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Site Photographs



Photo 1 ***Field geologist documenting soil core lithology.***



Photo 2 ***View of a samples processing setup.***



Photo 3 ***Distributing soil aliquots into stainless steel bowls to prepare for homogenization of composite samples.***



Photo 4 ***Drill crew advancing soil borings in the south central excavation area of the Southern Impoundment.***



Photo 5 ***Drill crew positioning the DPT rig in the northeast excavation area of the Southern Impoundment.***



Photo 6 ***View of the structure within the southwest excavation area to be demolished during RA construction activities.***



Photo 7 ***Drum storage area of containerized investigation derived waste (IDW) generated from PC-FSE activities. Contents include PPE, soil cuttings, piezometer water, and water generated from the decontamination of drilling rods and sampling bowls between borings.***



Photo 8 ***Drilling crew working in the north central excavation area of the Southern Impoundment***



Photo 9 ***Decontamination of bowls and drilling equipment occurring at the Decon Pad.***



Photo 10 ***View of sampling crews working in north central area of the Southern Impoundment***



Photo 11 ***Field geologist observing the soil lithology of soil cores, with EPA oversight.***



Photo 12 ***Debris from monitoring well P&A activities containerized for off-site disposal.***

Technical Memorandum

18 April 2022

To	Meagan Willis	**Tel**	561-688-9008
Copy to	Kathy Shaw	**Email**	Marisa.Oriaku@ghd.com
From	Marisa Oriaku/cs/3-NF	**Ref. No.**	11215131
Subject	**Analytical Results and Validation – High Resolution Dioxins and Furans Pre-Construction Field Sampling Event – Confirmation Soil Samples San Jacinto River Waste Pits - Southern Impoundment Channelview, Harris County, Texas November 2021 through February 2022**		

1. Introduction

This document details a validation of analytical results for soil samples collected in support of the Pre-Construction Field Sampling Event at the San Jacinto River Waste Pits – Southern Impoundment Site from November 2021 through February 2022. Samples were submitted to SGS Laboratory located in Wilmington, North Carolina. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. The sample delivery groups covered in the report are identified in Table 1. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, recovery data from surrogate spikes/laboratory control samples (LCS), matrix spikes (MS) and field Quality Assurance/Quality Control (QA/QC) samples. The assessment of analytical and in-house data included checks for: data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria, and transmittal errors.

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

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

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

Item ii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criterion and sample preservation requirements for the analysis are summarized in Table 3. The sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

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

3. Gas Chromatography/Mass Spectrometry (GC/MS) – Tuning and Mass Calibration (Instrument Performance Check)

Prior to Polychlorinated Dibenzodioxins/Polychlorinated Dibenzo-p-furan (PCDD/PCDF) analyses, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, the method requires the analysis of the specific tuning compound perfluorokerosene (PFK). The resulting spectra must meet the criteria cited in the method before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout the analysis period. All tuning criteria were met, indicating that proper optimization of the instrumentation was achieved.

4. Initial Calibration

To quantify PCDDs/PCDFs of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a minimum of a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve, instrument sensitivity, and ion abundance ratios are evaluated against the criteria cited in the “Guidelines”.

The initial calibration data were reviewed. All compounds met the criteria for sensitivity, linearity, and ion abundance ratios.

5. Continuing Calibration

To ensure that instrument calibration for the analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

Calibration standards were analyzed at the required frequency. Most results met the criteria for instrument sensitivity, stability, and ion abundance ratios with the exception of some high percent difference values for several congeners. All associated data was qualified as estimated (J) as shown in Table 4.

6. Laboratory Blank Analyses

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

For this study, laboratory method blanks were analyzed at a minimum frequency of one per analytical batch.

Most method blank results were non-detect with the exception of a few blanks with low concentrations of congeners. Sample results with similar concentrations to those found in the method blanks were qualified as non-detect (U) as shown in Table 5. Note that method blanks were corrected for individual sample dilution factors and percent solids, where applicable.

7. Spiked C13 Labeled PCDDs/PCDFs

In accordance with the method employed, all samples, blanks, and QC samples analyzed for PCDDs/PCDFs are spiked with labeled congeners prior to extraction to be an internal standard for the quantitation of native congeners, and to serve as surrogates for the assessment of method performance in the sample matrix.

All samples submitted were spiked with the appropriate number of labeled compounds prior to sample extraction and analysis.

Labeled congener recoveries and ion abundance ratios were assessed against the method control limits. Most labeled PCDD/PCDF recoveries and ion abundance ratios were within the method acceptance ranges. A few outlying recoveries were noted, and the associated sample results were qualified as estimated as shown in Table 6. Some ion abundance ratios were outside of the acceptable limits, and the associated sample results were qualified as estimated as shown in Table 7.

8. Cleanup Standard Recoveries

A C13 labeled cleanup standard is added to all samples, blanks, and QC samples after extraction, but prior to the cleanup procedures to assess the efficiency of the cleanup process.

All cleanup standard recoveries were within the method acceptance ranges.

9. Laboratory Control Sample Analyses

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

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

The LCS contained all compounds of interest. Most LCS recoveries were within the laboratory control limits with the exception of one slightly high 1,2,3,4,6,7,8-Heptachlorodibenzofuran recovery for the LCSD extracted on January 10, 2022. All associated positive sample results were qualified as estimated to reflect the potential high bias (see Table 8).

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

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analytes of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed. If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD.

MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with all compounds of interest. Most percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision with the exception of those shown in Table 9.

11. Field QA/QC Samples

The field QA/QC consisted of 17 rinse blank samples and 17 field duplicate sample sets.

Rinse Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, a rinse blank was submitted for analysis, as identified in Table 1. Most results were non-detect for the analytes of interest. Low concentrations of congeners were detected in some of the rinse blanks, however qualification due to the rinse blank contamination could not be performed since the associated samples were non-aqueous.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, 17 field duplicate samples were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 100 percent for soil samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is two times the RL value.

Most field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision with the exception of some compounds that showed elevated variability as shown in Table 10.

12. Target Compound Identification/Sample Quantitation

To minimize erroneous compound identification during PCDD/PCDF analyses, qualitative criteria including compound retention time, ion abundance ratio, and chromatography were evaluated according to the identification criteria established by the methods.

The samples identified in Table 1 were reviewed. Most compounds reported adhered to the specified identification criteria. Some sample results were reported as positive hits although the ion abundance ratio was not met. The associated results were qualified as the estimated maximum possible concentration. A summary of these qualified data is presented in Table 11.

Diphenyl ether interference was observed for one sample. The associated result was qualified as estimated as shown in Table 12.

Some congeners reported co-eluting interferences and were qualified as estimated due to poor chromatography (see Table 13).

13. Analyte Reporting

The laboratory reported detected results down to the laboratory's estimated detection limit (EDL) for each analyte. Positive analyte detections less than the reporting limit (RL) but greater than the EDL were reported as estimated (J) in Table 2 unless otherwise qualified in the Memorandum. Non-detect results were presented as non-detect at the EDL in Table 2.

All results were reported on a dry weight basis.

Sample results that exceeded the range of the calibration curve were qualified as estimated (J) as shown in Table 14.

14. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications herein.

Regards,



Marisa Oriaku
Data Management - Data Validator

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**PCDDs/PCDFs**	**Comments**
B5961	11215131-120121-S-JC-NE-S-8	NE-F1	Soil	12/01/2021	10:35	X	
	11215131-120121-S-JC-NE-S-9	NE-G1	Soil	12/01/2021	14:50	X	
	11215131-120121-S-JC-NE-S-10	NE-G2	Soil	12/01/2021	15:00	X	
	11215131-120221-S-JC-SW-S-1	SW-A1	Soil	12/02/2021	10:00	X	
	11215131-120221-S-JC-SW-S-2	SW-A2	Soil	12/02/2021	10:10	X	
B5962	11215131-120121-S-JC-NE-B-1	NE-F1, NE-F2, NE-F3, NE-G1, NE-G2, NE-G3	Soil	12/01/2021	14:20	X	
	11215131-120121-S-JC-NE-O-6	NE-F1, NE-F2, NE-F3	Soil	12/01/2021	10:45	X	
	11215131-120121-S-JC-NE-O-7	NE-G1, NE-G2, NE-G3, NE-G4	Soil	12/01/2021	14:40	X	
	11215131-120221-S-JC-SW-B-1	SW-A1, SW-A2, SW-A3, SW-A4, SW-A5	Soil	12/02/2021	10:30	X	
	11215131-120221-S-JC-SW-O-1	SW-A1, SW-A2, SW-A3, SW-A4, SW-A5	Soil	12/02/2021	10:20	X	MS/MSD
	11215131-120221-S-JC-SW-DUP-1	SW-A1, SW-A2, SW-A3, SW-A4, SW-A5	Soil	12/02/2021	--	X	FD (11215131-120221-S-JC-SW-O-1)
B5962B	11215131-120121-S-JC-NE-B-1H	NE-F1, NE-F2, NE-F3, NE-G1, NE-G2, NE-G3	Soil	12/01/2021	14:30	X	
B5963	11215131-120121-S-SPS-NE-S-11	NE-H1	Soil	12/01/2021	13:30	X	
	11215131-120221-S-SPS-SW-S-17	SW-L1	Soil	12/02/2021	08:30	X	
	11215131-120221-S-SPS-SW-S-18	SW-L2	Soil	12/02/2021	08:55	X	
	11215131-120221-S-SPS-SW-S-19	SW-L3	Soil	12/02/2021	09:20	X	
B5964	11215131-120121-S-SPS-NE-B-2	NE-H1, NE-H2, NE-H3, NE-H4, NE-I1, NE-I2	Soil	12/01/2021	14:30	X	
	11215131-120121-S-SPS-NE-O-8	NE-H1, NE-H2, NE-H3, NE-H4	Soil	12/01/2021	13:55	X	
	11215131-120121-S-SPS-NE-O-9	NE-I1, NE-I2, NE-I3	Soil	12/01/2021	14:25	X	
	11215131-120221-S-SPS-SW-B-9	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	Soil	12/02/2021	10:20	X	MS/MSD
	11215131-120221-S-SPS-SW-O-7	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	Soil	12/02/2021	10:15	X	
	11215131-120221-S-SPS-DUP2	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	Soil	12/02/2021	--	X	FD (11215131-120221-S-SPS-SW-O-7)
B5964A	11215131-120221-S-SPS-SW-B-9H1	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	Soil	12/02/2021	10:25	X	
	11215131-120221-S-SPS-SW-B-9H1	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	Soil	12/02/2021	10:25	X	
B5964D	11215131-120221-S-SPS-SW-B-9H2	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	Soil	12/02/2021	10:30	X	
B5965	11215131-113021-S-JC-NE-S-1	NE-A1	Soil	11/30/2021	13:50	X	
	11215131-113021-S-JC-NE-S-2	NE-A2	Soil	11/30/2021	14:10	X	
	11215131-113021-S-JC-NE-S-3	NE-B3	Soil	11/30/2021	15:30	X	
	11215131-120121-S-JC-NE-S-4	NE-C1	Soil	12/01/2021	09:10	X	
	11215131-120121-S-JC-NE-S-5	NE-C3	Soil	12/01/2021	09:20	X	
	11215131-113021-S-SPS-NE-S-6	NE-E1	Soil	11/30/2021	13:50	X	
	11215131-113021-S-SPS-NE-S-7	NE-E2	Soil	11/30/2021	13:40	X	
	11215131-120121-S-SPS-NE-S-12	NE-H3	Soil	12/01/2021	09:15	X	
	11215131-120121-S-SPS-NE-S-13	NE-I1	Soil	12/01/2021	10:45	X	
	11215131-120121-S-SPS-NE-S-14	NE-I2	Soil	12/01/2021	09:40	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: PCDDs/PCDFs	Comments
B5966	11215131-113021-S-JC-NE-O-1	NE-A1, NE-A2	Soil	11/30/2021	13:40	X	
	11215131-113021-S-JC-NE-O-2	NE-B1, NE-B2, NE-B3	Soil	11/30/2021	15:20	X	
	11215131-120121-S-JC-NE-O-3	NE-C1, NE-C2, NE-C3, NE-C4	Soil	12/01/2021	09:30	X	
	11215131-113021-S-SPS-NE-O-4	NE-D1, NE-D2	Soil	11/30/2021	15:45	X	
	11215131-113021-S-SPS-NE-O-5	NE-E1, NE-E2, NE-E3	Soil	11/30/2021	14:10	X	
B5969	11215131-120221-S-JC-SW-S-3	SW-B1	Soil	12/02/2021	13:30	X	
	11215131-120221-S-JC-SW-S-4	SW-B2	Soil	12/02/2021	13:40	X	
	11215131-120321-S-JC-SW-S-5	SW-C1	Soil	12/03/2021	09:40	X	
	11215131-120221-S-SPS-SW-S-6	SW-D1	Soil	12/02/2021	14:00	X	
	11215131-120221-S-SPS-SW-S-7	SW-D2	Soil	12/02/2021	13:25	X	
	11215131-120321-S-SPS-SW-S-8	SW-E1	Soil	12/03/2021	11:05	X	
	11215131-120321-S-SPS-SW-S-9	SW-E2	Soil	12/03/2021	10:55	X	
	11215131-120321-S-SPS-SW-S-10	SW-E3	Soil	12/03/2021	10:30	X	
	11215131-120321-S-SPS-SW-S-11	SW-H1	Soil	12/03/2021	09:30	X	
	11215131-120321-S-SPS-SW-S-12	SW-H2	Soil	12/03/2021	08:45	X	
B5970	11215131-120221-S-JC-SW-B-2	SW-B1, SW-B2, SW-B3, SW-B4, SW-B5	Soil	12/02/2021	14:00	X	
	11215131-120321-S-JC-SW-B-3	SW-C1, SW-C2, SW-C3, SW-C4, SW-C5	Soil	12/03/2021	09:50	X	
	11215131-120221-S-SPS-SW-B-4	SW-D1, SW-D2, SW-D3, SW-D4, SW-D5	Soil	12/02/2021	14:25	X	
	11215131-120321-S-SPS-SW-B-5	SW-E1, SW-E2, SW-E3, SW-E4, SW-H1, SW-H2	Soil	12/03/2021	11:15	X	
	11215131-120221-S-JC-SW-O-2	SW-B1, SW-B2, SW-B3, SW-B4, SW-B5	Soil	12/02/2021	13:50	X	
	11215131-120221-S-SPS-SW-O-3	SW-D1, SW-D2, SW-D3, SW-D4, SW-D5	Soil	12/02/2021	14:20	X	
	11215131-120321-S-SPS-SW-O-4	SW-E1, SW-E2, SW-E3, SW-E4	Soil	12/03/2021	11:10	X	
	11215131-120321-S-SPS-SW-O-5	SW-H1, SW-H2, SW-H3, SW-H4	Soil	12/03/2021	09:25	X	
B5971	11215131-120221-S-JC-SW-B-2H	SW-B1, SW-B2, SW-B3, SW-B4, SW-B5	Soil	12/02/2021	14:10	X	
	11215131-120321-S-JC-SW-B-3H	SW-C1, SW-C2, SW-C3, SW-C4, SW-C5	Soil	12/03/2021	10:00	X	
	11215131-120221-S-SPS-SW-B-4H1	SW-D1, SW-D2, SW-D3, SW-D4, SW-D5	Soil	12/02/2021	14:30	X	
	11215131-120321-S-SPS-SW-B-5H	SW-E1, SW-E2, SW-E3, SW-E4, SW-H1, SW-H2	Soil	12/03/2021	11:20	X	
B5971A	11215131-120221-S-SPS-SW-B-4H2	SW-D1, SW-D2, SW-D3, SW-D4, SW-D5	Soil	12/02/2021	14:35	X	
B5985	11215131-120621-S-JC-SC-S-1	SC-A1	Soil	12/06/2021	09:00	X	MS/MSD
	11215131-120621-S-JC-DUP-4	SC-A1	Soil	12/06/2021	--	X	FD (11215131-120621-S-JC-SC-S-1)
	11215131-120621-S-JC-SC-S-2	SC-A2	Soil	12/06/2021	09:10	X	
	11215131-120621-S-JC-SC-S-3	SC-A3	Soil	12/06/2021	09:20	X	
	11215131-120421-S-JC-SC-S-10	SC-F1	Soil	12/04/2021	10:50	X	
	11215131-120421-S-JC-SC-S-11	SC-F2	Soil	12/04/2021	11:00	X	
	11215131-120421-S-JC-SC-S-12	SC-F3	Soil	12/04/2021	11:10	X	
	11215131-120321-S-JC-SW-S-13	SW-I1	Soil	12/03/2021	13:25	X	

Table 1

Sample Collection and Analysis Summary
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San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**PCDDs/PCDFs**	**Comments**
B5986	11215131-120621-S-JC-SC-B-1	SC-A1, SC-A2, SC-A3, SC-A4, SC-A5	Soil	12/06/2021	09:40	X	
	11215131-120421-S-JC-SC-B-5	SC-F1, SC-F2, SC-F3, SC-F4, SC-F5	Soil	12/04/2021	11:30	X	
	11215131-120621-S-JC-SC-O-1	SC-A1, SC-A2, SC-A3, SC-A4, SC-A5	Soil	12/06/2021	09:30	X	
	11215131-120421-S-JC-SC-O-6	SC-F1, SC-F2, SC-F3, SC-F4, SC-F5	Soil	12/04/2021	11:20	X	
	11215131-120421-S-JC-SC-O-7	SC-G1, SC-G2	Soil	12/04/2021	14:15	X	
	11215131-120421-S-JC-SC-O-12	SC-L1, SC-L2, SC-L3, SC-L4, SC-L5	Soil	12/04/2021	08:55	X	
	11215131-120321-S-JC-SW-B-6	SW-F1, SW-F2, SW-G1, SW-I1, SW-I2	Soil	12/03/2021	13:35	X	
B5987	11215131-120621-S-JC-SC-B-1H	SC-A1, SC-A2, SC-A3, SC-A4, SC-A5	Soil	12/06/2021	09:50	X	
	11215131-120321-S-JC-SW-B-6H	SW-F1, SW-F2, SW-G1, SW-I1, SW-I2	Soil	12/03/2021	13:45	X	
B5988	11215131-120221-S-JC-RB-1	--	Water	12/02/2021	15:00	X	Rinse Blank
	11215131-120221-S-SS-RB-2	--	Water	12/02/2021	15:15	X	Rinse Blank
	11215131-120421-S-SS-RB-3	--	Water	12/04/2021	14:55	X	Rinse Blank
	11215131-120621-S-JC-RB-4	--	Water	12/06/2021	10:15	X	Rinse Blank
B5990	11215131-120621-S-SS-SC-S-4	SC-B1	Soil	12/06/2021	9:20	X	
	11215131-120621-S-SS-SC-S-5	SC-B2	Soil	12/06/2021	9:00	X	
	11215131-120621-S-SS-SC-S-6	SC-B3	Soil	12/06/2021	8:15	X	
	11215131-120421-S-SS-SC-S-16	SC-K2	Soil	12/04/2021	09:50	X	
	11215131-120421-S-SS-SC-S-17	SC-K3	Soil	12/04/2021	11:00	X	
	11215131-120321-S-SS-SW-S-14	SW-J1	Soil	12/03/2021	13:30	X	
B5991	11215131-120621-S-SS-SC-B-2	SC-B1, SC-B2, SC-B3, SC-B4, SC-B5	Soil	12/06/2021	09:30	X	
	11215131-120421-S-SS-SC-B-7	SC-K1, SC-K2, SC-K3, SC-K4	Soil	12/04/2021	11:25	X	
	11215131-120621-S-SS-SC-O-2	SC-B1, SC-B2, SC-B3, SC-B4, SC-B5	Soil	12/06/2021	09:25	X	
	11215131-120421-S-SS-SC-O-8	SC-H1, SC-H2, SC-H3	Soil	12/04/2021	14:05	X	
	11215131-120421-S-SS-SC-O-11	SC-K1, SC-K2, SC-K3, SC-K4	Soil	12/04/2021	11:20	X	
	11215131-120421-S-SS-SC-O-13	SC-M1, SC-M2, SC-M3, SC-M4, SC-M5	Soil	12/04/2021	08:45	X	
	11215131-120421-S-SS-DUP-3	SC-M1, SC-M2, SC-M3, SC-M4, SC-M5	Soil	12/04/2021	--	X	FD (11215131-120421-S-SS-SC-O-13)
	11215131-120321-S-SS-SW-B-7	SW-J1, SW-J2, SW-J3, SW-J3, SW-J4, SW-J5	Soil	12/03/2021	14:25	X	MS/MSD
B5992	11215131-120621-S-SS-SC-B-2H	SC-B1, SC-B2, SC-B3, SC-B4, SC-B5	Soil	12/06/2021	09:35	X	
	11215131-120421-S-SS-SC-B-7H	SC-K1, SC-K2, SC-K3, SC-K4	Soil	12/04/2021	11:30	X	
	11215131-120321-S-SS-SW-B-7H1	SW-J1, SW-J2, SW-J3, SW-J3, SW-J4, SW-J5	Soil	12/03/2021	14:30	X	
B5992B	11215131-120321-S-SS-SW-B-7H2	SW-J1, SW-J2, SW-J3, SW-J3, SW-J4, SW-J5	Soil	12/03/2021	14:35	X	
B5999	11215131-120721-S-JC-SC-S-7	SC-C1	Soil	12/07/2021	08:30	X	
	11215131-120721-S-SS-SC-S-8	SC-D1	Soil	12/07/2021	08:40	X	
	11215131-120721-S-SS-SC-S-9	SC-D2	Soil	12/07/2021	08:10	X	
	11215131-120621-S-SS-SC-S-13	SC-I1	Soil	12/06/2021	14:25	X	
	11215131-120621-S-JC-SC-S-14	SC-J1	Soil	12/06/2021	14:20	X	
	11215131-120621-S-JC-SC-S-15	SC-J2	Soil	12/06/2021	14:30	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**PCDDs/PCDFs**	**Comments**
B6000	11215131-120721-S-JC-SC-B-3	SC-C1, SC-C2, SC-C3, SC-E1, SC-E2	Soil	12/07/2021	08:50	X	
	11215131-120721-S-SS-SC-B-4	SC-D1, SC-D2, SC-D3, SC-D4, SC-E3	Soil	12/07/2021	09:15	X	
	11215131-120621-S-SS-SC-B-6	SC-I1, SC-I2, SC-I3, SC-J1, SC-J2, SC-J3	Soil	12/06/2021	14:55	X	
	11215131-120721-S-JC-SC-O-3	SC-C1, SC-C2, SC-C3	Soil	12/07/2021	08:40	X	
	11215131-120721-S-SS-SC-O-4	SC-D1, SC-D2, SC-D3, SC-D4	Soil	12/07/2021	09:00	X	
	11215131-120721-S-JC-SC-O-5	SC-E1, SC-E2, SC-E3	Soil	12/07/2021	09:15	X	
	11215131-120621-S-SS-SC-O-9	SC-I1, SC-I2, SC-I3	Soil	12/06/2021	14:50	X	
	11215131-120621-S-JC-SC-O-10	SC-J1, SC-J2, SC-J3, SC-J4	Soil	12/06/2021	14:40	X	
B6001	11215131-120621-S-SS-SC-B-6H	SC-I1, SC-I2, SC-I3, SC-J1, SC-J2, SC-J3	Soil	12/06/2021	15:00	X	
B6006	11215131-120721-S-JC-NC-S-6	NC-F1	Soil	12/07/2021	13:00	X	
	11215131-120721-S-JC-NC-S-7	NC-F2	Soil	12/07/2021	13:10	X	
	11215131-120721-S-SS-NC-S-8	NC-G1	Soil	12/07/2021	12:40	X	
	11215131-120721-S-SS-NC-S-9	NC-H1	Soil	12/07/2021	13:15	X	
	11215131-120821-S-JC-SW-S-15	SW-K1	Soil	12/08/2021	10:00	X	
	11215131-120821-S-JC-SW-S-16	SW-K2	Soil	12/08/2021	10:10	X	
	11215131-120821-S-SS-SW-S-25	SW-O1	Soil	12/08/2021	09:50	X	
	11215131-120821-S-SS-SW-S-26	SW-O3	Soil	12/08/2021	08:20	X	
	11215131-120821-S-SS-SW-S-27	SW-O4	Soil	12/08/2021	10:30	X	
B6007	11215131-120721-S-JC-NC-O-6	NC-F1, NC-F2, NC-F3	Soil	12/07/2021	13:20	X	
	11215131-120721-S-SS-NC-O-7	NC-G1, NC-G2	Soil	12/07/2021	13:00	X	
	11215131-120721-S-SS-NC-O-8	NC-H1, NC-H2	Soil	12/07/2021	13:40	X	
	11215131-120821-S-JC-SW-B-8	SW-K1, SW-K2, SW-K3, SW-K3, SW-K4, SW-K5	Soil	12/08/2021	10:30	X	
	11215131-120821-S-SS-SW-B-12	SW-O1, SW-O2, SW-O3, SW-O4, SW-O5	Soil	12/08/2021	10:40	X	
	11215131-120821-S-JC-SW-O-6	SW-K1, SW-K2, SW-K3, SW-K3, SW-K4, SW-K5	Soil	12/08/2021	10:20	X	
	11215131-120821-S-SS-SW-O-10	SW-O1, SW-O2, SW-O3, SW-O4, SW-O5	Soil	12/08/2021	10:35	X	
	11215131-120821-S-SS-DUP-5	SW-O1, SW-O2, SW-O3, SW-O4, SW-O5	Soil	12/08/2021	--	X	FD (11215131-120821-S-SS-SW-O-10)
B6008	11215131-120821-S-JC-SW-B-8H1	SW-K1, SW-K2, SW-K3, SW-K3, SW-K4, SW-K5	Soil	12/08/2021	10:40	X	
B6008B	11215131-120821-S-JC-SW-B-8H2	SW-K1, SW-K2, SW-K3, SW-K3, SW-K4, SW-K5	Soil	12/08/2021	10:50	X	
B6008B	11215131-120821-S-SS-SW-B-12H	SW-O1, SW-O2, SW-O3, SW-O4, SW-O5	Soil	12/08/2021	10:45	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**PCDDs/PCDFs**	**Comments**
B6009	11215131-121021-S-SS-NC-S-1	NC-A1	Soil	12/10/2021	08:55	X	
	11215131-121021-S-SS-NC-S-2	NC-A2	Soil	12/10/2021	08:10	X	
	11215131-121021-S-SS-NC-S-3	NC-A3	Soil	12/10/2021	08:00	X	
	11215131-121021-S-JC-NC-S-4	NC-B1	Soil	12/10/2021	08:25	X	
	11215131-121021-S-JC-NC-S-5	NC-C1	Soil	12/10/2021	09:00	X	
	11215131-120921-S-JC-NC-S-10	NC-J1	Soil	12/09/2021	9:40	X	
	11215131-120921-S-JC-NC-S-11	NC-K1	Soil	12/09/2021	13:20	X	
	11215131-120921-S-SS-NC-S-12	NC-L1	Soil	12/09/2021	08:30	X	
	11215131-120921-S-SS-NC-S-13	NC-M1	Soil	12/09/2021	08:55	X	
	11215131-120921-S-SS-NC-S-14	NC-N1	Soil	12/09/2021	09:20	X	
	11215131-120821-S-JC-SW-S-20	SW-M1	Soil	12/08/2021	14:00	X	
	11215131-120821-S-JC-SW-S-21	SW-M2	Soil	12/08/2021	14:10	X	
	11215131-120821-S-JC-SW-S-22	SW-M3	Soil	12/08/2021	14:20	X	
	11215131-120821-S-SS-SW-S-23	SW-N1	Soil	12/08/2021	14:50	X	
	11215131-120821-S-SS-SW-S-24	SW-N2	Soil	12/08/2021	13:45	X	
B6010	11215131-121021-S-SS-NC-B-1	NC-A1, NC-A2, NC-A3, NC-A4	Soil	12/10/2021	08:50	X	
	11215131-121021-S-JC-NC-B-2	NC-B1, NC-B2, NC-B3, NC-C1, NC-C2, NC-C3	Soil	12/10/2021	09:20	X	
	11215131-120921-S-JC-NC-B-3	NC-I1, NC-I2, NC-J1, NC-J2, NC-J3, NC-K1	Soil	12/09/2021	13:40	X	
	11215131-120921-S-SS-NC-B-4	NC-L1, NC-L2, NC-L3, NC-M1, NC-M2, NC-M3	Soil	12/09/2021	14:05	X	
	11215131-121021-S-SS-NC-O-1	NC-A1, NC-A2, NC-A3, NC-A4	Soil	12/10/2021	08:45	X	
	11215131-121021-S-JC-NC-O-2	NC-B1, NC-B2, NC-B3	Soil	12/10/2021	08:35	X	
	11215131-121021-S-JC-NC-O-3	NC-C1, NC-C2, NC-C3	Soil	12/10/2021	09:10	X	
	11215131-120921-S-JC-NC-O-9	NC-I1, NC-I2	Soil	12/09/2021	09:50	X	
	11215131-120921-S-JC-NC-O-10	NC-J1, NC-J2, NC-J3	Soil	12/09/2021	10:00	X	
	11215131-120921-S-JC-NC-O-11	NC-K1, NC-K2, NC-K3	Soil	12/09/2021	13:30	X	
	11215131-120921-S-SS-NC-O-12	NC-L1, NC-L2, NC-L3	Soil	12/09/2021	10:00	X	
	11215131-120921-S-SS-NC-O-13	NC-M1, NC-M2, NC-M3	Soil	12/09/2021	13:25	X	
	11215131-120921-S-SS-NC-O-14	NC-N1, NC-N2, NC-N3	Soil	12/09/2021	14:00	X	
	11215131-120821-S-JC-SW-B-10	SW-M1, SW-M2, SW-M3, SW-M4, SW-M5	Soil	12/08/2021	14:40	X	
	11215131-120821-S-SS-SW-B-11	SW-N1, SW-N2, SW-N3, SW-N4, SW-N5	Soil	12/08/2021	15:15	X	MS/MSD
	11215131-120821-S-JC-SW-O-8	SW-M1, SW-M2, SW-M3, SW-M4, SW-M5	Soil	12/08/2021	14:30	X	MS/MSD
	11215131-120821-S-JC-DUP-6	SW-M1, SW-M2, SW-M3, SW-M4, SW-M5	Soil	12/08/2021	--	X	FD (11215131-120821-S-JC-SW-O-8)
	11215131-120821-S-SS-SW-O-9	SW-N1, SW-N2, SW-N3, SW-N4, SW-N5	Soil	12/08/2021	15:10	X	
B6011	11215131-120821-S-SS-RB-5	--	Water	12/08/2021	16:25	X	Rinse Blank
	11215131-120821-S-JC-RB-6	--	Water	12/08/2021	15:00	X	Rinse Blank

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: PCDDs/PCDFs	Comments
B6038	11215131-121321-S-BN-NC-S-16	NC-T1	Soil	12/13/2021	08:30	X	
	11215131-121321-S-BN-NC-S-17	NC-U1	Soil	12/13/2021	09:20	X	
	11215131-121321-S-BN-NC-S-18	NC-V1	Soil	12/13/2021	09:30	X	
	11215131-121321-S-SS-NC-S-19	NC-W1	Soil	12/13/2021	08:40	X	
B6039	11215131-121321-S-SS-NC-B-6	NC-W1, NC-W2, NC-W3, NC-Y1, NC-Y2, NC-X1	Soil	12/13/2021	10:25	X	MS/MSD
	11215131-121321-S-BN-NC-O-20	NC-T1, NC-T2	Soil	12/13/2021	08:40	X	MS/MSD
	11215131-121321-S-BN-DUP-8	NC-T1, NC-T2	Soil	12/13/2021	--	X	FD (11215131-121321-S-BN-NC-O-20)
	11215131-121321-S-BN-NC-O-21	NC-U1, NC-U2	Soil	12/13/2021	09:40	X	
	11215131-121321-S-BN-NC-O-22	NC-V1, NC-V2	Soil	12/13/2021	09:50	X	
	11215131-121321-S-SS-NC-O-23	NC-W1, NC-W2, NC-W3	Soil	12/13/2021	08:30	X	
	11215131-121321-S-SS-NC-O-24	NC-X1, NC-X2	Soil	12/13/2021	10:20	X	
	11215131-121321-S-SS-NC-O-25	NC-Y1, NC-Y2	Soil	12/13/2021	10:05	X	
	11215131-121321-S-SS-DUP-7	NC-Y1, NC-Y2	Soil	12/13/2021	--	X	FD (11215131-121321-S-SS-NC-O-25)
B6056	11215131-121421-S-BN-NC-S-15	NC-P1	Soil	12/14/2021	10:00	X	
B6057	11215131-121421-S-BN-NC-B-5	NC-O1, NC-02, NC-P1, NC-P2, NC-P3, NC-Q1	Soil	12/14/2021	10:40	X	
	11215131-121321-S-SS-NC-O-4	NC-D1, NC-D2	Soil	12/13/2021	13:35	X	
	11215131-121321-S-SS-NC-O-5	NC-E1, NC-E2	Soil	12/13/2021	14:05	X	
	11215131-121421-S-BN-NC-O-15	NC-O1, NC-02	Soil	12/14/2021	10:10	X	
	11215131-121421-S-BN-NC-O-16	NC-P1, NC-P2, NC-P3	Soil	12/14/2021	10:20	X	
	11215131-121421-S-BN-NC-O-17	NC-Q1, NC-Q2	Soil	12/14/2021	10:30	X	
	11215131-121321-S-BN-NC-O-18	NC-R1, NC-R2	Soil	12/13/2021	14:20	X	
	11215131-121321-S-BN-NC-O-19	NC-S1, NC-S2	Soil	12/13/2021	14:30	X	
B6059	11215131-121321-S-BN-RB-8	--	Water	12/13/2021	15:15	X	Rinse Blank
	11215131-121321-S-SS-RB-7	--	Water	12/13/2021	15:15	X	Rinse Blank
B6078	11215131-121621-S-BN-NE-S-15	NE-J1	Soil	12/16/2021	13:00	X	
	11215131-121621-S-BN-NE-S-16	NE-K1	Soil	12/16/2021	13:50	X	
	11215131-121721-S-BN-NE-S-17	NE-L1	Soil	12/17/2021	09:10	X	
	11215131-121721-S-BN-NE-S-18	NE-M1	Soil	12/17/2021	09:20	X	
B6079	11215131-121621-S-BN-NE-B-3	NE-K1, NE-K2	Soil	12/16/2021	14:10	X	
	11215131-121721-S-BN-NE-B-4	NE-M1, NE-M2, NE-M3	Soil	12/17/2021	9:40	X	
	11215131-121621-S-BN-NE-O-10	NE-J1, NE-J2	Soil	12/16/2021	13:10	X	
	11215131-121621-S-BN-NE-O-11	NE-K1, NE-K2	Soil	12/16/2021	14:00	X	
	11215131-121721-S-BN-NE-O-12	NE-M1, NE-M2, NE-M3	Soil	12/17/2021	9:30	X	
B6080	11215131-121621-S-BN-NE-B-3H	NE-K1, NE-K2	Soil	12/16/2021	14:20	X	
	11215131-121721-S-BN-NE-B-4H	NE-M1, NE-M2, NE-M3	Soil	12/17/2021	09:50	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**PCDDs/PCDFs**	**Comments**
B6108	11215131-122121-S-BN-SC-S-18	SC-N1	Soil	12/21/2021	8:10	X	
	11215131-122121-S-BN-SC-S-19	SC-N2	Soil	12/21/2021	8:20	X	
	11215131-122121-S-BN-SC-S-20	SC-N3	Soil	12/21/2021	8:30	X	
	11215131-122021-S-BN-SC-S-21	SC-O1	Soil	12/20/2021	13:40	X	
	11215131-122021-S-BN-SC-S-22	SC-P1	Soil	12/20/2021	13:10	X	
	11215131-122021-S-BN-SC-S-24	SC-Q1	Soil	12/20/2021	11:15	X	
	11215131-122021-S-BN-SC-S-25	SC-Q2	Soil	12/20/2021	11:25	X	
B6109	11215131-122021-S-BN-SC-B-10	SC-P1, SC-P2, SC-P3	Soil	12/20/2021	13:30	X	
	11215131-122021-S-BN-SC-B-11	SC-Q1, SC-Q2, SC-Q3, SC-Q4, SC-Q5	Soil	12/20/2021	11:45	X	
	11215131-122121-S-BN-SC-B-8	SC-N1, SC-N2, SC-N3, SC-N4, SC-N5	Soil	12/21/2021	08:50	X	
	11215131-122021-S-BN-SC-B-9	SC-O1, SC-O2	Soil	12/20/2021	14:00	X	
	11215131-122121-S-BN-SC-O-14	SC-N1, SC-N2, SC-N3, SC-N4, SC-N5	Soil	12/21/2021	08:40	X	
	11215131-122021-S-BN-SC-O-15	SC-O1, SC-O2	Soil	12/20/2021	13:50	X	
	11215131-122021-S-BN-SC-O-16	SC-P1, SC-P2, SC-P3	Soil	12/20/2021	13:20	X	
	11215131-122021-S-BN-SC-O-17	SC-Q1, SC-Q2, SC-Q3, SC-Q4, SC-Q5	Soil	12/20/2021	11:35	X	MS/MSD
	11215131-122021-S-BN-DUP-9	SC-Q1, SC-Q2, SC-Q3, SC-Q4, SC-Q5	Soil	12/20/2021	--	X	FD (11215131-122021-S-BN-SC-O-17)
B6110	11215131-122021-S-BN-SC-B-11H	SC-Q1, SC-Q2, SC-Q3, SC-Q4, SC-Q5	Soil	12/20/2021	11:55	X	
B6110A	11215131-122121-S-BN-SC-B-8H	SC-N1, SC-N2, SC-N3, SC-N4, SC-N5	Soil	12/21/2021	09:00	X	
B6111	11215131-122121-S-BN-RB-9	--	Water	12/21/2021	10:00	X	Rinse Blank
B6138	11215131-010522-S-BN-SW-S-40	SW-V1	Soil	01/05/2022	10:35	X	
	11215131-010522-S-BN-SW-S-41	SW-V2	Soil	01/05/2022	10:45	X	
B6139	11215131-010522-S-BN-SW-B-19	SW-V1, SW-V2, SW-V3, SW-V4, SW-V5	Soil	01/05/2022	11:05	X	
	11215131-010522-S-BN-SW-O-17	SW-V1, SW-V2, SW-V3, SW-V4, SW-V5	Soil	01/05/2022	10:55	X	
B6140	11215131-010522-S-BN-SW-B-19H1	SW-V1, SW-V2, SW-V3, SW-V4, SW-V5	Soil	01/05/2022	11:15	X	
B6146	11215131-010622-S-BN-SW-S-30	SW-Q1	Soil	01/06/2022	09:30	X	
	11215131-010622-S-BN-SW-S-35	SW-Q3	Soil	01/06/2022	09:40	X	
	11215131-010522-S-BN-SW-S-36	SW-U1	Soil	01/05/2022	14:40	X	
B6147	11215131-010622-S-BN-SW-B-15	SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5	Soil	01/06/2022	10:00	X	MS/MSD
	11215131-010622-S-BN-DUP-10	SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5	Soil	01/06/2022	--	X	FD (11215131-010622-S-BN-SW-B-15)
	11215131-010522-S-BN-SW-B-17	SW-U1, SW-U2, SW-U3, SW-U4, SW-U5	Soil	01/05/2022	15:00	X	
	11215131-010622-S-BN-SW-O-12	SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5	Soil	01/06/2022	09:50	X	
	11215131-010522-S-BN-SW-O-15	SW-U1, SW-U2, SW-U3, SW-U4, SW-U5	Soil	01/05/2022	14:50	X	
B6148	11215131-010622-S-BN-SW-B-15H1	SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5	Soil	01/06/2022	10:10	X	
	11215131-010522-S-BN-SW-B-17H1	SW-U1, SW-U2, SW-U3, SW-U4, SW-U5	Soil	01/05/2022	15:10	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**PCDDs/PCDFs**	**Comments**
B6148A	11215131-010622-S-BN-SW-B-15H2	SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5	Soil	01/06/2022	10:20	X	
	11215131-010522-S-BN-SW-B-17H2	SW-U1, SW-U2, SW-U3, SW-U4, SW-U5	Soil	01/05/2022	15:20	X	
B6152	11215131-010622-S-BN-SW-S-28	SW-P1	Soil	01/06/2022	14:00	X	
	11215131-010622-S-BN-SW-S-29	SW-P3	Soil	01/06/2022	14:10	X	
	11215131-010722-S-BN-SW-S-31	SW-R1	Soil	01/07/2022	09:20	X	
	11215131-010722-S-BN-SW-S-32	SW-S1	Soil	01/07/2022	09:30	X	
	11215131-010722-S-BN-SW-S-33	SW-S2	Soil	01/07/2022	09:40	X	
B6153	11215131-010622-S-BN-SW-B-13	SW-P1, SW-P2	Soil	01/06/2022	14:30	X	
	11215131-010622-S-BN-SW-B-14	SW-P3, SW-P4, SW-P5	Soil	01/06/2022	14:40	X	
	11215131-010722-S-BN-SW-B-16	SW-R1, SW-R2, SW-R3, SW-S1, SW-S2, SW-S3	Soil	01/07/2022	10:10	X	
	11215131-010622-S-BN-SW-O-11	SW-P1, SW-P2, SW-P3, SW-P4, SW-P5	Soil	01/06/2022	14:20	X	
	11215131-010722-S-BN-SW-O-13	SW-R1, SW-R2, SW-R3	Soil	01/07/2022	09:50	X	
	11215131-010722-S-BN-SW-O-14	SW-S1, SW-S2, SW-S3	Soil	01/07/2022	10:00	X	
B6154	11215131-010622-S-BN-SW-B-14H	SW-P3, SW-P4, SW-P5	Soil	01/06/2022	14:50	X	
B6154	11215131-010722-S-BN-SW-B-16H	SW-R1, SW-R2, SW-R3, SW-S1, SW-S2, SW-S3	Soil	01/07/2022	10:20	X	
B6155	11215131-010622-S-BN-RB-10	--	Water	01/06/2022	15:30	X	Rinse Blank
B6169	11215131-011022-S-BN-NC-S-20	NC-AD1	Soil	01/10/2022	10:30	X	
	11215131-011122-S-BN-NC-S-21	NC-AE1	Soil	01/11/2022	11:00	X	
	11215131-011122-S-BN-NC-S-22	NC-AE2	Soil	01/11/2022	11:10	X	
	11215131-011022-S-BN-NC-S-23	NC-AF1	Soil	01/10/2022	08:50	X	
	11215131-011122-S-BN-NC-S-24	NC-AB1	Soil	01/11/2022	09:30	X	
	11215131-011122-S-BN-NC-S-25	NC-AB2	Soil	01/11/2022	09:40	X	
	11215131-010822-S-BN-NC-S-26	NC-AG1	Soil	01/08/2022	10:10	X	
	11215131-011122-S-BN-NC-S-27	NC-AA2	Soil	01/11/2022	09:50	X	
	11215131-010822-S-BN-NC-S-28	NC-AH1	Soil	01/08/2022	09:20	X	
	11215131-010822-S-BN-NC-S-29	NC-AI1	Soil	01/08/2022	09:30	X	
	11215131-011122-S-BN-NC-S-30	NC-AA1	Soil	01/11/2022	10:00	X	
	11215131-011022-S-BN-NC-S-31	NC-AC2	Soil	01/10/2022	13:40	X	
	11215131-011022-S-BN-NC-S-32	NC-AD3	Soil	01/10/2022	10:40	X	
B6170	11215131-010722-S-BN-SW-S-34	SW-T1	Soil	01/07/2022	13:30	X	MS/MSD
	11215131-010722-S-BN-SW-S-37	SW-T2	Soil	01/07/2022	13:40	X	
	11215131-010722-S-BN-SW-S-38	SW-T3	Soil	01/07/2022	13:50	X	
	11215131-010722-S-BN-SW-S-39	SW-T4	Soil	01/07/2022	14:00	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**PCDDs/PCDFs**	**Comments**
B6171	11215131-011022-S-BN-NC-B-7	NC-AC1, NC-AC2, NC-AC3	Soil	01/10/2022	14:00	X	MS/MSD
	11215131-011022-S-BN-DUP-12	NC-AC1, NC-AC2, NC-AC3	Soil	01/10/2022	--	X	FD (11215131-011022-S-BN-NC-B-7)
	11215131-010822-S-BN-NC-B-8	NC-AG1, NC-AG2	Soil	01/08/2022	10:30	X	
	11215131-011122-S-BN-NC-B-9	NC-AA1, NC-AA2, NC-AA3, NC-AB1, NC-AB2,	Soil	01/11/2022	10:30	X	
	11215131-011022-S-BN-NC-O-26	NC-AC1, NC-AC2, NC-AC3	Soil	01/10/2022	13:50	X	
	11215131-011022-S-BN-NC-O-27	NC-AD1, NC-AD2, NC-AD3	Soil	01/10/2022	10:50	X	
	11215131-011122-S-BN-NC-O-28	NC-AE1, NC-AE2, NC-AE3	Soil	01/11/2022	11:20	X	
	11215131-011022-S-BN-NC-O-29	NC-AF1, NC-AF2	Soil	01/10/2022	09:00	X	
	11215131-011122-S-BN-NC-O-30	NC-AB1, NC-AB2, NC-AB3	Soil	01/11/2022	10:10	X	
	11215131-010822-S-BN-NC-O-31	NC-AG1, NC-AG2	Soil	01/08/2022	10:20	X	
	11215131-011122-S-BN-NC-O-32	NC-AA1, NC-AA2, NC-AA3	Soil	01/11/2022	10:20	X	
	11215131-010822-S-BN-NC-O-33	NC-AH1, NC-AH2	Soil	01/08/2022	09:40	X	
	11215131-010822-S-BN-NC-O-34	NC-AI1, NC-AI2	Soil	01/08/2022	09:50	X	
	11215131-010722-S-BN-SW-B-18	SW-T1, SW-T2, SW-T3, SW-T4, SW-T5	Soil	01/07/2022	14:20	X	
	11215131-010722-S-BN-SW-O-16	SW-T1, SW-T2, SW-T3, SW-T4, SW-T5	Soil	01/07/2022	14:10	X	
	11215131-010722-S-BN-DUP-11	SW-T1	Soil	01/07/2022	--	X	FD (11215131-010722-S-BN-SW-S-34)
B6172	11215131-010722-S-BN-RB-11	--	Water	01/07/2022	15:15	X	Rinse Blank
	11215131-011022-S-BN-RB-12	--	Water	01/10/2022	12:45	X	Rinse Blank
B6181	11215131-011222-S-BN-SC-S-26	SC-N6	Soil	01/12/2022	08:20	X	
	11215131-011222-S-BN-SC-S-27	SC-P5	Soil	01/12/2022	09:00	X	
	11215131-011222-S-BN-SC-S-28	SC-Q5	Soil	01/12/2022	13:45	X	
	11215131-011222-S-BN-SC-S-29	SC-Q6	Soil	01/12/2022	13:55	X	
B6182	11215131-011222-S-BN-SC-B-12	SC-P4, SC-P5, SC-P6	Soil	01/12/2022	09:20	X	
	11215131-011222-S-BN-SC-B-13	SC-Q5, SC-Q6, SC-Q7	Soil	01/12/2022	14:15	X	
	11215131-011222-S-BN-SC-B-8A	SC-N6	Soil	01/12/2022	08:40	X	
	11215131-011222-S-BN-SC-O-14A	SC-N6	Soil	01/12/2022	08:30	X	
	11215131-011222-S-BN-SC-O-18	SC-P4, SC-P5, SC-P6	Soil	01/12/2022	09:10	X	
	11215131-011222-S-BN-SC-O-19	SC-Q5, SC-Q6, SC-Q7	Soil	01/12/2022	14:05	X	
B6183	11215131-011222-S-BN-SC-B-8aH	SC-N6	Soil	01/12/2022	8:50	X	
	11215131-011222-S-BN-SC-B-13H	SC-Q5, SC-Q6, SC-Q7	Soil	01/12/2022	14:25	X	
B6206	11215131-011922-S-BN-SW-S-43	SW-Q6	Soil	01/19/2022	09:50	X	
	11215131-011922-S-BN-SW-S-42	SW-R4	Soil	01/19/2022	13:00	X	
	11215131-012022-S-BN-SW-S-44	SW-T7	Soil	01/20/2022	10:20	X	
	11215131-012022-S-BN-SW-S-45	SW-T8	Soil	01/20/2022	10:30	X	
	11215131-011922-S-BN-SW-S-46	SW-V6	Soil	01/19/2022	09:00	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: PCDDs/PCDFs	Comments
B6207	11215131-011922-S-BN-SW-O-18	SW-R4, SW-R5, SW-R6	Soil	01/19/2022	13:10	X	
	11215131-011922-S-BN-SW-B-20	SW-R4, SW-R5, SW-R6	Soil	01/19/2022	13:20	X	
	11215131-011922-S-BN-SW-O-19	SW-Q6, SW-Q7, SW-Q8	Soil	01/19/2022	10:00	X	
	11215131-011922-S-BN-SW-B-21	SW-Q6, SW-Q7, SW-Q8	Soil	01/19/2022	10:10	X	MS/MSD
	11215131-011922-S-BN-DUP-13	SW-Q6, SW-Q7, SW-Q8	Soil	01/19/2022	--	X	FD (11215131-011922-S-BN-SW-B-21)
	11215131-012022-S-BN-SW-O-20	SW-T7, SW-T8, SW-T9, SW-T10, SW-T11	Soil	01/20/2022	10:40	X	
	11215131-012022-S-BN-SW-B-22	SW-T7, SW-T8, SW-T9, SW-T10, SW-T11	Soil	01/20/2022	10:50	X	
	11215131-011922-S-BN-SW-O-21	SW-V6	Soil	01/19/2022	09:10	X	
	11215131-011922-S-BN-SW-B-23	SW-V6	Soil	01/19/2022	09:20	X	
B6208	11215131-011922-S-BN-SW-B-20H	SW-R4, SW-R5, SW-R6	Soil	01/19/2022	13:30	X	
	11215131-011922-S-BN-SW-B-21H1	SW-Q6, SW-Q7, SW-Q8	Soil	01/19/2022	10:20	X	
	11215131-011922-S-BN-SW-B-21H2	SW-Q6, SW-Q7, SW-Q8	Soil	01/19/2022	10:30	X	
	11215131-011922-S-BN-SW-B-23H	SW-V6	Soil	01/19/2022	9:30	X	
B6211	11215131-011922-S-BN-RB-13	--	Water	01/19/2022	13:45	X	Rinse Blank
B6234	11215131-012222-S-BN-NC-S-33	NC-AC4	Soil	01/22/2022	9:30	X	
	11215131-012222-S-BN-NC-S-34	NC-AE4	Soil	01/22/2022	8:30	X	
	11215131-012222-S-BN-NC-S-35	NC-AE5	Soil	01/22/2022	8:40	X	
	11215131-012122-S-BN-NC-S-36	NC-AF3	Soil	01/21/2022	14:20	X	
	11215131-012222-S-BN-NC-S-37	NC-AB4	Soil	01/22/2022	12:20	X	
	11215131-012122-S-BN-NC-S-38	NC-AG3	Soil	01/21/2022	11:00	X	
	11215131-012122-S-BN-NC-S-39	NC-AH3	Soil	01/21/2022	10:40	X	
	11215131-012222-S-BN-NC-S-40	NC-AA4	Soil	01/22/2022	12:10	X	
	11215131-012222-S-BN-NC-S-41	NC-AC5	Soil	01/22/2022	9:40	X	
B6235	11215131-012222-S-BN-NC-B-10	NC-AC4, NC-AC5, NC-AC6	Soil	01/22/2022	10:00	X	MS/MSD
	11215131-012222-S-BN-DUP-14	NC-AC4, NC-AC5, NC-AC6	Soil	01/22/2022	--	X	FD (11215131-012222-S-BN-NC-B-10)
	11215131-012122-S-BN-NC-B-11	NC-AG3, NC-AG4	Soil	01/21/2022	11:20	X	
	11215131-012222-S-BN-NC-B-12	NC-AA4, NC-AA5, NC-AB4, NC-AB5	Soil	01/22/2022	12:50	X	
	11215131-012222-S-BN-NC-O-35	NC-AC4, NC-AC5, NC-AC6	Soil	01/22/2022	09:50	X	
	11215131-012222-S-BN-NC-O-36	NC-AE4, NC-AE5, NC-AE6	Soil	01/22/2022	08:50	X	
	11215131-012122-S-BN-NC-O-37	NC-AF3, NC-AF4	Soil	01/21/2022	14:30	X	
	11215131-012122-S-BN-NC-O-38	NC-AF5, NC-AF6	Soil	01/21/2022	14:40	X	
	11215131-012222-S-BN-NC-O-39	NC-AB4, NC-AB5	Soil	01/22/2022	12:40	X	
	11215131-012122-S-BN-NC-O-40	NC-AG3, NC-AG4	Soil	01/21/2022	11:10	X	
	11215131-012222-S-BN-NC-O-41	NC-AA4, NC-AA5	Soil	01/22/2022	12:30	X	
	11215131-012122-S-BN-NC-O-42	NC-AH3, NC-AH4	Soil	01/21/2022	10:50	X	
	11215131-012122-S-BN-NC-O-43	NC-AI3, NC-AI4	Soil	01/21/2022	10:30	X	
B6236	11215131-012222-S-BN-RB-14	--	Water	01/22/2022	14:00	X	Rinse Blank

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	PCDDs/PCDFs	Comments
B6276	11215131-020222-S-SB-NC-S-42	NC-AC7	Soil	02/02/2022	10:45	X	
	11215131-020222-S-SB-NC-S-43	NC-AC8	Soil	02/02/2022	11:00	X	
	11215131-020222-S-SB-NC-S-47	NC-AA6	Soil	02/02/2022	09:40	X	
B6277	11215131-020222-S-SB-NC-B-13	NC-AC7, NC-AC8, NC-AC9	Soil	02/02/2022	11:30	X	
	11215131-020222-S-SB-NC-B-14	NC-AA6, NC-AA7, NC-AA8	Soil	02/02/2022	10:00	X	
	11215131-020222-S-SB-NC-O-44	NC-AC7, NC-AC8, NC-AC9	Soil	02/02/2022	11:15	X	
	11215131-020222-S-SB-NC-O-46	NC-AA6, NC-AA7, NC-AA8	Soil	02/02/2022	09:50	X	
B6279	11215131-020222-S-SB-NC-S-44	NC-AF7	Soil	02/02/2022	16:00	X	
	11215131-020222-S-SB-NC-S-45	NC-AH5	Soil	02/02/2022	15:10	X	
	11215131-020222-S-SB-NC-S-46	NC-AI5	Soil	02/02/2022	14:30	X	
B6280	11215131-020222-S-SB-NC-O-45	NC-AF7	Soil	02/02/2022	16:10	X	
	11215131-020222-S-SB-NC-O-47	NC-AH5, NC-AH6	Soil	02/02/2022	15:20	X	
	11215131-020222-S-SB-NC-O-48	NC-AI5, NC-AI6	Soil	02/02/2022	14:45	X	
B6283	11215131-020422-S-SB-SW-S-49	SW-Q9	Soil	02/04/2022	11:15	X	
	11215131-020422-S-SB-SW-S-50	SW-Q10	Soil	02/04/2022	10:30	X	
	11215131-020422-S-SB-SW-S-54	SW-V7	Soil	02/04/2022	10:10	X	
B6284	11215131-020422-S-SB-SW-B-25	SW-Q9, SW-Q10, SW-Q11, SW-Q12, SW-Q13	Soil	02/04/2022	11:45	X	
	11215131-020422-S-SB-SW-B-25H1	SW-Q9, SW-Q10, SW-Q11, SW-Q12, SW-Q13	Soil	02/04/2022	12:00	X	
	11215131-020422-S-SB-SW-B-25H2	SW-Q9, SW-Q10, SW-Q11, SW-Q12, SW-Q13	Soil	02/04/2022	12:30	X	
	11215131-020422-S-SB-SW-B-27	SW-V7	Soil	02/04/2022	09:40	X	
	11215131-020422-S-SB-SW-B-27H	SW-V7	Soil	02/04/2022	09:50	X	
	11215131-020422-S-SB-SW-O-23	SW-Q9, SW-Q10, SW-Q11, SW-Q12, SW-Q13	Soil	02/04/2022	11:30	X	
	11215131-020422-S-SB-SW-O-25	SW-V7	Soil	02/04/2022	10:00	X	
B6290	11215131-020622-S-SB-SC-S-30	SC-P7, SC-P8, SC-P9	Soil	02/06/2022	11:20	X	
	11215131-020622-S-SB-SC-S-31	SC-P7, SC-P8, SC-P9	Soil	02/06/2022	11:30	X	
	11215131-020622-S-SB-SC-S-32	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	Soil	02/06/2022	09:10	X	
	11215131-020422-S-SB-SW-S-47	SW-R7	Soil	02/04/2022	15:15	X	
	11215131-020422-S-SB-SW-S-48	SW-R11	Soil	02/04/2022	15:00	X	
	11215131-020522-S-SB-SW-S-51	SW-T12, SW-T13, SW-T14, SW-T15, SW-T16	Soil	02/05/2022	09:30	X	
	11215131-020522-S-SB-SW-S-52	SW-T12, SW-T13, SW-T14, SW-T15, SW-T16	Soil	02/05/2022	09:40	X	
	11215131-020522-S-SB-SW-S-53	SW-T12, SW-T13, SW-T14, SW-T15, SW-T16	Soil	02/05/2022	09:50	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

						Analysis/Parameters	
Sample Delivery Group	**Sample Identification**	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**PCDDs/PCDFs**	**Comments**
B6291	11215131-020522-S-SB-NE-B-5	NE-L2, NE-L3, NE-L4	Soil	02/05/2022	13:00	X	
	11215131-020422-S-SB-SW-B-24	SW-R7, SW-R8, SW-R9, SW-R10, SW-R11	Soil	02/04/2022	16:00	X	MS/MSD
	11215131-020422-S-SB-SW-B-24H	SW-R7, SW-R8, SW-R9, SW-R10, SW-R11	Soil	02/04/2022	16:15	X	
	11215131-020422-S-SB-DUP-15	SW-R7, SW-R8, SW-R9, SW-R10, SW-R11	Soil	02/04/2022	--	X	FD (11215131-020422-S-SB-SW-B-24H)
	11215131-020522-S-SB-SW-B-26	SW-T12, SW-T13, SW-T14, SW-T15, SW-T16	Soil	02/05/2022	10:10	X	
	11215131-020522-S-SB-NE-O-13	NE-L2, NE-L3, NE-L4	Soil	02/05/2022	12:40	X	
	11215131-020522-S-SB-NE-O-14	NE-L2, NE-L3, NE-L4	Soil	02/05/2022	12:50	X	
	11215131-020422-S-SB-SW-O-22	SW-R7, SW-R8, SW-R9, SW-R10, SW-R11	Soil	02/04/2022	15:30	X	
	11215131-020522-S-SB-SW-O-24	SW-T12, SW-T13, SW-T14, SW-T15, SW-T16	Soil	02/05/2022	10:00	X	
B6292	11215131-020622-S-SB-SC-B-14	SC-P7, SC-P8, SC-P9	Soil	02/06/2022	11:50	X	
	11215131-020622-S-SB-SC-B-15	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	Soil	02/06/2022	09:30	X	
	11215131-020622-S-SB-SC-B-15H	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	Soil	02/06/2022	09:40	X	MS/MSD
	11215131-020622-S-SB-DUP-16	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	Soil	02/06/2022	--	X	FD (11215131-020622-S-SB-SC-B-15)
	11215131-020622-S-SB-SC-B-16	SCW-QR1	Soil	02/06/2022	10:50	X	
	11215131-020622-S-SB-SC-B-16H	SCW-QR1	Soil	02/06/2022	10:55	X	
	11215131-020622-S-SB-SC-O-20	SC-P7, SC-P8, SC-P9	Soil	02/06/2022	11:40	X	
	11215131-020622-S-SB-SC-O-21	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	Soil	02/06/2022	09:20	X	
	11215131-020622-S-SB-SC-O-22	SCW-QR1	Soil	02/06/2022	10:40	X	
	11215131-020622-S-SB-SC-O-23	SCW-QR1	Soil	02/06/2022	10:45	X	
B6293	11215131-020522-S-SB-RB-15	--	Water	02/05/2022	13:40	X	Rinse Blank
	11215131-020622-S-SB-RB-16	--	Water	02/06/2022	13:00	X	Rinse Blank
B6328	11215131-021722-S-SB-SC-S-33	SC-Q13	Soil	02/17/2022	12:30	X	
	11215131-021822-S-SB-NC-S-48	NC-AC13	Soil	02/18/2022	10:50	X	
	11215131-021722-S-SB-NC-S-49	NC-AF8	Soil	02/17/2022	15:00	X	
B6329	11215131-021822-S-SB-NC-B-15	NC-AC10, NC-AC11, NC-AC12	Soil	02/18/2022	10:30	X	MS/MSD
	11215131-021822-S-SB-NC-B-16	NC-AC13, NC-AC14, NC-AC15	Soil	02/18/2022	10:40	X	
	11215131-021822-S-SB-DUP-17	NC-AC13, NC-AC14, NC-AC15	Soil	02/18/2022	--	X	FD (11215131-021822-S-SB-NC-B-16)
	11215131-021722-S-SB-SC-B-17	SC-Q13, SC-Q14, SC-Q15	Soil	02/17/2022	12:40	X	
	11215131-021722-S-SB-SC-B-17H	SC-Q13, SC-Q14, SC-Q15	Soil	02/17/2022	12:45	X	
	11215131-021722-S-SB-SC-O-24	SC-Q13, SC-Q14, SC-Q15	Soil	02/17/2022	12:35	X	
	11215131-021822-S-SB-NC-O-49	NC-AC10, NC-AC11, NC-AC12	Soil	02/18/2022	10:10	X	
	11215131-021822-S-SB-NC-O-50	NC-AC13, NC-AC14, NC-AC15	Soil	02/18/2022	10:20	X	
	11215131-021722-S-SB-NC-O-52	NC-AF8, NC-AF9	Soil	02/17/2022	15:30	X	
B6335	11215131-021922-S-SB-NC-S-50	NC-AI7	Soil	02/19/2022	08:00	X	

Table 1

Sample Collection and Analysis Summary
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: PCDDs/PCDFs	Comments
B6336	11215131-021822-S-SB-NC-S-51	NC-AC16	Soil	02/18/2022	14:30	X	
B6336B	11215131-021922-S-SB-NC-O-51	NC-AE7, NC-AE8	Soil	02/19/2022	09:10	X	
	11215131-021922-S-SB-NC-O-53	NC-AI7, NC-AI8	Soil	02/19/2022	08:15	X	
B6336C	11215131-021822-S-SB-NC-B-17	NC-AC16, NC-AC17, NC-AC18	Soil	02/18/2022	14:20	X	
	11215131-021822-S-SB-NC-O-54	NC-AC16, NC-AC17, NC-AC18	Soil	02/18/2022	14:10	X	
B6337	11215131-021822-S-SB-RB-17	--	Water	02/18/2022	15:20	X	Rinse Blank

Notes:

MS/MSD - Matrix Spike/Matrix Spike Duplicate
FD - Field Duplicate of sample in parentheses
PCDDs - Polychlorinated Dibenzodioxins
PCDFs - Polychlorinated Dibenzofurans

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**North Central**	**North Central**	**North Central**	**North Central**	**North Central**
Sample Location		**NC-A1, NC-A2, NC-A3, NC-A4**	**NC-B1, NC-B2, NC-B3, NC-C1, NC-C2, NC-C3**	**NC-I1, NC-I2, NC-J1, NC-J2, NC-J3, NC-K1**	**NC-L1, NC-L2, NC-L3, NC-M1, NC-M2, NC-M3**	**NC-O1, NC-02, NC-P1, NC-P2, NC-P3, NC-Q1**
Sample Identification		**11215131-121021-S-SS-NC-B-1**	**11215131-121021-S-JC-NC-B-2**	**11215131-120921-S-JC-NC-B-3**	**11215131-120921-S-SS-NC-B-4**	**11215131-121421-S-BN-NC-B-5**
Sample Date		**12/10/2021**	**12/10/2021**	**12/09/2021**	**12/09/2021**	**12/14/2021**
Sample Type		**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	6990 J	4300 J	227 J	4960 J	4560
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	10700 J	7070 J	1140 J	10300 J	10700 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	594	310	71.1	320	417
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	772	485	77.7	773	750
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	179	82.8	23.3	102	115
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1330	660	190	651	951
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.73	3.78	0.695 J	5.27	4.2
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	323	168	46.8	160	227
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	29.2	18.1	2.49	25.5	21.2
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	1.19 U	0.726 U	0.334 U	1.06 U	2.01 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	13	8.47	1.91 J	11.5	10.5
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	675	455	107	429	635
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	45.4	42.7	9.23	34.5	45.4
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	67.2	38.9	8.9	38.5	55.8
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	458 J+	356 J+	82.4 J+	307 J+	483
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	13300 J	12500 J	2770 J	9250 J	16000 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	4710 J	4250 J	958	3560 J	4140 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	1170 J	596 J	122 J	724 J	801 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1600 J	965 J	184 J	1630 J	1520 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	2130 J	1090 J	293 J	1110 J	1520 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	257 J	156 J	58.4 J	268 J	222
Total pentachlorodibenzofuran (PeCDF)	pg/g	1840 J	1320 J	301 J	1210 J	1800 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	96.4 J	80.2 J	20.5 J	81 J	86.3 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	25300 J	24000 J	5510 J	17800 J	30500 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	5280 J	4770 J	1080 J	3980 J	4550 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	6440 J	5770 J	1300 J	4730 J	6090 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	6440 J	5770 J	1300 J	4730 J	6090 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**North Central**	**North Central**	**North Central**	**North Central**	**North Central**
Sample Location		**NC-W1, NC-W2, NC-W3, NC-Y1, NC-Y2, NC-X1**	**NC-AC1, NC-AC2, NC-AC3**	**NC-AC1, NC-AC2, NC-AC3**	**NC-AG1, NC-AG2**	**NC-AA1, NC-AA2, NC-AA3, NC-AB1, NC-AB2,**
Sample Identification		**11215131-121321-S-SS-NC-B-6**	**11215131-011022-S-BN-DUP-12**	**11215131-011022-S-BN-NC-B-7**	**11215131-010822-S-BN-NC-B-8**	**11215131-011122-S-BN-NC-B-9**
Sample Date		**12/13/2021**	**01/10/2022**	**01/10/2022**	**01/08/2022**	**01/11/2022**
Sample Type		**Excavation Bottom**	**Duplicate**	**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1510	4680	3660	462	4470
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2160	10000 J	6330	1680	7480
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	127 J	411	276	68.1	275
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	113 J	825	482 J+	120	536
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	13.1	115	73.7	14	48.7
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	81.3 J	924	593	111	310
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.39 J	3.89	2.14 J	1.04 J	2.85
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	21.9	215	144 J+	28	79
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.79	19.8	14.5	3.49	16
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.381 U	0.713 U	0.682 U	0.894 U	1.07 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.1	8.48	6.15	2.63	7.63
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	54.1	630	433	71.8	202
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	6.84	55.9	36.5	5.96	18.4
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	5.67	50.3	34.2	6.19	21.4
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	45.5 J+	501	352 J+	55.2	167
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	1520 J	19500 J	12800 J	1940 J	5690 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	589	5010 J	3310 J	512	1630 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	186 J	821 J	546 J	123 J	573 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	271 J	2080 J	1020 J	306 J	1240 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	153 J	1510 J	987 J	187 J	604 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	71.7	224 J	134 J	49.6 J	163 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	174 J	1840 J	1280 J	205 J	662 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	20.9 J	96 J	65.1 J	9.52 J	49.3 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	2940 J	39100 J	25800 J	3680 J	11100 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	667 J	5580 J	3680 J	579 J	1820 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	779 J	7330 J	4840 J	749 J	2330 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	779 J	7330 J	4840 J	749 J	2330 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-AC4, NC-AC5, NC-AC6	NC-AC4, NC-AC5, NC-AC6	NC-AG3, NC-AG4	NC-AA4, NC-AA5, NC-AB4, NC-AB5	NC-AC7, NC-AC8, NC-AC9	NC-AA6, NC-AA7, NC-AA8
Sample Identification		11215131-012222-S-BN-DUP-14	11215131-012222-S-BN-NC-B-10	11215131-012122-S-BN-NC-B-11	11215131-012222-S-BN-NC-B-12	11215131-020222-S-SB-NC-B-13	11215131-020222-S-SB-NC-B-14
Sample Date		01/22/2022	01/22/2022	01/21/2022	01/22/2022	02/02/2022	02/02/2022
Sample Type		Duplicate	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	3690	3120	287	944	4460	792
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2730	2450	2500	2690	4760	1210
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	111	108	151	91.2	161	49.9
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	178	156	188	180	294	65.9
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	11.5	11	57	20.8	23	3.4
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	41.1	25.5	468	174	100	4.1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.12 J	1.68 J	0.804 J	1.1 J	3.19	1.04 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	11.1	6.94	119	45.1	27.1	1.32 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	8.4	7.33	4.94	5.65	12.6	2.75
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.402 U	0.413 U	0.26 U	0.29 U	0.392 U	0.202 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.25	5.12	2.68	2.97	7.04	2.51
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	36.2	13.9	284	116	66	2.66
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.41	3.39	24.8	12.7	9.25	0.992 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	5.27	3.3	26.2	10.2	9.53	1.05 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	28.4	15.1	217	92.1	59.7 J+	3.09 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	699	556	6890 J	3340 J	2110 J	105
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	229	185	2480 J	1240 J	748	34.2
Total heptachlorodibenzofuran (HpCDF)	pg/g	213 J	198 J	268 J	182 J	324 J	78.2 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	444 J	392 J	392 J	387 J	661 J	197 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	123 J	89.2 J	727 J	286 J	239 J	21.5 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	143 J	135 J	74.2 J	66.7 J	127 J	118 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	146 J	83.7 J	794 J	332 J	254 J	17.9 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	35.8 J	31.4 J	43 J	26.7 J	35.3 J	28.7 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	1360 J	1050 J	13400 J	6540 J	4190 J	170 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	282 J	230 J	2720 J	1370 J	858 J	54.6 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	324 J	258 J	3330 J	1650 J	1010 J	49.8 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	324 J	258 J	3330 J	1650 J	1010 J	49.8 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-AC10, NC-AC11, NC-AC12	NC-AC13, NC-AC14, NC-AC15	NC-AC13, NC-AC14, NC-AC15	NC-AC16, NC-AC17, NC-AC18	NC-AC16, NC-AC17, NC-AC18	NC-AC10, NC-AC11, NC-AC12
Sample Identification		11215131-021822-S-SB-NC-B-15	11215131-021822-S-SB-DUP-17	11215131-021822-S-SB-NC-B-16	11215131-021822-S-SB-NC-B-17	11215131-021822-S-SB-NC-O-54	11215131-021822-S-SB-NC-O-49
Sample Date		02/18/2022	02/18/2022	02/18/2022	02/18/2022	02/18/2022	02/18/2022
Sample Type		Excavation Bottom	Duplicate	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	7160	443	240	9.34	160	2520
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	4380	1760	1420	851	2390	12000 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	186 J-	71.5	58.6	12.8	35.7	541
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	282	107	89.5	73.8	172	743
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	18.9	21.5	17.4	4.53	4.61	173
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	29	164	142	35.4	11.6	1450
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.01	1.25 J	0.645 J	0.992 J	2.49	5.05
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	9.24	41.2	35.1	11	3.36	366
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	14.4	3.93	2.76	2.01 J	8.47	22.8
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.696 U	0.358 U	0.611 U	0.274 U	0.344 U	0.58 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	7.62	2.55 J	2.05 J	4.53	4.27	10.7
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	18.8	83.7	78.6	23.3	5.58	914
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	5.5	8.69	8.85	2.77	1.29 J	94
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	7.17	9.09	6.78	4.45	2.39 J	83
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	23.2 J+	64.2	64.1	19.6 J+	5.52 J+	704
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	820	2210 J	2300 J	454	108	24900 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	265	818	841	162	34.4	9490 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	361 J	135 J	105 J	23.4 J	87.4 J	1010 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	668 J	260 J	214 J	369 J	432 J	1570 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	155 J	262 J	219 J	76 J	53.5 J	2290 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	155 J	64 J	55.7 J	166 J	81.7 J	228 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	143 J	236 J	226 J	107 J	41.4 J	2540 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	39 J	21.2 J	21.8 J	38.7 J	15.4 J	147 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	1660 J	4290 J	4530 J	981 J	215 J	46700 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	313 J	924 J	950 J	213 J	45.7 J	10400 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	375 J	1090 J	1120 J	224 J	54.5 J	12500 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	376 J	1090 J	1120 J	224 J	54.5 J	12500 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-AC13, NC-AC14, NC-AC15	NC-AE7, NC-AE8	NC-AF8, NC-AF9	NC-AI7, NC-AI8	NC-A1, NC-A2, NC-A3, NC-A4	NC-B1, NC-B2, NC-B3
Sample Identification		11215131-021822-S-SB-NC-O-50	11215131-021922-S-SB-NC-O-51	11215131-021722-S-SB-NC-O-52	11215131-021922-S-SB-NC-O-53	11215131-121021-S-SS-NC-O-1	11215131-121021-S-JC-NC-O-2
Sample Date		02/18/2022	02/19/2022	02/17/2022	02/19/2022	12/10/2021	12/10/2021
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	36.1	308	159	71.2	84.6 J	85 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	751	11500 J	5040	1750	1440 J	1460 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	14.2	147	39.1	42.7	19.9	20.3
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	53.6	726	336	124	99.4	101
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.68 J	19.4	7.03	11	2.12 J	2.88
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	15.7	89.6	34.6	111	5.97	7.28
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.885 J	4.93	2.22 J	1.68 J	1.54 J	1.11 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	4.05	30.9	9.09	30.1	1.51 J	1.93 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.03 J	23.9	6.61	4.34	4.92	4.02
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.331 U	0.59 U	0.307 U	0.512 U	0.215 U	0.259 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.79 J	9.6	3.98	3.31	3.04 J	2.5
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	10.9	52	22.1	80.3	2.27 J	5.4
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.55 J	6.26	3.44	6.85	0.863 J	1.1 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.29 J	12.4	3.46	7.78	1.2 J	1.44 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	9.8	42	18.5	59.8 J+	2.29 J+	3.86 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	317	1160 J	563	1960 J	37.5	85.2
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	114	336	219	595	12	33.3
Total heptachlorodibenzofuran (HpCDF)	pg/g	29.6 J	423 J	134 J	85.8 J	52.5 J	64.4 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	157 J	1600 J	2120 J	285 J	247 J	246 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	34.8 J	308 J	88.1 J	192 J	28.3 J	33.1 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	46 J	187 J	135 J	61.8 J	52.6 J	39.6 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	35.5 J	246 J	74.9 J	228 J	16.2 J	23.3 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	9.92 J	29 J	16 J	18 J	6.09 J	5.22 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	608 J	2380 J	1140 J	3890 J	74.2 J	160 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	131 J	389 J	250 J	669 J	15.5 J	40.6 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	154 J	502 J	296 J	836 J	20.9 J	47.8 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	154 J	502 J	296 J	836 J	20.9 J	47.8 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-C1, NC-C2, NC-C3	NC-D1, NC-D2	NC-E1, NC-E2	NC-F1, NC-F2, NC-F3	NC-G1, NC-G2	NC-H1, NC-H2
Sample Identification		11215131-121021-S-JC-NC-O-3	11215131-121321-S-SS-NC-O-4	11215131-121321-S-SS-NC-O-5	11215131-120721-S-JC-NC-O-6	11215131-120721-S-SS-NC-O-7	11215131-120721-S-SS-NC-O-8
Sample Date		12/10/2021	12/13/2021	12/13/2021	12/07/2021	12/07/2021	12/07/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	389 J	48.5	153	397	82.1	238
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	5150 J	23900 J	3360	2790	7830	36500 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	89.2	15.5	51.7	87.7	38.6	123
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	435	193	209	198	219	925
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	12.3	3.07 J	14.6	24.2	10.1	42.2
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	33.1	26.9	99.3	173	82.4	321
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.09	0.984 J	1.26 J	2.6	1.49 J	5.34
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	7.71	6.26	23.6	45.2	20.5	81.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	16.7	2.44 J	4.29	7.35	5.04	13.4
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.482 U	0.801 U	0.94 U	0.25 U	0.159 U	0.256 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	8.52	1.47 J	2.6	4.57	3.33	9.99
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	19.8	16.4	56.3	117	60.3	183
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.11	1.55 J	6.42	11.4	6.12	20.3
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	5.54	1.65 J	5.92	10.8	5.22	17.3
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	13 J+	13.3	48.2	87.3 J+	50.3 J+	138 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	306	484	2170 J	2930 J	1640 J	5310 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	123	131	558	1020 J	538	1830 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	296 J	31.5 J	111 J	203 J	89.8 J	262 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	979 J	487 J	654 J	439 J	524 J	2060 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	144 J	46.6 J	162 J	301 J	143 J	522 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	134 J	46.8	64.7	68.4 J	63.1 J	169 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	80.3 J	47.5 J	171 J	335 J	179 J	511 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	17.2 J	4.81 J	8.77 J	22.3 J	14.8 J	38.1 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	565 J	971 J	4250 J	5730 J	3270 J	10400 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	150 J	144 J	618 J	1140 J	607 J	2050 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	176 J	199 J	815 J	1380 J	742 J	2500 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	176 J	199 J	815 J	1380 J	742 J	2500 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-I1, NC-I2	NC-J1, NC-J2, NC-J3	NC-K1, NC-K2, NC-K3	NC-L1, NC-L2, NC-L3	NC-M1, NC-M2, NC-M3	NC-N1, NC-N2, NC-N3
Sample Identification		11215131-120921-S-JC-NC-O-9	11215131-120921-S-JC-NC-O-10	11215131-120921-S-JC-NC-O-11	11215131-120921-S-SS-NC-O-12	11215131-120921-S-SS-NC-O-13	11215131-120921-S-SS-NC-O-14
Sample Date		12/09/2021	12/09/2021	12/09/2021	12/09/2021	12/09/2021	12/09/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	257	203 J	241 J	154	87 J	220 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2320 J	3210 J	3010 J	2780 J	1870 J	3340 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	85.7	62.5	57	43.3	24.5	55.6
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	170	240	250	234	144	259
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	28.2	14	7.72	8.72	2.88	7.34
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	220	95.7	22.2	22.1	7.54	17.8
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.93 J	2.31 J	2.3 J	3.35	1.59 J	2.99
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	54.8	24.5	5.79	5.84	2.69	4.96
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	6.18	8.85	9.73	10.4	5.65	9.45
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.443 U	0.34 U	0.292 U	0.379 U	0.293 U	0.334 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.9	5.35	5.61	7.75	3.75	6.28
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	135	56.9	12.4	11.1	4.76	8.44
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	9.37	5.42	1.95 J	2.45 J	1.26 J	1.88 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	12.4	6.85	3.68	3.41	1.85 J	3.84
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	88.1 J+	41.6 J+	9.07 J+	9.92 J+	4.1 J+	7.21 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	2530 J	1230 J	166	241	62.4	181
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	922	442	52.7	89.8	22.8	65.5
Total heptachlorodibenzofuran (HpCDF)	pg/g	184 J	166 J	174 J	120 J	78.2 J	168 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	423 J	717 J	552 J	544 J	336 J	611 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	365 J	191 J	92.8 J	78.4 J	41.8 J	81.9 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	77.2 J	108 J	83.3 J	110 J	54.8 J	100 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	351 J	167 J	51.9 J	54 J	25.8 J	43 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	20.4 J	18.5 J	10.3 J	17.6 J	7.52 J	14.5 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	4890 J	2390 J	273 J	474 J	120 J	296 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1030 J	502 J	63 J	106 J	30.2 J	78.7 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1250 J	603 J	83.4 J	129 J	36.3 J	96.7 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1250 J	603 J	83.4 J	129 J	36.3 J	96.7 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-O1, NC-02	NC-P1, NC-P2, NC-P3	NC-Q1, NC-Q2	NC-R1, NC-R2	NC-S1, NC-S2	NC-T1, NC-T2
Sample Identification		11215131-121421-S-BN-NC-O-15	11215131-121421-S-BN-NC-O-16	11215131-121421-S-BN-NC-O-17	11215131-121321-S-BN-NC-O-18	11215131-121321-S-BN-NC-O-19	11215131-121321-S-BN-DUP-8
Sample Date		12/14/2021	12/14/2021	12/14/2021	12/13/2021	12/13/2021	12/13/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Duplicate
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	135	40.6 J	123	244	155	131
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2430	936	2260	3390	2520	2450
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	27.9	11	30.6	66.9	36.1	31.5
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	190	118	212	300	201	167
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	3.77	0.939 J	3.91	4.88	2.68 U	3.82
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	10.4	2.3 J	15	8.14	8.51	10.9
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.31 J	1.25 J	1.92 J	1.91 J	1.9 J	2.04 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.8 J	0.536 J	3.67	3.08	2.45 J	3.12
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.88 J	2.42 J	7.16	15	6.43	7.93
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.804 U	0.613 U	0.905 U	1.14 U	0.947 U	0.309 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.41	2.23 J	4.05	7.35	3.59	4.72
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	5.24	1.64 J	10.4	4.09	4.43	5.59
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.762 U	0.682 U	1.4 J	1.53 J	1.07 J	1.55 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.83 J	0.566 J	2.41 J	3.75	2.2 J	2.72
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	4.02	1.58 J	8	4.49	4.07	4.44 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	87.7	35.9	140	73.7	94.5	90.9
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	23.4	8.47	33.7	18.3	28.5	41.5
Total heptachlorodibenzofuran (HpCDF)	pg/g	83 J	32.8 J	94.9 J	210 J	101 J	96.6 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	533 J	491 J	538 J	610 J	500 J	420 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	40.3 J	13.6 J	53.5 J	68.2 J	46.3 J	51.8 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	69	57.4	80.9	112	74	80.8
Total pentachlorodibenzofuran (PeCDF)	pg/g	21.6 J	8.19 J	40.2 J	29.2 J	26.7 J	29.7 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.84 J	3.7 J	11.7 J	11.9 J	9.27 J	13.3 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	151 J	64.4 J	247 J	138 J	177 J	178 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	26.9 J	10.5 J	42.1 J	20.5 J	35.3 J	55.7 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	39.0 J	15.1 J	58.4 J	37.4 J	46.1 J	59.6 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	39.4 J	15.5 J	58.5 J	37.5 J	46.1 J	59.6 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-T1, NC-T2	NC-U1, NC-U2	NC-V1, NC-V2	NC-W1, NC-W2, NC-W3	NC-X1, NC-X2	NC-Y1, NC-Y2
Sample Identification		11215131-121321-S-BN-NC-O-20	11215131-121321-S-BN-NC-O-21	11215131-121321-S-BN-NC-O-22	11215131-121321-S-SS-NC-O-23	11215131-121321-S-SS-NC-O-24	11215131-121321-S-SS-DUP-7
Sample Date		12/13/2021	12/13/2021	12/13/2021	12/13/2021	12/13/2021	12/13/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Duplicate
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	115	117	104	739	87.3	86.2
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2330	2090	1980	6960	2320	1880
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	30.1	34.4	26.4	113	23.2	22.6
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	179	147	152	564	130	129
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	3.46	3.02	2.94	14.5	2.91	3.01
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	9.77	7.29	6.48	63	7.1	8.31
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.93 J	1.89 J	1.86 J	4.91	1.49 J	1.8 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.48	2.43 J	2.1 J	16.2	1.92 J	2.4 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.75	6.73	5.75	16	4.44	4.45
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.245 U	0.262 U	0.218 U	0.522 U	0.271 U	0.211 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.97	4.64	4.2	8.79	2.93	3.77
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	4.88	3.86	2.96	37.6	3.31	4.22
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.28 J	1.74 J	1.25 J	4.8	0.734 J	1.23 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.89 J	1.89 J	1.55 J	6.87	1.44 J	1.58 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.81 J+	3.17 J+	2.62 J+	30.1 J+	2.74 J+	3.45 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	81.1	60.9	50	783	48.6	69.1
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	33.9	27.7	21.7	328	18.1	29.8
Total heptachlorodibenzofuran (HpCDF)	pg/g	85.8 J	95.6 J	69.9 J	288 J	60 J	63.6 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	427 J	374 J	369 J	2510 J	362 J	302 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	42.6 J	42.2 J	32.7 J	169 J	31.2 J	32.6 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	73.9	78.6	74.6	241	59.3	63.2
Total pentachlorodibenzofuran (PeCDF)	pg/g	24.4 J	21.4 J	17.3 J	134 J	16.1 J	19.6 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	12.6 J	16.8 J	12.6 J	26.4 J	7.65 J	11.7 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	157 J	114 J	90.3 J	1490 J	91.3 J	134 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	45.9 J	42.2 J	30 J	378 J	24.1 J	38.3 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	50.0 J	41.6 J	33.5 J	442 J	28.8 J	43.5 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	50.0 J	41.6 J	33.5 J	442 J	28.8 J	43.5 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-Y1, NC-Y2	NC-AC1, NC-AC2, NC-AC3	NC-AD1, NC-AD2, NC-AD3	NC-AE1, NC-AE2, NC-AE3	NC-AF1, NC-AF2	NC-AB1, NC-AB2, NC-AB3
Sample Identification		11215131-121321-S-SS-NC-O-25	11215131-011022-S-BN-NC-O-26	11215131-011022-S-BN-NC-O-27	11215131-011122-S-BN-NC-O-28	11215131-011022-S-BN-NC-O-29	11215131-011122-S-BN-NC-O-30
Sample Date		12/13/2021	01/10/2022	01/10/2022	01/11/2022	01/10/2022	01/11/2022
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	62	209	195	540	93.2	98.6
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1550	3020	2780	11700 J	18400 J	1590
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	16.7	48.6	48.3	139	123	22.7
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	111	228	213	250	270	118
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.87 J	5.69	6.61	47.3	42.9	2.92
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	4.78	14.1	20.8	423	382	12.2
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.37 J	1.77 J	1.09 U	1.44 J	1.33 J	1.33 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.44 J	4.03	6	105	89.2	3.15
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.06	7.76	8.04	7.16	5.33	3.9
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.193 U	0.651 U	0.89 U	0.871 U	0.747 U	0.776 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.12	4.01	3.82	3.47	2.6 J	2.53
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.81	7.86	13.2	245	227	7.38
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.28 J	1.71 J	1.89 J	17.8	16.6	1.09 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.07 J	2.93	3.02	23	17.9	1.28 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.4 J+	6.05	9.33	179	167	5.08 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	54.4	154	191	6260 J	5340 J	164
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	22.2	46.3	54.2	1710 J	1550 J	43.5
Total heptachlorodibenzofuran (HpCDF)	pg/g	43.6 J	149 J	137 J	290 J	233 J	65.6 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	273 J	555 J	517 J	584 J	621 J	353 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	21.8 J	74.3 J	81.3 J	688 J	591 J	39 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	60	69.1 J	60.4 J	64.1 J	88.7 J	48.5 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	13.1 J	38.7 J	57.7 J	677 J	612 J	23.3 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	11 J	9.13 J	5.85 J	32.8 J	30.4 J	3.4 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	106 J	278 J	340 J	12300 J	10800 J	275 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	29.3 J	53.7 J	60.4 J	1920 J	1750 J	48.5 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	33.3 J	72.7 J	86.1 J	2480 J	2220 J	67.1 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	33.3 J	72.7 J	86.2 J	2480 J	2220 J	67.2 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-AG1, NC-AG2	NC-AA1, NC-AA2, NC-AA3	NC-AH1, NC-AH2	NC-AI1, NC-AI2	NC-AC4, NC-AC5, NC-AC6	NC-AE4, NC-AE5, NC-AE6
Sample Identification		11215131-010822-S-BN-NC-O-31	11215131-011122-S-BN-NC-O-32	11215131-010822-S-BN-NC-O-33	11215131-010822-S-BN-NC-O-34	11215131-012222-S-BN-NC-O-35	11215131-012222-S-BN-NC-O-36
Sample Date		01/08/2022	01/11/2022	01/08/2022	01/08/2022	01/22/2022	01/22/2022
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	132	230	226	1260	92	31.2
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2070	2800	3110	5810	1380	3730
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	28.9	41.5	43	272	33.2	19.5
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	151	178	249	455	99.9	82.7
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	3.54	5.23	4.12	24.8	8.32	5.53
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	9.93	26.9	13.4	179	62.3	44.3
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.34 J	1.36 J	1.84 J	2.63	1.14 J	0.938 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.84	6.74	3.99	45.2	15	13.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.21	5.88	7.6	12.6	3.9	2.45 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.713 U	0.738 U	0.794 U	1.11 U	0.151 U	0.229 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.24	3.75	4.03	5.8 J	2.61	1.98 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	6.33	17.2	7.56	114	40.3	29.5
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.15 J	1.82 J	1.39 J	11.5	4.5	2.41 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.85 J	2.98	2.18 J	14.3	3.76	3.16
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	4.59 J+	13.3 J+	6.07 J+	90	31 J+	20.5 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	104	340	155	3240 J	1020 J	606
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	31	100	42.7	932	366	219
Total heptachlorodibenzofuran (HpCDF)	pg/g	87.5 J	104 J	114 J	620 J	76.8 J	44.2 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	366 J	481 J	799 J	1030 J	242 J	192 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	48.7 J	75.7 J	67.1 J	412 J	109 J	81.8 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	48.9 J	67.5 J	112 J	145 J	48.7 J	28.2 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	27.8 J	60.1 J	35.5 J	351 J	116 J	84.3 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	4.48 J	7.97 J	9.98 J	29.7 J	13.7 J	7.04 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	180 J	635 J	281 J	6430 J	2010 J	1210 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	36.3 J	115 J	52 J	1050 J	416 J	247 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	49.1 J	148 J	68.9 J	1330 J	494 J	298 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	49.1 J	148 J	68.9 J	1330 J	494 J	298 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-AF3, NC-AF4	NC-AF5, NC-AF6	NC-AB4, NC-AB5	NC-AG3, NC-AG4	NC-AA4, NC-AA5	NC-AH3, NC-AH4
Sample Identification		11215131-012122-S-BN-NC-O-37	11215131-012122-S-BN-NC-O-38	11215131-012222-S-BN-NC-O-39	11215131-012122-S-BN-NC-O-40	11215131-012222-S-BN-NC-O-41	11215131-012122-S-BN-NC-O-42
Sample Date		01/21/2022	01/21/2022	01/22/2022	01/21/2022	01/22/2022	01/21/2022
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	253	88.1	206	100	1090	533
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	13900 J	4050	5680	2420	4830	2350
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	141	81.7	52.4	27.8	138	55.3
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	625	163	277	155	368	209
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	29.3	34.1	7.74	3.65	34.6	9.52
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	198	300	27.3	6.23	260	41.8
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.51	1.09 J	2.86	1.65 J	3.2	1.91 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	55.9	75.2	6.78	2.65	70.8	11.2
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	20.9	4.41	9.6	5.37	13.6	6.56
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.268 U	0.245 U	0.288 U	0.256 U	0.436 U	0.469 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	8.37	2.26 J	5.9	3.55	7.01	3.23
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	117	178	20.8	3.37	212	23.8
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	13.5	17.6	3.48	1.23 J	14.5	3.25
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	14.5	15.3	4.35	2.3 J	18.6	3.87
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	87.7	137	12.5 J+	3.39	153	20.6 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	2910 J	4770 J	229	41.1	3610 J	644
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1060 J	1740 J	78.9	15.7	1330 J	239
Total heptachlorodibenzofuran (HpCDF)	pg/g	367 J	166 J	169 J	76.2 J	325 J	119 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1270 J	357 J	797 J	376 J	862 J	431 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	411 J	468 J	99.1 J	42.1 J	470 J	92.5 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	169 J	62 J	112 J	65.7 J	134 J	77.7 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	380 J	499 J	80.7 J	28.2 J	606 J	87.5 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	38 J	32.5 J	20.4 J	14.4 J	36.3 J	20.9 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	5720 J	9170 J	411 J	85.2 J	7030 J	1310 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1190 J	1930 J	96.4 J	25.6 J	1480 J	279 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1440 J	2320 J	120 J	27.0 J	1800 J	324 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1440 J	2320 J	120 J	27.0 J	1800 J	324 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**North Central**	**North Central**	**North Central**	**North Central**	**North Central**	**North Central**
Sample Location		**NC-AI3, NC-AI4**	**NC-AC7, NC-AC8, NC-AC9**	**NC-AF7**	**NC-AA6, NC-AA7, NC-AA8**	**NC-AH5, NC-AH6**	**NC-AI5, NC-AI6**
Sample Identification		**11215131-012122-S-BN-NC-O-43**	**11215131-020222-S-SB-NC-O-44**	**11215131-020222-S-SB-NC-O-45**	**11215131-020222-S-SB-NC-O-46**	**11215131-020222-S-SB-NC-O-47**	**11215131-020222-S-SB-NC-O-48**
Sample Date		**01/21/2022**	**02/02/2022**	**02/02/2022**	**02/02/2022**	**02/02/2022**	**02/02/2022**
Sample Type		**Overburden**	**Overburden**	**Overburden**	**Overburden**	**Overburden**	**Overburden**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1180	387	163	161	115	4370
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2520	2860	4290	2500	2400	8420
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	81.8	71.1	228	49.2	31.4	180
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	184	192	193	215	180	496
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	10.2	11.5	91.3	9.32	2.96	26.6
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	58.3	62.9	736	53	6.12	118
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.69 J	2.11 J	1.64 J	2.51	2.32 J	4.4
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	16.8	16.3	178	13.2	3.26	31.2
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	6.07	6.96	5.59	7.77	7.55	19.6
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.256 U	0.278 U	0.81 U	0.506 U	0.373 U	0.588 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.96	4.52	2.98 J	4.8	4.85	9.03
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	38.8	39.4	391	32.5	2.53	67.7
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	4.72	5.42	23.8	3.75	1.29 J	9.73
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	5.09	5.24	36.5	4.66	3.21	12.3
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	32.7 J+	32.4 J+	248	23.7 J+	4 J+	56.9
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	1110 J	1140 J	6300 J	744	23.5	1890 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	395	437	2430 J	290	8.57	711
Total heptachlorodibenzofuran (HpCDF)	pg/g	150 J	161 J	399 J	134 J	84 J	389 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	422 J	436 J	424 J	510 J	425 J	1170 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	125 J	132 J	1110 J	118 J	51.4 J	290 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	81.1 J	75.1 J	68.7 J	88.5 J	96 J	217 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	129 J	126 J	989 J	99.8 J	44.4 J	246 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	19.9 J	17.4 J	40.7 J	15.8 J	28.8 J	48.2 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	2240 J	2240 J	12400 J	1460 J	81.1 J	3770 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	449 J	495 J	2710 J	331 J	31.3 J	812 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	535 J	581 J	3270 J	388 J	19.1 J	959 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	535 J	581 J	3270 J	388 J	19.1 J	959 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-A1	NC-A2	NC-A3	NC-B1	NC-C1	NC-F1
Sample Identification		11215131-121021-S-SS-NC-S-1	11215131-121021-S-SS-NC-S-2	11215131-121021-S-SS-NC-S-3	11215131-121021-S-JC-NC-S-4	11215131-121021-S-JC-NC-S-5	11215131-120721-S-JC-NC-S-6
Sample Date		12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/07/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	660 J	634 J	682 J	2510 J	2170 J	50.4
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	3630 J	5930 J	6070 J	6680 J	6170 J	1160
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	169	169	149	258	146	13.5
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	258	354	334	470	477	85.5
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	50.5	54.5	43.2	70.1	21.2	1.8
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	413	455	324	521	128	4.38
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.82 J	2.75	2.4 J	3.88	3.45	1.11 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	103	111	78.6	131	32.7	1.29 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	7.83	12.2	11	16.9	13.9	2.84
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.321 U	0.193 U	0.248 U	0.4 U	0.324 U	0.126 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.88	5.77	5.27	7.76	6.49	2.63
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	244	250	158	292	76.7	2.59
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	30.6	23.9	17.2	36	9.65	0.771 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	22.8	25.5	19.2	31	10.4	1.09 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	207 J+	180 J+	129 J+	229 J+	62.7 J+	2.03 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	8110 J	6150 J	4610 J	9370 J	2440 J	44
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2900 J	2150 J	1560 J	3250 J	816	16.7
Total heptachlorodibenzofuran (HpCDF)	pg/g	312	395	348	548	340	38.7 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	521	769	717	1010	1870	229 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	653	738	542	874	275	20.2 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	72.4	97.8	89.2	150	179	55.7 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	703	683	473	848	252	14 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	47.6	40.3	32.5	65.9	27.9	9.7 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	15800	11700	9050	18100	4700	88.2 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	3120	2340	1720	3540	900	33.6 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	3870 J	2920 J	2130 J	4380 J	1120 J	25.3 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	3870 J	2920 J	2130 J	4380 J	1120 J	25.3 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-F2	NC-G1	NC-H1	NC-J1	NC-K1	NC-L1
Sample Identification		11215131-120721-S-JC-NC-S-7	11215131-120721-S-SS-NC-S-8	11215131-120721-S-SS-NC-S-9	11215131-120921-S-JC-NC-S-10	11215131-120921-S-JC-NC-S-11	11215131-120921-S-SS-NC-S-12
Sample Date		12/07/2021	12/07/2021	12/07/2021	12/09/2021	12/09/2021	12/09/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	772	404 J	126 J	565 J	532 J	80.1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	3110	12200 J	41500 J	5350 J	1860 J	1340 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	195	198	93.1	173	80.5	23.7
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	247	502	453	381	131	105
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	64.4	63.4	33.8	57.9	17.2	4.58
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	545	530	246	522	132	19.5
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.41	2.32	2.05	2.74	1.68 J	1.1 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	136	128	59.2	122	33.5	4.48
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	8.96	10.9	4.86	10.7	4.4 J	3.96
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.113 U	0.222 U	0.147 U	0.202 U	0.212 U	0.149 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.06	4.6	4.13	5.54	3.31	2.19 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	295	331	103	269	77.2	8.2
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	23.6	33.3	9.9	26	7.62	1.41 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	29.2	29.6	11.8	29.1	8.56	2.04 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	189	266 J+	71.1 J+	201 J+	56.9 J+	6.43 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	5530 J	9470 J	2220 J	7040 J	1870 J	177
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2020 J	3140 J	829 J	2480 J	655	66.3
Total heptachlorodibenzofuran (HpCDF)	pg/g	370 J	412 J	167 J	359	143	65.4
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	532 J	1670 J	1010 J	1180	344	266
Total hexachlorodibenzofuran (HxCDF)	pg/g	854 J	835 J	373 J	822	223	47.4
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	82.5 J	147 J	77.8 J	128	71.5	60
Total pentachlorodibenzofuran (PeCDF)	pg/g	751 J	941 J	272 J	744	215	28.3
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	40.6 J	54.3 J	19.7 J	44	19.3	9.61
Total tetrachlorodibenzofuran (TCDF)	pg/g	10700 J	18300 J	4260 J	13600	3640	336
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2200 J	3480 J	910 J	2710	727	80.7
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	2740 J	4290 J	1140 J	3360 J	890 J	92.7 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	2740 J	4290 J	1140 J	3360 J	890 J	92.7 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-M1	NC-N1	NC-P1	NC-T1	NC-U1	NC-V1
Sample Identification		11215131-120921-S-SS-NC-S-13	11215131-120921-S-SS-NC-S-14	11215131-121421-S-BN-NC-S-15	11215131-121321-S-BN-NC-S-16	11215131-121321-S-BN-NC-S-17	11215131-121321-S-BN-NC-S-18
Sample Date		12/09/2021	12/09/2021	12/14/2021	12/13/2021	12/13/2021	12/13/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	111	1320	1050	355	1110	3310
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1650 J	5170 J	8830 J	3530	5010	4460
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	25.2	413	118	62.4	131	126
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	119	388	970	236	371	311
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	2.56	165	20.2	13.6	12.5	14.9
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	7.5	855	125	97.7	54.2	47.7
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.11 J	3.29	4.9	2.16 J	2.89	4.14
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.39 J	179	31.4	25.7	15.7	13.3
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.65	13.3	18.6	8.48	16.8	13.5
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.103 U	0.199 U	0.713 U	0.406 U	0.254 U	0.466 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.48	7.15	8.06	4.1	10.3	7.71
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	4.19	166	73.6	62.2	37.5	28.7
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.839 J	13.7	5.04 J	6.13	6.64	5.84
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.32 J	27.4	9.34	7.37	6.92	6.75
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.17 J+	99.9 J+	52.2	44.7 J+	30.7 J+	28 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	73.1	3170 J	1650 J	1390 J	911	904
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	27	1190 J	414	516	339	297
Total heptachlorodibenzofuran (HpCDF)	pg/g	70.1	797	318	157	378	273
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	326	868	3780	566	831	772
Total hexachlorodibenzofuran (HxCDF)	pg/g	30.7	1230	264	183	179	151
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	46.5	130	324	84	154	149
Total pentachlorodibenzofuran (PeCDF)	pg/g	18.4	426	230	176	131	128
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	7.07	34.3	25.6	18.5	33.4	32.1
Total tetrachlorodibenzofuran (TCDF)	pg/g	145	6110	3160	2770	1770	1770
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	34.3	1300	466	574	391	342
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	40.1 J	1680 J	636 J	695 J	465 J	419 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	40.1 J	1680 J	636 J	695 J	465 J	419 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-W1	NC-AD1	NC-AE1	NC-AE2	NC-AF1	NC-AB1
Sample Identification		11215131-121321-S-SS-NC-S-19	11215131-011022-S-BN-NC-S-20	11215131-011122-S-BN-NC-S-21	11215131-011122-S-BN-NC-S-22	11215131-011022-S-BN-NC-S-23	11215131-011122-S-BN-NC-S-24
Sample Date		12/13/2021	01/10/2022	01/11/2022	01/11/2022	01/10/2022	01/11/2022
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1900	82.3	99.4	2550	111	293
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	5950	1240	1680	31900 J	6690	2000
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	114	21.2	96.3	499	155	58.4
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	485	96.5	109	666	169	145
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	20.3	2.74	37.8	174	69.3	11.8
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	101	10.8	348	1470	638	87.6
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.12	1.29 J	1.38 J	3.91 J	1.58 J	1.84 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	26.6	2.37 J	88.5	352	158	22.7
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	17	3.62	4.09	20.6	4.85	6.24
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.365 U	0.44 U	0.61 U	1.22 U	1.04 U	0.482 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	8.67	2.28 J	2.66	8.47	3.42	3.68
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	64.1	7.14	209	791	390	58.4
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	7.03	0.907 J	16.2	60.6	19.8	6.66
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	9.62	1.46 J	19.8	72.5	31.5	5.91
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	53.5 J+	3.8 J+	146 J+	577 J+	226 J+	48.1 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	1530 J	87.7	4830 J	18700 J	5500 J	1760 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	542	33.2	1600 J	6700 J	1930 J	654
Total heptachlorodibenzofuran (HpCDF)	pg/g	276	55.9 J	173 J	1000 J	291 J	128 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1560	254 J	231 J	1580 J	368 J	347 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	226	32.7 J	543 J	2280 J	965 J	163 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	267	60.5 J	48.1 J	177 J	70.3 J	72.9 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	216	21.5 J	571 J	2160 J	930 J	178 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	37.5	10 J	35.9 J	100 J	36.2 J	17 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	2930	162 J	9190 J	35700 J	10400 J	3400 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	609	52.2 J	1780 J	7410 J	2110 J	739 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	745 J	48.0 J	2200 J	9040 J	2670 J	868 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	745 J	48.0 J	2200 J	9040 J	2670 J	869 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-AB2	NC-AG1	NC-AA2	NC-AH1	NC-AI1	NC-AA1
Sample Identification		11215131-011122-S-BN-NC-S-25	11215131-010822-S-BN-NC-S-26	11215131-011122-S-BN-NC-S-27	11215131-010822-S-BN-NC-S-28	11215131-010822-S-BN-NC-S-29	11215131-011122-S-BN-NC-S-30
Sample Date		01/11/2022	01/08/2022	01/11/2022	01/08/2022	01/08/2022	01/11/2022
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	60.2	423	630	953	1290	329
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1000	4300	2740	4840	3010	1970
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	48.4	91.3	70.7	104	89.1	45.4
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	66.7	274	190	336	198	116
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	17	21.5	12.7	19.4	16.8	7.68
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	141	155	78.2	116	111	48.9
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1 J	2.06 J	1.84 J	2.91	2.45	2.53
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	38	40.5	23.6	33.6	29.7	13
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.36 J	9.36	6.87	13.4	8.79	4.22
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.743 U	0.71 U	0.514 U	0.823 U	0.611 U	0.574 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.43 J	5.51	3.66	7.39	5.41	3.64
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	93.1	96.2	52.6	74.6	71.2	31.4
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	11	8.94	5.05	7.5	7.23	3.01
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	7.14	9.22	7.16	8.88	7.92	3.52
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	76.9 J+	72.3 J+	40.3 J+	55.9 J+	51.8 J+	24.2 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	2970 J	2450 J	1420 J	1960 J	1680 J	647
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1080 J	852	461	670	608	242
Total heptachlorodibenzofuran (HpCDF)	pg/g	88.2 J	214 J	153 J	239 J	176 J	82.8 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	159 J	630 J	432 J	765 J	464 J	305 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	222 J	274 J	165 J	246 J	213 J	89.8 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	40.7 J	96.1 J	68.5 J	159 J	100 J	66.8 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	268 J	279 J	159 J	230 J	214 J	92.9 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	21.6 J	22.6 J	16.7 J	31.3 J	24.3 J	13.2 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	5730 J	4700 J	2730 J	3870 J	3290 J	1270 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1210 J	958 J	524 J	764 J	682 J	273 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1430 J	1160 J	638 J	917 J	822 J	328 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1430 J	1160 J	638 J	917 J	822 J	328 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-AC2	NC-AD3	NC-AC4	NC-AE4	NC-AE5	NC-AF3
Sample Identification		11215131-011022-S-BN-NC-S-31	11215131-011022-S-BN-NC-S-32	11215131-012222-S-BN-NC-S-33	11215131-012222-S-BN-NC-S-34	11215131-012222-S-BN-NC-S-35	11215131-012122-S-BN-NC-S-36
Sample Date		01/10/2022	01/10/2022	01/22/2022	01/22/2022	01/22/2022	01/21/2022
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1560	71.6	905	102	13.5	450
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	5950	1250	6020	2930	949	9320 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	181	15.5	257	24.1	4.42	94
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	416	89.6	452	160	46.3	324
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	40.8	1.75 J	84.3	4.07	0.478 U	17.6
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	344	5	733	3.76	0.769 J	112
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.95	0.983 J	2.21	1.7 J	0.926 J	3.06
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	87.6	1.45 J	191	2.29	0.304 U	34.3
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	14.7	3.58 J	13.2	3.81	1.55 J	10.4
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.714 U	0.482 U	0.384 U	0.364 U	0.417 U	0.386 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	6.94	2.28 J	5.43	3.19	1.7 J	5.63
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	241	2.57 J	483	1.07 J	0.68 U	73.1
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	19.5	0.825 J	53.9	0.514 J	0.455 U	5.94
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	20.7	1.09 J	43.9	1.45 J	0.351 U	9.86
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	190 J+	2.54 J	401	1.42 J	0.69 U	54.8 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	5650 J	51.2	15400 J	9.63	3.7	1490 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2040 J	18.2	5570 J	2.61	1.35	535
Total heptachlorodibenzofuran (HpCDF)	pg/g	372 J	41 J	501 J	75.5 J	7.51 J	221 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	880 J	258 J	873 J	574 J	144 J	730 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	590 J	23.3 J	1170 J	34.2 J	3.2 J	252 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	128 J	50 J	121 J	72.5 J	35.8 J	110 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	708 J	14.8 J	1400 J	14.1 J	0.81 J	231 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	43.9 J	9.57 J	86.7 J	7.46 J	4.81 J	19.3 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	11100 J	98.1 J	29700 J	22.1 J	12 J	2890 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2250 J	22.8 J	6260 J	5.23 J	5.34 J	605 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	2750 J	27.9 J	7410 J	8.96 J	3.01 J	733 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	2750 J	27.9 J	7410 J	8.97 J	3.41 J	733 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**North Central**	**North Central**	**North Central**	**North Central**	**North Central**	**North Central**
Sample Location		**NC-AB4**	**NC-AG3**	**NC-AH3**	**NC-AA4**	**NC-AC5**	**NC-AC7**
Sample Identification		**11215131-012222-S-BN-NC-S-37**	**11215131-012122-S-BN-NC-S-38**	**11215131-012122-S-BN-NC-S-39**	**11215131-012222-S-BN-NC-S-40**	**11215131-012222-S-BN-NC-S-41**	**11215131-020222-S-SB-NC-S-42**
Sample Date		**01/22/2022**	**01/21/2022**	**01/21/2022**	**01/22/2022**	**01/22/2022**	**02/02/2022**
Sample Type		**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	2360	303	1500	500	137	309
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	4520	4710	3530	4350	2110	2010
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	205	112	137	122	63.3	43.6
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	295	349	232	288	138	149
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	37.1	24.4	19.5	25.5	6.36	8.62
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	247	160	136	195	43.5	44.9
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.79	3.45	2.06 J	2.57	1.53 J	2 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	69.3	45.3	38	51.8	10.4	10.6
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	10.2	15.3	7.64	8.79	5.78	4.95
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.518 U	0.389 U	0.508 U	0.526 U	0.507 U	0.289 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.53	7.62	3.9	4.97	3.61 J	3.97
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	143	90.5	77	119	22.9	29.7
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	15.5	9.89	8.1	10.6	2.57	3.68
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	15.8	13.5	9.66	14.4	4.15	3.8
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	119	70.5	61.5	96.5	18.2	21.7
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	3980 J	2060 J	1980 J	3110 J	470	695
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1390 J	739 J	709	1020 J	176	261
Total heptachlorodibenzofuran (HpCDF)	pg/g	379 J	258 J	236 J	266 J	136 J	109 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	817 J	814 J	550 J	720 J	354 J	351 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	444 J	326 J	253 J	355 J	102 J	92 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	120 J	155 J	102 J	92.6 J	97 J	63.9 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	436 J	293 J	240 J	353 J	71.2 J	88.5 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	38.3 J	44.5 J	27.1 J	25.7 J	19.4 J	13.9 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	7630 J	4080 J	3910 J	6110 J	911 J	1330 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1570 J	843 J	808 J	1160 J	203 J	296 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1890 J	1010 J	961 J	1410 J	241 J	351 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1890 J	1010 J	961 J	1410 J	241 J	351 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	North Central	North Central	North Central
Sample Location		NC-AC8	NC-AF7	NC-AH5	NC-AI5	NC-AA6	NC-AC13
Sample Identification		11215131-020222-S-SB-NC-S-43	11215131-020222-S-SB-NC-S-44	11215131-020222-S-SB-NC-S-45	11215131-020222-S-SB-NC-S-46	11215131-020222-S-SB-NC-S-47	11215131-021822-S-SB-NC-S-48
Sample Date		02/02/2022	02/02/2022	02/02/2022	02/02/2022	02/02/2022	02/18/2022
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	4740	118	170	1230	814	841
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	7280	1900	3390	2000	4600	3410
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	454	120	40.7	51.1	141	154
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	490	116	279	125	353	259
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	129	48	4.22	7.56	31.3	5.68 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	782	406	23.2	39.4	192	255
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.82	0.841 U	2.12 J	0.932 U	3.72	2.13 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	187	88.8	6.5	9.75	51.7	66.9
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	18.4	3.48	7.11	4.29	12.5	9.96
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.655 U	0.867 U	0.66 U	0.776 U	0.327 U	0.326 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	9.1	1.81 J	4.28	2.42 J	7.18	4.09 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	230	201	14.4	23.3	110	153
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	23.1	9.29	1.9 J	2.2 J	14.4	17.8
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	29.3	18.8	3.52	3.45	12	15.9
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	170	109 J+	12 J+	20.9 J+	91.9	126
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	5800 J	2540 J	339	775	3460 J	4440 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2110 J	743	88.7	213	1240 J	1610 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	811 J	223 J	115 J	99 J	325 J	289 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1080 J	276 J	663 J	301 J	812 J	594 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	1220 J	599 J	72.8 J	82 J	358 J	444 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	183 J	33.1 J	83.7 J	69 J	127 J	105 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	685 J	469 J	62.3 J	85.4 J	337 J	460 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	61.1 J	11.1 J	11.7 J	11.6 J	33.5 J	40.8 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	11400 J	4950 J	663 J	1480 J	6680 J	8310 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2360 J	824 J	101 J	240 J	1380 J	1800 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	2890 J	1100 J	138 J	308 J	1670 J	2150 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	2890 J	1100 J	138 J	308 J	1670 J	2160 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		North Central	North Central	North Central	Northeast	Northeast
Sample Location		NC-AF8	NC-AI7	NC-AC16	NE-F1, NE-F2, NE-F3, NE-G1, NE-G2, NE-G3	NE-F1, NE-F2, NE-F3, NE-G1, NE-G2, NE-G3
Sample Identification		11215131-021722-S-SB-NC-S-49	11215131-021922-S-SB-NC-S-50	11215131-021822-S-SB-NC-S-51	11215131-120121-S-JC-NE-B-1	11215131-120121-S-JC-NE-B-1H
Sample Date		02/17/2022	02/19/2022	02/18/2022	12/01/2021	12/01/2021
Sample Type		Sidewall	Sidewall	Sidewall	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	989	5.71	25	1410	14.7
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	42100 J	592	675	1440	2100
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	137	2.8	6.14	57.1	5.87
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	2510	28.3	47.3	77.9	79.8
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	15.6	0.627 J	0.624 J	6.38	0.284 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	8.98	4.7	0.923 J	6.38	1.02 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	9.34	0.359 J	0.679 J	0.746 J	1.66 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.75	1.33 J	0.303 J	1.9 J	0.844 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	30.1	0.75 J	1.53 J	3.05	2.46
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.194 U	0.173 U	0.205 U	0.463 U	0.277 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	13.7	1.91 J	2.55	2.11 J	3.27
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.61	2.93 J	0.437 J	4.68	0.712 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	2.89	0.551 J	0.407 U	0.893 J	0.75 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	3.79	0.518 J	0.403 J	1.35 J	0.803 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.62	2.76 J+	0.214 U	5.34 J+	0.933 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	42.3	88.4	6.28	196	4.97
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	16.2	33.7	2.1	45.5	1.87
Total heptachlorodibenzofuran (HpCDF)	pg/g	697 J	5.67 J	11.7 J	96.8 J	8.23 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	22600 J	84.7 J	129 J	210 J	225 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	131 J	9.51 J	6.48 J	30 J	9.5 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	833 J	57.7 J	50.5 J	52.9 J	71.2 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	22 J	9.8 J	3.2 J	33.7 J	11.8 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	26.5 J	10.2 J	8.89 J	10.4 J	13.9 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	81.8 J	177 J	11.6 J	389 J	19.7 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	23.5 J	44.7 J	10.8 J	59.4 J	10.7 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	70.6 J	45.5 J	4.13 J	71.6 J	5.92 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	70.6 J	45.5 J	4.38 J	71.6 J	5.93 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Northeast	Northeast	Northeast	Northeast	Northeast	Northeast
Sample Location		NE-H1, NE-H2, NE-H3, NE-H4, NE-I1, NE-I2	NE-K1, NE-K2	NE-K1, NE-K2	NE-M1, NE-M2, NE-M3	NE-M1, NE-M2, NE-M3	NE-L2, NE-L3, NE-L4
Sample Identification		11215131-120121-S-SPS-NE-B-2	11215131-121621-S-BN-NE-B-3	11215131-121621-S-BN-NE-B-3H	11215131-121721-S-BN-NE-B-4	11215131-121721-S-BN-NE-B-4H	11215131-020522-S-SB-NE-B-5
Sample Date		12/01/2021	12/16/2021	12/16/2021	12/17/2021	12/17/2021	02/05/2022
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1750	7540	1680	4700	6200	5950
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	6550	6250	2240	7360	5420	4590
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	75	232	69.1	131	159	171
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	165	462	97.9	555	340	283
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	5.79	29.4	4.6	16	16.6	17.6
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	5.86	53.4	6.71	17.5	25.2	26
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.65 J	3.7	1.27 J	4.51	3.93	4.08
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.21 J	15.6	2.38 J	6.56	7.85	9.5
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.76	16.1	4.25	19.3	16.6	14.6
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.655 U	1.62 U	0.339 U	1.37 U	0.602 U	0.577 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.9	7.56 J	3.48	10.9	9.58	8.41
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.65 J	33.2	4.49	11.7	15.7	17.3
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.32 J	6.23	1.51 J	4.04	4.92	4.62 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.81 J	9.71	1.95 J	6.35	6.7	8.77
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	5.55 J+	35.2 J+	5.65 J+	16 J+	20.2 J+	23.1
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	196	1400 J	198	533	724	741
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	44.1	351	57.8	116	229	239
Total heptachlorodibenzofuran (HpCDF)	pg/g	135 J	488 J	113 J	302 J	348 J	332 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	425 J	998 J	262 J	1160 J	776 J	677 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	38.8 J	212 J	39.8 J	129 J	147 J	150 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	73.4 J	157 J	68.4 J	181 J	177 J	172 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	37.8 J	184 J	37.2 J	111 J	125 J	142 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	11.8 J	35 J	14.6 J	35.5 J	38.7 J	41.7 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	397 J	2460 J	407 J	1060 J	1460 J	1510 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	56.7 J	399 J	75.8 J	143 J	279 J	294 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	73.7 J	531 J	85.8 J	196 J	328 J	340 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	73.7 J	531 J	85.9 J	196 J	329 J	340 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Northeast	Northeast	Northeast	Northeast	Northeast	Northeast
Sample Location		NE-A1, NE-A2	NE-B1, NE-B2, NE-B3	NE-C1, NE-C2, NE-C3, NE-C4	NE-D1, NE-D2	NE-E1, NE-E2, NE-E3	NE-F1, NE-F2, NE-F3
Sample Identification		11215131-113021-S-JC-NE-O-1	11215131-113021-S-JC-NE-O-2	11215131-120121-S-JC-NE-O-3	11215131-113021-S-SPS-NE-O-4	11215131-113021-S-SPS-NE-O-5	11215131-120121-S-JC-NE-O-6
Sample Date		11/30/2021	11/30/2021	12/01/2021	11/30/2021	11/30/2021	12/01/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	87	198	90	146	72.6	64
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	3390	12900 J	8790	4330	2880	67600 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	38.6	59.3	27.2	47.8	48.1	21.5
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	341	1000	248	326	235	1100
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	2.54	5.05	2.49	3.85	2.15 J	1.54 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.59	3.83	1.79 J	2.7	1.98 J	1.56 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.88 J	3.12 J	1.7 J	2.07 J	1.63 J	3.99
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.75 J	2.58	1.5 J	2.29 J	2.55	1.33 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	8.34	15.3	5.84	9.11	6.49	6.99
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.436 U	0.654 U	0.397 U	0.566 U	0.551 U	1.59 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.19	7.89	3.47	4.69	3.07	6.53 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.36 J	1.85 J	0.754 J	1.01 J	0.9 J	1.37 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.936 J	1.23 J	0.805 J	1.21 J	0.677 J	1.86 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.54	3.84	1.92 J	3.35	2.28 J	1.39 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.78 J+	5.12 J+	1.6 J	2.87 J+	2.36 J	1.43 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	3.29	12.9	3.79	3.52	3.75	5.04
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	0.498 J	2.19	0.811	0.446 J	0.594	1.71 U
Total heptachlorodibenzofuran (HpCDF)	pg/g	105 J	219 J	90.4 J	152 J	117 J	63.5 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	767 J	1910 J	591 J	685 J	500 J	2360 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	40.3 J	73.8 J	33.4 J	58.9 J	44.8 J	23.5 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	87.5 J	119 J	55.6 J	74.4 J	57.1 J	74 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	26.1 J	52.7 J	16.3 J	28.4 J	22.3 J	5.66 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	10.8 J	12.4 J	7.53 J	9.14 J	7.62 J	1.86 U
Total tetrachlorodibenzofuran (TCDF)	pg/g	28 J	67 J	16.9 J	22.2 J	23.4 J	11.1 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	3.66 J	5.14 J	1.67 J	1.53 J	2.08 J	1.71 U
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	9.63 J	24.5 J	9.56 J	10.4 J	7.92 J	33.9 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	9.65 J	24.6 J	9.58 J	10.5 J	7.95 J	36.2 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**Northeast**	**Northeast**	**Northeast**	**Northeast**	**Northeast**	**Northeast**
Sample Location		**NE-G1, NE-G2, NE-G3, NE-G4**	**NE-H1, NE-H2, NE-H3, NE-H4**	**NE-I1, NE-I2, NE-I3**	**NE-J1, NE-J2**	**NE-K1, NE-K2**	**NE-M1, NE-M2, NE-M3**
Sample Identification		**11215131-120121-S-JC-NE-O-7**	**11215131-120121-S-SPS-NE-O-8**	**11215131-120121-S-SPS-NE-O-9**	**11215131-121621-S-BN-NE-O-10**	**11215131-121621-S-BN-NE-O-11**	**11215131-121721-S-BN-NE-O-12**
Sample Date		**12/01/2021**	**12/01/2021**	**12/01/2021**	**12/16/2021**	**12/16/2021**	**12/17/2021**
Sample Type		**Overburden**	**Overburden**	**Overburden**	**Overburden**	**Overburden**	**Overburden**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	33.4	186	69.3	1100	128	109
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	26800 J	12300 J	108000 J	7110	7580	15100 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	10.2	34.5	16	156	37.9	61.2
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	268	440	722	647	284	476
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.998 J	4.12 J	1.45 J	10.8	3.91 J	3.06
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.06 J	1.81 J	1.22 J	5.58	4.26	2.05 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.18 J	1.6 J	2.79	2.68	1.48 J	2.87 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.88 J	0.844 J	0.61 J	3.15	2.39 J	1.77 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.13	5.81	4.55	15.7	6.05	10.8
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.277 U	0.657 U	0.533 U	1.12 U	1.07 U	1.41 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.07	2.85 J	4.43	6.1	2.56 J	6.16
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.488 J	0.478 J	0.535 J	2.52	2.05 J	1.45 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.81 J	0.866 J	0.937 J	1.34 J	1.15 J	1.04 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.872 J	1.58 J	0.882 J	4.73 J	2.7	2.45 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.23 J	1.22 J	1.23 J	4.97 J+	3.28	2.29 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	3.13	3.44	2.52	99.5	10.9	3.46 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	0.573 J	0.277 J	0.313 U	22.9	1.5 J	0.851 U
Total heptachlorodibenzofuran (HpCDF)	pg/g	26.6 J	140 J	58.8 J	432 J	129 J	162 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	624 J	809 J	1570 J	1900 J	624 J	1030 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	13.7 J	32.3 J	18.4 J	133 J	48.5 J	56 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	47.6 J	54.9 J	58.3 J	179 J	53 J	96.9 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	9.95 J	10.1 J	11 J	55 J	30.9 J	19.7 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	5.92 J	4.7 J	5.38 J	19.2 J	8.19 J	3.68 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	11.9 J	11.1 J	10.8 J	192 J	50.2 J	19.8 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1.01 J	3.31 J	0.313 U	27.5 J	1.5 J	1.23 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	14.2 J	11.8 J	42.8 J	50.2 J	12.3 J	13.7 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	14.3 J	11.9 J	42.8 J	50.2 J	12.4 J	14.7 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Northeast	Northeast	Northeast	Northeast	Northeast	Northeast
Sample Location		NE-L2, NE-L3, NE-L4	NE-L2, NE-L3, NE-L4	NE-A1	NE-A2	NE-B3	NE-C1
Sample Identification		11215131-020522-S-SB-NE-O-13	11215131-020522-S-SB-NE-O-14	11215131-113021-S-JC-NE-S-1	11215131-113021-S-JC-NE-S-2	11215131-113021-S-JC-NE-S-3	11215131-120121-S-JC-NE-S-4
Sample Date		02/05/2022	02/05/2022	11/30/2021	11/30/2021	11/30/2021	12/01/2021
Sample Type		Overburden	Overburden	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	85.8	533	165	2690	8940 J	3010
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	12600 J	9660	5670	3840	9310 J	6360 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	22.9	70.9	55.3	84.7	486	135
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	274	696	517	295	663	561
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.46 J	5.39	3.77	11.1	31.9	14.8
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.87 J	7.15	2.76	25.9	65.5	25.1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.23 J	4.13	2.85	1.98 J	5.48 J	4.1
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.17 J	5.53	1.91	8.1	20	9.01
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.6 J	17.6	11.7	8.82	23.9	16.3
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.325 U	0.535 U	0.692 U	0.738 U	1.36 U	1.23 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.8	9.09	6.71	4.92	13.1	8.34
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.13 J	4.13	1.35 J	17.7	44.5	16.9
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.656 J	2.58	1.29 J	3.15	7.95	3.93
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.71 J	6.68	3.28	4.95	15.8	6.6
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.74 J	6.85	3.2	18.3 J+	48.2 J+	19.2 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	5.11	65	5.24	636 J	1620 J	589 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	0.386 U	20.5	1.21 J	166	425	151
Total heptachlorodibenzofuran (HpCDF)	pg/g	81.7 J	192 J	180 J	203 J	998 J	347 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	542 J	1380 J	1120 J	638 J	1370 J	1320 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	28 J	97.6 J	62.5 J	102 J	340 J	150 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	45.6 J	169 J	115 J	96.5 J	270 J	150 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	16 J	66.5 J	32.4 J	95.1 J	279 J	113 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	4.97 J	30.2 J	11.9 J	19.8 J	58.3 J	26.4 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	15.9 J	189 J	36.1 J	1200 J	2960 J	1190 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	0.386 U	41.2 J	3.81 J	194 J	501 J	176 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	9.85 J	47.6	14.5 J	250 J	642 J	237 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	10.1 J	47.6	14.5 J	250 J	642 J	237 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Northeast	Northeast	Northeast	Northeast	Northeast	Northeast
Sample Location		NE-C3	NE-E1	NE-E2	NE-F1	NE-G1	NE-G2
Sample Identification		11215131-120121-S-JC-NE-S-5	11215131-113021-S-SPS-NE-S-6	11215131-113021-S-SPS-NE-S-7	11215131-120121-S-JC-NE-S-8	11215131-120121-S-JC-NE-S-9	11215131-120121-S-JC-NE-S-10
Sample Date		12/01/2021	11/30/2021	11/30/2021	12/01/2021	12/01/2021	12/01/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	49	124	203	534	198	1390
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	4850	9210 J	6740	7450 J	2040	10500 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	13.2	60.8	82.4	23.3	14.9	55.2
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	164	510	669	172	79.2	179
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.32 J	5.16	5.06 J	4.3	2.83	7.26
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.982 J	4.69	4.42 J	3.15	12.2	6.78
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.09 J	3.04 J	3.63 J	1.62	0.988 J	1.8 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.846 J	5.6	3.31 J	1.4 J	3.69	2.34
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.5	12.5	14.9	4.17	2.42	5.24
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.525 U	1.46 J	1.31 U	0.135 U	0.0966 U	0.282 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.41 J	5.59 J	6.45 J	3.12	2.52	3.7
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.471 U	2.15	1.58 J	2.02	8.06	4.56
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.492 U	1.69	1.4 U	0.883 J	1.51 J	1.91
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.869 J	6.31	3.83 J	1.56	1.27 J	1.92
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.787 J	3.92	3.51 J	2.63 J+	7.03	5.46 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	3.71	10.4	5.36	65.7	226	182
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	0.979 J	1.79 J	1.31 U	20.6	86.3	56.7
Total heptachlorodibenzofuran (HpCDF)	pg/g	45.9 J	183 J	243 J	59.6 J	33.7 J	114 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	392 J	1050 J	1410 J	397 J	209 J	420 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	15.6 J	78.4 J	76.5 J	26 J	28.2 J	38.8 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	61.6 J	118 J	142 J	54.4 J	62.6 J	67.1 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	6.86 J	44.6 J	33.9 J	19.5 J	30.4 J	30.5 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	6.82 J	19.8 J	14.9 J	9.2 J	14.2 J	14.6 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	9.3 J	59.1 J	24.1 J	110 J	448 J	309 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	4.75 J	6.99 J	1.31 U	28.4 J	109 J	67.9 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	5.91 J	18.2 J	14.9 J	34.8 J	117 J	86.7 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	6.19 J	18.2 J	16.4 J	34.8 J	117 J	86.8 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Northeast	Northeast	Northeast	Northeast	Northeast	Northeast
Sample Location		NE-H1	NE-H3	NE-I1	NE-I2	NE-J1	NE-K1
Sample Identification		11215131-120121-S-SPS-NE-S-11	11215131-120121-S-SPS-NE-S-12	11215131-120121-S-SPS-NE-S-13	11215131-120121-S-SPS-NE-S-14	11215131-121621-S-BN-NE-S-15	11215131-121621-S-BN-NE-S-16
Sample Date		12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/16/2021	12/16/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	271	402	4340	29.4	101	256
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	4550	4820	38100 J	5020	4270	8980
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	62.4	62	410	7.39 J	26	27.4
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	419	477	1730	152	328	274
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	8.1	4.13 J	28.1	0.979 J	2.74	4.03
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	28.7	5.54	28	3.42	1.71 J	3.09
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.74	2.1 J	6.24	0.792 U	2.61	2.08 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	9.29	4.88	14.9	1.18 J	1.18 J	1.48 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	11.3	9.96	32.6	2.44	6.71	5.16
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.142 U	0.863 U	1.53 U	0.611 U	0.231 U	0.192 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	6.22	4.95 J	14.5	2.37 J	4.7	3.88
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	19	4.24	17.7	1.79 J	0.873 J	1.81 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.23	1.59 J	4.75	0.619 U	0.557 J	0.891 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	5.7	6.31	14	0.783 J	1.41 J	1.5 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	17.4	7.09 J+	22.8 J+	1.92 J	1.06 J+	2.41 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	485	45.5	525	22.1	17.5	49.9
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	191	10.1	136	5.46	5.75	15.4
Total heptachlorodibenzofuran (HpCDF)	pg/g	201 J	151 J	1480 J	20.8 J	81.5 J	68.6 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	885 J	891 J	3680 J	321 J	1200 J	611 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	113 J	76.7 J	362 J	14.5 J	27.4 J	26.1 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	108 J	91.9 J	257 J	31 J	119	59.3
Total pentachlorodibenzofuran (PeCDF)	pg/g	83.4 J	75.2 J	167 J	15.4 J	9.02 J	16.6 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	14.8 J	21.8 J	54.7 J	0.619 U	7.01 J	7.54 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	973 J	169 J	1140 J	54.5 J	40.6 J	90.7 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	216 J	19.1 J	182 J	9.4 J	10.9 J	19.2 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	261	28.9 J	246 J	12.4 J	15.1 J	29.6 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	261	28.9 J	246 J	12.8 J	15.1 J	29.6 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Northeast	Northeast	South Central	South Central	South Central	South Central
Sample Location		NE-L1	NE-M1	SC-Q13, SC-Q14, SC-Q15	SC-A1, SC-A2, SC-A3, SC-A4, SC-A5	SC-A1, SC-A2, SC-A3, SC-A4, SC-A5	SC-B1, SC-B2, SC-B3, SC-B4, SC-B5
Sample Identification		11215131-121721-S-BN-NE-S-17	11215131-121721-S-BN-NE-S-18	11215131-021722-S-SB-SC-O-24	11215131-120621-S-JC-SC-B-1	11215131-120621-S-JC-SC-B-1H	11215131-120621-S-SS-SC-B-2
Sample Date		12/17/2021	12/17/2021	02/17/2022	12/06/2021	12/06/2021	12/06/2021
Sample Type		Sidewall	Sidewall		Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	3250	1760	578	966	6130	9.85
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	13500 J	15900 J	43000 J	61800 J	24400 J	658
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	188	77.6	217	915	1720 J+	13.5
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	527	274	5520 J	3740	1610	46.2
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	33.2	7.42	33.5	200	615	7.02
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	222	15.4	48.3	1640	5020 J	63.9
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.94	3.16	16	28.3	11.5	0.659 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	60.6	4.87	25.6	451	1270	15.2
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	17.8	9.07	143	136	58.8	1.38 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.345 U	0.254 U	1.19 U	0.592 U	2.23 U	0.205 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	9.31	5.57	109	53.7	20.1	1.54 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	160	9.47	17.3	1070	2760	30.4
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	20.2	2.75	19.7	115	235	2.97
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	18.2	3.58	29.8	121	285	3.6
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	132 J+	10.5 J+	41.7 J+	864 J+	1960 J+	26.2 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	4620 J	329	82.6	28500 J	68200 J	725
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1760 J	111	6.73	10500 J	24000 J	268
Total heptachlorodibenzofuran (HpCDF)	pg/g	417 J	175 J	698 J	2070	3170 J	25.8 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1160 J	633 J	10800 J	7970	3200 J	143 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	448 J	78.2 J	418 J	3130	7870 J	99.3 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	193	90.6	2130 J	1070	463 J	53.8 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	513 J	62.1 J	324 J	3280	7400 J	93.3 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	56.3 J	17.7 J	202 J	266	341 J	13.3 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	8890 J	679 J	454 J	53900	125000 J	1470 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1980 J	131 J	79.6 J	11800	27000 J	310 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	2330 J	163 J	156 J	14100 J	32400 J	362 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	2330 J	163 J	156 J	14100 J	32400 J	362 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central
Sample Location		SC-B1, SC-B2, SC-B3, SC-B4, SC-B5	SC-C1, SC-C2, SC-C3, SC-E1, SC-E2	SC-D1, SC-D2, SC-D3, SC-D4, SC-E3	SC-F1, SC-F2, SC-F3, SC-F4, SC-F5	SC-I1, SC-I2, SC-I3, SC-J1, SC-J2, SC-J3
Sample Identification		11215131-120621-S-SS-SC-B-2H	11215131-120721-S-JC-SC-B-3	11215131-120721-S-SS-SC-B-4	11215131-120421-S-JC-SC-B-5	11215131-120621-S-SS-SC-B-6
Sample Date		12/06/2021	12/07/2021	12/07/2021	12/04/2021	12/06/2021
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	0.634 U	5880	18.6	9.69	92.5
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	347	10900 J	527	507 J	1040
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	0.518 J+	492	3.63	3.2	161
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	14.4 J	758	24.8	30.5	67.5
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.517 U	118	0.826 J	0.817 J	76.3
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.366 U	960	7.62	6.6	452
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.614 U	5.47	0.495 J	0.334 U	0.757 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.322 U	254	1.79 J	1.54 J	106
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.591 J	29.1	0.914 J	0.892 J	2.14 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.499 U	0.718 U	0.17 U	0.224 U	0.375 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.07 J	12.6	1.25 J	1.54 J	1.78 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.363 U	566	4.8	4.03	102
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.472 U	48.7	0.579 J	0.607 J	11.3
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.493 U	59.4	0.47 J	0.497 J	14.1
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.418 U	426 J+	3.07 J+	3.01	78.3 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	9.34	13600 J	63.2	104	3020 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	3.53	4610 J	23.5	37.4	1080 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	0.518 J	934 J	5.99 J	6.66	277 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	90 J	1610 J	85.7 J	91.7	184 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	0.408 U	1620 J	12.3 J	11.4	644 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	46.9 J	250 J	35.1 J	30.6	69.5 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	0.389 U	1640 J	12.1 J	10.5	288 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	9.81 J	105 J	6.8 J	5.43	27 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	15.2 J	26100 J	126 J	208	5930 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	12.6 J	5190 J	31.7 J	45.3	1230 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	4.88 J	6310 J	33.2 J	51.0 J	1480 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	5.30 J	6310 J	33.2 J	51.1 J	1480 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-I1, SC-I2, SC-I3, SC-J1, SC-J2, SC-J3	SC-K1, SC-K2, SC-K3, SC-K4	SC-K1, SC-K2, SC-K3, SC-K4	SC-N1, SC-N2, SC-N3, SC-N4, SC-N5	SC-N6	SC-N6
Sample Identification		11215131-120621-S-SS-SC-B-6H	11215131-120421-S-SS-SC-B-7	11215131-120421-S-SS-SC-B-7H	11215131-122121-S-BN-SC-B-8	11215131-011222-S-BN-SC-B-8A	11215131-011222-S-BN-SC-B-8aH
Sample Date		12/06/2021	12/04/2021	12/04/2021	12/21/2021	01/12/2022	01/12/2022
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	0.897 U	1420 J	7840	320	1.4 J	0.349 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	311	18200 J	6620	24700 J	590	450
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	0.513 J+	1850	310 J+	189	0.815 J	0.0992 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	16.6	1270	469	1270	30.5	22.7
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.476 U	522 J	54.8	15.5	0.44 U	0.147 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.307 U	4260	291	14.6	1.06 J	0.232 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.64 U	5.65	5.97	7.35	0.661 J	0.411 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.302 U	1090	80.7	14.3	0.562 J	0.146 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.619 U	33.7	18.8	41.1	0.993 J	0.774 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.396 U	2.75 U	1.21 U	0.582 U	0.336 U	0.164 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.517 J	11.1	9.25	16.8	1.73 J	1.45 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.457 U	2250	166	3.87	1.26 J	0.321 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.402 U	213	21.4	3.76 J	0.52 U	0.401 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.461 U	213 J	20.2	11.2	0.287 U	0.146 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.452 U	1760 J+	151	11.7 J+	0.875 J	0.228 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	14	57200 J	5820 J	23.1	22.1	2.58
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	5.32	21300 J	1980 J	6.23	7.15	1.13
Total heptachlorodibenzofuran (HpCDF)	pg/g	1.29 J	2940 J	595 J	552 J	1.3 J	0.12 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	64.6 J	2530 J	1250 J	2860 J	98.4 J	72.7 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	0.358 U	6490 J	602 J	325 J	2.3 J	0.232 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	32.3 J	232 J	237 J	328 J	26 J	26.4 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	0.454 U	6200 J	584 J	164 J	5.03 J	0.321 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	5.92 J	288 J	61.2 J	36.8 J	4.88 J	4.53 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	28.1 J	99600 J	11700 J	140 J	68.5 J	8.67 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	14.5 J	23800 J	2260 J	29.3 J	9.97 J	5.21 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	7.04 J	28400 J	2690 J	48.7 J	10.7 J	2.45 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	7.45 J	28400 J	2690 J	48.7 J	10.9 J	2.51 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-N1, SC-N2, SC-N3, SC-N4, SC-N5	SC-O1, SC-O2	SC-P1, SC-P2, SC-P3	SC-Q1, SC-Q2, SC-Q3, SC-Q4, SC-Q5	SC-Q1, SC-Q2, SC-Q3, SC-Q4, SC-Q5	SC-P4, SC-P5, SC-P6
Sample Identification		11215131-122121-S-BN-SC-B-8H	11215131-122021-S-BN-SC-B-9	11215131-122021-S-BN-SC-B-10	11215131-122021-S-BN-SC-B-11	11215131-122021-S-BN-SC-B-11H	11215131-011222-S-BN-SC-B-12
Sample Date		12/21/2021	12/20/2021	12/20/2021	12/20/2021	12/20/2021	01/12/2022
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	604	9760	1.16 J	636	2300	0.851 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	31100 J	7720	448	14600 J	2690	345
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	338	515	1.07 U	524	119	0.178 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1680	537	20.9	1390	175	15
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	51.7	127	0.261 U	167	18.7	0.314 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	321	951	1.42 J	1510	108	0.24 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	9.67	4.74	0.454 J	3.95	1.64 J	0.33 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	91.5	245	0.379 J	380	29.9	0.218 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	57	20.7	0.693 J	27.5	7.84	0.3 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.861 U	0.954 U	0.298 U	0.903 U	0.315 U	0.288 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	24.7	10.2	1.32 J	12.5	4.21	0.353 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	208	500	0.675 J	1040	60.6	0.361 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	26.8	28.2	0.567 U	87.2	7.54	0.31 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	33.4	49	0.375 U	78.1 J-	7.28	0.238 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	176	280	0.554 J	793	52.5	0.335 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	5680 J	8400 J	16.4	27800 J	1910 J	2.55 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2080 J	2260 J	5.17	7710 J	628	0.465 U
Total heptachlorodibenzofuran (HpCDF)	pg/g	880 J	960 J	1.37 J	979 J	228 J	0.23 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	3630 J	1190 J	86.2 J	2790 J	430 J	61.7 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	831 J	1610 J	2.2 J	2420 J	214 J	0.242 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	472 J	203 J	35.8 J	263 J	91.1 J	20 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	794 J	1270 J	2.11 J	2920 J	211 J	0.348 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	86.3 J	69.6 J	5.39 J	132 J	27.3 J	3.99 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	11300 J	16500 J	32.4 J	55800 J	3820 J	2.17 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2370 J	2540 J	14.4 J	8410 J	717 J	6.95 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	2820 J	3370 J	7.77 J	11100 J	865 J	0.254
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	2820 J	3370 J	8.09 J	11100 J	865 J	0.926

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central
Sample Location		SC-Q5, SC-Q6, SC-Q7	SC-Q5, SC-Q6, SC-Q7	SC-P7, SC-P8, SC-P9	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12
Sample Identification		11215131-011222-S-BN-SC-B-13	11215131-011222-S-BN-SC-B-13H	11215131-020622-S-SB-SC-B-14	11215131-020622-S-SB-SC-B-15	11215131-020622-S-SB-DUP-16
Sample Date		01/12/2022	01/12/2022	02/06/2022	02/06/2022	02/06/2022
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Duplicate
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1340	2210	1.95 U	3200	3360
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	9620	2390	386	8540	8580
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	1230	94.1	0.233 U	566	533
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	620	173	18	778	844
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	513	18.5	0.407 U	202	176
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	4630	86.2	0.255 U	1730	1620
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.98	1.66 J	0.376 J	5.32	7.51
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1100	21.5	0.208 U	418	403
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	20.9	6.75	0.699 J	22	22.6
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	1.07 U	0.308 U	0.289 U	0.594 U	0.567 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	7.13	3.67	0.969 J	12.9	11.9
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2300	31.1	0.486 J	994	951
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	185	3.74	0.346 U	81.4	74.9
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	235	5.43	0.223 U	87.6	84.7
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1440 J+	23.6	0.263 U	682	598
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	49700 J	765	7.49	21300 J	19000 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	18800 J	289	2.62 J	8140 J	7630 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	2140 J	206 J	0.301 U	1030 J	988 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1240 J	436 J	83.6 J	2220 J	2540 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	6940 J	168 J	0.239 U	2650 J	2510 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	143 J	82.8 J	40.4 J	366 J	467 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	5910 J	110 J	0.486 J	2630 J	2380 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	231 J	16.7 J	7.4 J	132 J	137 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	88600 J	1550 J	14.1 J	39800 J	34800 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	21000 J	332 J	14.7 J	9120 J	8560 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	25100 J	394 J	3.88 J	10800 J	10050 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	25100 J	394 J	4.15 J	10800 J	10050 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	SCW-QR1	SCW-QR1	SC-Q13, SC-Q14, SC-Q15	SC-Q13, SC-Q14, SC-Q15	SC-A1, SC-A2, SC-A3, SC-A4, SC-A5
Sample Identification		11215131-020622-S-SB-SC-B-15H	11215131-020622-S-SB-SC-B-16	11215131-020622-S-SB-SC-B-16H	11215131-021722-S-SB-SC-B-17	11215131-021722-S-SB-SC-B-17H	11215131-120621-S-JC-SC-O-1
Sample Date		02/06/2022	02/06/2022	02/06/2022	02/17/2022	02/17/2022	12/06/2021
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1320	2660	11.5	2.31 J	0.478 U	274
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1650	3330	356	732	508	16800 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	64.2	360	4.92	1.52 J	0.362 J	147
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	112	255	20.6	48	26.4	957
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	12.9	122	2.15 J	0.381 J	0.216 U	11.7
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	69.4	991	15.5	2.34 J	0.967 J	16.5
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.17 J	2.47 J	0.624 J	0.595 U	0.521 J	8.12
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	14.8	221	3.06 J	0.8 J	0.152 U	10.3
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.26	9.41	0.765 J	1.4 J	1.02 J	33.4
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.381 U	0.562 U	0.364 U	0.265 U	0.184 U	0.288 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.31	4.77	1.43 J	2.23 J	1.45 J	16.2
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	25.8	400	6.1	1.9 J	0.56 J	6.46
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	2.14 J	25.6	0.702 J	0.635 J	0.315 U	3.57
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	3.75	43.1	0.829 J	0.239 U	0.158 U	13.1
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	14 J+	242	4.25	1.51 J	0.629 J	10.9 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	341	6670 J	114	58	17.7	89
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	121	2450 J	41.8	20.8	6.42	31
Total heptachlorodibenzofuran (HpCDF)	pg/g	122 J	626 J	8.5 J	2.9 J	0.362 J	413
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	282 J	663 J	70.2 J	152 J	95.9 J	2360
Total hexachlorodibenzofuran (HxCDF)	pg/g	123 J	1490 J	22 J	4.08 J	0.967 J	222
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	64.2 J	132 J	31.9 J	61.3 J	40.6 J	310
Total pentachlorodibenzofuran (PeCDF)	pg/g	76.8 J	1020 J	15 J	5.24 J	1.19 J	94.1
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	13.4 J	50 J	6.3 J	9.12 J	7 J	28.2
Total tetrachlorodibenzofuran (TCDF)	pg/g	696 J	13000 J	233 J	117 J	35.9 J	214
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	144 J	2760 J	51.9 J	36.9 J	16.7 J	43.1
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	175 J	3360 J	58.0 J	29.1 J	9.21 J	73.0 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	175 J	3360 J	58.0 J	29.2 J	9.39 J	73.0 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-B1, SC-B2, SC-B3, SC-B4, SC-B5	SC-C1, SC-C2, SC-C3	SC-D1, SC-D2, SC-D3, SC-D4	SC-E1, SC-E2, SC-E3	SC-F1, SC-F2, SC-F3, SC-F4, SC-F5	SC-G1, SC-G2
Sample Identification		11215131-120621-S-SS-SC-O-2	11215131-120721-S-JC-SC-O-3	11215131-120721-S-SS-SC-O-4	11215131-120721-S-JC-SC-O-5	11215131-120421-S-JC-SC-O-6	11215131-120421-S-JC-SC-O-7
Sample Date		12/06/2021	12/07/2021	12/07/2021	12/07/2021	12/04/2021	12/04/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	137	67.4	176	163	213	1510
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	3750	5110	9890	9790	6540 J	15200 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	40.7	38.2	102	104	70.5	597
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	259	263	712	671	463	1020
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	5.24	3.71	8.9	8.47	6.52	206
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	8.54	9.2	15.8	10.6	10.5	2020
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.47	2.76	5.16	5.27	3.87	7.54
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	3.3	4.42	8.87	8.18	5.6	494
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	7.4	9.71	23.6	23.3	15.8	36.3
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.245 U	0.32 U	0.302 U	0.368 U	0.264 U	0.471 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.66	5.68	11.2	11.2	8.67	14.6
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.37	5.83	7.05	3	3.87	1090
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.1 J	1.57 J	2.95	2.88	2.25 J	74.7
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	3.25	5.09	10.9	11.2	6.75	105
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.88 J+	6.43 J+	12.5 J+	7.99 J+	7.92 J+	675 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	38.9	12.7	39.8	14.8	53.7	20100 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	11.9	2.97	12.8	4.06	18	7500 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	121 J	106 J	304 J	289 J	201	1220
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	975 J	556 J	1560 J	1570 J	985	1970
Total hexachlorodibenzofuran (HxCDF)	pg/g	57.5 J	83.8 J	189 J	176 J	112	3150
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	98.4 J	82.2 J	200 J	206 J	134	239
Total pentachlorodibenzofuran (PeCDF)	pg/g	29.5 J	63.6 J	126 J	107 J	75.2	2740
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	9.91 J	11.2 J	25.2 J	24.5 J	14.7	116
Total tetrachlorodibenzofuran (TCDF)	pg/g	82 J	42.6 J	128 J	70.7 J	133	38700
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	15.4 J	5.84 J	23.7 J	11.1 J	24.8	8390
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	25.3 J	16.2 J	42.5 J	28.7 J	40.7 J	10100 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	25.3 J	16.2 J	42.5 J	28.7 J	40.7 J	10100 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-H1, SC-H2, SC-H3	SC-I1, SC-I2, SC-I3	SC-J1, SC-J2, SC-J3, SC-J4	SC-K1, SC-K2, SC-K3, SC-K4	SC-L1, SC-L2, SC-L3, SC-L4, SC-L5	SC-M1, SC-M2, SC-M3, SC-M4, SC-M5
Sample Identification		11215131-120421-S-SS-SC-O-8	11215131-120621-S-SS-SC-O-9	11215131-120621-S-JC-SC-O-10	11215131-120421-S-SS-SC-O-11	11215131-120421-S-JC-SC-O-12	11215131-120421-S-SS-DUP-3
Sample Date		12/04/2021	12/06/2021	12/06/2021	12/04/2021	12/04/2021	12/04/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Duplicate
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	413	392	197	195	595	297
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	23500 J	19800 J	20800 J	6800	31700 J	17100 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	236	163	95.7	112	194	150
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1730	1160	709	622	3920	2030
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	18.6	13.8	7.78	6.02	37.5	15.3
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	22.2	13.3	9.36	6.11	60.6	21.5
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	12.4	7.86	5.32	4.12	13.3	8.06
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	16.5 J	10.8	6.48	4.78	24.8	11.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	54.4	33.5	21	23.1	96.3	48.3
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.278 U	0.446 U	0.399 U	0.169 U	0.773 U	0.745 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	25.4	14.2	10.1	12	59.6	27.4
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	5.45	5.5	2.75	1.8 J	26.6	6.09
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	5.14 J	3.24	2.6	1.93 J	10.9	4.52
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	23.8	12	8.94	6.69	28.8	15
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	16.2 J+	8.93 J+	7.42 J+	4.49 J+	58.5 J+	19 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	21.5	16.1	21.5	14.3	105	37.8
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	4.9	3.45	5.45	3.72	6.65	5.68
Total heptachlorodibenzofuran (HpCDF)	pg/g	681 J	542 J	290 J	298 J	604	427 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	3950 J	3240 J	1590 J	1330 J	7930	3940 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	375 J	232 J	153 J	123 J	370	204 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	447 J	358 J	182 J	198 J	963	457 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	208 J	103 J	79.6 J	50.3 J	366	133 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	41.6 J	25.5 J	17.6 J	22.5 J	113	53.9 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	127 J	58.9 J	70.2 J	49.5 J	640	163 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	17.8 J	8.35 J	8.89 J	9.78 J	62.8	30.6 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	59.7 J	39.7 J	33.1 J	23.7 J	126 J	60.2 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	59.7 J	39.8 J	33.1 J	23.7 J	126 J	60.2 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-M1, SC-M2, SC-M3, SC-M4, SC-M5	SC-N1, SC-N2, SC-N3, SC-N4, SC-N5	SC-N6	SC-O1, SC-O2	SC-P1, SC-P2, SC-P3	SC-Q1, SC-Q2, SC-Q3, SC-Q4, SC-Q5
Sample Identification		11215131-120421-S-SS-SC-O-13	11215131-122121-S-BN-SC-O-14	11215131-011222-S-BN-SC-O-14A	11215131-122021-S-BN-SC-O-15	11215131-122021-S-BN-SC-O-16	11215131-122021-S-BN-DUP-9
Sample Date		12/04/2021	12/21/2021	01/12/2022	12/20/2021	12/20/2021	12/20/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Duplicate
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	270	48	22	40.8	257	244
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	15300 J	1050	568	1870	8720	13200 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	141	12.2	7.51	16.3	162	91.8
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	2030	74.1	38	125	824	1650
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	15.9	1.41 J	0.449 U	1.63 J	14.6	18.5
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	22.4	2.57	1.33 J	3.35	31.5	35
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	9.92	1.07 J	0.634 J	1.11 J	5.86	4.45
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	12.1	0.874 J	0.196 U	1.45 J	15.8	14.5
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	54	2.61 J	1.36 J	3.57	30.7	32.4
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.474 U	0.418 U	0.244 U	0.326 U	0.614 U	1.17 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	29.9	2.04 J	1.21 J	2.2 J	13.1	19.1
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	7.14	1.23 J	0.528 U	1.78 J	12.2	6.25 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	4.92	0.583 J	0.401 U	0.663 J	4.19 J	3.22
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	15.5	0.618 U	0.894 J	1.42 J	14.9	14.2
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	23 J+	1.35 J	0.483 U	2.13 J	22.4 J+	22.3 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	40.1	15.7	3.82 U	16.1	140	31.8
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2.9	4.54	1.47	4.02	22.6	2.22
Total heptachlorodibenzofuran (HpCDF)	pg/g	398 J	31.9 J	19.8 J	48.3 J	440 J	278 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	3980 J	185 J	91.4 J	287 J	1650 J	3340 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	217 J	16.4 J	10.1 J	26.5 J	313 J	208 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	487 J	36.5 J	15.2 J	34.5 J	208 J	334 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	159 J	9.24 J	1.65 J	18.5 J	233 J	150 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	54.8 J	4.85 J	0.401 U	4.69 J	21.1 J	34.2 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	193 J	31.4 J	7.02 J	37.1 J	310 J	173 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	27.1 J	6.49 J	1.47 J	5.25 J	25.4 J	12.9 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	59.9 J	9.26 J	2.64 J	10.3 J	71.8 J	49.1 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	59.9 J	9.31 J	3.14 J	10.3 J	71.8 J	49.2 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-Q1, SC-Q2, SC-Q3, SC-Q4, SC-Q5	SC-P4, SC-P5, SC-P6	SC-Q5, SC-Q6, SC-Q7	SC-P7, SC-P8, SC-P9	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	SCW-QR1
Sample Identification		11215131-122021-S-BN-SC-O-17	11215131-011222-S-BN-SC-O-18	11215131-011222-S-BN-SC-O-19	11215131-020622-S-SB-SC-O-20	11215131-020622-S-SB-SC-O-21	11215131-020622-S-SB-SC-O-22
Sample Date		12/20/2021	01/12/2022	01/12/2022	02/06/2022	02/06/2022	02/06/2022
Sample Type		Overburden	Overburden	Overburden	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	232	181	305	100	390	124
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	12600 J	5500	14000 J	1590	26100 J	4450
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	93.6	69.4	306	21.4	161	33.1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1780	429	1860	160	3170	388
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	16.9	6.54	90.4	2.31 J	34.7	3.16
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	27.8	13.4	777	3.77	92.6	4.82
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.08	4.64	9.15	1.87 J	8.52	1.86 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	12.5	6.39	198	1.91 J	35.9	2.8
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	43.3	14.2	72.4	4.94	71.5	7.93
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.755 J+	0.644 U	1.6 U	0.313 U	0.688 U	0.42 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	24.1	9.33	87.7	3.22	44.4	5.9
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	6.17	5.1 J	383	1.94 J	32.4	2.25 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.46 J	1.91 J	47.4	0.764 J	9.84	1.22 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	13.2	6.34	43.8	2.47	28.2	2.3 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	20.5 J+	7.82	265 J+	2.95	49.6	3.68
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	19.4	80.8	8240 J	34.4	510	21.7
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1.55 J	22.9	2940 J	15.2	199	7.9
Total heptachlorodibenzofuran (HpCDF)	pg/g	277 J	200 J	576 J	67.4 J	499 J	115 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	3370 J	867 J	4150 J	505 J	5890 J	794 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	189 J	108 J	1290 J	33.5 J	399 J	47.1 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	419 J	125 J	1780 J	74.4 J	748 J	83.8 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	145 J	65.9 J	1100 J	25 J	290 J	28.9 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	45.9 J	16.3 J	204 J	10.6 J	82.9 J	8.75 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	143 J	179 J	16300 J	80.8 J	1230 J	59.1 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	15.3 J	28.8 J	3320 J	19.5 J	261 J	7.9 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	48.7 J	47.6 J	4050 J	24.5 J	345 J	20.6 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	48.7 J	47.6 J	4050 J	24.5 J	345 J	20.7 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SCW-QR1	SC-A1	SC-A1	SC-A2	SC-A3	SC-B1	SC-B2
Sample Identification		11215131-020622-S-SB-SC-O-23	11215131-120621-S-JC-DUP-4	11215131-120621-S-JC-SC-S-1	11215131-120621-S-JC-SC-S-2	11215131-120621-S-JC-SC-S-3	11215131-120621-S-SS-SC-S-4	11215131-120621-S-SS-SC-S-5
Sample Date		02/06/2022	12/06/2021	12/06/2021	12/06/2021	12/06/2021	12/06/2021	12/06/2021
Sample Type		Overburden	Duplicate	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**							
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	455	1030	1030	2370	778	110 J	4.01 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	28100 J	28300 J	19900 J	10900 J	27600 J	1610 J	492 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	157	731	557	304	686	36	2.26 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	2560	1560	1130	705	1770	140	37
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	23.5	220	162 J	62.7	190	6.97	0.469 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	34.8	1960	1520	383	1660	27.3	2.7
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	9.95	7.21	4.66	5.22	9.76	1.93 J	0.828 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	17	501	408	105	417	7.61	0.912 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	57.2	46	30.7	23.3	54.1	4.82	1.2 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.89 U	1.38 U	1.04 U	1.06 U	1.41 U	0.115 U	0.106 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	36.9	14.9	11.3	8.5 J	20.8	3.71	1.94 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	11	1240	965	237	978	9.65	1.69 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	6.94 J	101	69.6	22.7	69.7	1.41 J	0.56 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	20.8	106	91.5	30	93.4	3.12	0.386 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	30.1 J+	898	804 J	197	688	7.61 J+	1.34 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	68.4	30300 J	20800 J	6290 J	20600 J	191	38.5
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	15.1	8810 J	5890 J	1640 J	5840 J	66.8	13.6
Total heptachlorodibenzofuran (HpCDF)	pg/g	474 J	1440 J	1080 J	642 J	1440 J	80.4 J	4.9 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	5000 J	3170 J	2350 J	1510 J	3870 J	345 J	124 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	279 J	3150 J	2480 J	743 J	2780 J	66.8 J	6.71 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	605 J	325 J	228 J	181 J	435 J	62.8 J	36.5 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	233 J	3390 J	2820 J	754 J	2770 J	39.4 J	5.31 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	72.7 J	160 J	109 J	46.4 J	118 J	9.35 J	5.3 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	351 J	58900 J	40500 J	12500 J	40400 J	391 J	82 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	51.5 J	9840 J	6600 J	1860 J	6550 J	77.8 J	19.3 J
TEQ								
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	91.9 J	12500 J	8540 J	2430 J	8470 J	97.1 J	19.8 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	91.9 J	12500 J	8540 J	2430 J	8470 J	97.1 J	19.8 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-B3	SC-C1	SC-D1	SC-D2	SC-F1	SC-F2
Sample Identification		11215131-120621-S-SS-SC-S-6	11215131-120721-S-JC-SC-S-7	11215131-120721-S-SS-SC-S-8	11215131-120721-S-SS-SC-S-9	11215131-120421-S-JC-SC-S-10	11215131-120421-S-JC-SC-S-11
Sample Date		12/06/2021	12/07/2021	12/07/2021	12/07/2021	12/04/2021	12/04/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	81.5 J	2920	67.2	144	18.6	25.5
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2050 J	16300 J	3250 J	17800 J	1550	2020
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	21.7	453	30.1	103	13.9	33.9
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	169	925	218	863	135	156
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	2.87	150	3.16	6.91	1.19 J	8.07
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	4.78	1230	7.48	11.9	2.03 J	70.6
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.59 J	6.16	1.74	5.24	1.5 U	0.994 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.29 J	305	3.03	7.44	1.2 J	17.2
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.22	29.9	6.62	25.1	3.72	5.03
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.172 U	0.368 U	0.106 U	0.145 U	0.708 U	0.729 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.48	13.3	4.08	11.3	2.23 J	2.34 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.15 J	840	4.06	3.62	0.874 U	43.9
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.826 J	51.2	1.05 J	2.71 J	0.723 U	4.39
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.23 J	77	3.4	9.31	1.98 J	5.62
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.53 J+	575 J+	4.7 J+	8.43 J+	2.05 J	34.9
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	30.2	14500 J	13.6	12.7	5.35	1080 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	9.39	4840 J	3.22	3.1	1.33	281
Total heptachlorodibenzofuran (HpCDF)	pg/g	81.2 J	966 J	87.2 J	278 J	35.5 J	59.6 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	809 J	1830 J	480 J	1900 J	314 J	366 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	36 J	2020 J	60.7 J	176 J	26 J	124 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	92.8 J	224 J	84.7 J	247 J	41.7 J	56 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	25.2 J	2280 J	43.2 J	92 J	18.5 J	131 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	11.2 J	94.9 J	14.3 J	45.9 J	0.723 U	9.05 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	74.4 J	28400 J	40.2 J	91.3 J	13.3 J	2150 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	17 J	5280 J	12.9 J	28.1 J	3.47 J	314 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	18.8 J	6700 J	13 J	32 J	5.57 J	418 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	18.8 J	6700 J	13 J	32 J	6.05 J	418 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-F3	SC-I1	SC-J1	SC-J2	SC-K2	SC-K3
Sample Identification		11215131-120421-S-JC-SC-S-12	11215131-120621-S-SS-SC-S-13	11215131-120621-S-JC-SC-S-14	11215131-120621-S-JC-SC-S-15	11215131-120421-S-SS-SC-S-16	11215131-120421-S-SS-SC-S-17
Sample Date		12/04/2021	12/06/2021	12/06/2021	12/06/2021	12/04/2021	12/04/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1050	523	123	50.7	103 J	4710 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	5260	9890 J	7230 J	2250 J	2670 J	19200 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	285	173	50.9	18.4	179	511
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	439	1740	399	185	242	1590
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	88.9	13.4	5.62	2.13	69.2	72.8
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	925	9.6	7.15	1.97	614	465
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.45	17.1	2.92 J	1.71 J	1.48 J	7.94
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	226	5.84	4.18	1.24 J	147	128
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	20.6	33	11.5	5.64	8.05	52.9
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	1.32 U	0.288 U	0.116 U	0.127 U	0.229 U	0.544 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	6.3	20.7	6.58	4.3	3.9	27.3
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	384	4.42	3.21	0.597 J	337	281
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	23.6	2.94	1.51 J	0.961 J	33.1	36.6
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	51.5	8.48	3.99	1.58 J	31.5	42.8
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	220	6.7 J+	4.47 J+	1.49 J+	235 J+	233 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	7130 J	32.1	64.3	6.83	7950 J	8310 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1870 J	8.17	22.6	2.27	2950 J	2960 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	601 J	776 J	165 J	53 J	322 J	1350 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	929 J	6760 J	962 J	473 J	516 J	3600 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	1490 J	250 J	76.9 J	28.6 J	938 J	1080 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	172 J	1160 J	142 J	79.9 J	88.9 J	527 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	963 J	64.5 J	38.4 J	14.5 J	888 J	939 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	43.8 J	65.1 J	17.3 J	9.02 J	51.3 J	114 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	13800 J	117 J	142 J	21.4 J	15600 J	16400 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2090 J	23.2 J	37 J	7.14 J	3180 J	3250 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	2820 J	48 J	42 J	8.82 J	3950 J	4010 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	2820 J	48 J	42 J	8.77 J	3950 J	4010 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-N1	SC-N2	SC-N3	SC-O1	SC-P1	SC-Q1
Sample Identification		11215131-122121-S-BN-SC-S-18	11215131-122121-S-BN-SC-S-19	11215131-122121-S-BN-SC-S-20	11215131-122021-S-BN-SC-S-21	11215131-122021-S-BN-SC-S-22	11215131-122021-S-BN-SC-S-24
Sample Date		12/21/2021	12/21/2021	12/21/2021	12/20/2021	12/20/2021	12/20/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	381	2650	3.75 J	17.5	1020	2820
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	53800 J	14700 J	657	828	4640	16800 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	220	288	1.21 J	7.89	329	277
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	1520	1030	28.2	61.5	288	1990
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	15.5	56.3	0.325 U	0.928 J	108	77.3
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	13.7	325	0.37 J	2.53	912	557
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	9.38	9.62	0.46 J	0.937 J	2.17 J	6.24
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	15.2	91.2	0.278 J	1.06 J	218	139
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	50.3	37.6	0.894 J	2.27 J	10.9	45.7
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.76 U	0.742 U	0.211 U	0.282 U	0.635 U	0.831 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	20.9	17.5	1.5 J	1.95 J	5.6	26.6
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	4.15	307	0.567 J	1.76 J	543	391
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	5.08	17.4	0.259 J	0.573 J	44.8	34.4
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	14.7	33.1	0.258 U	0.814 J	45	36.4
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	12.9 J+	225 J+	0.407 J	1.71 J	392 J+	304
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	14.3	3840 J	3.61	23.8	12600 J	9050 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	3.36	1330 J	0.95	8.11	4390 J	2980 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	672 J	715 J	2.42 J	22.3 J	573 J	614 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	3340 J	2110 J	88.2 J	154 J	576 J	3670 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	336 J	747 J	2.11 J	16.6 J	1400 J	985 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	423 J	303 J	26.3 J	30.8 J	100 J	466 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	192 J	962 J	3.96 J	14 J	1470 J	1180 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	50.6 J	59.1 J	4.05 J	3.71 J	73.6 J	98.6 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	128 J	7580 J	21.2 J	49.6 J	24400 J	18000 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	37.3 J	1510 J	4.98 J	10.3 J	4880 J	3360 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	60.1 J	1880 J	2.55 J	13.5 J	5960 J	4130 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	60.1 J	1880 J	2.58 J	13.6 J	5960 J	4130 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	South Central	South Central	South Central
Sample Location		SC-Q2	SC-N6	SC-P5	SC-Q5	SC-Q6	SC-P7, SC-P8, SC-P9
Sample Identification		11215131-122021-S-BN-SC-S-25	11215131-011222-S-BN-SC-S-26	11215131-011222-S-BN-SC-S-27	11215131-011222-S-BN-SC-S-28	11215131-011222-S-BN-SC-S-29	11215131-020622-S-SB-SC-S-30
Sample Date		12/20/2021	01/12/2022	01/12/2022	01/12/2022	01/12/2022	02/06/2022
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	15.6	22.9	25.6	130	638	7.87
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1160	1420	1280	2120	9610 J	454
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	12.1	16.4	11.2	277	948	4.04
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	111	80.5	131	139	913	28.4
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	2.95	3.41	1.24 J	87.2	383	0.827 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	21.1	27.8	6.07	777	3880	7.14
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.884 J	0.789 U	1.19 J	0.966 J	3.52	0.484 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	5.37	7.15	1.88 J	190	952	2.03 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.33	2.15	2.82 J	3.86	20.9	0.811 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.299 U	0.596 U	0.357 U	0.422 U	0.692 U	0.328 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.8	1.68 J	3.06	2.17	8.22	1.16 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	13.3	20.1	3.94	389	2310	3.82
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.56 J	2.38	0.82 J	29	115	0.601 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.31 J	2.04 J	1.3 J	32.1	207	0.406 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	10.8	15.8	3.74	268	1340 J+	3.04 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	299	491	66.1	9440 J	34200 J	90.8
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	114	129	6.89	2680 J	9900 J	33.9
Total heptachlorodibenzofuran (HpCDF)	pg/g	26.3 J	41.2 J	28.3 J	426 J	1620 J	9.75 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	237 J	179 J	361 J	302 J	1670 J	79.7 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	37.9 J	55.2 J	23.1 J	1150 J	5860 J	12.8 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	47 J	25.4 J	60.7 J	43.5 J	171 J	20 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	40.6 J	61.7 J	18.3 J	1010 J	5670 J	9.93 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	10.1 J	3.98 J	6.3 J	41.3 J	159 J	3 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	603 J	936 J	132 J	18800 J	67200 J	185 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	134 J	145 J	13.6 J	2960 J	10900 J	38.6 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	154 J	191 J	19.0 J	3850 J	14400 J	46.2 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	154 J	191 J	19.0 J	3850 J	14400 J	46.3 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		South Central	South Central	South Central	Southwest	Southwest
Sample Location		SC-P7, SC-P8, SC-P9	SC-Q8, SC-Q9, SC-Q10, SC-Q11, SC-Q12	SC-Q13	SW-A1, SW-A2, SW-A3, SW-A4, SW-A5	SW-B1, SW-B2, SW-B3, SW-B4, SW-B5
Sample Identification		11215131-020622-S-SB-SC-S-31	11215131-020622-S-SB-SC-S-32	11215131-021722-S-SB-SC-S-33	11215131-120221-S-JC-SW-B-1	11215131-120221-S-JC-SW-B-2
Sample Date		02/06/2022	02/06/2022	02/17/2022	12/02/2021	12/02/2021
Sample Type		Sidewall	Sidewall	Sidewall	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	34.2	1780	163	83.7	201
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1040	63300 J	9260	2350	2590
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	11.7	563	46.8	90.2	134
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	79.3	5760 J	1050	143	218
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.12 J	174	8.66	35.5	47.3
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.22 J	1010	12.3	336	399
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.877 J	15.9	3.45 J	0.897 J	2.78
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.09 J	247	6.25	83.8	94.6
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.18 J	120	30	3.85	10
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.269 U	0.68 U	0.311 U	0.713 U	0.78 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.02 J	82.1	29	2.55	5.08
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.752 J	425	4.68	213	223
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.372 J	39.1	5.55	16.7	12.6
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.2 J	88.1	6.36	16.4	19.1
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.28 J	292	9.51 J+	168	146
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	5.52	7180 J	55.7	5540 J	4260 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1.96	2710 J	16.2	1520 J	1180 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	34.5 J	1440 J	153 J	162 J	239
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	267 J	10900 J	2190 J	304 J	415
Total hexachlorodibenzofuran (HxCDF)	pg/g	18.3 J	1970 J	90 J	505 J	616
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	65.6 J	1260 J	573 J	48.5 J	81.1
Total pentachlorodibenzofuran (PeCDF)	pg/g	10.1 J	1330 J	67.3 J	595 J	584
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	10.6 J	163 J	50.2 J	28.1 J	32.1
Total tetrachlorodibenzofuran (TCDF)	pg/g	19.4 J	14400 J	165 J	11200 J	8630
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	10.7 J	3040 J	37.3 J	1690 J	1300
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	5.49 J	3810 J	52.9 J	2200 J	1730 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	5.51 J	3810 J	52.9 J	2200 J	1730 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**Southwest**	**Southwest**	**Southwest**	**Southwest**	**Southwest**
Sample Location		**SW-B1, SW-B2, SW-B3, SW-B4, SW-B5**	**SW-C1, SW-C2, SW-C3, SW-C4, SW-C5**	**SW-C1, SW-C2, SW-C3, SW-C4, SW-C5**	**SW-D1, SW-D2, SW-D3, SW-D4, SW-D5**	**SW-D1, SW-D2, SW-D3, SW-D4, SW-D5**
Sample Identification		**11215131-120221-S-JC-SW-B-2H**	**11215131-120321-S-JC-SW-B-3**	**11215131-120321-S-JC-SW-B-3H**	**11215131-120221-S-SPS-SW-B-4**	**11215131-120221-S-SPS-SW-B-4H1**
Sample Date		**12/02/2021**	**12/03/2021**	**12/03/2021**	**12/02/2021**	**12/02/2021**
Sample Type		**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	14.7	54.4	2.45 J	2830	1130
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	448	1770	352	4780	1530
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	6.13	85.7	2.29 J+	223	63.2 J+
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	29.7	120	18.3	326	93.6
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.12 J	35.9	0.485 U	47.9	9.46
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	4.8	354	7.93	359	68.1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.379 U	0.695 J	0.82 U	2.39 J	1.55 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.31 J	85.8	2.3 J	84.3	19.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.998 J	2.98	0.706 U	10.7	4.16
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.229 U	0.913 U	0.604 U	1.03 U	0.559 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.15 J	1.85 J	0.71 U	4.92 J	2.77
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.2 J	233	4.91	235	42.5
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.295 U	16.2	0.761 U	25.3	4.81 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.591 J	18.1	0.546 U	21.5	4.04
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.63 J	179	3.17 J	205	36.7
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	47.2	5490 J	128	7980 J	1430 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	18.9	1510 J	43.5	2280 J	513
Total heptachlorodibenzofuran (HpCDF)	pg/g	13.8 J	158	3.3 J	398	113 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	94.2 J	262	58.3 J	740	233 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	13.5 J	532	11.2 J	594	130 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	33.3 J	47.3	18.3 J	105	54.1 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	7.9 J	648	12 J	744	143 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	6.51 J	27.2	2.28 J	49.3	13.7 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	96.5 J	11100	265 J	16000	2900 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	28.4 J	1670	50.4 J	2530	583 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	25.6 J	2190 J	58.7 J	3230 J	686 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	25.7 J	2190 J	59.3 J	3230 J	686 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-D1, SW-D2, SW-D3, SW-D4, SW-D5	SW-E1, SW-E2, SW-E3, SW-E4, SW-H1, SW-H2	SW-E1, SW-E2, SW-E3, SW-E4, SW-H1, SW-H2	SW-F1, SW-F2, SW-G1, SW-I1, SW-I2	SW-F1, SW-F2, SW-G1, SW-I1, SW-I2
Sample Identification		11215131-120221-S-SPS-SW-B-4H2	11215131-120321-S-SPS-SW-B-5	11215131-120321-S-SPS-SW-B-5H	11215131-120321-S-JC-SW-B-6	11215131-120321-S-JC-SW-B-6H
Sample Date		12/02/2021	12/03/2021	12/03/2021	12/03/2021	12/03/2021
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	593	5830	2040	4560	2100
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	725	6510	2560	3880 J	2060
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	43.3	390	87.7 J+	185	96 J+
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	44.2	436	162	260	147
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.67 J	91.1	8.16	41.7	8.78
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.28 J	684	26.9	162	19.8
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.913 J	3.79	1.35 J	3.51	2.35 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.794 J	175	8.21	41.2	9.53
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.77 J	15.9	6.86	13.6	8.11
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.233 U	1.47 U	0.5 U	0.597 U	0.604 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.62 J	7.42	4.24	7.35	4.49
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.56 J	424	17.9	78.2	9.16
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.82 J	33	2.76	11	3.64
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.71 J	38.1	4	12.4	6.48
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.21 J	302	17.6 J+	70.3 J+	16.3
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	68.9	10600 J	579	2650 J	294
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	20.4	2900 J	194	888	83.4
Total heptachlorodibenzofuran (HpCDF)	pg/g	57.8 J	702	170 J	387	185 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	136 J	1040	463 J	642	364 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	14.4 J	1140	97.3 J	334	109 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	33.2 J	166	103 J	146	96.7 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	13.8 J	1210	97.3 J	283	136 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	7.39 J	70.3	23 J	41	50.1 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	145 J	21000	1160 J	5280	708 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	28.5 J	3220	228 J	1020	135 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	30.9 J	4200 J	270 J	1220 J	130 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	30.9 J	4200 J	270 J	1220 J	130 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest
Sample Location		SW-J1, SW-J2, SW-J3, SW-J3, SW-J4, SW-J5	SW-J1, SW-J2, SW-J3, SW-J3, SW-J4, SW-J5	SW-J1, SW-J2, SW-J3, SW-J3, SW-J4, SW-J5	SW-K1, SW-K2, SW-K3, SW-K3, SW-K4, SW-K5
Sample Identification		11215131-120321-S-SS-SW-B-7	11215131-120321-S-SS-SW-B-7H1	11215131-120321-S-SS-SW-B-7H2	11215131-120821-S-JC-SW-B-8
Sample Date		12/03/2021	12/03/2021	12/03/2021	12/08/2021
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**				
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	213	904	6030	1100
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1840	1220	5090	3240
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	135	53.7 J+	216	155
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	145	70.7	344	243
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	49.7	2.61	38.8	50.3
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	436	4.3 J	234	401
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.32 J	0.933 J	3.33	1.95 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	105	1.76 J	62.7	97.2
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.09	3.16	15.8	7.42
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.167 U	0.667 U	0.693 U	0.213 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3	2.06 J	7.44	4.22
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	280	3.06	158	225
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	19.8	0.794 J	19.9	20
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	22.5	0.935 J	17	20.3
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	200 J+	3.89	141	165 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	5720 J	122	5250 J	5460 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1970 J	38.1	1760 J	1930 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	234 J	76.8 J	436 J	281 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	385 J	190 J	829 J	623 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	660 J	20.5 J	461 J	627 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	112 J	44.5 J	168 J	119 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	761 J	20.3 J	538 J	625 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	44.2 J	9.09 J	54.9 J	42.5 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	11300 J	250 J	10100 J	10700 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2220 J	52.1 J	2000 J	2170 J
TEQ					
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	2690 J	55.6 J	2400 J	2610 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	2690 J	55.6 J	2400 J	2610 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-K1, SW-K2, SW-K3, SW-K3, SW-K4, SW-K5	SW-K1, SW-K2, SW-K3, SW-K3, SW-K4, SW-K5	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5
Sample Identification		11215131-120821-S-JC-SW-B-8H1	11215131-120821-S-JC-SW-B-8H2	11215131-120221-S-SPS-SW-B-9	11215131-120221-S-SPS-SW-B-9H1	11215131-120221-S-SPS-SW-B-9H2
Sample Date		12/08/2021	12/08/2021	12/02/2021	12/02/2021	12/02/2021
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	82.4	1.59 J	2460	884	0.546 U
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	639	499	5490	1310	350
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	7.95 J+	0.342 J	677	46.9 J+	0.162 U
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	33.3	25.6	384 J-	69.4	18.1
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.02 J	0.292 U	270 J	3.44	0.257 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	6.52	0.511 J	2390	7.81	0.159 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.887 U	0.359 U	2.38 J	0.647 U	0.426 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.73 J	0.184 U	578	2.91	0.147 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.09 J	0.76 J	11.3	2.62	0.846 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.324 U	0.238 U	3.19 U	0.515 U	0.168 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.51 J	1.26 J	5.56	2.29 J	1.19 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.62	1.13 J	889	5.16	0.18 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.937 U	0.346 U	50.1 J	1.26 J	0.331 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.432 U	0.192 U	84.7 J	1.51 J	0.141 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.78 J	0.619 J	509	5.92	0.176 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	98.6	13.1	15700 J	176	0.207 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	37.1	3.86	4560 J	56.3	0.341 U
Total heptachlorodibenzofuran (HpCDF)	pg/g	11.5 J	0.731 J	1160 J	80.8 J	0.203 U
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	100 J	79.7 J	772 J	188 J	52.6 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	11.6 J	0.511 J	3450 J	37.6 J	0.152 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	29.8 J	23 J	105 J	49.6 J	15.3 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	10.2 J	2.58 J	2130 J	38.8 J	0.178 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	6.07 J	4.83 J	78.3 J	11.3 J	0.886 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	215 J	39.6 J	30100 J	342 J	0.765 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	46.8 J	6.14 J	4980 J	65.5 J	1.24 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	49.6 J	6.05 J	6680 J	80.7 J	0.490 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	50.2 J	6.28 J	6680 J	80.7 J	0.919 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-M1, SW-M2, SW-M3, SW-M4, SW-M5	SW-N1, SW-N2, SW-N3, SW-N4, SW-N5	SW-O1, SW-O2, SW-O3, SW-O4, SW-O5	SW-O1, SW-O2, SW-O3, SW-O4, SW-O5	SW-P1, SW-P2
Sample Identification		11215131-120821-S-JC-SW-B-10	11215131-120821-S-SS-SW-B-11	11215131-120821-S-SS-SW-B-12	11215131-120821-S-SS-SW-B-12H	11215131-010622-S-BN-SW-B-13
Sample Date		12/08/2021	12/08/2021	12/08/2021	12/08/2021	01/06/2022
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	0.535 U	3.89 J	5.7	1.47 J	3.35 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	422 J	605	743	608	1510
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	0.289 J	5.05	7.49	0.937 J	1.32 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	20.4	42.1	55.3	29.8	39.4
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.157 U	1.67 J	2.68	0.257 U	0.239 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.539 J	16.3	24.1	2.53 J	0.225 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.449 J	0.835 J	1.01 J	0.711 J	0.8 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.139 J	3.81	5.94	0.582 J	0.223 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.631 J	1.34 J	1.75 J	1.04 J	1.1 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.098 U	0.211 U	0.161 U	0.156 U	0.244 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.28 J	2.23 J	2.51	1.98 J	1.77 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.517 J	9.71	16	2.09 J	0.271 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.232 J	1.29 J	2.12 J	0.742 J	0.269 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.111 U	0.754 J	1.25 J	0.144 U	0.282 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.463 J	7.43	13.6 J+	1.6 J	0.274 U
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	11.6	258	454	56.5	4.92
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	3.88	96.4	168	22.2	2.27
Total heptachlorodibenzofuran (HpCDF)	pg/g	0.289 J	8.95 J	14 J	1.47 J	2.17 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	85.3 J	117 J	146 J	92.7 J	127 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	0.803 J	24.1 J	37 J	3.39 J	0.241 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	47.6 J	33.5 J	41.9 J	37.6 J	31.1 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	1.55 J	27.1 J	46.7 J	5.6 J	0.273 U
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	8.25 J	6.73 J	9.74 J	8.14 J	3.72 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	26 J	530 J	929 J	118 J	10.8 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	17.1 J	113 J	195 J	33 J	4.72 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	6.06 J	129 J	225 J	30.3 J	3.99 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	6.08 J	129 J	225 J	30.3 J	4.22 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**Southwest**	**Southwest**	**Southwest**	**Southwest**	**Southwest**
Sample Location		**SW-P3, SW-P4, SW-P5**	**SW-P3, SW-P4, SW-P5**	**SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5**	**SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5**	**SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5**
Sample Identification		**11215131-010622-S-BN-SW-B-14**	**11215131-010622-S-BN-SW-B-14H**	**11215131-010622-S-BN-DUP-10**	**11215131-010622-S-BN-SW-B-15**	**11215131-010622-S-BN-SW-B-15H1**
Sample Date		**01/06/2022**	**01/06/2022**	**01/06/2022**	**01/06/2022**	**01/06/2022**
Sample Type		**Excavation Bottom**	**Excavation Bottom**	**Duplicate**	**Excavation Bottom**	**Excavation Bottom**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	166	14.2	3520	1690	2350
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	3340	474	4430	2690	2560
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	126	3.41	264	110	227
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	280	27.6	254	153	170
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	42.8	0.45 J	37.6	20.7	10.8
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	363	2.54	269	138	28.1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.22	0.333 J	3.1	1.61 J	2.22 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	108	0.776 J	74.5	38.2	11.5
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	11.5	0.686 J	11.5	6	7.98
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.278 U	0.186 U	0.716 U	0.431 U	0.488 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	7.61	0.91 J	6.84	3.67	4.75
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	197	1.64 J	137	78	13.5
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	7.6	0.255 J	10.2	5.56	2.47
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	23.5	0.243 J	18.6	9.43	5.37
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	120	1.26 J	92.3 J+	59	14.7 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	1910 J	36.8	2520 J	1400 J	345
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	703	14.7	914	513	105
Total heptachlorodibenzofuran (HpCDF)	pg/g	232 J	5.87 J	425 J	204 J	325 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	590 J	66.7 J	610 J	382 J	477 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	618 J	5.2 J	544 J	259 J	118 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	103 J	21.7 J	136 J	81.1 J	110 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	491 J	4.93 J	434 J	245 J	108 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	26.6 J	3.5 J	33 J	16.4 J	25.6 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	3850 J	81.4 J	4820 J	2780 J	698 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	803 J	19.4 J	1030 J	581 J	133 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1000 J	20.1 J	1250 J	702 J	158 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1000 J	20.1 J	1250 J	702 J	158 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5	SW-Q6, SW-Q7, SW-Q8	SW-Q6, SW-Q7, SW-Q8	SW-Q6, SW-Q7, SW-Q8	SW-R1, SW-R2, SW-R3, SW-S1, SW-S2, SW-S3
Sample Identification		11215131-010622-S-BN-SW-B-15H2	11215131-011922-S-BN-SW-B-21	11215131-011922-S-BN-SW-B-21H1	11215131-011922-S-BN-SW-B-21H2	11215131-010722-S-BN-SW-B-16
Sample Date		01/06/2022	01/19/2022	01/19/2022	01/19/2022	01/07/2022
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	123	4980	2970	581	302
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	549	5770	3200	1040	1250
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	15.3	595	120	35.7	93.6
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	28.7	372	191	55	75.4
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.269 U	218 J-	14	2.89	36.6
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.59	2040	31.7	4.59	290
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.54 J	3.64	2.01 J	0.881 J	0.793 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.597 J	545	8.76	1.35 J	76.4
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.969 J	14.1	8.97	2.27 J	2.59
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.248 U	0.854 U	0.407 U	0.417 U	0.284 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.23 J	7.4	5.48	2.17 J	2.18 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.51 J	1000	20.7	2.99	157
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.332 U	45.9	3.6	1.03 J	23.3
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.206 U	111	4.95	1.42 J	13.6
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.12 J	512	21.7 J+	3.59 J+	129
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	28.2	12300 J	682	91.1	6420 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	10.3	4450 J	238	28.4	2310 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	17.9 J	1080 J	230 J	59 J	173 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	90.8 J	794 J	449 J	146 J	186 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	5.75 J	3210 J	117 J	22.6 J	451 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	27 J	150 J	105 J	39.2 J	42 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	4.24 J	2330 J	115 J	22.9 J	449 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	4.01 J	82.4 J	24 J	8.11 J	32.9 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	54.3 J	23500 J	1350 J	188 J	12500 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	13.9 J	5020 J	280 J	36.8 J	2600 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	14.7 J	6200 J	328 J	42.4 J	3060 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	14.9 J	6200 J	328 J	42.4 J	3060 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-R1, SW-R2, SW-R3, SW-S1, SW-S2, SW-S3	SW-R4, SW-R5, SW-R6	SW-R4, SW-R5, SW-R6	SW-U1, SW-U2, SW-U3, SW-U4, SW-U5	SW-U1, SW-U2, SW-U3, SW-U4, SW-U5
Sample Identification		11215131-010722-S-BN-SW-B-16H	11215131-011922-S-BN-SW-B-20	11215131-011922-S-BN-SW-B-20H	11215131-010522-S-BN-SW-B-17	11215131-010522-S-BN-SW-B-17H1
Sample Date		01/07/2022	01/19/2022	01/19/2022	01/05/2022	01/05/2022
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	0.481 U	1820	2660	91.5	1.75 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	477	15900 J	2810	2800	388
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	0.472 J	1250	88.9	159	0.655 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	25.5	965	166	163	16.2
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.266 U	493	10.7	67.1	0.339 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.763 J	4830	15.3	583	1.1 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.449 U	5.19	1.82 J	1.11 J	0.418 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.331 J	1150	4.79	150	0.209 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.695 J	27.2	7.47	4.95	0.682 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.188 U	1.12 U	0.351 U	0.452 U	0.249 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.39 J	8.06	4.67	2.91	1.22 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.533 J	3060	9.61	329	0.622 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.537 J	196	2.5	28.8	0.202 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.152 U	257	4.19	27.6	0.174 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.198 U	1880 J+	13.1 J+	240	0.554 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	7.07	53700 J	408	8040 J	11.9
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2.42	20100 J	132	2910 J	4.25
Total heptachlorodibenzofuran (HpCDF)	pg/g	0.472 J	2200 J	184 J	294 J	0.655 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	83.1 J	2030 J	403 J	327 J	61.7 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	1.09 J	7290 J	83.1 J	893 J	1.1 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	33.8 J	235 J	88.3 J	58.3 J	23 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	0.533 J	7530 J	79.8 J	871 J	1.55 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	8.5 J	267 J	20.8 J	42.2 J	4.34 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	21.1 J	91400 J	824 J	15500 J	25.2 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	18.8 J	22500 J	163 J	3270 J	6.85 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	4.40 J	27000 J	188 J	3910 J	6.25 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	4.47 J	27000 J	188 J	3910 J	6.39 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-U1, SW-U2, SW-U3, SW-U4, SW-U5	SW-T1, SW-T2, SW-T3, SW-T4, SW-T5	SW-V1, SW-V2, SW-V3, SW-V4, SW-V5	SW-V1, SW-V2, SW-V3, SW-V4, SW-V5	SW-R7, SW-R8, SW-R9, SW-R10, SW-R11
Sample Identification		11215131-010522-S-BN-SW-B-17H2	11215131-010722-S-BN-SW-B-18	11215131-010522-S-BN-SW-B-19	11215131-010522-S-BN-SW-B-19H1	11215131-020422-S-SB-SW-B-24
Sample Date		01/05/2022	01/07/2022	01/05/2022	01/05/2022	02/04/2022
Sample Type		Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	0.543 U	1.36 U	0.74 U	1.39 J	741
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	756	477	445	423	4520
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	0.138 U	0.325 U	0.277 J	1.16 J	594
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	27.1	21.6	22.1	22.5	313
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.25 U	0.531 U	0.331 U	0.3 J	207
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.157 U	0.526 U	0.957 J	2.82	1750
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.513 J	0.71 U	0.488 U	0.405 J	2.24 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.136 U	0.482 U	0.231 U	0.672 J	471
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.889 J	0.808 J	0.773 J	0.833 J	10.7
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.183 U	0.679 U	0.313 U	0.22 U	0.473 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.68 J	1.05 J	1.32 J	0.998 J	4.81
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.15 U	0.882 J	0.349 U	1.5 J	1050
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.281 U	0.6 U	0.467 U	0.464 J	85.7
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.149 U	0.959 U	0.272 U	0.188 U	93.7
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.153 U	0.54 U	0.346 U	0.796 J	707
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	1.34 J	12.7	14.3	31	23000 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	0.615	3.44	5.81	12.2	8910 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	0.183 U	0.4 U	0.277 J	1.89 J	968 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	93.4 J	85.5 J	70.1 J	71 J	612 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	0.154 U	0.622 U	0.957 J	3.96 J	2690 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	32.5 J	30.1 J	21.3 J	23.4 J	88.1 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	0.151 U	0.882 J	0.347 U	3.51 J	2690 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	4.79 J	6.43 J	2.19 J	4.35 J	114 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	4.26 J	24.4 J	28.9 J	66.7 J	39700 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	4.12 J	9.85 J	8.63 J	19.6 J	9960 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1.56 J	5.28 J	7.90 J	17.0 J	11800 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1.75 J	5.83 J	8.26 J	17.0 J	11800 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-R7, SW-R8, SW-R9, SW-R10, SW-R11	SW-R7, SW-R8, SW-R9, SW-R10, SW-R11	SW-Q9, SW-Q10, SW-Q11, SW-Q12, SW-Q13	SW-Q9, SW-Q10, SW-Q11, SW-Q12, SW-Q13	SW-Q9, SW-Q10, SW-Q11, SW-Q12, SW-Q13
Sample Identification		11215131-020422-S-SB-DUP-15	11215131-020422-S-SB-SW-B-24H	11215131-020422-S-SB-SW-B-25	11215131-020422-S-SB-SW-B-25H1	11215131-020422-S-SB-SW-B-25H2
Sample Date		02/04/2022	02/04/2022	02/04/2022	02/04/2022	02/04/2022
Sample Type		Duplicate	Excavation Bottom	Excavation Bottom	Excavation Bottom	Excavation Bottom
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	1300	1260	164	122	1.37 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1880	2280	2850	519	310
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	70.1	85.7	194	24	0.513 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	136	130	78.2	29	12.6
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	15.3	4.91	102	6.94	0.261 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	142	12.2	840	58.9	1.11 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.74 J	1.17 J	0.677 J	0.414 U	0.432 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	31.7	3.83	206	14.5	0.244 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.93 J	5.09	1.71 J	0.986 J	0.436 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.522 U	0.31 U	1.43 U	0.429 U	0.26 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.08	3.04	1.16 J	1 J	0.679 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	84.1	7.75	412	27.6	0.624 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.59 J	1.63 J	14.3	1.97 J	0.314 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	8.74	2.52	37.3	2.77	0.221 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	36.4	6.78	258	17.3	0.387 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	216	200	4800 J	454	6.53
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	69.1	68.8	1420 J	136	1.92
Total heptachlorodibenzofuran (HpCDF)	pg/g	148 J	158 J	354 J	38.2 J	0.513 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	401 J	315 J	195 J	90.1 J	47.9 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	242 J	54.7 J	1240 J	89.3 J	1.35 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	82.4 J	66.8 J	30.1 J	21.9 J	21.1 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	197 J	41.3 J	1040 J	68.7 J	1.29 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	13.3 J	14 J	21 J	4.98 J	3.09 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	437 J	405 J	9280 J	895 J	11.9 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	84.9 J	84.4 J	1580 J	151 J	9.46 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	128 J	98.7 J	2120 J	198 J	3.22 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	128 J	98.8 J	2120 J	198 J	3.40 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**Southwest**	**Southwest**	**Southwest**	**Southwest**	**Southwest**
Sample Location		**SW-T7, SW-T8, SW-T9, SW-T10, SW-T11**	**SW-T12, SW-T13, SW-T14, SW-T15, SW-T16**	**SW-V6**	**SW-V6**	**SW-V7**
Sample Identification		**11215131-012022-S-BN-SW-B-22**	**11215131-020522-S-SB-SW-B-26**	**11215131-011922-S-BN-SW-B-23**	**11215131-011922-S-BN-SW-B-23H**	**11215131-020422-S-SB-SW-B-27**
Sample Date		**01/20/2022**	**02/05/2022**	**01/19/2022**	**01/19/2022**	**02/04/2022**
Sample Type		**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**	**Excavation Bottom**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	0.807 U	0.612 U	0.557 U	2.83 J	3 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	439	539	525	349	390
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	0.17 U	0.199 U	0.403 J	0.817 J	0.409 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	21.6	27.5	18.6	16.8	20
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.358 U	0.333 U	0.665 U	0.265 U	0.279 U
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.288 U	0.49 J	0.986 J	0.56 J	0.178 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.493 U	0.689 J	0.483 U	0.25 U	0.574 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.267 U	0.194 U	0.251 U	0.17 U	0.169 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.558 J	1.16 J	0.421 U	0.228 U	0.685 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.346 U	0.3 U	0.324 U	0.222 U	0.269 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.09 J	1.96 J	1.34 J	1.11 J	1.16 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.278 U	0.839 J	0.385 U	0.159 U	0.57 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.414 U	0.441 J	0.757 U	0.341 U	0.31 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.246 U	0.234 U	0.229 U	0.184 U	0.232 U
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.298 U	0.647 J	0.68 J	0.157 U	0.363 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	2.14	4.1	10.4	4.85	1.71
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	0.815	1.72	3.86 J	1.79	0.36 U
Total heptachlorodibenzofuran (HpCDF)	pg/g	0.24 U	0.254 U	0.403 J	2.27 J	0.409 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	74.7 J	95.7 J	67.1 J	53.6 J	64.4 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	0.28 U	0.894 J	0.986 J	0.56 J	0.206 U
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	26.2 J	37.2 J	20.6 J	23.8 J	17.5 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	0.288 U	4.87 J	0.68 J	0.158 U	2.18 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.21 J	6.14 J	3.16 J	4.2 J	2.32 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	3.88 J	20.1 J	22.7 J	8.19 J	20.3 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	7.1 J	6.77 J	6.49 J	7.38 J	2.03 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1.54 J	3.66 J	5.68 J	2.729 J	0.861 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1.88 J	3.66 J	6.16 J	2.97 J	1.24 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-V7	SW-A1, SW-A2, SW-A3, SW-A4, SW-A5	SW-A1, SW-A2, SW-A3, SW-A4, SW-A5	SW-B1, SW-B2, SW-B3, SW-B4, SW-B5	SW-D1, SW-D2, SW-D3, SW-D4, SW-D5
Sample Identification		11215131-020422-S-SB-SW-B-27H	11215131-120221-S-JC-SW-DUP-1	11215131-120221-S-JC-SW-O-1	11215131-120221-S-JC-SW-O-2	11215131-120221-S-SPS-SW-O-3
Sample Date		02/04/2022	12/02/2021	12/02/2021	12/02/2021	12/02/2021
Sample Type		Excavation Bottom	Duplicate	Overburden	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	0.492 U	136	122	79.7	92.3
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	329	3850	3630 J	3610	5210
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	0.119 U	39.9	35.6	39.7	128
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	14.4	227	208	208	108
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.206 U	4.49	4.59	5.27	58.9
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.19 U	13.6	16	24.8	480
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.458 J	2.41 J	2.08 J	2.28 J	1.11 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.173 U	5.21	5.51	9.47	115
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.66 J	6.46	6.18	6.08	3.02
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.276 U	0.541 U	0.555 U	0.699 U	0.922 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.865 J	4.5	4.14	4.01	2.5
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.21 U	7.93	9.36	15.2	205
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.313 J	1.62 J	1.77 J	2.32 J	13.7
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.243 U	4.38	3.73	5.73	21.4
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.226 U	7.95	9.25	15.6	141
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	0.186 U	146	196	294	4370 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	0.387 U	33.1	47.7 J-	71.8	1220 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	0.15 U	100 J	92.9 J	92.5	226
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	69 J	541 J	476 J	467	240
Total hexachlorodibenzofuran (HxCDF)	pg/g	0.214 U	64.3 J	61.1 J	84.7	706
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	33.4 J	71.1 J	63 J	64.9	36.3
Total pentachlorodibenzofuran (PeCDF)	pg/g	0.217 U	52.9 J	56.5 J	90.8	530
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	6.18 J	9.35 J	10.3 J	15	20.6
Total tetrachlorodibenzofuran (TCDF)	pg/g	0.224 J	305 J	410 J	610	8820
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	8.61 J	39.8 J	56.4 J	84.9	1350
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	0.754 J	59.5 J	79.5 J	118 J	1790 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1.04 J	59.5 J	79.5 J	118 J	1790 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-E1, SW-E2, SW-E3, SW-E4	SW-H1, SW-H2, SW-H3, SW-H4	SW-K1, SW-K2, SW-K3, SW-K3, SW-K4, SW-K5	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5	SW-L1, SW-L2, SW-L3, SW-L4, SW-L5
Sample Identification		11215131-120321-S-SPS-SW-O-4	11215131-120321-S-SPS-SW-O-5	11215131-120821-S-JC-SW-O-6	11215131-120221-S-SPS-DUP2	11215131-120221-S-SPS-SW-O-7
Sample Date		12/03/2021	12/03/2021	12/08/2021	12/02/2021	12/02/2021
Sample Type		Overburden	Overburden	Overburden	Duplicate	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	83.3	14.6	80.7	25.3	48.6
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	5000	2170	1600	4710	3260
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	27.1	15.6	79.9	11.5	27.6
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	227	74.2	139	93	111
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.94 J	7.2	27.9	2.37 J	6.42
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.35 J	65.7	187	21.6	58.3
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.78 J	0.673 J	1.48 J	0.827 U	1.03 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.35 J	15.6	45.1	5.66	14.9
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.84	1.79 J	3.93	1.59 J	2.85 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.464 U	0.608 U	0.154 U	0.837 U	0.617 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.6	2.27 J	3.01	1.59 J	2.35 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.04 J	36.4	104	11.7	34.4
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.69 J	3.32	9.55	1.26 J	3.8
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.79 J	3.26	8.67	0.962 J	3.86
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.77 J	33.8	80.6 J+	9.53	26.6
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	13.9	1180 J	2630 J	260 J	943 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2.71 J	330	938	65.5 J	264 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	73.4	30.6	142 J	23.7 J	56.4 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	730	203	319 J	251 J	283 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	29.9	99.8	288 J	38.3 J	101 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	90.3	47	48.5 J	48.9 J	39 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	14.6	112	292 J	35.3 J	103 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	7.05	10.6	18.5 J	7.3 J	7.22 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	30.7	2390	5260 J	516 J	1850 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	4.64	373	1050 J	75.3 J	295 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	11.0 J	473 J	1270 J	102 J	382 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	11.0 J	473 J	1270 J	102 J	382 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-M1, SW-M2, SW-M3, SW-M4, SW-M5	SW-M1, SW-M2, SW-M3, SW-M4, SW-M5	SW-N1, SW-N2, SW-N3, SW-N4, SW-N5	SW-O1, SW-O2, SW-O3, SW-O4, SW-O5	SW-O1, SW-O2, SW-O3, SW-O4, SW-O5
Sample Identification		11215131-120821-S-JC-DUP-6	11215131-120821-S-JC-SW-O-8	11215131-120821-S-SS-SW-O-9	11215131-120821-S-SS-DUP-5	11215131-120821-S-SS-SW-O-10
Sample Date		12/08/2021	12/08/2021	12/08/2021	12/08/2021	12/08/2021
Sample Type		Duplicate	Overburden	Overburden	Duplicate	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	18	39.1	9.84	18.7	28.1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	4430 J	2560 J	1750 J	8340	8470
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	7.63	9.12	4.08	6.41	13.1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	76.6	64.6	49.7	144	185
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	1.69 J	1.31 J	0.561 J	0.946 J	2.13 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	7.3	5.51	1.58 J	3.19 J	14.1 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.801 J	0.673 J	0.675 J	1.6 J	2.23 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.79 J	1.56 J	0.451 J	1.04 J	3.86
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.59 J	2.1 J	1.29 J	2.53	4.65
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.178 U	0.218 U	0.129 U	0.147 U	0.289 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.52 J	1.62 J	1.21 J	2.73	3.91
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.99	3.55	0.919 J	1.74 J	10.7 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.903 J	0.749 J	0.39 J	1.04 J	2.22 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.74 J	0.774 J	0.285 J	0.61 J	1.3 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.66 J+	3.27 J+	0.678 J	1.65 J+	9.45 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	114	89.8	11.9	37.1 J	299 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	42.5	34.1 J+	4.48	12.4 J	107 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	18.7 J	24 J	11.8 J	15.2 J	34.2 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	172 J	150 J	117 J	350 J	446 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	17.1 J	17.2 J	6.73 J	10.6 J	32.4 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	22 J	26.9 J	17.2 J	29.4 J	49.4 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	15.2 J	14.9 J	3.75 J	8.72 J	37.5 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.79 J	3.5 J	1.88 J	4.32 J	7.23 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	225 J	181 J	22.1 J	72.5 J	602 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	47.5 J	38 J	4.78 J	14 J	120 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	59.6 J	47.7 J	7.91 J	22.9 J	150 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	59.6 J	47.7 J	7.92 J	22.9 J	150 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**Southwest**	**Southwest**	**Southwest**	**Southwest**	**Southwest**
Sample Location		**SW-P1, SW-P2, SW-P3, SW-P4, SW-P5**	**SW-Q1, SW-Q2, SW-Q3, SW-Q4, SW-Q5**	**SW-R1, SW-R2, SW-R3**	**SW-S1, SW-S2, SW-S3**	**SW-U1, SW-U2, SW-U3, SW-U4, SW-U5**
Sample Identification		**11215131-010622-S-BN-SW-O-11**	**11215131-010622-S-BN-SW-O-12**	**11215131-010722-S-BN-SW-O-13**	**11215131-010722-S-BN-SW-O-14**	**11215131-010522-S-BN-SW-O-15**
Sample Date		**01/06/2022**	**01/06/2022**	**01/07/2022**	**01/07/2022**	**01/05/2022**
Sample Type		**Overburden**	**Overburden**	**Overburden**	**Overburden**	**Overburden**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	103	127	90	11.5	13.4
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2850	10000 J	3000	1170	12300 J
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	35.3	44.1	14	11.5	3.38 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	245	232	114	63.2	94.4
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	3.3 J	9.57	1.17 J	3.72 J	0.7 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	8.14	58.1	1.88 J	36.3	2.53 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.85	1.97 J	0.916 J	0.587 J	1.09 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	3.42	16.7	1.04 J	9.68	0.671 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	6.05 J	6.3	2.41 J	1.66 J	1.53 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.433 U	0.339 U	0.384 U	0.355 U	0.338 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	5.29	4.05	1.73 J	2.08 J	1.69 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.2	27.4	1.03 J	25.1	1.62 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.01 J	2.48	0.664 J	2.34 J	0.495 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	3.34	5.13	0.874 J	2.15 J	0.352 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	4.43	19.6 J+	1.27 J	20.4	1.55 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	22.6	424	26.5	653	47.1
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	5.72	145	9.2	238	17.6
Total heptachlorodibenzofuran (HpCDF)	pg/g	94.8 J	119 J	37.6 J	24 J	10.7 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	574 J	602 J	327 J	168 J	232 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	56 J	123 J	16.6 J	60 J	6.33 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	75.1 J	69.9 J	35.9 J	53.7 J	21.5 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	37.6 J	85.8 J	10.3 J	70.8 J	5.2 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	10.7 J	12.1 J	4.4 J	11.4 J	0.495 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	64.5 J	900 J	55.9 J	1320 J	97.8 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	8.29 J	167 J	11.5 J	277 J	19.1 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	17.0 J	212 J	16.0 J	318 J	28.8 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	17.1 J	212 J	16.0 J	319 J	28.8 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-T1, SW-T2, SW-T3, SW-T4, SW-T5	SW-V1, SW-V2, SW-V3, SW-V4, SW-V5	SW-R4, SW-R5, SW-R6	SW-Q6, SW-Q7, SW-Q8	SW-Q6, SW-Q7, SW-Q8	SW-T7, SW-T8, SW-T9, SW-T10, SW-T11
Sample Identification		11215131-010722-S-BN-SW-O-16	11215131-010522-S-BN-SW-O-17	11215131-011922-S-BN-SW-O-18	11215131-011922-S-BN-DUP-13	11215131-011922-S-BN-SW-O-19	11215131-012022-S-BN-SW-O-20
Sample Date		01/07/2022	01/05/2022	01/19/2022	01/19/2022	01/19/2022	01/20/2022
Sample Type		Overburden	Overburden	Overburden	Duplicate	Overburden	Overburden
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	13.6	4.56 J	102	4450	42.3	61.6
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	337	8190	4260	7360	17000 J	1150
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	4.3	2.34 J	31.9	621	29.1	29.4
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	26.4	76.3	483	535	186	76.7
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.929 U	0.396 J	3.78	159	9.42	3.06 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	3.64	1.83 J	6.5	1370	88.2	3.44
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.723 U	1.13 J	2.17 J	4.22	1.63 J	0.491 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.45 J	0.259 U	3.76	360	21.9	1.78 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.03 J	1.31 J	10.7	19.1	2.07 J	3.45
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.809 U	0.369 U	0.516 U	0.724 U	0.298 U	0.327 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.941 J	1.42 J	6.73	9.71	1.96 J	1.39 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.58	0.961 J	3.26 J	831	43.7	0.586 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.84 U	0.769 J	1.29 J	62.6	4.39	0.461 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.19 U	0.344 U	3.88	77.1	4.12 J	2.33 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.81	0.713 J	8.49	543 J+	32.2	0.944 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	76.7	10.6	68.3	16600 J	906	2.13 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	22.4	3.8	7.97	6040 J	330	1.1 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	10.5 J	5.16 J	103 J	1030 J	53.8 J	97.8 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	83.7 J	198 J	937 J	1120 J	459 J	140 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	17 J	2.9 J	54.5 J	2200 J	134 J	52.7 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	9.2 J	18.3 J	103 J	197 J	28.8 J	13.8 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	14.7 J	1.67 J	42.5 J	2190 J	120 J	7.75 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.84 U	2.35 J	9.34 J	113 J	8.47 J	0.461 U
Total tetrachlorodibenzofuran (TCDF)	pg/g	150 J	17.3 J	132 J	31400 J	1720 J	2.9 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	23.9 J	3.8 J	9.24 J	6780 J	366 J	1.1 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	32.1 J	9.69 J	28.6 J	8150 J	455 J	4.31 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	32.7 J	9.74 J	28.6 J	8150 J	455 J	4.58 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-R7, SW-R8, SW-R9, SW-R10, SW-R11	SW-Q9, SW-Q10, SW-Q11, SW-Q12, SW-Q13	SW-T12, SW-T13, SW-T14, SW-T15, SW-T16	SW-V7	SW-A1
Sample Identification		11215131-020422-S-SB-SW-O-22	11215131-020422-S-SB-SW-O-23	11215131-020522-S-SB-SW-O-24	11215131-020422-S-SB-SW-O-25	11215131-120221-S-JC-SW-S-1
Sample Date		02/04/2022	02/04/2022	02/05/2022	02/04/2022	12/02/2021
Sample Type		Overburden	Overburden	Overburden	Overburden	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	80	23.6	35.4	45.5	73.9
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	3640	21000 J	1160	975	1770
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	27	15.1	11.4	8.02	35.9
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	460	196	69.5	37.4	136
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	3.03	5.72	1.62 J	0.849 J	10.9
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	4.47	57.8	4.82	1.99 J	76.3
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.25 J	1.32 J	0.785 J	0.493 J	1.89
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.68	13.3	2.12 J	0.62 J	19.6
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	12.3	2.2 J	2.22 J	0.916 J	6.25
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.409 U	0.296 U	0.282 U	0.386 U	0.091 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	7.79	2.23 J	1.41 J	1 J	4.33
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	1.66 J	21.5	5.91	0.834 J	47.3
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.36 J	1.4 J	1.4 J	0.283 U	5.29
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.9 J	2.4 J	1.57 J	0.336 U	4.65
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	4.12	9.75	5.55	0.756 J	39.4
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	10.4	192	63.1	19.7	1300 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	2.76	52.4	19.9	5.82	468
Total heptachlorodibenzofuran (HpCDF)	pg/g	83.9 J	32.6 J	32 J	15 J	68.2 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	863 J	492 J	167 J	120 J	266 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	44.8 J	89.5 J	23.4 J	6.57 J	132 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	123 J	32.8 J	22.5 J	34.8 J	73.2 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	34.8 J	49.7 J	46.1 J	3.31 J	148 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	12.2 J	5.14 J	6.26 J	4.8 J	19.8 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	43.8 J	390 J	217 J	37.1 J	2680 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	5.82 J	59.4 J	28.9 J	12.5 J	535 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	15.7 J	93.0 J	31.9 J	9.31 J	630 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	15.7 J	93.0 J	31.9 J	9.49 J	630 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-A2	SW-B1	SW-B2	SW-C1	SW-D1	SW-D2
Sample Identification		11215131-120221-S-JC-SW-S-2	11215131-120221-S-JC-SW-S-3	11215131-120221-S-JC-SW-S-4	11215131-120321-S-JC-SW-S-5	11215131-120221-S-SPS-SW-S-6	11215131-120221-S-SPS-SW-S-7
Sample Date		12/02/2021	12/02/2021	12/02/2021	12/03/2021	12/02/2021	12/02/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	51.6	129	72.3	35.2	32.8	236
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	6150	3190	1520	1160	634	3650
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	29	58.9	22.2	12.5	7.66	130
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	161	225	102	85.6	47.2	258
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	9.23	11.4	3.09	1.82	0.713 J	42.9
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	69.8	77.6	13.3	8.71	4.21	435
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.25 J	2.07	1.14 J	0.847 J	0.641 U	1.44 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	18.8	18.1	3.86	2.05 J	1.24 J	113
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.12	9.32	3.69	3.02	1.86	5.82
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.118 U	0.703 U	0.326 U	0.305 U	0.471 U	0.552 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.39	5.22	2.41	1.94	1.82	2.51 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	43.5	39.1	7.45	4.64	2.15	324
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	4.17	3.92	0.948 J	0.601 J	0.445 J	29.6
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	4.41	4.94	2	1.06 J	0.459 U	26.9
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	33.6	30.7	6.48 J+	4.48	1.78	278
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	1050 J	1030 J	152	115	63.6	9470 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	383	295	43.1	34.8	18.3	2800 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	55.5 J	118 J	58.4 J	30.3 J	14.1 J	239 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	358 J	459 J	266 J	212 J	124 J	527 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	118 J	147 J	42.8 J	25.4 J	10.2 J	679 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	65 J	80.4 J	45.6 J	51.3 J	23.1 J	83.8 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	128 J	132 J	36 J	23.2 J	7.95 J	942 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	15.6 J	16.9 J	6.59 J	7.9 J	3.92 J	50.5 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	2120 J	2090 J	302 J	237 J	133 J	18600 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	440 J	339 J	50.6 J	42 J	22 J	3150 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	517 J	428 J	65.8 J	51.5 J	27.4 J	3930 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	517 J	428 J	65.8 J	51.5 J	27.5 J	3930 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-E1	SW-E2	SW-E3	SW-H1	SW-H2	SW-I1
Sample Identification		11215131-120321-S-SPS-SW-S-8	11215131-120321-S-SPS-SW-S-9	11215131-120321-S-SPS-SW-S-10	11215131-120321-S-SPS-SW-S-11	11215131-120321-S-SPS-SW-S-12	11215131-120321-S-JC-SW-S-13
Sample Date		12/03/2021	12/03/2021	12/03/2021	12/03/2021	12/03/2021	12/03/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	124	358	1040	2410	7.89	4.47 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2170 J	17800 J	6550 J	4800 J	708 J	628
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	25.3	153	199	492	6.65	4.89 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	165	503	247	343	40.5	32.5
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	3.08	52.1	74	160	2.33	1.04 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	6.42	513	642	1380	19.8	14.4
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.909 U	3.78	1.56 J	1.96	0.424 U	1.22 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.92	122	151	331	5.08	3.39
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.22 J	9.37	6.66	10.7	1.18 J	1.11 U
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.533 U	1.42 U	1.12 U	0.614 U	0.347 U	0.716 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.97	6.93	3.92	4.38	1.08 J	1.08 U
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.07	323	386	744	13.6	9.87
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	1.04 J	26.9	23.2	75.8	1.81	1.36 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.5	24.9	31.3	62.2	1.07 J	0.696 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	3.83 J	235	245	529	11.5	7.98
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	54.2	8390 J	7240 J	22500 J	428	302
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	13.7	2360 J	2000 J	6820 J	127	87.6
Total heptachlorodibenzofuran (HpCDF)	pg/g	61.4 J	292 J	369 J	826 J	13.5 J	8.99 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	475 J	1430 J	550 J	712 J	127 J	109 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	37.7 J	784 J	968 J	2070 J	31.8 J	22.3 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	67.5 J	127 J	72.9 J	105 J	34.2 J	36.8 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	31 J	861 J	970 J	2000 J	39.4 J	25.8 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	10 J	41.5 J	37.4 J	107 J	6.39 J	7.48 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	137 J	16600 J	14300 J	42700 J	859 J	591 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	21.3 J	2650 J	2260 J	7640 J	146 J	99.6 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	25.9 J	3390 J	2920 J	9520 J	179 J	124 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	25.9 J	3390 J	2920 J	9520 J	179 J	124 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**Southwest**	**Southwest**	**Southwest**	**Southwest**	**Southwest**	**Southwest**
Sample Location		**SW-J1**	**SW-K1**	**SW-K2**	**SW-L1**	**SW-L2**	**SW-L3**
Sample Identification		**11215131-120321-S-SS-SW-S-14**	**11215131-120821-S-JC-SW-S-15**	**11215131-120821-S-JC-SW-S-16**	**11215131-120221-S-SPS-SW-S-17**	**11215131-120221-S-SPS-SW-S-18**	**11215131-120221-S-SPS-SW-S-19**
Sample Date		**12/03/2021**	**12/08/2021**	**12/08/2021**	**12/02/2021**	**12/02/2021**	**12/02/2021**
Sample Type		**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	3.22 J	11.3 J	5.97 J	2600	11.9	38.7
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	482 J	773 J	489 J	6110	1470	1200
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	1.42 J	11.5	5.12	344	8.94	38.4
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	32.2	62.4	37.3	439	73.6	87.4
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.122 U	4.95	1.79 J	105	3.31	19.8
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.36 J	40.7	17.2	832	26.7	141
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.625 J	0.74 J	0.591 J	3.31 J	0.812 J	0.832 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.34 J	9.66	4.14	206	6.84	35.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.971 J	1.44 J	0.963 J	14.4	1.56 J	2.16 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.0913 U	0.123 U	0.0735 U	0.42 U	0.161 U	0.119 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.47 J	2.12	1.31 J	7.46	1.79	2.89
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.871 J	23.4	8.83	497	16.1	75.9
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.382 J	2.63	0.846 J	59	1.8	6.72
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.0884 J	2.2	1 J	46.9	1.54 J	7.17
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	0.688 J	20.3 J+	5.06 J+	389 J+	12.7	58.1
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	16.1	557	99.3	13600 J	330	1590 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	5.52	207	43.9	5360 J	114	573
Total heptachlorodibenzofuran (HpCDF)	pg/g	3.38 J	23.3 J	11.2 J	624 J	17.8 J	75 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	117 J	175 J	148 J	881 J	171 J	213 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	2.8 J	62.5 J	28.3 J	1320 J	43.6 J	216 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	38.9 J	51.2 J	30.4 J	173 J	29 J	85.4 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	2.02 J	69.3 J	22.5 J	1430 J	47.4 J	214 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	7.92 J	10.3 J	5.95 J	100 J	6.81 J	22.8 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	30.9 J	1130 J	221 J	26000 J	678 J	3180 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	12.7 J	232 J	54.4 J	5940 J	132 J	654 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	8.72 J	279 J	59.6 J	7030 J	158 J	779 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	8.72 J	279 J	59.6 J	7030 J	158 J	779 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-M1	SW-M2	SW-M3	SW-N1	SW-N2	SW-O1
Sample Identification		11215131-120821-S-JC-SW-S-20	11215131-120821-S-JC-SW-S-21	11215131-120821-S-JC-SW-S-22	11215131-120821-S-SS-SW-S-23	11215131-120821-S-SS-SW-S-24	11215131-120821-S-SS-SW-S-25
Sample Date		12/08/2021	12/08/2021	12/08/2021	12/08/2021	12/08/2021	12/08/2021
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	26.5	23.9	25.9 J	7.14	31.5	27
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1110 J	1530 J	1040 J	668 J	3070 J	1260
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	31.7	29.8	28.8	9.82	40.1	36.7
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	83.9	86.9	80.6	43.7	130	90
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	11.3	12.5	11.9	3.43	13.5	14.4
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	96.4	108	100	30.3	117	121
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.823 J	0.657 J	0.721 J	0.703 J	1.36 J	0.763 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	24.5	26.2	24.1	7.38	29.2	31.3
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.33 J	2.24 J	2.35 J	1.37 J	3.06 J	2.13
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.144 U	0.117 U	0.0937 U	0.14 U	0.15 U	0.0937 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.89 J	2.38 J	1.94 J	1.82 J	2.67	2.06
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	57.9	65.8	55.9	18.3	62.7	71.8
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	6.51	6.42	7.4	2.63	7.1	7.09
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	5.54	6.34	5.56	1.49 J	6.38	6.96
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	49.6 J+	54.1 J+	50.6 J+	15.3 J+	52.9 J+	57.8 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	1780 J	1750 J	1910 J	559	1720 J	1860 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	639	603	657	214	617	680
Total heptachlorodibenzofuran (HpCDF)	pg/g	61.3	58.7	55	18.3	75.8	70.4 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	190	212	186	124	342	219 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	153	169	155	46.4	183	190 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	40.3	113	42.5	35.4	57.6	49.8 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	170	190	169	53.2	182	203 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	15.2	23.7	17.3	9.05	16.3	17.2 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	3500	3500	3740	1120	3380	3670 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	704	667	727	243	686	739 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	855 J	819 J	887 J	283 J	833 J	911 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	855 J	819 J	887 J	283 J	833 J	911 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-O3	SW-O4	SW-P1	SW-P3	SW-Q1	SW-R1
Sample Identification		11215131-120821-S-SS-SW-S-26	11215131-120821-S-SS-SW-S-27	11215131-010622-S-BN-SW-S-28	11215131-010622-S-BN-SW-S-29	11215131-010622-S-BN-SW-S-30	11215131-010722-S-BN-SW-S-31
Sample Date		12/08/2021	12/08/2021	01/06/2022	01/06/2022	01/06/2022	01/07/2022
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	43.2	13.6	81.7	27.4	5.1	113
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	3040	1440	1950	1750	550	7990
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	63.4	19.7	14.9	8.64	1.71 J	81
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	179	86	94	79.1	27.1	79.3
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	24.7	7.61	1.48 J	0.804 J	0.576 U	34.7
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	216	64.2	3.91	2.55	2.9	318
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.23 J	1.09 J	0.897 J	0.82 J	0.886 U	0.916 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	53.8	16.1	1.34 J	1.16 J	1 J	78.9
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.21	2.23	3.42 J	2.34 J	0.753 J	2.24 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.309 U	0.105 U	0.266 U	0.175 U	0.522 U	0.513 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.77	3.05	2.47	1.51 J	0.971 J	1.82 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	168	41.9	1.54 J	1.17 J	1.66 J	158
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	13.8	5.35	0.894 J	0.316 J	0.753 U	21.8
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	13	3.46	1.27 J	1 J	0.323 U	14.1
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	146 J+	37.5 J+	2.16 J+	1.47 J	1.02 J	120 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	3600 J	1270 J	25.2	20.9	24.4	5700 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1310 J	484	9.86	8.49	6.79	2200 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	119 J	38 J	40.6 J	23.2 J	4.09 J	141 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	386 J	256 J	232 J	183 J	95.5 J	219 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	337 J	99.6 J	23.9 J	15.2 J	4.55 J	476 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	46.4 J	84.3 J	40.6 J	27.5 J	23.4 J	56 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	500 J	126 J	18.4 J	10.6 J	3.94 J	440 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	25 J	19.7 J	6.2 J	3.55 J	2.14 J	34.5 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	7040 J	2520 J	59.7 J	46.1 J	57.6 J	11000 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1420 J	537 J	12.1 J	10.6 J	8.91 J	2390 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1770 J	639 J	17.0 J	13.7 J	10.6 J	2880 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1770 J	639 J	17.0 J	13.7 J	11.1 J	2880 J

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-S1	SW-S2	SW-T1	SW-T1	SW-Q3	SW-U1
Sample Identification		11215131-010722-S-BN-SW-S-32	11215131-010722-S-BN-SW-S-33	11215131-010722-S-BN-DUP-11	11215131-010722-S-BN-SW-S-34	11215131-010622-S-BN-SW-S-35	11215131-010522-S-BN-SW-S-36
Sample Date		01/07/2022	01/07/2022	01/07/2022	01/07/2022	01/06/2022	01/05/2022
Sample Type		Sidewall	Sidewall	Duplicate	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	8.59	4.89 J	35.8	64.1 U	1320	11.5 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1420	680	1890	2750	4170	2260
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	4.92	3.18	6.43	19.7 U	331	10.7
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	64	35.3	225	340	242	47
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	0.593 J	0.586 J	0.752 J	1.79 J	122	4.86
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	3.73	5.91	6.68	11.7	1100	36.4
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.78 J	0.794 J	0.625 J	1.1 J	2.06 J	0.798 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	1.26 J	1.72 J	1.36 J	2.94	269	9.63
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.65 J	1.08 J	2.76	4.42	7.04 J	1.24 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.25 U	0.172 U	0.586 U	0.197 U	1.52 U	0.869 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.77 J	1.73 J	2.06 J	2.43	3.75 J	0.945 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.44 J	3.49	4.88	5.93	704	20.4
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	0.454 J	0.73 J	0.704 U	0.968 J	37.9	2.24 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	0.512 J	0.466 J	0.99 U	0.87 J	51.5 J+	1.96 J+
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	2.19 J	3.24 J+	3.99	4.93 J+	462	15
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	64.9	92.9	159	165 J	10700 J	426
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	27.3	36.2	37.6	60.1	3100 J	114
Total heptachlorodibenzofuran (HpCDF)	pg/g	12 J	6.25 J	28.2 J	57 J	570 J	21.1 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	157 J	119 J	721 J	1020 J	602 J	130 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	11.7 J	11.2 J	13.3 J	26.7 J	1630 J	54.4 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	37.8 J	40.9 J	97 J	112 J	75.8 J	28.9 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	9.93 J	12.6 J	12.8 J	19.5 J	1800 J	52.8 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	5.65 J	8.25 J	11.9 J	9.21 J	55.6 J	6.11 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	134 J	185 J	312 J	335 J	20400 J	813 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	38.7 J	49.2 J	58.4 J	77.5 J	3400 J	126 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	37.1 J	49.1 J	59.1 J	85.8 J	4520 J	170 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	37.1 J	49.1 J	59.5 J	85.9 J	4520 J	170 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**Southwest**	**Southwest**	**Southwest**	**Southwest**	**Southwest**	**Southwest**
Sample Location		**SW-T2**	**SW-T3**	**SW-T4**	**SW-V1**	**SW-V2**	**SW-R7**
Sample Identification		**11215131-010722-S-BN-SW-S-37**	**11215131-010722-S-BN-SW-S-38**	**11215131-010722-S-BN-SW-S-39**	**11215131-010522-S-BN-SW-S-40**	**11215131-010522-S-BN-SW-S-41**	**11215131-020422-S-SB-SW-S-47**
Sample Date		**01/07/2022**	**01/07/2022**	**01/07/2022**	**01/05/2022**	**01/05/2022**	**02/04/2022**
Sample Type		**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**						
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	57.9 U	58.8 U	77.4	29	68.2	7.71
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	1570	1540	2400	890	8420	417
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	82.8	61.2	100	47.5	106	2.77
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	116	107	179	57.9	172	29.5
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	29.6	18.4	36.6	19.4	45.7	0.255 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	259	153	330	183	353	0.453 J
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.764 J	0.853 J	0.953 J	0.565 U	1.34 J	0.509 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	63.5	39.3	80.8	45.6	89.1	0.222 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	3.19	2.93	5.19	1.5 J	3.18 J	0.919 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.427 U	0.355 U	0.394 U	0.774 U	0.84 U	0.117 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.73 J	2.35	2.76	1.67 J	2.12 J	0.775 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	143	90.9	202	97.1	196	0.261 J
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	12.7	9.88	21.2	7.32	17.2	0.144 U
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	13.5	8.63	17.8	7.86 J+	15.6	0.296 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	115 J+	81.2 J+	174 J+	64.5	145	0.346 J
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	3740 J	2760 J	6060 J	1940 J	4650 J	3.84
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1270 J	970 J	2280 J	549	1420 J	1.43
Total heptachlorodibenzofuran (HpCDF)	pg/g	147 J	107 J	187 J	83 J	194 J	7.93 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	223 J	223 J	353 J	135 J	378 J	97.2 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	397 J	245 J	514 J	265 J	517 J	3.42 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	34.1 J	55.4 J	70 J	24.8 J	45.6 J	18.4 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	406 J	279 J	593 J	240 J	520 J	2.18 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	22.8 J	23.1 J	40 J	10.9 J	25.1 J	1.77 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	7210 J	5380 J	11700 J	3770 J	9130 J	11 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1390 J	1080 J	2470 J	617 J	1590 J	2.89 J
TEQ							
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1730 J	1310 J	3010 J	798 J	2000 J	2.70 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1730 J	1310 J	3010 J	798 J	2000 J	2.77 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest	Southwest
Sample Location		SW-R11	SW-Q9	SW-Q10	SW-T12, SW-T13, SW-T14, SW-T15, SW-T16	SW-T12, SW-T13, SW-T14, SW-T15, SW-T16
Sample Identification		11215131-020422-S-SB-SW-S-48	11215131-020422-S-SB-SW-S-49	11215131-020422-S-SB-SW-S-50	11215131-020522-S-SB-SW-S-51	11215131-020522-S-SB-SW-S-52
Sample Date		02/04/2022	02/04/2022	02/04/2022	02/05/2022	02/05/2022
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**					
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	113	11.3	9.32	2.65 J	4.45 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	3700	389	428	349	756
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	88.4	10.1	1.32 J	1.33 J	2.64 J
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	349	22	19.9	20.9	37.3
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	13.2	4.82	0.165 U	0.211 U	0.686 J
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	35.1	32.8	0.204 J	1.59 J	7.95
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	1.97 J	0.562 J	0.505 J	0.416 U	0.578 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	12.7	8.33	0.197 J	0.45 J	2.08 J
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	10.3	0.638 J	0.628 J	0.773 J	1.16 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.533 U	0.21 U	0.244 J	0.208 U	0.147 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	7.08	0.972 J	1.19 J	1.01 J	1.75 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	17.1	12	0.171 J	0.981 J	5.75
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.41	1.02 J	0.375 J	0.309 J	0.8 J
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	12.7	1.74 J	0.0823 U	0.176 U	0.7 J
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	17.4 J+	7.94 J+	0.18 U	1.24 J	4.83 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	329	155	1.46 J	31.7	165
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	125	57.6	0.467 J	12.2	63.1
Total heptachlorodibenzofuran (HpCDF)	pg/g	156 J	19 J	1.65 J	2.52 J	5.91 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	670 J	70.4 J	69.9 J	77.3 J	113 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	120 J	50.9 J	1 J	4.83 J	14 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	134 J	18.3 J	20.8 J	43.4 J	59.7 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	99.1 J	31.7 J	0.171 J	5.58 J	17.8 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	26.6 J	3.52 J	3.85 J	8.01 J	12.4 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	734 J	330 J	6.83 J	67.4 J	349 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	156 J	67 J	3.75 J	18.8 J	81.6 J
TEQ						
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	181 J	81.9 J	1.63 J	16.8 J	84.1 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	181 J	81.9 J	1.67 J	16.8 J	84.1 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		Southwest	Southwest	Southwest	Southwest
Sample Location		SW-T12, SW-T13, SW-T14, SW-T15, SW-T16	SW-V7	SW-Q6	SW-R4
Sample Identification		11215131-020522-S-SB-SW-S-53	11215131-020422-S-SB-SW-S-54	11215131-011922-S-BN-SW-S-43	11215131-011922-S-BN-SW-S-42
Sample Date		02/05/2022	02/04/2022	01/19/2022	01/19/2022
Sample Type		Sidewall	Sidewall	Sidewall	Sidewall
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**				
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	21.7	462	1670	898
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	960	717	8140	4060
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	24.9	63.3	281	287
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	78	42.4	225	322
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	8.57	1.95	87.6	93.3
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	61.5	2.3	1070	812
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.961 J	0.671 J	1.8 J	1.8 J
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	15.8	1.16 J	265	206
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.37 J	1.69 J	6.92	7.99 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.237 U	0.232 U	0.642 U	0.534 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.15 J	1.42 J	4.16	4.55
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	34	1.4 J	950	412
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	3.63	0.599 J	20.6	38.3
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	2.89	1.24 J	62.6	38.4
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	28.8 J+	2.15	477	307
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	920	50.1	5540 J	11400 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	346	11.3	1860 J	3950 J
Total heptachlorodibenzofuran (HpCDF)	pg/g	47.2 J	77 J	469 J	491 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	222 J	132 J	552 J	643 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	94.8 J	17.4 J	1670 J	1240 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	48.9 J	30.4 J	68.8 J	91 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	99.5 J	13 J	2200 J	1130 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	13.3 J	5.67 J	34.6 J	60 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	1890 J	80 J	10400 J	21500 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	401 J	15.8 J	2070 J	4470 J
TEQ					
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	461 J	19.9 J	2760 J	5350 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	461 J	19.9 J	2760 J	5350 J

Table 2

Analytical Results Summary
Pre-Construction Field Sampling Event
San Jacinto River Waste Pits
Channelview, Harris County, Texas
November 2021 - February 2022

Excavation Area		**Southwest**	**Southwest**	**Southwest**	**Southwest**
Sample Location		**SW-T7**	**SW-T8**	**SW-V6**	**SW-V6**
Sample Identification		**11215131-012022-S-BN-SW-S-44**	**11215131-012022-S-BN-SW-S-45**	**11215131-011922-S-BN-SW-O-21**	**11215131-011922-S-BN-SW-S-46**
Sample Date		**01/20/2022**	**01/20/2022**	**01/19/2022**	**01/19/2022**
Sample Type		**Sidewall**	**Sidewall**	**Sidewall**	**Sidewall**
Polychlorinated Dibenzodioxins & Polychlorinated Dibenzofurans	**Units**				
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	pg/g	65.7	123	208	29.5 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	pg/g	2490	2550	6440	2590
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	pg/g	86.7	79.3	267	32.3
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	167	186	440	48.7
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	pg/g	35.2	30.3	96.7	14.5
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	258	248	777	117
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	0.853 J	1.28 J	2.23 J	0.455 U
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	71.3	65.5	208	32
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	4.19	5.51	10.7	1.22 J
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	pg/g	0.436 U	0.352 U	0.418 U	0.355 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	2.69	3.12	4.62	1.23 J
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	123	145	470	60.3
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	13.2	14.8	49.4	5.62
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	pg/g	12.2	14.3	40.2	5.45
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	pg/g	111	122	371	44.8 J+
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	pg/g	3970 J	4450 J	11600 J	1280 J
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1360 J	1560 J	4940 J	443
Total heptachlorodibenzofuran (HpCDF)	pg/g	159 J	145 J	501 J	60.9 J
Total heptachlorodibenzo-p-dioxin (HpCDD)	pg/g	340 J	383 J	1160 J	170 J
Total hexachlorodibenzofuran (HxCDF)	pg/g	398 J	399 J	1190 J	180 J
Total hexachlorodibenzo-p-dioxin (HxCDD)	pg/g	52.2 J	52.8 J	117 J	31.6 J
Total pentachlorodibenzofuran (PeCDF)	pg/g	366 J	426 J	1320 J	161 J
Total pentachlorodibenzo-p-dioxin (PeCDD)	pg/g	25.5 J	25.5 J	71 J	9.42 J
Total tetrachlorodibenzofuran (TCDF)	pg/g	7600 J	8650 J	22500 J	2500 J
Total tetrachlorodibenzo-p-dioxin (TCDD)	pg/g	1530 J	1760 J	5480 J	498 J
TEQ					
Total WHO Dioxin TEQ(Human/Mammal)(ND=0)	pg/g	1850 J	2100 J	6390 J	609 J
Total WHO Dioxin TEQ(Human/Mammal)(ND=0.5)	pg/g	1850 J	2100 J	6390 J	609 J

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
J- - Estimated concentration, result may be biased low
J+ - Estimated concentration, result may be biased high
TEQ - Toxic Equivalent

Table 3

Analytical Methods
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Method	Matrix	Preservation	Holding Time	
				Collection to Extraction (Days)	Extraction to Analysis (Days)
Dioxins/Furans	EPA 1613B	Soil	Iced, 0-6° C	365	365

Notes:

EPA - Environmental Protection Agency Office of Water

Table 4

Qualified Sample Results Due to Outlying Continuing Calibration Results
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Associated Analyte	Qualified Result	Units
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	12/09/2021	36	11215131-120321-S-SPS-SW-S-12	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	708 J	pg/g
				11215131-120321-S-SPS-SW-S-11	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4800 J	pg/g
				11215131-120321-S-SPS-SW-S-10	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	6550 J	pg/g
				11215131-120321-S-SPS-SW-S-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	17800 J	pg/g
				11215131-120321-S-SPS-SW-S-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2170 J	pg/g
	13C-OCDF	12/13/2021	36	11215131-120321-S-SS-SW-S-14	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.22 J	pg/g
				11215131-120421-S-SS-SC-S-16	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	103 J	pg/g
				11215131-120421-S-SS-SC-S-17	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4710 J	pg/g
				11215131-120621-S-SS-SC-S-6	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	81.5 J	pg/g
				11215131-120621-S-SS-SC-S-5	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.01 J	pg/g
				11215131-120621-S-SS-SC-S-4	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	110 J	pg/g
	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	12/13/2021	38	11215131-120321-S-SS-SW-S-14	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	482 J	pg/g
				11215131-120421-S-SS-SC-S-16	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2670 J	pg/g
				11215131-120421-S-SS-SC-S-17	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	19200 J	pg/g
				11215131-120621-S-SS-SC-S-6	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2050 J	pg/g
				11215131-120621-S-SS-SC-S-5	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	492 J	pg/g
				11215131-120621-S-SS-SC-S-4	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1610 J	pg/g
	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	12/13/2021	36	11215131-120621-S-JC-SC-S-14	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7230 J	pg/g
				11215131-120621-S-JC-SC-S-15	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2250 J	pg/g
				11215131-120721-S-JC-SC-S-7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	16300 J	pg/g
				11215131-120621-S-SS-SC-S-13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9890 J	pg/g
				11215131-120721-S-SS-SC-S-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	17800 J	pg/g
				11215131-120721-S-SS-SC-S-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3250 J	pg/g
	13C-OCDF	12/15/2021	40	11215131-120721-S-SS-NC-S-8	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	404 J	pg/g
				11215131-120721-S-SS-NC-S-9	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	126 J	pg/g
				11215131-120821-S-JC-SW-S-15	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	11.3 J	pg/g
				11215131-120821-S-JC-SW-S-16	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	5.97 J	pg/g
	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	12/15/2021	41	11215131-120721-S-SS-NC-S-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	12200 J	pg/g
				11215131-120721-S-SS-NC-S-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	41500 J	pg/g
				11215131-120821-S-JC-SW-S-15	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	773 J	pg/g
				11215131-120821-S-JC-SW-S-16	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	489 J	pg/g

Table 4

Qualified Sample Results Due to Outlying Continuing Calibration Results
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Associated Analyte	Qualified Result	Units
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	12/17/2021	37	11215131-120321-S-JC-SW-B-6	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3880 J	pg/g
				11215131-120421-S-JC-SC-O-12	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	31700 J	pg/g
				11215131-120421-S-JC-SC-O-6	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	6540 J	pg/g
				11215131-120421-S-JC-SC-B-5	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	507 J	pg/g
				11215131-120421-S-JC-SC-O-7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	15200 J	pg/g
				11215131-120621-S-JC-SC-O-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	16800 J	pg/g
				11215131-120621-S-JC-SC-B-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	61800 J	pg/g
	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	12/15/2021	36	11215131-120821-S-SS-SW-S-24	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3070 J	pg/g
				11215131-120821-S-SS-SW-S-23	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	668 J	pg/g
				11215131-120921-S-SS-NC-S-12	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1340 J	pg/g
				11215131-120921-S-SS-NC-S-13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1650 J	pg/g
				11215131-120921-S-SS-NC-S-14	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5170 J	pg/g
				11215131-120821-S-JC-SW-S-20	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1110 J	pg/g
				11215131-120821-S-JC-SW-S-21	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1530 J	pg/g
	13C-OCDF	12/16/2021	38	11215131-120821-S-JC-SW-S-22	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	25.9 J	pg/g
				11215131-120921-S-JC-NC-S-10	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	565 J	pg/g
				11215131-120921-S-JC-NC-S-11	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	532 J	pg/g
				11215131-121021-S-JC-NC-S-4	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2510 J	pg/g
				11215131-121021-S-JC-NC-S-5	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2170 J	pg/g
				11215131-121021-S-SS-NC-S-3	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	682 J	pg/g
				11215131-121021-S-SS-NC-S-2	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	634 J	pg/g
				11215131-121021-S-SS-NC-S-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	660 J	pg/g
	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	12/16/2021	41	11215131-120821-S-JC-SW-S-22	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1040 J	pg/g
				11215131-120921-S-JC-NC-S-10	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5350 J	pg/g
				11215131-120921-S-JC-NC-S-11	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1860 J	pg/g
				11215131-121021-S-JC-NC-S-4	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	6680 J	pg/g
				11215131-121021-S-JC-NC-S-5	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	6170 J	pg/g
				11215131-121021-S-SS-NC-S-3	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	6070 J	pg/g
				11215131-121021-S-SS-NC-S-2	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5930 J	pg/g
				11215131-121021-S-SS-NC-S-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3630 J	pg/g

Table 4

Qualified Sample Results Due to Outlying Continuing Calibration Results
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Associated Analyte	Qualified Result	Units
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	01/02/2022	37	11215131-120821-S-SS-SW-O-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1750 J	pg/g
				11215131-120821-S-SS-SW-B-11	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	605 J	pg/g
				11215131-120921-S-SS-NC-O-12	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2780 J	pg/g
				11215131-120821-S-JC-SW-O-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2560 J	pg/g
				11215131-120821-S-JC-SW-B-10	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	422 J	pg/g
				11215131-120821-S-JC-DUP-6	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4430 J	pg/g
				11215131-120921-S-JC-NC-O-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2320 J	pg/g
	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD) C13	01/02/2022	40	11215131-120921-S-JC-NC-O-10	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3210 J	pg/g
				11215131-120921-S-JC-NC-O-11	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3010 J	pg/g
				11215131-120921-S-JC-NC-B-3	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1140 J	pg/g
				11215131-121021-S-JC-NC-O-2	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1460 J	pg/g
				11215131-121021-S-JC-NC-O-3	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5150 J	pg/g
				11215131-121021-S-JC-NC-B-2	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7070 J	pg/g
				11215131-120921-S-SS-NC-O-13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1870 J	pg/g
				11215131-120921-S-SS-NC-O-14	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3340 J	pg/g
				11215131-120921-S-SS-NC-B-4	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10300 J	pg/g
				11215131-121021-S-SS-NC-O-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1440 J	pg/g
				11215131-121021-S-SS-NC-B-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10700 J	pg/g
	13C-OCDF	01/02/2022	37	11215131-120921-S-JC-NC-O-10	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	203 J	pg/g
				11215131-120921-S-JC-NC-O-11	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	241 J	pg/g
				11215131-120921-S-JC-NC-B-3	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	227 J	pg/g
				11215131-121021-S-JC-NC-O-2	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	85 J	pg/g
				11215131-121021-S-JC-NC-O-3	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	389 J	pg/g
				11215131-121021-S-JC-NC-B-2	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4300 J	pg/g
				11215131-120921-S-SS-NC-O-13	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	87 J	pg/g
				11215131-120921-S-SS-NC-O-14	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	220 J	pg/g
				11215131-120921-S-SS-NC-B-4	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4960 J	pg/g
				11215131-121021-S-SS-NC-O-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	84.6 J	pg/g
				11215131-121021-S-SS-NC-B-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6990 J	pg/g

Notes:

%D - Percent difference
J - Estimated concentration

Table 5

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Analyte	Extraction Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units
Dioxins/Furans	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	01/12/2022	9.58	11215131-010722-S-BN-SW-S-34	64.1	64.1 U	pg/g
				11215131-010722-S-BN-SW-S-37	57.9	57.9 U	pg/g
				11215131-010722-S-BN-SW-S-38	58.8	58.8 U	pg/g
	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	01/12/2022	6.95	11215131-010722-S-BN-SW-S-34	19.7	19.7 U	pg/g
	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	01/05/2022	0.492J	11215131-122021-S-BN-SC-B-10	1.07 J	1.07 U	pg/g
	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	01/20/2022	2.55	11215131-011222-S-BN-SC-O-14A	3.82	3.82 U	pg/g
				11215131-011222-S-BN-SC-B-12	1.39	2.55 U	pg/g

Notes:

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

Table 6

Qualified Sample Data Due to Outlying of Surrogate Recoveries
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Surrogate	Surrogate % Recovery	Control Limits % Recovery	Analyte	Qualified Result		Units
Dioxins/Furans	11215131-010522-S-BN-SW-S-36	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) C13	156	28 - 136	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.96	J+	pg/g
	11215131-010622-S-BN-SW-S-35	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) C13	142	28 - 136	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	51.5	J+	pg/g
	11215131-010522-S-BN-SW-S-40	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) C13	150	28 - 136	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.86	J+	pg/g
	11215131-122021-S-BN-SC-B-11	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF) C13	27.9	28 - 136	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	78.1	J-	pg/g

Notes:

J- - Estimated concentration, result may be biased low

J+ - Estimated concentration, result may be biased high.

Table 7

Qualified Sample Data Due to Outlying Surrogate Ion Abundance Ratios
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Surrogate	Surrogate IAR	Control Limits IAR	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120621-S-JC-SC-S-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF) C13	1.81	0.32 - 1.78	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	804 J	pg/g
	11215131-120621-S-JC-SC-B-1H	2,3,7,8-Tetrachlorodibenzofuran (TCDF) C13	0.90	0.65 - 0.89	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	68200 J	pg/g
	11215131-012222-S-BN-NC-S-41	13C12-123789-HxCDD	1.45	1.05 - 1.43	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.61 J	pg/g

Notes:

J - Estimated concentration
IAR - Ion abundance ratio

Table 8

Qualified Sample Results Due to Outlying LCS/LCSD Results
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Analyte	LCS Date (mm/dd/yyyy)	LCS % Recovery	LCSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD (percent)	Associated Sample ID	Qualified Result		Units
Dioxins/Furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	01/10/2022	109.8	126.8	14.4	82 - 122	30	11215131-120221-S-SPS-SW-B-9H1	46.9	J+	pg/g
								11215131-120321-S-JC-SW-B-3H	2.29	J+	pg/g
								11215131-120221-S-SPS-SW-B-4H1	63.2	J+	pg/g
								11215131-120321-S-SPS-SW-B-5H	87.7	J+	pg/g
								11215131-120321-S-JC-SW-B-6H	96	J+	pg/g
								11215131-120621-S-JC-SC-B-1H	1720	J+	pg/g
								11215131-120321-S-SS-SW-B-7H1	53.7	J+	pg/g
								11215131-120421-S-SS-SC-B-7H	310	J+	pg/g
								11215131-120621-S-SS-SC-B-2H	0.518	J+	pg/g
								11215131-120621-S-SS-SC-B-6H	0.513	J+	pg/g
								11215131-120821-S-JC-SW-B-8H1	7.95	J+	pg/g

Notes:

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
RPD - Relative Percent Difference
J+ - Estimated concentration, result may be biased high.

Table 9

Qualified Sample Results Due to Outlying MS/MSD Results
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD (percent)	Qualified Result	Units
Dioxins/Furans	11215131-120221-S-SPS-SW-B-9	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	158	15.7	164	78 - 138	30	270 J	pg/g
		1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	0	0	0	70 - 140	30	384 J-	pg/g
		2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	79.1	54.9	36	70 - 156	30	84.7 J	pg/g
		1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	89.2	59.2	40	70 - 142	30	50.1 J	pg/g
	11215131-120621-S-JC-SC-S-1	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	119	171	39	78 - 138	30	162 J	pg/g
	11215131-120221-S-JC-SW-O-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	102	211	70	78 - 144	30	3630 J	pg/g
		2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0	0	0	68 - 158	30	47.7 J-	pg/g
	11215131-120421-S-SS-SC-B-7	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	169	78.1	74	63 - 170	30	1420 J	pg/g
		1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	164	34.5	130	78 - 130	30	522 J	pg/g
		2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	134	96.7	32	70 - 156	30	213 J	pg/g
	11215131-120821-S-JC-SW-O-8	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	175	212	19	68 - 158	30	34.1 J+	pg/g
	11215131-121321-S-SS-NC-B-6	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	112	71.4	44	70 - 140	30	113 J	pg/g
		1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	93.7	50.6	60	82 - 132	30	127 J	pg/g
		1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	142	99.4	35	72 - 134	30	81.3 J	pg/g
	11215131-010722-S-BN-SW-S-34	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	115	169	38	75 - 158	30	165 J	pg/g
	11215131-011022-S-BN-NC-B-7	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	163	214	27	82 - 132	30	482 J+	pg/g
		1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	190	165	14	84 - 130	30	144 J+	pg/g
		2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	221	241	9	68 - 160	30	352 J+	pg/g
	11215131-011922-S-BN-SW-B-21	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55.1	46.4	17	78 - 138	30	218 J-	pg/g
	11215131-020422-S-SB-SW-B-24	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	169	141	18	78 - 138	30	207 J+	pg/g
	11215131-021822-S-SB-NC-B-15	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	73.3	66.7	2.7	82 - 132	30	186 J-	pg/g

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
J - Estimated concentration
J- - Estimated concentration, result may be biased low
J+ - Estimated concentration, result may be biased high.

Table 10

Qualified Sample Data Due to Variability in Field Duplicate Results
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Analyte	RPD	Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
Dioxins/Furans	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	114	11215131-120221-S-SPS-SW-O-7	943 J	11215131-120221-S-SPS-DUP2	260 J	pg/g
	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	121	11215131-120221-S-SPS-SW-O-7	264 J	11215131-120221-S-SPS-DUP2	65.5 J	pg/g
	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	126	11215131-120821-S-SS-SW-O-10	14.1 J	11215131-120821-S-SS-DUP-5	3.19 J	pg/g
	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	144	11215131-120821-S-SS-SW-O-10	10.7 J	11215131-120821-S-SS-DUP-5	1.74 J	pg/g
	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	141	11215131-120821-S-SS-SW-O-10	9.45 J	11215131-120821-S-SS-DUP-5	1.65 J	pg/g
	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	156	11215131-120821-S-SS-SW-O-10	299 J	11215131-120821-S-SS-DUP-5	37.1 J	pg/g
	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	159	11215131-120821-S-SS-SW-O-10	107 J	11215131-120821-S-SS-DUP-5	12.4 J	pg/g
	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	103	11215131-020422-S-SB-SW-B-24H	4.91 J	11215131-020422-S-SB-DUP-15	15.3 J	pg/g
	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	168	11215131-020422-S-SB-SW-B-24H	12.2 J	11215131-020422-S-SB-DUP-15	142 J	pg/g
	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	157	11215131-020422-S-SB-SW-B-24H	3.83 J	11215131-020422-S-SB-DUP-15	31.7 J	pg/g
	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	166	11215131-020422-S-SB-SW-B-24H	7.75 J	11215131-020422-S-SB-DUP-15	84.1 J	pg/g
	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	110	11215131-020422-S-SB-SW-B-24H	2.52 J	11215131-020422-S-SB-DUP-15	8.74 J	pg/g
	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	137	11215131-020422-S-SB-SW-B-24H	6.78 J	11215131-020422-S-SB-DUP-15	36.4 J	pg/g

Notes:

RPD - Relative Percent Difference
J - Estimated concentration

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120221-S-SPS-SW-S-17	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.31 J	pg/g
	11215131-120221-S-SPS-SW-S-19	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.832 J	pg/g
	11215131-120221-S-SPS-SW-S-19	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.16 J	pg/g
	11215131-120121-S-SPS-NE-O-8	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.12 J	pg/g
	11215131-120121-S-SPS-NE-O-8	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6 J	pg/g
	11215131-120121-S-SPS-NE-O-8	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.81 J	pg/g
	11215131-120121-S-SPS-NE-O-8	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.844 J	pg/g
	11215131-120121-S-SPS-NE-O-8	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.85 J	pg/g
	11215131-120121-S-SPS-NE-O-8	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.277 J	pg/g
	11215131-120121-S-SPS-NE-O-9	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.45 J	pg/g
	11215131-120121-S-SPS-NE-O-9	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.61 J	pg/g
	11215131-120121-S-SPS-NE-O-9	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.937 J	pg/g
	11215131-120121-S-SPS-NE-O-9	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.882 J	pg/g
	11215131-120121-S-SPS-NE-B-2	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.21 J	pg/g
	11215131-120121-S-SPS-NE-B-2	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.65 J	pg/g
	11215131-120221-S-SPS-SW-O-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.85 J	pg/g
	11215131-120221-S-SPS-DUP2	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.37 J	pg/g
	11215131-120221-S-SPS-DUP2	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.59 J	pg/g
	11215131-120221-S-SPS-DUP2	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.59 J	pg/g
	11215131-120221-S-SPS-DUP2	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.26 J	pg/g
	11215131-120221-S-SPS-DUP2	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.962 J	pg/g
	11215131-113021-S-SPS-NE-S-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.04 J	pg/g
	11215131-113021-S-SPS-NE-S-6	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.59 J	pg/g
	11215131-113021-S-SPS-NE-S-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.79 J	pg/g
	11215131-120121-S-SPS-NE-S-12	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.13 J	pg/g
	11215131-120121-S-SPS-NE-S-12	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1 J	pg/g
	11215131-120121-S-SPS-NE-S-12	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.95 J	pg/g
	11215131-120121-S-SPS-NE-S-12	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.59 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120121-S-SPS-NE-S-14	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.39 J	pg/g
	11215131-120121-S-SPS-NE-S-14	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.37 J	pg/g
	11215131-120121-S-SPS-NE-S-14	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.79 J	pg/g
	11215131-120121-S-SPS-NE-S-14	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.783 J	pg/g
	11215131-120121-S-SPS-NE-S-14	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.92 J	pg/g
	11215131-113021-S-JC-NE-S-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.29 J	pg/g
	11215131-113021-S-JC-NE-S-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.21 J	pg/g
	11215131-113021-S-JC-NE-S-2	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.98 J	pg/g
	11215131-113021-S-JC-NE-S-3	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.48 J	pg/g
	11215131-120121-S-JC-NE-S-5	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.41 J	pg/g
	11215131-120121-S-JC-NE-S-5	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.787 J	pg/g
	11215131-120121-S-JC-NE-S-5	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.979 J	pg/g
	11215131-113021-S-SPS-NE-S-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	5.06 J	pg/g
	11215131-113021-S-SPS-NE-S-7	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.42 J	pg/g
	11215131-113021-S-SPS-NE-S-7	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	6.45 J	pg/g
	11215131-113021-S-SPS-NE-O-5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.677 J	pg/g
	11215131-113021-S-SPS-NE-O-5	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.9 J	pg/g
	11215131-113021-S-SPS-NE-O-5	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.28 J	pg/g
	11215131-113021-S-SPS-NE-O-4	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.01 J	pg/g
	11215131-113021-S-JC-NE-O-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.498 J	pg/g
	11215131-113021-S-JC-NE-O-2	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.12 J	pg/g
	11215131-113021-S-JC-NE-O-2	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.23 J	pg/g
	11215131-120321-S-JC-SW-S-5	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.05 J	pg/g
	11215131-120321-S-JC-SW-S-5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.601 J	pg/g
	11215131-120221-S-SPS-SW-S-7	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.51 J	pg/g
	11215131-120221-S-SPS-SW-S-6	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.713 J	pg/g
	11215131-120321-S-SPS-SW-S-12	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.08 J	pg/g
	11215131-120321-S-SPS-SW-S-10	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.56 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120321-S-SPS-SW-S-8	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.22 J	pg/g
	11215131-120321-S-SPS-SW-S-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.83 J	pg/g
	11215131-120321-S-JC-SW-S-13	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.47 J	pg/g
	11215131-120321-S-JC-SW-S-13	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	4.89 J	pg/g
	11215131-120321-S-JC-SW-S-13	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.04 J	pg/g
	11215131-120321-S-JC-SW-S-13	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.696 J	pg/g
	11215131-120421-S-JC-SC-S-10	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.19 J	pg/g
	11215131-120421-S-JC-SC-S-10	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.23 J	pg/g
	11215131-120421-S-JC-SC-S-11	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.994 J	pg/g
	11215131-120421-S-JC-SC-S-11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.34 J	pg/g
	11215131-120621-S-JC-SC-S-2	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.5 J	pg/g
	11215131-120321-S-SS-SW-S-14	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.22 J	pg/g
	11215131-120321-S-SS-SW-S-14	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.34 J	pg/g
	11215131-120321-S-SS-SW-S-14	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.0884 J	pg/g
	11215131-120621-S-SS-SC-S-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.59 J	pg/g
	11215131-120621-S-SS-SC-S-6	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.826 J	pg/g
	11215131-120621-S-SS-SC-S-6	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.15 J	pg/g
	11215131-120621-S-SS-SC-S-5	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.469 J	pg/g
	11215131-120621-S-SS-SC-S-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.41 J	pg/g
	11215131-120621-S-JC-SC-S-14	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.92 J	pg/g
	11215131-120721-S-SS-SC-S-9	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	2.71 J	pg/g
	11215131-120821-S-SS-SW-S-26	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.23 J	pg/g
	11215131-120821-S-JC-SW-S-15	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.74 J	pg/g
	11215131-120821-S-JC-SW-S-15	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.44 J	pg/g
	11215131-120821-S-JC-SW-S-16	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.591 J	pg/g
	11215131-120321-S-JC-SW-B-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.85 J	pg/g
	11215131-120221-S-SPS-SW-O-3	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.11 J	pg/g
	11215131-120221-S-SPS-SW-B-4	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.92 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120321-S-SPS-SW-O-5	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.673 J	pg/g
	11215131-120321-S-SPS-SW-O-4	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.78 J	pg/g
	11215131-120321-S-SPS-SW-O-4	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2.71 J	pg/g
	11215131-120421-S-JC-SC-B-5	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.892 J	pg/g
	11215131-120421-S-JC-SC-B-5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.607 J	pg/g
	11215131-120821-S-SS-SW-S-24	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.06 J	pg/g
	11215131-120921-S-SS-NC-S-12	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1 J	pg/g
	11215131-120921-S-SS-NC-S-12	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.19 J	pg/g
	11215131-120921-S-SS-NC-S-13	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.11 J	pg/g
	11215131-120921-S-SS-NC-S-13	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.839 J	pg/g
	11215131-120921-S-SS-NC-S-13	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.32 J	pg/g
	11215131-120821-S-JC-SW-S-22	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.721 J	pg/g
	11215131-120921-S-JC-NC-S-11	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.4 J	pg/g
	11215131-121421-S-BN-NC-S-15	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	5.04 J	pg/g
	11215131-120121-S-JC-NE-O-6	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.54 J	pg/g
	11215131-120121-S-JC-NE-O-6	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	6.53 J	pg/g
	11215131-120121-S-JC-NE-B-1	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.746 J	pg/g
	11215131-120121-S-JC-NE-B-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.893 J	pg/g
	11215131-120121-S-JC-NE-O-7	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.872 J	pg/g
	11215131-120121-S-JC-NE-O-7	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.573 J	pg/g
	11215131-120421-S-SS-SC-O-8	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	5.14 J	pg/g
	11215131-120621-S-SS-SC-B-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.757 J	pg/g
	11215131-120721-S-SS-NC-O-7	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.49 J	pg/g
	11215131-120821-S-SS-SW-B-12	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.01 J	pg/g
	11215131-120821-S-SS-SW-O-9	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.285 J	pg/g
	11215131-120821-S-SS-SW-B-11	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.29 J	pg/g
	11215131-120821-S-JC-SW-B-10	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.449 J	pg/g
	11215131-120821-S-JC-SW-B-10	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.139 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120821-S-JC-SW-B-10	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.232 J	pg/g
	11215131-120821-S-JC-DUP-6	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.52 J	pg/g
	11215131-120921-S-JC-NC-O-11	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3 J	pg/g
	11215131-120921-S-JC-NC-B-3	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.695 J	pg/g
	11215131-121021-S-SS-NC-O-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.04 J	pg/g
	11215131-121321-S-SS-NC-O-25	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.44 J	pg/g
	11215131-121321-S-SS-NC-O-24	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.734 J	pg/g
	11215131-121321-S-BN-NC-O-22	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.86 J	pg/g
	11215131-121321-S-BN-DUP-8	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.04 J	pg/g
	11215131-121321-S-BN-NC-O-18	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.91 J	pg/g
	11215131-121321-S-BN-NC-O-18	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.53 J	pg/g
	11215131-121321-S-BN-NC-O-19	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.07 J	pg/g
	11215131-121321-S-SS-NC-O-4	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.07 J	pg/g
	11215131-121321-S-SS-NC-O-4	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.984 J	pg/g
	11215131-121321-S-SS-NC-O-4	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.47 J	pg/g
	11215131-121321-S-SS-NC-O-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.55 J	pg/g
	11215131-121321-S-SS-NC-O-5	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.26 J	pg/g
	11215131-121421-S-BN-NC-O-15	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.31 J	pg/g
	11215131-121421-S-BN-NC-O-15	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.88 J	pg/g
	11215131-121421-S-BN-NC-O-15	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.8 J	pg/g
	11215131-121421-S-BN-NC-O-16	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	40.6 J	pg/g
	11215131-121421-S-BN-NC-O-16	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.939 J	pg/g
	11215131-121421-S-BN-NC-O-16	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.42 J	pg/g
	11215131-121421-S-BN-NC-O-16	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.536 J	pg/g
	11215131-121421-S-BN-NC-O-16	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.23 J	pg/g
	11215131-121421-S-BN-NC-O-16	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.566 J	pg/g
	11215131-121421-S-BN-NC-O-16	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.58 J	pg/g
	11215131-121621-S-BN-NE-O-10	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.34 J	pg/g

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Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-121621-S-BN-NE-O-10	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.73 J	pg/g
	11215131-121621-S-BN-NE-O-11	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.91 J	pg/g
	11215131-121621-S-BN-NE-O-11	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.48 J	pg/g
	11215131-121621-S-BN-NE-O-11	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.39 J	pg/g
	11215131-121621-S-BN-NE-O-11	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.56 J	pg/g
	11215131-121621-S-BN-NE-O-11	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.15 J	pg/g
	11215131-121621-S-BN-NE-O-11	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.5 J	pg/g
	11215131-121621-S-BN-NE-B-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.56 J	pg/g
	11215131-121721-S-BN-NE-O-12	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.87 J	pg/g
	11215131-121721-S-BN-NE-O-12	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.05 J	pg/g
	11215131-121721-S-BN-NE-O-12	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3.46 J	pg/g
	11215131-122021-S-BN-SC-S-25	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.56 J	pg/g
	11215131-122021-S-BN-SC-S-21	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.937 J	pg/g
	11215131-122021-S-BN-SC-S-21	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.06 J	pg/g
	11215131-122021-S-BN-SC-S-21	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.573 J	pg/g
	11215131-122021-S-BN-SC-S-21	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.814 J	pg/g
	11215131-122121-S-BN-SC-S-20	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.259 J	pg/g
	11215131-122121-S-BN-SC-S-20	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.567 J	pg/g
	11215131-122121-S-BN-SC-S-20	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.407 J	pg/g
	11215131-010522-S-BN-SW-S-36	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	11.5 J	pg/g
	11215131-010522-S-BN-SW-S-36	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.945 J	pg/g
	11215131-010622-S-BN-SW-S-30	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.71 J	pg/g
	11215131-010622-S-BN-SW-S-30	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.753 J	pg/g
	11215131-010622-S-BN-SW-S-30	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.971 J	pg/g
	11215131-010622-S-BN-SW-S-30	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.66 J	pg/g
	11215131-010622-S-BN-SW-S-30	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.02 J	pg/g
	11215131-010622-S-BN-SW-S-35	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	7.04 J	pg/g
	11215131-010622-S-BN-SW-S-35	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.75 J	pg/g

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Dioxins/Furans	11215131-010522-S-BN-SW-S-41	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.18 J	pg/g
	11215131-010522-S-BN-SW-S-41	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.12 J	pg/g
	11215131-010622-S-BN-SW-S-28	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.48 J	pg/g
	11215131-010622-S-BN-SW-S-28	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.897 J	pg/g
	11215131-010622-S-BN-SW-S-28	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.42 J	pg/g
	11215131-010622-S-BN-SW-S-28	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.54 J	pg/g
	11215131-010622-S-BN-SW-S-28	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.27 J	pg/g
	11215131-010622-S-BN-SW-S-28	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.16 J	pg/g
	11215131-010622-S-BN-SW-S-29	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.804 J	pg/g
	11215131-010622-S-BN-SW-S-29	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.316 J	pg/g
	11215131-010722-S-BN-SW-S-31	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.82 J	pg/g
	11215131-010722-S-BN-SW-S-32	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.78 J	pg/g
	11215131-010722-S-BN-SW-S-32	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.454 J	pg/g
	11215131-010722-S-BN-SW-S-32	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.512 J	pg/g
	11215131-010722-S-BN-SW-S-33	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.89 J	pg/g
	11215131-010722-S-BN-SW-S-33	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.08 J	pg/g
	11215131-010722-S-BN-SW-S-33	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.466 J	pg/g
	11215131-011022-S-BN-NC-S-20	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.37 J	pg/g
	11215131-011022-S-BN-NC-S-20	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.907 J	pg/g
	11215131-011022-S-BN-NC-S-20	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.46 J	pg/g
	11215131-011022-S-BN-NC-S-32	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.983 J	pg/g
	11215131-011022-S-BN-NC-S-32	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.58 J	pg/g
	11215131-011022-S-BN-NC-S-32	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.28 J	pg/g
	11215131-011022-S-BN-NC-S-32	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.825 J	pg/g
	11215131-011022-S-BN-NC-S-32	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.57 J	pg/g
	11215131-011022-S-BN-NC-S-32	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.09 J	pg/g
	11215131-011022-S-BN-NC-S-32	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.54 J	pg/g
	11215131-011122-S-BN-NC-S-25	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.43 J	pg/g

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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-011122-S-BN-NC-S-22	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.91 J	pg/g
	11215131-010722-S-BN-SW-S-39	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.953 J	pg/g
	11215131-120221-S-SPS-SW-B-9H1	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.51 J	pg/g
	11215131-120321-S-JC-SW-B-3H	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.17 J	pg/g
	11215131-120221-S-SPS-SW-B-4H1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.81 J	pg/g
	11215131-120321-S-SPS-SW-B-5H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.35 J	pg/g
	11215131-120221-S-JC-SW-B-2H	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.998 J	pg/g
	11215131-120321-S-JC-SW-B-6H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.35 J	pg/g
	11215131-122021-S-BN-SC-O-17	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.46 J	pg/g
	11215131-122021-S-BN-SC-O-17	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.55 J	pg/g
	11215131-122021-S-BN-SC-O-16	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.19 J	pg/g
	11215131-122021-S-BN-SC-B-10	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.16 J	pg/g
	11215131-122021-S-BN-SC-B-10	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.454 J	pg/g
	11215131-122021-S-BN-SC-B-10	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.379 J	pg/g
	11215131-122021-S-BN-SC-O-15	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.45 J	pg/g
	11215131-122021-S-BN-DUP-9	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	6.25 J	pg/g
	11215131-122121-S-BN-SC-O-14	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.07 J	pg/g
	11215131-122121-S-BN-SC-O-14	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.61 J	pg/g
	11215131-122121-S-BN-SC-O-14	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.583 J	pg/g
	11215131-122121-S-BN-SC-B-8	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.76 J	pg/g
	11215131-011222-S-BN-SC-S-26	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.04 J	pg/g
	11215131-011222-S-BN-SC-S-27	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.24 J	pg/g
	11215131-011222-S-BN-SC-S-27	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.82 J	pg/g
	11215131-120321-S-SS-SW-B-7H1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.3 J	pg/g
	11215131-120321-S-SS-SW-B-7H1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.76 J	pg/g
	11215131-120621-S-SS-SC-B-2H	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	14.4 J	pg/g
	11215131-120621-S-SS-SC-B-2H	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.591 J	pg/g
	11215131-120621-S-SS-SC-B-6H	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.513 J	pg/g

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Dioxins/Furans	11215131-120621-S-SS-SC-B-6H	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.517 J	pg/g
	11215131-120821-S-JC-SW-B-8H1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.09 J	pg/g
	11215131-120821-S-JC-SW-B-8H1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.51 J	pg/g
	11215131-120821-S-JC-SW-B-8H1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.78 J	pg/g
	11215131-010522-S-BN-SW-O-17	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.56 J	pg/g
	11215131-010522-S-BN-SW-O-17	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.396 J	pg/g
	11215131-010522-S-BN-SW-O-17	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.83 J	pg/g
	11215131-010522-S-BN-SW-O-17	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.42 J	pg/g
	11215131-010522-S-BN-SW-B-19	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.277 J	pg/g
	11215131-010522-S-BN-SW-B-19	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.32 J	pg/g
	11215131-010622-S-BN-SW-O-11	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.3 J	pg/g
	11215131-010622-S-BN-SW-O-11	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	6.05 J	pg/g
	11215131-010622-S-BN-SW-B-13	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.35 J	pg/g
	11215131-010622-S-BN-SW-B-13	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.8 J	pg/g
	11215131-010622-S-BN-SW-B-13	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.77 J	pg/g
	11215131-010722-S-BN-SW-O-13	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.41 J	pg/g
	11215131-010722-S-BN-SW-O-13	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.73 J	pg/g
	11215131-010722-S-BN-SW-O-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.27 J	pg/g
	11215131-010722-S-BN-SW-O-14	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.72 J	pg/g
	11215131-010722-S-BN-SW-B-16	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.793 J	pg/g
	11215131-010522-S-BN-SW-O-15	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.38 J	pg/g
	11215131-010522-S-BN-SW-O-15	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.7 J	pg/g
	11215131-010522-S-BN-SW-O-15	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.53 J	pg/g
	11215131-010522-S-BN-SW-O-15	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.53 J	pg/g
	11215131-010522-S-BN-SW-O-15	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.495 J	pg/g
	11215131-010522-S-BN-SW-O-15	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.352 J	pg/g
	11215131-010522-S-BN-SW-B-17	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.11 J	pg/g
	11215131-010622-S-BN-SW-O-12	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.97 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-010622-S-BN-SW-B-15	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.61 J	pg/g
	11215131-011022-S-BN-NC-B-7	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.14 J	pg/g
	11215131-011122-S-BN-NC-O-30	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.33 J	pg/g
	11215131-011122-S-BN-NC-O-30	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.09 J	pg/g
	11215131-011122-S-BN-NC-O-30	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.28 J	pg/g
	11215131-011122-S-BN-NC-O-32	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.36 J	pg/g
	11215131-011122-S-BN-NC-O-32	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.82 J	pg/g
	11215131-010722-S-BN-SW-O-16	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.03 J	pg/g
	11215131-010722-S-BN-SW-B-18	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.808 J	pg/g
	11215131-010722-S-BN-SW-B-18	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.05 J	pg/g
	11215131-010722-S-BN-SW-B-18	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.882 J	pg/g
	11215131-010822-S-BN-NC-O-33	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.84 J	pg/g
	11215131-010822-S-BN-NC-O-33	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.18 J	pg/g
	11215131-010822-S-BN-NC-O-34	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.8 J	pg/g
	11215131-010822-S-BN-NC-O-31	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.85 J	pg/g
	11215131-010722-S-BN-DUP-11	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.752 J	pg/g
	11215131-010722-S-BN-DUP-11	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.625 J	pg/g
	11215131-010722-S-BN-DUP-11	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.36 J	pg/g
	11215131-011022-S-BN-NC-O-29	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.6 J	pg/g
	11215131-011222-S-BN-SC-O-14A	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.634 J	pg/g
	11215131-011222-S-BN-SC-O-14A	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.21 J	pg/g
	11215131-011222-S-BN-SC-B-8A	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.4 J	pg/g
	11215131-011222-S-BN-SC-B-8A	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.661 J	pg/g
	11215131-011222-S-BN-SC-B-8A	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.06 J	pg/g
	11215131-011222-S-BN-SC-B-8A	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.26 J	pg/g
	11215131-011222-S-BN-SC-B-8A	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.875 J	pg/g
	11215131-011222-S-BN-SC-O-18	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.91 J	pg/g
	11215131-011222-S-BN-SC-O-18	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	5.1 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-121621-S-BN-NE-B-3H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.27 J	pg/g
	11215131-122021-S-BN-SC-B-11H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.64 J	pg/g
	11215131-010522-S-BN-SW-B-17H1	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.418 J	pg/g
	11215131-010522-S-BN-SW-B-17H1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.622 J	pg/g
	11215131-012022-S-BN-SW-S-44	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.853 J	pg/g
	11215131-011922-S-BN-SW-S-46	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	29.5 J	pg/g
	11215131-011922-S-BN-SW-S-43	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.8 J	pg/g
	11215131-011922-S-BN-SW-S-42	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.8 J	pg/g
	11215131-011922-S-BN-SW-S-42	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	7.99 J	pg/g
	11215131-012022-S-BN-SW-O-20	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.06 J	pg/g
	11215131-012022-S-BN-SW-O-20	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.586 J	pg/g
	11215131-012022-S-BN-SW-O-20	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.1 J	pg/g
	11215131-012022-S-BN-SW-O-20	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.13 J	pg/g
	11215131-012022-S-BN-SW-B-22	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.558 J	pg/g
	11215131-012022-S-BN-SW-B-22	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.09 J	pg/g
	11215131-011922-S-BN-SW-B-23	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3.86 J	pg/g
	11215131-011922-S-BN-SW-O-19	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.07 J	pg/g
	11215131-011922-S-BN-SW-O-19	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.96 J	pg/g
	11215131-011922-S-BN-SW-O-19	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.12 J	pg/g
	11215131-011922-S-BN-SW-O-18	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.29 J	pg/g
	11215131-011922-S-BN-SW-O-18	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.26 J	pg/g
	11215131-120121-S-JC-NE-B-1H	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.844 J	pg/g
	11215131-120121-S-JC-NE-B-1H	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.712 J	pg/g
	11215131-120121-S-JC-NE-B-1H	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.933 J	pg/g
	11215131-120221-S-SPS-SW-B-4H2	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.67 J	pg/g
	11215131-120221-S-SPS-SW-B-4H2	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.794 J	pg/g
	11215131-120221-S-SPS-SW-B-4H2	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.62 J	pg/g
	11215131-120821-S-SS-SW-B-12H	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.47 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120821-S-SS-SW-B-12H	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.937 J	pg/g
	11215131-120821-S-SS-SW-B-12H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.711 J	pg/g
	11215131-120821-S-SS-SW-B-12H	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.53 J	pg/g
	11215131-120821-S-SS-SW-B-12H	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.04 J	pg/g
	11215131-120821-S-SS-SW-B-12H	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.582 J	pg/g
	11215131-120821-S-JC-SW-B-8H2	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.342 J	pg/g
	11215131-120821-S-JC-SW-B-8H2	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.511 J	pg/g
	11215131-120821-S-JC-SW-B-8H2	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.76 J	pg/g
	11215131-120821-S-JC-SW-B-8H2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.619 J	pg/g
	11215131-010522-S-BN-SW-B-19H1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.39 J	pg/g
	11215131-010522-S-BN-SW-B-19H1	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.405 J	pg/g
	11215131-010522-S-BN-SW-B-19H1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.672 J	pg/g
	11215131-010522-S-BN-SW-B-19H1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.998 J	pg/g
	11215131-010522-S-BN-SW-B-19H1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.796 J	pg/g
	11215131-010522-S-BN-SW-B-17H2	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.513 J	pg/g
	11215131-010622-S-BN-SW-B-15H2	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.969 J	pg/g
	11215131-010622-S-BN-SW-B-15H2	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.597 J	pg/g
	11215131-010622-S-BN-SW-B-15H2	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.23 J	pg/g
	11215131-010622-S-BN-SW-B-15H2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.12 J	pg/g
	11215131-010622-S-BN-SW-B-14H	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.45 J	pg/g
	11215131-010622-S-BN-SW-B-14H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.333 J	pg/g
	11215131-010622-S-BN-SW-B-14H	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.686 J	pg/g
	11215131-010622-S-BN-SW-B-14H	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.255 J	pg/g
	11215131-010622-S-BN-SW-B-14H	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.243 J	pg/g
	11215131-010622-S-BN-SW-B-14H	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.26 J	pg/g
	11215131-010722-S-BN-SW-B-16H	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.533 J	pg/g
	11215131-010522-S-BN-SW-B-17H2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.34 J	pg/g
	11215131-011222-S-BN-SC-B-8aH	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.411 J	pg/g

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Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-011222-S-BN-SC-B-8aH	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.774 J	pg/g
	11215131-011222-S-BN-SC-B-8aH	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.401 J	pg/g
	11215131-011222-S-BN-SC-B-8aH	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.321 J	pg/g
	11215131-011222-S-BN-SC-B-8aH	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.13 J	pg/g
	11215131-011922-S-BN-SW-B-21H1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.6 J	pg/g
	11215131-011922-S-BN-SW-B-21H2	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.881 J	pg/g
	11215131-011922-S-BN-SW-B-21H2	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.27 J	pg/g
	11215131-011922-S-BN-SW-B-21H2	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.35 J	pg/g
	11215131-012122-S-BN-NC-S-36	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.06 J	pg/g
	11215131-012222-S-BN-NC-S-34	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.81 J	pg/g
	11215131-012222-S-BN-NC-S-34	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.514 J	pg/g
	11215131-012222-S-BN-NC-S-34	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.45 J	pg/g
	11215131-012222-S-BN-NC-S-34	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.42 J	pg/g
	11215131-012222-S-BN-NC-S-35	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7 J	pg/g
	11215131-012222-S-BN-NC-S-33	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.21 J	pg/g
	11215131-012222-S-BN-NC-S-33	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.43 J	pg/g
	11215131-012222-S-BN-NC-S-41	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.53 J	pg/g
	11215131-012222-S-BN-NC-S-41	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.61 J	pg/g
	11215131-012222-S-BN-NC-S-37	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.79 J	pg/g
	11215131-012122-S-BN-NC-O-38	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.09 J	pg/g
	11215131-012222-S-BN-NC-O-36	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	2.41 J	pg/g
	11215131-012222-S-BN-NC-O-35	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.14 J	pg/g
	11215131-012222-S-BN-NC-B-10	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.68 J	pg/g
	11215131-012222-S-BN-NC-B-10	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.3 J	pg/g
	11215131-012222-S-BN-NC-O-39	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.48 J	pg/g
	11215131-012222-S-BN-NC-B-12	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1 J	pg/g
	11215131-012222-S-BN-DUP-14	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.41 J	pg/g
	11215131-012122-S-BN-NC-O-42	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.23 J	pg/g

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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-012122-S-BN-NC-O-40	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.23 J	pg/g
	11215131-012122-S-BN-NC-B-11	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.804 J	pg/g
	11215131-020222-S-SB-NC-S-46	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.42 J	pg/g
	11215131-020222-S-SB-NC-S-46	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	2.2 J	pg/g
	11215131-020222-S-SB-NC-O-47	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.32 J	pg/g
	11215131-020222-S-SB-NC-O-45	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.64 J	pg/g
	11215131-020222-S-SB-NC-O-45	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.98 J	pg/g
	11215131-020422-S-SB-SW-S-50	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.505 J	pg/g
	11215131-020422-S-SB-SW-S-50	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.204 J	pg/g
	11215131-020422-S-SB-SW-S-50	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.628 J	pg/g
	11215131-020422-S-SB-SW-S-50	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.197 J	pg/g
	11215131-020422-S-SB-SW-S-50	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.244 J	pg/g
	11215131-020422-S-SB-SW-S-50	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.171 J	pg/g
	11215131-020422-S-SB-SW-S-50	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	0.467 J	pg/g
	11215131-020422-S-SB-SW-S-50	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.46 J	pg/g
	11215131-020422-S-SB-SW-S-49	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.638 J	pg/g
	11215131-020422-S-SB-SW-B-27	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.409 J	pg/g
	11215131-020422-S-SB-SW-B-27	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.363 J	pg/g
	11215131-020422-S-SB-SW-B-27H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.458 J	pg/g
	11215131-020422-S-SB-SW-B-27H	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.865 J	pg/g
	11215131-020422-S-SB-SW-B-27H	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.313 J	pg/g
	11215131-020422-S-SB-SW-O-25	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.916 J	pg/g
	11215131-020422-S-SB-SW-O-25	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.62 J	pg/g
	11215131-020422-S-SB-SW-B-25	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.677 J	pg/g
	11215131-020422-S-SB-SW-B-25	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.71 J	pg/g
	11215131-020422-S-SB-SW-B-25	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.16 J	pg/g
	11215131-020422-S-SB-SW-B-25H2	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.37 J	pg/g
	11215131-020422-S-SB-SW-B-25H2	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.244 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-020422-S-SB-SW-S-47	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.255 J	pg/g
	11215131-020422-S-SB-SW-S-47	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.919 J	pg/g
	11215131-020422-S-SB-SW-S-47	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.222 J	pg/g
	11215131-020422-S-SB-SW-S-47	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	0.775 J	pg/g
	11215131-020422-S-SB-SW-S-47	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.261 J	pg/g
	11215131-020422-S-SB-SW-S-47	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.346 J	pg/g
	11215131-020522-S-SB-SW-S-51	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.45 J	pg/g
	11215131-020522-S-SB-SW-S-51	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.309 J	pg/g
	11215131-020522-S-SB-SW-S-51	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.981 J	pg/g
	11215131-020522-S-SB-SW-S-52	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.64 J	pg/g
	11215131-020522-S-SB-SW-S-52	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.686 J	pg/g
	11215131-020522-S-SB-SW-S-52	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.8 J	pg/g
	11215131-020622-S-SB-SC-S-31	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.12 J	pg/g
	11215131-020622-S-SB-SC-S-31	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.372 J	pg/g
	11215131-020622-S-SB-SC-S-31	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.752 J	pg/g
	11215131-020422-S-SB-SW-O-22	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.36 J	pg/g
	11215131-020422-S-SB-SW-O-22	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.9 J	pg/g
	11215131-020422-S-SB-SW-B-24H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.17 J	pg/g
	11215131-020422-S-SB-DUP-15	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.93 J	pg/g
	11215131-020522-S-SB-SW-O-24	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.41 J	pg/g
	11215131-020522-S-SB-SW-B-26	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.49 J	pg/g
	11215131-020522-S-SB-SW-B-26	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.839 J	pg/g
	11215131-020522-S-SB-SW-B-26	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	0.647 J	pg/g
	11215131-020522-S-SB-NE-O-13	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.46 J	pg/g
	11215131-020522-S-SB-NE-O-13	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.23 J	pg/g
	11215131-020522-S-SB-NE-O-13	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.6 J	pg/g
	11215131-020522-S-SB-NE-O-13	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.17 J	pg/g
	11215131-020522-S-SB-NE-O-13	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.656 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-020522-S-SB-NE-B-5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.62 J	pg/g
	11215131-020622-S-SB-SC-B-15H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.17 J	pg/g
	11215131-020622-S-SB-SC-O-22	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.86 J	pg/g
	11215131-020622-S-SB-SC-O-22	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.3 J	pg/g
	11215131-020622-S-SB-SC-O-23	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	6.94 J	pg/g
	11215131-020622-S-SB-SC-B-16	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.47 J	pg/g
	11215131-020622-S-SB-SC-B-16H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.624 J	pg/g
	11215131-020622-S-SB-SC-B-16H	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.06 J	pg/g
	11215131-020622-S-SB-SC-B-16H	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.702 J	pg/g
	11215131-020622-S-SB-SC-O-20	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.764 J	pg/g
	11215131-020622-S-SB-SC-B-14	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.376 J	pg/g
	11215131-020622-S-SB-SC-B-14	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	0.486 J	pg/g
	11215131-020622-S-SB-SC-B-14	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2.62 J	pg/g
	11215131-021822-S-SB-NC-S-48	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.09 J	pg/g
	11215131-021722-S-SB-SC-S-33	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.45 J	pg/g
	11215131-021922-S-SB-NC-S-50	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.75 J	pg/g
	11215131-021922-S-SB-NC-S-50	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.551 J	pg/g
	11215131-021922-S-SB-NC-S-50	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.93 J	pg/g
	11215131-021722-S-SB-SC-B-17	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	0.381 J	pg/g
	11215131-021722-S-SB-SC-B-17	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.34 J	pg/g
	11215131-021722-S-SB-SC-B-17	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.23 J	pg/g
	11215131-021722-S-SB-SC-B-17	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	0.635 J	pg/g
	11215131-021722-S-SB-SC-B-17H	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	0.362 J	pg/g
	11215131-021722-S-SB-SC-B-17H	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.521 J	pg/g
	11215131-021722-S-SB-SC-B-17H	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	0.967 J	pg/g
	11215131-021722-S-SB-SC-B-17H	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.45 J	pg/g
	11215131-021722-S-SB-NC-O-52	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.22 J	pg/g
	11215131-021822-S-SB-NC-O-50	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.68 J	pg/g

Table 11

Qualified Sample Results Due to Outlying Identification Criteria
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-021822-S-SB-NC-O-50	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.03 J	pg/g
	11215131-021822-S-SB-NC-B-16	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	0.645 J	pg/g
	11215131-021822-S-SB-DUP-17	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.25 J	pg/g
	11215131-021822-S-SB-DUP-17	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.55 J	pg/g
	11215131-021822-S-SB-NC-S-51	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	0.403 J	pg/g

Notes:

J - Estimated concentration

Table 12

Qualified Sample Results Due to Diphenyl Ether Interference
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120421-S-SS-SC-O-8	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	16.5 J	pg/g

Notes:

J - Estimated concentration

Table 13

Qualified Sample Results Due to Poor Resolution
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120121-S-JC-NE-S-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.63 J+	pg/g
	11215131-120121-S-JC-NE-S-10	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.46 J+	pg/g
	11215131-120221-S-SPS-SW-S-17	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	389 J+	pg/g
	11215131-120121-S-SPS-NE-B-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.55 J+	pg/g
	11215131-120121-S-SPS-NE-S-12	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.09 J+	pg/g
	11215131-120121-S-SPS-NE-S-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	22.8 J+	pg/g
	11215131-113021-S-JC-NE-S-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	18.3 J+	pg/g
	11215131-113021-S-JC-NE-S-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	48.2 J+	pg/g
	11215131-120121-S-JC-NE-S-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	19.2 J+	pg/g
	11215131-113021-S-SPS-NE-O-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.87 J+	pg/g
	11215131-113021-S-JC-NE-O-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.12 J+	pg/g
	11215131-113021-S-JC-NE-O-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.78 J+	pg/g
	11215131-120221-S-JC-SW-S-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.48 J+	pg/g
	11215131-120421-S-SS-SC-S-16	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	235 J+	pg/g
	11215131-120421-S-SS-SC-S-17	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	233 J+	pg/g
	11215131-120621-S-SS-SC-S-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.53 J+	pg/g
	11215131-120621-S-SS-SC-S-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.61 J+	pg/g
	11215131-120621-S-JC-SC-S-14	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.47 J+	pg/g
	11215131-120621-S-JC-SC-S-15	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.49 J+	pg/g
	11215131-120721-S-JC-SC-S-7	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	575 J+	pg/g
	11215131-120621-S-SS-SC-S-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.7 J+	pg/g
	11215131-120721-S-SS-SC-S-9	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.43 J+	pg/g
	11215131-120721-S-SS-SC-S-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.7 J+	pg/g
	11215131-120721-S-SS-NC-S-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	266 J+	pg/g
	11215131-120721-S-SS-NC-S-9	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	71.1 J+	pg/g
	11215131-120821-S-SS-SW-S-26	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	146 J+	pg/g
	11215131-120821-S-SS-SW-S-25	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57.8 J+	pg/g
	11215131-120821-S-SS-SW-S-27	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	37.5 J+	pg/g

Table 13

Qualified Sample Results Due to Poor Resolution
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120721-S-JC-NC-S-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.03 J+	pg/g
	11215131-120821-S-JC-SW-S-15	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	20.3 J+	pg/g
	11215131-120821-S-JC-SW-S-16	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.06 J+	pg/g
	11215131-120321-S-JC-SW-B-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	70.3 J+	pg/g
	11215131-120421-S-JC-SC-O-12	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	58.5 J+	pg/g
	11215131-120421-S-JC-SC-O-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.92 J+	pg/g
	11215131-120421-S-JC-SC-O-7	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	675 J+	pg/g
	11215131-120621-S-JC-SC-O-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	10.9 J+	pg/g
	11215131-120621-S-JC-SC-B-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	864 J+	pg/g
	11215131-120821-S-SS-SW-S-24	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	52.9 J+	pg/g
	11215131-120821-S-SS-SW-S-23	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	15.3 J+	pg/g
	11215131-120921-S-SS-NC-S-12	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.43 J+	pg/g
	11215131-120921-S-SS-NC-S-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.17 J+	pg/g
	11215131-120921-S-SS-NC-S-14	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	99.9 J+	pg/g
	11215131-120821-S-JC-SW-S-20	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	49.6 J+	pg/g
	11215131-120821-S-JC-SW-S-21	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	54.1 J+	pg/g
	11215131-120821-S-JC-SW-S-22	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	50.6 J+	pg/g
	11215131-120921-S-JC-NC-S-10	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	201 J+	pg/g
	11215131-120921-S-JC-NC-S-11	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	56.9 J+	pg/g
	11215131-121021-S-JC-NC-S-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	229 J+	pg/g
	11215131-121021-S-JC-NC-S-5	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	62.7 J+	pg/g
	11215131-121021-S-SS-NC-S-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	129 J+	pg/g
	11215131-121021-S-SS-NC-S-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	180 J+	pg/g
	11215131-121021-S-SS-NC-S-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	207 J+	pg/g
	11215131-121321-S-SS-NC-S-19	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	53.5 J+	pg/g
	11215131-121321-S-BN-NC-S-16	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	44.7 J+	pg/g
	11215131-121321-S-BN-NC-S-17	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	30.7 J+	pg/g
	11215131-121321-S-BN-NC-S-18	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	28 J+	pg/g

Table 13

Qualified Sample Results Due to Poor Resolution
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result		Units
Dioxins/Furans	11215131-120121-S-JC-NE-B-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.34	J+	pg/g
	11215131-120321-S-SS-SW-B-7	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	200	J+	pg/g
	11215131-120421-S-SS-SC-O-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	23	J+	pg/g
	11215131-120421-S-SS-SC-O-11	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.49	J+	pg/g
	11215131-120421-S-SS-SC-B-7	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1760	J+	pg/g
	11215131-120421-S-SS-DUP-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	19	J+	pg/g
	11215131-120421-S-SS-SC-O-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	16.2	J+	pg/g
	11215131-120621-S-SS-SC-O-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.88	J+	pg/g
	11215131-120621-S-SS-SC-B-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	26.2	J+	pg/g
	11215131-120621-S-JC-SC-O-10	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.42	J+	pg/g
	11215131-120721-S-JC-SC-O-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.43	J+	pg/g
	11215131-120721-S-JC-SC-B-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	426	J+	pg/g
	11215131-120721-S-JC-SC-O-5	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.99	J+	pg/g
	11215131-120621-S-SS-SC-O-9	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.93	J+	pg/g
	11215131-120621-S-SS-SC-B-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	78.3	J+	pg/g
	11215131-120721-S-SS-SC-O-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	12.5	J+	pg/g
	11215131-120721-S-SS-SC-B-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.07	J+	pg/g
	11215131-120721-S-SS-NC-O-7	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	50.3	J+	pg/g
	11215131-120721-S-SS-NC-O-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	138	J+	pg/g
	11215131-120821-S-SS-SW-O-10	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	9.45	J+	pg/g
	11215131-120821-S-SS-DUP-5	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.65	J+	pg/g
	11215131-120821-S-SS-SW-B-12	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	13.6	J+	pg/g
	11215131-120721-S-JC-NC-O-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	87.3	J+	pg/g
	11215131-120821-S-JC-SW-O-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	80.6	J+	pg/g
	11215131-120821-S-JC-SW-B-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	165	J+	pg/g
	11215131-120921-S-SS-NC-O-12	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	9.92	J+	pg/g
	11215131-120821-S-JC-SW-O-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.27	J+	pg/g
	11215131-120821-S-JC-DUP-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.66	J+	pg/g

Table 13

Qualified Sample Results Due to Poor Resolution
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120921-S-JC-NC-O-9	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	88.1 J+	pg/g
	11215131-120921-S-JC-NC-O-10	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	41.6 J+	pg/g
	11215131-120921-S-JC-NC-O-11	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	9.07 J+	pg/g
	11215131-120921-S-JC-NC-B-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	82.4 J+	pg/g
	11215131-121021-S-JC-NC-O-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.86 J+	pg/g
	11215131-121021-S-JC-NC-O-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	13 J+	pg/g
	11215131-121021-S-JC-NC-B-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	356 J+	pg/g
	11215131-120921-S-SS-NC-O-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.1 J+	pg/g
	11215131-120921-S-SS-NC-O-14	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.21 J+	pg/g
	11215131-120921-S-SS-NC-B-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	307 J+	pg/g
	11215131-121021-S-SS-NC-O-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.29 J+	pg/g
	11215131-121021-S-SS-NC-B-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	458 J+	pg/g
	11215131-121321-S-SS-NC-O-23	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	30.1 J+	pg/g
	11215131-121321-S-SS-NC-O-25	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.4 J+	pg/g
	11215131-121321-S-SS-NC-O-24	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.74 J+	pg/g
	11215131-121321-S-SS-NC-B-6	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	45.5 J+	pg/g
	11215131-121321-S-SS-DUP-7	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.45 J+	pg/g
	11215131-121321-S-BN-NC-O-20	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.81 J+	pg/g
	11215131-121321-S-BN-NC-O-21	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.17 J+	pg/g
	11215131-121321-S-BN-NC-O-22	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.62 J+	pg/g
	11215131-121321-S-BN-DUP-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.44 J+	pg/g
	11215131-121621-S-BN-NE-S-15	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.06 J+	pg/g
	11215131-121621-S-BN-NE-S-16	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.41 J+	pg/g
	11215131-121721-S-BN-NE-S-17	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	132 J+	pg/g
	11215131-121721-S-BN-NE-S-18	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	10.5 J+	pg/g
	11215131-121621-S-BN-NE-O-10	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.97 J+	pg/g
	11215131-121621-S-BN-NE-B-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	35.2 J+	pg/g
	11215131-121721-S-BN-NE-B-4	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	16 J+	pg/g

Table 13

Qualified Sample Results Due to Poor Resolution
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-122021-S-BN-SC-S-22	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	392 J+	pg/g
	11215131-122121-S-BN-SC-S-18	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	12.9 J+	pg/g
	11215131-122121-S-BN-SC-S-19	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	225 J+	pg/g
	11215131-010622-S-BN-SW-S-28	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.16 J+	pg/g
	11215131-010722-S-BN-SW-S-31	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	120 J+	pg/g
	11215131-010722-S-BN-SW-S-33	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.24 J+	pg/g
	11215131-011022-S-BN-NC-S-20	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.8 J+	pg/g
	11215131-011022-S-BN-NC-S-31	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	190 J+	pg/g
	11215131-011122-S-BN-NC-S-24	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	48.1 J+	pg/g
	11215131-011122-S-BN-NC-S-25	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	76.9 J+	pg/g
	11215131-011122-S-BN-NC-S-27	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	40.3 J+	pg/g
	11215131-011122-S-BN-NC-S-30	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	24.2 J+	pg/g
	11215131-011122-S-BN-NC-S-21	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	146 J+	pg/g
	11215131-011122-S-BN-NC-S-22	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	577 J+	pg/g
	11215131-010822-S-BN-NC-S-28	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	55.9 J+	pg/g
	11215131-010822-S-BN-NC-S-29	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	51.8 J+	pg/g
	11215131-010822-S-BN-NC-S-26	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	72.3 J+	pg/g
	11215131-011022-S-BN-NC-S-23	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	226 J+	pg/g
	11215131-010722-S-BN-SW-S-34	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.93 J+	pg/g
	11215131-010722-S-BN-SW-S-37	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	115 J+	pg/g
	11215131-010722-S-BN-SW-S-38	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	81.2 J+	pg/g
	11215131-010722-S-BN-SW-S-39	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	174 J+	pg/g
	11215131-120321-S-SPS-SW-B-5H	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	17.6 J+	pg/g
	11215131-120621-S-JC-SC-B-1H	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1960 J+	pg/g
	11215131-122021-S-BN-SC-O-17	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	0.755 J+	pg/g
	11215131-122021-S-BN-SC-O-17	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	20.5 J+	pg/g
	11215131-122021-S-BN-SC-O-16	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	22.4 J+	pg/g
	11215131-122021-S-BN-DUP-9	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	22.3 J+	pg/g

Table 13

Qualified Sample Results Due to Poor Resolution
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-122121-S-BN-SC-B-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	11.7 J+	pg/g
	11215131-011222-S-BN-SC-S-29	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1340 J+	pg/g
	11215131-010622-S-BN-SW-O-12	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	19.6 J+	pg/g
	11215131-010622-S-BN-DUP-10	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	92.3 J+	pg/g
	11215131-011122-S-BN-NC-O-30	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.08 J+	pg/g
	11215131-011122-S-BN-NC-O-32	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	13.3 J+	pg/g
	11215131-010822-S-BN-NC-O-33	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.07 J+	pg/g
	11215131-010822-S-BN-NC-O-31	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.59 J+	pg/g
	11215131-011222-S-BN-SC-O-19	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	265 J+	pg/g
	11215131-011222-S-BN-SC-B-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1440 J+	pg/g
	11215131-121621-S-BN-NE-B-3H	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.65 J+	pg/g
	11215131-010622-S-BN-SW-B-15H1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	14.7 J+	pg/g
	11215131-011922-S-BN-SW-B-20	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1880 J+	pg/g
	11215131-011922-S-BN-DUP-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	543 J+	pg/g
	11215131-011922-S-BN-SW-S-46	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	44.8 J+	pg/g
	11215131-121721-S-BN-NE-B-4H	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	20.2 J+	pg/g
	11215131-012122-S-BN-NC-S-36	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	54.8 J+	pg/g
	11215131-012222-S-BN-NC-O-36	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	20.5 J+	pg/g
	11215131-012222-S-BN-NC-O-39	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	12.5 J+	pg/g
	11215131-012122-S-BN-NC-O-42	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	20.6 J+	pg/g
	11215131-020222-S-SB-NC-O-46	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	23.7 J+	pg/g
	11215131-020222-S-SB-NC-B-14	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.09 J+	pg/g
	11215131-020222-S-SB-NC-O-44	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	32.4 J+	pg/g
	11215131-020222-S-SB-NC-B-13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	59.7 J+	pg/g
	11215131-020222-S-SB-NC-S-46	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	20.9 J+	pg/g
	11215131-020222-S-SB-NC-S-45	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	12 J+	pg/g
	11215131-020222-S-SB-NC-S-44	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	109 J+	pg/g
	11215131-020222-S-SB-NC-O-47	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4 J+	pg/g

Table 13

Qualified Sample Results Due to Poor Resolution
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result		Units
Dioxins/Furans	11215131-020422-S-SB-SW-S-49	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.94	J+	pg/g
	11215131-020422-S-SB-SW-S-48	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	17.4	J+	pg/g
	11215131-020522-S-SB-SW-S-52	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.83	J+	pg/g
	11215131-020522-S-SB-SW-S-53	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	28.8	J+	pg/g
	11215131-020622-S-SB-SC-S-30	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.04	J+	pg/g
	11215131-020622-S-SB-SC-B-15H	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	14	J+	pg/g
	11215131-020622-S-SB-SC-O-23	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	30.1	J+	pg/g
	11215131-021722-S-SB-SC-S-33	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	9.51	J+	pg/g
	11215131-021922-S-SB-NC-S-50	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.76	J+	pg/g
	11215131-021722-S-SB-SC-O-24	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	41.7	J+	pg/g
	11215131-021822-S-SB-NC-B-15	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	23.2	J+	pg/g
	11215131-021922-S-SB-NC-O-53	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	59.8	J+	pg/g
	11215131-021822-S-SB-NC-O-54	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.52	J+	pg/g
	11215131-021822-S-SB-NC-B-17	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	19.6	J+	pg/g

Notes:

J+ - Estimated concentration, result may be biased high.

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120121-S-JC-NE-S-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7450 J	pg/g
	11215131-120121-S-JC-NE-S-10	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10500 J	pg/g
	11215131-120221-S-JC-SW-S-1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1300 J	pg/g
	11215131-120221-S-JC-SW-S-2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1050 J	pg/g
	11215131-120221-S-SPS-SW-S-17	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5360 J	pg/g
	11215131-120221-S-SPS-SW-S-17	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	13600 J	pg/g
	11215131-120221-S-SPS-SW-S-19	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1590 J	pg/g
	11215131-120121-S-SPS-NE-O-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	12300 J	pg/g
	11215131-120121-S-SPS-NE-O-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	108000 J	pg/g
	11215131-120221-S-SPS-SW-B-9	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	15700 J	pg/g
	11215131-120221-S-SPS-SW-B-9	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4560 J	pg/g
	11215131-113021-S-SPS-NE-S-6	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9210 J	pg/g
	11215131-120121-S-SPS-NE-S-13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	38100 J	pg/g
	11215131-113021-S-JC-NE-S-2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	636 J	pg/g
	11215131-113021-S-JC-NE-S-3	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9310 J	pg/g
	11215131-113021-S-JC-NE-S-3	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	8940 J	pg/g
	11215131-113021-S-JC-NE-S-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1620 J	pg/g
	11215131-120121-S-JC-NE-S-4	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	6360 J	pg/g
	11215131-120121-S-JC-NE-S-4	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	589 J	pg/g
	11215131-113021-S-JC-NE-O-2	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	12900 J	pg/g
	11215131-120221-S-JC-SW-S-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1030 J	pg/g
	11215131-120221-S-SPS-SW-S-7	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2800 J	pg/g
	11215131-120221-S-SPS-SW-S-7	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	9470 J	pg/g
	11215131-120321-S-SPS-SW-S-11	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	6820 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120321-S-SPS-SW-S-11	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	22500 J	pg/g
	11215131-120321-S-SPS-SW-S-10	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	6550 J	pg/g
	11215131-120321-S-SPS-SW-S-10	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2000 J	pg/g
	11215131-120321-S-SPS-SW-S-10	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	7240 J	pg/g
	11215131-120321-S-SPS-SW-S-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	17800 J	pg/g
	11215131-120321-S-SPS-SW-S-9	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2360 J	pg/g
	11215131-120321-S-SPS-SW-S-9	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8390 J	pg/g
	11215131-120421-S-JC-SC-S-11	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1080 J	pg/g
	11215131-120421-S-JC-SC-S-12	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1870 J	pg/g
	11215131-120421-S-JC-SC-S-12	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	7130 J	pg/g
	11215131-120621-S-JC-SC-S-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	19900 J	pg/g
	11215131-120621-S-JC-SC-S-1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	20800 J	pg/g
	11215131-120621-S-JC-SC-S-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5890 J	pg/g
	11215131-120621-S-JC-DUP-4	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	28300 J	pg/g
	11215131-120621-S-JC-SC-S-2	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10900 J	pg/g
	11215131-120621-S-JC-SC-S-2	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1640 J	pg/g
	11215131-120621-S-JC-SC-S-2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6290 J	pg/g
	11215131-120621-S-JC-SC-S-3	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	27600 J	pg/g
	11215131-120621-S-JC-SC-S-3	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5840 J	pg/g
	11215131-120621-S-JC-SC-S-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	20600 J	pg/g
	11215131-120621-S-JC-DUP-4	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	30300 J	pg/g
	11215131-120621-S-JC-DUP-4	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	8810 J	pg/g
	11215131-120421-S-SS-SC-S-16	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2950 J	pg/g
	11215131-120421-S-SS-SC-S-16	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	7950 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120421-S-SS-SC-S-17	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2960 J	pg/g
	11215131-120421-S-SS-SC-S-17	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8310 J	pg/g
	11215131-120421-S-SS-SC-S-17	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	19200 J	pg/g
	11215131-120621-S-JC-SC-S-14	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7230 J	pg/g
	11215131-120721-S-JC-SC-S-7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	16300 J	pg/g
	11215131-120721-S-JC-SC-S-7	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4840 J	pg/g
	11215131-120721-S-JC-SC-S-7	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	14500 J	pg/g
	11215131-120621-S-SS-SC-S-13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9890 J	pg/g
	11215131-120721-S-SS-SC-S-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	17800 J	pg/g
	11215131-120721-S-SS-NC-S-8	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3140 J	pg/g
	11215131-120721-S-SS-NC-S-8	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	9470 J	pg/g
	11215131-120721-S-SS-NC-S-9	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	829 J	pg/g
	11215131-120721-S-SS-NC-S-9	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2220 J	pg/g
	11215131-120821-S-SS-SW-S-26	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1310 J	pg/g
	11215131-120821-S-SS-SW-S-26	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3600 J	pg/g
	11215131-120821-S-SS-SW-S-25	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1860 J	pg/g
	11215131-120821-S-SS-SW-S-27	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1270 J	pg/g
	11215131-120721-S-JC-NC-S-7	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2020 J	pg/g
	11215131-120721-S-JC-NC-S-7	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5530 J	pg/g
	11215131-120721-S-SS-NC-S-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	12200 J	pg/g
	11215131-120721-S-SS-NC-S-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	41500 J	pg/g
	11215131-120221-S-JC-SW-B-2	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1180 J	pg/g
	11215131-120221-S-JC-SW-B-2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4260 J	pg/g
	11215131-120321-S-JC-SW-B-3	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1510 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120321-S-JC-SW-B-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5490 J	pg/g
	11215131-120221-S-SPS-SW-O-3	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1220 J	pg/g
	11215131-120221-S-SPS-SW-O-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4370 J	pg/g
	11215131-120221-S-SPS-SW-B-4	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2280 J	pg/g
	11215131-120221-S-SPS-SW-B-4	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	7980 J	pg/g
	11215131-120321-S-SPS-SW-O-5	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1180 J	pg/g
	11215131-120321-S-SPS-SW-B-5	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2900 J	pg/g
	11215131-120321-S-SPS-SW-B-5	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	10600 J	pg/g
	11215131-120321-S-JC-SW-B-6	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2650 J	pg/g
	11215131-120421-S-JC-SC-O-12	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	31700 J	pg/g
	11215131-120421-S-JC-SC-O-7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	15200 J	pg/g
	11215131-120421-S-JC-SC-O-7	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	7500 J	pg/g
	11215131-120421-S-JC-SC-O-7	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	20100 J	pg/g
	11215131-120621-S-JC-SC-O-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	16800 J	pg/g
	11215131-120621-S-JC-SC-B-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	61800 J	pg/g
	11215131-120621-S-JC-SC-B-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	10500 J	pg/g
	11215131-120621-S-JC-SC-B-1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	28500 J	pg/g
	11215131-120821-S-SS-SW-S-24	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1720 J	pg/g
	11215131-120921-S-SS-NC-S-14	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1190 J	pg/g
	11215131-120921-S-SS-NC-S-14	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3170 J	pg/g
	11215131-120821-S-JC-SW-S-20	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1780 J	pg/g
	11215131-120821-S-JC-SW-S-21	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1750 J	pg/g
	11215131-120821-S-JC-SW-S-22	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1910 J	pg/g
	11215131-120921-S-JC-NC-S-10	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2480 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120921-S-JC-NC-S-10	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	7040 J	pg/g
	11215131-120921-S-JC-NC-S-11	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1870 J	pg/g
	11215131-121021-S-JC-NC-S-4	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3250 J	pg/g
	11215131-121021-S-JC-NC-S-4	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	9370 J	pg/g
	11215131-121021-S-JC-NC-S-5	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2440 J	pg/g
	11215131-121021-S-SS-NC-S-3	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1560 J	pg/g
	11215131-121021-S-SS-NC-S-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4610 J	pg/g
	11215131-121021-S-SS-NC-S-2	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2150 J	pg/g
	11215131-121021-S-SS-NC-S-2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6150 J	pg/g
	11215131-121021-S-SS-NC-S-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2900 J	pg/g
	11215131-121021-S-SS-NC-S-1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8110 J	pg/g
	11215131-121321-S-SS-NC-S-19	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1530 J	pg/g
	11215131-121321-S-BN-NC-S-16	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1390 J	pg/g
	11215131-121421-S-BN-NC-S-15	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8830 J	pg/g
	11215131-121421-S-BN-NC-S-15	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1650 J	pg/g
	11215131-120121-S-JC-NE-O-6	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	67600 J	pg/g
	11215131-120121-S-JC-NE-O-7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	26800 J	pg/g
	11215131-120221-S-JC-SW-B-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1520 J	pg/g
	11215131-120221-S-JC-SW-B-1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5540 J	pg/g
	11215131-120321-S-SS-SW-B-7	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1970 J	pg/g
	11215131-120321-S-SS-SW-B-7	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5720 J	pg/g
	11215131-120421-S-SS-SC-O-13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	15300 J	pg/g
	11215131-120421-S-SS-SC-B-7	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	18200 J	pg/g
	11215131-120421-S-SS-SC-B-7	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	21300 J	pg/g

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Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120421-S-SS-SC-B-7	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	57200 J	pg/g
	11215131-120421-S-SS-DUP-3	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	17100 J	pg/g
	11215131-120421-S-SS-SC-O-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	23500 J	pg/g
	11215131-120621-S-JC-SC-O-10	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	20800 J	pg/g
	11215131-120721-S-JC-SC-B-3	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10900 J	pg/g
	11215131-120721-S-JC-SC-B-3	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4610 J	pg/g
	11215131-120721-S-JC-SC-B-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	13600 J	pg/g
	11215131-120621-S-SS-SC-O-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	19800 J	pg/g
	11215131-120621-S-SS-SC-B-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1080 J	pg/g
	11215131-120621-S-SS-SC-B-6	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3020 J	pg/g
	11215131-120721-S-SS-NC-O-7	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1640 J	pg/g
	11215131-120721-S-SS-NC-O-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	36500 J	pg/g
	11215131-120721-S-SS-NC-O-8	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1830 J	pg/g
	11215131-120721-S-SS-NC-O-8	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5310 J	pg/g
	11215131-120721-S-JC-NC-O-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1020 J	pg/g
	11215131-120721-S-JC-NC-O-6	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2930 J	pg/g
	11215131-120821-S-JC-SW-O-6	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2630 J	pg/g
	11215131-120821-S-JC-SW-B-8	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1930 J	pg/g
	11215131-120821-S-JC-SW-B-8	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5460 J	pg/g
	11215131-120921-S-JC-NC-O-9	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2530 J	pg/g
	11215131-120921-S-JC-NC-O-10	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1230 J	pg/g
	11215131-120921-S-JC-NC-B-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2770 J	pg/g
	11215131-121021-S-JC-NC-B-2	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4250 J	pg/g
	11215131-121021-S-JC-NC-B-2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	12500 J	pg/g

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Qualified Sample Data Due to Exceedance of Calibration Range
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Channelview, Harris County, Texas
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-120921-S-SS-NC-B-4	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10300 J	pg/g
	11215131-120921-S-SS-NC-B-4	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3560 J	pg/g
	11215131-120921-S-SS-NC-B-4	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	9250 J	pg/g
	11215131-121021-S-SS-NC-B-1	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10700 J	pg/g
	11215131-121021-S-SS-NC-B-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4710 J	pg/g
	11215131-121021-S-SS-NC-B-1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	13300 J	pg/g
	11215131-121321-S-SS-NC-B-6	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1520 J	pg/g
	11215131-121321-S-SS-NC-O-4	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	23900 J	pg/g
	11215131-121321-S-SS-NC-O-5	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2170 J	pg/g
	11215131-121421-S-BN-NC-B-5	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10700 J	pg/g
	11215131-121421-S-BN-NC-B-5	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4140 J	pg/g
	11215131-121421-S-BN-NC-B-5	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	16000 J	pg/g
	11215131-121721-S-BN-NE-S-17	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	13500 J	pg/g
	11215131-121721-S-BN-NE-S-17	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1760 J	pg/g
	11215131-121721-S-BN-NE-S-17	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4620 J	pg/g
	11215131-121721-S-BN-NE-S-18	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	15900 J	pg/g
	11215131-121621-S-BN-NE-B-3	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1400 J	pg/g
	11215131-121721-S-BN-NE-O-12	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	15100 J	pg/g
	11215131-122021-S-BN-SC-S-24	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	16800 J	pg/g
	11215131-122021-S-BN-SC-S-24	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2980 J	pg/g
	11215131-122021-S-BN-SC-S-24	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	9050 J	pg/g
	11215131-122021-S-BN-SC-S-22	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4390 J	pg/g
	11215131-122021-S-BN-SC-S-22	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	12600 J	pg/g
	11215131-122121-S-BN-SC-S-18	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	53800 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-122121-S-BN-SC-S-19	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	14700 J	pg/g
	11215131-122121-S-BN-SC-S-19	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1330 J	pg/g
	11215131-122121-S-BN-SC-S-19	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3840 J	pg/g
	11215131-010622-S-BN-SW-S-35	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3100 J	pg/g
	11215131-010622-S-BN-SW-S-35	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	10700 J	pg/g
	11215131-010522-S-BN-SW-S-40	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1940 J	pg/g
	11215131-010522-S-BN-SW-S-41	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1420 J	pg/g
	11215131-010522-S-BN-SW-S-41	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4650 J	pg/g
	11215131-010722-S-BN-SW-S-31	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2200 J	pg/g
	11215131-010722-S-BN-SW-S-31	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5700 J	pg/g
	11215131-011022-S-BN-NC-S-31	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2040 J	pg/g
	11215131-011122-S-BN-NC-S-25	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1080 J	pg/g
	11215131-011122-S-BN-NC-S-21	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1600 J	pg/g
	11215131-011122-S-BN-NC-S-22	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	31900 J	pg/g
	11215131-011122-S-BN-NC-S-22	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	6700 J	pg/g
	11215131-011022-S-BN-NC-S-31	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5650 J	pg/g
	11215131-011122-S-BN-NC-S-24	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1760 J	pg/g
	11215131-011122-S-BN-NC-S-25	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2970 J	pg/g
	11215131-011122-S-BN-NC-S-27	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1420 J	pg/g
	11215131-011122-S-BN-NC-S-21	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4830 J	pg/g
	11215131-011122-S-BN-NC-S-22	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	18700 J	pg/g
	11215131-011022-S-BN-NC-S-23	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1930 J	pg/g
	11215131-010822-S-BN-NC-S-28	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1960 J	pg/g
	11215131-010722-S-BN-SW-S-37	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1270 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-010722-S-BN-SW-S-37	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3740 J	pg/g
	11215131-010722-S-BN-SW-S-38	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	970 J	pg/g
	11215131-010722-S-BN-SW-S-38	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2760 J	pg/g
	11215131-010722-S-BN-SW-S-39	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2280 J	pg/g
	11215131-010722-S-BN-SW-S-39	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6060 J	pg/g
	11215131-010822-S-BN-NC-S-29	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1680 J	pg/g
	11215131-010822-S-BN-NC-S-26	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2450 J	pg/g
	11215131-011022-S-BN-NC-S-23	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5500 J	pg/g
	11215131-120221-S-SPS-SW-B-4H1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1430 J	pg/g
	11215131-120621-S-JC-SC-B-1H	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	24400 J	pg/g
	11215131-120621-S-JC-SC-B-1H	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5020 J	pg/g
	11215131-120621-S-JC-SC-B-1H	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	24000 J	pg/g
	11215131-120621-S-JC-SC-B-1H	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	68200 J	pg/g
	11215131-122021-S-BN-SC-O-17	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	12600 J	pg/g
	11215131-122021-S-BN-SC-B-11	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	14600 J	pg/g
	11215131-122021-S-BN-SC-B-11	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	7710 J	pg/g
	11215131-122021-S-BN-SC-B-11	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	27800 J	pg/g
	11215131-122021-S-BN-SC-B-9	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2260 J	pg/g
	11215131-122021-S-BN-SC-B-9	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8400 J	pg/g
	11215131-122021-S-BN-DUP-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	13200 J	pg/g
	11215131-122121-S-BN-SC-B-8	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	24700 J	pg/g
	11215131-011222-S-BN-SC-S-28	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2680 J	pg/g
	11215131-011222-S-BN-SC-S-28	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	9440 J	pg/g
	11215131-011222-S-BN-SC-S-29	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9610 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-011222-S-BN-SC-S-29	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	9900 J	pg/g
	11215131-011222-S-BN-SC-S-29	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	34200 J	pg/g
	11215131-120421-S-SS-SC-B-7H	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1980 J	pg/g
	11215131-120421-S-SS-SC-B-7H	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5820 J	pg/g
	11215131-010622-S-BN-SW-B-14	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1910 J	pg/g
	11215131-010722-S-BN-SW-B-16	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2310 J	pg/g
	11215131-010722-S-BN-SW-B-16	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6420 J	pg/g
	11215131-010522-S-BN-SW-O-15	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	12300 J	pg/g
	11215131-010522-S-BN-SW-B-17	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2910 J	pg/g
	11215131-010522-S-BN-SW-B-17	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8040 J	pg/g
	11215131-010622-S-BN-SW-O-12	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10000 J	pg/g
	11215131-010622-S-BN-SW-B-15	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1400 J	pg/g
	11215131-010622-S-BN-DUP-10	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2520 J	pg/g
	11215131-011022-S-BN-NC-B-7	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	12800 J	pg/g
	11215131-011022-S-BN-NC-B-7	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3310 J	pg/g
	11215131-011022-S-BN-DUP-12	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	10000 J	pg/g
	11215131-011022-S-BN-DUP-12	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	19500 J	pg/g
	11215131-011022-S-BN-DUP-12	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5010 J	pg/g
	11215131-011122-S-BN-NC-B-9	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1630 J	pg/g
	11215131-011122-S-BN-NC-B-9	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5690 J	pg/g
	11215131-011122-S-BN-NC-O-28	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11700 J	pg/g
	11215131-011122-S-BN-NC-O-28	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1710 J	pg/g
	11215131-011122-S-BN-NC-O-28	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6260 J	pg/g
	11215131-010822-S-BN-NC-O-34	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3240 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-010822-S-BN-NC-B-8	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1940 J	pg/g
	11215131-011022-S-BN-NC-O-29	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	18400 J	pg/g
	11215131-011022-S-BN-NC-O-29	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1550 J	pg/g
	11215131-011022-S-BN-NC-O-29	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5340 J	pg/g
	11215131-011222-S-BN-SC-O-19	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	14000 J	pg/g
	11215131-011222-S-BN-SC-O-19	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2940 J	pg/g
	11215131-011222-S-BN-SC-O-19	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8240 J	pg/g
	11215131-011222-S-BN-SC-B-13	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	18800 J	pg/g
	11215131-011222-S-BN-SC-B-13	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	49700 J	pg/g
	11215131-122021-S-BN-SC-B-11H	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1910 J	pg/g
	11215131-012022-S-BN-SW-S-44	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1360 J	pg/g
	11215131-012022-S-BN-SW-S-44	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3970 J	pg/g
	11215131-012022-S-BN-SW-S-45	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1560 J	pg/g
	11215131-012022-S-BN-SW-S-45	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4450 J	pg/g
	11215131-011922-S-BN-SW-S-46	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1280 J	pg/g
	11215131-011922-S-BN-SW-S-43	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1860 J	pg/g
	11215131-011922-S-BN-SW-S-43	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5540 J	pg/g
	11215131-011922-S-BN-SW-S-42	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3950 J	pg/g
	11215131-011922-S-BN-SW-S-42	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	11400 J	pg/g
	11215131-011922-S-BN-SW-O-21	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4940 J	pg/g
	11215131-011922-S-BN-SW-O-21	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	11600 J	pg/g
	11215131-011922-S-BN-SW-O-19	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	17000 J	pg/g
	11215131-011922-S-BN-SW-B-21	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	12300 J	pg/g
	11215131-011922-S-BN-SW-B-21	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4450 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
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Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-011922-S-BN-SW-B-20	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	15900 J	pg/g
	11215131-011922-S-BN-SW-B-20	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	20100 J	pg/g
	11215131-011922-S-BN-SW-B-20	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	53700 J	pg/g
	11215131-011922-S-BN-DUP-13	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	16600 J	pg/g
	11215131-011922-S-BN-DUP-13	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	6040 J	pg/g
	11215131-120321-S-SS-SW-B-7H2	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1760 J	pg/g
	11215131-120321-S-SS-SW-B-7H2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5250 J	pg/g
	11215131-122121-S-BN-SC-B-8H	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	31100 J	pg/g
	11215131-122121-S-BN-SC-B-8H	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2080 J	pg/g
	11215131-122121-S-BN-SC-B-8H	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5680 J	pg/g
	11215131-012122-S-BN-NC-S-36	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9320 J	pg/g
	11215131-012122-S-BN-NC-S-36	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1490 J	pg/g
	11215131-012222-S-BN-NC-S-33	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	5570 J	pg/g
	11215131-012222-S-BN-NC-S-33	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	15400 J	pg/g
	11215131-012222-S-BN-NC-S-40	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1020 J	pg/g
	11215131-012222-S-BN-NC-S-40	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3110 J	pg/g
	11215131-012222-S-BN-NC-S-37	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1390 J	pg/g
	11215131-012222-S-BN-NC-S-37	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3980 J	pg/g
	11215131-012122-S-BN-NC-S-39	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1980 J	pg/g
	11215131-012122-S-BN-NC-S-38	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	739 J	pg/g
	11215131-012122-S-BN-NC-S-38	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2060 J	pg/g
	11215131-012122-S-BN-NC-O-37	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	13900 J	pg/g
	11215131-012122-S-BN-NC-O-37	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1060 J	pg/g
	11215131-012122-S-BN-NC-O-37	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2910 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-012122-S-BN-NC-O-38	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1740 J	pg/g
	11215131-012122-S-BN-NC-O-38	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4770 J	pg/g
	11215131-012222-S-BN-NC-O-35	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1020 J	pg/g
	11215131-012222-S-BN-NC-O-41	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1330 J	pg/g
	11215131-012222-S-BN-NC-O-41	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3610 J	pg/g
	11215131-012222-S-BN-NC-B-12	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1240 J	pg/g
	11215131-012222-S-BN-NC-B-12	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3340 J	pg/g
	11215131-012122-S-BN-NC-O-43	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1110 J	pg/g
	11215131-012122-S-BN-NC-B-11	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2480 J	pg/g
	11215131-012122-S-BN-NC-B-11	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6890 J	pg/g
	11215131-020222-S-SB-NC-S-47	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1240 J	pg/g
	11215131-020222-S-SB-NC-S-47	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3460 J	pg/g
	11215131-020222-S-SB-NC-S-43	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2110 J	pg/g
	11215131-020222-S-SB-NC-S-43	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5800 J	pg/g
	11215131-020222-S-SB-NC-O-44	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1140 J	pg/g
	11215131-020222-S-SB-NC-B-13	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2110 J	pg/g
	11215131-020222-S-SB-NC-S-44	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2540 J	pg/g
	11215131-020222-S-SB-NC-O-48	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1890 J	pg/g
	11215131-020222-S-SB-NC-O-45	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2430 J	pg/g
	11215131-020222-S-SB-NC-O-45	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6300 J	pg/g
	11215131-020422-S-SB-SW-O-23	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	21000 J	pg/g
	11215131-020422-S-SB-SW-B-25	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1420 J	pg/g
	11215131-020422-S-SB-SW-B-25	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4800 J	pg/g
	11215131-020622-S-SB-SC-S-32	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	63300 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-020622-S-SB-SC-S-32	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	5760 J	pg/g
	11215131-020622-S-SB-SC-S-32	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2710 J	pg/g
	11215131-020622-S-SB-SC-S-32	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	7180 J	pg/g
	11215131-020422-S-SB-SW-B-24	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	8910 J	pg/g
	11215131-020422-S-SB-SW-B-24	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	23000 J	pg/g
	11215131-020522-S-SB-NE-O-13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	12600 J	pg/g
	11215131-020622-S-SB-SC-O-21	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	26100 J	pg/g
	11215131-020622-S-SB-SC-B-15	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	8140 J	pg/g
	11215131-020622-S-SB-SC-B-15	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	21300 J	pg/g
	11215131-020622-S-SB-DUP-16	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	7630 J	pg/g
	11215131-020622-S-SB-DUP-16	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	19000 J	pg/g
	11215131-020622-S-SB-SC-O-23	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	28100 J	pg/g
	11215131-020622-S-SB-SC-B-16	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2450 J	pg/g
	11215131-020622-S-SB-SC-B-16	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6670 J	pg/g
	11215131-021822-S-SB-NC-S-48	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1610 J	pg/g
	11215131-021822-S-SB-NC-S-48	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4440 J	pg/g
	11215131-021722-S-SB-NC-S-49	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	42100 J	pg/g
	11215131-021722-S-SB-SC-O-24	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	43000 J	pg/g
	11215131-021722-S-SB-SC-O-24	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	5520 J	pg/g
	11215131-021822-S-SB-NC-O-49	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	12000 J	pg/g
	11215131-021822-S-SB-NC-O-49	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	9490 J	pg/g
	11215131-021822-S-SB-NC-O-49	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	24900 J	pg/g

Table 14

Qualified Sample Data Due to Exceedance of Calibration Range
Pre-Construction Field Sampling Event – Confirmation Soil Samples
San Jacinto River Waste Pits - Southern Impoundment
Channelview, Harris County, Texas
November 2021 through February 2022

Parameter	Sample ID	Analyte	Qualified Result	Units
Dioxins/Furans	11215131-021822-S-SB-NC-B-16	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2300 J	pg/g
	11215131-021822-S-SB-DUP-17	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2210 J	pg/g
	11215131-021922-S-SB-NC-O-53	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1960 J	pg/g
	11215131-021922-S-SB-NC-O-51	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	11500 J	pg/g
	11215131-021922-S-SB-NC-O-51	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1160 J	pg/g

Notes:

J - Estimated concentration



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120121-S-JC-NE-S-8 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.74 g	Lab Sample ID	B5961_18710_DF_001	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	76.9 %	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:34:35

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	20.6				ES 2378-TCDD	76.5	
12378-PeCDD	0.883			J	ES 12378-PeCDD	81.9	
123478-HxCDD	1.62				ES 123478-HxCDD	76.6	
123678-HxCDD	4.17				ES 123678-HxCDD	80.2	
123789-HxCDD	3.12				ES 123789-HxCDD	75.2	
1234678-HpCDD	172				ES 1234678-HpCDD	76	
OCDD	7,450			E	ES OCDD	53.2	
2378-TCDF	65.7				ES 2378-TCDF	69.3	
12378-PeCDF	2.02				ES 12378-PeCDF	73.2	
23478-PeCDF	2.63				ES 23478-PeCDF	72.5	
123478-HxCDF	3.15				ES 123478-HxCDF	89.4	
123678-HxCDF	1.4			J	ES 123678-HxCDF	91.4	
234678-HxCDF	1.56				ES 234678-HxCDF	87.2	
123789-HxCDF	ND	0.135			ES 123789-HxCDF	89	
1234678-HpCDF	23.3				ES 1234678-HpCDF	88.3	
1234789-HpCDF	4.3				ES 1234789-HpCDF	88.3	
OCDF	534				ES OCDF	56.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77.8	
Total TCDD	27.1		28.4		CS 12347-PeCDD	89.9	
Total PeCDD	8.35		9.2		CS 12346-PeCDF	76.1	
Total HxCDD	54.4		54.4		CS 123469-HxCDF	95.5	
Total HpCDD	397		397		CS 1234689-HpCDF	93.7	
Total TCDF	108		110				
Total PeCDF	18.8		19.5				
Total HxCDF	25.1		26				
Total HpCDF	59.6		59.6				
Total PCDD/Fs	**8,680**		**8,680**	E			
WHO-2005 TEQs							
TEQ: ND=0	34.8		34.8				
TEQ: ND=DL/2	34.8	0.205	34.8				
TEQ: ND=DL	34.8	0.41	34.8				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: 11215131-120121-S-JC-NE-S-8 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.74 g	Lab Sample ID:	B5961_18710_DF_001	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	76.9 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:34:35

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.987		12479/12468D	2.02		124679/124689D	22.9		1234679D	225	
1379D	0.329		12469D	2.42		123468D	3.13		1234678D	172	
1369D	[0.183]	J	12368D	0.819	J	123679/123689D	16.5				
1469D	2.82		12478D	[0.713]	J	123469D	1.66				
1247D...[4]	[0.344]		12379D	0.482	J	123478D	1.62				
1378D	[0.259]	J	12369D...[3]	1.3	J	123678D	4.17				
1268D	(0.119)		12346/12347D	0.205	J	123467D	1.28	J			
1478D	(0.119)		12378D	0.883	J	123789D	3.12		**Conc.**	397	
1279D	(0.119)		12367D	[0.146]	J				**EMPC**	397	
1234/1269D	[0.46]		12389D	0.22	J						
1236D	(0.119)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	0.573										
1239D	(0.119)								OCDD	7450	E
2378D	20.6										
1278D	1.81										
1267D	(0.119)										
1289D	(0.119)										
Conc.	27.1		**Conc.**	8.35		**Conc.**	54.4				
EMPC	28.4		**EMPC**	9.2		**EMPC**	54.4				

5500 Business Drive
Wilmington, NC 28405, USA
Tel: +1 910 794-1613
www.us.sgs.com

WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	34.8	34.8
TEQ: ND=DL/2	34.8	34.8
TEQ: ND=DL	34.8	34.8

	Conc.	EMPC
Total PCDD/Fs	8,680	8,680

Checkcode: 476-819-NGC

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120121-S-JC-NE-S-8 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.74 g	Lab Sample ID:	B5961_18710_DF_001	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	76.9 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:34:35

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.339		13468/12468F	4.14		123468F	2.44		1234678F	23.3	
1468F	0.73		13678F...[3]	1.27	J	124678/134678F	7.8		1234679F	4.76	
2468F	2.02		12368F...[3]	4.14		134679F	(0.116)		1234689F	27.3	
1346/1246F	(0.0717)		14678F	[0.433]	J	124679F	0.545	J	1234789F	4.3	
1347F...[3]	2		13479F	(0.085)		124689F	7.52				
1348F	(0.0717)		13469/12479F	[0.246]	J	123467F	0.708	J			
1248F...[3]	3.24		12346F	0.194	J	123478F	3.15				
1268F	1.63		23468/12469F	1.2	J	123678F	1.4	J			
1467F	[0.436]		12347F	0.368	J	123479F	[0.127]	J			
1478F	3.08		12348F	0.637	J	123469F	[0.368]	J			
1369/1237F	0.804		12378F	2.02		123679F	(0.116)				
2467F	[0.395]		12678/12367F	1.58		234678F	1.56		**Conc.**	59.6	
2368F	3.17		12379F	(0.085)		234678/123689F	0		**EMPC**	59.6	
1238F...[5]	1.84		12679F	[0.104]	J	123689F	(0.116)				
1278F	10.9		23467/12369F	0.572	J	123789F	(0.135)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.0717)		23478F	2.63		123789/123489F	0				
1267F	1.36		23478/12489F	0		123489F	[0.422]	J	OCDF	534	
2346/1249F	(0.0717)		12489F	(0.085)							
2347/1279F	0.961		12349F	(0.085)							
2348F	2.14		12389F	(0.085)							
2378F	65.7										
2367/3467F	6.86										
1269F	0.72										
1239F	(0.0717)										
1289F	[1.97]										
Conc.	108		**Conc.**	18.8		**Conc.**	25.1				
EMPC	110		**EMPC**	19.5		**EMPC**	26				

Checkcode: 476-819-NGC

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120121-S-JC-NE-S-8 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5961_18710_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.74 g	QC Batch No.:	18710
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	07-Dec-2021 19:34
Lab Project No:	B5961	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	20.6		0.119	20.6	20.6	20.6
12378-PeCDD	0.883	J	0.155	0.441	0.883	0.883
123478-HxCDD	1.62		0.17	0.162	0.162	0.162
123678-HxCDD	4.17		0.167	0.417	0.417	0.417
123789-HxCDD	3.12		0.173	0.312	0.312	0.312
1234678-HpCDD	172		0.149	1.72	1.72	1.72
OCDD	7450	E	0.454	7.45	0.745	2.23
2378-TCDF	65.7		0.0717	6.57	6.57	6.57
12378-PeCDF	2.02		0.0871	0.101	0.101	0.0607
23478-PeCDF	2.63		0.0827	1.32	1.32	0.79
123478-HxCDF	3.15		0.106	0.315	0.315	0.315
123678-HxCDF	1.4	J	0.109	0.14	0.14	0.14
234678-HxCDF	1.56		0.119	0.156	0.156	0.156
123789-HxCDF	(0.135)		0.135	(0.0135)	(0.0135)	(0.0135)
1234678-HpCDF	23.3		0.0648	0.233	0.233	0.233
1234789-HpCDF	4.3		0.0828	0.043	0.043	0.043
OCDF	534		0.286	0.534	0.0534	0.16

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TEQ Summaries			
EMPC = 0, ND = 0	40.5	33.8	34.8
EMPC = 0, ND = DL / 2	40.5	33.8	34.8
EMPC = 0, ND = DL	40.5	33.8	34.8
EMPC = 0, < J-level = 0	39.9	32.8	33.8
EMPC = EMPC, ND = 0	40.5	33.8	34.8
EMPC = EMPC, ND = DL / 2	40.5	33.8	34.8
EMPC = EMPC, ND = DL	40.5	33.8	34.8
EMPC = EMPC, < J-level = 0	39.9	32.8	33.8

Checkcode: 476-819-NGC

Sample ID: 11215131-120121-S-JC-NE-S-9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.45 g	Lab Sample ID	B5961_18710_DF_002	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	72.3 %	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:20:56

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	86.3				ES 2378-TCDD	80.5	
12378-PeCDD	1.51			J	ES 12378-PeCDD	84.8	
123478-HxCDD	0.988			J	ES 123478-HxCDD	85.9	
123678-HxCDD	2.42				ES 123678-HxCDD	88.6	
123789-HxCDD	2.52				ES 123789-HxCDD	84.8	
1234678-HpCDD	79.2				ES 1234678-HpCDD	90.2	
OCDD	2,040				ES OCDD	67.4	
2378-TCDF	226				ES 2378-TCDF	73.1	
12378-PeCDF	8.06				ES 12378-PeCDF	78.6	
23478-PeCDF	7.03				ES 23478-PeCDF	78.3	
123478-HxCDF	12.2				ES 123478-HxCDF	99.5	
123678-HxCDF	3.69				ES 123678-HxCDF	102	
234678-HxCDF	1.27			J	ES 234678-HxCDF	97.4	
123789-HxCDF	ND	0.0966			ES 123789-HxCDF	104	
1234678-HpCDF	14.9				ES 1234678-HpCDF	104	
1234789-HpCDF	2.83				ES 1234789-HpCDF	103	
OCDF	198				ES OCDF	72.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	82.3	
Total TCDD	107		109		CS 12347-PeCDD	94	
Total PeCDD	13		14.2		CS 12346-PeCDF	80.7	
Total HxCDD	61		62.6		CS 123469-HxCDF	108	
Total HpCDD	209		209		CS 1234689-HpCDF	111	
Total TCDF	433		448				
Total PeCDF	28.9		30.4				
Total HxCDF	28		28.2				
Total HpCDF	33.7		33.7				
Total PCDD/Fs	**3,150**		**3,170**				
WHO-2005 TEQs							
TEQ: ND=0	117		117				
TEQ: ND=DL/2	117	0.19	117				
TEQ: ND=DL	117	0.38	117				

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Sample ID: 11215131-120121-S-JC-NE-S-9 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.45 g	Lab Sample ID:	B5961_18710_DF_002	Date Extracted: 03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	72.3 %	QC Batch No.:	18710	Date Analyzed: 07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 20:20:56

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.767		12479/12468D	2.68		124679/124689D	39.4		1234679D	130	
1379D	[0.444]		12469D	5.18		123468D	[1.63]	J	1234678D	79.2	
1369D	[0.495]		12368D	[0.685]	J	123679/123689D	13.6				
1469D	8.06		12478D	0.649	J	123469D	1.02	J			
1247D...[4]	0.553		12379D	[0.406]	J	123478D	0.988	J			
1378D	[0.36]		12369D...[3]	2.37		123678D	2.42				
1268D	(0.155)		12346/12347D	[0.161]	J	123467D	1.02	J			
1478D	0.367		12378D	1.51	J	123789D	2.52		**Conc.**	209	
1279D	[0.349]		12367D	0.267	J				**EMPC**	209	
1234/1269D	1.31		12389D	0.306	J						
1236D	(0.155)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	1.94										
1239D	(0.155)								OCDD	2040	
2378D	86.3										
1278D	7.67										
1267D	(0.155)										
1289D	(0.155)										
Conc.	107		**Conc.**	13		**Conc.**	61				
EMPC	109		**EMPC**	14.2		**EMPC**	62.6				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	117	117
TEQ: ND=DL/2	117	117
TEQ: ND=DL	117	117

	Conc.	EMPC
Total PCDD/Fs	3,150	3,170

Checkcode: 794-822-CSX

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120121-S-JC-NE-S-9 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.45 g	Lab Sample ID:	B5961_18710_DF_002	Date Extracted: 03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	72.3 %	QC Batch No.:	18710	Date Analyzed: 07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 20:20:56

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.328	J	13468/12468F	2.17		123468F	1.22	J	1234678F	14.9	
1468F	0.698		13678F...[3]	0.849	J	124678/134678F	4.28		1234679F	1.38	J
2468F	1.57		12368F...[3]	6.36		134679F	(0.0857)		1234689F	14.6	
1346/1246F	(0.0739)		14678F	(0.0792)		124679F	[0.237]	J	1234789F	2.83	
1347F...[3]	3.92		13479F	(0.0792)		124689F	3.72				
1348F	[1.22]		13469/12479F	(0.0792)		123467F	0.432	J			
1248F...[3]	11.1		12346F	(0.0792)		123478F	12.2				
1268F	4.35		23468/12469F	[0.684]	J	123678F	3.69				
1467F	0.876		12347F	0.426	J	123479F	(0.0857)				
1478F	10.5		12348F	1.07	J	123469F	(0.0857)				
1369/1237F	2.75		12378F	8.06		123679F	(0.0857)				
2467F	[0.425]		12678/12367F	2.96		234678F	1.27	J	**Conc.**	33.7	
2368F	6.85		12379F	(0.0792)		234678/123689F	0		**EMPC**	33.7	
1238F...[5]	12.9		12679F	(0.0792)		123689F	(0.0857)				
1278F	102		23467/12369F	[0.434]	J	123789F	(0.0966)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.0739)		23478F	7.03		123789/123489F	0				
1267F	5.95		23478/12489F	0		123489F	1.14	J	OCDF	198	
2346/1249F	0.786		12489F	(0.0792)							
2347/1279F	2.55		12349F	(0.0792)							
2348F	[13.5]		12389F	[0.387]	J						
2378F	226										
2367/3467F	18.6										
1269F	3.51										
1239F	(0.0739)										
1289F	17.2										
Conc.	433		**Conc.**	28.9		**Conc.**	28				
EMPC	448		**EMPC**	30.4		**EMPC**	28.2				

Checkcode: 794-822-CSX

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120121-S-JC-NE-S-9 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5961_18710_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.45 g	QC Batch No.:	18710
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	07-Dec-2021 20:20
Lab Project No:	B5961	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	86.3		0.155	86.3	86.3	86.3
12378-PeCDD	1.51	J	0.103	0.756	1.51	1.51
123478-HxCDD	0.988	J	0.167	0.0988	0.0988	0.0988
123678-HxCDD	2.42		0.164	0.242	0.242	0.242
123789-HxCDD	2.52		0.172	0.252	0.252	0.252
1234678-HpCDD	79.2		0.173	0.792	0.792	0.792
OCDD	2040		0.546	2.04	0.204	0.612
2378-TCDF	226		0.0739	22.6	22.6	22.6
12378-PeCDF	8.06		0.0779	0.403	0.403	0.242
23478-PeCDF	7.03		0.0806	3.51	3.51	2.11
123478-HxCDF	12.2		0.0796	1.22	1.22	1.22
123678-HxCDF	3.69		0.0814	0.369	0.369	0.369
234678-HxCDF	1.27	J	0.0867	0.127	0.127	0.127
123789-HxCDF	(0.0966)		0.0966	(0.00966)	(0.00966)	(0.00966)
1234678-HpCDF	14.9		0.0758	0.149	0.149	0.149
1234789-HpCDF	2.83		0.1	0.0283	0.0283	0.0283
OCDF	198		0.349	0.198	0.0198	0.0593

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TEQ Summaries			
EMPC = 0, ND = 0	119	118	117
EMPC = 0, ND = DL / 2	119	118	117
EMPC = 0, ND = DL	119	118	117
EMPC = 0, < J-level = 0	118	116	115
EMPC = EMPC, ND = 0	119	118	117
EMPC = EMPC, ND = DL / 2	119	118	117
EMPC = EMPC, ND = DL	119	118	117
EMPC = EMPC, < J-level = 0	118	116	115

Checkcode: 794-822-CSX

Sample ID: 11215131-120121-S-JC-NE-S-10 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.22 g	Lab Sample ID	B5961_18710_DF_003	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	63.1 %	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:07:17

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	56.7				ES 2378-TCDD	83.2	
12378-PeCDD	1.91				ES 12378-PeCDD	92.6	
123478-HxCDD	1.8			J	ES 123478-HxCDD	86.5	
123678-HxCDD	5.24				ES 123678-HxCDD	86.8	
123789-HxCDD	3.7				ES 123789-HxCDD	86.6	
1234678-HpCDD	179				ES 1234678-HpCDD	84.2	
OCDD	10,500			E	ES OCDD	59.6	
2378-TCDF	182				ES 2378-TCDF	78.2	
12378-PeCDF	4.56				ES 12378-PeCDF	87.6	
23478-PeCDF	5.46				ES 23478-PeCDF	84	
123478-HxCDF	6.78				ES 123478-HxCDF	97.1	
123678-HxCDF	2.34				ES 123678-HxCDF	99.4	
234678-HxCDF	1.92				ES 234678-HxCDF	98.8	
123789-HxCDF	ND	0.282			ES 123789-HxCDF	100	
1234678-HpCDF	55.2				ES 1234678-HpCDF	102	
1234789-HpCDF	7.26				ES 1234789-HpCDF	97.9	
OCDF	1,390				ES OCDF	62.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	86.8	
Total TCDD	62.7		67.9		CS 12347-PeCDD	99.4	
Total PeCDD	10.6		14.6		CS 12346-PeCDF	88.1	
Total HxCDD	65.8		67.1		CS 123469-HxCDF	110	
Total HpCDD	420		420		CS 1234689-HpCDF	110	
Total TCDF	303		309				
Total PeCDF	30.1		30.5				
Total HxCDF	37.7		38.8				
Total HpCDF	114		114				
Total PCDD/Fs	**13,000**		**13,000**	E			
WHO-2005 TEQs							
TEQ: ND=0	86.7		86.7				
TEQ: ND=DL/2	86.7	0.723	86.7				
TEQ: ND=DL	86.8	1.45	86.8				

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Sample ID: 11215131-120121-S-JC-NE-S-10 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.22 g	Lab Sample ID:	B5961_18710_DF_003	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	63.1 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:07:17

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.68		12479/12468D	[3.39]		124679/124689D	29.8		1234679D	241	
1379D	(0.501)		12469D	3.52		123468D	3.47		1234678D	179	
1369D	(0.501)		12368D	1.22	J	123679/123689D	20.3				
1469D	4.29		12478D	1.53	J	123469D	1.54	J			
1247D...[4]	(0.501)		12379D	[0.69]	J	123478D	1.8	J			
1378D	(0.501)		12369D...[3]	2.37		123678D	5.24				
1268D	(0.501)		12346/12347D	(0.61)		123467D	[1.31]	J			
1478D	(0.501)		12378D	1.91		123789D	3.7		**Conc.**	420	
1279D	(0.501)		12367D	(0.61)					**EMPC**	420	
1234/1269D	(0.501)		12389D	(0.61)							
1236D	(0.501)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.501)										
1239D	(0.501)								OCDD	10500	E
2378D	56.7										
1278D	[5.27]										
1267D	(0.501)										
1289D	(0.501)										
Conc.	62.7		**Conc.**	10.6		**Conc.**	65.8				
EMPC	67.9		**EMPC**	14.6		**EMPC**	67.1				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	86.7	86.7
TEQ: ND=DL/2	86.7	86.7
TEQ: ND=DL	86.8	86.8

	Conc.	EMPC
Total PCDD/Fs	13,000	13,000

Checkcode: 391-487-NRG

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120121-S-JC-NE-S-10 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.22 g	Lab Sample ID:	B5961_18710_DF_003	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	63.1 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:07:17

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.46]		13468/12468F	6.03		123468F	3.37		1234678F	55.2	
1468F	1.22		13678F...[3]	1.18	J	124678/134678F	9.86		1234679F	6.13	
2468F	3.05		12368F...[3]	6.98		134679F	(0.254)		1234689F	45.1	
1346/1246F	0.659		14678F	(0.186)		124679F	[0.47]	J	1234789F	7.26	
1347F...[3]	2.97		13479F	(0.186)		124689F	11.4				
1348F	1.08		13469/12479F	(0.186)		123467F	0.901	J			
1248F...[3]	7.43		12346F	(0.186)		123478F	6.78				
1268F	3.68		23468/12469F	2.33		123678F	2.34				
1467F	0.688		12347F	(0.186)		123479F	(0.254)				
1478F	8.57		12348F	1.01	J	123469F	[0.615]	J			
1369/1237F	2.1		12378F	4.56		123679F	(0.254)				
2467F	0.597		12678/12367F	2.27		234678F	1.92		**Conc.**	114	
2368F	8.27		12379F	(0.186)		234678/123689F	0		**EMPC**	114	
1238F...[5]	5.18		12679F	(0.186)		123689F	(0.254)				
1278F	42.2		23467/12369F	[0.402]	J	123789F	(0.282)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.178)		23478F	5.46		123789/123489F	0				
1267F	4.15		23478/12489F	0		123489F	1.16	J	OCDF	1390	
2346/1249F	(0.178)		12489F	(0.186)							
2347/1279F	2.17		12349F	(0.186)							
2348F	[5.6]		12389F	0.325	J						
2378F	182										
2367/3467F	18.3										
1269F	1.98										
1239F	(0.178)										
1289F	6.86										
Conc.	303		**Conc.**	30.1		**Conc.**	37.7				
EMPC	309		**EMPC**	30.5		**EMPC**	38.8				

Checkcode: 391-487-NRG

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120121-S-JC-NE-S-10 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5961_18710_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.22 g	QC Batch No.:	18710
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	07-Dec-2021 21:07
Lab Project No:	B5961	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	56.7		0.501	56.7	56.7	56.7
12378-PeCDD	1.91		0.61	0.957	1.91	1.91
123478-HxCDD	1.8	J	0.485	0.18	0.18	0.18
123678-HxCDD	5.24		0.503	0.524	0.524	0.524
123789-HxCDD	3.7		0.484	0.37	0.37	0.37
1234678-HpCDD	179		0.266	1.79	1.79	1.79
OCDD	10500	E	0.981	10.5	1.05	3.16
2378-TCDF	182		0.178	18.2	18.2	18.2
12378-PeCDF	4.56		0.184	0.228	0.228	0.137
23478-PeCDF	5.46		0.187	2.73	2.73	1.64
123478-HxCDF	6.78		0.245	0.678	0.678	0.678
123678-HxCDF	2.34		0.236	0.234	0.234	0.234
234678-HxCDF	1.92		0.256	0.192	0.192	0.192
123789-HxCDF	(0.282)		0.282	(0.0282)	(0.0282)	(0.0282)
1234678-HpCDF	55.2		0.134	0.552	0.552	0.552
1234789-HpCDF	7.26		0.186	0.0726	0.0726	0.0726
OCDF	1390		0.532	1.39	0.139	0.417

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TEQ Summaries			
EMPC = 0, ND = 0	95.3	85.5	86.7
EMPC = 0, ND = DL / 2	95.3	85.5	86.7
EMPC = 0, ND = DL	95.3	85.6	86.8
EMPC = 0, < J-level = 0	95.1	85.3	86.5
EMPC = EMPC, ND = 0	95.3	85.5	86.7
EMPC = EMPC, ND = DL / 2	95.3	85.5	86.7
EMPC = EMPC, ND = DL	95.3	85.6	86.8
EMPC = EMPC, < J-level = 0	95.1	85.3	86.5

Checkcode: 391-487-NRG

Sample ID: 11215131-120221-S-JC-SW-S-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.30 g	Lab Sample ID	B5961_18710_DF_004	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	79.2 %	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:53:36

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	468				ES 2378-TCDD	87.1	
12378-PeCDD	5.29				ES 12378-PeCDD	97.9	
123478-HxCDD	1.89				ES 123478-HxCDD	90.8	
123678-HxCDD	6.25				ES 123678-HxCDD	91	
123789-HxCDD	4.33				ES 123789-HxCDD	93.3	
1234678-HpCDD	136				ES 1234678-HpCDD	101	
OCDD	1,770				ES OCDD	53.9	
2378-TCDF	1,300			E	ES 2378-TCDF	79.4	
12378-PeCDF	47.3				ES 12378-PeCDF	91.6	
23478-PeCDF	39.4				ES 23478-PeCDF	88.6	
123478-HxCDF	76.3				ES 123478-HxCDF	106	
123678-HxCDF	19.6				ES 123678-HxCDF	108	
234678-HxCDF	4.65				ES 234678-HxCDF	106	
123789-HxCDF	ND	0.091			ES 123789-HxCDF	110	
1234678-HpCDF	35.9				ES 1234678-HpCDF	111	
1234789-HpCDF	10.9				ES 1234789-HpCDF	101	
OCDF	73.9				ES OCDF	56.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	92.2	
Total TCDD	531		535		CS 12347-PeCDD	112	
Total PeCDD	19.4		19.8		CS 12346-PeCDF	98.4	
Total HxCDD	73.2		73.2		CS 123469-HxCDF	123	
Total HpCDD	266		266		CS 1234689-HpCDF	116	
Total TCDF	2,680		2,680	E			
Total PeCDF	147		148				
Total HxCDF	132		132				
Total HpCDF	68.2		68.2				
Total PCDD/Fs	**5,760**		**5,770**	E			
WHO-2005 TEQs							
TEQ: ND=0	630		630				
TEQ: ND=DL/2	630	0.177	630				
TEQ: ND=DL	630	0.355	630				

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Sample ID: 11215131-120221-S-JC-SW-S-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.30 g	Lab Sample ID:	B5961_18710_DF_004	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	79.2 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:53:36

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.04		12479/12468D	3.15		124679/124689D	36.3		1234679D	131	
1379D	1.21		12469D	4		123468D	4.39		1234678D	136	
1369D	[0.281]	J	12368D	1.78		123679/123689D	17.4				
1469D	3.99		12478D	0.805	J	123469D	1.35	J			
1247D...[4]	1.42		12379D	1.61	J	123478D	1.89				
1378D	1.57		12369D...[3]	1.86		123678D	6.25				
1268D	(0.103)		12346/12347D	[0.347]	J	123467D	1.26	J			
1478D	1.27		12378D	5.29		123789D	4.33		**Conc.**	266	
1279D	(0.103)		12367D	0.591	J				**EMPC**	266	
1234/1269D	0.812		12389D	0.355	J						
1236D	(0.103)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	8.7										
1239D	(0.103)								OCDD	1770	
2378D	468										
1278D	42.2										
1267D	[1.87]										
1289D	[1.54]										
Conc.	531		**Conc.**	19.4		**Conc.**	73.2				
EMPC	535		**EMPC**	19.8		**EMPC**	73.2				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	630	630
TEQ: ND=DL/2	630	630
TEQ: ND=DL	630	630

	Conc.	EMPC
Total PCDD/Fs	5,760	5,770

Checkcode: 956-033-DPB

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120221-S-JC-SW-S-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.30 g	Lab Sample ID:	B5961_18710_DF_004	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	79.2 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:53:36

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.886		13468/12468F	2.81		123468F	3.12		1234678F	35.9	
1468F	3.31		13678F...[3]	1.97		124678/134678F	12.7		1234679F	2.39	
2468F	3.52		12368F...[3]	24.1		134679F	(0.0797)		1234689F	19	
1346/1246F	(0.0608)		14678F	1.38	J	124679F	0.512	J	1234789F	10.9	
1347F...[3]	18.3		13479F	(0.0913)		124689F	6.32				
1348F	(0.0608)		13469/12479F	0.389	J	123467F	1.8				
1248F...[3]	71.6		12346F	[0.454]	J	123478F	76.3				
1268F	23.3		23468/12469F	1.74		123678F	19.6				
1467F	3.54		12347F	1.86		123479F	(0.0797)				
1478F	57		12348F	6.26		123469F	0.911	J			
1369/1237F	15.6		12378F	47.3		123679F	(0.0797)				
2467F	2.06		12678/12367F	16.2		234678F	4.65		**Conc.**	68.2	
2368F	32.1		12379F	(0.0913)		234678/123689F	0		**EMPC**	68.2	
1238F...[5]	82.7		12679F	[0.19]	J	123689F	(0.0797)				
1278F	649		23467/12369F	1.06	J	123789F	(0.091)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.0608)		23478F	39.4		123789/123489F	0			**(pg/g)**	
1267F	34		23478/12489F	0		123489F	6.47		OCDF	73.9	
2346/1249F	4.78		12489F	(0.0913)							
2347/1279F	17.1		12349F	0.216	J						
2348F	116		12389F	2.38							
2378F	1300	E									
2367/3467F	109										
1269F	21.9										
1239F	2.09										
1289F	113										
Conc.	2,680		**Conc.**	147		**Conc.**	132				
EMPC	2,680		**EMPC**	148		**EMPC**	132				

Checkcode: 956-033-DPB

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120221-S-JC-SW-S-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5961_18710_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.30 g	QC Batch No.:	18710
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	07-Dec-2021 21:53
Lab Project No:	B5961	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	468		0.103	468	468	468
12378-PeCDD	5.29		0.13	2.65	5.29	5.29
123478-HxCDD	1.89		0.166	0.189	0.189	0.189
123678-HxCDD	6.25		0.16	0.625	0.625	0.625
123789-HxCDD	4.33		0.158	0.433	0.433	0.433
1234678-HpCDD	136		0.193	1.36	1.36	1.36
OCDD	1770		0.694	1.77	0.177	0.531
2378-TCDF	1300	E	0.0608	130	130	130
12378-PeCDF	47.3		0.0905	2.36	2.36	1.42
23478-PeCDF	39.4		0.0921	19.7	19.7	11.8
123478-HxCDF	76.3		0.076	7.63	7.63	7.63
123678-HxCDF	19.6		0.0724	1.96	1.96	1.96
234678-HxCDF	4.65		0.0812	0.465	0.465	0.465
123789-HxCDF	(0.091)		0.091	(0.0091)	(0.0091)	(0.0091)
1234678-HpCDF	35.9		0.113	0.359	0.359	0.359
1234789-HpCDF	10.9		0.161	0.109	0.109	0.109
OCDF	73.9		0.366	0.0739	0.00739	0.0222

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TEQ Summaries			
EMPC = 0, ND = 0	638	638	630
EMPC = 0, ND = DL / 2	638	638	630
EMPC = 0, ND = DL	638	639	630
EMPC = 0, < J-level = 0	638	638	630
EMPC = EMPC, ND = 0	638	638	630
EMPC = EMPC, ND = DL / 2	638	638	630
EMPC = EMPC, ND = DL	638	639	630
EMPC = EMPC, < J-level = 0	638	638	630

Sample ID: 11215131-120221-S-JC-SW-S-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.45 g	Lab Sample ID	B5961_18710_DF_005	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.3 %	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:39:56

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	383				ES 2378-TCDD	88.2	
12378-PeCDD	4.17				ES 12378-PeCDD	98.2	
123478-HxCDD	1.25			J	ES 123478-HxCDD	88.4	
123678-HxCDD	3.12				ES 123678-HxCDD	90.3	
123789-HxCDD	3.39				ES 123789-HxCDD	88	
1234678-HpCDD	161				ES 1234678-HpCDD	86.4	
OCDD	6,150				ES OCDD	57.9	
2378-TCDF	1,050			E	ES 2378-TCDF	82.3	
12378-PeCDF	43.5				ES 12378-PeCDF	89.3	
23478-PeCDF	33.6				ES 23478-PeCDF	87.4	
123478-HxCDF	69.8				ES 123478-HxCDF	102	
123678-HxCDF	18.8				ES 123678-HxCDF	106	
234678-HxCDF	4.41				ES 234678-HxCDF	101	
123789-HxCDF	ND	0.118			ES 123789-HxCDF	101	
1234678-HpCDF	29				ES 1234678-HpCDF	103	
1234789-HpCDF	9.23				ES 1234789-HpCDF	94.7	
OCDF	51.6				ES OCDF	59.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	94.6	
Total TCDD	435		440		CS 12347-PeCDD	112	
Total PeCDD	14.3		15.6		CS 12346-PeCDF	91.3	
Total HxCDD	62.5		65		CS 123469-HxCDF	118	
Total HpCDD	358		358		CS 1234689-HpCDF	112	
Total TCDF	2,120		2,120	E			
Total PeCDF	128		128				
Total HxCDF	117		118				
Total HpCDF	55.5		55.5				
Total PCDD/Fs	**9,490**		**9,500**	E			
WHO-2005 TEQs							
TEQ: ND=0	518		518				
TEQ: ND=DL/2	518	0.179	518				
TEQ: ND=DL	518	0.358	518				

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Sample ID: 11215131-120221-S-JC-SW-S-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.45 g	Lab Sample ID:	B5961_18710_DF_005	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.3 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:39:56

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.23		12479/12468D	2.04		124679/124689D	38		1234679D	196	
1379D	[0.681]		12469D	4.01		123468D	[2.5]		1234678D	161	
1369D	[0.308]	J	12368D	[0.921]	J	123679/123689D	14.2				
1469D	4.04		12478D	0.759	J	123469D	1.37	J			
1247D...[4]	[1.11]		12379D	0.925	J	123478D	1.25	J			
1378D	1.38		12369D...[3]	1.79		123678D	3.12				
1268D	(0.136)		12346/12347D	0.287	J	123467D	1.21	J			
1478D	[1.23]		12378D	4.17		123789D	3.39		**Conc.**	358	
1279D	[0.277]	J	12367D	[0.301]	J				**EMPC**	358	
1234/1269D	0.973		12389D	0.351	J						
1236D	(0.136)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	7.35										
1239D	(0.136)								OCDD	6150	
2378D	383										
1278D	36.5										
1267D	[1.41]										
1289D	(0.136)										
Conc.	435		**Conc.**	14.3		**Conc.**	62.5				
EMPC	440		**EMPC**	15.6		**EMPC**	65				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	518	518
TEQ: ND=DL/2	518	518
TEQ: ND=DL	518	518

	Conc.	EMPC
Total PCDD/Fs	9,490	9,500

Checkcode: 240-605-PYG

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120221-S-JC-SW-S-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.45 g	Lab Sample ID:	B5961_18710_DF_005	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.3 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:39:56

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.508		13468/12468F	1.89		123468F	2		1234678F	29	
1468F	2.1		13678F...[3]	1.39	J	124678/134678F	9.78		1234679F	1.52	J
2468F	2.42		12368F...[3]	22		134679F	(0.0981)		1234689F	15.8	
1346/1246F	(0.082)		14678F	(0.0746)		124679F	[0.277]	J	1234789F	9.23	
1347F...[3]	14.1		13479F	(0.0746)		124689F	5.45				
1348F	(0.082)		13469/12479F	0.327	J	123467F	0.995	J			
1248F...[3]	58.2		12346F	0.303	J	123478F	69.8				
1268F	19.1		23468/12469F	1.25	J	123678F	18.8				
1467F	2.55		12347F	1.24	J	123479F	(0.0981)				
1478F	45.8		12348F	4.84		123469F	0.402	J			
1369/1237F	12.4		12378F	43.5		123679F	(0.0981)				
2467F	1.44		12678/12367F	14.5		234678F	4.41		**Conc.**	55.5	
2368F	29.4		12379F	(0.0746)		234678/123689F	0		**EMPC**	55.5	
1238F...[5]	60.9		12679F	(0.0746)		123689F	(0.0981)				
1278F	506		23467/12369F	1.1	J	123789F	(0.118)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.082)		23478F	33.6		123789/123489F	0				
1267F	27.5		23478/12489F	0		123489F	5.73		OCDF	51.6	
2346/1249F	3.56		12489F	(0.0746)							
2347/1279F	13.1		12349F	(0.0746)							
2348F	75.8		12389F	1.96							
2378F	1050	E									
2367/3467F	84.9										
1269F	17.4										
1239F	1.46										
1289F	85.7										
Conc.	2,120		**Conc.**	128		**Conc.**	117				
EMPC	2,120		**EMPC**	128		**EMPC**	118				

Checkcode: 240-605-PYG

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: 11215131-120221-S-JC-SW-S-2 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5961_18710_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.45 g	QC Batch No.:	18710
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	07-Dec-2021 22:39
Lab Project No:	B5961	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	383		0.136	383	383	383
12378-PeCDD	4.17		0.0997	2.08	4.17	4.17
123478-HxCDD	1.25	J	0.155	0.125	0.125	0.125
123678-HxCDD	3.12		0.15	0.312	0.312	0.312
123789-HxCDD	3.39		0.157	0.339	0.339	0.339
1234678-HpCDD	161		0.165	1.61	1.61	1.61
OCDD	6150		0.711	6.15	0.615	1.85
2378-TCDF	1050	E	0.082	105	105	105
12378-PeCDF	43.5		0.0738	2.18	2.18	1.31
23478-PeCDF	33.6		0.0755	16.8	16.8	10.1
123478-HxCDF	69.8		0.0923	6.98	6.98	6.98
123678-HxCDF	18.8		0.0872	1.88	1.88	1.88
234678-HxCDF	4.41		0.0981	0.441	0.441	0.441
123789-HxCDF	(0.118)		0.118	(0.0118)	(0.0118)	(0.0118)
1234678-HpCDF	29		0.0846	0.29	0.29	0.29
1234789-HpCDF	9.23		0.109	0.0923	0.0923	0.0923
OCDF	51.6		0.321	0.0516	0.00516	0.0155

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TEQ Summaries			
EMPC = 0, ND = 0	528	524	518
EMPC = 0, ND = DL / 2	528	524	518
EMPC = 0, ND = DL	528	524	518
EMPC = 0, < J-level = 0	528	524	518
EMPC = EMPC, ND = 0	528	524	518
EMPC = EMPC, ND = DL / 2	528	524	518
EMPC = EMPC, ND = DL	528	524	518
EMPC = EMPC, < J-level = 0	528	524	518

Checkcode: 240-605-PYG

Sample ID: Method Blank B5961_18710 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18710_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:48:16

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.137			ES 2378-TCDD	99.3	
12378-PeCDD	ND	0.13			ES 12378-PeCDD	109	
123478-HxCDD	ND	0.103			ES 123478-HxCDD	102	
123678-HxCDD	ND	0.105			ES 123678-HxCDD	101	
123789-HxCDD	ND	0.108			ES 123789-HxCDD	99.5	
1234678-HpCDD	ND	0.105			ES 1234678-HpCDD	91.4	
OCDD	ND	0.597			ES OCDD	46	
2378-TCDF	ND	0.0741			ES 2378-TCDF	95.2	
12378-PeCDF	ND	0.0845			ES 12378-PeCDF	107	
23478-PeCDF	ND	0.079			ES 23478-PeCDF	105	
123478-HxCDF	ND	0.0832			ES 123478-HxCDF	114	
123678-HxCDF	ND	0.0785			ES 123678-HxCDF	123	
234678-HxCDF	ND	0.0792			ES 234678-HxCDF	119	
123789-HxCDF	ND	0.0996			ES 123789-HxCDF	117	
1234678-HpCDF	ND	0.0851			ES 1234678-HpCDF	111	
1234789-HpCDF	ND	0.122			ES 1234789-HpCDF	99.5	
OCDF	ND	0.399			ES OCDF	50.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	101	
Total TCDD	ND	0.137	ND		CS 12347-PeCDD	124	
Total PeCDD	ND	0.13	ND		CS 12346-PeCDF	116	
Total HxCDD	ND	0.105	ND		CS 123469-HxCDF	132	V
Total HpCDD	ND	0.105	ND		CS 1234689-HpCDF	115	
Total TCDF	ND	0.0741	ND				
Total PeCDF	ND	0.0818	ND				
Total HxCDF	ND	0.0844	ND				
Total HpCDF	ND	0.101	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.185	0.185	0.185				
TEQ: ND=DL	0.37	0.37	0.37				

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Sample ID: Method Blank B5961_18710 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18710_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:48:16

Tetra-Dioxins	Conc. (pg/g)	Qualifiers
1368D	(0.137)	
1379D	(0.137)	
1369D	(0.137)	
1469D	(0.137)	
1247D...[4]	(0.137)	
1378D	(0.137)	
1268D	(0.137)	
1478D	(0.137)	
1279D	(0.137)	
1234/1269D	(0.137)	
1236D	(0.137)	
1237/1238D	(0.137)	
1239D	(0.137)	
2378D	(0.137)	
1278D	(0.137)	
1267D	(0.137)	
1289D	(0.137)	
Conc.	0	
EMPC	0	

Penta-Dioxins	Conc. (pg/g)	Qualifiers
12479/12468D	(0.13)	
12469D	(0.13)	
12368D	(0.13)	
12478D	(0.13)	
12379D	(0.13)	
12369D...[3]	(0.13)	
12346/12347D	(0.13)	
12378D	(0.13)	
12367D	(0.13)	
12389D	(0.13)	
Conc.	0	
EMPC	0	

Hexa-Dioxins	Conc (pg/g)	Qualifiers
124679/124689D	(0.105)	
123468D	(0.105)	
123679/123689D	(0.105)	
123469D	(0.105)	
123478D	(0.103)	
123678D	(0.105)	
123467D	(0.105)	
123789D	(0.108)	
Conc.	0	
EMPC	0	

Hepta-Dioxins	Conc (pg/g)	Qualifiers
1234679D	(0.105)	
1234678D	(0.105)	
Conc.	0	
EMPC	0	

Octa-Dioxin	Conc (pg/g)	Qualifiers
OCDD	(0.597)	

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.185	0.185
TEQ: ND=DL	0.37	0.37

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 192-567-JJX

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: Method Blank B5961_18710 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18710_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:48:16

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.0741)		13468/12468F	(0.0717)		123468F	(0.0844)		1234678F	(0.0851)	
1468F	(0.0741)		13678F...[3]	(0.0818)		124678/134678F	(0.0844)		1234679F	(0.101)	
2468F	(0.0741)		12368F...[3]	(0.0818)		134679F	(0.0844)		1234689F	(0.101)	
1346/1246F	(0.0741)		14678F	(0.0818)		124679F	(0.0844)		1234789F	(0.122)	
1347F...[3]	(0.0741)		13479F	(0.0818)		124689F	(0.0844)				
1348F	(0.0741)		13469/12479F	(0.0818)		123467F	(0.0844)				
1248F...[3]	(0.0741)		12346F	(0.0818)		123478F	(0.0832)				
1268F	(0.0741)		23468/12469F	(0.0818)		123678F	(0.0785)				
1467F	(0.0741)		12347F	(0.0818)		123479F	(0.0844)				
1478F	(0.0741)		12348F	(0.0818)		123469F	(0.0844)				
1369/1237F	(0.0741)		12378F	(0.0845)		123679F	(0.0844)				
2467F	(0.0741)		12678/12367F	(0.0818)		234678F	(0.0792)		**Conc.**	0	
2368F	(0.0741)		12379F	(0.0818)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.0741)		12679F	(0.0818)		123689F	(0.0844)				
1278F	(0.0741)		23467/12369F	(0.0818)		123789F	(0.0996)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.0741)		23478F	(0.079)		123789/123489F	0				
1267F	(0.0741)		23478/12489F	0		123489F	(0.0844)		OCDF	(0.399)	
2346/1249F	(0.0741)		12489F	(0.0818)							
2347/1279F	(0.0741)		12349F	(0.0818)							
2348F	(0.0741)		12389F	(0.0818)							
2378F	(0.0741)										
2367/3467F	(0.0741)										
1269F	(0.0741)										
1239F	(0.0741)										
1289F	(0.0741)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 192-567-JJX

Report Created: 08-Dec-2021 11:27 Analyst: TF

Sample ID: Method Blank B5961_18710 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18710_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18710
Date Collected:	n/a	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	07-Dec-2021 18:48
Lab Project No:	B5961	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.137)		0.137	(0.137)	(0.137)	(0.137)
12378-PeCDD	(0.13)		0.13	(0.065)	(0.13)	(0.13)
123478-HxCDD	(0.103)		0.103	(0.0103)	(0.0103)	(0.0103)
123678-HxCDD	(0.105)		0.105	(0.0105)	(0.0105)	(0.0105)
123789-HxCDD	(0.108)		0.108	(0.0108)	(0.0108)	(0.0108)
1234678-HpCDD	(0.105)		0.105	(0.00105)	(0.00105)	(0.00105)
OCDD	(0.597)		0.597	(0.000597)	(0.0000597)	(0.000179)
2378-TCDF	(0.0741)		0.0741	(0.00741)	(0.00741)	(0.00741)
12378-PeCDF	(0.0845)		0.0845	(0.00423)	(0.00423)	(0.00254)
23478-PeCDF	(0.079)		0.079	(0.0395)	(0.0395)	(0.0237)
123478-HxCDF	(0.0832)		0.0832	(0.00832)	(0.00832)	(0.00832)
123678-HxCDF	(0.0785)		0.0785	(0.00785)	(0.00785)	(0.00785)
234678-HxCDF	(0.0792)		0.0792	(0.00792)	(0.00792)	(0.00792)
123789-HxCDF	(0.0996)		0.0996	(0.00996)	(0.00996)	(0.00996)
1234678-HpCDF	(0.0851)		0.0851	(0.000851)	(0.000851)	(0.000851)
1234789-HpCDF	(0.122)		0.122	(0.00122)	(0.00122)	(0.00122)
OCDF	(0.399)		0.399	(0.000399)	(0.0000399)	(0.00012)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.162	0.194	0.185
EMPC = 0, ND = DL	0.323	0.387	0.37
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.162	0.194	0.185
EMPC = EMPC, ND = DL	0.323	0.387	0.37
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 192-567-JJX

SGS North America - DF v0.99

Sample ID: 0_18710_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18710_DF-RJ	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	16:29:16

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.3				ES 2378-TCDD	97.1	
12378-PeCDD	54.3				ES 12378-PeCDD	111	
123478-HxCDD	59.2				ES 123478-HxCDD	106	
123678-HxCDD	57.8				ES 123678-HxCDD	107	
123789-HxCDD	55.4				ES 123789-HxCDD	106	
1234678-HpCDD	55.9				ES 1234678-HpCDD	103	
OCDD	112				ES OCDD	56.4	
2378-TCDF	12				ES 2378-TCDF	91.9	
12378-PeCDF	54.9				ES 12378-PeCDF	109	
23478-PeCDF	59.6				ES 23478-PeCDF	103	
123478-HxCDF	55.5				ES 123478-HxCDF	116	
123678-HxCDF	55.4				ES 123678-HxCDF	124	
234678-HxCDF	57.4				ES 234678-HxCDF	115	
123789-HxCDF	52.7				ES 123789-HxCDF	129	
1234678-HpCDF	55.5				ES 1234678-HpCDF	124	
1234789-HpCDF	56.8				ES 1234789-HpCDF	111	
OCDF	112				ES OCDF	59.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	101	
Total TCDD	59.8		59.8		CS 12347-PeCDD	123	
Total PeCDD	83.6		83.6		CS 12346-PeCDF	112	
Total HxCDD	189		189		CS 123469-HxCDF	124	
Total HpCDD	72		72		CS 1234689-HpCDF	139	
Total TCDF	72.2		72.2				
Total PeCDF	212		212				
Total HxCDF	361		361				
Total HpCDF	112		112				
Total PCDD/Fs	**1,390**		**1,390**				
WHO-2005 TEQs							
TEQ: ND=0	128		128				
TEQ: ND=DL/2	128	0.138	128				
TEQ: ND=DL	128	0.275	128				

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Sample ID: 0_18710_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5961	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18710_DF	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:15:35

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.6				ES 2378-TCDD	101	
12378-PeCDD	53.3				ES 12378-PeCDD	112	
123478-HxCDD	58				ES 123478-HxCDD	106	
123678-HxCDD	59.3				ES 123678-HxCDD	105	
123789-HxCDD	55.3				ES 123789-HxCDD	105	
1234678-HpCDD	56				ES 1234678-HpCDD	99.5	
OCDD	114				ES OCDD	53.2	
2378-TCDF	12.6				ES 2378-TCDF	91.7	
12378-PeCDF	56				ES 12378-PeCDF	104	
23478-PeCDF	60.1				ES 23478-PeCDF	103	
123478-HxCDF	57.5				ES 123478-HxCDF	120	
123678-HxCDF	56				ES 123678-HxCDF	127	
234678-HxCDF	54.9				ES 234678-HxCDF	125	
123789-HxCDF	54.4				ES 123789-HxCDF	125	
1234678-HpCDF	56.1				ES 1234678-HpCDF	124	
1234789-HpCDF	53.8				ES 1234789-HpCDF	106	
OCDF	111				ES OCDF	57.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	102	
Total TCDD	58.6		58.6		CS 12347-PeCDD	125	
Total PeCDD	84.1		84.1		CS 12346-PeCDF	108	
Total HxCDD	191		191		CS 123469-HxCDF	133	
Total HpCDD	72.7		72.7		CS 1234689-HpCDF	118	
Total TCDF	71.2		71.2				
Total PeCDF	208		208				
Total HxCDF	378		378				
Total HpCDF	110		110				
Total PCDD/Fs	**1,400**		**1,400**				
WHO-2005 TEQs							
TEQ: ND=0	128		128				
TEQ: ND=DL/2	128	0.128	128				
TEQ: ND=DL	128	0.256	128				

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Sample DUP

Method 1613B

Sample ID: 0_18710_OPR001

Analyte	OPR1_18710_DF-RJ pg/uL	OPR2_18710_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	12.3	12.6	2.5%
1,2,3,7,8-PeCDD	54.3	53.3	1.8%
1,2,3,4,7,8-HxCDD	59.2	58	2.1%
1,2,3,6,7,8-HxCDD	57.8	59.3	2.6%
1,2,3,7,8,9-HxCDD	55.4	55.3	0.1%
1,2,3,4,6,7,8-HpCDD	55.9	56	0.3%
OCDD	112	114	1.2%
2,3,7,8-TCDF	12	12.6	4.5%
1,2,3,7,8-PeCDF	54.9	56	1.9%
2,3,4,7,8-PeCDF	59.6	60.1	0.8%
1,2,3,4,7,8-HxCDF	55.5	57.5	3.5%
1,2,3,6,7,8-HxCDF	55.4	56	1.1%
2,3,4,6,7,8-HxCDF	57.4	54.9	4.3%
1,2,3,7,8,9-HxCDF	52.7	54.4	3.2%
1,2,3,4,6,7,8-HpCDF	55.5	56.1	1.1%
1,2,3,4,7,8,9-HpCDF	56.8	53.8	5.4%
OCDF	112	111	1.0%
Totals			
Total TCDD	59.8	58.6	2.0%
Total PeCDD	83.6	84.1	0.5%
Total HxCDD	189	191	1.1%
Total HpCDD	72	72.7	0.9%
Total TCDF	72.2	71.2	1.5%
Total PeCDF	212	208	1.9%
Total HxCDF	361	378	4.8%
Total HpCDF	112	110	2.1%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5961*
Requested TAT:	*3 business days*
Projected due date:	*8-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120121-S-JC-NE-S-8	B5961_001	Solid	1	4oz Amber	01-Dec-21	10:35	0.5	1	4905 2704 1823
11215131-120121-S-JC-NE-S-9	B5961_002	Solid	1	4oz Amber	01-Dec-21	14:50	0.5	1	4905 2704 1823
11215131-120121-S-JC-NE-S-10	B5961_003	Solid	1	4oz Amber	01-Dec-21	15:00	0.5	1	4905 2704 1823
11215131-120221-S-JC-SW-S-1	B5961_004	Solid	1	4oz Amber	02-Dec-21	10:00	0.5	1	4905 2704 1823
11215131-120221-S-JC-SW-S-2	B5961_005	Solid	1	4oz Amber	02-Dec-21	10:10	0.5	1	4905 2704 1823

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* TB 12/3/2021

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B594U1 1/2

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV
SPECIAL DELIVERABLES:
☐ DoD ■ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS	SEE SSOW
11215131-120121-S-JC-NE-S-8	12-1-21	1035	C	S	4 oz	X					1	RUSH	*
11215131-120121-S-JC-NE-O-6		1045			4 oz	X					1		
11215131-120121-S-JC-NE-B-1		1420			4 oz	X					1		
11215131-120121-S-JC-NE-B-2		1430			4 oz	X					1	HOLD	
11215131-120121-S-JC-NE-O-7		1440			4 oz	X					1		
11215131-120121-S-JC-NE-S-9		1450			4 oz	X					1	RUSH	*
11215131-120121-S-JC-NE-S-10	↓	1500	↓	↓	4 oz	X					1	RUSH	*
11215131-120221-S-JC-SW-S-1	12-2-21	1000	C	S	4 oz	X					1	RUSH	*
11215131-120221-S-JC-SW-S-2	↓	1010	↓	↓	4 oz	X					1	RUSH	*
11215131-120221-S-JC-SW-O-1	↓	1020	↓	↓	4 oz	X		X	X		1	NO MSD	

	DATE:	TIME:	
COLLECTED/RELINQUISHED BY (1): Breanna North	12-2-21	1345	RECEIVED BY: Eddie Castro
RELINQUISHED BY (2): Eddie Castro	12-2-21	1525	RECEIVED BY: 12/2/21 1525
RELINQUISHED BY (3):	12/2/21	1525	RECEIVED BY:

RECEIVED BY LABORATORY: DANIELLE OUTLAW DATE: 12/3/21 TIME: 10:47
COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT
CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT
CARRIER: FedEx TEMP: °C 0.5°
TRACKING #: 4905 2304 1823

*=Samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

CHAIN OF CUSTODY

B59161 2/2

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUNDTIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV
SPECIAL DELIVERABLES:
☐ DoD ☒ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QC: QTY	REMARKS: SEE SOW
112151311-120221-S-JC-SW-DUP-1	12-2-21	—	C	S	4 oz		X					DUP-1
112151311-120221-S-JC-SW-B-1	12-2-21	1030	C	S	4 oz		X					
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							

COLLECTED/RELINQUISHED BY (1): Brianna North	DATE: 12-2-21	TIME: 1315	RECEIVED BY: Eddie Castro
RELINQUISHED BY (2): Eddie Castro	DATE: 12-2-21	TIME: 1525	RECEIVED BY: 12/2/21 1525
RELINQUISHED BY (3):	DATE: 12/2/21	TIME: 1525	RECEIVED BY:

RECEIVED BY LABORATORY: DATE: TIME:
ASHLEY ONEIL 12/3/21 10:47
COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT
CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT
CARRIER: FedEx TEMP °C 0.5°
TRACKING #: 4905 2704 1823

*=Samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

B5961 1/1

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 02DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405

(910) 350-1903 REF:
INV:
PO: DEPT:

12/3/2021
10:47
0.5°

565C3/E934/05A2

FedEx Express

E

J191219002001ev

1 of 2

TRK# 0201 4905 2704 1823

MASTER

NL ILMA

FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

28405
NC-US RDU

TB
12/3/21

Part # 156148-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5961

Initiation Date: 03-Dec-21

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 3 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Read and understood, initial and date: Prep Lab: 12/3/21 TPB 12/3/21 HRMS Lab:

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: tburkamper Date: 03-Dec-2021

SGS

Methods: PCB / PAH; (PCDD/F) WHO-2; QUANTICS USV; DoD PCDD/F PEST

Extraction Type: (SDS) CLL; TALEX Carbon SPE

Solid

Final Volume: 20 µL

Batch# 18710

Split: ~~1/2~~ ~~1/4~~

Extract Initial/Date: KE 12/3/21

Clean-up Initial/Date: RAB 12/6/21

Transfer Init/Date: RAB 12/6/21

Lab Sample ID	Extraction Position (Solvent: Tol)	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5961_18710_001	4	21.78				brown/gray, clay-like
B5961_18710_002	5	19.98				gray, clay-like
B5961_18710_003	6	20.97				gray, clay-like, oil/fuel smell
B5961_18710_004	7	19.33				gray, clay-like
B5961_18710_005	8	18.95				gray, clay-like
B5963_18710_001	9	17.61				gray, clay-like, sandy
B5963_18710_002	10	18.20				gray, clay-like, fuel/oil smell
B5963_18710_003	11	19.28				gray, clay-like
B5963_18710_004	12	19.16				gray, clay-like
MB1_18710	1	10.00				sodium sulfate
OPR1_18710	2	10.00				sodium sulfate
OPR2_18710	3	10.00				sodium sulfate

08 Dec 21

~~RAB~~ 12/6/21

Supply IDs	
Toluene	STL14.16
MeCHL	STL14.2
Florisil	SPLS.66
Hexane	STL14.19
Silica	SPLS.280
S Nitrate	N/A
Base Silica	SPLS.63
HydroMatrix	N/A
Tetradecane	SPLS.288
H_2SO_4	N/A
A Silica	SPLS.65
Sodium Sulfate	SPLS.286

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	08 Dec 21
Carbon Column Date/Initial:	CA
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1600
	Stop: 0915
HEX	Start:
	Stop: 08 Dec 21
DCM	Start: CA
	Stop:

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18710

Inter-Department Communication Sheet

08 DEC 21

SGS

Wt. Volume Results

Batch #: 18710 **Comments:**

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5961_001	0.8	4.39	3.56	76.88%	76.88%			13.01	21.78	16.74
B5961_002	0.8	3.33	2.63	72.33%	72.33%			13.83	19.98	14.45
B5961_003	0.82	3.5	2.51	63.06%	63.06%			15.86	20.97	13.22
B5961_004	0.81	5.37	4.42	79.17%	79.17%			12.63	19.33	15.3
B5961_005	0.8	4.55	3.66	76.27%	76.27%			13.11	18.95	14.45
B5963_001	0.82	3.33	2.8	78.88%	78.88%			12.68	17.61	13.89
B5963_002	0.8	4.02	3.2	74.53%	74.53%			13.42	18.2	13.56
B5963_003	0.8	3.49	2.93	79.18%	79.18%			12.63	19.28	15.27
B5963_004	0.81	4.59	3.93	82.54%	82.54%			12.12	19.16	15.81

reviewed

[illegible] 21

% Solid Determination WorkSheet

SGS

Batch: 18710

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5961_18710_001	0.80	4.39	3.56	
B5961_18710_002	0.80	3.33	2.63	
B5961_18710_003	0.82	3.50	2.51	
B5961_18710_004	0.81	5.37	4.42	
B5961_18710_005	0.80	4.55	3.66	
B5963_18710_001	0.82	3.33	2.80	
B5963_18710_002	0.80	4.02	3.20	08DC21
B5963_18710_003	0.80	3.49	2.93	C
B5963_18710_004	0.81	4.59	3.93	

DMS 12/6/21

Date/Initials: KE 12/6/21

SGS | Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Solid

Batch # 18710

Spiker Initials/Date:	JRH 12/3/21	JRH 12/3/21	JRH 12/3/21	PBS 12/6/21	BDD 12/6/21		
	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
Lab Sample ID	Amount: 20mL	Amount: 20mL	Amount: 20mL	Amount: 20µL	Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5961_18710_001	—	—	KE	KE	KE		
B5961_18710_002	—	—	KE	KE	KE		
B5961_18710_003	—	—	KE	KE	KE		
B5961_18710_004	—	—	KE	KE	KE		
B5961_18710_005	—	—	KE	KE	KE		
B5963_18710_001	—	—	KE	KE	KE		
B5963_18710_002	—	—	KE	KE	KE		
B5963_18710_003	—	—	KE	KE	KE		
B5963_18710_004	—	—	KE	KE	KE		
MB1_18710	—	—	KE	KE	KE		
OPR1_18710	KE	KE	KE	KE	KE		
OPR2_18710	KE	KE	KE	KE	KE		

PBS 12/6/21

Standard Information

Pipette ID							
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
SIL #	24-15-4	26-187-2	26-1-7	25-273.1	25-309.1		
Concentration	10pg/mL	10pg/mL	100 pg/mL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/23	4/22/22	8/2023	9/8/22	10/8/22		

BDD 12/6/21

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	211207C01	3	CS3_211207_DF_CA	1.00	SIL 25-347-1	DTF	468-803	07-Dec-2021	14:18:24
3	211207C03	26	OPR1_18710_DF-RJ	1.00	0_18710_OPR001	DTF	348-095	07-Dec-2021	16:29:16
4	211207C04	27	OPR2_18710_DF	1.00	0_18710_OPR002	DTF	493-149	07-Dec-2021	17:15:35
5	211207C05	2	SBS_211207_DF_CA	1.00	20-61-1	DTF	956-405	07-Dec-2021	18:01:56
6	211207C06	25	MB1_18710_DF_SDS	10.00	Method Blank	DTF	192-567	07-Dec-2021	18:48:16
7	211207C07	28	B5961_18710_DF_001	16.74	11215131-120121-S-JC-NE-S-8	DTF	476-819	07-Dec-2021	19:34:35
8	211207C08	29	B5961_18710_DF_002	14.45	11215131-120121-S-JC-NE-S-9	DTF	794-822	07-Dec-2021	20:20:56
9	211207C09	30	B5961_18710_DF_003	13.22	11215131-120121-S-JC-NE-S-10	DTF	391-487	07-Dec-2021	21:07:17
10	211207C10	31	B5961_18710_DF_004	15.30	11215131-120221-S-JC-SW-S-1	DTF	956-033	07-Dec-2021	21:53:36
11	211207C11	32	B5961_18710_DF_005	14.45	11215131-120221-S-JC-SW-S-2	DTF	240-605	07-Dec-2021	22:39:56

REVIEWED
Tyler_Fritz , 12/8/2021, 11:38:23 AM

APPROVED
Carla_Lyon , 12/8/2021, 2:00:29 PM

Lab ID: MB1_18710_DF_SDS **Acq'd:** 07 Dec 2021 18:48 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5961_18710 **UTP:** 08-Dec-2021 11:25:16 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 192-567-JJX

Datafile: 211207C06 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0009	-		-	-	-	1.18	-	5044.673	0.137
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	5136.982	0.13
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3494.357	0.103
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	3494.357	0.105
123789-HxCDD	NotFnd		1.0117	-		-	-	-	1.05	-	3494.357	0.108
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2831.227	0.105
OCDD	NotFnd		1.0003	-		-	-	-	1.13	-	4395.405	0.597
2378-TCDF	NotFnd		1.0009	-		-	-	-	1.08	-	3966.524	0.0741
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	4972.626	0.0845
23478-PeCDF	NotFnd		1.0006	-		-	-	-	1.02	-	4972.626	0.079
123478-HxCDF	NotFnd		1.0005	-		-	-	-	1.27	-	4451.71	0.0832
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	4451.71	0.0785
234678-HxCDF	NotFnd		1.0004	-		-	-	-	1.19	-	4451.71	0.0792
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	4451.71	0.0996
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	4192.288	0.0851
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	4192.288	0.122
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	3721.805	0.399

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.12	1.0260	1.0261	+0.2	7.01E+07	0.84	Y	1.05	99.3
ES 12378-PeCDD	32.77	1.2396	1.2399	+0.6	6.50E+07	1.64	Y	0.88	109
ES 123478-HxCDD	36.77	0.9916	0.9915	-0.2	5.07E+07	1.25	Y	0.97	102
ES 123678-HxCDD	36.88	0.9947	0.9946	-0.2	4.88E+07	1.26	Y	0.94	101
ES 123789-HxCDD	37.18	1.0027	1.0028	+0.2	5.54E+07	1.24	Y	1.09	99.5
ES 1234678-HpCDD	40.14	1.0828	1.0825	-0.7	4.26E+07	1.06	Y	0.91	91.4
ES OCDD	42.75	1.1528	1.1529	+0.3	2.93E+07	0.90	Y	0.62	46
ES 2378-TCDF	26.18	1.0591	1.0592	+0.2	1.14E+08	0.78	Y	1.06	95.2
ES 12378-PeCDF	31.25	1.2643	1.2646	+0.6	1.10E+08	1.56	Y	0.91	107
ES 23478-PeCDF	32.41	1.3110	1.3113	+0.6	1.05E+08	1.56	Y	0.88	105
ES 123478-HxCDF	35.77	0.9648	0.9647	-0.2	7.00E+07	0.52	Y	1.20	114
ES 123678-HxCDF	35.91	0.9686	0.9685	-0.2	8.49E+07	0.53	Y	1.35	123
ES 234678-HxCDF	36.57	0.9865	0.9864	-0.2	7.52E+07	0.54	Y	1.24	119
ES 123789-HxCDF	37.56	1.0129	1.0128	-0.2	6.87E+07	0.52	Y	1.16	117
ES 1234678-HpCDF	39.17	1.0565	1.0563	-0.5	5.50E+07	0.47	Y	0.97	111
ES 1234789-HpCDF	40.56	1.0943	1.0940	-0.7	4.32E+07	0.47	Y	0.85	99.5
ES OCDF	42.91	1.1569	1.1571	+0.5	4.18E+07	0.92	Y	0.81	50.7

Lab ID: MB1_18710_DF_SDS | **Acq'd:** 07 Dec 2021 18:48 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5961_18710 | **UTP:** 08-Dec-2021 11:25:16 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 192-567-JJX

Datafile: 211207C06 | **Report:** 08 Dec 2021 11:27 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.43		-	-	-	6.75E+07	0.83	Y	-	-	
JS 1234-TCDF	24.71		-	-	-	1.13E+08	0.78	Y	-	-	
JS 123467-HxCDD	37.08		-	-	-	2.55E+07	1.33	Y	-	-	
CS 37Cl-2378-TCDD	27.14		1.0269	1.0270	+0.2	3.29E+07	n/a	-	1.20	101	
CS 12347-PeCDD	32.26		1.2203	1.2205	+0.4	6.33E+07	1.63	Y	0.75	124	
CS 12346-PeCDF	30.71		1.2424	1.2426	+0.4	1.11E+08	1.57	Y	0.85	116	
CS 123469-HxCDF	36.23	V	0.9771	0.9770	-0.2	7.53E+07	0.54	Y	1.12	132	
CS 1234689-HpCDF	39.60		1.0681	1.0679	-0.5	5.19E+07	0.45	Y	0.89	115	
~~SS 37Cl-2378-TCDD~~	~~27.14~~		~~1.0269~~	~~1.0270~~	~~+0.2~~	~~3.29E+07~~	~~n/a~~		~~1.15~~	~~102~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.26~~		~~1.2203~~	~~1.2205~~	~~+0.4~~	~~6.33E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~114~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.71~~		~~1.2424~~	~~1.2426~~	~~+0.4~~	~~1.11E+08~~	~~1.57~~	~~Y~~	~~0.94~~	~~100~~	
~~SS 123469-HxCDF~~	~~36.23~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~7.53E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~107~~	
~~SS 1234689-HpCDF~~	~~39.60~~		~~1.0681~~	~~1.0679~~	~~-0.5~~	~~5.19E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~103~~	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18710_DF_SDS **Acq'd: 07 Dec 2021 18:48 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5961_18710 **UTP: 08-Dec-2021 11:25:16 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 192-567-JJX**

Datafile: 211207C06 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8545						1.18		5044.673	0.137
1379-TCDD	NotFnd		0.8692						1.18		5044.673	0.137
1369-TCDD	NotFnd		0.8868						1.18		5044.673	0.137
1469-TCDD	NotFnd		0.9185						1.18		5044.673	0.137
1247/1246/1248/1249-TCDD	NotFnd		0.9282						1.18		5044.673	0.137
1378-TCDD	NotFnd		0.9355						1.18		5044.673	0.137
1268-TCDD	NotFnd		0.9435						1.18		5044.673	0.137
1478-TCDD	NotFnd		0.9533						1.18		5044.673	0.137
1279-TCDD	NotFnd		0.9601						1.18		5044.673	0.137
1234/1269-TCDD	NotFnd		0.9741						1.18		5044.673	0.137
1236-TCDD	NotFnd		0.9797						1.18		5044.673	0.137
1237/1238-TCDD	NotFnd		0.9898						1.18		5044.673	0.137
1239-TCDD	NotFnd		0.9952						1.18		5044.673	0.137
2378-TCDD	**NotFnd**		**1.0009**						**1.18**		**5044.673**	**0.137**
1278-TCDD	NotFnd		1.0139						1.18		5044.673	0.137
1267-TCDD	NotFnd		1.0193						1.18		5044.673	0.137
1289-TCDD	NotFnd		1.0393						1.18		5044.673	0.137
12479/12468-PeCDD	NotFnd		0.9216						1.04		5136.982	0.13
12469-PeCDD	NotFnd		0.9386						1.04		5136.982	0.13
12368-PeCDD	NotFnd		0.9560						1.04		5136.982	0.13
12478-PeCDD	NotFnd		0.9619						1.04		5136.982	0.13
12379-PeCDD	NotFnd		0.9651						1.04		5136.982	0.13
12369/12467/12489-PeCDD	NotFnd		0.9735						1.04		5136.982	0.13
12346/12347-PeCDD	NotFnd		0.9852						1.04		5136.982	0.13
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**5136.982**	**0.13**
12367-PeCDD	NotFnd		1.0037						1.04		5136.982	0.13
12389-PeCDD	NotFnd		1.0145						1.04		5136.982	0.13
124679/124689-HxCDD	NotFnd		0.9535						1.10		3494.357	0.105
123468-HxCDD	NotFnd		0.9716						1.10		3494.357	0.105
123679/123689-HxCDD	NotFnd		0.9796						1.10		3494.357	0.105
123469-HxCDD	NotFnd		0.9833						1.10		3494.357	0.105
123478-HxCDD	NotFnd		**1.0004**						1.09		**3494.357**	**0.103**
123678-HxCDD	NotFnd		**1.0035**						1.15		**3494.357**	**0.105**
123467-HxCDD	NotFnd		1.0088						1.10		3494.357	0.105
123789-HxCDD	NotFnd		**1.0117**						1.05		**3494.357**	**0.108**

Lab ID: MB1_18710_DF_SDS **Acq'd:** 07 Dec 2021 18:48 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5961_18710 **UTP:** 08-Dec-2021 11:25:16 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 192-567-JJX

Datafile: 211207C06 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

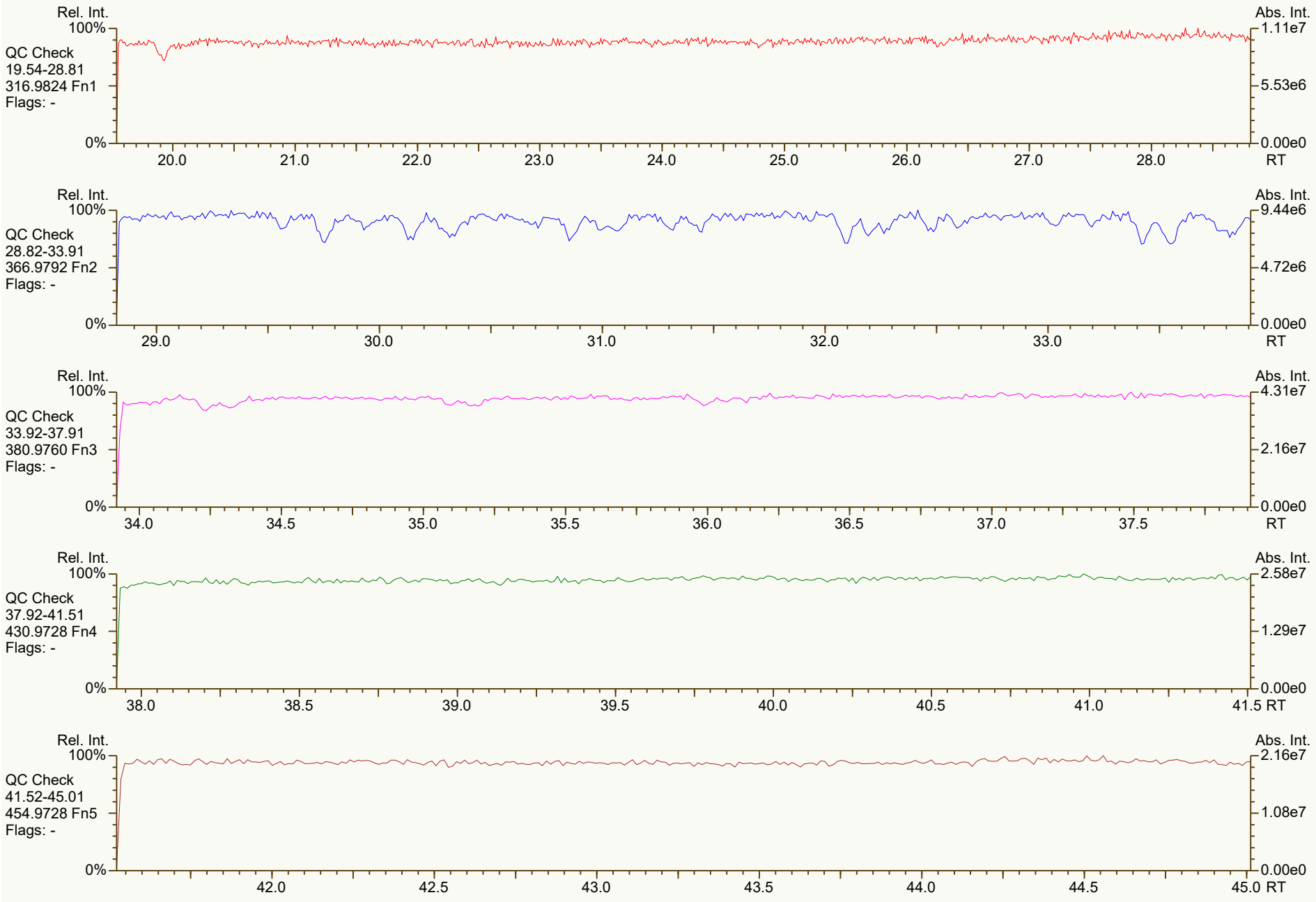
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9833						1.06		2831.227	0.105
1234678-HpCDD	**NotFnd**		**1.0003**						**1.06**		**2831.227**	**0.105**
OCDD	**NotFnd**		**1.0003**						**1.13**		**4395.405**	**0.597**
OCDD-a	NotFnd		1.0002						0.07		6131.781	13
1368-TCDF	NotFnd		0.7998						1.08		3966.524	0.0741
1468-TCDF	NotFnd		0.8214						1.08		3966.524	0.0741
2468-TCDF	NotFnd		0.8463						1.08		3966.524	0.0741
1346/1246-TCDF	NotFnd		0.8608						1.08		3966.524	0.0741
1347/1378/1247-TCDF	NotFnd		0.8675						1.08		3966.524	0.0741
1348-TCDF	NotFnd		0.8793						1.08		3966.524	0.0741
1248/1367/1379-TCDF	NotFnd		0.8850						1.08		3966.524	0.0741
1268-TCDF	NotFnd		0.9010						1.08		3966.524	0.0741
1467-TCDF	NotFnd		0.9068						1.08		3966.524	0.0741
1478-TCDF	NotFnd		0.9139						1.08		3966.524	0.0741
1369/1237-TCDF	NotFnd		0.9294						1.08		3966.524	0.0741
2467-TCDF	NotFnd		0.9350						1.08		3966.524	0.0741
2368-TCDF	NotFnd		0.9410						1.08		3966.524	0.0741
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9451						1.08		3966.524	0.0741
1278-TCDF	NotFnd		0.9642						1.08		3966.524	0.0741
1349-TCDF	NotFnd		0.9695						1.08		3966.524	0.0741
1267-TCDF	NotFnd		0.9753						1.08		3966.524	0.0741
2346/1249-TCDF	NotFnd		0.9832						1.08		3966.524	0.0741
2347/1279-TCDF	NotFnd		0.9921						1.08		3966.524	0.0741
2348-TCDF	NotFnd		0.9970						1.08		3966.524	0.0741
2378-TCDF	**NotFnd**		**1.0009**						**1.08**		**3966.524**	**0.0741**
2367/3467-TCDF	NotFnd		1.0162						1.08		3966.524	0.0741
1269-TCDF	NotFnd		1.0259						1.08		3966.524	0.0741
1239-TCDF	NotFnd		1.0370						1.08		3966.524	0.0741
1289-TCDF	NotFnd		1.0829						1.08		3966.524	0.0741
13468/12468-PeCDF	NotFnd		0.9067						1.02		4354.971	0.0717
13678/13467/12467-PeCDF	NotFnd		0.9583						1.02		4972.626	0.0818
12368/13478/12478-PeCDF	NotFnd		0.9635						1.02		4972.626	0.0818
14678-PeCDF	NotFnd		0.9669						1.02		4972.626	0.0818
13479-PeCDF	NotFnd		0.9701						1.02		4972.626	0.0818
13469/12479-PeCDF	NotFnd		0.9784						1.02		4972.626	0.0818
12346-PeCDF	NotFnd		0.9831						1.02		4972.626	0.0818

Lab ID: MB1_18710_DF_SDS **Acq'd: 07 Dec 2021 18:48 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5961_18710 **UTP: 08-Dec-2021 11:25:16 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 192-567-JJX**

Datafile: 211207C06 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

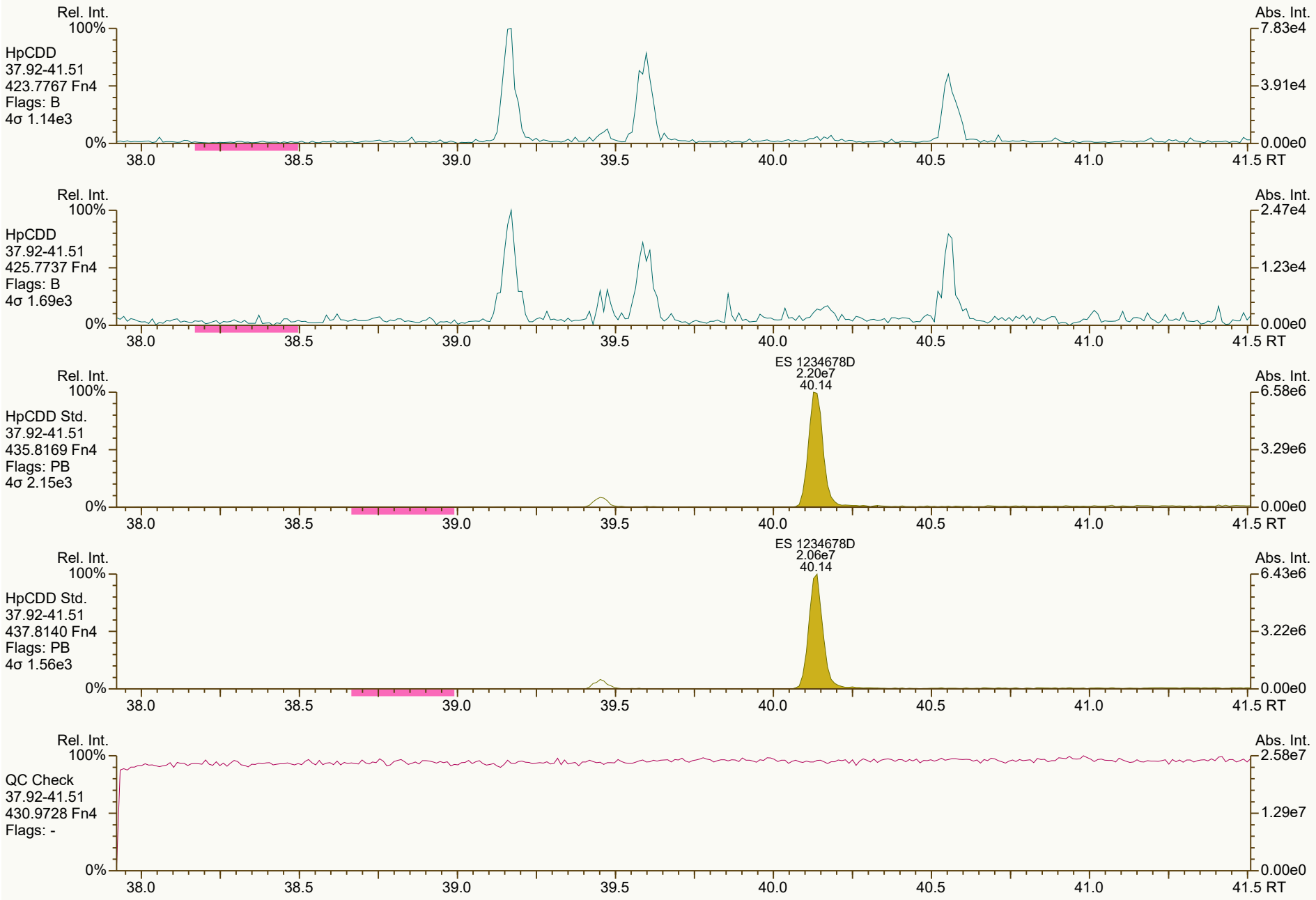
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9859						1.02		4972.626	0.0818
12347-PeCDF	NotFnd		0.9885						1.02		4972.626	0.0818
12348-PeCDF	NotFnd		0.9937						1.02		4972.626	0.0818
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**4972.626**	**0.0845**
12678/12367-PeCDF	NotFnd		1.0097						1.02		4972.626	0.0818
12379-PeCDF	NotFnd		1.0153						1.02		4972.626	0.0818
12679-PeCDF	NotFnd		0.9925						1.02		4972.626	0.0818
23467/12369-PeCDF	NotFnd		0.9966						1.02		4972.626	0.0818
23478-PeCDF	**NotFnd**		**1.0006**						**1.02**		**4972.626**	**0.079**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		4972.626	0.0818
12349-PeCDF	NotFnd		1.0108						1.02		4972.626	0.0818
12389-PeCDF	NotFnd		1.0346						1.02		4972.626	0.0818
123468-HxCDF	NotFnd		0.9610						1.19		4451.71	0.0844
124678/134678-HxCDF	NotFnd		0.9667						1.19		4451.71	0.0844
134679-HxCDF	NotFnd		0.9732						1.19		4451.71	0.0844
124679-HxCDF	NotFnd		0.9788						1.19		4451.71	0.0844
124689-HxCDF	NotFnd		0.9852						1.19		4451.71	0.0844
123467-HxCDF	NotFnd		0.9971						1.19		4451.71	0.0844
123478-HxCDF	**NotFnd**		**1.0005**						**1.27**		**4451.71**	**0.0832**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**4451.71**	**0.0785**
123479-HxCDF	NotFnd		1.0050						1.19		4451.71	0.0844
123469-HxCDF	NotFnd		1.0091						1.19		4451.71	0.0844
123679-HxCDF	NotFnd		0.9943						1.19		4451.71	0.0844
234678-HxCDF	**NotFnd**		**1.0004**						**1.19**		**4451.71**	**0.0792**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4451.71	0.0844
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**4451.71**	**0.0996**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0008						1.19		4451.71	0.0844
1234678-HpCDF	**NotFnd**		**1.0003**						**1.37**		**4192.288**	**0.0851**
1234679-HpCDF	NotFnd		1.0075						1.34		4192.288	0.101
1234689-HpCDF	NotFnd		1.0113						1.34		4192.288	0.101
1234789-HpCDF	**NotFnd**		**1.0002**						**1.31**		**4192.288**	**0.122**
OCDF	**NotFnd**		**1.0003**						**1.07**		**3721.805**	**0.399**
OCDF-a	NotFnd		1.0002						0.07		6107.359	10.6

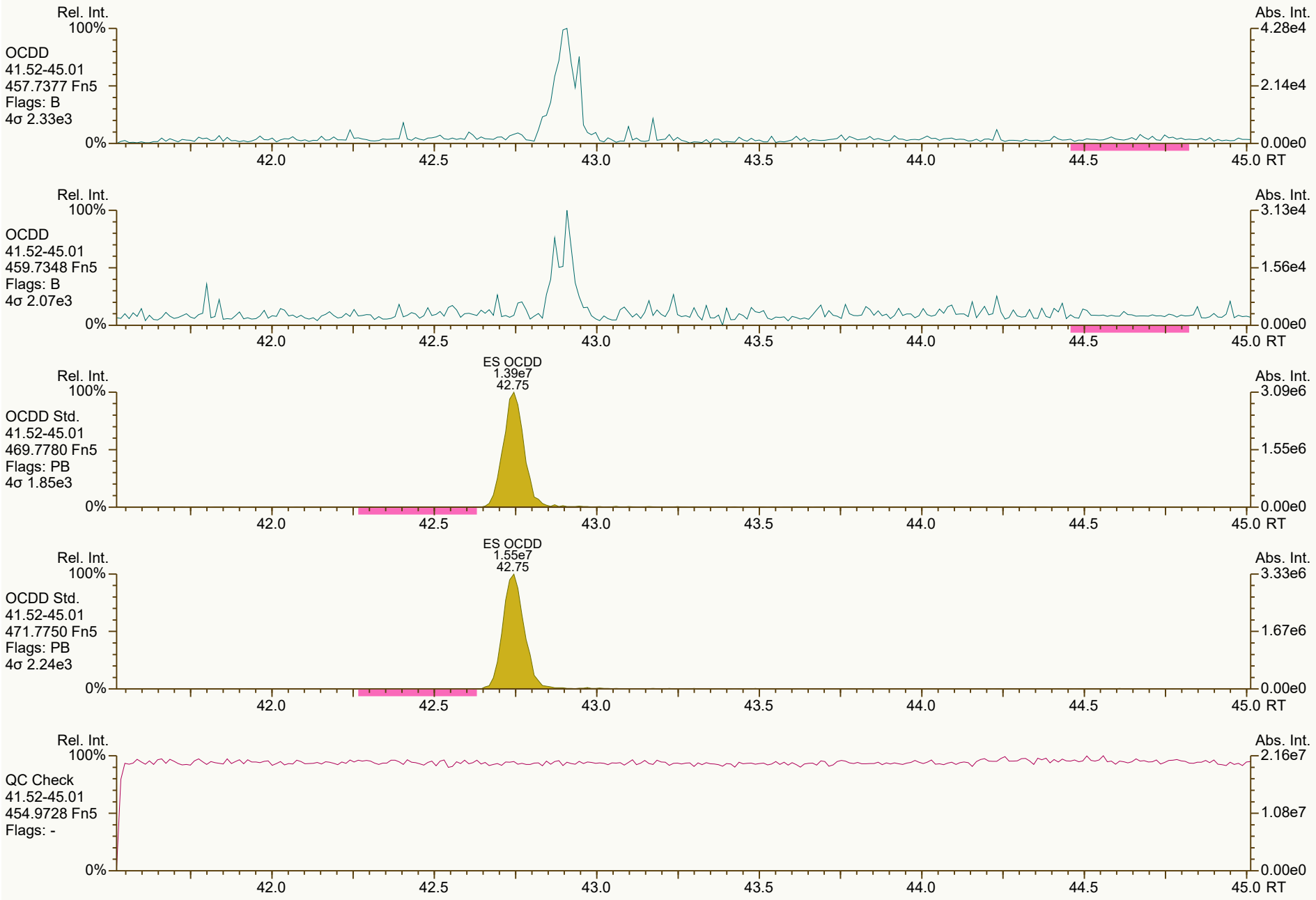

Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Abs. Int.
1.11e7
5.53e6
0.00e0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
29.0
30.0
31.0
32.0
33.0
Abs. Int.
9.44e6
4.72e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
Abs. Int.
4.31e7
2.16e7
0.00e0
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
2.58e7
1.29e7
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
2.16e7
1.08e7
0.00e0

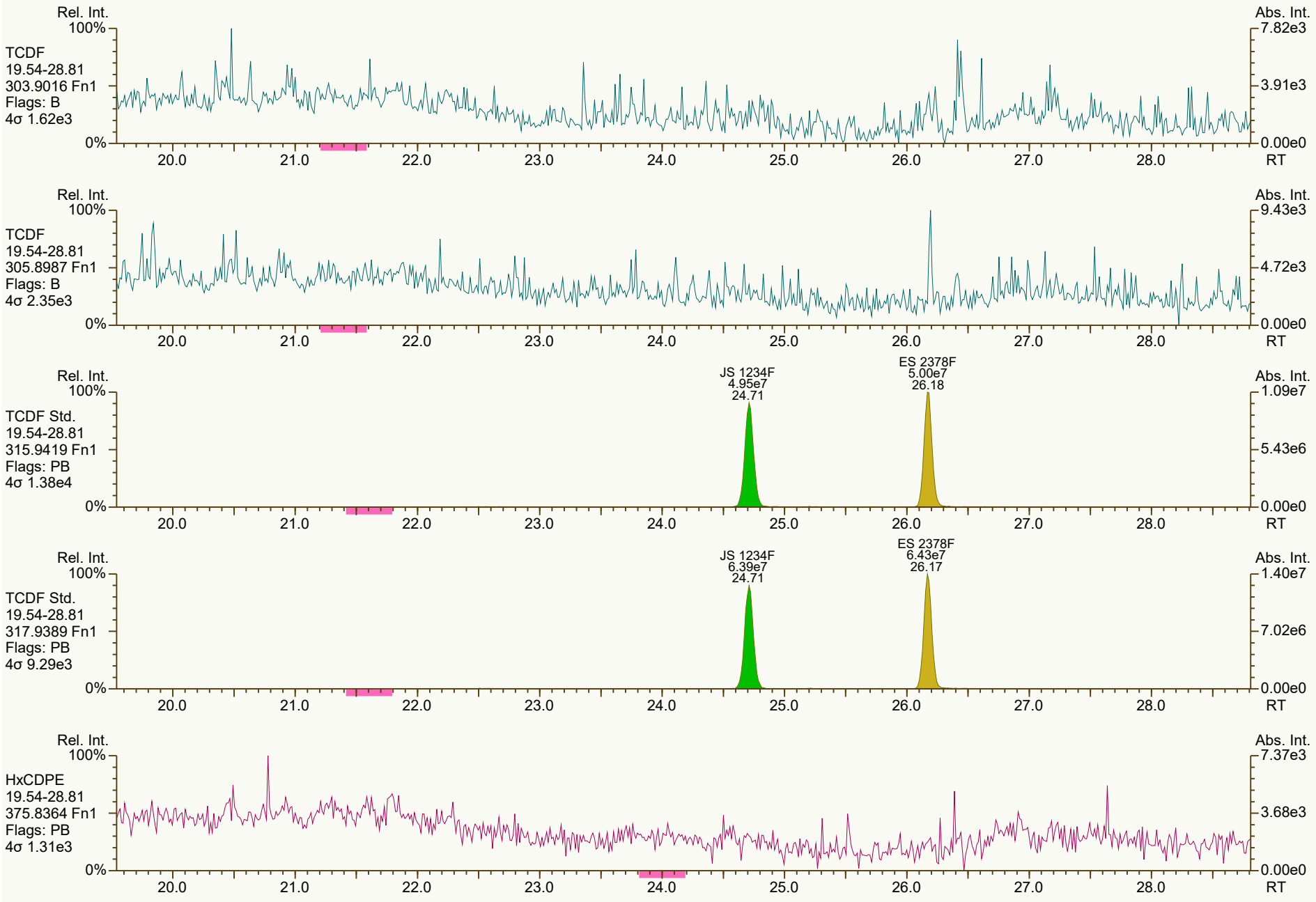

Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: B
4σ 2.82e3
0%
Abs. Int.
2.99e4
1.50e4
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: B
4σ 2.22e3
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 2.01e3
CS 37Cl-2378D
3.29e7
27.14
0%
Abs. Int.
7.74e6
3.87e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 1.52e4
JS 1234D
3.06e7
26.43
ES 2378D
3.21e7
27.12
0%
Abs. Int.
7.10e6
3.55e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 5.20e3
JS 1234D
3.69e7
26.43
ES 2378D
3.80e7
27.12
0%
Abs. Int.
8.62e6
4.31e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: B
4σ 3.02e3
0%
Abs. Int.
3.08e4
1.54e4
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: B
4σ 2.12e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 3.97e3
0%
CS 12347D
3.93e7
32.26
ES 12378D
4.04e7
32.77
Abs. Int.
1.19e7
5.93e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 1.74e3
0%
CS 12347D
2.40e7
32.25
ES 12378D
2.46e7
32.77
Abs. Int.
7.21e6
3.60e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.44e6
4.72e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT

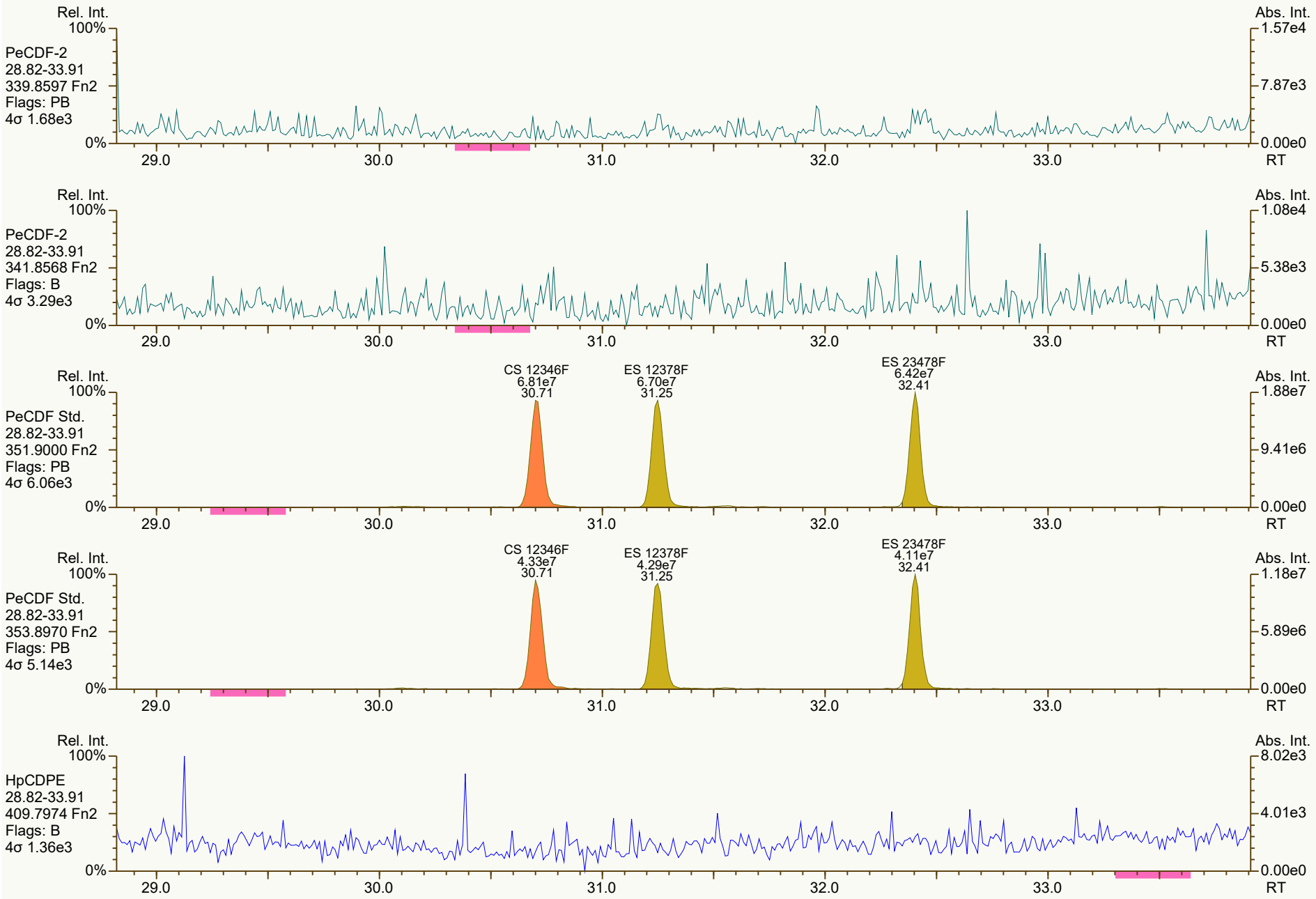

Rel. Int.
100%
HxCDD
33.92-37.91
389.8156 Fn3
Flags: B
4σ 1.53e3
0%
Abs. Int.
5.89e4
2.94e4
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.91
391.8127 Fn3
Flags: B
4σ 1.96e3
0%
Abs. Int.
1.74e4
8.69e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PBM
4σ 6.01e3
0%
ES 123678D
ES 123478D 2.72e7
2.81e7 36.88
36.77
ES 123789D
3.06e7*
37.18
JS 123467D
1.45e7*
37.08
Abs. Int.
8.64e6
4.32e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PB
4σ 6.04e3
0%
ES 123678D
ES 123478D 2.15e7
2.25e7 36.88
36.77
ES 123789D
2.48e7
37.18
JS 123467D
1.10e7
37.08
Abs. Int.
6.90e6
3.45e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.31e7
2.16e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT

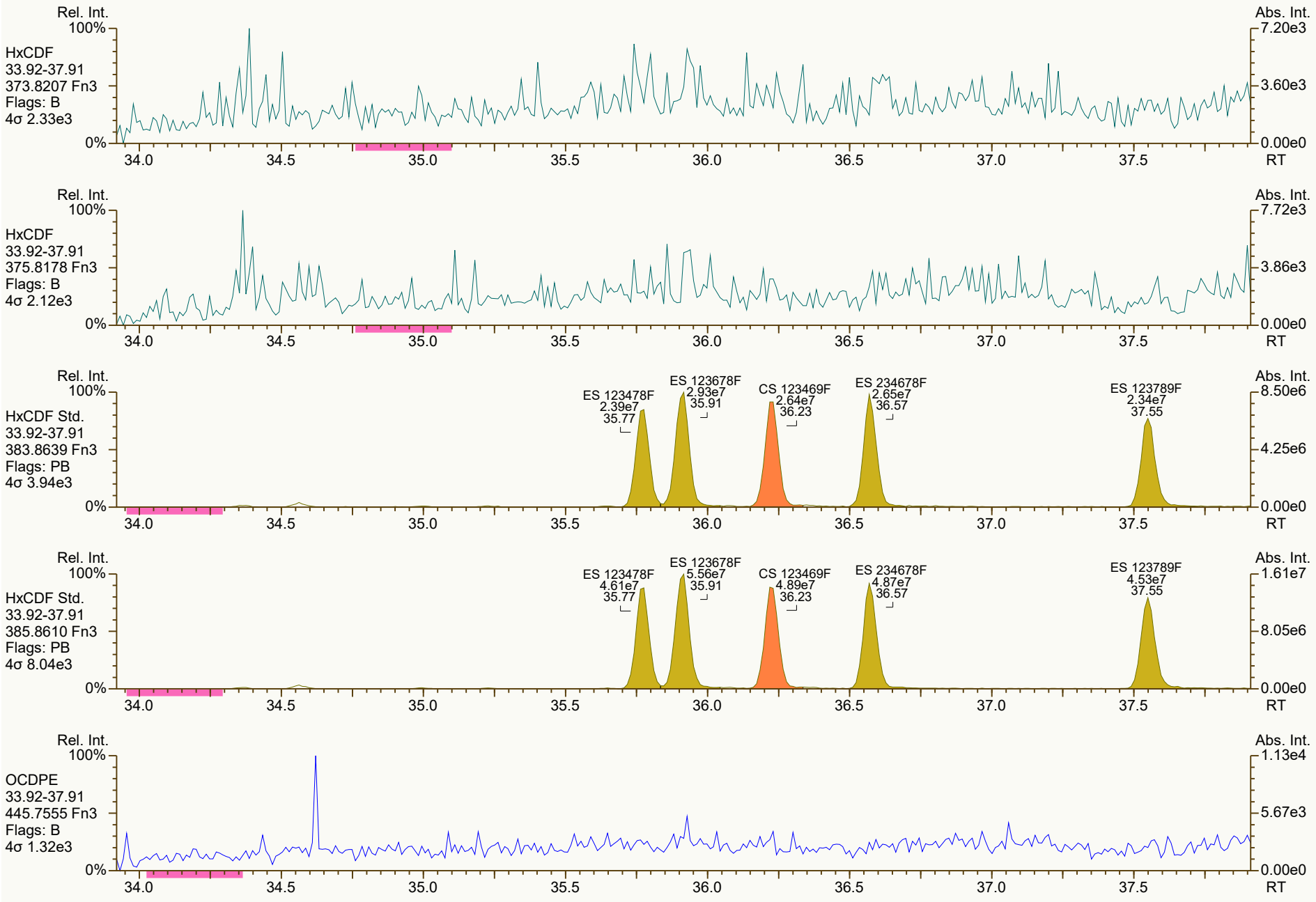

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: B
4σ 1.14e3
0%
Abs. Int.
7.83e4
3.91e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: B
4σ 1.69e3
0%
Abs. Int.
2.47e4
1.23e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
ES 1234678D
2.20e7
40.14
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 2.15e3
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
ES 1234678D
2.06e7
40.14
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 1.56e3
0%
Abs. Int.
6.43e6
3.22e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.58e7
1.29e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

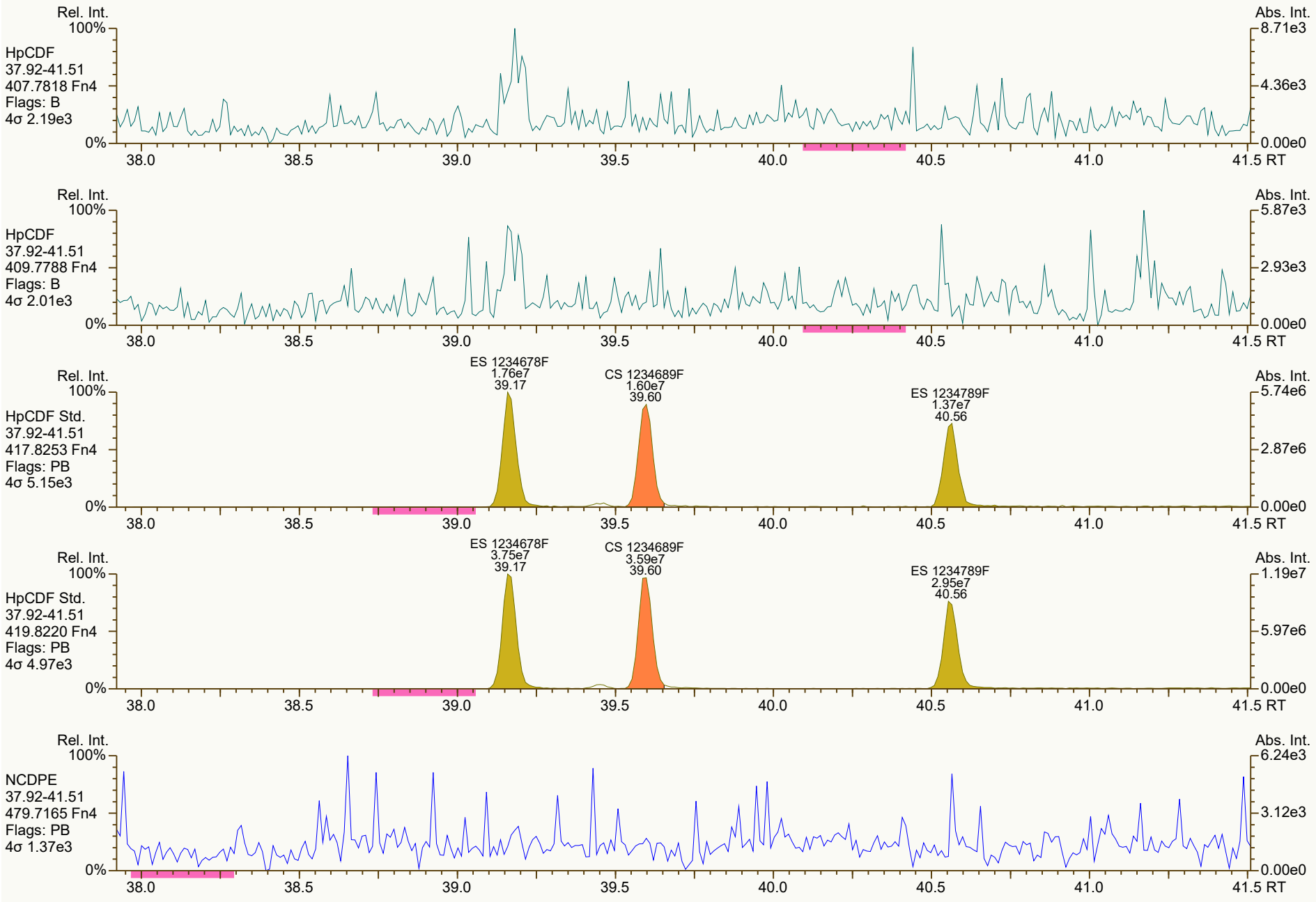

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
4.28e4
2.14e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.07e3
0%
Abs. Int.
3.13e4
1.56e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.39e7
42.75
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
Abs. Int.
3.09e6
1.55e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.55e7
42.75
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
3.33e6
1.67e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.16e7
1.08e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: B
4σ 1.62e3
0%
Abs. Int.
7.82e3
3.91e3
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: B
4σ 2.35e3
0%
Abs. Int.
9.43e3
4.72e3
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.38e4
0%
JS 1234F
4.95e7
24.71
ES 2378F
5.00e7
26.18
Abs. Int.
1.09e7
5.43e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 9.29e3
0%
JS 1234F
6.39e7
24.71
ES 2378F
6.43e7
26.17
Abs. Int.
1.40e7
7.02e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: PB
4σ 1.31e3
0%
Abs. Int.
7.37e3
3.68e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.52e4
7.58e3
0.00e0
RT
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: B
4σ 2.09e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
0%
Abs. Int.
1.41e4
7.05e3
0.00e0
RT
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: B
4σ 2.26e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
0%
Abs. Int.
1.11e7
5.53e6
0.00e0
RT
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PB
4σ 1.68e3
0%
Abs. Int.
1.57e4
7.87e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: B
4σ 3.29e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 6.06e3
0%
CS 12346F
6.81e7
30.71
ES 12378F
6.70e7
31.25
ES 23478F
6.42e7
32.41
Abs. Int.
1.88e7
9.41e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 5.14e3
0%
CS 12346F
4.33e7
30.71
ES 12378F
4.29e7
31.25
ES 23478F
4.11e7
32.41
Abs. Int.
1.18e7
5.89e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.36e3
0%
Abs. Int.
8.02e3
4.01e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
7.20e3
3.60e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF
33.92-37.91
375.8178 Fn3
Flags: B
4σ 2.12e3
0%
Abs. Int.
7.72e3
3.86e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PB
4σ 3.94e3
0%
ES 123478F
2.39e7
35.77
ES 123678F
2.93e7
35.91
CS 123469F
2.64e7
36.23
ES 234678F
2.65e7
36.57
ES 123789F
2.34e7
37.55
Abs. Int.
8.50e6
4.25e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PB
4σ 8.04e3
0%
ES 123478F
4.61e7
35.77
ES 123678F
5.56e7
35.91
CS 123469F
4.89e7
36.23
ES 234678F
4.87e7
36.57
ES 123789F
4.53e7
37.55
Abs. Int.
1.61e7
8.05e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 1.32e3
0%
Abs. Int.
1.13e4
5.67e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT


Rel. Int.
100%
HpCDF
37.92-41.51
407.7818 Fn4
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.71e3
4.36e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.92-41.51
409.7788 Fn4
Flags: B
4σ 2.01e3
0%
Abs. Int.
5.87e3
2.93e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PB
4σ 5.15e3
0%
ES 1234678F
1.76e7
39.17
CS 1234689F
1.60e7
39.60
ES 1234789F
1.37e7
40.56
Abs. Int.
5.74e6
2.87e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PB
4σ 4.97e3
0%
ES 1234678F
3.75e7
39.17
CS 1234689F
3.59e7
39.60
ES 1234789F
2.95e7
40.56
Abs. Int.
1.19e7
5.97e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.92-41.51
479.7165 Fn4
Flags: PB
4σ 1.37e3
0%
Abs. Int.
6.24e3
3.12e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.68e3
0%
Abs. Int.
1.16e4
5.81e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.04e3
0%
Abs. Int.
1.17e4
5.84e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.00e7
42.90
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 3.30e3
0%
Abs. Int.
4.18e6
2.09e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.18e7
42.90
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.65e3
0%
Abs. Int.
4.63e6
2.32e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.43e3
0%
Abs. Int.
4.29e3
2.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5961_18710_DF_001 **Acq'd:** 07 Dec 2021 19:34 DTF **Wt/Vol:** 16.74 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-S-8 **UTP:** 08-Dec-2021 11:25:16 DTF **J-level:** 0.299 pg/g **Split:** 1 **Checkcode:** 476-819-NGC

Datafile: 211207C07 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.13		1.0009	1.0009	0	1.09E+07	0.82	Y	1.18	20.6	5912.188	0.119
12378-PeCDD	32.78	J	1.0006	1.0006	0	3.68E+05	1.65	Y	1.04	0.883	6966.947	0.155
123478-HxCDD	36.77		1.0004	1.0004	0	5.70E+05	1.32	Y	1.09	1.62	7506.726	0.17
123678-HxCDD	36.89		1.0035	1.0035	0	1.57E+06	1.21	Y	1.15	4.17	7506.726	0.167
123789-HxCDD	37.19		1.0117	1.0117	0	1.16E+06	1.26	Y	1.05	3.12	7506.726	0.173
1234678-HpCDD	40.15		1.0003	1.0003	0	5.48E+07	1.04	Y	1.06	172	5810.225	0.149
OCDD	42.77	E	1.0003	1.0003	0	1.21E+09	0.91	Y	1.13	7,450	6079.771	0.454
2378-TCDF	26.19		1.0009	1.0008	-0.2	5.05E+07	0.80	Y	1.08	65.7	4838.075	0.0717
12378-PeCDF	31.26		1.0005	1.0006	+0.2	1.34E+06	1.55	Y	1.02	2.02	6152.573	0.0871
23478-PeCDF	32.42		1.0006	1.0009	+0.6	1.67E+06	1.56	Y	1.02	2.63	6152.573	0.0827
123478-HxCDF	35.78		1.0005	1.0005	0	1.86E+06	1.32	Y	1.27	3.15	7889.643	0.106
123678-HxCDF	35.92	J	1.0004	1.0004	0	8.62E+05	1.32	Y	1.15	1.4	7889.643	0.109
234678-HxCDF	36.58		1.0004	1.0004	0	8.70E+05	1.23	Y	1.19	1.56	7889.643	0.119
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	7889.643	0.135
1234678-HpCDF	39.17		1.0003	1.0003	0	1.18E+07	1.06	Y	1.37	23.3	4216.225	0.0648
1234789-HpCDF	40.58		1.0002	1.0003	+0.2	1.83E+06	1.17	Y	1.31	4.3	4216.225	0.0828
OCDF	42.92		1.0003	1.0003	0	1.13E+08	0.91	Y	1.07	534	5244.435	0.286

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.10	1.0260	1.0261	+0.2	5.34E+07	0.80	Y	1.05	76.5
ES 12378-PeCDD	32.76	1.2396	1.2401	+1.0	4.81E+07	1.57	Y	0.88	81.9
ES 123478-HxCDD	36.76	0.9916	0.9916	0	3.85E+07	1.27	Y	0.97	76.6
ES 123678-HxCDD	36.87	0.9947	0.9946	-0.2	3.91E+07	1.24	Y	0.94	80.2
ES 123789-HxCDD	37.17	1.0027	1.0028	+0.2	4.25E+07	1.28	Y	1.09	75.2
ES 1234678-HpCDD	40.14	1.0828	1.0828	0	3.59E+07	1.10	Y	0.91	76
ES OCDD	42.76	1.1528	1.1534	+1.5	3.44E+07	0.94	Y	0.62	53.2
ES 2378-TCDF	26.16	1.0591	1.0593	+0.3	8.50E+07	0.79	Y	1.06	69.3
ES 12378-PeCDF	31.24	1.2643	1.2648	+0.9	7.72E+07	1.54	Y	0.91	73.2
ES 23478-PeCDF	32.39	1.3110	1.3115	+1.0	7.42E+07	1.53	Y	0.88	72.5
ES 123478-HxCDF	35.76	0.9648	0.9648	0	5.54E+07	0.53	Y	1.20	89.4
ES 123678-HxCDF	35.90	0.9686	0.9685	-0.2	6.39E+07	0.54	Y	1.35	91.4
ES 234678-HxCDF	36.57	0.9865	0.9864	-0.2	5.61E+07	0.54	Y	1.24	87.2
ES 123789-HxCDF	37.55	1.0129	1.0129	0	5.32E+07	0.55	Y	1.16	89
ES 1234678-HpCDF	39.16	1.0565	1.0564	-0.2	4.42E+07	0.46	Y	0.97	88.3
ES 1234789-HpCDF	40.57	1.0943	1.0944	+0.2	3.89E+07	0.47	Y	0.85	88.3
ES OCDF	42.91	1.1569	1.1576	+1.8	4.73E+07	0.92	Y	0.81	56.6

Lab ID: B5961_18710_DF_001 **Acq'd:** 07 Dec 2021 19:34 DTF **Wt/Vol:** 16.74 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-S-8 **UTP:** 08-Dec-2021 11:25:16 DTF **J-level:** 0.299 pg/g **Split:** 1 **Checkcode:** 476-819-NGC

Datafile: 211207C07 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.42		-	-	-	6.67E+07	0.82	Y	-	-	
JS 1234-TCDF	24.70		-	-	-	1.16E+08	0.79	Y	-	-	
JS 123467-HxCDD	37.07		-	-	-	2.59E+07	1.23	Y	-	-	
CS 37Cl-2378-TCDD	27.13		1.0269	1.0270	+0.2	2.50E+07	n/a	-	1.20	77.8	
CS 12347-PeCDD	32.24		1.2203	1.2207	+0.8	4.52E+07	1.65	Y	0.75	89.9	
CS 12346-PeCDF	30.70		1.2424	1.2428	+0.7	7.50E+07	1.54	Y	0.85	76.1	
CS 123469-HxCDF	36.22		0.9771	0.9771	0	5.52E+07	0.55	Y	1.12	95.5	
CS 1234689-HpCDF	39.59		1.0681	1.0681	0	4.30E+07	0.46	Y	0.89	93.7	
~~SS 37Cl-2378-TCDD~~	~~27.13~~		~~1.0269~~	~~1.0270~~	~~+0.2~~	~~2.50E+07~~	~~n/a~~		~~1.15~~	~~102~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.24~~		~~1.2203~~	~~1.2207~~	~~+0.8~~	~~4.52E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~110~~	CL 08dEC21
~~SS 12346-PeCDF~~	~~30.70~~		~~1.2424~~	~~1.2428~~	~~+0.7~~	~~7.50E+07~~	~~1.54~~	~~Y~~	~~0.94~~	~~104~~	
~~SS 123469-HxCDF~~	~~36.22~~		~~0.9771~~	~~0.9771~~	~~0~~	~~5.52E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~104~~	
~~SS 1234689-HpCDF~~	~~39.59~~		~~1.0681~~	~~1.0681~~	~~0~~	~~4.30E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~106~~	

Totals	Conc	EMPC
Total TCDD	27.1	28.4
Total PeCDD	8.35	9.2
Total HxCDD	54.4	54.4
Total HpCDD	397	397
Total Tetra-Octa Dioxins	7930	7940
Total TCDF	108	110
Total PeCDF	18.8	19.5
Total HxCDF	25.1	26
Total HpCDF	59.6	59.6
Total Tetra-Octa Furans	745	749
Total Tetra-Octa Dioxins & Furans	8680	8680

Lab ID: B5961_18710_DF_001 **Acq'd: 07 Dec 2021 19:34 DTF** **Wt/Vol: 16.74 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-JC-NE-S-8 **UTP: 08-Dec-2021 11:25:16 DTF** **J-level: 0.299 pg/g** **Split: 1** **Checkcode: 476-819-NGC**

Datafile: 211207C07 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.15		0.8545	0.8542	-0.4	5.23E+05	0.85	Y	1.18	0.987	5912.188	0.119
1379-TCDD	23.55		0.8692	0.8690	-0.3	1.74E+05	0.71	Y	1.18	0.329	5912.188	0.119
1369-TCDD	24.02	J EMPC	0.8868	0.8864	-0.6	9.70E+04	0.91	N	1.18	0.183	5912.188	0.119
1469-TCDD	24.89		0.9185	0.9182	-0.4	1.49E+06	0.84	Y	1.18	2.82	5912.188	0.119
1247/1246/1248/1249-TCDD	25.16	EMPC	0.9282	0.9284	+0.3	1.82E+05	1.06	N	1.18	0.344	5912.188	0.119
1378-TCDD	25.37	J EMPC	0.9355	0.9359	+0.6	1.37E+05	1.02	N	1.18	0.259	5912.188	0.119
1268-TCDD	NotFnd		0.9435						1.18		5912.188	0.119
1478-TCDD	NotFnd		0.9533						1.18		5912.188	0.119
1279-TCDD	NotFnd		0.9601						1.18		5912.188	0.119
1234/1269-TCDD	26.39	EMPC	0.9741	0.9738	-0.5	2.44E+05	0.92	N	1.18	0.46	5912.188	0.119
1236-TCDD	NotFnd		0.9797						1.18		5912.188	0.119
1237/1238-TCDD	26.81		0.9898	0.9892	-1.0	3.03E+05	0.87	Y	1.18	0.573	5912.188	0.119
1239-TCDD	NotFnd		0.9952						1.18		5912.188	0.119
2378-TCDD	**27.13**		**1.0009**	1.0009	**0**	1.09E+07	0.82	Y	**1.18**	**20.6**	**5912.188**	**0.119**
1278-TCDD	27.48		1.0139	1.0140	+0.2	9.57E+05	0.75	Y	1.18	1.81	5912.188	0.119
1267-TCDD	NotFnd		1.0193						1.18		5912.188	0.119
1289-TCDD	NotFnd		1.0393						1.18		5912.188	0.119
12479/12468-PeCDD	30.19		0.9216	0.9215	-0.2	8.41E+05	1.72	Y	1.04	2.02	6966.947	0.155
12469-PeCDD	30.74		0.9386	0.9383	-0.6	1.01E+06	1.50	Y	1.04	2.42	6966.947	0.155
12368-PeCDD	31.31	J	0.9560	0.9557	-0.6	3.42E+05	1.42	Y	1.04	0.819	6966.947	0.155
12478-PeCDD	31.51	J EMPC	0.9619	0.9619	0	2.97E+05	1.23	N	1.04	0.713	6966.947	0.155
12379-PeCDD	31.61	J	0.9651	0.9651	0	2.01E+05	1.67	Y	1.04	0.482	6966.947	0.155
12369/12467/12489-PeCDD	31.89	J	0.9735	0.9734	-0.2	5.42E+05	1.67	Y	1.04	1.3	6966.947	0.155
12346/12347-PeCDD	32.27	J	0.9852	0.9851	-0.2	8.53E+04	1.35	Y	1.04	0.205	6966.947	0.155
12378-PeCDD	32.78	J	**1.0006**	**1.0006**	**0**	**3.68E+05**	**1.65**	**Y**	**1.04**	**0.883**	**6966.947**	**0.155**
12367-PeCDD	32.88	J EMPC	1.0037	1.0038	+0.2	6.08E+04	2.26	N	1.04	0.146	6966.947	0.155
12389-PeCDD	33.23	J	1.0145	1.0144	-0.2	9.18E+04	1.63	Y	1.04	0.22	6966.947	0.155
124679/124689-HxCDD	35.05		0.9535	0.9534	-0.2	8.40E+06	1.30	Y	1.10	22.9	7506.726	0.17
123468-HxCDD	35.72		0.9716	0.9717	+0.2	1.15E+06	1.42	Y	1.10	3.13	7506.726	0.17
123679/123689-HxCDD	36.01		0.9796	0.9796	0	6.07E+06	1.24	Y	1.10	16.5	7506.726	0.17
123469-HxCDD	36.14		0.9833	0.9831	-0.4	6.11E+05	1.34	Y	1.10	1.66	7506.726	0.17
123478-HxCDD	36.77		**1.0004**	**1.0004**	**0**	**5.70E+05**	**1.32**	**Y**	1.09	**1.62**	**7506.726**	**0.17**
123678-HxCDD	36.89		**1.0035**	**1.0035**	**0**	**1.57E+06**	**1.21**	**Y**	1.15	**4.17**	**7506.726**	**0.167**
123467-HxCDD	37.08	J	1.0088	1.0089	+0.2	4.70E+05	1.29	Y	1.10	1.28	7506.726	0.17
123789-HxCDD	37.19		**1.0117**	**1.0117**	**0**	**1.16E+06**	**1.26**	**Y**	1.05	**3.12**	**7506.726**	**0.173**

Lab ID: B5961_18710_DF_001 **Acq'd:** 07 Dec 2021 19:34 DTF **Wt/Vol:** 16.74 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-S-8 **UTP:** 08-Dec-2021 11:25:16 DTF **J-level:** 0.299 pg/g **Split:** 1 **Checkcode:** 476-819-NGC

Datafile: 211207C07 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

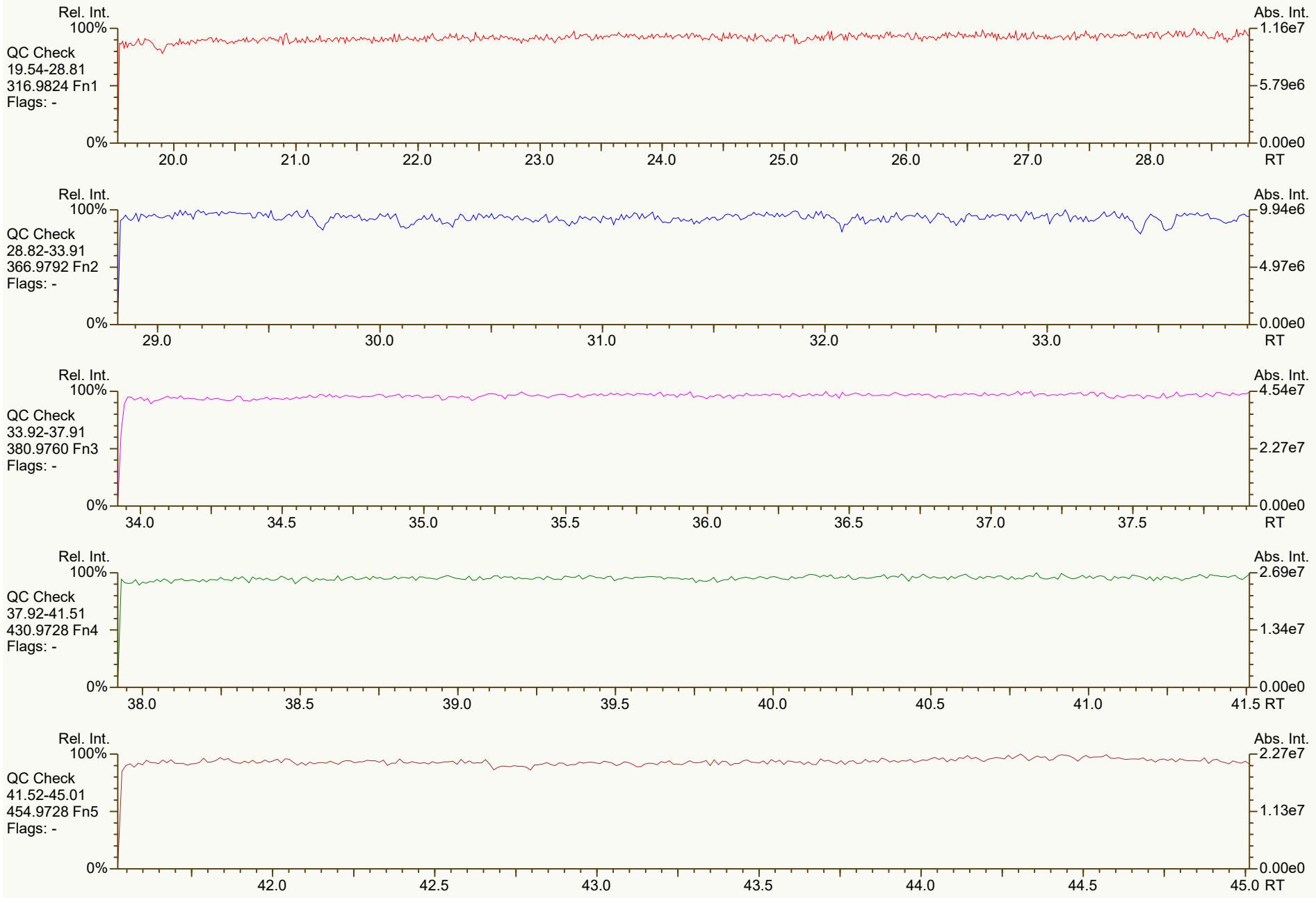
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9832	-0.2	7.17E+07	1.05	Y	1.06	225	5810.225	0.149
1234678-HpCDD	**40.15**		**1.0003**	**1.0003**	**0**	**5.48E+07**	**1.04**	**Y**	**1.06**	**172**	**5810.225**	**0.149**
OCDD	**42.77**	**E**	**1.0003**	**1.0003**	**0**	**1.21E+09**	**0.91**	**Y**	**1.13**	**7,450**	**6079.771**	**0.454**
OCDD-a	42.76	**E**	1.0002	1.0002	0	7.12E+07	2.50	Y	0.07	6,880	11299.518	13.2
1368-TCDF	20.92		0.7998	0.7996	-0.3	2.61E+05	0.76	Y	1.08	0.339	4838.075	0.0717
1468-TCDF	21.47		0.8214	0.8207	-0.9	5.61E+05	0.80	Y	1.08	0.73	4838.075	0.0717
2468-TCDF	22.13		0.8463	0.8457	-0.8	1.55E+06	0.87	Y	1.08	2.02	4838.075	0.0717
1346/1246-TCDF	NotFnd		0.8608						1.08		4838.075	0.0717
1347/1378/1247-TCDF	22.70		0.8675	0.8675	0	1.53E+06	0.83	Y	1.08	2	4838.075	0.0717
1348-TCDF	NotFnd		0.8793						1.08		4838.075	0.0717
1248/1367/1379-TCDF	23.10		0.8850	0.8830	-2.8	2.49E+06	0.79	Y	1.08	3.24	4838.075	0.0717
1268-TCDF	23.57		0.9010	0.9009	-0.1	1.26E+06	0.78	Y	1.08	1.63	4838.075	0.0717
1467-TCDF	23.72	EMPC	0.9068	0.9065	-0.4	3.35E+05	0.89	N	1.08	0.436	4838.075	0.0717
1478-TCDF	23.90		0.9139	0.9136	-0.4	2.37E+06	0.86	Y	1.08	3.08	4838.075	0.0717
1369/1237-TCDF	24.31		0.9294	0.9292	-0.3	6.17E+05	0.82	Y	1.08	0.804	4838.075	0.0717
2467-TCDF	24.46	EMPC	0.9350	0.9349	-0.1	3.03E+05	0.98	N	1.08	0.395	4838.075	0.0717
2368-TCDF	24.63		0.9410	0.9413	+0.4	2.44E+06	0.88	Y	1.08	3.17	4838.075	0.0717
1238/1234/1678/1469/1236-TCDF	24.73		0.9451	0.9453	+0.3	1.41E+06	0.71	Y	1.08	1.84	4838.075	0.0717
1278-TCDF	25.22		0.9642	0.9640	-0.3	8.40E+06	0.79	Y	1.08	10.9	4838.075	0.0717
1349-TCDF	NotFnd		0.9695						1.08		4838.075	0.0717
1267-TCDF	25.51		0.9753	0.9752	-0.2	1.04E+06	0.81	Y	1.08	1.36	4838.075	0.0717
2346/1249-TCDF	NotFnd		0.9832						1.08		4838.075	0.0717
2347/1279-TCDF	25.95		0.9921	0.9920	-0.2	7.38E+05	0.84	Y	1.08	0.961	4838.075	0.0717
2348-TCDF	26.06		0.9970	0.9960	-1.6	1.65E+06	0.74	Y	1.08	2.14	4838.075	0.0717
2378-TCDF	**26.19**		**1.0009**	**1.0008**	**-0.2**	**5.05E+07**	**0.80**	**Y**	**1.08**	**65.7**	**4838.075**	**0.0717**
2367/3467-TCDF	26.57		1.0162	1.0156	-1.0	5.27E+06	0.84	Y	1.08	6.86	4838.075	0.0717
1269-TCDF	26.83		1.0259	1.0257	-0.3	5.53E+05	0.87	Y	1.08	0.72	4838.075	0.0717
1239-TCDF	NotFnd		1.0370						1.08		4838.075	0.0717
1289-TCDF	28.33	EMPC	1.0829	1.0829	0	1.51E+06	0.92	N	1.08	1.97	4838.075	0.0717
13468/12468-PeCDF	28.34		0.9067	0.9071	+0.7	2.68E+06	1.62	Y	1.02	4.14	4831.287	0.0667
13678/13467/12467-PeCDF	29.96	J	0.9583	0.9589	+1.1	8.22E+05	1.57	Y	1.02	1.27	6152.573	0.085
12368/13478/12478-PeCDF	30.12		0.9635	0.9640	+0.9	2.68E+06	1.69	Y	1.02	4.14	6152.573	0.085
14678-PeCDF	30.22	J EMPC	0.9669	0.9672	+0.5	2.81E+05	1.78	N	1.02	0.433	6152.573	0.085
13479-PeCDF	NotFnd		0.9701						1.02		6152.573	0.085
13469/12479-PeCDF	30.55	J EMPC	0.9784	0.9779	-0.9	1.59E+05	2.04	N	1.02	0.246	6152.573	0.085
12346-PeCDF	30.70	J	0.9831	0.9828	-0.6	1.26E+05	1.36	Y	1.02	0.194	6152.573	0.085

Lab ID: B5961_18710_DF_001 **Acq'd: 07 Dec 2021 19:34 DTF** **Wt/Vol: 16.74 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-JC-NE-S-8 **UTP: 08-Dec-2021 11:25:16 DTF** **J-level: 0.299 pg/g** **Split: 1** **Checkcode: 476-819-NGC**

Datafile: 211207C07 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.80	J	0.9859	0.9860	+0.2	7.78E+05	1.75	Y	1.02	1.2	6152.573	0.085
12347-PeCDF	30.88	J	0.9885	0.9884	-0.2	2.38E+05	1.46	Y	1.02	0.368	6152.573	0.085
12348-PeCDF	31.05	J	0.9937	0.9938	+0.2	4.12E+05	1.38	Y	1.02	0.637	6152.573	0.085
12378-PeCDF	**31.26**		**1.0005**	**1.0006**	**+0.2**	**1.34E+06**	**1.55**	**Y**	**1.02**	**2.02**	**6152.573**	**0.0871**
12678/12367-PeCDF	31.57		1.0097	1.0105	+1.5	1.02E+06	1.34	Y	1.02	1.58	6152.573	0.085
12379-PeCDF	NotFnd		1.0153						1.02		6152.573	0.085
12679-PeCDF	32.15	J EMPC	0.9925	0.9925	0	6.74E+04	1.11	N	1.02	0.104	6152.573	0.085
23467/12369-PeCDF	32.28	J	0.9966	0.9966	0	3.70E+05	1.62	Y	1.02	0.572	6152.573	0.085
23478-PeCDF	**32.42**		**1.0006**	**1.0009**	**+0.6**	**1.67E+06**	**1.56**	**Y**	**1.02**	**2.63**	**6152.573**	**0.0827**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6152.573	0.085
12349-PeCDF	NotFnd		1.0108						1.02		6152.573	0.085
12389-PeCDF	NotFnd		1.0346						1.02		6152.573	0.085
123468-HxCDF	34.37		0.9610	0.9610	0	1.40E+06	1.23	Y	1.19	2.44	7889.643	0.116
124678/134678-HxCDF	34.57		0.9667	0.9666	-0.2	4.46E+06	1.29	Y	1.19	7.8	7889.643	0.116
134679-HxCDF	NotFnd		0.9732						1.19		7889.643	0.116
124679-HxCDF	35.01	J	0.9788	0.9790	+0.4	3.12E+05	1.28	Y	1.19	0.545	7889.643	0.116
124689-HxCDF	35.23		0.9852	0.9852	0	4.30E+06	1.31	Y	1.19	7.52	7889.643	0.116
123467-HxCDF	35.66	J	0.9971	0.9971	0	4.04E+05	1.27	Y	1.19	0.708	7889.643	0.116
123478-HxCDF	**35.78**		**1.0005**	**1.0005**	**0**	**1.86E+06**	**1.32**	**Y**	**1.27**	**3.15**	**7889.643**	**0.106**
123678-HxCDF	**35.92**	J	**1.0004**	**1.0004**	**0**	**8.62E+05**	**1.32**	**Y**	**1.15**	**1.4**	**7889.643**	**0.109**
123479-HxCDF	36.08	J EMPC	1.0050	1.0050	0	7.23E+04	1.66	N	1.19	0.127	7889.643	0.116
123469-HxCDF	36.23	J EMPC	1.0091	1.0091	0	2.10E+05	0.96	N	1.19	0.368	7889.643	0.116
123679-HxCDF	NotFnd		0.9943						1.19		7889.643	0.116
234678-HxCDF	**36.58**		**1.0004**	**1.0004**	**0**	**8.70E+05**	**1.23**	**Y**	**1.19**	**1.56**	**7889.643**	**0.119**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		7889.643	0.116
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**7889.643**	**0.135**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	37.60	J EMPC	1.0008	1.0012	+0.9	2.41E+05	0.97	N	1.19	0.422	7889.643	0.116
1234678-HpCDF	**39.17**		**1.0003**	**1.0003**	**0**	**1.18E+07**	**1.06**	**Y**	**1.37**	**23.3**	**4216.225**	**0.0648**
1234679-HpCDF	39.46		1.0075	1.0076	+0.2	2.22E+06	1.10	Y	1.34	4.76	4216.225	0.0731
1234689-HpCDF	39.60		1.0113	1.0113	0	1.27E+07	1.04	Y	1.34	27.3	4216.225	0.0731
1234789-HpCDF	**40.58**		**1.0002**	**1.0003**	**+0.2**	**1.83E+06**	**1.17**	**Y**	**1.31**	**4.3**	**4216.225**	**0.0828**
OCDF	**42.92**		**1.0003**	**1.0003**	**0**	**1.13E+08**	**0.91**	**Y**	**1.07**	**534**	**5244.435**	**0.286**
OCDF-a	42.92		1.0002	1.0002	0	7.24E+06	2.58	Y	0.07	551	9632.74	8.49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100%
QC Check
19.54-28.81
316.9824 Fn1
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0%
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21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Abs. Int.
1.16e7
5.79e6
0.00e0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
29.0
30.0
31.0
32.0
33.0
Abs. Int.
9.94e6
4.97e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
Abs. Int.
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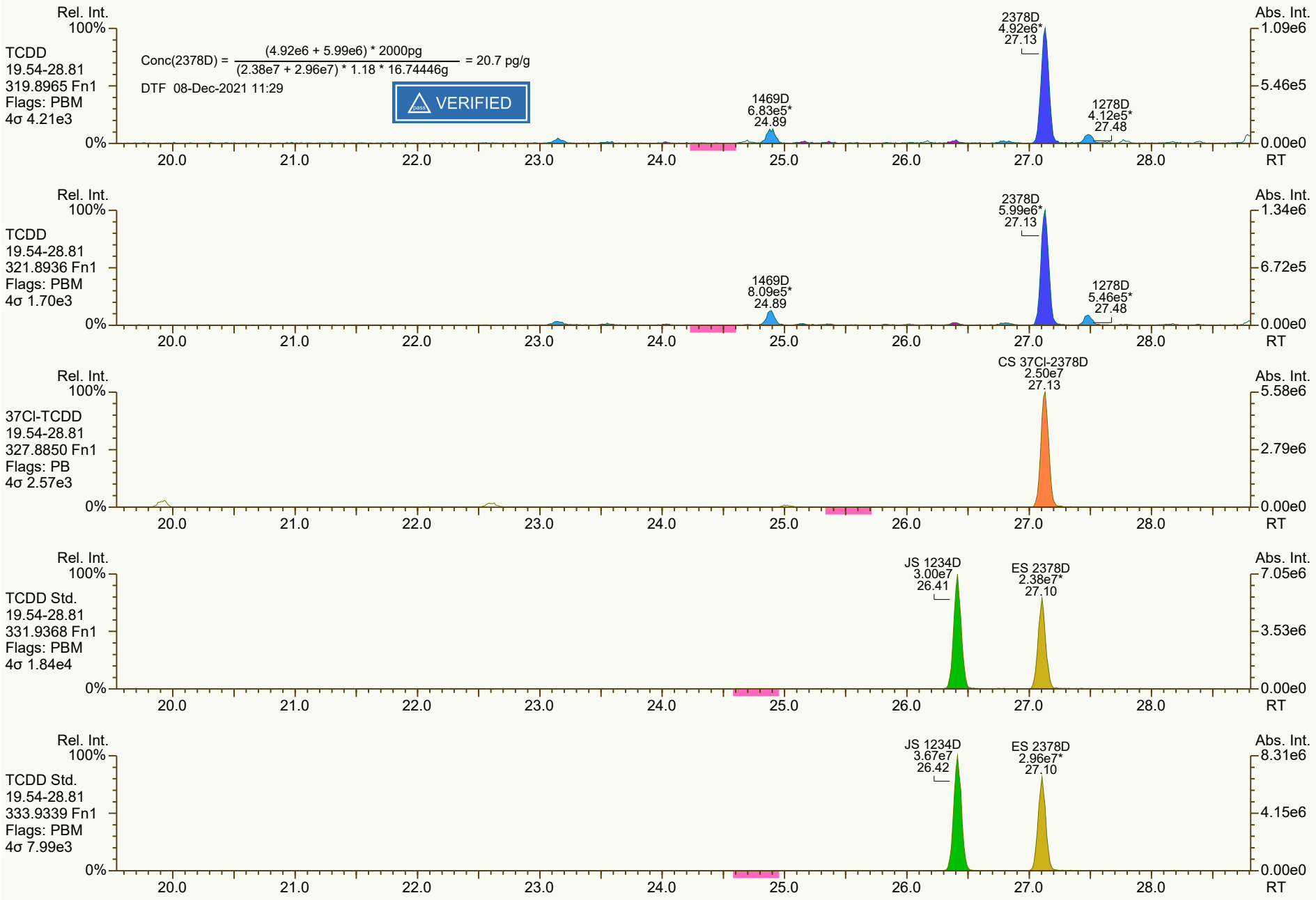
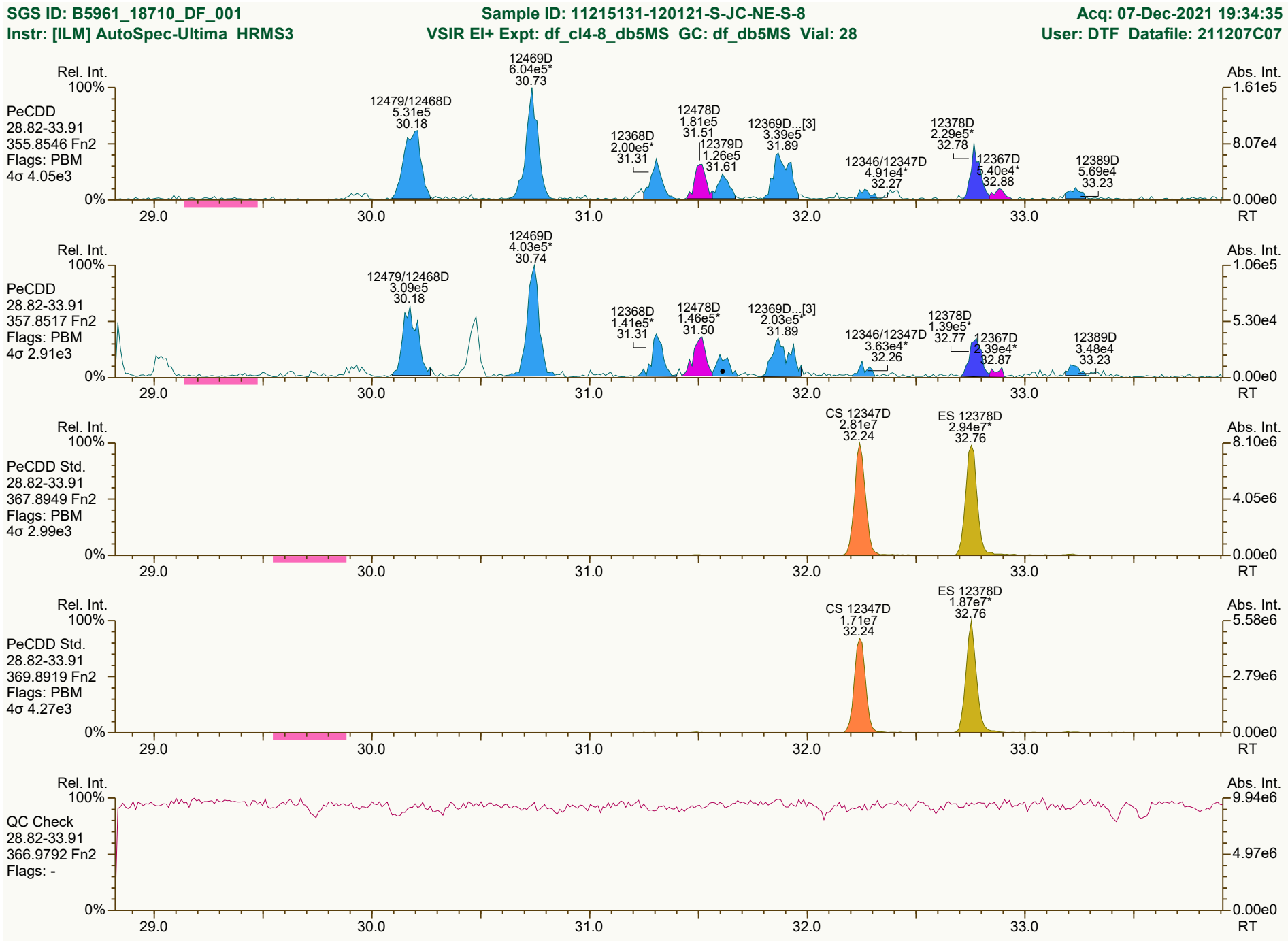
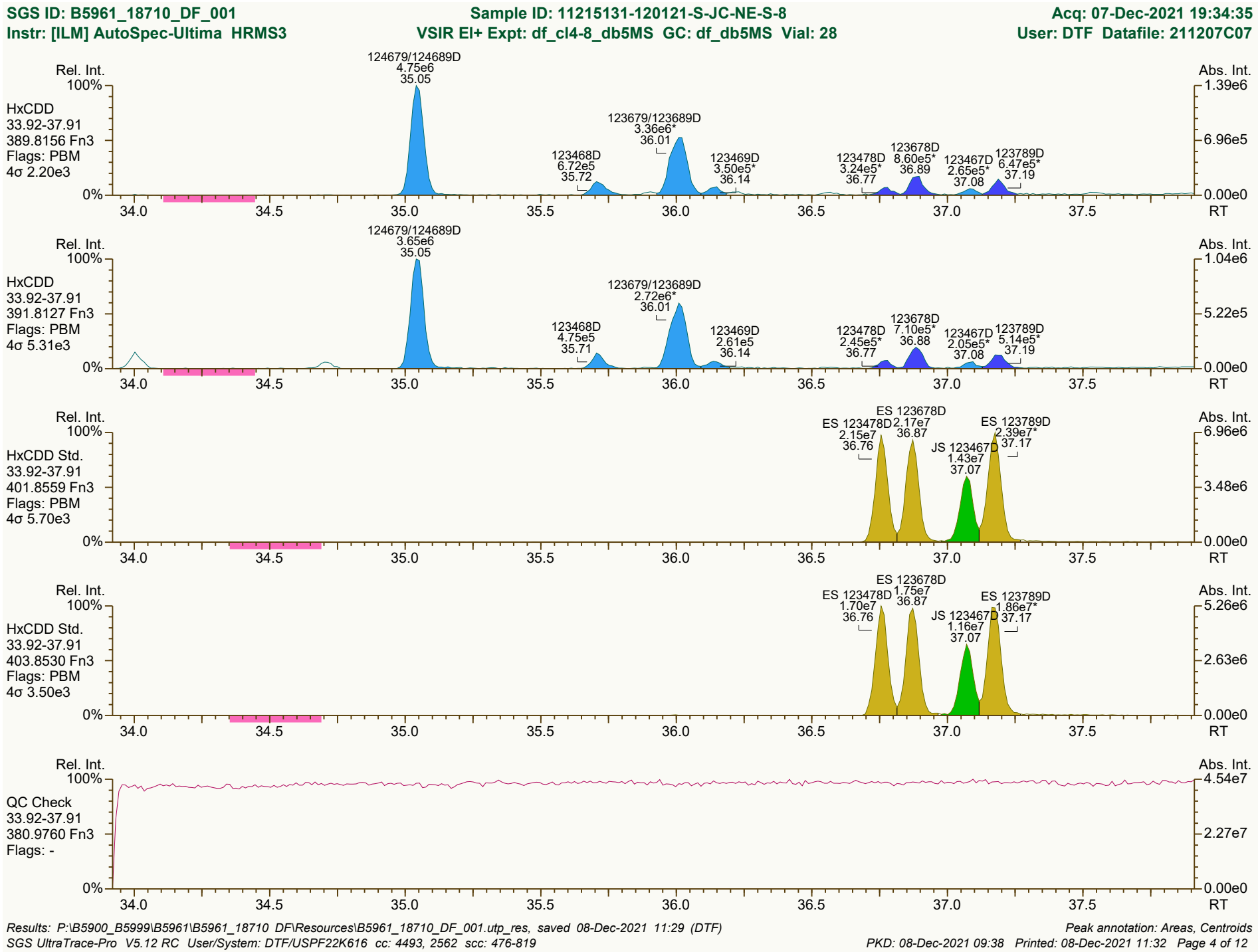
2.27e7
0.00e0
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
2.69e7
1.34e7
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
2.27e7
1.13e7
0.00e0

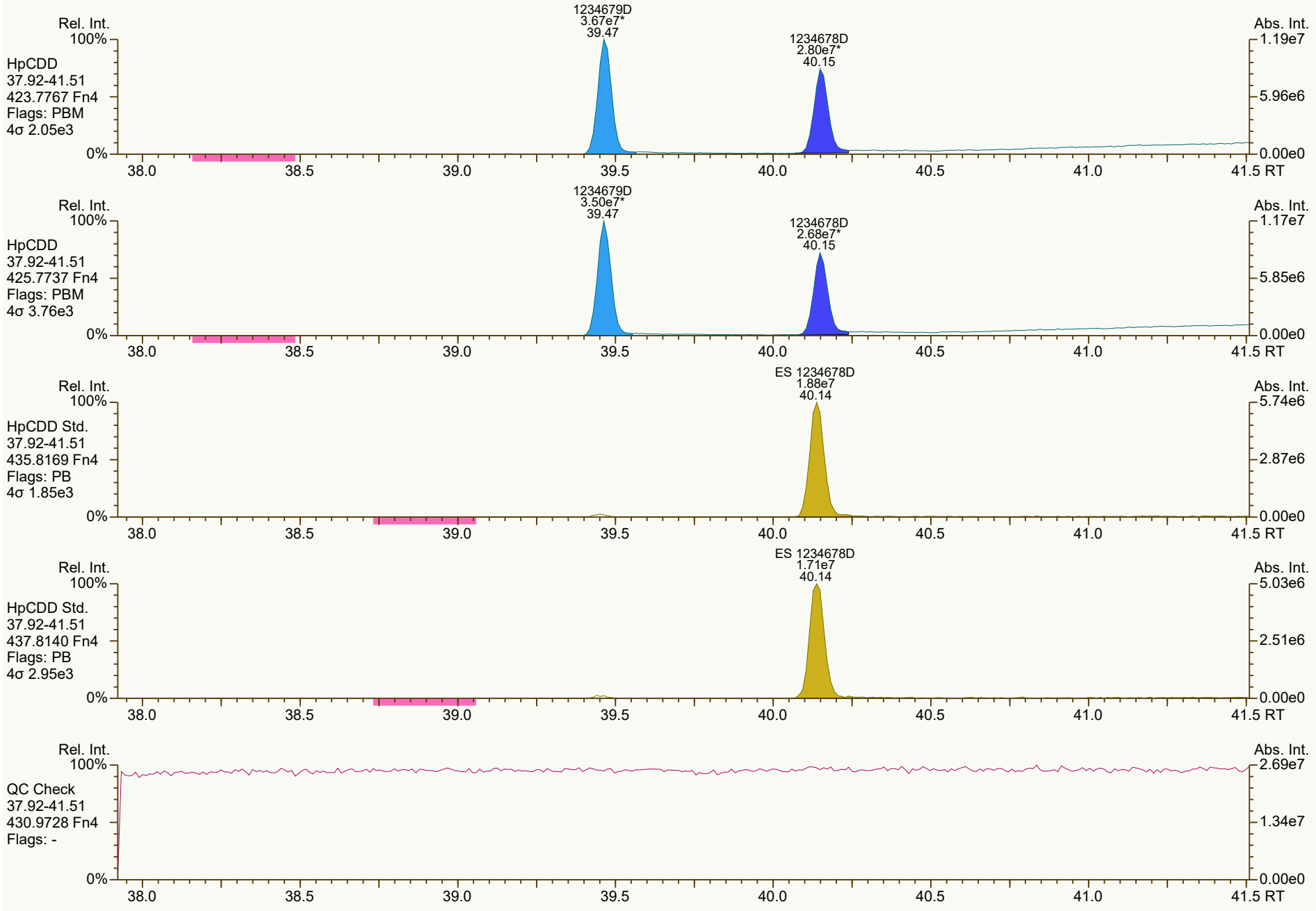

Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: PBM
4σ 4.21e3
0%
Conc(2378D) = (4.92e6 + 5.99e6) * 2000pg / (2.38e7 + 2.96e7) * 1.18 * 16.74446g = 20.7 pg/g
DTF 08-Dec-2021 11:29
VERIFIED
2378D 4.92e6* 27.13
1469D 6.83e5* 24.89
1278D 4.12e5* 27.48
Abs. Int.
1.09e6
5.46e5
0.00e0
RT
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 1.70e3
0%
2378D 5.99e6* 27.13
1469D 8.09e5* 24.89
1278D 5.46e5* 27.48
Abs. Int.
1.34e6
6.72e5
0.00e0
RT
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 2.57e3
0%
CS 37Cl-2378D 2.50e7 27.13
Abs. Int.
5.58e6
2.79e6
0.00e0
RT
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PBM
4σ 1.84e4
0%
JS 1234D 3.00e7 26.41
ES 2378D 2.38e7* 27.10
Abs. Int.
7.05e6
3.53e6
0.00e0
RT
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PBM
4σ 7.99e3
0%
JS 1234D 3.67e7 26.42
ES 2378D 2.96e7* 27.10
Abs. Int.
8.31e6
4.15e6
0.00e0
RT
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0


SGS ID: B5961_18710_DF_001
Sample ID: 11215131-120121-S-JC-NE-S-8
Acq: 07-Dec-2021 19:34:35
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: DTF Datafile: 211207C07
Rel. Int.
Abs. Int.
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PBM
4σ 4.05e3
12469D 6.04e5* 30.73
12479/12468D 5.31e5 30.18
12368D 2.00e5* 31.31
12478D 1.81e5 31.51
12379D 1.26e5 31.61
12369D...[3] 3.39e5 31.89
12346/12347D 4.91e4* 32.27
12378D 2.29e5* 32.78
12367D 5.40e4* 32.88
12389D 5.69e4 33.23
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PBM
4σ 2.91e3
12469D 4.03e5* 30.74
12479/12468D 3.09e5 30.18
12368D 1.41e5* 31.31
12478D 1.46e5* 31.50
12369D...[3] 2.03e5* 31.89
12346/12347D 3.63e4* 32.26
12378D 1.39e5* 32.77
12367D 2.39e4* 32.87
12389D 3.48e4 33.23
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PBM
4σ 2.99e3
CS 12347D 2.81e7 32.24
ES 12378D 2.94e7* 32.76
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PBM
4σ 4.27e3
CS 12347D 1.71e7 32.24
ES 12378D 1.87e7* 32.76
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
100%
0%
29.0
30.0
31.0
32.0
33.0
RT
1.61e5
8.07e4
0.00e0
1.06e5
5.30e4
8.10e6
4.05e6
5.58e6
2.79e6
9.94e6
4.97e6
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_001.utp_res, saved 08-Dec-2021 11:29 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3007, 9948 scc: 476-819
Revised: 08-Dec-2021 09:33 (DTF) Printed: 08-Dec-2021 11:32 Page 3 of 12

SGS ID: B5961_18710_DF_001 | Sample ID: 11215131-120121-S-JC-NE-S-8 | Acq: 07-Dec-2021 19:34:35
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28 | User: DTF Datafile: 211207C07



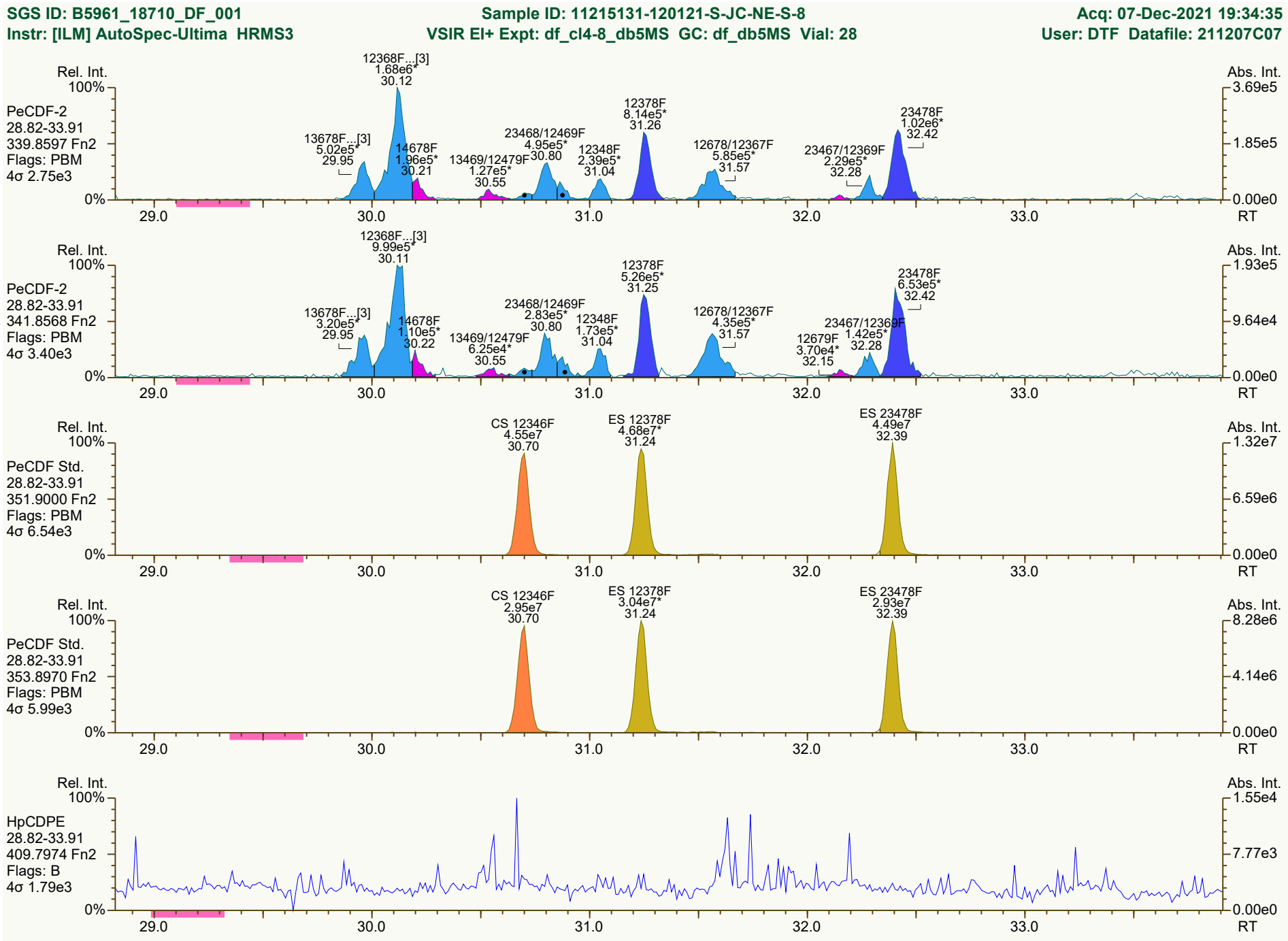
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_001.utp_res, saved 08-Dec-2021 11:29 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4493, 2562 scc: 476-819 | PKD: 08-Dec-2021 09:38 Printed: 08-Dec-2021 11:32 Page 4 of 12

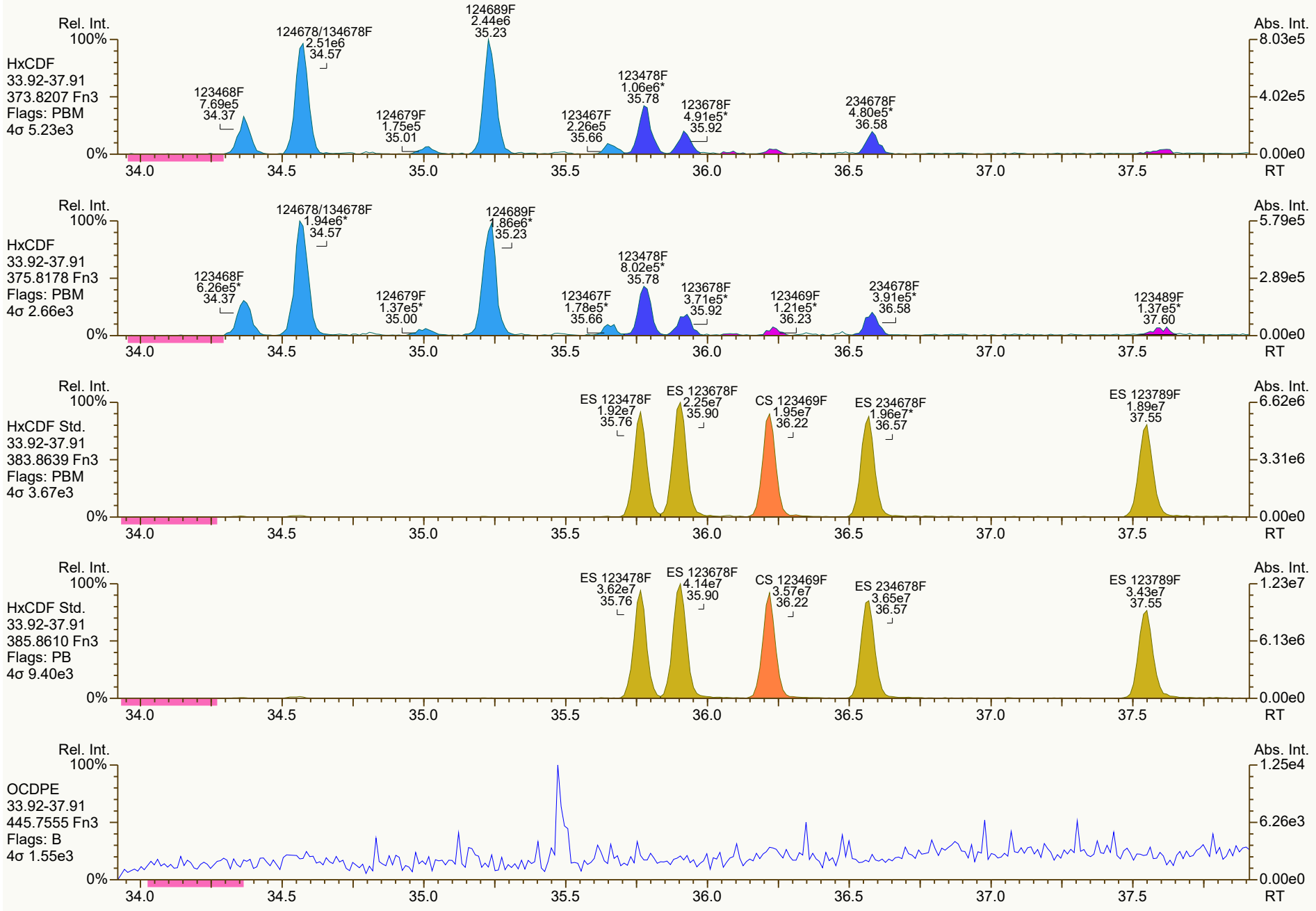

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PBM
4σ 2.05e3
0%
1234679D
3.67e7*
39.47
1234678D
2.80e7*
40.15
Abs. Int.
1.19e7
5.96e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PBM
4σ 3.76e3
0%
1234679D
3.50e7*
39.47
1234678D
2.68e7*
40.15
Abs. Int.
1.17e7
5.85e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 1.85e3
0%
ES 1234678D
1.88e7
40.14
Abs. Int.
5.74e6
2.87e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 2.95e3
0%
ES 1234678D
1.71e7
40.14
Abs. Int.
5.03e6
2.51e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.69e7
1.34e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

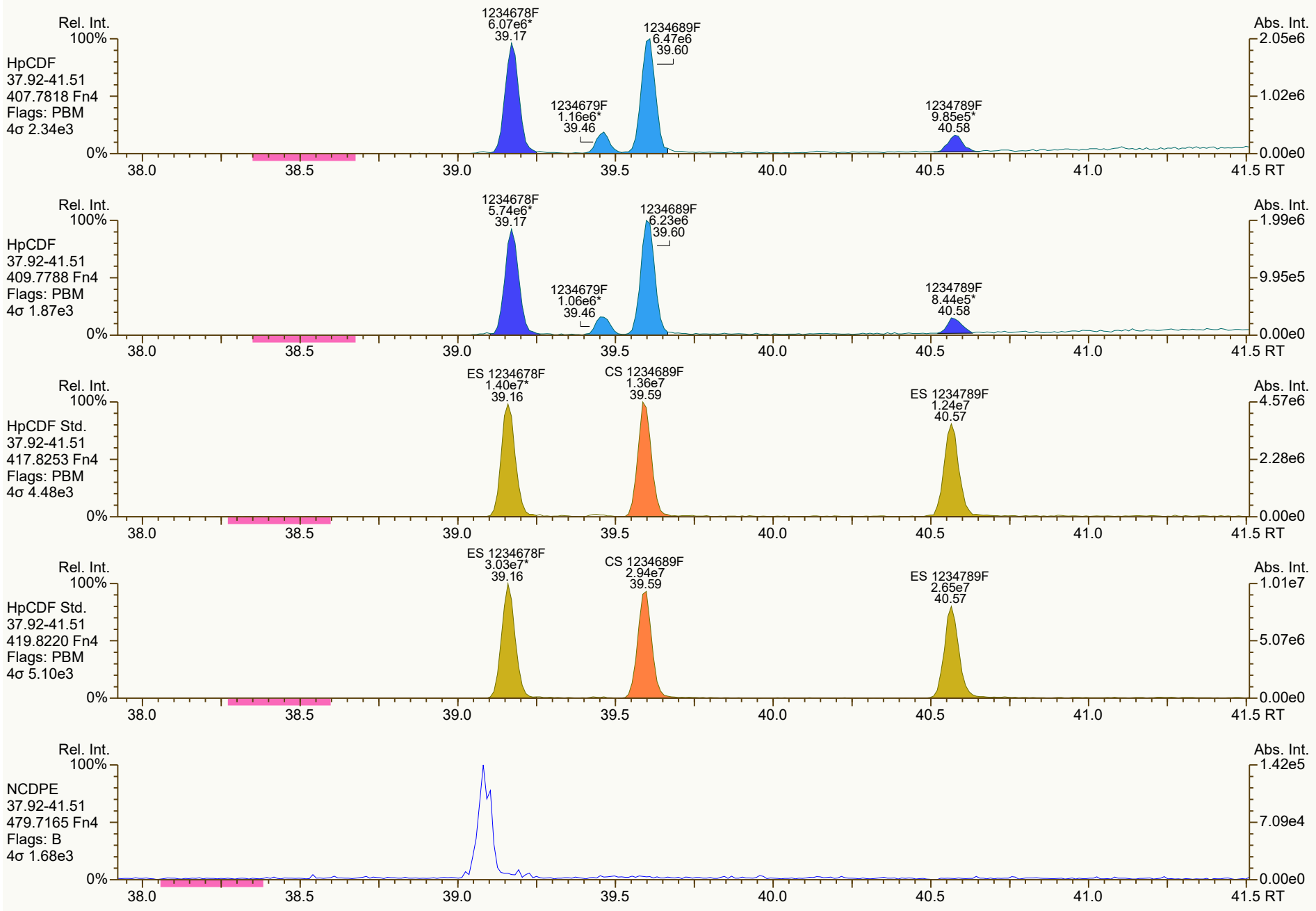

OCDD
5.74e8
42.77
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.27e3
0%
Abs. Int.
1.23e8
6.17e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.32e8
42.77
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.81e3
0%
Abs. Int.
1.37e8
6.83e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.67e7
42.76
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.78e3
0%
Abs. Int.
3.44e6
1.72e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.77e7
42.76
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 3.89e3
0%
Abs. Int.
3.59e6
1.79e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.27e7
1.13e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 2.29e3
0%
2378F
2.25e7*
26.18
1278F
3.71e6
25.22
2367/3467F
2.41e6
26.57
Abs. Int.
4.60e6
2.30e6
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 2.55e3
0%
2378F
2.80e7*
26.18
1278F
4.69e6*
25.22
2348F
9.47e5*
26.06
2367/3467F
2.87e6*
26.57
Abs. Int.
5.86e6
2.93e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.65e4
0%
JS 1234F
5.10e7
24.70
ES 2378F
3.75e7
26.16
Abs. Int.
9.89e6
4.95e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 9.06e3
0%
JS 1234F
6.49e7
24.70
ES 2378F
4.75e7
26.16
Abs. Int.
1.28e7
6.42e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.15e4
5.76e3
0.00e0
RT

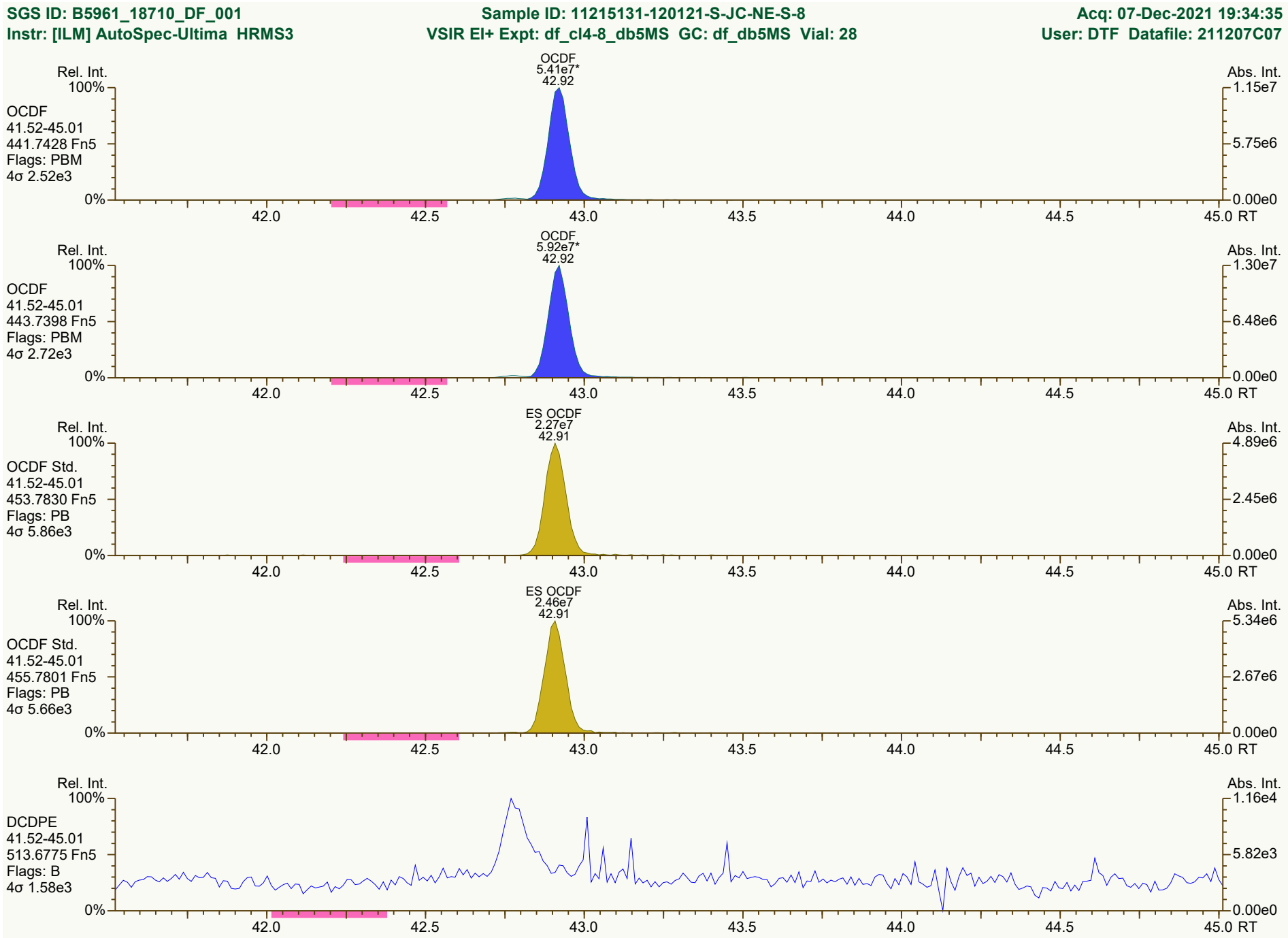

Rel. Int.
100%
0%
Abs. Int.
4.24e5
2.12e5
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
13468/12468F
1.66e6*
28.34
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PBM
4σ 2.27e3
13468/12468F
1.02e6*
28.34
2.94e5
1.47e5
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PBM
4σ 2.56e3
1.16e7
5.79e6
QC Check
19.54-28.81
316.9824 Fn1
Flags: -


SGS ID: B5961_18710_DF_001
Sample ID: 11215131-120121-S-JC-NE-S-8
Acq: 07-Dec-2021 19:34:35
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: DTF Datafile: 211207C07
Rel. Int.
Abs. Int.
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PBM
4σ 2.75e3
12368F...[3] 1.68e6* 30.12
13678F...[3] 5.02e5* 29.95
14678F 1.96e5* 30.21
13469/12479F 1.27e5* 30.55
23468/12469F 4.95e5* 30.80
12348F 2.39e5* 31.04
12378F 8.14e5* 31.26
12678/12367F 5.85e5* 31.57
23467/12369F 2.29e5* 32.28
23478F 1.02e6* 32.42
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PBM
4σ 3.40e3
12368F...[3] 9.99e5* 30.11
13678F...[3] 3.20e5* 29.95
14678F 1.10e5* 30.22
13469/12479F 6.25e4* 30.55
23468/12469F 2.83e5* 30.80
12348F 1.73e5* 31.04
12378F 5.26e5* 31.25
12678/12367F 4.35e5* 31.57
12679F 3.70e4* 32.15
23467/12369F 1.42e5* 32.28
23478F 6.53e5* 32.42
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PBM
4σ 6.54e3
CS 12346F 4.55e7 30.70
ES 12378F 4.68e7* 31.24
ES 23478F 4.49e7 32.39
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PBM
4σ 5.99e3
CS 12346F 2.95e7 30.70
ES 12378F 3.04e7* 31.24
ES 23478F 2.93e7 32.39
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.79e3
100%
0%
29.0
30.0
31.0
32.0
33.0
RT
3.69e5
1.85e5
0.00e0
1.93e5
9.64e4
1.32e7
6.59e6
8.28e6
4.14e6
1.55e4
7.77e3
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_001.utp_res, saved 08-Dec-2021 11:29 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2745, 9735, 4376 scc: 476-819
Revised: 08-Dec-2021 09:36 (DTF) Printed: 08-Dec-2021 11:32 Page 9 of 12


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PBM
4σ 5.23e3
123468F 7.69e5 34.37
124678/134678F 2.51e6 34.57
124679F 1.75e5 35.01
124689F 2.44e6 35.23
123467F 2.26e5 35.66
123478F 1.06e6* 35.78
123678F 4.91e5* 35.92
234678F 4.80e5* 36.58
Abs. Int.
8.03e5
4.02e5
0.00e0
0%
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
Rel. Int.
100%
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PBM
4σ 2.66e3
123468F 6.26e5* 34.37
124678/134678F 1.94e6* 34.57
124679F 1.37e5* 35.00
124689F 1.86e6* 35.23
123467F 1.78e5* 35.66
123478F 8.02e5* 35.78
123678F 3.71e5* 35.92
123469F 1.21e5* 36.23
234678F 3.91e5* 36.58
123489F 1.37e5* 37.60
Abs. Int.
5.79e5
2.89e5
0.00e0
0%
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 3.67e3
ES 123478F 1.92e7 35.76
ES 123678F 2.25e7 35.90
CS 123469F 1.95e7 36.22
ES 234678F 1.96e7* 36.57
ES 123789F 1.89e7 37.55
Abs. Int.
6.62e6
3.31e6
0.00e0
0%
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PB
4σ 9.40e3
ES 123478F 3.62e7 35.76
ES 123678F 4.14e7 35.90
CS 123469F 3.57e7 36.22
ES 234678F 3.65e7 36.57
ES 123789F 3.43e7 37.55
Abs. Int.
1.23e7
6.13e6
0.00e0
0%
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
Rel. Int.
100%
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 1.55e3
Abs. Int.
1.25e4
6.26e3
0.00e0
0%
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT


Rel. Int.
100%
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PBM
4σ 2.34e3
1234678F
6.07e6*
39.17
1234689F
6.47e6
39.60
1234679F
1.16e6*
39.46
1234789F
9.85e5*
40.58
Abs. Int.
2.05e6
1.02e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PBM
4σ 1.87e3
1234678F
5.74e6*
39.17
1234689F
6.23e6
39.60
1234679F
1.06e6*
39.46
1234789F
8.44e5*
40.58
Abs. Int.
1.99e6
9.95e5
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PBM
4σ 4.48e3
ES 1234678F
1.40e7*
39.16
CS 1234689F
1.36e7
39.59
ES 1234789F
1.24e7
40.57
Abs. Int.
4.57e6
2.28e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PBM
4σ 5.10e3
ES 1234678F
3.03e7*
39.16
CS 1234689F
2.94e7
39.59
ES 1234789F
2.65e7
40.57
Abs. Int.
1.01e7
5.07e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.68e3
Abs. Int.
1.42e5
7.09e4
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

SGS ID: B5961_18710_DF_001 | Sample ID: 11215131-120121-S-JC-NE-S-8 | Acq: 07-Dec-2021 19:34:35
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28 | User: DTF Datafile: 211207C07



Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_001.utp_res, saved 08-Dec-2021 11:29 (DTF) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8230, 6946, 8362 scc: 476-819 | *Revised: 08-Dec-2021 09:38 (DTF) Printed: 08-Dec-2021 11:32 Page 12 of 12*

Lab ID: B5961_18710_DF_002 **Acq'd:** 07 Dec 2021 20:20 DTF **Wt/Vol:** 14.45 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-S-9 **UTP:** 08-Dec-2021 11:25:17 DTF **J-level:** 0.346 pg/g **Split:** 1 **Checkcode:** 794-822-CSX

Datafile: 211207C08 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.14		1.0009	1.0009	0	5.23E+07	0.81	Y	1.18	86.3	8272.483	0.155
12378-PeCDD	32.78	J	1.0006	1.0006	0	7.09E+05	1.55	Y	1.04	1.51	5250.569	0.103
123478-HxCDD	36.77	J	1.0004	1.0003	-0.2	3.90E+05	1.15	Y	1.09	0.988	8197.314	0.167
123678-HxCDD	36.89		1.0035	1.0036	+0.2	1.01E+06	1.30	Y	1.15	2.42	8197.314	0.164
123789-HxCDD	37.19		1.0117	1.0118	+0.2	1.06E+06	1.29	Y	1.05	2.52	8197.314	0.172
1234678-HpCDD	40.16		1.0003	1.0003	0	3.00E+07	1.06	Y	1.06	79.2	8279.524	0.173
OCDD	42.75		1.0003	1.0003	0	4.20E+08	0.91	Y	1.13	2,040	9163.616	0.546
2378-TCDF	26.19		1.0009	1.0009	0	1.96E+08	0.79	Y	1.08	226	5605.43	0.0739
12378-PeCDF	31.26		1.0005	1.0006	+0.2	6.12E+06	1.61	Y	1.02	8.06	6354.199	0.0779
23478-PeCDF	32.42		1.0006	1.0008	+0.4	5.12E+06	1.62	Y	1.02	7.03	6354.199	0.0806
123478-HxCDF	35.78		1.0005	1.0005	0	8.05E+06	1.27	Y	1.27	12.2	6460.445	0.0796
123678-HxCDF	35.92		1.0004	1.0004	0	2.54E+06	1.33	Y	1.15	3.69	6460.445	0.0814
234678-HxCDF	36.58	J	1.0004	1.0004	0	7.95E+05	1.40	Y	1.19	1.27	6460.445	0.0867
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	6460.445	0.0966
1234678-HpCDF	39.18		1.0003	1.0003	0	8.92E+06	1.09	Y	1.37	14.9	5906.097	0.0758
1234789-HpCDF	40.58		1.0002	1.0002	0	1.41E+06	0.99	Y	1.31	2.83	5906.097	0.1
OCDF	42.91		1.0003	1.0003	0	5.40E+07	0.92	Y	1.07	198	7957.752	0.349

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.11	1.0260	1.0261	+0.2	7.07E+07	0.82	Y	1.05	80.5
ES 12378-PeCDD	32.76	1.2396	1.2398	+0.4	6.26E+07	1.60	Y	0.88	84.8
ES 123478-HxCDD	36.76	0.9916	0.9915	-0.2	5.02E+07	1.31	Y	0.97	85.9
ES 123678-HxCDD	36.87	0.9947	0.9946	-0.2	5.03E+07	1.27	Y	0.94	88.6
ES 123789-HxCDD	37.18	1.0027	1.0028	+0.2	5.57E+07	1.29	Y	1.09	84.8
ES 1234678-HpCDD	40.14	1.0828	1.0828	0	4.95E+07	1.05	Y	0.91	90.2
ES OCDD	42.74	1.1528	1.1529	+0.3	5.06E+07	0.90	Y	0.62	67.4
ES 2378-TCDF	26.17	1.0591	1.0592	+0.2	1.11E+08	0.79	Y	1.06	73.1
ES 12378-PeCDF	31.24	1.2643	1.2646	+0.6	1.02E+08	1.57	Y	0.91	78.6
ES 23478-PeCDF	32.40	1.3110	1.3113	+0.6	9.89E+07	1.57	Y	0.88	78.3
ES 123478-HxCDF	35.76	0.9648	0.9647	-0.2	7.18E+07	0.52	Y	1.20	99.5
ES 123678-HxCDF	35.91	0.9686	0.9686	0	8.25E+07	0.54	Y	1.35	102
ES 234678-HxCDF	36.57	0.9865	0.9864	-0.2	7.28E+07	0.54	Y	1.24	97.4
ES 123789-HxCDF	37.55	1.0129	1.0129	0	7.20E+07	0.54	Y	1.16	104
ES 1234678-HpCDF	39.17	1.0565	1.0565	0	6.07E+07	0.46	Y	0.97	104
ES 1234789-HpCDF	40.57	1.0943	1.0944	+0.2	5.28E+07	0.46	Y	0.85	103
ES OCDF	42.90	1.1569	1.1573	+1.0	7.05E+07	0.92	Y	0.81	72.6

Lab ID: B5961_18710_DF_002 **Acq'd:** 07 Dec 2021 20:20 DTF **Wt/Vol:** 14.45 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-S-9 **UTP:** 08-Dec-2021 11:25:17 DTF **J-level:** 0.346 pg/g **Split:** 1 **Checkcode:** 794-822-CSX

Datafile: 211207C08 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.42		-	-	-	8.40E+07	0.81	Y	-	-	
JS 1234-TCDF	24.71		-	-	-	1.43E+08	0.79	Y	-	-	
JS 123467-HxCDD	37.07		-	-	-	3.01E+07	1.23	Y	-	-	
CS 37Cl-2378-TCDD	27.14		1.0269	1.0270	+0.2	3.32E+07	n/a	-	1.20	82.3	
CS 12347-PeCDD	32.25		1.2203	1.2205	+0.4	5.95E+07	1.62	Y	0.75	94	
CS 12346-PeCDF	30.70		1.2424	1.2426	+0.4	9.83E+07	1.57	Y	0.85	80.7	
CS 123469-HxCDF	36.22		0.9771	0.9770	-0.2	7.22E+07	0.55	Y	1.12	108	
CS 1234689-HpCDF	39.60		1.0681	1.0681	0	5.93E+07	0.47	Y	0.89	111	
~~SS 37Cl-2378-TCDD~~	~~27.14~~		~~1.0269~~	~~1.0270~~	~~+0.2~~	~~3.32E+07~~	~~n/a~~		~~1.15~~	~~102~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.25~~		~~1.2203~~	~~1.2205~~	~~+0.4~~	~~5.95E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~111~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.70~~		~~1.2424~~	~~1.2426~~	~~+0.4~~	~~9.83E+07~~	~~1.57~~	~~Y~~	~~0.94~~	~~102~~	
~~SS 123469-HxCDF~~	~~36.22~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~7.22E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~106~~	
~~SS 1234689-HpCDF~~	~~39.60~~		~~1.0681~~	~~1.0681~~	~~0~~	~~5.93E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~106~~	

Totals	Conc	EMPC
Total TCDD	107	109
Total PeCDD	13	14.2
Total HxCDD	61	62.6
Total HpCDD	209	209
Total Tetra-Octa Dioxins	2430	2430
Total TCDF	433	448
Total PeCDF	28.9	30.4
Total HxCDF	28	28.2
Total HpCDF	33.7	33.7
Total Tetra-Octa Furans	721	738
Total Tetra-Octa Dioxins & Furans	3150	3170

Lab ID: B5961_18710_DF_002 **Acq'd: 07 Dec 2021 20:20 DTF** **Wt/Vol: 14.45 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-JC-NE-S-9 **UTP: 08-Dec-2021 11:25:17 DTF** **J-level: 0.346 pg/g** **Split: 1** **Checkcode: 794-822-CSX**

Datafile: 211207C08 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.15		0.8545	0.8540	-0.7	4.64E+05	0.85	Y	1.18	0.767	8272.483	0.155
1379-TCDD	23.56	EMPC	0.8692	0.8690	-0.3	2.69E+05	0.97	N	1.18	0.444	8272.483	0.155
1369-TCDD	24.04	EMPC	0.8868	0.8865	-0.4	3.00E+05	0.97	N	1.18	0.495	8272.483	0.155
1469-TCDD	24.89		0.9185	0.9182	-0.4	4.88E+06	0.79	Y	1.18	8.06	8272.483	0.155
1247/1246/1248/1249-TCDD	25.17		0.9282	0.9282	0	3.35E+05	0.82	Y	1.18	0.553	8272.483	0.155
1378-TCDD	25.36	EMPC	0.9355	0.9356	+0.2	2.18E+05	0.91	N	1.18	0.36	8272.483	0.155
1268-TCDD	NotFnd		0.9435						1.18		8272.483	0.155
1478-TCDD	25.85		0.9533	0.9533	0	2.22E+05	0.70	Y	1.18	0.367	8272.483	0.155
1279-TCDD	26.02	EMPC	0.9601	0.9596	-0.8	2.12E+05	0.96	N	1.18	0.349	8272.483	0.155
1234/1269-TCDD	26.40		0.9741	0.9736	-0.8	7.91E+05	0.77	Y	1.18	1.31	8272.483	0.155
1236-TCDD	NotFnd		0.9797						1.18		8272.483	0.155
1237/1238-TCDD	26.82		0.9898	0.9892	-1.0	1.17E+06	0.86	Y	1.18	1.94	8272.483	0.155
1239-TCDD	NotFnd		0.9952						1.18		8272.483	0.155
2378-TCDD	**27.14**		**1.0009**	1.0009	**0**	5.23E+07	0.81	Y	**1.18**	**86.3**	**8272.483**	**0.155**
1278-TCDD	27.49		1.0139	1.0139	0	4.65E+06	0.78	Y	1.18	7.67	8272.483	0.155
1267-TCDD	NotFnd		1.0193						1.18		8272.483	0.155
1289-TCDD	NotFnd		1.0393						1.18		8272.483	0.155
12479/12468-PeCDD	30.19		0.9216	0.9215	-0.2	1.26E+06	1.67	Y	1.04	2.68	5250.569	0.103
12469-PeCDD	30.74		0.9386	0.9385	-0.2	2.43E+06	1.63	Y	1.04	5.18	5250.569	0.103
12368-PeCDD	31.31	J EMPC	0.9560	0.9557	-0.6	3.21E+05	1.85	N	1.04	0.685	5250.569	0.103
12478-PeCDD	31.52	J	0.9619	0.9621	+0.4	3.04E+05	1.63	Y	1.04	0.649	5250.569	0.103
12379-PeCDD	31.61	J EMPC	0.9651	0.9650	-0.2	1.90E+05	2.19	N	1.04	0.406	5250.569	0.103
12369/12467/12489-PeCDD	31.89		0.9735	0.9735	0	1.11E+06	1.63	Y	1.04	2.37	5250.569	0.103
12346/12347-PeCDD	32.27	J EMPC	0.9852	0.9850	-0.4	7.56E+04	2.16	N	1.04	0.161	5250.569	0.103
12378-PeCDD	32.78	J	**1.0006**	**1.0006**	**0**	**7.09E+05**	**1.55**	**Y**	**1.04**	**1.51**	**5250.569**	**0.103**
12367-PeCDD	32.88	J	1.0037	1.0037	0	1.25E+05	1.63	Y	1.04	0.267	5250.569	0.103
12389-PeCDD	33.23	J	1.0145	1.0142	-0.6	1.43E+05	1.43	Y	1.04	0.306	5250.569	0.103
124679/124689-HxCDD	35.05		0.9535	0.9535	0	1.62E+07	1.29	Y	1.10	39.4	8197.314	0.167
123468-HxCDD	35.73	J EMPC	0.9716	0.9720	+0.9	6.72E+05	1.47	N	1.10	1.63	8197.314	0.167
123679/123689-HxCDD	36.01		0.9796	0.9797	+0.2	5.61E+06	1.29	Y	1.10	13.6	8197.314	0.167
123469-HxCDD	36.14	J	0.9833	0.9832	-0.2	4.22E+05	1.31	Y	1.10	1.02	8197.314	0.167
123478-HxCDD	36.77	J	**1.0004**	**1.0003**	**-0.2**	**3.90E+05**	**1.15**	**Y**	1.09	**0.988**	**8197.314**	**0.167**
123678-HxCDD	36.89		**1.0035**	**1.0036**	**+0.2**	**1.01E+06**	**1.30**	**Y**	1.15	**2.42**	**8197.314**	**0.164**
123467-HxCDD	37.09	J	1.0088	1.0091	+0.7	4.21E+05	1.41	Y	1.10	1.02	8197.314	0.167
123789-HxCDD	37.19		**1.0117**	**1.0118**	**+0.2**	**1.06E+06**	**1.29**	**Y**	1.05	**2.52**	**8197.314**	**0.172**

Lab ID: B5961_18710_DF_002 **Acq'd: 07 Dec 2021 20:20 DTF** **Wt/Vol: 14.45 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-JC-NE-S-9 **UTP: 08-Dec-2021 11:25:17 DTF** **J-level: 0.346 pg/g** **Split: 1** **Checkcode: 794-822-CSX**

Datafile: 211207C08 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

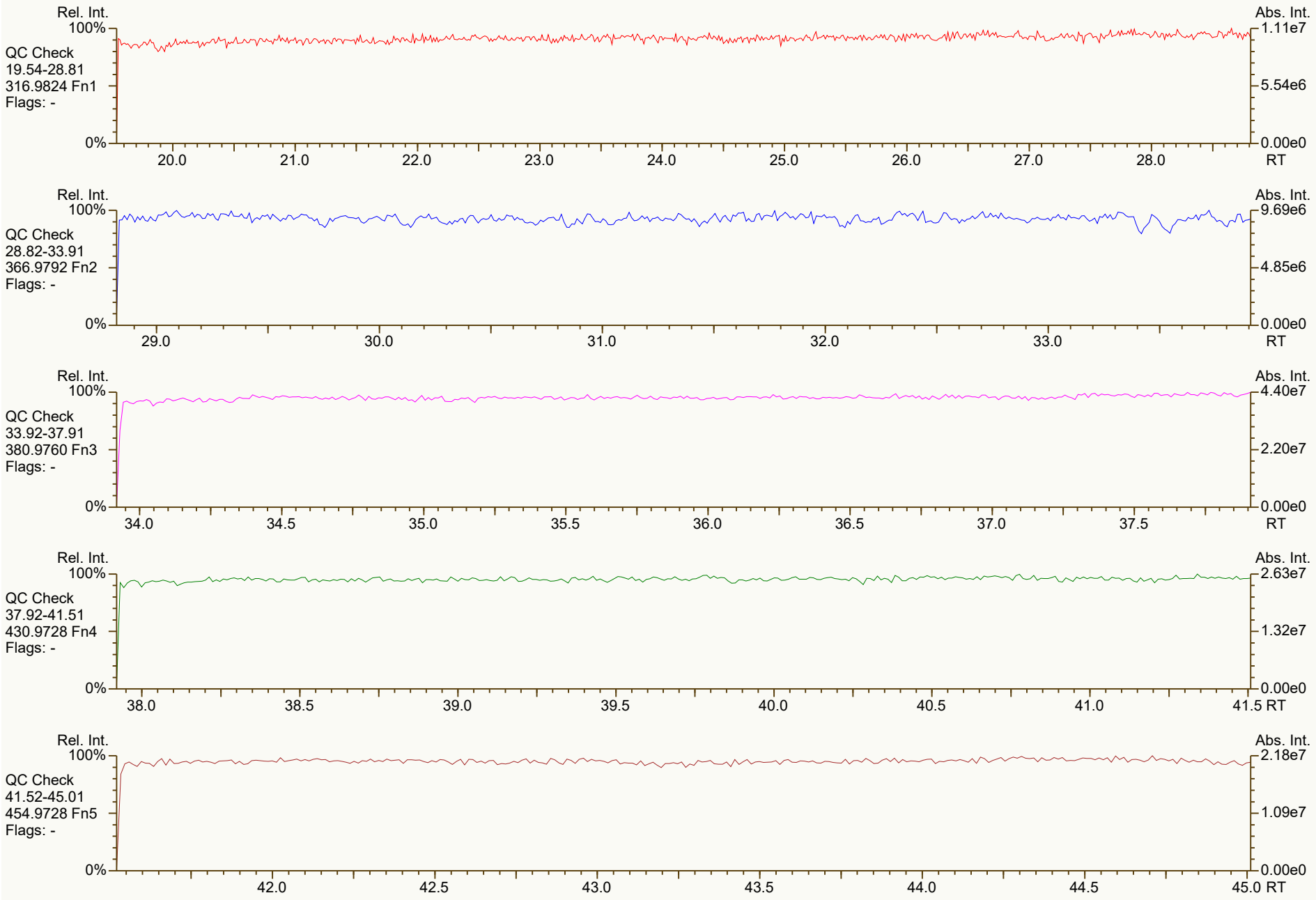
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9832	-0.2	4.92E+07	1.05	Y	1.06	130	8279.524	0.173
1234678-HpCDD	**40.16**		**1.0003**	**1.0003**	**0**	**3.00E+07**	**1.06**	**Y**	**1.06**	**79.2**	**8279.524**	**0.173**
OCDD	**42.75**		**1.0003**	**1.0003**	**0**	**4.20E+08**	**0.91**	**Y**	**1.13**	**2,040**	**9163.616**	**0.546**
OCDD-a	42.75		1.0002	1.0002	0	2.62E+07	2.40	Y	0.07	1,990	10031.782	9.34
1368-TCDF	20.92	J	0.7998	0.7993	-0.6	2.83E+05	0.78	Y	1.08	0.328	5605.43	0.0739
1468-TCDF	21.48		0.8214	0.8208	-0.8	6.03E+05	0.82	Y	1.08	0.698	5605.43	0.0739
2468-TCDF	22.13		0.8463	0.8458	-0.7	1.35E+06	0.76	Y	1.08	1.57	5605.43	0.0739
1346/1246-TCDF	NotFnd		0.8608						1.08		5605.43	0.0739
1347/1378/1247-TCDF	22.70		0.8675	0.8676	+0.1	3.39E+06	0.79	Y	1.08	3.92	5605.43	0.0739
1348-TCDF	23.01	EMPC	0.8793	0.8792	-0.1	1.06E+06	0.57	N	1.08	1.22	5605.43	0.0739
1248/1367/1379-TCDF	23.12		0.8850	0.8834	-2.2	9.63E+06	0.84	Y	1.08	11.1	5605.43	0.0739
1268-TCDF	23.58		0.9010	0.9010	0	3.76E+06	0.80	Y	1.08	4.35	5605.43	0.0739
1467-TCDF	23.73		0.9068	0.9069	+0.1	7.57E+05	0.78	Y	1.08	0.876	5605.43	0.0739
1478-TCDF	23.91		0.9139	0.9137	-0.3	9.07E+06	0.78	Y	1.08	10.5	5605.43	0.0739
1369/1237-TCDF	24.32		0.9294	0.9293	-0.1	2.38E+06	0.77	Y	1.08	2.75	5605.43	0.0739
2467-TCDF	24.47	EMPC	0.9350	0.9349	-0.1	3.67E+05	0.90	N	1.08	0.425	5605.43	0.0739
2368-TCDF	24.62		0.9410	0.9409	-0.1	5.92E+06	0.80	Y	1.08	6.85	5605.43	0.0739
1238/1234/1678/1469/1236-TCDF	24.71		0.9451	0.9444	-1.0	1.11E+07	0.81	Y	1.08	12.9	5605.43	0.0739
1278-TCDF	25.23		0.9642	0.9640	-0.3	8.80E+07	0.81	Y	1.08	102	5605.43	0.0739
1349-TCDF	NotFnd		0.9695						1.08		5605.43	0.0739
1267-TCDF	25.52		0.9753	0.9753	0	5.14E+06	0.85	Y	1.08	5.95	5605.43	0.0739
2346/1249-TCDF	25.74		0.9832	0.9837	+0.8	6.79E+05	0.87	Y	1.08	0.786	5605.43	0.0739
2347/1279-TCDF	25.95		0.9921	0.9917	-0.6	2.21E+06	0.78	Y	1.08	2.55	5605.43	0.0739
2348-TCDF	26.07	EMPC	0.9970	0.9964	-0.9	1.17E+07	0.97	N	1.08	13.5	5605.43	0.0739
2378-TCDF	**26.19**		**1.0009**	**1.0009**	**0**	**1.96E+08**	**0.79**	**Y**	**1.08**	**226**	**5605.43**	**0.0739**
2367/3467-TCDF	26.58		1.0162	1.0156	-1.0	1.60E+07	0.80	Y	1.08	18.6	5605.43	0.0739
1269-TCDF	26.84		1.0259	1.0257	-0.3	3.03E+06	0.79	Y	1.08	3.51	5605.43	0.0739
1239-TCDF	NotFnd		1.0370						1.08		5605.43	0.0739
1289-TCDF	28.34		1.0829	1.0830	+0.2	1.48E+07	0.82	Y	1.08	17.2	5605.43	0.0739
13468/12468-PeCDF	28.34		0.9067	0.9072	+0.9	1.61E+06	1.51	Y	1.02	2.17	4075.513	0.0508
13678/13467/12467-PeCDF	29.96	J	0.9583	0.9588	+0.9	6.31E+05	1.64	Y	1.02	0.849	6354.199	0.0792
12368/13478/12478-PeCDF	30.13		0.9635	0.9643	+1.4	4.73E+06	1.63	Y	1.02	6.36	6354.199	0.0792
14678-PeCDF	NotFnd		0.9669						1.02		6354.199	0.0792
13479-PeCDF	NotFnd		0.9701						1.02		6354.199	0.0792
13469/12479-PeCDF	NotFnd		0.9784						1.02		6354.199	0.0792
12346-PeCDF	NotFnd		0.9831						1.02		6354.199	0.0792

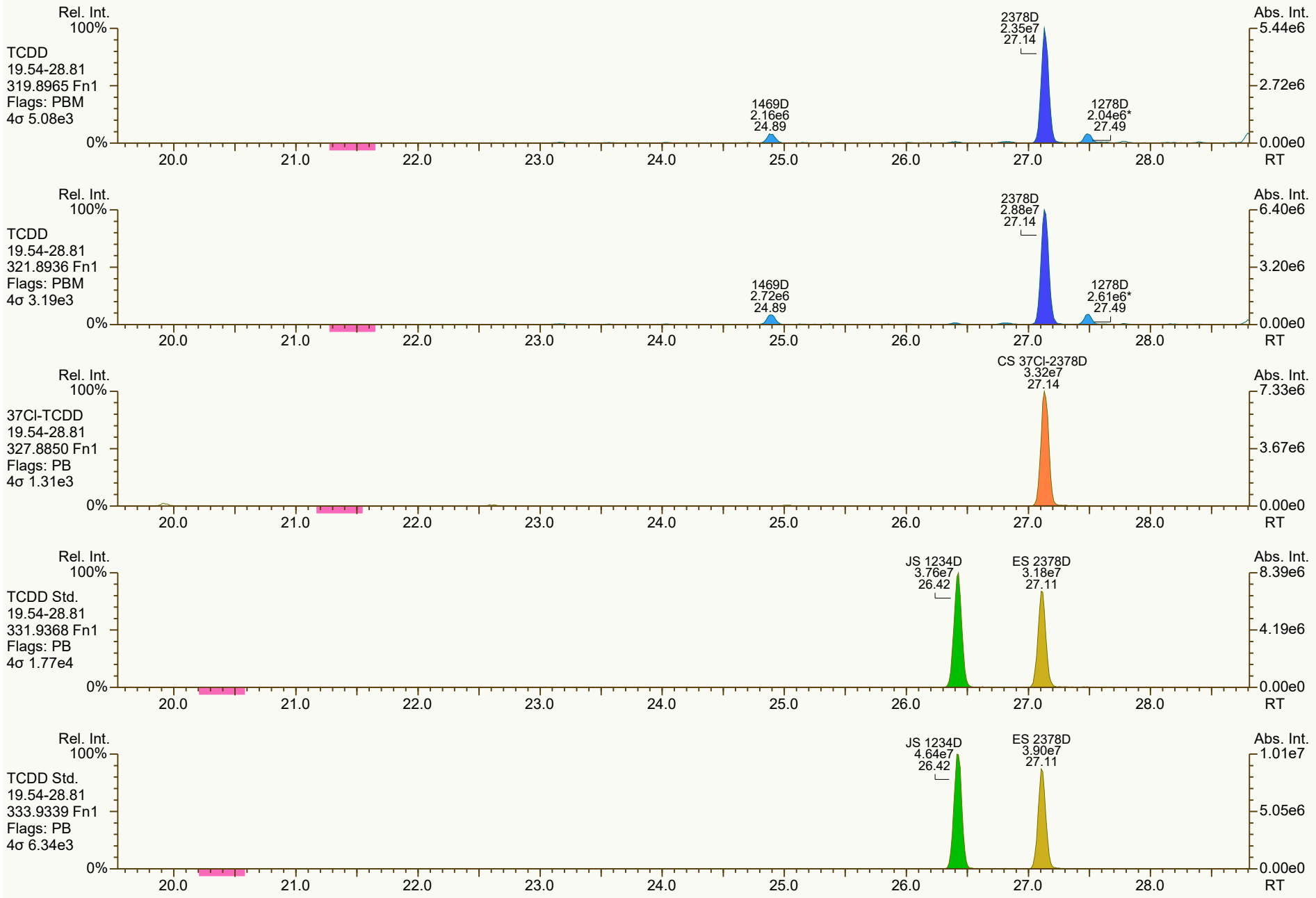
Lab ID: B5961_18710_DF_002 **Acq'd: 07 Dec 2021 20:20 DTF** **Wt/Vol: 14.45 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-JC-NE-S-9 **UTP: 08-Dec-2021 11:25:17 DTF** **J-level: 0.346 pg/g** **Split: 1** **Checkcode: 794-822-CSX**

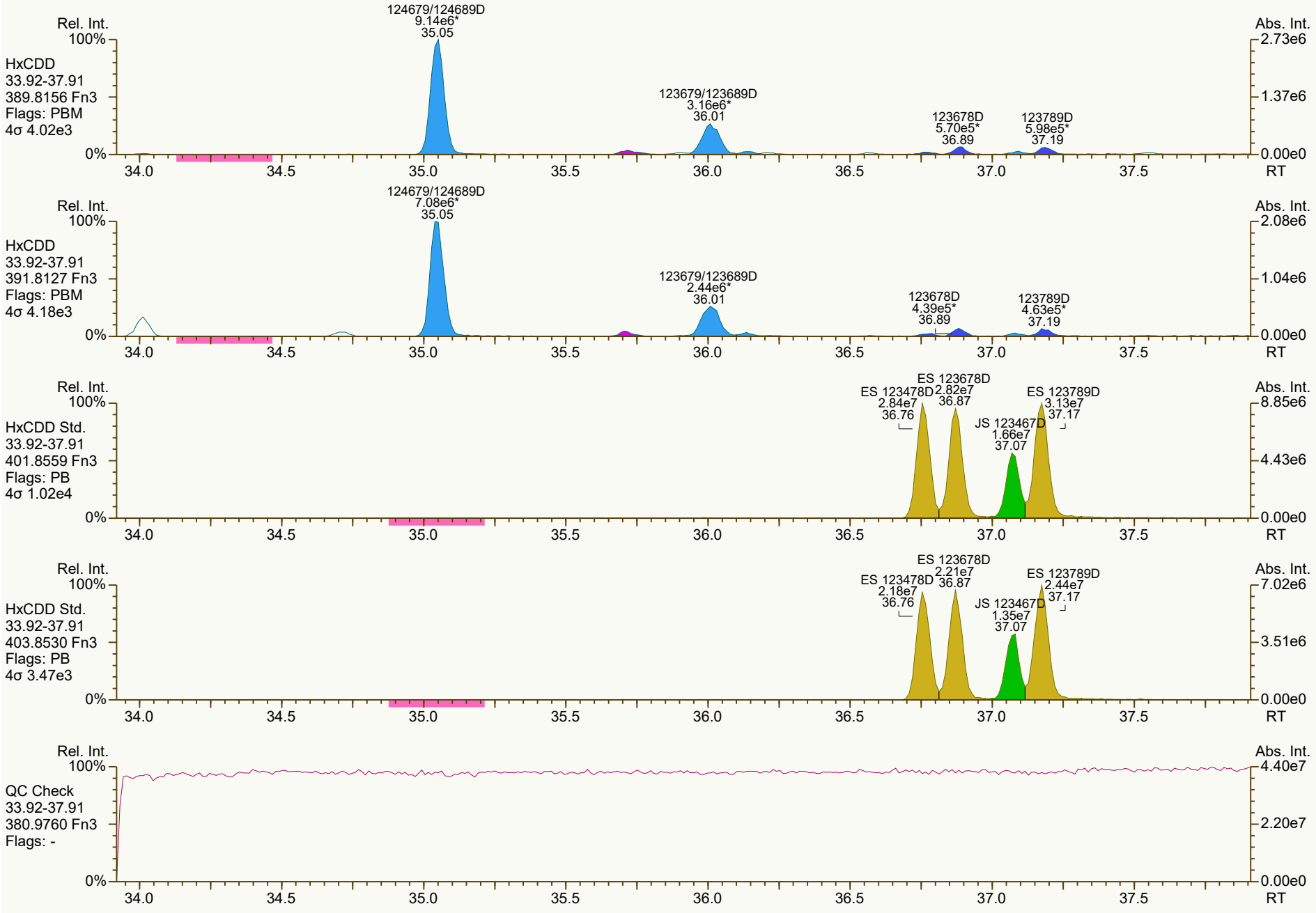
Datafile: 211207C08 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

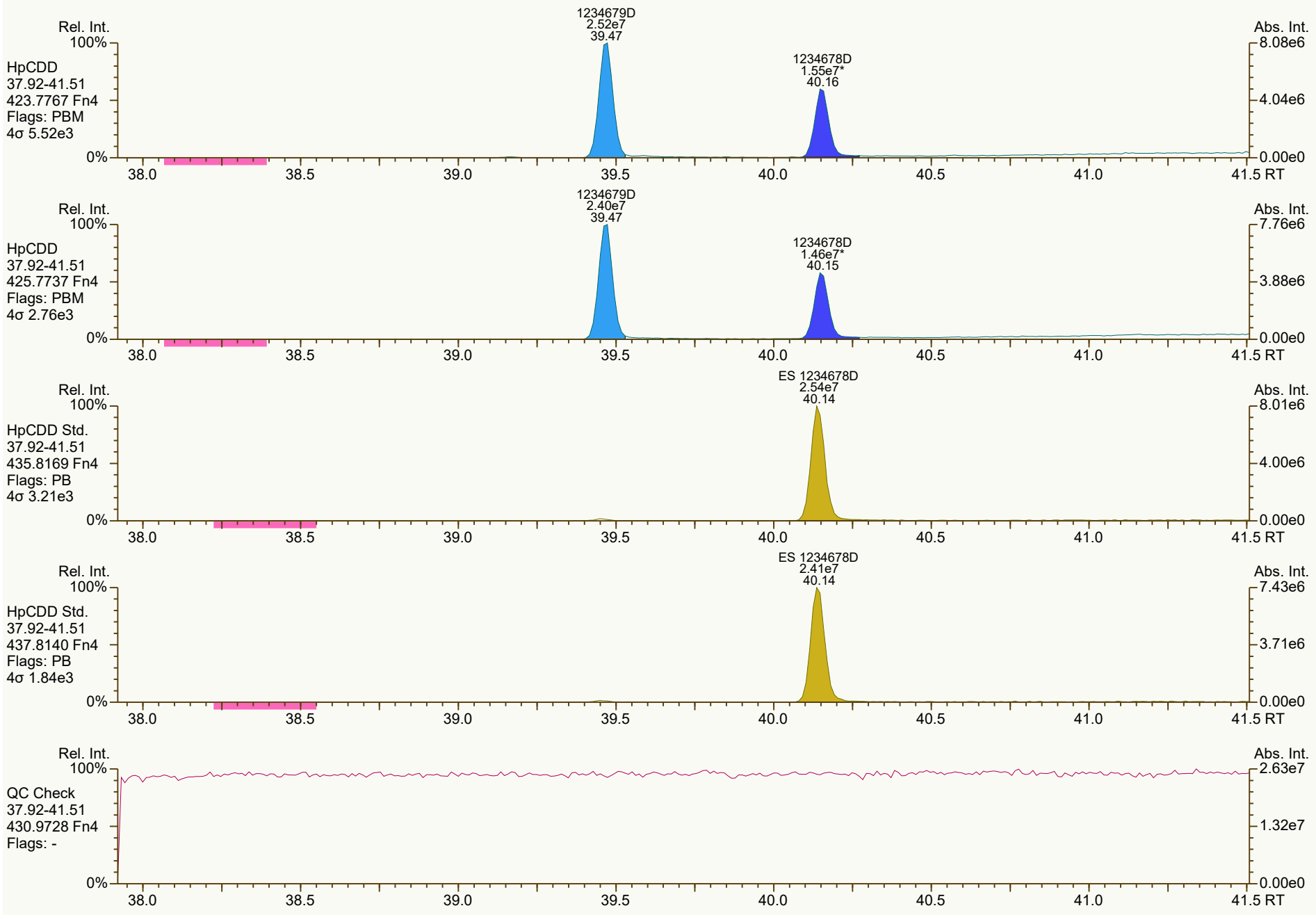
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.80	J EMPC	0.9859	0.9858	-0.2	5.09E+05	1.29	N	1.02	0.684	6354.199	0.0792
12347-PeCDF	30.87	J	0.9885	0.9881	-0.7	3.17E+05	1.64	Y	1.02	0.426	6354.199	0.0792
12348-PeCDF	31.05	J	0.9937	0.9937	0	7.97E+05	1.72	Y	1.02	1.07	6354.199	0.0792
12378-PeCDF	**31.26**		**1.0005**	**1.0006**	**+0.2**	**6.12E+06**	**1.61**	**Y**	**1.02**	**8.06**	**6354.199**	**0.0779**
12678/12367-PeCDF	31.57		1.0097	1.0104	+1.3	2.20E+06	1.68	Y	1.02	2.96	6354.199	0.0792
12379-PeCDF	NotFnd		1.0153						1.02		6354.199	0.0792
12679-PeCDF	NotFnd		0.9925						1.02		6354.199	0.0792
23467/12369-PeCDF	32.28	J EMPC	0.9966	0.9964	-0.4	3.23E+05	1.29	N	1.02	0.434	6354.199	0.0792
23478-PeCDF	**32.42**		**1.0006**	**1.0008**	**+0.4**	**5.12E+06**	**1.62**	**Y**	**1.02**	**7.03**	**6354.199**	**0.0806**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6354.199	0.0792
12349-PeCDF	NotFnd		1.0108						1.02		6354.199	0.0792
12389-PeCDF	33.51	J EMPC	1.0346	1.0345	-0.2	2.88E+05	1.30	N	1.02	0.387	6354.199	0.0792
123468-HxCDF	34.37	J	0.9610	0.9610	0	7.88E+05	1.20	Y	1.19	1.22	6460.445	0.0857
124678/134678-HxCDF	34.57		0.9667	0.9667	0	2.76E+06	1.21	Y	1.19	4.28	6460.445	0.0857
134679-HxCDF	NotFnd		0.9732						1.19		6460.445	0.0857
124679-HxCDF	35.01	J EMPC	0.9788	0.9790	+0.4	1.53E+05	0.94	N	1.19	0.237	6460.445	0.0857
124689-HxCDF	35.24		0.9852	0.9852	0	2.40E+06	1.25	Y	1.19	3.72	6460.445	0.0857
123467-HxCDF	35.66	J	0.9971	0.9972	+0.2	2.79E+05	1.33	Y	1.19	0.432	6460.445	0.0857
123478-HxCDF	**35.78**		**1.0005**	**1.0005**	**0**	**8.05E+06**	**1.27**	**Y**	**1.27**	**12.2**	**6460.445**	**0.0796**
123678-HxCDF	**35.92**		**1.0004**	**1.0004**	**0**	**2.54E+06**	**1.33**	**Y**	**1.15**	**3.69**	**6460.445**	**0.0814**
123479-HxCDF	NotFnd		1.0050						1.19		6460.445	0.0857
123469-HxCDF	NotFnd		1.0091						1.19		6460.445	0.0857
123679-HxCDF	NotFnd		0.9943						1.19		6460.445	0.0857
234678-HxCDF	**36.58**	J	**1.0004**	**1.0004**	**0**	**7.95E+05**	**1.40**	**Y**	**1.19**	**1.27**	**6460.445**	**0.0867**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6460.445	0.0857
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**6460.445**	**0.0966**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	37.60	J	1.0008	1.0012	+0.9	7.37E+05	1.25	Y	1.19	1.14	6460.445	0.0857
1234678-HpCDF	**39.18**		**1.0003**	**1.0003**	**0**	**8.92E+06**	**1.09**	**Y**	**1.37**	**14.9**	**5906.097**	**0.0758**
1234679-HpCDF	39.46	**J**	1.0075	1.0076	+0.2	7.59E+05	1.03	Y	1.34	1.38	5906.097	0.0871
1234689-HpCDF	39.61		1.0113	1.0113	0	8.03E+06	1.07	Y	1.34	14.6	5906.097	0.0871
1234789-HpCDF	**40.58**		**1.0002**	**1.0002**	**0**	**1.41E+06**	**0.99**	**Y**	**1.31**	**2.83**	**5906.097**	**0.1**
OCDF	**42.91**		**1.0003**	**1.0003**	**0**	**5.40E+07**	**0.92**	**Y**	**1.07**	**198**	**7957.752**	**0.349**
OCDF-a	42.91		1.0002	1.0002	0	3.57E+06	2.73	Y	0.07	211	5772.691	4.09

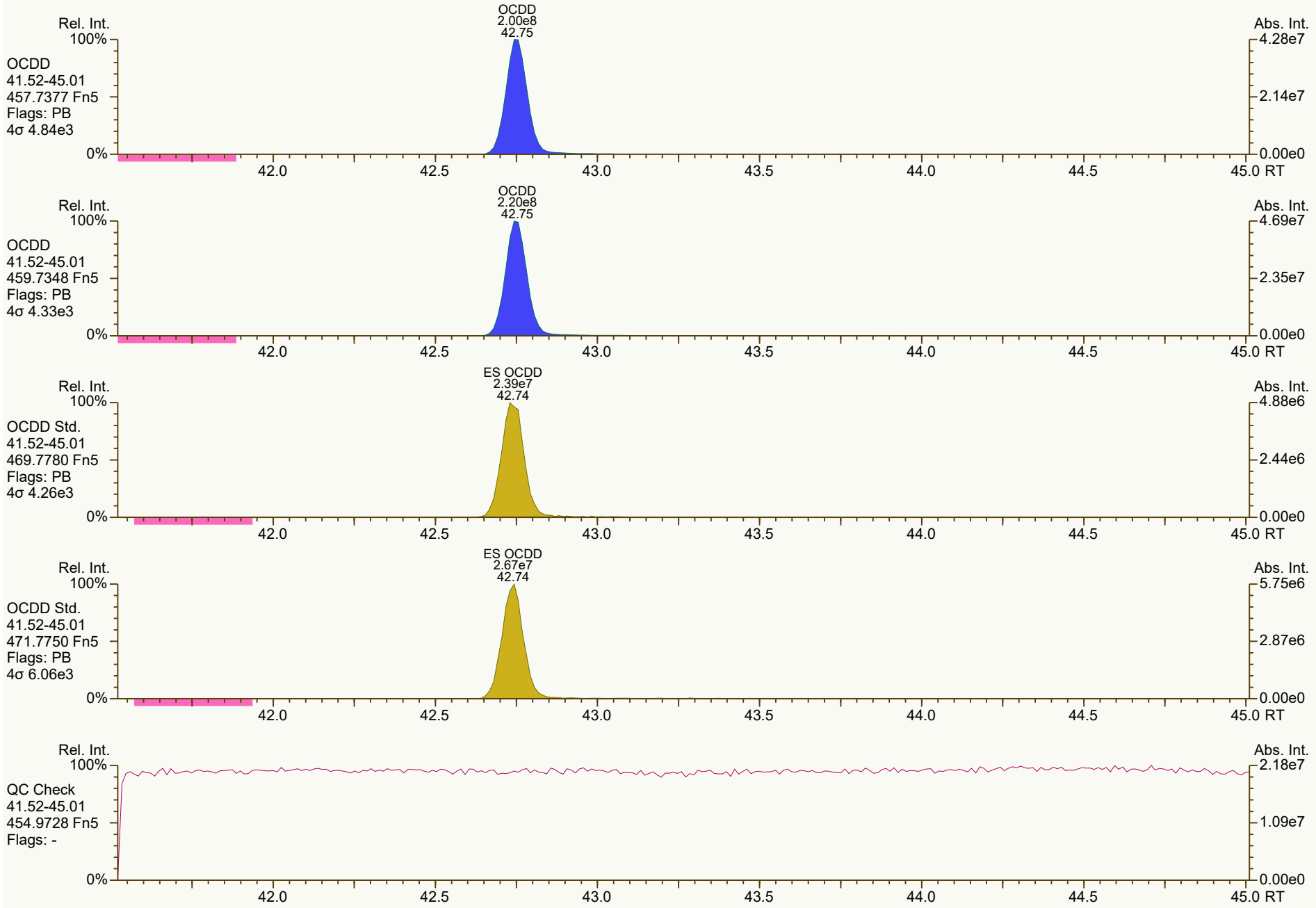

Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Abs. Int.
1.11e7
5.54e6
0.00e0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
29.0
30.0
31.0
32.0
33.0
Abs. Int.
9.69e6
4.85e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
Abs. Int.
4.40e7
2.20e7
0.00e0
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
2.63e7
1.32e7
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
2.18e7
1.09e7
0.00e0

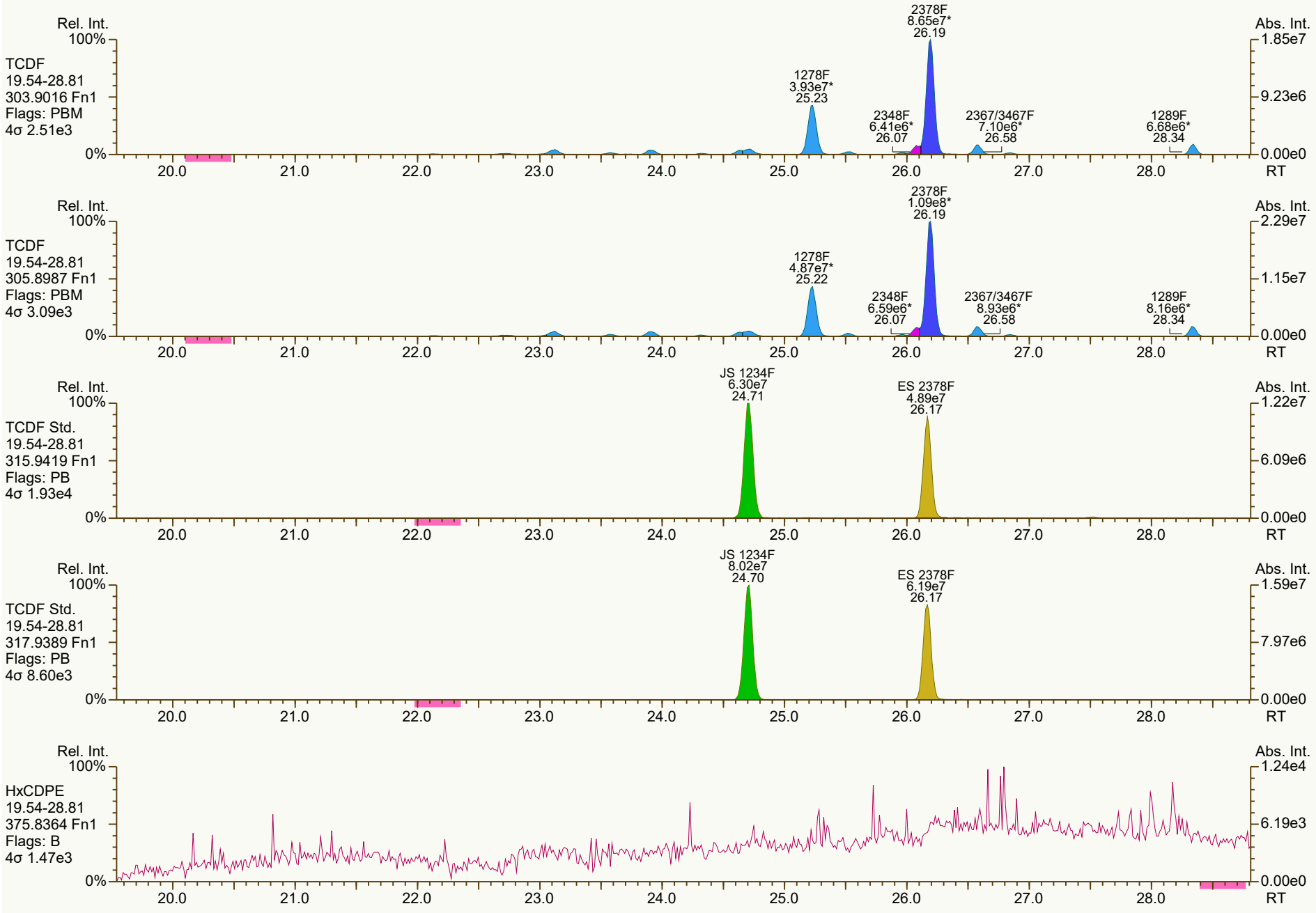

Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: PBM
4σ 5.08e3
0%
2378D
2.35e7
27.14
1469D
2.16e6
24.89
1278D
2.04e6*
27.49
Abs. Int.
5.44e6
2.72e6
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 3.19e3
0%
2378D
2.88e7
27.14
1469D
2.72e6
24.89
1278D
2.61e6*
27.49
Abs. Int.
6.40e6
3.20e6
0.00e0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 1.31e3
0%
CS 37Cl-2378D
3.32e7
27.14
Abs. Int.
7.33e6
3.67e6
0.00e0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 1.77e4
0%
JS 1234D
3.76e7
26.42
ES 2378D
3.18e7
27.11
Abs. Int.
8.39e6
4.19e6
0.00e0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 6.34e3
0%
JS 1234D
4.64e7
26.42
ES 2378D
3.90e7
27.11
Abs. Int.
1.01e7
5.05e6
0.00e0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PBM
4σ 2.50e3
0%
12469D
1.51e6*
30.74
12479/12468D
7.87e5*
30.19
12368D
2.32e5*
31.31
12478D
1.88e5*
31.52
12379D
1.64e5*
31.61
12369D...[3]
6.88e5*
31.89
12378D
4.31e5*
32.78
12367D
7.76e4*
32.88
12389D
8.43e4*
33.22
Abs. Int.
4.16e5
2.08e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PBM
4σ 2.75e3
0%
12469D
9.24e5*
30.74
12479/12468D
4.72e5*
30.19
12368D
1.26e5*
31.31
12478D
1.16e5*
31.52
12369D...[3]
4.23e5*
31.89
12378D
2.78e5*
32.78
12367D
4.77e4*
32.87
12389D
5.90e4*
33.23
Abs. Int.
2.67e5
1.33e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PBM
4σ 3.82e3
0%
CS 12347D
3.68e7*
32.25
ES 12378D
3.85e7
32.76
Abs. Int.
1.05e7
5.25e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PBM
4σ 3.67e3
0%
CS 12347D
2.27e7*
32.25
ES 12378D
2.41e7
32.76
Abs. Int.
6.80e6
3.40e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.69e6
4.85e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT

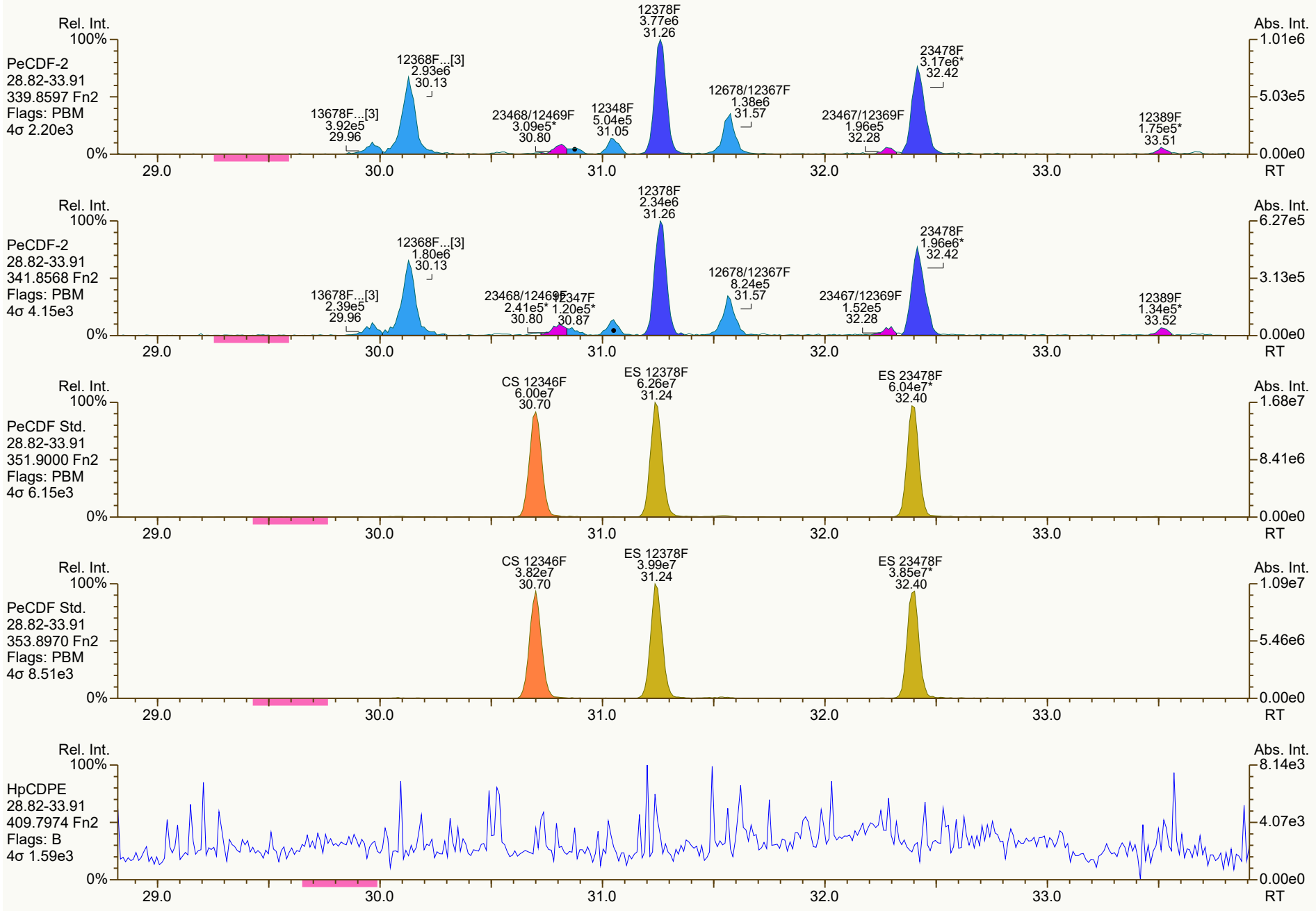

Rel. Int.
100%
HxCDD
33.92-37.91
389.8156 Fn3
Flags: PBM
4σ 4.02e3
124679/124689D
9.14e6*
35.05
123679/123689D
3.16e6*
36.01
123678D
5.70e5*
36.89
123789D
5.98e5*
37.19
Abs. Int.
2.73e6
1.37e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.91
391.8127 Fn3
Flags: PBM
4σ 4.18e3
124679/124689D
7.08e6*
35.05
123679/123689D
2.44e6*
36.01
123678D
4.39e5*
36.89
123789D
4.63e5*
37.19
Abs. Int.
2.08e6
1.04e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PB
4σ 1.02e4
ES 123678D
ES 123478D
2.84e7
36.76
2.82e7
36.87
JS 123467D
1.66e7
37.07
ES 123789D
3.13e7
37.17
Abs. Int.
8.85e6
4.43e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PB
4σ 3.47e3
ES 123678D
ES 123478D
2.18e7
36.76
2.21e7
36.87
JS 123467D
1.35e7
37.07
ES 123789D
2.44e7
37.17
Abs. Int.
7.02e6
3.51e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
Abs. Int.
4.40e7
2.20e7
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT

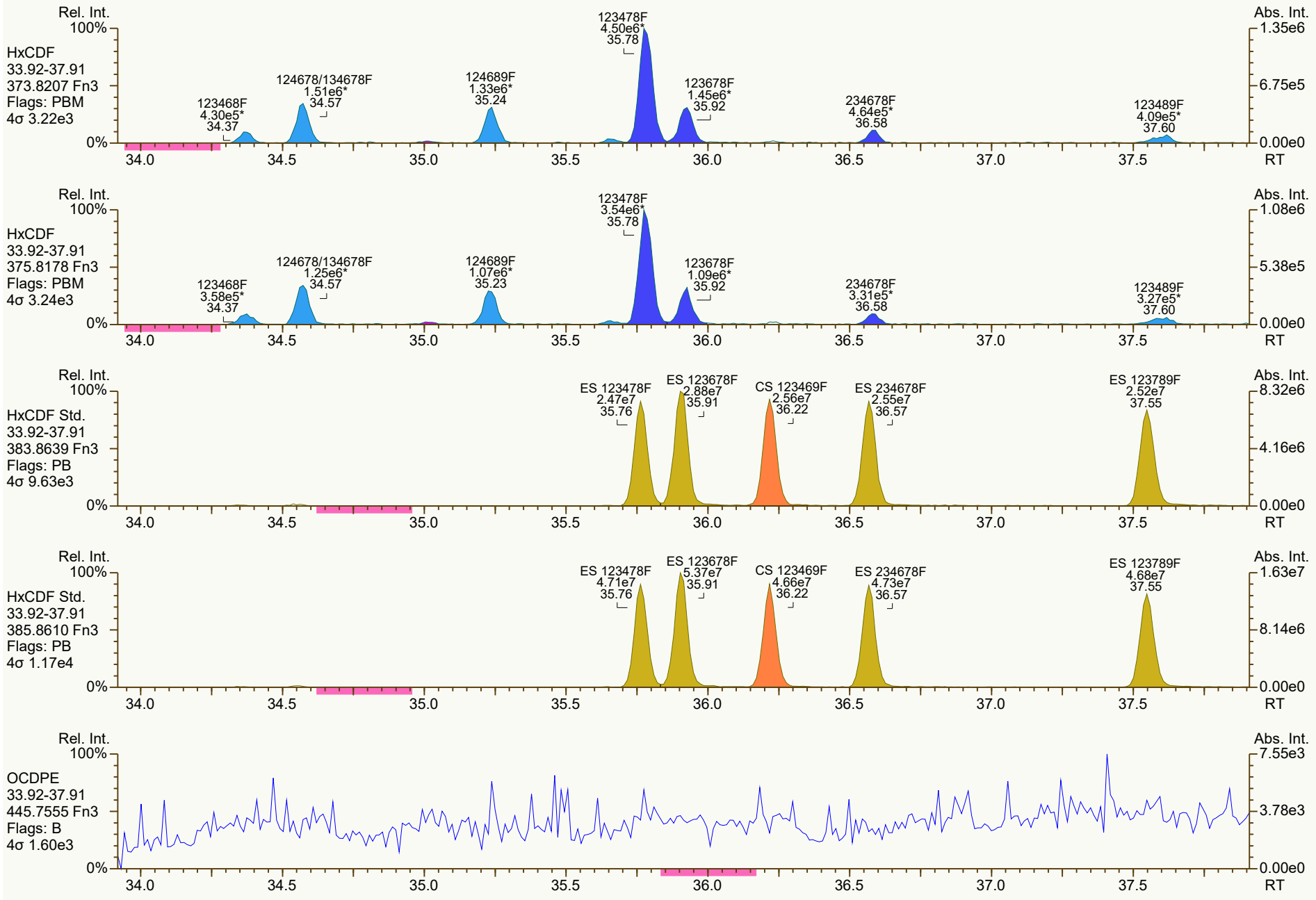

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PBM
4σ 5.52e3
0%
1234679D
2.52e7
39.47
1234678D
1.55e7*
40.16
Abs. Int.
8.08e6
4.04e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PBM
4σ 2.76e3
0%
1234679D
2.40e7
39.47
1234678D
1.46e7*
40.15
Abs. Int.
7.76e6
3.88e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 3.21e3
0%
ES 1234678D
2.54e7
40.14
Abs. Int.
8.01e6
4.00e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 1.84e3
0%
ES 1234678D
2.41e7
40.14
Abs. Int.
7.43e6
3.71e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.63e7
1.32e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

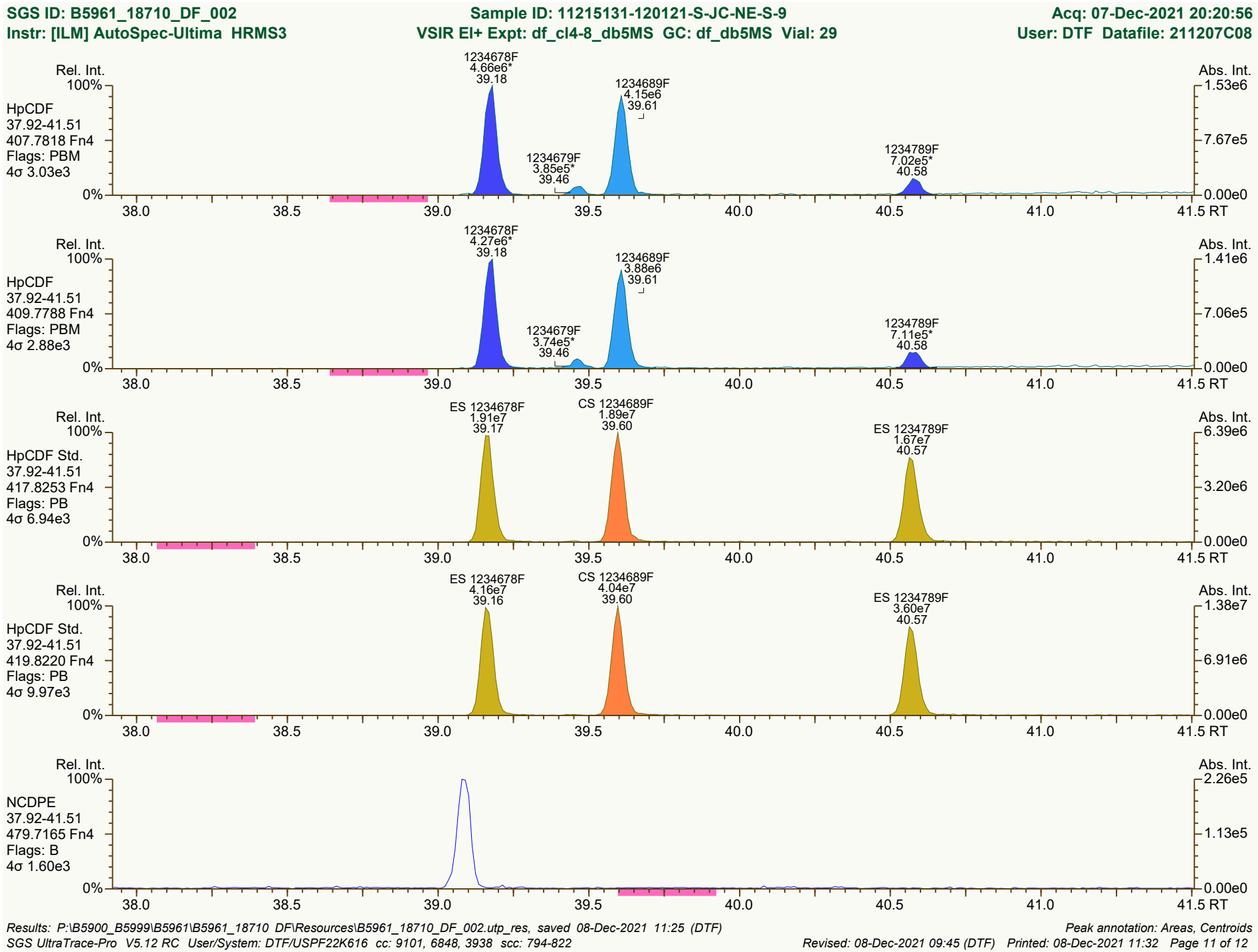

OCDD
2.00e8
42.75
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 4.84e3
0%
Abs. Int.
4.28e7
2.14e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.20e8
42.75
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 4.33e3
0%
Abs. Int.
4.69e7
2.35e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.39e7
42.74
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 4.26e3
0%
Abs. Int.
4.88e6
2.44e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.67e7
42.74
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 6.06e3
0%
Abs. Int.
5.75e6
2.87e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.18e7
1.09e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

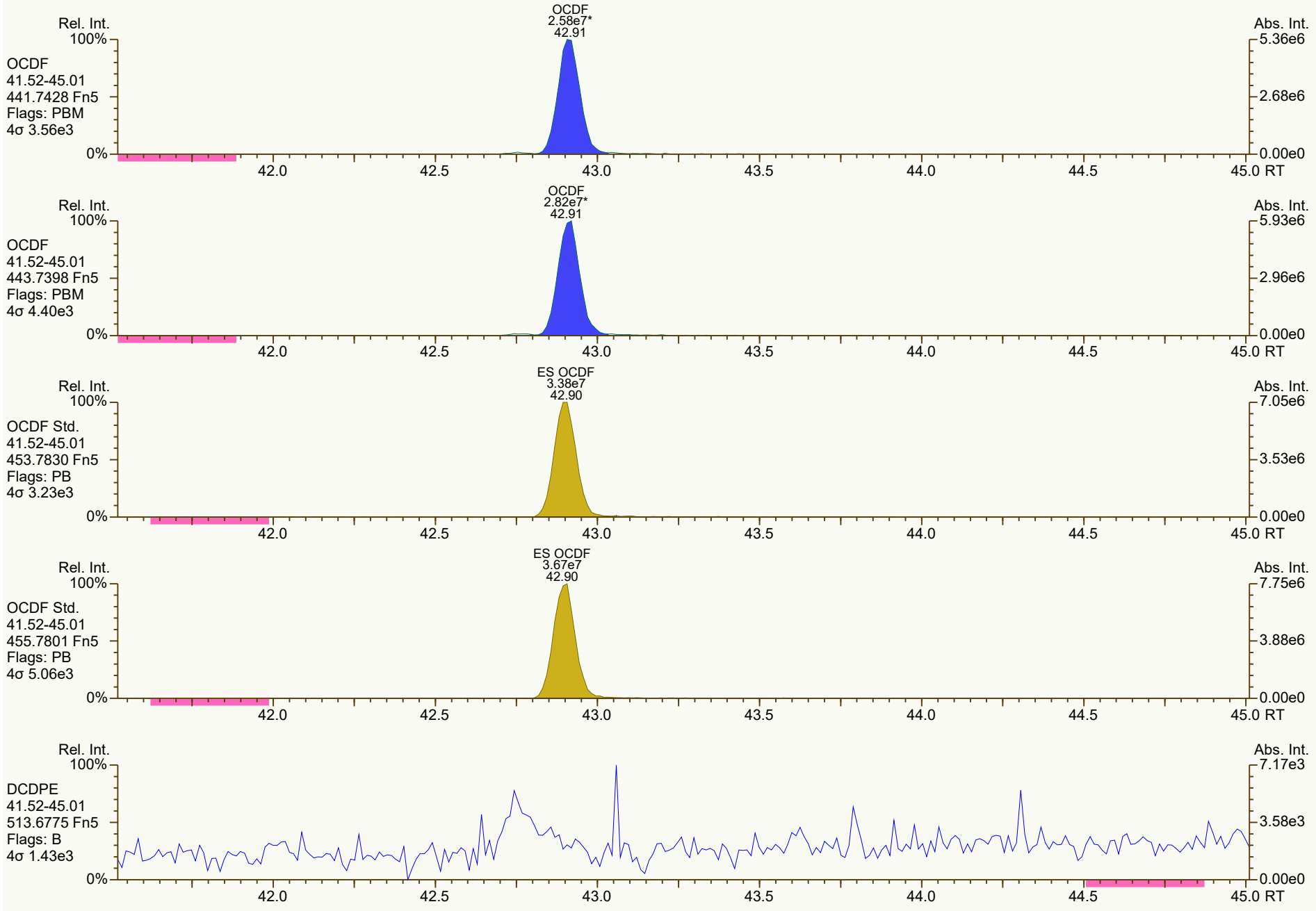

Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 2.51e3
0%
2378F
8.65e7*
26.19
1278F
3.93e7*
25.23
2348F
6.41e6*
26.07
2367/3467F
7.10e6*
26.58
1289F
6.68e6*
28.34
Abs. Int.
1.85e7
9.23e6
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 3.09e3
0%
2378F
1.09e8*
26.19
1278F
4.87e7*
25.22
2348F
6.59e6*
26.07
2367/3467F
8.93e6*
26.58
1289F
8.16e6*
28.34
Abs. Int.
2.29e7
1.15e7
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.93e4
0%
JS 1234F
6.30e7
24.71
ES 2378F
4.89e7
26.17
Abs. Int.
1.22e7
6.09e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 8.60e3
0%
JS 1234F
8.02e7
24.70
ES 2378F
6.19e7
26.17
Abs. Int.
1.59e7
7.97e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.47e3
0%
Abs. Int.
1.24e4
6.19e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
2.38e5
1.19e5
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 1.92e3
13468/12468F
9.68e5
28.34
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 2.15e3
13468/12468F
6.43e5
28.34
1.73e5
8.66e4
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
1.11e7
5.54e6


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PBM
4σ 2.20e3
0%
13678F...[3] 3.92e5 29.96
12368F...[3] 2.93e6 30.13
23468/12469F 3.09e5* 30.80
12348F 5.04e5 31.05
12378F 3.77e6 31.26
12678/12367F 1.38e6 31.57
23467/12369F 1.96e5 32.28
23478F 3.17e6* 32.42
12389F 1.75e5* 33.51
Abs. Int.
1.01e6
5.03e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PBM
4σ 4.15e3
0%
13678F...[3] 2.39e5 29.96
12368F...[3] 1.80e6 30.13
23468/12469F 2.41e5* 30.80
12347F 1.20e5* 30.87
12378F 2.34e6 31.26
12678/12367F 8.24e5 31.57
23467/12369F 1.52e5 32.28
23478F 1.96e6* 32.42
12389F 1.34e5* 33.52
Abs. Int.
6.27e5
3.13e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PBM
4σ 6.15e3
0%
CS 12346F 6.00e7 30.70
ES 12378F 6.26e7 31.24
ES 23478F 6.04e7* 32.40
Abs. Int.
1.68e7
8.41e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PBM
4σ 8.51e3
0%
CS 12346F 3.82e7 30.70
ES 12378F 3.99e7 31.24
ES 23478F 3.85e7* 32.40
Abs. Int.
1.09e7
5.46e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.14e3
4.07e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PBM
4σ 3.22e3
123468F 4.30e5* 34.37
124678/134678F 1.51e6* 34.57
124689F 1.33e6* 35.24
123478F 4.50e6* 35.78
123678F 1.45e6* 35.92
234678F 4.64e5* 36.58
123489F 4.09e5* 37.60
Abs. Int.
1.35e6
6.75e5
0.00e0
0%
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PBM
4σ 3.24e3
123468F 3.58e5* 34.37
124678/134678F 1.25e6* 34.57
124689F 1.07e6* 35.23
123478F 3.54e6* 35.78
123678F 1.09e6* 35.92
234678F 3.31e5* 36.58
123489F 3.27e5* 37.60
1.08e6
5.38e5
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PB
4σ 9.63e3
ES 123478F 2.47e7 35.76
ES 123678F 2.88e7 35.91
CS 123469F 2.56e7 36.22
ES 234678F 2.55e7 36.57
ES 123789F 2.52e7 37.55
8.32e6
4.16e6
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PB
4σ 1.17e4
ES 123478F 4.71e7 35.76
ES 123678F 5.37e7 35.91
CS 123469F 4.66e7 36.22
ES 234678F 4.73e7 36.57
ES 123789F 4.68e7 37.55
1.63e7
8.14e6
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 1.60e3
7.55e3
3.78e3


SGS ID: B5961_18710_DF_002
Sample ID: 11215131-120121-S-JC-NE-S-9
Acq: 07-Dec-2021 20:20:56
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: DTF Datafile: 211207C08
Rel. Int.
Abs. Int.
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PBM
4σ 3.03e3
1234678F
4.66e6*
39.18
1234689F
4.15e6
39.61
1234679F
3.85e5*
39.46
1234789F
7.02e5*
40.58
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PBM
4σ 2.88e3
1234678F
4.27e6*
39.18
1234689F
3.88e6
39.61
1234679F
3.74e5*
39.46
1234789F
7.11e5*
40.58
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PB
4σ 6.94e3
ES 1234678F
1.91e7
39.17
CS 1234689F
1.89e7
39.60
ES 1234789F
1.67e7
40.57
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PB
4σ 9.97e3
ES 1234678F
4.16e7
39.16
CS 1234689F
4.04e7
39.60
ES 1234789F
3.60e7
40.57
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.60e3
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_002.utp_res, saved 08-Dec-2021 11:25 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9101, 6848, 3938 scc: 794-822
Revised: 08-Dec-2021 09:45 (DTF) Printed: 08-Dec-2021 11:32 Page 11 of 12


OCDF
2.58e7*
42.91
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 3.56e3
0%
Abs. Int.
5.36e6
2.68e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.82e7*
42.91
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 4.40e3
0%
Abs. Int.
5.93e6
2.96e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.38e7
42.90
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 3.23e3
0%
Abs. Int.
7.05e6
3.53e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.67e7
42.90
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 5.06e3
0%
Abs. Int.
7.75e6
3.88e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.43e3
0%
Abs. Int.
7.17e3
3.58e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5961_18710_DF_003 **Acq'd:** 07 Dec 2021 21:07 DTF **Wt/Vol:** 13.22 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-S-10 **UTP:** 08-Dec-2021 11:25:17 DTF **J-level:** 0.378 pg/g **Split:** 1 **Checkcode:** 391-487-NRG

Datafile: 211207C09 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.15		1.0009	1.0009	0	2.17E+07	0.84	Y	1.18	56.7	16774.343	0.501
12378-PeCDD	32.79		1.0006	1.0005	-0.2	6.00E+05	1.49	Y	1.04	1.91	20683.892	0.61
123478-HxCDD	36.78	J	1.0004	1.0003	-0.2	5.07E+05	1.39	Y	1.09	1.8	16870.502	0.485
123678-HxCDD	36.90		1.0035	1.0036	+0.2	1.52E+06	1.29	Y	1.15	5.24	16870.502	0.503
123789-HxCDD	37.20		1.0117	1.0117	0	1.13E+06	1.24	Y	1.05	3.7	16870.502	0.484
1234678-HpCDD	40.16		1.0003	1.0003	0	4.50E+07	1.02	Y	1.06	179	8725.389	0.266
OCDD	42.77	E	1.0003	1.0003	0	1.36E+09	0.90	Y	1.13	10,500	10412.213	0.981
2378-TCDF	26.20		1.0009	1.0009	0	1.00E+08	0.80	Y	1.08	182	7917.954	0.178
12378-PeCDF	31.28		1.0005	1.0006	+0.2	2.31E+06	1.61	Y	1.02	4.56	9775.052	0.184
23478-PeCDF	32.44		1.0006	1.0009	+0.6	2.55E+06	1.48	Y	1.02	5.46	9775.052	0.187
123478-HxCDF	35.79		1.0005	1.0005	0	3.09E+06	1.22	Y	1.27	6.78	13614.242	0.245
123678-HxCDF	35.94		1.0004	1.0005	+0.2	1.12E+06	1.32	Y	1.15	2.34	13614.242	0.236
234678-HxCDF	36.59		1.0004	1.0004	0	8.61E+05	1.42	Y	1.19	1.92	13614.242	0.256
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	13614.242	0.282
1234678-HpCDF	39.19		1.0003	1.0003	0	2.30E+07	1.05	Y	1.37	55.2	7339.144	0.134
1234789-HpCDF	40.59		1.0002	1.0003	+0.2	2.43E+06	1.11	Y	1.31	7.26	7339.144	0.186
OCDF	42.92		1.0003	1.0003	0	2.32E+08	0.90	Y	1.07	1,390	7549.049	0.532

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.12	1.0260	1.0261	+0.2	4.89E+07	0.81	Y	1.05	83.2
ES 12378-PeCDD	32.77	1.2396	1.2398	+0.4	4.57E+07	1.58	Y	0.88	92.6
ES 123478-HxCDD	36.77	0.9916	0.9915	-0.2	3.91E+07	1.27	Y	0.97	86.5
ES 123678-HxCDD	36.88	0.9947	0.9946	-0.2	3.81E+07	1.27	Y	0.94	86.8
ES 123789-HxCDD	37.19	1.0027	1.0028	+0.2	4.40E+07	1.26	Y	1.09	86.6
ES 1234678-HpCDD	40.15	1.0828	1.0827	-0.2	3.58E+07	1.07	Y	0.91	84.2
ES OCDD	42.75	1.1528	1.1529	+0.3	3.46E+07	0.92	Y	0.62	59.6
ES 2378-TCDF	26.18	1.0591	1.0593	+0.3	7.75E+07	0.79	Y	1.06	78.2
ES 12378-PeCDF	31.26	1.2643	1.2647	+0.8	7.46E+07	1.59	Y	0.91	87.6
ES 23478-PeCDF	32.41	1.3110	1.3113	+0.6	6.93E+07	1.54	Y	0.88	84
ES 123478-HxCDF	35.78	0.9648	0.9647	-0.2	5.42E+07	0.53	Y	1.20	97.1
ES 123678-HxCDF	35.92	0.9686	0.9686	0	6.25E+07	0.55	Y	1.35	99.4
ES 234678-HxCDF	36.58	0.9865	0.9864	-0.2	5.72E+07	0.54	Y	1.24	98.8
ES 123789-HxCDF	37.56	1.0129	1.0129	0	5.40E+07	0.55	Y	1.16	100
ES 1234678-HpCDF	39.17	1.0565	1.0564	-0.2	4.60E+07	0.47	Y	0.97	102
ES 1234789-HpCDF	40.58	1.0943	1.0942	-0.2	3.88E+07	0.47	Y	0.85	97.9
ES OCDF	42.91	1.1569	1.1571	+0.5	4.71E+07	0.94	Y	0.81	62.7

Lab ID: B5961_18710_DF_003 **Acq'd:** 07 Dec 2021 21:07 DTF **Wt/Vol:** 13.22 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-S-10 **UTP:** 08-Dec-2021 11:25:17 DTF **J-level:** 0.378 pg/g **Split:** 1 **Checkcode:** 391-487-NRG

Datafile: 211207C09 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.43		-	-	-	5.61E+07	0.82	Y	-	-	
JS 1234-TCDF	24.72		-	-	-	9.35E+07	0.80	Y	-	-	
JS 123467-HxCDD	37.08		-	-	-	2.33E+07	1.27	Y	-	-	
CS 37Cl-2378-TCDD	27.15		1.0269	1.0270	+0.2	2.34E+07	n/a	-	1.20	86.8	
CS 12347-PeCDD	32.26		1.2203	1.2204	+0.2	4.20E+07	1.59	Y	0.75	99.4	
CS 12346-PeCDF	30.72		1.2424	1.2428	+0.7	7.01E+07	1.57	Y	0.85	88.1	
CS 123469-HxCDF	36.23		0.9771	0.9770	-0.2	5.73E+07	0.54	Y	1.12	110	
CS 1234689-HpCDF	39.61		1.0681	1.0680	-0.2	4.56E+07	0.45	Y	0.89	110	
~~SS 37Cl-2378-TCDD~~	~~27.15~~		~~1.0269~~	~~1.0270~~	~~+0.2~~	~~2.34E+07~~	~~n/a~~		~~1.15~~	~~105~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.26~~		~~1.2203~~	~~1.2204~~	~~+0.2~~	~~4.20E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~107~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.72~~		~~1.2424~~	~~1.2428~~	~~+0.7~~	~~7.01E+07~~	~~1.57~~	~~Y~~	~~0.94~~	~~100~~	
~~SS 123469-HxCDF~~	~~36.23~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~5.73E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~111~~	
~~SS 1234689-HpCDF~~	~~39.61~~		~~1.0681~~	~~1.0680~~	~~-0.2~~	~~4.56E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~108~~	

Totals	Conc	EMPC
Total TCDD	62.7	67.9
Total PeCDD	10.6	14.6
Total HxCDD	65.8	67.1
Total HpCDD	420	420
Total Tetra-Octa Dioxins	11100	11100
Total TCDF	303	309
Total PeCDF	30.1	30.5
Total HxCDF	37.7	38.8
Total HpCDF	114	114
Total Tetra-Octa Furans	1,870	1880
Total Tetra-Octa Dioxins & Furans	13000	13000

Lab ID: B5961_18710_DF_003 **Acq'd: 07 Dec 2021 21:07 DTF** **Wt/Vol: 13.22 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-JC-NE-S-10 **UTP: 08-Dec-2021 11:25:17 DTF** **J-level: 0.378 pg/g** **Split: 1** **Checkcode: 391-487-NRG**

Datafile: 211207C09 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.17		0.8545	0.8540	-0.7	6.41E+05	0.80	Y	1.18	1.68	16774.343	0.501
1379-TCDD	NotFnd		0.8692						1.18		16774.343	0.501
1369-TCDD	NotFnd		0.8868						1.18		16774.343	0.501
1469-TCDD	24.90		0.9185	0.9182	-0.4	1.64E+06	0.87	Y	1.18	4.29	16774.343	0.501
1247/1246/1248/1249-TCDD	NotFnd		0.9282						1.18		16774.343	0.501
1378-TCDD	NotFnd		0.9355						1.18		16774.343	0.501
1268-TCDD	NotFnd		0.9435						1.18		16774.343	0.501
1478-TCDD	NotFnd		0.9533						1.18		16774.343	0.501
1279-TCDD	NotFnd		0.9601						1.18		16774.343	0.501
1234/1269-TCDD	NotFnd		0.9741						1.18		16774.343	0.501
1236-TCDD	NotFnd		0.9797						1.18		16774.343	0.501
1237/1238-TCDD	NotFnd		0.9898						1.18		16774.343	0.501
1239-TCDD	NotFnd		0.9952						1.18		16774.343	0.501
2378-TCDD	**27.15**		**1.0009**	1.0009	**0**	2.17E+07	0.84	Y	**1.18**	**56.7**	**16774.343**	**0.501**
1278-TCDD	27.49	EMPC	1.0139	1.0136	-0.5	2.02E+06	0.99	N	1.18	5.27	16774.343	0.501
1267-TCDD	NotFnd		1.0193						1.18		16774.343	0.501
1289-TCDD	NotFnd		1.0393						1.18		16774.343	0.501
12479/12468-PeCDD	30.20	EMPC	0.9216	0.9215	-0.2	1.06E+06	1.83	N	1.04	3.39	20683.892	0.61
12469-PeCDD	30.76		0.9386	0.9385	-0.2	1.10E+06	1.76	Y	1.04	3.52	20683.892	0.61
12368-PeCDD	31.33	J	0.9560	0.9560	0	3.83E+05	1.52	Y	1.04	1.22	20683.892	0.61
12478-PeCDD	31.53	J	0.9619	0.9621	+0.4	4.81E+05	1.35	Y	1.04	1.53	20683.892	0.61
12379-PeCDD	31.64	J EMPC	0.9651	0.9653	+0.4	2.16E+05	1.81	N	1.04	0.69	20683.892	0.61
12369/12467/12489-PeCDD	31.90		0.9735	0.9734	-0.2	7.43E+05	1.77	Y	1.04	2.37	20683.892	0.61
12346/12347-PeCDD	NotFnd		0.9852						1.04		20683.892	0.61
12378-PeCDD	32.79		**1.0006**	**1.0005**	**-0.2**	**6.00E+05**	**1.49**	**Y**	**1.04**	**1.91**	**20683.892**	**0.61**
12367-PeCDD	NotFnd		1.0037						1.04		20683.892	0.61
12389-PeCDD	NotFnd		1.0145						1.04		20683.892	0.61
124679/124689-HxCDD	35.06		0.9535	0.9535	0	8.72E+06	1.26	Y	1.10	29.8	16870.502	0.489
123468-HxCDD	35.73		0.9716	0.9717	+0.2	1.02E+06	1.35	Y	1.10	3.47	16870.502	0.489
123679/123689-HxCDD	36.02		0.9796	0.9797	+0.2	5.94E+06	1.26	Y	1.10	20.3	16870.502	0.489
123469-HxCDD	36.15	J	0.9833	0.9832	-0.2	4.51E+05	1.07	Y	1.10	1.54	16870.502	0.489
123478-HxCDD	36.78	J	**1.0004**	**1.0003**	**-0.2**	**5.07E+05**	**1.39**	**Y**	1.09	**1.8**	**16870.502**	**0.485**
123678-HxCDD	36.90		**1.0035**	**1.0036**	**+0.2**	**1.52E+06**	**1.29**	**Y**	1.15	**5.24**	**16870.502**	**0.503**
123467-HxCDD	37.10	J EMPC	1.0088	1.0090	+0.4	3.83E+05	1.45	N	1.10	1.31	16870.502	0.489
123789-HxCDD	37.20		**1.0117**	**1.0117**	**0**	**1.13E+06**	**1.24**	**Y**	1.05	**3.7**	**16870.502**	**0.484**

Lab ID: B5961_18710_DF_003 **Acq'd:** 07 Dec 2021 21:07 DTF **Wt/Vol:** 13.22 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-S-10 **UTP:** 08-Dec-2021 11:25:17 DTF **J-level:** 0.378 pg/g **Split:** 1 **Checkcode:** 391-487-NRG

Datafile: 211207C09 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

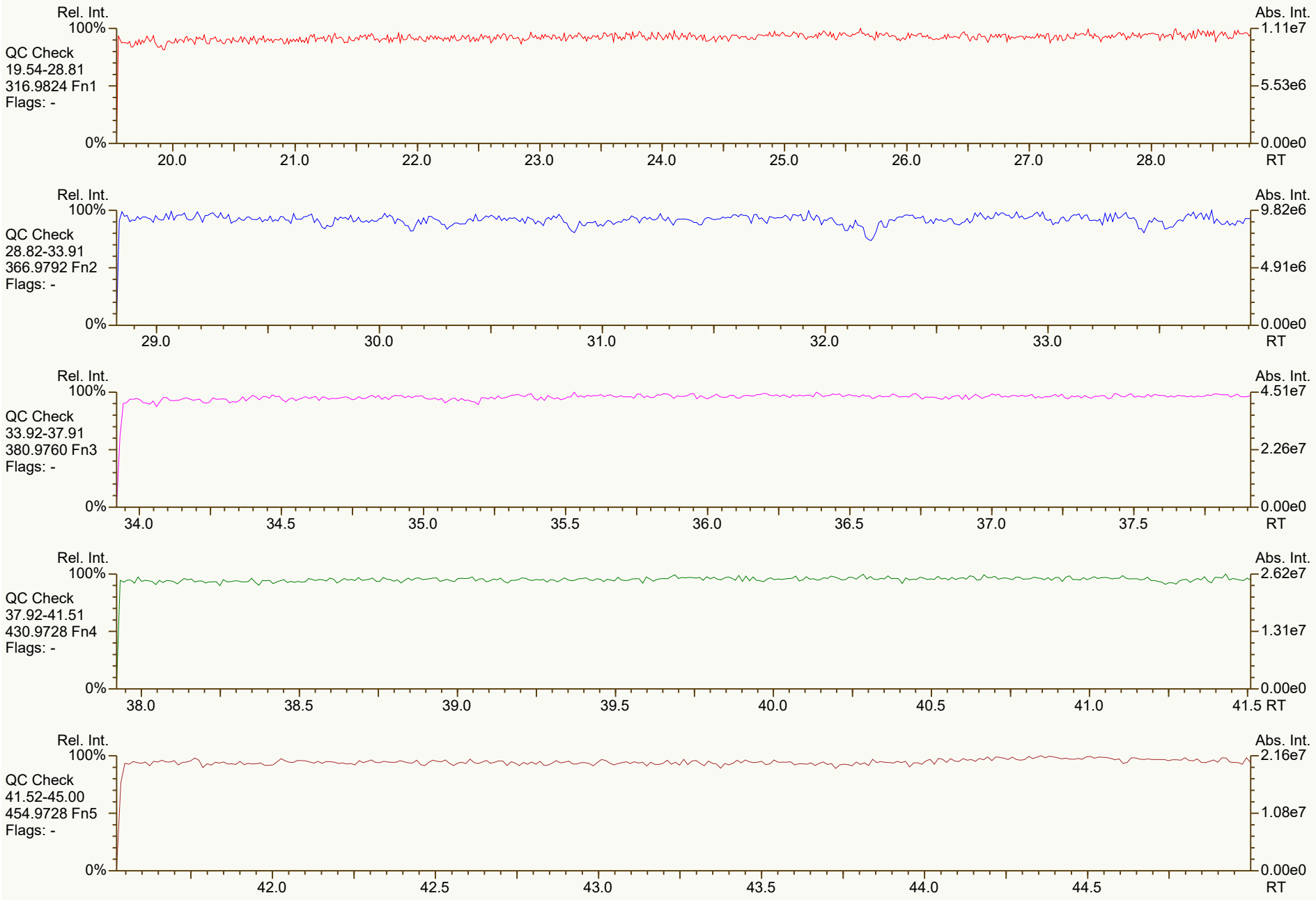
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.48		0.9833	0.9833	0	6.04E+07	1.06	Y	1.06	241	8725.389	0.266
1234678-HpCDD	**40.16**		**1.0003**	**1.0003**	**0**	**4.50E+07**	**1.02**	**Y**	**1.06**	**179**	**8725.389**	**0.266**
OCDD	**42.77**	**E**	**1.0003**	**1.0003**	**0**	**1.36E+09**	**0.90**	**Y**	**1.13**	**10,500**	**10412.213**	**0.981**
OCDD-a	42.76	**E**	1.0002	1.0002	0	8.21E+07	2.56	Y	0.07	9,960	11753.061	17.3
1368-TCDF	20.92	EMPC	0.7998	0.7991	-0.9	2.54E+05	1.00	N	1.08	0.46	7917.954	0.178
1468-TCDF	21.49		0.8214	0.8208	-0.8	6.72E+05	0.87	Y	1.08	1.22	7917.954	0.178
2468-TCDF	22.14		0.8463	0.8458	-0.7	1.69E+06	0.85	Y	1.08	3.05	7917.954	0.178
1346/1246-TCDF	22.58		0.8608	0.8624	+2.2	3.64E+05	0.75	Y	1.08	0.659	7917.954	0.178
1347/1378/1247-TCDF	22.73		0.8675	0.8683	+1.1	1.64E+06	0.79	Y	1.08	2.97	7917.954	0.178
1348-TCDF	23.02		0.8793	0.8791	-0.3	5.98E+05	0.83	Y	1.08	1.08	7917.954	0.178
1248/1367/1379-TCDF	23.13		0.8850	0.8834	-2.2	4.11E+06	0.80	Y	1.08	7.43	7917.954	0.178
1268-TCDF	23.59		0.9010	0.9010	0	2.03E+06	0.81	Y	1.08	3.68	7917.954	0.178
1467-TCDF	23.74		0.9068	0.9067	-0.1	3.80E+05	0.86	Y	1.08	0.688	7917.954	0.178
1478-TCDF	23.92		0.9139	0.9135	-0.6	4.74E+06	0.80	Y	1.08	8.57	7917.954	0.178
1369/1237-TCDF	24.33		0.9294	0.9295	+0.1	1.16E+06	0.77	Y	1.08	2.1	7917.954	0.178
2467-TCDF	24.47		0.9350	0.9348	-0.3	3.30E+05	0.73	Y	1.08	0.597	7917.954	0.178
2368-TCDF	24.64		0.9410	0.9413	+0.4	4.57E+06	0.78	Y	1.08	8.27	7917.954	0.178
1238/1234/1678/1469/1236-TCDF	24.74		0.9451	0.9450	-0.1	2.87E+06	0.81	Y	1.08	5.18	7917.954	0.178
1278-TCDF	25.24		0.9642	0.9640	-0.3	2.33E+07	0.80	Y	1.08	42.2	7917.954	0.178
1349-TCDF	NotFnd		0.9695						1.08		7917.954	0.178
1267-TCDF	25.53		0.9753	0.9752	-0.2	2.29E+06	0.85	Y	1.08	4.15	7917.954	0.178
2346/1249-TCDF	NotFnd		0.9832						1.08		7917.954	0.178
2347/1279-TCDF	25.97		0.9921	0.9918	-0.5	1.20E+06	0.82	Y	1.08	2.17	7917.954	0.178
2348-TCDF	26.08	EMPC	0.9970	0.9963	-1.1	3.10E+06	1.01	N	1.08	5.6	7917.954	0.178
2378-TCDF	**26.20**		**1.0009**	**1.0009**	**0**	**1.00E+08**	**0.80**	**Y**	**1.08**	**182**	**7917.954**	**0.178**
2367/3467-TCDF	26.59		1.0162	1.0156	-1.0	1.01E+07	0.79	Y	1.08	18.3	7917.954	0.178
1269-TCDF	26.85		1.0259	1.0257	-0.3	1.09E+06	0.83	Y	1.08	1.98	7917.954	0.178
1239-TCDF	NotFnd		1.0370						1.08		7917.954	0.178
1289-TCDF	28.35		1.0829	1.0829	0	3.79E+06	0.80	Y	1.08	6.86	7917.954	0.178
13468/12468-PeCDF	28.36		0.9067	0.9071	+0.7	2.93E+06	1.61	Y	1.02	6.03	4433.642	0.0841
13678/13467/12467-PeCDF	29.97	J	0.9583	0.9588	+0.9	5.74E+05	1.62	Y	1.02	1.18	9775.052	0.186
12368/13478/12478-PeCDF	30.14		0.9635	0.9644	+1.6	3.39E+06	1.53	Y	1.02	6.98	9775.052	0.186
14678-PeCDF	NotFnd		0.9669						1.02		9775.052	0.186
13479-PeCDF	NotFnd		0.9701						1.02		9775.052	0.186
13469/12479-PeCDF	NotFnd		0.9784						1.02		9775.052	0.186
12346-PeCDF	NotFnd		0.9831						1.02		9775.052	0.186

Lab ID: B5961_18710_DF_003 **Acq'd: 07 Dec 2021 21:07 DTF** **Wt/Vol: 13.22 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-JC-NE-S-10 **UTP: 08-Dec-2021 11:25:17 DTF** **J-level: 0.378 pg/g** **Split: 1** **Checkcode: 391-487-NRG**

Datafile: 211207C09 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.83		0.9859	0.9863	+0.7	1.13E+06	1.60	Y	1.02	2.33	9775.052	0.186
12347-PeCDF	NotFnd		0.9885						1.02		9775.052	0.186
12348-PeCDF	31.07	J	0.9937	0.9938	+0.2	4.92E+05	1.75	Y	1.02	1.01	9775.052	0.186
12378-PeCDF	**31.28**		**1.0005**	**1.0006**	**+0.2**	**2.31E+06**	**1.61**	**Y**	**1.02**	**4.56**	**9775.052**	**0.184**
12678/12367-PeCDF	31.60		1.0097	1.0109	+2.3	1.10E+06	1.46	Y	1.02	2.27	9775.052	0.186
12379-PeCDF	NotFnd		1.0153						1.02		9775.052	0.186
12679-PeCDF	NotFnd		0.9925						1.02		9775.052	0.186
23467/12369-PeCDF	32.30	J EMPC	0.9966	0.9967	+0.2	1.95E+05	1.23	N	1.02	0.402	9775.052	0.186
23478-PeCDF	**32.44**		**1.0006**	**1.0009**	**+0.6**	**2.55E+06**	**1.48**	**Y**	**1.02**	**5.46**	**9775.052**	**0.187**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		9775.052	0.186
12349-PeCDF	NotFnd		1.0108						1.02		9775.052	0.186
12389-PeCDF	33.53	J	1.0346	1.0346	0	1.58E+05	1.45	Y	1.02	0.325	9775.052	0.186
123468-HxCDF	34.38		0.9610	0.9611	+0.2	1.52E+06	1.27	Y	1.19	3.37	13614.242	0.254
124678/134678-HxCDF	34.58		0.9667	0.9667	0	4.43E+06	1.29	Y	1.19	9.86	13614.242	0.254
134679-HxCDF	NotFnd		0.9732						1.19		13614.242	0.254
124679-HxCDF	35.02	J EMPC	0.9788	0.9788	0	2.11E+05	1.48	N	1.19	0.47	13614.242	0.254
124689-HxCDF	35.25		0.9852	0.9853	+0.2	5.13E+06	1.24	Y	1.19	11.4	13614.242	0.254
123467-HxCDF	35.67	J	0.9971	0.9971	0	4.05E+05	1.27	Y	1.19	0.901	13614.242	0.254
123478-HxCDF	**35.79**		**1.0005**	**1.0005**	**0**	**3.09E+06**	**1.22**	**Y**	**1.27**	**6.78**	**13614.242**	**0.245**
123678-HxCDF	**35.94**		**1.0004**	**1.0005**	**+0.2**	**1.12E+06**	**1.32**	**Y**	**1.15**	**2.34**	**13614.242**	**0.236**
123479-HxCDF	NotFnd		1.0050						1.19		13614.242	0.254
123469-HxCDF	36.25	J EMPC	1.0091	1.0092	+0.2	2.76E+05	0.94	N	1.19	0.615	13614.242	0.254
123679-HxCDF	NotFnd		0.9943						1.19		13614.242	0.254
234678-HxCDF	**36.59**		**1.0004**	**1.0004**	**0**	**8.61E+05**	**1.42**	**Y**	**1.19**	**1.92**	**13614.242**	**0.256**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		13614.242	0.254
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**13614.242**	**0.282**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	37.61	J	1.0008	1.0013	+1.1	5.21E+05	1.19	Y	1.19	1.16	13614.242	0.254
1234678-HpCDF	**39.19**		**1.0003**	**1.0003**	**0**	**2.30E+07**	**1.05**	**Y**	**1.37**	**55.2**	**7339.144**	**0.134**
1234679-HpCDF	39.47		1.0075	1.0076	+0.2	2.30E+06	1.10	Y	1.34	6.13	7339.144	0.157
1234689-HpCDF	39.62		1.0113	1.0114	+0.2	1.69E+07	1.06	Y	1.34	45.1	7339.144	0.157
1234789-HpCDF	**40.59**		**1.0002**	**1.0003**	**+0.2**	**2.43E+06**	**1.11**	**Y**	**1.31**	**7.26**	**7339.144**	**0.186**
OCDF	**42.92**		**1.0003**	**1.0003**	**0**	**2.32E+08**	**0.90**	**Y**	**1.07**	**1,390**	**7549.049**	**0.532**
OCDF-a	42.92		1.0002	1.0002	0	1.47E+07	2.49	Y	0.07	1,430	4978.693	5.66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20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
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4.91e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
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2.26e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
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1.31e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
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1.08e7
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42.0
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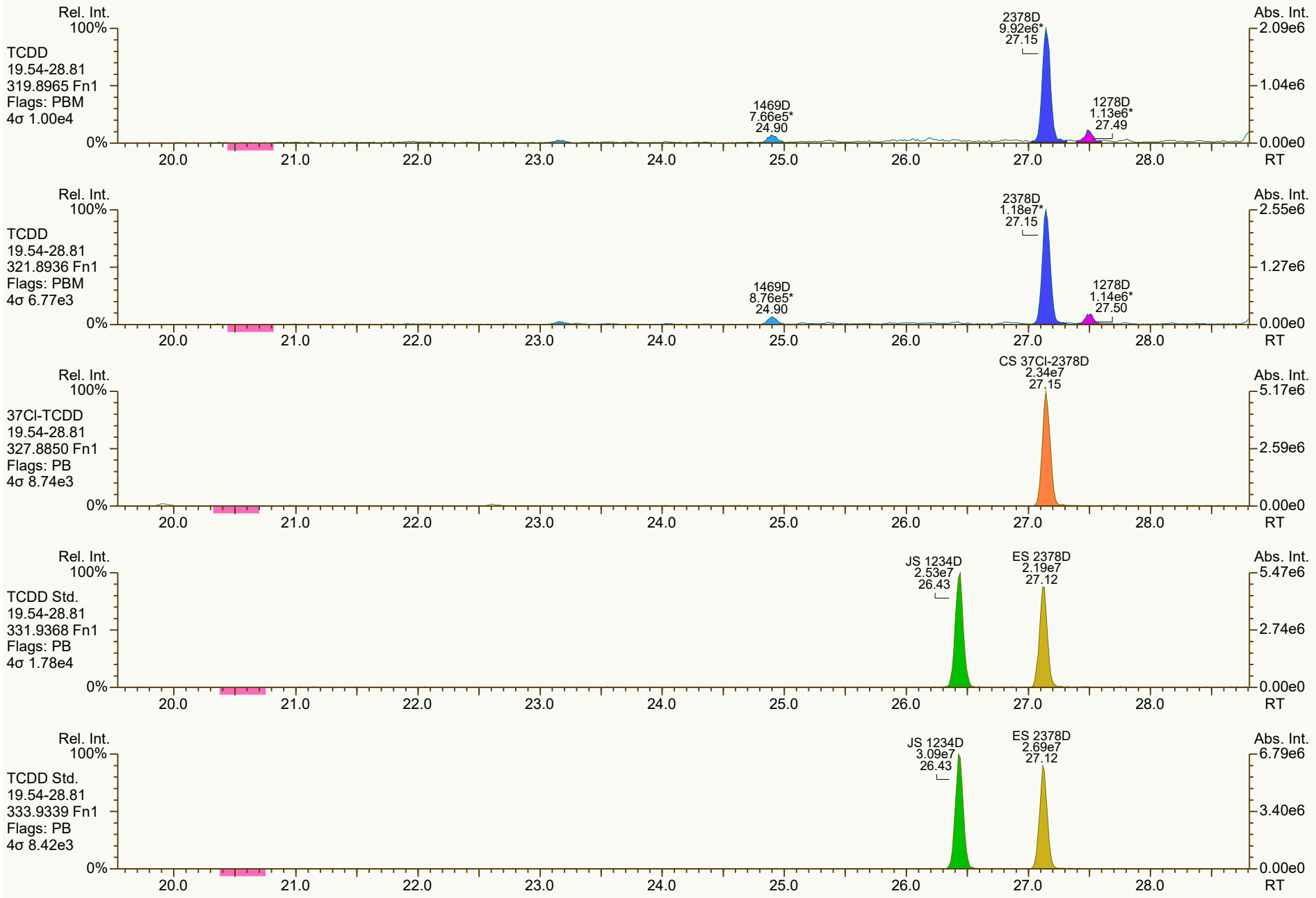
43.0
43.5
44.0
44.5
RT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0%
2378D
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27.15
1469D
7.66e5*
24.90
1278D
1.13e6*
27.49
Abs. Int.
2.09e6
1.04e6
0.00e0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 6.77e3
0%
2378D
1.18e7*
27.15
1469D
8.76e5*
24.90
1278D
1.14e6*
27.50
Abs. Int.
2.55e6
1.27e6
0.00e0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 8.74e3
0%
CS 37Cl-2378D
2.34e7
27.15
Abs. Int.
5.17e6
2.59e6
0.00e0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 1.78e4
0%
JS 1234D
2.53e7
26.43
ES 2378D
2.19e7
27.12
Abs. Int.
5.47e6
2.74e6
0.00e0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 8.42e3
0%
JS 1234D
3.09e7
26.43
ES 2378D
2.69e7
27.12
Abs. Int.
6.79e6
3.40e6
0.00e0
RT
20.0
21.0
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24.0
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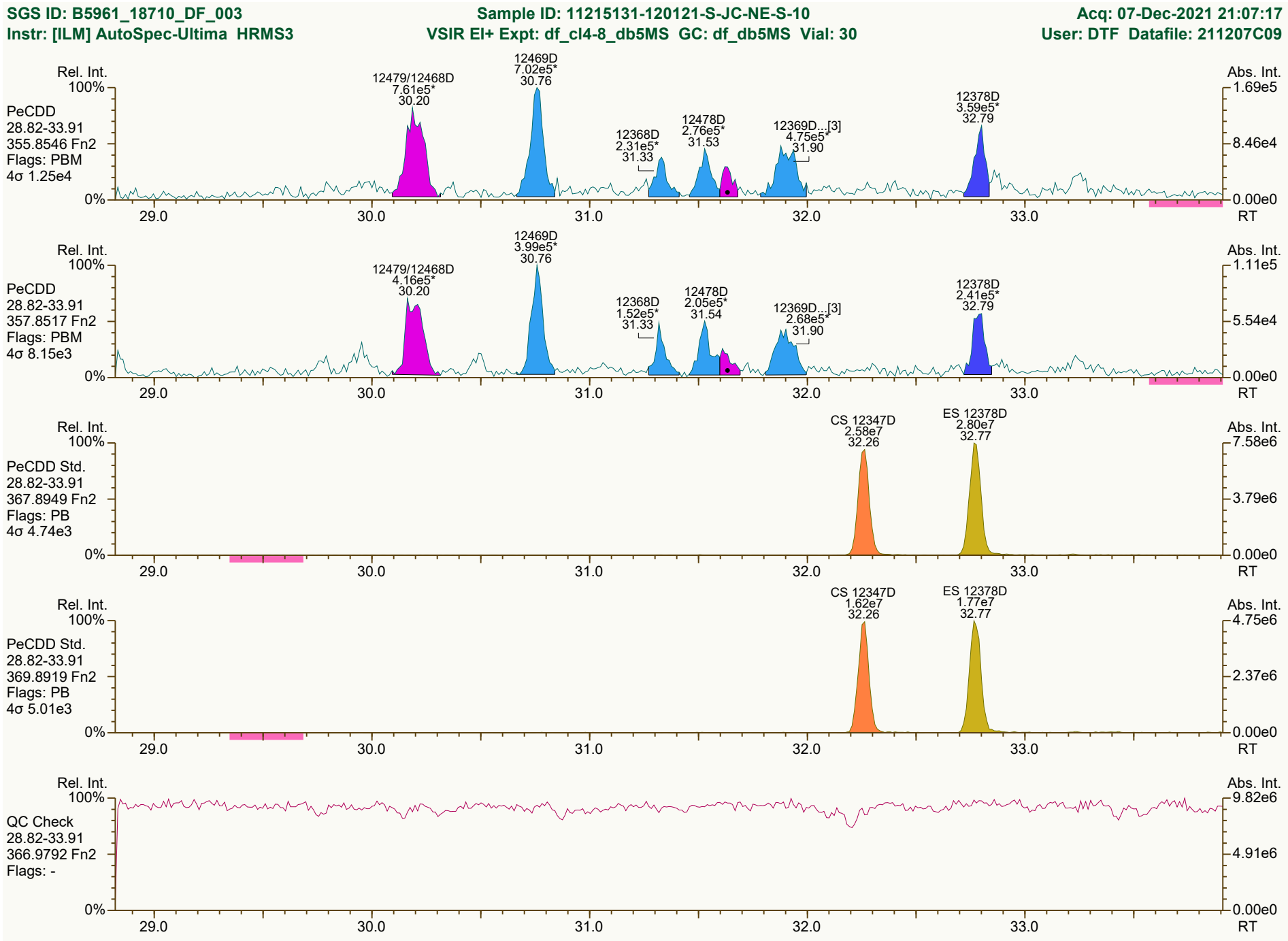
26.0
27.0
28.0



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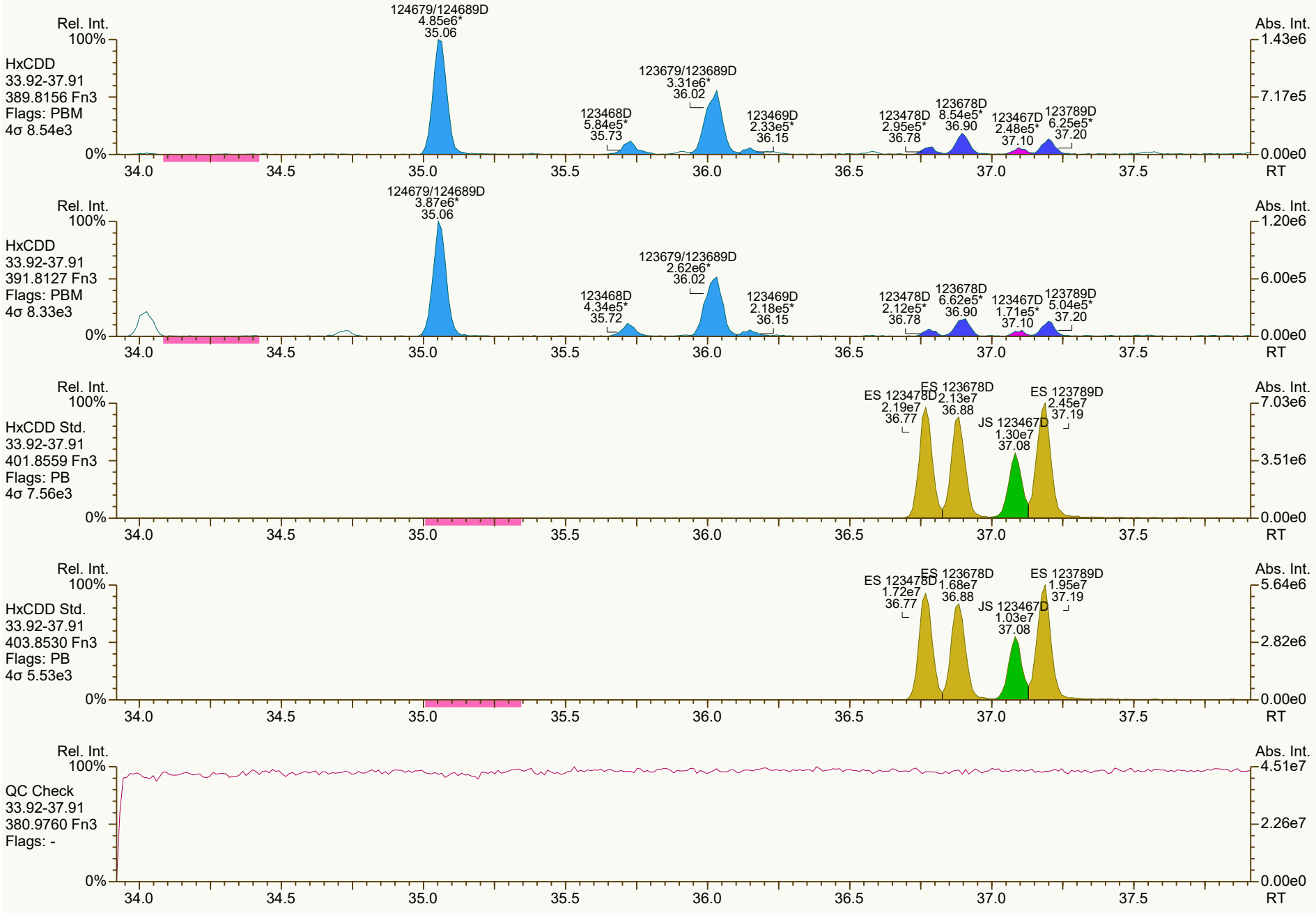
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2571, 1440 scc: 391-487
Revised: 08-Dec-2021 10:06 (DTF) Printed: 08-Dec-2021 11:32 Page 3 of 12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Abs. Int.
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124679/124689D
4.85e6*
35.06
123679/123689D
3.31e6*
36.02
123468D
5.84e5*
35.73
123469D
2.33e5*
36.15
123478D
2.95e5*
36.78
123678D
8.54e5*
36.90
123467D
2.48e5*
37.10
123789D
6.25e5*
37.20
1.43e6
7.17e5
0.00e0
HxCDD
33.92-37.91
391.8127 Fn3
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4σ 8.33e3
124679/124689D
3.87e6*
35.06
123679/123689D
2.62e6*
36.02
123468D
4.34e5*
35.72
123469D
2.18e5*
36.15
123478D
2.12e5*
36.78
123678D
6.62e5*
36.90
123467D
1.71e5*
37.10
123789D
5.04e5*
37.20
1.20e6
6.00e5
0.00e0
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PB
4σ 7.56e3
ES 123478D
2.19e7
36.77
ES 123678D
2.13e7
36.88
JS 123467D
1.30e7
37.08
ES 123789D
2.45e7
37.19
7.03e6
3.51e6
0.00e0
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PB
4σ 5.53e3
ES 123478D
1.72e7
36.77
ES 123678D
1.68e7
36.88
JS 123467D
1.03e7
37.08
ES 123789D
1.95e7
37.19
5.64e6
2.82e6
0.00e0
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
4.51e7
2.26e7
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0%
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34.5
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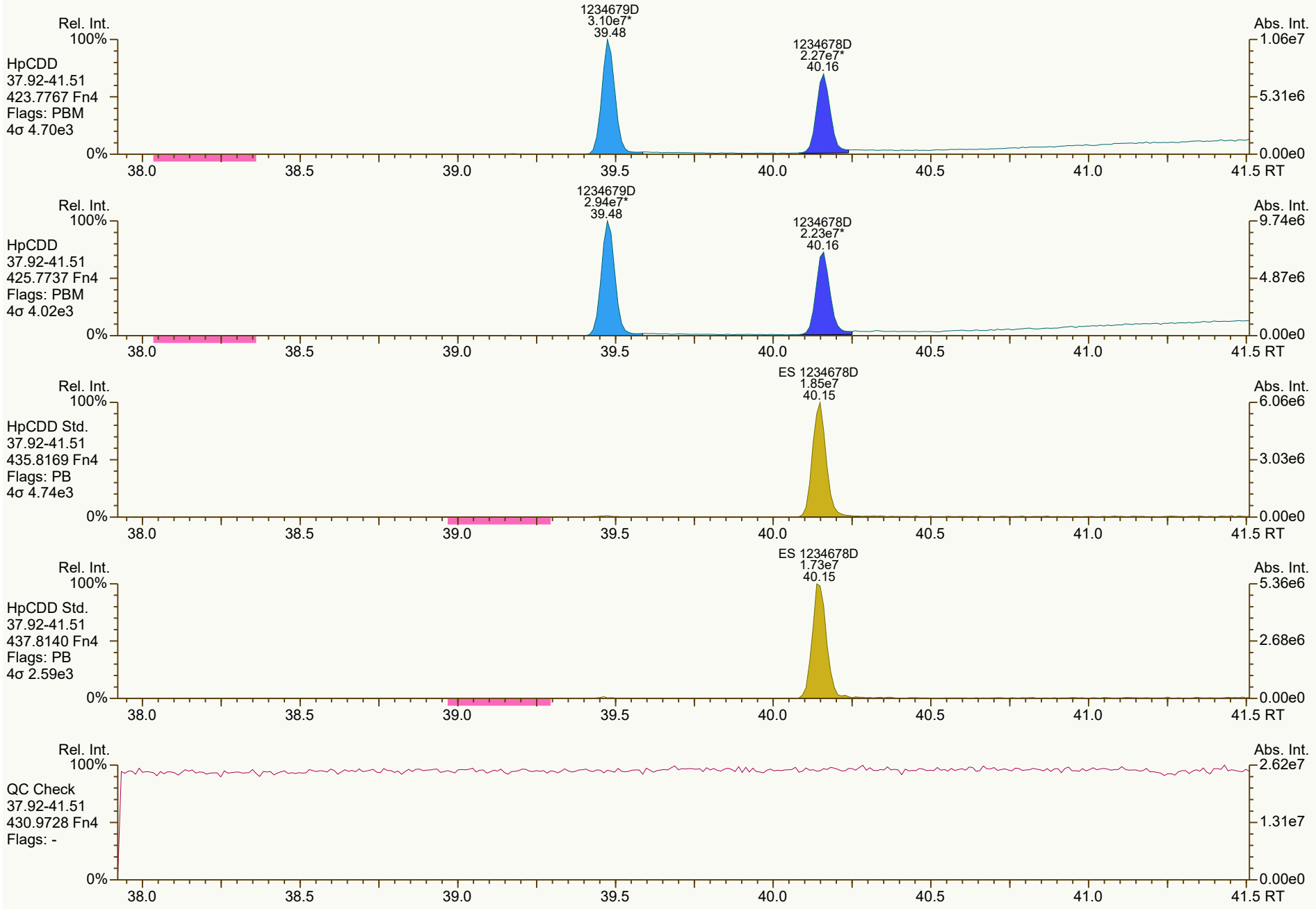
35.5
36.0
36.5
37.0
37.5
RT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37.92-41.51
423.7767 Fn4
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1234679D
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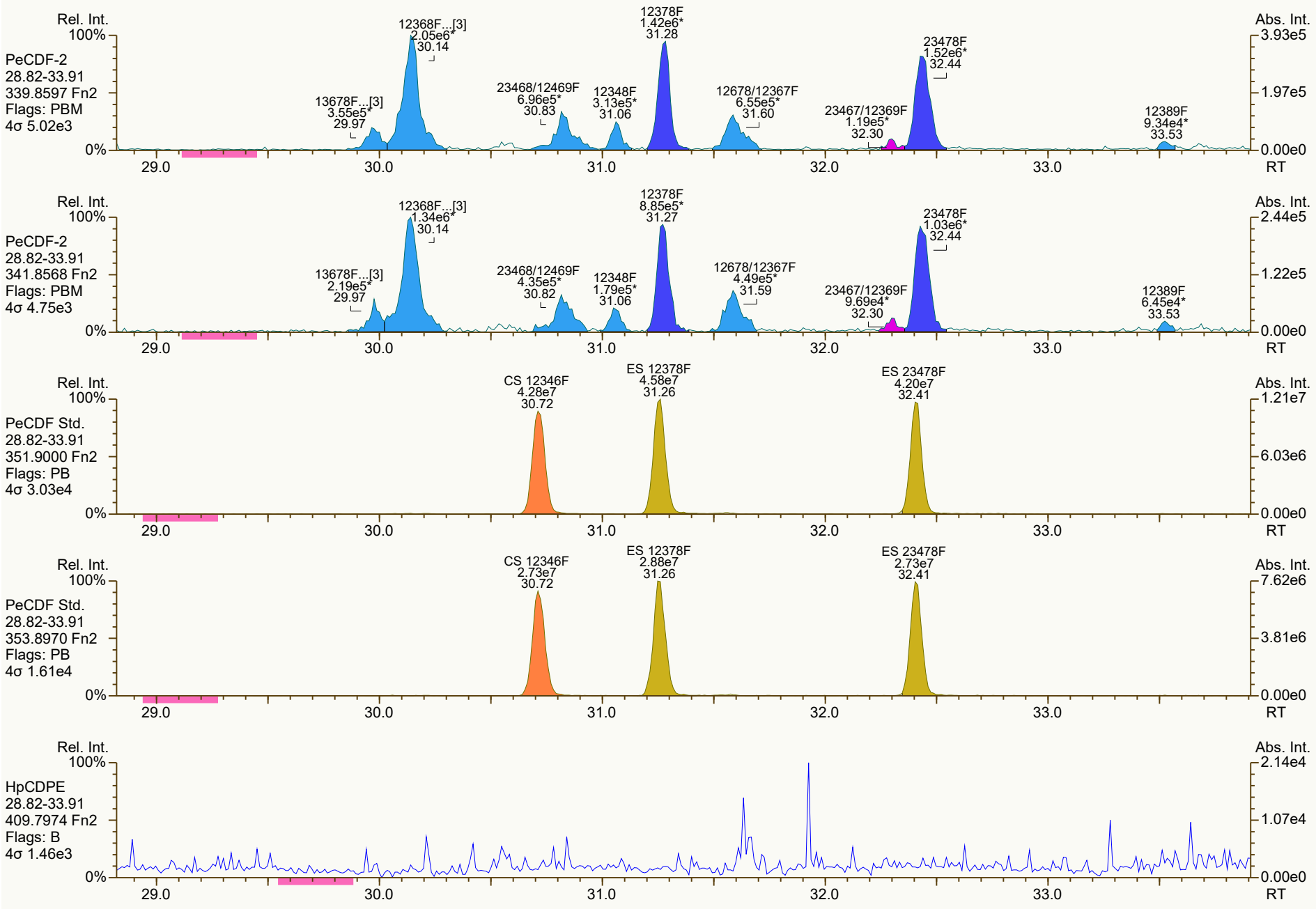
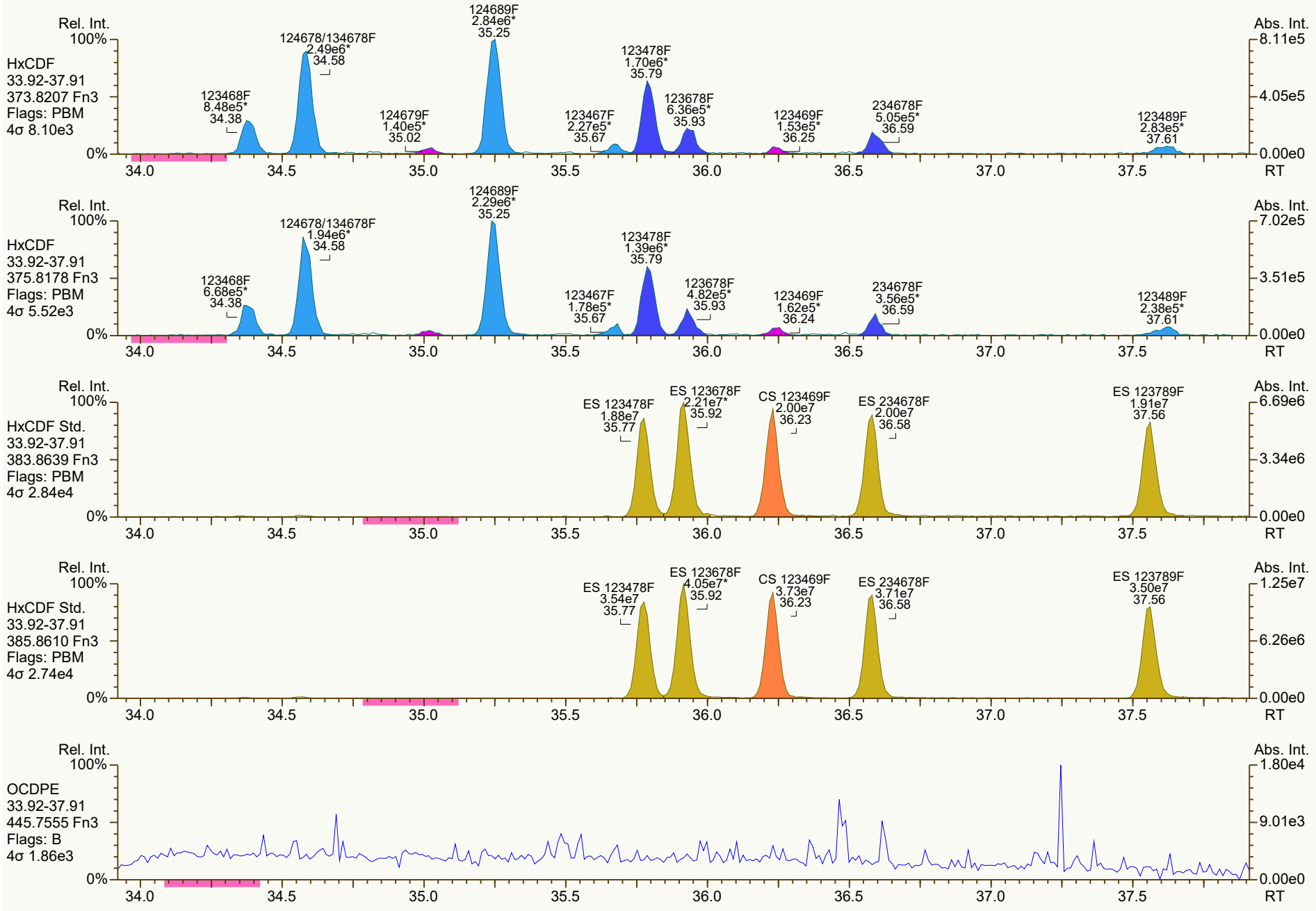
39.48
1234678D
2.27e7*
40.16
Abs. Int.
1.06e7
5.31e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PBM
4σ 4.02e3
0%
1234679D
2.94e7*
39.48
1234678D
2.23e7*
40.16
Abs. Int.
9.74e6
4.87e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 4.74e3
0%
ES 1234678D
1.85e7
40.15
Abs. Int.
6.06e6
3.03e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 2.59e3
0%
ES 1234678D
1.73e7
40.15
Abs. Int.
5.36e6
2.68e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.62e7
1.31e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

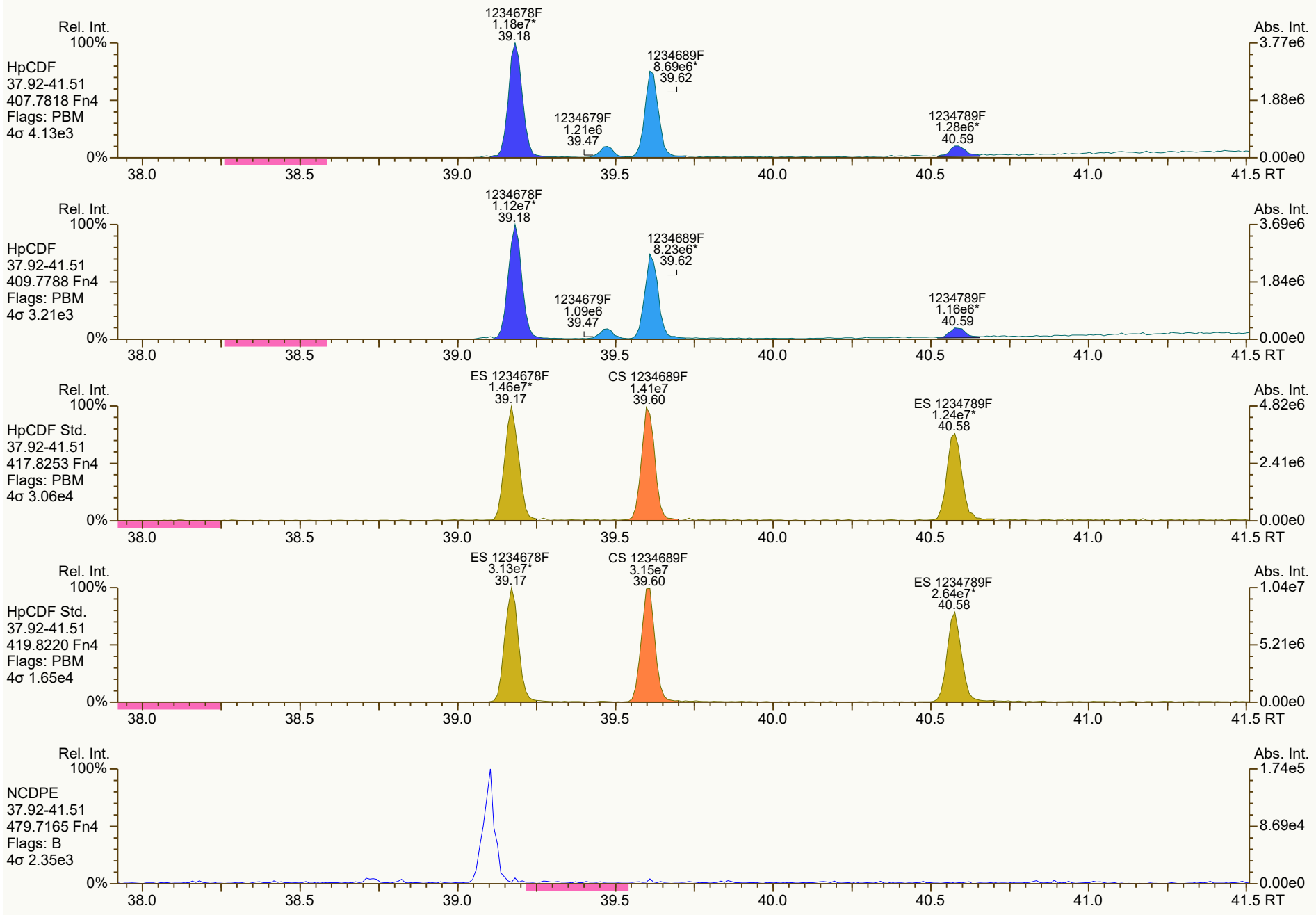

OCDD
6.44e8
42.77
Rel. Int.
100%
OCDD
41.52-45.00
457.7377 Fn5
Flags: PB
4σ 4.83e3
0%
Abs. Int.
1.39e8
6.95e7
0.00e0
RT
42.0
42.5
43.0
43.5
44.0
44.5
OCDD
7.15e8
42.76
OCDD
41.52-45.00
459.7348 Fn5
Flags: PB
4σ 5.58e3
1.56e8
7.82e7
ES OCDD
1.66e7
42.75
OCDD Std.
41.52-45.00
469.7780 Fn5
Flags: PB
4σ 5.41e3
3.42e6
1.71e6
ES OCDD
1.80e7
42.75
OCDD Std.
41.52-45.00
471.7750 Fn5
Flags: PB
4σ 6.30e3
3.83e6
1.91e6
QC Check
41.52-45.00
454.9728 Fn5
Flags: -
2.16e7
1.08e7

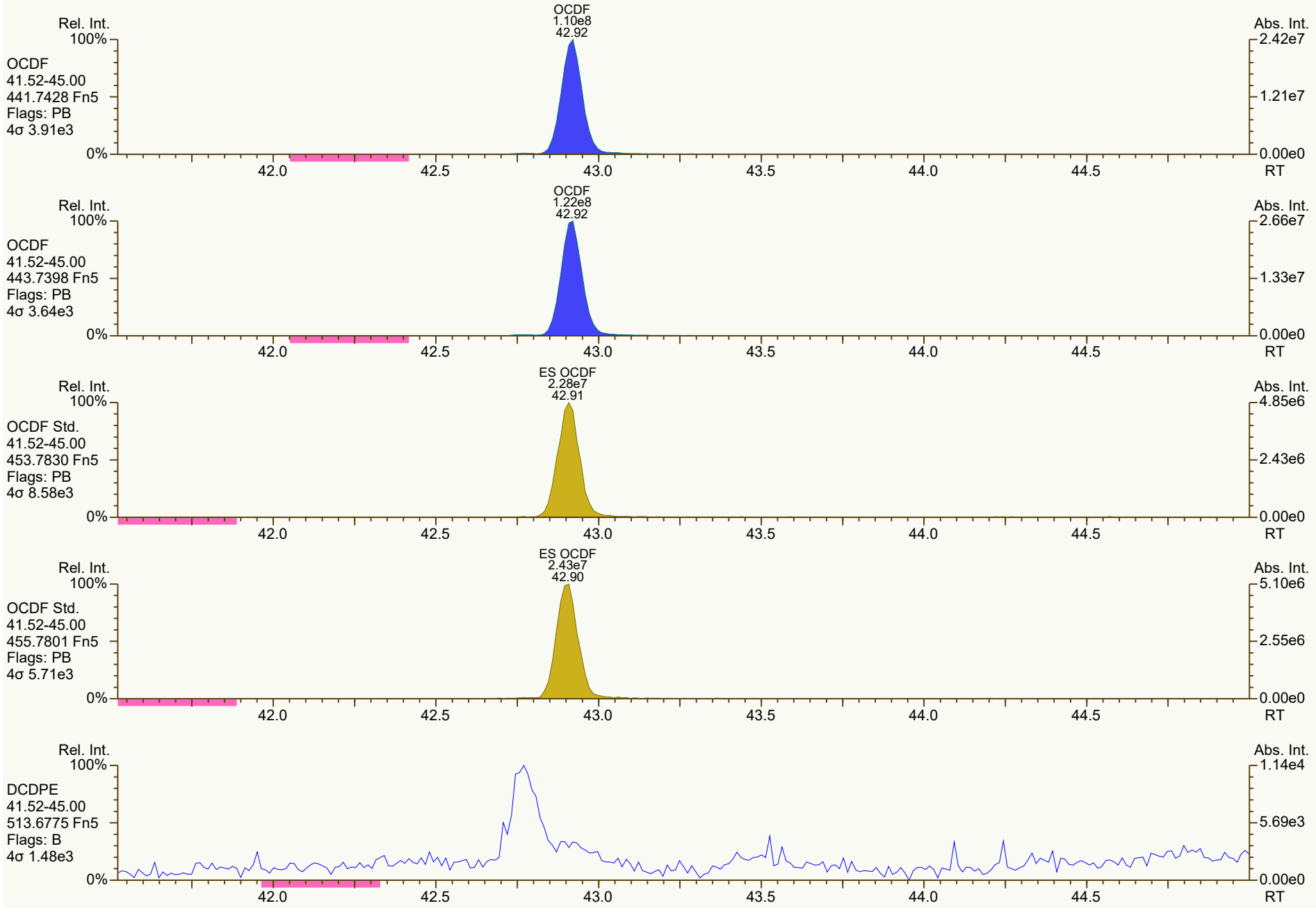

Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 3.15e3
0%
2378F
4.45e7*
26.20
1278F
1.03e7*
25.24
2348F
1.77e6*
26.08
2367/3467F
4.48e6*
26.59
Abs. Int.
9.11e6
4.55e6
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 4.77e3
0%
2378F
5.60e7*
26.20
1278F
1.30e7*
25.24
2348F
1.75e6*
26.07
2367/3467F
5.64e6*
26.59
Abs. Int.
1.12e7
5.60e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 2.98e4
0%
JS 1234F
4.17e7
24.72
ES 2378F
3.42e7
26.18
Abs. Int.
7.75e6
3.88e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 2.14e4
0%
JS 1234F
5.18e7
24.71
ES 2378F
4.33e7
26.18
Abs. Int.
9.42e6
4.71e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.65e3
0%
Abs. Int.
2.79e4
1.39e4
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
4.29e5
2.14e5
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 1.93e3
13468/12468F
1.81e6
28.35
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 2.50e3
13468/12468F
1.12e6
28.36
2.84e5
1.42e5
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
1.11e7
5.53e6


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PBM
4σ 5.02e3
0%
13678F...[3] 3.55e5* 29.97
12368F...[3] 2.05e6* 30.14
23468/12469F 6.96e5* 30.83
12348F 3.13e5* 31.06
12378F 1.42e6* 31.28
12678/12367F 6.55e5* 31.60
23467/12369F 1.19e5* 32.30
23478F 1.52e6* 32.44
12389F 9.34e4* 33.53
Abs. Int.
3.93e5
1.97e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PBM
4σ 4.75e3
0%
13678F...[3] 2.19e5* 29.97
12368F...[3] 1.34e6* 30.14
23468/12469F 4.35e5* 30.82
12348F 1.79e5* 31.06
12378F 8.85e5* 31.27
12678/12367F 4.49e5* 31.59
23467/12369F 9.69e4* 32.30
23478F 1.03e6* 32.44
12389F 6.45e4* 33.53
Abs. Int.
2.44e5
1.22e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 3.03e4
0%
CS 12346F 4.28e7 30.72
ES 12378F 4.58e7 31.26
ES 23478F 4.20e7 32.41
Abs. Int.
1.21e7
6.03e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 1.61e4
0%
CS 12346F 2.73e7 30.72
ES 12378F 2.88e7 31.26
ES 23478F 2.73e7 32.41
Abs. Int.
7.62e6
3.81e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.46e3
0%
Abs. Int.
2.14e4
1.07e4
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PBM
4σ 8.10e3
0%
123468F 8.48e5* 34.38
124678/134678F 2.49e6* 34.58
124679F 1.40e5* 35.02
124689F 2.84e6* 35.25
123467F 2.27e5* 35.67
123478F 1.70e6* 35.79
123678F 6.36e5* 35.93
123469F 1.53e5* 36.25
234678F 5.05e5* 36.59
123489F 2.83e5* 37.61
Abs. Int.
8.11e5
4.05e5
0.00e0
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
Rel. Int.
100%
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PBM
4σ 5.52e3
0%
123468F 6.68e5* 34.38
124678/134678F 1.94e6* 34.58
124689F 2.29e6* 35.25
123467F 1.78e5* 35.67
123478F 1.39e6* 35.79
123678F 4.82e5* 35.93
123469F 1.62e5* 36.24
234678F 3.56e5* 36.59
123489F 2.38e5* 37.61
Abs. Int.
7.02e5
3.51e5
0.00e0
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 2.84e4
0%
ES 123478F 1.88e7 35.77
ES 123678F 2.21e7* 35.92
CS 123469F 2.00e7 36.23
ES 234678F 2.00e7 36.58
ES 123789F 1.91e7 37.56
Abs. Int.
6.69e6
3.34e6
0.00e0
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PBM
4σ 2.74e4
0%
ES 123478F 3.54e7 35.77
ES 123678F 4.05e7* 35.92
CS 123469F 3.73e7 36.23
ES 234678F 3.71e7 36.58
ES 123789F 3.50e7 37.56
Abs. Int.
1.25e7
6.26e6
0.00e0
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT
Rel. Int.
100%
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 1.86e3
0%
Abs. Int.
1.80e4
9.01e3
0.00e0
34.0 34.5 35.0 35.5 36.0 36.5 37.0 37.5 RT


Rel. Int.
100%
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PBM
4σ 4.13e3
1234678F
1.18e7*
39.18
1234679F
1.21e6
39.47
1234689F
8.69e6*
39.62
1234789F
1.28e6*
40.59
Abs. Int.
3.77e6
1.88e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PBM
4σ 3.21e3
1234678F
1.12e7*
39.18
1234679F
1.09e6
39.47
1234689F
8.23e6*
39.62
1234789F
1.16e6*
40.59
Abs. Int.
3.69e6
1.84e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PBM
4σ 3.06e4
ES 1234678F
1.46e7*
39.17
CS 1234689F
1.41e7
39.60
ES 1234789F
1.24e7*
40.58
Abs. Int.
4.82e6
2.41e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PBM
4σ 1.65e4
ES 1234678F
3.13e7*
39.17
CS 1234689F
3.15e7
39.60
ES 1234789F
2.64e7*
40.58
Abs. Int.
1.04e7
5.21e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 2.35e3
Abs. Int.
1.74e5
8.69e4
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.00
441.7428 Fn5
Flags: PB
4σ 3.91e3
0%
OCDF
1.10e8
42.92
Abs. Int.
2.42e7
1.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
RT
Rel. Int.
100%
OCDF
41.52-45.00
443.7398 Fn5
Flags: PB
4σ 3.64e3
0%
OCDF
1.22e8
42.92
Abs. Int.
2.66e7
1.33e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
RT
Rel. Int.
100%
OCDF Std.
41.52-45.00
453.7830 Fn5
Flags: PB
4σ 8.58e3
0%
ES OCDF
2.28e7
42.91
Abs. Int.
4.85e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
RT
Rel. Int.
100%
OCDF Std.
41.52-45.00
455.7801 Fn5
Flags: PB
4σ 5.71e3
0%
ES OCDF
2.43e7
42.90
Abs. Int.
5.10e6
2.55e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
RT
Rel. Int.
100%
DCDPE
41.52-45.00
513.6775 Fn5
Flags: B
4σ 1.48e3
0%
Abs. Int.
1.14e4
5.69e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
RT

Lab ID: B5961_18710_DF_004 **Acq'd:** 07 Dec 2021 21:53 DTF **Wt/Vol:** 15.30 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-JC-SW-S-1 **UTP:** 08-Dec-2021 11:25:18 DTF **J-level:** 0.327 pg/g **Split:** 1 **Checkcode:** 956-033-DPB

Datafile: 211207C10 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.13		1.0009	1.0009	0	2.86E+08	0.81	Y	1.18	468	5861.43	0.103
12378-PeCDD	32.78		1.0006	1.0006	0	2.68E+06	1.70	Y	1.04	5.29	7235.579	0.13
123478-HxCDD	36.77		1.0004	1.0003	-0.2	7.95E+05	1.30	Y	1.09	1.89	8477.107	0.166
123678-HxCDD	36.88		1.0035	1.0035	0	2.69E+06	1.26	Y	1.15	6.25	8477.107	0.16
123789-HxCDD	37.19		1.0117	1.0117	0	2.01E+06	1.30	Y	1.05	4.33	8477.107	0.158
1234678-HpCDD	40.15		1.0003	1.0004	+0.2	5.76E+07	1.05	Y	1.06	136	10267.711	0.193
OCDD	42.75		1.0003	1.0003	0	2.92E+08	0.91	Y	1.13	1,770	10083.634	0.694
2378-TCDF	26.19	E	1.0009	1.0009	0	1.16E+09	0.80	Y	1.08	1,300	4771.345	0.0608
12378-PeCDF	31.26		1.0005	1.0006	+0.2	3.96E+07	1.55	Y	1.02	47.3	8289.499	0.0905
23478-PeCDF	32.42		1.0006	1.0008	+0.4	3.08E+07	1.55	Y	1.02	39.4	8289.499	0.0921
123478-HxCDF	35.78		1.0005	1.0005	0	5.37E+07	1.26	Y	1.27	76.3	6633.766	0.076
123678-HxCDF	35.92		1.0004	1.0005	+0.2	1.44E+07	1.28	Y	1.15	19.6	6633.766	0.0724
234678-HxCDF	36.58		1.0004	1.0004	0	3.17E+06	1.20	Y	1.19	4.65	6633.766	0.0812
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	6633.766	0.091
1234678-HpCDF	39.17		1.0003	1.0003	0	2.31E+07	1.04	Y	1.37	35.9	9394.68	0.113
1234789-HpCDF	40.57		1.0002	1.0003	+0.2	5.36E+06	1.01	Y	1.31	10.9	9394.68	0.161
OCDF	42.91		1.0003	1.0002	-0.3	1.58E+07	0.94	Y	1.07	73.9	7077.034	0.366

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.11	1.0260	1.0260	0	6.75E+07	0.80	Y	1.05	87.1
ES 12378-PeCDD	32.76	1.2396	1.2398	+0.4	6.38E+07	1.58	Y	0.88	97.9
ES 123478-HxCDD	36.76	0.9916	0.9915	-0.2	5.03E+07	1.31	Y	0.97	90.8
ES 123678-HxCDD	36.87	0.9947	0.9946	-0.2	4.90E+07	1.24	Y	0.94	91
ES 123789-HxCDD	37.17	1.0027	1.0028	+0.2	5.80E+07	1.25	Y	1.09	93.3
ES 1234678-HpCDD	40.14	1.0828	1.0828	0	5.23E+07	1.10	Y	0.91	101
ES OCDD	42.74	1.1528	1.1531	+0.8	3.84E+07	0.93	Y	0.62	53.9
ES 2378-TCDF	26.17	1.0591	1.0592	+0.2	1.08E+08	0.80	Y	1.06	79.4
ES 12378-PeCDF	31.24	1.2643	1.2648	+0.9	1.07E+08	1.58	Y	0.91	91.6
ES 23478-PeCDF	32.40	1.3110	1.3114	+0.8	1.00E+08	1.58	Y	0.88	88.6
ES 123478-HxCDF	35.76	0.9648	0.9647	-0.2	7.25E+07	0.55	Y	1.20	106
ES 123678-HxCDF	35.90	0.9686	0.9685	-0.2	8.30E+07	0.53	Y	1.35	108
ES 234678-HxCDF	36.56	0.9865	0.9864	-0.2	7.51E+07	0.53	Y	1.24	106
ES 123789-HxCDF	37.55	1.0129	1.0129	0	7.23E+07	0.52	Y	1.16	110
ES 1234678-HpCDF	39.16	1.0565	1.0565	0	6.13E+07	0.48	Y	0.97	111
ES 1234789-HpCDF	40.56	1.0943	1.0943	0	4.90E+07	0.46	Y	0.85	101
ES OCDF	42.90	1.1569	1.1572	+0.8	5.23E+07	0.90	Y	0.81	56.8

Lab ID: B5961_18710_DF_004 **Acq'd:** 07 Dec 2021 21:53 DTF **Wt/Vol:** 15.30 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-JC-SW-S-1 **UTP:** 08-Dec-2021 11:25:18 DTF **J-level:** 0.327 pg/g **Split:** 1 **Checkcode:** 956-033-DPB

Datafile: 211207C10 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.42		-	-	-	7.41E+07	0.80	Y	-	-	
JS 1234-TCDF	24.70		-	-	-	1.28E+08	0.78	Y	-	-	
JS 123467-HxCDD	37.07		-	-	-	2.85E+07	1.23	Y	-	-	
CS 37Cl-2378-TCDD	27.13		1.0269	1.0269	0	3.28E+07	n/a	-	1.20	92.2	
CS 12347-PeCDD	32.25		1.2203	1.2205	+0.4	6.22E+07	1.63	Y	0.75	112	
CS 12346-PeCDF	30.70		1.2424	1.2429	+0.9	1.07E+08	1.55	Y	0.85	98.4	
CS 123469-HxCDF	36.22		0.9771	0.9770	-0.2	7.86E+07	0.54	Y	1.12	123	
CS 1234689-HpCDF	39.60		1.0681	1.0682	+0.2	5.87E+07	0.48	Y	0.89	116	
~~SS 37Cl-2378-TCDD~~	~~27.13~~		~~1.0269~~	~~1.0269~~	~~0~~	~~3.28E+07~~	~~n/a~~		~~1.15~~	~~106~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.25~~		~~1.2203~~	~~1.2205~~	~~+0.4~~	~~6.22E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~114~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.70~~		~~1.2424~~	~~1.2429~~	~~+0.9~~	~~1.07E+08~~	~~1.55~~	~~Y~~	~~0.94~~	~~107~~	
~~SS 123469-HxCDF~~	~~36.22~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~7.86E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~114~~	
~~SS 1234689-HpCDF~~	~~39.60~~		~~1.0681~~	~~1.0682~~	~~+0.2~~	~~5.87E+07~~	~~0.48~~	~~Y~~	~~0.92~~	~~104~~	

Totals	Conc	EMPC
Total TCDD	531	535
Total PeCDD	19.4	19.8
Total HxCDD	73.2	73.2
Total HpCDD	266	266
Total Tetra-Octa Dioxins	2660	2660
Total TCDF	2,680	2680
Total PeCDF	147	148
Total HxCDF	132	132
Total HpCDF	68.2	68.2
Total Tetra-Octa Furans	3,100	3100
Total Tetra-Octa Dioxins & Furans	5760	5770

Lab ID: B5961_18710_DF_004 **Acq'd: 07 Dec 2021 21:53 DTF** **Wt/Vol: 15.30 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-JC-SW-S-1 **UTP: 08-Dec-2021 11:25:18 DTF** **J-level: 0.327 pg/g** **Split: 1** **Checkcode: 956-033-DPB**

Datafile: 211207C10 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.15		0.8545	0.8541	-0.6	1.25E+06	0.85	Y	1.18	2.04	5861.43	0.103
1379-TCDD	23.55		0.8692	0.8689	-0.4	7.39E+05	0.84	Y	1.18	1.21	5861.43	0.103
1369-TCDD	24.03	J EMPC	0.8868	0.8864	-0.6	1.72E+05	0.99	N	1.18	0.281	5861.43	0.103
1469-TCDD	24.89		0.9185	0.9181	-0.6	2.44E+06	0.78	Y	1.18	3.99	5861.43	0.103
1247/1246/1248/1249-TCDD	25.17		0.9282	0.9285	+0.5	8.66E+05	0.84	Y	1.18	1.42	5861.43	0.103
1378-TCDD	25.35		0.9355	0.9352	-0.5	9.61E+05	0.80	Y	1.18	1.57	5861.43	0.103
1268-TCDD	NotFnd		0.9435						1.18		5861.43	0.103
1478-TCDD	25.84		0.9533	0.9532	-0.2	7.77E+05	0.79	Y	1.18	1.27	5861.43	0.103
1279-TCDD	NotFnd		0.9601						1.18		5861.43	0.103
1234/1269-TCDD	26.40		0.9741	0.9739	-0.3	4.97E+05	0.83	Y	1.18	0.812	5861.43	0.103
1236-TCDD	NotFnd		0.9797						1.18		5861.43	0.103
1237/1238-TCDD	26.82		0.9898	0.9893	-0.8	5.32E+06	0.88	Y	1.18	8.7	5861.43	0.103
1239-TCDD	NotFnd		0.9952						1.18		5861.43	0.103
2378-TCDD	**27.13**		**1.0009**	1.0009	**0**	2.86E+08	0.81	Y	**1.18**	**468**	**5861.43**	**0.103**
1278-TCDD	27.48		1.0139	1.0139	0	2.58E+07	0.80	Y	1.18	42.2	5861.43	0.103
1267-TCDD	27.63	EMPC	1.0193	1.0194	+0.2	1.15E+06	1.18	N	1.18	1.87	5861.43	0.103
1289-TCDD	28.13	EMPC	1.0393	1.0377	-2.7	9.39E+05	1.32	N	1.18	1.54	5861.43	0.103
12479/12468-PeCDD	30.19		0.9216	0.9216	0	1.59E+06	1.48	Y	1.04	3.15	7235.579	0.13
12469-PeCDD	30.74		0.9386	0.9385	-0.2	2.02E+06	1.66	Y	1.04	4	7235.579	0.13
12368-PeCDD	31.31		0.9560	0.9558	-0.4	9.01E+05	1.71	Y	1.04	1.78	7235.579	0.13
12478-PeCDD	31.51	J	0.9619	0.9620	+0.2	4.08E+05	1.74	Y	1.04	0.805	7235.579	0.13
12379-PeCDD	31.61	J	0.9651	0.9651	0	8.13E+05	1.53	Y	1.04	1.61	7235.579	0.13
12369/12467/12489-PeCDD	31.90		0.9735	0.9737	+0.4	9.41E+05	1.59	Y	1.04	1.86	7235.579	0.13
12346/12347-PeCDD	32.27	J EMPC	0.9852	0.9852	0	1.75E+05	1.30	N	1.04	0.347	7235.579	0.13
12378-PeCDD	32.78		**1.0006**	**1.0006**	**0**	**2.68E+06**	**1.70**	**Y**	**1.04**	**5.29**	**7235.579**	**0.13**
12367-PeCDD	32.88	J	1.0037	1.0039	+0.4	2.99E+05	1.68	Y	1.04	0.591	7235.579	0.13
12389-PeCDD	33.23	J	1.0145	1.0144	-0.2	1.80E+05	1.70	Y	1.04	0.355	7235.579	0.13
124679/124689-HxCDD	35.05		0.9535	0.9535	0	1.60E+07	1.24	Y	1.10	36.3	8477.107	0.161
123468-HxCDD	35.72		0.9716	0.9717	+0.2	1.93E+06	1.42	Y	1.10	4.39	8477.107	0.161
123679/123689-HxCDD	36.01		0.9796	0.9796	0	7.64E+06	1.26	Y	1.10	17.4	8477.107	0.161
123469-HxCDD	36.13	J	0.9833	0.9830	-0.7	5.94E+05	1.18	Y	1.10	1.35	8477.107	0.161
123478-HxCDD	36.77		**1.0004**	**1.0003**	**-0.2**	**7.95E+05**	**1.30**	**Y**	1.09	**1.89**	**8477.107**	**0.166**
123678-HxCDD	36.88		**1.0035**	**1.0035**	**0**	**2.69E+06**	**1.26**	**Y**	1.15	**6.25**	**8477.107**	**0.16**
123467-HxCDD	37.08	J	1.0088	1.0087	-0.2	5.51E+05	1.15	Y	1.10	1.26	8477.107	0.161
123789-HxCDD	37.19		**1.0117**	**1.0117**	**0**	**2.01E+06**	**1.30**	**Y**	1.05	**4.33**	**8477.107**	**0.158**

Lab ID: B5961_18710_DF_004 **Acq'd: 07 Dec 2021 21:53 DTF** **Wt/Vol: 15.30 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-JC-SW-S-1 **UTP: 08-Dec-2021 11:25:18 DTF** **J-level: 0.327 pg/g** **Split: 1** **Checkcode: 956-033-DPB**

Datafile: 211207C10 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

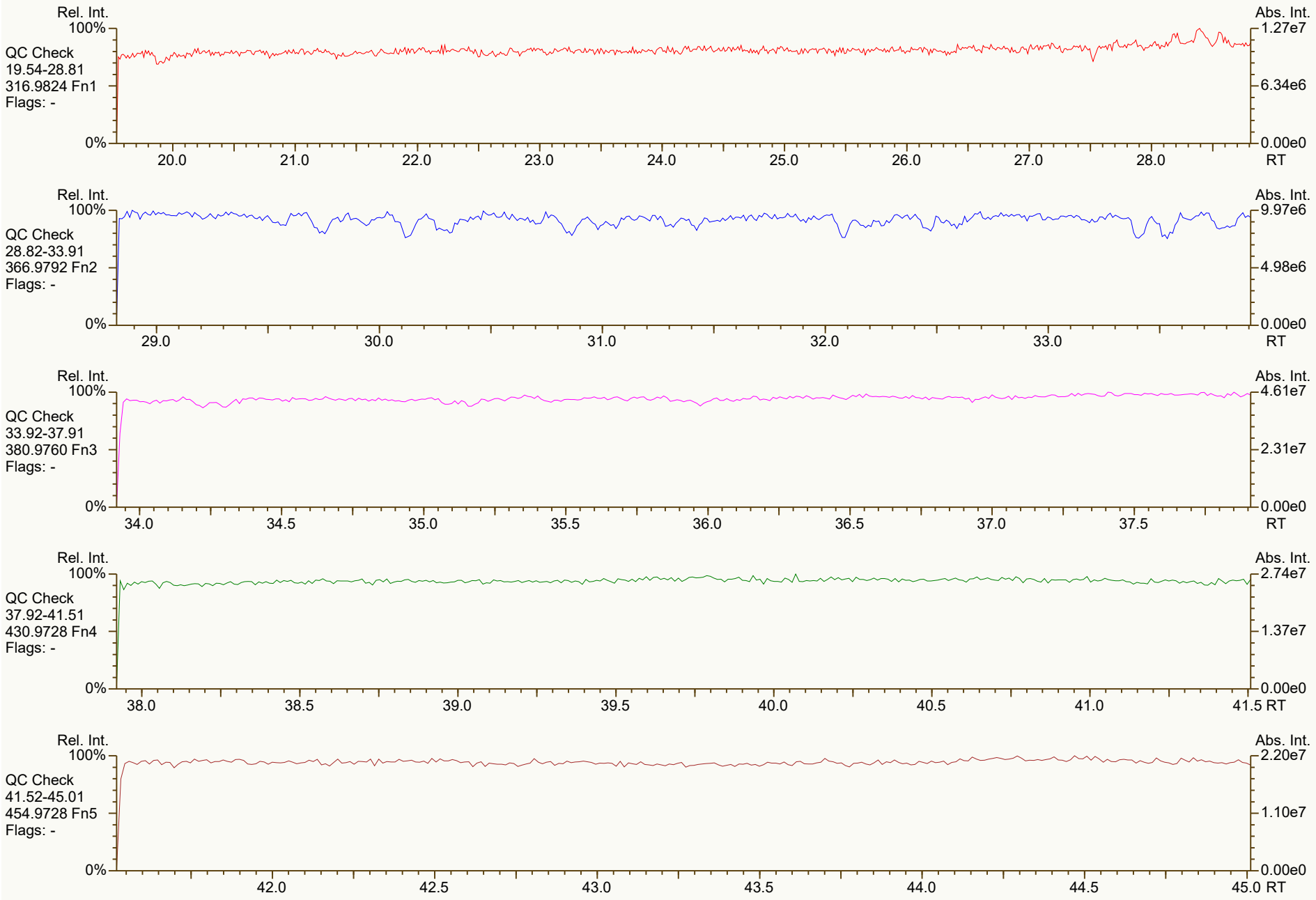
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9833	0	5.54E+07	1.05	Y	1.06	131	10267.711	0.193
1234678-HpCDD	**40.15**		**1.0003**	**1.0004**	**+0.2**	**5.76E+07**	**1.05**	**Y**	**1.06**	**136**	**10267.711**	**0.193**
OCDD	**42.75**		**1.0003**	**1.0003**	**0**	**2.92E+08**	**0.91**	**Y**	**1.13**	**1,770**	**10083.634**	**0.694**
OCDD-a	42.75		1.0002	1.0002	0	1.82E+07	2.41	Y	0.07	1,720	7176.33	7.72
1368-TCDF	20.91		0.7998	0.7992	-0.8	7.87E+05	0.88	Y	1.08	0.886	4771.345	0.0608
1468-TCDF	21.48		0.8214	0.8208	-0.8	2.94E+06	0.79	Y	1.08	3.31	4771.345	0.0608
2468-TCDF	22.13		0.8463	0.8459	-0.5	3.13E+06	0.86	Y	1.08	3.52	4771.345	0.0608
1346/1246-TCDF	NotFnd		0.8608						1.08		4771.345	0.0608
1347/1378/1247-TCDF	22.72		0.8675	0.8682	+1.0	1.63E+07	0.81	Y	1.08	18.3	4771.345	0.0608
1348-TCDF	NotFnd		0.8793						1.08		4771.345	0.0608
1248/1367/1379-TCDF	23.11		0.8850	0.8831	-2.6	6.36E+07	0.80	Y	1.08	71.6	4771.345	0.0608
1268-TCDF	23.57		0.9010	0.9009	-0.1	2.07E+07	0.83	Y	1.08	23.3	4771.345	0.0608
1467-TCDF	23.72		0.9068	0.9066	-0.3	3.15E+06	0.82	Y	1.08	3.54	4771.345	0.0608
1478-TCDF	23.91		0.9139	0.9137	-0.3	5.06E+07	0.80	Y	1.08	57	4771.345	0.0608
1369/1237-TCDF	24.32		0.9294	0.9294	0	1.39E+07	0.81	Y	1.08	15.6	4771.345	0.0608
2467-TCDF	24.46		0.9350	0.9350	0	1.83E+06	0.81	Y	1.08	2.06	4771.345	0.0608
2368-TCDF	24.61		0.9410	0.9407	-0.4	2.86E+07	0.79	Y	1.08	32.1	4771.345	0.0608
1238/1234/1678/1469/1236-TCDF	24.71		0.9451	0.9443	-1.2	7.35E+07	0.81	Y	1.08	82.7	4771.345	0.0608
1278-TCDF	25.22		0.9642	0.9639	-0.5	5.76E+08	0.80	Y	1.08	649	4771.345	0.0608
1349-TCDF	NotFnd		0.9695						1.08		4771.345	0.0608
1267-TCDF	25.52		0.9753	0.9753	0	3.02E+07	0.82	Y	1.08	34	4771.345	0.0608
2346/1249-TCDF	25.74		0.9832	0.9838	+0.9	4.25E+06	0.78	Y	1.08	4.78	4771.345	0.0608
2347/1279-TCDF	25.95		0.9921	0.9917	-0.6	1.52E+07	0.77	Y	1.08	17.1	4771.345	0.0608
2348-TCDF	26.07		0.9970	0.9965	-0.8	1.03E+08	0.79	Y	1.08	116	4771.345	0.0608
2378-TCDF	**26.19**	E	**1.0009**	**1.0009**	**0**	**1.16E+09**	**0.80**	**Y**	**1.08**	**1,300**	**4771.345**	**0.0608**
2367/3467-TCDF	26.58		1.0162	1.0157	-0.8	9.64E+07	0.80	Y	1.08	109	4771.345	0.0608
1269-TCDF	26.84		1.0259	1.0259	0	1.95E+07	0.80	Y	1.08	21.9	4771.345	0.0608
1239-TCDF	27.13		1.0370	1.0369	-0.2	1.86E+06	0.76	Y	1.08	2.09	4771.345	0.0608
1289-TCDF	28.34		1.0829	1.0830	+0.2	1.00E+08	0.80	Y	1.08	113	4771.345	0.0608
13468/12468-PeCDF	28.34		0.9067	0.9070	+0.5	2.27E+06	1.50	Y	1.02	2.81	5332.554	0.0587
13678/13467/12467-PeCDF	29.96		0.9583	0.9588	+0.9	1.59E+06	1.43	Y	1.02	1.97	8289.499	0.0913
12368/13478/12478-PeCDF	30.13		0.9635	0.9643	+1.4	1.95E+07	1.57	Y	1.02	24.1	8289.499	0.0913
14678-PeCDF	30.22	J	0.9669	0.9673	+0.7	1.12E+06	1.73	Y	1.02	1.38	8289.499	0.0913
13479-PeCDF	NotFnd		0.9701						1.02		8289.499	0.0913
13469/12479-PeCDF	30.54	J	0.9784	0.9775	-1.6	3.15E+05	1.51	Y	1.02	0.389	8289.499	0.0913
12346-PeCDF	30.71	J EMPC	0.9831	0.9831	0	3.67E+05	1.28	N	1.02	0.454	8289.499	0.0913

Lab ID: B5961_18710_DF_004 **Acq'd: 07 Dec 2021 21:53 DTF** **Wt/Vol: 15.30 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-JC-SW-S-1 **UTP: 08-Dec-2021 11:25:18 DTF** **J-level: 0.327 pg/g** **Split: 1** **Checkcode: 956-033-DPB**

Datafile: 211207C10 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.80		0.9859	0.9859	0	1.41E+06	1.48	Y	1.02	1.74	8289.499	0.0913
12347-PeCDF	30.88		0.9885	0.9882	-0.6	1.50E+06	1.47	Y	1.02	1.86	8289.499	0.0913
12348-PeCDF	31.05		0.9937	0.9938	+0.2	5.06E+06	1.55	Y	1.02	6.26	8289.499	0.0913
12378-PeCDF	**31.26**		**1.0005**	**1.0006**	**+0.2**	**3.96E+07**	**1.55**	**Y**	**1.02**	**47.3**	**8289.499**	**0.0905**
12678/12367-PeCDF	31.57		1.0097	1.0104	+1.3	1.31E+07	1.55	Y	1.02	16.2	8289.499	0.0913
12379-PeCDF	NotFnd		1.0153						1.02		8289.499	0.0913
12679-PeCDF	32.16	J EMPC	0.9925	0.9926	+0.2	1.54E+05	1.80	N	1.02	0.19	8289.499	0.0913
23467/12369-PeCDF	32.28	J	0.9966	0.9964	-0.4	8.61E+05	1.52	Y	1.02	1.06	8289.499	0.0913
23478-PeCDF	**32.42**		**1.0006**	**1.0008**	**+0.4**	**3.08E+07**	**1.55**	**Y**	**1.02**	**39.4**	**8289.499**	**0.0921**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		8289.499	0.0913
12349-PeCDF	32.74	J	1.0108	1.0106	-0.4	1.75E+05	1.58	Y	1.02	0.216	8289.499	0.0913
12389-PeCDF	33.51		1.0346	1.0345	-0.2	1.93E+06	1.58	Y	1.02	2.38	8289.499	0.0913
123468-HxCDF	34.37		0.9610	0.9610	0	2.16E+06	1.21	Y	1.19	3.12	6633.766	0.0797
124678/134678-HxCDF	34.57		0.9667	0.9667	0	8.78E+06	1.26	Y	1.19	12.7	6633.766	0.0797
134679-HxCDF	NotFnd		0.9732						1.19		6633.766	0.0797
124679-HxCDF	35.01	J	0.9788	0.9789	+0.2	3.54E+05	1.06	Y	1.19	0.512	6633.766	0.0797
124689-HxCDF	35.23		0.9852	0.9852	0	4.37E+06	1.27	Y	1.19	6.32	6633.766	0.0797
123467-HxCDF	35.65		0.9971	0.9970	-0.2	1.24E+06	1.23	Y	1.19	1.8	6633.766	0.0797
123478-HxCDF	**35.78**		**1.0005**	**1.0005**	**0**	**5.37E+07**	**1.26**	**Y**	**1.27**	**76.3**	**6633.766**	**0.076**
123678-HxCDF	**35.92**		**1.0004**	**1.0005**	**+0.2**	**1.44E+07**	**1.28**	**Y**	**1.15**	**19.6**	**6633.766**	**0.0724**
123479-HxCDF	NotFnd		1.0050						1.19		6633.766	0.0797
123469-HxCDF	36.23	J	1.0091	1.0091	0	6.30E+05	1.22	Y	1.19	0.911	6633.766	0.0797
123679-HxCDF	NotFnd		0.9943						1.19		6633.766	0.0797
234678-HxCDF	**36.58**		**1.0004**	**1.0004**	**0**	**3.17E+06**	**1.20**	**Y**	**1.19**	**4.65**	**6633.766**	**0.0812**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6633.766	0.0797
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**6633.766**	**0.091**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	37.60		1.0008	1.0014	+1.4	4.47E+06	1.29	Y	1.19	6.47	6633.766	0.0797
1234678-HpCDF	**39.17**		**1.0003**	**1.0003**	**0**	**2.31E+07**	**1.04**	**Y**	**1.37**	**35.9**	**9394.68**	**0.113**
1234679-HpCDF	39.46		1.0075	1.0075	0	1.35E+06	1.00	Y	1.34	2.39	9394.68	0.134
1234689-HpCDF	39.61		1.0113	1.0113	0	1.07E+07	1.06	Y	1.34	19	9394.68	0.134
1234789-HpCDF	**40.57**		**1.0002**	**1.0003**	**+0.2**	**5.36E+06**	**1.01**	**Y**	**1.31**	**10.9**	**9394.68**	**0.161**
OCDF	**42.91**		**1.0003**	**1.0002**	**-0.3**	**1.58E+07**	**0.94**	**Y**	**1.07**	**73.9**	**7077.034**	**0.366**
OCDF-a	42.90		1.0002	1.0000	-0.5	9.13E+05	2.80	Y	0.07	68.8	10652.813	8.9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27.0
28.0
RT
Rel. Int.
100%
QC Check
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0%
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RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
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2.31e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
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1.37e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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1.10e7
0.00e0
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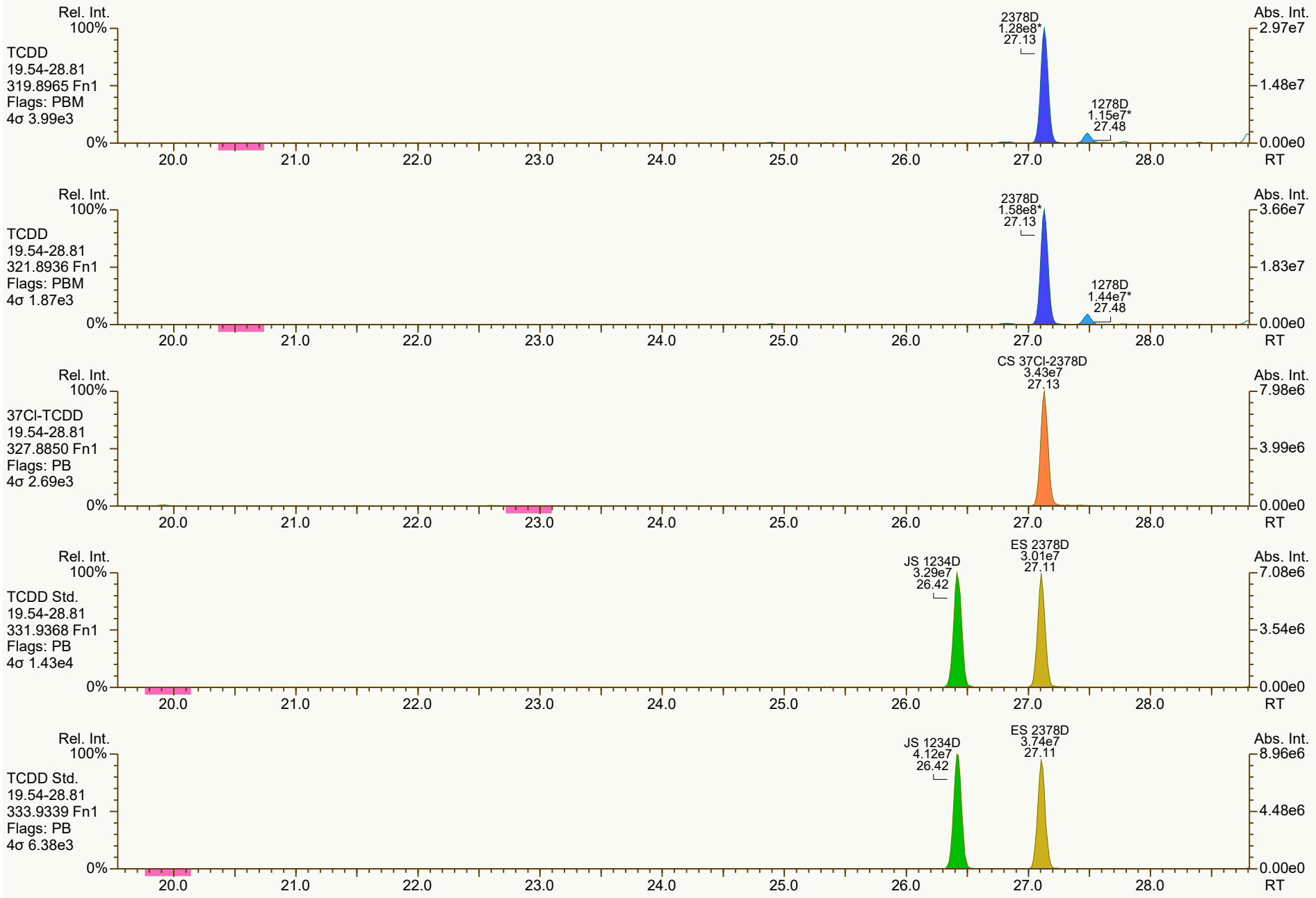
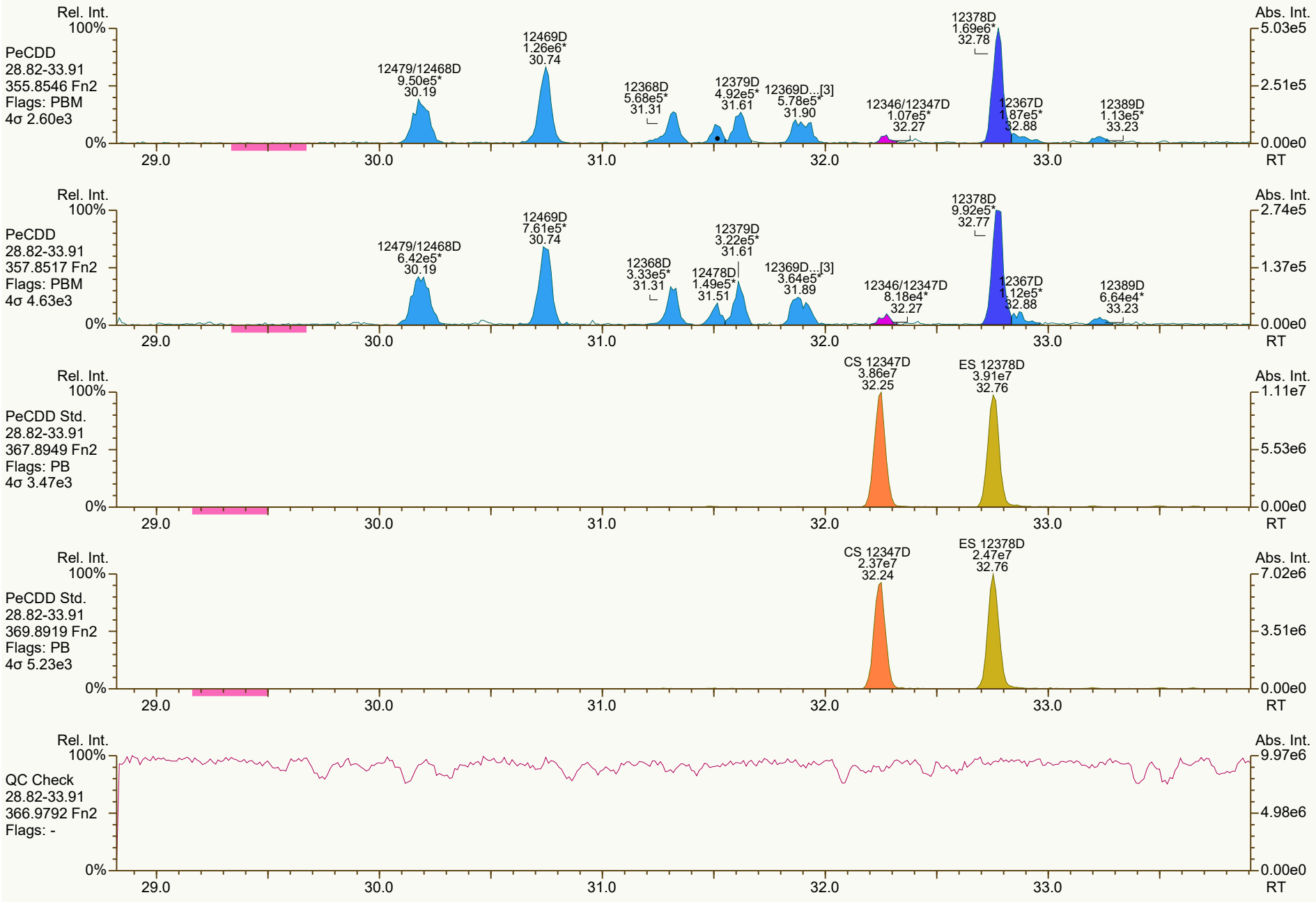
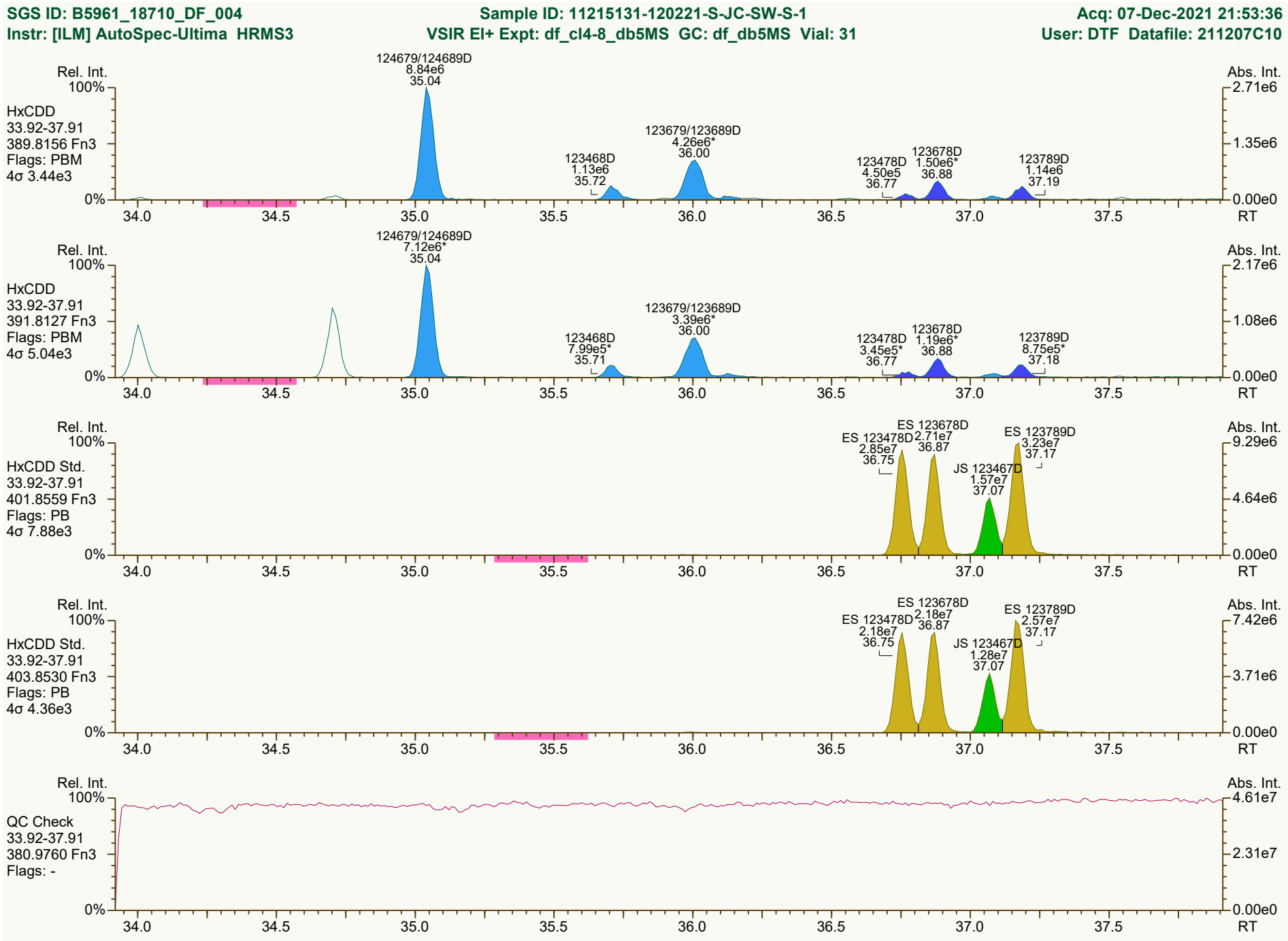
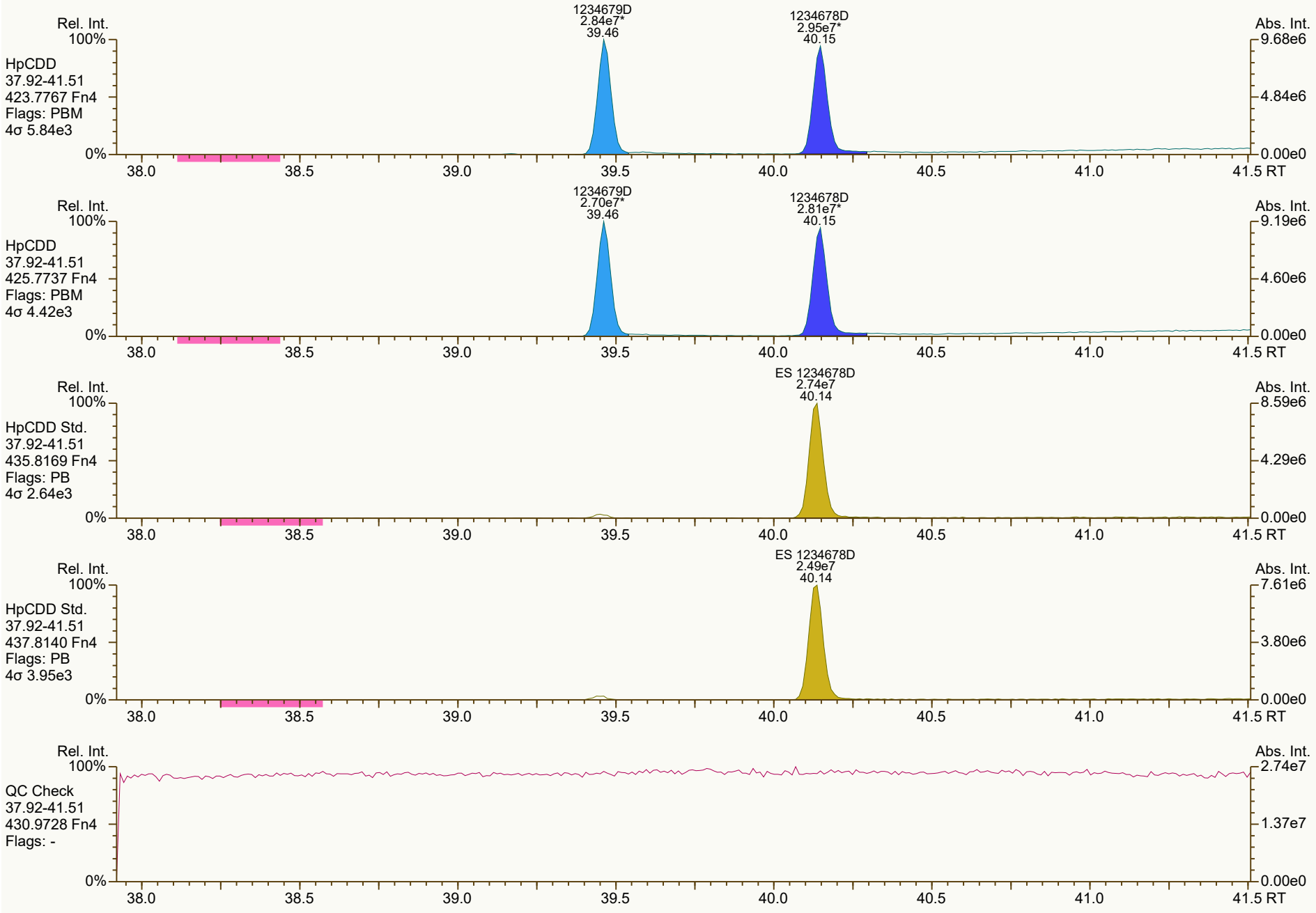
44.5
45.0 RT

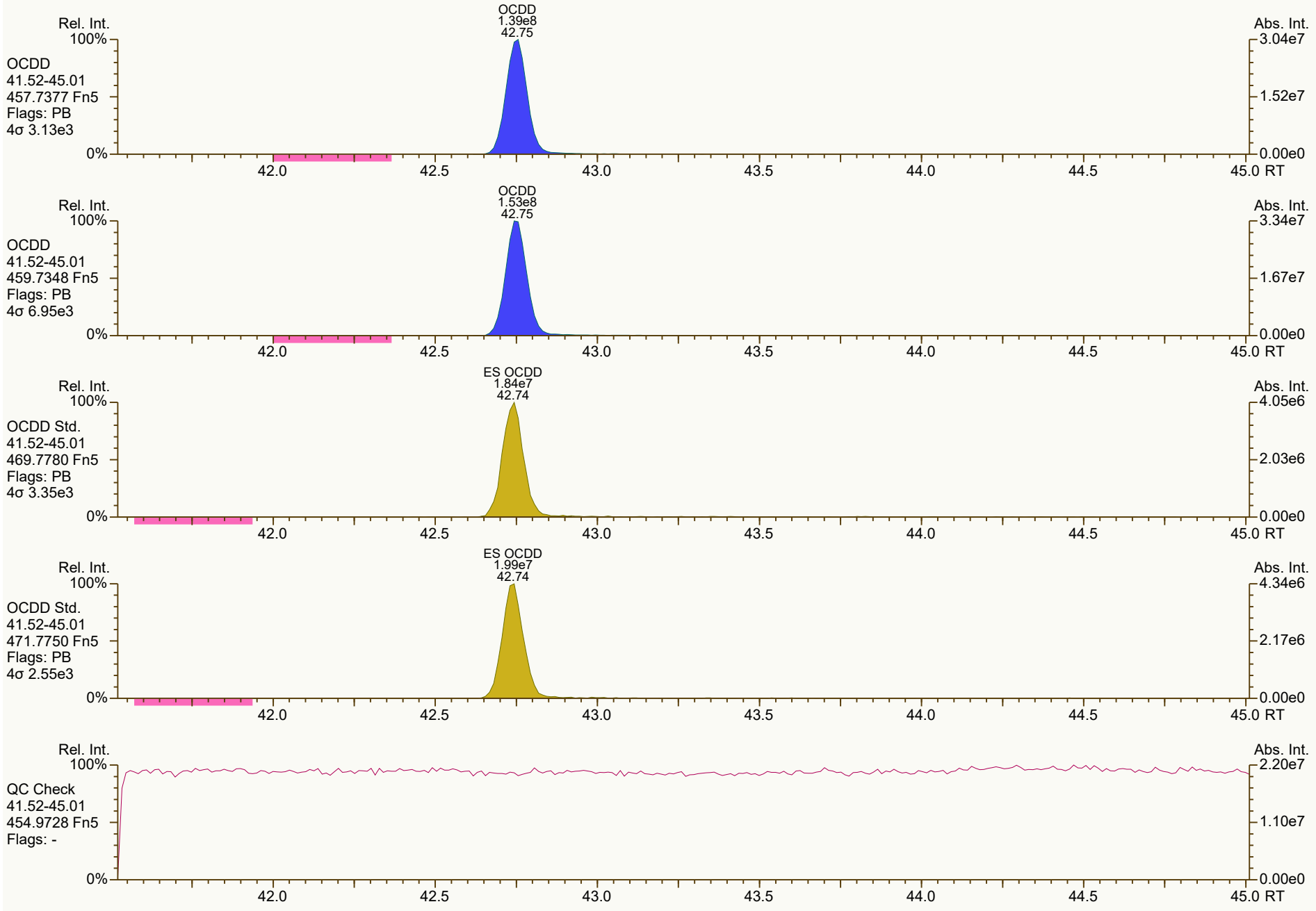

Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: PBM
4σ 3.99e3
0%
2378D
1.28e8*
27.13
1278D
1.15e7*
27.48
Abs. Int.
2.97e7
1.48e7
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 1.87e3
0%
2378D
1.58e8*
27.13
1278D
1.44e7*
27.48
Abs. Int.
3.66e7
1.83e7
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 2.69e3
0%
CS 37Cl-2378D
3.43e7
27.13
Abs. Int.
7.98e6
3.99e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 1.43e4
0%
JS 1234D
3.29e7
26.42
ES 2378D
3.01e7
27.11
Abs. Int.
7.08e6
3.54e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 6.38e3
0%
JS 1234D
4.12e7
26.42
ES 2378D
3.74e7
27.11
Abs. Int.
8.96e6
4.48e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT

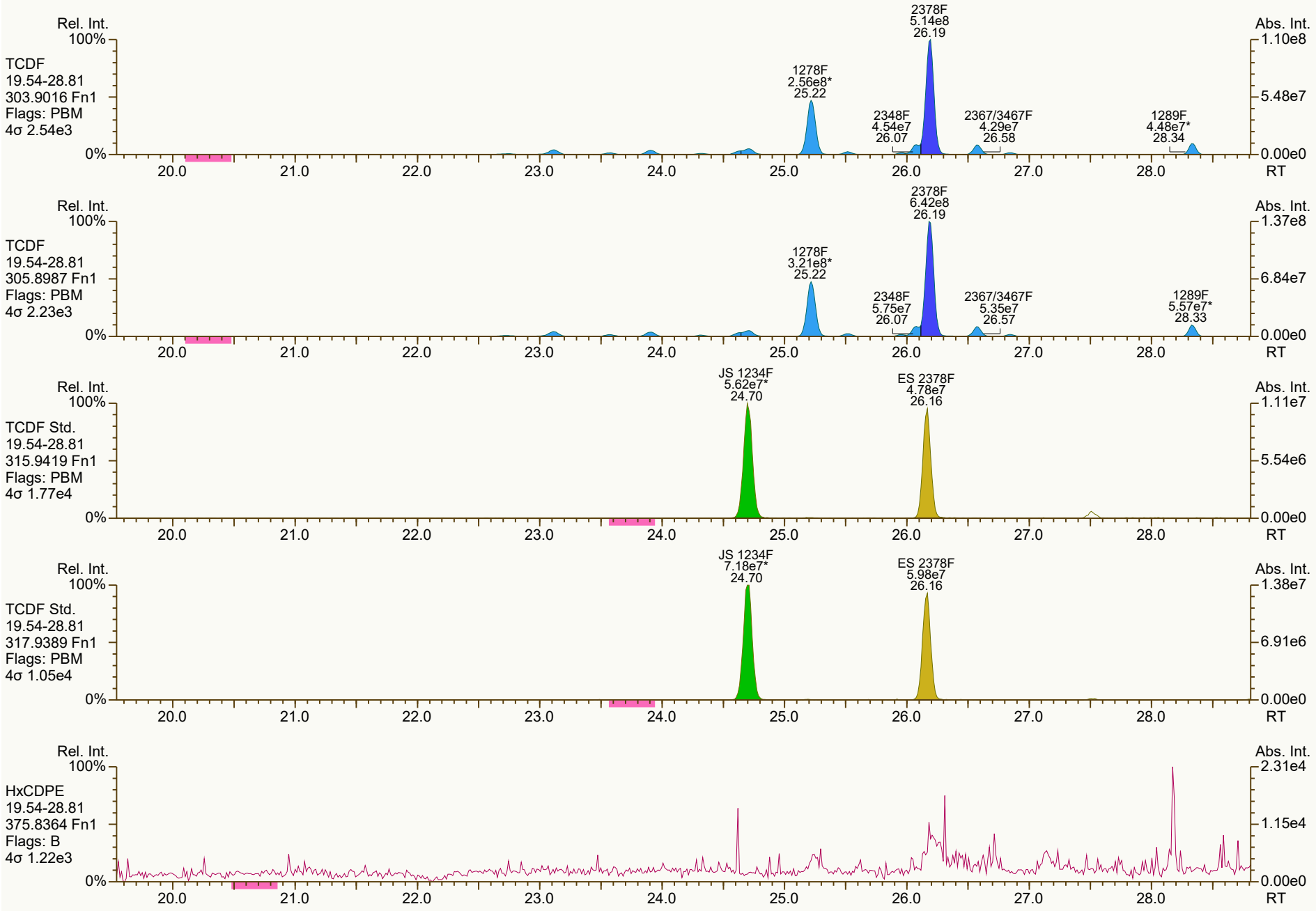

Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PBM
4σ 2.60e3
0%
12479/12468D
9.50e5*
30.19
12469D
1.26e6*
30.74
12368D
5.68e5*
31.31
12379D
4.92e5*
31.61
12369D...[3]
5.78e5*
31.90
12346/12347D
1.07e5*
32.27
12378D
1.69e6*
32.78
12367D
1.87e5*
32.88
12389D
1.13e5*
33.23
Abs. Int.
5.03e5
2.51e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PBM
4σ 4.63e3
0%
12479/12468D
6.42e5*
30.19
12469D
7.61e5*
30.74
12368D
3.33e5*
31.31
12379D
3.22e5*
31.61
12478D
1.49e5*
31.51
12369D...[3]
3.64e5*
31.89
12346/12347D
8.18e4*
32.27
12378D
9.92e5*
32.77
12367D
1.12e5*
32.88
12389D
6.64e4*
33.23
Abs. Int.
2.74e5
1.37e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 3.47e3
0%
CS 12347D
3.86e7
32.25
ES 12378D
3.91e7
32.76
Abs. Int.
1.11e7
5.53e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 5.23e3
0%
CS 12347D
2.37e7
32.24
ES 12378D
2.47e7
32.76
Abs. Int.
7.02e6
3.51e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.97e6
4.98e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT



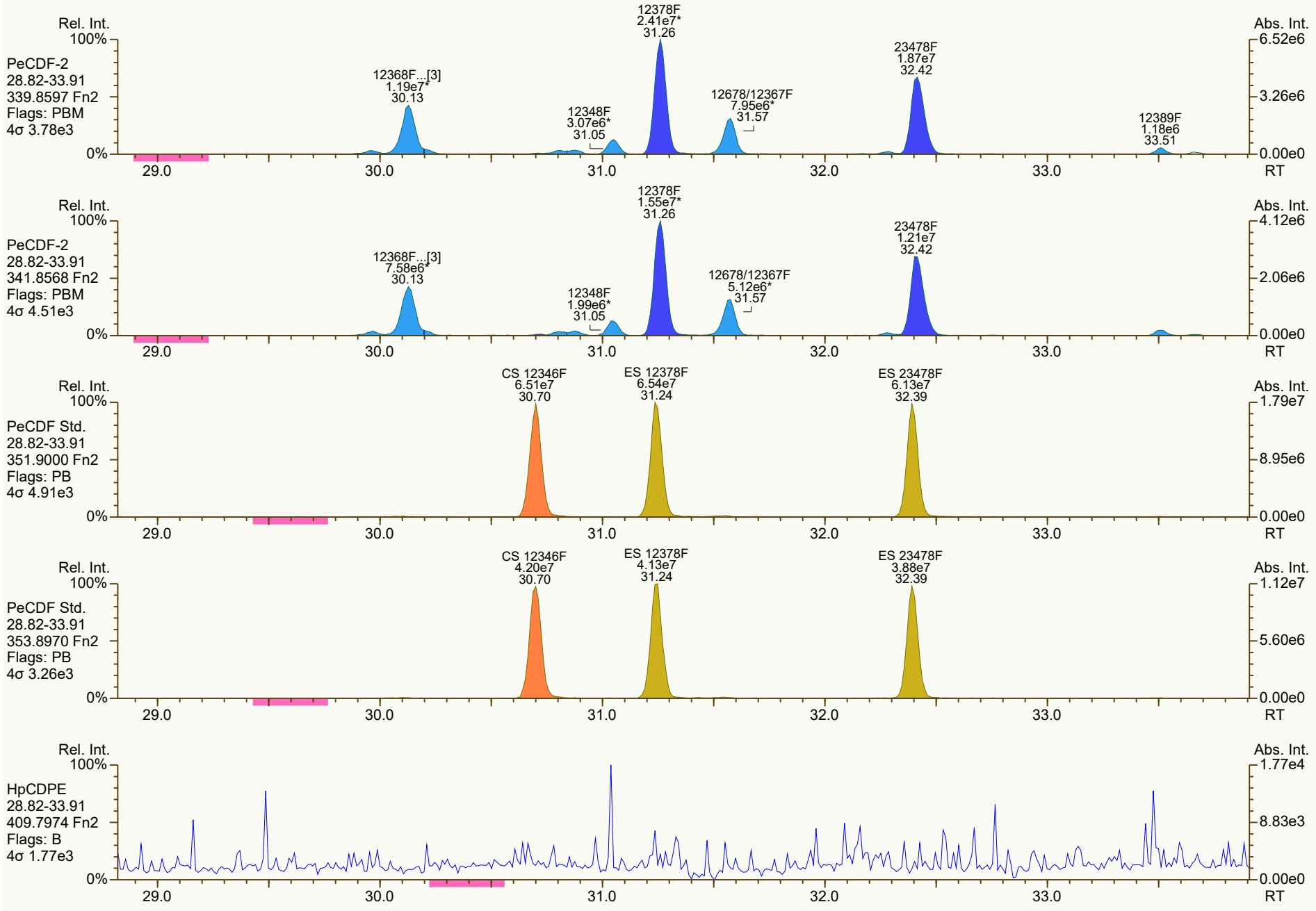
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_004.utp_res, saved 08-Dec-2021 11:25 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5957, 5138 scc: 956-033
Revised: 08-Dec-2021 10:15 (DTF) Printed: 08-Dec-2021 11:33 Page 4 of 12

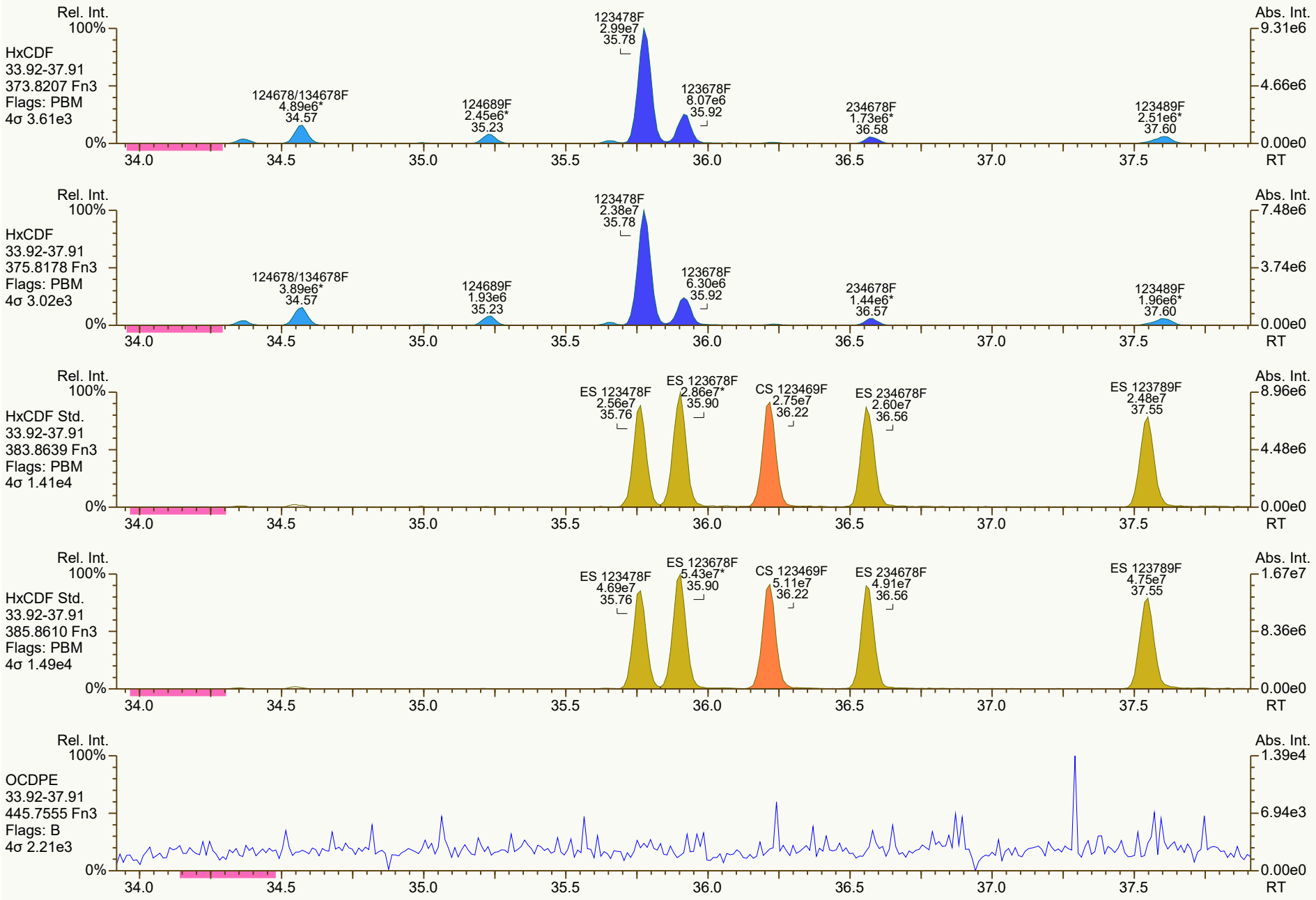

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PBM
4σ 5.84e3
0%
1234679D
2.84e7*
39.46
1234678D
2.95e7*
40.15
Abs. Int.
9.68e6
4.84e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PBM
4σ 4.42e3
0%
1234679D
2.70e7*
39.46
1234678D
2.81e7*
40.15
Abs. Int.
9.19e6
4.60e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 2.64e3
0%
ES 1234678D
2.74e7
40.14
Abs. Int.
8.59e6
4.29e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 3.95e3
0%
ES 1234678D
2.49e7
40.14
Abs. Int.
7.61e6
3.80e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.74e7
1.37e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.39e8
42.75
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 3.13e3
0%
Abs. Int.
3.04e7
1.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.53e8
42.75
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 6.95e3
3.34e7
1.67e7
ES OCDD
1.84e7
42.74
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 3.35e3
4.05e6
2.03e6
ES OCDD
1.99e7
42.74
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.55e3
4.34e6
2.17e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
2.20e7
1.10e7

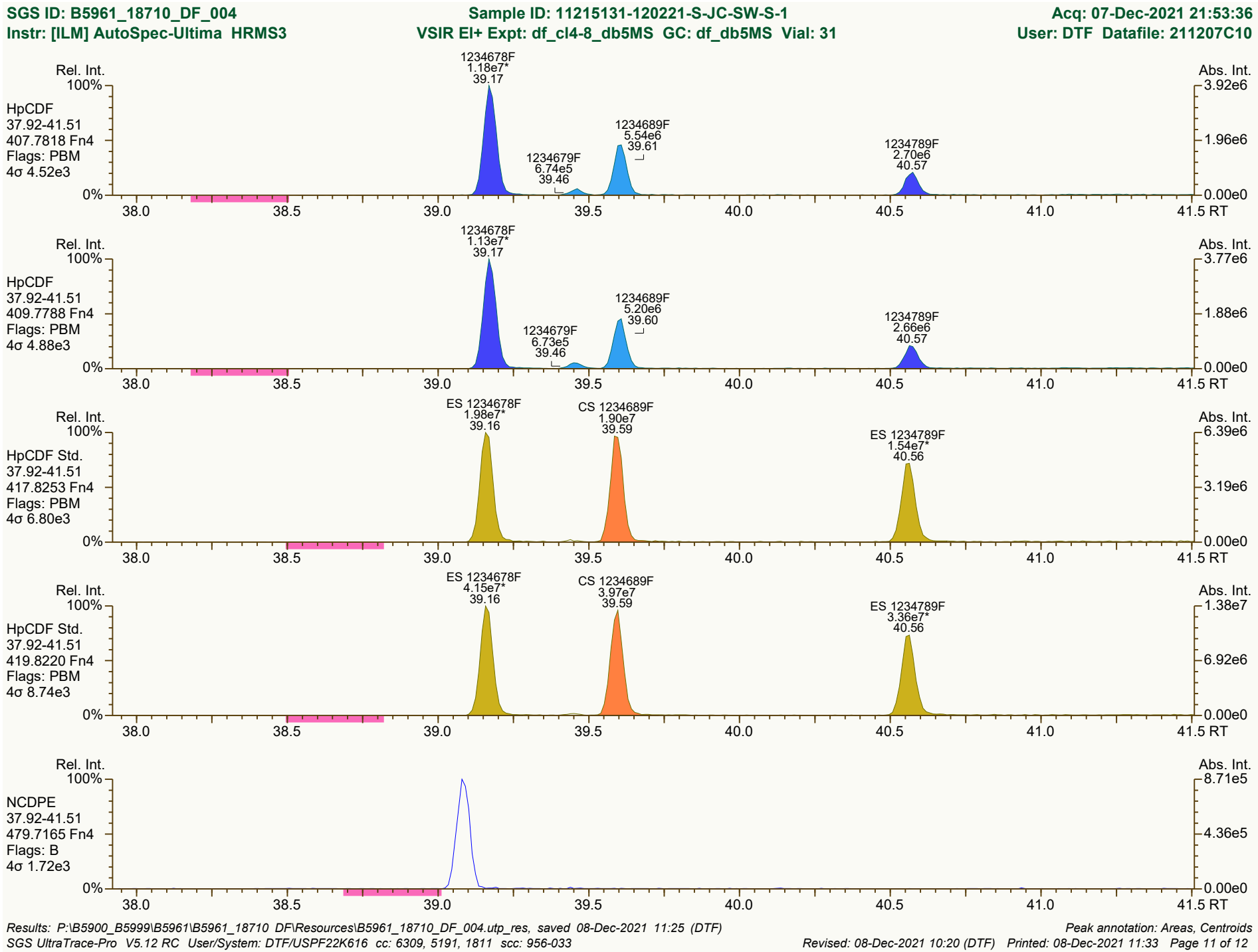

Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 2.54e3
0%
2378F
5.14e8
26.19
1278F
2.56e8*
25.22
2348F
4.54e7
26.07
2367/3467F
4.29e7
26.58
1289F
4.48e7*
28.34
Abs. Int.
1.10e8
5.48e7
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 2.23e3
0%
2378F
6.42e8
26.19
1278F
3.21e8*
25.22
2348F
5.75e7
26.07
2367/3467F
5.35e7
26.57
1289F
5.57e7*
28.33
Abs. Int.
1.37e8
6.84e7
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PBM
4σ 1.77e4
0%
JS 1234F
5.62e7*
24.70
ES 2378F
4.78e7
26.16
Abs. Int.
1.11e7
5.54e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PBM
4σ 1.05e4
0%
JS 1234F
7.18e7*
24.70
ES 2378F
5.98e7
26.16
Abs. Int.
1.38e7
6.91e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.22e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
3.37e5
1.69e5
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 2.54e3
13468/12468F
1.36e6
28.34
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 2.79e3
13468/12468F
9.09e5
28.34
2.34e5
1.17e5
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
1.27e7
6.34e6

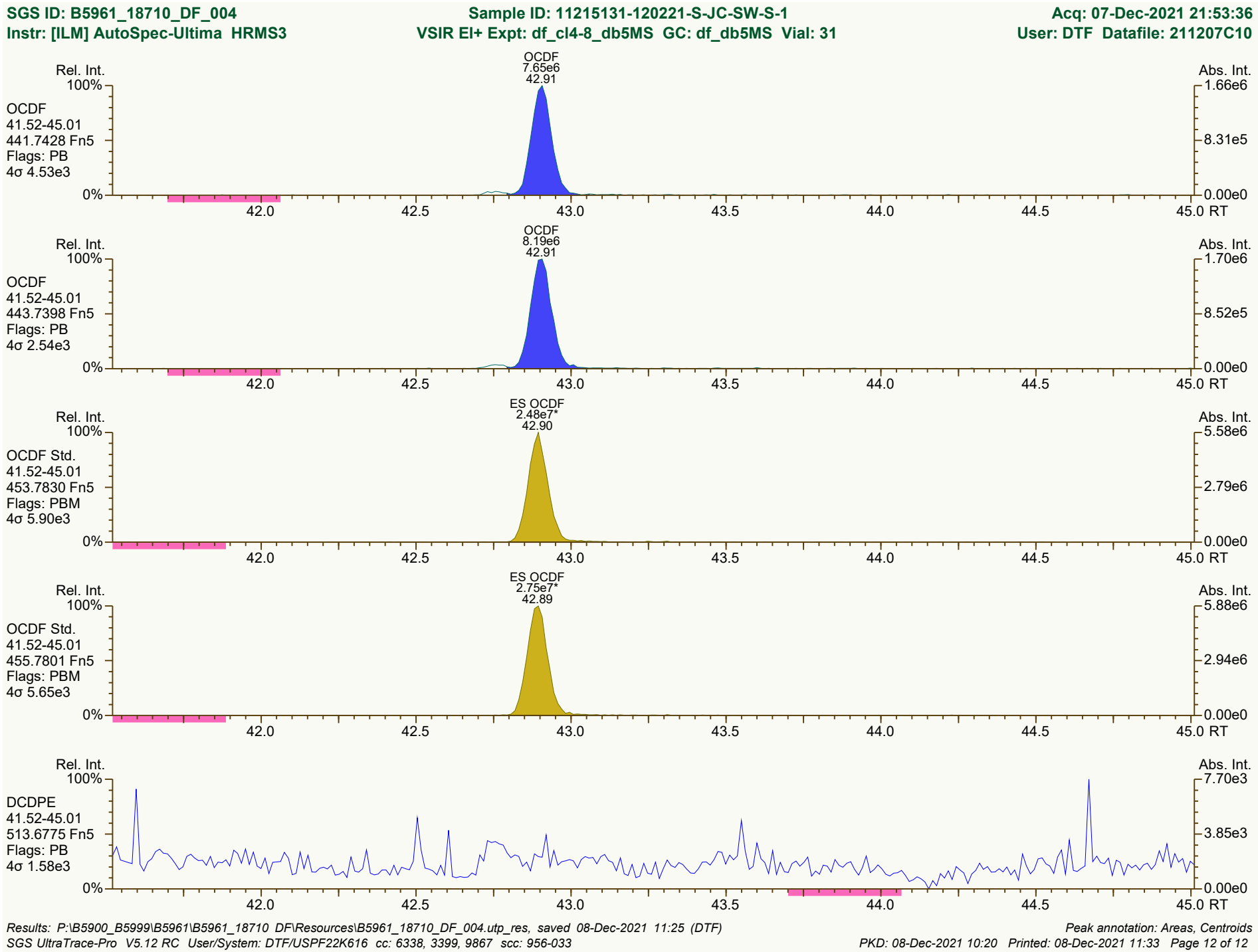

Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PBM
4σ 3.78e3
0%
12368F...[3]
1.19e7*
30.13
12348F
3.07e6*
31.05
12378F
2.41e7*
31.26
12678/12367F
7.95e6*
31.57
23478F
1.87e7
32.42
12389F
1.18e6
33.51
Abs. Int.
6.52e6
3.26e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PBM
4σ 4.51e3
0%
12368F...[3]
7.58e6*
30.13
12348F
1.99e6*
31.05
12378F
1.55e7*
31.26
12678/12367F
5.12e6*
31.57
23478F
1.21e7
32.42
Abs. Int.
4.12e6
2.06e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 4.91e3
0%
CS 12346F
6.51e7
30.70
ES 12378F
6.54e7
31.24
ES 23478F
6.13e7
32.39
Abs. Int.
1.79e7
8.95e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 3.26e3
0%
CS 12346F
4.20e7
30.70
ES 12378F
4.13e7
31.24
ES 23478F
3.88e7
32.39
Abs. Int.
1.12e7
5.60e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.77e3
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PBM
4σ 3.61e3
0%
123478F
2.99e7
35.78
124678/134678F
4.89e6*
34.57
124689F
2.45e6*
35.23
123678F
8.07e6
35.92
234678F
1.73e6*
36.58
123489F
2.51e6*
37.60
Abs. Int.
9.31e6
4.66e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PBM
4σ 3.02e3
0%
123478F
2.38e7
35.78
124678/134678F
3.89e6*
34.57
124689F
1.93e6
35.23
123678F
6.30e6
35.92
234678F
1.44e6*
36.57
123489F
1.96e6*
37.60
Abs. Int.
7.48e6
3.74e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 1.41e4
0%
ES 123478F
2.56e7
35.76
ES 123678F
2.86e7*
35.90
CS 123469F
2.75e7
36.22
ES 234678F
2.60e7
36.56
ES 123789F
2.48e7
37.55
Abs. Int.
8.96e6
4.48e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PBM
4σ 1.49e4
0%
ES 123478F
4.69e7
35.76
ES 123678F
5.43e7*
35.90
CS 123469F
5.11e7
36.22
ES 234678F
4.91e7
36.56
ES 123789F
4.75e7
37.55
Abs. Int.
1.67e7
8.36e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 2.21e3
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT

SGS ID: B5961_18710_DF_004 | Sample ID: 11215131-120221-S-JC-SW-S-1 | Acq: 07-Dec-2021 21:53:36
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31 | User: DTF Datafile: 211207C10



Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_004.utp_res, saved 08-Dec-2021 11:25 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6309, 5191, 1811 scc: 956-033 | Revised: 08-Dec-2021 10:20 (DTF) Printed: 08-Dec-2021 11:33 Page 11 of 12


SGS ID: B5961_18710_DF_004
Sample ID: 11215131-120221-S-JC-SW-S-1
Acq: 07-Dec-2021 21:53:36
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31
User: DTF Datafile: 211207C10
OCDF
7.65e6
42.91
Rel. Int.
100%
Abs. Int.
1.66e6
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 4.53e3
8.31e5
0%
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
8.19e6
42.91
Rel. Int.
100%
Abs. Int.
1.70e6
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.54e3
8.52e5
0%
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.48e7*
42.90
Rel. Int.
100%
Abs. Int.
5.58e6
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 5.90e3
2.79e6
0%
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.75e7*
42.89
Rel. Int.
100%
Abs. Int.
5.88e6
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 5.65e3
2.94e6
0%
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
Abs. Int.
7.70e3
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.58e3
3.85e3
0%
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_004.utp_res, saved 08-Dec-2021 11:25 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6338, 3399, 9867 scc: 956-033
PKD: 08-Dec-2021 10:20 Printed: 08-Dec-2021 11:33 Page 12 of 12

Lab ID: B5961_18710_DF_005 **Acq'd:** 07 Dec 2021 22:39 DTF **Wt/Vol:** 14.45 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-JC-SW-S-2 **UTP:** 08-Dec-2021 11:25:19 DTF **J-level:** 0.346 pg/g **Split:** 1 **Checkcode:** 240-605-PYG

Datafile: 211207C11 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.13		1.0009	1.0009	0	2.17E+08	0.80	Y	1.18	383	6783.658	0.136
12378-PeCDD	32.78		1.0006	1.0006	0	1.93E+06	1.73	Y	1.04	4.17	5482.446	0.0997
123478-HxCDD	36.77	J	1.0004	1.0004	0	4.62E+05	1.20	Y	1.09	1.25	7114.731	0.155
123678-HxCDD	36.89		1.0035	1.0035	0	1.21E+06	1.24	Y	1.15	3.12	7114.731	0.15
123789-HxCDD	37.19		1.0117	1.0116	-0.2	1.35E+06	1.19	Y	1.05	3.39	7114.731	0.157
1234678-HpCDD	40.15		1.0003	1.0003	0	5.34E+07	1.05	Y	1.06	161	6858.571	0.165
OCDD	42.76		1.0003	1.0003	0	9.91E+08	0.91	Y	1.13	6,150	10462.304	0.711
2378-TCDF	26.19	E	1.0009	1.0008	-0.2	8.92E+08	0.80	Y	1.08	1,050	5952.724	0.082
12378-PeCDF	31.26		1.0005	1.0006	+0.2	3.27E+07	1.56	Y	1.02	43.5	6129.651	0.0738
23478-PeCDF	32.42		1.0006	1.0008	+0.4	2.38E+07	1.58	Y	1.02	33.6	6129.651	0.0755
123478-HxCDF	35.78		1.0005	1.0005	0	4.31E+07	1.25	Y	1.27	69.8	7045.806	0.0923
123678-HxCDF	35.92		1.0004	1.0005	+0.2	1.23E+07	1.24	Y	1.15	18.8	7045.806	0.0872
234678-HxCDF	36.58		1.0004	1.0004	0	2.60E+06	1.26	Y	1.19	4.41	7045.806	0.0981
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	7045.806	0.118
1234678-HpCDF	39.18		1.0003	1.0003	0	1.57E+07	1.04	Y	1.37	29	5756.521	0.0846
1234789-HpCDF	40.58		1.0002	1.0003	+0.2	3.85E+06	1.01	Y	1.31	9.23	5756.521	0.109
OCDF	42.91		1.0003	1.0002	-0.3	1.06E+07	0.88	Y	1.07	51.6	5922.665	0.321

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.11	1.0260	1.0260	0	6.61E+07	0.80	Y	1.05	88.2
ES 12378-PeCDD	32.76	1.2396	1.2398	+0.4	6.19E+07	1.58	Y	0.88	98.2
ES 123478-HxCDD	36.76	0.9916	0.9916	0	4.71E+07	1.27	Y	0.97	88.4
ES 123678-HxCDD	36.87	0.9947	0.9946	-0.2	4.67E+07	1.27	Y	0.94	90.3
ES 123789-HxCDD	37.17	1.0027	1.0028	+0.2	5.26E+07	1.29	Y	1.09	88
ES 1234678-HpCDD	40.14	1.0828	1.0828	0	4.32E+07	1.10	Y	0.91	86.4
ES OCDD	42.75	1.1528	1.1531	+0.8	3.96E+07	0.94	Y	0.62	57.9
ES 2378-TCDF	26.17	1.0591	1.0591	0	1.09E+08	0.77	Y	1.06	82.3
ES 12378-PeCDF	31.24	1.2643	1.2645	+0.4	1.01E+08	1.57	Y	0.91	89.3
ES 23478-PeCDF	32.39	1.3110	1.3112	+0.4	9.62E+07	1.59	Y	0.88	87.4
ES 123478-HxCDF	35.76	0.9648	0.9647	-0.2	6.73E+07	0.55	Y	1.20	102
ES 123678-HxCDF	35.90	0.9686	0.9685	-0.2	7.84E+07	0.55	Y	1.35	106
ES 234678-HxCDF	36.57	0.9865	0.9864	-0.2	6.88E+07	0.53	Y	1.24	101
ES 123789-HxCDF	37.55	1.0129	1.0129	0	6.41E+07	0.53	Y	1.16	101
ES 1234678-HpCDF	39.17	1.0565	1.0565	0	5.46E+07	0.46	Y	0.97	103
ES 1234789-HpCDF	40.57	1.0943	1.0944	+0.2	4.41E+07	0.47	Y	0.85	94.7
ES OCDF	42.90	1.1569	1.1573	+1.0	5.28E+07	0.92	Y	0.81	59.7

Lab ID: B5961_18710_DF_005 **Acq'd:** 07 Dec 2021 22:39 DTF **Wt/Vol:** 14.45 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-JC-SW-S-2 **UTP:** 08-Dec-2021 11:25:19 DTF **J-level:** 0.346 pg/g **Split:** 1 **Checkcode:** 240-605-PYG

Datafile: 211207C11 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.42		-	-	-	7.17E+07	0.80	Y	-	-	
JS 1234-TCDF	24.71		-	-	-	1.25E+08	0.78	Y	-	-	
JS 123467-HxCDD	37.07		-	-	-	2.74E+07	1.30	Y	-	-	
CS 37Cl-2378-TCDD	27.13		1.0269	1.0270	+0.2	3.26E+07	n/a	-	1.20	94.6	
CS 12347-PeCDD	32.24		1.2203	1.2204	+0.2	6.03E+07	1.59	Y	0.75	112	
CS 12346-PeCDF	30.70		1.2424	1.2426	+0.4	9.69E+07	1.56	Y	0.85	91.3	
CS 123469-HxCDF	36.22		0.9771	0.9770	-0.2	7.19E+07	0.55	Y	1.12	118	
CS 1234689-HpCDF	39.60		1.0681	1.0682	+0.2	5.43E+07	0.45	Y	0.89	112	
~~SS 37Cl-2378-TCDD~~	~~27.13~~		~~1.0269~~	~~1.0270~~	~~+0.2~~	~~3.26E+07~~	~~n/a~~		~~1.15~~	~~108~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.24~~		~~1.2203~~	~~1.2204~~	~~+0.2~~	~~6.03E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~113~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.70~~		~~1.2424~~	~~1.2426~~	~~+0.4~~	~~9.69E+07~~	~~1.56~~	~~Y~~	~~0.94~~	~~102~~	
~~SS 123469-HxCDF~~	~~36.22~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~7.19E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~111~~	
~~SS 1234689-HpCDF~~	~~39.60~~		~~1.0681~~	~~1.0682~~	~~+0.2~~	~~5.43E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~108~~	

Totals	Conc	EMPC
Total TCDD	435	440
Total PeCDD	14.3	15.6
Total HxCDD	62.5	65
Total HpCDD	358	358
Total Tetra-Octa Dioxins	7020	7030
Total TCDF	2,120	2120
Total PeCDF	128	128
Total HxCDF	117	118
Total HpCDF	55.5	55.5
Total Tetra-Octa Furans	2,470	2470
Total Tetra-Octa Dioxins & Furans	9490	9500

Lab ID: B5961_18710_DF_005 **Acq'd: 07 Dec 2021 22:39 DTF** **Wt/Vol: 14.45 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-JC-SW-S-2 **UTP: 08-Dec-2021 11:25:19 DTF** **J-level: 0.346 pg/g** **Split: 1** **Checkcode: 240-605-PYG**

Datafile: 211207C11 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.16		0.8545	0.8543	-0.3	6.95E+05	0.83	Y	1.18	1.23	6783.658	0.136
1379-TCDD	23.56	EMPC	0.8692	0.8689	-0.4	3.86E+05	0.89	N	1.18	0.681	6783.658	0.136
1369-TCDD	24.04	J EMPC	0.8868	0.8867	-0.1	1.75E+05	0.97	N	1.18	0.308	6783.658	0.136
1469-TCDD	24.89		0.9185	0.9183	-0.3	2.29E+06	0.81	Y	1.18	4.04	6783.658	0.136
1247/1246/1248/1249-TCDD	25.17	EMPC	0.9282	0.9285	+0.5	6.29E+05	1.02	N	1.18	1.11	6783.658	0.136
1378-TCDD	25.36		0.9355	0.9354	-0.2	7.79E+05	0.83	Y	1.18	1.38	6783.658	0.136
1268-TCDD	NotFnd		0.9435						1.18		6783.658	0.136
1478-TCDD	25.84	EMPC	0.9533	0.9533	0	6.95E+05	0.89	N	1.18	1.23	6783.658	0.136
1279-TCDD	26.03	J EMPC	0.9601	0.9601	0	1.57E+05	0.96	N	1.18	0.277	6783.658	0.136
1234/1269-TCDD	26.39		0.9741	0.9737	-0.6	5.51E+05	0.87	Y	1.18	0.973	6783.658	0.136
1236-TCDD	NotFnd		0.9797						1.18		6783.658	0.136
1237/1238-TCDD	26.82		0.9898	0.9893	-0.8	4.16E+06	0.84	Y	1.18	7.35	6783.658	0.136
1239-TCDD	NotFnd		0.9952						1.18		6783.658	0.136
2378-TCDD	**27.13**		**1.0009**	1.0009	**0**	2.17E+08	0.80	Y	**1.18**	**383**	**6783.658**	**0.136**
1278-TCDD	27.49		1.0139	1.0139	0	2.07E+07	0.83	Y	1.18	36.5	6783.658	0.136
1267-TCDD	27.63	EMPC	1.0193	1.0191	-0.3	8.00E+05	1.15	N	1.18	1.41	6783.658	0.136
1289-TCDD	NotFnd		1.0393						1.18		6783.658	0.136
12479/12468-PeCDD	30.19		0.9216	0.9216	0	9.45E+05	1.40	Y	1.04	2.04	5482.446	0.0997
12469-PeCDD	30.74		0.9386	0.9385	-0.2	1.86E+06	1.60	Y	1.04	4.01	5482.446	0.0997
12368-PeCDD	31.30	J EMPC	0.9560	0.9555	-0.9	4.27E+05	2.15	N	1.04	0.921	5482.446	0.0997
12478-PeCDD	31.51	J	0.9619	0.9620	+0.2	3.52E+05	1.62	Y	1.04	0.759	5482.446	0.0997
12379-PeCDD	31.62	J	0.9651	0.9652	+0.2	4.29E+05	1.67	Y	1.04	0.925	5482.446	0.0997
12369/12467/12489-PeCDD	31.89		0.9735	0.9735	0	8.32E+05	1.39	Y	1.04	1.79	5482.446	0.0997
12346/12347-PeCDD	32.27	J	0.9852	0.9852	0	1.33E+05	1.63	Y	1.04	0.287	5482.446	0.0997
12378-PeCDD	32.78		**1.0006**	**1.0006**	**0**	**1.93E+06**	**1.73**	**Y**	**1.04**	**4.17**	**5482.446**	**0.0997**
12367-PeCDD	32.89	J EMPC	1.0037	1.0041	+0.8	1.40E+05	2.18	N	1.04	0.301	5482.446	0.0997
12389-PeCDD	33.23	J	1.0145	1.0143	-0.4	1.63E+05	1.32	Y	1.04	0.351	5482.446	0.0997
124679/124689-HxCDD	35.05		0.9535	0.9534	-0.2	1.47E+07	1.24	Y	1.10	38	7114.731	0.154
123468-HxCDD	35.72	EMPC	0.9716	0.9718	+0.4	9.64E+05	1.45	N	1.10	2.5	7114.731	0.154
123679/123689-HxCDD	36.01		0.9796	0.9795	-0.2	5.47E+06	1.27	Y	1.10	14.2	7114.731	0.154
123469-HxCDD	36.14	J	0.9833	0.9832	-0.2	5.27E+05	1.20	Y	1.10	1.37	7114.731	0.154
123478-HxCDD	36.77	J	**1.0004**	**1.0004**	**0**	**4.62E+05**	**1.20**	**Y**	1.09	**1.25**	**7114.731**	**0.155**
123678-HxCDD	36.89		**1.0035**	**1.0035**	**0**	**1.21E+06**	**1.24**	**Y**	1.15	**3.12**	**7114.731**	**0.15**
123467-HxCDD	37.09	J	1.0088	1.0089	+0.2	4.66E+05	1.28	Y	1.10	1.21	7114.731	0.154
123789-HxCDD	37.19		**1.0117**	**1.0116**	**-0.2**	**1.35E+06**	**1.19**	**Y**	1.05	**3.39**	**7114.731**	**0.157**

Lab ID: B5961_18710_DF_005 **Acq'd:** 07 Dec 2021 22:39 DTF **Wt/Vol:** 14.45 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-JC-SW-S-2 **UTP:** 08-Dec-2021 11:25:19 DTF **J-level:** 0.346 pg/g **Split:** 1 **Checkcode:** 240-605-PYG

Datafile: 211207C11 **Report:** 08 Dec 2021 11:27 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

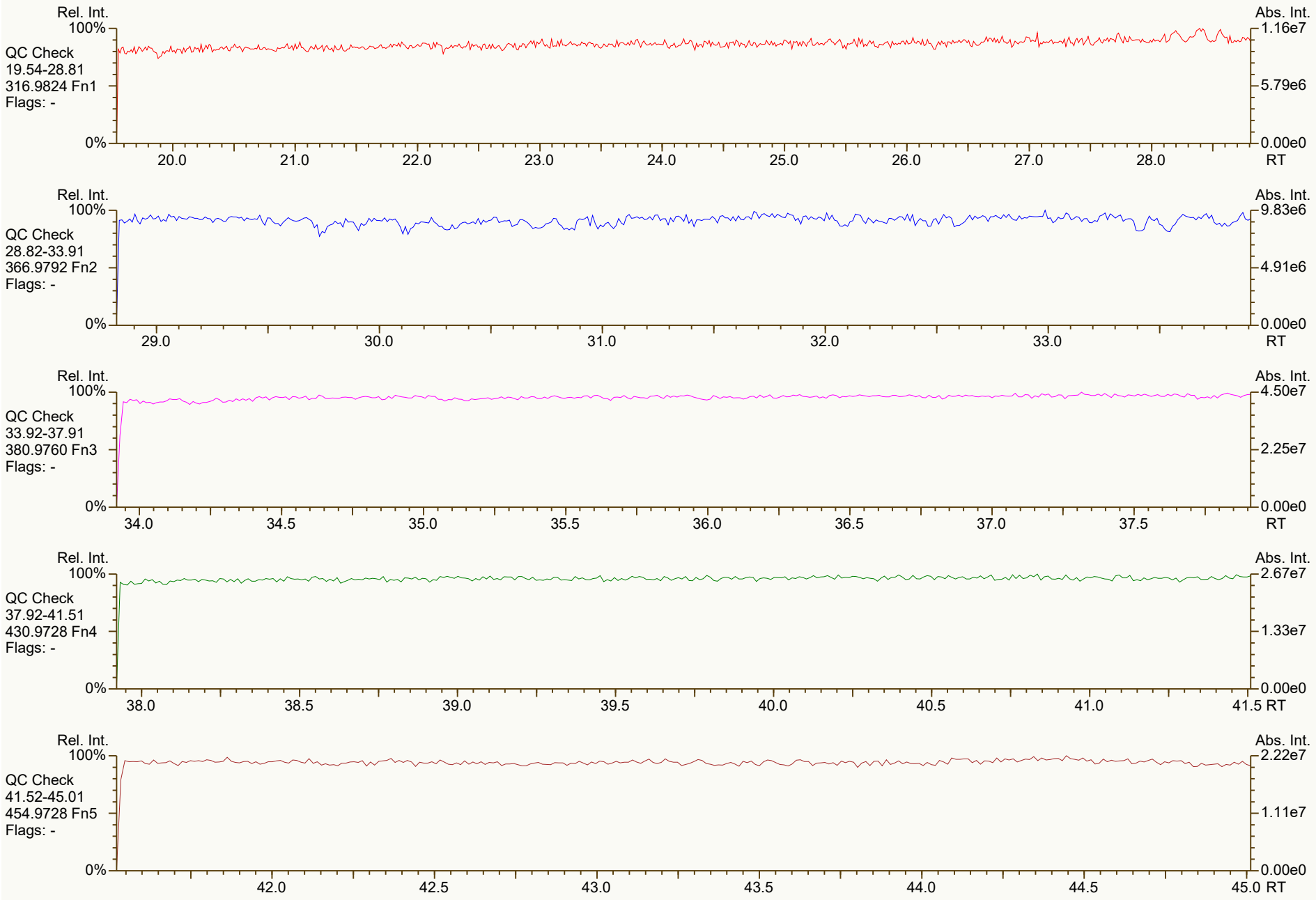
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9833	0	6.50E+07	1.05	Y	1.06	196	6858.571	0.165
1234678-HpCDD	**40.15**		**1.0003**	**1.0003**	**0**	**5.34E+07**	**1.05**	**Y**	**1.06**	**161**	**6858.571**	**0.165**
OCDD	**42.76**		**1.0003**	**1.0003**	**0**	**9.91E+08**	**0.91**	**Y**	**1.13**	**6,150**	**10462.304**	**0.711**
OCDD-a	42.75		1.0002	1.0002	0	5.84E+07	2.47	Y	0.07	5,670	9302.344	9.88
1368-TCDF	20.92		0.7998	0.7994	-0.5	4.30E+05	0.75	Y	1.08	0.508	5952.724	0.082
1468-TCDF	21.48		0.8214	0.8209	-0.6	1.78E+06	0.80	Y	1.08	2.1	5952.724	0.082
2468-TCDF	22.14		0.8463	0.8460	-0.4	2.05E+06	0.77	Y	1.08	2.42	5952.724	0.082
1346/1246-TCDF	NotFnd		0.8608						1.08		5952.724	0.082
1347/1378/1247-TCDF	22.72		0.8675	0.8683	+1.1	1.19E+07	0.81	Y	1.08	14.1	5952.724	0.082
1348-TCDF	NotFnd		0.8793						1.08		5952.724	0.082
1248/1367/1379-TCDF	23.11		0.8850	0.8832	-2.5	4.94E+07	0.81	Y	1.08	58.2	5952.724	0.082
1268-TCDF	23.58		0.9010	0.9010	0	1.62E+07	0.81	Y	1.08	19.1	5952.724	0.082
1467-TCDF	23.73		0.9068	0.9068	0	2.16E+06	0.81	Y	1.08	2.55	5952.724	0.082
1478-TCDF	23.91		0.9139	0.9137	-0.3	3.89E+07	0.81	Y	1.08	45.8	5952.724	0.082
1369/1237-TCDF	24.32		0.9294	0.9295	+0.1	1.05E+07	0.84	Y	1.08	12.4	5952.724	0.082
2467-TCDF	24.46		0.9350	0.9349	-0.1	1.22E+06	0.88	Y	1.08	1.44	5952.724	0.082
2368-TCDF	24.62		0.9410	0.9410	0	2.49E+07	0.78	Y	1.08	29.4	5952.724	0.082
1238/1234/1678/1469/1236-TCDF	24.71		0.9451	0.9444	-1.0	5.16E+07	0.80	Y	1.08	60.9	5952.724	0.082
1278-TCDF	25.22		0.9642	0.9639	-0.5	4.29E+08	0.80	Y	1.08	506	5952.724	0.082
1349-TCDF	NotFnd		0.9695						1.08		5952.724	0.082
1267-TCDF	25.52		0.9753	0.9752	-0.2	2.33E+07	0.81	Y	1.08	27.5	5952.724	0.082
2346/1249-TCDF	25.74		0.9832	0.9837	+0.8	3.01E+06	0.76	Y	1.08	3.56	5952.724	0.082
2347/1279-TCDF	25.95		0.9921	0.9917	-0.6	1.11E+07	0.79	Y	1.08	13.1	5952.724	0.082
2348-TCDF	26.07		0.9970	0.9962	-1.3	6.43E+07	0.80	Y	1.08	75.8	5952.724	0.082
2378-TCDF	**26.19**	E	**1.0009**	**1.0008**	**-0.2**	**8.92E+08**	**0.80**	**Y**	**1.08**	**1,050**	**5952.724**	**0.082**
2367/3467-TCDF	26.58		1.0162	1.0156	-1.0	7.19E+07	0.80	Y	1.08	84.9	5952.724	0.082
1269-TCDF	26.84		1.0259	1.0258	-0.2	1.47E+07	0.80	Y	1.08	17.4	5952.724	0.082
1239-TCDF	27.13		1.0370	1.0366	-0.7	1.24E+06	0.82	Y	1.08	1.46	5952.724	0.082
1289-TCDF	28.34		1.0829	1.0829	0	7.27E+07	0.80	Y	1.08	85.7	5952.724	0.082
13468/12468-PeCDF	28.34		0.9067	0.9071	+0.7	1.38E+06	1.43	Y	1.02	1.89	5418.792	0.066
13678/13467/12467-PeCDF	29.95	J	0.9583	0.9587	+0.7	1.02E+06	1.35	Y	1.02	1.39	6129.651	0.0746
12368/13478/12478-PeCDF	30.13		0.9635	0.9644	+1.6	1.61E+07	1.57	Y	1.02	22	6129.651	0.0746
14678-PeCDF	NotFnd		0.9669						1.02		6129.651	0.0746
13479-PeCDF	NotFnd		0.9701						1.02		6129.651	0.0746
13469/12479-PeCDF	30.53	J	0.9784	0.9772	-2.2	2.39E+05	1.56	Y	1.02	0.327	6129.651	0.0746
12346-PeCDF	30.72	J	0.9831	0.9832	+0.2	2.21E+05	1.51	Y	1.02	0.303	6129.651	0.0746

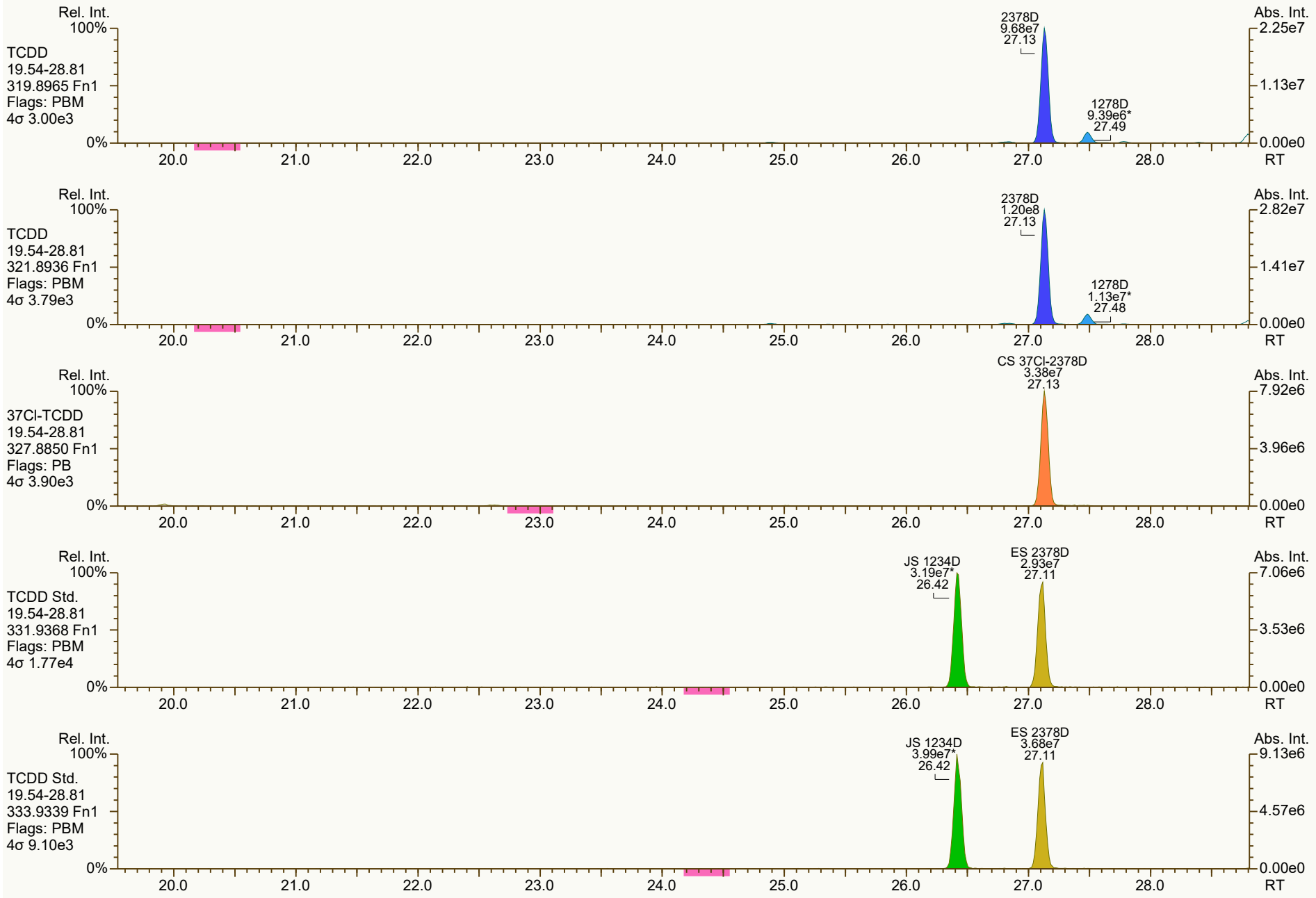
Lab ID: B5961_18710_DF_005 **Acq'd: 07 Dec 2021 22:39 DTF** **Wt/Vol: 14.45 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

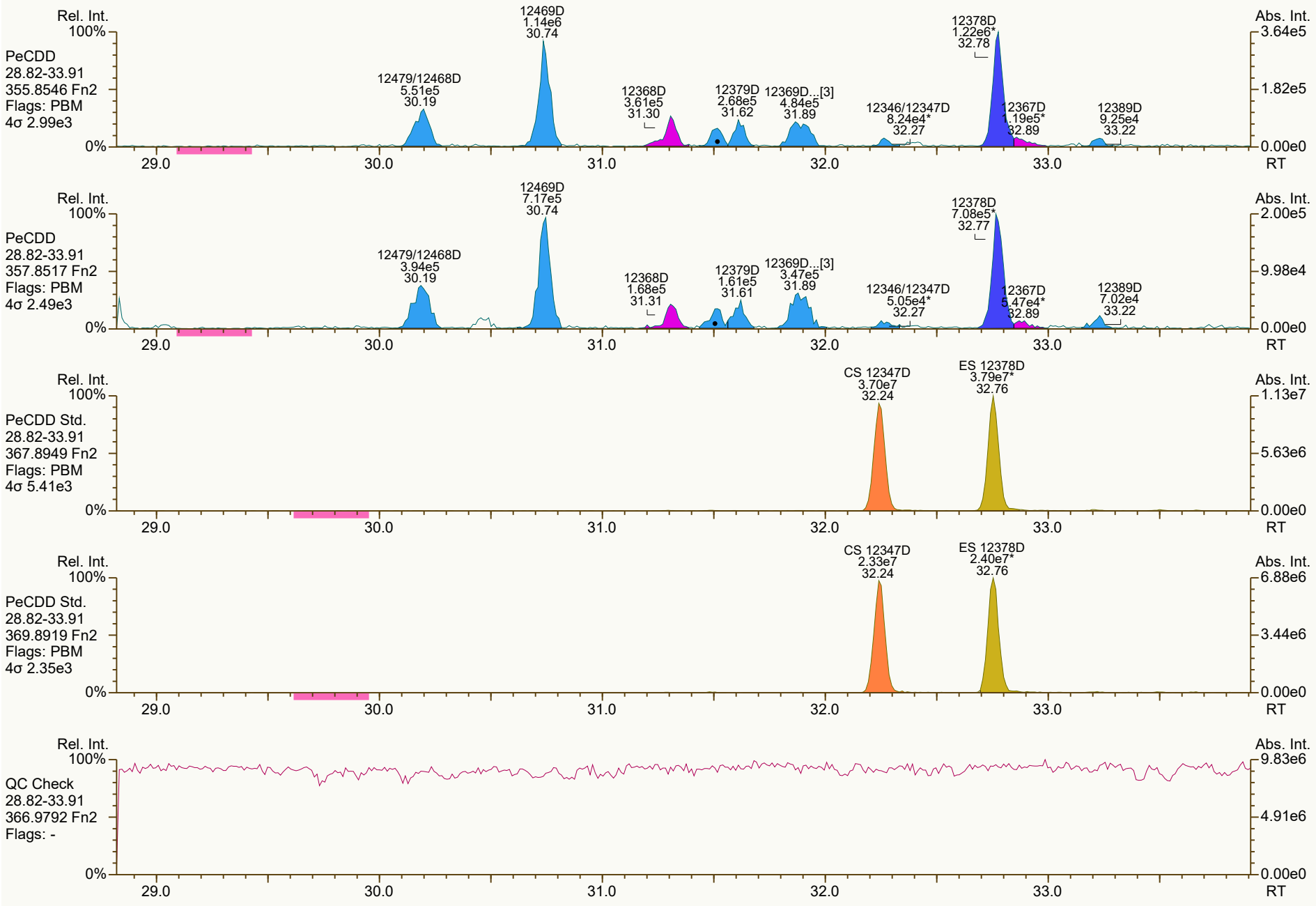
Client ID: 11215131-120221-S-JC-SW-S-2 **UTP: 08-Dec-2021 11:25:19 DTF** **J-level: 0.346 pg/g** **Split: 1** **Checkcode: 240-605-PYG**

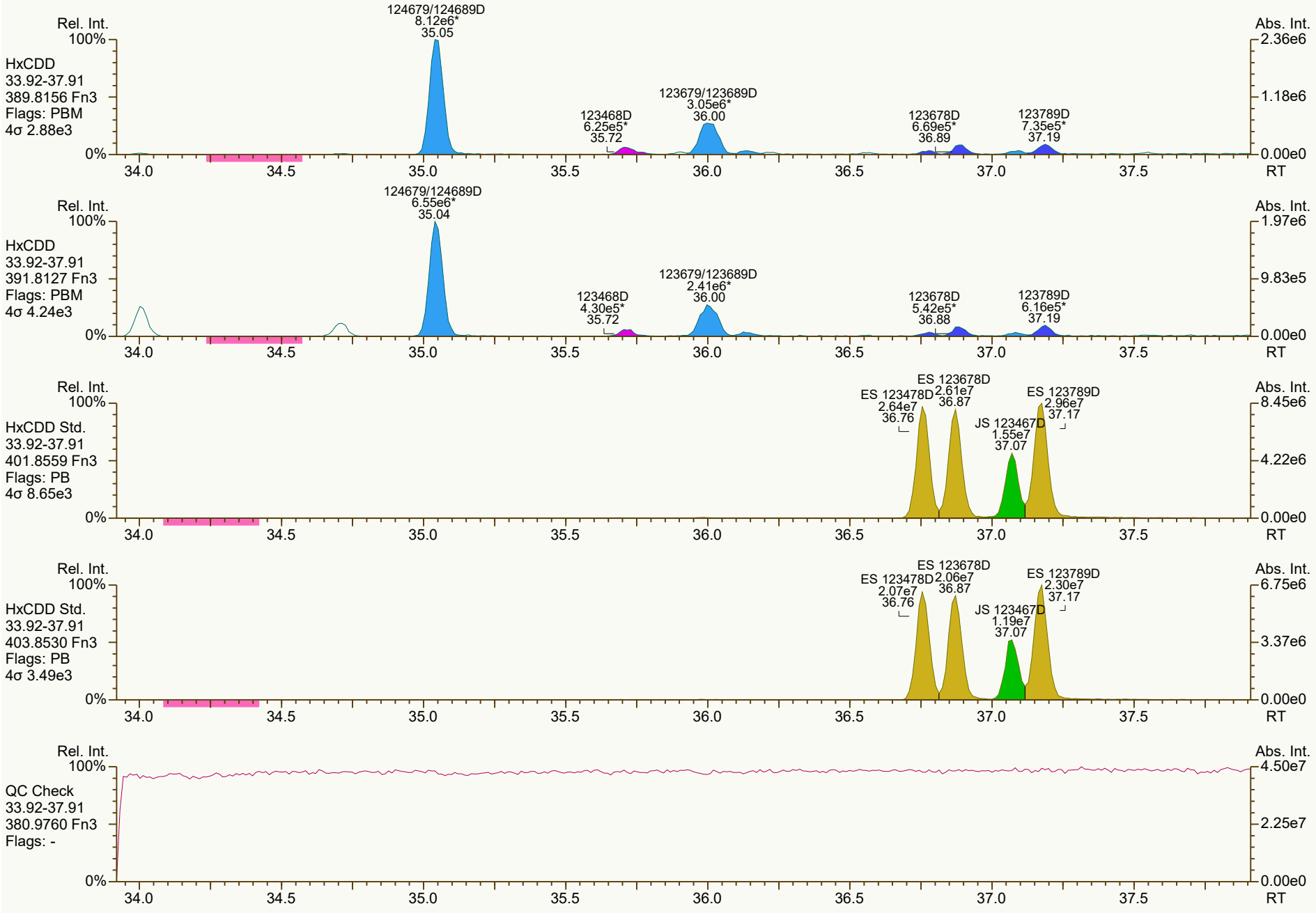
Datafile: 211207C11 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

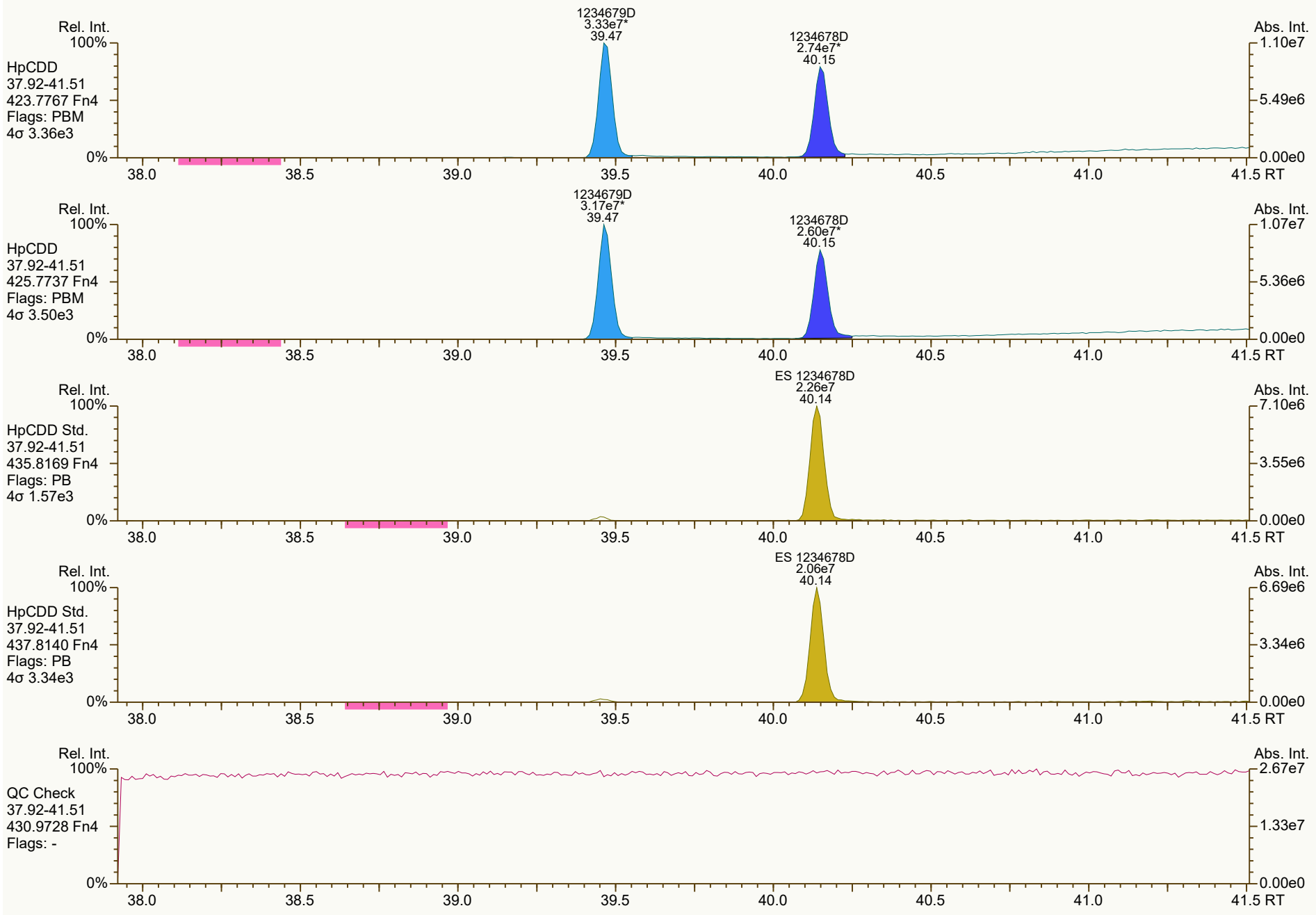
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.80	J	0.9859	0.9859	0	9.11E+05	1.53	Y	1.02	1.25	6129.651	0.0746
12347-PeCDF	30.88	J	0.9885	0.9884	-0.2	9.07E+05	1.59	Y	1.02	1.24	6129.651	0.0746
12348-PeCDF	31.05		0.9937	0.9938	+0.2	3.54E+06	1.57	Y	1.02	4.84	6129.651	0.0746
12378-PeCDF	**31.26**		**1.0005**	**1.0006**	**+0.2**	**3.27E+07**	**1.56**	**Y**	**1.02**	**43.5**	**6129.651**	**0.0738**
12678/12367-PeCDF	31.57		1.0097	1.0105	+1.5	1.06E+07	1.57	Y	1.02	14.5	6129.651	0.0746
12379-PeCDF	NotFnd		1.0153						1.02		6129.651	0.0746
12679-PeCDF	NotFnd		0.9925						1.02		6129.651	0.0746
23467/12369-PeCDF	32.28	J	0.9966	0.9966	0	8.00E+05	1.58	Y	1.02	1.1	6129.651	0.0746
23478-PeCDF	**32.42**		**1.0006**	**1.0008**	**+0.4**	**2.38E+07**	**1.58**	**Y**	**1.02**	**33.6**	**6129.651**	**0.0755**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6129.651	0.0746
12349-PeCDF	NotFnd		1.0108						1.02		6129.651	0.0746
12389-PeCDF	33.51		1.0346	1.0346	0	1.43E+06	1.55	Y	1.02	1.96	6129.651	0.0746
123468-HxCDF	34.37		0.9610	0.9610	0	1.20E+06	1.32	Y	1.19	2	7045.806	0.0981
124678/134678-HxCDF	34.57		0.9667	0.9666	-0.2	5.88E+06	1.23	Y	1.19	9.78	7045.806	0.0981
134679-HxCDF	NotFnd		0.9732						1.19		7045.806	0.0981
124679-HxCDF	35.01	J EMPC	0.9788	0.9789	+0.2	1.66E+05	1.48	N	1.19	0.277	7045.806	0.0981
124689-HxCDF	35.23		0.9852	0.9852	0	3.27E+06	1.23	Y	1.19	5.45	7045.806	0.0981
123467-HxCDF	35.66	J	0.9971	0.9971	0	5.98E+05	1.21	Y	1.19	0.995	7045.806	0.0981
123478-HxCDF	**35.78**		**1.0005**	**1.0005**	**0**	**4.31E+07**	**1.25**	**Y**	**1.27**	**69.8**	**7045.806**	**0.0923**
123678-HxCDF	**35.92**		**1.0004**	**1.0005**	**+0.2**	**1.23E+07**	**1.24**	**Y**	**1.15**	**18.8**	**7045.806**	**0.0872**
123479-HxCDF	NotFnd		1.0050						1.19		7045.806	0.0981
123469-HxCDF	36.23	J	1.0091	1.0092	+0.2	2.42E+05	1.30	Y	1.19	0.402	7045.806	0.0981
123679-HxCDF	NotFnd		0.9943						1.19		7045.806	0.0981
234678-HxCDF	**36.58**		**1.0004**	**1.0004**	**0**	**2.60E+06**	**1.26**	**Y**	**1.19**	**4.41**	**7045.806**	**0.0981**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		7045.806	0.0981
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**7045.806**	**0.118**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	37.60		1.0008	1.0014	+1.4	3.44E+06	1.34	Y	1.19	5.73	7045.806	0.0981
1234678-HpCDF	**39.18**		**1.0003**	**1.0003**	**0**	**1.57E+07**	**1.04**	**Y**	**1.37**	**29**	**5756.521**	**0.0846**
1234679-HpCDF	39.46	**J**	1.0075	1.0076	+0.2	7.24E+05	0.95	Y	1.34	1.52	5756.521	0.0955
1234689-HpCDF	39.61		1.0113	1.0113	0	7.54E+06	1.07	Y	1.34	15.8	5756.521	0.0955
1234789-HpCDF	**40.58**		**1.0002**	**1.0003**	**+0.2**	**3.85E+06**	**1.01**	**Y**	**1.31**	**9.23**	**5756.521**	**0.109**
OCDF	**42.91**		**1.0003**	**1.0002**	**-0.3**	**1.06E+07**	**0.88**	**Y**	**1.07**	**51.6**	**5922.665**	**0.321**
OCDF-a	42.91		1.0002	1.0002	0	7.30E+05	2.70	Y	0.07	57.6	5726.873	5.01

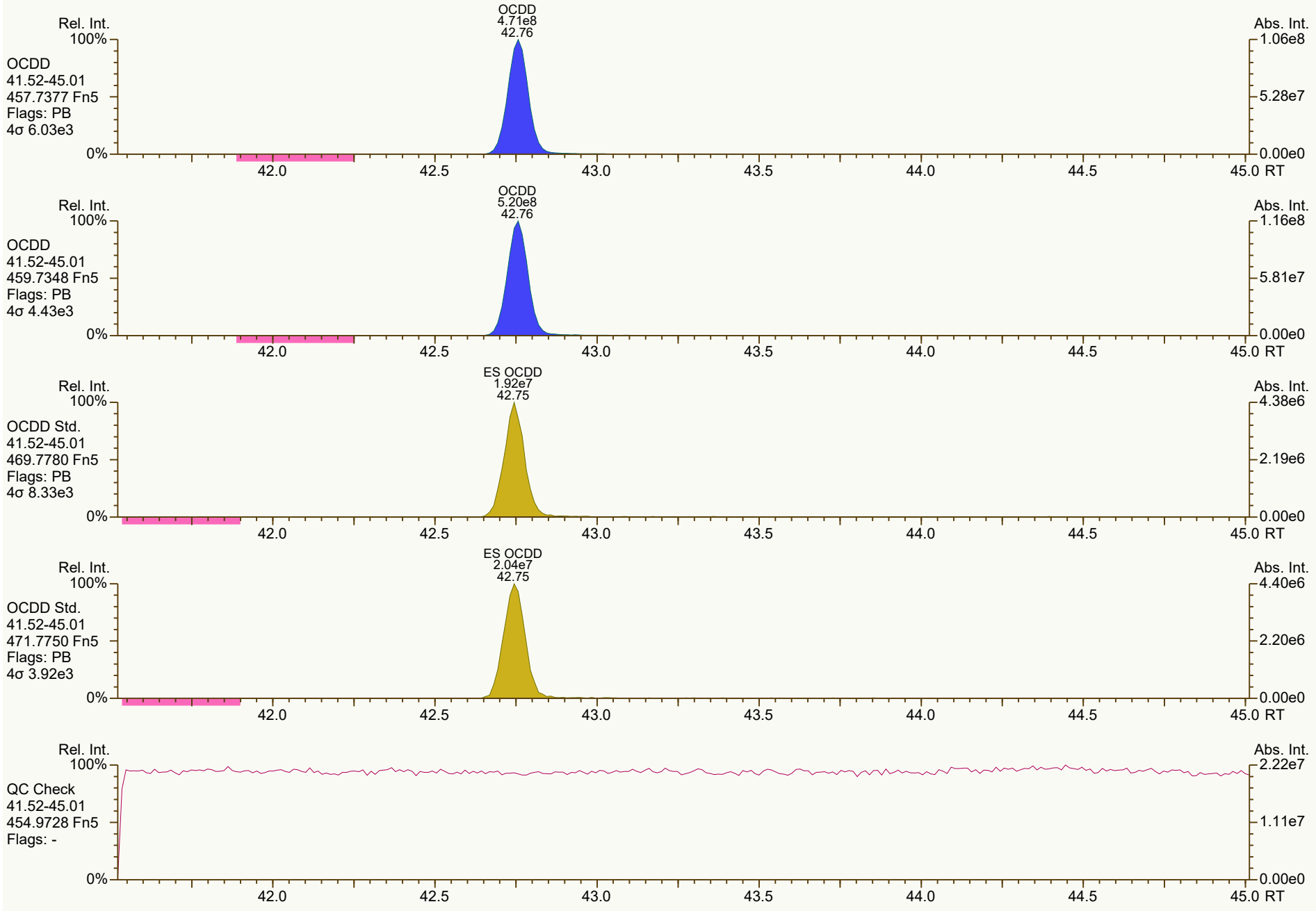

Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Abs. Int.
1.16e7
5.79e6
0.00e0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
29.0
30.0
31.0
32.0
33.0
Abs. Int.
9.83e6
4.91e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
Abs. Int.
4.50e7
2.25e7
0.00e0
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
2.67e7
1.33e7
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
2.22e7
1.11e7
0.00e0

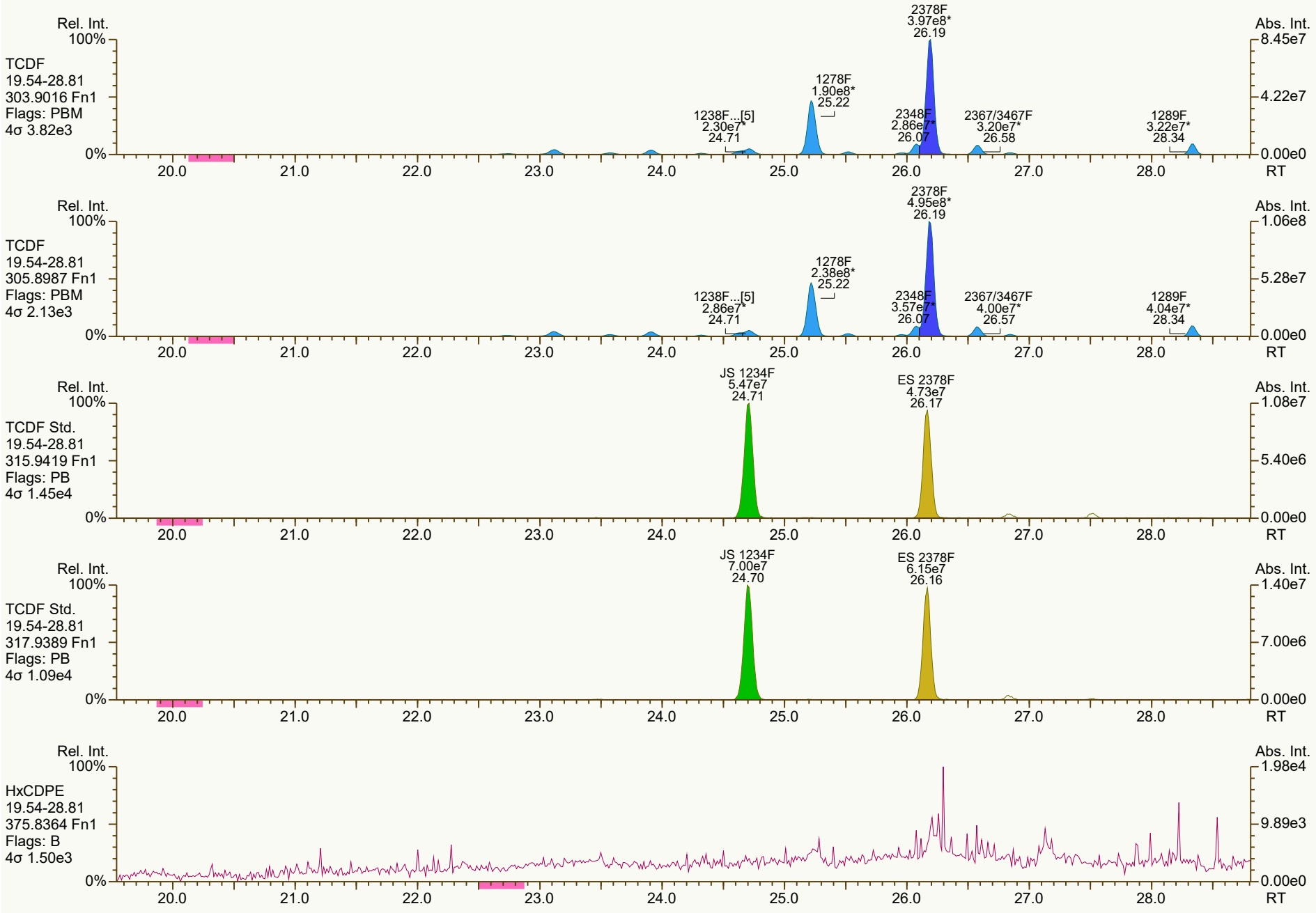

Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: PBM
4σ 3.00e3
0%
2378D
9.68e7
27.13
1278D
9.39e6*
27.49
Abs. Int.
2.25e7
1.13e7
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 3.79e3
0%
2378D
1.20e8
27.13
1278D
1.13e7*
27.48
Abs. Int.
2.82e7
1.41e7
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 3.90e3
0%
CS 37Cl-2378D
3.38e7
27.13
Abs. Int.
7.92e6
3.96e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PBM
4σ 1.77e4
0%
JS 1234D
3.19e7*
26.42
ES 2378D
2.93e7
27.11
Abs. Int.
7.06e6
3.53e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PBM
4σ 9.10e3
0%
JS 1234D
3.99e7*
26.42
ES 2378D
3.68e7
27.11
Abs. Int.
9.13e6
4.57e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PBM
4σ 2.99e3
0%
12479/12468D
5.51e5
30.19
12469D
1.14e6
30.74
12368D
3.61e5
31.30
12379D
2.68e5
31.62
12369D...[3]
4.84e5
31.89
12346/12347D
8.24e4*
32.27
12378D
1.22e6*
32.78
12367D
1.19e5*
32.89
12389D
9.25e4
33.22
Abs. Int.
3.64e5
1.82e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PBM
4σ 2.49e3
0%
12479/12468D
3.94e5
30.19
12469D
7.17e5
30.74
12368D
1.68e5
31.31
12379D
1.61e5
31.61
12369D...[3]
3.47e5
31.89
12346/12347D
5.05e4*
32.27
12378D
7.08e5*
32.77
12367D
5.47e4*
32.89
12389D
7.02e4
33.22
Abs. Int.
2.00e5
9.98e4
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PBM
4σ 5.41e3
0%
CS 12347D
3.70e7
32.24
ES 12378D
3.79e7*
32.76
Abs. Int.
1.13e7
5.63e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PBM
4σ 2.35e3
0%
CS 12347D
2.33e7
32.24
ES 12378D
2.40e7*
32.76
Abs. Int.
6.88e6
3.44e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.83e6
4.91e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT

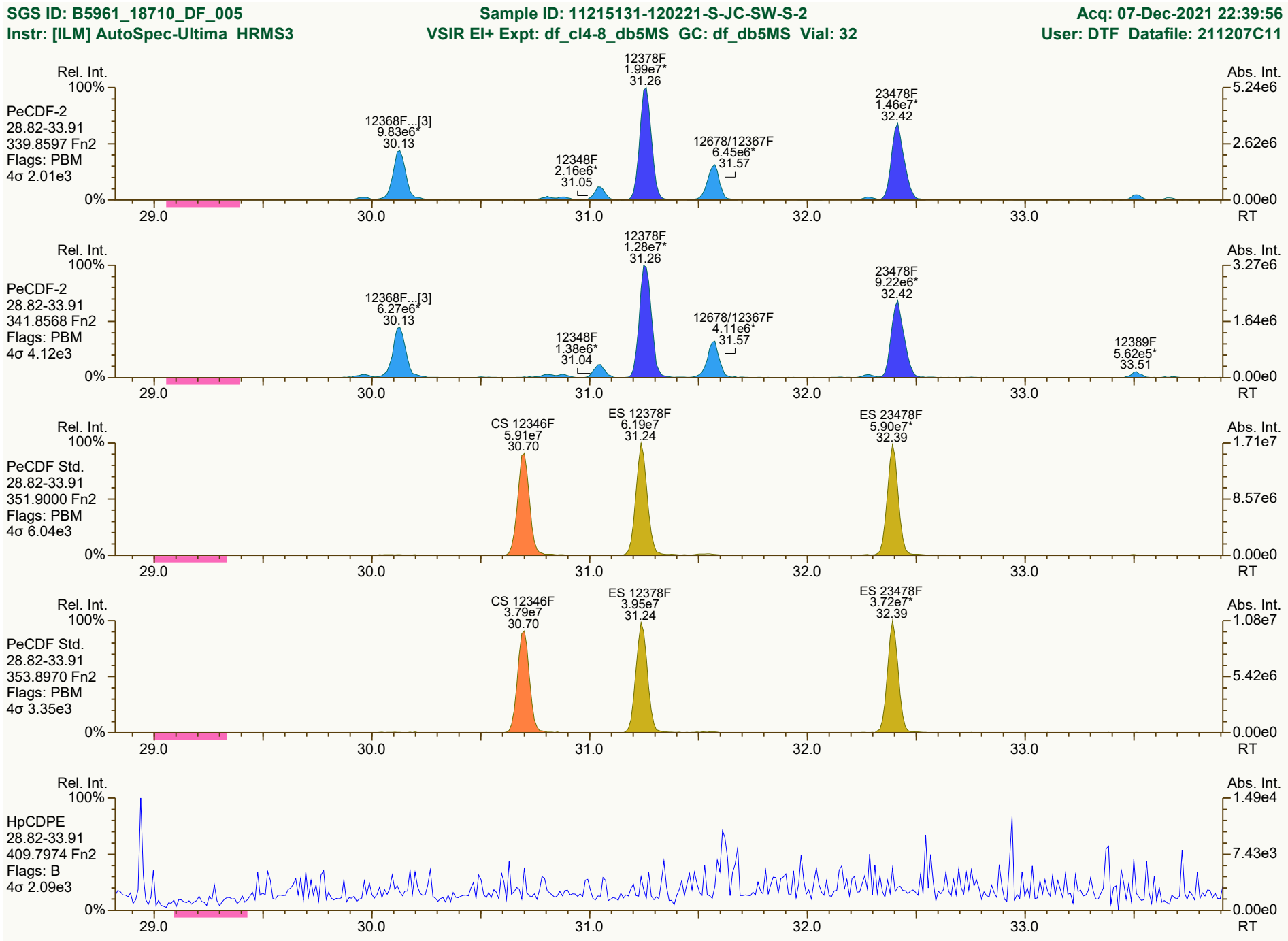

Rel. Int.
100%
HxCDD
33.92-37.91
389.8156 Fn3
Flags: PBM
4σ 2.88e3
0%
124679/124689D
8.12e6*
35.05
123468D
6.25e5*
35.72
123679/123689D
3.05e6*
36.00
123678D
6.69e5*
36.89
123789D
7.35e5*
37.19
Abs. Int.
2.36e6
1.18e6
0.00e0
RT
Rel. Int.
100%
HxCDD
33.92-37.91
391.8127 Fn3
Flags: PBM
4σ 4.24e3
0%
124679/124689D
6.55e6*
35.04
123468D
4.30e5*
35.72
123679/123689D
2.41e6*
36.00
123678D
5.42e5*
36.88
123789D
6.16e5*
37.19
Abs. Int.
1.97e6
9.83e5
0.00e0
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PB
4σ 8.65e3
0%
ES 123478D
2.64e7
36.76
ES 123678D
2.61e7
36.87
JS 123467D
1.55e7
37.07
ES 123789D
2.96e7
37.17
Abs. Int.
8.45e6
4.22e6
0.00e0
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PB
4σ 3.49e3
0%
ES 123478D
2.07e7
36.76
ES 123678D
2.06e7
36.87
JS 123467D
1.19e7
37.07
ES 123789D
2.30e7
37.17
Abs. Int.
6.75e6
3.37e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.50e7
2.25e7
0.00e0
RT
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5


Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PBM
4σ 3.36e3
0%
1234679D
3.33e7*
39.47
1234678D
2.74e7*
40.15
Abs. Int.
1.10e7
5.49e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PBM
4σ 3.50e3
0%
1234679D
3.17e7*
39.47
1234678D
2.60e7*
40.15
Abs. Int.
1.07e7
5.36e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 1.57e3
0%
ES 1234678D
2.26e7
40.14
Abs. Int.
7.10e6
3.55e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 3.34e3
0%
ES 1234678D
2.06e7
40.14
Abs. Int.
6.69e6
3.34e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.67e7
1.33e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
4.71e8
42.76
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 6.03e3
0%
Abs. Int.
1.06e8
5.28e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.20e8
42.76
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 4.43e3
0%
Abs. Int.
1.16e8
5.81e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.92e7
42.75
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 8.33e3
0%
Abs. Int.
4.38e6
2.19e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.04e7
42.75
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 3.92e3
0%
Abs. Int.
4.40e6
2.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.22e7
1.11e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 3.82e3
0%
2378F
3.97e8*
26.19
1278F
1.90e8*
25.22
1238F...[5]
2.30e7*
24.71
2348F
2.86e7*
26.07
2367/3467F
3.20e7*
26.58
1289F
3.22e7*
28.34
Abs. Int.
8.45e7
4.22e7
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 2.13e3
0%
2378F
4.95e8*
26.19
1278F
2.38e8*
25.22
1238F...[5]
2.86e7*
24.71
2348F
3.57e7*
26.07
2367/3467F
4.00e7*
26.57
1289F
4.04e7*
28.34
Abs. Int.
1.06e8
5.28e7
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.45e4
0%
JS 1234F
5.47e7
24.71
ES 2378F
4.73e7
26.17
Abs. Int.
1.08e7
5.40e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 1.09e4
0%
JS 1234F
7.00e7
24.70
ES 2378F
6.15e7
26.16
Abs. Int.
1.40e7
7.00e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.50e3
0%
Abs. Int.
1.98e4
9.89e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.82e5
9.08e4
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
13468/12468F
8.13e5
28.34
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 2.12e3
13468/12468F
5.68e5
28.34
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 3.30e3
1.31e5
6.53e4
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
1.16e7
5.79e6



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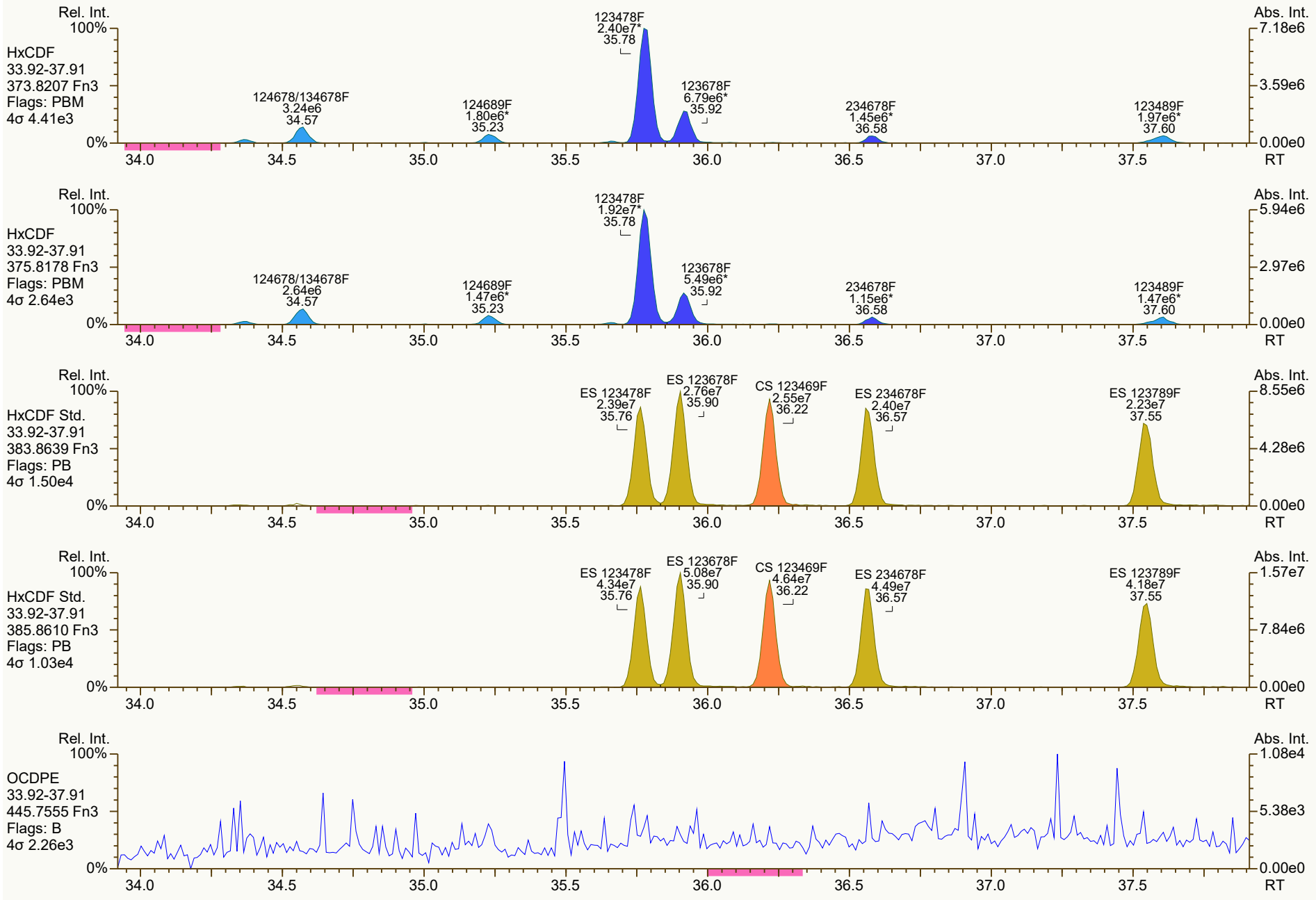
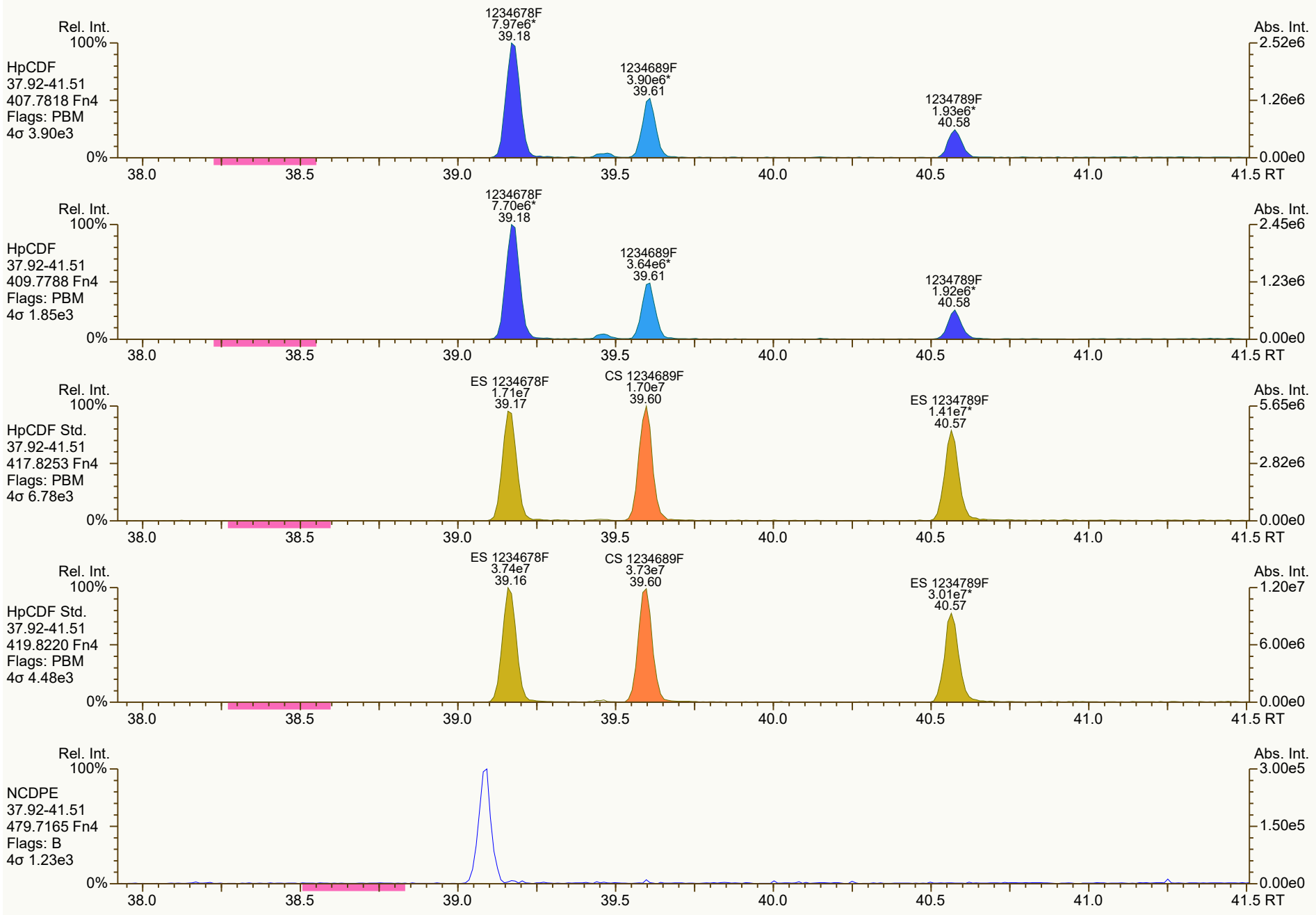
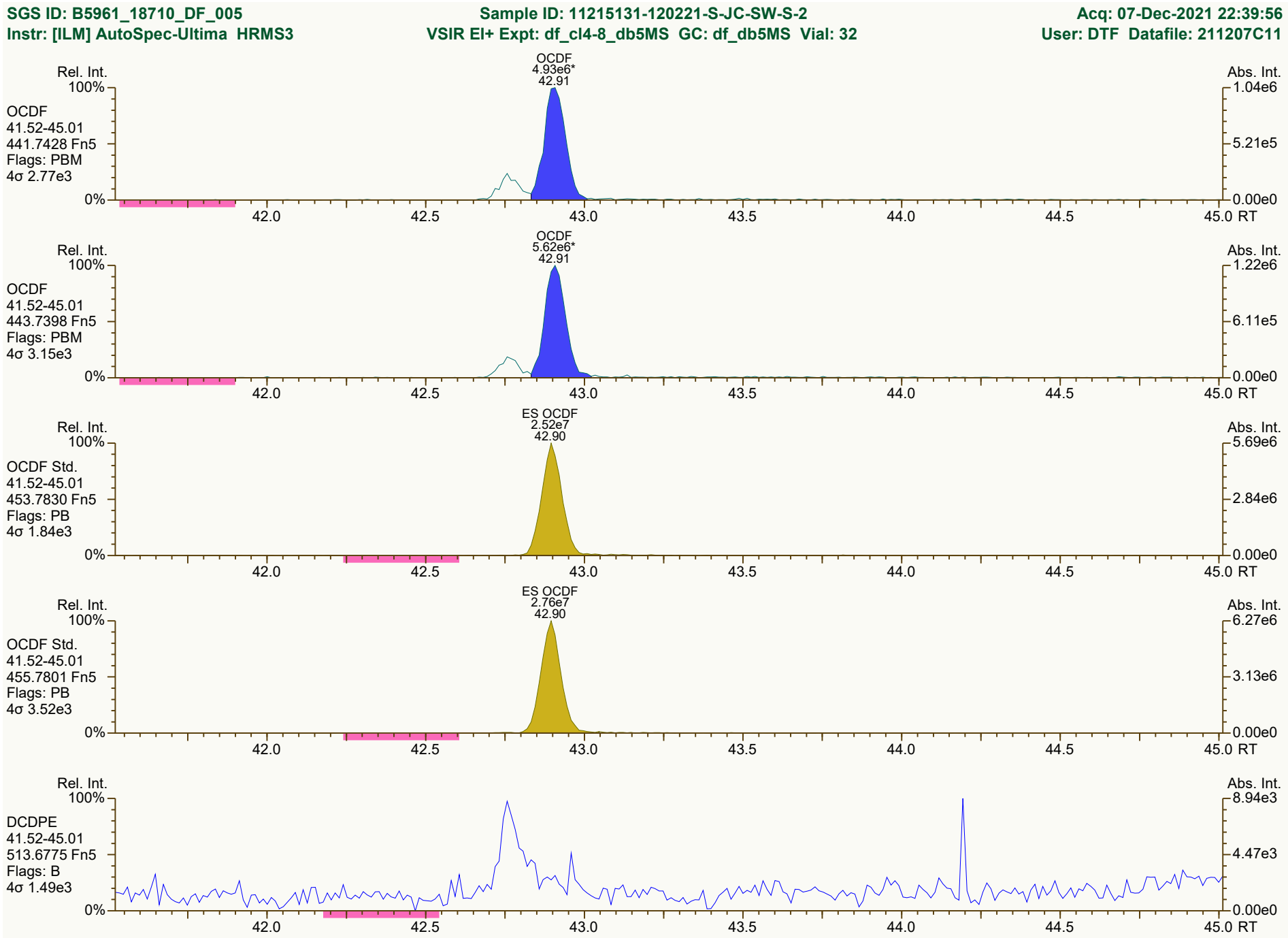
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7317, 4922, 2411 scc: 240-605
Revised: 08-Dec-2021 11:23 (DTF) Printed: 08-Dec-2021 11:33 Page 9 of 12


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PBM
4σ 4.41e3
123478F
2.40e7*
35.78
124678/134678F
3.24e6
34.57
124689F
1.80e6*
35.23
123678F
6.79e6*
35.92
234678F
1.45e6*
36.58
123489F
1.97e6*
37.60
Abs. Int.
7.18e6
3.59e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PBM
4σ 2.64e3
123478F
1.92e7*
35.78
124678/134678F
2.64e6
34.57
124689F
1.47e6*
35.23
123678F
5.49e6*
35.92
234678F
1.15e6*
36.58
123489F
1.47e6*
37.60
5.94e6
2.97e6
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PB
4σ 1.50e4
ES 123478F
2.39e7
35.76
ES 123678F
2.76e7
35.90
CS 123469F
2.55e7
36.22
ES 234678F
2.40e7
36.57
ES 123789F
2.23e7
37.55
8.55e6
4.28e6
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PB
4σ 1.03e4
ES 123478F
4.34e7
35.76
ES 123678F
5.08e7
35.90
CS 123469F
4.64e7
36.22
ES 234678F
4.49e7
36.57
ES 123789F
4.18e7
37.55
1.57e7
7.84e6
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 2.26e3
1.08e4
5.38e3


Rel. Int.
100%
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PBM
4σ 3.90e3
0%
1234678F
7.97e6*
39.18
1234689F
3.90e6*
39.61
1234789F
1.93e6*
40.58
Abs. Int.
2.52e6
1.26e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PBM
4σ 1.85e3
0%
1234678F
7.70e6*
39.18
1234689F
3.64e6*
39.61
1234789F
1.92e6*
40.58
Abs. Int.
2.45e6
1.23e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PBM
4σ 6.78e3
0%
ES 1234678F
1.71e7
39.17
CS 1234689F
1.70e7
39.60
ES 1234789F
1.41e7*
40.57
Abs. Int.
5.65e6
2.82e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PBM
4σ 4.48e3
0%
ES 1234678F
3.74e7
39.16
CS 1234689F
3.73e7
39.60
ES 1234789F
3.01e7*
40.57
Abs. Int.
1.20e7
6.00e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.23e3
0%
Abs. Int.
3.00e5
1.50e5
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT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Sample ID: 11215131-120221-S-JC-SW-S-2
Acq: 07-Dec-2021 22:39:56
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: DTF Datafile: 211207C11
OCDF
4.93e6*
42.91
Rel. Int.
Abs. Int.
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.77e3
OCDF
5.62e6*
42.91
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.15e3
ES OCDF
2.52e7
42.90
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 1.84e3
ES OCDF
2.76e7
42.90
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.52e3
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.49e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\B5961_18710_DF_005.utp_res, saved 08-Dec-2021 11:25 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5007, 5641, 9599 scc: 240-605
Revised: 08-Dec-2021 11:24 (DTF) Printed: 08-Dec-2021 11:33 Page 12 of 12

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	211207C01	3	CS3_211207_DF_CA	1.00	SIL 25-347-1	DTF	468-803	07-Dec-2021	14:18:24
3	211207C03	26	OPR1_18710_DF-RJ	1.00	0_18710_OPR001	DTF	348-095	07-Dec-2021	16:29:16
4	211207C04	27	OPR2_18710_DF	1.00	0_18710_OPR002	DTF	493-149	07-Dec-2021	17:15:35
5	211207C05	2	SBS_211207_DF_CA	1.00	20-61-1	DTF	956-405	07-Dec-2021	18:01:56
6	211207C06	25	MB1_18710_DF_SDS	10.00	Method Blank	DTF	192-567	07-Dec-2021	18:48:16
7	211207C07	28	B5961_18710_DF_001	16.74	11215131-120121-S-JC-NE-S-8	DTF	476-819	07-Dec-2021	19:34:35
8	211207C08	29	B5961_18710_DF_002	14.45	11215131-120121-S-JC-NE-S-9	DTF	794-822	07-Dec-2021	20:20:56
9	211207C09	30	B5961_18710_DF_003	13.22	11215131-120121-S-JC-NE-S-10	DTF	391-487	07-Dec-2021	21:07:17
10	211207C10	31	B5961_18710_DF_004	15.30	11215131-120221-S-JC-SW-S-1	DTF	956-033	07-Dec-2021	21:53:36
11	211207C11	32	B5961_18710_DF_005	14.45	11215131-120221-S-JC-SW-S-2	DTF	240-605	07-Dec-2021	22:39:56

REVIEWED
Tyler_Fritz , 12/8/2021, 11:38:23 AM

APPROVED
Carla_Lyon , 12/8/2021, 2:11:22 PM

Dioxin/Furan QC Summary	Acq'd: 07 Dec 2021 14:18 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211207_DF_CA	UTP: 08-Dec-2021 11:25:14 DTF	Checkcode: 468-803-YZW
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 11:26 TF	Datafile: 211207C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.28	1.06E+07	0.83	Y	1.18	1.23	3%
12378-PeCDD	32.88	4.12E+07	1.56	Y	1.04	1.07	3%
123478-HxCDD	36.87	3.67E+07	1.28	Y	1.09	1.14	5%
123678-HxCDD	36.99	3.80E+07	1.29	Y	1.15	1.20	5%
123789-HxCDD	37.29	4.00E+07	1.26	Y	1.05	1.10	5%
1234678-HpCDD	40.21	3.35E+07	1.06	Y	1.06	1.05	-1%
OCDD	42.82	4.01E+07	0.91	Y	1.13	1.13	1%
2378-TCDF	26.35	1.66E+07	0.81	Y	1.08	1.17	9%
12378-PeCDF	31.38	6.54E+07	1.55	Y	1.02	1.06	4%
23478-PeCDF	32.52	6.43E+07	1.56	Y	1.02	1.05	3%
123478-HxCDF	35.88	5.81E+07	1.27	Y	1.27	1.30	2%
123678-HxCDF	36.02	6.14E+07	1.26	Y	1.15	1.20	4%
234678-HxCDF	36.68	5.77E+07	1.25	Y	1.19	1.21	1%
123789-HxCDF	37.67	5.16E+07	1.26	Y	1.16	1.18	2%
1234678-HpCDF	39.25	5.17E+07	1.04	Y	1.37	1.40	2%
1234789-HpCDF	40.64	4.48E+07	1.05	Y	1.31	1.35	3%
OCDF	42.98	5.32E+07	0.91	Y	1.07	1.10	3%
ES 2378-TCDD	27.26	8.66E+07	0.81	Y	1.05	1.02	-2%
ES 12378-PeCDD	32.865	7.73E+07	1.56	Y	0.88	0.91	4%
ES 123478-HxCDD	36.854	6.41E+07	1.27	Y	0.97	0.97	0%
ES 123678-HxCDD	36.969	6.33E+07	1.26	Y	0.94	0.96	2%
ES 123789-HxCDD	37.272	7.26E+07	1.26	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.201	6.38E+07	1.08	Y	0.91	0.97	6%
ES OCDD	42.811	7.07E+07	0.92	Y	0.62	0.54	-14%
ES 2378-TCDF	26.329	1.42E+08	0.78	Y	1.06	1.01	-4%
ES 12378-PeCDF	31.36	1.23E+08	1.56	Y	0.91	0.88	-3%
ES 23478-PeCDF	32.506	1.22E+08	1.55	Y	0.88	0.87	-1%
ES 123478-HxCDF	35.861	8.96E+07	0.54	Y	1.20	1.36	13%
ES 123678-HxCDF	36.001	1.02E+08	0.53	Y	1.35	1.55	15%
ES 234678-HxCDF	36.665	9.58E+07	0.54	Y	1.24	1.45	17%
ES 123789-HxCDF	37.65	8.72E+07	0.54	Y	1.16	1.32	15%
ES 1234678-HpCDF	39.236	7.38E+07	0.46	Y	0.97	1.12	16%
ES 1234789-HpCDF	40.632	6.63E+07	0.46	Y	0.85	1.01	18%
ES OCDF	42.968	9.68E+07	0.93	Y	0.81	0.73	-9%

Dioxin/Furan QC Summary	Acq'd: 07 Dec 2021 14:18 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211207_DF_CA	UTP: 08-Dec-2021 11:25:14 DTF	Checkcode: 468-803-YZW
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 11:26 TF	Datafile: 211207C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.58	8.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	24.89	1.40E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.17	3.29E+07	1.27	Y	-	-	-
CS 37Cl-2378-TCDD	27.28	1.16E+07	n/a	-	1.20	1.37	14%
CS 12347-PeCDD	32.36	6.99E+07	1.59	Y	0.75	0.83	10%
CS 12346-PeCDF	30.82	1.20E+08	1.56	Y	0.85	0.86	1%
CS 123469-HxCDF	36.32	9.38E+07	0.53	Y	1.12	1.42	27%
CS 1234689-HpCDF	39.66	7.49E+07	0.46	Y	0.89	1.14	28%
~~SS 37Cl-2378-TCDD~~	~~27.28~~	~~1.16E+07~~	~~n/a~~	~~-~~	~~1.15~~	~~1.34~~	~~17%~~
~~SS 12347-PeCDD~~	~~32.36~~	~~6.99E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~0.90~~	~~5%~~
~~SS 12346-PeCDF~~	~~30.82~~	~~1.20E+08~~	~~1.56~~	~~Y~~	~~0.94~~	~~0.97~~	~~4%~~
~~SS 123469-HxCDF~~	~~36.32~~	~~9.38E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~0.92~~	~~11%~~
~~SS 1234689-HpCDF~~	~~39.66~~	~~7.49E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~1.01~~	~~10%~~
Not used in this project.							
CL 08Dec21							
~~OCDD-a~~	~~42.82~~	~~2.56E+06~~	~~2.53~~	~~Y~~	~~0.07~~	~~0.07~~	~~0%~~
~~OCDF-a~~	~~42.98~~	~~3.24E+06~~	~~2.41~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 211207C01 Analysis Date: 07-DEC-2021 14:18:24

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.83	0.65 - 0.89	Y	10.3	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	51.5	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	52.5	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	52.3	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	52.5	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88 - 1.20	Y	49.5	43 - 58	Y
OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	101	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.81	0.65 - 0.89	Y	10.9	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	51.9	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	51.7	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	51.1	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	52	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.7	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	51.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	51.7	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 08 Dec 2021 11:26 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

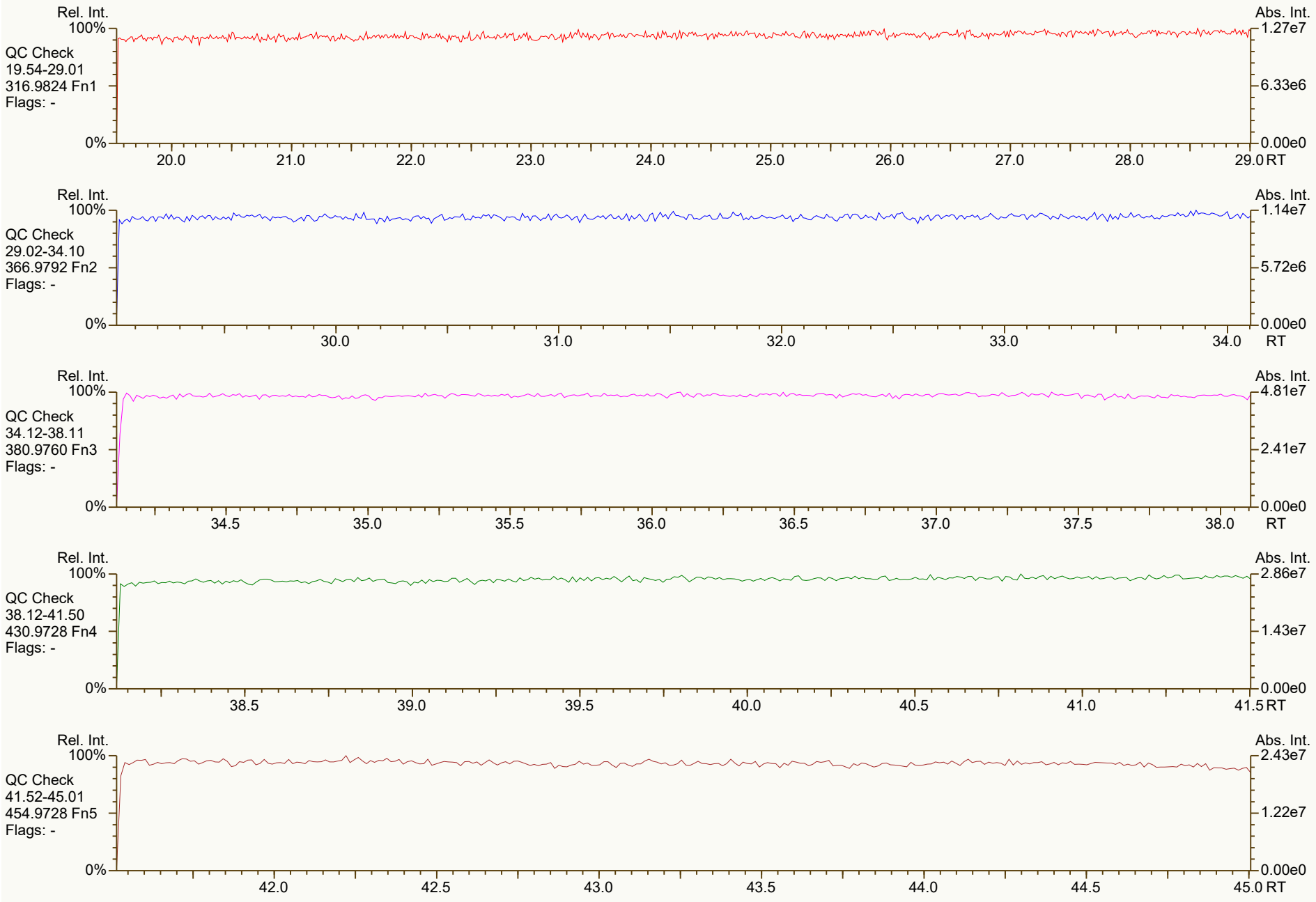
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

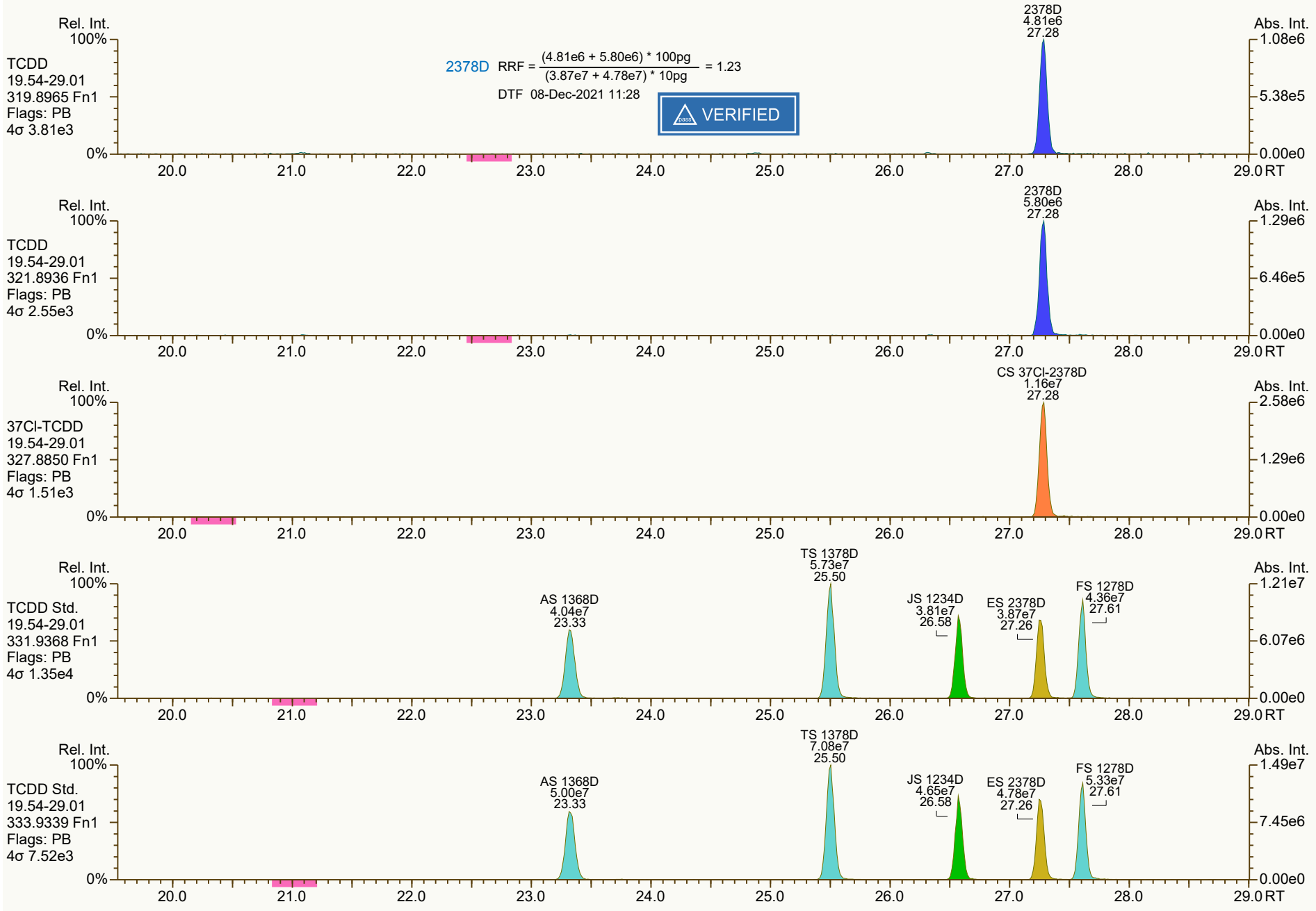
Instrument ID: HRMS3 GC Column ID: ZB-5ms

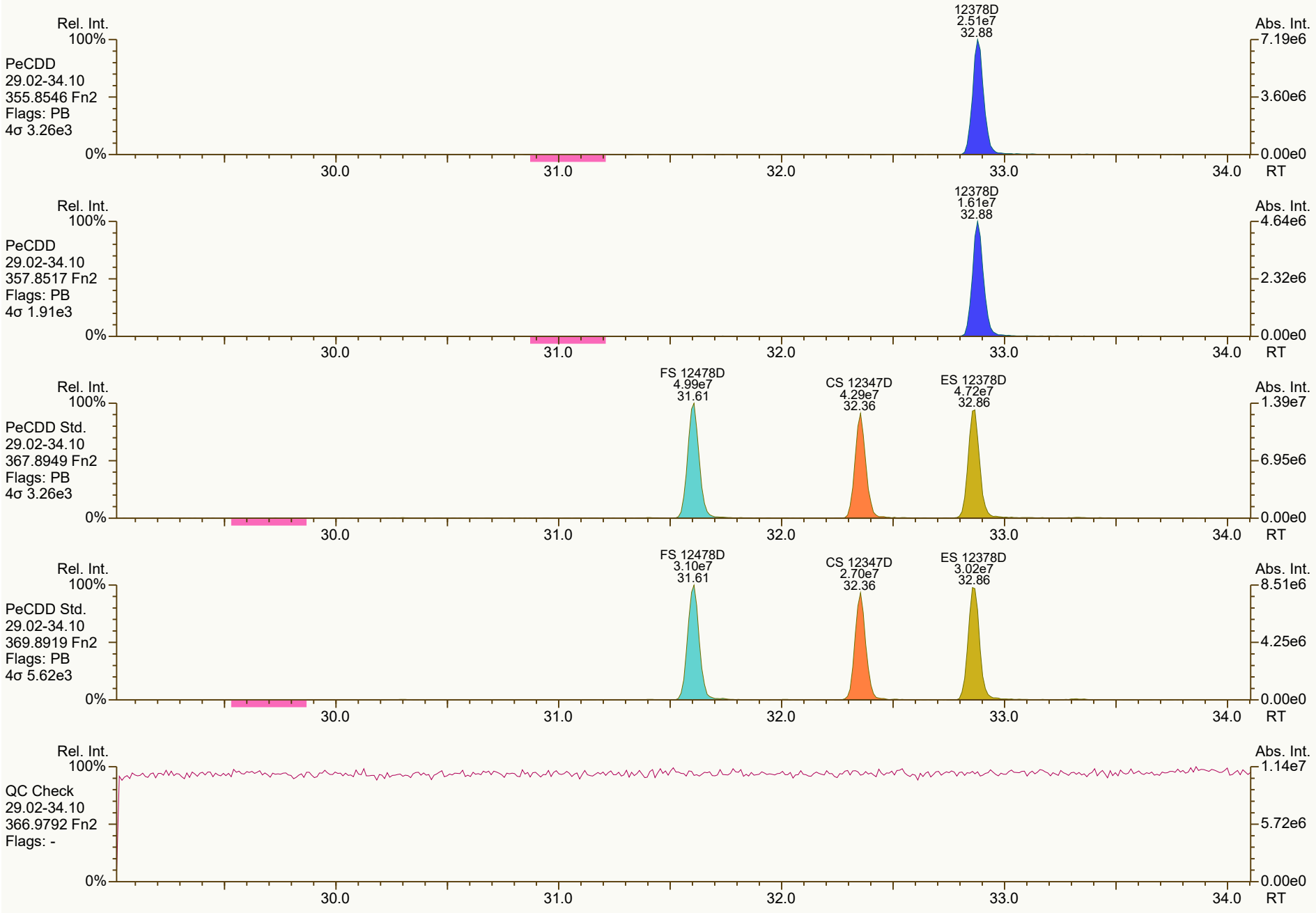
VER Data Filename: 211207C01 Analysis Date: 07-DEC-2021 14:18:24

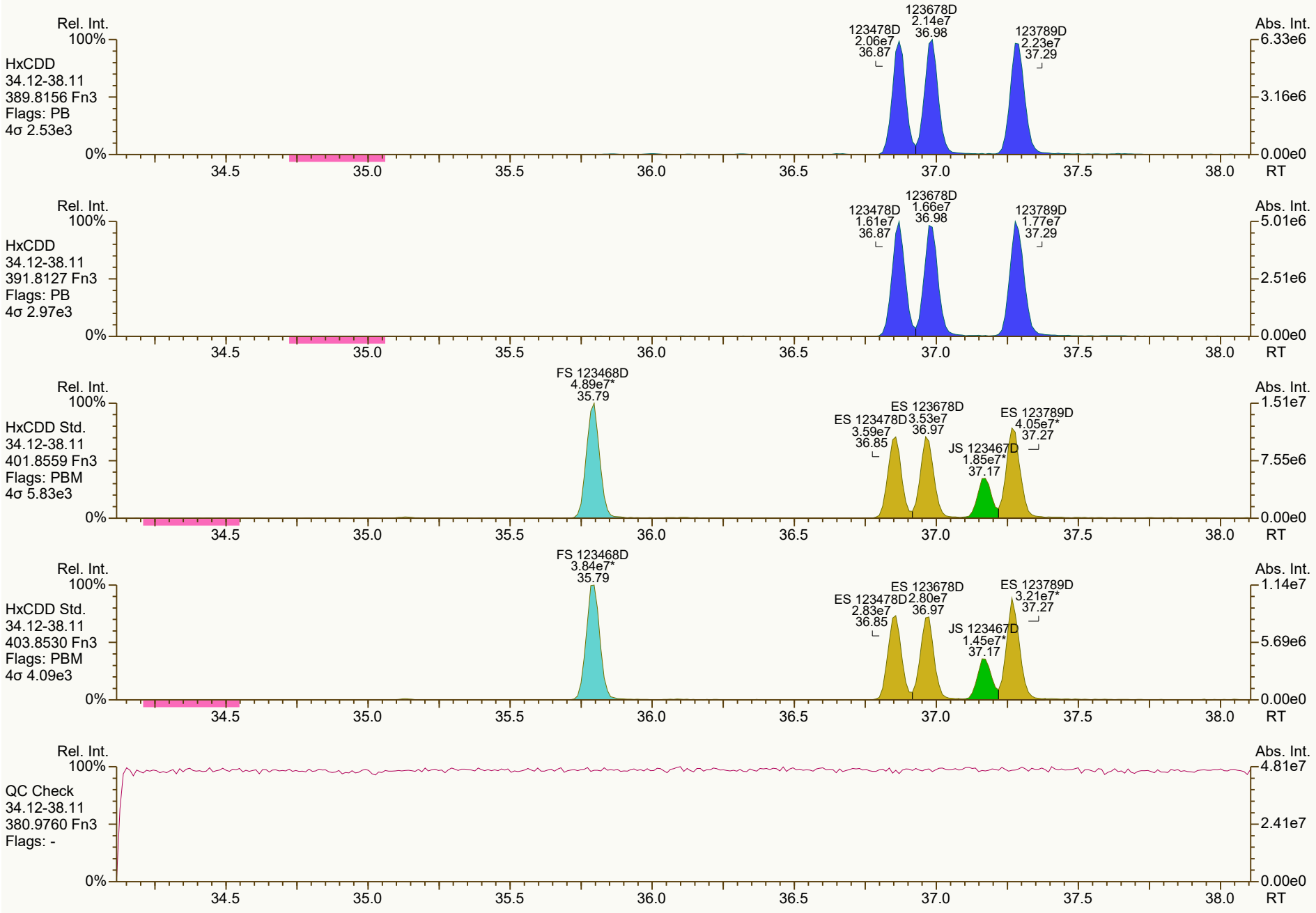
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	97.9	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32	-	1.78	Y	104	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	100	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	101	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88	-	1.20	Y	106	72	-	138	Y
13C-OCDD	M+2/M+4	0.92	0.76	-	1.02	Y	172	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65	-	0.89	Y	95.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	96.5	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32	-	1.78	Y	98.7	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	113	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	115	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	117	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	115	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	116	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	118	77	-	129	Y
13C-OCDF	M+2/M+4	0.93	0.76	-	1.02	Y	182	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						11.4	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.59	1.32	-	1.78	Y	110	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	101	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	127	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	128	70	-	130	Y

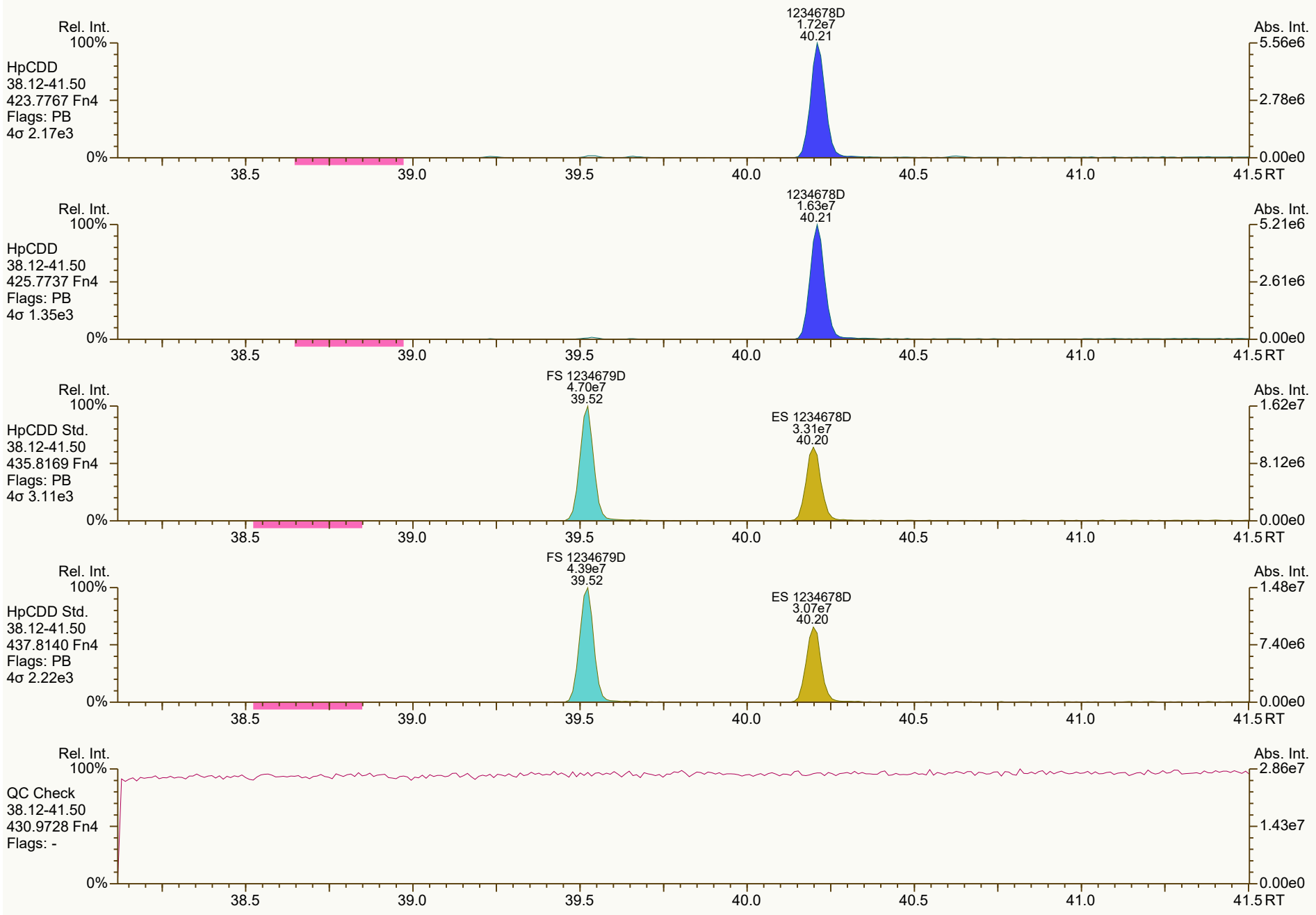
Processed: 08 Dec 2021 11:26 Analyst: TF

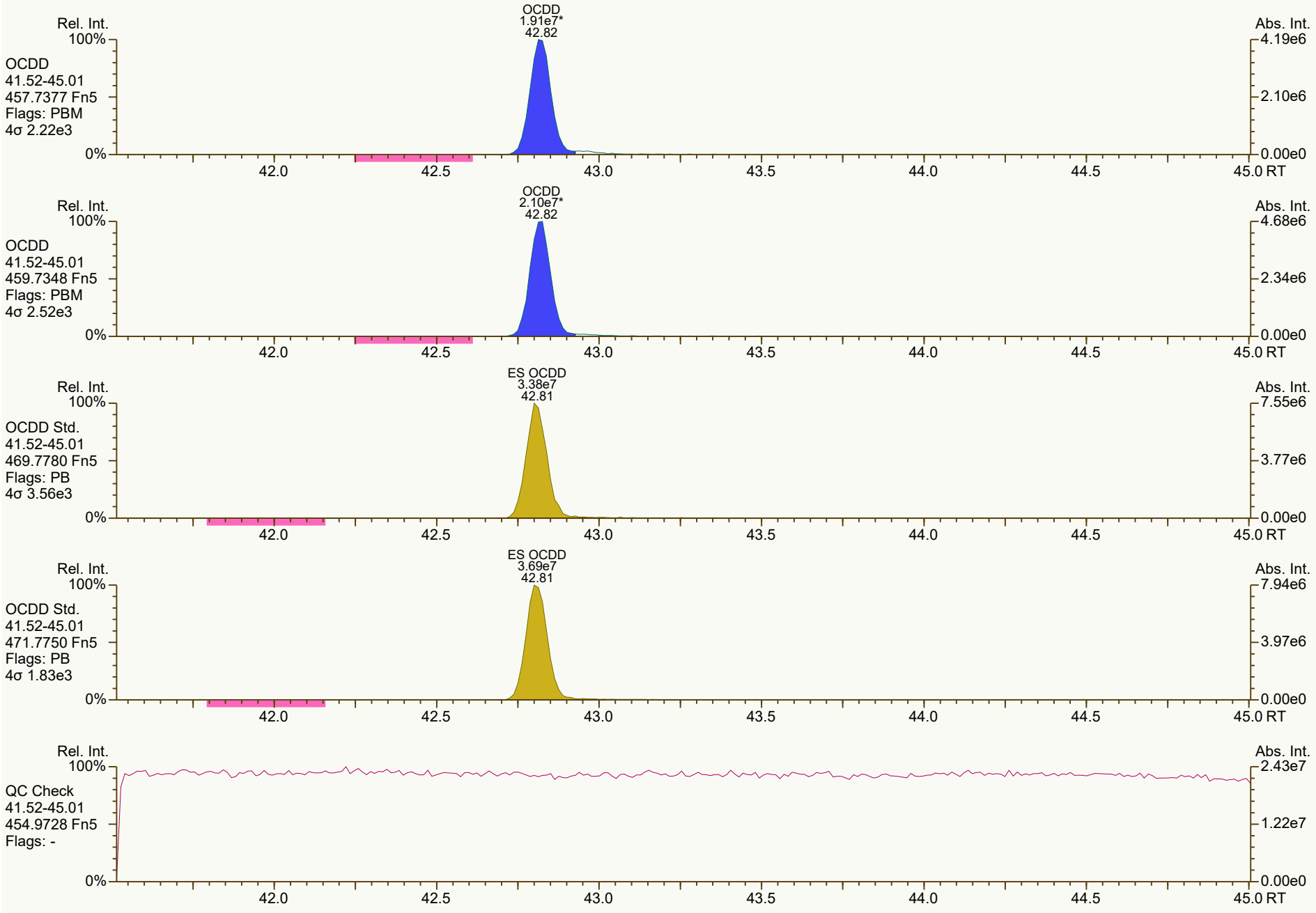

Rel. Int.
100%
QC Check
19.54-29.01
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.27e7
6.33e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
QC Check
29.02-34.10
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.14e7
5.72e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
34.12-38.11
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.81e7
2.41e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
38.12-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.86e7
1.43e7
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.43e7
1.22e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

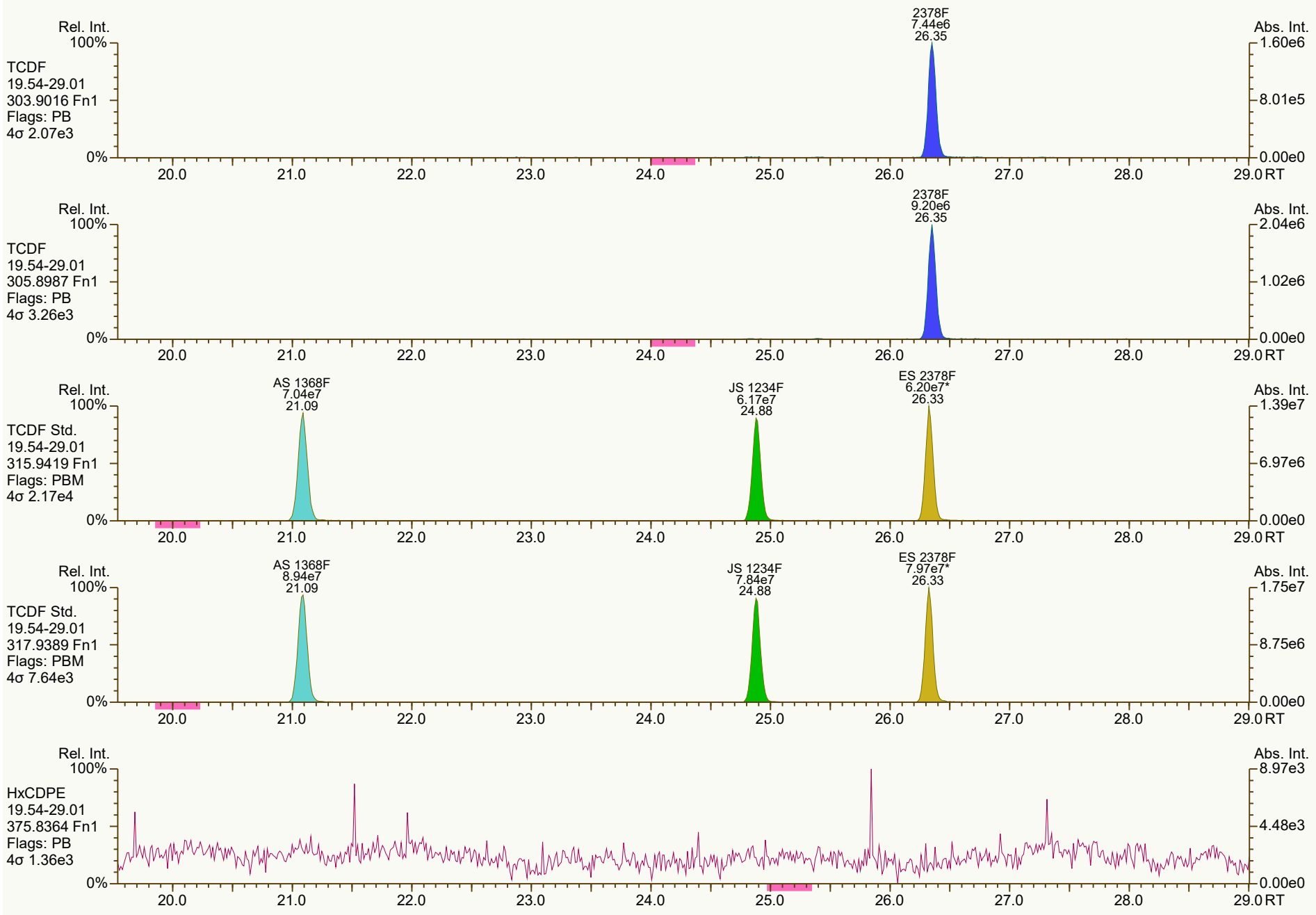

Rel. Int.
100%
TCDD
19.54-29.01
319.8965 Fn1
Flags: PB
4σ 3.81e3
0%
2378D
4.81e6
27.28
Abs. Int.
1.08e6
5.38e5
0.00e0
2378D RRF = (4.81e6 + 5.80e6) * 100pg / (3.87e7 + 4.78e7) * 10pg = 1.23
DTF 08-Dec-2021 11:28
VERIFIED
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDD
19.54-29.01
321.8936 Fn1
Flags: PB
4σ 2.55e3
0%
2378D
5.80e6
27.28
Abs. Int.
1.29e6
6.46e5
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.01
327.8850 Fn1
Flags: PB
4σ 1.51e3
0%
CS 37Cl-2378D
1.16e7
27.28
Abs. Int.
2.58e6
1.29e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDD Std.
19.54-29.01
331.9368 Fn1
Flags: PB
4σ 1.35e4
0%
AS 1368D
4.04e7
23.33
TS 1378D
5.73e7
25.50
JS 1234D
3.81e7
26.58
ES 2378D
3.87e7
27.26
FS 1278D
4.36e7
27.61
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDD Std.
19.54-29.01
333.9339 Fn1
Flags: PB
4σ 7.52e3
0%
AS 1368D
5.00e7
23.33
TS 1378D
7.08e7
25.50
JS 1234D
4.65e7
26.58
ES 2378D
4.78e7
27.26
FS 1278D
5.33e7
27.61
Abs. Int.
1.49e7
7.45e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT


Rel. Int.
100%
PeCDD
29.02-34.10
355.8546 Fn2
Flags: PB
4σ 3.26e3
0%
12378D
2.51e7
32.88
Abs. Int.
7.19e6
3.60e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD
29.02-34.10
357.8517 Fn2
Flags: PB
4σ 1.91e3
0%
12378D
1.61e7
32.88
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.02-34.10
367.8949 Fn2
Flags: PB
4σ 3.26e3
0%
FS 12478D
4.99e7
31.61
CS 12347D
4.29e7
32.36
ES 12378D
4.72e7
32.86
Abs. Int.
1.39e7
6.95e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.02-34.10
369.8919 Fn2
Flags: PB
4σ 5.62e3
0%
FS 12478D
3.10e7
31.61
CS 12347D
2.70e7
32.36
ES 12378D
3.02e7
32.86
Abs. Int.
8.51e6
4.25e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
29.02-34.10
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.14e7
5.72e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT

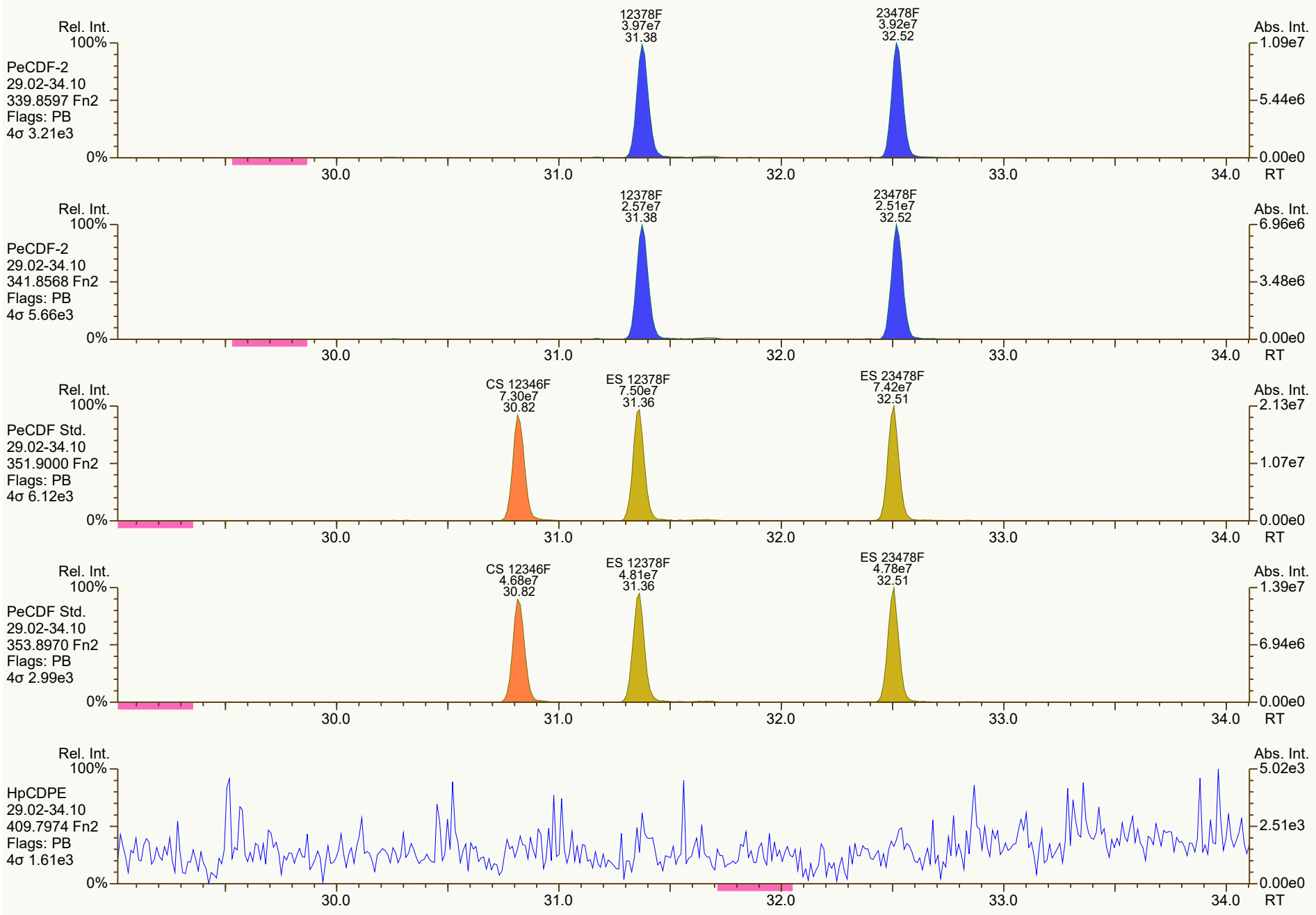

Rel. Int.
100%
HxCDD
34.12-38.11
389.8156 Fn3
Flags: PB
4σ 2.53e3
0%
123478D
2.06e7
36.87
123678D
2.14e7
36.98
123789D
2.23e7
37.29
Abs. Int.
6.33e6
3.16e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.12-38.11
391.8127 Fn3
Flags: PB
4σ 2.97e3
0%
123478D
1.61e7
36.87
123678D
1.66e7
36.98
123789D
1.77e7
37.29
Abs. Int.
5.01e6
2.51e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.12-38.11
401.8559 Fn3
Flags: PBM
4σ 5.83e3
0%
FS 123468D
4.89e7*
35.79
ES 123478D
3.59e7
36.85
ES 123678D
3.53e7
36.97
JS 123467D
1.85e7*
37.17
ES 123789D
4.05e7*
37.27
Abs. Int.
1.51e7
7.55e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.12-38.11
403.8530 Fn3
Flags: PBM
4σ 4.09e3
0%
FS 123468D
3.84e7*
35.79
ES 123478D
2.83e7
36.85
ES 123678D
2.80e7
36.97
JS 123467D
1.45e7*
37.17
ES 123789D
3.21e7*
37.27
Abs. Int.
1.14e7
5.69e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.12-38.11
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.81e7
2.41e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

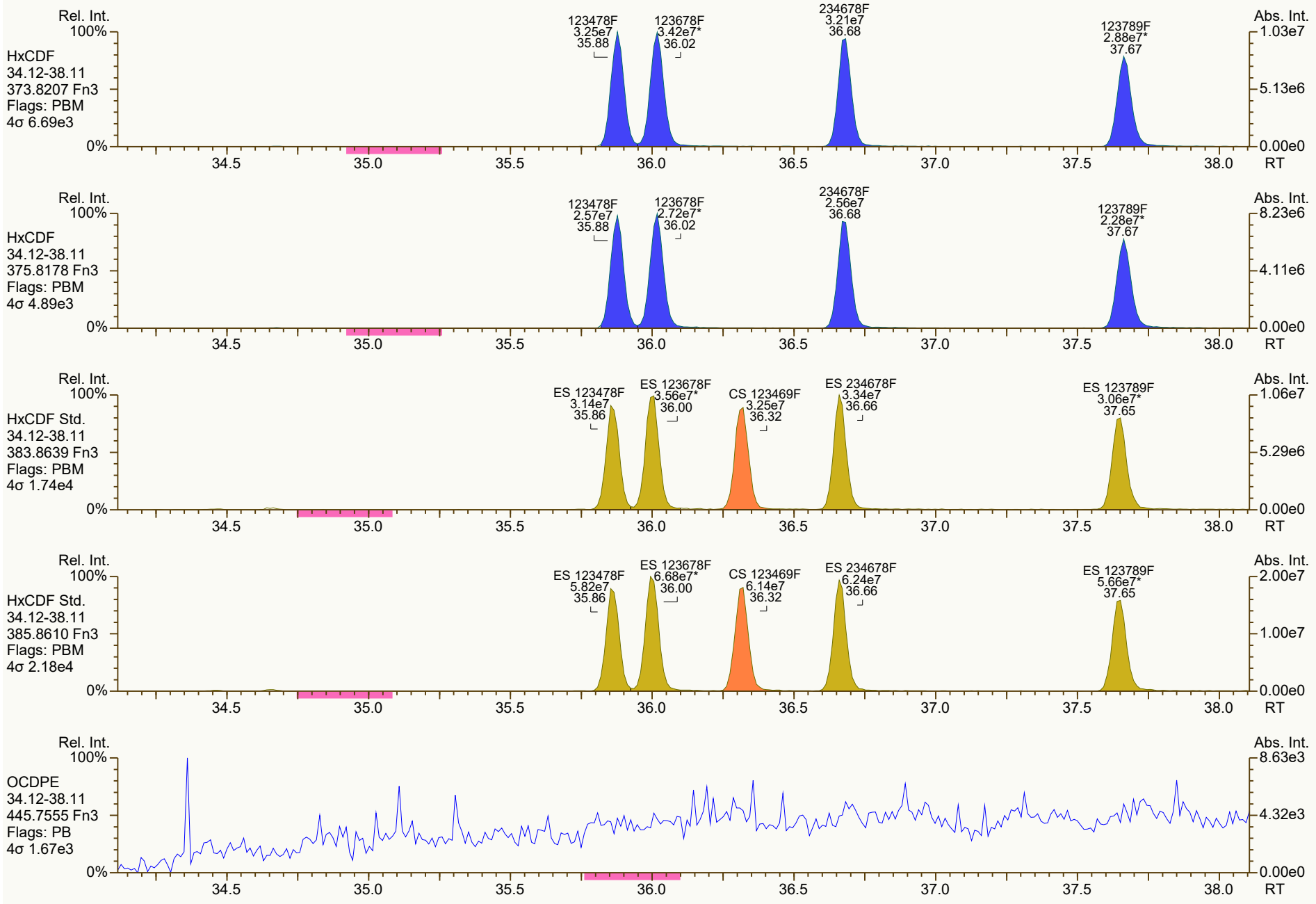

Rel. Int.
100%
HpCDD
38.12-41.50
423.7767 Fn4
Flags: PB
4σ 2.17e3
1234678D
1.72e7
40.21
Abs. Int.
5.56e6
2.78e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.12-41.50
425.7737 Fn4
Flags: PB
4σ 1.35e3
1234678D
1.63e7
40.21
Abs. Int.
5.21e6
2.61e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.12-41.50
435.8169 Fn4
Flags: PB
4σ 3.11e3
FS 1234679D
4.70e7
39.52
ES 1234678D
3.31e7
40.20
Abs. Int.
1.62e7
8.12e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.12-41.50
437.8140 Fn4
Flags: PB
4σ 2.22e3
FS 1234679D
4.39e7
39.52
ES 1234678D
3.07e7
40.20
Abs. Int.
1.48e7
7.40e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.12-41.50
430.9728 Fn4
Flags: -
Abs. Int.
2.86e7
1.43e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.91e7*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 2.22e3
0%
Abs. Int.
4.19e6
2.10e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.10e7*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.38e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 3.56e3
0%
Abs. Int.
7.55e6
3.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.69e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 1.83e3
0%
Abs. Int.
7.94e6
3.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.43e7
1.22e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.01
303.9016 Fn1
Flags: PB
4σ 2.07e3
0%
2378F
7.44e6
26.35
Abs. Int.
1.60e6
8.01e5
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDF
19.54-29.01
305.8987 Fn1
Flags: PB
4σ 3.26e3
0%
2378F
9.20e6
26.35
Abs. Int.
2.04e6
1.02e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDF Std.
19.54-29.01
315.9419 Fn1
Flags: PBM
4σ 2.17e4
0%
AS 1368F
7.04e7
21.09
JS 1234F
6.17e7
24.88
ES 2378F
6.20e7*
26.33
Abs. Int.
1.39e7
6.97e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDF Std.
19.54-29.01
317.9389 Fn1
Flags: PBM
4σ 7.64e3
0%
AS 1368F
8.94e7
21.09
JS 1234F
7.84e7
24.88
ES 2378F
7.97e7*
26.33
Abs. Int.
1.75e7
8.75e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
HxCDPE
19.54-29.01
375.8364 Fn1
Flags: PB
4σ 1.36e3
0%
Abs. Int.
8.97e3
4.48e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT

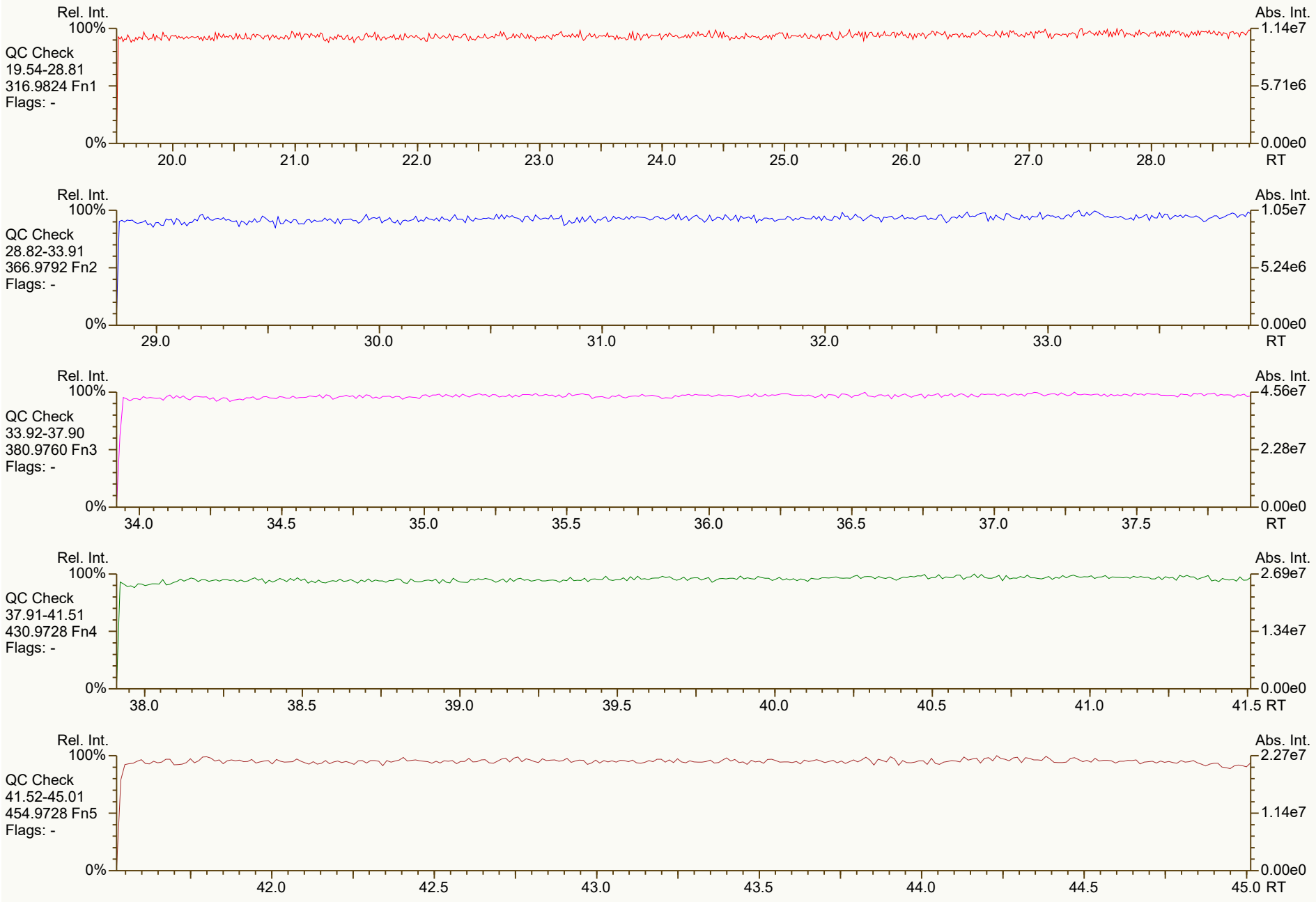

Rel. Int.
100%
0%
Abs. Int.
1.00e4
5.00e3
0.00e0
PeCDF-1
19.54-29.01
339.8597 Fn1
Flags: B
4σ 1.80e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.65e3
0.00e0
PeCDF-1
19.54-29.01
341.8568 Fn1
Flags: B
4σ 3.54e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.27e7
6.33e6
0.00e0
QC Check
19.54-29.01
316.9824 Fn1
Flags: -
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT

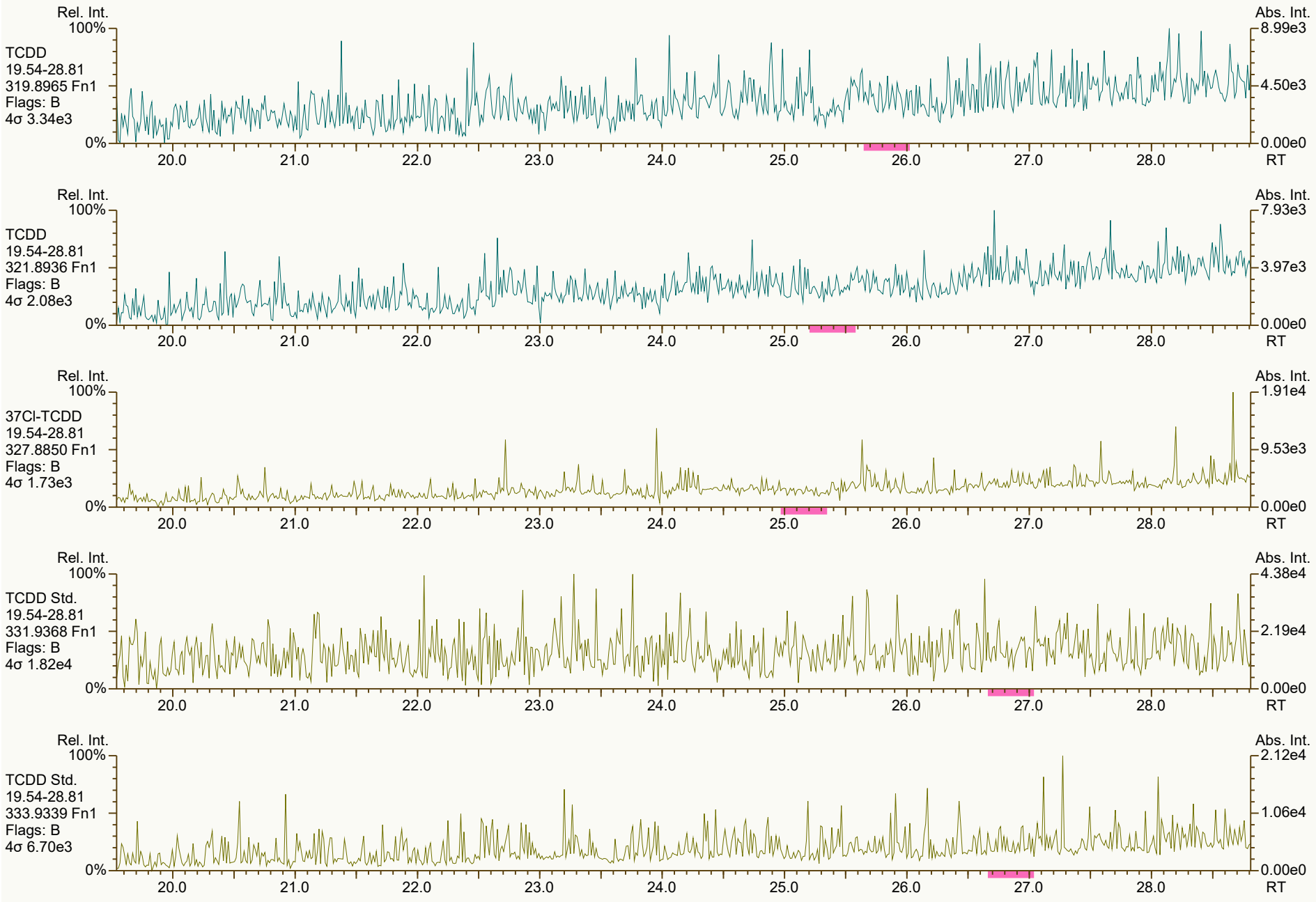

Rel. Int.
100%
PeCDF-2
29.02-34.10
339.8597 Fn2
Flags: PB
4σ 3.21e3
12378F
3.97e7
31.38
23478F
3.92e7
32.52
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF-2
29.02-34.10
341.8568 Fn2
Flags: PB
4σ 5.66e3
12378F
2.57e7
31.38
23478F
2.51e7
32.52
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.02-34.10
351.9000 Fn2
Flags: PB
4σ 6.12e3
CS 12346F
7.30e7
30.82
ES 12378F
7.50e7
31.36
ES 23478F
7.42e7
32.51
Abs. Int.
2.13e7
1.07e7
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.02-34.10
353.8970 Fn2
Flags: PB
4σ 2.99e3
CS 12346F
4.68e7
30.82
ES 12378F
4.81e7
31.36
ES 23478F
4.78e7
32.51
Abs. Int.
1.39e7
6.94e6
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
HpCDPE
29.02-34.10
409.7974 Fn2
Flags: PB
4σ 1.61e3
Abs. Int.
5.02e3
2.51e3
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT


Rel. Int.
100%
HxCDF
34.12-38.11
373.8207 Fn3
Flags: PBM
4σ 6.69e3
0%
123478F
3.25e7
35.88
123678F
3.42e7*
36.02
234678F
3.21e7
36.68
123789F
2.88e7*
37.67
Abs. Int.
1.03e7
5.13e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.12-38.11
375.8178 Fn3
Flags: PBM
4σ 4.89e3
0%
123478F
2.57e7
35.88
123678F
2.72e7*
36.02
234678F
2.56e7
36.68
123789F
2.28e7*
37.67
Abs. Int.
8.23e6
4.11e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.12-38.11
383.8639 Fn3
Flags: PBM
4σ 1.74e4
0%
ES 123478F
3.14e7
35.86
ES 123678F
3.56e7*
36.00
CS 123469F
3.25e7
36.32
ES 234678F
3.34e7
36.66
ES 123789F
3.06e7*
37.65
Abs. Int.
1.06e7
5.29e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.12-38.11
385.8610 Fn3
Flags: PBM
4σ 2.18e4
0%
ES 123478F
5.82e7
35.86
ES 123678F
6.68e7*
36.00
CS 123469F
6.14e7
36.32
ES 234678F
6.24e7
36.66
ES 123789F
5.66e7*
37.65
Abs. Int.
2.00e7
1.00e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.12-38.11
445.7555 Fn3
Flags: PB
4σ 1.67e3
0%
Abs. Int.
8.63e3
4.32e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.12-41.50
407.7818 Fn4
Flags: PB
4σ 2.13e3
1234678F
2.63e7
39.25
1234789F
2.29e7
40.64
Abs. Int.
8.76e6
4.38e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.12-41.50
409.7788 Fn4
Flags: PB
4σ 3.02e3
1234678F
2.53e7
39.25
1234789F
2.19e7
40.64
Abs. Int.
8.53e6
4.26e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.12-41.50
417.8253 Fn4
Flags: PBM
4σ 4.28e3
ES 1234678F
2.32e7*
39.24
CS 1234689F
2.35e7*
39.66
ES 1234789F
2.08e7
40.63
Abs. Int.
8.62e6
4.31e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.12-41.50
419.8220 Fn4
Flags: PBM
4σ 4.55e3
ES 1234678F
5.06e7*
39.24
CS 1234689F
5.14e7*
39.66
ES 1234789F
4.56e7
40.63
Abs. Int.
1.79e7
8.96e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.12-41.50
479.7165 Fn4
Flags: B
4σ 1.46e3
Abs. Int.
7.39e3
3.70e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
2.53e7*
42.98
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.57e3
0%
Abs. Int.
5.89e6
2.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.79e7*
42.98
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.67e3
0%
Abs. Int.
6.23e6
3.12e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
4.66e7*
42.97
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
5.02e7*
42.97
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.07e3
0%
Abs. Int.
1.12e7
5.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.33e3
0%
Abs. Int.
5.80e3
2.90e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

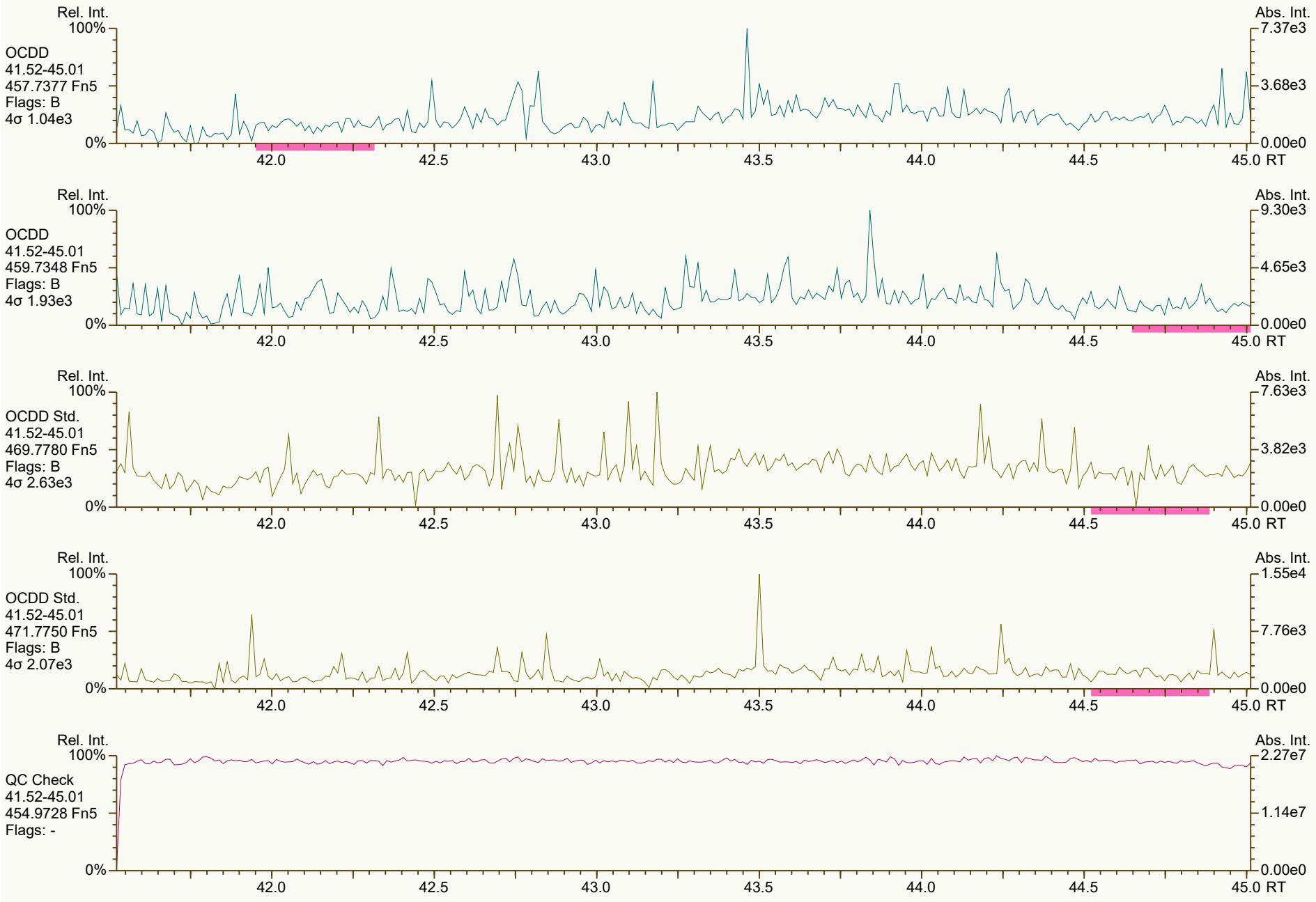

Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Abs. Int.
1.14e7
5.71e6
0.00e0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
29.0
30.0
31.0
32.0
33.0
Abs. Int.
1.05e7
5.24e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.90
380.9760 Fn3
Flags: -
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
Abs. Int.
4.56e7
2.28e7
0.00e0
RT
Rel. Int.
100%
QC Check
37.91-41.51
430.9728 Fn4
Flags: -
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
2.69e7
1.34e7
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
2.27e7
1.14e7
0.00e0


Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: B
4σ 3.34e3
0%
Abs. Int.
8.99e3
4.50e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.93e3
3.97e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: B
4σ 1.73e3
0%
Abs. Int.
1.91e4
9.53e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: B
4σ 1.82e4
0%
Abs. Int.
4.38e4
2.19e4
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: B
4σ 6.70e3
0%
Abs. Int.
2.12e4
1.06e4
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PB
4σ 2.29e3
0%
Abs. Int.
7.74e3
3.87e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PB
4σ 1.94e3
0%
Abs. Int.
6.73e3
3.36e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: B
4σ 1.92e3
0%
Abs. Int.
1.85e4
9.24e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: B
4σ 1.38e3
0%
Abs. Int.
1.14e4
5.69e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDD
33.92-37.90
389.8156 Fn3
Flags: B
4σ 1.34e3
0%
Abs. Int.
6.46e3
3.23e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.90
391.8127 Fn3
Flags: B
4σ 1.94e3
0%
Abs. Int.
6.66e3
3.33e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.90
401.8559 Fn3
Flags: B
4σ 5.54e3
0%
Abs. Int.
2.23e4
1.12e4
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.90
403.8530 Fn3
Flags: B
4σ 1.76e3
0%
Abs. Int.
9.91e3
4.96e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.90
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.56e7
2.28e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT


Rel. Int.
100%
HpCDD
37.91-41.51
423.7767 Fn4
Flags: B
4σ 1.29e3
0%
Abs. Int.
6.01e3
3.01e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.91-41.51
425.7737 Fn4
Flags: B
4σ 1.44e3
0%
Abs. Int.
4.63e3
2.31e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.91-41.51
435.8169 Fn4
Flags: B
4σ 2.92e3
0%
Abs. Int.
2.53e4
1.27e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.91-41.51
437.8140 Fn4
Flags: B
4σ 1.67e3
0%
Abs. Int.
7.62e3
3.81e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.91-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.69e7
1.34e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.04e3
0%
Abs. Int.
7.37e3
3.68e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 1.93e3
0%
Abs. Int.
9.30e3
4.65e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.63e3
0%
Abs. Int.
7.63e3
3.82e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.07e3
0%
Abs. Int.
1.55e4
7.76e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 2.01e3
2468F
9.91e5*
22.14
SBS
Abs. Int.
2.05e5
1.02e5
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 2.06e3
2468F
1.28e6*
22.14
Abs. Int.
2.14e5
1.07e5
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: B
4σ 1.45e4
Abs. Int.
3.01e4
1.51e4
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: B
4σ 8.40e3
Abs. Int.
1.94e4
9.70e3
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.57e3
Abs. Int.
6.57e3
3.29e3
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.21e4
6.07e3
0.00e0
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: B
4σ 1.61e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: B
4σ 2.55e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.14e7
5.71e6
0.00e0
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: B
4σ 1.46e3
0%
Abs. Int.
1.33e4
6.64e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.21e3
4.10e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: B
4σ 4.84e3
0%
Abs. Int.
1.89e4
9.46e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: B
4σ 2.73e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.23e3
0%
Abs. Int.
1.08e4
5.41e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDF
33.92-37.90
373.8207 Fn3
Flags: B
4σ 1.95e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF
33.92-37.90
375.8178 Fn3
Flags: B
4σ 3.19e3
0%
Abs. Int.
9.53e3
4.77e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.90
383.8639 Fn3
Flags: B
4σ 2.09e3
0%
Abs. Int.
1.87e4
9.33e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.90
385.8610 Fn3
Flags: B
4σ 8.21e3
0%
Abs. Int.
3.85e4
1.93e4
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
OCDPE
33.92-37.90
445.7555 Fn3
Flags: PB
4σ 1.29e3
0%
Abs. Int.
6.90e3
3.45e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT


Rel. Int.
100%
HpCDF
37.91-41.51
407.7818 Fn4
Flags: PB
4σ 1.86e3
0%
Abs. Int.
2.03e4
1.01e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.91-41.51
409.7788 Fn4
Flags: B
4σ 2.03e3
0%
Abs. Int.
8.79e3
4.40e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.91-41.51
417.8253 Fn4
Flags: B
4σ 5.61e3
0%
Abs. Int.
1.60e4
8.02e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.91-41.51
419.8220 Fn4
Flags: B
4σ 1.63e3
0%
Abs. Int.
1.94e4
9.69e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.91-41.51
479.7165 Fn4
Flags: PB
4σ 1.45e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.53e3
0%
Abs. Int.
9.16e3
4.58e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.94e3
0%
Abs. Int.
7.28e3
3.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.20e3
0%
Abs. Int.
1.19e4
5.94e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 2.74e3
0%
Abs. Int.
1.77e4
8.86e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.29e3
0%
Abs. Int.
7.14e3
3.57e3
0.00e0
42.0
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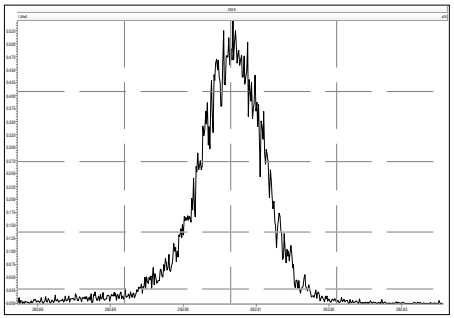
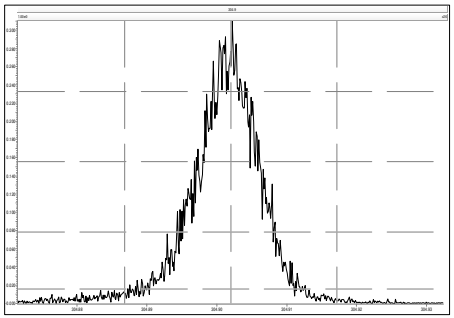
43.0
43.5
44.0
44.5
45.0 RT

Printed: Tuesday, December 07, 2021 14:13:59 Eastern Standard Time

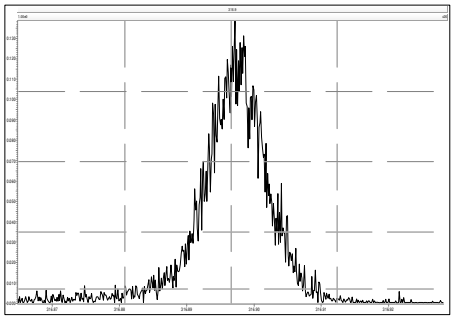
M 292.9824 R 13335



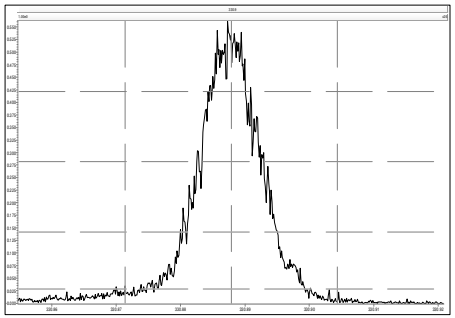
M 304.9824 R 14414



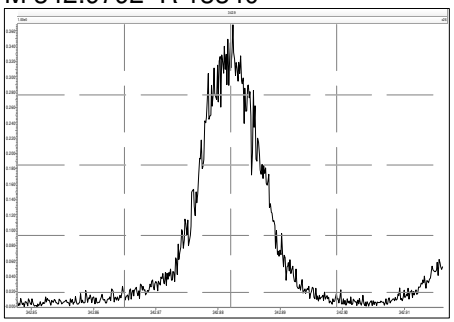
M 316.9824 R 15497



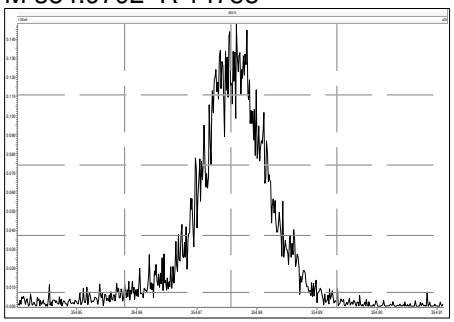
M 330.9792 R 14164



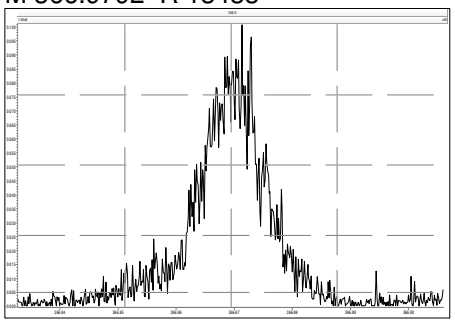
M 342.9792 R 13340



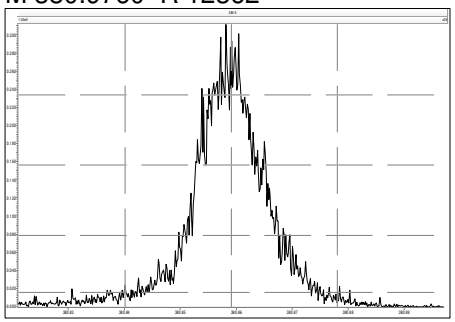
M 354.9792 R 14755



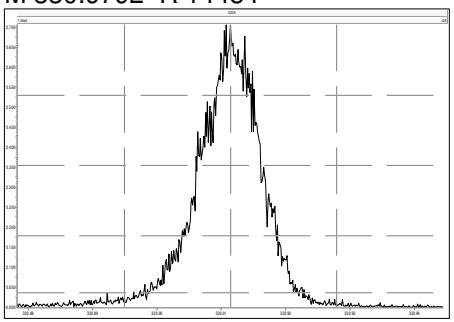
M 366.9792 R 13433



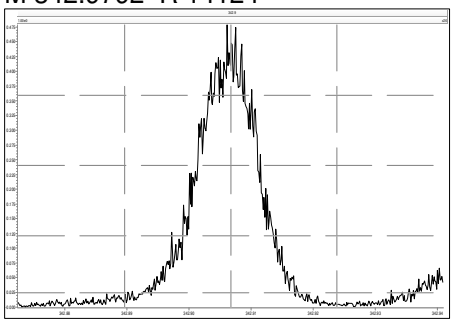
M 380.9760 R 12362



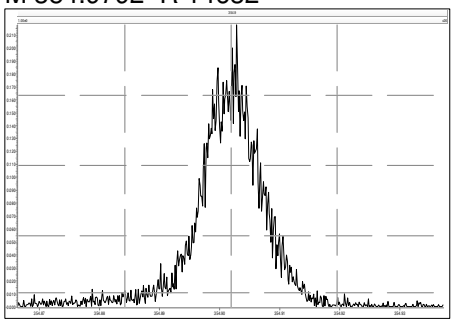
M 330.9792 R 14454



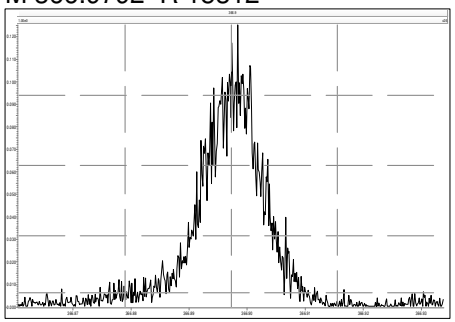
M 342.9792 R 14124



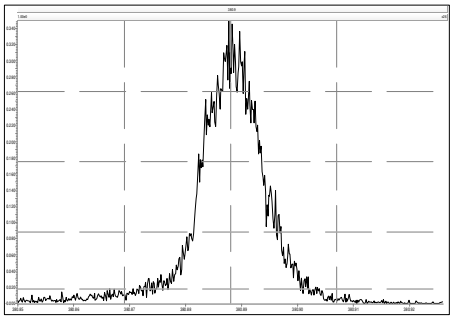
M 354.9792 R 14632



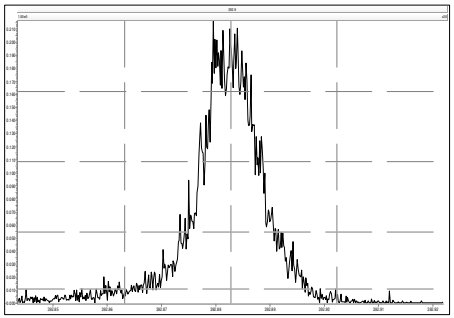
M 366.9792 R 15312



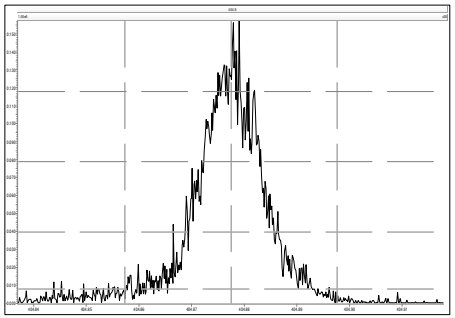
M 380.9760 R 15166



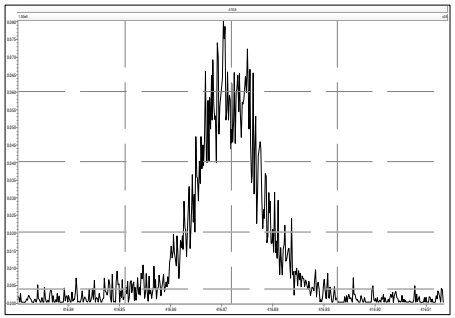
M 392.9760 R 13903



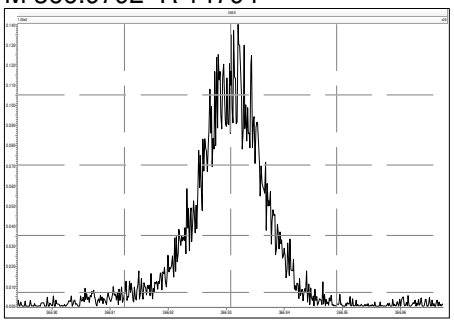
M 404.9760 R 14014



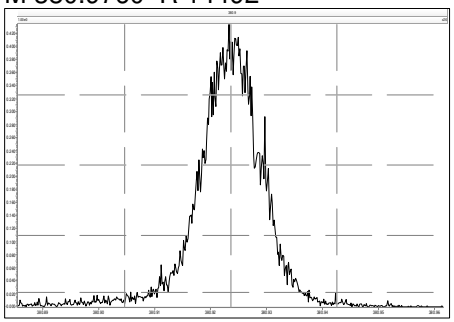
M 416.9760 R 15155



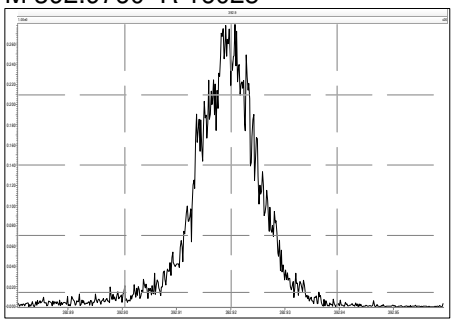
M 366.9792 R 14794



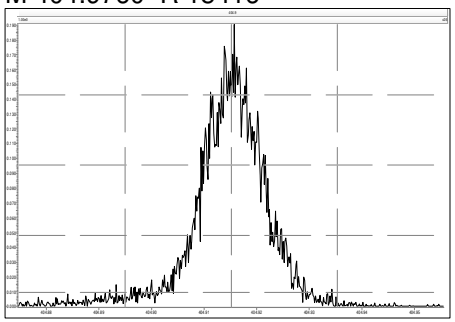
M 380.9760 R 14492



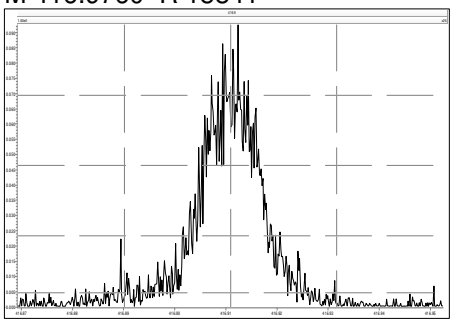
M 392.9760 R 16025



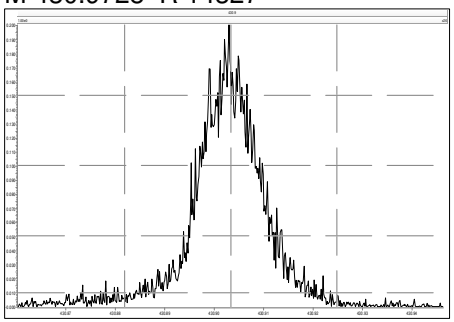
M 404.9760 R 15416



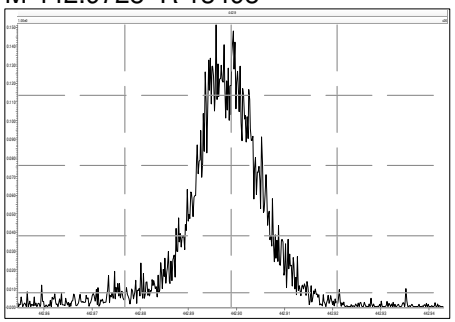
M 416.9760 R 15841



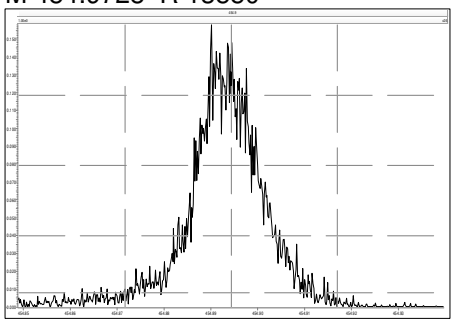
M 430.9728 R 14327



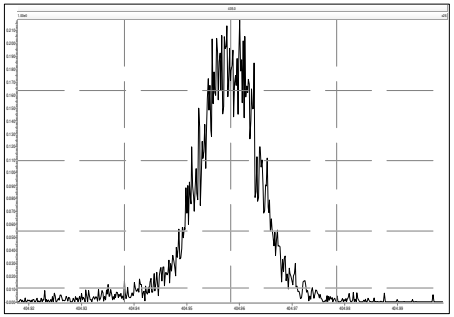
M 442.9728 R 13498



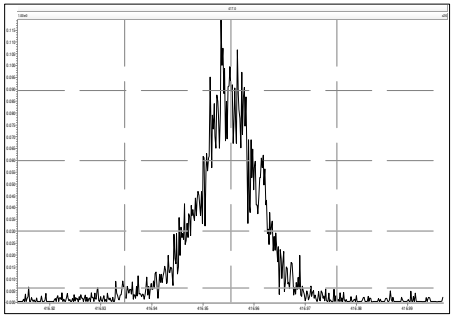
M 454.9728 R 13550



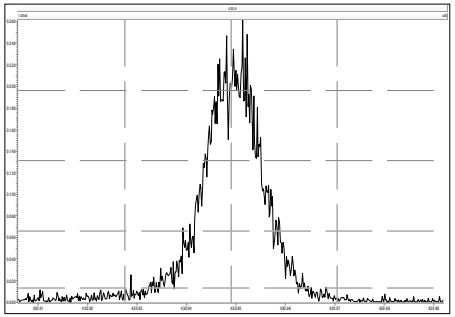
M 404.9760 R 14978



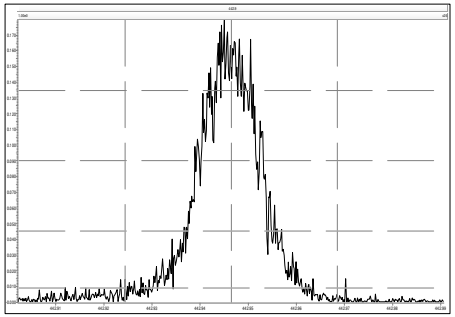
M 416.9760 R 16713



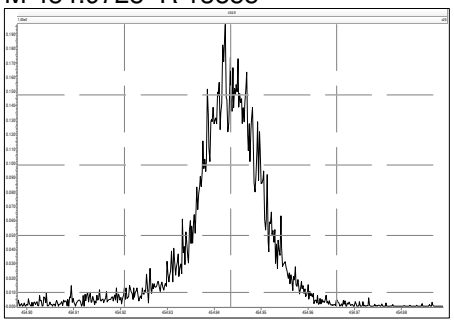
M 430.9728 R 15385



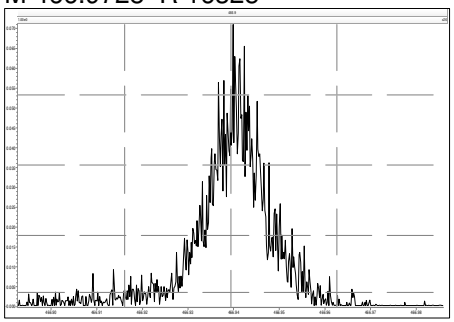
M 442.9728 R 14683



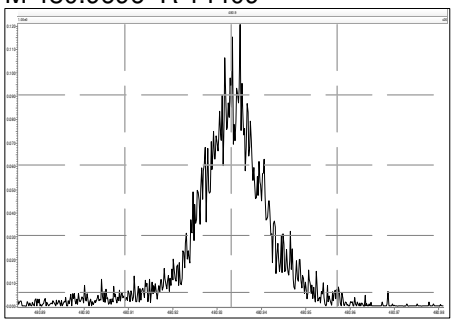
M 454.9728 R 13855



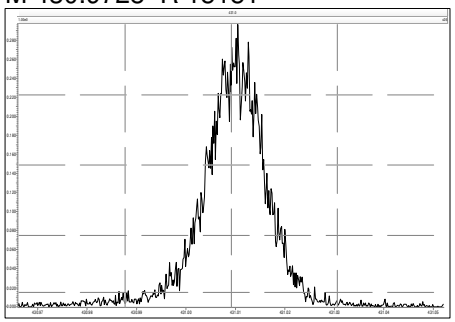
M 466.9728 R 16325



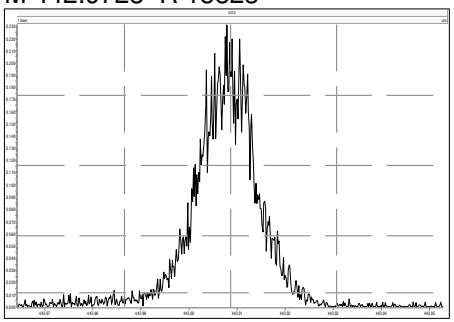
M 480.9696 R 14409



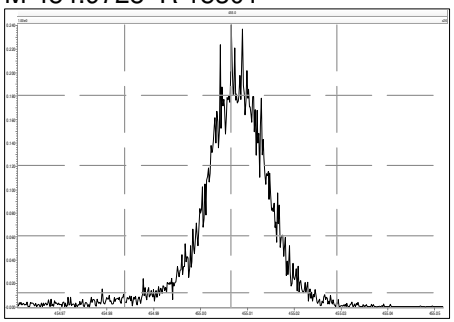
M 430.9728 R 15151



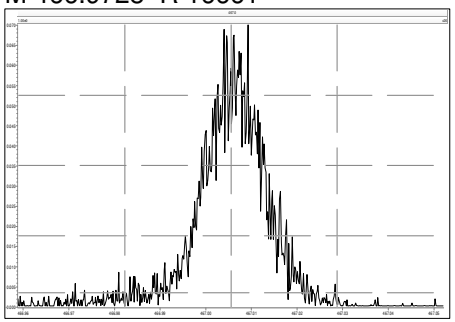
M 442.9728 R 15823



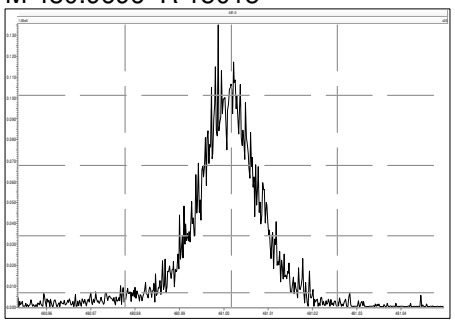
M 454.9728 R 15301



M 466.9728 R 16661



M 480.9696 R 15015



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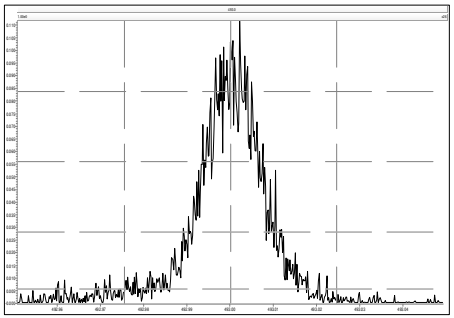
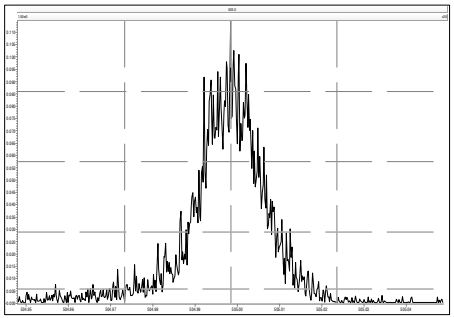
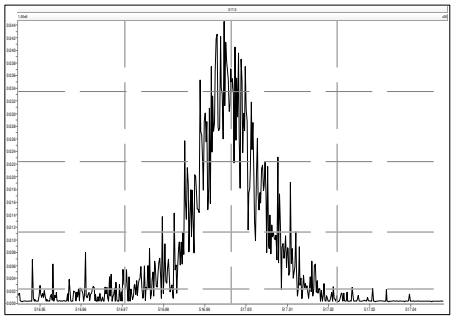
M 492.9696 R 15201



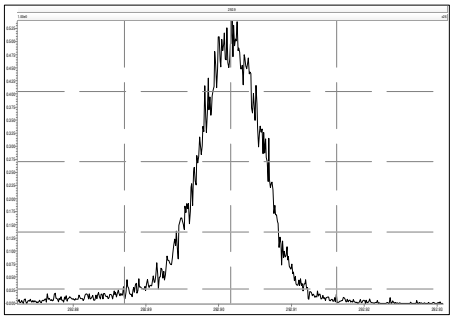
M 504.9696 R 15171



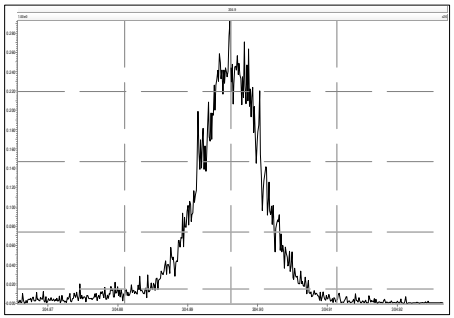
M 516.9697 R 16090



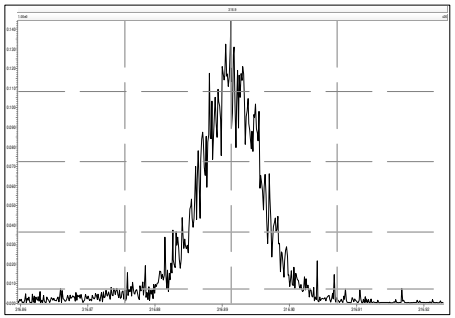
M 292.9824 R 13170



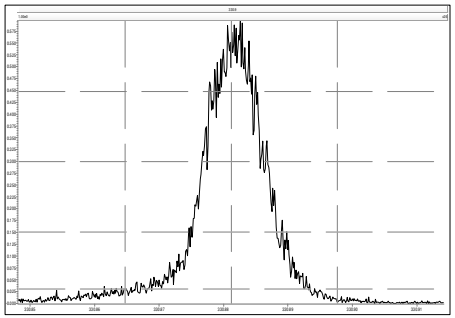
M 304.9824 R 13776



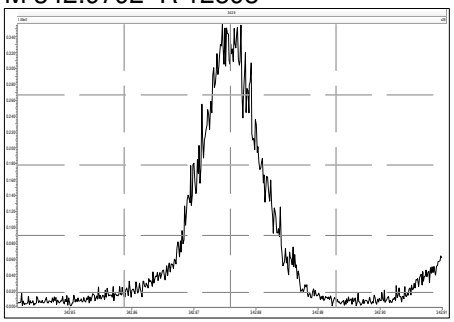
M 316.9824 R 15279



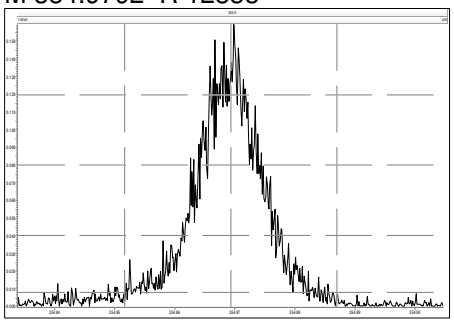
M 330.9792 R 13549



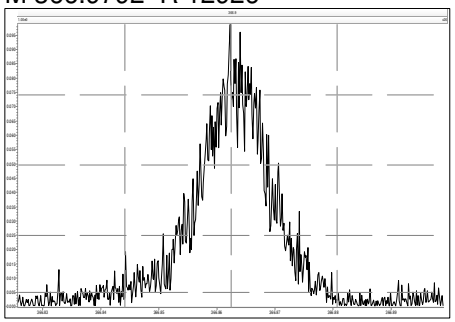
M 342.9792 R 12598



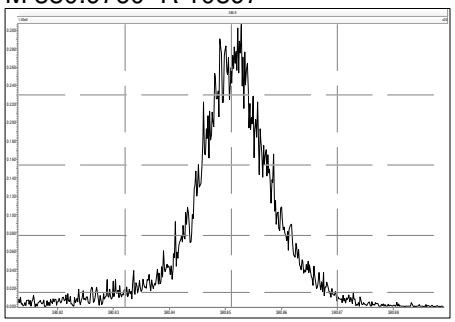
M 354.9792 R 12858



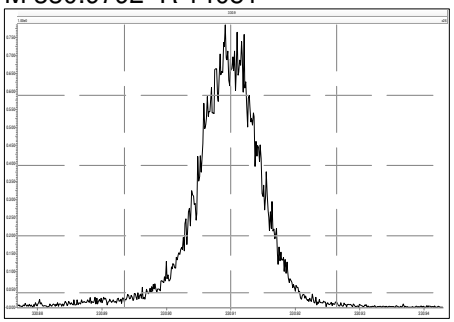
M 366.9792 R 12926



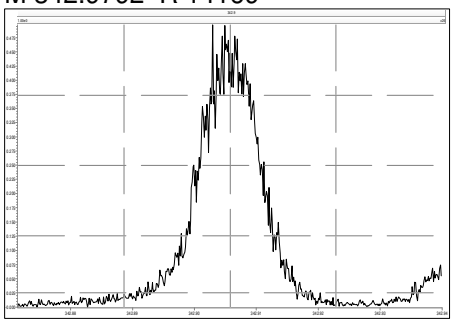
M 380.9760 R 10897



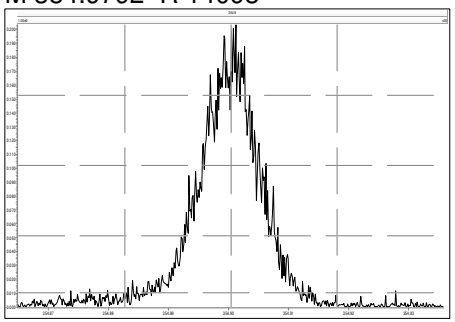
M 330.9792 R 14051



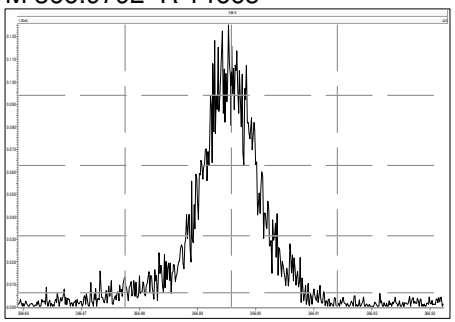
M 342.9792 R 14169



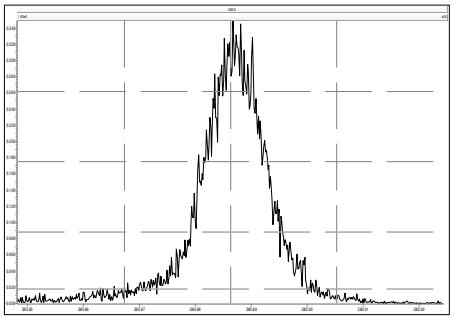
M 354.9792 R 14098



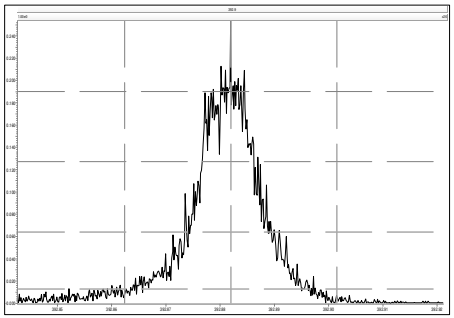
M 366.9792 R 14665



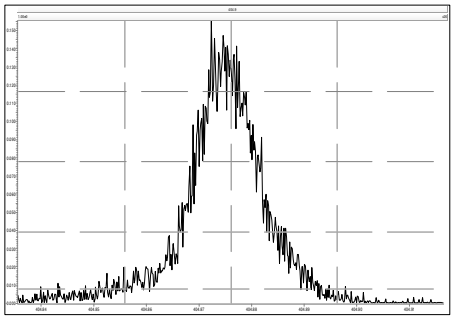
M 380.9760 R 13895



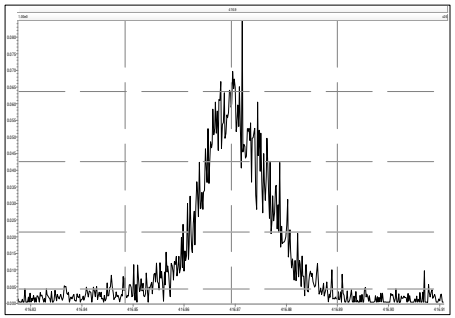
M 392.9760 R 12472



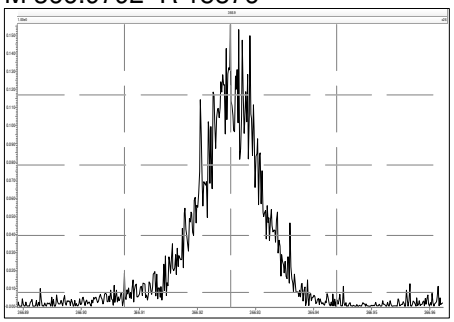
M 404.9760 R 12950



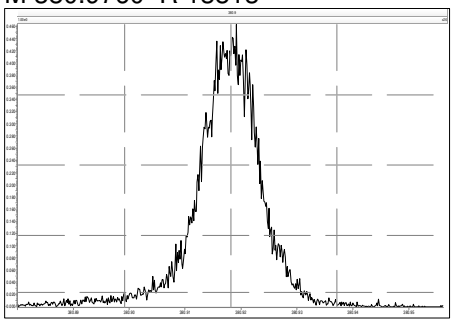
M 416.9760 R 14540



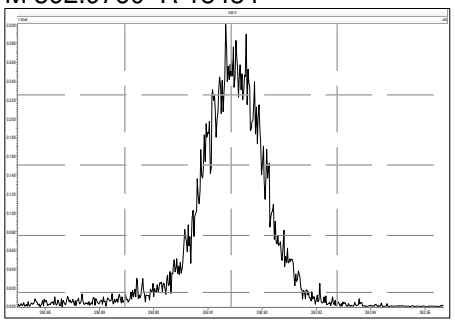
M 366.9792 R 15876



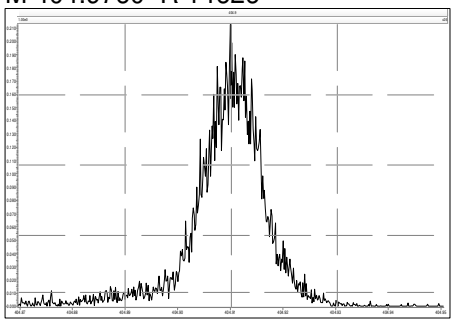
M 380.9760 R 13813



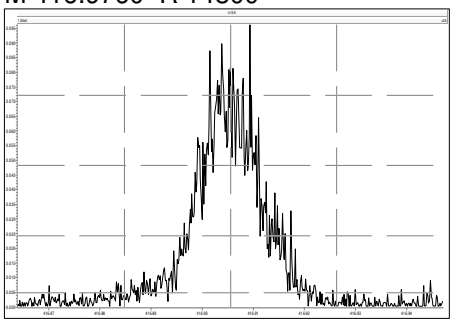
M 392.9760 R 15434



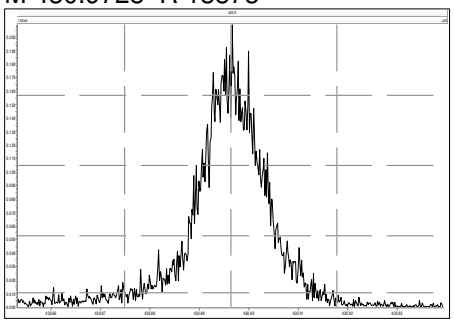
M 404.9760 R 14626



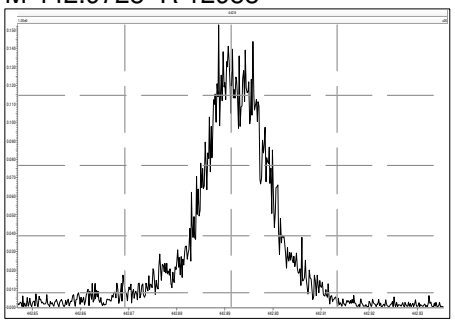
M 416.9760 R 14800



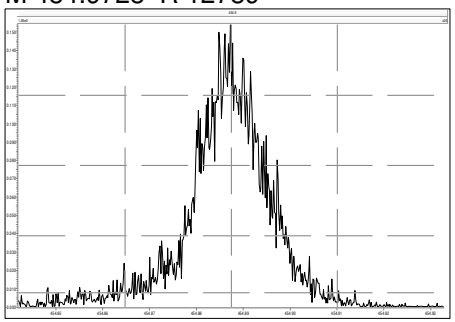
M 430.9728 R 13873



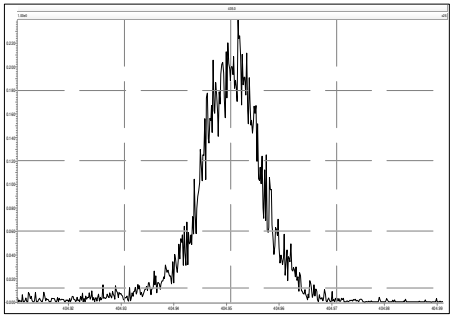
M 442.9728 R 12958



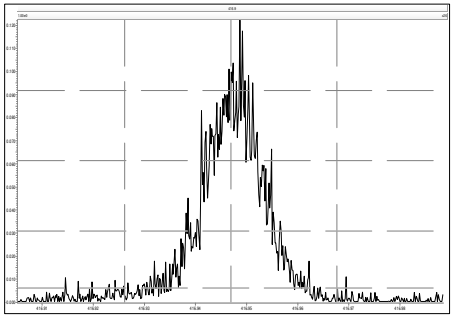
M 454.9728 R 12789



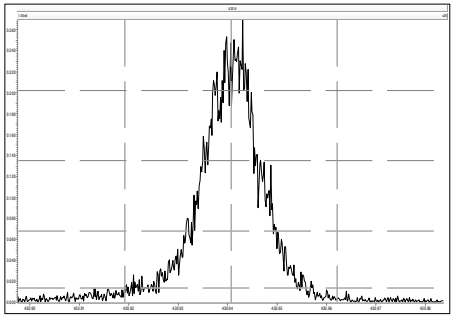
M 404.9760 R 15151



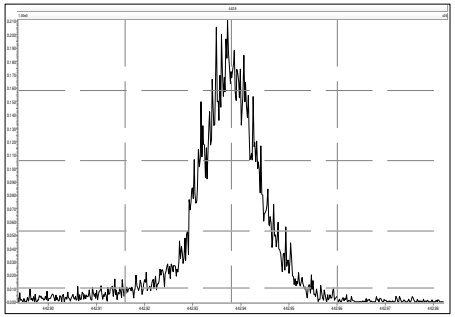
M 416.9760 R 15252



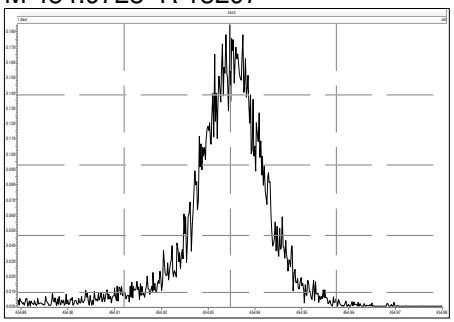
M 430.9728 R 14285



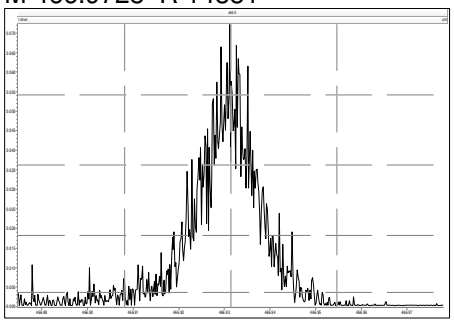
M 442.9728 R 13995



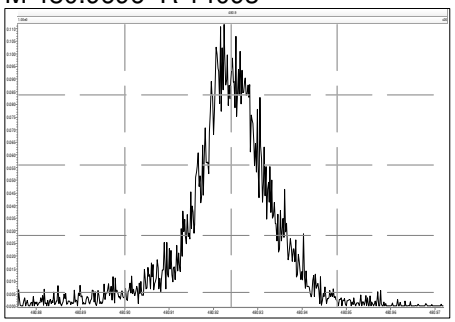
M 454.9728 R 13297



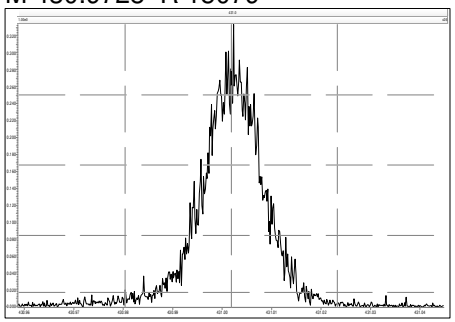
M 466.9728 R 14881



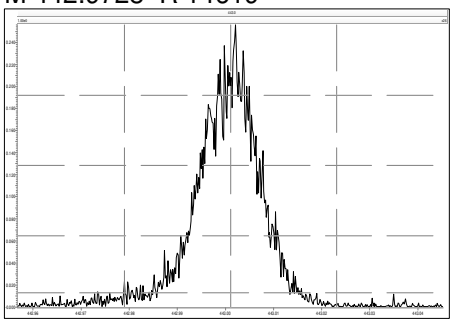
M 480.9696 R 14093



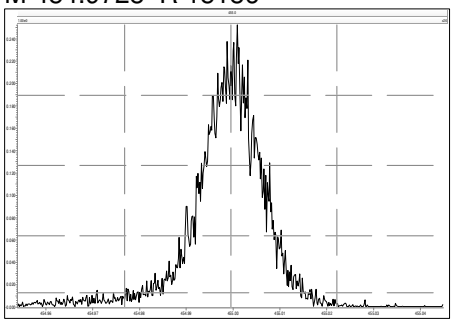
M 430.9728 R 15079



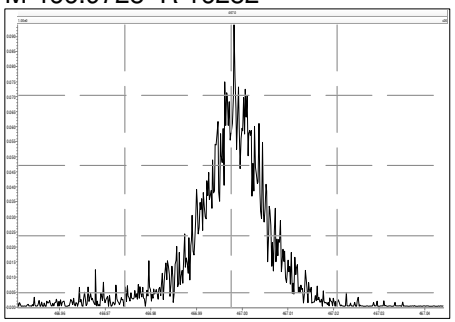
M 442.9728 R 14619



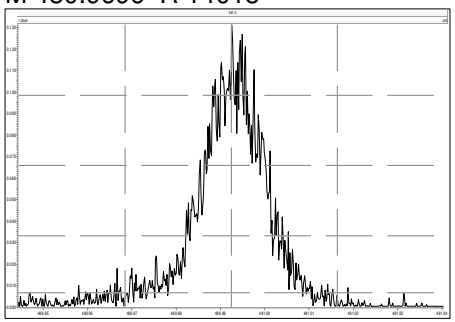
M 454.9728 R 15186



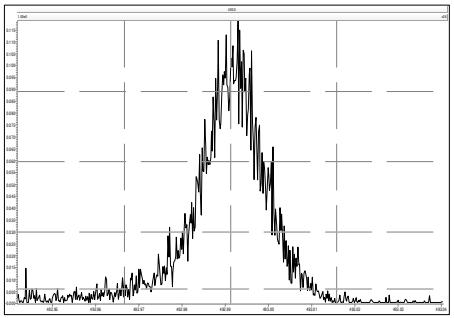
M 466.9728 R 16282



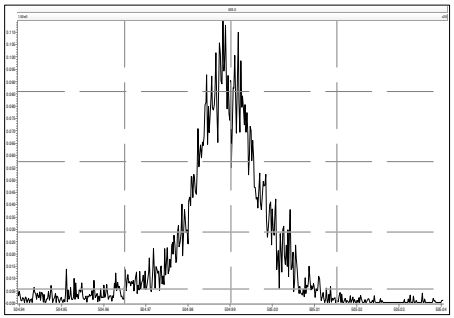
M 480.9696 R 14018



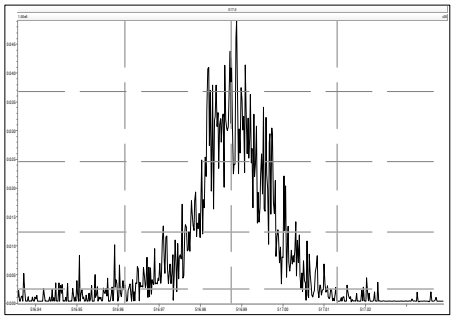
M 492.9696 R 15104



M 504.9696 R 13042



M 516.9697 R 13746



Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 0.25 pg/uL CS0	211110C05 0.5 pg/uL CS1	211110C06 2 pg/uL CS2	211110C07 10 pg/uL CS3	211110C08 40 pg/uL CS4	211110C09 200 pg/uL CS5	211110C10 500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 **0.25 pg/uL CS0**	211110C05 **0.5 pg/uL CS1**	211110C06 **2 pg/uL CS2**	211110C07 **10 pg/uL CS3**	211110C08 **40 pg/uL CS4**	211110C09 **200 pg/uL CS5**	211110C10 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86 ✓	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07 ✓	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10 ✓	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28 ✓	1.33

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

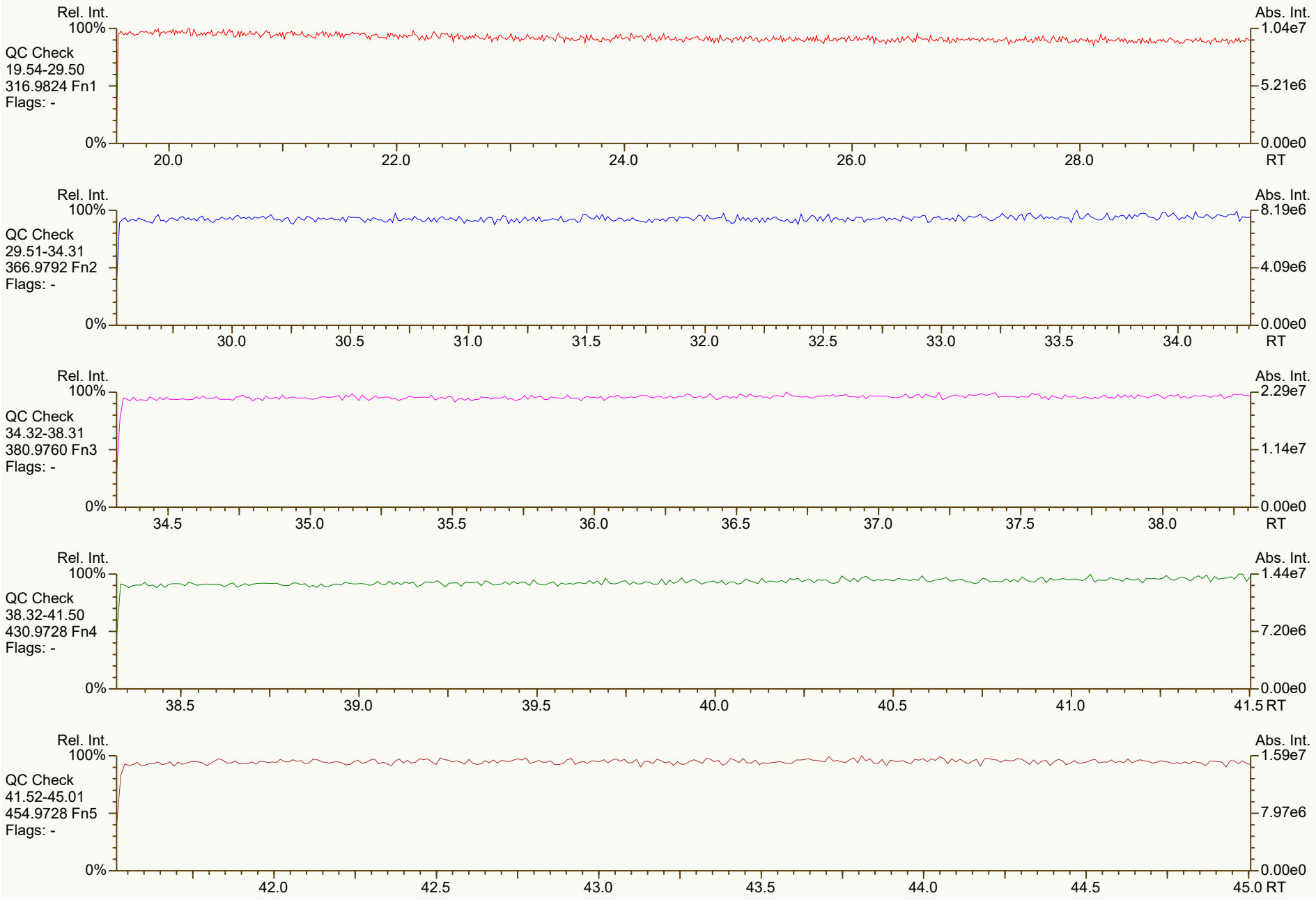
APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

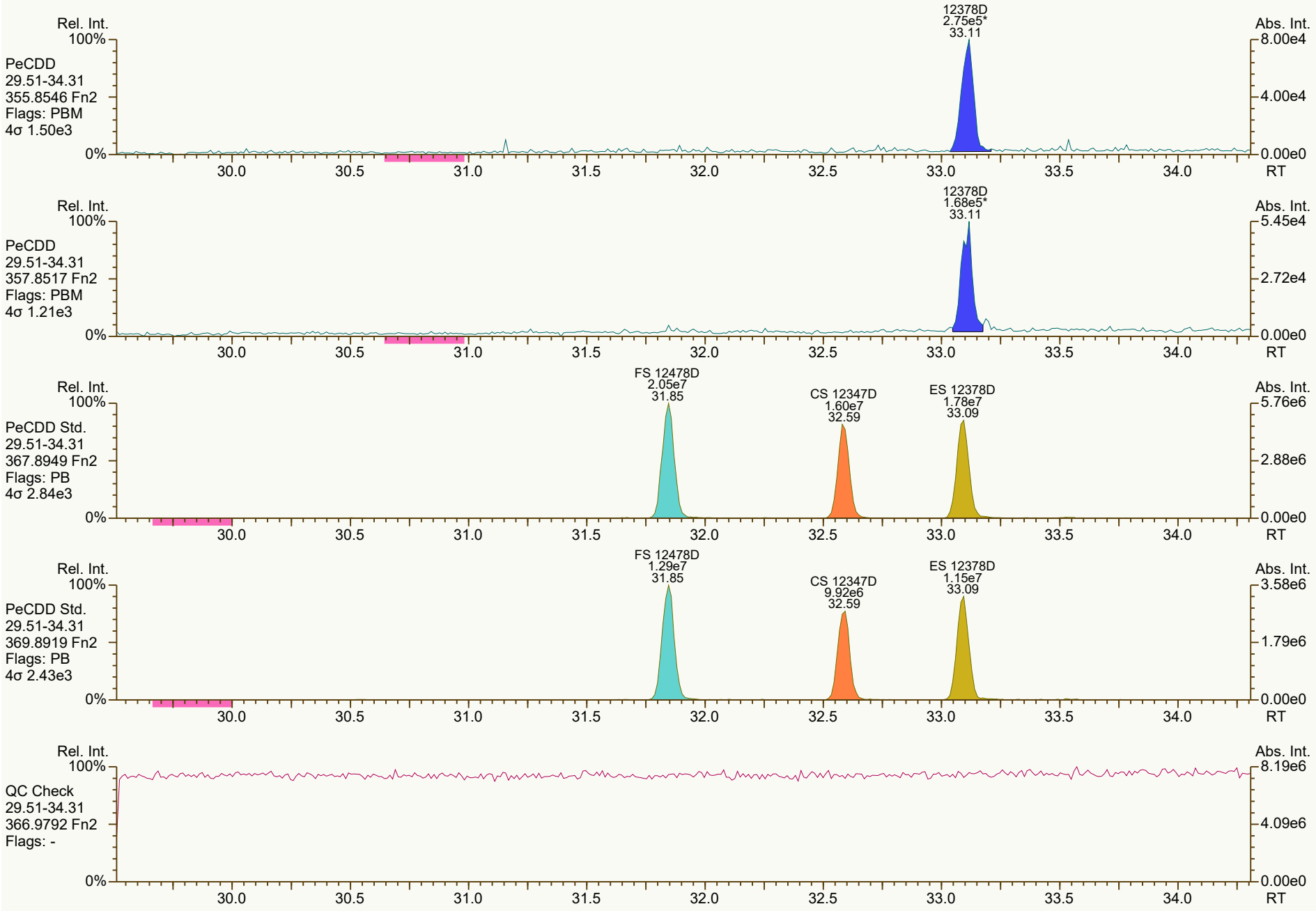
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:02 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA	UTP: 11-Nov-2021 16:23:33 DTF	Checkcode: 245-007-QLD
Sample ID: 25-6-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C04

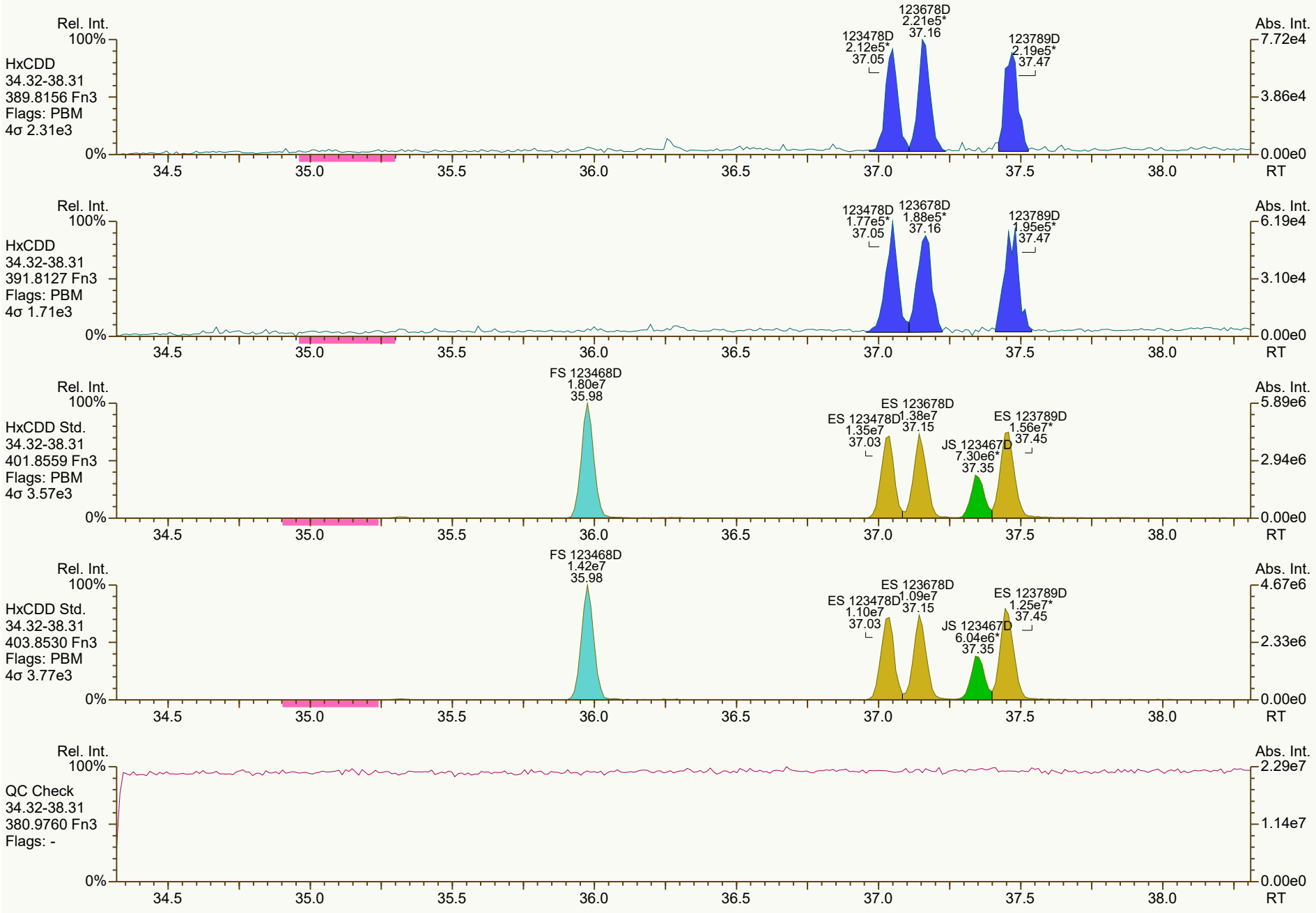
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

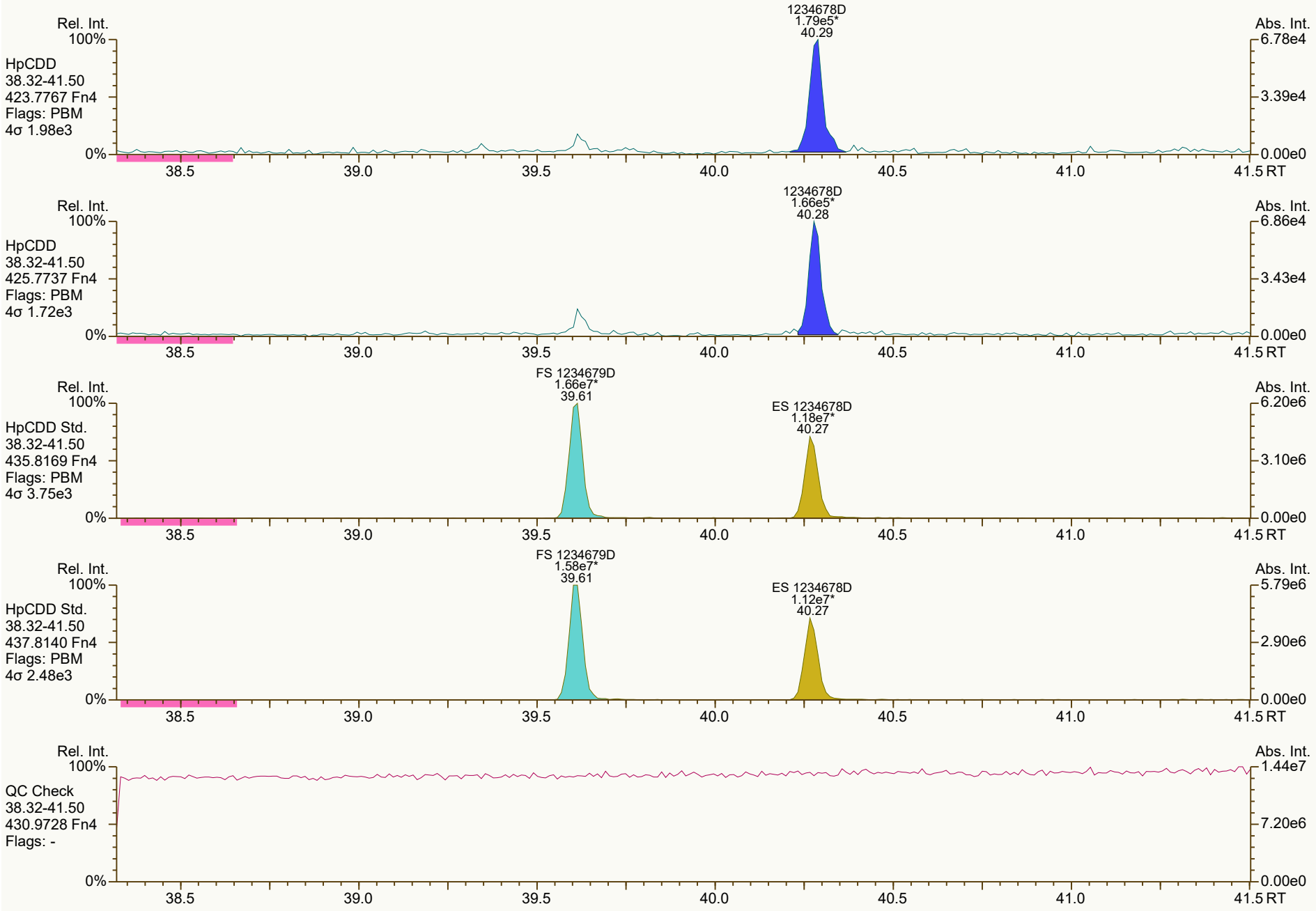
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF					ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF					Checkcode: 245-007-QLD
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF					Datafile: 211110C04
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%

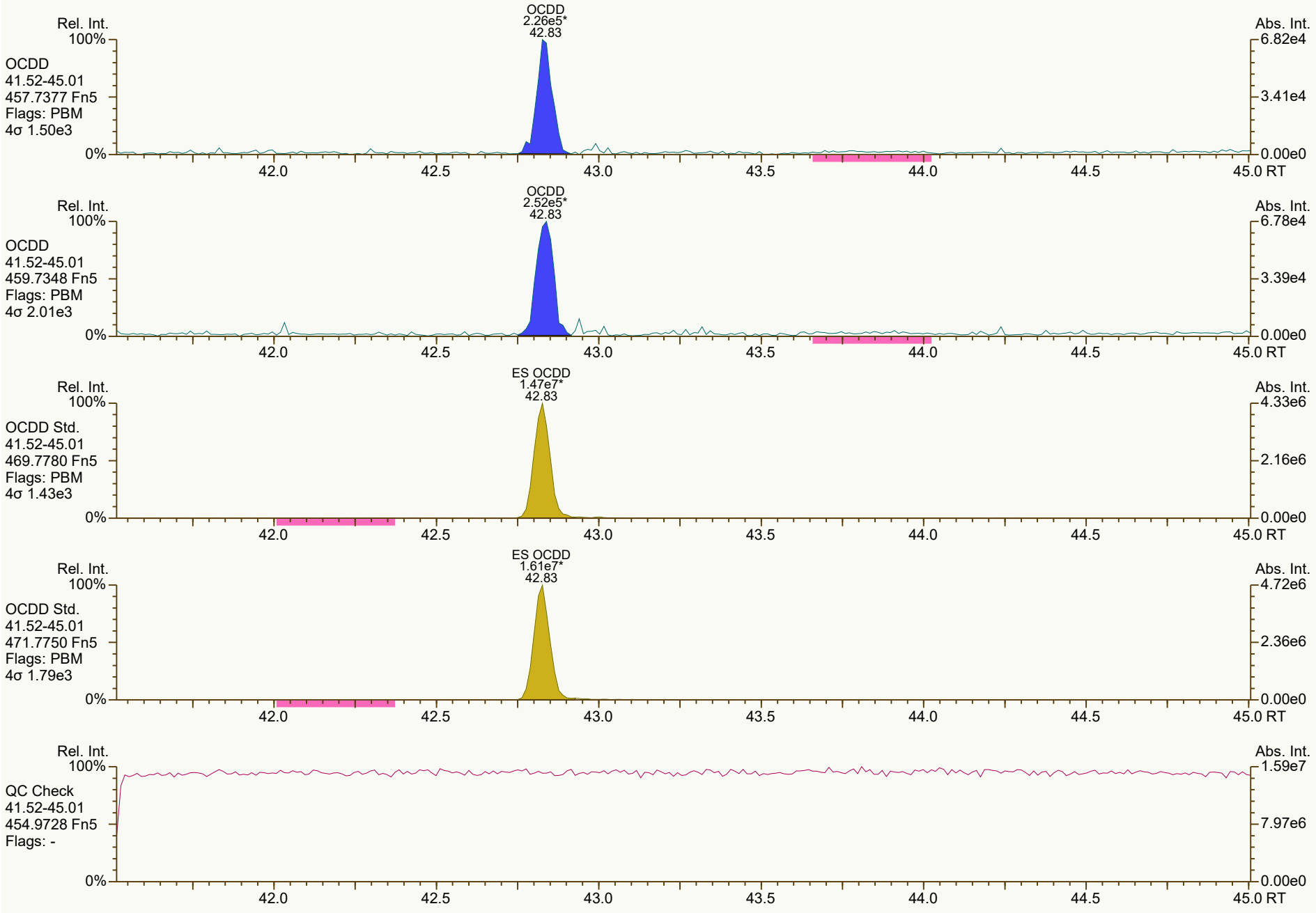

Rel. Int.
100%
0%
Abs. Int.
1.04e7
5.21e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.19e6
4.09e6
0.00e0
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
0%
Abs. Int.
1.59e7
7.97e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

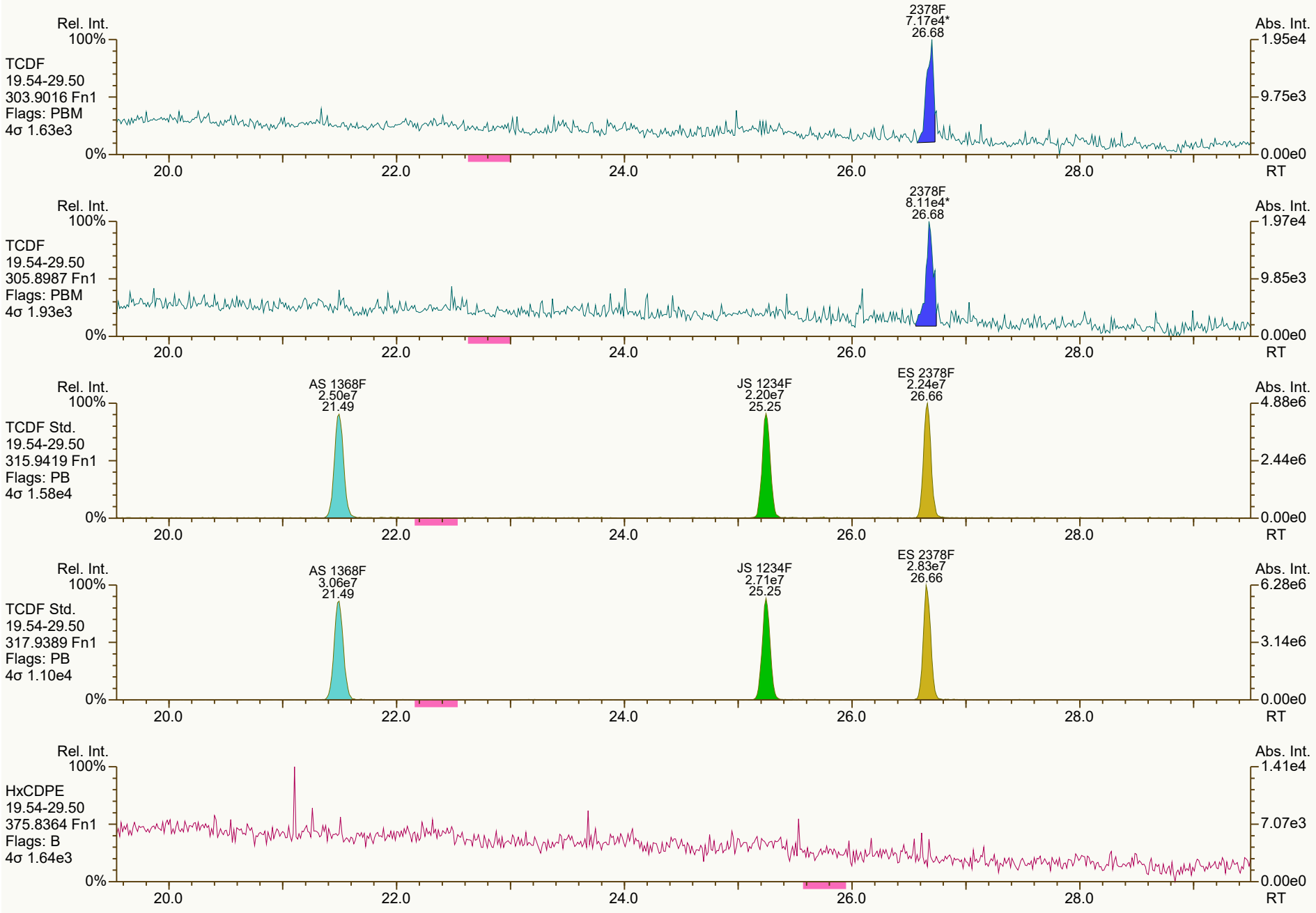

SGS ID: CS0_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
Acq: 10-Nov-2021 11:02:13
User: DTF Datafile: 211110C04
Rel. Int.
100%
0%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PBM
4σ 2.61e3
RRF = (5.29e4 + 6.64e4) * 100pg / (1.59e7 + 1.97e7) * .25pg = 1.34
DTF 11-Nov-2021 16:30
2378D
5.29e4*
27.60
Abs. Int.
1.67e4
8.35e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
APPROVED
Amy_Boehm , 11/11/2021, 5:12:33 PM
TCDD
19.54-29.50
321.8936 Fn1
Flags: PBM
4σ 2.27e3
2378D
6.64e4*
27.59
2.13e4
1.06e4
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.48e3
9.73e3
4.86e3
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 9.73e3
AS 1368D
1.64e7
23.73
TS 1378D
2.18e7
25.85
JS 1234D
1.56e7
26.90
ES 2378D
1.59e7
27.57
FS 1278D
1.73e7
27.92
4.65e6
2.32e6
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.27e3
AS 1368D
2.03e7
23.73
TS 1378D
2.73e7
25.85
JS 1234D
1.90e7
26.90
ES 2378D
1.97e7
27.57
FS 1278D
2.17e7
27.92
5.85e6
2.92e6
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3504, 1483, 2998 scc: 245-007
Revised: 11-Nov-2021 16:18 (DTF) Printed: 11-Nov-2021 16:32 Page 2 of 12


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
Abs. Int.
8.00e4
4.00e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.68e5*
33.11
Abs. Int.
5.45e4
2.72e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
Abs. Int.
5.76e6
2.88e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
0%
123478D
2.12e5*
37.05
123678D
2.21e5*
37.16
123789D
2.19e5*
37.47
Abs. Int.
7.72e4
3.86e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
0%
123478D
1.77e5*
37.05
123678D
1.88e5*
37.16
123789D
1.95e5*
37.47
Abs. Int.
6.19e4
3.10e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
0%
FS 123468D
1.80e7
35.98
ES 123478D
1.35e7
37.03
ES 123678D
1.38e7
37.15
JS 123467D
7.30e6*
37.35
ES 123789D
1.56e7*
37.45
Abs. Int.
5.89e6
2.94e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
0%
FS 123468D
1.42e7
35.98
ES 123478D
1.10e7
37.03
ES 123678D
1.09e7
37.15
JS 123467D
6.04e6*
37.35
ES 123789D
1.25e7*
37.45
Abs. Int.
4.67e6
2.33e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
0%
1234678D
1.79e5*
40.29
Abs. Int.
6.78e4
3.39e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
0%
1234678D
1.66e5*
40.28
Abs. Int.
6.86e4
3.43e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
0%
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
Abs. Int.
6.20e6
3.10e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
0%
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
Abs. Int.
5.79e6
2.90e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

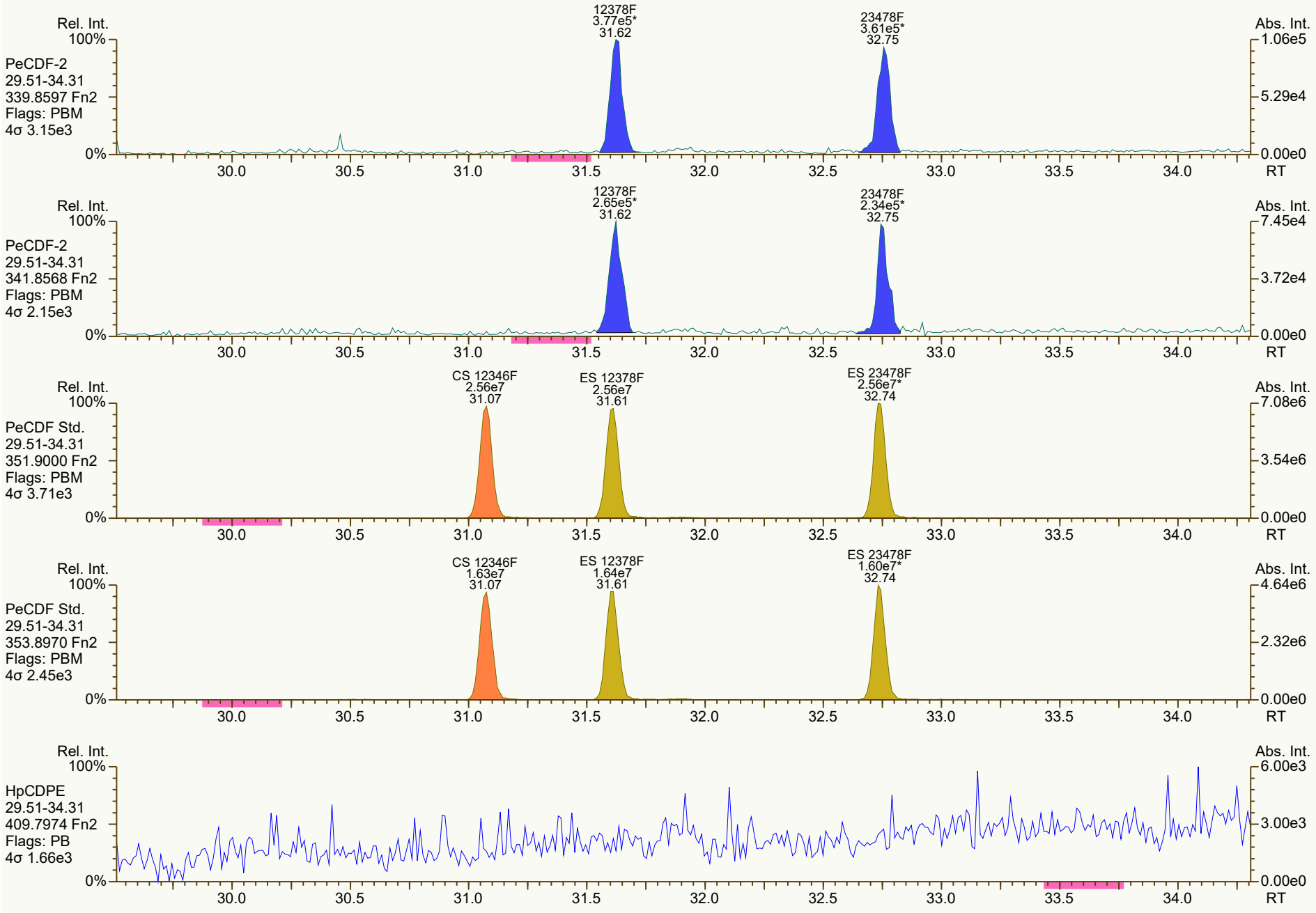

OCDD
2.26e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
6.82e4
3.41e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.52e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.47e7*
42.83
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
0%
Abs. Int.
4.33e6
2.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7*
42.83
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
0%
Abs. Int.
4.72e6
2.36e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

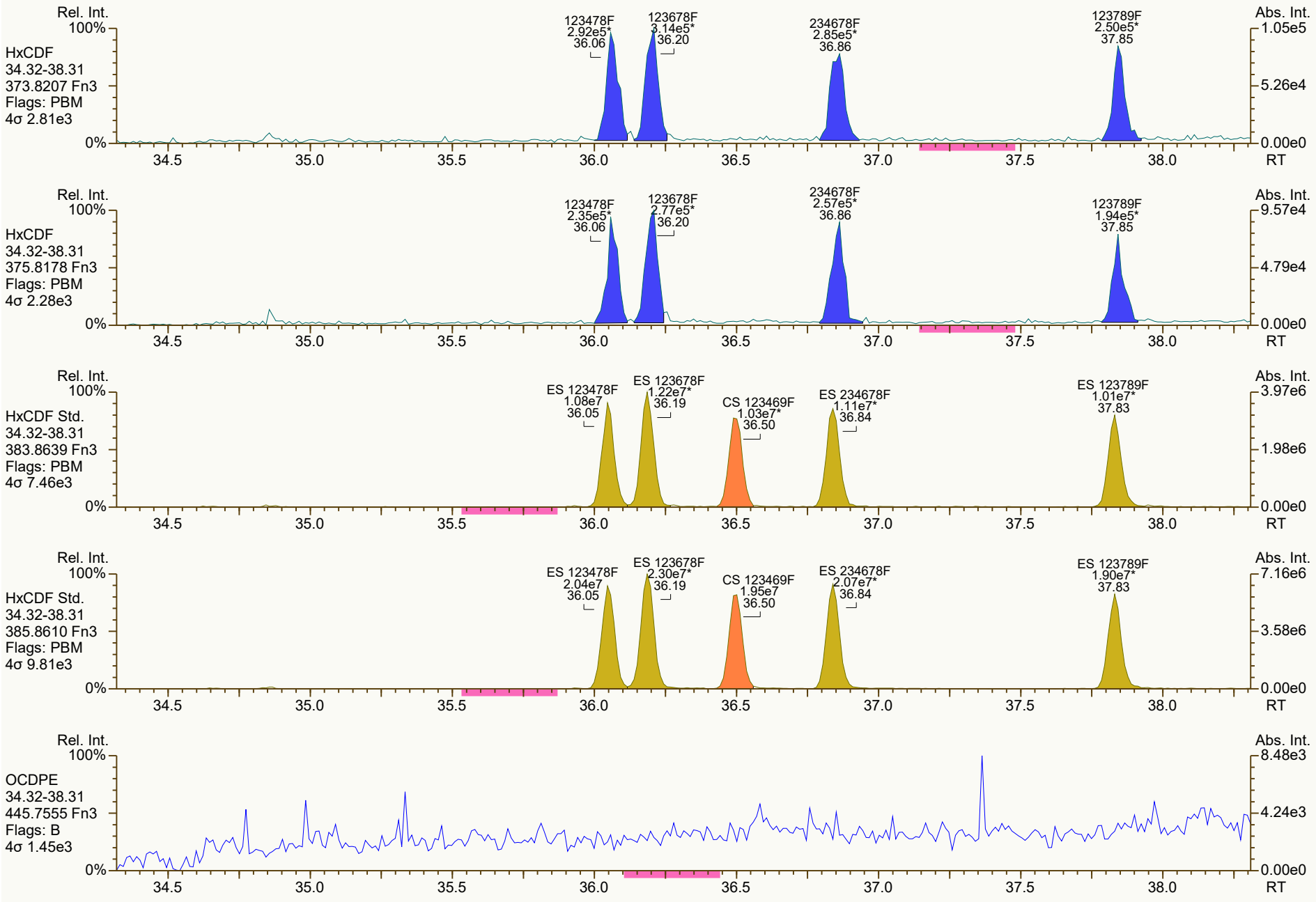

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
0%
2378F
7.17e4*
26.68
Abs. Int.
1.95e4
9.75e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
0%
2378F
8.11e4*
26.68
Abs. Int.
1.97e4
9.85e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
Abs. Int.
4.88e6
2.44e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
0%
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
26.66
Abs. Int.
6.28e6
3.14e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.41e4
7.07e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

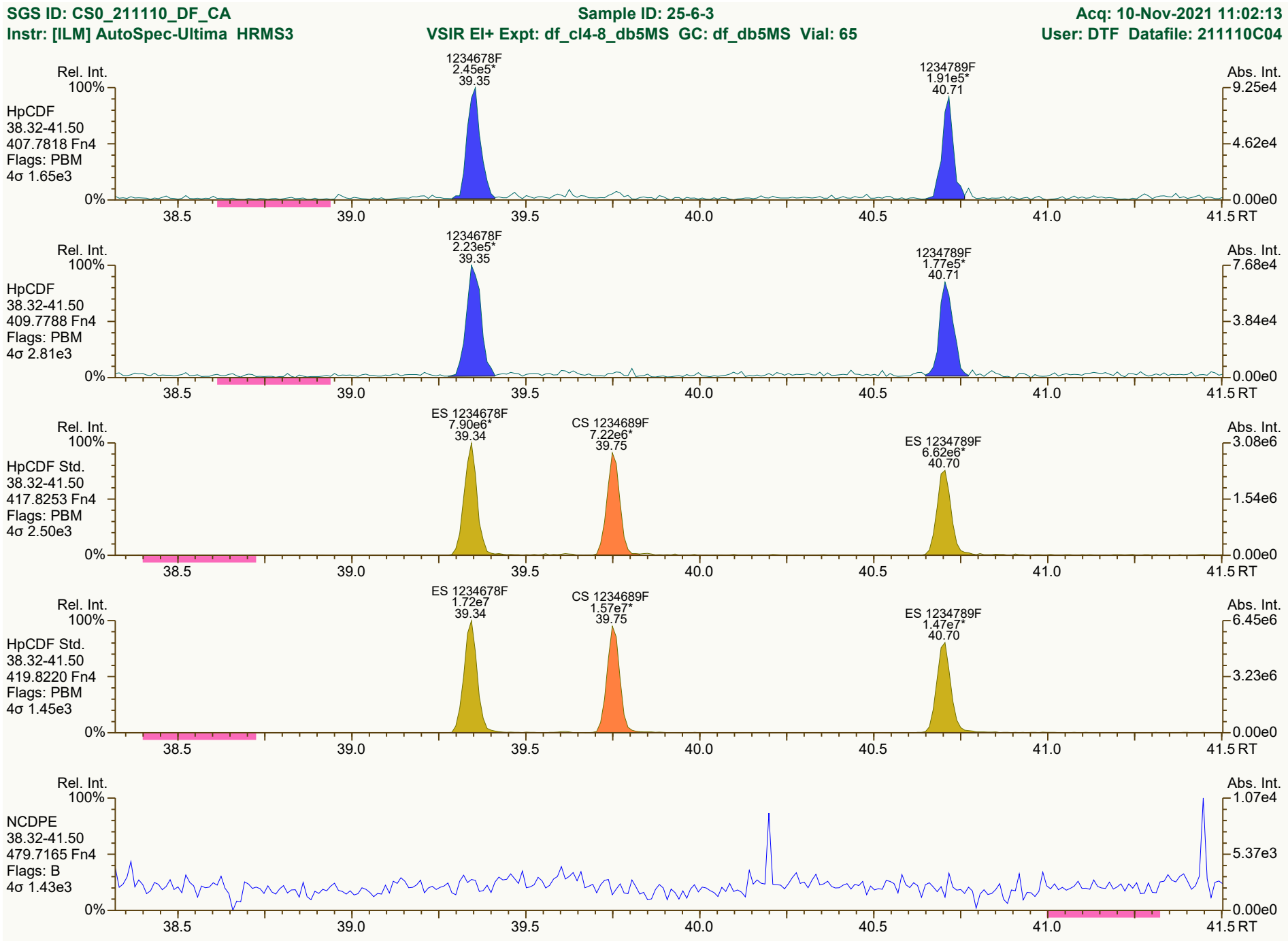
SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6412 scc: 245-007
PKD: 10-Nov-2021 13:30 Printed: 11-Nov-2021 16:32 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12378F
3.77e5*
31.62
23478F
3.61e5*
32.75
Abs. Int.
1.06e5
5.29e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
0%
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
Abs. Int.
7.45e4
3.72e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
0%
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
Abs. Int.
7.08e6
3.54e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
0%
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

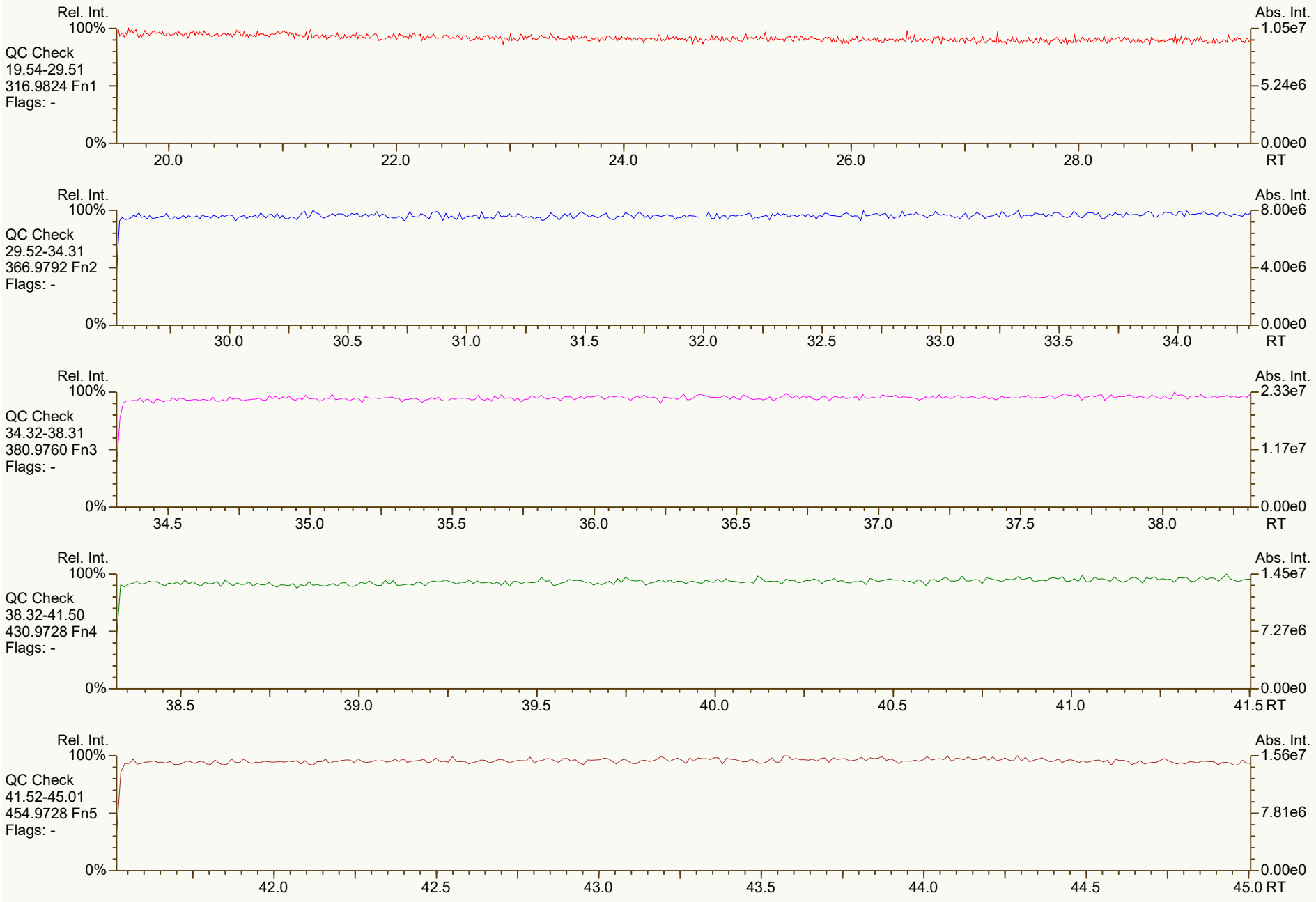

Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.81e3
0%
123478F
2.92e5*
36.06
123678F
3.14e5*
36.20
234678F
2.85e5*
36.86
123789F
2.50e5*
37.85
Abs. Int.
1.05e5
5.26e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.28e3
0%
123478F
2.35e5*
36.06
123678F
2.77e5*
36.20
234678F
2.57e5*
36.86
123789F
1.94e5*
37.85
Abs. Int.
9.57e4
4.79e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.46e3
0%
ES 123478F
1.08e7
36.05
ES 123678F
1.22e7*
36.19
CS 123469F
1.03e7*
36.50
ES 234678F
1.11e7*
36.84
ES 123789F
1.01e7*
37.83
Abs. Int.
3.97e6
1.98e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.81e3
0%
ES 123478F
2.04e7
36.05
ES 123678F
2.30e7*
36.19
CS 123469F
1.95e7
36.50
ES 234678F
2.07e7*
36.84
ES 123789F
1.90e7*
37.83
Abs. Int.
7.16e6
3.58e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
9.25e4
4.62e4
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
7.68e4
3.84e4
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
3.08e6
1.54e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
6.45e6
3.23e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
1.07e4
5.37e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0834, 2511, 5505 scc: 245-007
Revised: 10-Nov-2021 13:36 (DTF) Printed: 11-Nov-2021 16:32 Page 11 of 12

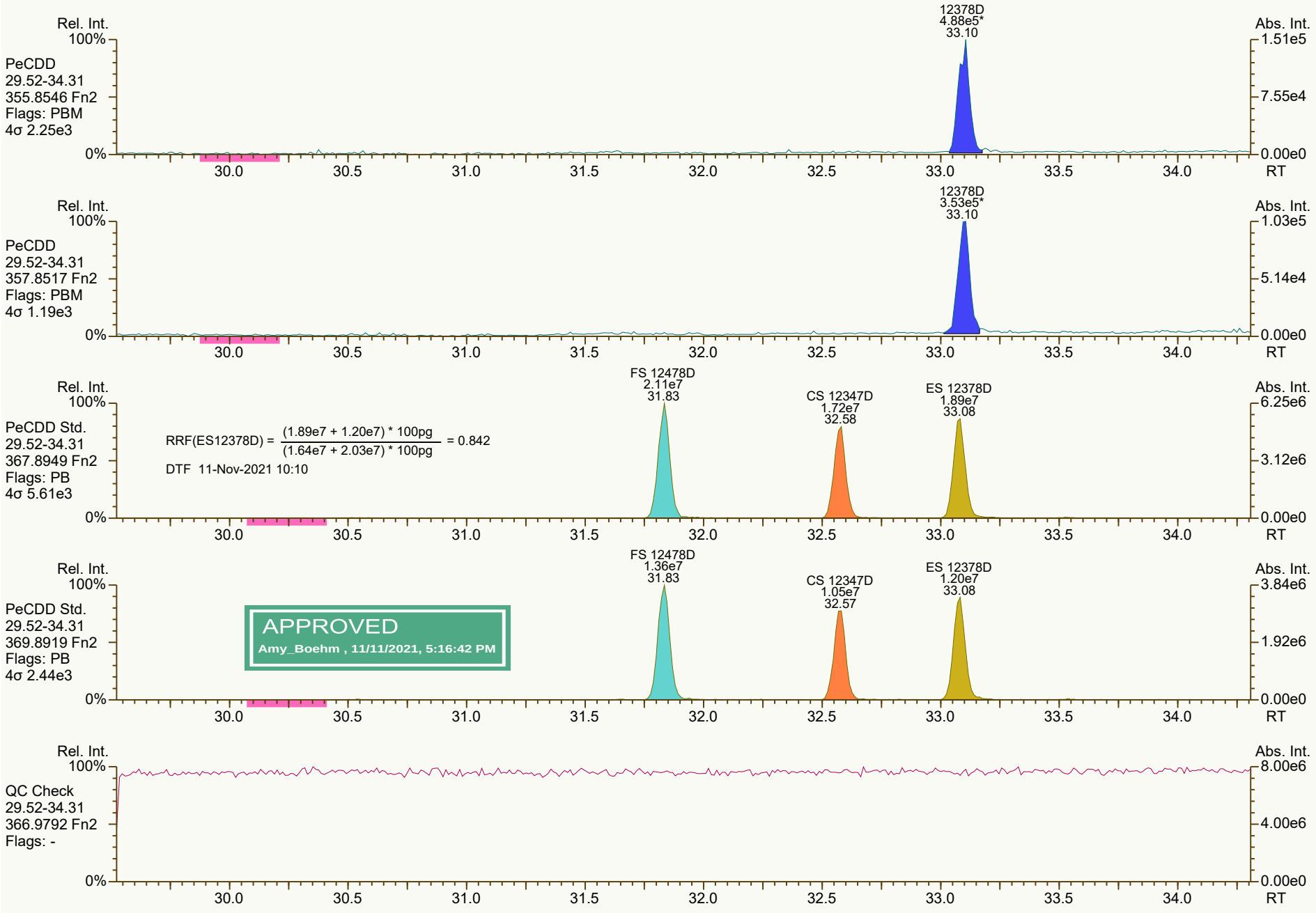

OCDF
2.83e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.07e3
0%
Abs. Int.
9.68e4
4.84e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.12e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.63e3
0%
Abs. Int.
8.96e4
4.48e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.88e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.90e3
0%
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.08e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.27e3
0%
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.52e3
0%
Abs. Int.
5.12e3
2.56e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

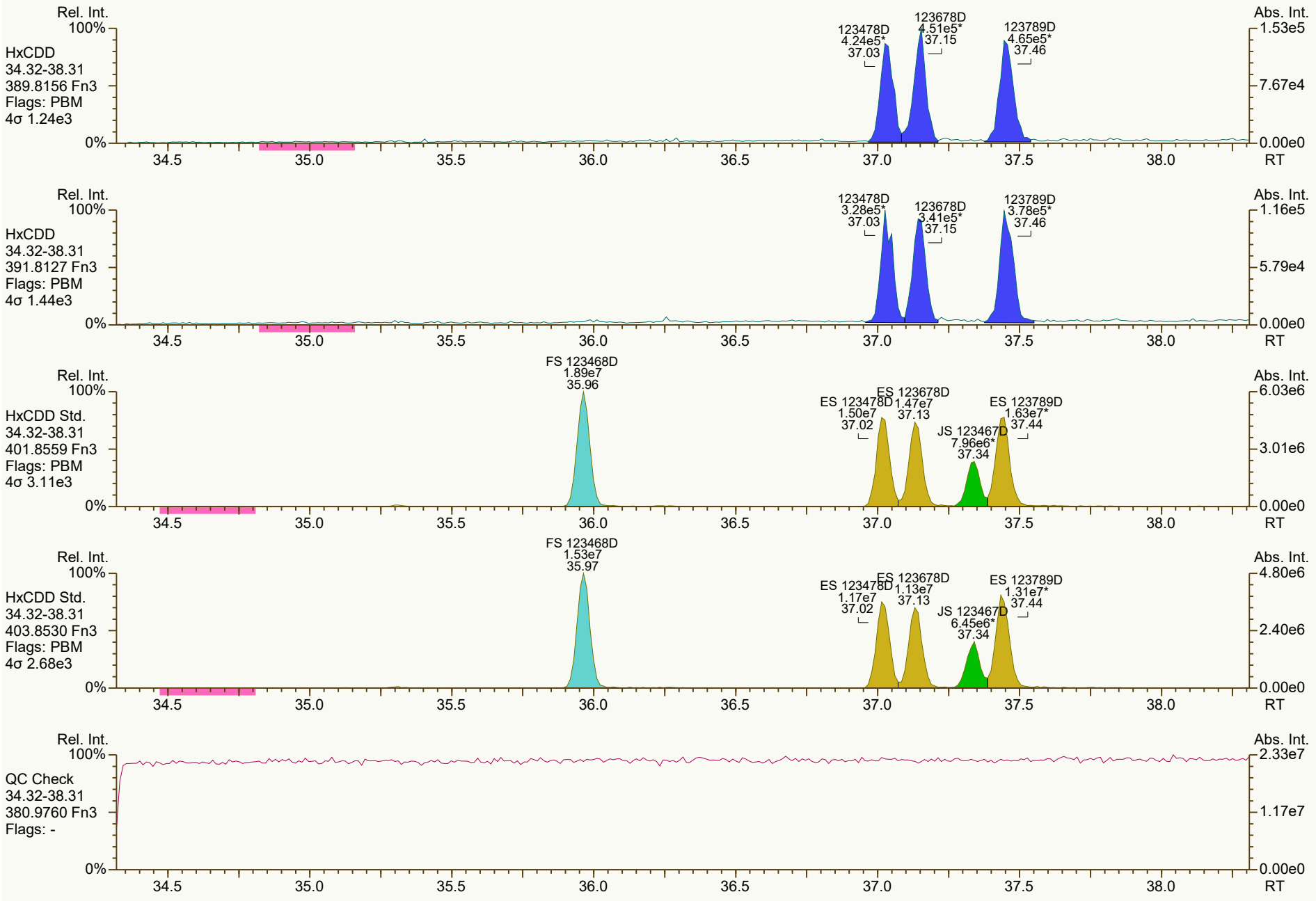
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

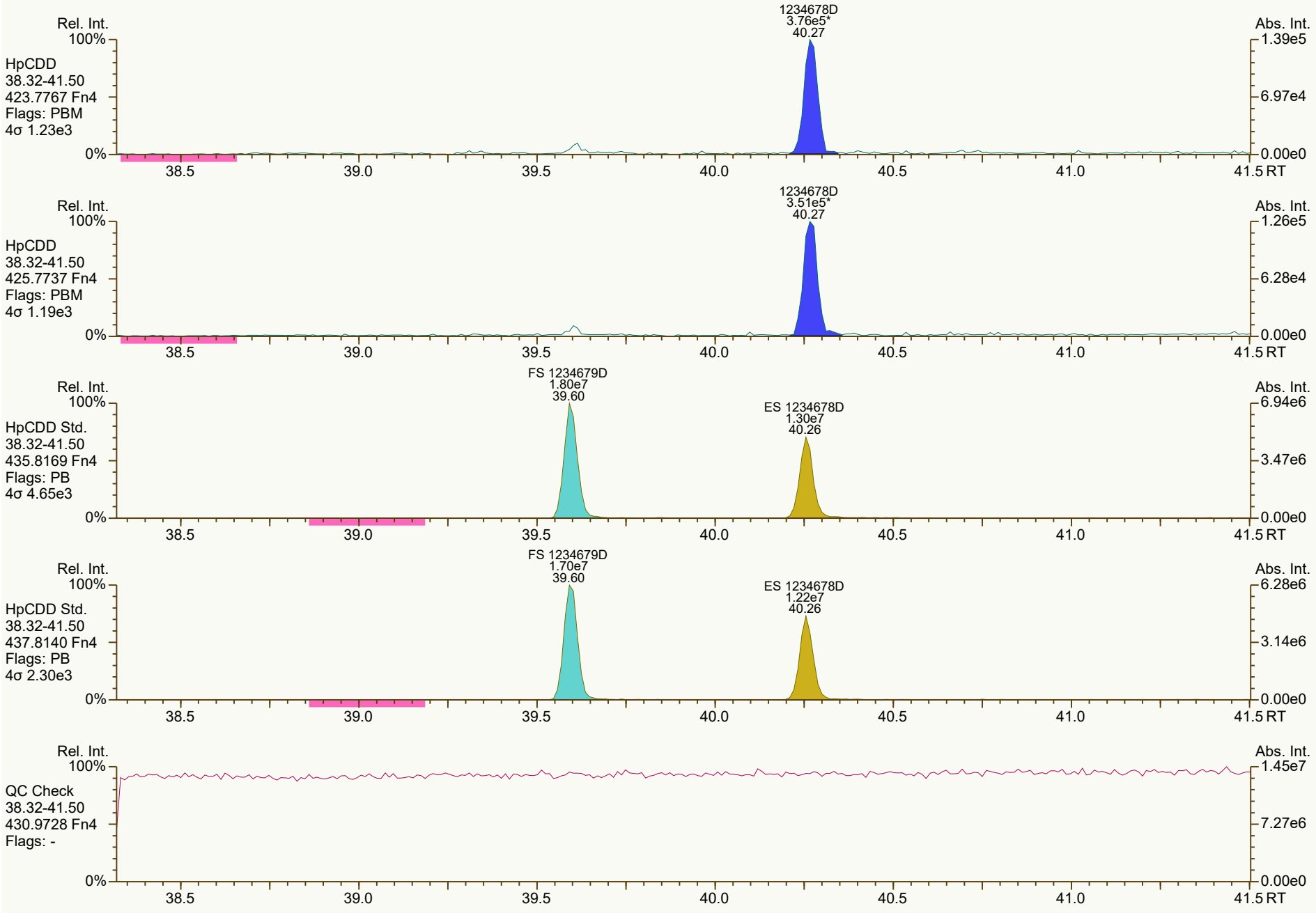
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

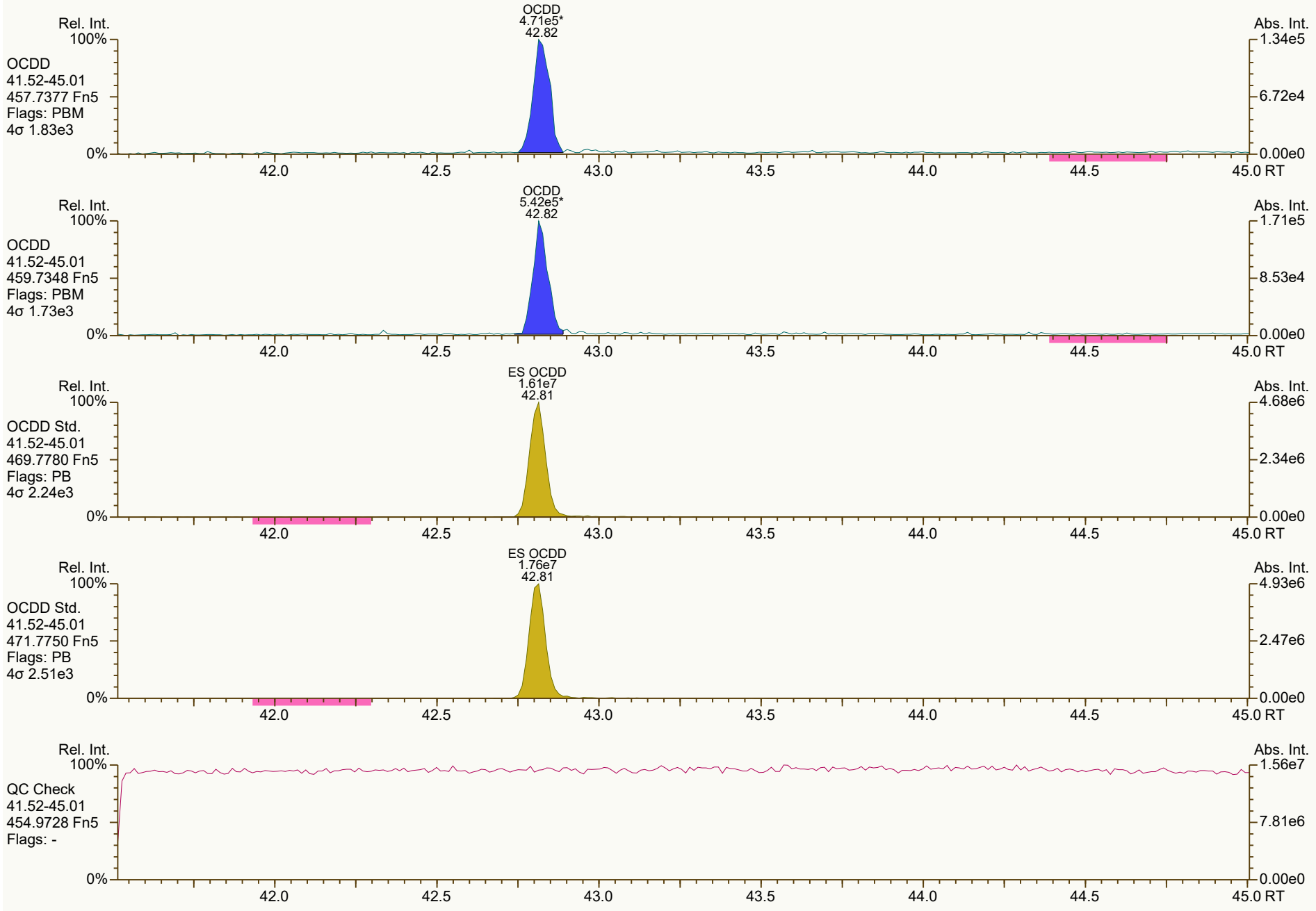

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.05e7
5.24e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.00e6
4.00e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.45e7
7.27e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.56e7
7.81e6
0.00e0

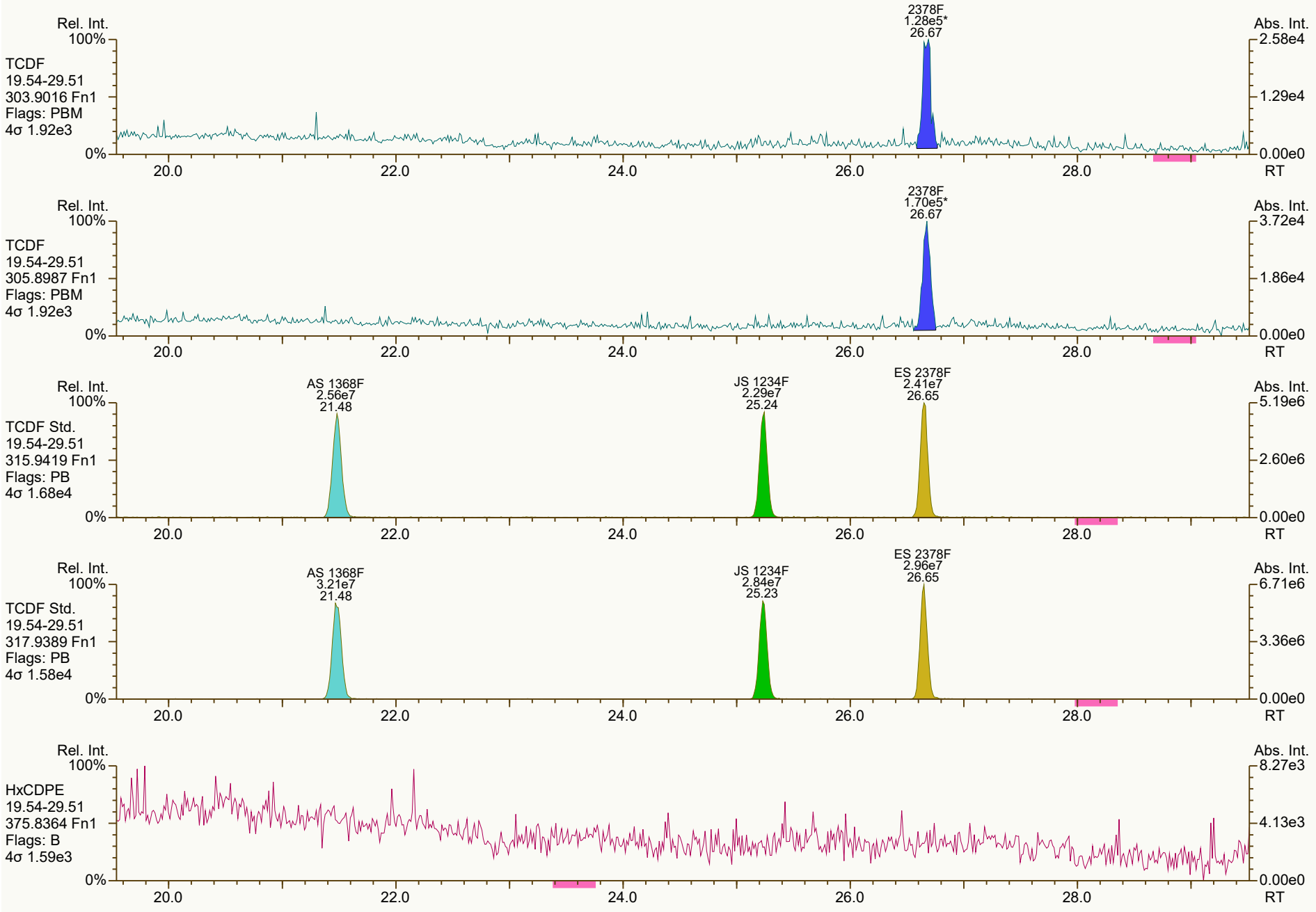

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 3.33e3
0%
2378D
1.05e5*
27.58
Abs. Int.
2.76e4
1.38e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.06e3
0%
2378D
1.27e5*
27.58
Abs. Int.
2.99e4
1.49e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.52e3
0%
CS 37Cl-2378D
2.01e5*
27.59
Abs. Int.
5.18e4
2.59e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 1.05e4
0%
AS 1368D
1.71e7
23.72
TS 1378D
2.28e7
25.84
JS 1234D
1.64e7
26.89
ES 2378D
1.66e7
27.56
FS 1278D
1.82e7
27.90
Abs. Int.
4.92e6
2.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 5.59e3
0%
AS 1368D
2.15e7
23.72
TS 1378D
2.86e7
25.84
JS 1234D
2.03e7
26.89
ES 2378D
2.11e7
27.56
FS 1278D
2.26e7
27.90
Abs. Int.
6.21e6
3.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

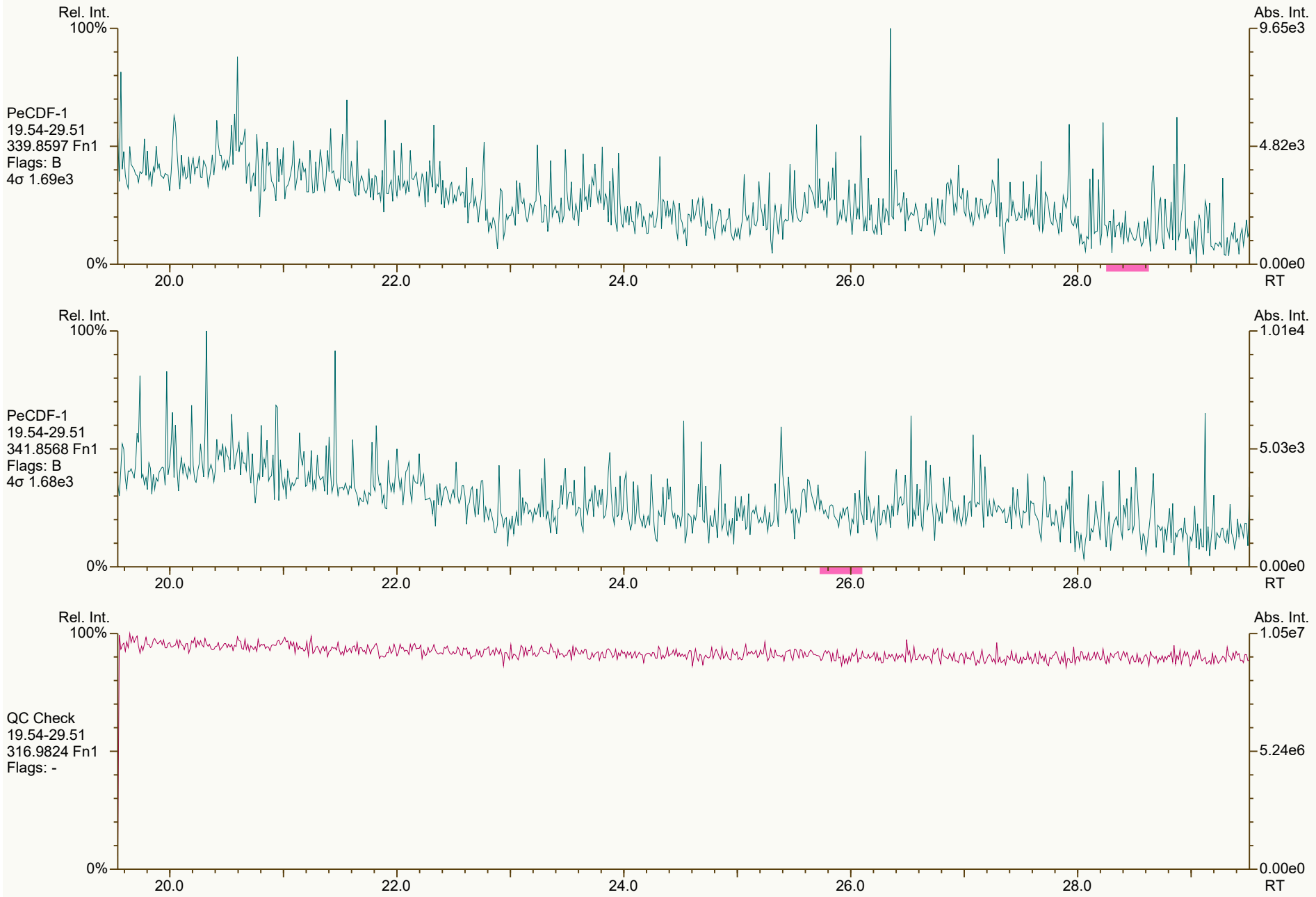

Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.25e3
12378D
4.88e5*
33.10
Abs. Int.
1.51e5
7.55e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.19e3
12378D
3.53e5*
33.10
1.03e5
5.14e4
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 5.61e3
RRF(ES12378D) = (1.89e7 + 1.20e7) * 100pg / (1.64e7 + 2.03e7) * 100pg = 0.842
DTF 11-Nov-2021 10:10
FS 12478D
2.11e7
31.83
CS 12347D
1.72e7
32.58
ES 12378D
1.89e7
33.08
6.25e6
3.12e6
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 2.44e3
APPROVED
Amy_Boehm , 11/11/2021, 5:16:42 PM
FS 12478D
1.36e7
31.83
CS 12347D
1.05e7
32.57
ES 12378D
1.20e7
33.08
3.84e6
1.92e6
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
8.00e6
4.00e6


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D
4.24e5*
37.03
123678D
4.51e5*
37.15
123789D
4.65e5*
37.46
Abs. Int.
1.53e5
7.67e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D
3.28e5*
37.03
123678D
3.41e5*
37.15
123789D
3.78e5*
37.46
Abs. Int.
1.16e5
5.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D
1.89e7
35.96
ES 123678D
1.47e7
37.13
ES 123478D
1.50e7
37.02
ES 123789D
1.63e7*
37.44
JS 123467D
7.96e6*
37.34
Abs. Int.
6.03e6
3.01e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
1.53e7
35.97
ES 123678D
1.13e7
37.13
ES 123478D
1.17e7
37.02
ES 123789D
1.31e7*
37.44
JS 123467D
6.45e6*
37.34
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

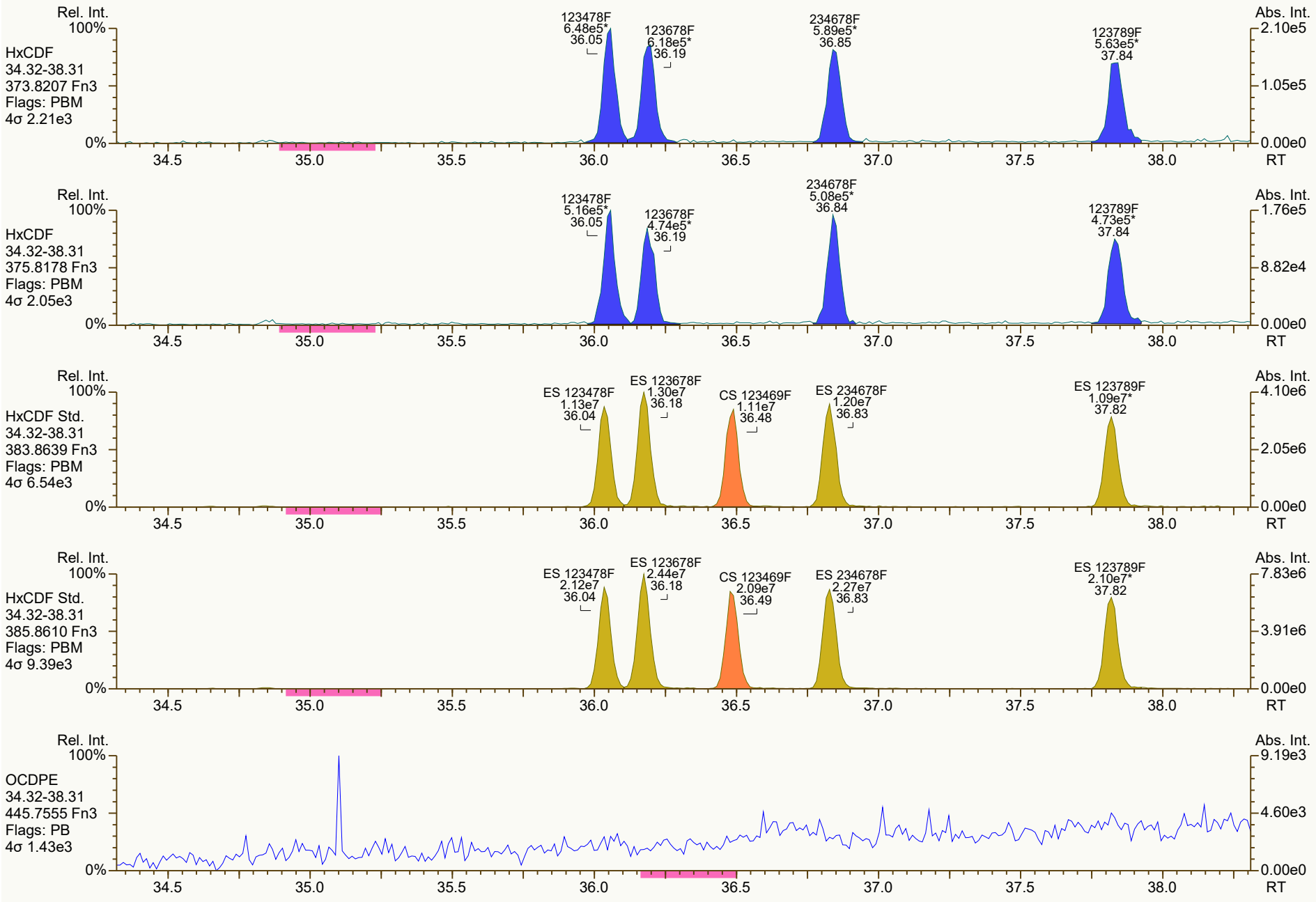

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
0%
1234678D
3.76e5*
40.27
Abs. Int.
1.39e5
6.97e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
0%
1234678D
3.51e5*
40.27
Abs. Int.
1.26e5
6.28e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
0%
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
Abs. Int.
6.94e6
3.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
0%
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
Abs. Int.
6.28e6
3.14e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.45e7
7.27e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
4.71e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
1.34e5
6.72e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
Abs. Int.
1.71e5
8.53e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
Abs. Int.
4.93e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.56e7
7.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

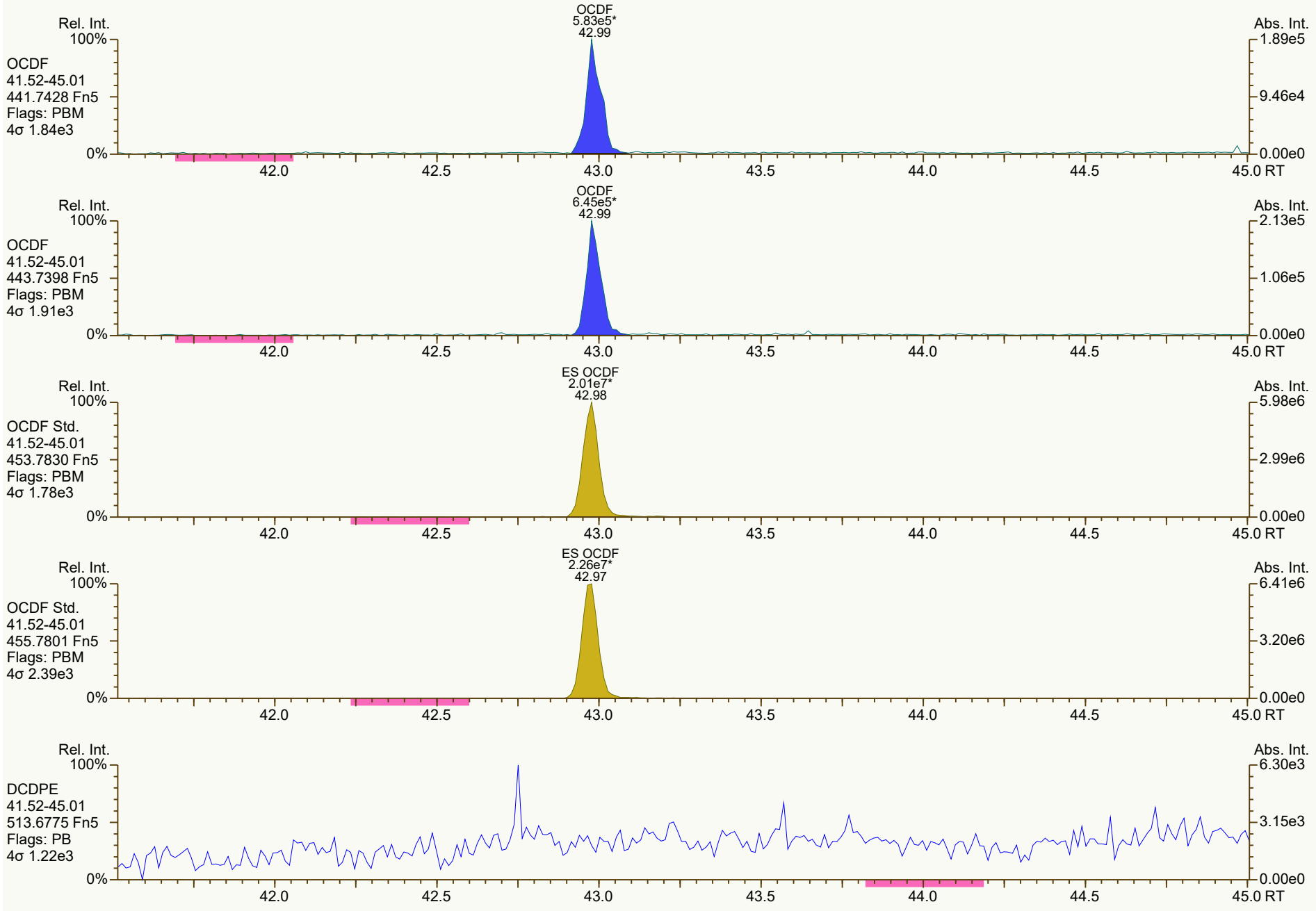

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.28e5*
26.67
Abs. Int.
2.58e4
1.29e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.70e5*
26.67
Abs. Int.
3.72e4
1.86e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.68e4
0%
AS 1368F
2.56e7
21.48
JS 1234F
2.29e7
25.24
ES 2378F
2.41e7
26.65
Abs. Int.
5.19e6
2.60e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
3.21e7
21.48
JS 1234F
2.84e7
25.23
ES 2378F
2.96e7
26.65
Abs. Int.
6.71e6
3.36e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.65e3
4.82e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.69e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.01e4
5.03e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.68e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
Abs. Int.
2.10e5
1.05e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
Abs. Int.
1.40e5
7.02e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.63e7
32.73
Abs. Int.
7.54e6
3.77e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
CS 12346F
1.69e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
Abs. Int.
4.85e6
2.42e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
Abs. Int.
1.10e4
5.51e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.21e3
123478F
6.48e5*
36.05
123678F
6.18e5*
36.19
234678F
5.89e5*
36.85
123789F
5.63e5*
37.84
Abs. Int.
2.10e5
1.05e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.05e3
123478F
5.16e5*
36.05
123678F
4.74e5*
36.19
234678F
5.08e5*
36.84
123789F
4.73e5*
37.84
Abs. Int.
1.76e5
8.82e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 6.54e3
ES 123478F
1.13e7
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.11e7
36.48
ES 234678F
1.20e7
36.83
ES 123789F
1.09e7*
37.82
Abs. Int.
4.10e6
2.05e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.39e3
ES 123478F
2.12e7
36.04
ES 123678F
2.44e7
36.18
CS 123469F
2.09e7
36.49
ES 234678F
2.27e7
36.83
ES 123789F
2.10e7*
37.82
Abs. Int.
7.83e6
3.91e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.43e3
Abs. Int.
9.19e3
4.60e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.51e3
0%
1234678F
5.15e5*
39.34
1234789F
3.83e5*
40.70
Abs. Int.
2.00e5
9.99e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.63e3
0%
1234678F
4.85e5*
39.34
1234789F
4.12e5*
40.70
Abs. Int.
1.67e5
8.36e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 3.90e3
0%
ES 1234678F
7.77e6*
39.33
CS 1234689F
8.09e6*
39.74
ES 1234789F
7.34e6*
40.69
Abs. Int.
3.13e6
1.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.97e3
0%
ES 1234678F
1.82e7*
39.33
CS 1234689F
1.73e7*
39.74
ES 1234789F
1.63e7*
40.69
Abs. Int.
6.42e6
3.21e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.46e3
0%
Abs. Int.
3.72e3
1.86e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

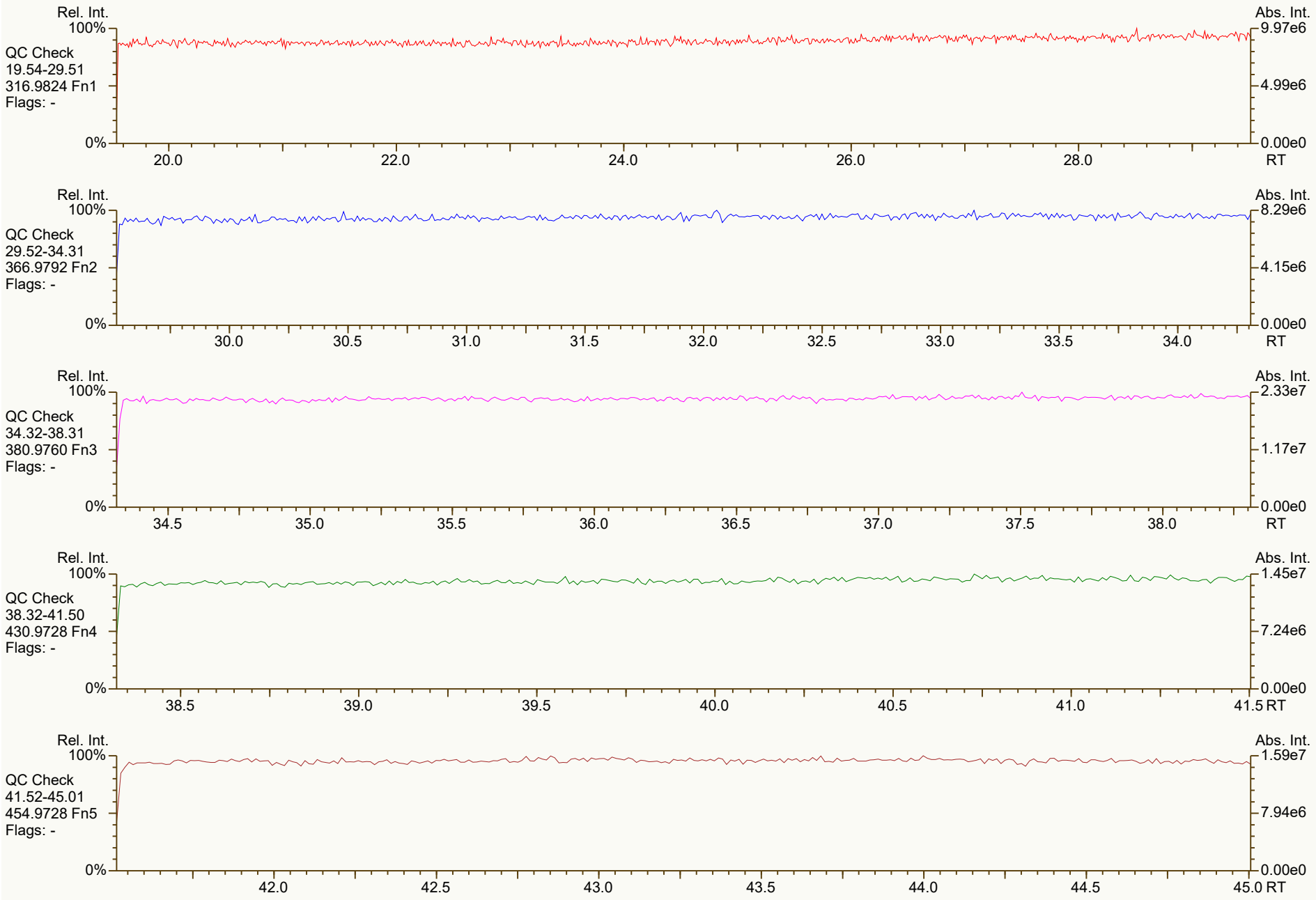

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
0%
OCDF
5.83e5*
42.99
Abs. Int.
1.89e5
9.46e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
0%
OCDF
6.45e5*
42.99
Abs. Int.
2.13e5
1.06e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
0%
ES OCDF
2.01e7*
42.98
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
0%
ES OCDF
2.26e7*
42.97
Abs. Int.
6.41e6
3.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

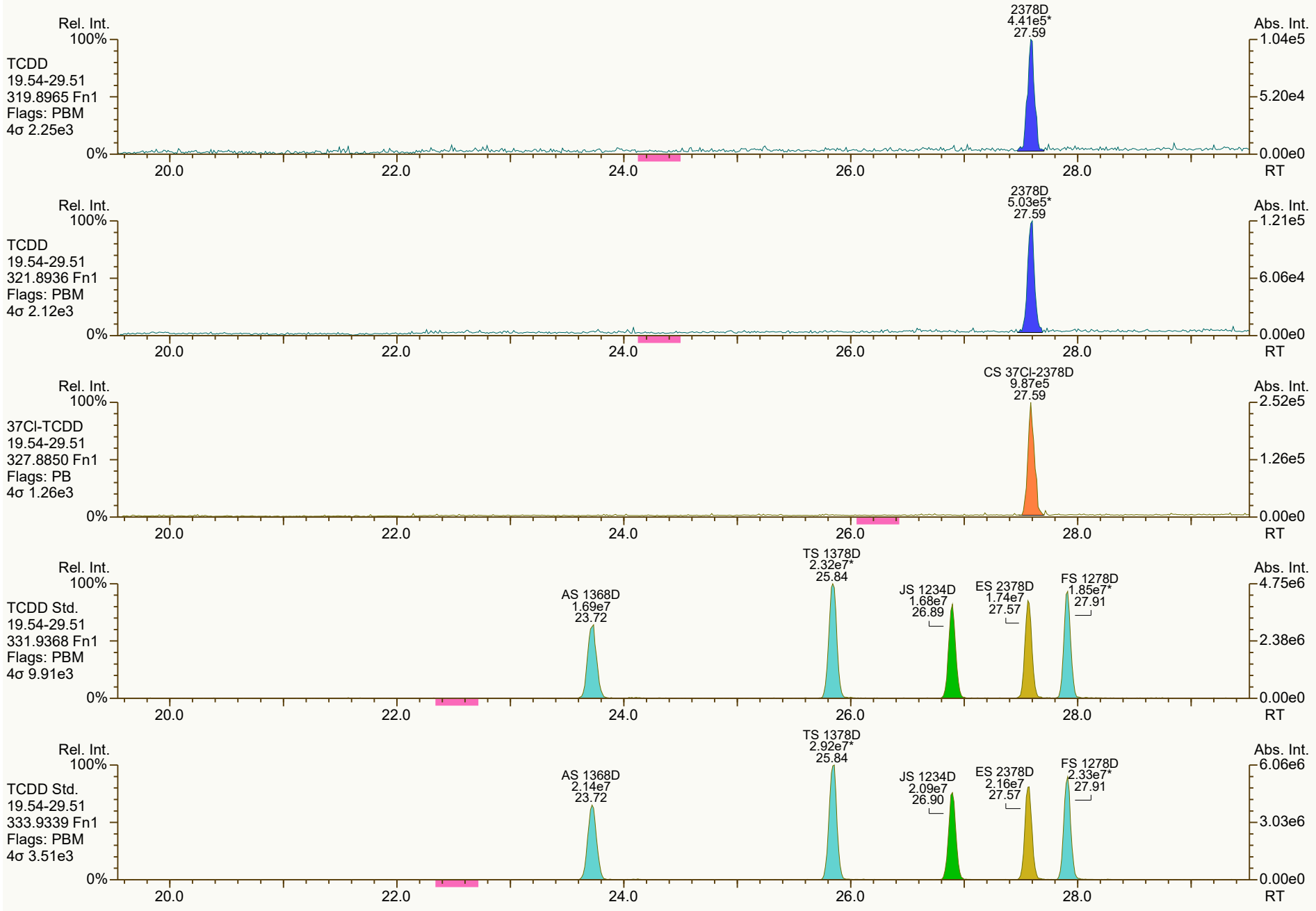
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

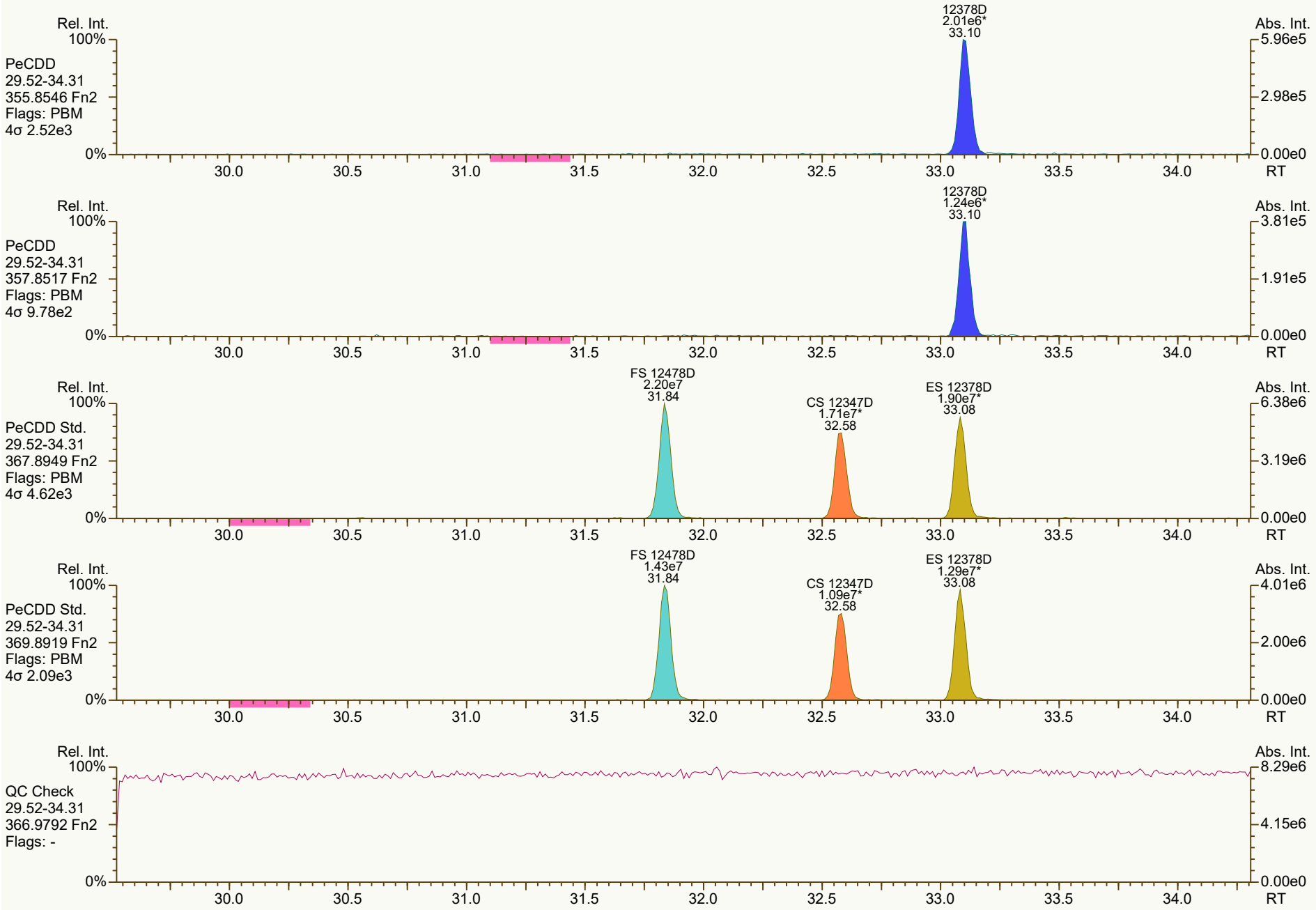
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

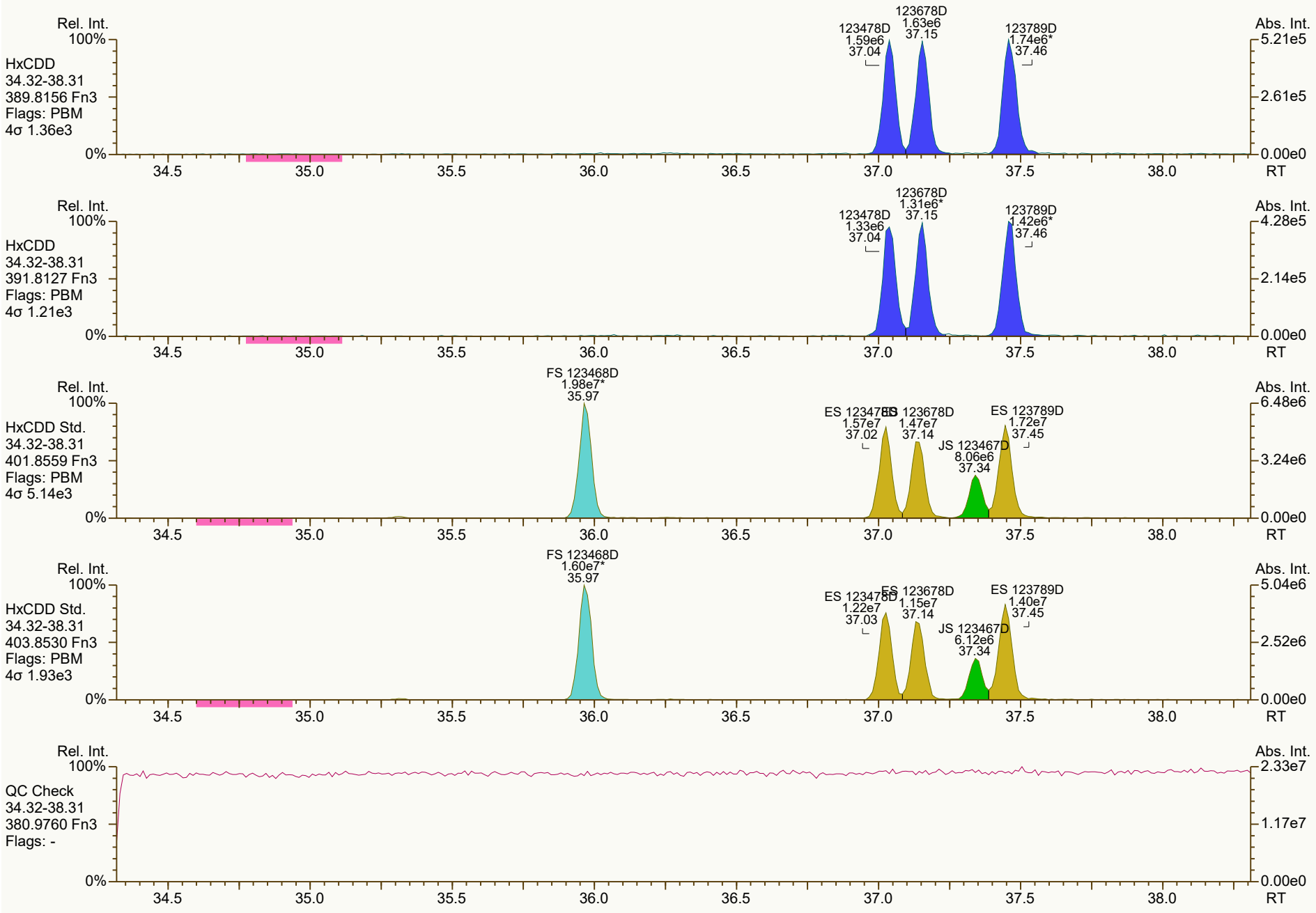
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

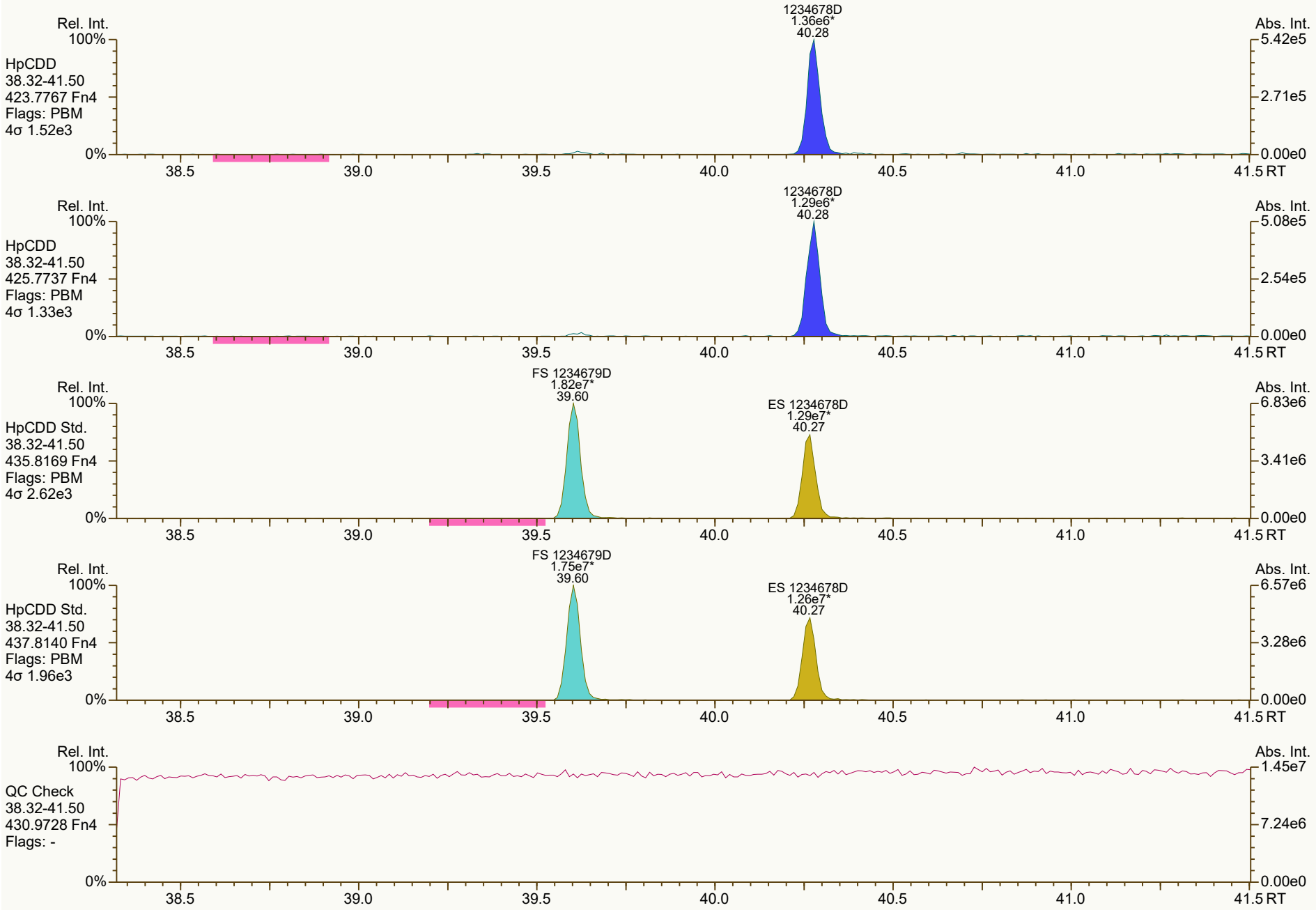
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%

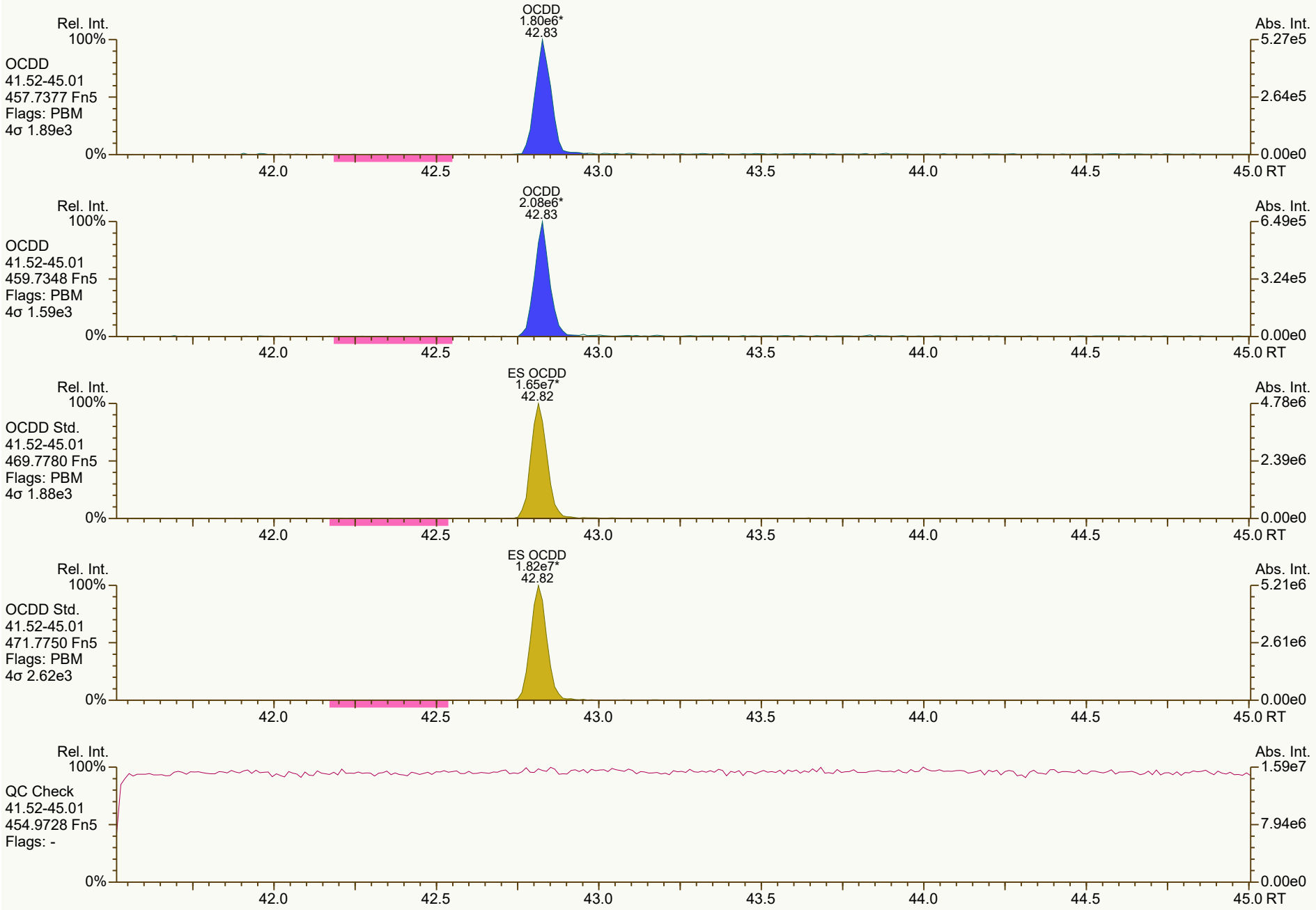

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.29e6
4.15e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.45e7
7.24e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.94e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
0%
2378D
4.41e5*
27.59
Abs. Int.
1.04e5
5.20e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
0%
2378D
5.03e5*
27.59
Abs. Int.
1.21e5
6.06e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
0%
CS 37Cl-2378D
9.87e5
27.59
Abs. Int.
2.52e5
1.26e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
0%
AS 1368D
1.69e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.85e7*
27.91
Abs. Int.
4.75e6
2.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
0%
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.52e3
12378D
2.01e6*
33.10
Abs. Int.
5.96e5
2.98e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 9.78e2
12378D
1.24e6*
33.10
Abs. Int.
3.81e5
1.91e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 4.62e3
FS 12478D
2.20e7
31.84
CS 12347D
1.71e7*
32.58
ES 12378D
1.90e7*
33.08
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 2.09e3
FS 12478D
1.43e7
31.84
CS 12347D
1.09e7*
32.58
ES 12378D
1.29e7*
33.08
Abs. Int.
4.01e6
2.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.29e6
4.15e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123478D
1.59e6
37.04
123678D
1.63e6
37.15
123789D
1.74e6*
37.46
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123478D
1.33e6
37.04
123678D
1.31e6*
37.15
123789D
1.42e6*
37.46
4.28e5
2.14e5
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D
1.98e7*
35.97
ES 123478D
1.57e7
37.02
ES 123678D
1.47e7
37.14
JS 123467D
8.06e6
37.34
ES 123789D
1.72e7
37.45
6.48e6
3.24e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D
1.60e7*
35.97
ES 123478D
1.22e7
37.03
ES 123678D
1.15e7
37.14
JS 123467D
6.12e6
37.34
ES 123789D
1.40e7
37.45
5.04e6
2.52e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.33e7
1.17e7

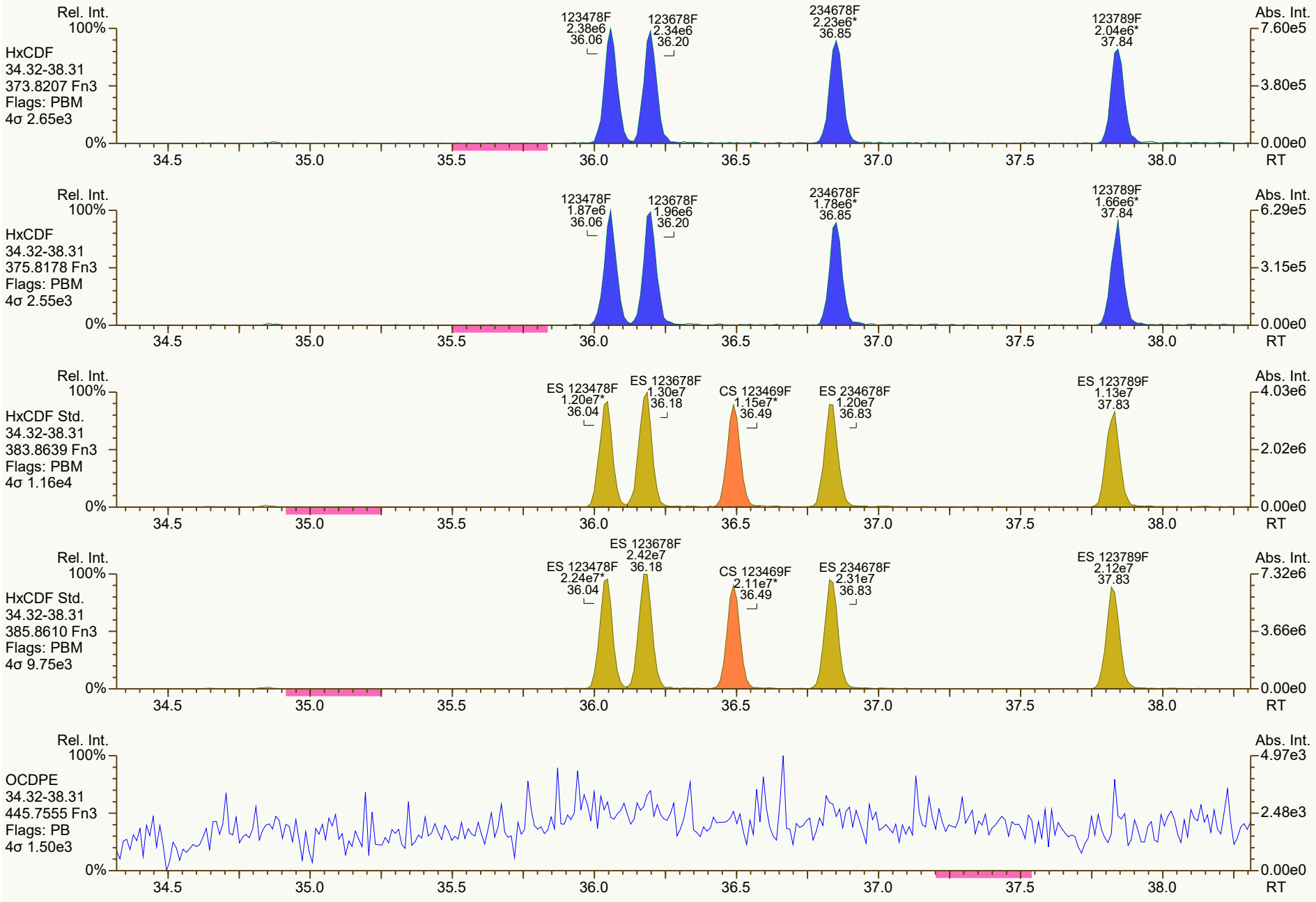

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.36e6*
40.28
Abs. Int.
5.42e5
2.71e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
Abs. Int.
5.08e5
2.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
Abs. Int.
6.83e6
3.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.96e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
Abs. Int.
6.57e6
3.28e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.45e7
7.24e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

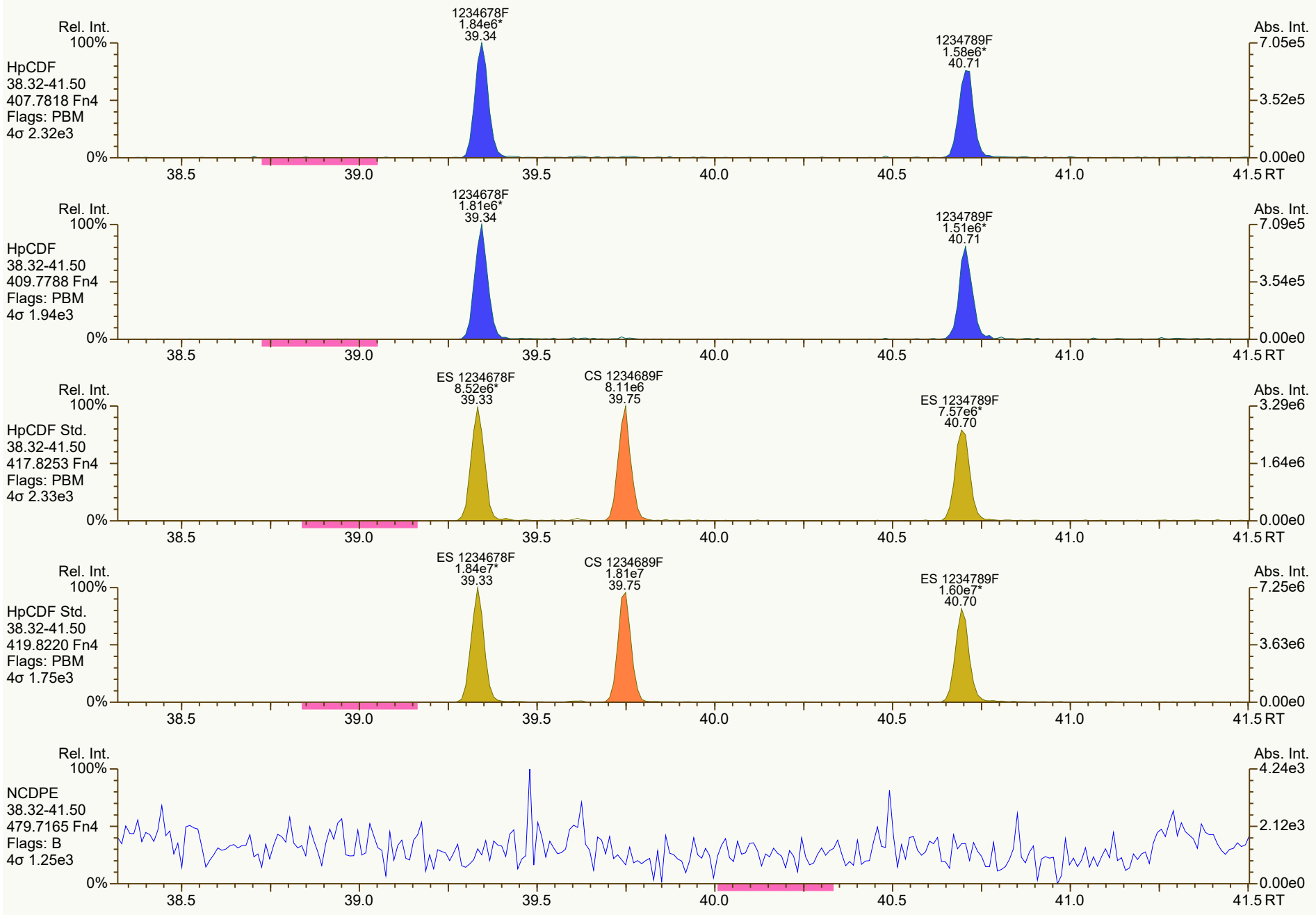

OCDD
1.80e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
5.27e5
2.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.08e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
0%
Abs. Int.
6.49e5
3.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.65e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.82e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
5.21e6
2.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

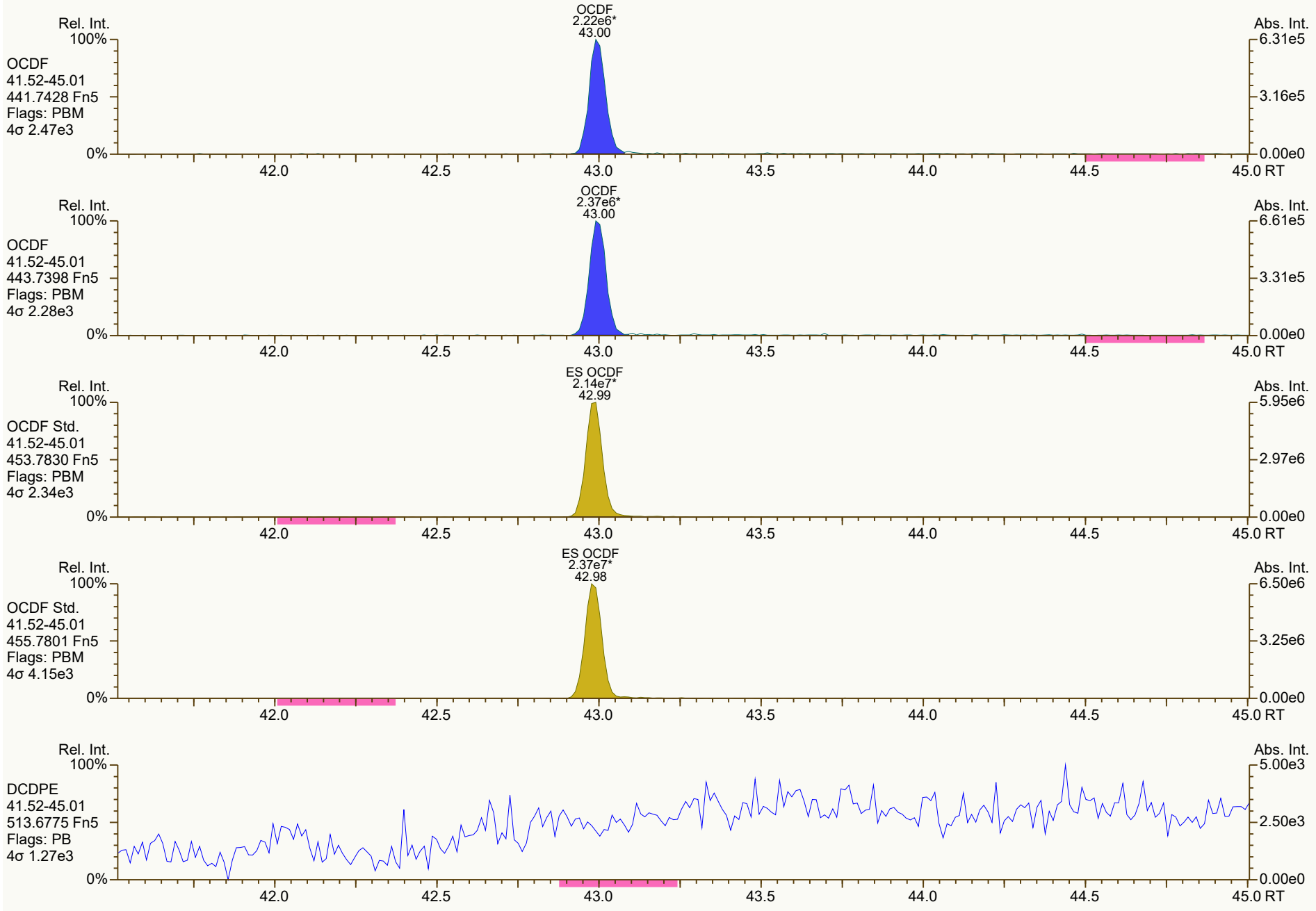

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
0%
2378F
5.70e5*
26.68
Abs. Int.
1.27e5
6.37e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
0%
2378F
6.77e5*
26.68
Abs. Int.
1.62e5
8.11e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
0%
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
26.65
Abs. Int.
5.72e6
2.86e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
0%
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
26.65
Abs. Int.
7.12e6
3.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.23e3
4.62e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.32e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.97e6
4.99e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
0%
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
Abs. Int.
8.19e5
4.10e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
5.27e5
2.63e5
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
8.01e6
4.01e6
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
5.19e6
2.59e6
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
6.67e3
3.33e3


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.65e3
0%
123478F
2.38e6
36.06
123678F
2.34e6
36.20
234678F
2.23e6*
36.85
123789F
2.04e6*
37.84
Abs. Int.
7.60e5
3.80e5
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.55e3
123478F
1.87e6
36.06
123678F
1.96e6
36.20
234678F
1.78e6*
36.85
123789F
1.66e6*
37.84
6.29e5
3.15e5
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 1.16e4
ES 123478F
1.20e7*
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.15e7*
36.49
ES 234678F
1.20e7
36.83
ES 123789F
1.13e7
37.83
4.03e6
2.02e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.75e3
ES 123478F
2.24e7*
36.04
ES 123678F
2.42e7
36.18
CS 123469F
2.11e7*
36.49
ES 234678F
2.31e7
36.83
ES 123789F
2.12e7
37.83
7.32e6
3.66e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.50e3
4.97e3
2.48e3

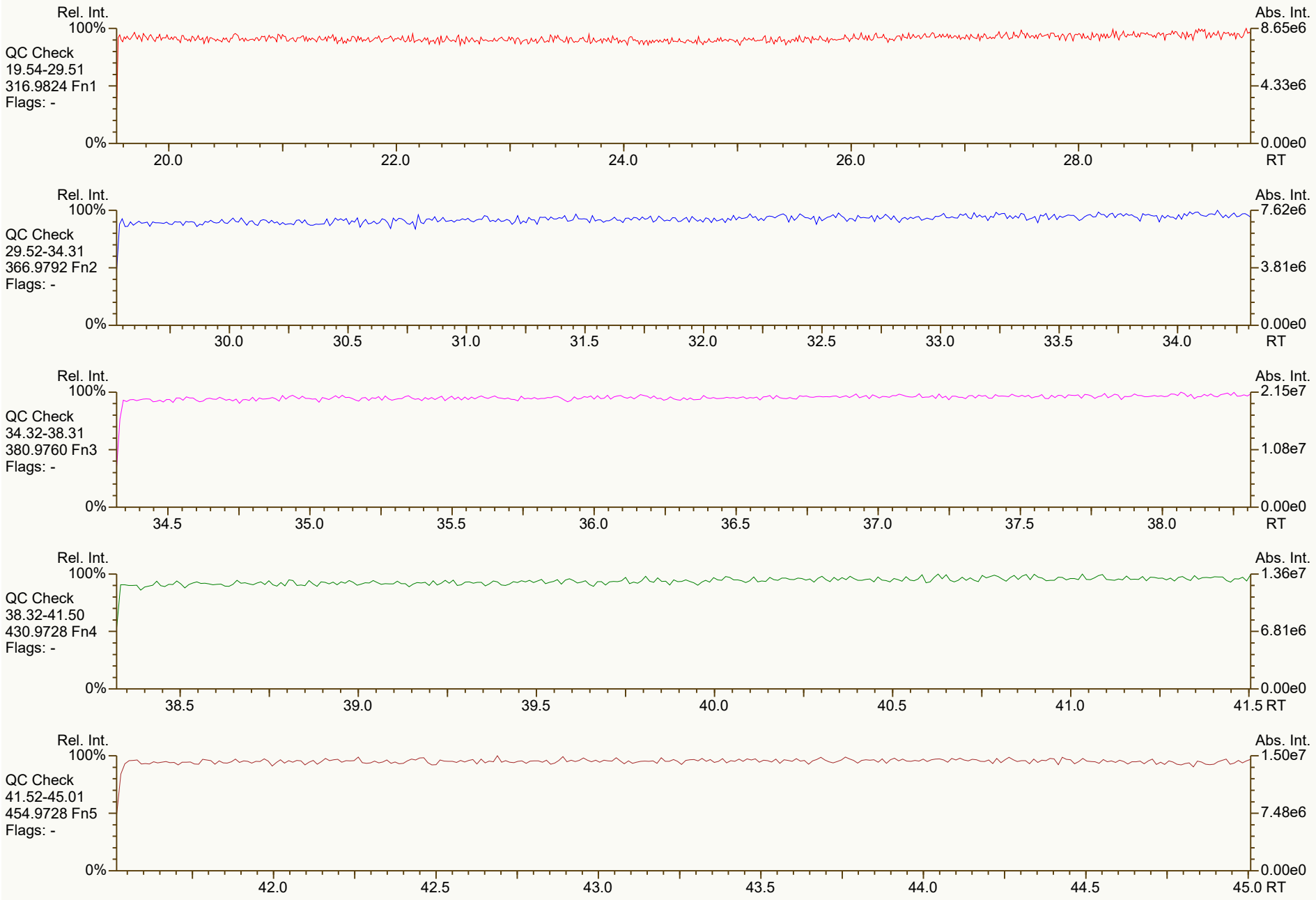

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.32e3
1234678F
1.84e6*
39.34
1234789F
1.58e6*
40.71
Abs. Int.
7.05e5
3.52e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.94e3
1234678F
1.81e6*
39.34
1234789F
1.51e6*
40.71
Abs. Int.
7.09e5
3.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.33e3
ES 1234678F
8.52e6*
39.33
CS 1234689F
8.11e6
39.75
ES 1234789F
7.57e6*
40.70
Abs. Int.
3.29e6
1.64e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.75e3
ES 1234678F
1.84e7*
39.33
CS 1234689F
1.81e7
39.75
ES 1234789F
1.60e7*
40.70
Abs. Int.
7.25e6
3.63e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.25e3
Abs. Int.
4.24e3
2.12e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
2.22e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
0%
Abs. Int.
6.31e5
3.16e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.37e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
0%
Abs. Int.
6.61e5
3.31e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.37e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
6.50e6
3.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.00e3
2.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

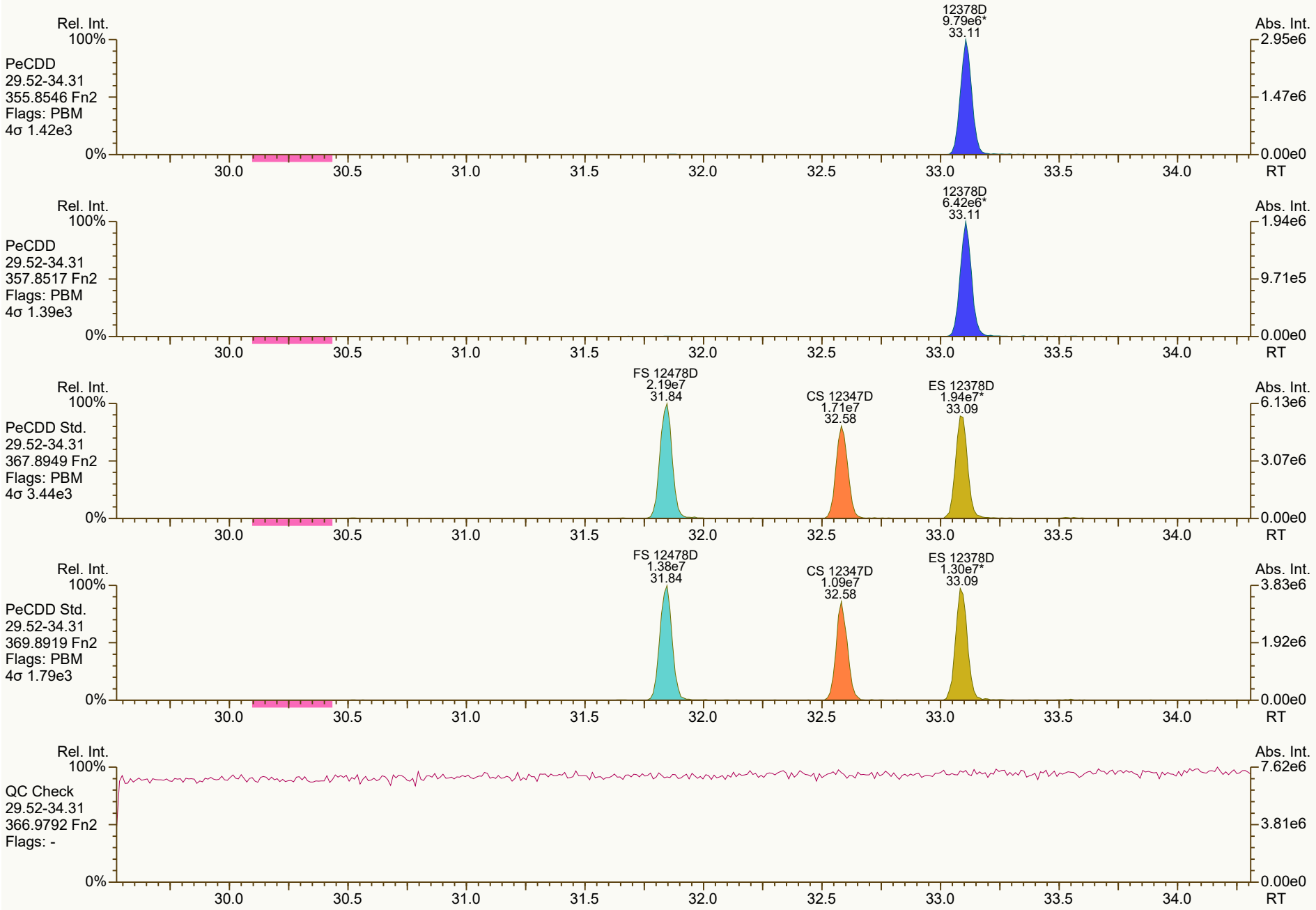
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

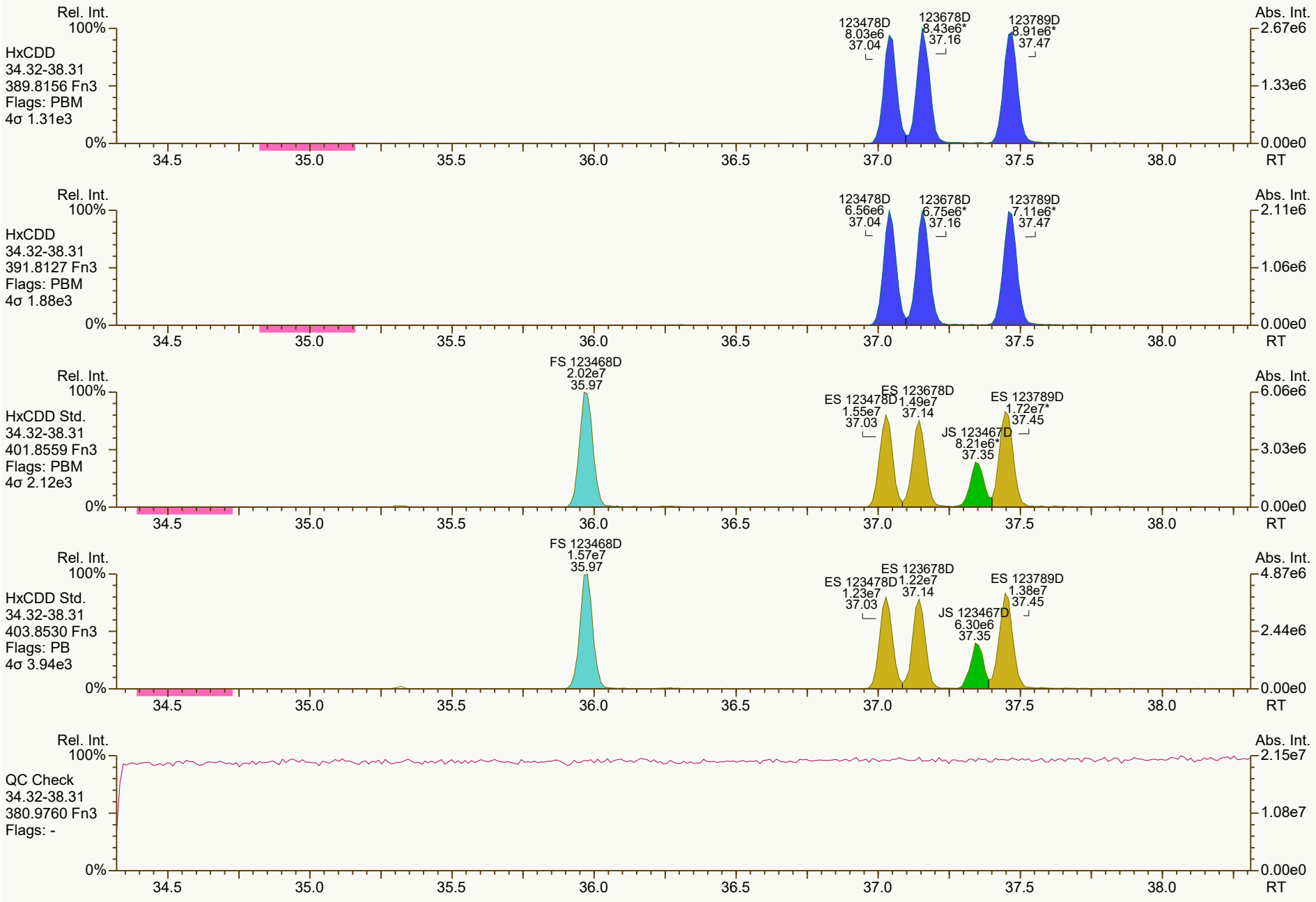
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 13:21 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211110_DF_CB	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 507-474-MKW
Sample ID: 23-672-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C07

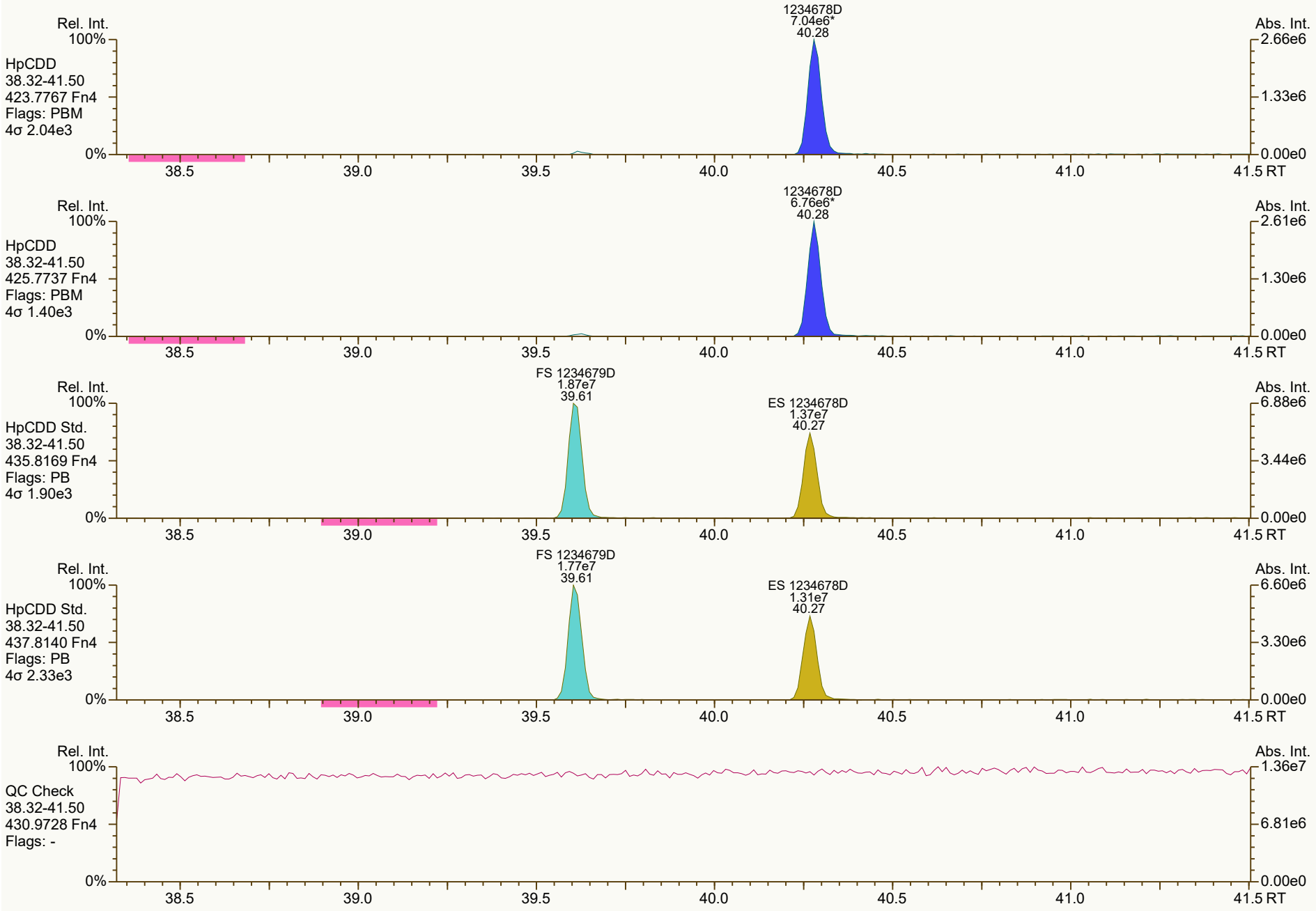
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%

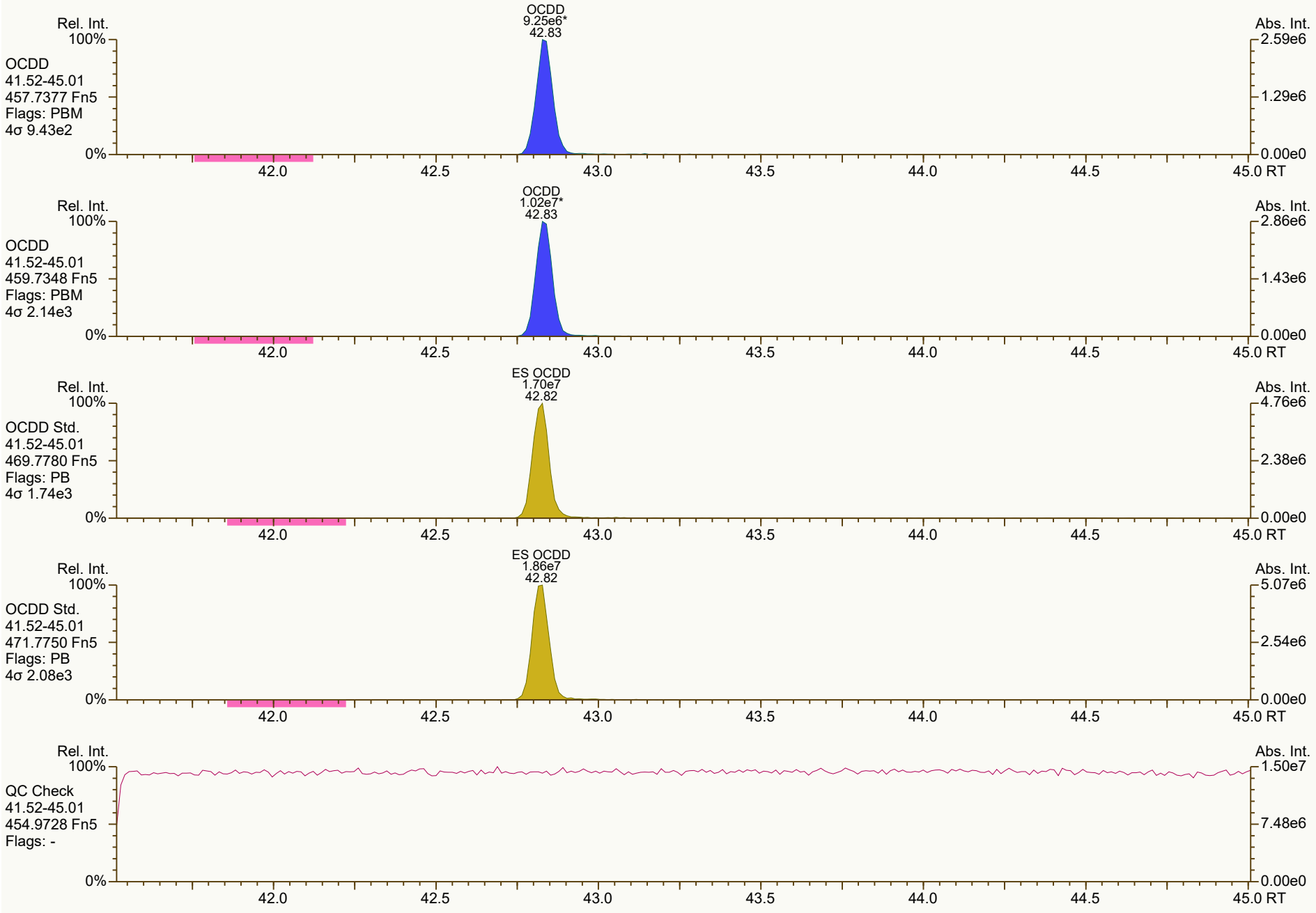

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.65e6
4.33e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.62e6
3.81e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.15e7
1.08e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.36e7
6.81e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.50e7
7.48e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
0%
2378D
1.99e6
27.60
Abs. Int.
4.35e5
2.17e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
0%
2378D
2.55e6
27.60
Abs. Int.
5.98e5
2.99e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
Abs. Int.
1.03e6
5.16e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
0%
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
Abs. Int.
4.80e6
2.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
0%
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.42e3
0%
12378D
9.79e6*
33.11
Abs. Int.
2.95e6
1.47e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.39e3
0%
12378D
6.42e6*
33.11
Abs. Int.
1.94e6
9.71e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 3.44e3
0%
FS 12478D
2.19e7
31.84
CS 12347D
1.71e7
32.58
ES 12378D
1.94e7*
33.09
Abs. Int.
6.13e6
3.07e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 1.79e3
0%
FS 12478D
1.38e7
31.84
CS 12347D
1.09e7
32.58
ES 12378D
1.30e7*
33.09
Abs. Int.
3.83e6
1.92e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.62e6
3.81e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.31e3
123478D
8.03e6
37.04
123678D
8.43e6*
37.16
123789D
8.91e6*
37.47
Abs. Int.
2.67e6
1.33e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.88e3
123478D
6.56e6
37.04
123678D
6.75e6*
37.16
123789D
7.11e6*
37.47
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.12e3
FS 123468D
2.02e7
35.97
ES 123478D
1.55e7
37.03
ES 123678D
1.49e7
37.14
JS 123467D
8.21e6*
37.35
ES 123789D
1.72e7*
37.45
Abs. Int.
6.06e6
3.03e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.94e3
FS 123468D
1.57e7
35.97
ES 123478D
1.23e7
37.03
ES 123678D
1.22e7
37.14
JS 123467D
6.30e6
37.35
ES 123789D
1.38e7
37.45
Abs. Int.
4.87e6
2.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.15e7
1.08e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.61
ES 1234678D
1.37e7
40.27
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.61
ES 1234678D
1.31e7
40.27
Abs. Int.
6.60e6
3.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 9.43e2
0%
OCDD
9.25e6*
42.83
Abs. Int.
2.59e6
1.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.14e3
0%
OCDD
1.02e7*
42.83
Abs. Int.
2.86e6
1.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.74e3
0%
ES OCDD
1.70e7
42.82
Abs. Int.
4.76e6
2.38e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.08e3
0%
ES OCDD
1.86e7
42.82
Abs. Int.
5.07e6
2.54e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.50e7
7.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

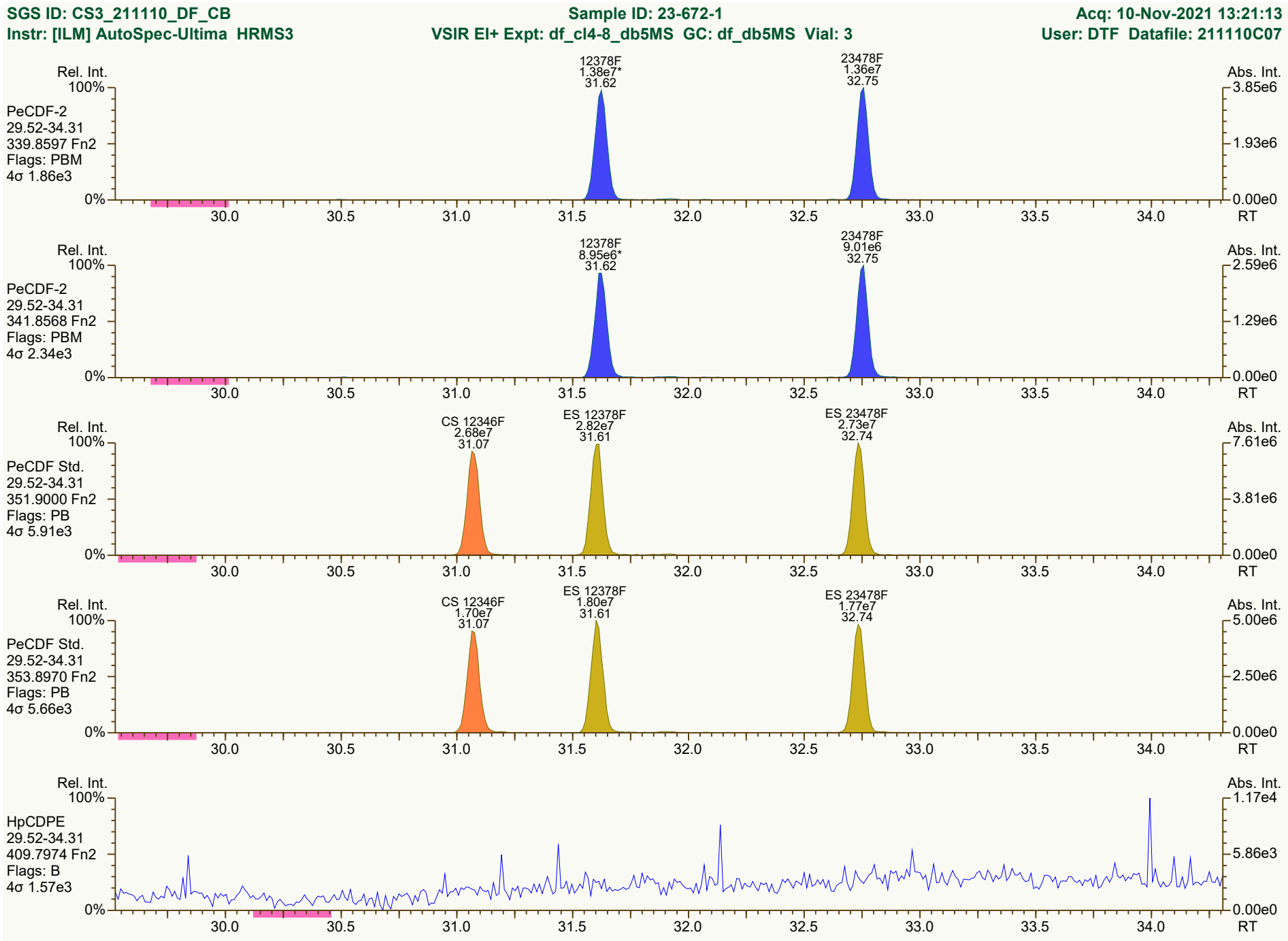

Rel. Int.
100%
0%
Abs. Int.
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.54e3
2378F
2.58e6
26.68
5.81e5
2.91e5
0.00e0
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.71e3
2378F
3.32e6
26.68
7.66e5
3.83e5
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.69e4
AS 1368F
2.59e7
21.50
JS 1234F
2.21e7
25.25
ES 2378F
2.41e7
26.66
5.45e6
2.73e6
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.04e4
AS 1368F
3.25e7
21.50
JS 1234F
2.82e7
25.25
ES 2378F
3.03e7
26.66
6.76e6
3.38e6
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.54e3
6.84e3
3.42e3
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.76e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.65e6
4.33e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT

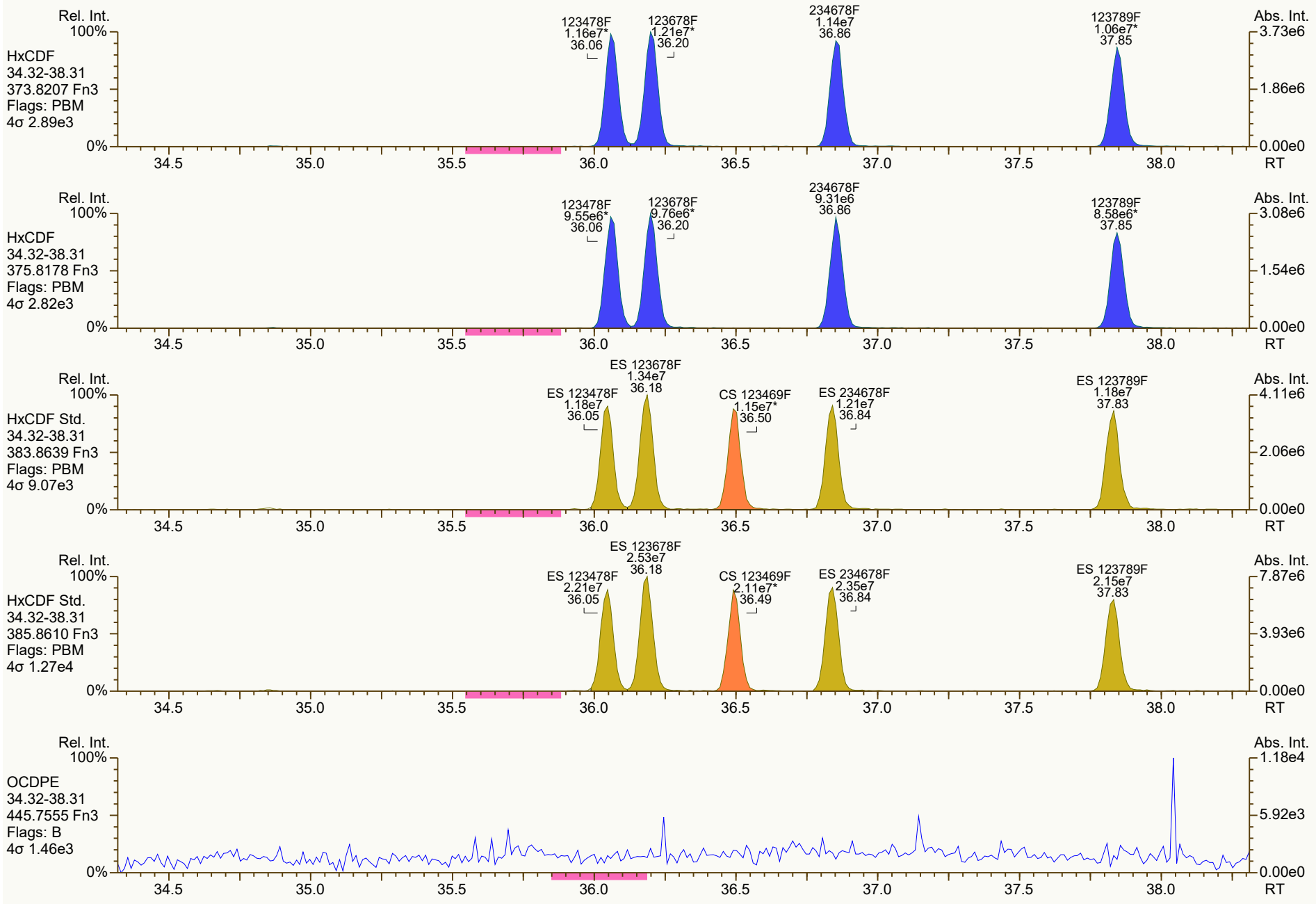
SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3

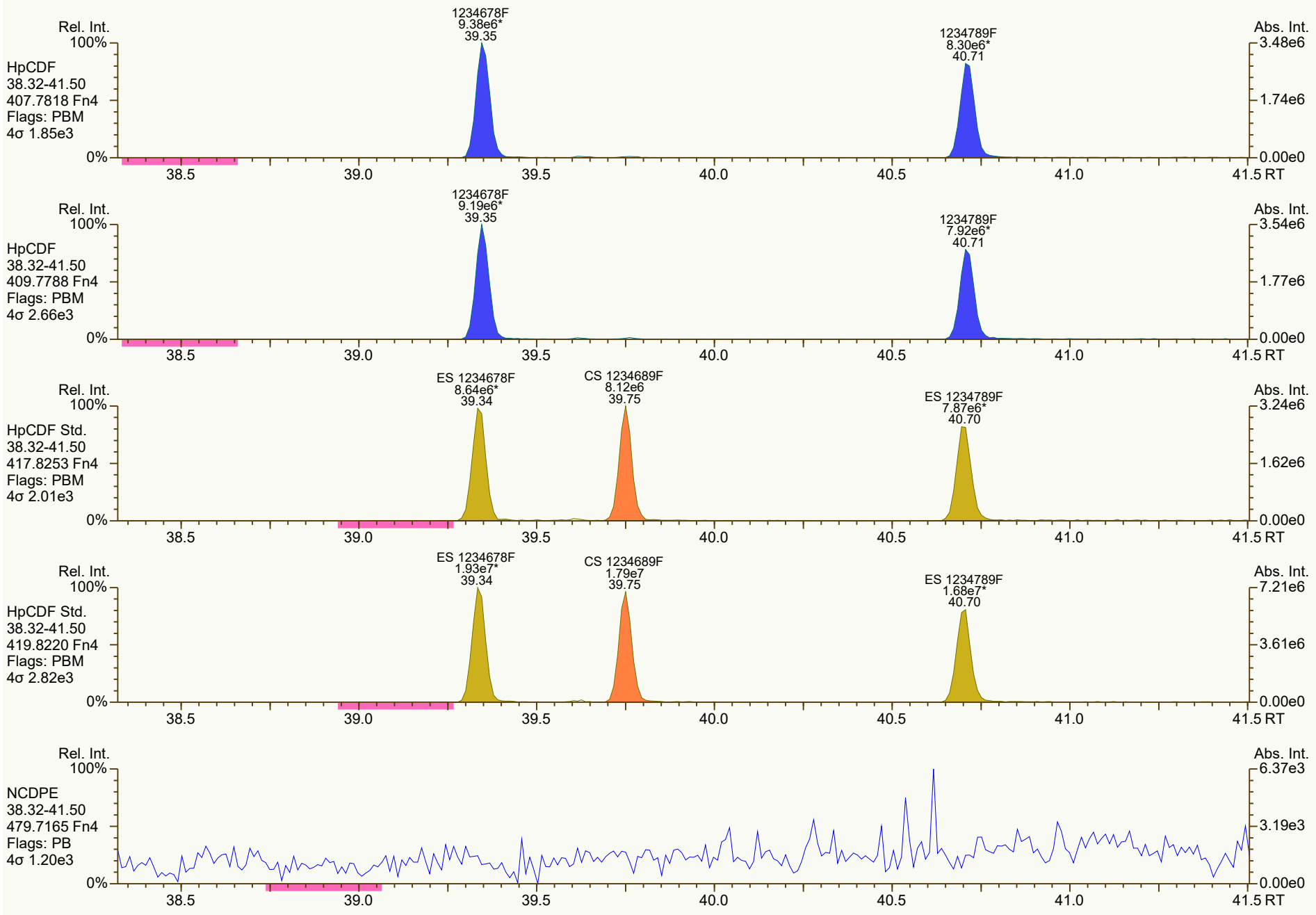
Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0728, 8378, 8418 scc: 507-474
Revised: 10-Nov-2021 14:17 (DTF) Printed: 11-Nov-2021 10:41 Page 9 of 12


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.89e3
0%
123478F
1.16e7*
36.06
123678F
1.21e7*
36.20
234678F
1.14e7
36.86
123789F
1.06e7*
37.85
Abs. Int.
3.73e6
1.86e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.82e3
0%
123478F
9.55e6*
36.06
123678F
9.76e6*
36.20
234678F
9.31e6
36.86
123789F
8.58e6*
37.85
Abs. Int.
3.08e6
1.54e6
0.00e0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 9.07e3
0%
ES 123478F
1.18e7
36.05
ES 123678F
1.34e7
36.18
CS 123469F
1.15e7*
36.50
ES 234678F
1.21e7
36.84
ES 123789F
1.18e7
37.83
Abs. Int.
4.11e6
2.06e6
0.00e0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 1.27e4
0%
ES 123478F
2.21e7
36.05
ES 123678F
2.53e7
36.18
CS 123469F
2.11e7*
36.49
ES 234678F
2.35e7
36.84
ES 123789F
2.15e7
37.83
Abs. Int.
7.87e6
3.93e6
0.00e0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.46e3
0%
Abs. Int.
1.18e4
5.92e3
0.00e0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.85e3
0%
1234678F
9.38e6*
39.35
1234789F
8.30e6*
40.71
Abs. Int.
3.48e6
1.74e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.66e3
0%
1234678F
9.19e6*
39.35
1234789F
7.92e6*
40.71
Abs. Int.
3.54e6
1.77e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.01e3
0%
ES 1234678F
8.64e6*
39.34
CS 1234689F
8.12e6
39.75
ES 1234789F
7.87e6*
40.70
Abs. Int.
3.24e6
1.62e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.82e3
0%
ES 1234678F
1.93e7*
39.34
CS 1234689F
1.79e7
39.75
ES 1234789F
1.68e7*
40.70
Abs. Int.
7.21e6
3.61e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.20e3
0%
Abs. Int.
6.37e3
3.19e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

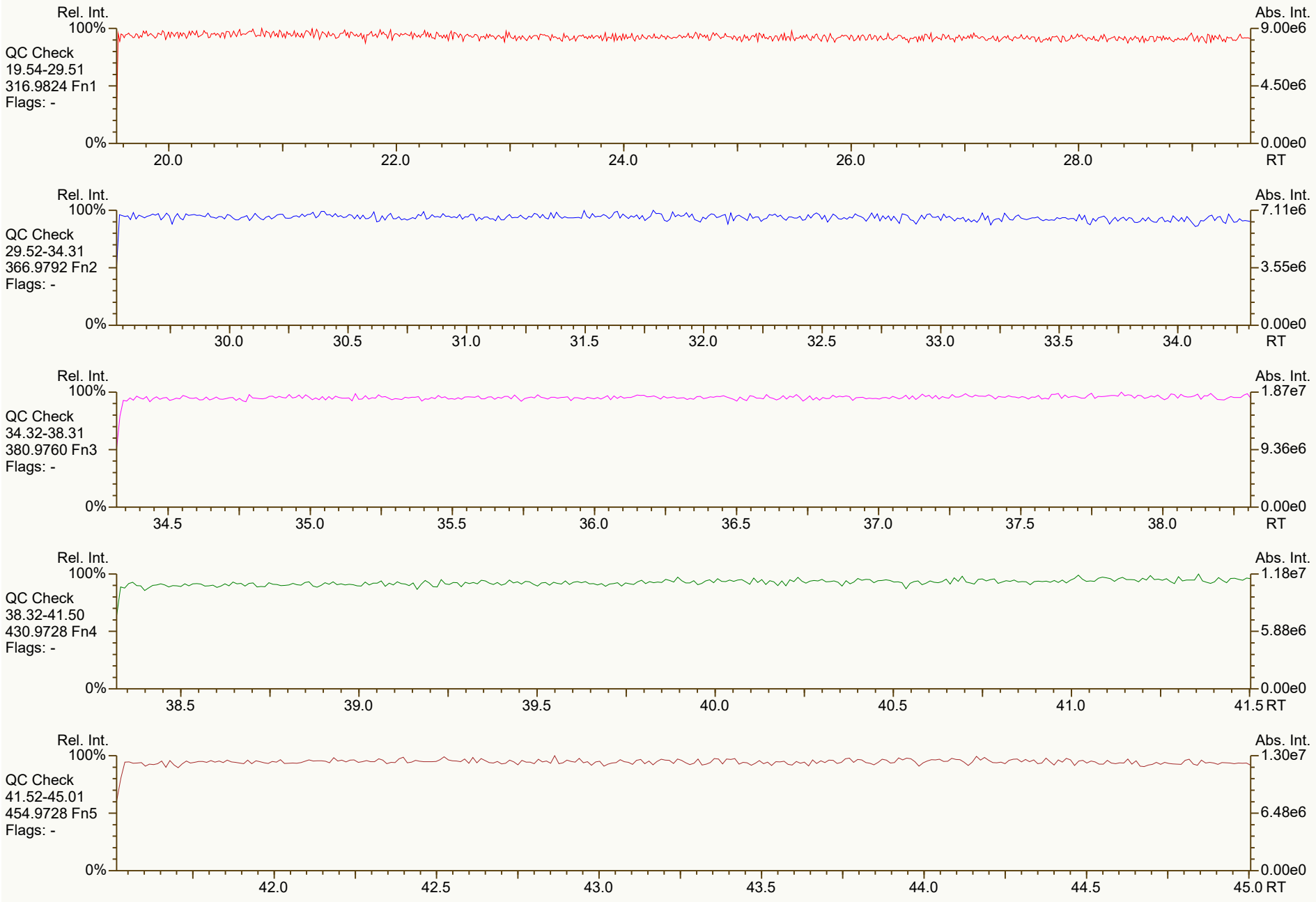

OCDF
1.15e7*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
3.25e6
1.62e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.28e7*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
0%
Abs. Int.
3.53e6
1.76e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.21e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
0%
Abs. Int.
6.08e6
3.04e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.39e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
0%
Abs. Int.
6.65e6
3.32e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3
0%
Abs. Int.
4.82e3
2.41e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

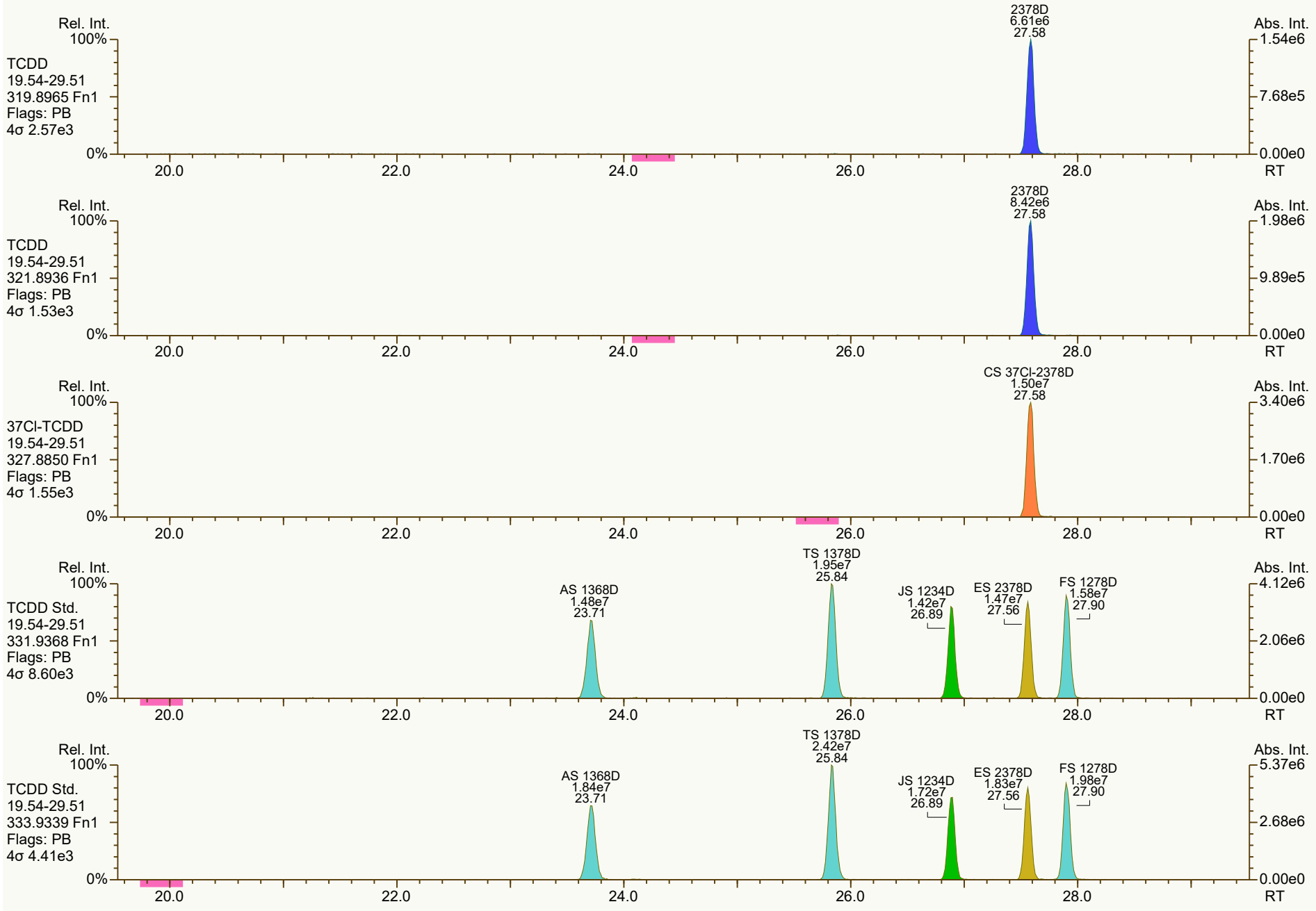
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:07 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS4_211110_DF_CA	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 855-576-PGM
Sample ID: 25-5-4	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C08

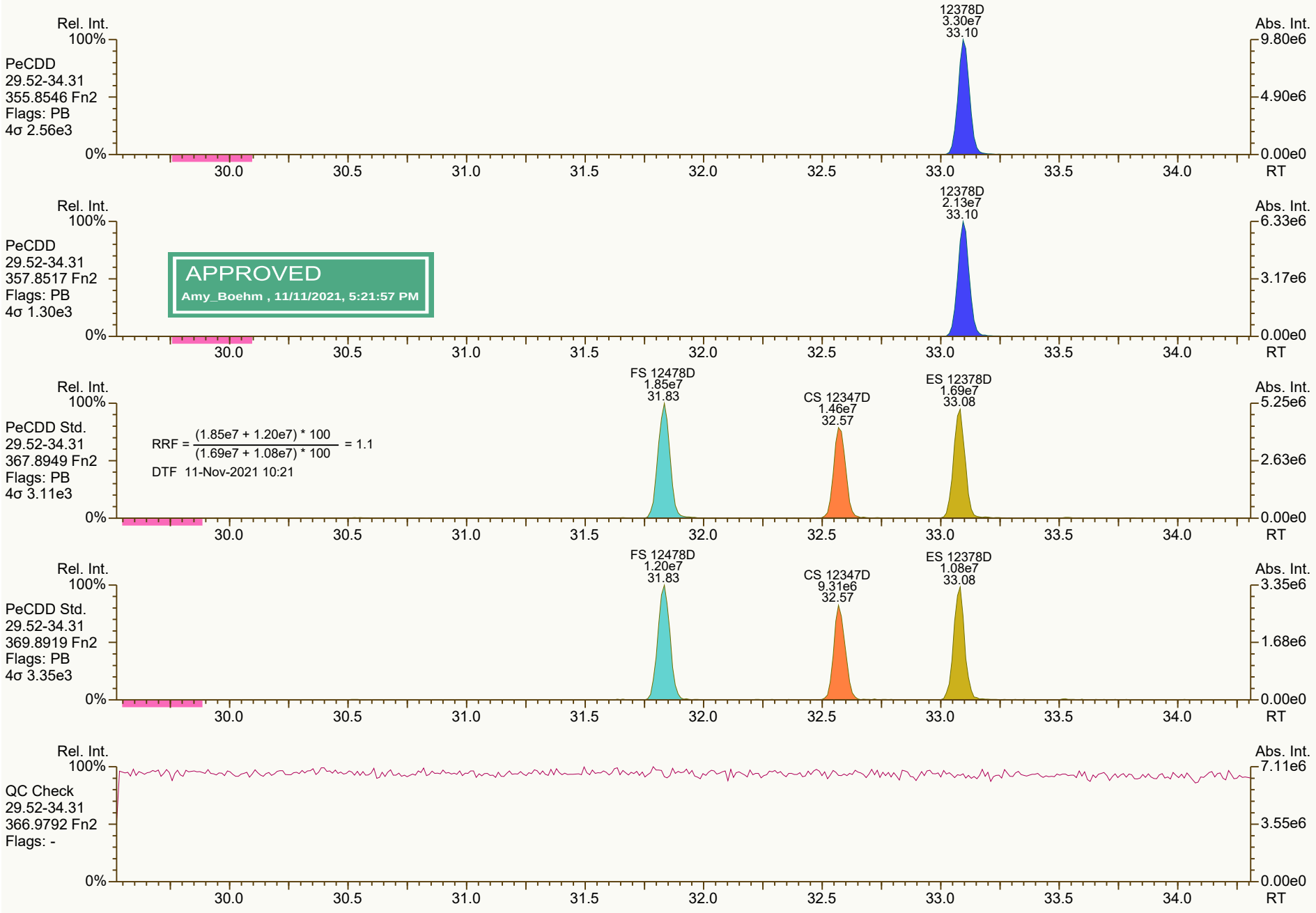
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

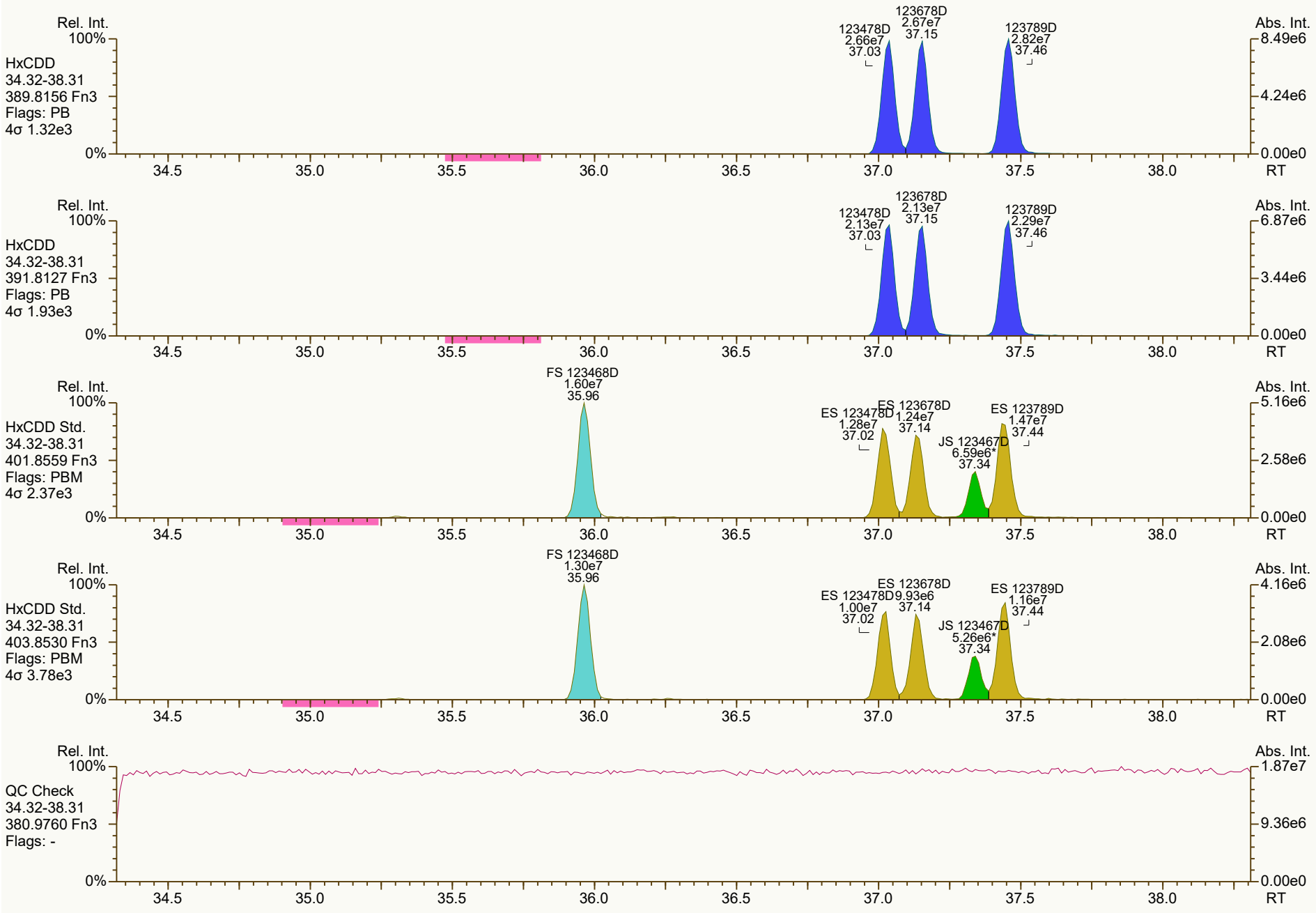
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:07 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS4_211110_DF_CA	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 855-576-PGM
Sample ID: 25-5-4	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C08

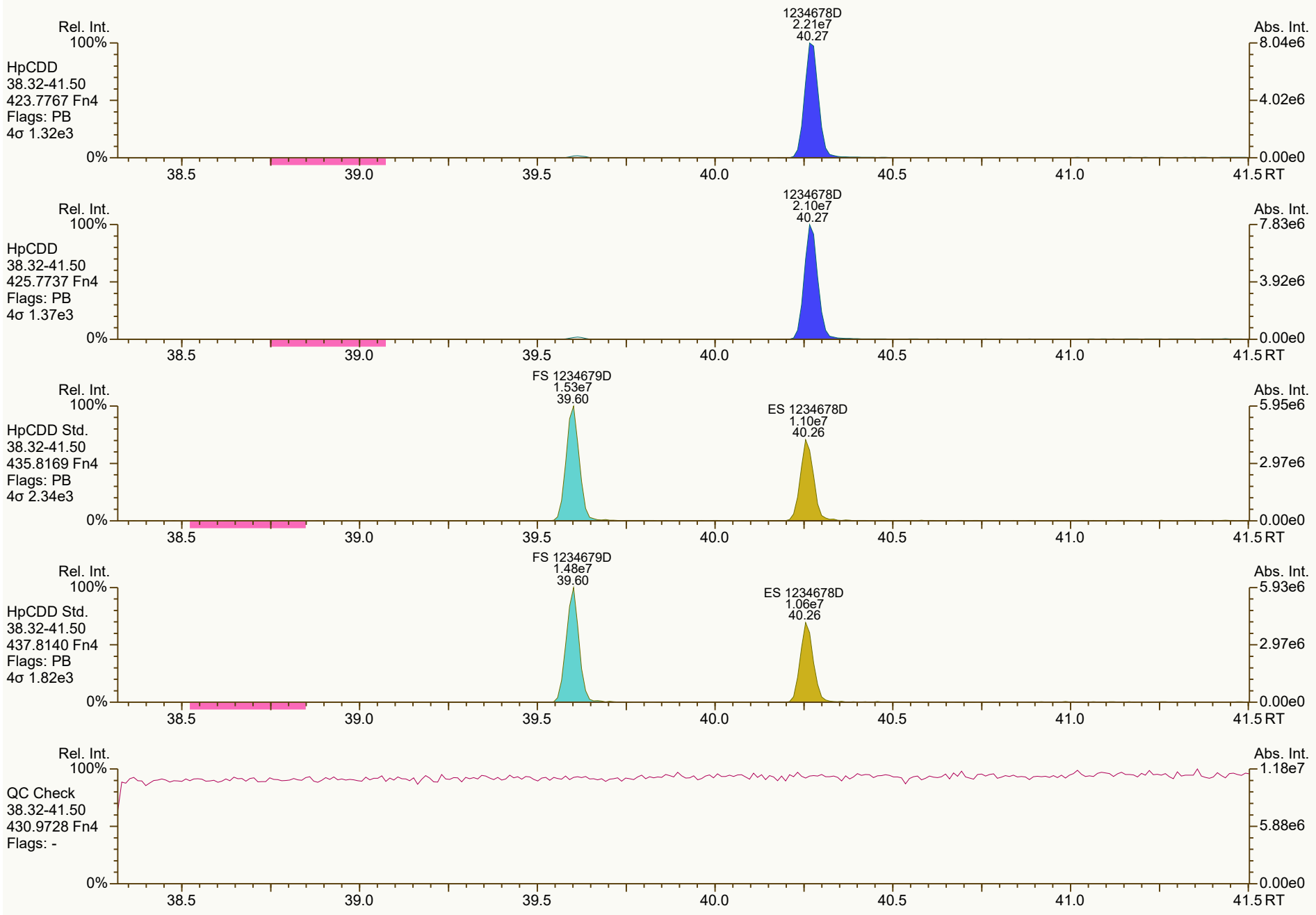
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

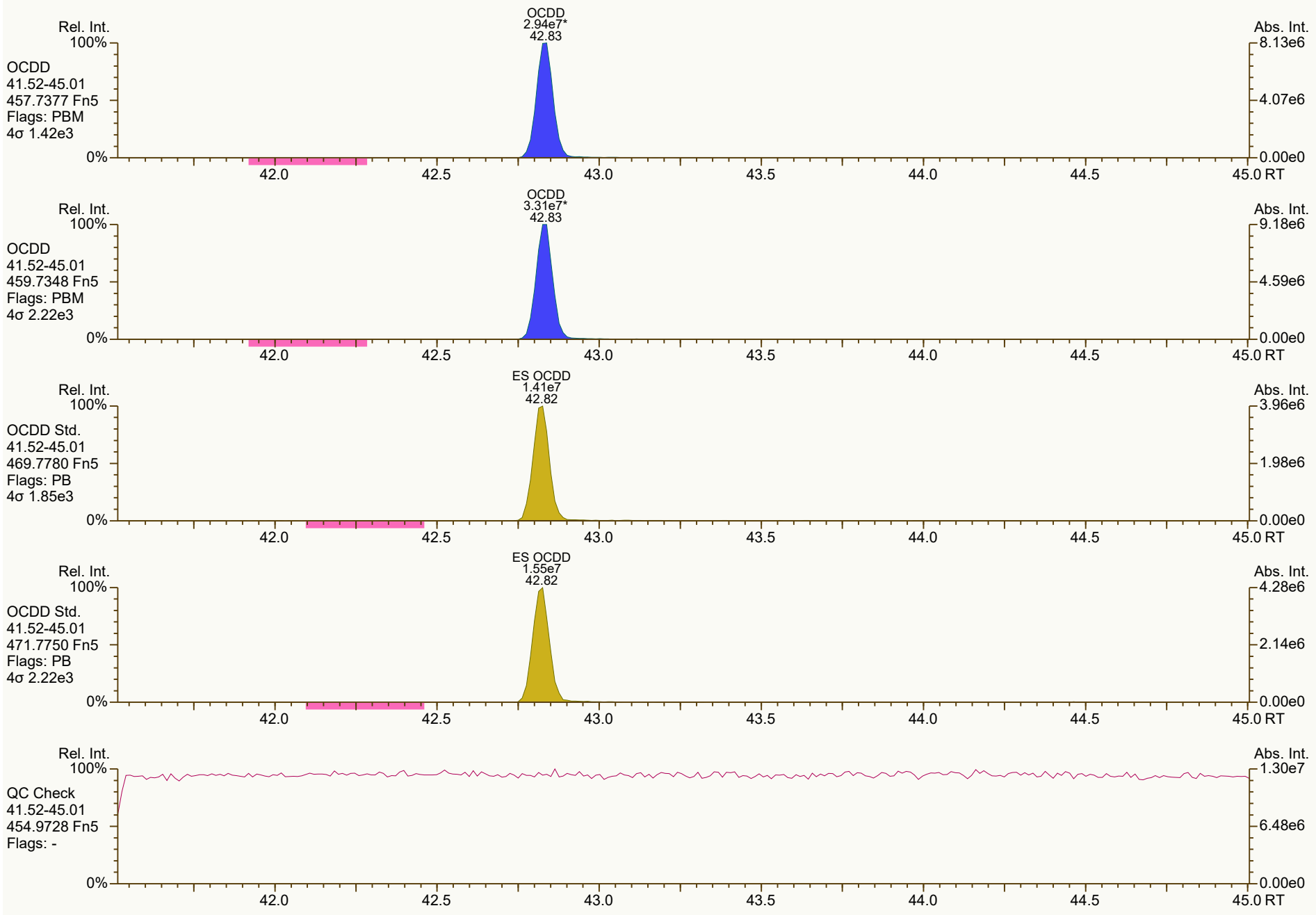

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.00e6
4.50e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.11e6
3.55e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.87e7
9.36e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.18e7
5.88e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.30e7
6.48e6
0.00e0


Rel. Int.
100%
0%
Abs. Int.
RT
20.0
22.0
24.0
26.0
28.0
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
2378D
6.61e6
27.58
1.54e6
7.68e5
0.00e0
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
2378D
8.42e6
27.58
1.98e6
9.89e5
0.00e0
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
CS 37Cl-2378D
1.50e7
27.58
3.40e6
1.70e6
0.00e0
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
4.12e6
2.06e6
0.00e0
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
5.37e6
2.68e6
0.00e0


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PB
4σ 2.56e3
0%
12378D
3.30e7
33.10
Abs. Int.
9.80e6
4.90e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PB
4σ 1.30e3
APPROVED
Amy_Boehm , 11/11/2021, 5:21:57 PM
0%
12378D
2.13e7
33.10
Abs. Int.
6.33e6
3.17e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 3.11e3
RRF = (1.85e7 + 1.20e7) * 100 / (1.69e7 + 1.08e7) * 100 = 1.1
DTF 11-Nov-2021 10:21
0%
FS 12478D
1.85e7
31.83
CS 12347D
1.46e7
32.57
ES 12378D
1.69e7
33.08
Abs. Int.
5.25e6
2.63e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 3.35e3
0%
FS 12478D
1.20e7
31.83
CS 12347D
9.31e6
32.57
ES 12378D
1.08e7
33.08
Abs. Int.
3.35e6
1.68e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.11e6
3.55e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123478D
2.66e7
37.03
123678D
2.67e7
37.15
123789D
2.82e7
37.46
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123478D
2.13e7
37.03
123678D
2.13e7
37.15
123789D
2.29e7
37.46
Abs. Int.
6.87e6
3.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D
1.60e7
35.96
ES 123478D
1.28e7
37.02
ES 123678D
1.24e7
37.14
JS 123467D
6.59e6*
37.34
ES 123789D
1.47e7
37.44
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D
1.30e7
35.96
ES 123478D
1.00e7
37.02
ES 123678D
9.93e6
37.14
JS 123467D
5.26e6*
37.34
ES 123789D
1.16e7
37.44
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.87e7
9.36e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

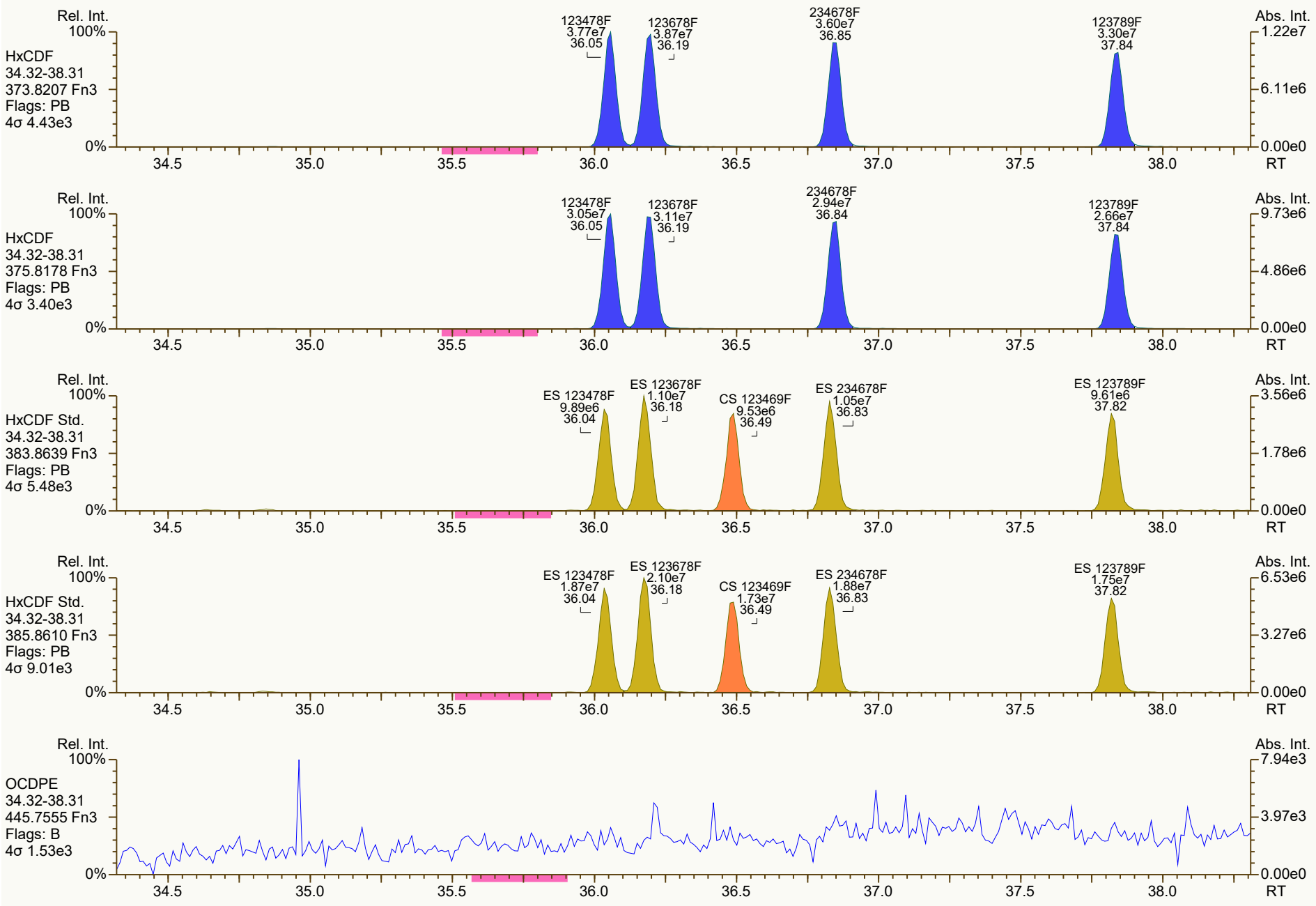

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
1234678D
2.21e7
40.27
Abs. Int.
8.04e6
4.02e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
1234678D
2.10e7
40.27
Abs. Int.
7.83e6
3.92e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
Abs. Int.
5.95e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
Abs. Int.
5.93e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.18e7
5.88e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

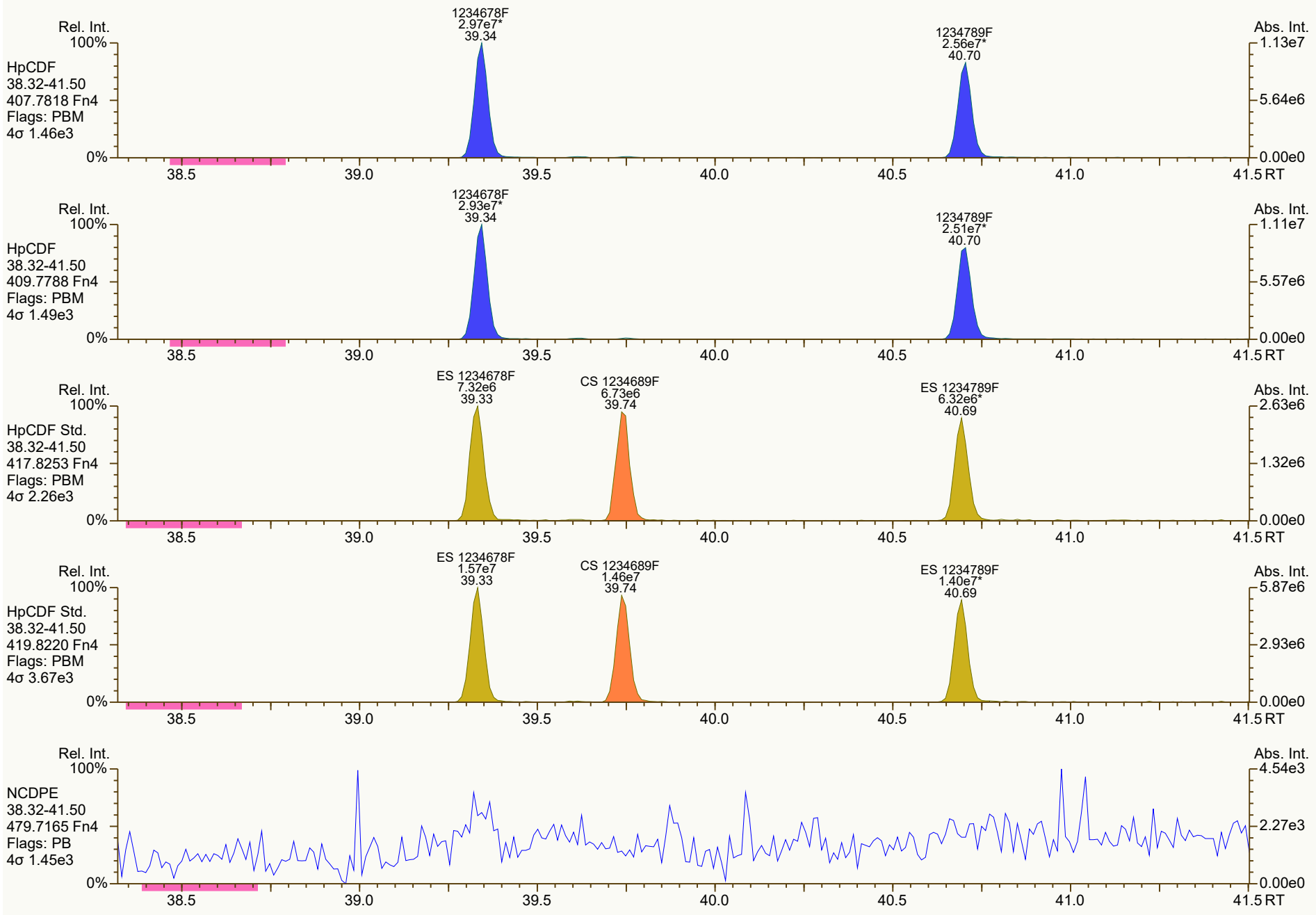

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.42e3
0%
OCDD
2.94e7*
42.83
Abs. Int.
8.13e6
4.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.22e3
0%
OCDD
3.31e7*
42.83
Abs. Int.
9.18e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
ES OCDD
1.41e7
42.82
Abs. Int.
3.96e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.22e3
0%
ES OCDD
1.55e7
42.82
Abs. Int.
4.28e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

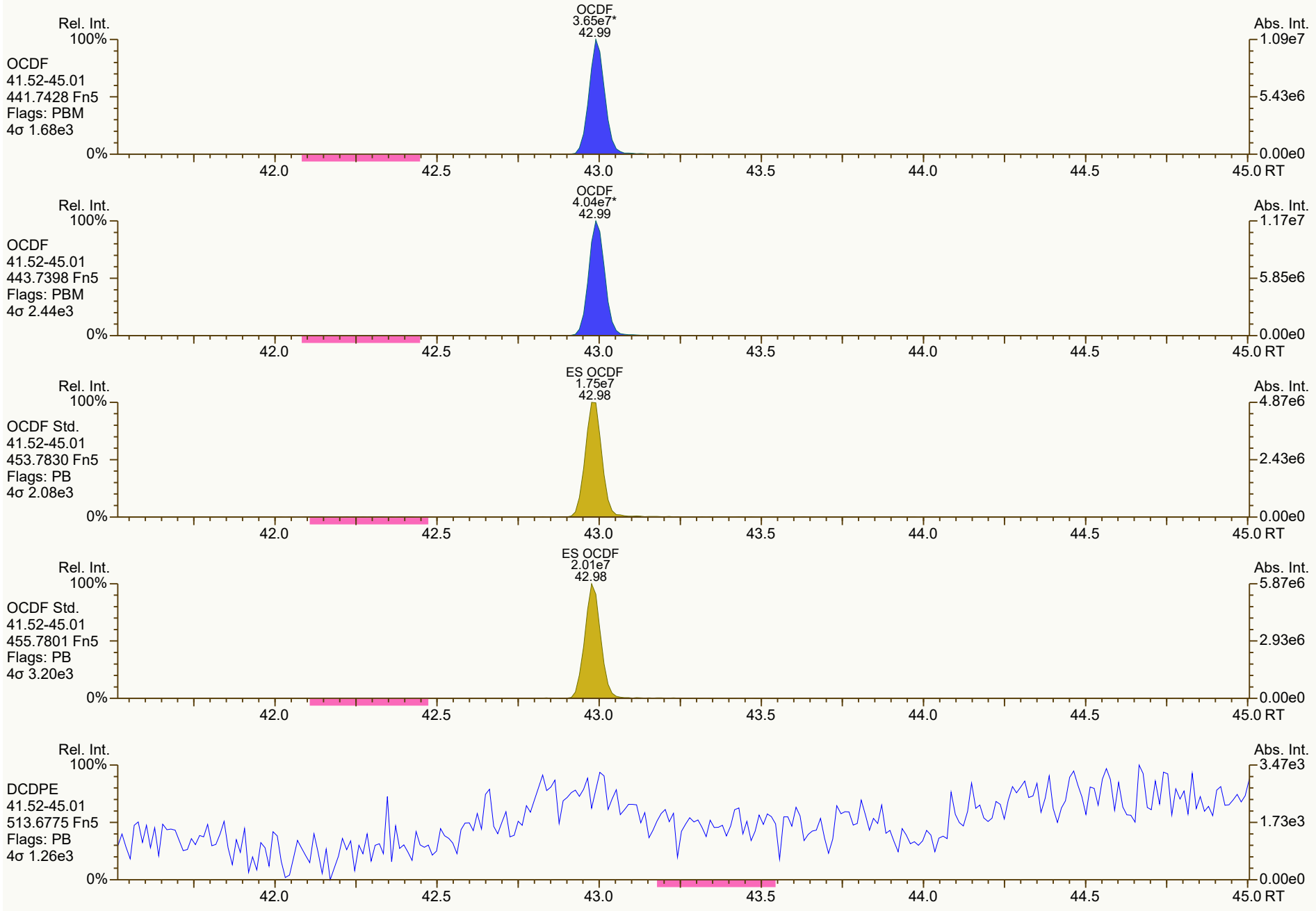

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
0%
2378F
8.36e6
26.67
Abs. Int.
1.89e6
9.43e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
0%
2378F
1.07e7
26.67
Abs. Int.
2.41e6
1.20e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
0%
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7*
25.23
ES 2378F
2.05e7
26.65
Abs. Int.
4.47e6
2.23e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
0%
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7*
25.23
ES 2378F
2.57e7
26.65
Abs. Int.
5.68e6
2.84e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
0%
Abs. Int.
9.44e3
4.72e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.83e3
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
8.94e3
4.47e3
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
9.00e6
4.50e6


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
Abs. Int.
1.30e7
6.48e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
Abs. Int.
8.36e6
4.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12346F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
Abs. Int.
6.66e6
3.33e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12346F
1.46e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
Abs. Int.
4.36e6
2.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
Abs. Int.
7.51e3
3.76e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 4.43e3
0%
123478F
3.77e7
36.05
123678F
3.87e7
36.19
234678F
3.60e7
36.85
123789F
3.30e7
37.84
Abs. Int.
1.22e7
6.11e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 3.40e3
123478F
3.05e7
36.05
123678F
3.11e7
36.19
234678F
2.94e7
36.84
123789F
2.66e7
37.84
9.73e6
4.86e6
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.48e3
ES 123478F
9.89e6
36.04
ES 123678F
1.10e7
36.18
CS 123469F
9.53e6
36.49
ES 234678F
1.05e7
36.83
ES 123789F
9.61e6
37.82
3.56e6
1.78e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 9.01e3
ES 123478F
1.87e7
36.04
ES 123678F
2.10e7
36.18
CS 123469F
1.73e7
36.49
ES 234678F
1.88e7
36.83
ES 123789F
1.75e7
37.82
6.53e6
3.27e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.53e3
7.94e3
3.97e3

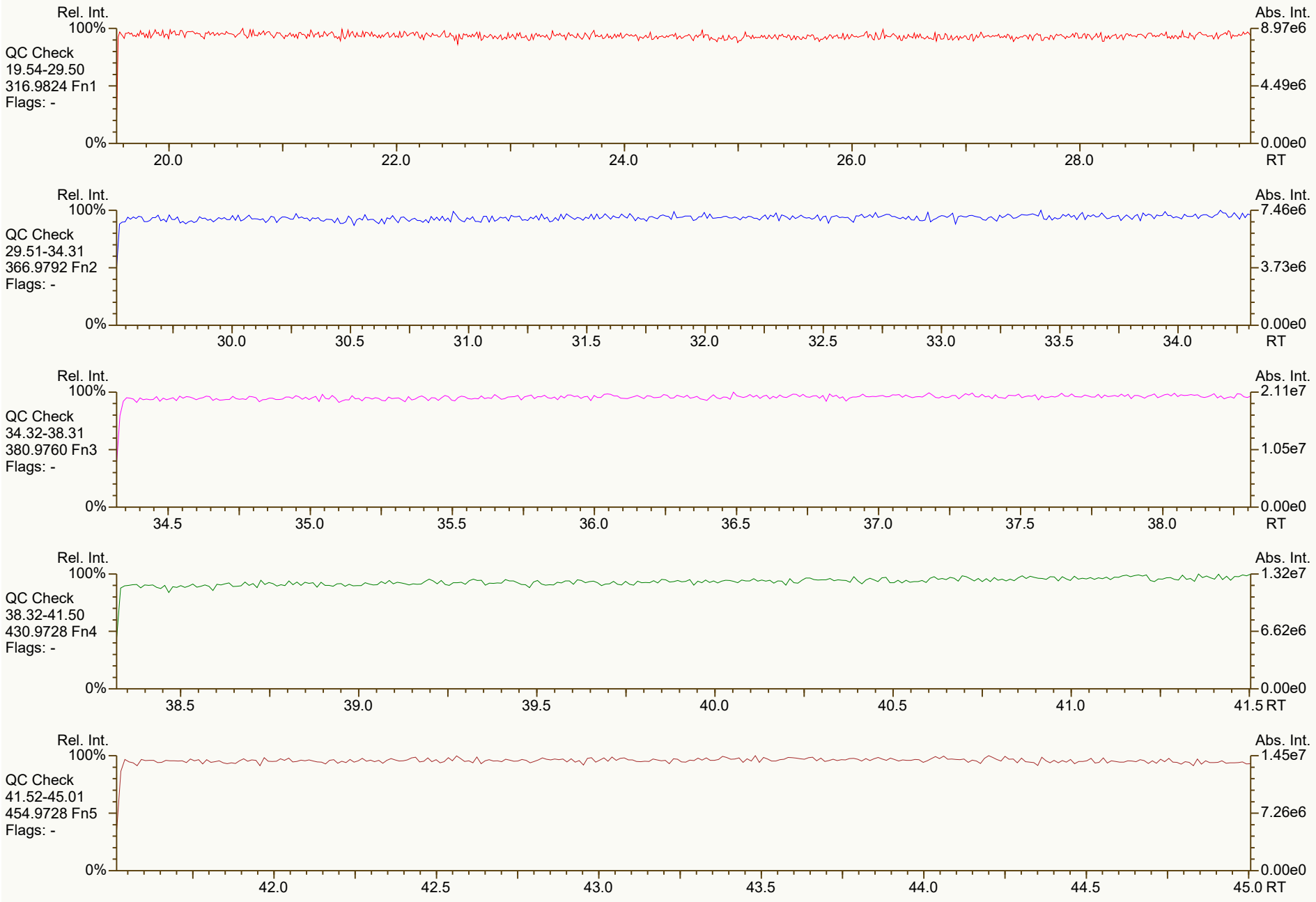

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
0%
1234678F
2.97e7*
39.34
1234789F
2.56e7*
40.70
Abs. Int.
1.13e7
5.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
0%
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
Abs. Int.
1.11e7
5.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
0%
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
Abs. Int.
2.63e6
1.32e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
0%
ES 1234678F
1.57e7
39.33
CS 1234689F
1.46e7
39.74
ES 1234789F
1.40e7*
40.69
Abs. Int.
5.87e6
2.93e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
0%
Abs. Int.
4.54e3
2.27e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
3.65e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.04e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.75e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
0%
Abs. Int.
4.87e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
0%
Abs. Int.
5.87e6
2.93e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
0%
Abs. Int.
3.47e3
1.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

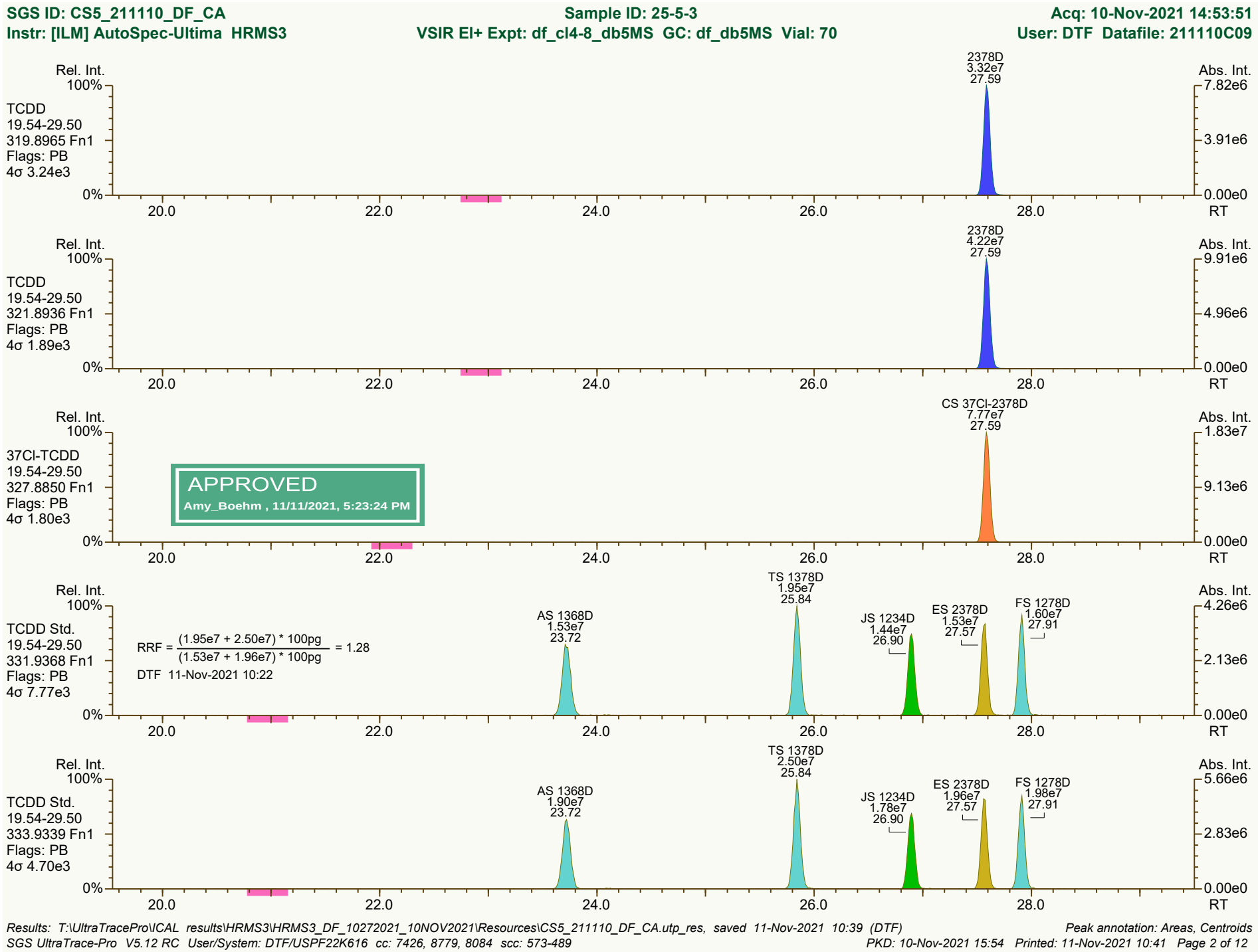
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

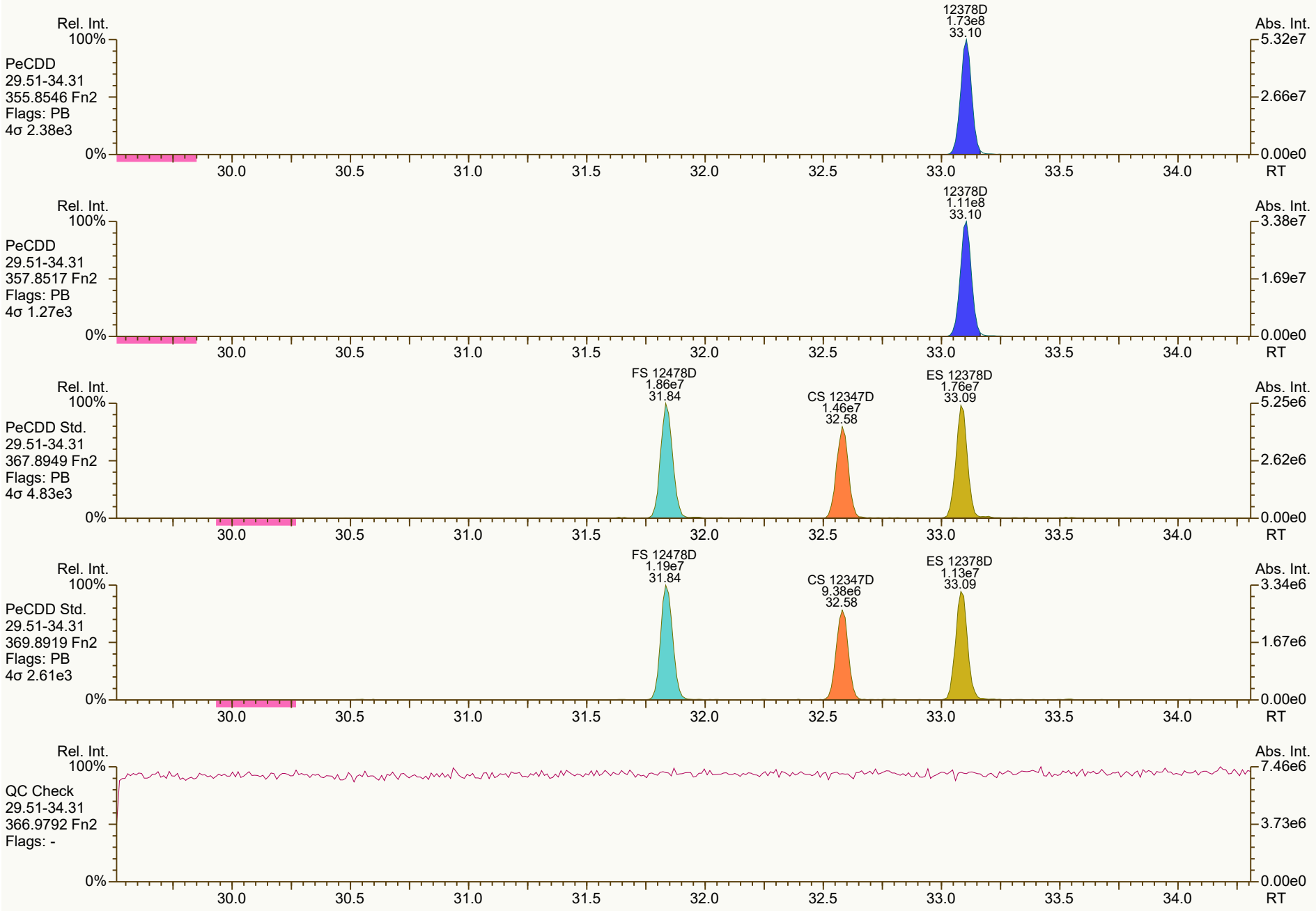
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:53 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS5_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF				Checkcode: 573-489-BMZ	
Sample ID: 25-5-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C09	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

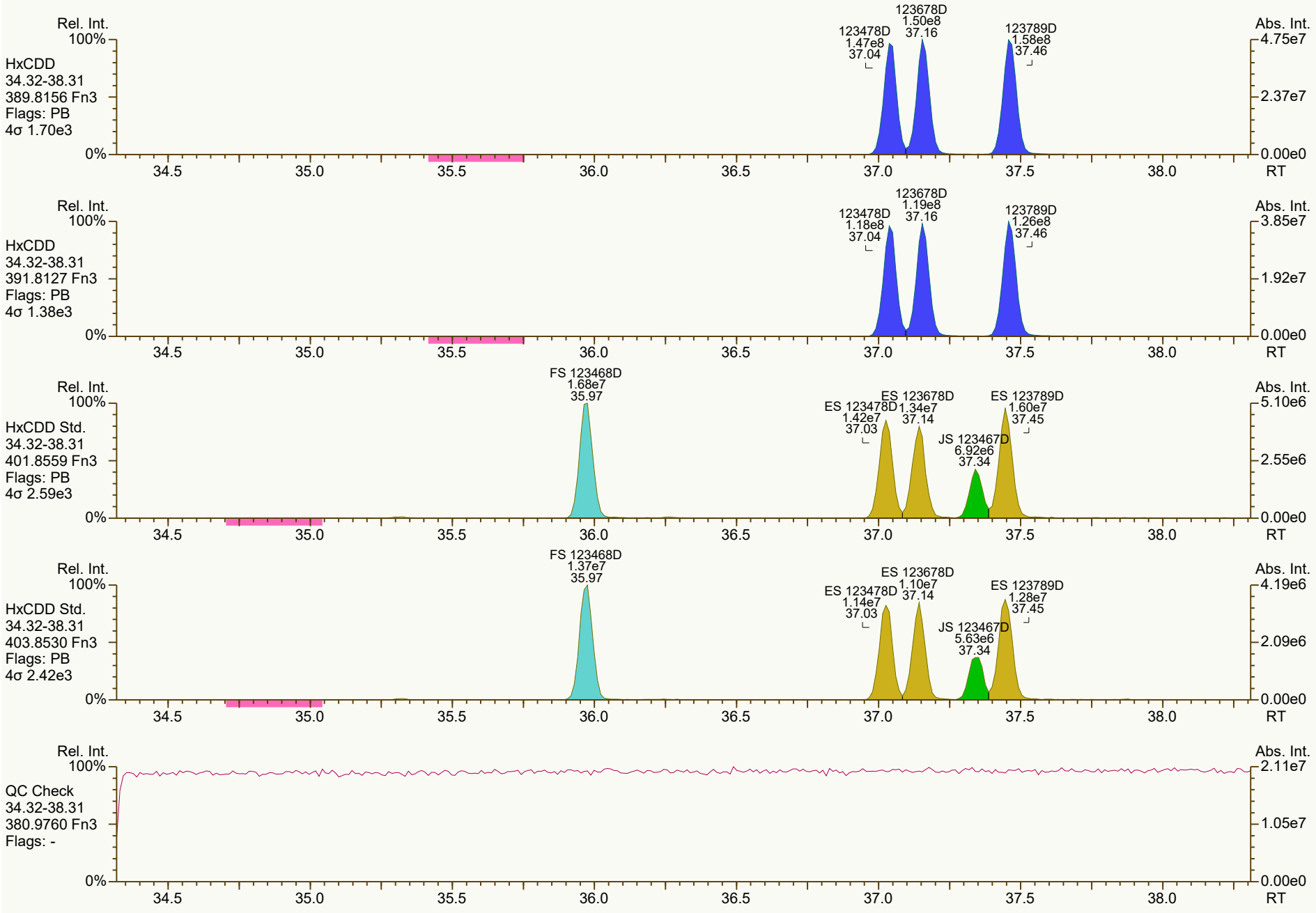

Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
7.46e6
3.73e6
0.00e0
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.11e7
1.05e7
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.32e7
6.62e6
0.00e0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
0%
Abs. Int.
1.45e7
7.26e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

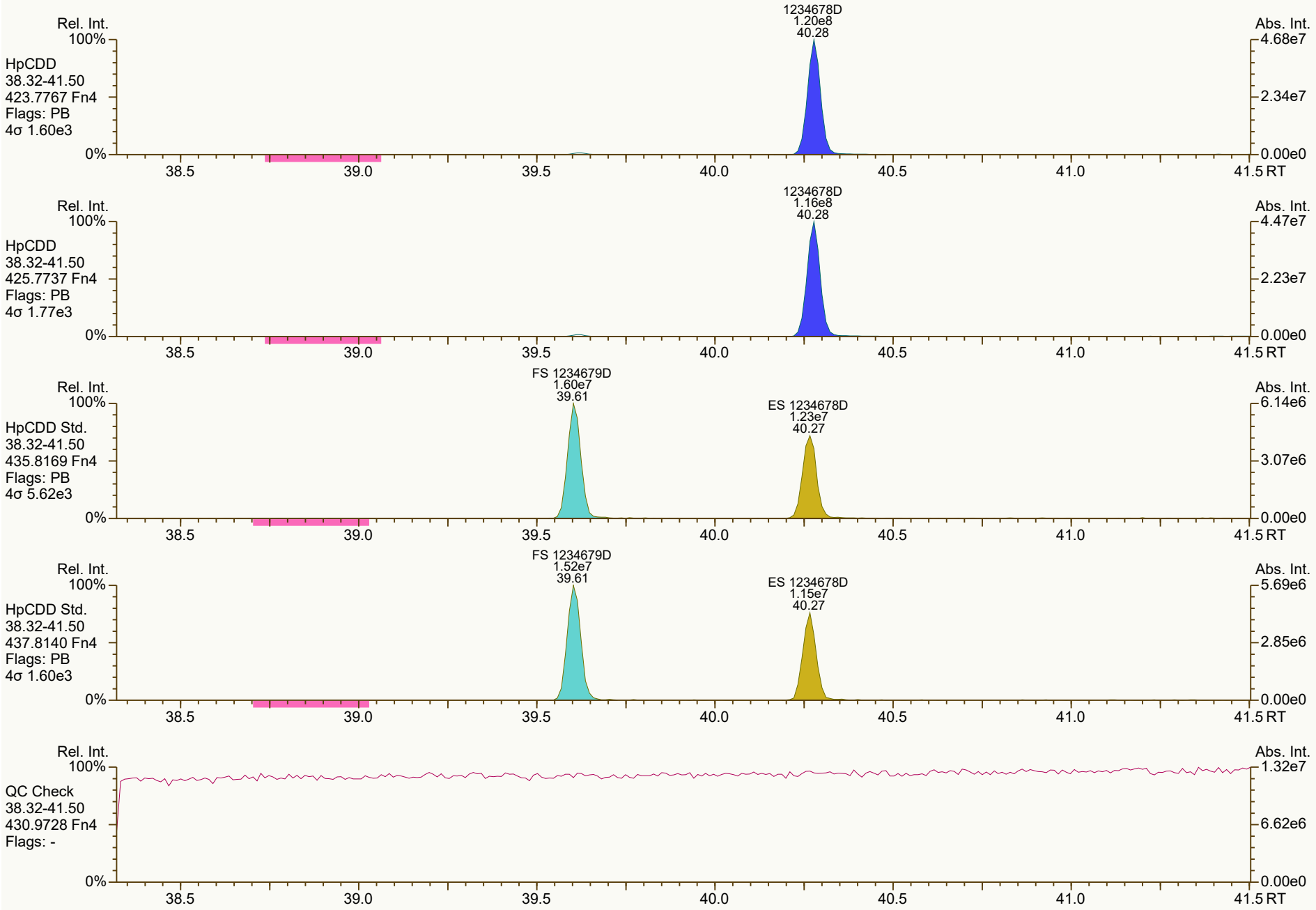
SGS ID: CS5_211110_DF_CA | Sample ID: 25-5-3 | Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70 | User: DTF Datafile: 211110C09

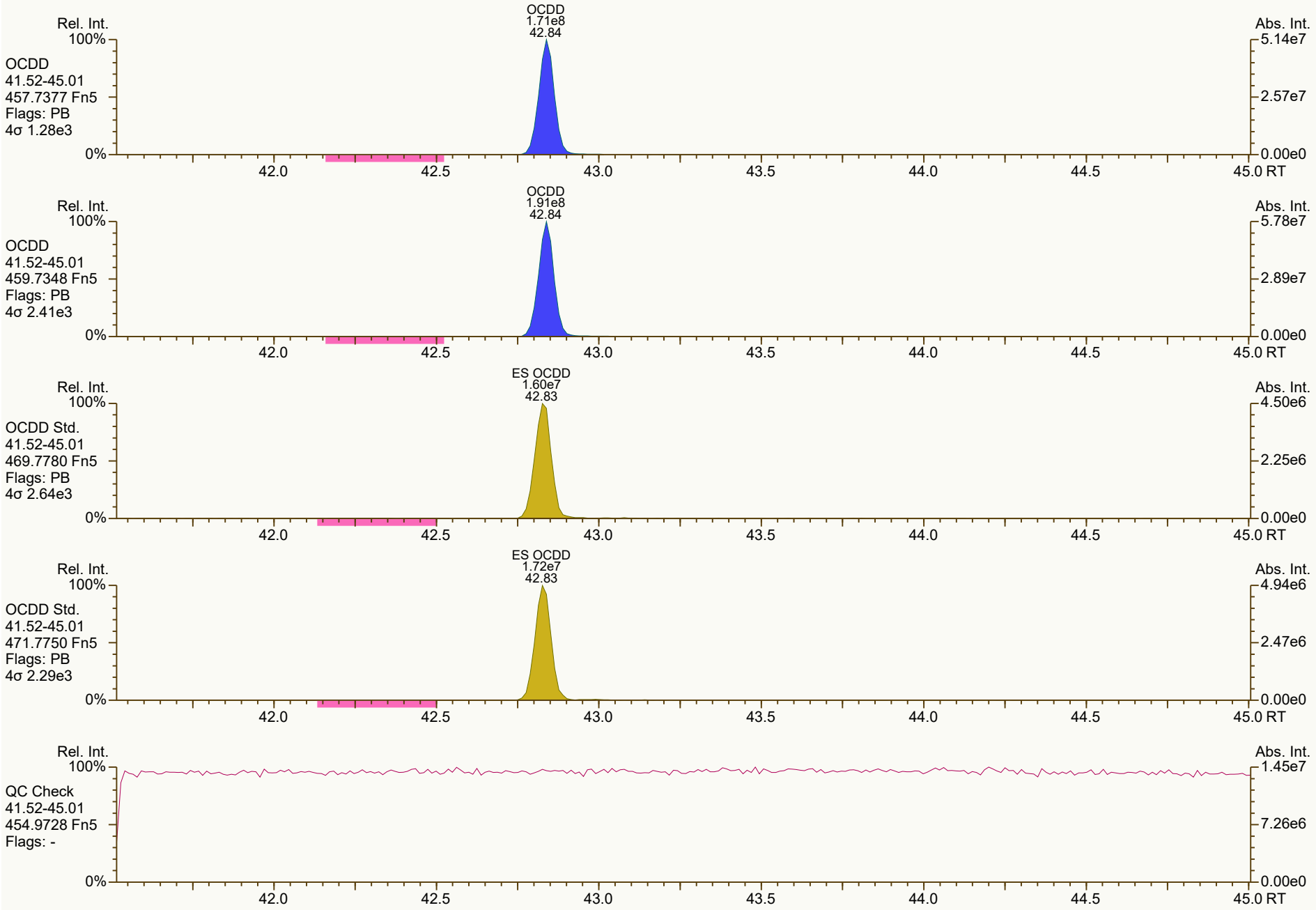


Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7426, 8779, 8084 scc: 573-489 | PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 2 of 12


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
12378D
1.73e8
33.10
Abs. Int.
5.32e7
2.66e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
12378D
1.11e8
33.10
Abs. Int.
3.38e7
1.69e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
FS 12478D
1.86e7
31.84
CS 12347D
1.46e7
32.58
ES 12378D
1.76e7
33.09
Abs. Int.
5.25e6
2.62e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
Abs. Int.
3.34e6
1.67e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
7.46e6
3.73e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

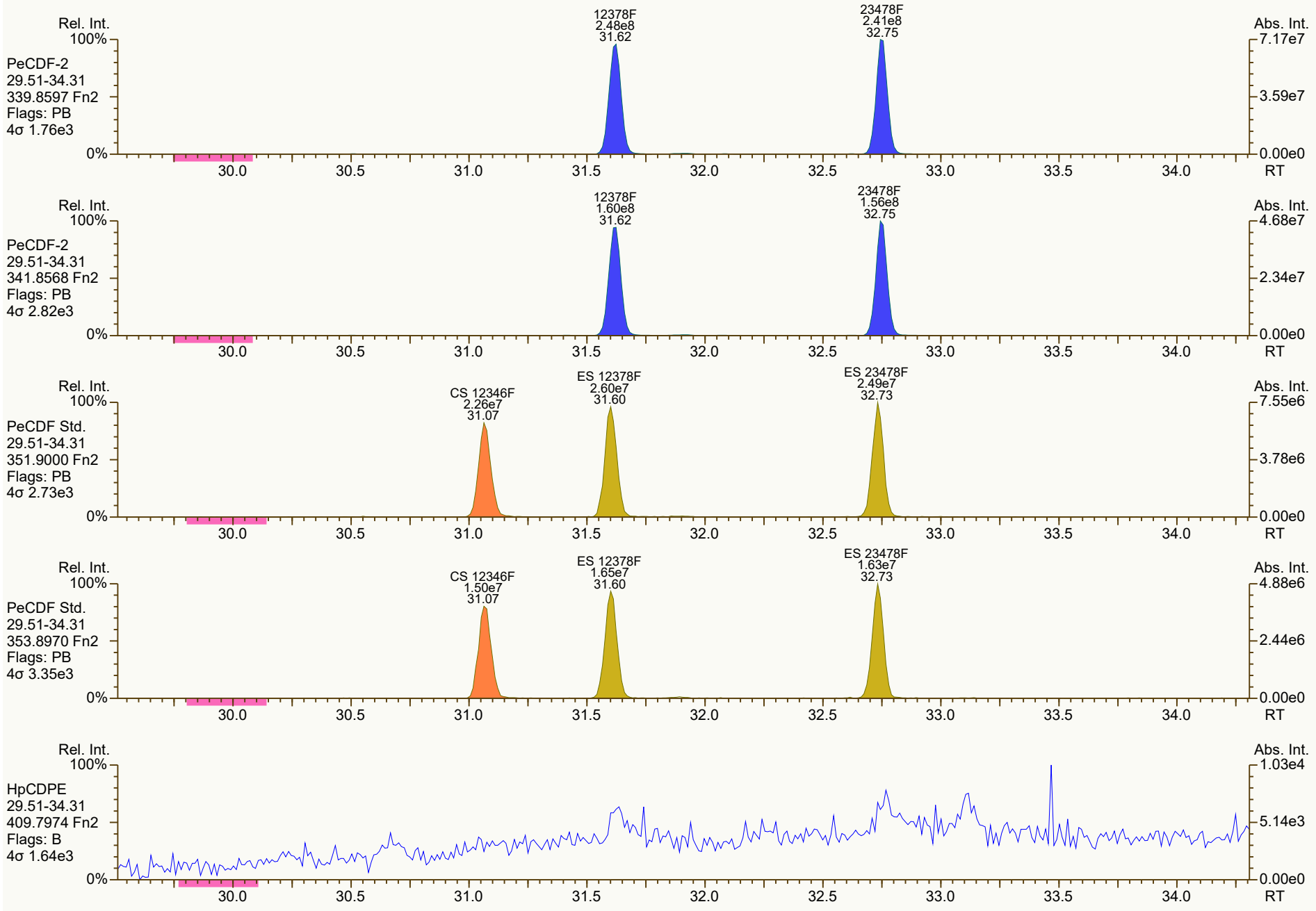

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
0%
123478D
1.47e8
37.04
123678D
1.50e8
37.16
123789D
1.58e8
37.46
Abs. Int.
4.75e7
2.37e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
0%
123478D
1.18e8
37.04
123678D
1.19e8
37.16
123789D
1.26e8
37.46
Abs. Int.
3.85e7
1.92e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
0%
FS 123468D
1.68e7
35.97
ES 123478D
1.42e7
37.03
ES 123678D
1.34e7
37.14
JS 123467D
6.92e6
37.34
ES 123789D
1.60e7
37.45
Abs. Int.
5.10e6
2.55e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
0%
FS 123468D
1.37e7
35.97
ES 123478D
1.14e7
37.03
ES 123678D
1.10e7
37.14
JS 123467D
5.63e6
37.34
ES 123789D
1.28e7
37.45
Abs. Int.
4.19e6
2.09e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.11e7
1.05e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

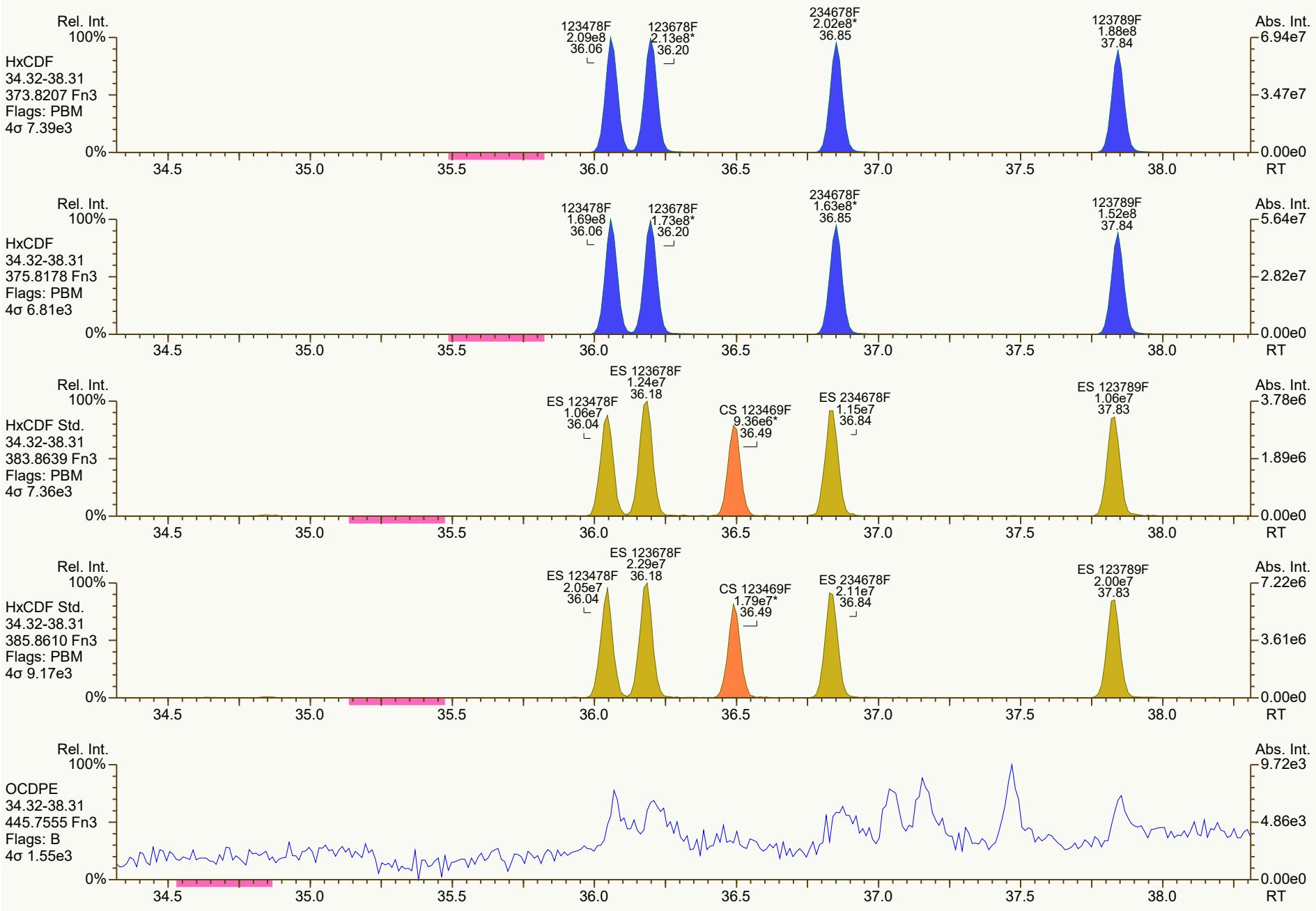

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
1.20e8
40.28
Abs. Int.
4.68e7
2.34e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.77e3
1234678D
1.16e8
40.28
Abs. Int.
4.47e7
2.23e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 5.62e3
FS 1234679D
1.60e7
39.61
ES 1234678D
1.23e7
40.27
Abs. Int.
6.14e6
3.07e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.60e3
FS 1234679D
1.52e7
39.61
ES 1234678D
1.15e7
40.27
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.32e7
6.62e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

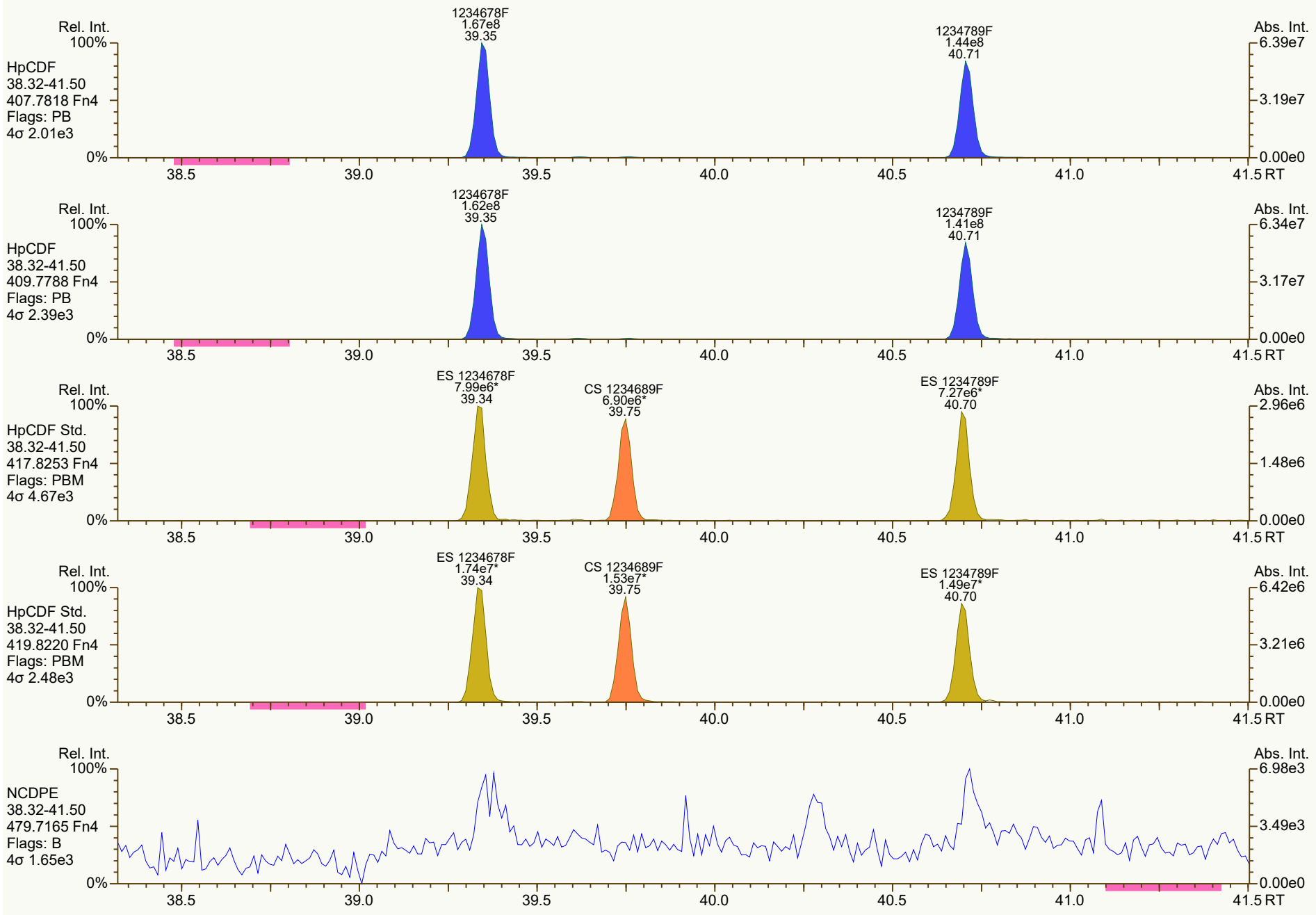

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
0%
OCDD
1.71e8
42.84
Abs. Int.
5.14e7
2.57e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
0%
OCDD
1.91e8
42.84
Abs. Int.
5.78e7
2.89e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
0%
ES OCDD
1.60e7
42.83
Abs. Int.
4.50e6
2.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
0%
ES OCDD
1.72e7
42.83
Abs. Int.
4.94e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.45e7
7.26e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

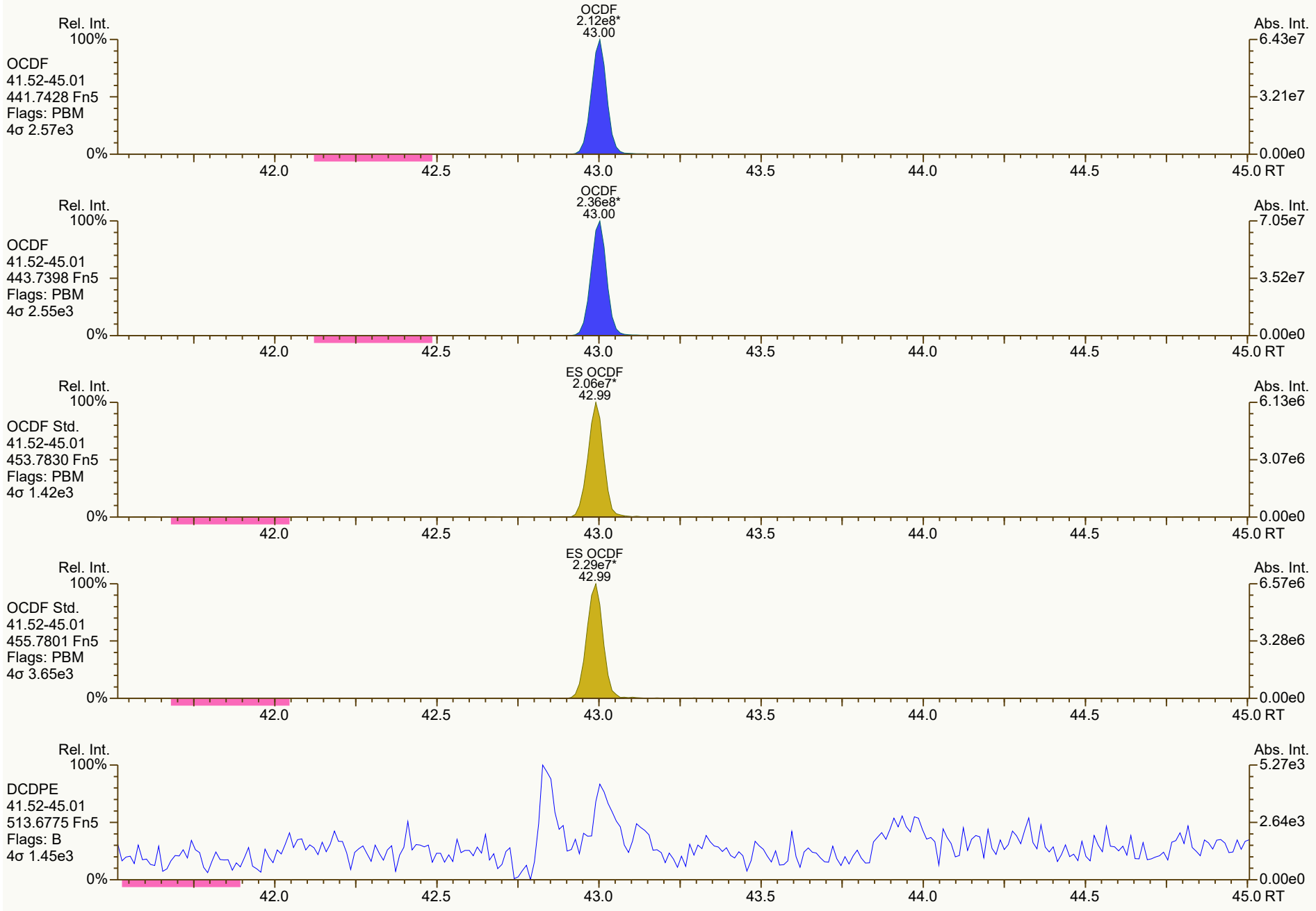

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
0%
2378F
4.22e7
26.68
Abs. Int.
9.59e6
4.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
0%
2378F
5.40e7
26.68
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
0%
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
Abs. Int.
4.70e6
2.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
Abs. Int.
5.78e6
2.89e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
0%
Abs. Int.
7.47e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.43e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 2.08e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
0%
12378F
2.48e8
31.62
23478F
2.41e8
32.75
Abs. Int.
7.17e7
3.59e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
0%
12378F
1.60e8
31.62
23478F
1.56e8
32.75
Abs. Int.
4.68e7
2.34e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
0%
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
Abs. Int.
7.55e6
3.78e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
0%
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.63e7
32.73
Abs. Int.
4.88e6
2.44e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 7.39e3
0%
123478F
2.09e8
36.06
123678F
2.13e8*
36.20
234678F
2.02e8*
36.85
123789F
1.88e8
37.84
Abs. Int.
6.94e7
3.47e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 6.81e3
0%
123478F
1.69e8
36.06
123678F
1.73e8*
36.20
234678F
1.63e8*
36.85
123789F
1.52e8
37.84
Abs. Int.
5.64e7
2.82e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.36e3
0%
ES 123478F
1.06e7
36.04
ES 123678F
1.24e7
36.18
CS 123469F
9.36e6*
36.49
ES 234678F
1.15e7
36.84
ES 123789F
1.06e7
37.83
Abs. Int.
3.78e6
1.89e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.17e3
0%
ES 123478F
2.05e7
36.04
ES 123678F
2.29e7
36.18
CS 123469F
1.79e7*
36.49
ES 234678F
2.11e7
36.84
ES 123789F
2.00e7
37.83
Abs. Int.
7.22e6
3.61e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.55e3
0%
Abs. Int.
9.72e3
4.86e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

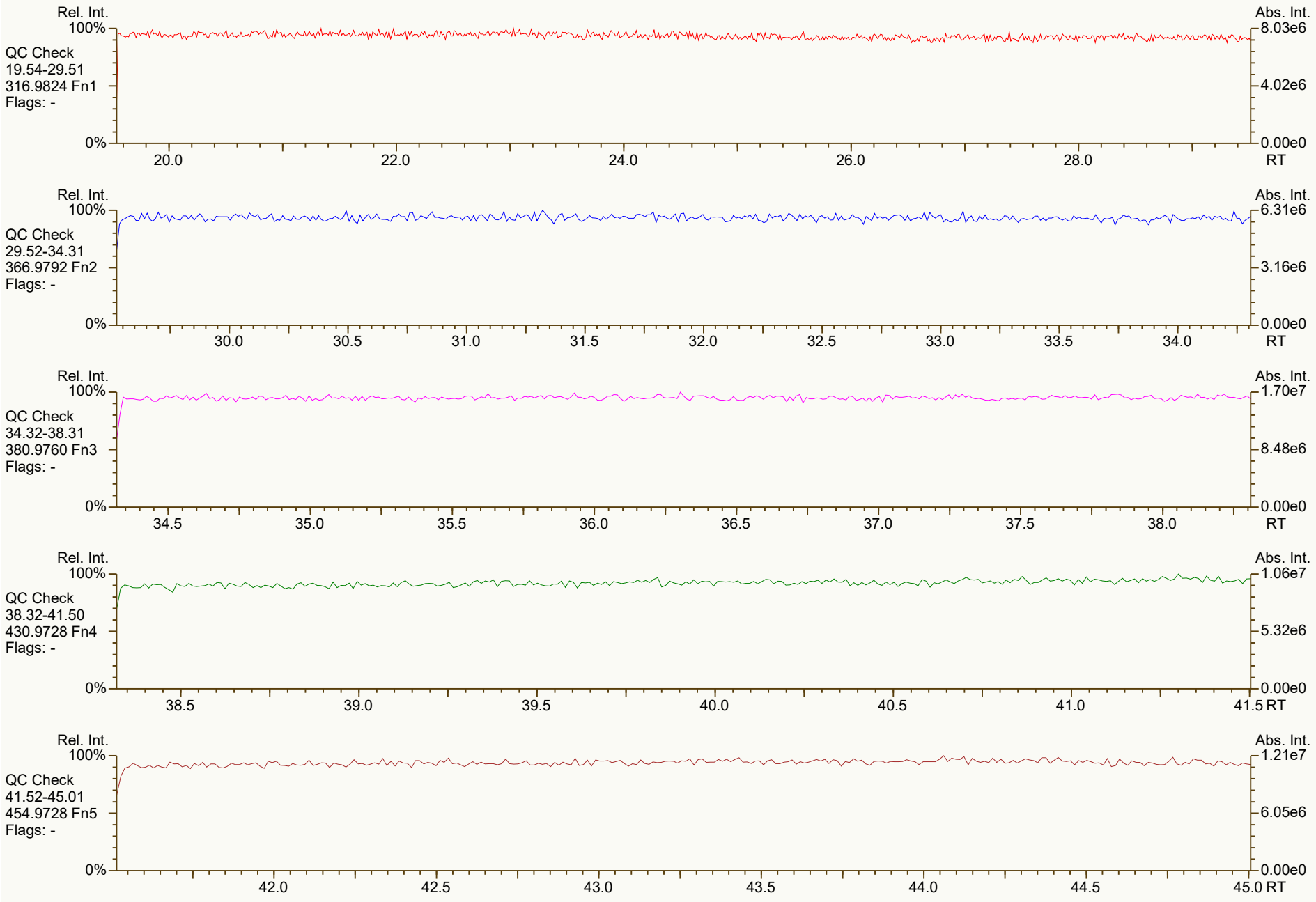

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 2.01e3
0%
1234678F
1.67e8
39.35
1234789F
1.44e8
40.71
Abs. Int.
6.39e7
3.19e7
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 2.39e3
0%
1234678F
1.62e8
39.35
1234789F
1.41e8
40.71
Abs. Int.
6.34e7
3.17e7
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.67e3
0%
ES 1234678F
7.99e6*
39.34
CS 1234689F
6.90e6*
39.75
ES 1234789F
7.27e6*
40.70
Abs. Int.
2.96e6
1.48e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.48e3
0%
ES 1234678F
1.74e7*
39.34
CS 1234689F
1.53e7*
39.75
ES 1234789F
1.49e7*
40.70
Abs. Int.
6.42e6
3.21e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.65e3
0%
Abs. Int.
6.98e3
3.49e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

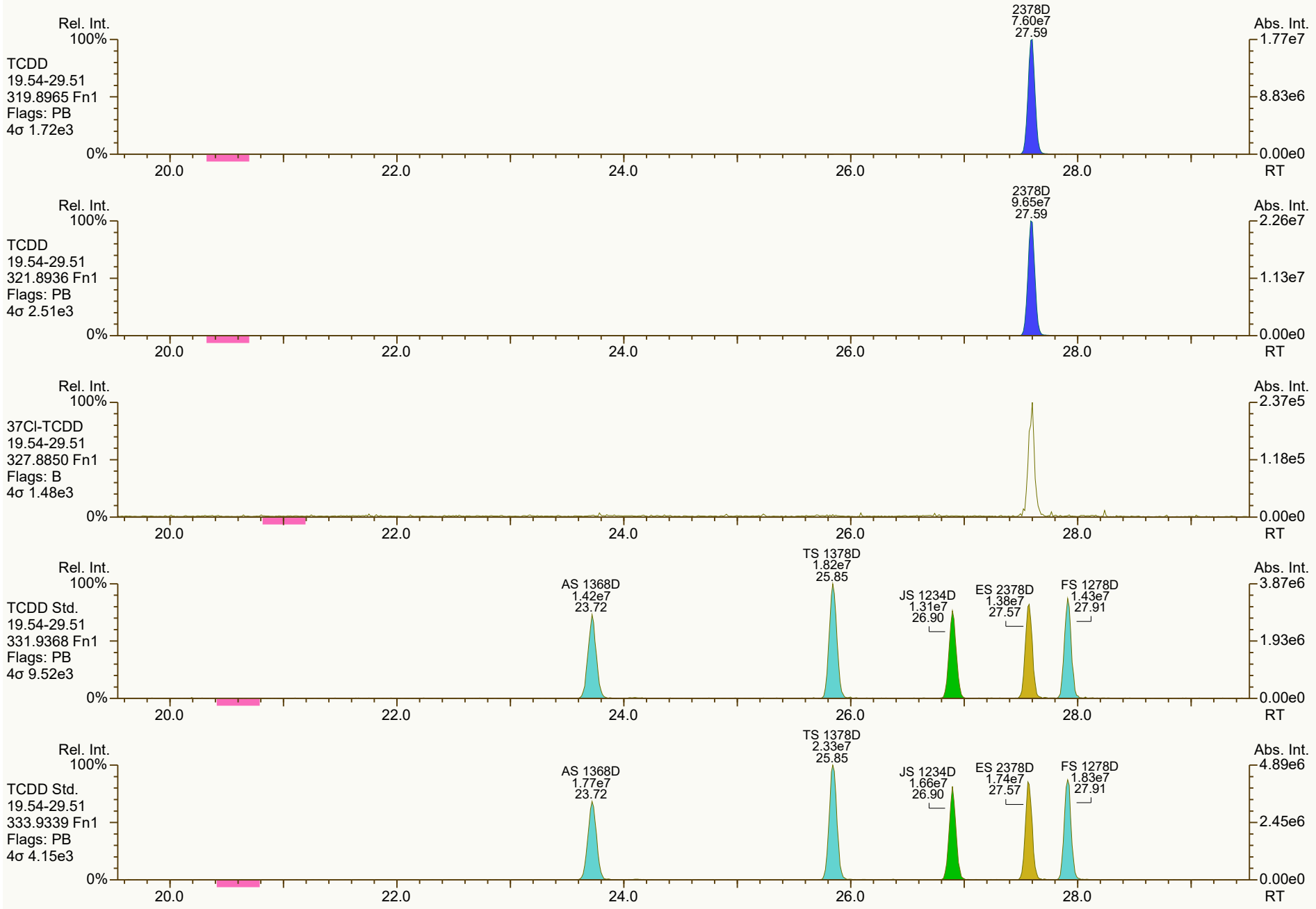

OCDF
2.12e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
6.43e7
3.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.36e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
0%
Abs. Int.
7.05e7
3.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
6.13e6
3.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
6.57e6
3.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
5.27e3
2.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

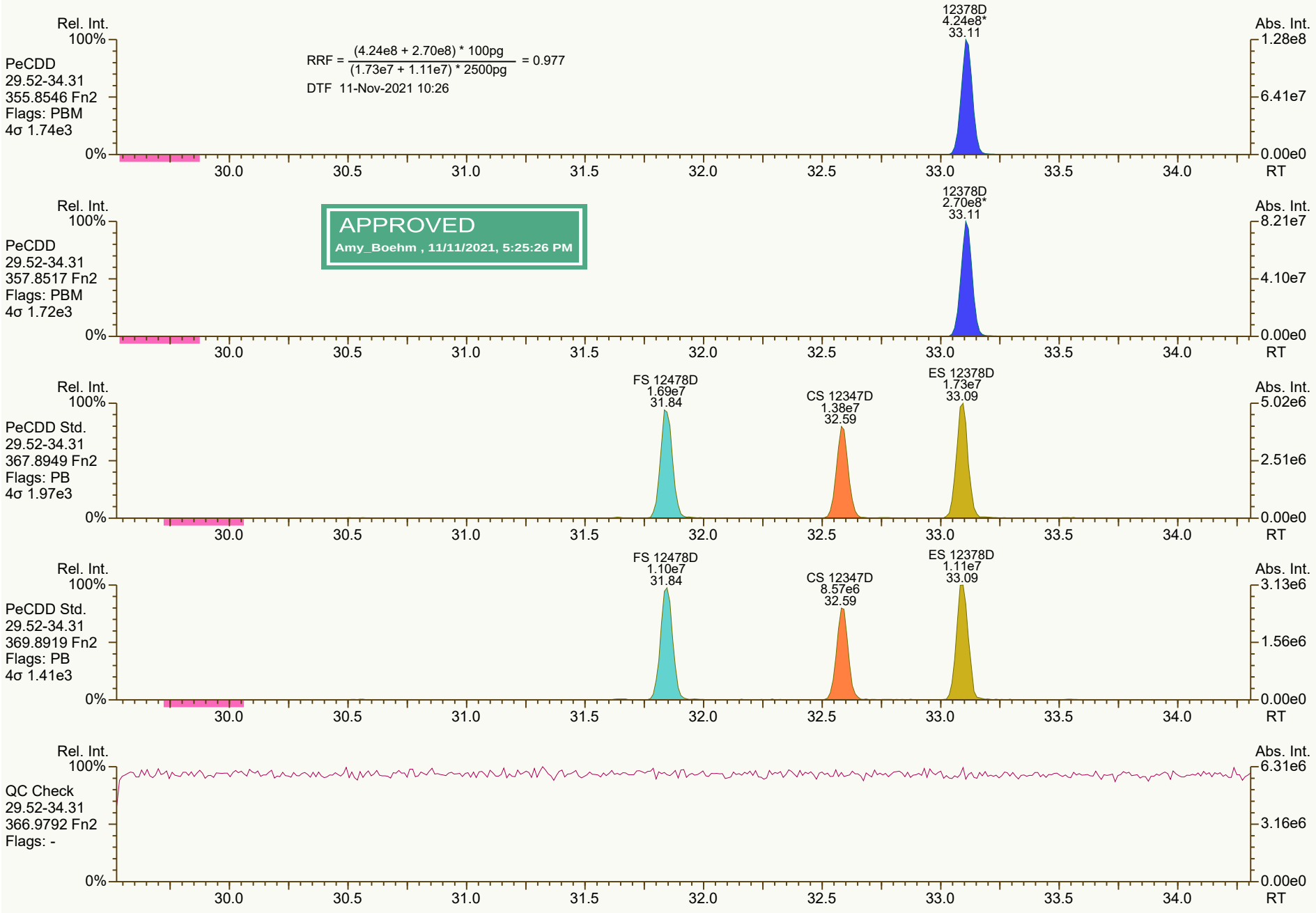
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

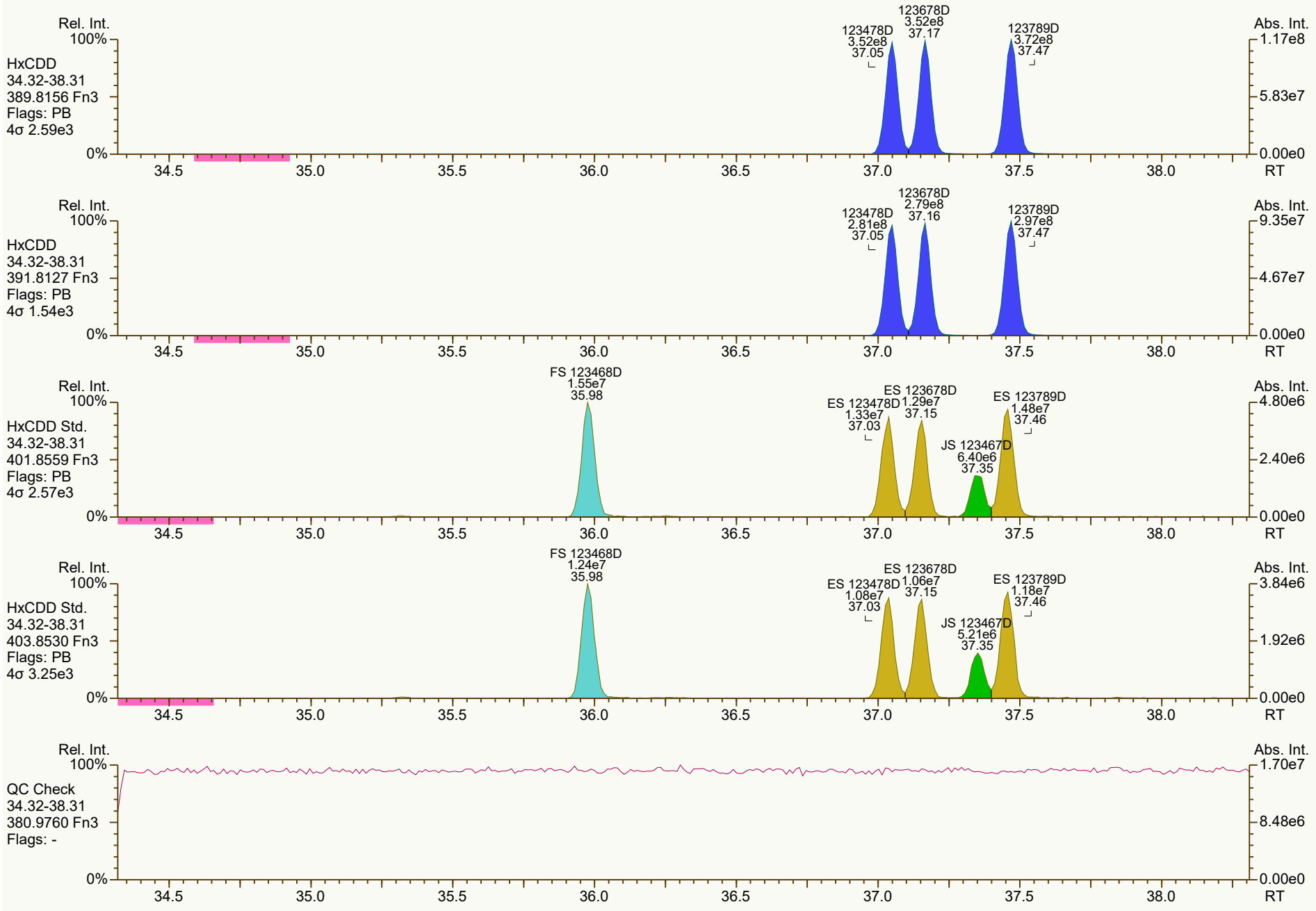
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

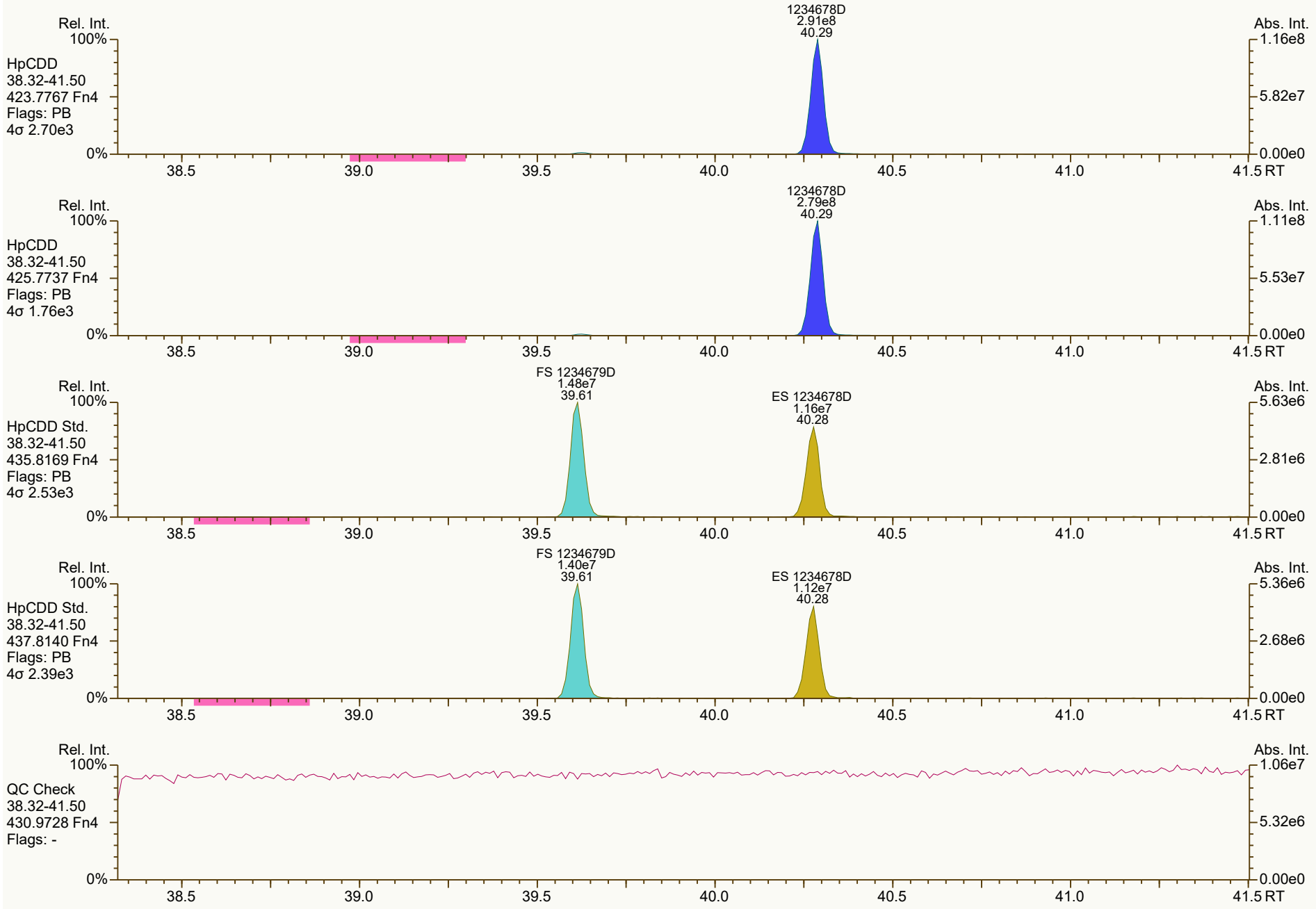
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF				Checkcode: 172-736-WQL	
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C10	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

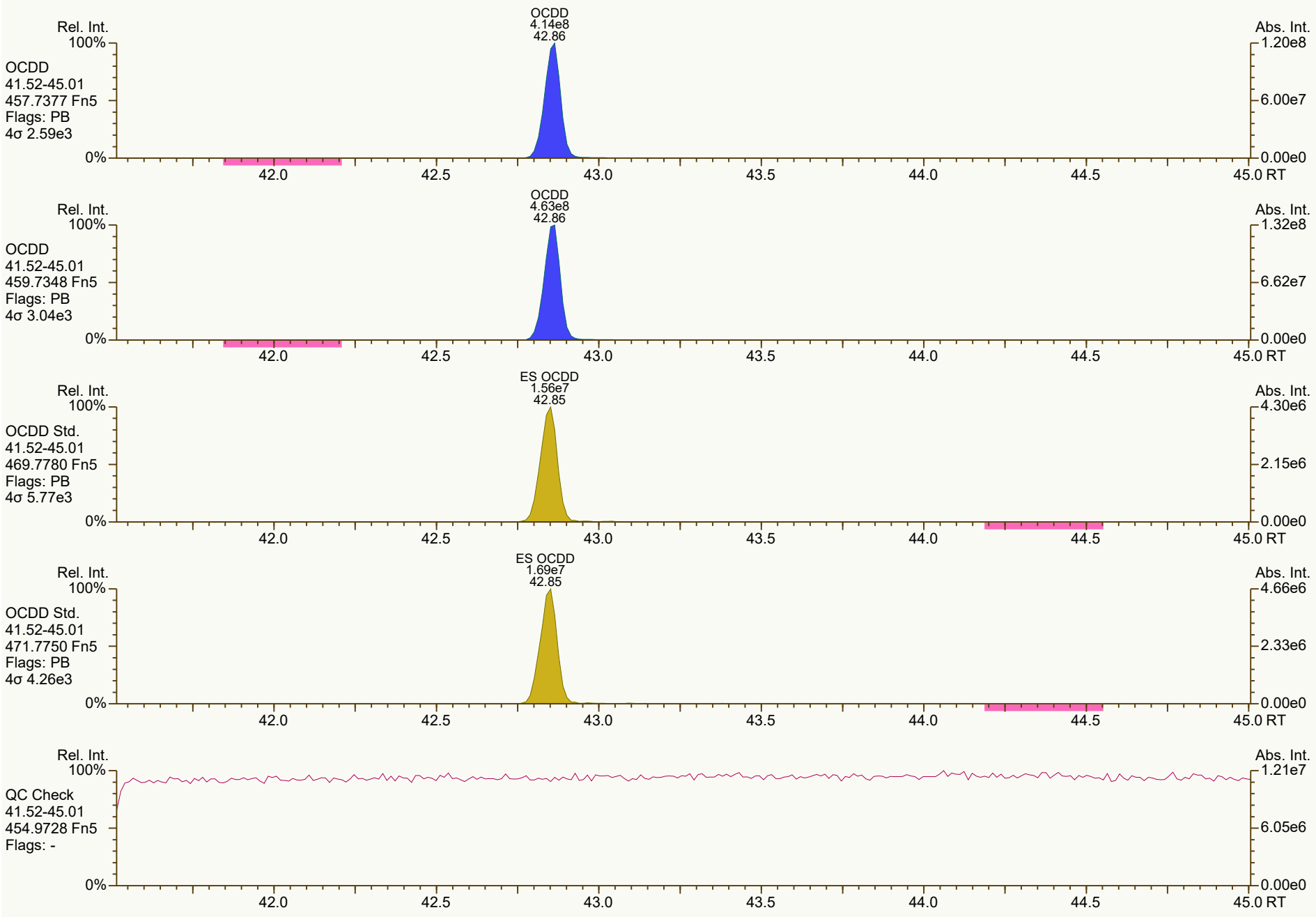

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.03e6
4.02e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
6.31e6
3.16e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.70e7
8.48e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.06e7
5.32e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.21e7
6.05e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
0%
2378D
7.60e7
27.59
Abs. Int.
1.77e7
8.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
0%
2378D
9.65e7
27.59
Abs. Int.
2.26e7
1.13e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
2.37e5
1.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
0%
AS 1368D
1.42e7
23.72
TS 1378D
1.82e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
Abs. Int.
3.87e6
1.93e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
0%
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.83e7
27.91
Abs. Int.
4.89e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.74e3
0%
RRF = (4.24e8 + 2.70e8) * 100pg / (1.73e7 + 1.11e7) * 2500pg = 0.977
DTF 11-Nov-2021 10:26
12378D
4.24e8*
33.11
Abs. Int.
1.28e8
6.41e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.72e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:25:26 PM
12378D
2.70e8*
33.11
Abs. Int.
8.21e7
4.10e7
0.00e0
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 1.97e3
0%
FS 12478D
1.69e7
31.84
CS 12347D
1.38e7
32.59
ES 12378D
1.73e7
33.09
Abs. Int.
5.02e6
2.51e6
0.00e0
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 1.41e3
0%
FS 12478D
1.10e7
31.84
CS 12347D
8.57e6
32.59
ES 12378D
1.11e7
33.09
Abs. Int.
3.13e6
1.56e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.31e6
3.16e6
0.00e0

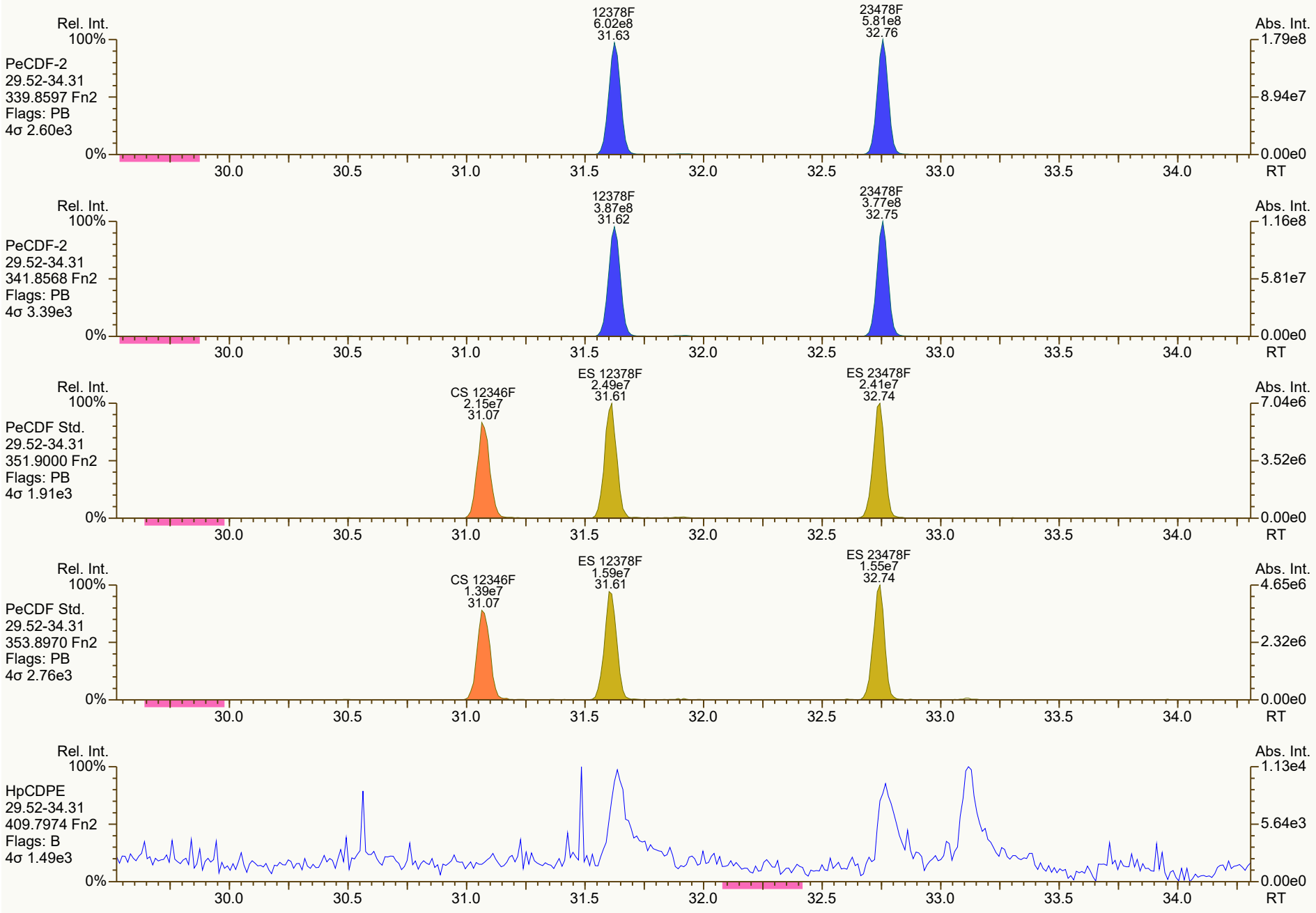

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
123478D
3.52e8
37.05
123678D
3.52e8
37.17
123789D
3.72e8
37.47
Abs. Int.
1.17e8
5.83e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
123478D
2.81e8
37.05
123678D
2.79e8
37.16
123789D
2.97e8
37.47
Abs. Int.
9.35e7
4.67e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
FS 123468D
1.55e7
35.98
ES 123478D
1.33e7
37.03
ES 123678D
1.29e7
37.15
JS 123467D
6.40e6
37.35
ES 123789D
1.48e7
37.46
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
FS 123468D
1.24e7
35.98
ES 123478D
1.08e7
37.03
ES 123678D
1.06e7
37.15
JS 123467D
5.21e6
37.35
ES 123789D
1.18e7
37.46
Abs. Int.
3.84e6
1.92e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.70e7
8.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

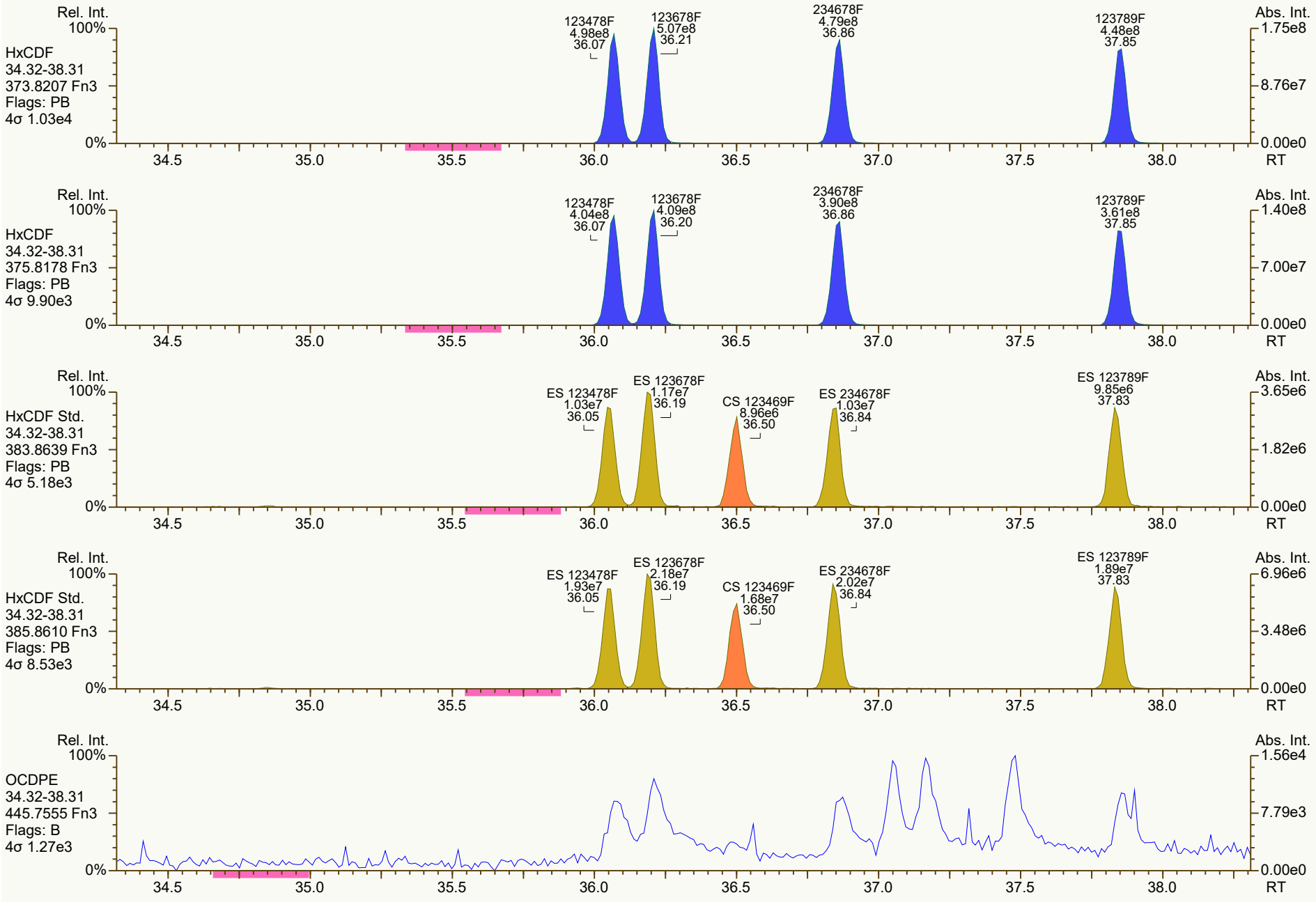

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
1234678D
2.91e8
40.29
Abs. Int.
1.16e8
5.82e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
1234678D
2.79e8
40.29
Abs. Int.
1.11e8
5.53e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
FS 1234679D
1.48e7
39.61
ES 1234678D
1.16e7
40.28
Abs. Int.
5.63e6
2.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
FS 1234679D
1.40e7
39.61
ES 1234678D
1.12e7
40.28
Abs. Int.
5.36e6
2.68e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.06e7
5.32e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

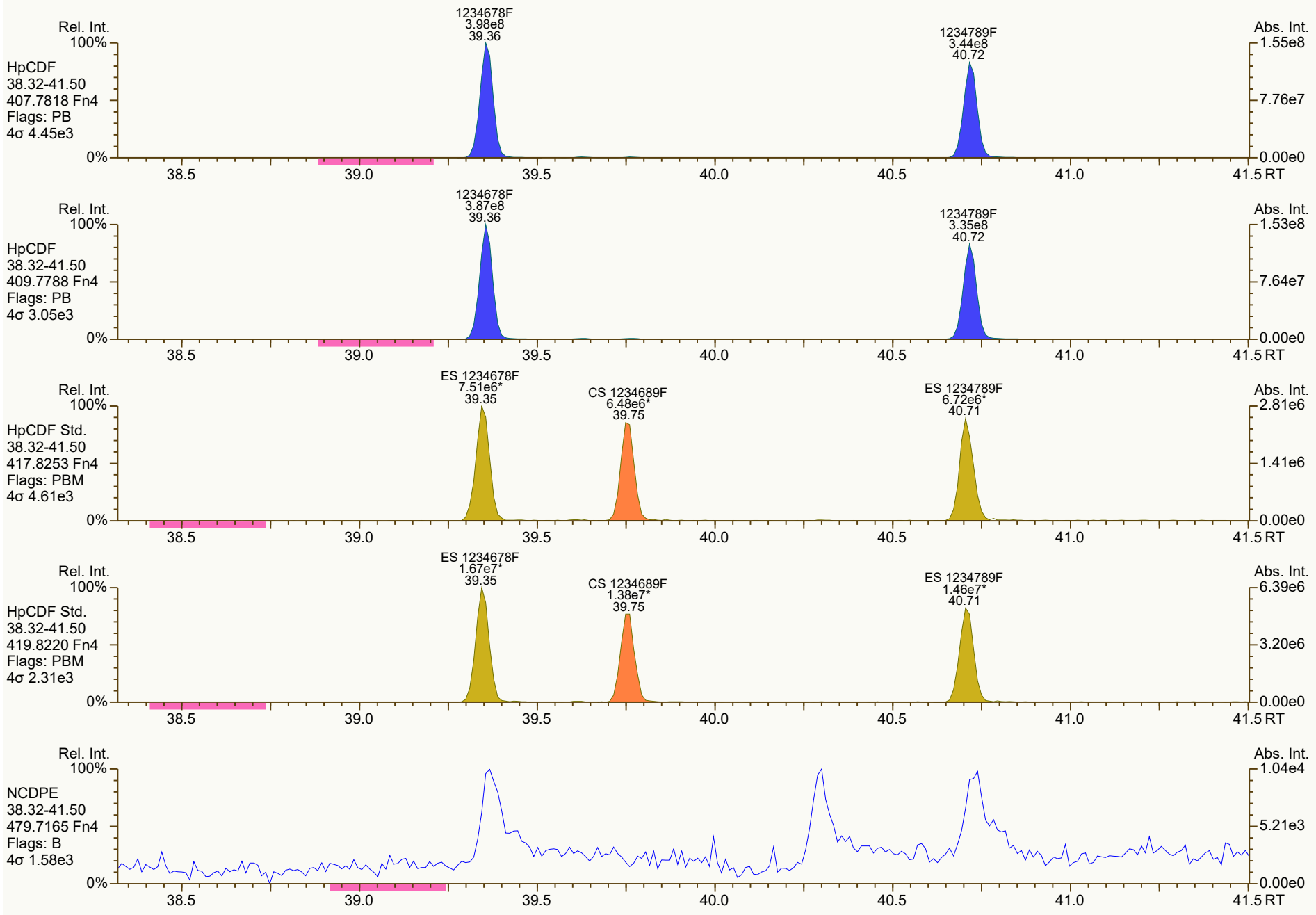

OCDD
4.14e8
42.86
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.59e3
0%
Abs. Int.
1.20e8
6.00e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.63e8
42.86
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
1.32e8
6.62e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.56e7
42.85
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.77e3
0%
Abs. Int.
4.30e6
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.69e7
42.85
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.26e3
0%
Abs. Int.
4.66e6
2.33e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.21e7
6.05e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

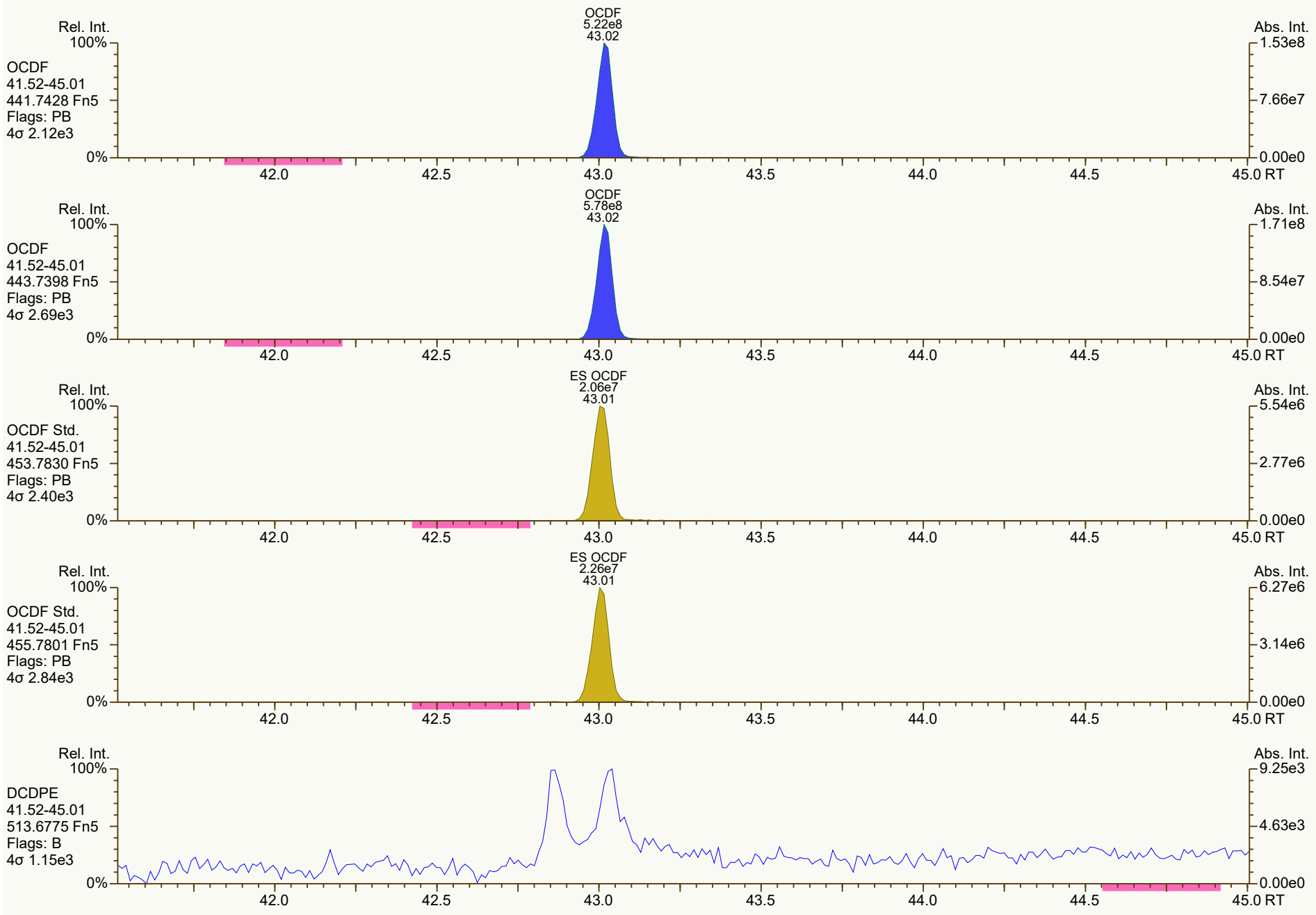

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 2.26e3
0%
2378F
9.73e7
26.68
Abs. Int.
2.17e7
1.08e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 2.01e3
0%
2378F
1.26e8
26.68
Abs. Int.
2.85e7
1.42e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.95e4
0%
AS 1368F
2.07e7
21.49
JS 1234F
1.84e7
25.24
ES 2378F
1.95e7
26.66
Abs. Int.
4.38e6
2.19e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 7.53e3
0%
AS 1368F
2.62e7
21.49
JS 1234F
2.32e7
25.24
ES 2378F
2.51e7
26.65
Abs. Int.
5.43e6
2.72e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.55e3
0%
Abs. Int.
6.34e3
3.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

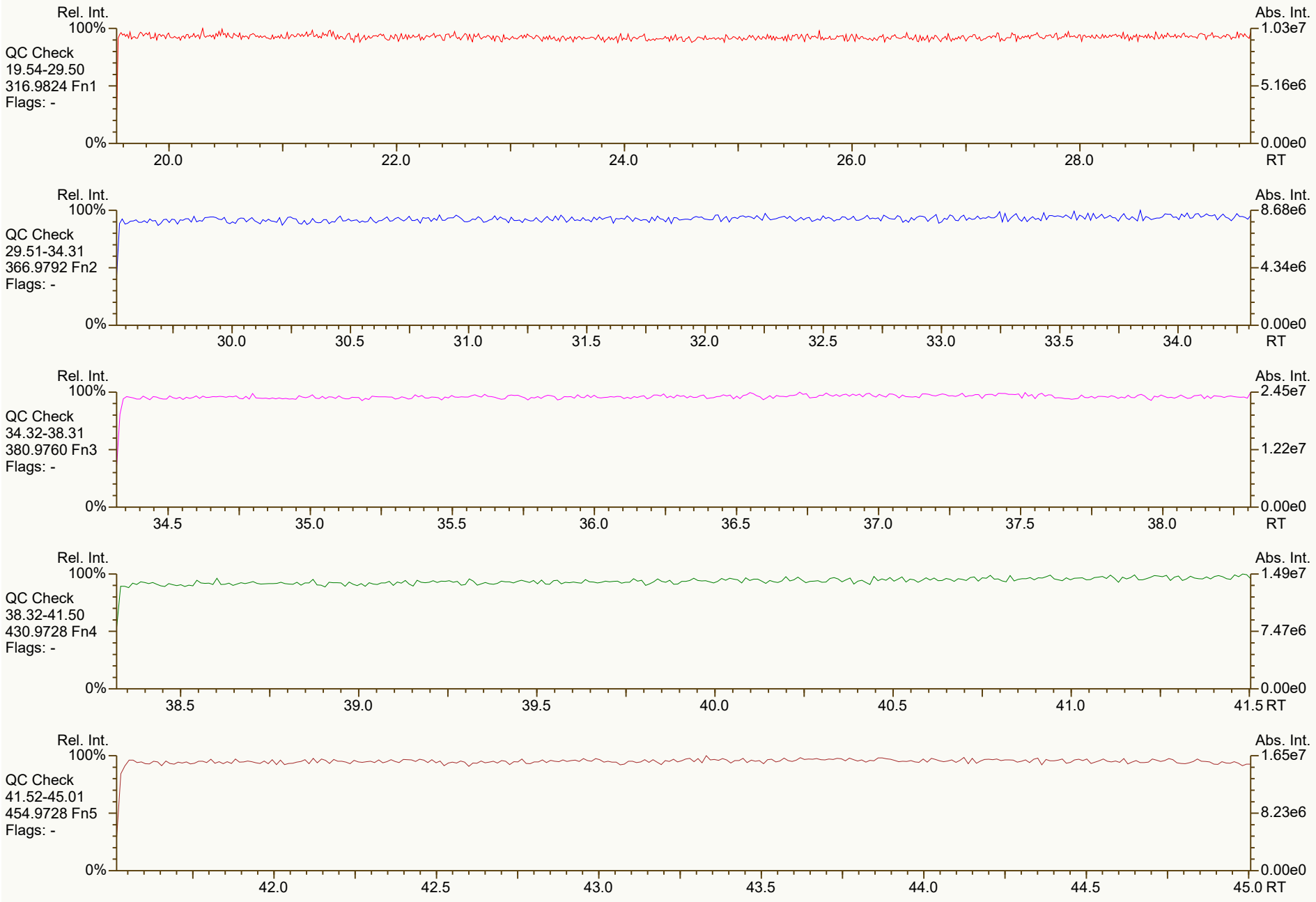

Rel. Int.
100%
0%
Abs. Int.
9.54e3
4.77e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 2.51e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.38e4
6.90e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.99e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.03e6
4.02e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PB
4σ 2.60e3
12378F
6.02e8
31.63
23478F
5.81e8
32.76
Abs. Int.
1.79e8
8.94e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PB
4σ 3.39e3
12378F
3.87e8
31.62
23478F
3.77e8
32.75
Abs. Int.
1.16e8
5.81e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 1.91e3
CS 12346F
2.15e7
31.07
ES 12378F
2.49e7
31.61
ES 23478F
2.41e7
32.74
Abs. Int.
7.04e6
3.52e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.76e3
CS 12346F
1.39e7
31.07
ES 12378F
1.59e7
31.61
ES 23478F
1.55e7
32.74
Abs. Int.
4.65e6
2.32e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.49e3
Abs. Int.
1.13e4
5.64e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 1.03e4
123478F
4.98e8
36.07
123678F
5.07e8
36.21
234678F
4.79e8
36.86
123789F
4.48e8
37.85
Abs. Int.
1.75e8
8.76e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 9.90e3
123478F
4.04e8
36.07
123678F
4.09e8
36.20
234678F
3.90e8
36.86
123789F
3.61e8
37.85
Abs. Int.
1.40e8
7.00e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.18e3
ES 123478F
1.03e7
36.05
ES 123678F
1.17e7
36.19
CS 123469F
8.96e6
36.50
ES 234678F
1.03e7
36.84
ES 123789F
9.85e6
37.83
Abs. Int.
3.65e6
1.82e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 8.53e3
ES 123478F
1.93e7
36.05
ES 123678F
2.18e7
36.19
CS 123469F
1.68e7
36.50
ES 234678F
2.02e7
36.84
ES 123789F
1.89e7
37.83
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.27e3
Abs. Int.
1.56e4
7.79e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e8
39.36
1234789F
3.44e8
40.72
Abs. Int.
1.55e8
7.76e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e8
39.36
1234789F
3.35e8
40.72
Abs. Int.
1.53e8
7.64e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
Abs. Int.
2.81e6
1.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
Abs. Int.
1.04e4
5.21e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

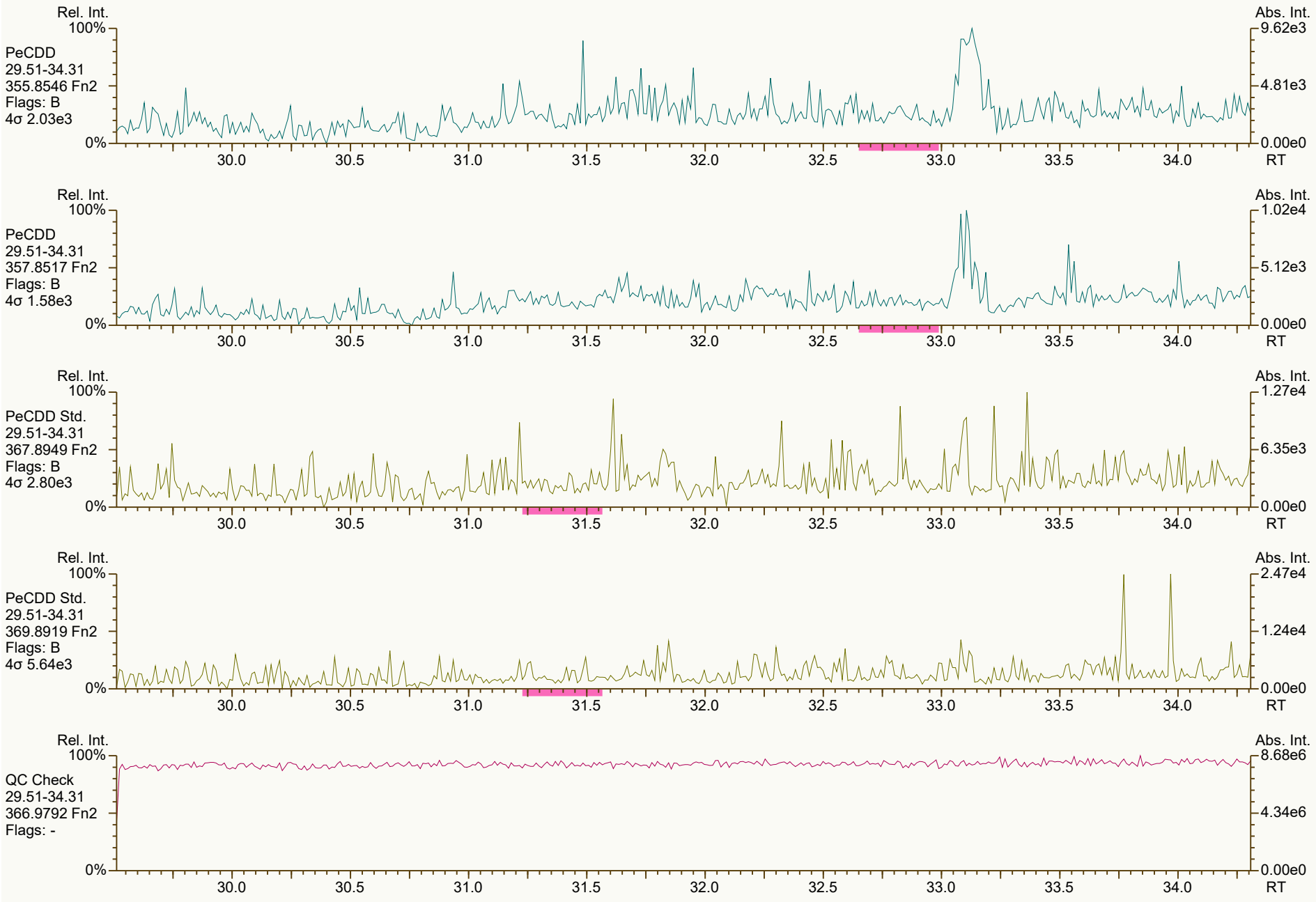

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
OCDF
5.22e8
43.02
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
OCDF
5.78e8
43.02
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
ES OCDF
2.06e7
43.01
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDF
2.26e7
43.01
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.03e7
5.16e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.68e6
4.34e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.45e7
1.22e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.49e7
7.47e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.65e7
8.23e6
0.00e0



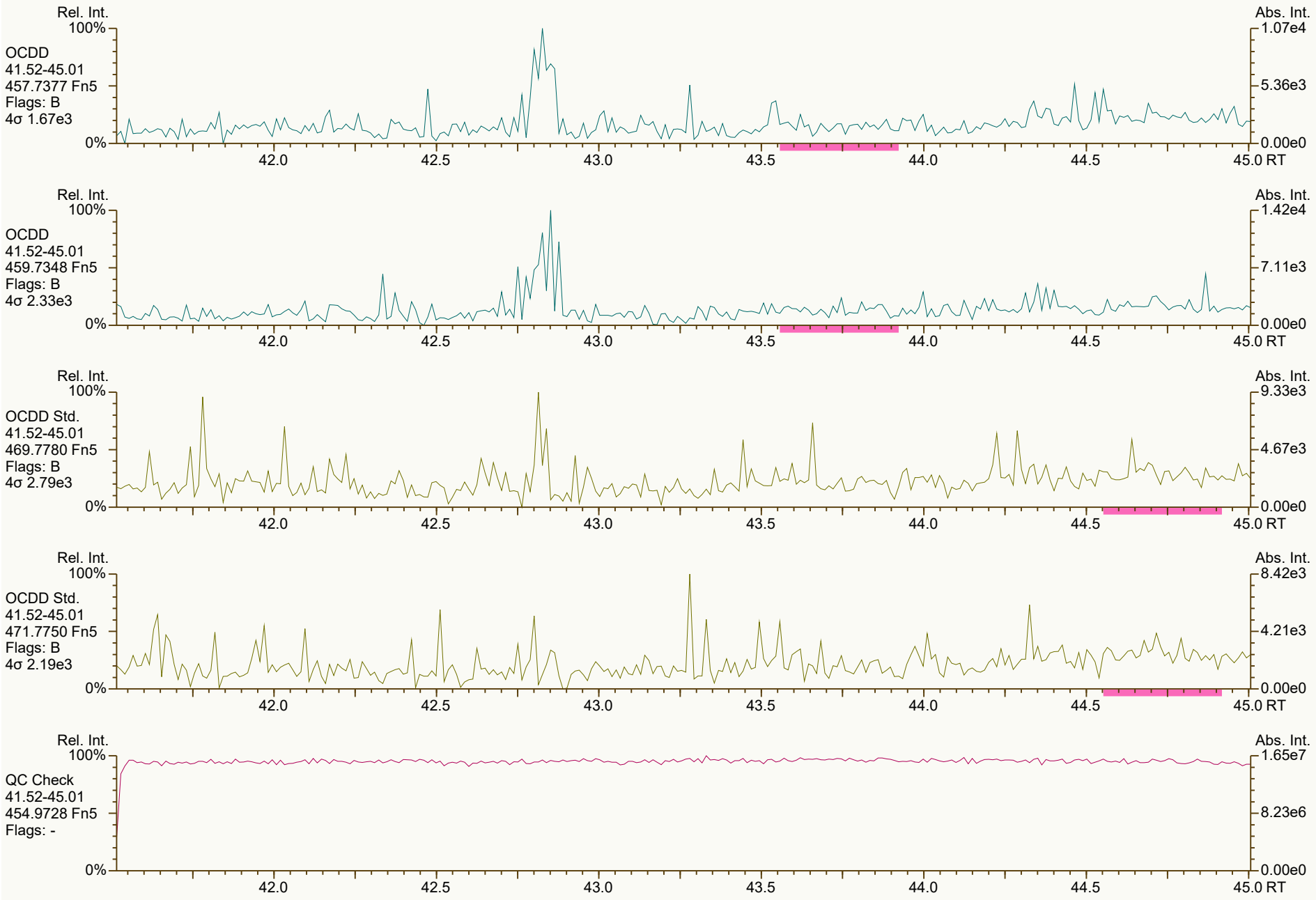
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4939, 4247, 1318 scc: 876-647
PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: B
4σ 2.56e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.75e3
0%
Abs. Int.
8.16e3
4.08e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: B
4σ 7.98e3
0%
Abs. Int.
2.72e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: B
4σ 6.62e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: B
4σ 2.80e3
0%
Abs. Int.
1.27e4
6.35e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: B
4σ 5.64e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.68e6
4.34e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

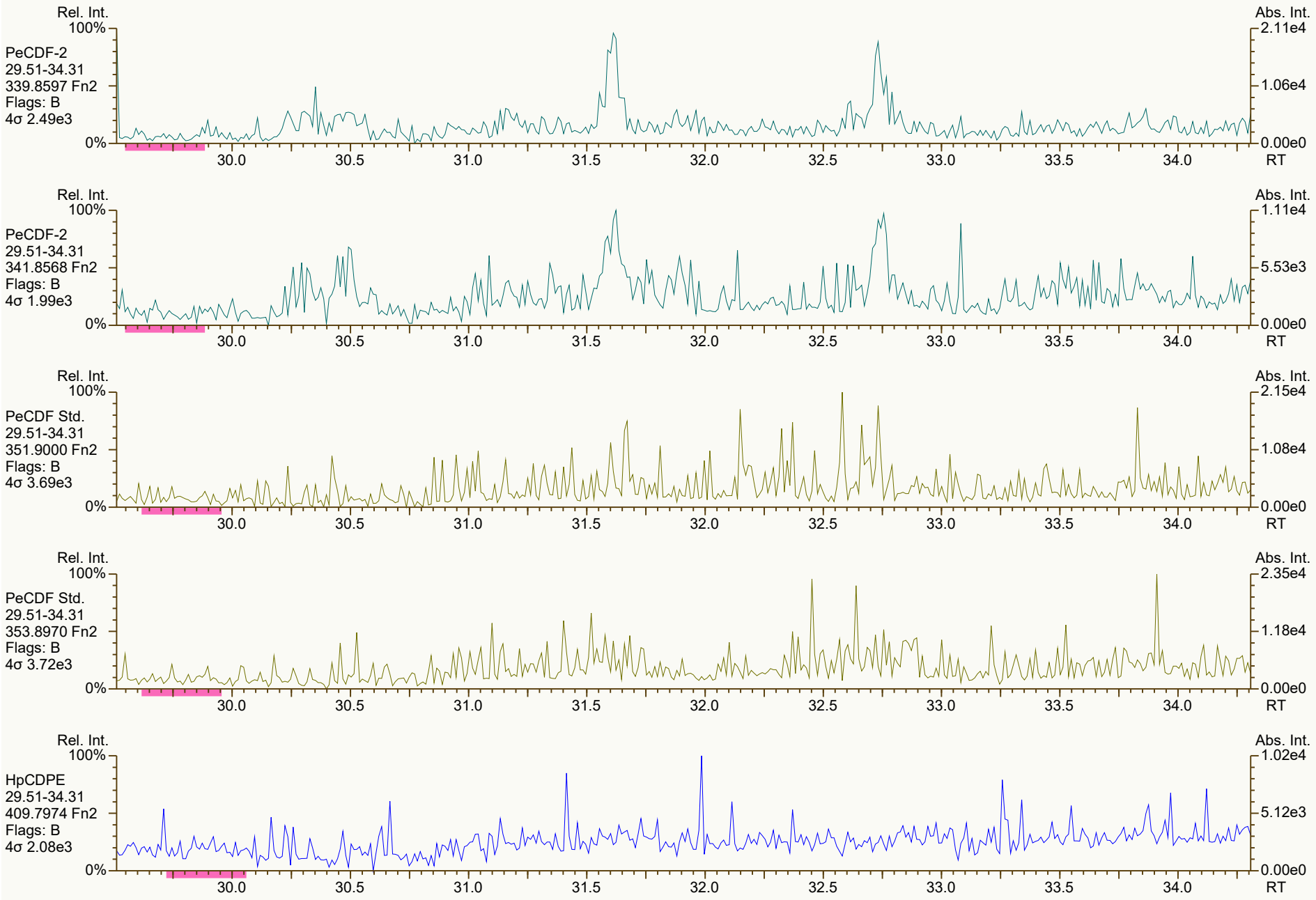

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: B
4σ 5.99e3
0%
Abs. Int.
1.61e4
8.05e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.45e7
1.22e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

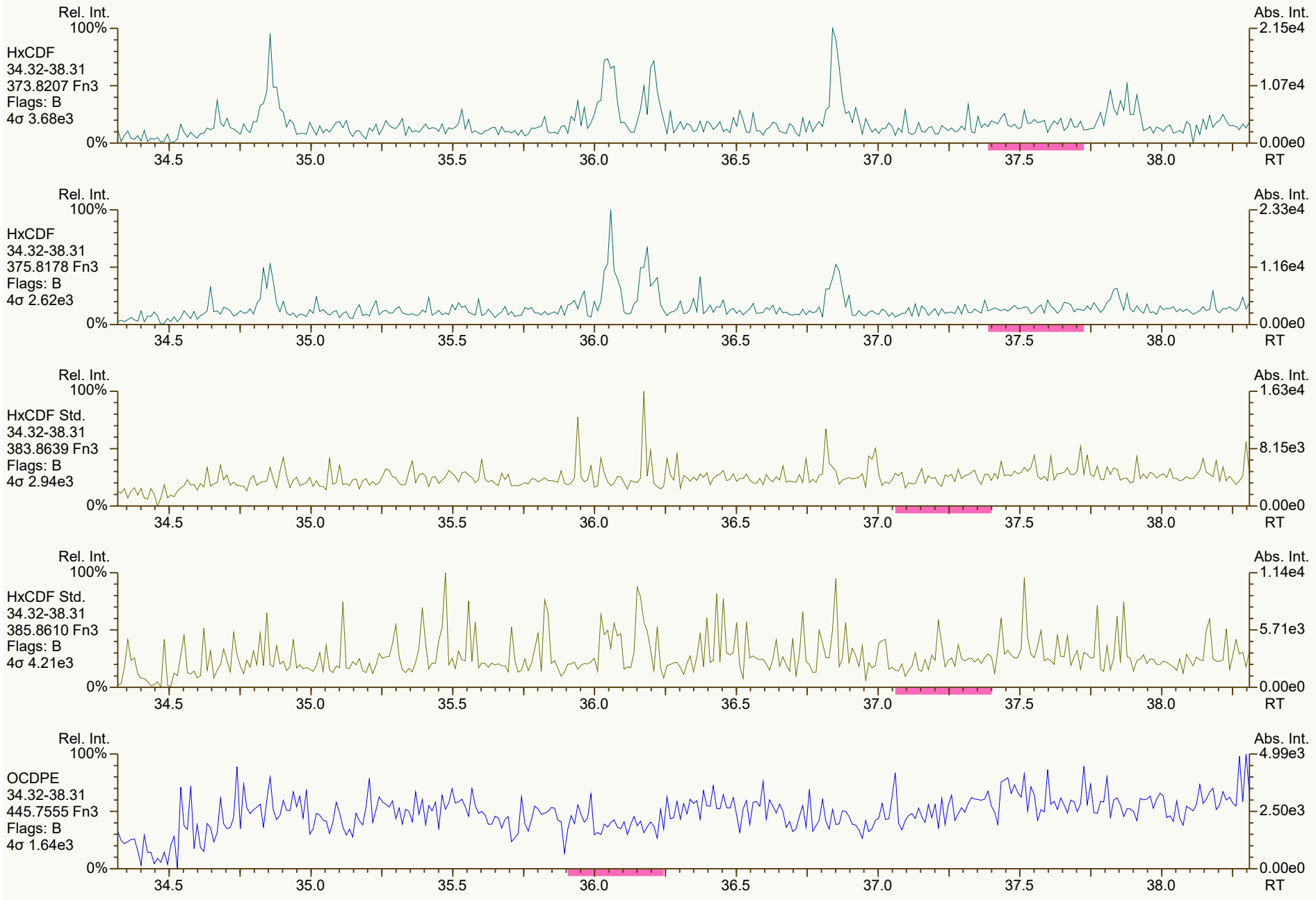

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.62e4
8.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: B
4σ 2.39e3
0%
Abs. Int.
2.45e4
1.23e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: B
4σ 2.97e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.49e7
7.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.07e4
5.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.42e4
7.11e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.65e7
8.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
2468F
3.48e5*
22.78
Abs. Int.
7.07e4
3.53e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
2468F
5.04e5*
22.78
Abs. Int.
1.06e5
5.32e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
Abs. Int.
5.11e4
2.56e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
Abs. Int.
2.83e4
1.42e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
9.47e3
4.73e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
8.70e3
4.35e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.84e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.49e3
4.75e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 3.09e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.03e7
5.16e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: B
4σ 2.49e3
0%
Abs. Int.
2.11e4
1.06e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: B
4σ 3.69e3
0%
Abs. Int.
2.15e4
1.08e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: B
4σ 3.72e3
0%
Abs. Int.
2.35e4
1.18e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
2.15e4
1.07e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.33e4
1.16e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: B
4σ 4.21e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.64e3
0%
Abs. Int.
4.99e3
2.50e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

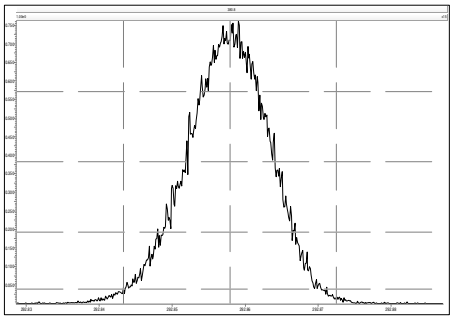

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: B
4σ 2.83e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: B
4σ 5.26e3
0%
Abs. Int.
2.80e4
1.40e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.49e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.02e4
5.08e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
6.88e3
3.44e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.40e3
0%
Abs. Int.
4.10e3
2.05e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

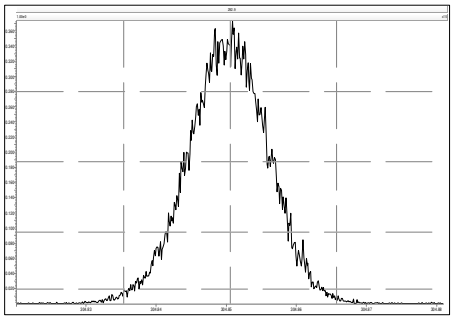
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

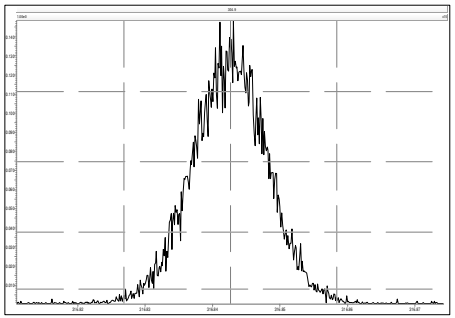
M 292.9824 R 10731



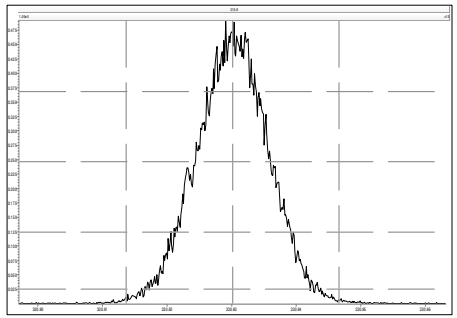
M 304.9824 R 11311



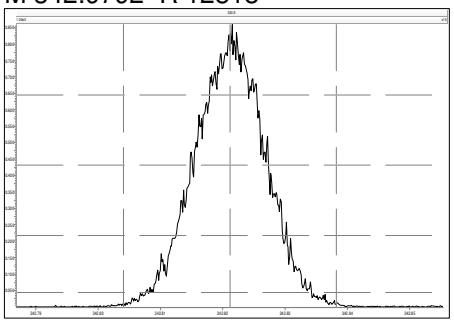
M 316.9824 R 12373



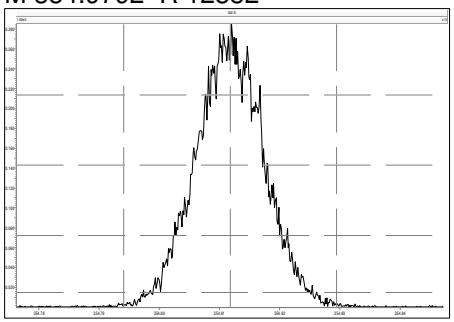
M 330.9792 R 12887



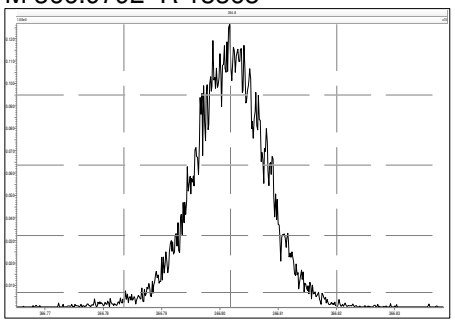
M 342.9792 R 12818



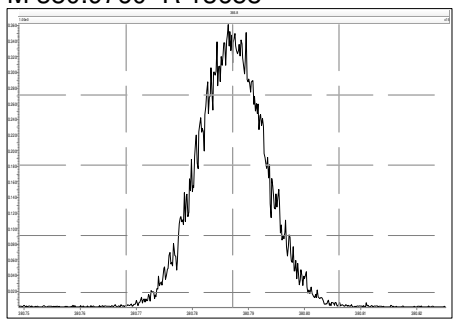
M 354.9792 R 12882



M 366.9792 R 13368



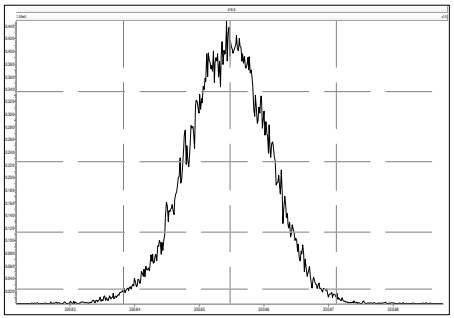
M 380.9760 R 13658



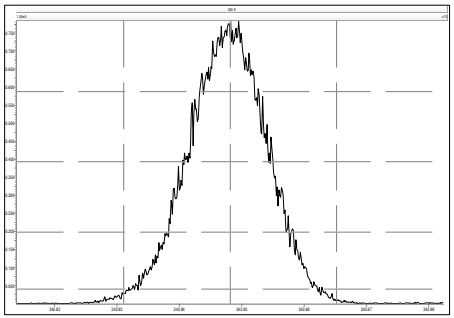
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

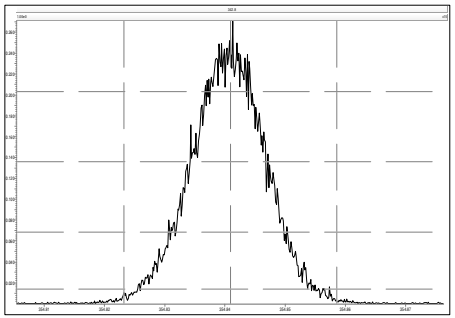
M 330.9792 R 11112



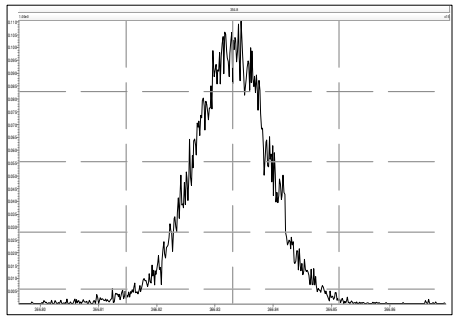
M 342.9792 R 11909



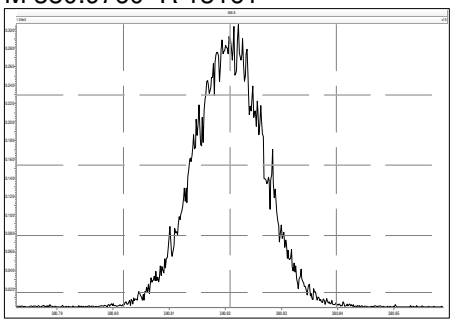
M 354.9792 R 11684



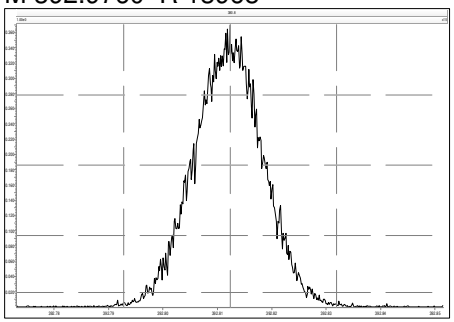
M 366.9792 R 11962



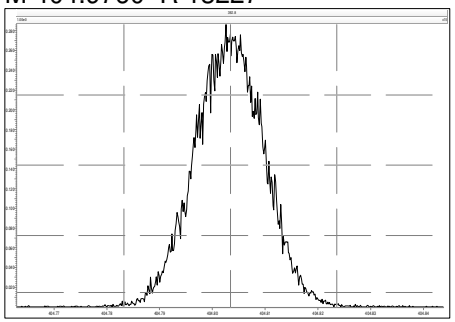
M 380.9760 R 13161



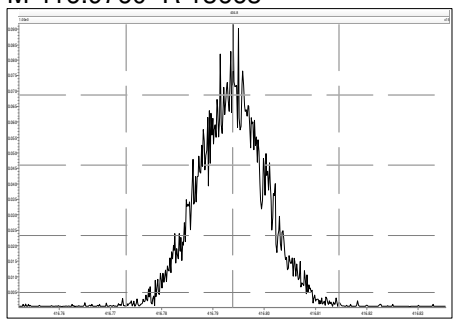
M 392.9760 R 13968



M 404.9760 R 13227



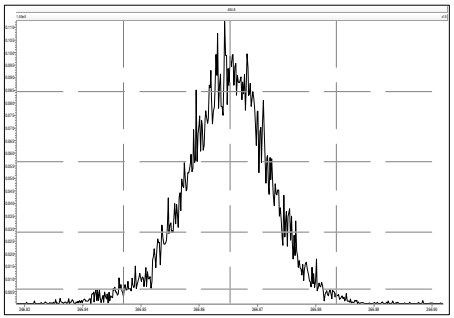
M 416.9760 R 13663



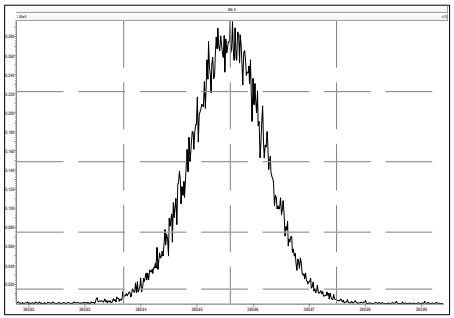
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

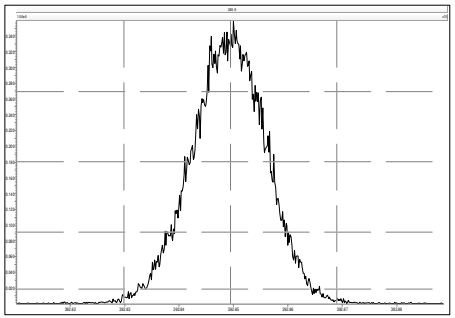
M 366.9792 R 10680



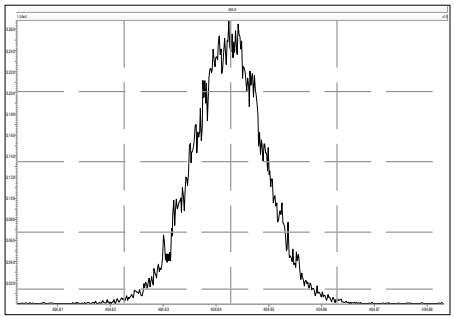
M 380.9760 R 12315



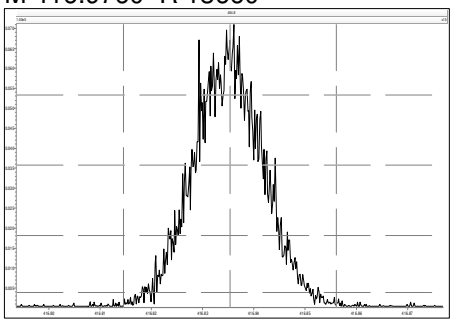
M 392.9760 R 12197



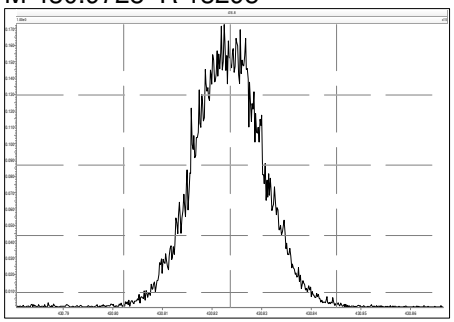
M 404.9760 R 12433



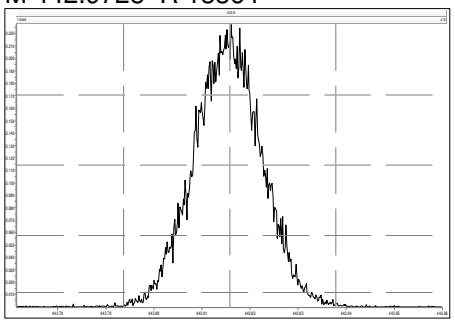
M 416.9760 R 13660



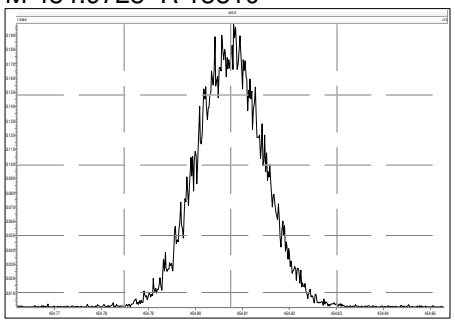
M 430.9728 R 13295



M 442.9728 R 13364



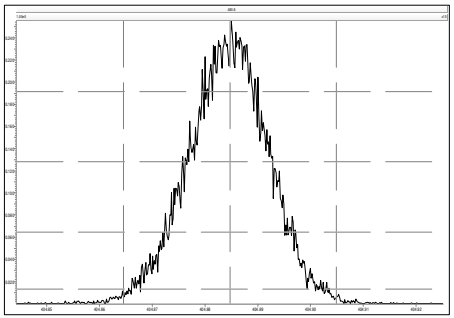
M 454.9728 R 13810



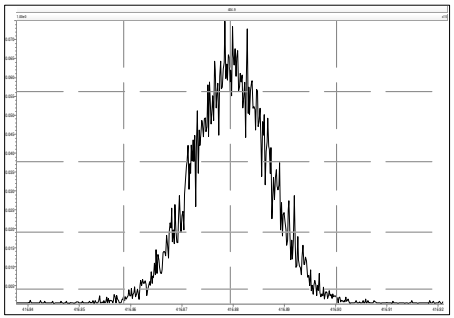
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

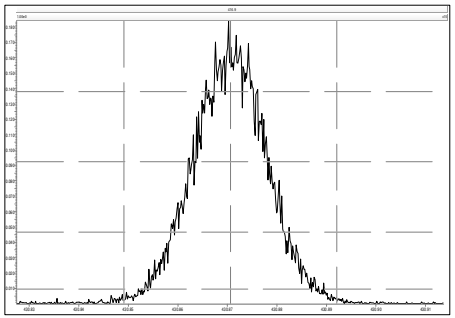
M 404.9760 R 11679



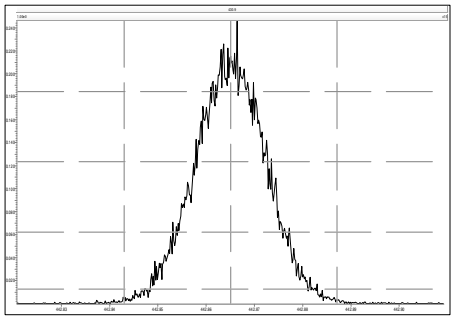
M 416.9760 R 12886



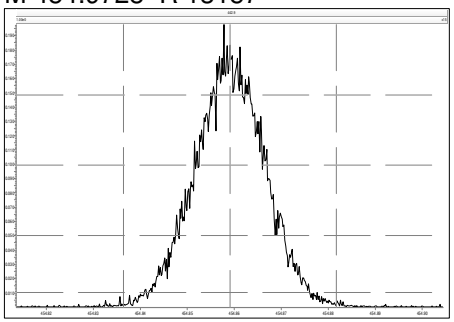
M 430.9728 R 12253



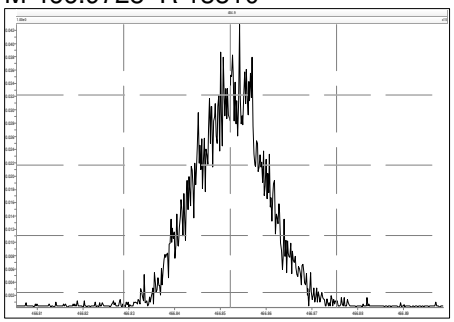
M 442.9728 R 12756



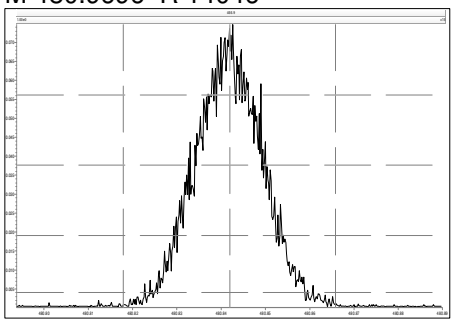
M 454.9728 R 13157



M 466.9728 R 13810



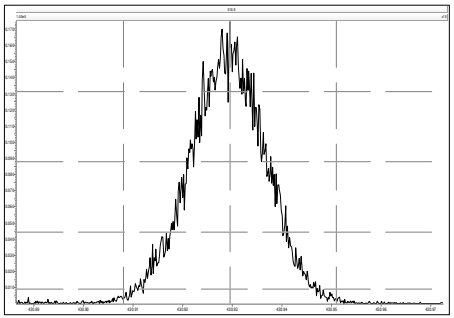
M 480.9696 R 14046



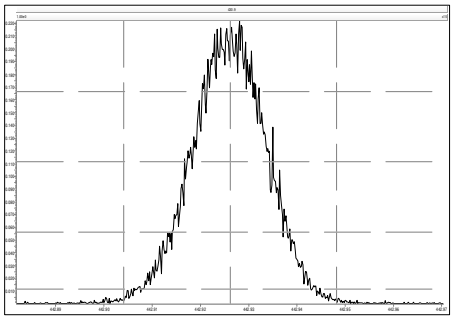
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

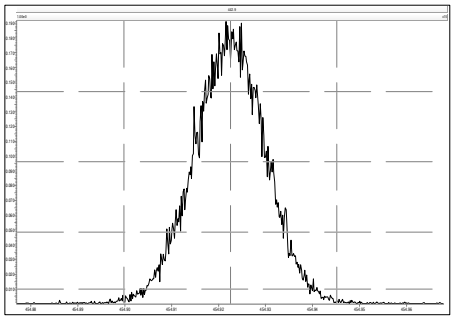
M 430.9728 R 11574



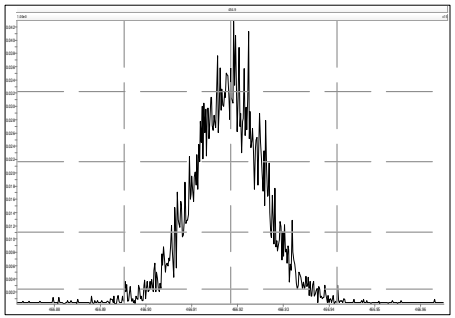
M 442.9728 R 12198



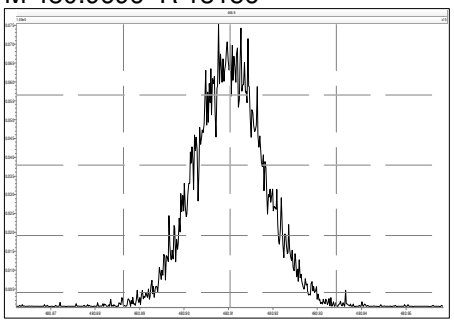
M 454.9728 R 12950



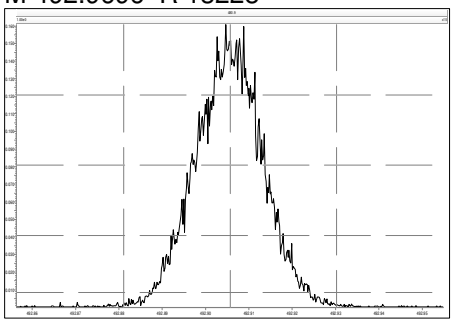
M 466.9728 R 13088



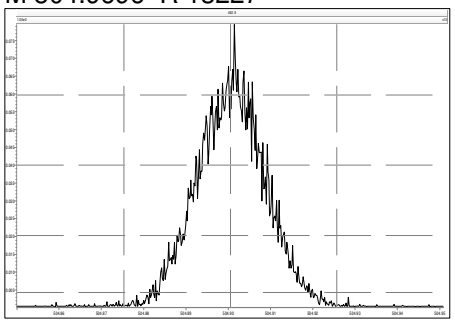
M 480.9696 R 13156



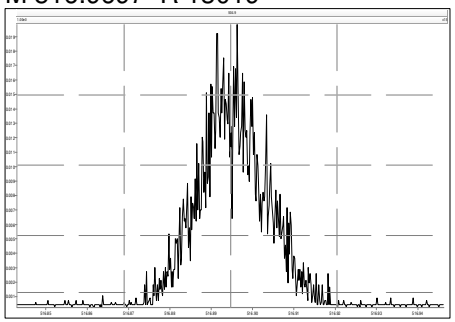
M 492.9696 R 13228



M 504.9696 R 13227



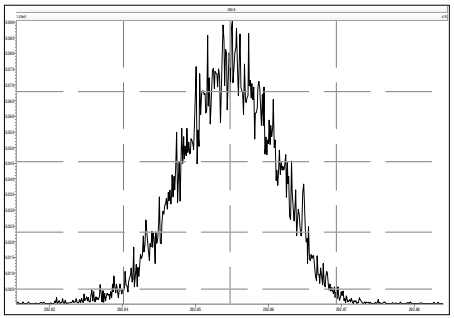
M 516.9697 R 13019



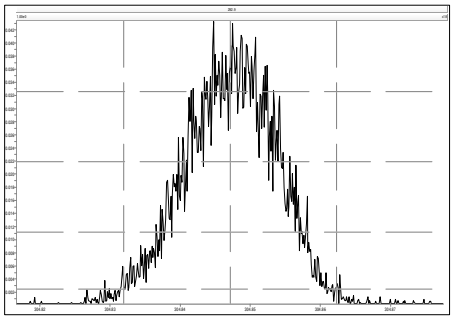
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

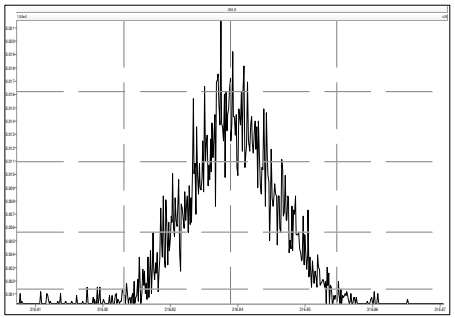
M 292.9824 R 10122



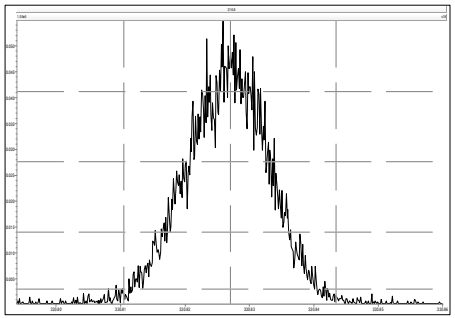
M 304.9824 R 10329



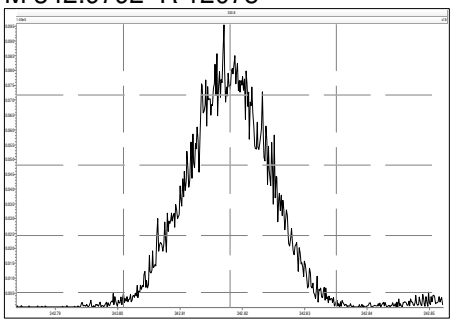
M 316.9824 R 11964



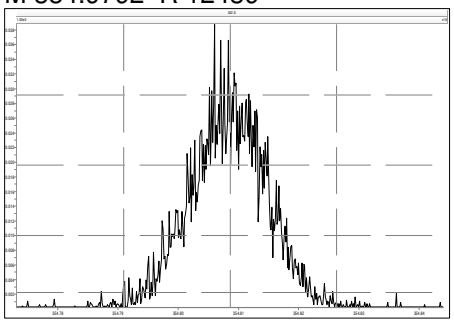
M 330.9792 R 11062



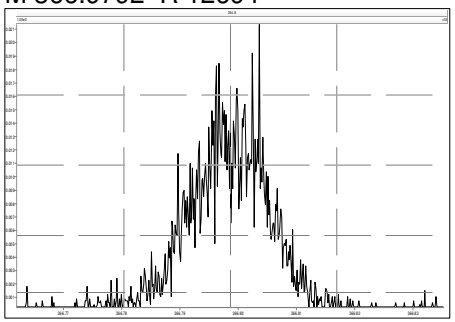
M 342.9792 R 12075



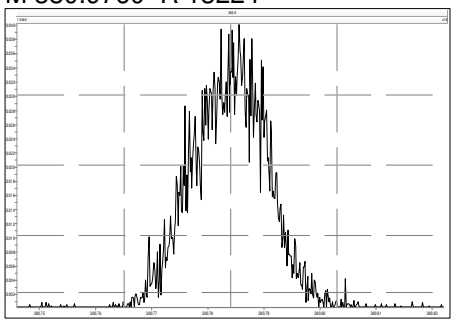
M 354.9792 R 12439



M 366.9792 R 12694



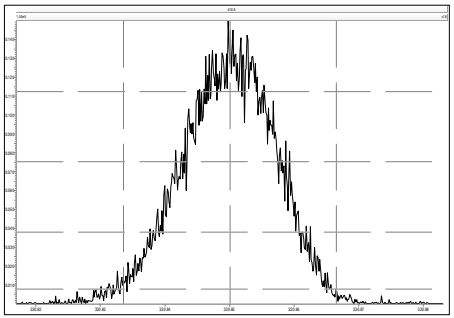
M 380.9760 R 13224



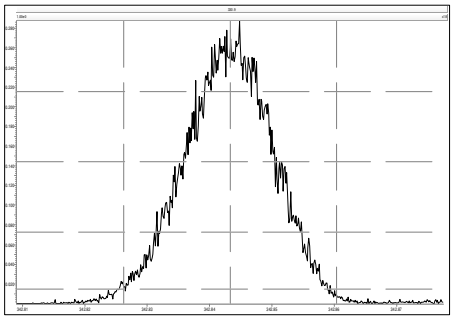
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

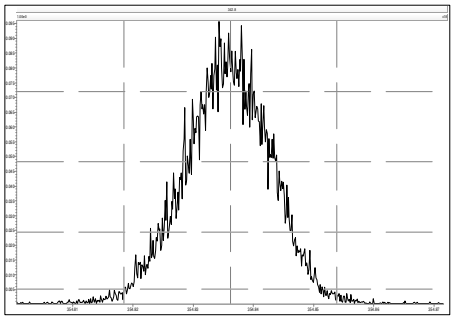
M 330.9792 R 10730



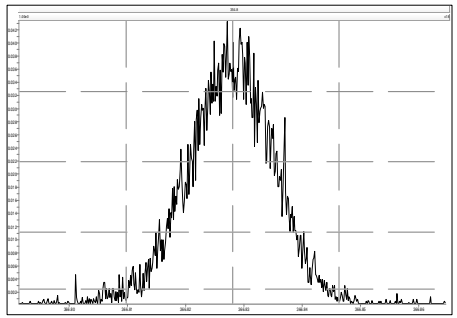
M 342.9792 R 10039



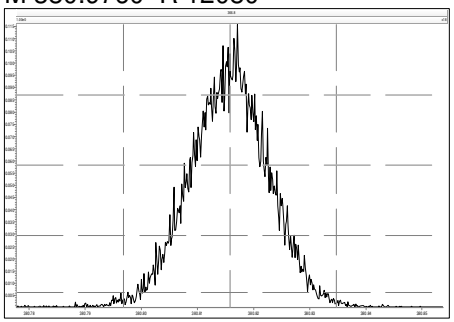
M 354.9792 R 11108



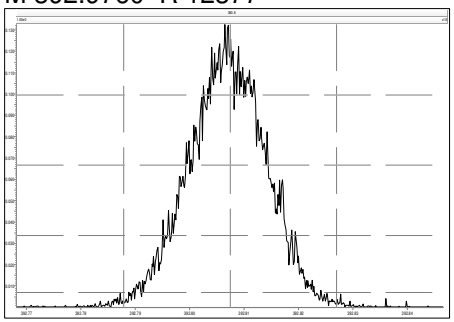
M 366.9792 R 11520



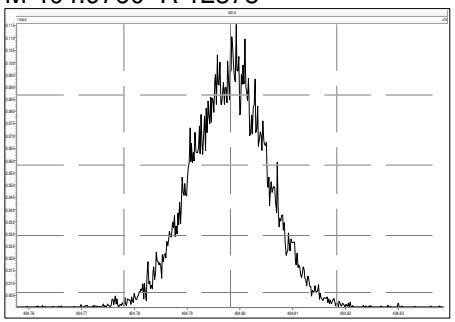
M 380.9760 R 12080



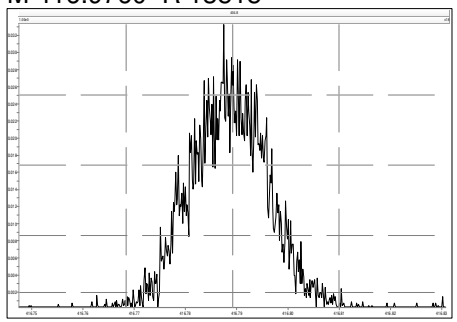
M 392.9760 R 12377



M 404.9760 R 12375



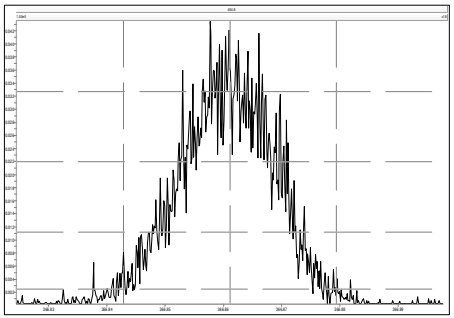
M 416.9760 R 13515



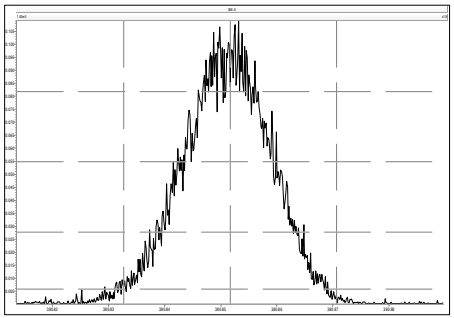
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

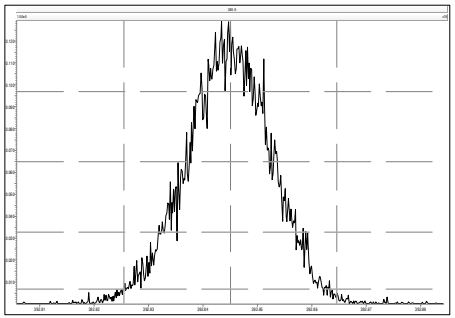
M 366.9792 R 10866



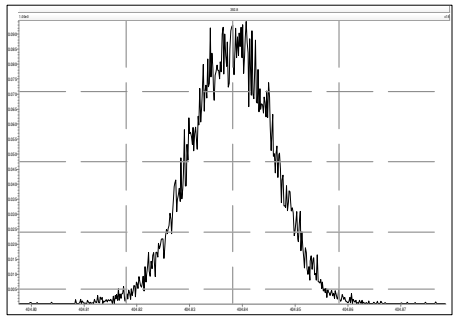
M 380.9760 R 10416



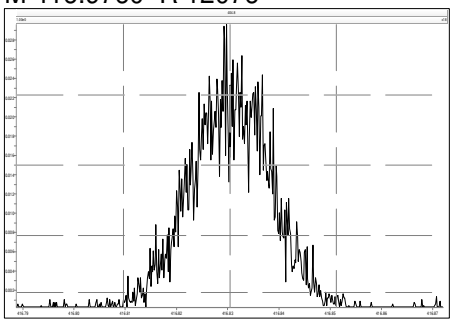
M 392.9760 R 10640



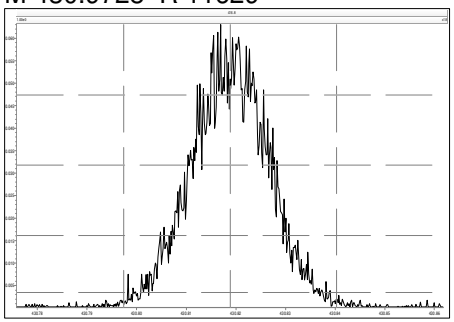
M 404.9760 R 11957



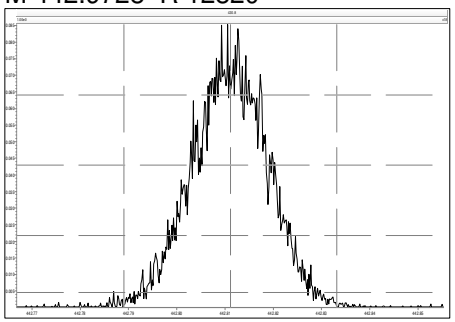
M 416.9760 R 12076



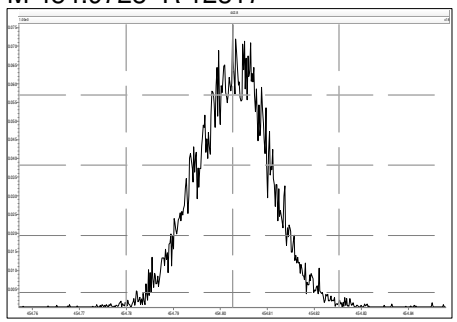
M 430.9728 R 11629



M 442.9728 R 12820



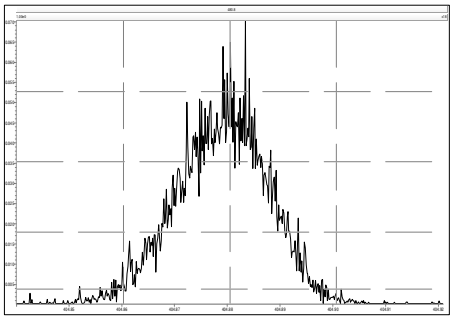
M 454.9728 R 12317



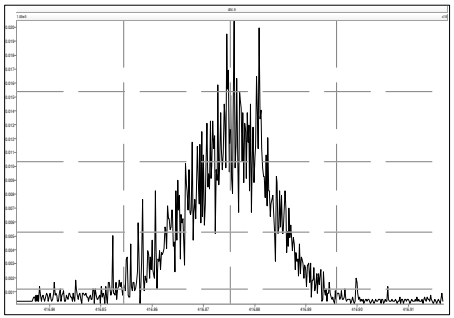
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

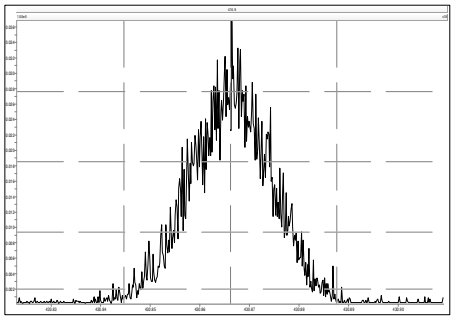
M 404.9760 R 10505



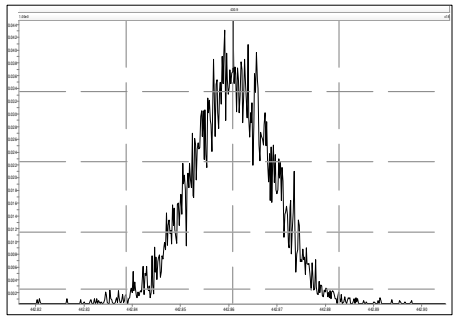
M 416.9760 R 12500



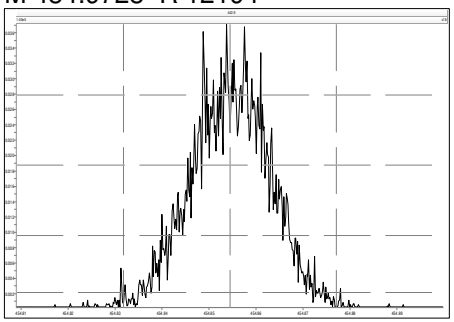
M 430.9728 R 11362



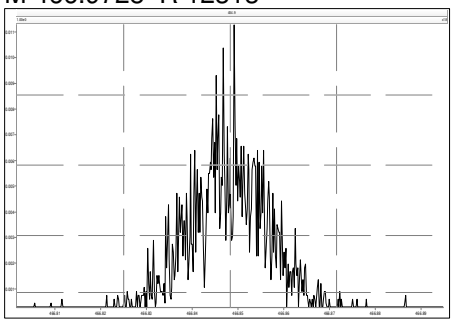
M 442.9728 R 12756



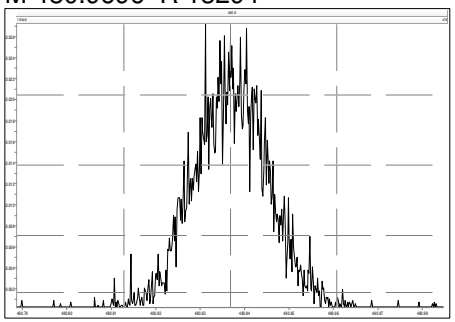
M 454.9728 R 12194



M 466.9728 R 12313



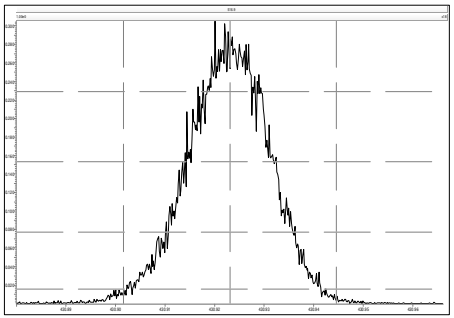
M 480.9696 R 13294



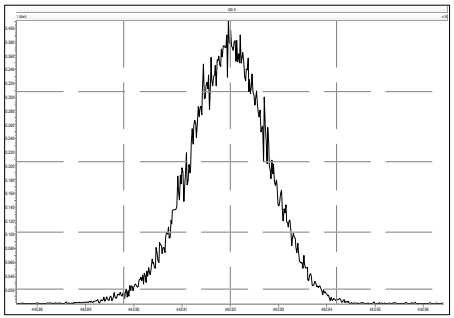
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

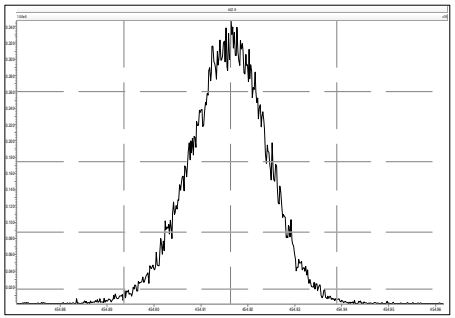
M 430.9728 R 11312



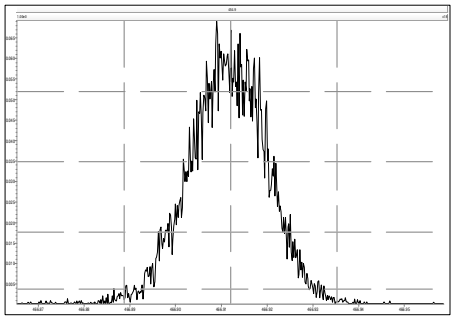
M 442.9728 R 11110



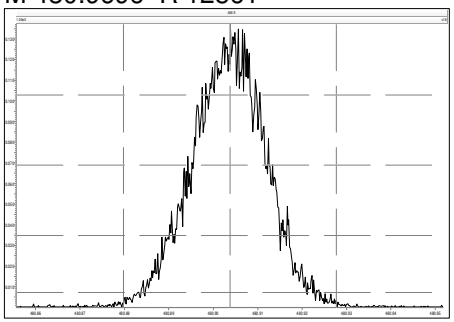
M 454.9728 R 11906



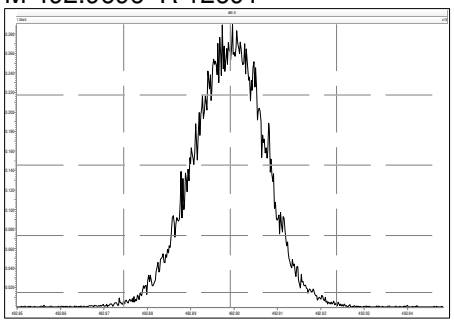
M 466.9728 R 12562



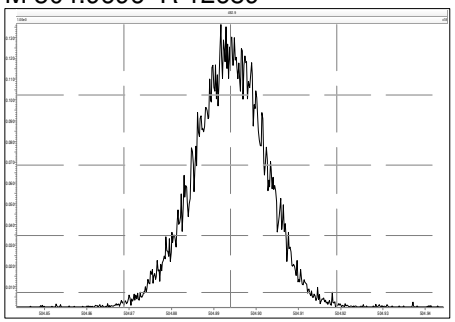
M 480.9696 R 12561



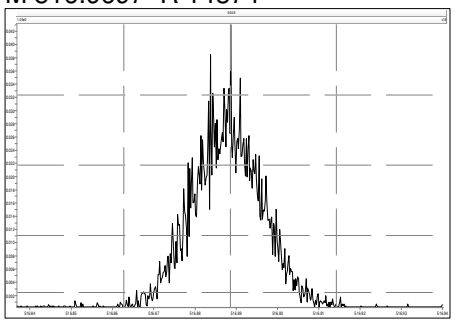
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



Lab ID: OPR1_18710_DF-RJ

APPROVED
Carla_Lyon , 12/8/2021, 2:21:05 PM

Acq'd: 07 Dec 2021 16:29 DTF

Wt/Vol: 1 uL

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR001

UTP: 08-Dec-2021 11:25:15 DTF

J-level: 0.25 pg/uL **Split:** 1

Checkcode: 348-095-BPM

Datafile: 211207C03

Report: 08 Dec 2021 11:26 TF

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.16		1.0009	1.0009	0	9.86E+06	0.79	Y	1.18	12.3	5673.426	0.0764
12378-PeCDD	32.80		1.0006	1.0006	0	3.67E+07	1.58	Y	1.04	54.3	4710.967	0.0629
123478-HxCDD	36.80		1.0004	1.0004	0	3.60E+07	1.30	Y	1.09	59.2	5787.098	0.0768
123678-HxCDD	36.92		1.0035	1.0035	0	3.60E+07	1.27	Y	1.15	57.8	5787.098	0.0784
123789-HxCDD	37.22		1.0117	1.0117	0	3.63E+07	1.27	Y	1.05	55.4	5787.098	0.0773
1234678-HpCDD	40.18		1.0003	1.0003	0	2.99E+07	1.04	Y	1.06	55.9	2806.4	0.0412
OCDD	42.77		1.0003	1.0003	0	2.39E+07	0.89	Y	1.13	112	4913.517	0.273
2378-TCDF	26.22		1.0009	1.0009	0	1.43E+07	0.81	Y	1.08	12	5331.351	0.0517
12378-PeCDF	31.28		1.0005	1.0006	+0.2	6.34E+07	1.58	Y	1.02	54.9	15674.925	0.128
23478-PeCDF	32.44		1.0006	1.0005	-0.2	6.27E+07	1.53	Y	1.02	59.6	15674.925	0.134
123478-HxCDF	35.80		1.0005	1.0005	0	5.29E+07	1.25	Y	1.27	55.5	17764.038	0.153
123678-HxCDF	35.94		1.0004	1.0004	0	5.79E+07	1.26	Y	1.15	55.4	17764.038	0.141
234678-HxCDF	36.61		1.0004	1.0005	+0.2	5.25E+07	1.27	Y	1.19	57.4	17764.038	0.155
123789-HxCDF	37.59		1.0003	1.0004	+0.2	4.91E+07	1.27	Y	1.16	52.7	17764.038	0.168
1234678-HpCDF	39.20		1.0003	1.0003	0	4.91E+07	1.05	Y	1.37	55.5	5647.813	0.0507
1234789-HpCDF	40.60		1.0002	1.0003	+0.2	3.79E+07	1.05	Y	1.31	56.8	5647.813	0.0706
OCDF	42.93		1.0003	1.0002	-0.3	3.12E+07	0.91	Y	1.07	112	4471.795	0.185

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.13	1.0260	1.0260	0	6.77E+07	0.81	Y	1.05	97.1
ES 12378-PeCDD	32.78	1.2396	1.2395	-0.2	6.53E+07	1.60	Y	0.88	111
ES 123478-HxCDD	36.79	0.9916	0.9916	0	5.57E+07	1.30	Y	0.97	106
ES 123678-HxCDD	36.90	0.9947	0.9947	0	5.43E+07	1.26	Y	0.94	107
ES 123789-HxCDD	37.20	1.0027	1.0028	+0.2	6.26E+07	1.27	Y	1.09	106
ES 1234678-HpCDD	40.16	1.0828	1.0827	-0.2	5.05E+07	1.10	Y	0.91	103
ES OCDD	42.76	1.1528	1.1527	-0.3	3.79E+07	0.91	Y	0.62	56.4
ES 2378-TCDF	26.19	1.0591	1.0590	-0.2	1.10E+08	0.77	Y	1.06	91.9
ES 12378-PeCDF	31.27	1.2643	1.2641	-0.4	1.13E+08	1.59	Y	0.91	109
ES 23478-PeCDF	32.42	1.3110	1.3107	-0.6	1.03E+08	1.56	Y	0.88	103
ES 123478-HxCDF	35.79	0.9648	0.9647	-0.2	7.51E+07	0.55	Y	1.20	116
ES 123678-HxCDF	35.93	0.9686	0.9685	-0.2	9.06E+07	0.53	Y	1.35	124
ES 234678-HxCDF	36.59	0.9865	0.9864	-0.2	7.71E+07	0.54	Y	1.24	115
ES 123789-HxCDF	37.58	1.0129	1.0129	0	8.00E+07	0.53	Y	1.16	129
ES 1234678-HpCDF	39.19	1.0565	1.0563	-0.5	6.46E+07	0.45	Y	0.97	124
ES 1234789-HpCDF	40.59	1.0943	1.0942	-0.2	5.10E+07	0.46	Y	0.85	111
ES OCDF	42.92	1.1569	1.1570	+0.3	5.20E+07	0.92	Y	0.81	59.8

Lab ID: OPR1_18710_DF-RJ | **Acq'd:** 07 Dec 2021 16:29 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR001 | **UTP:** 08-Dec-2021 11:25:15 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 348-095-BPM

Datafile: 211207C03 | **Report:** 08 Dec 2021 11:26 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.45		-	-	-	6.67E+07	0.83	Y	-	-	
JS 1234-TCDF	24.73		-	-	-	1.13E+08	0.76	Y	-	-	
JS 123467-HxCDD	37.10		-	-	-	2.69E+07	1.25	Y	-	-	
CS 37Cl-2378-TCDD	27.16		1.0269	1.0269	0	3.23E+07	n/a	-	1.20	101	
CS 12347-PeCDD	32.27		1.2203	1.2202	-0.2	6.18E+07	1.62	Y	0.75	123	
CS 12346-PeCDF	30.72		1.2424	1.2421	-0.6	1.08E+08	1.56	Y	0.85	112	
CS 123469-HxCDF	36.24		0.9771	0.9770	-0.2	7.48E+07	0.54	Y	1.12	124	
CS 1234689-HpCDF	39.62		1.0681	1.0680	-0.2	6.62E+07	0.47	Y	0.89	139	
~~SS 37Cl-2378-TCDD~~	~~27.16~~		~~1.0269~~	~~1.0269~~	~~0~~	~~3.23E+07~~	~~n/a~~		~~1.15~~	~~104~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.27~~		~~1.2203~~	~~1.2202~~	~~-0.2~~	~~6.18E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~110~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.72~~		~~1.2424~~	~~1.2421~~	~~-0.6~~	~~1.08E+08~~	~~1.56~~	~~Y~~	~~0.94~~	~~102~~	
~~SS 123469-HxCDF~~	~~36.24~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~7.48E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~99.7~~	
~~SS 1234689-HpCDF~~	~~39.62~~		~~1.0681~~	~~1.0680~~	~~-0.2~~	~~6.62E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~112~~	

Totals	Conc	EMPC
Total TCDD	59.8	59.8
Total PeCDD	83.6	83.6
Total HxCDD	189	189
Total HpCDD	72	72
Total Tetra-Octa Dioxins	517	517
Total TCDF	72.2	72.2
Total PeCDF	212	212
Total HxCDF	361	361
Total HpCDF	112	112
Total Tetra-Octa Furans	869	869
Total Tetra-Octa Dioxins & Furans	1390	1390

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.79	0.79
Response	9.88E+06	9.86E+06

Lab ID: OPR1_18710_DF-RJ **Acq'd: 07 Dec 2021 16:29 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR001 **UTP: 08-Dec-2021 11:25:15 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 348-095-BPM**

Datafile: 211207C03 **Report: 08 Dec 2021 11:26 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.19		0.8545	0.8547	+0.3	1.33E+07	0.79	Y	1.18	16.5	5673.426	0.0764
1379-TCDD	NotFnd		0.8692						1.18		5673.426	0.0764
1369-TCDD	NotFnd		0.8868						1.18		5673.426	0.0764
1469-TCDD	NotFnd		0.9185						1.18		5673.426	0.0764
1247/1246/1248/1249-TCDD	NotFnd		0.9282						1.18		5673.426	0.0764
1378-TCDD	NotFnd		0.9355						1.18		5673.426	0.0764
1268-TCDD	NotFnd		0.9435						1.18		5673.426	0.0764
1478-TCDD	NotFnd		0.9533						1.18		5673.426	0.0764
1279-TCDD	NotFnd		0.9601						1.18		5673.426	0.0764
1234/1269-TCDD	NotFnd		0.9741						1.18		5673.426	0.0764
1236-TCDD	NotFnd		0.9797						1.18		5673.426	0.0764
1237/1238-TCDD	NotFnd		0.9898						1.18		5673.426	0.0764
1239-TCDD	27.00		0.9952	0.9951	-0.2	9.57E+06	0.83	Y	1.18	11.9	5673.426	0.0764
2378-TCDD	**27.16**		**1.0009**	1.0009	**0**	9.86E+06	0.79	Y	**1.18**	**12.3**	**5673.426**	**0.0764**
1278-TCDD	NotFnd		1.0139						1.18		5673.426	0.0764
1267-TCDD	NotFnd		1.0193						1.18		5673.426	0.0764
1289-TCDD	28.20		1.0393	1.0392	-0.2	1.53E+07	0.81	Y	1.18	19.1	5673.426	0.0764
12479/12468-PeCDD	30.21		0.9216	0.9217	+0.2	9.35E+06	1.57	Y	1.04	13.8	4710.967	0.0629
12469-PeCDD	NotFnd		0.9386						1.04		4710.967	0.0629
12368-PeCDD	NotFnd		0.9560						1.04		4710.967	0.0629
12478-PeCDD	NotFnd		0.9619						1.04		4710.967	0.0629
12379-PeCDD	NotFnd		0.9651						1.04		4710.967	0.0629
12369/12467/12489-PeCDD	NotFnd		0.9735						1.04		4710.967	0.0629
12346/12347-PeCDD	NotFnd		0.9852						1.04		4710.967	0.0629
12378-PeCDD	32.80		**1.0006**	**1.0006**	**0**	**3.67E+07**	**1.58**	**Y**	**1.04**	**54.3**	**4710.967**	**0.0629**
12367-PeCDD	NotFnd		1.0037						1.04		4710.967	0.0629
12389-PeCDD	33.25		1.0145	1.0145	0	1.05E+07	1.57	Y	1.04	15.6	4710.967	0.0629
124679/124689-HxCDD	35.07		0.9535	0.9534	-0.2	1.06E+07	1.27	Y	1.10	16.9	5787.098	0.0774
123468-HxCDD	NotFnd		0.9716						1.10		5787.098	0.0774
123679/123689-HxCDD	NotFnd		0.9796						1.10		5787.098	0.0774
123469-HxCDD	NotFnd		0.9833						1.10		5787.098	0.0774
123478-HxCDD	36.80		**1.0004**	**1.0004**	**0**	**3.60E+07**	**1.30**	**Y**	1.09	**59.2**	**5787.098**	**0.0768**
123678-HxCDD	36.92		**1.0035**	**1.0035**	**0**	**3.60E+07**	**1.27**	**Y**	1.15	**57.8**	**5787.098**	**0.0784**
123467-HxCDD	NotFnd		1.0088						1.10		5787.098	0.0774
123789-HxCDD	37.22		**1.0117**	**1.0117**	**0**	**3.63E+07**	**1.27**	**Y**	1.05	**55.4**	**5787.098**	**0.0773**

Lab ID: OPR1_18710_DF-RJ | **Acq'd:** 07 Dec 2021 16:29 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR001 | **UTP:** 08-Dec-2021 11:25:15 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 348-095-BPM

Datafile: 211207C03 | **Report:** 08 Dec 2021 11:26 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.49		0.9833	0.9832	-0.2	8.64E+06	1.08	Y	1.06	16.1	2806.4	0.0412
1234678-HpCDD	**40.18**		**1.0003**	**1.0003**	**0**	**2.99E+07**	**1.04**	**Y**	**1.06**	**55.9**	**2806.4**	**0.0412**
OCDD	**42.77**		**1.0003**	**1.0003**	**0**	**2.39E+07**	**0.89**	**Y**	**1.13**	**112**	**4913.517**	**0.273**
OCDD-a	42.77		1.0002	1.0002	0	1.60E+06	2.79	Y	0.07	117	7578.982	6.6
1368-TCDF	20.96		0.7998	0.8001	+0.4	2.14E+07	0.79	Y	1.08	18	5331.351	0.0517
1468-TCDF	NotFnd		0.8214						1.08		5331.351	0.0517
2468-TCDF	22.17		0.8463	0.8464	+0.1	5.40E+06	0.81	Y	1.08	4.54	5331.351	0.0517
1346/1246-TCDF	NotFnd		0.8608						1.08		5331.351	0.0517
1347/1378/1247-TCDF	NotFnd		0.8675						1.08		5331.351	0.0517
1348-TCDF	NotFnd		0.8793						1.08		5331.351	0.0517
1248/1367/1379-TCDF	NotFnd		0.8850						1.08		5331.351	0.0517
1268-TCDF	NotFnd		0.9010						1.08		5331.351	0.0517
1467-TCDF	NotFnd		0.9068						1.08		5331.351	0.0517
1478-TCDF	NotFnd		0.9139						1.08		5331.351	0.0517
1369/1237-TCDF	NotFnd		0.9294						1.08		5331.351	0.0517
2467-TCDF	NotFnd		0.9350						1.08		5331.351	0.0517
2368-TCDF	NotFnd		0.9410						1.08		5331.351	0.0517
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9451						1.08		5331.351	0.0517
1278-TCDF	NotFnd		0.9642						1.08		5331.351	0.0517
1349-TCDF	NotFnd		0.9695						1.08		5331.351	0.0517
1267-TCDF	NotFnd		0.9753						1.08		5331.351	0.0517
2346/1249-TCDF	NotFnd		0.9832						1.08		5331.351	0.0517
2347/1279-TCDF	NotFnd		0.9921						1.08		5331.351	0.0517
2348-TCDF	26.11		0.9970	0.9966	-0.6	2.14E+07	0.78	Y	1.08	18	5331.351	0.0517
2378-TCDF	**26.22**		**1.0009**	**1.0009**	**0**	**1.43E+07**	**0.81**	**Y**	**1.08**	**12**	**5331.351**	**0.0517**
2367/3467-TCDF	NotFnd		1.0162						1.08		5331.351	0.0517
1269-TCDF	NotFnd		1.0259						1.08		5331.351	0.0517
1239-TCDF	NotFnd		1.0370						1.08		5331.351	0.0517
1289-TCDF	28.36		1.0829	1.0826	-0.5	2.35E+07	0.81	Y	1.08	19.7	5331.351	0.0517
13468/12468-PeCDF	28.33		0.9067	0.9062	-0.8	9.22E+07	1.57	Y	1.02	83.6	3528.121	0.0294
13678/13467/12467-PeCDF	NotFnd		0.9583						1.02		15674.925	0.131
12368/13478/12478-PeCDF	NotFnd		0.9635						1.02		15674.925	0.131
14678-PeCDF	NotFnd		0.9669						1.02		15674.925	0.131
13479-PeCDF	NotFnd		0.9701						1.02		15674.925	0.131
13469/12479-PeCDF	NotFnd		0.9784						1.02		15674.925	0.131
12346-PeCDF	NotFnd		0.9831						1.02		15674.925	0.131

Lab ID: OPR1_18710_DF-RJ | **Acq'd:** 07 Dec 2021 16:29 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR001 | **UTP:** 08-Dec-2021 11:25:15 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 348-095-BPM

Datafile: 211207C03 | **Report:** 08 Dec 2021 11:26 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9859						1.02		15674.925	0.131
12347-PeCDF	NotFnd		0.9885						1.02		15674.925	0.131
12348-PeCDF	NotFnd		0.9937						1.02		15674.925	0.131
12378-PeCDF	**31.28**		**1.0005**	**1.0006**	**+0.2**	**6.34E+07**	**1.58**	**Y**	**1.02**	**54.9**	**15674.925**	**0.128**
12678/12367-PeCDF	NotFnd		1.0097						1.02		15674.925	0.131
12379-PeCDF	NotFnd		1.0153						1.02		15674.925	0.131
12679-PeCDF	NotFnd		0.9925						1.02		15674.925	0.131
23467/12369-PeCDF	NotFnd		0.9966						1.02		15674.925	0.131
23478-PeCDF	**32.44**		**1.0006**	**1.0005**	**-0.2**	**6.27E+07**	**1.53**	**Y**	**1.02**	**59.6**	**15674.925**	**0.134**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		15674.925	0.131
12349-PeCDF	NotFnd		1.0108						1.02		15674.925	0.131
12389-PeCDF	33.54		1.0346	1.0345	-0.2	1.50E+07	1.58	Y	1.02	13.6	15674.925	0.131
123468-HxCDF	34.39		0.9610	0.9611	+0.2	1.34E+08	1.25	Y	1.19	140	17764.038	0.153
124678/134678-HxCDF	NotFnd		0.9667						1.19		17764.038	0.153
134679-HxCDF	NotFnd		0.9732						1.19		17764.038	0.153
124679-HxCDF	NotFnd		0.9788						1.19		17764.038	0.153
124689-HxCDF	NotFnd		0.9852						1.19		17764.038	0.153
123467-HxCDF	NotFnd		0.9971						1.19		17764.038	0.153
123478-HxCDF	**35.80**		**1.0005**	**1.0005**	**0**	**5.29E+07**	**1.25**	**Y**	**1.27**	**55.5**	**17764.038**	**0.153**
123678-HxCDF	**35.94**		**1.0004**	**1.0004**	**0**	**5.79E+07**	**1.26**	**Y**	**1.15**	**55.4**	**17764.038**	**0.141**
123479-HxCDF	NotFnd		1.0050						1.19		17764.038	0.153
123469-HxCDF	NotFnd		1.0091						1.19		17764.038	0.153
123679-HxCDF	NotFnd		0.9943						1.19		17764.038	0.153
234678-HxCDF	**36.61**		**1.0004**	**1.0005**	**+0.2**	**5.25E+07**	**1.27**	**Y**	**1.19**	**57.4**	**17764.038**	**0.155**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		17764.038	0.153
123789-HxCDF	**37.59**		**1.0003**	**1.0004**	**+0.2**	**4.91E+07**	**1.27**	**Y**	**1.16**	**52.7**	**17764.038**	**0.168**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0008						1.19		17764.038	0.153
1234678-HpCDF	**39.20**		**1.0003**	**1.0003**	**0**	**4.91E+07**	**1.05**	**Y**	**1.37**	**55.5**	**5647.813**	**0.0507**
1234679-HpCDF	NotFnd		1.0075						1.34		5647.813	0.0594
1234689-HpCDF	NotFnd		1.0113						1.34		5647.813	0.0594
1234789-HpCDF	**40.60**		**1.0002**	**1.0003**	**+0.2**	**3.79E+07**	**1.05**	**Y**	**1.31**	**56.8**	**5647.813**	**0.0706**
OCDF	**42.93**		**1.0003**	**1.0002**	**-0.3**	**3.12E+07**	**0.91**	**Y**	**1.07**	**112**	**4471.795**	**0.185**
OCDF-a	42.93		1.0002	1.0002	0	1.91E+06	2.56	Y	0.07	111	6114.017	4.08

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211207C03	Analysis Date:	07-DEC-2021 16:29:16
Lab ID:	OPR1_18710_DF-RJ		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.3	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	54.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	59.2	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	57.8	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	55.4	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	55.9	35	-	70	Y
OCDD	100	112	78	-	144	Y
2,3,7,8-TCDF	10	12	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.9	40	-	67	Y
2,3,4,7,8-PeCDF	50	59.6	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	55.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	55.4	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	57.4	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	52.7	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	55.5	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	56.8	39	-	69	Y
OCDF	100	112	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Dec 2021 11:26 Analyst: TF

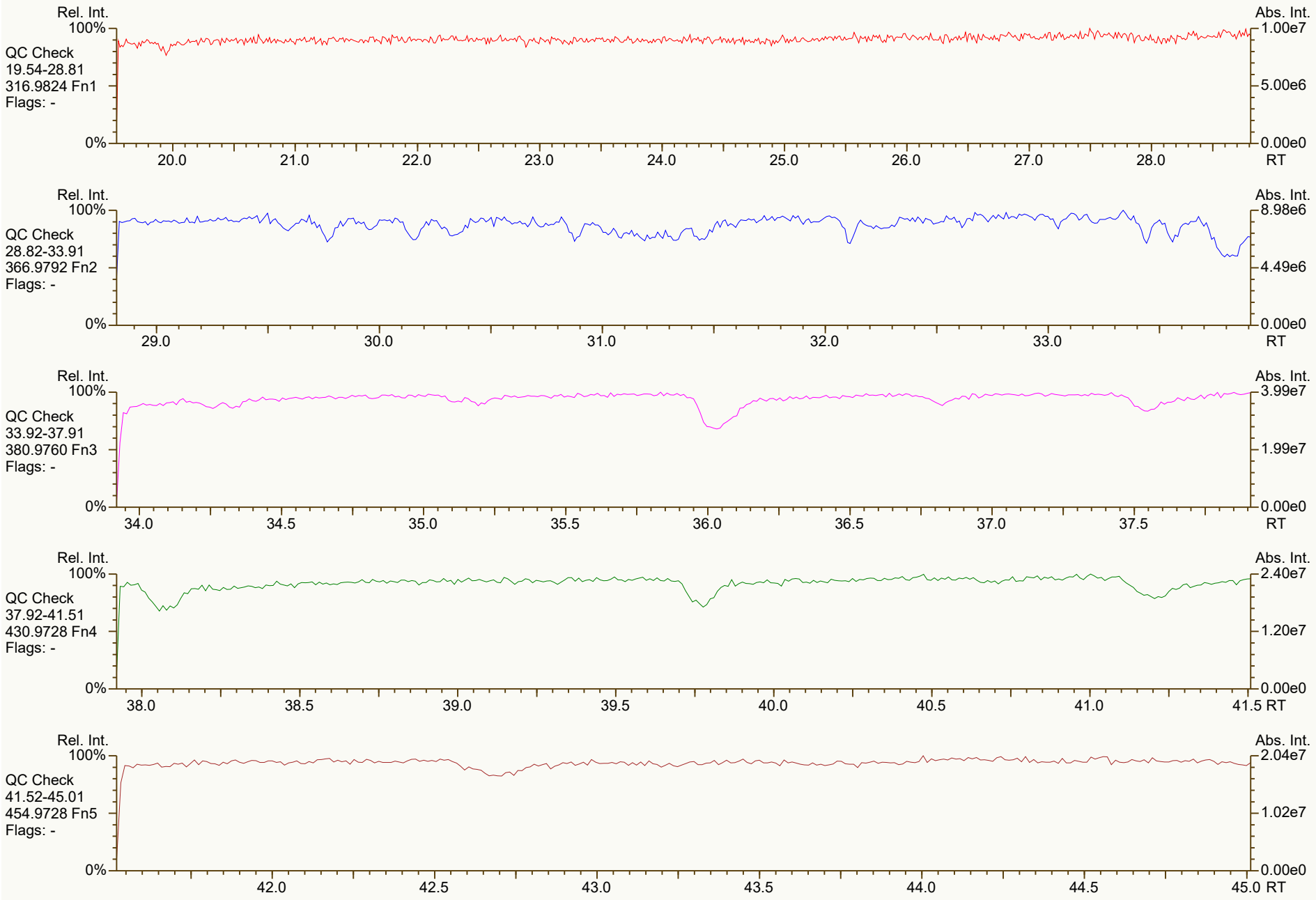
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211207C03	Analysis Date:	07-DEC-2021 16:29:16
Lab ID:	OPR1_18710_DF-RJ		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	97.1	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	111	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	106	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	107	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	106	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	103	26	-	166	Y
13C-OCDD	200	113	26	-	397	Y
13C-2,3,7,8-TCDF	100	91.9	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	109	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	103	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	116	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	124	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	115	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	129	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	124	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	111	20	-	186	Y
13C-OCDF	200	120	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	40.3	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 08 Dec 2021 11:26 Analyst: TF


Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
Abs. Int.
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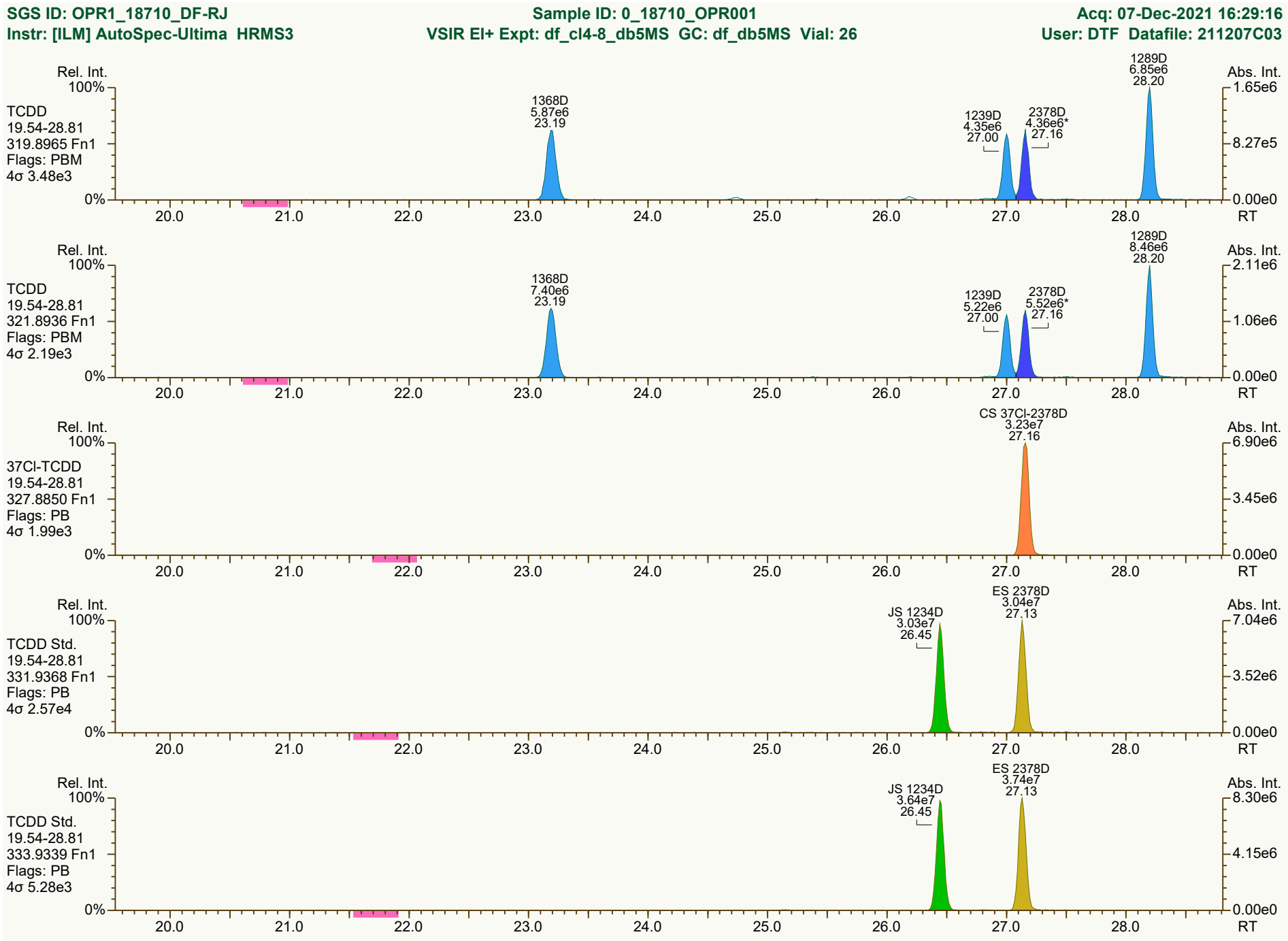
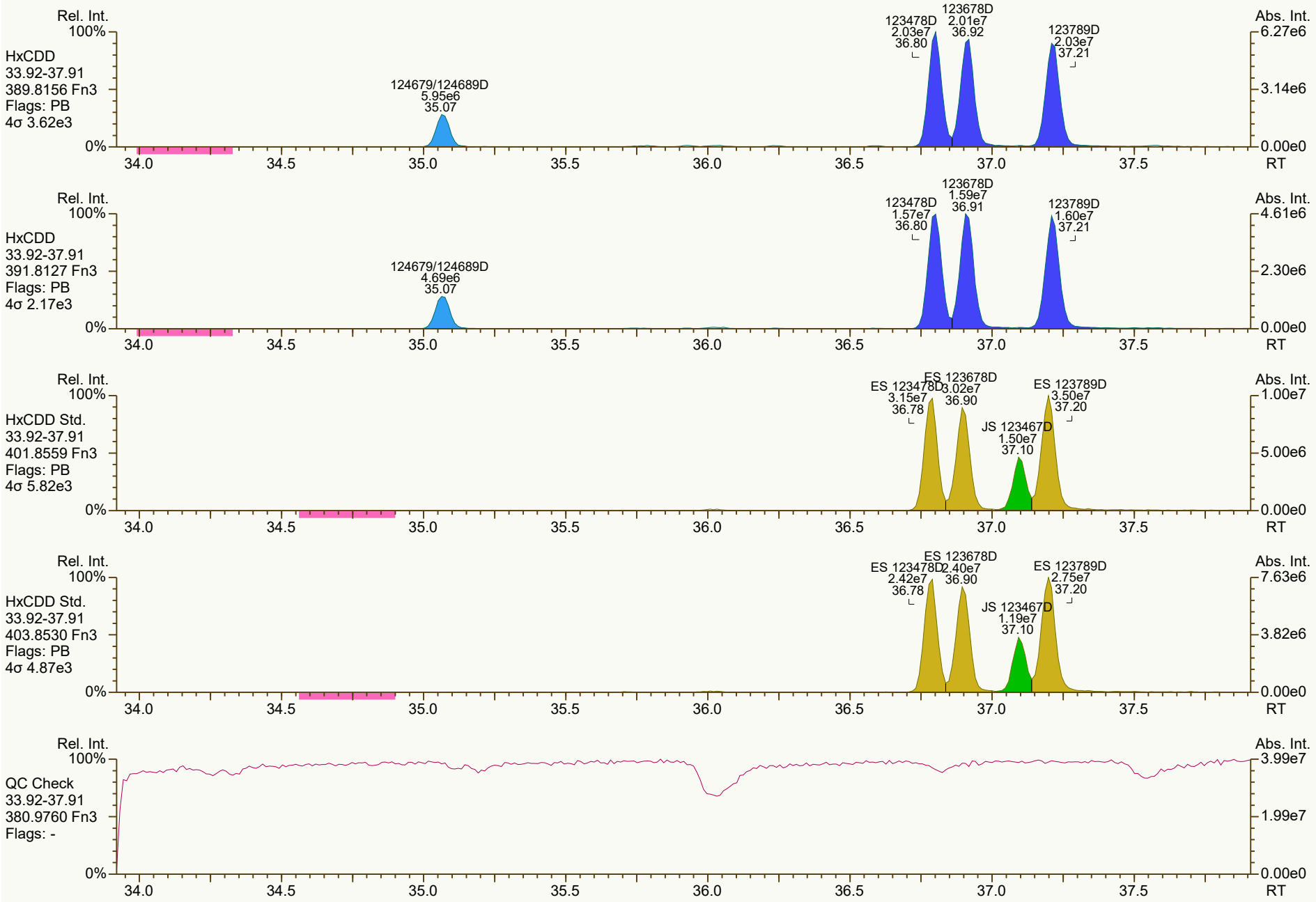
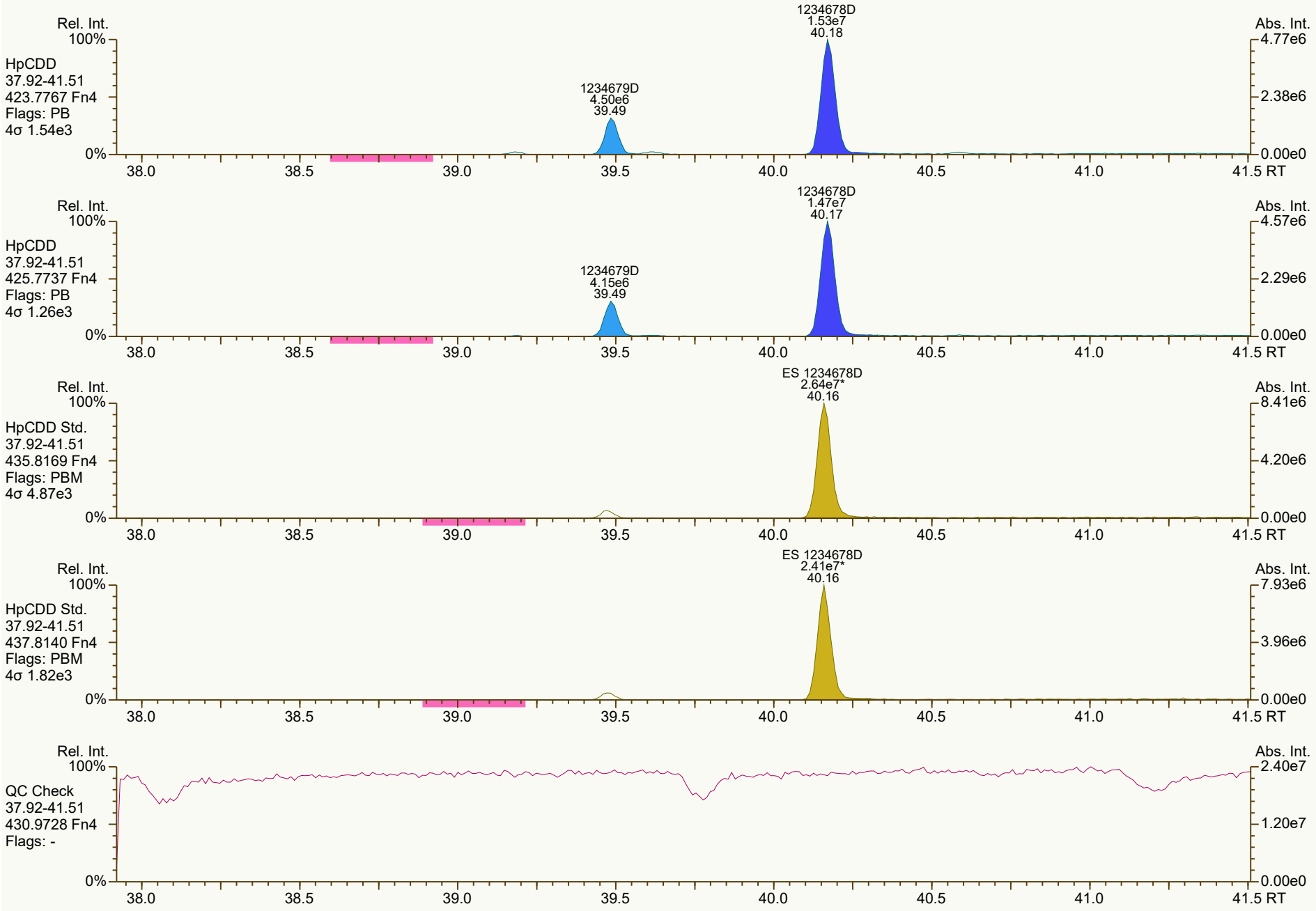
5.00e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.98e6
4.49e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.99e7
1.99e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.40e7
1.20e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.04e7
1.02e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

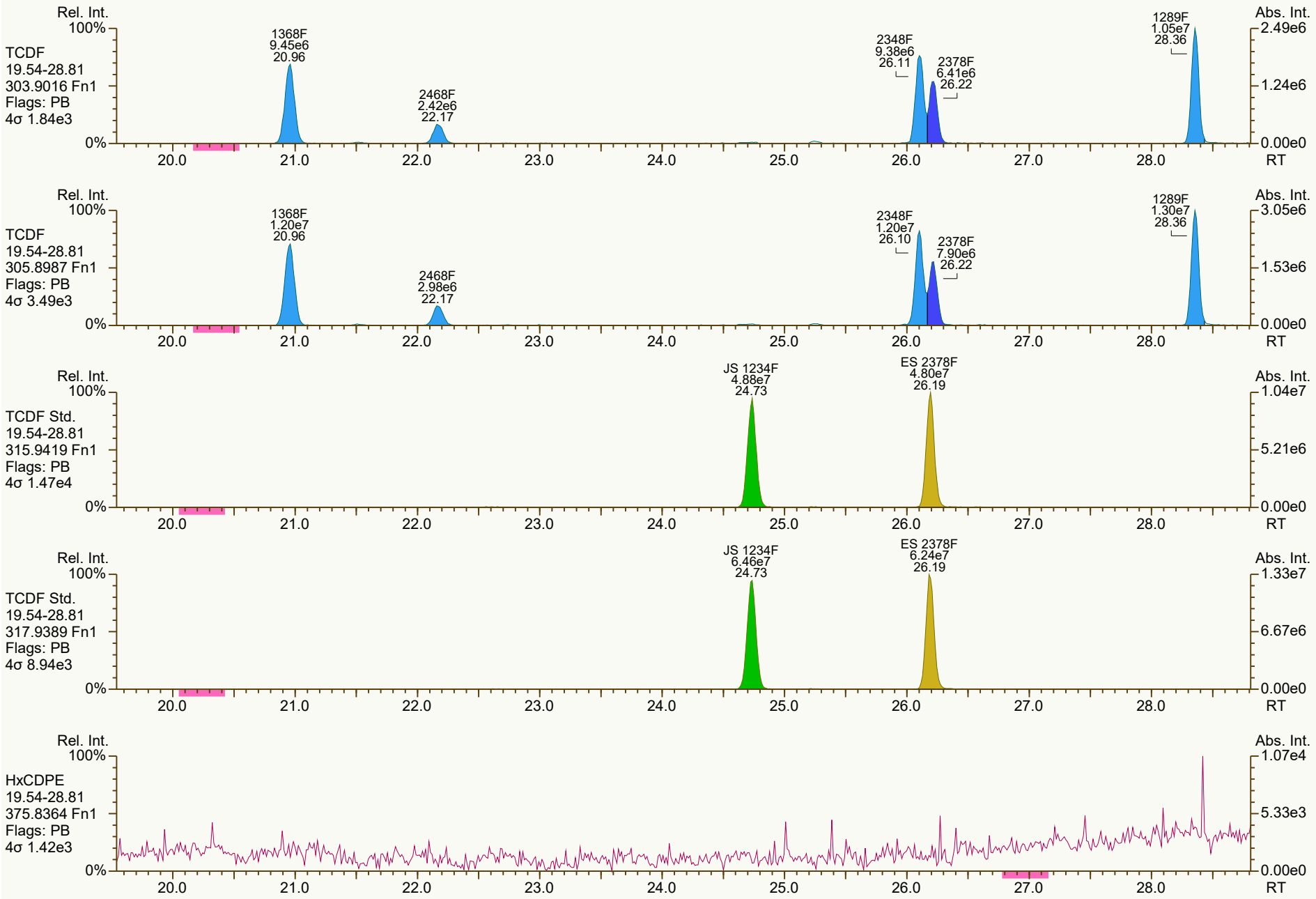

SGS ID: OPR1_18710_DF-RJ
Sample ID: 0_18710_OPR001
Acq: 07-Dec-2021 16:29:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 211207C03
Rel. Int.
Abs. Int.
TCDD
19.54-28.81
319.8965 Fn1
Flags: PBM
4σ 3.48e3
1368D
5.87e6
23.19
1239D
4.35e6
27.00
2378D
4.36e6*
27.16
1289D
6.85e6
28.20
1.65e6
8.27e5
0.00e0
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 2.19e3
1368D
7.40e6
23.19
1239D
5.22e6
27.00
2378D
5.52e6*
27.16
1289D
8.46e6
28.20
2.11e6
1.06e6
0.00e0
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 1.99e3
CS 37Cl-2378D
3.23e7
27.16
6.90e6
3.45e6
0.00e0
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 2.57e4
JS 1234D
3.03e7
26.45
ES 2378D
3.04e7
27.13
7.04e6
3.52e6
0.00e0
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 5.28e3
JS 1234D
3.64e7
26.45
ES 2378D
3.74e7
27.13
8.30e6
4.15e6
0.00e0
100%
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\OPR1_18710_DF-RJ.utp_res, saved 08-Dec-2021 11:25 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7301, 3826, 1027 scc: 348-095
Revised: 08-Dec-2021 09:02 (DTF) Printed: 08-Dec-2021 11:31 Page 2 of 12


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PB
4σ 2.89e3
12479/12468D
5.71e6
30.21
12378D
2.25e7
32.80
12389D
6.43e6
33.25
Abs. Int.
6.09e6
3.04e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PB
4σ 1.82e3
12479/12468D
3.64e6
30.21
12378D
1.42e7
32.80
12389D
4.10e6
33.25
Abs. Int.
3.87e6
1.94e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 2.63e3
CS 12347D
3.82e7
32.27
ES 12378D
4.02e7
32.78
Abs. Int.
1.11e7
5.56e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 3.21e3
CS 12347D
2.36e7
32.27
ES 12378D
2.51e7
32.78
Abs. Int.
7.04e6
3.52e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
Abs. Int.
8.98e6
4.49e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT

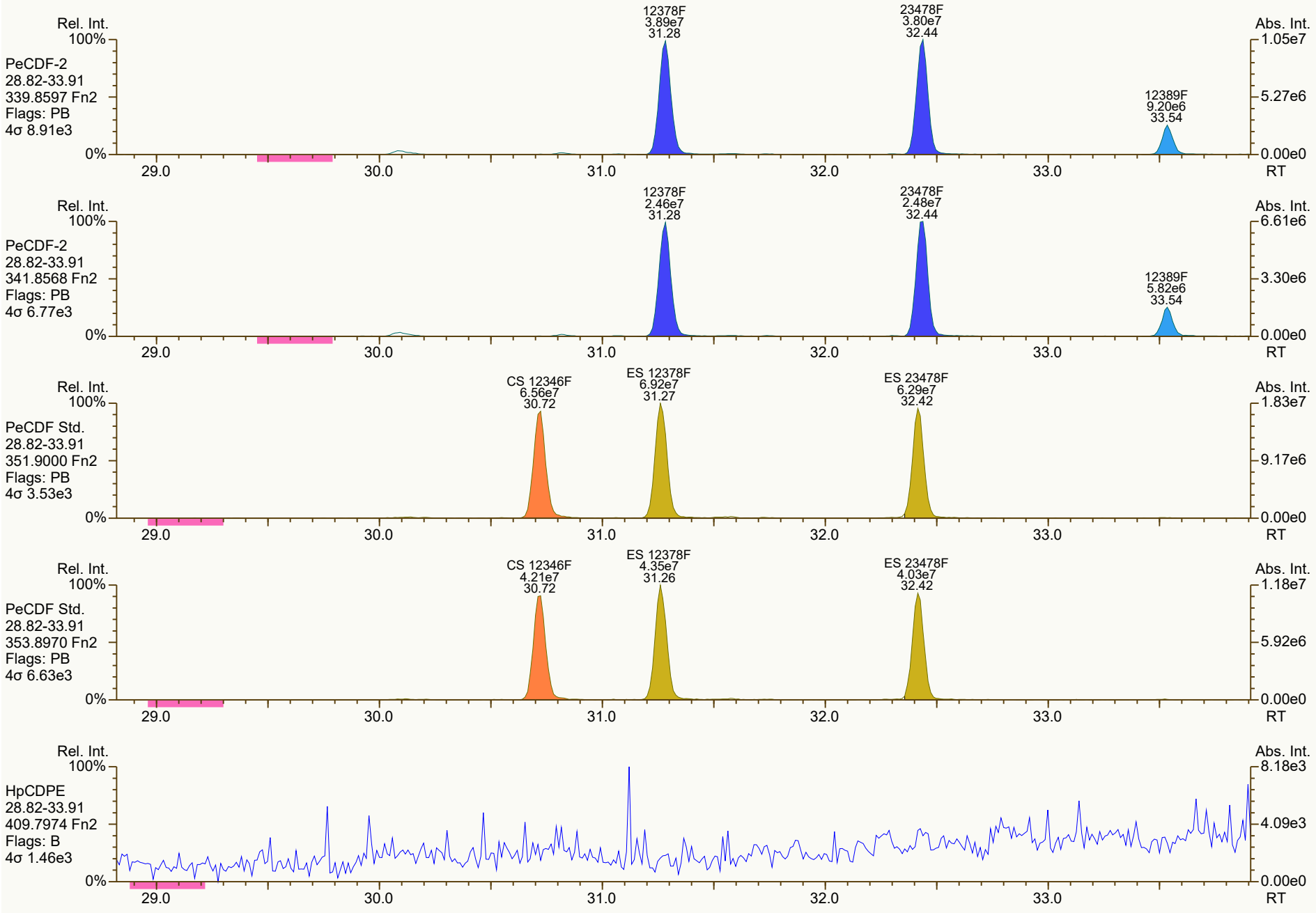

Rel. Int.
100%
HxCDD
33.92-37.91
389.8156 Fn3
Flags: PB
4σ 3.62e3
0%
124679/124689D
5.95e6
35.07
123478D
2.03e7
36.80
123678D
2.01e7
36.92
123789D
2.03e7
37.21
Abs. Int.
6.27e6
3.14e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.91
391.8127 Fn3
Flags: PB
4σ 2.17e3
0%
124679/124689D
4.69e6
35.07
123478D
1.57e7
36.80
123678D
1.59e7
36.91
123789D
1.60e7
37.21
Abs. Int.
4.61e6
2.30e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PB
4σ 5.82e3
0%
ES 123478D
3.15e7
36.78
ES 123678D
3.02e7
36.90
JS 123467D
1.50e7
37.10
ES 123789D
3.50e7
37.20
Abs. Int.
1.00e7
5.00e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PB
4σ 4.87e3
0%
ES 123478D
2.42e7
36.78
ES 123678D
2.40e7
36.90
JS 123467D
1.19e7
37.10
ES 123789D
2.75e7
37.20
Abs. Int.
7.63e6
3.82e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.99e7
1.99e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT

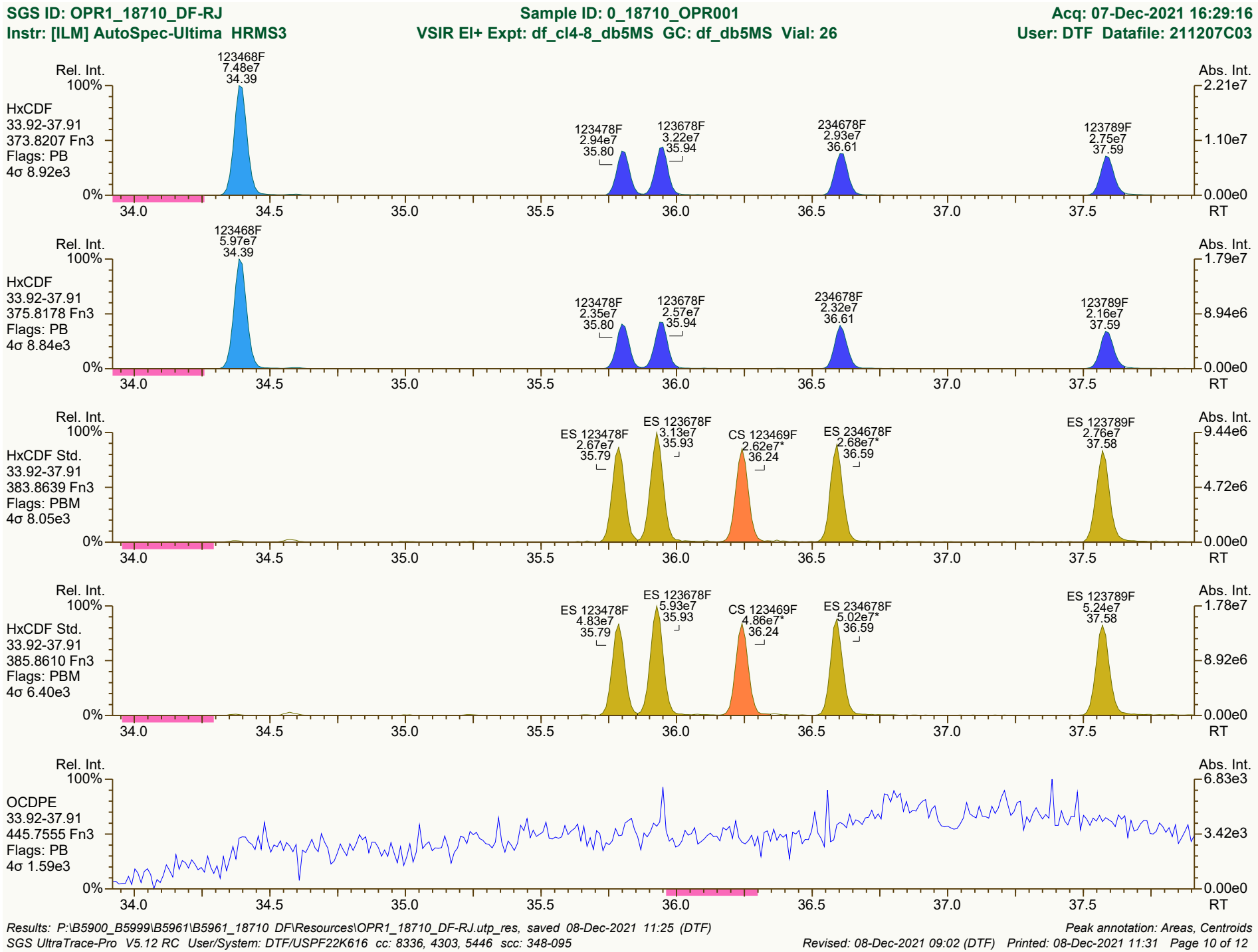

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PB
4σ 1.54e3
0%
1234678D
1.53e7
40.18
1234679D
4.50e6
39.49
Abs. Int.
4.77e6
2.38e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PB
4σ 1.26e3
0%
1234678D
1.47e7
40.17
1234679D
4.15e6
39.49
Abs. Int.
4.57e6
2.29e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PBM
4σ 4.87e3
0%
ES 1234678D
2.64e7*
40.16
Abs. Int.
8.41e6
4.20e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PBM
4σ 1.82e3
0%
ES 1234678D
2.41e7*
40.16
Abs. Int.
7.93e6
3.96e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.40e7
1.20e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

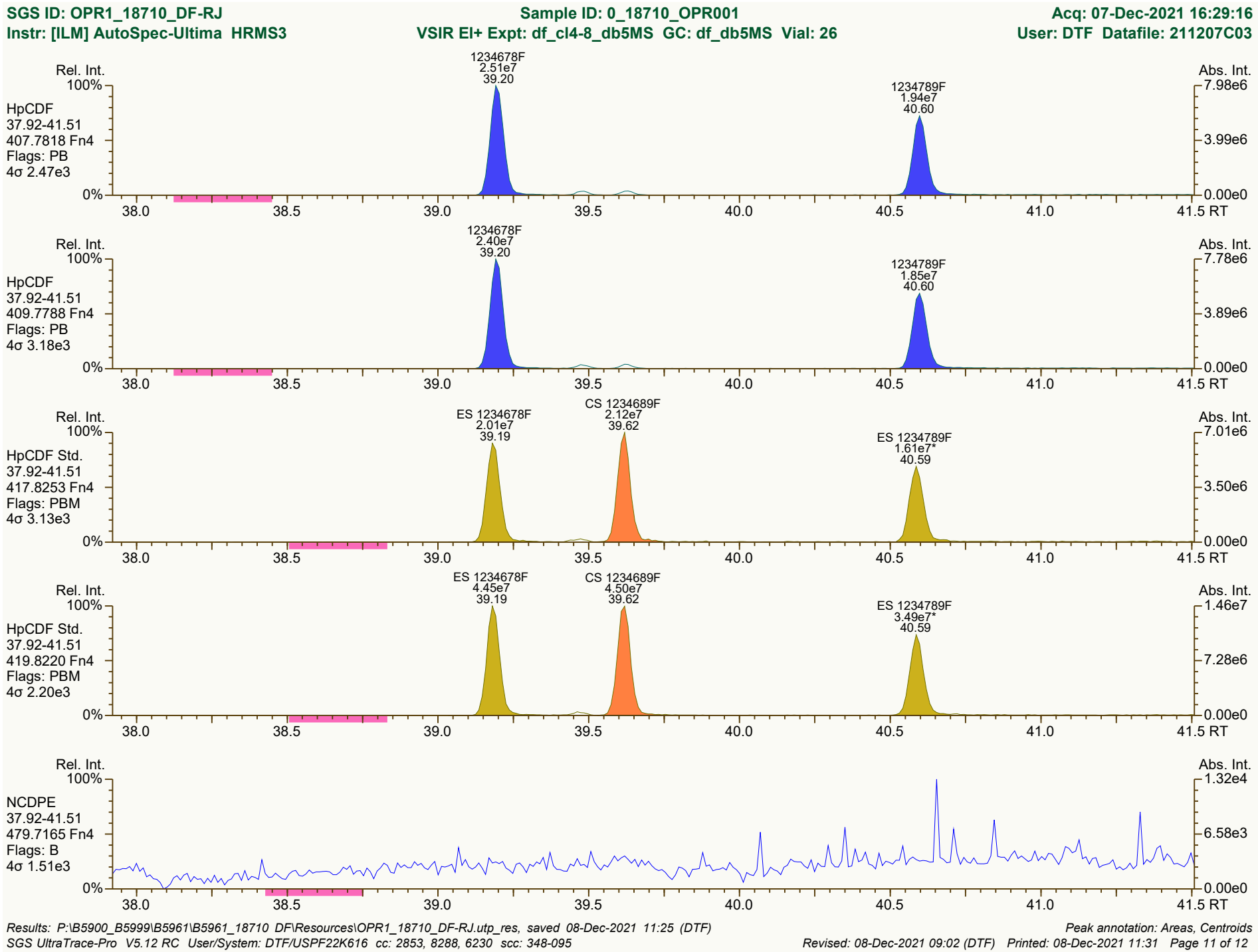

OCDD
1.13e7*
42.77
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.53e3
0%
Abs. Int.
2.50e6
1.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.27e7*
42.77
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 3.39e3
2.75e6
1.38e6
ES OCDD
1.80e7
42.76
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.03e3
3.79e6
1.90e6
ES OCDD
1.99e7
42.76
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.24e3
4.38e6
2.19e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
2.04e7
1.02e7

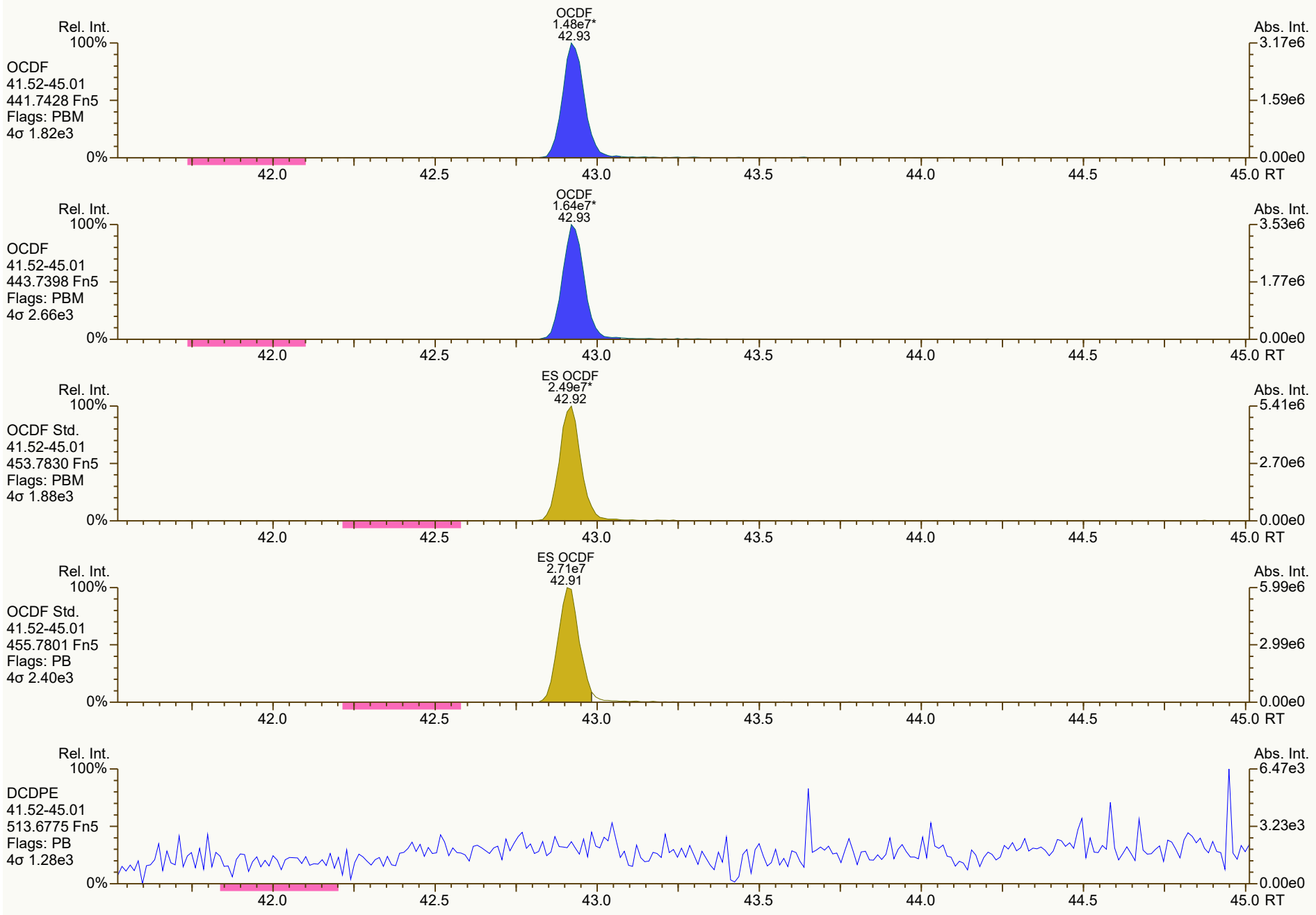

Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PB
4σ 1.84e3
1368F
9.45e6
20.96
2468F
2.42e6
22.17
2348F
9.38e6
26.11
2378F
6.41e6
26.22
1289F
1.05e7
28.36
Abs. Int.
2.49e6
1.24e6
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PB
4σ 3.49e3
1368F
1.20e7
20.96
2468F
2.98e6
22.17
2348F
1.20e7
26.10
2378F
7.90e6
26.22
1289F
1.30e7
28.36
Abs. Int.
3.05e6
1.53e6
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.47e4
JS 1234F
4.88e7
24.73
ES 2378F
4.80e7
26.19
Abs. Int.
1.04e7
5.21e6
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 8.94e3
JS 1234F
6.46e7
24.73
ES 2378F
6.24e7
26.19
Abs. Int.
1.33e7
6.67e6
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: PB
4σ 1.42e3
Abs. Int.
1.07e4
5.33e3
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
0%
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 2.18e3
13468/12468F
5.63e7
28.33
Abs. Int.
1.36e7
6.81e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 1.35e3
13468/12468F
3.59e7
28.33
Abs. Int.
8.55e6
4.28e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
Abs. Int.
1.00e7
5.00e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PB
4σ 8.91e3
0%
12378F
3.89e7
31.28
23478F
3.80e7
32.44
12389F
9.20e6
33.54
Abs. Int.
1.05e7
5.27e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PB
4σ 6.77e3
0%
12378F
2.46e7
31.28
23478F
2.48e7
32.44
12389F
5.82e6
33.54
Abs. Int.
6.61e6
3.30e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 3.53e3
0%
CS 12346F
6.56e7
30.72
ES 12378F
6.92e7
31.27
ES 23478F
6.29e7
32.42
Abs. Int.
1.83e7
9.17e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 6.63e3
0%
CS 12346F
4.21e7
30.72
ES 12378F
4.35e7
31.26
ES 23478F
4.03e7
32.42
Abs. Int.
1.18e7
5.92e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.46e3
0%
Abs. Int.
8.18e3
4.09e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


SGS ID: OPR1_18710_DF-RJ
Sample ID: 0_18710_OPR001
Acq: 07-Dec-2021 16:29:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 211207C03
Rel. Int.
Abs. Int.
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PB
4σ 8.92e3
123468F 7.48e7 34.39
123478F 2.94e7 35.80
123678F 3.22e7 35.94
234678F 2.93e7 36.61
123789F 2.75e7 37.59
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PB
4σ 8.84e3
123468F 5.97e7 34.39
123478F 2.35e7 35.80
123678F 2.57e7 35.94
234678F 2.32e7 36.61
123789F 2.16e7 37.59
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 8.05e3
ES 123478F 2.67e7 35.79
ES 123678F 3.13e7 35.93
CS 123469F 2.62e7* 36.24
ES 234678F 2.68e7* 36.59
ES 123789F 2.76e7 37.58
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PBM
4σ 6.40e3
ES 123478F 4.83e7 35.79
ES 123678F 5.93e7 35.93
CS 123469F 4.86e7* 36.24
ES 234678F 5.02e7* 36.59
ES 123789F 5.24e7 37.58
OCDPE
33.92-37.91
445.7555 Fn3
Flags: PB
4σ 1.59e3
100%
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
2.21e7
1.10e7
0.00e0
1.79e7
8.94e6
9.44e6
4.72e6
1.78e7
8.92e6
6.83e3
3.42e3
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\OPR1_18710_DF-RJ.utp_res, saved 08-Dec-2021 11:25 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8336, 4303, 5446 scc: 348-095
Revised: 08-Dec-2021 09:02 (DTF) Printed: 08-Dec-2021 11:31 Page 10 of 12


SGS ID: OPR1_18710_DF-RJ
Sample ID: 0_18710_OPR001
Acq: 07-Dec-2021 16:29:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 211207C03
Rel. Int.
Abs. Int.
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PB
4σ 2.47e3
1234678F
2.51e7
39.20
1234789F
1.94e7
40.60
7.98e6
3.99e6
0.00e0
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PB
4σ 3.18e3
1234678F
2.40e7
39.20
1234789F
1.85e7
40.60
7.78e6
3.89e6
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PBM
4σ 3.13e3
ES 1234678F
2.01e7
39.19
CS 1234689F
2.12e7
39.62
ES 1234789F
1.61e7*
40.59
7.01e6
3.50e6
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PBM
4σ 2.20e3
ES 1234678F
4.45e7
39.19
CS 1234689F
4.50e7
39.62
ES 1234789F
3.49e7*
40.59
1.46e7
7.28e6
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.51e3
1.32e4
6.58e3
100%
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\OPR1_18710_DF-RJ.utp_res, saved 08-Dec-2021 11:25 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2853, 8288, 6230 scc: 348-095
Revised: 08-Dec-2021 09:02 (DTF) Printed: 08-Dec-2021 11:31 Page 11 of 12


OCDF
1.48e7*
42.93
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.82e3
0%
Abs. Int.
3.17e6
1.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.64e7*
42.93
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.66e3
0%
Abs. Int.
3.53e6
1.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.49e7*
42.92
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.88e3
0%
Abs. Int.
5.41e6
2.70e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.71e7
42.91
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.40e3
0%
Abs. Int.
5.99e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.28e3
0%
Abs. Int.
6.47e3
3.23e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: OPR2_18710_DF **Acq'd: 07 Dec 2021 17:15 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 **UTP: 08-Dec-2021 11:25:15 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 493-149-SMV**

Datafile: 211207C04 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.13		1.0009	1.0009	0	9.93E+06	0.83	Y	1.18	12.6	5585.795	0.0782
12378-PeCDD	32.78		1.0006	1.0006	0	3.42E+07	1.60	Y	1.04	53.3	5660.385	0.0794
123478-HxCDD	36.77		1.0004	1.0004	0	3.10E+07	1.25	Y	1.09	58	3659.466	0.0569
123678-HxCDD	36.88		1.0035	1.0035	0	3.23E+07	1.26	Y	1.15	59.3	3659.466	0.0533
123789-HxCDD	37.18		1.0117	1.0117	0	3.17E+07	1.25	Y	1.05	55.3	3659.466	0.0565
1234678-HpCDD	40.16		1.0003	1.0003	0	2.58E+07	1.07	Y	1.06	56	4120.351	0.0743
OCDD	42.77		1.0003	1.0003	0	2.03E+07	0.93	Y	1.13	114	5262.012	0.334
2378-TCDF	26.18		1.0009	1.0008	-0.2	1.45E+07	0.78	Y	1.08	12.6	4830.041	0.0477
12378-PeCDF	31.26		1.0005	1.0006	+0.2	5.98E+07	1.56	Y	1.02	56	17726.316	0.154
23478-PeCDF	32.41		1.0006	1.0005	-0.2	6.16E+07	1.55	Y	1.02	60.1	17726.316	0.154
123478-HxCDF	35.78		1.0005	1.0005	0	5.03E+07	1.26	Y	1.27	57.5	6175.615	0.0586
123678-HxCDF	35.92		1.0004	1.0004	0	5.32E+07	1.26	Y	1.15	56	6175.615	0.0541
234678-HxCDF	36.58		1.0004	1.0004	0	4.85E+07	1.26	Y	1.19	54.9	6175.615	0.059
123789-HxCDF	37.56		1.0003	1.0005	+0.5	4.36E+07	1.28	Y	1.16	54.4	6175.615	0.07
1234678-HpCDF	39.17		1.0003	1.0003	0	4.40E+07	1.05	Y	1.37	56.1	3727.574	0.0379
1234789-HpCDF	40.58		1.0002	1.0002	0	3.05E+07	1.06	Y	1.31	53.8	3727.574	0.0551
OCDF	42.93		1.0003	1.0002	-0.3	2.63E+07	0.90	Y	1.07	111	4925.776	0.251

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.10	1.0260	1.0261	+0.2	6.65E+07	0.81	Y	1.05	101
ES 12378-PeCDD	32.76	1.2396	1.2401	+1.0	6.20E+07	1.61	Y	0.88	112
ES 123478-HxCDD	36.75	0.9916	0.9916	0	4.91E+07	1.28	Y	0.97	106
ES 123678-HxCDD	36.87	0.9947	0.9947	0	4.75E+07	1.27	Y	0.94	105
ES 123789-HxCDD	37.17	1.0027	1.0028	+0.2	5.47E+07	1.30	Y	1.09	105
ES 1234678-HpCDD	40.15	1.0828	1.0831	+0.7	4.34E+07	1.10	Y	0.91	99.5
ES OCDD	42.76	1.1528	1.1536	+2.1	3.17E+07	0.94	Y	0.62	53.2
ES 2378-TCDF	26.16	1.0591	1.0593	+0.3	1.07E+08	0.79	Y	1.06	91.7
ES 12378-PeCDF	31.24	1.2643	1.2649	+1.1	1.04E+08	1.56	Y	0.91	104
ES 23478-PeCDF	32.39	1.3110	1.3116	+1.2	1.00E+08	1.56	Y	0.88	103
ES 123478-HxCDF	35.76	0.9648	0.9648	0	6.89E+07	0.54	Y	1.20	120
ES 123678-HxCDF	35.90	0.9686	0.9686	0	8.23E+07	0.54	Y	1.35	127
ES 234678-HxCDF	36.56	0.9865	0.9864	-0.2	7.43E+07	0.54	Y	1.24	125
ES 123789-HxCDF	37.54	1.0129	1.0129	0	6.88E+07	0.54	Y	1.16	125
ES 1234678-HpCDF	39.16	1.0565	1.0566	+0.2	5.72E+07	0.46	Y	0.97	124
ES 1234789-HpCDF	40.58	1.0943	1.0947	+1.0	4.33E+07	0.46	Y	0.85	106
ES OCDF	42.92	1.1569	1.1579	+2.6	4.42E+07	0.93	Y	0.81	57.3

Lab ID: OPR2_18710_DF | **Acq'd:** 07 Dec 2021 17:15 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR002 | **UTP:** 08-Dec-2021 11:25:15 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 493-149-SMV

Datafile: 211207C04 | **Report:** 08 Dec 2021 11:27 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.41		-	-	-	6.28E+07	0.83	Y	-	-	
JS 1234-TCDF	24.70		-	-	-	1.10E+08	0.79	Y	-	-	
JS 123467-HxCDD	37.07		-	-	-	2.39E+07	1.19	Y	-	-	
CS 37Cl-2378-TCDD	27.13		1.0269	1.0269	0	3.07E+07	n/a	-	1.20	102	
CS 12347-PeCDD	32.24		1.2203	1.2207	+0.8	5.91E+07	1.59	Y	0.75	125	
CS 12346-PeCDF	30.70		1.2424	1.2429	+0.9	1.01E+08	1.58	Y	0.85	108	
CS 123469-HxCDF	36.21		0.9771	0.9771	0	7.08E+07	0.55	Y	1.12	133	
CS 1234689-HpCDF	39.59		1.0681	1.0682	+0.2	5.00E+07	0.45	Y	0.89	118	
~~SS 37Cl-2378-TCDD~~	~~27.13~~		~~1.0269~~	~~1.0269~~	~~0~~	~~3.07E+07~~	~~n/a~~		~~1.15~~	~~101~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.24~~		~~1.2203~~	~~1.2207~~	~~+0.8~~	~~5.91E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~111~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.70~~		~~1.2424~~	~~1.2429~~	~~+0.9~~	~~1.01E+08~~	~~1.58~~	~~Y~~	~~0.94~~	~~104~~	
~~SS 123469-HxCDF~~	~~36.21~~		~~0.9771~~	~~0.9771~~	~~0~~	~~7.08E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~104~~	
~~SS 1234689-HpCDF~~	~~39.59~~		~~1.0681~~	~~1.0682~~	~~+0.2~~	~~5.00E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~95~~	

Totals	Conc	EMPC
Total TCDD	58.6	58.6
Total PeCDD	84.1	84.1
Total HxCDD	191	191
Total HpCDD	72.7	72.7
Total Tetra-Octa Dioxins	520	520
Total TCDF	71.2	71.2
Total PeCDF	208	208
Total HxCDF	378	378
Total HpCDF	110	110
Total Tetra-Octa Furans	878	878
Total Tetra-Octa Dioxins & Furans	1400	1400

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.823	0.83
Response	9.94E+06	9.93E+06

Lab ID: OPR2_18710_DF **Acq'd: 07 Dec 2021 17:15 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 **UTP: 08-Dec-2021 11:25:15 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 493-149-SMV**

Datafile: 211207C04 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.15		0.8545	0.8542	-0.4	1.33E+07	0.82	Y	1.18	16.8	5585.795	0.0782
1379-TCDD	NotFnd		0.8692						1.18		5585.795	0.0782
1369-TCDD	NotFnd		0.8868						1.18		5585.795	0.0782
1469-TCDD	NotFnd		0.9185						1.18		5585.795	0.0782
1247/1246/1248/1249-TCDD	NotFnd		0.9282						1.18		5585.795	0.0782
1378-TCDD	NotFnd		0.9355						1.18		5585.795	0.0782
1268-TCDD	NotFnd		0.9435						1.18		5585.795	0.0782
1478-TCDD	NotFnd		0.9533						1.18		5585.795	0.0782
1279-TCDD	NotFnd		0.9601						1.18		5585.795	0.0782
1234/1269-TCDD	NotFnd		0.9741						1.18		5585.795	0.0782
1236-TCDD	NotFnd		0.9797						1.18		5585.795	0.0782
1237/1238-TCDD	NotFnd		0.9898						1.18		5585.795	0.0782
1239-TCDD	26.97		0.9952	0.9951	-0.2	9.75E+06	0.79	Y	1.18	12.4	5585.795	0.0782
2378-TCDD	**27.13**		**1.0009**	1.0009	**0**	9.93E+06	0.83	Y	**1.18**	**12.6**	**5585.795**	**0.0782**
1278-TCDD	NotFnd		1.0139						1.18		5585.795	0.0782
1267-TCDD	NotFnd		1.0193						1.18		5585.795	0.0782
1289-TCDD	28.17		1.0393	1.0394	+0.2	1.32E+07	0.80	Y	1.18	16.8	5585.795	0.0782
12479/12468-PeCDD	30.19		0.9216	0.9216	0	9.32E+06	1.60	Y	1.04	14.5	5660.385	0.0794
12469-PeCDD	NotFnd		0.9386						1.04		5660.385	0.0794
12368-PeCDD	NotFnd		0.9560						1.04		5660.385	0.0794
12478-PeCDD	NotFnd		0.9619						1.04		5660.385	0.0794
12379-PeCDD	NotFnd		0.9651						1.04		5660.385	0.0794
12369/12467/12489-PeCDD	NotFnd		0.9735						1.04		5660.385	0.0794
12346/12347-PeCDD	NotFnd		0.9852						1.04		5660.385	0.0794
12378-PeCDD	32.78		**1.0006**	**1.0006**	**0**	**3.42E+07**	**1.60**	**Y**	**1.04**	**53.3**	**5660.385**	**0.0794**
12367-PeCDD	NotFnd		1.0037						1.04		5660.385	0.0794
12389-PeCDD	33.23		1.0145	1.0144	-0.2	1.04E+07	1.57	Y	1.04	16.2	5660.385	0.0794
124679/124689-HxCDD	35.05		0.9535	0.9535	0	1.03E+07	1.25	Y	1.10	18.7	3659.466	0.0555
123468-HxCDD	NotFnd		0.9716						1.10		3659.466	0.0555
123679/123689-HxCDD	NotFnd		0.9796						1.10		3659.466	0.0555
123469-HxCDD	NotFnd		0.9833						1.10		3659.466	0.0555
123478-HxCDD	36.77		**1.0004**	**1.0004**	**0**	**3.10E+07**	**1.25**	**Y**	1.09	**58**	**3659.466**	**0.0569**
123678-HxCDD	36.88		**1.0035**	**1.0035**	**0**	**3.23E+07**	**1.26**	**Y**	1.15	**59.3**	**3659.466**	**0.0533**
123467-HxCDD	NotFnd		1.0088						1.10		3659.466	0.0555
123789-HxCDD	37.18		**1.0117**	**1.0117**	**0**	**3.17E+07**	**1.25**	**Y**	1.05	**55.3**	**3659.466**	**0.0565**

Lab ID: OPR2_18710_DF **Acq'd: 07 Dec 2021 17:15 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 **UTP: 08-Dec-2021 11:25:15 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 493-149-SMV**

Datafile: 211207C04 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9831	-0.5	7.67E+06	1.06	Y	1.06	16.7	4120.351	0.0743
1234678-HpCDD	**40.16**		**1.0003**	**1.0003**	**0**	**2.58E+07**	**1.07**	**Y**	**1.06**	**56**	**4120.351**	**0.0743**
OCDD	**42.77**		**1.0003**	**1.0003**	**0**	**2.03E+07**	**0.93**	**Y**	**1.13**	**114**	**5262.012**	**0.334**
OCDD-a	42.76		1.0002	1.0001	-0.3	1.19E+06	2.60	Y	0.07	104	6880.302	6.84
1368-TCDF	20.92		0.7998	0.7995	-0.4	2.06E+07	0.81	Y	1.08	17.8	4830.041	0.0477
1468-TCDF	NotFnd		0.8214						1.08		4830.041	0.0477
2468-TCDF	22.13		0.8463	0.8459	-0.5	5.11E+06	0.77	Y	1.08	4.43	4830.041	0.0477
1346/1246-TCDF	NotFnd		0.8608						1.08		4830.041	0.0477
1347/1378/1247-TCDF	NotFnd		0.8675						1.08		4830.041	0.0477
1348-TCDF	NotFnd		0.8793						1.08		4830.041	0.0477
1248/1367/1379-TCDF	NotFnd		0.8850						1.08		4830.041	0.0477
1268-TCDF	NotFnd		0.9010						1.08		4830.041	0.0477
1467-TCDF	NotFnd		0.9068						1.08		4830.041	0.0477
1478-TCDF	NotFnd		0.9139						1.08		4830.041	0.0477
1369/1237-TCDF	NotFnd		0.9294						1.08		4830.041	0.0477
2467-TCDF	NotFnd		0.9350						1.08		4830.041	0.0477
2368-TCDF	NotFnd		0.9410						1.08		4830.041	0.0477
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9451						1.08		4830.041	0.0477
1278-TCDF	NotFnd		0.9642						1.08		4830.041	0.0477
1349-TCDF	NotFnd		0.9695						1.08		4830.041	0.0477
1267-TCDF	NotFnd		0.9753						1.08		4830.041	0.0477
2346/1249-TCDF	NotFnd		0.9832						1.08		4830.041	0.0477
2347/1279-TCDF	NotFnd		0.9921						1.08		4830.041	0.0477
2348-TCDF	26.07		0.9970	0.9965	-0.8	2.05E+07	0.79	Y	1.08	17.7	4830.041	0.0477
2378-TCDF	**26.18**		**1.0009**	**1.0008**	**-0.2**	**1.45E+07**	**0.78**	**Y**	**1.08**	**12.6**	**4830.041**	**0.0477**
2367/3467-TCDF	NotFnd		1.0162						1.08		4830.041	0.0477
1269-TCDF	NotFnd		1.0259						1.08		4830.041	0.0477
1239-TCDF	NotFnd		1.0370						1.08		4830.041	0.0477
1289-TCDF	28.33		1.0829	1.0828	-0.2	2.15E+07	0.79	Y	1.08	18.6	4830.041	0.0477
13468/12468-PeCDF	28.30		0.9067	0.9060	-1.2	8.10E+07	1.60	Y	1.02	77.4	3749.795	0.0326
13678/13467/12467-PeCDF	NotFnd		0.9583						1.02		17726.316	0.154
12368/13478/12478-PeCDF	NotFnd		0.9635						1.02		17726.316	0.154
14678-PeCDF	NotFnd		0.9669						1.02		17726.316	0.154
13479-PeCDF	NotFnd		0.9701						1.02		17726.316	0.154
13469/12479-PeCDF	NotFnd		0.9784						1.02		17726.316	0.154
12346-PeCDF	NotFnd		0.9831						1.02		17726.316	0.154

Lab ID: OPR2_18710_DF **Acq'd: 07 Dec 2021 17:15 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 **UTP: 08-Dec-2021 11:25:15 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 493-149-SMV**

Datafile: 211207C04 **Report: 08 Dec 2021 11:27 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9859						1.02		17726.316	0.154
12347-PeCDF	NotFnd		0.9885						1.02		17726.316	0.154
12348-PeCDF	NotFnd		0.9937						1.02		17726.316	0.154
12378-PeCDF	**31.26**		**1.0005**	**1.0006**	**+0.2**	**5.98E+07**	**1.56**	**Y**	**1.02**	**56**	**17726.316**	**0.154**
12678/12367-PeCDF	NotFnd		1.0097						1.02		17726.316	0.154
12379-PeCDF	NotFnd		1.0153						1.02		17726.316	0.154
12679-PeCDF	NotFnd		0.9925						1.02		17726.316	0.154
23467/12369-PeCDF	NotFnd		0.9966						1.02		17726.316	0.154
23478-PeCDF	**32.41**		**1.0006**	**1.0005**	**-0.2**	**6.16E+07**	**1.55**	**Y**	**1.02**	**60.1**	**17726.316**	**0.154**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		17726.316	0.154
12349-PeCDF	NotFnd		1.0108						1.02		17726.316	0.154
12389-PeCDF	33.52		1.0346	1.0347	+0.2	1.49E+07	1.56	Y	1.02	14.2	17726.316	0.154
123468-HxCDF	34.37		0.9610	0.9610	0	1.37E+08	1.27	Y	1.19	155	6175.615	0.06
124678/134678-HxCDF	NotFnd		0.9667						1.19		6175.615	0.06
134679-HxCDF	NotFnd		0.9732						1.19		6175.615	0.06
124679-HxCDF	NotFnd		0.9788						1.19		6175.615	0.06
124689-HxCDF	NotFnd		0.9852						1.19		6175.615	0.06
123467-HxCDF	NotFnd		0.9971						1.19		6175.615	0.06
123478-HxCDF	**35.78**		**1.0005**	**1.0005**	**0**	**5.03E+07**	**1.26**	**Y**	**1.27**	**57.5**	**6175.615**	**0.0586**
123678-HxCDF	**35.92**		**1.0004**	**1.0004**	**0**	**5.32E+07**	**1.26**	**Y**	**1.15**	**56**	**6175.615**	**0.0541**
123479-HxCDF	NotFnd		1.0050						1.19		6175.615	0.06
123469-HxCDF	NotFnd		1.0091						1.19		6175.615	0.06
123679-HxCDF	NotFnd		0.9943						1.19		6175.615	0.06
234678-HxCDF	**36.58**		**1.0004**	**1.0004**	**0**	**4.85E+07**	**1.26**	**Y**	**1.19**	**54.9**	**6175.615**	**0.059**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6175.615	0.06
123789-HxCDF	**37.56**		**1.0003**	**1.0005**	**+0.5**	**4.36E+07**	**1.28**	**Y**	**1.16**	**54.4**	**6175.615**	**0.07**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0008						1.19		6175.615	0.06
1234678-HpCDF	**39.17**		**1.0003**	**1.0003**	**0**	**4.40E+07**	**1.05**	**Y**	**1.37**	**56.1**	**3727.574**	**0.0379**
1234679-HpCDF	NotFnd		1.0075						1.34		3727.574	0.0452
1234689-HpCDF	NotFnd		1.0113						1.34		3727.574	0.0452
1234789-HpCDF	**40.58**		**1.0002**	**1.0002**	**0**	**3.05E+07**	**1.06**	**Y**	**1.31**	**53.8**	**3727.574**	**0.0551**
OCDF	**42.93**		**1.0003**	**1.0002**	**-0.3**	**2.63E+07**	**0.90**	**Y**	**1.07**	**111**	**4925.776**	**0.251**
OCDF-a	42.92		1.0002	1.0002	0	1.56E+06	2.46	Y	0.07	106	6452.045	5.31

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211207C04	Analysis Date:	07-DEC-2021 17:15:35
Lab ID:	OPR2_18710_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.6	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	53.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	58	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	59.3	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	55.3	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56	35	-	70	Y
OCDD	100	114	78	-	144	Y
2,3,7,8-TCDF	10	12.6	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	56	40	-	67	Y
2,3,4,7,8-PeCDF	50	60.1	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	57.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	56	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	54.9	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	54.4	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	56.1	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	53.8	39	-	69	Y
OCDF	100	111	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Dec 2021 11:27 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name: SGS North America
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
Instrument ID: HRMS3 GC Column ID: ZB-5ms
VER Data Filename: 211207C04 Analysis Date: 07-DEC-2021 17:15:35
Lab ID: OPR2_18710_DF

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	101	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	112	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	106	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	105	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	105	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	99.5	26	-	166	Y
13C-OCDD	200	106	26	-	397	Y
13C-2,3,7,8-TCDF	100	91.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	104	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	103	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	120	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	127	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	125	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	125	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	124	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	106	20	-	186	Y
13C-OCDF	200	115	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	40.7	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 08 Dec 2021 11:27 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211207C04	Analysis Date:	07-DEC-2021 17:15:35
Lab ID:	OPR2_18710_DF		

Window Defining Standards Results

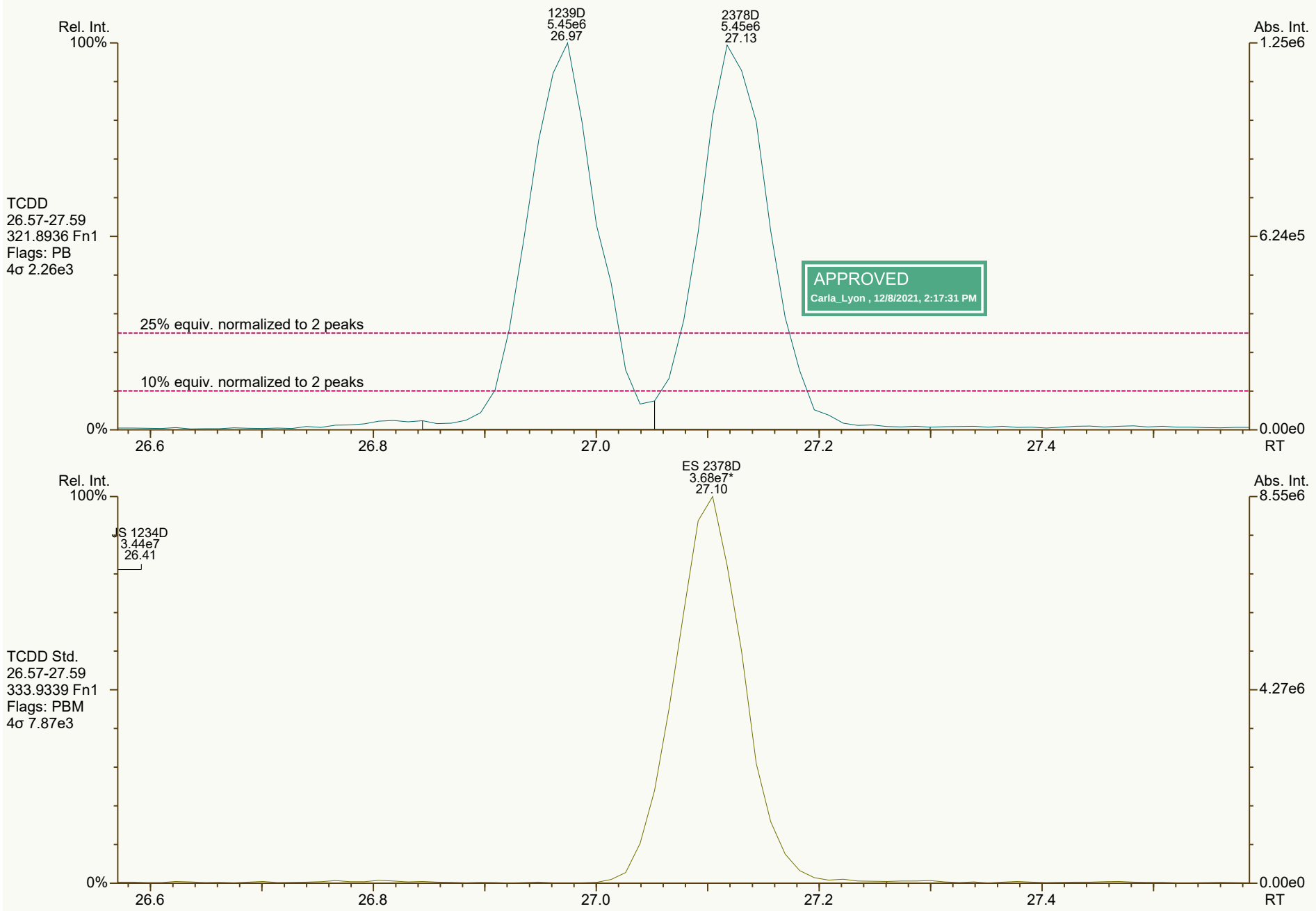
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	23.15	1289-TCDD	28.17
12479/12468-PeCDD	30.19	12389-PeCDD	33.23
124679/124689-HxCDD	35.05	123789-HxCDD	37.18
1234679-HpCDD	39.47	1234678-HpCDD	40.16
1368-TCDF	20.92	1289-TCDF	28.33
13468/12468-PeCDF	28.30	12389-PeCDF	33.52
123468-HxCDF	34.37	123789-HxCDF	37.56
1234678-HpCDF	39.17	1234789-HpCDF	40.58

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	26.97	2378-TCDD	27.13
2348-TCDF	26.07	2378-TCDF	26.18

Processed: 08 Dec 2021 11:27 Analyst: TF

SGS ID: OPR2_18710_DF
Sample ID: 0_18710_OPR002
Acq: 07-Dec-2021 17:15:35
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04



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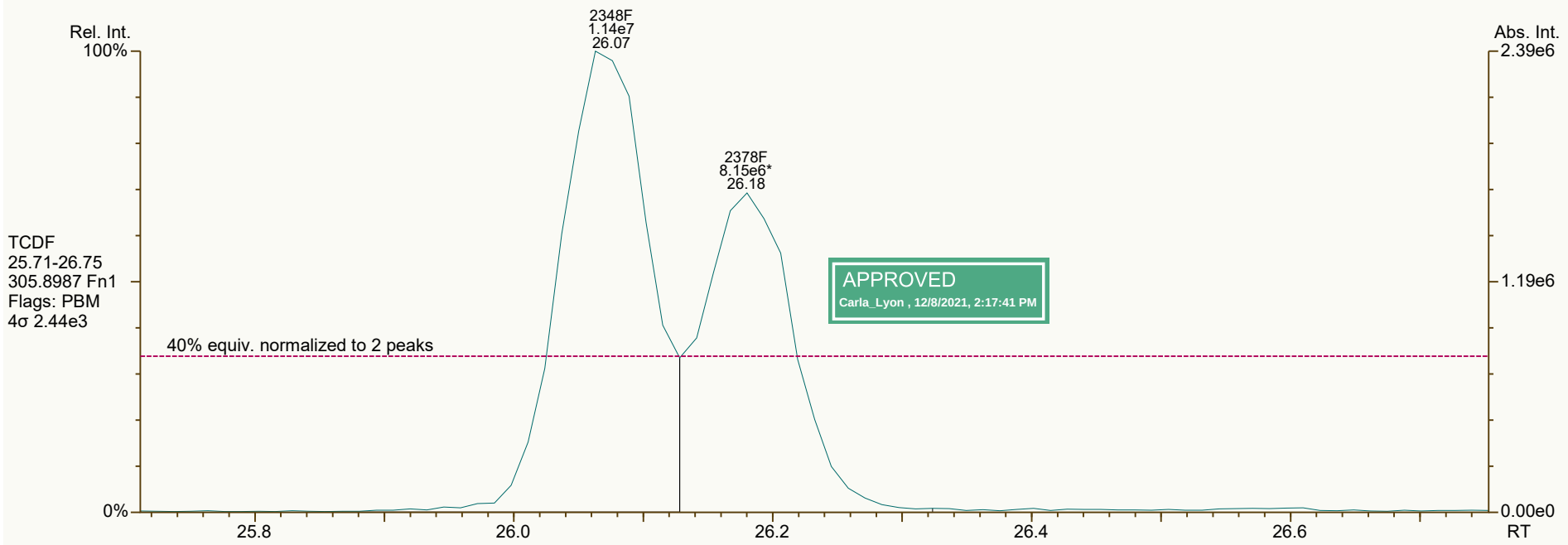
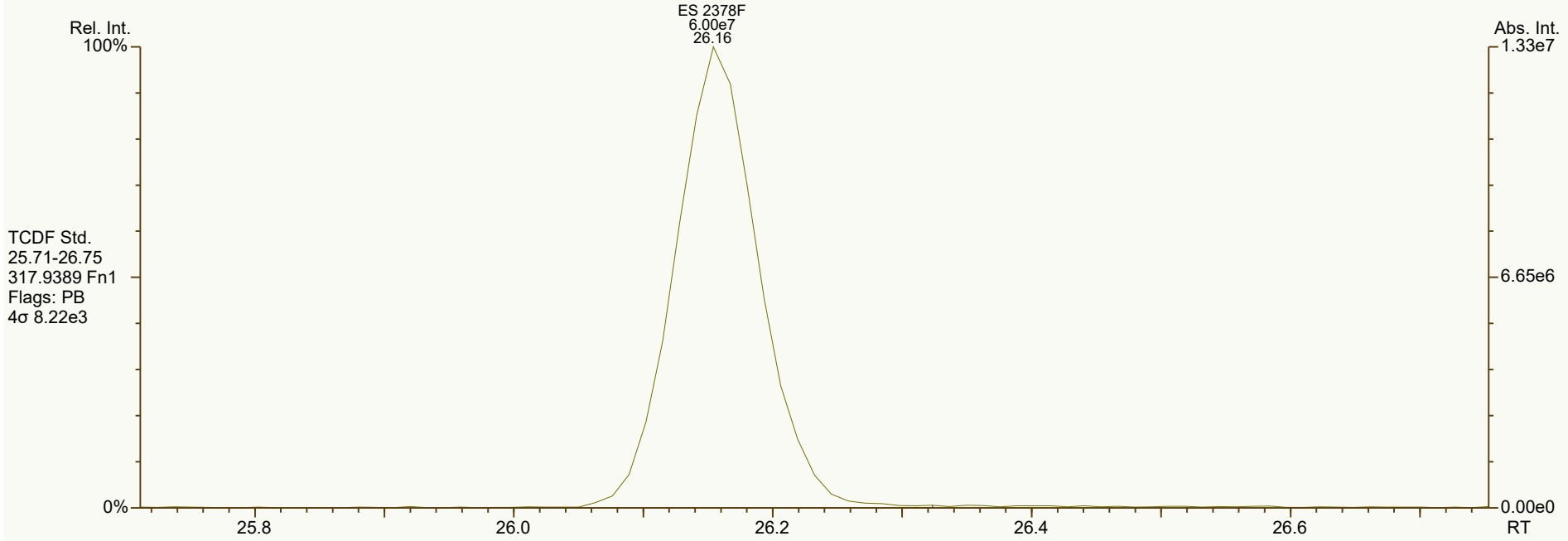
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 11:29

SGS ID: OPR2_18710_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18710_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

Acq: 07-Dec-2021 17:15:35
User: DTF Datafile: 211207C04





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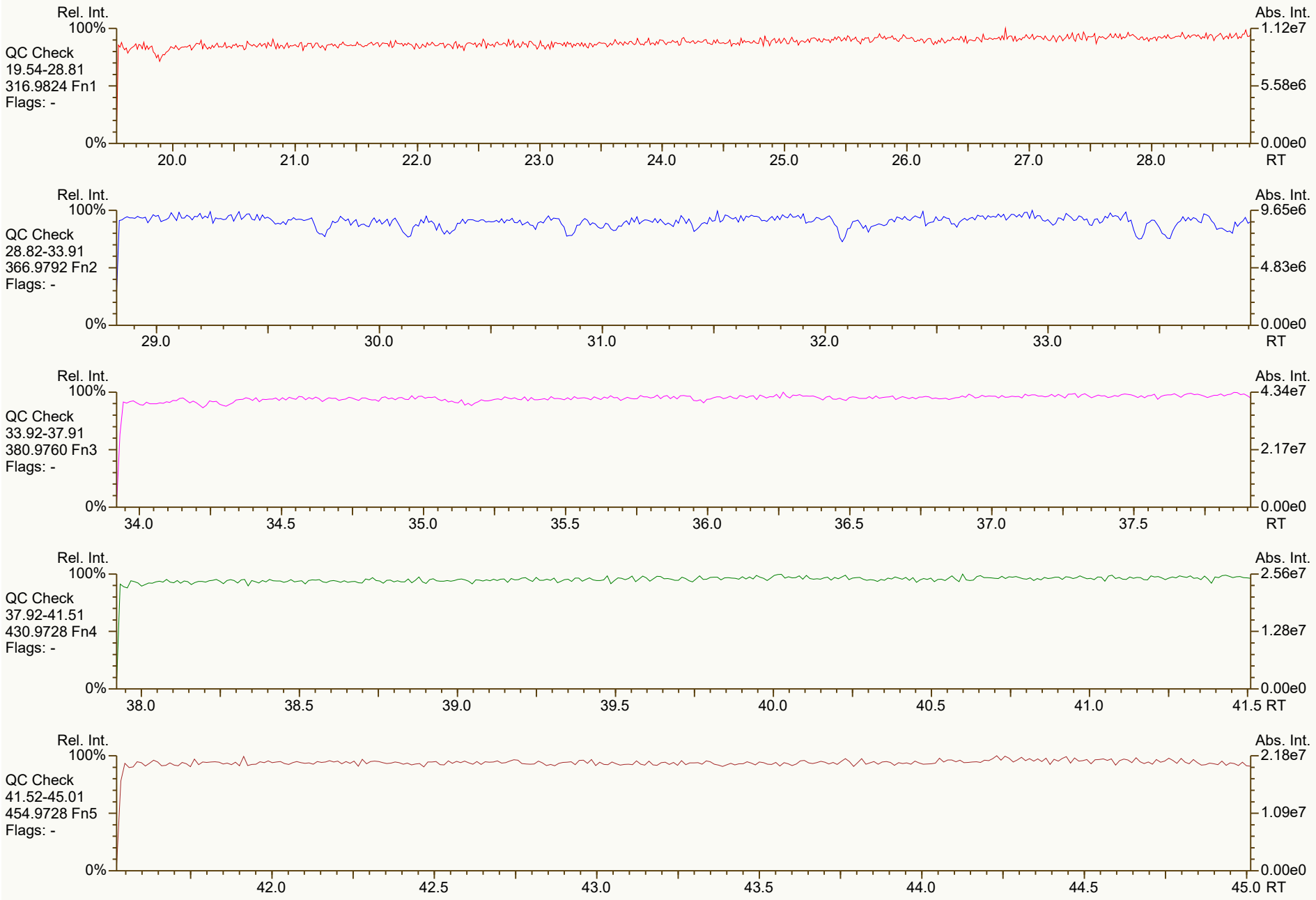
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 11:29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316.9824 Fn1
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0%
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22.0
23.0
24.0
25.0
26.0
27.0
28.0
Abs. Int.
1.12e7
5.58e6
0.00e0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
29.0
30.0
31.0
32.0
33.0
Abs. Int.
9.65e6
4.83e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
Abs. Int.
4.34e7
2.17e7
0.00e0
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
2.56e7
1.28e7
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
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43.5
44.0
44.5
45.0 RT
Abs. Int.
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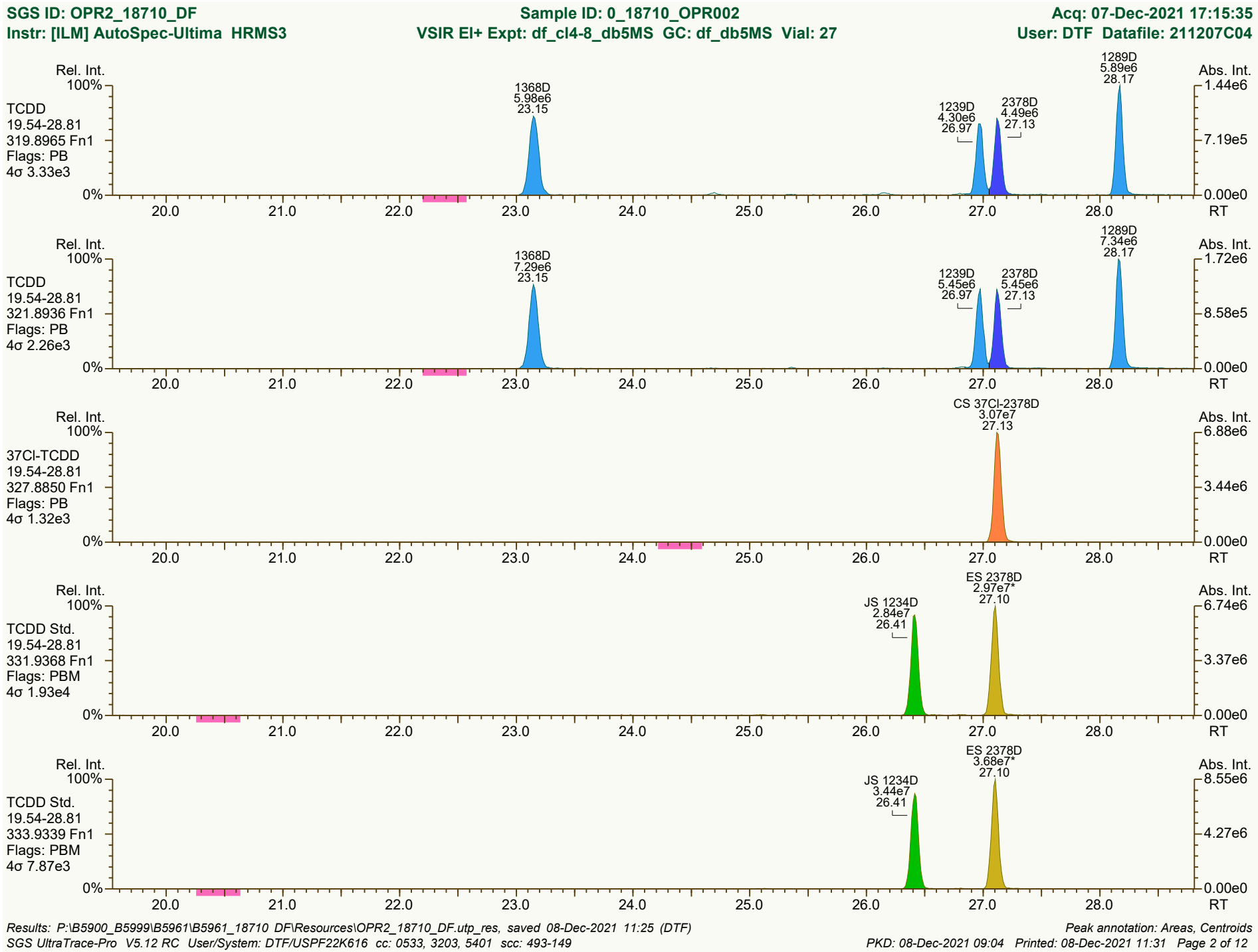
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04
Rel. Int.
Abs. Int.
TCDD
19.54-28.81
319.8965 Fn1
Flags: PB
4σ 3.33e3
1368D
5.98e6
23.15
1239D
4.30e6
26.97
2378D
4.49e6
27.13
1289D
5.89e6
28.17
1.44e6
7.19e5
0.00e0
TCDD
19.54-28.81
321.8936 Fn1
Flags: PB
4σ 2.26e3
1368D
7.29e6
23.15
1239D
5.45e6
26.97
2378D
5.45e6
27.13
1289D
7.34e6
28.17
1.72e6
8.58e5
0.00e0
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 1.32e3
CS 37Cl-2378D
3.07e7
27.13
6.88e6
3.44e6
0.00e0
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PBM
4σ 1.93e4
JS 1234D
2.84e7
26.41
ES 2378D
2.97e7*
27.10
6.74e6
3.37e6
0.00e0
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PBM
4σ 7.87e3
JS 1234D
3.44e7
26.41
ES 2378D
3.68e7*
27.10
8.55e6
4.27e6
0.00e0
100%
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
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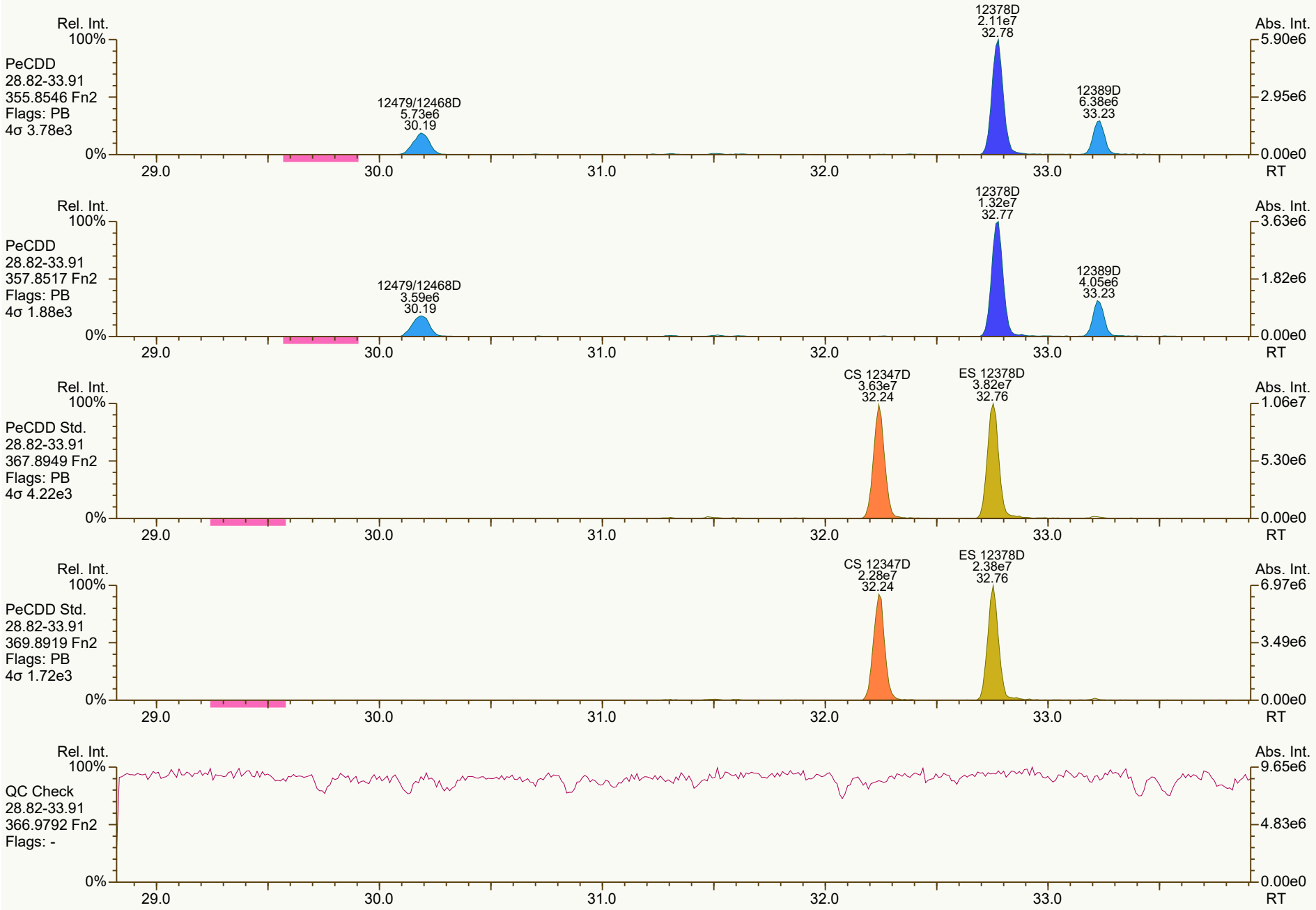
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0533, 3203, 5401 scc: 493-149
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 11:31 Page 2 of 12


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PB
4σ 3.78e3
0%
12479/12468D
5.73e6
30.19
12378D
2.11e7
32.78
12389D
6.38e6
33.23
Abs. Int.
5.90e6
2.95e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PB
4σ 1.88e3
0%
12479/12468D
3.59e6
30.19
12378D
1.32e7
32.77
12389D
4.05e6
33.23
Abs. Int.
3.63e6
1.82e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 4.22e3
0%
CS 12347D
3.63e7
32.24
ES 12378D
3.82e7
32.76
Abs. Int.
1.06e7
5.30e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 1.72e3
0%
CS 12347D
2.28e7
32.24
ES 12378D
2.38e7
32.76
Abs. Int.
6.97e6
3.49e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.65e6
4.83e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT

SGS ID: OPR2_18710_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18710_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

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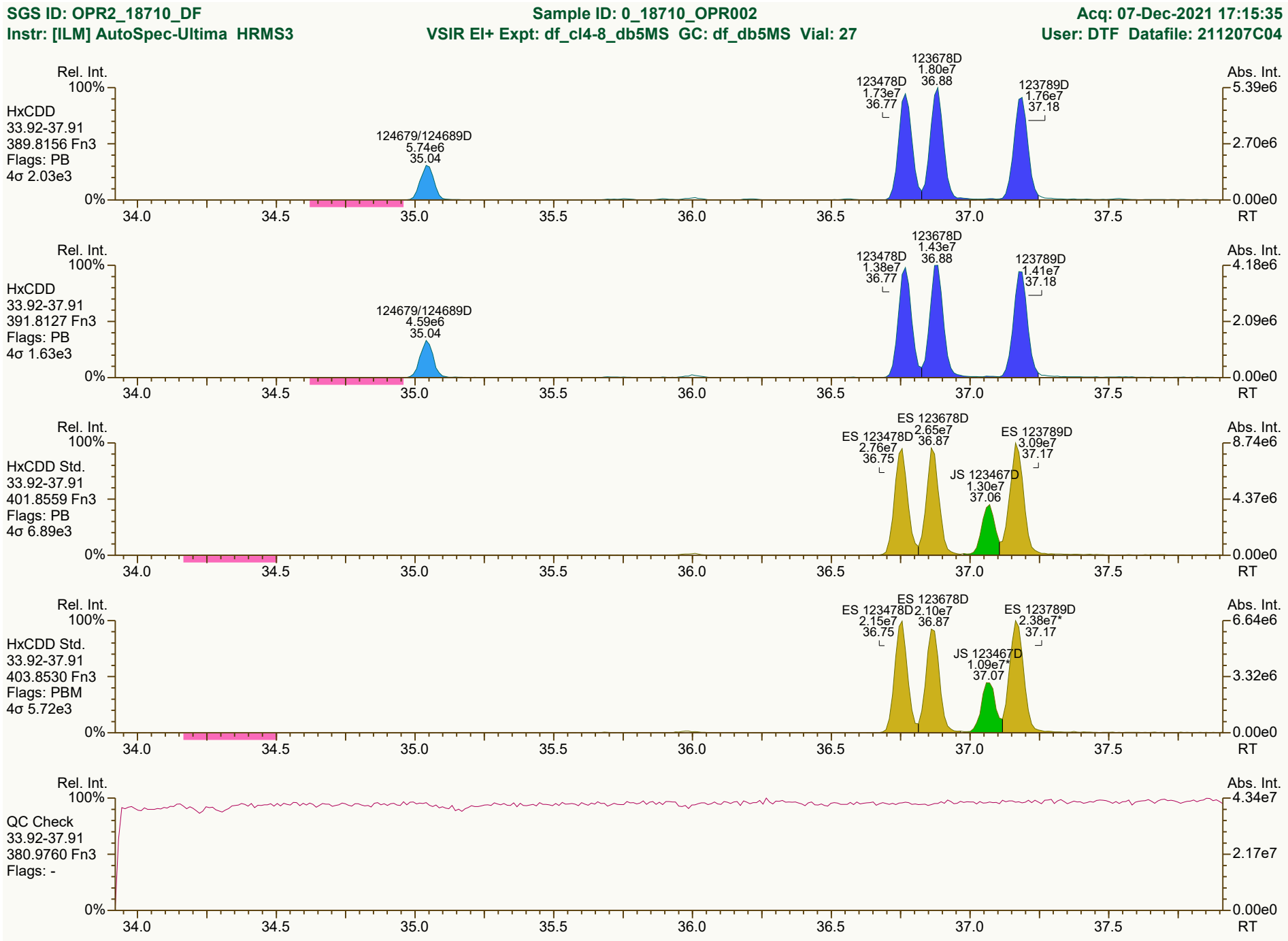

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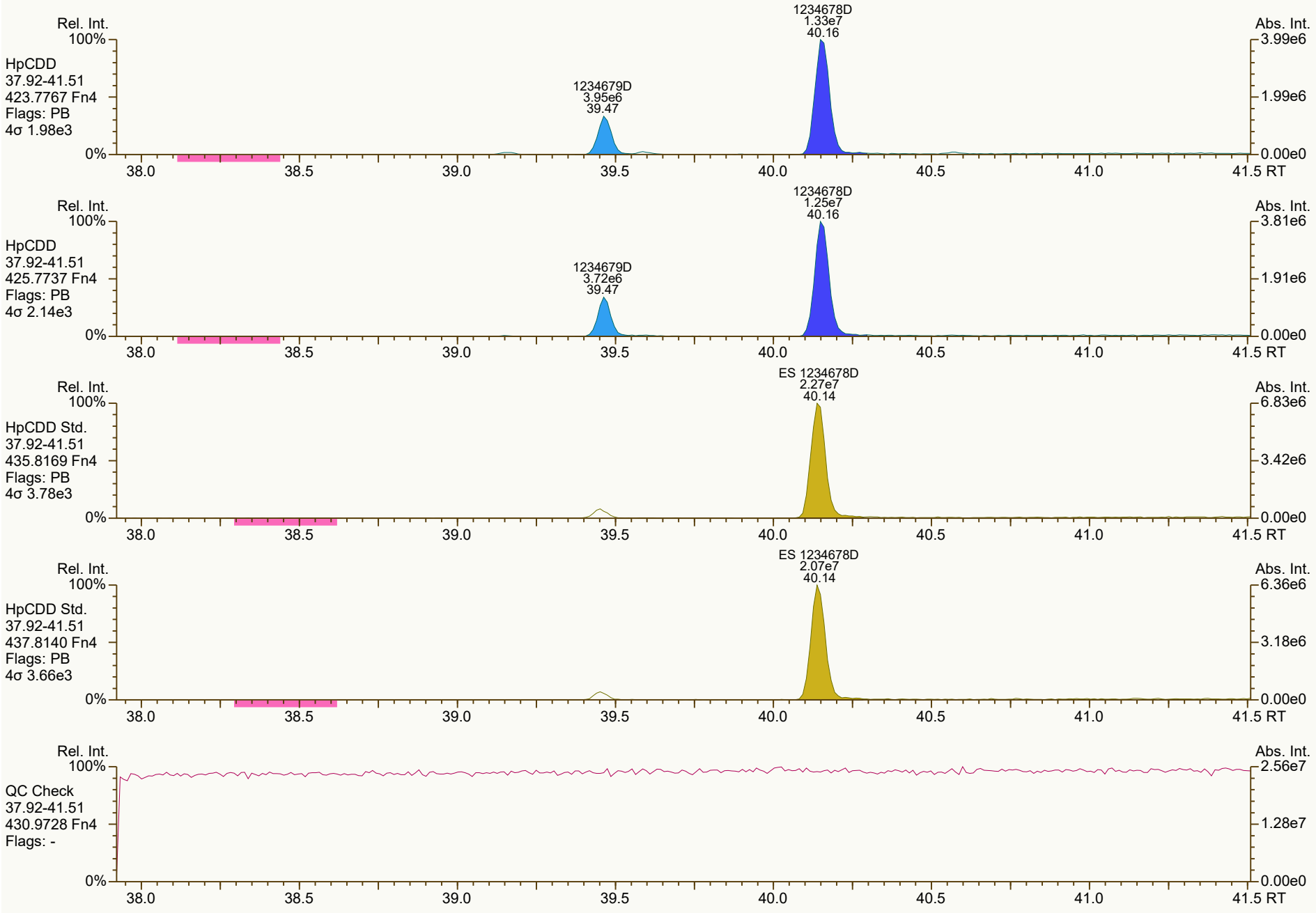
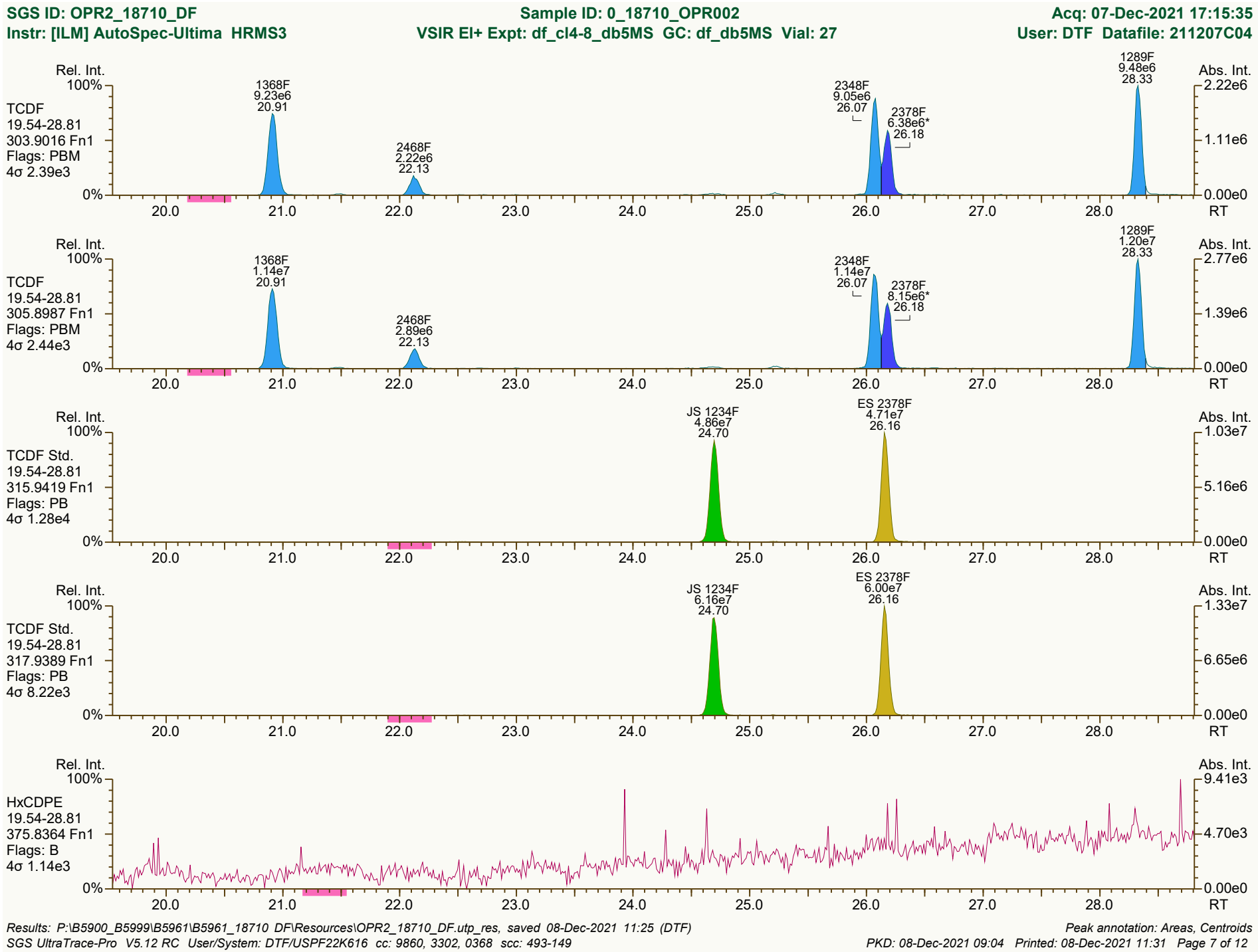
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8581, 9907 scc: 493-149

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 11:31 Page 4 of 12


Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PB
4σ 1.98e3
0%
1234678D
1.33e7
40.16
1234679D
3.95e6
39.47
Abs. Int.
3.99e6
1.99e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PB
4σ 2.14e3
0%
1234678D
1.25e7
40.16
1234679D
3.72e6
39.47
Abs. Int.
3.81e6
1.91e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 3.78e3
0%
ES 1234678D
2.27e7
40.14
Abs. Int.
6.83e6
3.42e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 3.66e3
0%
ES 1234678D
2.07e7
40.14
Abs. Int.
6.36e6
3.18e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.56e7
1.28e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.86e3
0%
OCDD
9.76e6*
42.77
Abs. Int.
2.14e6
1.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 3.40e3
0%
OCDD
1.05e7*
42.77
Abs. Int.
2.18e6
1.09e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.30e3
0%
ES OCDD
1.54e7
42.76
Abs. Int.
3.39e6
1.70e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 3.05e3
0%
ES OCDD
1.63e7
42.76
Abs. Int.
3.43e6
1.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.18e7
1.09e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT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Sample ID: 0_18710_OPR002
Acq: 07-Dec-2021 17:15:35
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04
Rel. Int.
Abs. Int.
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 2.39e3
1368F 9.23e6 20.91
2468F 2.22e6 22.13
2348F 9.05e6 26.07
2378F 6.38e6* 26.18
1289F 9.48e6 28.33
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 2.44e3
1368F 1.14e7 20.91
2468F 2.89e6 22.13
2348F 1.14e7 26.07
2378F 8.15e6* 26.18
1289F 1.20e7 28.33
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.28e4
JS 1234F 4.86e7 24.70
ES 2378F 4.71e7 26.16
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 8.22e3
JS 1234F 6.16e7 24.70
ES 2378F 6.00e7 26.16
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.14e3
RT
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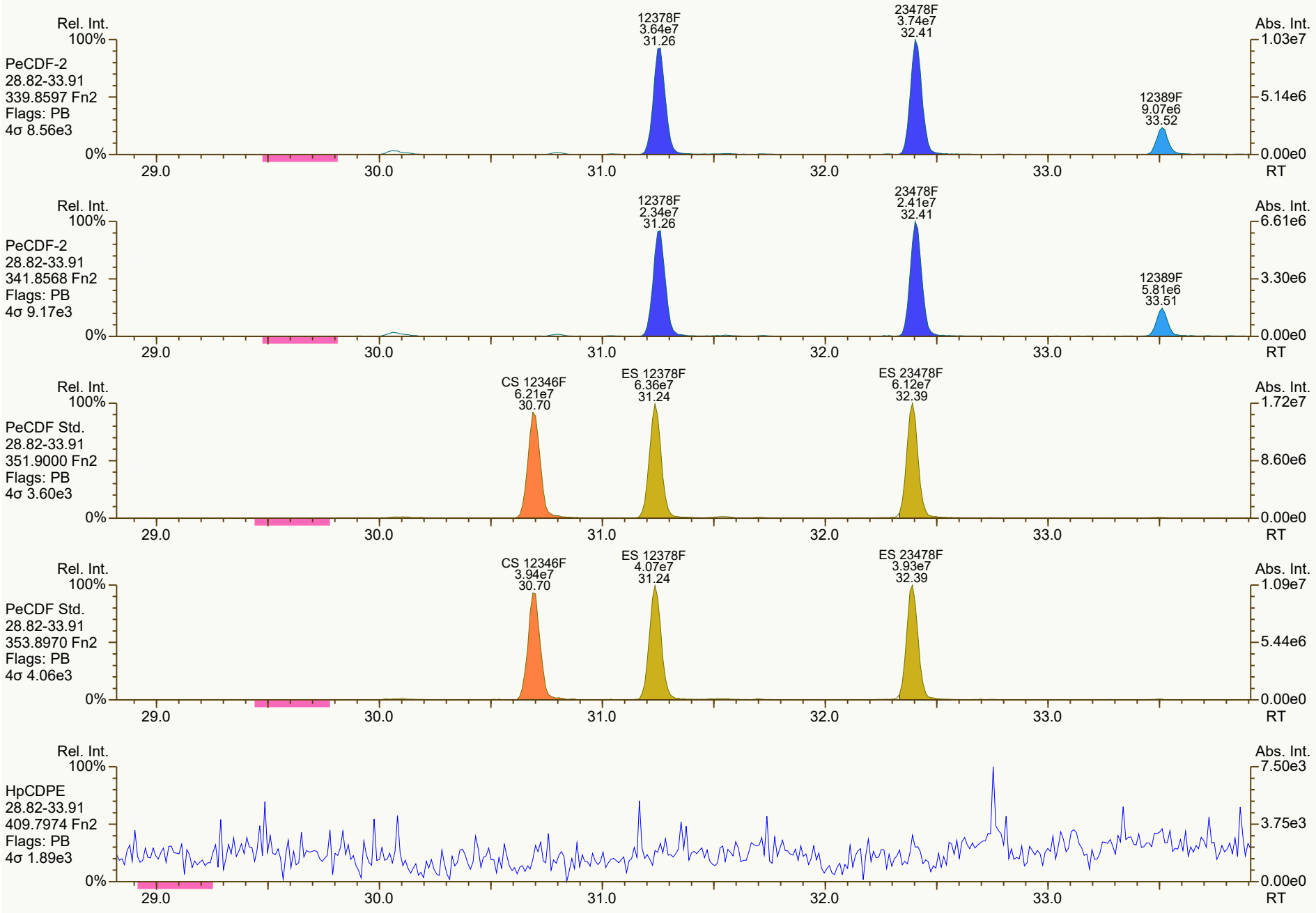
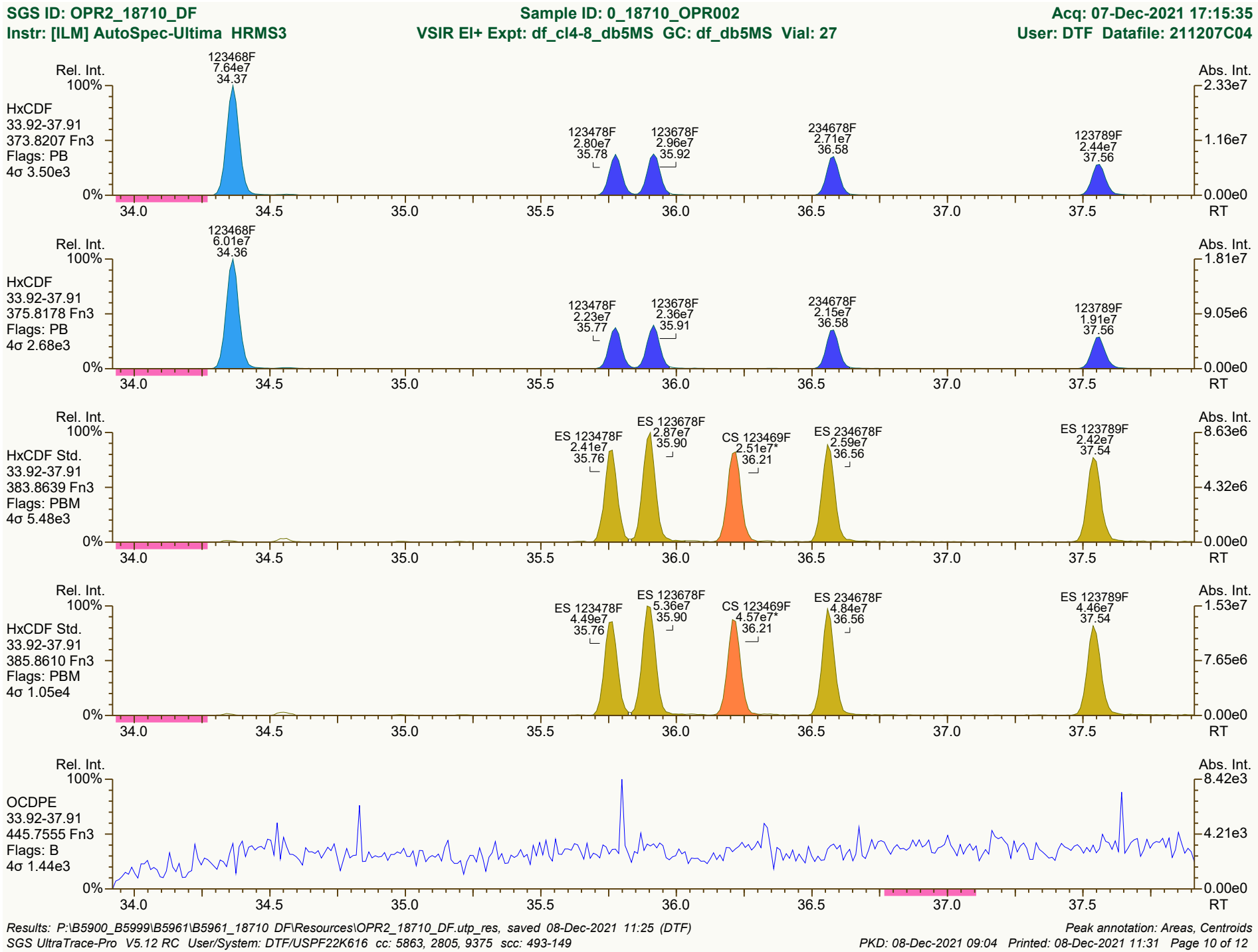
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9860, 3302, 0368 scc: 493-149
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 11:31 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 1.53e3
13468/12468F
4.99e7
28.30
Abs. Int.
1.22e7
6.09e6
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 2.22e3
13468/12468F
3.11e7
28.30
7.55e6
3.77e6
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
1.12e7
5.58e6


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PB
4σ 8.56e3
0%
12378F
3.64e7
31.26
23478F
3.74e7
32.41
12389F
9.07e6
33.52
Abs. Int.
1.03e7
5.14e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PB
4σ 9.17e3
0%
12378F
2.34e7
31.26
23478F
2.41e7
32.41
12389F
5.81e6
33.51
Abs. Int.
6.61e6
3.30e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 3.60e3
0%
CS 12346F
6.21e7
30.70
ES 12378F
6.36e7
31.24
ES 23478F
6.12e7
32.39
Abs. Int.
1.72e7
8.60e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 4.06e3
0%
CS 12346F
3.94e7
30.70
ES 12378F
4.07e7
31.24
ES 23478F
3.93e7
32.39
Abs. Int.
1.09e7
5.44e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: PB
4σ 1.89e3
0%
Abs. Int.
7.50e3
3.75e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04
Rel. Int.
Abs. Int.
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PB
4σ 3.50e3
123468F 7.64e7 34.37
123478F 2.80e7 35.78
123678F 2.96e7 35.92
234678F 2.71e7 36.58
123789F 2.44e7 37.56
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PB
4σ 2.68e3
123468F 6.01e7 34.36
123478F 2.23e7 35.77
123678F 2.36e7 35.91
234678F 2.15e7 36.58
123789F 1.91e7 37.56
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 5.48e3
ES 123478F 2.41e7 35.76
ES 123678F 2.87e7 35.90
CS 123469F 2.51e7* 36.21
ES 234678F 2.59e7 36.56
ES 123789F 2.42e7 37.54
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PBM
4σ 1.05e4
ES 123478F 4.49e7 35.76
ES 123678F 5.36e7 35.90
CS 123469F 4.57e7* 36.21
ES 234678F 4.84e7 36.56
ES 123789F 4.46e7 37.54
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 1.44e3
100%
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
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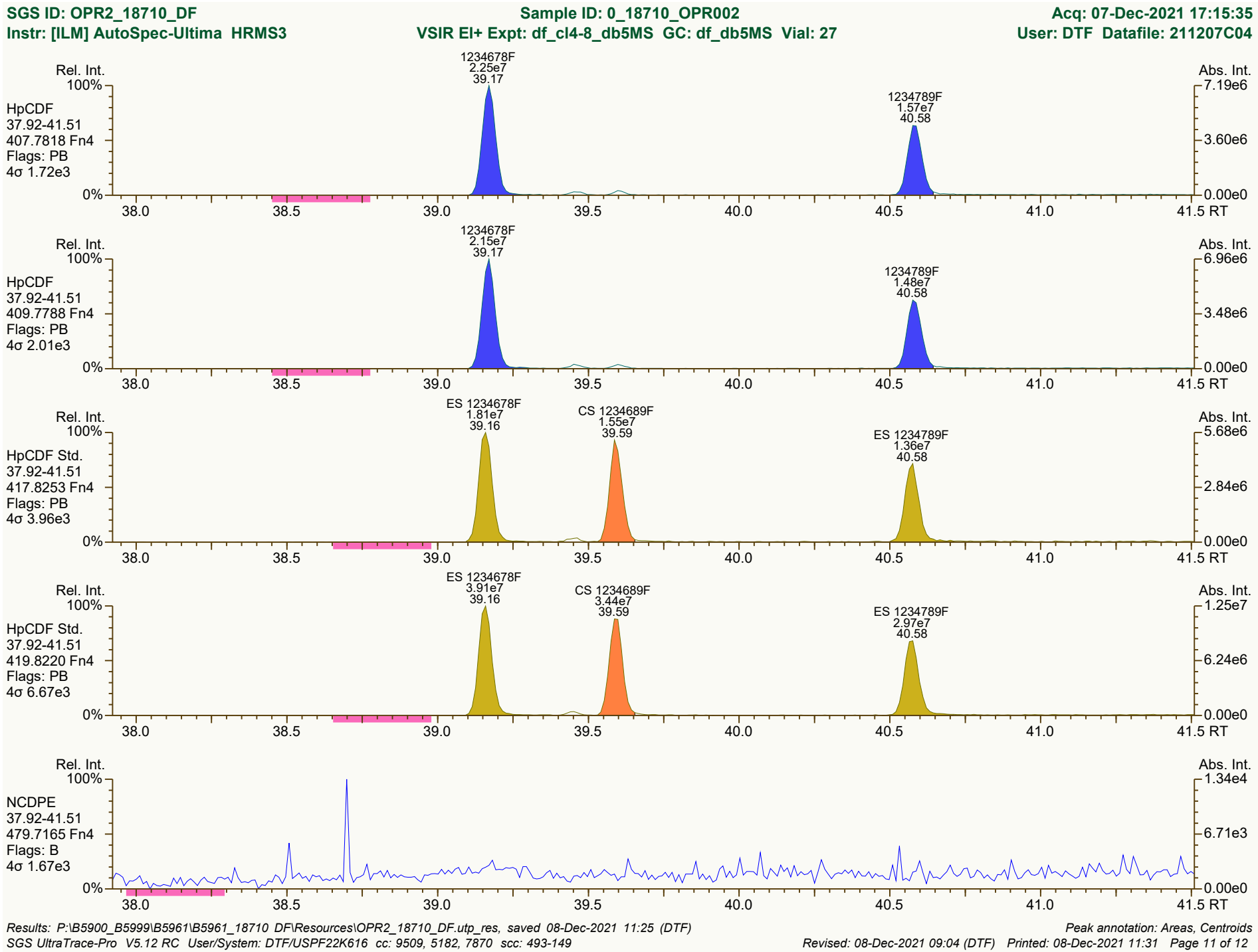
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 11:31 Page 10 of 12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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04
Rel. Int.
Abs. Int.
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PB
4σ 1.72e3
1234678F
2.25e7
39.17
1234789F
1.57e7
40.58
7.19e6
3.60e6
0.00e0
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PB
4σ 2.01e3
1234678F
2.15e7
39.17
1234789F
1.48e7
40.58
6.96e6
3.48e6
0.00e0
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PB
4σ 3.96e3
ES 1234678F
1.81e7
39.16
CS 1234689F
1.55e7
39.59
ES 1234789F
1.36e7
40.58
5.68e6
2.84e6
0.00e0
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PB
4σ 6.67e3
ES 1234678F
3.91e7
39.16
CS 1234689F
3.44e7
39.59
ES 1234789F
2.97e7
40.58
1.25e7
6.24e6
0.00e0
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.67e3
1.34e4
6.71e3
0.00e0
100%
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
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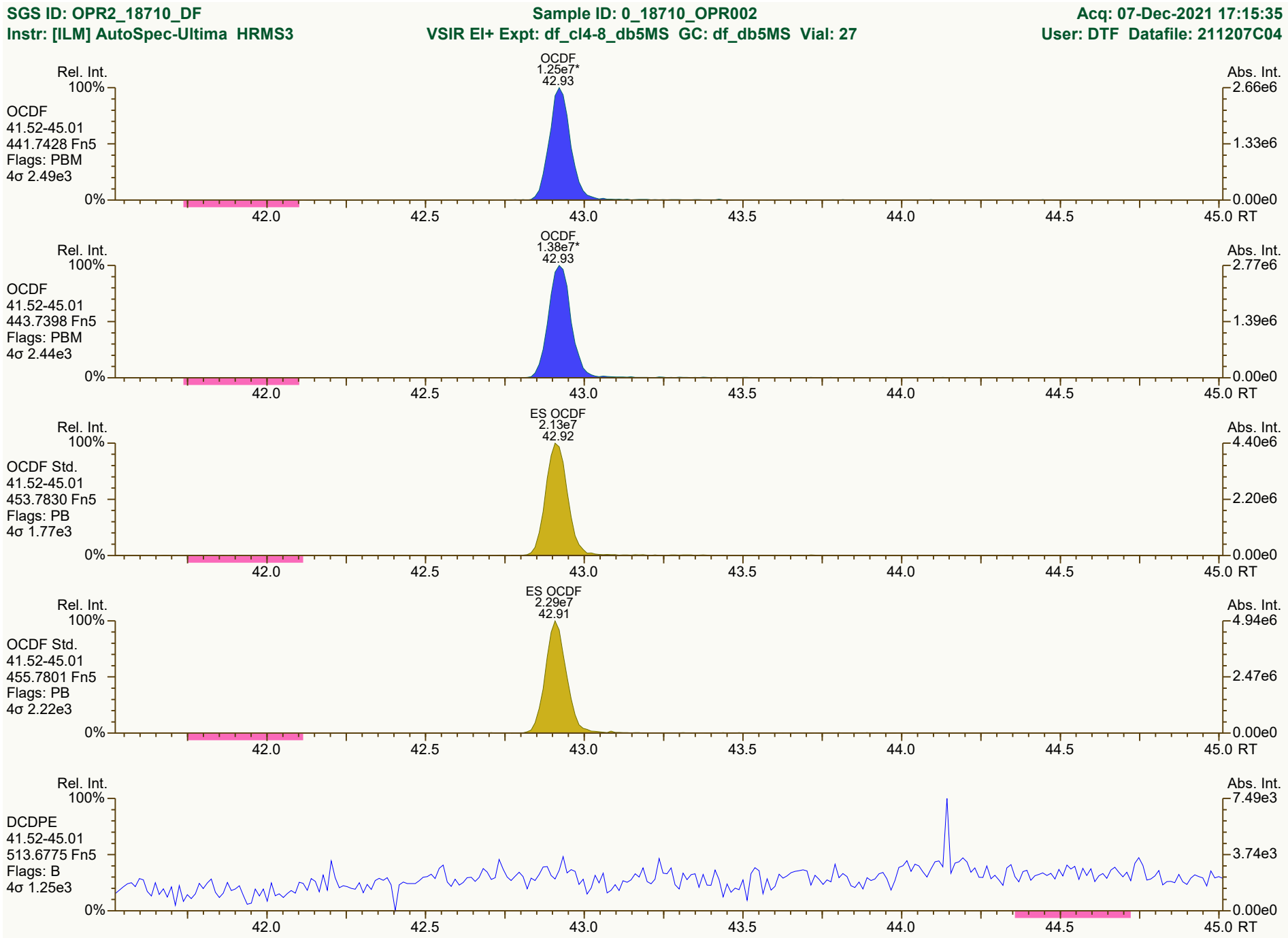
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9509, 5182, 7870 scc: 493-149
Revised: 08-Dec-2021 09:04 (DTF) Printed: 08-Dec-2021 11:31 Page 11 of 12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Sample ID: 0_18710_OPR002
Acq: 07-Dec-2021 17:15:35
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04
OCDF
1.25e7*
42.93
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.49e3
0%
Abs. Int.
2.66e6
1.33e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.38e7*
42.93
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
2.77e6
1.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.13e7
42.92
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 1.77e3
0%
Abs. Int.
4.40e6
2.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7
42.91
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.22e3
0%
Abs. Int.
4.94e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.25e3
0%
Abs. Int.
7.49e3
3.74e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5961\B5961_18710 DF\Resources\OPR2_18710_DF.utp_res, saved 08-Dec-2021 11:25 (DTF)
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SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0419, 8083, 5575 scc: 493-149
Revised: 08-Dec-2021 09:04 (DTF) Printed: 08-Dec-2021 11:31 Page 12 of 12



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120121-S-JC-NE-O-6 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.62 g	Lab Sample ID	B5962_18720_DF_001-D5	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	78.3 %	QC Batch No:	18720	Date Analyzed:	20-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:00:37

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.71			ES 2378-TCDD	86.5	
12378-PeCDD	ND	1.86			ES 12378-PeCDD	74.7	
123478-HxCDD	3.99				ES 123478-HxCDD	95.5	
123678-HxCDD	6.99				ES 123678-HxCDD	87.1	
123789-HxCDD	EMPC		6.53		ES 123789-HxCDD	95	
1234678-HpCDD	1,100				ES 1234678-HpCDD	89.7	
OCDD	67,600			E	ES OCDD	78.7	
2378-TCDF	5.04				ES 2378-TCDF	84.9	
12378-PeCDF	ND	1.37			ES 12378-PeCDF	88.4	
23478-PeCDF	ND	1.43			ES 23478-PeCDF	83.9	
123478-HxCDF	ND	1.56			ES 123478-HxCDF	97.8	
123678-HxCDF	ND	1.33			ES 123678-HxCDF	103	
234678-HxCDF	1.39			J	ES 234678-HxCDF	98	
123789-HxCDF	ND	1.59			ES 123789-HxCDF	97.9	
1234678-HpCDF	21.5				ES 1234678-HpCDF	94.6	
1234789-HpCDF	EMPC		1.54	J	ES 1234789-HpCDF	105	
OCDF	64				ES OCDF	75.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77.6	
Total TCDD	ND	1.71	ND		CS 12347-PeCDD	74.3	
Total PeCDD	ND	1.86	ND		CS 12346-PeCDF	96.5	
Total HxCDD	41		74		CS 123469-HxCDF	110	
Total HpCDD	2,360		2,360		CS 1234689-HpCDF	118	
Total TCDF	8.91		11.1				
Total PeCDF	ND		5.66				
Total HxCDF	12.9		23.5				
Total HpCDF	61.9		63.5				
Total PCDD/Fs	**70,100**		**70,200**	E			
WHO-2005 TEQs							
TEQ: ND=0	33.2		33.9				
TEQ: ND=DL/2	35.5	2.83	36.1				
TEQ: ND=DL	37.7	5.66	38.4				

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Sample ID: 11215131-120121-S-JC-NE-O-6 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.62 g	Lab Sample ID:	B5962_18720_DF_001-D5	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	78.3 %	QC Batch No.:	18720	Date Analyzed:	20-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:00:37

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(1.71)		12479/12468D	(1.86)		124679/124689D	[22]		1234679D	1260	
1379D	(1.71)		12469D	(1.86)		123468D	[4.51]		1234678D	1100	
1369D	(1.71)		12368D	(1.86)		123679/123689D	25.6				
1469D	(1.71)		12478D	(1.86)		123469D	4.36				
1247D...[4]	(1.71)		12379D	(1.86)		123478D	3.99				
1378D	(1.71)		12369D...[3]	(1.86)		123678D	6.99				
1268D	(1.71)		12346/12347D	(1.86)		123467D	(2.72)				
1478D	(1.71)		12378D	(1.86)		123789D	[6.53]		**Conc.**	2,360	
1279D	(1.71)		12367D	(1.86)					**EMPC**	2,360	
1234/1269D	(1.71)		12389D	(1.86)							
1236D	(1.71)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	(1.71)									**(pg/g)**	
1239D	(1.71)								OCDD	67600	E
2378D	(1.71)										
1278D	(1.71)										
1267D	(1.71)										
1289D	(1.71)										
Conc.	0		**Conc.**	0		**Conc.**	41				
EMPC	0		**EMPC**	0		**EMPC**	74				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	33.2	33.9
TEQ: ND=DL/2	35.5	36.1
TEQ: ND=DL	37.7	38.4

	Conc.	EMPC
Total PCDD/Fs	70,100	70,200

Checkcode: 670-989-ZDB

Report Created: 20-Dec-2021 14:10 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-O-6 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.62 g	Lab Sample ID:	B5962_18720_DF_001-D5	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	78.3 %	QC Batch No.:	18720	Date Analyzed:	20-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:00:37

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(1.57)		13468/12468F	[5.66]		123468F	[2.64]		1234678F	21.5	
1468F	(1.57)		13678F...[3]	(1.4)		124678/134678F	11.5		1234679F	1.92	J
2468F	3.87		12368F...[3]	(1.4)		134679F	(1.49)		1234689F	38.5	
1346/1246F	(1.57)		14678F	(1.4)		124679F	(1.49)		1234789F	[1.54]	J
1347F...[3]	(1.57)		13479F	(1.4)		124689F	[7.98]				
1348F	(1.57)		13469/12479F	(1.4)		123467F	(1.49)				
1248F...[3]	(1.57)		12346F	(1.4)		123478F	(1.56)				
1268F	(1.57)		23468/12469F	(1.4)		123678F	(1.33)				
1467F	(1.57)		12347F	(1.4)		123479F	(1.49)				
1478F	(1.57)		12348F	(1.4)		123469F	(1.49)				
1369/1237F	(1.57)		12378F	(1.37)		123679F	(1.49)				
2467F	(1.57)		12678/12367F	(1.4)		234678F	1.39	J	**Conc.**	61.9	
2368F	(1.57)		12379F	(1.4)		234678/123689F	0		**EMPC**	63.5	
1238F...[5]	(1.57)		12679F	(1.4)		123689F	(1.49)				
1278F	(1.57)		23467/12369F	(1.4)		123789F	(1.59)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(1.57)		23478F	(1.43)		123789/123489F	0				
1267F	(1.57)		23478/12489F	0		123489F	(1.49)		OCDF	64	
2346/1249F	(1.57)		12489F	(1.4)							
2347/1279F	(1.57)		12349F	(1.4)							
2348F	(1.57)		12389F	(1.4)							
2378F	5.04										
2367/3467F	[2.16]										
1269F	(1.57)										
1239F	(1.57)										
1289F	(1.57)										
Conc.	8.91		**Conc.**	0		**Conc.**	12.9				
EMPC	11.1		**EMPC**	5.66		**EMPC**	23.5				

Checkcode: 670-989-ZDB

Report Created: 20-Dec-2021 14:10 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-O-6 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5962_18720_DF_001-D5
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.62 g	QC Batch No.:	18720
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	20-Dec-2021 13:00
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(1.71)		1.71	(1.71)	(1.71)	(1.71)
12378-PeCDD	(1.86)		1.86	(0.931)	(1.86)	(1.86)
123478-HxCDD	3.99		2.83	0.399	0.399	0.399
123678-HxCDD	6.99		2.78	0.699	0.699	0.699
123789-HxCDD	[6.53]		2.58	[0.653]	[0.653]	[0.653]
1234678-HpCDD	1100		1.69	11	11	11
OCDD	67600	E	4.42	67.6	6.76	20.3
2378-TCDF	5.04		1.57	0.504	0.504	0.504
12378-PeCDF	(1.37)		1.37	(0.0685)	(0.0685)	(0.0411)
23478-PeCDF	(1.43)		1.43	(0.715)	(0.715)	(0.429)
123478-HxCDF	(1.56)		1.56	(0.156)	(0.156)	(0.156)
123678-HxCDF	(1.33)		1.33	(0.133)	(0.133)	(0.133)
234678-HxCDF	1.39	J	1.51	0.139	0.139	0.139
123789-HxCDF	(1.59)		1.59	(0.159)	(0.159)	(0.159)
1234678-HpCDF	21.5		1.07	0.215	0.215	0.215
1234789-HpCDF	[1.54]	J	1.24	[0.0154]	[0.0154]	[0.0154]
OCDF	64		3.14	0.064	0.0064	0.0192

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TEQ Summaries			
EMPC = 0, ND = 0	80.6	19.7	33.2
EMPC = 0, ND = DL / 2	82.5	22.1	35.5
EMPC = 0, ND = DL	84.5	24.5	37.7
EMPC = 0, < J-level = 0	80.4	19.5	33.1
EMPC = EMPC, ND = 0	81.3	20.4	33.9
EMPC = EMPC, ND = DL / 2	83.2	22.8	36.1
EMPC = EMPC, ND = DL	85.1	25.2	38.4
EMPC = EMPC, < J-level = 0	81.1	20.2	33.7

Checkcode: 670-989-ZDB

Sample ID: 11215131-120121-S-JC-NE-B-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.45 g	Lab Sample ID	B5962_18720_DF_002	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	75.1 %	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	15:37:49

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	45.5				ES 2378-TCDD	92	
12378-PeCDD	EMPC		0.893	J	ES 12378-PeCDD	79.8	
123478-HxCDD	EMPC		0.746	J	ES 123478-HxCDD	92	
123678-HxCDD	3.05				ES 123678-HxCDD	97.4	
123789-HxCDD	2.11			J	ES 123789-HxCDD	96.4	
1234678-HpCDD	77.9				ES 1234678-HpCDD	88.4	
OCDD	1,440				ES OCDD	72	
2378-TCDF	196				ES 2378-TCDF	88	
12378-PeCDF	4.68				ES 12378-PeCDF	91.6	
23478-PeCDF	5.34				ES 23478-PeCDF	89.2	
123478-HxCDF	6.38				ES 123478-HxCDF	98.2	
123678-HxCDF	1.9			J	ES 123678-HxCDF	102	
234678-HxCDF	1.35			J	ES 234678-HxCDF	97.2	
123789-HxCDF	ND	0.463			ES 123789-HxCDF	99.2	
1234678-HpCDF	57.1				ES 1234678-HpCDF	104	
1234789-HpCDF	6.38				ES 1234789-HpCDF	97.4	
OCDF	1,410				ES OCDF	76.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	82.8	
Total TCDD	57.4		59.4		CS 12347-PeCDD	84.4	
Total PeCDD	9.01		10.4		CS 12346-PeCDF	95.1	
Total HxCDD	52.2		52.9		CS 123469-HxCDF	108	
Total HpCDD	210		210		CS 1234689-HpCDF	109	
Total TCDF	386		389				
Total PeCDF	32.1		33.7				
Total HxCDF	29.6		30				
Total HpCDF	96.8		96.8				
Total PCDD/Fs	**3,730**		**3,740**				
WHO-2005 TEQs							
TEQ: ND=0	70.5		71.5				
TEQ: ND=DL/2	70.6	0.521	71.5				
TEQ: ND=DL	70.6	1.04	71.6				

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Sample ID: 11215131-120121-S-JC-NE-B-1 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.45 g	Lab Sample ID:	B5962_18720_DF_002	Date Extracted: 13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	75.1 %	QC Batch No.:	18720	Date Analyzed: 17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 15:37:49

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.16		12479/12468D	2.3	J	124679/124689D	31		1234679D	132	
1379D	0.396	J	12469D	3.32		123468D	1.91	J	1234678D	77.9	
1369D	[0.366]	J	12368D	0.846	J	123679/123689D	12.3				
1469D	4.09		12478D	[0.505]	J	123469D	1.02	J			
1247D...[4]	[0.462]	J	12379D	0.44	J	123478D	[0.746]	J			
1378D	[0.296]	J	12369D...[3]	2.1	J	123678D	3.05				
1268D	(0.222)		12346/12347D	(0.36)		123467D	0.721	J			
1478D	[0.232]	J	12378D	[0.893]	J	123789D	2.11	J	**Conc.**	210	
1279D	0.318	J	12367D	(0.36)					**EMPC**	210	
1234/1269D	0.773		12389D	(0.36)							
1236D	(0.222)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	0.844										
1239D	(0.222)								OCDD	1440	
2378D	45.5										
1278D	4.34										
1267D	(0.222)										
1289D	[0.62]										
Conc.	57.4		**Conc.**	9.01		**Conc.**	52.2				
EMPC	59.4		**EMPC**	10.4		**EMPC**	52.9				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	70.5	71.5
TEQ: ND=DL/2	70.6	71.5
TEQ: ND=DL	70.6	71.6

	Conc.	EMPC
Total PCDD/Fs	3,730	3,740

Checkcode: 578-176-NPC

Report Created: 20-Dec-2021 14:09 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-B-1 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.45 g	Lab Sample ID:	B5962_18720_DF_002	Date Extracted: 13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	75.1 %	QC Batch No.:	18720	Date Analyzed: 17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 15:37:49

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.459	J	13468/12468F	9.34		123468F	2.29	J	1234678F	57.1	
1468F	1.03		13678F...[3]	[0.957]	J	124678/134678F	8.22		1234679F	3.16	
2468F	3		12368F...[3]	6.42		134679F	(0.449)		1234689F	30.1	
1346/1246F	0.776		14678F	0.622	J	124679F	(0.449)		1234789F	6.38	
1347F...[3]	2.9		13479F	(0.186)		124689F	7.92				
1348F	1.17		13469/12479F	0.256	J	123467F	0.528	J			
1248F...[3]	11		12346F	[0.201]	J	123478F	6.38				
1268F	4.45		23468/12469F	1.45	J	123678F	1.9	J			
1467F	0.994		12347F	[0.493]	J	123479F	(0.449)				
1478F	8.87		12348F	1.19	J	123469F	[0.408]	J			
1369/1237F	2.1		12378F	4.68		123679F	(0.449)				
2467F	0.688		12678/12367F	2.13	J	234678F	1.35	J	**Conc.**	96.8	
2368F	7.27		12379F	(0.186)		234678/123689F	0		**EMPC**	96.8	
1238F...[5]	8.55		12679F	(0.186)		123689F	(0.449)				
1278F	84.4		23467/12369F	0.306	J	123789F	(0.463)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	[0.816]		23478F	5.34		123789/123489F	0				
1267F	5.17		23478/12489F	0		123489F	1.06	J	OCDF	1410	
2346/1249F	0.88		12489F	(0.186)							
2347/1279F	[1.78]		12349F	(0.186)							
2348F	13.3		12389F	0.343	J						
2378F	196										
2367/3467F	16.6										
1269F	3.37										
1239F	(0.19)										
1289F	13.9										
Conc.	386		**Conc.**	32.1		**Conc.**	29.6				
EMPC	389		**EMPC**	33.7		**EMPC**	30				

Checkcode: 578-176-NPC

Report Created: 20-Dec-2021 14:09 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-B-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5962_18720_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.45 g	QC Batch No.:	18720
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 15:37
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	45.5		0.222	45.5	45.5	45.5
12378-PeCDD	[0.893]	J	0.36	[0.446]	[0.893]	[0.893]
123478-HxCDD	[0.746]	J	0.636	[0.0746]	[0.0746]	[0.0746]
123678-HxCDD	3.05		0.678	0.305	0.305	0.305
123789-HxCDD	2.11	J	0.605	0.211	0.211	0.211
1234678-HpCDD	77.9		0.506	0.779	0.779	0.779
OCDD	1440		1.66	1.44	0.144	0.432
2378-TCDF	196		0.19	19.6	19.6	19.6
12378-PeCDF	4.68		0.19	0.234	0.234	0.14
23478-PeCDF	5.34		0.182	2.67	2.67	1.6
123478-HxCDF	6.38		0.46	0.638	0.638	0.638
123678-HxCDF	1.9	J	0.414	0.19	0.19	0.19
234678-HxCDF	1.35	J	0.467	0.135	0.135	0.135
123789-HxCDF	(0.463)		0.463	(0.0463)	(0.0463)	(0.0463)
1234678-HpCDF	57.1		0.145	0.571	0.571	0.571
1234789-HpCDF	6.38		0.197	0.0638	0.0638	0.0638
OCDF	1410		0.357	1.41	0.141	0.424

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TEQ Summaries			
EMPC = 0, ND = 0	73.7	71.1	70.5
EMPC = 0, ND = DL / 2	73.7	71.2	70.6
EMPC = 0, ND = DL	73.7	71.2	70.6
EMPC = 0, < J-level = 0	73.2	70.6	70
EMPC = EMPC, ND = 0	74.2	72.1	71.5
EMPC = EMPC, ND = DL / 2	74.2	72.1	71.5
EMPC = EMPC, ND = DL	74.3	72.1	71.6
EMPC = EMPC, < J-level = 0	73.2	70.6	70

Checkcode: 578-176-NPC

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Sample ID: 11215131-120121-S-JC-NE-O-7 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	Lab Sample ID	B5962_18720_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	79.0 %	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	16:25:17

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		0.573		ES 2378-TCDD	97.5	
12378-PeCDD	0.81			J	ES 12378-PeCDD	84.2	
123478-HxCDD	2.18			J	ES 123478-HxCDD	98.8	
123678-HxCDD	4.13				ES 123678-HxCDD	107	
123789-HxCDD	4.07				ES 123789-HxCDD	102	
1234678-HpCDD	268				ES 1234678-HpCDD	95.6	
OCDD	26,800			E	ES OCDD	79.3	
2378-TCDF	3.13				ES 2378-TCDF	88.3	
12378-PeCDF	0.488			J	ES 12378-PeCDF	92.3	
23478-PeCDF	1.23			J	ES 23478-PeCDF	93.3	
123478-HxCDF	1.06			J	ES 123478-HxCDF	106	
123678-HxCDF	0.88			J	ES 123678-HxCDF	117	
234678-HxCDF	EMPC		0.872	J	ES 234678-HxCDF	111	
123789-HxCDF	ND	0.277			ES 123789-HxCDF	104	
1234678-HpCDF	10.2				ES 1234678-HpCDF	113	
1234789-HpCDF	0.998			J	ES 1234789-HpCDF	101	
OCDF	33.4				ES OCDF	73.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	84	
Total TCDD	0.438		1.01		CS 12347-PeCDD	86.6	
Total PeCDD	4.86		5.92		CS 12346-PeCDF	96.2	
Total HxCDD	46.4		47.6		CS 123469-HxCDF	115	
Total HpCDD	624		624		CS 1234689-HpCDF	114	
Total TCDF	9.13		11.9				
Total PeCDF	5.5		9.95				
Total HxCDF	12.1		13.7				
Total HpCDF	26.6		26.6				
Total PCDD/Fs	**27,600**		**27,600**	E			
WHO-2005 TEQs							
TEQ: ND=0	13.6		14.3				
TEQ: ND=DL/2	13.6	0.364	14.3				
TEQ: ND=DL	13.6	0.729	14.3				

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Sample ID: 11215131-120121-S-JC-NE-O-7 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	Lab Sample ID:	B5962_18720_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	79.0 %	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	16:25:17

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.438	J	12479/12468D	1.77	J	124679/124689D	16.8		1234679D	356	
1379D	(0.175)		12469D	0.653	J	123468D	2.57		1234678D	268	
1369D	(0.175)		12368D	0.634	J	123679/123689D	15.5				
1469D	(0.175)		12478D	0.814	J	123469D	[1.23]	J			
1247D...[4]	(0.175)		12379D	[0.386]	J	123478D	2.18	J			
1378D	(0.175)		12369D...[3]	[0.665]	J	123678D	4.13				
1268D	(0.175)		12346/12347D	(0.229)		123467D	1.1	J			
1478D	(0.175)		12378D	0.81	J	123789D	4.07		**Conc.**	624	
1279D	(0.175)		12367D	0.185	J				**EMPC**	624	
1234/1269D	(0.175)		12389D	(0.229)							
1236D	(0.175)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.175)										
1239D	(0.175)								OCDD	26800	E
2378D	[0.573]										
1278D	(0.175)										
1267D	(0.175)										
1289D	(0.175)										
Conc.	0.438		**Conc.**	4.86		**Conc.**	46.4				
EMPC	1.01		**EMPC**	5.92		**EMPC**	47.6				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	13.6	14.3
TEQ: ND=DL/2	13.6	14.3
TEQ: ND=DL	13.6	14.3

	Conc.	EMPC
Total PCDD/Fs	27,600	27,600

Checkcode: 607-913-NQN

Report Created: 20-Dec-2021 14:09 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-O-7 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	Lab Sample ID:	B5962_18720_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	79.0 %	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	16:25:17

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.202)		13468/12468F	2.78		123468F	1.53	J	1234678F	10.2	
1468F	(0.202)		13678F...[3]	0.786	J	124678/134678F	5.49		1234679F	0.876	J
2468F	1.64		12368F...[3]	[1.88]	J	134679F	(0.24)		1234689F	14.5	
1346/1246F	(0.202)		14678F	[0.226]	J	124679F	(0.24)		1234789F	0.998	J
1347F...[3]	0.635		13479F	(0.211)		124689F	3.14				
1348F	0.55		13469/12479F	(0.211)		123467F	[0.693]	J			
1248F...[3]	(0.202)		12346F	[0.176]	J	123478F	1.06	J			
1268F	[0.284]	J	23468/12469F	[0.686]	J	123678F	0.88	J			
1467F	0.318	J	12347F	[0.205]	J	123479F	(0.24)				
1478F	0.371	J	12348F	0.207	J	123469F	(0.24)				
1369/1237F	(0.202)		12378F	0.488	J	123679F	(0.24)				
2467F	0.328	J	12678/12367F	[0.66]	J	234678F	[0.872]	J	**Conc.**	26.6	
2368F	0.811		12379F	(0.211)		234678/123689F	0		**EMPC**	26.6	
1238F...[5]	[0.277]	J	12679F	(0.211)		123689F	(0.24)				
1278F	1.1		23467/12369F	[0.625]	J	123789F	(0.277)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.202)		23478F	1.23	J	123789/123489F	0			**(pg/g)**	
1267F	[0.275]	J	23478/12489F	0		123489F	(0.24)		OCDF	33.4	
2346/1249F	(0.202)		12489F	(0.211)							
2347/1279F	[0.194]	J	12349F	(0.211)							
2348F	0.241	J	12389F	(0.211)							
2378F	3.13										
2367/3467F	[1.08]										
1269F	(0.202)										
1239F	(0.202)										
1289F	[0.681]										
Conc.	9.13		**Conc.**	5.5		**Conc.**	12.1				
EMPC	11.9		**EMPC**	9.95		**EMPC**	13.7				

Checkcode: 607-913-NQN

Report Created: 20-Dec-2021 14:09 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-O-7 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5962_18720_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	QC Batch No.:	18720
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 16:25
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	[0.573]		0.175	[0.573]	[0.573]	[0.573]
12378-PeCDD	0.81	J	0.229	0.405	0.81	0.81
123478-HxCDD	2.18	J	0.449	0.218	0.218	0.218
123678-HxCDD	4.13		0.438	0.413	0.413	0.413
123789-HxCDD	4.07		0.408	0.407	0.407	0.407
1234678-HpCDD	268		0.428	2.68	2.68	2.68
OCDD	26800	E	1.25	26.8	2.68	8.05
2378-TCDF	3.13		0.202	0.313	0.313	0.313
12378-PeCDF	0.488	J	0.212	0.0244	0.0244	0.0146
23478-PeCDF	1.23	J	0.21	0.617	0.617	0.37
123478-HxCDF	1.06	J	0.234	0.106	0.106	0.106
123678-HxCDF	0.88	J	0.212	0.088	0.088	0.088
234678-HxCDF	[0.872]	J	0.245	[0.0872]	[0.0872]	[0.0872]
123789-HxCDF	(0.277)		0.277	(0.0277)	(0.0277)	(0.0277)
1234678-HpCDF	10.2		0.222	0.102	0.102	0.102
1234789-HpCDF	0.998	J	0.296	0.00998	0.00998	0.00998
OCDF	33.4		0.532	0.0334	0.00334	0.01

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TEQ Summaries			
EMPC = 0, ND = 0	32.3	8.47	13.6
EMPC = 0, ND = DL / 2	32.3	8.49	13.6
EMPC = 0, ND = DL	32.3	8.5	13.6
EMPC = 0, < J-level = 0	30.8	6.6	12
EMPC = EMPC, ND = 0	32.9	9.13	14.3
EMPC = EMPC, ND = DL / 2	32.9	9.15	14.3
EMPC = EMPC, ND = DL	32.9	9.16	14.3
EMPC = EMPC, < J-level = 0	31.4	7.17	12.5

Checkcode: 607-913-NQN

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Sample ID: 11215131-120221-S-JC-SW-O-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.20 g	Lab Sample ID	B5962_18720_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	86.8 %	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:12:51

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	47.7				ES 2378-TCDD	91.1	
12378-PeCDD	1.77			J	ES 12378-PeCDD	75.1	
123478-HxCDD	2.08			J	ES 123478-HxCDD	95.2	
123678-HxCDD	6.18				ES 123678-HxCDD	106	
123789-HxCDD	4.14				ES 123789-HxCDD	105	
1234678-HpCDD	208				ES 1234678-HpCDD	86.7	
OCDD	3,630				ES OCDD	59.7	
2378-TCDF	196				ES 2378-TCDF	87.6	
12378-PeCDF	9.36				ES 12378-PeCDF	91.6	
23478-PeCDF	9.25				ES 23478-PeCDF	89.6	
123478-HxCDF	16				ES 123478-HxCDF	104	
123678-HxCDF	5.51				ES 123678-HxCDF	115	
234678-HxCDF	3.73				ES 234678-HxCDF	105	
123789-HxCDF	ND	0.555			ES 123789-HxCDF	104	
1234678-HpCDF	35.6				ES 1234678-HpCDF	104	
1234789-HpCDF	4.59				ES 1234789-HpCDF	95.3	
OCDF	122				ES OCDF	62.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.2	
Total TCDD	53.8		56.4		CS 12347-PeCDD	79.5	
Total PeCDD	8.64		10.3		CS 12346-PeCDF	93.7	
Total HxCDD	61.2		63		CS 123469-HxCDF	117	
Total HpCDD	476		476		CS 1234689-HpCDF	109	
Total TCDF	407		410				
Total PeCDF	54.3		56.5				
Total HxCDF	61.1		61.1				
Total HpCDF	92.9		92.9				
Total PCDD/Fs	**4,960**		**4,970**				
WHO-2005 TEQs							
TEQ: ND=0	79.5		79.5				
TEQ: ND=DL/2	79.5	0.566	79.5				
TEQ: ND=DL	79.6	1.13	79.6				

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Sample ID: 11215131-120221-S-JC-SW-O-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.20 g	Lab Sample ID:	B5962_18720_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	86.8 %	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:12:51

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.845]		12479/12468D	2.38	J	124679/124689D	22.5		1234679D	268	
1379D	(0.218)		12469D	[1.66]	J	123468D	4.19		1234678D	208	
1369D	(0.218)		12368D	1.21	J	123679/123689D	20.6				
1469D	[0.764]		12478D	1.14	J	123469D	[1.78]	J			
1247D...[4]	0.38	J	12379D	0.811	J	123478D	2.08	J			
1378D	[0.428]	J	12369D...[3]	1.33	J	123678D	6.18				
1268D	(0.218)		12346/12347D	(0.399)		123467D	1.56	J			
1478D	(0.218)		12378D	1.77	J	123789D	4.14		**Conc.**	476	
1279D	(0.218)		12367D	(0.399)					**EMPC**	476	
1234/1269D	(0.218)		12389D	(0.399)							
1236D	(0.218)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	0.944										
1239D	(0.218)								OCDD	3630	
2378D	47.7										
1278D	4.77										
1267D	[0.359]	J									
1289D	[0.189]	J									
Conc.	53.8		**Conc.**	8.64		**Conc.**	61.2				
EMPC	56.4		**EMPC**	10.3		**EMPC**	63				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	79.5	79.5
TEQ: ND=DL/2	79.5	79.5
TEQ: ND=DL	79.6	79.6

	Conc.	EMPC
Total PCDD/Fs	4,960	4,970

Checkcode: 521-175-FWV

Report Created: 20-Dec-2021 14:10 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-O-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.20 g	Lab Sample ID:	B5962_18720_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	86.8 %	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:12:51

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.606		13468/12468F	9.22		123468F	4		1234678F	35.6	
1468F	1.19		13678F...[3]	3.52		124678/134678F	16.7		1234679F	2.56	
2468F	[1.82]		12368F...[3]	9.85		134679F	(0.499)		1234689F	50.2	
1346/1246F	0.67		14678F	1.64	J	124679F	(0.499)		1234789F	4.59	
1347F...[3]	4.96		13479F	0.276	J	124689F	11.3				
1348F	[0.689]		13469/12479F	[0.351]	J	123467F	2.4	J			
1248F...[3]	10.3		12346F	0.699	J	123478F	16				
1268F	3.9		23468/12469F	2.37	J	123678F	5.51				
1467F	1.12		12347F	1.18	J	123479F	(0.499)				
1478F	8.96		12348F	[1.35]	J	123469F	(0.499)				
1369/1237F	2.77		12378F	9.36		123679F	(0.499)				
2467F	1.12		12678/12367F	4.81		234678F	3.73		**Conc.**	92.9	
2368F	8.21		12379F	(0.206)		234678/123689F	0		**EMPC**	92.9	
1238F...[5]	11.1		12679F	(0.206)		123689F	(0.499)				
1278F	87.7		23467/12369F	2.11	J	123789F	(0.555)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.179)		23478F	9.25		123789/123489F	0				
1267F	5.85		23478/12489F	0		123489F	1.52	J	OCDF	122	
2346/1249F	1.47		12489F	(0.206)							
2347/1279F	3.23		12349F	(0.206)							
2348F	18.1		12389F	[0.528]	J						
2378F	196										
2367/3467F	20.6										
1269F	3.71										
1239F	(0.179)										
1289F	16										
Conc.	407		**Conc.**	54.3		**Conc.**	61.1				
EMPC	410		**EMPC**	56.5		**EMPC**	61.1				

Checkcode: 521-175-FWV

Report Created: 20-Dec-2021 14:10 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-O-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5962_18720_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.20 g	QC Batch No.:	18720
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 17:12
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	47.7		0.218	47.7	47.7	47.7
12378-PeCDD	1.77	J	0.399	0.887	1.77	1.77
123478-HxCDD	2.08	J	0.717	0.208	0.208	0.208
123678-HxCDD	6.18		0.765	0.618	0.618	0.618
123789-HxCDD	4.14		0.693	0.414	0.414	0.414
1234678-HpCDD	208		0.766	2.08	2.08	2.08
OCDD	3630		1.81	3.63	0.363	1.09
2378-TCDF	196		0.179	19.6	19.6	19.6
12378-PeCDF	9.36		0.211	0.468	0.468	0.281
23478-PeCDF	9.25		0.202	4.63	4.63	2.78
123478-HxCDF	16		0.463	1.6	1.6	1.6
123678-HxCDF	5.51		0.447	0.551	0.551	0.551
234678-HxCDF	3.73		0.547	0.373	0.373	0.373
123789-HxCDF	(0.555)		0.555	(0.0555)	(0.0555)	(0.0555)
1234678-HpCDF	35.6		0.186	0.356	0.356	0.356
1234789-HpCDF	4.59		0.261	0.0459	0.0459	0.0459
OCDF	122		0.577	0.122	0.0122	0.0366

TEQ Summaries			
EMPC = 0, ND = 0	83.3	80.8	79.5
EMPC = 0, ND = DL / 2	83.3	80.8	79.5
EMPC = 0, ND = DL	83.3	80.9	79.6
EMPC = 0, < J-level = 0	82.2	78.8	77.5
EMPC = EMPC, ND = 0	83.3	80.8	79.5
EMPC = EMPC, ND = DL / 2	83.3	80.8	79.5
EMPC = EMPC, ND = DL	83.3	80.9	79.6
EMPC = EMPC, < J-level = 0	82.2	78.8	77.5

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Checkcode: 521-175-FWV

Sample ID: 11215131-120221-S-JC-SW-O-1 -MS

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID	B5962_18720_DF_005MS	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	86.8 %	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:00:17

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	45.3				ES 2378-TCDD	93.3	
12378-PeCDD	89.9				ES 12378-PeCDD	83.6	
123478-HxCDD	106				ES 123478-HxCDD	97	
123678-HxCDD	116				ES 123678-HxCDD	103	
123789-HxCDD	107				ES 123789-HxCDD	101	
1234678-HpCDD	324				ES 1234678-HpCDD	91.7	
OCDD	3,830				ES OCDD	63.2	
2378-TCDF	147				ES 2378-TCDF	88.8	
12378-PeCDF	117				ES 12378-PeCDF	90	
23478-PeCDF	128				ES 23478-PeCDF	90	
123478-HxCDF	121				ES 123478-HxCDF	100	
123678-HxCDF	110				ES 123678-HxCDF	111	
234678-HxCDF	112				ES 234678-HxCDF	104	
123789-HxCDF	104				ES 123789-HxCDF	102	
1234678-HpCDF	143				ES 1234678-HpCDF	107	
1234789-HpCDF	108				ES 1234789-HpCDF	101	
OCDF	339				ES OCDF	66.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.6	
Total TCDD	112		114		CS 12347-PeCDD	84.2	
Total PeCDD	136		141		CS 12346-PeCDF	93.4	
Total HxCDD	406		409		CS 123469-HxCDF	111	
Total HpCDD	621		621		CS 1234689-HpCDF	110	
Total TCDF	375		378				
Total PeCDF	523		527				
Total HxCDF	732		732				
Total HpCDF	305		305				
Total PCDD/Fs	**7,380**		**7,390**				
WHO-2005 TEQs							
TEQ: ND=0	277		277				
TEQ: ND=DL/2	277	0.704	277				
TEQ: ND=DL	277	1.41	277				

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Sample ID: 11215131-120221-S-JC-SW-O-1 -MSD — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	Lab Sample ID	B5962_18720_DF_005MSD	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	86.8 %	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:47:50

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	40.9				ES 2378-TCDD	94.5	
12378-PeCDD	88.8				ES 12378-PeCDD	81.9	
123478-HxCDD	104				ES 123478-HxCDD	93.2	
123678-HxCDD	108				ES 123678-HxCDD	101	
123789-HxCDD	103				ES 123789-HxCDD	96.2	
1234678-HpCDD	360				ES 1234678-HpCDD	82.4	
OCDD	4,040				ES OCDD	55.2	
2378-TCDF	123				ES 2378-TCDF	89.4	
12378-PeCDF	114				ES 12378-PeCDF	89.7	
23478-PeCDF	129				ES 23478-PeCDF	85.4	
123478-HxCDF	113				ES 123478-HxCDF	97.2	
123678-HxCDF	105				ES 123678-HxCDF	105	
234678-HxCDF	107				ES 234678-HxCDF	103	
123789-HxCDF	101				ES 123789-HxCDF	99.1	
1234678-HpCDF	140				ES 1234678-HpCDF	95.2	
1234789-HpCDF	103				ES 1234789-HpCDF	89.7	
OCDF	335				ES OCDF	56.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.1	
Total TCDD	108		109		CS 12347-PeCDD	81.1	
Total PeCDD	137		140		CS 12346-PeCDF	88.3	
Total HxCDD	415		415		CS 123469-HxCDF	106	
Total HpCDD	821		821		CS 1234689-HpCDF	101	
Total TCDF	336		338				
Total PeCDF	530		532				
Total HxCDF	709		709				
Total HpCDF	304		304				
Total PCDD/Fs	**7,730**		**7,740**				
WHO-2005 TEQs							
TEQ: ND=0	266		266				
TEQ: ND=DL/2	266	0.736	266				
TEQ: ND=DL	266	1.47	266				

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MS/MSD Comparison

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Method 1613B

Sample ID: 11215131-120221-S-JC-SW-O-1

Analyte	Native Conc.	MS Spike	MS Conc.	MS Rec.	MSD Spike	MSD Conc.	MSD Rec.	RPD
	(pg/g)	(pg/g)	(pg/g)	%	(pg/g)	(pg/g)	%	
2,3,7,8-TCDD	47.7	19.9	45.3	-12.3	19.5	40.9	-35.2	*
1,2,3,7,8-PeCDD	1.77	99.4	89.9	88.6	97.5	88.8	89.3	1%
1,2,3,4,7,8-HxCDD	2.08	99.4	106	105	97.5	104	104	1%
1,2,3,6,7,8-HxCDD	6.18	99.4	116	111	97.5	108	104	7%
1,2,3,7,8,9-HxCDD	4.14	99.4	107	104	97.5	103	102	2%
1,2,3,4,6,7,8-HpCDD	208	99.4	324	117	97.5	360	156	29%
OCDD	3630	199	3830	102	195	4040	211	70%
2,3,7,8-TCDF	196	19.9	147	-247	19.5	123	-371	*
1,2,3,7,8-PeCDF	9.36	99.4	117	109	97.5	114	108	1%
2,3,4,7,8-PeCDF	9.25	99.4	128	120	97.5	129	123	2%
1,2,3,4,7,8-HxCDF	16	99.4	121	106	97.5	113	99.3	7%
1,2,3,6,7,8-HxCDF	5.51	99.4	110	105	97.5	105	102	3%
2,3,4,6,7,8-HxCDF	3.73	99.4	112	109	97.5	107	106	3%
1,2,3,7,8,9-HxCDF	0	99.4	104	105	97.5	101	103	2%
1,2,3,4,6,7,8-HpCDF	35.6	99.4	143	108	97.5	140	107	1%
1,2,3,4,7,8,9-HpCDF	4.59	99.4	108	104	97.5	103	101	3%
OCDF	122	199	339	109	195	335	109	0%

* % Recovery limits for MS and MSD: 70-130% of expected value, if native < RL
* RPD limit for MS vs. MSD recoveries: +/- 20%, if native < RL

Sample ID: 11215131-120221-S-JC-SW-DUP-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.11 g	Lab Sample ID	B5962_18720_DF_006	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	87.9 %	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:35:24

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	33.1				ES 2378-TCDD	92	
12378-PeCDD	1.62			J	ES 12378-PeCDD	77.7	
123478-HxCDD	2.41			J	ES 123478-HxCDD	94.5	
123678-HxCDD	6.46				ES 123678-HxCDD	101	
123789-HxCDD	4.5				ES 123789-HxCDD	99.3	
1234678-HpCDD	227				ES 1234678-HpCDD	84.4	
OCDD	3,850				ES OCDD	55.2	
2378-TCDF	146				ES 2378-TCDF	88.7	
12378-PeCDF	7.93				ES 12378-PeCDF	90.4	
23478-PeCDF	7.95				ES 23478-PeCDF	91.3	
123478-HxCDF	13.6				ES 123478-HxCDF	98.2	
123678-HxCDF	5.21				ES 123678-HxCDF	105	
234678-HxCDF	4.38				ES 234678-HxCDF	103	
123789-HxCDF	ND	0.541			ES 123789-HxCDF	97.6	
1234678-HpCDF	39.9				ES 1234678-HpCDF	98.5	
1234789-HpCDF	4.49				ES 1234789-HpCDF	90.8	
OCDF	136				ES OCDF	56.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	81	
Total TCDD	35.2		39.8		CS 12347-PeCDD	81.8	
Total PeCDD	5.16		9.35		CS 12346-PeCDF	90.7	
Total HxCDD	71.1		71.1		CS 123469-HxCDF	111	
Total HpCDD	541		541		CS 1234689-HpCDF	102	
Total TCDF	297		305				
Total PeCDF	49.8		52.9				
Total HxCDF	63.5		64.3				
Total HpCDF	100		100				
Total PCDD/Fs	**5,140**		**5,160**				
WHO-2005 TEQs							
TEQ: ND=0	59.5		59.5				
TEQ: ND=DL/2	59.5	0.628	59.5				
TEQ: ND=DL	59.6	1.26	59.6				

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Sample ID: 11215131-120221-S-JC-SW-DUP-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.11 g	Lab Sample ID:	B5962_18720_DF_006	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	87.9 %	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:35:24

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.835		12479/12468D	2.33	J	124679/124689D	25.5		1234679D	314	
1379D	(0.298)		12469D	[1.93]	J	123468D	4.94		1234678D	227	
1369D	(0.298)		12368D	1.22	J	123679/123689D	23.2				
1469D	[1.01]		12478D	(0.431)		123469D	2.24	J			
1247D...[4]	(0.298)		12379D	[0.649]	J	123478D	2.41	J			
1378D	0.385	J	12369D...[3]	[1.27]	J	123678D	6.46				
1268D	(0.298)		12346/12347D	(0.431)		123467D	1.77	J			
1478D	(0.298)		12378D	1.62	J	123789D	4.5		**Conc.**	541	
1279D	(0.298)		12367D	(0.431)					**EMPC**	541	
1234/1269D	(0.298)		12389D	[0.336]	J						
1236D	(0.298)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	0.866										
1239D	(0.298)								OCDD	3850	
2378D	33.1										
1278D	[3.6]										
1267D	(0.298)										
1289D	(0.298)										
Conc.	35.2		**Conc.**	5.16		**Conc.**	71.1				
EMPC	39.8		**EMPC**	9.35		**EMPC**	71.1				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	59.5	59.5
TEQ: ND=DL/2	59.5	59.5
TEQ: ND=DL	59.6	59.6

	Conc.	EMPC
Total PCDD/Fs	5,140	5,160

Checkcode: 568-825-FKF

Report Created: 20-Dec-2021 14:10 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-DUP-1 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.11 g	Lab Sample ID:	B5962_18720_DF_006	Date Extracted: 13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	87.9 %	QC Batch No.:	18720	Date Analyzed: 17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 19:35:24

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.468]	J	13468/12468F	9.14		123468F	4.63		1234678F	39.9	
1468F	1.18		13678F...[3]	3.52		124678/134678F	17.8		1234679F	3.06	
2468F	2.17		12368F...[3]	9.31		134679F	(0.476)		1234689F	53	
1346/1246F	1.06		14678F	1.6	J	124679F	[0.807]	J	1234789F	4.49	
1347F...[3]	3.57		13479F	(0.234)		124689F	12.4				
1348F	0.748		13469/12479F	0.565	J	123467F	3.24				
1248F...[3]	6.59		12346F	[0.746]	J	123478F	13.6				
1268F	[2.74]		23468/12469F	[2.39]	J	123678F	5.21				
1467F	1.05		12347F	1.03	J	123479F	(0.476)				
1478F	6.49		12348F	1.37	J	123469F	0.682	J			
1369/1237F	[1.98]		12378F	7.93		123679F	(0.476)				
2467F	1.28		12678/12367F	4.39		234678F	4.38		**Conc.**	100	
2368F	4.94		12379F	(0.234)		234678/123689F	0		**EMPC**	100	
1238F...[5]	9.27		12679F	(0.234)		123689F	(0.476)				
1278F	62.4		23467/12369F	2.42	J	123789F	(0.541)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.231)		23478F	7.95		123789/123489F	0			(pg/g)	
1267F	4.8		23478/12489F	0		123489F	1.51	J	OCDF	136	
2346/1249F	1.23		12489F	(0.234)							
2347/1279F	[2.34]		12349F	(0.234)							
2348F	11.9		12389F	0.536	J						
2378F	146										
2367/3467F	16.6										
1269F	3.07										
1239F	(0.231)										
1289F	12.6										
Conc.	297		**Conc.**	49.8		**Conc.**	63.5				
EMPC	305		**EMPC**	52.9		**EMPC**	64.3				

Checkcode: 568-825-FKF

Report Created: 20-Dec-2021 14:10 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-DUP-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5962_18720_DF_006
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.11 g	QC Batch No.:	18720
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 19:35
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	33.1		0.298	33.1	33.1	33.1
12378-PeCDD	1.62	J	0.431	0.808	1.62	1.62
123478-HxCDD	2.41	J	0.788	0.241	0.241	0.241
123678-HxCDD	6.46		0.754	0.646	0.646	0.646
123789-HxCDD	4.5		0.72	0.45	0.45	0.45
1234678-HpCDD	227		0.546	2.27	2.27	2.27
OCDD	3850		1.58	3.85	0.385	1.15
2378-TCDF	146		0.231	14.6	14.6	14.6
12378-PeCDF	7.93		0.244	0.396	0.396	0.238
23478-PeCDF	7.95		0.223	3.98	3.98	2.39
123478-HxCDF	13.6		0.457	1.36	1.36	1.36
123678-HxCDF	5.21		0.438	0.521	0.521	0.521
234678-HxCDF	4.38		0.48	0.438	0.438	0.438
123789-HxCDF	(0.541)		0.541	(0.0541)	(0.0541)	(0.0541)
1234678-HpCDF	39.9		0.208	0.399	0.399	0.399
1234789-HpCDF	4.49		0.305	0.0449	0.0449	0.0449
OCDF	136		0.598	0.136	0.0136	0.0407

TEQ Summaries			
EMPC = 0, ND = 0	63.2	60.5	59.5
EMPC = 0, ND = DL / 2	63.3	60.5	59.5
EMPC = 0, ND = DL	63.3	60.5	59.6
EMPC = 0, < J-level = 0	62.2	58.6	57.7
EMPC = EMPC, ND = 0	63.2	60.5	59.5
EMPC = EMPC, ND = DL / 2	63.3	60.5	59.5
EMPC = EMPC, ND = DL	63.3	60.5	59.6
EMPC = EMPC, < J-level = 0	62.2	58.6	57.7

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Sample ID: 11215131-120221-S-JC-SW-B-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.39 g	Lab Sample ID	B5962_18720_DF_007	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	71.5 %	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:22:57

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	1,520			E	ES 2378-TCDD	95	
12378-PeCDD	16.7				ES 12378-PeCDD	84.8	
123478-HxCDD	0.897			J	ES 123478-HxCDD	95.2	
123678-HxCDD	3.85				ES 123678-HxCDD	96.3	
123789-HxCDD	2.55				ES 123789-HxCDD	95.6	
1234678-HpCDD	143				ES 1234678-HpCDD	88.9	
OCDD	2,350				ES OCDD	74	
2378-TCDF	5,540			E	ES 2378-TCDF	89.7	
12378-PeCDF	213				ES 12378-PeCDF	94.9	
23478-PeCDF	168				ES 23478-PeCDF	88.7	
123478-HxCDF	336				ES 123478-HxCDF	95.6	
123678-HxCDF	83.8				ES 123678-HxCDF	103	
234678-HxCDF	16.4				ES 234678-HxCDF	98.6	
123789-HxCDF	ND	0.713			ES 123789-HxCDF	92.2	
1234678-HpCDF	90.2				ES 1234678-HpCDF	119	
1234789-HpCDF	35.5				ES 1234789-HpCDF	93.2	
OCDF	83.7				ES OCDF	66.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	83	
Total TCDD	1,640		1,690	E	CS 12347-PeCDD	84.4	
Total PeCDD	23.2		28.1		CS 12346-PeCDF	96.4	
Total HxCDD	47.6		48.5		CS 123469-HxCDF	104	
Total HpCDD	304		304		CS 1234689-HpCDF	104	
Total TCDF	11,200		11,200	E			
Total PeCDF	593		595				
Total HxCDF	505		505				
Total HpCDF	162		162				
Total PCDD/Fs	**16,900**		**17,000**	E			
WHO-2005 TEQs							
TEQ: ND=0	2200		2200				
TEQ: ND=DL/2	2200	0.51	2200				
TEQ: ND=DL	2200	1.02	2200				

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Sample ID: 11215131-120221-S-JC-SW-B-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.39 g	Lab Sample ID:	B5962_18720_DF_007	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	71.5 %	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:22:57

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.92		12479/12468D	2.09	J	124679/124689D	26.3		1234679D	161	
1379D	0.937		12469D	[2.29]	J	123468D	1.71	J	1234678D	143	
1369D	(0.234)		12368D	1.94	J	123679/123689D	12.3				
1469D	3.43		12478D	1.1	J	123469D	[0.944]	J			
1247D...[4]	[2.73]		12379D	[1.04]	J	123478D	0.897	J			
1378D	4.01		12369D...[3]	1.32	J	123678D	3.85				
1268D	(0.234)		12346/12347D	[0.425]	J	123467D	(0.434)				
1478D	3.7		12378D	16.7		123789D	2.55		**Conc.**	304	
1279D	(0.234)		12367D	[1.11]	J				**EMPC**	304	
1234/1269D	[0.739]		12389D	(0.286)							
1236D	[0.375]	J							**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[24]										
1239D	(0.234)								OCDD	2350	
2378D	1520	E									
1278D	104										
1267D	[9.77]										
1289D	[6.44]										
Conc.	1,640		**Conc.**	23.2		**Conc.**	47.6				
EMPC	1,690		**EMPC**	28.1		**EMPC**	48.5				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	2,200	2,200
TEQ: ND=DL/2	2,200	2,200
TEQ: ND=DL	2,200	2,200

	Conc.	EMPC
Total PCDD/Fs	16,900	17,000

Checkcode: 130-426-VQX

Report Created: 20-Dec-2021 14:10 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-B-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.39 g	Lab Sample ID:	B5962_18720_DF_007	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	71.5 %	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:22:57

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.29		13468/12468F	6.09		123468F	3.62		1234678F	90.2	
1468F	7.35		13678F...[3]	2.54		124678/134678F	27.3		1234679F	1.45	J
2468F	5.87		12368F...[3]	91.4		134679F	(0.633)		1234689F	35.1	
1346/1246F	6.01		14678F	4.09		124679F	(0.633)		1234789F	35.5	
1347F...[3]	48.7		13479F	(0.254)		124689F	12.2				
1348F	19.2		13469/12479F	[0.922]	J	123467F	1.28	J			
1248F...[3]	247		12346F	[0.55]	J	123478F	336				
1268F	88.5		23468/12469F	3.72		123678F	83.8				
1467F	13.2		12347F	4.28		123479F	(0.633)				
1478F	234		12348F	21		123469F	(0.633)				
1369/1237F	60.2		12378F	213		123679F	(0.633)				
2467F	4.59		12678/12367F	66.6		234678F	16.4		**Conc.**	162	
2368F	123		12379F	(0.254)		234678/123689F	0		**EMPC**	162	
1238F...[5]	329		12679F	(0.254)		123689F	(0.633)				
1278F	2670	E	23467/12369F	2.97		123789F	(0.713)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.193)		23478F	168		123789/123489F	0			**(pg/g)**	
1267F	145		23478/12489F	0		123489F	24.6		OCDF	83.7	
2346/1249F	20.1		12489F	(0.254)							
2347/1279F	77.2		12349F	(0.254)							
2348F	517		12389F	9.65							
2378F	5540	E									
2367/3467F	461										
1269F	93.6										
1239F	9.81										
1289F	481										
Conc.	11,200		**Conc.**	593		**Conc.**	505				
EMPC	11,200		**EMPC**	595		**EMPC**	505				

Checkcode: 130-426-VQX

Report Created: 20-Dec-2021 14:10 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-B-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5962_18720_DF_007
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.39 g	QC Batch No.:	18720
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 20:22
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	1520	E	0.234	1520	1520	1520
12378-PeCDD	16.7		0.286	8.37	16.7	16.7
123478-HxCDD	0.897	J	0.444	0.0897	0.0897	0.0897
123678-HxCDD	3.85		0.458	0.385	0.385	0.385
123789-HxCDD	2.55		0.404	0.255	0.255	0.255
1234678-HpCDD	143		0.409	1.43	1.43	1.43
OCDD	2350		0.917	2.35	0.235	0.705
2378-TCDF	5540	E	0.193	554	554	554
12378-PeCDF	213		0.247	10.6	10.6	6.38
23478-PeCDF	168		0.262	84.1	84.1	50.5
123478-HxCDF	336		0.618	33.6	33.6	33.6
123678-HxCDF	83.8		0.565	8.38	8.38	8.38
234678-HxCDF	16.4		0.658	1.64	1.64	1.64
123789-HxCDF	(0.713)		0.713	(0.0713)	(0.0713)	(0.0713)
1234678-HpCDF	90.2		0.165	0.902	0.902	0.902
1234789-HpCDF	35.5		0.254	0.355	0.355	0.355
OCDF	83.7		0.423	0.0837	0.00837	0.0251

TEQ Summaries			
EMPC = 0, ND = 0	2230	2240	2200
EMPC = 0, ND = DL / 2	2230	2240	2200
EMPC = 0, ND = DL	2230	2240	2200
EMPC = 0, < J-level = 0	2230	2240	2200
EMPC = EMPC, ND = 0	2230	2240	2200
EMPC = EMPC, ND = DL / 2	2230	2240	2200
EMPC = EMPC, ND = DL	2230	2240	2200
EMPC = EMPC, < J-level = 0	2230	2240	2200

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Checkcode: 130-426-VQX

Sample ID: Method Blank B5962_18720 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18720_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	14:02:42

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.194			ES 2378-TCDD	93.3	
12378-PeCDD	ND	0.199			ES 12378-PeCDD	79.9	
123478-HxCDD	ND	0.272			ES 123478-HxCDD	90.6	
123678-HxCDD	ND	0.274			ES 123678-HxCDD	104	
123789-HxCDD	ND	0.244			ES 123789-HxCDD	101	
1234678-HpCDD	ND	0.271			ES 1234678-HpCDD	90.3	
OCDD	ND	0.513			ES OCDD	66.9	
2378-TCDF	ND	0.156			ES 2378-TCDF	81.4	
12378-PeCDF	ND	0.144			ES 12378-PeCDF	89.1	
23478-PeCDF	ND	0.153			ES 23478-PeCDF	85.4	
123478-HxCDF	ND	0.159			ES 123478-HxCDF	99.4	
123678-HxCDF	ND	0.147			ES 123678-HxCDF	117	
234678-HxCDF	ND	0.177			ES 234678-HxCDF	103	
123789-HxCDF	ND	0.194			ES 123789-HxCDF	95.1	
1234678-HpCDF	ND	0.134			ES 1234678-HpCDF	111	
1234789-HpCDF	ND	0.216			ES 1234789-HpCDF	93.7	
OCDF	ND	0.426			ES OCDF	66.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	82.7	
Total TCDD	ND	0.194	ND		CS 12347-PeCDD	83.4	
Total PeCDD	ND	0.199	ND		CS 12346-PeCDF	93.6	
Total HxCDD	ND	0.262	ND		CS 123469-HxCDF	113	
Total HpCDD	ND	0.271	ND		CS 1234689-HpCDF	111	
Total TCDF	ND	0.156	ND				
Total PeCDF	ND	0.148	ND				
Total HxCDF	ND	0.167	ND				
Total HpCDF	ND	0.169	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.306	0.306	0.306				
TEQ: ND=DL	0.611	0.611	0.611				

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Sample ID: Method Blank B5962_18720 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18720_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	14:02:42

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.194)		12479/12468D	(0.199)		124679/124689D	(0.262)		1234679D	(0.271)	
1379D	(0.194)		12469D	(0.199)		123468D	(0.262)		1234678D	(0.271)	
1369D	(0.194)		12368D	(0.199)		123679/123689D	(0.262)				
1469D	(0.194)		12478D	(0.199)		123469D	(0.262)				
1247D...[4]	(0.194)		12379D	(0.199)		123478D	(0.272)				
1378D	(0.194)		12369D...[3]	(0.199)		123678D	(0.274)				
1268D	(0.194)		12346/12347D	(0.199)		123467D	(0.262)				
1478D	(0.194)		12378D	(0.199)		123789D	(0.244)		**Conc.**	0	
1279D	(0.194)		12367D	(0.199)					**EMPC**	0	
1234/1269D	(0.194)		12389D	(0.199)							
1236D	(0.194)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.194)										
1239D	(0.194)								OCDD	(0.513)	
2378D	(0.194)										
1278D	(0.194)										
1267D	(0.194)										
1289D	(0.194)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.306	0.306
TEQ: ND=DL	0.611	0.611

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 673-484-QWD

Report Created: 20-Dec-2021 14:17 Analyst: gd

Sample ID: Method Blank B5962_18720 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18720_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	14:02:42

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.156)		13468/12468F	(0.216)		123468F	(0.167)		1234678F	(0.134)	
1468F	(0.156)		13678F...[3]	(0.148)		124678/134678F	(0.167)		1234679F	(0.169)	
2468F	(0.156)		12368F...[3]	(0.148)		134679F	(0.167)		1234689F	(0.169)	
1346/1246F	(0.156)		14678F	(0.148)		124679F	(0.167)		1234789F	(0.216)	
1347F...[3]	(0.156)		13479F	(0.148)		124689F	(0.167)				
1348F	(0.156)		13469/12479F	(0.148)		123467F	(0.167)				
1248F...[3]	(0.156)		12346F	(0.148)		123478F	(0.159)				
1268F	(0.156)		23468/12469F	(0.148)		123678F	(0.147)				
1467F	(0.156)		12347F	(0.148)		123479F	(0.167)				
1478F	(0.156)		12348F	(0.148)		123469F	(0.167)				
1369/1237F	(0.156)		12378F	(0.144)		123679F	(0.167)				
2467F	(0.156)		12678/12367F	(0.148)		234678F	(0.177)		**Conc.**	0	
2368F	(0.156)		12379F	(0.148)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.156)		12679F	(0.148)		123689F	(0.167)				
1278F	(0.156)		23467/12369F	(0.148)		123789F	(0.194)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.156)		23478F	(0.153)		123789/123489F	0			**(pg/g)**	
1267F	(0.156)		23478/12489F	0		123489F	(0.167)		OCDF	(0.426)	
2346/1249F	(0.156)		12489F	(0.148)							
2347/1279F	(0.156)		12349F	(0.148)							
2348F	(0.156)		12389F	(0.148)							
2378F	(0.156)										
2367/3467F	(0.156)										
1269F	(0.156)										
1239F	(0.156)										
1289F	(0.156)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 673-484-QWD

Report Created: 20-Dec-2021 14:17 Analyst: gd

Sample ID: Method Blank B5962_18720 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18720_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18720
Date Collected:	n/a	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	17-Dec-2021 14:02
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.194)		0.194	(0.194)	(0.194)	(0.194)
12378-PeCDD	(0.199)		0.199	(0.0994)	(0.199)	(0.199)
123478-HxCDD	(0.272)		0.272	(0.0272)	(0.0272)	(0.0272)
123678-HxCDD	(0.274)		0.274	(0.0274)	(0.0274)	(0.0274)
123789-HxCDD	(0.244)		0.244	(0.0244)	(0.0244)	(0.0244)
1234678-HpCDD	(0.271)		0.271	(0.00271)	(0.00271)	(0.00271)
OCDD	(0.513)		0.513	(0.000513)	(0.0000513)	(0.000154)
2378-TCDF	(0.156)		0.156	(0.0156)	(0.0156)	(0.0156)
12378-PeCDF	(0.144)		0.144	(0.00722)	(0.00722)	(0.00433)
23478-PeCDF	(0.153)		0.153	(0.0763)	(0.0763)	(0.0458)
123478-HxCDF	(0.159)		0.159	(0.0159)	(0.0159)	(0.0159)
123678-HxCDF	(0.147)		0.147	(0.0147)	(0.0147)	(0.0147)
234678-HxCDF	(0.177)		0.177	(0.0177)	(0.0177)	(0.0177)
123789-HxCDF	(0.194)		0.194	(0.0194)	(0.0194)	(0.0194)
1234678-HpCDF	(0.134)		0.134	(0.00134)	(0.00134)	(0.00134)
1234789-HpCDF	(0.216)		0.216	(0.00216)	(0.00216)	(0.00216)
OCDF	(0.426)		0.426	(0.000426)	(0.0000426)	(0.000128)

TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.273	0.322	0.306
EMPC = 0, ND = DL	0.546	0.645	0.611
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.273	0.322	0.306
EMPC = EMPC, ND = DL	0.546	0.645	0.611
EMPC = EMPC, < J-level = 0	0	0	0

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Checkcode: 673-484-QWD

Sample ID: 0_18720_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18720_DF	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18720	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	12:28:30

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	9.09				ES 2378-TCDD	88.5	
12378-PeCDD	44.6				ES 12378-PeCDD	77.7	
123478-HxCDD	52.5				ES 123478-HxCDD	94.1	
123678-HxCDD	54.7				ES 123678-HxCDD	102	
123789-HxCDD	48.5				ES 123789-HxCDD	102	
1234678-HpCDD	54.1				ES 1234678-HpCDD	90	
OCDD	105				ES OCDD	65.2	
2378-TCDF	12.2				ES 2378-TCDF	83.7	
12378-PeCDF	54.2				ES 12378-PeCDF	92.4	
23478-PeCDF	57.3				ES 23478-PeCDF	87.7	
123478-HxCDF	52.8				ES 123478-HxCDF	100	
123678-HxCDF	52.4				ES 123678-HxCDF	118	
234678-HxCDF	51.2				ES 234678-HxCDF	104	
123789-HxCDF	49.8				ES 123789-HxCDF	97.8	
1234678-HpCDF	53.7				ES 1234678-HpCDF	110	
1234789-HpCDF	52.1				ES 1234789-HpCDF	95.8	
OCDF	104				ES OCDF	67.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	78.4	
Total TCDD	41.4		41.4		CS 12347-PeCDD	82.2	
Total PeCDD	67.6		67.6		CS 12346-PeCDF	94.9	
Total HxCDD	170		170		CS 123469-HxCDF	114	
Total HpCDD	66.7		66.7		CS 1234689-HpCDF	112	
Total TCDF	63.5		63.5				
Total PeCDF	231		231				
Total HxCDF	331		331				
Total HpCDF	106		106				
Total PCDD/Fs	**1,290**		**1,290**				
WHO-2005 TEQs							
TEQ: ND=0	112		112				
TEQ: ND=DL/2	112	0.214	112				
TEQ: ND=DL	112	0.428	112				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5962*
Requested TAT:	*10 business days*
Projected due date:	*17-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120121-S-JC-NE-O-6	B5962_001	Solid	1	4oz Amber	01-Dec-21	10:45	0.5	1	4905 2704 1823
11215131-120121-S-JC-NE-B-1	B5962_002	Solid	1	4oz Amber	01-Dec-21	14:20	0.5	1	4905 2704 1823
11215131-120121-S-JC-NE-B-1H	B5962_003	Solid - HOLD	1	4oz Amber	01-Dec-21	14:30	0.5	1	4905 2704 1823
11215131-120121-S-JC-NE-O-7	B5962_004	Solid	1	4oz Amber	01-Dec-21	14:40	0.5	1	4905 2704 1823
11215131-120221-S-JC-SW-O-1	B5962_005	Solid - MS/MSD	1	4oz Amber	02-Dec-21	10:20	0.5	1	4905 2704 1823
11215131-120221-S-JC-SW-DUP-1	B5962_006	Solid	1	4oz Amber	02-Dec-21	n/a	0.5	1	4905 2704 1823
11215131-120221-S-JC-SW-B-1	B5962_007	Solid	1	4oz Amber	02-Dec-21	10:30	0.5	1	4905 2704 1823

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* TB 12/3/2021

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS

CHAIN OF CUSTODY

B5962 1/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUNDTIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS SEE SSOW
11215131-120121-S-JC-NE-S-8	12-1-21	1035	C	S	4 oz	X				1	RUSH
11215131-120121-S-JC-NE-O-6	↓	1045	↓	↓	4 oz	X				1	*
11215131-120121-S-JC-NE-B-1	↓	1420	↓	↓	4 oz	X				1	*
11215131-120121-S-JC-NE-B-1H	↓	1430	↓	↓	4 oz	X				1	HOLD *
11215131-120121-S-JC-NE-O-7	↓	1440	↓	↓	4 oz	X				1	*
11215131-120121-S-JC-NE-S-9	↓	1450	↓	↓	4 oz	X				1	RUSH
11215131-120121-S-JC-NE-S-10	↓	1500	↓	↓	4 oz	X				1	RUSH
11215131-120221-S-JC-SW-S-1	12-2-21	1000	C	S	4 oz	X				1	RUSH
11215131-120221-S-JC-SW-S-2	↓	1010	↓	↓	4 oz	X				1	RUSH
11215131-120221-S-JC-SW-O-1	↓	1020	↓	↓	4 oz	X	X	X		1	no MSD *

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Breanna North	12-2-21	1345	[signature]
RELINQUISHED BY (2): [signature]	12-2-21	1525	RECEIVED BY: [signature] 12/2/21 1525
RELINQUISHED BY (3): [signature]	12/2/21	1525	RECEIVED BY:

RECEIVED BY LABORATORY:	DATE:	TIME:
Ashley Owens	12/3/21	10:47

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT

CARRIER: FedEx TEMP: °C 0.5°

TRACKING #: 4905 2704 1823

*=Samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

SGS

CHAIN OF CUSTODY

B5962 2/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS SEESSOW
11215131-120221-S-JC-SW-DUP-1	12-2-21	—	C	S	4 oz	X					DUP-1 *
11215131-120221-S-JC-SW-B-1	12-2-21	1030	C	S	4 oz	X					*
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE:	TIME:
Brianna North	12-2-21	1345	Eddie Castro	Ashley Owens	12/3/21	10:47
RELINQUISHED BY (2): Eddie Castro	DATE: 12-2-21	TIME: 1525	RECEIVED BY: [signature] 12/2/21 1525	COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT		
				CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT		
RELINQUISHED BY (3): [signature]	DATE: 12/2/21	TIME: 1525	RECEIVED BY:	CARRIER: FedEx	TEMP: °C 0.5°	
				TRACKING #: 4905 2704 1823		

*= Samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

B59162 1/1

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 02DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903 REF:
INV:
PO: DEPT:

12/3/2021
10:47
0.5°

565C3/E934/0542

FedEx Express

J191219082001ev

1 of 2

TRK# 0201 4905 2704 1823

MASTER

NL ILMA

FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

28405
NC-US **RDU**

Part # 156148-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5962

Initiation Date: 03-Dec-21

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR

10 g DWE extraction

Sample 003 on HOLD

Sample 005 is MS/MSD

no ~~LCS~~ OPRs required with MS/MSD set TW 12/3/21

Read and understood, initial and date: Prep Lab: KE 12/10/21 JRH 12/13/21 RBS 12/15/21 HRMS Lab:

Reporting Instructions

M1613B

Full Report

Sample 005 is MS/MSD summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: tburkamper Date: 03-Dec-2021

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Extraction Type: SDS CLL | TALEX Carbon SPE | Solid | Final Volume: 20 mL

Batch# 18720 | Split: ~~1/2~~ ~~1/4~~ | Extract Initial/Date: JRH 12/3/21 | Clean-up Initial/Date: [illegible] 12/15/21 | Transfer Init/Date: [illegible] 12/15/21

Lab Sample ID	Extraction Position Solvent: TOL	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5962_18720_001	3	13.56				clay-like, clumpy
B5962_18720_002	4	13.92				muddy, fuel smell
B5962_18720_004	5	13.80				clay-like, clumpy
B5962_18720_005	6	11.76				loosely packed dirt, dirt clods
B5962_18720_005MS	7	11.59				see 005
B5962_18720_005MSD	8	11.82				see 005
B5962_18720_006	9	11.51				loosely packed dirt, dirt clods
B5962_18720_007	10	14.54				dark, muddy, sticky
MB1_18720	1	10.06				sodium sulfate
OPR1_18720	2	10.00				sodium sulfate

TB 12/21/21

[illegible] 12/15/21

Supply IDs

Toluene	STL 14-20
MeCHL	STL 14.2
Florisil	SPLS-70
Hexane	STL 14-19
Silica	SPLS-281
S Nitrate	N/A
Base Silica	SPLS-67
HydroMatrix	N/A
Tetradecane	SPLS-288
H_2SO_4	N/A
A Silica	SPLS-65
Sodium Sulfate	STL 5-28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	TB 12/21/21
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1430 Stop: 0900
HEX	Start: Stop: TB 12/21/21
DCM	Start: Stop:

SGS

Methods: PCB (PCDD/F) QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

Solid

Batch# 18720

Inter-Department Communication Sheet

Sample B5962-001 getting a D5 solvent dilution for saturated peaks. Adv 12/20/24

12.12.24
JB

SGS

Wt. Volume Results

Batch#: 18720

Comments:

AK 12/20/23

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5962_001	0.8	4.54	3.73	78.34%	78.34%			12.76	13.56	10.62
B5962_002	0.79	4.92	3.89	75.06%	75.06%			13.32	13.92	10.45
B5962_004	0.8	4.6	3.8	78.95%	78.95%			12.67	13	10.26
B5962_005	0.8	4.58	4.08	86.77%	86.77%			11.52	11.76	10.2
B5962_005MS	0.8	4.58	4.08	86.77%	86.77%			11.52	11.59	10.06
B5962_005MSD	0.8	4.58	4.08	86.77%	86.77%			11.52	11.82	10.26
B5962_006	0.8	4.51	4.06	87.87%	87.87%			11.38	11.51	10.11
B5962_007	0.81	4.7	3.59	71.47%	71.47%			13.99	14.54	10.39

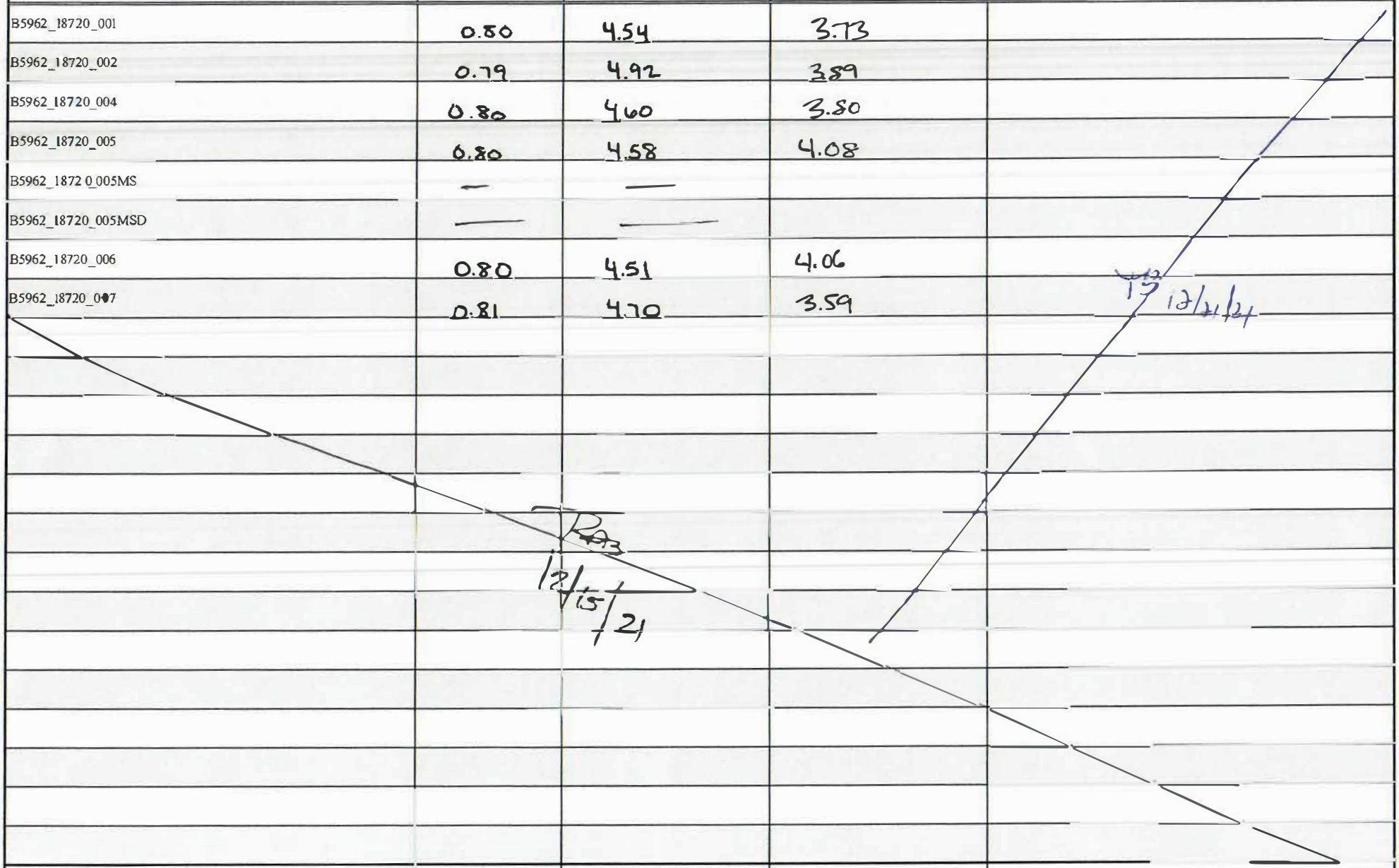
TB
12-12-24

% Solid Determination WorkSheet

SGS

Batch: I8720

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5962_I8720_001	0.80	4.54	3.73	
B5962_I8720_002	0.79	4.92	3.89	
B5962_I8720_004	0.80	4.60	3.80	
B5962_I8720_005	0.80	4.58	4.08	
B5962_I872 0_005MS	—	—		
B5962_I8720_005MSD	—	—		
B5962_I8720_006	0.80	4.51	4.06	
B5962_I8720_007	0.81	4.70	3.59	



Date/Initials: 12/10/21 KE

SGS

Methods: PCB / PAH | PCDD/F / WHO-2 | QUANTICS / USV | DoD PCDD/F / PEST | Solid

Batch # 18720

Lab Sample ID	Spiker Initials/Date: JRH 12/13/21	JRH 12/13/21	JRH 12/13/21	JRH 12/15/21	JRH 12/15/21		
	DIF AV-A	DIF AV-B	DIFES	DIFCS	DIFJS		
	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5962_18720_001	—	—	KE	JRH	KE		
B5962_18720_002	—	—	KE	JRH	KE		
B5962_18720_004	—	—	KE	JRH	KE		
B5962_18720_005	—	—	KE	JRH	KE		
B5962_18720_005MS	KE	KE	KE	JRH	KE		
B5962_18720_005MSD	KE	KE	KE	JRH	KE		
B5962_18720_006	—	—	KE	JRH	KE		
B5962_18720_007	—	—	KE	JRH	KE		
MB1_18720	—	—	KE	JRH	KE		
OPR1_18720	KE	KE	KE	JRH	KE		

12/15/21

Standard Information

Pipette ID							
Spike ID	DIF AV-A	DIF AV-B	DIF ES	DIF CS	DIF JS		
SIL#	24-154	25-157-2	26-1-7	25-338.1	25-309.1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/28	6/23/22	8/2023	11/16/22	10/8/22		

JRH 12/15/21

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
2	211217R02	3	CS3_211217_DF_RB	1.00	SIL 25-347-1	PSW	481-555	17-Dec-2021	11:30:59
3	211217R03	7	OPR1_18720_DF	1.00	0_18720_OPR001	PSW	036-372	17-Dec-2021	12:28:30
4	211217R04	2	SBS_211217_DF_RA	1.00	SIL 20-61-1	PSW	380-619	17-Dec-2021	13:15:09
5	211217R05	6	MB1_18720_DF_SDS	10.00	Method Blank	PSW	673-484	17-Dec-2021	14:02:42
7	211217R07	9	B5962_18720_DF_002 ✓	10.45	11215131-120121-S-JC-NE-B-1	PSW	578-176	17-Dec-2021	15:37:49
8	211217R08	10	B5962_18720_DF_004	10.26	11215131-120121-S-JC-NE-O-7	PSW	607-913	17-Dec-2021	16:25:17
9	211217R09	11	B5962_18720_DF_005	10.20	11215131-120221-S-JC-SW-O-1	PSW	521-175	17-Dec-2021	17:12:51
10	211217R10	12	B5962_18720_DF_005MS	10.06	11215131-120221-S-JC-SW-O-1 -MS	PSW	639-482	17-Dec-2021	18:00:17
11	211217R11	13	B5962_18720_DF_005MSD	10.26	11215131-120221-S-JC-SW-O-1 -MSD	PSW	305-268	17-Dec-2021	18:47:50
12	211217R12	14	B5962_18720_DF_006	10.11	11215131-120221-S-JC-SW-DUP-1	PSW	568-825	17-Dec-2021	19:35:24
13	211217R13	15	B5962_18720_DF_007	10.39	11215131-120221-S-JC-SW-B-1	PSW	130-426	17-Dec-2021	20:22:57
2	211220R02	3	CS3_211220_DF_RA ✓	1.00	SIL 25-347-1	PSW	763-871	20-Dec-2021	09:49:37
3	211220R03	29	OPR1_18743_DF	1.00	0_18743_OPR001 CPSM only	PSW	572-127	20-Dec-2021	10:38:41
4	211220R04	2	SBS_211217_DF_RC	1.00	SIL 20-61-1	PSW	671-834	20-Dec-2021	11:26:26
6	211220R06	16	B5962_18720_DF_001-D5	10.62	11215131-120121-S-JC-NE-O-6	PSW	670-989	20-Dec-2021	13:00:37

REVIEWED
paul_walton , 12/20/2021, 2:37:07 PM

REVIEWED
Amber_Kornegay , 12/21/2021, 8:48:48 AM

Lab ID: MB1_18720_DF_SDS **Acq'd:** 17 Dec 2021 14:02 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5962_18720 **UTP:** 20-Dec-2021 14:06:08 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 673-484-QWD

Datafile: 211217R05 **Report:** 20 Dec 2021 14:18 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	6770.223	0.194
12378-PeCDD	NotFnd		1.0005	-		-	-	-	1.06	-	5419.016	0.199
123478-HxCDD	NotFnd		1.0003	-		-	-	-	1.06	-	6393.818	0.272
123678-HxCDD	NotFnd		1.0033	-		-	-	-	1.08	-	6393.818	0.274
123789-HxCDD	NotFnd		1.0110	-		-	-	-	1.02	-	6393.818	0.244
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	0.97	-	6617.374	0.271
OCDD	NotFnd		1.0003	-		-	-	-	1.07	-	6671.497	0.513
2378-TCDF	NotFnd		1.0006	-		-	-	-	0.96	-	4928.407	0.156
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	4843.201	0.144
23478-PeCDF	NotFnd		1.0006	-		-	-	-	0.94	-	4843.201	0.153
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	5852.126	0.159
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.13	-	5852.126	0.147
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	5852.126	0.177
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	5852.126	0.194
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.36	-	6164.768	0.134
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.30	-	6164.768	0.216
OCDF	NotFnd		1.0002	-		-	-	-	1.03	-	6502.161	0.426

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.21	1.0237	1.0239	+0.3	5.80E+07	0.78	Y	1.03	93.3
ES 12378-PeCDD	33.56	1.2158	1.2183	+5.0	4.97E+07	1.62	Y	1.03	79.9
ES 123478-HxCDD	37.44	0.9920	0.9915	-1.1	3.99E+07	1.25	Y	0.99	90.6
ES 123678-HxCDD	37.56	0.9949	0.9947	-0.5	4.50E+07	1.28	Y	0.97	104
ES 123789-HxCDD	37.87	1.0026	1.0029	+0.7	5.03E+07	1.33	Y	1.12	101
ES 1234678-HpCDD	40.50	1.0713	1.0726	+3.2	3.97E+07	1.06	Y	0.99	90.3
ES OCDD	43.05	1.1385	1.1401	+4.1	4.61E+07	0.92	Y	0.78	66.9
ES 2378-TCDF	27.35	1.0519	1.0527	+1.3	7.71E+07	0.78	Y	1.08	81.4
ES 12378-PeCDF	32.12	1.2331	1.2363	+6.2	7.27E+07	1.58	Y	0.93	89.1
ES 23478-PeCDF	33.23	1.2754	1.2790	+7.2	6.89E+07	1.57	Y	0.92	85.4
ES 123478-HxCDF	36.46	0.9656	0.9655	-0.2	5.03E+07	0.52	Y	1.14	99.4
ES 123678-HxCDF	36.60	0.9693	0.9692	-0.2	6.75E+07	0.52	Y	1.30	117
ES 234678-HxCDF	37.26	0.9869	0.9868	-0.2	5.49E+07	0.53	Y	1.20	103
ES 123789-HxCDF	38.24	1.0121	1.0125	+0.9	4.79E+07	0.51	Y	1.14	95.1
ES 1234678-HpCDF	39.61	1.0478	1.0489	+2.6	4.69E+07	0.47	Y	0.95	111
ES 1234789-HpCDF	40.95	1.0832	1.0845	+3.2	3.52E+07	0.42	Y	0.85	93.7
ES OCDF	43.23	1.1434	1.1449	+3.9	5.45E+07	0.94	Y	0.93	66.4

Lab ID: MB1_18720_DF_SDS | **Acq'd:** 17 Dec 2021 14:02 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5962_18720 | **UTP:** 20-Dec-2021 14:06:08 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 673-484-QWD

Datafile: 211217R05 | **Report:** 20 Dec 2021 14:18 gd | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.55		-	-	-	6.01E+07	0.78	Y	-	-
JS 1234-TCDF	25.98		-	-	-	8.74E+07	0.76	Y	-	-
JS 123467-HxCDD	37.76		-	-	-	2.22E+07	1.25	Y	-	-
CS 37Cl-2378-TCDD	28.23		1.0245	1.0247	+0.3	2.60E+07	n/a	-	1.31	82.7
CS 12347-PeCDD	33.06		1.1978	1.2002	+4.8	4.48E+07	1.60	Y	0.89	83.4
CS 12346-PeCDF	31.59		1.2130	1.2159	+5.5	7.10E+07	1.54	Y	0.87	93.6
CS 123469-HxCDF	36.91		0.9775	0.9775	0	5.44E+07	0.52	Y	1.09	113
CS 1234689-HpCDF	40.00		1.0580	1.0593	+3.1	4.24E+07	0.47	Y	0.86	111
~~SS 37Cl-2378-TCDD~~	~~28.23~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.60E+07~~	~~n/a~~		~~1.26~~	~~89.1~~
~~SS 12347-PeCDD~~	~~33.06~~		~~1.1978~~	~~1.2002~~	~~+4.8~~	~~4.48E+07~~	~~1.60~~	~~Y~~	~~0.86~~	~~104~~
~~SS 12346-PeCDF~~	~~31.59~~		~~1.2130~~	~~1.2159~~	~~+5.5~~	~~7.10E+07~~	~~1.54~~	~~Y~~	~~0.93~~	~~105~~
~~SS 123469-HxCDF~~	~~36.91~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.44E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~95.9~~
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0593~~	~~+3.1~~	~~4.24E+07~~	~~0.47~~	~~Y~~	~~0.91~~	~~99~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18720_DF_SDS | **Acq'd: 17 Dec 2021 14:02 PSW** | **Wt/Vol: 10.00 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: Method Blank B5962_18720 | **UTP: 20-Dec-2021 14:06:08 PSW** | **J-level: 0.5 pg/g** | **Split: 1** | **Checkcode: 673-484-QWD**

Datafile: 211217R05 | **Report: 20 Dec 2021 14:18 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		6770.223	0.194
1379-TCDD	NotFnd		0.8851						1.34		6770.223	0.194
1369-TCDD	NotFnd		0.9002						1.34		6770.223	0.194
1469-TCDD	NotFnd		0.9275						1.34		6770.223	0.194
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6770.223	0.194
1378-TCDD	NotFnd		0.9427						1.34		6770.223	0.194
1268-TCDD	NotFnd		0.9498						1.34		6770.223	0.194
1478-TCDD	NotFnd		0.9584						1.34		6770.223	0.194
1279-TCDD	NotFnd		0.9644						1.34		6770.223	0.194
1234/1269-TCDD	NotFnd		0.9766						1.34		6770.223	0.194
1236-TCDD	NotFnd		0.9813						1.34		6770.223	0.194
1237/1238-TCDD	NotFnd		0.9906						1.34		6770.223	0.194
1239-TCDD	NotFnd		0.9952						1.34		6770.223	0.194
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**6770.223**	**0.194**
1278-TCDD	NotFnd		1.0122						1.34		6770.223	0.194
1267-TCDD	NotFnd		1.0168						1.34		6770.223	0.194
1289-TCDD	NotFnd		1.0349						1.34		6770.223	0.194
12479/12468-PeCDD	NotFnd		0.9267						1.06		5419.016	0.199
12469-PeCDD	NotFnd		0.9425						1.06		5419.016	0.199
12368-PeCDD	NotFnd		0.9588						1.06		5419.016	0.199
12478-PeCDD	NotFnd		0.9643						1.06		5419.016	0.199
12379-PeCDD	NotFnd		0.9673						1.06		5419.016	0.199
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		5419.016	0.199
12346/12347-PeCDD	NotFnd		0.9859						1.06		5419.016	0.199
12378-PeCDD	NotFnd		**1.0005**						**1.06**		**5419.016**	**0.199**
12367-PeCDD	NotFnd		1.0032						1.06		5419.016	0.199
12389-PeCDD	NotFnd		1.0135						1.06		5419.016	0.199
124679/124689-HxCDD	NotFnd		0.9544						1.05		6393.818	0.262
123468-HxCDD	NotFnd		0.9716						1.05		6393.818	0.262
123679/123689-HxCDD	NotFnd		0.9793						1.05		6393.818	0.262
123469-HxCDD	NotFnd		0.9829						1.05		6393.818	0.262
123478-HxCDD	NotFnd		**1.0003**						1.06		**6393.818**	**0.272**
123678-HxCDD	NotFnd		**1.0033**						1.08		**6393.818**	**0.274**
123467-HxCDD	NotFnd		1.0084						1.05		6393.818	0.262
123789-HxCDD	NotFnd		**1.0110**						1.02		**6393.818**	**0.244**

Lab ID: MB1_18720_DF_SDS | **Acq'd:** 17 Dec 2021 14:02 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5962_18720 | **UTP:** 20-Dec-2021 14:06:08 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 673-484-QWD

Datafile: 211217R05 | **Report:** 20 Dec 2021 14:18 gd | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

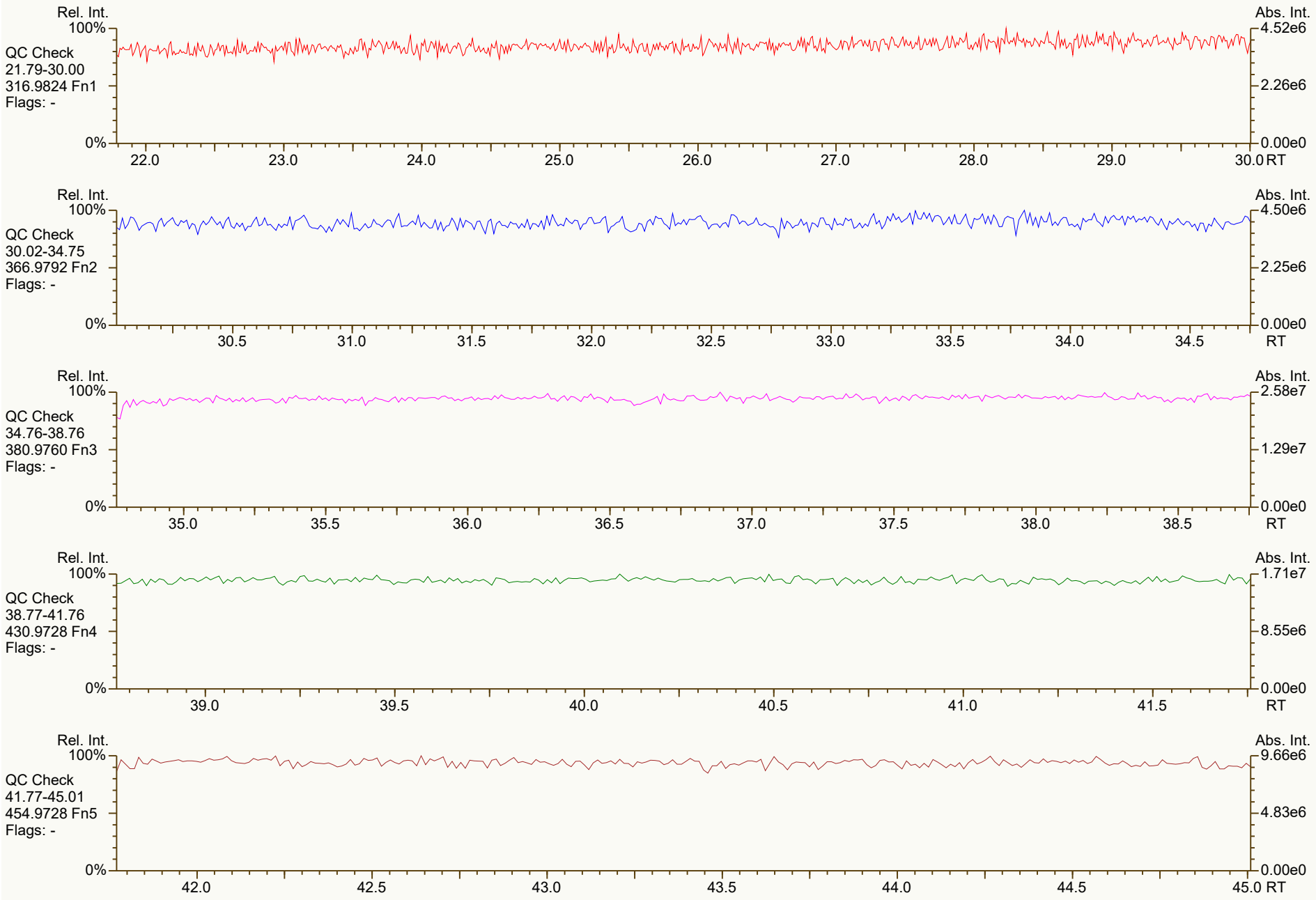
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9843						0.97		6617.374	0.271
1234678-HpCDD	**NotFnd**		**1.0003**						**0.97**		**6617.374**	**0.271**
OCDD	**NotFnd**		**1.0003**						**1.07**		**6671.497**	**0.513**
OCDD-a	NotFnd		1.0001						0.07		8088.257	10.1
1368-TCDF	NotFnd		0.8230						0.96		4928.407	0.156
1468-TCDF	NotFnd		0.8443						0.96		4928.407	0.156
2468-TCDF	NotFnd		0.8672						0.96		4928.407	0.156
1346/1246-TCDF	NotFnd		0.8802						0.96		4928.407	0.156
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		4928.407	0.156
1348-TCDF	NotFnd		0.8952						0.96		4928.407	0.156
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		4928.407	0.156
1268-TCDF	NotFnd		0.9136						0.96		4928.407	0.156
1467-TCDF	NotFnd		0.9185						0.96		4928.407	0.156
1478-TCDF	NotFnd		0.9247						0.96		4928.407	0.156
1369/1237-TCDF	NotFnd		0.9381						0.96		4928.407	0.156
2467-TCDF	NotFnd		0.9427						0.96		4928.407	0.156
2368-TCDF	NotFnd		0.9484						0.96		4928.407	0.156
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		4928.407	0.156
1278-TCDF	NotFnd		0.9682						0.96		4928.407	0.156
1349-TCDF	NotFnd		0.9725						0.96		4928.407	0.156
1267-TCDF	NotFnd		0.9782						0.96		4928.407	0.156
2346/1249-TCDF	NotFnd		0.9846						0.96		4928.407	0.156
2347/1279-TCDF	NotFnd		0.9926						0.96		4928.407	0.156
2348-TCDF	NotFnd		0.9966						0.96		4928.407	0.156
2378-TCDF	**NotFnd**		**1.0006**						**0.96**		**4928.407**	**0.156**
2367/3467-TCDF	NotFnd		1.0139						0.96		4928.407	0.156
1269-TCDF	NotFnd		1.0226						0.96		4928.407	0.156
1239-TCDF	NotFnd		1.0322						0.96		4928.407	0.156
1289-TCDF	NotFnd		1.0729						0.96		4928.407	0.156
13468/12468-PeCDF	NotFnd		0.9135						0.94		7044.331	0.216
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		4843.201	0.148
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		4843.201	0.148
14678-PeCDF	NotFnd		0.9693						0.94		4843.201	0.148
13479-PeCDF	NotFnd		0.9723						0.94		4843.201	0.148
13469/12479-PeCDF	NotFnd		0.9799						0.94		4843.201	0.148
12346-PeCDF	NotFnd		0.9842						0.94		4843.201	0.148

Lab ID: MB1_18720_DF_SDS | **Acq'd:** 17 Dec 2021 14:02 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5962_18720 | **UTP:** 20-Dec-2021 14:06:08 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 673-484-QWD

Datafile: 211217R05 | **Report:** 20 Dec 2021 14:18 gd | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		4843.201	0.148
12347-PeCDF	NotFnd		0.9893						0.94		4843.201	0.148
12348-PeCDF	NotFnd		0.9941						0.94		4843.201	0.148
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**4843.201**	**0.144**
12678/12367-PeCDF	NotFnd		1.0090						0.94		4843.201	0.148
12379-PeCDF	NotFnd		1.0143						0.94		4843.201	0.148
12679-PeCDF	NotFnd		0.9929						0.94		4843.201	0.148
23467/12369-PeCDF	NotFnd		0.9966						0.94		4843.201	0.148
23478-PeCDF	**NotFnd**		**1.0006**						**0.94**		**4843.201**	**0.153**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		4843.201	0.148
12349-PeCDF	NotFnd		1.0102						0.94		4843.201	0.148
12389-PeCDF	NotFnd		1.0325						0.94		4843.201	0.148
123468-HxCDF	NotFnd		0.9628						1.16		5852.126	0.167
124678/134678-HxCDF	NotFnd		0.9683						1.16		5852.126	0.167
134679-HxCDF	NotFnd		0.9746						1.16		5852.126	0.167
124679-HxCDF	NotFnd		0.9798						1.16		5852.126	0.167
124689-HxCDF	NotFnd		0.9859						1.16		5852.126	0.167
123467-HxCDF	NotFnd		0.9972						1.16		5852.126	0.167
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**5852.126**	**0.159**
123678-HxCDF	**NotFnd**		**1.0004**						**1.13**		**5852.126**	**0.147**
123479-HxCDF	NotFnd		1.0049						1.16		5852.126	0.167
123469-HxCDF	NotFnd		1.0088						1.16		5852.126	0.167
123679-HxCDF	NotFnd		0.9943						1.16		5852.126	0.167
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**5852.126**	**0.177**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		5852.126	0.167
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**5852.126**	**0.194**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		5852.126	0.167
1234678-HpCDF	**NotFnd**		**1.0003**						**1.36**		**6164.768**	**0.134**
1234679-HpCDF	NotFnd		1.0067						1.33		6164.768	0.169
1234689-HpCDF	NotFnd		1.0100						1.33		6164.768	0.169
1234789-HpCDF	**NotFnd**		**1.0003**						**1.30**		**6164.768**	**0.216**
OCDF	**NotFnd**		**1.0002**						**1.03**		**6502.161**	**0.426**
OCDF-a	NotFnd		1.0002						0.06		7593.167	8.61

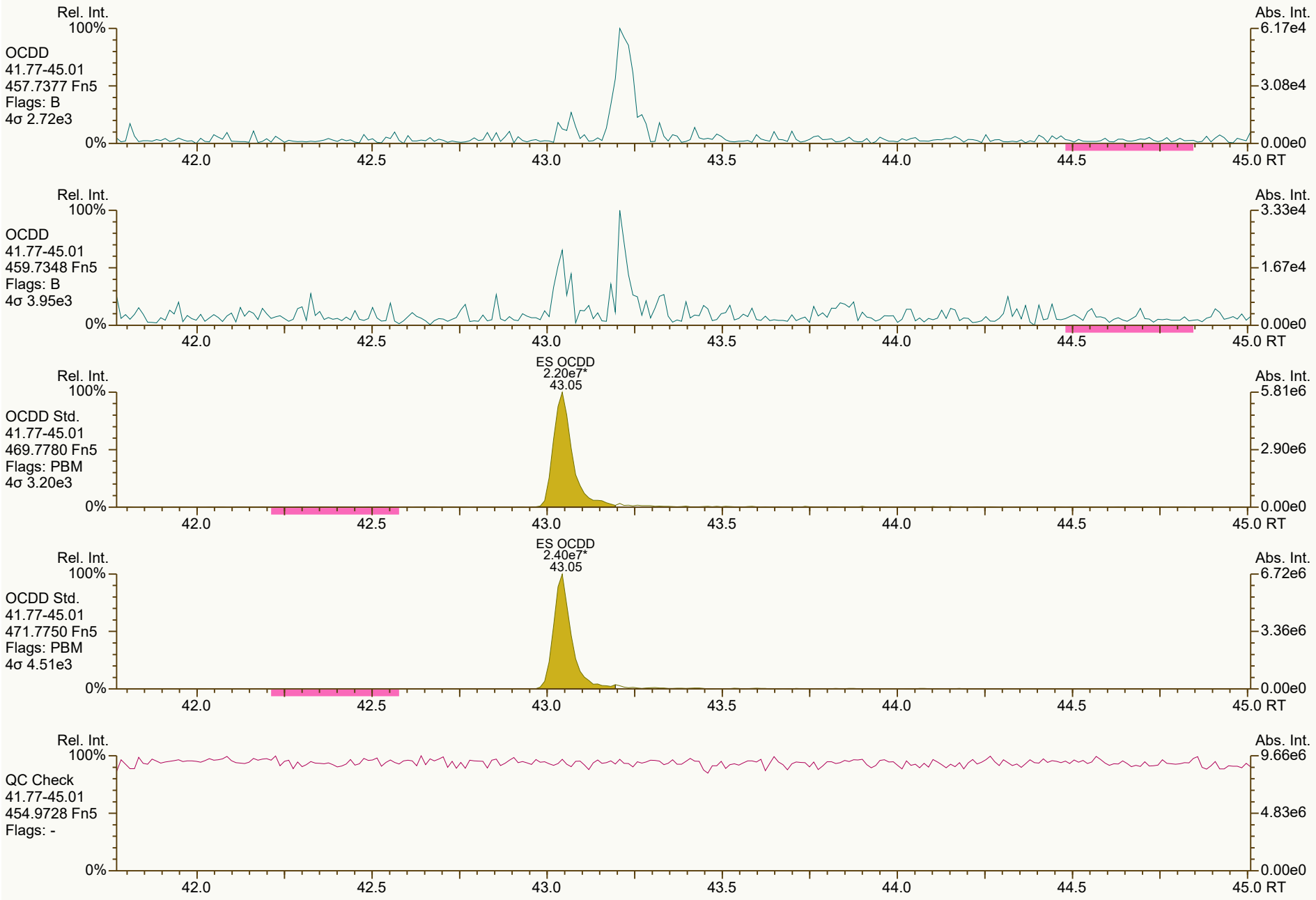

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.52e6
2.26e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.50e6
2.25e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.58e7
1.29e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.71e7
8.55e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.66e6
4.83e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

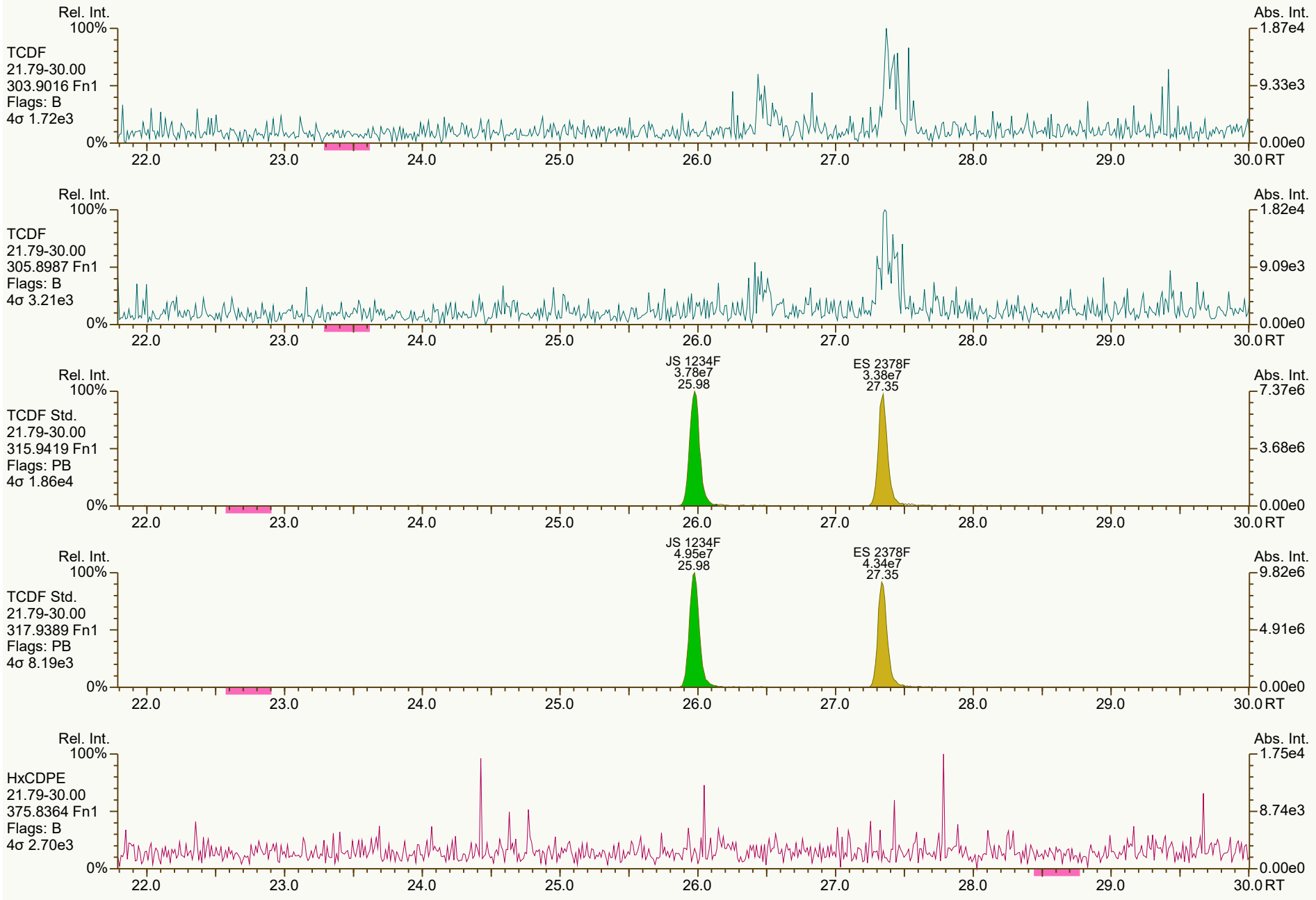

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 3.96e3
0%
Abs. Int.
1.77e4
8.87e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 2.81e3
0%
Abs. Int.
1.93e4
9.64e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.98e3
0%
CS 37Cl-2378D
2.60e7
28.23
Abs. Int.
5.73e6
2.86e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.12e4
0%
JS 1234D
2.63e7
27.55
ES 2378D
2.54e7
28.21
Abs. Int.
5.80e6
2.90e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 6.58e3
0%
JS 1234D
3.38e7
27.55
ES 2378D
3.26e7
28.21
Abs. Int.
7.79e6
3.90e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: B
4σ 2.56e3
0%
Abs. Int.
8.01e3
4.01e3
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
PeCDD
30.02-34.75
357.8517 Fn2
Flags: B
4σ 2.86e3
4.69e3
2.35e3
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.74e3
CS 12347D
2.75e7
33.06
ES 12378D
3.07e7
33.56
7.95e6
3.98e6
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 3.00e3
CS 12347D
1.72e7
33.06
ES 12378D
1.90e7
33.56
5.20e6
2.60e6
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
4.50e6
2.25e6

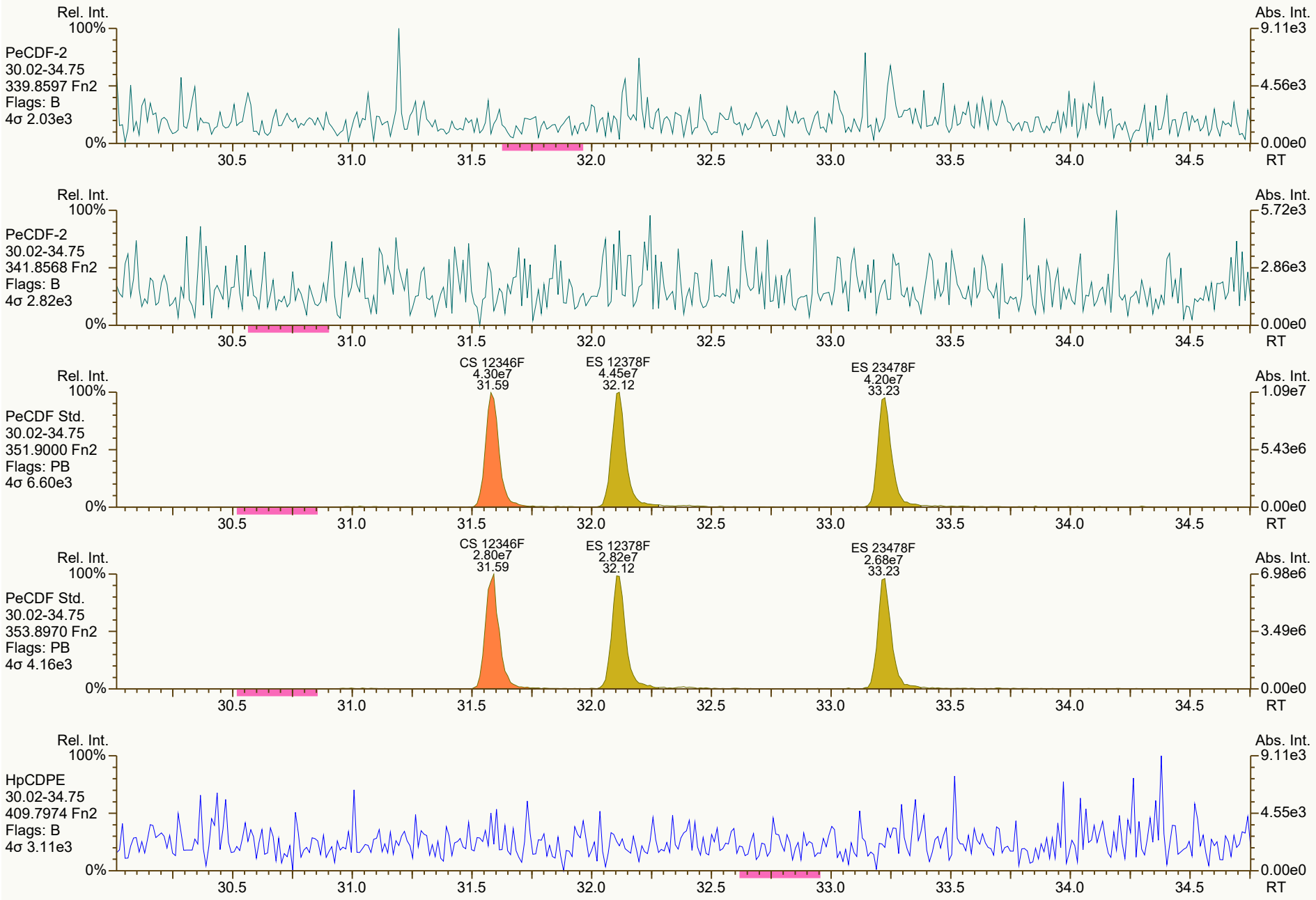

Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: B
4σ 2.83e3
0%
Abs. Int.
1.35e4
6.73e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: B
4σ 3.56e3
0%
Abs. Int.
6.67e3
3.34e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 3.64e3
0%
ES 123478D
2.22e7*
37.44
ES 123678D
2.53e7*
37.56
JS 123467D
1.23e7*
37.76
ES 123789D
2.87e7*
37.87
Abs. Int.
7.34e6
3.67e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 3.49e3
0%
ES 123478D
1.77e7*
37.44
ES 123678D
1.98e7*
37.56
JS 123467D
9.84e6*
37.76
ES 123789D
2.16e7*
37.87
Abs. Int.
5.67e6
2.84e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.58e7
1.29e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

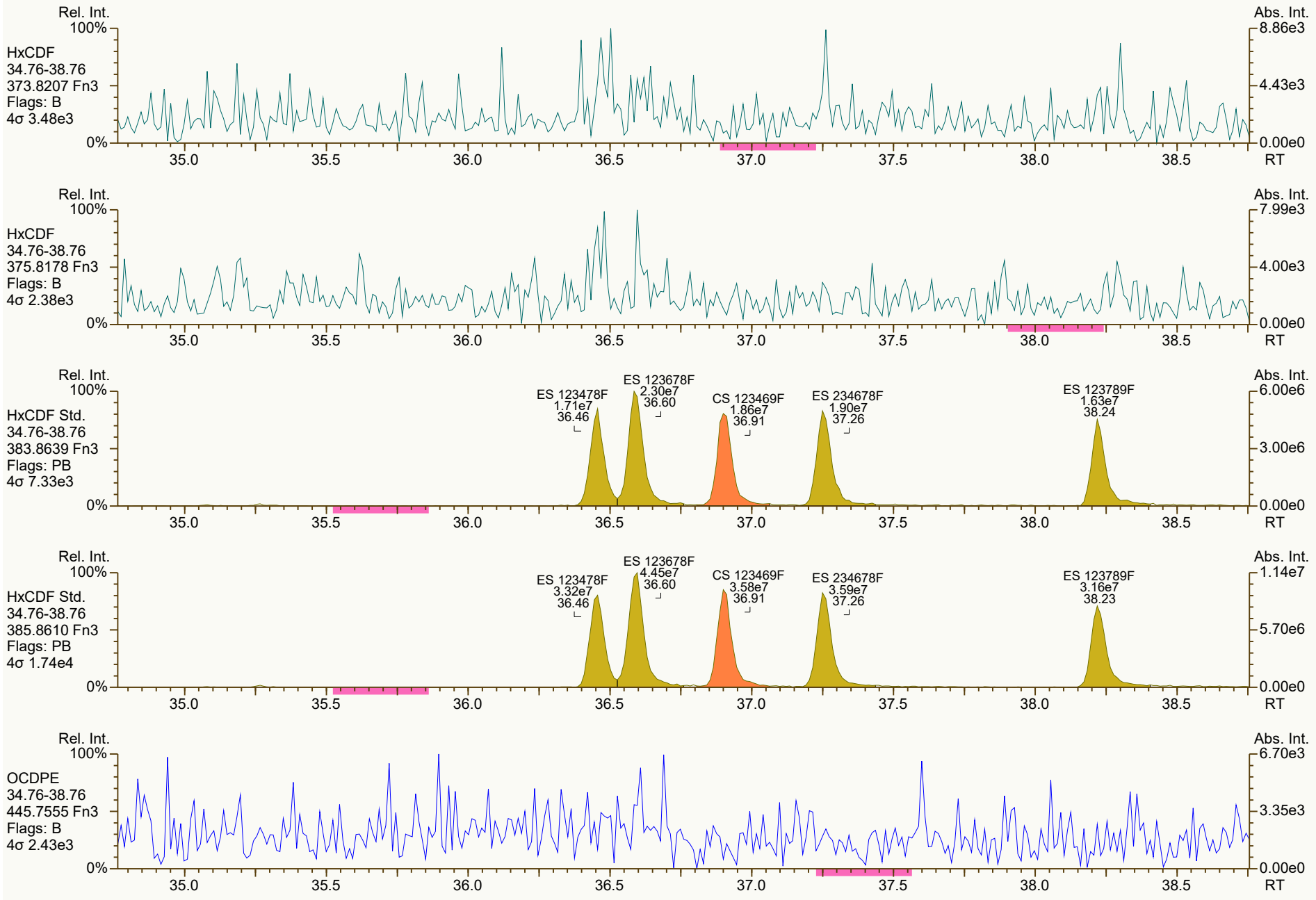

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: B
4σ 3.11e3
0%
Abs. Int.
2.79e4
1.39e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: B
4σ 3.50e3
0%
Abs. Int.
1.67e4
8.35e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
ES 1234678D
2.04e7
40.50
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.14e3
0%
Abs. Int.
6.43e6
3.22e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
ES 1234678D
1.93e7
40.50
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.07e3
0%
Abs. Int.
6.28e6
3.14e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.71e7
8.55e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

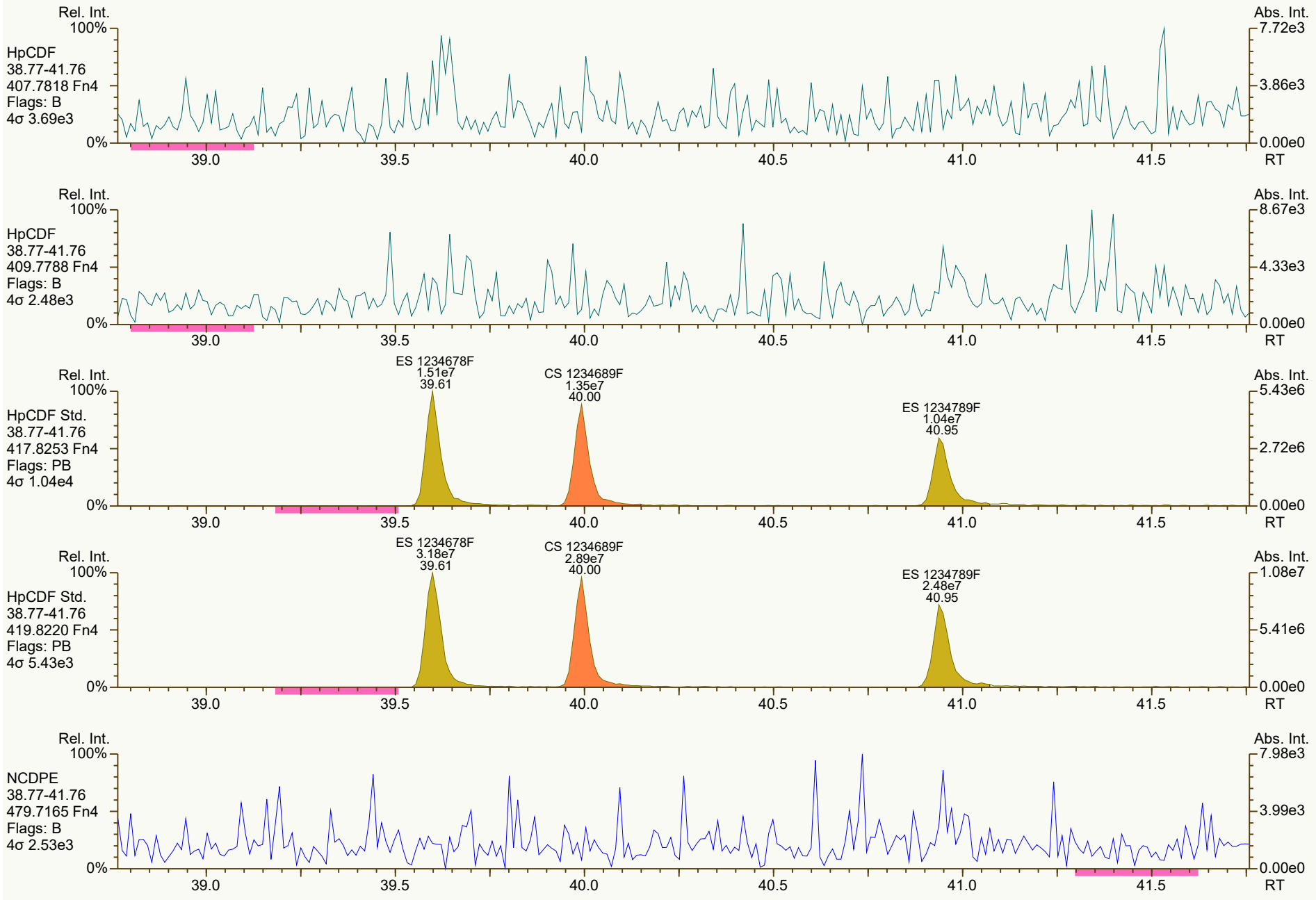

Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: B
4σ 2.72e3
0%
Abs. Int.
6.17e4
3.08e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 3.95e3
0%
Abs. Int.
3.33e4
1.67e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.20e7*
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 3.20e3
0%
Abs. Int.
5.81e6
2.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.40e7*
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 4.51e3
0%
Abs. Int.
6.72e6
3.36e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.66e6
4.83e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

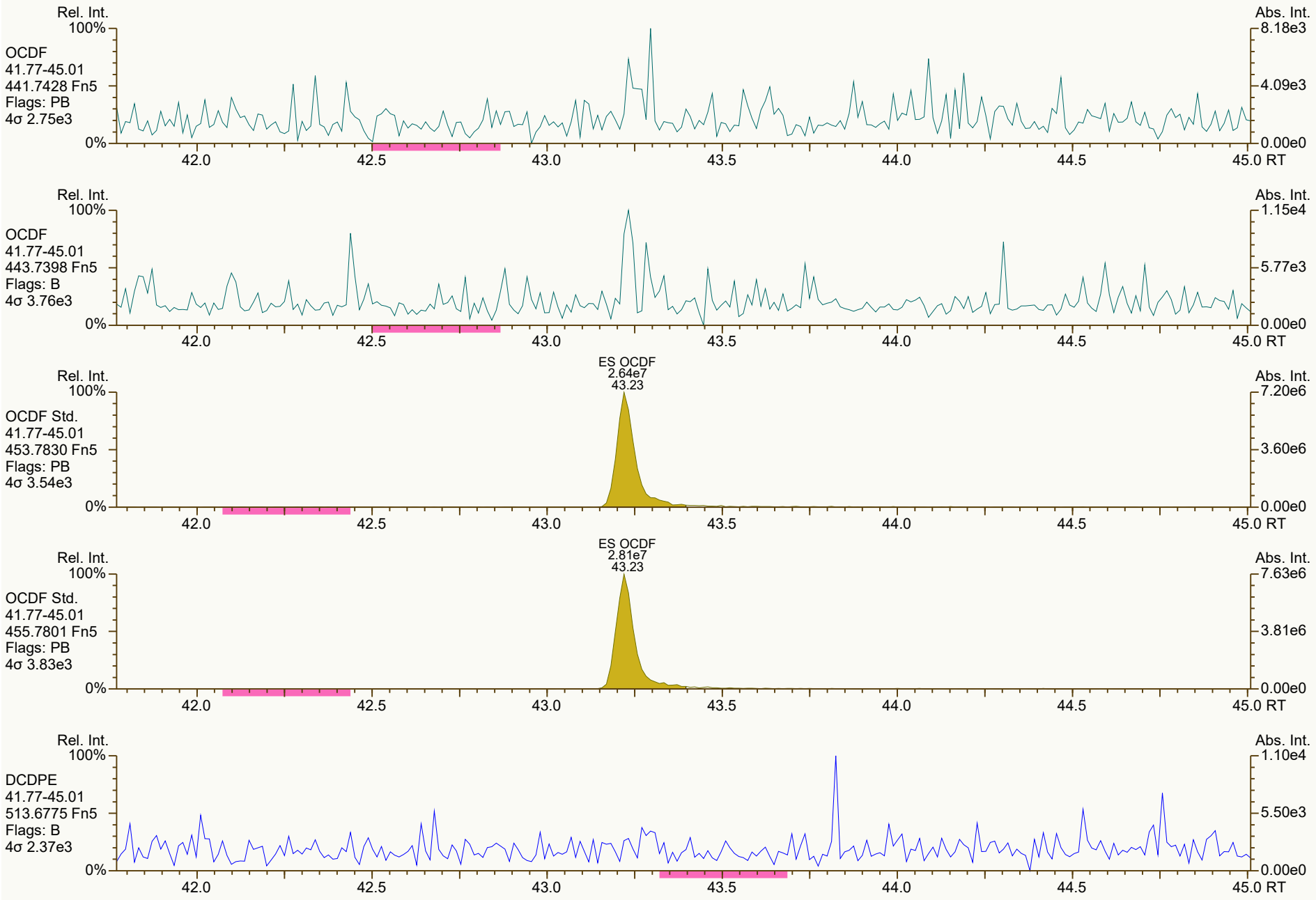

Rel. Int.
100%
TCDF
21.79-30.00
303.9016 Fn1
Flags: B
4σ 1.72e3
0%
Abs. Int.
1.87e4
9.33e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF
21.79-30.00
305.8987 Fn1
Flags: B
4σ 3.21e3
0%
Abs. Int.
1.82e4
9.09e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.86e4
JS 1234F
3.78e7
25.98
ES 2378F
3.38e7
27.35
0%
Abs. Int.
7.37e6
3.68e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 8.19e3
JS 1234F
4.95e7
25.98
ES 2378F
4.34e7
27.35
0%
Abs. Int.
9.82e6
4.91e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.70e3
0%
Abs. Int.
1.75e4
8.74e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
0%
Abs. Int.
1.89e4
9.43e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 4.24e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 2.81e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
4.52e6
2.26e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.11e3
4.56e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: B
4σ 2.82e3
0%
Abs. Int.
5.72e3
2.86e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 6.60e3
0%
CS 12346F
4.30e7
31.59
ES 12378F
4.45e7
32.12
ES 23478F
4.20e7
33.23
Abs. Int.
1.09e7
5.43e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.16e3
0%
CS 12346F
2.80e7
31.59
ES 12378F
2.82e7
32.12
ES 23478F
2.68e7
33.23
Abs. Int.
6.98e6
3.49e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.11e3
0%
Abs. Int.
9.11e3
4.55e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: B
4σ 3.48e3
0%
Abs. Int.
8.86e3
4.43e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: B
4σ 2.38e3
0%
Abs. Int.
7.99e3
4.00e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 7.33e3
0%
ES 123478F
1.71e7
36.46
ES 123678F
2.30e7
36.60
CS 123469F
1.86e7
36.91
ES 234678F
1.90e7
37.26
ES 123789F
1.63e7
38.24
Abs. Int.
6.00e6
3.00e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 1.74e4
0%
ES 123478F
3.32e7
36.46
ES 123678F
4.45e7
36.60
CS 123469F
3.58e7
36.91
ES 234678F
3.59e7
37.26
ES 123789F
3.16e7
38.23
Abs. Int.
1.14e7
5.70e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.43e3
0%
Abs. Int.
6.70e3
3.35e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: B
4σ 3.69e3
0%
Abs. Int.
7.72e3
3.86e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: B
4σ 2.48e3
0%
Abs. Int.
8.67e3
4.33e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.04e4
0%
ES 1234678F
1.51e7
39.61
CS 1234689F
1.35e7
40.00
ES 1234789F
1.04e7
40.95
Abs. Int.
5.43e6
2.72e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 5.43e3
0%
ES 1234678F
3.18e7
39.61
CS 1234689F
2.89e7
40.00
ES 1234789F
2.48e7
40.95
Abs. Int.
1.08e7
5.41e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.53e3
0%
Abs. Int.
7.98e3
3.99e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 2.75e3
0%
Abs. Int.
8.18e3
4.09e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 3.76e3
0%
Abs. Int.
1.15e4
5.77e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.64e7
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.54e3
0%
Abs. Int.
7.20e6
3.60e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.81e7
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 3.83e3
0%
Abs. Int.
7.63e6
3.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.37e3
0%
Abs. Int.
1.10e4
5.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5962_18720_DF_001-D5 **Acq'd:** 20 Dec 2021 13:00 PSW **Wt/Vol:** 10.62 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-6 **UTP:** 20-Dec-2021 14:06:14 PSW **J-level:** 0.471 pg/g **Split:** 1 **Checkcode:** 670-989-ZDB

Datafile: 211220R06 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	5609.373	1.71
12378-PeCDD	NotFnd		1.0005	-		-	-	-	1.06	-	4735.408	1.86
123478-HxCDD	37.29		1.0003	1.0006	+0.7	8.16E+04	1.25	Y	1.06	3.99	6489.021	2.83
123678-HxCDD	37.40		1.0036	1.0037	+0.2	1.31E+05	1.28	Y	1.08	6.99	6489.021	2.78
123789-HxCDD	37.71	EMPC	1.0119	1.0119	0	1.44E+05	1.54	N	1.02	6.53	6489.021	2.58
1234678-HpCDD	40.39		1.0003	1.0004	+0.2	1.94E+07	1.02	Y	0.97	1,100	4373.671	1.69
OCDD	42.92	E	1.0003	1.0004	+0.3	9.02E+08	0.89	Y	1.07	67,600	7732.547	4.42
2378-TCDF	27.12		1.0007	1.0007	0	1.75E+05	0.74	Y	0.96	5.04	5031.967	1.57
12378-PeCDF	NotFnd		1.0005	-		-	-	-	0.95	-	4864.721	1.37
23478-PeCDF	NotFnd		1.0005	-		-	-	-	0.94	-	4864.721	1.43
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	5188.207	1.56
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.13	-	5188.207	1.33
234678-HxCDF	37.10	J	1.0005	1.0004	-0.2	3.84E+04	1.30	Y	1.15	1.39	5188.207	1.51
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	5188.207	1.59
1234678-HpCDF	39.48		1.0003	1.0003	0	5.37E+05	0.93	Y	1.36	21.5	4432.042	1.07
1234789-HpCDF	40.83	J EMPC	1.0002	1.0003	+0.2	3.63E+04	1.31	N	1.30	1.54	4432.042	1.24
OCDF	43.08		1.0002	1.0002	0	9.34E+05	0.82	Y	1.03	64	5732.16	3.14

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.98		1.0243	1.0245	+0.3	4.80E+06	0.78	Y	1.03	86.5
ES 12378-PeCDD	33.38		1.2222	1.2222	0	4.14E+06	1.52	Y	1.03	74.7
ES 123478-HxCDD	37.26		0.9915	0.9914	-0.2	3.65E+06	1.25	Y	0.99	95.5
ES 123678-HxCDD	37.38		0.9947	0.9946	-0.2	3.25E+06	1.43	N	0.97	87.1
ES 123789-HxCDD	37.69		1.0029	1.0027	-0.5	4.10E+06	1.37	Y	1.12	95
ES 1234678-HpCDD	40.37		1.0740	1.0741	+0.2	3.42E+06	1.07	Y	0.99	89.7
ES OCDD	42.90		1.1408	1.1414	+1.5	4.70E+06	0.85	Y	0.78	78.7
ES 2378-TCDF	27.10		1.0539	1.0540	+0.2	6.81E+06	0.86	Y	1.08	84.9
ES 12378-PeCDF	31.92		1.2414	1.2413	-0.2	6.11E+06	1.56	Y	0.93	88.4
ES 23478-PeCDF	33.04		1.2849	1.2848	-0.2	5.73E+06	1.46	Y	0.92	83.9
ES 123478-HxCDF	36.28		0.9654	0.9654	0	4.29E+06	0.52	Y	1.14	97.8
ES 123678-HxCDF	36.43		0.9691	0.9691	0	5.11E+06	0.53	Y	1.30	103
ES 234678-HxCDF	37.08		0.9866	0.9866	0	4.52E+06	0.44	Y	1.20	98
ES 123789-HxCDF	38.06		1.0128	1.0126	-0.5	4.27E+06	0.57	Y	1.14	97.9
ES 1234678-HpCDF	39.47		1.0501	1.0502	+0.2	3.45E+06	0.48	Y	0.95	94.6
ES 1234789-HpCDF	40.81		1.0857	1.0859	+0.5	3.41E+06	0.45	Y	0.85	105
ES OCDF	43.08		1.1457	1.1461	+1.0	5.36E+06	0.91	Y	0.93	75.3

Lab ID: B5962_18720_DF_001-D5 **Acq'd:** 20 Dec 2021 13:00 PSW **Wt/Vol:** 10.62 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-6 **UTP:** 20-Dec-2021 14:06:14 PSW **J-level:** 0.471 pg/g **Split:** 1 **Checkcode:** 670-989-ZDB

Datafile: 211220R06 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.31		-	-	-	5.36E+06	0.73	Y	-	-
JS 1234-TCDF	25.71		-	-	-	7.40E+06	0.77	Y	-	-
JS 123467-HxCDD	37.59		-	-	-	1.92E+06	1.20	Y	-	-
CS 37Cl-2378-TCDD	28.00		1.0251	1.0252	+0.2	2.18E+06	n/a	-	1.31	77.6
CS 12347-PeCDD	32.87		1.2038	1.2037	-0.2	3.56E+06	1.55	Y	0.89	74.3
CS 12346-PeCDF	31.39		1.2208	1.2207	-0.2	6.20E+06	1.64	Y	0.87	96.5
CS 123469-HxCDF	36.73		0.9773	0.9773	0	4.62E+06	0.49	Y	1.09	110
CS 1234689-HpCDF	39.87		1.0606	1.0607	+0.2	3.92E+06	0.42	Y	0.86	118
~~SS 37Cl-2378-TCDD~~	~~28.00~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~2.18E+06~~	~~n/a~~		~~1.26~~	~~90.2~~
~~SS 12347-PeCDD~~	~~32.87~~		~~1.2038~~	~~1.2037~~	~~-0.2~~	~~3.56E+06~~	~~1.55~~	~~Y~~	~~0.86~~	~~99.4~~
~~SS 12346-PeCDF~~	~~31.39~~		~~1.2208~~	~~1.2207~~	~~-0.2~~	~~6.20E+06~~	~~1.64~~	~~Y~~	~~0.93~~	~~109~~
~~SS 123469-HxCDF~~	~~36.73~~		~~0.9773~~	~~0.9773~~	~~0~~	~~4.62E+06~~	~~0.49~~	~~Y~~	~~0.84~~	~~107~~
~~SS 1234689-HpCDF~~	~~39.87~~		~~1.0606~~	~~1.0607~~	~~+0.2~~	~~3.92E+06~~	~~0.42~~	~~Y~~	~~0.91~~	~~124~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	41	74
Total HpCDD	2360	2360
Total Tetra-Octa Dioxins	70000	70000
Total TCDF	8.91	11.1
Total PeCDF	0	5.66
Total HxCDF	12.9	23.5
Total HpCDF	61.9	63.5
Total Tetra-Octa Furans	148	168
Total Tetra-Octa Dioxins & Furans	70100	70200

Lab ID: B5962_18720_DF_001-D5 | **Acq'd: 20 Dec 2021 13:00 PSW** | **Wt/Vol: 10.62 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-O-6 | **UTP: 20-Dec-2021 14:06:14 PSW** | **J-level: 0.471 pg/g** | **Split: 1** | **Checkcode: 670-989-ZDB**

Datafile: 211220R06 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8677						1.34		5609.373	1.71
1379-TCDD	NotFnd		0.8808						1.34		5609.373	1.71
1369-TCDD	NotFnd		0.8967						1.34		5609.373	1.71
1469-TCDD	NotFnd		0.9244						1.34		5609.373	1.71
1247/1246/1248/1249-TCDD	NotFnd		0.9340						1.34		5609.373	1.71
1378-TCDD	NotFnd		0.9408						1.34		5609.373	1.71
1268-TCDD	NotFnd		0.9479						1.34		5609.373	1.71
1478-TCDD	NotFnd		0.9571						1.34		5609.373	1.71
1279-TCDD	NotFnd		0.9631						1.34		5609.373	1.71
1234/1269-TCDD	NotFnd		0.9758						1.34		5609.373	1.71
1236-TCDD	NotFnd		0.9808						1.34		5609.373	1.71
1237/1238-TCDD	NotFnd		0.9902						1.34		5609.373	1.71
1239-TCDD	NotFnd		0.9949						1.34		5609.373	1.71
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**5609.373**	**1.71**
1278-TCDD	NotFnd		1.0126						1.34		5609.373	1.71
1267-TCDD	NotFnd		1.0174						1.34		5609.373	1.71
1289-TCDD	NotFnd		1.0361						1.34		5609.373	1.71
12479/12468-PeCDD	NotFnd		0.9252						1.06		4735.408	1.86
12469-PeCDD	NotFnd		0.9414						1.06		4735.408	1.86
12368-PeCDD	NotFnd		0.9579						1.06		4735.408	1.86
12478-PeCDD	NotFnd		0.9636						1.06		4735.408	1.86
12379-PeCDD	NotFnd		0.9666						1.06		4735.408	1.86
12369/12467/12489-PeCDD	NotFnd		0.9745						1.06		4735.408	1.86
12346/12347-PeCDD	NotFnd		0.9856						1.06		4735.408	1.86
12378-PeCDD	NotFnd		**1.0005**						**1.06**		**4735.408**	**1.86**
12367-PeCDD	NotFnd		1.0034						1.06		4735.408	1.86
12389-PeCDD	NotFnd		1.0137						1.06		4735.408	1.86
124679/124689-HxCDD	35.57	EMPC	0.9545	0.9546	+0.2	4.50E+05	1.47	N	1.05	22	6489.021	2.72
123468-HxCDD	36.22	EMPC	0.9720	0.9719	-0.2	9.24E+04	0.94	N	1.05	4.51	6489.021	2.72
123679/123689-HxCDD	36.51		0.9796	0.9798	+0.4	5.25E+05	1.21	Y	1.05	25.6	6489.021	2.72
123469-HxCDD	36.64		0.9833	0.9832	-0.2	8.94E+04	1.06	Y	1.05	4.36	6489.021	2.72
123478-HxCDD	37.29		**1.0003**	**1.0006**	**+0.7**	**8.16E+04**	**1.25**	**Y**	1.06	**3.99**	**6489.021**	**2.83**
123678-HxCDD	37.40		**1.0036**	**1.0037**	**+0.2**	**1.31E+05**	**1.28**	**Y**	1.08	**6.99**	**6489.021**	**2.78**
123467-HxCDD	NotFnd		1.0090						1.05		6489.021	2.72
123789-HxCDD	37.71	EMPC	**1.0119**	**1.0119**	**0**	**1.44E+05**	**1.54**	**N**	1.02	**6.53**	**6489.021**	**2.58**

Lab ID: B5962_18720_DF_001-D5 **Acq'd:** 20 Dec 2021 13:00 PSW **Wt/Vol:** 10.62 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-6 **UTP:** 20-Dec-2021 14:06:14 PSW **J-level:** 0.471 pg/g **Split:** 1 **Checkcode:** 670-989-ZDB

Datafile: 211220R06 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

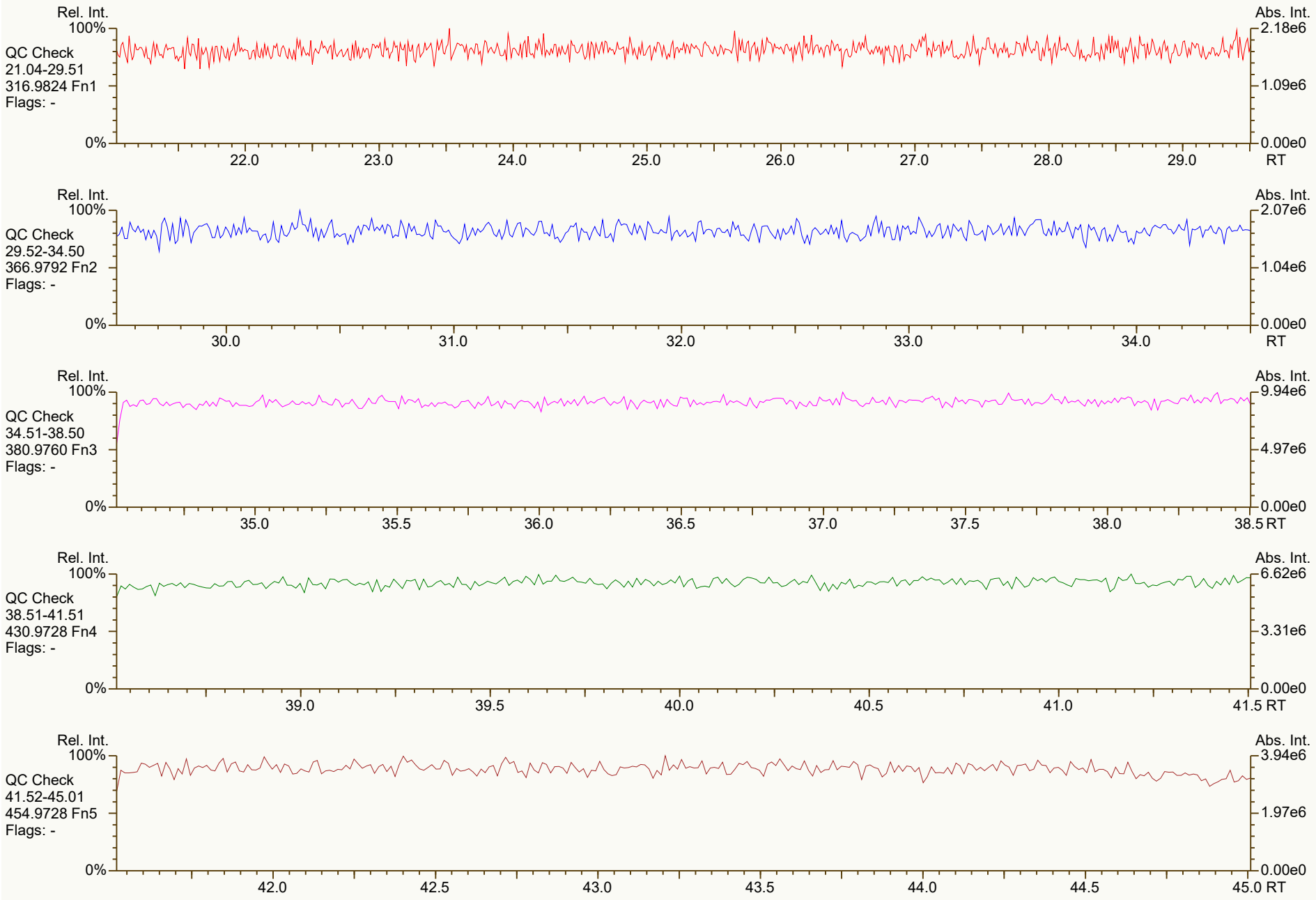
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.74		0.9844	0.9844	0	2.23E+07	1.06	Y	0.97	1,260	4373.671	1.69
1234678-HpCDD	**40.39**		**1.0003**	**1.0004**	**+0.2**	**1.94E+07**	**1.02**	**Y**	**0.97**	**1,100**	**4373.671**	**1.69**
OCDD	**42.92**	**E**	**1.0003**	**1.0004**	**+0.3**	**9.02E+08**	**0.89**	**Y**	**1.07**	**67,600**	**7732.547**	**4.42**
OCDD-a	42.91	E	1.0002	1.0003	+0.3	5.49E+07	2.53	Y	0.07	66,700	8071.72	74.8
1368-TCDF	NotFnd		0.8152						0.96		5031.967	1.57
1468-TCDF	NotFnd		0.8371						0.96		5031.967	1.57
2468-TCDF	23.36		0.8616	0.8618	+0.3	1.35E+05	0.88	Y	0.96	3.87	5031.967	1.57
1346/1246-TCDF	NotFnd		0.8749						0.96		5031.967	1.57
1347/1378/1247-TCDF	NotFnd		0.8807						0.96		5031.967	1.57
1348-TCDF	NotFnd		0.8908						0.96		5031.967	1.57
1248/1367/1379-TCDF	NotFnd		0.8959						0.96		5031.967	1.57
1268-TCDF	NotFnd		0.9100						0.96		5031.967	1.57
1467-TCDF	NotFnd		0.9152						0.96		5031.967	1.57
1478-TCDF	NotFnd		0.9217						0.96		5031.967	1.57
1369/1237-TCDF	NotFnd		0.9357						0.96		5031.967	1.57
2467-TCDF	NotFnd		0.9406						0.96		5031.967	1.57
2368-TCDF	NotFnd		0.9463						0.96		5031.967	1.57
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9495						0.96		5031.967	1.57
1278-TCDF	NotFnd		0.9669						0.96		5031.967	1.57
1349-TCDF	NotFnd		0.9711						0.96		5031.967	1.57
1267-TCDF	NotFnd		0.9773						0.96		5031.967	1.57
2346/1249-TCDF	NotFnd		0.9841						0.96		5031.967	1.57
2347/1279-TCDF	NotFnd		0.9924						0.96		5031.967	1.57
2348-TCDF	NotFnd		0.9966						0.96		5031.967	1.57
2378-TCDF	**27.12**		**1.0007**	**1.0007**	**0**	**1.75E+05**	**0.74**	**Y**	**0.96**	**5.04**	**5031.967**	**1.57**
2367/3467-TCDF	27.50	EMPC	1.0145	1.0147	+0.3	7.50E+04	0.92	N	0.96	2.16	5031.967	1.57
1269-TCDF	NotFnd		1.0233						0.96		5031.967	1.57
1239-TCDF	NotFnd		1.0331						0.96		5031.967	1.57
1289-TCDF	NotFnd		1.0756						0.96		5031.967	1.57
13468/12468-PeCDF	29.12	EMPC	0.9116	0.9122	+1.0	1.68E+05	1.03	N	0.94	5.66	5500.579	1.58
13678/13467/12467-PeCDF	NotFnd		0.9604						0.94		4864.721	1.4
12368/13478/12478-PeCDF	NotFnd		0.9653						0.94		4864.721	1.4
14678-PeCDF	NotFnd		0.9684						0.94		4864.721	1.4
13479-PeCDF	NotFnd		0.9715						0.94		4864.721	1.4
13469/12479-PeCDF	NotFnd		0.9794						0.94		4864.721	1.4
12346-PeCDF	NotFnd		0.9836						0.94		4864.721	1.4

Lab ID: B5962_18720_DF_001-D5 **Acq'd: 20 Dec 2021 13:00 PSW** **Wt/Vol: 10.62 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-O-6 **UTP: 20-Dec-2021 14:06:14 PSW** **J-level: 0.471 pg/g** **Split: 1** **Checkcode: 670-989-ZDB**

Datafile: 211220R06 **Report: 20 Dec 2021 14:10 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9865						0.94		4864.721	1.4
12347-PeCDF	NotFnd		0.9891						0.94		4864.721	1.4
12348-PeCDF	NotFnd		0.9939						0.94		4864.721	1.4
12378-PeCDF	**NotFnd**		**1.0005**						**0.95**		**4864.721**	**1.37**
12678/12367-PeCDF	NotFnd		1.0092						0.94		4864.721	1.4
12379-PeCDF	NotFnd		1.0145						0.94		4864.721	1.4
12679-PeCDF	NotFnd		0.9928						0.94		4864.721	1.4
23467/12369-PeCDF	NotFnd		0.9966						0.94		4864.721	1.4
23478-PeCDF	**NotFnd**		**1.0005**						**0.94**		**4864.721**	**1.43**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		4864.721	1.4
12349-PeCDF	NotFnd		1.0101						0.94		4864.721	1.4
12389-PeCDF	NotFnd		1.0330						0.94		4864.721	1.4
123468-HxCDF	34.92	EMPC	0.9623	0.9624	+0.2	7.42E+04	1.02	N	1.16	2.64	5188.207	1.49
124678/134678-HxCDF	35.12		0.9679	0.9678	-0.2	3.23E+05	1.12	Y	1.16	11.5	5188.207	1.49
134679-HxCDF	NotFnd		0.9741						1.16		5188.207	1.49
124679-HxCDF	NotFnd		0.9796						1.16		5188.207	1.49
124689-HxCDF	35.77	EMPC	0.9857	0.9857	0	2.24E+05	0.94	N	1.16	7.98	5188.207	1.49
123467-HxCDF	NotFnd		0.9972						1.16		5188.207	1.49
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**5188.207**	**1.56**
123678-HxCDF	**NotFnd**		**1.0005**						**1.13**		**5188.207**	**1.33**
123479-HxCDF	NotFnd		1.0048						1.16		5188.207	1.49
123469-HxCDF	NotFnd		1.0089						1.16		5188.207	1.49
123679-HxCDF	NotFnd		0.9944						1.16		5188.207	1.49
234678-HxCDF	**37.10**	J	**1.0005**	**1.0004**	**-0.2**	**3.84E+04**	**1.30**	**Y**	**1.15**	**1.39**	**5188.207**	**1.51**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		5188.207	1.49
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**5188.207**	**1.59**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		5188.207	1.49
1234678-HpCDF	**39.48**		**1.0003**	**1.0003**	**0**	**5.37E+05**	**0.93**	**Y**	**1.36**	**21.5**	**4432.042**	**1.07**
1234679-HpCDF	39.74	**J**	1.0069	1.0069	0	4.65E+04	1.00	Y	1.33	1.92	4432.042	1.15
1234689-HpCDF	39.88		1.0102	1.0104	+0.5	9.32E+05	1.05	Y	1.33	38.5	4432.042	1.15
1234789-HpCDF	**40.83**	**J EMPC**	**1.0002**	**1.0003**	**+0.2**	**3.63E+04**	**1.31**	**N**	**1.30**	**1.54**	**4432.042**	**1.24**
OCDF	**43.08**		**1.0002**	**1.0002**	**0**	**9.34E+05**	**0.82**	**Y**	**1.03**	**64**	**5732.16**	**3.14**
OCDF-a	NotFnd		1.0002						0.06		8099.163	76.7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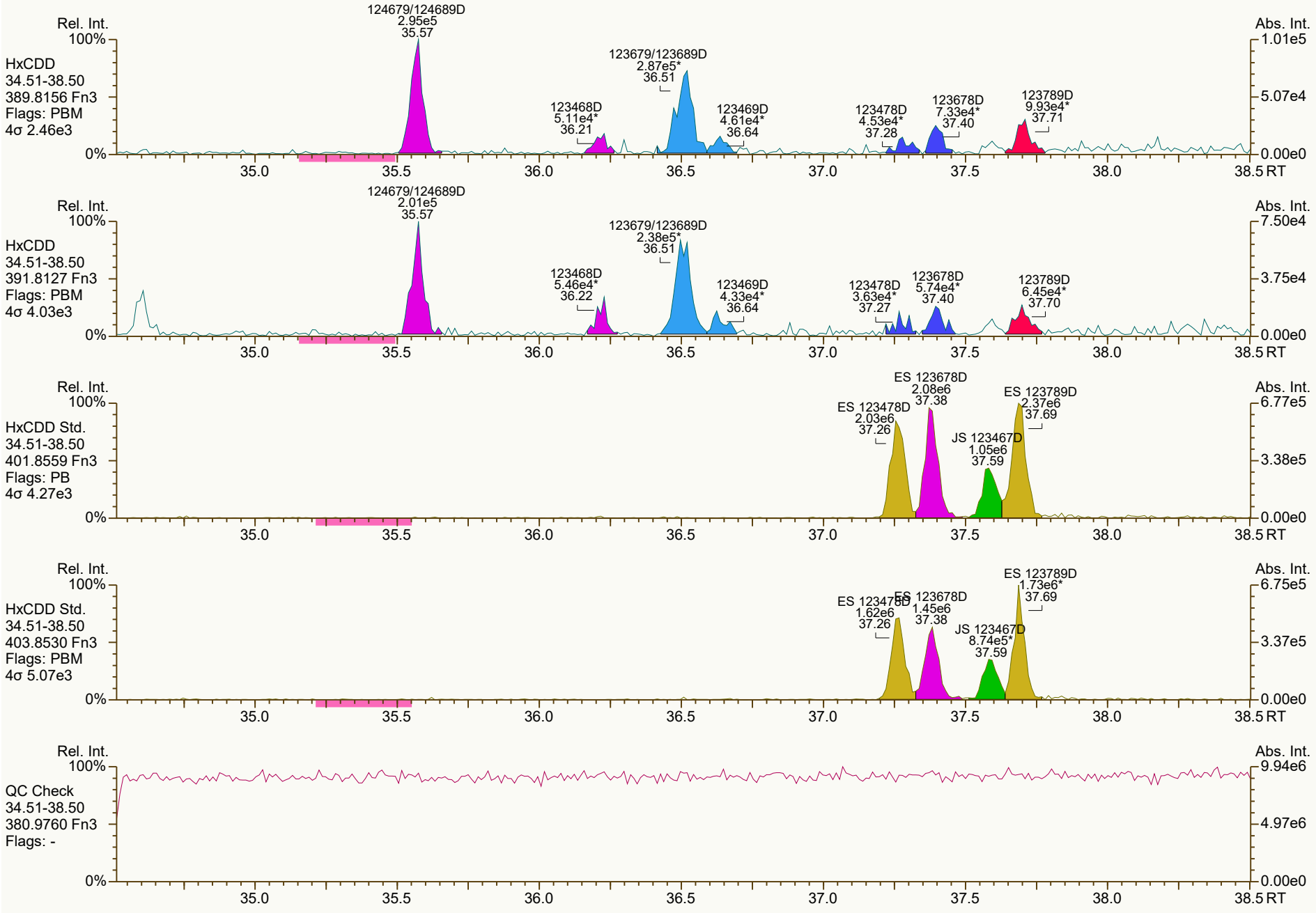
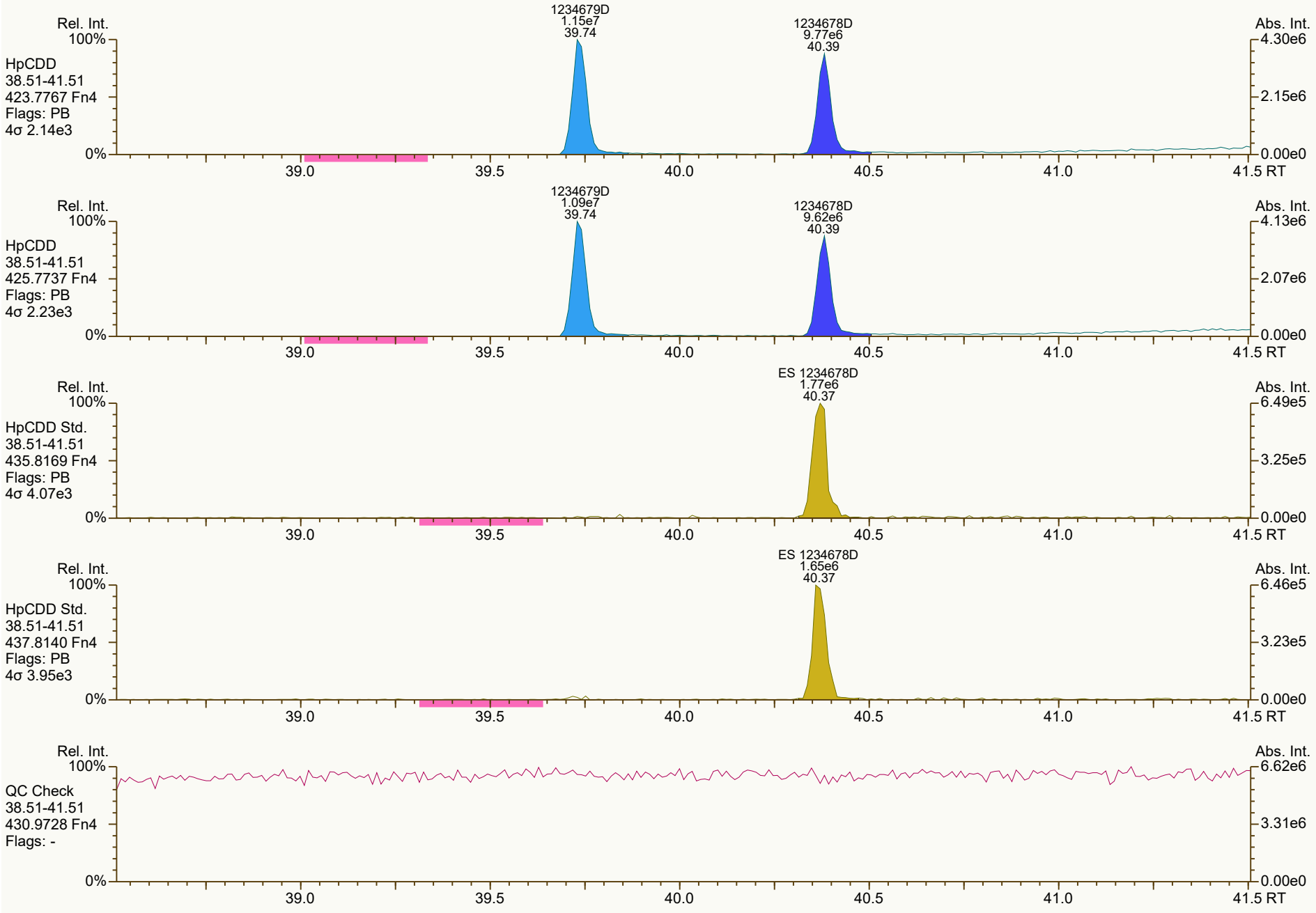
100%
QC Check
21.04-29.51
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.18e6
1.09e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
QC Check
29.52-34.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.07e6
1.04e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
34.51-38.50
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.94e6
4.97e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
QC Check
38.51-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.62e6
3.31e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
3.94e6
1.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

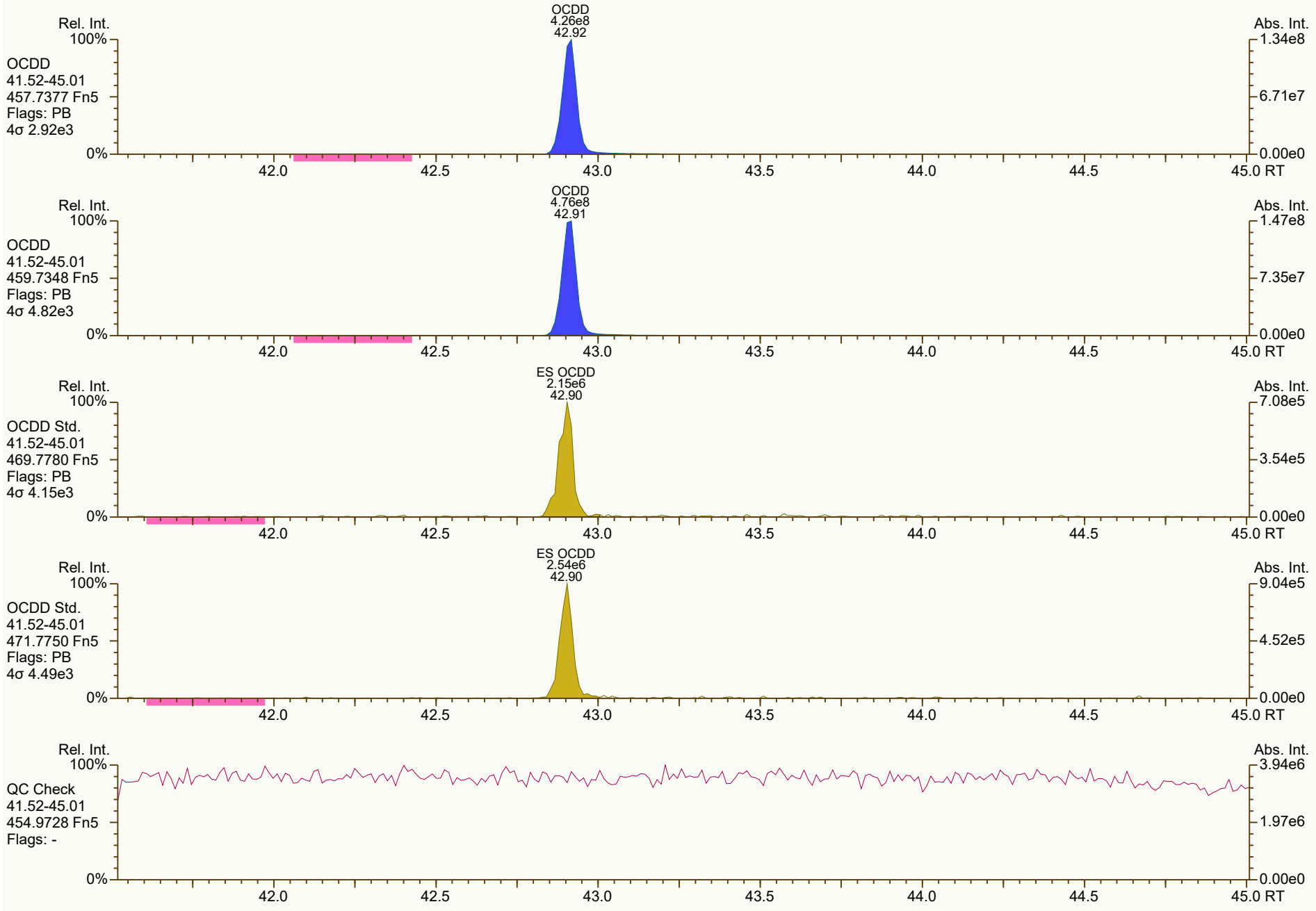

Rel. Int.
100%
TCDD
21.04-29.51
319.8965 Fn1
Flags: B
4σ 3.23e3
0%
Abs. Int.
9.59e3
4.79e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDD
21.04-29.51
321.8936 Fn1
Flags: B
4σ 2.38e3
0%
Abs. Int.
7.59e3
3.79e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
37Cl-TCDD
21.04-29.51
327.8850 Fn1
Flags: PB
4σ 2.75e3
0%
CS 37Cl-2378D
2.18e6
28.00
Abs. Int.
5.66e5
2.83e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDD Std.
21.04-29.51
331.9368 Fn1
Flags: PB
4σ 4.20e3
0%
JS 1234D
2.26e6
27.31
ES 2378D
2.10e6
27.98
Abs. Int.
5.60e5
2.80e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDD Std.
21.04-29.51
333.9339 Fn1
Flags: PB
4σ 3.38e3
0%
JS 1234D
3.10e6
27.31
ES 2378D
2.70e6
27.98
Abs. Int.
6.63e5
3.32e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT

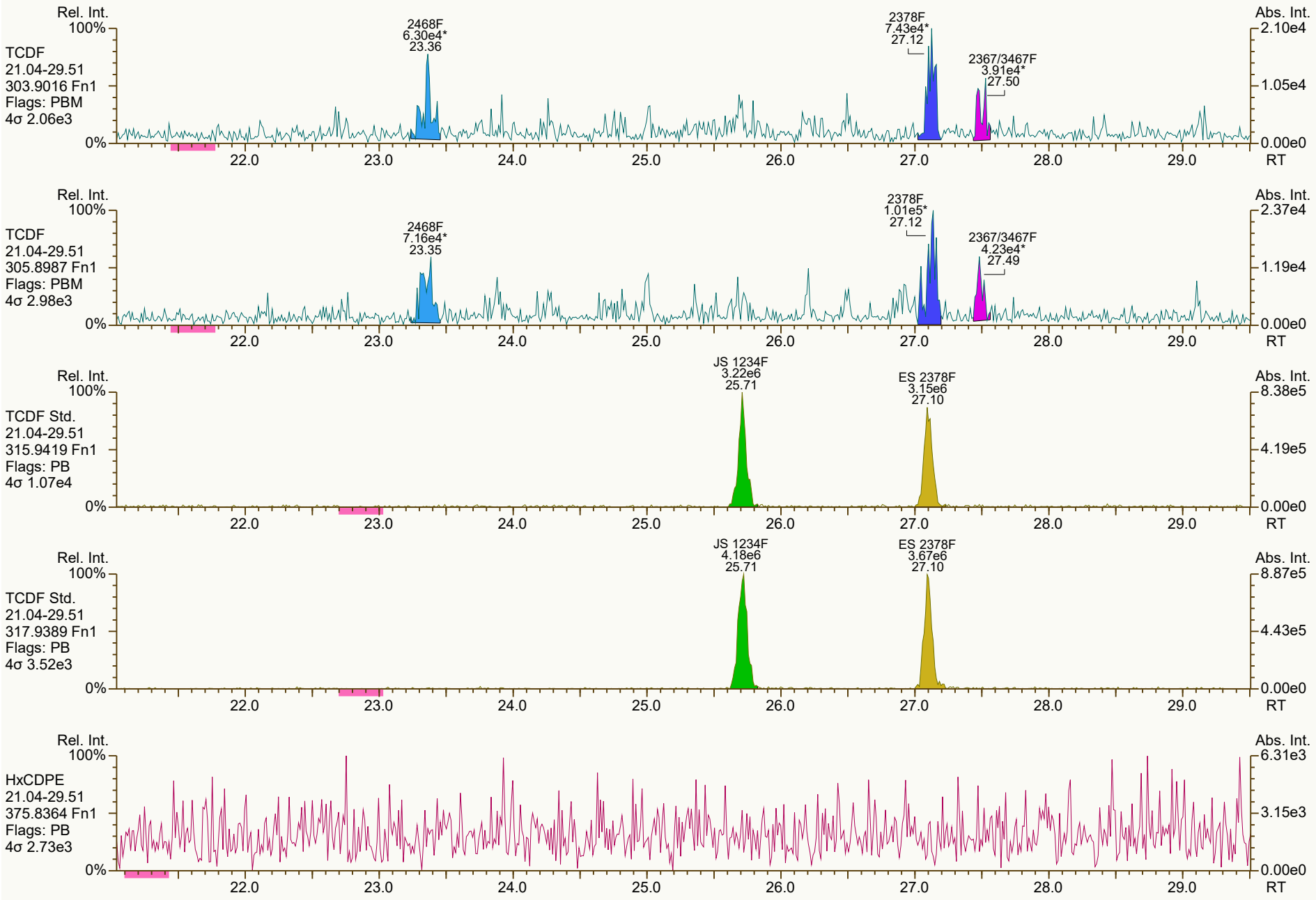

Rel. Int.
100%
PeCDD
29.52-34.50
355.8546 Fn2
Flags: B
4σ 2.02e3
0%
Abs. Int.
8.82e3
4.41e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.50
357.8517 Fn2
Flags: B
4σ 2.72e3
0%
Abs. Int.
1.71e4
8.54e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.50
367.8949 Fn2
Flags: PBM
4σ 2.81e3
0%
CS 12347D
2.16e6
32.87
ES 12378D
2.50e6*
33.38
Abs. Int.
6.83e5
3.42e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.50
369.8919 Fn2
Flags: PBM
4σ 2.97e3
0%
CS 12347D
1.40e6
32.87
ES 12378D
1.64e6*
33.37
Abs. Int.
6.15e5
3.07e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.07e6
1.04e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT



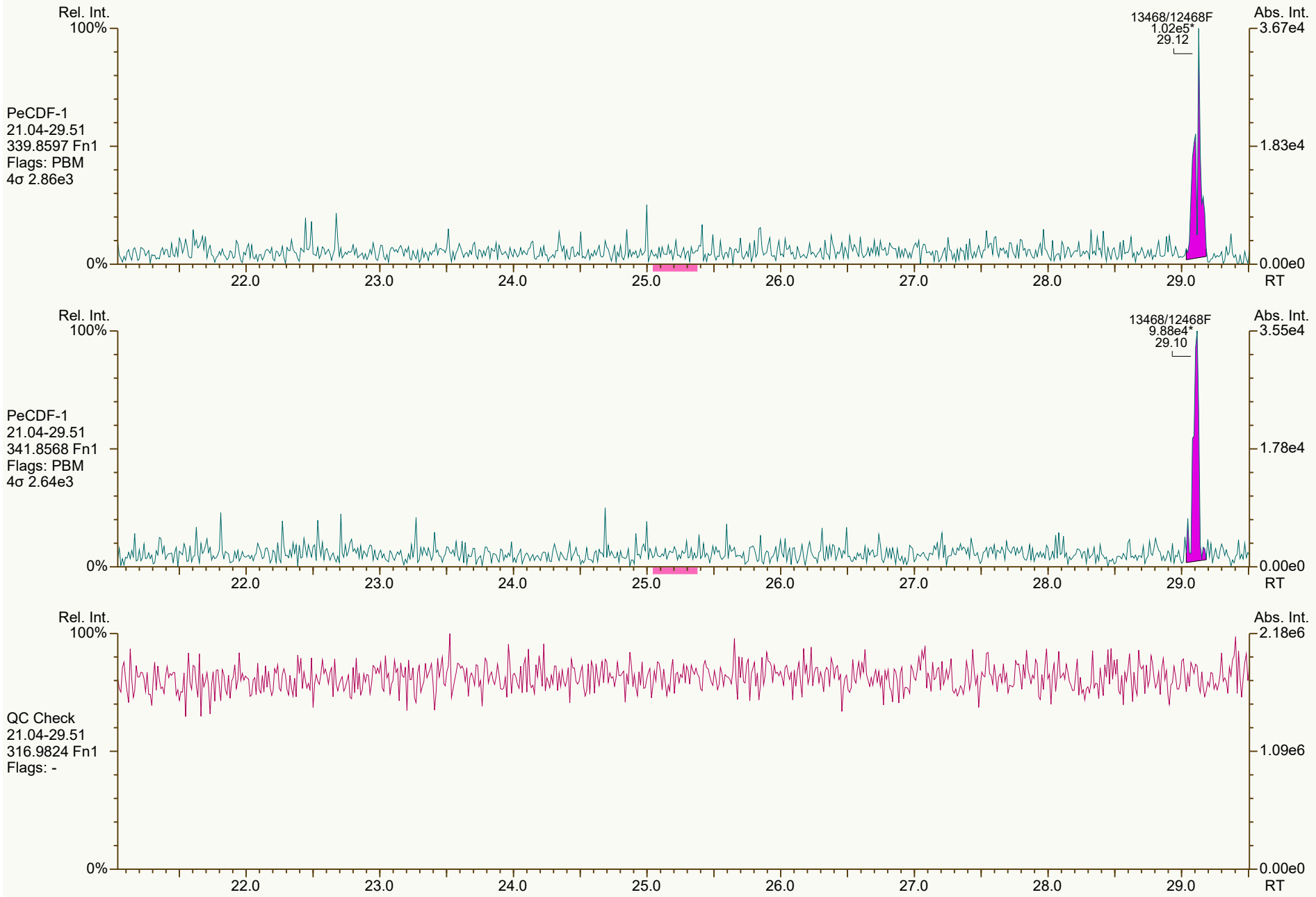
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_001-D5.utp_res, saved 20-Dec-2021 14:06 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9253, 4867 scc: 670-989 *PKD: 20-Dec-2021 14:03 Printed: 20-Dec-2021 14:29 Page 4 of 12*


Rel. Int.
100%
HpCDD
38.51-41.51
423.7767 Fn4
Flags: PB
4σ 2.14e3
1234679D
1.15e7
39.74
1234678D
9.77e6
40.39
Abs. Int.
4.30e6
2.15e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.51-41.51
425.7737 Fn4
Flags: PB
4σ 2.23e3
1234679D
1.09e7
39.74
1234678D
9.62e6
40.39
Abs. Int.
4.13e6
2.07e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.51-41.51
435.8169 Fn4
Flags: PB
4σ 4.07e3
ES 1234678D
1.77e6
40.37
Abs. Int.
6.49e5
3.25e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.51-41.51
437.8140 Fn4
Flags: PB
4σ 3.95e3
ES 1234678D
1.65e6
40.37
Abs. Int.
6.46e5
3.23e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.51-41.51
430.9728 Fn4
Flags: -
Abs. Int.
6.62e6
3.31e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.92e3
0%
OCDD
4.26e8
42.92
Abs. Int.
1.34e8
6.71e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 4.82e3
0%
OCDD
4.76e8
42.91
Abs. Int.
1.47e8
7.35e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 4.15e3
0%
ES OCDD
2.15e6
42.90
Abs. Int.
7.08e5
3.54e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.49e3
0%
ES OCDD
2.54e6
42.90
Abs. Int.
9.04e5
4.52e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
3.94e6
1.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

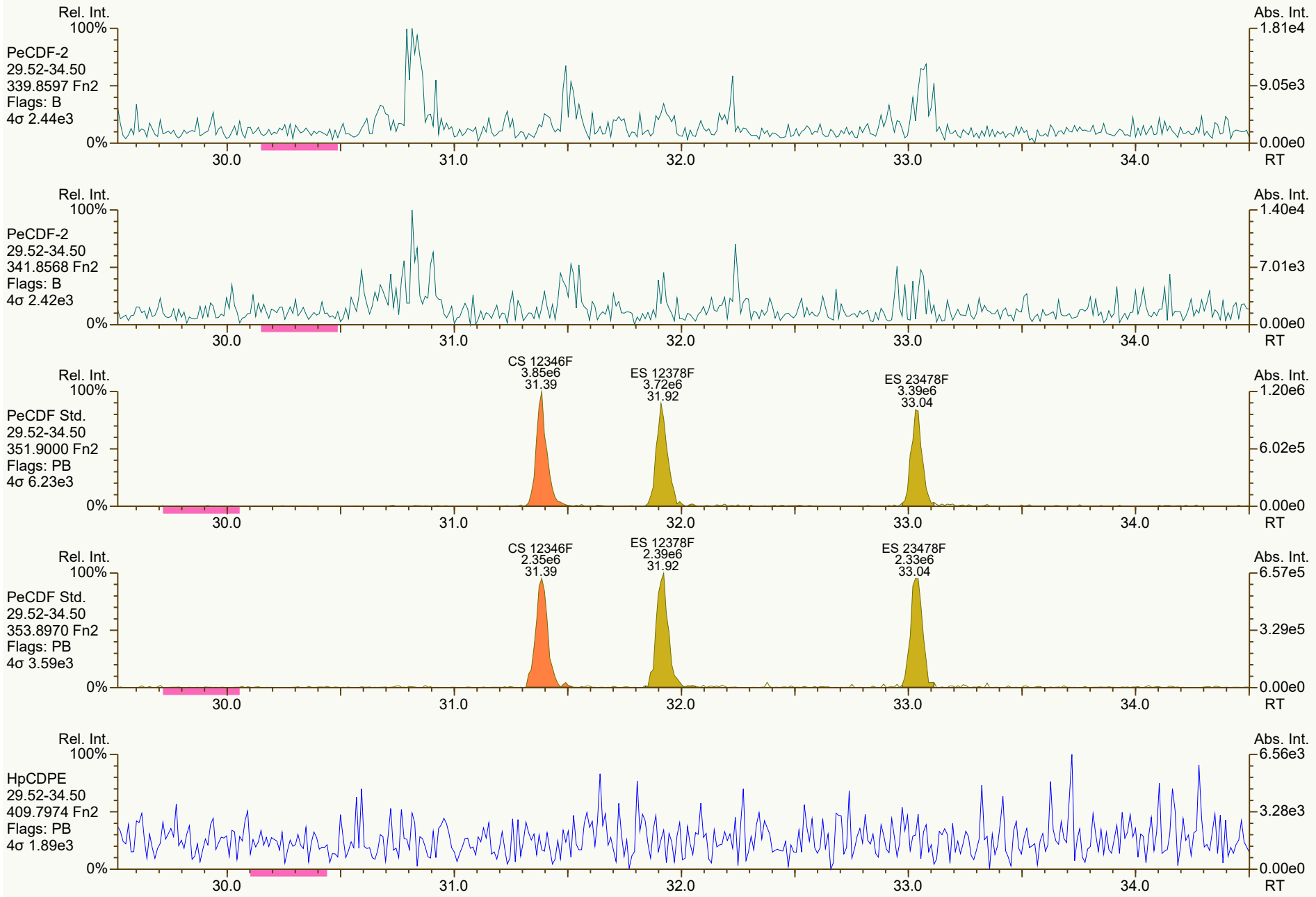

Rel. Int.
100%
TCDF
21.04-29.51
303.9016 Fn1
Flags: PBM
4σ 2.06e3
0%
2468F
6.30e4*
23.36
2378F
7.43e4*
27.12
2367/3467F
3.91e4*
27.50
Abs. Int.
2.10e4
1.05e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDF
21.04-29.51
305.8987 Fn1
Flags: PBM
4σ 2.98e3
0%
2468F
7.16e4*
23.35
2378F
1.01e5*
27.12
2367/3467F
4.23e4*
27.49
Abs. Int.
2.37e4
1.19e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDF Std.
21.04-29.51
315.9419 Fn1
Flags: PB
4σ 1.07e4
0%
JS 1234F
3.22e6
25.71
ES 2378F
3.15e6
27.10
Abs. Int.
8.38e5
4.19e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDF Std.
21.04-29.51
317.9389 Fn1
Flags: PB
4σ 3.52e3
0%
JS 1234F
4.18e6
25.71
ES 2378F
3.67e6
27.10
Abs. Int.
8.87e5
4.43e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
HxCDPE
21.04-29.51
375.8364 Fn1
Flags: PB
4σ 2.73e3
0%
Abs. Int.
6.31e3
3.15e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT

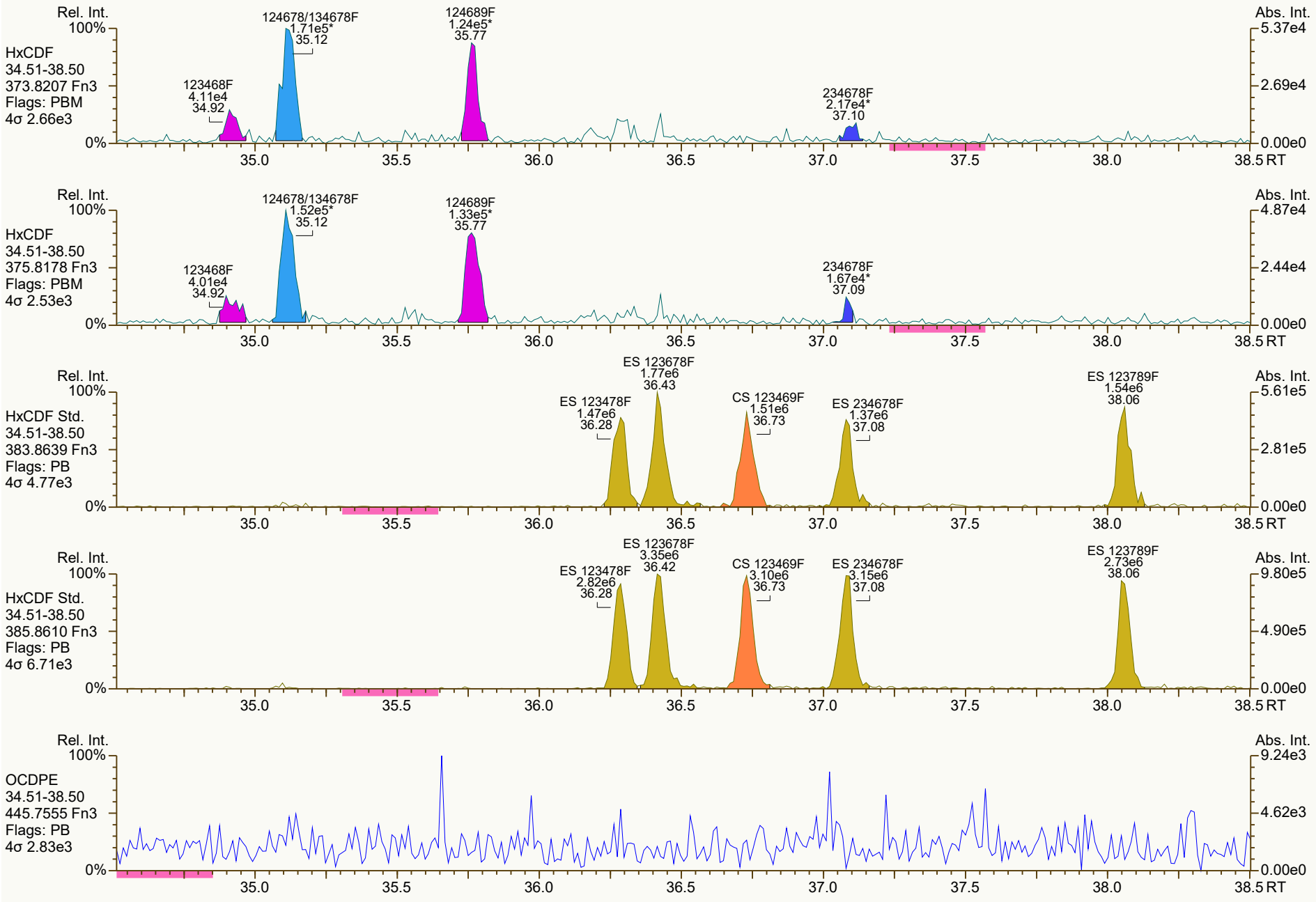
SGS ID: B5962_18720_DF_001-D5 | Sample ID: 11215131-120121-S-JC-NE-O-6 | Acq: 20-Dec-2021 13:00:37
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 16 | User: PSW Datafile: 211220R06

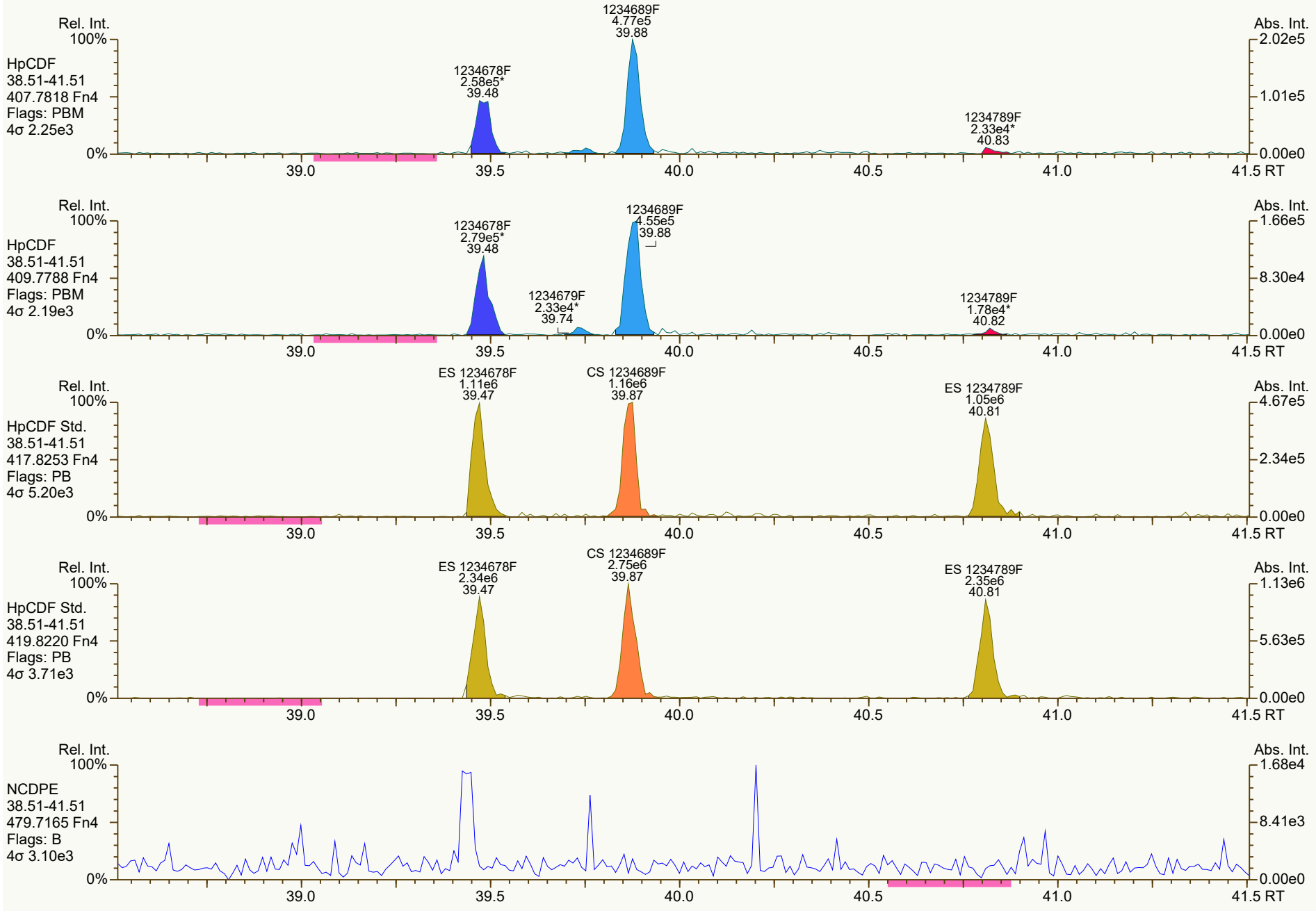


Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_001-D5.utp_res, saved 20-Dec-2021 14:06 (PSW) *Peak annotation: Areas, Centroids*

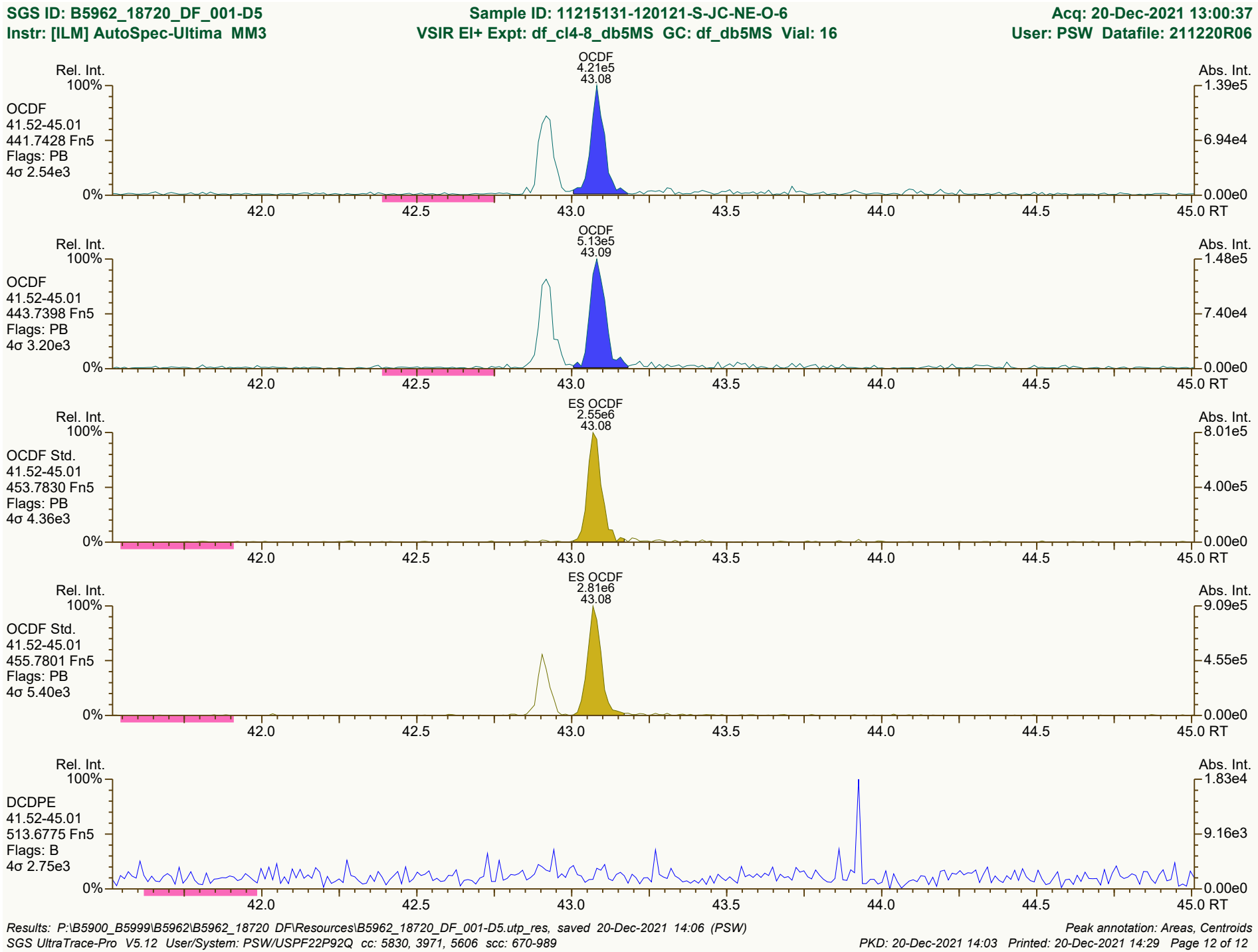
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9415 scc: 670-989 *PKD: 20-Dec-2021 14:03 Printed: 20-Dec-2021 14:29 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
29.52-34.50
339.8597 Fn2
Flags: B
4σ 2.44e3
0%
Abs. Int.
1.81e4
9.05e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.50
341.8568 Fn2
Flags: B
4σ 2.42e3
0%
Abs. Int.
1.40e4
7.01e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.50
351.9000 Fn2
Flags: PB
4σ 6.23e3
0%
CS 12346F
3.85e6
31.39
ES 12378F
3.72e6
31.92
ES 23478F
3.39e6
33.04
Abs. Int.
1.20e6
6.02e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.50
353.8970 Fn2
Flags: PB
4σ 3.59e3
0%
CS 12346F
2.35e6
31.39
ES 12378F
2.39e6
31.92
ES 23478F
2.33e6
33.04
Abs. Int.
6.57e5
3.29e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.50
409.7974 Fn2
Flags: PB
4σ 1.89e3
0%
Abs. Int.
6.56e3
3.28e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT


Rel. Int.
100%
HxCDF
34.51-38.50
373.8207 Fn3
Flags: PBM
4σ 2.66e3
123468F
4.11e4
34.92
124678/134678F
1.71e5*
35.12
124689F
1.24e5*
35.77
234678F
2.17e4*
37.10
0%
Abs. Int.
5.37e4
2.69e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF
34.51-38.50
375.8178 Fn3
Flags: PBM
4σ 2.53e3
123468F
4.01e4
34.92
124678/134678F
1.52e5*
35.12
124689F
1.33e5*
35.77
234678F
1.67e4*
37.09
0%
Abs. Int.
4.87e4
2.44e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF Std.
34.51-38.50
383.8639 Fn3
Flags: PB
4σ 4.77e3
ES 123478F
1.47e6
36.28
ES 123678F
1.77e6
36.43
CS 123469F
1.51e6
36.73
ES 234678F
1.37e6
37.08
ES 123789F
1.54e6
38.06
0%
Abs. Int.
5.61e5
2.81e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF Std.
34.51-38.50
385.8610 Fn3
Flags: PB
4σ 6.71e3
ES 123478F
2.82e6
36.28
ES 123678F
3.35e6
36.42
CS 123469F
3.10e6
36.73
ES 234678F
3.15e6
37.08
ES 123789F
2.73e6
38.06
0%
Abs. Int.
9.80e5
4.90e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
OCDPE
34.51-38.50
445.7555 Fn3
Flags: PB
4σ 2.83e3
0%
Abs. Int.
9.24e3
4.62e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT


Rel. Int.
100%
HpCDF
38.51-41.51
407.7818 Fn4
Flags: PBM
4σ 2.25e3
1234689F
4.77e5
39.88
1234678F
2.58e5*
39.48
1234789F
2.33e4*
40.83
Abs. Int.
2.02e5
1.01e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.51-41.51
409.7788 Fn4
Flags: PBM
4σ 2.19e3
1234678F
2.79e5*
39.48
1234689F
4.55e5
39.88
1234679F
2.33e4*
39.74
1234789F
1.78e4*
40.82
Abs. Int.
1.66e5
8.30e4
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.51-41.51
417.8253 Fn4
Flags: PB
4σ 5.20e3
ES 1234678F
1.11e6
39.47
CS 1234689F
1.16e6
39.87
ES 1234789F
1.05e6
40.81
Abs. Int.
4.67e5
2.34e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.51-41.51
419.8220 Fn4
Flags: PB
4σ 3.71e3
ES 1234678F
2.34e6
39.47
CS 1234689F
2.75e6
39.87
ES 1234789F
2.35e6
40.81
Abs. Int.
1.13e6
5.63e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.51-41.51
479.7165 Fn4
Flags: B
4σ 3.10e3
Abs. Int.
1.68e4
8.41e3
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT

SGS ID: B5962_18720_DF_001-D5 | Sample ID: 11215131-120121-S-JC-NE-O-6 | Acq: 20-Dec-2021 13:00:37
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 16 | User: PSW Datafile: 211220R06



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_001-D5.utp_res, saved 20-Dec-2021 14:06 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5830, 3971, 5606 scc: 670-989 | *PKD: 20-Dec-2021 14:03 Printed: 20-Dec-2021 14:29 Page 12 of 12*

Lab ID: B5962_18720_DF_002 **Acq'd:** 17 Dec 2021 15:37 PSW **Wt/Vol:** 10.45 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-B-1 **UTP:** 20-Dec-2021 14:06:08 PSW **J-level:** 0.478 pg/g **Split:** 1 **Checkcode:** 578-176-NPC

Datafile: 211217R07 **Report:** 20 Dec 2021 14:09 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.23		1.0008	1.0008	0	2.17E+07	0.76	Y	1.34	45.5	9760.199	0.222
12378-PeCDD	33.59	J EMPC	1.0005	1.0007	+0.4	2.91E+05	2.25	N	1.06	0.893	13173.244	0.36
123478-HxCDD	37.46	J EMPC	1.0003	1.0004	+0.2	2.07E+05	1.43	N	1.06	0.746	21566.74	0.636
123678-HxCDD	37.57		1.0033	1.0035	+0.5	8.99E+05	1.19	Y	1.08	3.05	21566.74	0.678
123789-HxCDD	37.87	J	1.0110	1.0115	+1.1	6.67E+05	1.07	Y	1.02	2.11	21566.74	0.605
1234678-HpCDD	40.51		1.0003	1.0003	0	1.91E+07	1.01	Y	0.97	77.9	17504.513	0.506
OCDD	43.05		1.0003	1.0003	0	2.47E+08	0.89	Y	1.07	1,440	34887.03	1.66
2378-TCDF	27.37		1.0006	1.0008	+0.3	9.00E+07	0.80	Y	0.96	196	8018.648	0.19
12378-PeCDF	32.14		1.0006	1.0005	-0.2	1.90E+06	1.63	Y	0.95	4.68	7856.415	0.19
23478-PeCDF	33.26		1.0006	1.0009	+0.6	2.07E+06	1.58	Y	0.94	5.34	7856.415	0.182
123478-HxCDF	36.48		1.0004	1.0004	0	2.53E+06	1.26	Y	1.23	6.38	21209.778	0.46
123678-HxCDF	36.61	J	1.0004	1.0003	-0.2	8.14E+05	1.18	Y	1.13	1.9	21209.778	0.414
234678-HxCDF	37.27	J	1.0005	1.0004	-0.2	5.20E+05	1.38	Y	1.15	1.35	21209.778	0.467
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	21209.778	0.463
1234678-HpCDF	39.61		1.0003	1.0003	0	2.19E+07	1.05	Y	1.36	57.1	8135.708	0.145
1234789-HpCDF	40.97		1.0003	1.0005	+0.5	1.96E+06	1.01	Y	1.30	6.38	8135.708	0.197
OCDF	43.23		1.0002	1.0002	0	2.95E+08	0.90	Y	1.03	1,410	9510.709	0.357

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.21	1.0237	1.0240	+0.5	6.79E+07	0.78	Y	1.03	92
ES 12378-PeCDD	33.56	1.2158	1.2183	+5.0	5.90E+07	1.61	Y	1.03	79.8
ES 123478-HxCDD	37.44	0.9920	0.9916	-0.9	5.03E+07	1.25	Y	0.99	92
ES 123678-HxCDD	37.56	0.9949	0.9947	-0.5	5.21E+07	1.26	Y	0.97	97.4
ES 123789-HxCDD	37.87	1.0026	1.0028	+0.5	5.94E+07	1.22	Y	1.12	96.4
ES 1234678-HpCDD	40.50	1.0713	1.0725	+2.9	4.81E+07	1.07	Y	0.99	88.4
ES OCDD	43.04	1.1385	1.1398	+3.4	6.15E+07	0.90	Y	0.78	72
ES 2378-TCDF	27.35	1.0519	1.0526	+1.1	9.17E+07	0.76	Y	1.08	88
ES 12378-PeCDF	32.12	1.2331	1.2362	+6.0	8.21E+07	1.54	Y	0.93	91.6
ES 23478-PeCDF	33.23	1.2754	1.2790	+7.2	7.91E+07	1.61	Y	0.92	89.2
ES 123478-HxCDF	36.46	0.9656	0.9656	0	6.16E+07	0.53	Y	1.14	98.2
ES 123678-HxCDF	36.60	0.9693	0.9693	0	7.27E+07	0.53	Y	1.30	102
ES 234678-HxCDF	37.26	0.9869	0.9867	-0.4	6.42E+07	0.53	Y	1.20	97.2
ES 123789-HxCDF	38.23	1.0121	1.0123	+0.5	6.19E+07	0.52	Y	1.14	99.2
ES 1234678-HpCDF	39.60	1.0478	1.0488	+2.4	5.40E+07	0.46	Y	0.95	104
ES 1234789-HpCDF	40.95	1.0832	1.0844	+2.9	4.53E+07	0.45	Y	0.85	97.4
ES OCDF	43.23	1.1434	1.1447	+3.4	7.79E+07	0.92	Y	0.93	76.6

Lab ID: B5962_18720_DF_002 **Acq'd:** 17 Dec 2021 15:37 PSW **Wt/Vol:** 10.45 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-B-1 **UTP:** 20-Dec-2021 14:06:08 PSW **J-level:** 0.478 pg/g **Split:** 1 **Checkcode:** 578-176-NPC

Datafile: 211217R07 **Report:** 20 Dec 2021 14:09 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.55		-	-	-	7.14E+07	0.80	Y	-	-
JS 1234-TCDF	25.98		-	-	-	9.61E+07	0.79	Y	-	-
JS 123467-HxCDD	37.76		-	-	-	2.74E+07	1.28	Y	-	-
CS 37Cl-2378-TCDD	28.23		1.0245	1.0248	+0.5	3.10E+07	n/a	-	1.31	82.8
CS 12347-PeCDD	33.06		1.1978	1.2002	+4.8	5.38E+07	1.64	Y	0.89	84.4
CS 12346-PeCDF	31.59		1.2130	1.2159	+5.5	7.93E+07	1.57	Y	0.87	95.1
CS 123469-HxCDF	36.91		0.9775	0.9775	0	6.46E+07	0.52	Y	1.09	108
CS 1234689-HpCDF	39.99		1.0580	1.0592	+2.9	5.18E+07	0.46	Y	0.86	109
~~SS 37Cl-2378-TCDD~~	~~28.23~~		~~1.0245~~	~~1.0248~~	~~+0.5~~	~~3.10E+07~~	~~n/a~~		~~1.26~~	~~90.5~~
~~SS 12347-PeCDD~~	~~33.06~~		~~1.1978~~	~~1.2002~~	~~+4.8~~	~~5.38E+07~~	~~1.64~~	~~Y~~	~~0.86~~	~~106~~
~~SS 12346-PeCDF~~	~~31.59~~		~~1.2130~~	~~1.2159~~	~~+5.5~~	~~7.93E+07~~	~~1.57~~	~~Y~~	~~0.93~~	~~104~~
~~SS 123469-HxCDF~~	~~36.91~~		~~0.9775~~	~~0.9775~~	~~0~~	~~6.46E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~106~~
~~SS 1234689-HpCDF~~	~~39.99~~		~~1.0580~~	~~1.0592~~	~~+2.9~~	~~5.18E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~105~~

Totals	Conc	EMPC
Total TCDD	57.4	59.4
Total PeCDD	9.01	10.4
Total HxCDD	52.2	52.9
Total HpCDD	210	210
Total Tetra-Octa Dioxins	1770	1770
Total TCDF	386	389
Total PeCDF	32.1	33.7
Total HxCDF	29.6	30
Total HpCDF	96.8	96.8
Total Tetra-Octa Furans	1,960	1960
Total Tetra-Octa Dioxins & Furans	3730	3740

Lab ID: B5962_18720_DF_002 **Acq'd: 17 Dec 2021 15:37 PSW** **Wt/Vol: 10.45 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-B-1 **UTP: 20-Dec-2021 14:06:08 PSW** **J-level: 0.478 pg/g** **Split: 1** **Checkcode: 578-176-NPC**

Datafile: 211217R07 **Report: 20 Dec 2021 14:09 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.57		0.8726	0.8708	-2.7	5.52E+05	0.79	Y	1.34	1.16	9760.199	0.222
1379-TCDD	24.93	J	0.8851	0.8836	-2.2	1.89E+05	0.73	Y	1.34	0.396	9760.199	0.222
1369-TCDD	25.36	J EMPC	0.9002	0.8989	-2.0	1.75E+05	0.90	N	1.34	0.366	9760.199	0.222
1469-TCDD	26.14		0.9275	0.9267	-1.3	1.95E+06	0.82	Y	1.34	4.09	9760.199	0.222
1247/1246/1248/1249-TCDD	26.39	J EMPC	0.9361	0.9353	-1.3	2.20E+05	1.41	N	1.34	0.462	9760.199	0.222
1378-TCDD	26.58	J EMPC	0.9427	0.9422	-0.8	1.41E+05	0.99	N	1.34	0.296	9760.199	0.222
1268-TCDD	NotFnd		0.9498						1.34		9760.199	0.222
1478-TCDD	27.04	J EMPC	0.9584	0.9584	0	1.11E+05	1.14	N	1.34	0.232	9760.199	0.222
1279-TCDD	27.18	J	0.9644	0.9634	-1.6	1.52E+05	0.73	Y	1.34	0.318	9760.199	0.222
1234/1269-TCDD	27.53		0.9766	0.9760	-1.0	3.69E+05	0.69	Y	1.34	0.773	9760.199	0.222
1236-TCDD	NotFnd		0.9813						1.34		9760.199	0.222
1237/1238-TCDD	27.92		0.9906	0.9898	-1.3	4.03E+05	0.88	Y	1.34	0.844	9760.199	0.222
1239-TCDD	NotFnd		0.9952						1.34		9760.199	0.222
2378-TCDD	**28.23**		**1.0008**	1.0008	**0**	2.17E+07	0.76	Y	**1.34**	**45.5**	**9760.199**	**0.222**
1278-TCDD	28.56		1.0122	1.0122	0	2.07E+06	0.83	Y	1.34	4.34	9760.199	0.222
1267-TCDD	NotFnd		1.0168						1.34		9760.199	0.222
1289-TCDD	29.20	EMPC	1.0349	1.0350	+0.2	2.96E+05	1.49	N	1.34	0.62	9760.199	0.222
12479/12468-PeCDD	31.08	J	0.9267	0.9260	-1.3	7.51E+05	1.64	Y	1.06	2.3	13173.244	0.36
12469-PeCDD	31.62		0.9425	0.9420	-0.9	1.08E+06	1.60	Y	1.06	3.32	13173.244	0.36
12368-PeCDD	32.17	J	0.9588	0.9583	-1.0	2.76E+05	1.69	Y	1.06	0.846	13173.244	0.36
12478-PeCDD	32.36	J EMPC	0.9643	0.9641	-0.4	1.65E+05	2.09	N	1.06	0.505	13173.244	0.36
12379-PeCDD	32.46	J	0.9673	0.9671	-0.4	1.44E+05	1.61	Y	1.06	0.44	13173.244	0.36
12369/12467/12489-PeCDD	32.72	J	0.9750	0.9748	-0.4	6.85E+05	1.43	Y	1.06	2.1	13173.244	0.36
12346/12347-PeCDD	NotFnd		0.9859						1.06		13173.244	0.36
12378-PeCDD	33.59	J EMPC	**1.0005**	**1.0007**	**+0.4**	**2.91E+05**	**2.25**	**N**	**1.06**	**0.893**	**13173.244**	**0.36**
12367-PeCDD	NotFnd		1.0032						1.06		13173.244	0.36
12389-PeCDD	NotFnd		1.0135						1.06		13173.244	0.36
124679/124689-HxCDD	35.75		0.9544	0.9547	+0.6	9.19E+06	1.30	Y	1.05	31	21566.74	0.638
123468-HxCDD	36.40	J	0.9716	0.9722	+1.3	5.65E+05	1.22	Y	1.05	1.91	21566.74	0.638
123679/123689-HxCDD	36.68		0.9793	0.9797	+0.9	3.65E+06	1.24	Y	1.05	12.3	21566.74	0.638
123469-HxCDD	36.81	J	0.9829	0.9832	+0.7	3.02E+05	1.21	Y	1.05	1.02	21566.74	0.638
123478-HxCDD	37.46	J EMPC	**1.0003**	**1.0004**	**+0.2**	**2.07E+05**	**1.43**	**N**	1.06	**0.746**	**21566.74**	**0.636**
123678-HxCDD	37.57		**1.0033**	**1.0035**	**+0.5**	**8.99E+05**	**1.19**	**Y**	1.08	**3.05**	**21566.74**	**0.678**
123467-HxCDD	37.77	J	1.0084	1.0089	+1.1	2.13E+05	1.25	Y	1.05	0.721	21566.74	0.638
123789-HxCDD	37.87	J	**1.0110**	**1.0115**	**+1.1**	**6.67E+05**	**1.07**	**Y**	1.02	**2.11**	**21566.74**	**0.605**

Lab ID: B5962_18720_DF_002 **Acq'd:** 17 Dec 2021 15:37 PSW **Wt/Vol:** 10.45 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-B-1 **UTP:** 20-Dec-2021 14:06:08 PSW **J-level:** 0.478 pg/g **Split:** 1 **Checkcode:** 578-176-NPC

Datafile: 211217R07 **Report:** 20 Dec 2021 14:09 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

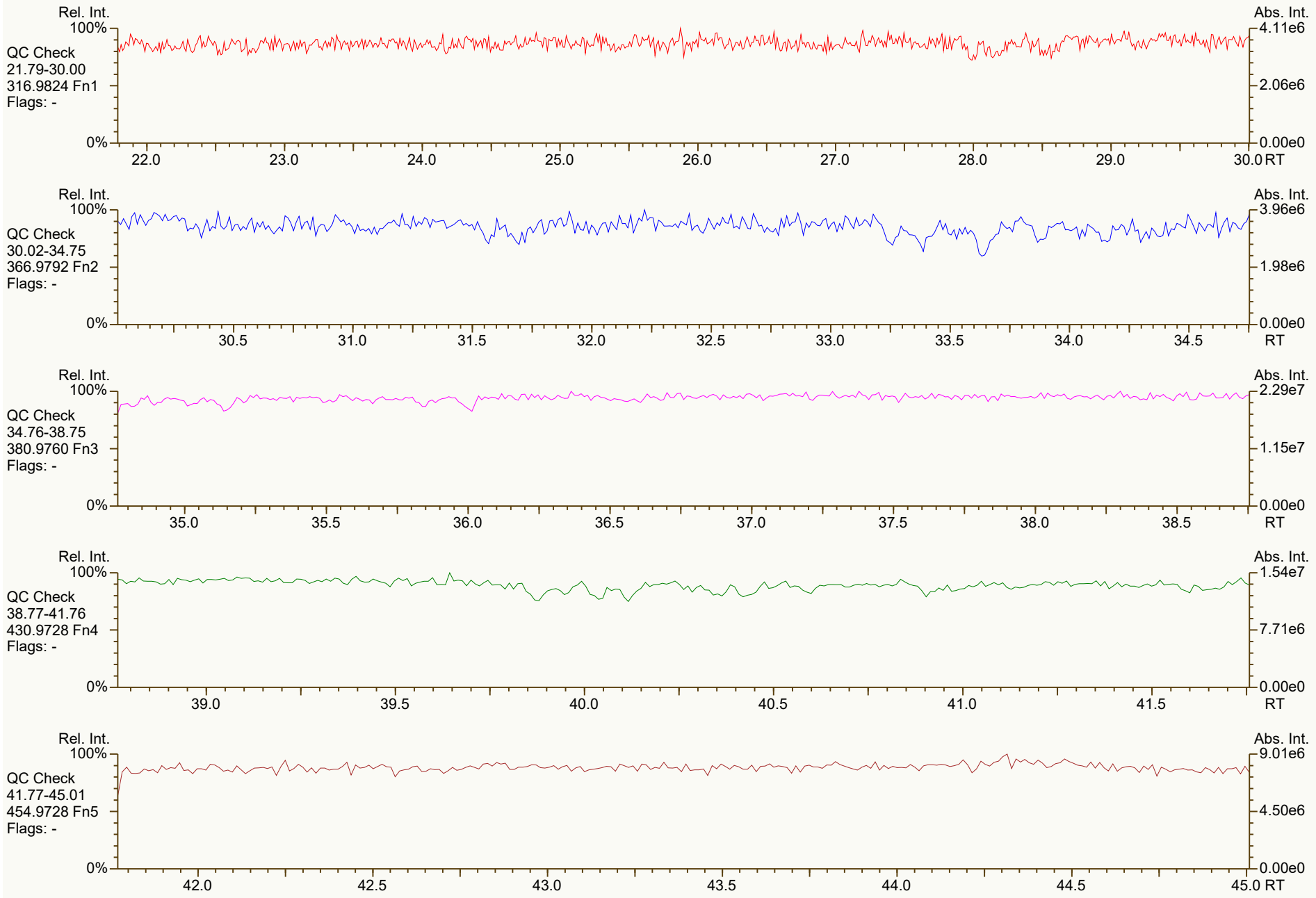
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	3.24E+07	1.04	Y	0.97	132	17504.513	0.506
1234678-HpCDD	**40.51**		**1.0003**	**1.0003**	**0**	**1.91E+07**	**1.01**	**Y**	**0.97**	**77.9**	**17504.513**	**0.506**
OCDD	**43.05**		**1.0003**	**1.0003**	**0**	**2.47E+08**	**0.89**	**Y**	**1.07**	**1,440**	**34887.03**	**1.66**
OCDD-a	43.05		1.0001	1.0002	+0.3	1.49E+07	2.38	Y	0.07	1,400	16830.567	12.9
1368-TCDF	22.43	J	0.8230	0.8201	-3.9	2.11E+05	0.69	Y	0.96	0.459	8018.648	0.19
1468-TCDF	23.01		0.8443	0.8413	-4.1	4.72E+05	0.83	Y	0.96	1.03	8018.648	0.19
2468-TCDF	23.66		0.8672	0.8653	-2.7	1.38E+06	0.72	Y	0.96	3	8018.648	0.19
1346/1246-TCDF	24.06		0.8802	0.8799	-0.4	3.57E+05	0.84	Y	0.96	0.776	8018.648	0.19
1347/1378/1247-TCDF	24.19		0.8855	0.8847	-1.2	1.33E+06	0.79	Y	0.96	2.9	8018.648	0.19
1348-TCDF	24.44		0.8952	0.8937	-2.2	5.39E+05	0.70	Y	0.96	1.17	8018.648	0.19
1248/1367/1379-TCDF	24.54		0.9000	0.8974	-3.8	5.05E+06	0.79	Y	0.96	11	8018.648	0.19
1268-TCDF	24.95		0.9136	0.9125	-1.6	2.05E+06	0.76	Y	0.96	4.45	8018.648	0.19
1467-TCDF	25.09		0.9185	0.9174	-1.7	4.57E+05	0.78	Y	0.96	0.994	8018.648	0.19
1478-TCDF	25.26		0.9247	0.9237	-1.5	4.08E+06	0.82	Y	0.96	8.87	8018.648	0.19
1369/1237-TCDF	25.64		0.9381	0.9375	-0.9	9.65E+05	0.87	Y	0.96	2.1	8018.648	0.19
2467-TCDF	25.76		0.9427	0.9421	-0.9	3.17E+05	0.78	Y	0.96	0.688	8018.648	0.19
2368-TCDF	25.92		0.9484	0.9478	-0.9	3.35E+06	0.75	Y	0.96	7.27	8018.648	0.19
1238/1234/1678/1469/1236-TCDF	26.00		0.9517	0.9507	-1.6	3.93E+06	0.86	Y	0.96	8.55	8018.648	0.19
1278-TCDF	26.46		0.9682	0.9677	-0.8	3.88E+07	0.79	Y	0.96	84.4	8018.648	0.19
1349-TCDF	26.60	EMPC	0.9725	0.9726	+0.2	3.75E+05	0.91	N	0.96	0.816	8018.648	0.19
1267-TCDF	26.74		0.9782	0.9778	-0.6	2.38E+06	0.73	Y	0.96	5.17	8018.648	0.19
2346/1249-TCDF	26.93		0.9846	0.9849	+0.5	4.05E+05	0.87	Y	0.96	0.88	8018.648	0.19
2347/1279-TCDF	27.14	EMPC	0.9926	0.9923	-0.5	8.16E+05	0.90	N	0.96	1.78	8018.648	0.19
2348-TCDF	27.26		0.9966	0.9969	+0.5	6.11E+06	0.82	Y	0.96	13.3	8018.648	0.19
2378-TCDF	**27.37**		**1.0006**	**1.0008**	**+0.3**	**9.00E+07**	**0.80**	**Y**	**0.96**	**196**	**8018.648**	**0.19**
2367/3467-TCDF	27.72		1.0139	1.0137	-0.3	7.63E+06	0.78	Y	0.96	16.6	8018.648	0.19
1269-TCDF	27.98		1.0226	1.0232	+1.0	1.55E+06	0.83	Y	0.96	3.37	8018.648	0.19
1239-TCDF	NotFnd		1.0322						0.96		8018.648	0.19
1289-TCDF	29.38		1.0729	1.0745	+2.8	6.41E+06	0.80	Y	0.96	13.9	8018.648	0.19
13468/12468-PeCDF	29.34		0.9135	0.9134	-0.2	3.71E+06	1.33	Y	0.94	9.34	7401.078	0.175
13678/13467/12467-PeCDF	30.88	J EMPC	0.9612	0.9613	+0.2	3.80E+05	1.30	N	0.94	0.957	7856.415	0.186
12368/13478/12478-PeCDF	31.03		0.9661	0.9661	0	2.55E+06	1.52	Y	0.94	6.42	7856.415	0.186
14678-PeCDF	31.12	J	0.9693	0.9690	-0.6	2.47E+05	1.44	Y	0.94	0.622	7856.415	0.186
13479-PeCDF	NotFnd		0.9723						0.94		7856.415	0.186
13469/12479-PeCDF	31.45	J	0.9799	0.9791	-1.5	1.02E+05	1.62	Y	0.94	0.256	7856.415	0.186
12346-PeCDF	31.60	J EMPC	0.9842	0.9839	-0.6	7.96E+04	1.80	N	0.94	0.201	7856.415	0.186

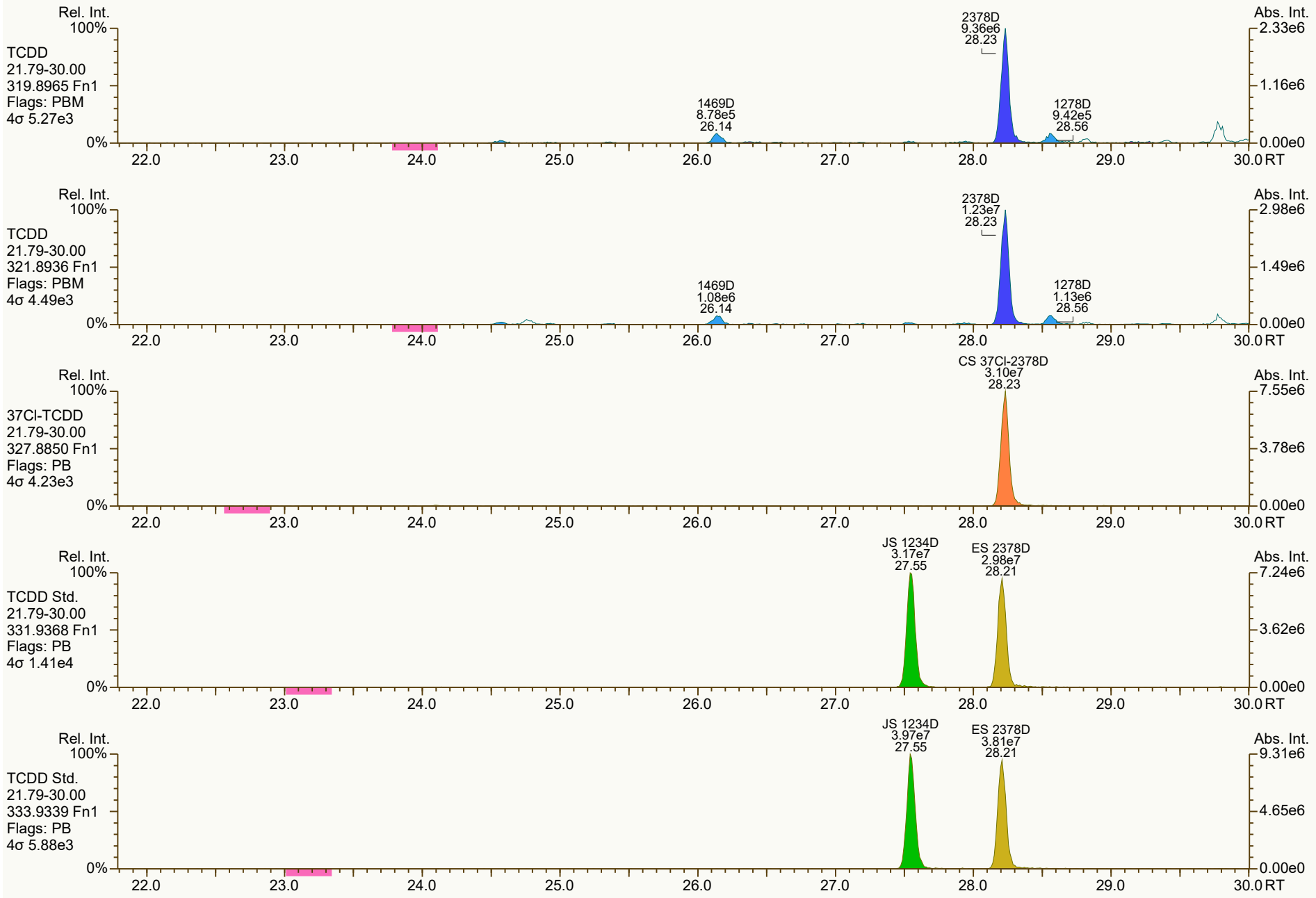
Lab ID: B5962_18720_DF_002 | **Acq'd: 17 Dec 2021 15:37 PSW** | **Wt/Vol: 10.45 g** | **ICAL: MM3_DF_10272021_27JUL2021**

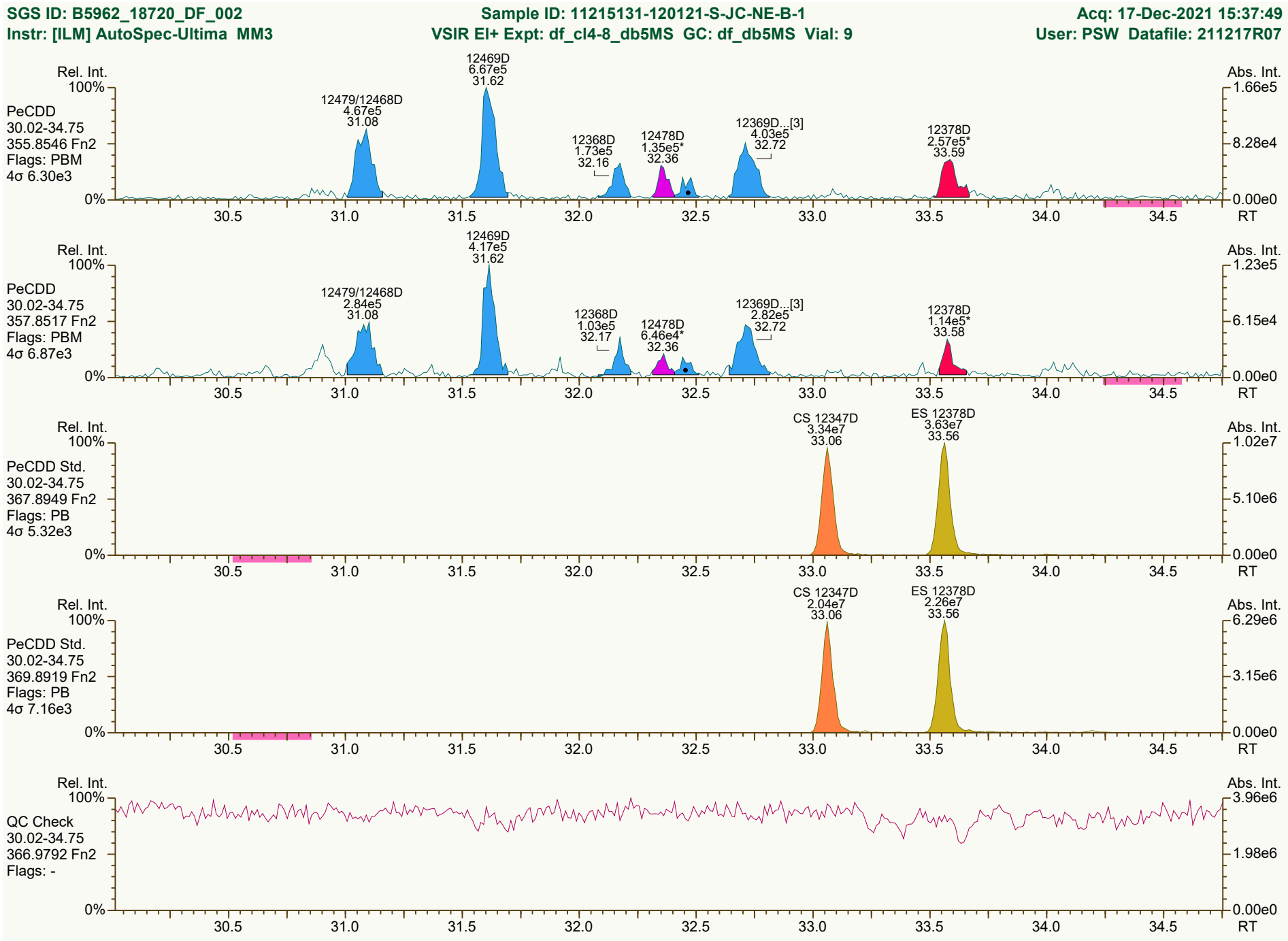
Client ID: 11215131-120121-S-JC-NE-B-1 | **UTP: 20-Dec-2021 14:06:08 PSW** | **J-level: 0.478 pg/g** | **Split: 1** | **Checkcode: 578-176-NPC**

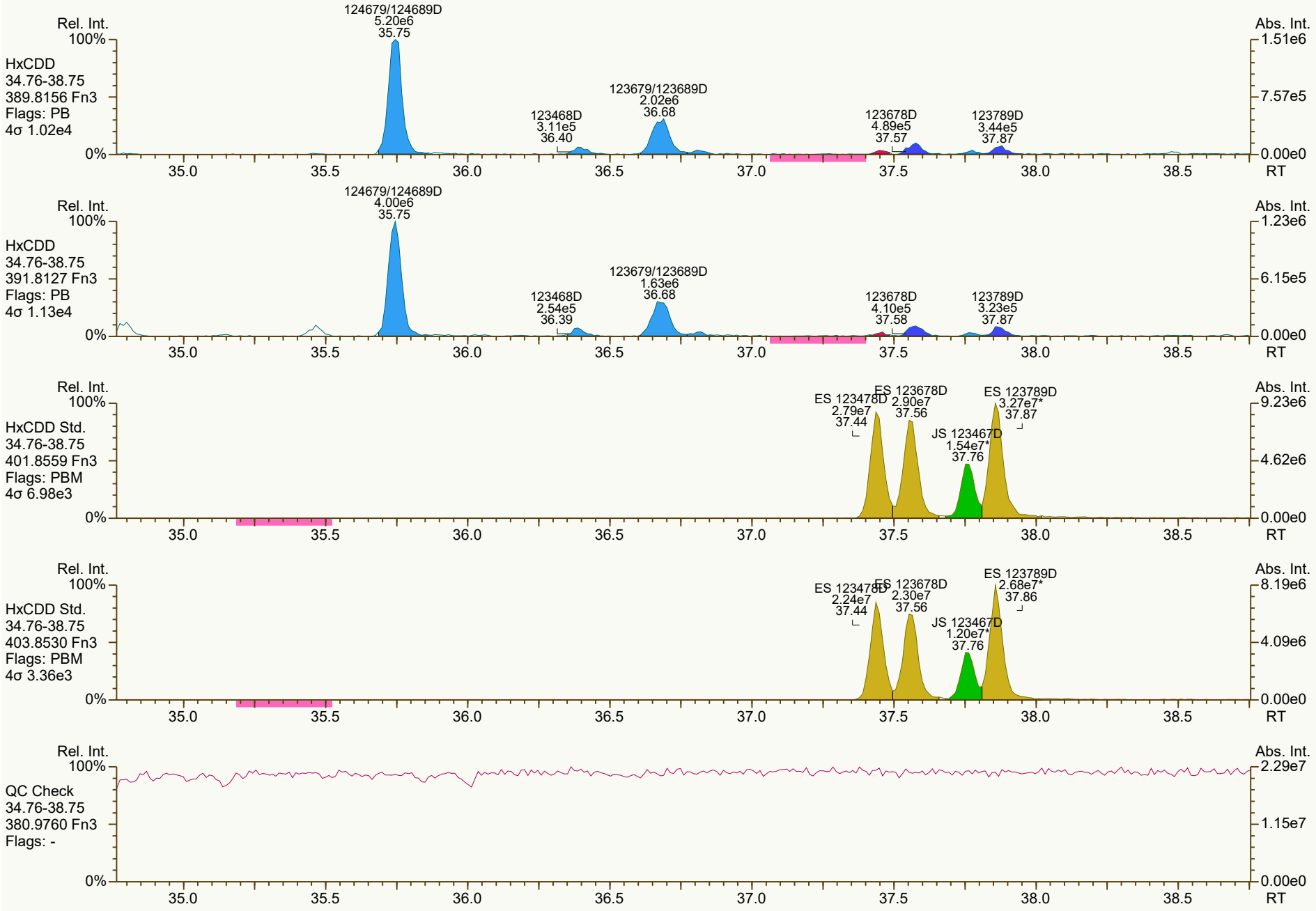
Datafile: 211217R07 | **Report: 20 Dec 2021 14:09 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

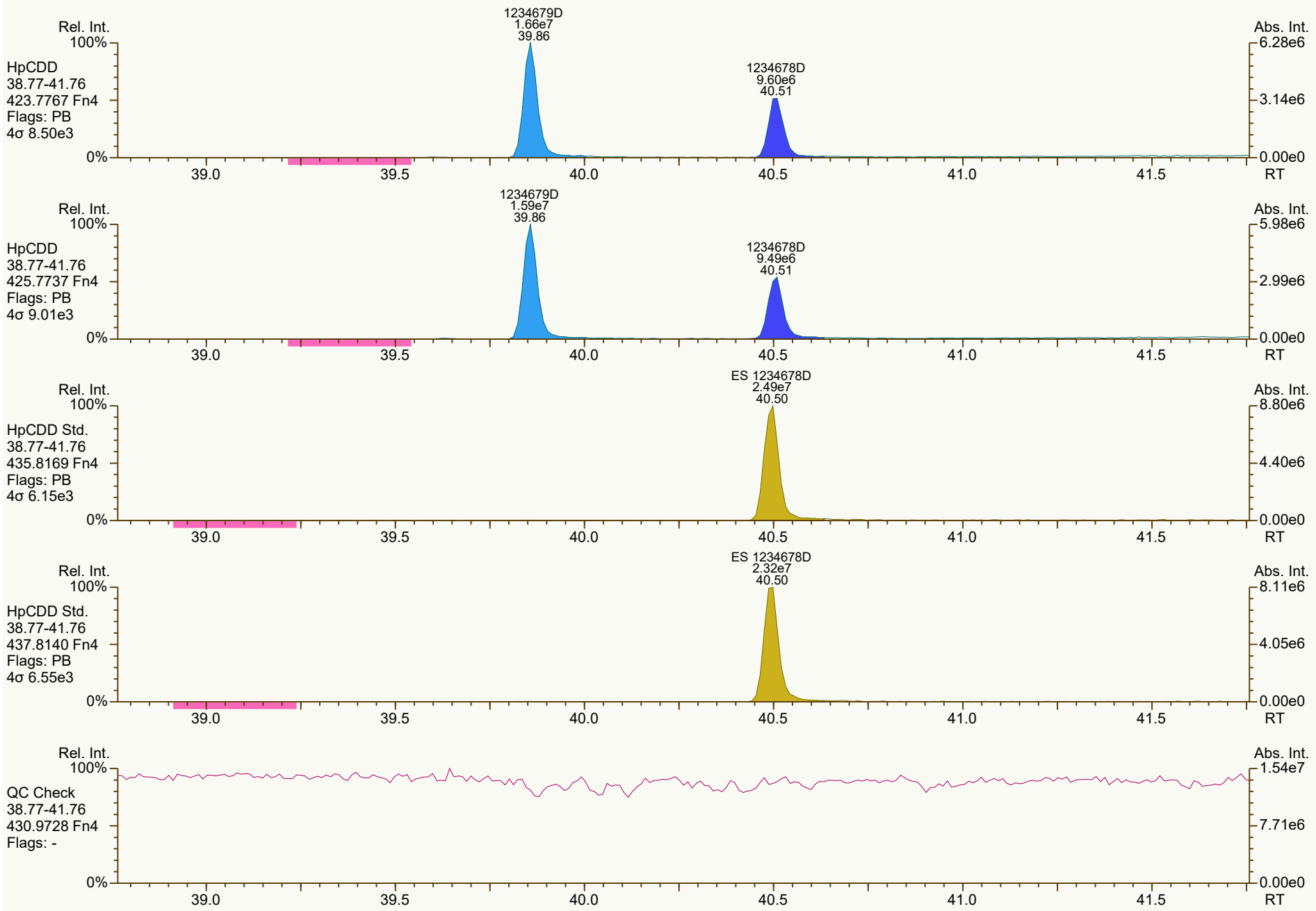
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.69	J	0.9868	0.9867	-0.2	5.75E+05	1.70	Y	0.94	1.45	7856.415	0.186
12347-PeCDF	31.77	J EMPC	0.9893	0.9890	-0.6	1.96E+05	2.17	N	0.94	0.493	7856.415	0.186
12348-PeCDF	31.93	J	0.9941	0.9940	-0.2	4.72E+05	1.66	Y	0.94	1.19	7856.415	0.186
12378-PeCDF	**32.14**		**1.0006**	**1.0005**	**-0.2**	**1.90E+06**	**1.63**	**Y**	**0.95**	**4.68**	**7856.415**	**0.19**
12678/12367-PeCDF	32.43	J	1.0090	1.0096	+1.2	8.48E+05	1.73	Y	0.94	2.13	7856.415	0.186
12379-PeCDF	NotFnd		1.0143						0.94		7856.415	0.186
12679-PeCDF	NotFnd		0.9929						0.94		7856.415	0.186
23467/12369-PeCDF	33.11	J	0.9966	0.9964	-0.4	1.22E+05	1.60	Y	0.94	0.306	7856.415	0.186
23478-PeCDF	**33.26**		**1.0006**	**1.0009**	**+0.6**	**2.07E+06**	**1.58**	**Y**	**0.94**	**5.34**	**7856.415**	**0.182**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7856.415	0.186
12349-PeCDF	NotFnd		1.0102						0.94		7856.415	0.186
12389-PeCDF	34.32	J	1.0325	1.0328	+0.6	1.36E+05	1.41	Y	0.94	0.343	7856.415	0.186
123468-HxCDF	35.10	J	0.9628	0.9628	0	9.04E+05	1.25	Y	1.16	2.29	21209.778	0.449
124678/134678-HxCDF	35.30		0.9683	0.9681	-0.4	3.25E+06	1.24	Y	1.16	8.22	21209.778	0.449
134679-HxCDF	NotFnd		0.9746						1.16		21209.778	0.449
124679-HxCDF	NotFnd		0.9798						1.16		21209.778	0.449
124689-HxCDF	35.94		0.9859	0.9858	-0.2	3.13E+06	1.22	Y	1.16	7.92	21209.778	0.449
123467-HxCDF	36.35	J	0.9972	0.9971	-0.2	2.09E+05	1.38	Y	1.16	0.528	21209.778	0.449
123478-HxCDF	**36.48**		**1.0004**	**1.0004**	**0**	**2.53E+06**	**1.26**	**Y**	**1.23**	**6.38**	**21209.778**	**0.46**
123678-HxCDF	**36.61**	J	**1.0004**	**1.0003**	**-0.2**	**8.14E+05**	**1.18**	**Y**	**1.13**	**1.9**	**21209.778**	**0.414**
123479-HxCDF	NotFnd		1.0049						1.16		21209.778	0.449
123469-HxCDF	36.93	J EMPC	1.0088	1.0089	+0.2	1.61E+05	0.85	N	1.16	0.408	21209.778	0.449
123679-HxCDF	NotFnd		0.9943						1.16		21209.778	0.449
234678-HxCDF	**37.27**	J	**1.0005**	**1.0004**	**-0.2**	**5.20E+05**	**1.38**	**Y**	**1.15**	**1.35**	**21209.778**	**0.467**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		21209.778	0.449
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**21209.778**	**0.463**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.27	J	1.0007	1.0012	+1.1	4.19E+05	1.09	Y	1.16	1.06	21209.778	0.449
1234678-HpCDF	**39.61**		**1.0003**	**1.0003**	**0**	**2.19E+07**	**1.05**	**Y**	**1.36**	**57.1**	**8135.708**	**0.145**
1234679-HpCDF	39.87		1.0067	1.0067	0	1.09E+06	1.10	Y	1.33	3.16	8135.708	0.168
1234689-HpCDF	40.01		1.0100	1.0102	+0.5	1.04E+07	1.02	Y	1.33	30.1	8135.708	0.168
1234789-HpCDF	**40.97**		**1.0003**	**1.0005**	**+0.5**	**1.96E+06**	**1.01**	**Y**	**1.30**	**6.38**	**8135.708**	**0.197**
OCDF	**43.23**		**1.0002**	**1.0002**	**0**	**2.95E+08**	**0.90**	**Y**	**1.03**	**1,410**	**9510.709**	**0.357**
OCDF-a	43.23		1.0002	1.0002	0	1.80E+07	2.56	Y	0.06	1,490	10703.778	6.95


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.11e6
2.06e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.96e6
1.98e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.15e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.54e7
7.71e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.01e6
4.50e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

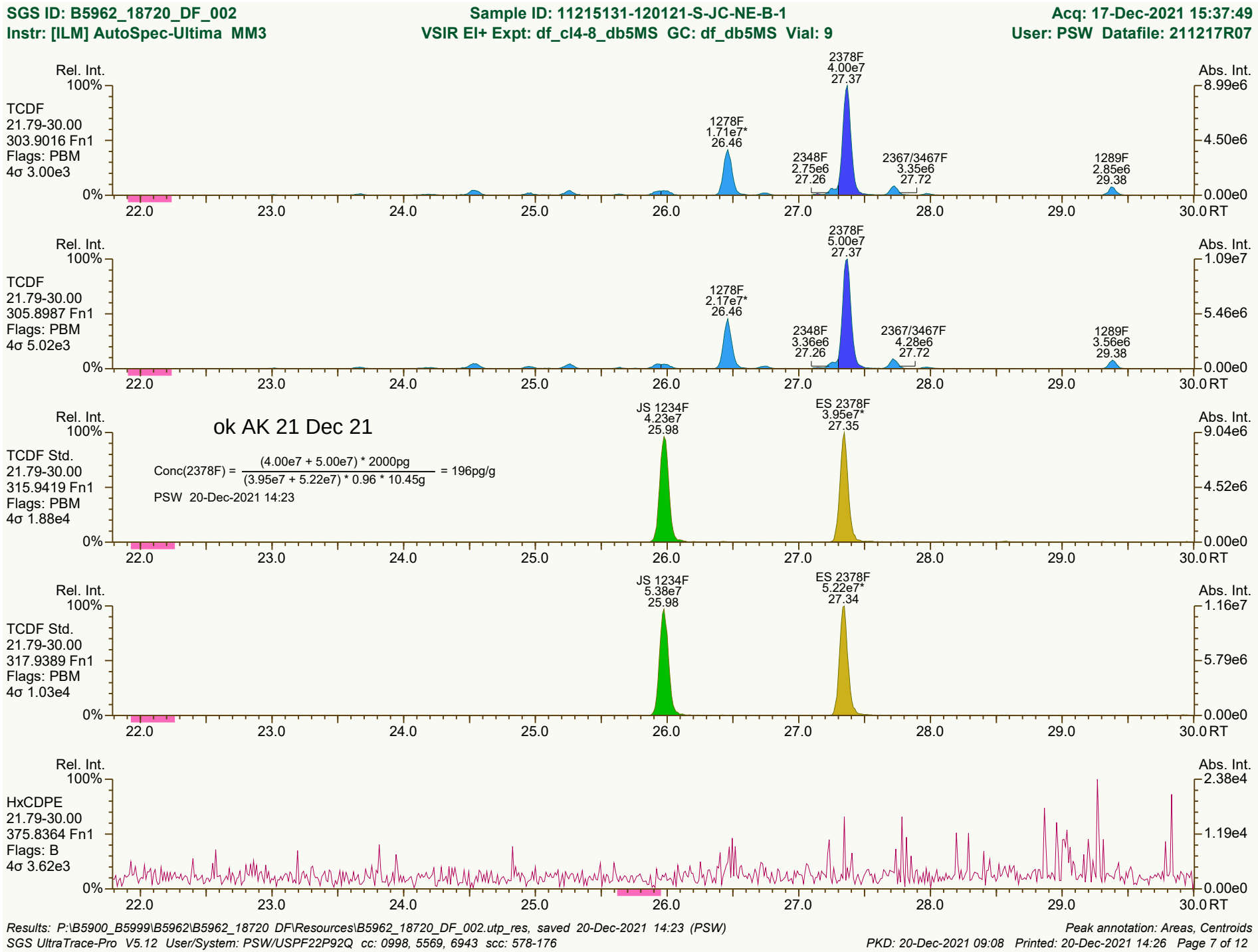

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 5.27e3
0%
2378D
9.36e6
28.23
1469D
8.78e5
26.14
1278D
9.42e5
28.56
Abs. Int.
2.33e6
1.16e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 4.49e3
0%
2378D
1.23e7
28.23
1469D
1.08e6
26.14
1278D
1.13e6
28.56
Abs. Int.
2.98e6
1.49e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 4.23e3
0%
CS 37Cl-2378D
3.10e7
28.23
Abs. Int.
7.55e6
3.78e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.41e4
0%
JS 1234D
3.17e7
27.55
ES 2378D
2.98e7
28.21
Abs. Int.
7.24e6
3.62e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 5.88e3
0%
JS 1234D
3.97e7
27.55
ES 2378D
3.81e7
28.21
Abs. Int.
9.31e6
4.65e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


SGS ID: B5962_18720_DF_002
Sample ID: 11215131-120121-S-JC-NE-B-1
Acq: 17-Dec-2021 15:37:49
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9
User: PSW Datafile: 211217R07
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 6.30e3
12479/12468D 4.67e5 31.08
12469D 6.67e5 31.62
12368D 1.73e5 32.16
12478D 1.35e5* 32.36
12369D...[3] 4.03e5 32.72
12378D 2.57e5* 33.59
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 6.87e3
12479/12468D 2.84e5 31.08
12469D 4.17e5 31.62
12368D 1.03e5 32.17
12478D 6.46e4* 32.36
12369D...[3] 2.82e5 32.72
12378D 1.14e5* 33.58
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.32e3
CS 12347D 3.34e7 33.06
ES 12378D 3.63e7 33.56
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 7.16e3
CS 12347D 2.04e7 33.06
ES 12378D 2.26e7 33.56
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_002.utp_res, saved 20-Dec-2021 14:23 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0902, 7440 scc: 578-176
PKD: 20-Dec-2021 09:08 Printed: 20-Dec-2021 14:26 Page 3 of 12

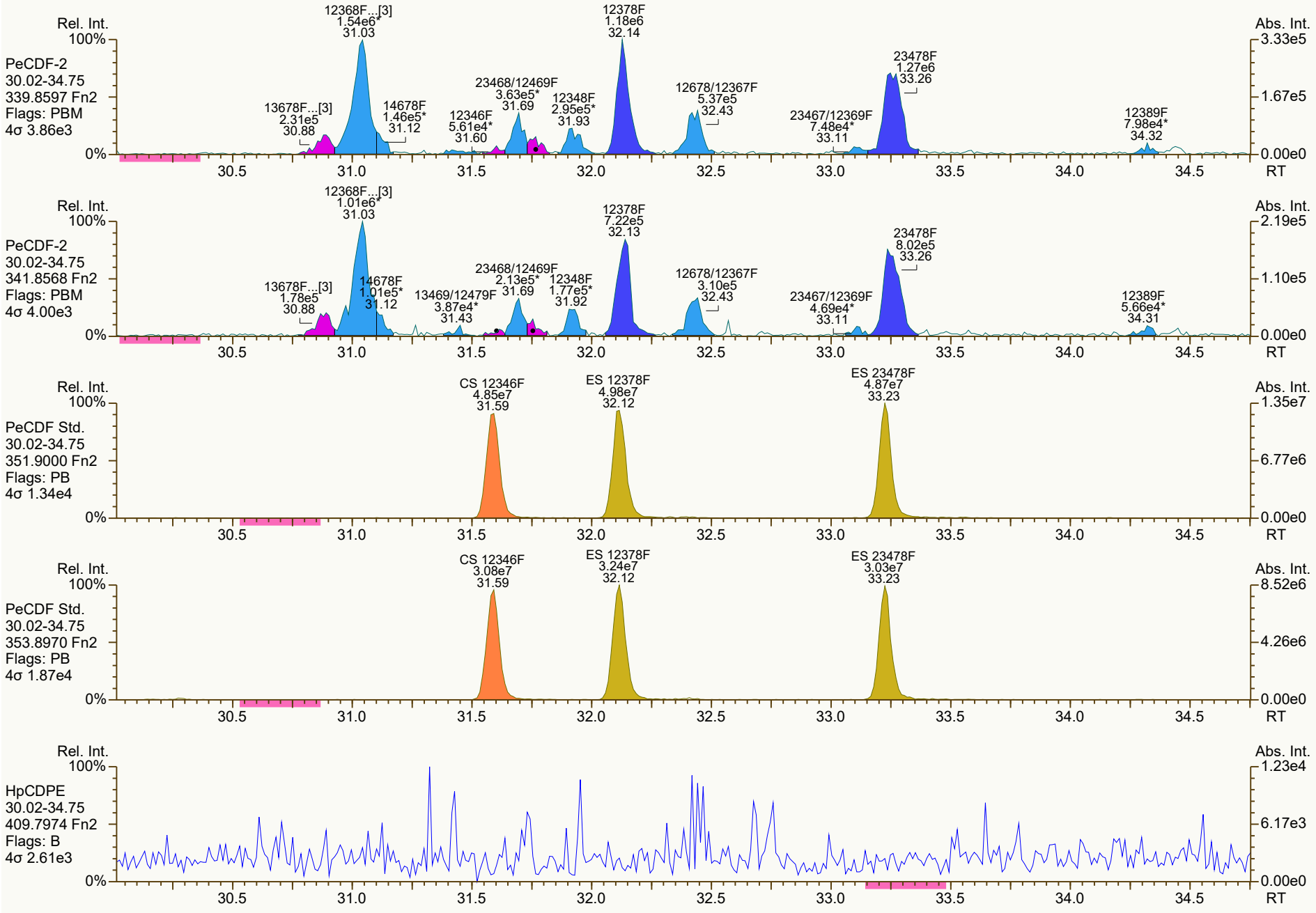

Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 1.02e4
124679/124689D
5.20e6
35.75
123468D
3.11e5
36.40
123679/123689D
2.02e6
36.68
123678D
4.89e5
37.57
123789D
3.44e5
37.87
Abs. Int.
1.51e6
7.57e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 1.13e4
124679/124689D
4.00e6
35.75
123468D
2.54e5
36.39
123679/123689D
1.63e6
36.68
123678D
4.10e5
37.58
123789D
3.23e5
37.87
Abs. Int.
1.23e6
6.15e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 6.98e3
ES 123478D
2.79e7
37.44
ES 123678D
2.90e7
37.56
JS 123467D
1.54e7*
37.76
ES 123789D
3.27e7*
37.87
Abs. Int.
9.23e6
4.62e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 3.36e3
ES 123478D
2.24e7
37.44
ES 123678D
2.30e7
37.56
JS 123467D
1.20e7*
37.76
ES 123789D
2.68e7*
37.86
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
Abs. Int.
2.29e7
1.15e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

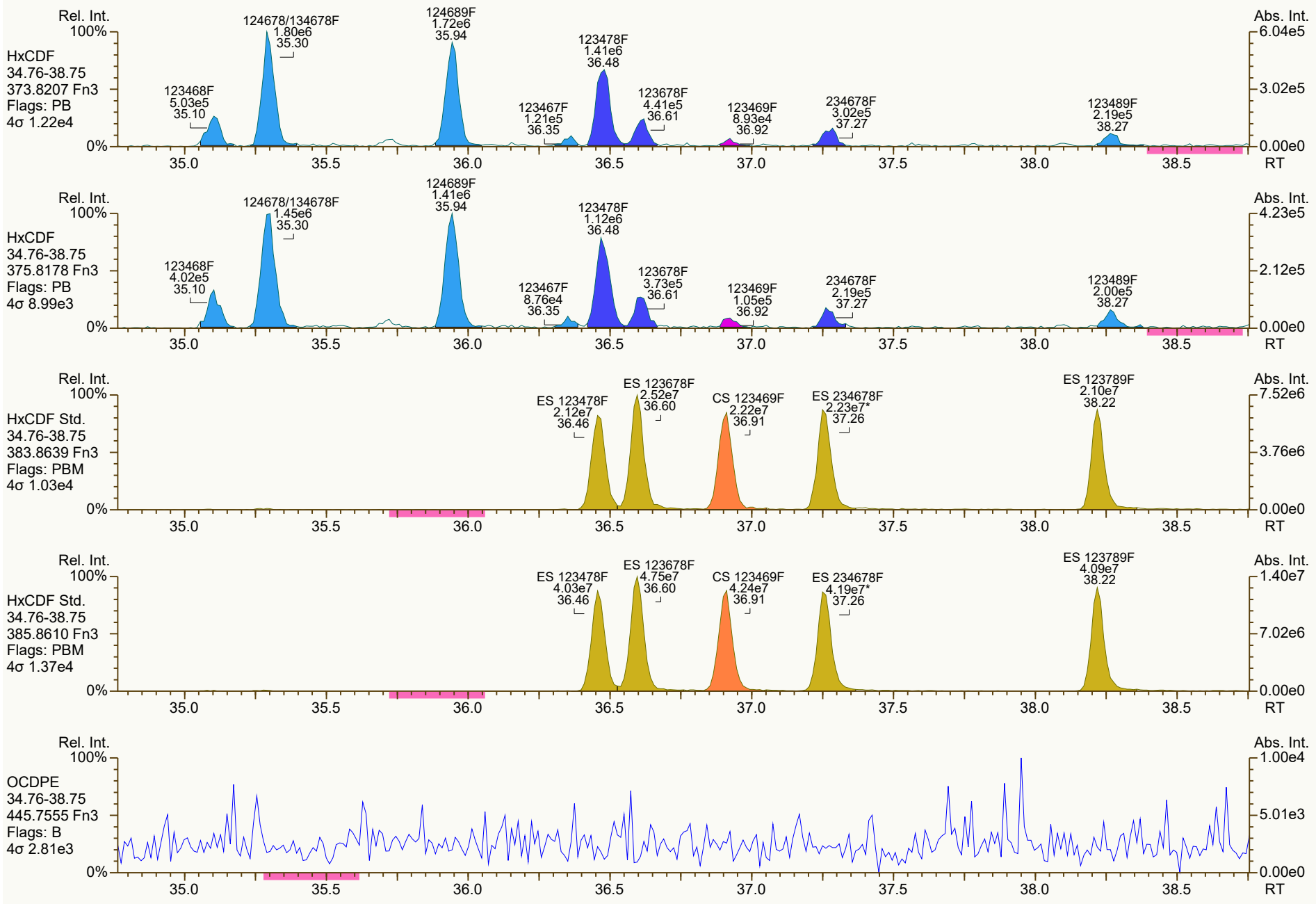

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 8.50e3
1234679D
1.66e7
39.86
1234678D
9.60e6
40.51
Abs. Int.
6.28e6
3.14e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 9.01e3
1234679D
1.59e7
39.86
1234678D
9.49e6
40.51
Abs. Int.
5.98e6
2.99e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 6.15e3
ES 1234678D
2.49e7
40.50
Abs. Int.
8.80e6
4.40e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 6.55e3
ES 1234678D
2.32e7
40.50
Abs. Int.
8.11e6
4.05e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.54e7
7.71e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

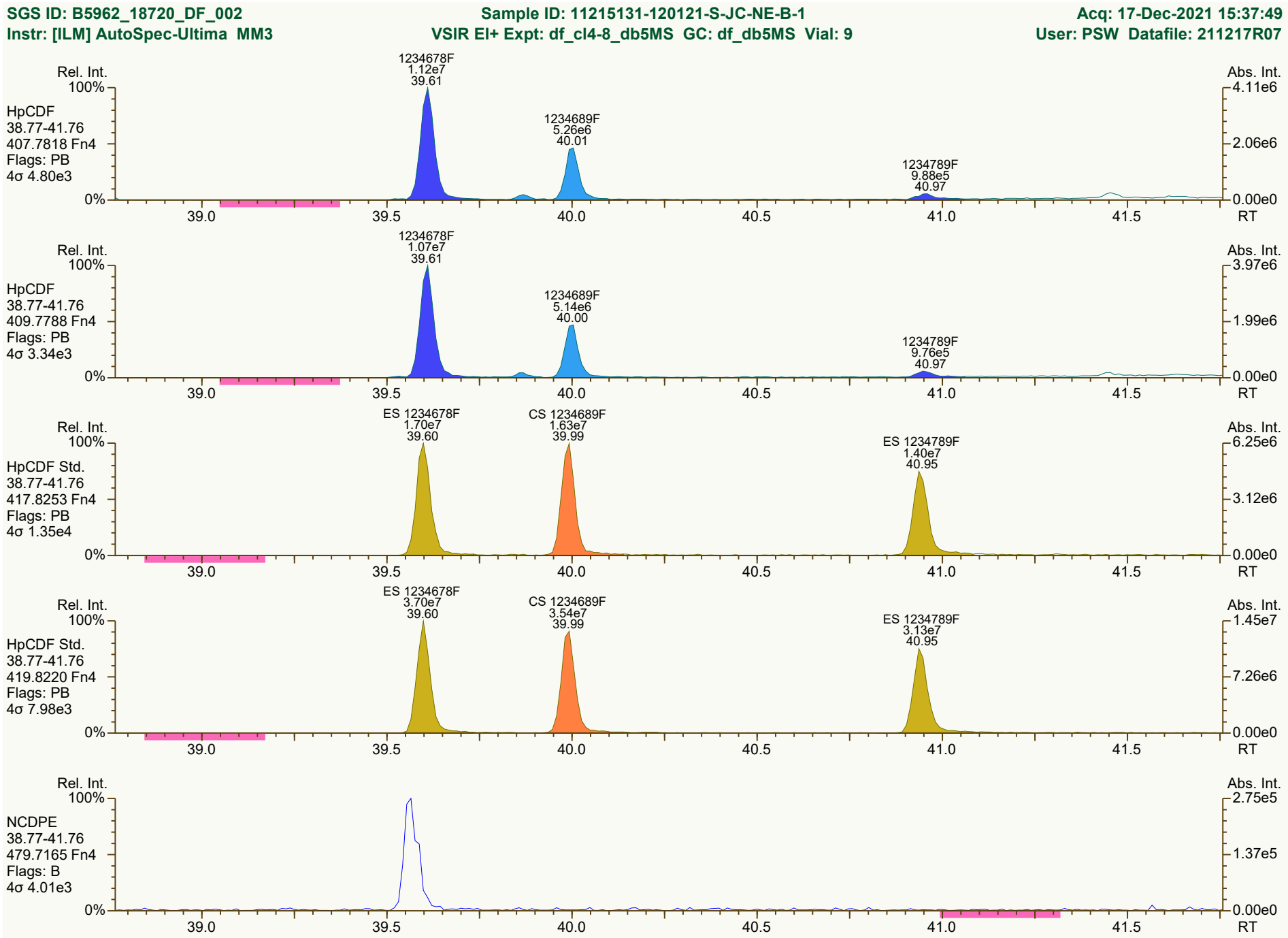

OCDD
1.17e8
43.05
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 1.77e4
0%
Abs. Int.
3.50e7
1.75e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.31e8
43.05
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.72e4
0%
Abs. Int.
3.94e7
1.97e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.91e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 5.28e3
0%
Abs. Int.
8.94e6
4.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.23e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.20e3
0%
Abs. Int.
9.48e6
4.74e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.01e6
4.50e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5962_18720_DF_002
Sample ID: 11215131-120121-S-JC-NE-B-1
Acq: 17-Dec-2021 15:37:49
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9
User: PSW Datafile: 211217R07
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.00e3
2378F
4.00e7
27.37
1278F
1.71e7*
26.46
2348F
2.75e6
27.26
2367/3467F
3.35e6
27.72
1289F
2.85e6
29.38
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 5.02e3
2378F
5.00e7
27.37
1278F
2.17e7*
26.46
2348F
3.36e6
27.26
2367/3467F
4.28e6
27.72
1289F
3.56e6
29.38
ok AK 21 Dec 21
Conc(2378F) = (4.00e7 + 5.00e7) * 2000pg / (3.95e7 + 5.22e7) * 0.96 * 10.45g = 196pg/g
PSW 20-Dec-2021 14:23
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 1.88e4
JS 1234F
4.23e7
25.98
ES 2378F
3.95e7*
27.35
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.03e4
JS 1234F
5.38e7
25.98
ES 2378F
5.22e7*
27.34
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.62e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_002.utp_res, saved 20-Dec-2021 14:23 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0998, 5569, 6943 scc: 578-176
PKD: 20-Dec-2021 09:08 Printed: 20-Dec-2021 14:26 Page 7 of 12


13468/12468F
2.11e6
29.34
Rel. Int.
100%
0%
Abs. Int.
5.10e5
2.55e5
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 4.15e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
1.59e6
29.34
Rel. Int.
100%
0%
Abs. Int.
3.71e5
1.85e5
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.25e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
4.11e6
2.06e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.86e3
12368F...[3] 1.54e6* 31.03
13678F...[3] 2.31e5 30.88
14678F 1.46e5* 31.12
12346F 5.61e4* 31.60
23468/12469F 3.63e5* 31.69
12348F 2.95e5* 31.93
12378F 1.18e6 32.14
12678/12367F 5.37e5 32.43
23467/12369F 7.48e4* 33.11
23478F 1.27e6 33.26
12389F 7.98e4* 34.32
Abs. Int.
3.33e5
1.67e5
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 4.00e3
12368F...[3] 1.01e6* 31.03
13678F...[3] 1.78e5 30.88
14678F 1.01e5* 31.12
13469/12479F 3.87e4* 31.43
23468/12469F 2.13e5* 31.69
12348F 1.77e5* 31.92
12378F 7.22e5 32.13
12678/12367F 3.10e5 32.43
23467/12369F 4.69e4* 33.11
23478F 8.02e5 33.26
12389F 5.66e4* 34.31
Abs. Int.
2.19e5
1.10e5
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 1.34e4
CS 12346F 4.85e7 31.59
ES 12378F 4.98e7 32.12
ES 23478F 4.87e7 33.23
Abs. Int.
1.35e7
6.77e6
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 1.87e4
CS 12346F 3.08e7 31.59
ES 12378F 3.24e7 32.12
ES 23478F 3.03e7 33.23
Abs. Int.
8.52e6
4.26e6
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.61e3
Abs. Int.
1.23e4
6.17e3
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PB
4σ 1.22e4
123468F 5.03e5 35.10
124678/134678F 1.80e6 35.30
124689F 1.72e6 35.94
123467F 1.21e5 36.35
123478F 1.41e6 36.48
123678F 4.41e5 36.61
123469F 8.93e4 36.92
234678F 3.02e5 37.27
123489F 2.19e5 38.27
Abs. Int.
6.04e5
3.02e5
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PB
4σ 8.99e3
123468F 4.02e5 35.10
124678/134678F 1.45e6 35.30
124689F 1.41e6 35.94
123467F 8.76e4 36.35
123478F 1.12e6 36.48
123678F 3.73e5 36.61
123469F 1.05e5 36.92
234678F 2.19e5 37.27
123489F 2.00e5 38.27
Abs. Int.
4.23e5
2.12e5
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PBM
4σ 1.03e4
ES 123478F 2.12e7 36.46
ES 123678F 2.52e7 36.60
CS 123469F 2.22e7 36.91
ES 234678F 2.23e7* 37.26
ES 123789F 2.10e7 38.22
Abs. Int.
7.52e6
3.76e6
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PBM
4σ 1.37e4
ES 123478F 4.03e7 36.46
ES 123678F 4.75e7 36.60
CS 123469F 4.24e7 36.91
ES 234678F 4.19e7* 37.26
ES 123789F 4.09e7 38.22
Abs. Int.
1.40e7
7.02e6
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.81e3
Abs. Int.
1.00e4
5.01e3
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT


SGS ID: B5962_18720_DF_002
Sample ID: 11215131-120121-S-JC-NE-B-1
Acq: 17-Dec-2021 15:37:49
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 9
User: PSW Datafile: 211217R07
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.80e3
1234678F
1.12e7
39.61
1234689F
5.26e6
40.01
1234789F
9.88e5
40.97
4.11e6
2.06e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.34e3
1234678F
1.07e7
39.61
1234689F
5.14e6
40.00
1234789F
9.76e5
40.97
3.97e6
1.99e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.35e4
ES 1234678F
1.70e7
39.60
CS 1234689F
1.63e7
39.99
ES 1234789F
1.40e7
40.95
6.25e6
3.12e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 7.98e3
ES 1234678F
3.70e7
39.60
CS 1234689F
3.54e7
39.99
ES 1234789F
3.13e7
40.95
1.45e7
7.26e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 4.01e3
2.75e5
1.37e5
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_002.utp_res, saved 20-Dec-2021 14:23 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5351, 6217, 0026 scc: 578-176
PKD: 20-Dec-2021 09:08 Printed: 20-Dec-2021 14:26 Page 11 of 12


OCDF
1.40e8*
43.23
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PBM
4σ 4.42e3
0%
Abs. Int.
4.30e7
2.15e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.55e8*
43.23
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PBM
4σ 5.09e3
0%
Abs. Int.
4.80e7
2.40e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.73e7
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 8.35e3
0%
Abs. Int.
1.19e7
5.95e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
4.06e7
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 8.56e3
0%
Abs. Int.
1.27e7
6.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.84e3
0%
Abs. Int.
1.35e4
6.75e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5962_18720_DF_004 **Acq'd:** 17 Dec 2021 16:25 PSW **Wt/Vol:** 10.26 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-7 **UTP:** 20-Dec-2021 14:06:09 PSW **J-level:** 0.487 pg/g **Split:** 1 **Checkcode:** 607-913-NQN

Datafile: 211217R08 **Report:** 20 Dec 2021 14:09 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.22	EMPC	1.0008	1.0009	+0.2	2.59E+05	1.11	N	1.34	0.573	6792.991	0.175
12378-PeCDD	33.57	J	1.0005	1.0006	+0.2	2.49E+05	1.61	Y	1.06	0.81	7811.624	0.229
123478-HxCDD	37.44	J	1.0003	1.0005	+0.4	5.60E+05	1.40	Y	1.06	2.18	12763.358	0.449
123678-HxCDD	37.56		1.0033	1.0036	+0.7	1.15E+06	1.22	Y	1.08	4.13	12763.358	0.438
123789-HxCDD	37.87		1.0110	1.0117	+1.6	1.18E+06	1.41	Y	1.02	4.07	12763.358	0.408
1234678-HpCDD	40.50		1.0003	1.0004	+0.2	6.14E+07	1.05	Y	0.97	268	14157.245	0.428
OCDD	43.05	E	1.0003	1.0003	0	4.39E+09	0.90	Y	1.07	26,800	24055.45	1.25
2378-TCDF	27.35		1.0006	1.0006	0	1.37E+06	0.88	Y	0.96	3.13	7551.055	0.202
12378-PeCDF	32.11	J	1.0006	1.0003	-0.6	1.89E+05	1.53	Y	0.95	0.488	8260.057	0.212
23478-PeCDF	33.23	J	1.0006	1.0005	-0.2	4.73E+05	1.59	Y	0.94	1.23	8260.057	0.21
123478-HxCDF	36.46	J	1.0004	1.0003	-0.2	3.90E+05	1.18	Y	1.23	1.06	9959.611	0.234
123678-HxCDF	36.59	J	1.0004	1.0002	-0.4	3.74E+05	1.33	Y	1.13	0.88	9959.611	0.212
234678-HxCDF	37.26	J EMPC	1.0005	1.0005	0	3.33E+05	1.02	N	1.15	0.872	9959.611	0.245
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	9959.611	0.277
1234678-HpCDF	39.60		1.0003	1.0002	-0.2	3.72E+06	1.04	Y	1.36	10.2	11359.384	0.222
1234789-HpCDF	40.94	J	1.0003	1.0002	-0.2	2.75E+05	0.99	Y	1.30	0.998	11359.384	0.296
OCDF	43.22		1.0002	1.0002	0	5.75E+06	0.91	Y	1.03	33.4	11055.101	0.532

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.19		1.0237	1.0240	+0.5	6.55E+07	0.78	Y	1.03	97.5
ES 12378-PeCDD	33.55		1.2158	1.2185	+5.4	5.66E+07	1.60	Y	1.03	84.2
ES 123478-HxCDD	37.43		0.9920	0.9916	-0.9	4.75E+07	1.26	Y	0.99	98.8
ES 123678-HxCDD	37.55		0.9949	0.9948	-0.2	5.04E+07	1.29	Y	0.97	107
ES 123789-HxCDD	37.85		1.0026	1.0028	+0.5	5.55E+07	1.26	Y	1.12	102
ES 1234678-HpCDD	40.48		1.0713	1.0725	+2.9	4.58E+07	1.05	Y	0.99	95.6
ES OCDD	43.03		1.1385	1.1401	+4.1	5.96E+07	0.90	Y	0.78	79.3
ES 2378-TCDF	27.33		1.0519	1.0527	+1.3	8.85E+07	0.78	Y	1.08	88.3
ES 12378-PeCDF	32.10		1.2331	1.2364	+6.4	7.97E+07	1.57	Y	0.93	92.3
ES 23478-PeCDF	33.21		1.2754	1.2793	+7.8	7.96E+07	1.54	Y	0.92	93.3
ES 123478-HxCDF	36.44		0.9656	0.9656	0	5.83E+07	0.53	Y	1.14	106
ES 123678-HxCDF	36.58		0.9693	0.9693	0	7.33E+07	0.51	Y	1.30	117
ES 234678-HxCDF	37.25		0.9869	0.9868	-0.2	6.45E+07	0.53	Y	1.20	111
ES 123789-HxCDF	38.21		1.0121	1.0125	+0.9	5.74E+07	0.53	Y	1.14	104
ES 1234678-HpCDF	39.59		1.0478	1.0488	+2.4	5.20E+07	0.45	Y	0.95	113
ES 1234789-HpCDF	40.93		1.0832	1.0844	+2.9	4.14E+07	0.44	Y	0.85	101
ES OCDF	43.21		1.1434	1.1448	+3.6	6.54E+07	0.91	Y	0.93	73.2

Lab ID: B5962_18720_DF_004 **Acq'd:** 17 Dec 2021 16:25 PSW **Wt/Vol:** 10.26 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-7 **UTP:** 20-Dec-2021 14:06:09 PSW **J-level:** 0.487 pg/g **Split:** 1 **Checkcode:** 607-913-NQN

Datafile: 211217R08 **Report:** 20 Dec 2021 14:09 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.53		-	-	-	6.50E+07	0.79	Y	-	-
JS 1234-TCDF	25.96		-	-	-	9.25E+07	0.75	Y	-	-
JS 123467-HxCDD	37.74		-	-	-	2.42E+07	1.27	Y	-	-
CS 37Cl-2378-TCDD	28.21		1.0245	1.0248	+0.5	2.86E+07	n/a	-	1.31	84
CS 12347-PeCDD	33.05		1.1978	1.2003	+5.0	5.02E+07	1.57	Y	0.89	86.6
CS 12346-PeCDF	31.57		1.2130	1.2160	+5.7	7.72E+07	1.53	Y	0.87	96.2
CS 123469-HxCDF	36.89		0.9775	0.9775	0	6.05E+07	0.51	Y	1.09	115
CS 1234689-HpCDF	39.98		1.0580	1.0592	+2.9	4.77E+07	0.44	Y	0.86	114
~~SS 37Cl-2378-TCDD~~	~~28.21~~		~~1.0245~~	~~1.0248~~	~~+0.5~~	~~2.86E+07~~	~~n/a~~		~~1.26~~	~~86.6~~
~~SS 12347-PeCDD~~	~~33.05~~		~~1.1978~~	~~1.2003~~	~~+5.0~~	~~5.02E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~103~~
~~SS 12346-PeCDF~~	~~31.57~~		~~1.2130~~	~~1.2160~~	~~+5.7~~	~~7.72E+07~~	~~1.53~~	~~Y~~	~~0.93~~	~~104~~
~~SS 123469-HxCDF~~	~~36.89~~		~~0.9775~~	~~0.9775~~	~~0~~	~~6.05E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~98.1~~
~~SS 1234689-HpCDF~~	~~39.98~~		~~1.0580~~	~~1.0592~~	~~+2.9~~	~~4.77E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~101~~

Totals	Conc	EMPC
Total TCDD	0.438	1.01
Total PeCDD	4.86	5.92
Total HxCDD	46.4	47.6
Total HpCDD	624	624
Total Tetra-Octa Dioxins	27500	27500
Total TCDF	9.13	11.9
Total PeCDF	5.5	9.95
Total HxCDF	12.1	13.7
Total HpCDF	26.6	26.6
Total Tetra-Octa Furans	86.7	95.5
Total Tetra-Octa Dioxins & Furans	27600	27600

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.994	1.11
Response	3.26E+05	3.08E+05

Lab ID: B5962_18720_DF_004 | **Acq'd: 17 Dec 2021 16:25 PSW** | **Wt/Vol: 10.26 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-O-7 | **UTP: 20-Dec-2021 14:06:09 PSW** | **J-level: 0.487 pg/g** | **Split: 1** | **Checkcode: 607-913-NQN**

Datafile: 211217R08 | **Report: 20 Dec 2021 14:09 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.53	J	0.8726	0.8701	-3.7	1.98E+05	0.66	Y	1.34	0.438	6792.991	0.175
1379-TCDD	NotFnd		0.8851						1.34		6792.991	0.175
1369-TCDD	NotFnd		0.9002						1.34		6792.991	0.175
1469-TCDD	NotFnd		0.9275						1.34		6792.991	0.175
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6792.991	0.175
1378-TCDD	NotFnd		0.9427						1.34		6792.991	0.175
1268-TCDD	NotFnd		0.9498						1.34		6792.991	0.175
1478-TCDD	NotFnd		0.9584						1.34		6792.991	0.175
1279-TCDD	NotFnd		0.9644						1.34		6792.991	0.175
1234/1269-TCDD	NotFnd		0.9766						1.34		6792.991	0.175
1236-TCDD	NotFnd		0.9813						1.34		6792.991	0.175
1237/1238-TCDD	NotFnd		0.9906						1.34		6792.991	0.175
1239-TCDD	NotFnd		0.9952						1.34		6792.991	0.175
2378-TCDD	**28.22**	EMPC	**1.0008**	1.0009	**+0.2**	2.59E+05	1.11	N	**1.34**	**0.573**	**6792.991**	**0.175**
1278-TCDD	NotFnd		1.0122						1.34		6792.991	0.175
1267-TCDD	NotFnd		1.0168						1.34		6792.991	0.175
1289-TCDD	NotFnd		1.0349						1.34		6792.991	0.175
12479/12468-PeCDD	31.07	J	0.9267	0.9260	-1.3	5.44E+05	1.52	Y	1.06	1.77	7811.624	0.229
12469-PeCDD	31.60	J	0.9425	0.9419	-1.1	2.01E+05	1.39	Y	1.06	0.653	7811.624	0.229
12368-PeCDD	32.15	J	0.9588	0.9583	-1.0	1.95E+05	1.42	Y	1.06	0.634	7811.624	0.229
12478-PeCDD	32.34	J	0.9643	0.9639	-0.8	2.50E+05	1.74	Y	1.06	0.814	7811.624	0.229
12379-PeCDD	32.44	J EMPC	0.9673	0.9669	-0.8	1.19E+05	1.89	N	1.06	0.386	7811.624	0.229
12369/12467/12489-PeCDD	32.70	J EMPC	0.9750	0.9747	-0.6	2.05E+05	1.17	N	1.06	0.665	7811.624	0.229
12346/12347-PeCDD	NotFnd		0.9859						1.06		7811.624	0.229
12378-PeCDD	33.57	J	**1.0005**	**1.0006**	**+0.2**	**2.49E+05**	**1.61**	**Y**	**1.06**	**0.81**	**7811.624**	**0.229**
12367-PeCDD	33.66	J	1.0032	1.0033	+0.2	5.70E+04	1.55	Y	1.06	0.185	7811.624	0.229
12389-PeCDD	NotFnd		1.0135						1.06		7811.624	0.229
124679/124689-HxCDD	35.73		0.9544	0.9546	+0.4	4.64E+06	1.31	Y	1.05	16.8	12763.358	0.43
123468-HxCDD	36.38		0.9716	0.9720	+0.9	7.07E+05	1.33	Y	1.05	2.57	12763.358	0.43
123679/123689-HxCDD	36.66		0.9793	0.9796	+0.7	4.28E+06	1.26	Y	1.05	15.5	12763.358	0.43
123469-HxCDD	36.80	J EMPC	0.9829	0.9832	+0.7	3.40E+05	1.55	N	1.05	1.23	12763.358	0.43
123478-HxCDD	37.44	J	**1.0003**	**1.0005**	**+0.4**	**5.60E+05**	**1.40**	**Y**	1.06	**2.18**	**12763.358**	**0.449**
123678-HxCDD	37.56		**1.0033**	**1.0036**	**+0.7**	**1.15E+06**	**1.22**	**Y**	1.08	**4.13**	**12763.358**	**0.438**
123467-HxCDD	37.76	J	1.0084	1.0088	+0.9	3.04E+05	1.36	Y	1.05	1.1	12763.358	0.43
123789-HxCDD	37.87		**1.0110**	**1.0117**	**+1.6**	**1.18E+06**	**1.41**	**Y**	1.02	**4.07**	**12763.358**	**0.408**

Lab ID: B5962_18720_DF_004 **Acq'd:** 17 Dec 2021 16:25 PSW **Wt/Vol:** 10.26 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-7 **UTP:** 20-Dec-2021 14:06:09 PSW **J-level:** 0.487 pg/g **Split:** 1 **Checkcode:** 607-913-NQN

Datafile: 211217R08 **Report:** 20 Dec 2021 14:09 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

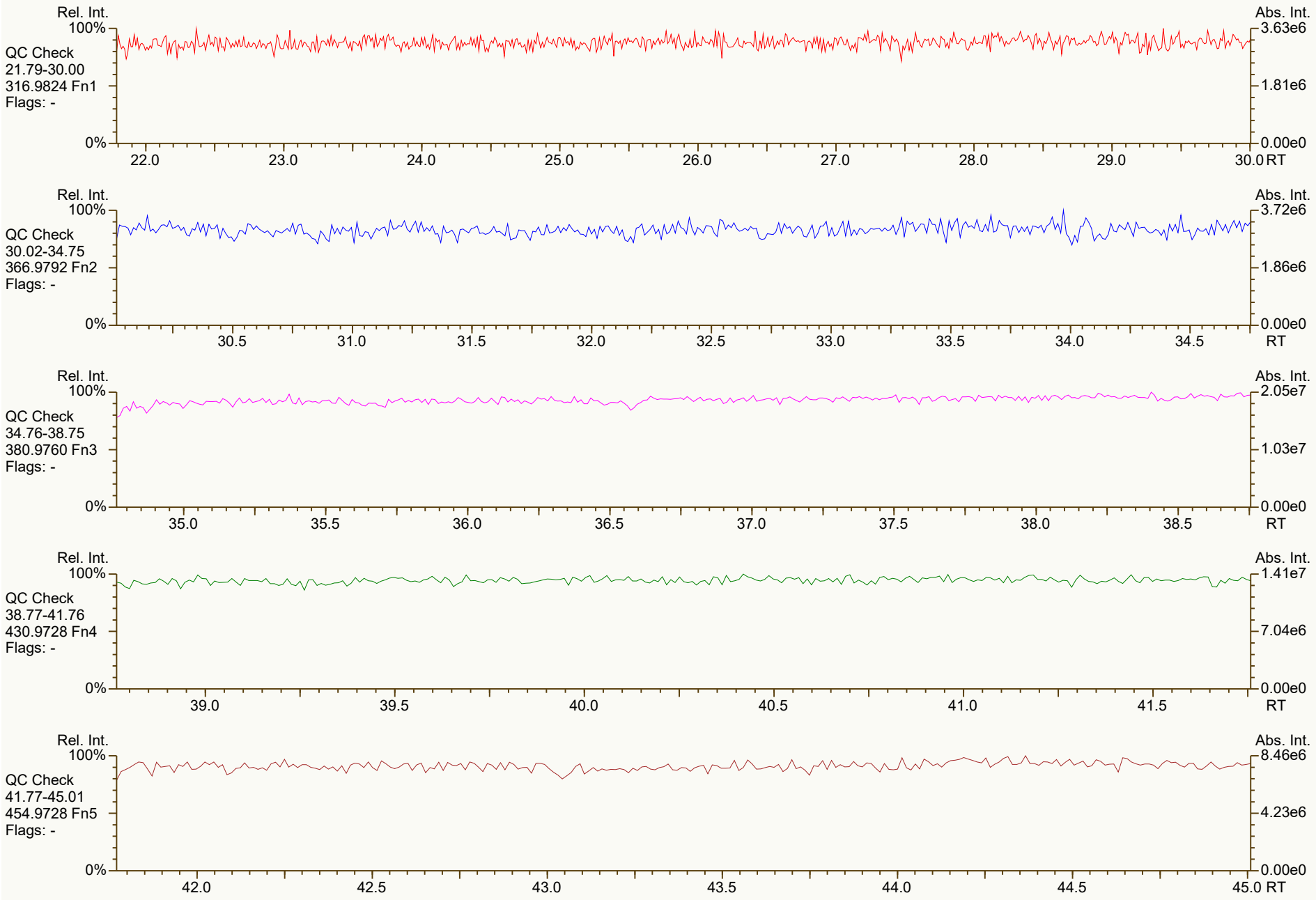
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.85		0.9843	0.9844	+0.2	8.15E+07	1.04	Y	0.97	356	14157.245	0.428
1234678-HpCDD	**40.50**		**1.0003**	**1.0004**	**+0.2**	**6.14E+07**	**1.05**	**Y**	**0.97**	**268**	**14157.245**	**0.428**
OCDD	**43.05**	**E**	**1.0003**	**1.0003**	**0**	**4.39E+09**	**0.90**	**Y**	**1.07**	**26,800**	**24055.45**	**1.25**
OCDD-a	43.04	**E**	1.0001	1.0002	+0.3	2.69E+08	2.56	Y	0.07	26,600	17342.505	14.7
1368-TCDF	NotFnd		0.8230						0.96		7551.055	0.202
1468-TCDF	NotFnd		0.8443						0.96		7551.055	0.202
2468-TCDF	23.64		0.8672	0.8649	-3.3	7.14E+05	0.87	Y	0.96	1.64	7551.055	0.202
1346/1246-TCDF	NotFnd		0.8802						0.96		7551.055	0.202
1347/1378/1247-TCDF	24.17		0.8855	0.8842	-1.9	2.77E+05	0.88	Y	0.96	0.635	7551.055	0.202
1348-TCDF	24.52		0.8952	0.8971	+2.8	2.40E+05	0.74	Y	0.96	0.55	7551.055	0.202
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		7551.055	0.202
1268-TCDF	24.93	J EMPC	0.9136	0.9123	-1.9	1.24E+05	1.23	N	0.96	0.284	7551.055	0.202
1467-TCDF	25.08	J	0.9185	0.9176	-1.4	1.39E+05	0.66	Y	0.96	0.318	7551.055	0.202
1478-TCDF	25.25	J	0.9247	0.9239	-1.2	1.62E+05	0.87	Y	0.96	0.371	7551.055	0.202
1369/1237-TCDF	NotFnd		0.9381						0.96		7551.055	0.202
2467-TCDF	25.73	J	0.9427	0.9414	-2.0	1.43E+05	0.73	Y	0.96	0.328	7551.055	0.202
2368-TCDF	25.92		0.9484	0.9485	+0.2	3.54E+05	0.69	Y	0.96	0.811	7551.055	0.202
1238/1234/1678/1469/1236-TCDF	26.04	J EMPC	0.9517	0.9529	+1.9	1.21E+05	0.99	N	0.96	0.277	7551.055	0.202
1278-TCDF	26.45		0.9682	0.9676	-1.0	4.81E+05	0.83	Y	0.96	1.1	7551.055	0.202
1349-TCDF	NotFnd		0.9725						0.96		7551.055	0.202
1267-TCDF	26.73	J EMPC	0.9782	0.9779	-0.5	1.20E+05	1.10	N	0.96	0.275	7551.055	0.202
2346/1249-TCDF	NotFnd		0.9846						0.96		7551.055	0.202
2347/1279-TCDF	27.12	J EMPC	0.9926	0.9925	-0.2	8.45E+04	1.37	N	0.96	0.194	7551.055	0.202
2348-TCDF	27.22	J	0.9966	0.9961	-0.8	1.05E+05	0.75	Y	0.96	0.241	7551.055	0.202
2378-TCDF	**27.35**		**1.0006**	**1.0006**	**0**	**1.37E+06**	**0.88**	**Y**	**0.96**	**3.13**	**7551.055**	**0.202**
2367/3467-TCDF	27.71	EMPC	1.0139	1.0140	+0.2	4.72E+05	0.94	N	0.96	1.08	7551.055	0.202
1269-TCDF	NotFnd		1.0226						0.96		7551.055	0.202
1239-TCDF	NotFnd		1.0322						0.96		7551.055	0.202
1289-TCDF	29.33	EMPC	1.0729	1.0732	+0.5	2.97E+05	1.44	N	0.96	0.681	7551.055	0.202
13468/12468-PeCDF	29.31		0.9135	0.9131	-0.7	1.07E+06	1.65	Y	0.94	2.78	8427.15	0.215
13678/13467/12467-PeCDF	30.84	J	0.9612	0.9608	-0.7	3.03E+05	1.35	Y	0.94	0.786	8260.057	0.211
12368/13478/12478-PeCDF	31.00	J EMPC	0.9661	0.9658	-0.6	7.22E+05	1.92	N	0.94	1.88	8260.057	0.211
14678-PeCDF	31.10	J EMPC	0.9693	0.9688	-0.9	8.70E+04	2.25	N	0.94	0.226	8260.057	0.211
13479-PeCDF	NotFnd		0.9723						0.94		8260.057	0.211
13469/12479-PeCDF	NotFnd		0.9799						0.94		8260.057	0.211
12346-PeCDF	31.58	J EMPC	0.9842	0.9838	-0.8	6.79E+04	1.25	N	0.94	0.176	8260.057	0.211

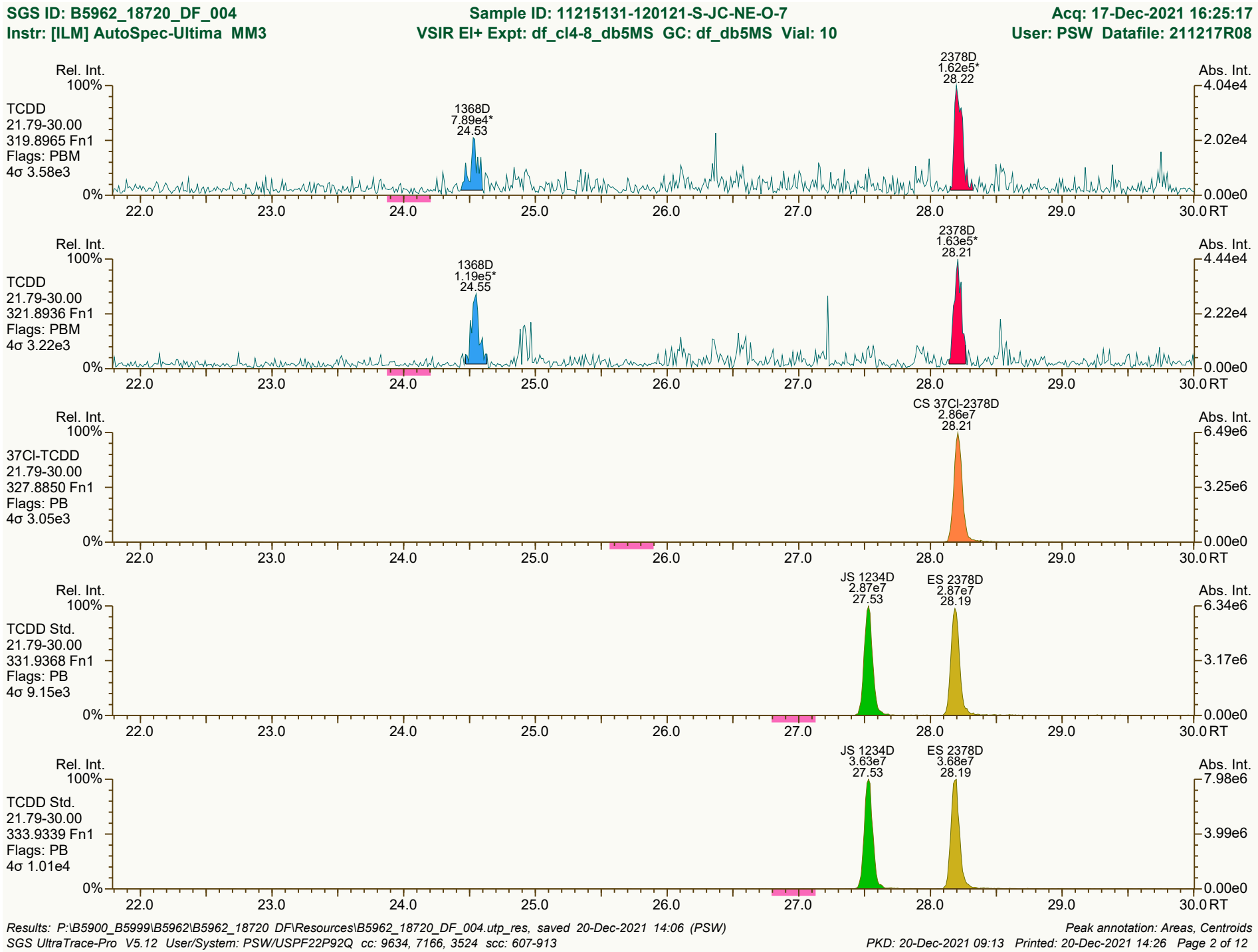
Lab ID: B5962_18720_DF_004 | **Acq'd: 17 Dec 2021 16:25 PSW** | **Wt/Vol: 10.26 g** | **ICAL: MM3_DF_10272021_27JUL2021**

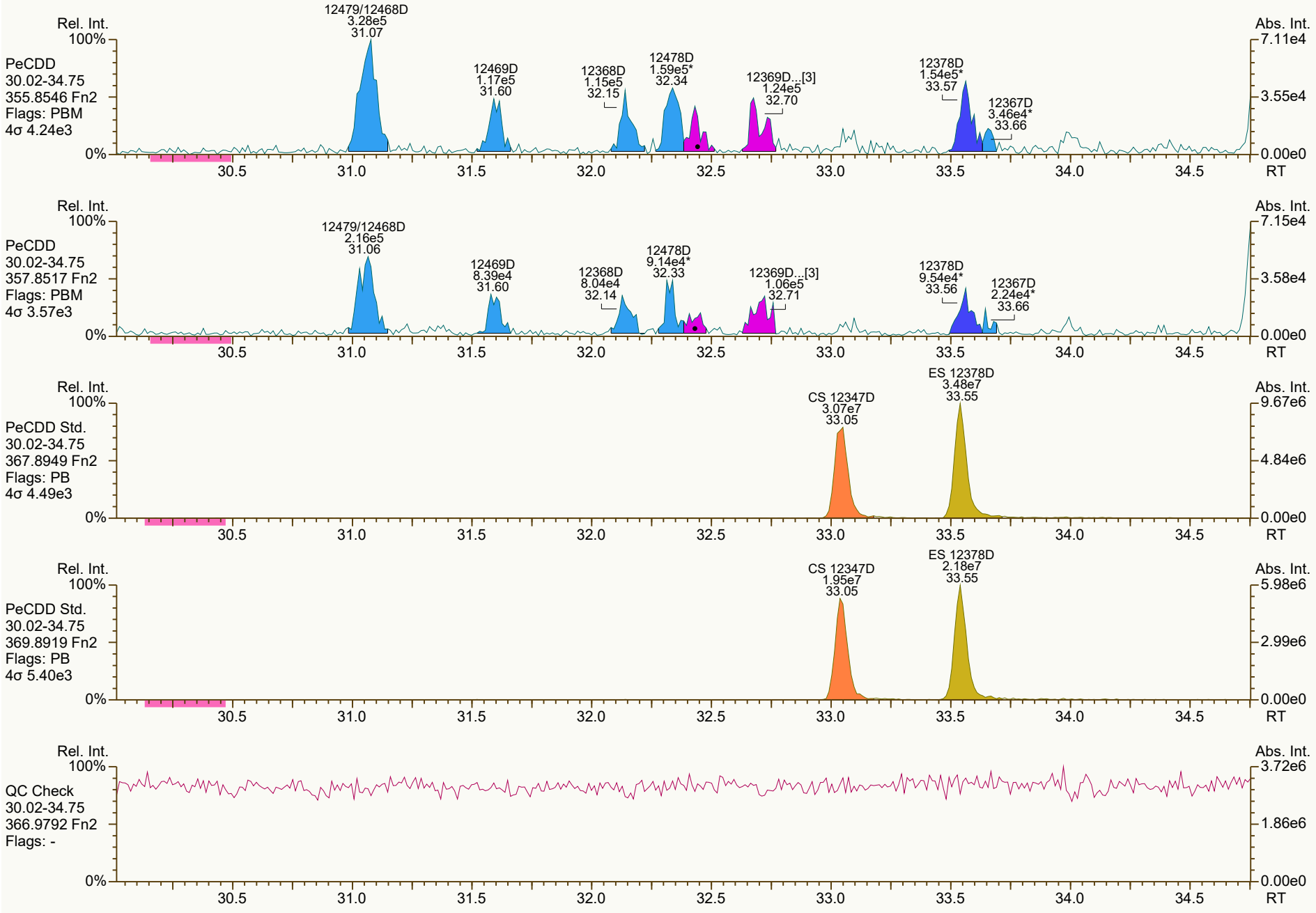
Client ID: 11215131-120121-S-JC-NE-O-7 | **UTP: 20-Dec-2021 14:06:09 PSW** | **J-level: 0.487 pg/g** | **Split: 1** | **Checkcode: 607-913-NQN**

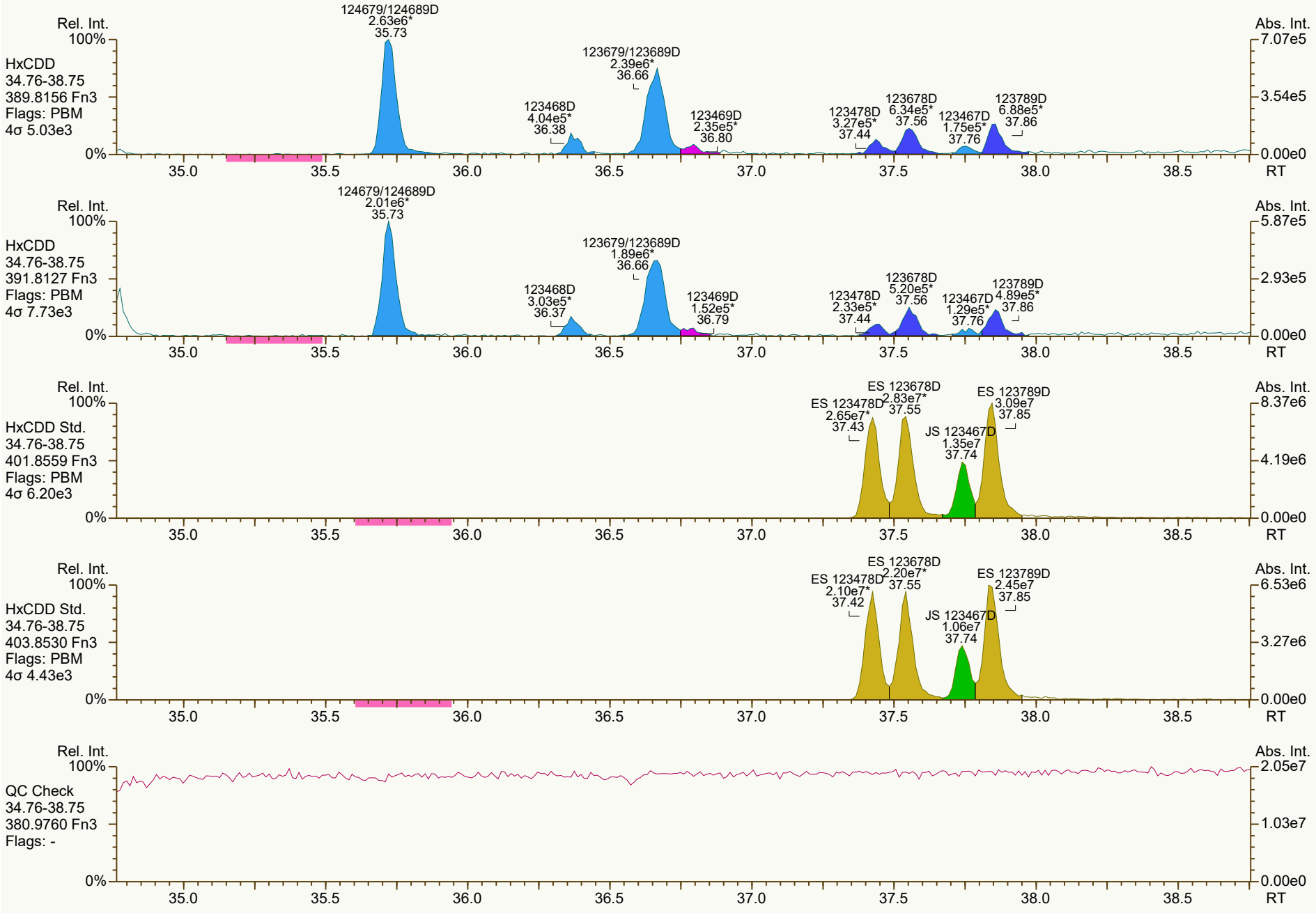
Datafile: 211217R08 | **Report: 20 Dec 2021 14:09 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.67	J EMPC	0.9868	0.9865	-0.6	2.64E+05	1.27	N	0.94	0.686	8260.057	0.211
12347-PeCDF	31.75	J EMPC	0.9893	0.9891	-0.4	7.88E+04	1.82	N	0.94	0.205	8260.057	0.211
12348-PeCDF	31.91	J	0.9941	0.9939	-0.4	7.99E+04	1.38	Y	0.94	0.207	8260.057	0.211
12378-PeCDF	**32.11**	J	**1.0006**	**1.0003**	**-0.6**	**1.89E+05**	**1.53**	**Y**	**0.95**	**0.488**	**8260.057**	**0.212**
12678/12367-PeCDF	32.39	J EMPC	1.0090	1.0091	+0.2	2.54E+05	1.89	N	0.94	0.66	8260.057	0.211
12379-PeCDF	NotFnd		1.0143						0.94		8260.057	0.211
12679-PeCDF	NotFnd		0.9929						0.94		8260.057	0.211
23467/12369-PeCDF	33.10	J EMPC	0.9966	0.9965	-0.2	2.41E+05	1.23	N	0.94	0.625	8260.057	0.211
23478-PeCDF	**33.23**	J	**1.0006**	**1.0005**	**-0.2**	**4.73E+05**	**1.59**	**Y**	**0.94**	**1.23**	**8260.057**	**0.21**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8260.057	0.211
12349-PeCDF	NotFnd		1.0102						0.94		8260.057	0.211
12389-PeCDF	NotFnd		1.0325						0.94		8260.057	0.211
123468-HxCDF	35.08	J	0.9628	0.9626	-0.4	5.78E+05	1.25	Y	1.16	1.53	9959.611	0.24
124678/134678-HxCDF	35.28		0.9683	0.9680	-0.6	2.08E+06	1.24	Y	1.16	5.49	9959.611	0.24
134679-HxCDF	NotFnd		0.9746						1.16		9959.611	0.24
124679-HxCDF	NotFnd		0.9798						1.16		9959.611	0.24
124689-HxCDF	35.93		0.9859	0.9859	0	1.19E+06	1.20	Y	1.16	3.14	9959.611	0.24
123467-HxCDF	36.34	J EMPC	0.9972	0.9972	0	2.62E+05	1.54	N	1.16	0.693	9959.611	0.24
123478-HxCDF	**36.46**	J	**1.0004**	**1.0003**	**-0.2**	**3.90E+05**	**1.18**	**Y**	**1.23**	**1.06**	**9959.611**	**0.234**
123678-HxCDF	**36.59**	J	**1.0004**	**1.0002**	**-0.4**	**3.74E+05**	**1.33**	**Y**	**1.13**	**0.88**	**9959.611**	**0.212**
123479-HxCDF	NotFnd		1.0049						1.16		9959.611	0.24
123469-HxCDF	NotFnd		1.0088						1.16		9959.611	0.24
123679-HxCDF	NotFnd		0.9943						1.16		9959.611	0.24
234678-HxCDF	**37.26**	J EMPC	**1.0005**	**1.0005**	**0**	**3.33E+05**	**1.02**	**N**	**1.15**	**0.872**	**9959.611**	**0.245**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		9959.611	0.24
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**9959.611**	**0.277**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		9959.611	0.24
1234678-HpCDF	**39.60**		**1.0003**	**1.0002**	**-0.2**	**3.72E+06**	**1.04**	**Y**	**1.36**	**10.2**	**11359.384**	**0.222**
1234679-HpCDF	39.85	**J**	1.0067	1.0066	-0.2	2.79E+05	1.19	Y	1.33	0.876	11359.384	0.255
1234689-HpCDF	39.99		1.0100	1.0101	+0.2	4.62E+06	1.06	Y	1.33	14.5	11359.384	0.255
1234789-HpCDF	**40.94**	**J**	**1.0003**	**1.0002**	**-0.2**	**2.75E+05**	**0.99**	**Y**	**1.30**	**0.998**	**11359.384**	**0.296**
OCDF	**43.22**		**1.0002**	**1.0002**	**0**	**5.75E+06**	**0.91**	**Y**	**1.03**	**33.4**	**11055.101**	**0.532**
OCDF-a	43.21	**EMPC**	1.0002	0.9999	-0.8	2.05E+05	1.30	N	0.06	20.6	10138.401	8.44

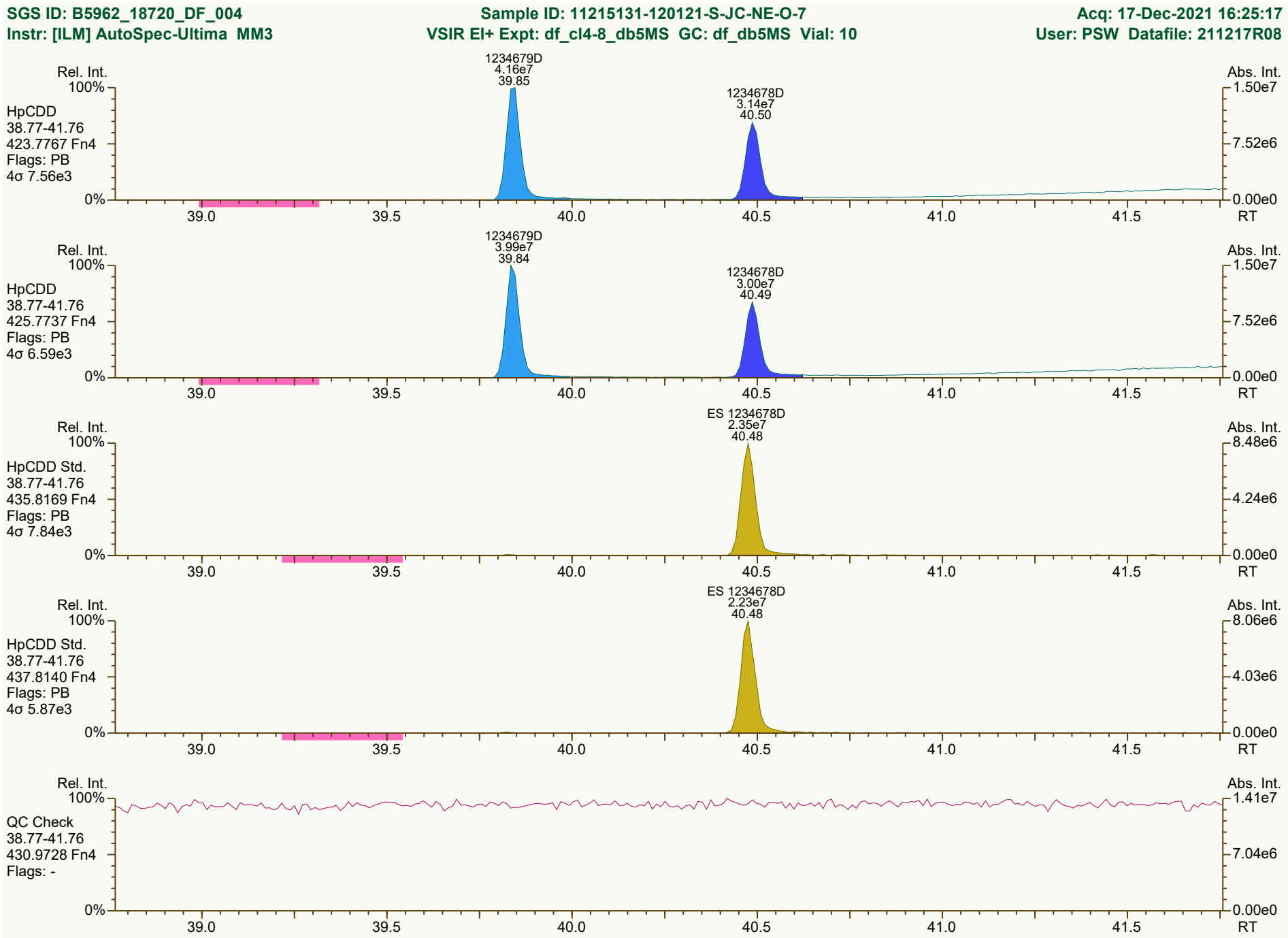

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.63e6
1.81e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.72e6
1.86e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.05e7
1.03e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.41e7
7.04e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.46e6
4.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5962_18720_DF_004
Sample ID: 11215131-120121-S-JC-NE-O-7
Acq: 17-Dec-2021 16:25:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 10
User: PSW Datafile: 211217R08
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 3.58e3
1368D
7.89e4*
24.53
2378D
1.62e5*
28.22
4.04e4
2.02e4
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.22e3
1368D
1.19e5*
24.55
2378D
1.63e5*
28.21
4.44e4
2.22e4
0.00e0
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.05e3
CS 37Cl-2378D
2.86e7
28.21
6.49e6
3.25e6
0.00e0
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 9.15e3
JS 1234D
2.87e7
27.53
ES 2378D
2.87e7
28.19
6.34e6
3.17e6
0.00e0
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.01e4
JS 1234D
3.63e7
27.53
ES 2378D
3.68e7
28.19
7.98e6
3.99e6
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_004.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9634, 7166, 3524 scc: 607-913
PKD: 20-Dec-2021 09:13 Printed: 20-Dec-2021 14:26 Page 2 of 12

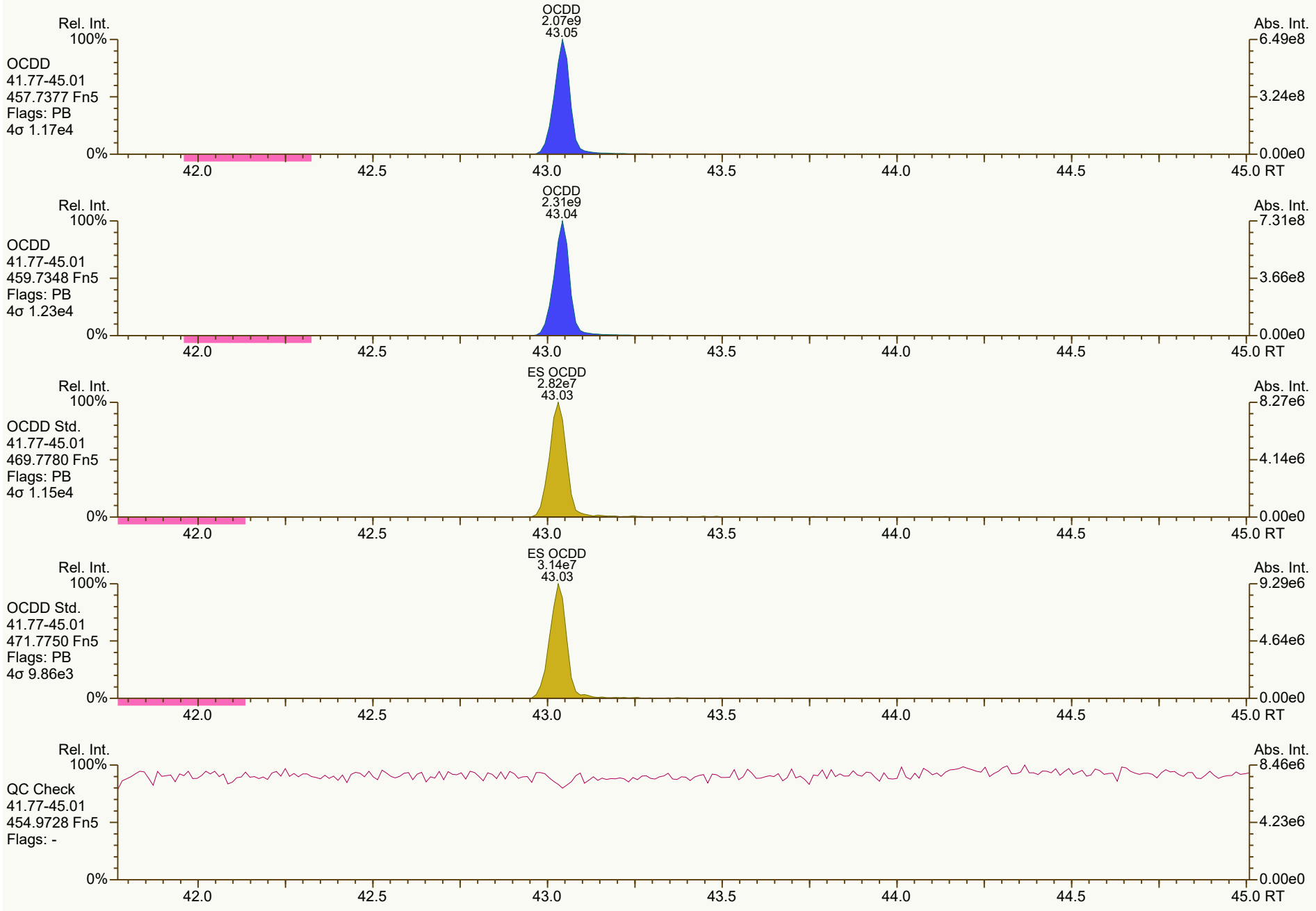

Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 4.24e3
12479/12468D
3.28e5
31.07
12469D
1.17e5
31.60
12368D
1.15e5
32.15
12478D
1.59e5*
32.34
12369D...[3]
1.24e5
32.70
12378D
1.54e5*
33.57
12367D
3.46e4*
33.66
Abs. Int.
7.11e4
3.55e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 3.57e3
12479/12468D
2.16e5
31.06
12469D
8.39e4
31.60
12368D
8.04e4
32.14
12478D
9.14e4*
32.33
12369D...[3]
1.06e5
32.71
12378D
9.54e4*
33.56
12367D
2.24e4*
33.66
Abs. Int.
7.15e4
3.58e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.49e3
CS 12347D
3.07e7
33.05
ES 12378D
3.48e7
33.55
Abs. Int.
9.67e6
4.84e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 5.40e3
CS 12347D
1.95e7
33.05
ES 12378D
2.18e7
33.55
Abs. Int.
5.98e6
2.99e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
3.72e6
1.86e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

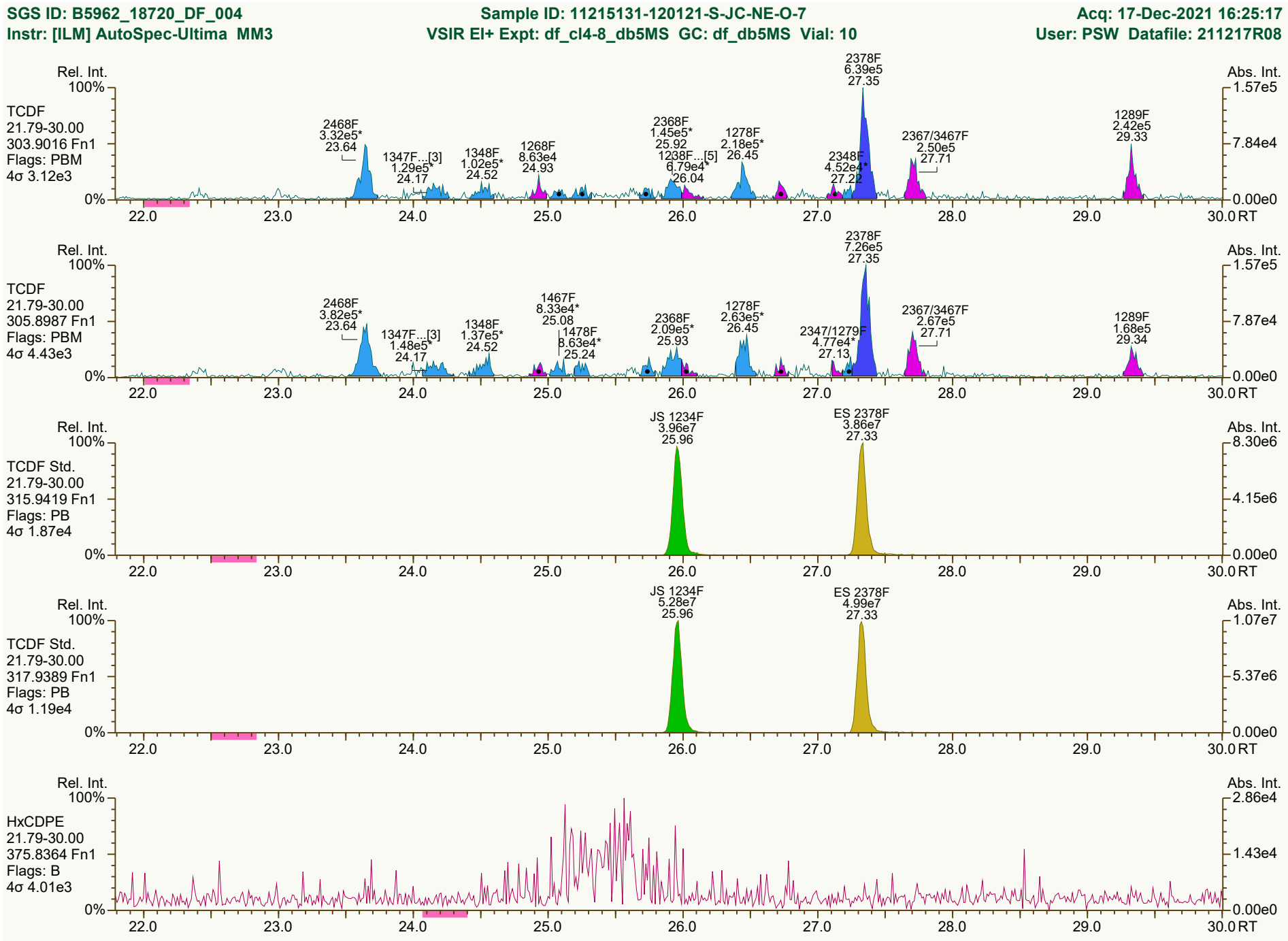

Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PBM
4σ 5.03e3
0%
124679/124689D
2.63e6*
35.73
123679/123689D
2.39e6*
36.66
123468D
4.04e5*
36.38
123469D
2.35e5*
36.80
123478D
3.27e5*
37.44
123678D
6.34e5*
37.56
123467D
1.75e5*
37.76
123789D
6.88e5*
37.86
Abs. Int.
7.07e5
3.54e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 7.73e3
0%
124679/124689D
2.01e6*
35.73
123679/123689D
1.89e6*
36.66
123468D
3.03e5*
36.37
123469D
1.52e5*
36.79
123478D
2.33e5*
37.44
123678D
5.20e5*
37.56
123467D
1.29e5*
37.76
123789D
4.89e5*
37.86
Abs. Int.
5.87e5
2.93e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 6.20e3
0%
ES 123678D
2.83e7*
37.55
ES 123478D
2.65e7*
37.43
ES 123789D
3.09e7
37.85
JS 123467D
1.35e7
37.74
Abs. Int.
8.37e6
4.19e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 4.43e3
0%
ES 123678D
2.20e7*
37.55
ES 123478D
2.10e7*
37.42
ES 123789D
2.45e7
37.85
JS 123467D
1.06e7
37.74
Abs. Int.
6.53e6
3.27e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.05e7
1.03e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

SGS ID: B5962_18720_DF_004 | Sample ID: 11215131-120121-S-JC-NE-O-7 | Acq: 17-Dec-2021 16:25:17
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 10 | User: PSW Datafile: 211217R08



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_004.utp_res, saved 20-Dec-2021 14:06 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9189, 8777 scc: 607-913 | PKD: 20-Dec-2021 09:13 Printed: 20-Dec-2021 14:26 Page 5 of 12


OCDD
2.07e9
43.05
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 1.17e4
0%
Abs. Int.
6.49e8
3.24e8
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.31e9
43.04
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.23e4
0%
Abs. Int.
7.31e8
3.66e8
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.82e7
43.03
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 1.15e4
0%
Abs. Int.
8.27e6
4.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.14e7
43.03
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 9.86e3
0%
Abs. Int.
9.29e6
4.64e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.46e6
4.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5962_18720_DF_004
Sample ID: 11215131-120121-S-JC-NE-O-7
Acq: 17-Dec-2021 16:25:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 10
User: PSW Datafile: 211217R08
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.12e3
2468F 3.32e5* 23.64
1347F...[3] 1.29e5* 24.17
1348F 1.02e5* 24.52
1268F 8.63e4 24.93
2368F 1.45e5* 25.92
1238F...[5] 6.79e4* 26.04
1278F 2.18e5* 26.45
2348F 4.52e4* 27.22
2378F 6.39e5 27.35
2367/3467F 2.50e5 27.71
1289F 2.42e5 29.33
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 4.43e3
2468F 3.82e5* 23.64
1347F...[3] 1.48e5* 24.17
1348F 1.37e5* 24.52
1467F 8.33e4* 25.08
1478F 8.63e4* 25.24
2368F 2.09e5* 25.93
1278F 2.63e5* 26.45
2347/1279F 4.77e4* 27.13
2378F 7.26e5 27.35
2367/3467F 2.67e5 27.71
1289F 1.68e5 29.34
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.87e4
JS 1234F 3.96e7 25.96
ES 2378F 3.86e7 27.33
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.19e4
JS 1234F 5.28e7 25.96
ES 2378F 4.99e7 27.33
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 4.01e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_004.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1473, 9670, 5586 scc: 607-913
PKD: 20-Dec-2021 09:13 Printed: 20-Dec-2021 14:26 Page 7 of 12

SGS ID: B5962_18720_DF_004 | Sample ID: 11215131-120121-S-JC-NE-O-7 | Acq: 17-Dec-2021 16:25:17

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 10 | User: PSW Datafile: 211217R08

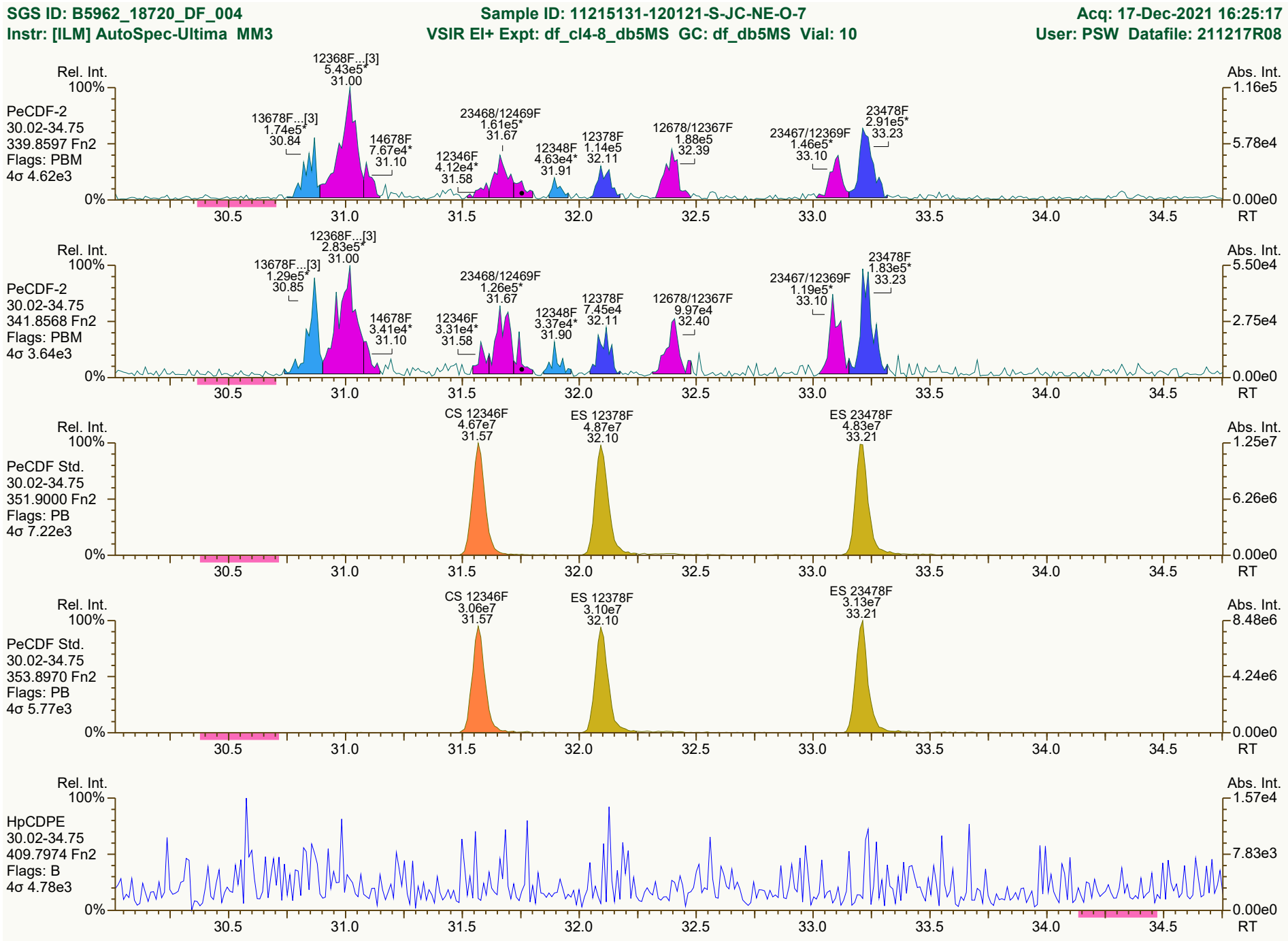


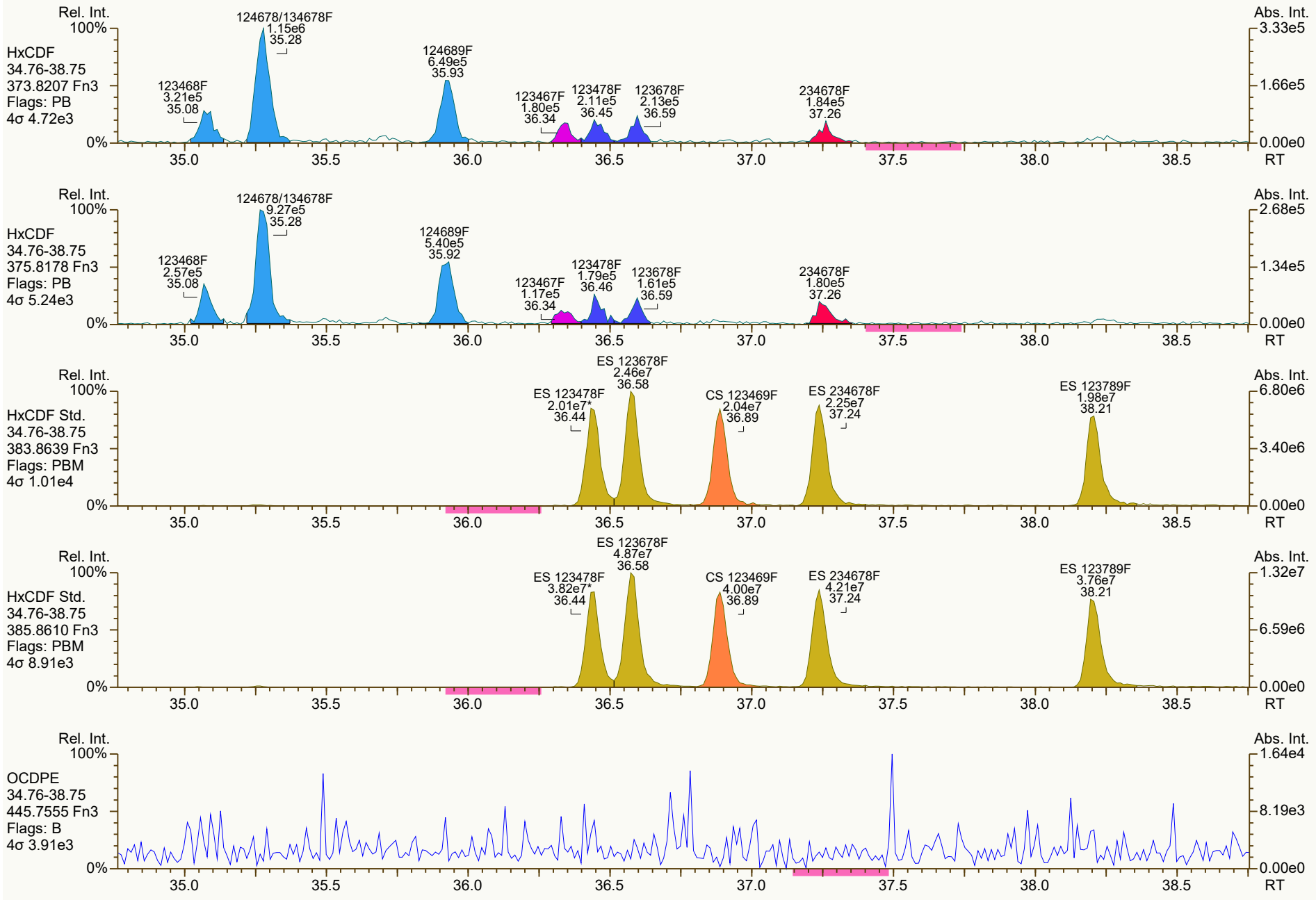
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_004.utp_res, saved 20-Dec-2021 14:06 (PSW)

Peak annotation: Areas, Centroids

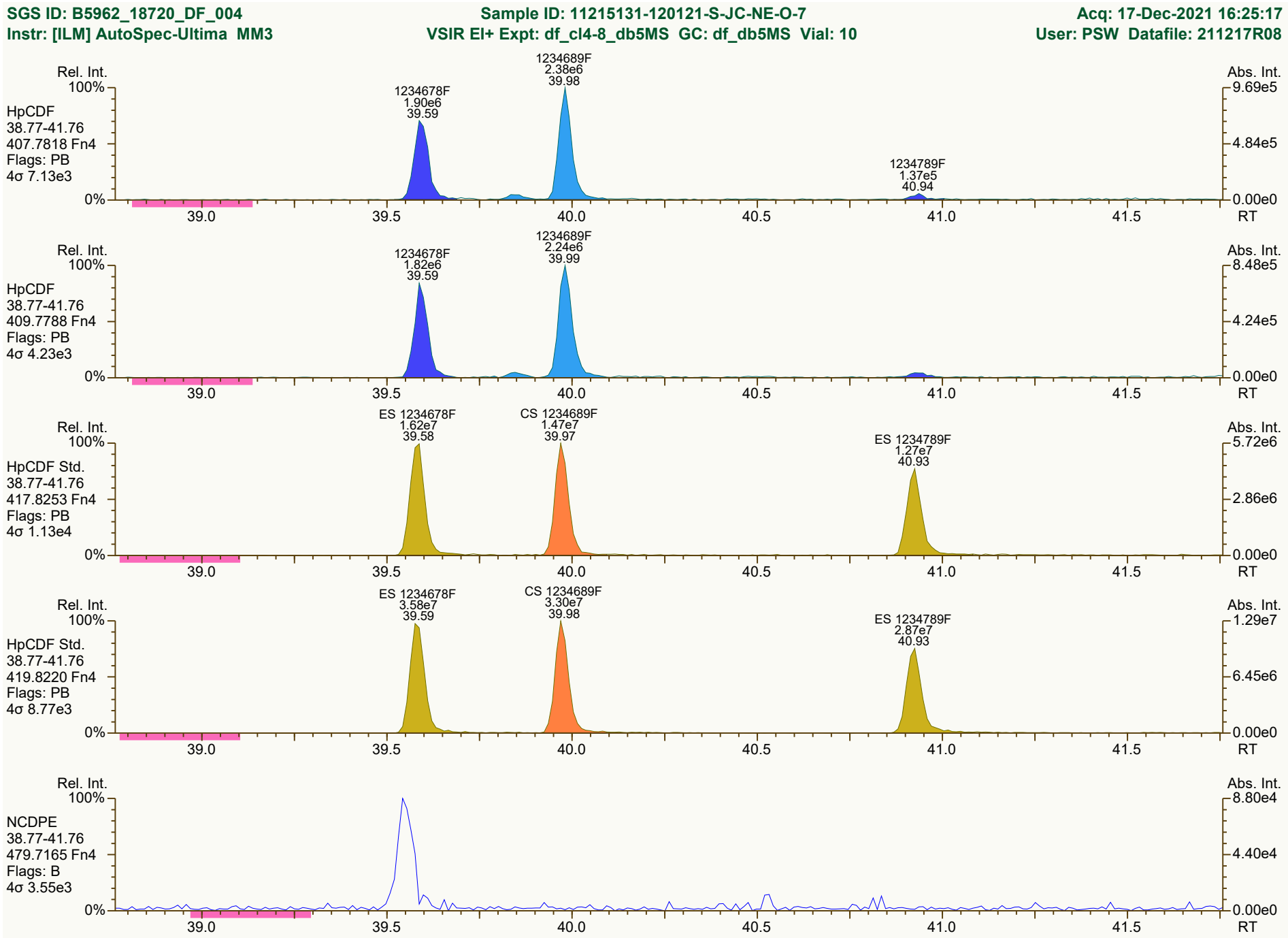
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7596 scc: 607-913

PKD: 20-Dec-2021 09:13 Printed: 20-Dec-2021 14:26 Page 8 of 12

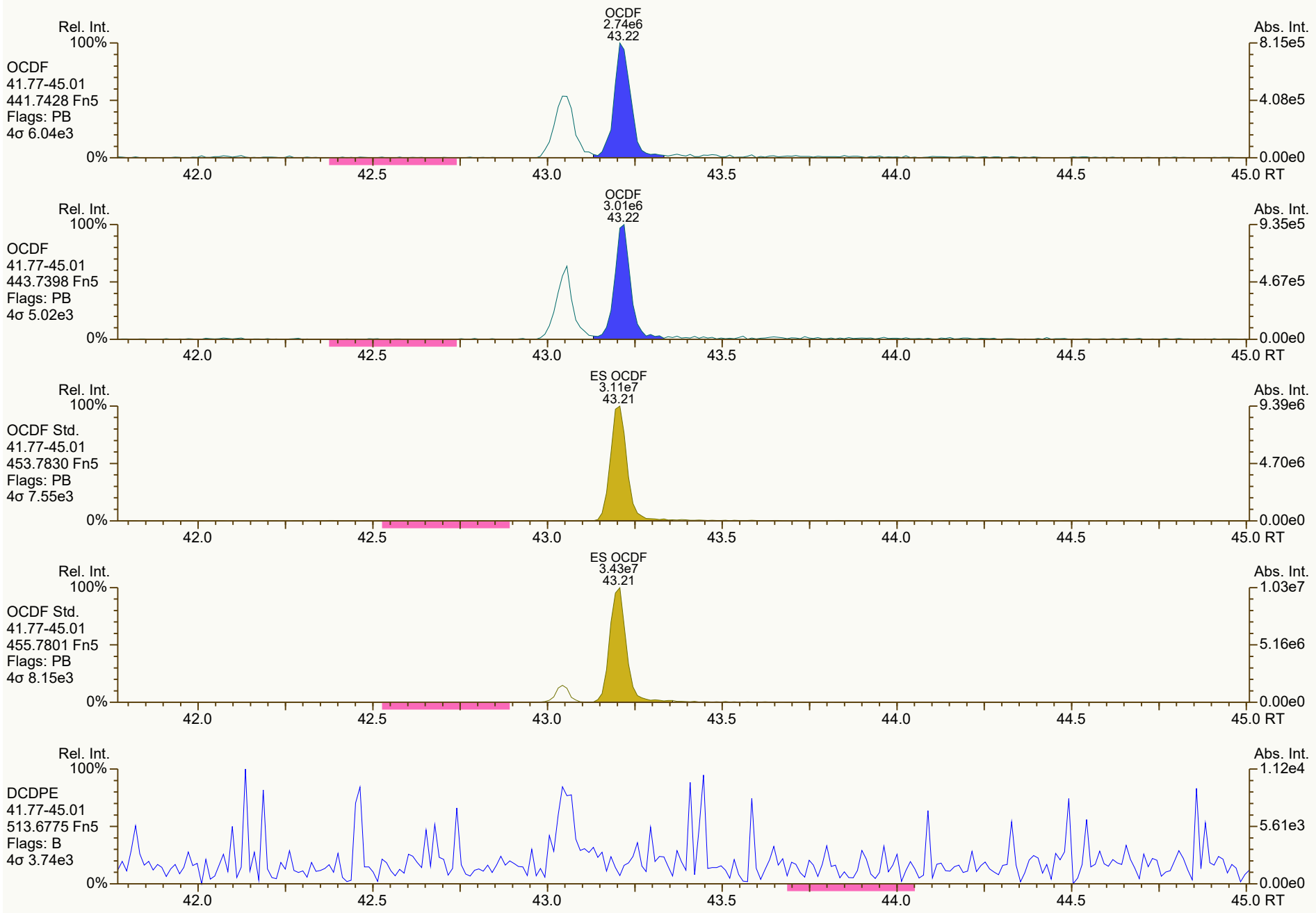

SGS ID: B5962_18720_DF_004
Sample ID: 11215131-120121-S-JC-NE-O-7
Acq: 17-Dec-2021 16:25:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 10
User: PSW Datafile: 211217R08
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 4.62e3
12368F...[3] 5.43e5* 31.00
13678F...[3] 1.74e5* 30.84
14678F 7.67e4* 31.10
23468/12469F 1.61e5* 31.67
12346F 4.12e4* 31.58
12348F 4.63e4* 31.91
12378F 1.14e5 32.11
12678/12367F 1.88e5 32.39
23467/12369F 1.46e5* 33.10
23478F 2.91e5* 33.23
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.64e3
12368F...[3] 2.83e5* 31.00
13678F...[3] 1.29e5* 30.85
14678F 3.41e4* 31.10
23468/12469F 1.26e5* 31.67
12346F 3.31e4* 31.58
12348F 3.37e4* 31.90
12378F 7.45e4 32.11
12678/12367F 9.97e4 32.40
23467/12369F 1.19e5* 33.10
23478F 1.83e5* 33.23
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 7.22e3
CS 12346F 4.67e7 31.57
ES 12378F 4.87e7 32.10
ES 23478F 4.83e7 33.21
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 5.77e3
CS 12346F 3.06e7 31.57
ES 12378F 3.10e7 32.10
ES 23478F 3.13e7 33.21
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 4.78e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_004.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3721, 6530, 4760 scc: 607-913
PKD: 20-Dec-2021 09:13 Printed: 20-Dec-2021 14:26 Page 9 of 12


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PB
4σ 4.72e3
123468F 3.21e5 35.08
124678/134678F 1.15e6 35.28
124689F 6.49e5 35.93
123467F 1.80e5 36.34
123478F 2.11e5 36.45
123678F 2.13e5 36.59
234678F 1.84e5 37.26
0%
Abs. Int.
3.33e5
1.66e5
0.00e0
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PB
4σ 5.24e3
123468F 2.57e5 35.08
124678/134678F 9.27e5 35.28
124689F 5.40e5 35.92
123467F 1.17e5 36.34
123478F 1.79e5 36.46
123678F 1.61e5 36.59
234678F 1.80e5 37.26
0%
Abs. Int.
2.68e5
1.34e5
0.00e0
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PBM
4σ 1.01e4
ES 123478F 2.01e7* 36.44
ES 123678F 2.46e7 36.58
CS 123469F 2.04e7 36.89
ES 234678F 2.25e7 37.24
ES 123789F 1.98e7 38.21
0%
Abs. Int.
6.80e6
3.40e6
0.00e0
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PBM
4σ 8.91e3
ES 123478F 3.82e7* 36.44
ES 123678F 4.87e7 36.58
CS 123469F 4.00e7 36.89
ES 234678F 4.21e7 37.24
ES 123789F 3.76e7 38.21
0%
Abs. Int.
1.32e7
6.59e6
0.00e0
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 3.91e3
0%
Abs. Int.
1.64e4
8.19e3
0.00e0
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT

SGS ID: B5962_18720_DF_004 | Sample ID: 11215131-120121-S-JC-NE-O-7 | Acq: 17-Dec-2021 16:25:17
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 10 | User: PSW Datafile: 211217R08



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_004.utp_res, saved 20-Dec-2021 14:06 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6982, 9149, 4980 scc: 607-913 | PKD: 20-Dec-2021 09:13 Printed: 20-Dec-2021 14:26 Page 11 of 12


OCDF
2.74e6
43.22
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 6.04e3
0%
Abs. Int.
8.15e5
4.08e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.01e6
43.22
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 5.02e3
0%
Abs. Int.
9.35e5
4.67e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.11e7
43.21
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 7.55e3
0%
Abs. Int.
9.39e6
4.70e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.43e7
43.21
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 8.15e3
0%
Abs. Int.
1.03e7
5.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.74e3
0%
Abs. Int.
1.12e4
5.61e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5962_18720_DF_005 **Acq'd:** 17 Dec 2021 17:12 PSW **Wt/Vol:** 10.20 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-1 **UTP:** 20-Dec-2021 14:06:09 PSW **J-level:** 0.49 pg/g **Split:** 1 **Checkcode:** 521-175-FWV

Datafile: 211217R09 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.22		1.0008	1.0008	0	1.95E+07	0.81	Y	1.34	47.7	8182.492	0.218
12378-PeCDD	33.57	J	1.0005	1.0004	-0.2	4.71E+05	1.32	Y	1.06	1.77	10979.91	0.399
123478-HxCDD	37.45	J	1.0003	1.0004	+0.2	4.60E+05	1.33	Y	1.06	2.08	18406.906	0.717
123678-HxCDD	37.57		1.0033	1.0036	+0.7	1.52E+06	1.36	Y	1.08	6.18	18406.906	0.765
123789-HxCDD	37.88		1.0110	1.0119	+2.0	1.10E+06	1.35	Y	1.02	4.14	18406.906	0.693
1234678-HpCDD	40.50		1.0003	1.0004	+0.2	3.85E+07	1.05	Y	0.97	208	20047.301	0.766
OCDD	43.04		1.0003	1.0003	0	3.98E+08	0.90	Y	1.07	3,630	22830.29	1.81
2378-TCDF	27.36		1.0006	1.0008	+0.3	7.76E+07	0.80	Y	0.96	196	6343.309	0.179
12378-PeCDF	32.12		1.0006	1.0005	-0.2	3.29E+06	1.65	Y	0.95	9.36	7517.029	0.211
23478-PeCDF	33.24		1.0006	1.0007	+0.2	3.12E+06	1.59	Y	0.94	9.25	7517.029	0.202
123478-HxCDF	36.46		1.0004	1.0005	+0.2	5.19E+06	1.24	Y	1.23	16	18553.936	0.463
123678-HxCDF	36.60		1.0004	1.0004	0	2.05E+06	1.24	Y	1.13	5.51	18553.936	0.447
234678-HxCDF	37.26		1.0005	1.0004	-0.2	1.20E+06	1.18	Y	1.15	3.73	18553.936	0.547
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	18553.936	0.555
1234678-HpCDF	39.60		1.0003	1.0003	0	1.06E+07	1.05	Y	1.36	35.6	7763.509	0.186
1234789-HpCDF	40.94		1.0003	1.0001	-0.5	1.06E+06	1.11	Y	1.30	4.59	7763.509	0.261
OCDF	43.22		1.0002	1.0002	0	1.59E+07	0.91	Y	1.03	122	9055.342	0.577

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.20	1.0237	1.0239	+0.3	5.96E+07	0.80	Y	1.03	91.1
ES 12378-PeCDD	33.55	1.2158	1.2184	+5.2	4.91E+07	1.59	Y	1.03	75.1
ES 123478-HxCDD	37.43	0.9920	0.9916	-0.9	4.11E+07	1.29	Y	0.99	95.2
ES 123678-HxCDD	37.55	0.9949	0.9947	-0.5	4.45E+07	1.31	Y	0.97	106
ES 123789-HxCDD	37.86	1.0026	1.0028	+0.5	5.13E+07	1.28	Y	1.12	105
ES 1234678-HpCDD	40.49	1.0713	1.0726	+3.2	3.72E+07	1.06	Y	0.99	86.7
ES OCDD	43.03	1.1385	1.1400	+3.9	4.02E+07	0.92	Y	0.78	59.7
ES 2378-TCDF	27.33	1.0519	1.0526	+1.1	8.09E+07	0.77	Y	1.08	87.6
ES 12378-PeCDF	32.11	1.2331	1.2364	+6.4	7.28E+07	1.59	Y	0.93	91.6
ES 23478-PeCDF	33.22	1.2754	1.2792	+7.6	7.04E+07	1.58	Y	0.92	89.6
ES 123478-HxCDF	36.45	0.9656	0.9655	-0.2	5.17E+07	0.52	Y	1.14	104
ES 123678-HxCDF	36.59	0.9693	0.9692	-0.2	6.46E+07	0.54	Y	1.30	115
ES 234678-HxCDF	37.25	0.9869	0.9868	-0.2	5.49E+07	0.54	Y	1.20	105
ES 123789-HxCDF	38.22	1.0121	1.0125	+0.9	5.15E+07	0.54	Y	1.14	104
ES 1234678-HpCDF	39.59	1.0478	1.0489	+2.6	4.30E+07	0.46	Y	0.95	104
ES 1234789-HpCDF	40.94	1.0832	1.0845	+3.2	3.50E+07	0.44	Y	0.85	95.3
ES OCDF	43.21	1.1434	1.1448	+3.6	4.98E+07	0.88	Y	0.93	62.1

Lab ID: B5962_18720_DF_005 **Acq'd:** 17 Dec 2021 17:12 PSW **Wt/Vol:** 10.20 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-1 **UTP:** 20-Dec-2021 14:06:09 PSW **J-level:** 0.49 pg/g **Split:** 1 **Checkcode:** 521-175-FWV

Datafile: 211217R09 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.54		-	-	-	6.33E+07	0.80	Y	-	-
JS 1234-TCDF	25.97		-	-	-	8.52E+07	0.77	Y	-	-
JS 123467-HxCDD	37.75		-	-	-	2.17E+07	1.28	Y	-	-
CS 37Cl-2378-TCDD	28.22		1.0245	1.0248	+0.5	2.66E+07	n/a	-	1.31	80.2
CS 12347-PeCDD	33.05		1.1978	1.2003	+5.0	4.49E+07	1.65	Y	0.89	79.5
CS 12346-PeCDF	31.58		1.2130	1.2160	+5.7	6.92E+07	1.54	Y	0.87	93.7
CS 123469-HxCDF	36.90		0.9775	0.9775	0	5.55E+07	0.52	Y	1.09	117
CS 1234689-HpCDF	39.98		1.0580	1.0592	+2.9	4.10E+07	0.44	Y	0.86	109
~~SS 37Cl-2378-TCDD~~	~~28.22~~		~~1.0245~~	~~1.0248~~	~~+0.5~~	~~2.66E+07~~	~~n/a~~		~~1.26~~	~~80.5~~
~~SS 12347-PeCDD~~	~~33.05~~		~~1.1978~~	~~1.2003~~	~~+5.0~~	~~4.49E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~106~~
~~SS 12346-PeCDF~~	~~31.58~~		~~1.2130~~	~~1.2160~~	~~+5.7~~	~~6.92E+07~~	~~1.54~~	~~Y~~	~~0.93~~	~~102~~
~~SS 123469-HxCDF~~	~~36.90~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.55E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~102~~
~~SS 1234689-HpCDF~~	~~39.98~~		~~1.0580~~	~~1.0592~~	~~+2.9~~	~~4.10E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~105~~

Totals	Conc	EMPC
Total TCDD	53.8	56.4
Total PeCDD	8.64	10.3
Total HxCDD	61.2	63
Total HpCDD	476	476
Total Tetra-Octa Dioxins	4230	4230
Total TCDF	407	410
Total PeCDF	54.3	56.5
Total HxCDF	61.1	61.1
Total HpCDF	92.9	92.9
Total Tetra-Octa Furans	738	742
Total Tetra-Octa Dioxins & Furans	4960	4970

Lab ID: B5962_18720_DF_005 **Acq'd: 17 Dec 2021 17:12 PSW** **Wt/Vol: 10.20 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-O-1 **UTP: 20-Dec-2021 14:06:09 PSW** **J-level: 0.49 pg/g** **Split: 1** **Checkcode: 521-175-FWV**

Datafile: 211217R09 **Report: 20 Dec 2021 14:10 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.55	EMPC	0.8726	0.8708	-2.7	3.45E+05	0.89	N	1.34	0.845	8182.492	0.218
1379-TCDD	NotFnd		0.8851						1.34		8182.492	0.218
1369-TCDD	NotFnd		0.9002						1.34		8182.492	0.218
1469-TCDD	26.13	EMPC	0.9275	0.9266	-1.4	3.12E+05	0.53	N	1.34	0.764	8182.492	0.218
1247/1246/1248/1249-TCDD	26.38	J	0.9361	0.9357	-0.6	1.55E+05	0.77	Y	1.34	0.38	8182.492	0.218
1378-TCDD	26.55	J EMPC	0.9427	0.9418	-1.4	1.75E+05	0.65	N	1.34	0.428	8182.492	0.218
1268-TCDD	NotFnd		0.9498						1.34		8182.492	0.218
1478-TCDD	NotFnd		0.9584						1.34		8182.492	0.218
1279-TCDD	NotFnd		0.9644						1.34		8182.492	0.218
1234/1269-TCDD	NotFnd		0.9766						1.34		8182.492	0.218
1236-TCDD	NotFnd		0.9813						1.34		8182.492	0.218
1237/1238-TCDD	27.93		0.9906	0.9904	-0.3	3.86E+05	0.79	Y	1.34	0.944	8182.492	0.218
1239-TCDD	NotFnd		0.9952						1.34		8182.492	0.218
2378-TCDD	**28.22**		**1.0008**	1.0008	**0**	1.95E+07	0.81	Y	**1.34**	**47.7**	**8182.492**	**0.218**
1278-TCDD	28.54		1.0122	1.0124	+0.3	1.95E+06	0.82	Y	1.34	4.77	8182.492	0.218
1267-TCDD	28.68	J EMPC	1.0168	1.0170	+0.3	1.46E+05	1.06	N	1.34	0.359	8182.492	0.218
1289-TCDD	29.13	J EMPC	1.0349	1.0330	-3.3	7.72E+04	1.20	N	1.34	0.189	8182.492	0.218
12479/12468-PeCDD	31.07	J	0.9267	0.9262	-0.9	6.32E+05	1.36	Y	1.06	2.38	10979.91	0.399
12469-PeCDD	31.60	J EMPC	0.9425	0.9420	-0.9	4.42E+05	1.10	N	1.06	1.66	10979.91	0.399
12368-PeCDD	32.16	J	0.9588	0.9584	-0.8	3.20E+05	1.39	Y	1.06	1.21	10979.91	0.399
12478-PeCDD	32.34	J	0.9643	0.9639	-0.8	3.02E+05	1.48	Y	1.06	1.14	10979.91	0.399
12379-PeCDD	32.44	J	0.9673	0.9668	-1.0	2.15E+05	1.33	Y	1.06	0.811	10979.91	0.399
12369/12467/12489-PeCDD	32.71	J	0.9750	0.9749	-0.2	3.52E+05	1.67	Y	1.06	1.33	10979.91	0.399
12346/12347-PeCDD	NotFnd		0.9859						1.06		10979.91	0.399
12378-PeCDD	33.57	J	**1.0005**	**1.0004**	**-0.2**	**4.71E+05**	**1.32**	**Y**	**1.06**	**1.77**	**10979.91**	**0.399**
12367-PeCDD	NotFnd		1.0032						1.06		10979.91	0.399
12389-PeCDD	NotFnd		1.0135						1.06		10979.91	0.399
124679/124689-HxCDD	35.73		0.9544	0.9547	+0.6	5.50E+06	1.23	Y	1.05	22.5	18406.906	0.723
123468-HxCDD	36.38		0.9716	0.9720	+0.9	1.03E+06	1.37	Y	1.05	4.19	18406.906	0.723
123679/123689-HxCDD	36.67		0.9793	0.9796	+0.7	5.04E+06	1.30	Y	1.05	20.6	18406.906	0.723
123469-HxCDD	36.80	J EMPC	0.9829	0.9832	+0.7	4.36E+05	1.71	N	1.05	1.78	18406.906	0.723
123478-HxCDD	37.45	J	**1.0003**	**1.0004**	**+0.2**	**4.60E+05**	**1.33**	**Y**	1.06	**2.08**	**18406.906**	**0.717**
123678-HxCDD	37.57		**1.0033**	**1.0036**	**+0.7**	**1.52E+06**	**1.36**	**Y**	1.08	**6.18**	**18406.906**	**0.765**
123467-HxCDD	37.76	J	1.0084	1.0088	+0.9	3.83E+05	1.28	Y	1.05	1.56	18406.906	0.723
123789-HxCDD	37.88		**1.0110**	**1.0119**	**+2.0**	**1.10E+06**	**1.35**	**Y**	1.02	**4.14**	**18406.906**	**0.693**

Lab ID: B5962_18720_DF_005 **Acq'd:** 17 Dec 2021 17:12 PSW **Wt/Vol:** 10.20 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-1 **UTP:** 20-Dec-2021 14:06:09 PSW **J-level:** 0.49 pg/g **Split:** 1 **Checkcode:** 521-175-FWV

Datafile: 211217R09 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.85		0.9843	0.9843	0	4.96E+07	1.05	Y	0.97	268	20047.301	0.766
1234678-HpCDD	**40.50**		**1.0003**	**1.0004**	**+0.2**	**3.85E+07**	**1.05**	**Y**	**0.97**	**208**	**20047.301**	**0.766**
OCDD	**43.04**		**1.0003**	**1.0003**	**0**	**3.98E+08**	**0.90**	**Y**	**1.07**	**3,630**	**22830.29**	**1.81**
OCDD-a	43.04		1.0001	1.0002	+0.3	2.40E+07	2.42	Y	0.07	3,540	17765.133	22.9
1368-TCDF	22.42		0.8230	0.8202	-3.8	2.40E+05	0.76	Y	0.96	0.606	6343.309	0.179
1468-TCDF	23.00		0.8443	0.8414	-4.0	4.72E+05	0.79	Y	0.96	1.19	6343.309	0.179
2468-TCDF	23.64	EMPC	0.8672	0.8650	-3.1	7.19E+05	0.63	N	0.96	1.82	6343.309	0.179
1346/1246-TCDF	24.02		0.8802	0.8787	-2.2	2.65E+05	0.77	Y	0.96	0.67	6343.309	0.179
1347/1378/1247-TCDF	24.17		0.8855	0.8843	-1.7	1.97E+06	0.79	Y	0.96	4.96	6343.309	0.179
1348-TCDF	24.41	EMPC	0.8952	0.8930	-3.2	2.73E+05	0.96	N	0.96	0.689	6343.309	0.179
1248/1367/1379-TCDF	24.53		0.9000	0.8973	-4.0	4.07E+06	0.81	Y	0.96	10.3	6343.309	0.179
1268-TCDF	24.94		0.9136	0.9124	-1.8	1.55E+06	0.81	Y	0.96	3.9	6343.309	0.179
1467-TCDF	25.08		0.9185	0.9175	-1.5	4.44E+05	0.82	Y	0.96	1.12	6343.309	0.179
1478-TCDF	25.25		0.9247	0.9237	-1.5	3.55E+06	0.78	Y	0.96	8.96	6343.309	0.179
1369/1237-TCDF	25.63		0.9381	0.9375	-0.9	1.10E+06	0.83	Y	0.96	2.77	6343.309	0.179
2467-TCDF	25.75		0.9427	0.9420	-1.1	4.44E+05	0.78	Y	0.96	1.12	6343.309	0.179
2368-TCDF	25.91		0.9484	0.9478	-0.9	3.25E+06	0.78	Y	0.96	8.21	6343.309	0.179
1238/1234/1678/1469/1236-TCDF	25.99		0.9517	0.9508	-1.4	4.40E+06	0.80	Y	0.96	11.1	6343.309	0.179
1278-TCDF	26.45		0.9682	0.9677	-0.8	3.48E+07	0.79	Y	0.96	87.7	6343.309	0.179
1349-TCDF	NotFnd		0.9725						0.96		6343.309	0.179
1267-TCDF	26.73		0.9782	0.9779	-0.5	2.32E+06	0.79	Y	0.96	5.85	6343.309	0.179
2346/1249-TCDF	26.92		0.9846	0.9850	+0.6	5.83E+05	0.68	Y	0.96	1.47	6343.309	0.179
2347/1279-TCDF	27.12		0.9926	0.9923	-0.5	1.28E+06	0.69	Y	0.96	3.23	6343.309	0.179
2348-TCDF	27.25		0.9966	0.9968	+0.3	7.16E+06	0.76	Y	0.96	18.1	6343.309	0.179
2378-TCDF	**27.36**		**1.0006**	**1.0008**	**+0.3**	**7.76E+07**	**0.80**	**Y**	**0.96**	**196**	**6343.309**	**0.179**
2367/3467-TCDF	27.71		1.0139	1.0137	-0.3	8.15E+06	0.83	Y	0.96	20.6	6343.309	0.179
1269-TCDF	27.96		1.0226	1.0229	+0.5	1.47E+06	0.76	Y	0.96	3.71	6343.309	0.179
1239-TCDF	NotFnd		1.0322						0.96		6343.309	0.179
1289-TCDF	29.37		1.0729	1.0744	+2.6	6.32E+06	0.83	Y	0.96	16	6343.309	0.179
13468/12468-PeCDF	29.32		0.9135	0.9131	-0.7	3.17E+06	1.44	Y	0.94	9.22	6801.963	0.187
13678/13467/12467-PeCDF	30.86		0.9612	0.9613	+0.2	1.21E+06	1.45	Y	0.94	3.52	7517.029	0.206
12368/13478/12478-PeCDF	31.02		0.9661	0.9661	0	3.39E+06	1.57	Y	0.94	9.85	7517.029	0.206
14678-PeCDF	31.10	J	0.9693	0.9688	-0.9	5.66E+05	1.37	Y	0.94	1.64	7517.029	0.206
13479-PeCDF	31.22	J	0.9723	0.9724	+0.2	9.51E+04	1.46	Y	0.94	0.276	7517.029	0.206
13469/12479-PeCDF	31.44	J EMPC	0.9799	0.9792	-1.3	1.21E+05	2.19	N	0.94	0.351	7517.029	0.206
12346-PeCDF	31.59	J	0.9842	0.9838	-0.8	2.41E+05	1.65	Y	0.94	0.699	7517.029	0.206

Lab ID: B5962_18720_DF_005 | **Acq'd: 17 Dec 2021 17:12 PSW** | **Wt/Vol: 10.20 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-O-1 | **UTP: 20-Dec-2021 14:06:09 PSW** | **J-level: 0.49 pg/g** | **Split: 1** | **Checkcode: 521-175-FWV**

Datafile: 211217R09 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.68	J	0.9868	0.9866	-0.4	8.17E+05	1.52	Y	0.94	2.37	7517.029	0.206
12347-PeCDF	31.75	J	0.9893	0.9890	-0.6	4.05E+05	1.53	Y	0.94	1.18	7517.029	0.206
12348-PeCDF	31.91	J EMPC	0.9941	0.9938	-0.6	4.64E+05	1.30	N	0.94	1.35	7517.029	0.206
12378-PeCDF	**32.12**		**1.0006**	**1.0005**	**-0.2**	**3.29E+06**	**1.65**	**Y**	**0.95**	**9.36**	**7517.029**	**0.211**
12678/12367-PeCDF	32.41		1.0090	1.0094	+0.8	1.66E+06	1.67	Y	0.94	4.81	7517.029	0.206
12379-PeCDF	NotFnd		1.0143						0.94		7517.029	0.206
12679-PeCDF	NotFnd		0.9929						0.94		7517.029	0.206
23467/12369-PeCDF	33.10	J	0.9966	0.9966	0	7.26E+05	1.53	Y	0.94	2.11	7517.029	0.206
23478-PeCDF	**33.24**		**1.0006**	**1.0007**	**+0.2**	**3.12E+06**	**1.59**	**Y**	**0.94**	**9.25**	**7517.029**	**0.202**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7517.029	0.206
12349-PeCDF	NotFnd		1.0102						0.94		7517.029	0.206
12389-PeCDF	34.30	J EMPC	1.0325	1.0327	+0.4	1.82E+05	1.25	N	0.94	0.528	7517.029	0.206
123468-HxCDF	35.09		0.9628	0.9627	-0.2	1.32E+06	1.22	Y	1.16	4	18553.936	0.499
124678/134678-HxCDF	35.28		0.9683	0.9681	-0.4	5.52E+06	1.22	Y	1.16	16.7	18553.936	0.499
134679-HxCDF	NotFnd		0.9746						1.16		18553.936	0.499
124679-HxCDF	NotFnd		0.9798						1.16		18553.936	0.499
124689-HxCDF	35.93		0.9859	0.9859	0	3.72E+06	1.26	Y	1.16	11.3	18553.936	0.499
123467-HxCDF	36.35	J	0.9972	0.9972	0	7.94E+05	1.24	Y	1.16	2.4	18553.936	0.499
123478-HxCDF	**36.46**		**1.0004**	**1.0005**	**+0.2**	**5.19E+06**	**1.24**	**Y**	**1.23**	**16**	**18553.936**	**0.463**
123678-HxCDF	**36.60**		**1.0004**	**1.0004**	**0**	**2.05E+06**	**1.24**	**Y**	**1.13**	**5.51**	**18553.936**	**0.447**
123479-HxCDF	NotFnd		1.0049						1.16		18553.936	0.499
123469-HxCDF	NotFnd		1.0088						1.16		18553.936	0.499
123679-HxCDF	NotFnd		0.9943						1.16		18553.936	0.499
234678-HxCDF	**37.26**		**1.0005**	**1.0004**	**-0.2**	**1.20E+06**	**1.18**	**Y**	**1.15**	**3.73**	**18553.936**	**0.547**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		18553.936	0.499
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**18553.936**	**0.555**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.26	J	1.0007	1.0011	+0.9	5.01E+05	1.25	Y	1.16	1.52	18553.936	0.499
1234678-HpCDF	**39.60**		**1.0003**	**1.0003**	**0**	**1.06E+07**	**1.05**	**Y**	**1.36**	**35.6**	**7763.509**	**0.186**
1234679-HpCDF	39.86		1.0067	1.0067	0	6.77E+05	1.08	Y	1.33	2.56	7763.509	0.219
1234689-HpCDF	40.00		1.0100	1.0102	+0.5	1.33E+07	1.04	Y	1.33	50.2	7763.509	0.219
1234789-HpCDF	**40.94**		**1.0003**	**1.0001**	**-0.5**	**1.06E+06**	**1.11**	**Y**	**1.30**	**4.59**	**7763.509**	**0.261**
OCDF	**43.22**		**1.0002**	**1.0002**	**0**	**1.59E+07**	**0.91**	**Y**	**1.03**	**122**	**9055.342**	**0.577**
OCDF-a	43.22	**EMPC**	1.0002	1.0001	-0.3	7.62E+05	2.98	N	0.06	101	7287.405	8.03


Rel. Int.
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QC Check
21.79-30.00
316.9824 Fn1
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0%
Abs. Int.
4.32e6
2.16e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.81e6
1.90e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.13e7
1.07e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.41e7
7.05e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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3.94e6
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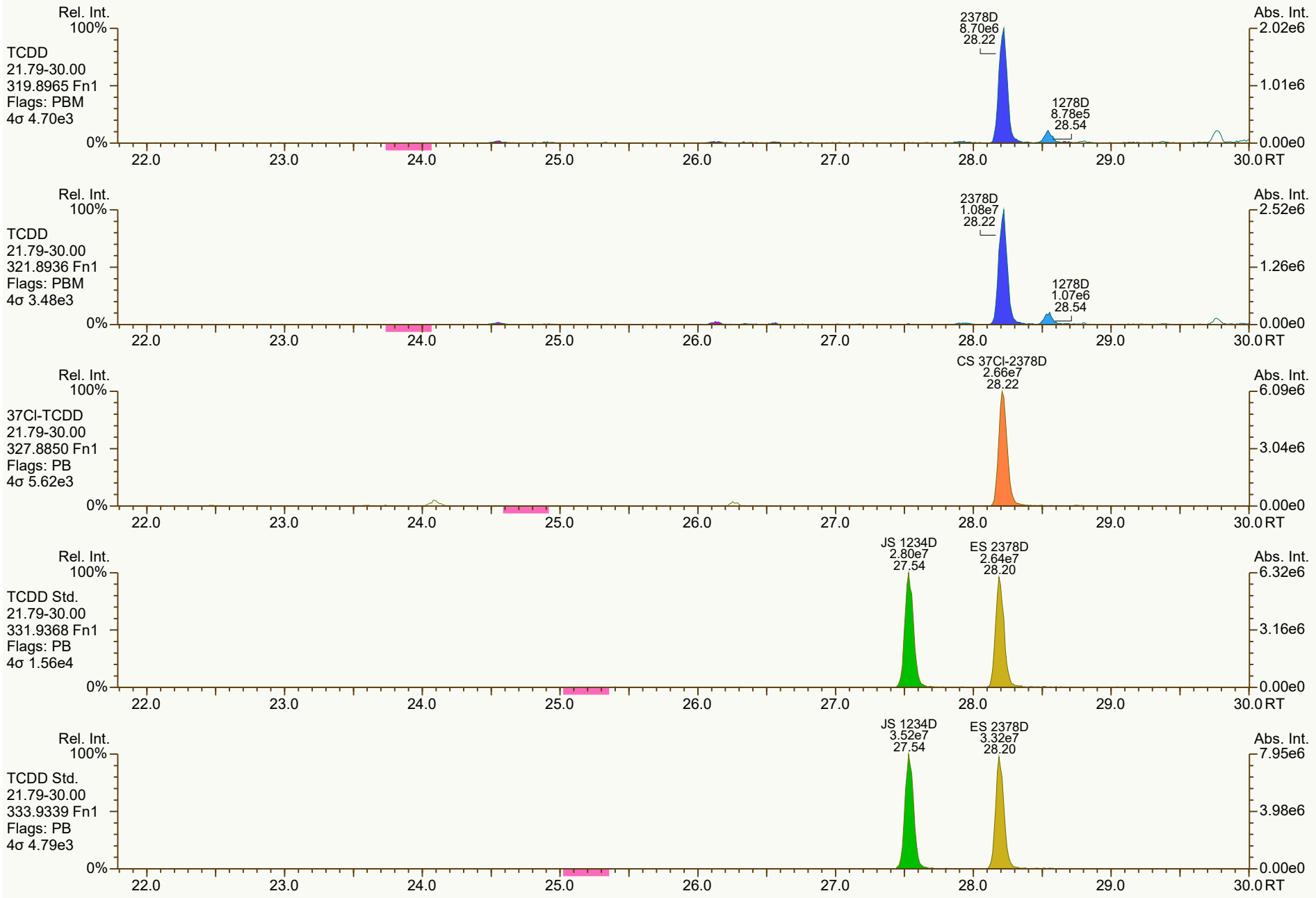
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
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2378D
8.70e6
28.22
1278D
8.78e5
28.54
Abs. Int.
2.02e6
1.01e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.48e3
0%
2378D
1.08e7
28.22
1278D
1.07e6
28.54
Abs. Int.
2.52e6
1.26e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 5.62e3
0%
CS 37Cl-2378D
2.66e7
28.22
Abs. Int.
6.09e6
3.04e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.56e4
0%
JS 1234D
2.80e7
27.54
ES 2378D
2.64e7
28.20
Abs. Int.
6.32e6
3.16e6
0.00e0
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23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 4.79e3
0%
JS 1234D
3.52e7
27.54
ES 2378D
3.32e7
28.20
Abs. Int.
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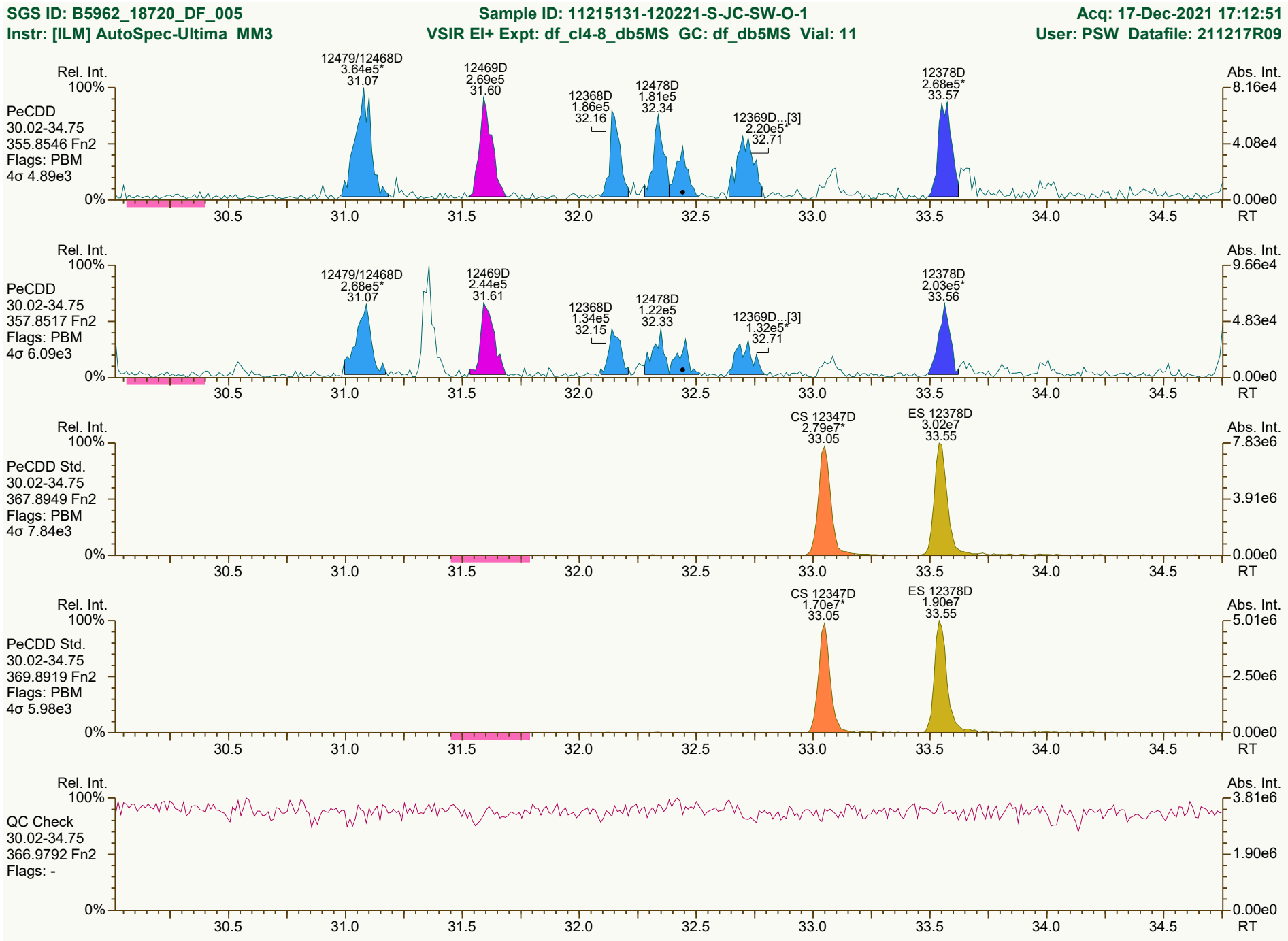
30.0 RT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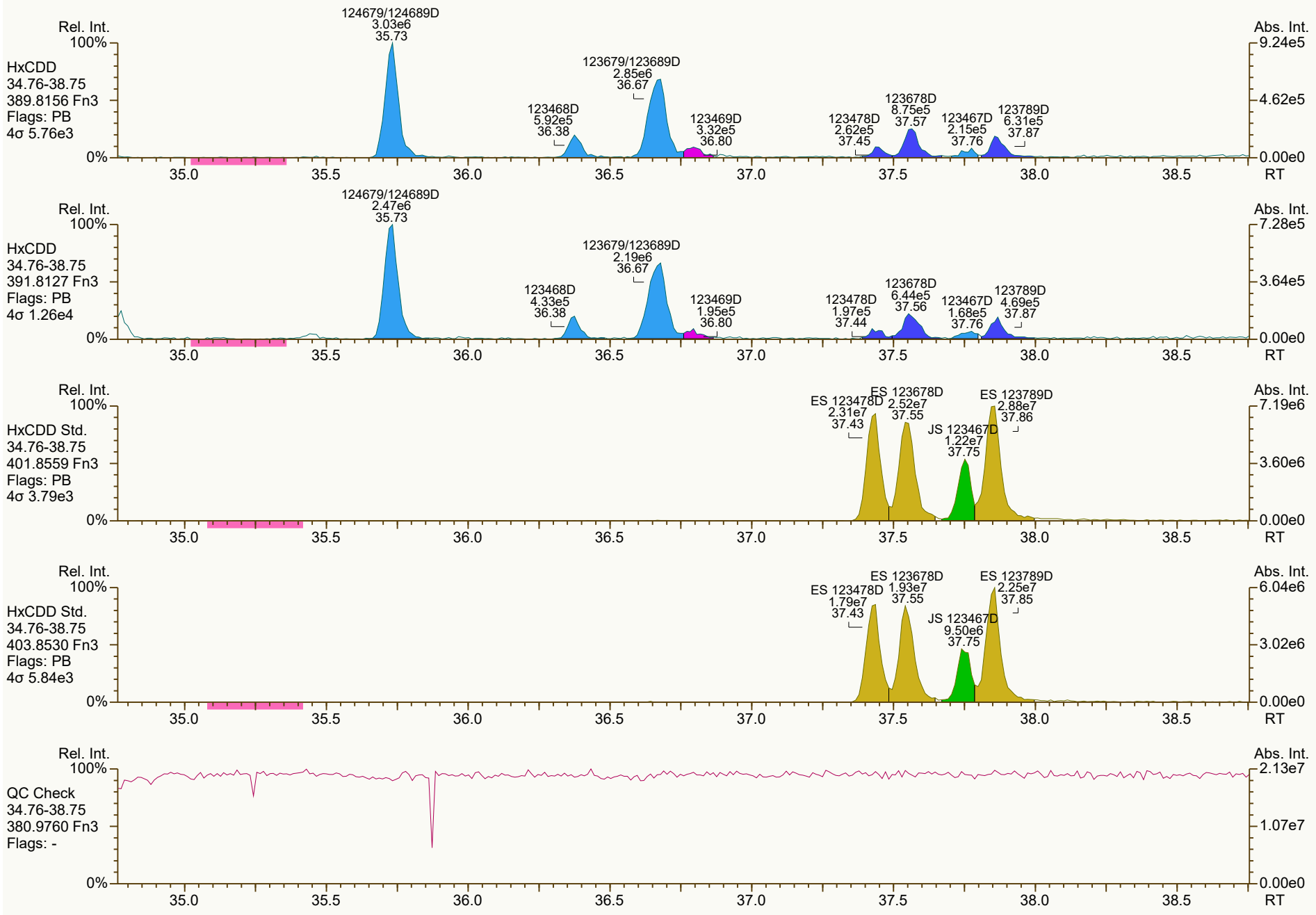
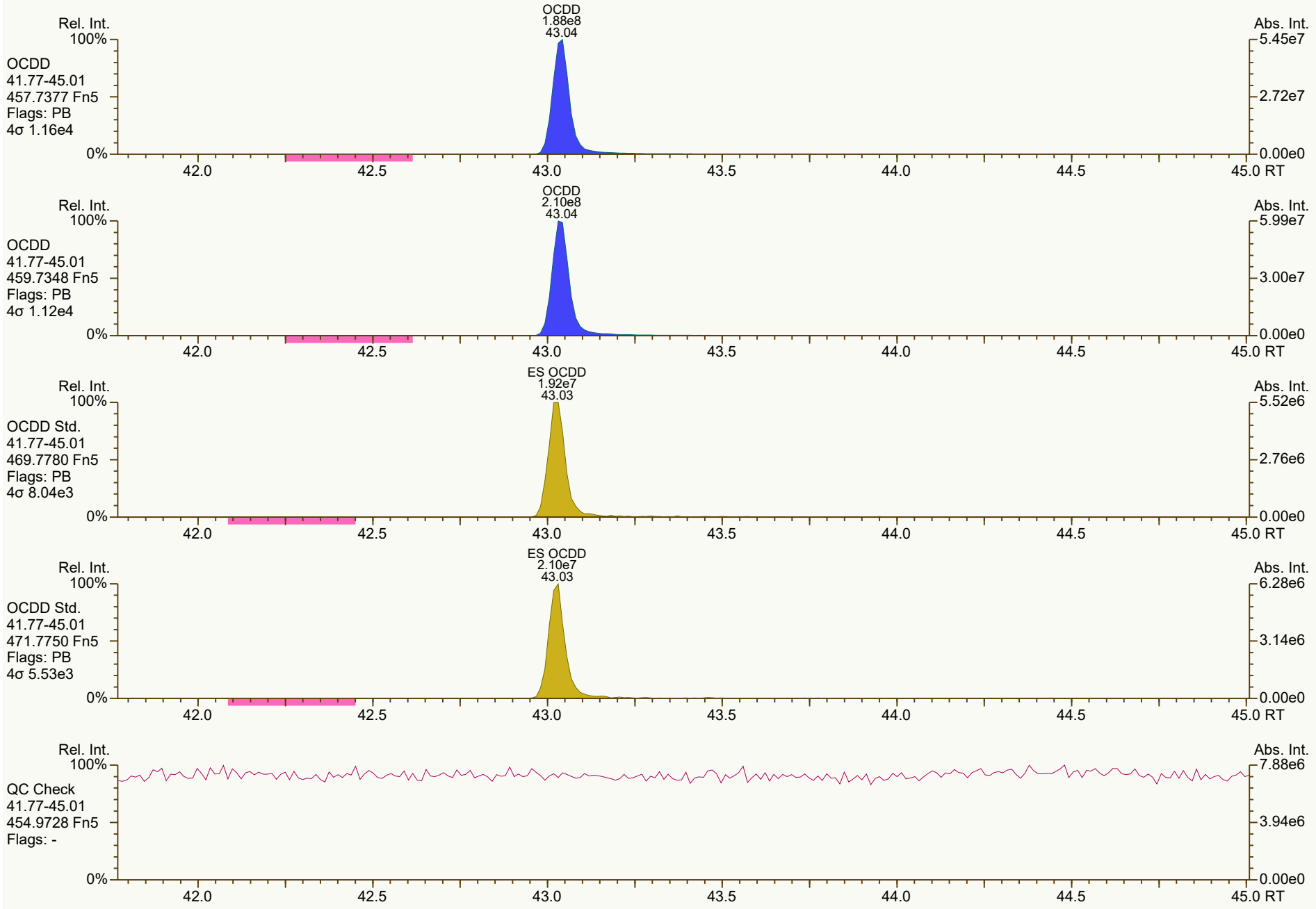
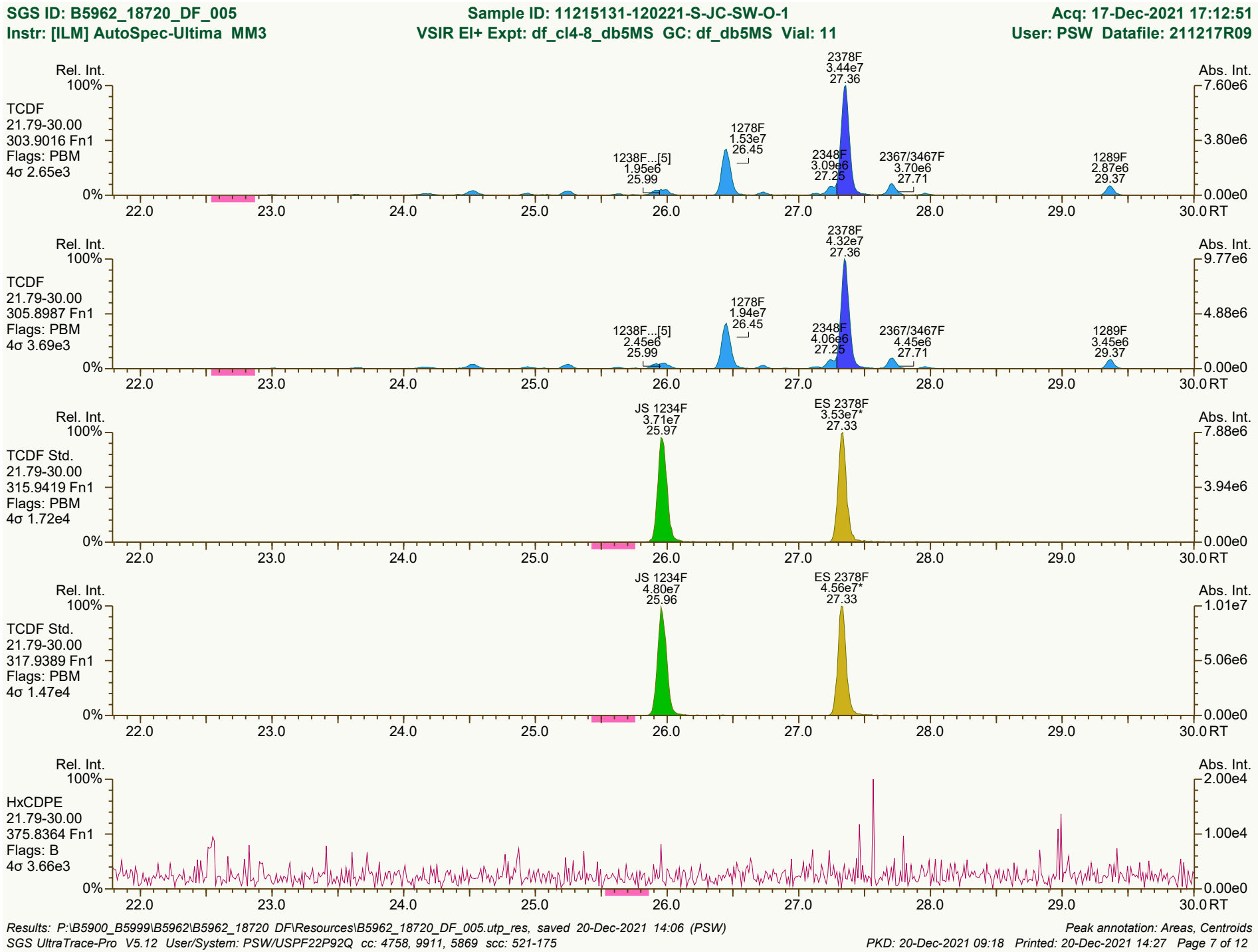
Sample ID: 11215131-120221-S-JC-SW-O-1
Acq: 17-Dec-2021 17:12:51
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 11
User: PSW Datafile: 211217R09
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 4.89e3
12479/12468D
3.64e5*
31.07
12469D
2.69e5
31.60
12368D
1.86e5
32.16
12478D
1.81e5
32.34
12369D...[3]
2.20e5*
32.71
12378D
2.68e5*
33.57
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 6.09e3
12479/12468D
2.68e5*
31.07
12469D
2.44e5
31.61
12368D
1.34e5
32.15
12478D
1.22e5
32.33
12369D...[3]
1.32e5*
32.71
12378D
2.03e5*
33.56
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 7.84e3
CS 12347D
2.79e7*
33.05
ES 12378D
3.02e7
33.55
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 5.98e3
CS 12347D
1.70e7*
33.05
ES 12378D
1.90e7
33.55
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3518, 8770 scc: 521-175
PKD: 20-Dec-2021 09:18 Printed: 20-Dec-2021 14:26 Page 3 of 12

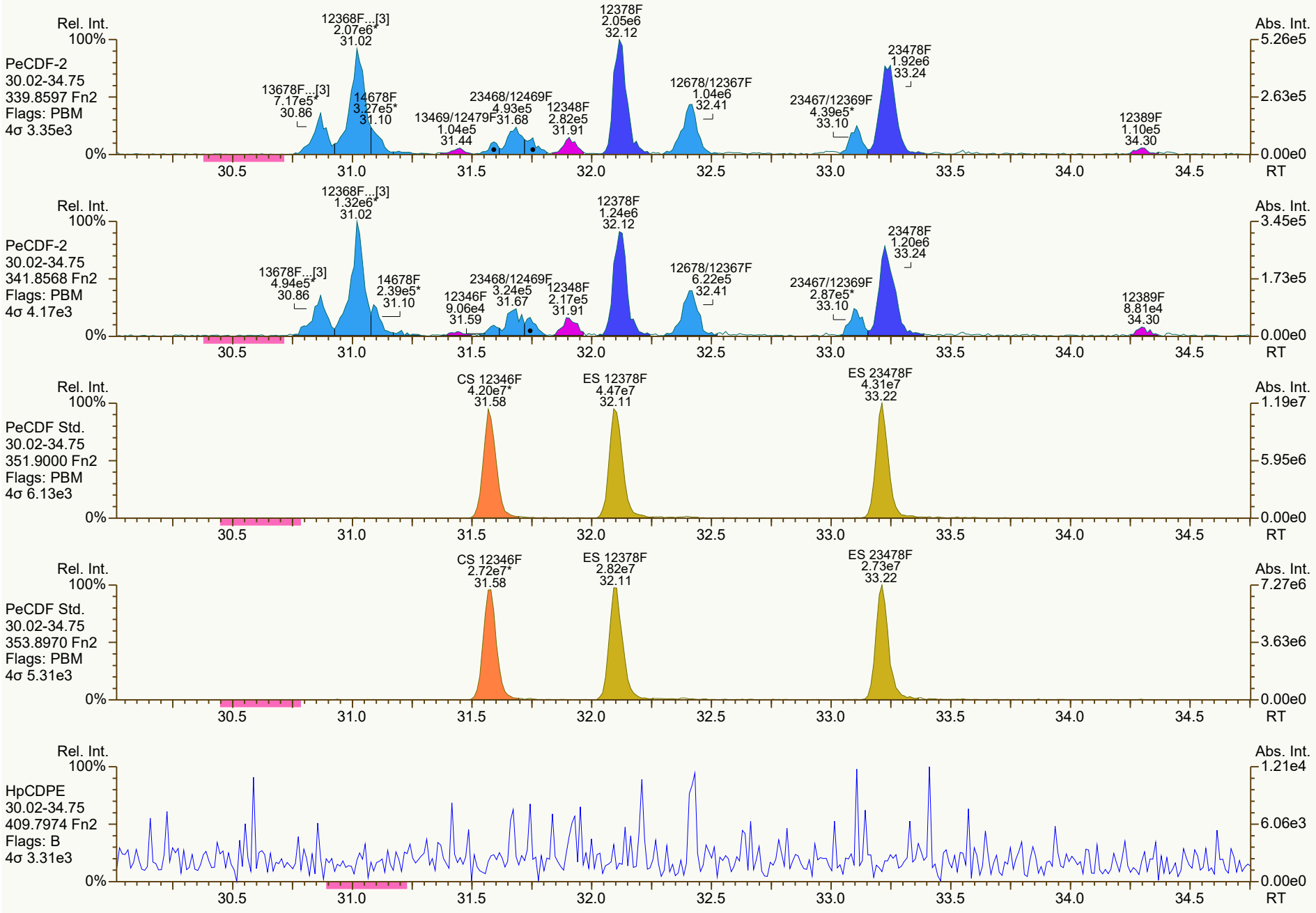

Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 5.76e3
124679/124689D
3.03e6
35.73
123679/123689D
2.85e6
36.67
123468D
5.92e5
36.38
123469D
3.32e5
36.80
123478D
2.62e5
37.45
123678D
8.75e5
37.57
123467D
2.15e5
37.76
123789D
6.31e5
37.87
Abs. Int.
9.24e5
4.62e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 1.26e4
124679/124689D
2.47e6
35.73
123679/123689D
2.19e6
36.67
123468D
4.33e5
36.38
123469D
1.95e5
36.80
123478D
1.97e5
37.44
123678D
6.44e5
37.56
123467D
1.68e5
37.76
123789D
4.69e5
37.87
Abs. Int.
7.28e5
3.64e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PB
4σ 3.79e3
ES 123478D
2.31e7
37.43
ES 123678D
2.52e7
37.55
JS 123467D
1.22e7
37.75
ES 123789D
2.88e7
37.86
Abs. Int.
7.19e6
3.60e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PB
4σ 5.84e3
ES 123478D
1.79e7
37.43
ES 123678D
1.93e7
37.55
JS 123467D
9.50e6
37.75
ES 123789D
2.25e7
37.85
Abs. Int.
6.04e6
3.02e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
Abs. Int.
2.13e7
1.07e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

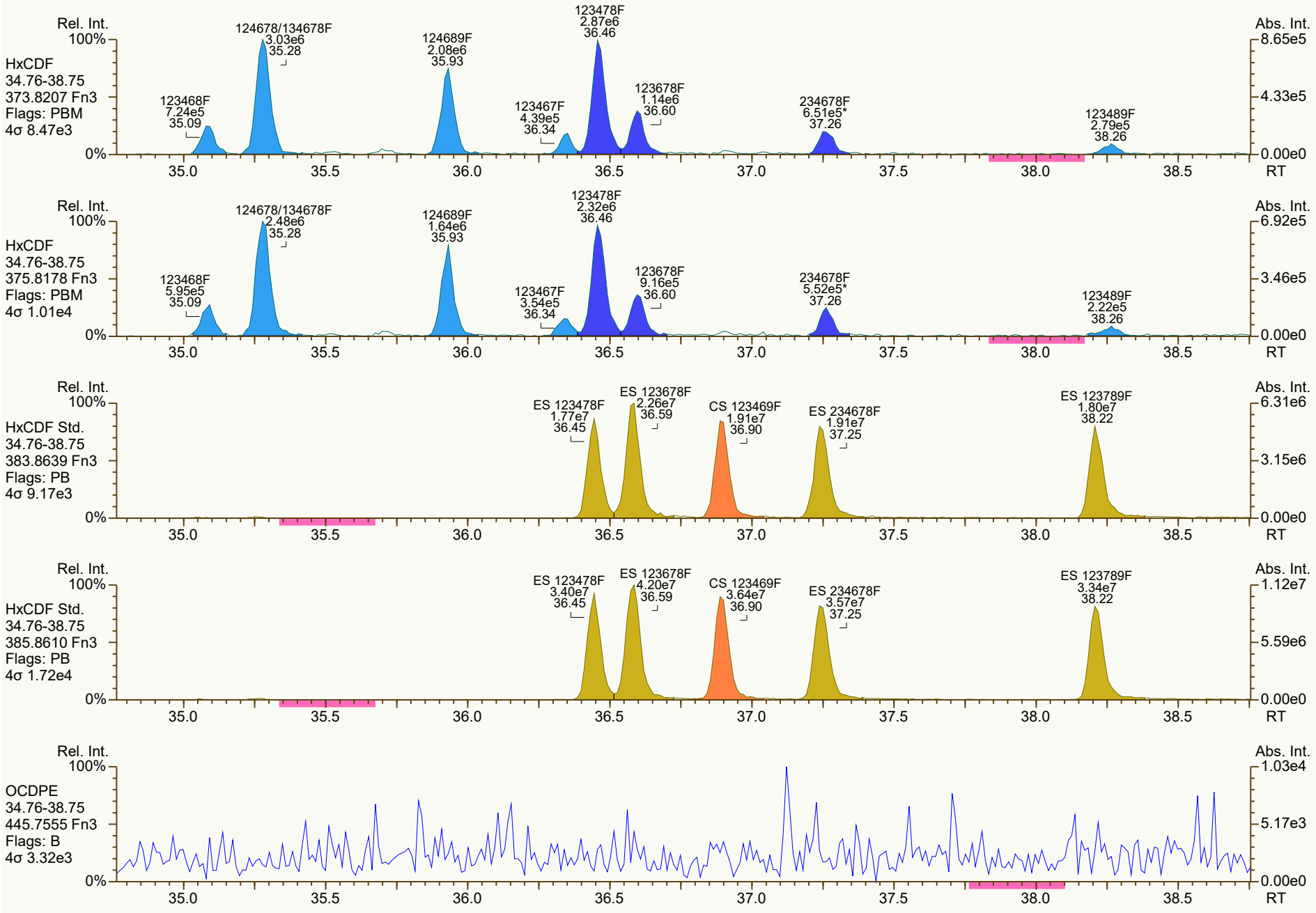

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 9.37e3
0%
1234679D
2.54e7*
39.85
1234678D
1.97e7
40.50
Abs. Int.
9.81e6
4.90e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 1.07e4
0%
1234679D
2.42e7*
39.85
1234678D
1.88e7
40.50
Abs. Int.
9.56e6
4.78e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 5.86e3
0%
ES 1234678D
1.92e7
40.49
Abs. Int.
6.79e6
3.39e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 3.23e3
0%
ES 1234678D
1.81e7
40.49
Abs. Int.
6.49e6
3.24e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.41e7
7.05e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

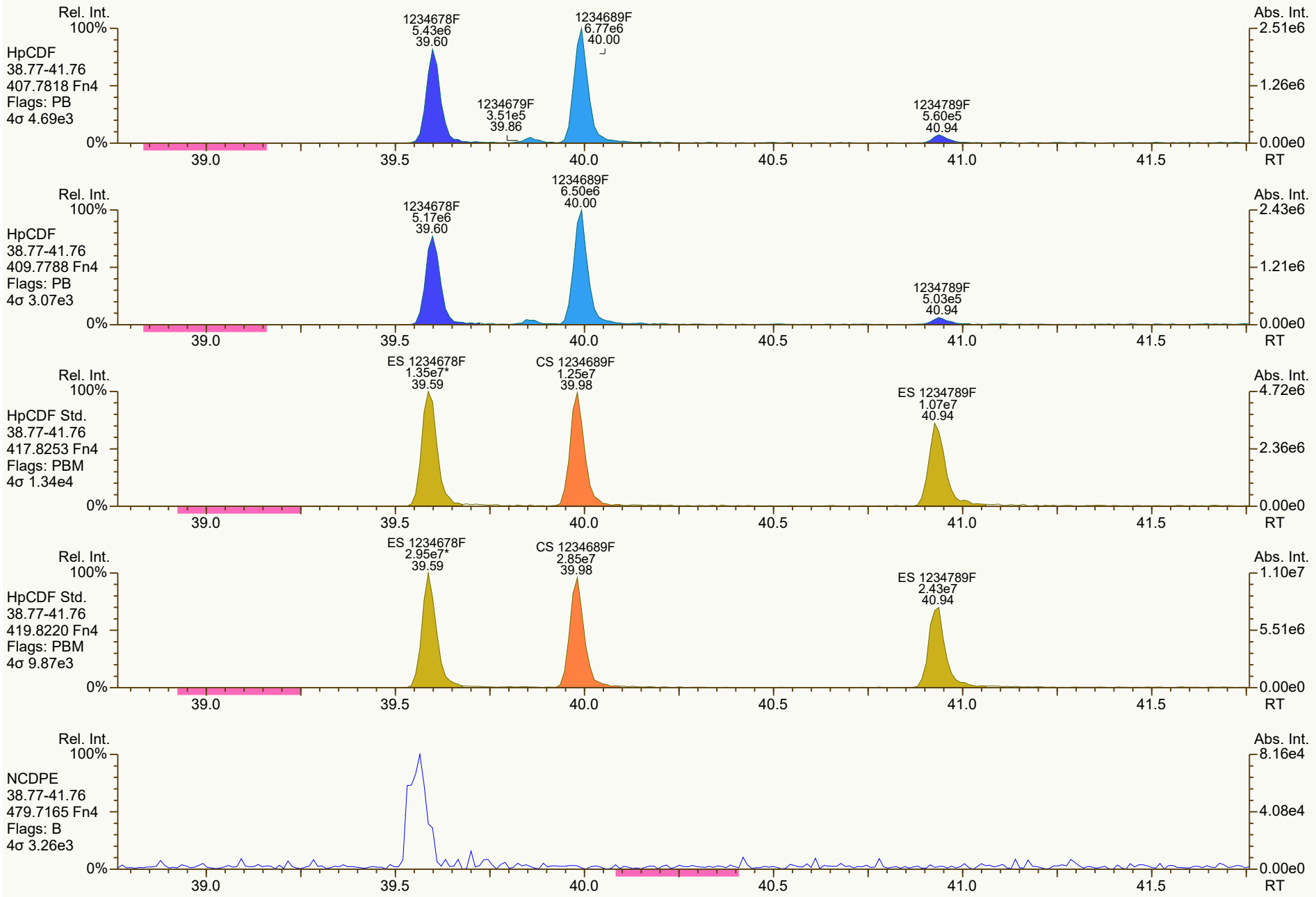

OCDD
1.88e8
43.04
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 1.16e4
0%
Abs. Int.
5.45e7
2.72e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.10e8
43.04
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.12e4
0%
Abs. Int.
5.99e7
3.00e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.92e7
43.03
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 8.04e3
0%
Abs. Int.
5.52e6
2.76e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.10e7
43.03
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.53e3
0%
Abs. Int.
6.28e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.88e6
3.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5962_18720_DF_005
Sample ID: 11215131-120221-S-JC-SW-O-1
Acq: 17-Dec-2021 17:12:51
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 11
User: PSW Datafile: 211217R09
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.65e3
2378F
3.44e7
27.36
1278F
1.53e7
26.45
1238F...[5]
1.95e6
25.99
2348F
3.09e6
27.25
2367/3467F
3.70e6
27.71
1289F
2.87e6
29.37
7.60e6
3.80e6
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 3.69e3
2378F
4.32e7
27.36
1278F
1.94e7
26.45
1238F...[5]
2.45e6
25.99
2348F
4.06e6
27.25
2367/3467F
4.45e6
27.71
1289F
3.45e6
29.37
9.77e6
4.88e6
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 1.72e4
JS 1234F
3.71e7
25.97
ES 2378F
3.53e7*
27.33
7.88e6
3.94e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.47e4
JS 1234F
4.80e7
25.96
ES 2378F
4.56e7*
27.33
1.01e7
5.06e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.66e3
2.00e4
1.00e4
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4758, 9911, 5869 scc: 521-175
PKD: 20-Dec-2021 09:18 Printed: 20-Dec-2021 14:27 Page 7 of 12

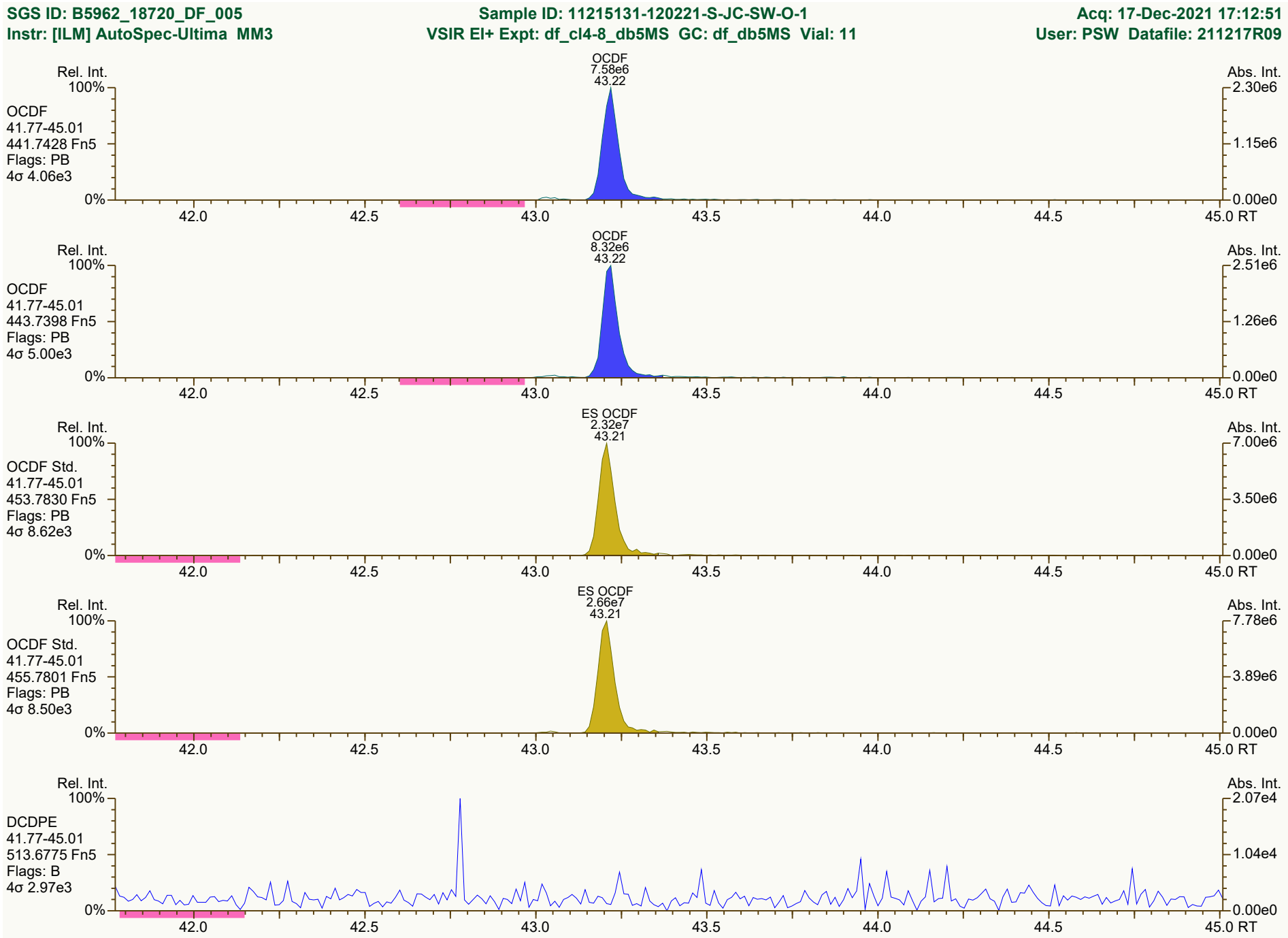

Rel. Int.
100%
0%
Abs. Int.
4.74e5
2.37e5
0.00e0
13468/12468F
1.87e6
29.32
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 4.15e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
1.30e6
29.32
3.40e5
1.70e5
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 2.65e3
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
4.32e6
2.16e6


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.35e3
0%
12368F...[3] 2.07e6* 31.02
13678F...[3] 7.17e5* 30.86
14678F 3.27e5* 31.10
13469/12479F 1.04e5 31.44
23468/12469F 4.93e5 31.68
12348F 2.82e5 31.91
12378F 2.05e6 32.12
12678/12367F 1.04e6 32.41
23467/12369F 4.39e5* 33.10
23478F 1.92e6 33.24
12389F 1.10e5 34.30
Abs. Int.
5.26e5
2.63e5
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 4.17e3
0%
12368F...[3] 1.32e6* 31.02
13678F...[3] 4.94e5* 30.86
14678F 2.39e5* 31.10
12346F 9.06e4 31.59
23468/12469F 3.24e5 31.67
12348F 2.17e5 31.91
12378F 1.24e6 32.12
12678/12367F 6.22e5 32.41
23467/12369F 2.87e5* 33.10
23478F 1.20e6 33.24
12389F 8.81e4 34.30
Abs. Int.
3.45e5
1.73e5
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 6.13e3
0%
CS 12346F 4.20e7* 31.58
ES 12378F 4.47e7 32.11
ES 23478F 4.31e7 33.22
Abs. Int.
1.19e7
5.95e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 5.31e3
0%
CS 12346F 2.72e7* 31.58
ES 12378F 2.82e7 32.11
ES 23478F 2.73e7 33.22
Abs. Int.
7.27e6
3.63e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.31e3
0%
Abs. Int.
1.21e4
6.06e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 8.47e3
123468F 7.24e5 35.09
124678/134678F 3.03e6 35.28
124689F 2.08e6 35.93
123467F 4.39e5 36.34
123478F 2.87e6 36.46
123678F 1.14e6 36.60
234678F 6.51e5* 37.26
123489F 2.79e5 38.26
Abs. Int.
8.65e5
4.33e5
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 1.01e4
123468F 5.95e5 35.09
124678/134678F 2.48e6 35.28
124689F 1.64e6 35.93
123467F 3.54e5 36.34
123478F 2.32e6 36.46
123678F 9.16e5 36.60
234678F 5.52e5* 37.26
123489F 2.22e5 38.26
6.92e5
3.46e5
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 9.17e3
ES 123478F 1.77e7 36.45
ES 123678F 2.26e7 36.59
CS 123469F 1.91e7 36.90
ES 234678F 1.91e7 37.25
ES 123789F 1.80e7 38.22
6.31e6
3.15e6
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.72e4
ES 123478F 3.40e7 36.45
ES 123678F 4.20e7 36.59
CS 123469F 3.64e7 36.90
ES 234678F 3.57e7 37.25
ES 123789F 3.34e7 38.22
1.12e7
5.59e6
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 3.32e3
1.03e4
5.17e3


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.69e3
1234678F
5.43e6
39.60
1234679F
3.51e5
39.86
1234689F
6.77e6
40.00
1234789F
5.60e5
40.94
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
2.51e6
1.26e6
0.00e0
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.07e3
1234678F
5.17e6
39.60
1234689F
6.50e6
40.00
1234789F
5.03e5
40.94
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
2.43e6
1.21e6
0.00e0
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 1.34e4
ES 1234678F
1.35e7*
39.59
CS 1234689F
1.25e7
39.98
ES 1234789F
1.07e7
40.94
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
4.72e6
2.36e6
0.00e0
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 9.87e3
ES 1234678F
2.95e7*
39.59
CS 1234689F
2.85e7
39.98
ES 1234789F
2.43e7
40.94
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.10e7
5.51e6
0.00e0
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.26e3
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
8.16e4
4.08e4
0.00e0

SGS ID: B5962_18720_DF_005 | Sample ID: 11215131-120221-S-JC-SW-O-1 | Acq: 17-Dec-2021 17:12:51
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 11 | User: PSW Datafile: 211217R09



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005.utp_res, saved 20-Dec-2021 14:06 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9384, 5031, 6232 scc: 521-175 | *PKD: 20-Dec-2021 09:18 Printed: 20-Dec-2021 14:27 Page 12 of 12*

Lab ID: B5962_18720_DF_005MS **Acq'd:** 17 Dec 2021 18:00 PSW **Wt/Vol:** 10.06 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-1 -MS **UTP:** 20-Dec-2021 14:06:10 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 639-482-KDK

Datafile: 211217R10 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.22		1.0008	1.0008	0	1.90E+07	0.78	Y	1.34	45.3	6450.716	0.165
12378-PeCDD	33.58		1.0005	1.0006	+0.2	2.67E+07	1.54	Y	1.06	89.9	10127.874	0.322
123478-HxCDD	37.45		1.0003	1.0004	+0.2	2.59E+07	1.28	Y	1.06	106	23554.336	0.854
123678-HxCDD	37.57		1.0033	1.0036	+0.7	3.02E+07	1.25	Y	1.08	116	23554.336	0.813
123789-HxCDD	37.87		1.0110	1.0116	+1.4	2.96E+07	1.27	Y	1.02	107	23554.336	0.815
1234678-HpCDD	40.51		1.0003	1.0004	+0.2	6.88E+07	1.04	Y	0.97	324	11433.504	0.394
OCDD	43.04		1.0003	1.0003	0	4.83E+08	0.89	Y	1.07	3,830	21563.293	1.44
2378-TCDF	27.36		1.0006	1.0007	+0.2	6.15E+07	0.82	Y	0.96	147	8696.179	0.243
12378-PeCDF	32.13		1.0006	1.0005	-0.2	4.23E+07	1.57	Y	0.95	117	18016.717	0.494
23478-PeCDF	33.24		1.0006	1.0005	-0.2	4.54E+07	1.56	Y	0.94	128	18016.717	0.505
123478-HxCDF	36.47		1.0004	1.0005	+0.2	4.09E+07	1.24	Y	1.23	121	46905.08	1.11
123678-HxCDF	36.61		1.0004	1.0005	+0.2	4.30E+07	1.25	Y	1.13	110	46905.08	1.02
234678-HxCDF	37.27		1.0005	1.0005	0	3.85E+07	1.24	Y	1.15	112	46905.08	1.22
123789-HxCDF	38.24		1.0005	1.0004	-0.2	3.28E+07	1.25	Y	1.14	104	46905.08	1.36
1234678-HpCDF	39.61		1.0003	1.0003	0	4.75E+07	1.05	Y	1.36	143	8261.159	0.165
1234789-HpCDF	40.95		1.0003	1.0002	-0.2	2.89E+07	1.04	Y	1.30	108	8261.159	0.243
OCDF	43.22		1.0002	1.0002	0	5.17E+07	0.89	Y	1.03	339	8220.731	0.44

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.20	1.0237	1.0239	+0.3	6.21E+07	0.80	Y	1.03	93.3
ES 12378-PeCDD	33.56	1.2158	1.2183	+5.0	5.57E+07	1.60	Y	1.03	83.6
ES 123478-HxCDD	37.44	0.9920	0.9916	-0.9	4.60E+07	1.26	Y	0.99	97
ES 123678-HxCDD	37.56	0.9949	0.9948	-0.2	4.76E+07	1.25	Y	0.97	103
ES 123789-HxCDD	37.86	1.0026	1.0028	+0.5	5.40E+07	1.29	Y	1.12	101
ES 1234678-HpCDD	40.49	1.0713	1.0725	+2.9	4.33E+07	1.04	Y	0.99	91.7
ES OCDD	43.03	1.1385	1.1398	+3.4	4.68E+07	0.90	Y	0.78	63.2
ES 2378-TCDF	27.34	1.0519	1.0526	+1.1	8.68E+07	0.77	Y	1.08	88.8
ES 12378-PeCDF	32.11	1.2331	1.2363	+6.2	7.58E+07	1.55	Y	0.93	90
ES 23478-PeCDF	33.22	1.2754	1.2792	+7.6	7.48E+07	1.55	Y	0.92	90
ES 123478-HxCDF	36.45	0.9656	0.9655	-0.2	5.44E+07	0.52	Y	1.14	100
ES 123678-HxCDF	36.59	0.9693	0.9692	-0.2	6.88E+07	0.51	Y	1.30	111
ES 234678-HxCDF	37.26	0.9869	0.9868	-0.2	5.95E+07	0.52	Y	1.20	104
ES 123789-HxCDF	38.22	1.0121	1.0124	+0.7	5.50E+07	0.51	Y	1.14	102
ES 1234678-HpCDF	39.60	1.0478	1.0488	+2.4	4.86E+07	0.47	Y	0.95	107
ES 1234789-HpCDF	40.94	1.0832	1.0845	+3.2	4.08E+07	0.47	Y	0.85	101
ES OCDF	43.21	1.1434	1.1447	+3.4	5.90E+07	0.88	Y	0.93	66.9

Lab ID: B5962_18720_DF_005MS | **Acq'd:** 17 Dec 2021 18:00 PSW | **Wt/Vol:** 10.06 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-1 -MS | **UTP:** 20-Dec-2021 14:06:10 PSW | **J-level:** 0.497 pg/g | **Split:** 1 | **Checkcode:** 639-482-KDK

Datafile: 211217R10 | **Report:** 20 Dec 2021 14:10 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.54		-	-	-	6.44E+07	0.79	Y	-	-
JS 1234-TCDF	25.97		-	-	-	9.02E+07	0.78	Y	-	-
JS 123467-HxCDD	37.75		-	-	-	2.38E+07	1.21	Y	-	-
CS 37Cl-2378-TCDD	28.22		1.0245	1.0247	+0.3	2.72E+07	n/a	-	1.31	80.6
CS 12347-PeCDD	33.06		1.1978	1.2002	+4.8	4.84E+07	1.58	Y	0.89	84.2
CS 12346-PeCDF	31.58		1.2130	1.2160	+5.7	7.31E+07	1.56	Y	0.87	93.4
CS 123469-HxCDF	36.90		0.9775	0.9775	0	5.77E+07	0.53	Y	1.09	111
CS 1234689-HpCDF	39.99		1.0580	1.0592	+2.9	4.54E+07	0.45	Y	0.86	110
~~SS 37Cl-2378-TCDD~~	~~28.22~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.72E+07~~	~~n/a~~		~~1.26~~	~~86.8~~
~~SS 12347-PeCDD~~	~~33.06~~		~~1.1978~~	~~1.2002~~	~~+4.8~~	~~4.84E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~101~~
~~SS 12346-PeCDF~~	~~31.58~~		~~1.2130~~	~~1.2160~~	~~+5.7~~	~~7.31E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~104~~
~~SS 123469-HxCDF~~	~~36.90~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.77E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~99.7~~
~~SS 1234689-HpCDF~~	~~39.99~~		~~1.0580~~	~~1.0592~~	~~+2.9~~	~~4.54E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~102~~

Totals	Conc	EMPC
Total TCDD	112	114
Total PeCDD	136	141
Total HxCDD	406	409
Total HpCDD	621	621
Total Tetra-Octa Dioxins	5110	5110
Total TCDF	375	378
Total PeCDF	523	527
Total HxCDF	732	732
Total HpCDF	305	305
Total Tetra-Octa Furans	2,270	2280
Total Tetra-Octa Dioxins & Furans	7380	7390

Lab ID: B5962_18720_DF_005MS | **Acq'd: 17 Dec 2021 18:00 PSW** | **Wt/Vol: 10.06 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-O-1 -MS | **UTP: 20-Dec-2021 14:06:10 PSW** | **J-level: 0.497 pg/g** | **Split: 1** | **Checkcode: 639-482-KDK**

Datafile: 211217R10 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.56		0.8726	0.8708	-2.7	9.88E+06	0.78	Y	1.34	23.5	6450.716	0.165
1379-TCDD	NotFnd		0.8851						1.34		6450.716	0.165
1369-TCDD	NotFnd		0.9002						1.34		6450.716	0.165
1469-TCDD	26.13	EMPC	0.9275	0.9266	-1.4	3.98E+05	0.64	N	1.34	0.947	6450.716	0.165
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6450.716	0.165
1378-TCDD	NotFnd		0.9427						1.34		6450.716	0.165
1268-TCDD	NotFnd		0.9498						1.34		6450.716	0.165
1478-TCDD	NotFnd		0.9584						1.34		6450.716	0.165
1279-TCDD	NotFnd		0.9644						1.34		6450.716	0.165
1234/1269-TCDD	NotFnd		0.9766						1.34		6450.716	0.165
1236-TCDD	NotFnd		0.9813						1.34		6450.716	0.165
1237/1238-TCDD	27.91	EMPC	0.9906	0.9895	-1.8	3.83E+05	0.96	N	1.34	0.912	6450.716	0.165
1239-TCDD	28.07		0.9952	0.9952	0	6.80E+06	0.76	Y	1.34	16.2	6450.716	0.165
2378-TCDD	**28.22**		**1.0008**	1.0008	**0**	1.90E+07	0.78	Y	**1.34**	**45.3**	**6450.716**	**0.165**
1278-TCDD	28.55		1.0122	1.0124	+0.3	1.24E+06	0.76	Y	1.34	2.95	6450.716	0.165
1267-TCDD	NotFnd		1.0168						1.34		6450.716	0.165
1289-TCDD	29.20		1.0349	1.0353	+0.7	1.01E+07	0.80	Y	1.34	24	6450.716	0.165
12479/12468-PeCDD	31.08		0.9267	0.9262	-0.9	6.54E+06	1.63	Y	1.06	22.1	10127.874	0.322
12469-PeCDD	31.61	J EMPC	0.9425	0.9421	-0.8	4.84E+05	1.07	N	1.06	1.63	10127.874	0.322
12368-PeCDD	32.16	J EMPC	0.9588	0.9584	-0.8	3.12E+05	1.97	N	1.06	1.05	10127.874	0.322
12478-PeCDD	32.35	J EMPC	0.9643	0.9640	-0.6	3.10E+05	0.93	N	1.06	1.04	10127.874	0.322
12379-PeCDD	32.45	J EMPC	0.9673	0.9671	-0.4	1.94E+05	1.85	N	1.06	0.655	10127.874	0.322
12369/12467/12489-PeCDD	32.71	J	0.9750	0.9747	-0.6	4.07E+05	1.47	Y	1.06	1.37	10127.874	0.322
12346/12347-PeCDD	33.09	J EMPC	0.9859	0.9860	+0.2	1.28E+05	2.09	N	1.06	0.43	10127.874	0.322
12378-PeCDD	33.58		**1.0005**	**1.0006**	**+0.2**	**2.67E+07**	**1.54**	**Y**	**1.06**	**89.9**	**10127.874**	**0.322**
12367-PeCDD	NotFnd		1.0032						1.06		10127.874	0.322
12389-PeCDD	34.01		1.0135	1.0136	+0.2	6.71E+06	1.60	Y	1.06	22.6	10127.874	0.322
124679/124689-HxCDD	35.74		0.9544	0.9546	+0.4	1.31E+07	1.27	Y	1.05	50.2	23554.336	0.826
123468-HxCDD	36.39		0.9716	0.9720	+0.9	1.18E+06	1.36	Y	1.05	4.55	23554.336	0.826
123679/123689-HxCDD	36.67		0.9793	0.9796	+0.7	5.66E+06	1.29	Y	1.05	21.7	23554.336	0.826
123469-HxCDD	36.80	J EMPC	0.9829	0.9830	+0.2	6.02E+05	1.45	N	1.05	2.31	23554.336	0.826
123478-HxCDD	37.45		**1.0003**	**1.0004**	**+0.2**	**2.59E+07**	**1.28**	**Y**	1.06	**106**	**23554.336**	**0.854**
123678-HxCDD	37.57		**1.0033**	**1.0036**	**+0.7**	**3.02E+07**	**1.25**	**Y**	1.08	**116**	**23554.336**	**0.813**
123467-HxCDD	NotFnd		1.0084						1.05		23554.336	0.826
123789-HxCDD	37.87		**1.0110**	**1.0116**	**+1.4**	**2.96E+07**	**1.27**	**Y**	1.02	**107**	**23554.336**	**0.815**

Lab ID: B5962_18720_DF_005MS | **Acq'd: 17 Dec 2021 18:00 PSW** | **Wt/Vol: 10.06 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-O-1 -MS | **UTP: 20-Dec-2021 14:06:10 PSW** | **J-level: 0.497 pg/g** | **Split: 1** | **Checkcode: 639-482-KDK**

Datafile: 211217R10 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

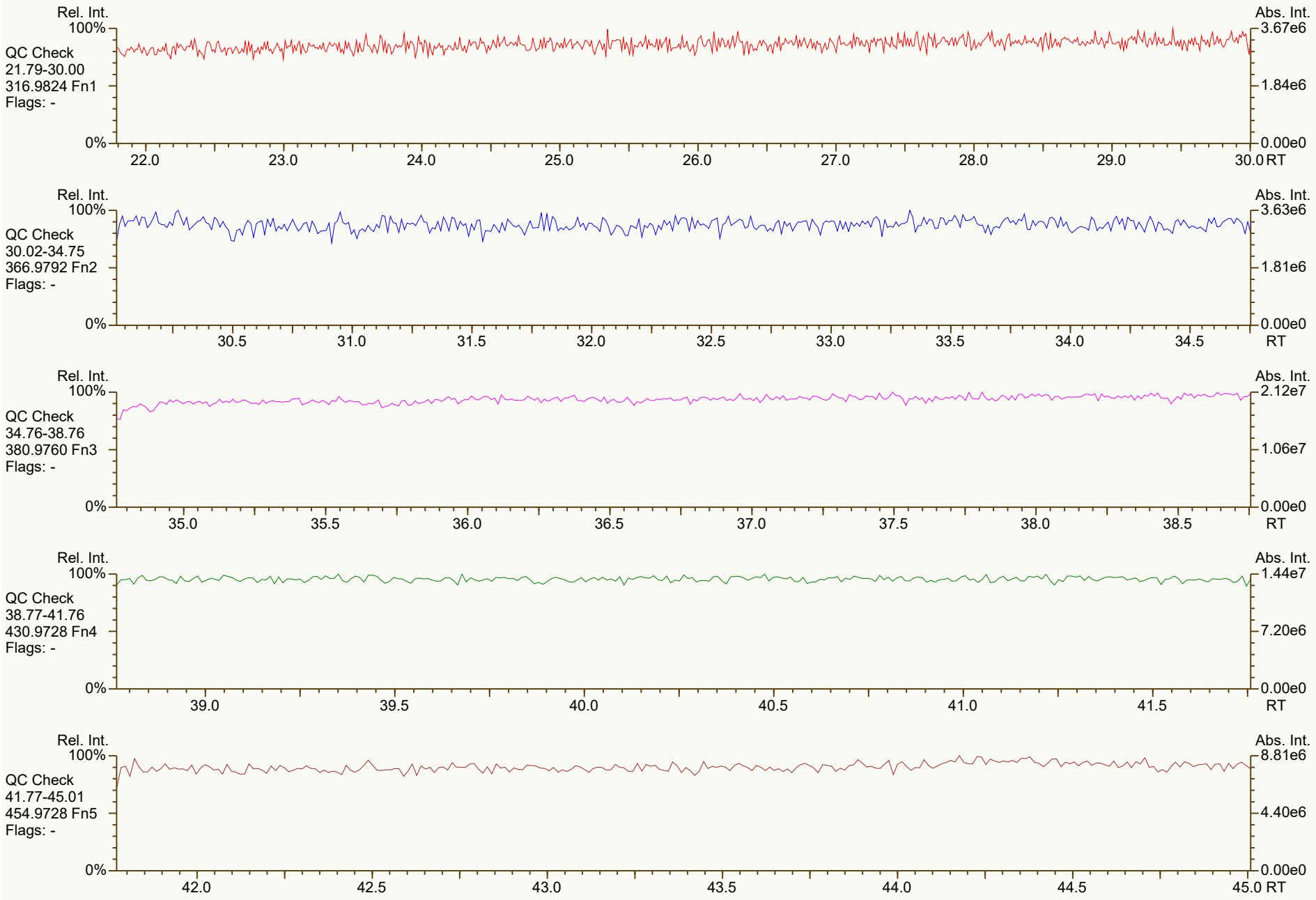
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	6.30E+07	1.06	Y	0.97	297	11433.504	0.394
1234678-HpCDD	**40.51**		**1.0003**	**1.0004**	**+0.2**	**6.88E+07**	**1.04**	**Y**	**0.97**	**324**	**11433.504**	**0.394**
OCDD	**43.04**		**1.0003**	**1.0003**	**0**	**4.83E+08**	**0.89**	**Y**	**1.07**	**3,830**	**21563.293**	**1.44**
OCDD-a	43.04		1.0001	1.0002	+0.3	2.91E+07	2.45	Y	0.07	3,750	13151.314	14.2
1368-TCDF	22.42		0.8230	0.8201	-3.9	1.25E+07	0.78	Y	0.96	29.8	8696.179	0.243
1468-TCDF	23.01	EMPC	0.8443	0.8416	-3.7	5.00E+05	0.97	N	0.96	1.19	8696.179	0.243
2468-TCDF	23.65		0.8672	0.8651	-3.0	3.88E+06	0.80	Y	0.96	9.25	8696.179	0.243
1346/1246-TCDF	24.04		0.8802	0.8795	-1.0	4.73E+05	0.75	Y	0.96	1.13	8696.179	0.243
1347/1378/1247-TCDF	24.18		0.8855	0.8845	-1.5	1.40E+06	0.87	Y	0.96	3.33	8696.179	0.243
1348-TCDF	24.42		0.8952	0.8933	-2.8	3.50E+05	0.86	Y	0.96	0.835	8696.179	0.243
1248/1367/1379-TCDF	24.53		0.9000	0.8974	-3.8	2.56E+06	0.83	Y	0.96	6.11	8696.179	0.243
1268-TCDF	24.95		0.9136	0.9126	-1.5	1.10E+06	0.69	Y	0.96	2.62	8696.179	0.243
1467-TCDF	25.09		0.9185	0.9176	-1.4	3.63E+05	0.73	Y	0.96	0.865	8696.179	0.243
1478-TCDF	25.25		0.9247	0.9237	-1.5	2.30E+06	0.79	Y	0.96	5.49	8696.179	0.243
1369/1237-TCDF	25.63	EMPC	0.9381	0.9375	-0.9	8.04E+05	0.89	N	0.96	1.92	8696.179	0.243
2467-TCDF	25.75		0.9427	0.9417	-1.5	4.70E+05	0.73	Y	0.96	1.12	8696.179	0.243
2368-TCDF	25.91		0.9484	0.9477	-1.1	2.22E+06	0.83	Y	0.96	5.3	8696.179	0.243
1238/1234/1678/1469/1236-TCDF	25.99		0.9517	0.9507	-1.6	3.39E+06	0.78	Y	0.96	8.09	8696.179	0.243
1278-TCDF	26.46		0.9682	0.9677	-0.8	2.14E+07	0.80	Y	0.96	51	8696.179	0.243
1349-TCDF	NotFnd		0.9725						0.96		8696.179	0.243
1267-TCDF	26.73		0.9782	0.9778	-0.6	1.57E+06	0.81	Y	0.96	3.75	8696.179	0.243
2346/1249-TCDF	26.92		0.9846	0.9846	0	4.73E+05	0.82	Y	0.96	1.13	8696.179	0.243
2347/1279-TCDF	27.13		0.9926	0.9923	-0.5	8.28E+05	0.85	Y	0.96	1.97	8696.179	0.243
2348-TCDF	27.24		0.9966	0.9964	-0.3	1.40E+07	0.81	Y	0.96	33.3	8696.179	0.243
2378-TCDF	**27.36**		**1.0006**	**1.0007**	**+0.2**	**6.15E+07**	**0.82**	**Y**	**0.96**	**147**	**8696.179**	**0.243**
2367/3467-TCDF	27.72		1.0139	1.0137	-0.3	5.97E+06	0.80	Y	0.96	14.2	8696.179	0.243
1269-TCDF	27.96		1.0226	1.0228	+0.3	1.04E+06	0.86	Y	0.96	2.48	8696.179	0.243
1239-TCDF	NotFnd		1.0322						0.96		8696.179	0.243
1289-TCDF	29.37		1.0729	1.0742	+2.3	1.93E+07	0.77	Y	0.96	46.1	8696.179	0.243
13468/12468-PeCDF	29.30		0.9135	0.9123	-2.1	8.14E+07	1.54	Y	0.94	228	6574.784	0.182
13678/13467/12467-PeCDF	30.86	EMPC	0.9612	0.9611	-0.2	1.01E+06	1.80	N	0.94	2.82	18016.717	0.5
12368/13478/12478-PeCDF	31.01		0.9661	0.9657	-0.7	4.20E+06	1.65	Y	0.94	11.8	18016.717	0.5
14678-PeCDF	31.10	J	0.9693	0.9685	-1.5	4.90E+05	1.51	Y	0.94	1.37	18016.717	0.5
13479-PeCDF	NotFnd		0.9723						0.94		18016.717	0.5
13469/12479-PeCDF	NotFnd		0.9799						0.94		18016.717	0.5
12346-PeCDF	31.60	J	0.9842	0.9840	-0.4	2.98E+05	1.71	Y	0.94	0.835	18016.717	0.5

Lab ID: B5962_18720_DF_005MS | **Acq'd: 17 Dec 2021 18:00 PSW** | **Wt/Vol: 10.06 g** | **ICAL: MM3_DF_10272021_27JUL2021**

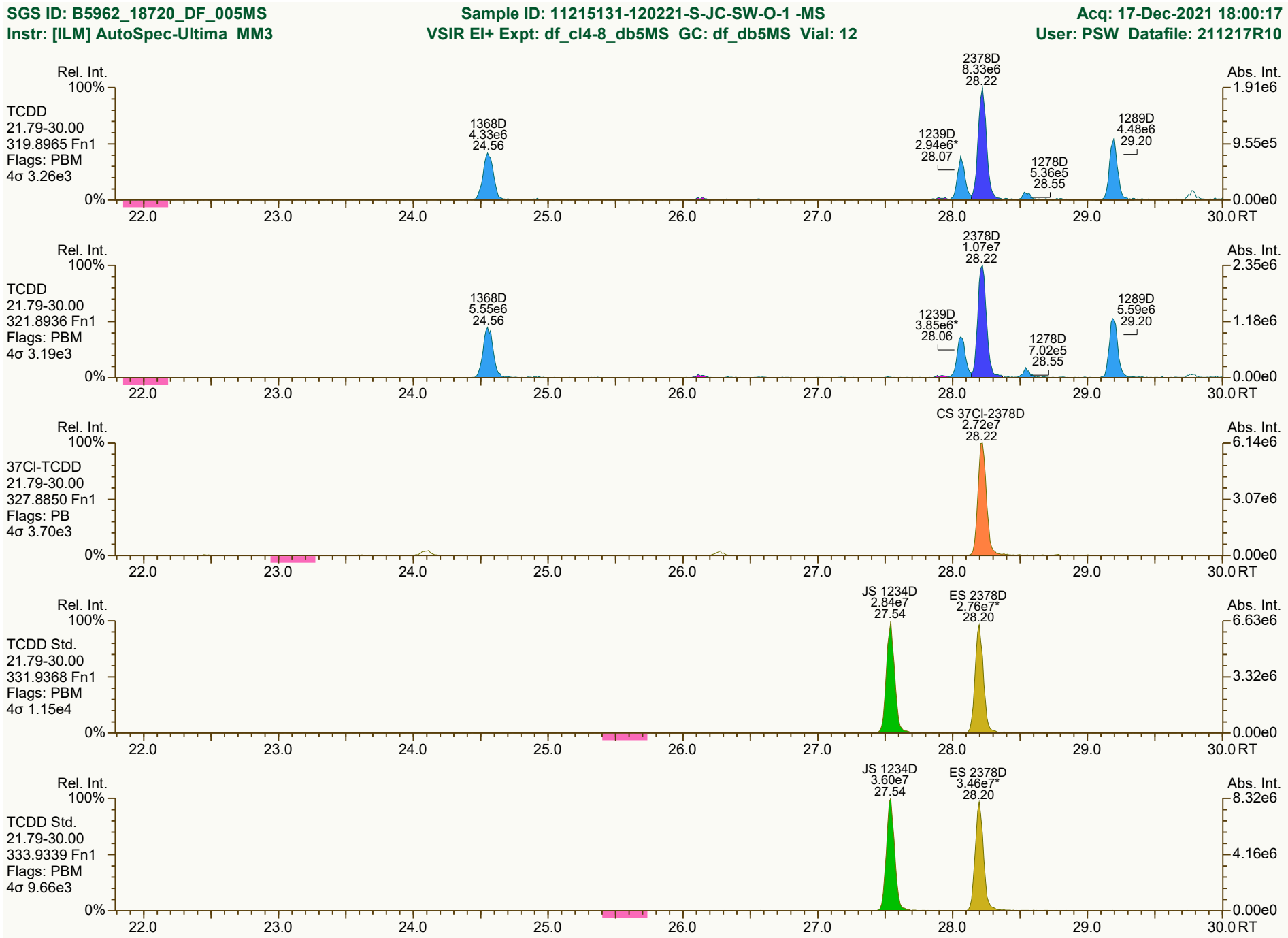
Client ID: 11215131-120221-S-JC-SW-O-1 -MS | **UTP: 20-Dec-2021 14:06:10 PSW** | **J-level: 0.497 pg/g** | **Split: 1** | **Checkcode: 639-482-KDK**

Datafile: 211217R10 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.69		0.9868	0.9869	+0.2	1.09E+06	1.60	Y	0.94	3.04	18016.717	0.5
12347-PeCDF	31.78	J	0.9893	0.9896	+0.6	2.28E+05	1.75	Y	0.94	0.639	18016.717	0.5
12348-PeCDF	31.91	J EMPC	0.9941	0.9939	-0.4	4.05E+05	1.25	N	0.94	1.13	18016.717	0.5
12378-PeCDF	**32.13**		**1.0006**	**1.0005**	**-0.2**	**4.23E+07**	**1.57**	**Y**	**0.95**	**117**	**18016.717**	**0.494**
12678/12367-PeCDF	32.41		1.0090	1.0092	+0.4	1.77E+06	1.62	Y	0.94	4.95	18016.717	0.5
12379-PeCDF	NotFnd		1.0143						0.94		18016.717	0.5
12679-PeCDF	NotFnd		0.9929						0.94		18016.717	0.5
23467/12369-PeCDF	33.11		0.9966	0.9964	-0.4	8.89E+05	1.58	Y	0.94	2.49	18016.717	0.5
23478-PeCDF	**33.24**		**1.0006**	**1.0005**	**-0.2**	**4.54E+07**	**1.56**	**Y**	**0.94**	**128**	**18016.717**	**0.505**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		18016.717	0.5
12349-PeCDF	NotFnd		1.0102						0.94		18016.717	0.5
12389-PeCDF	34.31		1.0325	1.0328	+0.6	8.65E+06	1.62	Y	0.94	24.2	18016.717	0.5
123468-HxCDF	35.09		0.9628	0.9627	-0.2	8.79E+07	1.26	Y	1.16	253	46905.08	1.17
124678/134678-HxCDF	35.29		0.9683	0.9680	-0.6	6.78E+06	1.16	Y	1.16	19.5	46905.08	1.17
134679-HxCDF	NotFnd		0.9746						1.16		46905.08	1.17
124679-HxCDF	NotFnd		0.9798						1.16		46905.08	1.17
124689-HxCDF	35.94		0.9859	0.9859	0	3.73E+06	1.33	Y	1.16	10.7	46905.08	1.17
123467-HxCDF	36.35	J	0.9972	0.9973	+0.2	7.36E+05	1.26	Y	1.16	2.12	46905.08	1.17
123478-HxCDF	**36.47**		**1.0004**	**1.0005**	**+0.2**	**4.09E+07**	**1.24**	**Y**	**1.23**	**121**	**46905.08**	**1.11**
123678-HxCDF	**36.61**		**1.0004**	**1.0005**	**+0.2**	**4.30E+07**	**1.25**	**Y**	**1.13**	**110**	**46905.08**	**1.02**
123479-HxCDF	NotFnd		1.0049						1.16		46905.08	1.17
123469-HxCDF	NotFnd		1.0088						1.16		46905.08	1.17
123679-HxCDF	NotFnd		0.9943						1.16		46905.08	1.17
234678-HxCDF	**37.27**		**1.0005**	**1.0005**	**0**	**3.85E+07**	**1.24**	**Y**	**1.15**	**112**	**46905.08**	**1.22**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		46905.08	1.17
123789-HxCDF	**38.24**		**1.0005**	**1.0004**	**-0.2**	**3.28E+07**	**1.25**	**Y**	**1.14**	**104**	**46905.08**	**1.36**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		46905.08	1.17
1234678-HpCDF	**39.61**		**1.0003**	**1.0003**	**0**	**4.75E+07**	**1.05**	**Y**	**1.36**	**143**	**8261.159**	**0.165**
1234679-HpCDF	39.86		1.0067	1.0067	0	1.10E+06	1.03	Y	1.33	3.67	8261.159	0.201
1234689-HpCDF	40.00		1.0100	1.0102	+0.5	1.48E+07	1.05	Y	1.33	49.5	8261.159	0.201
1234789-HpCDF	**40.95**		**1.0003**	**1.0002**	**-0.2**	**2.89E+07**	**1.04**	**Y**	**1.30**	**108**	**8261.159**	**0.243**
OCDF	**43.22**		**1.0002**	**1.0002**	**0**	**5.17E+07**	**0.89**	**Y**	**1.03**	**339**	**8220.731**	**0.44**
OCDF-a	43.22		1.0002	1.0002	0	2.97E+06	2.48	Y	0.06	337	9264.126	8.59


Rel. Int.
100%
0%
Abs. Int.
3.67e6
1.84e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
3.63e6
1.81e6
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
0%
Abs. Int.
2.12e7
1.06e7
0.00e0
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
0%
Abs. Int.
8.81e6
4.40e6
0.00e0
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

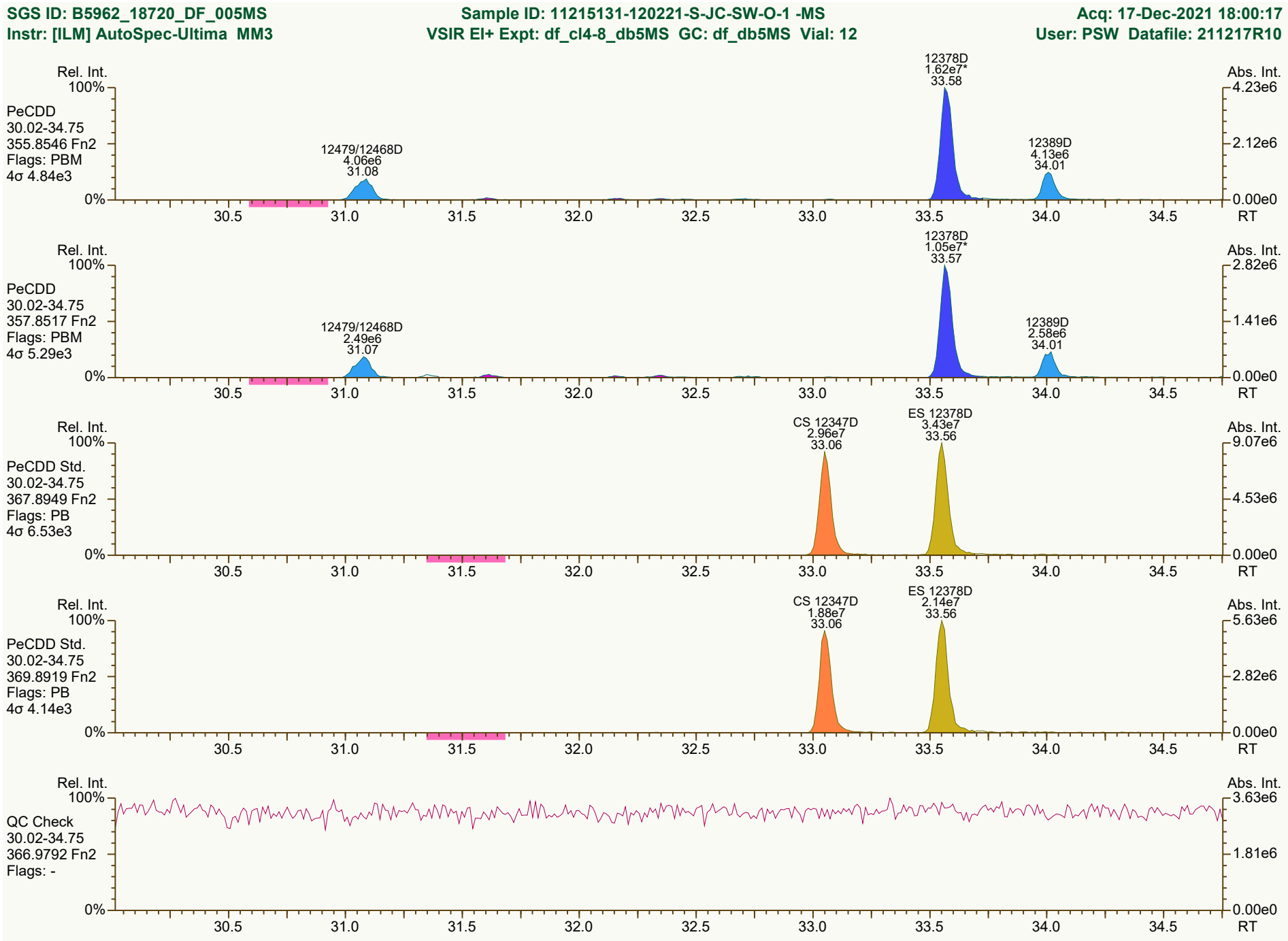
SGS ID: B5962_18720_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-JC-SW-O-1 -MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12
Acq: 17-Dec-2021 18:00:17
User: PSW Datafile: 211217R10



SGS ID: B5962_18720_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

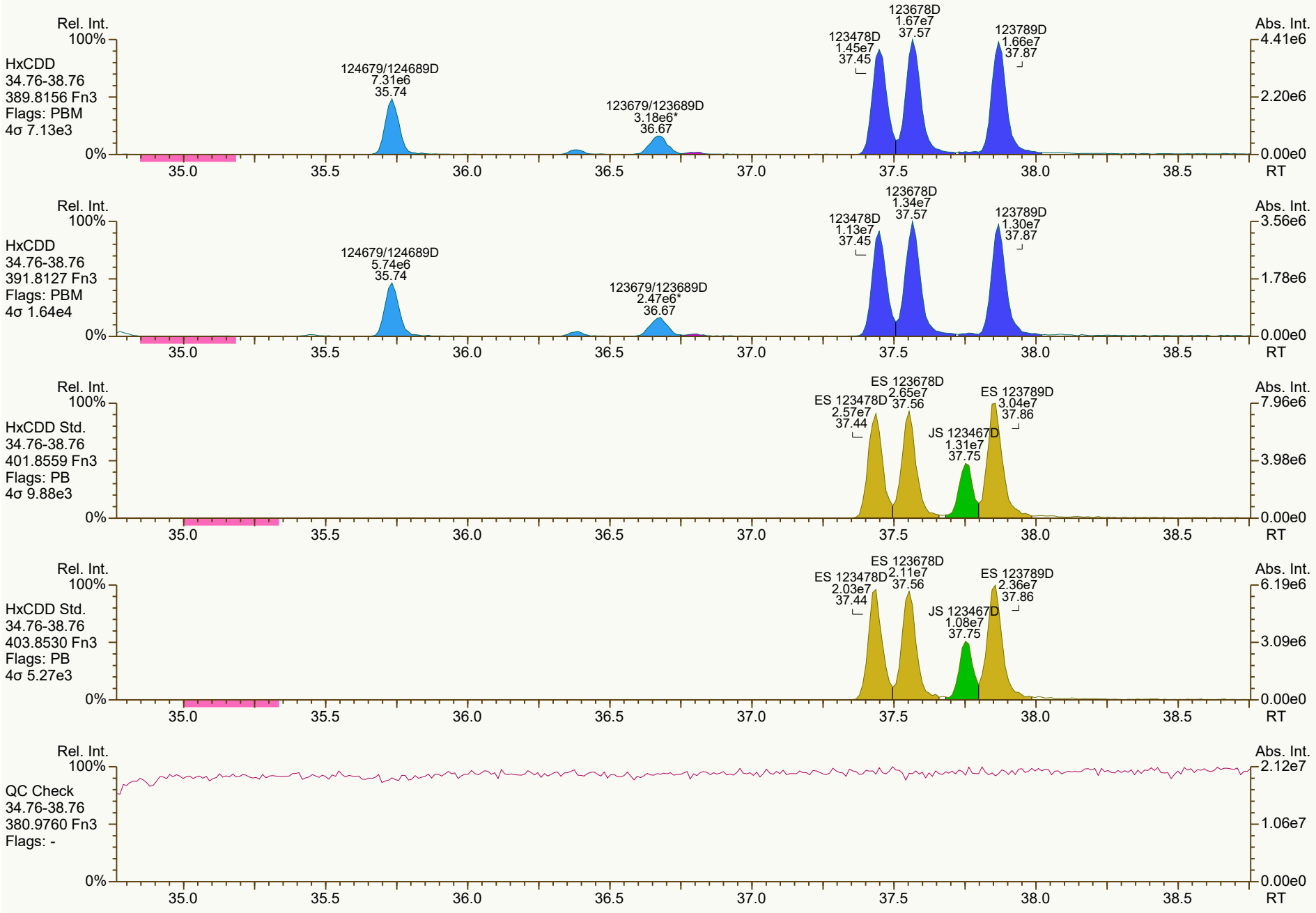
Sample ID: 11215131-120221-S-JC-SW-O-1 -MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

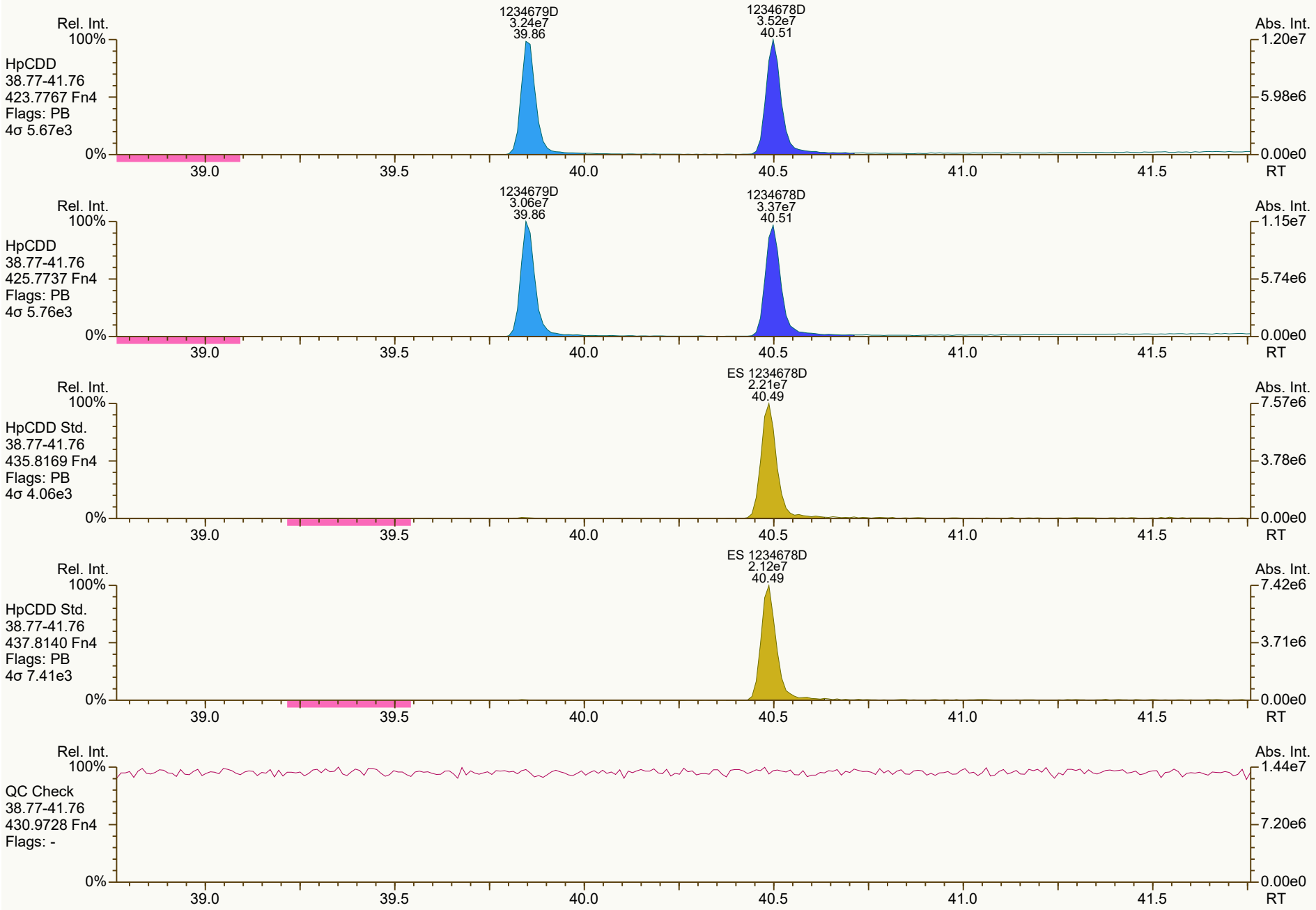
Acq: 17-Dec-2021 18:00:17
User: PSW Datafile: 211217R10



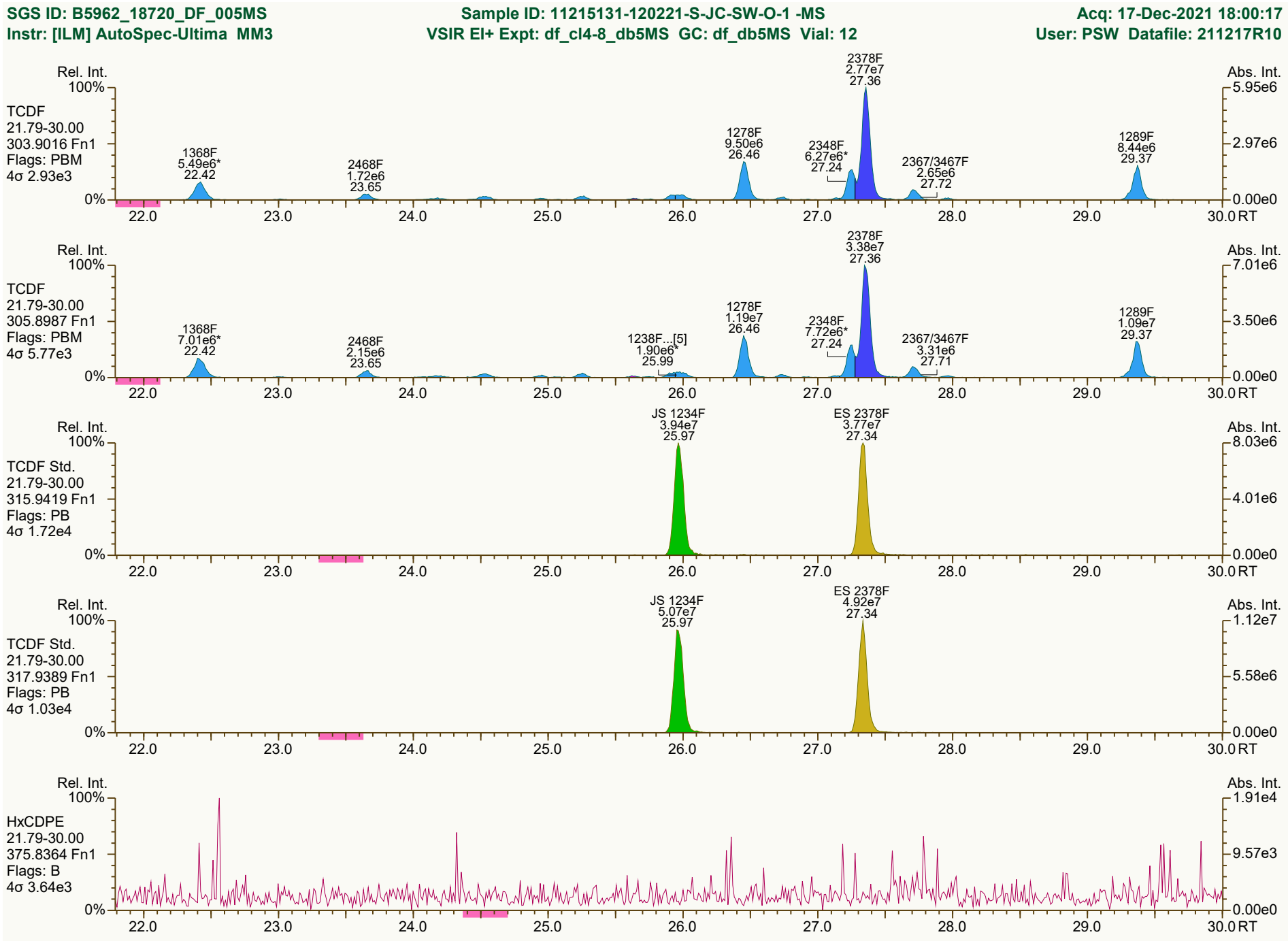
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MS.utp_res, saved 20-Dec-2021 14:06 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4610, 5634 scc: 639-482

Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:29 Printed: 20-Dec-2021 14:27 Page 3 of 12


Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 7.13e3
124679/124689D
7.31e6
35.74
123679/123689D
3.18e6*
36.67
123478D
1.45e7
37.45
123678D
1.67e7
37.57
123789D
1.66e7
37.87
Abs. Int.
4.41e6
2.20e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 1.64e4
124679/124689D
5.74e6
35.74
123679/123689D
2.47e6*
36.67
123478D
1.13e7
37.45
123678D
1.34e7
37.57
123789D
1.30e7
37.87
Abs. Int.
3.56e6
1.78e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 9.88e3
ES 123478D
2.57e7
37.44
ES 123678D
2.65e7
37.56
JS 123467D
1.31e7
37.75
ES 123789D
3.04e7
37.86
Abs. Int.
7.96e6
3.98e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 5.27e3
ES 123478D
2.03e7
37.44
ES 123678D
2.11e7
37.56
JS 123467D
1.08e7
37.75
ES 123789D
2.36e7
37.86
Abs. Int.
6.19e6
3.09e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
Abs. Int.
2.12e7
1.06e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 5.67e3
1234679D
3.24e7
39.86
1234678D
3.52e7
40.51
Abs. Int.
1.20e7
5.98e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 5.76e3
1234679D
3.06e7
39.86
1234678D
3.37e7
40.51
Abs. Int.
1.15e7
5.74e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.06e3
ES 1234678D
2.21e7
40.49
Abs. Int.
7.57e6
3.78e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 7.41e3
ES 1234678D
2.12e7
40.49
Abs. Int.
7.42e6
3.71e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.44e7
7.20e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

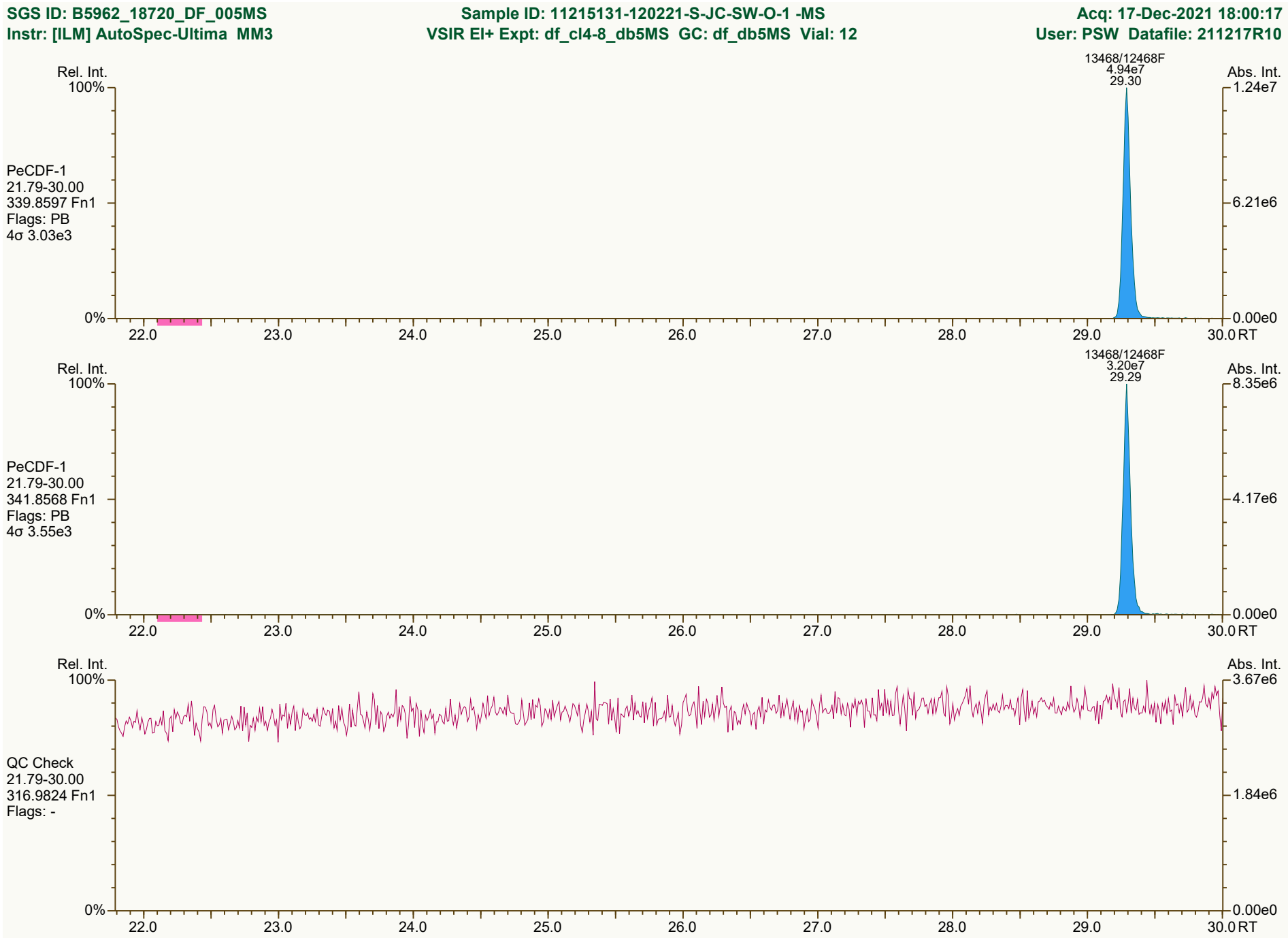

Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 8.91e3
0%
OCDD
2.28e8
43.04
Abs. Int.
6.68e7
3.34e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.27e4
0%
OCDD
2.55e8
43.04
Abs. Int.
7.60e7
3.80e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 6.72e3
0%
ES OCDD
2.22e7
43.03
Abs. Int.
6.61e6
3.31e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.50e3
0%
ES OCDD
2.46e7
43.03
Abs. Int.
7.45e6
3.73e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.81e6
4.40e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5962_18720_DF_005MS
Sample ID: 11215131-120221-S-JC-SW-O-1 -MS
Acq: 17-Dec-2021 18:00:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12
User: PSW Datafile: 211217R10
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.93e3
1368F 5.49e6* 22.42
2468F 1.72e6 23.65
1278F 9.50e6 26.46
2348F 6.27e6* 27.24
2378F 2.77e7 27.36
2367/3467F 2.65e6 27.72
1289F 8.44e6 29.37
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 5.77e3
1368F 7.01e6* 22.42
2468F 2.15e6 23.65
1238F...[5] 1.90e6* 25.99
1278F 1.19e7 26.46
2348F 7.72e6* 27.24
2378F 3.38e7 27.36
2367/3467F 3.31e6 27.71
1289F 1.09e7 29.37
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.72e4
JS 1234F 3.94e7 25.97
ES 2378F 3.77e7 27.34
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.03e4
JS 1234F 5.07e7 25.97
ES 2378F 4.92e7 27.34
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.64e3
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
5.95e6
2.97e6
0.00e0
7.01e6
3.50e6
8.03e6
4.01e6
1.12e7
5.58e6
1.91e4
9.57e3
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MS.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6075, 1147, 8965 scc: 639-482
PKD: 20-Dec-2021 09:29 Printed: 20-Dec-2021 14:27 Page 7 of 12

SGS ID: B5962_18720_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-JC-SW-O-1 -MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

Acq: 17-Dec-2021 18:00:17
User: PSW Datafile: 211217R10



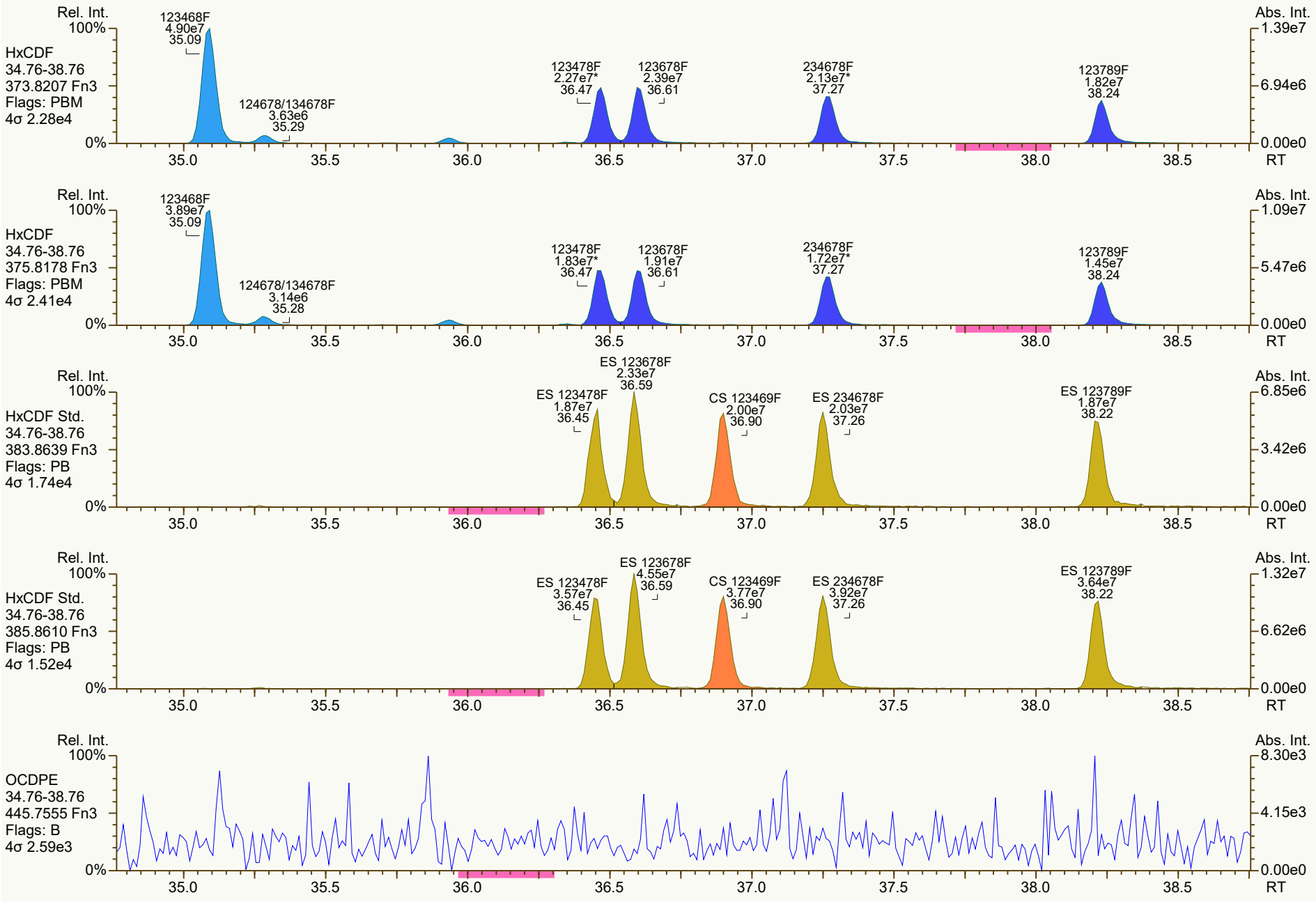
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MS.utp_res, saved 20-Dec-2021 14:06 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3290 scc: 639-482

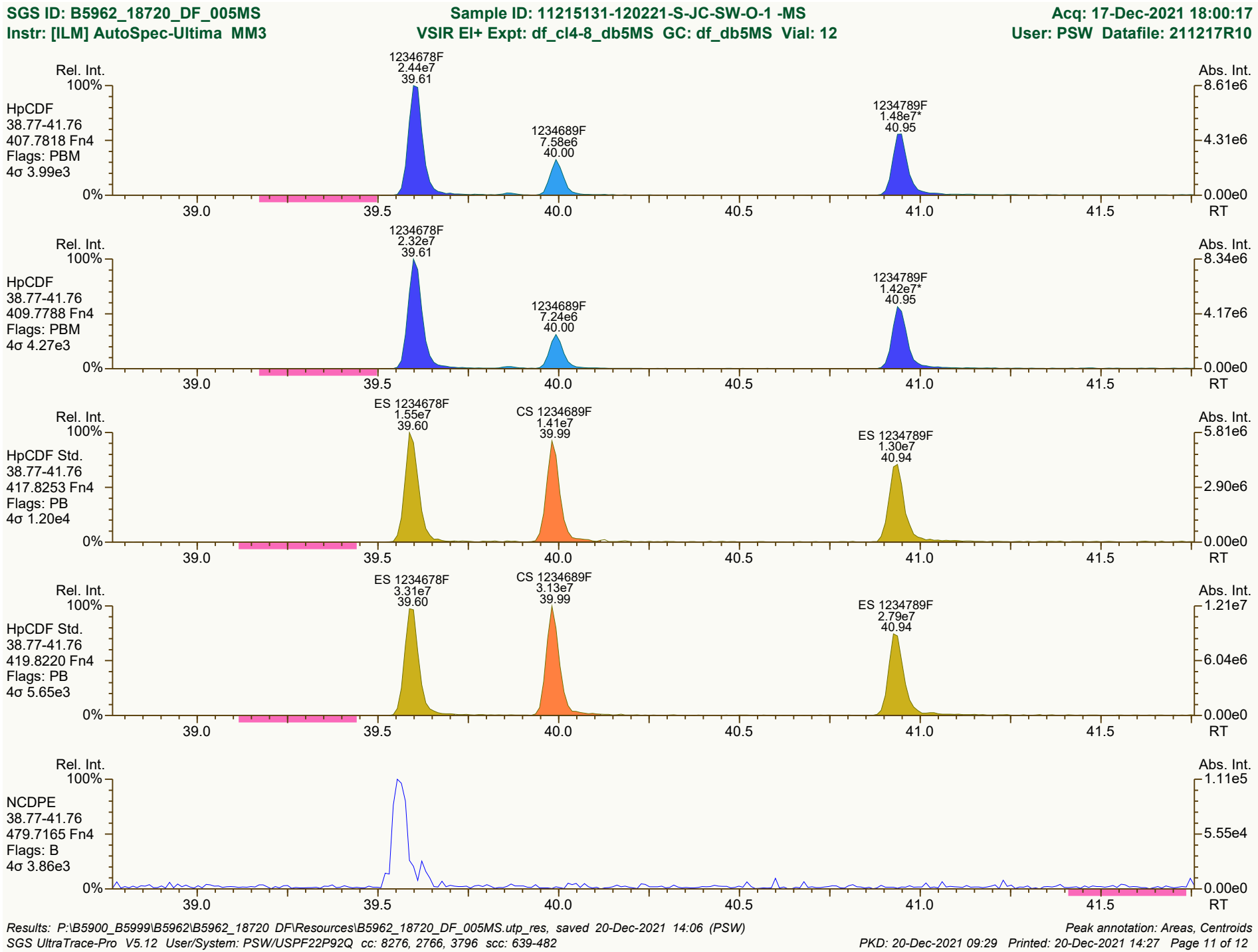
Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:29 Printed: 20-Dec-2021 14:27 Page 8 of 12

SGS ID: B5962_18720_DF_005MS
Sample ID: 11215131-120221-S-JC-SW-O-1 -MS
Acq: 17-Dec-2021 18:00:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12
User: PSW Datafile: 211217R10



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MS.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7783, 5754, 5584 scc: 639-482
PKD: 20-Dec-2021 09:29 Printed: 20-Dec-2021 14:27 Page 9 of 12

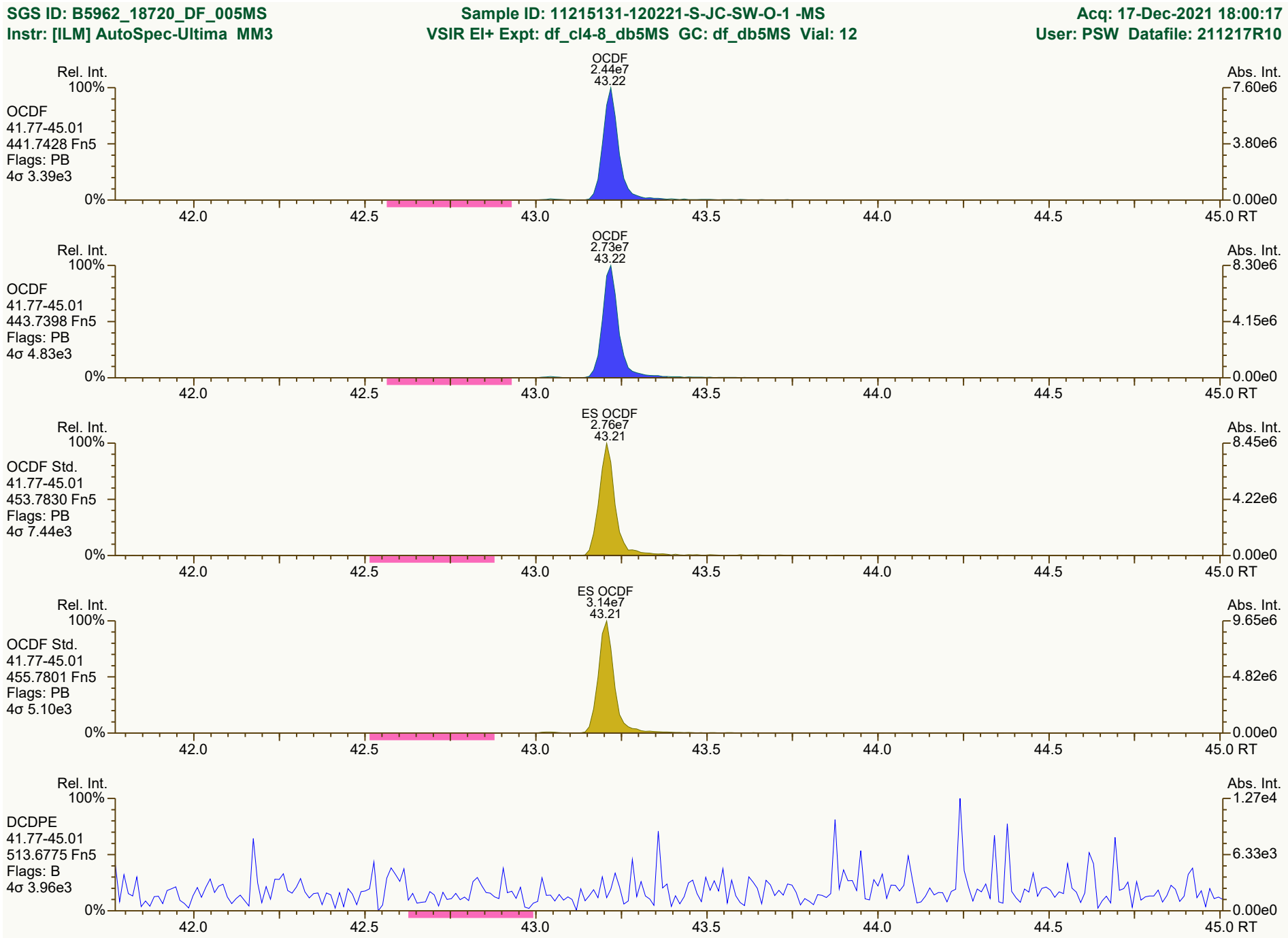

Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 2.28e4
123468F
4.90e7
35.09
124678/134678F
3.63e6
35.29
123478F
2.27e7*
36.47
123678F
2.39e7
36.61
234678F
2.13e7*
37.27
123789F
1.82e7
38.24
Abs. Int.
1.39e7
6.94e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 2.41e4
123468F
3.89e7
35.09
124678/134678F
3.14e6
35.28
123478F
1.83e7*
36.47
123678F
1.91e7
36.61
234678F
1.72e7*
37.27
123789F
1.45e7
38.24
1.09e7
5.47e6
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 1.74e4
ES 123678F
2.33e7
36.59
ES 123478F
1.87e7
36.45
CS 123469F
2.00e7
36.90
ES 234678F
2.03e7
37.26
ES 123789F
1.87e7
38.22
6.85e6
3.42e6
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 1.52e4
ES 123678F
4.55e7
36.59
ES 123478F
3.57e7
36.45
CS 123469F
3.77e7
36.90
ES 234678F
3.92e7
37.26
ES 123789F
3.64e7
38.22
1.32e7
6.62e6
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.59e3
8.30e3
4.15e3


SGS ID: B5962_18720_DF_005MS
Sample ID: 11215131-120221-S-JC-SW-O-1 -MS
Acq: 17-Dec-2021 18:00:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12
User: PSW Datafile: 211217R10
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 3.99e3
1234678F
2.44e7
39.61
1234689F
7.58e6
40.00
1234789F
1.48e7*
40.95
8.61e6
4.31e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 4.27e3
1234678F
2.32e7
39.61
1234689F
7.24e6
40.00
1234789F
1.42e7*
40.95
8.34e6
4.17e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.20e4
ES 1234678F
1.55e7
39.60
CS 1234689F
1.41e7
39.99
ES 1234789F
1.30e7
40.94
5.81e6
2.90e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 5.65e3
ES 1234678F
3.31e7
39.60
CS 1234689F
3.13e7
39.99
ES 1234789F
2.79e7
40.94
1.21e7
6.04e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.86e3
1.11e5
5.55e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MS.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8276, 2766, 3796 scc: 639-482
PKD: 20-Dec-2021 09:29 Printed: 20-Dec-2021 14:27 Page 11 of 12

SGS ID: B5962_18720_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-JC-SW-O-1 -MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 12

Acq: 17-Dec-2021 18:00:17
User: PSW Datafile: 211217R10



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MS.utp_res, saved 20-Dec-2021 14:06 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9155, 0231, 0221 scc: 639-482

Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:29 Printed: 20-Dec-2021 14:27 Page 12 of 12

Lab ID: B5962_18720_DF_005MSD **Acq'd:** 17 Dec 2021 18:47 PSW **Wt/Vol:** 10.26 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-1 -MSD **UTP:** 20-Dec-2021 14:06:11 PSW **J-level:** 0.487 pg/g **Split:** 1 **Checkcode:** 305-268-FGP

Datafile: 211217R11 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.22		1.0008	1.0008	0	1.62E+07	0.79	Y	1.34	40.9	9087.546	0.254
12378-PeCDD	33.57		1.0005	1.0006	+0.2	2.41E+07	1.58	Y	1.06	88.8	9342.651	0.326
123478-HxCDD	37.45		1.0003	1.0004	+0.2	2.33E+07	1.27	Y	1.06	104	19906.583	0.8
123678-HxCDD	37.57		1.0033	1.0037	+0.9	2.62E+07	1.25	Y	1.08	108	19906.583	0.784
123789-HxCDD	37.87		1.0110	1.0119	+2.0	2.60E+07	1.28	Y	1.02	103	19906.583	0.754
1234678-HpCDD	40.50		1.0003	1.0005	+0.5	6.58E+07	1.03	Y	0.97	360	13838.303	0.534
OCDD	43.04		1.0003	1.0003	0	4.26E+08	0.90	Y	1.07	4,040	21289.477	1.63
2378-TCDF	27.35		1.0006	1.0007	+0.2	4.86E+07	0.80	Y	0.96	123	8967.294	0.253
12378-PeCDF	32.12		1.0006	1.0005	-0.2	3.83E+07	1.55	Y	0.95	114	16737.483	0.508
23478-PeCDF	33.24		1.0006	1.0005	-0.2	4.05E+07	1.58	Y	0.94	129	16737.483	0.515
123478-HxCDF	36.46		1.0004	1.0004	0	3.55E+07	1.24	Y	1.23	113	40149.77	1.13
123678-HxCDF	36.60		1.0004	1.0004	0	3.71E+07	1.25	Y	1.13	105	40149.77	1.01
234678-HxCDF	37.27		1.0005	1.0005	0	3.51E+07	1.27	Y	1.15	107	40149.77	1.19
123789-HxCDF	38.23		1.0005	1.0004	-0.2	2.96E+07	1.29	Y	1.14	101	40149.77	1.2
1234678-HpCDF	39.60		1.0003	1.0003	0	3.95E+07	1.04	Y	1.36	140	8025.74	0.207
1234789-HpCDF	40.94		1.0003	1.0002	-0.2	2.35E+07	1.06	Y	1.30	103	8025.74	0.256
OCDF	43.22		1.0002	1.0002	0	4.11E+07	0.91	Y	1.03	335	7769.393	0.526

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.19	1.0237	1.0239	+0.3	5.76E+07	0.80	Y	1.03	94.5
ES 12378-PeCDD	33.55	1.2158	1.2185	+5.4	4.99E+07	1.52	Y	1.03	81.9
ES 123478-HxCDD	37.43	0.9920	0.9915	-1.1	4.15E+07	1.25	Y	0.99	93.2
ES 123678-HxCDD	37.55	0.9949	0.9947	-0.5	4.39E+07	1.27	Y	0.97	101
ES 123789-HxCDD	37.86	1.0026	1.0028	+0.5	4.84E+07	1.27	Y	1.12	96.2
ES 1234678-HpCDD	40.48	1.0713	1.0725	+2.9	3.66E+07	1.05	Y	0.99	82.4
ES OCDD	43.03	1.1385	1.1398	+3.4	3.84E+07	0.91	Y	0.78	55.2
ES 2378-TCDF	27.33	1.0519	1.0526	+1.1	7.99E+07	0.78	Y	1.08	89.4
ES 12378-PeCDF	32.11	1.2331	1.2364	+6.4	6.90E+07	1.57	Y	0.93	89.7
ES 23478-PeCDF	33.22	1.2754	1.2792	+7.6	6.49E+07	1.77	Y	0.92	85.4
ES 123478-HxCDF	36.45	0.9656	0.9655	-0.2	4.97E+07	0.53	Y	1.14	97.2
ES 123678-HxCDF	36.58	0.9693	0.9691	-0.4	6.08E+07	0.52	Y	1.30	105
ES 234678-HxCDF	37.25	0.9869	0.9867	-0.4	5.56E+07	0.53	Y	1.20	103
ES 123789-HxCDF	38.22	1.0121	1.0124	+0.7	5.04E+07	0.54	Y	1.14	99.1
ES 1234678-HpCDF	39.59	1.0478	1.0488	+2.4	4.05E+07	0.45	Y	0.95	95.2
ES 1234789-HpCDF	40.93	1.0832	1.0844	+2.9	3.40E+07	0.45	Y	0.85	89.7
ES OCDF	43.21	1.1434	1.1446	+3.1	4.66E+07	0.92	Y	0.93	56.3

Lab ID: B5962_18720_DF_005MSD | **Acq'd:** 17 Dec 2021 18:47 PSW | **Wt/Vol:** 10.26 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-1 -MSD | **UTP:** 20-Dec-2021 14:06:11 PSW | **J-level:** 0.487 pg/g | **Split:** 1 | **Checkcode:** 305-268-FGP

Datafile: 211217R11 | **Report:** 20 Dec 2021 14:10 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.54		-	-	-	5.89E+07	0.77	Y	-	-
JS 1234-TCDF	25.97		-	-	-	8.24E+07	0.78	Y	-	-
JS 123467-HxCDD	37.75		-	-	-	2.24E+07	1.26	Y	-	-
CS 37Cl-2378-TCDD	28.22		1.0245	1.0247	+0.3	2.47E+07	n/a	-	1.31	80.1
CS 12347-PeCDD	33.05		1.1978	1.2004	+5.2	4.27E+07	1.62	Y	0.89	81.1
CS 12346-PeCDF	31.58		1.2130	1.2161	+5.9	6.31E+07	1.55	Y	0.87	88.3
CS 123469-HxCDF	36.90		0.9775	0.9774	-0.2	5.18E+07	0.53	Y	1.09	106
CS 1234689-HpCDF	39.98		1.0580	1.0591	+2.6	3.92E+07	0.44	Y	0.86	101
~~SS 37Cl-2378-TCDD~~	~~28.22~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.47E+07~~	~~n/a~~		~~1.26~~	~~85.2~~
~~SS 12347-PeCDD~~	~~33.05~~		~~1.1978~~	~~1.2004~~	~~+5.2~~	~~4.27E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~98.9~~
~~SS 12346-PeCDF~~	~~31.58~~		~~1.2130~~	~~1.2161~~	~~+5.9~~	~~6.31E+07~~	~~1.55~~	~~Y~~	~~0.93~~	~~98.3~~
~~SS 123469-HxCDF~~	~~36.90~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~5.18E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~101~~
~~SS 1234689-HpCDF~~	~~39.98~~		~~1.0580~~	~~1.0591~~	~~+2.6~~	~~3.92E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~106~~

Totals	Conc	EMPC
Total TCDD	108	109
Total PeCDD	137	140
Total HxCDD	415	415
Total HpCDD	821	821
Total Tetra-Octa Dioxins	5520	5520
Total TCDF	336	338
Total PeCDF	530	532
Total HxCDF	709	709
Total HpCDF	304	304
Total Tetra-Octa Furans	2,210	2220
Total Tetra-Octa Dioxins & Furans	7730	7740

Lab ID: B5962_18720_DF_005MSD | **Acq'd: 17 Dec 2021 18:47 PSW** | **Wt/Vol: 10.26 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-O-1 -MSD | **UTP: 20-Dec-2021 14:06:11 PSW** | **J-level: 0.487 pg/g** | **Split: 1** | **Checkcode: 305-268-FGP**

Datafile: 211217R11 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.55		0.8726	0.8709	-2.5	9.11E+06	0.75	Y	1.34	22.9	9087.546	0.254
1379-TCDD	NotFnd		0.8851						1.34		9087.546	0.254
1369-TCDD	NotFnd		0.9002						1.34		9087.546	0.254
1469-TCDD	26.13		0.9275	0.9267	-1.3	4.65E+05	0.87	Y	1.34	1.17	9087.546	0.254
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		9087.546	0.254
1378-TCDD	NotFnd		0.9427						1.34		9087.546	0.254
1268-TCDD	NotFnd		0.9498						1.34		9087.546	0.254
1478-TCDD	NotFnd		0.9584						1.34		9087.546	0.254
1279-TCDD	NotFnd		0.9644						1.34		9087.546	0.254
1234/1269-TCDD	27.52	J EMPC	0.9766	0.9763	-0.5	9.77E+04	0.92	N	1.34	0.246	9087.546	0.254
1236-TCDD	NotFnd		0.9813						1.34		9087.546	0.254
1237/1238-TCDD	27.92	EMPC	0.9906	0.9901	-0.8	3.18E+05	0.60	N	1.34	0.802	9087.546	0.254
1239-TCDD	28.06		0.9952	0.9952	0	6.26E+06	0.79	Y	1.34	15.8	9087.546	0.254
2378-TCDD	**28.22**		**1.0008**	1.0008	**0**	1.62E+07	0.79	Y	**1.34**	**40.9**	**9087.546**	**0.254**
1278-TCDD	28.54		1.0122	1.0123	+0.2	1.10E+06	0.77	Y	1.34	2.76	9087.546	0.254
1267-TCDD	NotFnd		1.0168						1.34		9087.546	0.254
1289-TCDD	29.19		1.0349	1.0355	+1.1	9.60E+06	0.81	Y	1.34	24.2	9087.546	0.254
12479/12468-PeCDD	31.07		0.9267	0.9261	-1.1	5.99E+06	1.52	Y	1.06	22.1	9342.651	0.326
12469-PeCDD	31.61	J EMPC	0.9425	0.9420	-0.9	5.21E+05	1.13	N	1.06	1.92	9342.651	0.326
12368-PeCDD	32.15	J	0.9588	0.9583	-1.0	3.27E+05	1.55	Y	1.06	1.21	9342.651	0.326
12478-PeCDD	32.34	J EMPC	0.9643	0.9639	-0.8	3.50E+05	1.16	N	1.06	1.29	9342.651	0.326
12379-PeCDD	32.44	J	0.9673	0.9669	-0.8	2.24E+05	1.74	Y	1.06	0.825	9342.651	0.326
12369/12467/12489-PeCDD	32.70	J	0.9750	0.9747	-0.6	4.07E+05	1.71	Y	1.06	1.5	9342.651	0.326
12346/12347-PeCDD	33.07	J	0.9859	0.9856	-0.6	1.73E+05	1.50	Y	1.06	0.636	9342.651	0.326
12378-PeCDD	33.57		**1.0005**	**1.0006**	**+0.2**	**2.41E+07**	**1.58**	**Y**	**1.06**	**88.8**	**9342.651**	**0.326**
12367-PeCDD	NotFnd		1.0032						1.06		9342.651	0.326
12389-PeCDD	34.01		1.0135	1.0136	+0.2	5.93E+06	1.59	Y	1.06	21.8	9342.651	0.326
124679/124689-HxCDD	35.73		0.9544	0.9547	+0.6	1.43E+07	1.27	Y	1.05	59.3	19906.583	0.778
123468-HxCDD	36.38		0.9716	0.9720	+0.9	1.32E+06	1.26	Y	1.05	5.51	19906.583	0.778
123679/123689-HxCDD	36.67		0.9793	0.9796	+0.7	6.51E+06	1.32	Y	1.05	27.1	19906.583	0.778
123469-HxCDD	36.80		0.9829	0.9831	+0.4	1.14E+06	1.28	Y	1.05	4.74	19906.583	0.778
123478-HxCDD	37.45		**1.0003**	**1.0004**	**+0.2**	**2.33E+07**	**1.27**	**Y**	1.06	**104**	**19906.583**	**0.8**
123678-HxCDD	37.57		**1.0033**	**1.0037**	**+0.9**	**2.62E+07**	**1.25**	**Y**	1.08	**108**	**19906.583**	**0.784**
123467-HxCDD	37.75		1.0084	1.0085	+0.2	9.84E+05	1.26	Y	1.05	4.09	19906.583	0.778
123789-HxCDD	37.87		**1.0110**	**1.0119**	**+2.0**	**2.60E+07**	**1.28**	**Y**	1.02	**103**	**19906.583**	**0.754**

Lab ID: B5962_18720_DF_005MSD | **Acq'd:** 17 Dec 2021 18:47 PSW | **Wt/Vol:** 10.26 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-1 -MSD | **UTP:** 20-Dec-2021 14:06:11 PSW | **J-level:** 0.487 pg/g | **Split:** 1 | **Checkcode:** 305-268-FGP

Datafile: 211217R11 | **Report:** 20 Dec 2021 14:10 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

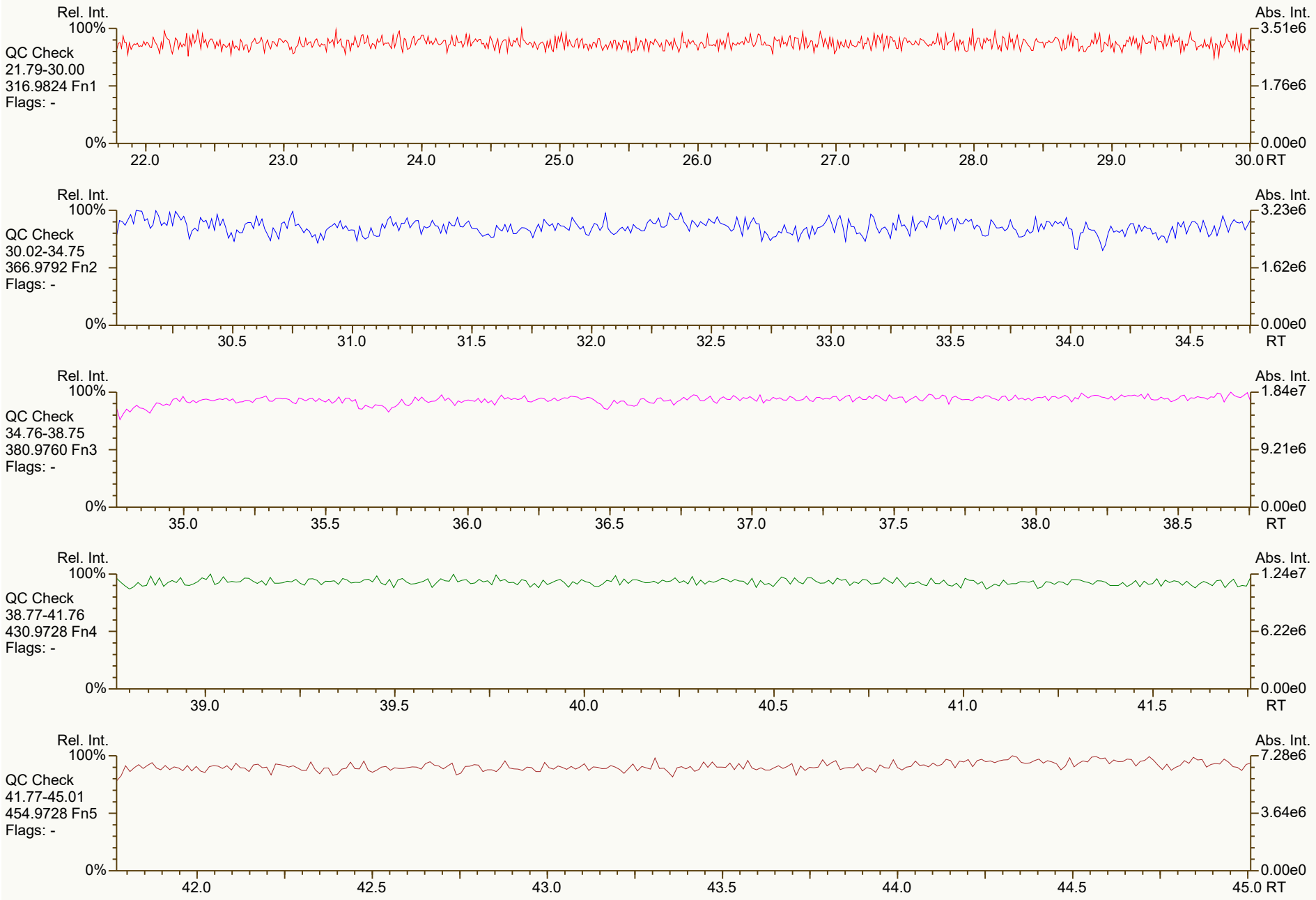
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.85		0.9843	0.9843	0	8.45E+07	1.04	Y	0.97	462	13838.303	0.534
1234678-HpCDD	**40.50**		**1.0003**	**1.0005**	**+0.5**	**6.58E+07**	**1.03**	**Y**	**0.97**	**360**	**13838.303**	**0.534**
OCDD	**43.04**		**1.0003**	**1.0003**	**0**	**4.26E+08**	**0.90**	**Y**	**1.07**	**4,040**	**21289.477**	**1.63**
OCDD-a	43.03		1.0001	1.0002	+0.3	2.57E+07	2.57	Y	0.07	3,940	18140.701	22.5
1368-TCDF	22.41		0.8230	0.8200	-4.0	1.17E+07	0.78	Y	0.96	29.7	8967.294	0.253
1468-TCDF	23.00		0.8443	0.8416	-3.7	5.10E+05	0.84	Y	0.96	1.29	8967.294	0.253
2468-TCDF	23.65		0.8672	0.8652	-2.8	3.79E+06	0.77	Y	0.96	9.62	8967.294	0.253
1346/1246-TCDF	24.04		0.8802	0.8794	-1.2	2.52E+05	0.76	Y	0.96	0.64	8967.294	0.253
1347/1378/1247-TCDF	24.16		0.8855	0.8841	-2.0	1.35E+06	0.83	Y	0.96	3.42	8967.294	0.253
1348-TCDF	24.43	EMPC	0.8952	0.8939	-1.9	3.32E+05	1.08	N	0.96	0.844	8967.294	0.253
1248/1367/1379-TCDF	24.53		0.9000	0.8974	-3.8	1.94E+06	0.84	Y	0.96	4.92	8967.294	0.253
1268-TCDF	24.94		0.9136	0.9124	-1.8	9.34E+05	0.75	Y	0.96	2.37	8967.294	0.253
1467-TCDF	25.08	EMPC	0.9185	0.9177	-1.2	3.71E+05	1.04	N	0.96	0.941	8967.294	0.253
1478-TCDF	25.25		0.9247	0.9236	-1.7	1.76E+06	0.80	Y	0.96	4.47	8967.294	0.253
1369/1237-TCDF	25.62		0.9381	0.9373	-1.2	6.06E+05	0.80	Y	0.96	1.54	8967.294	0.253
2467-TCDF	25.74		0.9427	0.9418	-1.4	4.68E+05	0.73	Y	0.96	1.19	8967.294	0.253
2368-TCDF	25.91		0.9484	0.9478	-0.9	2.02E+06	0.77	Y	0.96	5.13	8967.294	0.253
1238/1234/1678/1469/1236-TCDF	25.99		0.9517	0.9510	-1.1	2.65E+06	0.88	Y	0.96	6.72	8967.294	0.253
1278-TCDF	26.45		0.9682	0.9677	-0.8	1.61E+07	0.78	Y	0.96	41	8967.294	0.253
1349-TCDF	NotFnd		0.9725						0.96		8967.294	0.253
1267-TCDF	26.73		0.9782	0.9778	-0.6	1.36E+06	0.81	Y	0.96	3.45	8967.294	0.253
2346/1249-TCDF	26.92		0.9846	0.9848	+0.3	3.64E+05	0.69	Y	0.96	0.925	8967.294	0.253
2347/1279-TCDF	NotFnd		0.9926						0.96		8967.294	0.253
2348-TCDF	27.23		0.9966	0.9963	-0.5	1.41E+07	0.79	Y	0.96	35.7	8967.294	0.253
2378-TCDF	**27.35**		**1.0006**	**1.0007**	**+0.2**	**4.86E+07**	**0.80**	**Y**	**0.96**	**123**	**8967.294**	**0.253**
2367/3467-TCDF	27.71		1.0139	1.0138	-0.2	5.36E+06	0.77	Y	0.96	13.6	8967.294	0.253
1269-TCDF	27.96		1.0226	1.0230	+0.7	9.38E+05	0.76	Y	0.96	2.38	8967.294	0.253
1239-TCDF	NotFnd		1.0322						0.96		8967.294	0.253
1289-TCDF	29.36		1.0729	1.0742	+2.3	1.75E+07	0.80	Y	0.96	44.5	8967.294	0.253
13468/12468-PeCDF	29.29		0.9135	0.9123	-2.1	7.56E+07	1.59	Y	0.94	234	7705.119	0.235
13678/13467/12467-PeCDF	30.86		0.9612	0.9612	0	1.09E+06	1.63	Y	0.94	3.37	16737.483	0.511
12368/13478/12478-PeCDF	31.01		0.9661	0.9657	-0.7	3.76E+06	1.51	Y	0.94	11.6	16737.483	0.511
14678-PeCDF	31.10	J EMPC	0.9693	0.9688	-0.9	3.90E+05	1.97	N	0.94	1.2	16737.483	0.511
13479-PeCDF	NotFnd		0.9723						0.94		16737.483	0.511
13469/12479-PeCDF	NotFnd		0.9799						0.94		16737.483	0.511
12346-PeCDF	31.58	J EMPC	0.9842	0.9837	-0.9	1.97E+05	2.09	N	0.94	0.61	16737.483	0.511

Lab ID: B5962_18720_DF_005MSD | **Acq'd: 17 Dec 2021 18:47 PSW** | **Wt/Vol: 10.26 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-O-1 -MSD | **UTP: 20-Dec-2021 14:06:11 PSW** | **J-level: 0.487 pg/g** | **Split: 1** | **Checkcode: 305-268-FGP**

Datafile: 211217R11 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.68		0.9868	0.9866	-0.4	9.60E+05	1.64	Y	0.94	2.96	16737.483	0.511
12347-PeCDF	31.76	J EMPC	0.9893	0.9893	0	2.22E+05	2.55	N	0.94	0.685	16737.483	0.511
12348-PeCDF	31.91	J	0.9941	0.9940	-0.2	4.67E+05	1.60	Y	0.94	1.44	16737.483	0.511
12378-PeCDF	**32.12**		**1.0006**	**1.0005**	**-0.2**	**3.83E+07**	**1.55**	**Y**	**0.95**	**114**	**16737.483**	**0.508**
12678/12367-PeCDF	32.40		1.0090	1.0091	+0.2	1.66E+06	1.55	Y	0.94	5.12	16737.483	0.511
12379-PeCDF	NotFnd		1.0143						0.94		16737.483	0.511
12679-PeCDF	NotFnd		0.9929						0.94		16737.483	0.511
23467/12369-PeCDF	33.10		0.9966	0.9965	-0.2	9.81E+05	1.52	Y	0.94	3.03	16737.483	0.511
23478-PeCDF	**33.24**		**1.0006**	**1.0005**	**-0.2**	**4.05E+07**	**1.58**	**Y**	**0.94**	**129**	**16737.483**	**0.515**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		16737.483	0.511
12349-PeCDF	NotFnd		1.0102						0.94		16737.483	0.511
12389-PeCDF	34.31		1.0325	1.0327	+0.4	8.04E+06	1.51	Y	0.94	24.8	16737.483	0.511
123468-HxCDF	35.09		0.9628	0.9627	-0.2	7.99E+07	1.26	Y	1.16	247	40149.77	1.12
124678/134678-HxCDF	35.28		0.9683	0.9680	-0.6	6.51E+06	1.28	Y	1.16	20.2	40149.77	1.12
134679-HxCDF	NotFnd		0.9746						1.16		40149.77	1.12
124679-HxCDF	NotFnd		0.9798						1.16		40149.77	1.12
124689-HxCDF	35.93		0.9859	0.9859	0	3.73E+06	1.26	Y	1.16	11.6	40149.77	1.12
123467-HxCDF	36.34	J	0.9972	0.9971	-0.2	7.85E+05	1.18	Y	1.16	2.43	40149.77	1.12
123478-HxCDF	**36.46**		**1.0004**	**1.0004**	**0**	**3.55E+07**	**1.24**	**Y**	**1.23**	**113**	**40149.77**	**1.13**
123678-HxCDF	**36.60**		**1.0004**	**1.0004**	**0**	**3.71E+07**	**1.25**	**Y**	**1.13**	**105**	**40149.77**	**1.01**
123479-HxCDF	36.77	J	1.0049	1.0051	+0.4	7.41E+05	1.41	Y	1.16	2.29	40149.77	1.12
123469-HxCDF	NotFnd		1.0088						1.16		40149.77	1.12
123679-HxCDF	NotFnd		0.9943						1.16		40149.77	1.12
234678-HxCDF	**37.27**		**1.0005**	**1.0005**	**0**	**3.51E+07**	**1.27**	**Y**	**1.15**	**107**	**40149.77**	**1.19**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		40149.77	1.12
123789-HxCDF	**38.23**		**1.0005**	**1.0004**	**-0.2**	**2.96E+07**	**1.29**	**Y**	**1.14**	**101**	**40149.77**	**1.2**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		40149.77	1.12
1234678-HpCDF	**39.60**		**1.0003**	**1.0003**	**0**	**3.95E+07**	**1.04**	**Y**	**1.36**	**140**	**8025.74**	**0.207**
1234679-HpCDF	39.85		1.0067	1.0067	0	1.09E+06	1.10	Y	1.33	4.27	8025.74	0.229
1234689-HpCDF	39.99		1.0100	1.0101	+0.2	1.43E+07	1.05	Y	1.33	56.1	8025.74	0.229
1234789-HpCDF	**40.94**		**1.0003**	**1.0002**	**-0.2**	**2.35E+07**	**1.06**	**Y**	**1.30**	**103**	**8025.74**	**0.256**
OCDF	**43.22**		**1.0002**	**1.0002**	**0**	**4.11E+07**	**0.91**	**Y**	**1.03**	**335**	**7769.393**	**0.526**
OCDF-a	43.22		1.0002	1.0002	0	2.37E+06	2.43	Y	0.06	334	10348.835	12.1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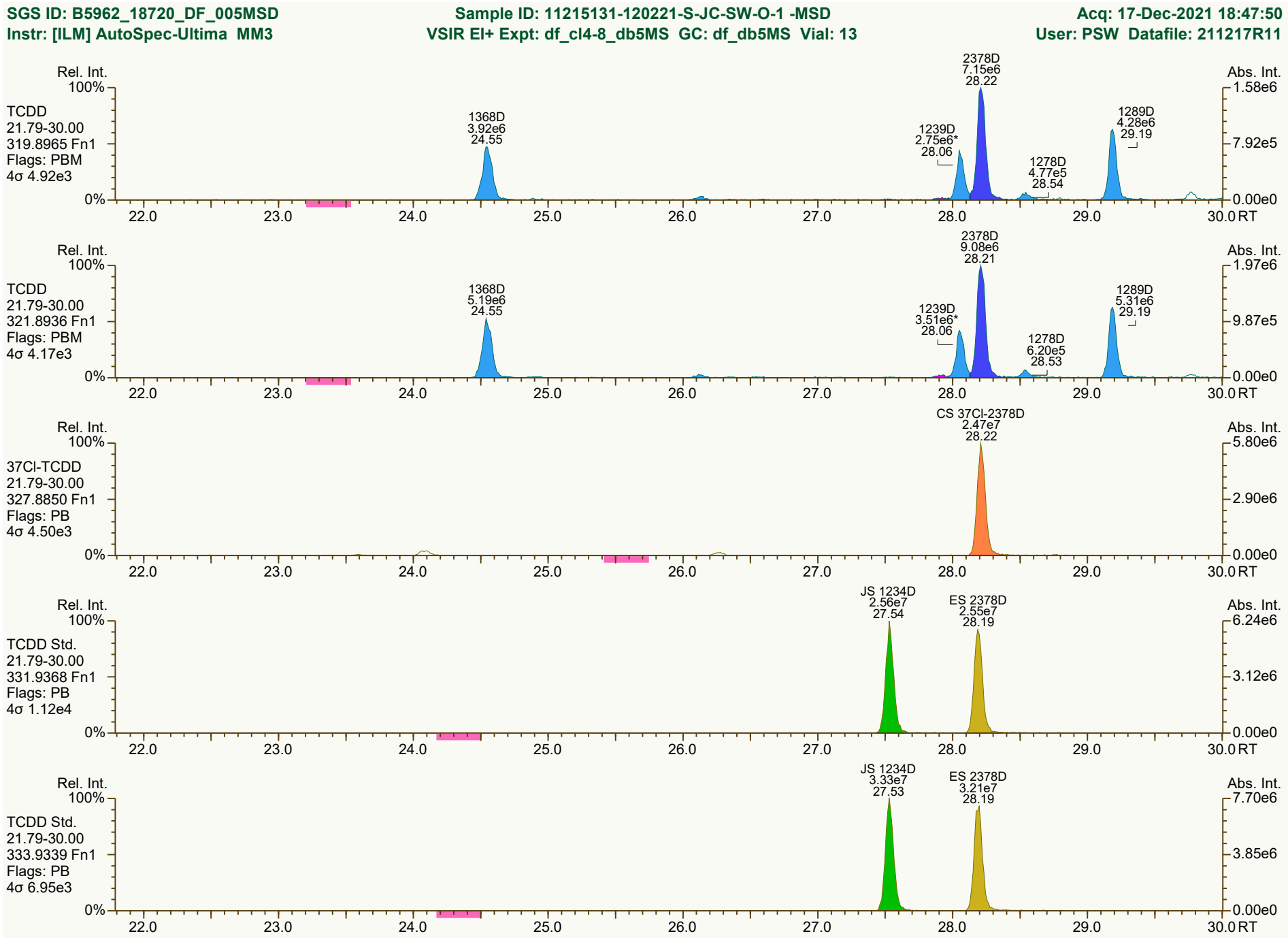
21.79-30.00
316.9824 Fn1
Flags: -
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Abs. Int.
3.51e6
1.76e6
0.00e0
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
3.23e6
1.62e6
0.00e0
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
1.84e7
9.21e6
0.00e0
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.24e7
6.22e6
0.00e0
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
7.28e6
3.64e6
0.00e0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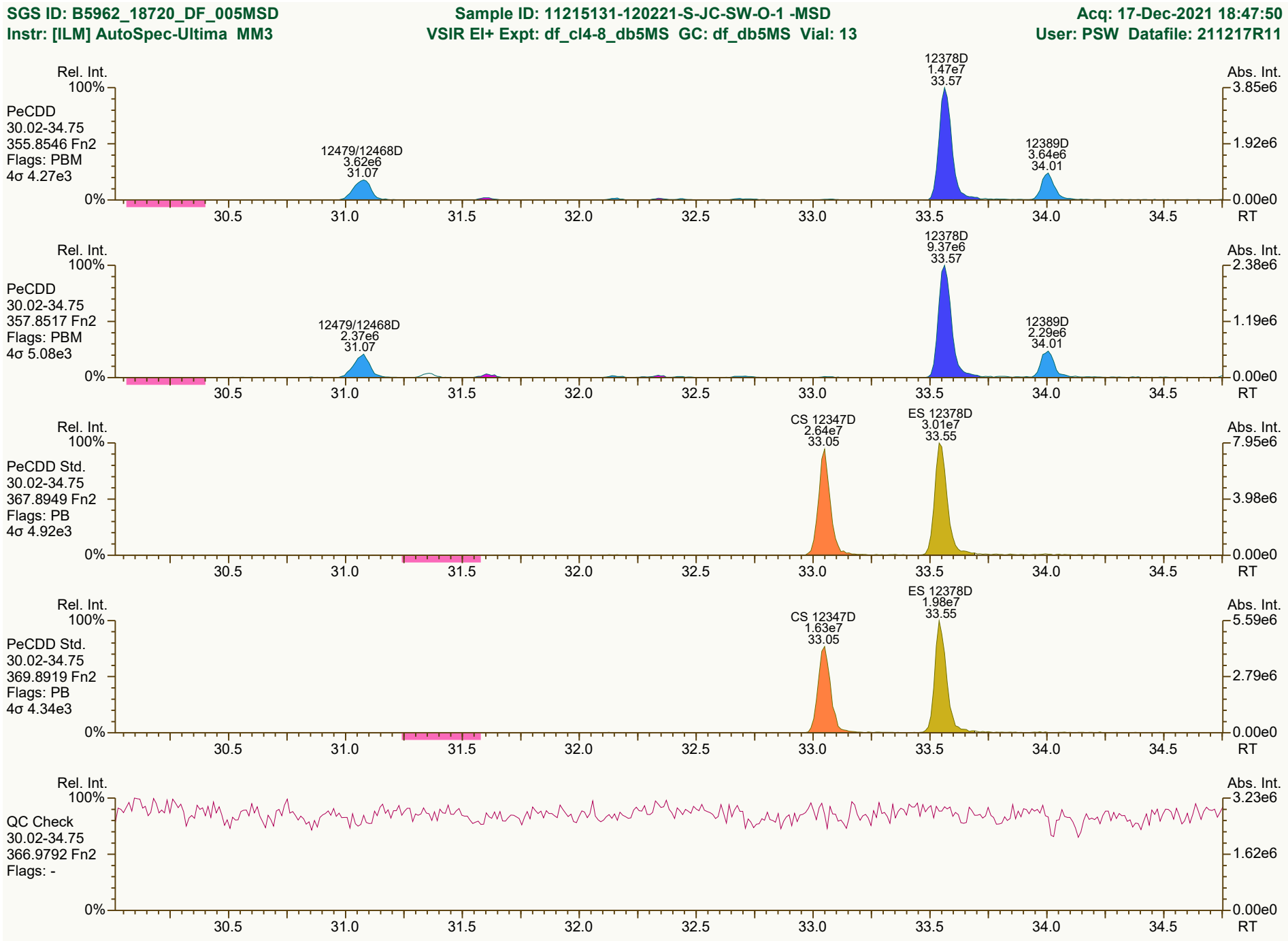
Sample ID: 11215131-120221-S-JC-SW-O-1 -MSD
Acq: 17-Dec-2021 18:47:50
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13
User: PSW Datafile: 211217R11
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 4.92e3
1368D 3.92e6 24.55
1239D 2.75e6* 28.06
2378D 7.15e6 28.22
1278D 4.77e5 28.54
1289D 4.28e6 29.19
1.58e6
7.92e5
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 4.17e3
1368D 5.19e6 24.55
1239D 3.51e6* 28.06
2378D 9.08e6 28.21
1278D 6.20e5 28.53
1289D 5.31e6 29.19
1.97e6
9.87e5
0.00e0
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 4.50e3
CS 37Cl-2378D 2.47e7 28.22
5.80e6
2.90e6
0.00e0
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.12e4
JS 1234D 2.56e7 27.54
ES 2378D 2.55e7 28.19
6.24e6
3.12e6
0.00e0
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 6.95e3
JS 1234D 3.33e7 27.53
ES 2378D 3.21e7 28.19
7.70e6
3.85e6
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MSD.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1812, 5303, 9099 scc: 305-268
PKD: 20-Dec-2021 09:33 Printed: 20-Dec-2021 14:27 Page 2 of 12

SGS ID: B5962_18720_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-JC-SW-O-1 -MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13

Acq: 17-Dec-2021 18:47:50
User: PSW Datafile: 211217R11



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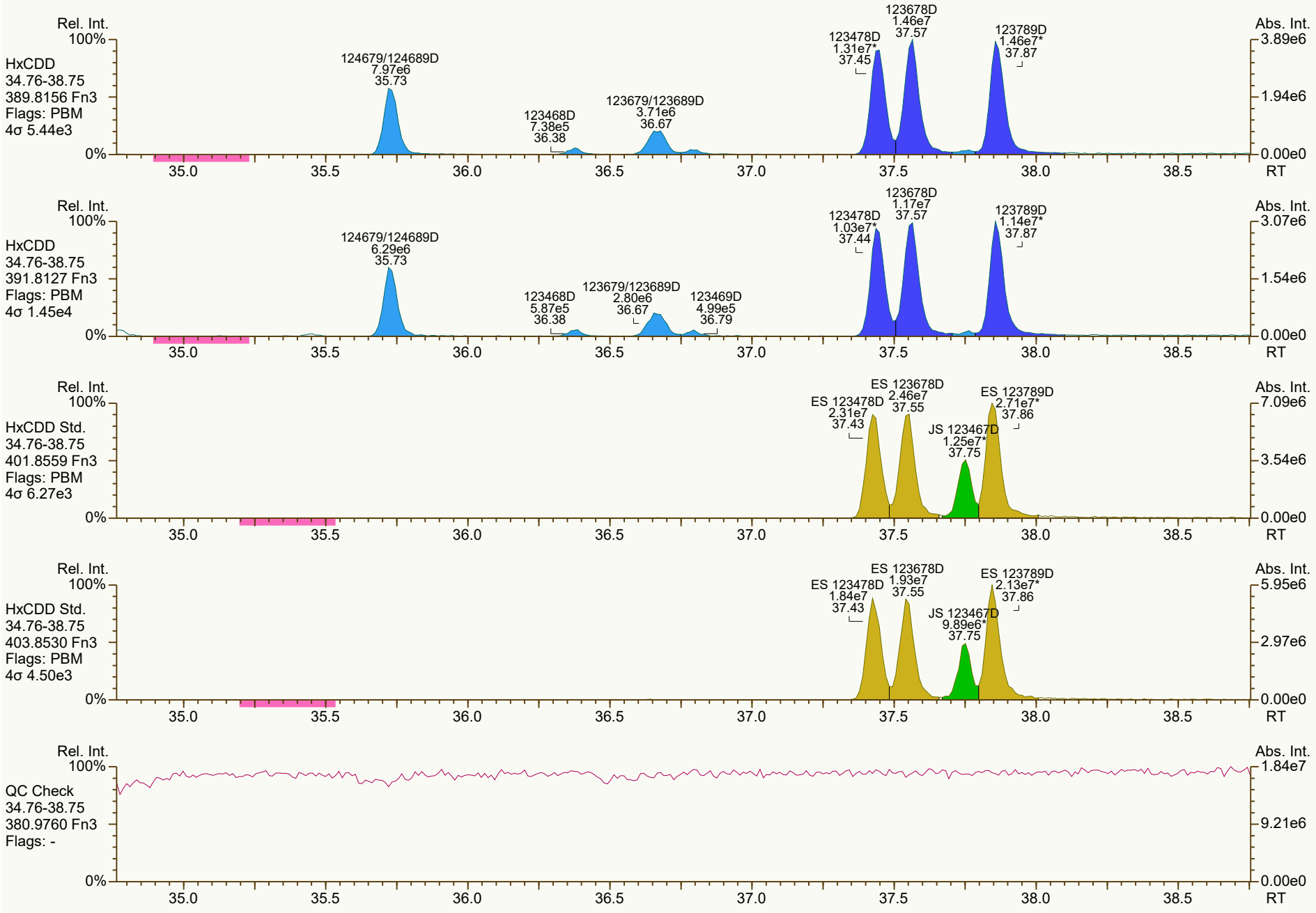
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5882, 1100 scc: 305-268

Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:33 Printed: 20-Dec-2021 14:27 Page 3 of 12


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PBM
4σ 5.44e3
0%
124679/124689D
7.97e6
35.73
123468D
7.38e5
36.38
123679/123689D
3.71e6
36.67
123478D
1.31e7*
37.45
123678D
1.46e7
37.57
123789D
1.46e7*
37.87
Abs. Int.
3.89e6
1.94e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 1.45e4
0%
124679/124689D
6.29e6
35.73
123468D
5.87e5
36.38
123679/123689D
2.80e6
36.67
123469D
4.99e5
36.79
123478D
1.03e7*
37.44
123678D
1.17e7
37.57
123789D
1.14e7*
37.87
Abs. Int.
3.07e6
1.54e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 6.27e3
0%
ES 123478D
2.31e7
37.43
ES 123678D
2.46e7
37.55
JS 123467D
1.25e7*
37.75
ES 123789D
2.71e7*
37.86
Abs. Int.
7.09e6
3.54e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 4.50e3
0%
ES 123478D
1.84e7
37.43
ES 123678D
1.93e7
37.55
JS 123467D
9.89e6*
37.75
ES 123789D
2.13e7*
37.86
Abs. Int.
5.95e6
2.97e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.84e7
9.21e6
0.00e0
35.0
35.5
36.0
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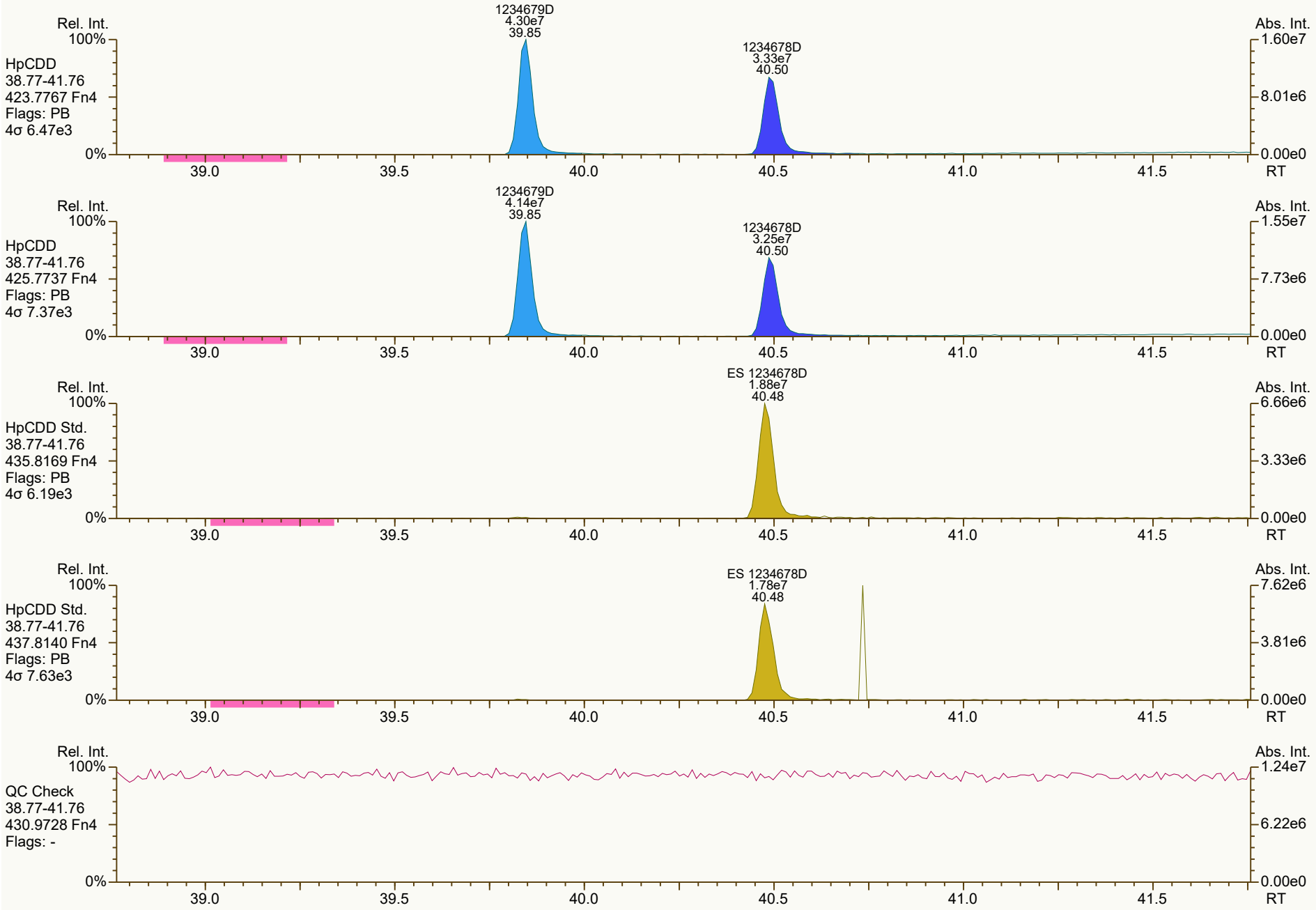
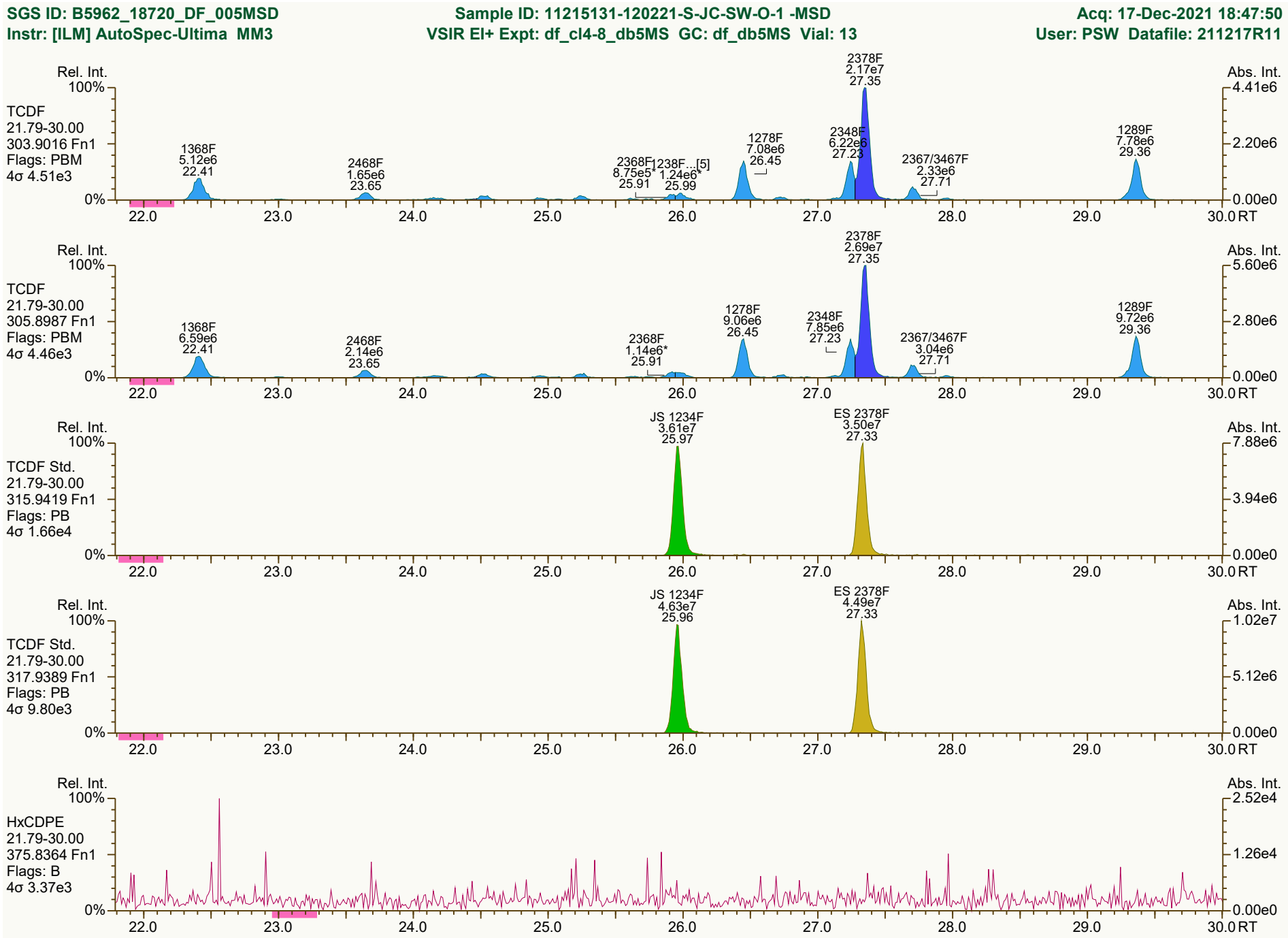
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 6.47e3
1234679D
4.30e7
39.85
1234678D
3.33e7
40.50
Abs. Int.
1.60e7
8.01e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 7.37e3
1234679D
4.14e7
39.85
1234678D
3.25e7
40.50
Abs. Int.
1.55e7
7.73e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 6.19e3
ES 1234678D
1.88e7
40.48
Abs. Int.
6.66e6
3.33e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 7.63e3
ES 1234678D
1.78e7
40.48
Abs. Int.
7.62e6
3.81e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.24e7
6.22e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
2.02e8
43.04
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 8.36e3
0%
Abs. Int.
6.36e7
3.18e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.24e8
43.04
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.29e4
0%
Abs. Int.
6.99e7
3.50e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.83e7
43.03
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 6.75e3
0%
Abs. Int.
5.67e6
2.83e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.02e7
43.02
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.65e3
0%
Abs. Int.
6.32e6
3.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.28e6
3.64e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT



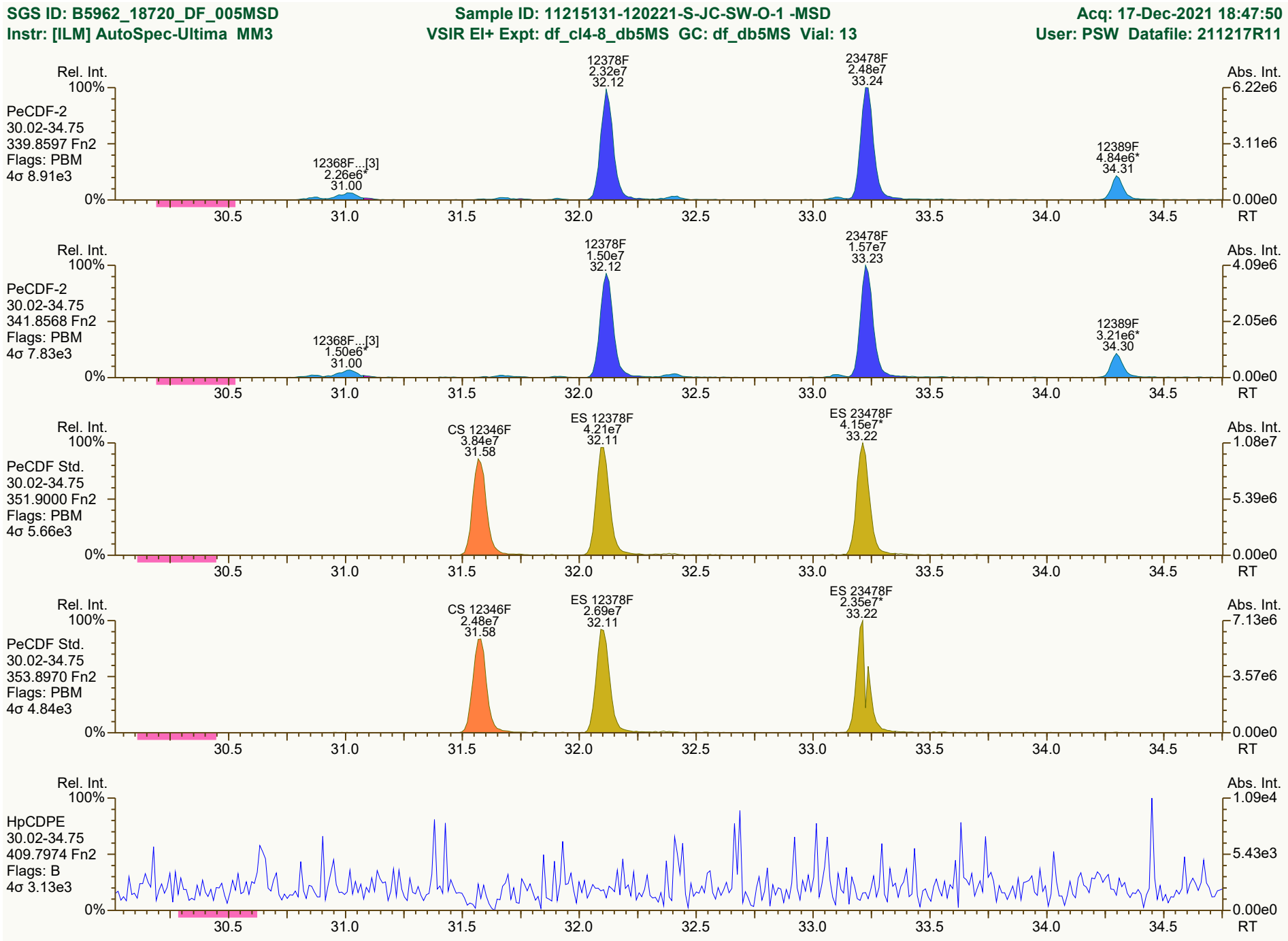
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MSD.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1883, 3618, 1151 scc: 305-268
PKD: 20-Dec-2021 09:33 Printed: 20-Dec-2021 14:27 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 2.97e3
13468/12468F
4.64e7
29.29
Abs. Int.
1.11e7
5.55e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 4.73e3
13468/12468F
2.92e7
29.29
Abs. Int.
6.95e6
3.48e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
3.51e6
1.76e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

SGS ID: B5962_18720_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

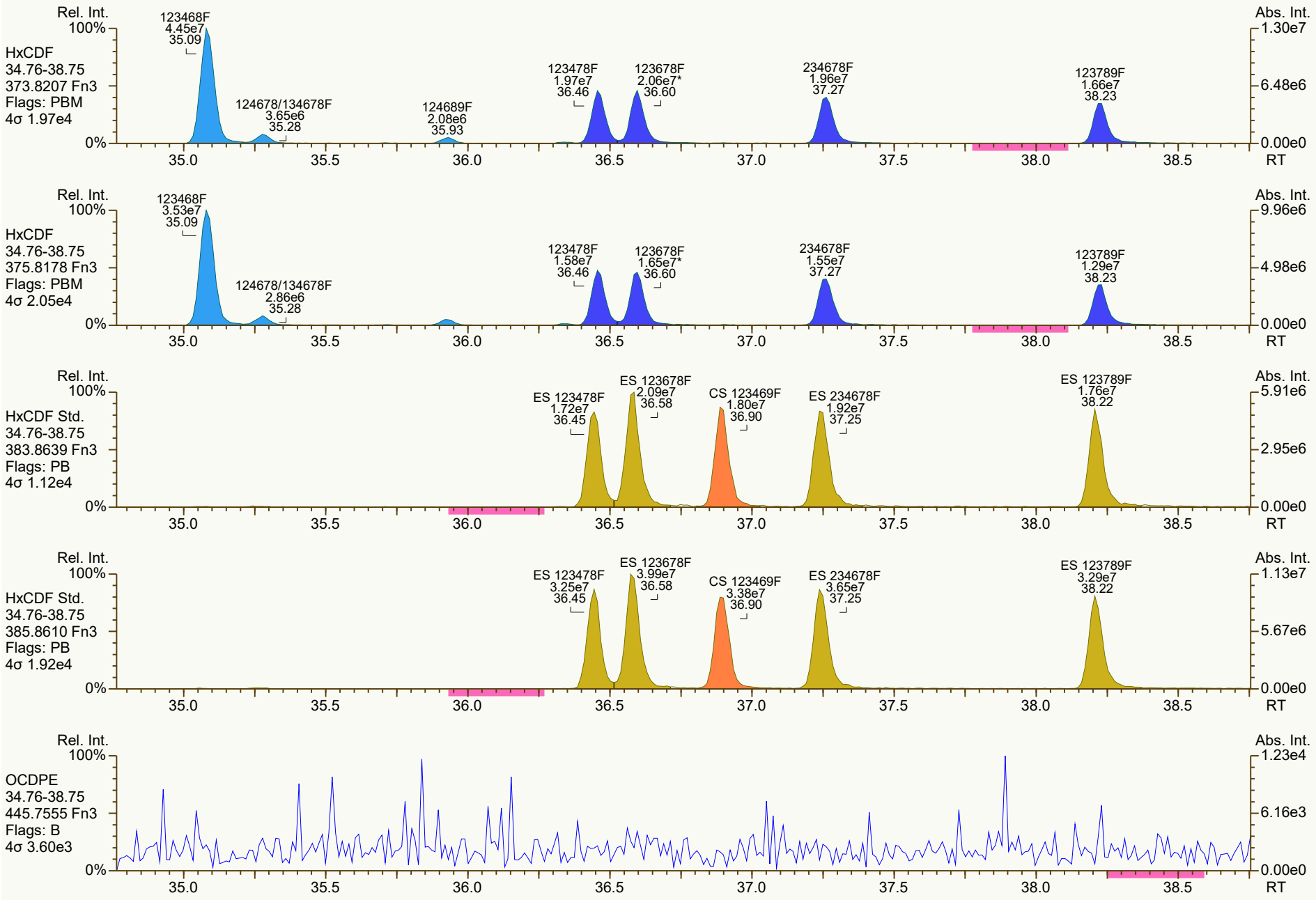
Sample ID: 11215131-120221-S-JC-SW-O-1 -MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13

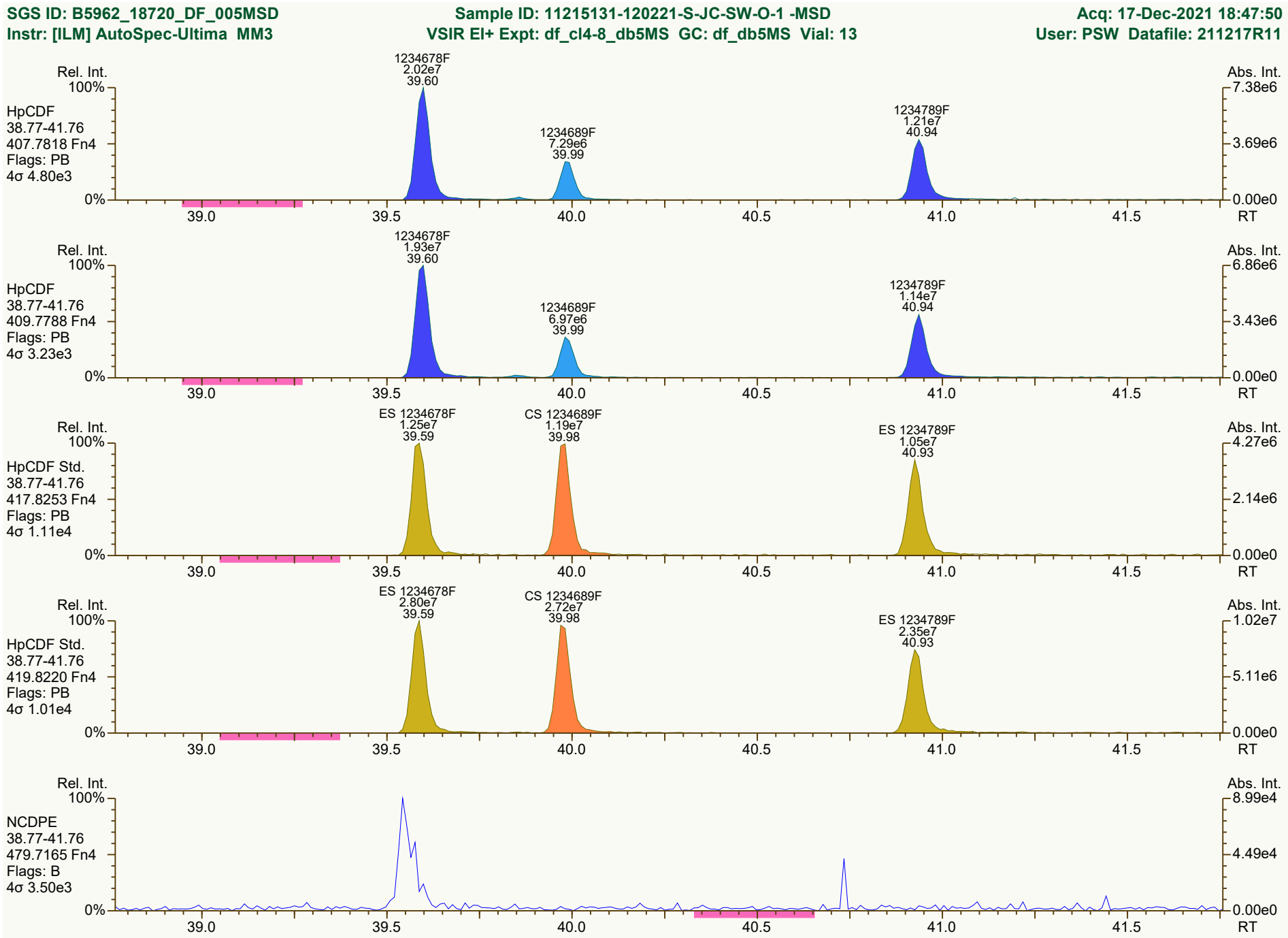
Acq: 17-Dec-2021 18:47:50
User: PSW Datafile: 211217R11



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MSD.utp_res, saved 20-Dec-2021 14:06 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0487, 6317, 7920 scc: 305-268

Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:33 Printed: 20-Dec-2021 14:27 Page 9 of 12


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 1.97e4
123468F
4.45e7
35.09
124678/134678F
3.65e6
35.28
124689F
2.08e6
35.93
123478F
1.97e7
36.46
123678F
2.06e7*
36.60
234678F
1.96e7
37.27
123789F
1.66e7
38.23
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 2.05e4
123468F
3.53e7
35.09
124678/134678F
2.86e6
35.28
123478F
1.58e7
36.46
123678F
1.65e7*
36.60
234678F
1.55e7
37.27
123789F
1.29e7
38.23
0%
Abs. Int.
9.96e6
4.98e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 1.12e4
ES 123478F
1.72e7
36.45
ES 123678F
2.09e7
36.58
CS 123469F
1.80e7
36.90
ES 234678F
1.92e7
37.25
ES 123789F
1.76e7
38.22
0%
Abs. Int.
5.91e6
2.95e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.92e4
ES 123478F
3.25e7
36.45
ES 123678F
3.99e7
36.58
CS 123469F
3.38e7
36.90
ES 234678F
3.65e7
37.25
ES 123789F
3.29e7
38.22
0%
Abs. Int.
1.13e7
5.67e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 3.60e3
0%
Abs. Int.
1.23e4
6.16e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT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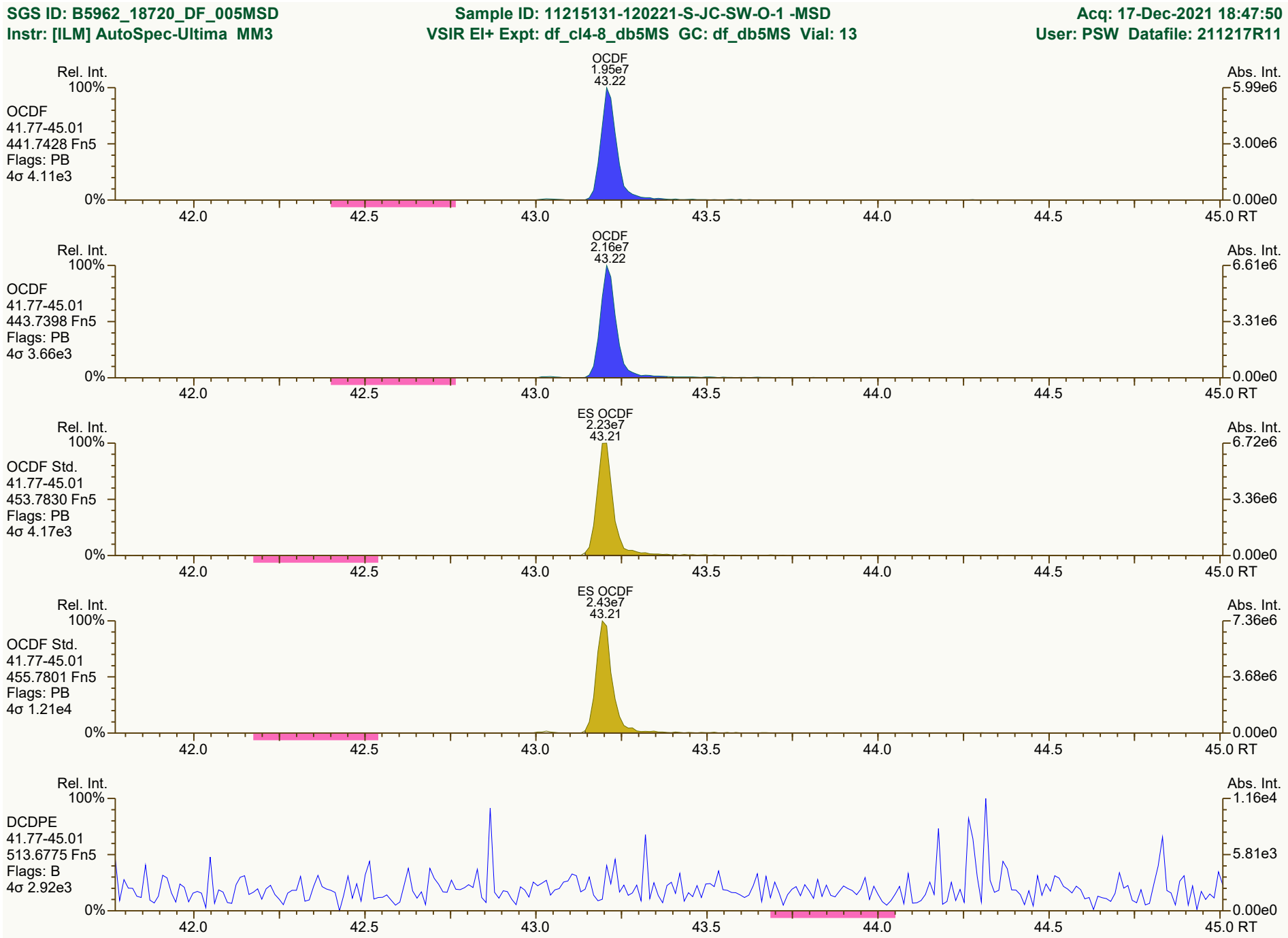
Sample ID: 11215131-120221-S-JC-SW-O-1 -MSD
Acq: 17-Dec-2021 18:47:50
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13
User: PSW Datafile: 211217R11
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.80e3
1234678F
2.02e7
39.60
1234689F
7.29e6
39.99
1234789F
1.21e7
40.94
7.38e6
3.69e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.23e3
1234678F
1.93e7
39.60
1234689F
6.97e6
39.99
1234789F
1.14e7
40.94
6.86e6
3.43e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.11e4
ES 1234678F
1.25e7
39.59
CS 1234689F
1.19e7
39.98
ES 1234789F
1.05e7
40.93
4.27e6
2.14e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 1.01e4
ES 1234678F
2.80e7
39.59
CS 1234689F
2.72e7
39.98
ES 1234789F
2.35e7
40.93
1.02e7
5.11e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.50e3
8.99e4
4.49e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MSD.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9984, 6732, 3987 scc: 305-268
PKD: 20-Dec-2021 09:33 Printed: 20-Dec-2021 14:27 Page 11 of 12

SGS ID: B5962_18720_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-JC-SW-O-1 -MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 13

Acq: 17-Dec-2021 18:47:50
User: PSW Datafile: 211217R11



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_005MSD.utp_res, saved 20-Dec-2021 14:06 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7252, 1425, 4664 scc: 305-268

Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:33 Printed: 20-Dec-2021 14:27 Page 12 of 12

Lab ID: B5962_18720_DF_006 **Acq'd:** 17 Dec 2021 19:35 PSW **Wt/Vol:** 10.11 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-DUP-1 **UTP:** 20-Dec-2021 14:06:11 PSW **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 568-825-FKF

Datafile: 211217R12 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.22		1.0008	1.0008	0	1.21E+07	0.73	Y	1.34	33.1	9675.715	0.298
12378-PeCDD	33.57	J	1.0005	1.0005	0	3.93E+05	1.60	Y	1.06	1.62	11359.811	0.431
123478-HxCDD	37.45	J	1.0003	1.0003	0	5.08E+05	1.15	Y	1.06	2.41	18041.475	0.788
123678-HxCDD	37.57		1.0033	1.0036	+0.7	1.45E+06	1.29	Y	1.08	6.46	18041.475	0.754
123789-HxCDD	37.87		1.0110	1.0116	+1.4	1.08E+06	1.11	Y	1.02	4.5	18041.475	0.72
1234678-HpCDD	40.51		1.0003	1.0004	+0.2	3.92E+07	1.04	Y	0.97	227	13913.323	0.546
OCDD	43.05		1.0003	1.0002	-0.3	3.74E+08	0.90	Y	1.07	3,850	17705.988	1.58
2378-TCDF	27.36		1.0006	1.0008	+0.3	5.21E+07	0.79	Y	0.96	146	7260.641	0.231
12378-PeCDF	32.13		1.0006	1.0005	-0.2	2.44E+06	1.53	Y	0.95	7.93	7373.819	0.244
23478-PeCDF	33.24		1.0006	1.0006	0	2.42E+06	1.52	Y	0.94	7.95	7373.819	0.223
123478-HxCDF	36.47		1.0004	1.0005	+0.2	4.00E+06	1.33	Y	1.23	13.6	16092.113	0.457
123678-HxCDF	36.60		1.0004	1.0004	0	1.70E+06	1.34	Y	1.13	5.21	16092.113	0.438
234678-HxCDF	37.27		1.0005	1.0004	-0.2	1.32E+06	1.35	Y	1.15	4.38	16092.113	0.48
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	16092.113	0.541
1234678-HpCDF	39.61		1.0003	1.0003	0	1.07E+07	1.06	Y	1.36	39.9	8200.593	0.208
1234789-HpCDF	40.95		1.0003	1.0002	-0.2	9.51E+05	1.13	Y	1.30	4.49	8200.593	0.305
OCDF	43.23		1.0002	1.0003	+0.3	1.55E+07	0.90	Y	1.03	136	8579.093	0.598

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.20	1.0237	1.0239	+0.3	5.37E+07	0.77	Y	1.03	92
ES 12378-PeCDD	33.55	1.2158	1.2184	+5.2	4.54E+07	1.57	Y	1.03	77.7
ES 123478-HxCDD	37.44	0.9920	0.9916	-0.9	3.94E+07	1.30	Y	0.99	94.5
ES 123678-HxCDD	37.55	0.9949	0.9947	-0.5	4.10E+07	1.24	Y	0.97	101
ES 123789-HxCDD	37.86	1.0026	1.0028	+0.5	4.68E+07	1.28	Y	1.12	99.3
ES 1234678-HpCDD	40.49	1.0713	1.0726	+3.2	3.51E+07	1.07	Y	0.99	84.4
ES OCDD	43.04	1.1385	1.1401	+4.1	3.60E+07	0.91	Y	0.78	55.2
ES 2378-TCDF	27.34	1.0519	1.0526	+1.1	7.33E+07	0.76	Y	1.08	88.7
ES 12378-PeCDF	32.11	1.2331	1.2364	+6.4	6.43E+07	1.57	Y	0.93	90.4
ES 23478-PeCDF	33.22	1.2754	1.2792	+7.6	6.42E+07	1.58	Y	0.92	91.3
ES 123478-HxCDF	36.45	0.9656	0.9655	-0.2	4.70E+07	0.52	Y	1.14	98.2
ES 123678-HxCDF	36.59	0.9693	0.9692	-0.2	5.70E+07	0.51	Y	1.30	105
ES 234678-HxCDF	37.25	0.9869	0.9868	-0.2	5.19E+07	0.53	Y	1.20	103
ES 123789-HxCDF	38.22	1.0121	1.0125	+0.9	4.65E+07	0.54	Y	1.14	97.6
ES 1234678-HpCDF	39.60	1.0478	1.0489	+2.6	3.92E+07	0.44	Y	0.95	98.5
ES 1234789-HpCDF	40.94	1.0832	1.0846	+3.4	3.22E+07	0.41	Y	0.85	90.8
ES OCDF	43.22	1.1434	1.1449	+3.9	4.41E+07	0.91	Y	0.93	56.8

Lab ID: B5962_18720_DF_006 **Acq'd:** 17 Dec 2021 19:35 PSW **Wt/Vol:** 10.11 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-DUP-1 **UTP:** 20-Dec-2021 14:06:11 PSW **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 568-825-FKF

Datafile: 211217R12 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.54		-	-	-	5.65E+07	0.78	Y	-	-
JS 1234-TCDF	25.97		-	-	-	7.62E+07	0.75	Y	-	-
JS 123467-HxCDD	37.75		-	-	-	2.10E+07	1.23	Y	-	-
CS 37Cl-2378-TCDD	28.22		1.0245	1.0247	+0.3	2.40E+07	n/a	-	1.31	81
CS 12347-PeCDD	33.05		1.1978	1.2003	+5.0	4.12E+07	1.65	Y	0.89	81.8
CS 12346-PeCDF	31.58		1.2130	1.2160	+5.7	6.00E+07	1.56	Y	0.87	90.7
CS 123469-HxCDF	36.90		0.9775	0.9775	0	5.08E+07	0.53	Y	1.09	111
CS 1234689-HpCDF	39.99		1.0580	1.0592	+2.9	3.70E+07	0.43	Y	0.86	102
~~SS 37Cl-2378-TCDD~~	~~28.22~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.40E+07~~	~~n/a~~		~~1.26~~	~~80.6~~
~~SS 12347-PeCDD~~	~~33.05~~		~~1.1978~~	~~1.2003~~	~~+5.0~~	~~4.12E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~105~~
~~SS 12346-PeCDF~~	~~31.58~~		~~1.2130~~	~~1.2160~~	~~+5.7~~	~~6.00E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~100~~
~~SS 123469-HxCDF~~	~~36.90~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.08E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~106~~
~~SS 1234689-HpCDF~~	~~39.99~~		~~1.0580~~	~~1.0592~~	~~+2.9~~	~~3.70E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~104~~

Totals	Conc	EMPC
Total TCDD	35.2	39.8
Total PeCDD	5.16	9.35
Total HxCDD	71.1	71.1
Total HpCDD	541	541
Total Tetra-Octa Dioxins	4500	4510
Total TCDF	297	305
Total PeCDF	49.8	52.9
Total HxCDF	63.5	64.3
Total HpCDF	100	100
Total Tetra-Octa Furans	647	658
Total Tetra-Octa Dioxins & Furans	5140	5160

Lab ID: B5962_18720_DF_006 | **Acq'd: 17 Dec 2021 19:35 PSW** | **Wt/Vol: 10.11 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-DUP-1 | **UTP: 20-Dec-2021 14:06:11 PSW** | **J-level: 0.495 pg/g** | **Split: 1** | **Checkcode: 568-825-FKF**

Datafile: 211217R12 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.55		0.8726	0.8707	-2.8	3.05E+05	0.81	Y	1.34	0.835	9675.715	0.298
1379-TCDD	NotFnd		0.8851						1.34		9675.715	0.298
1369-TCDD	NotFnd		0.9002						1.34		9675.715	0.298
1469-TCDD	26.13	EMPC	0.9275	0.9266	-1.4	3.69E+05	0.65	N	1.34	1.01	9675.715	0.298
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		9675.715	0.298
1378-TCDD	26.56	J	0.9427	0.9419	-1.3	1.41E+05	0.76	Y	1.34	0.385	9675.715	0.298
1268-TCDD	NotFnd		0.9498						1.34		9675.715	0.298
1478-TCDD	NotFnd		0.9584						1.34		9675.715	0.298
1279-TCDD	NotFnd		0.9644						1.34		9675.715	0.298
1234/1269-TCDD	NotFnd		0.9766						1.34		9675.715	0.298
1236-TCDD	NotFnd		0.9813						1.34		9675.715	0.298
1237/1238-TCDD	27.91		0.9906	0.9899	-1.2	3.16E+05	0.81	Y	1.34	0.866	9675.715	0.298
1239-TCDD	NotFnd		0.9952						1.34		9675.715	0.298
2378-TCDD	**28.22**		**1.0008**	1.0008	**0**	1.21E+07	0.73	Y	**1.34**	**33.1**	**9675.715**	**0.298**
1278-TCDD	28.55	EMPC	1.0122	1.0125	+0.5	1.31E+06	0.96	N	1.34	3.6	9675.715	0.298
1267-TCDD	NotFnd		1.0168						1.34		9675.715	0.298
1289-TCDD	NotFnd		1.0349						1.34		9675.715	0.298
12479/12468-PeCDD	31.07	J	0.9267	0.9261	-1.1	5.66E+05	1.35	Y	1.06	2.33	11359.811	0.431
12469-PeCDD	31.61	J EMPC	0.9425	0.9419	-1.1	4.69E+05	0.79	N	1.06	1.93	11359.811	0.431
12368-PeCDD	32.16	J	0.9588	0.9584	-0.8	2.97E+05	1.70	Y	1.06	1.22	11359.811	0.431
12478-PeCDD	NotFnd		0.9643						1.06		11359.811	0.431
12379-PeCDD	32.44	J EMPC	0.9673	0.9669	-0.8	1.58E+05	1.19	N	1.06	0.649	11359.811	0.431
12369/12467/12489-PeCDD	32.71	J EMPC	0.9750	0.9748	-0.4	3.10E+05	1.27	N	1.06	1.27	11359.811	0.431
12346/12347-PeCDD	NotFnd		0.9859						1.06		11359.811	0.431
12378-PeCDD	33.57	J	**1.0005**	**1.0005**	**0**	**3.93E+05**	**1.60**	**Y**	**1.06**	**1.62**	**11359.811**	**0.431**
12367-PeCDD	NotFnd		1.0032						1.06		11359.811	0.431
12389-PeCDD	34.00	J EMPC	1.0135	1.0132	-0.6	8.16E+04	1.18	N	1.06	0.336	11359.811	0.431
124679/124689-HxCDD	35.73		0.9544	0.9546	+0.4	5.75E+06	1.28	Y	1.05	25.5	18041.475	0.751
123468-HxCDD	36.38		0.9716	0.9719	+0.7	1.11E+06	1.34	Y	1.05	4.94	18041.475	0.751
123679/123689-HxCDD	36.67		0.9793	0.9796	+0.7	5.23E+06	1.29	Y	1.05	23.2	18041.475	0.751
123469-HxCDD	36.80	J	0.9829	0.9830	+0.2	5.05E+05	1.27	Y	1.05	2.24	18041.475	0.751
123478-HxCDD	37.45	J	**1.0003**	**1.0003**	**0**	**5.08E+05**	**1.15**	**Y**	1.06	**2.41**	**18041.475**	**0.788**
123678-HxCDD	37.57		**1.0033**	**1.0036**	**+0.7**	**1.45E+06**	**1.29**	**Y**	1.08	**6.46**	**18041.475**	**0.754**
123467-HxCDD	37.77	J	1.0084	1.0089	+1.1	3.99E+05	1.29	Y	1.05	1.77	18041.475	0.751
123789-HxCDD	37.87		**1.0110**	**1.0116**	**+1.4**	**1.08E+06**	**1.11**	**Y**	1.02	**4.5**	**18041.475**	**0.72**

Lab ID: B5962_18720_DF_006 | **Acq'd: 17 Dec 2021 19:35 PSW** | **Wt/Vol: 10.11 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-DUP-1 | **UTP: 20-Dec-2021 14:06:11 PSW** | **J-level: 0.495 pg/g** | **Split: 1** | **Checkcode: 568-825-FKF**

Datafile: 211217R12 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

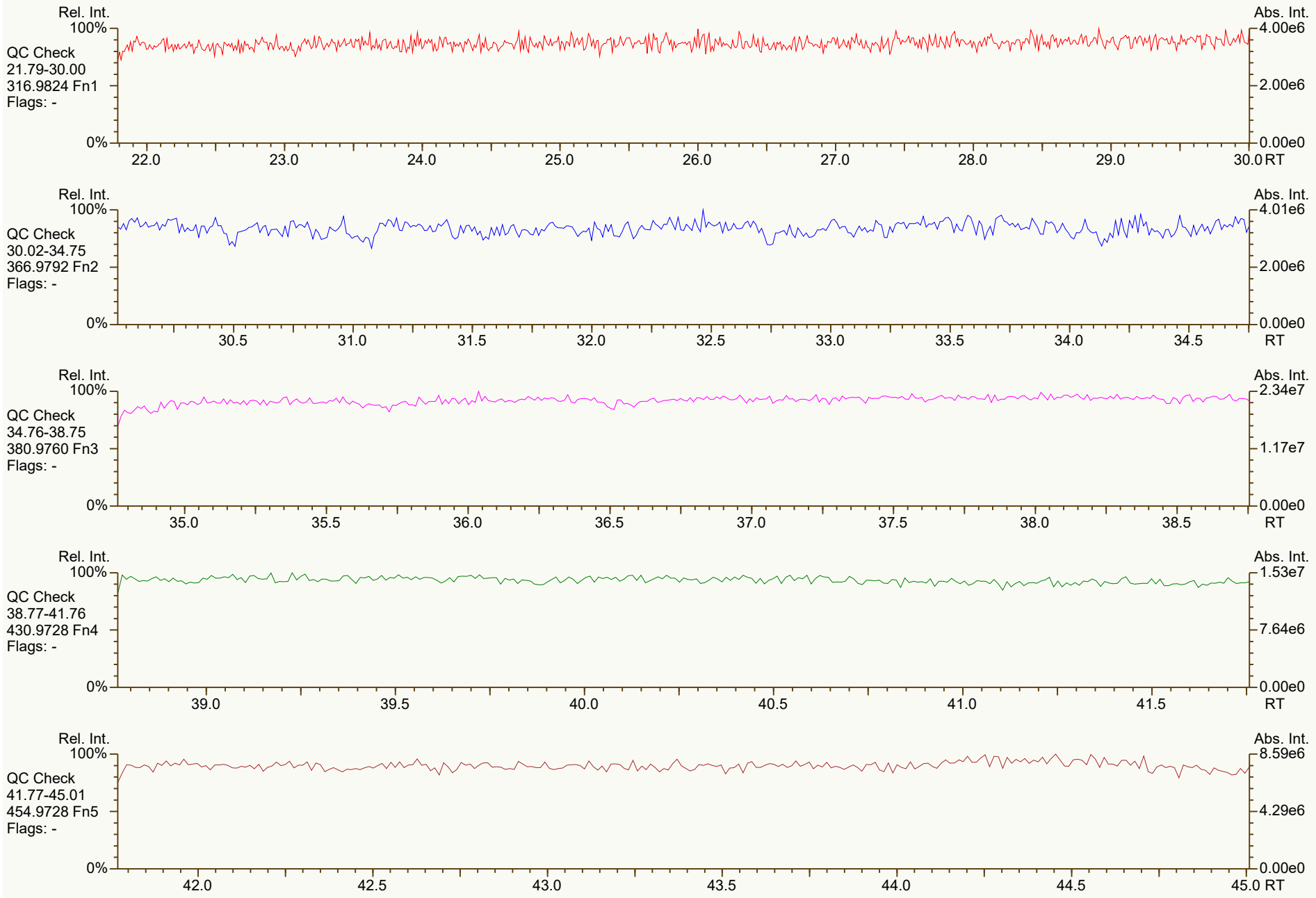
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	5.42E+07	1.04	Y	0.97	314	13913.323	0.546
1234678-HpCDD	**40.51**		**1.0003**	**1.0004**	**+0.2**	**3.92E+07**	**1.04**	**Y**	**0.97**	**227**	**13913.323**	**0.546**
OCDD	**43.05**		**1.0003**	**1.0002**	**-0.3**	**3.74E+08**	**0.90**	**Y**	**1.07**	**3,850**	**17705.988**	**1.58**
OCDD-a	43.05		1.0001	1.0002	+0.3	2.30E+07	2.56	Y	0.07	3,830	15789.083	22.8
1368-TCDF	22.41	J EMPC	0.8230	0.8198	-4.3	1.66E+05	1.00	N	0.96	0.468	7260.641	0.231
1468-TCDF	23.01		0.8443	0.8417	-3.6	4.20E+05	0.83	Y	0.96	1.18	7260.641	0.231
2468-TCDF	23.65		0.8672	0.8651	-3.0	7.72E+05	0.82	Y	0.96	2.17	7260.641	0.231
1346/1246-TCDF	24.05		0.8802	0.8797	-0.7	3.75E+05	0.80	Y	0.96	1.06	7260.641	0.231
1347/1378/1247-TCDF	24.18		0.8855	0.8845	-1.5	1.27E+06	0.78	Y	0.96	3.57	7260.641	0.231
1348-TCDF	24.43		0.8952	0.8937	-2.2	2.66E+05	0.84	Y	0.96	0.748	7260.641	0.231
1248/1367/1379-TCDF	24.53		0.9000	0.8974	-3.8	2.34E+06	0.81	Y	0.96	6.59	7260.641	0.231
1268-TCDF	24.95	EMPC	0.9136	0.9125	-1.6	9.76E+05	0.92	N	0.96	2.74	7260.641	0.231
1467-TCDF	25.08		0.9185	0.9173	-1.8	3.72E+05	0.76	Y	0.96	1.05	7260.641	0.231
1478-TCDF	25.25		0.9247	0.9237	-1.5	2.31E+06	0.82	Y	0.96	6.49	7260.641	0.231
1369/1237-TCDF	25.63	EMPC	0.9381	0.9376	-0.8	7.03E+05	0.97	N	0.96	1.98	7260.641	0.231
2467-TCDF	25.75		0.9427	0.9420	-1.1	4.55E+05	0.80	Y	0.96	1.28	7260.641	0.231
2368-TCDF	25.90		0.9484	0.9475	-1.4	1.76E+06	0.72	Y	0.96	4.94	7260.641	0.231
1238/1234/1678/1469/1236-TCDF	25.99		0.9517	0.9506	-1.7	3.30E+06	0.82	Y	0.96	9.27	7260.641	0.231
1278-TCDF	26.46		0.9682	0.9678	-0.6	2.22E+07	0.79	Y	0.96	62.4	7260.641	0.231
1349-TCDF	NotFnd		0.9725						0.96		7260.641	0.231
1267-TCDF	26.73		0.9782	0.9778	-0.6	1.71E+06	0.69	Y	0.96	4.8	7260.641	0.231
2346/1249-TCDF	26.92		0.9846	0.9849	+0.5	4.36E+05	0.69	Y	0.96	1.23	7260.641	0.231
2347/1279-TCDF	27.13	EMPC	0.9926	0.9924	-0.3	8.32E+05	0.93	N	0.96	2.34	7260.641	0.231
2348-TCDF	27.25		0.9966	0.9968	+0.3	4.24E+06	0.82	Y	0.96	11.9	7260.641	0.231
2378-TCDF	**27.36**		**1.0006**	**1.0008**	**+0.3**	**5.21E+07**	**0.79**	**Y**	**0.96**	**146**	**7260.641**	**0.231**
2367/3467-TCDF	27.71		1.0139	1.0138	-0.2	5.91E+06	0.76	Y	0.96	16.6	7260.641	0.231
1269-TCDF	27.96		1.0226	1.0227	+0.2	1.09E+06	0.71	Y	0.96	3.07	7260.641	0.231
1239-TCDF	NotFnd		1.0322						0.96		7260.641	0.231
1289-TCDF	29.37		1.0729	1.0744	+2.6	4.48E+06	0.84	Y	0.96	12.6	7260.641	0.231
13468/12468-PeCDF	29.32		0.9135	0.9132	-0.5	2.80E+06	1.57	Y	0.94	9.14	7531.542	0.239
13678/13467/12467-PeCDF	30.86		0.9612	0.9612	0	1.08E+06	1.54	Y	0.94	3.52	7373.819	0.234
12368/13478/12478-PeCDF	31.02		0.9661	0.9661	0	2.85E+06	1.57	Y	0.94	9.31	7373.819	0.234
14678-PeCDF	31.11	J	0.9693	0.9688	-0.9	4.91E+05	1.60	Y	0.94	1.6	7373.819	0.234
13479-PeCDF	NotFnd		0.9723						0.94		7373.819	0.234
13469/12479-PeCDF	31.44	J	0.9799	0.9790	-1.7	1.73E+05	1.72	Y	0.94	0.565	7373.819	0.234
12346-PeCDF	31.59	J EMPC	0.9842	0.9839	-0.6	2.28E+05	1.28	N	0.94	0.746	7373.819	0.234

Lab ID: B5962_18720_DF_006 | **Acq'd: 17 Dec 2021 19:35 PSW** | **Wt/Vol: 10.11 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-DUP-1 | **UTP: 20-Dec-2021 14:06:11 PSW** | **J-level: 0.495 pg/g** | **Split: 1** | **Checkcode: 568-825-FKF**

Datafile: 211217R12 | **Report: 20 Dec 2021 14:10 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.68	J EMPC	0.9868	0.9867	-0.2	7.32E+05	1.28	N	0.94	2.39	7373.819	0.234
12347-PeCDF	31.76	J	0.9893	0.9893	0	3.14E+05	1.72	Y	0.94	1.03	7373.819	0.234
12348-PeCDF	31.92	J	0.9941	0.9940	-0.2	4.20E+05	1.39	Y	0.94	1.37	7373.819	0.234
12378-PeCDF	**32.13**		**1.0006**	**1.0005**	**-0.2**	**2.44E+06**	**1.53**	**Y**	**0.95**	**7.93**	**7373.819**	**0.244**
12678/12367-PeCDF	32.41		1.0090	1.0094	+0.8	1.34E+06	1.50	Y	0.94	4.39	7373.819	0.234
12379-PeCDF	NotFnd		1.0143						0.94		7373.819	0.234
12679-PeCDF	NotFnd		0.9929						0.94		7373.819	0.234
23467/12369-PeCDF	33.11	J	0.9966	0.9966	0	7.40E+05	1.62	Y	0.94	2.42	7373.819	0.234
23478-PeCDF	**33.24**		**1.0006**	**1.0006**	**0**	**2.42E+06**	**1.52**	**Y**	**0.94**	**7.95**	**7373.819**	**0.223**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7373.819	0.234
12349-PeCDF	NotFnd		1.0102						0.94		7373.819	0.234
12389-PeCDF	34.31	J	1.0325	1.0328	+0.6	1.64E+05	1.66	Y	0.94	0.536	7373.819	0.234
123468-HxCDF	35.09		0.9628	0.9626	-0.4	1.38E+06	1.25	Y	1.16	4.63	16092.113	0.476
124678/134678-HxCDF	35.29		0.9683	0.9681	-0.4	5.30E+06	1.23	Y	1.16	17.8	16092.113	0.476
134679-HxCDF	NotFnd		0.9746						1.16		16092.113	0.476
124679-HxCDF	35.71	J EMPC	0.9798	0.9798	0	2.40E+05	1.01	N	1.16	0.807	16092.113	0.476
124689-HxCDF	35.93		0.9859	0.9859	0	3.70E+06	1.26	Y	1.16	12.4	16092.113	0.476
123467-HxCDF	36.35		0.9972	0.9972	0	9.64E+05	1.15	Y	1.16	3.24	16092.113	0.476
123478-HxCDF	**36.47**		**1.0004**	**1.0005**	**+0.2**	**4.00E+06**	**1.33**	**Y**	**1.23**	**13.6**	**16092.113**	**0.457**
123678-HxCDF	**36.60**		**1.0004**	**1.0004**	**0**	**1.70E+06**	**1.34**	**Y**	**1.13**	**5.21**	**16092.113**	**0.438**
123479-HxCDF	NotFnd		1.0049						1.16		16092.113	0.476
123469-HxCDF	36.92	J	1.0088	1.0090	+0.4	2.03E+05	1.24	Y	1.16	0.682	16092.113	0.476
123679-HxCDF	NotFnd		0.9943						1.16		16092.113	0.476
234678-HxCDF	**37.27**		**1.0005**	**1.0004**	**-0.2**	**1.32E+06**	**1.35**	**Y**	**1.15**	**4.38**	**16092.113**	**0.48**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		16092.113	0.476
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**16092.113**	**0.541**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.26	J	1.0007	1.0011	+0.9	4.50E+05	1.19	Y	1.16	1.51	16092.113	0.476
1234678-HpCDF	**39.61**		**1.0003**	**1.0003**	**0**	**1.07E+07**	**1.06**	**Y**	**1.36**	**39.9**	**8200.593**	**0.208**
1234679-HpCDF	39.86		1.0067	1.0066	-0.2	7.34E+05	0.99	Y	1.33	3.06	8200.593	0.251
1234689-HpCDF	40.00		1.0100	1.0102	+0.5	1.27E+07	1.06	Y	1.33	53	8200.593	0.251
1234789-HpCDF	**40.95**		**1.0003**	**1.0002**	**-0.2**	**9.51E+05**	**1.13**	**Y**	**1.30**	**4.49**	**8200.593**	**0.305**
OCDF	**43.23**		**1.0002**	**1.0003**	**+0.3**	**1.55E+07**	**0.90**	**Y**	**1.03**	**136**	**8579.093**	**0.598**
OCDF-a	43.23	**EMPC**	1.0002	1.0002	0	9.05E+05	2.97	N	0.06	137	9967.179	12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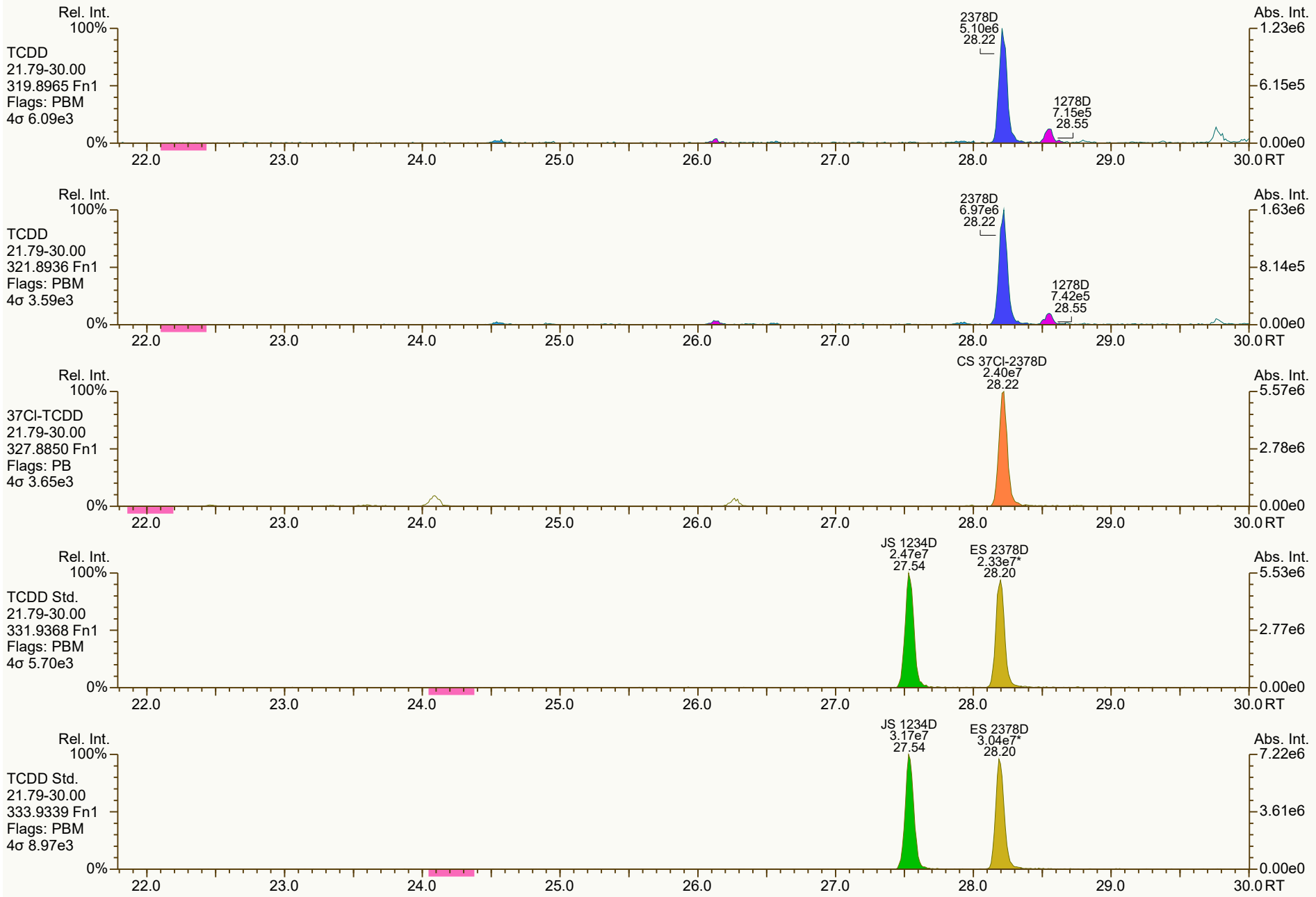
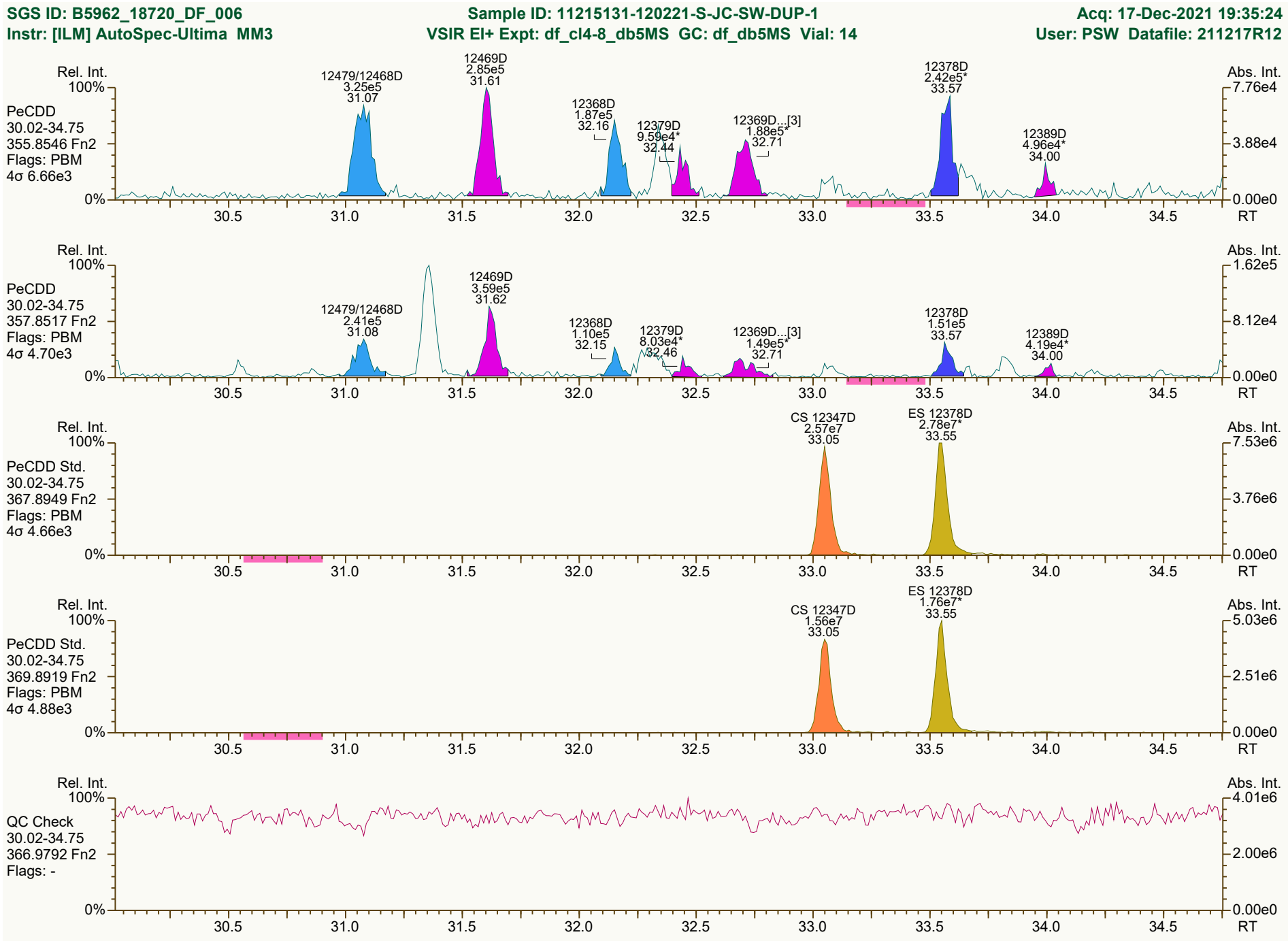
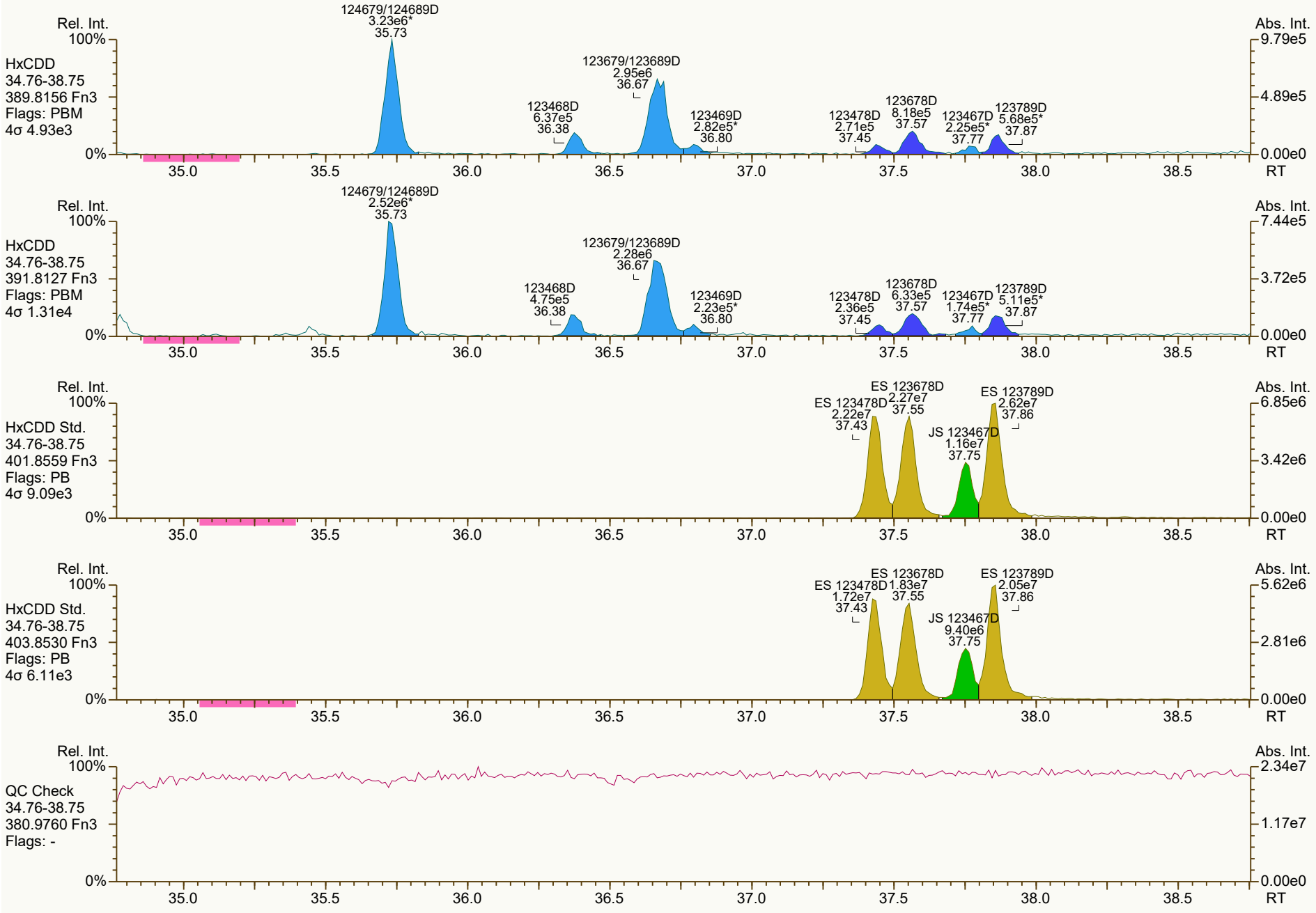
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.00e6
2.00e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.01e6
2.00e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.34e7
1.17e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.53e7
7.64e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.59e6
4.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 6.09e3
0%
2378D
5.10e6
28.22
1278D
7.15e5
28.55
Abs. Int.
1.23e6
6.15e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.59e3
0%
2378D
6.97e6
28.22
1278D
7.42e5
28.55
Abs. Int.
1.63e6
8.14e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.65e3
0%
CS 37Cl-2378D
2.40e7
28.22
Abs. Int.
5.57e6
2.78e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PBM
4σ 5.70e3
0%
JS 1234D
2.47e7
27.54
ES 2378D
2.33e7*
28.20
Abs. Int.
5.53e6
2.77e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PBM
4σ 8.97e3
0%
JS 1234D
3.17e7
27.54
ES 2378D
3.04e7*
28.20
Abs. Int.
7.22e6
3.61e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

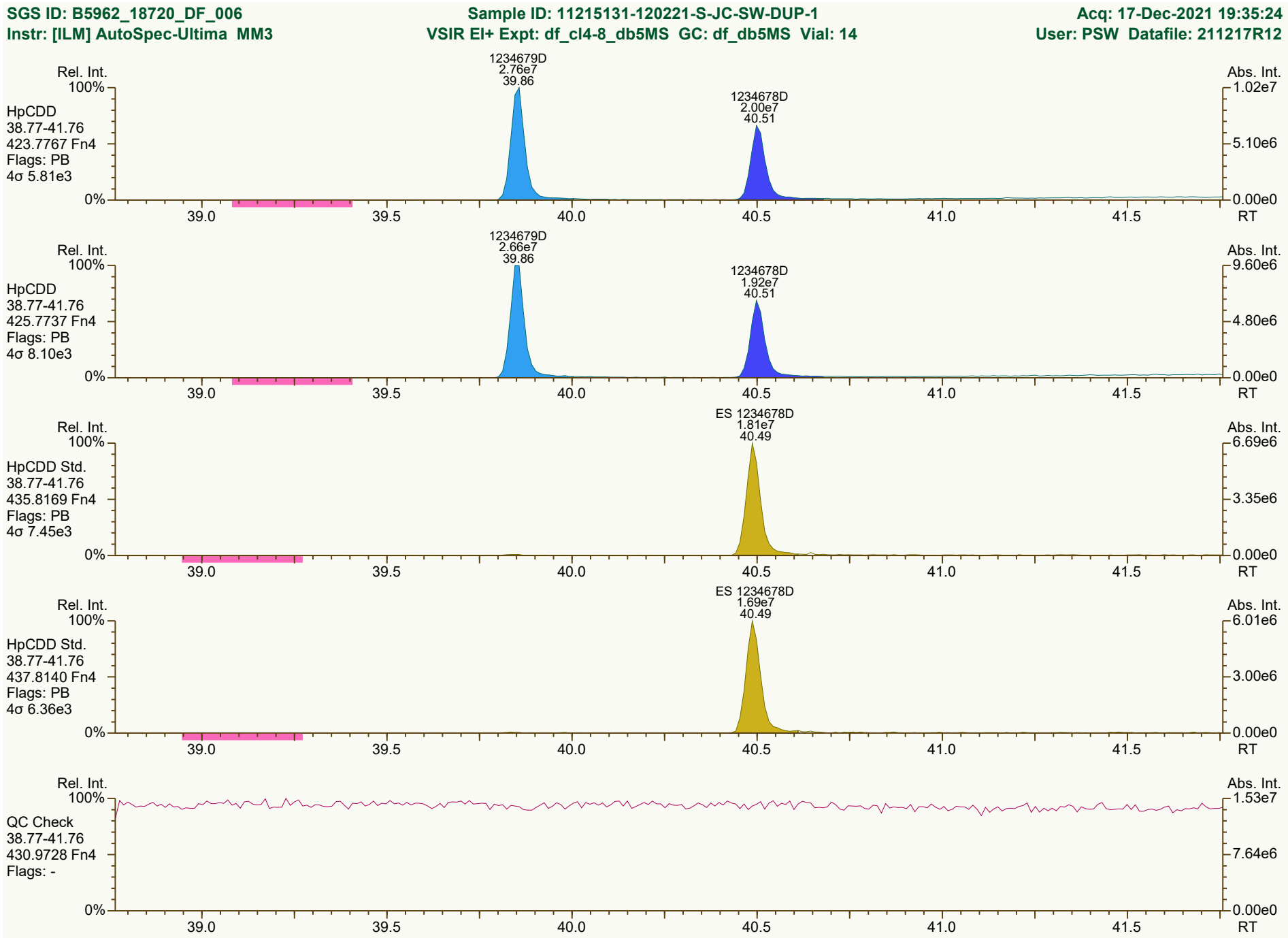
SGS ID: B5962_18720_DF_006 | Sample ID: 11215131-120221-S-JC-SW-DUP-1 | Acq: 17-Dec-2021 19:35:24
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14 | User: PSW Datafile: 211217R12



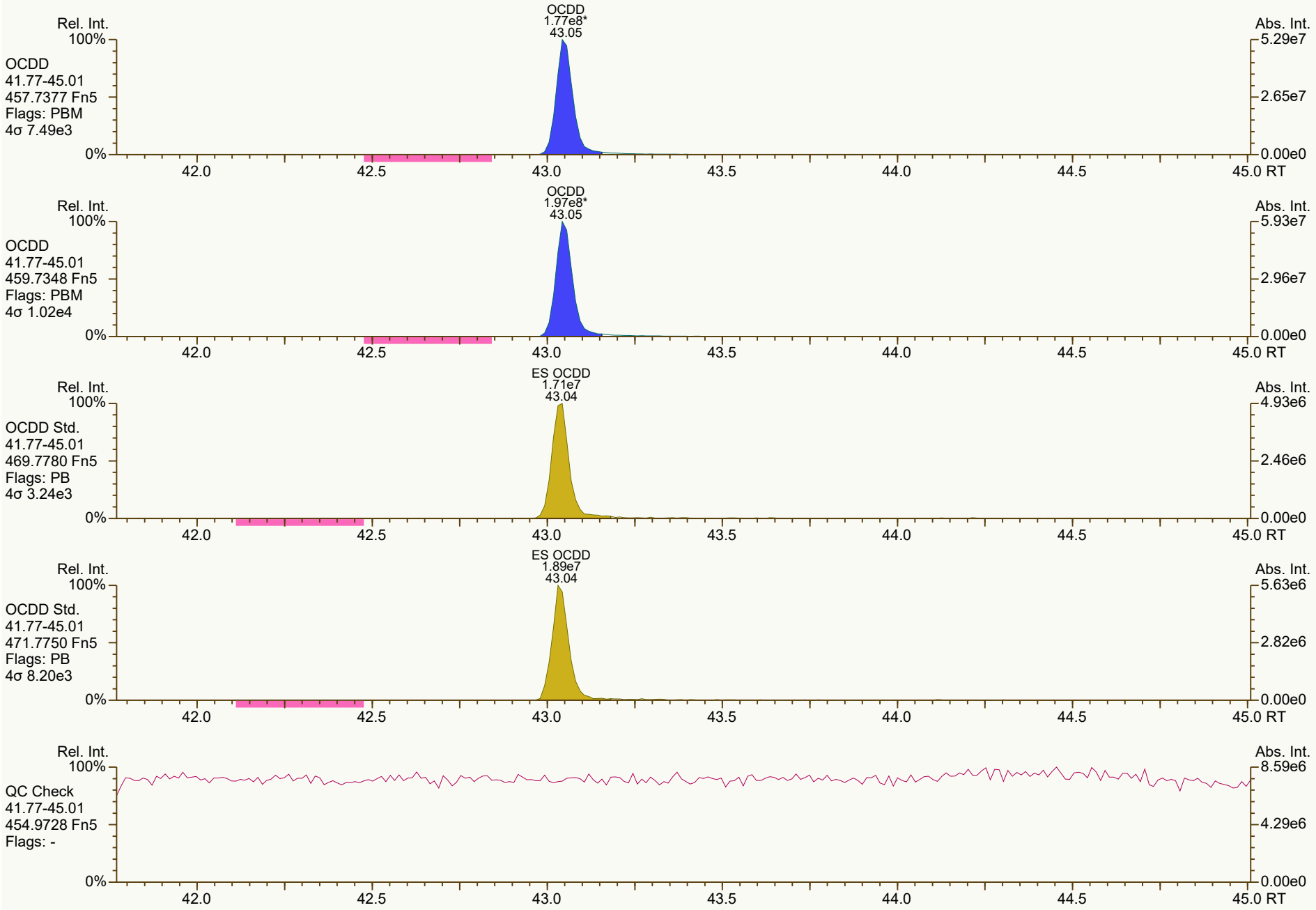
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_006.utp_res, saved 20-Dec-2021 14:06 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2817, 6773 scc: 568-825 | PKD: 20-Dec-2021 09:57 Printed: 20-Dec-2021 14:27 Page 3 of 12

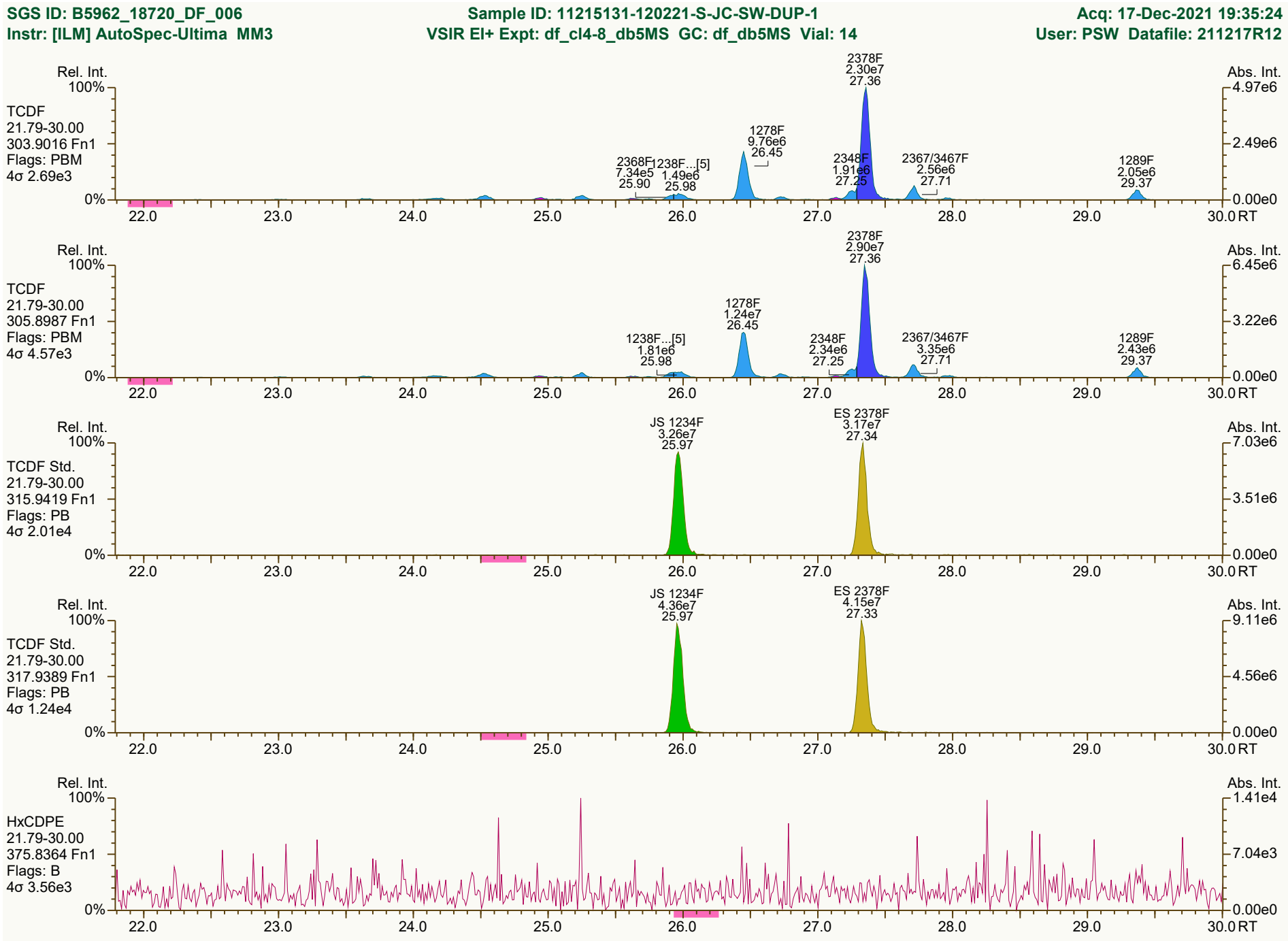

Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PBM
4σ 4.93e3
124679/124689D
3.23e6*
35.73
123679/123689D
2.95e6
36.67
123468D
6.37e5
36.38
123469D
2.82e5*
36.80
123478D
2.71e5
37.45
123678D
8.18e5
37.57
123467D
2.25e5*
37.77
123789D
5.68e5*
37.87
Abs. Int.
9.79e5
4.89e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 1.31e4
124679/124689D
2.52e6*
35.73
123679/123689D
2.28e6
36.67
123468D
4.75e5
36.38
123469D
2.23e5*
36.80
123478D
2.36e5
37.45
123678D
6.33e5
37.57
123467D
1.74e5*
37.77
123789D
5.11e5*
37.87
Abs. Int.
7.44e5
3.72e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PB
4σ 9.09e3
ES 123678D
2.27e7
37.55
ES 123478D
2.22e7
37.43
ES 123789D
2.62e7
37.86
JS 123467D
1.16e7
37.75
Abs. Int.
6.85e6
3.42e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PB
4σ 6.11e3
ES 123678D
1.83e7
37.55
ES 123478D
1.72e7
37.43
ES 123789D
2.05e7
37.86
JS 123467D
9.40e6
37.75
Abs. Int.
5.62e6
2.81e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
Abs. Int.
2.34e7
1.17e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

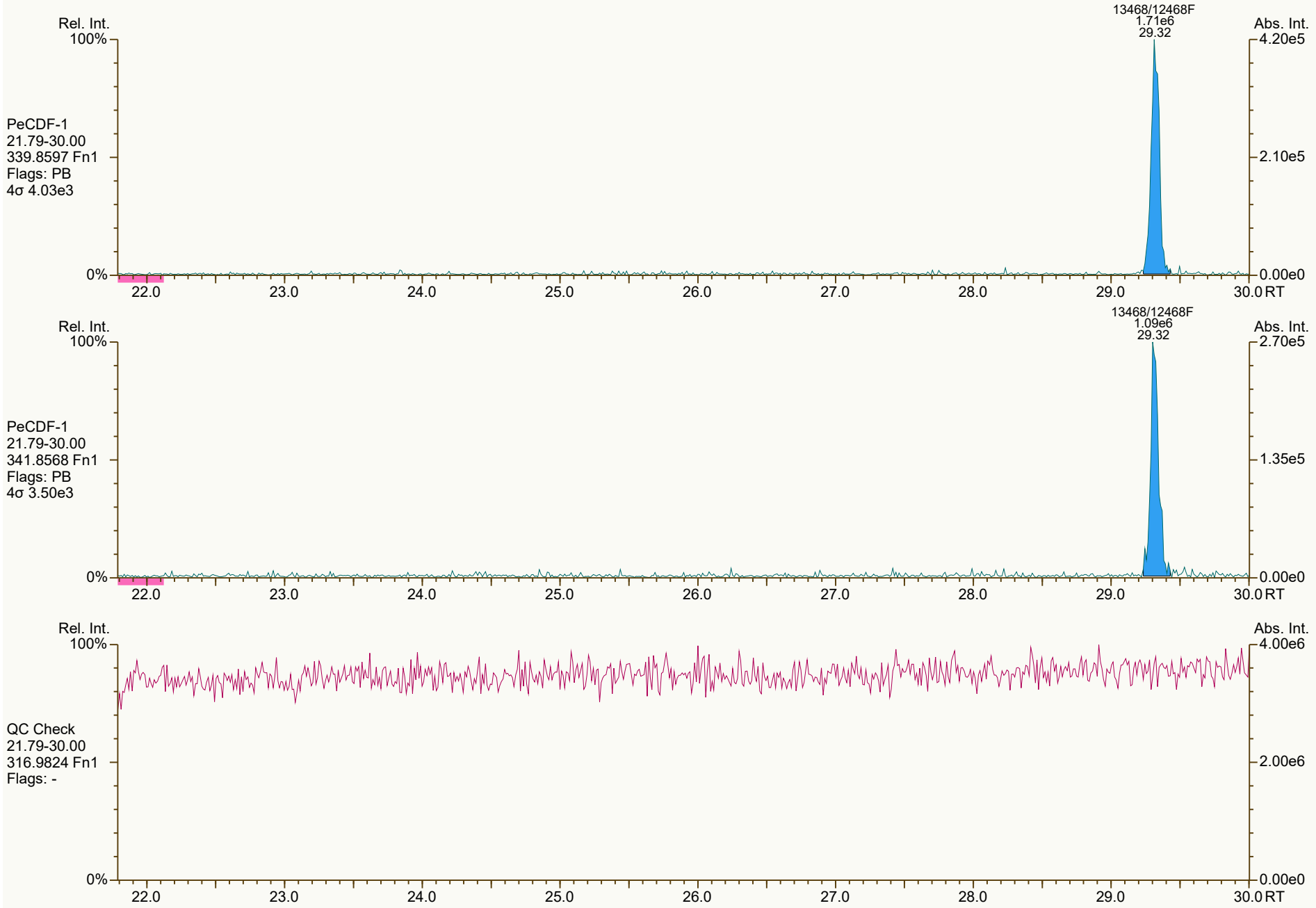
SGS ID: B5962_18720_DF_006 | Sample ID: 11215131-120221-S-JC-SW-DUP-1 | Acq: 17-Dec-2021 19:35:24
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14 | User: PSW Datafile: 211217R12

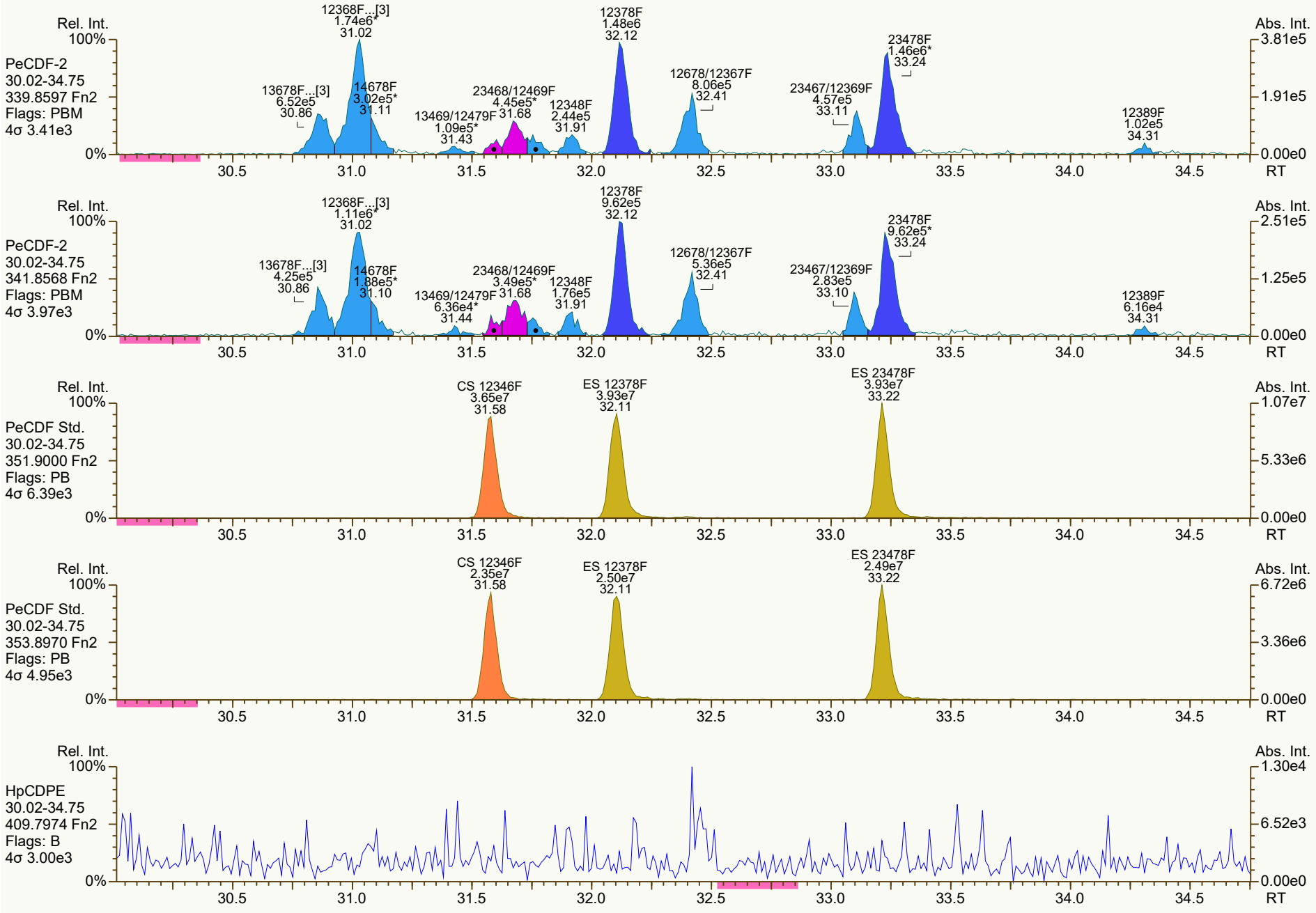


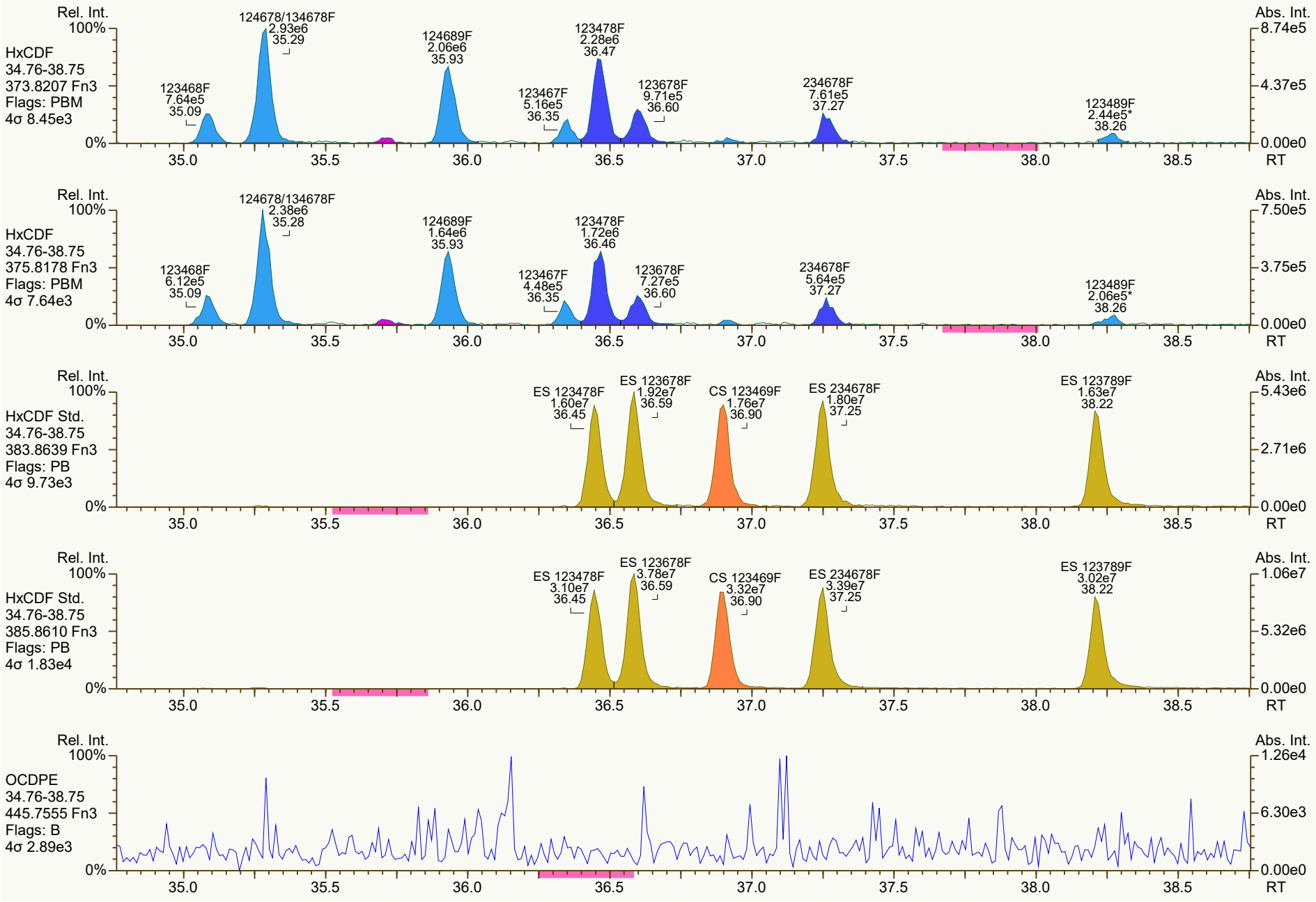
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_006.utp_res, saved 20-Dec-2021 14:06 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8085, 9990 scc: 568-825 | PKD: 20-Dec-2021 09:57 Printed: 20-Dec-2021 14:27 Page 5 of 12

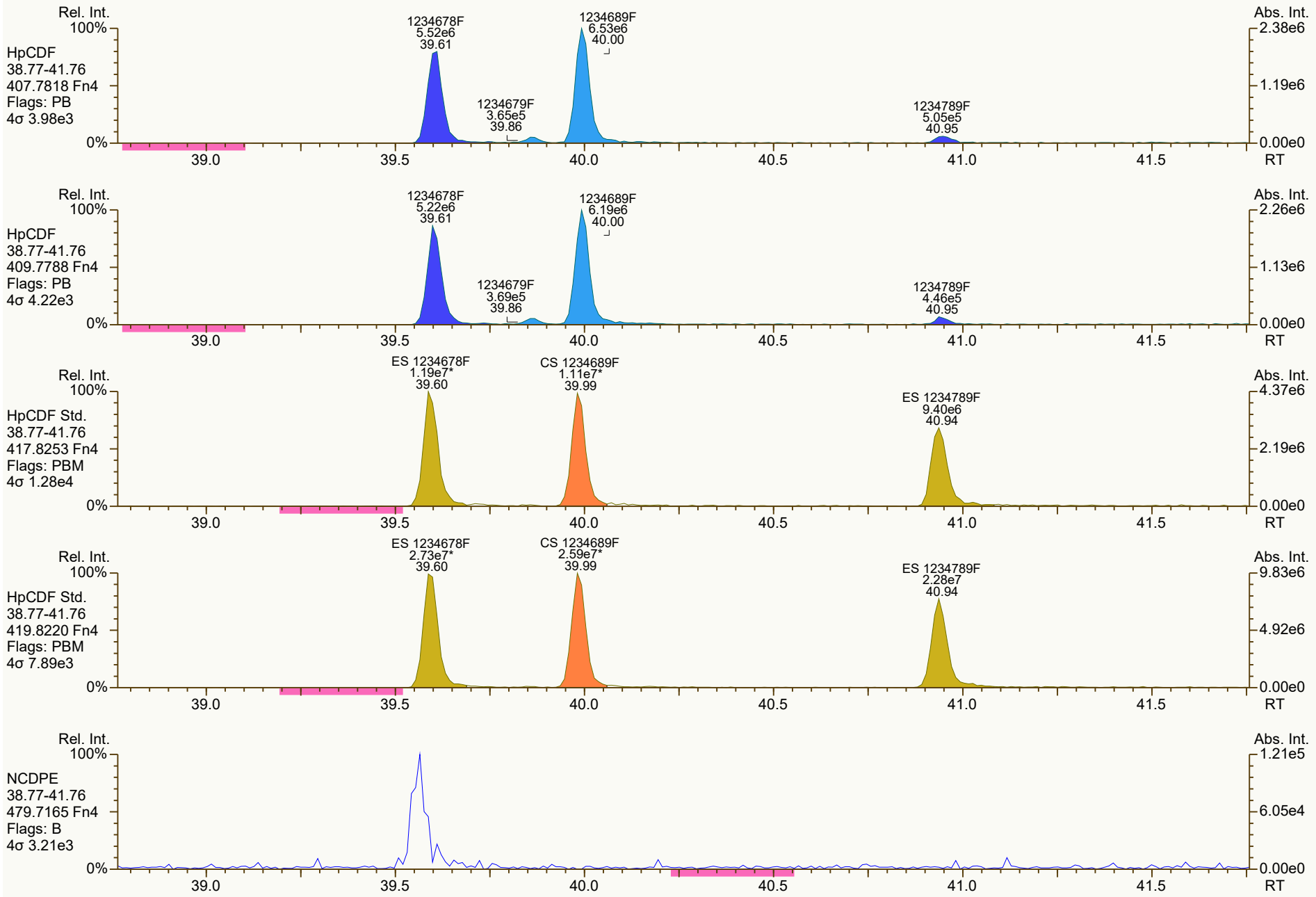

OCDD
1.77e8*
43.05
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 7.49e3
0%
Abs. Int.
5.29e7
2.65e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.97e8*
43.05
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 1.02e4
0%
Abs. Int.
5.93e7
2.96e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.71e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 3.24e3
0%
Abs. Int.
4.93e6
2.46e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.89e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 8.20e3
0%
Abs. Int.
5.63e6
2.82e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.59e6
4.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

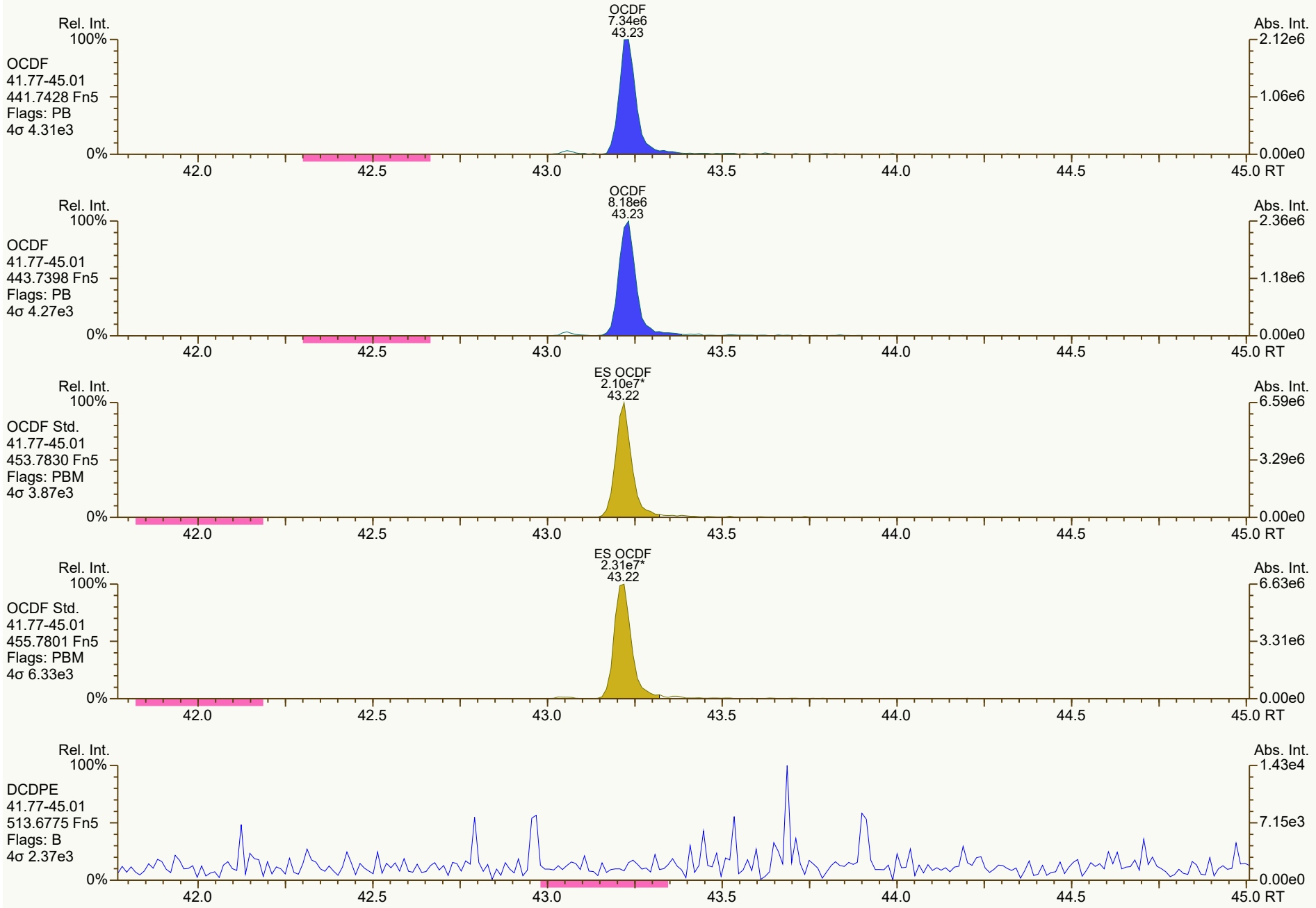

SGS ID: B5962_18720_DF_006
Sample ID: 11215131-120221-S-JC-SW-DUP-1
Acq: 17-Dec-2021 19:35:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14
User: PSW Datafile: 211217R12
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.69e3
2378F
2.30e7
27.36
1278F
9.76e6
26.45
2368F
7.34e5
25.90
1238F...[5]
1.49e6
25.98
2348F
1.91e6
27.25
2367/3467F
2.56e6
27.71
1289F
2.05e6
29.37
4.97e6
2.49e6
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 4.57e3
2378F
2.90e7
27.36
1278F
1.24e7
26.45
1238F...[5]
1.81e6
25.98
2348F
2.34e6
27.25
2367/3467F
3.35e6
27.71
1289F
2.43e6
29.37
6.45e6
3.22e6
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.01e4
JS 1234F
3.26e7
25.97
ES 2378F
3.17e7
27.34
7.03e6
3.51e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.24e4
JS 1234F
4.36e7
25.97
ES 2378F
4.15e7
27.33
9.11e6
4.56e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.56e3
1.41e4
7.04e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_006.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8249, 8304, 8453 scc: 568-825
PKD: 20-Dec-2021 09:57 Printed: 20-Dec-2021 14:28 Page 7 of 12


13468/12468F
1.71e6
29.32
Rel. Int.
100%
0%
Abs. Int.
4.20e5
2.10e5
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 4.03e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
1.09e6
29.32
Rel. Int.
100%
0%
Abs. Int.
2.70e5
1.35e5
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.50e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
4.00e6
2.00e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.41e3
12368F...[3] 1.74e6* 31.02
13678F...[3] 6.52e5 30.86
14678F 3.02e5* 31.11
13469/12479F 1.09e5* 31.43
23468/12469F 4.45e5* 31.68
12348F 2.44e5 31.91
12378F 1.48e6 32.12
12678/12367F 8.06e5 32.41
23467/12369F 4.57e5 33.11
23478F 1.46e6* 33.24
12389F 1.02e5 34.31
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.97e3
12368F...[3] 1.11e6* 31.02
13678F...[3] 4.25e5 30.86
14678F 1.88e5* 31.10
13469/12479F 6.36e4* 31.44
23468/12469F 3.49e5* 31.68
12348F 1.76e5 31.91
12378F 9.62e5 32.12
12678/12367F 5.36e5 32.41
23467/12369F 2.83e5 33.10
23478F 9.62e5* 33.24
12389F 6.16e4 34.31
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 6.39e3
CS 12346F 3.65e7 31.58
ES 12378F 3.93e7 32.11
ES 23478F 3.93e7 33.22
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.95e3
CS 12346F 2.35e7 31.58
ES 12378F 2.50e7 32.11
ES 23478F 2.49e7 33.22
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.00e3
Rel. Int.
Abs. Int.
RT
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 8.45e3
123468F 7.64e5 35.09
124678/134678F 2.93e6 35.29
124689F 2.06e6 35.93
123467F 5.16e5 36.35
123478F 2.28e6 36.47
123678F 9.71e5 36.60
234678F 7.61e5 37.27
123489F 2.44e5* 38.26
Abs. Int.
8.74e5
4.37e5
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 7.64e3
123468F 6.12e5 35.09
124678/134678F 2.38e6 35.28
124689F 1.64e6 35.93
123467F 4.48e5 36.35
123478F 1.72e6 36.46
123678F 7.27e5 36.60
234678F 5.64e5 37.27
123489F 2.06e5* 38.26
7.50e5
3.75e5
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 9.73e3
ES 123478F 1.60e7 36.45
ES 123678F 1.92e7 36.59
CS 123469F 1.76e7 36.90
ES 234678F 1.80e7 37.25
ES 123789F 1.63e7 38.22
5.43e6
2.71e6
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.83e4
ES 123478F 3.10e7 36.45
ES 123678F 3.78e7 36.59
CS 123469F 3.32e7 36.90
ES 234678F 3.39e7 37.25
ES 123789F 3.02e7 38.22
1.06e7
5.32e6
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.89e3
1.26e4
6.30e3


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 3.98e3
1234678F
5.52e6
39.61
1234679F
3.65e5
39.86
1234689F
6.53e6
40.00
1234789F
5.05e5
40.95
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
2.38e6
1.19e6
0.00e0
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 4.22e3
1234678F
5.22e6
39.61
1234679F
3.69e5
39.86
1234689F
6.19e6
40.00
1234789F
4.46e5
40.95
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
2.26e6
1.13e6
0.00e0
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 1.28e4
ES 1234678F
1.19e7*
39.60
CS 1234689F
1.11e7*
39.99
ES 1234789F
9.40e6
40.94
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
4.37e6
2.19e6
0.00e0
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 7.89e3
ES 1234678F
2.73e7*
39.60
CS 1234689F
2.59e7*
39.99
ES 1234789F
2.28e7
40.94
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
9.83e6
4.92e6
0.00e0
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.21e3
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.21e5
6.05e4
0.00e0


OCDF
7.34e6
43.23
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 4.31e3
0%
Abs. Int.
2.12e6
1.06e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
8.18e6
43.23
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 4.27e3
0%
Abs. Int.
2.36e6
1.18e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.10e7*
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PBM
4σ 3.87e3
0%
Abs. Int.
6.59e6
3.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.31e7*
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PBM
4σ 6.33e3
0%
Abs. Int.
6.63e6
3.31e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.37e3
0%
Abs. Int.
1.43e4
7.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5962_18720_DF_007 **Acq'd:** 17 Dec 2021 20:22 PSW **Wt/Vol:** 10.39 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-B-1 **UTP:** 20-Dec-2021 14:06:12 PSW **J-level:** 0.481 pg/g **Split:** 1 **Checkcode:** 130-426-VQX

Datafile: 211217R13 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.24	E	1.0008	1.0008	0	6.34E+08	0.79	Y	1.34	1,520	9152.592	0.234
12378-PeCDD	33.59		1.0005	1.0006	+0.2	4.90E+06	1.65	Y	1.06	16.7	9445.633	0.286
123478-HxCDD	37.46	J	1.0003	1.0004	+0.2	2.28E+05	1.36	Y	1.06	0.897	13454.89	0.444
123678-HxCDD	37.58		1.0033	1.0036	+0.7	9.91E+05	1.20	Y	1.08	3.85	13454.89	0.458
123789-HxCDD	37.88		1.0110	1.0116	+1.4	7.08E+05	1.28	Y	1.02	2.55	13454.89	0.404
1234678-HpCDD	40.51		1.0003	1.0004	+0.2	3.12E+07	1.04	Y	0.97	143	12856.985	0.409
OCDD	43.05		1.0003	1.0003	0	3.68E+08	0.89	Y	1.07	2,350	17433.942	0.917
2378-TCDF	27.38	E	1.0006	1.0008	+0.3	2.23E+09	0.79	Y	0.96	5,540	6977.009	0.193
12378-PeCDF	32.14		1.0006	1.0005	-0.2	7.69E+07	1.58	Y	0.95	213	9728.128	0.247
23478-PeCDF	33.26		1.0006	1.0008	+0.4	5.58E+07	1.61	Y	0.94	168	9728.128	0.262
123478-HxCDF	36.48		1.0004	1.0005	+0.2	1.15E+08	1.24	Y	1.23	336	27218.59	0.618
123678-HxCDF	36.61		1.0004	1.0004	0	3.23E+07	1.22	Y	1.13	83.8	27218.59	0.565
234678-HxCDF	37.27		1.0005	1.0004	-0.2	5.68E+06	1.25	Y	1.15	16.4	27218.59	0.658
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	27218.59	0.713
1234678-HpCDF	39.61		1.0003	1.0003	0	3.52E+07	1.03	Y	1.36	90.2	9790.819	0.165
1234789-HpCDF	40.95		1.0003	1.0002	-0.2	9.27E+06	1.07	Y	1.30	35.5	9790.819	0.254
OCDF	43.23		1.0002	1.0003	+0.3	1.34E+07	0.86	Y	1.03	83.7	8133.355	0.423

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.22	1.0237	1.0236	-0.2	5.96E+07	0.79	Y	1.03	95
ES 12378-PeCDD	33.57	1.2158	1.2177	+3.8	5.32E+07	1.63	Y	1.03	84.8
ES 123478-HxCDD	37.44	0.9920	0.9915	-1.1	4.63E+07	1.25	Y	0.99	95.2
ES 123678-HxCDD	37.56	0.9949	0.9947	-0.5	4.58E+07	1.22	Y	0.97	96.3
ES 123789-HxCDD	37.86	1.0026	1.0027	+0.2	5.26E+07	1.23	Y	1.12	95.6
ES 1234678-HpCDD	40.50	1.0713	1.0724	+2.7	4.31E+07	1.09	Y	0.99	88.9
ES OCDD	43.04	1.1385	1.1398	+3.4	5.63E+07	0.90	Y	0.78	74
ES 2378-TCDF	27.36	1.0519	1.0526	+1.1	8.08E+07	0.78	Y	1.08	89.7
ES 12378-PeCDF	32.12	1.2331	1.2360	+5.6	7.36E+07	1.56	Y	0.93	94.9
ES 23478-PeCDF	33.24	1.2754	1.2788	+6.8	6.80E+07	1.52	Y	0.92	88.7
ES 123478-HxCDF	36.46	0.9656	0.9655	-0.2	5.34E+07	0.53	Y	1.14	95.6
ES 123678-HxCDF	36.60	0.9693	0.9692	-0.2	6.56E+07	0.53	Y	1.30	103
ES 234678-HxCDF	37.26	0.9869	0.9867	-0.4	5.80E+07	0.52	Y	1.20	98.6
ES 123789-HxCDF	38.23	1.0121	1.0123	+0.5	5.13E+07	0.52	Y	1.14	92.2
ES 1234678-HpCDF	39.60	1.0478	1.0487	+2.1	5.52E+07	0.44	Y	0.95	119
ES 1234789-HpCDF	40.95	1.0832	1.0843	+2.7	3.86E+07	0.44	Y	0.85	93.2
ES OCDF	43.22	1.1434	1.1446	+3.1	6.01E+07	0.93	Y	0.93	66.3

Lab ID: B5962_18720_DF_007 **Acq'd:** 17 Dec 2021 20:22 PSW **Wt/Vol:** 10.39 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-B-1 **UTP:** 20-Dec-2021 14:06:12 PSW **J-level:** 0.481 pg/g **Split:** 1 **Checkcode:** 130-426-VQX

Datafile: 211217R13 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.57		-	-	-	6.07E+07	0.81	Y	-	-
JS 1234-TCDF	25.99		-	-	-	8.31E+07	0.77	Y	-	-
JS 123467-HxCDD	37.76		-	-	-	2.45E+07	1.31	Y	-	-
CS 37Cl-2378-TCDD	28.24		1.0245	1.0244	-0.2	2.64E+07	n/a	-	1.31	83
CS 12347-PeCDD	33.07		1.1978	1.1997	+3.8	4.57E+07	1.61	Y	0.89	84.4
CS 12346-PeCDF	31.60		1.2130	1.2159	+5.5	6.95E+07	1.58	Y	0.87	96.4
CS 123469-HxCDF	36.91		0.9775	0.9774	-0.2	5.53E+07	0.52	Y	1.09	104
CS 1234689-HpCDF	39.99		1.0580	1.0590	+2.4	4.40E+07	0.44	Y	0.86	104
~~SS 37Cl-2378-TCDD~~	~~28.24~~		~~1.0245~~	~~1.0244~~	~~-0.2~~	~~2.64E+07~~	~~n/a~~		~~1.26~~	~~87.9~~
~~SS 12347-PeCDD~~	~~33.07~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~4.57E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~99.5~~
~~SS 12346-PeCDF~~	~~31.60~~		~~1.2130~~	~~1.2159~~	~~+5.5~~	~~6.95E+07~~	~~1.58~~	~~Y~~	~~0.93~~	~~101~~
~~SS 123469-HxCDF~~	~~36.91~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~5.53E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~100~~
~~SS 1234689-HpCDF~~	~~39.99~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~4.40E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~87.4~~

Totals	Conc	EMPC
Total TCDD	1640	1690
Total PeCDD	23.2	28.1
Total HxCDD	47.6	48.5
Total HpCDD	304	304
Total Tetra-Octa Dioxins	4370	4420
Total TCDF	11,200	11200
Total PeCDF	593	595
Total HxCDF	505	505
Total HpCDF	162	162
Total Tetra-Octa Furans	12,500	12500
Total Tetra-Octa Dioxins & Furans	16900	17000

Lab ID: B5962_18720_DF_007 **Acq'd: 17 Dec 2021 20:22 PSW** **Wt/Vol: 10.39 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-B-1 **UTP: 20-Dec-2021 14:06:12 PSW** **J-level: 0.481 pg/g** **Split: 1** **Checkcode: 130-426-VQX**

Datafile: 211217R13 **Report: 20 Dec 2021 14:10 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.58		0.8726	0.8711	-2.2	8.01E+05	0.80	Y	1.34	1.92	9152.592	0.234
1379-TCDD	24.93		0.8851	0.8836	-2.2	3.90E+05	0.81	Y	1.34	0.937	9152.592	0.234
1369-TCDD	NotFnd		0.9002						1.34		9152.592	0.234
1469-TCDD	26.15		0.9275	0.9269	-0.9	1.43E+06	0.68	Y	1.34	3.43	9152.592	0.234
1247/1246/1248/1249-TCDD	26.40	EMPC	0.9361	0.9358	-0.5	1.14E+06	1.08	N	1.34	2.73	9152.592	0.234
1378-TCDD	26.58		0.9427	0.9420	-1.1	1.67E+06	0.81	Y	1.34	4.01	9152.592	0.234
1268-TCDD	NotFnd		0.9498						1.34		9152.592	0.234
1478-TCDD	27.04		0.9584	0.9582	-0.3	1.54E+06	0.77	Y	1.34	3.7	9152.592	0.234
1279-TCDD	NotFnd		0.9644						1.34		9152.592	0.234
1234/1269-TCDD	27.56	EMPC	0.9766	0.9769	+0.5	3.08E+05	0.92	N	1.34	0.739	9152.592	0.234
1236-TCDD	27.69	J EMPC	0.9813	0.9815	+0.3	1.56E+05	1.68	N	1.34	0.375	9152.592	0.234
1237/1238-TCDD	27.94	EMPC	0.9906	0.9902	-0.7	1.00E+07	0.89	N	1.34	24	9152.592	0.234
1239-TCDD	NotFnd		0.9952						1.34		9152.592	0.234
2378-TCDD	**28.24**	E	**1.0008**	1.0008	**0**	6.34E+08	0.79	Y	**1.34**	**1,520**	**9152.592**	**0.234**
1278-TCDD	28.56		1.0122	1.0123	+0.2	4.32E+07	0.76	Y	1.34	104	9152.592	0.234
1267-TCDD	28.69	EMPC	1.0168	1.0169	+0.2	4.06E+06	1.07	N	1.34	9.77	9152.592	0.234
1289-TCDD	29.16	EMPC	1.0349	1.0335	-2.4	2.68E+06	1.31	N	1.34	6.44	9152.592	0.234
12479/12468-PeCDD	31.09	J	0.9267	0.9263	-0.7	6.11E+05	1.53	Y	1.06	2.09	9445.633	0.286
12469-PeCDD	31.63	J EMPC	0.9425	0.9422	-0.6	6.70E+05	1.21	N	1.06	2.29	9445.633	0.286
12368-PeCDD	32.17	J	0.9588	0.9584	-0.8	5.69E+05	1.52	Y	1.06	1.94	9445.633	0.286
12478-PeCDD	32.37	J	0.9643	0.9643	0	3.23E+05	1.53	Y	1.06	1.1	9445.633	0.286
12379-PeCDD	32.47	J EMPC	0.9673	0.9673	0	3.04E+05	1.83	N	1.06	1.04	9445.633	0.286
12369/12467/12489-PeCDD	32.72	J	0.9750	0.9749	-0.2	3.86E+05	1.44	Y	1.06	1.32	9445.633	0.286
12346/12347-PeCDD	33.09	J EMPC	0.9859	0.9858	-0.2	1.24E+05	1.14	N	1.06	0.425	9445.633	0.286
12378-PeCDD	33.59		**1.0005**	**1.0006**	**+0.2**	**4.90E+06**	**1.65**	**Y**	**1.06**	**16.7**	**9445.633**	**0.286**
12367-PeCDD	33.70	J EMPC	1.0032	1.0040	+1.6	3.26E+05	2.52	N	1.06	1.11	9445.633	0.286
12389-PeCDD	NotFnd		1.0135						1.06		9445.633	0.286
124679/124689-HxCDD	35.75		0.9544	0.9547	+0.6	6.93E+06	1.29	Y	1.05	26.3	13454.89	0.434
123468-HxCDD	36.39	J	0.9716	0.9720	+0.9	4.51E+05	1.15	Y	1.05	1.71	13454.89	0.434
123679/123689-HxCDD	36.68		0.9793	0.9796	+0.7	3.23E+06	1.24	Y	1.05	12.3	13454.89	0.434
123469-HxCDD	36.81	J EMPC	0.9829	0.9832	+0.7	2.49E+05	1.62	N	1.05	0.944	13454.89	0.434
123478-HxCDD	37.46	J	**1.0003**	**1.0004**	**+0.2**	**2.28E+05**	**1.36**	**Y**	1.06	**0.897**	**13454.89**	**0.444**
123678-HxCDD	37.58		**1.0033**	**1.0036**	**+0.7**	**9.91E+05**	**1.20**	**Y**	1.08	**3.85**	**13454.89**	**0.458**
123467-HxCDD	NotFnd		1.0084						1.05		13454.89	0.434
123789-HxCDD	37.88		**1.0110**	**1.0116**	**+1.4**	**7.08E+05**	**1.28**	**Y**	1.02	**2.55**	**13454.89**	**0.404**

Lab ID: B5962_18720_DF_007 **Acq'd:** 17 Dec 2021 20:22 PSW **Wt/Vol:** 10.39 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-B-1 **UTP:** 20-Dec-2021 14:06:12 PSW **J-level:** 0.481 pg/g **Split:** 1 **Checkcode:** 130-426-VQX

Datafile: 211217R13 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

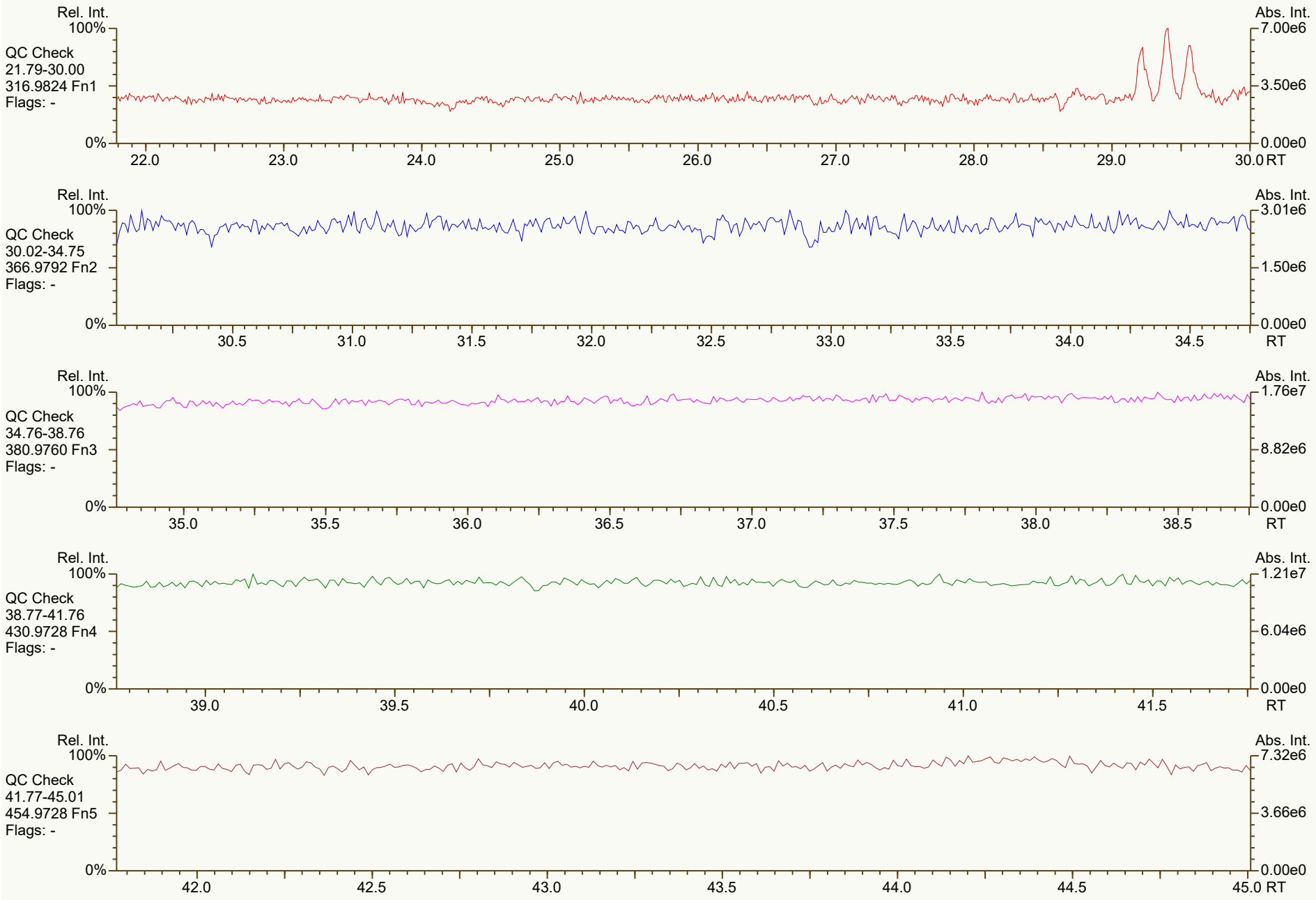
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	3.52E+07	1.05	Y	0.97	161	12856.985	0.409
1234678-HpCDD	**40.51**		**1.0003**	**1.0004**	**+0.2**	**3.12E+07**	**1.04**	**Y**	**0.97**	**143**	**12856.985**	**0.409**
OCDD	**43.05**		**1.0003**	**1.0003**	**0**	**3.68E+08**	**0.89**	**Y**	**1.07**	**2,350**	**17433.942**	**0.917**
OCDD-a	43.05		1.0001	1.0002	+0.3	2.16E+07	2.31	Y	0.07	2,230	15175.139	12.9
1368-TCDF	22.44		0.8230	0.8201	-3.9	5.21E+05	0.72	Y	0.96	1.29	6977.009	0.193
1468-TCDF	23.04		0.8443	0.8421	-3.0	2.96E+06	0.74	Y	0.96	7.35	6977.009	0.193
2468-TCDF	23.68		0.8672	0.8656	-2.3	2.37E+06	0.77	Y	0.96	5.87	6977.009	0.193
1346/1246-TCDF	24.11		0.8802	0.8814	+1.7	2.42E+06	0.66	Y	0.96	6.01	6977.009	0.193
1347/1378/1247-TCDF	24.24		0.8855	0.8860	+0.7	1.96E+07	0.79	Y	0.96	48.7	6977.009	0.193
1348-TCDF	24.47		0.8952	0.8944	-1.2	7.72E+06	0.74	Y	0.96	19.2	6977.009	0.193
1248/1367/1379-TCDF	24.56		0.9000	0.8979	-3.1	9.97E+07	0.79	Y	0.96	247	6977.009	0.193
1268-TCDF	24.97		0.9136	0.9127	-1.3	3.57E+07	0.80	Y	0.96	88.5	6977.009	0.193
1467-TCDF	25.10		0.9185	0.9176	-1.4	5.31E+06	0.85	Y	0.96	13.2	6977.009	0.193
1478-TCDF	25.28		0.9247	0.9239	-1.2	9.44E+07	0.79	Y	0.96	234	6977.009	0.193
1369/1237-TCDF	25.66		0.9381	0.9378	-0.5	2.43E+07	0.78	Y	0.96	60.2	6977.009	0.193
2467-TCDF	25.78		0.9427	0.9425	-0.3	1.85E+06	0.75	Y	0.96	4.59	6977.009	0.193
2368-TCDF	25.92		0.9484	0.9474	-1.6	4.94E+07	0.78	Y	0.96	123	6977.009	0.193
1238/1234/1678/1469/1236-TCDF	26.00		0.9517	0.9503	-2.2	1.33E+08	0.81	Y	0.96	329	6977.009	0.193
1278-TCDF	26.47	E	0.9682	0.9677	-0.8	1.07E+09	0.79	Y	0.96	2,670	6977.009	0.193
1349-TCDF	NotFnd		0.9725						0.96		6977.009	0.193
1267-TCDF	26.75		0.9782	0.9778	-0.6	5.84E+07	0.79	Y	0.96	145	6977.009	0.193
2346/1249-TCDF	26.94		0.9846	0.9849	+0.5	8.11E+06	0.84	Y	0.96	20.1	6977.009	0.193
2347/1279-TCDF	27.15		0.9926	0.9925	-0.2	3.11E+07	0.79	Y	0.96	77.2	6977.009	0.193
2348-TCDF	27.27		0.9966	0.9969	+0.5	2.08E+08	0.78	Y	0.96	517	6977.009	0.193
2378-TCDF	**27.38**	E	**1.0006**	**1.0008**	**+0.3**	**2.23E+09**	**0.79**	**Y**	**0.96**	**5,540**	**6977.009**	**0.193**
2367/3467-TCDF	27.73		1.0139	1.0138	-0.2	1.86E+08	0.79	Y	0.96	461	6977.009	0.193
1269-TCDF	27.99		1.0226	1.0230	+0.7	3.77E+07	0.79	Y	0.96	93.6	6977.009	0.193
1239-TCDF	28.25		1.0322	1.0326	+0.7	3.95E+06	0.82	Y	0.96	9.81	6977.009	0.193
1289-TCDF	29.40		1.0729	1.0747	+3.2	1.94E+08	0.80	Y	0.96	481	6977.009	0.193
13468/12468-PeCDF	29.35		0.9135	0.9136	+0.2	2.11E+06	1.63	Y	0.94	6.09	7553.083	0.197
13678/13467/12467-PeCDF	30.89		0.9612	0.9616	+0.7	8.82E+05	1.56	Y	0.94	2.54	9728.128	0.254
12368/13478/12478-PeCDF	31.05		0.9661	0.9666	+0.9	3.17E+07	1.54	Y	0.94	91.4	9728.128	0.254
14678-PeCDF	31.14		0.9693	0.9693	0	1.42E+06	1.60	Y	0.94	4.09	9728.128	0.254
13479-PeCDF	NotFnd		0.9723						0.94		9728.128	0.254
13469/12479-PeCDF	31.43	J EMPC	0.9799	0.9782	-3.2	3.20E+05	1.84	N	0.94	0.922	9728.128	0.254
12346-PeCDF	31.60	J EMPC	0.9842	0.9837	-0.9	1.91E+05	2.00	N	0.94	0.55	9728.128	0.254

Lab ID: B5962_18720_DF_007 **Acq'd:** 17 Dec 2021 20:22 PSW **Wt/Vol:** 10.39 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-B-1 **UTP:** 20-Dec-2021 14:06:12 PSW **J-level:** 0.481 pg/g **Split:** 1 **Checkcode:** 130-426-VQX

Datafile: 211217R13 **Report:** 20 Dec 2021 14:10 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.69		0.9868	0.9866	-0.4	1.29E+06	1.55	Y	0.94	3.72	9728.128	0.254
12347-PeCDF	31.77		0.9893	0.9891	-0.4	1.49E+06	1.62	Y	0.94	4.28	9728.128	0.254
12348-PeCDF	31.93		0.9941	0.9941	0	7.28E+06	1.50	Y	0.94	21	9728.128	0.254
12378-PeCDF	**32.14**		**1.0006**	**1.0005**	**-0.2**	**7.69E+07**	**1.58**	**Y**	**0.95**	**213**	**9728.128**	**0.247**
12678/12367-PeCDF	32.44		1.0090	1.0097	+1.4	2.31E+07	1.56	Y	0.94	66.6	9728.128	0.254
12379-PeCDF	NotFnd		1.0143						0.94		9728.128	0.254
12679-PeCDF	NotFnd		0.9929						0.94		9728.128	0.254
23467/12369-PeCDF	33.12		0.9966	0.9964	-0.4	1.03E+06	1.41	Y	0.94	2.97	9728.128	0.254
23478-PeCDF	**33.26**		**1.0006**	**1.0008**	**+0.4**	**5.58E+07**	**1.61**	**Y**	**0.94**	**168**	**9728.128**	**0.262**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		9728.128	0.254
12349-PeCDF	NotFnd		1.0102						0.94		9728.128	0.254
12389-PeCDF	34.32		1.0325	1.0326	+0.2	3.35E+06	1.50	Y	0.94	9.65	9728.128	0.254
123468-HxCDF	35.10		0.9628	0.9628	0	1.25E+06	1.19	Y	1.16	3.62	27218.59	0.633
124678/134678-HxCDF	35.30		0.9683	0.9682	-0.2	9.43E+06	1.23	Y	1.16	27.3	27218.59	0.633
134679-HxCDF	NotFnd		0.9746						1.16		27218.59	0.633
124679-HxCDF	NotFnd		0.9798						1.16		27218.59	0.633
124689-HxCDF	35.94		0.9859	0.9859	0	4.21E+06	1.22	Y	1.16	12.2	27218.59	0.633
123467-HxCDF	36.35	J	0.9972	0.9971	-0.2	4.42E+05	1.30	Y	1.16	1.28	27218.59	0.633
123478-HxCDF	**36.48**		**1.0004**	**1.0005**	**+0.2**	**1.15E+08**	**1.24**	**Y**	**1.23**	**336**	**27218.59**	**0.618**
123678-HxCDF	**36.61**		**1.0004**	**1.0004**	**0**	**3.23E+07**	**1.22**	**Y**	**1.13**	**83.8**	**27218.59**	**0.565**
123479-HxCDF	NotFnd		1.0049						1.16		27218.59	0.633
123469-HxCDF	NotFnd		1.0088						1.16		27218.59	0.633
123679-HxCDF	NotFnd		0.9943						1.16		27218.59	0.633
234678-HxCDF	**37.27**		**1.0005**	**1.0004**	**-0.2**	**5.68E+06**	**1.25**	**Y**	**1.15**	**16.4**	**27218.59**	**0.658**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		27218.59	0.633
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**27218.59**	**0.713**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.27		1.0007	1.0011	+0.9	8.47E+06	1.26	Y	1.16	24.6	27218.59	0.633
1234678-HpCDF	**39.61**		**1.0003**	**1.0003**	**0**	**3.52E+07**	**1.03**	**Y**	**1.36**	**90.2**	**9790.819**	**0.165**
1234679-HpCDF	39.87	**J**	1.0067	1.0067	0	4.71E+05	1.02	Y	1.33	1.45	9790.819	0.202
1234689-HpCDF	40.00		1.0100	1.0101	+0.2	1.14E+07	1.05	Y	1.33	35.1	9790.819	0.202
1234789-HpCDF	**40.95**		**1.0003**	**1.0002**	**-0.2**	**9.27E+06**	**1.07**	**Y**	**1.30**	**35.5**	**9790.819**	**0.254**
OCDF	**43.23**		**1.0002**	**1.0003**	**+0.3**	**1.34E+07**	**0.86**	**Y**	**1.03**	**83.7**	**8133.355**	**0.423**
OCDF-a	43.23		1.0002	1.0001	-0.3	7.80E+05	2.29	Y	0.06	84.2	8862.622	7.98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23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
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0%
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1.50e6
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31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
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8.82e6
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35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
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6.04e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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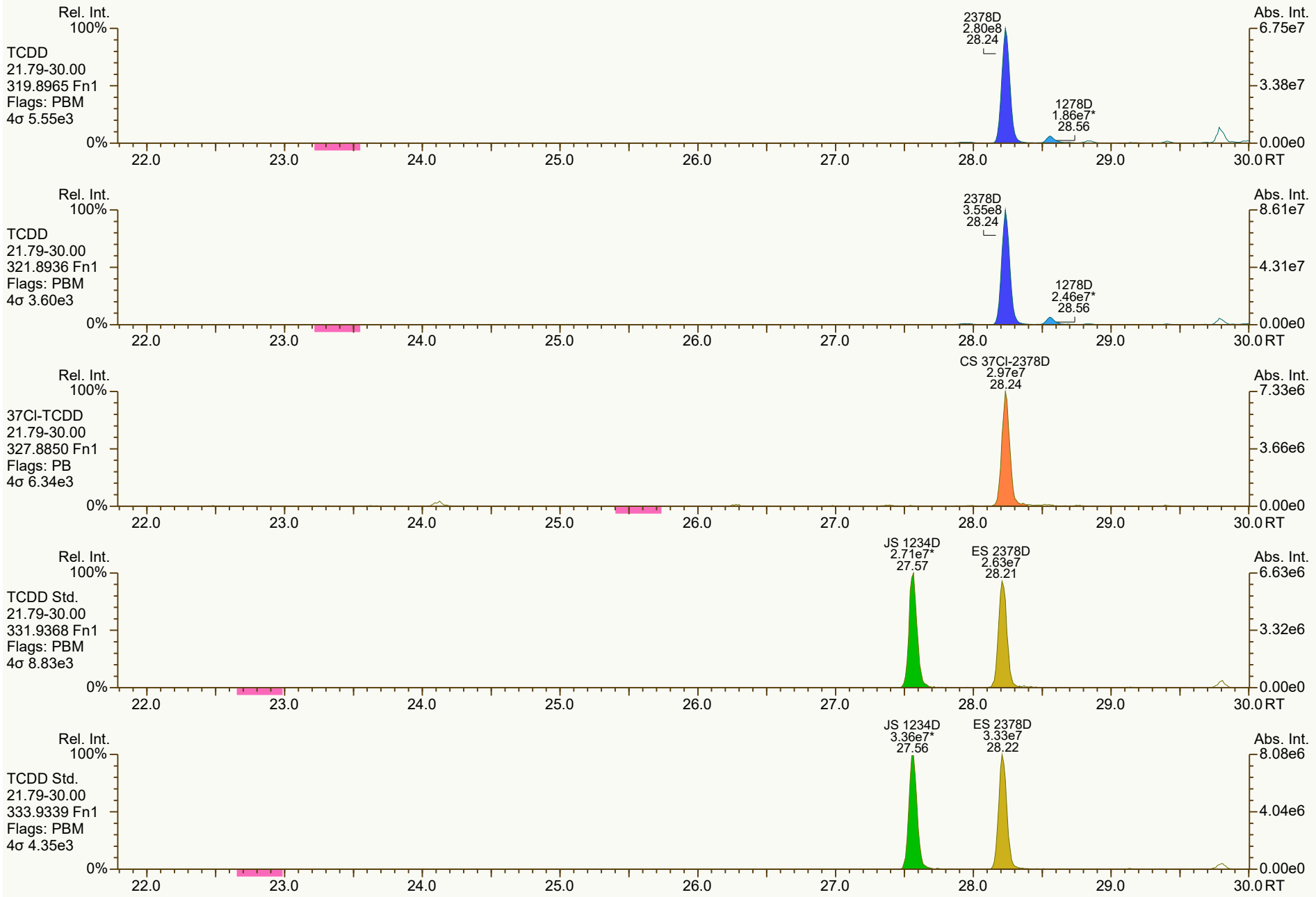
3.66e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT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0%
2378D
2.80e8
28.24
1278D
1.86e7*
28.56
Abs. Int.
6.75e7
3.38e7
0.00e0
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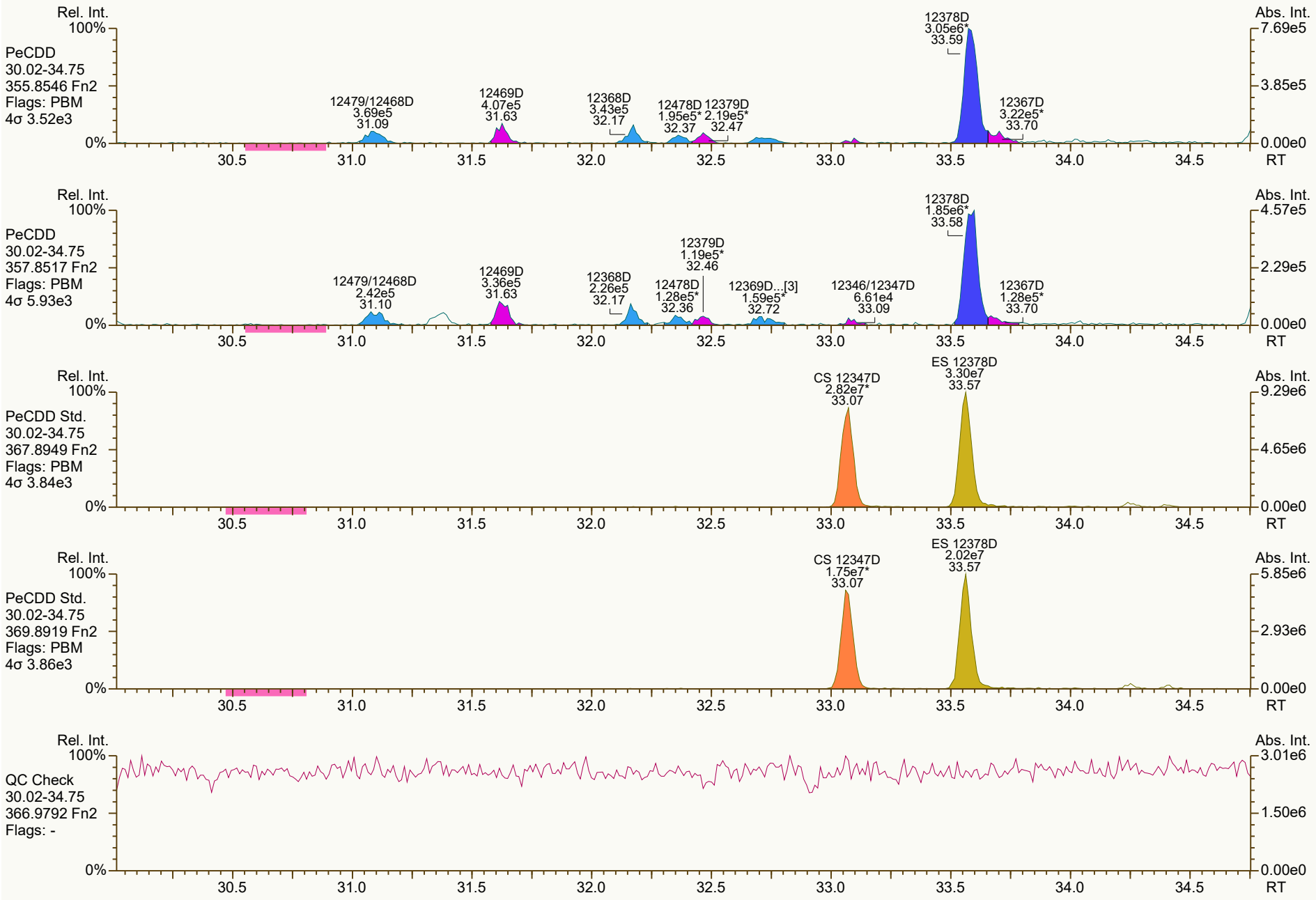
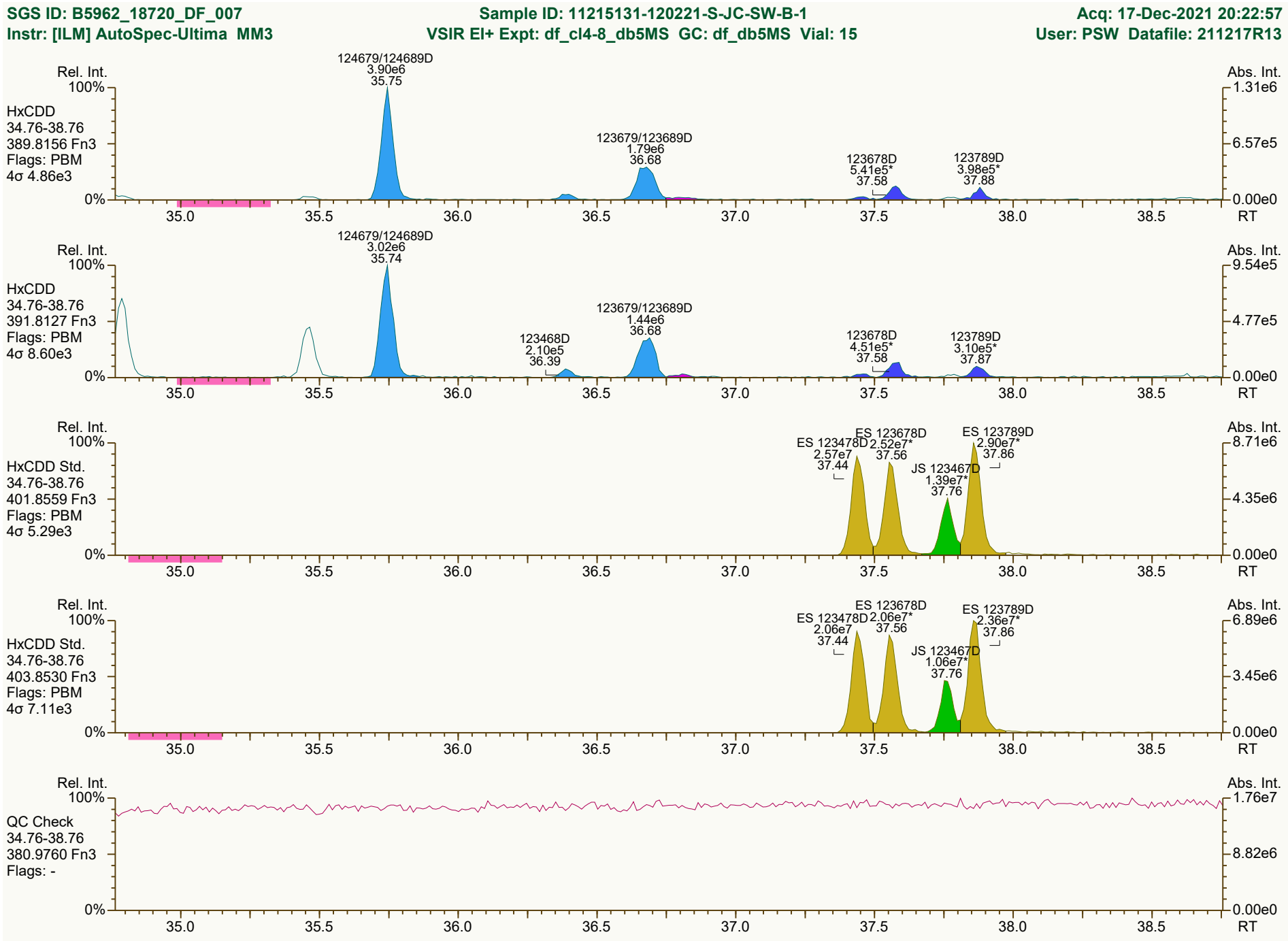
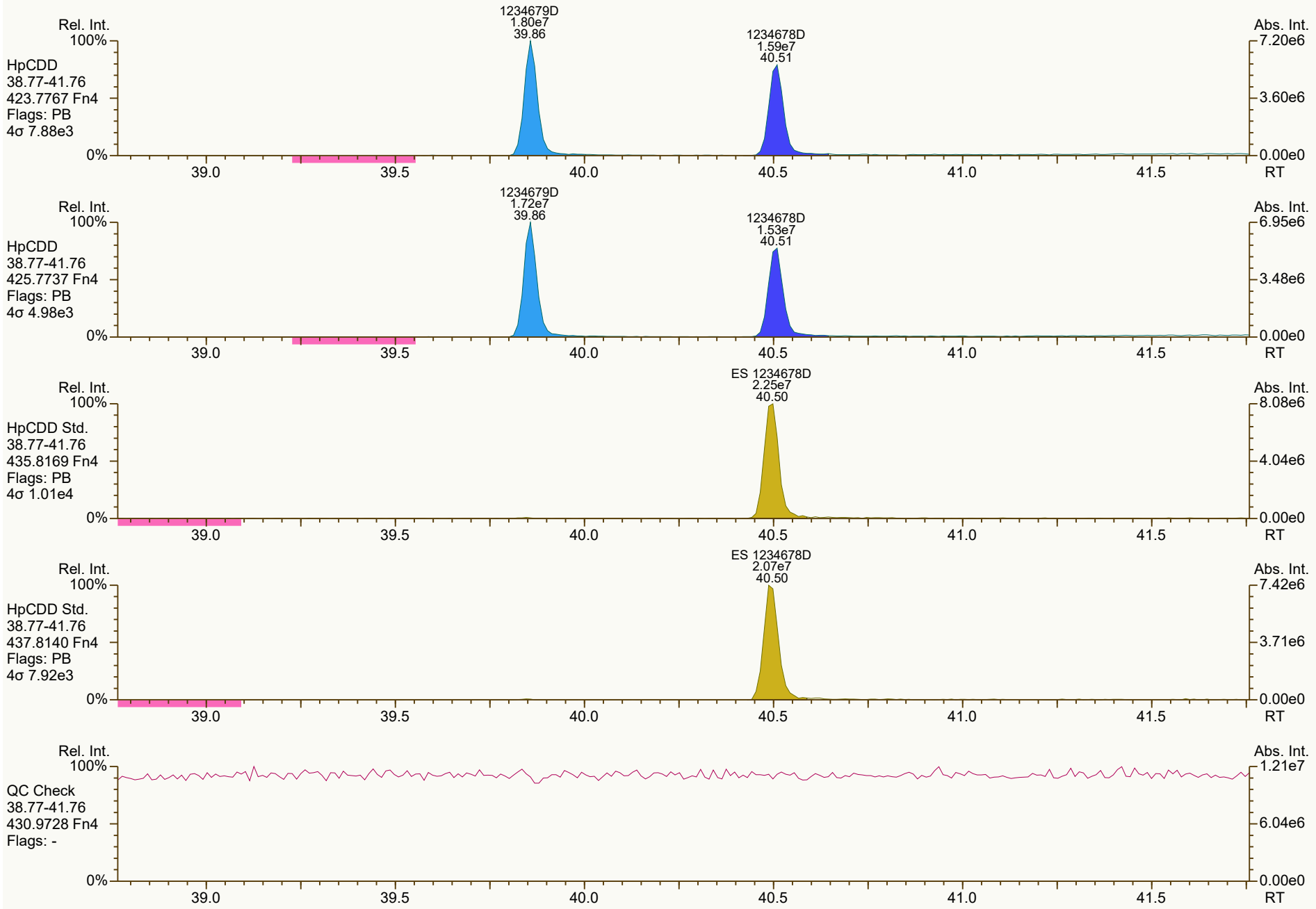
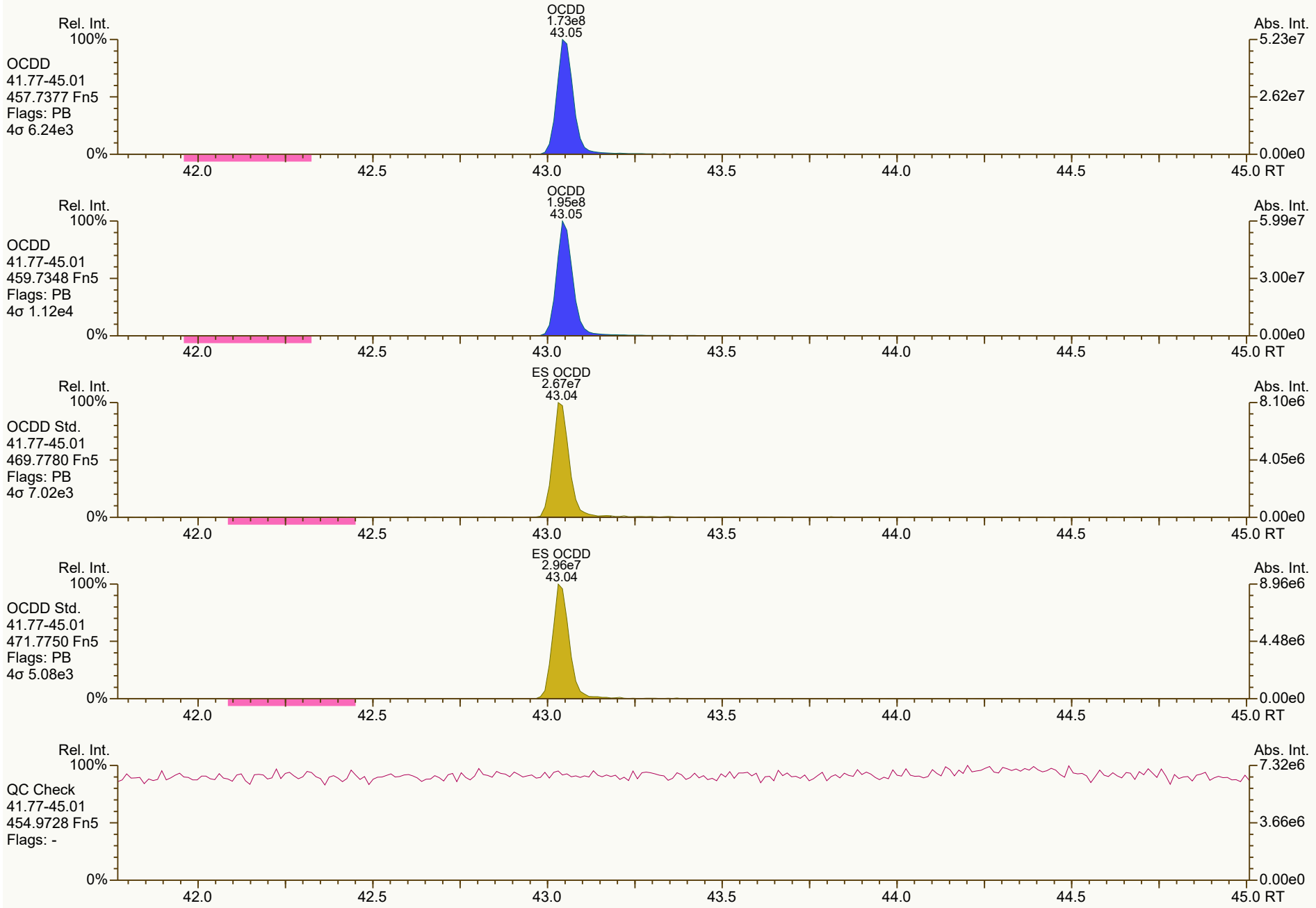
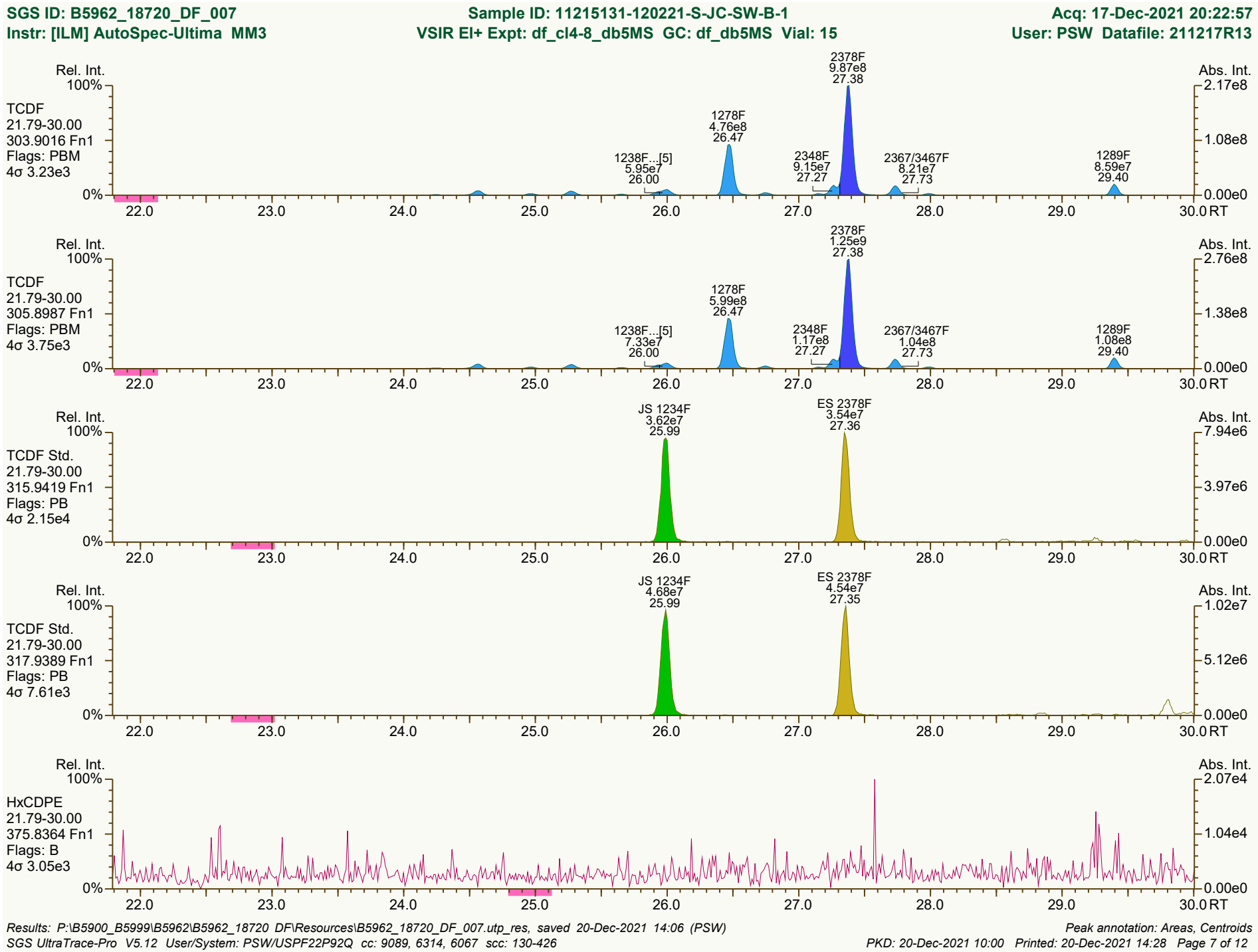
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.60e3
0%
2378D
3.55e8
28.24
1278D
2.46e7*
28.56
Abs. Int.
8.61e7
4.31e7
0.00e0
22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 6.34e3
0%
CS 37Cl-2378D
2.97e7
28.24
Abs. Int.
7.33e6
3.66e6
0.00e0
22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PBM
4σ 8.83e3
0%
JS 1234D
2.71e7*
27.57
ES 2378D
2.63e7
28.21
Abs. Int.
6.63e6
3.32e6
0.00e0
22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PBM
4σ 4.35e3
0%
JS 1234D
3.36e7*
27.56
ES 2378D
3.33e7
28.22
Abs. Int.
8.08e6
4.04e6
0.00e0
22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 3.52e3
0%
12479/12468D
3.69e5
31.09
12469D
4.07e5
31.63
12368D
3.43e5
32.17
12478D
1.95e5*
32.37
12379D
2.19e5*
32.47
12378D
3.05e6*
33.59
12367D
3.22e5*
33.70
Abs. Int.
7.69e5
3.85e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 5.93e3
0%
12479/12468D
2.42e5
31.10
12469D
3.36e5
31.63
12368D
2.26e5
32.17
12379D
1.19e5*
32.46
12478D
1.28e5*
32.36
12369D...[3]
1.59e5*
32.72
12346/12347D
6.61e4
33.09
12378D
1.85e6*
33.58
12367D
1.28e5*
33.70
Abs. Int.
4.57e5
2.29e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 3.84e3
0%
CS 12347D
2.82e7*
33.07
ES 12378D
3.30e7
33.57
Abs. Int.
9.29e6
4.65e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 3.86e3
0%
CS 12347D
1.75e7*
33.07
ES 12378D
2.02e7
33.57
Abs. Int.
5.85e6
2.93e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.01e6
1.50e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


SGS ID: B5962_18720_DF_007
Sample ID: 11215131-120221-S-JC-SW-B-1
Acq: 17-Dec-2021 20:22:57
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15
User: PSW Datafile: 211217R13
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 4.86e3
124679/124689D
3.90e6
35.75
123679/123689D
1.79e6
36.68
123678D
5.41e5*
37.58
123789D
3.98e5*
37.88
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 8.60e3
124679/124689D
3.02e6
35.74
123468D
2.10e5
36.39
123679/123689D
1.44e6
36.68
123678D
4.51e5*
37.58
123789D
3.10e5*
37.87
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 5.29e3
ES 123478D
2.57e7
37.44
ES 123678D
2.52e7*
37.56
JS 123467D
1.39e7*
37.76
ES 123789D
2.90e7*
37.86
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 7.11e3
ES 123478D
2.06e7
37.44
ES 123678D
2.06e7*
37.56
JS 123467D
1.06e7*
37.76
ES 123789D
2.36e7*
37.86
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_007.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3548, 9821 scc: 130-426
PKD: 20-Dec-2021 10:00 Printed: 20-Dec-2021 14:28 Page 4 of 12

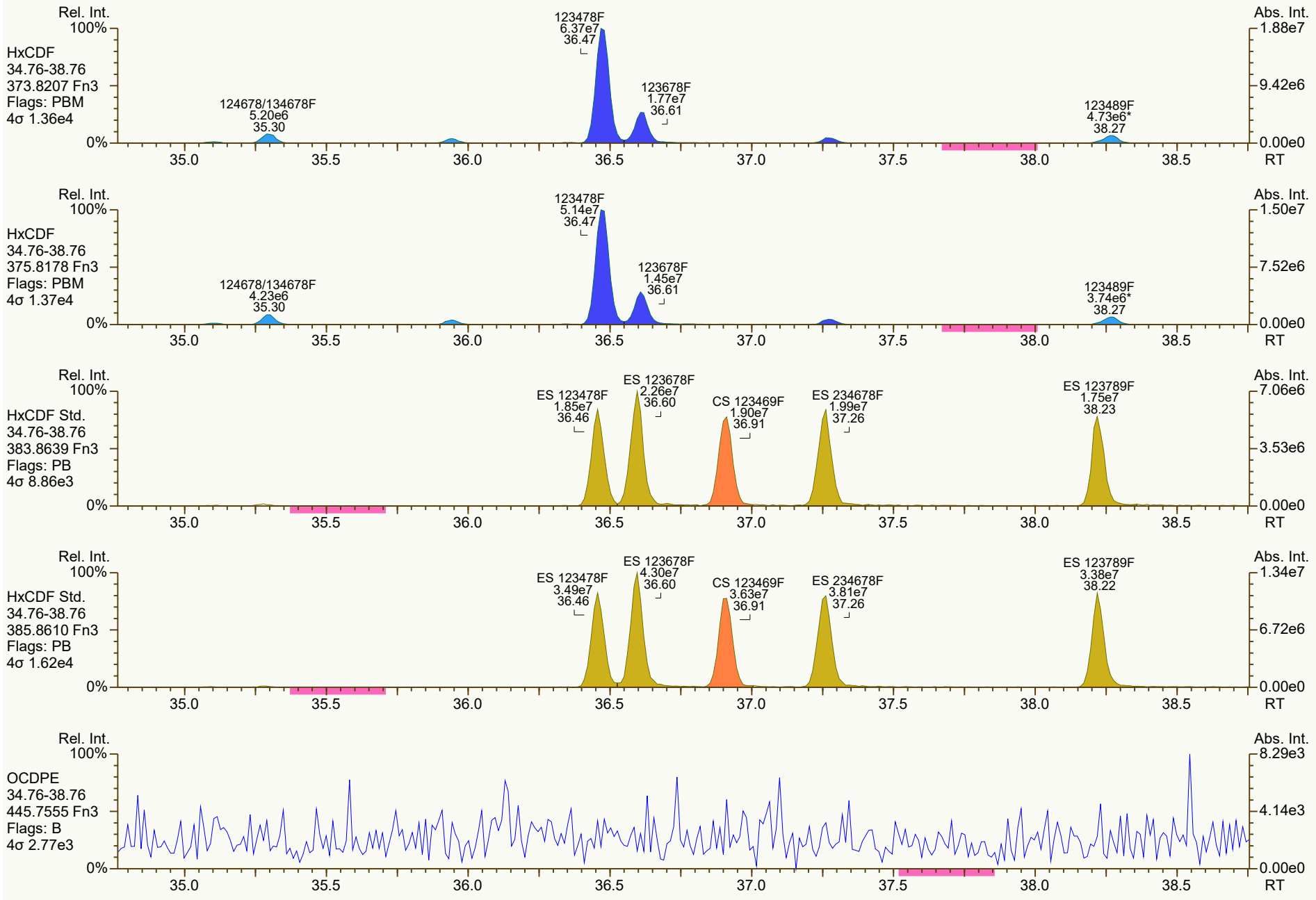

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 7.88e3
1234679D
1.80e7
39.86
1234678D
1.59e7
40.51
Abs. Int.
7.20e6
3.60e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 4.98e3
1234679D
1.72e7
39.86
1234678D
1.53e7
40.51
Abs. Int.
6.95e6
3.48e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 1.01e4
ES 1234678D
2.25e7
40.50
Abs. Int.
8.08e6
4.04e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 7.92e3
ES 1234678D
2.07e7
40.50
Abs. Int.
7.42e6
3.71e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.21e7
6.04e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
1.73e8
43.05
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 6.24e3
0%
Abs. Int.
5.23e7
2.62e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.95e8
43.05
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.12e4
0%
Abs. Int.
5.99e7
3.00e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.67e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 7.02e3
0%
Abs. Int.
8.10e6
4.05e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.96e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.08e3
0%
Abs. Int.
8.96e6
4.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.32e6
3.66e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

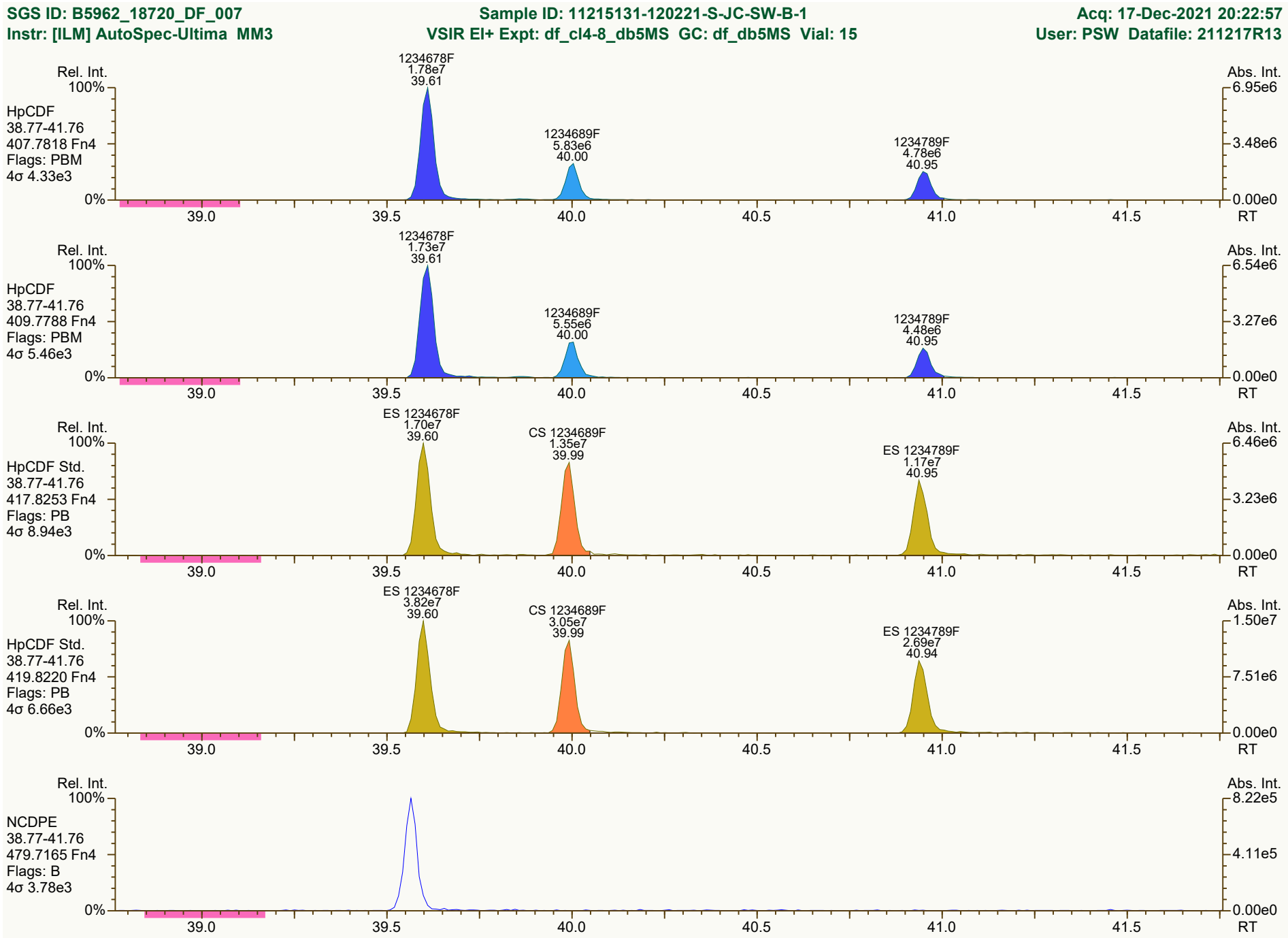

SGS ID: B5962_18720_DF_007
Sample ID: 11215131-120221-S-JC-SW-B-1
Acq: 17-Dec-2021 20:22:57
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15
User: PSW Datafile: 211217R13
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.23e3
2378F
9.87e8
27.38
1278F
4.76e8
26.47
1238F...[5]
5.95e7
26.00
2348F
9.15e7
27.27
2367/3467F
8.21e7
27.73
1289F
8.59e7
29.40
2.17e8
1.08e8
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 3.75e3
2378F
1.25e9
27.38
1278F
5.99e8
26.47
1238F...[5]
7.33e7
26.00
2348F
1.17e8
27.27
2367/3467F
1.04e8
27.73
1289F
1.08e8
29.40
2.76e8
1.38e8
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.15e4
JS 1234F
3.62e7
25.99
ES 2378F
3.54e7
27.36
7.94e6
3.97e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 7.61e3
JS 1234F
4.68e7
25.99
ES 2378F
4.54e7
27.35
1.02e7
5.12e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.05e3
2.07e4
1.04e4
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_007.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9089, 6314, 6067 scc: 130-426
PKD: 20-Dec-2021 10:00 Printed: 20-Dec-2021 14:28 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
3.38e5
1.69e5
0.00e0
13468/12468F
1.31e6
29.35
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 4.08e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.38e5
1.19e5
0.00e0
13468/12468F
8.04e5
29.35
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.47e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
7.00e6
3.50e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 6.26e3
0%
12368F...[3]
1.92e7*
31.05
12348F
4.37e6*
31.93
12378F
4.71e7
32.14
12678/12367F
1.41e7
32.44
23478F
3.44e7
33.26
Abs. Int.
1.36e7
6.80e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.47e3
0%
12368F...[3]
1.25e7*
31.05
12348F
2.91e6*
31.93
12378F
2.98e7
32.14
12678/12367F
9.04e6
32.43
23478F
2.14e7
33.26
Abs. Int.
8.37e6
4.18e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 5.28e3
0%
CS 12346F
4.25e7
31.60
ES 12378F
4.48e7
32.12
ES 23478F
4.11e7*
33.23
Abs. Int.
1.22e7
6.10e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 5.97e3
0%
CS 12346F
2.69e7
31.60
ES 12378F
2.88e7
32.12
ES 23478F
2.70e7*
33.24
Abs. Int.
7.53e6
3.77e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.21e3
0%
Abs. Int.
1.69e4
8.46e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 1.36e4
123478F
6.37e7
36.47
123678F
1.77e7
36.61
124678/134678F
5.20e6
35.30
123489F
4.73e6*
38.27
Abs. Int.
1.88e7
9.42e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 1.37e4
123478F
5.14e7
36.47
123678F
1.45e7
36.61
124678/134678F
4.23e6
35.30
123489F
3.74e6*
38.27
Abs. Int.
1.50e7
7.52e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 8.86e3
ES 123478F
1.85e7
36.46
ES 123678F
2.26e7
36.60
CS 123469F
1.90e7
36.91
ES 234678F
1.99e7
37.26
ES 123789F
1.75e7
38.23
Abs. Int.
7.06e6
3.53e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 1.62e4
ES 123478F
3.49e7
36.46
ES 123678F
4.30e7
36.60
CS 123469F
3.63e7
36.91
ES 234678F
3.81e7
37.26
ES 123789F
3.38e7
38.22
Abs. Int.
1.34e7
6.72e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.77e3
Abs. Int.
8.29e3
4.14e3
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

SGS ID: B5962_18720_DF_007 | Sample ID: 11215131-120221-S-JC-SW-B-1 | Acq: 17-Dec-2021 20:22:57
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15 | User: PSW Datafile: 211217R13



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\B5962_18720_DF_007.utp_res, saved 20-Dec-2021 14:06 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5668, 5830, 6464 scc: 130-426 | PKD: 20-Dec-2021 10:00 Printed: 20-Dec-2021 14:28 Page 11 of 12


OCDF
6.20e6
43.23
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.73e3
0%
Abs. Int.
1.93e6
9.67e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
7.21e6
43.23
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 4.40e3
0%
Abs. Int.
2.16e6
1.08e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.90e7
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.62e3
0%
Abs. Int.
8.70e6
4.35e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.11e7
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.82e3
0%
Abs. Int.
9.58e6
4.79e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.20e3
0%
Abs. Int.
1.76e4
8.78e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
2	211217R02	3	CS3_211217_DF_RB	1.00	SIL 25-347-1	PSW	481-555	17-Dec-2021	11:30:59
3	211217R03	7	OPR1_18720_DF	1.00	0_18720_OPR001	PSW	036-372	17-Dec-2021	12:28:30
4	211217R04	2	SBS_211217_DF_RA	1.00	SIL 20-61-1	PSW	380-619	17-Dec-2021	13:15:09
5	211217R05	6	MB1_18720_DF_SDS	10.00	Method Blank	PSW	673-484	17-Dec-2021	14:02:42
7	211217R07	9	B5962_18720_DF_002 ✓	10.45	11215131-120121-S-JC-NE-B-1	PSW	578-176	17-Dec-2021	15:37:49
8	211217R08	10	B5962_18720_DF_004	10.26	11215131-120121-S-JC-NE-O-7	PSW	607-913	17-Dec-2021	16:25:17
9	211217R09	11	B5962_18720_DF_005	10.20	11215131-120221-S-JC-SW-O-1	PSW	521-175	17-Dec-2021	17:12:51
10	211217R10	12	B5962_18720_DF_005MS	10.06	11215131-120221-S-JC-SW-O-1 -MS	PSW	639-482	17-Dec-2021	18:00:17
11	211217R11	13	B5962_18720_DF_005MSD	10.26	11215131-120221-S-JC-SW-O-1 -MSD	PSW	305-268	17-Dec-2021	18:47:50
12	211217R12	14	B5962_18720_DF_006	10.11	11215131-120221-S-JC-SW-DUP-1	PSW	568-825	17-Dec-2021	19:35:24
13	211217R13	15	B5962_18720_DF_007	10.39	11215131-120221-S-JC-SW-B-1	PSW	130-426	17-Dec-2021	20:22:57
2	211220R02	3	CS3_211220_DF_RA ✓	1.00	SIL 25-347-1	PSW	763-871	20-Dec-2021	09:49:37
3	211220R03	29	OPR1_18743_DF	1.00	0_18743_OPR001 CPSM only	PSW	572-127	20-Dec-2021	10:38:41
4	211220R04	2	SBS_211217_DF_RC	1.00	SIL 20-61-1	PSW	671-834	20-Dec-2021	11:26:26
6	211220R06	16	B5962_18720_DF_001-D5	10.62	11215131-120121-S-JC-NE-O-6	PSW	670-989	20-Dec-2021	13:00:37

REVIEWED
paul_walton , 12/20/2021, 2:37:07 PM

REVIEWED
Amber_Kornegay , 12/20/2021, 4:35:47 PM

Dioxin/Furan QC Summary	Acq'd: 17 Dec 2021 11:30 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211217_DF_RB	UTP: 20-Dec-2021 14:06:07 PSW	Checkcode: 481-555-ZZH
Sample ID: SIL 25-347-1	Report: 20 Dec 2021 14:09 pw	Datafile: 211217R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.23	4.20E+06	0.82	Y	1.34	1.11	-17%
12378-PeCDD	33.58	1.66E+07	1.56	Y	1.06	0.95	-10%
123478-HxCDD	37.45	1.48E+07	1.23	Y	1.06	1.02	-4%
123678-HxCDD	37.58	1.73E+07	1.22	Y	1.08	1.10	1%
123789-HxCDD	37.88	1.72E+07	1.25	Y	1.02	0.96	-5%
1234678-HpCDD	40.51	1.47E+07	1.04	Y	0.97	0.99	2%
OCDD	43.05	2.04E+07	0.88	Y	1.07	1.03	-4%
2378-TCDF	27.37	5.84E+06	0.84	Y	0.96	1.05	9%
12378-PeCDF	32.13	2.39E+07	1.56	Y	0.95	0.99	5%
23478-PeCDF	33.25	2.46E+07	1.63	Y	0.94	1.02	9%
123478-HxCDF	36.47	2.21E+07	1.29	Y	1.23	1.21	-2%
123678-HxCDF	36.61	2.49E+07	1.26	Y	1.13	1.15	1%
234678-HxCDF	37.28	2.27E+07	1.24	Y	1.15	1.15	0%
123789-HxCDF	38.24	2.04E+07	1.25	Y	1.14	1.17	3%
1234678-HpCDF	39.61	2.15E+07	1.05	Y	1.36	1.32	-3%
1234789-HpCDF	40.96	1.80E+07	1.05	Y	1.30	1.32	2%
OCDF	43.24	2.59E+07	0.93	Y	1.03	1.06	3%
ES 2378-TCDD	28.21	3.79E+07	0.78	Y	1.03	0.99	-4%
ES 12378-PeCDD	33.561	3.49E+07	1.62	Y	1.03	0.91	-12%
ES 123478-HxCDD	37.439	2.90E+07	1.26	Y	0.99	1.04	4%
ES 123678-HxCDD	37.559	3.16E+07	1.30	Y	0.97	1.13	16%
ES 123789-HxCDD	37.863	3.57E+07	1.26	Y	1.12	1.28	14%
ES 1234678-HpCDD	40.499	2.97E+07	1.01	Y	0.99	1.06	7%
ES OCDD	43.044	3.95E+07	0.91	Y	0.78	0.71	-9%
ES 2378-TCDF	27.345	5.57E+07	0.78	Y	1.08	1.03	-5%
ES 12378-PeCDF	32.115	4.84E+07	1.49	Y	0.93	0.89	-4%
ES 23478-PeCDF	33.227	4.82E+07	1.54	Y	0.92	0.89	-4%
ES 123478-HxCDF	36.454	3.65E+07	0.50	Y	1.14	1.31	14%
ES 123678-HxCDF	36.595	4.34E+07	0.53	Y	1.30	1.55	20%
ES 234678-HxCDF	37.26	3.94E+07	0.52	Y	1.20	1.41	17%
ES 123789-HxCDF	38.227	3.50E+07	0.50	Y	1.14	1.25	10%
ES 1234678-HpCDF	39.603	3.26E+07	0.44	Y	0.95	1.16	22%
ES 1234789-HpCDF	40.947	2.73E+07	0.44	Y	0.85	0.97	15%
ES OCDF	43.224	4.90E+07	0.87	Y	0.93	0.87	-6%

Dioxin/Furan QC Summary	Acq'd: 17 Dec 2021 11:30 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211217_DF_RB	UTP: 20-Dec-2021 14:06:07 PSW	Checkcode: 481-555-ZZH
Sample ID: SIL 25-347-1	Report: 20 Dec 2021 14:09 pw	Datafile: 211217R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.55	3.83E+07	0.77	Y	-	-	-
JS 1234-TCDF	25.98	5.43E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.75	1.40E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	28.23	4.69E+06	n/a	-	1.31	1.22	-7%
CS 12347-PeCDD	33.06	3.06E+07	1.59	Y	0.89	0.80	-11%
CS 12346-PeCDF	31.59	4.71E+07	1.51	Y	0.87	0.87	0%
CS 123469-HxCDF	36.91	3.86E+07	0.52	Y	1.09	1.38	27%
CS 1234689-HpCDF	39.99	3.02E+07	0.43	Y	0.86	1.08	25%
~~SS 37Cl-2378-TCDD~~	~~28.23~~	~~4.69E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.24~~	~~-2%~~
~~SS 12347-PeCDD~~	~~33.06~~	~~3.06E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~0.80~~	~~1%~~
~~SS 12346-PeCDF~~	~~31.59~~	~~4.71E+07~~	~~1.51~~	~~Y~~	~~0.93~~	~~0.97~~	~~4%~~
~~SS 123469-HxCDF~~	~~36.91~~	~~3.86E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~0.89~~	~~6%~~
~~SS 1234689-HpCDF~~	~~39.99~~	~~3.02E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~0.93~~	~~2%~~
~~OCDD-a~~	~~0.00~~	~~0.00E+00~~	~~0.00~~	~~0~~	~~0.07~~	~~0.00~~	~~-100%~~
~~OCDF-a~~	~~43.23~~	~~1.41E+06~~	~~2.29~~	~~Y~~	~~0.06~~	~~0.06~~	~~-3%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211217R02 Analysis Date: 17-DEC-2021 11:30:59

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.82	0.65 - 0.89	Y	8.26	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	44.9	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05 - 1.43	Y	48.2	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.22	1.05 - 1.43	Y	50.7	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	47.3	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.9	43 - 58	Y
OCDD	M+2/M+4	0.88	0.76 - 1.02	Y	96.5	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.84	0.65 - 0.89	Y	10.9	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	52.3	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.63	1.32 - 1.78	Y	54.4	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.29	1.05 - 1.43	Y	49	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	50.7	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.4	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	48.5	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	50.8	43 - 58	Y
OCDF	M+2/M+4	0.93	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 20 Dec 2021 14:09 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

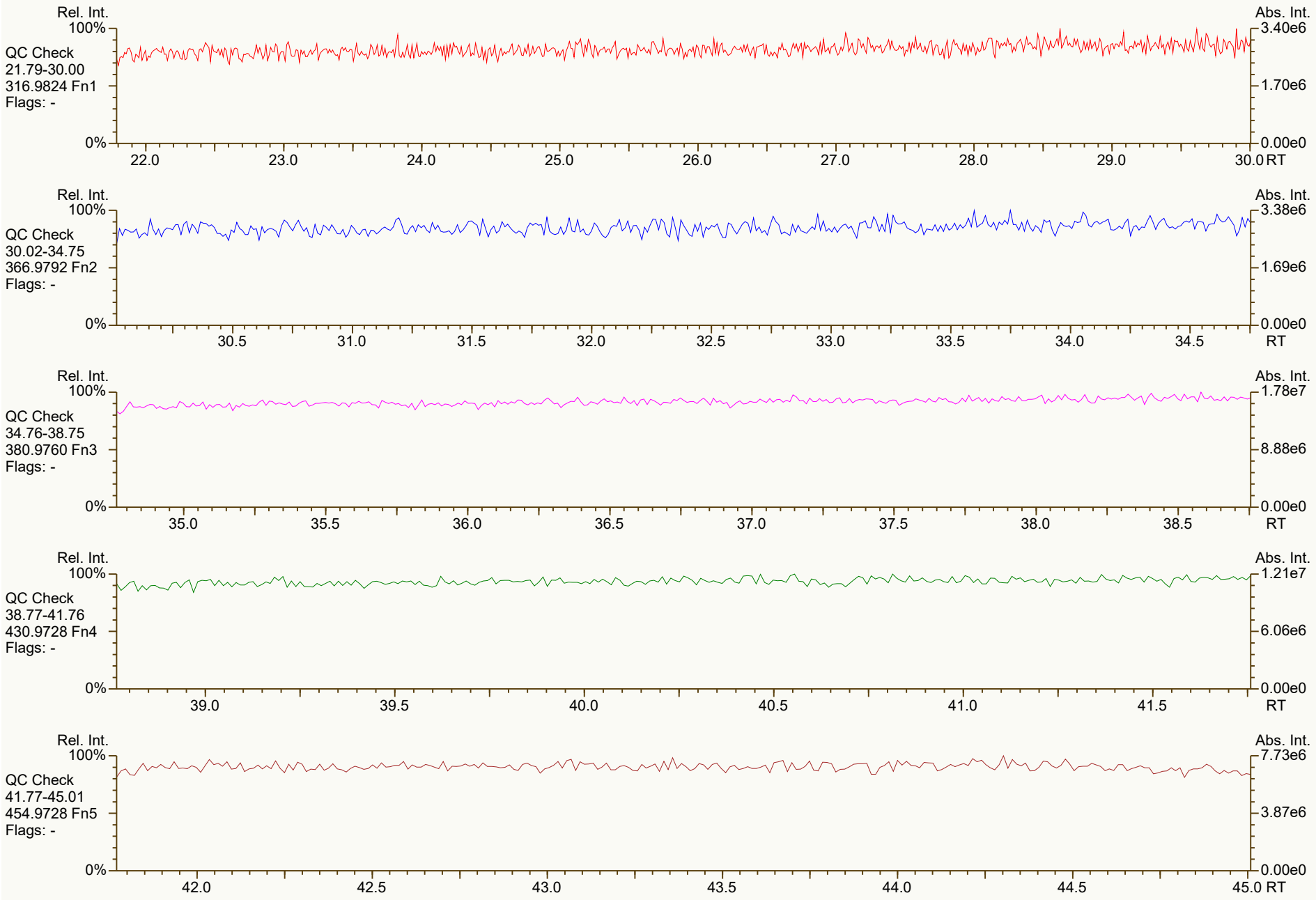
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

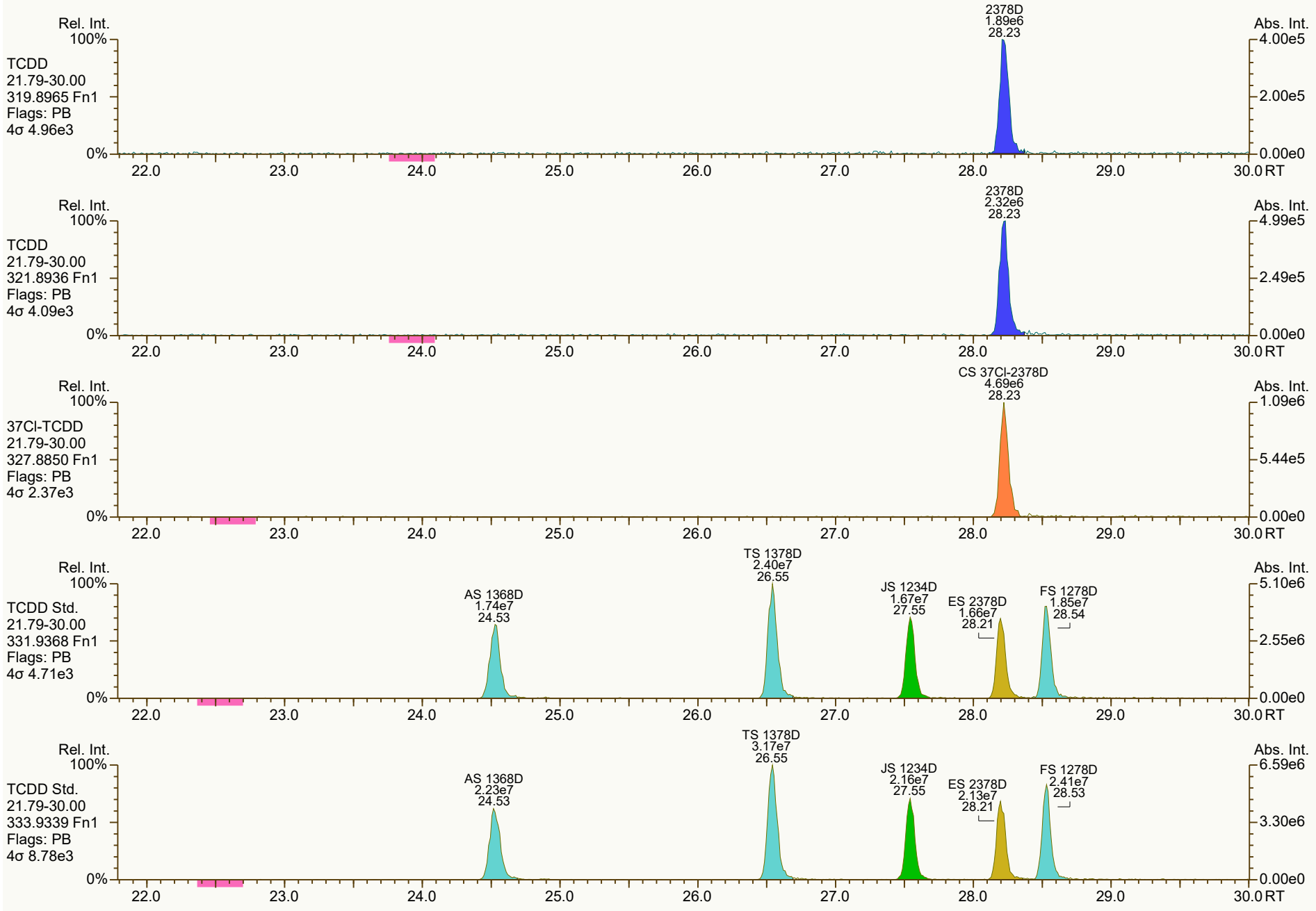
Instrument ID: MM3 GC Column ID: ZB-5ms

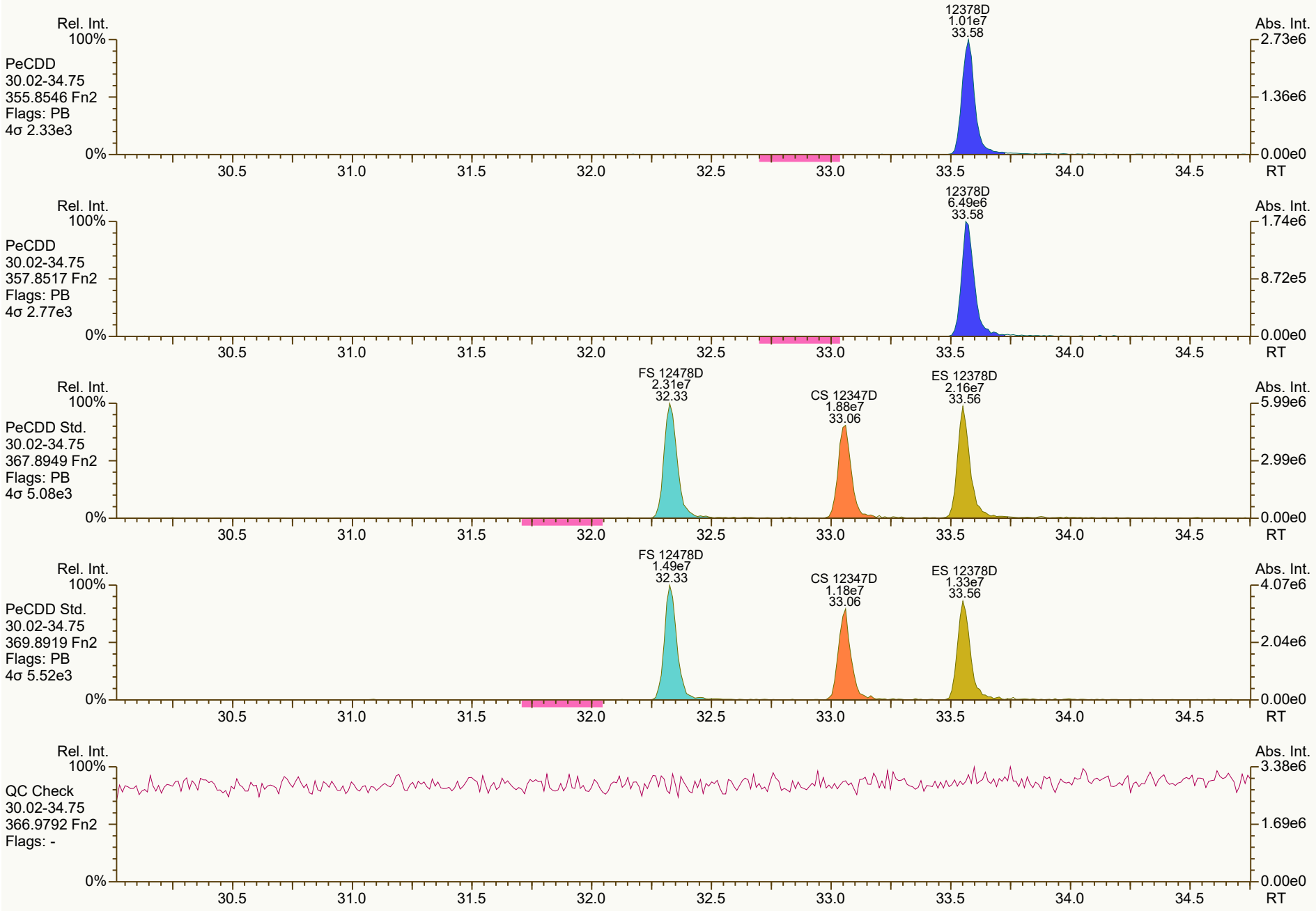
VER Data Filename: 211217R02 Analysis Date: 17-DEC-2021 11:30:59

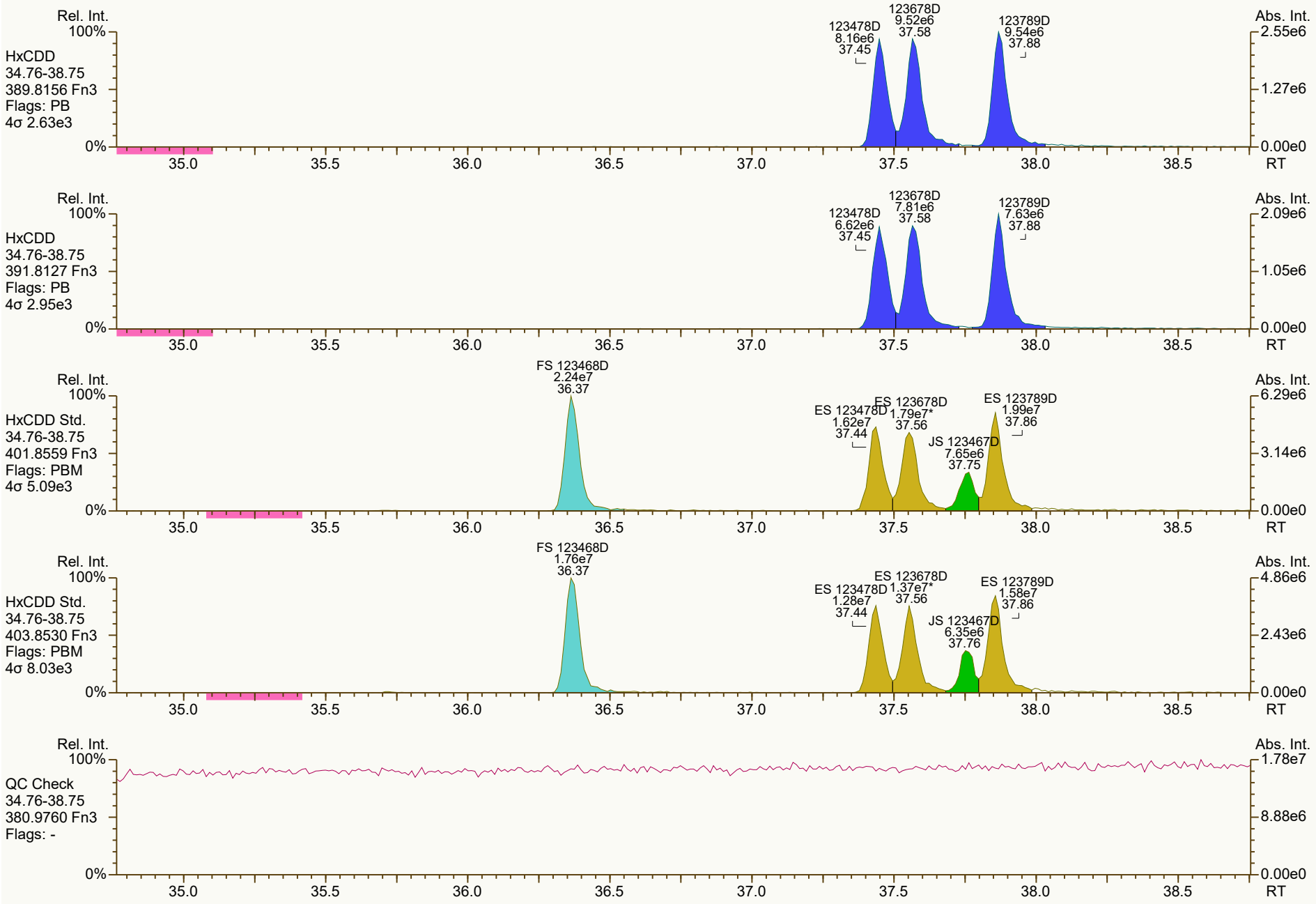
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65	-	0.89	Y	95.5	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32	-	1.78	Y	88	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	104	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05	-	1.43	Y	116	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	114	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.01	0.88	-	1.20	Y	107	72	-	138	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	182	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65	-	0.89	Y	94.7	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.49	1.32	-	1.78	Y	95.5	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32	-	1.78	Y	96.2	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	114	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	120	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	117	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	110	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	122	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	115	77	-	129	Y
13C-OCDF	M+2/M+4	0.87	0.76	-	1.02	Y	189	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.35	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.59	1.32	-	1.78	Y	89.3	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.51	1.32	-	1.78	Y	99.9	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	127	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.43	0.37	-	0.51	Y	125	70	-	130	Y

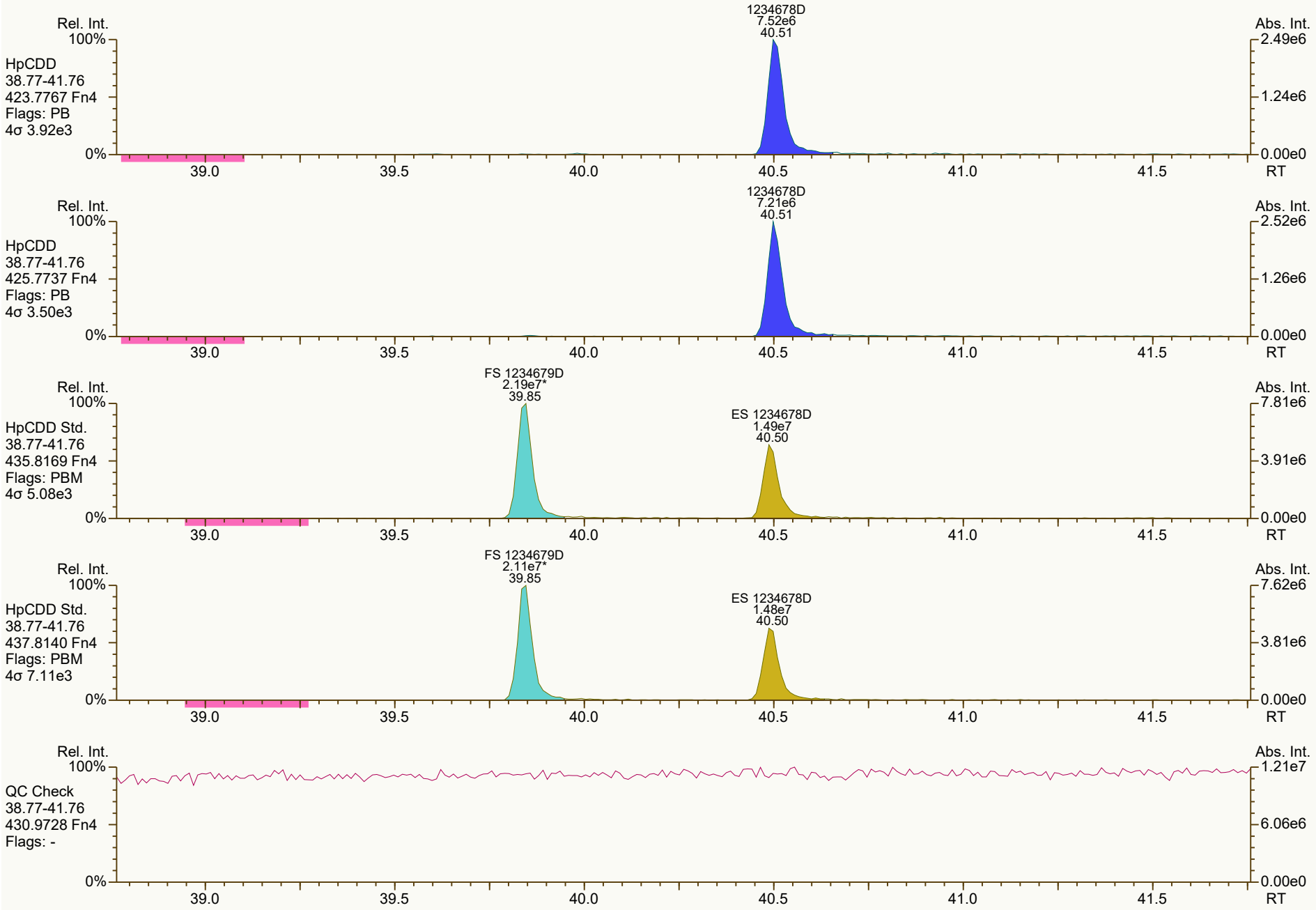
Processed: 20 Dec 2021 14:09 Analyst: pw

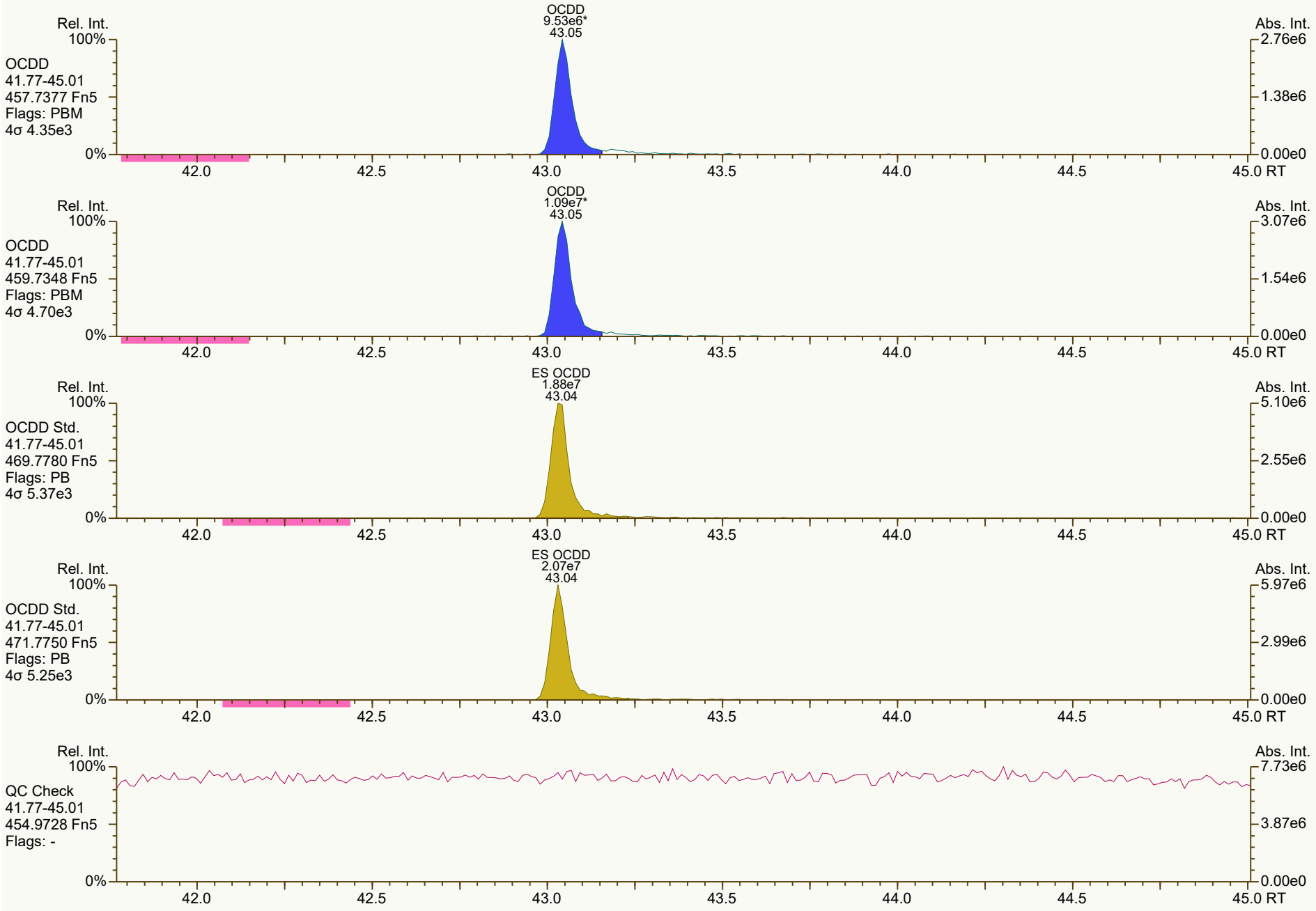

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.40e6
1.70e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.38e6
1.69e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.78e7
8.88e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.21e7
6.06e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.73e6
3.87e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

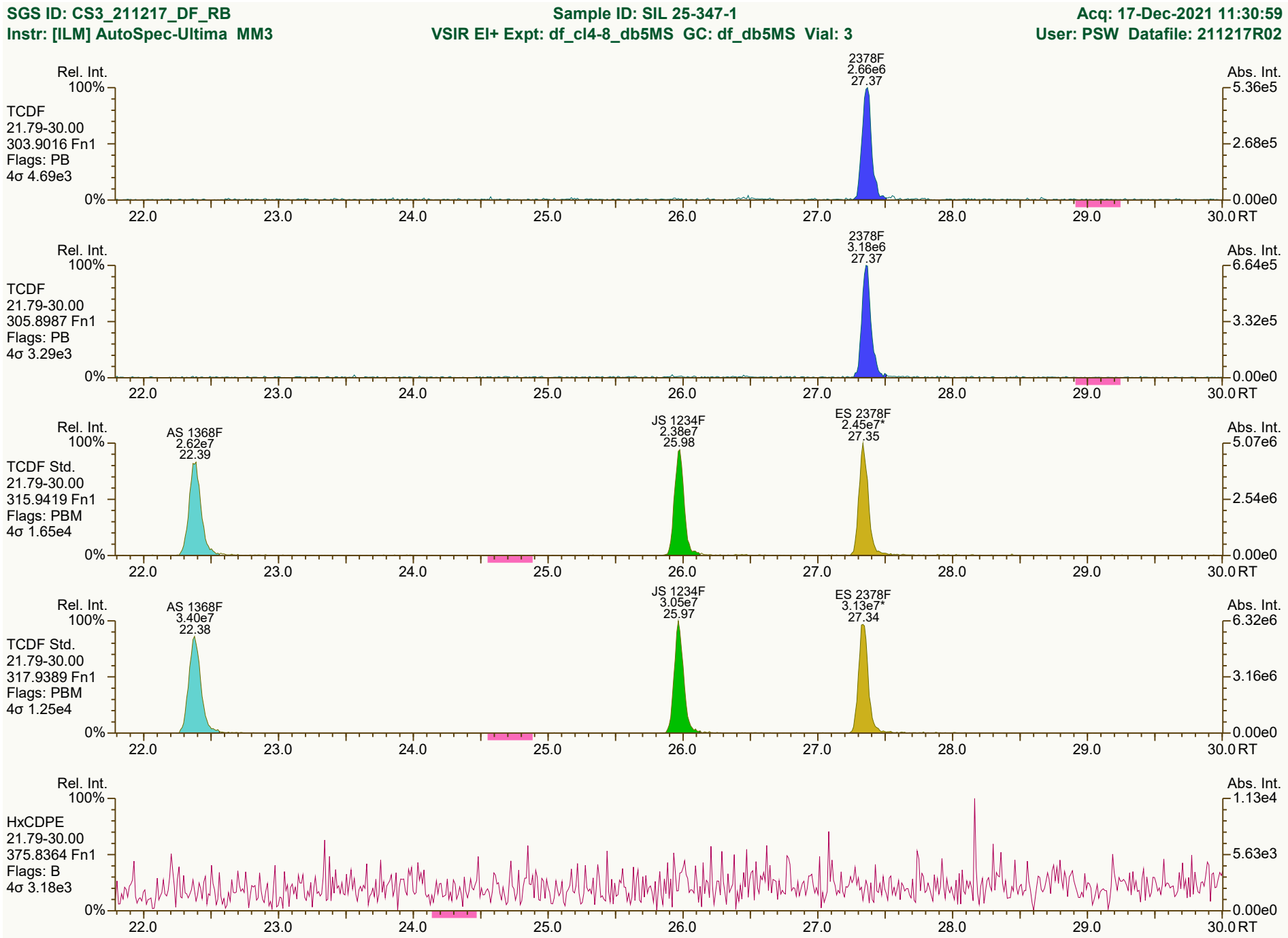

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PB
4σ 4.96e3
0%
2378D
1.89e6
28.23
Abs. Int.
4.00e5
2.00e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PB
4σ 4.09e3
0%
2378D
2.32e6
28.23
Abs. Int.
4.99e5
2.49e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.37e3
0%
CS 37Cl-2378D
4.69e6
28.23
Abs. Int.
1.09e6
5.44e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 4.71e3
0%
AS 1368D
1.74e7
24.53
TS 1378D
2.40e7
26.55
JS 1234D
1.67e7
27.55
ES 2378D
1.66e7
28.21
FS 1278D
1.85e7
28.54
Abs. Int.
5.10e6
2.55e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 8.78e3
0%
AS 1368D
2.23e7
24.53
TS 1378D
3.17e7
26.55
JS 1234D
2.16e7
27.55
ES 2378D
2.13e7
28.21
FS 1278D
2.41e7
28.53
Abs. Int.
6.59e6
3.30e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PB
4σ 2.33e3
0%
12378D
1.01e7
33.58
Abs. Int.
2.73e6
1.36e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 2.77e3
0%
12378D
6.49e6
33.58
Abs. Int.
1.74e6
8.72e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.08e3
0%
FS 12478D
2.31e7
32.33
CS 12347D
1.88e7
33.06
ES 12378D
2.16e7
33.56
Abs. Int.
5.99e6
2.99e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 5.52e3
0%
FS 12478D
1.49e7
32.33
CS 12347D
1.18e7
33.06
ES 12378D
1.33e7
33.56
Abs. Int.
4.07e6
2.04e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.38e6
1.69e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

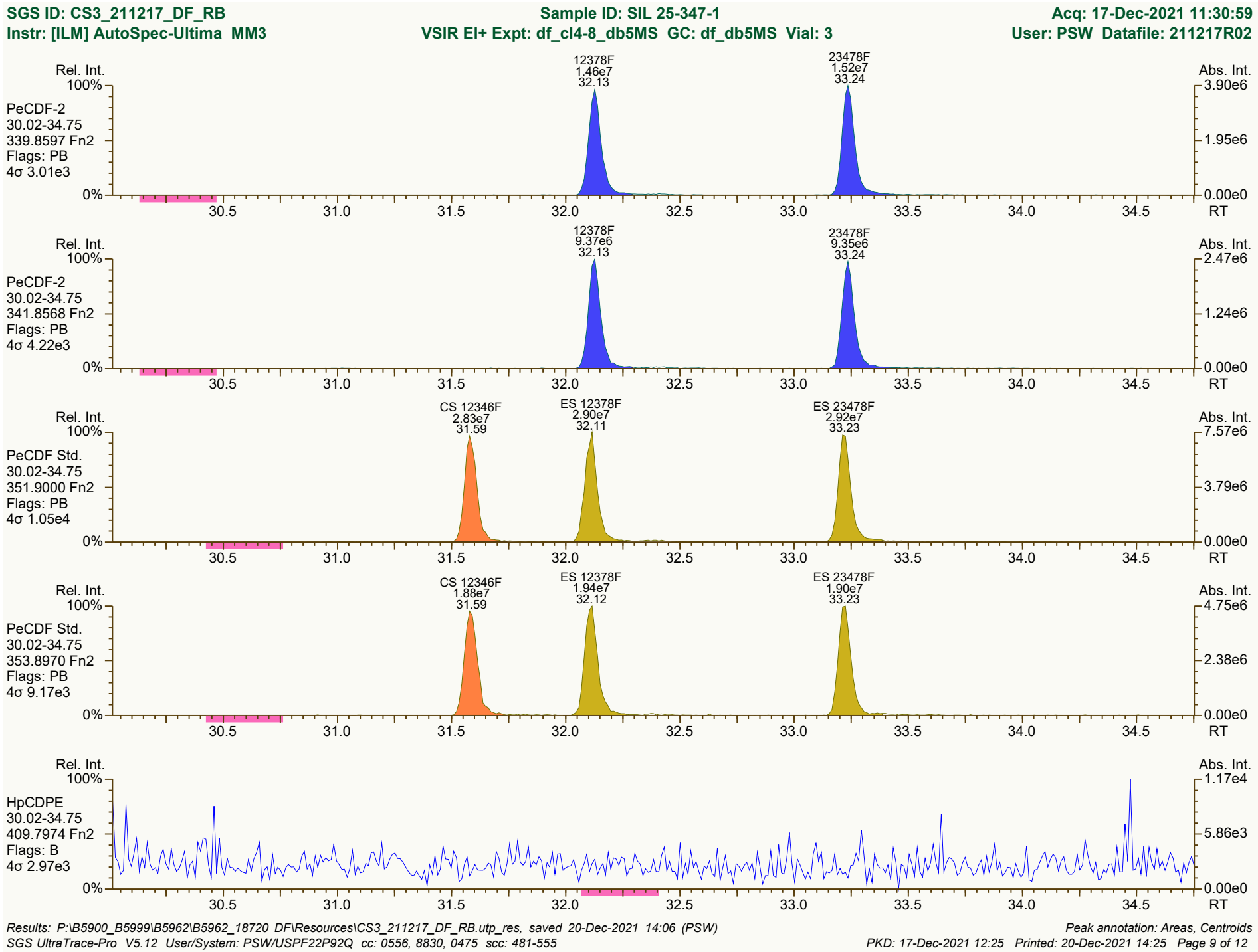

Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 2.63e3
123478D
8.16e6
37.45
123678D
9.52e6
37.58
123789D
9.54e6
37.88
Abs. Int.
2.55e6
1.27e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 2.95e3
123478D
6.62e6
37.45
123678D
7.81e6
37.58
123789D
7.63e6
37.88
Abs. Int.
2.09e6
1.05e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 5.09e3
FS 123468D
2.24e7
36.37
ES 123478D
1.62e7
37.44
ES 123678D
1.79e7*
37.56
JS 123467D
7.65e6
37.75
ES 123789D
1.99e7
37.86
Abs. Int.
6.29e6
3.14e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 8.03e3
FS 123468D
1.76e7
36.37
ES 123478D
1.28e7
37.44
ES 123678D
1.37e7*
37.56
JS 123467D
6.35e6
37.76
ES 123789D
1.58e7
37.86
Abs. Int.
4.86e6
2.43e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
Abs. Int.
1.78e7
8.88e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

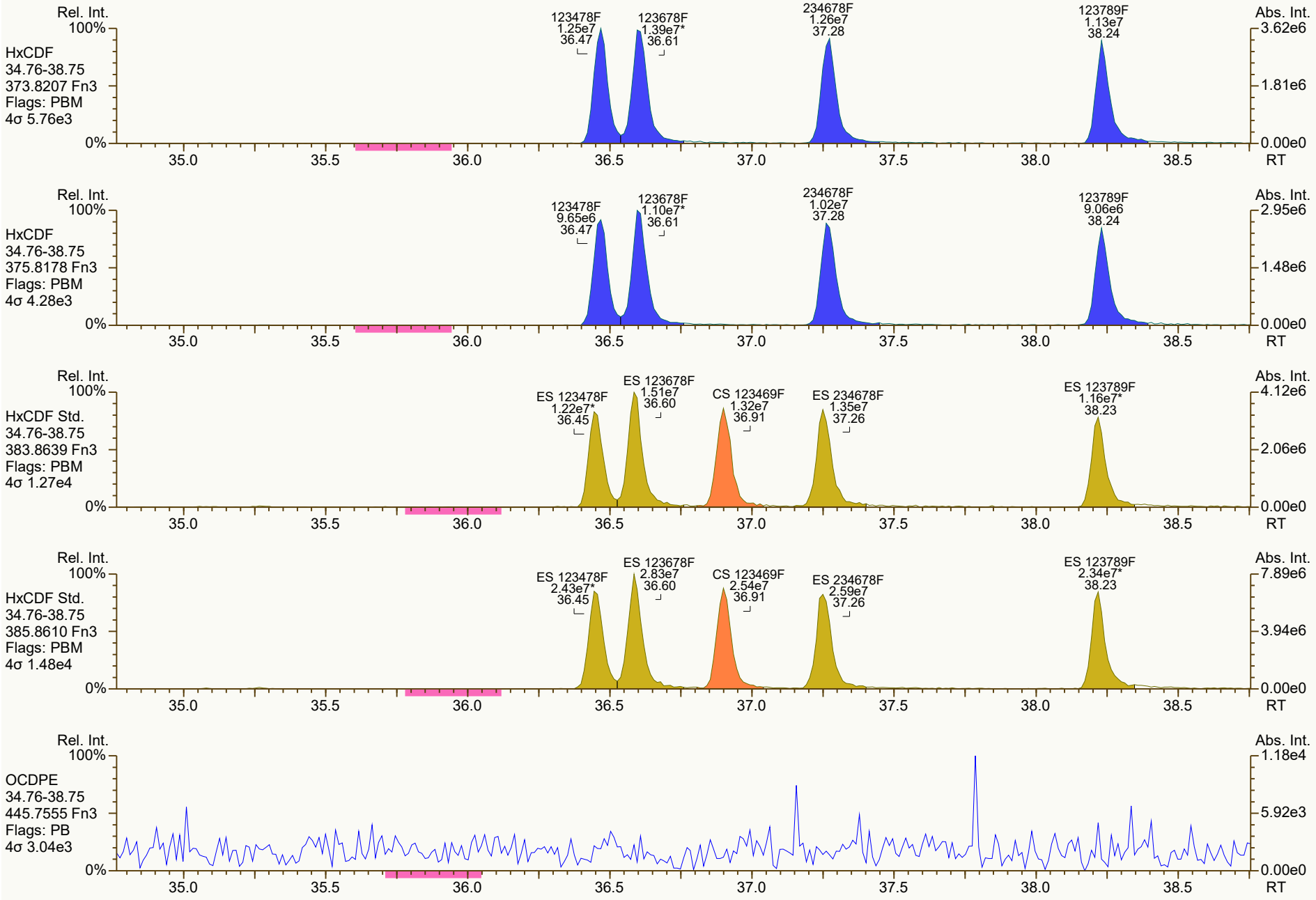

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 3.92e3
1234678D
7.52e6
40.51
Abs. Int.
2.49e6
1.24e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.50e3
1234678D
7.21e6
40.51
Abs. Int.
2.52e6
1.26e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 5.08e3
FS 1234679D
2.19e7*
39.85
ES 1234678D
1.49e7
40.50
Abs. Int.
7.81e6
3.91e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 7.11e3
FS 1234679D
2.11e7*
39.85
ES 1234678D
1.48e7
40.50
Abs. Int.
7.62e6
3.81e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.21e7
6.06e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

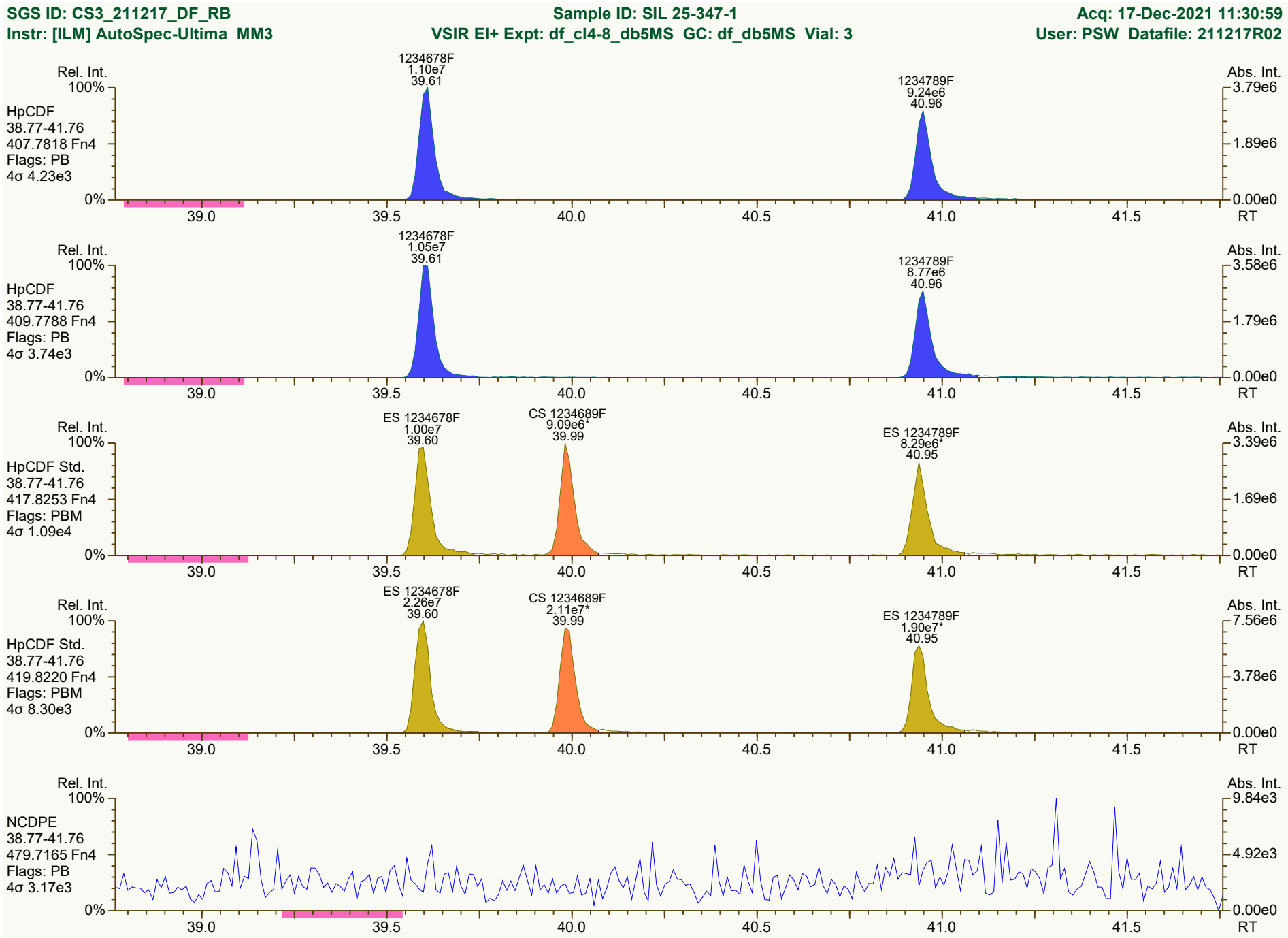

OCDD
9.53e6*
43.05
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 4.35e3
0%
Abs. Int.
2.76e6
1.38e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.09e7*
43.05
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 4.70e3
0%
Abs. Int.
3.07e6
1.54e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.88e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 5.37e3
0%
Abs. Int.
5.10e6
2.55e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.07e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.25e3
0%
Abs. Int.
5.97e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.73e6
3.87e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: CS3_211217_DF_RB
Sample ID: SIL 25-347-1
Acq: 17-Dec-2021 11:30:59
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211217R02
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 4.69e3
2378F
2.66e6
27.37
5.36e5
2.68e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 3.29e3
2378F
3.18e6
27.37
6.64e5
3.32e5
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 1.65e4
AS 1368F
2.62e7
22.39
JS 1234F
2.38e7
25.98
ES 2378F
2.45e7*
27.35
5.07e6
2.54e6
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.25e4
AS 1368F
3.40e7
22.38
JS 1234F
3.05e7
25.97
ES 2378F
3.13e7*
27.34
6.32e6
3.16e6
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.18e3
1.13e4
5.63e3
0%
100%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\CS3_211217_DF_RB.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5711, 7301, 0011 scc: 481-555
PKD: 17-Dec-2021 12:25 Printed: 20-Dec-2021 14:25 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.10e4
5.48e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 2.83e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.20e4
5.98e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 4.09e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
3.40e6
1.70e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


SGS ID: CS3_211217_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
Acq: 17-Dec-2021 11:30:59
User: PSW Datafile: 211217R02
Rel. Int.
Abs. Int.
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 3.01e3
12378F
1.46e7
32.13
23478F
1.52e7
33.24
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 4.22e3
12378F
9.37e6
32.13
23478F
9.35e6
33.24
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 1.05e4
CS 12346F
2.83e7
31.59
ES 12378F
2.90e7
32.11
ES 23478F
2.92e7
33.23
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 9.17e3
CS 12346F
1.88e7
31.59
ES 12378F
1.94e7
32.12
ES 23478F
1.90e7
33.23
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.97e3
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\CS3_211217_DF_RB.utp_res, saved 20-Dec-2021 14:06 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0556, 8830, 0475 scc: 481-555
Peak annotation: Areas, Centroids
PKD: 17-Dec-2021 12:25 Printed: 20-Dec-2021 14:25 Page 9 of 12


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 5.76e3
123478F
1.25e7
36.47
123678F
1.39e7*
36.61
234678F
1.26e7
37.28
123789F
1.13e7
38.24
Abs. Int.
3.62e6
1.81e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 4.28e3
123478F
9.65e6
36.47
123678F
1.10e7*
36.61
234678F
1.02e7
37.28
123789F
9.06e6
38.24
Abs. Int.
2.95e6
1.48e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PBM
4σ 1.27e4
ES 123478F
1.22e7*
36.45
ES 123678F
1.51e7
36.60
CS 123469F
1.32e7
36.91
ES 234678F
1.35e7
37.26
ES 123789F
1.16e7*
38.23
Abs. Int.
4.12e6
2.06e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PBM
4σ 1.48e4
ES 123478F
2.43e7*
36.45
ES 123678F
2.83e7
36.60
CS 123469F
2.54e7
36.91
ES 234678F
2.59e7
37.26
ES 123789F
2.34e7*
38.23
Abs. Int.
7.89e6
3.94e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: PB
4σ 3.04e3
Abs. Int.
1.18e4
5.92e3
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: CS3_211217_DF_RB
Sample ID: SIL 25-347-1
Acq: 17-Dec-2021 11:30:59
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211217R02
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.23e3
1234678F
1.10e7
39.61
1234789F
9.24e6
40.96
3.79e6
1.89e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.74e3
1234678F
1.05e7
39.61
1234789F
8.77e6
40.96
3.58e6
1.79e6
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 1.09e4
ES 1234678F
1.00e7
39.60
CS 1234689F
9.09e6*
39.99
ES 1234789F
8.29e6*
40.95
3.39e6
1.69e6
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 8.30e3
ES 1234678F
2.26e7
39.60
CS 1234689F
2.11e7*
39.99
ES 1234789F
1.90e7*
40.95
7.56e6
3.78e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: PB
4σ 3.17e3
9.84e3
4.92e3
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 5.09e3
OCDF
1.25e7
43.24
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 2.89e3
OCDF
1.34e7
43.24
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.94e3
ES OCDF
2.27e7
43.22
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 2.85e3
ES OCDF
2.62e7
43.22
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.38e3
Rel. Int.
Abs. Int.
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
3.42e6
1.71e6
0.00e0
3.68e6
1.84e6
6.35e6
3.18e6
7.29e6
3.64e6
1.10e4
5.50e3

Dioxin/Furan QC Summary	Acq'd: 20 Dec 2021 09:49 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211220_DF_RA	UTP: 20-Dec-2021 14:06:13 PSW	Checkcode: 763-871-NDX
Sample ID: SIL 25-347-1	Report: 20 Dec 2021 14:09 pw	Datafile: 211220R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.00	1.95E+06	0.72	Y	1.34	1.12	-16%
12378-PeCDD	33.39	7.88E+06	1.56	Y	1.06	0.95	-10%
123478-HxCDD	37.27	7.52E+06	1.24	Y	1.06	1.01	-4%
123678-HxCDD	37.39	7.75E+06	1.31	Y	1.08	1.06	-2%
123789-HxCDD	37.70	8.17E+06	1.24	Y	1.02	0.97	-4%
1234678-HpCDD	40.37	7.28E+06	1.04	Y	0.97	0.98	1%
OCDD	42.88	9.91E+06	0.90	Y	1.07	1.01	-6%
2378-TCDF	27.12	2.57E+06	0.75	Y	0.96	1.02	7%
12378-PeCDF	31.93	1.12E+07	1.67	Y	0.95	1.02	8%
23478-PeCDF	33.05	1.12E+07	1.53	Y	0.94	0.98	4%
123478-HxCDF	36.29	1.07E+07	1.27	Y	1.23	1.23	0%
123678-HxCDF	36.43	1.15E+07	1.26	Y	1.13	1.14	1%
234678-HxCDF	37.09	1.08E+07	1.26	Y	1.15	1.18	3%
123789-HxCDF	38.07	1.00E+07	1.26	Y	1.14	1.15	2%
1234678-HpCDF	39.47	1.01E+07	1.04	Y	1.36	1.31	-4%
1234789-HpCDF	40.81	9.02E+06	1.02	Y	1.30	1.35	4%
OCDF	43.07	1.25E+07	0.94	Y	1.03	1.09	6%
ES 2378-TCDD	27.98	1.74E+07	0.84	Y	1.03	0.94	-9%
ES 12378-PeCDD	33.37	1.65E+07	1.47	Y	1.03	0.89	-14%
ES 123478-HxCDD	37.256	1.48E+07	1.30	Y	0.99	0.99	0%
ES 123678-HxCDD	37.374	1.46E+07	1.25	Y	0.97	0.98	0%
ES 123789-HxCDD	37.683	1.68E+07	1.35	Y	1.12	1.12	0%
ES 1234678-HpCDD	40.36	1.48E+07	1.02	Y	0.99	0.99	0%
ES OCDD	42.875	1.96E+07	0.90	Y	0.78	0.66	-16%
ES 2378-TCDF	27.099	2.51E+07	0.76	Y	1.08	1.01	-7%
ES 12378-PeCDF	31.915	2.20E+07	1.53	Y	0.93	0.89	-5%
ES 23478-PeCDF	33.035	2.29E+07	1.55	Y	0.92	0.92	0%
ES 123478-HxCDF	36.276	1.73E+07	0.52	Y	1.14	1.16	1%
ES 123678-HxCDF	36.417	2.01E+07	0.50	Y	1.30	1.34	4%
ES 234678-HxCDF	37.072	1.82E+07	0.51	Y	1.20	1.22	1%
ES 123789-HxCDF	38.054	1.74E+07	0.48	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.464	1.54E+07	0.46	Y	0.95	1.03	8%
ES 1234789-HpCDF	40.801	1.33E+07	0.49	Y	0.85	0.89	5%
ES OCDF	43.052	2.31E+07	0.91	Y	0.93	0.77	-17%

Dioxin/Furan QC Summary	Acq'd: 20 Dec 2021 09:49 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211220_DF_RA	UTP: 20-Dec-2021 14:06:13 PSW	Checkcode: 763-871-NDX
Sample ID: SIL 25-347-1	Report: 20 Dec 2021 14:09 pw	Datafile: 211220R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.31	1.85E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.72	2.48E+07	0.73	Y	-	-	-
JS 123467-HxCDD	37.58	7.48E+06	1.24	Y	-	-	-
CS 37Cl-2378-TCDD	27.99	2.13E+06	n/a	-	1.31	1.15	-12%
CS 12347-PeCDD	32.87	1.46E+07	1.56	Y	0.89	0.79	-12%
CS 12346-PeCDF	31.39	2.14E+07	1.55	Y	0.87	0.86	-1%
CS 123469-HxCDF	36.73	1.80E+07	0.50	Y	1.09	1.20	11%
CS 1234689-HpCDF	39.86	1.48E+07	0.46	Y	0.86	0.99	14%
~~SS 37Cl-2378-TCDD~~	~~27.99~~	~~2.13E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.23~~	~~-3%~~
~~SS 12347-PeCDD~~	~~32.87~~	~~1.46E+07~~	~~1.56~~	~~Y~~	~~0.86~~	~~0.88~~	~~2%~~
~~SS 12346-PeCDF~~	~~31.39~~	~~2.14E+07~~	~~1.55~~	~~Y~~	~~0.93~~	~~0.97~~	~~4%~~
~~SS 123469-HxCDF~~	~~36.73~~	~~1.80E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~0.90~~	~~7%~~
~~SS 1234689-HpCDF~~	~~39.86~~	~~1.48E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~0.96~~	~~5%~~
~~OCDD-a~~	~~42.88~~	~~5.72E+05~~	~~2.36~~	~~Y~~	~~0.07~~	~~0.06~~	~~-12%~~
~~OCDF-a~~	~~43.06~~	~~6.18E+05~~	~~2.49~~	~~Y~~	~~0.06~~	~~0.05~~	~~-10%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211220R02 Analysis Date: 20-DEC-2021 09:49:37

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.72	0.65 - 0.89	Y	8.36	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	45	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	48.1	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.31	1.05 - 1.43	Y	49	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	47.9	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.5	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	94.4	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.75	0.65 - 0.89	Y	10.7	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.67	1.32 - 1.78	Y	53.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32 - 1.78	Y	52.1	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	49.9	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	50.6	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	51.4	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	48.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	52.1	43 - 58	Y
OCDF	M+2/M+4	0.94	0.76 - 1.02	Y	106	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 20 Dec 2021 14:09 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

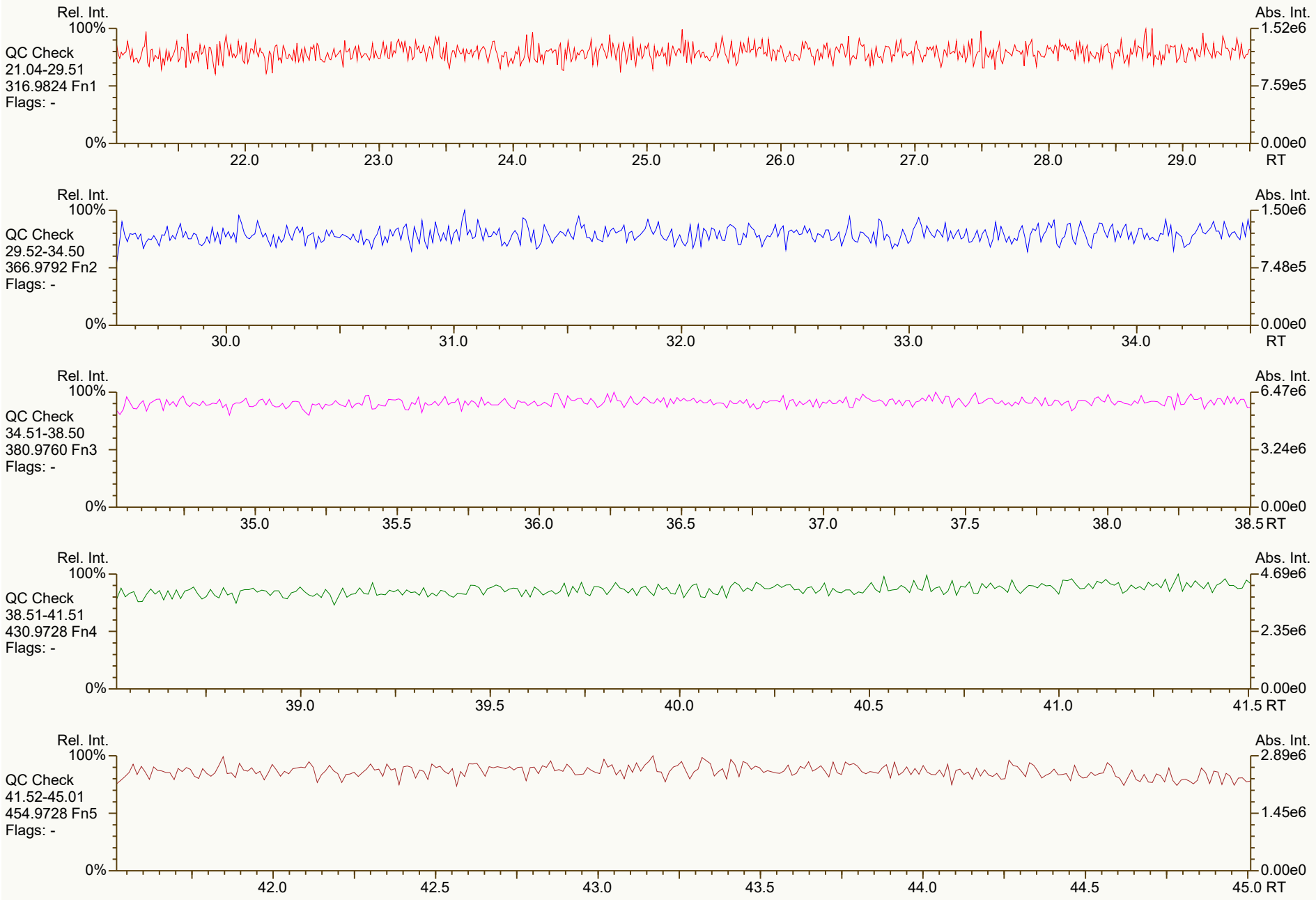
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211220R02 Analysis Date: 20-DEC-2021 09:49:37

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.84	0.65	-	0.89	Y	90.6	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.47	1.32	-	1.78	Y	86.2	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05	-	1.43	Y	99.6	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	100	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.35	1.05	-	1.43	Y	99.9	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88	-	1.20	Y	99.7	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	169	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.76	0.65	-	0.89	Y	93.2	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.53	1.32	-	1.78	Y	94.9	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32	-	1.78	Y	99.8	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	101	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	104	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	101	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.48	0.43	-	0.59	Y	102	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	108	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.49	0.37	-	0.51	Y	105	77	-	129	Y
13C-OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	166	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						8.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.56	1.32	-	1.78	Y	88.2	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.55	1.32	-	1.78	Y	99.2	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	111	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	114	70	-	130	Y

Processed: 20 Dec 2021 14:09 Analyst: pw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21.04-29.51
316.9824 Fn1
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0%
Abs. Int.
1.52e6
7.59e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
QC Check
29.52-34.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.50e6
7.48e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
34.51-38.50
380.9760 Fn3
Flags: -
0%
Abs. Int.
6.47e6
3.24e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
QC Check
38.51-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.69e6
2.35e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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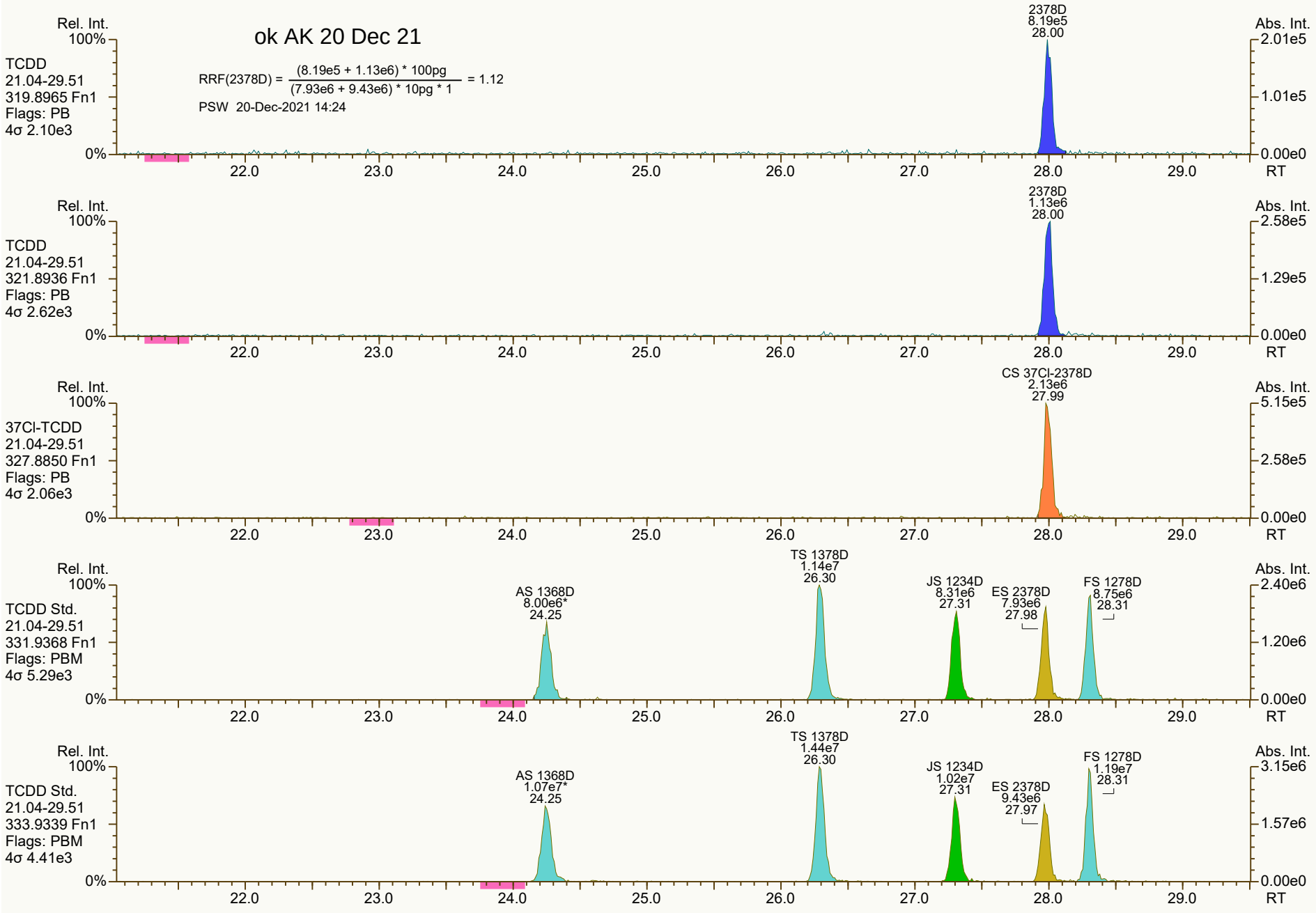
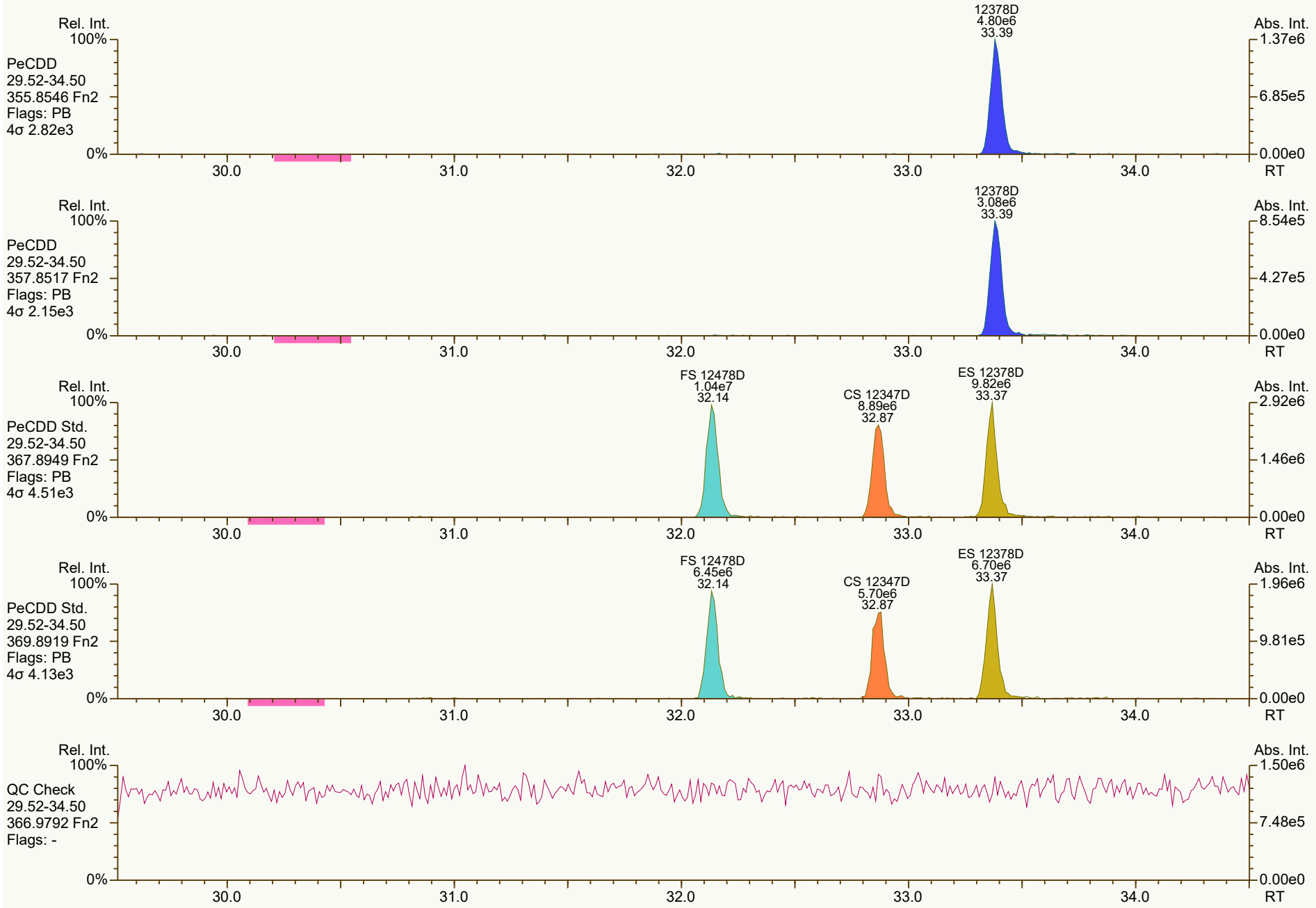
1.45e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


ok AK 20 Dec 21
RRF(2378D) = (8.19e5 + 1.13e6) * 100pg / (7.93e6 + 9.43e6) * 10pg * 1 = 1.12
PSW 20-Dec-2021 14:24
Rel. Int.
Abs. Int.
TCDD
21.04-29.51
319.8965 Fn1
Flags: PB
4σ 2.10e3
2378D
8.19e5
28.00
TCDD
21.04-29.51
321.8936 Fn1
Flags: PB
4σ 2.62e3
2378D
1.13e6
28.00
37Cl-TCDD
21.04-29.51
327.8850 Fn1
Flags: PB
4σ 2.06e3
CS 37Cl-2378D
2.13e6
27.99
TCDD Std.
21.04-29.51
331.9368 Fn1
Flags: PBM
4σ 5.29e3
AS 1368D
8.00e6*
24.25
TS 1378D
1.14e7
26.30
JS 1234D
8.31e6
27.31
ES 2378D
7.93e6
27.98
FS 1278D
8.75e6
28.31
TCDD Std.
21.04-29.51
333.9339 Fn1
Flags: PBM
4σ 4.41e3
AS 1368D
1.07e7*
24.25
TS 1378D
1.44e7
26.30
JS 1234D
1.02e7
27.31
ES 2378D
9.43e6
27.97
FS 1278D
1.19e7
28.31
RT


Rel. Int.
100%
PeCDD
29.52-34.50
355.8546 Fn2
Flags: PB
4σ 2.82e3
0%
12378D
4.80e6
33.39
Abs. Int.
1.37e6
6.85e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.50
357.8517 Fn2
Flags: PB
4σ 2.15e3
0%
12378D
3.08e6
33.39
Abs. Int.
8.54e5
4.27e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.50
367.8949 Fn2
Flags: PB
4σ 4.51e3
0%
FS 12478D
1.04e7
32.14
CS 12347D
8.89e6
32.87
ES 12378D
9.82e6
33.37
Abs. Int.
2.92e6
1.46e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.50
369.8919 Fn2
Flags: PB
4σ 4.13e3
0%
FS 12478D
6.45e6
32.14
CS 12347D
5.70e6
32.87
ES 12378D
6.70e6
33.37
Abs. Int.
1.96e6
9.81e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.50e6
7.48e5
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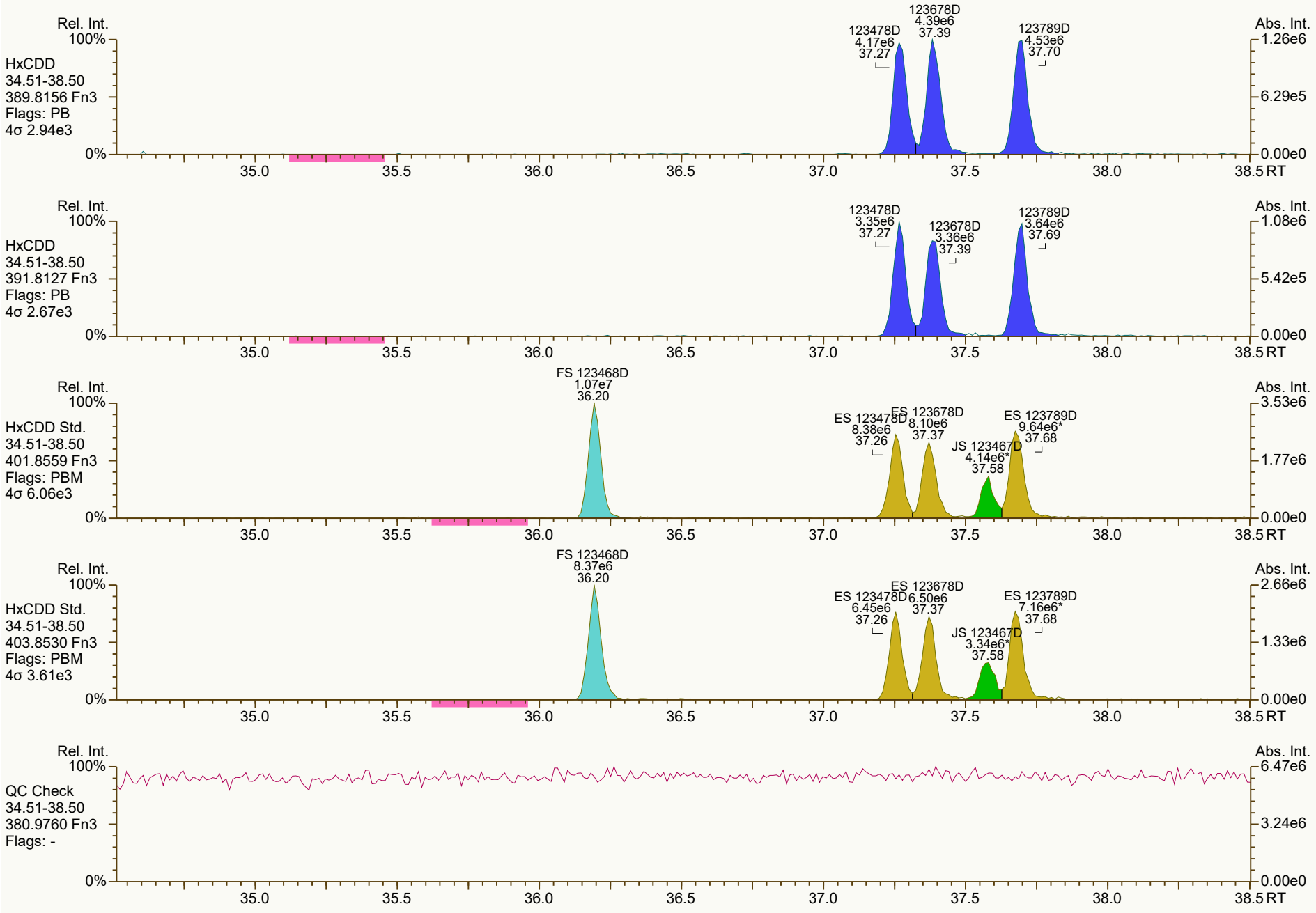
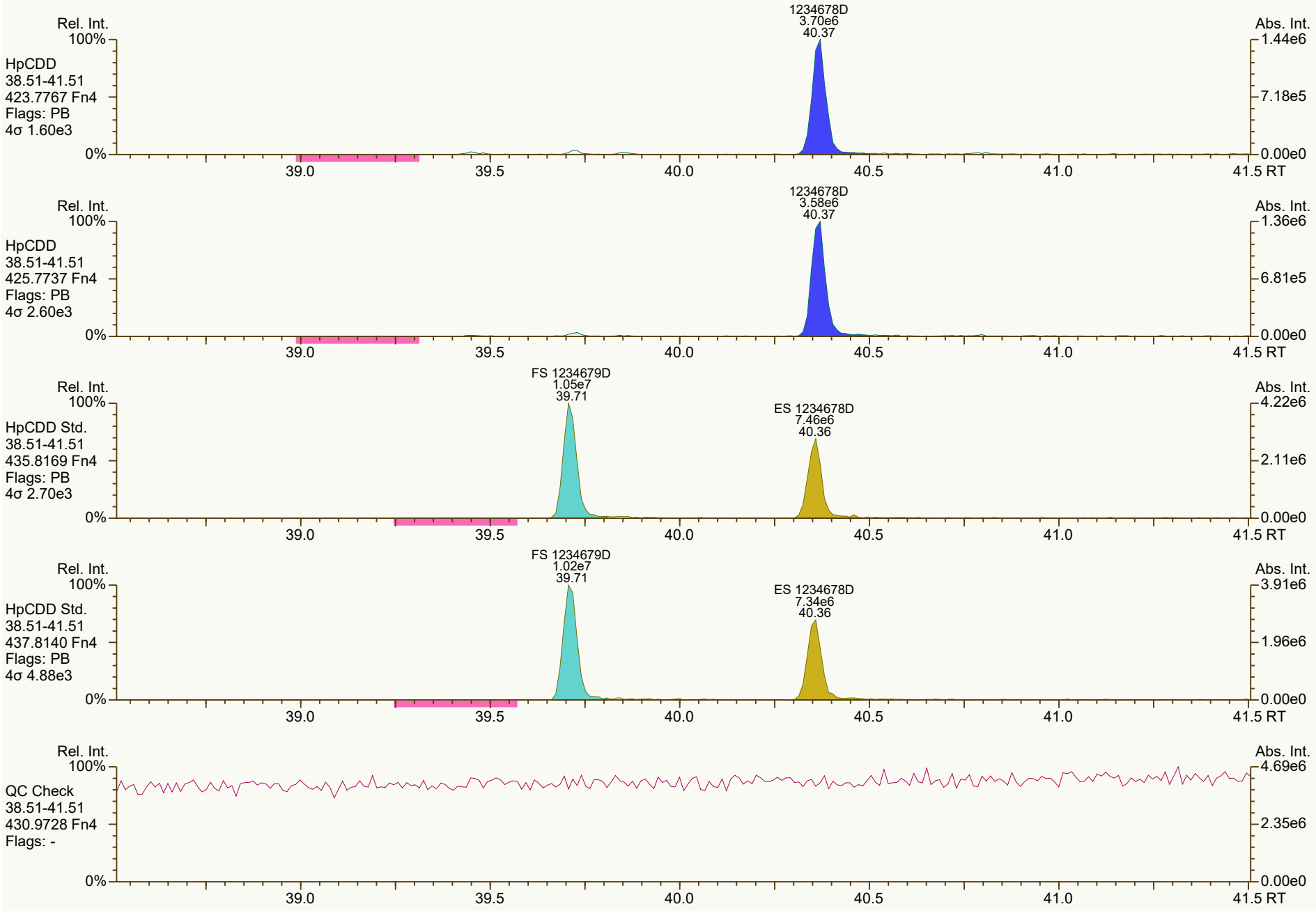
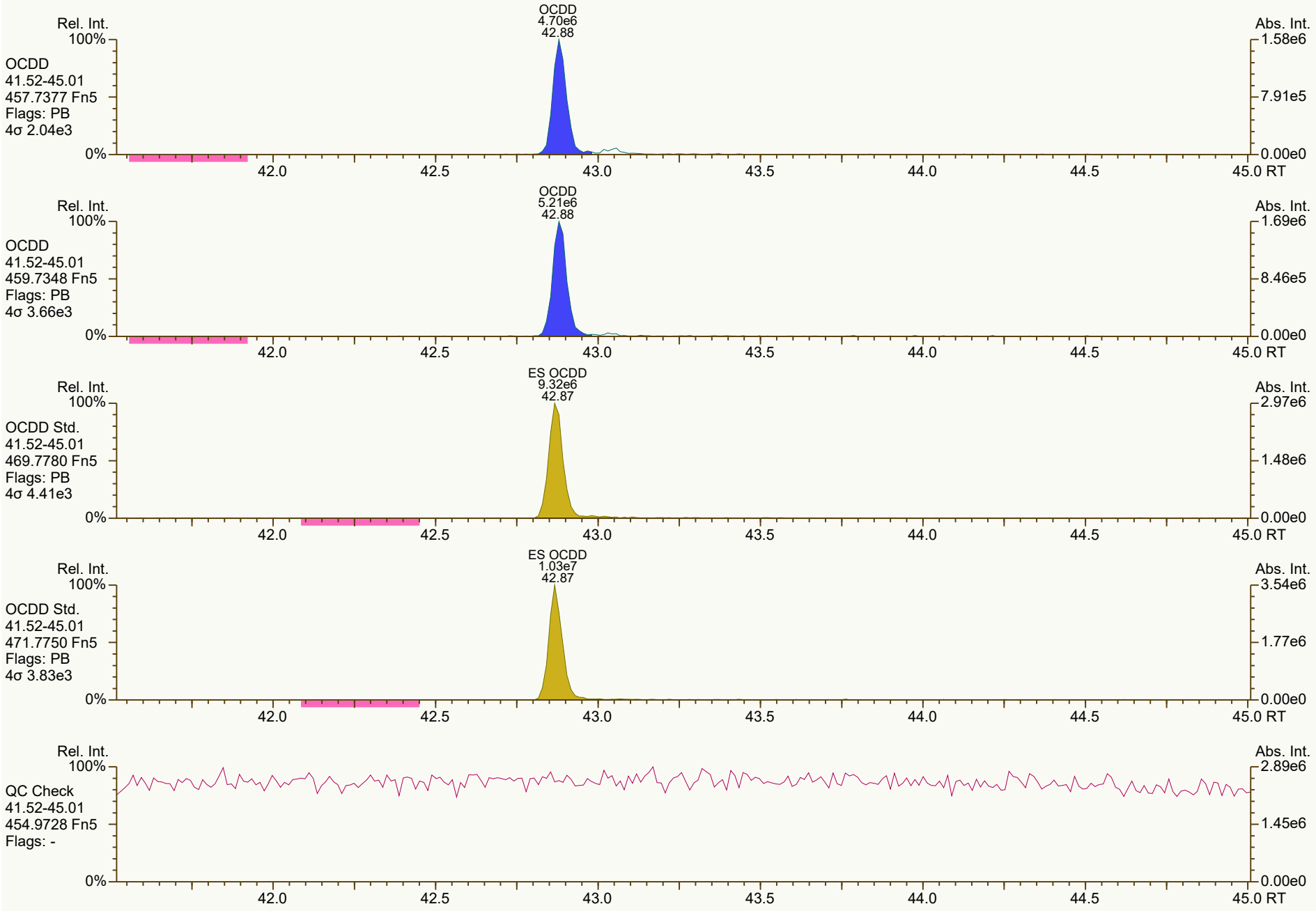
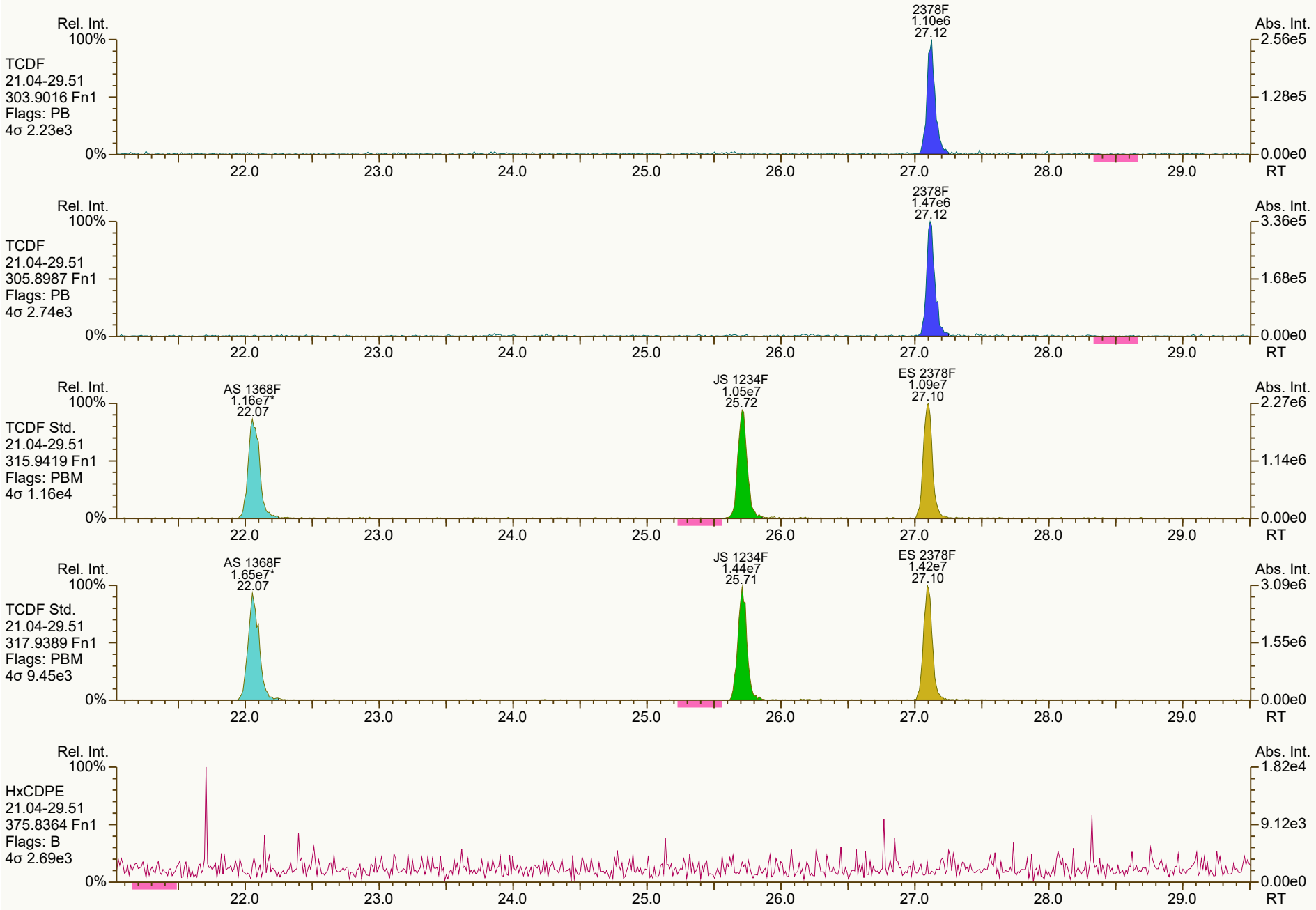
30.0
31.0
32.0
33.0
34.0
RT

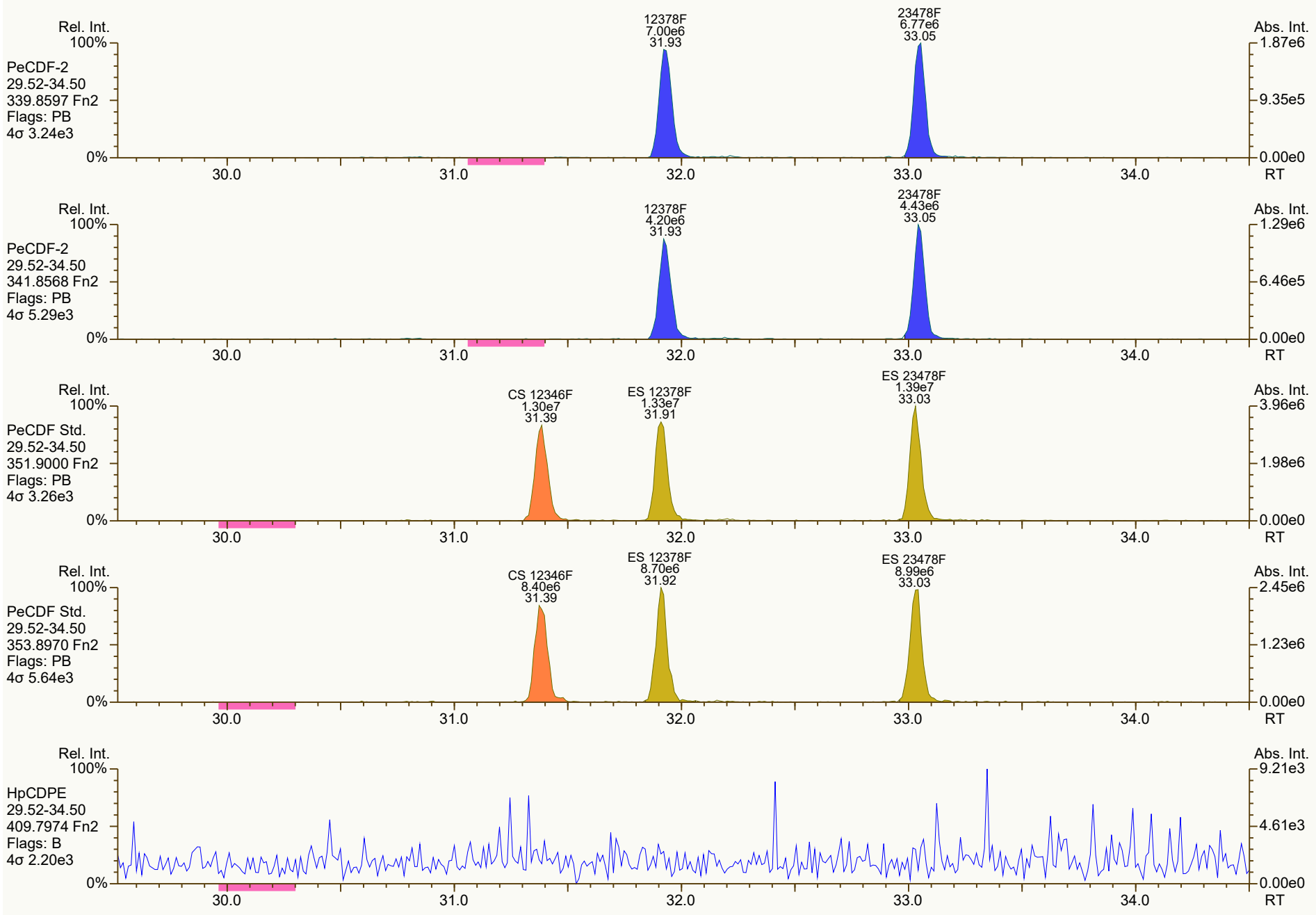

Rel. Int.
100%
HxCDD
34.51-38.50
389.8156 Fn3
Flags: PB
4σ 2.94e3
0%
123478D
4.17e6
37.27
123678D
4.39e6
37.39
123789D
4.53e6
37.70
Abs. Int.
1.26e6
6.29e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDD
34.51-38.50
391.8127 Fn3
Flags: PB
4σ 2.67e3
0%
123478D
3.35e6
37.27
123678D
3.36e6
37.39
123789D
3.64e6
37.69
Abs. Int.
1.08e6
5.42e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDD Std.
34.51-38.50
401.8559 Fn3
Flags: PBM
4σ 6.06e3
0%
FS 123468D
1.07e7
36.20
ES 123478D
8.38e6
37.26
ES 123678D
8.10e6
37.37
JS 123467D
4.14e6*
37.58
ES 123789D
9.64e6*
37.68
Abs. Int.
3.53e6
1.77e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDD Std.
34.51-38.50
403.8530 Fn3
Flags: PBM
4σ 3.61e3
0%
FS 123468D
8.37e6
36.20
ES 123478D
6.45e6
37.26
ES 123678D
6.50e6
37.37
JS 123467D
3.34e6*
37.58
ES 123789D
7.16e6*
37.68
Abs. Int.
2.66e6
1.33e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
QC Check
34.51-38.50
380.9760 Fn3
Flags: -
0%
Abs. Int.
6.47e6
3.24e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT

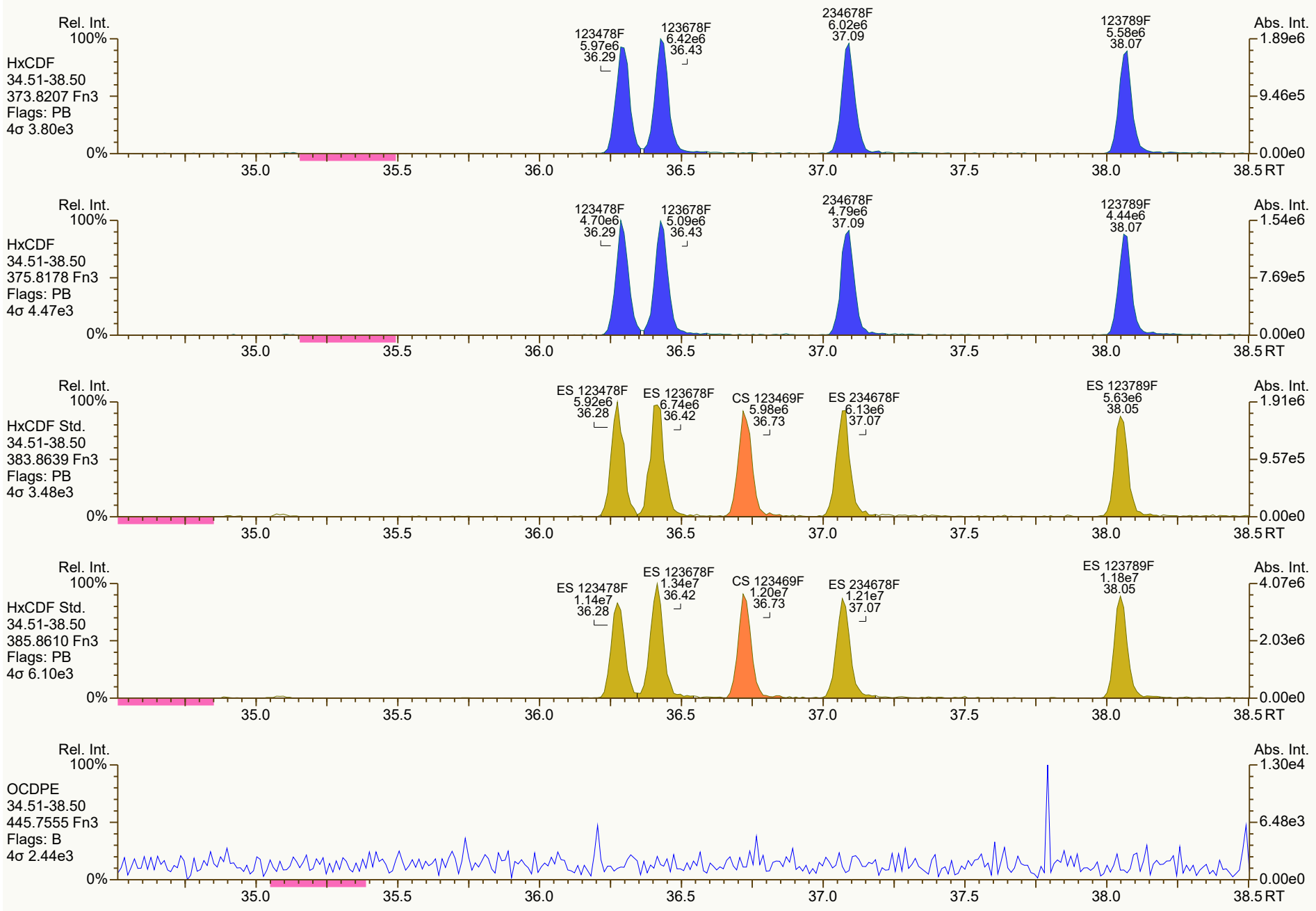

Rel. Int.
100%
HpCDD
38.51-41.51
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
3.70e6
40.37
Abs. Int.
1.44e6
7.18e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.51-41.51
425.7737 Fn4
Flags: PB
4σ 2.60e3
1234678D
3.58e6
40.37
Abs. Int.
1.36e6
6.81e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.51-41.51
435.8169 Fn4
Flags: PB
4σ 2.70e3
FS 1234679D
1.05e7
39.71
ES 1234678D
7.46e6
40.36
Abs. Int.
4.22e6
2.11e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.51-41.51
437.8140 Fn4
Flags: PB
4σ 4.88e3
FS 1234679D
1.02e7
39.71
ES 1234678D
7.34e6
40.36
Abs. Int.
3.91e6
1.96e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.51-41.51
430.9728 Fn4
Flags: -
Abs. Int.
4.69e6
2.35e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT

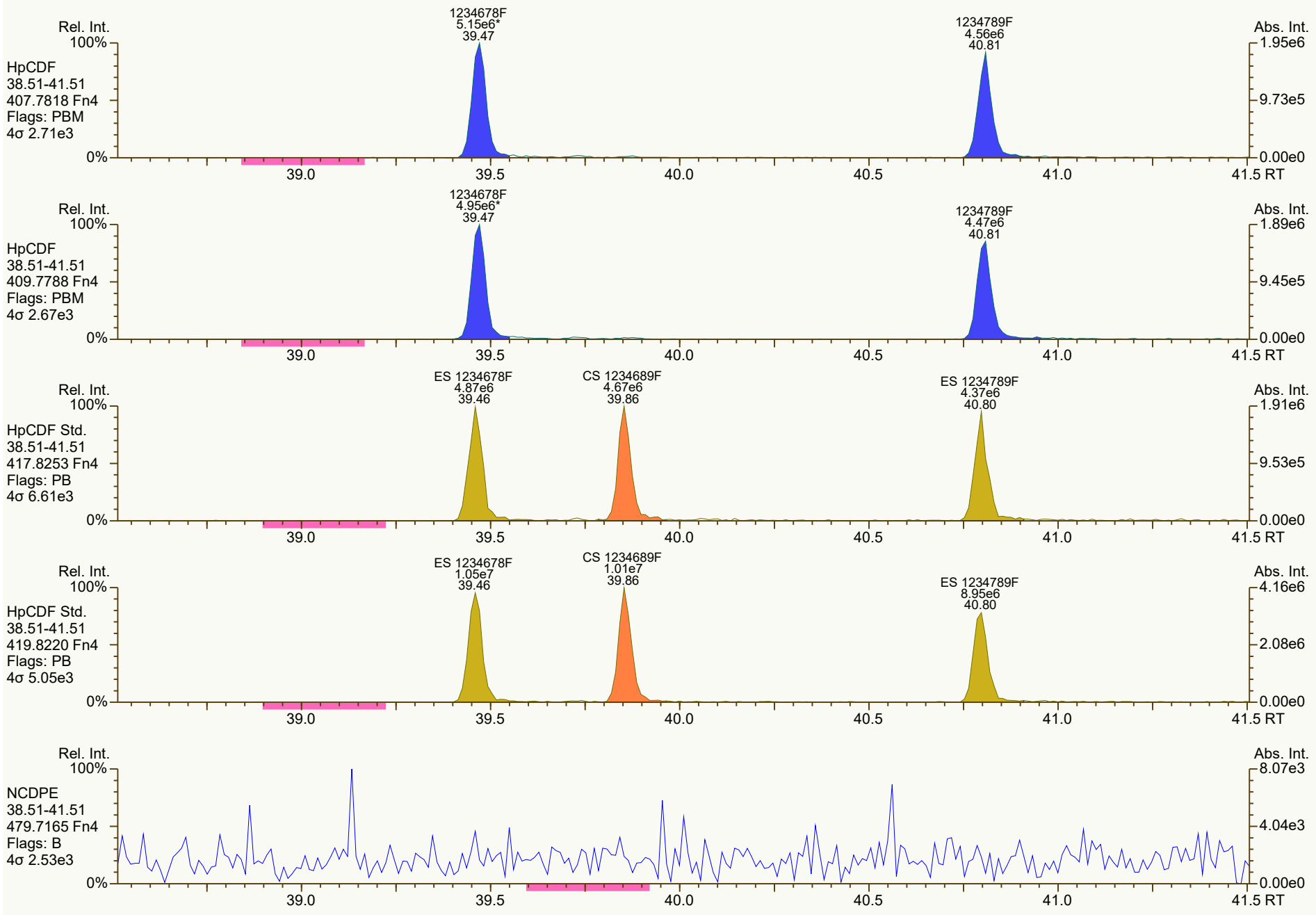

OCDD
4.70e6
42.88
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.04e3
0%
Abs. Int.
1.58e6
7.91e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.21e6
42.88
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.66e3
0%
Abs. Int.
1.69e6
8.46e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
9.32e6
42.87
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 4.41e3
0%
Abs. Int.
2.97e6
1.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.03e7
42.87
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 3.83e3
0%
Abs. Int.
3.54e6
1.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.89e6
1.45e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

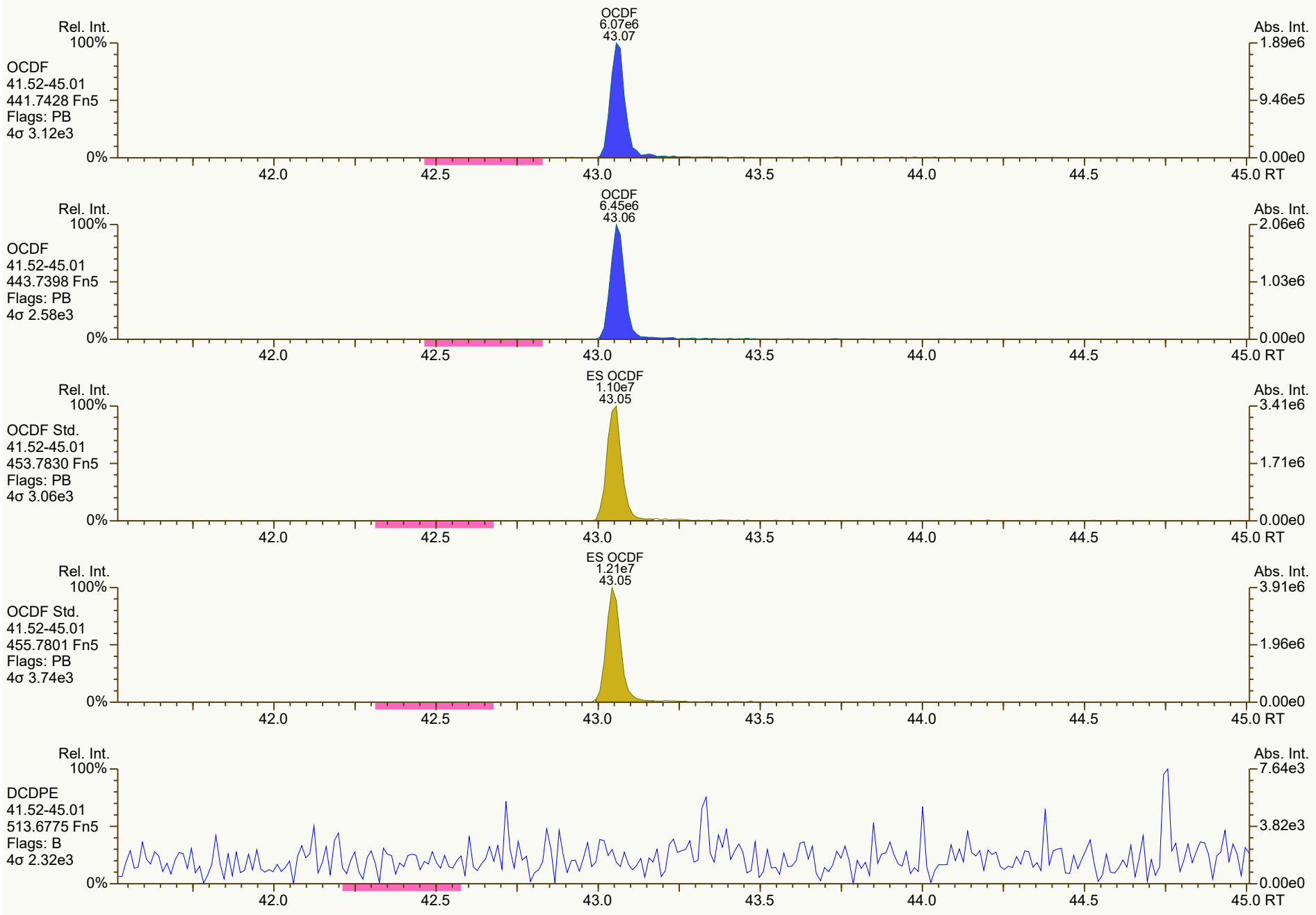

Rel. Int.
100%
TCDF
21.04-29.51
303.9016 Fn1
Flags: PB
4σ 2.23e3
0%
2378F
1.10e6
27.12
Abs. Int.
2.56e5
1.28e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDF
21.04-29.51
305.8987 Fn1
Flags: PB
4σ 2.74e3
0%
2378F
1.47e6
27.12
Abs. Int.
3.36e5
1.68e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDF Std.
21.04-29.51
315.9419 Fn1
Flags: PBM
4σ 1.16e4
0%
AS 1368F
1.16e7*
22.07
JS 1234F
1.05e7
25.72
ES 2378F
1.09e7
27.10
Abs. Int.
2.27e6
1.14e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDF Std.
21.04-29.51
317.9389 Fn1
Flags: PBM
4σ 9.45e3
0%
AS 1368F
1.65e7*
22.07
JS 1234F
1.44e7
25.71
ES 2378F
1.42e7
27.10
Abs. Int.
3.09e6
1.55e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
HxCDPE
21.04-29.51
375.8364 Fn1
Flags: B
4σ 2.69e3
0%
Abs. Int.
1.82e4
9.12e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT

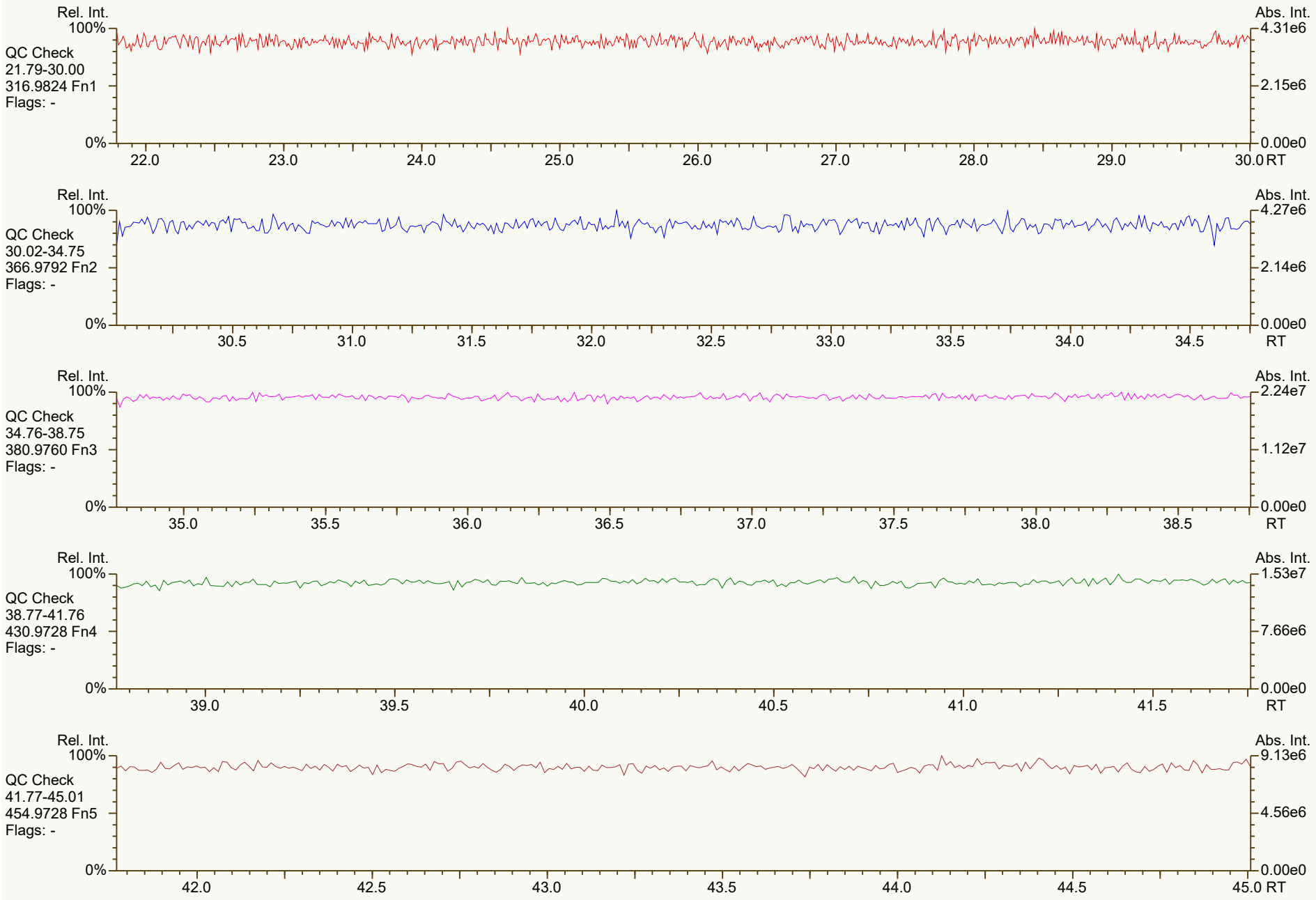

Rel. Int.
100%
0%
Abs. Int.
1.29e4
6.43e3
0.00e0
RT
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
PeCDF-1
21.04-29.51
339.8597 Fn1
Flags: B
4σ 2.89e3
PeCDF-1
21.04-29.51
341.8568 Fn1
Flags: B
4σ 3.16e3
QC Check
21.04-29.51
316.9824 Fn1
Flags: -
1.03e4
5.16e3
1.52e6
7.59e5


Rel. Int.
100%
PeCDF-2
29.52-34.50
339.8597 Fn2
Flags: PB
4σ 3.24e3
0%
12378F
7.00e6
31.93
23478F
6.77e6
33.05
Abs. Int.
1.87e6
9.35e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.50
341.8568 Fn2
Flags: PB
4σ 5.29e3
0%
12378F
4.20e6
31.93
23478F
4.43e6
33.05
Abs. Int.
1.29e6
6.46e5
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.50
351.9000 Fn2
Flags: PB
4σ 3.26e3
0%
CS 12346F
1.30e7
31.39
ES 12378F
1.33e7
31.91
ES 23478F
1.39e7
33.03
Abs. Int.
3.96e6
1.98e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.50
353.8970 Fn2
Flags: PB
4σ 5.64e3
0%
CS 12346F
8.40e6
31.39
ES 12378F
8.70e6
31.92
ES 23478F
8.99e6
33.03
Abs. Int.
2.45e6
1.23e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.50
409.7974 Fn2
Flags: B
4σ 2.20e3
0%
Abs. Int.
9.21e3
4.61e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT


Rel. Int.
100%
HxCDF
34.51-38.50
373.8207 Fn3
Flags: PB
4σ 3.80e3
123478F
5.97e6
36.29
123678F
6.42e6
36.43
234678F
6.02e6
37.09
123789F
5.58e6
38.07
Abs. Int.
1.89e6
9.46e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF
34.51-38.50
375.8178 Fn3
Flags: PB
4σ 4.47e3
123478F
4.70e6
36.29
123678F
5.09e6
36.43
234678F
4.79e6
37.09
123789F
4.44e6
38.07
Abs. Int.
1.54e6
7.69e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF Std.
34.51-38.50
383.8639 Fn3
Flags: PB
4σ 3.48e3
ES 123478F
5.92e6
36.28
ES 123678F
6.74e6
36.42
CS 123469F
5.98e6
36.73
ES 234678F
6.13e6
37.07
ES 123789F
5.63e6
38.05
Abs. Int.
1.91e6
9.57e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF Std.
34.51-38.50
385.8610 Fn3
Flags: PB
4σ 6.10e3
ES 123478F
1.14e7
36.28
ES 123678F
1.34e7
36.42
CS 123469F
1.20e7
36.73
ES 234678F
1.21e7
37.07
ES 123789F
1.18e7
38.05
Abs. Int.
4.07e6
2.03e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
OCDPE
34.51-38.50
445.7555 Fn3
Flags: B
4σ 2.44e3
Abs. Int.
1.30e4
6.48e3
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT

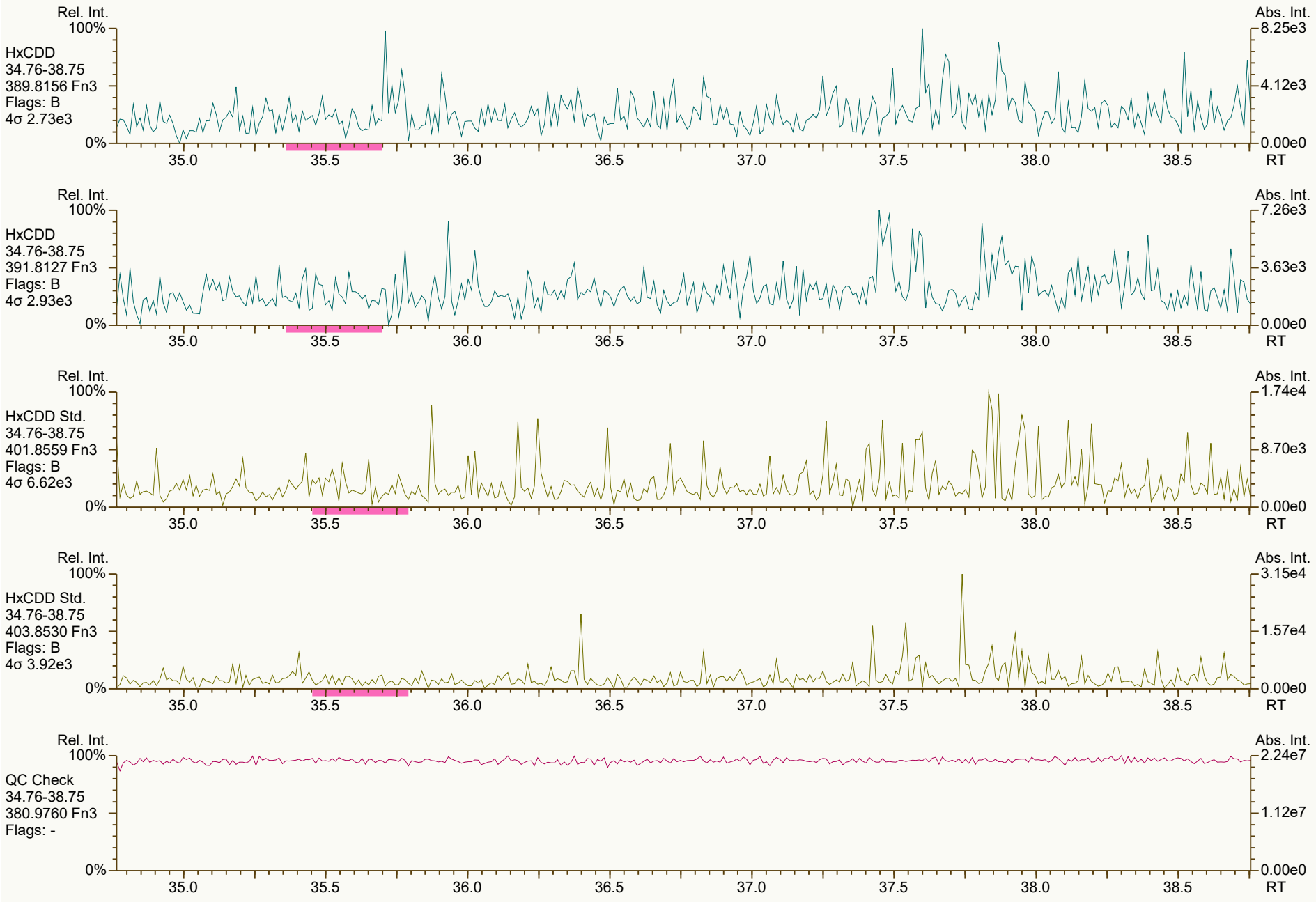

Rel. Int.
100%
HpCDF
38.51-41.51
407.7818 Fn4
Flags: PBM
4σ 2.71e3
0%
1234678F
5.15e6*
39.47
1234789F
4.56e6
40.81
Abs. Int.
1.95e6
9.73e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.51-41.51
409.7788 Fn4
Flags: PBM
4σ 2.67e3
0%
1234678F
4.95e6*
39.47
1234789F
4.47e6
40.81
Abs. Int.
1.89e6
9.45e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.51-41.51
417.8253 Fn4
Flags: PB
4σ 6.61e3
0%
ES 1234678F
4.87e6
39.46
CS 1234689F
4.67e6
39.86
ES 1234789F
4.37e6
40.80
Abs. Int.
1.91e6
9.53e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.51-41.51
419.8220 Fn4
Flags: PB
4σ 5.05e3
0%
ES 1234678F
1.05e7
39.46
CS 1234689F
1.01e7
39.86
ES 1234789F
8.95e6
40.80
Abs. Int.
4.16e6
2.08e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.51-41.51
479.7165 Fn4
Flags: B
4σ 2.53e3
0%
Abs. Int.
8.07e3
4.04e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
6.07e6
43.07
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 3.12e3
0%
Abs. Int.
1.89e6
9.46e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.45e6
43.06
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.58e3
0%
Abs. Int.
2.06e6
1.03e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.10e7
43.05
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 3.06e3
0%
Abs. Int.
3.41e6
1.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.21e7
43.05
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.74e3
0%
Abs. Int.
3.91e6
1.96e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 2.32e3
0%
Abs. Int.
7.64e3
3.82e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.31e6
2.15e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.27e6
2.14e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.24e7
1.12e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.53e7
7.66e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.13e6
4.56e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

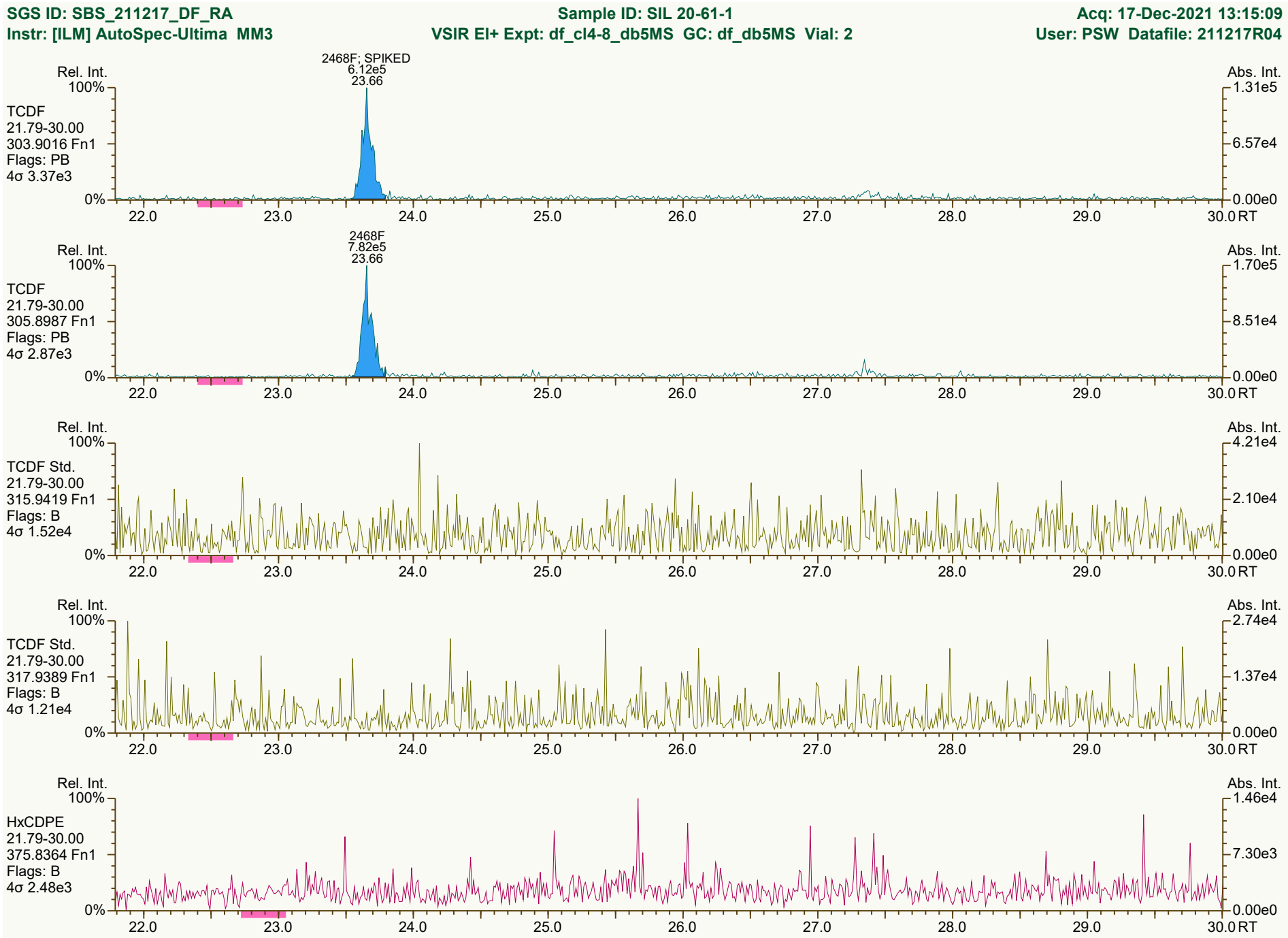

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 4.56e3
0%
Abs. Int.
1.09e4
5.45e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 2.62e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: B
4σ 2.79e3
0%
Abs. Int.
1.29e4
6.47e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: B
4σ 6.21e3
0%
Abs. Int.
3.66e4
1.83e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: B
4σ 4.80e3
0%
Abs. Int.
2.90e4
1.45e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

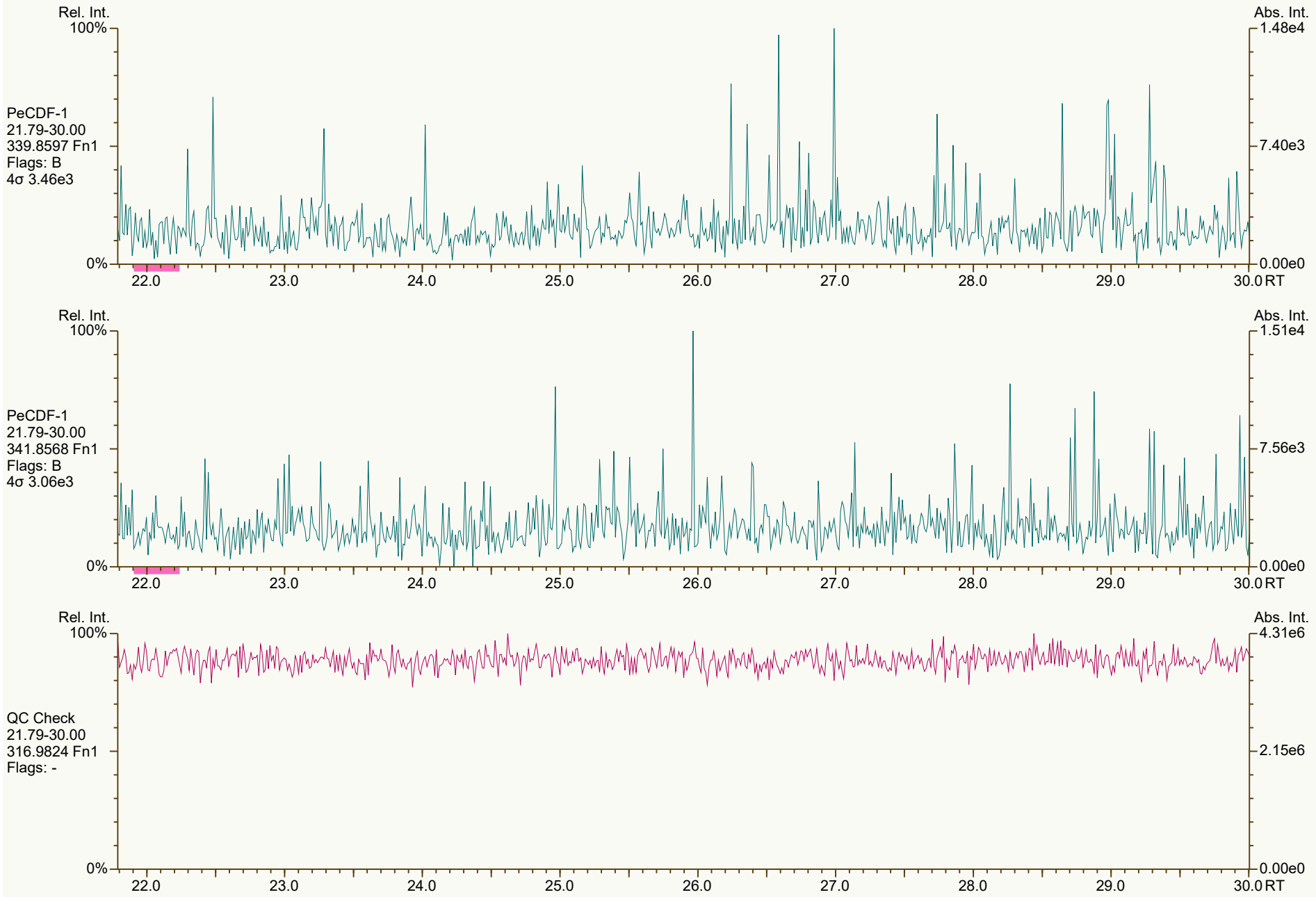

Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: B
4σ 3.67e3
0%
Abs. Int.
8.52e3
4.26e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 3.20e3
0%
Abs. Int.
7.09e3
3.55e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: B
4σ 4.28e3
0%
Abs. Int.
1.63e4
8.14e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: B
4σ 4.49e3
0%
Abs. Int.
1.85e4
9.25e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.27e6
2.14e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: B
4σ 2.73e3
0%
Abs. Int.
8.25e3
4.12e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: B
4σ 2.93e3
0%
Abs. Int.
7.26e3
3.63e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: B
4σ 6.62e3
0%
Abs. Int.
1.74e4
8.70e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: B
4σ 3.92e3
0%
Abs. Int.
3.15e4
1.57e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.24e7
1.12e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: B
4σ 2.82e3
0%
Abs. Int.
8.00e3
4.00e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: B
4σ 3.40e3
0%
Abs. Int.
6.28e3
3.14e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: B
4σ 4.91e3
0%
Abs. Int.
2.20e4
1.10e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: B
4σ 5.37e3
0%
Abs. Int.
1.69e4
8.43e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.53e7
7.66e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: B
4σ 4.86e3
0%
Abs. Int.
2.20e4
1.10e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 3.21e3
0%
Abs. Int.
1.64e4
8.19e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: B
4σ 3.51e3
0%
Abs. Int.
1.78e4
8.91e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: B
4σ 3.59e3
0%
Abs. Int.
2.04e4
1.02e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.13e6
4.56e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: SBS_211217_DF_RA
Sample ID: SIL 20-61-1
Acq: 17-Dec-2021 13:15:09
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
User: PSW Datafile: 211217R04
2468F: SPIKED
6.12e5
23.66
Rel. Int.
Abs. Int.
100%
0%
1.31e5
6.57e4
0.00e0
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 3.37e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
2468F
7.82e5
23.66
1.70e5
8.51e4
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 2.87e3
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: B
4σ 1.52e4
4.21e4
2.10e4
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: B
4σ 1.21e4
2.74e4
1.37e4
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.48e3
1.46e4
7.30e3
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\SBS_211217_DF_RA.utp_res, saved 17-Dec-2021 14:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8056, 8728, 9777 scc: 380-619
PKD: 17-Dec-2021 14:45 Printed: 20-Dec-2021 14:25 Page 7 of 12

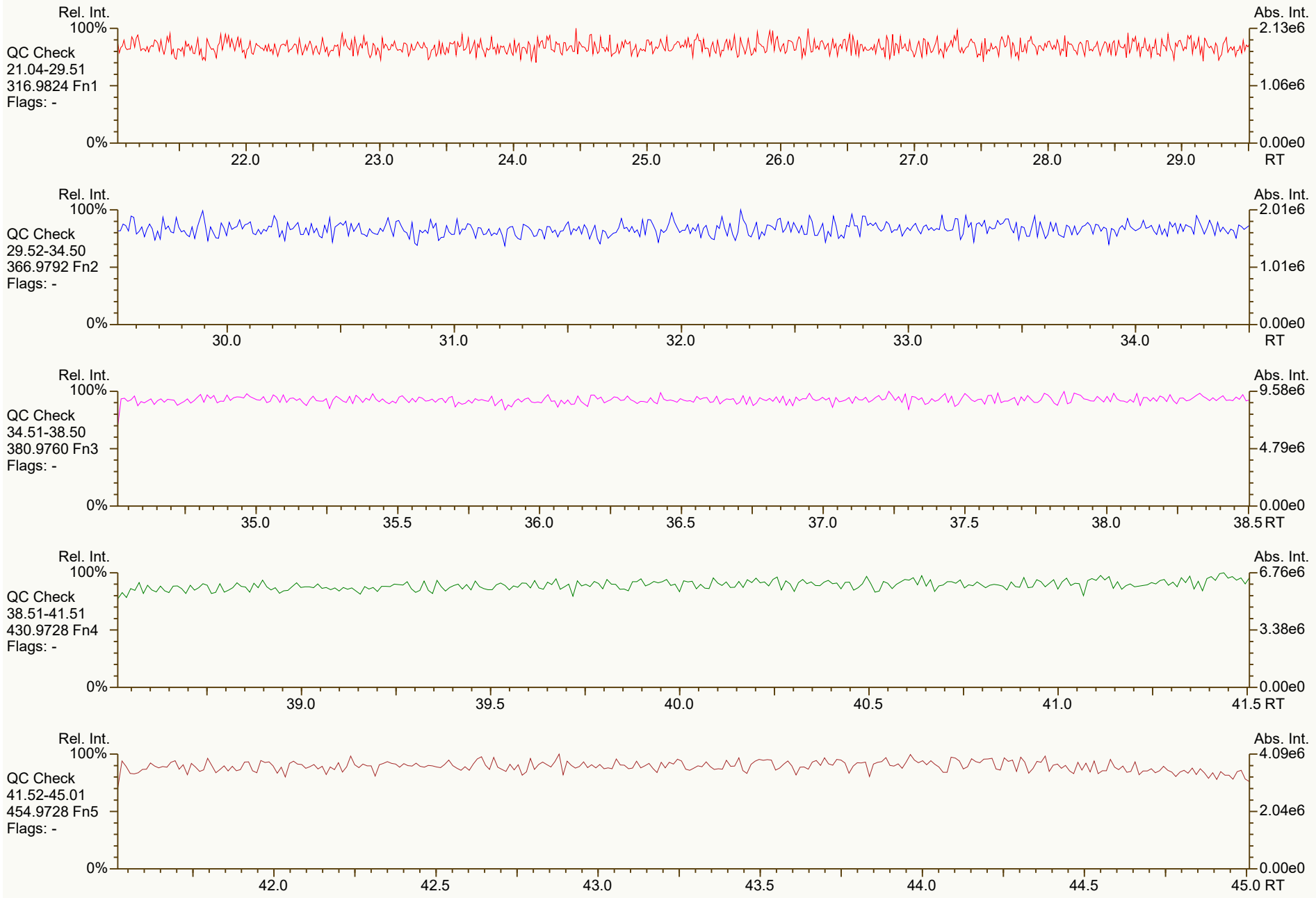

Rel. Int.
100%
0%
Abs. Int.
1.48e4
7.40e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 3.46e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.51e4
7.56e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.06e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
4.31e6
2.15e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: B
4σ 2.48e3
0%
Abs. Int.
9.45e3
4.73e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: B
4σ 3.15e3
0%
Abs. Int.
6.57e3
3.28e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: B
4σ 4.25e3
0%
Abs. Int.
3.12e4
1.56e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: B
4σ 4.68e3
0%
Abs. Int.
3.00e4
1.50e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.70e3
0%
Abs. Int.
1.02e4
5.09e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: B
4σ 3.54e3
0%
Abs. Int.
1.36e4
6.80e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: B
4σ 2.81e3
0%
Abs. Int.
1.04e4
5.20e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: B
4σ 5.43e3
0%
Abs. Int.
1.79e4
8.96e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: B
4σ 4.38e3
0%
Abs. Int.
3.08e4
1.54e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.02e3
0%
Abs. Int.
9.90e3
4.95e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: B
4σ 3.24e3
0%
Abs. Int.
1.46e4
7.32e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: B
4σ 4.32e3
0%
Abs. Int.
1.09e4
5.45e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: B
4σ 6.45e3
0%
Abs. Int.
1.51e4
7.57e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: B
4σ 6.39e3
0%
Abs. Int.
1.92e4
9.62e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.15e3
0%
Abs. Int.
1.10e4
5.48e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: B
4σ 3.84e3
0%
Abs. Int.
9.61e3
4.80e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 2.58e3
0%
Abs. Int.
1.21e4
6.04e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: B
4σ 4.11e3
0%
Abs. Int.
2.87e4
1.44e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: B
4σ 3.55e3
0%
Abs. Int.
3.19e4
1.59e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.44e4
7.20e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
21.04-29.51
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.13e6
1.06e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
QC Check
29.52-34.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.01e6
1.01e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
34.51-38.50
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.58e6
4.79e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
QC Check
38.51-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.76e6
3.38e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.09e6
2.04e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.04-29.51
319.8965 Fn1
Flags: B
4σ 2.82e3
0%
Abs. Int.
1.10e4
5.51e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDD
21.04-29.51
321.8936 Fn1
Flags: PB
4σ 2.65e3
0%
Abs. Int.
8.79e3
4.40e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
37Cl-TCDD
21.04-29.51
327.8850 Fn1
Flags: B
4σ 2.39e3
0%
Abs. Int.
1.36e4
6.82e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDD Std.
21.04-29.51
331.9368 Fn1
Flags: B
4σ 4.39e3
0%
Abs. Int.
4.73e4
2.36e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
TCDD Std.
21.04-29.51
333.9339 Fn1
Flags: B
4σ 3.20e3
0%
Abs. Int.
2.17e4
1.09e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT


Rel. Int.
100%
PeCDD
29.52-34.50
355.8546 Fn2
Flags: B
4σ 2.15e3
0%
Abs. Int.
5.98e3
2.99e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.50
357.8517 Fn2
Flags: PB
4σ 2.19e3
0%
Abs. Int.
4.60e3
2.30e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.50
367.8949 Fn2
Flags: B
4σ 2.67e3
0%
Abs. Int.
1.62e4
8.11e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.50
369.8919 Fn2
Flags: B
4σ 4.11e3
0%
Abs. Int.
1.05e4
5.24e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.01e6
1.01e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT


Rel. Int.
100%
HxCDD
34.51-38.50
389.8156 Fn3
Flags: B
4σ 1.68e3
0%
Abs. Int.
8.96e3
4.48e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDD
34.51-38.50
391.8127 Fn3
Flags: PB
4σ 1.96e3
0%
Abs. Int.
5.50e3
2.75e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDD Std.
34.51-38.50
401.8559 Fn3
Flags: B
4σ 2.64e3
0%
Abs. Int.
1.92e4
9.59e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDD Std.
34.51-38.50
403.8530 Fn3
Flags: B
4σ 4.01e3
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
QC Check
34.51-38.50
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.58e6
4.79e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT

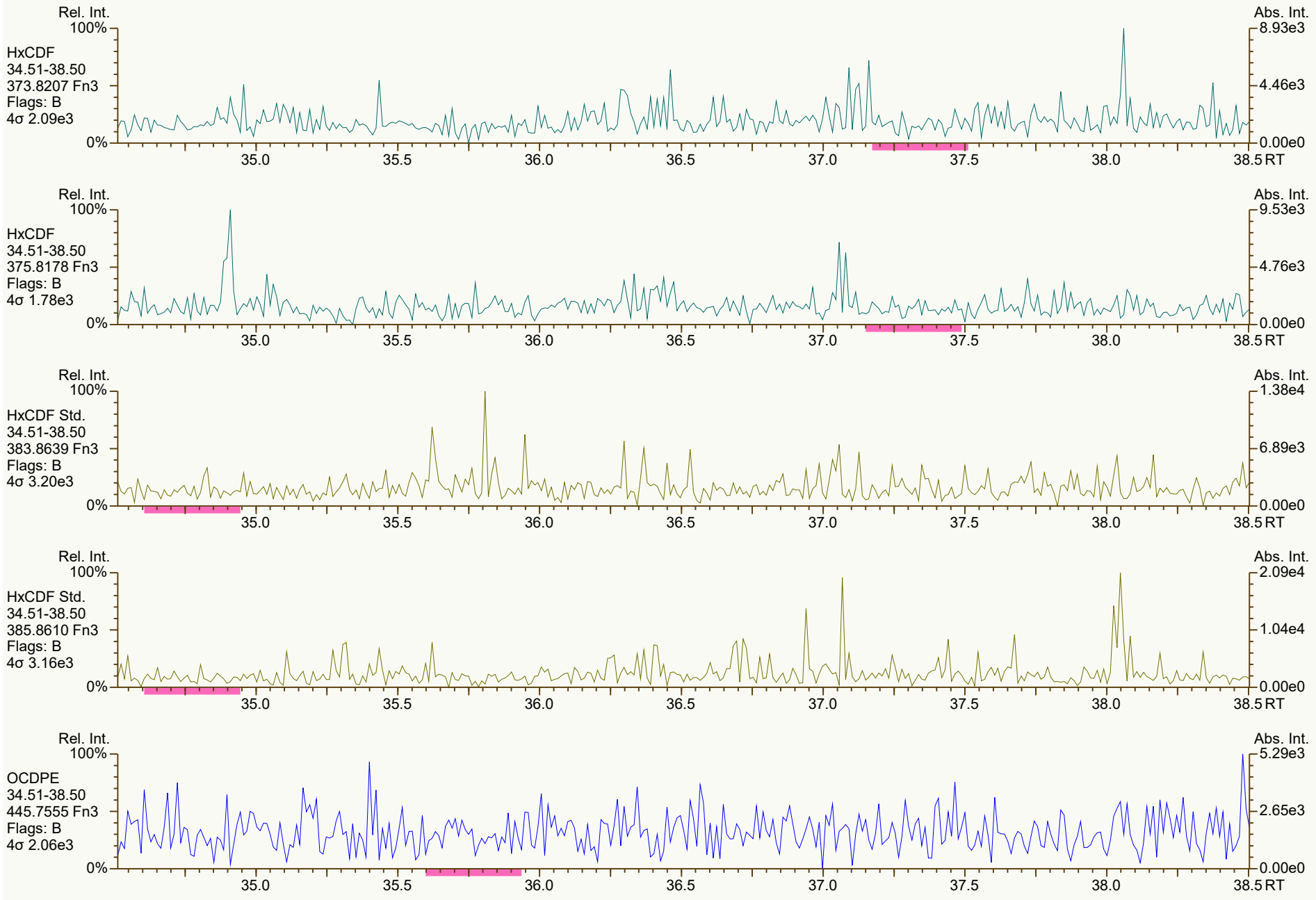

Rel. Int.
100%
HpCDD
38.51-41.51
423.7767 Fn4
Flags: PB
4σ 2.10e3
0%
Abs. Int.
6.36e3
3.18e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.51-41.51
425.7737 Fn4
Flags: PB
4σ 1.78e3
0%
Abs. Int.
5.41e3
2.71e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.51-41.51
435.8169 Fn4
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.79e4
8.96e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.51-41.51
437.8140 Fn4
Flags: B
4σ 3.68e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.51-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.76e6
3.38e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 3.13e3
0%
Abs. Int.
8.17e3
4.09e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.40e3
0%
Abs. Int.
1.11e4
5.57e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 3.27e3
0%
Abs. Int.
1.03e4
5.16e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 3.34e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.09e6
2.04e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


2468F: SPIKED
2.49e5
23.33
Rel. Int.
100%
TCDF
21.04-29.51
303.9016 Fn1
Flags: PB
4σ 2.15e3
0%
Abs. Int.
6.07e4
3.04e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
2468F
2.96e5
23.33
TCDF
21.04-29.51
305.8987 Fn1
Flags: PB
4σ 2.15e3
5.49e4
2.74e4
TCDF Std.
21.04-29.51
315.9419 Fn1
Flags: B
4σ 1.18e4
2.81e4
1.40e4
TCDF Std.
21.04-29.51
317.9389 Fn1
Flags: B
4σ 4.50e3
4.54e4
2.27e4
HxCDPE
21.04-29.51
375.8364 Fn1
Flags: B
4σ 2.76e3
7.76e3
3.88e3


Rel. Int.
100%
0%
Abs. Int.
1.50e4
7.49e3
0.00e0
PeCDF-1
21.04-29.51
339.8597 Fn1
Flags: B
4σ 2.62e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.60e3
4.30e3
0.00e0
PeCDF-1
21.04-29.51
341.8568 Fn1
Flags: B
4σ 2.38e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.13e6
1.06e6
0.00e0
QC Check
21.04-29.51
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.50
339.8597 Fn2
Flags: B
4σ 2.17e3
0%
Abs. Int.
8.01e3
4.00e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.50
341.8568 Fn2
Flags: PB
4σ 2.01e3
0%
Abs. Int.
4.75e3
2.37e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.50
351.9000 Fn2
Flags: B
4σ 3.12e3
0%
Abs. Int.
1.24e4
6.21e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.50
353.8970 Fn2
Flags: B
4σ 3.19e3
0%
Abs. Int.
1.75e4
8.74e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.50
409.7974 Fn2
Flags: B
4σ 2.44e3
0%
Abs. Int.
7.38e3
3.69e3
0.00e0
30.0
31.0
32.0
33.0
34.0
RT


Rel. Int.
100%
HxCDF
34.51-38.50
373.8207 Fn3
Flags: B
4σ 2.09e3
0%
Abs. Int.
8.93e3
4.46e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF
34.51-38.50
375.8178 Fn3
Flags: B
4σ 1.78e3
0%
Abs. Int.
9.53e3
4.76e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF Std.
34.51-38.50
383.8639 Fn3
Flags: B
4σ 3.20e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
HxCDF Std.
34.51-38.50
385.8610 Fn3
Flags: B
4σ 3.16e3
0%
Abs. Int.
2.09e4
1.04e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
OCDPE
34.51-38.50
445.7555 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
5.29e3
2.65e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT

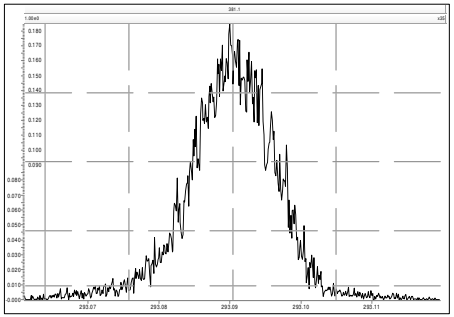

Rel. Int.
100%
HpCDF
38.51-41.51
407.7818 Fn4
Flags: B
4σ 2.19e3
0%
Abs. Int.
7.76e3
3.88e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.51-41.51
409.7788 Fn4
Flags: B
4σ 1.71e3
0%
Abs. Int.
5.89e3
2.95e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.51-41.51
417.8253 Fn4
Flags: B
4σ 4.38e3
0%
Abs. Int.
2.02e4
1.01e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.51-41.51
419.8220 Fn4
Flags: B
4σ 2.99e3
0%
Abs. Int.
9.58e3
4.79e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.51-41.51
479.7165 Fn4
Flags: B
4σ 2.64e3
0%
Abs. Int.
7.09e3
3.54e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.25e3
0%
Abs. Int.
6.47e3
3.24e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.92e4
9.58e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.86e3
0%
Abs. Int.
9.56e3
4.78e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 3.46e3
0%
Abs. Int.
1.36e4
6.80e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 2.61e3
0%
Abs. Int.
1.22e4
6.10e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

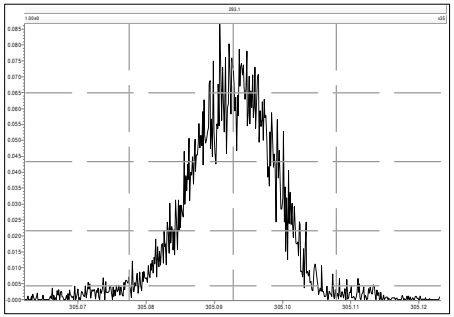
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Friday, December 17, 2021 11:29:13 Eastern Standard Time

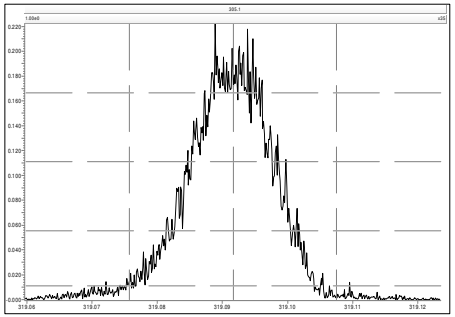
M 292.9824 R 11903



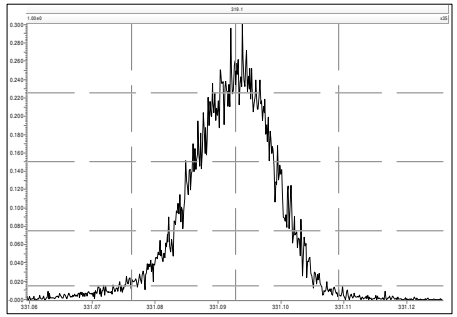
M 304.9824 R 12251



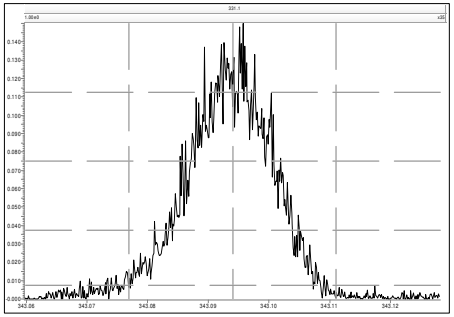
M 318.9792 R 11057



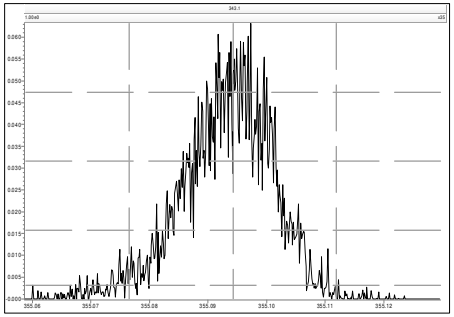
M 330.9792 R 12375



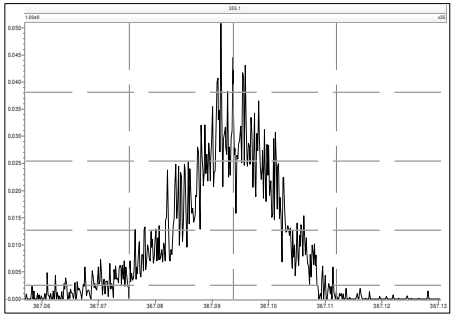
M 342.9792 R 10550



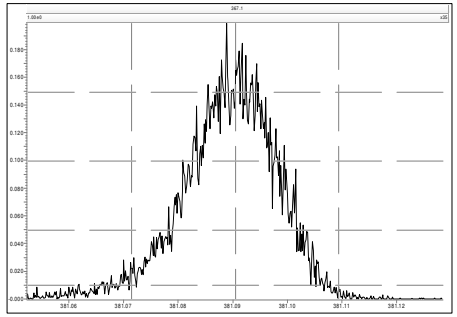
M 354.9792 R 13228



M 366.9792 R 11012



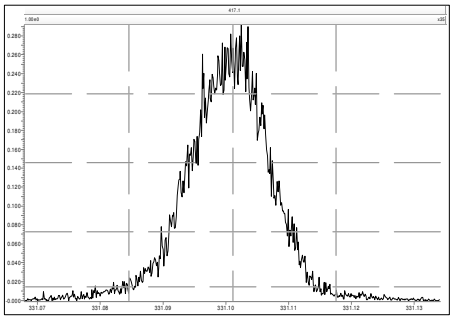
M 380.9760 R 10685



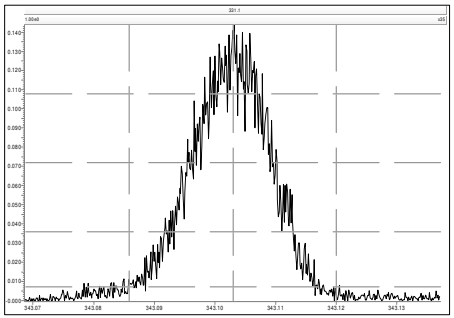
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Friday, December 17, 2021 11:29:34 Eastern Standard Time

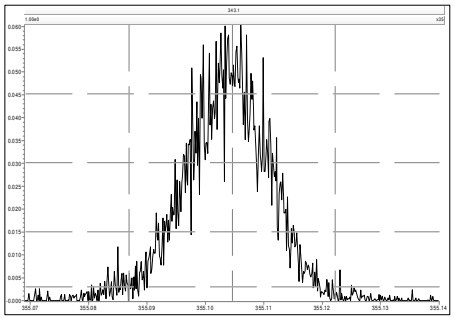
M 330.9792 R 11573



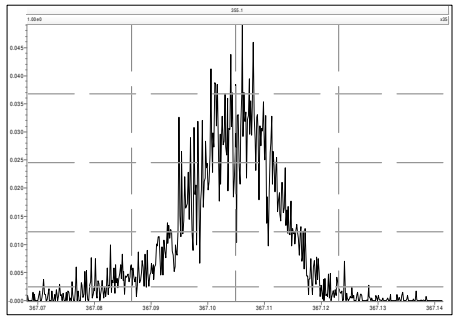
M 342.9792 R 12318



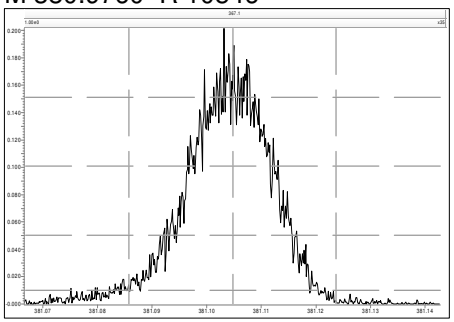
M 354.9792 R 12020



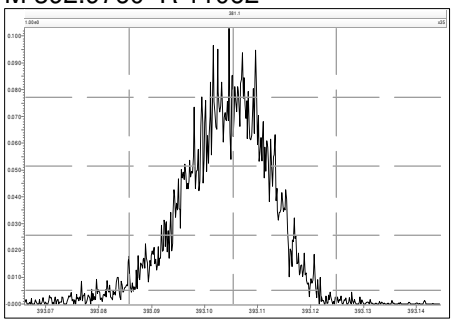
M 366.9792 R 12135



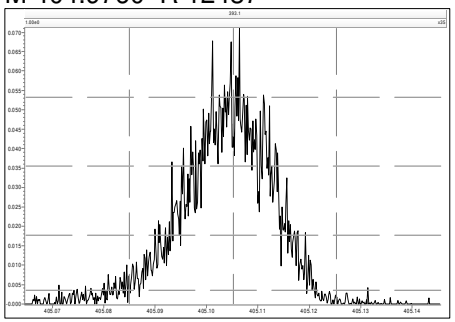
M 380.9760 R 10546



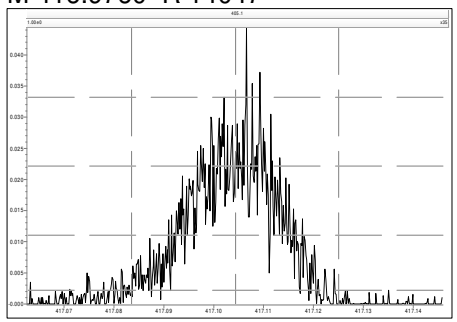
M 392.9760 R 11062



M 404.9760 R 12437



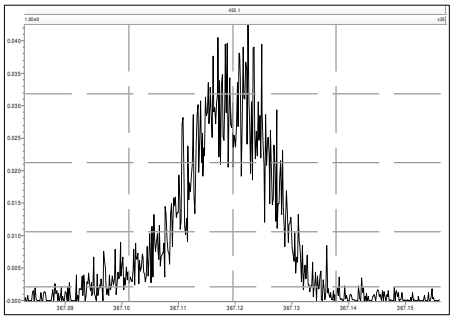
M 416.9760 R 14047



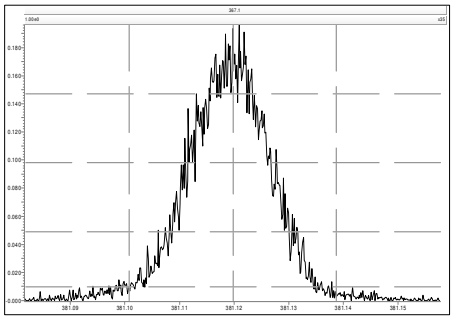
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Friday, December 17, 2021 11:30:00 Eastern Standard Time

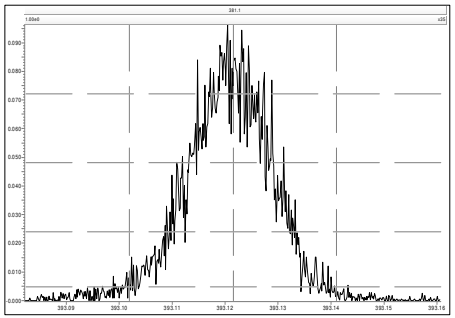
M 366.9792 R 10775



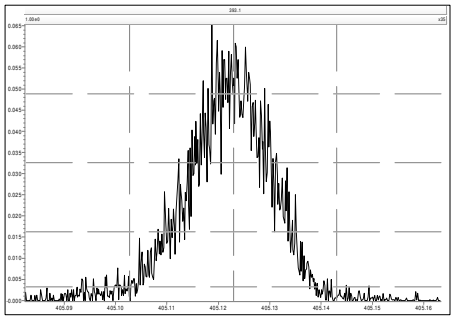
M 380.9760 R 11685



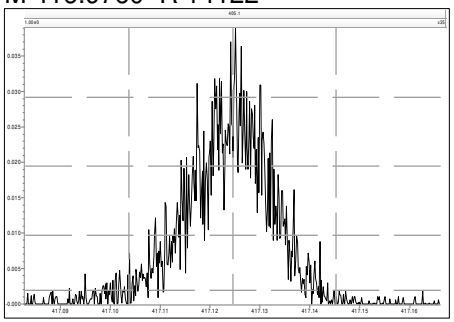
M 392.9760 R 12822



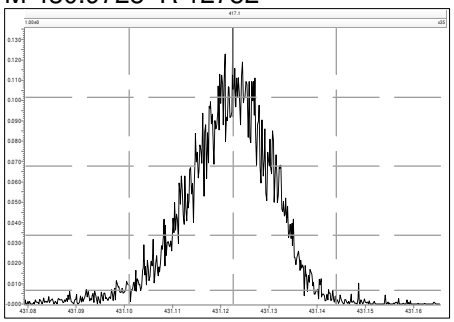
M 404.9760 R 11792



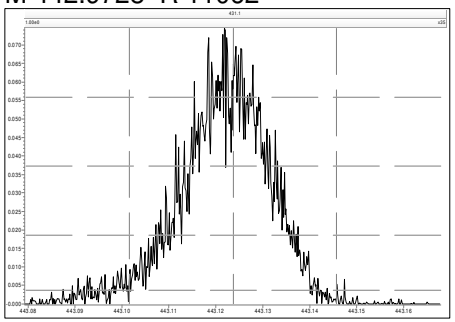
M 416.9760 R 14122



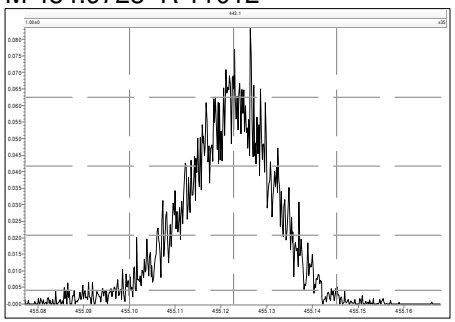
M 430.9728 R 12752



M 442.9728 R 11062



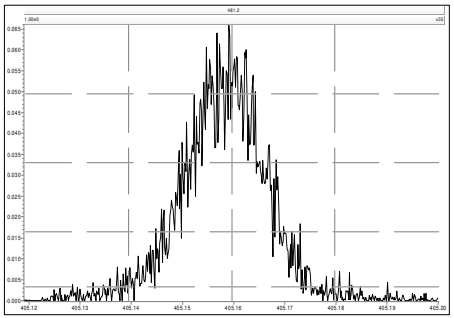
M 454.9728 R 11012



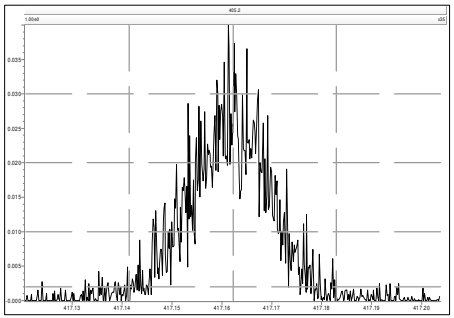
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Friday, December 17, 2021 11:30:15 Eastern Standard Time

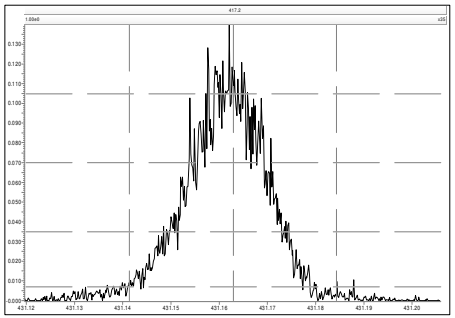
M 404.9760 R 11733



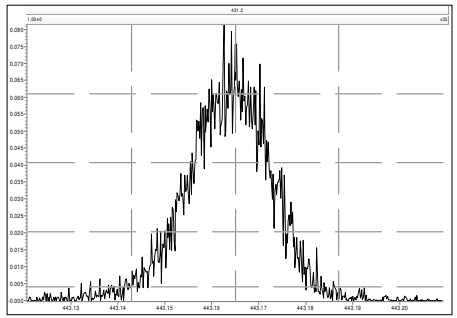
M 416.9760 R 14049



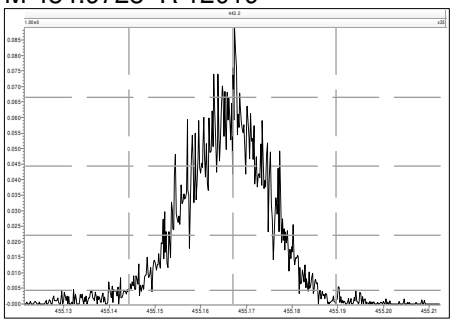
M 430.9728 R 11362



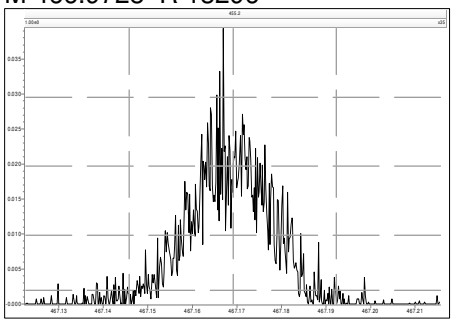
M 442.9728 R 11793



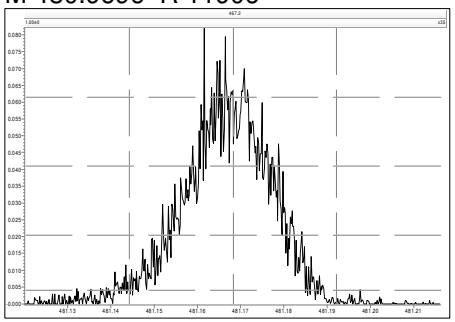
M 454.9728 R 12019



M 466.9728 R 13296



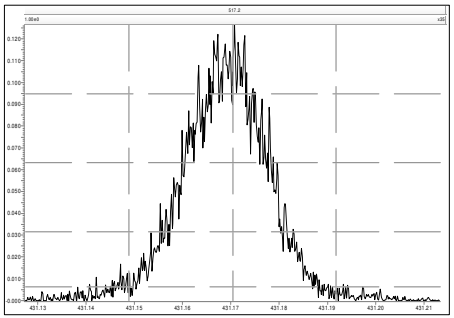
M 480.9696 R 11906



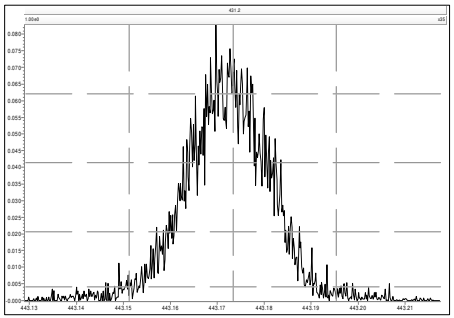
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Friday, December 17, 2021 11:30:31 Eastern Standard Time

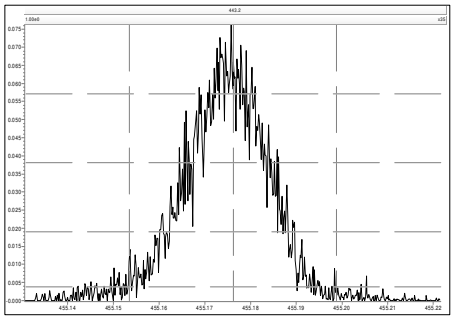
M 430.9728 R 11209



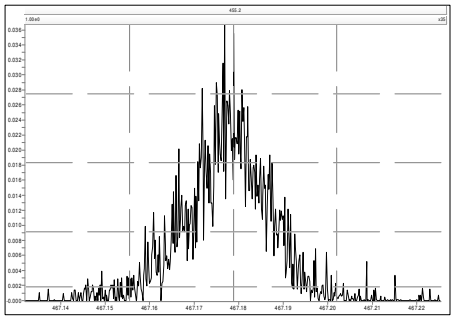
M 442.9728 R 12316



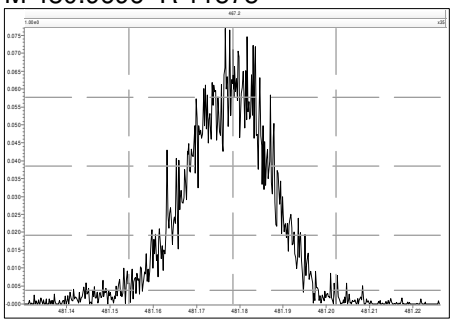
M 454.9728 R 13020



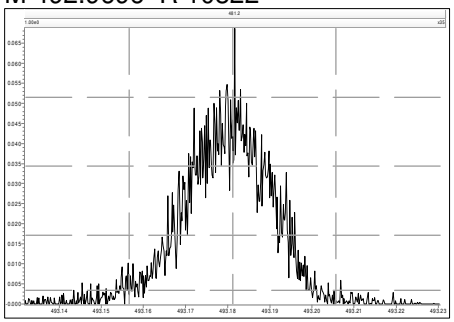
M 466.9728 R 14879



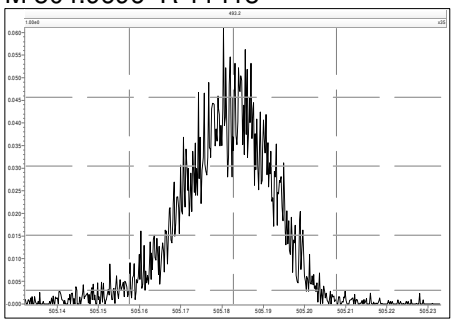
M 480.9696 R 11575



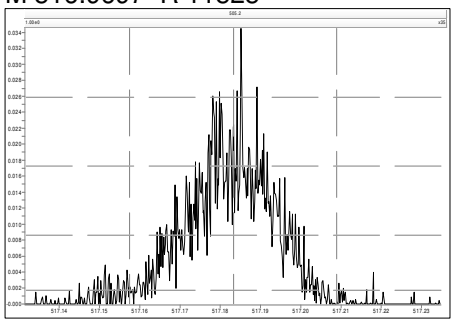
M 492.9696 R 10822



M 504.9696 R 11418



M 516.9697 R 11525



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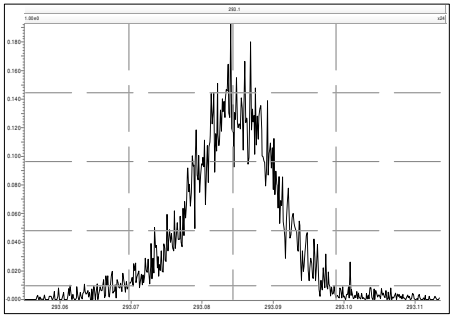
M 292.9824 R 11709



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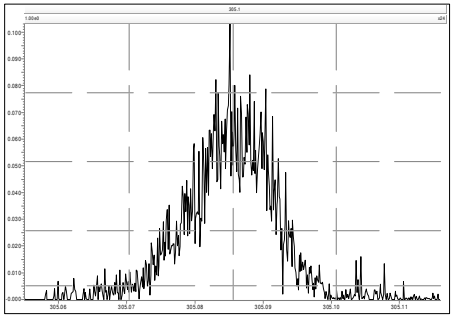

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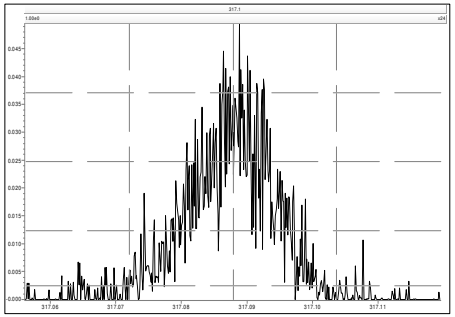
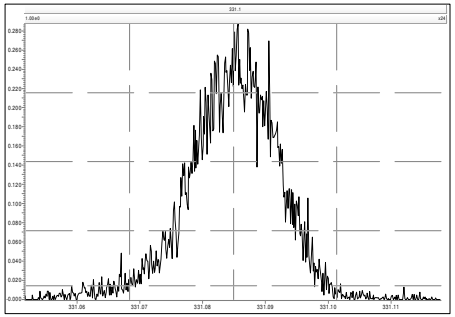
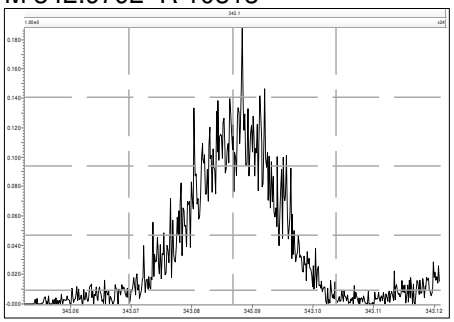


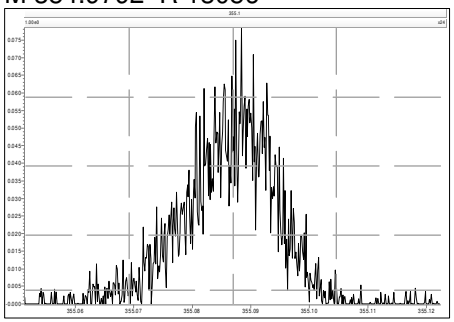
M 330.9792 R 11020



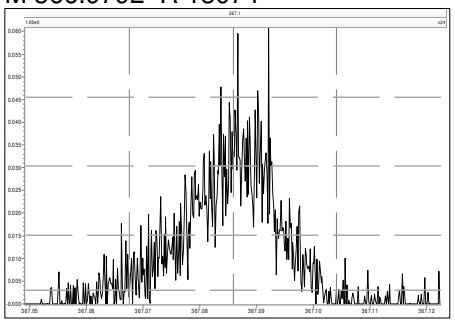
M 342.9792 R 10813



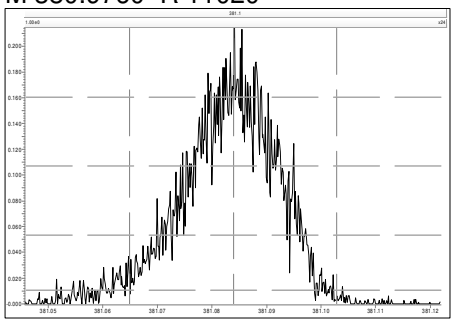
M 354.9792 R 13056



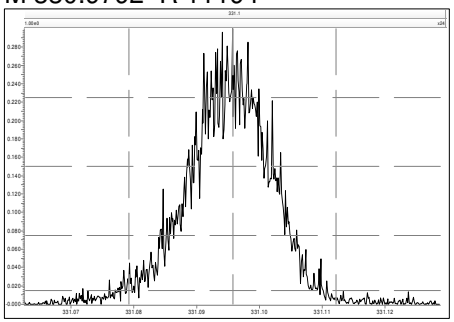
M 366.9792 R 13074



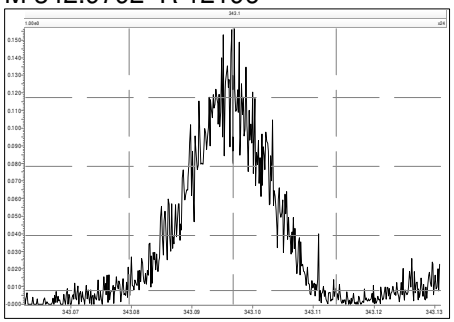
M 380.9760 R 11020



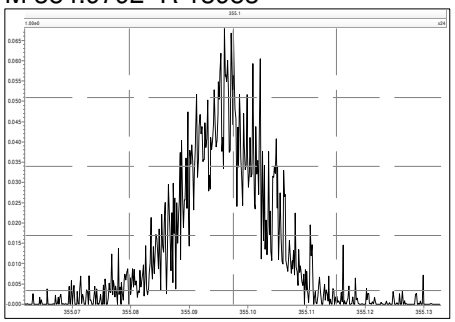
M 330.9792 R 11194



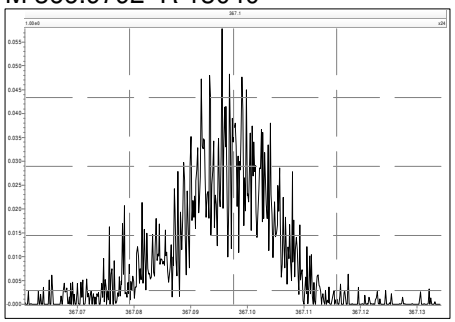
M 342.9792 R 12196



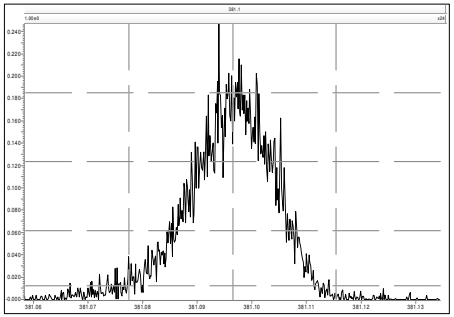
M 354.9792 R 13953



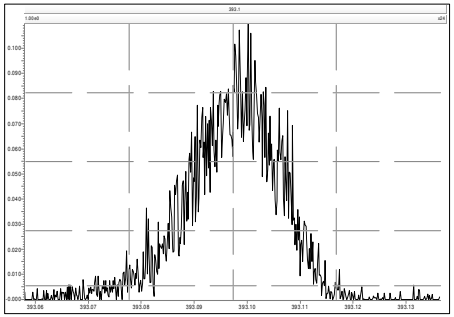
M 366.9792 R 13040



M 380.9760 R 11905



M 392.9760 R 12628



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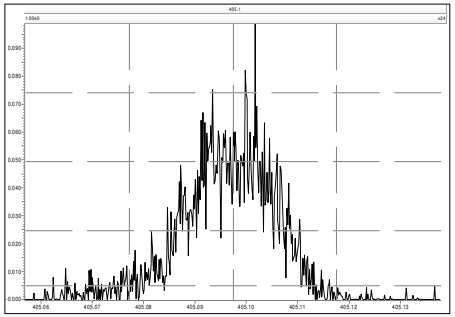
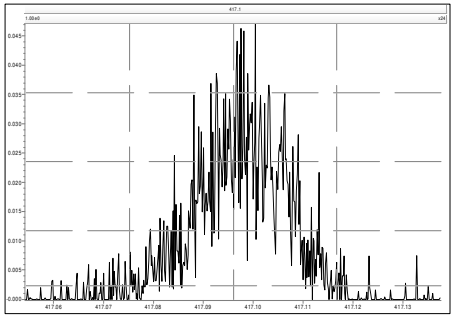
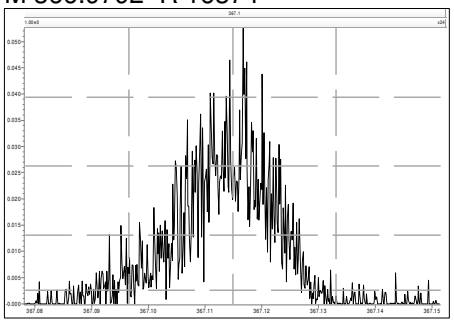


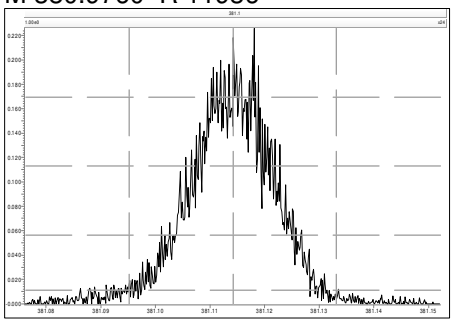
M 416.9760 R 15467



M 366.9792 R 16374



M 380.9760 R 11936



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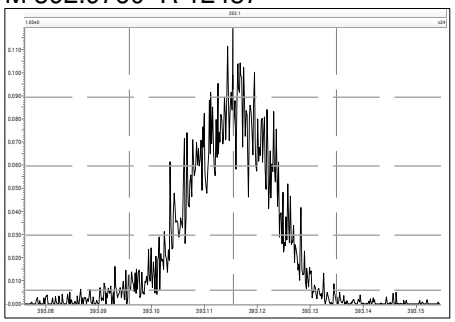
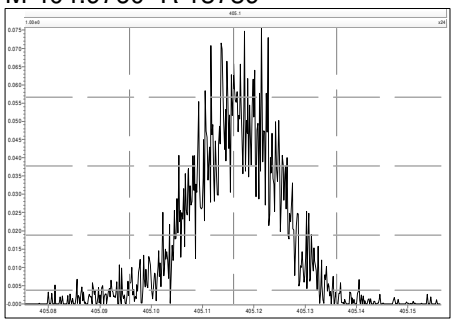
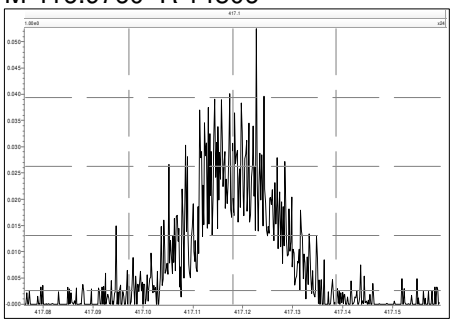


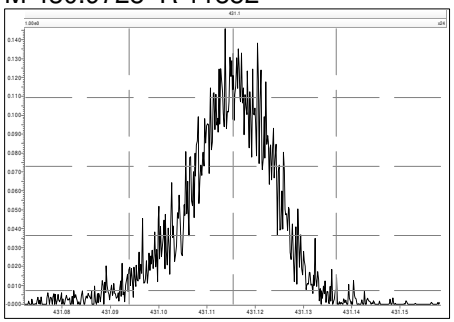
M 404.9760 R 13739



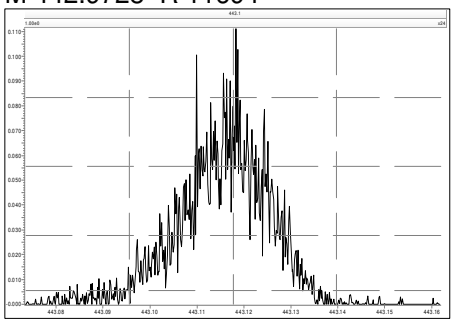
M 416.9760 R 14506



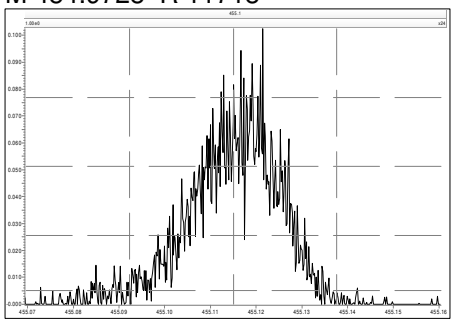
M 430.9728 R 11852



M 442.9728 R 11694



M 454.9728 R 11718



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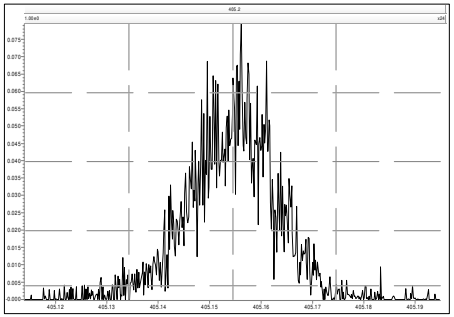

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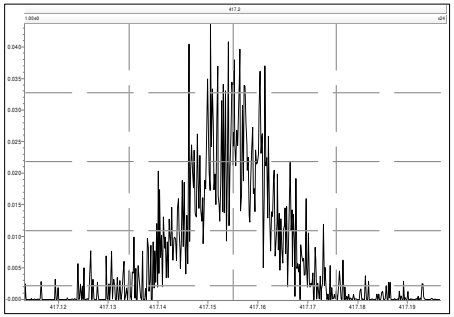
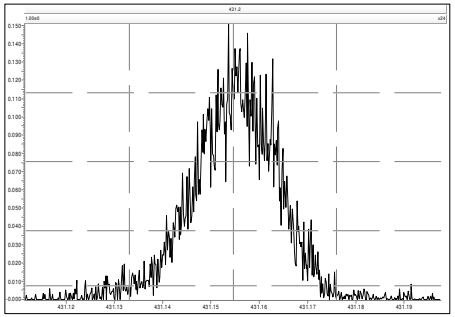
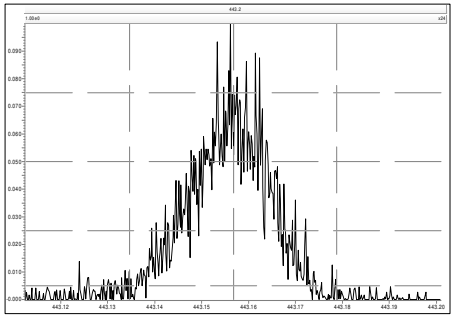


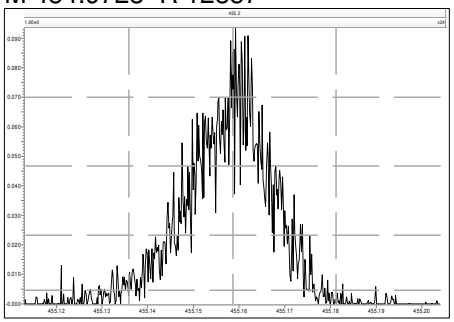
M 430.9728 R 12037



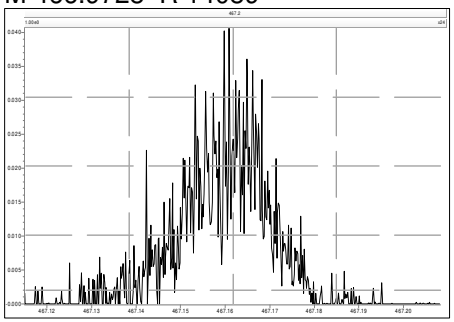
M 442.9728 R 12378



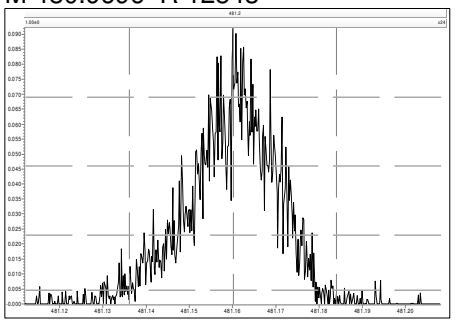
M 454.9728 R 12857



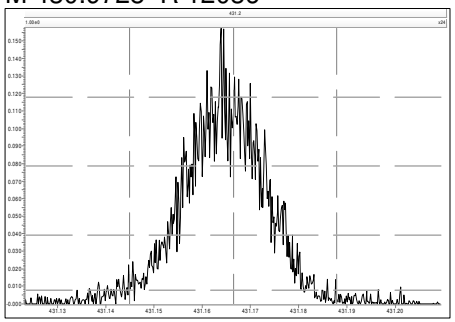
M 466.9728 R 14089



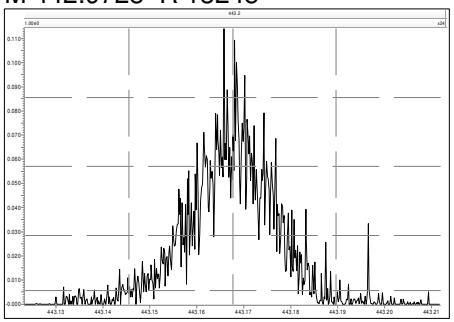
M 480.9696 R 12543



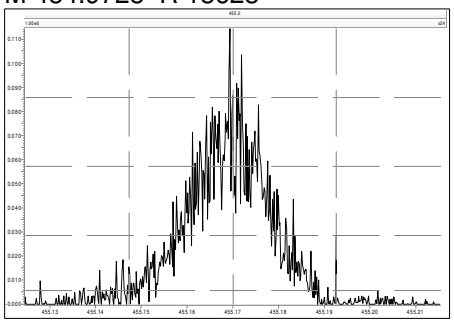
M 430.9728 R 12036



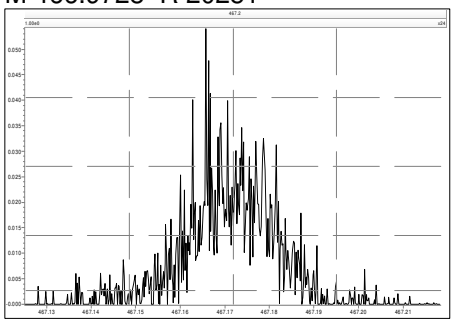
M 442.9728 R 13245



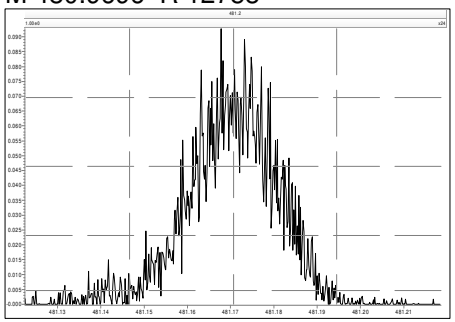
M 454.9728 R 13623



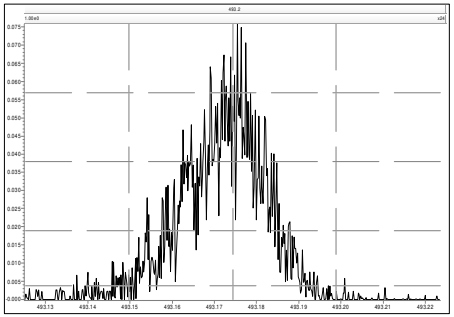
M 466.9728 R 20251



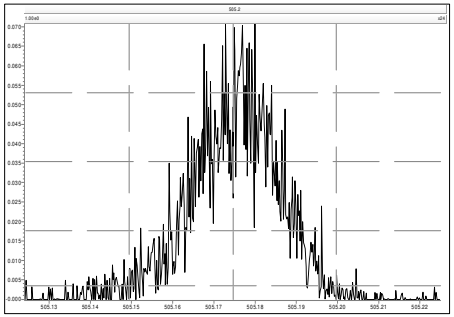
M 480.9696 R 12758



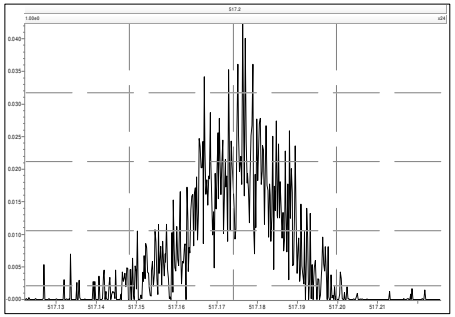
M 492.9696 R 13382



M 504.9696 R 13660



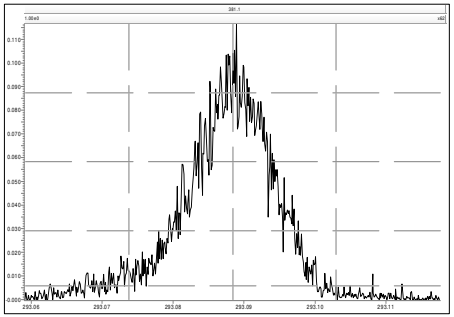
M 516.9697 R 18210



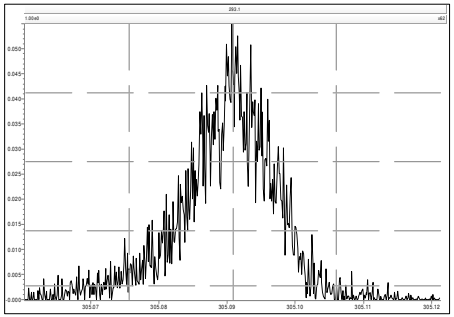
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, December 20, 2021 09:47:12 Eastern Standard Time

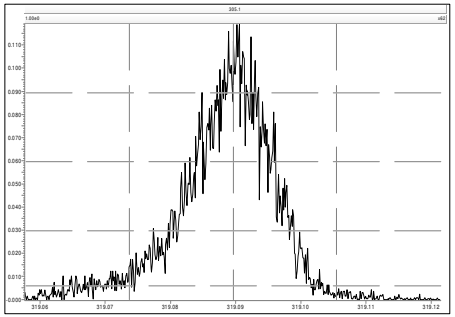
M 292.9824 R 11414



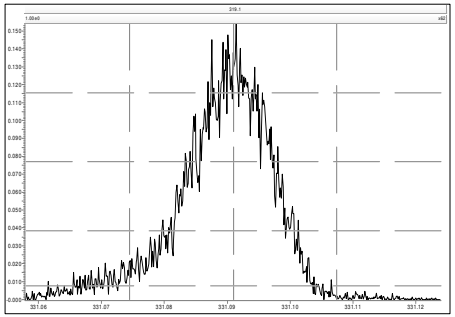
M 304.9824 R 11739



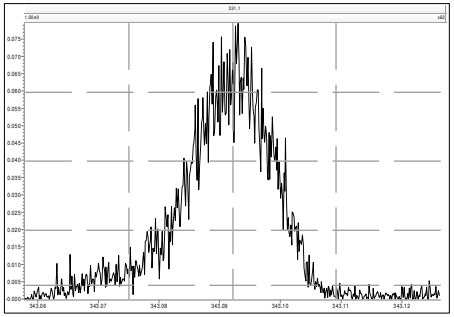
M 318.9792 R 11793



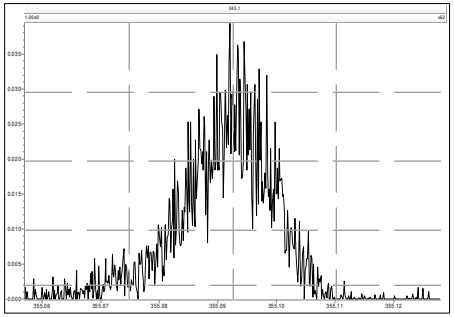
M 330.9792 R 10682



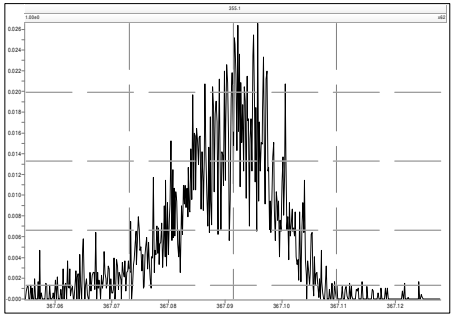
M 342.9792 R 11465



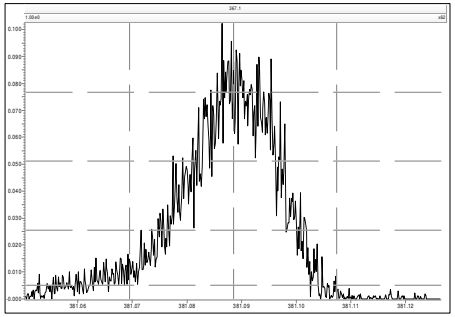
M 354.9792 R 13015



M 366.9792 R 11903



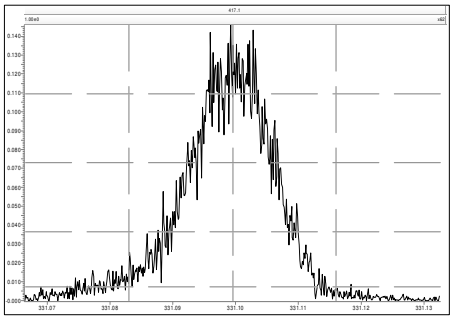
M 380.9760 R 10332



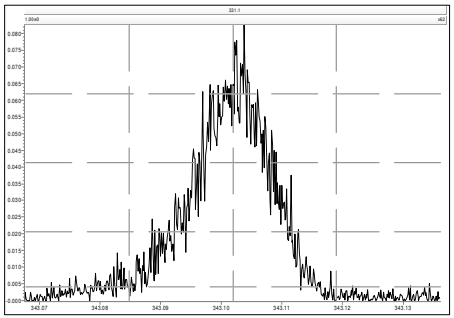
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Monday, December 20, 2021 09:48:02 Eastern Standard Time

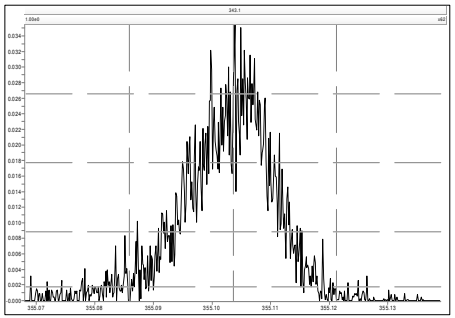
M 330.9792 R 11012



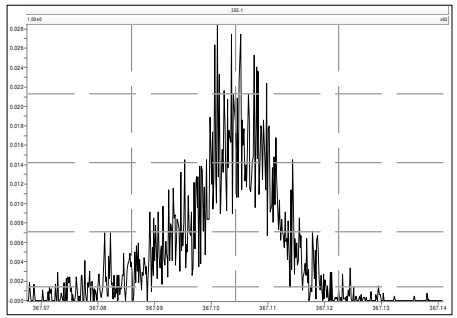
M 342.9792 R 13092



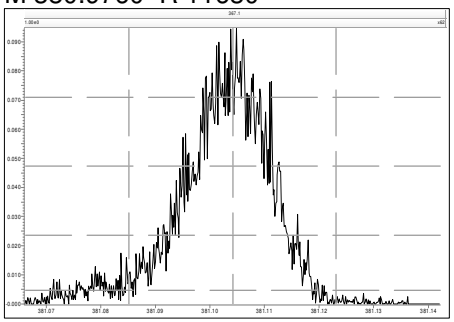
M 354.9792 R 11683



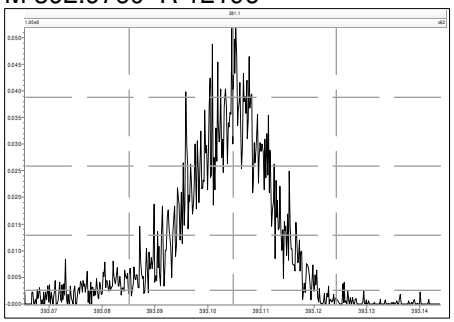
M 366.9792 R 12885



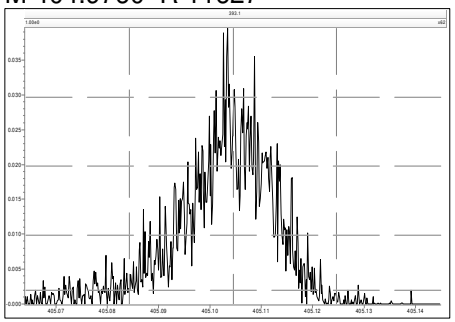
M 380.9760 R 11630



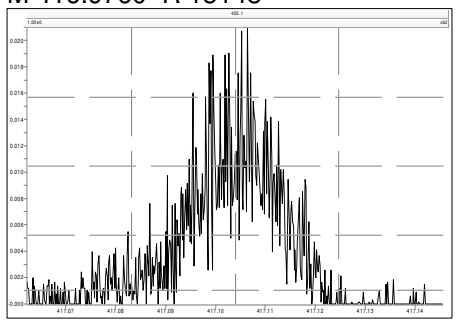
M 392.9760 R 12196



M 404.9760 R 11627



M 416.9760 R 15148



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

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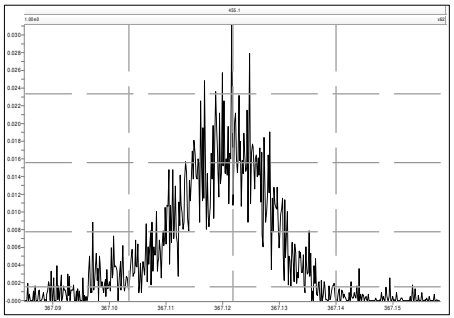
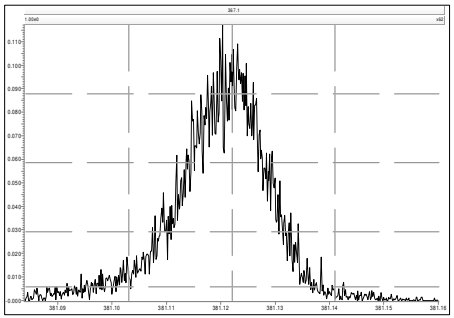
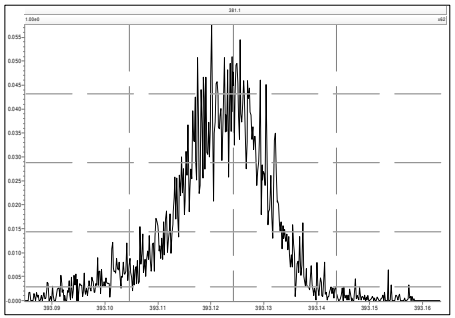
M 366.9792 R 10775



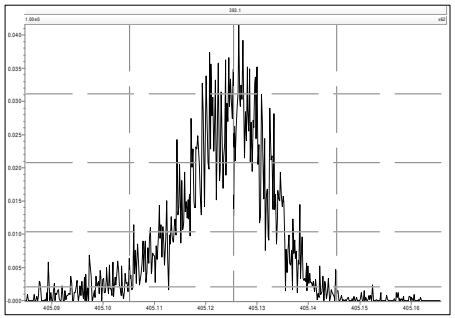
M 380.9760 R 11572



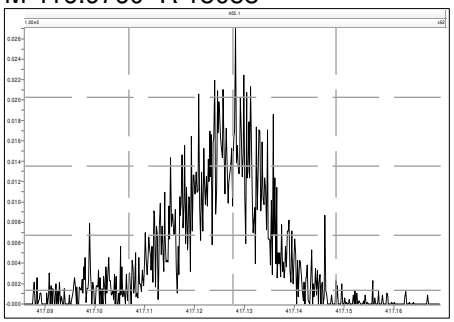
M 392.9760 R 11262



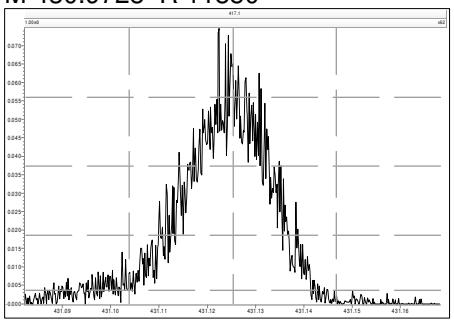
M 404.9760 R 12315



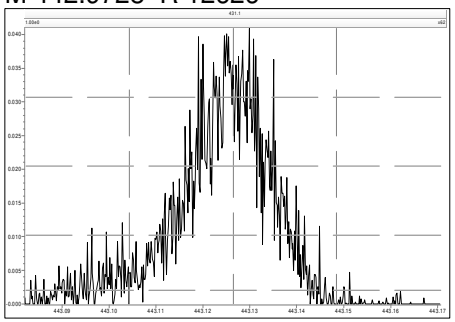
M 416.9760 R 15058



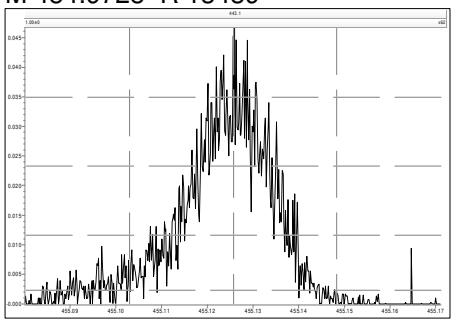
M 430.9728 R 11850



M 442.9728 R 12626



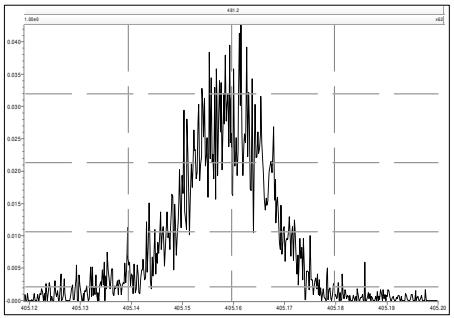
M 454.9728 R 13439



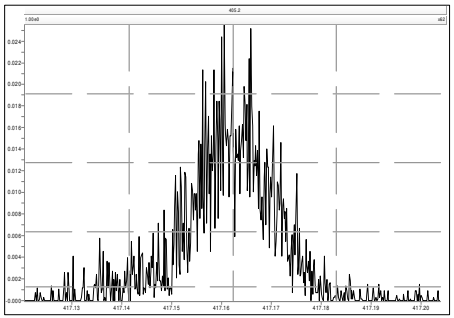
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Monday, December 20, 2021 09:48:38 Eastern Standard Time

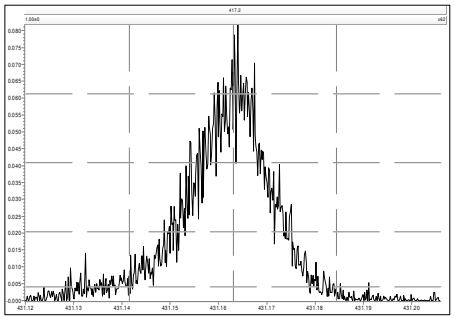
M 404.9760 R 12563



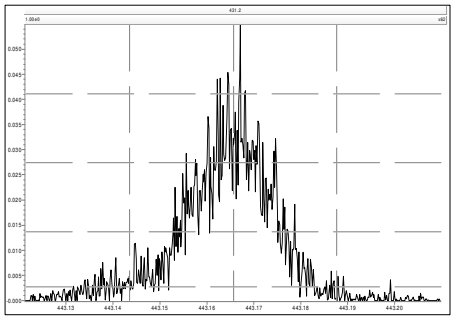
M 416.9760 R 17240



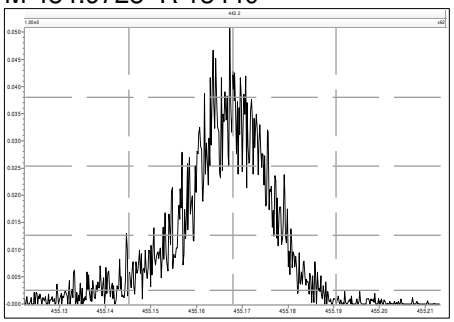
M 430.9728 R 11626



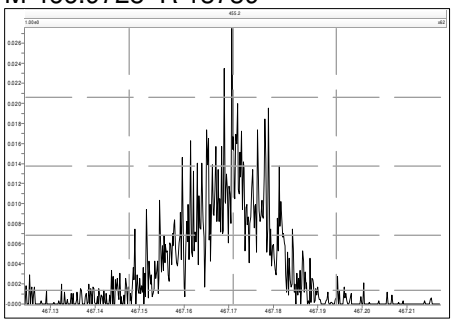
M 442.9728 R 11738



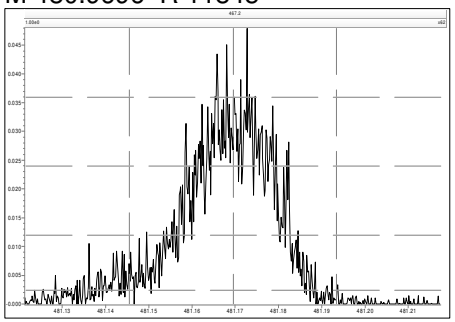
M 454.9728 R 13440



M 466.9728 R 13739



M 480.9696 R 11845



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

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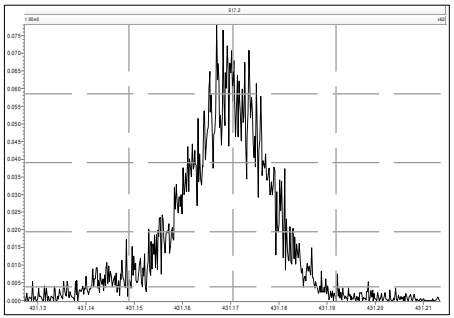
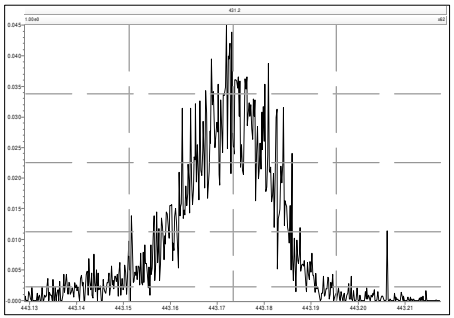
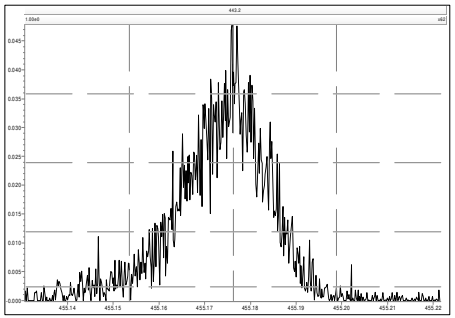
M 430.9728 R 12134



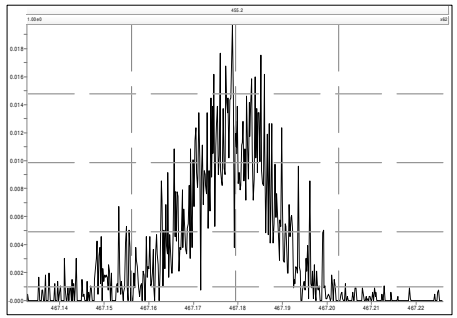
M 442.9728 R 12312



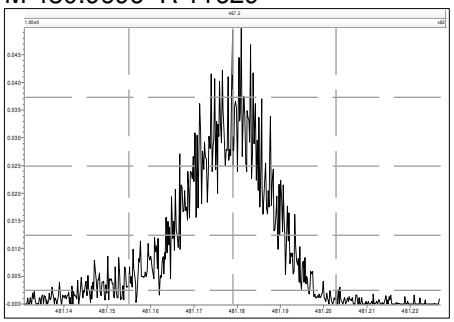
M 454.9728 R 11363



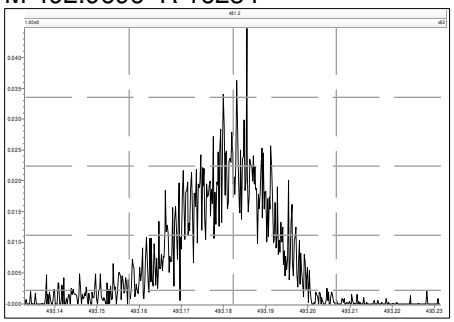
M 466.9728 R 14709



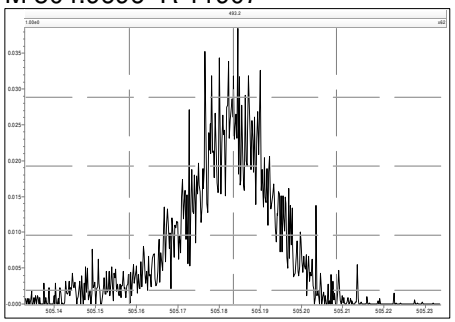
M 480.9696 R 11629



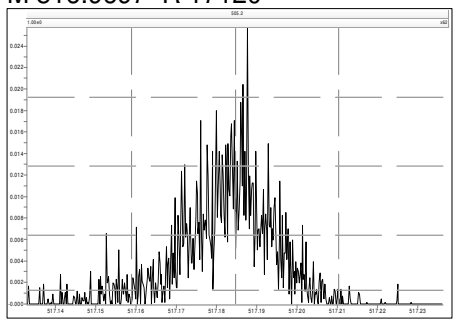
M 492.9696 R 16234



M 504.9696 R 11907



M 516.9697 R 17120



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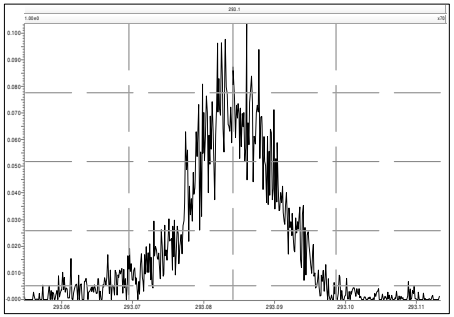
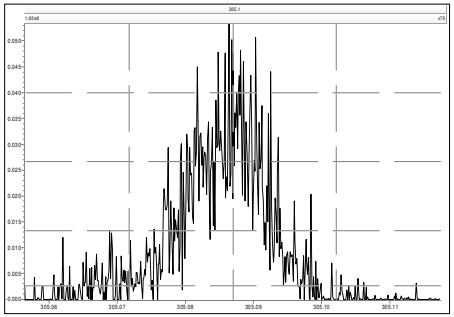
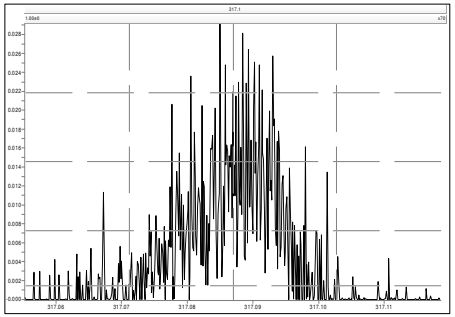
M 292.9824 R 12986



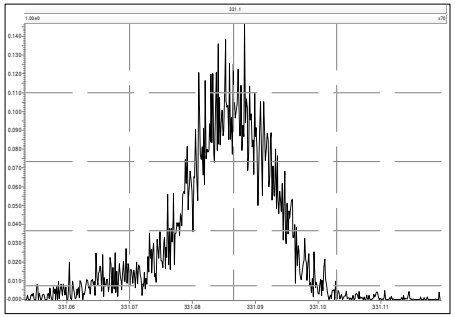
M 304.9824 R 13923



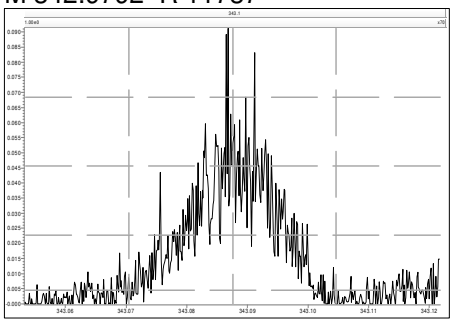
M 316.9824 R 19763



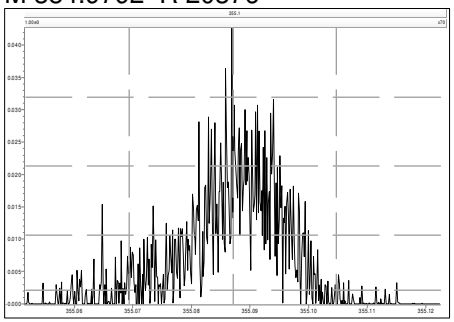
M 330.9792 R 12316



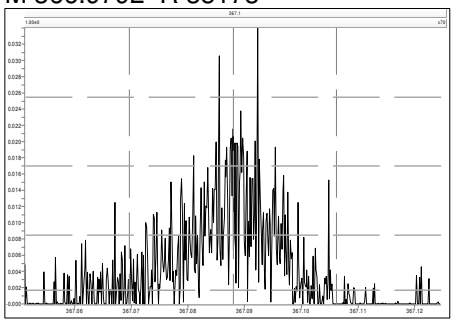
M 342.9792 R 11737



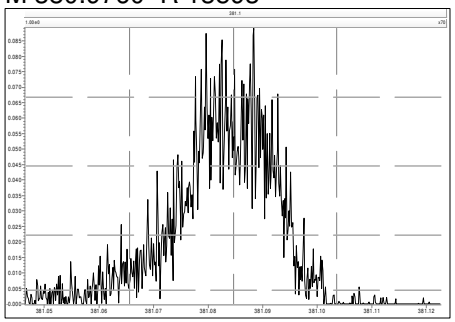
M 354.9792 R 20376



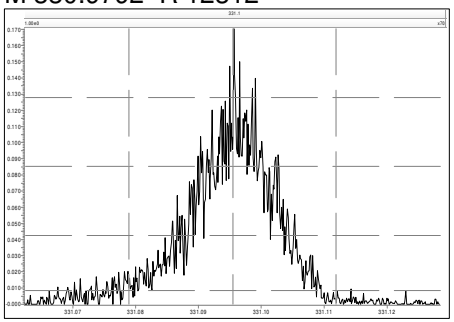
M 366.9792 R 35173



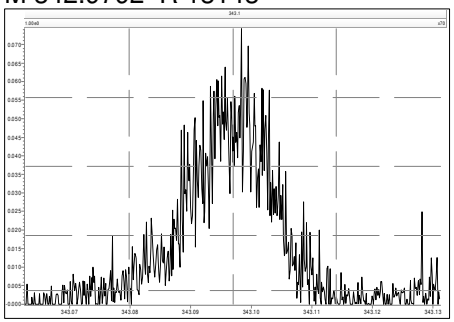
M 380.9760 R 13593



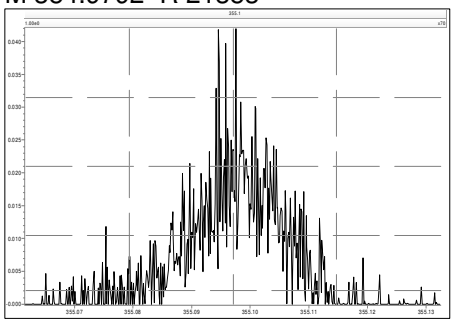
M 330.9792 R 12312



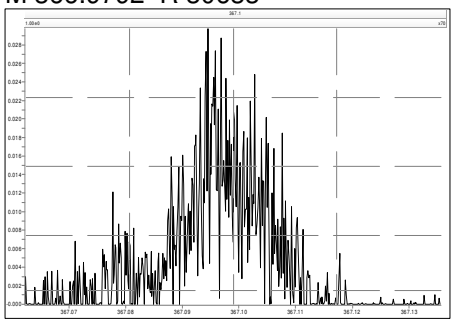
M 342.9792 R 13143



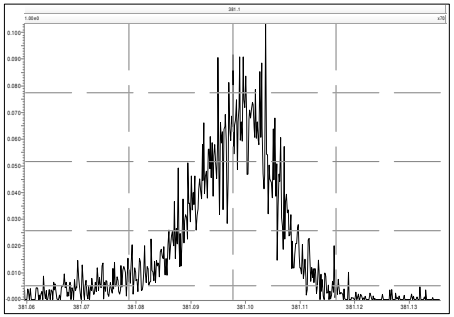
M 354.9792 R 21353



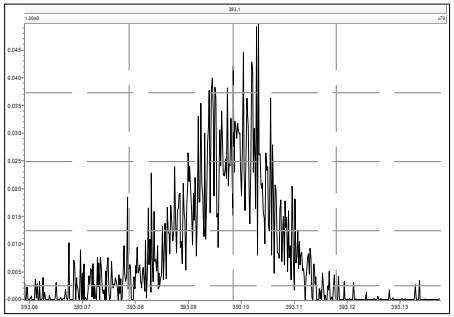
M 366.9792 R 30633



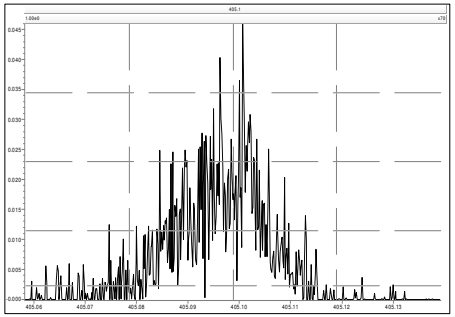
M 380.9760 R 12452



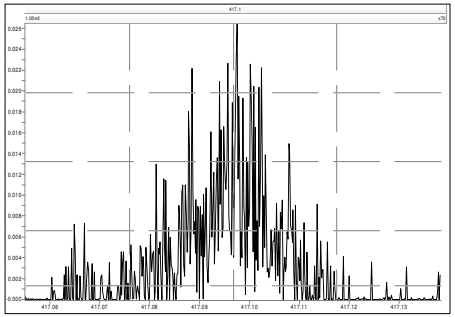
M 392.9760 R 14748



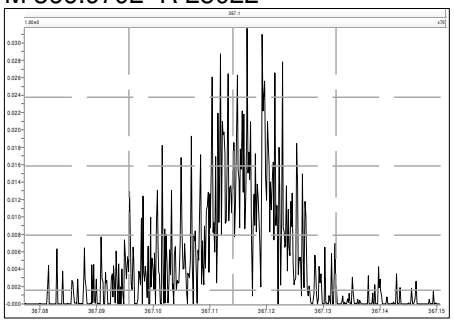
M 404.9760 R 20254



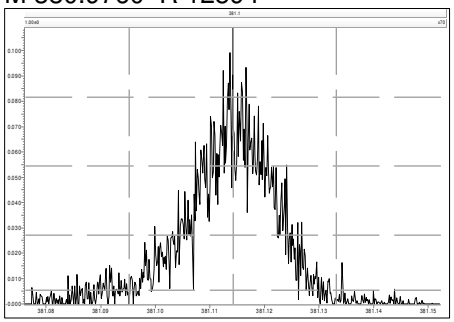
M 416.9760 R 33512



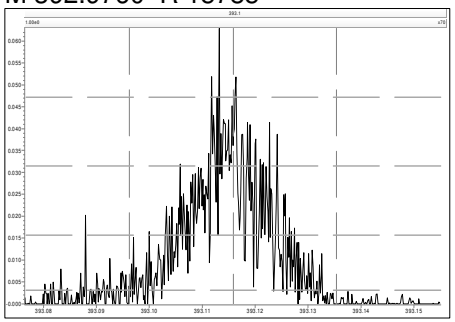
M 366.9792 R 25022



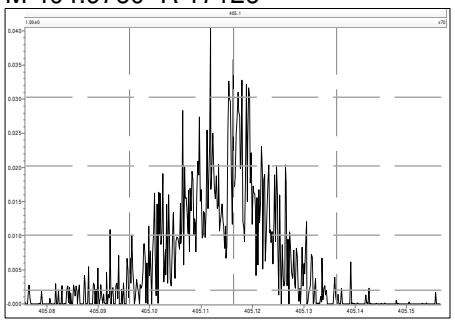
M 380.9760 R 12594



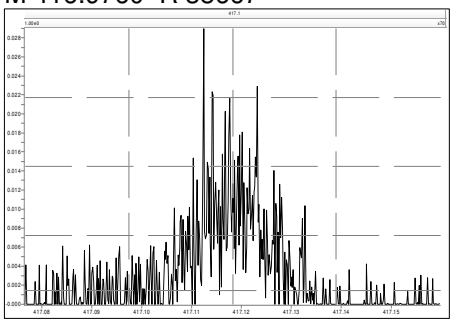
M 392.9760 R 15785



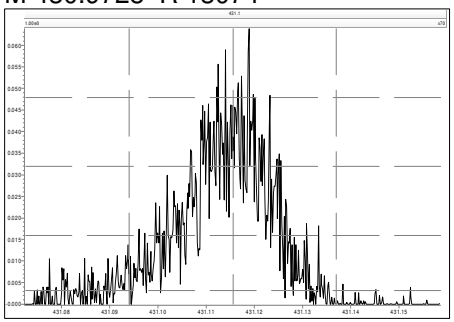
M 404.9760 R 17126



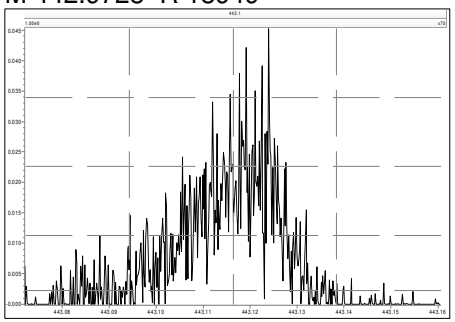
M 416.9760 R 38667



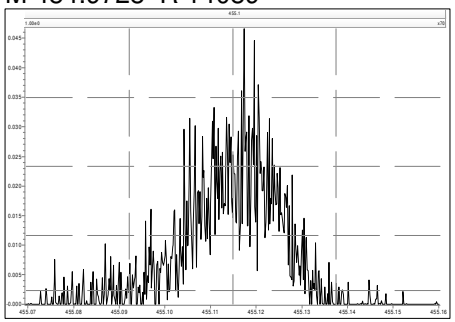
M 430.9728 R 13074



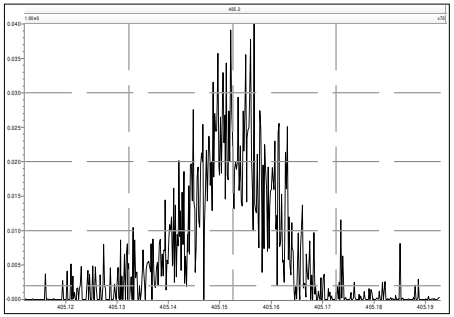
M 442.9728 R 18949



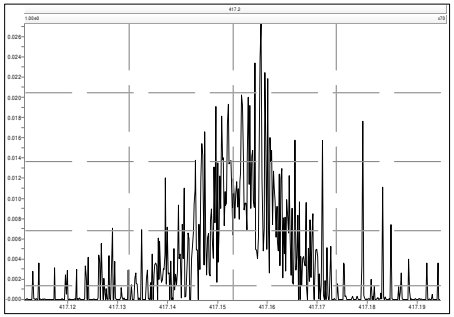
M 454.9728 R 14089



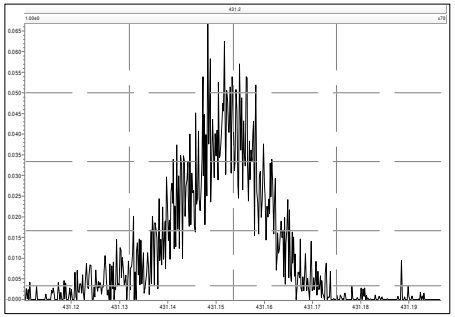
M 404.9760 R 21971



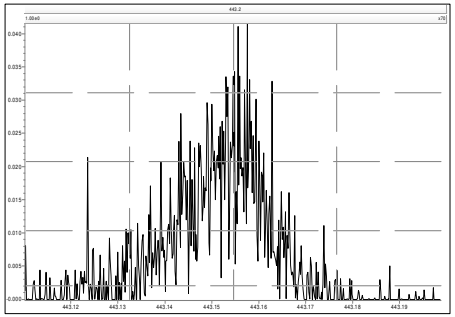
M 416.9760 R 21577



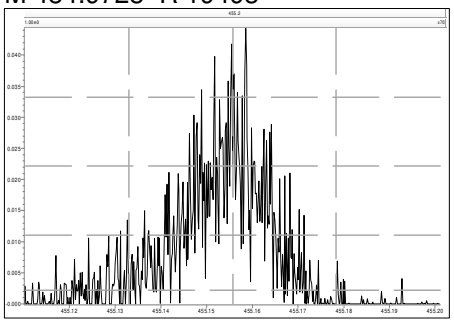
M 430.9728 R 13715



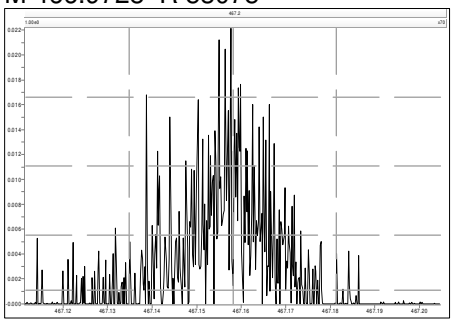
M 442.9728 R 25512



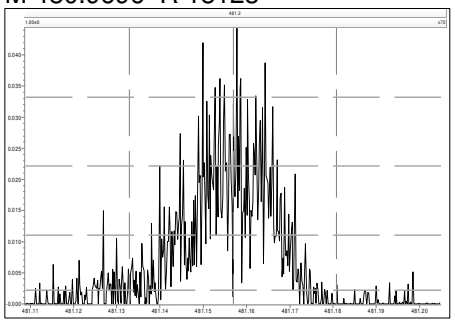
M 454.9728 R 19493



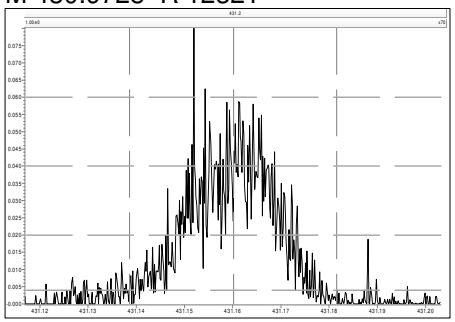
M 466.9728 R 53075



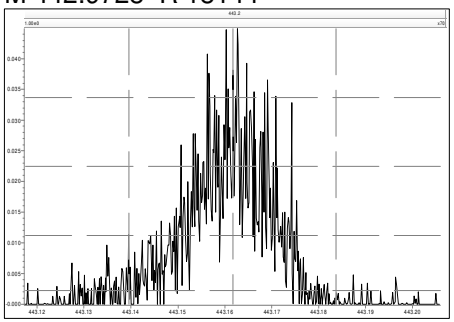
M 480.9696 R 18123



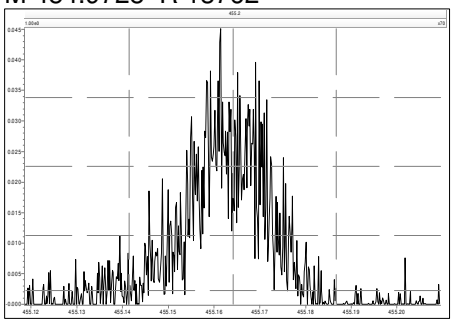
M 430.9728 R 12321



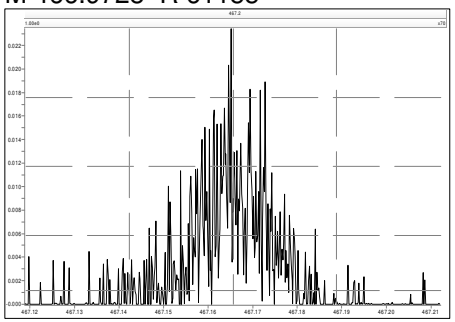
M 442.9728 R 18144



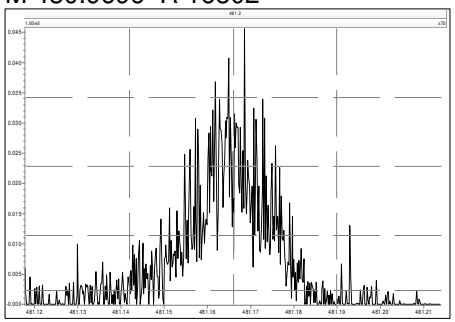
M 454.9728 R 13762



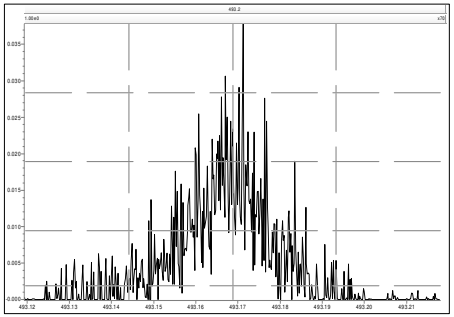
M 466.9728 R 61155



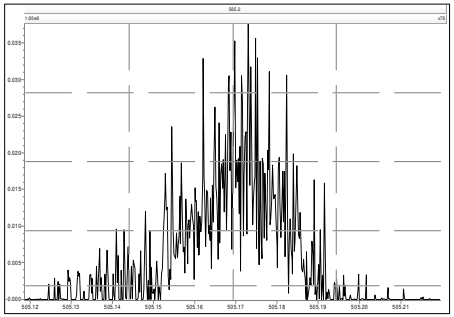
M 480.9696 R 16502



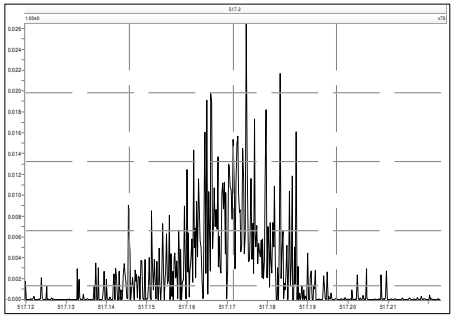
M 492.9696 R 17939



M 504.9696 R 17183



M 516.9697 R 52436



Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 0.25 pg/uL CS0	210727R03 0.5 pg/uL CS1	210727R04 2 pg/uL CS2	210727R05 10 pg/uL CS3	210727R06 40 pg/uL CS4	210727R07 200 pg/uL CS5	210727R08 500 pg/uL CS6
2378-TCDD	1.34	4.7%	1.45 ✓	1.34	1.26	1.32	1.30	1.35	1.39
12378-PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
123478-HxCDD	1.06	3.3%	1.10	1.10	0.99	1.05	1.05	1.06	1.05
123678-HxCDD	1.08	2.9%	1.12	1.07	1.02 ✓	1.08	1.10	1.10	1.09
123789-HxCDD	1.02	4.8%	1.10	1.05	0.95	0.99	0.99	1.01	1.00
1234678-HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
OCDD	1.07	4.2%	1.15	1.04	1.01	1.07	1.08 ✓	1.06	1.08
2378-TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
12378-PeCDF	0.95	3.2%	1.00	0.94	0.90	0.94	0.95	0.93	0.96
23478-PeCDF	0.94	3.7%	0.99	0.90 ✓	0.90	0.92	0.93	0.96	0.96
123478-HxCDF	1.23	3.3%	1.32	1.23	1.19	1.22	1.24	1.24	1.22
123678-HxCDF	1.13	3.0%	1.17	1.16	1.07	1.10	1.13	1.14	1.14
234678-HxCDF	1.15	4.2%	1.23	1.19	1.08	1.14	1.13	1.15	1.15
123789-HxCDF	1.14	3.5%	1.19	1.08	1.09	1.14	1.14	1.15	1.16 ✓
1234678-HpCDF	1.36	3.6%	1.46	1.35	1.31	1.34 ✓	1.33	1.37	1.36
1234789-HpCDF	1.30	4.0%	1.34	1.20	1.26	1.34	1.30	1.35	1.33
OCDF	1.03	4.1%	1.01	1.01	0.95	1.03	1.05	1.06 ✓	1.08
ES 2378-TCDD	1.03	1.7%	1.02	1.02	1.02	1.05	1.06	1.04	1.02
ES 12378-PeCDD	1.03	3.5%	1.01	1.02	0.99	1.01	1.03	1.07	1.10
ES 123478-HxCDD	0.99	4.4%	0.97	0.93	0.99	1.00	0.98	1.03	1.07
ES 123678-HxCDD	0.97	5.2%	0.94	0.91	0.95	1.01	0.94	1.02	1.05
ES 123789-HxCDD	1.12	5.1%	1.09	1.04	1.12	1.14	1.09	1.17	1.22
ES 1234678-HpCDD	0.99	5.2%	0.95	0.92	0.98	1.02	0.97	1.05	1.06
ES OCDD	0.78	8.4%	0.73	0.71	0.74	0.77	0.75	0.85	0.89
ES 2378-TCDF	1.08	1.2%	1.06	1.08	1.07 ✓	1.09	1.09	1.08	1.10
ES 12378-PeCDF	0.93	2.7%	0.91	0.91	0.92	0.93	0.95	0.95	0.98
ES 23478-PeCDF	0.92	2.4%	0.90	0.91	0.90	0.93	0.93	0.93	0.96
ES 123478-HxCDF	1.14	5.9%	1.09	1.04	1.13	1.18	1.12	1.21	1.23
ES 123678-HxCDF	1.30	4.9%	1.24	1.21	1.27	1.35	1.27	1.36	1.37
ES 234678-HxCDF	1.20	4.9%	1.14	1.12	1.18	1.23	1.20	1.27	1.27
ES 123789-HxCDF	1.14	5.9%	1.06	1.07	1.11	1.16	1.12	1.20	1.24
ES 1234678-HpCDF	0.95	5.7%	0.90	0.88	0.92	0.98	0.94	1.00	1.03
ES 1234789-HpCDF	0.85	7.0%	0.79	0.78	0.82	0.86	0.83	0.90	0.94
ES OCDF	0.93	8.9%	0.86	0.83	0.88	0.93	0.90	1.01	1.06

APPROVED
Carla_Lyon , 7/28/2021, 12:24:59 PM

Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 **0.25 pg/uL CS0**	210727R03 **0.5 pg/uL CS1**	210727R04 **2 pg/uL CS2**	210727R05 **10 pg/uL CS3**	210727R06 **40 pg/uL CS4**	210727R07 **200 pg/uL CS5**	210727R08 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.31	2.3%	-	1.32	1.27	1.30	1.31	1.35	-
CS 12347-PeCDD	0.89	2.1%	0.89	0.91	0.88	0.87	0.93	0.88	0.89
CS 12346-PeCDF	0.87	1.7%	0.86	0.88	0.86	0.89	0.88	0.86	0.85
CS 123469-HxCDF	1.09	2.8%	1.06	1.04	1.08	1.14	1.09	1.12	1.09
CS 1234689-HpCDF	0.86	3.3%	0.86	0.84	0.86	0.92	0.86	0.86	0.84
SS 37Cl-2378-TCDD	1.26	2.3%	-	1.29	1.25	1.24	1.23	1.29	-
SS 12347-PeCDD	0.86	4.0%	0.88	0.89	0.89	0.86	0.90	0.82 ✓	0.81
SS 12346-PeCDF	0.93	3.5%	0.94	0.97	0.93	0.96	0.93	0.91	0.87
SS 123469-HxCDF	0.84	2.8%	0.86	0.86	0.85	0.84	0.86	0.82	0.80
SS 1234689-HpCDF	0.91	6.0%	0.96	0.96	0.94	0.94	0.92	0.86	0.81
AS 1368-TCDD	1.02	0.7%	1.01	1.03	1.02	1.02 ✓	1.02	1.04	1.02
AS 1368-TCDF	1.08	1.9%	1.05	1.06	1.07	1.10	1.09	1.10	1.07
~~OCDD-a~~	~~0.07~~	~~7.2%~~	~~0.06~~	~~0.08~~	~~0.07~~	~~0.07~~	~~0.07~~	~~0.06~~	~~0.07~~
~~OCDF-a~~	~~0.06~~	~~7.0%~~	~~0.05~~	~~0.06~~	~~0.05~~	~~0.06~~	~~0.06~~	~~0.06~~	~~0.06~~
Not reported from this ICAL - CL 28Jul21									
Totals									
Total TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
Total PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
Total HxCDD	1.05	3.3%	1.11	1.07	0.99	1.04	1.05	1.06	1.05
Total HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
Total TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
Total PeCDF	0.94	3.3%	1.00	0.92	0.90	0.93	0.94	0.95	0.96
Total HxCDF	1.16	3.1%	1.23	1.16	1.11	1.15	1.16	1.17	1.17
Total HpCDF	1.33	3.2%	1.40	1.28	1.28	1.34	1.32	1.36	1.34
FS 1278-TCDD	1.08	0.7%	1.08	1.08	1.09	1.08	1.08	1.08	1.10
FS 12478-PeCDD	1.09	3.7%	1.10	1.10 ✓	1.12	1.13	1.13	1.07	1.01
FS 123468-HxCDD	1.26	4.2%	1.27	1.30	1.28	1.32	1.28	1.24	1.16
FS 1234679-HpCDD	1.36	5.0%	1.41	1.37	1.38	1.42	1.38 ✓	1.30	1.23
TS 1378-TCDD	1.35	2.3%	1.36 ✓	1.38	1.36	1.31	1.30	1.35	1.37

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	210727R01	2	SBS_210727_DF_RA	1.00	SIL 20-61-1	PSW	638-037	27-Jul-2021	08:17:39
2	210727R02	85	CS0_210727_DF_RA	1.00	SIL 25-6-3	PSW	693-472	27-Jul-2021	09:04:23
3	210727R03	86	CS1_210727_DF_RA	1.00	SIL 25-6-2	PSW	554-132	27-Jul-2021	09:54:34
4	210727R04	87	CS2_210727_DF_RA	1.00	SIL 25-6-1	PSW	377-233	27-Jul-2021	10:44:24
5	210727R05	3	CS3_210727_DF_RA	1.00	SIL 23-672-1	PSW	230-891	27-Jul-2021	11:32:33
6	210727R06	88	CS4_210727_DF_RA	1.00	SIL 25-5-4	PSW	602-590	27-Jul-2021	12:19:16
7	210727R07	89	CS5_210727_DF_RA	1.00	SIL 25-5-3	PSW	147-553	27-Jul-2021	13:09:36
8	210727R08	90	CS6_210727_DF_RA	1.00	SIL 25-5-2	PSW	783-472	27-Jul-2021	13:58:27

Alternate OCDD/OCDF - NR in this ICAL. CL 28Jul21

REVIEWED
paul_walton , 7/28/2021, 8:31:00 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:08 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan STD Association	SGS Environmental Services

Individual Native Standards

2378-TCDD	ES 2378-TCDD
12378-PeCDD	ES 12378-PeCDD
123478-HxCDD	ES 123478-HxCDD
123678-HxCDD	ES 123678-HxCDD
123789-HxCDD	ES 123789-HxCDD
1234678-HpCDD	ES 1234678-HpCDD
OCDD	ES OCDD
2378-TCDF	ES 2378-TCDF
12378-PeCDF	ES 12378-PeCDF
23478-PeCDF	ES 23478-PeCDF
123478-HxCDF	ES 123478-HxCDF
123678-HxCDF	ES 123678-HxCDF
234678-HxCDF	ES 234678-HxCDF
123789-HxCDF	ES 123789-HxCDF
1234678-HpCDF	ES 1234678-HpCDF
1234789-HpCDF	ES 1234789-HpCDF
OCDF	ES OCDF

Cleanup/Sampling Standards

CS 37Cl-2378-TCDD	1234 TCDD 13C12
CS 12347-PeCDD	1234 TCDD 13C12
CS 12346-PeCDF	1234 TCDF 13C12
CS 123469-HxCDF	123467 HxCDD 13C12
CS 1234689-HpCDF	123467 HxCDD 13C12

Alternate Standards

AS 1368-TCDD	1234 TCDD 13C12
AS 1368-TCDF	1234 TCDF 13C12

Shipping Standards

FS 1278-TCDD	ES 2378-TCDD
FS 12478-PeCDD	ES 12378-PeCDD
FS 123468-HxCDD	ES 123478-HxCDD
FS 1234679-HpCDD	ES 1234678-HpCDD
TS 1378-TCDD	ES 2378-TCDD

Extraction Standards

ES 2378-TCDD	1234 TCDD 13C12
ES 12378-PeCDD	1234 TCDD 13C12
ES 123478-HxCDD	123467 HxCDD 13C12
ES 123678-HxCDD	123467 HxCDD 13C12
ES 123789-HxCDD	123467 HxCDD 13C12
ES 1234678-HpCDD	123467 HxCDD 13C12
ES OCDD	123467 HxCDD 13C12
ES 2378-TCDF	1234 TCDF 13C12
ES 12378-PeCDF	1234 TCDF 13C12
ES 23478-PeCDF	1234 TCDF 13C12
ES 123478-HxCDF	123467 HxCDD 13C12
ES 123678-HxCDF	123467 HxCDD 13C12
ES 234678-HxCDF	123467 HxCDD 13C12
ES 123789-HxCDF	123467 HxCDD 13C12
ES 1234678-HpCDF	123467 HxCDD 13C12
ES 1234789-HpCDF	123467 HxCDD 13C12
ES OCDF	123467 HxCDD 13C12

Injection Standards

1234 TCDD 13C12
1234 TCDF 13C12
123467 HxCDD 13C12

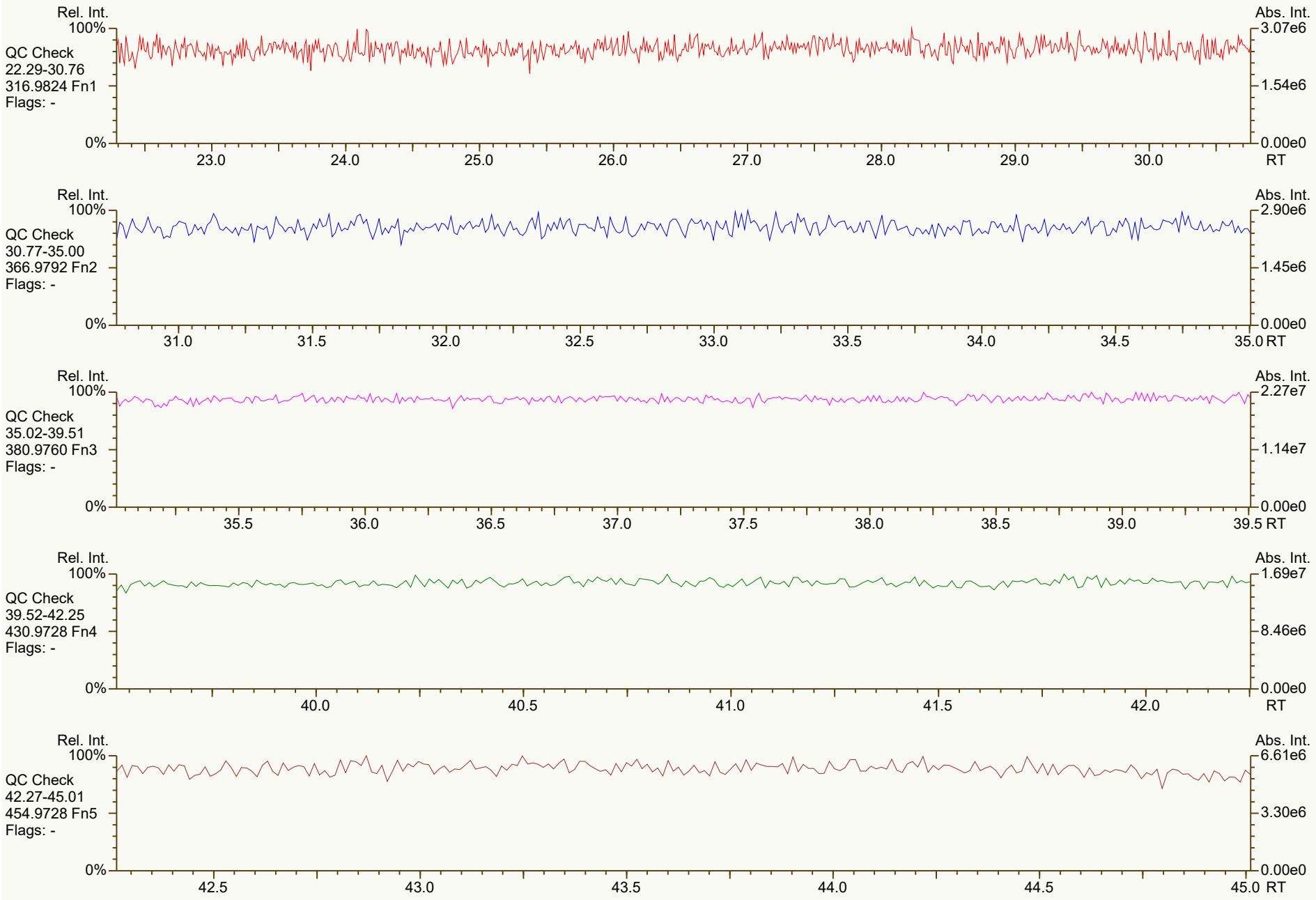
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	6.43E+05	0.73	Y	1.34	1.45	8%
12378-PeCDD	33.80	2.41E+06	1.48	Y	1.06	1.09	3%
123478-HxCDD	37.67	2.24E+06	1.35	Y	1.06	1.10	4%
123678-HxCDD	37.78	2.20E+06	1.31	Y	1.08	1.12	3%
123789-HxCDD	38.07	2.52E+06	1.21	Y	1.02	1.10	9%
1234678-HpCDD	40.66	2.08E+06	0.99	Y	0.97	1.05	7%
OCDD	43.22	3.52E+06	0.85	Y	1.07	1.15	8%
2378-TCDF	27.66	7.49E+05	0.72	Y	0.96	1.01	5%
12378-PeCDF	32.38	3.19E+06	1.44	Y	0.95	1.00	5%
23478-PeCDF	33.46	3.11E+06	1.57	Y	0.94	0.99	6%
123478-HxCDF	36.68	3.00E+06	1.23	Y	1.23	1.32	7%
123678-HxCDF	36.82	3.05E+06	1.18	Y	1.13	1.17	4%
234678-HxCDF	37.49	2.95E+06	1.17	Y	1.15	1.23	7%
123789-HxCDF	38.42	2.65E+06	1.30	Y	1.14	1.19	5%
1234678-HpCDF	39.76	2.75E+06	1.00	Y	1.36	1.46	7%
1234789-HpCDF	41.10	2.20E+06	1.11	Y	1.30	1.34	3%
OCDF	43.40	3.66E+06	0.85	Y	1.03	1.01	-1%
ES 2378-TCDD	28.50	1.77E+08	0.79	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.781	1.77E+08	1.63	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.653	1.63E+08	1.26	Y	0.99	0.97	-2%
ES 123678-HxCDD	37.766	1.57E+08	1.27	Y	0.97	0.94	-3%
ES 123789-HxCDD	38.056	1.82E+08	1.26	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.643	1.59E+08	1.05	Y	0.99	0.95	-4%
ES OCDD	43.205	2.44E+08	0.92	Y	0.78	0.73	-6%
ES 2378-TCDF	27.645	2.97E+08	0.78	Y	1.08	1.06	-2%
ES 12378-PeCDF	32.355	2.55E+08	1.55	Y	0.93	0.91	-2%
ES 23478-PeCDF	33.445	2.50E+08	1.56	Y	0.92	0.90	-3%
ES 123478-HxCDF	36.661	1.82E+08	0.53	Y	1.14	1.09	-5%
ES 123678-HxCDF	36.801	2.08E+08	0.53	Y	1.30	1.24	-4%
ES 234678-HxCDF	37.466	1.92E+08	0.53	Y	1.20	1.14	-5%
ES 123789-HxCDF	38.399	1.78E+08	0.52	Y	1.14	1.06	-7%
ES 1234678-HpCDF	39.748	1.51E+08	0.44	Y	0.95	0.90	-5%
ES 1234789-HpCDF	41.09	1.32E+08	0.45	Y	0.85	0.79	-7%
ES OCDF	43.389	2.89E+08	0.89	Y	0.93	0.86	-7%

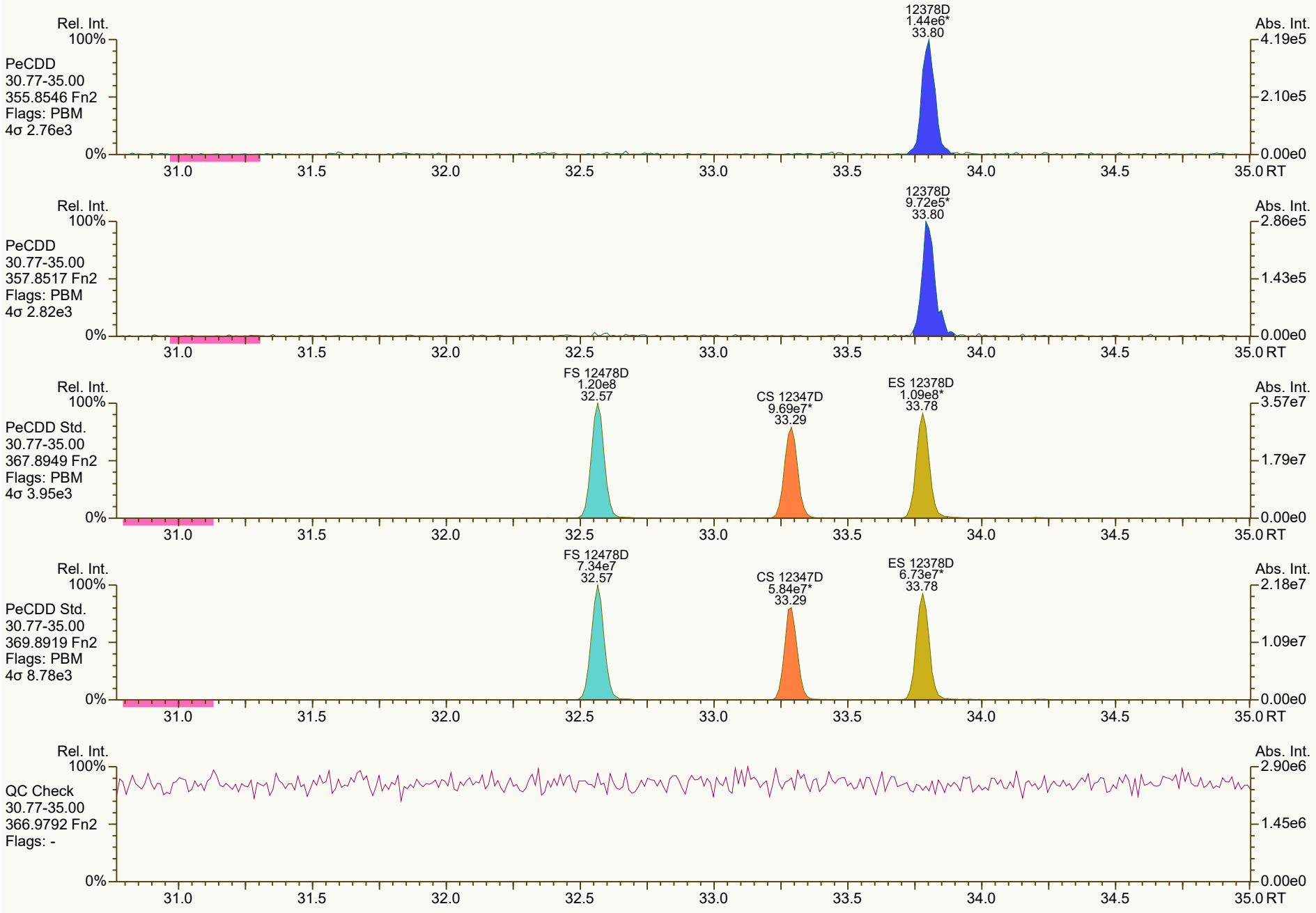
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

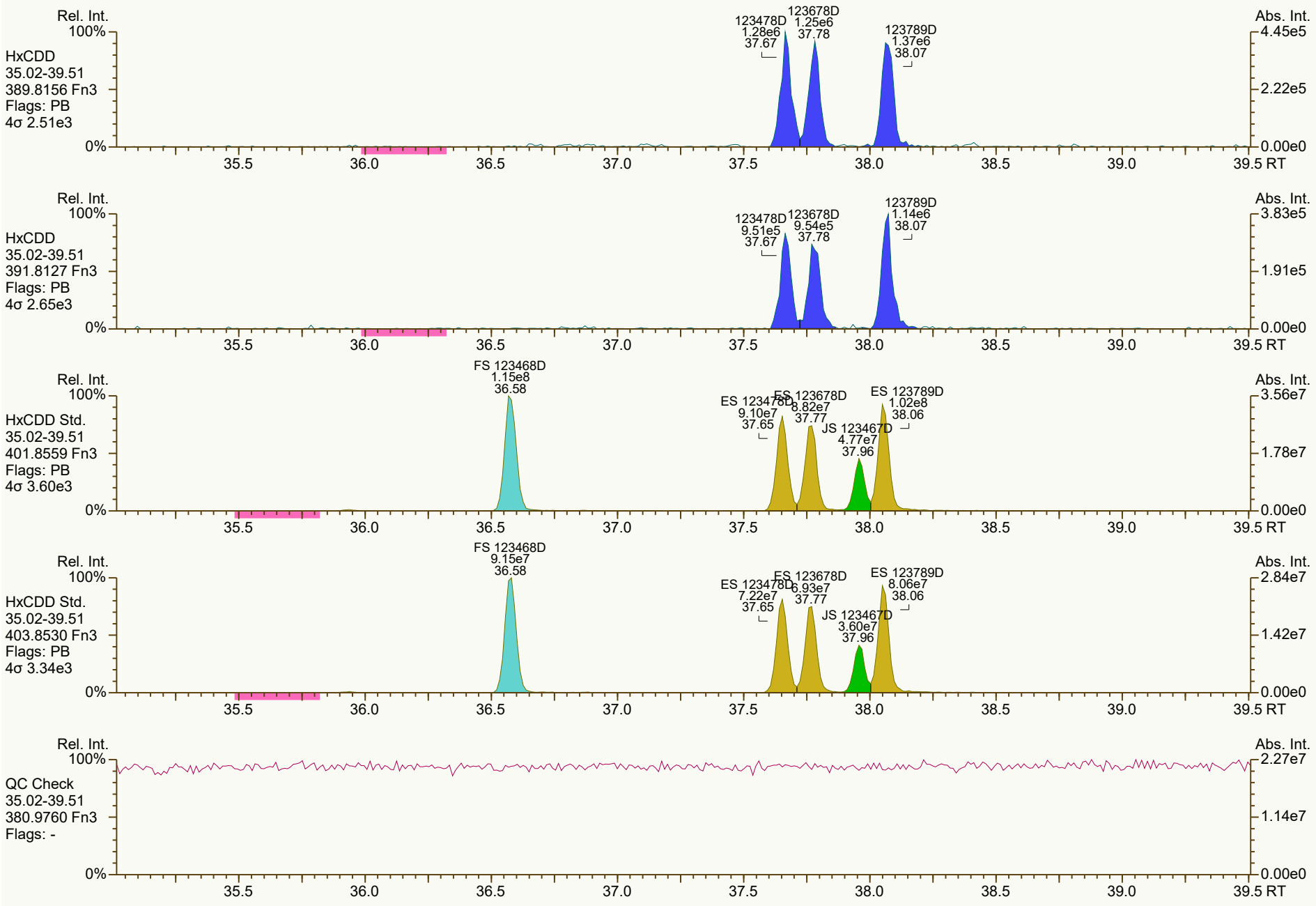
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.74E+08	0.80	Y	-	-	-
JS 1234-TCDF	26.33	2.80E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	8.38E+07	1.33	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.89	0.89	0%
CS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.78E+08	0.52	Y	1.09	1.06	-2%
CS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.86	0.88	2%
SS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.93	0.94	2%
SS 123469-HxCDF	37.12	1.78E+08	0.52	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.91	0.96	5%
AS 1368-TCDD	24.91	1.76E+08	0.79	Y	1.02	1.01	-1%
AS 1368-TCDF	22.86	2.95E+08	0.78	Y	1.08	1.05	-2%
FS 1278-TCDD	28.82	1.91E+08	0.78	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.94E+08	1.64	Y	1.09	1.10	0%
FS 123468-HxCDD	36.58	2.07E+08	1.26	Y	1.26	1.27	0%
FS 1234679-HpCDD	39.99	2.24E+08	1.06	Y	1.36	1.41	4%
TS 1378-TCDD	26.87	2.41E+08	0.79	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.22~~	~~1.80E+05~~	~~0.99~~	~~N~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.41~~	~~1.98E+05~~	~~2.81~~	~~Y~~	~~0.06~~	~~0.05~~	~~-7%~~

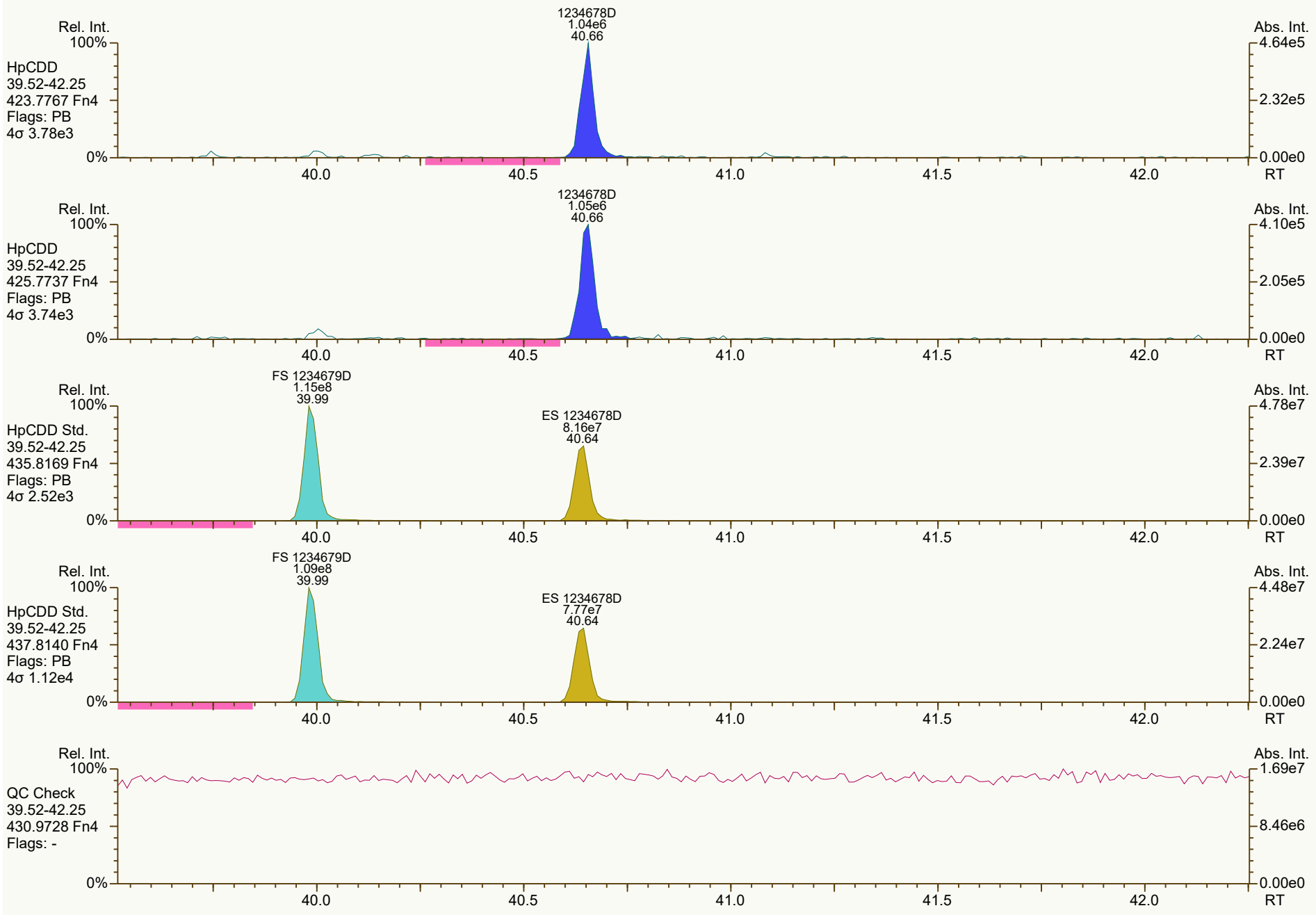
Not reported from this ICAL - CL 28Jul21

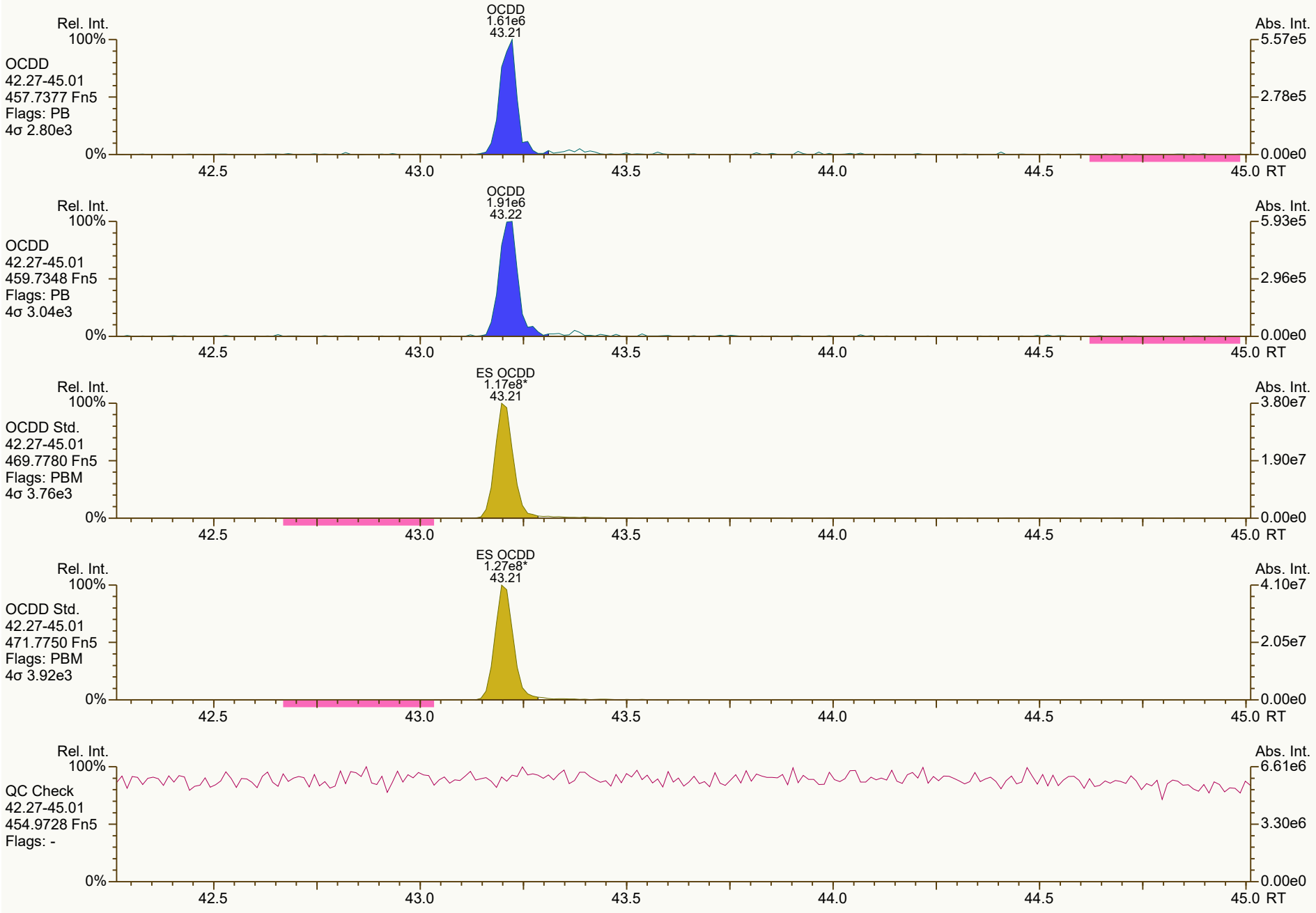

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.07e6
1.54e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.69e7
8.46e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

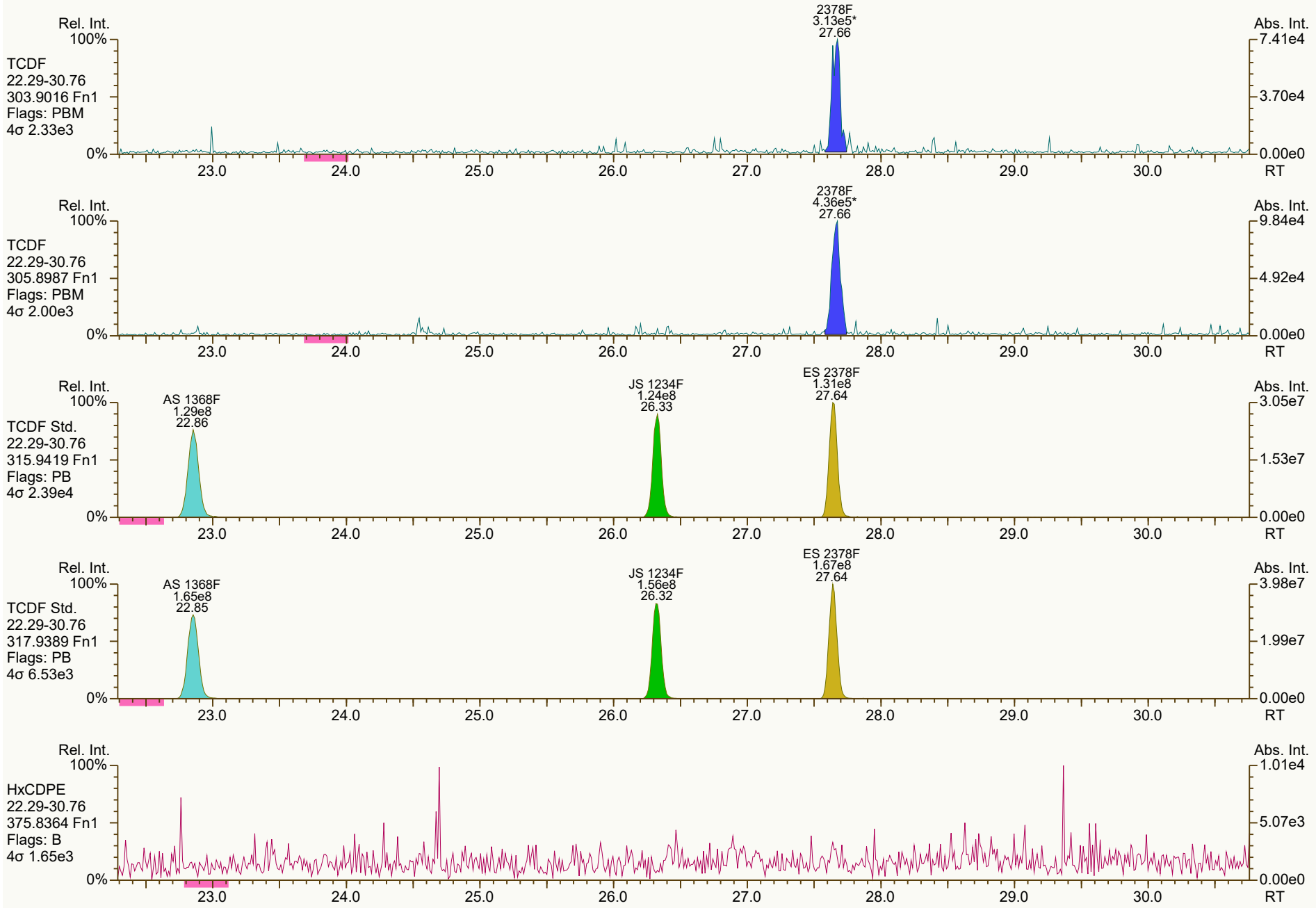

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 2.21e3
0%
2378D
2.70e5*
28.52
Abs. Int.
6.87e4
3.43e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.34e3
RRF(2378D) = (2.70e5 + 3.73e5) * 100pg / (7.81e7 + 9.89e7) * 0.25pg = 1.45
PSW 27-Jul-2021 15:08
OK
CL 28Jul21
2378D
3.73e5*
28.52
9.52e4
4.76e4
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.84e3
1.43e4
7.14e3
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.61e3
AS 1368D
7.76e7
24.91
TS 1378D
1.07e8
26.87
JS 1234D
7.74e7
27.86
ES 2378D
7.81e7
28.50
FS 1278D
8.37e7
28.82
2.55e7
1.28e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.86e3
RRF(TS 1378D) = (1.07e8 + 1.34e8) * 100pg / (7.81e7 + 9.89e7) * 100pg = 1.36
PSW 27-Jul-2021 15:11
OK - CL 28Jul21
AS 1368D
9.87e7
24.91
TS 1378D
1.34e8
26.87
JS 1234D
9.66e7
27.86
ES 2378D
9.89e7
28.50
FS 1278D
1.08e8
28.82
3.19e7
1.59e7


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 2.76e3
0%
12378D
1.44e6*
33.80
Abs. Int.
4.19e5
2.10e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.82e3
0%
12378D
9.72e5*
33.80
Abs. Int.
2.86e5
1.43e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.95e3
0%
FS 12478D
1.20e8
32.57
CS 12347D
9.69e7*
33.29
ES 12378D
1.09e8*
33.78
Abs. Int.
3.57e7
1.79e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 8.78e3
0%
FS 12478D
7.34e7
32.57
CS 12347D
5.84e7*
33.29
ES 12378D
6.73e7*
33.78
Abs. Int.
2.18e7
1.09e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

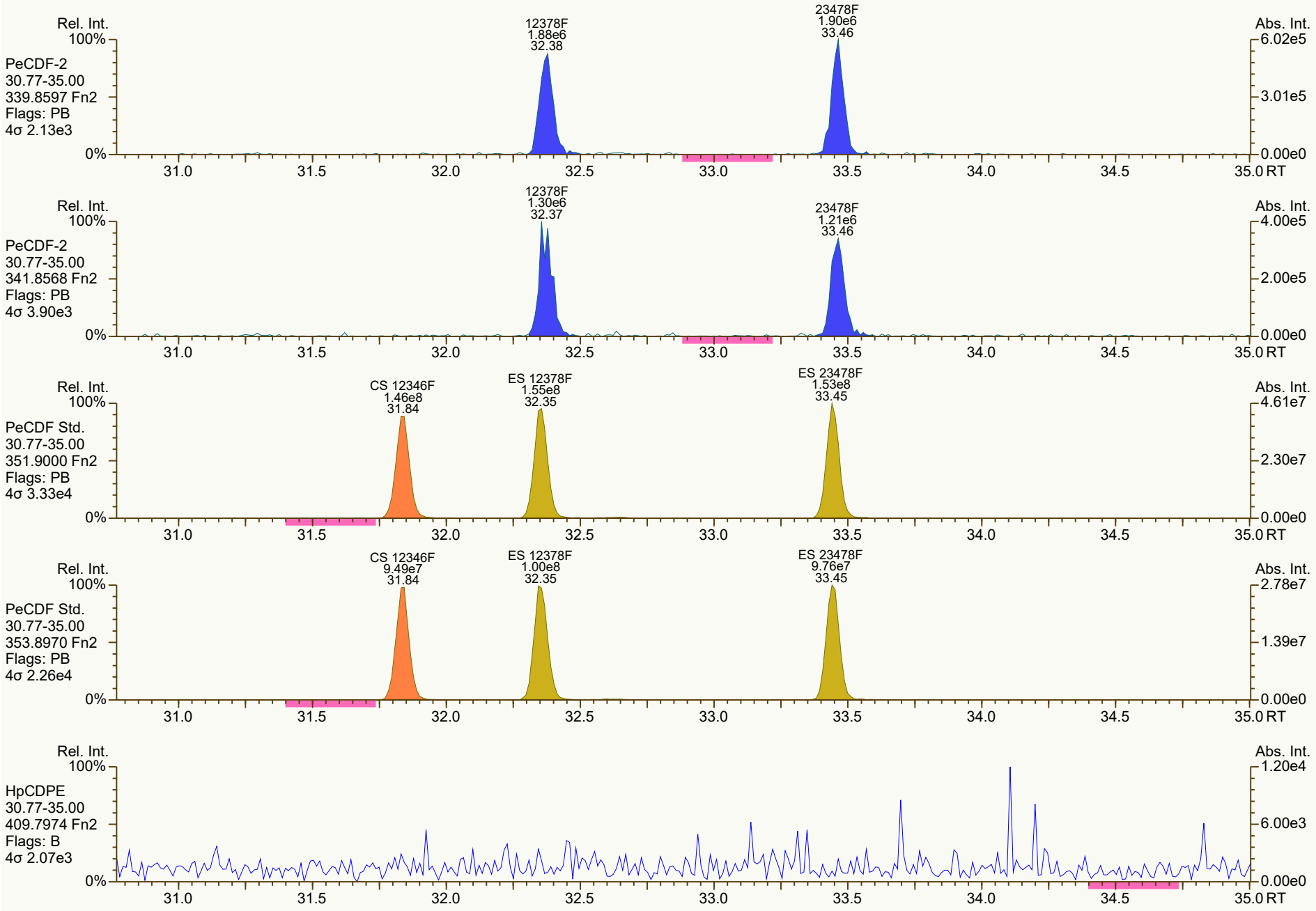

Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.51e3
123478D 1.28e6 37.67
123678D 1.25e6 37.78
123789D 1.37e6 38.07
4.45e5
2.22e5
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.65e3
123478D 9.51e5 37.67
123678D 9.54e5 37.78
123789D 1.14e6 38.07
3.83e5
1.91e5
0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.60e3
FS 123468D 1.15e8 36.58
ES 123478D 9.10e7 37.65
ES 123678D 8.82e7 37.77
JS 123467D 4.77e7 37.96
ES 123789D 1.02e8 38.06
3.56e7
1.78e7
0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.34e3
FS 123468D 9.15e7 36.58
ES 123478D 7.22e7 37.65
ES 123678D 6.93e7 37.77
JS 123467D 3.60e7 37.96
ES 123789D 8.06e7 38.06
2.84e7
1.42e7
0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.27e7
1.14e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

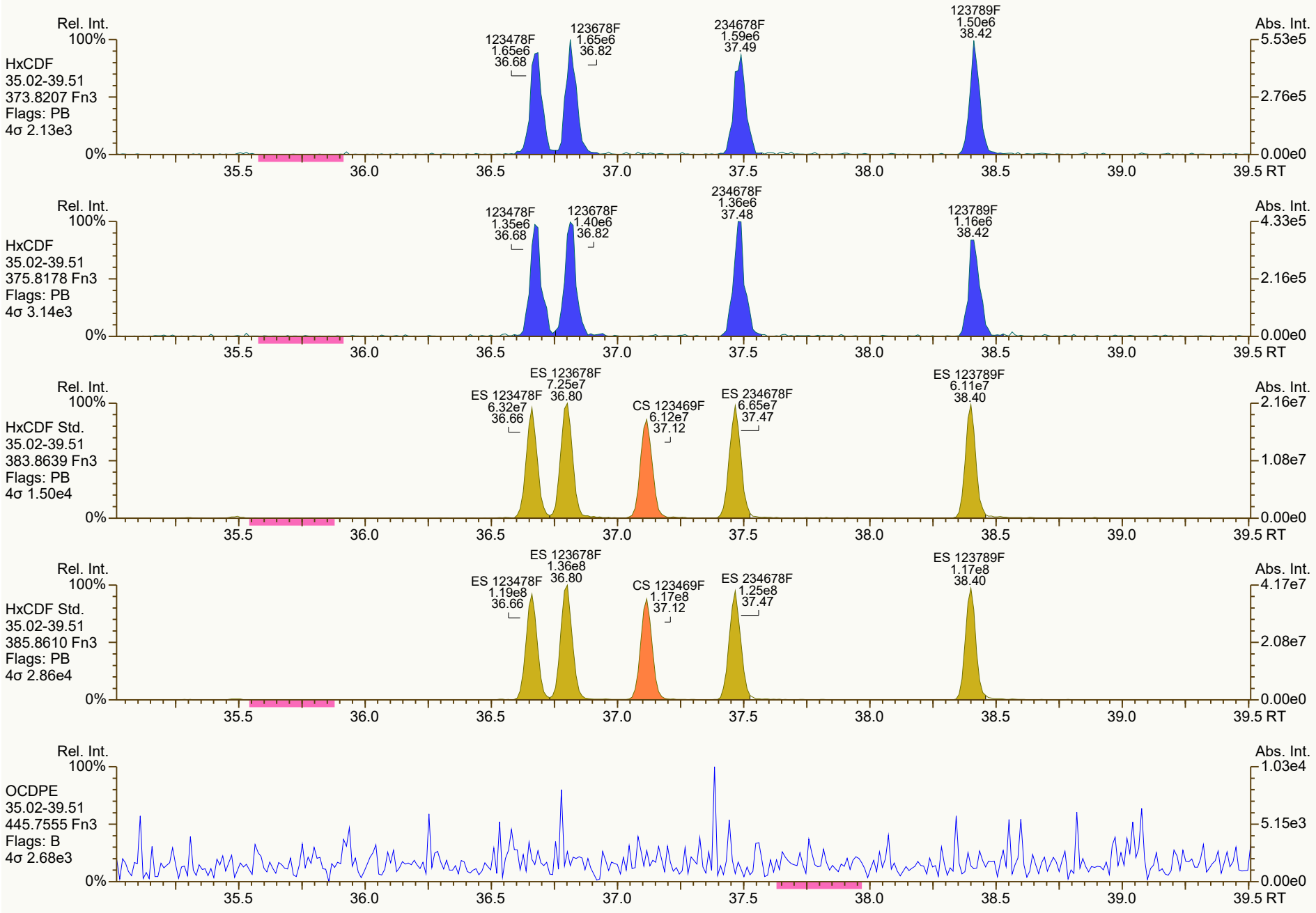

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 3.78e3
1234678D
1.04e6
40.66
Abs. Int.
4.64e5
2.32e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.74e3
1234678D
1.05e6
40.66
Abs. Int.
4.10e5
2.05e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.52e3
FS 1234679D
1.15e8
39.99
ES 1234678D
8.16e7
40.64
Abs. Int.
4.78e7
2.39e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.12e4
FS 1234679D
1.09e8
39.99
ES 1234678D
7.77e7
40.64
Abs. Int.
4.48e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.69e7
8.46e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDD
1.61e6
43.21
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.80e3
0%
Abs. Int.
5.57e5
2.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
5.93e5
2.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.17e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PBM
4σ 3.76e3
0%
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.27e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PBM
4σ 3.92e3
0%
Abs. Int.
4.10e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.33e3
2378F
3.13e5*
27.66
Abs. Int.
7.41e4
3.70e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.00e3
2378F
4.36e5*
27.66
Abs. Int.
9.84e4
4.92e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.39e4
AS 1368F
1.29e8
22.86
JS 1234F
1.24e8
26.33
ES 2378F
1.31e8
27.64
Abs. Int.
3.05e7
1.53e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 6.53e3
AS 1368F
1.65e8
22.85
JS 1234F
1.56e8
26.32
ES 2378F
1.67e8
27.64
Abs. Int.
3.98e7
1.99e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.65e3
Abs. Int.
1.01e4
5.07e3
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
4.15e4
2.08e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.62e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 1.94e3
Abs. Int.
2.30e4
1.15e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
Abs. Int.
3.07e6
1.54e6

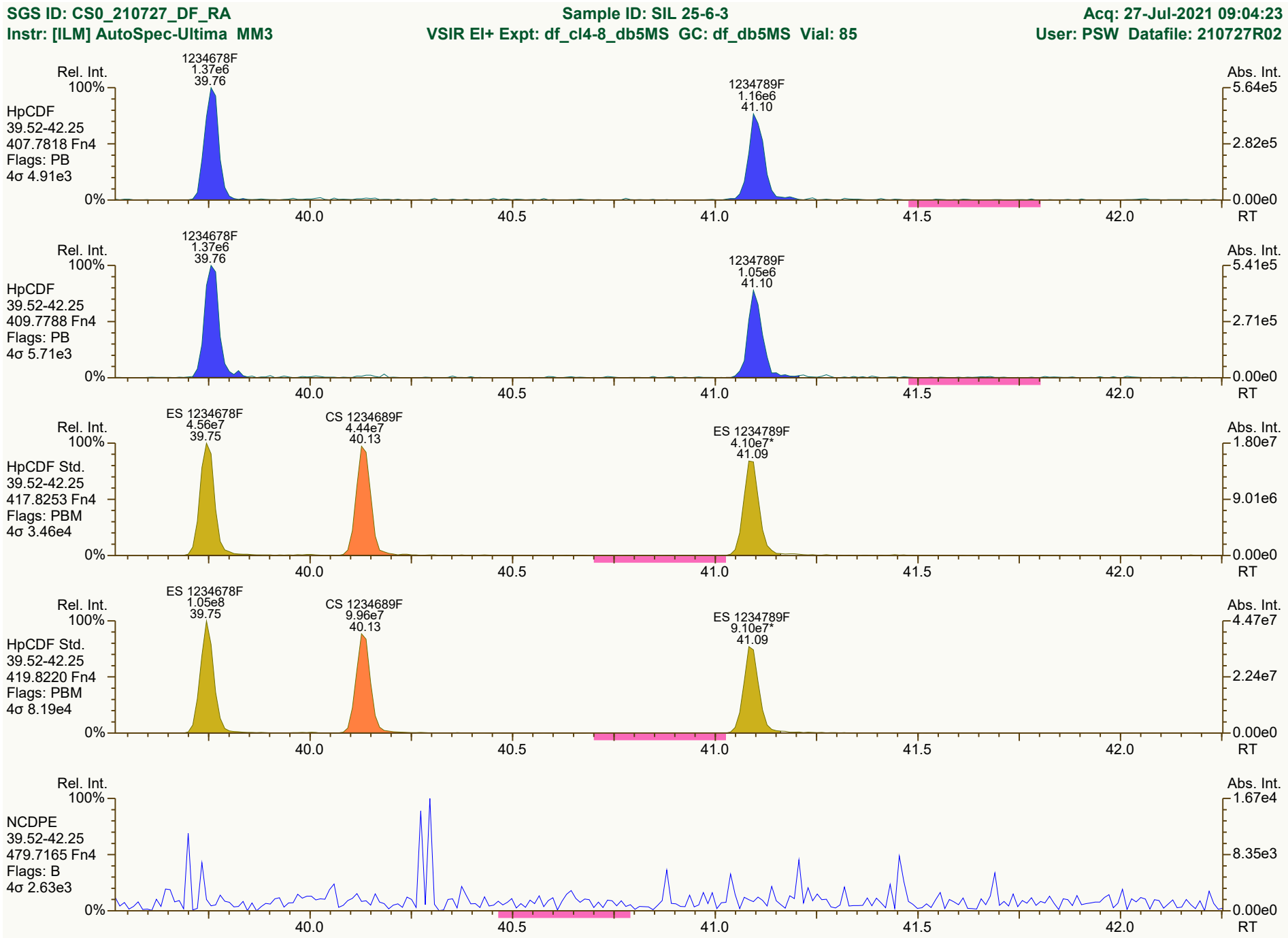

Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.13e3
0%
12378F
1.88e6
32.38
23478F
1.90e6
33.46
Abs. Int.
6.02e5
3.01e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.90e3
0%
12378F
1.30e6
32.37
23478F
1.21e6
33.46
Abs. Int.
4.00e5
2.00e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 3.33e4
0%
CS 12346F
1.46e8
31.84
ES 12378F
1.55e8
32.35
ES 23478F
1.53e8
33.45
Abs. Int.
4.61e7
2.30e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.26e4
0%
CS 12346F
9.49e7
31.84
ES 12378F
1.00e8
32.35
ES 23478F
9.76e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
1.20e4
6.00e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.13e3
123478F 1.65e6 36.68
123678F 1.65e6 36.82
234678F 1.59e6 37.49
123789F 1.50e6 38.42
Abs. Int.
5.53e5
2.76e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 3.14e3
123478F 1.35e6 36.68
123678F 1.40e6 36.82
234678F 1.36e6 37.48
123789F 1.16e6 38.42
Abs. Int.
4.33e5
2.16e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.50e4
ES 123478F 6.32e7 36.66
ES 123678F 7.25e7 36.80
CS 123469F 6.12e7 37.12
ES 234678F 6.65e7 37.47
ES 123789F 6.11e7 38.40
Abs. Int.
2.16e7
1.08e7
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.86e4
ES 123478F 1.19e8 36.66
ES 123678F 1.36e8 36.80
CS 123469F 1.17e8 37.12
ES 234678F 1.25e8 37.47
ES 123789F 1.17e8 38.40
Abs. Int.
4.17e7
2.08e7
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.68e3
Abs. Int.
1.03e4
5.15e3
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT

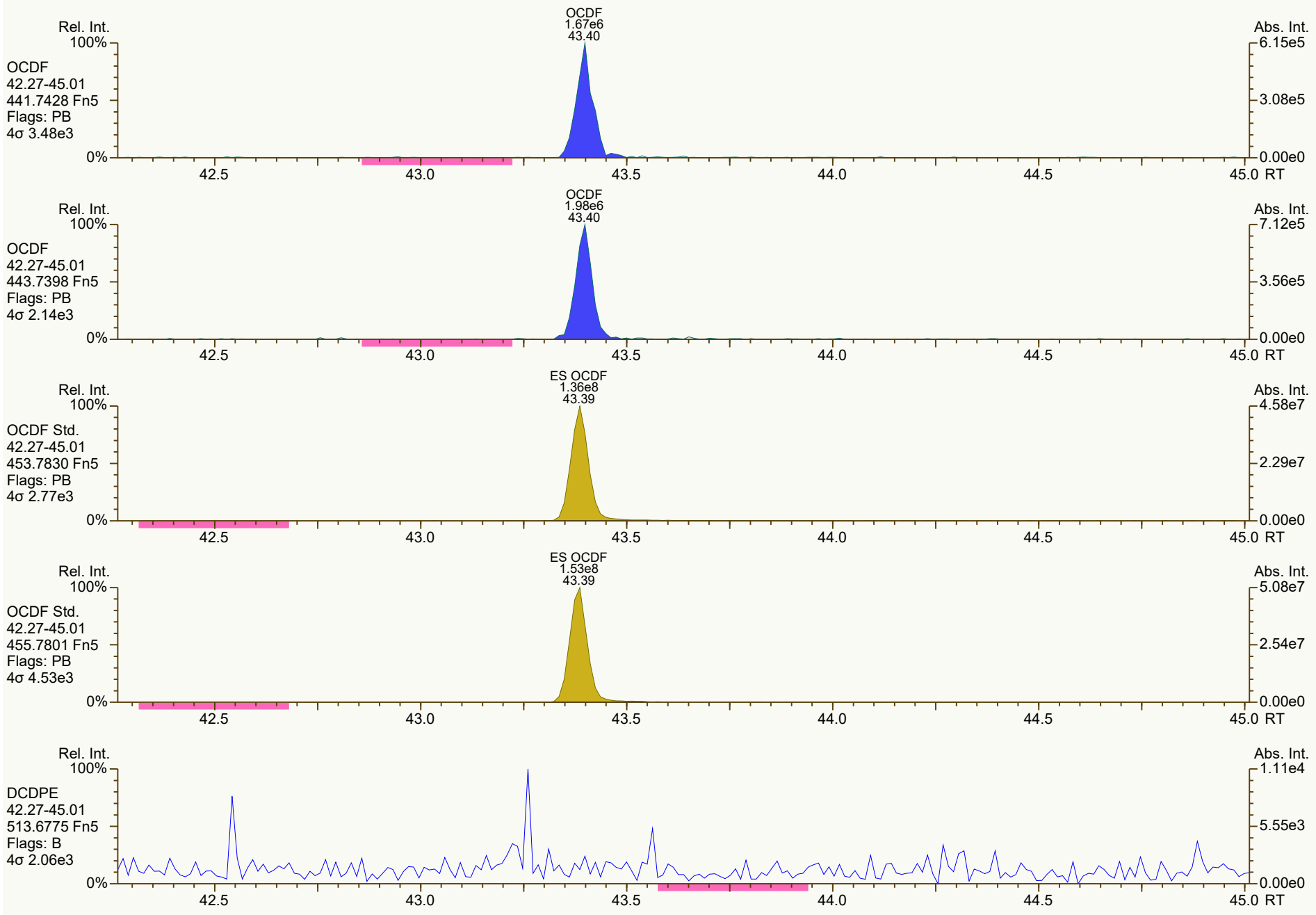
SGS ID: CS0_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85

Acq: 27-Jul-2021 09:04:23
User: PSW Datafile: 210727R02



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7550, 7798, 0516 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 11 of 12


OCDF
1.67e6
43.40
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 3.48e3
0%
Abs. Int.
6.15e5
3.08e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.98e6
43.40
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.14e3
7.12e5
3.56e5
ES OCDF
1.36e8
43.39
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 2.77e3
4.58e7
2.29e7
ES OCDF
1.53e8
43.39
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.53e3
5.08e7
2.54e7
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.06e3
1.11e4
5.55e3

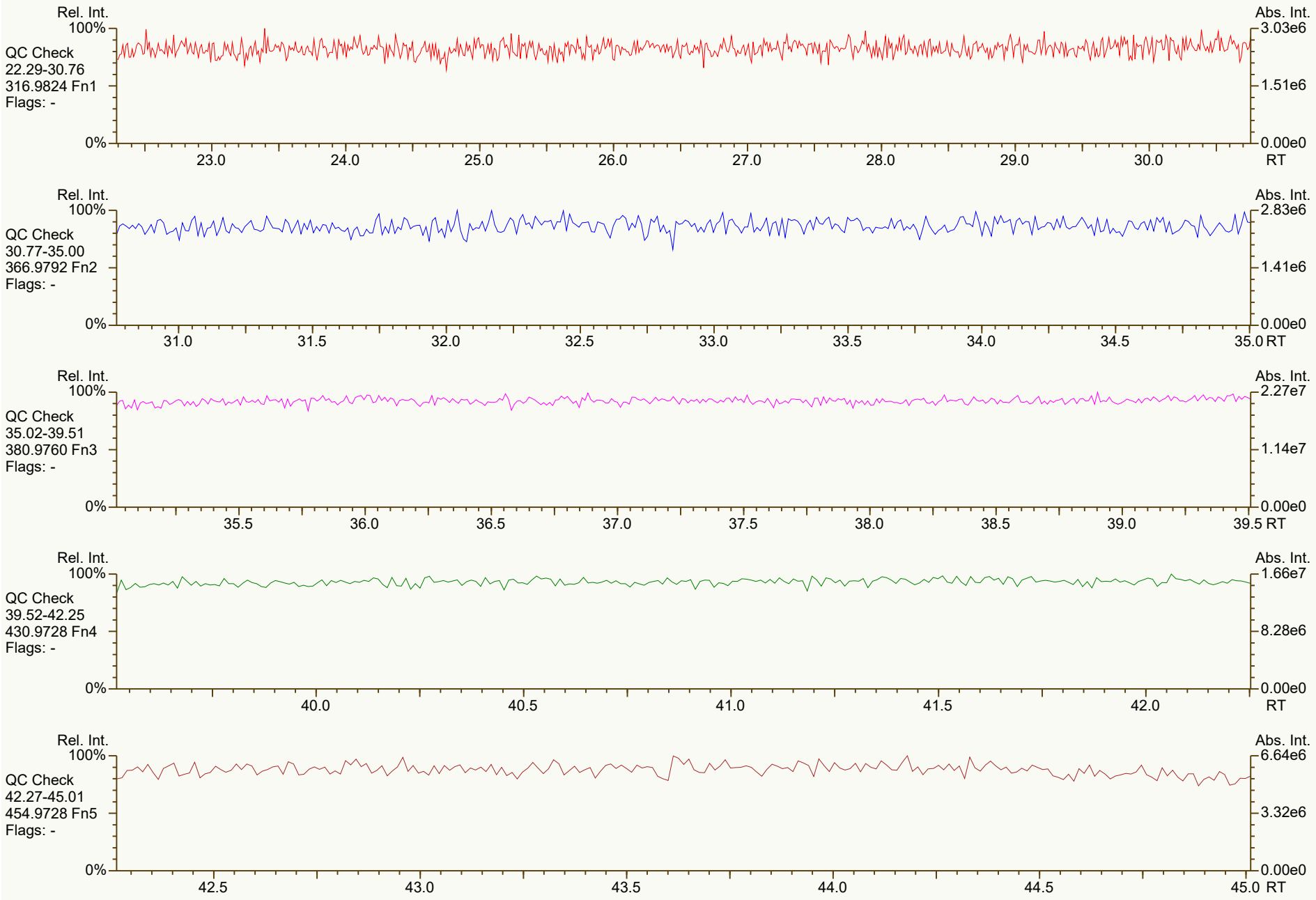
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.04E+06	0.76	Y	1.34	1.34	-1%
12378-PeCDD	33.81	4.16E+06	1.48	Y	1.06	1.07	1%
123478-HxCDD	37.68	3.92E+06	1.22	Y	1.06	1.10	4%
123678-HxCDD	37.79	3.74E+06	1.22	Y	1.08	1.07	-1%
123789-HxCDD	38.08	4.22E+06	1.33	Y	1.02	1.05	4%
1234678-HpCDD	40.66	3.34E+06	1.16	Y	0.97	0.95	-3%
OCDD	43.23	5.66E+06	0.85	Y	1.07	1.04	-3%
2378-TCDF	27.67	1.25E+06	0.72	Y	0.96	0.94	-2%
12378-PeCDF	32.38	5.24E+06	1.54	Y	0.95	0.94	0%
23478-PeCDF	33.47	5.06E+06	1.63	Y	0.94	0.90	-4%
123478-HxCDF	36.69	4.92E+06	1.14	Y	1.23	1.23	-1%
123678-HxCDF	36.83	5.41E+06	1.33	Y	1.13	1.16	3%
234678-HxCDF	37.49	5.10E+06	1.23	Y	1.15	1.19	3%
123789-HxCDF	38.42	4.41E+06	1.28	Y	1.14	1.08	-5%
1234678-HpCDF	39.76	4.59E+06	0.97	Y	1.36	1.35	0%
1234789-HpCDF	41.11	3.63E+06	1.08	Y	1.30	1.20	-7%
OCDF	43.41	6.46E+06	0.90	Y	1.03	1.01	-2%
ES 2378-TCDD	28.51	1.56E+08	0.81	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.789	1.56E+08	1.63	Y	1.03	1.02	-1%
ES 123478-HxCDD	37.66	1.43E+08	1.26	Y	0.99	0.93	-6%
ES 123678-HxCDD	37.773	1.40E+08	1.27	Y	0.97	0.91	-6%
ES 123789-HxCDD	38.062	1.60E+08	1.24	Y	1.12	1.04	-7%
ES 1234678-HpCDD	40.65	1.41E+08	1.06	Y	0.99	0.92	-8%
ES OCDD	43.215	2.18E+08	0.91	Y	0.78	0.71	-9%
ES 2378-TCDF	27.651	2.66E+08	0.77	Y	1.08	1.08	0%
ES 12378-PeCDF	32.362	2.22E+08	1.59	Y	0.93	0.91	-3%
ES 23478-PeCDF	33.454	2.24E+08	1.55	Y	0.92	0.91	-1%
ES 123478-HxCDF	36.667	1.60E+08	0.52	Y	1.14	1.04	-9%
ES 123678-HxCDF	36.807	1.86E+08	0.54	Y	1.30	1.21	-7%
ES 234678-HxCDF	37.474	1.72E+08	0.53	Y	1.20	1.12	-7%
ES 123789-HxCDF	38.407	1.64E+08	0.51	Y	1.14	1.07	-6%
ES 1234678-HpCDF	39.755	1.36E+08	0.46	Y	0.95	0.88	-7%
ES 1234789-HpCDF	41.099	1.21E+08	0.45	Y	0.85	0.78	-7%
ES OCDF	43.396	2.56E+08	0.88	Y	0.93	0.83	-10%

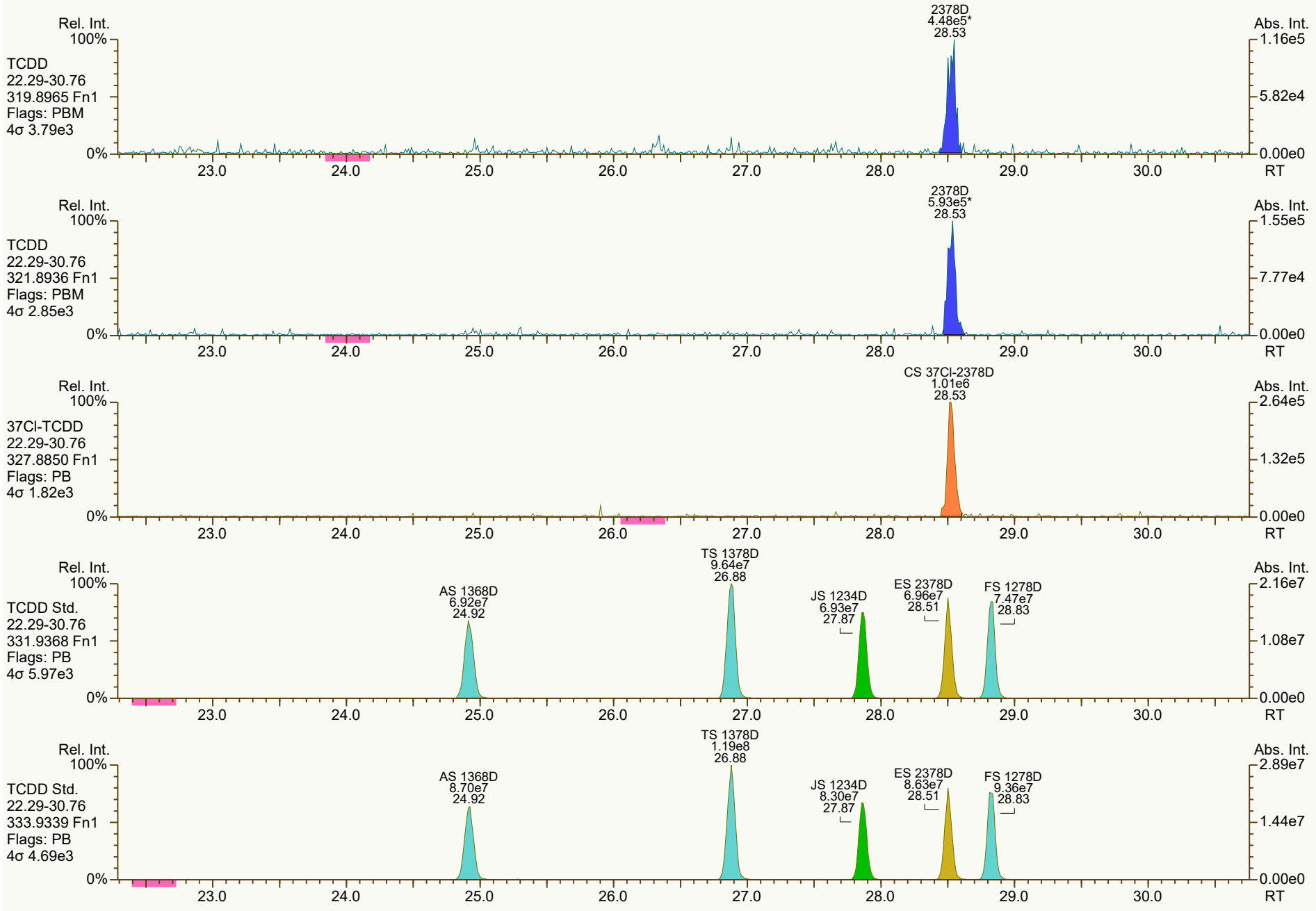
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

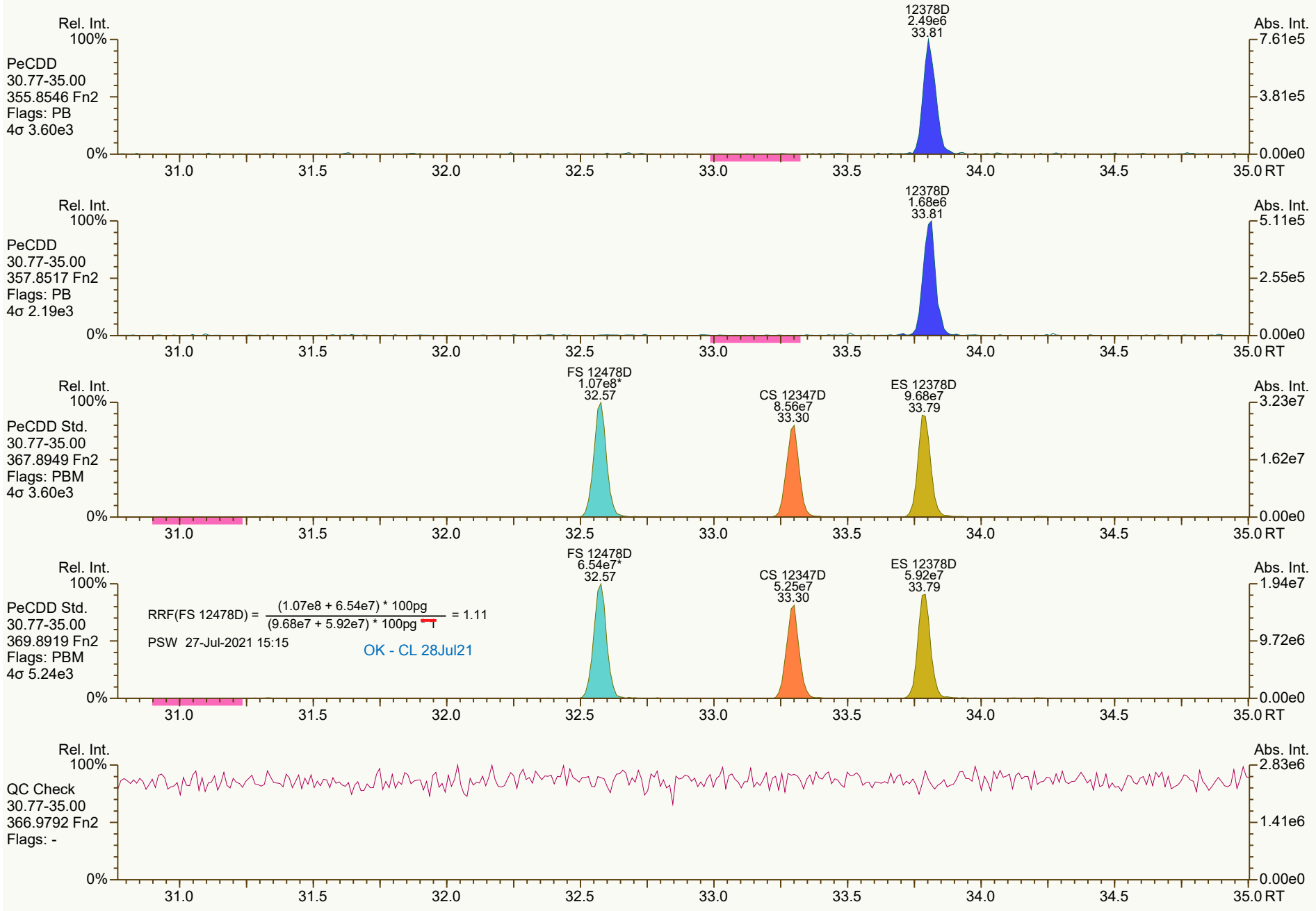
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.52E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.33	2.45E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	7.69E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.31	1.32	1%
CS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.89	0.91	2%
CS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.87	0.88	1%
CS 123469-HxCDF	37.12	1.61E+08	0.52	Y	1.09	1.04	-4%
CS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.86	0.84	-2%
SS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.26	1.29	2%
SS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.86	0.89	2%
SS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.61E+08	0.52	Y	0.84	0.86	3%
SS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.91	0.96	5%
AS 1368-TCDD	24.92	1.56E+08	0.80	Y	1.02	1.03	0%
AS 1368-TCDF	22.86	2.59E+08	0.77	Y	1.08	1.06	-2%
FS 1278-TCDD	28.83	1.68E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.72E+08	1.63	Y	1.09	1.10	1%
FS 123468-HxCDD	36.59	1.86E+08	1.29	Y	1.26	1.30	3%
FS 1234679-HpCDD	39.99	1.93E+08	1.05	Y	1.36	1.37	1%
TS 1378-TCDD	26.88	2.16E+08	0.81	Y	1.35	1.38	3%
~~OCDD-a~~	~~43.23~~	~~4.10E+05~~	~~2.91~~	~~N~~	~~0.07~~	~~0.08~~	~~14%~~
~~OCDF-a~~	~~43.40~~	~~3.79E+05~~	~~1.92~~	~~N~~	~~0.06~~	~~0.06~~	~~0%~~

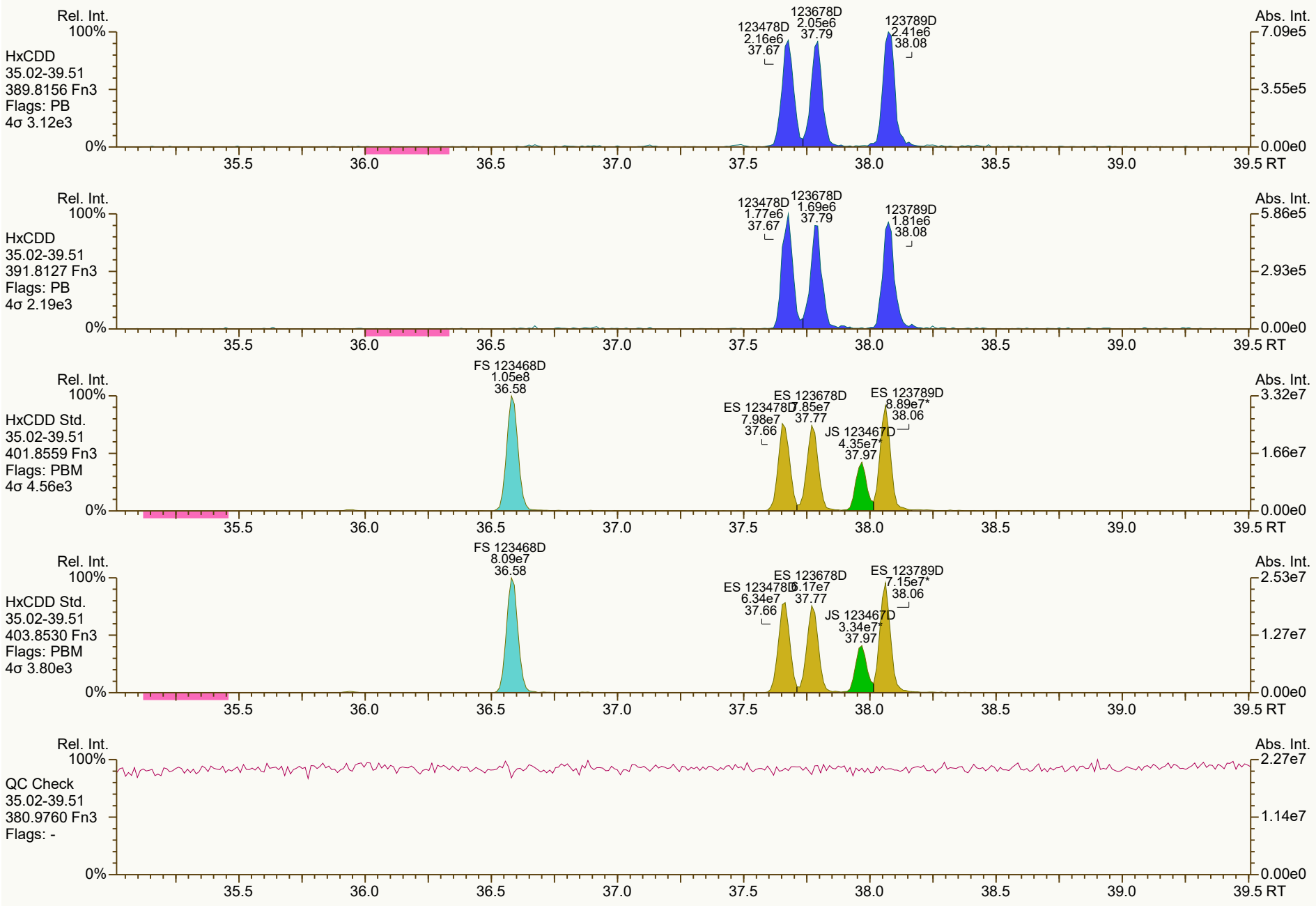
Not reported from this ICAL - CL 28Jul21

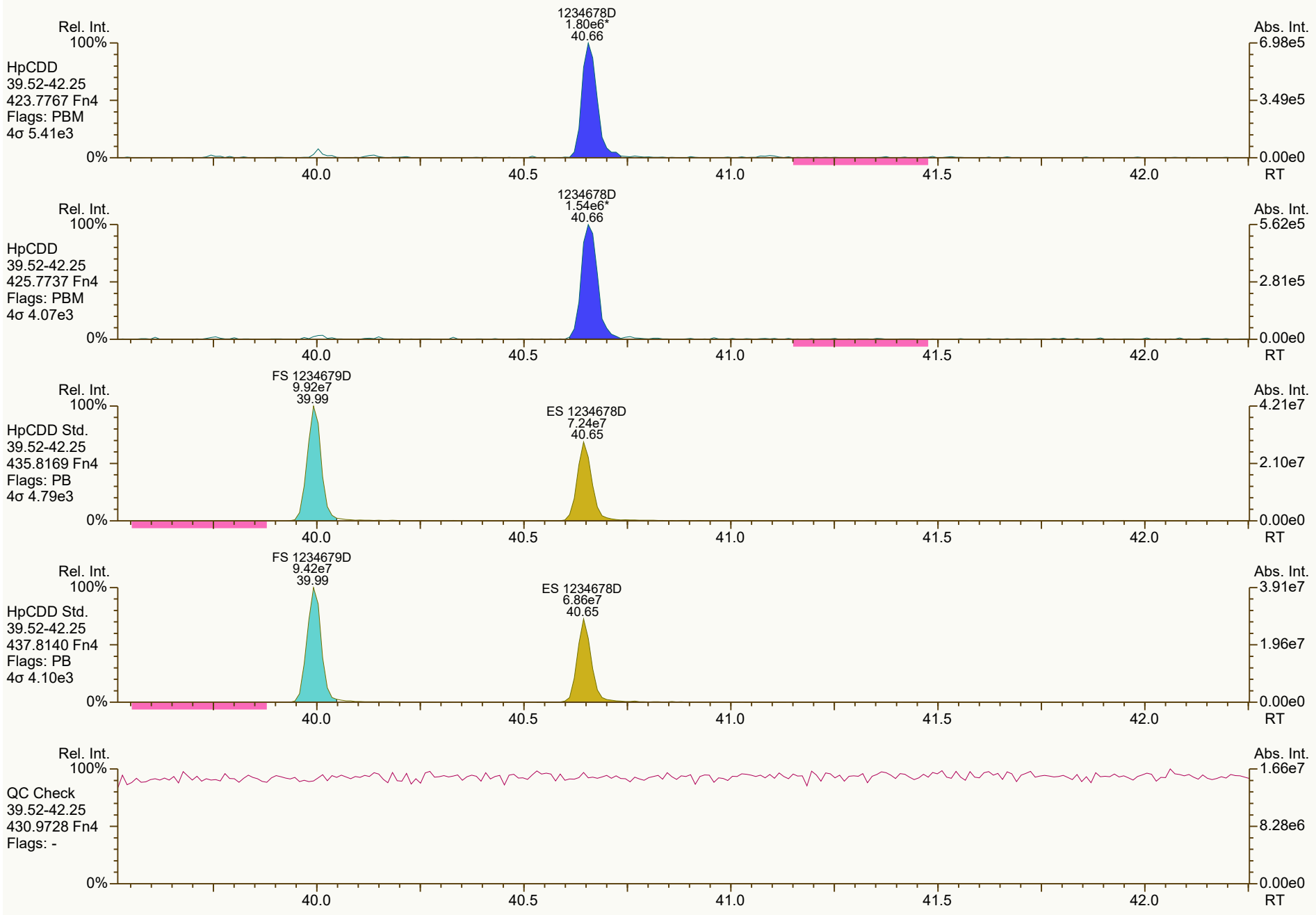


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 554-132
PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 3.79e3
0%
2378D
4.48e5*
28.53
Abs. Int.
1.16e5
5.82e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.85e3
0%
2378D
5.93e5*
28.53
Abs. Int.
1.55e5
7.77e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.82e3
0%
CS 37Cl-2378D
1.01e6
28.53
Abs. Int.
2.64e5
1.32e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.97e3
0%
AS 1368D
6.92e7
24.92
TS 1378D
9.64e7
26.88
JS 1234D
6.93e7
27.87
ES 2378D
6.96e7
28.51
FS 1278D
7.47e7
28.83
Abs. Int.
2.16e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.69e3
0%
AS 1368D
8.70e7
24.92
TS 1378D
1.19e8
26.88
JS 1234D
8.30e7
27.87
ES 2378D
8.63e7
28.51
FS 1278D
9.36e7
28.83
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.60e3
0%
12378D
2.49e6
33.81
Abs. Int.
7.61e5
3.81e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.19e3
0%
12378D
1.68e6
33.81
Abs. Int.
5.11e5
2.55e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.60e3
0%
FS 12478D
1.07e8*
32.57
CS 12347D
8.56e7
33.30
ES 12378D
9.68e7
33.79
Abs. Int.
3.23e7
1.62e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 5.24e3
0%
RRF(FS 12478D) = (1.07e8 + 6.54e7) * 100pg / (9.68e7 + 5.92e7) * 100pg * 1 = 1.11
PSW 27-Jul-2021 15:15
OK - CL 28Jul21
FS 12478D
6.54e7*
32.57
CS 12347D
5.25e7
33.30
ES 12378D
5.92e7
33.79
Abs. Int.
1.94e7
9.72e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.12e3
123478D
2.16e6
37.67
123678D
2.05e6
37.79
123789D
2.41e6
38.08
Abs. Int.
7.09e5
3.55e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.19e3
123478D
1.77e6
37.67
123678D
1.69e6
37.79
123789D
1.81e6
38.08
Abs. Int.
5.86e5
2.93e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.56e3
FS 123468D
1.05e8
36.58
ES 123478D
7.98e7
37.66
ES 123678D
7.85e7
37.77
JS 123467D
4.35e7*
37.97
ES 123789D
8.89e7*
38.06
Abs. Int.
3.32e7
1.66e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.80e3
FS 123468D
8.09e7
36.58
ES 123478D
6.34e7
37.66
ES 123678D
6.17e7
37.77
JS 123467D
3.34e7*
37.97
ES 123789D
7.15e7*
38.06
Abs. Int.
2.53e7
1.27e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

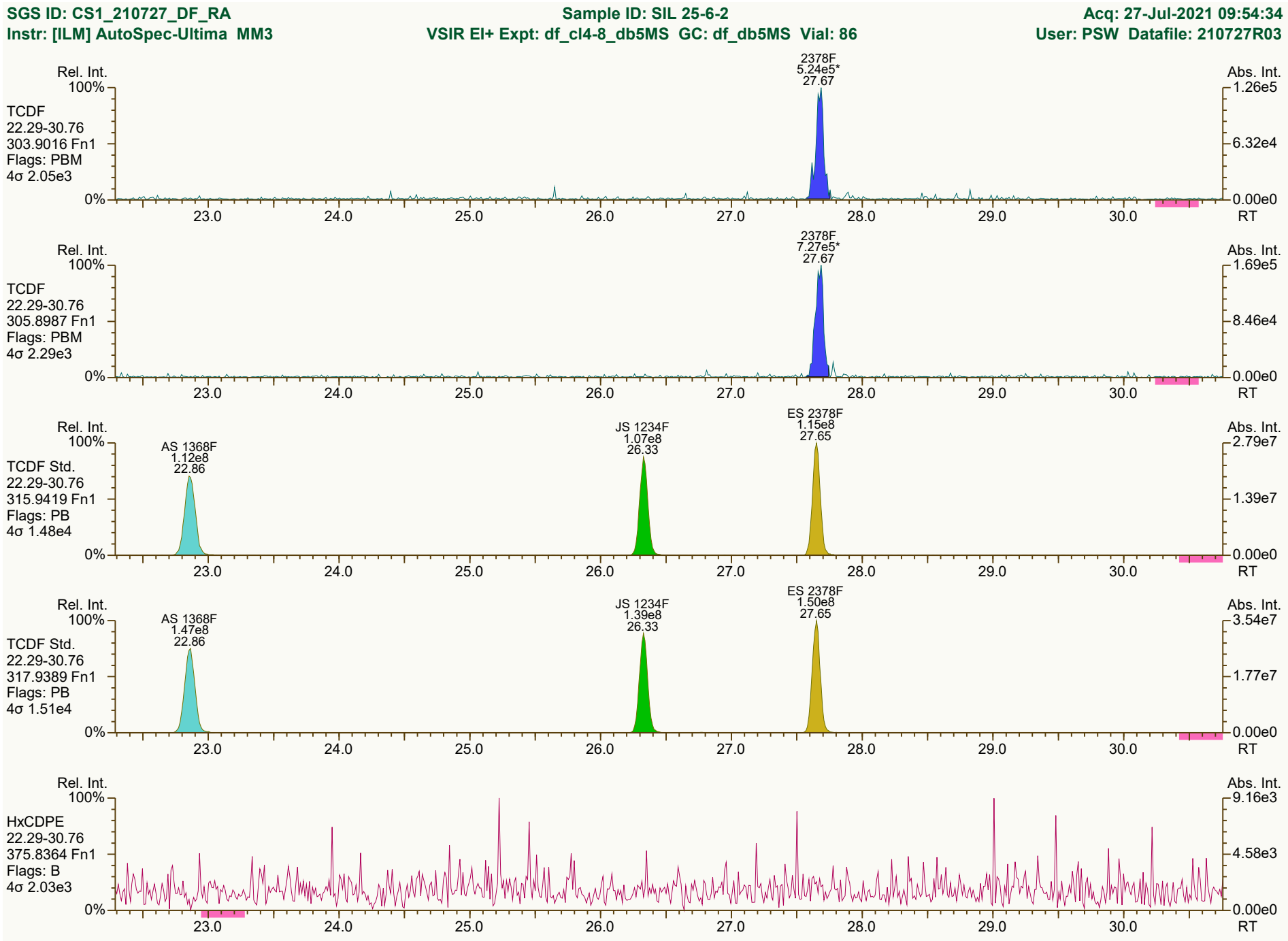

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 5.41e3
0%
1234678D
1.80e6*
40.66
Abs. Int.
6.98e5
3.49e5
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 4.07e3
0%
1234678D
1.54e6*
40.66
Abs. Int.
5.62e5
2.81e5
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 4.79e3
0%
FS 1234679D
9.92e7
39.99
ES 1234678D
7.24e7
40.65
Abs. Int.
4.21e7
2.10e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.10e3
0%
FS 1234679D
9.42e7
39.99
ES 1234678D
6.86e7
40.65
Abs. Int.
3.91e7
1.96e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


OCDD
2.61e6
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.60e3
0%
Abs. Int.
8.02e5
4.01e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.05e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.89e3
0%
Abs. Int.
1.09e6
5.45e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.04e8
43.22
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 2.94e3
0%
Abs. Int.
3.50e7
1.75e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.14e8
43.22
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 3.15e3
0%
Abs. Int.
3.84e7
1.92e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

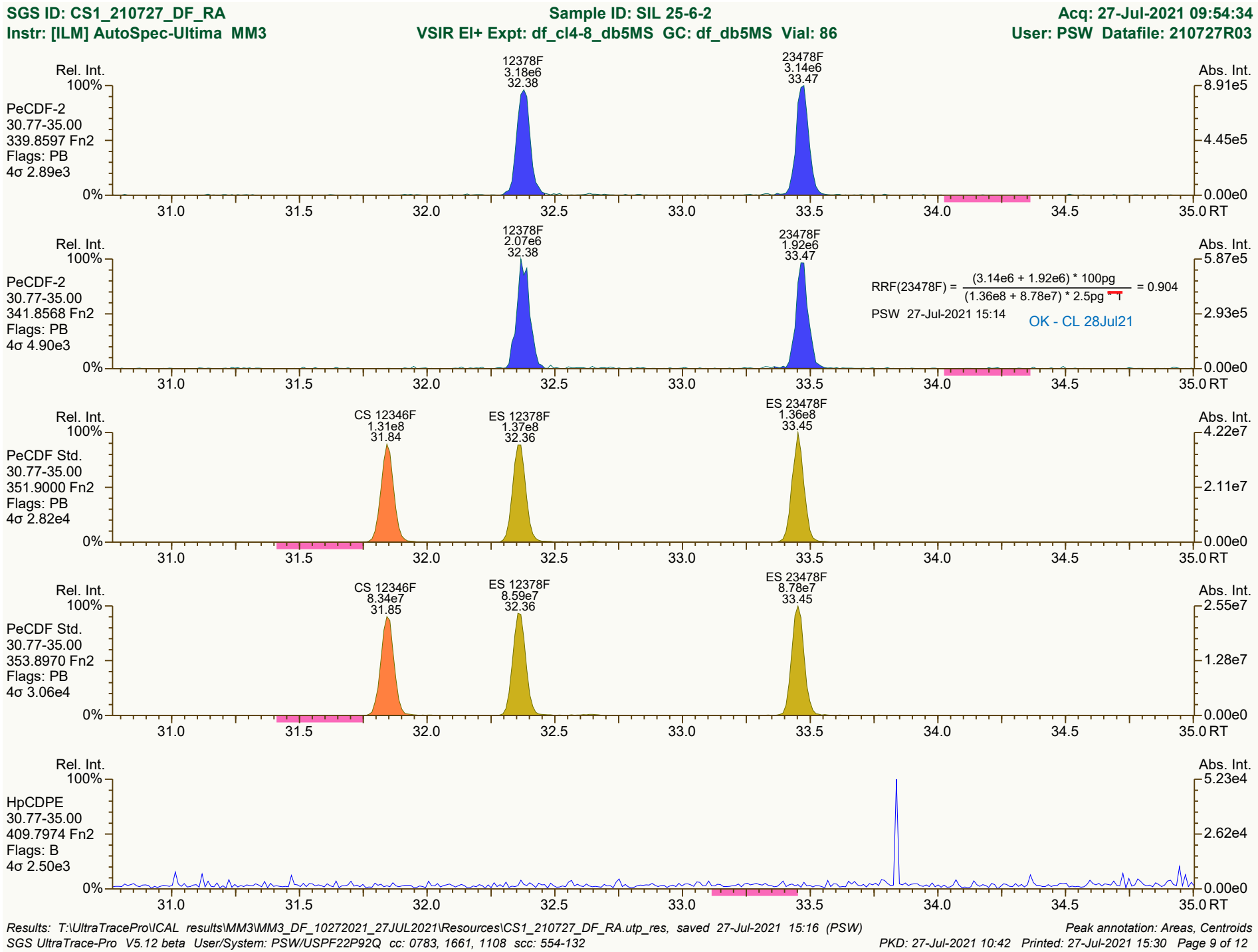
Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03

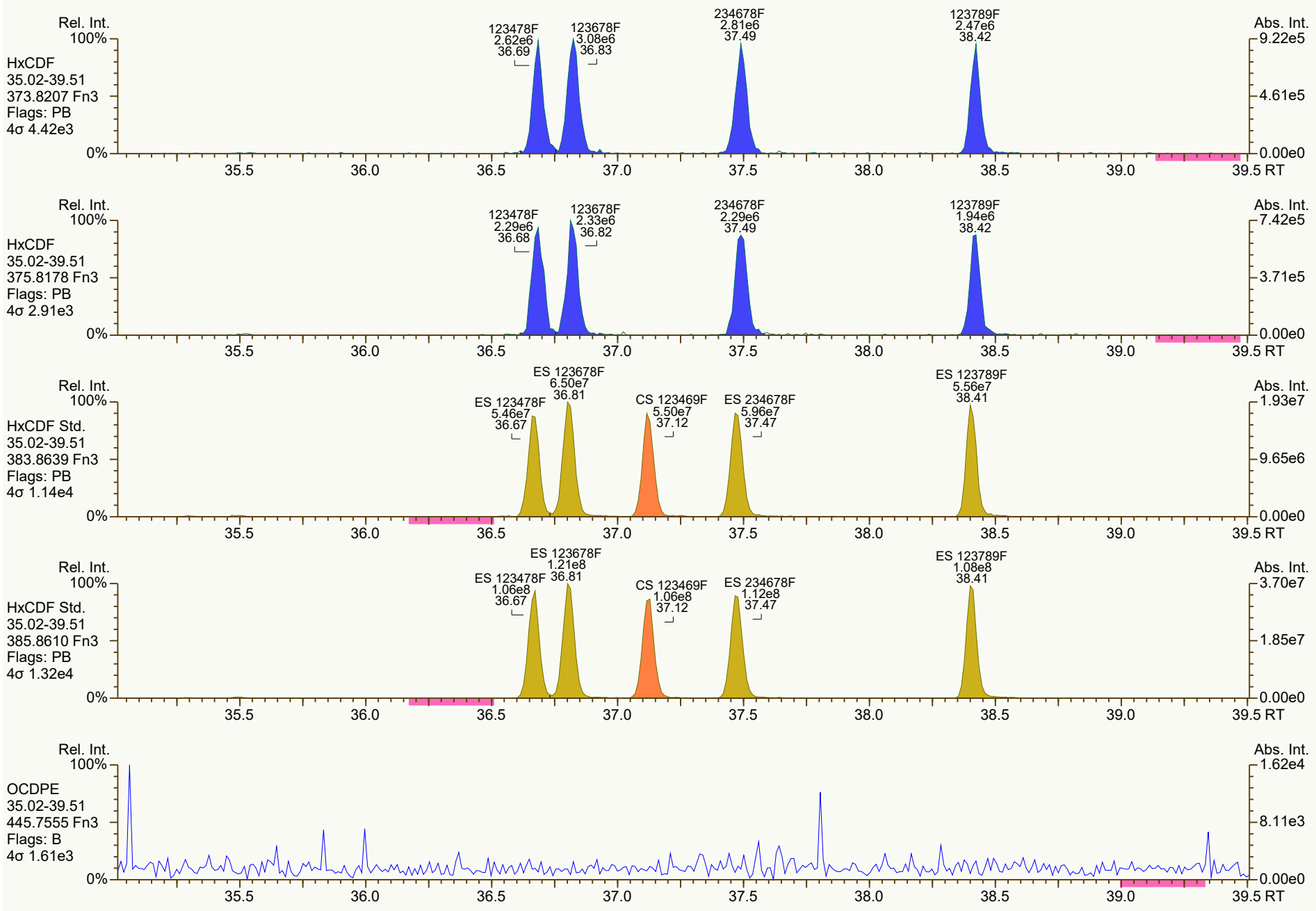


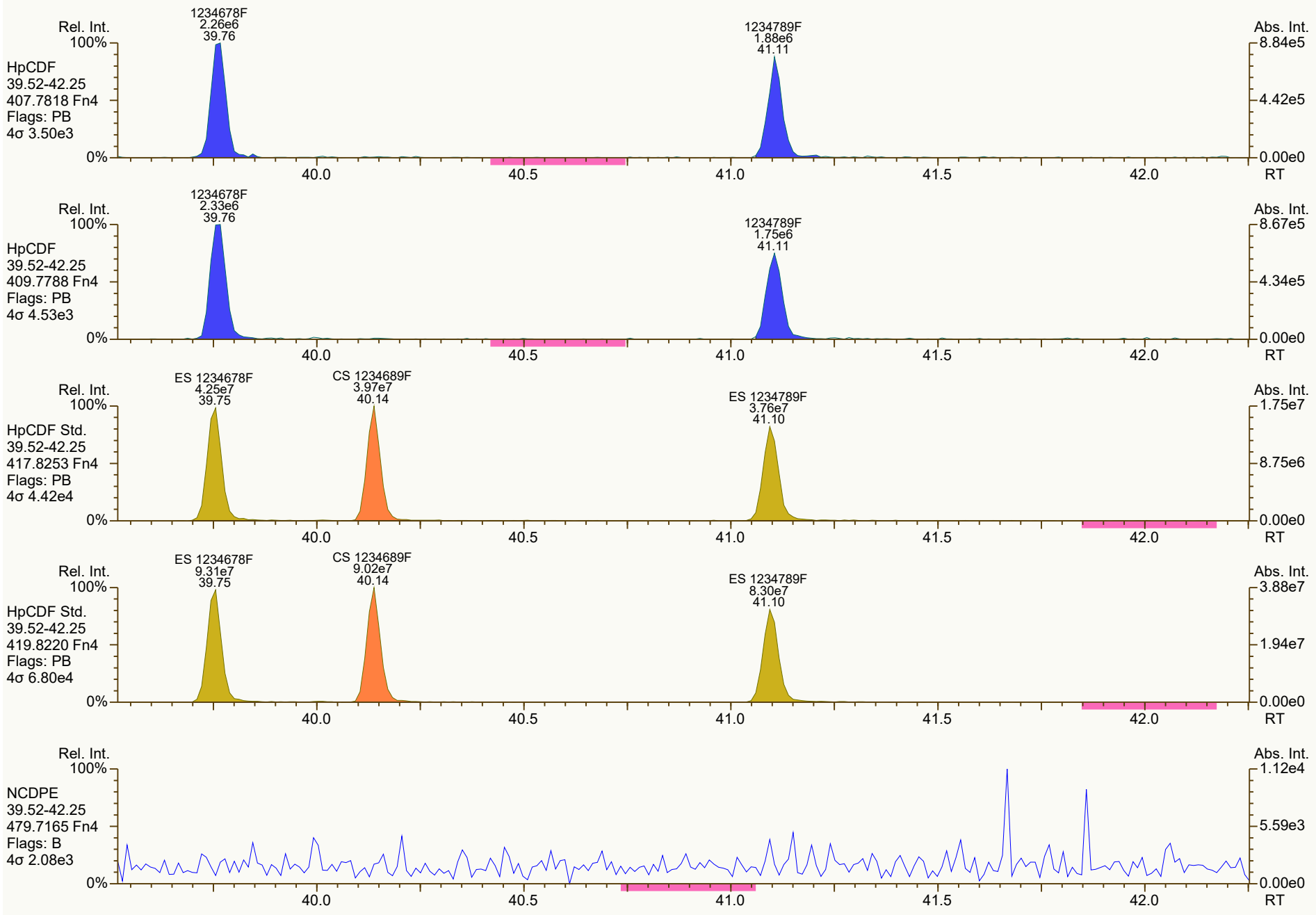
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0890, 2579, 1486 scc: 554-132

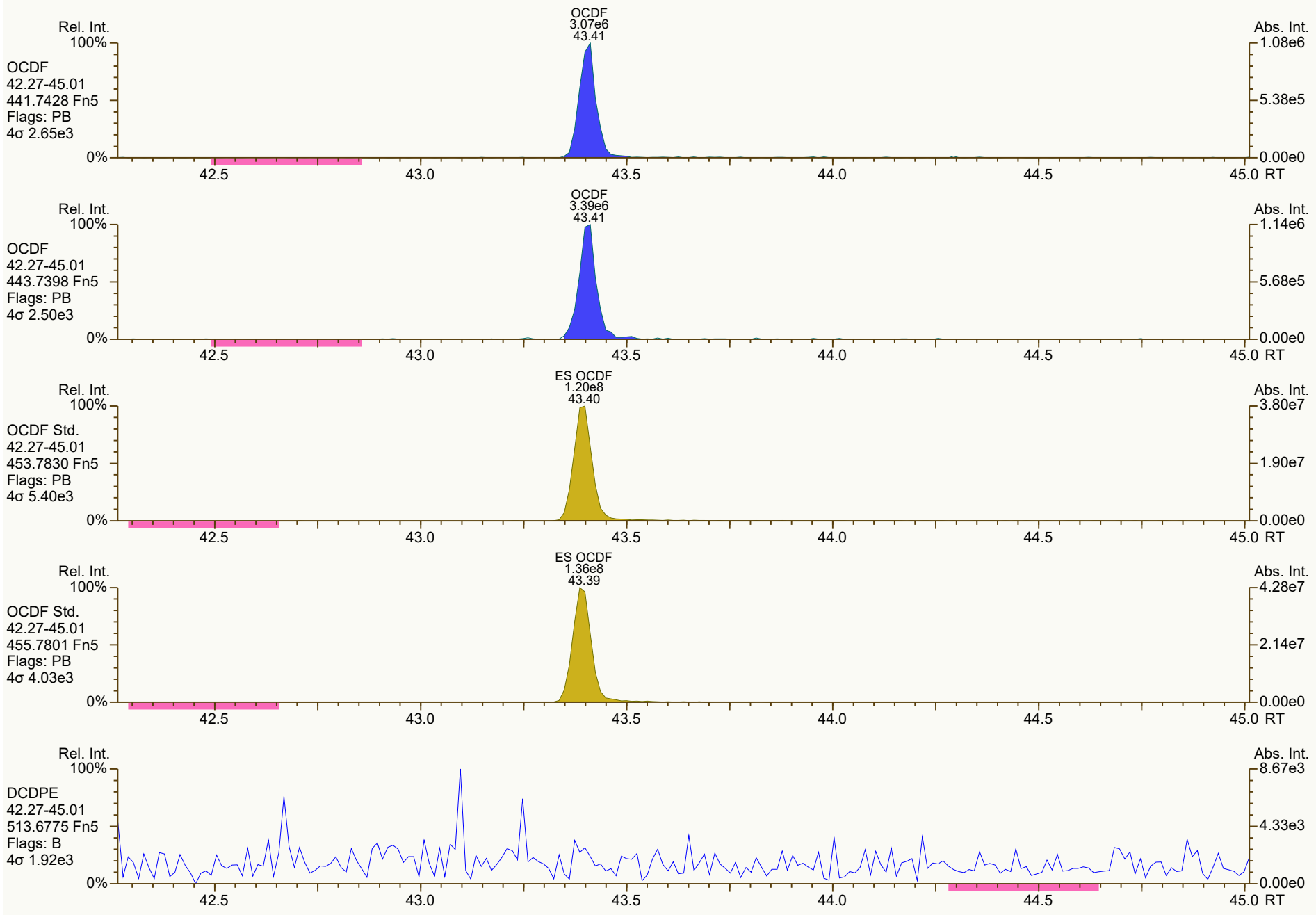
Peak annotation: Areas, Centroids
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.43e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.60e3
1.13e4
5.66e3
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
3.03e6
1.51e6


SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.89e3
12378F
3.18e6
32.38
23478F
3.14e6
33.47
8.91e5
4.45e5
0.00e0
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 4.90e3
12378F
2.07e6
32.38
23478F
1.92e6
33.47
RRF(23478F) = (3.14e6 + 1.92e6) * 100pg / (1.36e8 + 8.78e7) * 2.5pg * T = 0.904
PSW 27-Jul-2021 15:14
OK - CL 28Jul21
5.87e5
2.93e5
0.00e0
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.82e4
CS 12346F
1.31e8
31.84
ES 12378F
1.37e8
32.36
ES 23478F
1.36e8
33.45
4.22e7
2.11e7
0.00e0
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 3.06e4
CS 12346F
8.34e7
31.85
ES 12378F
8.59e7
32.36
ES 23478F
8.78e7
33.45
2.55e7
1.28e7
0.00e0
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.50e3
5.23e4
2.62e4
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0783, 1661, 1108 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 4.42e3
0%
123478F
2.62e6
36.69
123678F
3.08e6
36.83
234678F
2.81e6
37.49
123789F
2.47e6
38.42
Abs. Int.
9.22e5
4.61e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 2.91e3
0%
123478F
2.29e6
36.68
123678F
2.33e6
36.82
234678F
2.29e6
37.49
123789F
1.94e6
38.42
Abs. Int.
7.42e5
3.71e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.14e4
0%
ES 123478F
5.46e7
36.67
ES 123678F
6.50e7
36.81
CS 123469F
5.50e7
37.12
ES 234678F
5.96e7
37.47
ES 123789F
5.56e7
38.41
Abs. Int.
1.93e7
9.65e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.32e4
0%
ES 123478F
1.06e8
36.67
ES 123678F
1.21e8
36.81
CS 123469F
1.06e8
37.12
ES 234678F
1.12e8
37.47
ES 123789F
1.08e8
38.41
Abs. Int.
3.70e7
1.85e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.61e3
0%
Abs. Int.
1.62e4
8.11e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 3.50e3
1234678F
2.26e6
39.76
1234789F
1.88e6
41.11
Abs. Int.
8.84e5
4.42e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 4.53e3
1234678F
2.33e6
39.76
1234789F
1.75e6
41.11
Abs. Int.
8.67e5
4.34e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 4.42e4
ES 1234678F
4.25e7
39.75
CS 1234689F
3.97e7
40.14
ES 1234789F
3.76e7
41.10
Abs. Int.
1.75e7
8.75e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 6.80e4
ES 1234678F
9.31e7
39.75
CS 1234689F
9.02e7
40.14
ES 1234789F
8.30e7
41.10
Abs. Int.
3.88e7
1.94e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.08e3
Abs. Int.
1.12e4
5.59e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 2.65e3
0%
OCDF
3.07e6
43.41
Abs. Int.
1.08e6
5.38e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.50e3
0%
OCDF
3.39e6
43.41
Abs. Int.
1.14e6
5.68e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.40e3
0%
ES OCDF
1.20e8
43.40
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.03e3
0%
ES OCDF
1.36e8
43.39
Abs. Int.
4.28e7
2.14e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.67e3
4.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

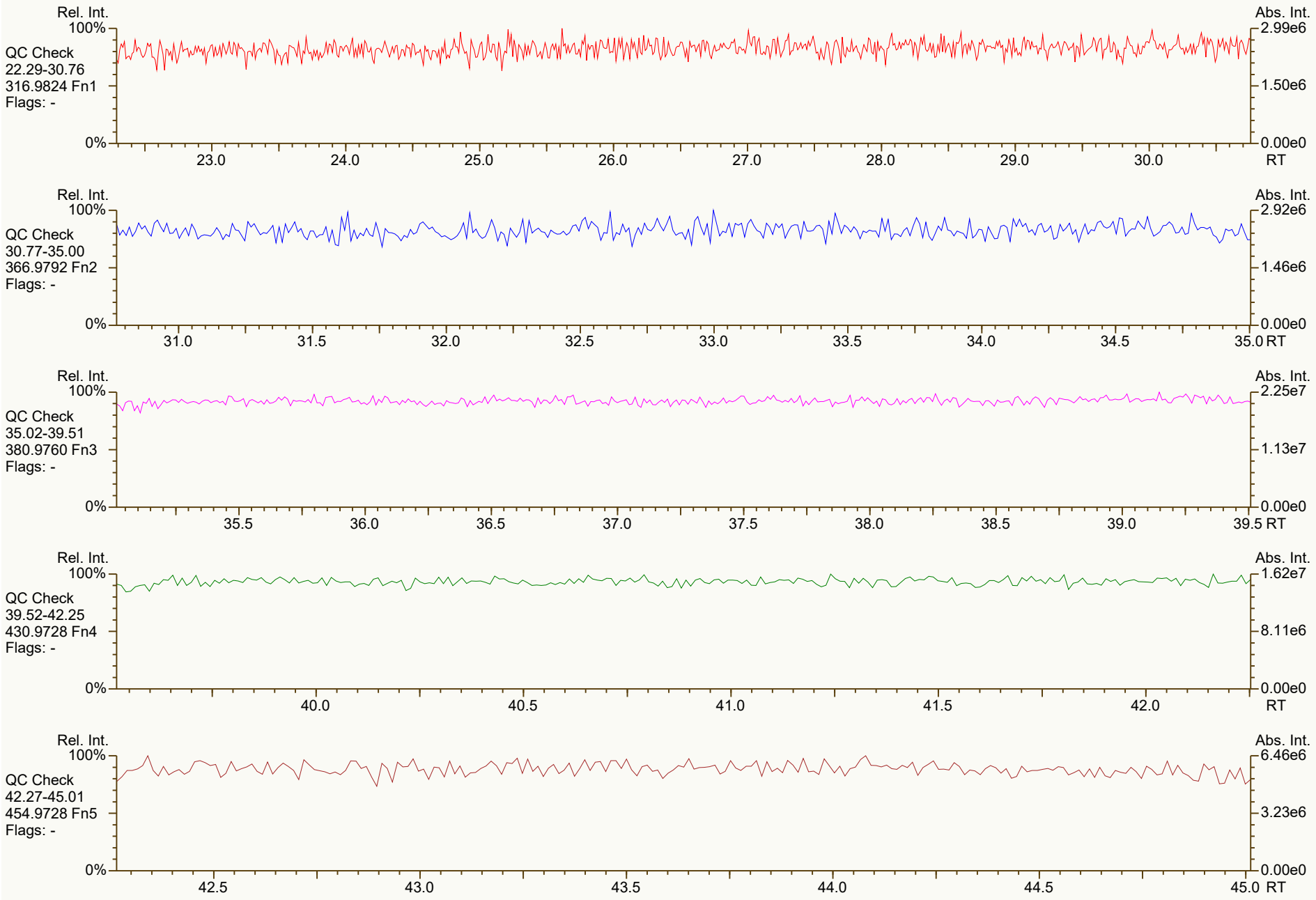
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

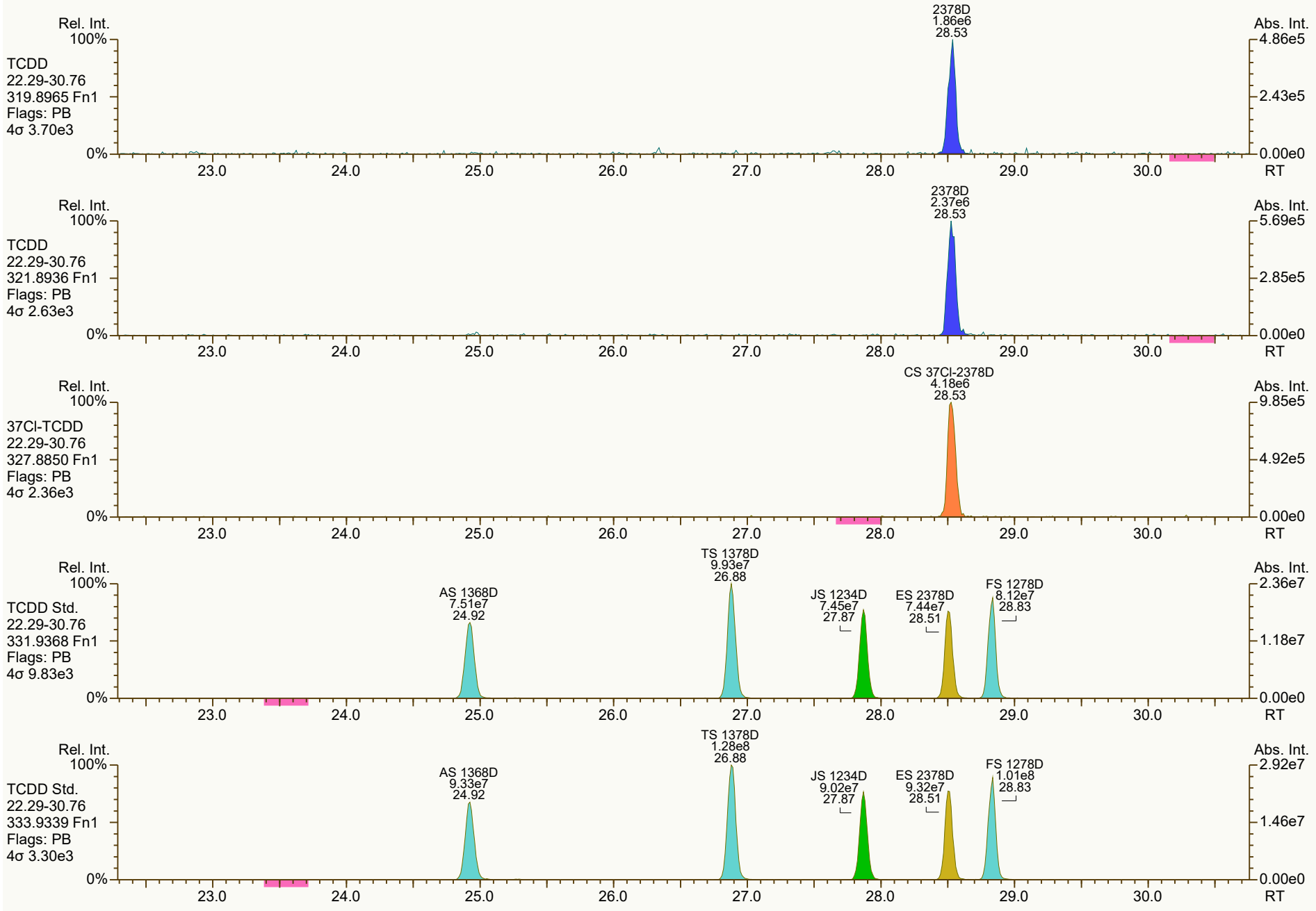
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	4.23E+06	0.79	Y	1.34	1.26	-6%
12378-PeCDD	33.81	1.67E+07	1.63	Y	1.06	1.02	-4%
123478-HxCDD	37.68	1.53E+07	1.32	Y	1.06	0.99	-6%
123678-HxCDD	37.80	1.52E+07	1.22	Y	1.08	1.02	-5%
123789-HxCDD	38.08	1.66E+07	1.25	Y	1.02	0.95	-6%
1234678-HpCDD	40.67	1.41E+07	1.01	Y	0.97	0.92	-6%
OCDD	43.23	2.33E+07	0.88	Y	1.07	1.01	-6%
2378-TCDF	27.68	5.04E+06	0.83	Y	0.96	0.90	-6%
12378-PeCDF	32.39	2.16E+07	1.63	Y	0.95	0.90	-5%
23478-PeCDF	33.48	2.12E+07	1.52	Y	0.94	0.90	-4%
123478-HxCDF	36.69	2.09E+07	1.25	Y	1.23	1.19	-4%
123678-HxCDF	36.83	2.13E+07	1.24	Y	1.13	1.07	-5%
234678-HxCDF	37.50	1.98E+07	1.20	Y	1.15	1.08	-6%
123789-HxCDF	38.43	1.89E+07	1.24	Y	1.14	1.09	-4%
1234678-HpCDF	39.77	1.87E+07	1.01	Y	1.36	1.31	-4%
1234789-HpCDF	41.12	1.60E+07	1.02	Y	1.30	1.26	-3%
OCDF	43.41	2.61E+07	0.92	Y	1.03	0.95	-7%
ES 2378-TCDD	28.51	1.68E+08	0.80	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.794	1.63E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.667	1.54E+08	1.28	Y	0.99	0.99	-1%
ES 123678-HxCDD	37.781	1.49E+08	1.24	Y	0.97	0.95	-2%
ES 123789-HxCDD	38.07	1.75E+08	1.26	Y	1.12	1.12	0%
ES 1234678-HpCDD	40.658	1.53E+08	1.06	Y	0.99	0.98	-1%
ES OCDD	43.222	2.31E+08	0.90	Y	0.78	0.74	-5%
ES 2378-TCDF	27.656	2.80E+08	0.80	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.368	2.40E+08	1.55	Y	0.93	0.92	-2%
ES 23478-PeCDF	33.459	2.36E+08	1.59	Y	0.92	0.90	-2%
ES 123478-HxCDF	36.674	1.76E+08	0.52	Y	1.14	1.13	-1%
ES 123678-HxCDF	36.814	1.99E+08	0.52	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.481	1.84E+08	0.52	Y	1.20	1.18	-2%
ES 123789-HxCDF	38.416	1.73E+08	0.52	Y	1.14	1.11	-2%
ES 1234678-HpCDF	39.761	1.43E+08	0.44	Y	0.95	0.92	-3%
ES 1234789-HpCDF	41.105	1.28E+08	0.46	Y	0.85	0.82	-3%
ES OCDF	43.404	2.74E+08	0.87	Y	0.93	0.88	-5%

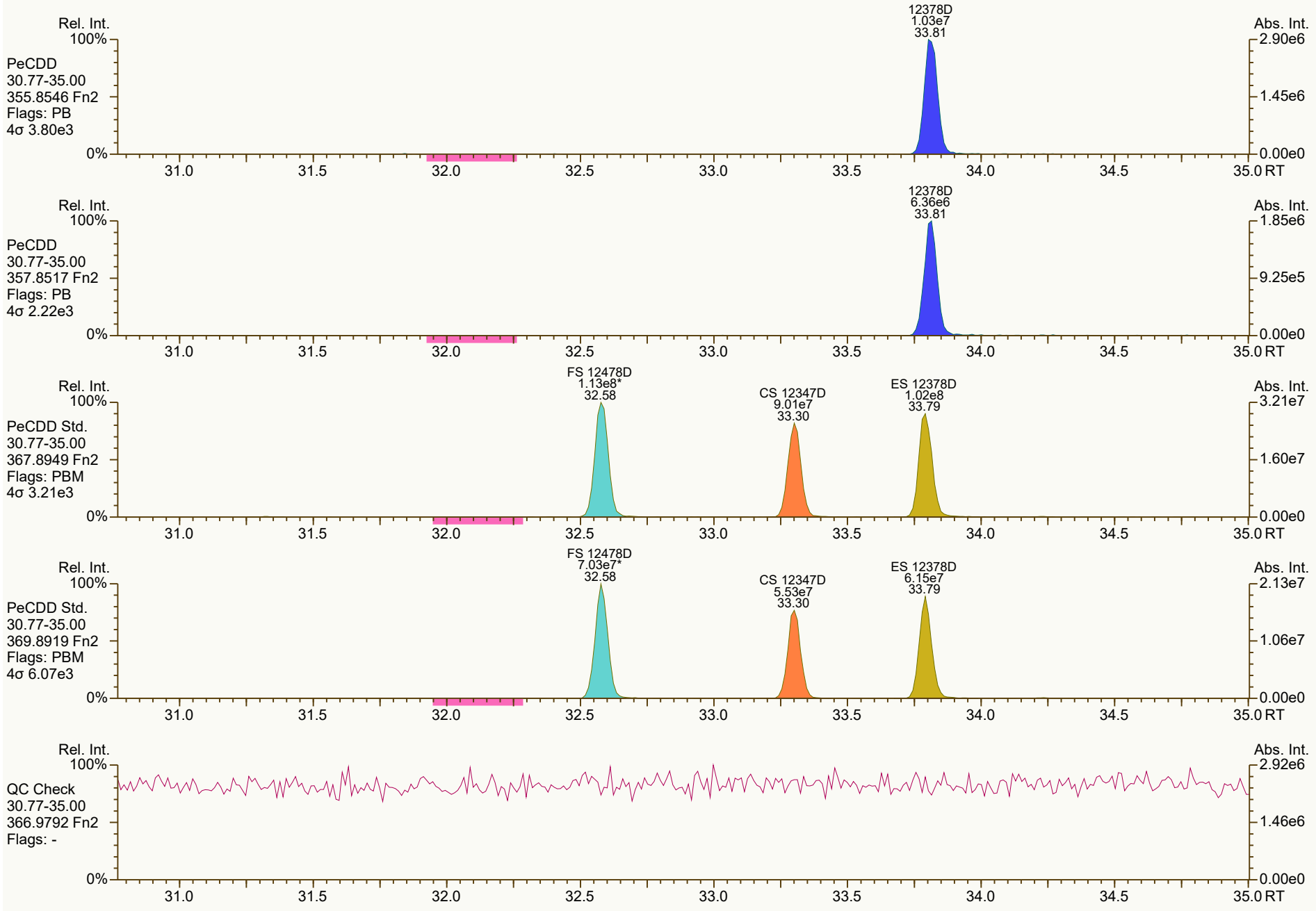
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

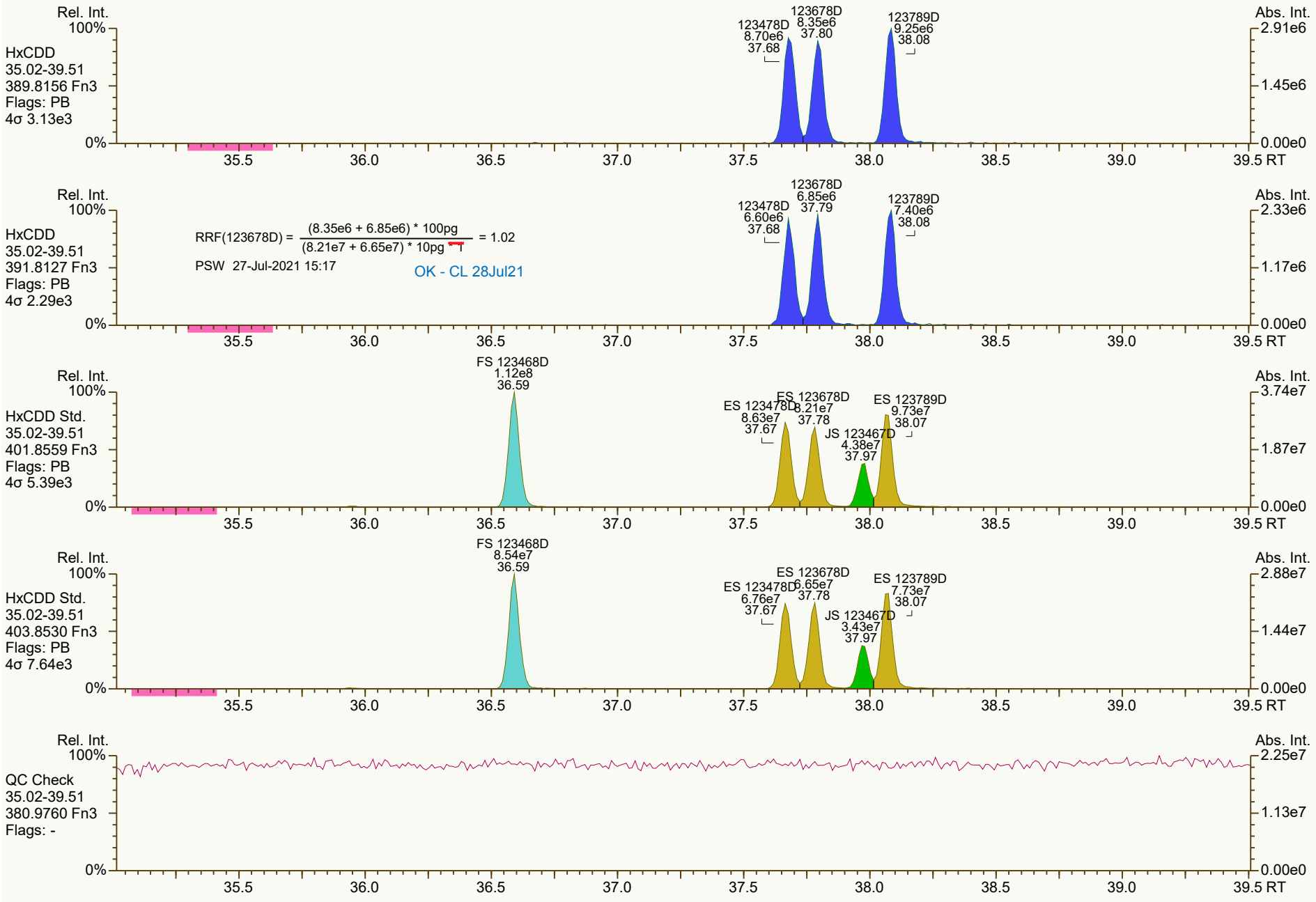
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.65E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.34	2.62E+08	0.75	Y	-	-	-
JS 123467-HxCDD	37.97	7.80E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.31	1.27	-3%
CS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.13	1.69E+08	0.52	Y	1.09	1.08	-1%
CS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.86	0.89	3%
SS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.13	1.69E+08	0.52	Y	0.84	0.85	1%
SS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.92	1.68E+08	0.81	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.81E+08	0.77	Y	1.08	1.07	-1%
FS 1278-TCDD	28.83	1.83E+08	0.80	Y	1.08	1.09	0%
FS 12478-PeCDD	32.58	1.83E+08	1.61	Y	1.09	1.12	3%
FS 123468-HxCDD	36.59	1.97E+08	1.31	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	2.12E+08	1.04	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	2.27E+08	0.78	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.23~~	~~1.51E+06~~	~~2.07~~	~~N~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.41~~	~~1.45E+06~~	~~3.13~~	~~N~~	~~0.06~~	~~0.05~~	~~-11%~~

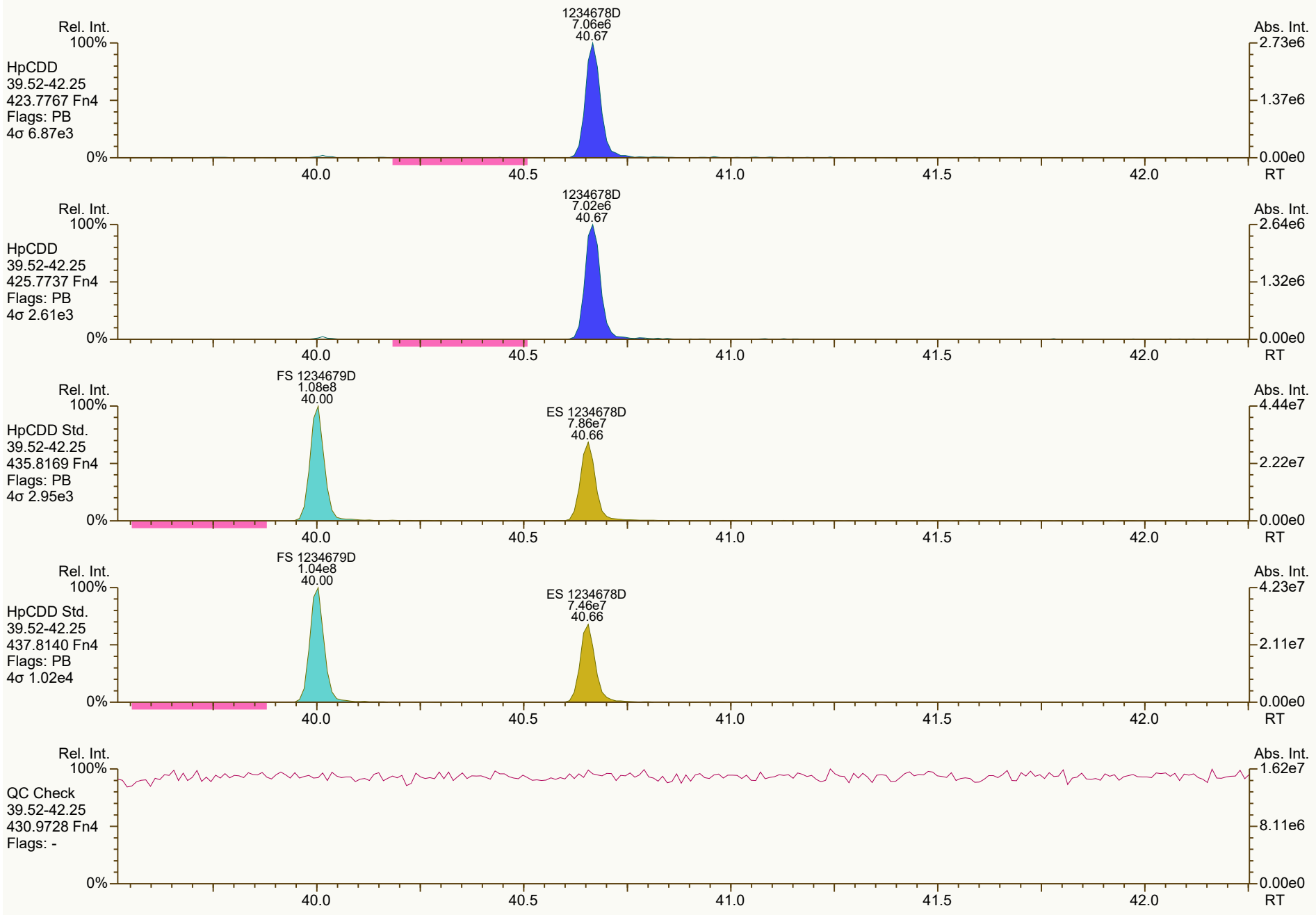
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.99e6
1.50e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.46e6
3.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

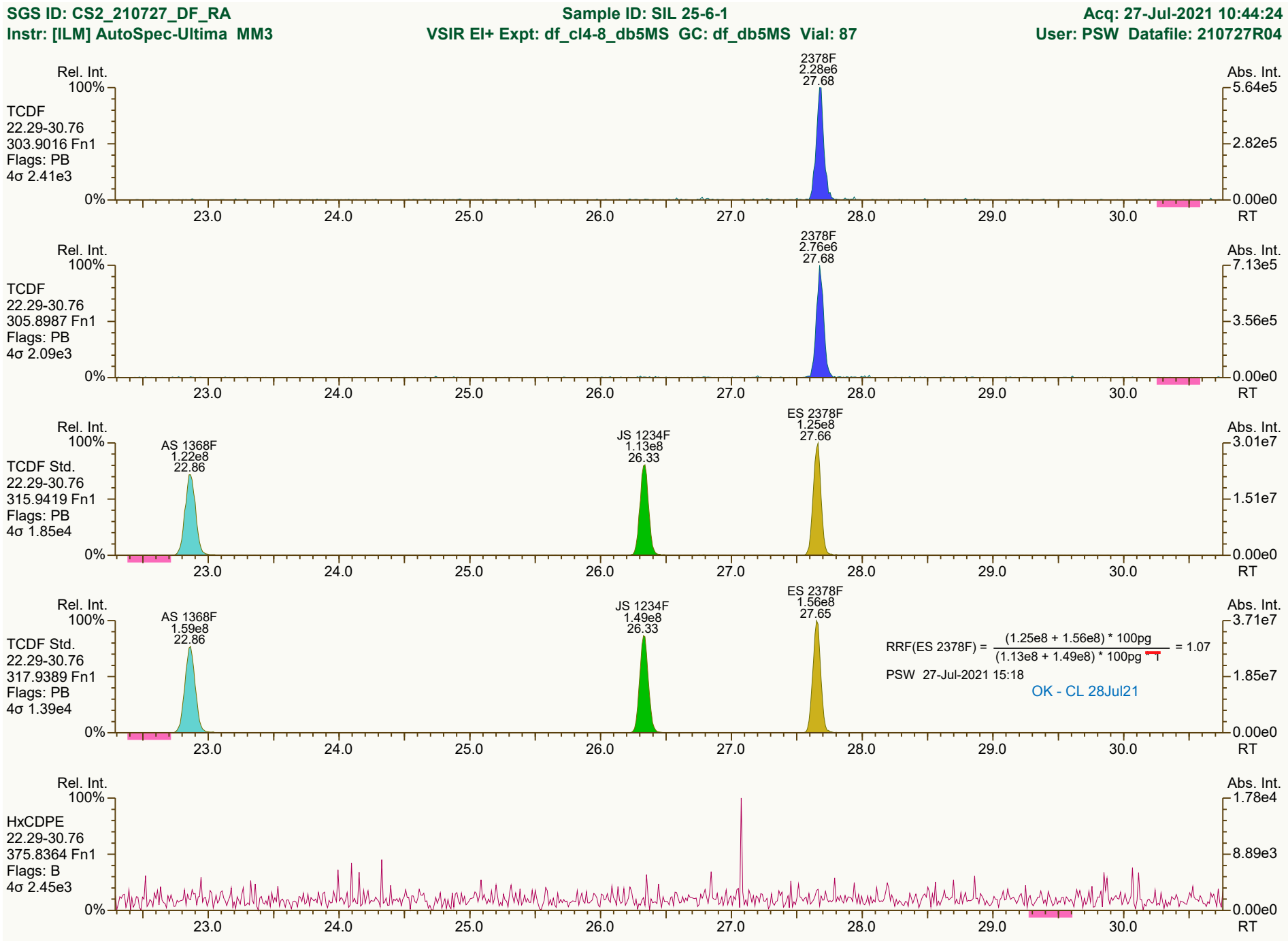

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.70e3
0%
2378D
1.86e6
28.53
Abs. Int.
4.86e5
2.43e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.63e3
0%
2378D
2.37e6
28.53
Abs. Int.
5.69e5
2.85e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.36e3
0%
CS 37Cl-2378D
4.18e6
28.53
Abs. Int.
9.85e5
4.92e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 9.83e3
0%
AS 1368D
7.51e7
24.92
TS 1378D
9.93e7
26.88
JS 1234D
7.45e7
27.87
ES 2378D
7.44e7
28.51
FS 1278D
8.12e7
28.83
Abs. Int.
2.36e7
1.18e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.30e3
0%
AS 1368D
9.33e7
24.92
TS 1378D
1.28e8
26.88
JS 1234D
9.02e7
27.87
ES 2378D
9.32e7
28.51
FS 1278D
1.01e8
28.83
Abs. Int.
2.92e7
1.46e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.80e3
0%
12378D
1.03e7
33.81
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.22e3
0%
12378D
6.36e6
33.81
Abs. Int.
1.85e6
9.25e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.21e3
0%
FS 12478D
1.13e8*
32.58
CS 12347D
9.01e7
33.30
ES 12378D
1.02e8
33.79
Abs. Int.
3.21e7
1.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 6.07e3
0%
FS 12478D
7.03e7*
32.58
CS 12347D
5.53e7
33.30
ES 12378D
6.15e7
33.79
Abs. Int.
2.13e7
1.06e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

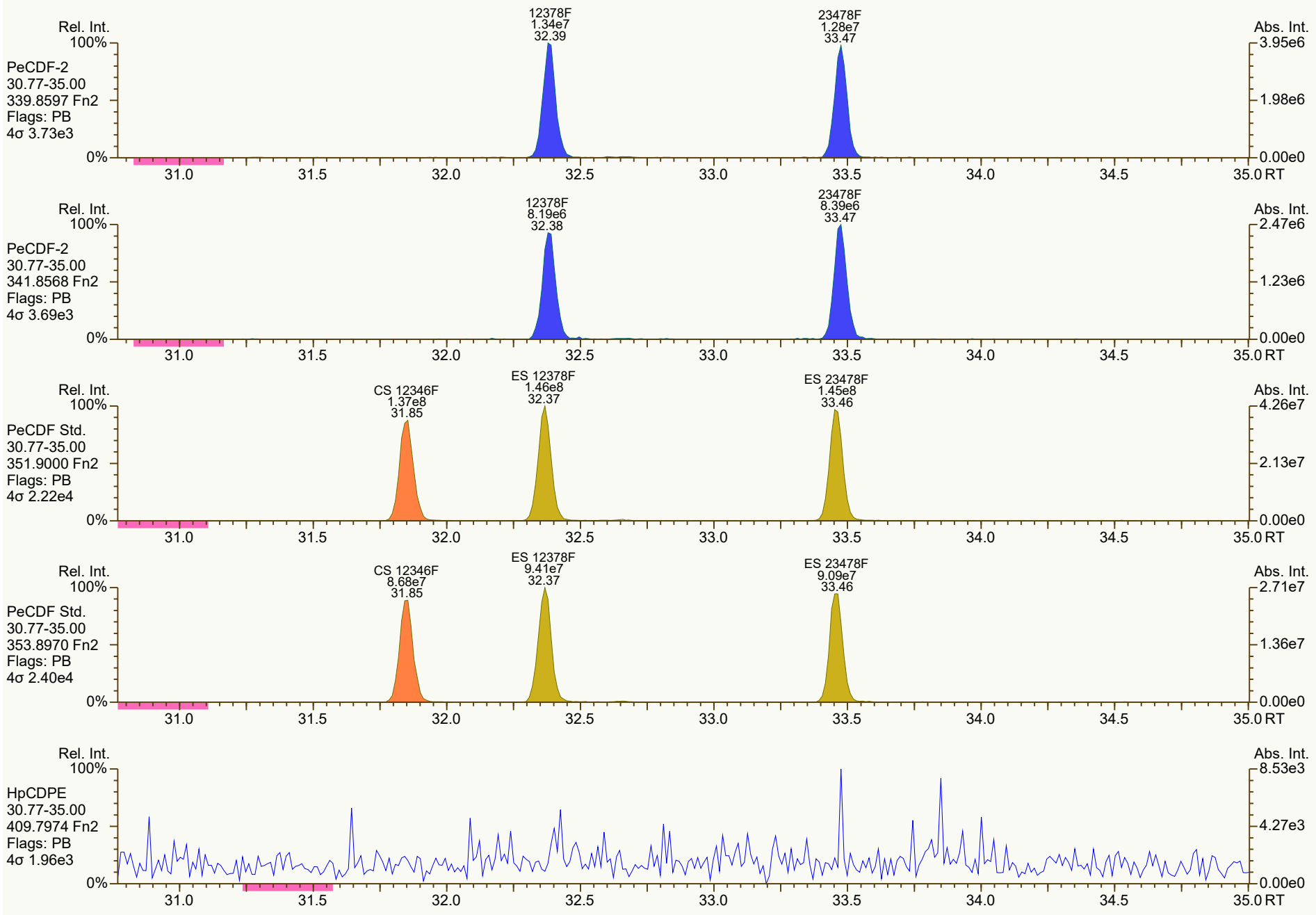

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.13e3
123478D 8.70e6 37.68
123678D 8.35e6 37.80
123789D 9.25e6 38.08
Abs. Int. 2.91e6 1.45e6 0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.29e3
RRF(123678D) = (8.35e6 + 6.85e6) * 100pg / (8.21e7 + 6.65e7) * 10pg = 1.02
PSW 27-Jul-2021 15:17
OK - CL 28Jul21
123478D 6.60e6 37.68
123678D 6.85e6 37.79
123789D 7.40e6 38.08
Abs. Int. 2.33e6 1.17e6 0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 5.39e3
FS 123468D 1.12e8 36.59
ES 123478D 8.63e7 37.67
ES 123678D 8.21e7 37.78
JS 123467D 4.38e7 37.97
ES 123789D 9.73e7 38.07
Abs. Int. 3.74e7 1.87e7 0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 7.64e3
FS 123468D 8.54e7 36.59
ES 123478D 6.76e7 37.67
ES 123678D 6.65e7 37.78
JS 123467D 3.43e7 37.97
ES 123789D 7.73e7 38.07
Abs. Int. 2.88e7 1.44e7 0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int. 2.25e7 1.13e7 0.00e0

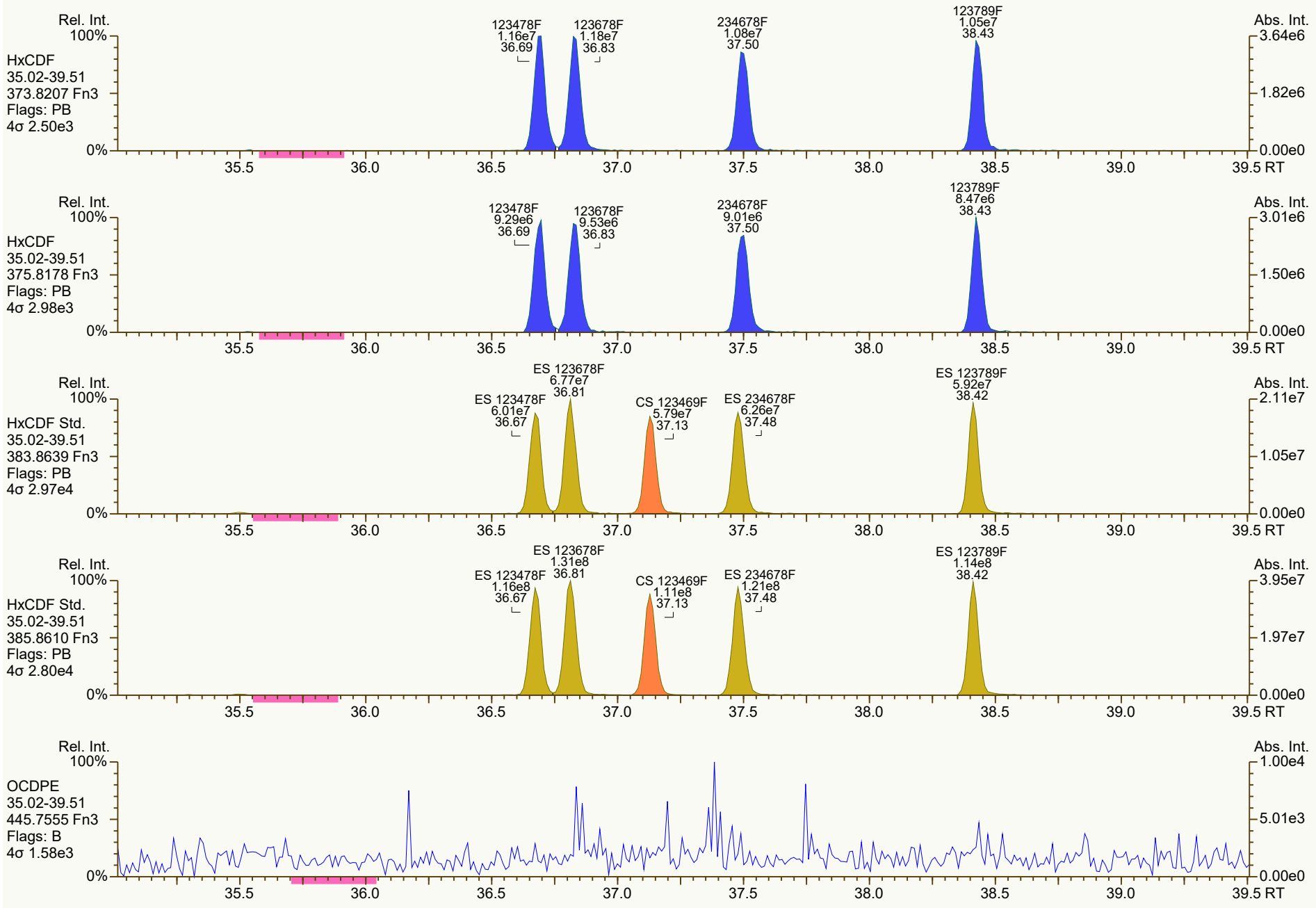

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 6.87e3
0%
1234678D
7.06e6
40.67
Abs. Int.
2.73e6
1.37e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 2.61e3
0%
1234678D
7.02e6
40.67
Abs. Int.
2.64e6
1.32e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.95e3
0%
FS 1234679D
1.08e8
40.00
ES 1234678D
7.86e7
40.66
Abs. Int.
4.44e7
2.22e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.02e4
0%
FS 1234679D
1.04e8
40.00
ES 1234678D
7.46e7
40.66
Abs. Int.
4.23e7
2.11e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0

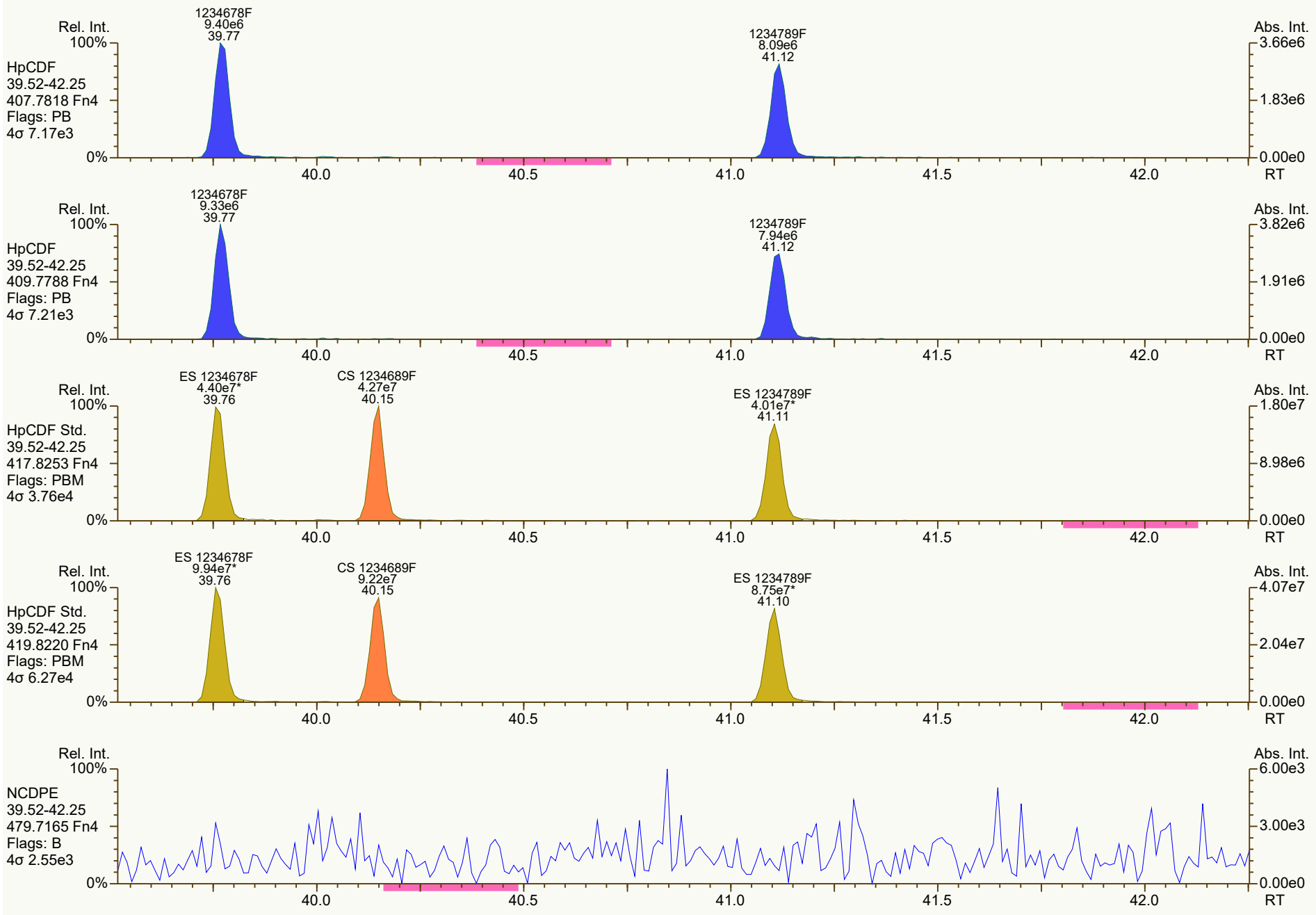

OCDD
1.09e7
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 3.62e3
0%
Abs. Int.
3.54e6
1.77e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.24e7
43.23
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 1.67e3
4.01e6
2.00e6
ES OCDD
1.10e8
43.22
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 3.79e3
3.53e7
1.77e7
ES OCDD
1.22e8
43.22
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 7.59e3
3.84e7
1.92e7
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
6.46e6
3.23e6

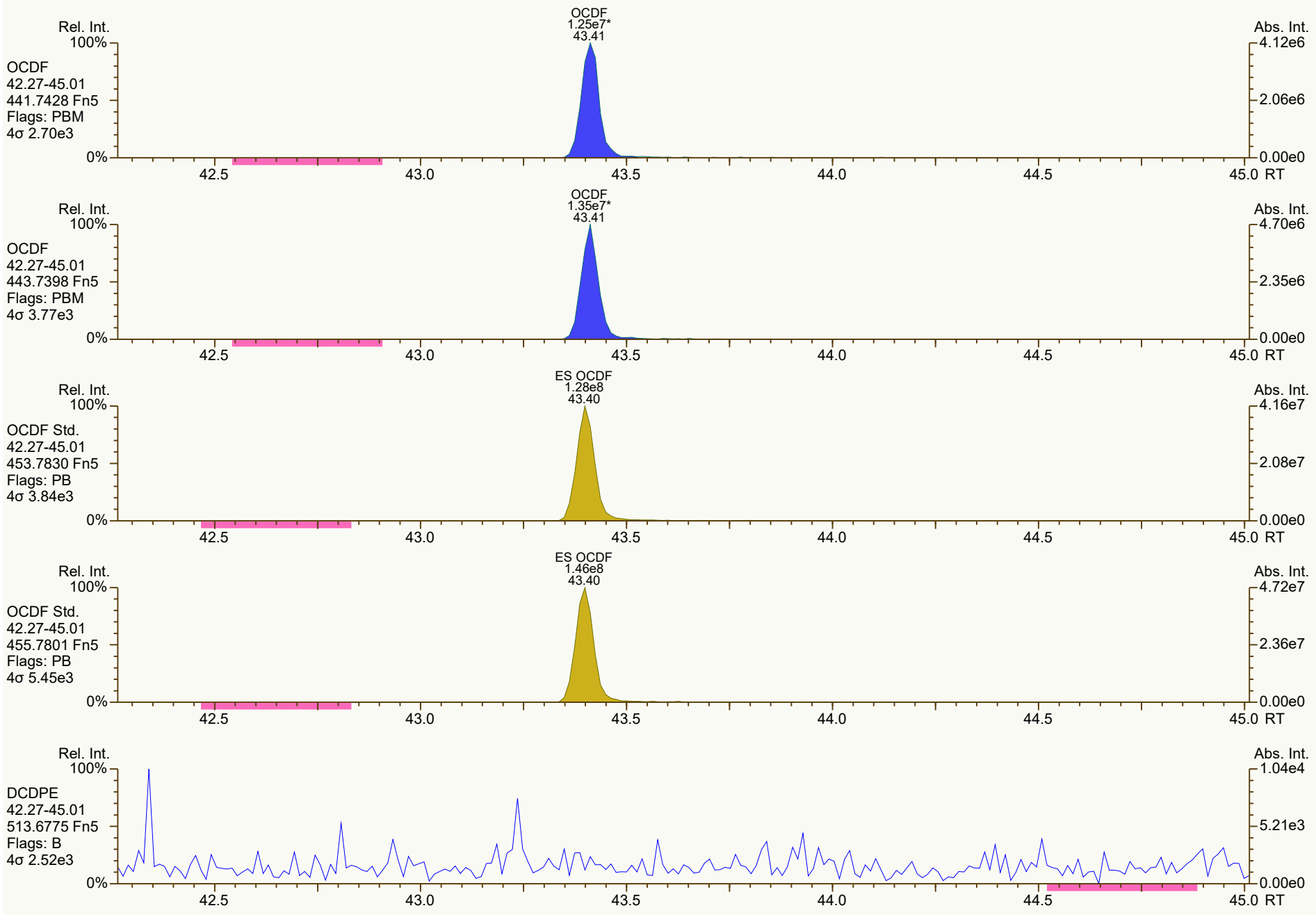

SGS ID: CS2_210727_DF_RA
Sample ID: SIL 25-6-1
Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
User: PSW Datafile: 210727R04
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.41e3
2378F
2.28e6
27.68
5.64e5
2.82e5
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.09e3
2378F
2.76e6
27.68
7.13e5
3.56e5
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.85e4
AS 1368F
1.22e8
22.86
JS 1234F
1.13e8
26.33
ES 2378F
1.25e8
27.66
3.01e7
1.51e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.39e4
AS 1368F
1.59e8
22.86
JS 1234F
1.49e8
26.33
ES 2378F
1.56e8
27.65
RRF(ES 2378F) = (1.25e8 + 1.56e8) * 100pg / (1.13e8 + 1.49e8) * 100pg * 1 = 1.07
PSW 27-Jul-2021 15:18
OK - CL 28Jul21
3.71e7
1.85e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.45e3
1.78e4
8.89e3
0%
100%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9273, 2389, 5803 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.66e4
8.28e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.30e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.23e3
2.64e4
1.32e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.99e6
1.50e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 3.73e3
0%
12378F
1.34e7
32.39
23478F
1.28e7
33.47
Abs. Int.
3.95e6
1.98e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.69e3
0%
12378F
8.19e6
32.38
23478F
8.39e6
33.47
Abs. Int.
2.47e6
1.23e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.22e4
0%
CS 12346F
1.37e8
31.85
ES 12378F
1.46e8
32.37
ES 23478F
1.45e8
33.46
Abs. Int.
4.26e7
2.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.40e4
0%
CS 12346F
8.68e7
31.85
ES 12378F
9.41e7
32.37
ES 23478F
9.09e7
33.46
Abs. Int.
2.71e7
1.36e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: PB
4σ 1.96e3
0%
Abs. Int.
8.53e3
4.27e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.50e3
0%
123478F
1.16e7
36.69
123678F
1.18e7
36.83
234678F
1.08e7
37.50
123789F
1.05e7
38.43
Abs. Int.
3.64e6
1.82e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 2.98e3
0%
123478F
9.29e6
36.69
123678F
9.53e6
36.83
234678F
9.01e6
37.50
123789F
8.47e6
38.43
Abs. Int.
3.01e6
1.50e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 2.97e4
0%
ES 123478F
6.01e7
36.67
ES 123678F
6.77e7
36.81
CS 123469F
5.79e7
37.13
ES 234678F
6.26e7
37.48
ES 123789F
5.92e7
38.42
Abs. Int.
2.11e7
1.05e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.80e4
0%
ES 123478F
1.16e8
36.67
ES 123678F
1.31e8
36.81
CS 123469F
1.11e8
37.13
ES 234678F
1.21e8
37.48
ES 123789F
1.14e8
38.42
Abs. Int.
3.95e7
1.97e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.00e4
5.01e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 7.17e3
1234678F
9.40e6
39.77
1234789F
8.09e6
41.12
Abs. Int.
3.66e6
1.83e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 7.21e3
1234678F
9.33e6
39.77
1234789F
7.94e6
41.12
Abs. Int.
3.82e6
1.91e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.76e4
ES 1234678F
4.40e7*
39.76
CS 1234689F
4.27e7
40.15
ES 1234789F
4.01e7*
41.11
Abs. Int.
1.80e7
8.98e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 6.27e4
ES 1234678F
9.94e7*
39.76
CS 1234689F
9.22e7
40.15
ES 1234789F
8.75e7*
41.10
Abs. Int.
4.07e7
2.04e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.55e3
Abs. Int.
6.00e3
3.00e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PBM
4σ 2.70e3
0%
OCDF
1.25e7*
43.41
Abs. Int.
4.12e6
2.06e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PBM
4σ 3.77e3
0%
OCDF
1.35e7*
43.41
Abs. Int.
4.70e6
2.35e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 3.84e3
0%
ES OCDF
1.28e8
43.40
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 5.45e3
0%
ES OCDF
1.46e8
43.40
Abs. Int.
4.72e7
2.36e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.52e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

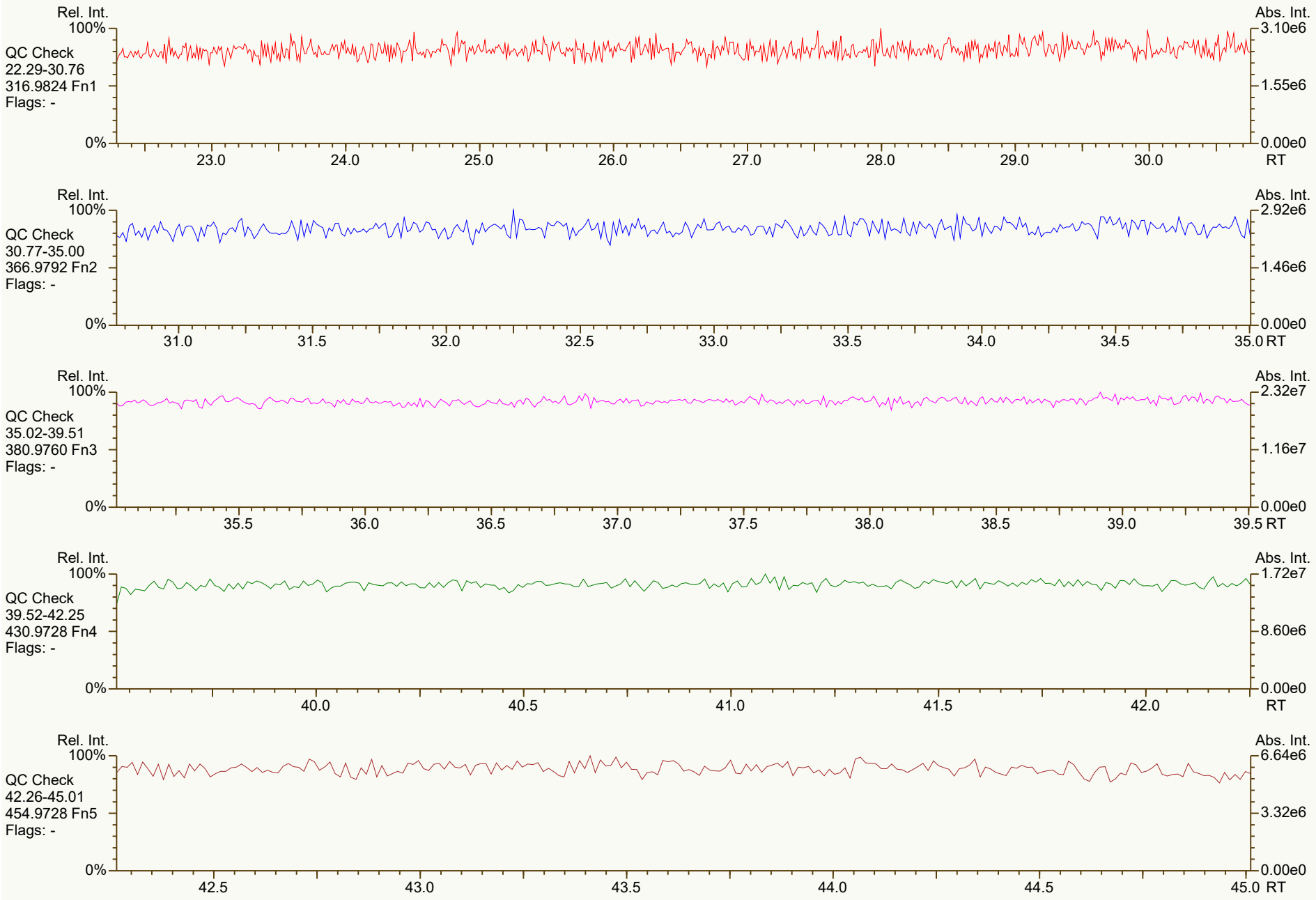
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

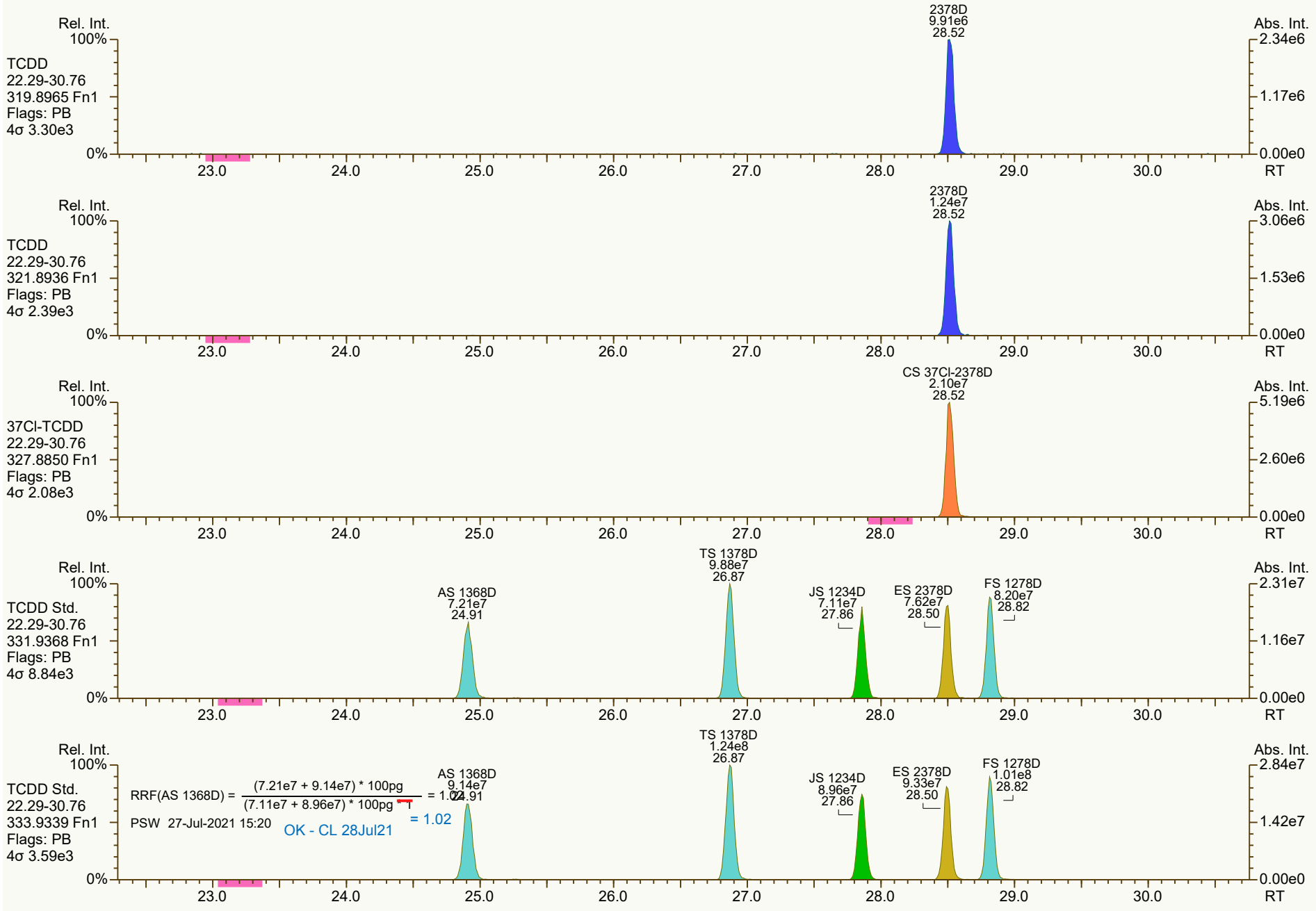
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.23E+07	0.80	Y	1.34	1.32	-2%
12378-PeCDD	33.80	8.56E+07	1.57	Y	1.06	1.05	-1%
123478-HxCDD	37.67	7.63E+07	1.25	Y	1.06	1.05	-1%
123678-HxCDD	37.78	7.89E+07	1.25	Y	1.08	1.08	0%
123789-HxCDD	38.07	8.22E+07	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.66	7.06E+07	1.03	Y	0.97	0.95	-2%
OCDD	43.22	1.21E+08	0.89	Y	1.07	1.07	0%
2378-TCDF	27.66	2.66E+07	0.80	Y	0.96	0.95	-1%
12378-PeCDF	32.37	1.11E+08	1.56	Y	0.95	0.94	-1%
23478-PeCDF	33.46	1.09E+08	1.56	Y	0.94	0.92	-2%
123478-HxCDF	36.68	1.05E+08	1.22	Y	1.23	1.22	-2%
123678-HxCDF	36.82	1.08E+08	1.25	Y	1.13	1.10	-2%
234678-HxCDF	37.49	1.02E+08	1.24	Y	1.15	1.14	-1%
123789-HxCDF	38.42	9.59E+07	1.23	Y	1.14	1.14	0%
1234678-HpCDF	39.76	9.62E+07	1.03	Y	1.36	1.34	-1%
1234789-HpCDF	41.10	8.35E+07	1.03	Y	1.30	1.34	3%
OCDF	43.41	1.40E+08	0.89	Y	1.03	1.03	0%
ES 2378-TCDD	28.50	1.70E+08	0.82	Y	1.03	1.05	2%
ES 12378-PeCDD	33.782	1.63E+08	1.65	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.654	1.45E+08	1.26	Y	0.99	1.00	0%
ES 123678-HxCDD	37.768	1.46E+08	1.27	Y	0.97	1.01	3%
ES 123789-HxCDD	38.057	1.66E+08	1.23	Y	1.12	1.14	1%
ES 1234678-HpCDD	40.644	1.48E+08	1.08	Y	0.99	1.02	3%
ES OCDD	43.211	2.25E+08	0.88	Y	0.78	0.77	-1%
ES 2378-TCDF	27.643	2.80E+08	0.79	Y	1.08	1.09	1%
ES 12378-PeCDF	32.354	2.37E+08	1.58	Y	0.93	0.93	-1%
ES 23478-PeCDF	33.446	2.37E+08	1.53	Y	0.92	0.93	0%
ES 123478-HxCDF	36.661	1.72E+08	0.52	Y	1.14	1.18	4%
ES 123678-HxCDF	36.801	1.96E+08	0.52	Y	1.30	1.35	4%
ES 234678-HxCDF	37.469	1.79E+08	0.54	Y	1.20	1.23	2%
ES 123789-HxCDF	38.404	1.68E+08	0.52	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.75	1.43E+08	0.45	Y	0.95	0.98	4%
ES 1234789-HpCDF	41.092	1.25E+08	0.44	Y	0.85	0.86	1%
ES OCDF	43.395	2.71E+08	0.89	Y	0.93	0.93	1%

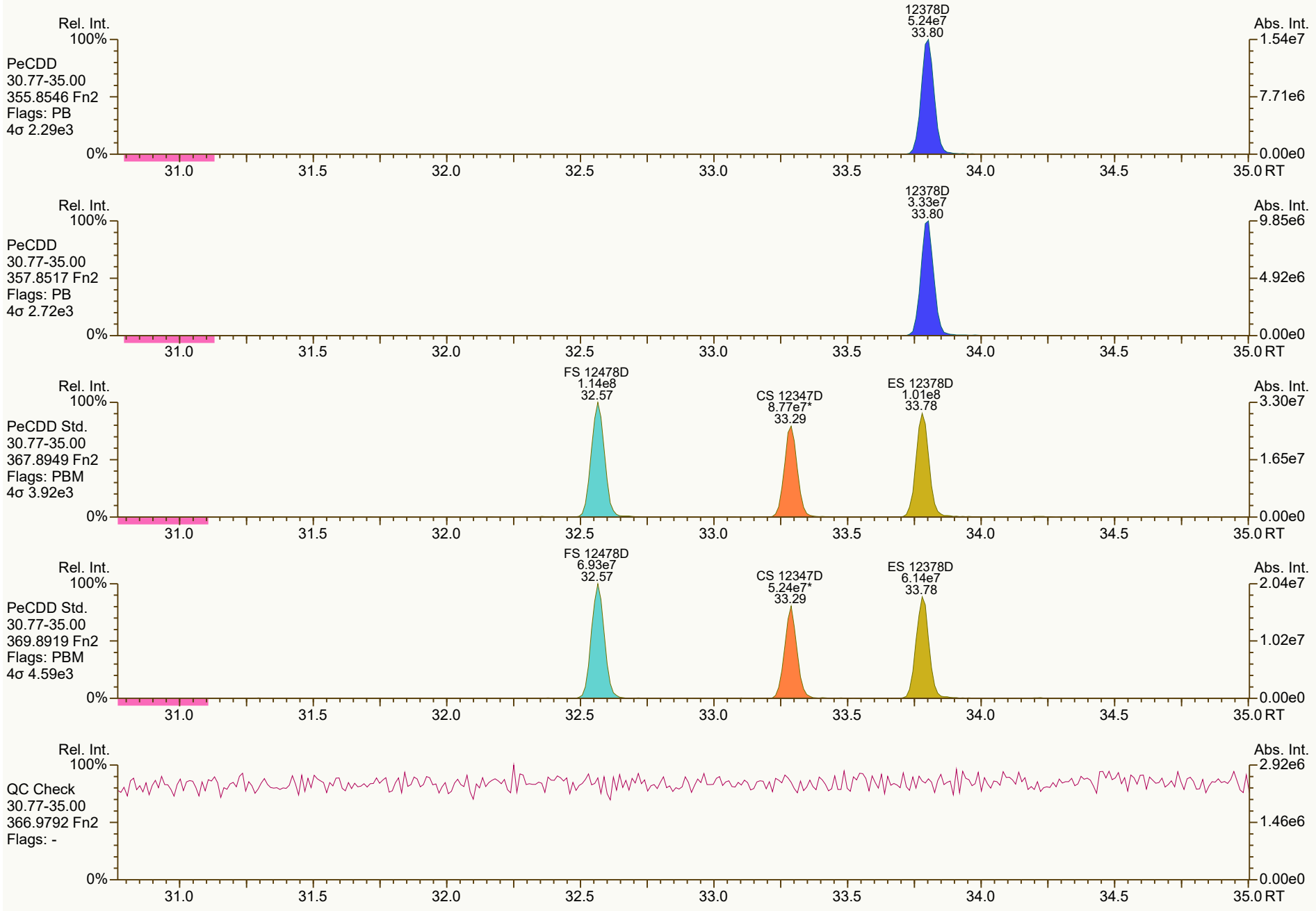
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

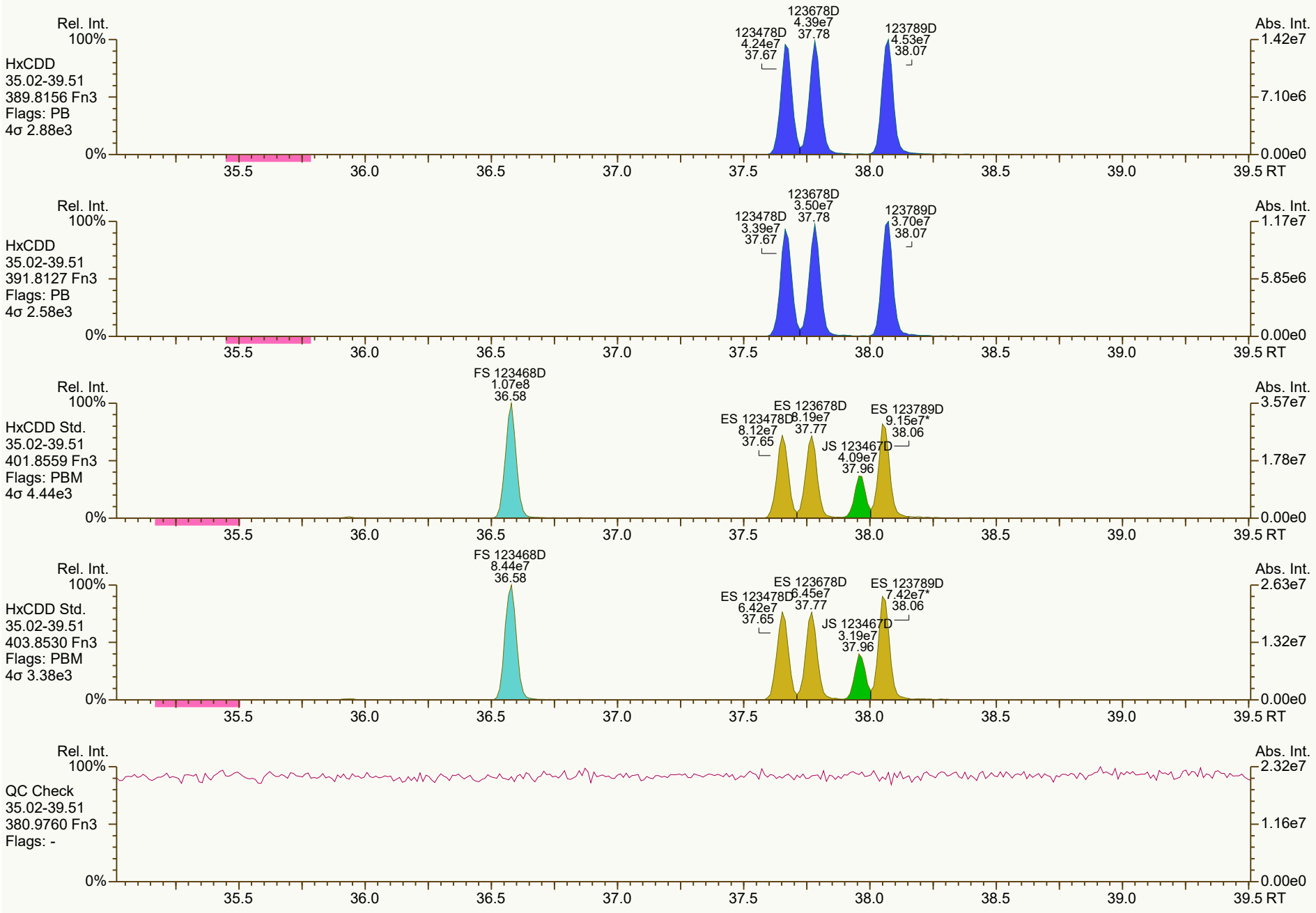
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.61E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.32	2.56E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.96	7.28E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.31	1.30	0%
CS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.89	0.87	-2%
CS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.87	0.89	2%
CS 123469-HxCDF	37.12	1.65E+08	0.52	Y	1.09	1.14	4%
CS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.86	0.92	7%
SS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.26	1.24	-2%
SS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.86	0.86	0%
SS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.93	0.96	3%
SS 123469-HxCDF	37.12	1.65E+08	0.52	Y	0.84	0.84	0%
SS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.91	1.64E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.85	2.82E+08	0.79	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.83E+08	0.81	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.84E+08	1.65	Y	1.09	1.13	3%
FS 123468-HxCDD	36.58	1.91E+08	1.27	Y	1.26	1.32	4%
FS 1234679-HpCDD	39.99	2.10E+08	1.06	Y	1.36	1.42	5%
TS 1378-TCDD	26.87	2.23E+08	0.80	Y	1.35	1.31	-3%
~~OCDD-a~~	~~43.22~~	~~7.32E+06~~	~~2.45~~	~~Y~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.40~~	~~8.14E+06~~	~~2.47~~	~~Y~~	~~0.06~~	~~0.06~~	~~1%~~

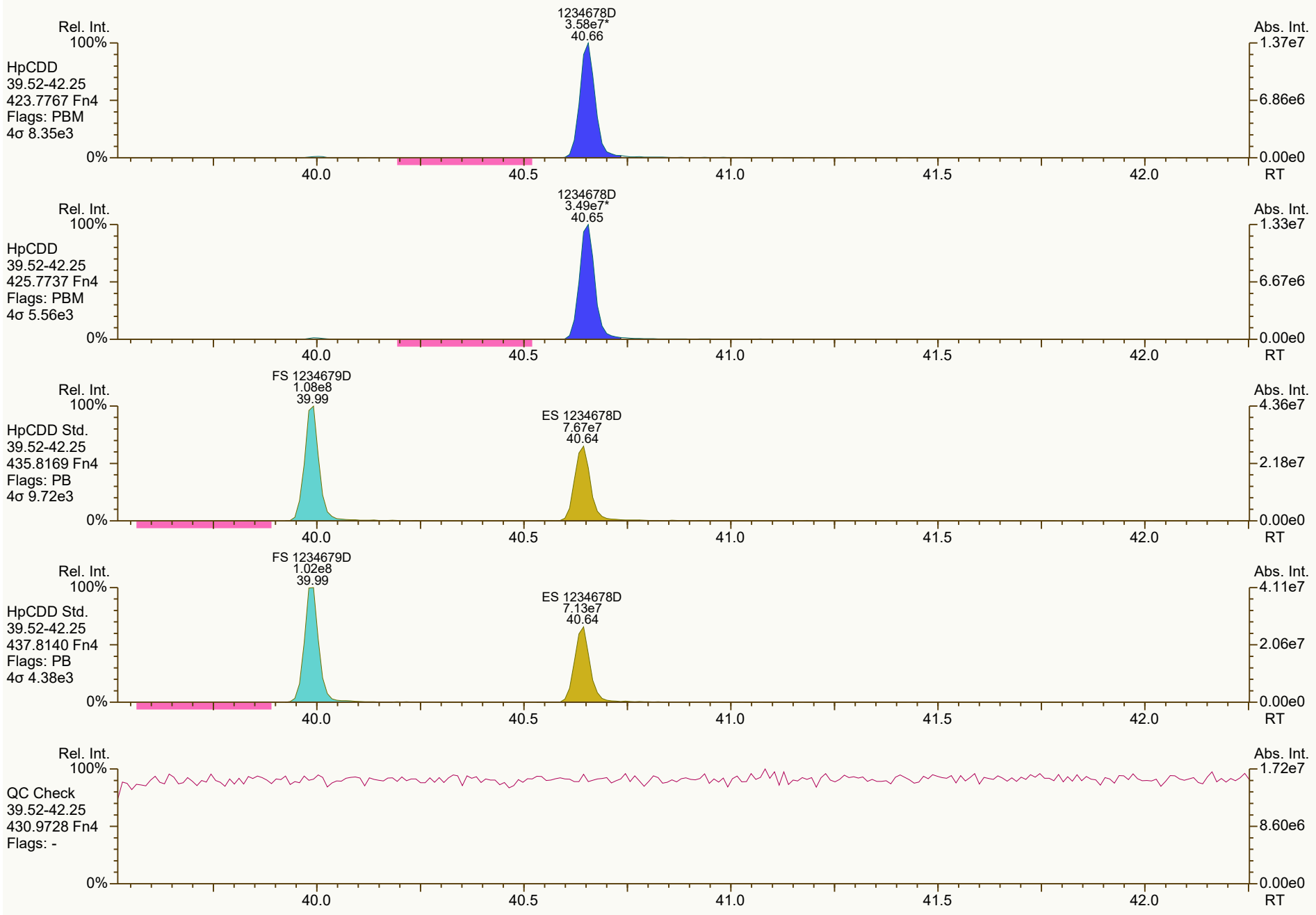
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.32e7
1.16e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.72e7
8.60e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

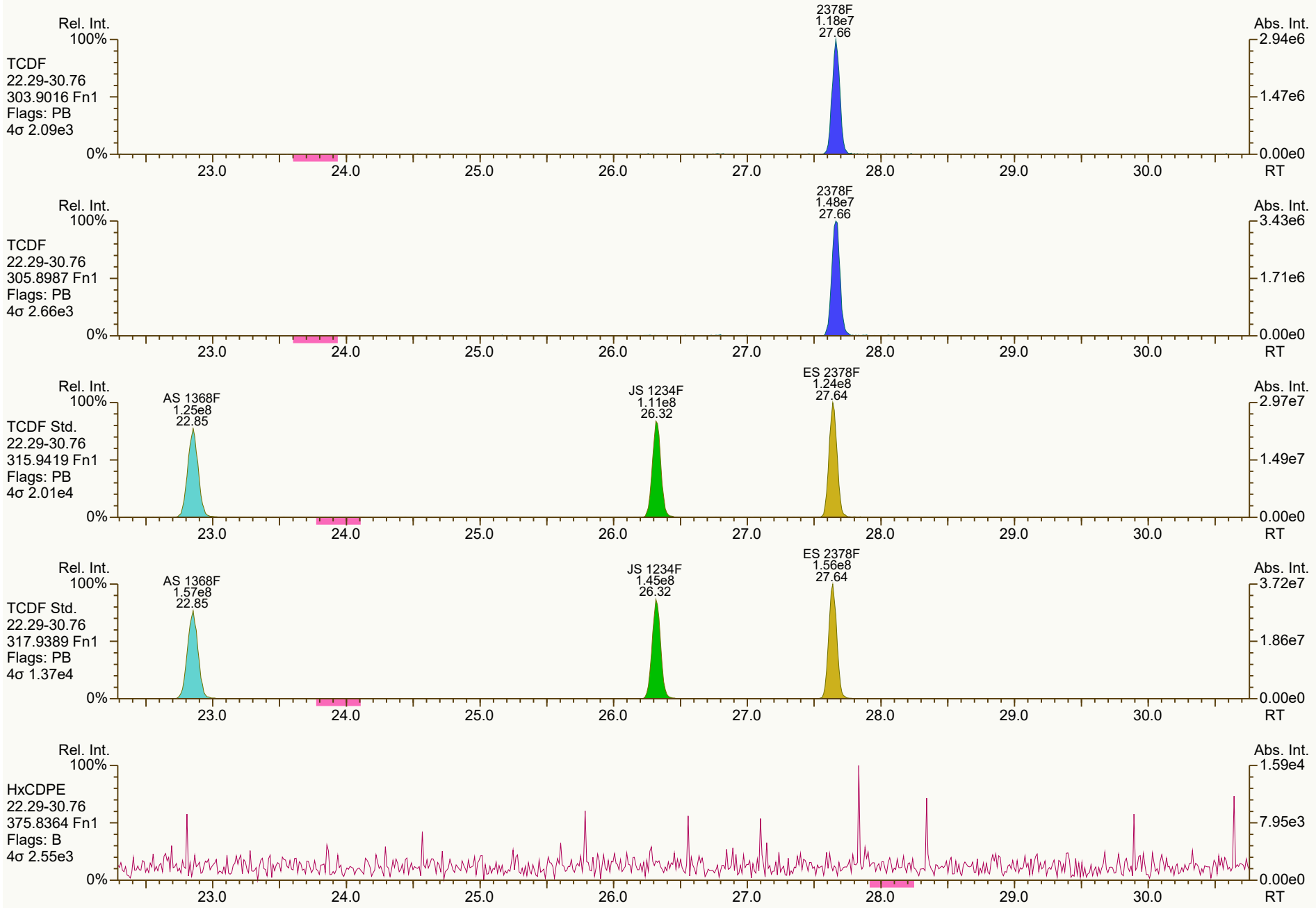

Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.30e3
2378D
9.91e6
28.52
2.34e6
1.17e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.39e3
2378D
1.24e7
28.52
3.06e6
1.53e6
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.08e3
CS 37Cl-2378D
2.10e7
28.52
5.19e6
2.60e6
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 8.84e3
AS 1368D
7.21e7
24.91
TS 1378D
9.88e7
26.87
JS 1234D
7.11e7
27.86
ES 2378D
7.62e7
28.50
FS 1278D
8.20e7
28.82
2.31e7
1.16e7
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.59e3
RRF(AS 1368D) = (7.21e7 + 9.14e7) * 100pg / (7.11e7 + 8.96e7) * 100pg = 1.02
PSW 27-Jul-2021 15:20
OK - CL 28Jul21
= 1.02
AS 1368D
9.14e7
24.91
TS 1378D
1.24e8
26.87
JS 1234D
8.96e7
27.86
ES 2378D
9.33e7
28.50
FS 1278D
1.01e8
28.82
2.84e7
1.42e7
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.29e3
0%
12378D
5.24e7
33.80
Abs. Int.
1.54e7
7.71e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.72e3
0%
12378D
3.33e7
33.80
Abs. Int.
9.85e6
4.92e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.92e3
0%
FS 12478D
1.14e8
32.57
CS 12347D
8.77e7*
33.29
ES 12378D
1.01e8
33.78
Abs. Int.
3.30e7
1.65e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 4.59e3
0%
FS 12478D
6.93e7
32.57
CS 12347D
5.24e7*
33.29
ES 12378D
6.14e7
33.78
Abs. Int.
2.04e7
1.02e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

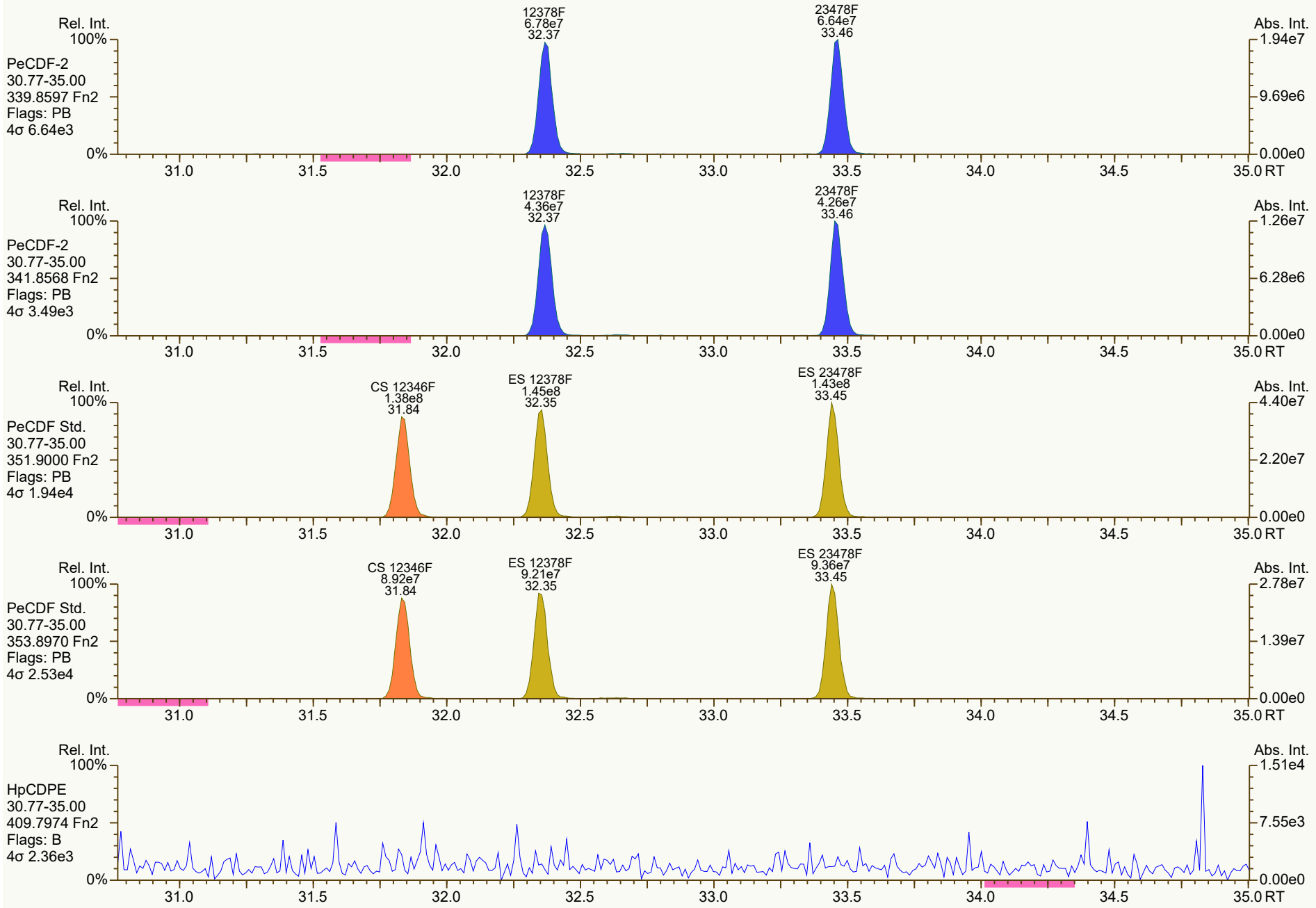

Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.88e3
123678D 4.39e7 37.78
123478D 4.24e7 37.67
123789D 4.53e7 38.07
1.42e7
7.10e6
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.58e3
123678D 3.50e7 37.78
123478D 3.39e7 37.67
123789D 3.70e7 38.07
1.17e7
5.85e6
0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.44e3
FS 123468D 1.07e8 36.58
ES 123678D 8.19e7 37.77
ES 123478D 8.12e7 37.65
ES 123789D 9.15e7* 38.06
JS 123467D 4.09e7 37.96
3.57e7
1.78e7
0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.38e3
FS 123468D 8.44e7 36.58
ES 123678D 6.45e7 37.77
ES 123478D 6.42e7 37.65
ES 123789D 7.42e7* 38.06
JS 123467D 3.19e7 37.96
2.63e7
1.32e7
0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.32e7
1.16e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 8.35e3
0%
1234678D
3.58e7*
40.66
Abs. Int.
1.37e7
6.86e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 5.56e3
0%
1234678D
3.49e7*
40.65
Abs. Int.
1.33e7
6.67e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 9.72e3
0%
FS 1234679D
1.08e8
39.99
ES 1234678D
7.67e7
40.64
Abs. Int.
4.36e7
2.18e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.38e3
0%
FS 1234679D
1.02e8
39.99
ES 1234678D
7.13e7
40.64
Abs. Int.
4.11e7
2.06e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.72e7
8.60e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0


OCDD
5.68e7*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.46e3
0%
Abs. Int.
2.00e7
1.00e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.38e7*
43.22
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 3.66e3
Abs. Int.
2.18e7
1.09e7
ES OCDD
1.05e8*
43.21
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 6.38e3
Abs. Int.
3.38e7
1.69e7
ES OCDD
1.20e8*
43.21
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.59e3
Abs. Int.
3.96e7
1.98e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
Abs. Int.
6.64e6
3.32e6


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.09e3
0%
2378F
1.18e7
27.66
Abs. Int.
2.94e6
1.47e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.66e3
0%
2378F
1.48e7
27.66
Abs. Int.
3.43e6
1.71e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.01e4
0%
AS 1368F
1.25e8
22.85
JS 1234F
1.11e8
26.32
ES 2378F
1.24e8
27.64
Abs. Int.
2.97e7
1.49e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.37e4
0%
AS 1368F
1.57e8
22.85
JS 1234F
1.45e8
26.32
ES 2378F
1.56e8
27.64
Abs. Int.
3.72e7
1.86e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.55e3
0%
Abs. Int.
1.59e4
7.95e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

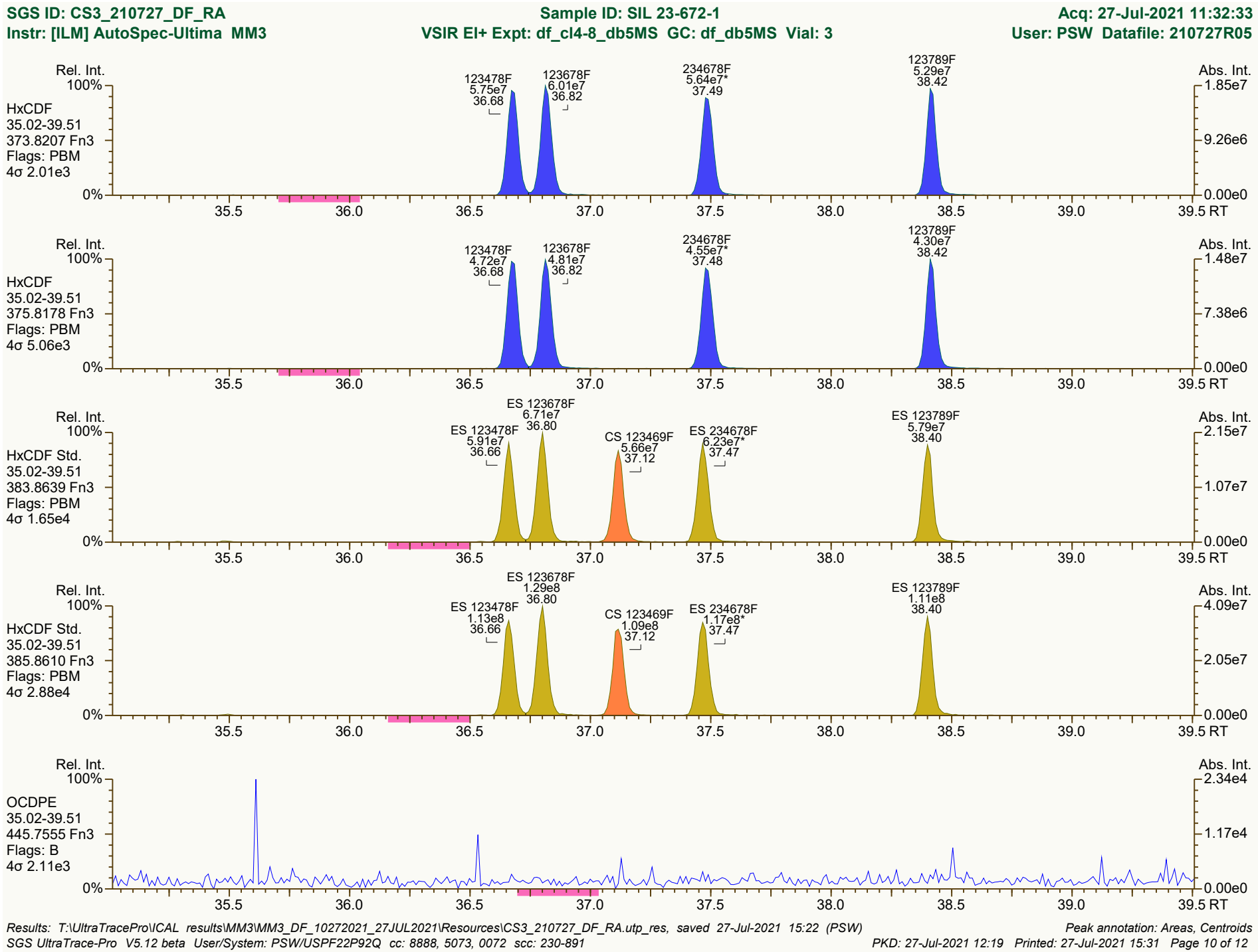

Rel. Int.
100%
0%
Abs. Int.
1.52e4
7.61e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.35e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.57e4
7.83e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.27e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 6.64e3
0%
12378F
6.78e7
32.37
23478F
6.64e7
33.46
Abs. Int.
1.94e7
9.69e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.49e3
0%
12378F
4.36e7
32.37
23478F
4.26e7
33.46
Abs. Int.
1.26e7
6.28e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 1.94e4
0%
CS 12346F
1.38e8
31.84
ES 12378F
1.45e8
32.35
ES 23478F
1.43e8
33.45
Abs. Int.
4.40e7
2.20e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.53e4
0%
CS 12346F
8.92e7
31.84
ES 12378F
9.21e7
32.35
ES 23478F
9.36e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.36e3
0%
Abs. Int.
1.51e4
7.55e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

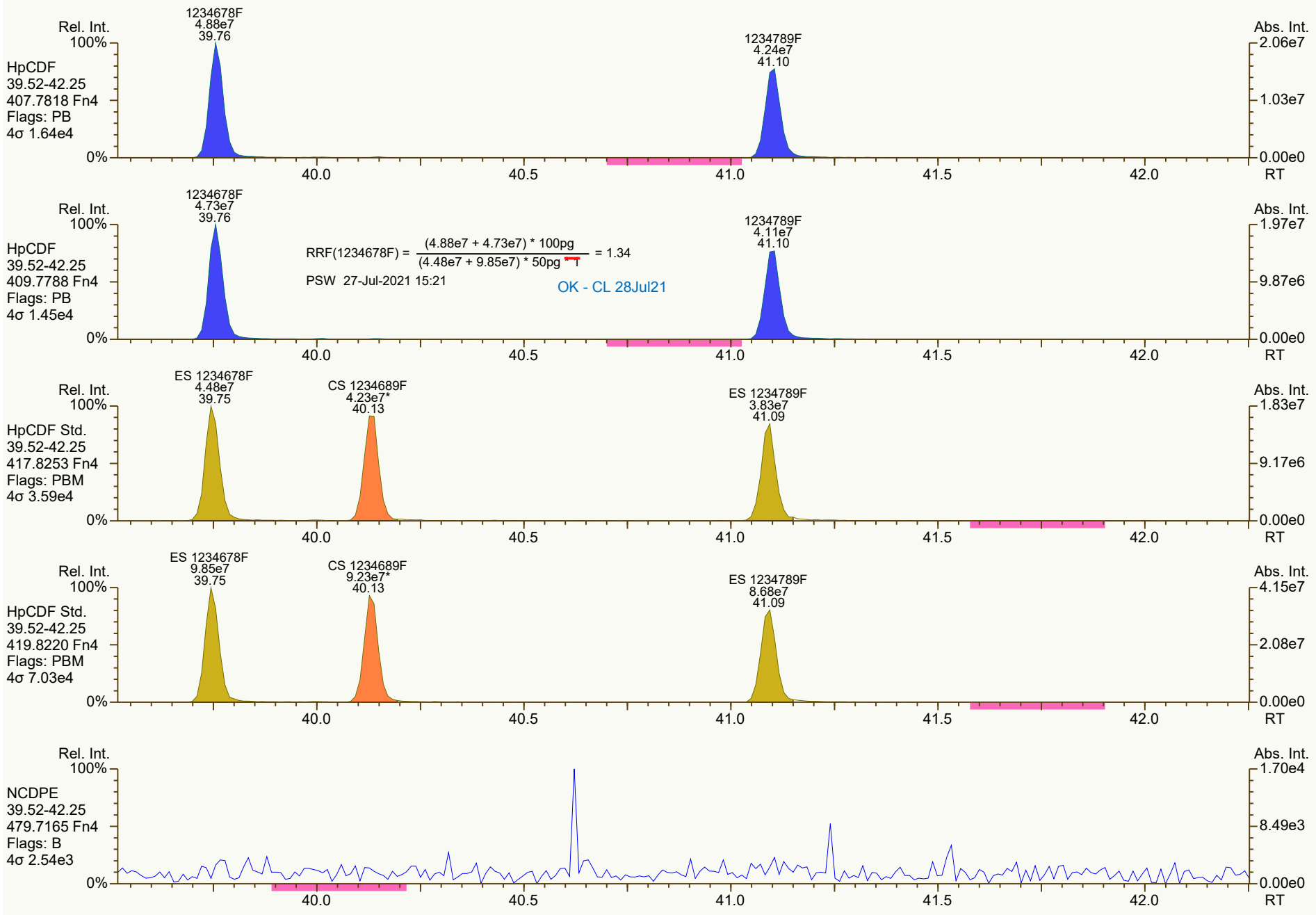
SGS ID: CS3_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

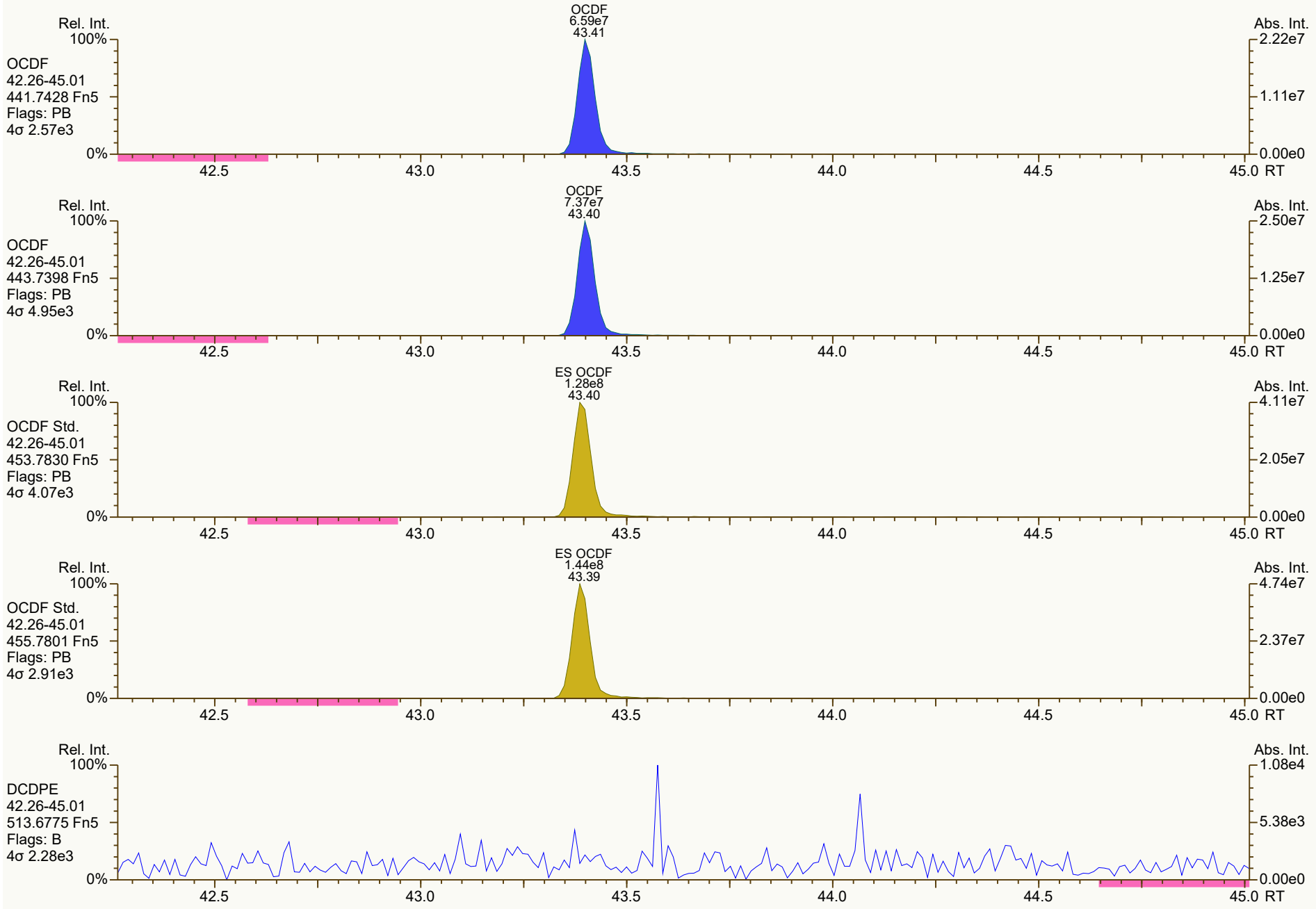
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 27-Jul-2021 11:32:33
User: PSW Datafile: 210727R05



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8888, 5073, 0072 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.64e4
1234678F
4.88e7
39.76
1234789F
4.24e7
41.10
Abs. Int.
2.06e7
1.03e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.45e4
1234678F
4.73e7
39.76
RRF(1234678F) = (4.88e7 + 4.73e7) * 100pg / (4.48e7 + 9.85e7) * 50pg = 1.34
PSW 27-Jul-2021 15:21
OK - CL 28Jul21
1234789F
4.11e7
41.10
1.97e7
9.87e6
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.59e4
ES 1234678F
4.48e7
39.75
CS 1234689F
4.23e7*
40.13
ES 1234789F
3.83e7
41.09
1.83e7
9.17e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 7.03e4
ES 1234678F
9.85e7
39.75
CS 1234689F
9.23e7*
40.13
ES 1234789F
8.68e7
41.09
4.15e7
2.08e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.54e3
1.70e4
8.49e3


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.57e3
0%
OCDF
6.59e7
43.41
Abs. Int.
2.22e7
1.11e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 4.95e3
0%
OCDF
7.37e7
43.40
Abs. Int.
2.50e7
1.25e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 4.07e3
0%
ES OCDF
1.28e8
43.40
Abs. Int.
4.11e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.91e3
0%
ES OCDF
1.44e8
43.39
Abs. Int.
4.74e7
2.37e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.28e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

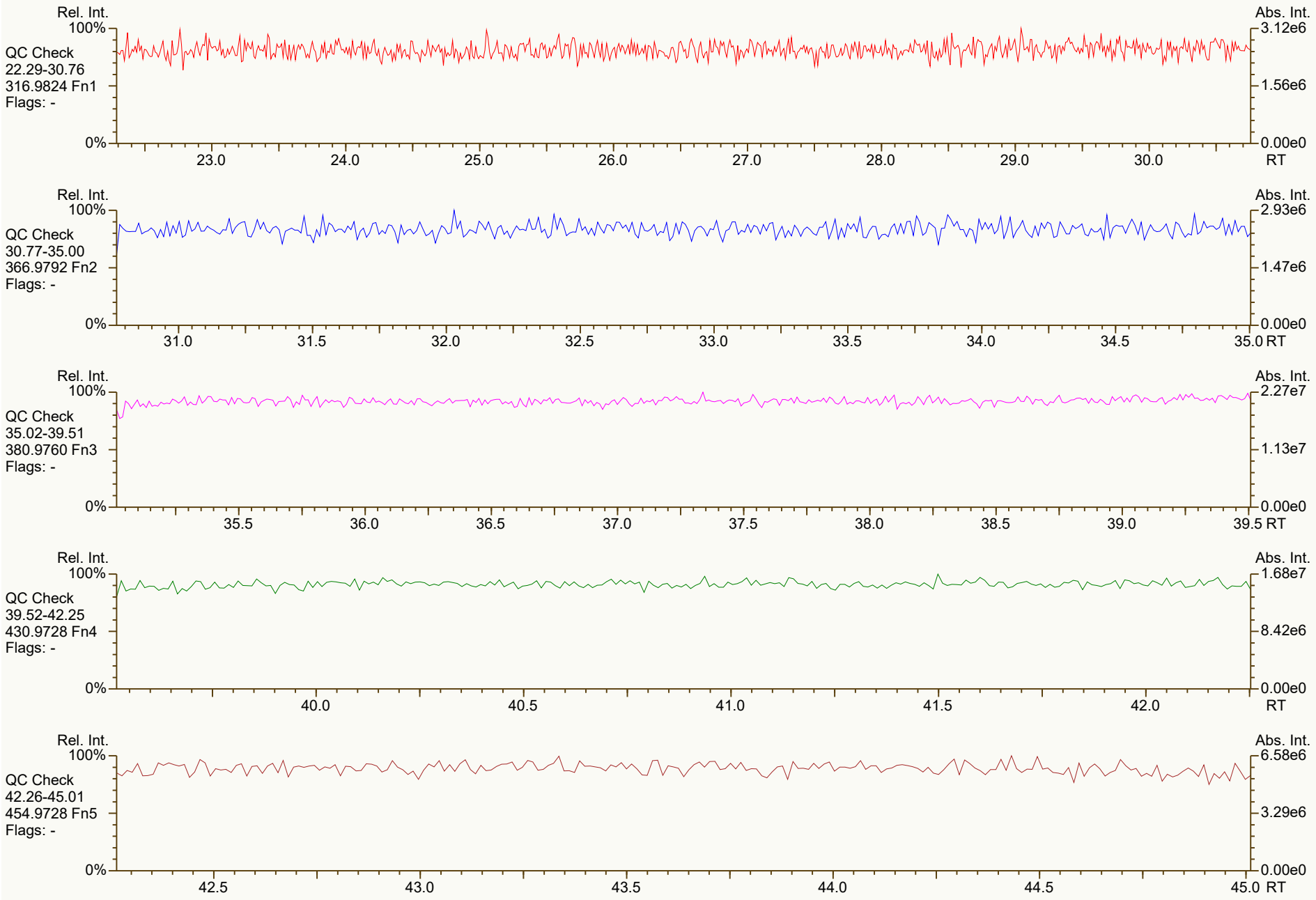
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

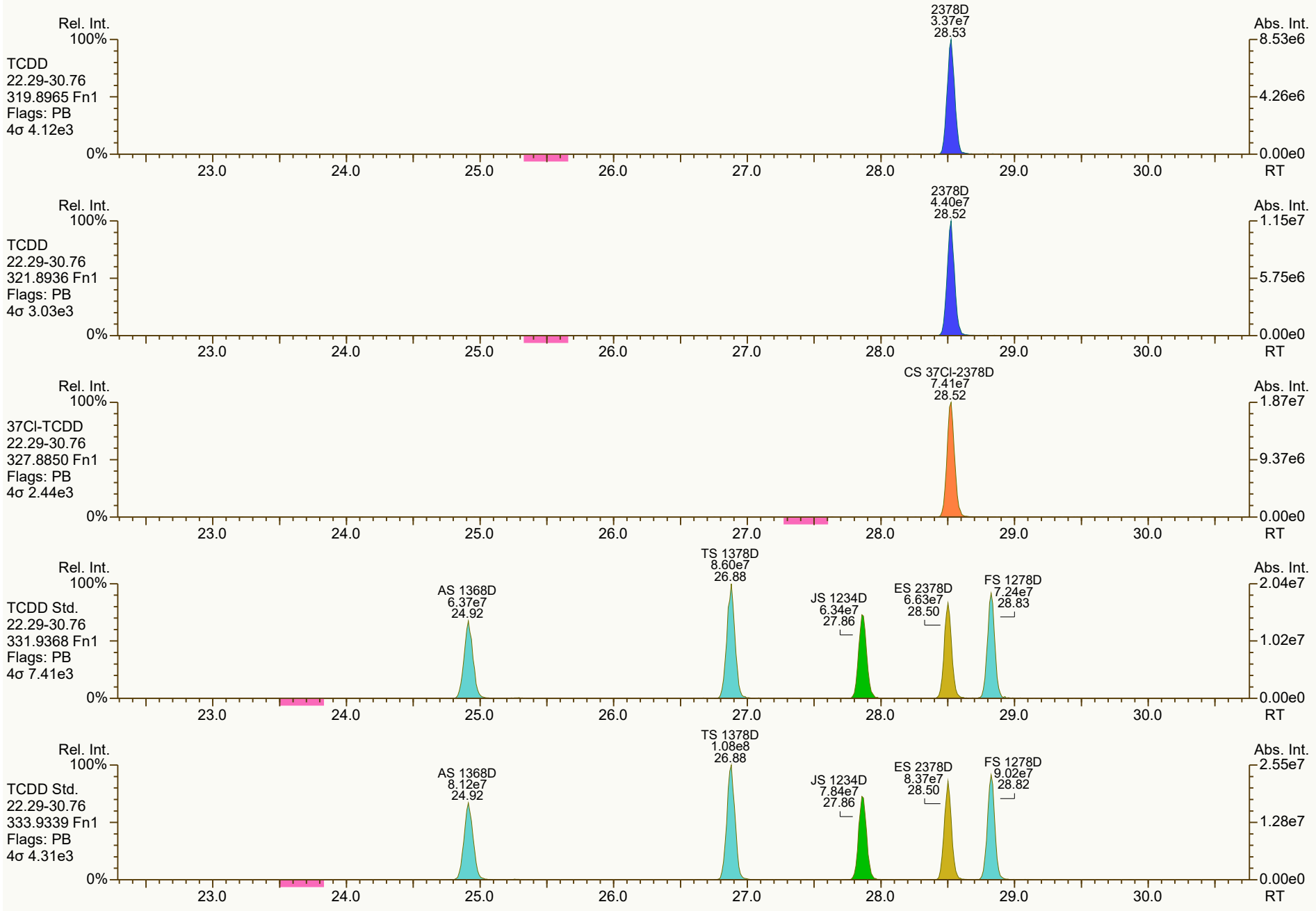
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	7.77E+07	0.76	Y	1.34	1.30	-4%
12378-PeCDD	33.81	3.10E+08	1.55	Y	1.06	1.06	0%
123478-HxCDD	37.68	2.82E+08	1.23	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.84E+08	1.24	Y	1.08	1.10	2%
123789-HxCDD	38.08	2.99E+08	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.67	2.61E+08	1.03	Y	0.97	0.98	0%
OCDD	43.23	4.49E+08	0.90	Y	1.07	1.08	1%
2378-TCDF	27.67	9.59E+07	0.77	Y	0.96	0.96	0%
12378-PeCDF	32.38	4.09E+08	1.58	Y	0.95	0.95	0%
23478-PeCDF	33.47	3.96E+08	1.56	Y	0.94	0.93	-1%
123478-HxCDF	36.69	3.82E+08	1.23	Y	1.23	1.24	0%
123678-HxCDF	36.83	3.97E+08	1.25	Y	1.13	1.13	0%
234678-HxCDF	37.49	3.75E+08	1.25	Y	1.15	1.13	-2%
123789-HxCDF	38.43	3.51E+08	1.24	Y	1.14	1.14	0%
1234678-HpCDF	39.77	3.45E+08	1.03	Y	1.36	1.33	-2%
1234789-HpCDF	41.11	2.99E+08	1.04	Y	1.30	1.30	0%
OCDF	43.41	5.22E+08	0.91	Y	1.03	1.05	2%
ES 2378-TCDD	28.50	1.50E+08	0.79	Y	1.03	1.06	2%
ES 12378-PeCDD	33.789	1.46E+08	1.59	Y	1.03	1.03	0%
ES 123478-HxCDD	37.662	1.34E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.775	1.29E+08	1.28	Y	0.97	0.94	-4%
ES 123789-HxCDD	38.064	1.51E+08	1.27	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.654	1.33E+08	1.06	Y	0.99	0.97	-2%
ES OCDD	43.216	2.07E+08	0.92	Y	0.78	0.75	-3%
ES 2378-TCDF	27.649	2.49E+08	0.80	Y	1.08	1.09	1%
ES 12378-PeCDF	32.362	2.16E+08	1.57	Y	0.93	0.95	2%
ES 23478-PeCDF	33.454	2.12E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.668	1.54E+08	0.51	Y	1.14	1.12	-2%
ES 123678-HxCDF	36.808	1.75E+08	0.53	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.477	1.66E+08	0.53	Y	1.20	1.20	0%
ES 123789-HxCDF	38.409	1.54E+08	0.52	Y	1.14	1.12	-1%
ES 1234678-HpCDF	39.757	1.30E+08	0.45	Y	0.95	0.94	-1%
ES 1234789-HpCDF	41.102	1.15E+08	0.45	Y	0.85	0.83	-2%
ES OCDF	43.398	2.49E+08	0.90	Y	0.93	0.90	-2%

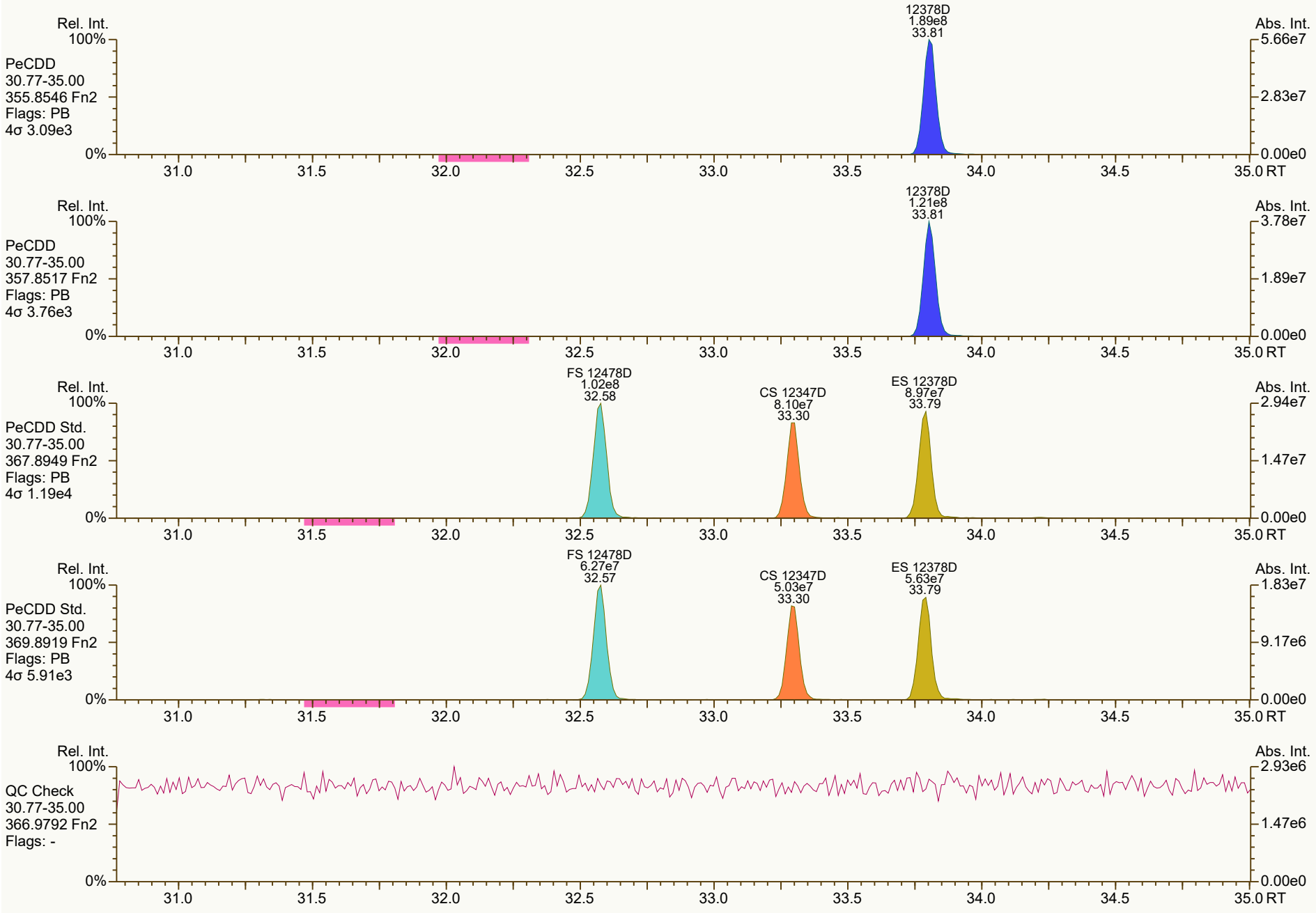
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

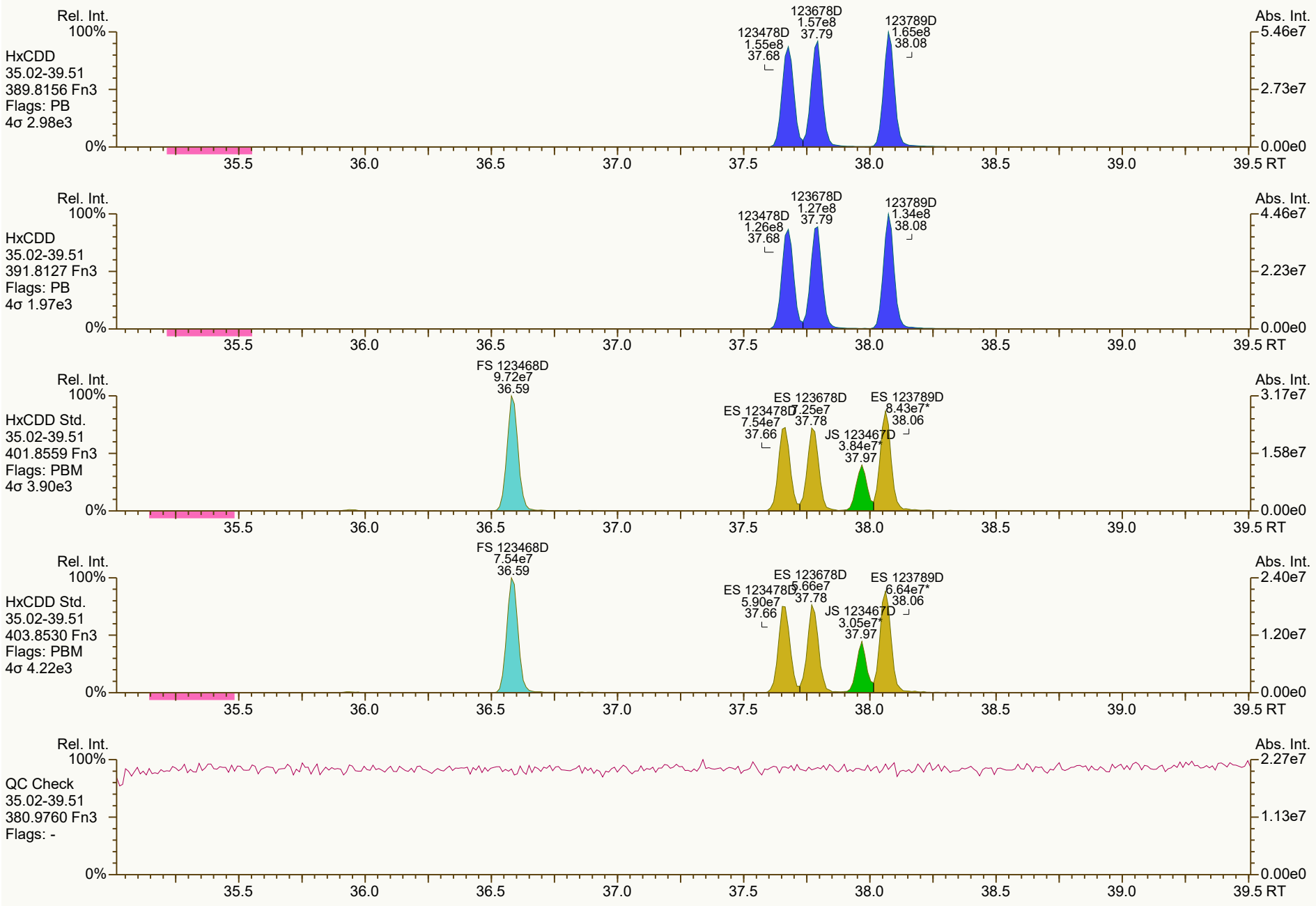
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.42E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	2.27E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	6.89E+07	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.31	1.31	0%
CS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.89	0.93	4%
CS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.87	0.88	2%
CS 123469-HxCDF	37.12	1.50E+08	0.54	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.26	1.23	-2%
SS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.86	0.90	4%
SS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.12	1.50E+08	0.54	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.91	0.92	1%
AS 1368-TCDD	24.92	1.45E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.49E+08	0.79	Y	1.08	1.09	1%
FS 1278-TCDD	28.83	1.63E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.64E+08	1.62	Y	1.09	1.13	3%
FS 123468-HxCDD	36.59	1.73E+08	1.29	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	1.84E+08	1.07	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	1.94E+08	0.79	Y	1.35	1.30	-4%
~~OCDD-a~~	~~43.22~~	~~2.77E+07~~	~~2.50~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~
~~OCDF-a~~	~~43.41~~	~~3.08E+07~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~4%~~

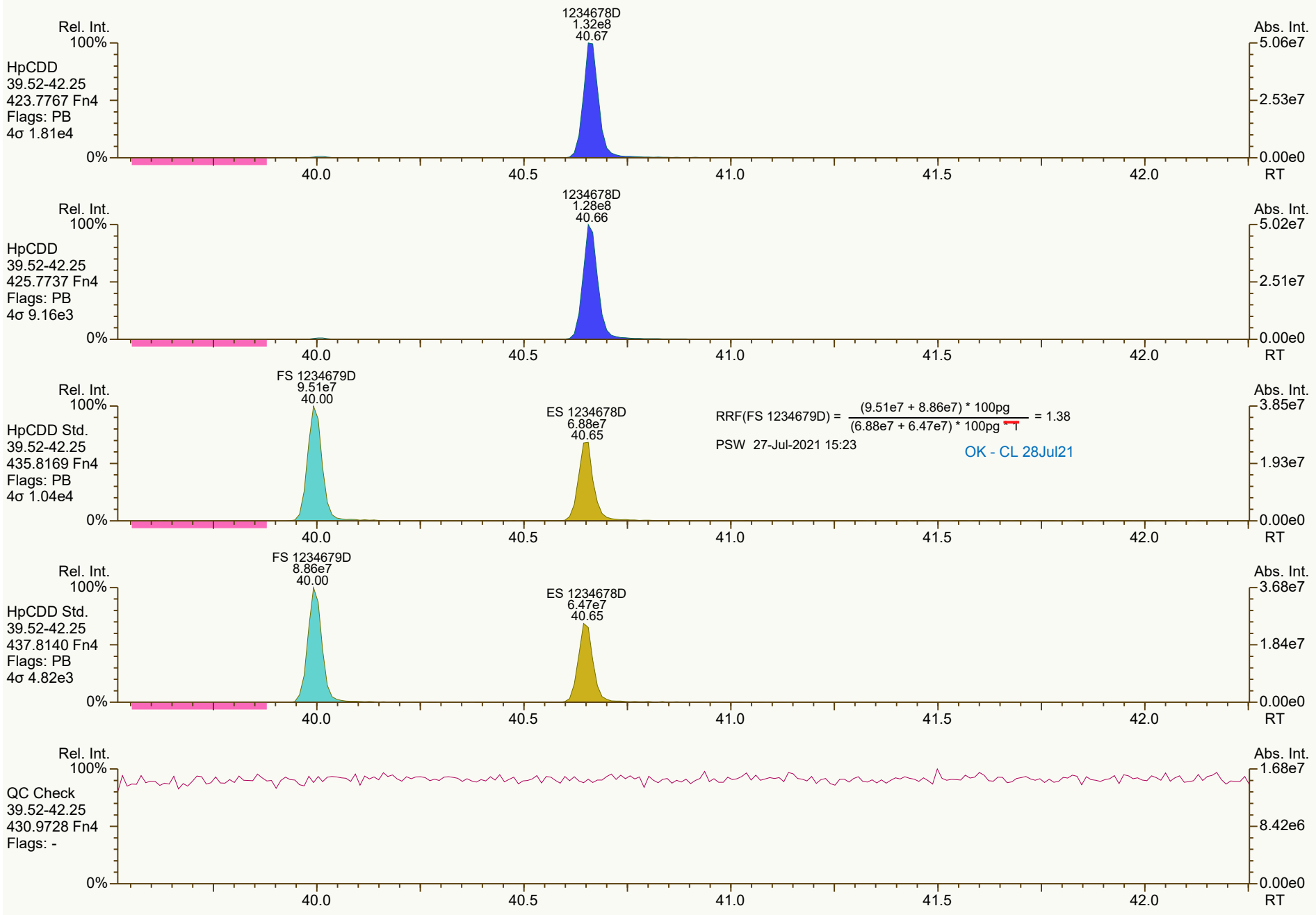
Not reported from this ICAL - CL 28Jul21

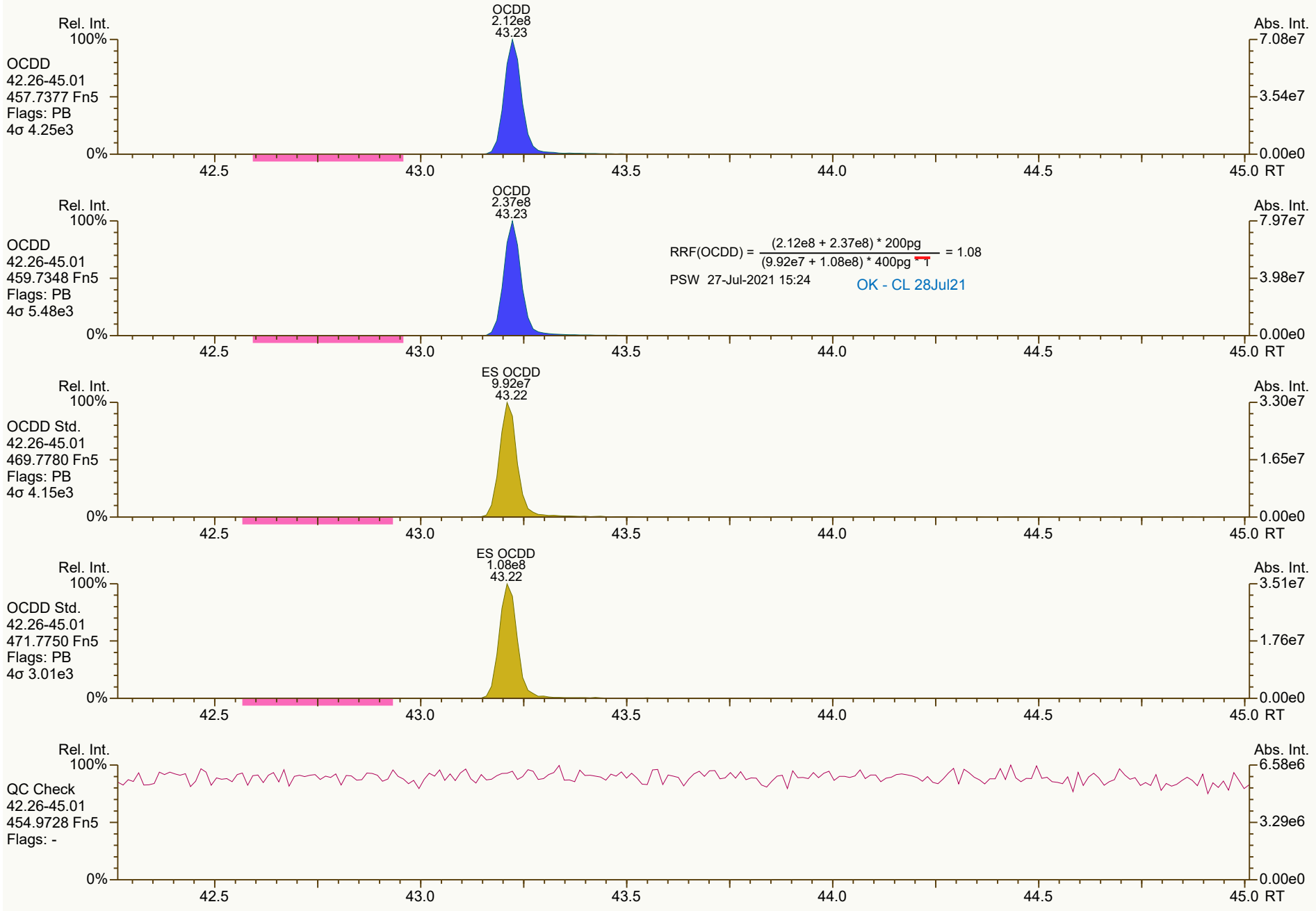

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.68e7
8.42e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 4.12e3
2378D
3.37e7
28.53
8.53e6
4.26e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 3.03e3
2378D
4.40e7
28.52
1.15e7
5.75e6
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.44e3
CS 37Cl-2378D
7.41e7
28.52
1.87e7
9.37e6
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.41e3
AS 1368D
6.37e7
24.92
TS 1378D
8.60e7
26.88
JS 1234D
6.34e7
27.86
ES 2378D
6.63e7
28.50
FS 1278D
7.24e7
28.83
2.04e7
1.02e7
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.31e3
AS 1368D
8.12e7
24.92
TS 1378D
1.08e8
26.88
JS 1234D
7.84e7
27.86
ES 2378D
8.37e7
28.50
FS 1278D
9.02e7
28.82
2.55e7
1.28e7
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.09e3
0%
12378D
1.89e8
33.81
Abs. Int.
5.66e7
2.83e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 3.76e3
0%
12378D
1.21e8
33.81
Abs. Int.
3.78e7
1.89e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 1.19e4
0%
FS 12478D
1.02e8
32.58
CS 12347D
8.10e7
33.30
ES 12378D
8.97e7
33.79
Abs. Int.
2.94e7
1.47e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 5.91e3
0%
FS 12478D
6.27e7
32.57
CS 12347D
5.03e7
33.30
ES 12378D
5.63e7
33.79
Abs. Int.
1.83e7
9.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

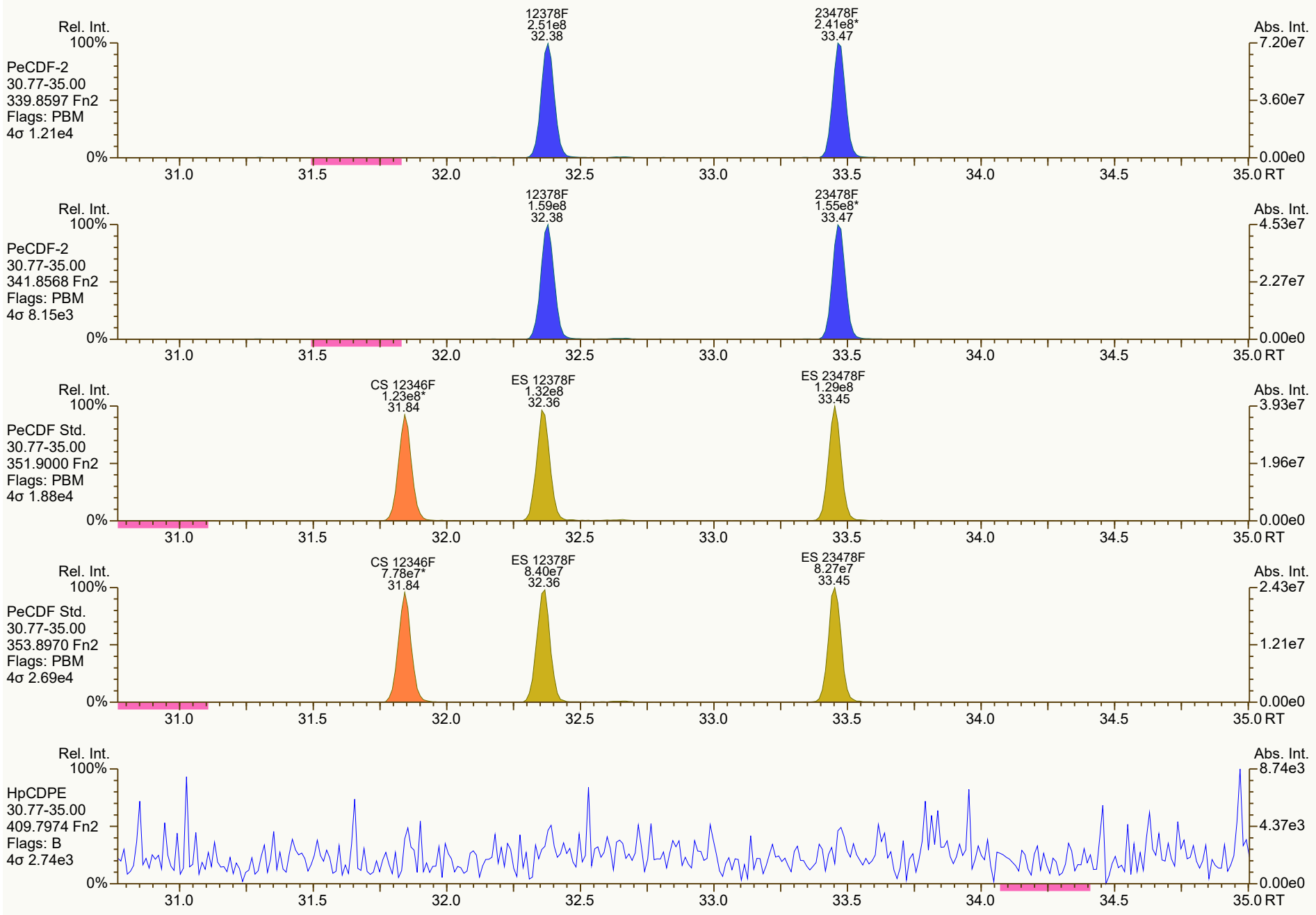

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.98e3
123678D
1.57e8
37.79
123478D
1.55e8
37.68
123789D
1.65e8
38.08
Abs. Int.
5.46e7
2.73e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.97e3
123678D
1.27e8
37.79
123478D
1.26e8
37.68
123789D
1.34e8
38.08
Abs. Int.
4.46e7
2.23e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.90e3
FS 123468D
9.72e7
36.59
ES 123678D
7.25e7
37.78
ES 123478D
7.54e7
37.66
ES 123789D
8.43e7*
38.06
JS 123467D
3.84e7*
37.97
Abs. Int.
3.17e7
1.58e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 4.22e3
FS 123468D
7.54e7
36.59
ES 123678D
5.66e7
37.78
ES 123478D
5.90e7
37.66
ES 123789D
6.64e7*
38.06
JS 123467D
3.05e7*
37.97
Abs. Int.
2.40e7
1.20e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.13e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

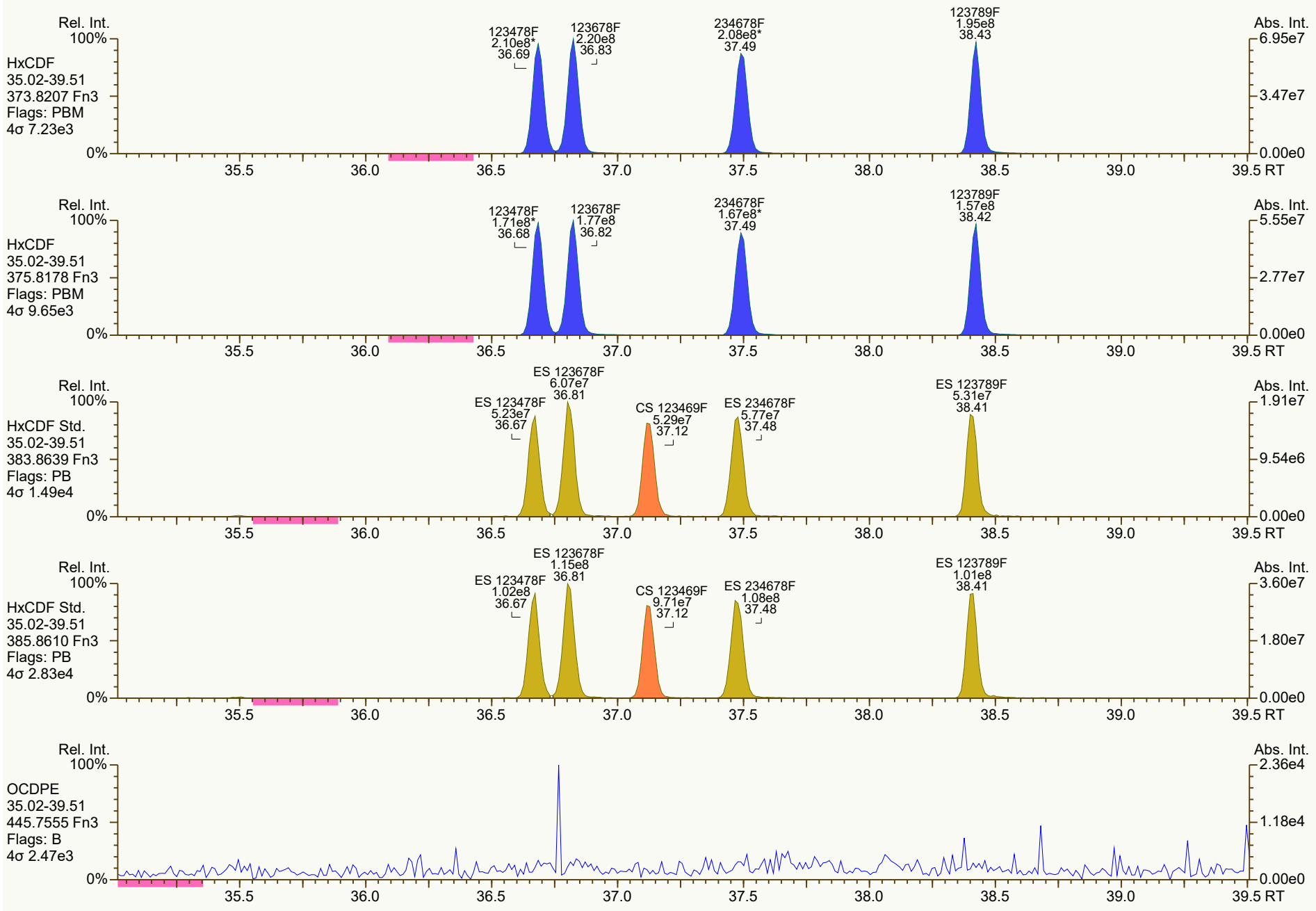

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.81e4
1234678D
1.32e8
40.67
Abs. Int.
5.06e7
2.53e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 9.16e3
1234678D
1.28e8
40.66
5.02e7
2.51e7
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.04e4
FS 1234679D
9.51e7
40.00
ES 1234678D
6.88e7
40.65
RRF(FS 1234679D) = (9.51e7 + 8.86e7) * 100pg / (6.88e7 + 6.47e7) * 100pg = 1.38
PSW 27-Jul-2021 15:23
OK - CL 28Jul21
3.85e7
1.93e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.82e3
FS 1234679D
8.86e7
40.00
ES 1234678D
6.47e7
40.65
3.68e7
1.84e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.68e7
8.42e6

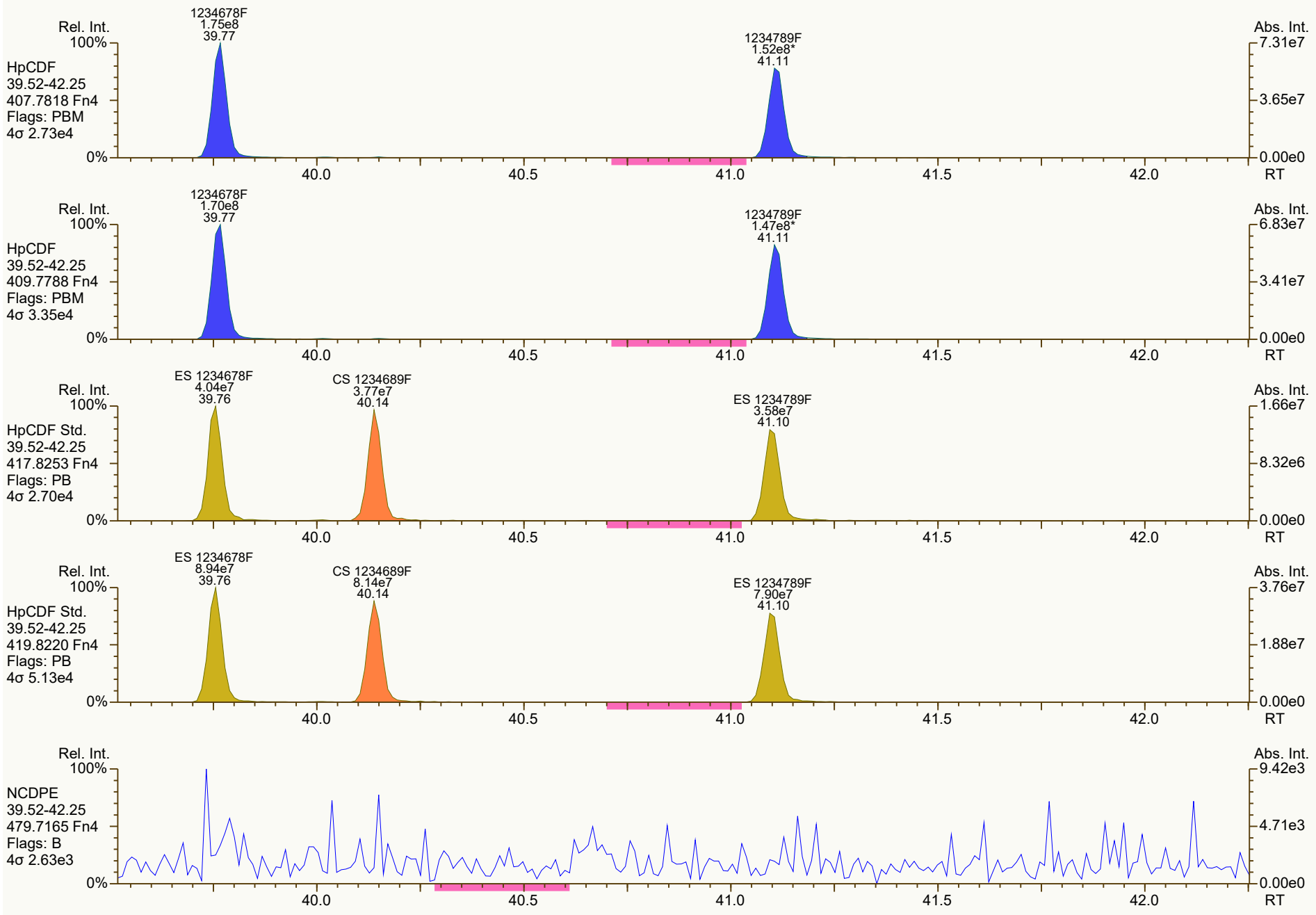

Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PB
4σ 4.25e3
0%
OCDD
2.12e8
43.23
Abs. Int.
7.08e7
3.54e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PB
4σ 5.48e3
0%
OCDD
2.37e8
43.23
RRF(OCDD) = (2.12e8 + 2.37e8) * 200pg / (9.92e7 + 1.08e8) * 400pg = 1.08
PSW 27-Jul-2021 15:24
OK - CL 28Jul21
Abs. Int.
7.97e7
3.98e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.15e3
0%
ES OCDD
9.92e7
43.22
Abs. Int.
3.30e7
1.65e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.01e3
0%
ES OCDD
1.08e8
43.22
Abs. Int.
3.51e7
1.76e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.95e3
2378F
4.17e7
27.67
9.81e6
4.91e6
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.51e3
2378F
5.43e7
27.67
1.28e7
6.42e6
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.36e4
AS 1368F
1.10e8
22.86
JS 1234F
9.87e7
26.33
ES 2378F
1.10e8
27.65
2.69e7
1.34e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.34e4
AS 1368F
1.39e8
22.85
JS 1234F
1.29e8
26.33
ES 2378F
1.38e8
27.65
3.21e7
1.60e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.81e3
9.37e3
4.68e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.32e4
6.61e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.55e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.14e4
1.07e4
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.28e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PBM
4σ 1.21e4
0%
12378F
2.51e8
32.38
23478F
2.41e8*
33.47
Abs. Int.
7.20e7
3.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PBM
4σ 8.15e3
0%
12378F
1.59e8
32.38
23478F
1.55e8*
33.47
Abs. Int.
4.53e7
2.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 1.88e4
0%
CS 12346F
1.23e8*
31.84
ES 12378F
1.32e8
32.36
ES 23478F
1.29e8
33.45
Abs. Int.
3.93e7
1.96e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.69e4
0%
CS 12346F
7.78e7*
31.84
ES 12378F
8.40e7
32.36
ES 23478F
8.27e7
33.45
Abs. Int.
2.43e7
1.21e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.74e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 7.23e3
0%
123478F
2.10e8*
36.69
123678F
2.20e8
36.83
234678F
2.08e8*
37.49
123789F
1.95e8
38.43
Abs. Int.
6.95e7
3.47e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.65e3
0%
123478F
1.71e8*
36.68
123678F
1.77e8
36.82
234678F
1.67e8*
37.49
123789F
1.57e8
38.42
Abs. Int.
5.55e7
2.77e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.49e4
0%
ES 123478F
5.23e7
36.67
ES 123678F
6.07e7
36.81
CS 123469F
5.29e7
37.12
ES 234678F
5.77e7
37.48
ES 123789F
5.31e7
38.41
Abs. Int.
1.91e7
9.54e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.83e4
0%
ES 123478F
1.02e8
36.67
ES 123678F
1.15e8
36.81
CS 123469F
9.71e7
37.12
ES 234678F
1.08e8
37.48
ES 123789F
1.01e8
38.41
Abs. Int.
3.60e7
1.80e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.47e3
0%
Abs. Int.
2.36e4
1.18e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
0%
Abs. Int.
RT
40.0
40.5
41.0
41.5
42.0
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PBM
4σ 2.73e4
1234678F
1.75e8
39.77
1234789F
1.52e8*
41.11
7.31e7
3.65e7
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PBM
4σ 3.35e4
1234678F
1.70e8
39.77
1234789F
1.47e8*
41.11
6.83e7
3.41e7
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.70e4
ES 1234678F
4.04e7
39.76
CS 1234689F
3.77e7
40.14
ES 1234789F
3.58e7
41.10
1.66e7
8.32e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.13e4
ES 1234678F
8.94e7
39.76
CS 1234689F
8.14e7
40.14
ES 1234789F
7.90e7
41.10
3.76e7
1.88e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
9.42e3
4.71e3
0.00e0


OCDF
2.49e8
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.68e3
0%
Abs. Int.
8.08e7
4.04e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.73e8
43.41
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.81e3
0%
Abs. Int.
8.85e7
4.43e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.18e8
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.20e3
0%
Abs. Int.
3.94e7
1.97e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.31e8
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 5.23e3
0%
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
0%
Abs. Int.
4.05e3
2.02e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

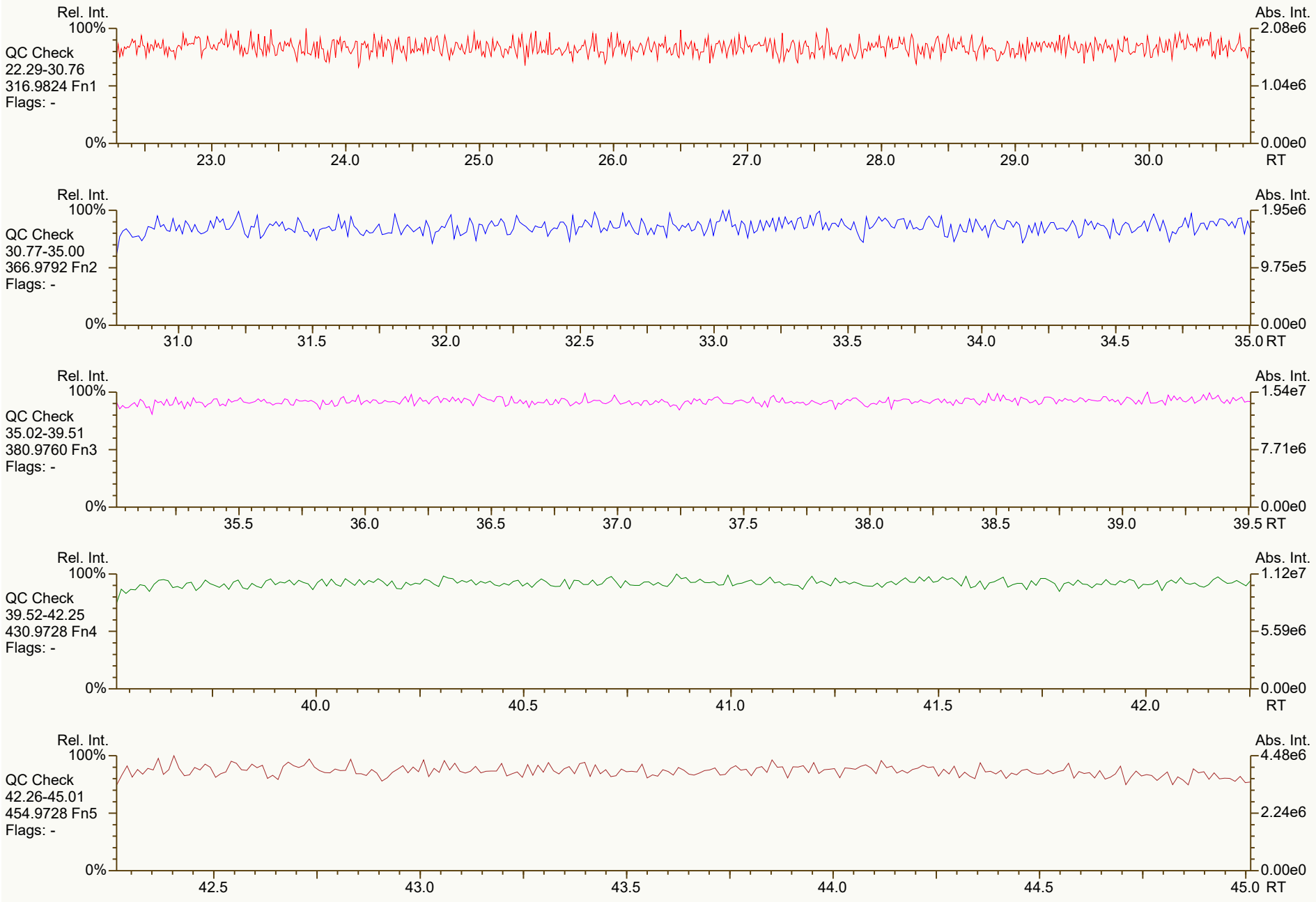
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

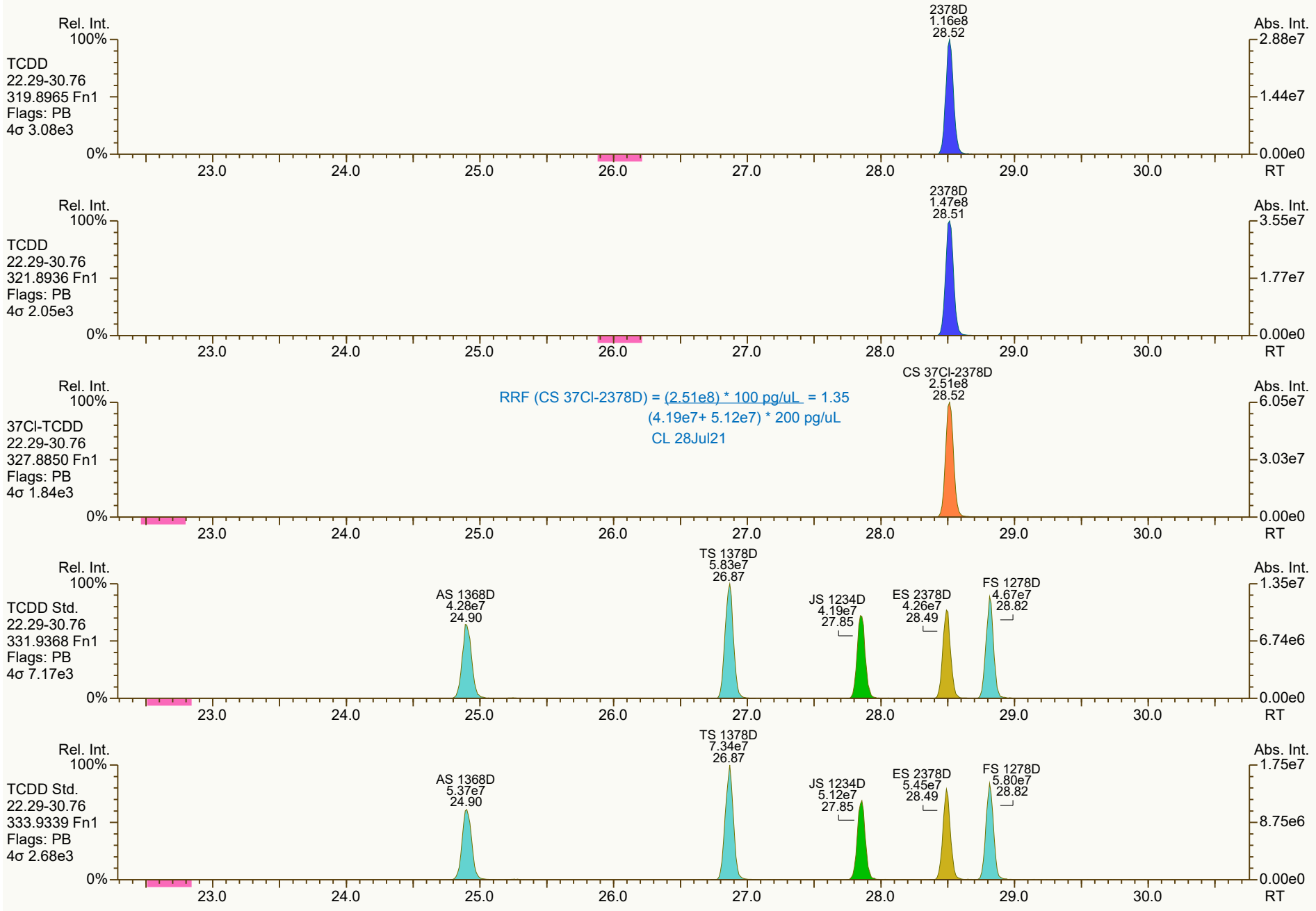
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.63E+08	0.78	Y	1.34	1.35	1%
12378-PeCDD	33.80	1.06E+09	1.56	Y	1.06	1.07	1%
123478-HxCDD	37.67	9.52E+08	1.24	Y	1.06	1.06	0%
123678-HxCDD	37.78	9.75E+08	1.25	Y	1.08	1.10	1%
123789-HxCDD	38.07	1.03E+09	1.25	Y	1.02	1.01	-1%
1234678-HpCDD	40.66	8.94E+08	1.04	Y	0.97	0.98	1%
OCDD	43.22	1.57E+09	0.88	Y	1.07	1.06	-1%
2378-TCDF	27.66	3.19E+08	0.77	Y	0.96	0.97	1%
12378-PeCDF	32.37	1.33E+09	1.51	Y	0.95	0.93	-1%
23478-PeCDF	33.46	1.36E+09	1.58	Y	0.94	0.96	3%
123478-HxCDF	36.68	1.30E+09	1.25	Y	1.23	1.24	0%
123678-HxCDF	36.82	1.35E+09	1.25	Y	1.13	1.14	1%
234678-HxCDF	37.49	1.27E+09	1.24	Y	1.15	1.15	0%
123789-HxCDF	38.42	1.20E+09	1.24	Y	1.14	1.15	2%
1234678-HpCDF	39.76	1.19E+09	1.03	Y	1.36	1.37	1%
1234789-HpCDF	41.10	1.06E+09	1.03	Y	1.30	1.35	4%
OCDF	43.40	1.87E+09	0.90	Y	1.03	1.06	3%
ES 2378-TCDD	28.49	9.72E+07	0.78	Y	1.03	1.04	1%
ES 12378-PeCDD	33.782	9.96E+07	1.62	Y	1.03	1.07	3%
ES 123478-HxCDD	37.654	8.99E+07	1.27	Y	0.99	1.03	4%
ES 123678-HxCDD	37.768	8.89E+07	1.27	Y	0.97	1.02	5%
ES 123789-HxCDD	38.058	1.02E+08	1.27	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.644	9.11E+07	1.06	Y	0.99	1.05	6%
ES OCDD	43.21	1.48E+08	0.89	Y	0.78	0.85	9%
ES 2378-TCDF	27.639	1.64E+08	0.80	Y	1.08	1.08	0%
ES 12378-PeCDF	32.354	1.43E+08	1.61	Y	0.93	0.95	1%
ES 23478-PeCDF	33.446	1.41E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.662	1.05E+08	0.52	Y	1.14	1.21	6%
ES 123678-HxCDF	36.801	1.19E+08	0.53	Y	1.30	1.36	5%
ES 234678-HxCDF	37.468	1.11E+08	0.51	Y	1.20	1.27	6%
ES 123789-HxCDF	38.402	1.04E+08	0.54	Y	1.14	1.20	5%
ES 1234678-HpCDF	39.749	8.70E+07	0.46	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.092	7.84E+07	0.46	Y	0.85	0.90	6%
ES OCDF	43.392	1.76E+08	0.89	Y	0.93	1.01	9%

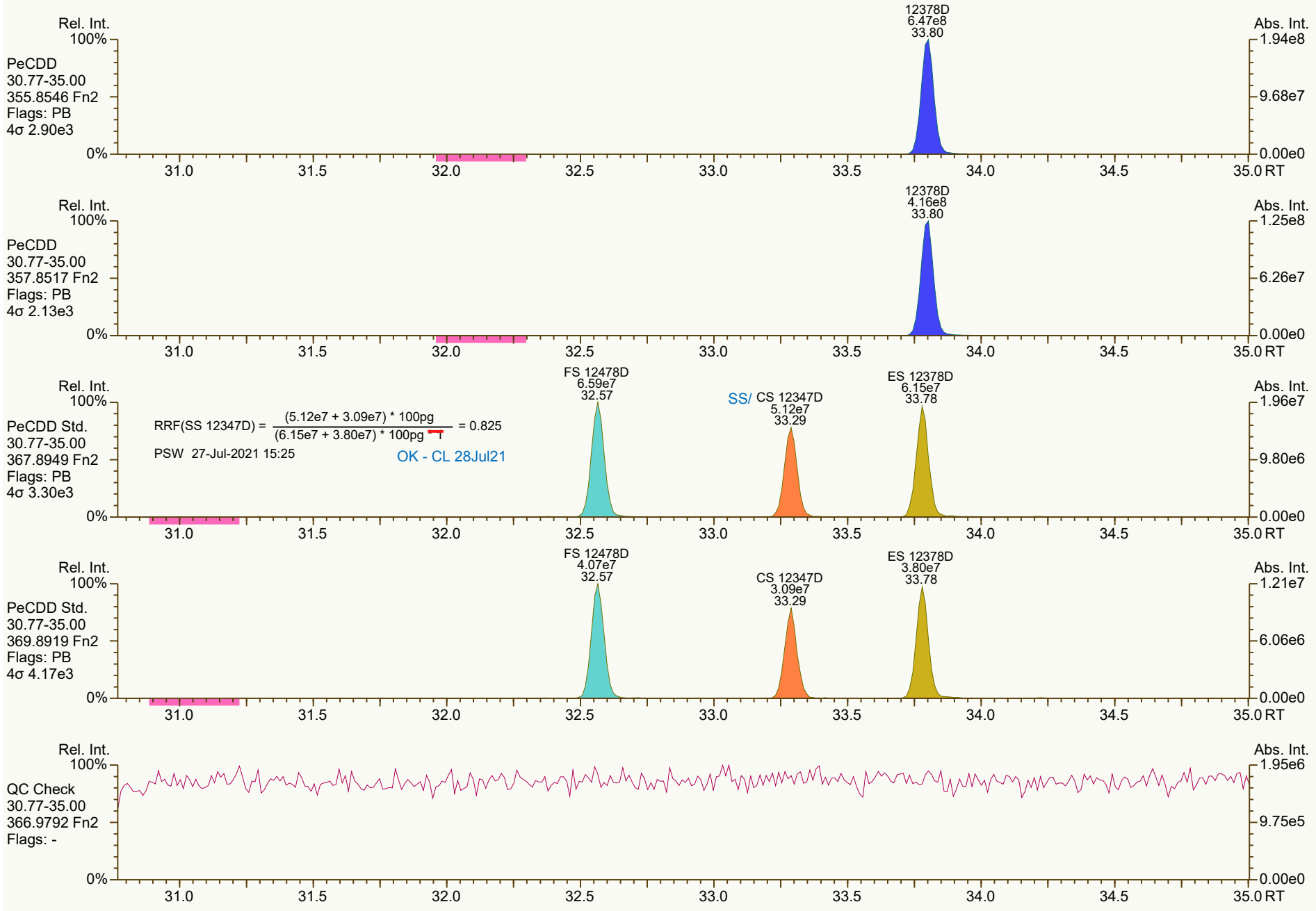
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

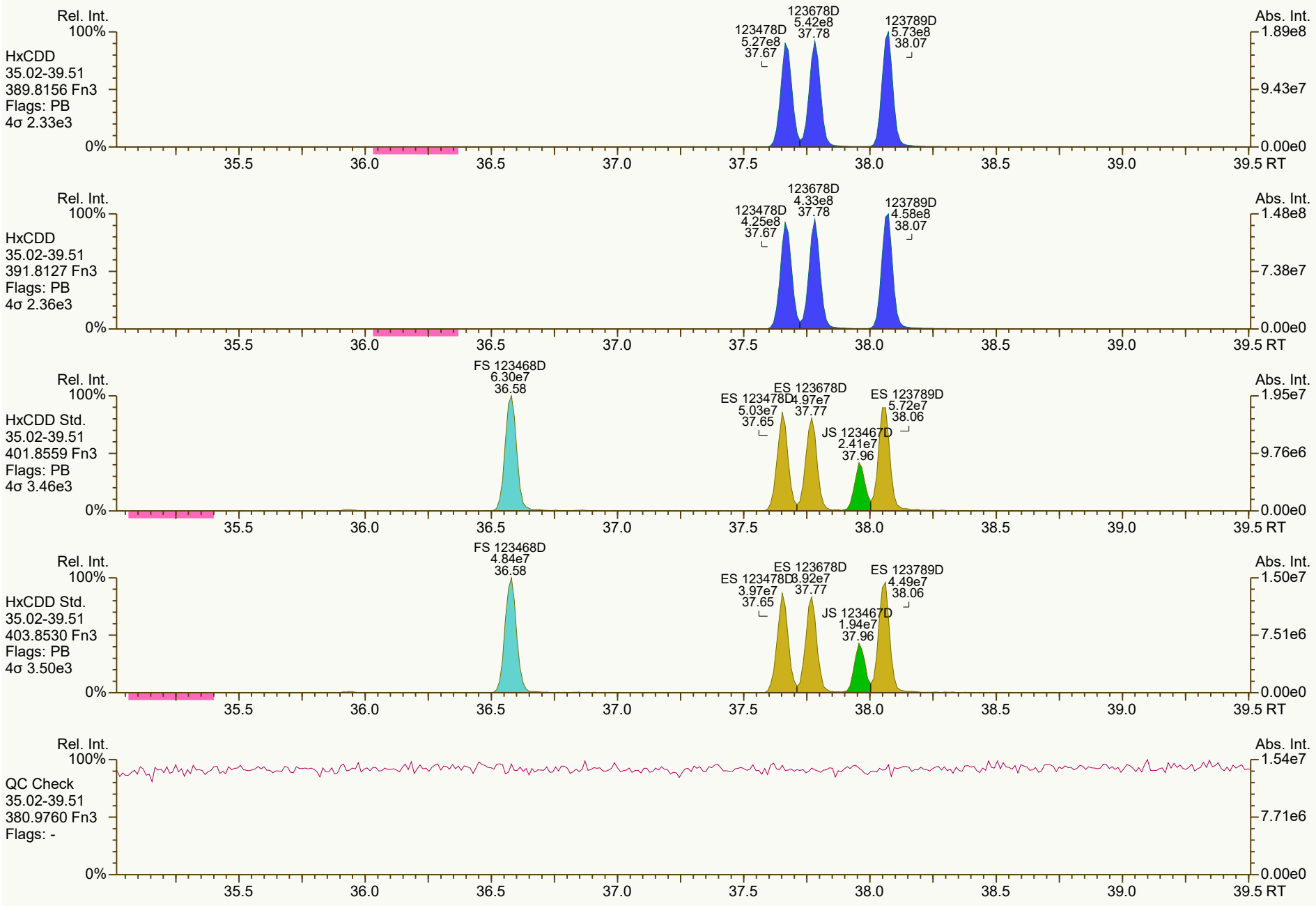
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.85	9.31E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.32	1.51E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	4.35E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.31	1.35	3%
CS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.11	9.75E+07	0.53	Y	1.09	1.12	3%
CS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.26	1.29	3%
SS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.86	0.82	-5%
SS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.93	0.91	-2%
SS 123469-HxCDF	37.11	9.75E+07	0.53	Y	0.84	0.82	-2%
SS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.91	0.86	-6%
AS 1368-TCDD	24.90	9.65E+07	0.80	Y	1.02	1.04	1%
AS 1368-TCDF	22.84	1.66E+08	0.78	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.05E+08	0.81	Y	1.08	1.08	-1%
FS 12478-PeCDD	32.57	1.07E+08	1.62	Y	1.09	1.07	-2%
FS 123468-HxCDD	36.58	1.11E+08	1.30	Y	1.26	1.24	-2%
FS 1234679-HpCDD	39.99	1.18E+08	1.06	Y	1.36	1.30	-4%
TS 1378-TCDD	26.87	1.32E+08	0.79	Y	1.35	1.35	1%
~~OCDD-a~~	~~43.22~~	~~9.57E+07~~	~~2.52~~	~~Y~~	~~0.07~~	~~0.06~~	~~-2%~~
~~OCDF-a~~	~~43.40~~	~~1.10E+08~~	~~2.51~~	~~Y~~	~~0.06~~	~~0.06~~	~~5%~~

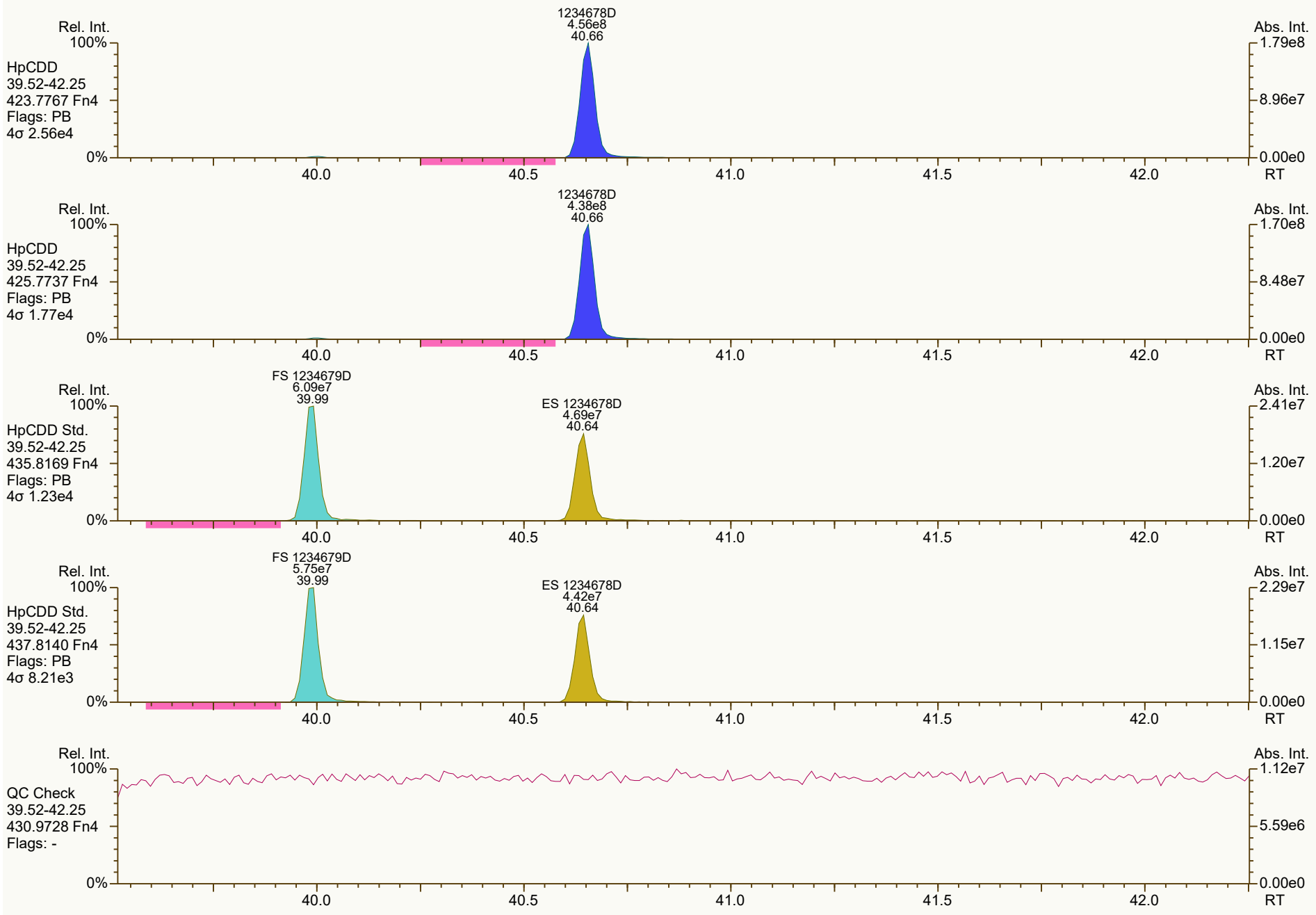
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.08e6
1.04e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.54e7
7.71e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.12e7
5.59e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

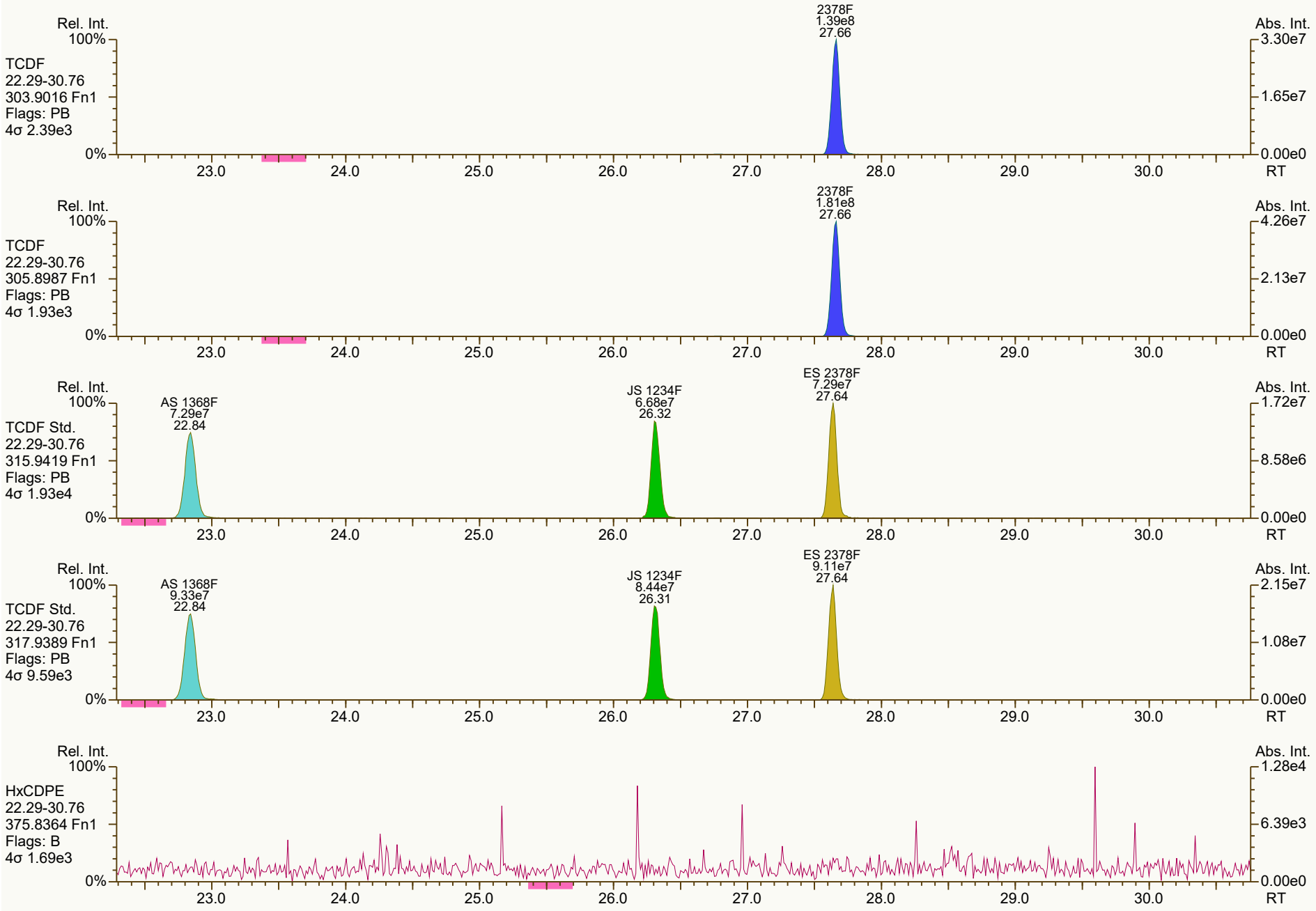

Rel. Int.
100%
0%
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.08e3
2378D
1.16e8
28.52
2.88e7
1.44e7
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.05e3
2378D
1.47e8
28.51
3.55e7
1.77e7
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.84e3
CS 37Cl-2378D
2.51e8
28.52
RRF (CS 37Cl-2378D) = (2.51e8) * 100 pg/uL = 1.35
(4.19e7+ 5.12e7) * 200 pg/uL
CL 28Jul21
6.05e7
3.03e7
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.17e3
AS 1368D
4.28e7
24.90
TS 1378D
5.83e7
26.87
JS 1234D
4.19e7
27.85
ES 2378D
4.26e7
28.49
FS 1278D
4.67e7
28.82
1.35e7
6.74e6
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.68e3
AS 1368D
5.37e7
24.90
TS 1378D
7.34e7
26.87
JS 1234D
5.12e7
27.85
ES 2378D
5.45e7
28.49
FS 1278D
5.80e7
28.82
1.75e7
8.75e6
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.90e3
0%
12378D
6.47e8
33.80
Abs. Int.
1.94e8
9.68e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.13e3
0%
12378D
4.16e8
33.80
Abs. Int.
1.25e8
6.26e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.30e3
0%
RRF(SS 12347D) = (5.12e7 + 3.09e7) * 100pg / (6.15e7 + 3.80e7) * 100pg = 0.825
PSW 27-Jul-2021 15:25
OK - CL 28Jul21
FS 12478D
6.59e7
32.57
SS/ CS 12347D
5.12e7
33.29
ES 12378D
6.15e7
33.78
Abs. Int.
1.96e7
9.80e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.17e3
0%
FS 12478D
4.07e7
32.57
CS 12347D
3.09e7
33.29
ES 12378D
3.80e7
33.78
Abs. Int.
1.21e7
6.06e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.33e3
123478D
5.27e8
37.67
123678D
5.42e8
37.78
123789D
5.73e8
38.07
Abs. Int.
1.89e8
9.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.36e3
123478D
4.25e8
37.67
123678D
4.33e8
37.78
123789D
4.58e8
38.07
Abs. Int.
1.48e8
7.38e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.46e3
FS 123468D
6.30e7
36.58
ES 123478D
5.03e7
37.65
ES 123678D
4.97e7
37.77
JS 123467D
2.41e7
37.96
ES 123789D
5.72e7
38.06
Abs. Int.
1.95e7
9.76e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.50e3
FS 123468D
4.84e7
36.58
ES 123478D
3.97e7
37.65
ES 123678D
3.92e7
37.77
JS 123467D
1.94e7
37.96
ES 123789D
4.49e7
38.06
Abs. Int.
1.50e7
7.51e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.54e7
7.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

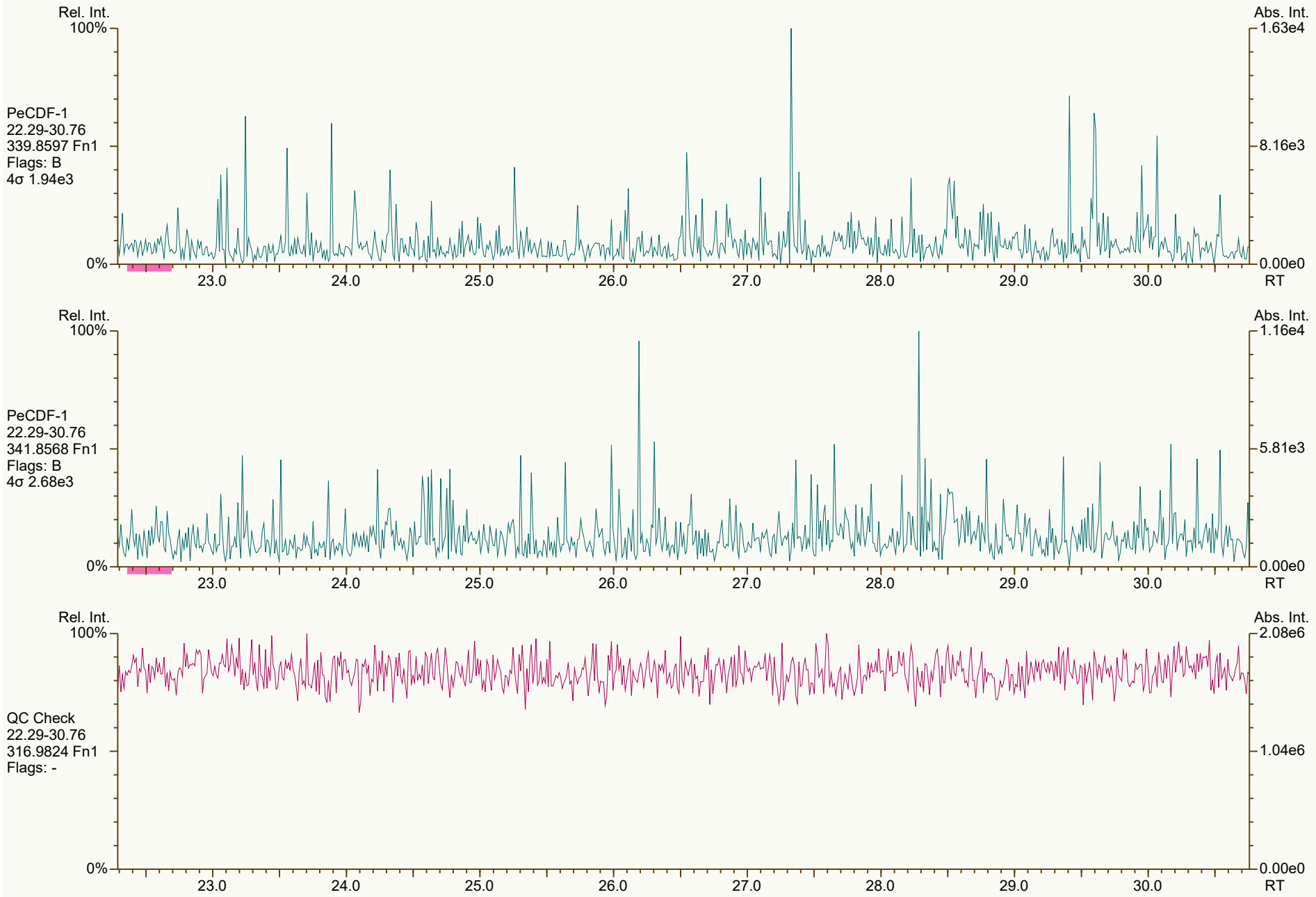

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.56e4
1234678D
4.56e8
40.66
Abs. Int.
1.79e8
8.96e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.77e4
1234678D
4.38e8
40.66
Abs. Int.
1.70e8
8.48e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.23e4
FS 1234679D
6.09e7
39.99
ES 1234678D
4.69e7
40.64
Abs. Int.
2.41e7
1.20e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 8.21e3
FS 1234679D
5.75e7
39.99
ES 1234678D
4.42e7
40.64
Abs. Int.
2.29e7
1.15e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.12e7
5.59e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.62e3
0%
OCDD
7.34e8*
43.22
Abs. Int.
2.52e8
1.26e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
OCDD
8.31e8*
43.22
Abs. Int.
2.81e8
1.40e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 3.01e3
0%
ES OCDD
6.94e7
43.21
Abs. Int.
2.31e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.23e3
0%
ES OCDD
7.81e7
43.21
Abs. Int.
2.71e7
1.35e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.39e3
0%
2378F
1.39e8
27.66
Abs. Int.
3.30e7
1.65e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 1.93e3
0%
2378F
1.81e8
27.66
Abs. Int.
4.26e7
2.13e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.93e4
0%
AS 1368F
7.29e7
22.84
JS 1234F
6.68e7
26.32
ES 2378F
7.29e7
27.64
Abs. Int.
1.72e7
8.58e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 9.59e3
0%
AS 1368F
9.33e7
22.84
JS 1234F
8.44e7
26.31
ES 2378F
9.11e7
27.64
Abs. Int.
2.15e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.69e3
0%
Abs. Int.
1.28e4
6.39e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS5_210727_DF_RA | Sample ID: SIL 25-5-3 | Acq: 27-Jul-2021 13:09:36

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89 | User: PSW Datafile: 210727R07

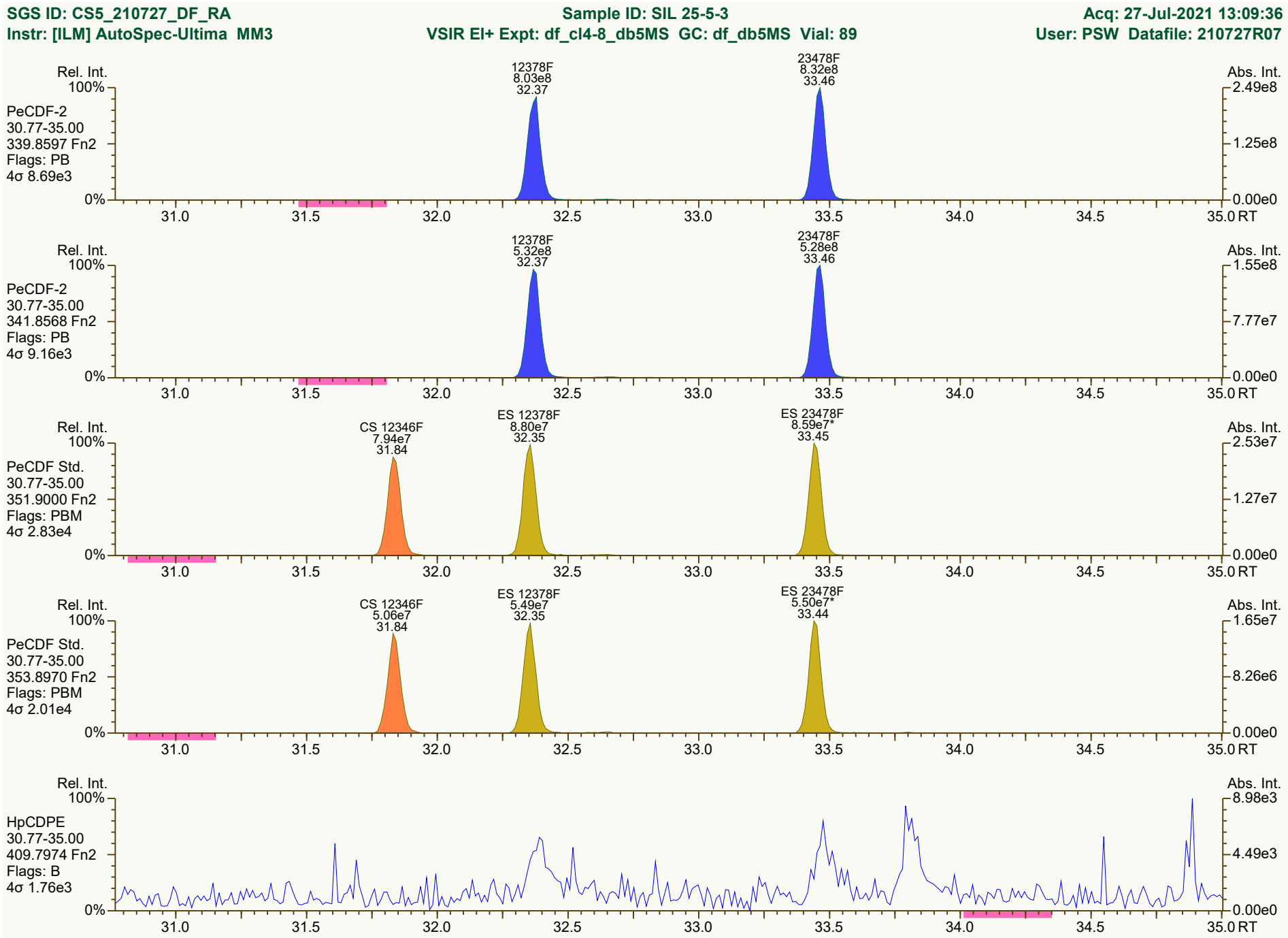


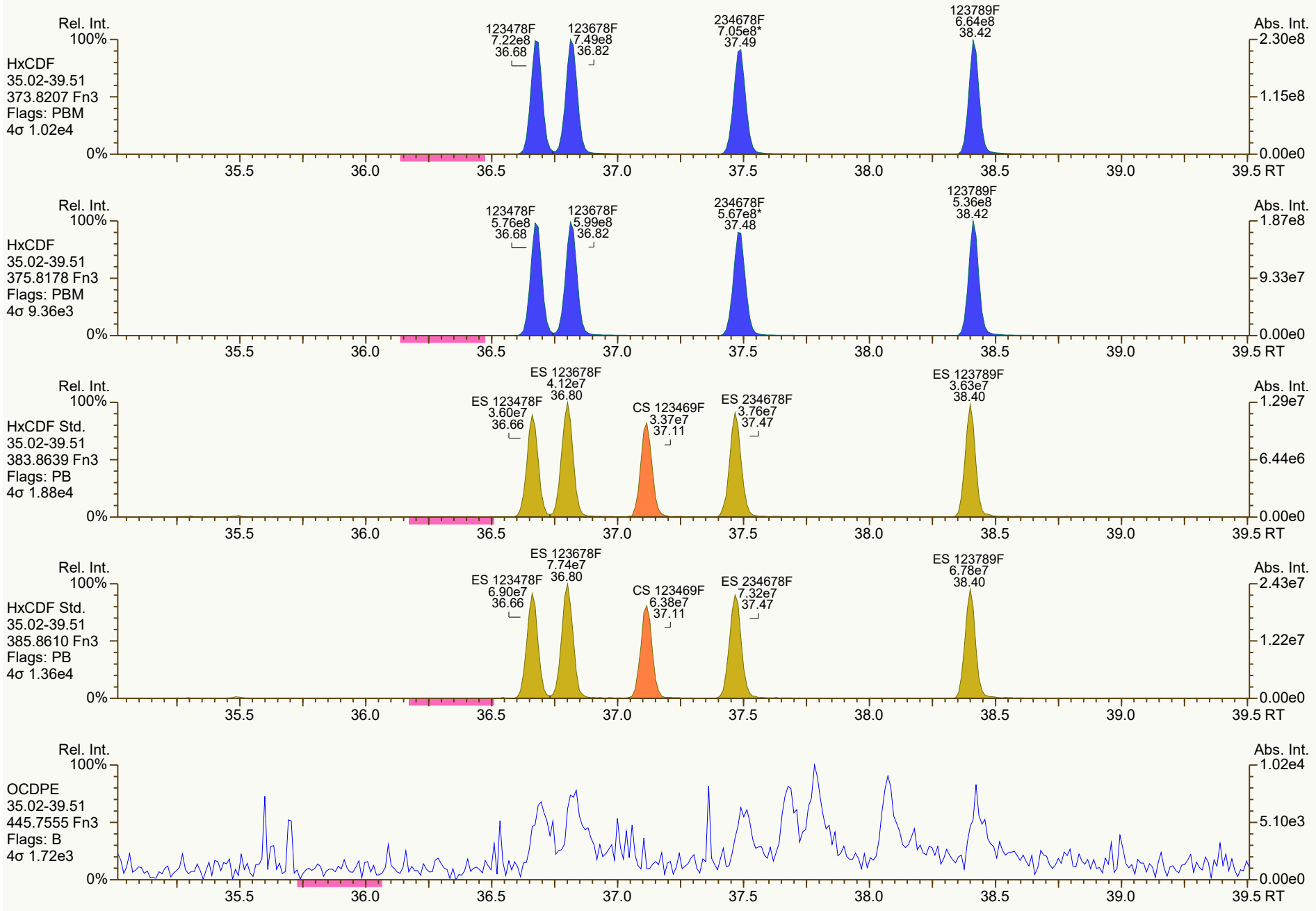
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)

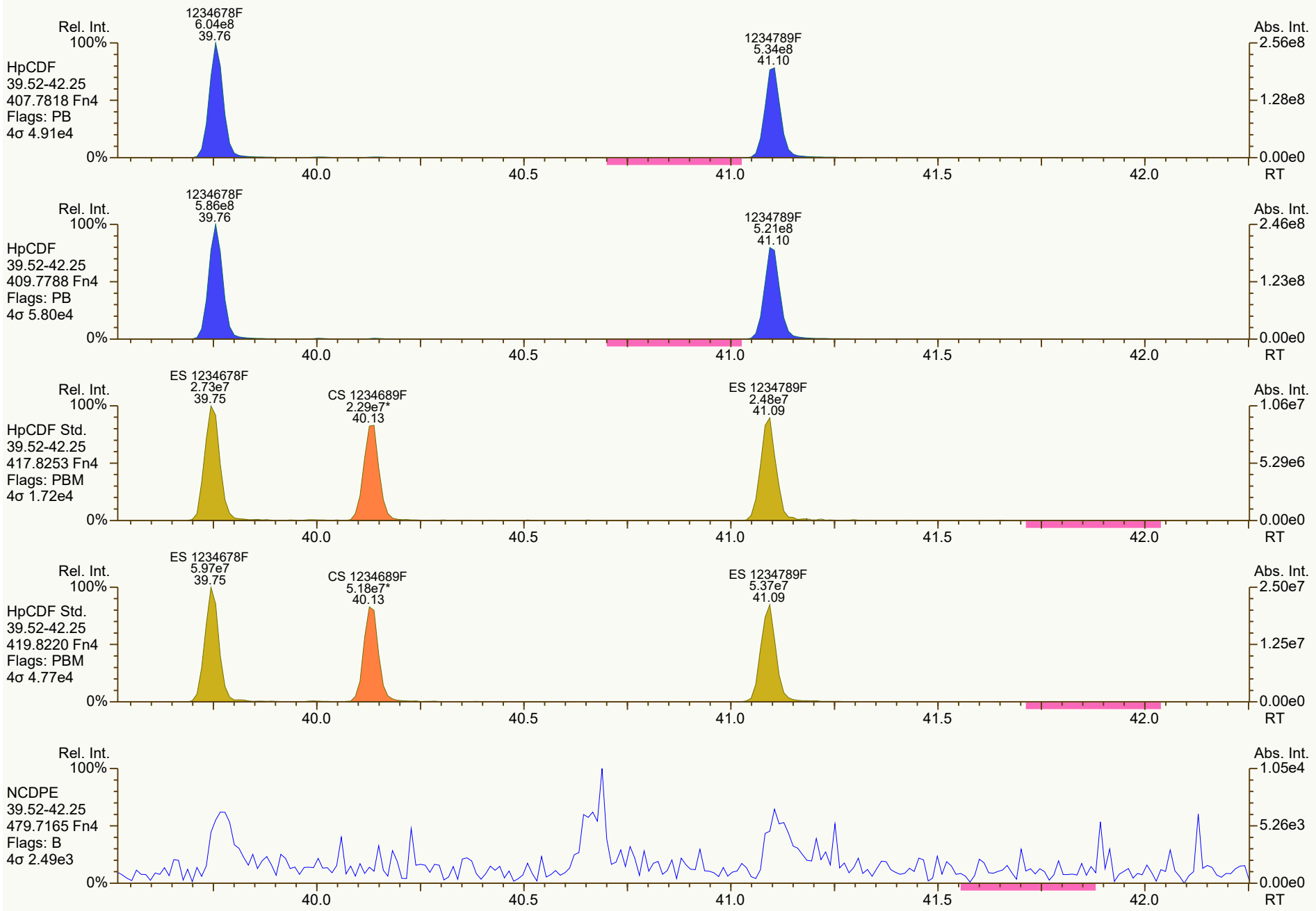
Peak annotation: Areas, Centroids

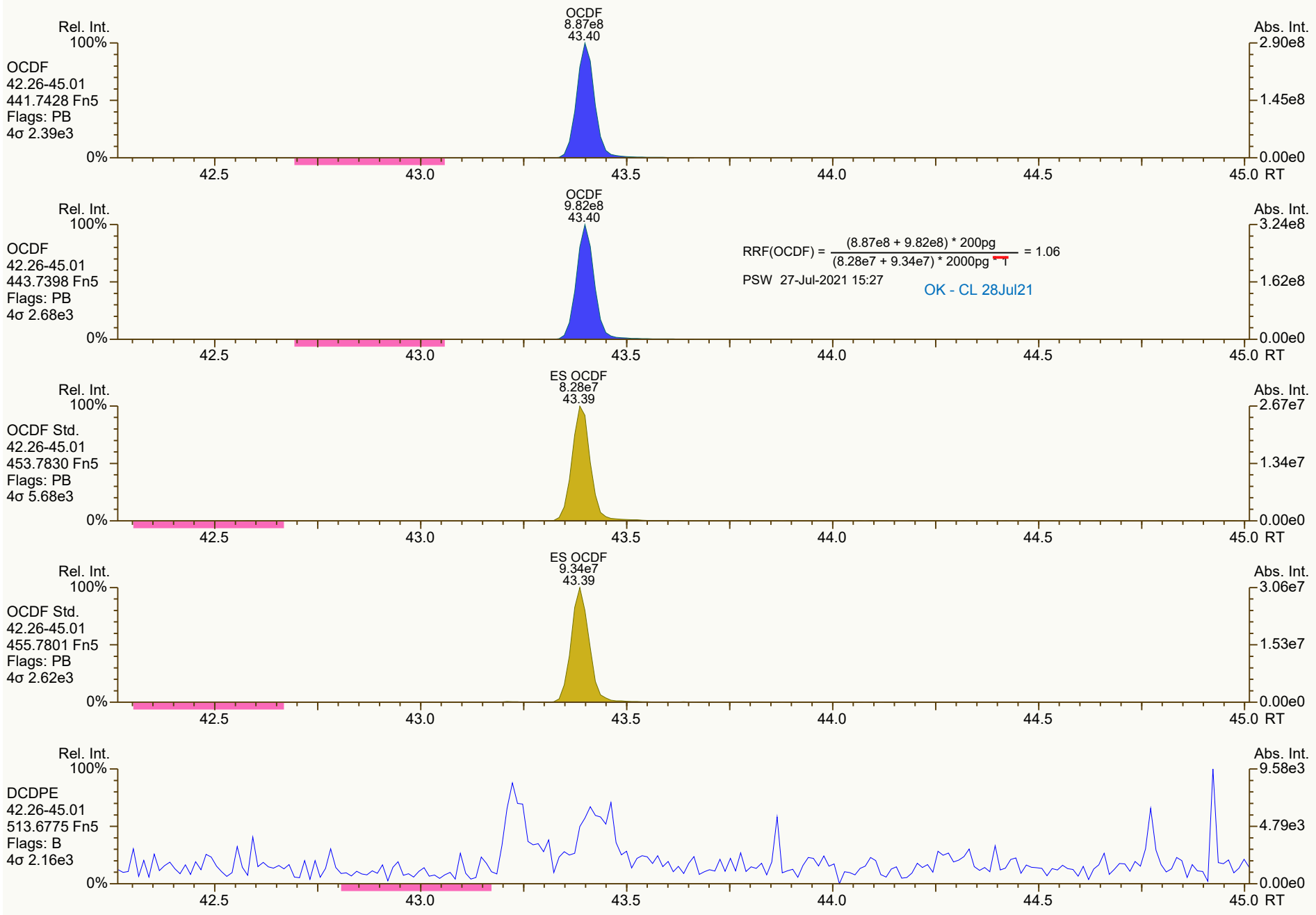
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7511 scc: 147-553

PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 8 of 12


SGS ID: CS5_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
Acq: 27-Jul-2021 13:09:36
User: PSW Datafile: 210727R07
Rel. Int.
100%
0%
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 8.69e3
12378F
8.03e8
32.37
23478F
8.32e8
33.46
2.49e8
1.25e8
0.00e0
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 9.16e3
12378F
5.32e8
32.37
23478F
5.28e8
33.46
1.55e8
7.77e7
0.00e0
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.83e4
CS 12346F
7.94e7
31.84
ES 12378F
8.80e7
32.35
ES 23478F
8.59e7*
33.45
2.53e7
1.27e7
0.00e0
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.01e4
CS 12346F
5.06e7
31.84
ES 12378F
5.49e7
32.35
ES 23478F
5.50e7*
33.44
1.65e7
8.26e6
0.00e0
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 1.76e3
8.98e3
4.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1570, 9623, 3877 scc: 147-553
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.02e4
0%
123478F
7.22e8
36.68
123678F
7.49e8
36.82
234678F
7.05e8*
37.49
123789F
6.64e8
38.42
Abs. Int.
2.30e8
1.15e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.36e3
0%
123478F
5.76e8
36.68
123678F
5.99e8
36.82
234678F
5.67e8*
37.48
123789F
5.36e8
38.42
Abs. Int.
1.87e8
9.33e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.88e4
0%
ES 123478F
3.60e7
36.66
ES 123678F
4.12e7
36.80
CS 123469F
3.37e7
37.11
ES 234678F
3.76e7
37.47
ES 123789F
3.63e7
38.40
Abs. Int.
1.29e7
6.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.36e4
0%
ES 123478F
6.90e7
36.66
ES 123678F
7.74e7
36.80
CS 123469F
6.38e7
37.11
ES 234678F
7.32e7
37.47
ES 123789F
6.78e7
38.40
Abs. Int.
2.43e7
1.22e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.72e3
0%
Abs. Int.
1.02e4
5.10e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

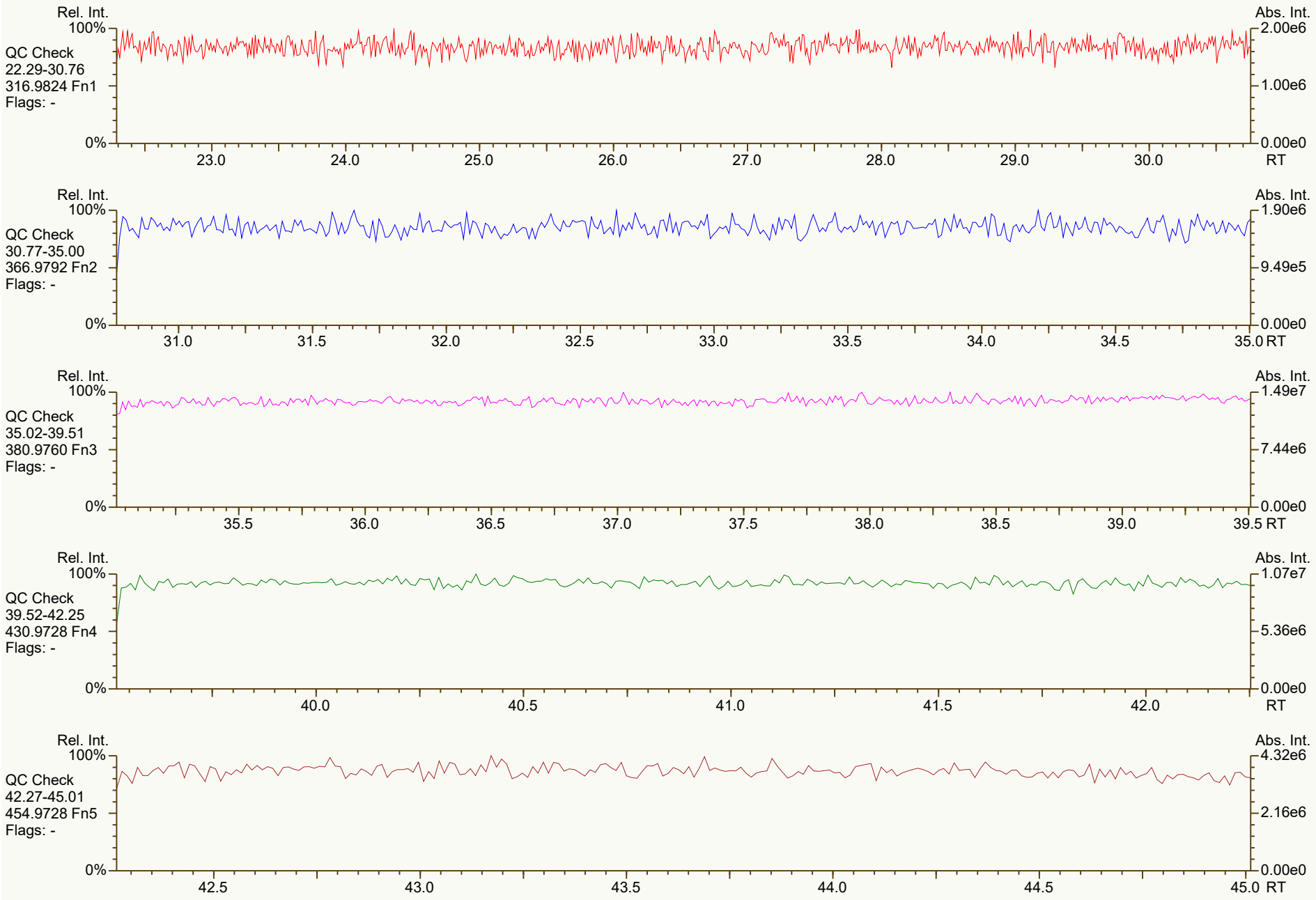

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e4
1234678F
6.04e8
39.76
1234789F
5.34e8
41.10
Abs. Int.
2.56e8
1.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.80e4
1234678F
5.86e8
39.76
1234789F
5.21e8
41.10
2.46e8
1.23e8
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 1.72e4
ES 1234678F
2.73e7
39.75
CS 1234689F
2.29e7*
40.13
ES 1234789F
2.48e7
41.09
1.06e7
5.29e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 4.77e4
ES 1234678F
5.97e7
39.75
CS 1234689F
5.18e7*
40.13
ES 1234789F
5.37e7
41.09
2.50e7
1.25e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.49e3
1.05e4
5.26e3

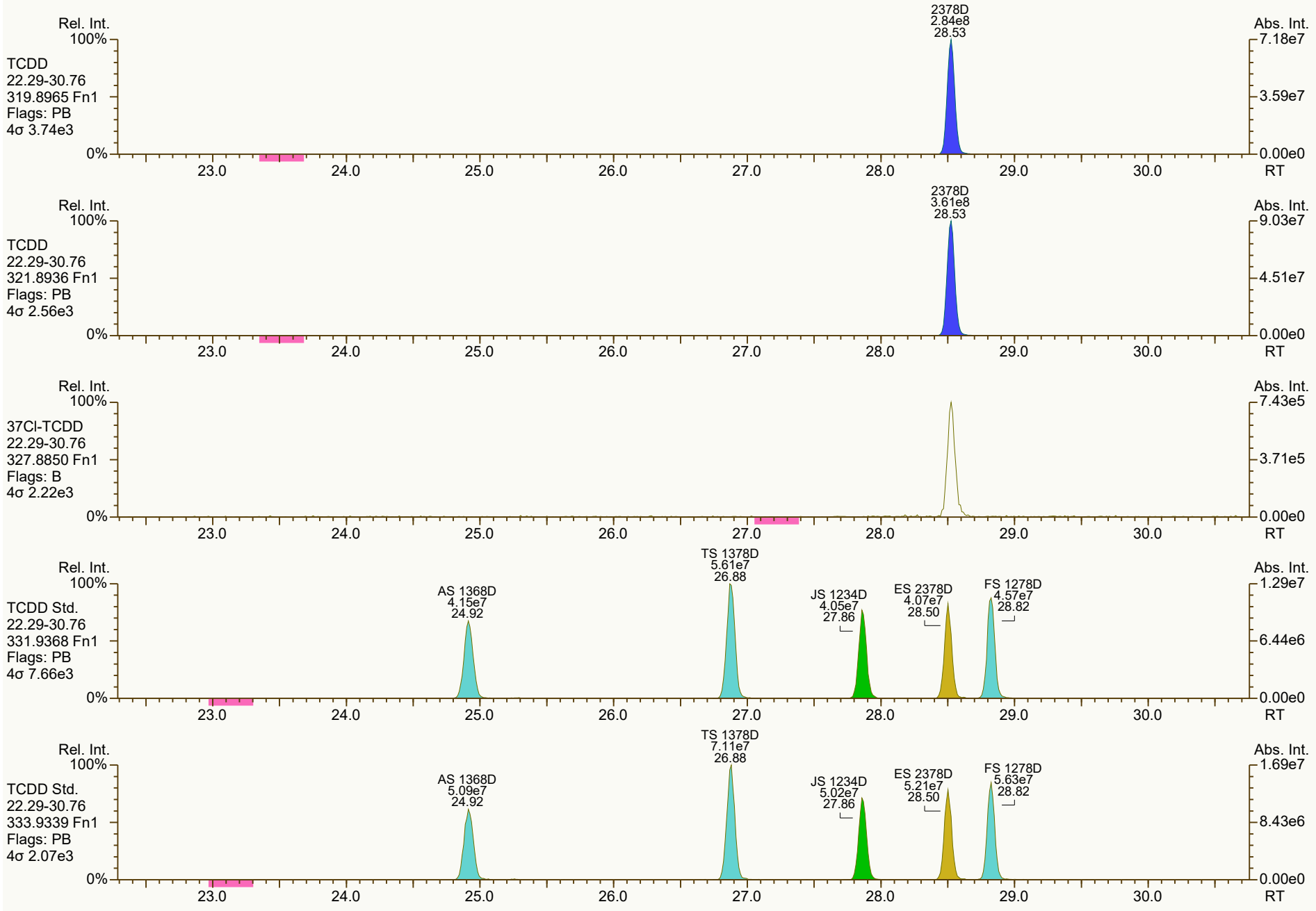

Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.39e3
0%
OCDF
8.87e8
43.40
Abs. Int.
2.90e8
1.45e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.68e3
0%
OCDF
9.82e8
43.40
RRF(OCDF) = (8.87e8 + 9.82e8) * 200pg / (8.28e7 + 9.34e7) * 2000pg = 1.06
PSW 27-Jul-2021 15:27
OK - CL 28Jul21
Abs. Int.
3.24e8
1.62e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.68e3
0%
ES OCDF
8.28e7
43.39
Abs. Int.
2.67e7
1.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.62e3
0%
ES OCDF
9.34e7
43.39
Abs. Int.
3.06e7
1.53e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.16e3
0%
Abs. Int.
9.58e3
4.79e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

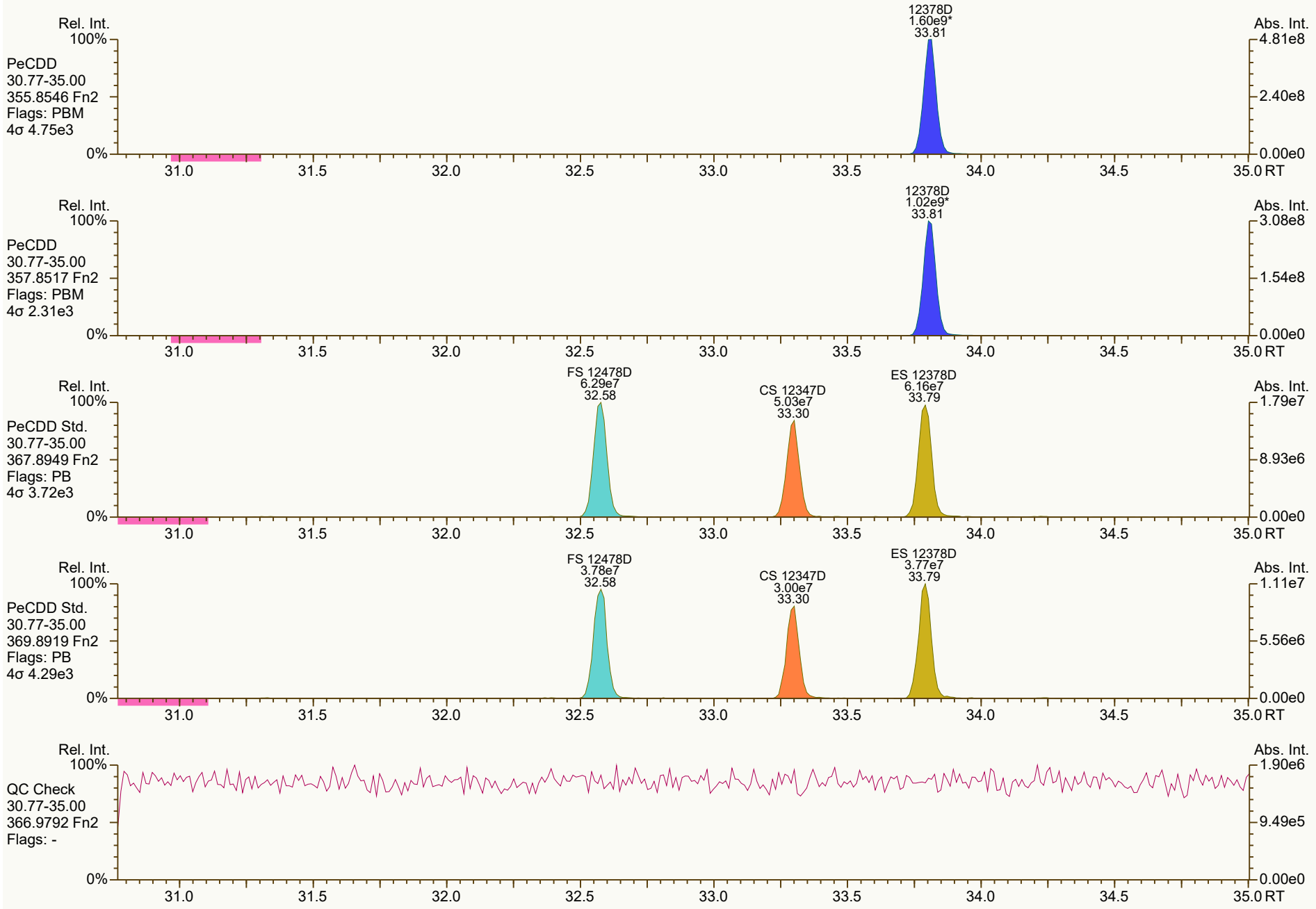
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

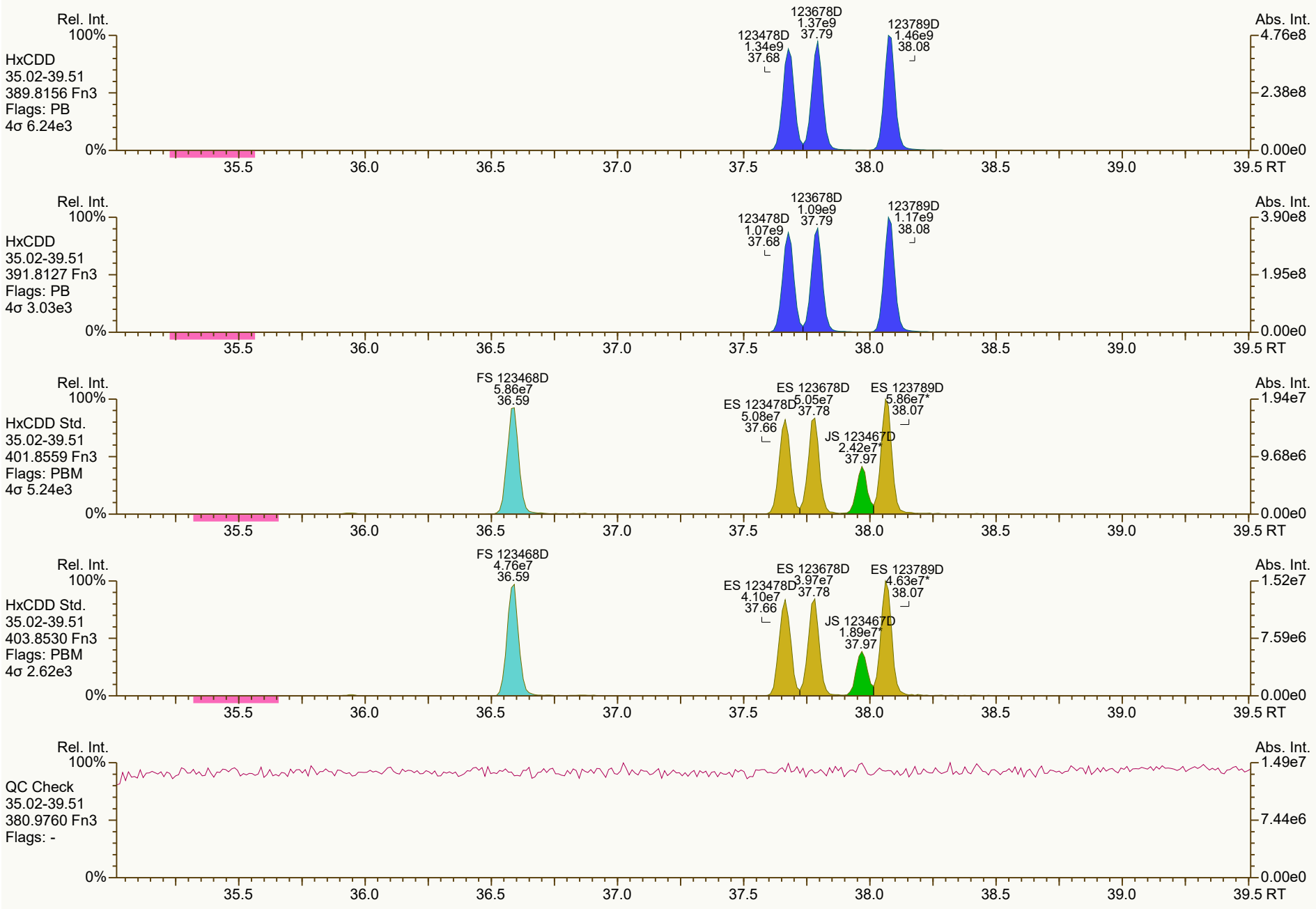
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	6.45E+08	0.79	Y	1.34	1.39	3%
12378-PeCDD	33.81	2.62E+09	1.57	Y	1.06	1.05	0%
123478-HxCDD	37.68	2.41E+09	1.26	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.46E+09	1.25	Y	1.08	1.09	1%
123789-HxCDD	38.08	2.63E+09	1.25	Y	1.02	1.00	-1%
1234678-HpCDD	40.66	2.28E+09	1.03	Y	0.97	1.00	2%
OCDD	43.24	4.13E+09	0.89	Y	1.07	1.08	1%
2378-TCDF	27.67	7.99E+08	0.77	Y	0.96	0.99	3%
12378-PeCDF	32.38	3.47E+09	1.57	Y	0.95	0.96	2%
23478-PeCDF	33.47	3.38E+09	1.55	Y	0.94	0.96	2%
123478-HxCDF	36.69	3.24E+09	1.24	Y	1.23	1.22	-1%
123678-HxCDF	36.83	3.36E+09	1.24	Y	1.13	1.14	0%
234678-HxCDF	37.49	3.14E+09	1.25	Y	1.15	1.15	0%
123789-HxCDF	38.43	3.10E+09	1.25	Y	1.14	1.16	2%
1234678-HpCDF	39.77	3.01E+09	1.04	Y	1.36	1.36	0%
1234789-HpCDF	41.11	2.70E+09	1.03	Y	1.30	1.33	2%
OCDF	43.42	4.91E+09	0.91	Y	1.03	1.08	5%
ES 2378-TCDD	28.50	9.29E+07	0.78	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.791	9.93E+07	1.63	Y	1.03	1.10	6%
ES 123478-HxCDD	37.663	9.19E+07	1.24	Y	0.99	1.07	7%
ES 123678-HxCDD	37.778	9.02E+07	1.27	Y	0.97	1.05	7%
ES 123789-HxCDD	38.067	1.05E+08	1.27	Y	1.12	1.22	8%
ES 1234678-HpCDD	40.65	9.14E+07	1.03	Y	0.99	1.06	7%
ES OCDD	43.227	1.53E+08	0.91	Y	0.78	0.89	14%
ES 2378-TCDF	27.65	1.62E+08	0.78	Y	1.08	1.10	2%
ES 12378-PeCDF	32.365	1.44E+08	1.56	Y	0.93	0.98	5%
ES 23478-PeCDF	33.455	1.42E+08	1.59	Y	0.92	0.96	4%
ES 123478-HxCDF	36.671	1.06E+08	0.53	Y	1.14	1.23	8%
ES 123678-HxCDF	36.81	1.18E+08	0.53	Y	1.30	1.37	6%
ES 234678-HxCDF	37.477	1.09E+08	0.52	Y	1.20	1.27	5%
ES 123789-HxCDF	38.411	1.07E+08	0.52	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.757	8.85E+07	0.45	Y	0.95	1.03	8%
ES 1234789-HpCDF	41.1	8.15E+07	0.45	Y	0.85	0.94	12%
ES OCDF	43.407	1.83E+08	0.90	Y	0.93	1.06	14%

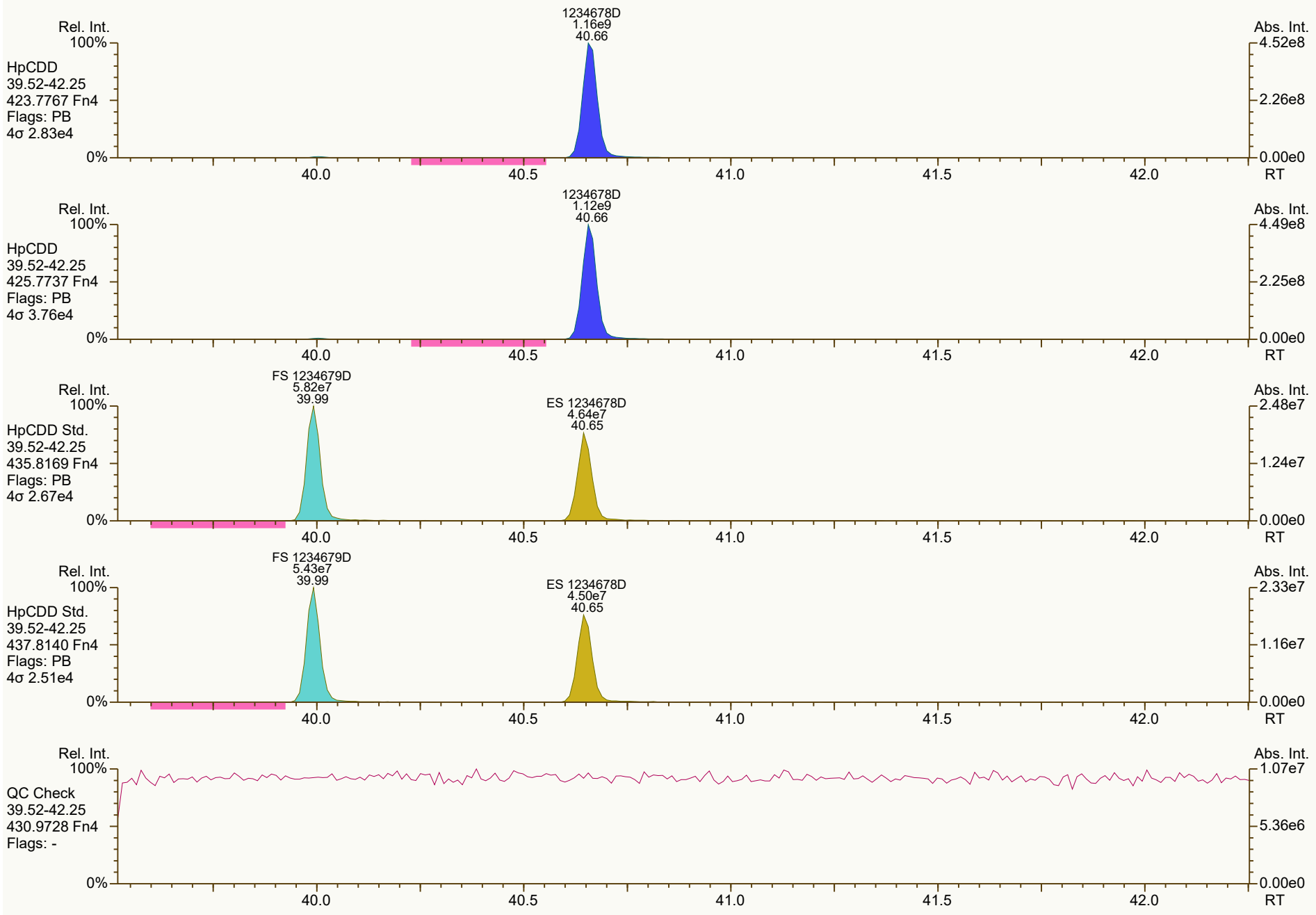
Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 13:58 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS6_210727_DF_RA		UTP: 27-Jul-2021 15:00:22 PSW				Checkcode: 783-472-ZXK	
Sample ID: SIL 25-5-2		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	27.86	9.07E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.33	1.47E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	4.31E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.89	0.89	-1%
CS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.87	0.85	-2%
CS 123469-HxCDF	37.12	9.43E+07	0.51	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.86	0.84	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.86	0.81	-6%
SS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.93	0.87	-7%
SS 123469-HxCDF	37.12	9.43E+07	0.51	Y	0.84	0.80	-5%
SS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.91	0.81	-11%
AS 1368-TCDD	24.92	9.24E+07	0.82	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	1.58E+08	0.79	Y	1.08	1.07	0%
FS 1278-TCDD	28.83	1.02E+08	0.81	Y	1.08	1.10	1%
FS 12478-PeCDD	32.58	1.01E+08	1.67	Y	1.09	1.01	-7%
FS 123468-HxCDD	36.59	1.06E+08	1.23	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.99	1.12E+08	1.07	Y	1.36	1.23	-9%
TS 1378-TCDD	26.88	1.27E+08	0.79	Y	1.35	1.37	2%
~~OCDD-a~~	~~43.23~~	~~2.53E+08~~	~~2.47~~	~~Y~~	~~0.07~~	~~0.07~~	~~0%~~
~~OCDF-a~~	~~43.42~~	~~2.93E+08~~	~~2.57~~	~~Y~~	~~0.06~~	~~0.06~~	~~8%~~
Not reported from this ICAL - CL 28Jul21							

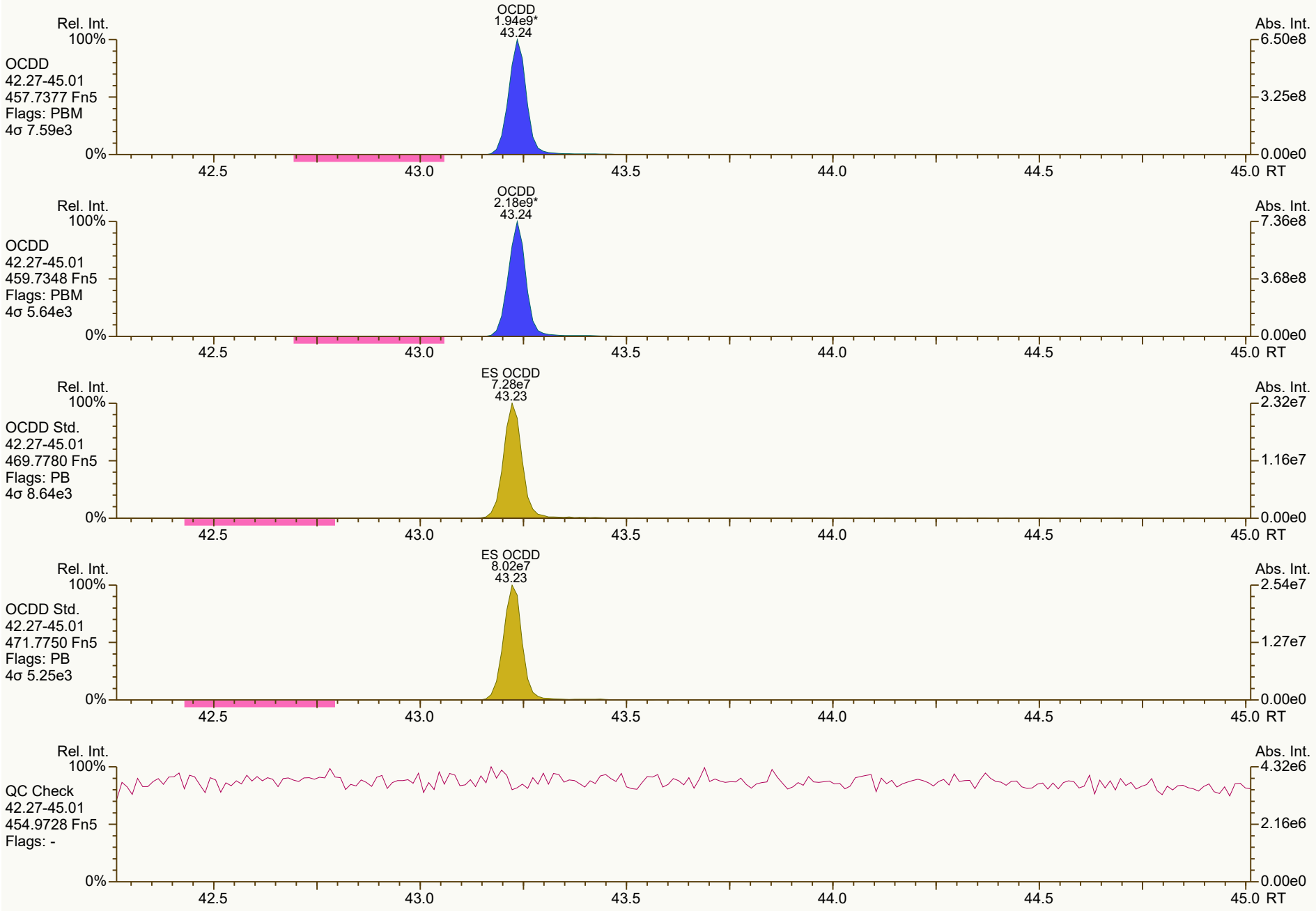

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.00e6
1.00e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.49e7
7.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.74e3
0%
2378D
2.84e8
28.53
Abs. Int.
7.18e7
3.59e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.56e3
0%
2378D
3.61e8
28.53
Abs. Int.
9.03e7
4.51e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.22e3
0%
Abs. Int.
7.43e5
3.71e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.66e3
0%
AS 1368D
4.15e7
24.92
TS 1378D
5.61e7
26.88
JS 1234D
4.05e7
27.86
ES 2378D
4.07e7
28.50
FS 1278D
4.57e7
28.82
Abs. Int.
1.29e7
6.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.07e3
0%
AS 1368D
5.09e7
24.92
TS 1378D
7.11e7
26.88
JS 1234D
5.02e7
27.86
ES 2378D
5.21e7
28.50
FS 1278D
5.63e7
28.82
Abs. Int.
1.69e7
8.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 4.75e3
0%
12378D
1.60e9*
33.81
Abs. Int.
4.81e8
2.40e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.31e3
0%
12378D
1.02e9*
33.81
Abs. Int.
3.08e8
1.54e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.72e3
0%
FS 12478D
6.29e7
32.58
CS 12347D
5.03e7
33.30
ES 12378D
6.16e7
33.79
Abs. Int.
1.79e7
8.93e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.29e3
0%
FS 12478D
3.78e7
32.58
CS 12347D
3.00e7
33.30
ES 12378D
3.77e7
33.79
Abs. Int.
1.11e7
5.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

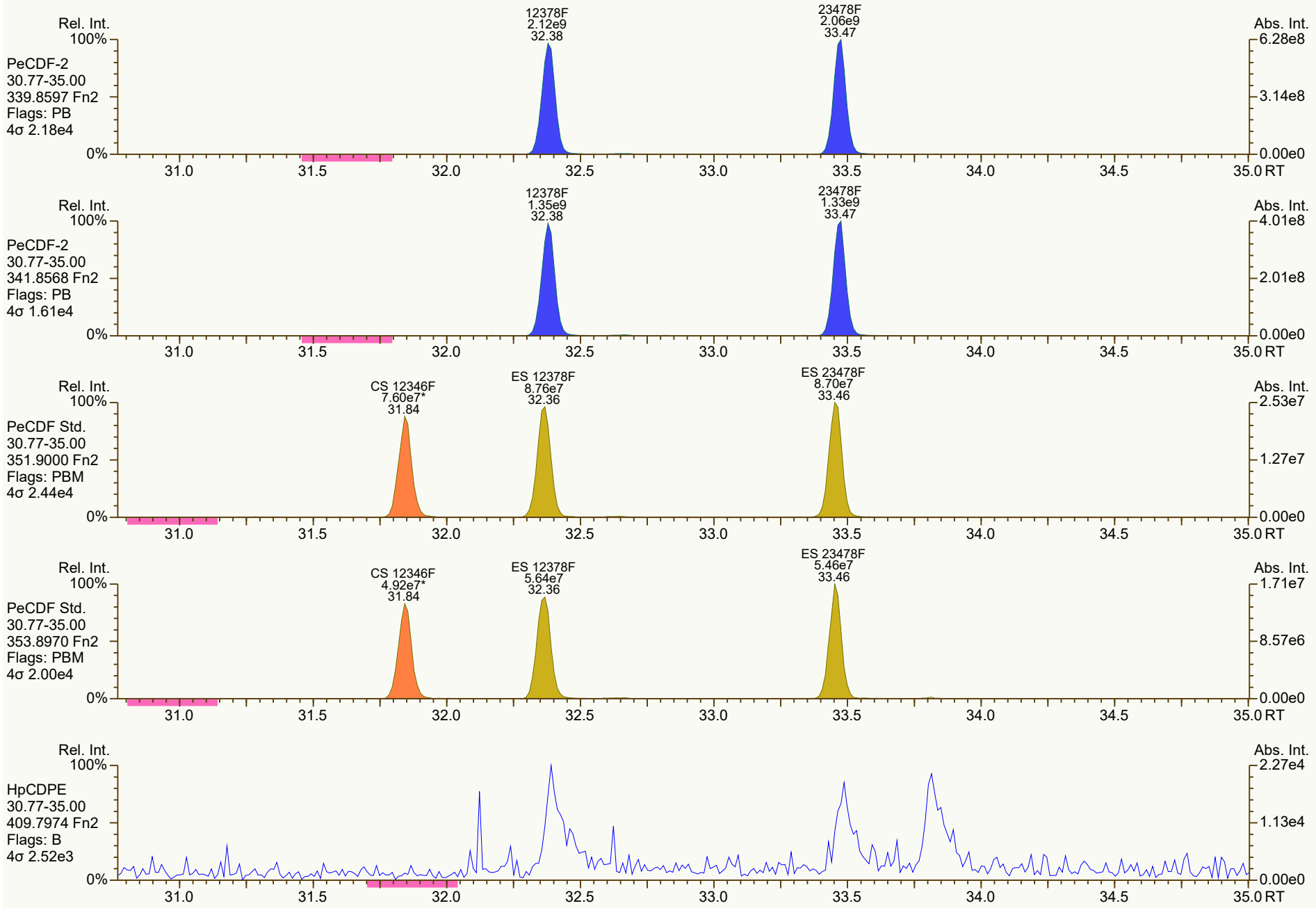

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 6.24e3
123678D
1.37e9
37.79
123478D
1.34e9
37.68
123789D
1.46e9
38.08
Abs. Int.
4.76e8
2.38e8
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 3.03e3
123678D
1.09e9
37.79
123478D
1.07e9
37.68
123789D
1.17e9
38.08
Abs. Int.
3.90e8
1.95e8
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 5.24e3
FS 123468D
5.86e7
36.59
ES 123678D
5.05e7
37.78
ES 123478D
5.08e7
37.66
ES 123789D
5.86e7*
38.07
JS 123467D
2.42e7*
37.97
Abs. Int.
1.94e7
9.68e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.62e3
FS 123468D
4.76e7
36.59
ES 123678D
3.97e7
37.78
ES 123478D
4.10e7
37.66
ES 123789D
4.63e7*
38.07
JS 123467D
1.89e7*
37.97
Abs. Int.
1.52e7
7.59e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.49e7
7.44e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

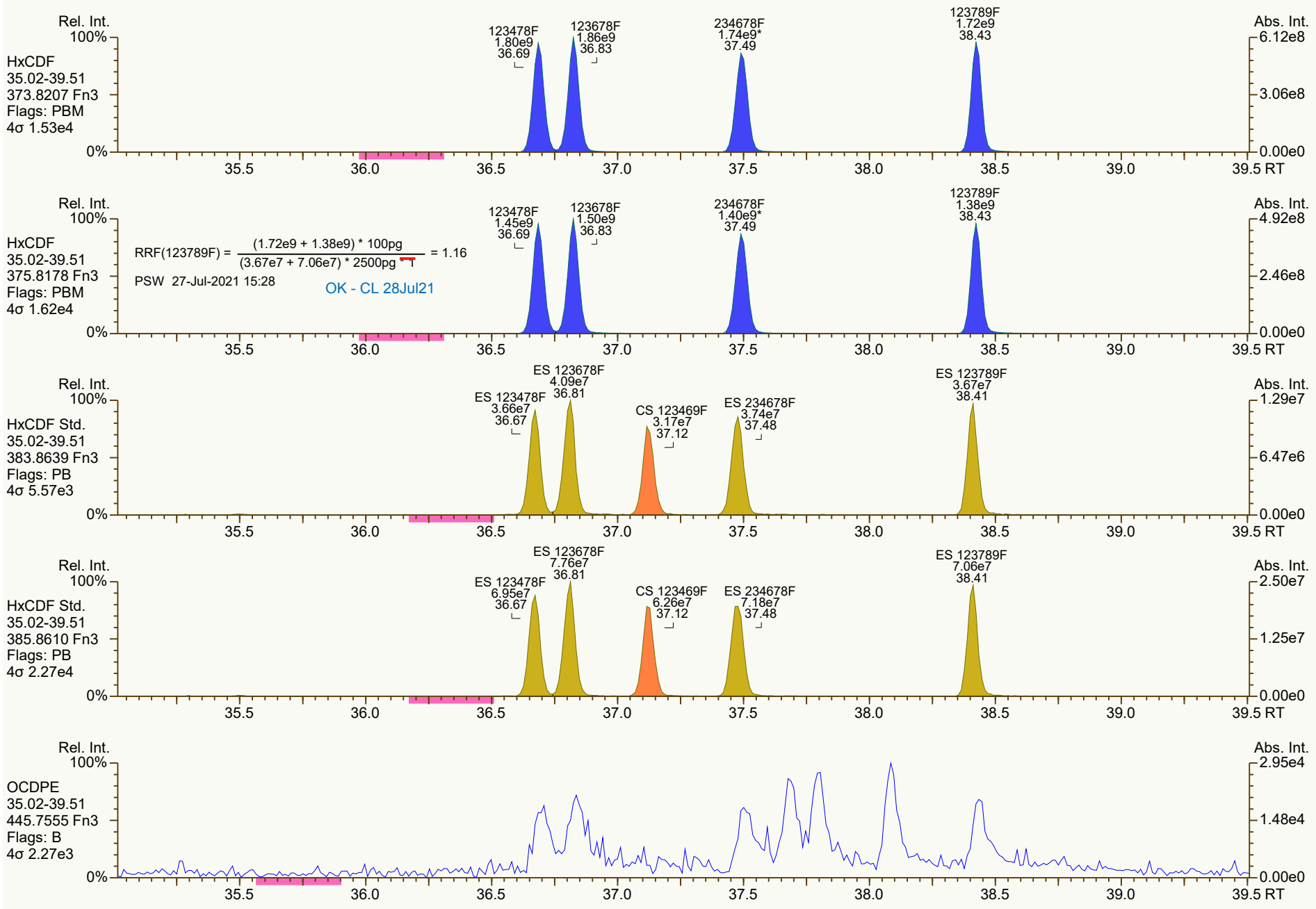

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.83e4
0%
1234678D
1.16e9
40.66
Abs. Int.
4.52e8
2.26e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.76e4
0%
1234678D
1.12e9
40.66
Abs. Int.
4.49e8
2.25e8
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.67e4
0%
FS 1234679D
5.82e7
39.99
ES 1234678D
4.64e7
40.65
Abs. Int.
2.48e7
1.24e7
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 2.51e4
0%
FS 1234679D
5.43e7
39.99
ES 1234678D
4.50e7
40.65
Abs. Int.
2.33e7
1.16e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
RT

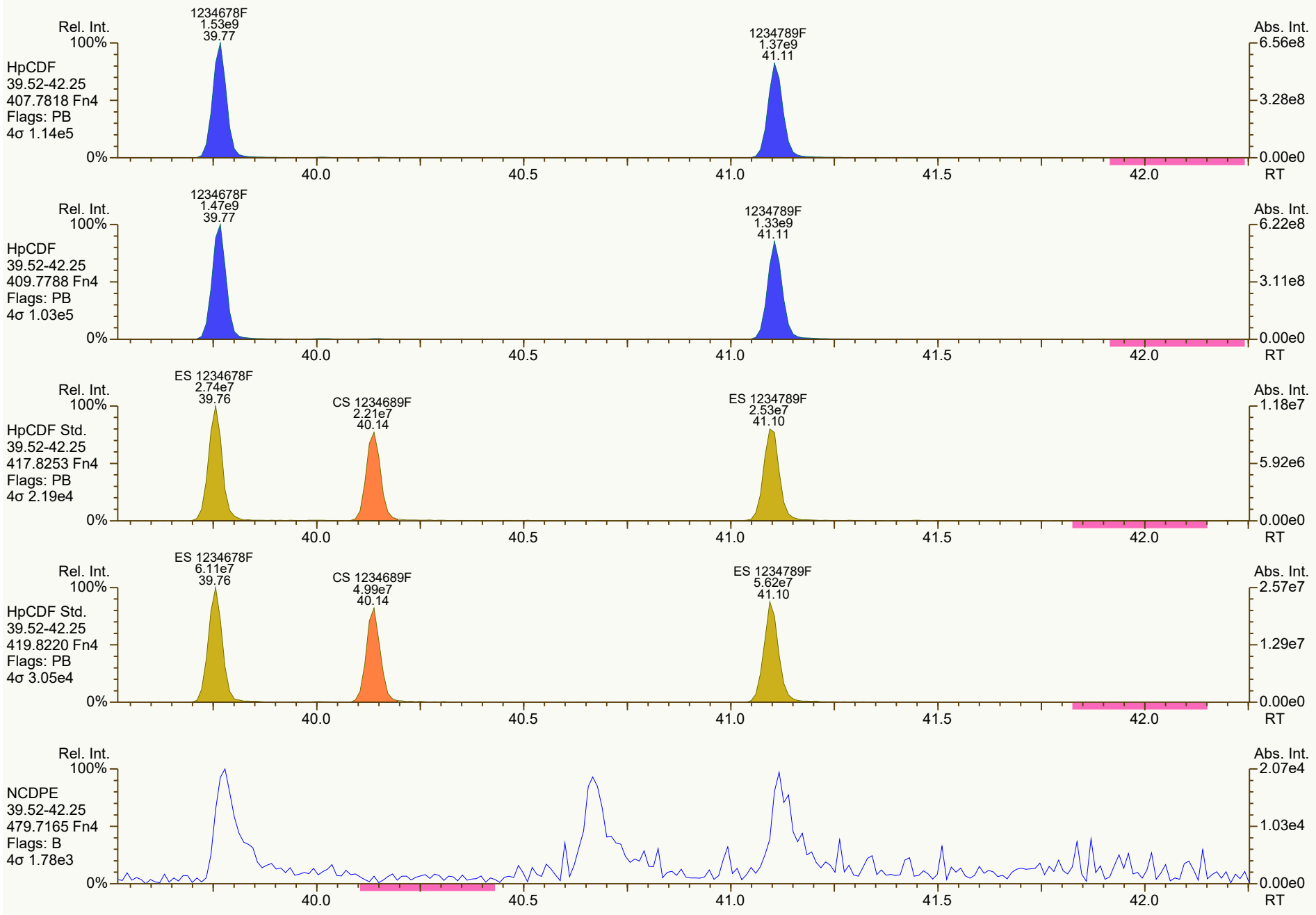

OCDD
1.94e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PBM
4σ 7.59e3
0%
Abs. Int.
6.50e8
3.25e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.18e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PBM
4σ 5.64e3
0%
Abs. Int.
7.36e8
3.68e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.28e7
43.23
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 8.64e3
0%
Abs. Int.
2.32e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.02e7
43.23
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 5.25e3
0%
Abs. Int.
2.54e7
1.27e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

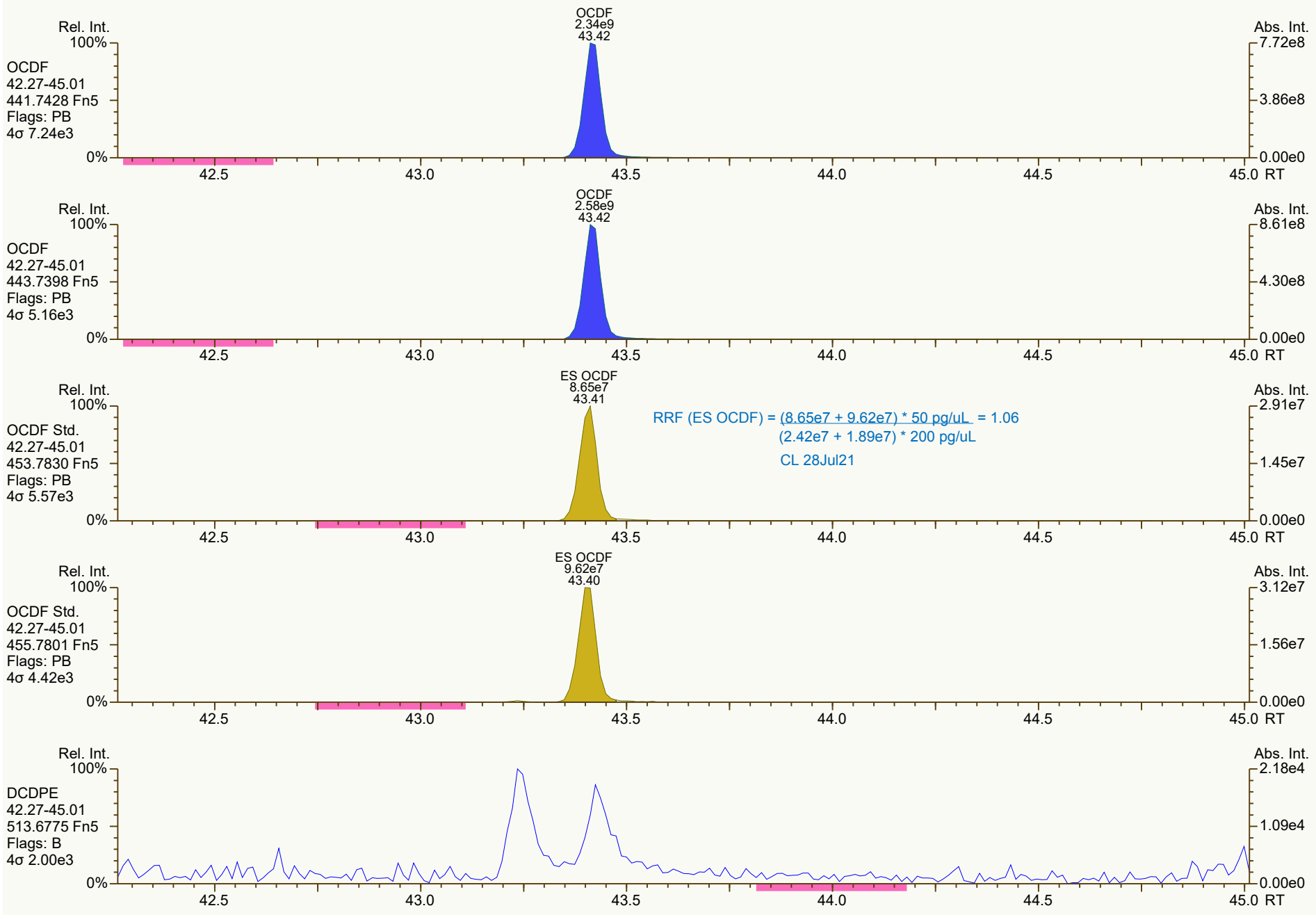

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.81e3
0%
2378F
3.47e8
27.67
Abs. Int.
8.18e7
4.09e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.63e3
0%
2378F
4.52e8
27.67
Abs. Int.
1.06e8
5.31e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
6.97e7
22.86
JS 1234F
6.51e7
26.33
ES 2378F
7.12e7
27.65
Abs. Int.
1.73e7
8.65e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 8.59e3
0%
AS 1368F
8.87e7
22.85
JS 1234F
8.23e7
26.33
ES 2378F
9.09e7
27.65
Abs. Int.
2.19e7
1.09e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.16e3
0%
Abs. Int.
1.85e4
9.24e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.81e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 4.96e3
1.40e4
7.01e3
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.00e6
1.00e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.18e4
0%
12378F
2.12e9
32.38
23478F
2.06e9
33.47
Abs. Int.
6.28e8
3.14e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 1.61e4
0%
12378F
1.35e9
32.38
23478F
1.33e9
33.47
Abs. Int.
4.01e8
2.01e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.44e4
0%
CS 12346F
7.60e7*
31.84
ES 12378F
8.76e7
32.36
ES 23478F
8.70e7
33.46
Abs. Int.
2.53e7
1.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.00e4
0%
CS 12346F
4.92e7*
31.84
ES 12378F
5.64e7
32.36
ES 23478F
5.46e7
33.46
Abs. Int.
1.71e7
8.57e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.52e3
0%
Abs. Int.
2.27e4
1.13e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.53e4
0%
123478F
1.80e9
36.69
123678F
1.86e9
36.83
234678F
1.74e9*
37.49
123789F
1.72e9
38.43
Abs. Int.
6.12e8
3.06e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 1.62e4
RRF(123789F) = (1.72e9 + 1.38e9) * 100pg / (3.67e7 + 7.06e7) * 2500pg = 1.16
PSW 27-Jul-2021 15:28
OK - CL 28Jul21
123478F
1.45e9
36.69
123678F
1.50e9
36.83
234678F
1.40e9*
37.49
123789F
1.38e9
38.43
4.92e8
2.46e8
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.57e3
ES 123478F
3.66e7
36.67
ES 123678F
4.09e7
36.81
CS 123469F
3.17e7
37.12
ES 234678F
3.74e7
37.48
ES 123789F
3.67e7
38.41
1.29e7
6.47e6
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.27e4
ES 123478F
6.95e7
36.67
ES 123678F
7.76e7
36.81
CS 123469F
6.26e7
37.12
ES 234678F
7.18e7
37.48
ES 123789F
7.06e7
38.41
2.50e7
1.25e7
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.27e3
2.95e4
1.48e4


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.14e5
1234678F
1.53e9
39.77
1234789F
1.37e9
41.11
Abs. Int.
6.56e8
3.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.03e5
1234678F
1.47e9
39.77
1234789F
1.33e9
41.11
Abs. Int.
6.22e8
3.11e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.19e4
ES 1234678F
2.74e7
39.76
CS 1234689F
2.21e7
40.14
ES 1234789F
2.53e7
41.10
Abs. Int.
1.18e7
5.92e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 3.05e4
ES 1234678F
6.11e7
39.76
CS 1234689F
4.99e7
40.14
ES 1234789F
5.62e7
41.10
Abs. Int.
2.57e7
1.29e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 1.78e3
Abs. Int.
2.07e4
1.03e4
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 7.24e3
0%
OCDF
2.34e9
43.42
Abs. Int.
7.72e8
3.86e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 5.16e3
0%
OCDF
2.58e9
43.42
Abs. Int.
8.61e8
4.30e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.57e3
0%
ES OCDF
8.65e7
43.41
RRF (ES OCDF) = (8.65e7 + 9.62e7) * 50 pg/uL = 1.06
(2.42e7 + 1.89e7) * 200 pg/uL
CL 28Jul21
Abs. Int.
2.91e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.42e3
0%
ES OCDF
9.62e7
43.40
Abs. Int.
3.12e7
1.56e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.00e3
0%
Abs. Int.
2.18e4
1.09e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

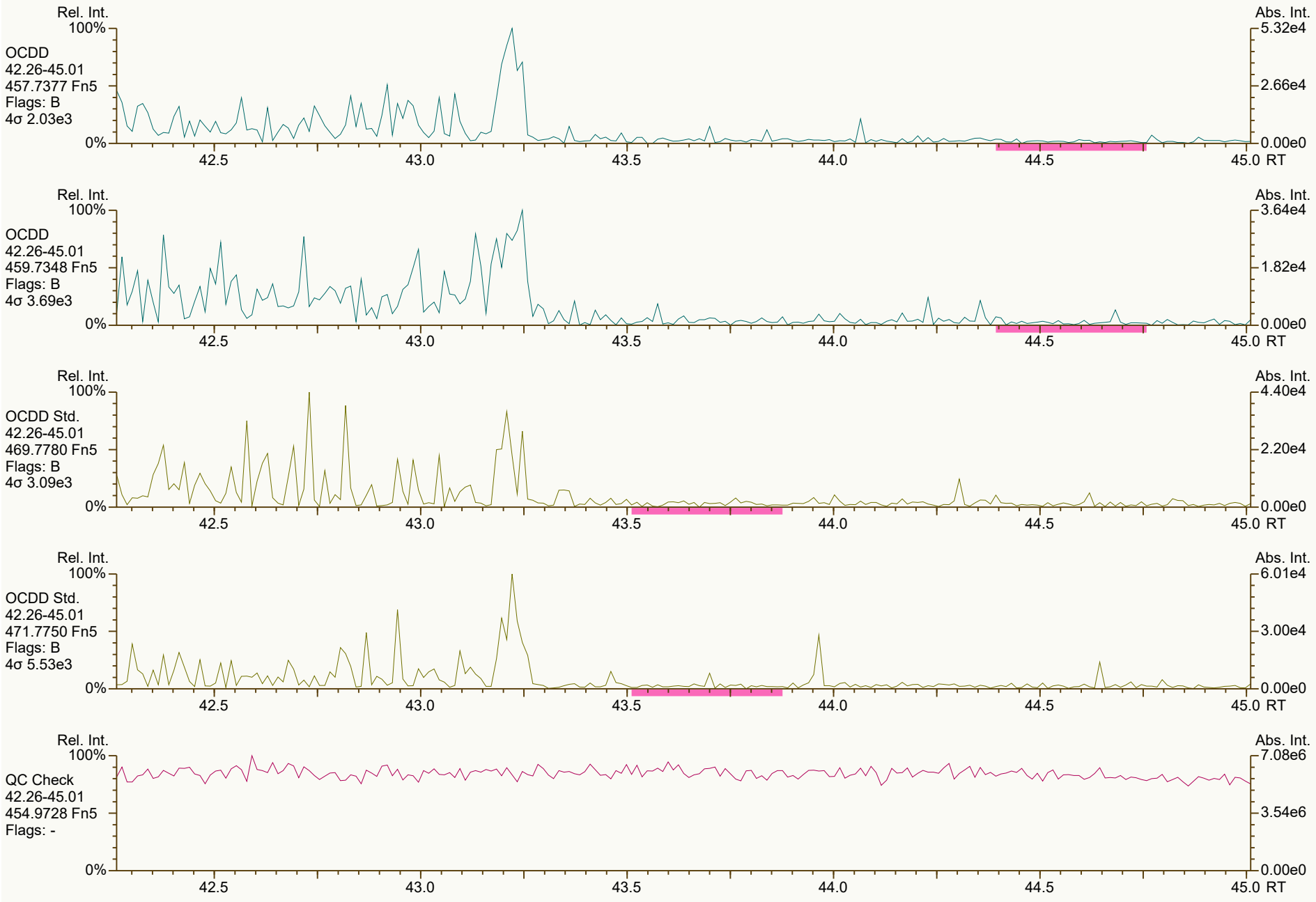

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: B
4σ 5.46e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: B
4σ 3.81e3
0%
Abs. Int.
1.72e4
8.58e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.57e4
7.86e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: B
4σ 1.19e4
0%
Abs. Int.
4.60e4
2.30e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: B
4σ 4.18e3
0%
Abs. Int.
4.81e4
2.40e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: B
4σ 9.54e3
0%
Abs. Int.
3.89e4
1.94e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: B
4σ 5.05e3
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: B
4σ 5.45e3
0%
Abs. Int.
6.36e4
3.18e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: B
4σ 4.94e3
0%
Abs. Int.
2.95e4
1.48e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: B
4σ 4.48e3
0%
Abs. Int.
4.12e4
2.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: B
4σ 3.42e3
0%
Abs. Int.
3.84e4
1.92e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: B
4σ 5.33e3
0%
Abs. Int.
4.48e4
2.24e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: B
4σ 6.09e3
0%
Abs. Int.
7.66e4
3.83e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

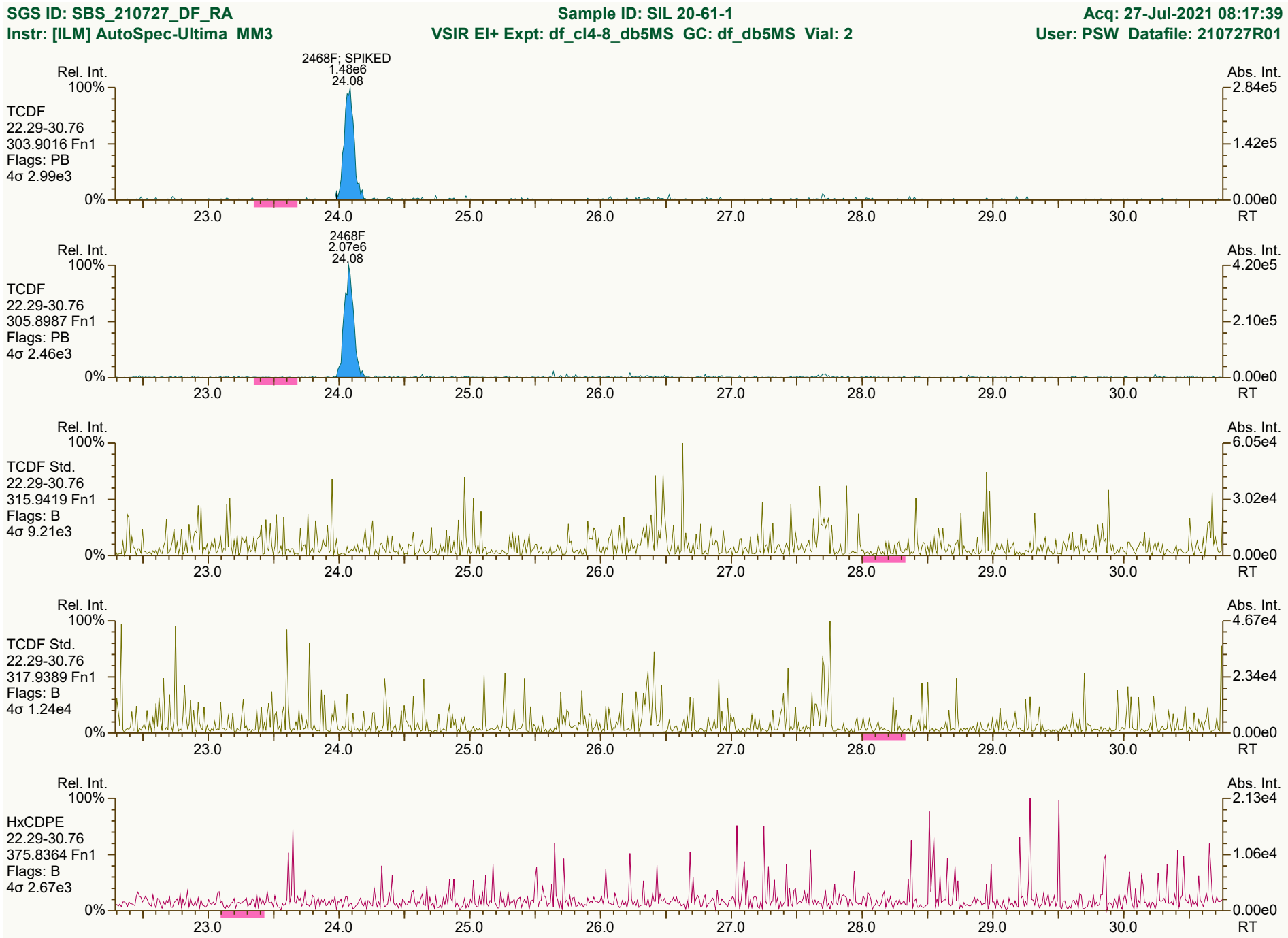

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: B
4σ 8.10e3
0%
Abs. Int.
5.65e4
2.82e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: B
4σ 9.20e3
0%
Abs. Int.
3.29e4
1.64e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: B
4σ 7.86e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: B
4σ 3.02e3
0%
Abs. Int.
6.85e4
3.43e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: B
4σ 2.03e3
0%
Abs. Int.
5.32e4
2.66e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: B
4σ 3.69e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: B
4σ 3.09e3
0%
Abs. Int.
4.40e4
2.20e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: B
4σ 5.53e3
0%
Abs. Int.
6.01e4
3.00e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 27-Jul-2021 08:17:39
User: PSW Datafile: 210727R01

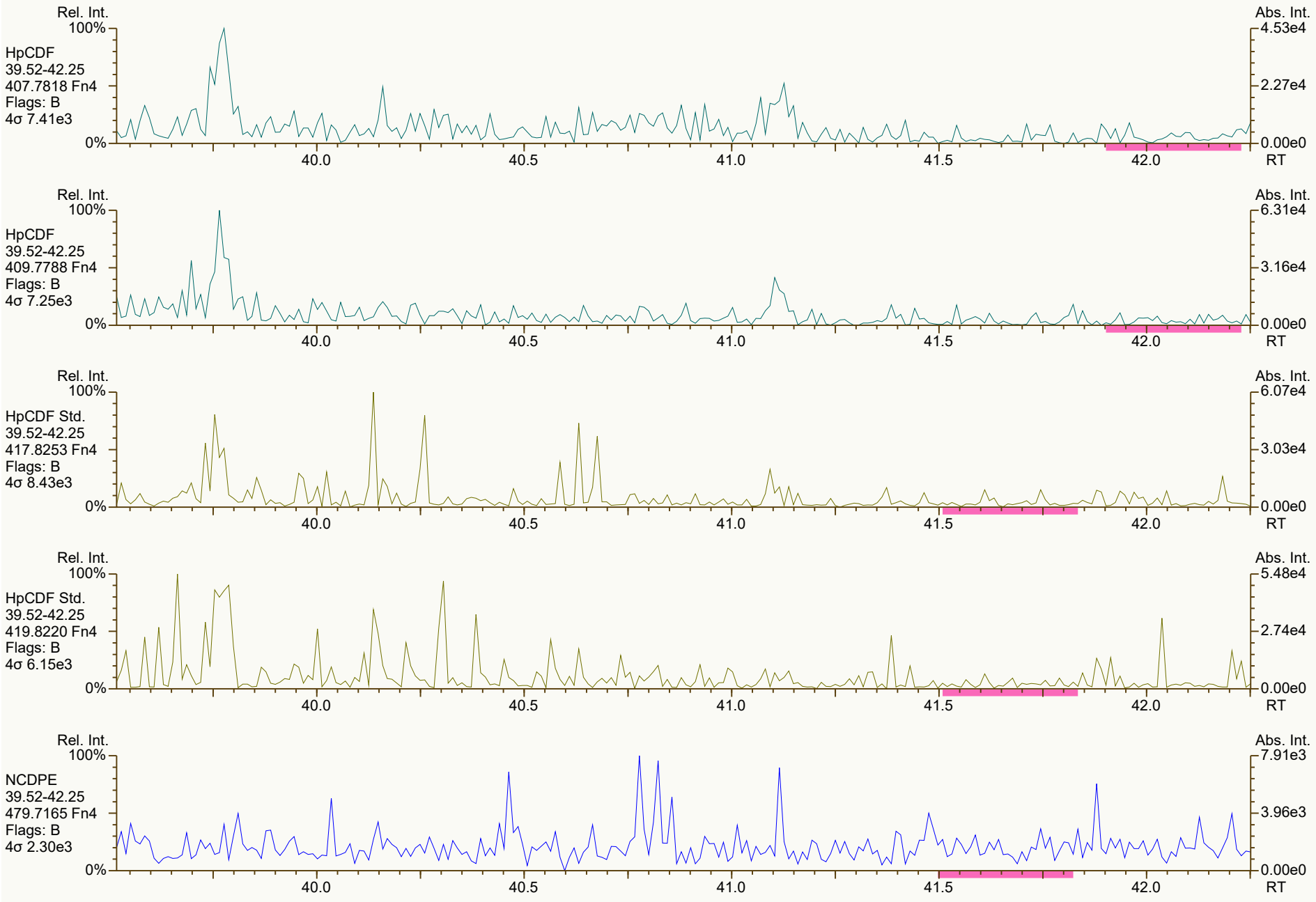


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9293, 5161, 7483 scc: 638-037
PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
3.87e4
1.94e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 6.47e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 6.41e3
3.57e4
1.78e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
3.23e6
1.61e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: B
4σ 6.52e3
0%
Abs. Int.
4.88e4
2.44e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: B
4σ 6.57e3
0%
Abs. Int.
3.28e4
1.64e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: B
4σ 2.11e3
0%
Abs. Int.
6.19e4
3.10e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: B
4σ 3.42e3
0%
Abs. Int.
5.42e4
2.71e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: B
4σ 6.81e3
0%
Abs. Int.
5.46e4
2.73e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: B
4σ 4.05e3
0%
Abs. Int.
3.51e4
1.76e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: B
4σ 6.70e3
0%
Abs. Int.
4.23e4
2.11e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: B
4σ 1.33e4
0%
Abs. Int.
8.19e4
4.10e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.51e3
0%
Abs. Int.
2.13e4
1.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: B
4σ 7.41e3
0%
Abs. Int.
4.53e4
2.27e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: B
4σ 7.25e3
0%
Abs. Int.
6.31e4
3.16e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: B
4σ 8.43e3
0%
Abs. Int.
6.07e4
3.03e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: B
4σ 6.15e3
0%
Abs. Int.
5.48e4
2.74e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.30e3
0%
Abs. Int.
7.91e3
3.96e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: B
4σ 2.18e3
0%
Abs. Int.
4.13e4
2.06e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: B
4σ 1.96e3
0%
Abs. Int.
5.82e4
2.91e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: B
4σ 3.42e3
0%
Abs. Int.
6.44e4
3.22e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: B
4σ 2.75e3
0%
Abs. Int.
6.15e4
3.08e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 2.12e3
0%
Abs. Int.
5.85e3
2.93e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
15	210727R15	3	CS3_210727_DF_RB ✓	1.00	SIL 23-672-1	PSW	320-816	27-Jul-2021	19:43:55
16	210727R16	92	CS3_210727_DF_RC	1.00	ICV SIL 24-11-9 ✓	PSW	537-883	27-Jul-2021	20:31:28

REVIEWED
paul_walton , 7/28/2021, 8:29:53 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:21 PM

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.67E+07	0.81	Y	1.34	1.35	0%
12378-PeCDD	33.81	6.38E+07	1.58	Y	1.06	1.06	0%
123478-HxCDD	37.68	5.49E+07	1.25	Y	1.06	1.06	1%
123678-HxCDD	37.79	5.63E+07	1.26	Y	1.08	1.10	2%
123789-HxCDD	38.08	5.86E+07	1.24	Y	1.02	1.00	-2%
1234678-HpCDD	40.66	4.96E+07	1.04	Y	0.97	0.98	0%
OCDD	43.23	8.27E+07	0.89	Y	1.07	1.07	0%
2378-TCDF	27.67	2.12E+07	0.80	Y	0.96	0.97	1%
12378-PeCDF	32.38	8.71E+07	1.57	Y	0.95	0.97	2%
23478-PeCDF	33.47	7.79E+07	1.46	Y	0.94	0.92	-2%
123478-HxCDF	36.69	7.88E+07	1.25	Y	1.23	1.25	2%
123678-HxCDF	36.83	8.26E+07	1.26	Y	1.13	1.13	0%
234678-HxCDF	37.49	7.73E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.43	6.95E+07	1.26	Y	1.14	1.13	0%
1234678-HpCDF	39.77	7.02E+07	1.03	Y	1.36	1.34	-2%
1234789-HpCDF	41.11	5.97E+07	1.05	Y	1.30	1.36	5%
OCDF	43.41	9.92E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.50	1.24E+08	0.80	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.788	1.20E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.661	1.03E+08	1.29	Y	0.99	0.98	-1%
ES 123678-HxCDD	37.775	1.02E+08	1.32	Y	0.97	0.97	0%
ES 123789-HxCDD	38.065	1.17E+08	1.31	Y	1.12	1.12	-1%
ES 1234678-HpCDD	40.653	1.01E+08	1.07	Y	0.99	0.96	-3%
ES OCDD	43.218	1.54E+08	0.91	Y	0.78	0.73	-6%
ES 2378-TCDF	27.65	2.18E+08	0.77	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.362	1.80E+08	1.58	Y	0.93	0.89	-5%
ES 23478-PeCDF	33.452	1.68E+08	1.62	Y	0.92	0.83	-10%
ES 123478-HxCDF	36.669	1.26E+08	0.54	Y	1.14	1.19	4%
ES 123678-HxCDF	36.809	1.47E+08	0.50	Y	1.30	1.39	7%
ES 234678-HxCDF	37.476	1.31E+08	0.52	Y	1.20	1.25	4%
ES 123789-HxCDF	38.411	1.23E+08	0.52	Y	1.14	1.17	3%
ES 1234678-HpCDF	39.758	1.05E+08	0.47	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.102	8.75E+07	0.45	Y	0.85	0.83	-2%
ES OCDF	43.399	1.88E+08	0.89	Y	0.93	0.89	-4%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.21E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.33	2.03E+08	0.78	Y	-	-	-
JS 123467-HxCDD	37.97	5.27E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.31	1.28	-2%
CS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.89	0.87	-3%
CS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.22E+08	0.52	Y	1.09	1.16	7%
CS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.86	0.90	4%
SS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.86	0.87	1%
SS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.22E+08	0.52	Y	0.84	0.83	-1%
SS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.91	0.90	-1%
~~OCDD-a~~	~~43.22~~	~~4.70E+06~~	~~2.62~~	~~Y~~	~~0.07~~	~~0.06~~	~~-8%~~
~~OCDF-a~~	~~43.41~~	~~5.40E+06~~	~~2.31~~	~~Y~~	~~0.06~~	~~0.06~~	~~-3%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	10	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	50.1	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	50.3	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	50.9	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	49.1	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88	-	1.20	Y	50.1	40	-	60	Y
OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	10.1	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	51.2	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32	-	1.78	Y	49.2	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	50.8	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	51.1	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.1	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88	-	1.20	Y	52.4	40	-	60	Y
OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	103	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	70	-	130	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	70	-	130	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	140	-	260	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	10	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.1	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.1	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32 - 1.78	Y	49.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	52.4	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

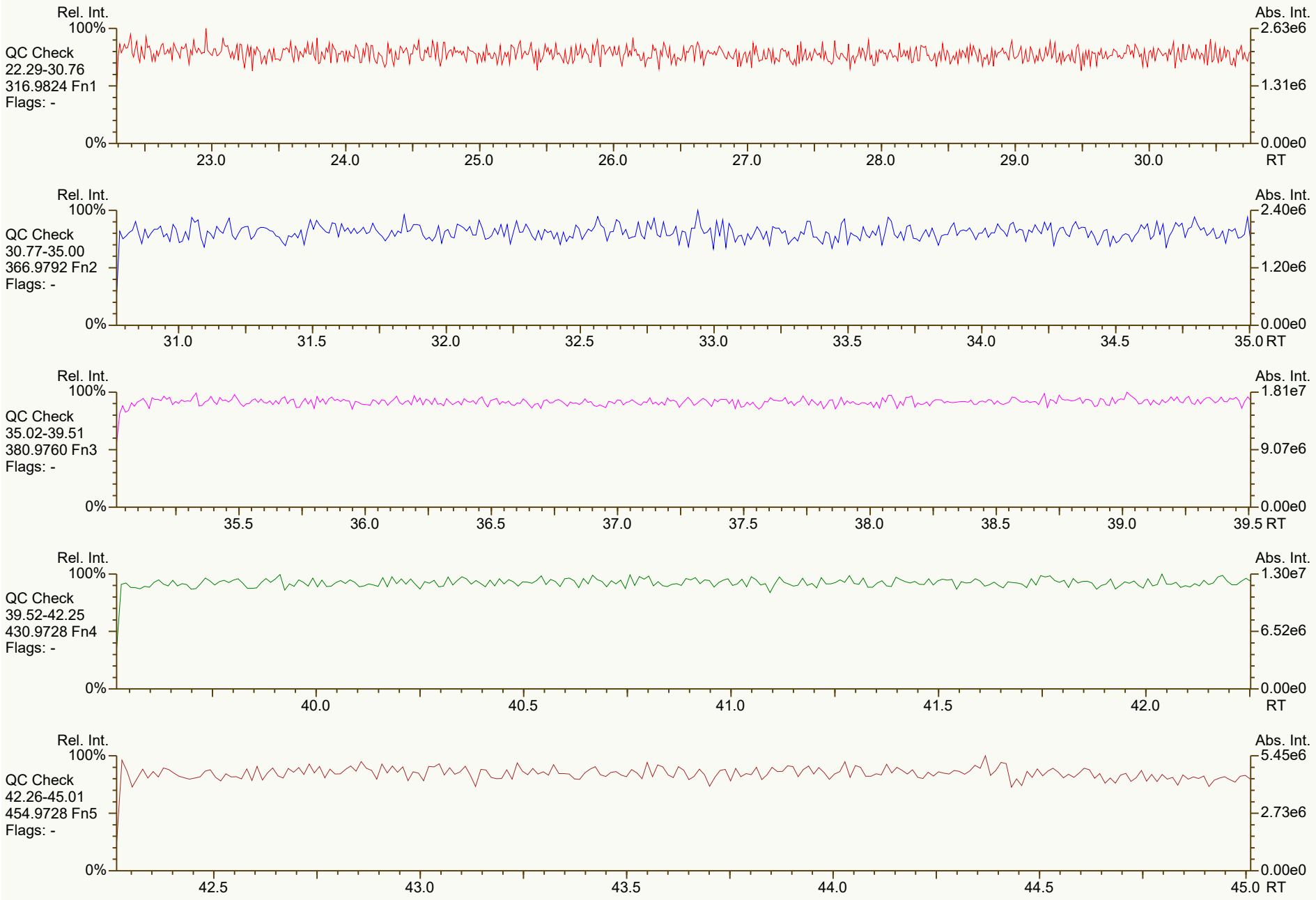
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

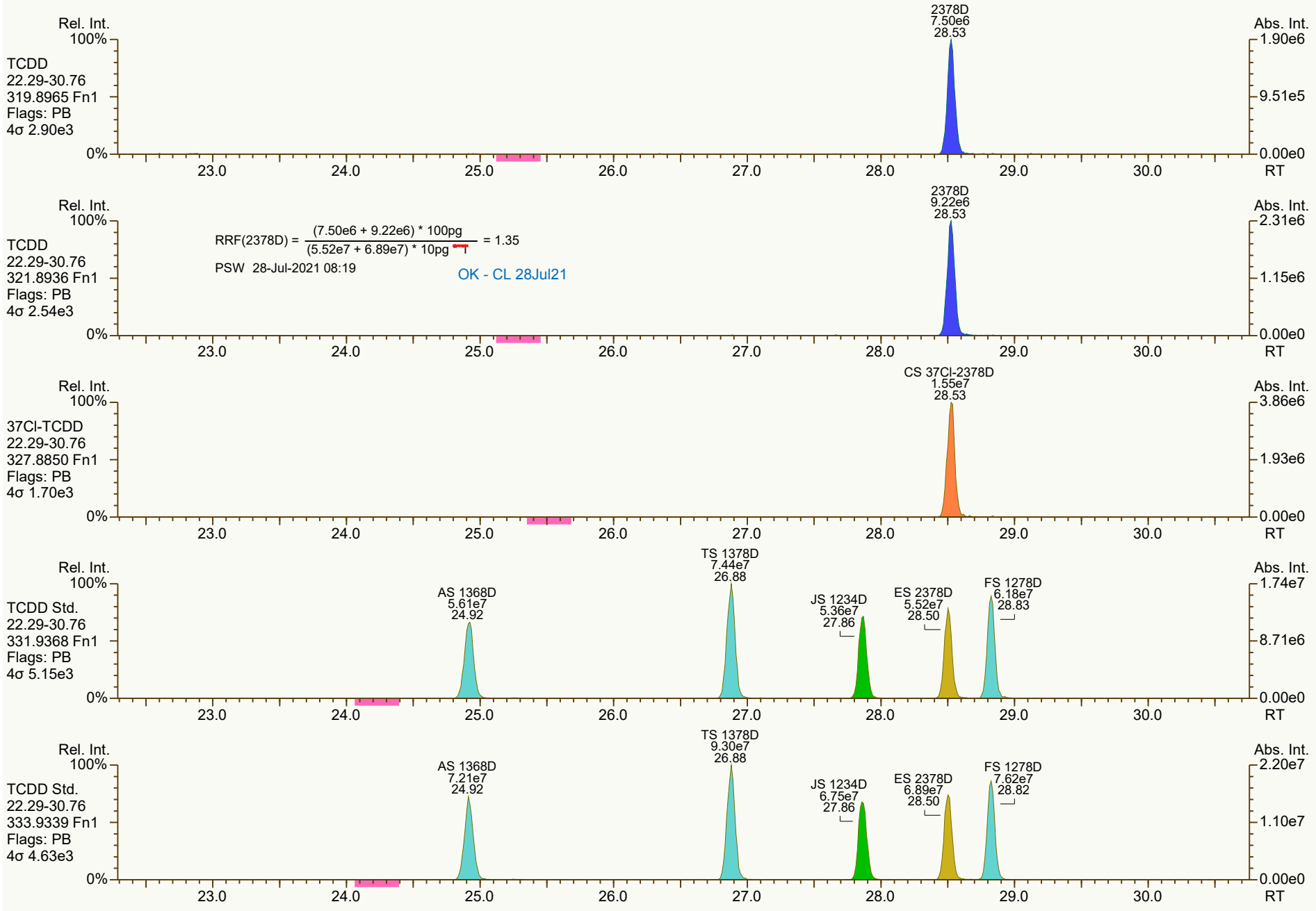
Instrument ID: MM3 GC Column ID: ZB-5ms

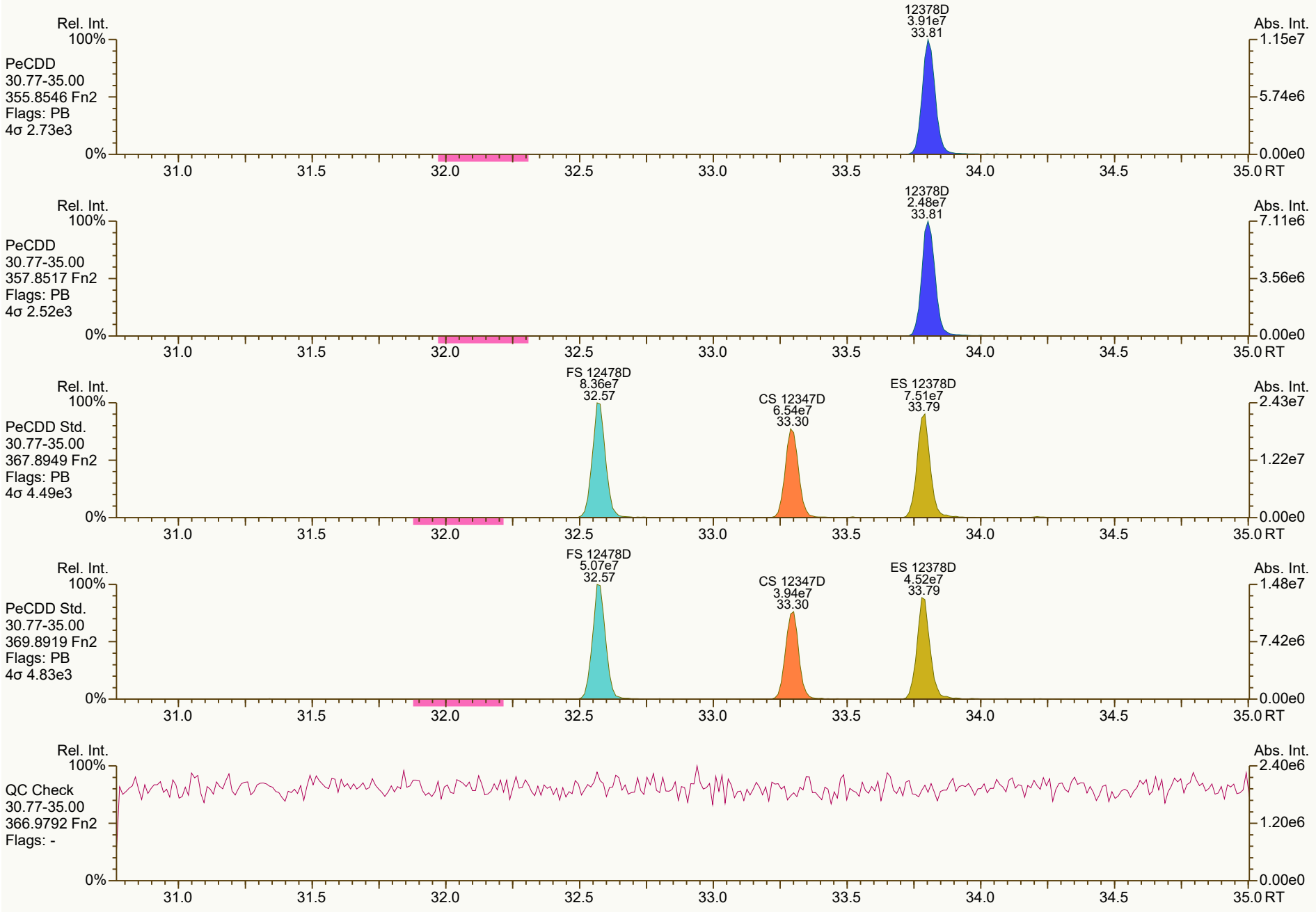
VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	72	-	138	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	77	-	129	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:18 Analyst: pw


Rel. Int.
100%
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
RT
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
2.40e6
1.20e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.81e7
9.07e6
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.30e7
6.52e6
40.0
40.5
41.0
41.5
42.0
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
5.45e6
2.73e6
42.5
43.0
43.5
44.0
44.5
45.0


Rel. Int.
100%
0%
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.90e3
2378D
7.50e6
28.53
1.90e6
9.51e5
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.54e3
RRF(2378D) = (7.50e6 + 9.22e6) * 100pg / (5.52e7 + 6.89e7) * 10pg = 1.35
PSW 28-Jul-2021 08:19
OK - CL 28Jul21
2378D
9.22e6
28.53
2.31e6
1.15e6
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.70e3
CS 37Cl-2378D
1.55e7
28.53
3.86e6
1.93e6
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.15e3
AS 1368D
5.61e7
24.92
TS 1378D
7.44e7
26.88
JS 1234D
5.36e7
27.86
ES 2378D
5.52e7
28.50
FS 1278D
6.18e7
28.83
1.74e7
8.71e6
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.63e3
AS 1368D
7.21e7
24.92
TS 1378D
9.30e7
26.88
JS 1234D
6.75e7
27.86
ES 2378D
6.89e7
28.50
FS 1278D
7.62e7
28.82
2.20e7
1.10e7


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.73e3
0%
12378D
3.91e7
33.81
Abs. Int.
1.15e7
5.74e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.52e3
0%
12378D
2.48e7
33.81
Abs. Int.
7.11e6
3.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 4.49e3
0%
FS 12478D
8.36e7
32.57
CS 12347D
6.54e7
33.30
ES 12378D
7.51e7
33.79
Abs. Int.
2.43e7
1.22e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
5.07e7
32.57
CS 12347D
3.94e7
33.30
ES 12378D
4.52e7
33.79
Abs. Int.
1.48e7
7.42e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.40e6
1.20e6
0.00e0
31.0
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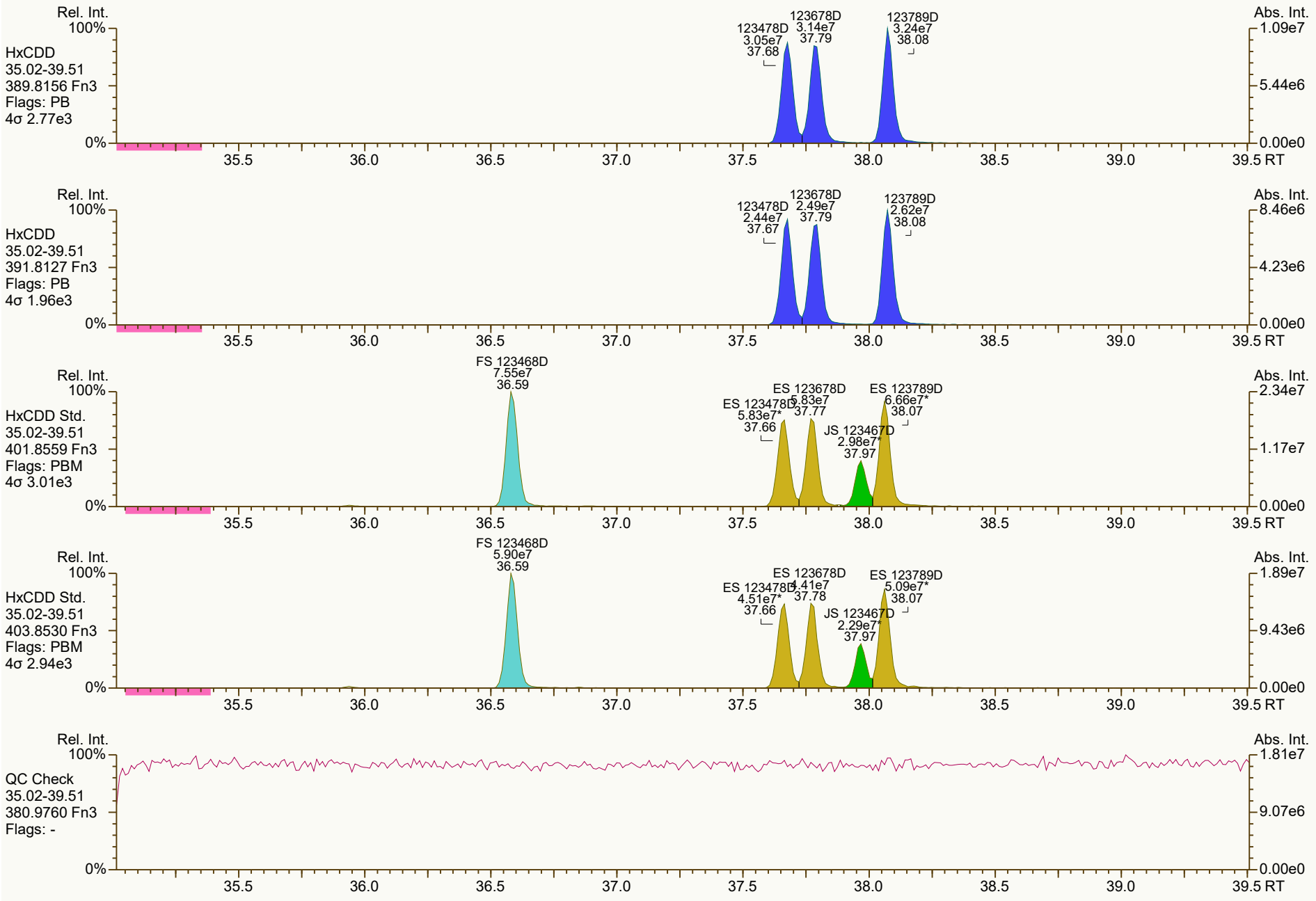
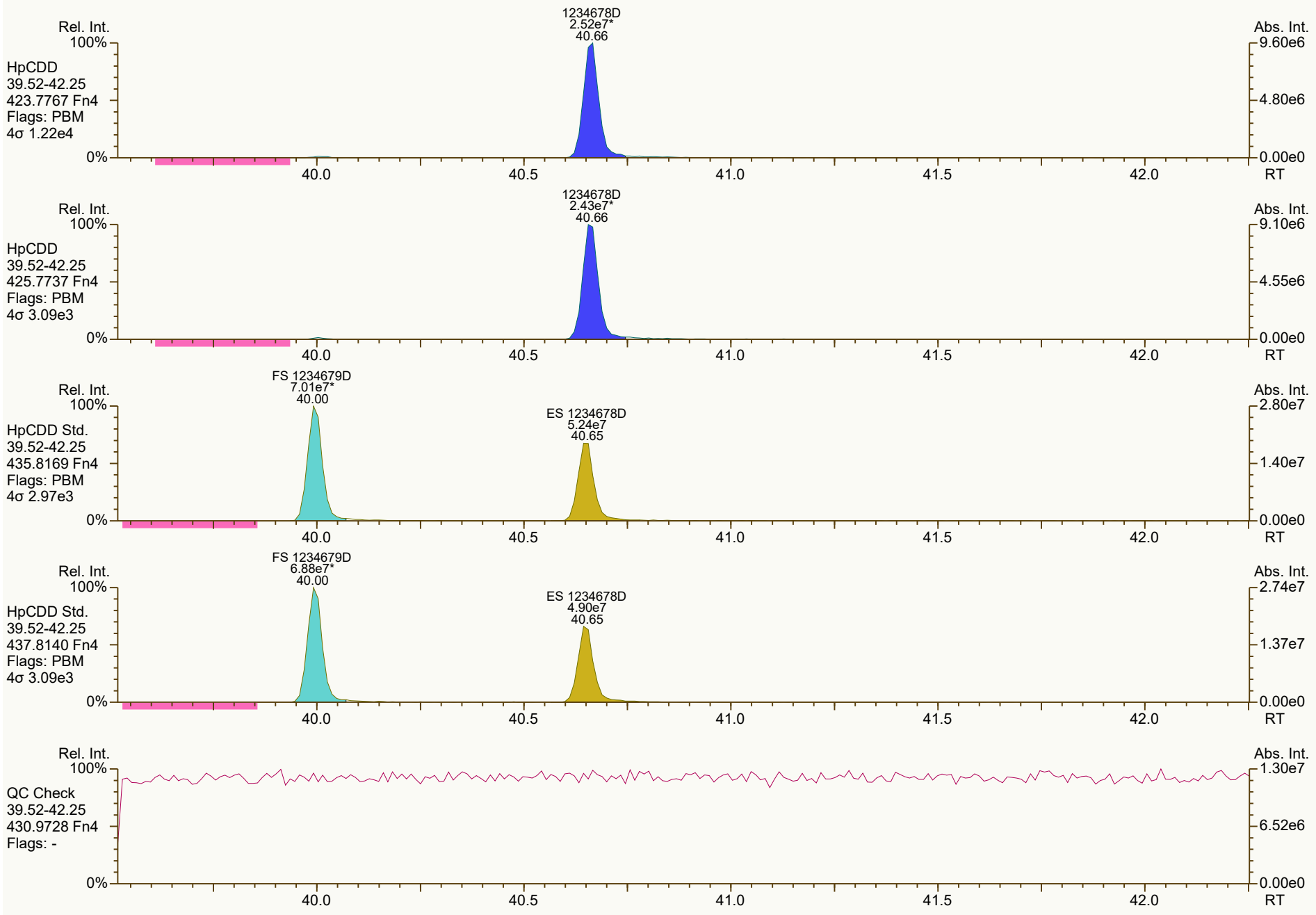
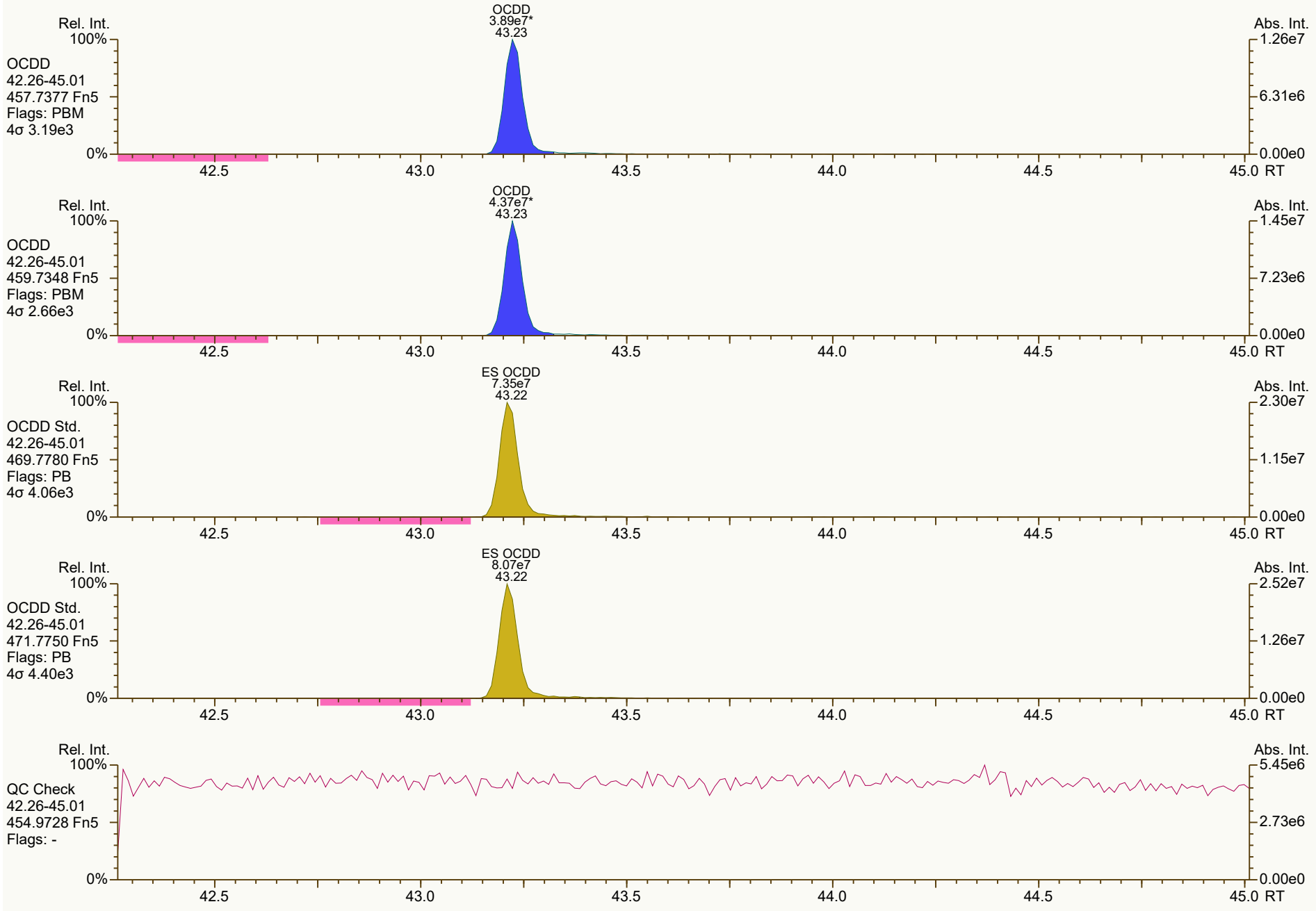
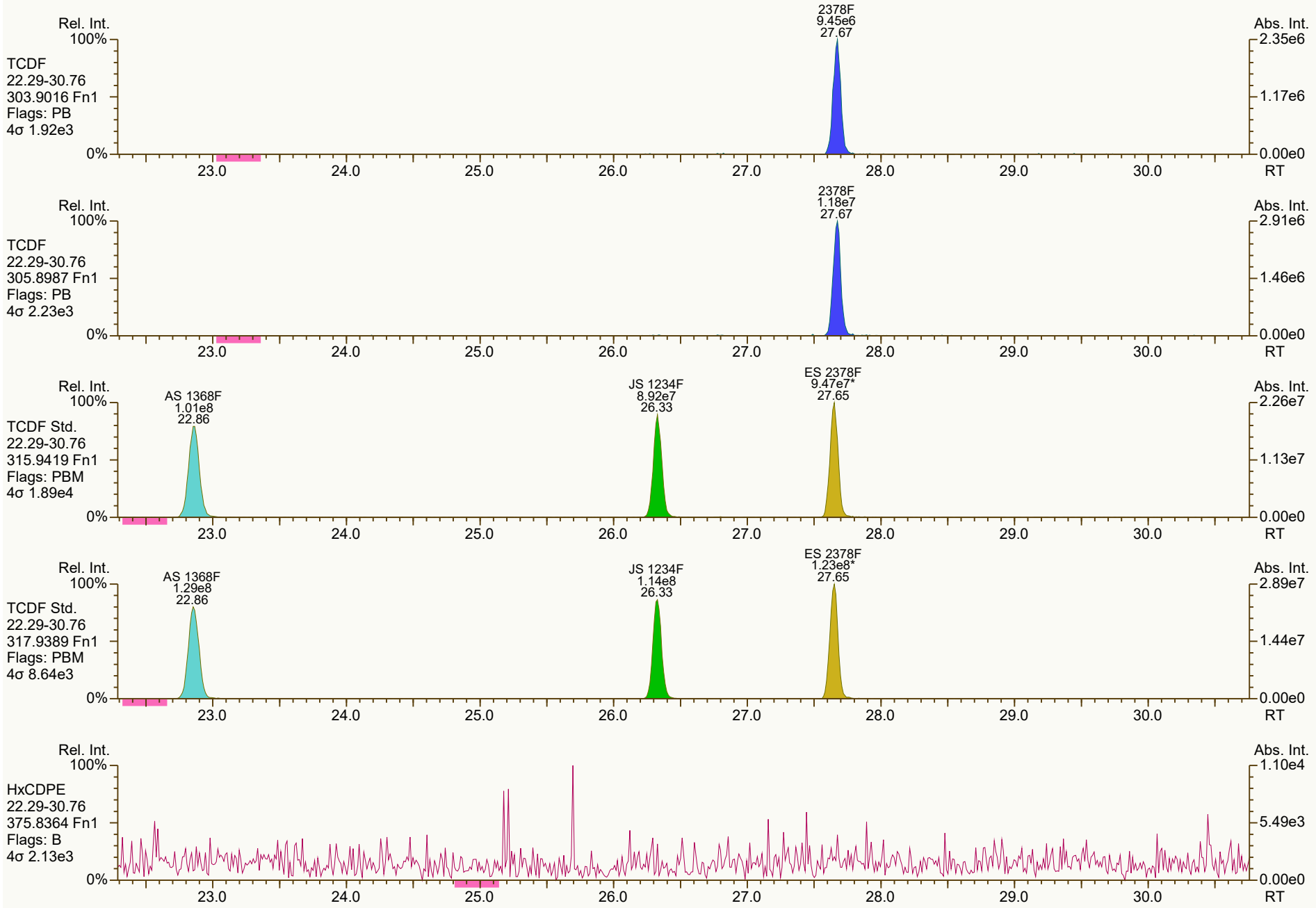
33.5
34.0
34.5
35.0 RT

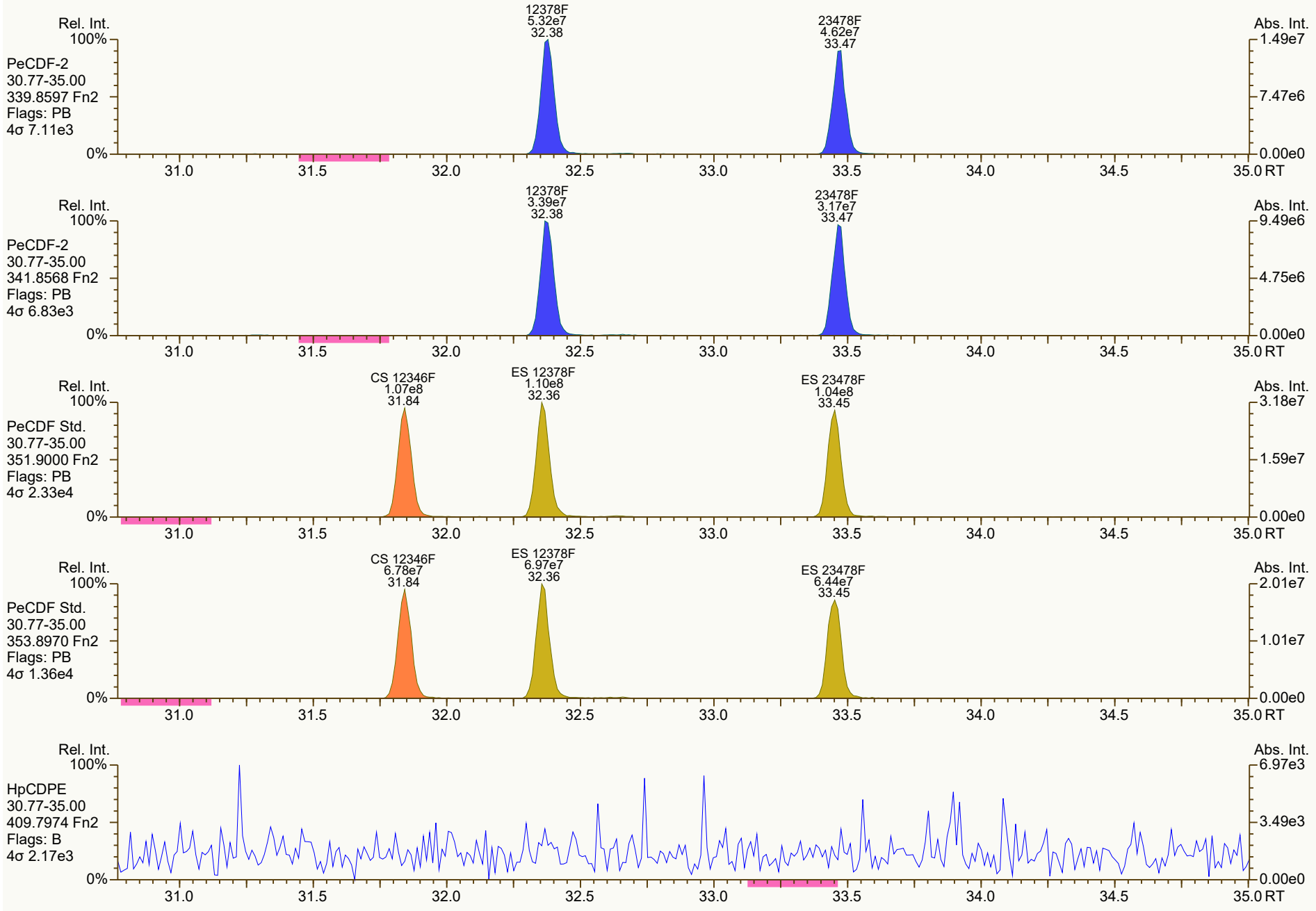

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.77e3
123478D 3.05e7 37.68
123678D 3.14e7 37.79
123789D 3.24e7 38.08
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.96e3
123478D 2.44e7 37.67
123678D 2.49e7 37.79
123789D 2.62e7 38.08
8.46e6
4.23e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.01e3
FS 123468D 7.55e7 36.59
ES 123478D 5.83e7* 37.66
ES 123678D 5.83e7 37.77
JS 123467D 2.98e7* 37.97
ES 123789D 6.66e7* 38.07
2.34e7
1.17e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.94e3
FS 123468D 5.90e7 36.59
ES 123478D 4.51e7* 37.66
ES 123678D 4.41e7 37.78
JS 123467D 2.29e7* 37.97
ES 123789D 5.09e7* 38.07
1.89e7
9.43e6
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.81e7
9.07e6

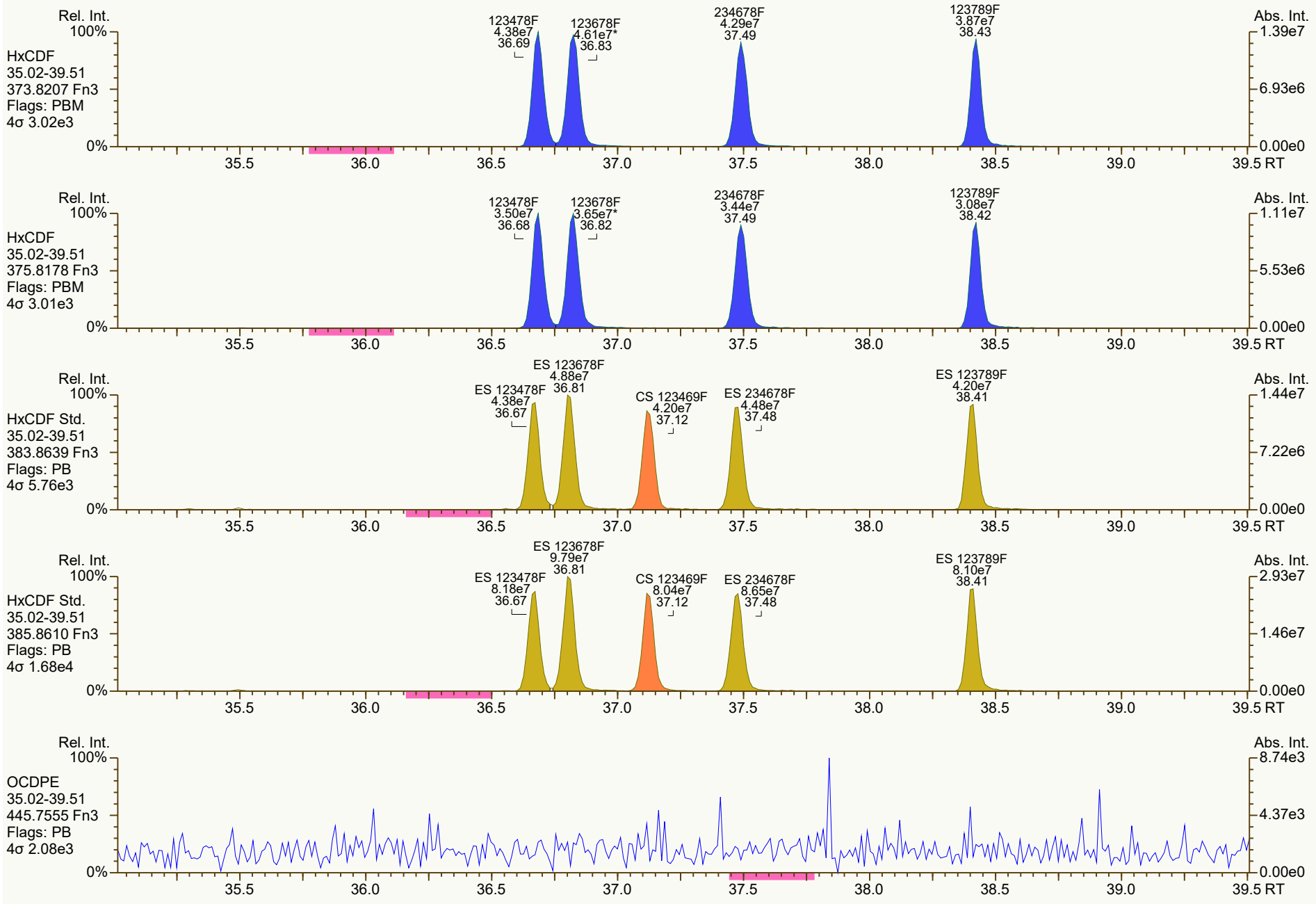

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 1.22e4
0%
1234678D
2.52e7*
40.66
Abs. Int.
9.60e6
4.80e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 3.09e3
0%
1234678D
2.43e7*
40.66
Abs. Int.
9.10e6
4.55e6
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 2.97e3
0%
FS 1234679D
7.01e7*
40.00
ES 1234678D
5.24e7
40.65
Abs. Int.
2.80e7
1.40e7
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 3.09e3
0%
FS 1234679D
6.88e7*
40.00
ES 1234678D
4.90e7
40.65
Abs. Int.
2.74e7
1.37e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.52e6
0.00e0
RT

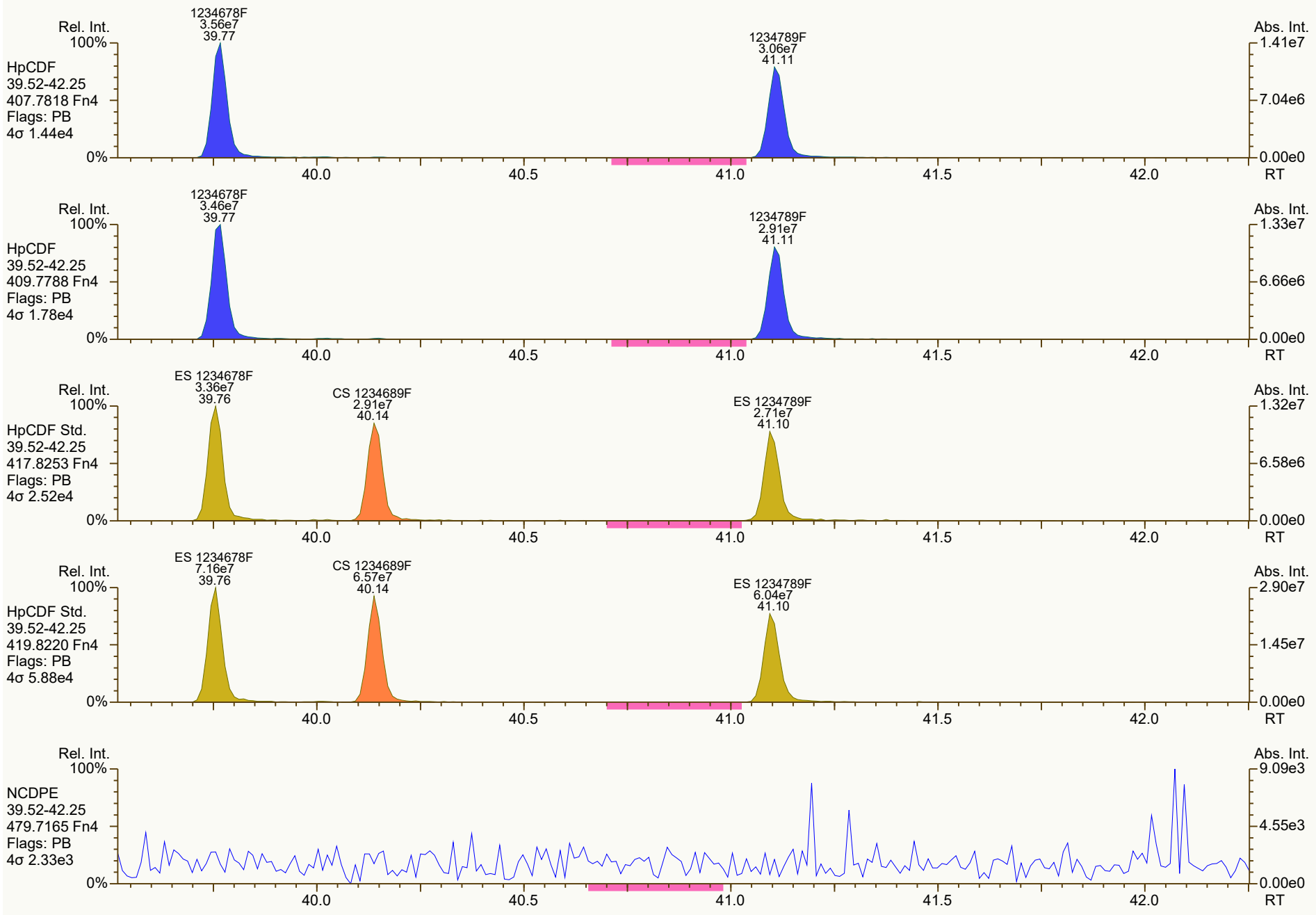

OCDD
3.89e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.19e3
0%
Abs. Int.
1.26e7
6.31e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.37e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.66e3
0%
Abs. Int.
1.45e7
7.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.35e7
43.22
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.06e3
0%
Abs. Int.
2.30e7
1.15e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.07e7
43.22
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 4.40e3
0%
Abs. Int.
2.52e7
1.26e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
5.45e6
2.73e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

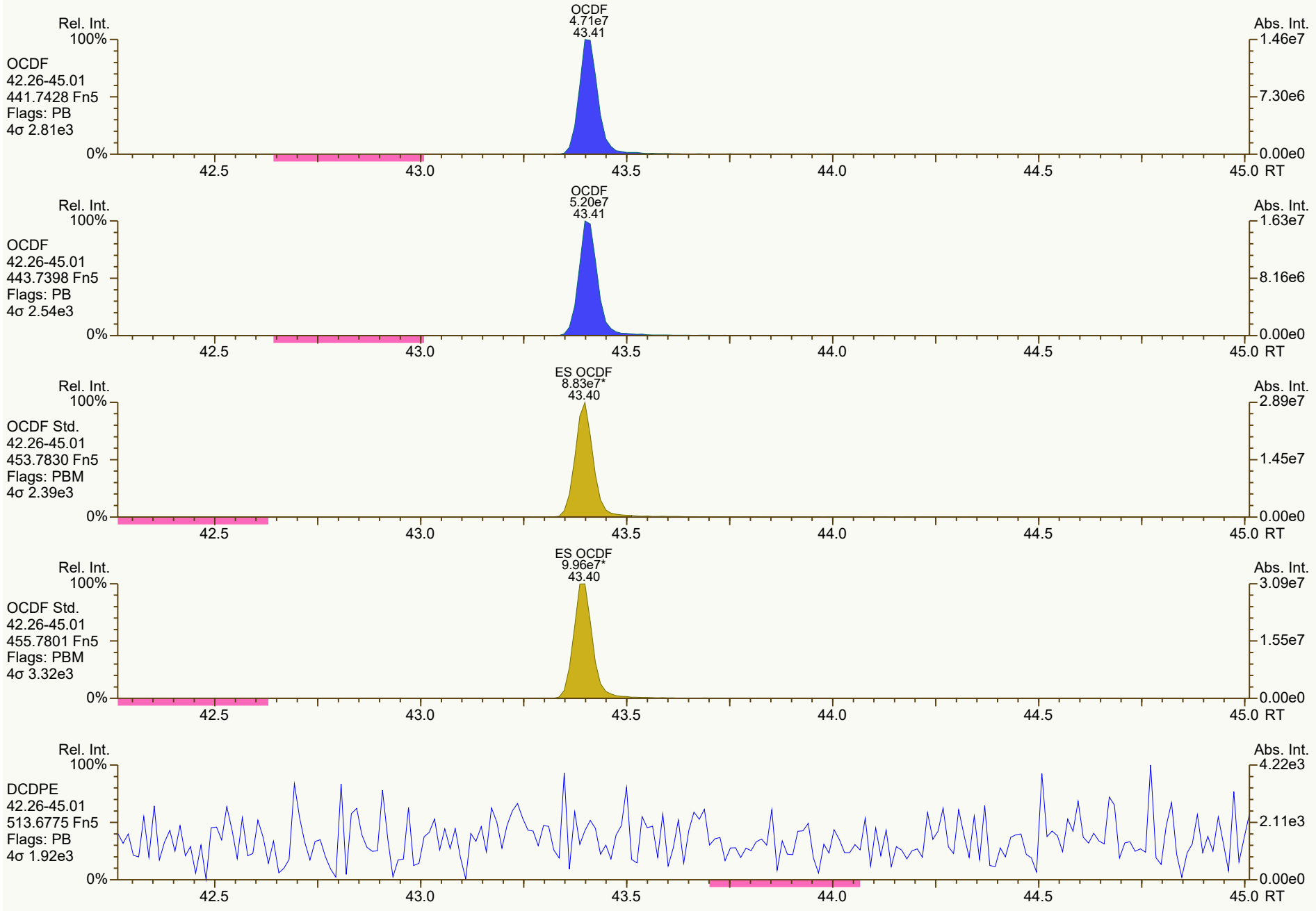

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 1.92e3
0%
2378F
9.45e6
27.67
Abs. Int.
2.35e6
1.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.23e3
0%
2378F
1.18e7
27.67
Abs. Int.
2.91e6
1.46e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PBM
4σ 1.89e4
0%
AS 1368F
1.01e8
22.86
JS 1234F
8.92e7
26.33
ES 2378F
9.47e7*
27.65
Abs. Int.
2.26e7
1.13e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PBM
4σ 8.64e3
0%
AS 1368F
1.29e8
22.86
JS 1234F
1.14e8
26.33
ES 2378F
1.23e8*
27.65
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.13e3
0%
Abs. Int.
1.10e4
5.49e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.70e4
1.35e4
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.78e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.25e4
6.25e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.56e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 7.11e3
12378F
5.32e7
32.38
23478F
4.62e7
33.47
1.49e7
7.47e6
0.00e0
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 6.83e3
12378F
3.39e7
32.38
23478F
3.17e7
33.47
9.49e6
4.75e6
0.00e0
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.33e4
CS 12346F
1.07e8
31.84
ES 12378F
1.10e8
32.36
ES 23478F
1.04e8
33.45
3.18e7
1.59e7
0.00e0
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 1.36e4
CS 12346F
6.78e7
31.84
ES 12378F
6.97e7
32.36
ES 23478F
6.44e7
33.45
2.01e7
1.01e7
0.00e0
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.17e3
6.97e3
3.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 3.02e3
0%
123478F
4.38e7
36.69
123678F
4.61e7*
36.83
234678F
4.29e7
37.49
123789F
3.87e7
38.43
Abs. Int.
1.39e7
6.93e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 3.01e3
0%
123478F
3.50e7
36.68
123678F
3.65e7*
36.82
234678F
3.44e7
37.49
123789F
3.08e7
38.42
Abs. Int.
1.11e7
5.53e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.76e3
0%
ES 123478F
4.38e7
36.67
ES 123678F
4.88e7
36.81
CS 123469F
4.20e7
37.12
ES 234678F
4.48e7
37.48
ES 123789F
4.20e7
38.41
Abs. Int.
1.44e7
7.22e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.68e4
0%
ES 123478F
8.18e7
36.67
ES 123678F
9.79e7
36.81
CS 123469F
8.04e7
37.12
ES 234678F
8.65e7
37.48
ES 123789F
8.10e7
38.41
Abs. Int.
2.93e7
1.46e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: PB
4σ 2.08e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
0%
Abs. Int.
RT
40.0
40.5
41.0
41.5
42.0
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.44e4
1234678F
3.56e7
39.77
1234789F
3.06e7
41.11
1.41e7
7.04e6
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.78e4
1234678F
3.46e7
39.77
1234789F
2.91e7
41.11
1.33e7
6.66e6
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.52e4
ES 1234678F
3.36e7
39.76
CS 1234689F
2.91e7
40.14
ES 1234789F
2.71e7
41.10
1.32e7
6.58e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.88e4
ES 1234678F
7.16e7
39.76
CS 1234689F
6.57e7
40.14
ES 1234789F
6.04e7
41.10
2.90e7
1.45e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.33e3
9.09e3
4.55e3
0.00e0


OCDF
4.71e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.81e3
0%
Abs. Int.
1.46e7
7.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.20e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.54e3
0%
Abs. Int.
1.63e7
8.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.83e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PBM
4σ 2.39e3
0%
Abs. Int.
2.89e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.96e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PBM
4σ 3.32e3
0%
Abs. Int.
3.09e7
1.55e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 1.92e3
0%
Abs. Int.
4.22e3
2.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	2.48E+07	0.79	Y	1.34	1.22	-9%
12378-PeCDD	33.81	9.55E+07	1.55	Y	1.06	0.98	-8%
123478-HxCDD	37.68	8.89E+07	1.25	Y	1.06	1.04	-1%
123678-HxCDD	37.80	9.70E+07	1.25	Y	1.08	1.14	5%
123789-HxCDD	38.09	9.52E+07	1.24	Y	1.02	0.95	-7%
1234678-HpCDD	40.67	8.40E+07	1.03	Y	0.97	0.99	1%
OCDD	43.24	1.45E+08	0.90	Y	1.07	1.07	0%
2378-TCDF	27.68	3.32E+07	0.79	Y	0.96	0.95	-1%
12378-PeCDF	32.38	1.28E+08	1.52	Y	0.95	0.87	-8%
23478-PeCDF	33.48	1.47E+08	1.58	Y	0.94	1.00	6%
123478-HxCDF	36.69	1.27E+08	1.27	Y	1.23	1.25	1%
123678-HxCDF	36.83	1.34E+08	1.26	Y	1.13	1.11	-2%
234678-HxCDF	37.50	1.26E+08	1.24	Y	1.15	1.17	1%
123789-HxCDF	38.43	1.13E+08	1.25	Y	1.14	1.10	-3%
1234678-HpCDF	39.77	1.18E+08	1.02	Y	1.36	1.34	-2%
1234789-HpCDF	41.12	9.93E+07	1.03	Y	1.30	1.29	-1%
OCDF	43.42	1.67E+08	0.90	Y	1.03	1.02	-1%
ES 2378-TCDD	28.51	2.04E+08	0.81	Y	1.03	0.96	-7%
ES 12378-PeCDD	33.795	1.95E+08	1.65	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.667	1.70E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.781	1.70E+08	1.29	Y	0.97	0.97	0%
ES 123789-HxCDD	38.071	2.01E+08	1.25	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.656	1.70E+08	1.05	Y	0.99	0.97	-2%
ES OCDD	43.225	2.69E+08	0.90	Y	0.78	0.77	-1%
ES 2378-TCDF	27.654	3.51E+08	0.77	Y	1.08	0.99	-9%
ES 12378-PeCDF	32.366	2.97E+08	1.58	Y	0.93	0.84	-10%
ES 23478-PeCDF	33.459	2.95E+08	1.56	Y	0.92	0.84	-9%
ES 123478-HxCDF	36.673	2.04E+08	0.52	Y	1.14	1.17	2%
ES 123678-HxCDF	36.814	2.41E+08	0.53	Y	1.30	1.38	7%
ES 234678-HxCDF	37.481	2.17E+08	0.52	Y	1.20	1.24	3%
ES 123789-HxCDF	38.414	2.06E+08	0.52	Y	1.14	1.18	4%
ES 1234678-HpCDF	39.764	1.76E+08	0.46	Y	0.95	1.01	6%
ES 1234789-HpCDF	41.106	1.54E+08	0.45	Y	0.85	0.88	4%
ES OCDF	43.408	3.28E+08	0.88	Y	0.93	0.94	2%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	2.13E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	3.53E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	8.73E+07	1.21	Y	-	-	-
~~OCDD-a~~	~~43.23~~	~~9.07E+06~~	~~2.21~~	~~Y~~	~~0.07~~	~~0.07~~	~~2%~~
~~OCDF-a~~	~~43.42~~	~~9.95E+06~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~2%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	9.05	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	46.2	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	49.4	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	52.7	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	46.7	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88	-	1.20	Y	50.7	40	-	60	Y
OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65	-	0.89	Y	9.87	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	45.8	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	53.1	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05	-	1.43	Y	50.5	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.2	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05	-	1.43	Y	50.6	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	48.4	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88	-	1.20	Y	49.2	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.7	40	-	60	Y
OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	99.5	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	70	-	130	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	70	-	130	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	140	-	260	Y
CLEANUP STANDARDS n/a - CL 28Jul21											
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	9.05	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	52.7	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	46.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	50.7	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.87	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	45.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	53.1	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.5	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.2	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.4	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	49.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.7	43 - 58	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.5	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

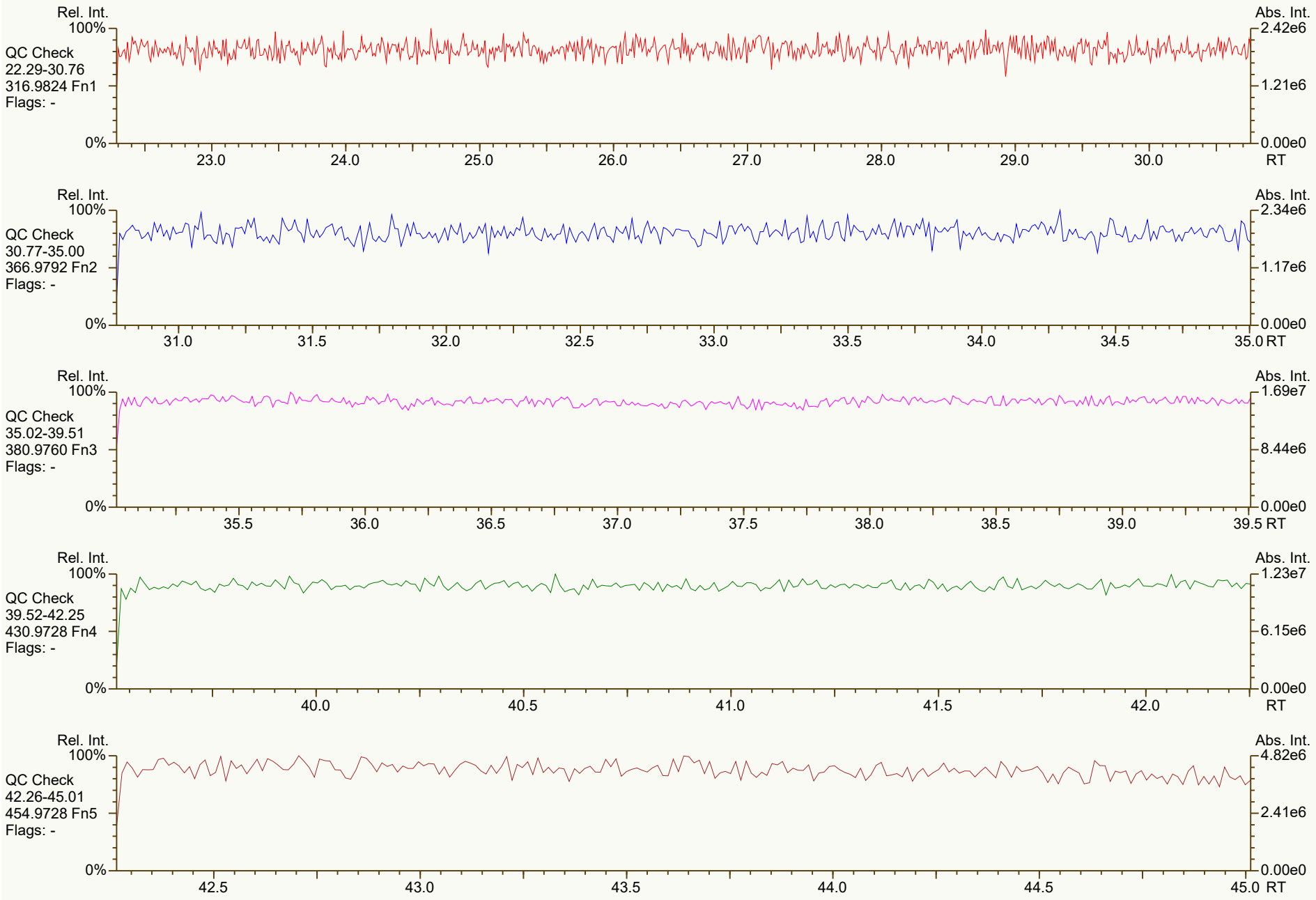
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	77	-	129	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	96	-	415	Y
CLEANUP STANDARDS	n/a - CL 28Jul21										
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:18 Analyst: pw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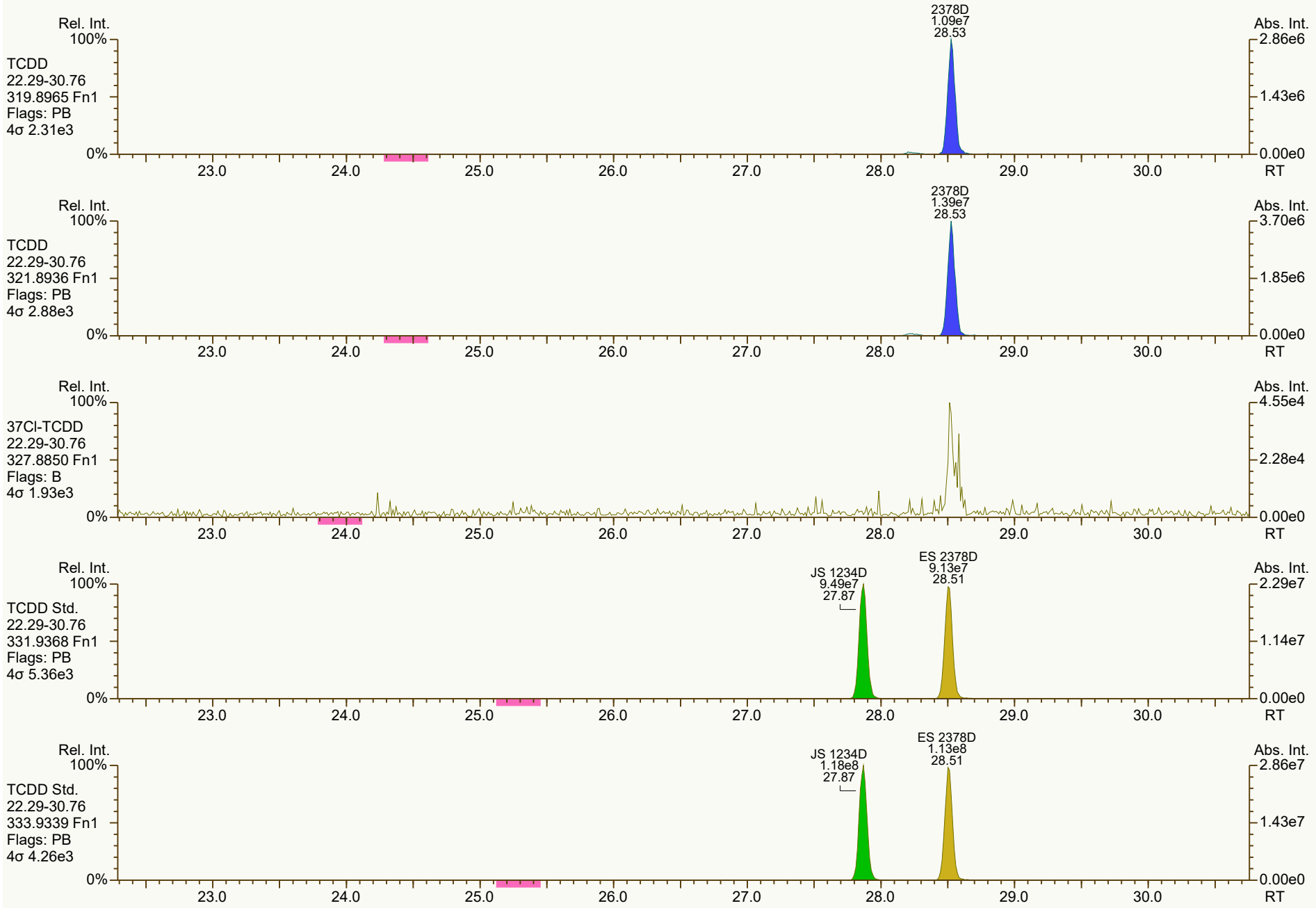
100%
0%
Abs. Int.
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.42e6
1.21e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
2.34e6
1.17e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.69e7
8.44e6
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.23e7
6.15e6
40.0
40.5
41.0
41.5
42.0
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
4.82e6
2.41e6
42.5
43.0
43.5
44.0
44.5
45.0


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.31e3
0%
2378D
1.09e7
28.53
Abs. Int.
2.86e6
1.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.88e3
0%
2378D
1.39e7
28.53
Abs. Int.
3.70e6
1.85e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.93e3
0%
Abs. Int.
4.55e4
2.28e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.36e3
0%
JS 1234D
9.49e7
27.87
ES 2378D
9.13e7
28.51
Abs. Int.
2.29e7
1.14e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.26e3
0%
JS 1234D
1.18e8
27.87
ES 2378D
1.13e8
28.51
Abs. Int.
2.86e7
1.43e7
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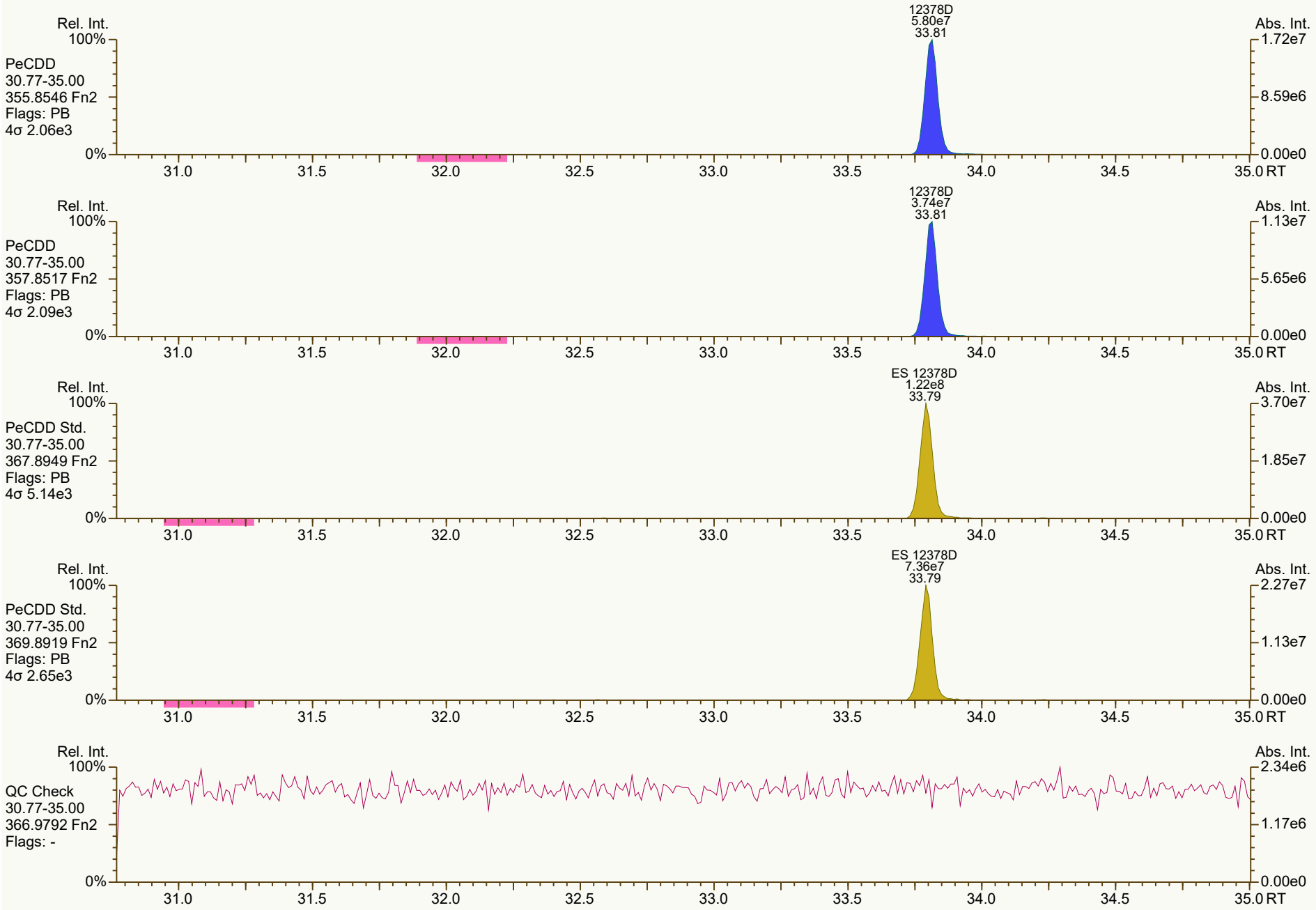
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.06e3
0%
12378D
5.80e7
33.81
Abs. Int.
1.72e7
8.59e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.09e3
0%
12378D
3.74e7
33.81
Abs. Int.
1.13e7
5.65e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 5.14e3
0%
ES 12378D
1.22e8
33.79
Abs. Int.
3.70e7
1.85e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 2.65e3
0%
ES 12378D
7.36e7
33.79
Abs. Int.
2.27e7
1.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
31.0
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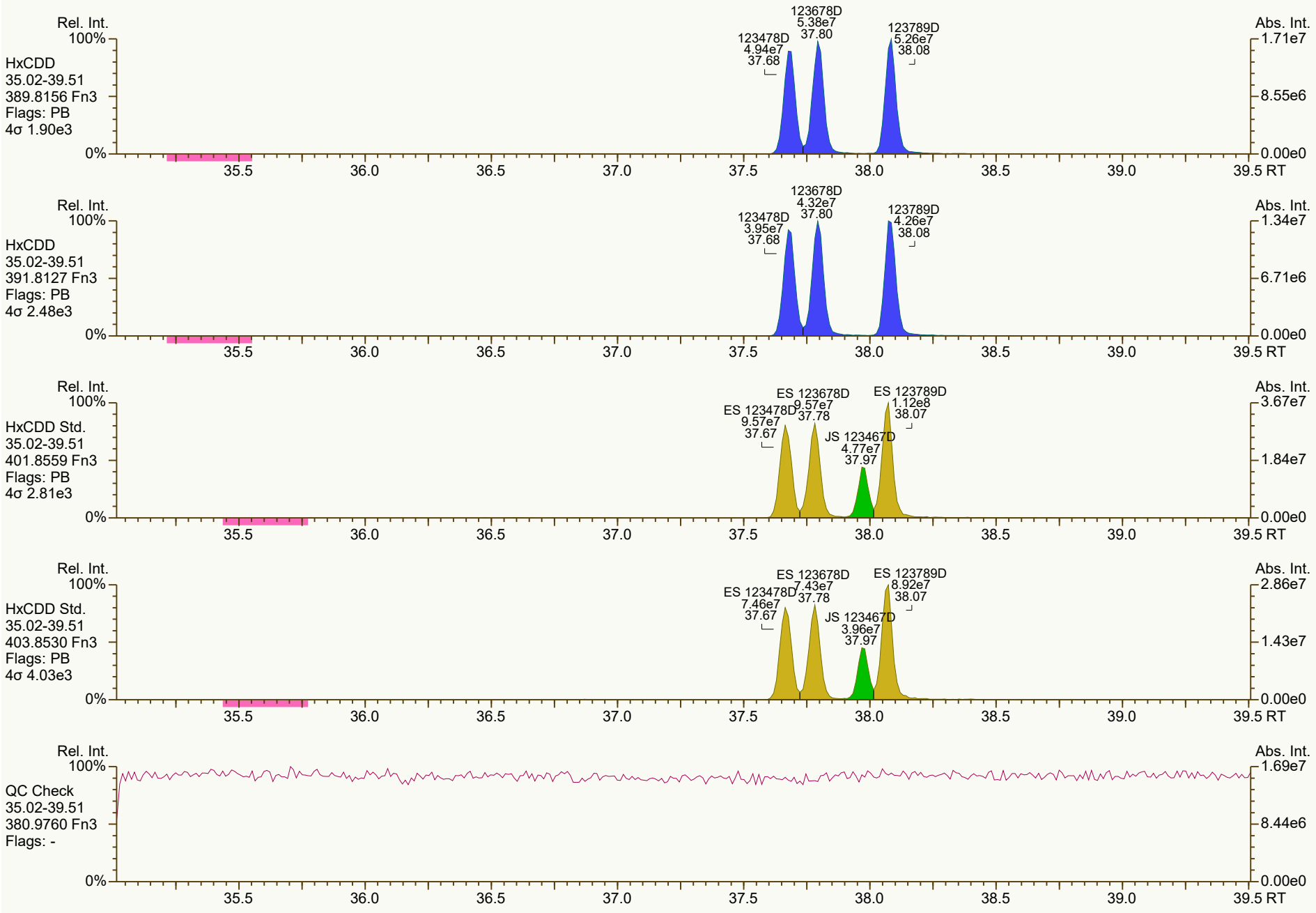
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 1.90e3
123678D
5.38e7
37.80
123478D
4.94e7
37.68
123789D
5.26e7
38.08
Abs. Int.
1.71e7
8.55e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.48e3
123678D
4.32e7
37.80
123478D
3.95e7
37.68
123789D
4.26e7
38.08
Abs. Int.
1.34e7
6.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 2.81e3
ES 123678D
9.57e7
37.78
ES 123478D
9.57e7
37.67
ES 123789D
1.12e8
38.07
JS 123467D
4.77e7
37.97
Abs. Int.
3.67e7
1.84e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 4.03e3
ES 123678D
7.43e7
37.78
ES 123478D
7.46e7
37.67
ES 123789D
8.92e7
38.07
JS 123467D
3.96e7
37.97
Abs. Int.
2.86e7
1.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.69e7
8.44e6
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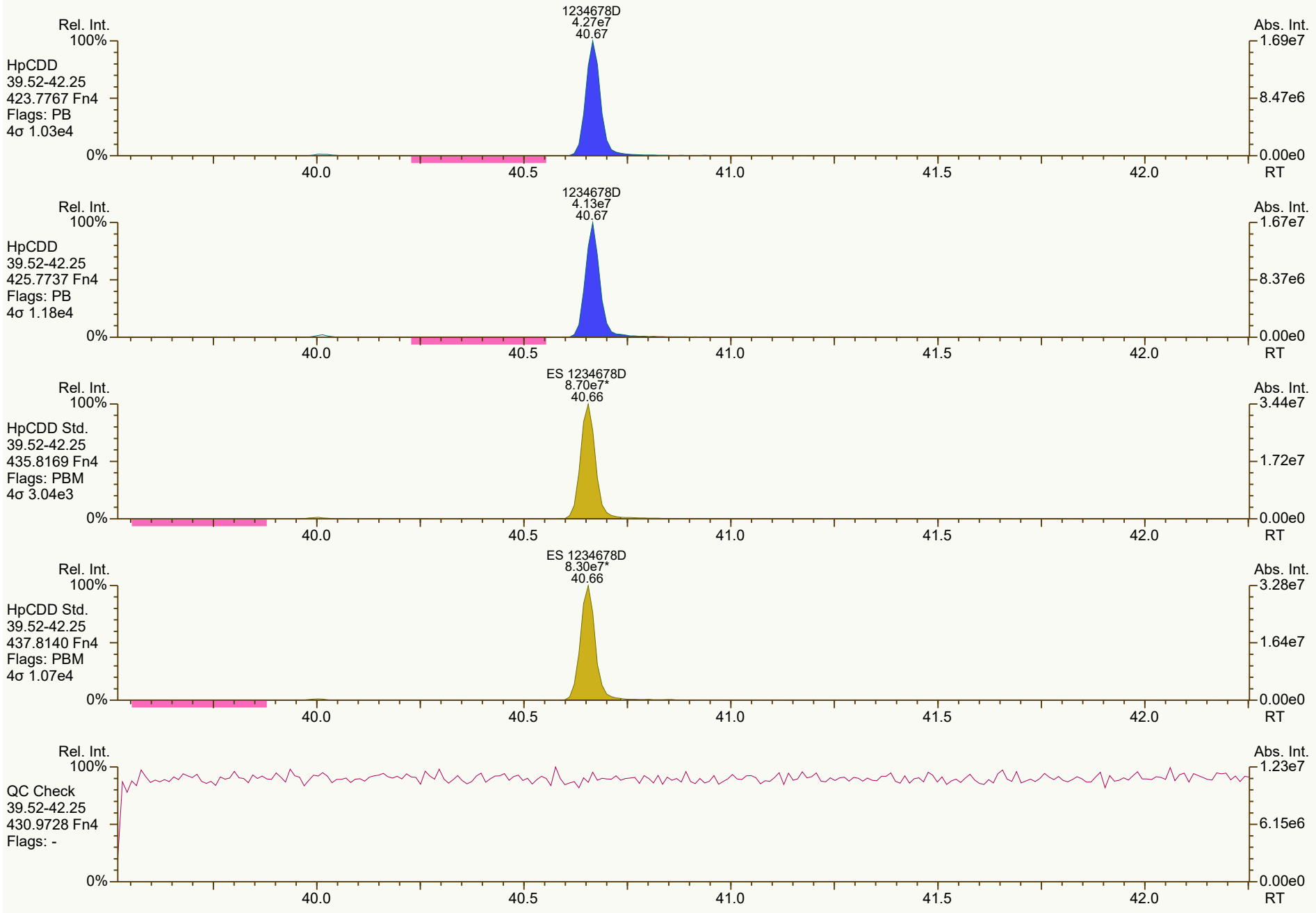
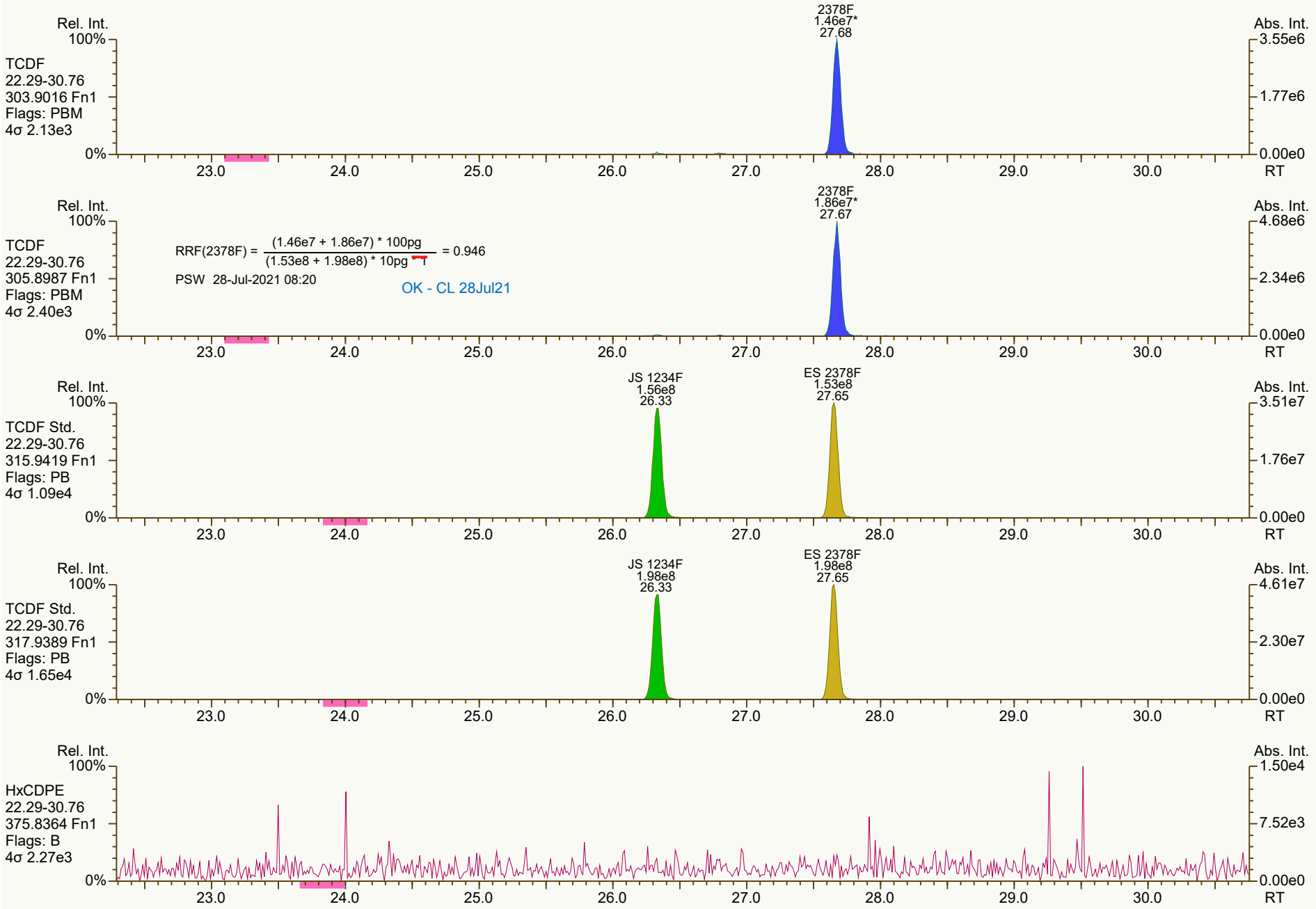
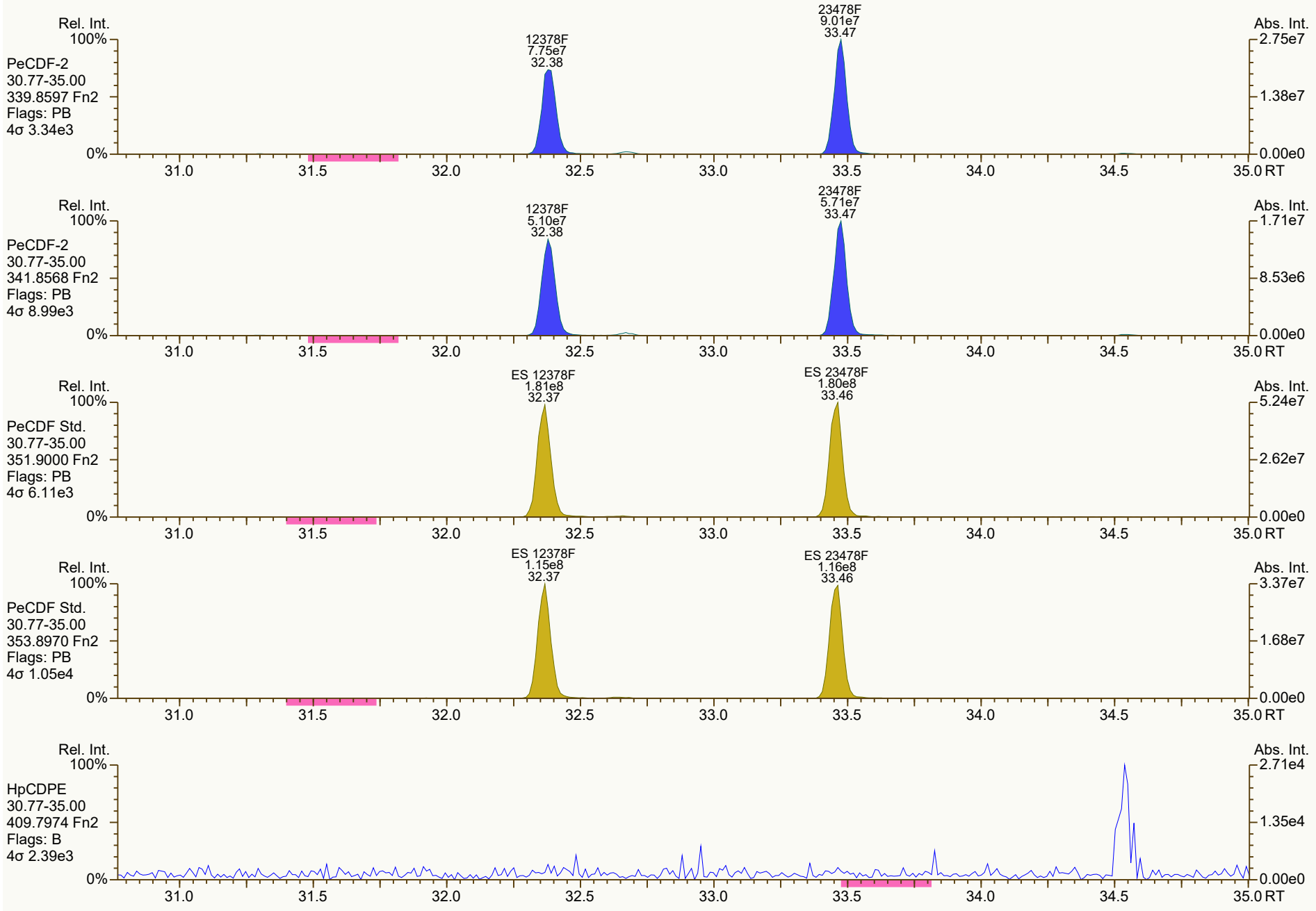
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

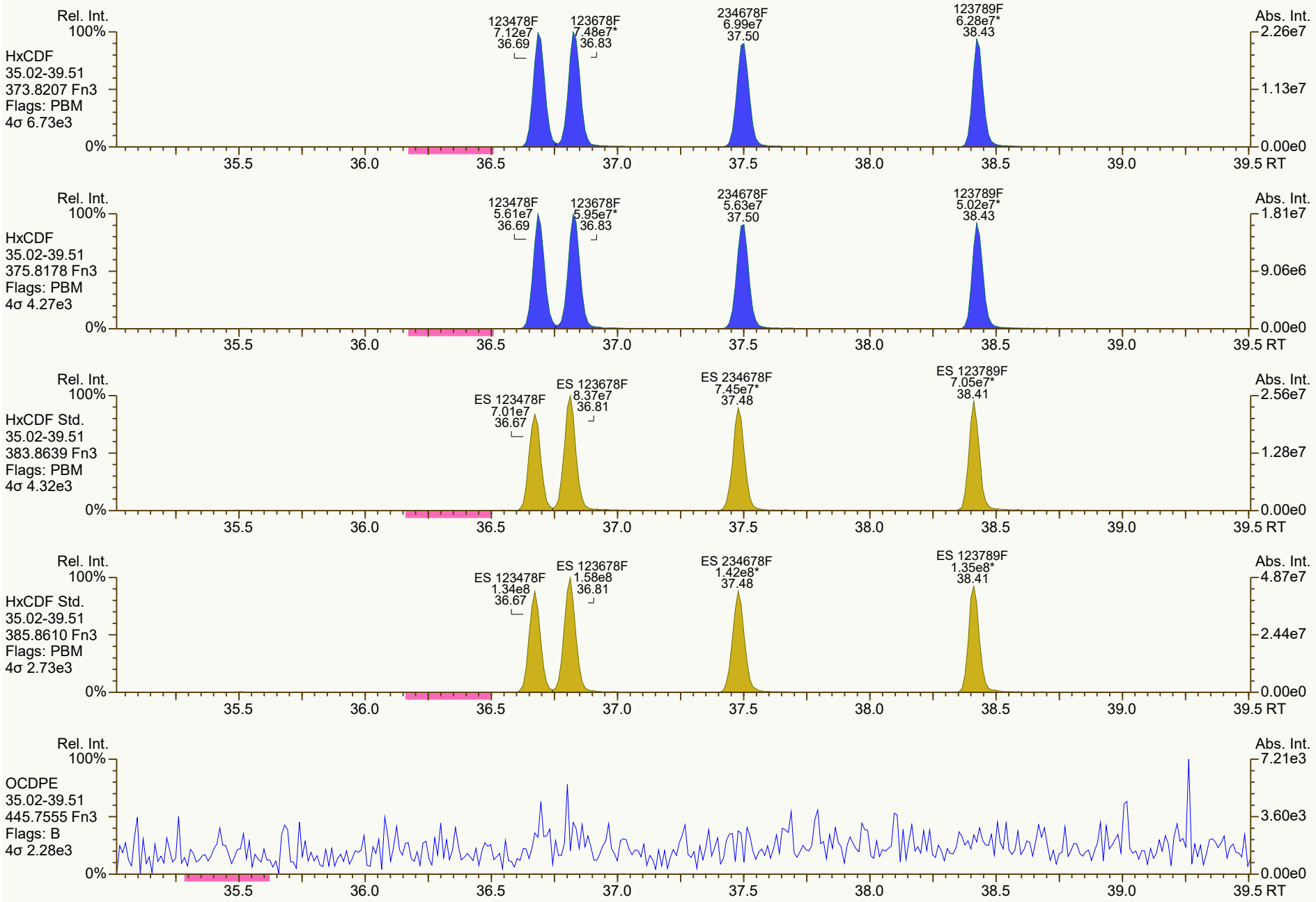

1234678D
4.27e7
40.67
Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.03e4
0%
Abs. Int.
1.69e7
8.47e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
1234678D
4.13e7
40.67
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.18e4
1.67e7
8.37e6
ES 1234678D
8.70e7*
40.66
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 3.04e3
3.44e7
1.72e7
ES 1234678D
8.30e7*
40.66
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 1.07e4
3.28e7
1.64e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.23e7
6.15e6

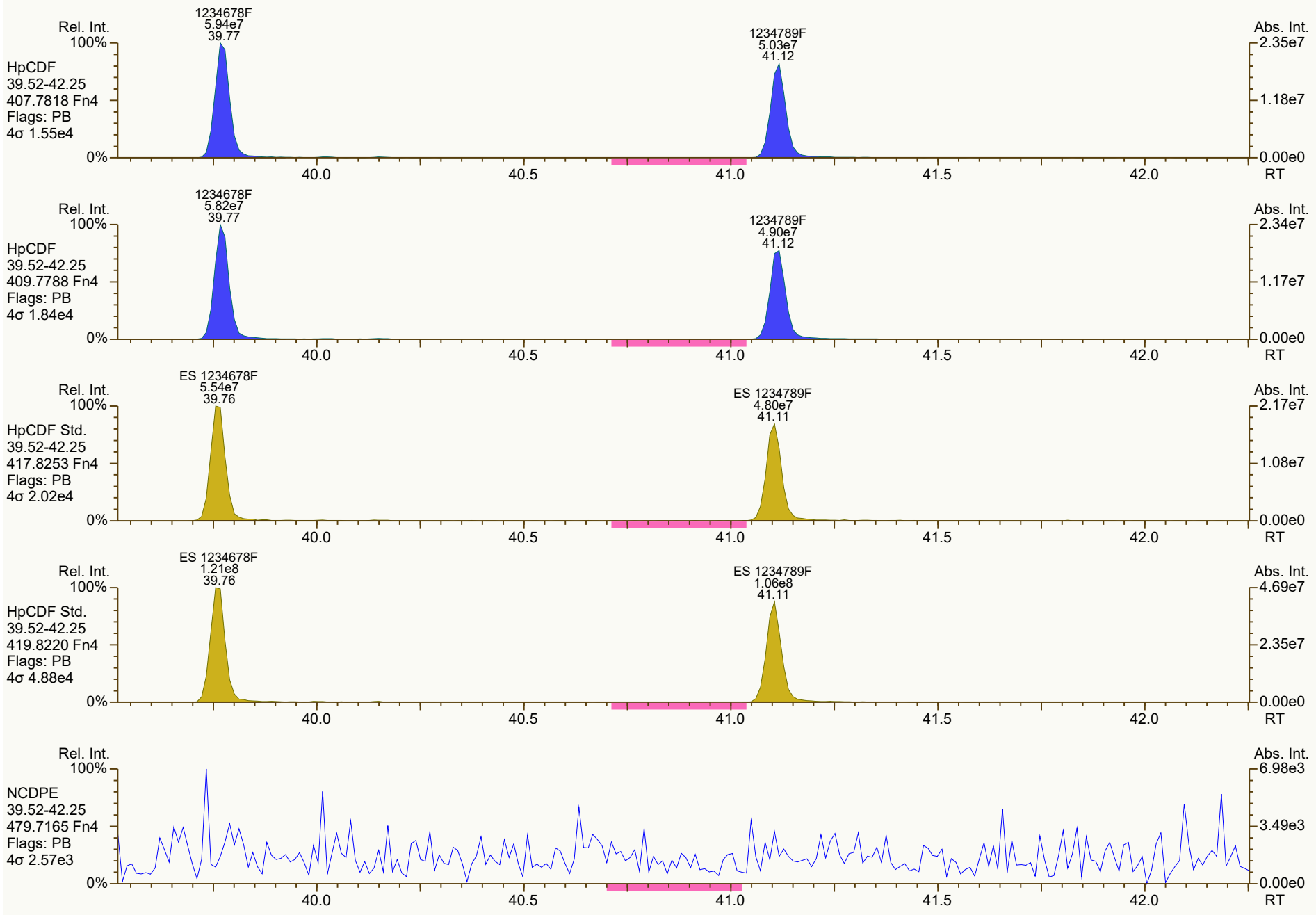

OCDD
6.83e7*
43.24
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.37e3
0%
Abs. Int.
2.30e7
1.15e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
7.63e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 4.65e3
0%
Abs. Int.
2.58e7
1.29e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.28e8*
43.22
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 3.40e3
0%
Abs. Int.
4.34e7
2.17e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.41e8*
43.22
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.30e3
0%
Abs. Int.
4.68e7
2.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.82e6
2.41e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

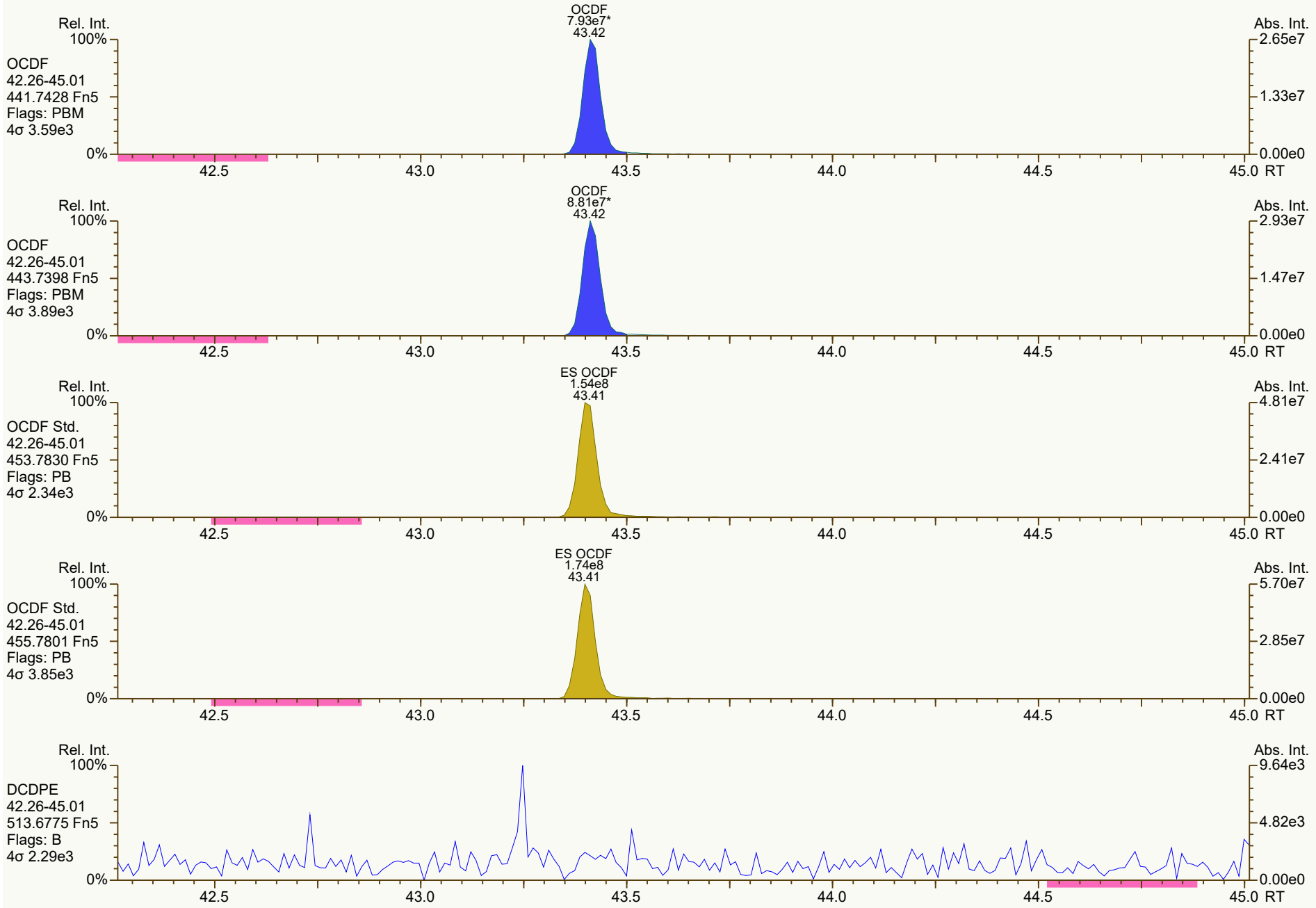

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.13e3
0%
2378F
1.46e7*
27.68
Abs. Int.
3.55e6
1.77e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.40e3
0%
RRF(2378F) = (1.46e7 + 1.86e7) * 100pg / (1.53e8 + 1.98e8) * 10pg = 0.946
PSW 28-Jul-2021 08:20
OK - CL 28Jul21
2378F
1.86e7*
27.67
Abs. Int.
4.68e6
2.34e6
0.00e0
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.09e4
0%
JS 1234F
1.56e8
26.33
ES 2378F
1.53e8
27.65
Abs. Int.
3.51e7
1.76e7
0.00e0
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.65e4
0%
JS 1234F
1.98e8
26.33
ES 2378F
1.98e8
27.65
Abs. Int.
4.61e7
2.30e7
0.00e0
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.27e3
0%
Abs. Int.
1.50e4
7.52e3
0.00e0


Rel. Int.
100%
0%
Abs. Int.
1.31e4
6.54e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.61e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.73e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.05e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.42e6
1.21e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 3.34e3
12378F
7.75e7
32.38
23478F
9.01e7
33.47
Abs. Int.
2.75e7
1.38e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 8.99e3
12378F
5.10e7
32.38
23478F
5.71e7
33.47
Abs. Int.
1.71e7
8.53e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 6.11e3
ES 12378F
1.81e8
32.37
ES 23478F
1.80e8
33.46
Abs. Int.
5.24e7
2.62e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 1.05e4
ES 12378F
1.15e8
32.37
ES 23478F
1.16e8
33.46
Abs. Int.
3.37e7
1.68e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.39e3
Abs. Int.
2.71e4
1.35e4
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 6.73e3
123478F
7.12e7
36.69
123678F
7.48e7*
36.83
234678F
6.99e7
37.50
123789F
6.28e7*
38.43
Abs. Int.
2.26e7
1.13e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 4.27e3
123478F
5.61e7
36.69
123678F
5.95e7*
36.83
234678F
5.63e7
37.50
123789F
5.02e7*
38.43
Abs. Int.
1.81e7
9.06e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 4.32e3
ES 123478F
7.01e7
36.67
ES 123678F
8.37e7
36.81
ES 234678F
7.45e7*
37.48
ES 123789F
7.05e7*
38.41
Abs. Int.
2.56e7
1.28e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.73e3
ES 123478F
1.34e8
36.67
ES 123678F
1.58e8
36.81
ES 234678F
1.42e8*
37.48
ES 123789F
1.35e8*
38.41
Abs. Int.
4.87e7
2.44e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.28e3
Abs. Int.
7.21e3
3.60e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

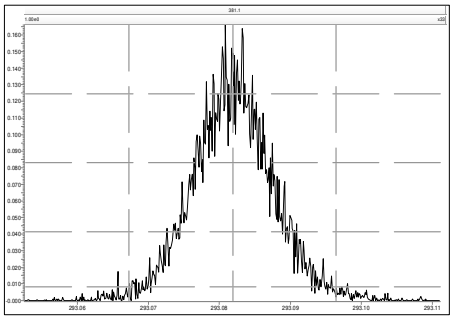

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.55e4
0%
1234678F
5.94e7
39.77
1234789F
5.03e7
41.12
Abs. Int.
2.35e7
1.18e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.84e4
0%
1234678F
5.82e7
39.77
1234789F
4.90e7
41.12
Abs. Int.
2.34e7
1.17e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.02e4
0%
ES 1234678F
5.54e7
39.76
ES 1234789F
4.80e7
41.11
Abs. Int.
2.17e7
1.08e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 4.88e4
0%
ES 1234678F
1.21e8
39.76
ES 1234789F
1.06e8
41.11
Abs. Int.
4.69e7
2.35e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.57e3
0%
Abs. Int.
6.98e3
3.49e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PBM
4σ 3.59e3
0%
OCDF
7.93e7*
43.42
Abs. Int.
2.65e7
1.33e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PBM
4σ 3.89e3
0%
OCDF
8.81e7*
43.42
Abs. Int.
2.93e7
1.47e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 2.34e3
0%
ES OCDF
1.54e8
43.41
Abs. Int.
4.81e7
2.41e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 3.85e3
0%
ES OCDF
1.74e8
43.41
Abs. Int.
5.70e7
2.85e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.29e3
0%
Abs. Int.
9.64e3
4.82e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

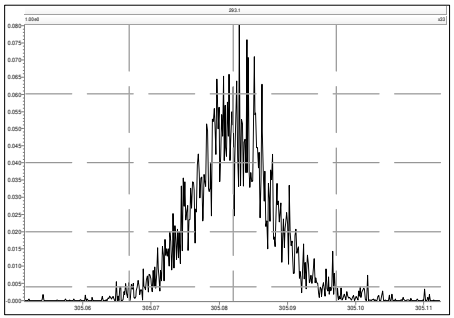
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:15:38 Eastern Daylight Time

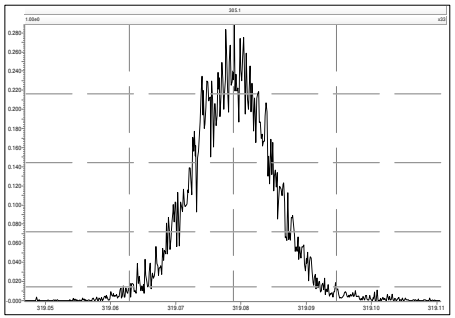
M 292.9824 R 12951



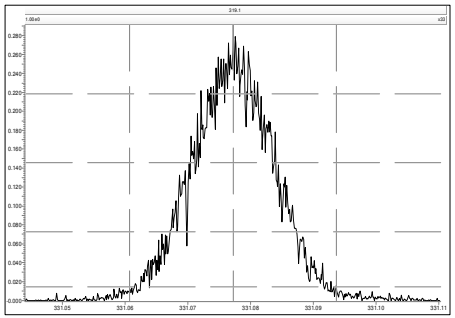
M 304.9824 R 13589



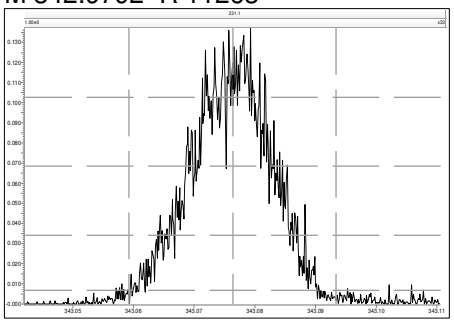
M 318.9792 R 11848



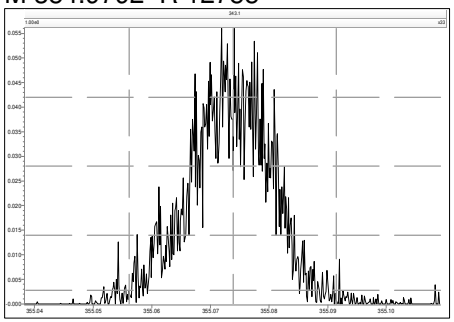
M 330.9792 R 11310



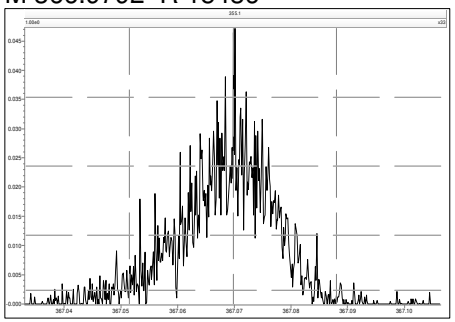
M 342.9792 R 11263



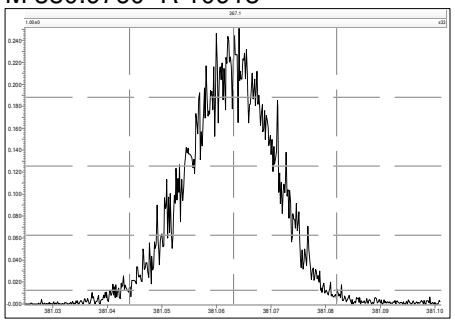
M 354.9792 R 12755



M 366.9792 R 15436



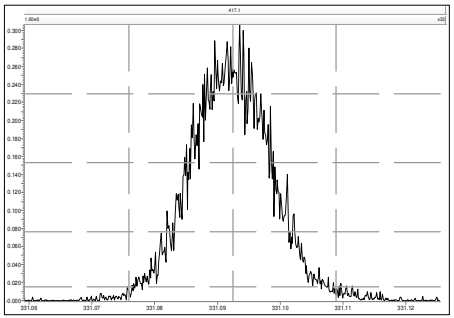
M 380.9760 R 10918



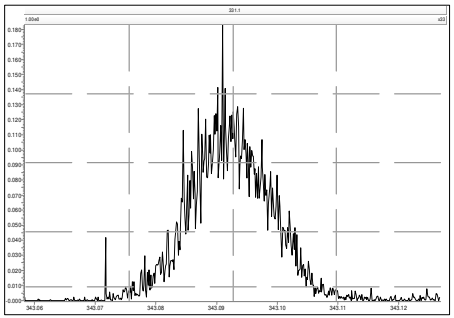
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:03 Eastern Daylight Time

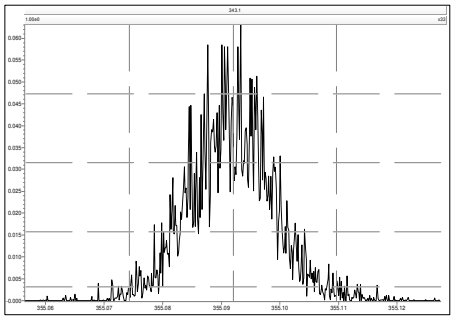
M 330.9792 R 11165



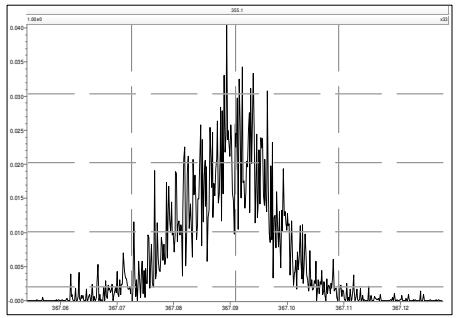
M 342.9792 R 12440



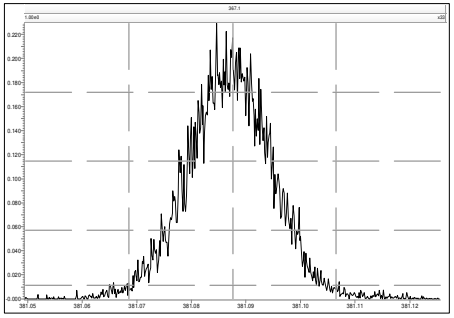
M 354.9792 R 12626



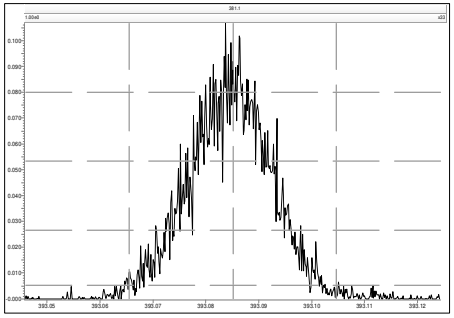
M 366.9792 R 12134



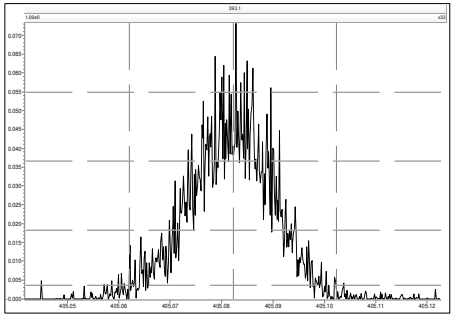
M 380.9760 R 10727



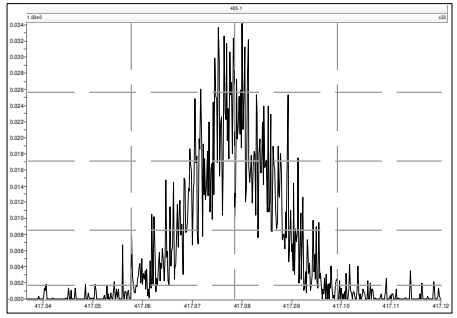
M 392.9760 R 12019



M 404.9760 R 11685



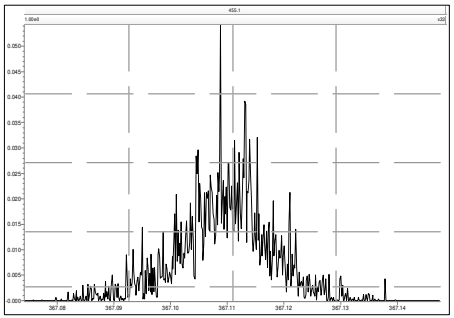
M 416.9760 R 14046



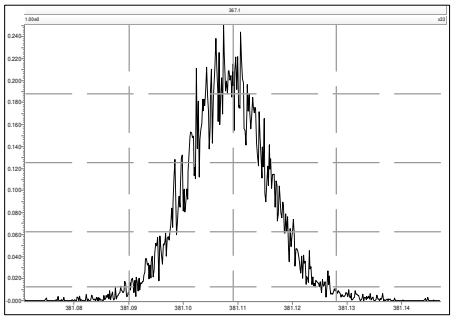
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:24 Eastern Daylight Time

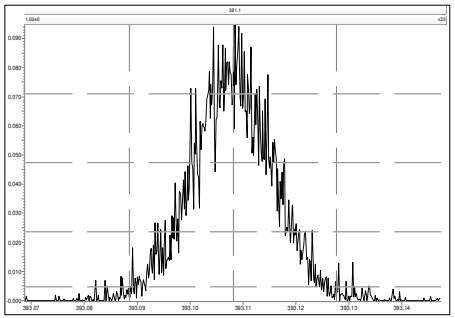
M 366.9792 R 13020



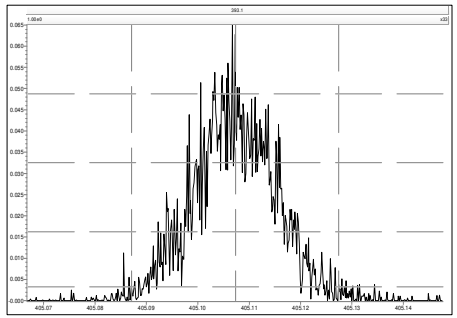
M 380.9760 R 11361



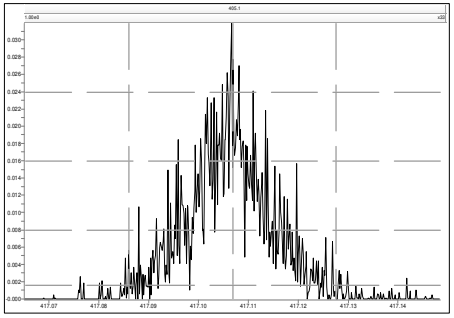
M 392.9760 R 11464



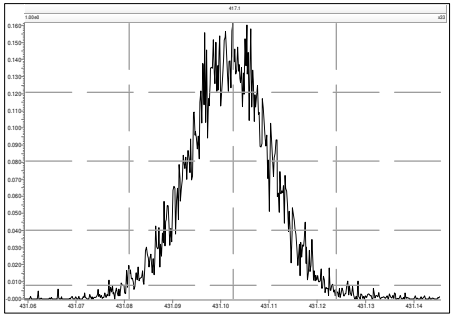
M 404.9760 R 12314



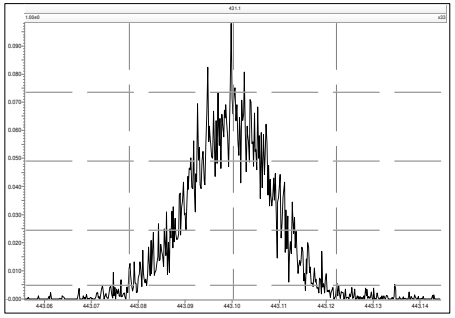
M 416.9760 R 17727



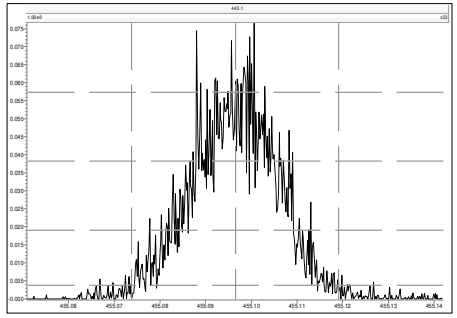
M 430.9728 R 11112



M 442.9728 R 13157



M 454.9728 R 12133



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

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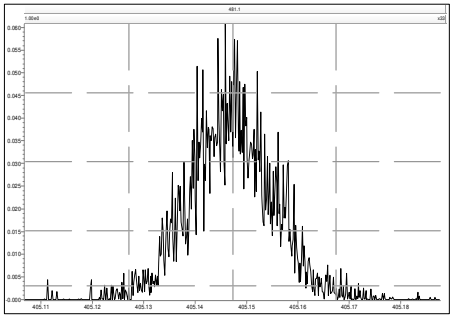
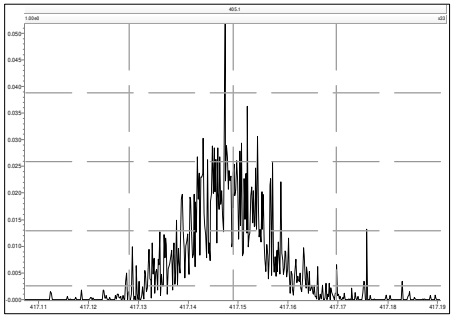
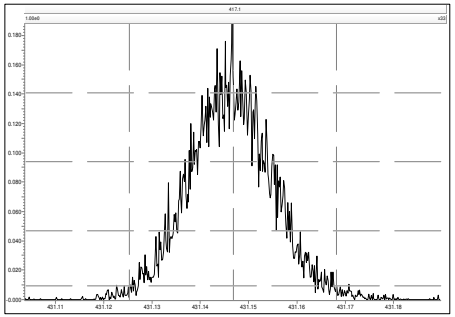
M 404.9760 R 12954



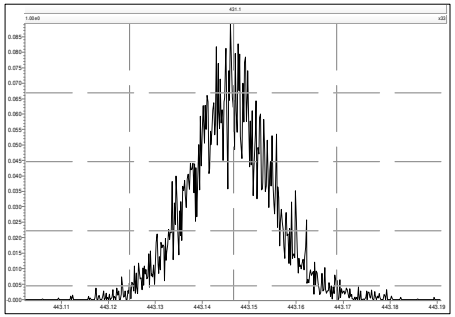
M 416.9760 R 17005



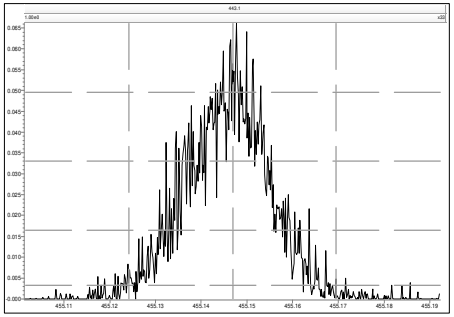
M 430.9728 R 11739



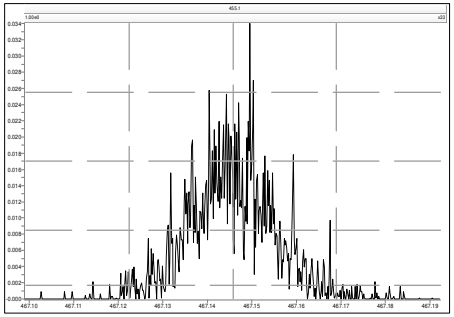
M 442.9728 R 11849



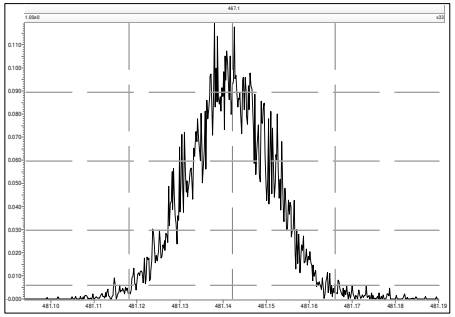
M 454.9728 R 12562



M 466.9728 R 14617



M 480.9696 R 11211



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

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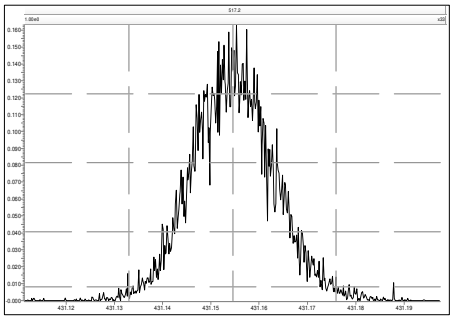
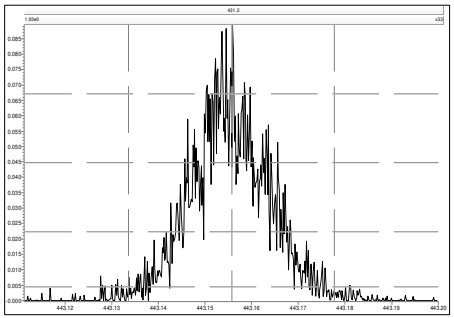
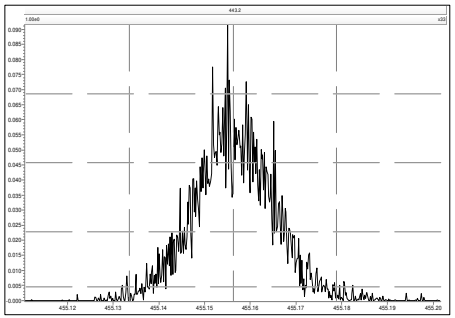
M 430.9728 R 11739



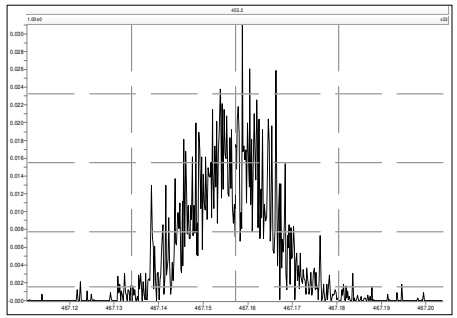
M 442.9728 R 12623



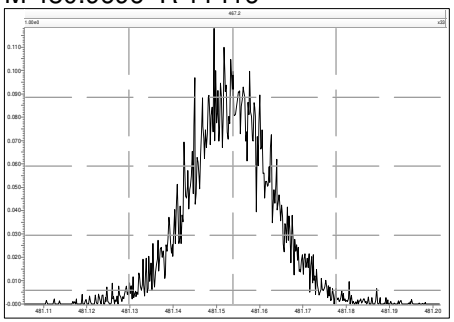
M 454.9728 R 12952



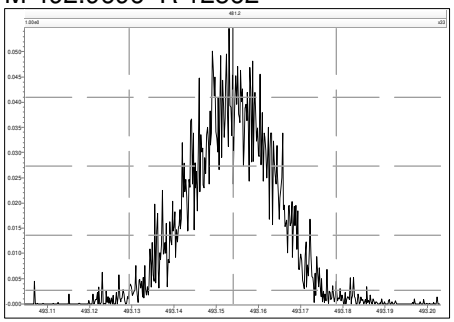
M 466.9728 R 17238



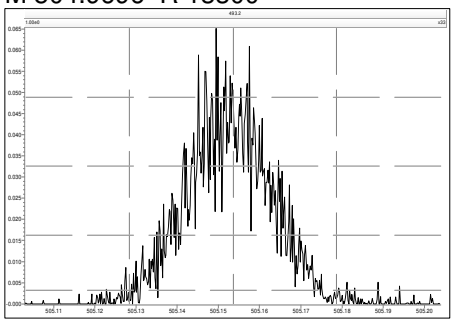
M 480.9696 R 11416



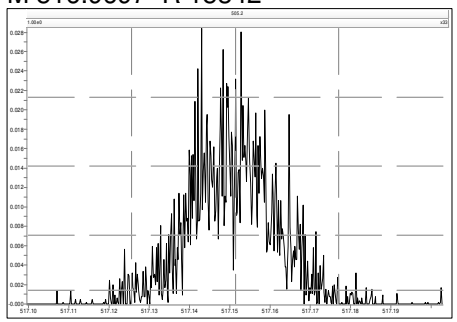
M 492.9696 R 12562



M 504.9696 R 13300



M 516.9697 R 15342



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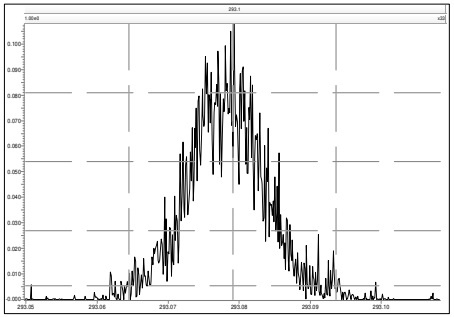
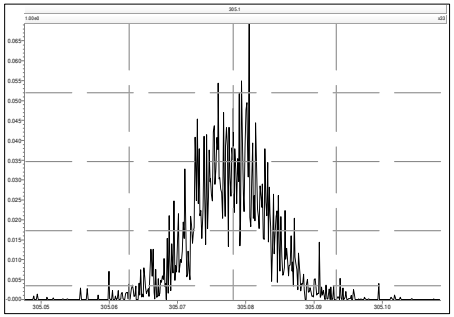
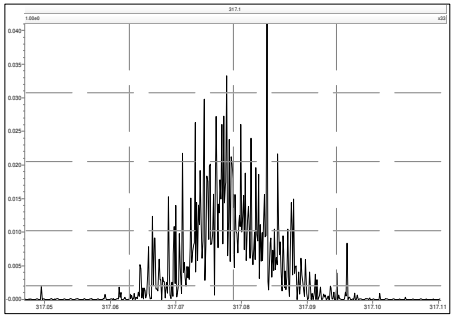
M 292.9824 R 13333



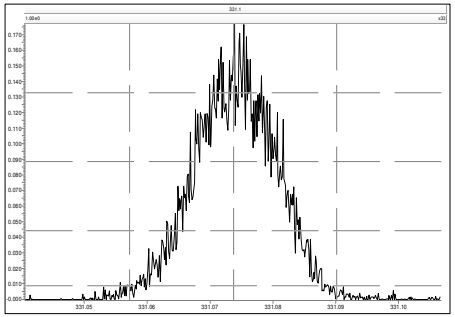
M 304.9824 R 14839



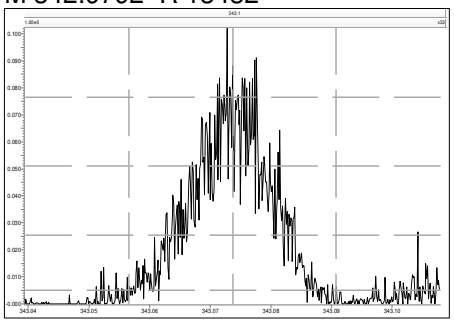
M 316.9824 R 17537



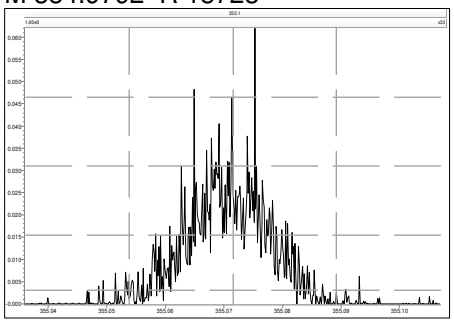
M 330.9792 R 11836



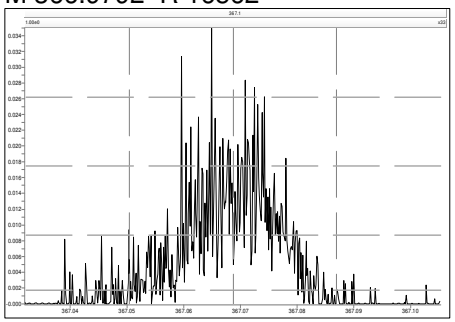
M 342.9792 R 13432



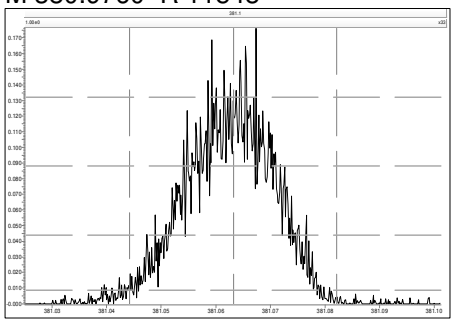
M 354.9792 R 15723



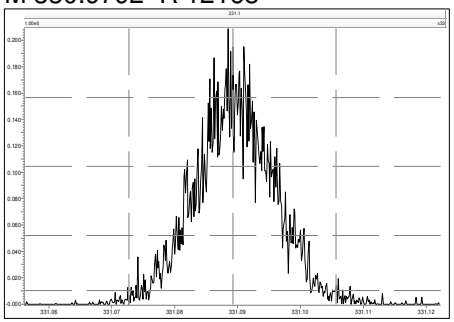
M 366.9792 R 16562



M 380.9760 R 11548



M 330.9792 R 12168



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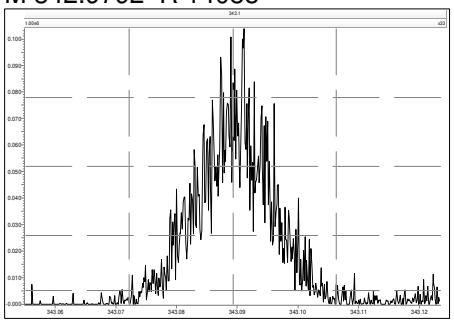

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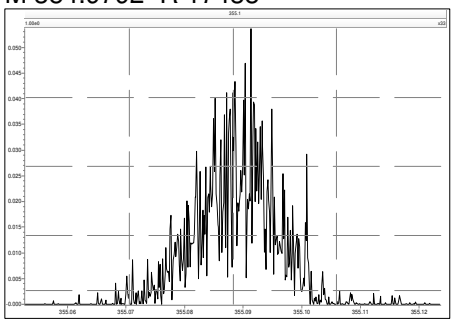

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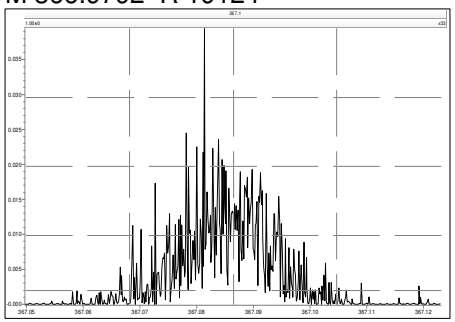
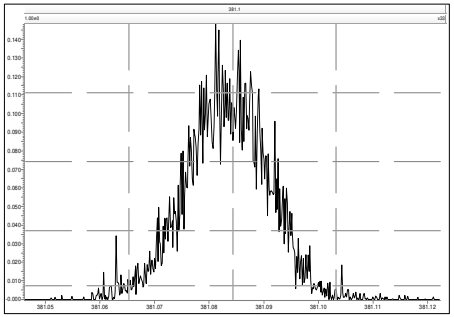
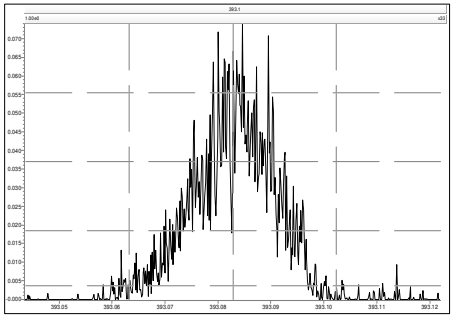


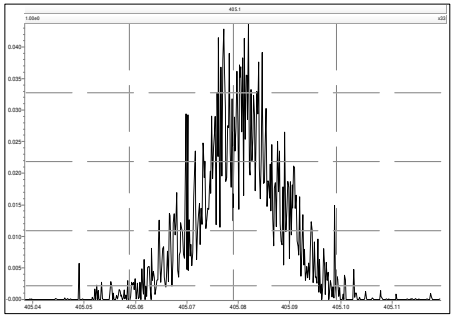
M 380.9760 R 12109



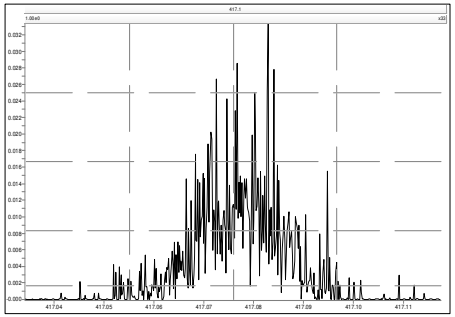
M 392.9760 R 12919



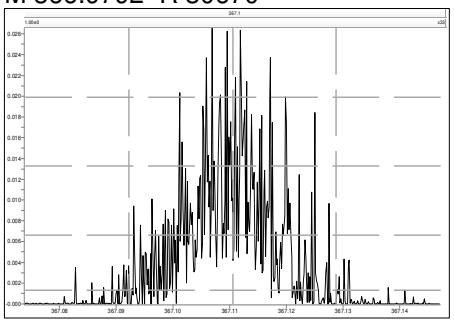
M 404.9760 R 13512



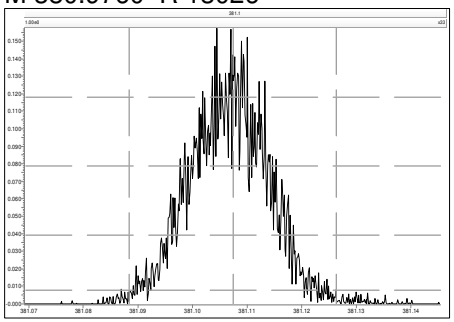
M 416.9760 R 18043



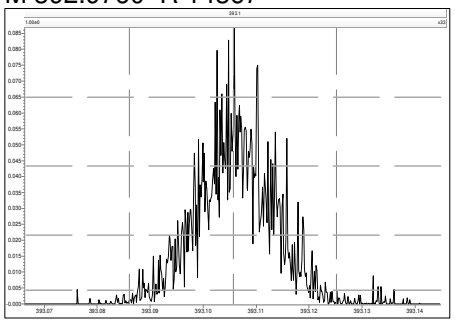
M 366.9792 R 30670



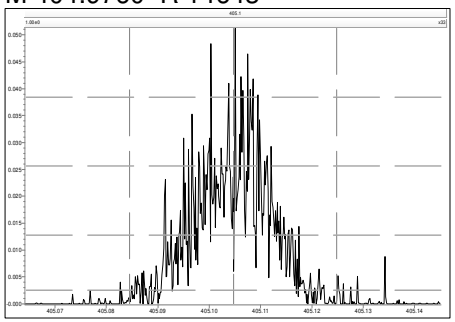
M 380.9760 R 13026



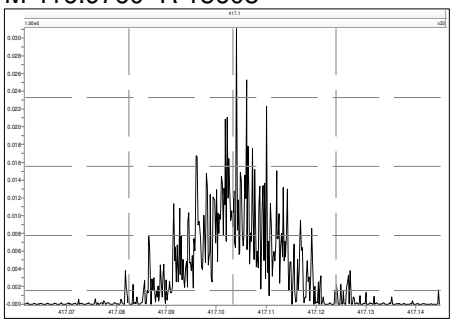
M 392.9760 R 14367



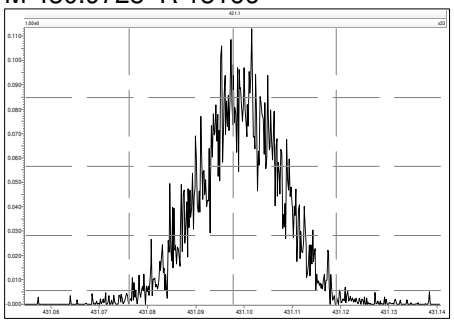
M 404.9760 R 14643



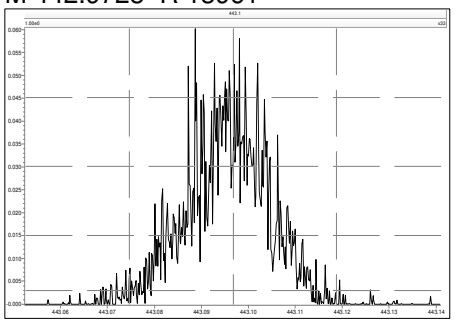
M 416.9760 R 18608



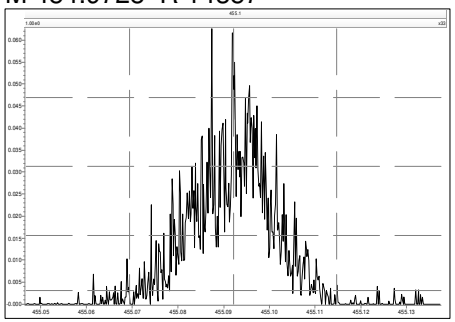
M 430.9728 R 13166



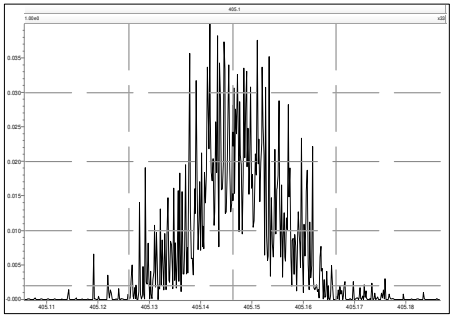
M 442.9728 R 13961



M 454.9728 R 14357



M 404.9760 R 17503



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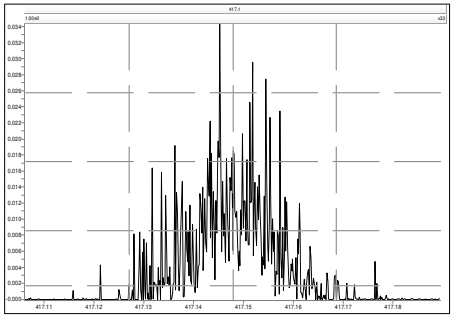
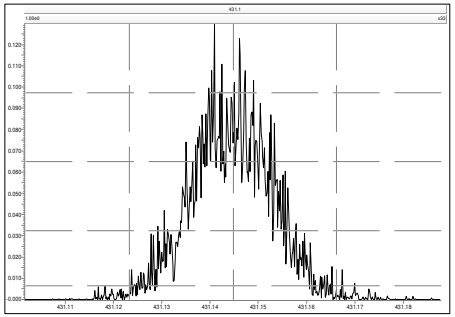
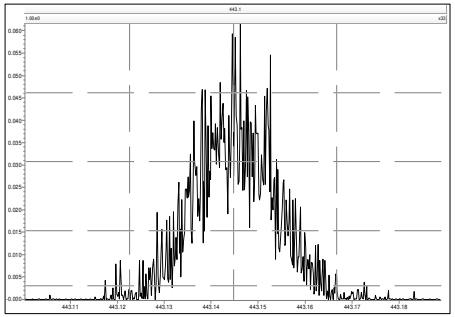


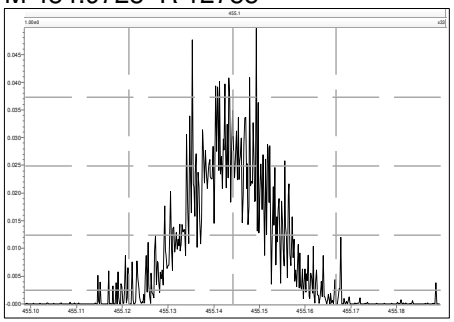
M 430.9728 R 12961



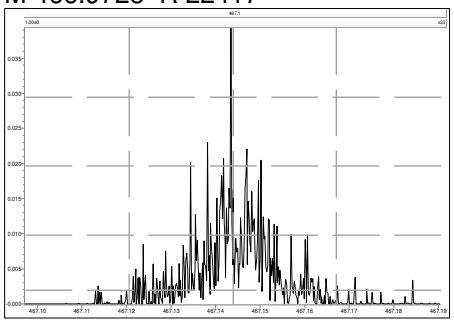
M 442.9728 R 13157



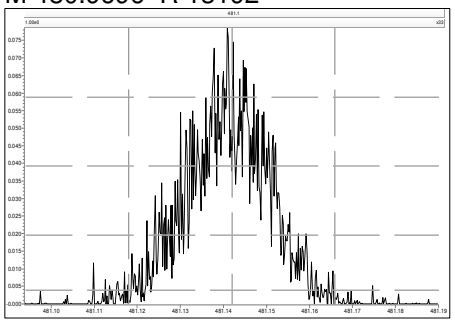
M 454.9728 R 12755



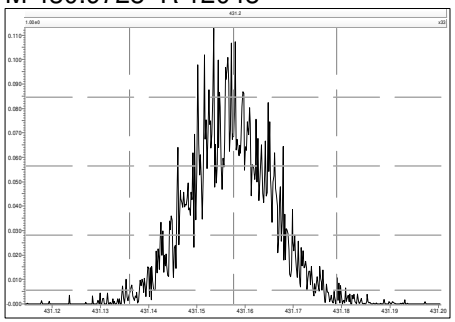
M 466.9728 R 22417



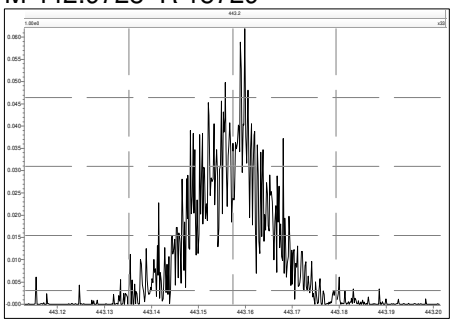
M 480.9696 R 13192



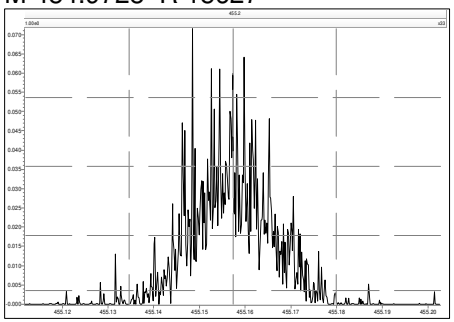
M 430.9728 R 12048



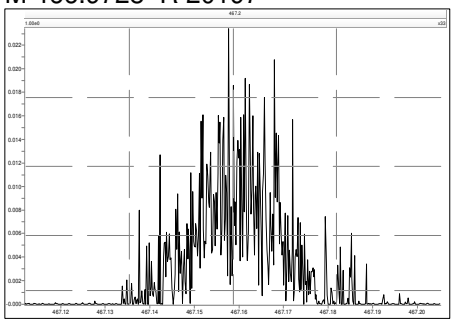
M 442.9728 R 15729



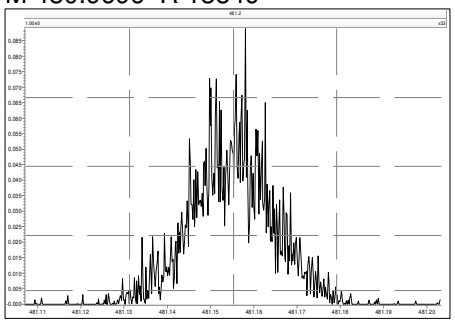
M 454.9728 R 15627



M 466.9728 R 20197



M 480.9696 R 13549



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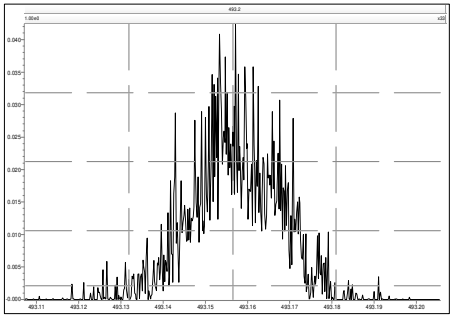

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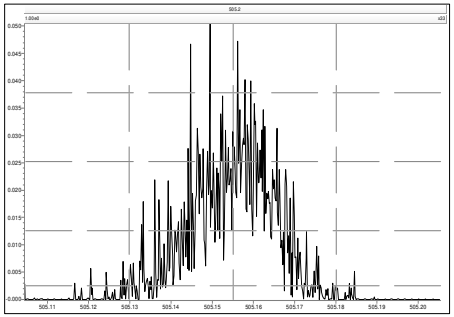

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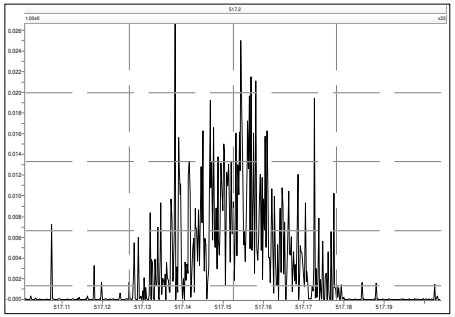

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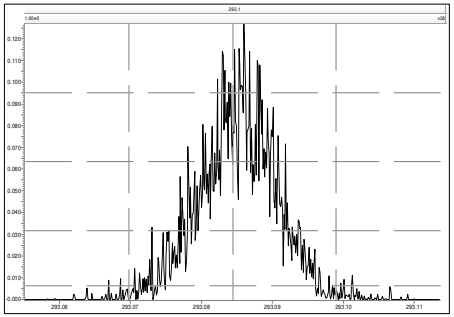

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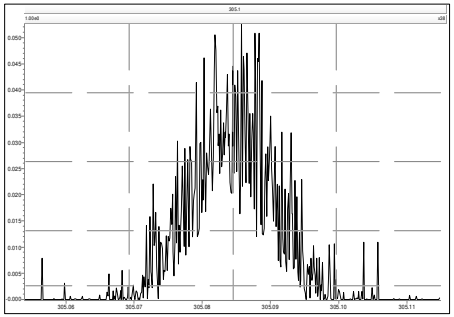

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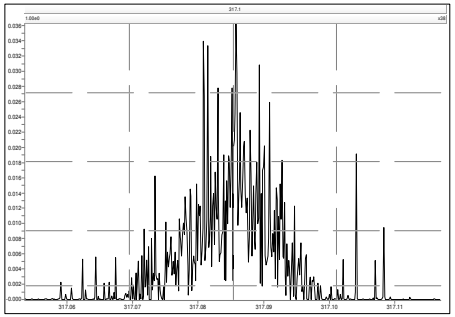

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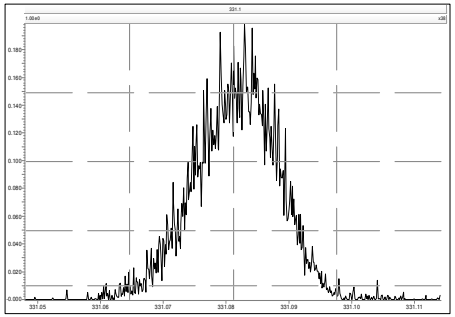

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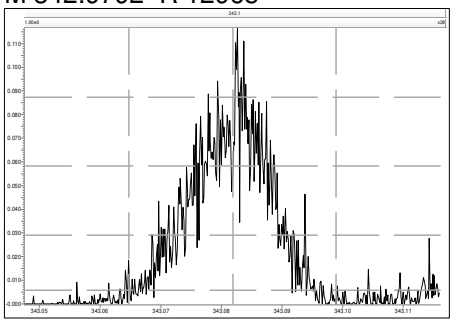

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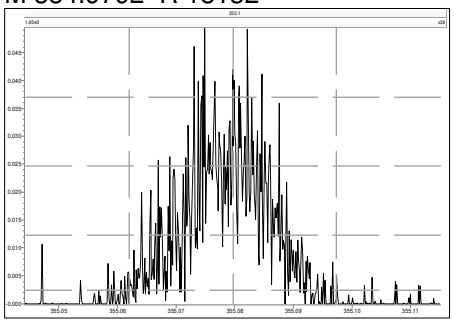

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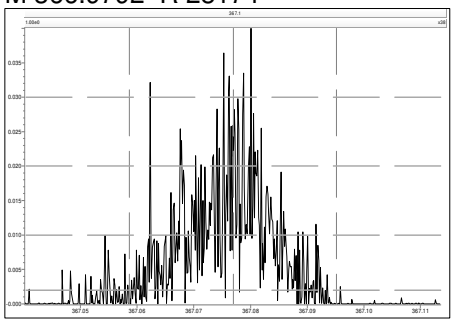

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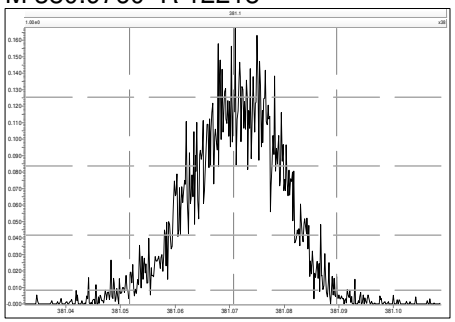

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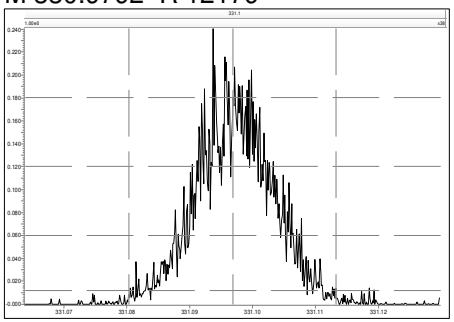

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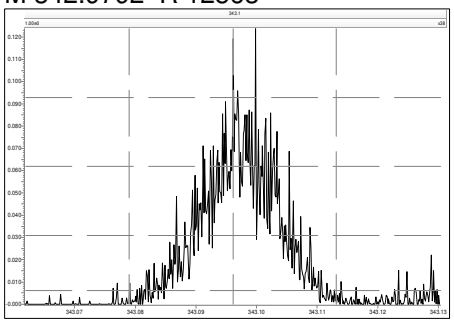

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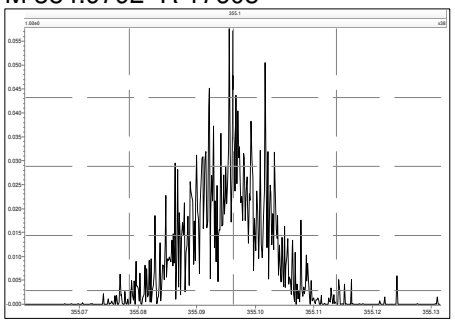

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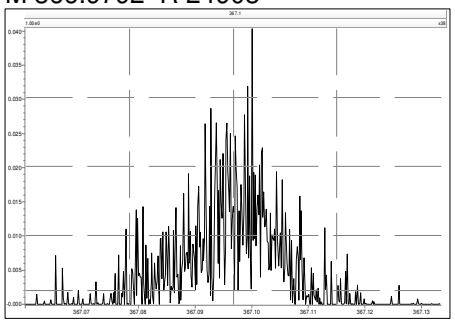

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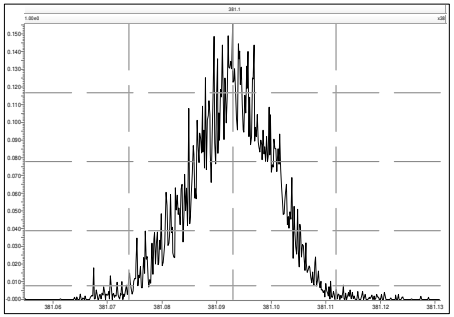

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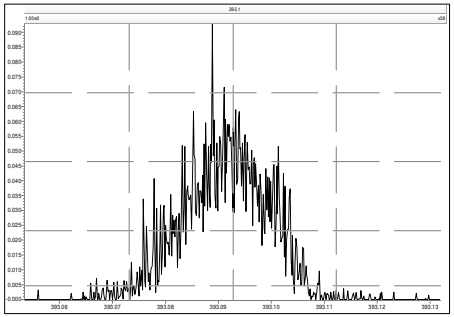

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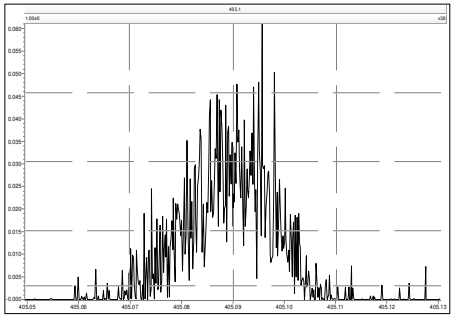

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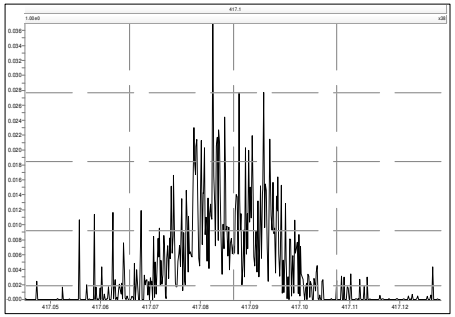

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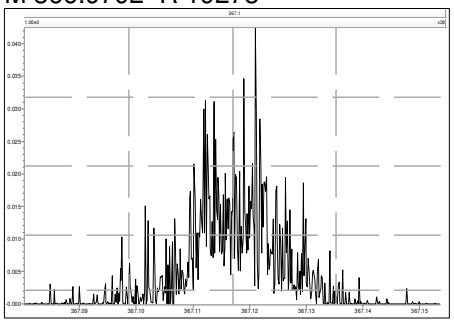

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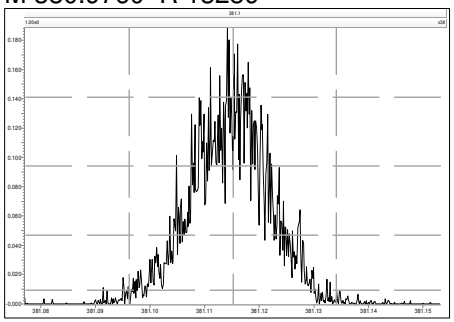

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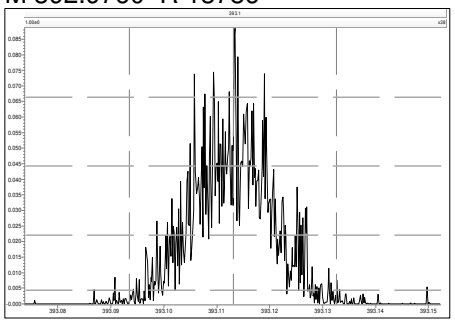

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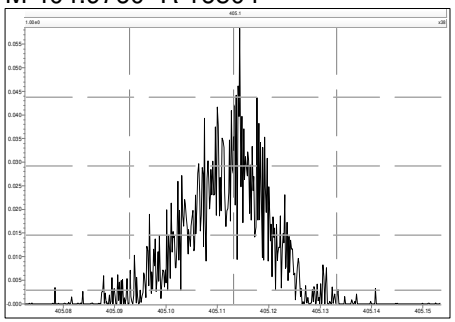

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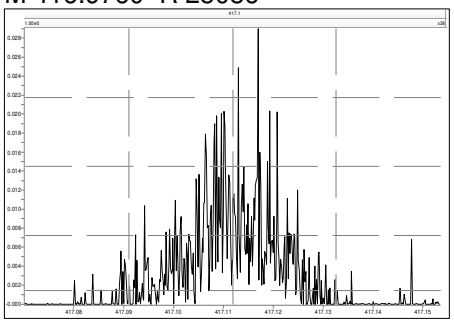

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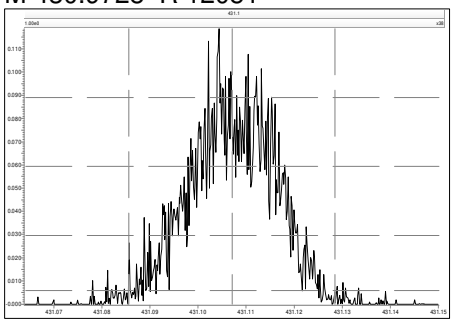

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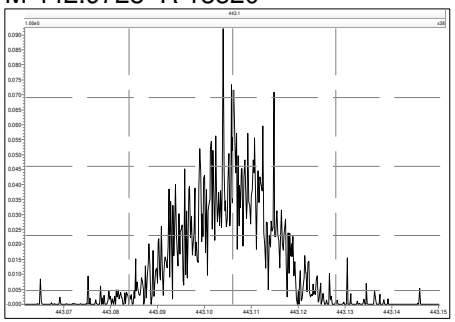

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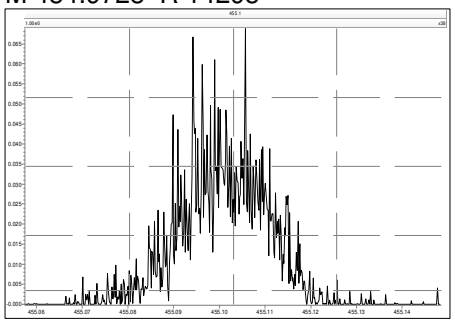

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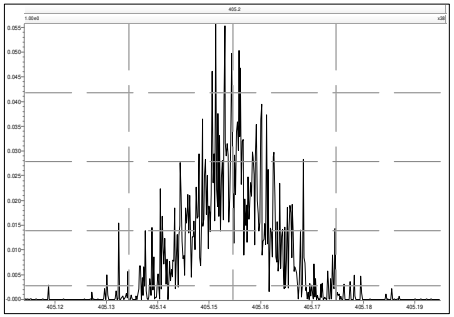

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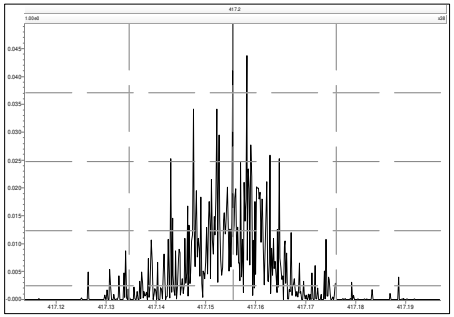

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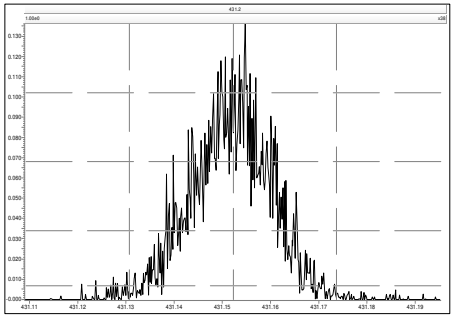

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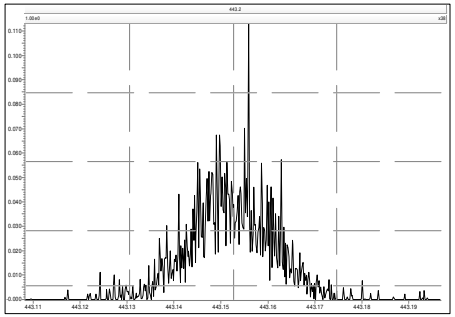

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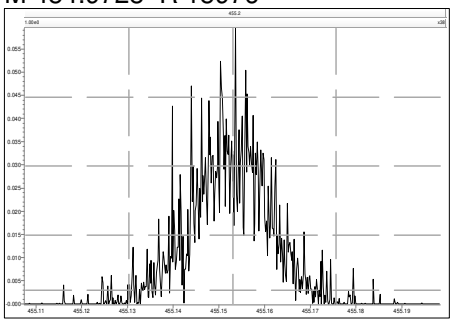

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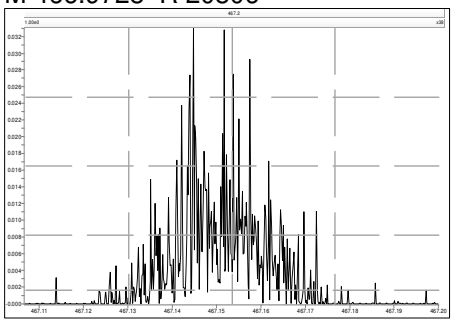

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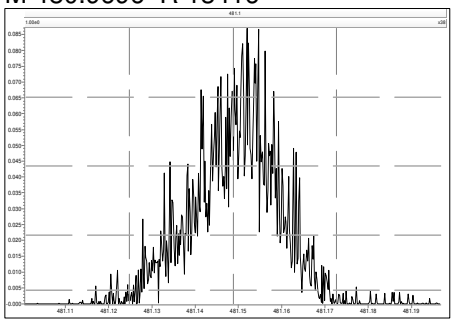

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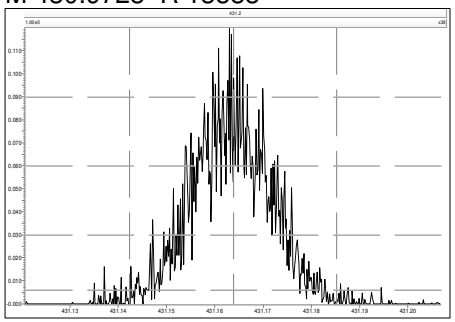

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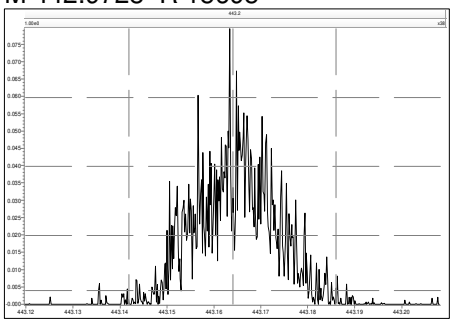

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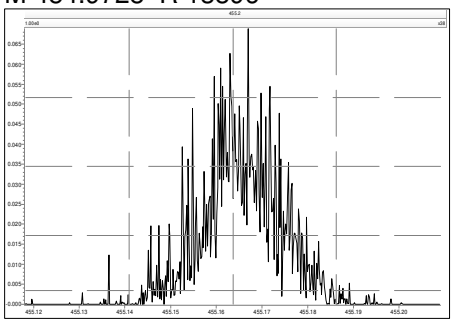

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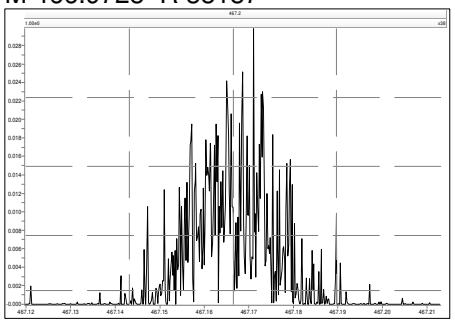

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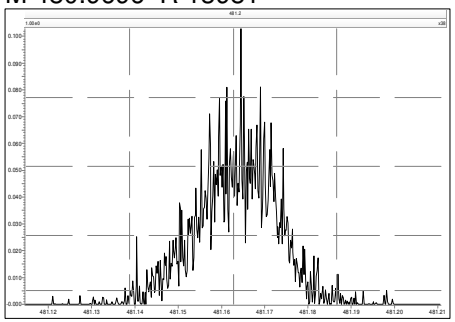

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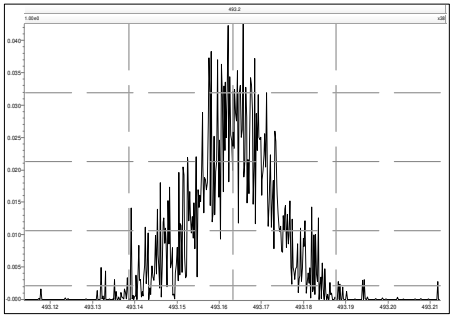

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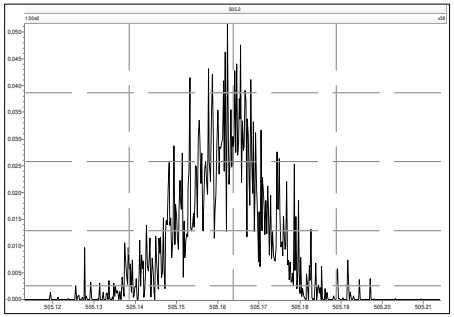

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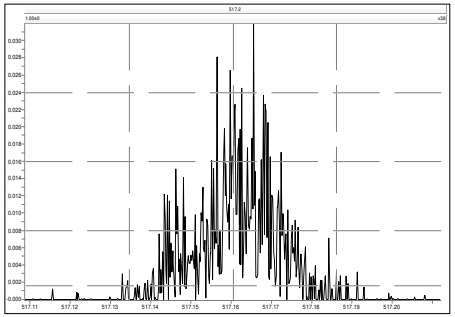


REVIEWED
Amber_Kornegay , 12/21/2021, 8:13:16 AM

Lab ID: OPR1_18720_DF **Acq'd:** 17 Dec 2021 12:28 PSW **Wt/Vol:** 1 uL **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18720_OPR001 **UTP:** 20-Dec-2021 14:06:07 PSW **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 036-372-ZLD

Datafile: 211217R03 **Report:** 20 Dec 2021 14:09 pw **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.22		1.0008	1.0008	0	8.45E+06	0.78	Y	1.34	9.09	7530.349	0.0903
12378-PeCDD	33.57		1.0005	1.0006	+0.2	2.88E+07	1.55	Y	1.06	44.6	5871.079	0.0881
123478-HxCDD	37.45		1.0003	1.0004	+0.2	2.80E+07	1.26	Y	1.06	52.5	7063.011	0.119
123678-HxCDD	37.57		1.0033	1.0037	+0.9	3.17E+07	1.24	Y	1.08	54.7	7063.011	0.122
123789-HxCDD	37.87		1.0110	1.0117	+1.6	3.04E+07	1.26	Y	1.02	48.5	7063.011	0.108
1234678-HpCDD	40.50		1.0003	1.0004	+0.2	2.54E+07	1.03	Y	0.97	54.1	8067.917	0.128
OCDD	43.05		1.0003	1.0003	0	3.08E+07	0.89	Y	1.07	105	11062.447	0.33
2378-TCDF	27.36		1.0006	1.0006	0	1.12E+07	0.83	Y	0.96	12.2	9771.429	0.125
12378-PeCDF	32.13		1.0006	1.0006	0	4.67E+07	1.58	Y	0.95	54.2	15142.623	0.181
23478-PeCDF	33.24		1.0006	1.0005	-0.2	4.59E+07	1.57	Y	0.94	57.3	15142.623	0.184
123478-HxCDF	36.46		1.0004	1.0004	0	4.03E+07	1.23	Y	1.23	52.8	28806.71	0.338
123678-HxCDF	36.60		1.0004	1.0004	0	4.91E+07	1.25	Y	1.13	52.4	28806.71	0.292
234678-HxCDF	37.27		1.0005	1.0004	-0.2	3.97E+07	1.27	Y	1.15	51.2	28806.71	0.369
123789-HxCDF	38.24		1.0005	1.0004	-0.2	3.38E+07	1.31	Y	1.14	49.8	28806.71	0.384
1234678-HpCDF	39.61		1.0003	1.0003	0	4.11E+07	1.06	Y	1.36	53.7	8523.742	0.0804
1234789-HpCDF	40.95		1.0003	1.0003	0	2.96E+07	1.05	Y	1.30	52.1	8523.742	0.12
OCDF	43.23		1.0002	1.0003	+0.3	3.59E+07	0.90	Y	1.03	104	6847.758	0.175

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.20	1.0237	1.0239	+0.3	6.92E+07	0.79	Y	1.03	88.5
ES 12378-PeCDD	33.55	1.2158	1.2183	+5.0	6.08E+07	1.57	Y	1.03	77.7
ES 123478-HxCDD	37.43	0.9920	0.9915	-1.1	5.05E+07	1.29	Y	0.99	94.1
ES 123678-HxCDD	37.55	0.9949	0.9947	-0.5	5.35E+07	1.26	Y	0.97	102
ES 123789-HxCDD	37.86	1.0026	1.0028	+0.5	6.17E+07	1.29	Y	1.12	102
ES 1234678-HpCDD	40.49	1.0713	1.0725	+2.9	4.81E+07	1.04	Y	0.99	90
ES OCDD	43.03	1.1385	1.1399	+3.6	5.47E+07	0.91	Y	0.78	65.2
ES 2378-TCDF	27.34	1.0519	1.0527	+1.3	9.58E+07	0.76	Y	1.08	83.7
ES 12378-PeCDF	32.11	1.2331	1.2363	+6.2	9.11E+07	1.55	Y	0.93	92.4
ES 23478-PeCDF	33.22	1.2754	1.2791	+7.4	8.54E+07	1.61	Y	0.92	87.7
ES 123478-HxCDF	36.45	0.9656	0.9655	-0.2	6.18E+07	0.53	Y	1.14	100
ES 123678-HxCDF	36.59	0.9693	0.9692	-0.2	8.29E+07	0.52	Y	1.30	118
ES 234678-HxCDF	37.25	0.9869	0.9868	-0.2	6.72E+07	0.53	Y	1.20	104
ES 123789-HxCDF	38.22	1.0121	1.0124	+0.7	5.99E+07	0.53	Y	1.14	97.8
ES 1234678-HpCDF	39.59	1.0478	1.0488	+2.4	5.63E+07	0.45	Y	0.95	110
ES 1234789-HpCDF	40.94	1.0832	1.0845	+3.2	4.37E+07	0.46	Y	0.85	95.8
ES OCDF	43.22	1.1434	1.1448	+3.6	6.72E+07	0.87	Y	0.93	67.3

Lab ID: OPR1_18720_DF | **Acq'd:** 17 Dec 2021 12:28 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18720_OPR001 | **UTP:** 20-Dec-2021 14:06:07 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 036-372-ZLD

Datafile: 211217R03 | **Report:** 20 Dec 2021 14:09 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.54		-	-	-	7.56E+07	0.80	Y	-	-
JS 1234-TCDF	25.97		-	-	-	1.06E+08	0.77	Y	-	-
JS 123467-HxCDD	37.75		-	-	-	2.70E+07	1.25	Y	-	-
CS 37Cl-2378-TCDD	28.22		1.0245	1.0247	+0.3	3.11E+07	n/a	-	1.31	78.4
CS 12347-PeCDD	33.05		1.1978	1.2001	+4.6	5.55E+07	1.63	Y	0.89	82.2
CS 12346-PeCDF	31.58		1.2130	1.2160	+5.7	8.69E+07	1.53	Y	0.87	94.9
CS 123469-HxCDF	36.90		0.9775	0.9775	0	6.68E+07	0.53	Y	1.09	114
CS 1234689-HpCDF	39.99		1.0580	1.0592	+2.9	5.20E+07	0.46	Y	0.86	112
~~SS 37Cl-2378-TCDD~~	~~28.22~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~3.11E+07~~	~~n/a~~		~~1.26~~	~~89.1~~
~~SS 12347-PeCDD~~	~~33.05~~		~~1.1978~~	~~1.2001~~	~~+4.6~~	~~5.55E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~106~~
~~SS 12346-PeCDF~~	~~31.58~~		~~1.2130~~	~~1.2160~~	~~+5.7~~	~~8.69E+07~~	~~1.53~~	~~Y~~	~~0.93~~	~~103~~
~~SS 123469-HxCDF~~	~~36.90~~		~~0.9775~~	~~0.9775~~	~~0~~	~~6.68E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~95.8~~
~~SS 1234689-HpCDF~~	~~39.99~~		~~1.0580~~	~~1.0592~~	~~+2.9~~	~~5.20E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~101~~

Totals	Conc	EMPC
Total TCDD	41.4	41.4
Total PeCDD	67.6	67.6
Total HxCDD	170	170
Total HpCDD	66.7	66.7
Total Tetra-Octa Dioxins	451	451
Total TCDF	63.5	63.5
Total PeCDF	231	231
Total HxCDF	331	331
Total HpCDF	106	106
Total Tetra-Octa Furans	836	836
Total Tetra-Octa Dioxins & Furans	1290	1290

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.777	0.78
Response	8.47E+06	8.45E+06

Lab ID: OPR1_18720_DF | **Acq'd: 17 Dec 2021 12:28 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18720_OPR001 | **UTP: 20-Dec-2021 14:06:07 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 036-372-ZLD**

Datafile: 211217R03 | **Report: 20 Dec 2021 14:09 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.56		0.8726	0.8710	-2.4	1.12E+07	0.75	Y	1.34	12.1	7530.349	0.0903
1379-TCDD	NotFnd		0.8851						1.34		7530.349	0.0903
1369-TCDD	NotFnd		0.9002						1.34		7530.349	0.0903
1469-TCDD	NotFnd		0.9275						1.34		7530.349	0.0903
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		7530.349	0.0903
1378-TCDD	NotFnd		0.9427						1.34		7530.349	0.0903
1268-TCDD	NotFnd		0.9498						1.34		7530.349	0.0903
1478-TCDD	NotFnd		0.9584						1.34		7530.349	0.0903
1279-TCDD	NotFnd		0.9644						1.34		7530.349	0.0903
1234/1269-TCDD	NotFnd		0.9766						1.34		7530.349	0.0903
1236-TCDD	NotFnd		0.9813						1.34		7530.349	0.0903
1237/1238-TCDD	NotFnd		0.9906						1.34		7530.349	0.0903
1239-TCDD	28.06		0.9952	0.9952	0	7.56E+06	0.78	Y	1.34	8.13	7530.349	0.0903
2378-TCDD	**28.22**		**1.0008**	1.0008	**0**	8.45E+06	0.78	Y	**1.34**	**9.09**	**7530.349**	**0.0903**
1278-TCDD	NotFnd		1.0122						1.34		7530.349	0.0903
1267-TCDD	NotFnd		1.0168						1.34		7530.349	0.0903
1289-TCDD	29.20		1.0349	1.0354	+0.9	1.13E+07	0.77	Y	1.34	12.1	7530.349	0.0903
12479/12468-PeCDD	31.08		0.9267	0.9262	-0.9	6.92E+06	1.56	Y	1.06	10.7	5871.079	0.0881
12469-PeCDD	NotFnd		0.9425						1.06		5871.079	0.0881
12368-PeCDD	NotFnd		0.9588						1.06		5871.079	0.0881
12478-PeCDD	NotFnd		0.9643						1.06		5871.079	0.0881
12379-PeCDD	NotFnd		0.9673						1.06		5871.079	0.0881
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		5871.079	0.0881
12346/12347-PeCDD	NotFnd		0.9859						1.06		5871.079	0.0881
12378-PeCDD	33.57		**1.0005**	**1.0006**	**+0.2**	**2.88E+07**	**1.55**	**Y**	**1.06**	**44.6**	**5871.079**	**0.0881**
12367-PeCDD	NotFnd		1.0032						1.06		5871.079	0.0881
12389-PeCDD	34.01		1.0135	1.0137	+0.4	7.85E+06	1.65	Y	1.06	12.2	5871.079	0.0881
124679/124689-HxCDD	35.73		0.9544	0.9546	+0.4	8.33E+06	1.25	Y	1.05	14.3	7063.011	0.116
123468-HxCDD	NotFnd		0.9716						1.05		7063.011	0.116
123679/123689-HxCDD	NotFnd		0.9793						1.05		7063.011	0.116
123469-HxCDD	NotFnd		0.9829						1.05		7063.011	0.116
123478-HxCDD	37.45		**1.0003**	**1.0004**	**+0.2**	**2.80E+07**	**1.26**	**Y**	1.06	**52.5**	**7063.011**	**0.119**
123678-HxCDD	37.57		**1.0033**	**1.0037**	**+0.9**	**3.17E+07**	**1.24**	**Y**	1.08	**54.7**	**7063.011**	**0.122**
123467-HxCDD	NotFnd		1.0084						1.05		7063.011	0.116
123789-HxCDD	37.87		**1.0110**	**1.0117**	**+1.6**	**3.04E+07**	**1.26**	**Y**	1.02	**48.5**	**7063.011**	**0.108**

Lab ID: OPR1_18720_DF **Acq'd: 17 Dec 2021 12:28 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18720_OPR001 **UTP: 20-Dec-2021 14:06:07 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 036-372-ZLD**

Datafile: 211217R03 **Report: 20 Dec 2021 14:09 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9844	+0.2	5.89E+06	1.04	Y	0.97	12.6	8067.917	0.128
1234678-HpCDD	**40.50**		**1.0003**	**1.0004**	**+0.2**	**2.54E+07**	**1.03**	**Y**	**0.97**	**54.1**	**8067.917**	**0.128**
OCDD	**43.05**		**1.0003**	**1.0003**	**0**	**3.08E+07**	**0.89**	**Y**	**1.07**	**105**	**11062.447**	**0.33**
OCDD-a	43.04		1.0001	1.0001	0	1.96E+06	2.69	Y	0.07	109	8405.399	4.06
1368-TCDF	22.42		0.8230	0.8201	-3.9	1.48E+07	0.81	Y	0.96	16.1	9771.429	0.125
1468-TCDF	NotFnd		0.8443						0.96		9771.429	0.125
2468-TCDF	23.66		0.8672	0.8653	-2.7	3.66E+06	0.78	Y	0.96	3.98	9771.429	0.125
1346/1246-TCDF	NotFnd		0.8802						0.96		9771.429	0.125
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		9771.429	0.125
1348-TCDF	NotFnd		0.8952						0.96		9771.429	0.125
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		9771.429	0.125
1268-TCDF	NotFnd		0.9136						0.96		9771.429	0.125
1467-TCDF	NotFnd		0.9185						0.96		9771.429	0.125
1478-TCDF	NotFnd		0.9247						0.96		9771.429	0.125
1369/1237-TCDF	NotFnd		0.9381						0.96		9771.429	0.125
2467-TCDF	NotFnd		0.9427						0.96		9771.429	0.125
2368-TCDF	NotFnd		0.9484						0.96		9771.429	0.125
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		9771.429	0.125
1278-TCDF	NotFnd		0.9682						0.96		9771.429	0.125
1349-TCDF	NotFnd		0.9725						0.96		9771.429	0.125
1267-TCDF	NotFnd		0.9782						0.96		9771.429	0.125
2346/1249-TCDF	NotFnd		0.9846						0.96		9771.429	0.125
2347/1279-TCDF	NotFnd		0.9926						0.96		9771.429	0.125
2348-TCDF	27.25		0.9966	0.9966	0	1.35E+07	0.81	Y	0.96	14.7	9771.429	0.125
2378-TCDF	**27.36**		**1.0006**	**1.0006**	**0**	**1.12E+07**	**0.83**	**Y**	**0.96**	**12.2**	**9771.429**	**0.125**
2367/3467-TCDF	NotFnd		1.0139						0.96		9771.429	0.125
1269-TCDF	NotFnd		1.0226						0.96		9771.429	0.125
1239-TCDF	NotFnd		1.0322						0.96		9771.429	0.125
1289-TCDF	29.38		1.0729	1.0744	+2.6	1.53E+07	0.77	Y	0.96	16.6	9771.429	0.125
13468/12468-PeCDF	29.29		0.9135	0.9123	-2.1	8.94E+07	1.53	Y	0.94	108	5949.042	0.0717
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		15142.623	0.183
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		15142.623	0.183
14678-PeCDF	NotFnd		0.9693						0.94		15142.623	0.183
13479-PeCDF	NotFnd		0.9723						0.94		15142.623	0.183
13469/12479-PeCDF	NotFnd		0.9799						0.94		15142.623	0.183
12346-PeCDF	NotFnd		0.9842						0.94		15142.623	0.183

Lab ID: OPR1_18720_DF | **Acq'd: 17 Dec 2021 12:28 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18720_OPR001 | **UTP: 20-Dec-2021 14:06:07 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 036-372-ZLD**

Datafile: 211217R03 | **Report: 20 Dec 2021 14:09 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		15142.623	0.183
12347-PeCDF	NotFnd		0.9893						0.94		15142.623	0.183
12348-PeCDF	NotFnd		0.9941						0.94		15142.623	0.183
12378-PeCDF	**32.13**		**1.0006**	**1.0006**	**0**	**4.67E+07**	**1.58**	**Y**	**0.95**	**54.2**	**15142.623**	**0.181**
12678/12367-PeCDF	NotFnd		1.0090						0.94		15142.623	0.183
12379-PeCDF	NotFnd		1.0143						0.94		15142.623	0.183
12679-PeCDF	NotFnd		0.9929						0.94		15142.623	0.183
23467/12369-PeCDF	NotFnd		0.9966						0.94		15142.623	0.183
23478-PeCDF	**33.24**		**1.0006**	**1.0005**	**-0.2**	**4.59E+07**	**1.57**	**Y**	**0.94**	**57.3**	**15142.623**	**0.184**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		15142.623	0.183
12349-PeCDF	NotFnd		1.0102						0.94		15142.623	0.183
12389-PeCDF	34.31		1.0325	1.0329	+0.8	9.86E+06	1.53	Y	0.94	11.9	15142.623	0.183
123468-HxCDF	35.09		0.9628	0.9627	-0.2	9.89E+07	1.23	Y	1.16	125	28806.71	0.341
124678/134678-HxCDF	NotFnd		0.9683						1.16		28806.71	0.341
134679-HxCDF	NotFnd		0.9746						1.16		28806.71	0.341
124679-HxCDF	NotFnd		0.9798						1.16		28806.71	0.341
124689-HxCDF	NotFnd		0.9859						1.16		28806.71	0.341
123467-HxCDF	NotFnd		0.9972						1.16		28806.71	0.341
123478-HxCDF	**36.46**		**1.0004**	**1.0004**	**0**	**4.03E+07**	**1.23**	**Y**	**1.23**	**52.8**	**28806.71**	**0.338**
123678-HxCDF	**36.60**		**1.0004**	**1.0004**	**0**	**4.91E+07**	**1.25**	**Y**	**1.13**	**52.4**	**28806.71**	**0.292**
123479-HxCDF	NotFnd		1.0049						1.16		28806.71	0.341
123469-HxCDF	NotFnd		1.0088						1.16		28806.71	0.341
123679-HxCDF	NotFnd		0.9943						1.16		28806.71	0.341
234678-HxCDF	**37.27**		**1.0005**	**1.0004**	**-0.2**	**3.97E+07**	**1.27**	**Y**	**1.15**	**51.2**	**28806.71**	**0.369**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		28806.71	0.341
123789-HxCDF	**38.24**		**1.0005**	**1.0004**	**-0.2**	**3.38E+07**	**1.31**	**Y**	**1.14**	**49.8**	**28806.71**	**0.384**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		28806.71	0.341
1234678-HpCDF	**39.61**		**1.0003**	**1.0003**	**0**	**4.11E+07**	**1.06**	**Y**	**1.36**	**53.7**	**8523.742**	**0.0804**
1234679-HpCDF	NotFnd		1.0067						1.33		8523.742	0.0974
1234689-HpCDF	NotFnd		1.0100						1.33		8523.742	0.0974
1234789-HpCDF	**40.95**		**1.0003**	**1.0003**	**0**	**2.96E+07**	**1.05**	**Y**	**1.30**	**52.1**	**8523.742**	**0.12**
OCDF	**43.23**		**1.0002**	**1.0003**	**+0.3**	**3.59E+07**	**0.90**	**Y**	**1.03**	**104**	**6847.758**	**0.175**
OCDF-a	43.22		1.0002	1.0002	0	2.09E+06	2.64	Y	0.06	105	8060.379	3.56

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211217R03	Analysis Date:	17-DEC-2021 12:28:30
Lab ID:	OPR1_18720_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.09	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	44.6	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	52.5	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	54.7	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	48.5	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	54.1	35	-	70	Y
OCDD	100	105	78	-	144	Y
2,3,7,8-TCDF	10	12.2	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.2	40	-	67	Y
2,3,4,7,8-PeCDF	50	57.3	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	52.8	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	52.4	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	51.2	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	49.8	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	53.7	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	52.1	39	-	69	Y
OCDF	100	104	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2021 14:09 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211217R03	Analysis Date:	17-DEC-2021 12:28:30
Lab ID:	OPR1_18720_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	88.5	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	77.7	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	94.1	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	102	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	102	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	90	26	-	166	Y
13C-OCDD	200	130	26	-	397	Y
13C-2,3,7,8-TCDF	100	83.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	92.4	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	87.7	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	100	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	118	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	104	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	97.8	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	110	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	95.8	20	-	186	Y
13C-OCDF	200	135	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	31.4	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2021 14:09 Analyst: pw

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211217R03	Analysis Date:	17-DEC-2021 12:28:30
Lab ID:	OPR1_18720_DF		

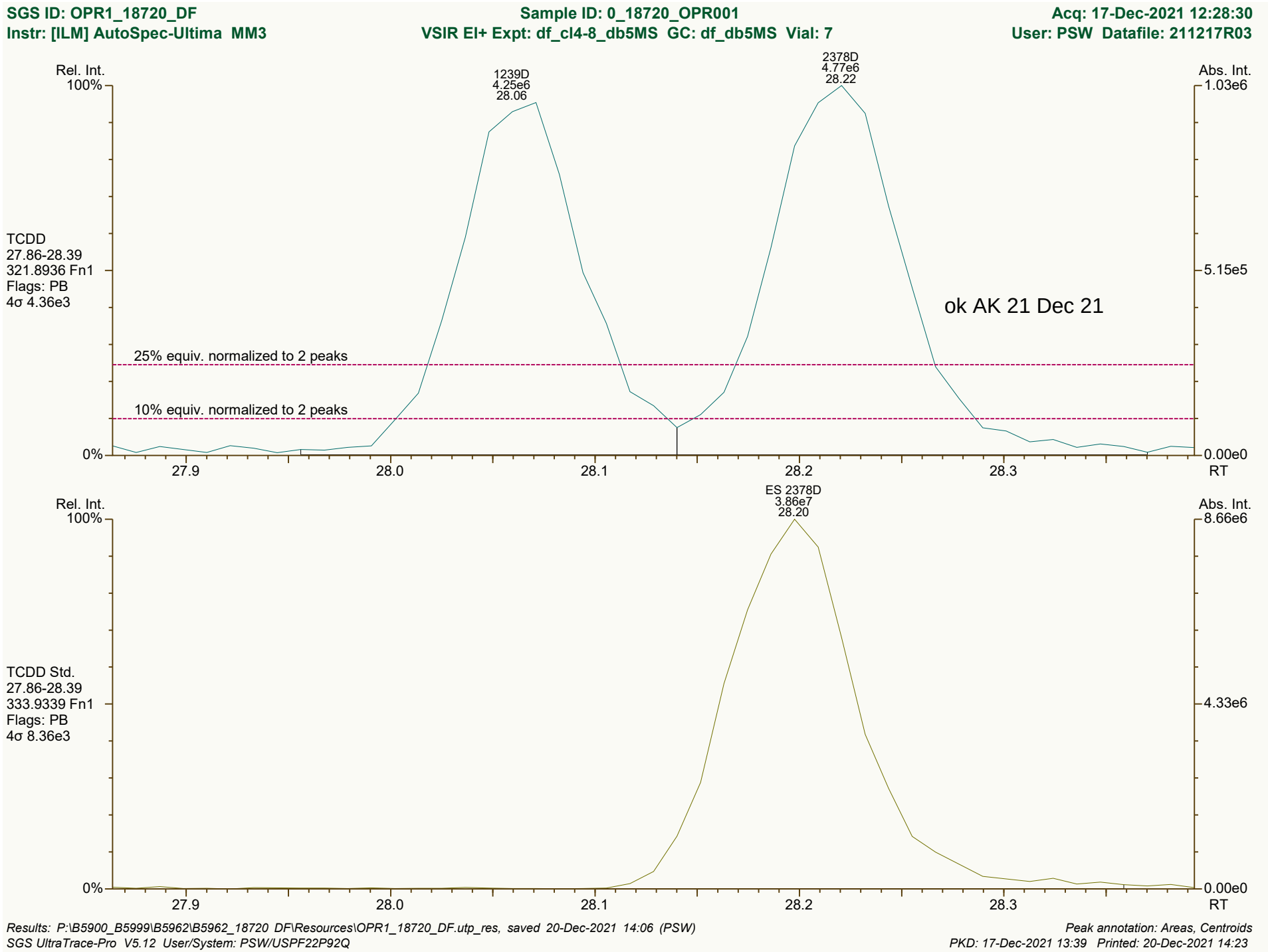
Window Defining Standards Results

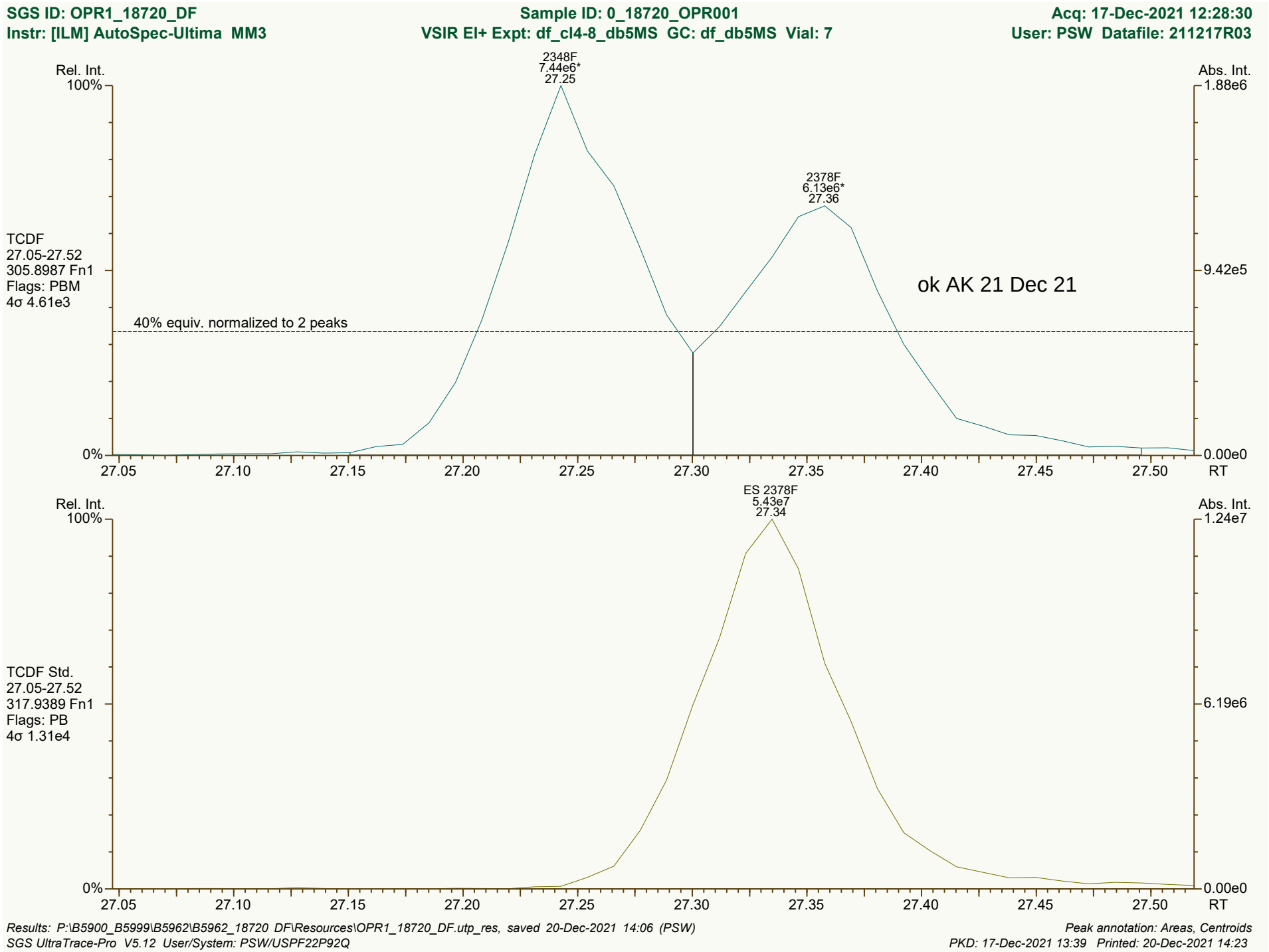
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.56	1289-TCDD	29.20
12479/12468-PeCDD	31.08	12389-PeCDD	34.01
124679/124689-HxCDD	35.73	123789-HxCDD	37.87
1234679-HpCDD	39.86	1234678-HpCDD	40.50
1368-TCDF	22.42	1289-TCDF	29.38
13468/12468-PeCDF	29.29	12389-PeCDF	34.31
123468-HxCDF	35.09	123789-HxCDF	38.24
1234678-HpCDF	39.61	1234789-HpCDF	40.95

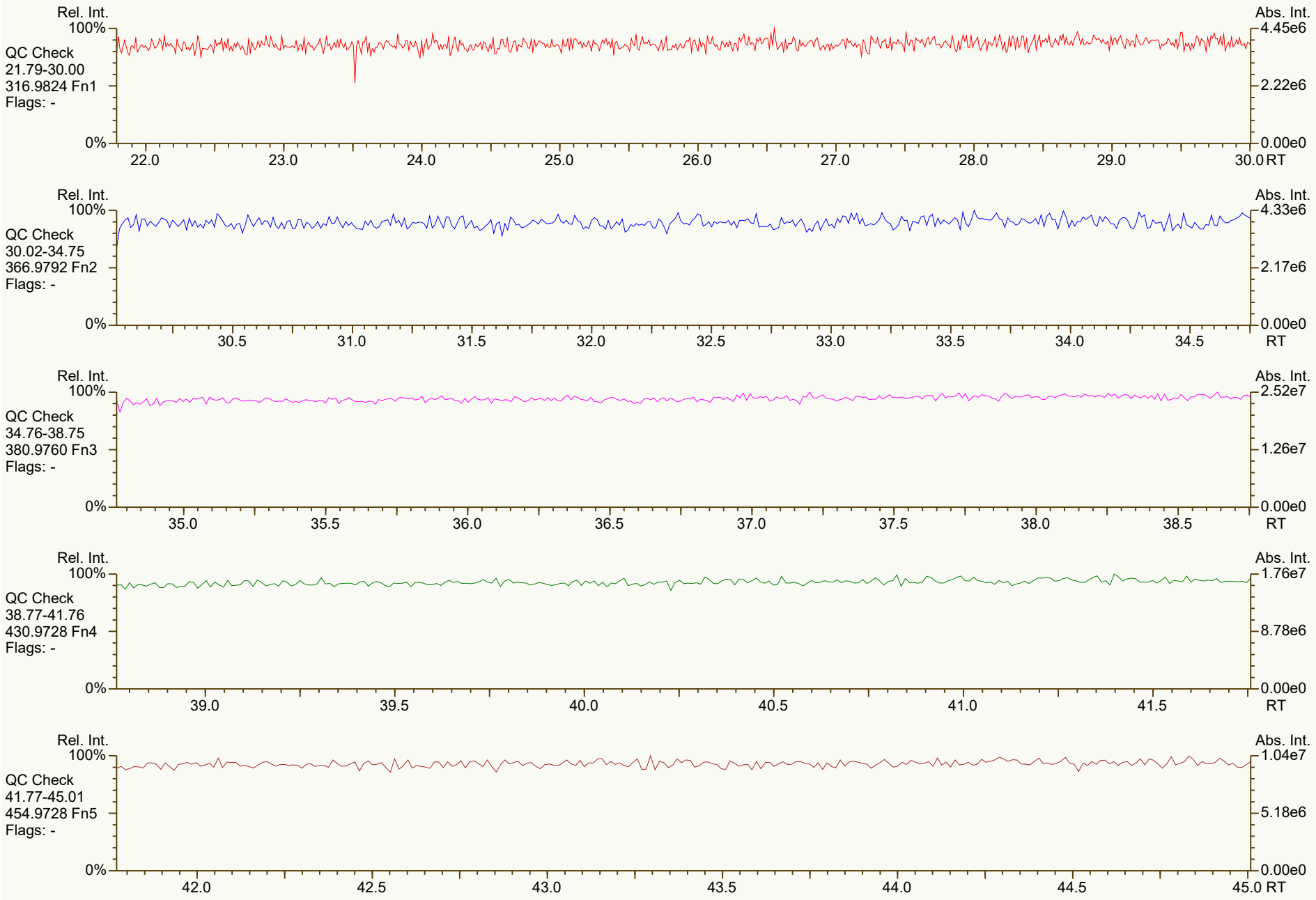
Isomer Specificity Test Standard Results

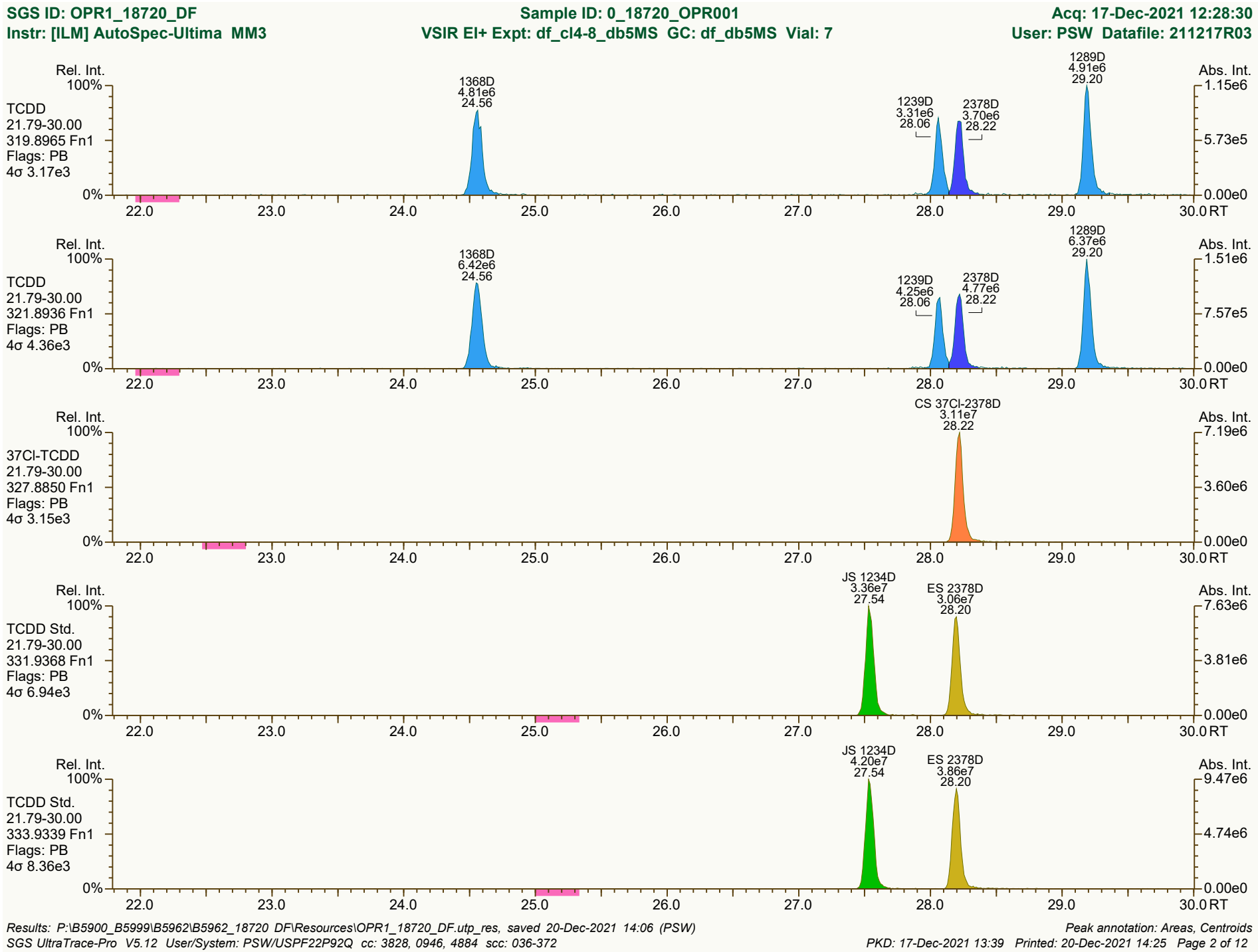
Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.06	2378-TCDD	28.22
2348-TCDF	27.25	2378-TCDF	27.36

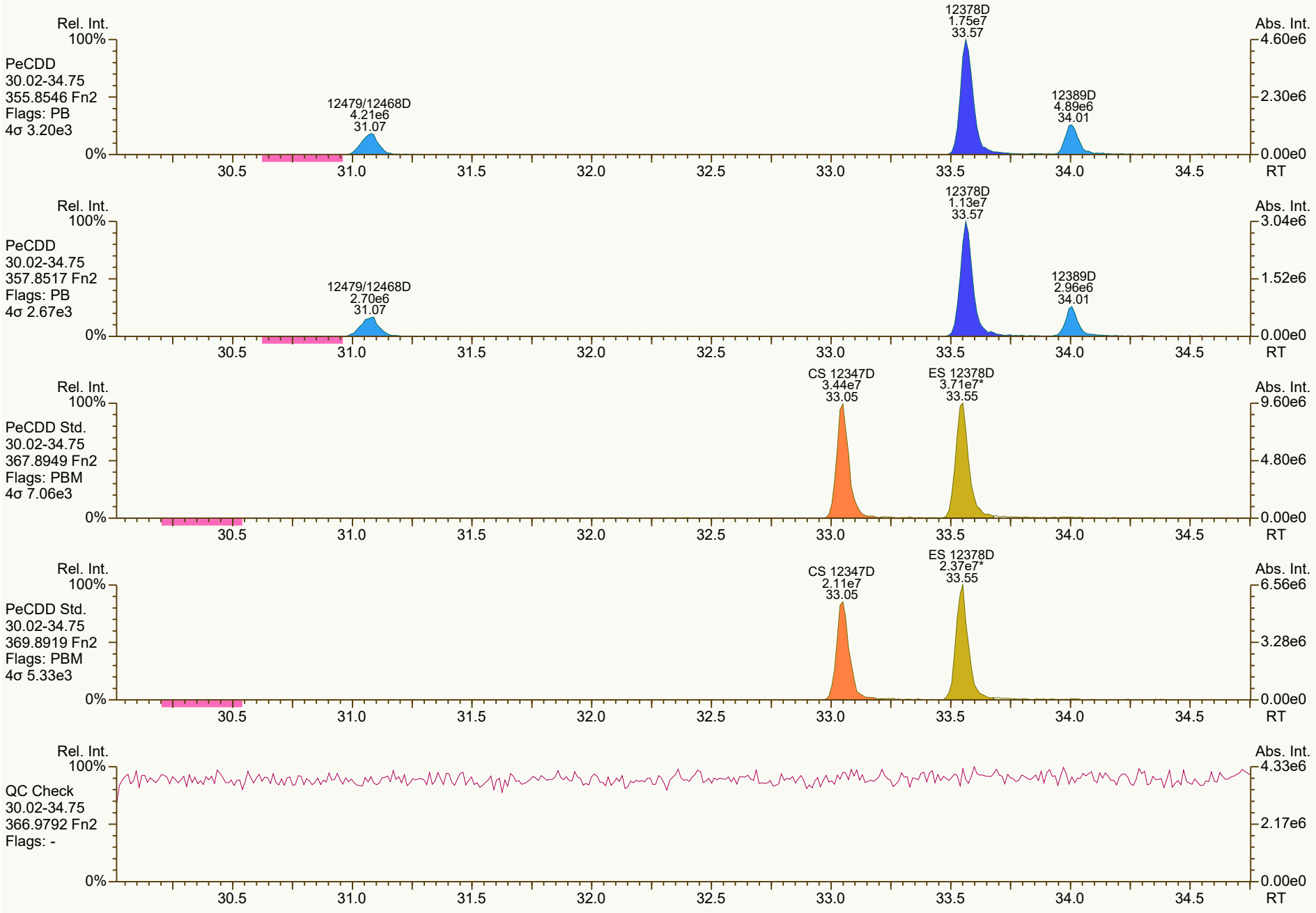
Processed: 20 Dec 2021 14:09 Analyst: pw

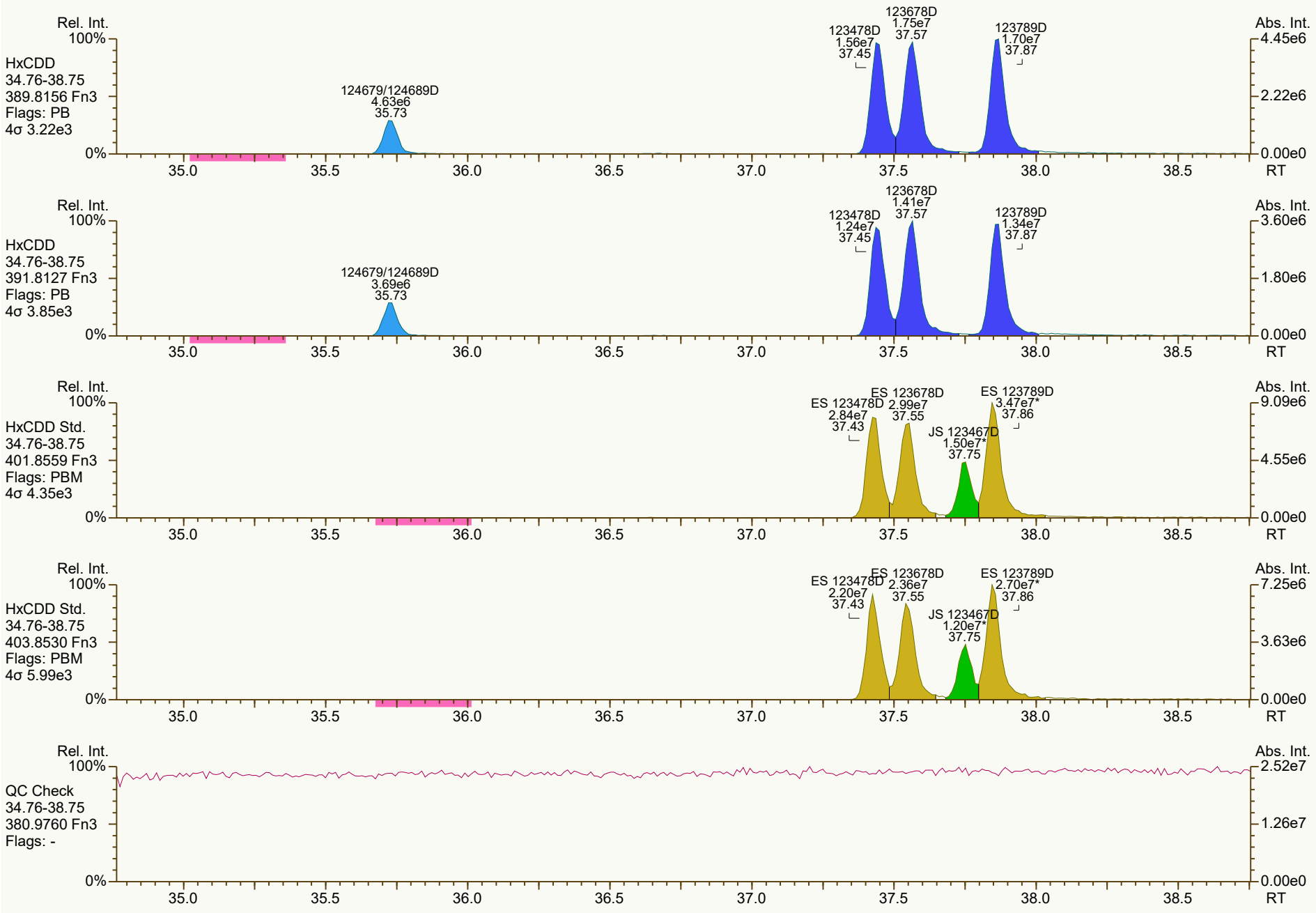

SGS ID: OPR1_18720_DF
Sample ID: 0_18720_OPR001
Acq: 17-Dec-2021 12:28:30
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 7
User: PSW Datafile: 211217R03
Rel. Int.
100%
1239D
4.25e6
28.06
2378D
4.77e6
28.22
Abs. Int.
1.03e6
5.15e5
0.00e0
TCDD
27.86-28.39
321.8936 Fn1
Flags: PB
4σ 4.36e3
ok AK 21 Dec 21
25% equiv. normalized to 2 peaks
10% equiv. normalized to 2 peaks
0%
27.9
28.0
28.1
28.2
28.3
RT
Rel. Int.
100%
ES 2378D
3.86e7
28.20
Abs. Int.
8.66e6
4.33e6
0.00e0
TCDD Std.
27.86-28.39
333.9339 Fn1
Flags: PB
4σ 8.36e3
0%
27.9
28.0
28.1
28.2
28.3
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18720_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 17-Dec-2021 13:39 Printed: 20-Dec-2021 14:23

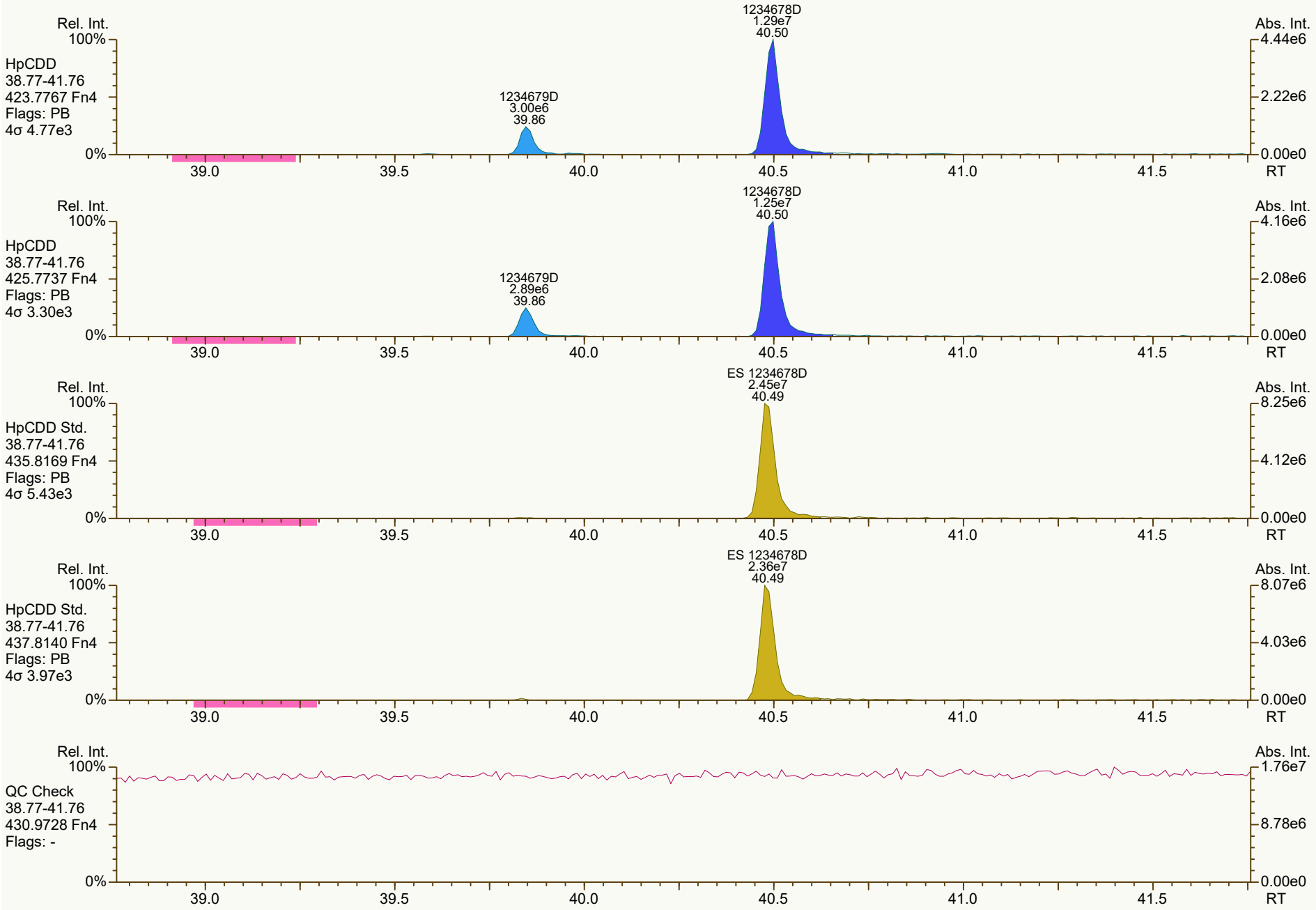

SGS ID: OPR1_18720_DF
Sample ID: 0_18720_OPR001
Acq: 17-Dec-2021 12:28:30
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 7
User: PSW Datafile: 211217R03
Rel. Int.
100%
0%
Abs. Int.
1.88e6
9.42e5
0.00e0
2348F
7.44e6*
27.25
2378F
6.13e6*
27.36
TCDF
27.05-27.52
305.8987 Fn1
Flags: PBM
4σ 4.61e3
40% equiv. normalized to 2 peaks
ok AK 21 Dec 21
27.05
27.10
27.15
27.20
27.25
27.30
27.35
27.40
27.45
27.50
RT
ES 2378F
5.43e7
27.34
1.24e7
6.19e6
TCDF Std.
27.05-27.52
317.9389 Fn1
Flags: PB
4σ 1.31e4
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18720_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 17-Dec-2021 13:39 Printed: 20-Dec-2021 14:23

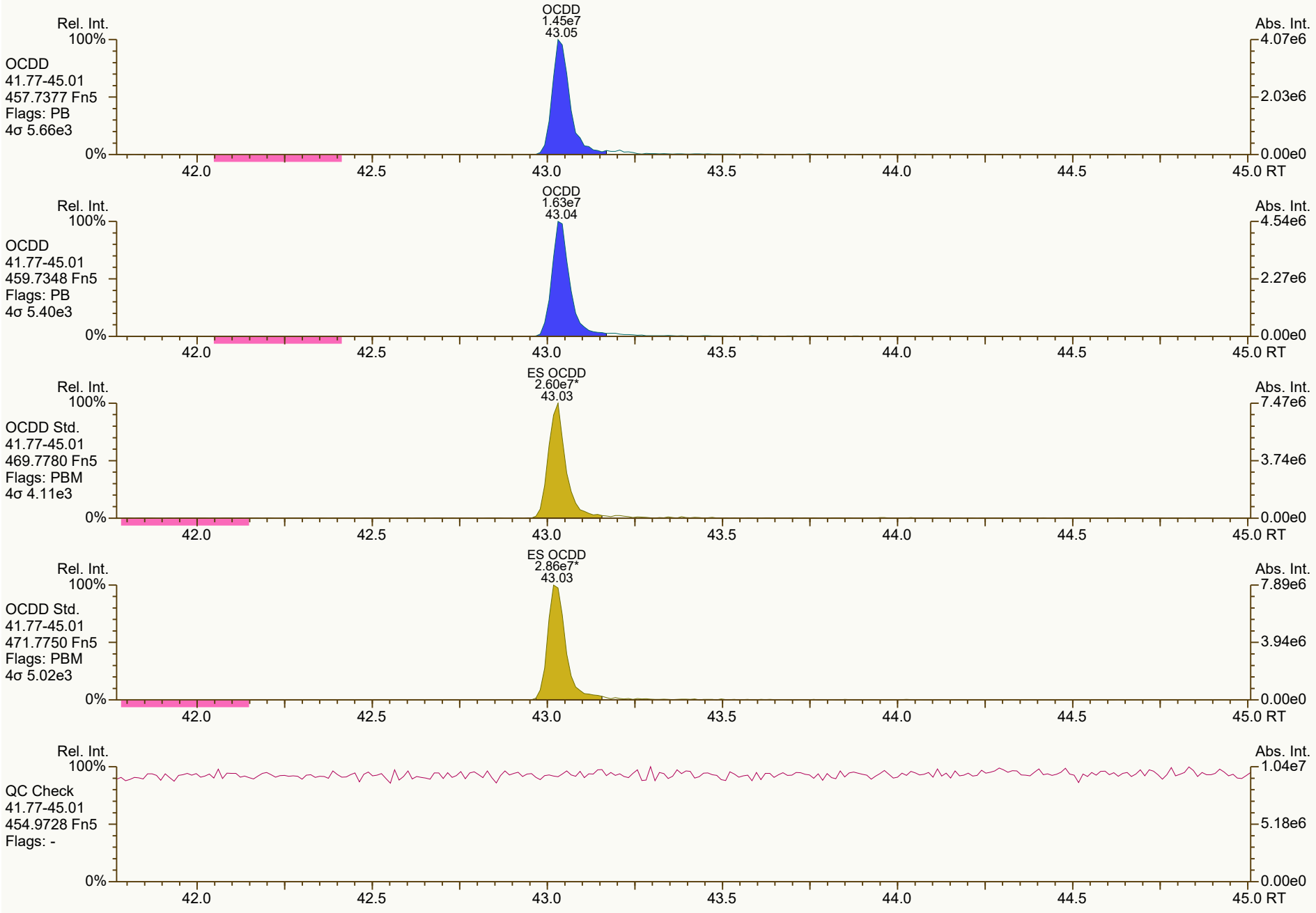

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Abs. Int.
4.45e6
2.22e6
0.00e0
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
4.33e6
2.17e6
0.00e0
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
2.52e7
1.26e7
0.00e0
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.76e7
8.78e6
0.00e0
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.04e7
5.18e6
0.00e0

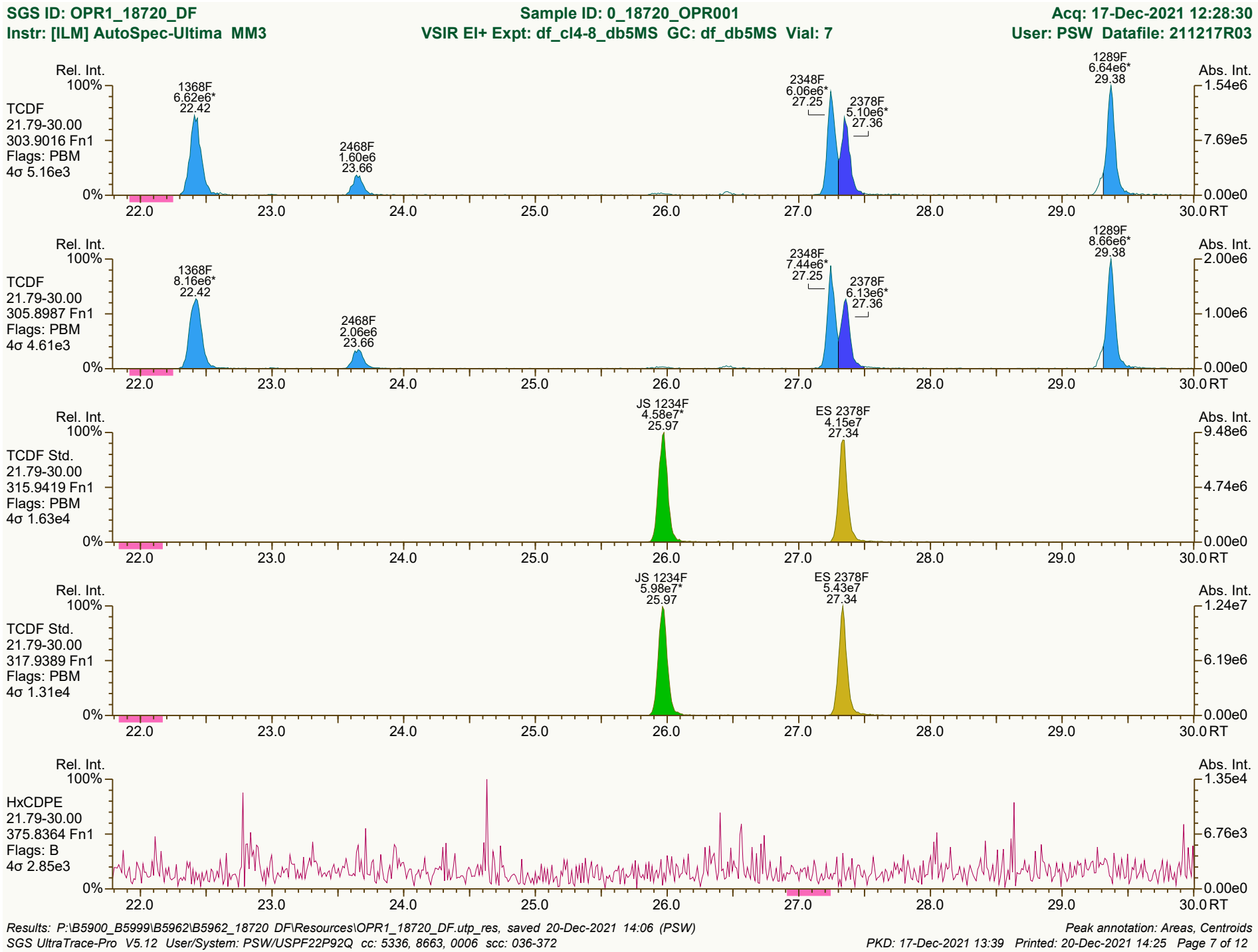

SGS ID: OPR1_18720_DF
Sample ID: 0_18720_OPR001
Acq: 17-Dec-2021 12:28:30
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 7
User: PSW Datafile: 211217R03
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: PB
4σ 3.17e3
1368D 4.81e6 24.56
1239D 3.31e6 28.06
2378D 3.70e6 28.22
1289D 4.91e6 29.20
1.15e6
5.73e5
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: PB
4σ 4.36e3
1368D 6.42e6 24.56
1239D 4.25e6 28.06
2378D 4.77e6 28.22
1289D 6.37e6 29.20
1.51e6
7.57e5
0.00e0
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.15e3
CS 37Cl-2378D 3.11e7 28.22
7.19e6
3.60e6
0.00e0
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 6.94e3
JS 1234D 3.36e7 27.54
ES 2378D 3.06e7 28.20
7.63e6
3.81e6
0.00e0
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 8.36e3
JS 1234D 4.20e7 27.54
ES 2378D 3.86e7 28.20
9.47e6
4.74e6
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18720_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3828, 0946, 4884 scc: 036-372
PKD: 17-Dec-2021 13:39 Printed: 20-Dec-2021 14:25 Page 2 of 12

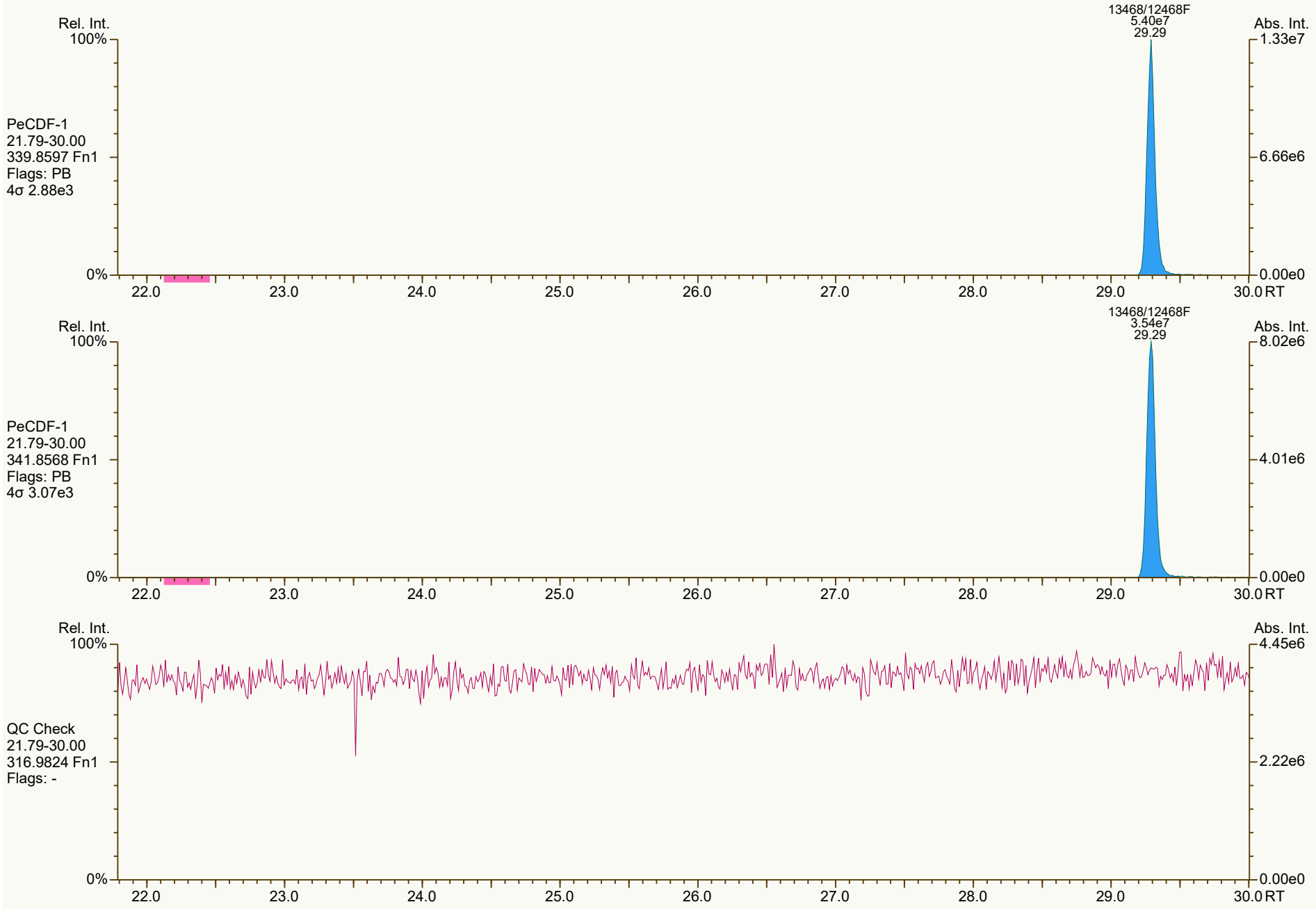

Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PB
4σ 3.20e3
0%
12479/12468D
4.21e6
31.07
12378D
1.75e7
33.57
12389D
4.89e6
34.01
Abs. Int.
4.60e6
2.30e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 2.67e3
0%
12479/12468D
2.70e6
31.07
12378D
1.13e7
33.57
12389D
2.96e6
34.01
Abs. Int.
3.04e6
1.52e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 7.06e3
0%
CS 12347D
3.44e7
33.05
ES 12378D
3.71e7*
33.55
Abs. Int.
9.60e6
4.80e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 5.33e3
0%
CS 12347D
2.11e7
33.05
ES 12378D
2.37e7*
33.55
Abs. Int.
6.56e6
3.28e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.33e6
2.17e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

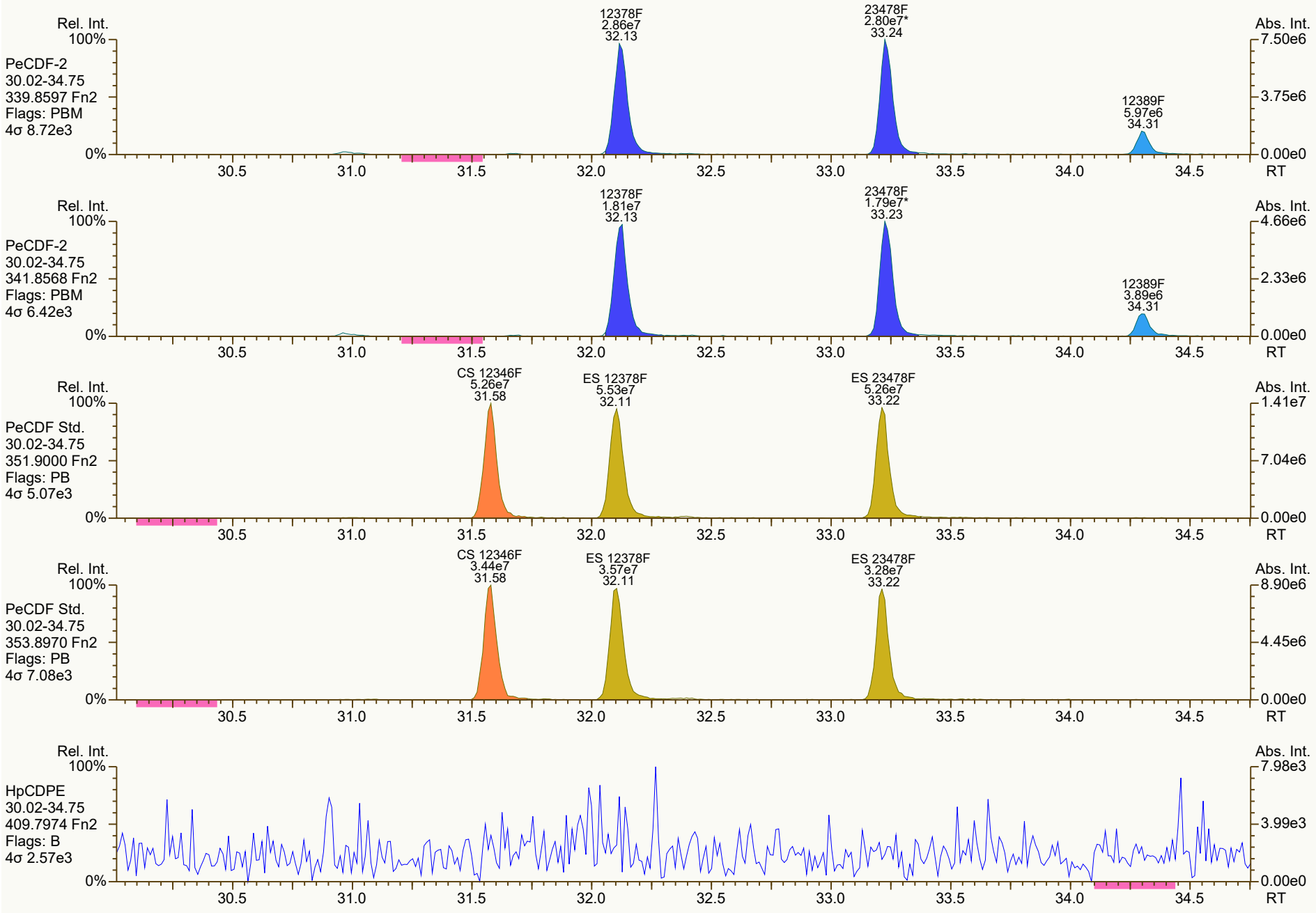

Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 3.22e3
124679/124689D
4.63e6
35.73
123478D
1.56e7
37.45
123678D
1.75e7
37.57
123789D
1.70e7
37.87
0%
Abs. Int.
4.45e6
2.22e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 3.85e3
124679/124689D
3.69e6
35.73
123478D
1.24e7
37.45
123678D
1.41e7
37.57
123789D
1.34e7
37.87
0%
Abs. Int.
3.60e6
1.80e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 4.35e3
ES 123478D
2.84e7
37.43
ES 123678D
2.99e7
37.55
JS 123467D
1.50e7*
37.75
ES 123789D
3.47e7*
37.86
0%
Abs. Int.
9.09e6
4.55e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 5.99e3
ES 123478D
2.20e7
37.43
ES 123678D
2.36e7
37.55
JS 123467D
1.20e7*
37.75
ES 123789D
2.70e7*
37.86
0%
Abs. Int.
7.25e6
3.63e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.52e7
1.26e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

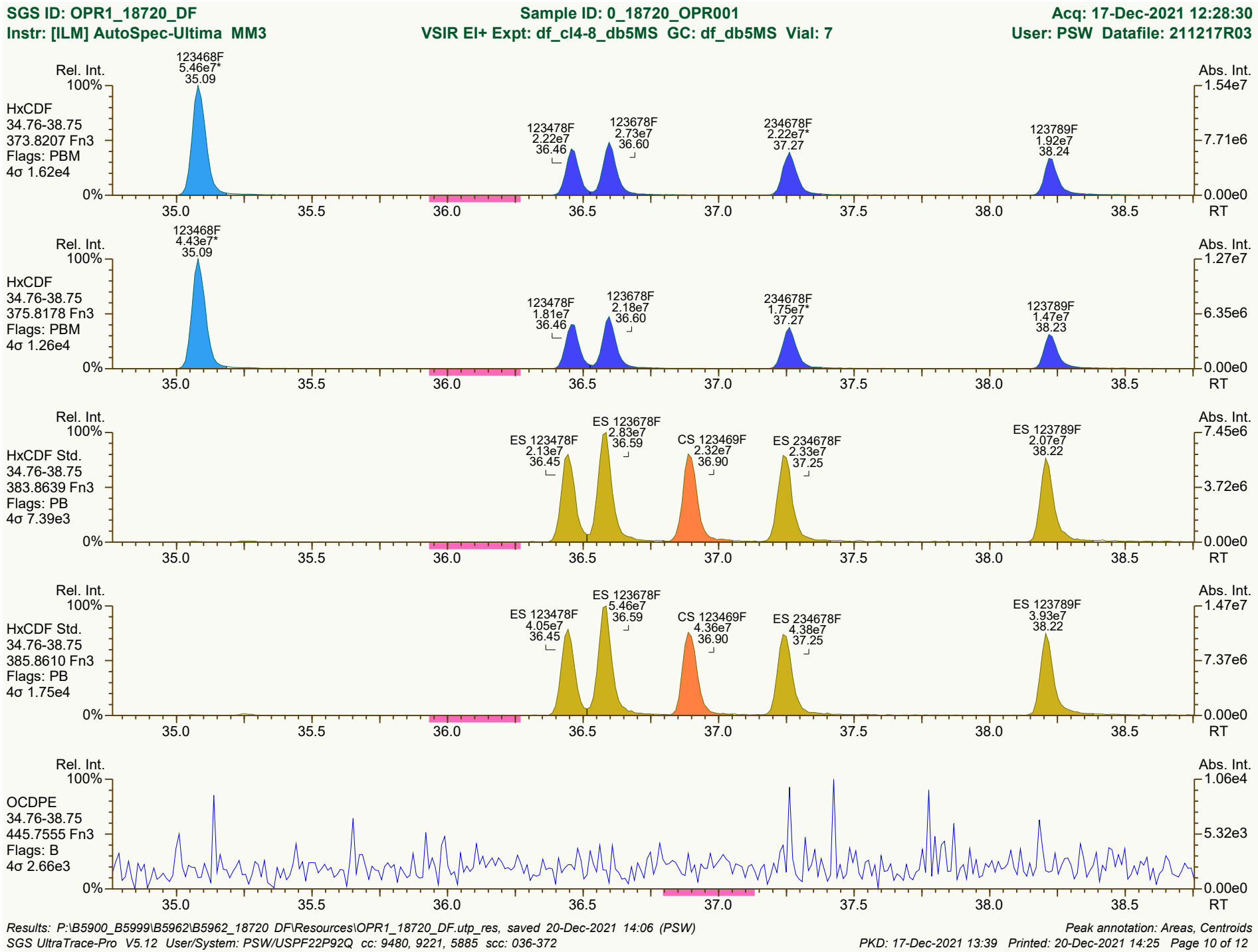

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.77e3
1234678D
1.29e7
40.50
1234679D
3.00e6
39.86
Abs. Int.
4.44e6
2.22e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.30e3
1234678D
1.25e7
40.50
1234679D
2.89e6
39.86
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 5.43e3
ES 1234678D
2.45e7
40.49
Abs. Int.
8.25e6
4.12e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 3.97e3
ES 1234678D
2.36e7
40.49
Abs. Int.
8.07e6
4.03e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.76e7
8.78e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

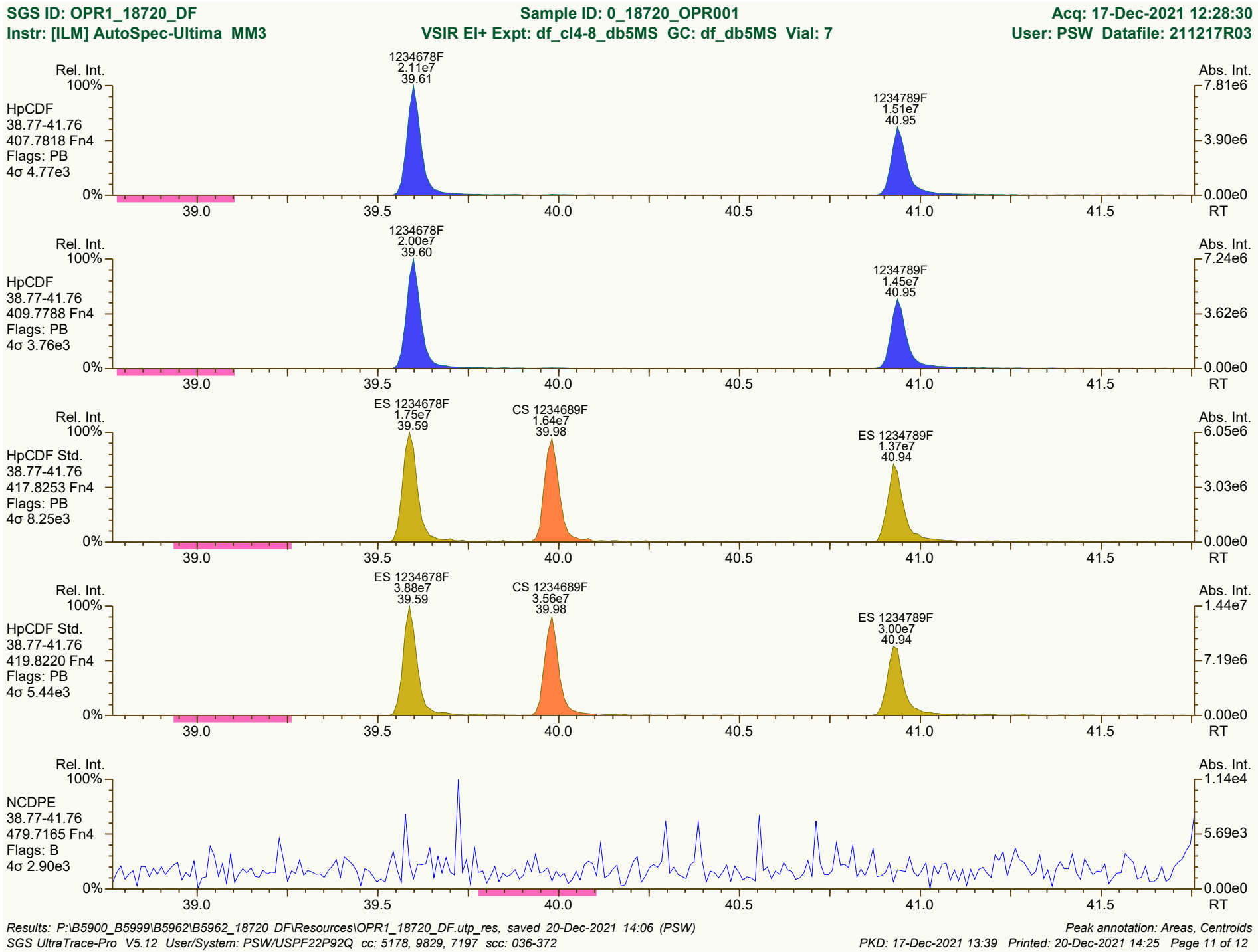

OCDD
1.45e7
43.05
Rel. Int.
Abs. Int.
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 5.66e3
OCDD
1.63e7
43.04
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 5.40e3
ES OCDD
2.60e7*
43.03
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 4.11e3
ES OCDD
2.86e7*
43.03
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 5.02e3
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR1_18720_DF
Sample ID: 0_18720_OPR001
Acq: 17-Dec-2021 12:28:30
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 7
User: PSW Datafile: 211217R03
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 5.16e3
1368F 6.62e6* 22.42
2468F 1.60e6 23.66
2348F 6.06e6* 27.25
2378F 5.10e6* 27.36
1289F 6.64e6* 29.38
1.54e6
7.69e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 4.61e3
1368F 8.16e6* 22.42
2468F 2.06e6 23.66
2348F 7.44e6* 27.25
2378F 6.13e6* 27.36
1289F 8.66e6* 29.38
2.00e6
1.00e6
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 1.63e4
JS 1234F 4.58e7* 25.97
ES 2378F 4.15e7 27.34
9.48e6
4.74e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.31e4
JS 1234F 5.98e7* 25.97
ES 2378F 5.43e7 27.34
1.24e7
6.19e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.85e3
1.35e4
6.76e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18720_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5336, 8663, 0006 scc: 036-372
PKD: 17-Dec-2021 13:39 Printed: 20-Dec-2021 14:25 Page 7 of 12

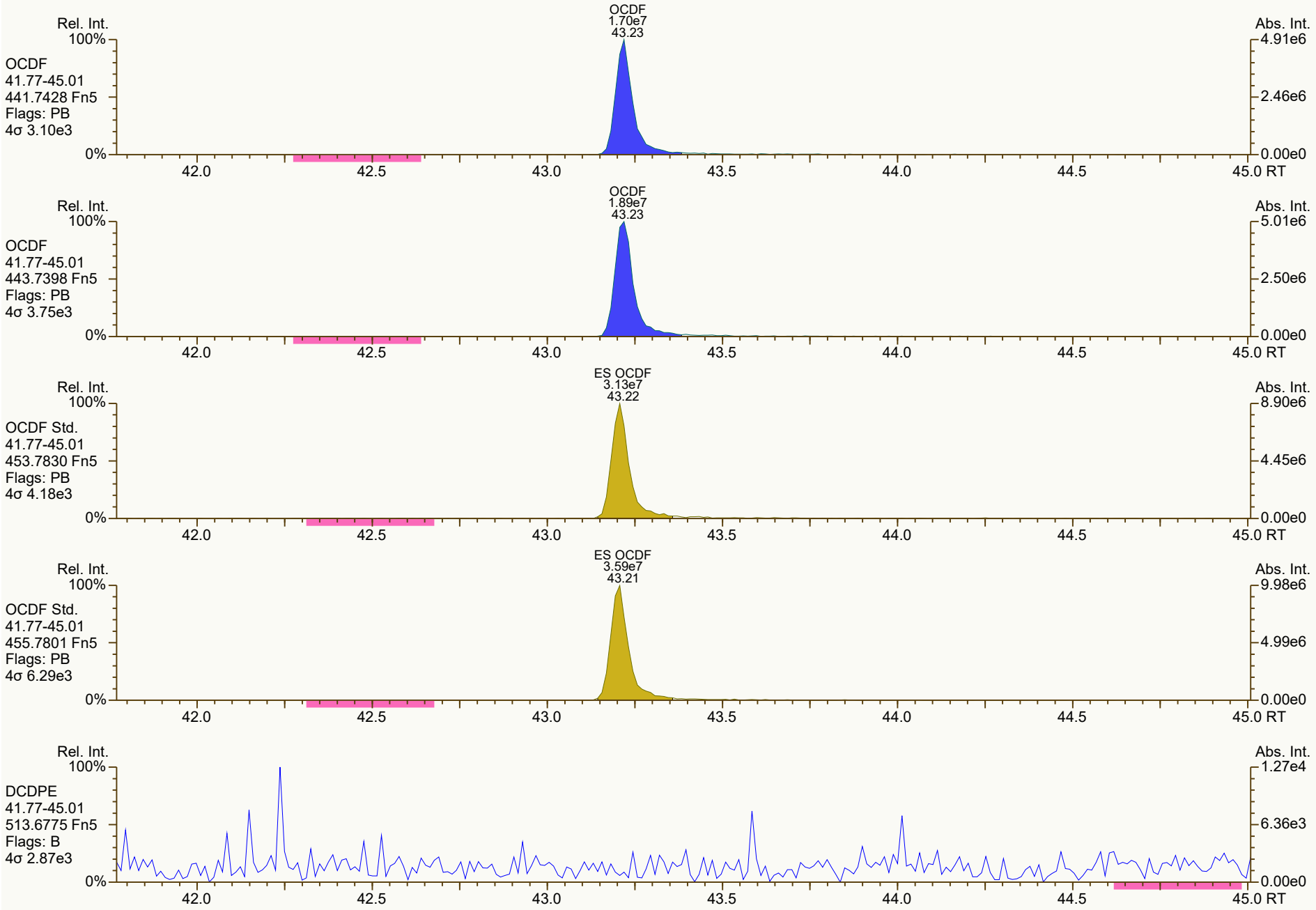

Rel. Int.
100%
0%
Abs. Int.
1.33e7
6.66e6
0.00e0
13468/12468F
5.40e7
29.29
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 2.88e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
8.02e6
4.01e6
0.00e0
13468/12468F
3.54e7
29.29
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.07e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
4.45e6
2.22e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 8.72e3
0%
12378F
2.86e7
32.13
23478F
2.80e7*
33.24
12389F
5.97e6
34.31
Abs. Int.
7.50e6
3.75e6
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 6.42e3
0%
12378F
1.81e7
32.13
23478F
1.79e7*
33.23
12389F
3.89e6
34.31
Abs. Int.
4.66e6
2.33e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 5.07e3
0%
CS 12346F
5.26e7
31.58
ES 12378F
5.53e7
32.11
ES 23478F
5.26e7
33.22
Abs. Int.
1.41e7
7.04e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 7.08e3
0%
CS 12346F
3.44e7
31.58
ES 12378F
3.57e7
32.11
ES 23478F
3.28e7
33.22
Abs. Int.
8.90e6
4.45e6
0.00e0
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.57e3
0%
Abs. Int.
7.98e3
3.99e3
0.00e0
RT


SGS ID: OPR1_18720_DF
Sample ID: 0_18720_OPR001
Acq: 17-Dec-2021 12:28:30
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 7
User: PSW Datafile: 211217R03
Rel. Int.
Abs. Int.
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 1.62e4
123468F
5.46e7*
35.09
123478F
2.22e7
36.46
123678F
2.73e7
36.60
234678F
2.22e7*
37.27
123789F
1.92e7
38.24
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 1.26e4
123468F
4.43e7*
35.09
123478F
1.81e7
36.46
123678F
2.18e7
36.60
234678F
1.75e7*
37.27
123789F
1.47e7
38.23
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 7.39e3
ES 123478F
2.13e7
36.45
ES 123678F
2.83e7
36.59
CS 123469F
2.32e7
36.90
ES 234678F
2.33e7
37.25
ES 123789F
2.07e7
38.22
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.75e4
ES 123478F
4.05e7
36.45
ES 123678F
5.46e7
36.59
CS 123469F
4.36e7
36.90
ES 234678F
4.38e7
37.25
ES 123789F
3.93e7
38.22
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.66e3
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18720_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9480, 9221, 5885 scc: 036-372
PKD: 17-Dec-2021 13:39 Printed: 20-Dec-2021 14:25 Page 10 of 12



Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18720_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5178, 9829, 7197 scc: 036-372
PKD: 17-Dec-2021 13:39 Printed: 20-Dec-2021 14:25 Page 11 of 12


OCDF
1.70e7
43.23
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.10e3
0%
Abs. Int.
4.91e6
2.46e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.89e7
43.23
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.75e3
0%
Abs. Int.
5.01e6
2.50e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.13e7
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.18e3
0%
Abs. Int.
8.90e6
4.45e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.59e7
43.21
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 6.29e3
0%
Abs. Int.
9.98e6
4.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.87e3
0%
Abs. Int.
1.27e4
6.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

CPSM only

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211220R03	Analysis Date:	20-DEC-2021 10:38:41
Lab ID:	OPR1_18743_DF		

Window Defining Standards Results

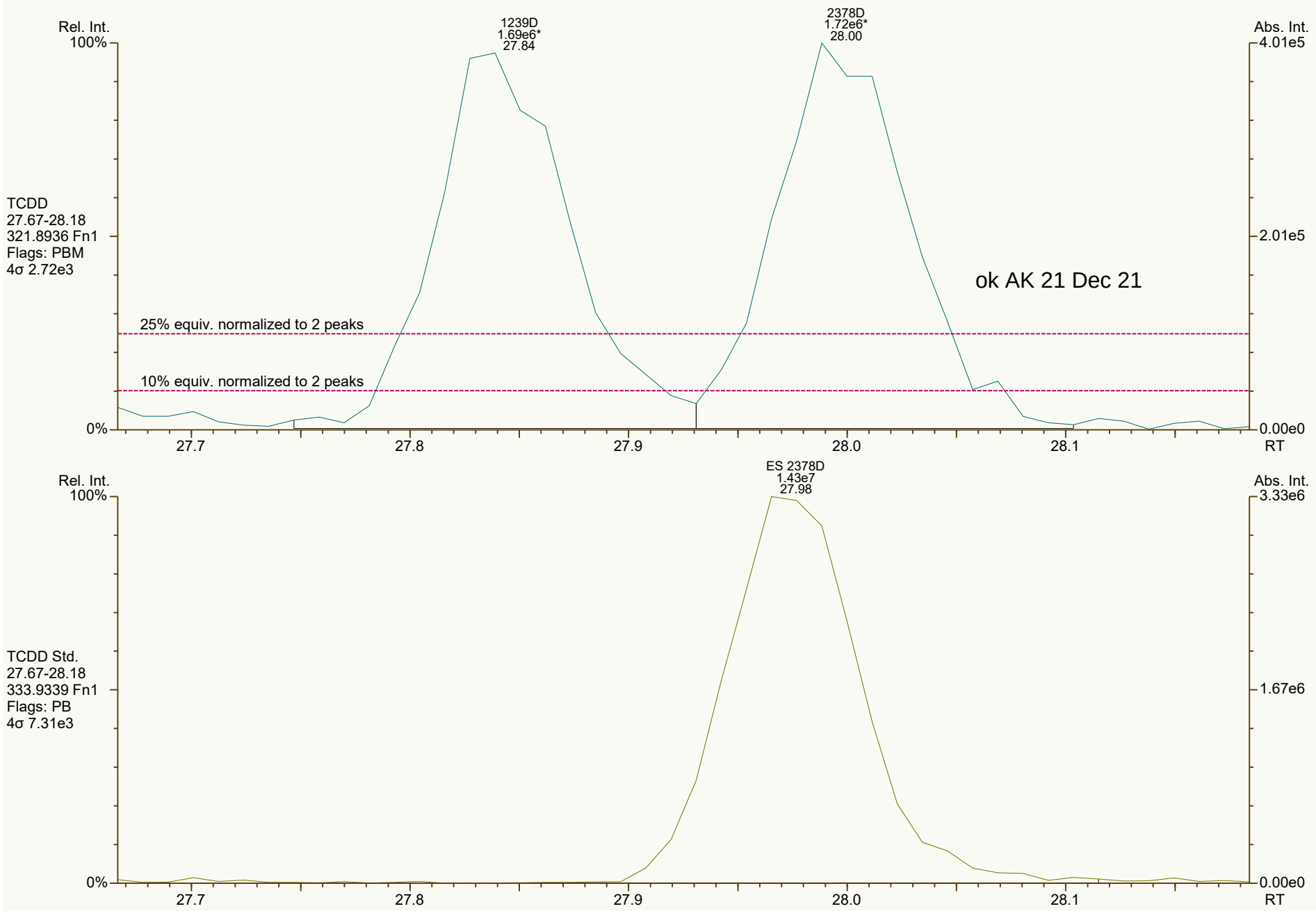
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.28	1289-TCDD	28.99
12479/12468-PeCDD	30.89	12389-PeCDD	33.84
124679/124689-HxCDD	35.57	123789-HxCDD	37.71
1234679-HpCDD	39.74	1234678-HpCDD	40.38
1368-TCDF	22.10	1289-TCDF	29.16
13468/12468-PeCDF	29.09	12389-PeCDF	34.14
123468-HxCDF	34.93	123789-HxCDF	38.08
1234678-HpCDF	39.48	1234789-HpCDF	40.82

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	27.84	2378-TCDD	28.00
2348-TCDF	27.02	2378-TCDF	27.12

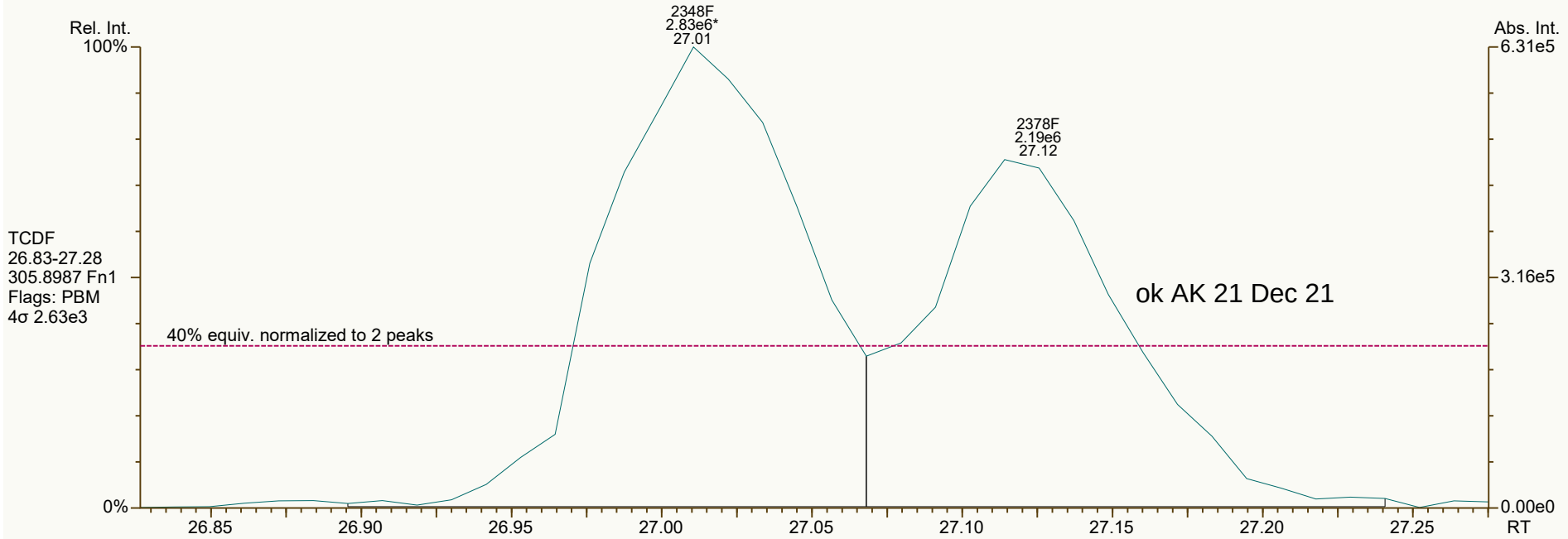
Processed: 20 Dec 2021 14:10 Analyst: pw

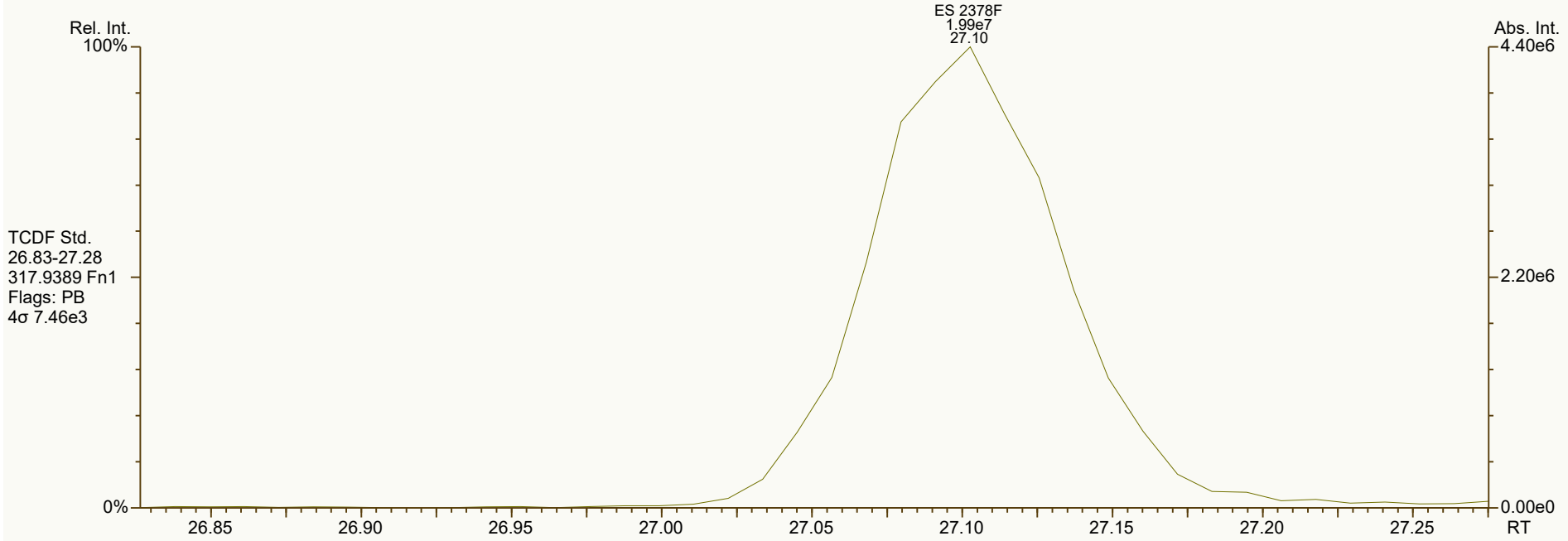
SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03



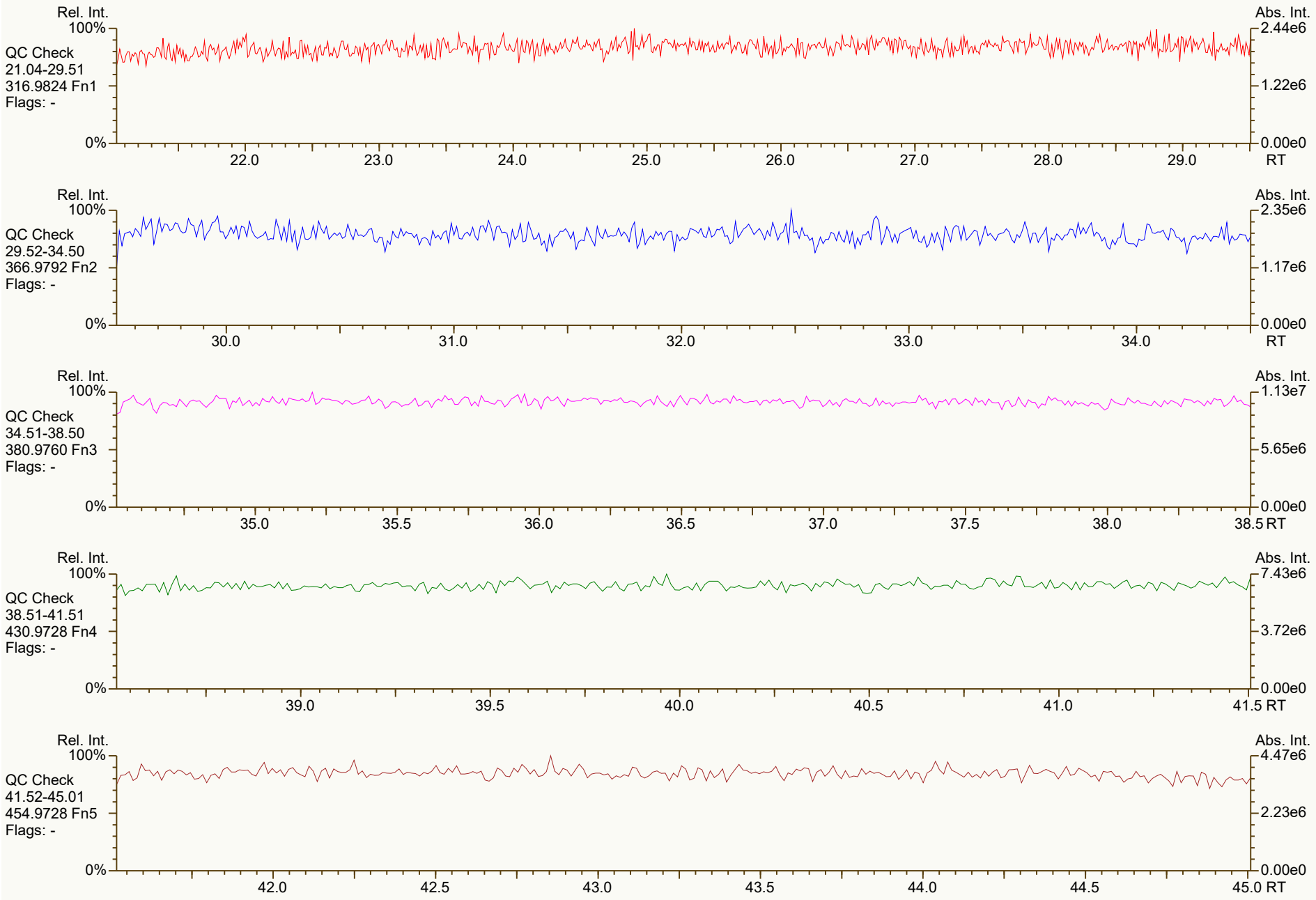
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:23

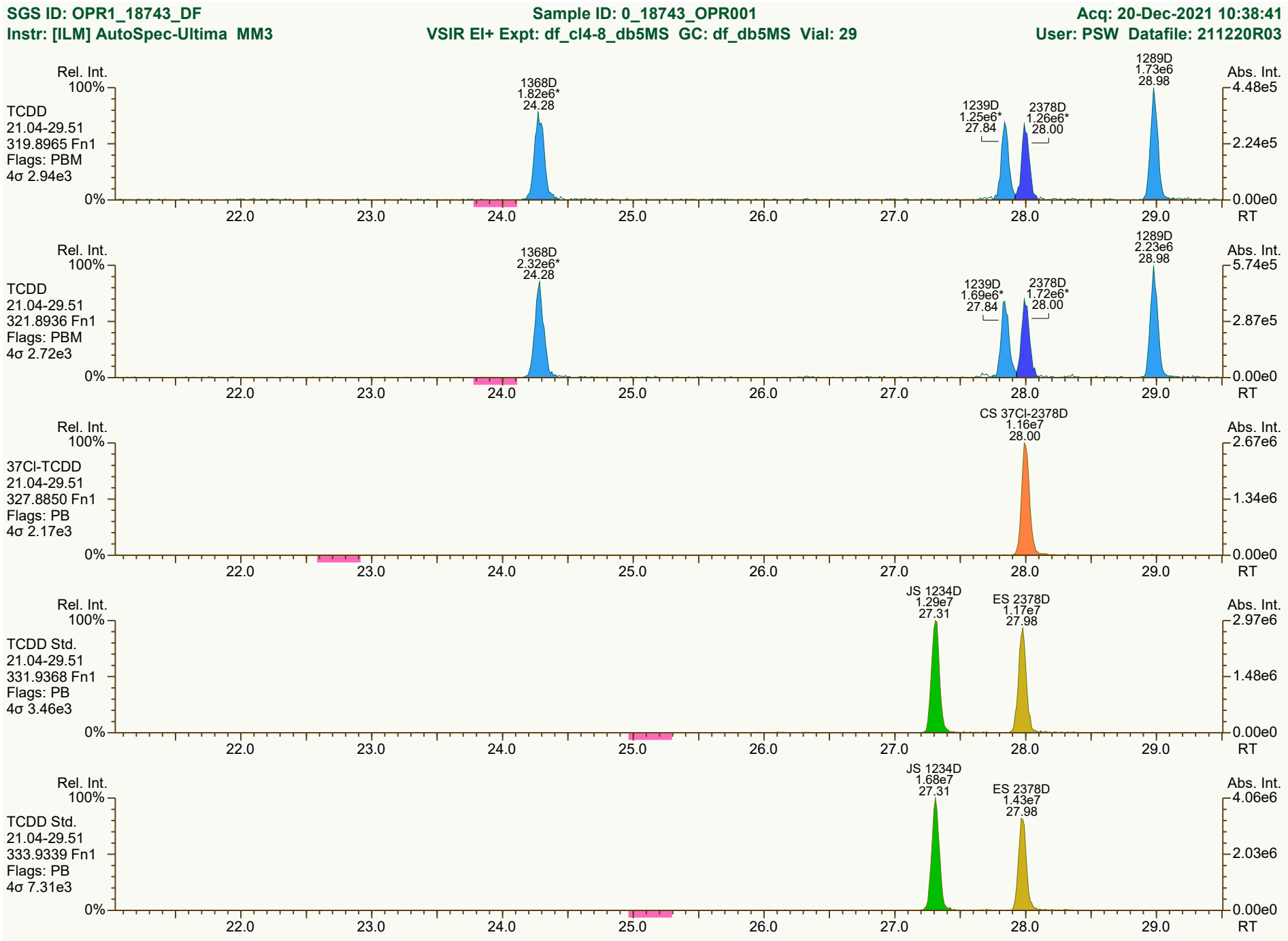
SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03

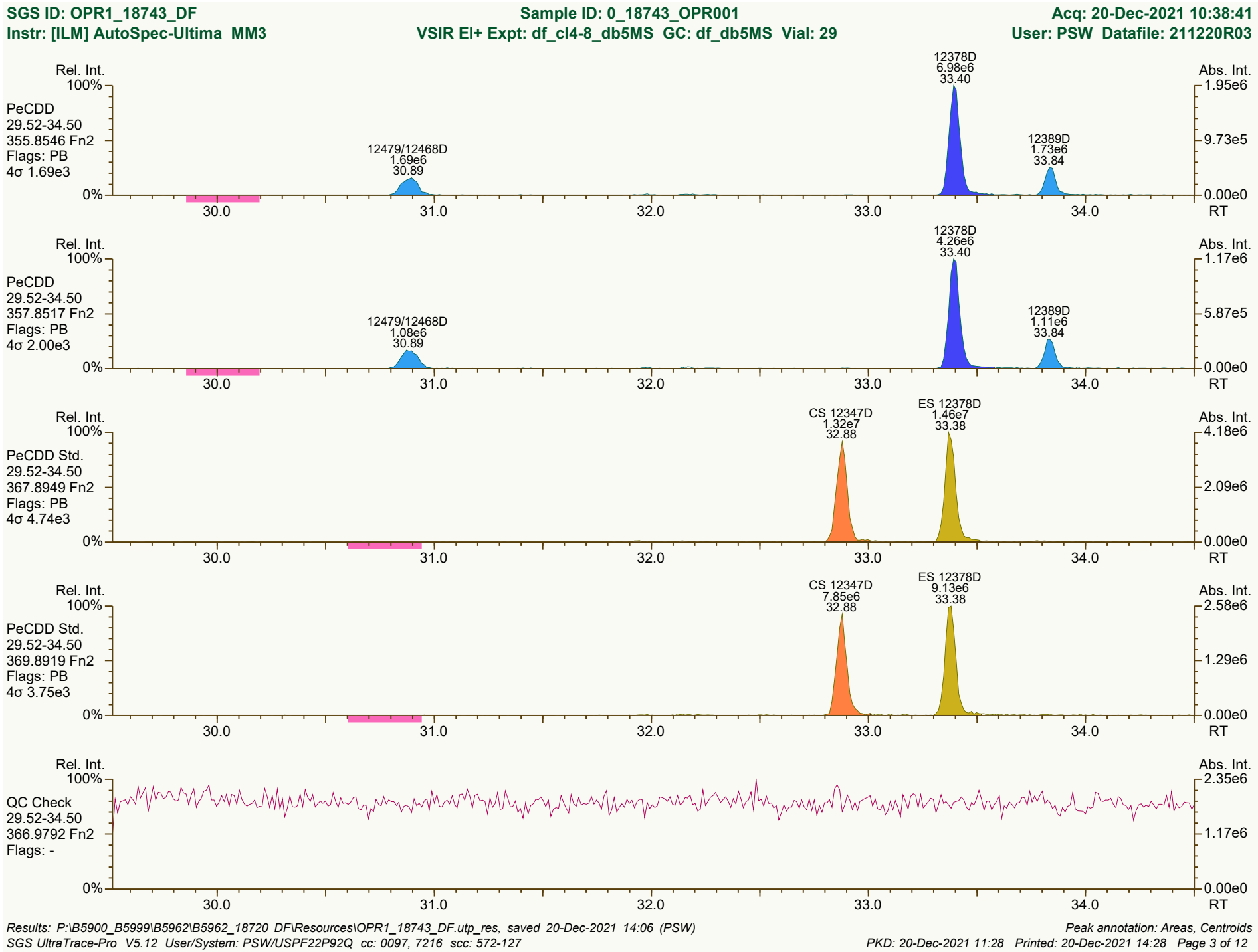




Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:24


Rel. Int.
100%
QC Check
21.04-29.51
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.44e6
1.22e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Rel. Int.
100%
QC Check
29.52-34.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.35e6
1.17e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
34.51-38.50
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.13e7
5.65e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
Rel. Int.
100%
QC Check
38.51-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
7.43e6
3.72e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.47e6
2.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

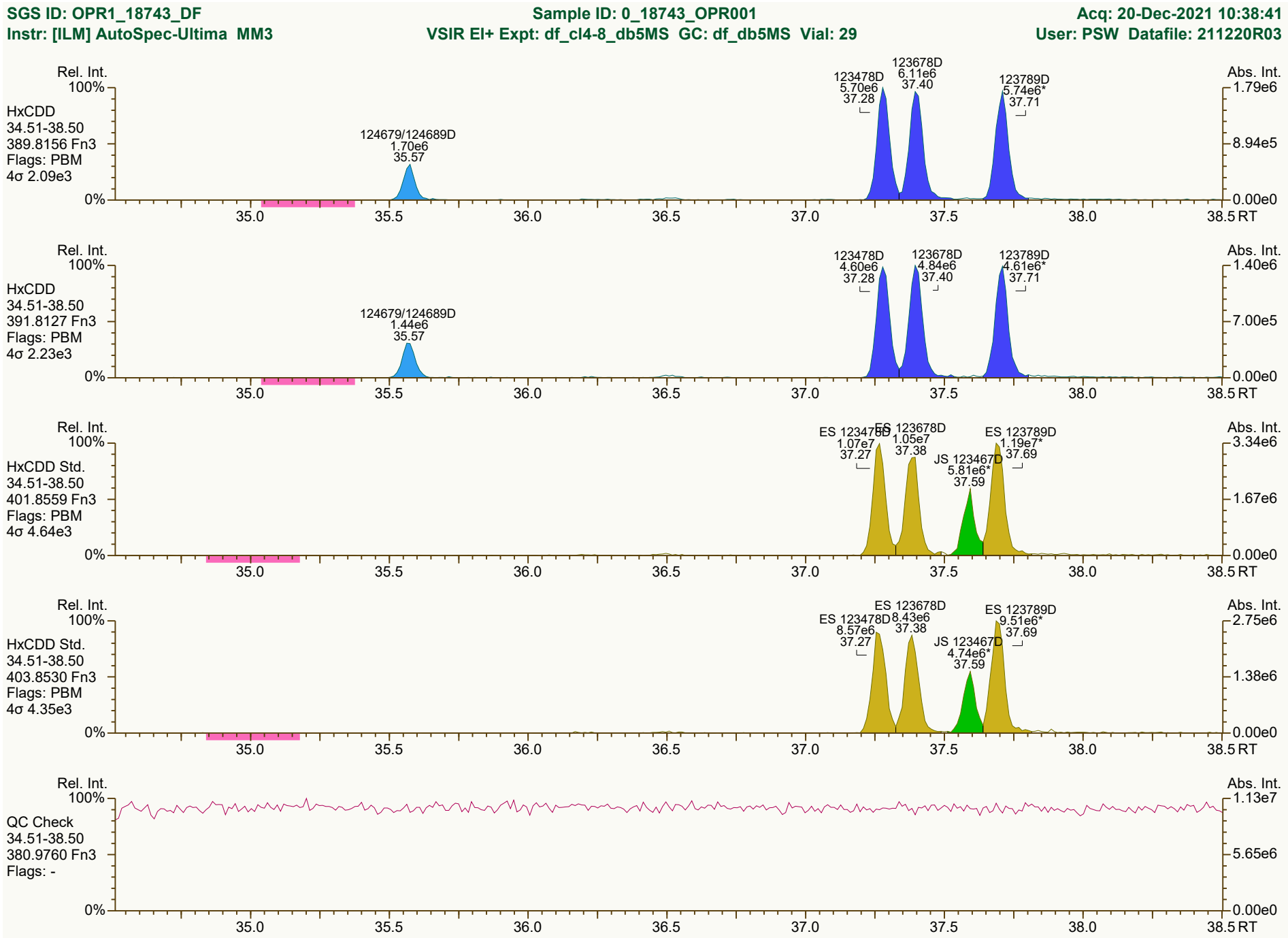

SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03
Rel. Int.
Abs. Int.
TCDD
21.04-29.51
319.8965 Fn1
Flags: PBM
4σ 2.94e3
1368D 1.82e6* 24.28
1239D 1.25e6* 27.84
2378D 1.26e6* 28.00
1289D 1.73e6 28.98
4.48e5
2.24e5
0.00e0
TCDD
21.04-29.51
321.8936 Fn1
Flags: PBM
4σ 2.72e3
1368D 2.32e6* 24.28
1239D 1.69e6* 27.84
2378D 1.72e6* 28.00
1289D 2.23e6 28.98
5.74e5
2.87e5
0.00e0
37Cl-TCDD
21.04-29.51
327.8850 Fn1
Flags: PB
4σ 2.17e3
CS 37Cl-2378D 1.16e7 28.00
2.67e6
1.34e6
0.00e0
TCDD Std.
21.04-29.51
331.9368 Fn1
Flags: PB
4σ 3.46e3
JS 1234D 1.29e7 27.31
ES 2378D 1.17e7 27.98
2.97e6
1.48e6
0.00e0
TCDD Std.
21.04-29.51
333.9339 Fn1
Flags: PB
4σ 7.31e3
JS 1234D 1.68e7 27.31
ES 2378D 1.43e7 27.98
4.06e6
2.03e6
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1086, 4185, 5307 scc: 572-127
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:28 Page 2 of 12


SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03
Rel. Int.
Abs. Int.
PeCDD
29.52-34.50
355.8546 Fn2
Flags: PB
4σ 1.69e3
12479/12468D
1.69e6
30.89
12378D
6.98e6
33.40
12389D
1.73e6
33.84
1.95e6
9.73e5
0.00e0
PeCDD
29.52-34.50
357.8517 Fn2
Flags: PB
4σ 2.00e3
12479/12468D
1.08e6
30.89
12378D
4.26e6
33.40
12389D
1.11e6
33.84
1.17e6
5.87e5
0.00e0
PeCDD Std.
29.52-34.50
367.8949 Fn2
Flags: PB
4σ 4.74e3
CS 12347D
1.32e7
32.88
ES 12378D
1.46e7
33.38
4.18e6
2.09e6
0.00e0
PeCDD Std.
29.52-34.50
369.8919 Fn2
Flags: PB
4σ 3.75e3
CS 12347D
7.85e6
32.88
ES 12378D
9.13e6
33.38
2.58e6
1.29e6
0.00e0
QC Check
29.52-34.50
366.9792 Fn2
Flags: -
2.35e6
1.17e6
0.00e0
100%
0%
30.0
31.0
32.0
33.0
34.0
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0097, 7216 scc: 572-127
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:28 Page 3 of 12

SGS ID: OPR1_18743_DF
Instr: [ILM] AutoSpec-Ultima MM3

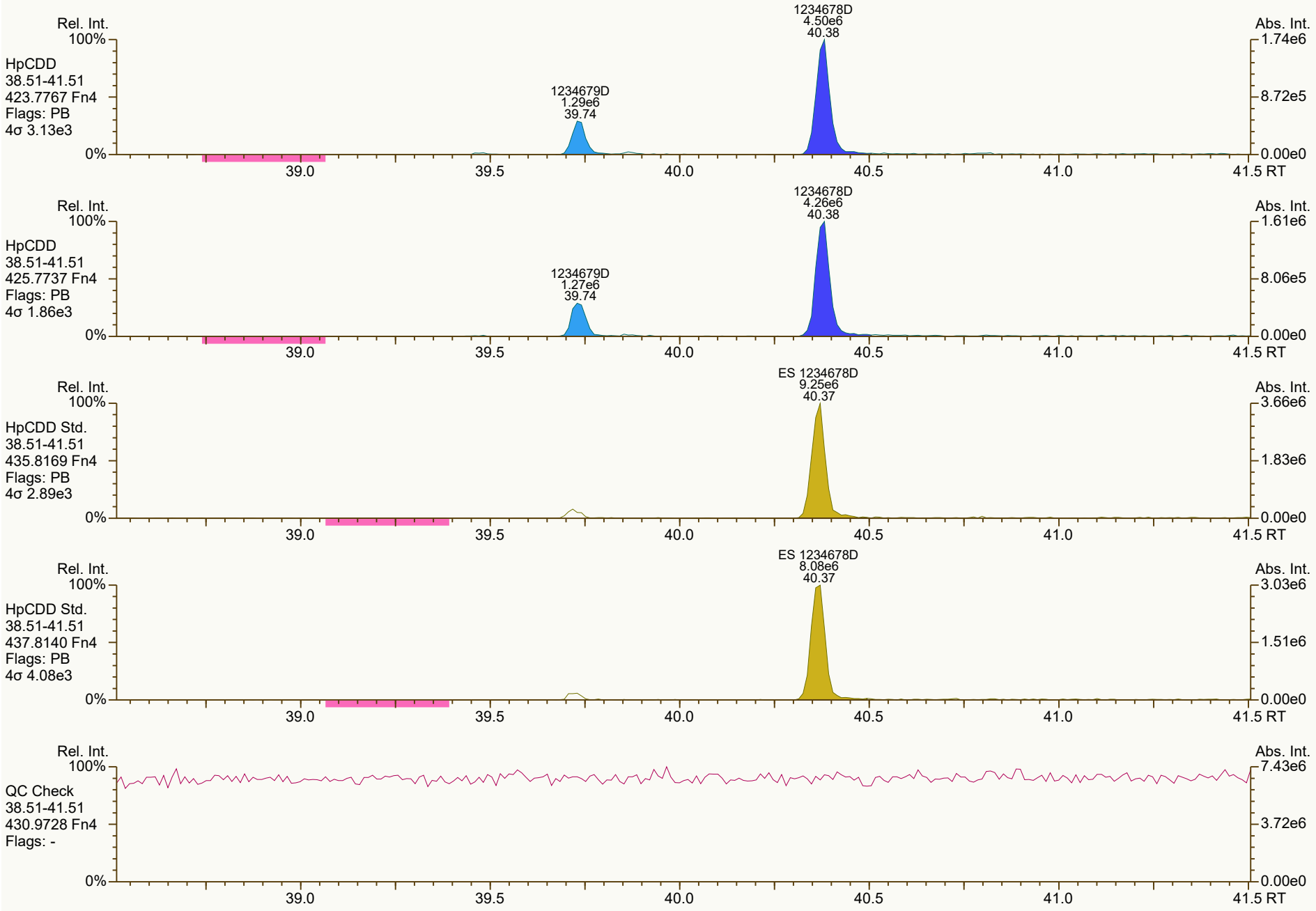
Sample ID: 0_18743_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29

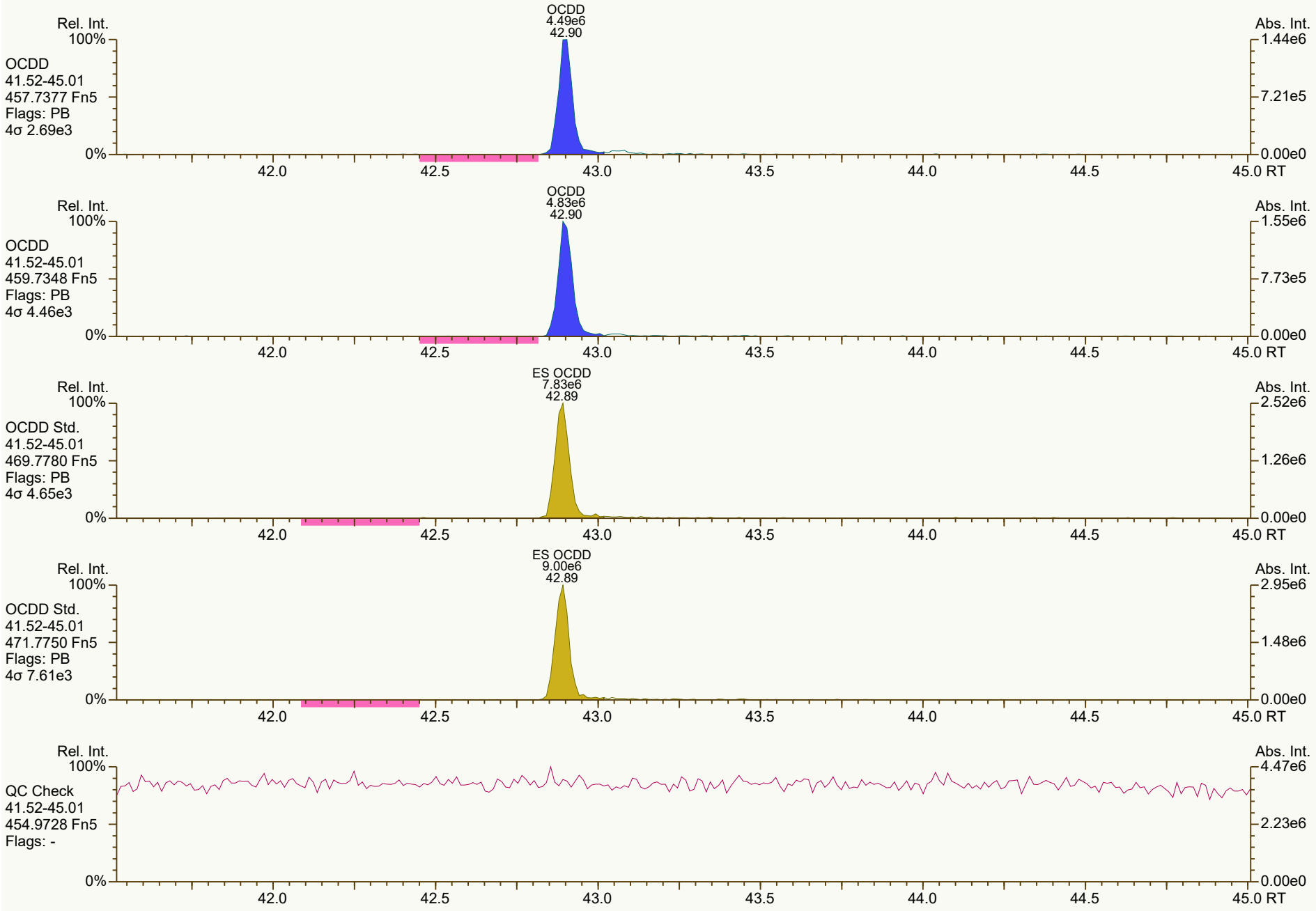
Acq: 20-Dec-2021 10:38:41
User: PSW Datafile: 211220R03



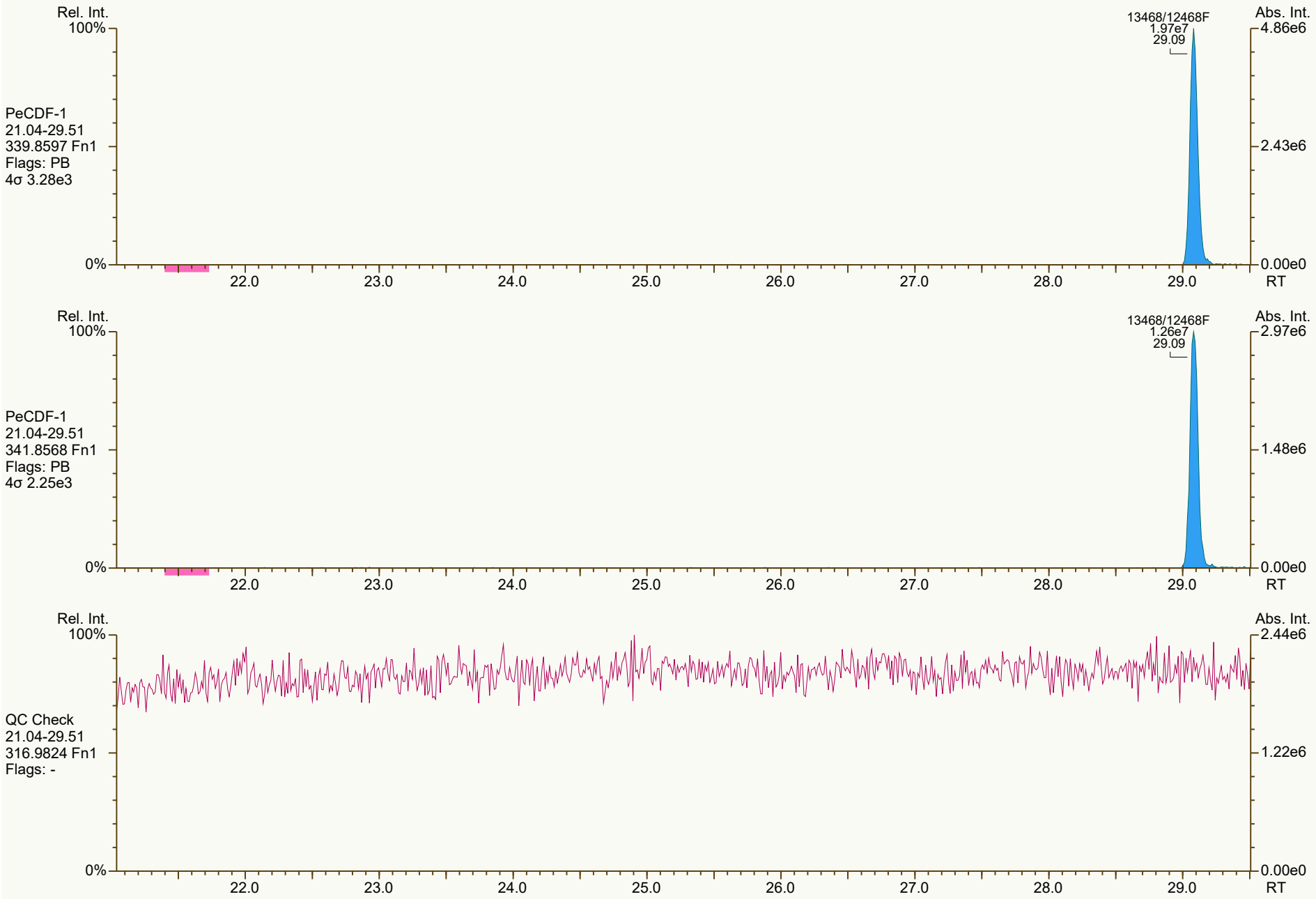
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6600, 2227 scc: 572-127

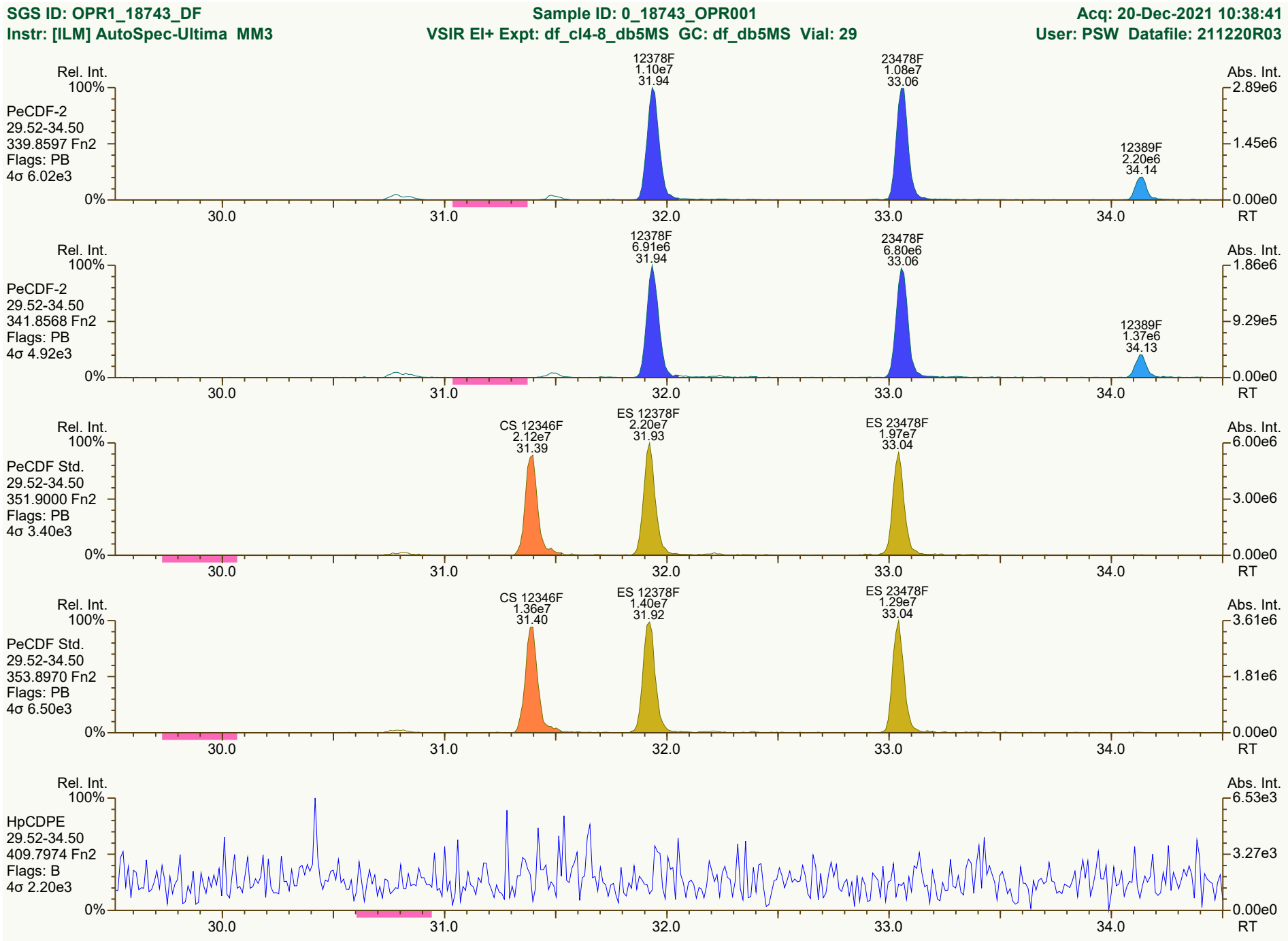
Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:28 Page 4 of 12

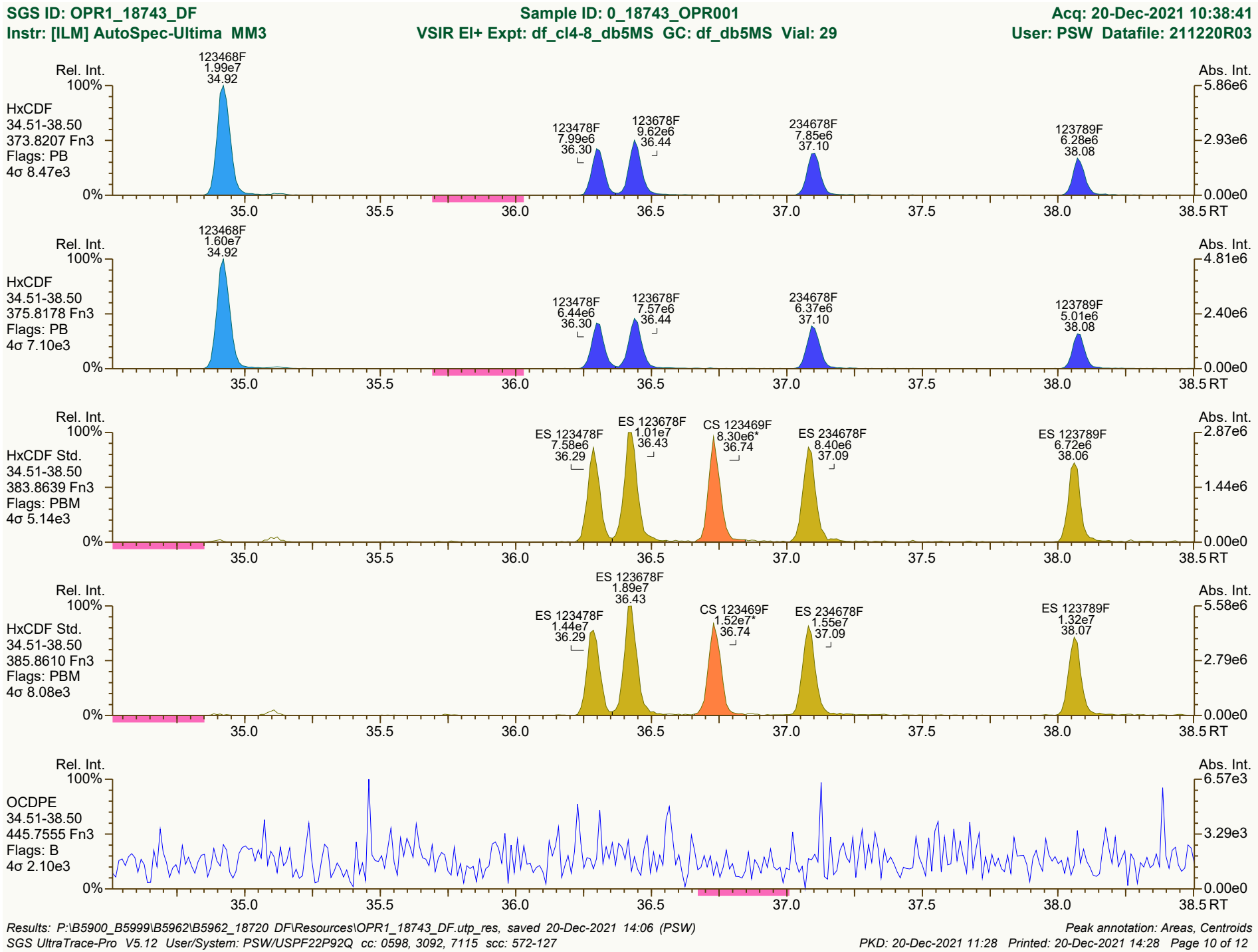

Rel. Int.
100%
HpCDD
38.51-41.51
423.7767 Fn4
Flags: PB
4σ 3.13e3
1234679D
1.29e6
39.74
1234678D
4.50e6
40.38
Abs. Int.
1.74e6
8.72e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.51-41.51
425.7737 Fn4
Flags: PB
4σ 1.86e3
1234679D
1.27e6
39.74
1234678D
4.26e6
40.38
Abs. Int.
1.61e6
8.06e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.51-41.51
435.8169 Fn4
Flags: PB
4σ 2.89e3
ES 1234678D
9.25e6
40.37
Abs. Int.
3.66e6
1.83e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.51-41.51
437.8140 Fn4
Flags: PB
4σ 4.08e3
ES 1234678D
8.08e6
40.37
Abs. Int.
3.03e6
1.51e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.51-41.51
430.9728 Fn4
Flags: -
Abs. Int.
7.43e6
3.72e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.69e3
0%
OCDD
4.49e6
42.90
Abs. Int.
1.44e6
7.21e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 4.46e3
0%
OCDD
4.83e6
42.90
Abs. Int.
1.55e6
7.73e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 4.65e3
0%
ES OCDD
7.83e6
42.89
Abs. Int.
2.52e6
1.26e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 7.61e3
0%
ES OCDD
9.00e6
42.89
Abs. Int.
2.95e6
1.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.47e6
2.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03
Rel. Int.
Abs. Int.
TCDF
21.04-29.51
303.9016 Fn1
Flags: PBM
4σ 2.57e3
1368F
2.47e6
22.10
2468F
5.98e5
23.36
2348F
2.30e6*
27.02
2378F
1.78e6
27.12
1289F
2.22e6*
29.16
5.62e5
2.81e5
0.00e0
TCDF
21.04-29.51
305.8987 Fn1
Flags: PBM
4σ 2.63e3
1368F
3.11e6
22.10
2468F
7.27e5
23.36
2348F
2.83e6*
27.01
2378F
2.19e6
27.12
1289F
2.91e6*
29.16
7.32e5
3.66e5
0.00e0
TCDF Std.
21.04-29.51
315.9419 Fn1
Flags: PB
4σ 1.13e4
JS 1234F
1.98e7
25.72
ES 2378F
1.48e7
27.11
3.99e6
2.00e6
0.00e0
TCDF Std.
21.04-29.51
317.9389 Fn1
Flags: PB
4σ 7.46e3
JS 1234F
2.52e7
25.72
ES 2378F
1.99e7
27.10
5.15e6
2.57e6
0.00e0
HxCDPE
21.04-29.51
375.8364 Fn1
Flags: B
4σ 2.66e3
1.28e4
6.40e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2196, 9820, 2026 scc: 572-127
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:28 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
4.86e6
2.43e6
0.00e0
RT
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
13468/12468F
1.97e7
29.09
PeCDF-1
21.04-29.51
339.8597 Fn1
Flags: PB
4σ 3.28e3
13468/12468F
1.26e7
29.09
2.97e6
1.48e6
PeCDF-1
21.04-29.51
341.8568 Fn1
Flags: PB
4σ 2.25e3
2.44e6
1.22e6
QC Check
21.04-29.51
316.9824 Fn1
Flags: -


SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.50
339.8597 Fn2
Flags: PB
4σ 6.02e3
12378F
1.10e7
31.94
23478F
1.08e7
33.06
12389F
2.20e6
34.14
2.89e6
1.45e6
0.00e0
PeCDF-2
29.52-34.50
341.8568 Fn2
Flags: PB
4σ 4.92e3
12378F
6.91e6
31.94
23478F
6.80e6
33.06
12389F
1.37e6
34.13
1.86e6
9.29e5
0.00e0
PeCDF Std.
29.52-34.50
351.9000 Fn2
Flags: PB
4σ 3.40e3
CS 12346F
2.12e7
31.39
ES 12378F
2.20e7
31.93
ES 23478F
1.97e7
33.04
6.00e6
3.00e6
0.00e0
PeCDF Std.
29.52-34.50
353.8970 Fn2
Flags: PB
4σ 6.50e3
CS 12346F
1.36e7
31.40
ES 12378F
1.40e7
31.92
ES 23478F
1.29e7
33.04
3.61e6
1.81e6
0.00e0
HpCDPE
29.52-34.50
409.7974 Fn2
Flags: B
4σ 2.20e3
6.53e3
3.27e3
0.00e0
100%
0%
30.0
31.0
32.0
33.0
34.0
RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0295, 6846, 6980 scc: 572-127
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:28 Page 9 of 12


SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03
Rel. Int.
Abs. Int.
HxCDF
34.51-38.50
373.8207 Fn3
Flags: PB
4σ 8.47e3
123468F
1.99e7
34.92
123478F
7.99e6
36.30
123678F
9.62e6
36.44
234678F
7.85e6
37.10
123789F
6.28e6
38.08
5.86e6
2.93e6
0.00e0
HxCDF
34.51-38.50
375.8178 Fn3
Flags: PB
4σ 7.10e3
123468F
1.60e7
34.92
123478F
6.44e6
36.30
123678F
7.57e6
36.44
234678F
6.37e6
37.10
123789F
5.01e6
38.08
4.81e6
2.40e6
0.00e0
HxCDF Std.
34.51-38.50
383.8639 Fn3
Flags: PBM
4σ 5.14e3
ES 123478F
7.58e6
36.29
ES 123678F
1.01e7
36.43
CS 123469F
8.30e6*
36.74
ES 234678F
8.40e6
37.09
ES 123789F
6.72e6
38.06
2.87e6
1.44e6
0.00e0
HxCDF Std.
34.51-38.50
385.8610 Fn3
Flags: PBM
4σ 8.08e3
ES 123678F
1.89e7
36.43
ES 123478F
1.44e7
36.29
CS 123469F
1.52e7*
36.74
ES 234678F
1.55e7
37.09
ES 123789F
1.32e7
38.07
5.58e6
2.79e6
0.00e0
OCDPE
34.51-38.50
445.7555 Fn3
Flags: B
4σ 2.10e3
6.57e3
3.29e3
0.00e0
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5 RT
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SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0598, 3092, 7115 scc: 572-127
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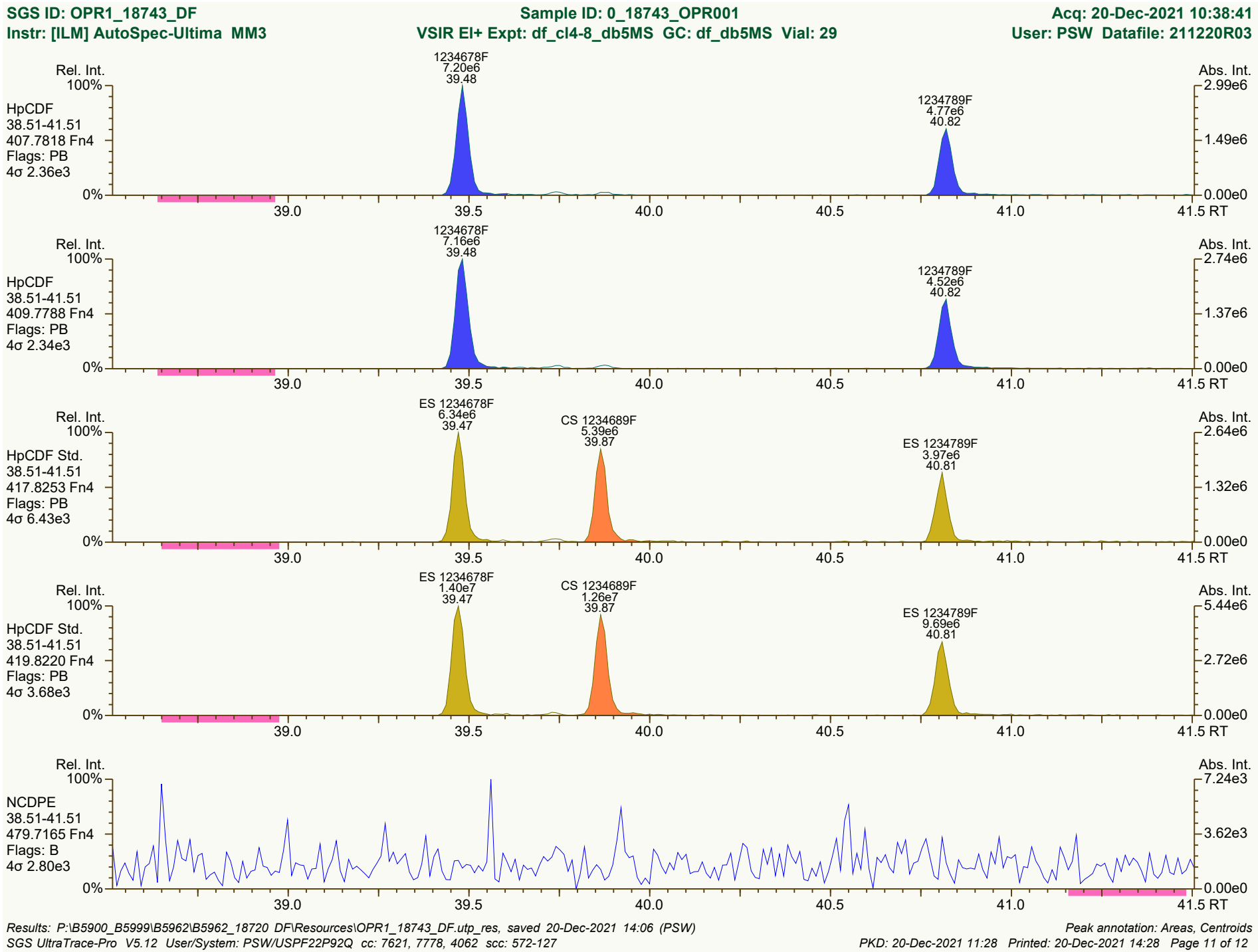
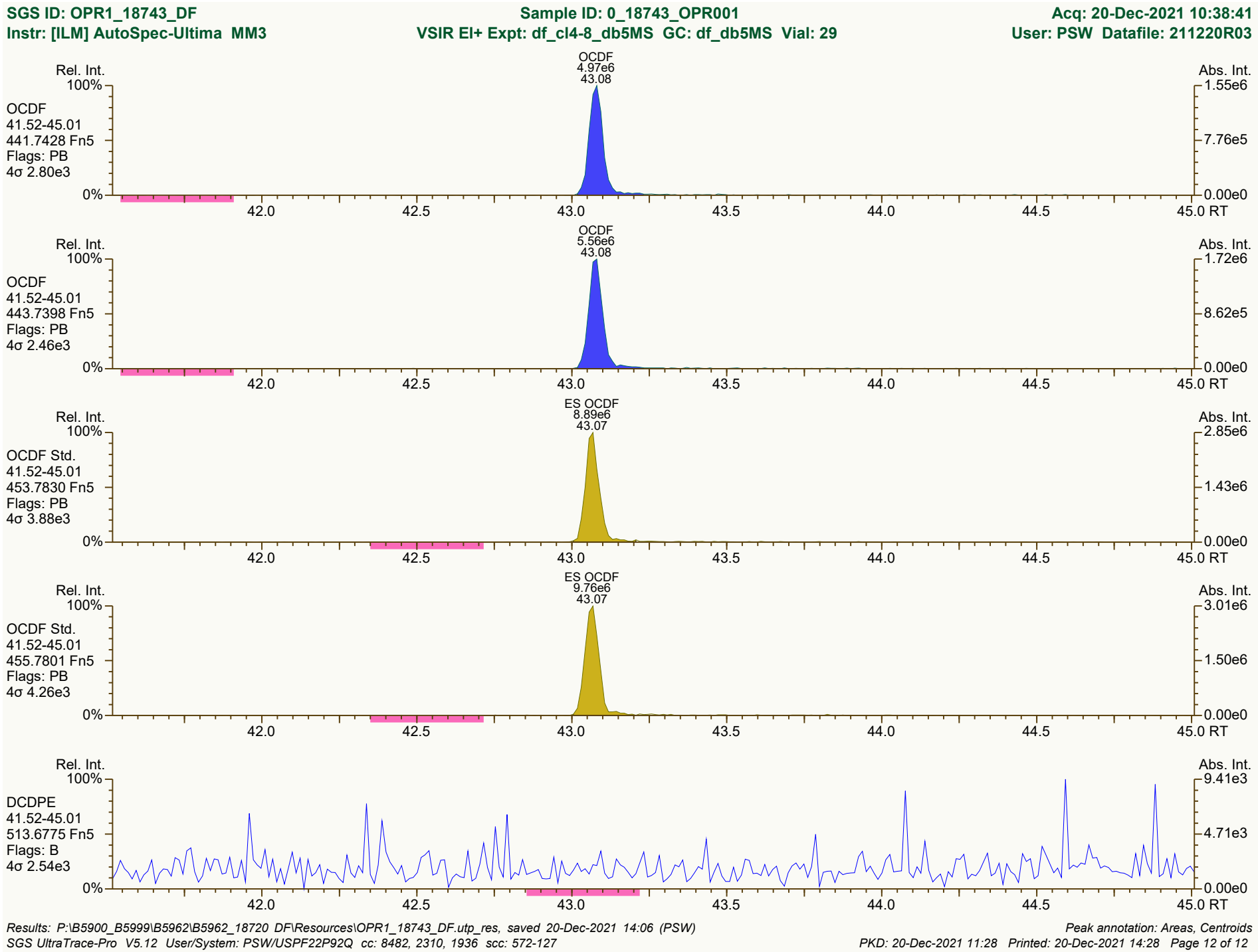

SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03
Rel. Int.
Abs. Int.
HpCDF
38.51-41.51
407.7818 Fn4
Flags: PB
4σ 2.36e3
1234678F
7.20e6
39.48
1234789F
4.77e6
40.82
2.99e6
1.49e6
0.00e0
HpCDF
38.51-41.51
409.7788 Fn4
Flags: PB
4σ 2.34e3
1234678F
7.16e6
39.48
1234789F
4.52e6
40.82
2.74e6
1.37e6
0.00e0
HpCDF Std.
38.51-41.51
417.8253 Fn4
Flags: PB
4σ 6.43e3
ES 1234678F
6.34e6
39.47
CS 1234689F
5.39e6
39.87
ES 1234789F
3.97e6
40.81
2.64e6
1.32e6
0.00e0
HpCDF Std.
38.51-41.51
419.8220 Fn4
Flags: PB
4σ 3.68e3
ES 1234678F
1.40e7
39.47
CS 1234689F
1.26e7
39.87
ES 1234789F
9.69e6
40.81
5.44e6
2.72e6
0.00e0
NCDPE
38.51-41.51
479.7165 Fn4
Flags: B
4σ 2.80e3
7.24e3
3.62e3
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7621, 7778, 4062 scc: 572-127
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:28 Page 11 of 12


SGS ID: OPR1_18743_DF
Sample ID: 0_18743_OPR001
Acq: 20-Dec-2021 10:38:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211220R03
OCDF
4.97e6
43.08
Rel. Int.
Abs. Int.
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.80e3
OCDF
5.56e6
43.08
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.46e3
ES OCDF
8.89e6
43.07
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 3.88e3
ES OCDF
9.76e6
43.07
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 4.26e3
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 2.54e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5962\B5962_18720 DF\Resources\OPR1_18743_DF.utp_res, saved 20-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8482, 2310, 1936 scc: 572-127
PKD: 20-Dec-2021 11:28 Printed: 20-Dec-2021 14:28 Page 12 of 12



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120121-S-JC-NE-B-1H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID	B5962_18911_DF_003	Date Extracted:	16-Feb-2022
Date Collected:	01-Dec-2021	% Solid:	65.9 %	QC Batch No:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	20:23:20

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	1.87				ES 2378-TCDD	82.3	
12378-PeCDD	0.75			J	ES 12378-PeCDD	85.5	
123478-HxCDD	1.66			J	ES 123478-HxCDD	79	
123678-HxCDD	2.46				ES 123678-HxCDD	87.4	
123789-HxCDD	3.27				ES 123789-HxCDD	75.9	
1234678-HpCDD	79.8				ES 1234678-HpCDD	86.4	
OCDD	2,100				ES OCDD	89.2	
2378-TCDF	4.97				ES 2378-TCDF	75.9	
12378-PeCDF	EMPC		0.712	J	ES 12378-PeCDF	82	
23478-PeCDF	EMPC		0.933	J	ES 23478-PeCDF	82.8	
123478-HxCDF	1.02			J	ES 123478-HxCDF	81.4	
123678-HxCDF	EMPC		0.844	J	ES 123678-HxCDF	84.4	
234678-HxCDF	0.803			J	ES 234678-HxCDF	93.8	
123789-HxCDF	ND	0.277			ES 123789-HxCDF	81.6	
1234678-HpCDF	5.87				ES 1234678-HpCDF	92.2	
1234789-HpCDF	ND	0.284			ES 1234789-HpCDF	86.3	
OCDF	14.7				ES OCDF	89.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	82.4	
Total TCDD	10.1		10.7		CS 12347-PeCDD	93.4	
Total PeCDD	11.4		13.9		CS 12346-PeCDF	85.8	
Total HxCDD	69.8		71.2		CS 123469-HxCDF	93.4	
Total HpCDD	225		225		CS 1234689-HpCDF	97.7	
Total TCDF	13.4		19.7				
Total PeCDF	8.17		11.8				
Total HxCDF	6.47		9.5				
Total HpCDF	8.23		8.23				
Total PCDD/Fs	**2,470**		**2,490**				
WHO-2005 TEQs							
TEQ: ND=0	5.53		5.91				
TEQ: ND=DL/2	5.54	0.58	5.93				
TEQ: ND=DL	5.56	1.16	5.94				

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Sample ID: 11215131-120121-S-JC-NE-B-1H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID:	B5962_18911_DF_003	Date Extracted:	16-Feb-2022
Date Collected:	01-Dec-2021	% Solid:	65.9 %	QC Batch No.:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	20:23:20

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.548]		12479/12468D	2.52		124679/124689D	41.8		1234679D	145	
1379D	(0.448)		12469D	5.3		123468D	[1.45]	J	1234678D	79.8	
1369D	(0.448)		12368D	0.595	J	123679/123689D	17.8				
1469D	7.26		12478D	0.812	J	123469D	1.55	J			
1247D...[4]	(0.448)		12379D	0.985	J	123478D	1.66	J			
1378D	(0.448)		12369D...[3]	[2.45]	J	123678D	2.46				
1268D	(0.448)		12346/12347D	(0.384)		123467D	1.21	J			
1478D	(0.448)		12378D	0.75	J	123789D	3.27		**Conc.**	225	
1279D	(0.448)		12367D	(0.384)					**EMPC**	225	
1234/1269D	1		12389D	0.483	J						
1236D	(0.448)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.448)										
1239D	(0.448)								OCDD	2100	
2378D	1.87										
1278D	(0.448)										
1267D	(0.448)										
1289D	(0.448)										
Conc.	10.1		**Conc.**	11.4		**Conc.**	69.8				
EMPC	10.7		**EMPC**	13.9		**EMPC**	71.2				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	5.53	5.91
TEQ: ND=DL/2	5.54	5.93
TEQ: ND=DL	5.56	5.94

	Conc.	EMPC
Total PCDD/Fs	2,470	2,490

Checkcode: 309-908-LRL

Report Created: 21-Feb-2022 10:33 Analyst: TF

Sample ID: 11215131-120121-S-JC-NE-B-1H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID:	B5962_18911_DF_003	Date Extracted:	16-Feb-2022
Date Collected:	01-Dec-2021	% Solid:	65.9 %	QC Batch No.:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	20:23:20

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.48]	J	13468/12468F	3.81		123468F	[1.15]	J	1234678F	5.87	
1468F	(0.255)		13678F...[3]	1.14	J	124678/134678F	4.17		1234679F	(0.239)	
2468F	2.59		12368F...[3]	3.23		134679F	(0.241)		1234689F	2.36	J
1346/1246F	(0.255)		14678F	(0.2)		124679F	(0.241)		1234789F	(0.284)	
1347F...[3]	[1.5]		13479F	(0.2)		124689F	[1.04]	J			
1348F	(0.255)		13469/12479F	(0.2)		123467F	0.479	J			
1248F...[3]	[1.27]		12346F	(0.2)		123478F	1.02	J			
1268F	[1.04]		23468/12469F	[0.854]	J	123678F	[0.844]	J			
1467F	(0.255)		12347F	(0.2)		123479F	(0.241)				
1478F	(0.255)		12348F	(0.2)		123469F	(0.241)				
1369/1237F	0.583		12378F	[0.712]	J	123679F	(0.241)				
2467F	[0.511]		12678/12367F	[0.671]	J	234678F	0.803	J	**Conc.**	8.23	
2368F	2.19		12379F	(0.2)		234678/123689F	0		**EMPC**	8.23	
1238F...[5]	(0.255)		12679F	(0.2)		123689F	(0.241)				
1278F	2.41		23467/12369F	[0.467]	J	123789F	(0.277)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.255)		23478F	[0.933]	J	123789/123489F	0				
1267F	0.635		23478/12489F	0		123489F	(0.241)		OCDF	14.7	
2346/1249F	(0.255)		12489F	(0.2)							
2347/1279F	(0.255)		12349F	(0.2)							
2348F	(0.255)		12389F	(0.2)							
2378F	4.97										
2367/3467F	[0.924]										
1269F	(0.255)										
1239F	(0.255)										
1289F	[0.554]										
Conc.	13.4		**Conc.**	8.17		**Conc.**	6.47				
EMPC	19.7		**EMPC**	11.8		**EMPC**	9.5				

Checkcode: 309-908-LRL

Report Created: 21-Feb-2022 10:33 Analyst: TF

Sample ID: 11215131-120121-S-JC-NE-B-1H TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5962_18911_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	QC Batch No.:	18911
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	16-Feb-2022
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	19-Feb-2022 20:23
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	1.87		0.448	1.87	1.87	1.87
12378-PeCDD	0.75	J	0.384	0.375	0.75	0.75
123478-HxCDD	1.66	J	0.455	0.166	0.166	0.166
123678-HxCDD	2.46		0.409	0.246	0.246	0.246
123789-HxCDD	3.27		0.422	0.327	0.327	0.327
1234678-HpCDD	79.8		0.413	0.798	0.798	0.798
OCDD	2100		0.73	2.1	0.21	0.631
2378-TCDF	4.97		0.255	0.497	0.497	0.497
12378-PeCDF	[0.712]	J	0.199	[0.0356]	[0.0356]	[0.0214]
23478-PeCDF	[0.933]	J	0.2	[0.467]	[0.467]	[0.28]
123478-HxCDF	1.02	J	0.233	0.102	0.102	0.102
123678-HxCDF	[0.844]	J	0.23	[0.0844]	[0.0844]	[0.0844]
234678-HxCDF	0.803	J	0.231	0.0803	0.0803	0.0803
123789-HxCDF	(0.277)		0.277	(0.0277)	(0.0277)	(0.0277)
1234678-HpCDF	5.87		0.202	0.0587	0.0587	0.0587
1234789-HpCDF	(0.284)		0.284	(0.00284)	(0.00284)	(0.00284)
OCDF	14.7		0.594	0.0147	0.00147	0.00442

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TEQ Summaries			
EMPC = 0, ND = 0	6.64	5.1	5.53
EMPC = 0, ND = DL / 2	6.65	5.12	5.54
EMPC = 0, ND = DL	6.67	5.13	5.56
EMPC = 0, < J-level = 0	5.91	4.01	4.43
EMPC = EMPC, ND = 0	7.22	5.69	5.91
EMPC = EMPC, ND = DL / 2	7.24	5.7	5.93
EMPC = EMPC, ND = DL	7.25	5.72	5.94
EMPC = EMPC, < J-level = 0	5.91	4.01	4.43

Checkcode: 309-908-LRL

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Sample ID: Method Blank B5962_18911 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18911_DF_SDS	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:37:00

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.388			ES 2378-TCDD	89.5	
12378-PeCDD	ND	0.236			ES 12378-PeCDD	98.9	
123478-HxCDD	ND	0.269			ES 123478-HxCDD	90.6	
123678-HxCDD	ND	0.25			ES 123678-HxCDD	95.4	
123789-HxCDD	ND	0.266			ES 123789-HxCDD	88.3	
1234678-HpCDD	ND	0.39			ES 1234678-HpCDD	93.1	
OCDD	ND	0.598			ES OCDD	88.9	
2378-TCDF	ND	0.224			ES 2378-TCDF	79.3	
12378-PeCDF	ND	0.182			ES 12378-PeCDF	93.4	
23478-PeCDF	ND	0.183			ES 23478-PeCDF	93.7	
123478-HxCDF	ND	0.184			ES 123478-HxCDF	90.9	
123678-HxCDF	ND	0.173			ES 123678-HxCDF	102	
234678-HxCDF	ND	0.178			ES 234678-HxCDF	106	
123789-HxCDF	ND	0.198			ES 123789-HxCDF	88.6	
1234678-HpCDF	ND	0.211			ES 1234678-HpCDF	97.9	
1234789-HpCDF	ND	0.31			ES 1234789-HpCDF	89.8	
OCDF	ND	0.451			ES OCDF	88.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	95.7	
Total TCDD	ND	0.388	ND		CS 12347-PeCDD	120	
Total PeCDD	ND	0.236	ND		CS 12346-PeCDF	105	
Total HxCDD	ND	0.261	ND		CS 123469-HxCDF	113	
Total HpCDD	ND	0.39	ND		CS 1234689-HpCDF	106	
Total TCDF	ND	0.224	ND				
Total PeCDF	ND	0.183	ND				
Total HxCDF	ND	0.182	ND				
Total HpCDF	ND	0.254	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.434	0.434	0.434				
TEQ: ND=DL	0.868	0.868	0.868				

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Sample ID: Method Blank B5962_18911 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18911_DF_SDS	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:37:00

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.388)		12479/12468D	(0.236)		124679/124689D	(0.261)		1234679D	(0.39)	
1379D	(0.388)		12469D	(0.236)		123468D	(0.261)		1234678D	(0.39)	
1369D	(0.388)		12368D	(0.236)		123679/123689D	(0.261)				
1469D	(0.388)		12478D	(0.236)		123469D	(0.261)				
1247D...[4]	(0.388)		12379D	(0.236)		123478D	(0.269)				
1378D	(0.388)		12369D...[3]	(0.236)		123678D	(0.25)				
1268D	(0.388)		12346/12347D	(0.236)		123467D	(0.261)				
1478D	(0.388)		12378D	(0.236)		123789D	(0.266)		**Conc.**	0	
1279D	(0.388)		12367D	(0.236)					**EMPC**	0	
1234/1269D	(0.388)		12389D	(0.236)							
1236D	(0.388)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.388)										
1239D	(0.388)								OCDD	(0.598)	
2378D	(0.388)										
1278D	(0.388)										
1267D	(0.388)										
1289D	(0.388)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.434	0.434
TEQ: ND=DL	0.868	0.868

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 399-492-BMX

Report Created: 21-Feb-2022 10:33 Analyst: TF

Sample ID: Method Blank B5962_18911 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18911_DF_SDS	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:37:00

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.224)		13468/12468F	(0.17)		123468F	(0.182)		1234678F	(0.211)	
1468F	(0.224)		13678F...[3]	(0.183)		124678/134678F	(0.182)		1234679F	(0.254)	
2468F	(0.224)		12368F...[3]	(0.183)		134679F	(0.182)		1234689F	(0.254)	
1346/1246F	(0.224)		14678F	(0.183)		124679F	(0.182)		1234789F	(0.31)	
1347F...[3]	(0.224)		13479F	(0.183)		124689F	(0.182)				
1348F	(0.224)		13469/12479F	(0.183)		123467F	(0.182)				
1248F...[3]	(0.224)		12346F	(0.183)		123478F	(0.184)				
1268F	(0.224)		23468/12469F	(0.183)		123678F	(0.173)				
1467F	(0.224)		12347F	(0.183)		123479F	(0.182)				
1478F	(0.224)		12348F	(0.183)		123469F	(0.182)				
1369/1237F	(0.224)		12378F	(0.182)		123679F	(0.182)				
2467F	(0.224)		12678/12367F	(0.183)		234678F	(0.178)		**Conc.**	0	
2368F	(0.224)		12379F	(0.183)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.224)		12679F	(0.183)		123689F	(0.182)				
1278F	(0.224)		23467/12369F	(0.183)		123789F	(0.198)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.224)		23478F	(0.183)		123789/123489F	0			**(pg/g)**	
1267F	(0.224)		23478/12489F	0		123489F	(0.182)		OCDF	(0.451)	
2346/1249F	(0.224)		12489F	(0.183)							
2347/1279F	(0.224)		12349F	(0.183)							
2348F	(0.224)		12389F	(0.183)							
2378F	(0.224)										
2367/3467F	(0.224)										
1269F	(0.224)										
1239F	(0.224)										
1289F	(0.224)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 399-492-BMX

Report Created: 21-Feb-2022 10:33 Analyst: TF

Sample ID: Method Blank B5962_18911 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18911_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18911
Date Collected:	n/a	Split:	-	Date Extracted:	16-Feb-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	19-Feb-2022 19:37
Lab Project No:	B5962	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.388)		0.388	(0.388)	(0.388)	(0.388)
12378-PeCDD	(0.236)		0.236	(0.118)	(0.236)	(0.236)
123478-HxCDD	(0.269)		0.269	(0.0269)	(0.0269)	(0.0269)
123678-HxCDD	(0.25)		0.25	(0.025)	(0.025)	(0.025)
123789-HxCDD	(0.266)		0.266	(0.0266)	(0.0266)	(0.0266)
1234678-HpCDD	(0.39)		0.39	(0.0039)	(0.0039)	(0.0039)
OCDD	(0.598)		0.598	(0.000598)	(0.0000598)	(0.000179)
2378-TCDF	(0.224)		0.224	(0.0224)	(0.0224)	(0.0224)
12378-PeCDF	(0.182)		0.182	(0.00912)	(0.00912)	(0.00547)
23478-PeCDF	(0.183)		0.183	(0.0915)	(0.0915)	(0.0549)
123478-HxCDF	(0.184)		0.184	(0.0184)	(0.0184)	(0.0184)
123678-HxCDF	(0.173)		0.173	(0.0173)	(0.0173)	(0.0173)
234678-HxCDF	(0.178)		0.178	(0.0178)	(0.0178)	(0.0178)
123789-HxCDF	(0.198)		0.198	(0.0198)	(0.0198)	(0.0198)
1234678-HpCDF	(0.211)		0.211	(0.00211)	(0.00211)	(0.00211)
1234789-HpCDF	(0.31)		0.31	(0.0031)	(0.0031)	(0.0031)
OCDF	(0.451)		0.451	(0.000451)	(0.0000451)	(0.000135)

TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.395	0.454	0.434
EMPC = 0, ND = DL	0.791	0.908	0.868
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.395	0.454	0.434
EMPC = EMPC, ND = DL	0.791	0.908	0.868
EMPC = EMPC, < J-level = 0	0	0	0

5500 Business Drive
Wilmington, NC 28405, USA
Tel: +1 910 794-1613; Toll-Free 866 846-8290
www.us.sgs.com

Checkcode: 399-492-BMX

Sample ID: 0_18911_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18911_DF	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	18:04:19

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	11.7				ES 2378-TCDD	91.5	
12378-PeCDD	50.5				ES 12378-PeCDD	90.9	
123478-HxCDD	54.5				ES 123478-HxCDD	98.2	
123678-HxCDD	56.6				ES 123678-HxCDD	102	
123789-HxCDD	52.2				ES 123789-HxCDD	92	
1234678-HpCDD	54.9				ES 1234678-HpCDD	97.5	
OCDD	112				ES OCDD	90	
2378-TCDF	10.9				ES 2378-TCDF	77.7	
12378-PeCDF	48.7				ES 12378-PeCDF	91.4	
23478-PeCDF	54.1				ES 23478-PeCDF	85.6	
123478-HxCDF	51.5				ES 123478-HxCDF	96.2	
123678-HxCDF	53.7				ES 123678-HxCDF	103	
234678-HxCDF	54.4				ES 234678-HxCDF	111	
123789-HxCDF	48.7				ES 123789-HxCDF	94.4	
1234678-HpCDF	50.9				ES 1234678-HpCDF	104	
1234789-HpCDF	51.7				ES 1234789-HpCDF	95.5	
OCDF	103				ES OCDF	91.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	97.6	
Total TCDD	53.1		53.1		CS 12347-PeCDD	108	
Total PeCDD	77.7		77.7		CS 12346-PeCDF	98.4	
Total HxCDD	179		179		CS 123469-HxCDF	119	
Total HpCDD	68.4		68.4		CS 1234689-HpCDF	113	
Total TCDF	63.5		63.5				
Total PeCDF	206		206				
Total HxCDF	334		334				
Total HpCDF	103		103				
Total PCDD/Fs	**1,300**		**1,300**				
WHO-2005 TEQs							
TEQ: ND=0	120		120				
TEQ: ND=DL/2	120	0.265	120				
TEQ: ND=DL	120	0.53	120				

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Sample ID: 0_18911_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5962	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18911_DF	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18911	Date Analyzed:	20-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	5:55:34

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	11.1				ES 2378-TCDD	97.9	
12378-PeCDD	47.5				ES 12378-PeCDD	103	
123478-HxCDD	52.2				ES 123478-HxCDD	98.4	
123678-HxCDD	54.5				ES 123678-HxCDD	104	
123789-HxCDD	51.6				ES 123789-HxCDD	91.9	
1234678-HpCDD	52.2				ES 1234678-HpCDD	98	
OCDD	109				ES OCDD	92.5	
2378-TCDF	10.7				ES 2378-TCDF	85.1	
12378-PeCDF	49.7				ES 12378-PeCDF	96.4	
23478-PeCDF	50.9				ES 23478-PeCDF	100	
123478-HxCDF	51.4				ES 123478-HxCDF	91.9	
123678-HxCDF	50.6				ES 123678-HxCDF	105	
234678-HxCDF	50.7				ES 234678-HxCDF	114	
123789-HxCDF	47.8				ES 123789-HxCDF	94	
1234678-HpCDF	49.8				ES 1234678-HpCDF	107	
1234789-HpCDF	49.1				ES 1234789-HpCDF	95.3	
OCDF	103				ES OCDF	92.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	101	
Total TCDD	52.3		52.3		CS 12347-PeCDD	116	
Total PeCDD	73.6		73.6		CS 12346-PeCDF	105	
Total HxCDD	174		174		CS 123469-HxCDF	109	
Total HpCDD	65.2		65.2		CS 1234689-HpCDF	106	
Total TCDF	63.4		63.4				
Total PeCDF	197		197				
Total HxCDF	320		320				
Total HpCDF	98.8		98.8				
Total PCDD/Fs	**1,260**		**1,260**				
WHO-2005 TEQs							
TEQ: ND=0	114		114				
TEQ: ND=DL/2	114	0.279	114				
TEQ: ND=DL	114	0.558	114				

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Sample DUP

Method 1613B

Sample ID: 0_18911_OPR001

Analyte	OPR1_18911_DF pg/uL	OPR2_18911_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	11.7	11.1	5.3%
1,2,3,7,8-PeCDD	50.5	47.5	6.1%
1,2,3,4,7,8-HxCDD	54.5	52.2	4.3%
1,2,3,6,7,8-HxCDD	56.6	54.5	3.9%
1,2,3,7,8,9-HxCDD	52.2	51.6	1.2%
1,2,3,4,6,7,8-HpCDD	54.9	52.2	5.0%
OCDD	112	109	2.6%
2,3,7,8-TCDF	10.9	10.7	2.1%
1,2,3,7,8-PeCDF	48.7	49.7	2.1%
2,3,4,7,8-PeCDF	54.1	50.9	6.3%
1,2,3,4,7,8-HxCDF	51.5	51.4	0.2%
1,2,3,6,7,8-HxCDF	53.7	50.6	5.9%
2,3,4,6,7,8-HxCDF	54.4	50.7	7.0%
1,2,3,7,8,9-HxCDF	48.7	47.8	1.9%
1,2,3,4,6,7,8-HpCDF	50.9	49.8	2.3%
1,2,3,4,7,8,9-HpCDF	51.7	49.1	5.3%
OCDF	103	103	0.9%
Totals			
Total TCDD	53.1	52.3	1.6%
Total PeCDD	77.7	73.6	5.4%
Total HxCDD	179	174	3.0%
Total HpCDD	68.4	65.2	4.8%
Total TCDF	63.5	63.4	0.1%
Total PeCDF	206	197	4.6%
Total HxCDF	334	320	4.2%
Total HpCDF	103	98.8	3.8%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5962*
Requested TAT:	*10 business days*
Projected due date:	*21-Feb-22*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120121-S-JC-NE-O-6	B5962_001	Solid	1	4oz Amber	01-Dec-21	10:45	0.5	1	4905 2704 1823
11215131-120121-S-JC-NE-B-1	B5962_002	Solid	1	4oz Amber	01-Dec-21	14:20	0.5	1	4905 2704 1823
11215131-120121-S-JC-NE-B-1H	B5962_003*	Solid	1	4oz Amber	01-Dec-21	14:30	0.5	1	4905 2704 1823
11215131-120121-S-JC-NE-O-7	B5962_004	Solid	1	4oz Amber	01-Dec-21	14:40	0.5	1	4905 2704 1823
11215131-120221-S-JC-SW-O-1	B5962_005	Solid - MS/MSD	1	4oz Amber	02-Dec-21	10:20	0.5	1	4905 2704 1823
11215131-120221-S-JC-SW-DUP-1	B5962_006	Solid	1	4oz Amber	02-Dec-21	n/a	0.5	1	4905 2704 1823
11215131-120221-S-JC-SW-B-1	B5962_007	Solid	1	4oz Amber	02-Dec-21	10:30	0.5	1	4905 2704 1823

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact *sample taken off HOLD per email dated 2/4/2022

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: *Ashley Owens* *Logged in by:* *Ashley Owens* *QC'ed by:* TB 02/07/2022

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS

CHAIN OF CUSTODY

B5962 1/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUNDTIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS SEE SSOW
11215131-120121-S-JC-NE-S-8	12-1-21	1035	C	S	4 oz	X				1	RUSH
11215131-120121-S-JC-NE-O-6	↓	1045	↓	↓	4 oz	X				1	*
11215131-120121-S-JC-NE-B-1	↓	1420	↓	↓	4 oz	X				1	*
11215131-120121-S-JC-NE-B-1H	↓	1430	↓	↓	4 oz	X				1	HOLD *
11215131-120121-S-JC-NE-O-7	↓	1440	↓	↓	4 oz	X				1	*
11215131-120121-S-JC-NE-S-9	↓	1450	↓	↓	4 oz	X				1	RUSH
11215131-120121-S-JC-NE-S-10	↓	1500	↓	↓	4 oz	X				1	RUSH
11215131-120221-S-JC-SW-S-1	12-2-21	1000	C	S	4 oz	X				1	RUSH
11215131-120221-S-JC-SW-S-2	↓	1010	↓	↓	4 oz	X				1	RUSH
11215131-120221-S-JC-SW-O-1	↓	1020	↓	↓	4 oz	X	X	X		1	no MSD *

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Breanna North	12-2-21	1345	[signature]
RELINQUISHED BY (2): [signature]	12-2-21	1525	RECEIVED BY: [signature] 12/2/21 1525
RELINQUISHED BY (3): [signature]	12/2/21	1525	RECEIVED BY:

RECEIVED BY LABORATORY:	DATE:	TIME:
Ashley Owens	12/3/21	10:47

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT

CARRIER: FedEx TEMP: °C 0.5°

TRACKING #: 4905 2704 1823

*=Samples in this project.

Page 1 of 2

SGS CHAIN OF CUSTODY

B59962 2/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remark

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS: SEE SOW
11215131-120221-S-JC-SW-DUP-1	12-2-21	—	C	S	4 oz		X					DUP-1 *
11215131-120221-S-JC-SW-B-1	12-2-21	1030	C	S	4 oz		X					*
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							

	DATE:	TIME:		
COLLECTED/RELINQUISHED BY (1): Brianna North	12-2-21	1345	RECEIVED BY: Eddie Castro	
RELINQUISHED BY (2): Eddie Castro	12-2-21	1525	RECEIVED BY:	12/2/21 1525
RELINQUISHED BY (3):	12/2/21	1525	RECEIVED BY:	

RECEIVED BY LABORATORY: DATE: 12/3/21 TIME: 10:47

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT

CARRIER: FedEx TEMP: °C 0.5°

TRACKING #: 4905 2704 1823

*=Samples in this project.

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Member of the SGS Group (SGS SA)

B59162 1/1

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 02DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350- 1903 REF:
INV:
PO: DEPT:

12/3/2021
10:47
0.5°

565C3/E934/0542

FedEx Express

J191219082001ev

1 of 2

TRK# 0201 4905 2704 1823

MASTER

NL ILMA

FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

28405
NC-US **RDU**

Part # 156148-434 MTW EXP 07/22

Project Initiation Form

Project Number:	B5962A	Initiation Date:	07-Feb-22
Client Name:	GHD Services Inc.	Sample Matrix:	Solid
Analysis Method:	1613 PCDD/F	TAT:	10 days
		Project Manager:	Tamara

Special Instructions

M1613B w/ OPR

10 g DWE extraction

Sample 003 taken off HOLD 2/4/2022
TB 2/21/2022

Read and understood, initial and date: Prep Lab: HRMS Lab:

Reporting Instructions

M1613B

Full Report

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: tburkamper Date: 03-Dec-2021

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Extraction Type: SDS CLL | TALEX Carbon SPE | Solid | Final Volume: 20µL

Batch# 18911 | Split: 1/2 1/4 | Extract Initial/Date: JAH 2/16/22 | Clean-up Initial/Date: SAB 2/18/22 | Transfer Init/Date: 2/18/22

Lab Sample ID	Extraction Position Solvent: DCM	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations	Supply IDs
B5962_18911_003	4	15.46				black/gray, sticky, clay-like	Toluene STL 14-26
B5964_18911_007	5	13.65				black/gray, sticky, clay-like	MeCHL STL14-17
B5992_18911_002	6	13.35				fuel smell, gray, clay-like	Florisil SPLS-83
B6008_18911_001	7	13.84				black/gray, sticky, clay-like	Hexane STL14-29
B6008_18911_003	8	13.82				black/gray, clay-like	Silica SPLS-69
B6080_18911_002	9	16.54				black/gray, clay-like, moist, fuel smell	S Nitrate N/A
B6110_18911_002	10	14.58				black/gray, clay-like	Base Silica SPLS-86
B6140_18911_001	11	13.22				black/gray, clay-like	HydroMatrix N/A
B6148_18911_002	12	14.15				black/gray, clay-like	Tetradecane SPLS-730
B6148_18911_004	13	13.42				black/gray, clay-like	H_2SO_4 N/A
B6154_18911_001	14	12.82				gray, sandy/clay-like	A Silica SPLS-90
B6154_18911_002	15	14.03				gray, clay-like	Sodium Sulfate SPLS-808
B6208_18911_001	16	12.78				gray, clay-like	
B6208_18911_002	17	14.25				gray, clay-like, fuel smell	
B6208_18911_003	18	13.32				gray, clay-like, fuel smell	
B6208_18911_004	19	13.66				black/gray, clay-like, strong fuel smell	
MBI_18911	1	10.00				sodium sulfate	
OPR1_18911	2	10.00				sodium sulfate	
OPR2_18911	3	10.00				sodium sulfate	

TB 2/21/2022

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	TB 2/21/2022
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1650	Stop: 0900
HEX	Start:	Stop:
DCM	Start:	Stop:

TB 2/21/2022

2/16/22

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18911

Inter-Department Communication Sheet

TB
2/21/2022

SGS

REVIEWED
Tamara Burkamper , 2/21/2022, 1:35:52 PM

Wt. Volume Results

Batch #: 18911 **Comments:**

QAC 2/21/22

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5962_003	2.36	5.09	4.16	65.93%	65.93%			15.17	15.46	10.19
B5964_007	2.3	4.53	4	76.23%	76.23%			13.12	13.65	10.41
B5992_002	2.37	4.8	4.22	76.13%	76.13%			13.14	13.35	10.16
B6008_001	2.37	4.44	3.92	74.88%	74.88%			13.35	13.84	10.36
B6008_003	2.41	4.46	3.98	76.59%	76.59%			13.06	13.22	10.13
B6080_002	2.39	4.82	3.98	65.43%	65.43%			15.28	16.54	10.82
B6110_002	2.4	4.86	4.13	70.33%	70.33%			14.22	14.58	10.25
B6140_001	2.36	5.24	4.6	77.78%	77.78%			12.86	13.22	10.28
B6148_002	2.35	4.43	3.93	75.96%	75.96%			13.16	14.15	10.75
B6148_004	2.36	4.55	4.03	76.26%	76.26%			13.11	13.42	10.23
B6154_001	2.33	5.22	4.64	79.93%	79.93%			12.51	12.82	10.25
B6154_002	2.38	4.5	3.96	74.53%	74.53%			13.42	14.03	10.46
B6208_001	2.33	5.5	4.85	79.50%	79.50%			12.58	12.78	10.16
B6208_002	2.33	4.77	4.1	72.54%	72.54%			13.79	14.25	10.34
B6208_003	2.33	5.23	4.56	76.90%	76.90%			13	13.32	10.24
B6208_004	2.32	5.1	4.45	76.62%	76.62%			13.05	13.66	10.47

TB 2/21/2022

TB 2/21/2022

% Solid Determination WorkSheet

SGS

Batch: 18911

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	110g one	Comments
B5962_18911_003	2.36	5.09	4.16	15.17	
B5964_18911_007	2.36	4.53	4.00	13.17	
B5992_18911_002	2.37	4.80	4.22	13.14	
B6008_18911_001	2.37	4.44	3.92	13.35	
B6008_18911_003	2.41	4.46	3.98	13.06	
B6080_18911_002	2.39	4.82	3.97	15.28	
B6110_18911_002	2.40	4.86	4.13	14.22	
B6140_18911_001	2.36	5.24	4.60	12.86	
B6148_18911_002	2.35	4.43	3.93	13.16	
B6148_18911_004	2.36	4.55	4.03	13.11	
B6154_18911_001	2.33	5.22	4.64	12.51	
B6154_18911_002	2.38	4.50	3.96	13.42	
B6208_18911_001	2.33	5.50	4.85	12.58	
B6208_18911_002	2.33	4.77	4.11	13.79	
B6208_18911_003	2.33	5.23	4.56	13.00	
B6208_18911_004	2.32	5.10	4.45	13.05	

~~B33~~
2/18/22

Date/Initials: JRH 2/14/22

SGS | Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Solid

Batch # 18911

Spiker Initials/Date:	JRH 2/16/22	JRH 2/16/22	JRH 2/16/22	RBS 2/18/22	RBS 2/18/22		
Lab Sample ID	D/F Ax-A Amount: 20µL	D/F Ax-B Amount: 20µL	D/F ES Amount: 20µL	D/F CS Amount: 20µL	D/F JS Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5962_18911_003	—	—	RBS	JRH	JRH		
B5964_18911_007	—	—	RBS	JRH	JRH		
B5992_18911_002	—	—	RBS	JRH	JRH		
B6008_18911_001	—	—	RBS	JRH	JRH		
B6008_18911_003	—	—	RBS	JRH	JRH		
B6080_18911_002	—	—	RBS	JRH	JRH		
B6110_18911_002	—	—	RBS	JRH	JRH		
B6140_18911_001	—	—	RBS	JRH	JRH		
B6148_18911_002	—	—	RBS	JRH	JRH		
B6148_18911_004	—	—	RBS	JRH	JRH		
B6154_18911_001	—	—	RBS	JRH	JRH		
B6154_18911_002	—	—	RBS	JRH	JRH		
B6208_18911_001	—	—	RBS	JRH	JRH		
B6208_18911_002	—	—	RBS	JRH	JRH		
B6208_18911_003	—	—	RBS	JRH	JRH		
B6208_18911_004	—	—	RBS	JRH	JRH		
MB1_18911	—	—	RBS	JRH	JRH		
OPR1_18911	RBS	RBS	RBS	JRH	JRH		
OPR2_18911	RBS	RBS	RBS	JRH	JRH		
		RBS 2/18/22					

Standard Information

Pipette ID							RBS 2/18/22
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
SIL#	26-2-8	28-182-2	26-2-9	25-338-1	25-384-1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/24	6/22/22	8/2018	11/16/22	1/28/23		

REVIEWED
Tamara Burkamper , 2/21/2022, 1:44:28 PM

SGS Environmental Services — Run Log **Project: B5962_18911_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
0	220219C01	3	CS3_220219_DF_CA	1.00	25-347-1	DTF	910-087	19-Feb-2022	17:17:59
1	220219C02	26	OPR1_18911_DF	1.00	0_18911_OPR001	DTF	320-676	19-Feb-2022	18:04:19
2	220219C03	2	SBS_220219_DF_CA	1.00	20-61-1	DTF	501-491	19-Feb-2022	18:50:40
3	220219C04	25	MB1_18911_DF_SDS	10.00	Method Blank	DTF	399-492	19-Feb-2022	19:37:00
4	220219C05	28	B5962_18911_DF_003	10.19	11215131-120121-S-JC-NE-B-1H	DTF	309-908	19-Feb-2022	20:23:20
16	220219C16	3	CS3_220219_DF_CB	1.00	25-347-1	DTF	111-739	20-Feb-2022	05:01:11
17	220219C17	27	OPR2_18911_DF	1.00	0_18911_OPR002	DTF	488-895	20-Feb-2022	05:55:34

REVIEWED
Tyler_Fritz , 2/21/2022, 10:40:28 AM

Lab ID: MB1_18911_DF_SDS **Acq'd:** 19 Feb 2022 19:37 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5962_18911 **UTP:** 21-Feb-2022 10:21:15 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 399-492-BMX

Datafile: 220219C04 **Report:** 21 Feb 2022 10:33 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	4631.374	0.388
12378-PeCDD	NotFnd		1.0007	-		-	-	-	1.04	-	2783.22	0.236
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3118.687	0.269
123678-HxCDD	NotFnd		1.0036	-		-	-	-	1.15	-	3118.687	0.25
123789-HxCDD	NotFnd		1.0118	-		-	-	-	1.05	-	3118.687	0.266
1234678-HpCDD	NotFnd		1.0002	-		-	-	-	1.06	-	4399.488	0.39
OCDD	NotFnd		1.0003	-		-	-	-	1.13	-	3230.665	0.598
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	3471.373	0.224
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3188.391	0.182
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3188.391	0.183
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	3096.37	0.184
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	3096.37	0.173
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	3096.37	0.178
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3096.37	0.198
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	3605.552	0.211
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	3605.552	0.31
OCDF	NotFnd		1.0002	-		-	-	-	1.07	-	2961.523	0.451

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0243	1.0243	0	2.20E+07	0.81	Y	1.05	89.5
ES 12378-PeCDD	33.63	1.2198	1.2203	+1.0	2.05E+07	1.59	Y	0.88	98.9
ES 123478-HxCDD	37.56	0.9916	0.9916	0	1.85E+07	1.28	Y	0.97	90.6
ES 123678-HxCDD	37.68	0.9947	0.9948	+0.2	1.89E+07	1.29	Y	0.94	95.4
ES 123789-HxCDD	37.99	1.0029	1.0028	-0.2	2.02E+07	1.23	Y	1.09	88.3
ES 1234678-HpCDD	40.72	1.0749	1.0749	0	1.78E+07	1.06	Y	0.91	93.1
ES OCDD	43.41	1.1460	1.1460	0	2.32E+07	0.89	Y	0.62	88.9
ES 2378-TCDF	27.36	1.0531	1.0534	+0.5	3.24E+07	0.79	Y	1.06	79.3
ES 12378-PeCDF	32.17	1.2378	1.2386	+1.5	3.28E+07	1.56	Y	0.91	93.4
ES 23478-PeCDF	33.29	1.2810	1.2818	+1.6	3.19E+07	1.50	Y	0.88	93.7
ES 123478-HxCDF	36.55	0.9650	0.9650	0	2.28E+07	0.54	Y	1.20	90.9
ES 123678-HxCDF	36.70	0.9688	0.9687	-0.2	2.90E+07	0.56	Y	1.35	102
ES 234678-HxCDF	37.38	0.9866	0.9867	+0.2	2.76E+07	0.53	Y	1.24	106
ES 123789-HxCDF	38.35	1.0125	1.0124	-0.2	2.14E+07	0.55	Y	1.16	88.6
ES 1234678-HpCDF	39.78	1.0501	1.0500	-0.2	1.98E+07	0.44	Y	0.97	97.9
ES 1234789-HpCDF	41.17	1.0870	1.0869	-0.2	1.60E+07	0.46	Y	0.85	89.8
ES OCDF	43.59	1.1505	1.1505	0	3.00E+07	0.93	Y	0.81	88.7

Lab ID: MB1_18911_DF_SDS | **Acq'd:** 19 Feb 2022 19:37 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5962_18911 | **UTP:** 21-Feb-2022 10:21:15 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 399-492-BMX

Datafile: 220219C04 | **Report:** 21 Feb 2022 10:33 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.56		-	-	-	2.35E+07	0.80	Y	-	-
JS 1234-TCDF	25.97		-	-	-	3.86E+07	0.80	Y	-	-
JS 123467-HxCDD	37.88		-	-	-	1.05E+07	1.32	Y	-	-
CS 37Cl-2378-TCDD	28.25		1.0251	1.0252	+0.2	1.08E+07	n/a	-	1.20	95.7
CS 12347-PeCDD	33.12		1.2016	1.2020	+0.8	2.12E+07	1.58	Y	0.75	120
CS 12346-PeCDF	31.63		1.2172	1.2180	+1.5	3.45E+07	1.61	Y	0.85	105
CS 123469-HxCDF	37.01		0.9771	0.9770	-0.2	2.65E+07	0.53	Y	1.12	113
CS 1234689-HpCDF	40.18		1.0608	1.0607	-0.2	1.98E+07	0.46	Y	0.89	106
~~SS 37Cl-2378-TCDD~~	~~28.25~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~1.08E+07~~	~~n/a~~		~~1.15~~	~~107~~
~~SS 12347-PeCDD~~	~~33.12~~		~~1.2016~~	~~1.2020~~	~~+0.8~~	~~2.12E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~121~~
~~SS 12346-PeCDF~~	~~31.63~~		~~1.2172~~	~~1.2180~~	~~+1.5~~	~~3.45E+07~~	~~1.61~~	~~Y~~	~~0.94~~	~~113~~
~~SS 123469-HxCDF~~	~~37.01~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~2.65E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~110~~
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0608~~	~~1.0607~~	~~-0.2~~	~~1.98E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~108~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18911_DF_SDS **Acq'd: 19 Feb 2022 19:37 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5962_18911 **UTP: 21-Feb-2022 10:21:15 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 399-492-BMX**

Datafile: 220219C04 **Report: 21 Feb 2022 10:33 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8701						1.18		4631.374	0.388
1379-TCDD	NotFnd		0.8829						1.18		4631.374	0.388
1369-TCDD	NotFnd		0.8982						1.18		4631.374	0.388
1469-TCDD	NotFnd		0.9261						1.18		4631.374	0.388
1247/1246/1248/1249-TCDD	NotFnd		0.9348						1.18		4631.374	0.388
1378-TCDD	NotFnd		0.9417						1.18		4631.374	0.388
1268-TCDD	NotFnd		0.9487						1.18		4631.374	0.388
1478-TCDD	NotFnd		0.9576						1.18		4631.374	0.388
1279-TCDD	NotFnd		0.9636						1.18		4631.374	0.388
1234/1269-TCDD	NotFnd		0.9761						1.18		4631.374	0.388
1236-TCDD	NotFnd		0.9812						1.18		4631.374	0.388
1237/1238-TCDD	NotFnd		0.9905						1.18		4631.374	0.388
1239-TCDD	NotFnd		0.9951						1.18		4631.374	0.388
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**4631.374**	**0.388**
1278-TCDD	NotFnd		1.0124						1.18		4631.374	0.388
1267-TCDD	NotFnd		1.0172						1.18		4631.374	0.388
1289-TCDD	NotFnd		1.0354						1.18		4631.374	0.388
12479/12468-PeCDD	NotFnd		0.9255						1.04		2783.22	0.236
12469-PeCDD	NotFnd		0.9416						1.04		2783.22	0.236
12368-PeCDD	NotFnd		0.9582						1.04		2783.22	0.236
12478-PeCDD	NotFnd		0.9637						1.04		2783.22	0.236
12379-PeCDD	NotFnd		0.9668						1.04		2783.22	0.236
12369/12467/12489-PeCDD	NotFnd		0.9746						1.04		2783.22	0.236
12346/12347-PeCDD	NotFnd		0.9858						1.04		2783.22	0.236
12378-PeCDD	NotFnd		**1.0007**						**1.04**		**2783.22**	**0.236**
12367-PeCDD	NotFnd		1.0036						1.04		2783.22	0.236
12389-PeCDD	NotFnd		1.0137						1.04		2783.22	0.236
124679/124689-HxCDD	NotFnd		0.9540						1.10		3118.687	0.261
123468-HxCDD	NotFnd		0.9715						1.10		3118.687	0.261
123679/123689-HxCDD	NotFnd		0.9793						1.10		3118.687	0.261
123469-HxCDD	NotFnd		0.9829						1.10		3118.687	0.261
123478-HxCDD	NotFnd		**1.0004**						1.09		**3118.687**	**0.269**
123678-HxCDD	NotFnd		**1.0036**						1.15		**3118.687**	**0.25**
123467-HxCDD	NotFnd		1.0089						1.10		3118.687	0.261
123789-HxCDD	NotFnd		**1.0118**						1.05		**3118.687**	**0.266**

Lab ID: MB1_18911_DF_SDS | **Acq'd:** 19 Feb 2022 19:37 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5962_18911 | **UTP:** 21-Feb-2022 10:21:15 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 399-492-BMX

Datafile: 220219C04 | **Report:** 21 Feb 2022 10:33 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

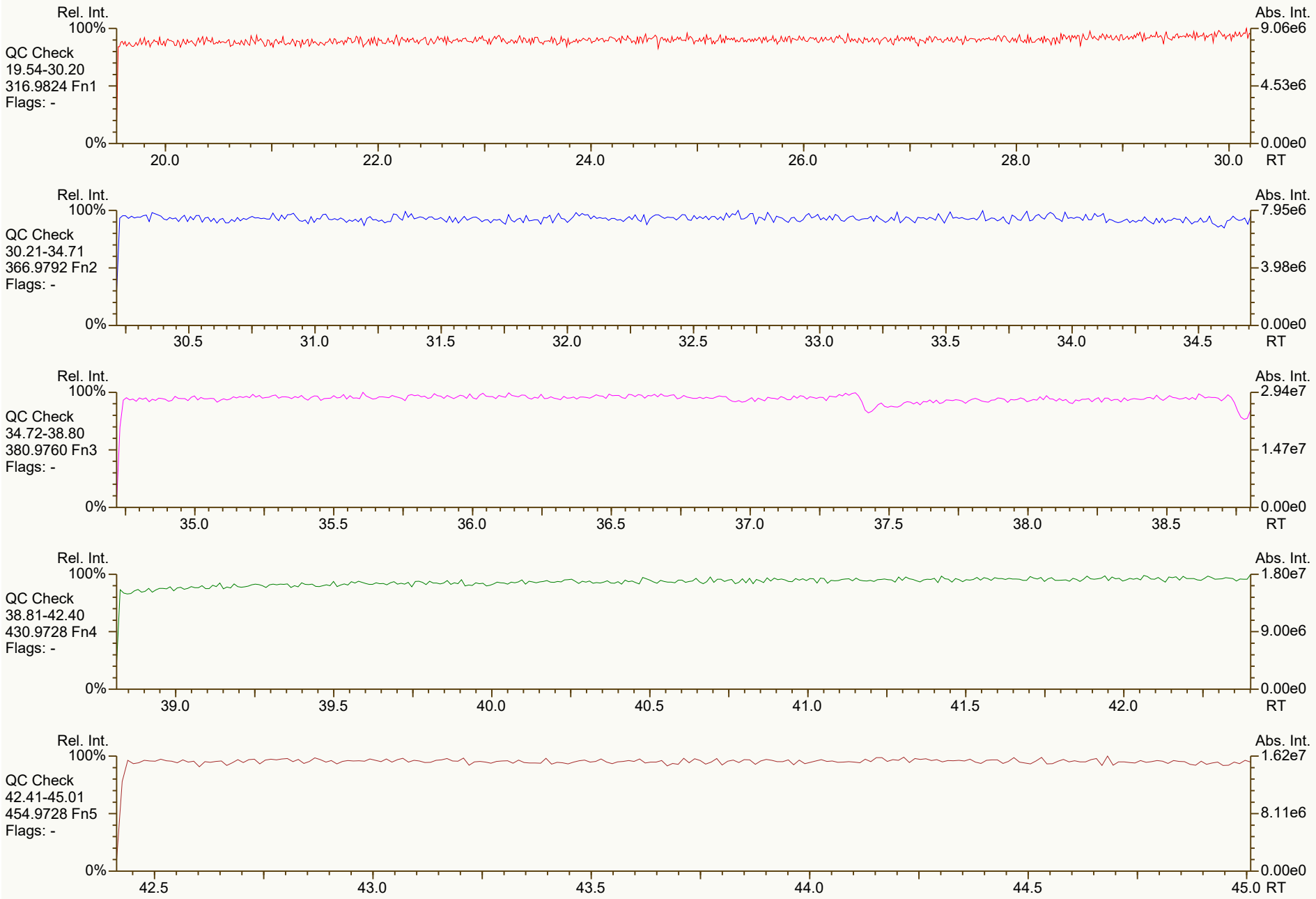
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9836						1.06		4399.488	0.39
1234678-HpCDD	**NotFnd**		**1.0002**						**1.06**		**4399.488**	**0.39**
OCDD	**NotFnd**		**1.0003**						**1.13**		**3230.665**	**0.598**
OCDD-a	NotFnd		1.0002						0.07		3130.658	9.06
1368-TCDF	NotFnd		0.8191						1.08		3471.373	0.224
1468-TCDF	NotFnd		0.8408						1.08		3471.373	0.224
2468-TCDF	NotFnd		0.8645						1.08		3471.373	0.224
1346/1246-TCDF	NotFnd		0.8772						1.08		3471.373	0.224
1347/1378/1247-TCDF	NotFnd		0.8833						1.08		3471.373	0.224
1348-TCDF	NotFnd		0.8932						1.08		3471.373	0.224
1248/1367/1379-TCDF	NotFnd		0.8980						1.08		3471.373	0.224
1268-TCDF	NotFnd		0.9119						1.08		3471.373	0.224
1467-TCDF	NotFnd		0.9170						1.08		3471.373	0.224
1478-TCDF	NotFnd		0.9234						1.08		3471.373	0.224
1369/1237-TCDF	NotFnd		0.9369						1.08		3471.373	0.224
2467-TCDF	NotFnd		0.9415						1.08		3471.373	0.224
2368-TCDF	NotFnd		0.9475						1.08		3471.373	0.224
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9507						1.08		3471.373	0.224
1278-TCDF	NotFnd		0.9676						1.08		3471.373	0.224
1349-TCDF	NotFnd		0.9722						1.08		3471.373	0.224
1267-TCDF	NotFnd		0.9777						1.08		3471.373	0.224
2346/1249-TCDF	NotFnd		0.9843						1.08		3471.373	0.224
2347/1279-TCDF	NotFnd		0.9926						1.08		3471.373	0.224
2348-TCDF	NotFnd		0.9968						1.08		3471.373	0.224
2378-TCDF	**NotFnd**		**1.0008**						**1.08**		**3471.373**	**0.224**
2367/3467-TCDF	NotFnd		1.0142						1.08		3471.373	0.224
1269-TCDF	NotFnd		1.0235						1.08		3471.373	0.224
1239-TCDF	NotFnd		1.0329						1.08		3471.373	0.224
1289-TCDF	NotFnd		1.0742						1.08		3471.373	0.224
13468/12468-PeCDF	NotFnd		0.9122						1.02		2974.037	0.17
13678/13467/12467-PeCDF	NotFnd		0.9606						1.02		3188.391	0.183
12368/13478/12478-PeCDF	NotFnd		0.9655						1.02		3188.391	0.183
14678-PeCDF	NotFnd		0.9685						1.02		3188.391	0.183
13479-PeCDF	NotFnd		0.9716						1.02		3188.391	0.183
13469/12479-PeCDF	NotFnd		0.9794						1.02		3188.391	0.183
12346-PeCDF	NotFnd		0.9836						1.02		3188.391	0.183

Lab ID: MB1_18911_DF_SDS | **Acq'd:** 19 Feb 2022 19:37 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5962_18911 | **UTP:** 21-Feb-2022 10:21:15 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 399-492-BMX

Datafile: 220219C04 | **Report:** 21 Feb 2022 10:33 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9866						1.02		3188.391	0.183
12347-PeCDF	NotFnd		0.9891						1.02		3188.391	0.183
12348-PeCDF	NotFnd		0.9938						1.02		3188.391	0.183
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3188.391**	**0.182**
12678/12367-PeCDF	NotFnd		1.0091						1.02		3188.391	0.183
12379-PeCDF	NotFnd		1.0144						1.02		3188.391	0.183
12679-PeCDF	NotFnd		0.9927						1.02		3188.391	0.183
23467/12369-PeCDF	NotFnd		0.9965						1.02		3188.391	0.183
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3188.391**	**0.183**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3188.391	0.183
12349-PeCDF	NotFnd		1.0101						1.02		3188.391	0.183
12389-PeCDF	NotFnd		1.0330						1.02		3188.391	0.183
123468-HxCDF	NotFnd		0.9622						1.19		3096.37	0.182
124678/134678-HxCDF	NotFnd		0.9678						1.19		3096.37	0.182
134679-HxCDF	NotFnd		0.9741						1.19		3096.37	0.182
124679-HxCDF	NotFnd		0.9795						1.19		3096.37	0.182
124689-HxCDF	NotFnd		0.9856						1.19		3096.37	0.182
123467-HxCDF	NotFnd		0.9972						1.19		3096.37	0.182
123478-HxCDF	**NotFnd**		**1.0004**						**1.27**		**3096.37**	**0.184**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**3096.37**	**0.173**
123479-HxCDF	NotFnd		1.0048						1.19		3096.37	0.182
123469-HxCDF	NotFnd		1.0089						1.19		3096.37	0.182
123679-HxCDF	NotFnd		0.9942						1.19		3096.37	0.182
234678-HxCDF	**NotFnd**		**1.0005**						**1.19**		**3096.37**	**0.178**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3096.37	0.182
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**3096.37**	**0.198**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		3096.37	0.182
1234678-HpCDF	**NotFnd**		**1.0003**						**1.37**		**3605.552**	**0.211**
1234679-HpCDF	NotFnd		1.0068						1.34		3605.552	0.254
1234689-HpCDF	NotFnd		1.0104						1.34		3605.552	0.254
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**3605.552**	**0.31**
OCDF	**NotFnd**		**1.0002**						**1.07**		**2961.523**	**0.451**
OCDF-a	NotFnd		1.0001						0.07		3481.601	8.57

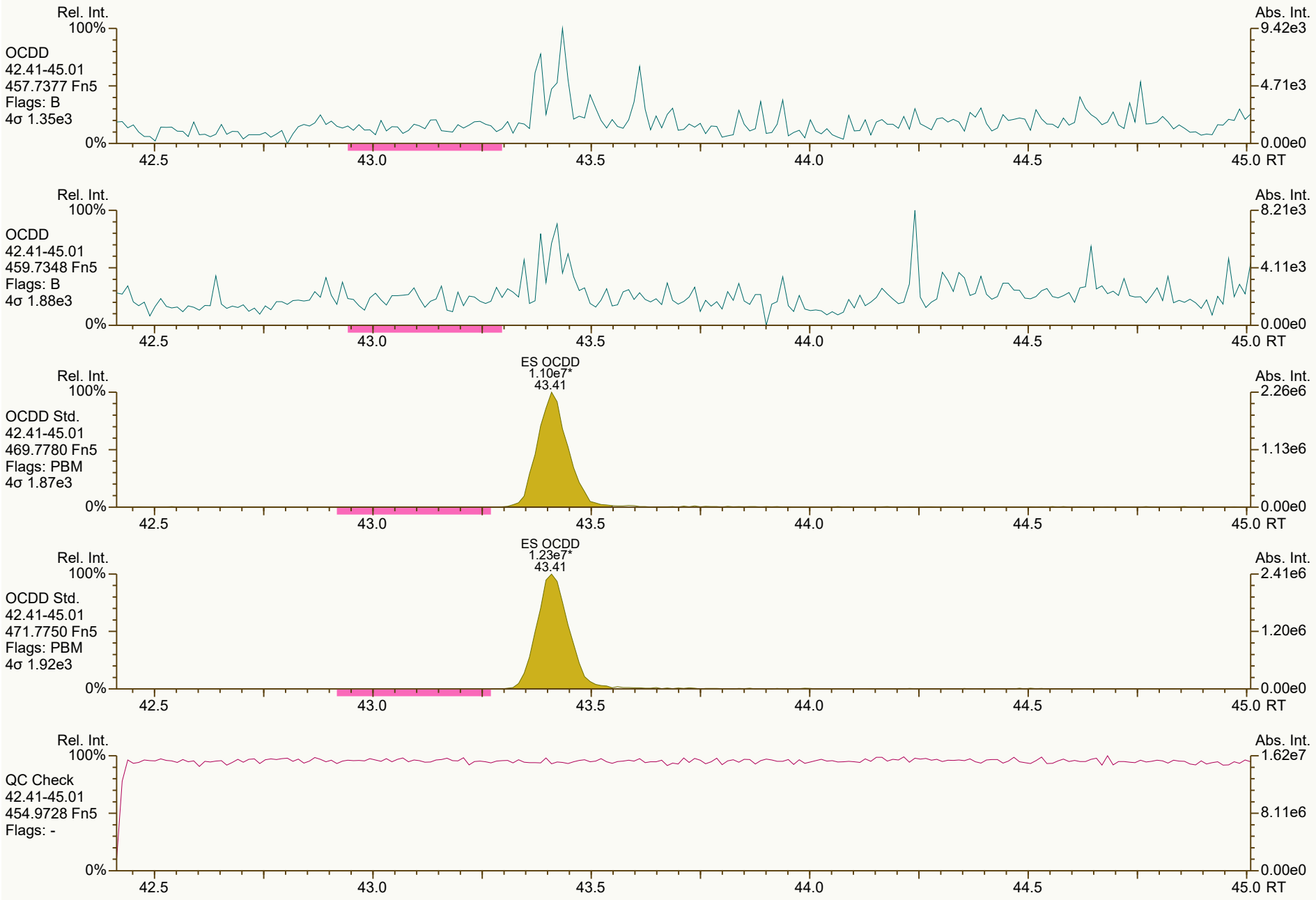

Rel. Int.
100%
0%
Abs. Int.
9.06e6
4.53e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
7.95e6
3.98e6
0.00e0
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
0%
Abs. Int.
2.94e7
1.47e7
0.00e0
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
0%
Abs. Int.
1.80e7
9.00e6
0.00e0
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
42.5
43.0
43.5
44.0
44.5
45.0
RT


Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: B
4σ 3.16e3
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
7.01e3
3.50e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.46e3
0%
CS 37Cl-2378D
1.08e7
28.25
Abs. Int.
2.48e6
1.24e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 6.73e3
0%
JS 1234D
1.05e7
27.56
ES 2378D
9.82e6
28.23
Abs. Int.
2.47e6
1.23e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 4.28e3
0%
JS 1234D
1.30e7
27.56
ES 2378D
1.22e7
28.23
Abs. Int.
2.91e6
1.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.21-34.71
355.8546 Fn2
Flags: B
4σ 1.61e3
0%
Abs. Int.
6.65e3
3.33e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PB
4σ 1.18e3
0%
Abs. Int.
7.24e3
3.62e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PB
4σ 1.81e3
0%
CS 12347D
1.30e7
33.12
ES 12378D
1.26e7
33.63
Abs. Int.
3.80e6
1.90e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 2.42e3
0%
CS 12347D
8.22e6
33.12
ES 12378D
7.89e6
33.63
Abs. Int.
2.29e6
1.15e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.95e6
3.98e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PB
4σ 1.52e3
0%
Abs. Int.
6.80e3
3.40e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PB
4σ 1.60e3
7.73e3
3.86e3
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PB
4σ 3.67e3
ES 123678D
1.06e7
37.68
ES 123478D
1.04e7
37.56
ES 123789D
1.11e7
37.99
JS 123467D
5.95e6
37.88
3.09e6
1.55e6
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PB
4σ 2.29e3
ES 123678D
8.25e6
37.68
ES 123478D
8.10e6
37.56
ES 123789D
9.03e6
37.99
JS 123467D
4.51e6
37.88
2.52e6
1.26e6
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
2.94e7
1.47e7


Rel. Int.
100%
HpCDD
38.81-42.40
423.7767 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
6.10e3
3.05e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
38.81-42.40
425.7737 Fn4
Flags: PB
4σ 1.98e3
0%
Abs. Int.
7.42e3
3.71e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
ES 1234678D
9.15e6
40.72
Rel. Int.
100%
HpCDD Std.
38.81-42.40
435.8169 Fn4
Flags: PB
4σ 2.66e3
0%
Abs. Int.
2.73e6
1.37e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
ES 1234678D
8.65e6
40.72
Rel. Int.
100%
HpCDD Std.
38.81-42.40
437.8140 Fn4
Flags: PB
4σ 1.85e3
0%
Abs. Int.
2.57e6
1.29e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.80e7
9.00e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.41-45.01
457.7377 Fn5
Flags: B
4σ 1.35e3
0%
Abs. Int.
9.42e3
4.71e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.41-45.01
459.7348 Fn5
Flags: B
4σ 1.88e3
0%
Abs. Int.
8.21e3
4.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.10e7*
43.41
Rel. Int.
100%
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PBM
4σ 1.87e3
0%
Abs. Int.
2.26e6
1.13e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.23e7*
43.41
Rel. Int.
100%
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PBM
4σ 1.92e3
0%
Abs. Int.
2.41e6
1.20e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: MB1_18911_DF_SDS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25

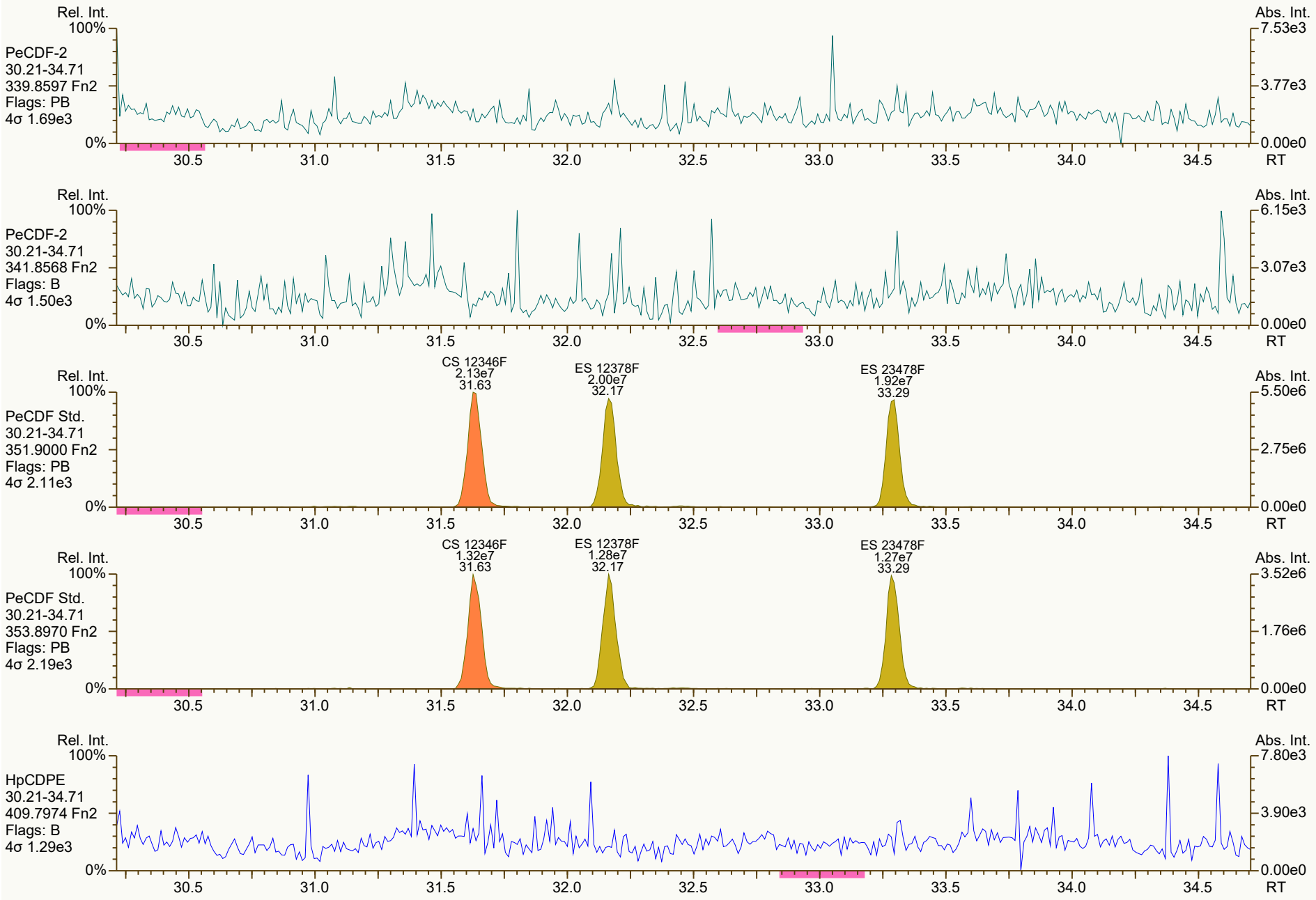
Acq: 19-Feb-2022 19:37:00
User: DTF Datafile: 220219C04

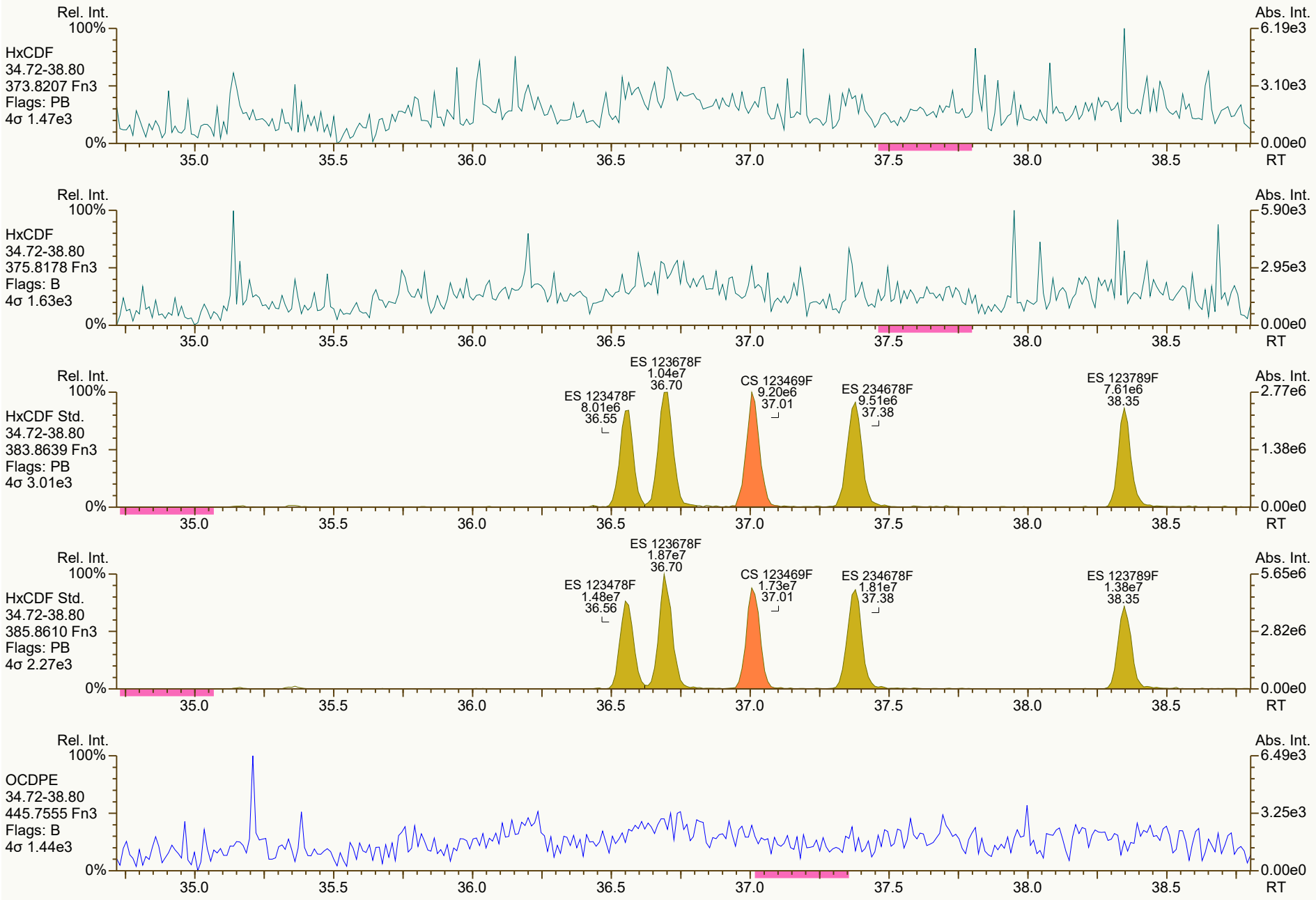


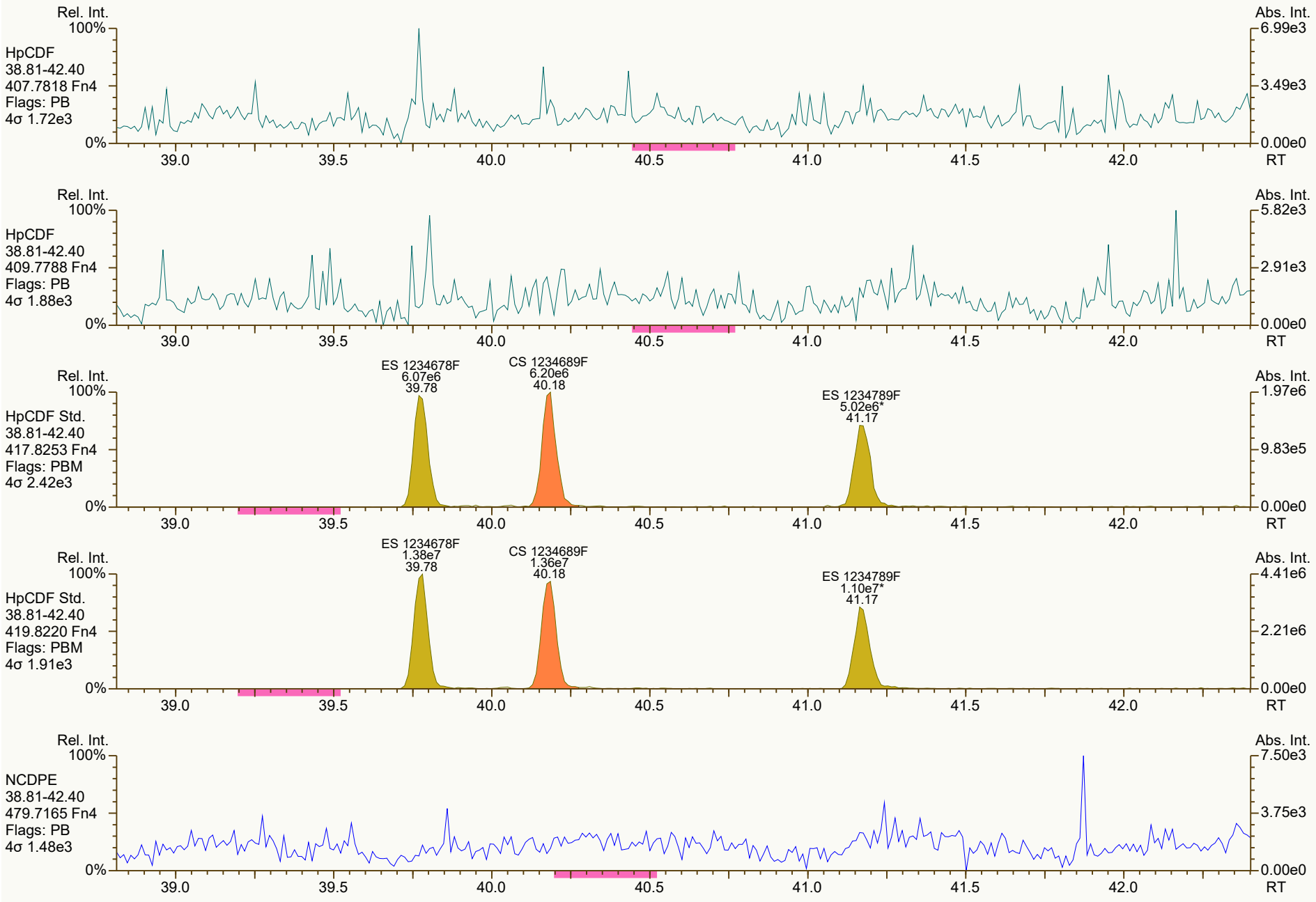
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:21 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6195, 1212, 7290 scc: 399-492

Peak annotation: Areas, Centroids
PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:37 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.40e4
7.00e3
0.00e0
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: B
4σ 1.56e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.36e4
1.18e4
0.00e0
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: B
4σ 1.41e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.06e6
4.53e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PB
4σ 1.69e3
0%
Abs. Int.
7.53e3
3.77e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: B
4σ 1.50e3
0%
Abs. Int.
6.15e3
3.07e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 2.11e3
0%
CS 12346F
2.13e7
31.63
ES 12378F
2.00e7
32.17
ES 23478F
1.92e7
33.29
Abs. Int.
5.50e6
2.75e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 2.19e3
0%
CS 12346F
1.32e7
31.63
ES 12378F
1.28e7
32.17
ES 23478F
1.27e7
33.29
Abs. Int.
3.52e6
1.76e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: B
4σ 1.29e3
0%
Abs. Int.
7.80e3
3.90e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.72-38.80
373.8207 Fn3
Flags: PB
4σ 1.47e3
0%
Abs. Int.
6.19e3
3.10e3
0.00e0
RT
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
HxCDF
34.72-38.80
375.8178 Fn3
Flags: B
4σ 1.63e3
5.90e3
2.95e3
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: PB
4σ 3.01e3
ES 123678F
1.04e7
36.70
ES 123478F
8.01e6
36.55
CS 123469F
9.20e6
37.01
ES 234678F
9.51e6
37.38
ES 123789F
7.61e6
38.35
2.77e6
1.38e6
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: PB
4σ 2.27e3
ES 123678F
1.87e7
36.70
ES 123478F
1.48e7
36.56
CS 123469F
1.73e7
37.01
ES 234678F
1.81e7
37.38
ES 123789F
1.38e7
38.35
5.65e6
2.82e6
OCDPE
34.72-38.80
445.7555 Fn3
Flags: B
4σ 1.44e3
6.49e3
3.25e3


Rel. Int.
100%
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PB
4σ 1.72e3
0%
Abs. Int.
6.99e3
3.49e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PB
4σ 1.88e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PBM
4σ 2.42e3
0%
ES 1234678F
6.07e6
39.78
CS 1234689F
6.20e6
40.18
ES 1234789F
5.02e6*
41.17
Abs. Int.
1.97e6
9.83e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PBM
4σ 1.91e3
0%
ES 1234678F
1.38e7
39.78
CS 1234689F
1.36e7
40.18
ES 1234789F
1.10e7*
41.17
Abs. Int.
4.41e6
2.21e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
38.81-42.40
479.7165 Fn4
Flags: PB
4σ 1.48e3
0%
Abs. Int.
7.50e3
3.75e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT

SGS ID: MB1_18911_DF_SDS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25

Acq: 19-Feb-2022 19:37:00
User: DTF Datafile: 220219C04



Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:21 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7192, 3054, 7558 scc: 399-492

Peak annotation: Areas, Centroids
PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:37 Page 12 of 12

Lab ID: B5962_18911_DF_003 **Acq'd:** 19 Feb 2022 20:23 DTF **Wt/Vol:** 10.19 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-B-1H **UTP:** 21-Feb-2022 10:21:16 DTF **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 309-908-LRL

Datafile: 220219C05 **Report:** 21 Feb 2022 10:33 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.24		1.0008	1.0008	0	2.28E+05	0.72	Y	1.18	1.87	5269.941	0.448
12378-PeCDD	33.63	J	1.0007	1.0005	-0.4	7.00E+04	1.58	Y	1.04	0.75	4215.319	0.384
123478-HxCDD	37.56	J	1.0004	1.0003	-0.2	1.41E+05	1.25	Y	1.09	1.66	4311.497	0.455
123678-HxCDD	37.68		1.0036	1.0037	+0.2	2.36E+05	1.37	Y	1.15	2.46	4311.497	0.409
123789-HxCDD	37.98		1.0118	1.0117	-0.2	2.88E+05	1.28	Y	1.05	3.27	4311.497	0.422
1234678-HpCDD	40.72		1.0002	1.0003	+0.2	6.78E+06	1.04	Y	1.06	79.8	4101.935	0.413
OCDD	43.40		1.0003	1.0003	0	1.34E+08	0.91	Y	1.13	2,100	3642.885	0.73
2378-TCDF	27.37		1.0008	1.0008	0	7.94E+05	0.78	Y	1.08	4.97	3607.981	0.255
12378-PeCDF	32.18	J EMPC	1.0005	1.0006	+0.2	1.00E+05	2.10	N	1.02	0.712	3057.99	0.199
23478-PeCDF	33.30	J EMPC	1.0005	1.0006	+0.2	1.28E+05	1.29	N	1.02	0.933	3057.99	0.2
123478-HxCDF	36.56	J	1.0004	1.0004	0	1.28E+05	1.21	Y	1.27	1.02	3650.458	0.233
123678-HxCDF	36.70	J EMPC	1.0004	1.0006	+0.4	1.13E+05	0.86	N	1.15	0.844	3650.458	0.23
234678-HxCDF	37.37	J	1.0005	1.0003	-0.4	1.13E+05	1.23	Y	1.19	0.803	3650.458	0.231
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3650.458	0.277
1234678-HpCDF	39.77		1.0003	1.0003	0	7.29E+05	1.06	Y	1.37	5.87	3226.081	0.202
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	3226.081	0.284
OCDF	43.58		1.0002	1.0002	0	1.16E+06	0.85	Y	1.07	14.7	3716.5029	0.594

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.22		1.0243	1.0244	+0.2	2.02E+07	0.79	Y	1.05	82.3
ES 12378-PeCDD	33.62		1.2198	1.2203	+1.0	1.77E+07	1.54	Y	0.88	85.5
ES 123478-HxCDD	37.55		0.9916	0.9915	-0.2	1.53E+07	1.21	Y	0.97	79
ES 123678-HxCDD	37.67		0.9947	0.9947	0	1.64E+07	1.24	Y	0.94	87.4
ES 123789-HxCDD	37.97		1.0029	1.0027	-0.5	1.65E+07	1.27	Y	1.09	75.9
ES 1234678-HpCDD	40.70		1.0749	1.0748	-0.2	1.57E+07	1.06	Y	0.91	86.4
ES OCDD	43.39		1.1460	1.1457	-0.8	2.22E+07	0.92	Y	0.62	89.2
ES 2378-TCDF	27.35		1.0531	1.0534	+0.5	2.91E+07	0.78	Y	1.06	75.9
ES 12378-PeCDF	32.16		1.2378	1.2386	+1.5	2.70E+07	1.63	Y	0.91	82
ES 23478-PeCDF	33.28		1.2810	1.2818	+1.6	2.64E+07	1.58	Y	0.88	82.8
ES 123478-HxCDF	36.54		0.9650	0.9649	-0.2	1.94E+07	0.52	Y	1.20	81.4
ES 123678-HxCDF	36.68		0.9688	0.9687	-0.2	2.27E+07	0.52	Y	1.35	84.4
ES 234678-HxCDF	37.36		0.9866	0.9866	0	2.32E+07	0.55	Y	1.24	93.8
ES 123789-HxCDF	38.34		1.0125	1.0124	-0.2	1.88E+07	0.52	Y	1.16	81.6
ES 1234678-HpCDF	39.76		1.0501	1.0499	-0.5	1.78E+07	0.46	Y	0.97	92.2
ES 1234789-HpCDF	41.16		1.0870	1.0868	-0.5	1.46E+07	0.46	Y	0.85	86.3
ES OCDF	43.57		1.1505	1.1505	0	2.88E+07	0.91	Y	0.81	89.6

Lab ID: B5962_18911_DF_003 **Acq'd:** 19 Feb 2022 20:23 DTF **Wt/Vol:** 10.19 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-B-1H **UTP:** 21-Feb-2022 10:21:16 DTF **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 309-908-LRL

Datafile: 220219C05 **Report:** 21 Feb 2022 10:33 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.55		-	-	-	2.35E+07	0.78	Y	-	-
JS 1234-TCDF	25.96		-	-	-	3.62E+07	0.79	Y	-	-
JS 123467-HxCDD	37.87		-	-	-	9.96E+06	1.27	Y	-	-
CS 37Cl-2378-TCDD	28.24		1.0251	1.0252	+0.2	9.31E+06	n/a	-	1.20	82.4
CS 12347-PeCDD	33.11		1.2016	1.2020	+0.8	1.65E+07	1.59	Y	0.75	93.4
CS 12346-PeCDF	31.62		1.2172	1.2180	+1.5	2.64E+07	1.59	Y	0.85	85.8
CS 123469-HxCDF	37.00		0.9771	0.9770	-0.2	2.08E+07	0.53	Y	1.12	93.4
CS 1234689-HpCDF	40.17		1.0608	1.0607	-0.2	1.73E+07	0.45	Y	0.89	97.7
~~SS 37Cl-2378-TCDD~~	~~28.24~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~9.31E+06~~	~~n/a~~		~~1.15~~	~~100~~
~~SS 12347-PeCDD~~	~~33.11~~		~~1.2016~~	~~1.2020~~	~~+0.8~~	~~1.65E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~109~~
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2172~~	~~1.2180~~	~~+1.5~~	~~2.64E+07~~	~~1.59~~	~~Y~~	~~0.94~~	~~104~~
~~SS 123469-HxCDF~~	~~37.00~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~2.08E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~110~~
~~SS 1234689-HpCDF~~	~~40.17~~		~~1.0608~~	~~1.0607~~	~~-0.2~~	~~1.73E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~106~~

Totals	Conc	EMPC
Total TCDD	10.1	10.7
Total PeCDD	11.4	13.9
Total HxCDD	69.8	71.2
Total HpCDD	225	225
Total Tetra-Octa Dioxins	2420	2430
Total TCDF	13.4	19.7
Total PeCDF	8.17	11.8
Total HxCDF	6.47	9.5
Total HpCDF	8.23	8.23
Total Tetra-Octa Furans	51	63.9
Total Tetra-Octa Dioxins & Furans	2470	2490

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.689	0.72
Response	2.34E+05	2.28E+05

Lab ID: B5962_18911_DF_003 **Acq'd: 19 Feb 2022 20:23 DTF** **Wt/Vol: 10.19 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-JC-NE-B-1H **UTP: 21-Feb-2022 10:21:16 DTF** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 309-908-LRL**

Datafile: 220219C05 **Report: 21 Feb 2022 10:33 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.53	EMPC	0.8701	0.8693	-1.2	6.70E+04	1.37	N	1.18	0.548	5269.941	0.448
1379-TCDD	NotFnd		0.8829						1.18		5269.941	0.448
1369-TCDD	NotFnd		0.8982						1.18		5269.941	0.448
1469-TCDD	26.13		0.9261	0.9259	-0.3	8.87E+05	0.81	Y	1.18	7.26	5269.941	0.448
1247/1246/1248/1249-TCDD	NotFnd		0.9348						1.18		5269.941	0.448
1378-TCDD	NotFnd		0.9417						1.18		5269.941	0.448
1268-TCDD	NotFnd		0.9487						1.18		5269.941	0.448
1478-TCDD	NotFnd		0.9576						1.18		5269.941	0.448
1279-TCDD	NotFnd		0.9636						1.18		5269.941	0.448
1234/1269-TCDD	27.54		0.9761	0.9758	-0.5	1.22E+05	0.80	Y	1.18	1	5269.941	0.448
1236-TCDD	NotFnd		0.9812						1.18		5269.941	0.448
1237/1238-TCDD	NotFnd		0.9905						1.18		5269.941	0.448
1239-TCDD	NotFnd		0.9951						1.18		5269.941	0.448
2378-TCDD	**28.24**		**1.0008**	1.0008	**0**	2.28E+05	0.72	Y	**1.18**	**1.87**	**5269.941**	**0.448**
1278-TCDD	NotFnd		1.0124						1.18		5269.941	0.448
1267-TCDD	NotFnd		1.0172						1.18		5269.941	0.448
1289-TCDD	NotFnd		1.0354						1.18		5269.941	0.448
12479/12468-PeCDD	31.11		0.9255	0.9254	-0.2	2.36E+05	1.76	Y	1.04	2.52	4215.319	0.384
12469-PeCDD	31.65		0.9416	0.9415	-0.2	4.94E+05	1.74	Y	1.04	5.3	4215.319	0.384
12368-PeCDD	32.21	J	0.9582	0.9582	0	5.55E+04	1.46	Y	1.04	0.595	4215.319	0.384
12478-PeCDD	32.39	J	0.9637	0.9635	-0.4	7.58E+04	1.40	Y	1.04	0.812	4215.319	0.384
12379-PeCDD	32.50	J	0.9668	0.9667	-0.2	9.19E+04	1.34	Y	1.04	0.985	4215.319	0.384
12369/12467/12489-PeCDD	32.77	J EMPC	0.9746	0.9747	+0.2	2.28E+05	2.10	N	1.04	2.45	4215.319	0.384
12346/12347-PeCDD	NotFnd		0.9858						1.04		4215.319	0.384
12378-PeCDD	33.63	J	**1.0007**	**1.0005**	**-0.4**	**7.00E+04**	**1.58**	**Y**	**1.04**	**0.75**	**4215.319**	**0.384**
12367-PeCDD	NotFnd		1.0036						1.04		4215.319	0.384
12389-PeCDD	34.07	J	1.0137	1.0135	-0.4	4.50E+04	1.33	Y	1.04	0.483	4215.319	0.384
124679/124689-HxCDD	35.82		0.9540	0.9540	0	3.75E+06	1.28	Y	1.10	41.8	4311.497	0.428
123468-HxCDD	36.48	J EMPC	0.9715	0.9716	+0.2	1.30E+05	1.43	N	1.10	1.45	4311.497	0.428
123679/123689-HxCDD	36.77		0.9793	0.9794	+0.2	1.60E+06	1.26	Y	1.10	17.8	4311.497	0.428
123469-HxCDD	36.90	J	0.9829	0.9827	-0.4	1.39E+05	1.25	Y	1.10	1.55	4311.497	0.428
123478-HxCDD	37.56	J	**1.0004**	**1.0003**	**-0.2**	**1.41E+05**	**1.25**	**Y**	1.09	**1.66**	**4311.497**	**0.455**
123678-HxCDD	37.68		**1.0036**	**1.0037**	**+0.2**	**2.36E+05**	**1.37**	**Y**	1.15	**2.46**	**4311.497**	**0.409**
123467-HxCDD	37.89	J	1.0089	1.0091	+0.5	1.08E+05	1.06	Y	1.10	1.21	4311.497	0.428
123789-HxCDD	37.98		**1.0118**	**1.0117**	**-0.2**	**2.88E+05**	**1.28**	**Y**	1.05	**3.27**	**4311.497**	**0.422**

Lab ID: B5962_18911_DF_003 **Acq'd:** 19 Feb 2022 20:23 DTF **Wt/Vol:** 10.19 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-JC-NE-B-1H **UTP:** 21-Feb-2022 10:21:16 DTF **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 309-908-LRL

Datafile: 220219C05 **Report:** 21 Feb 2022 10:33 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

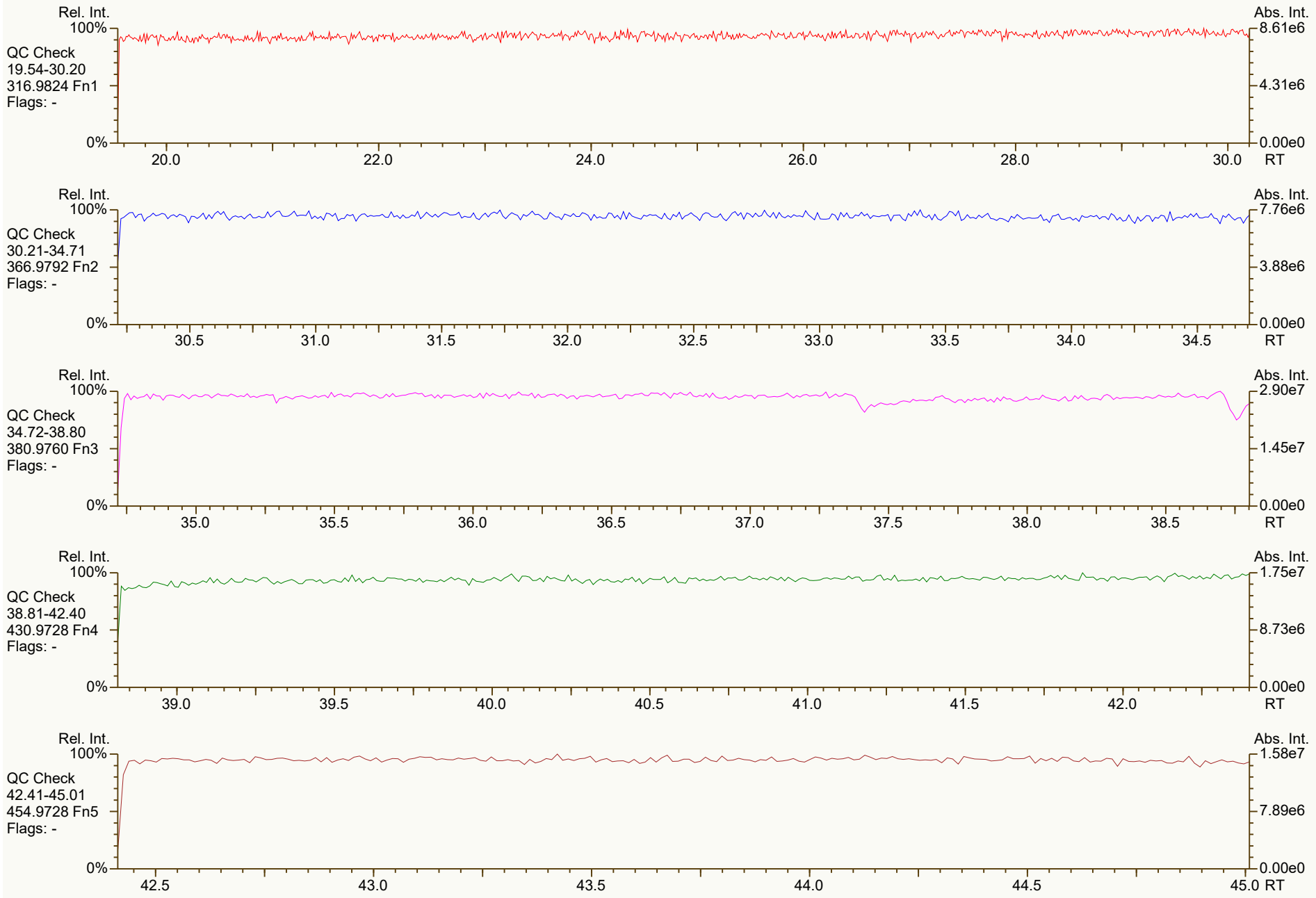
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.03		0.9836	0.9836	0	1.23E+07	1.04	Y	1.06	145	4101.935	0.413
1234678-HpCDD	**40.72**		**1.0002**	**1.0003**	**+0.2**	**6.78E+06**	**1.04**	**Y**	**1.06**	**79.8**	**4101.935**	**0.413**
OCDD	**43.40**		**1.0003**	**1.0003**	**0**	**1.34E+08**	**0.91**	**Y**	**1.13**	**2,100**	**3642.885**	**0.73**
OCDD-a	43.40		1.0002	1.0002	0	8.68E+06	2.35	Y	0.07	2,130	3876.23	12.1
1368-TCDF	22.36	J EMPC	0.8191	0.8177	-1.9	7.68E+04	1.03	N	1.08	0.48	3607.981	0.255
1468-TCDF	NotFnd		0.8408						1.08		3607.981	0.255
2468-TCDF	23.61		0.8645	0.8635	-1.4	4.14E+05	0.72	Y	1.08	2.59	3607.981	0.255
1346/1246-TCDF	NotFnd		0.8772						1.08		3607.981	0.255
1347/1378/1247-TCDF	24.15	EMPC	0.8833	0.8830	-0.4	2.40E+05	0.62	N	1.08	1.5	3607.981	0.255
1348-TCDF	NotFnd		0.8932						1.08		3607.981	0.255
1248/1367/1379-TCDF	24.50	EMPC	0.8980	0.8958	-3.2	2.03E+05	1.10	N	1.08	1.27	3607.981	0.255
1268-TCDF	24.93	EMPC	0.9119	0.9118	-0.1	1.67E+05	0.93	N	1.08	1.04	3607.981	0.255
1467-TCDF	NotFnd		0.9170						1.08		3607.981	0.255
1478-TCDF	NotFnd		0.9234						1.08		3607.981	0.255
1369/1237-TCDF	25.63		0.9369	0.9370	+0.2	9.33E+04	0.69	Y	1.08	0.583	3607.981	0.255
2467-TCDF	25.74	EMPC	0.9415	0.9413	-0.3	8.17E+04	1.08	N	1.08	0.511	3607.981	0.255
2368-TCDF	25.94		0.9475	0.9485	+1.6	3.50E+05	0.75	Y	1.08	2.19	3607.981	0.255
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9507						1.08		3607.981	0.255
1278-TCDF	26.46		0.9676	0.9674	-0.3	3.85E+05	0.74	Y	1.08	2.41	3607.981	0.255
1349-TCDF	NotFnd		0.9722						1.08		3607.981	0.255
1267-TCDF	26.73		0.9777	0.9775	-0.3	1.02E+05	0.74	Y	1.08	0.635	3607.981	0.255
2346/1249-TCDF	NotFnd		0.9843						1.08		3607.981	0.255
2347/1279-TCDF	NotFnd		0.9926						1.08		3607.981	0.255
2348-TCDF	NotFnd		0.9968						1.08		3607.981	0.255
2378-TCDF	**27.37**		**1.0008**	**1.0008**	**0**	**7.94E+05**	**0.78**	**Y**	**1.08**	**4.97**	**3607.981**	**0.255**
2367/3467-TCDF	27.74	EMPC	1.0142	1.0142	0	1.48E+05	0.51	N	1.08	0.924	3607.981	0.255
1269-TCDF	NotFnd		1.0235						1.08		3607.981	0.255
1239-TCDF	NotFnd		1.0329						1.08		3607.981	0.255
1289-TCDF	29.37	EMPC	1.0742	1.0740	-0.4	8.86E+04	1.23	N	1.08	0.554	3607.981	0.255
13468/12468-PeCDF	29.35		0.9122	0.9126	+0.7	5.30E+05	1.70	Y	1.02	3.81	3055.531	0.2
13678/13467/12467-PeCDF	30.90	J	0.9606	0.9609	+0.6	1.58E+05	1.52	Y	1.02	1.14	3057.99	0.2
12368/13478/12478-PeCDF	31.07		0.9655	0.9662	+1.3	4.49E+05	1.52	Y	1.02	3.23	3057.99	0.2
14678-PeCDF	NotFnd		0.9685						1.02		3057.99	0.2
13479-PeCDF	NotFnd		0.9716						1.02		3057.99	0.2
13469/12479-PeCDF	NotFnd		0.9794						1.02		3057.99	0.2
12346-PeCDF	NotFnd		0.9836						1.02		3057.99	0.2

Lab ID: B5962_18911_DF_003 **Acq'd: 19 Feb 2022 20:23 DTF** **Wt/Vol: 10.19 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

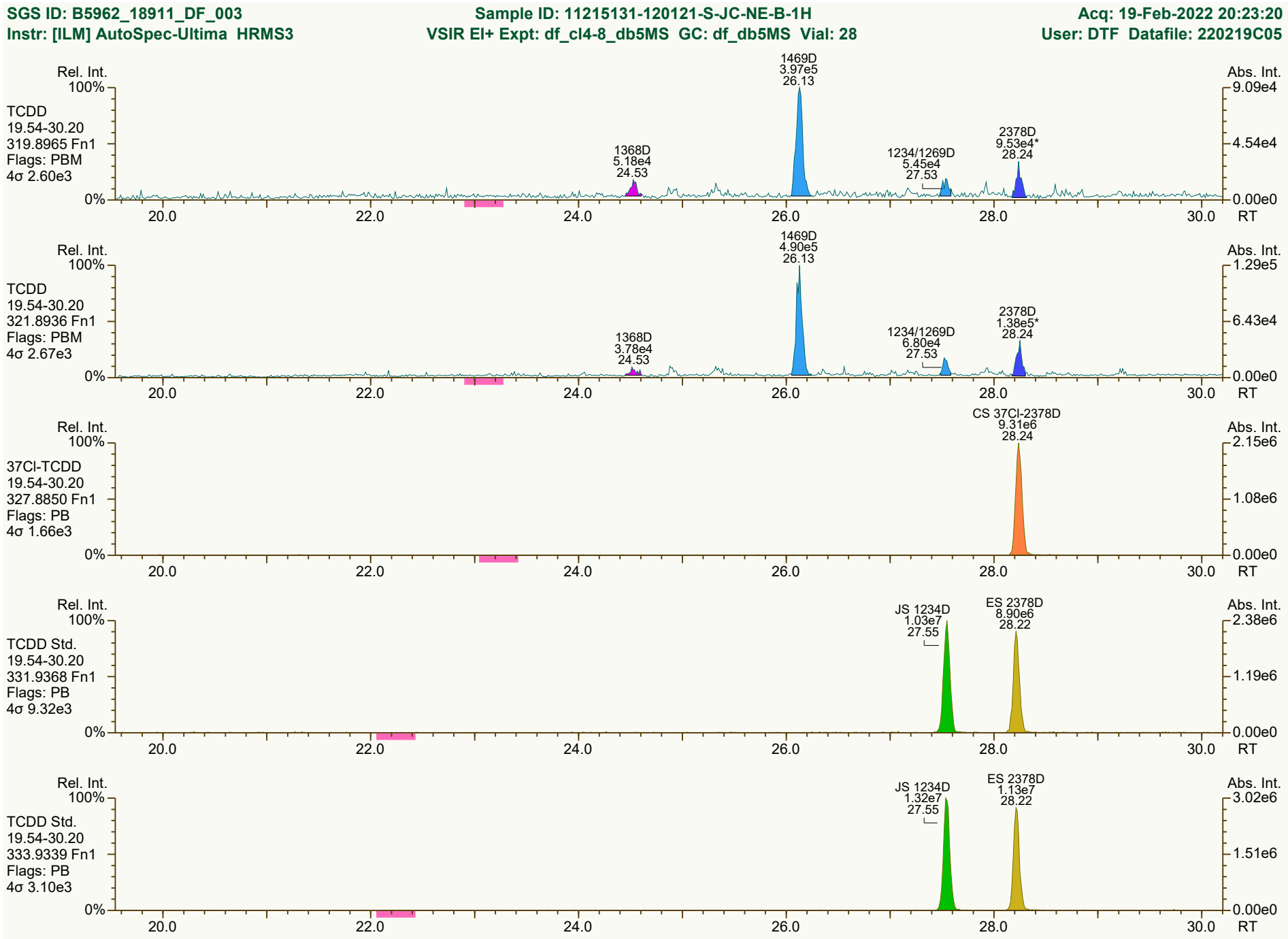
Client ID: 11215131-120121-S-JC-NE-B-1H **UTP: 21-Feb-2022 10:21:16 DTF** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 309-908-LRL**

Datafile: 220219C05 **Report: 21 Feb 2022 10:33 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

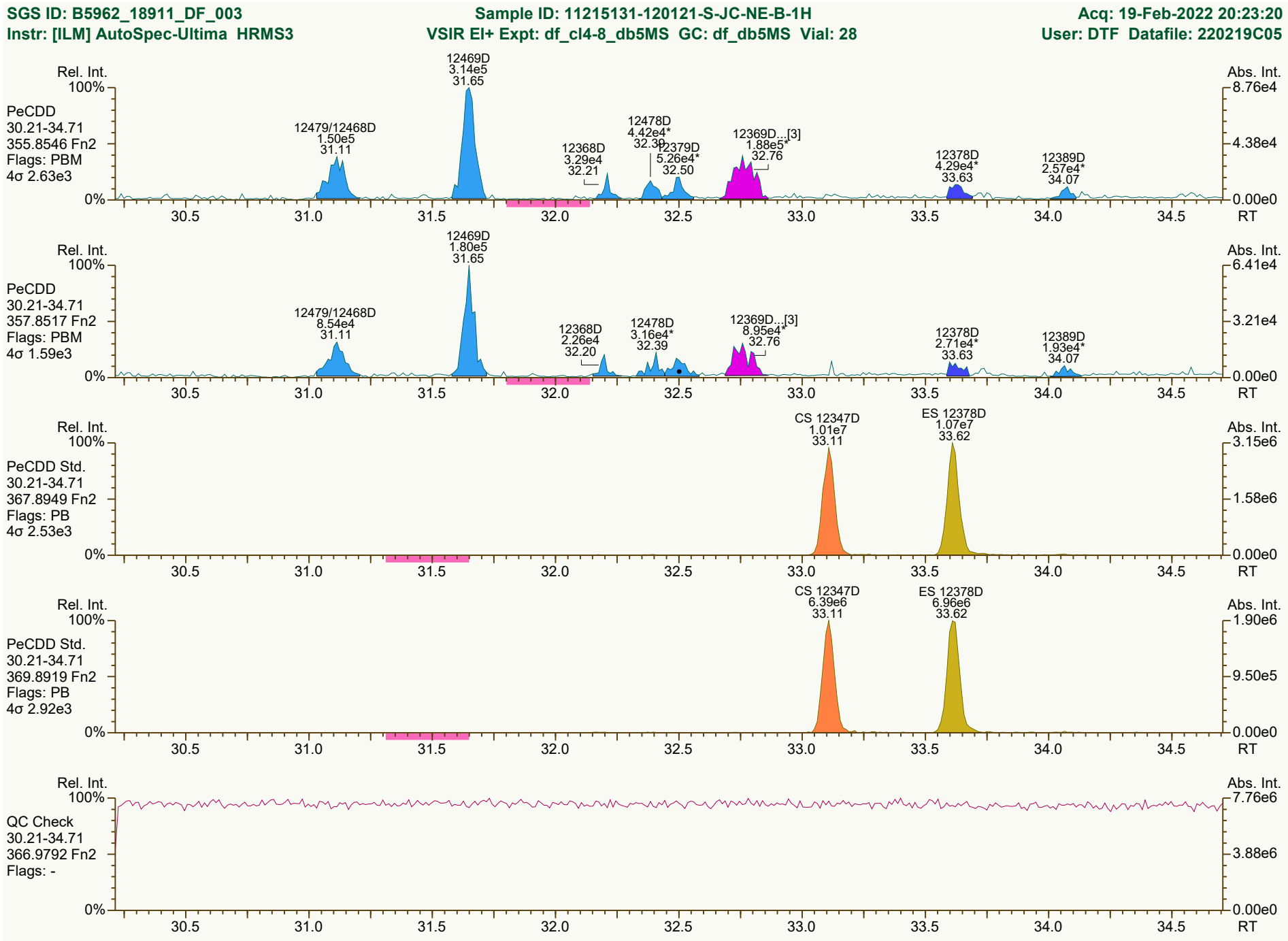
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.73	J EMPC	0.9866	0.9867	+0.2	1.19E+05	1.05	N	1.02	0.854	3057.99	0.2
12347-PeCDF	NotFnd		0.9891						1.02		3057.99	0.2
12348-PeCDF	NotFnd		0.9938						1.02		3057.99	0.2
12378-PeCDF	**32.18**	J EMPC	**1.0005**	**1.0006**	**+0.2**	**1.00E+05**	**2.10**	**N**	**1.02**	**0.712**	**3057.99**	**0.199**
12678/12367-PeCDF	32.44	J EMPC	1.0091	1.0089	-0.4	9.34E+04	1.18	N	1.02	0.671	3057.99	0.2
12379-PeCDF	NotFnd		1.0144						1.02		3057.99	0.2
12679-PeCDF	NotFnd		0.9927						1.02		3057.99	0.2
23467/12369-PeCDF	33.16	J EMPC	0.9965	0.9964	-0.2	6.50E+04	1.23	N	1.02	0.467	3057.99	0.2
23478-PeCDF	**33.30**	J EMPC	**1.0005**	**1.0006**	**+0.2**	**1.28E+05**	**1.29**	**N**	**1.02**	**0.933**	**3057.99**	**0.2**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3057.99	0.2
12349-PeCDF	NotFnd		1.0101						1.02		3057.99	0.2
12389-PeCDF	NotFnd		1.0330						1.02		3057.99	0.2
123468-HxCDF	35.17	J EMPC	0.9622	0.9624	+0.4	1.47E+05	1.49	N	1.19	1.15	3650.458	0.241
124678/134678-HxCDF	35.36		0.9678	0.9678	0	5.34E+05	1.10	Y	1.19	4.17	3650.458	0.241
134679-HxCDF	NotFnd		0.9741						1.19		3650.458	0.241
124679-HxCDF	NotFnd		0.9795						1.19		3650.458	0.241
124689-HxCDF	36.02	J EMPC	0.9856	0.9858	+0.4	1.33E+05	0.92	N	1.19	1.04	3650.458	0.241
123467-HxCDF	36.44	J	0.9972	0.9971	-0.2	6.14E+04	1.15	Y	1.19	0.479	3650.458	0.241
123478-HxCDF	**36.56**	J	**1.0004**	**1.0004**	**0**	**1.28E+05**	**1.21**	**Y**	**1.27**	**1.02**	**3650.458**	**0.233**
123678-HxCDF	**36.70**	J EMPC	**1.0004**	**1.0006**	**+0.4**	**1.13E+05**	**0.86**	**N**	**1.15**	**0.844**	**3650.458**	**0.23**
123479-HxCDF	NotFnd		1.0048						1.19		3650.458	0.241
123469-HxCDF	NotFnd		1.0089						1.19		3650.458	0.241
123679-HxCDF	NotFnd		0.9942						1.19		3650.458	0.241
234678-HxCDF	**37.37**	J	**1.0005**	**1.0003**	**-0.4**	**1.13E+05**	**1.23**	**Y**	**1.19**	**0.803**	**3650.458**	**0.231**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3650.458	0.241
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**3650.458**	**0.277**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		3650.458	0.241
1234678-HpCDF	**39.77**		**1.0003**	**1.0003**	**0**	**7.29E+05**	**1.06**	**Y**	**1.37**	**5.87**	**3226.081**	**0.202**
1234679-HpCDF	NotFnd		1.0068						1.34		3226.081	0.239
1234689-HpCDF	40.18	**J**	1.0104	1.0105	+0.2	2.61E+05	1.03	Y	1.34	2.36	3226.081	0.239
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**3226.081**	**0.284**
OCDF	**43.58**		**1.0002**	**1.0002**	**0**	**1.16E+06**	**0.85**	**Y**	**1.07**	**14.7**	**3716.5029**	**0.594**
OCDF-a	43.57	**EMPC**	1.0001	1.0001	0	5.32E+04	2.87	N	0.07	10.9	3419.991	8.83

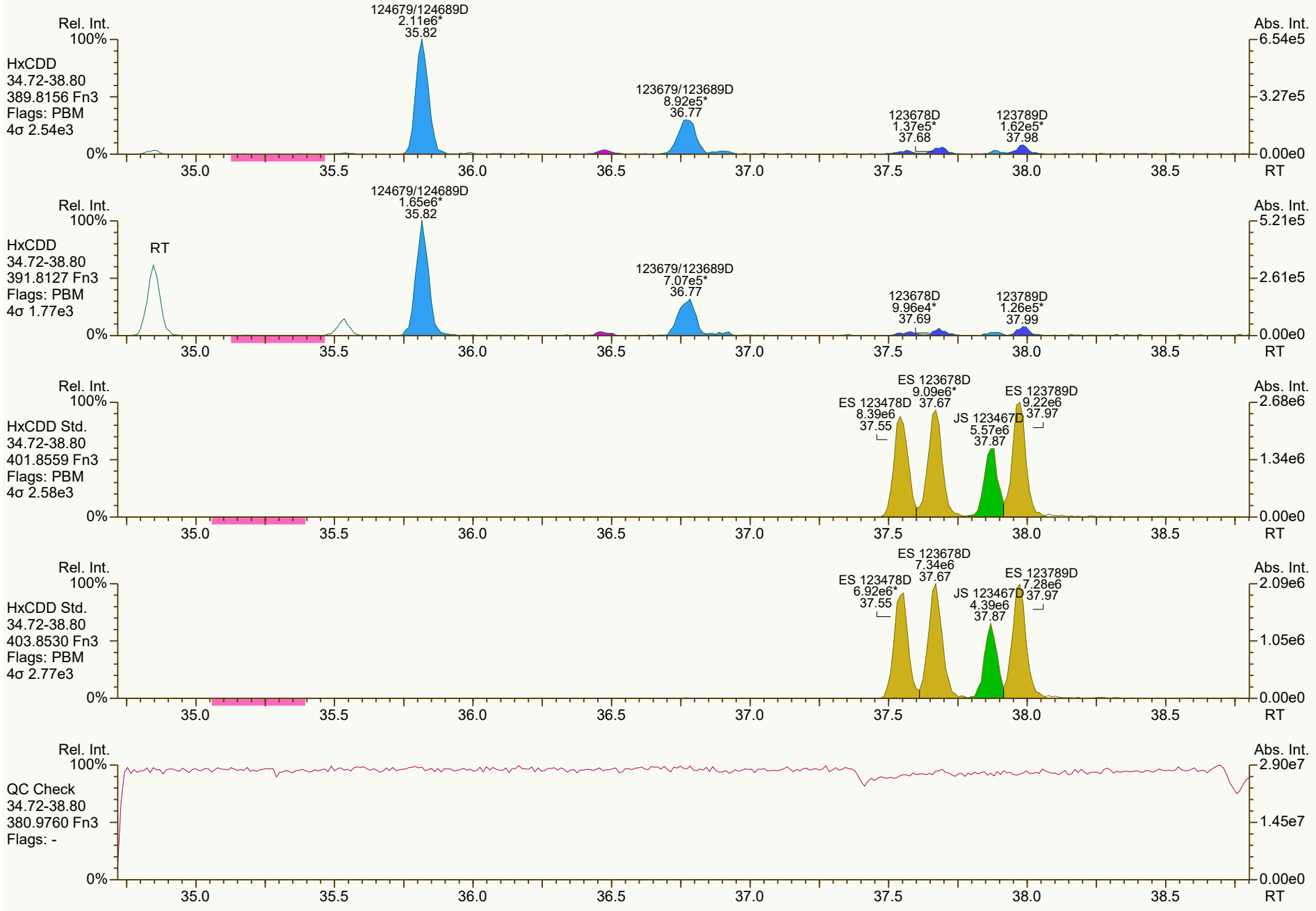

Rel. Int.
100%
0%
Abs. Int.
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
8.61e6
4.31e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
7.76e6
3.88e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
0%
Abs. Int.
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
2.90e7
1.45e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
0%
Abs. Int.
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
1.75e7
8.73e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
0%
Abs. Int.
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
1.58e7
7.89e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT

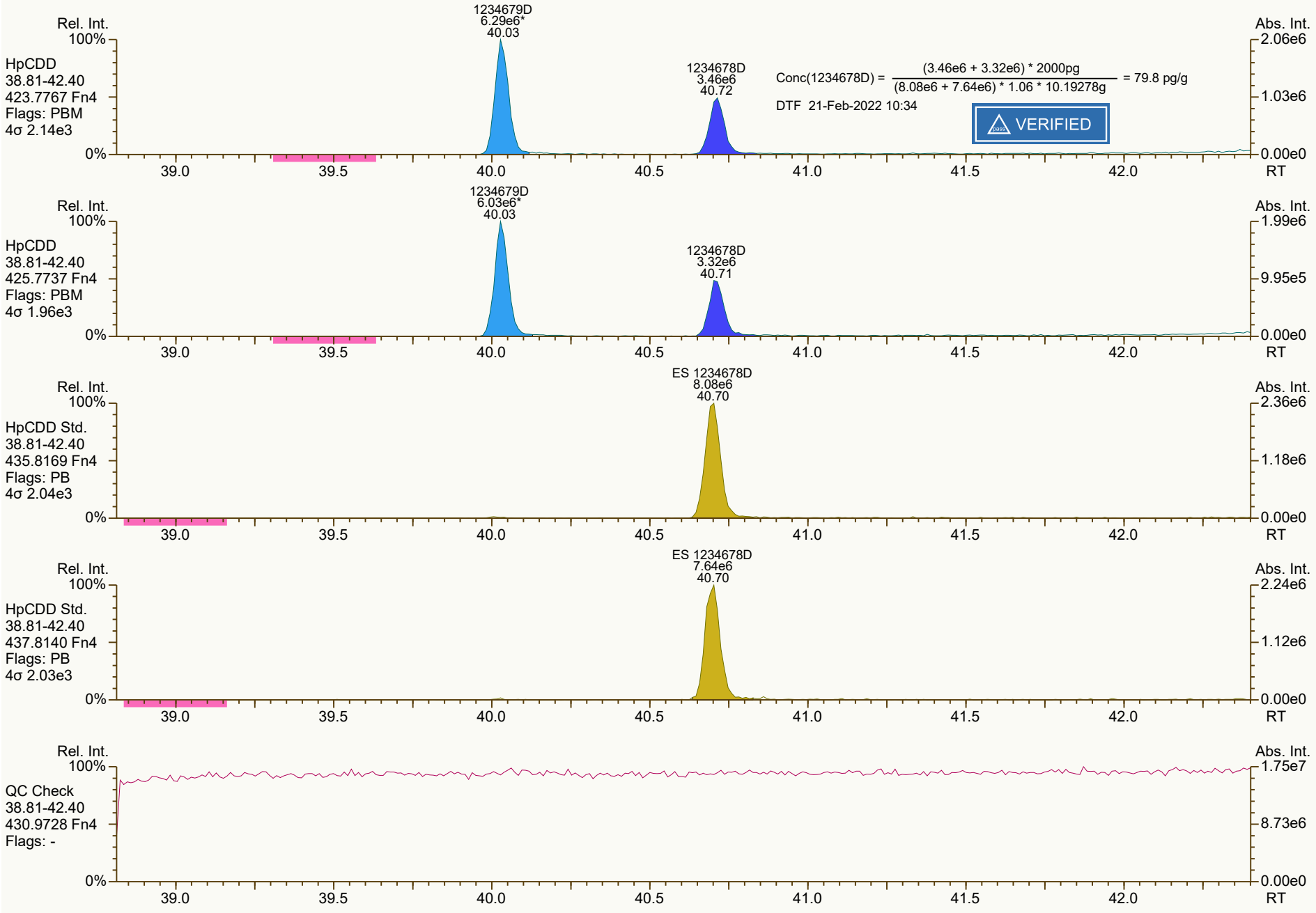
SGS ID: B5962_18911_DF_003 | Sample ID: 11215131-120121-S-JC-NE-B-1H | Acq: 19-Feb-2022 20:23:20
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28 | User: DTF Datafile: 220219C05

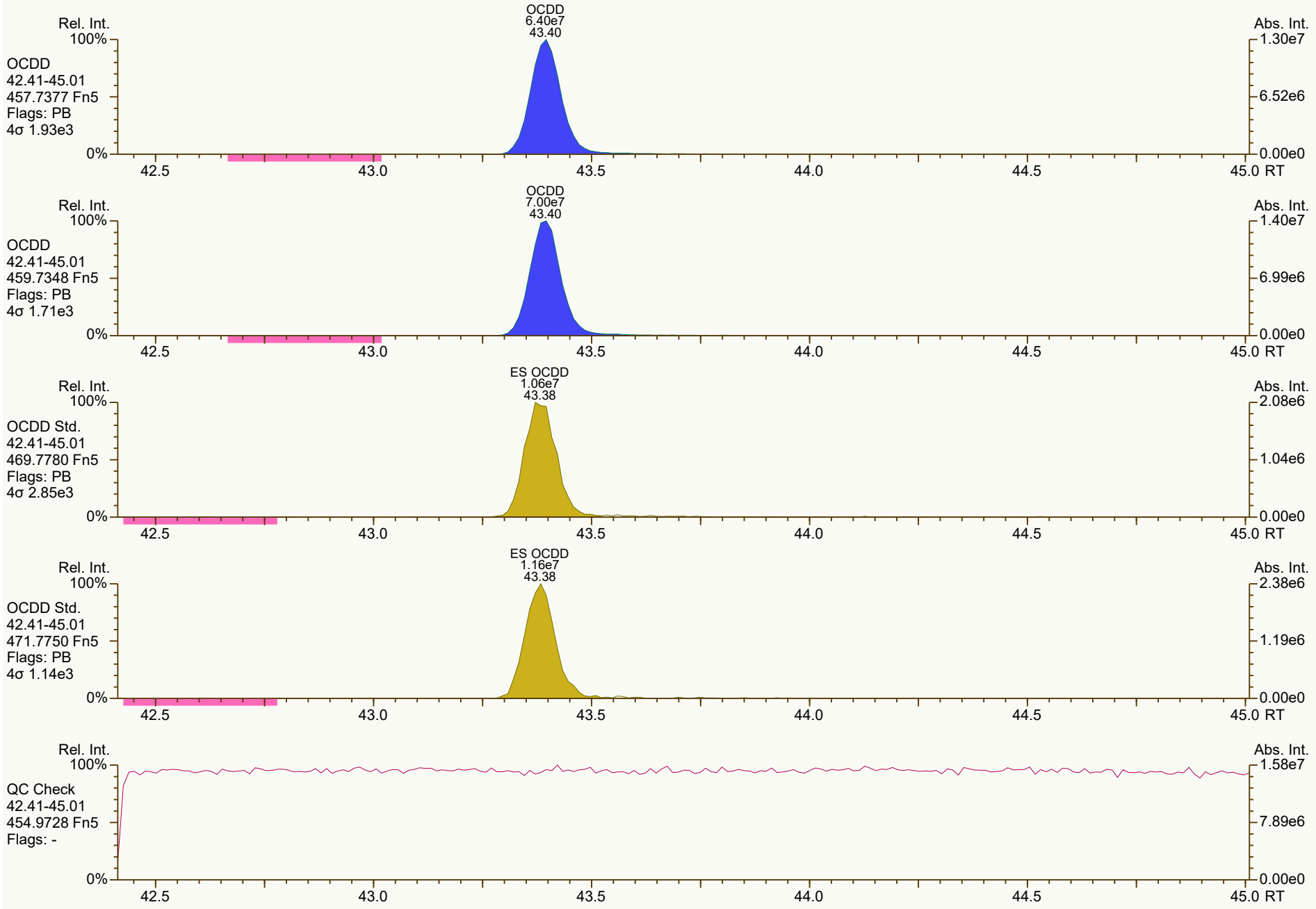


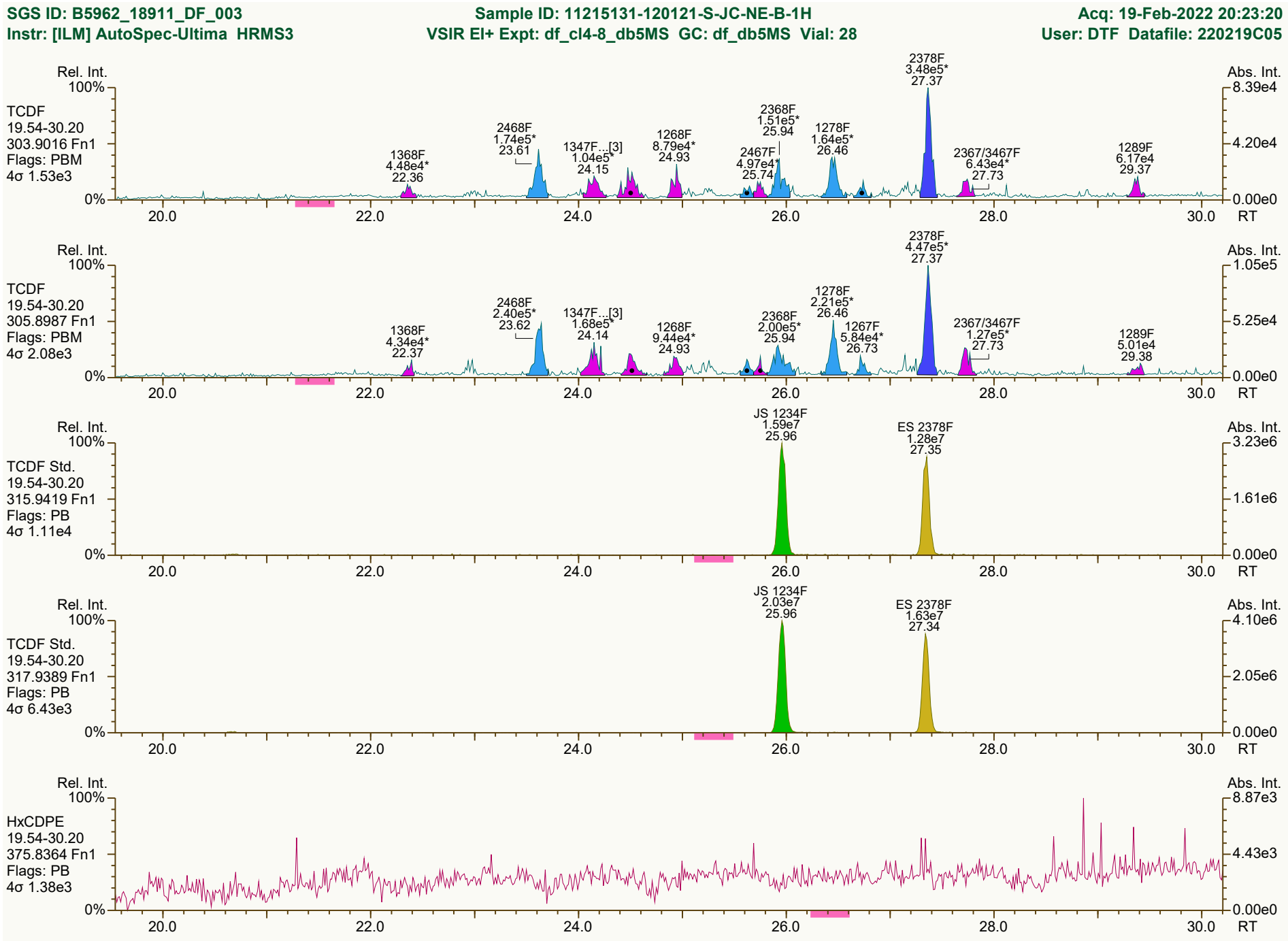
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\B5962_18911_DF_003.utp_res, saved 21-Feb-2022 10:34 (DTF) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8656, 8112, 5582 scc: 309-908 | *Revised: 21-Feb-2022 10:16 (DTF) Printed: 21-Feb-2022 10:37 Page 2 of 12*


SGS ID: B5962_18911_DF_003
Sample ID: 11215131-120121-S-JC-NE-B-1H
Acq: 19-Feb-2022 20:23:20
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: DTF Datafile: 220219C05
Rel. Int.
Abs. Int.
PeCDD
30.21-34.71
355.8546 Fn2
Flags: PBM
4σ 2.63e3
12479/12468D 1.50e5 31.11
12469D 3.14e5 31.65
12368D 3.29e4 32.21
12478D 4.42e4* 32.39
12379D 5.26e4* 32.50
12369D...[3] 1.88e5* 32.76
12378D 4.29e4* 33.63
12389D 2.57e4* 34.07
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PBM
4σ 1.59e3
12479/12468D 8.54e4 31.11
12469D 1.80e5 31.65
12368D 2.26e4 32.20
12478D 3.16e4* 32.39
12369D...[3] 8.95e4* 32.76
12378D 2.71e4* 33.63
12389D 1.93e4* 34.07
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PB
4σ 2.53e3
CS 12347D 1.01e7 33.11
ES 12378D 1.07e7 33.62
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 2.92e3
CS 12347D 6.39e6 33.11
ES 12378D 6.96e6 33.62
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\B5962_18911_DF_003.utp_res, saved 21-Feb-2022 10:34 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8842, 8380 scc: 309-908
Revised: 21-Feb-2022 10:16 (DTF) Printed: 21-Feb-2022 10:37 Page 3 of 12


Rel. Int.
100%
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PBM
4σ 2.54e3
124679/124689D
2.11e6*
35.82
123679/123689D
8.92e5*
36.77
123678D
1.37e5*
37.68
123789D
1.62e5*
37.98
Abs. Int.
6.54e5
3.27e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PBM
4σ 1.77e3
RT
124679/124689D
1.65e6*
35.82
123679/123689D
7.07e5*
36.77
123678D
9.96e4*
37.69
123789D
1.26e5*
37.99
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PBM
4σ 2.58e3
ES 123678D
9.09e6*
37.67
ES 123478D
8.39e6
37.55
ES 123789D
9.22e6
37.97
JS 123467D
5.57e6
37.87
Abs. Int.
2.68e6
1.34e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PBM
4σ 2.77e3
ES 123678D
7.34e6
37.67
ES 123478D
6.92e6*
37.55
ES 123789D
7.28e6
37.97
JS 123467D
4.39e6
37.87
Abs. Int.
2.09e6
1.05e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
Abs. Int.
2.90e7
1.45e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

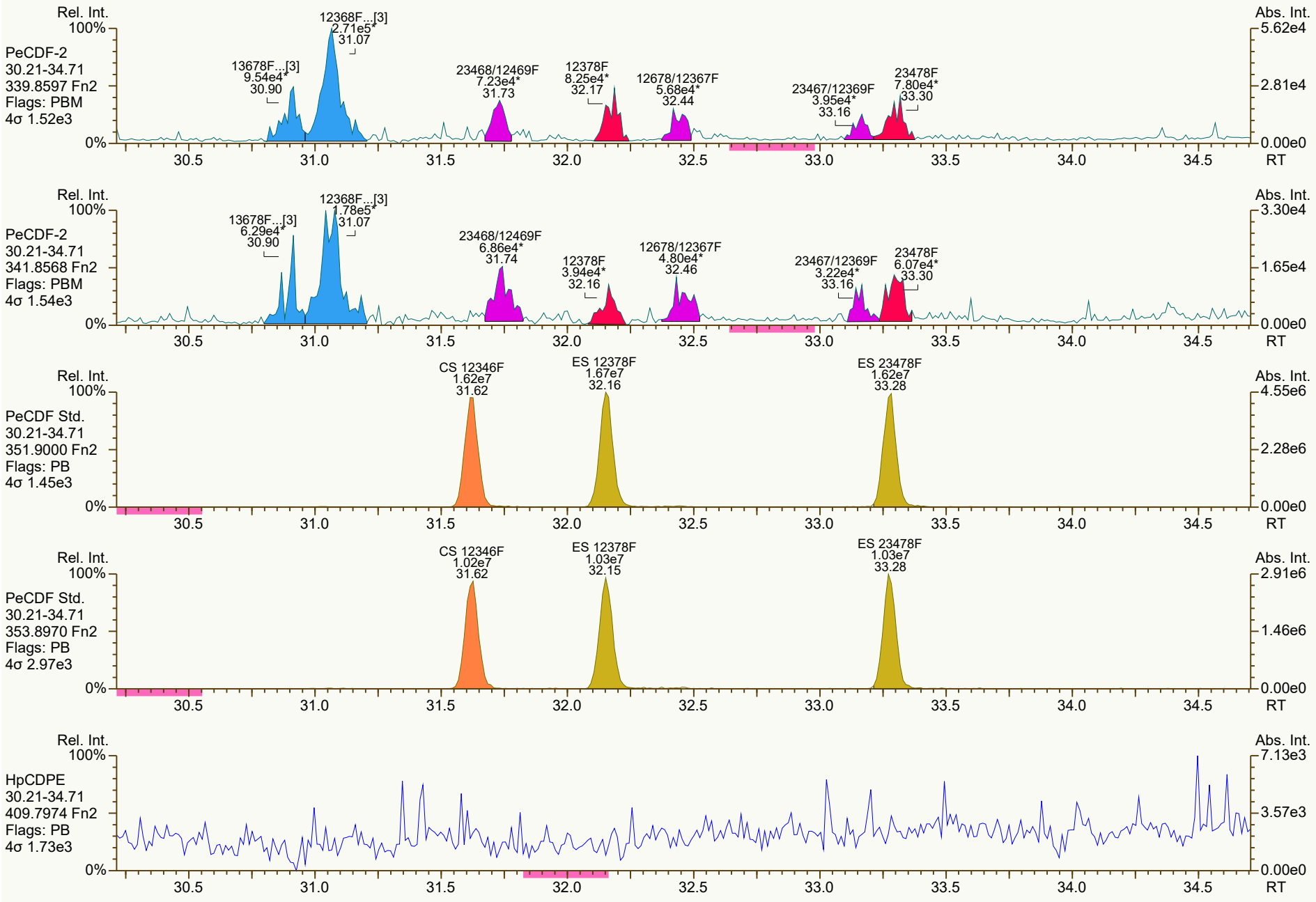

Rel. Int.
100%
HpCDD
38.81-42.40
423.7767 Fn4
Flags: PBM
4σ 2.14e3
1234679D
6.29e6*
40.03
1234678D
3.46e6
40.72
Conc(1234678D) = (3.46e6 + 3.32e6) * 2000pg / (8.08e6 + 7.64e6) * 1.06 * 10.19278g = 79.8 pg/g
DTF 21-Feb-2022 10:34
VERIFIED
Abs. Int.
2.06e6
1.03e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
38.81-42.40
425.7737 Fn4
Flags: PBM
4σ 1.96e3
1234679D
6.03e6*
40.03
1234678D
3.32e6
40.71
Abs. Int.
1.99e6
9.95e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
38.81-42.40
435.8169 Fn4
Flags: PB
4σ 2.04e3
ES 1234678D
8.08e6
40.70
Abs. Int.
2.36e6
1.18e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
38.81-42.40
437.8140 Fn4
Flags: PB
4σ 2.03e3
ES 1234678D
7.64e6
40.70
Abs. Int.
2.24e6
1.12e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.75e7
8.73e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT

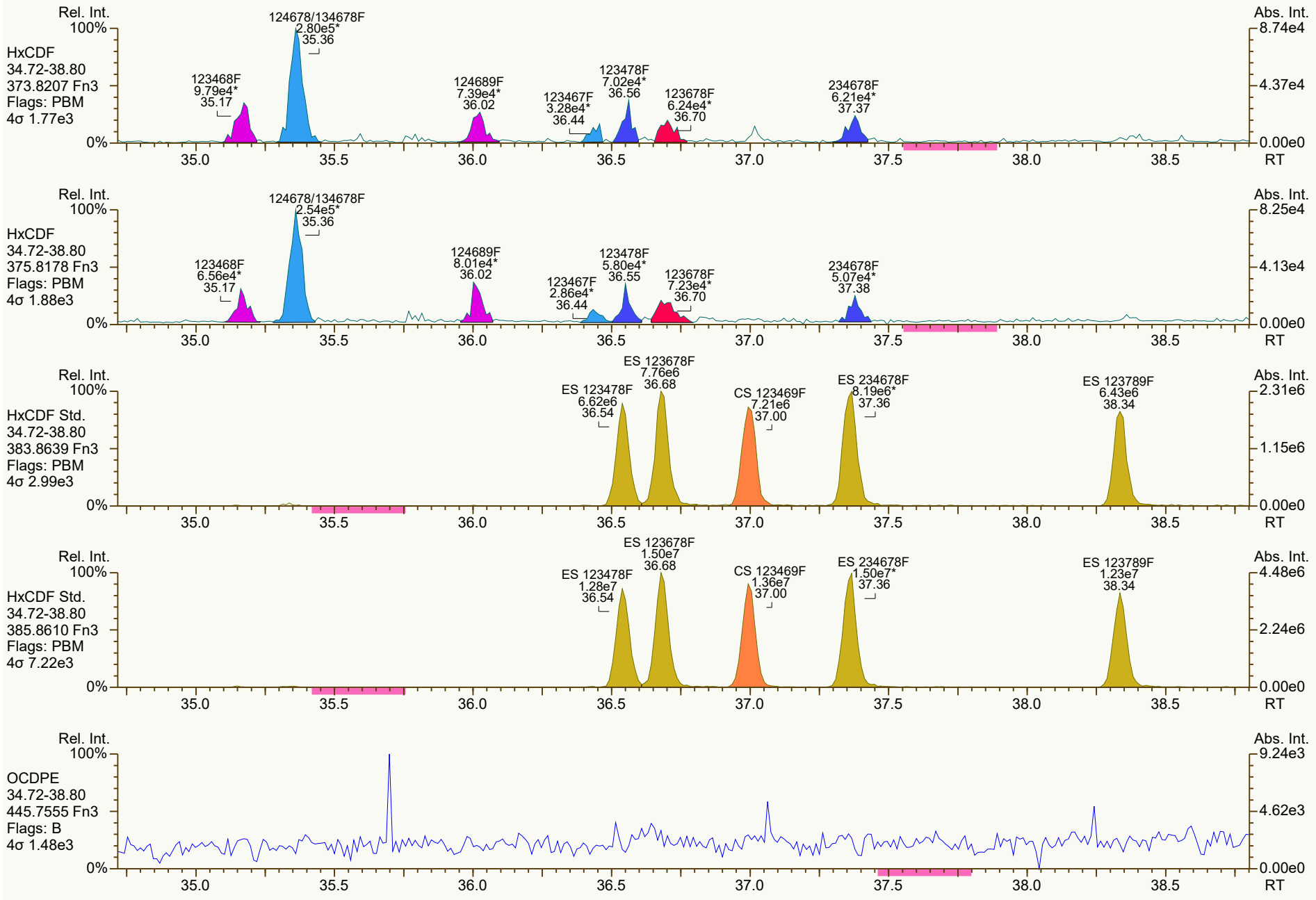

Rel. Int.
100%
OCDD
42.41-45.01
457.7377 Fn5
Flags: PB
4σ 1.93e3
0%
OCDD
6.40e7
43.40
Abs. Int.
1.30e7
6.52e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.41-45.01
459.7348 Fn5
Flags: PB
4σ 1.71e3
0%
OCDD
7.00e7
43.40
Abs. Int.
1.40e7
6.99e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PB
4σ 2.85e3
0%
ES OCDD
1.06e7
43.38
Abs. Int.
2.08e6
1.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PB
4σ 1.14e3
0%
ES OCDD
1.16e7
43.38
Abs. Int.
2.38e6
1.19e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.58e7
7.89e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

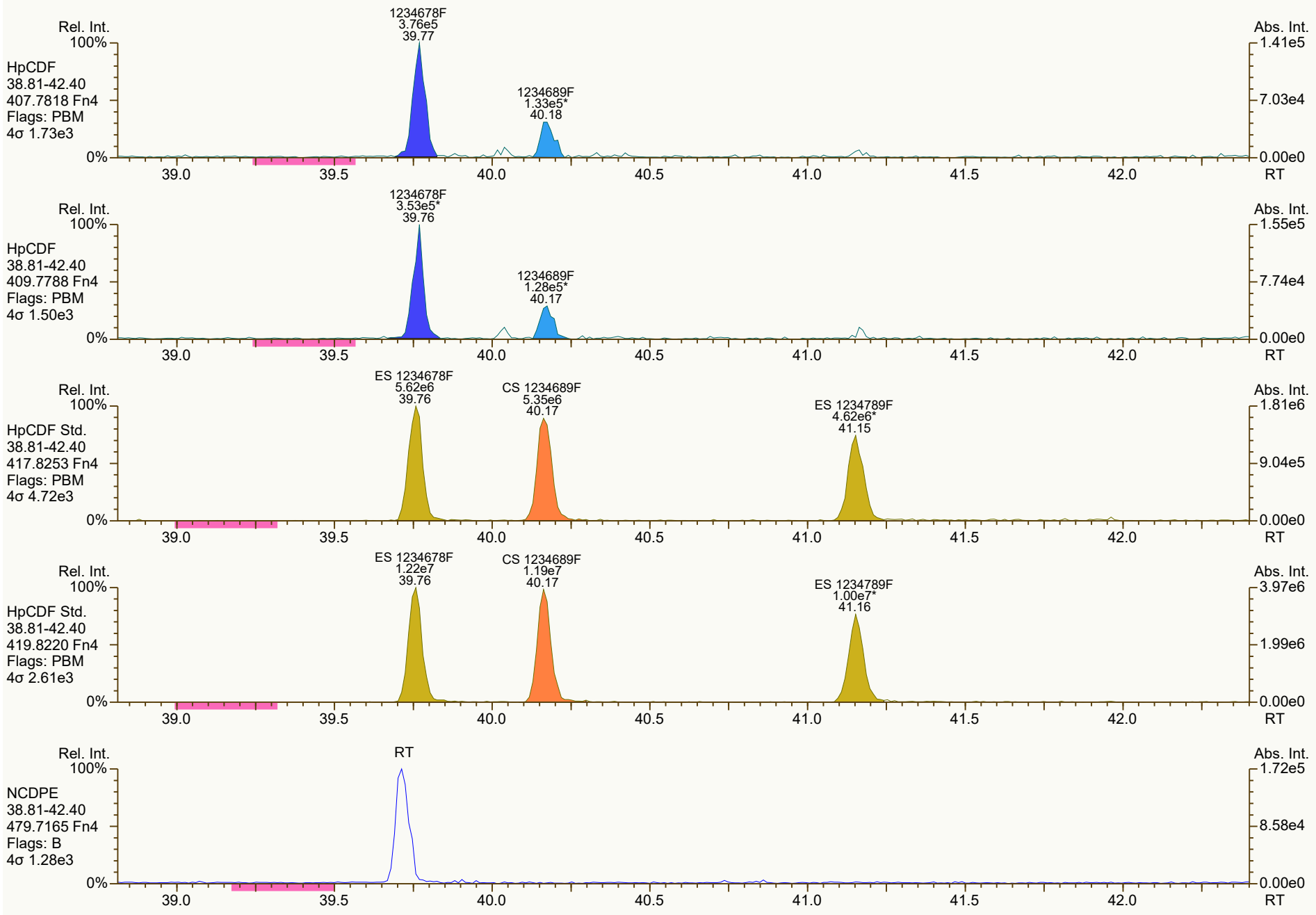


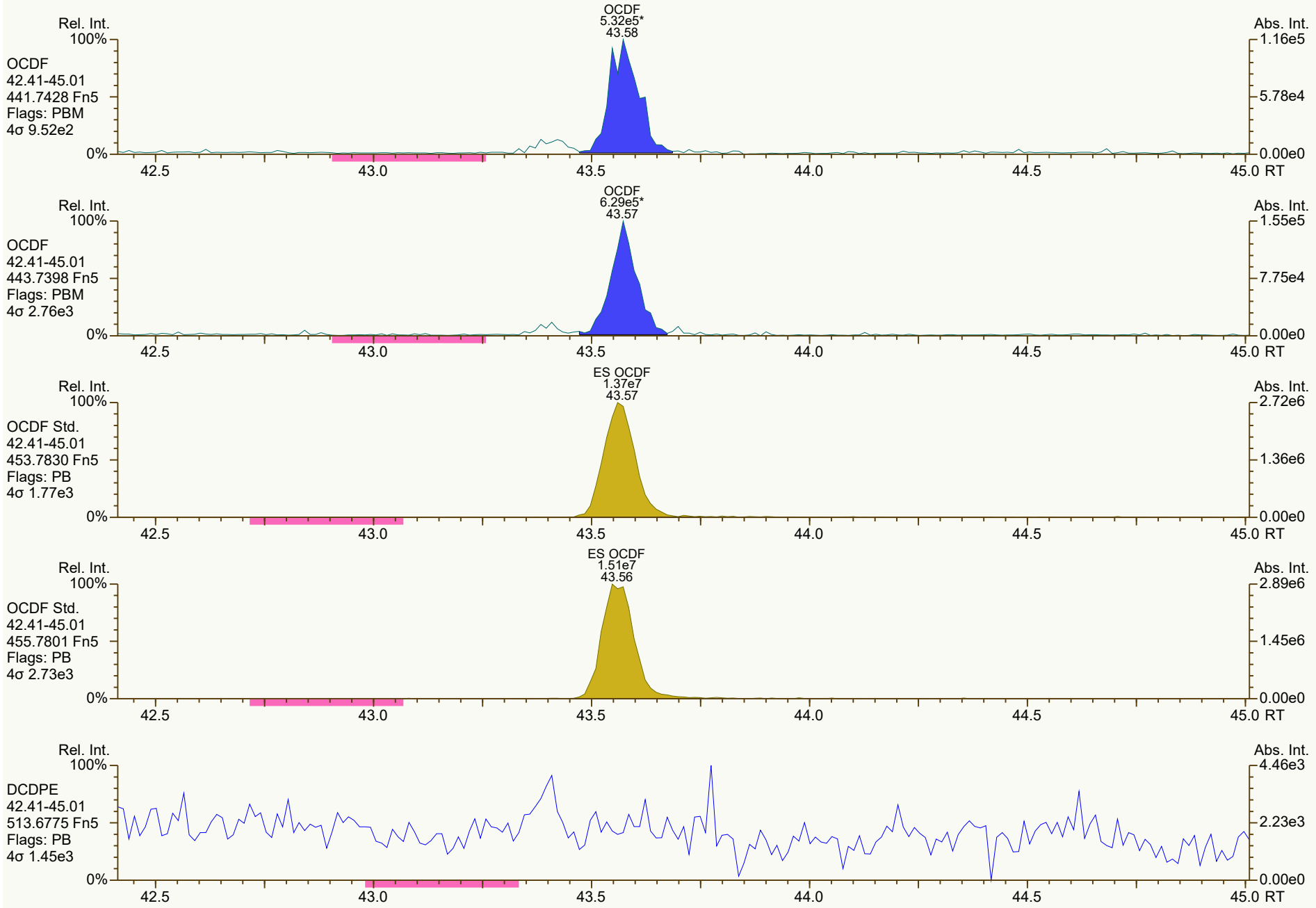
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\B5962_18911_DF_003.utp_res, saved 21-Feb-2022 10:34 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9348, 1750, 3208 scc: 309-908
Revised: 21-Feb-2022 10:19 (DTF) Printed: 21-Feb-2022 10:37 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: PBM
4σ 1.84e3
13468/12468F
3.34e5*
29.35
Abs. Int.
8.69e4
4.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: PBM
4σ 1.21e3
13468/12468F
1.96e5*
29.35
Abs. Int.
5.33e4
2.66e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
Abs. Int.
8.61e6
4.31e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PBM
4σ 1.52e3
0%
12368F...[3]
2.71e5*
31.07
13678F...[3]
9.54e4*
30.90
23468/12469F
7.23e4*
31.73
12378F
8.25e4*
32.17
12678/12367F
5.68e4*
32.44
23467/12369F
3.95e4*
33.16
23478F
7.80e4*
33.30
Abs. Int.
5.62e4
2.81e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: PBM
4σ 1.54e3
0%
12368F...[3]
1.78e5*
31.07
13678F...[3]
6.29e4*
30.90
23468/12469F
6.86e4*
31.74
12378F
3.94e4*
32.16
12678/12367F
4.80e4*
32.46
23467/12369F
3.22e4*
33.16
23478F
6.07e4*
33.30
Abs. Int.
3.30e4
1.65e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 1.45e3
0%
CS 12346F
1.62e7
31.62
ES 12378F
1.67e7
32.16
ES 23478F
1.62e7
33.28
Abs. Int.
4.55e6
2.28e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 2.97e3
0%
CS 12346F
1.02e7
31.62
ES 12378F
1.03e7
32.15
ES 23478F
1.03e7
33.28
Abs. Int.
2.91e6
1.46e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: PB
4σ 1.73e3
0%
Abs. Int.
7.13e3
3.57e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.72-38.80
373.8207 Fn3
Flags: PBM
4σ 1.77e3
123468F 9.79e4* 35.17
124678/134678F 2.80e5* 35.36
124689F 7.39e4* 36.02
123467F 3.28e4* 36.44
123478F 7.02e4* 36.56
123678F 6.24e4* 36.70
234678F 6.21e4* 37.37
Abs. Int.
8.74e4
4.37e4
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF
34.72-38.80
375.8178 Fn3
Flags: PBM
4σ 1.88e3
123468F 6.56e4* 35.17
124678/134678F 2.54e5* 35.36
124689F 8.01e4* 36.02
123467F 2.86e4* 36.44
123478F 5.80e4* 36.55
123678F 7.23e4* 36.70
234678F 5.07e4* 37.38
Abs. Int.
8.25e4
4.13e4
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: PBM
4σ 2.99e3
ES 123478F 6.62e6 36.54
ES 123678F 7.76e6 36.68
CS 123469F 7.21e6 37.00
ES 234678F 8.19e6* 37.36
ES 123789F 6.43e6 38.34
Abs. Int.
2.31e6
1.15e6
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: PBM
4σ 7.22e3
ES 123478F 1.28e7 36.54
ES 123678F 1.50e7 36.68
CS 123469F 1.36e7 37.00
ES 234678F 1.50e7* 37.36
ES 123789F 1.23e7 38.34
Abs. Int.
4.48e6
2.24e6
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
OCDPE
34.72-38.80
445.7555 Fn3
Flags: B
4σ 1.48e3
Abs. Int.
9.24e3
4.62e3
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT


Rel. Int.
100%
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PBM
4σ 1.73e3
1234678F
3.76e5
39.77
1234689F
1.33e5*
40.18
Abs. Int.
1.41e5
7.03e4
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PBM
4σ 1.50e3
1234678F
3.53e5*
39.76
1234689F
1.28e5*
40.17
Abs. Int.
1.55e5
7.74e4
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PBM
4σ 4.72e3
ES 1234678F
5.62e6
39.76
CS 1234689F
5.35e6
40.17
ES 1234789F
4.62e6*
41.15
Abs. Int.
1.81e6
9.04e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PBM
4σ 2.61e3
ES 1234678F
1.22e7
39.76
CS 1234689F
1.19e7
40.17
ES 1234789F
1.00e7*
41.16
Abs. Int.
3.97e6
1.99e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
38.81-42.40
479.7165 Fn4
Flags: B
4σ 1.28e3
RT
Abs. Int.
1.72e5
8.58e4
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDF
5.32e5*
43.58
Rel. Int.
100%
OCDF
42.41-45.01
441.7428 Fn5
Flags: PBM
4σ 9.52e2
0%
Abs. Int.
1.16e5
5.78e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.29e5*
43.57
Rel. Int.
100%
OCDF
42.41-45.01
443.7398 Fn5
Flags: PBM
4σ 2.76e3
0%
Abs. Int.
1.55e5
7.75e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.37e7
43.57
Rel. Int.
100%
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: PB
4σ 1.77e3
0%
Abs. Int.
2.72e6
1.36e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.51e7
43.56
Rel. Int.
100%
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: PB
4σ 2.73e3
0%
Abs. Int.
2.89e6
1.45e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.41-45.01
513.6775 Fn5
Flags: PB
4σ 1.45e3
0%
Abs. Int.
4.46e3
2.23e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

REVIEWED
Tamara Burkamper , 2/21/2022, 1:32:02 PM

SGS Environmental Services — Run Log **Project: B5962_18911_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
0	220219C01	3	CS3_220219_DF_CA	1.00	25-347-1	DTF	910-087	19-Feb-2022	17:17:59
1	220219C02	26	OPR1_18911_DF	1.00	0_18911_OPR001	DTF	320-676	19-Feb-2022	18:04:19
2	220219C03	2	SBS_220219_DF_CA	1.00	20-61-1	DTF	501-491	19-Feb-2022	18:50:40
3	220219C04	25	MB1_18911_DF_SDS	10.00	Method Blank	DTF	399-492	19-Feb-2022	19:37:00
4	220219C05	28	B5962_18911_DF_003	10.19	11215131-120121-S-JC-NE-B-1H	DTF	309-908	19-Feb-2022	20:23:20
16	220219C16	3	CS3_220219_DF_CB	1.00	25-347-1	DTF	111-739	20-Feb-2022	05:01:11
17	220219C17	27	OPR2_18911_DF	1.00	0_18911_OPR002	DTF	488-895	20-Feb-2022	05:55:34

REVIEWED
Tyler_Fritz , 2/21/2022, 10:40:28 AM

Dioxin/Furan QC Summary	Acq'd: 19 Feb 2022 17:17 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220219_DF_CA	UTP: 21-Feb-2022 10:21:14 DTF	Checkcode: 910-087-PNP
Sample ID: 25-347-1	Report: 21 Feb 2022 10:32 TF	Datafile: 220219C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.26	4.72E+06	0.82	Y	1.18	1.22	3%
12378-PeCDD	33.64	1.81E+07	1.55	Y	1.04	1.03	0%
123478-HxCDD	37.57	1.64E+07	1.25	Y	1.09	1.11	2%
123678-HxCDD	37.69	1.71E+07	1.27	Y	1.15	1.15	1%
123789-HxCDD	38.00	1.80E+07	1.23	Y	1.05	1.03	-2%
1234678-HpCDD	40.72	1.61E+07	1.04	Y	1.06	1.07	1%
OCDD	43.42	2.64E+07	0.91	Y	1.13	1.10	-2%
2378-TCDF	27.39	6.75E+06	0.78	Y	1.08	1.12	4%
12378-PeCDF	32.18	2.71E+07	1.55	Y	1.02	1.02	-1%
23478-PeCDF	33.30	2.62E+07	1.50	Y	1.02	0.98	-3%
123478-HxCDF	36.57	2.44E+07	1.23	Y	1.27	1.23	-3%
123678-HxCDF	36.71	2.56E+07	1.23	Y	1.15	1.13	-2%
234678-HxCDF	37.39	2.43E+07	1.25	Y	1.19	1.15	-3%
123789-HxCDF	38.36	2.22E+07	1.26	Y	1.16	1.11	-5%
1234678-HpCDF	39.78	2.21E+07	1.06	Y	1.37	1.37	0%
1234789-HpCDF	41.17	1.96E+07	1.01	Y	1.31	1.30	0%
OCDF	43.59	3.40E+07	0.93	Y	1.07	1.05	-2%
ES 2378-TCDD	28.23	3.87E+07	0.82	Y	1.05	1.01	-3%
ES 12378-PeCDD	33.623	3.49E+07	1.62	Y	0.88	0.91	4%
ES 123478-HxCDD	37.554	2.95E+07	1.26	Y	0.97	0.98	1%
ES 123678-HxCDD	37.673	2.96E+07	1.28	Y	0.94	0.98	4%
ES 123789-HxCDD	37.979	3.50E+07	1.25	Y	1.09	1.16	6%
ES 1234678-HpCDD	40.706	3.01E+07	1.10	Y	0.91	1.00	10%
ES OCDD	43.406	4.79E+07	0.89	Y	0.62	0.80	28%
ES 2378-TCDF	27.366	6.03E+07	0.80	Y	1.06	1.01	-5%
ES 12378-PeCDF	32.162	5.31E+07	1.64	Y	0.91	0.89	-2%
ES 23478-PeCDF	33.285	5.33E+07	1.61	Y	0.88	0.89	1%
ES 123478-HxCDF	36.549	3.97E+07	0.54	Y	1.20	1.32	10%
ES 123678-HxCDF	36.689	4.53E+07	0.54	Y	1.35	1.51	11%
ES 234678-HxCDF	37.366	4.22E+07	0.55	Y	1.24	1.40	13%
ES 123789-HxCDF	38.343	4.00E+07	0.54	Y	1.16	1.33	15%
ES 1234678-HpCDF	39.764	3.22E+07	0.46	Y	0.97	1.07	11%
ES 1234789-HpCDF	41.161	3.02E+07	0.47	Y	0.85	1.00	18%
ES OCDF	43.579	6.45E+07	0.91	Y	0.81	1.07	33% *

*meets M1613B criteria
TB 2/21/2022

Dioxin/Furan QC Summary	Acq'd: 19 Feb 2022 17:17 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220219_DF_CA	UTP: 21-Feb-2022 10:21:14 DTF	Checkcode: 910-087-PNP
Sample ID: 25-347-1	Report: 21 Feb 2022 10:32 TF	Datafile: 220219C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.57	3.82E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.99	5.98E+07	0.83	Y	-	-	-
JS 123467-HxCDD	37.87	1.50E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.26	5.16E+06	n/a	-	1.20	1.35	12%
CS 12347-PeCDD	33.12	3.13E+07	1.61	Y	0.75	0.82	8%
CS 12346-PeCDF	31.63	5.27E+07	1.55	Y	0.85	0.88	4%
CS 123469-HxCDF	37.00	4.17E+07	0.54	Y	1.12	1.39	24%
CS 1234689-HpCDF	40.17	3.39E+07	0.48	Y	0.89	1.13	27%
~~SS 37Cl-2378-TCDD~~	~~28.26~~	~~5.16E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.33~~	~~16%~~
~~SS 12347-PeCDD~~	~~33.12~~	~~3.13E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~0.90~~	~~4%~~
~~SS 12346-PeCDF~~	~~31.63~~	~~5.27E+07~~	~~1.55~~	~~Y~~	~~0.94~~	~~0.99~~	~~6%~~
~~SS 123469-HxCDF~~	~~37.00~~	~~4.17E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~0.92~~	~~11%~~
~~SS 1234689-HpCDF~~	~~40.17~~	~~3.39E+07~~	~~0.48~~	~~Y~~	~~0.92~~	~~1.05~~	~~14%~~
~~OCDD-a~~	~~43.42~~	~~1.55E+06~~	~~2.64~~	~~Y~~	~~0.07~~	~~0.06~~	~~-10%~~
~~OCDF-a~~	~~43.59~~	~~2.17E+06~~	~~2.56~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220219C01 Analysis Date: 19-FEB-2022 17:17:59

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.82	0.65 - 0.89	Y	10.3	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	49.9	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05 - 1.43	Y	49	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.3	43 - 58	Y
OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	97.8	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.78	0.65 - 0.89	Y	10.4	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	49.7	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.50	1.32 - 1.78	Y	48.3	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	48.3	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	49	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.5	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	47.7	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88 - 1.20	Y	50.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	49.8	43 - 58	Y
OCDF	M+2/M+4	0.93	0.76 - 1.02	Y	98.4	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 21 Feb 2022 10:32 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

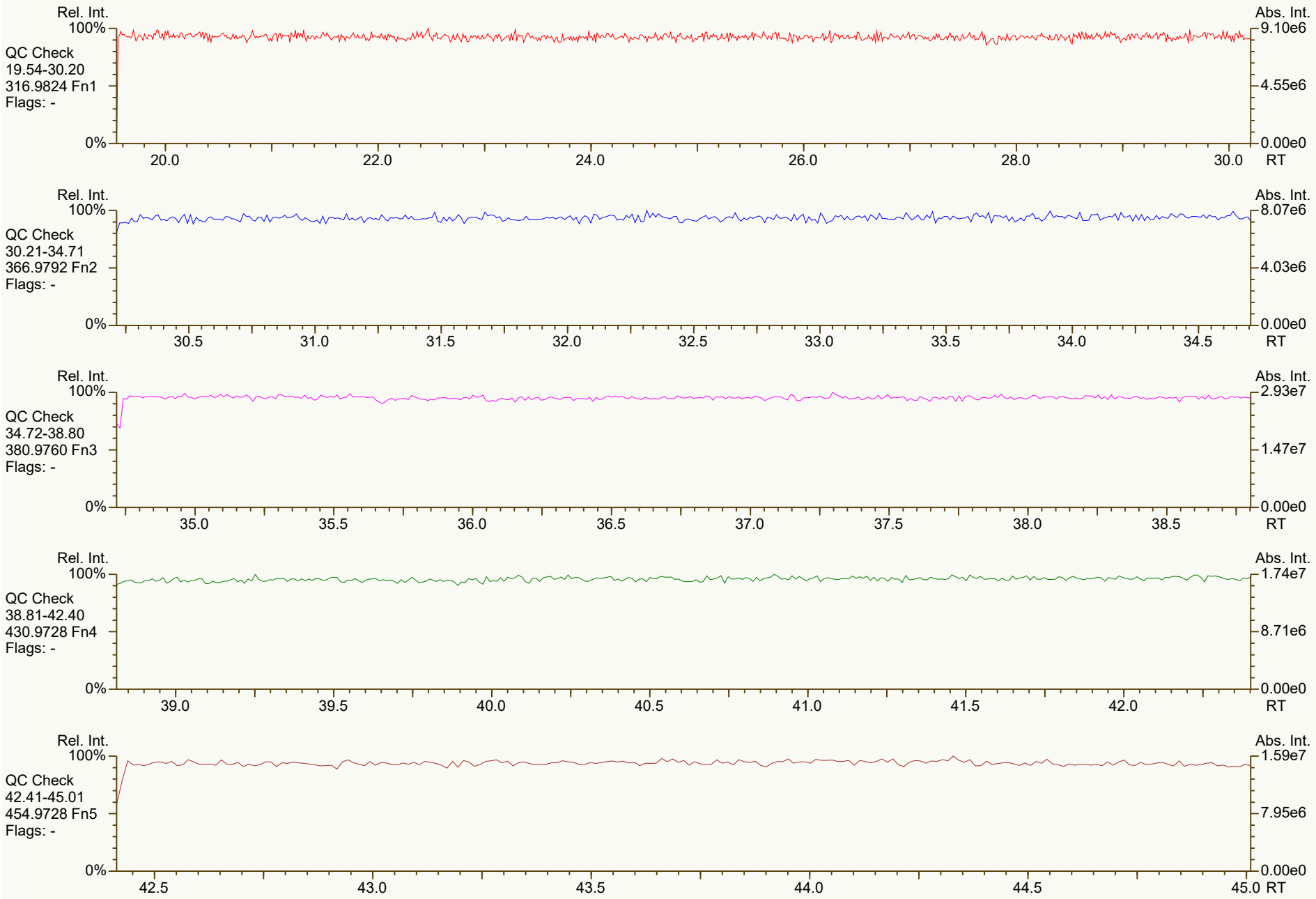
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

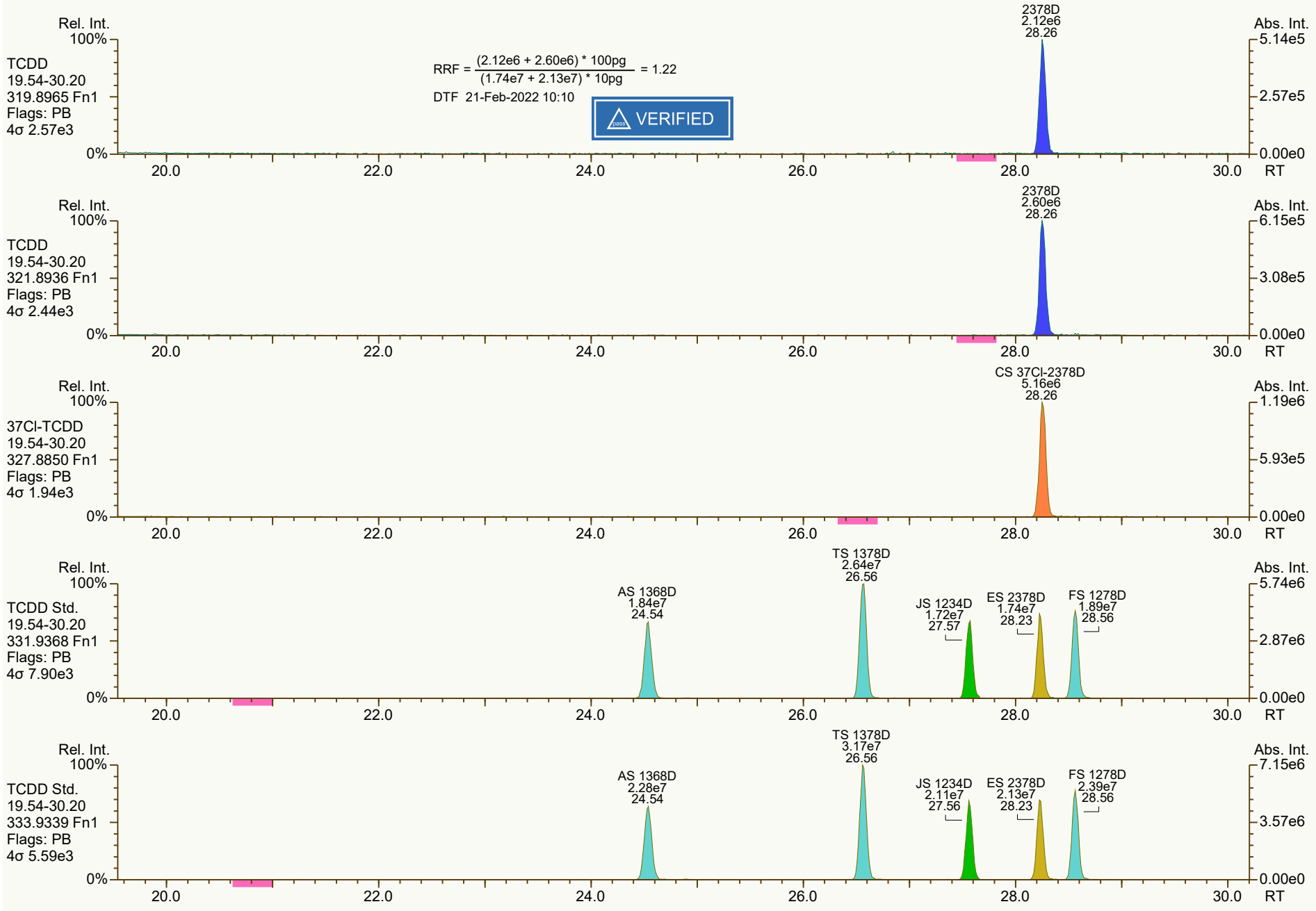
Instrument ID: HRMS3 GC Column ID: ZB-5ms

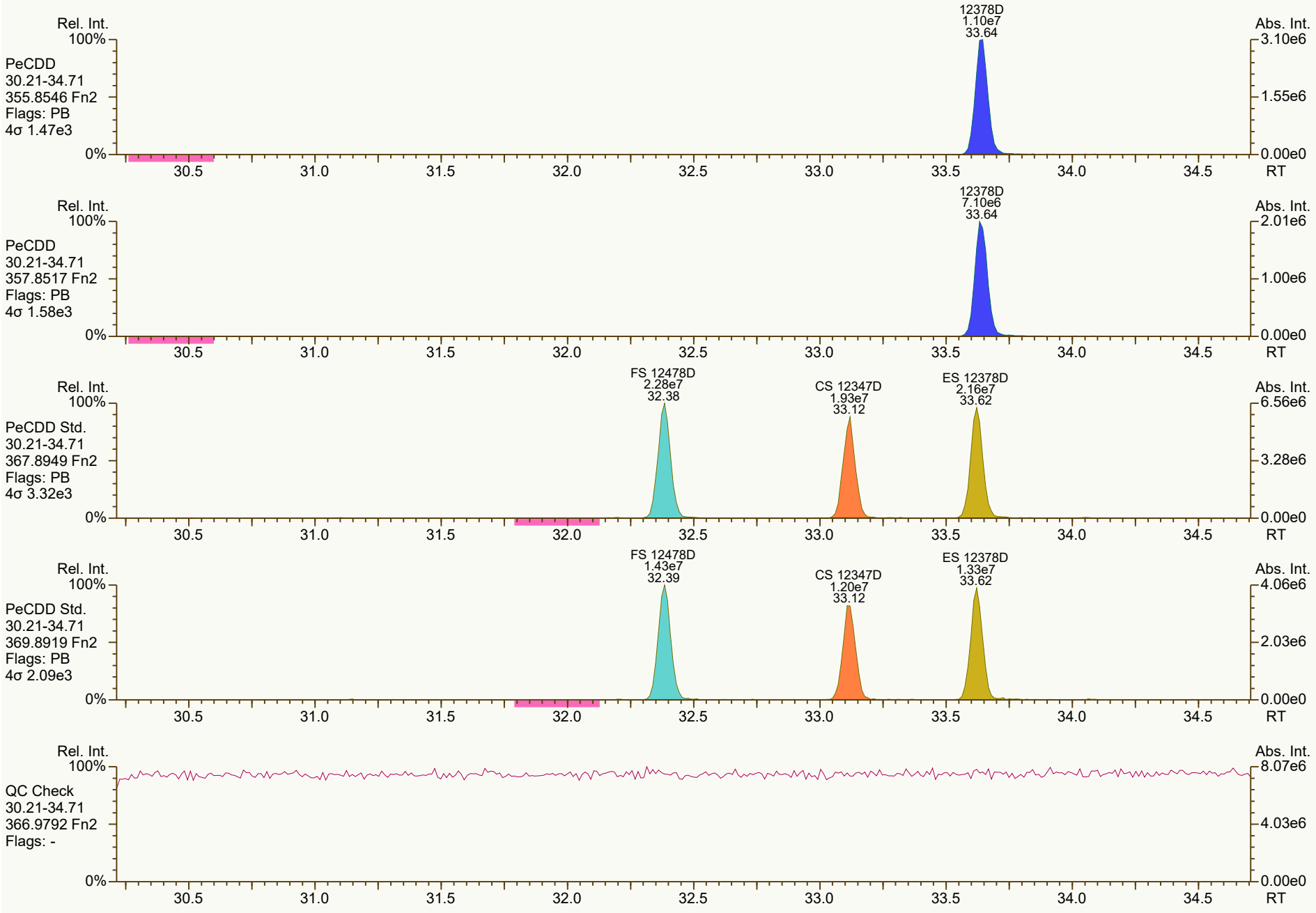
VER Data Filename: 220219C01 Analysis Date: 19-FEB-2022 17:17:59

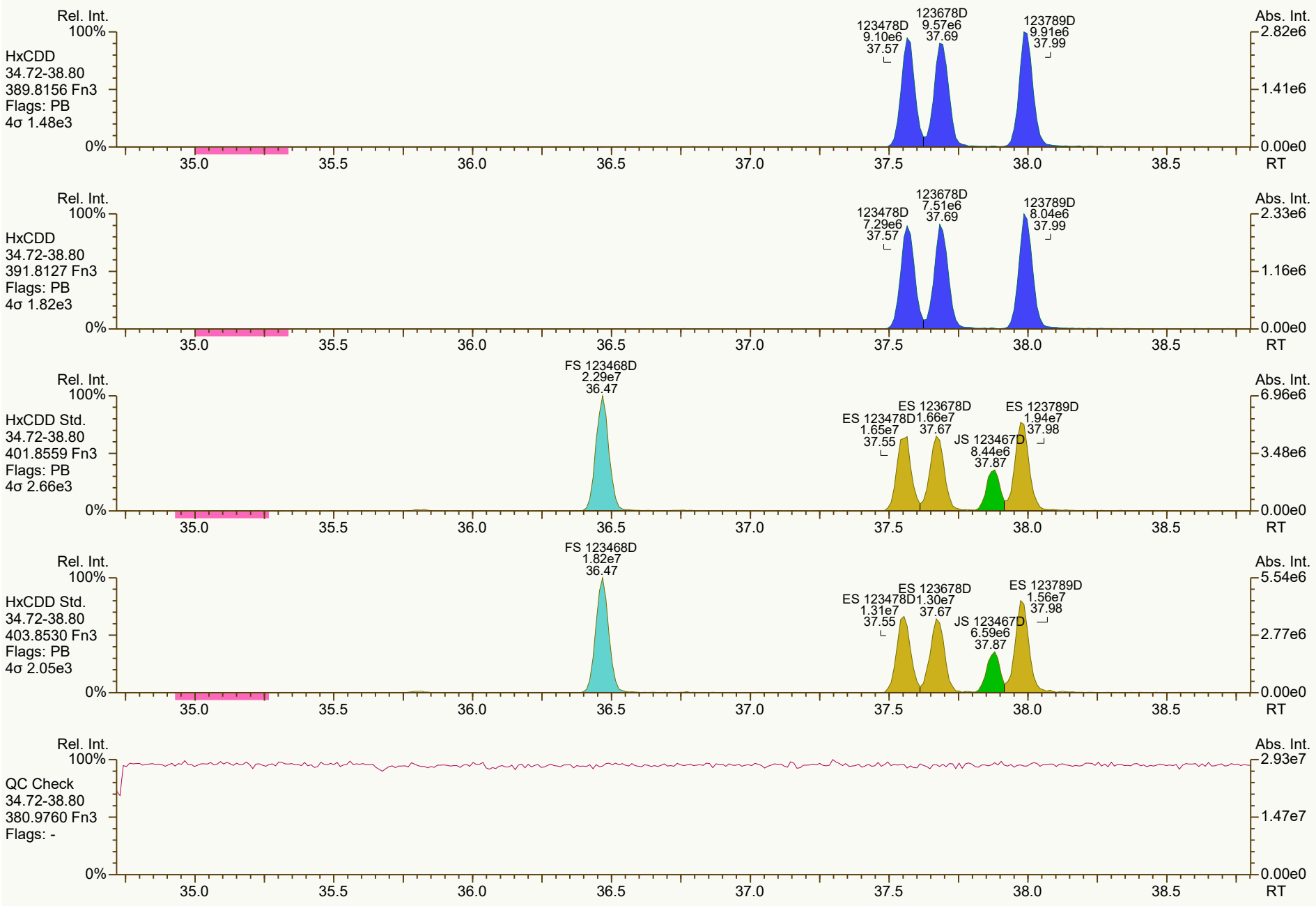
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65 - 0.89	Y	96.7	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32 - 1.78	Y	104	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	101	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	104	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	106	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.10	0.88 - 1.20	Y	110	72 - 138	Y
13C-OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	255	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	95.2	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.64	1.32 - 1.78	Y	97.6	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32 - 1.78	Y	101	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	110	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	111	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43 - 0.59	Y	113	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	115	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	111	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	118	77 - 129	Y
13C-OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	266	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				11.2	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.61	1.32 - 1.78	Y	108	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	104	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	124	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.48	0.37 - 0.51	Y	127	70 - 130	Y

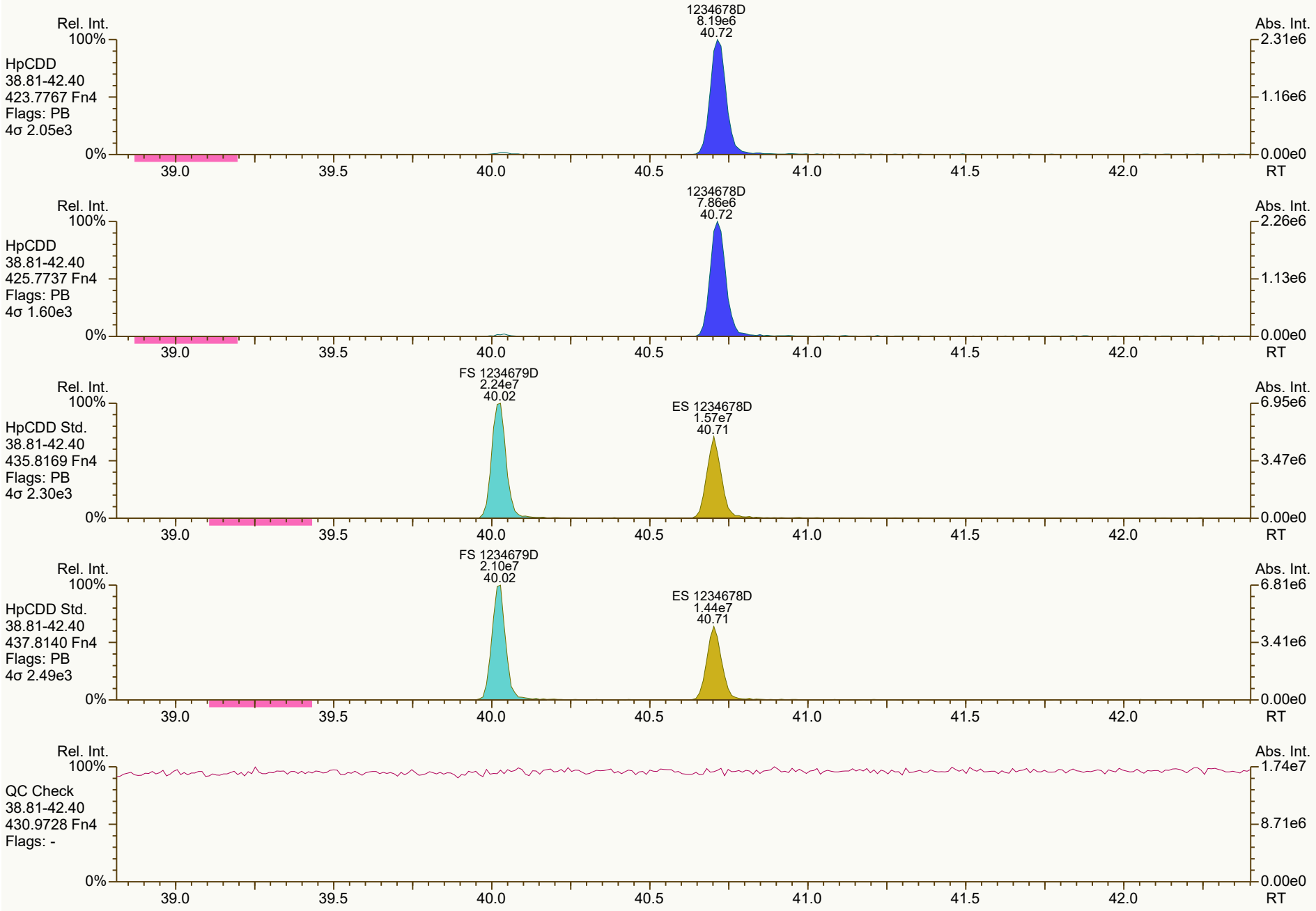
Processed: 21 Feb 2022 10:32 Analyst: TF

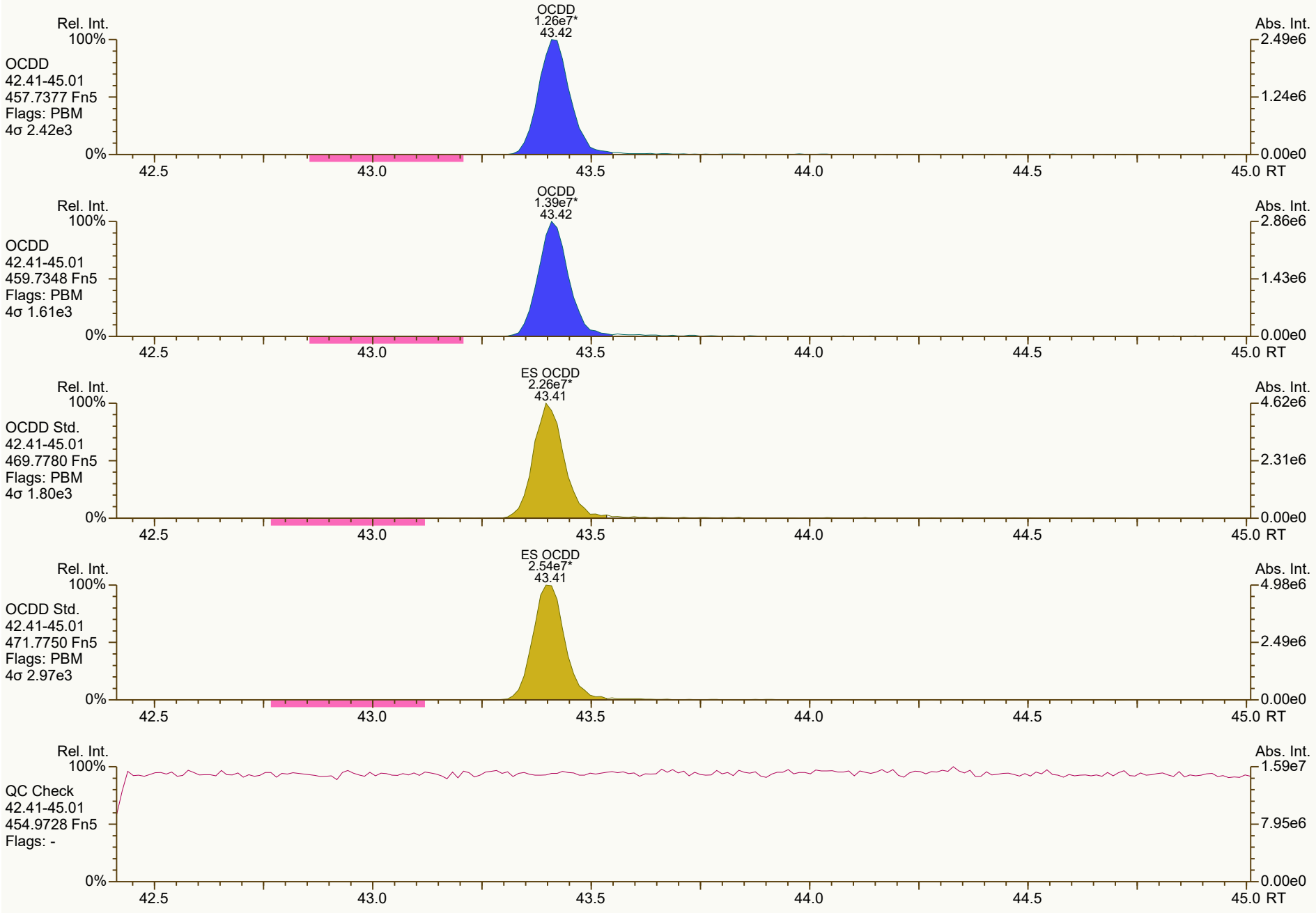

Rel. Int.
100%
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
9.10e6
4.55e6
0.00e0
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
8.07e6
4.03e6
0.00e0
Rel. Int.
100%
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
2.93e7
1.47e7
0.00e0
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.74e7
8.71e6
0.00e0
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.59e7
7.95e6
0.00e0

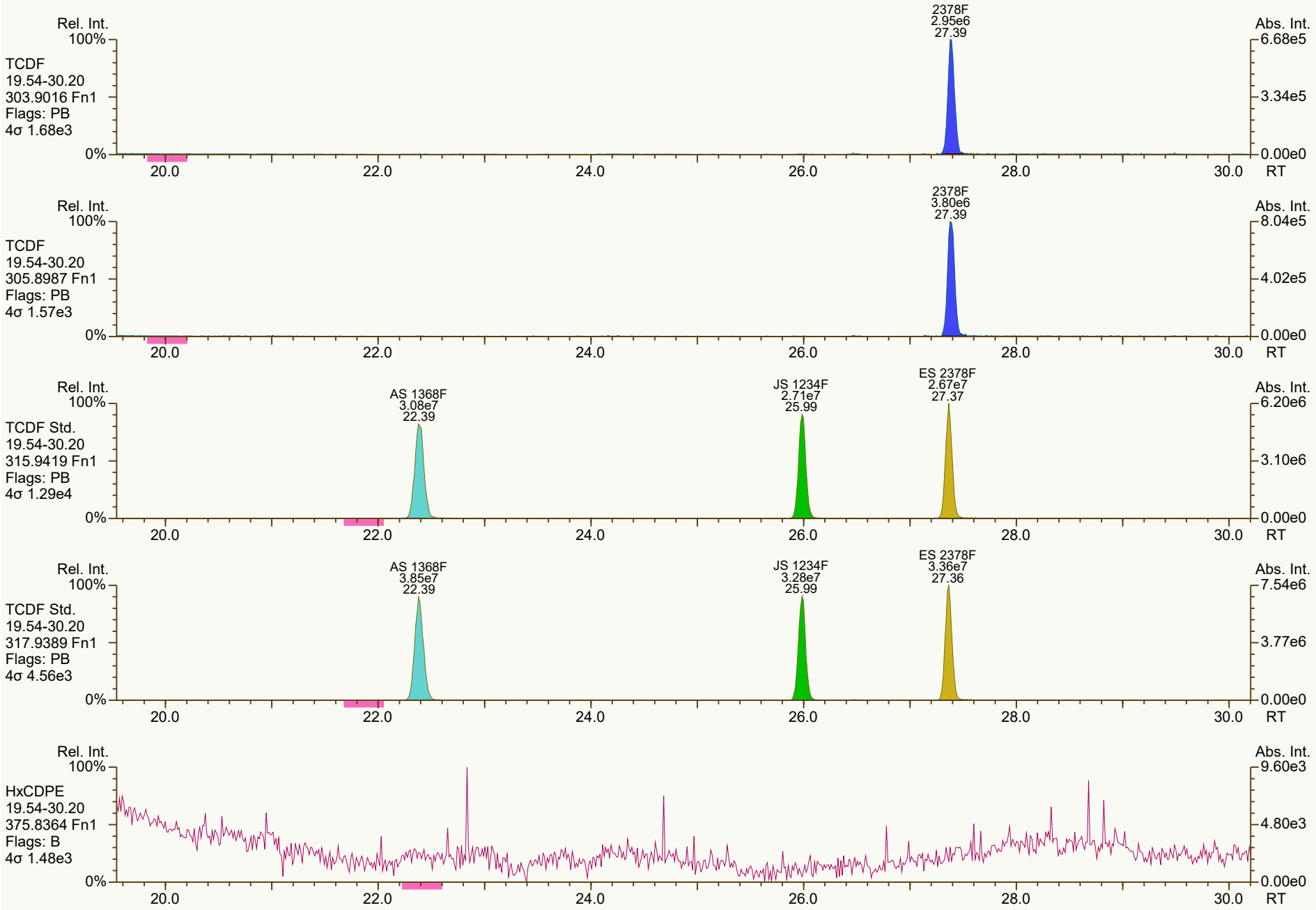

Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: PB
4σ 2.57e3
0%
2378D
2.12e6
28.26
Abs. Int.
5.14e5
2.57e5
0.00e0
RRF = (2.12e6 + 2.60e6) * 100pg / (1.74e7 + 2.13e7) * 10pg = 1.22
DTF 21-Feb-2022 10:10
VERIFIED
20.0
22.0
24.0
26.0
28.0
30.0
RT
TCDD
19.54-30.20
321.8936 Fn1
Flags: PB
4σ 2.44e3
2378D
2.60e6
28.26
6.15e5
3.08e5
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.94e3
CS 37Cl-2378D
5.16e6
28.26
1.19e6
5.93e5
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 7.90e3
AS 1368D
1.84e7
24.54
TS 1378D
2.64e7
26.56
JS 1234D
1.72e7
27.57
ES 2378D
1.74e7
28.23
FS 1278D
1.89e7
28.56
5.74e6
2.87e6
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 5.59e3
AS 1368D
2.28e7
24.54
TS 1378D
3.17e7
26.56
JS 1234D
2.11e7
27.56
ES 2378D
2.13e7
28.23
FS 1278D
2.39e7
28.56
7.15e6
3.57e6


Rel. Int.
100%
PeCDD
30.21-34.71
355.8546 Fn2
Flags: PB
4σ 1.47e3
0%
12378D
1.10e7
33.64
Abs. Int.
3.10e6
1.55e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PB
4σ 1.58e3
0%
12378D
7.10e6
33.64
Abs. Int.
2.01e6
1.00e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PB
4σ 3.32e3
0%
FS 12478D
2.28e7
32.38
CS 12347D
1.93e7
33.12
ES 12378D
2.16e7
33.62
Abs. Int.
6.56e6
3.28e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 2.09e3
0%
FS 12478D
1.43e7
32.39
CS 12347D
1.20e7
33.12
ES 12378D
1.33e7
33.62
Abs. Int.
4.06e6
2.03e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.07e6
4.03e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

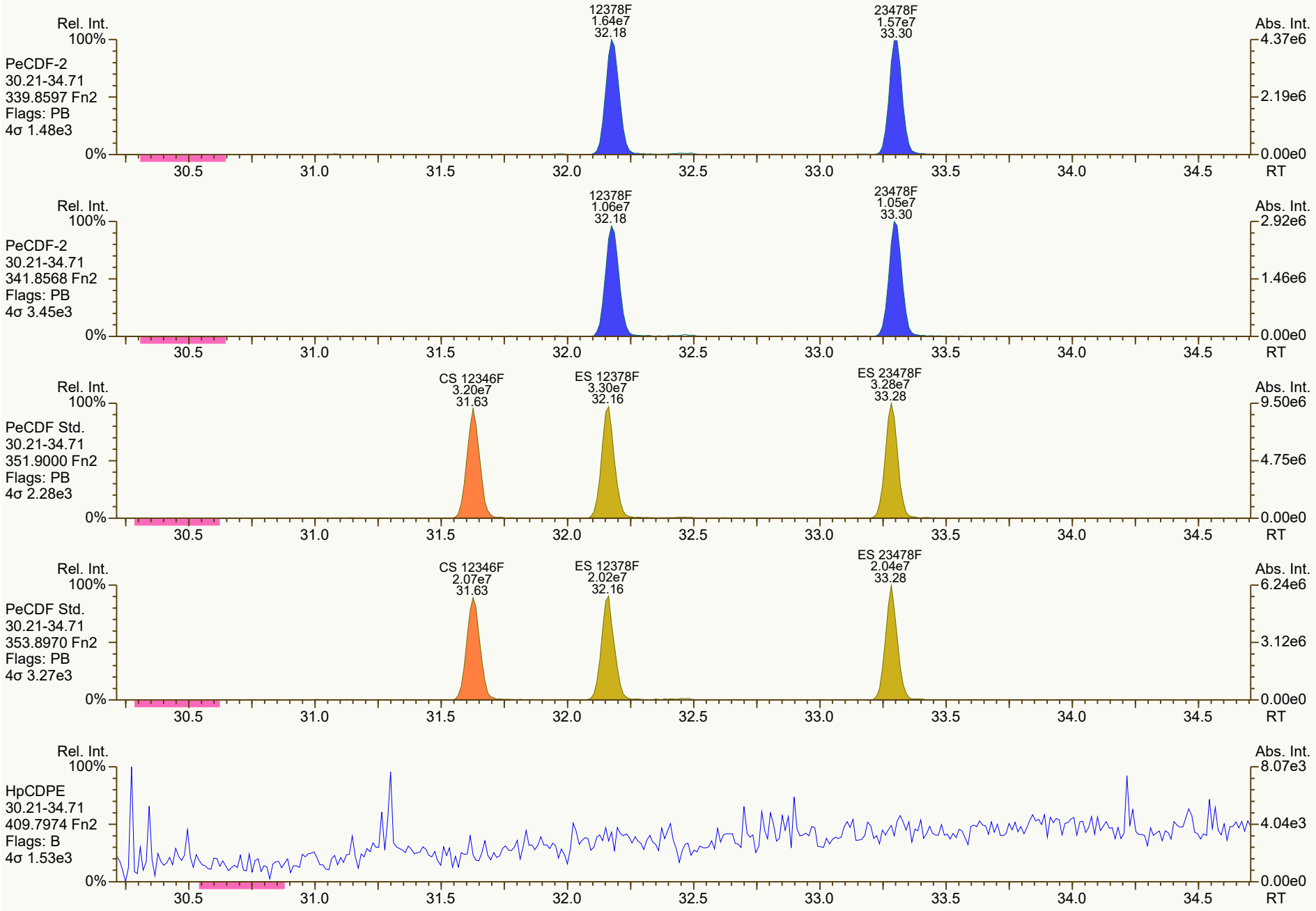

Rel. Int.
100%
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PB
4σ 1.48e3
123478D
9.10e6
37.57
123678D
9.57e6
37.69
123789D
9.91e6
37.99
Abs. Int.
2.82e6
1.41e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PB
4σ 1.82e3
123478D
7.29e6
37.57
123678D
7.51e6
37.69
123789D
8.04e6
37.99
Abs. Int.
2.33e6
1.16e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PB
4σ 2.66e3
FS 123468D
2.29e7
36.47
ES 123478D
1.65e7
37.55
ES 123678D
1.66e7
37.67
JS 123467D
8.44e6
37.87
ES 123789D
1.94e7
37.98
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PB
4σ 2.05e3
FS 123468D
1.82e7
36.47
ES 123478D
1.31e7
37.55
ES 123678D
1.30e7
37.67
JS 123467D
6.59e6
37.87
ES 123789D
1.56e7
37.98
Abs. Int.
5.54e6
2.77e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
Abs. Int.
2.93e7
1.47e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

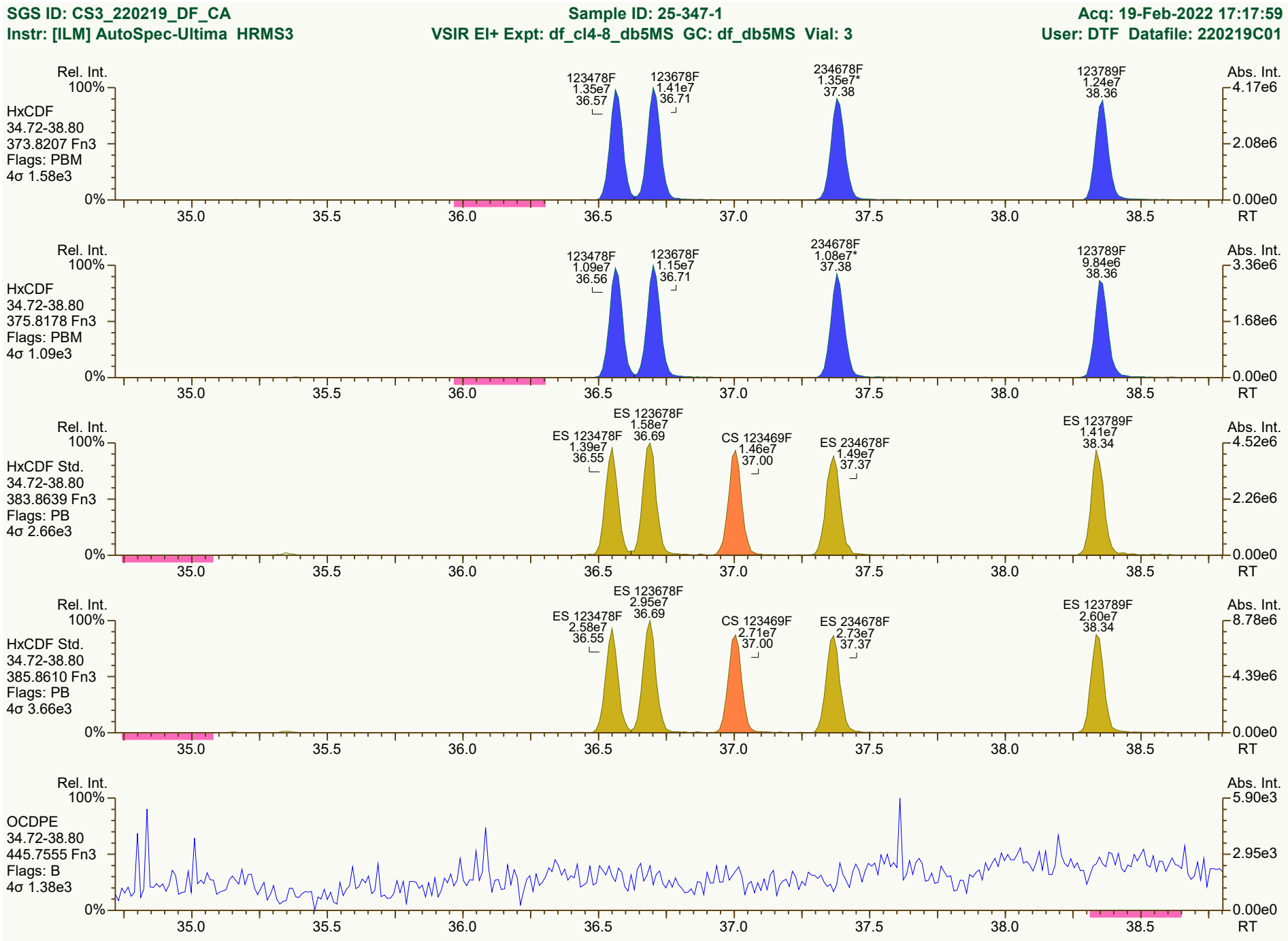

Rel. Int.
100%
HpCDD
38.81-42.40
423.7767 Fn4
Flags: PB
4σ 2.05e3
1234678D
8.19e6
40.72
Abs. Int.
2.31e6
1.16e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
38.81-42.40
425.7737 Fn4
Flags: PB
4σ 1.60e3
1234678D
7.86e6
40.72
Abs. Int.
2.26e6
1.13e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
38.81-42.40
435.8169 Fn4
Flags: PB
4σ 2.30e3
FS 1234679D
2.24e7
40.02
ES 1234678D
1.57e7
40.71
Abs. Int.
6.95e6
3.47e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
38.81-42.40
437.8140 Fn4
Flags: PB
4σ 2.49e3
FS 1234679D
2.10e7
40.02
ES 1234678D
1.44e7
40.71
Abs. Int.
6.81e6
3.41e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.74e7
8.71e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDD
1.26e7*
43.42
Rel. Int.
100%
OCDD
42.41-45.01
457.7377 Fn5
Flags: PBM
4σ 2.42e3
0%
Abs. Int.
2.49e6
1.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.39e7*
43.42
Rel. Int.
100%
OCDD
42.41-45.01
459.7348 Fn5
Flags: PBM
4σ 1.61e3
0%
Abs. Int.
2.86e6
1.43e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.26e7*
43.41
Rel. Int.
100%
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PBM
4σ 1.80e3
0%
Abs. Int.
4.62e6
2.31e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.54e7*
43.41
Rel. Int.
100%
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PBM
4σ 2.97e3
0%
Abs. Int.
4.98e6
2.49e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.95e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.20
303.9016 Fn1
Flags: PB
4σ 1.68e3
0%
2378F
2.95e6
27.39
Abs. Int.
6.68e5
3.34e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.20
305.8987 Fn1
Flags: PB
4σ 1.57e3
0%
2378F
3.80e6
27.39
Abs. Int.
8.04e5
4.02e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 1.29e4
0%
AS 1368F
3.08e7
22.39
JS 1234F
2.71e7
25.99
ES 2378F
2.67e7
27.37
Abs. Int.
6.20e6
3.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 4.56e3
0%
AS 1368F
3.85e7
22.39
JS 1234F
3.28e7
25.99
ES 2378F
3.36e7
27.36
Abs. Int.
7.54e6
3.77e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
9.60e3
4.80e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

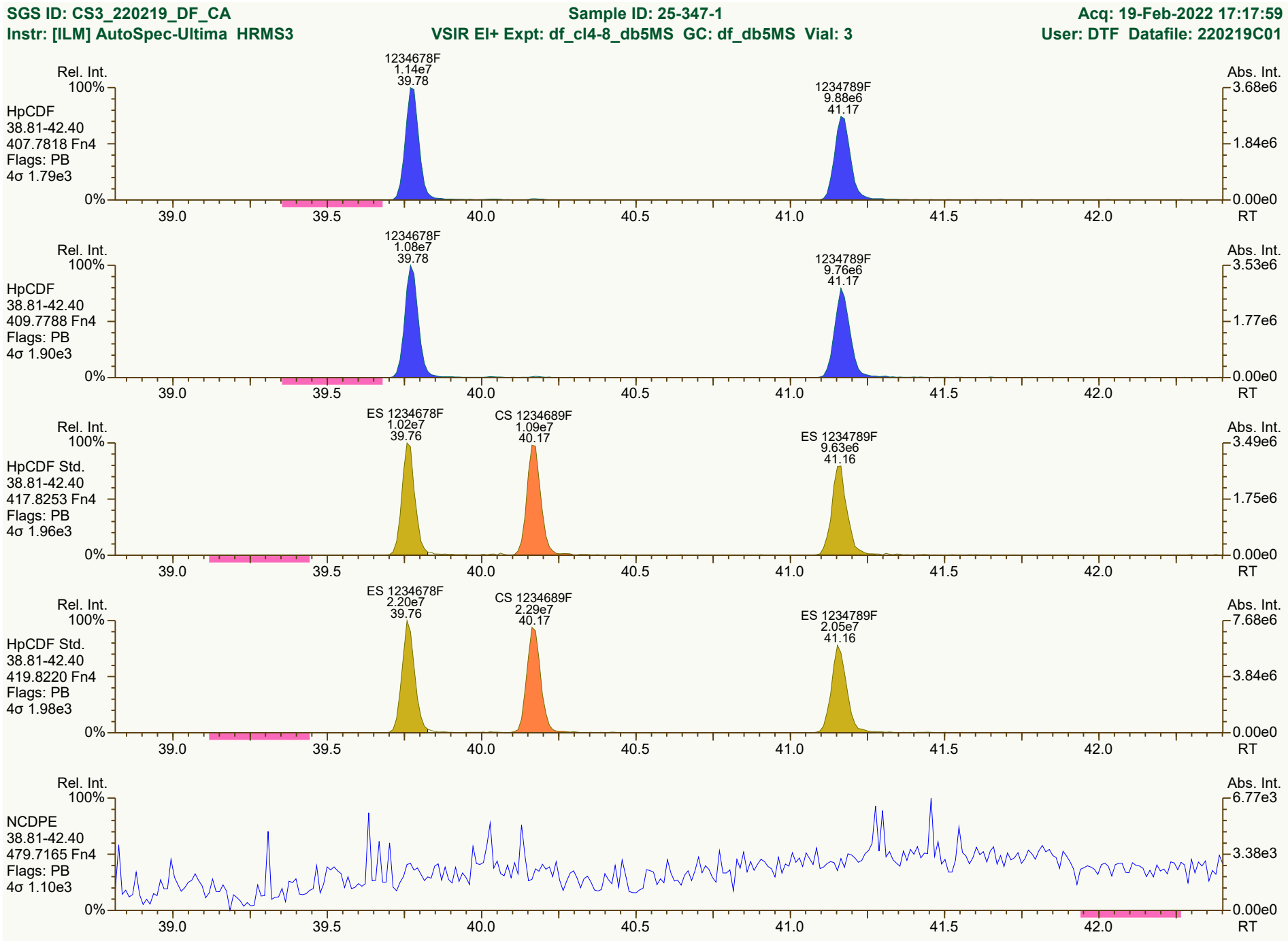

Rel. Int.
100%
0%
Abs. Int.
9.53e3
4.77e3
0.00e0
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: PB
4σ 1.89e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.20e4
6.02e3
0.00e0
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: B
4σ 1.53e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.10e6
4.55e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT

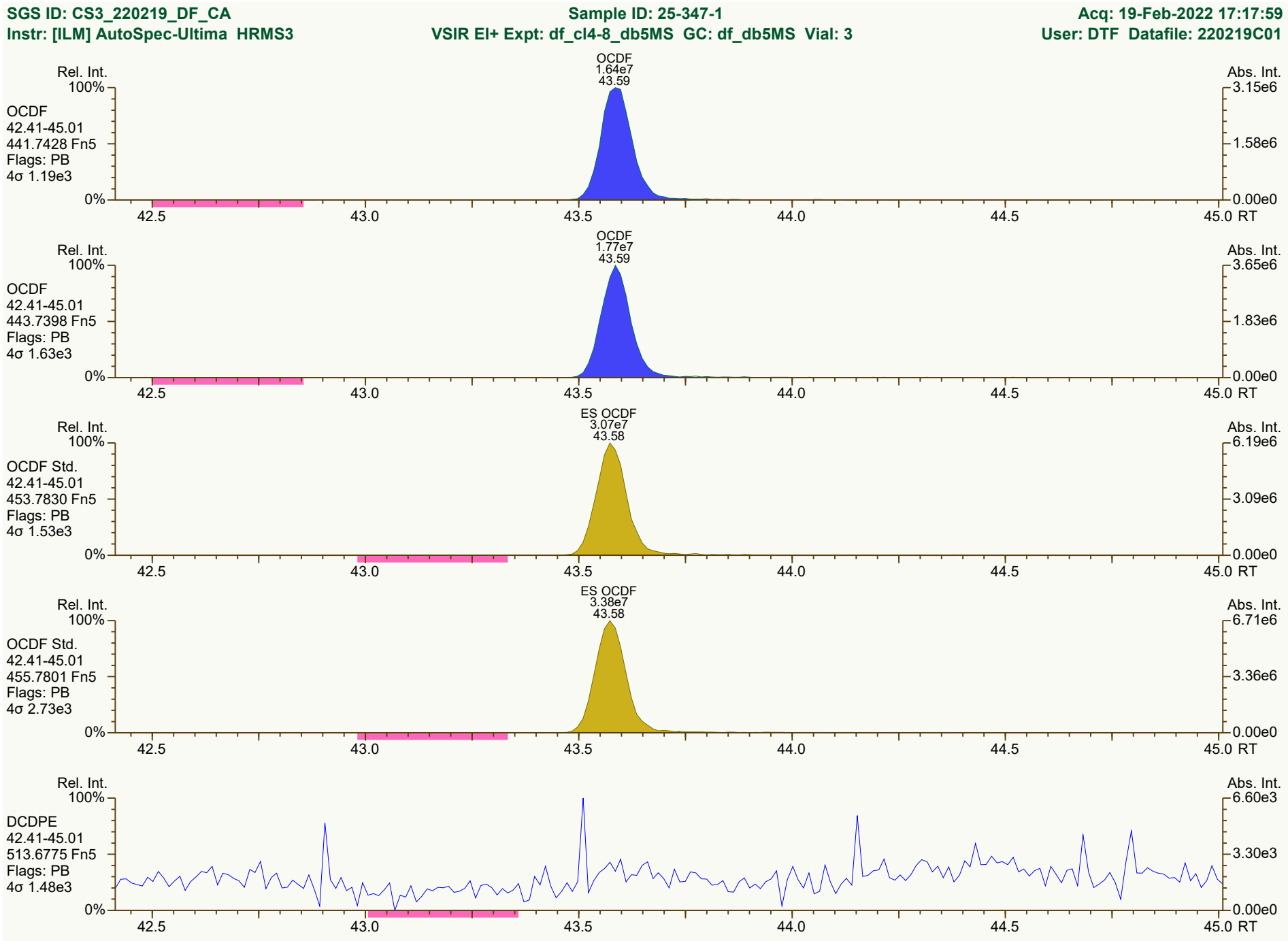

Rel. Int.
100%
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PB
4σ 1.48e3
0%
12378F
1.64e7
32.18
23478F
1.57e7
33.30
Abs. Int.
4.37e6
2.19e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: PB
4σ 3.45e3
0%
12378F
1.06e7
32.18
23478F
1.05e7
33.30
Abs. Int.
2.92e6
1.46e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 2.28e3
0%
CS 12346F
3.20e7
31.63
ES 12378F
3.30e7
32.16
ES 23478F
3.28e7
33.28
Abs. Int.
9.50e6
4.75e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 3.27e3
0%
CS 12346F
2.07e7
31.63
ES 12378F
2.02e7
32.16
ES 23478F
2.04e7
33.28
Abs. Int.
6.24e6
3.12e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: B
4σ 1.53e3
0%
Abs. Int.
8.07e3
4.04e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT



Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:21 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7160, 6610, 8702 scc: 910-087 *PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:36 Page 10 of 12*


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PB
4σ 1.79e3
1234678F
1.14e7
39.78
1234789F
9.88e6
41.17
3.68e6
1.84e6
0.00e0
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PB
4σ 1.90e3
1234678F
1.08e7
39.78
1234789F
9.76e6
41.17
3.53e6
1.77e6
0.00e0
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PB
4σ 1.96e3
ES 1234678F
1.02e7
39.76
CS 1234689F
1.09e7
40.17
ES 1234789F
9.63e6
41.16
3.49e6
1.75e6
0.00e0
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PB
4σ 1.98e3
ES 1234678F
2.20e7
39.76
CS 1234689F
2.29e7
40.17
ES 1234789F
2.05e7
41.16
7.68e6
3.84e6
0.00e0
NCDPE
38.81-42.40
479.7165 Fn4
Flags: PB
4σ 1.10e3
6.77e3
3.38e3
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:21 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3103, 1959, 2794 scc: 910-087
PKD: 21-Feb-2022 09:53 Printed: 21-Feb-2022 10:36 Page 11 of 12


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
OCDF
1.64e7
43.59
OCDF
42.41-45.01
441.7428 Fn5
Flags: PB
4σ 1.19e3
OCDF
1.77e7
43.59
OCDF
42.41-45.01
443.7398 Fn5
Flags: PB
4σ 1.63e3
ES OCDF
3.07e7
43.58
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: PB
4σ 1.53e3
ES OCDF
3.38e7
43.58
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: PB
4σ 2.73e3
DCDPE
42.41-45.01
513.6775 Fn5
Flags: PB
4σ 1.48e3
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
3.15e6
1.58e6
0.00e0
3.65e6
1.83e6
6.19e6
3.09e6
6.71e6
3.36e6
6.60e3
3.30e3
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:21 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1280, 3931, 9906 scc: 910-087
PKD: 21-Feb-2022 09:53 Printed: 21-Feb-2022 10:36 Page 12 of 12

Dioxin/Furan QC Summary	Acq'd: 20 Feb 2022 05:01 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220219_DF_CB	UTP: 21-Feb-2022 10:21:16 DTF	Checkcode: 111-739-KLT
Sample ID: 25-347-1	Report: 21 Feb 2022 10:32 TF	Datafile: 220219C16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.25	4.70E+06	0.75	Y	1.18	1.18	0%
12378-PeCDD	33.64	1.87E+07	1.58	Y	1.04	1.05	1%
123478-HxCDD	37.57	1.68E+07	1.28	Y	1.09	1.10	1%
123678-HxCDD	37.69	1.73E+07	1.30	Y	1.15	1.18	2%
123789-HxCDD	37.99	1.84E+07	1.25	Y	1.05	1.05	0%
1234678-HpCDD	40.72	1.66E+07	1.05	Y	1.06	1.04	-2%
OCDD	43.40	2.76E+07	0.92	Y	1.13	1.14	1%
2378-TCDF	27.39	6.83E+06	0.79	Y	1.08	1.07	-1%
12378-PeCDF	32.18	2.81E+07	1.56	Y	1.02	1.02	-1%
23478-PeCDF	33.30	2.73E+07	1.53	Y	1.02	1.02	0%
123478-HxCDF	36.56	2.55E+07	1.22	Y	1.27	1.21	-5%
123678-HxCDF	36.71	2.64E+07	1.21	Y	1.15	1.13	-2%
234678-HxCDF	37.38	2.50E+07	1.27	Y	1.19	1.15	-3%
123789-HxCDF	38.36	2.27E+07	1.24	Y	1.16	1.14	-2%
1234678-HpCDF	39.77	2.31E+07	1.04	Y	1.37	1.31	-4%
1234789-HpCDF	41.17	2.06E+07	1.03	Y	1.31	1.28	-2%
OCDF	43.58	3.51E+07	0.93	Y	1.07	1.06	-1%
ES 2378-TCDD	28.23	3.98E+07	0.82	Y	1.05	1.01	-3%
ES 12378-PeCDD	33.621	3.55E+07	1.56	Y	0.88	0.90	3%
ES 123478-HxCDD	37.55	3.06E+07	1.24	Y	0.97	0.95	-2%
ES 123678-HxCDD	37.672	2.94E+07	1.24	Y	0.94	0.91	-3%
ES 123789-HxCDD	37.977	3.51E+07	1.23	Y	1.09	1.09	0%
ES 1234678-HpCDD	40.707	3.19E+07	1.07	Y	0.91	0.99	8%
ES OCDD	43.391	4.86E+07	0.91	Y	0.62	0.75	21%
ES 2378-TCDF	27.363	6.37E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	32.159	5.53E+07	1.61	Y	0.91	0.90	-2%
ES 23478-PeCDF	33.282	5.37E+07	1.59	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.547	4.21E+07	0.54	Y	1.20	1.31	9%
ES 123678-HxCDF	36.688	4.69E+07	0.53	Y	1.35	1.45	8%
ES 234678-HxCDF	37.364	4.34E+07	0.53	Y	1.24	1.35	8%
ES 123789-HxCDF	38.343	3.96E+07	0.54	Y	1.16	1.23	6%
ES 1234678-HpCDF	39.764	3.53E+07	0.49	Y	0.97	1.10	13%
ES 1234789-HpCDF	41.162	3.21E+07	0.47	Y	0.85	1.00	17%
ES OCDF	43.572	6.63E+07	0.90	Y	0.81	1.03	27%

Dioxin/Furan QC Summary	Acq'd: 20 Feb 2022 05:01 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220219_DF_CB	UTP: 21-Feb-2022 10:21:16 DTF	Checkcode: 111-739-KLT
Sample ID: 25-347-1	Report: 21 Feb 2022 10:32 TF	Datafile: 220219C16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.56	3.94E+07	0.80	Y	-	-	-
JS 1234-TCDF	25.98	6.18E+07	0.80	Y	-	-	-
JS 123467-HxCDD	37.88	1.61E+07	1.31	Y	-	-	-
CS 37Cl-2378-TCDD	28.25	5.65E+06	n/a	-	1.20	1.44	19%
CS 12347-PeCDD	33.11	3.20E+07	1.61	Y	0.75	0.81	8%
CS 12346-PeCDF	31.63	5.28E+07	1.56	Y	0.85	0.85	0%
CS 123469-HxCDF	37.00	4.19E+07	0.54	Y	1.12	1.30	16%
CS 1234689-HpCDF	40.17	3.57E+07	0.46	Y	0.89	1.11	25%
~~SS 37Cl-2378-TCDD~~	~~28.25~~	~~5.65E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.42~~	~~24%~~
~~SS 12347-PeCDD~~	~~33.11~~	~~3.20E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~0.90~~	~~5%~~
~~SS 12346-PeCDF~~	~~31.63~~	~~5.28E+07~~	~~1.56~~	~~Y~~	~~0.94~~	~~0.95~~	~~2%~~
~~SS 123469-HxCDF~~	~~37.00~~	~~4.19E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~0.89~~	~~8%~~
~~SS 1234689-HpCDF~~	~~40.17~~	~~3.57E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~1.01~~	~~10%~~
~~OCDD-a~~	~~43.40~~	~~1.62E+06~~	~~2.62~~	~~Y~~	~~0.07~~	~~0.07~~	~~-8%~~
~~OCDF-a~~	~~43.58~~	~~2.27E+06~~	~~2.26~~	~~Y~~	~~0.07~~	~~0.07~~	~~3%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220219C16 Analysis Date: 20-FEB-2022 05:01:11

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.75	0.65 - 0.89	Y	9.95	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.7	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	50.6	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05 - 1.43	Y	51.2	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.9	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	49	43 - 58	Y
OCDD	M+2/M+4	0.92	0.76 - 1.02	Y	101	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.93	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	49.6	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32 - 1.78	Y	49.9	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	47.6	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.21	1.05 - 1.43	Y	48.9	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	48.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	47.8	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	43 - 58	Y
OCDF	M+2/M+4	0.93	0.76 - 1.02	Y	98.8	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 21 Feb 2022 10:32 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

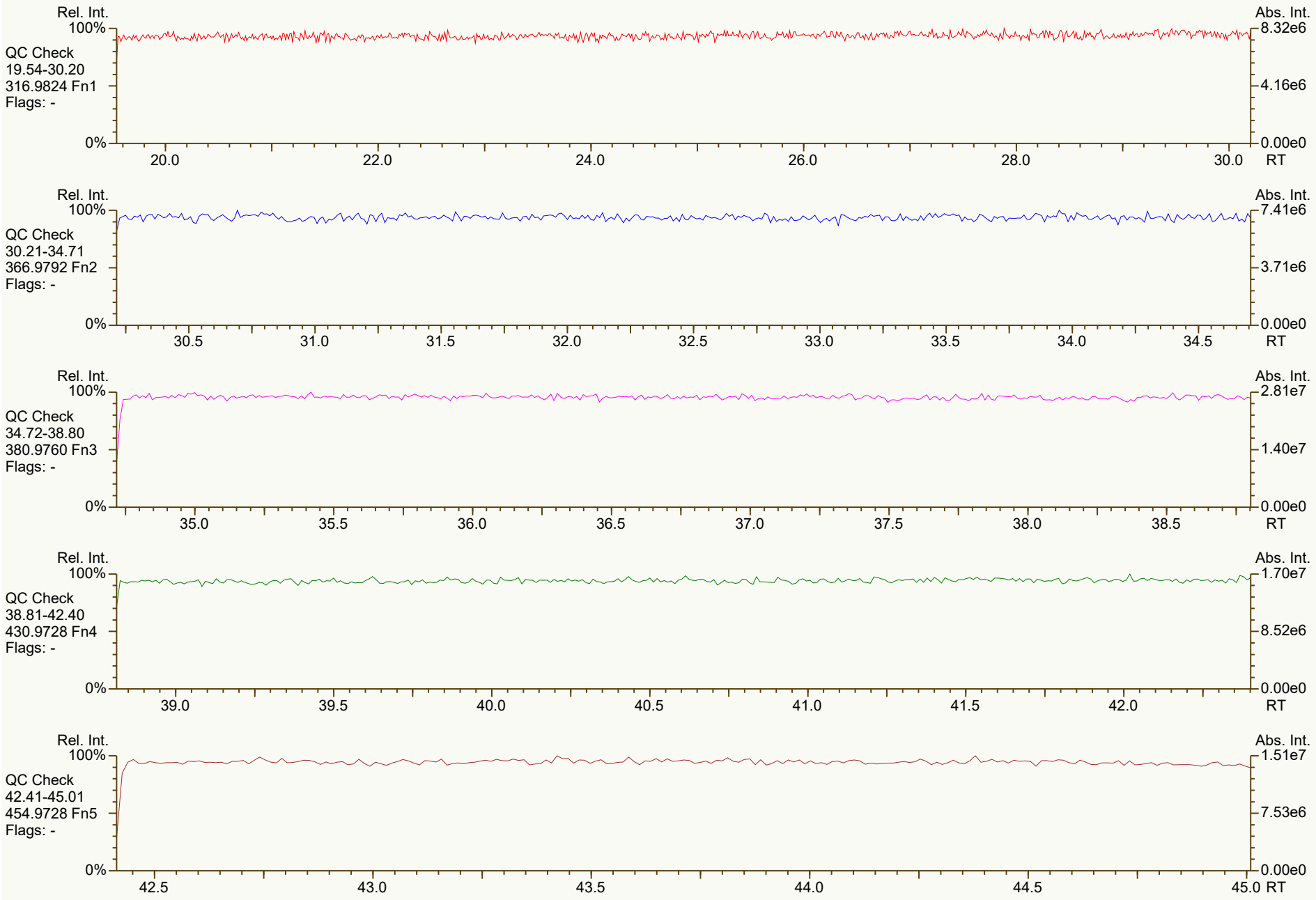
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

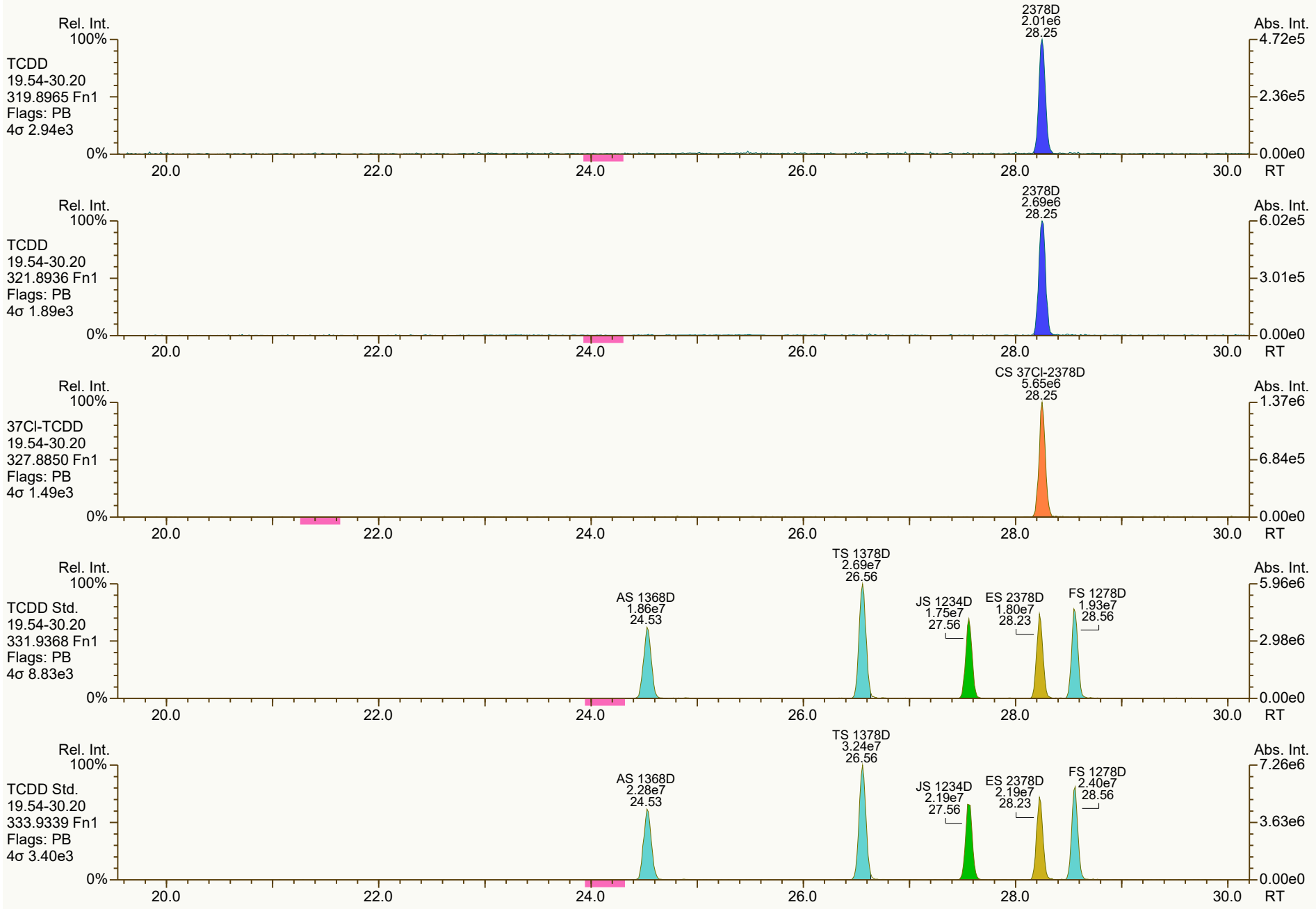
Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220219C16 Analysis Date: 20-FEB-2022 05:01:11

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65 - 0.89	Y	96.8	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	103	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	97.5	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	96.8	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05 - 1.43	Y	99.7	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88 - 1.20	Y	108	72 - 138	Y
13C-OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	242	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	97.4	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32 - 1.78	Y	98.4	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32 - 1.78	Y	98.5	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	109	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	108	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	108	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	106	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.49	0.37 - 0.51	Y	113	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	117	77 - 129	Y
13C-OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	255	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				11.9	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.61	1.32 - 1.78	Y	108	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	100	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	116	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	125	70 - 130	Y

Processed: 21 Feb 2022 10:32 Analyst: TF


Rel. Int.
100%
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
8.32e6
4.16e6
0.00e0
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
7.41e6
3.71e6
0.00e0
Rel. Int.
100%
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
2.81e7
1.40e7
0.00e0
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.70e7
8.52e6
0.00e0
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.51e7
7.53e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: PB
4σ 2.94e3
0%
2378D
2.01e6
28.25
Abs. Int.
4.72e5
2.36e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: PB
4σ 1.89e3
0%
2378D
2.69e6
28.25
Abs. Int.
6.02e5
3.01e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.49e3
0%
CS 37Cl-2378D
5.65e6
28.25
Abs. Int.
1.37e6
6.84e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 8.83e3
0%
AS 1368D
1.86e7
24.53
TS 1378D
2.69e7
26.56
JS 1234D
1.75e7
27.56
ES 2378D
1.80e7
28.23
FS 1278D
1.93e7
28.56
Abs. Int.
5.96e6
2.98e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 3.40e3
0%
AS 1368D
2.28e7
24.53
TS 1378D
3.24e7
26.56
JS 1234D
2.19e7
27.56
ES 2378D
2.19e7
28.23
FS 1278D
2.40e7
28.56
Abs. Int.
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3.63e6
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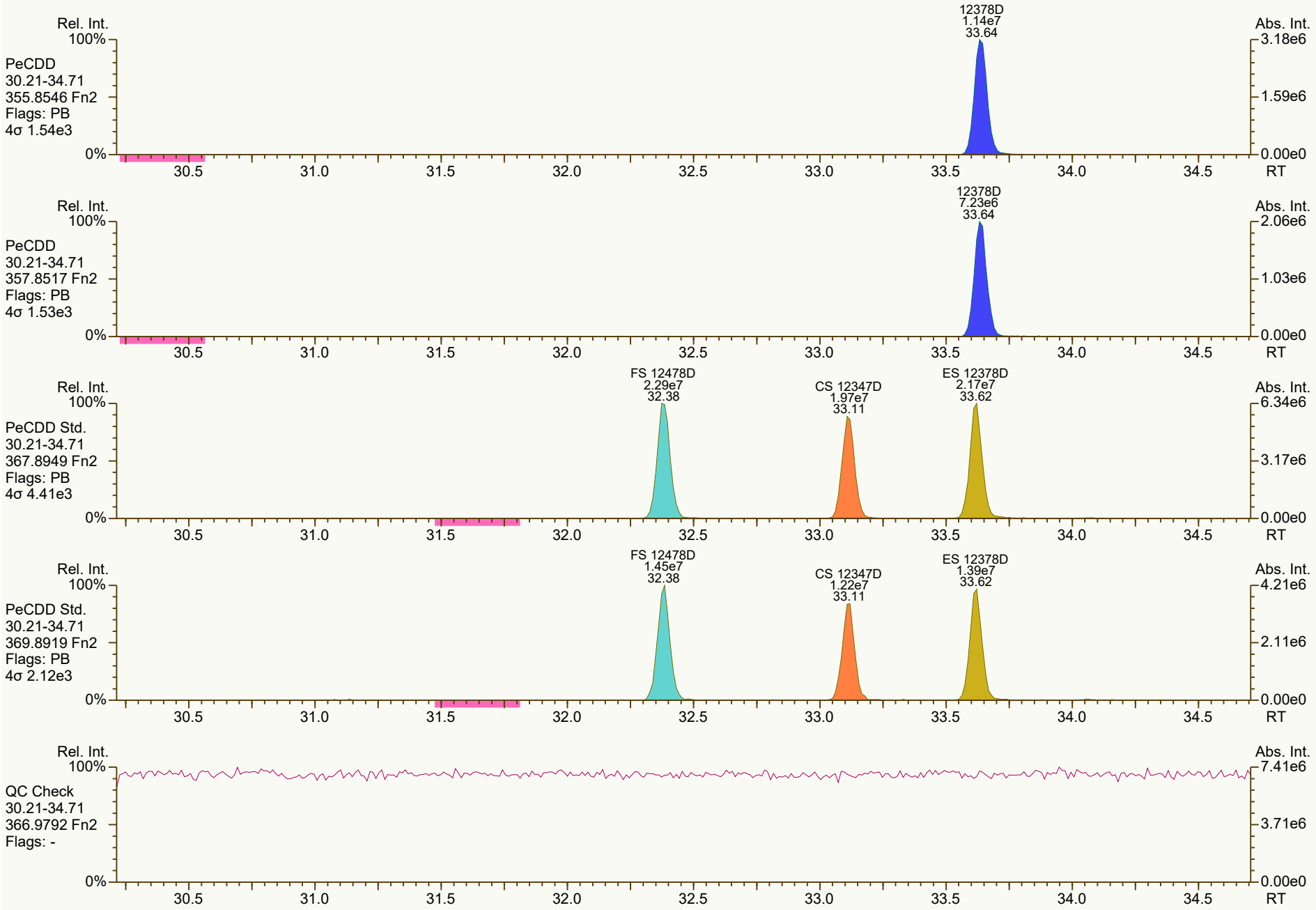
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
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PeCDD
30.21-34.71
355.8546 Fn2
Flags: PB
4σ 1.54e3
12378D
1.14e7
33.64
Abs. Int.
3.18e6
1.59e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PB
4σ 1.53e3
12378D
7.23e6
33.64
Abs. Int.
2.06e6
1.03e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PB
4σ 4.41e3
FS 12478D
2.29e7
32.38
CS 12347D
1.97e7
33.11
ES 12378D
2.17e7
33.62
Abs. Int.
6.34e6
3.17e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 2.12e3
FS 12478D
1.45e7
32.38
CS 12347D
1.22e7
33.11
ES 12378D
1.39e7
33.62
Abs. Int.
4.21e6
2.11e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
Abs. Int.
7.41e6
3.71e6
0.00e0
0%
30.5
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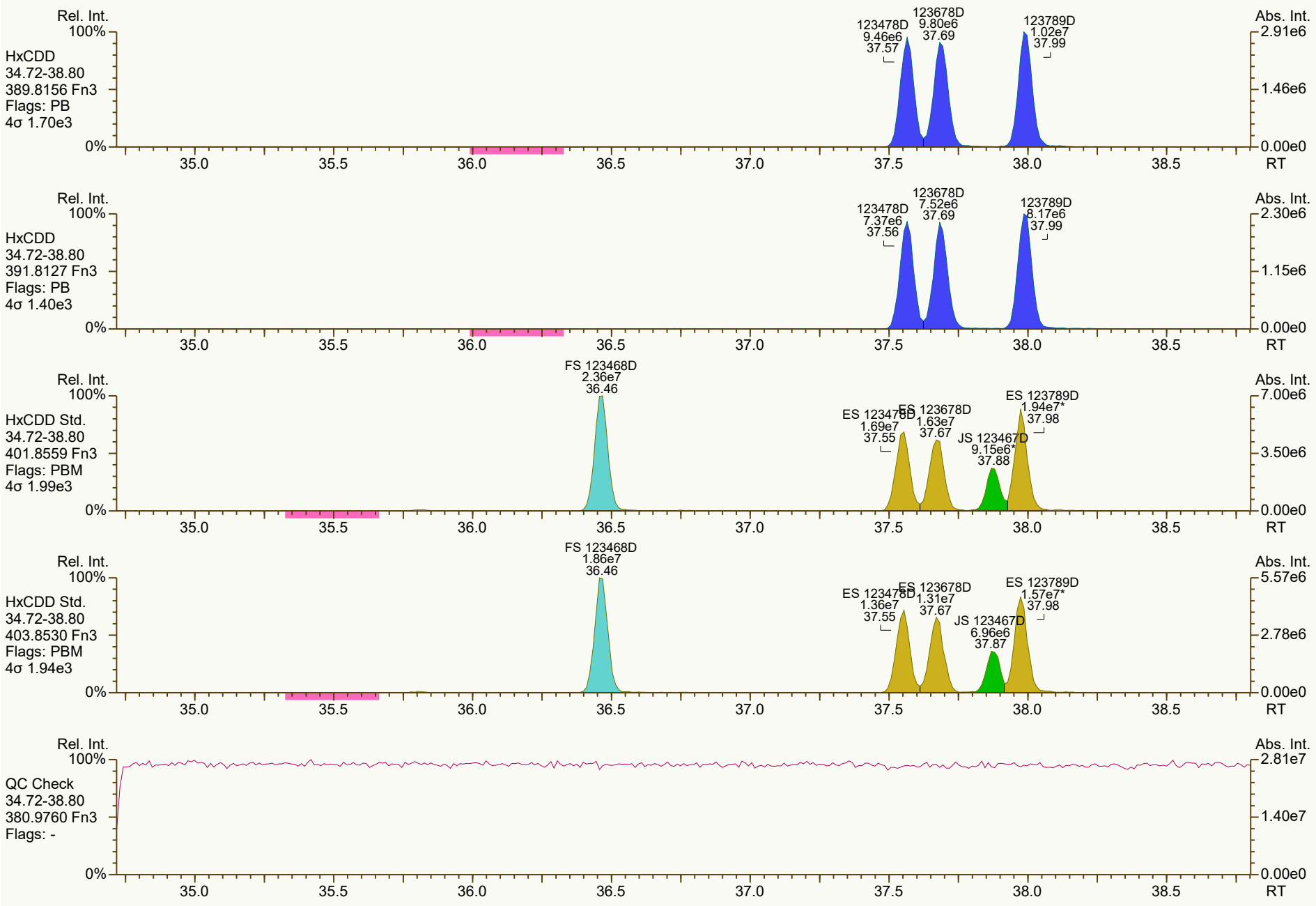
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PB
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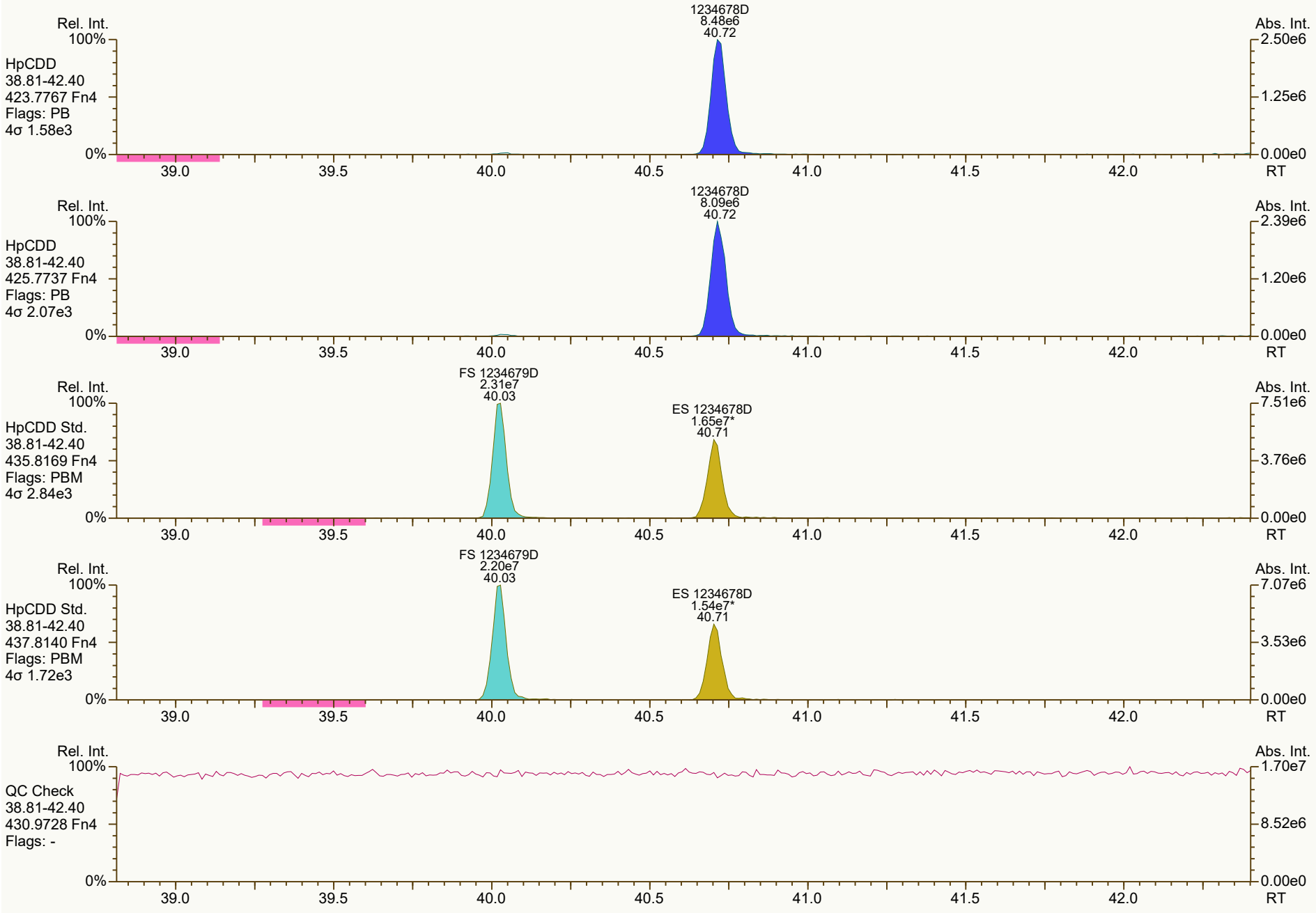
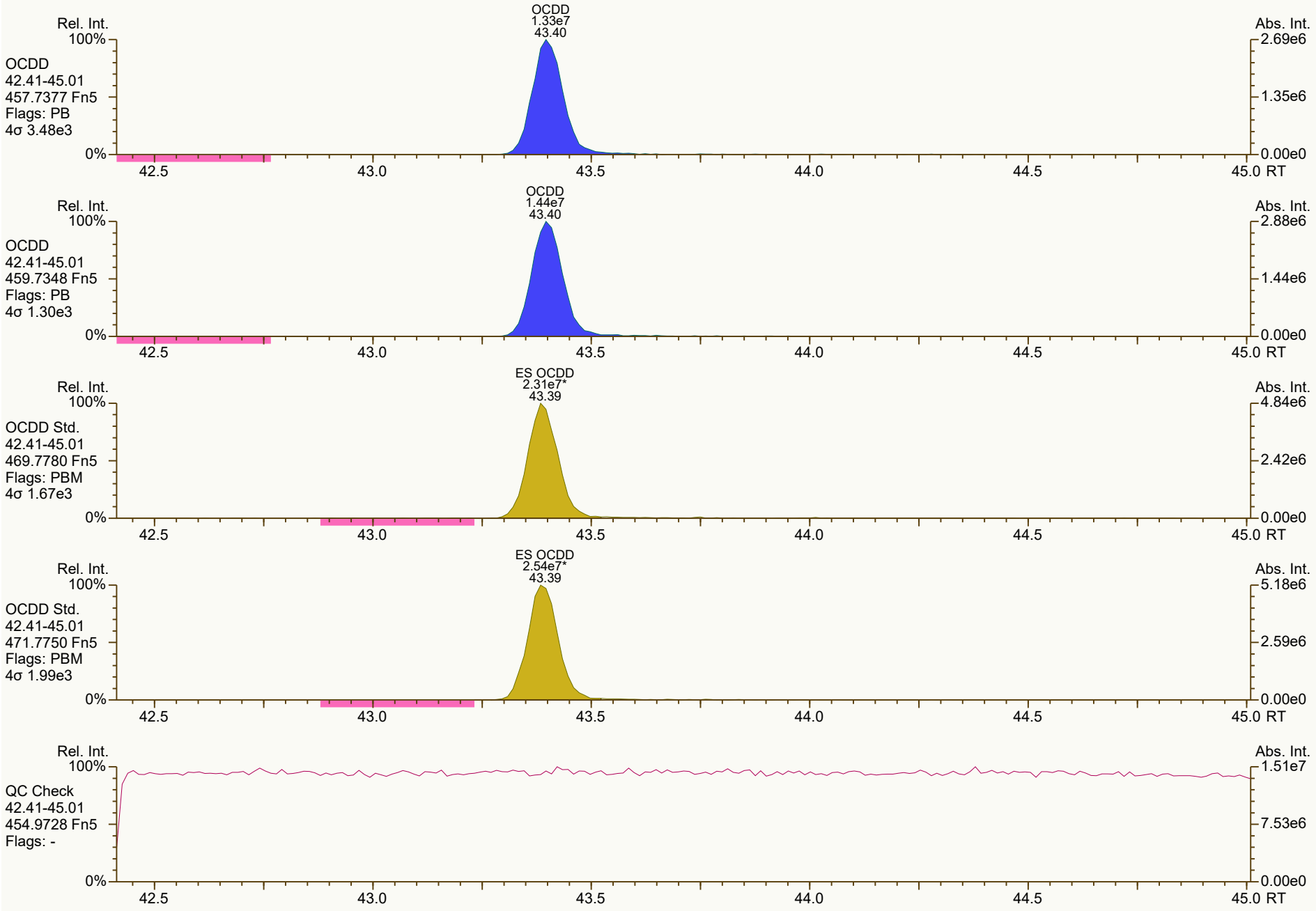
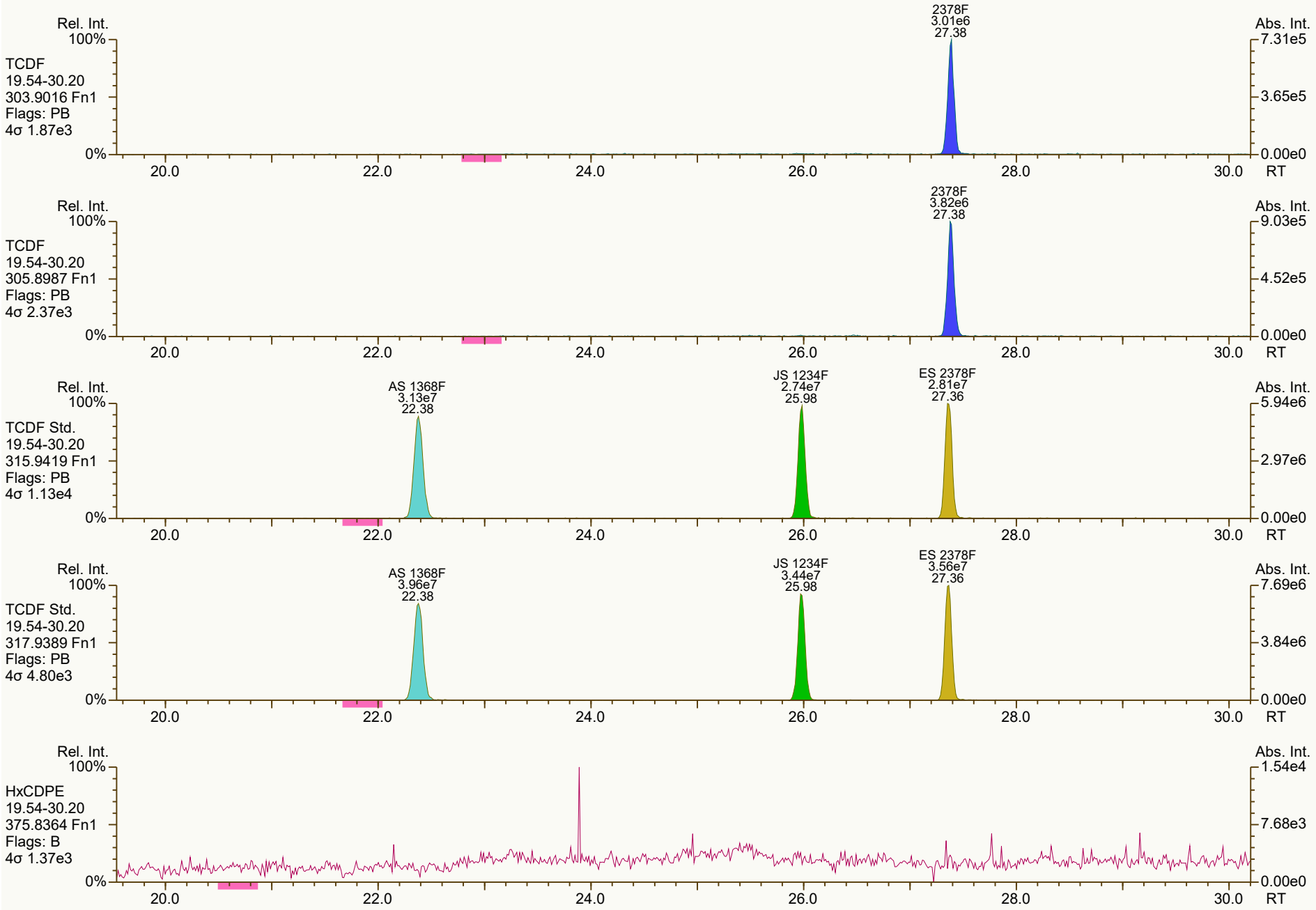
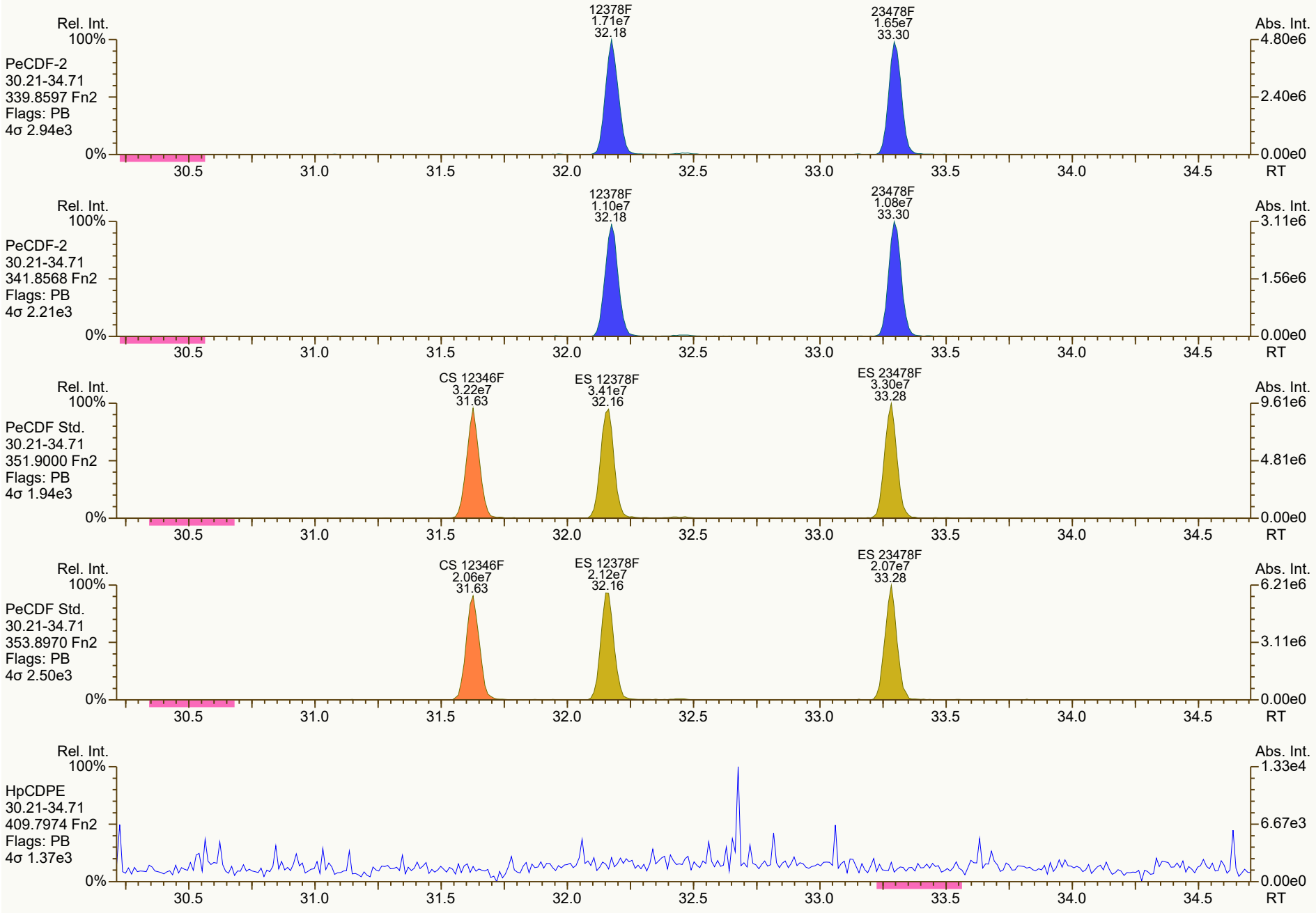
123478D 9.46e6 37.57
123678D 9.80e6 37.69
123789D 1.02e7 37.99
Abs. Int.
2.91e6
1.46e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PB
4σ 1.40e3
123478D 7.37e6 37.56
123678D 7.52e6 37.69
123789D 8.17e6 37.99
Abs. Int.
2.30e6
1.15e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PBM
4σ 1.99e3
FS 123468D 2.36e7 36.46
ES 123478D 1.69e7 37.55
ES 123678D 1.63e7 37.67
JS 123467D 9.15e6* 37.88
ES 123789D 1.94e7* 37.98
Abs. Int.
7.00e6
3.50e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PBM
4σ 1.94e3
FS 123468D 1.86e7 36.46
ES 123478D 1.36e7 37.55
ES 123678D 1.31e7 37.67
JS 123467D 6.96e6 37.87
ES 123789D 1.57e7* 37.98
Abs. Int.
5.57e6
2.78e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
Abs. Int.
2.81e7
1.40e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

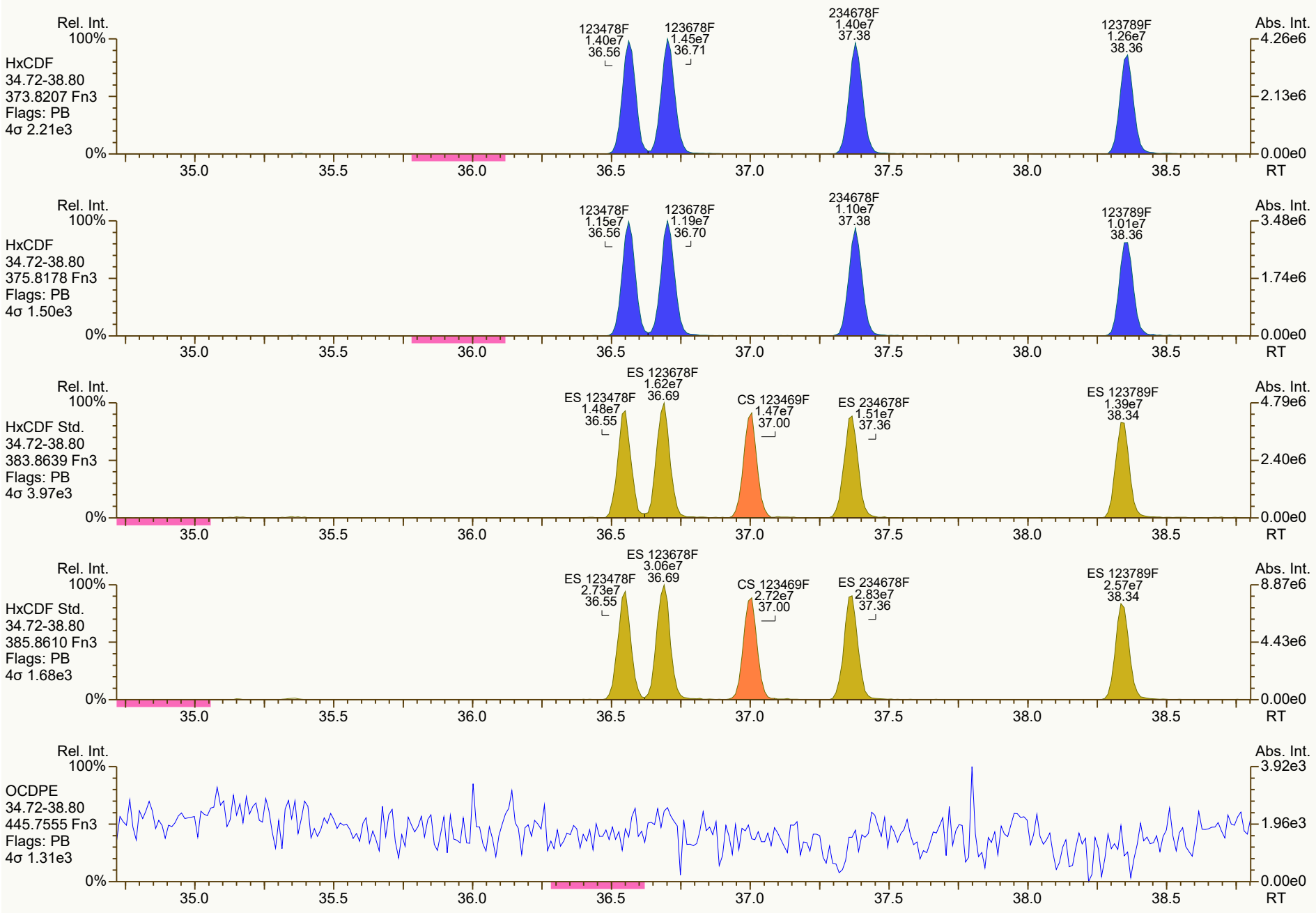

Rel. Int.
100%
HpCDD
38.81-42.40
423.7767 Fn4
Flags: PB
4σ 1.58e3
1234678D
8.48e6
40.72
Abs. Int.
2.50e6
1.25e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
38.81-42.40
425.7737 Fn4
Flags: PB
4σ 2.07e3
1234678D
8.09e6
40.72
Abs. Int.
2.39e6
1.20e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
38.81-42.40
435.8169 Fn4
Flags: PBM
4σ 2.84e3
FS 1234679D
2.31e7
40.03
ES 1234678D
1.65e7*
40.71
Abs. Int.
7.51e6
3.76e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
38.81-42.40
437.8140 Fn4
Flags: PBM
4σ 1.72e3
FS 1234679D
2.20e7
40.03
ES 1234678D
1.54e7*
40.71
Abs. Int.
7.07e6
3.53e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.70e7
8.52e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT

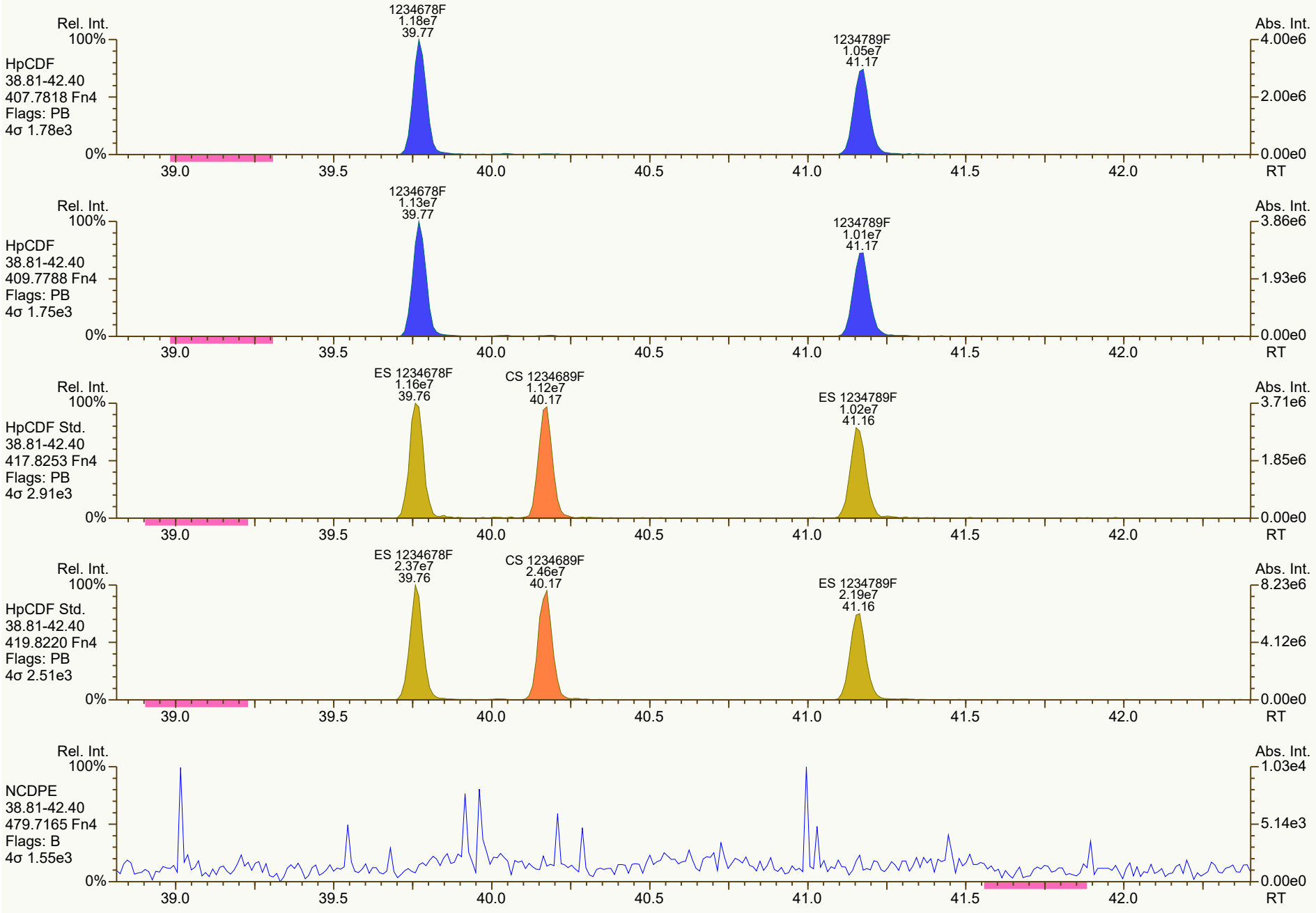

OCDD
1.33e7
43.40
Rel. Int.
Abs. Int.
OCDD
42.41-45.01
457.7377 Fn5
Flags: PB
4σ 3.48e3
OCDD
1.44e7
43.40
OCDD
42.41-45.01
459.7348 Fn5
Flags: PB
4σ 1.30e3
ES OCDD
2.31e7*
43.39
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PBM
4σ 1.67e3
ES OCDD
2.54e7*
43.39
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PBM
4σ 1.99e3
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
2.69e6
1.35e6
0.00e0
2.88e6
1.44e6
4.84e6
2.42e6
5.18e6
2.59e6
1.51e7
7.53e6


Rel. Int.
100%
TCDF
19.54-30.20
303.9016 Fn1
Flags: PB
4σ 1.87e3
0%
2378F
3.01e6
27.38
Abs. Int.
7.31e5
3.65e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.20
305.8987 Fn1
Flags: PB
4σ 2.37e3
0%
2378F
3.82e6
27.38
Abs. Int.
9.03e5
4.52e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 1.13e4
0%
AS 1368F
3.13e7
22.38
JS 1234F
2.74e7
25.98
ES 2378F
2.81e7
27.36
Abs. Int.
5.94e6
2.97e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 4.80e3
0%
AS 1368F
3.96e7
22.38
JS 1234F
3.44e7
25.98
ES 2378F
3.56e7
27.36
Abs. Int.
7.69e6
3.84e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.37e3
0%
Abs. Int.
1.54e4
7.68e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

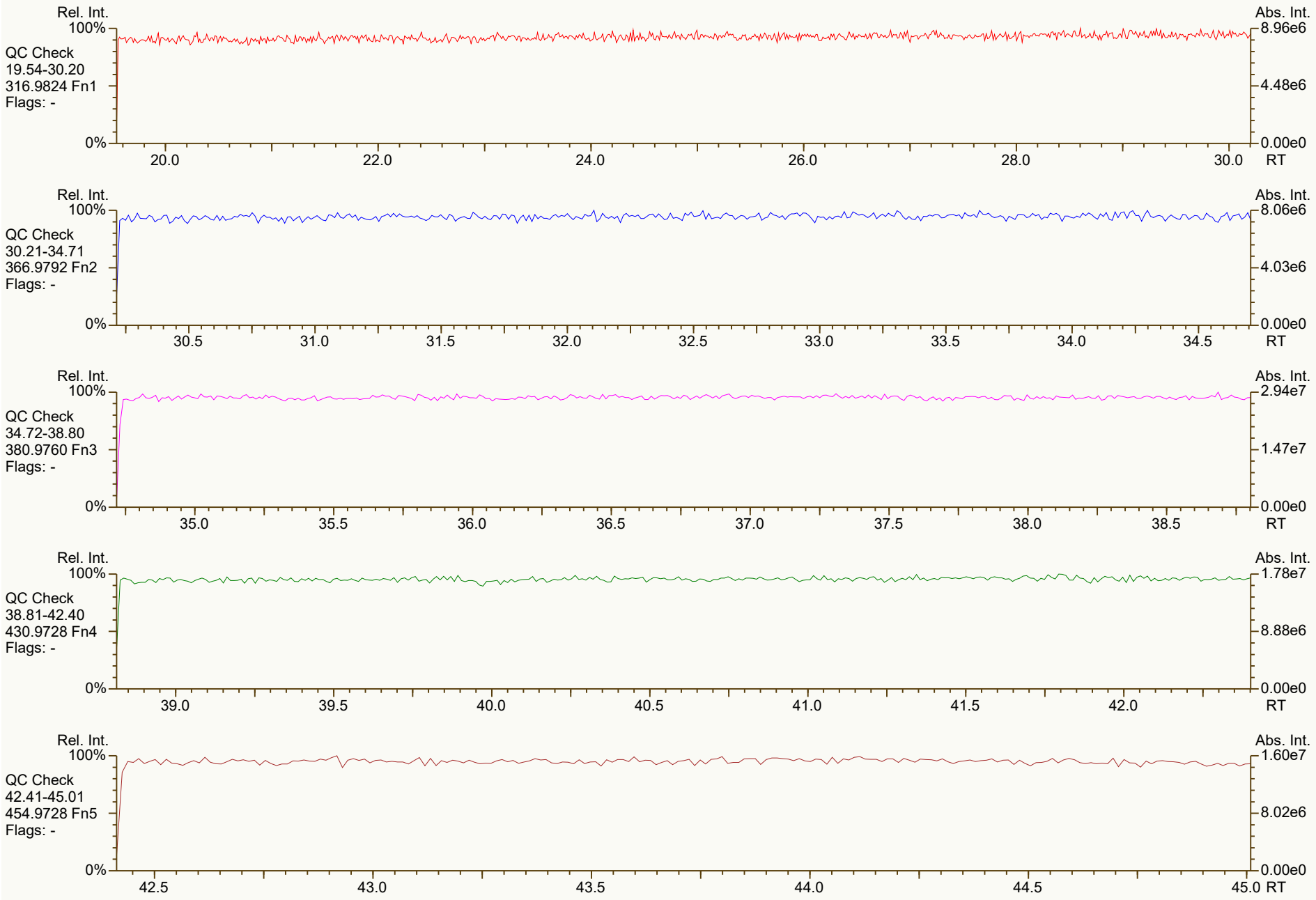

Rel. Int.
100%
0%
Abs. Int.
1.02e4
5.09e3
0.00e0
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: PB
4σ 1.09e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.76e4
8.80e3
0.00e0
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: B
4σ 1.85e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.32e6
4.16e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PB
4σ 2.94e3
0%
12378F
1.71e7
32.18
23478F
1.65e7
33.30
Abs. Int.
4.80e6
2.40e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: PB
4σ 2.21e3
0%
12378F
1.10e7
32.18
23478F
1.08e7
33.30
Abs. Int.
3.11e6
1.56e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 1.94e3
0%
CS 12346F
3.22e7
31.63
ES 12378F
3.41e7
32.16
ES 23478F
3.30e7
33.28
Abs. Int.
9.61e6
4.81e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 2.50e3
0%
CS 12346F
2.06e7
31.63
ES 12378F
2.12e7
32.16
ES 23478F
2.07e7
33.28
Abs. Int.
6.21e6
3.11e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: PB
4σ 1.37e3
0%
Abs. Int.
1.33e4
6.67e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

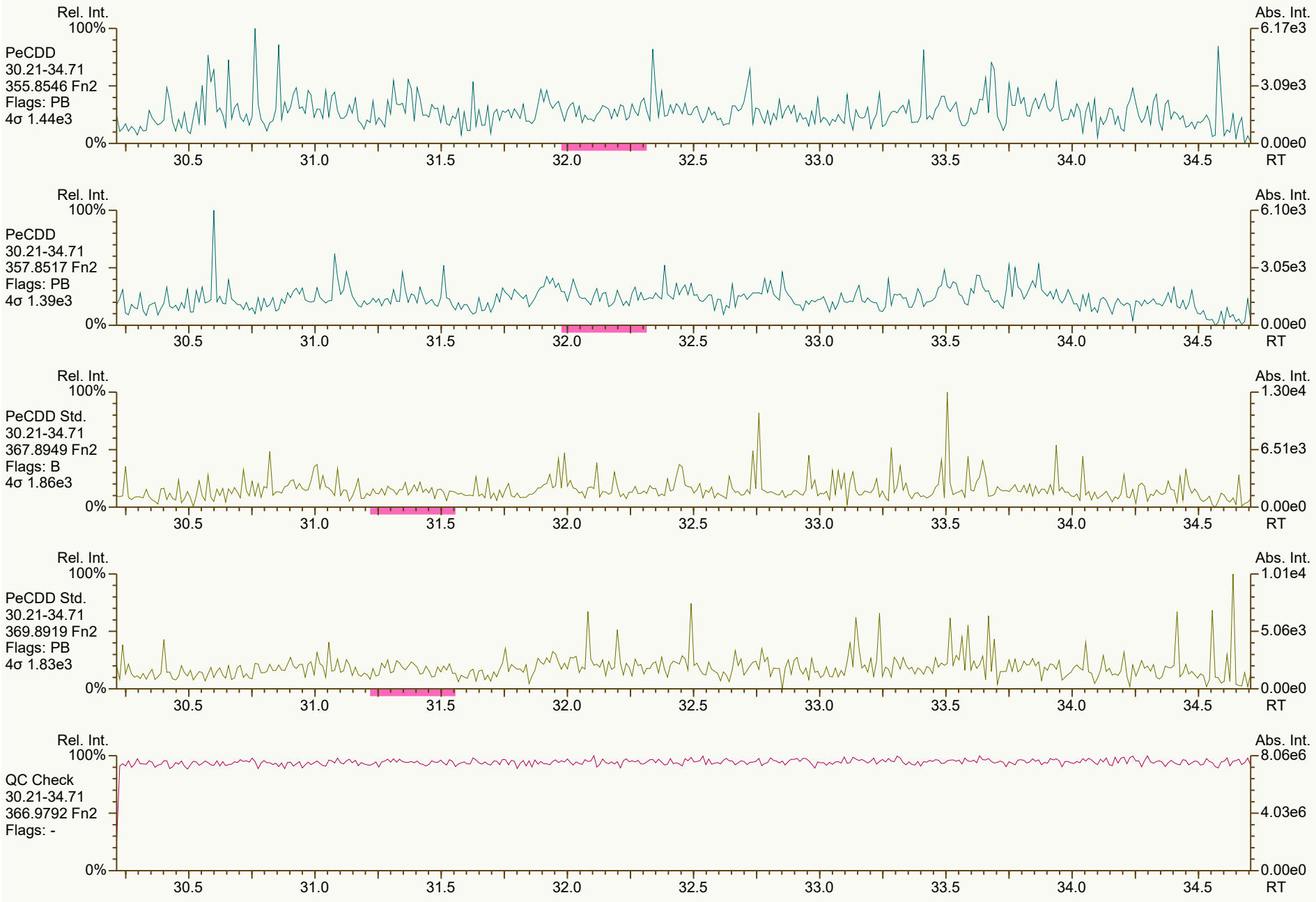

Rel. Int.
100%
HxCDF
34.72-38.80
373.8207 Fn3
Flags: PB
4σ 2.21e3
0%
123478F
1.40e7
36.56
123678F
1.45e7
36.71
234678F
1.40e7
37.38
123789F
1.26e7
38.36
Abs. Int.
4.26e6
2.13e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.72-38.80
375.8178 Fn3
Flags: PB
4σ 1.50e3
0%
123478F
1.15e7
36.56
123678F
1.19e7
36.70
234678F
1.10e7
37.38
123789F
1.01e7
38.36
Abs. Int.
3.48e6
1.74e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: PB
4σ 3.97e3
0%
ES 123478F
1.48e7
36.55
ES 123678F
1.62e7
36.69
CS 123469F
1.47e7
37.00
ES 234678F
1.51e7
37.36
ES 123789F
1.39e7
38.34
Abs. Int.
4.79e6
2.40e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: PB
4σ 1.68e3
0%
ES 123478F
2.73e7
36.55
ES 123678F
3.06e7
36.69
CS 123469F
2.72e7
37.00
ES 234678F
2.83e7
37.36
ES 123789F
2.57e7
38.34
Abs. Int.
8.87e6
4.43e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.72-38.80
445.7555 Fn3
Flags: PB
4σ 1.31e3
0%
Abs. Int.
3.92e3
1.96e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
0%
Abs. Int.
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PB
4σ 1.78e3
1234678F
1.18e7
39.77
1234789F
1.05e7
41.17
4.00e6
2.00e6
0.00e0
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PB
4σ 1.75e3
1234678F
1.13e7
39.77
1234789F
1.01e7
41.17
3.86e6
1.93e6
0.00e0
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PB
4σ 2.91e3
ES 1234678F
1.16e7
39.76
CS 1234689F
1.12e7
40.17
ES 1234789F
1.02e7
41.16
3.71e6
1.85e6
0.00e0
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PB
4σ 2.51e3
ES 1234678F
2.37e7
39.76
CS 1234689F
2.46e7
40.17
ES 1234789F
2.19e7
41.16
8.23e6
4.12e6
0.00e0
NCDPE
38.81-42.40
479.7165 Fn4
Flags: B
4σ 1.55e3
1.03e4
5.14e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDF
1.69e7*
43.58
Rel. Int.
Abs. Int.
OCDF
42.41-45.01
441.7428 Fn5
Flags: PBM
4σ 1.33e3
OCDF
1.82e7*
43.58
OCDF
42.41-45.01
443.7398 Fn5
Flags: PBM
4σ 1.30e3
ES OCDF
3.14e7
43.57
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: PB
4σ 2.35e3
ES OCDF
3.49e7
43.57
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: PB
4σ 3.39e3
DCDPE
42.41-45.01
513.6775 Fn5
Flags: B
4σ 1.36e3
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
8.96e6
4.48e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.06e6
4.03e6
0.00e0
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
0%
Abs. Int.
2.94e7
1.47e7
0.00e0
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
0%
Abs. Int.
1.78e7
8.88e6
0.00e0
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.60e7
8.02e6
0.00e0
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
42.5
43.0
43.5
44.0
44.5
45.0
RT

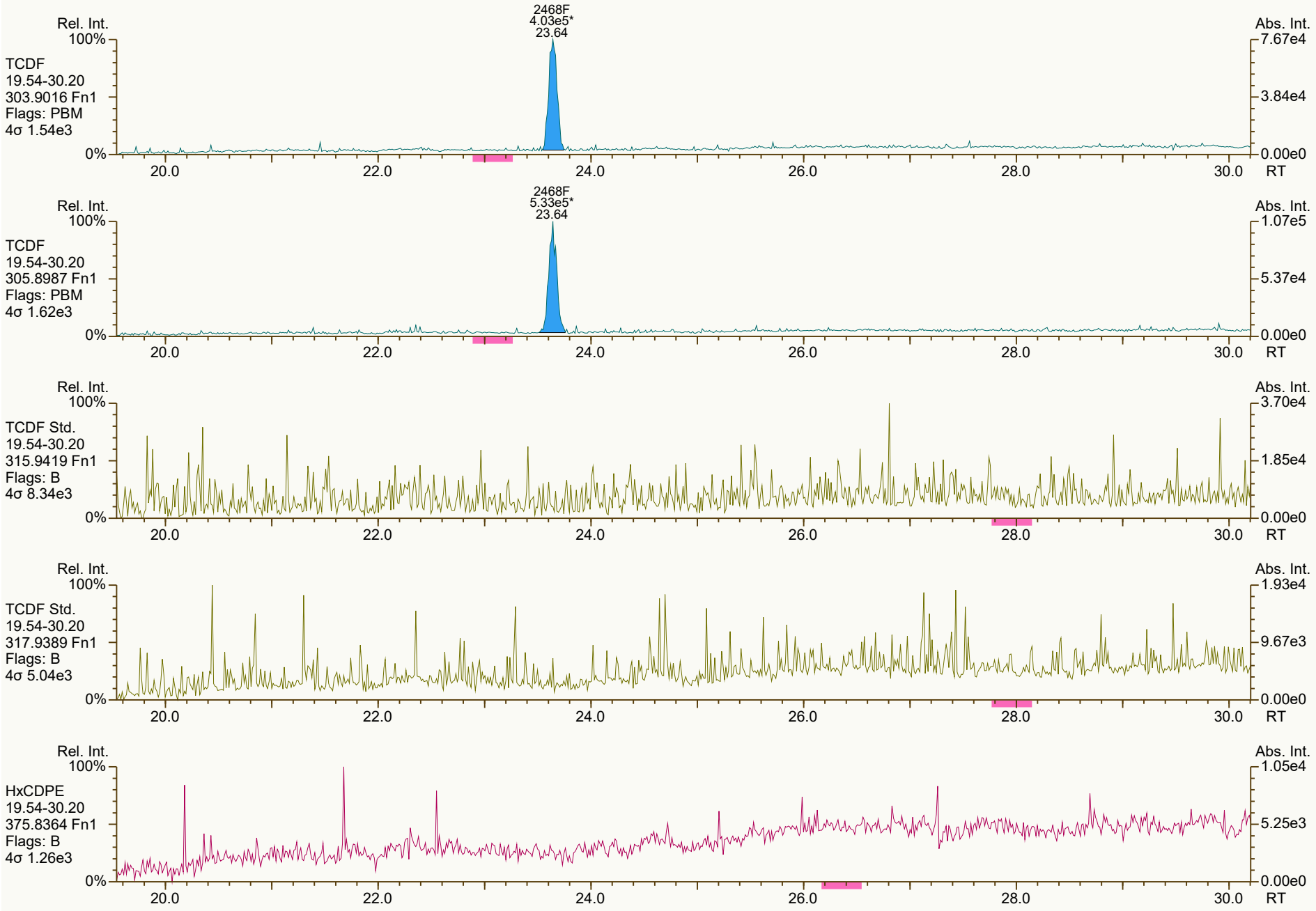

Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: B
4σ 2.21e3
0%
Abs. Int.
1.04e4
5.22e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.96e3
4.98e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: B
4σ 1.39e3
0%
Abs. Int.
2.05e4
1.02e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: B
4σ 9.01e3
0%
Abs. Int.
3.19e4
1.59e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: B
4σ 5.90e3
0%
Abs. Int.
2.56e4
1.28e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.21-34.71
355.8546 Fn2
Flags: PB
4σ 1.44e3
0%
Abs. Int.
6.17e3
3.09e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PB
4σ 1.39e3
0%
Abs. Int.
6.10e3
3.05e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: B
4σ 1.86e3
0%
Abs. Int.
1.30e4
6.51e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 1.83e3
0%
Abs. Int.
1.01e4
5.06e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.06e6
4.03e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.72-38.80
389.8156 Fn3
Flags: B
4σ 1.40e3
0%
Abs. Int.
1.33e4
6.64e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PB
4σ 1.57e3
0%
Abs. Int.
5.56e3
2.78e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: B
4σ 1.82e3
0%
Abs. Int.
3.19e4
1.60e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: B
4σ 2.05e3
0%
Abs. Int.
8.35e3
4.17e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.94e7
1.47e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.81-42.40
423.7767 Fn4
Flags: PB
4σ 2.42e3
0%
Abs. Int.
7.80e3
3.90e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
38.81-42.40
425.7737 Fn4
Flags: B
4σ 2.23e3
0%
Abs. Int.
5.46e3
2.73e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
38.81-42.40
435.8169 Fn4
Flags: B
4σ 1.54e3
0%
Abs. Int.
1.09e4
5.43e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
38.81-42.40
437.8140 Fn4
Flags: B
4σ 1.88e3
0%
Abs. Int.
9.38e3
4.69e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.78e7
8.88e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT

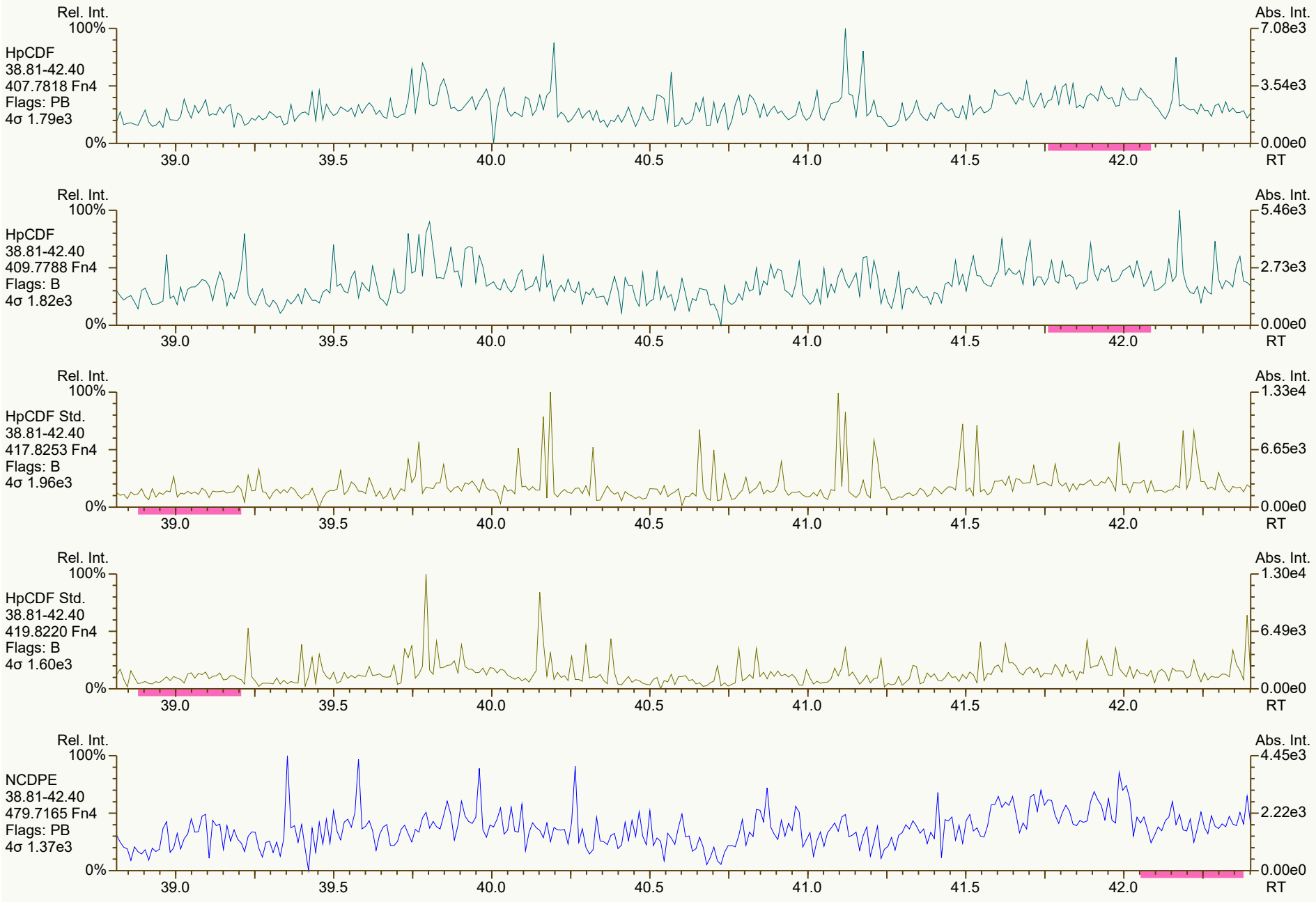

Rel. Int.
100%
OCDD
42.41-45.01
457.7377 Fn5
Flags: B
4σ 2.20e3
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.41-45.01
459.7348 Fn5
Flags: B
4σ 1.84e3
0%
Abs. Int.
1.31e4
6.54e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PB
4σ 2.08e3
0%
Abs. Int.
1.41e4
7.05e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.58e4
7.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.60e7
8.02e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


2468F
4.03e5*
23.64
Rel. Int.
100%
TCDF
19.54-30.20
303.9016 Fn1
Flags: PBM
4σ 1.54e3
0%
Abs. Int.
7.67e4
3.84e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
2468F
5.33e5*
23.64
TCDF
19.54-30.20
305.8987 Fn1
Flags: PBM
4σ 1.62e3
1.07e5
5.37e4
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: B
4σ 8.34e3
3.70e4
1.85e4
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: B
4σ 5.04e3
1.93e4
9.67e3
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.26e3
1.05e4
5.25e3


Rel. Int.
100%
0%
Abs. Int.
9.51e3
4.75e3
0.00e0
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: B
4σ 1.32e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.44e4
7.22e3
0.00e0
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: B
4σ 1.63e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.96e6
4.48e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PB
4σ 1.52e3
0%
Abs. Int.
9.44e3
4.72e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: B
4σ 1.67e3
0%
Abs. Int.
6.79e3
3.40e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: B
4σ 1.96e3
0%
Abs. Int.
8.41e3
4.21e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: PB
4σ 1.54e3
0%
Abs. Int.
7.96e3
3.98e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.72-38.80
373.8207 Fn3
Flags: B
4σ 1.74e3
0%
Abs. Int.
6.81e3
3.41e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.72-38.80
375.8178 Fn3
Flags: B
4σ 1.11e3
0%
Abs. Int.
8.37e3
4.19e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: B
4σ 1.65e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: B
4σ 2.12e3
0%
Abs. Int.
1.37e4
6.84e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.72-38.80
445.7555 Fn3
Flags: PB
4σ 1.35e3
0%
Abs. Int.
1.04e4
5.22e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PB
4σ 1.79e3
0%
Abs. Int.
7.08e3
3.54e3
0.00e0
RT
39.0
39.5
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDF
38.81-42.40
409.7788 Fn4
Flags: B
4σ 1.82e3
0%
Abs. Int.
5.46e3
2.73e3
0.00e0
RT
Rel. Int.
100%
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: B
4σ 1.96e3
0%
Abs. Int.
1.33e4
6.65e3
0.00e0
RT
Rel. Int.
100%
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: B
4σ 1.60e3
0%
Abs. Int.
1.30e4
6.49e3
0.00e0
RT
Rel. Int.
100%
NCDPE
38.81-42.40
479.7165 Fn4
Flags: PB
4σ 1.37e3
0%
Abs. Int.
4.45e3
2.22e3
0.00e0
RT


Rel. Int.
100%
OCDF
42.41-45.01
441.7428 Fn5
Flags: PB
4σ 1.70e3
0%
Abs. Int.
8.72e3
4.36e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.41-45.01
443.7398 Fn5
Flags: PB
4σ 2.29e3
0%
Abs. Int.
5.78e3
2.89e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: B
4σ 2.55e3
0%
Abs. Int.
4.05e4
2.02e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
9.60e3
4.80e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.41-45.01
513.6775 Fn5
Flags: B
4σ 1.47e3
0%
Abs. Int.
7.46e3
3.73e3
0.00e0
42.5
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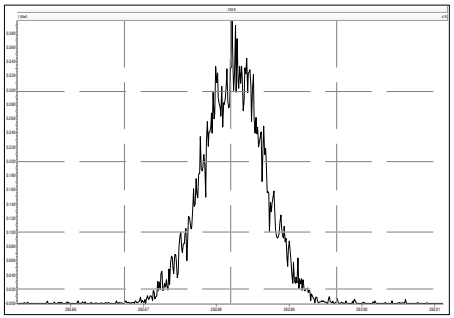
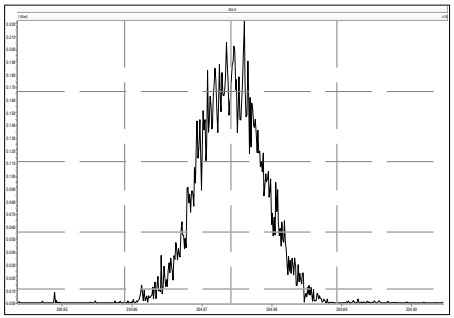
43.5
44.0
44.5
45.0 RT

Printed: Saturday, February 19, 2022 17:17:54 Eastern Standard Time

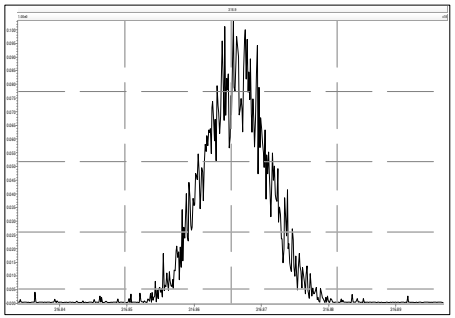
M 292.9824 R 14749



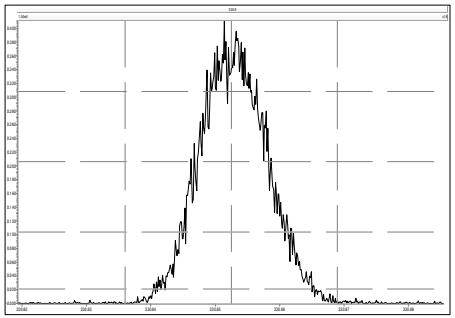
M 304.9824 R 15151



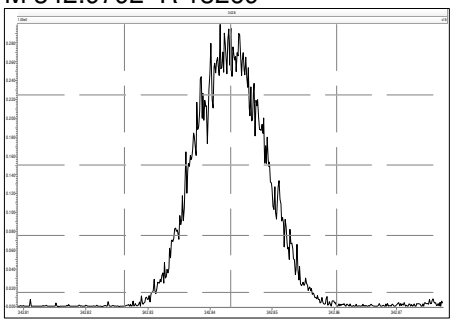
M 316.9824 R 15549



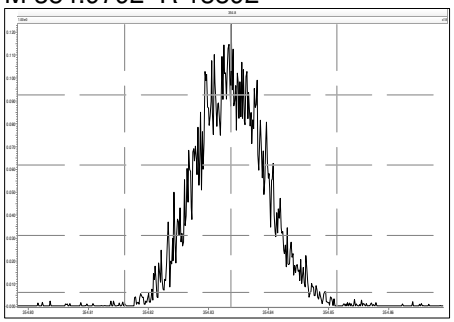
M 330.9792 R 14014



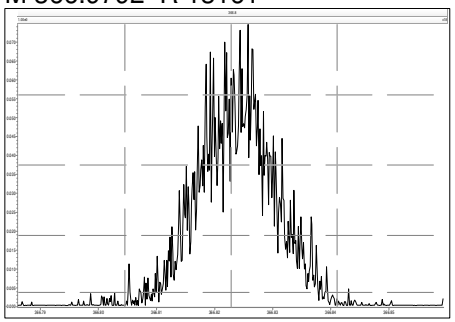
M 342.9792 R 13269



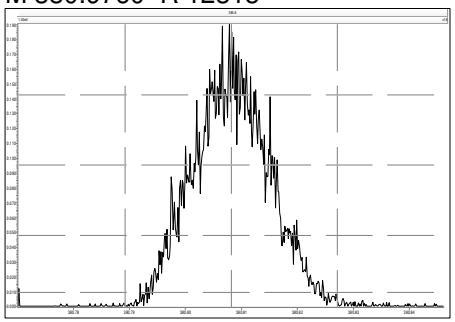
M 354.9792 R 13892



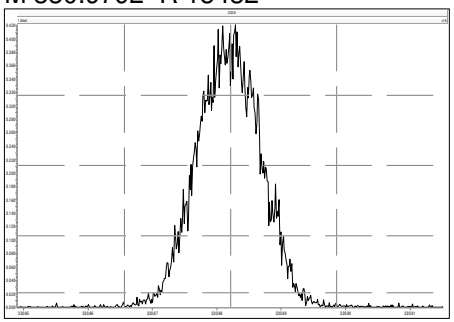
M 366.9792 R 13161



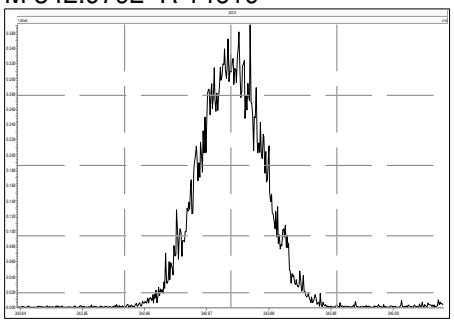
M 380.9760 R 12315



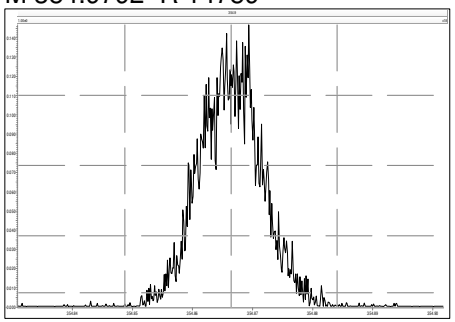
M 330.9792 R 15432



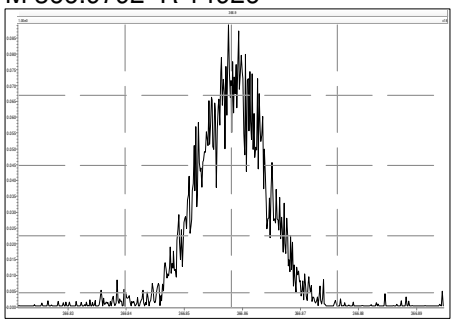
M 342.9792 R 14619



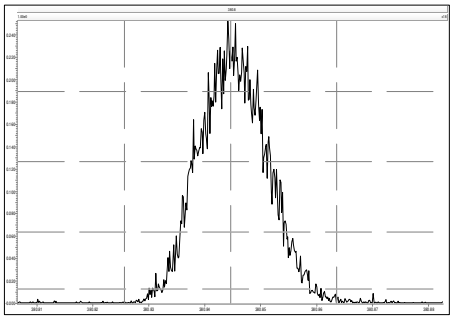
M 354.9792 R 14759



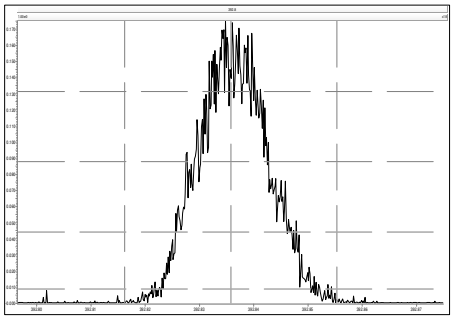
M 366.9792 R 14926



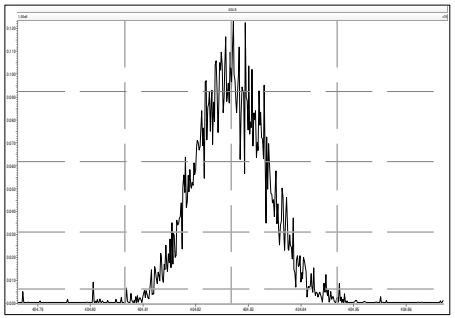
M 380.9760 R 14018



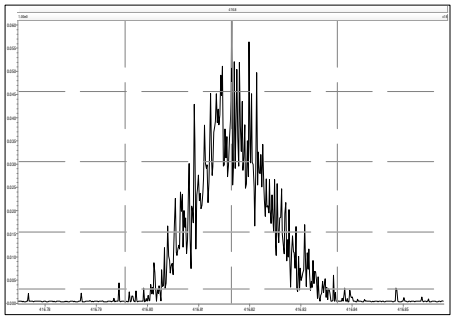
M 392.9760 R 13554



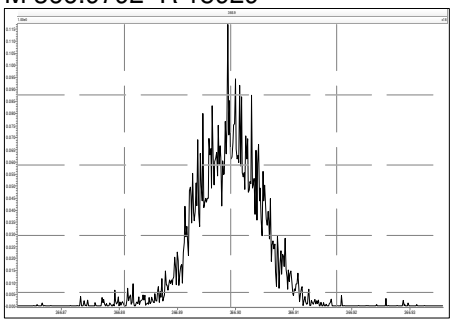
M 404.9760 R 14125



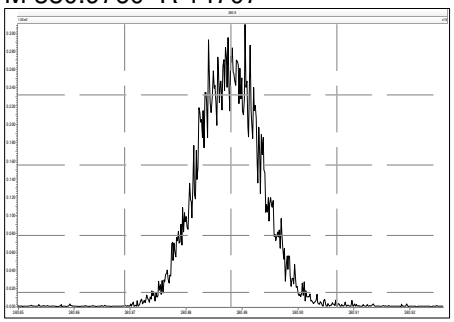
M 416.9760 R 15156



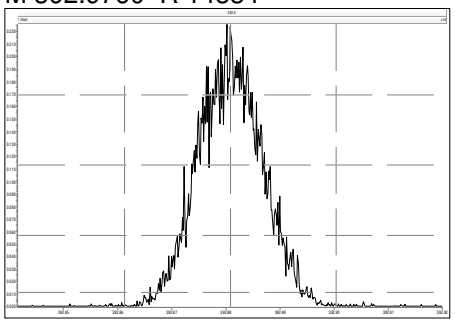
M 366.9792 R 15929



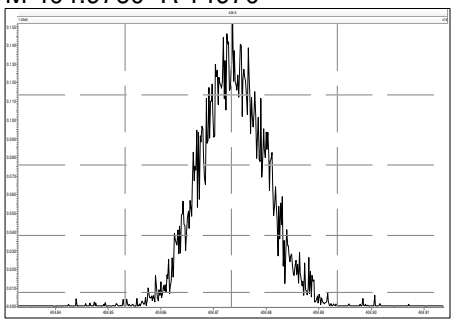
M 380.9760 R 14707



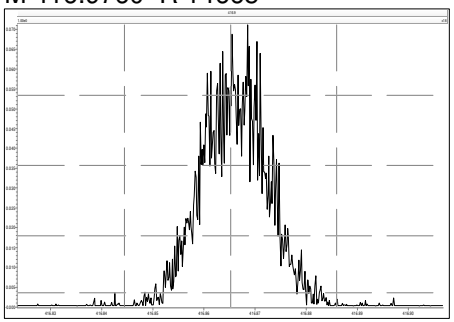
M 392.9760 R 14534



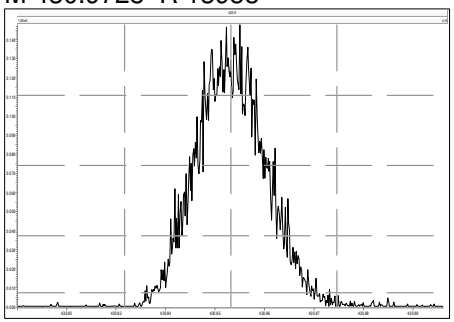
M 404.9760 R 14970



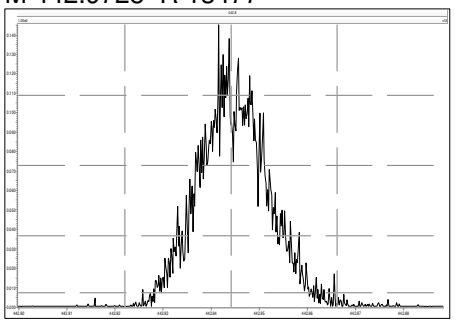
M 416.9760 R 14665



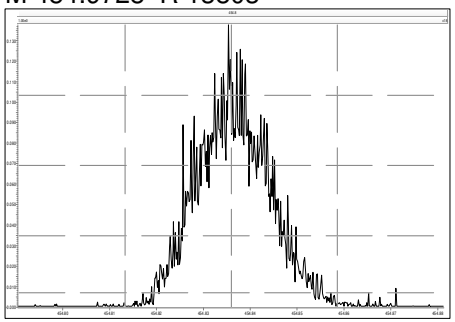
M 430.9728 R 13958



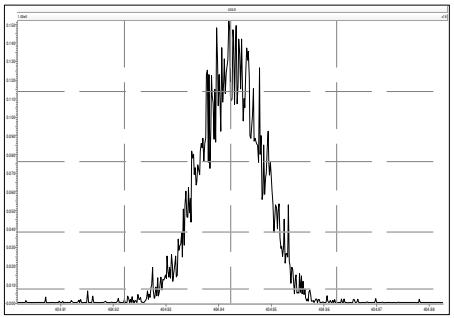
M 442.9728 R 13477



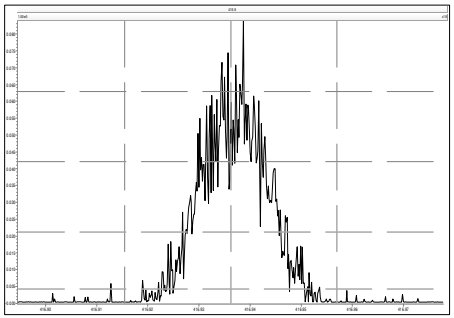
M 454.9728 R 13803



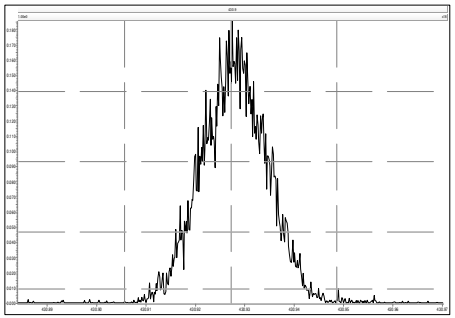
M 404.9760 R 15673



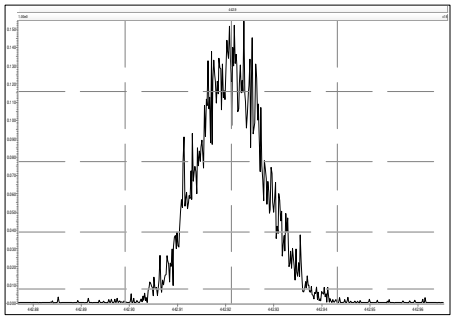
M 416.9760 R 16305



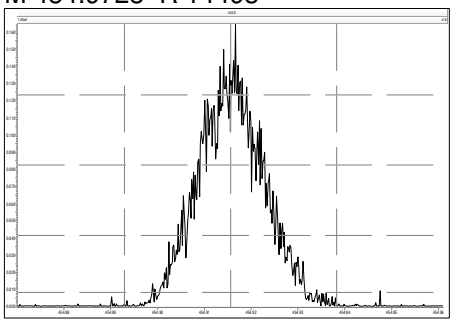
M 430.9728 R 14498



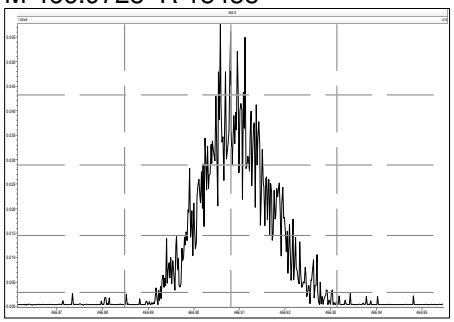
M 442.9728 R 15151



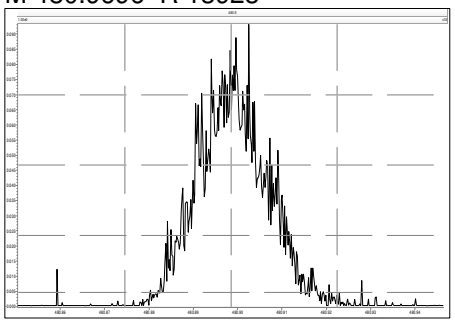
M 454.9728 R 14493



M 466.9728 R 15435



M 480.9696 R 13928



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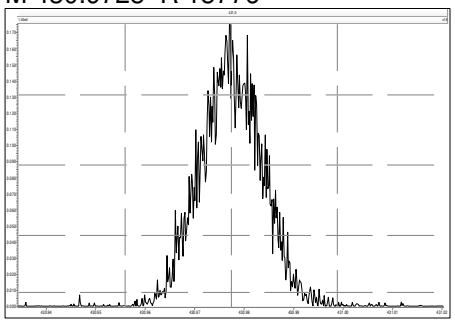

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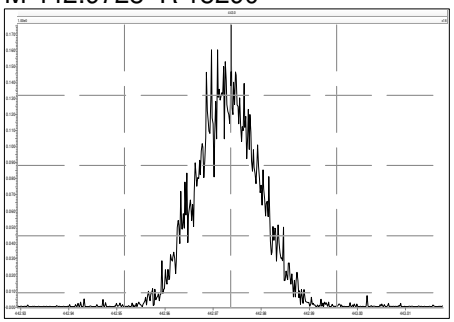

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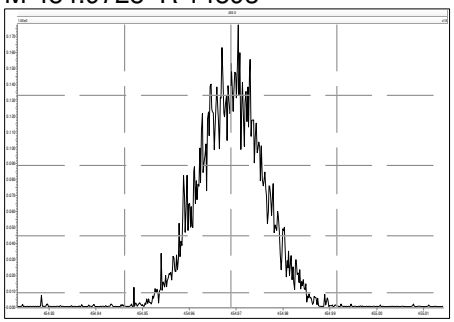

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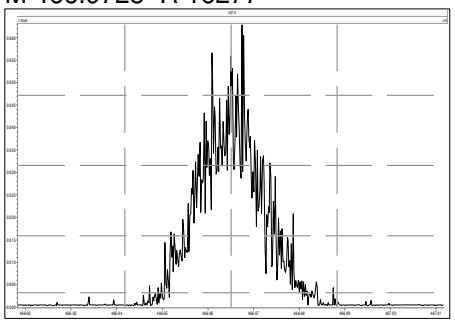

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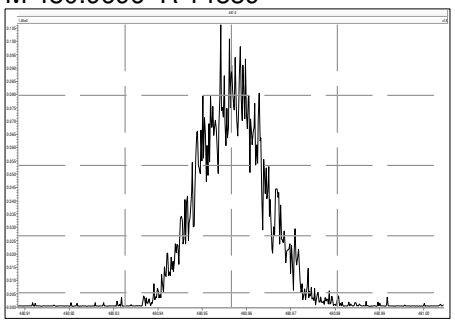

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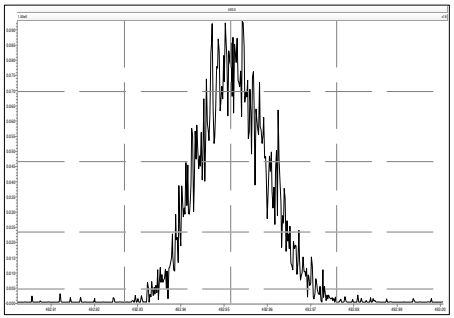

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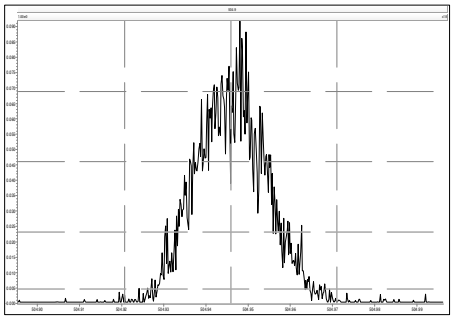

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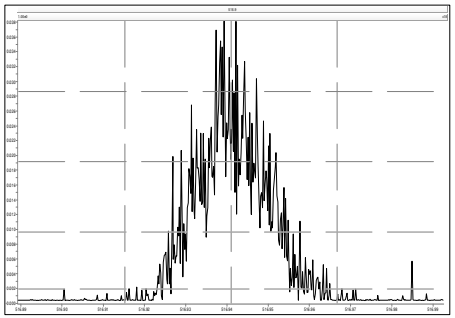

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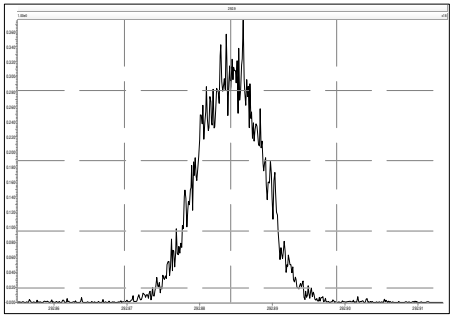
M 292.9824 R 14925



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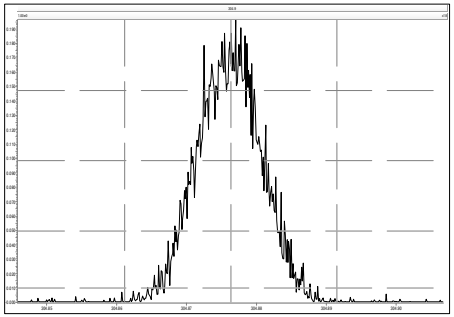

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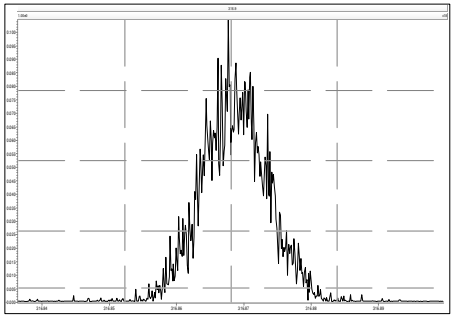

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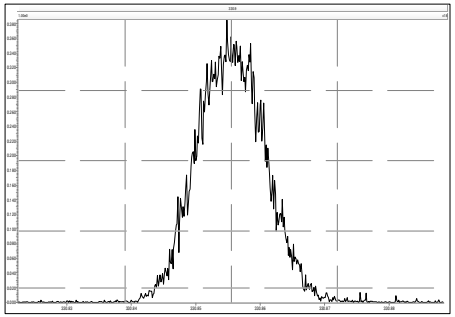

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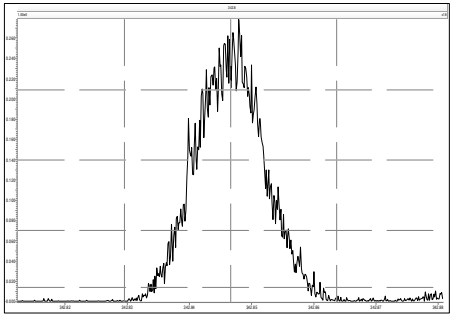

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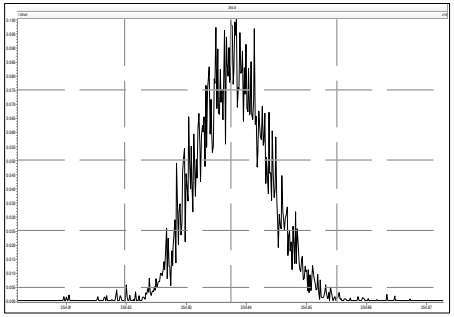

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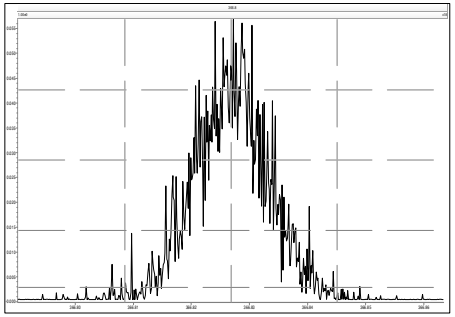
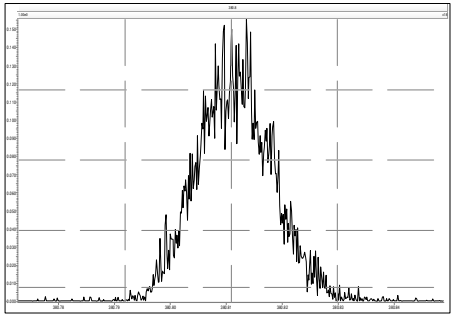


M 380.9760 R 13481



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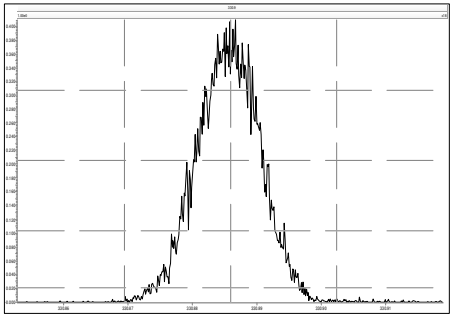

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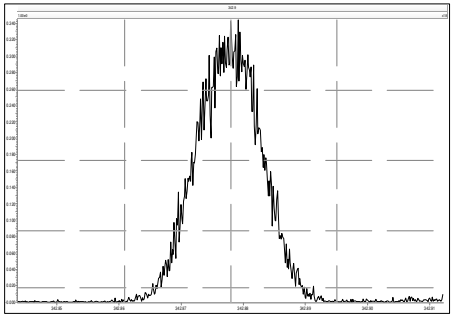

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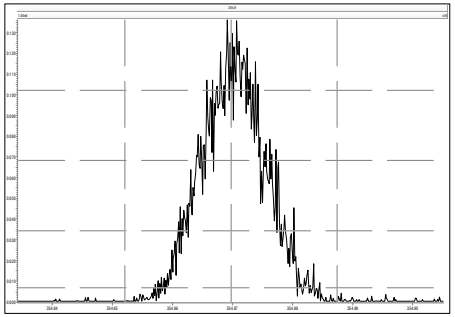

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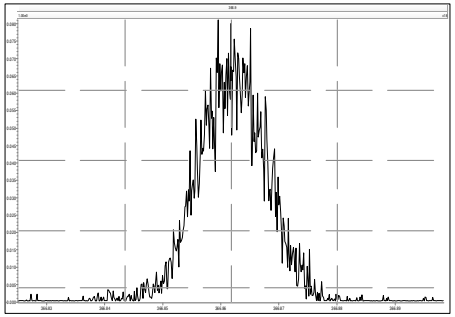

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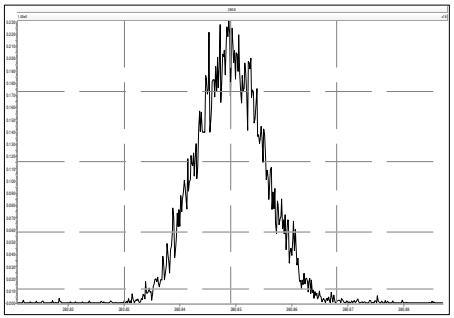

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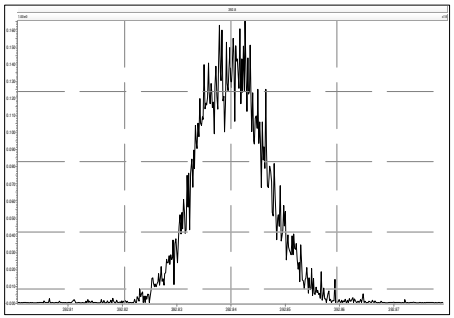

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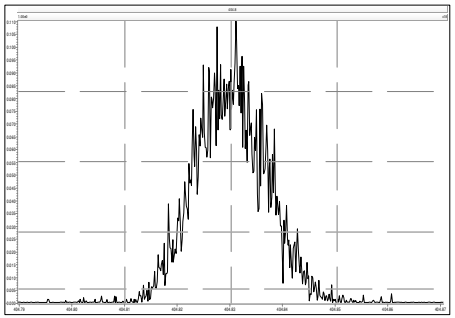

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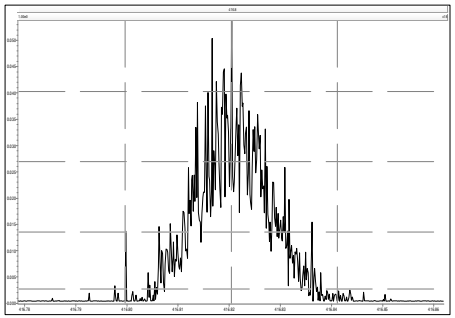

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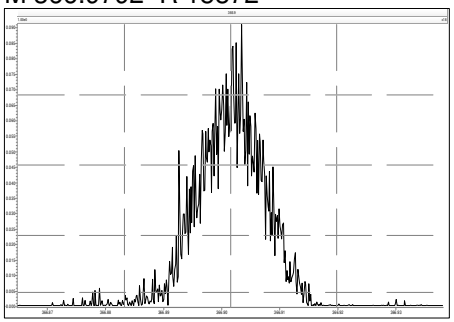

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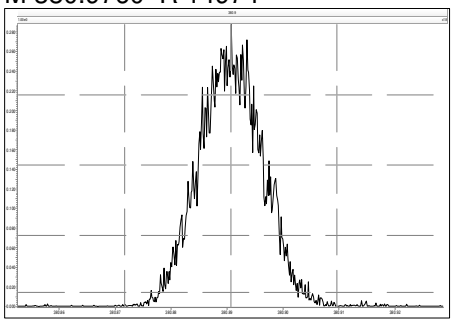

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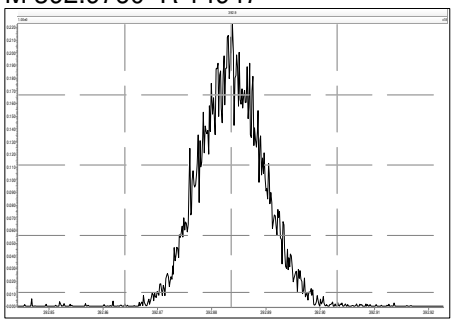

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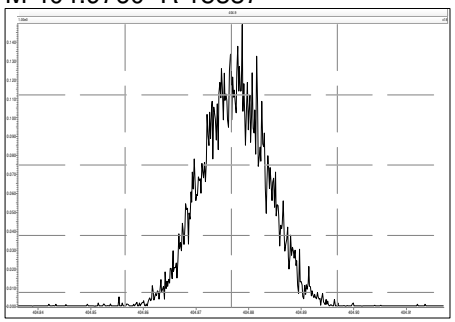

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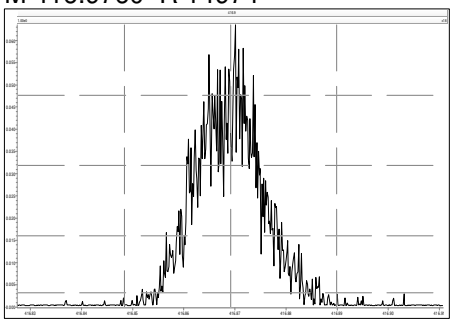

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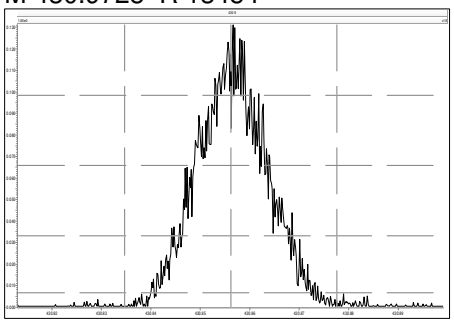

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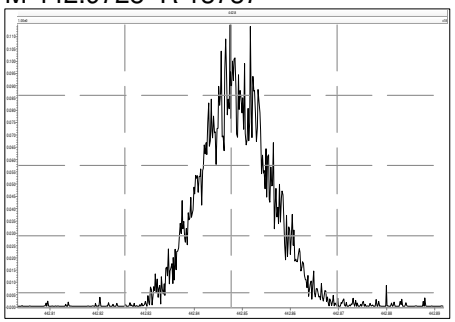

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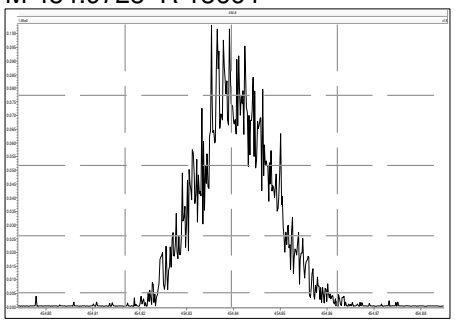

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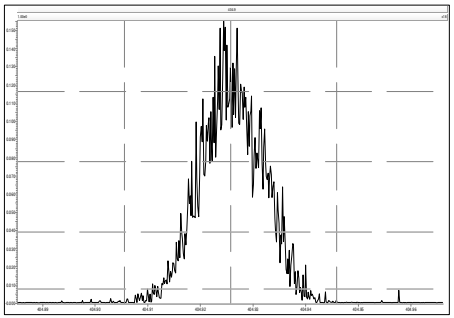

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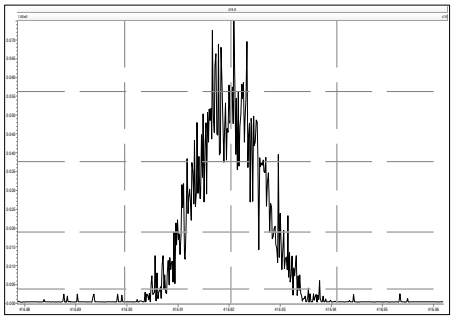

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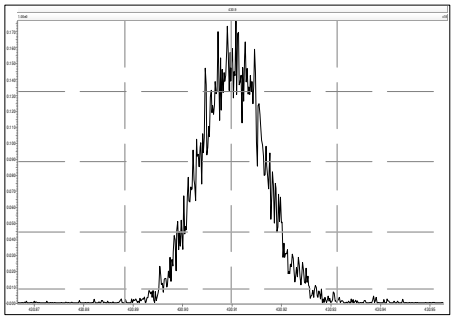

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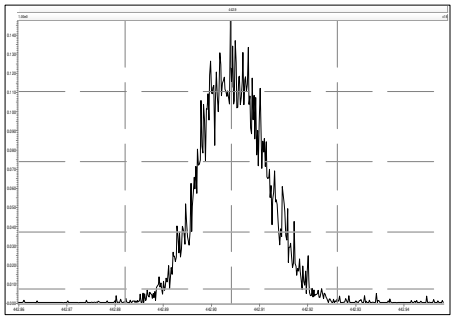
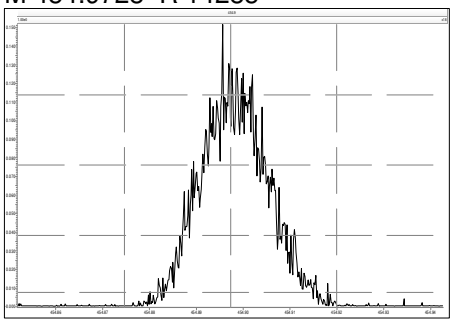


M 454.9728 R 14285



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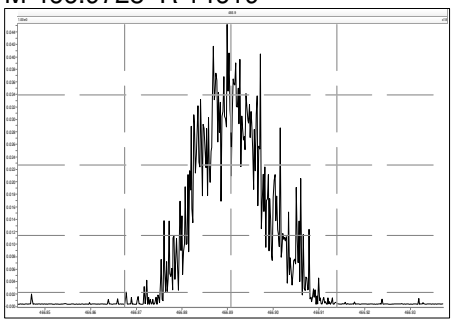

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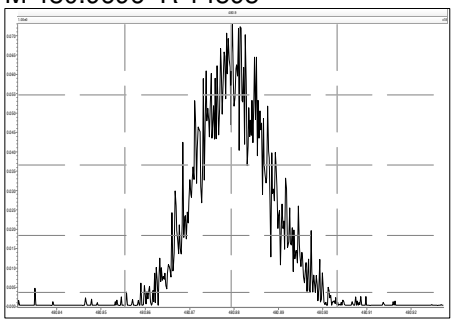

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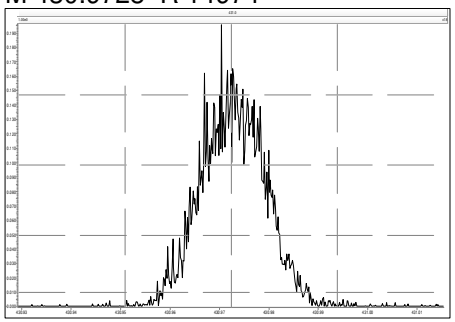

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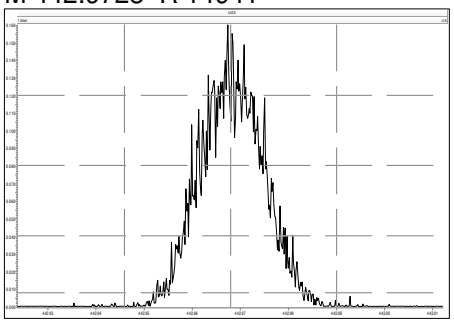

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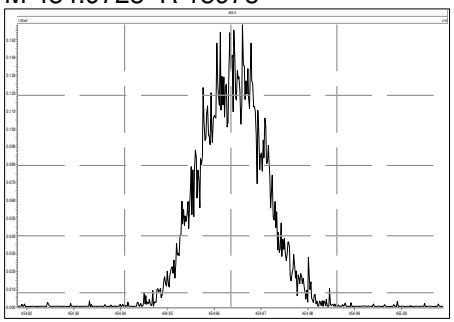

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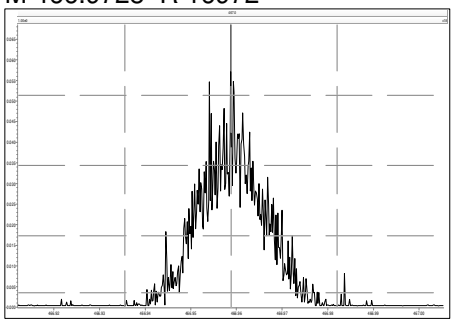

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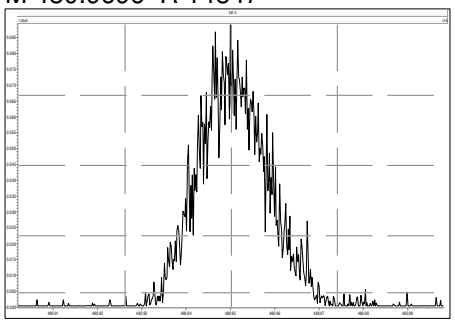

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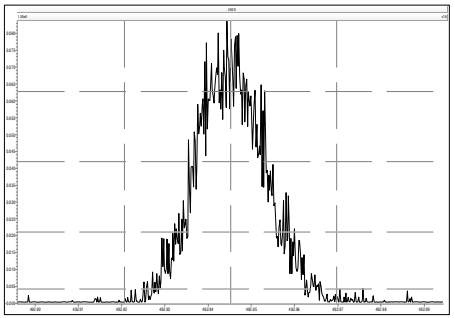
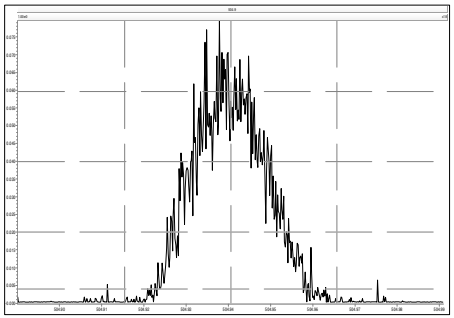
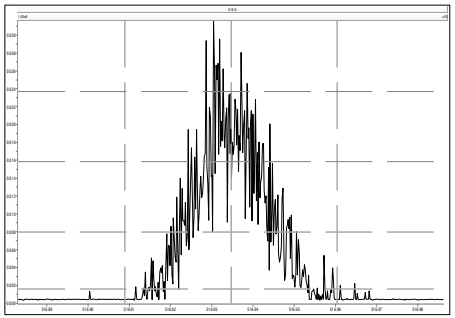


M 504.9696 R 14794



M 516.9697 R 16261



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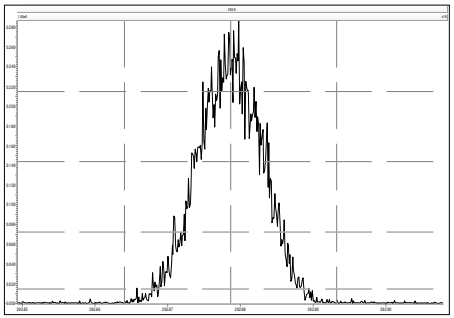
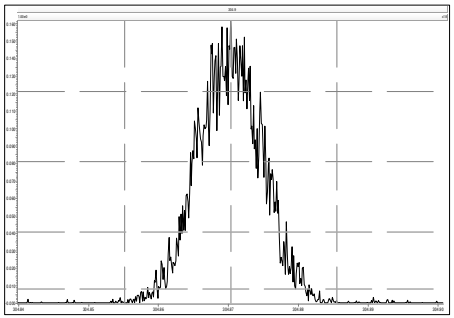
M 292.9824 R 14662



M 304.9824 R 14941



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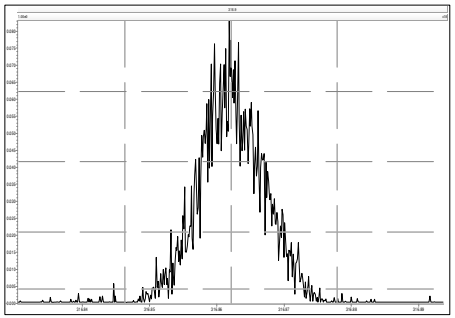
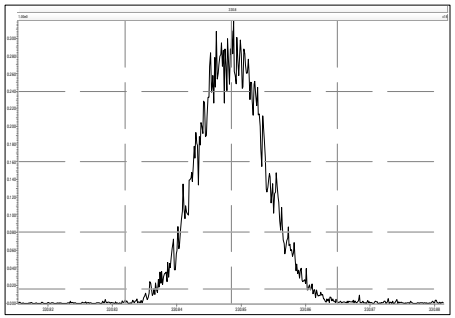


M 330.9792 R 13970



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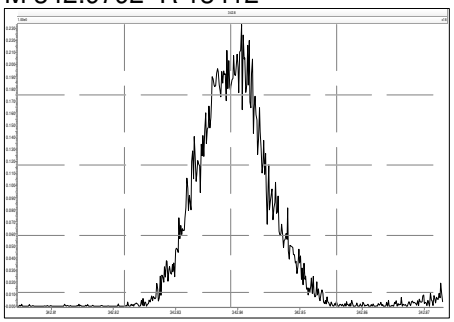

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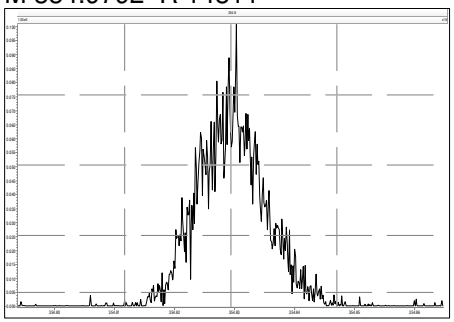
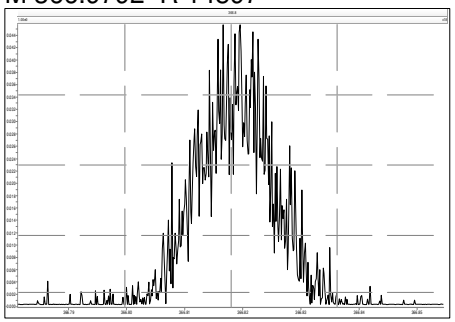
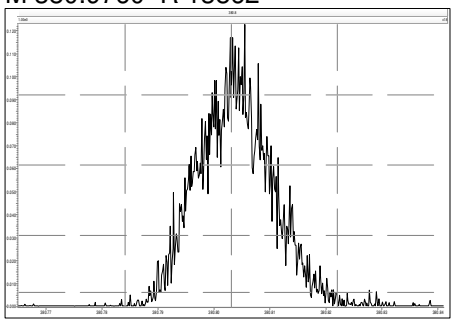


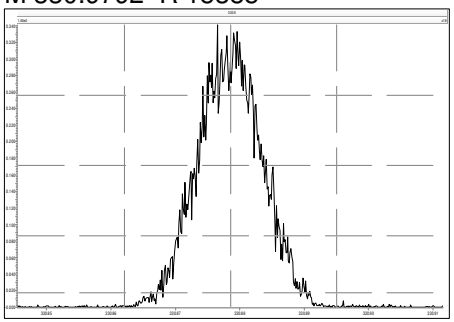
M 366.9792 R 14597



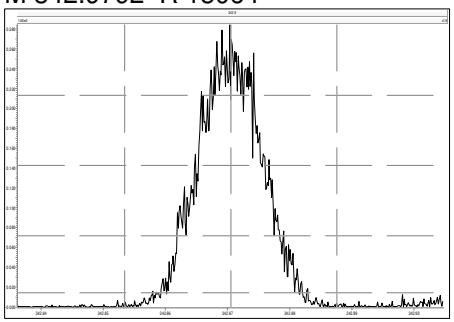
M 380.9760 R 13862



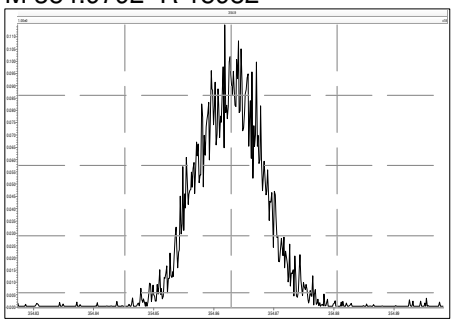
M 330.9792 R 15385



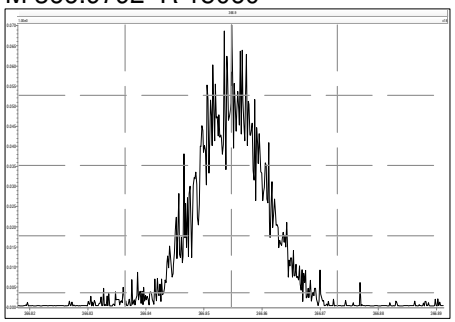
M 342.9792 R 15064



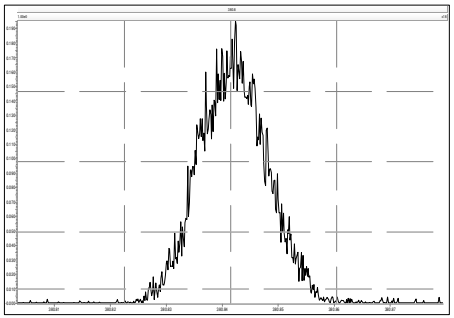
M 354.9792 R 15982



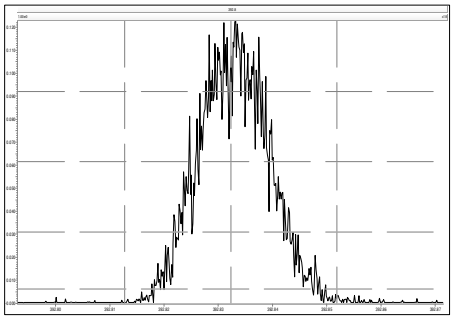
M 366.9792 R 15060



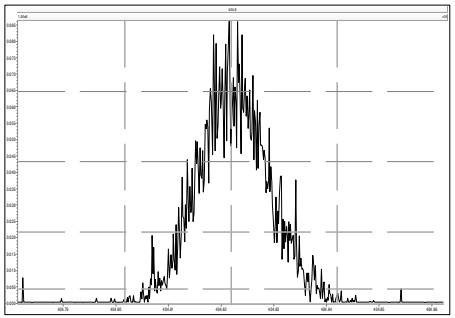
M 380.9760 R 14244



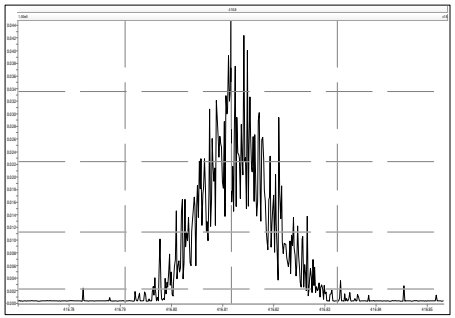
M 392.9760 R 13867



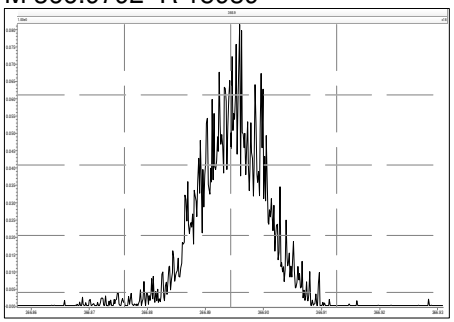
M 404.9760 R 14779



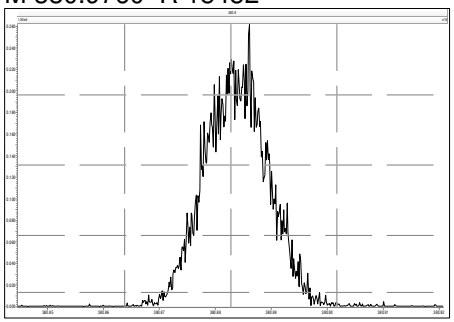
M 416.9760 R 16472



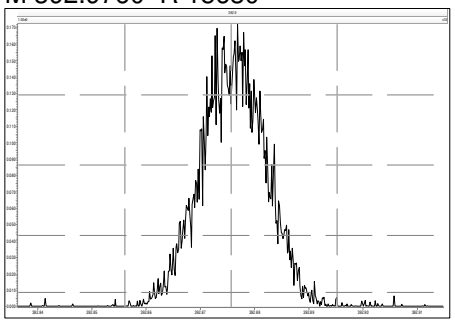
M 366.9792 R 15939



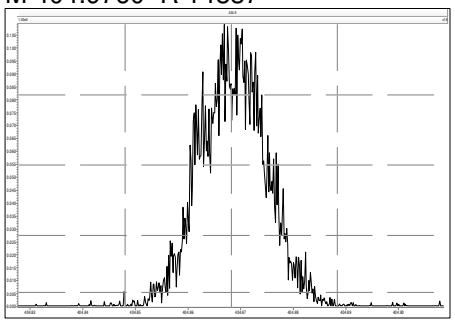
M 380.9760 R 15452



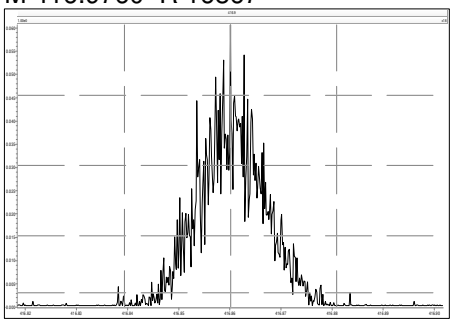
M 392.9760 R 15630



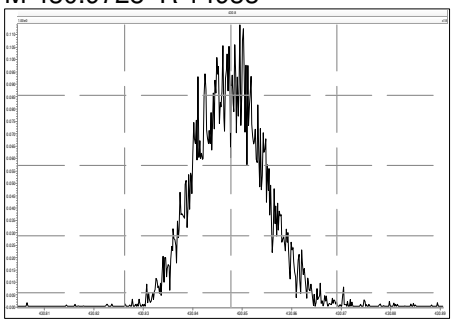
M 404.9760 R 14837



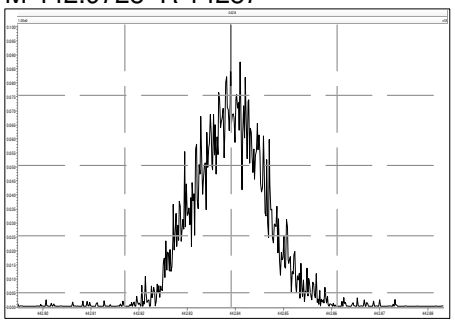
M 416.9760 R 16867



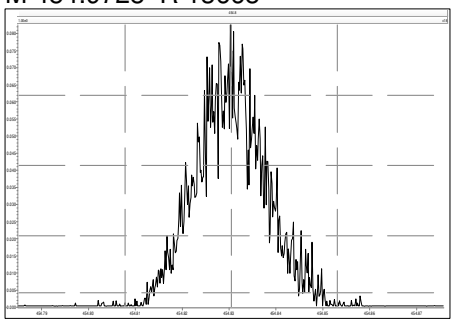
M 430.9728 R 14933



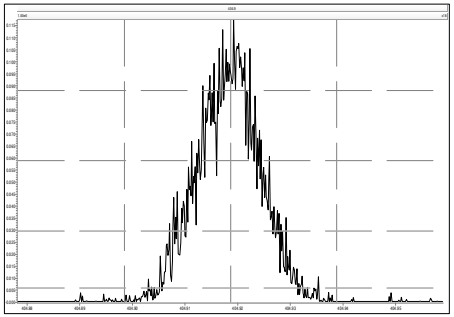
M 442.9728 R 14287



M 454.9728 R 13668



M 404.9760 R 15384



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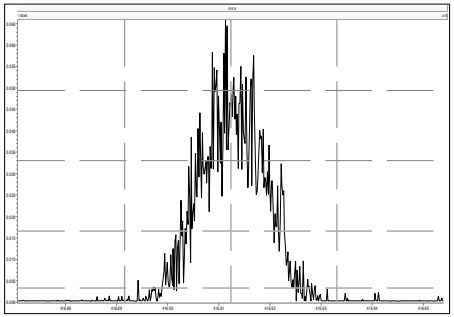
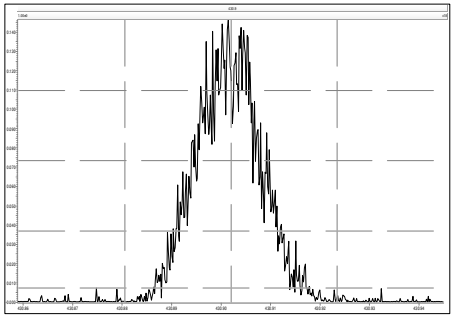
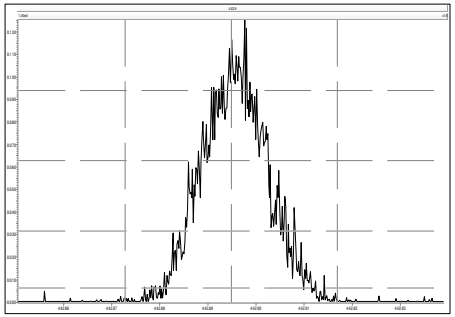


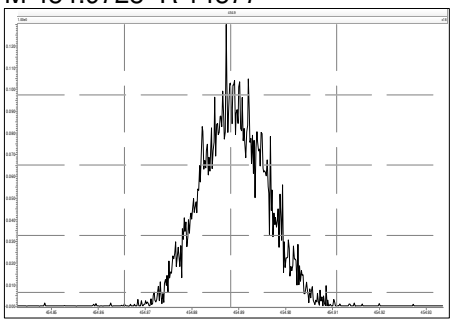
M 430.9728 R 15685



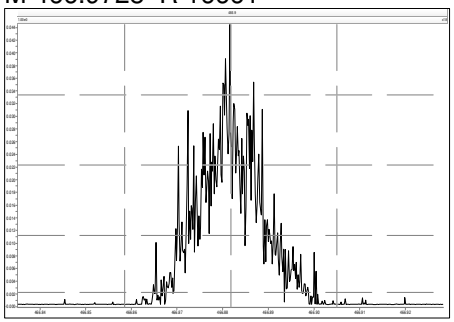
M 442.9728 R 14619



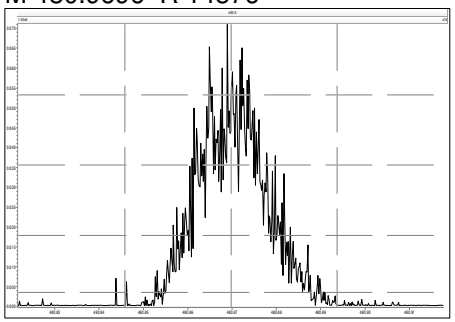
M 454.9728 R 14577



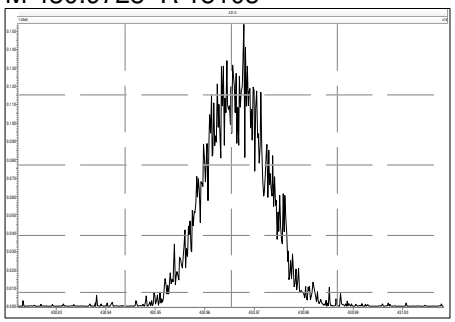
M 466.9728 R 16661



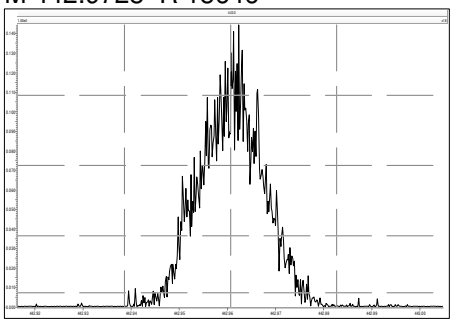
M 480.9696 R 14576



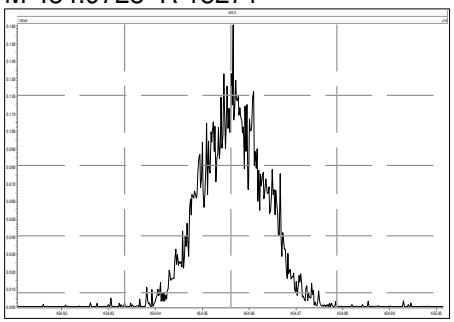
M 430.9728 R 15105



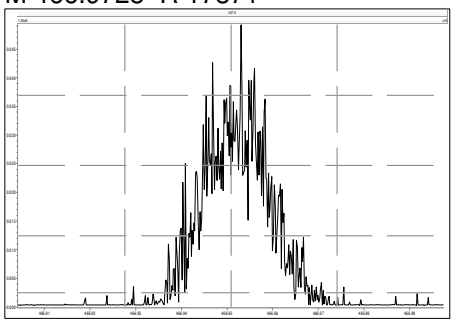
M 442.9728 R 15646



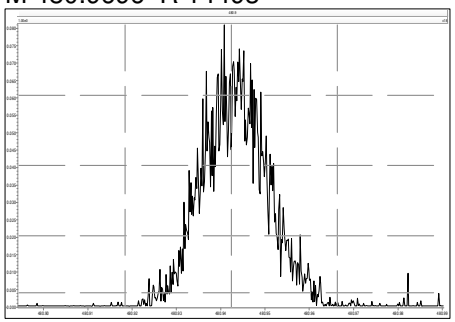
M 454.9728 R 15271



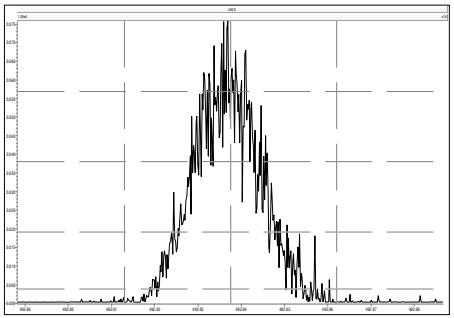
M 466.9728 R 17871



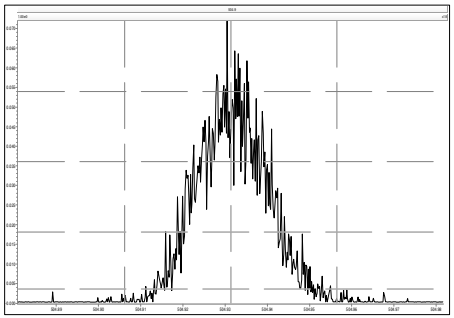
M 480.9696 R 14493



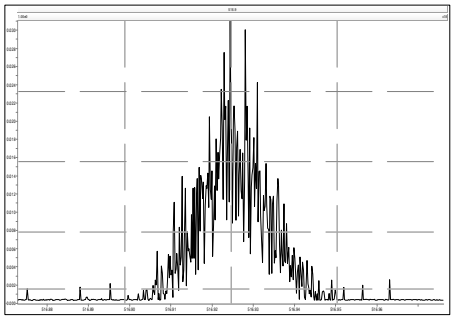
M 492.9696 R 15013



M 504.9696 R 14189



M 516.9697 R 15975



Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 0.25 pg/uL CS0	211110C05 0.5 pg/uL CS1	211110C06 2 pg/uL CS2	211110C07 10 pg/uL CS3	211110C08 40 pg/uL CS4	211110C09 200 pg/uL CS5	211110C10 500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 **0.25 pg/uL CS0**	211110C05 **0.5 pg/uL CS1**	211110C06 **2 pg/uL CS2**	211110C07 **10 pg/uL CS3**	211110C08 **40 pg/uL CS4**	211110C09 **200 pg/uL CS5**	211110C10 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86 ✓	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07 ✓	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10 ✓	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28 ✓	1.33

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

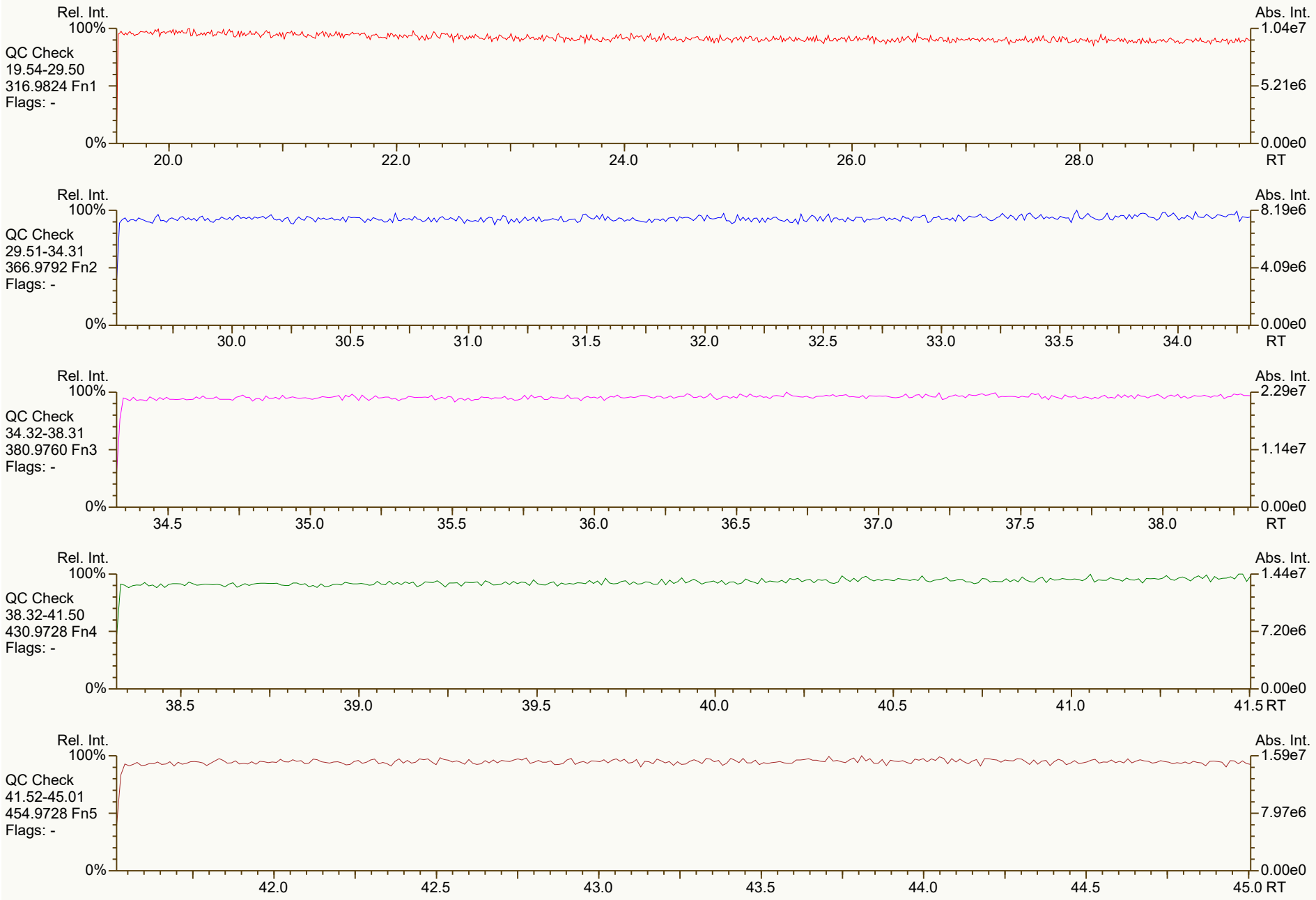
REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF				Checkcode: 245-007-QLD	
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C04	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

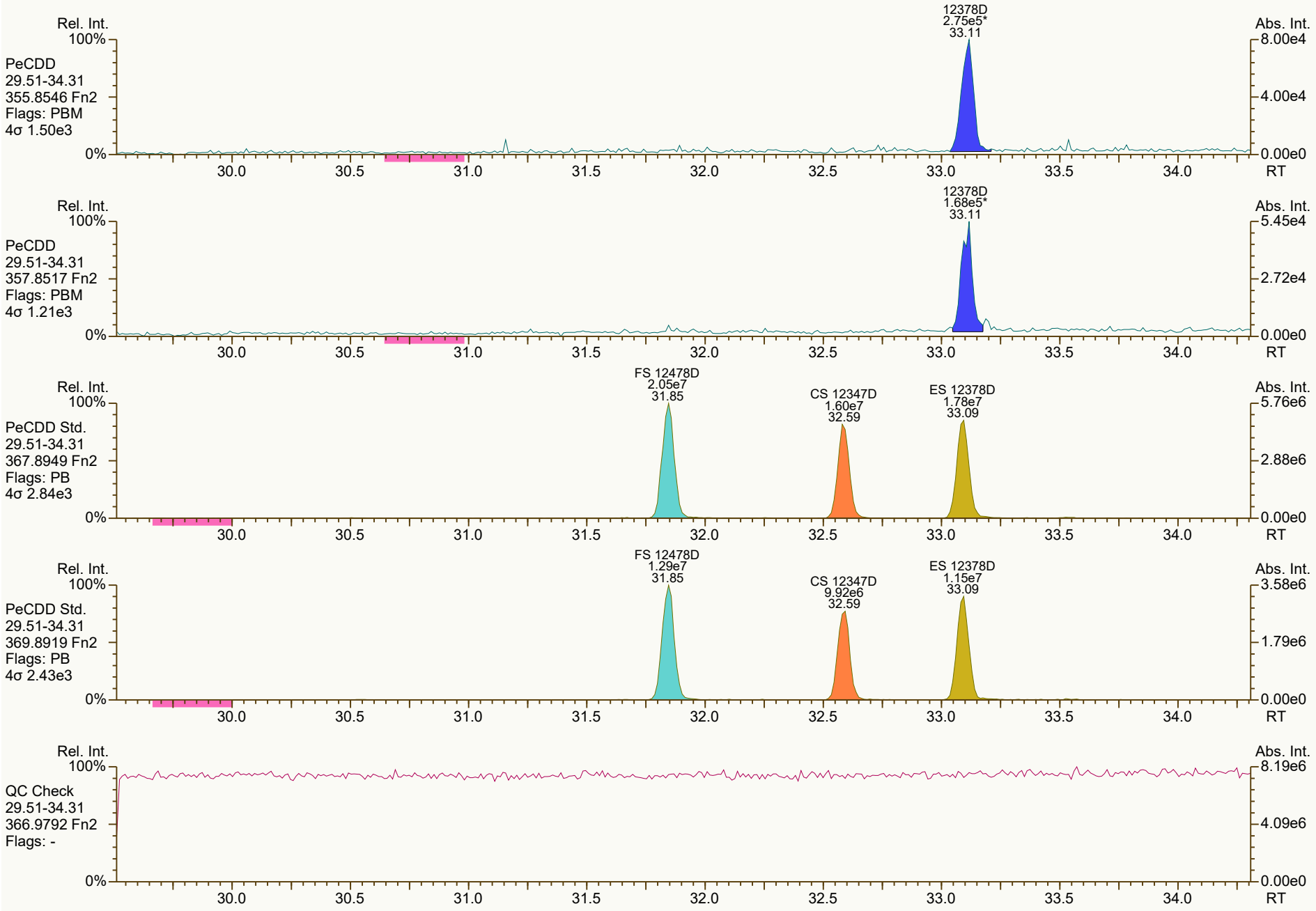
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF					ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF					Checkcode: 245-007-QLD
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF					Datafile: 211110C04
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%

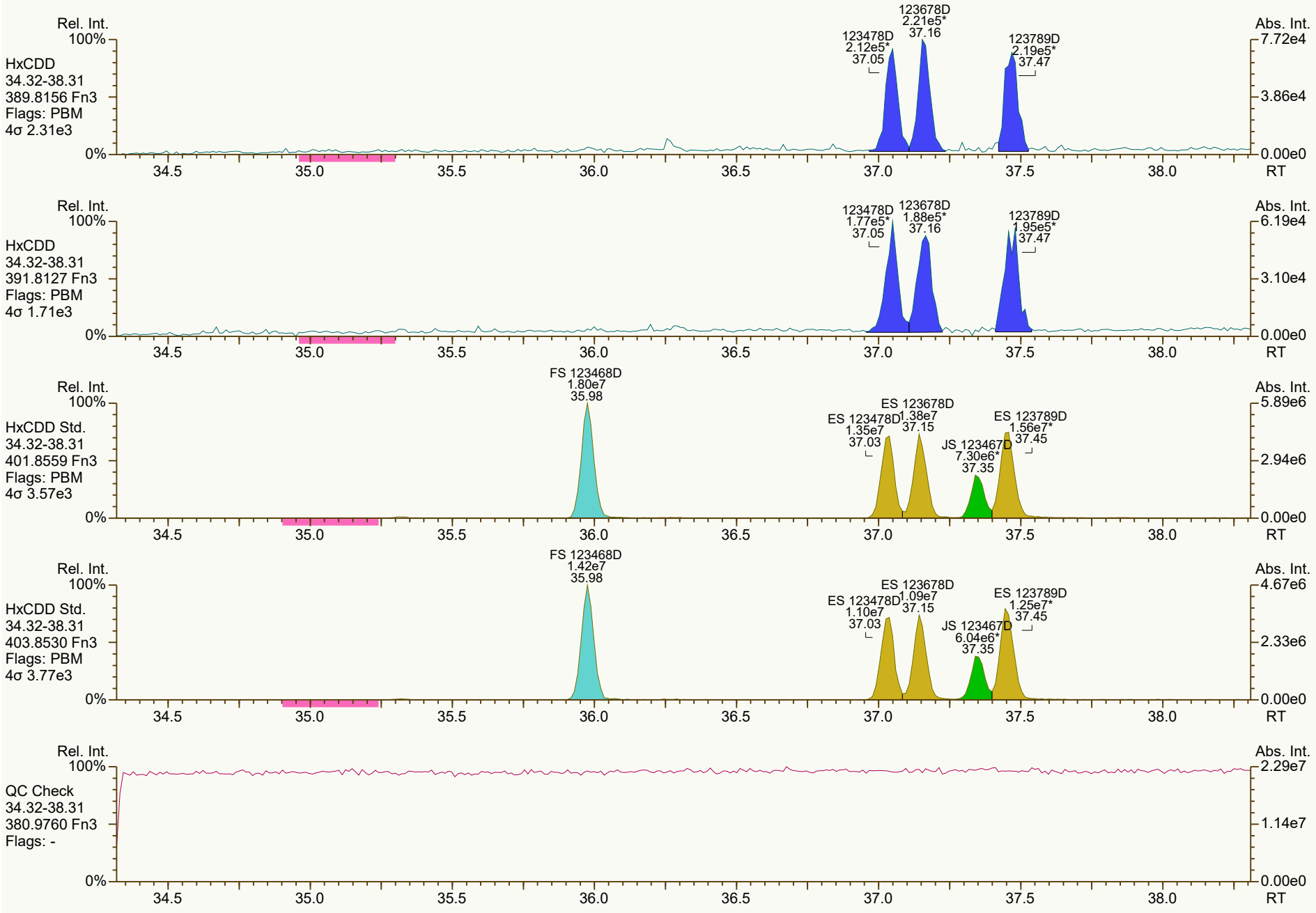

Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.04e7
5.21e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.19e6
4.09e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.29e7
1.14e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.44e7
7.20e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.97e6
0.00e0

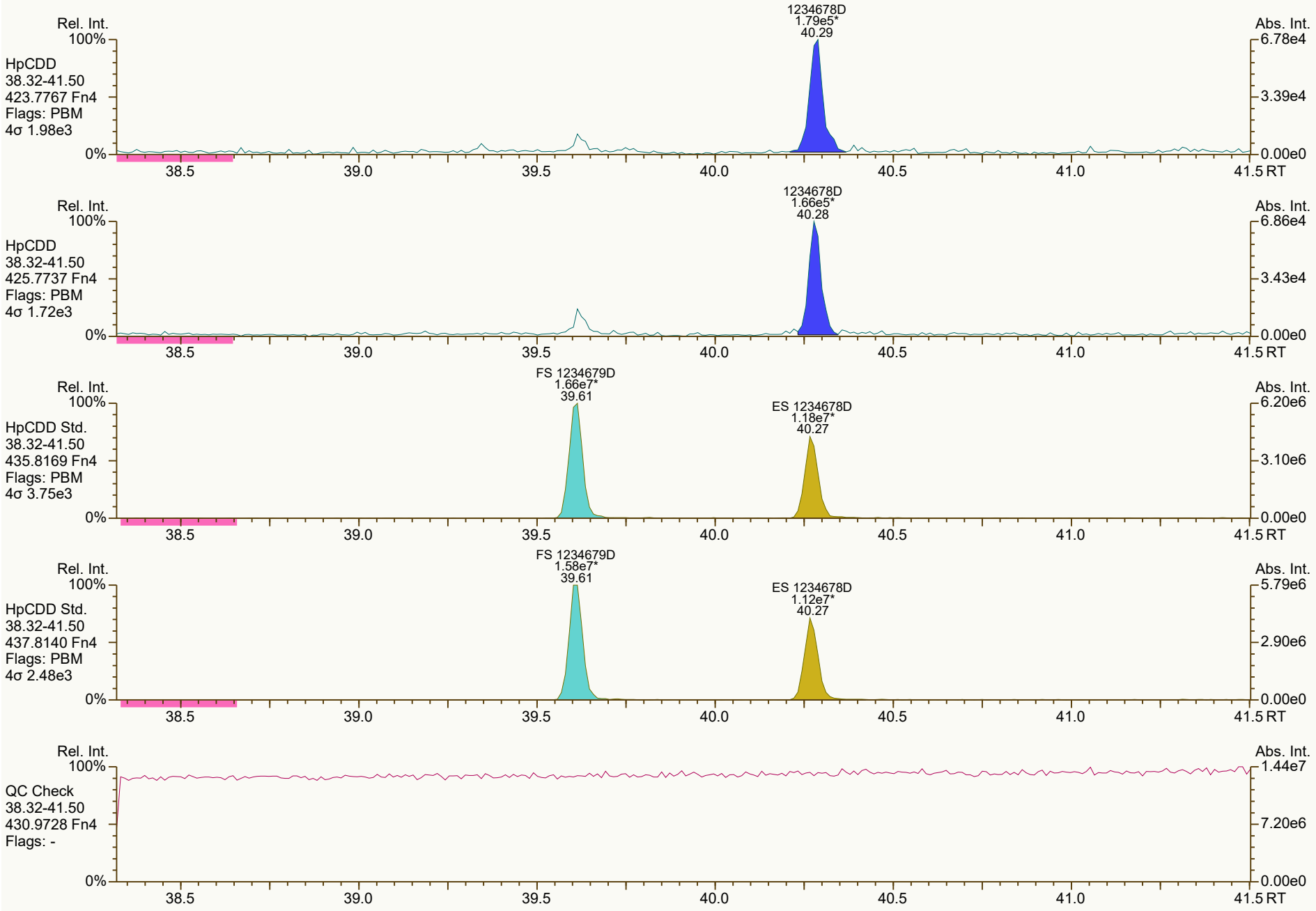


Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF) *Peak annotation: Areas, Centroids*

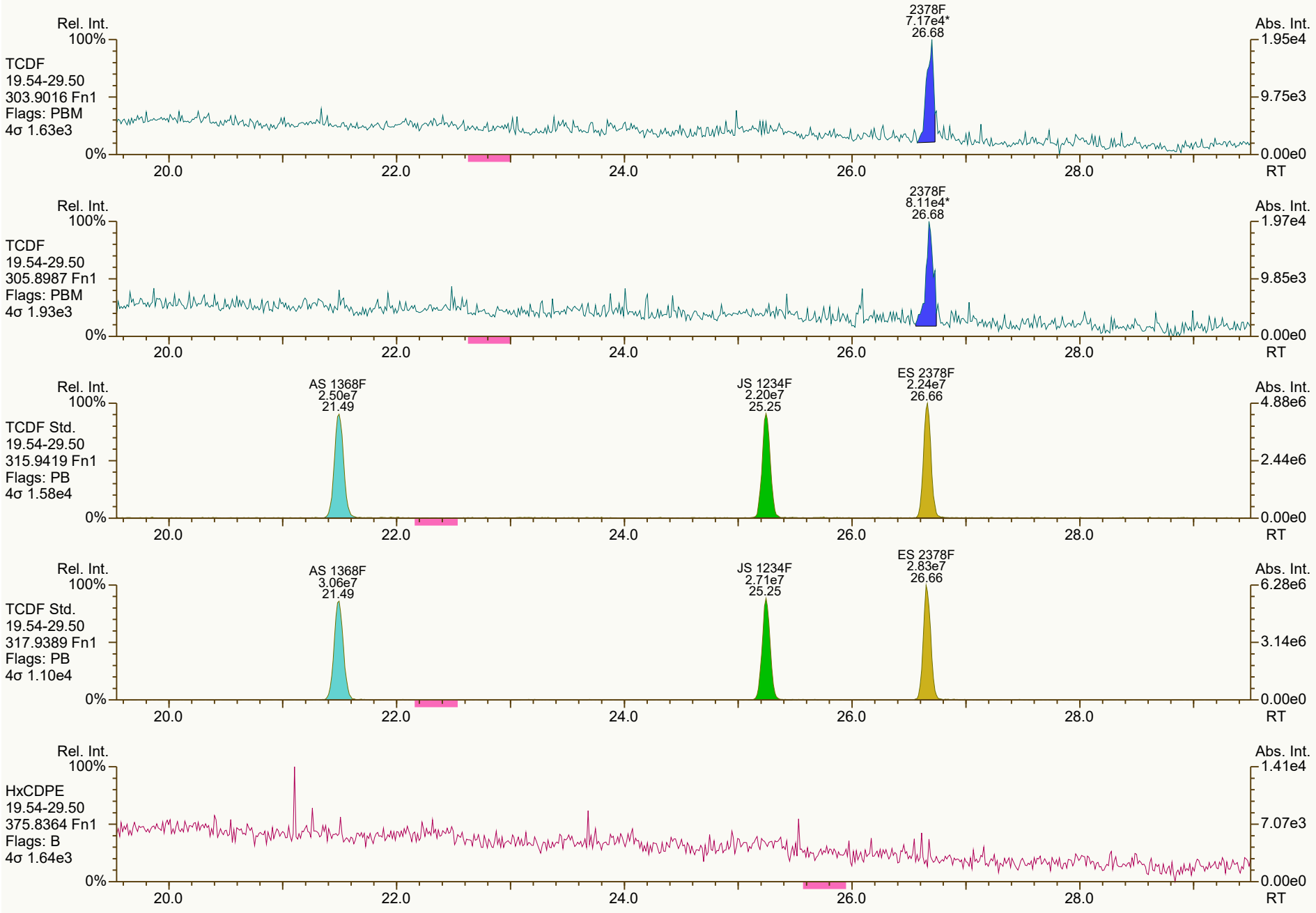
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3504, 1483, 2998 scc: 245-007 *Revised: 11-Nov-2021 16:18 (DTF)* *Printed: 11-Nov-2021 16:32 Page 2 of 12*


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
Abs. Int.
8.00e4
4.00e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.68e5*
33.11
Abs. Int.
5.45e4
2.72e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
Abs. Int.
5.76e6
2.88e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
0%
123478D
2.12e5*
37.05
123678D
2.21e5*
37.16
123789D
2.19e5*
37.47
Abs. Int.
7.72e4
3.86e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
0%
123478D
1.77e5*
37.05
123678D
1.88e5*
37.16
123789D
1.95e5*
37.47
Abs. Int.
6.19e4
3.10e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
0%
FS 123468D
1.80e7
35.98
ES 123678D
1.38e7
37.15
ES 123478D
1.35e7
37.03
ES 123789D
1.56e7*
37.45
JS 123467D
7.30e6*
37.35
Abs. Int.
5.89e6
2.94e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
0%
FS 123468D
1.42e7
35.98
ES 123678D
1.09e7
37.15
ES 123478D
1.10e7
37.03
ES 123789D
1.25e7*
37.45
JS 123467D
6.04e6*
37.35
Abs. Int.
4.67e6
2.33e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
0%
1234678D
1.79e5*
40.29
Abs. Int.
6.78e4
3.39e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
0%
1234678D
1.66e5*
40.28
Abs. Int.
6.86e4
3.43e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
0%
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
Abs. Int.
6.20e6
3.10e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
0%
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
Abs. Int.
5.79e6
2.90e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

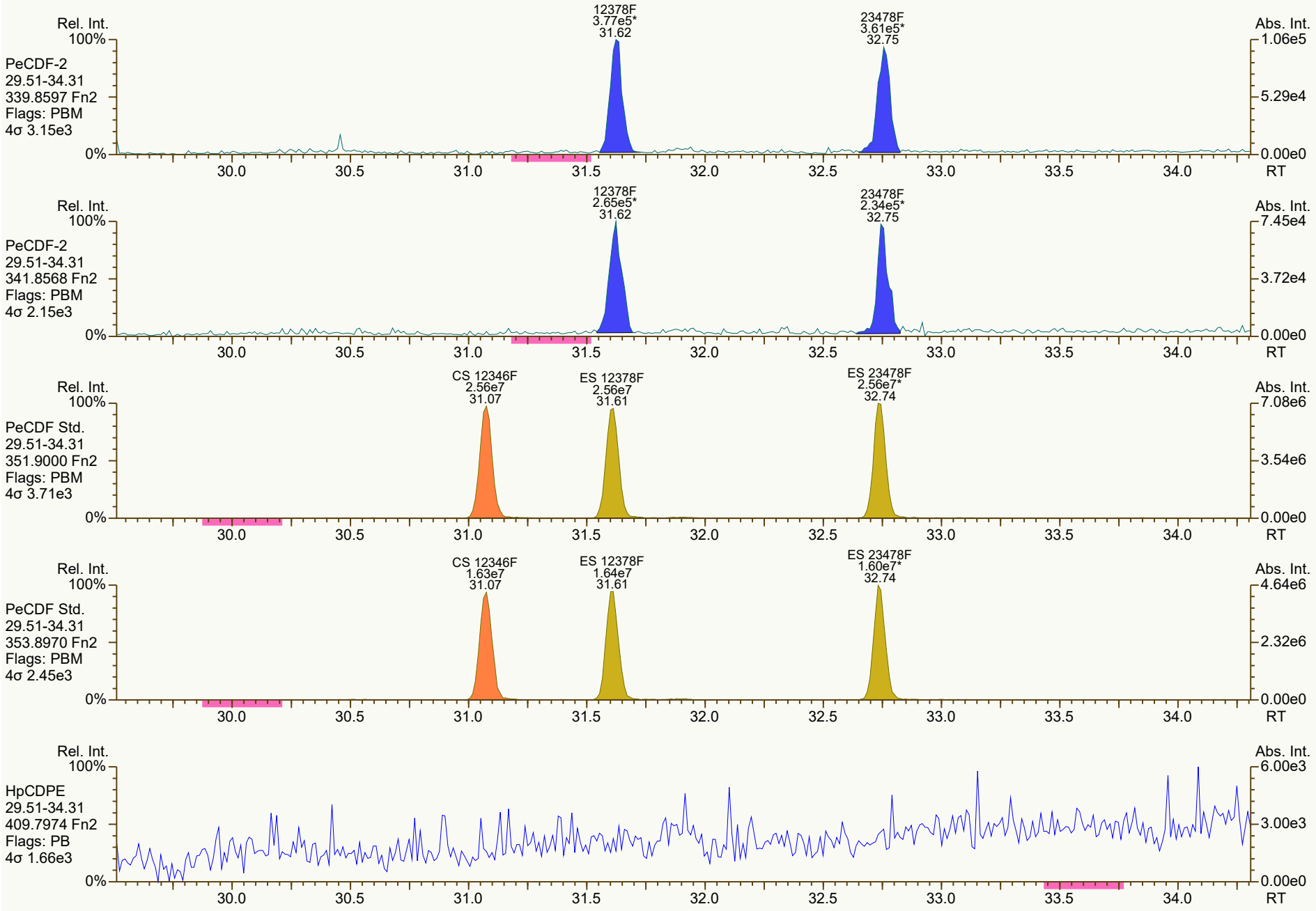

OCDD
2.26e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
6.82e4
3.41e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.52e5*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
ES OCDD
1.47e7*
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
4.33e6
2.16e6
ES OCDD
1.61e7*
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
4.72e6
2.36e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.59e7
7.97e6

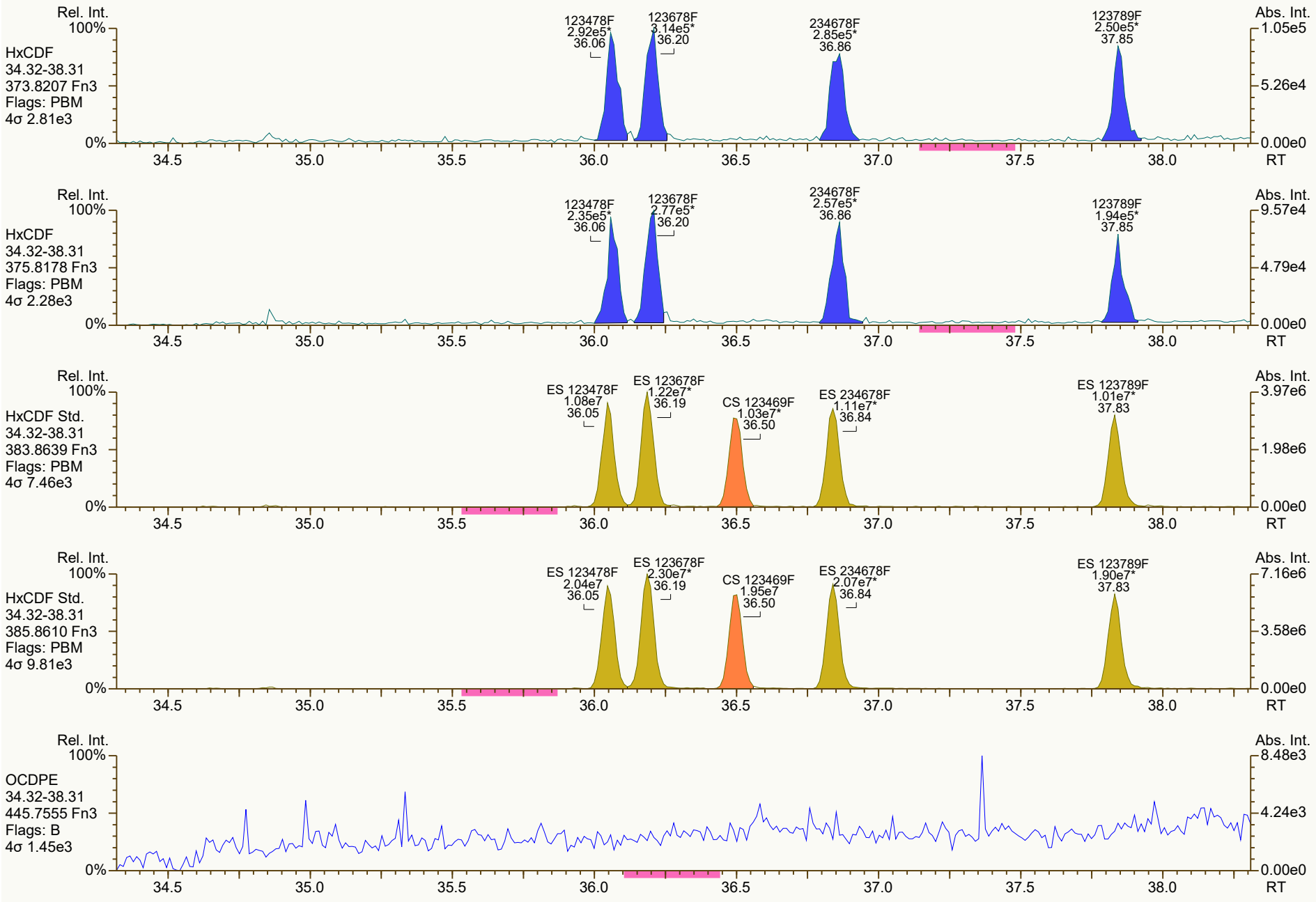

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
0%
2378F
7.17e4*
26.68
Abs. Int.
1.95e4
9.75e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
0%
2378F
8.11e4*
26.68
Abs. Int.
1.97e4
9.85e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
Abs. Int.
4.88e6
2.44e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
0%
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
26.66
Abs. Int.
6.28e6
3.14e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.41e4
7.07e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

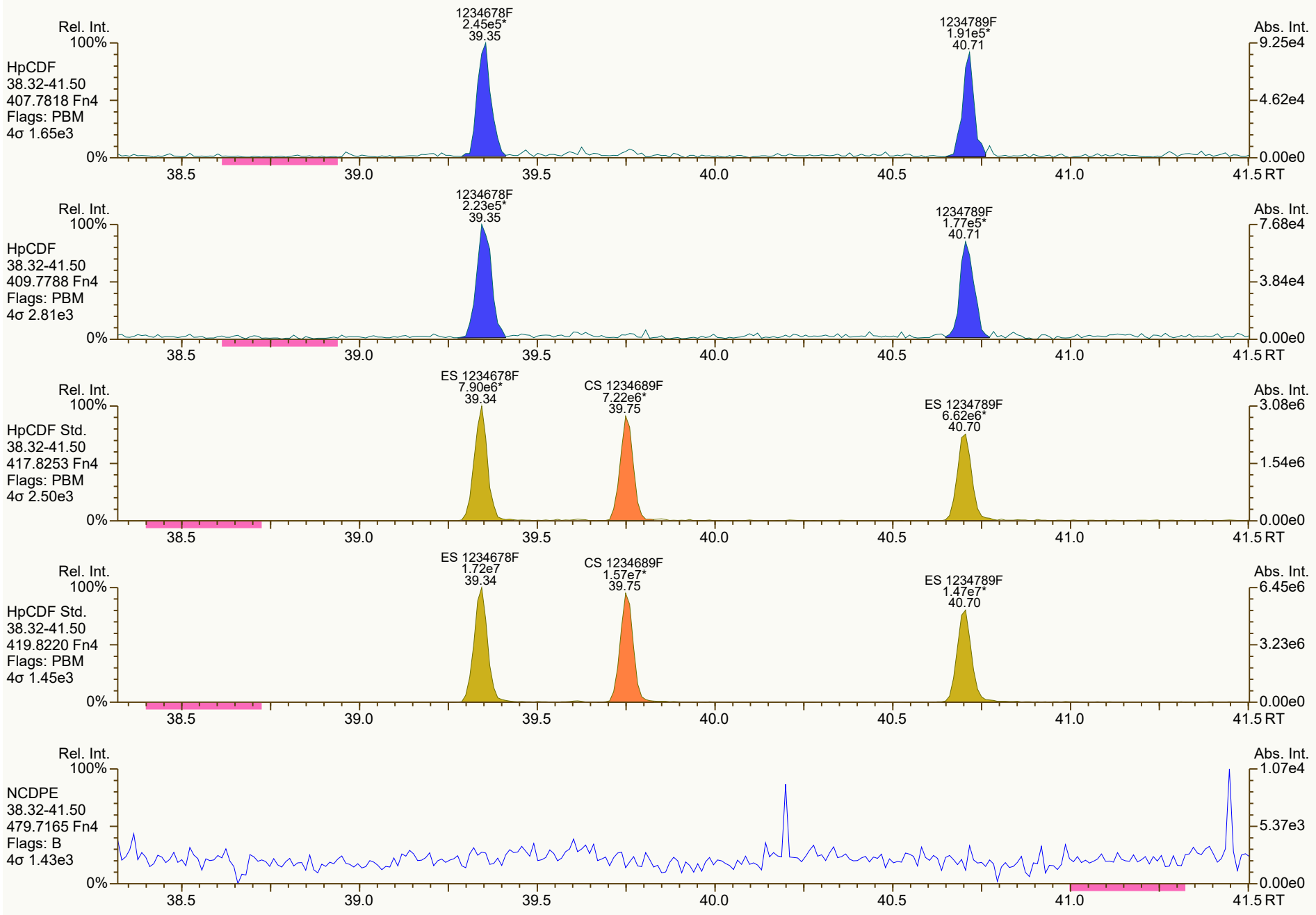
SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6412 scc: 245-007
PKD: 10-Nov-2021 13:30 Printed: 11-Nov-2021 16:32 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12378F
3.77e5*
31.62
23478F
3.61e5*
32.75
Abs. Int.
1.06e5
5.29e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
0%
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
Abs. Int.
7.45e4
3.72e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
0%
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
Abs. Int.
7.08e6
3.54e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
0%
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

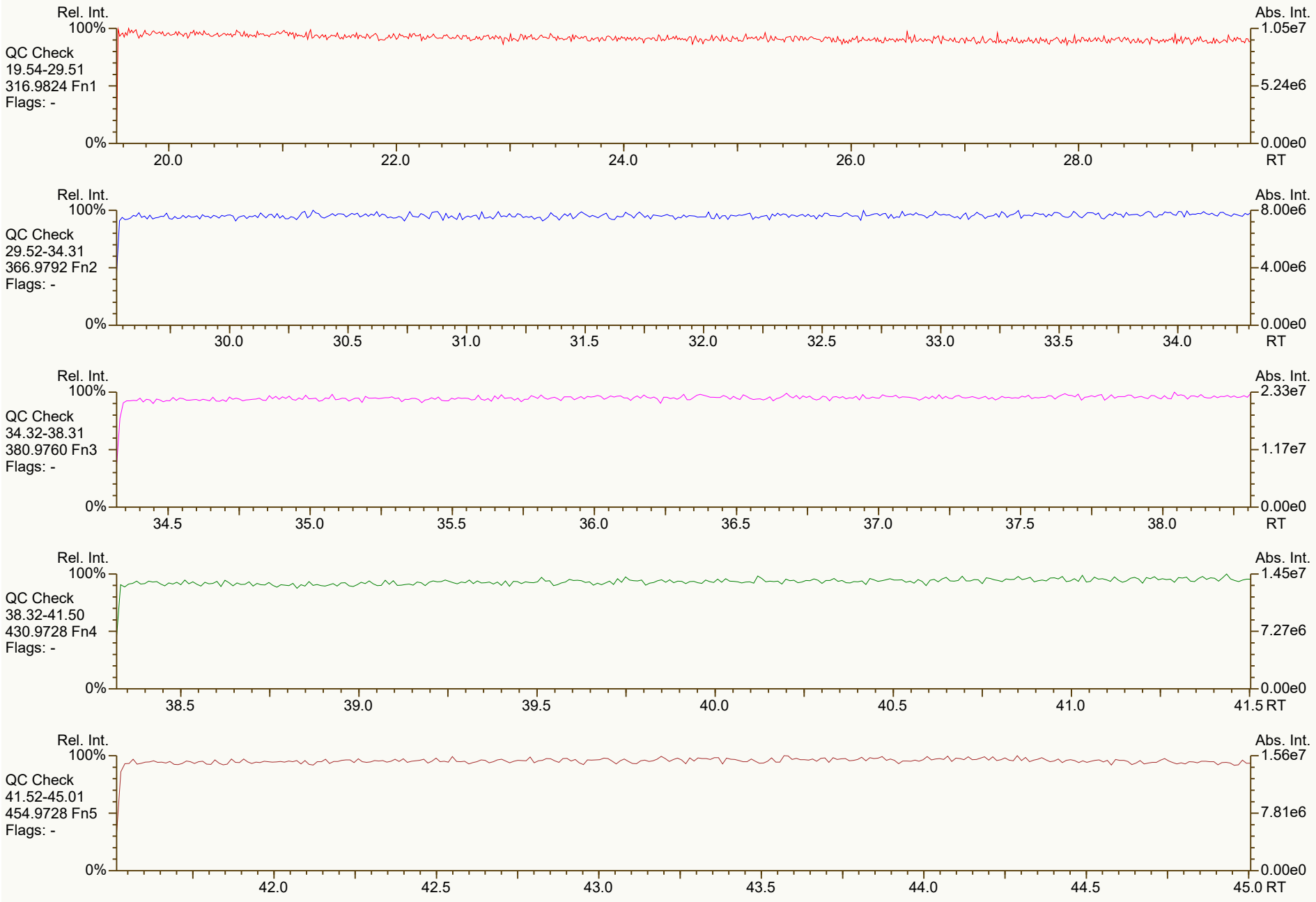

Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.81e3
123478F
2.92e5*
36.06
123678F
3.14e5*
36.20
234678F
2.85e5*
36.86
123789F
2.50e5*
37.85
Abs. Int.
1.05e5
5.26e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.28e3
123478F
2.35e5*
36.06
123678F
2.77e5*
36.20
234678F
2.57e5*
36.86
123789F
1.94e5*
37.85
Abs. Int.
9.57e4
4.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.46e3
ES 123478F
1.08e7
36.05
ES 123678F
1.22e7*
36.19
CS 123469F
1.03e7*
36.50
ES 234678F
1.11e7*
36.84
ES 123789F
1.01e7*
37.83
Abs. Int.
3.97e6
1.98e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.81e3
ES 123478F
2.04e7
36.05
ES 123678F
2.30e7*
36.19
CS 123469F
1.95e7
36.50
ES 234678F
2.07e7*
36.84
ES 123789F
1.90e7*
37.83
Abs. Int.
7.16e6
3.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.45e3
Abs. Int.
8.48e3
4.24e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
Abs. Int.
9.25e4
4.62e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
Abs. Int.
7.68e4
3.84e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
Abs. Int.
3.08e6
1.54e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
Abs. Int.
6.45e6
3.23e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
Abs. Int.
1.07e4
5.37e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
2.83e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.07e3
0%
Abs. Int.
9.68e4
4.84e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.12e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.63e3
0%
Abs. Int.
8.96e4
4.48e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.88e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.90e3
0%
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.08e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.27e3
0%
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.52e3
0%
Abs. Int.
5.12e3
2.56e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

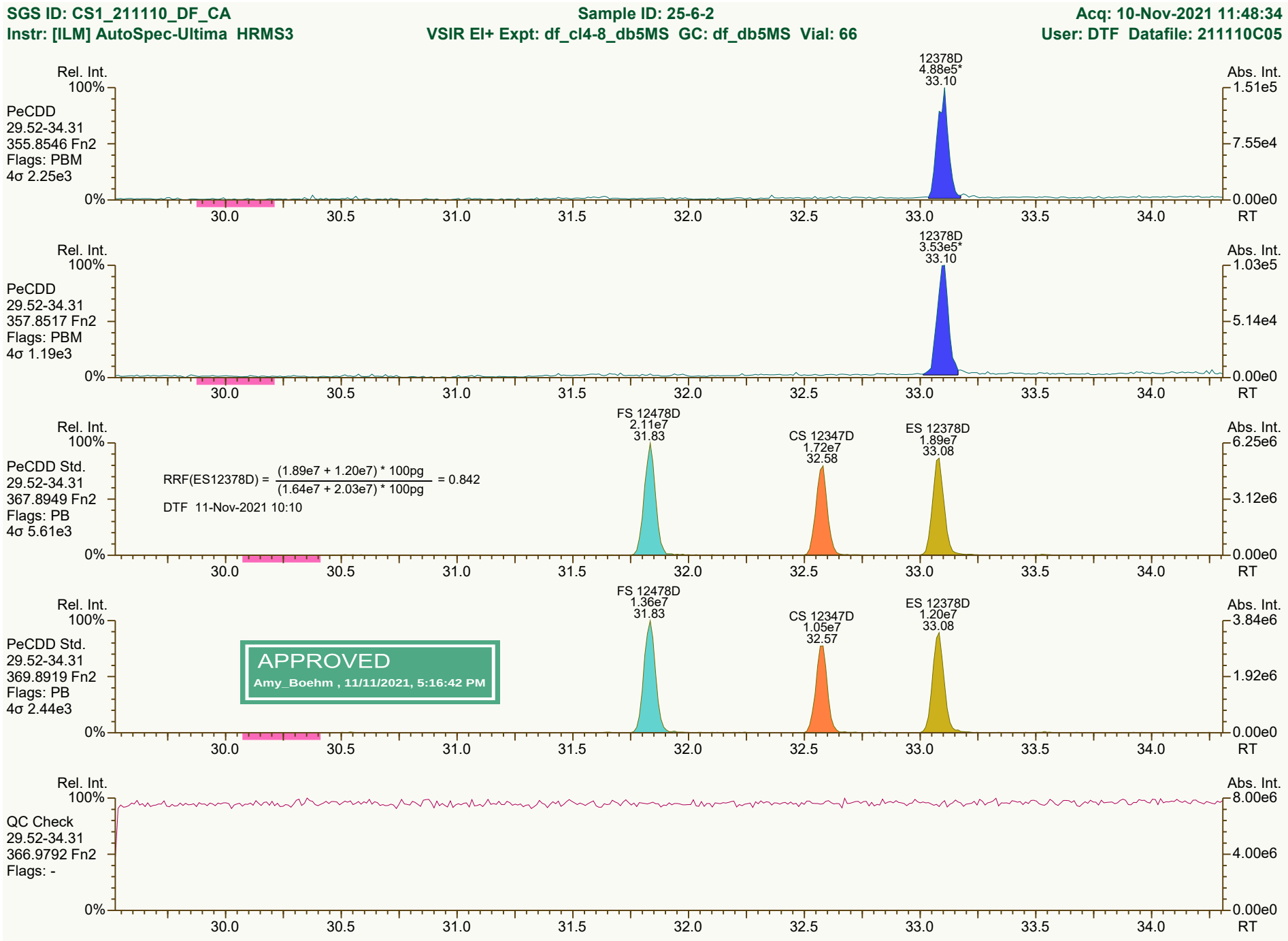
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

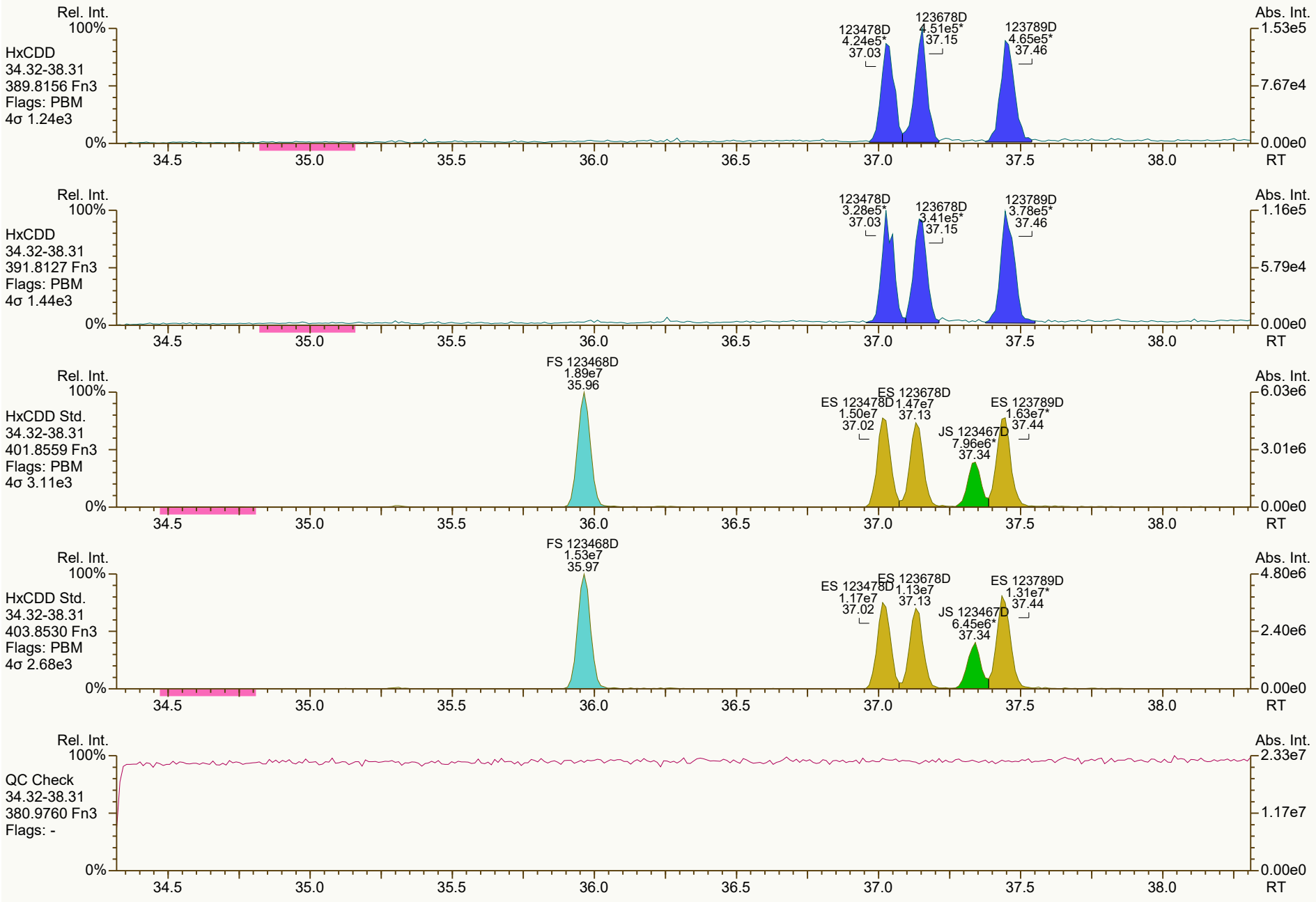

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.05e7
5.24e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.00e6
4.00e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.45e7
7.27e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.56e7
7.81e6
0.00e0

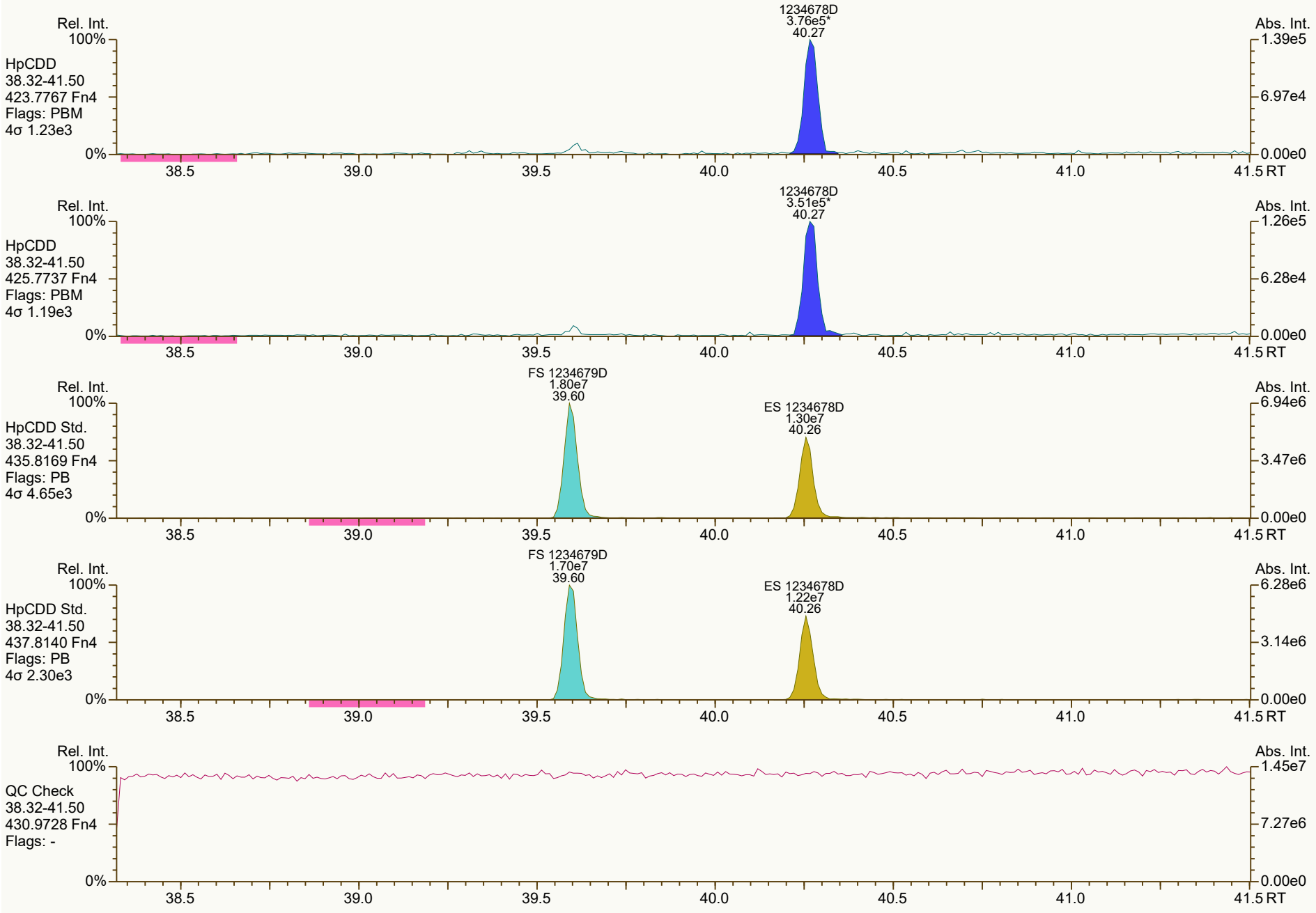

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 3.33e3
0%
2378D
1.05e5*
27.58
Abs. Int.
2.76e4
1.38e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.06e3
0%
2378D
1.27e5*
27.58
Abs. Int.
2.99e4
1.49e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.52e3
0%
CS 37Cl-2378D
2.01e5*
27.59
Abs. Int.
5.18e4
2.59e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 1.05e4
0%
AS 1368D
1.71e7
23.72
TS 1378D
2.28e7
25.84
JS 1234D
1.64e7
26.89
ES 2378D
1.66e7
27.56
FS 1278D
1.82e7
27.90
Abs. Int.
4.92e6
2.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 5.59e3
0%
AS 1368D
2.15e7
23.72
TS 1378D
2.86e7
25.84
JS 1234D
2.03e7
26.89
ES 2378D
2.11e7
27.56
FS 1278D
2.26e7
27.90
Abs. Int.
6.21e6
3.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

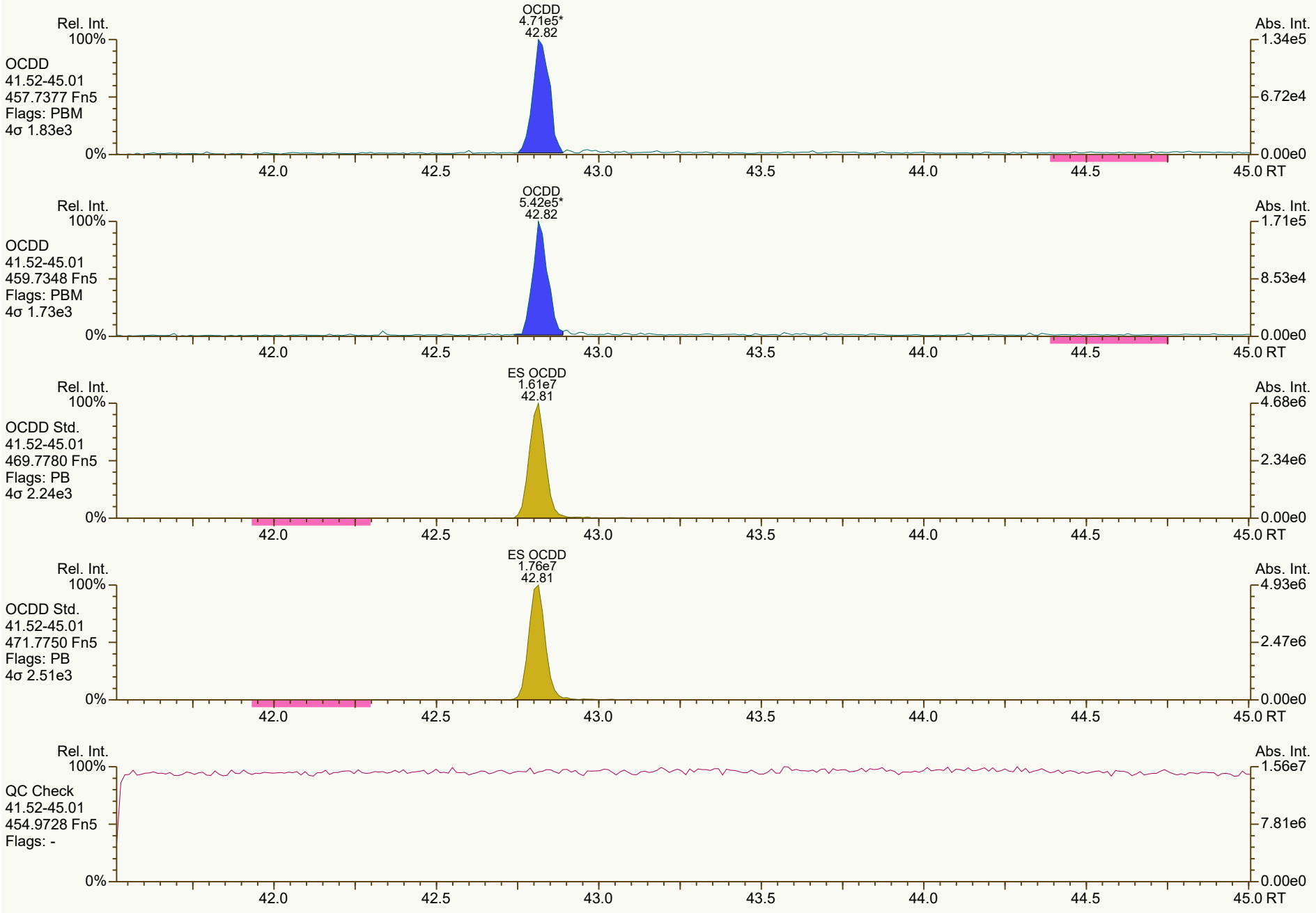
SGS ID: CS1_211110_DF_CA | Sample ID: 25-6-2 | Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66 | User: DTF Datafile: 211110C05

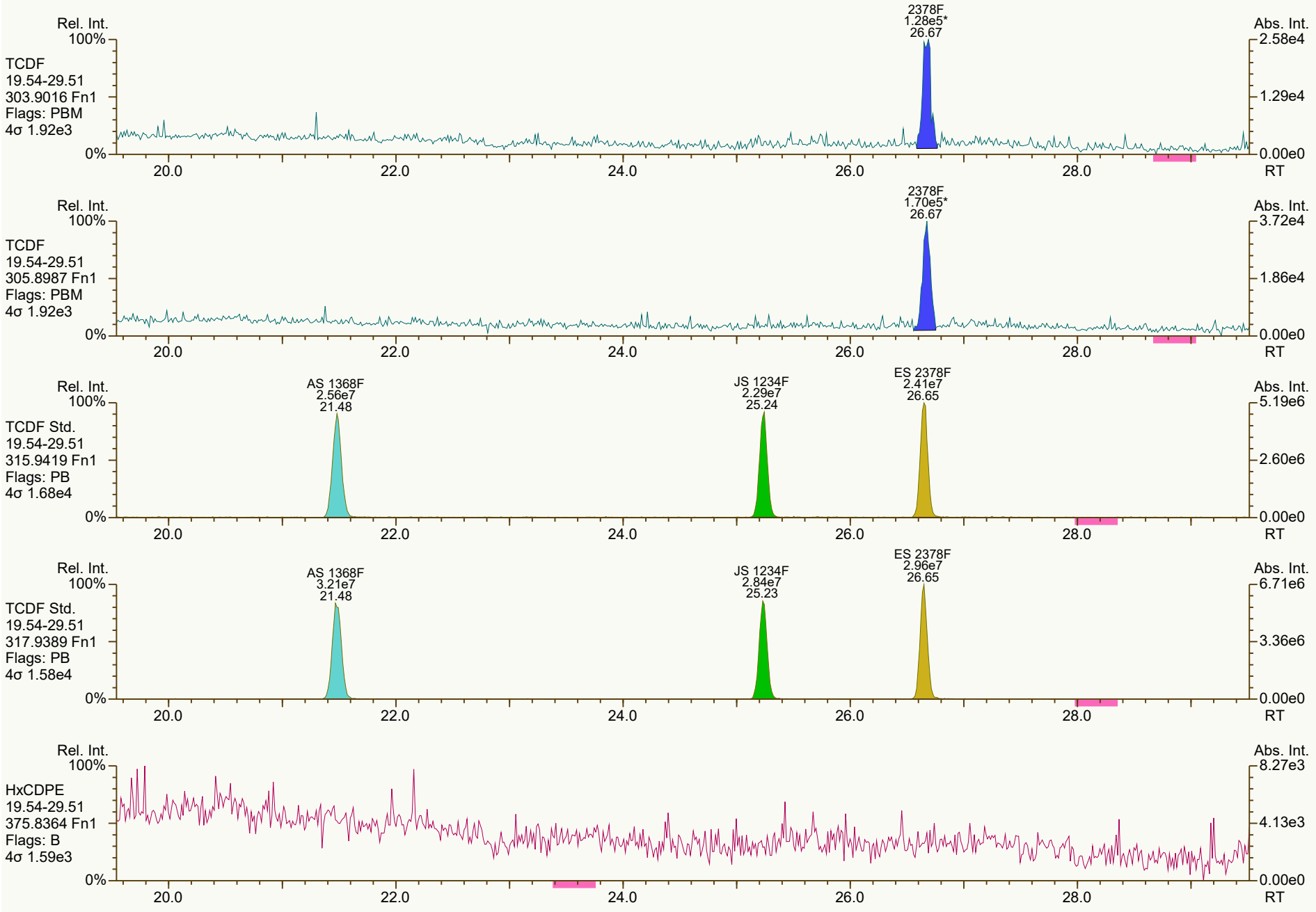


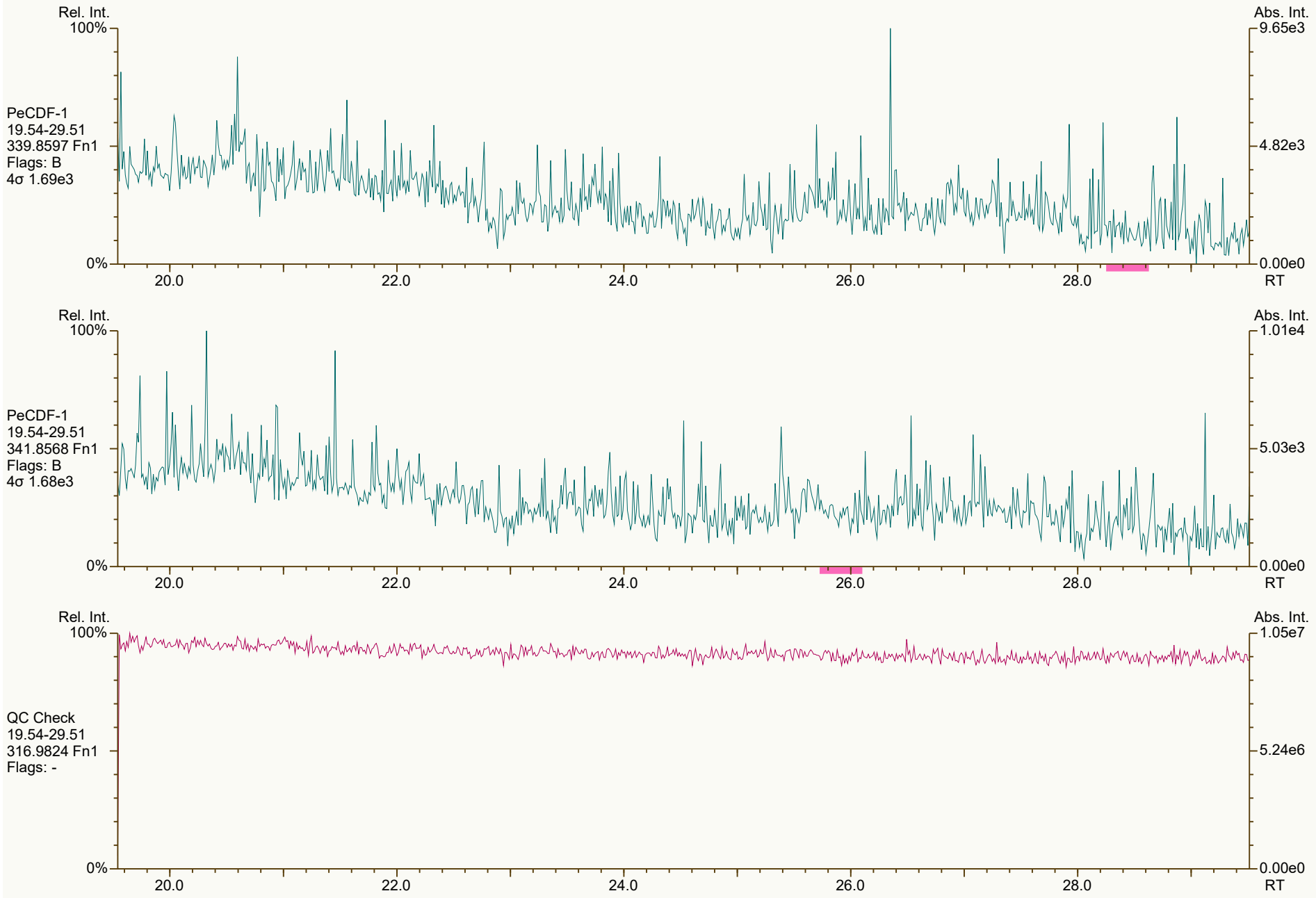
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0571, 3921 scc: 419-111 | Revised: 10-Nov-2021 13:37 (DTF) Printed: 11-Nov-2021 10:40 Page 3 of 12

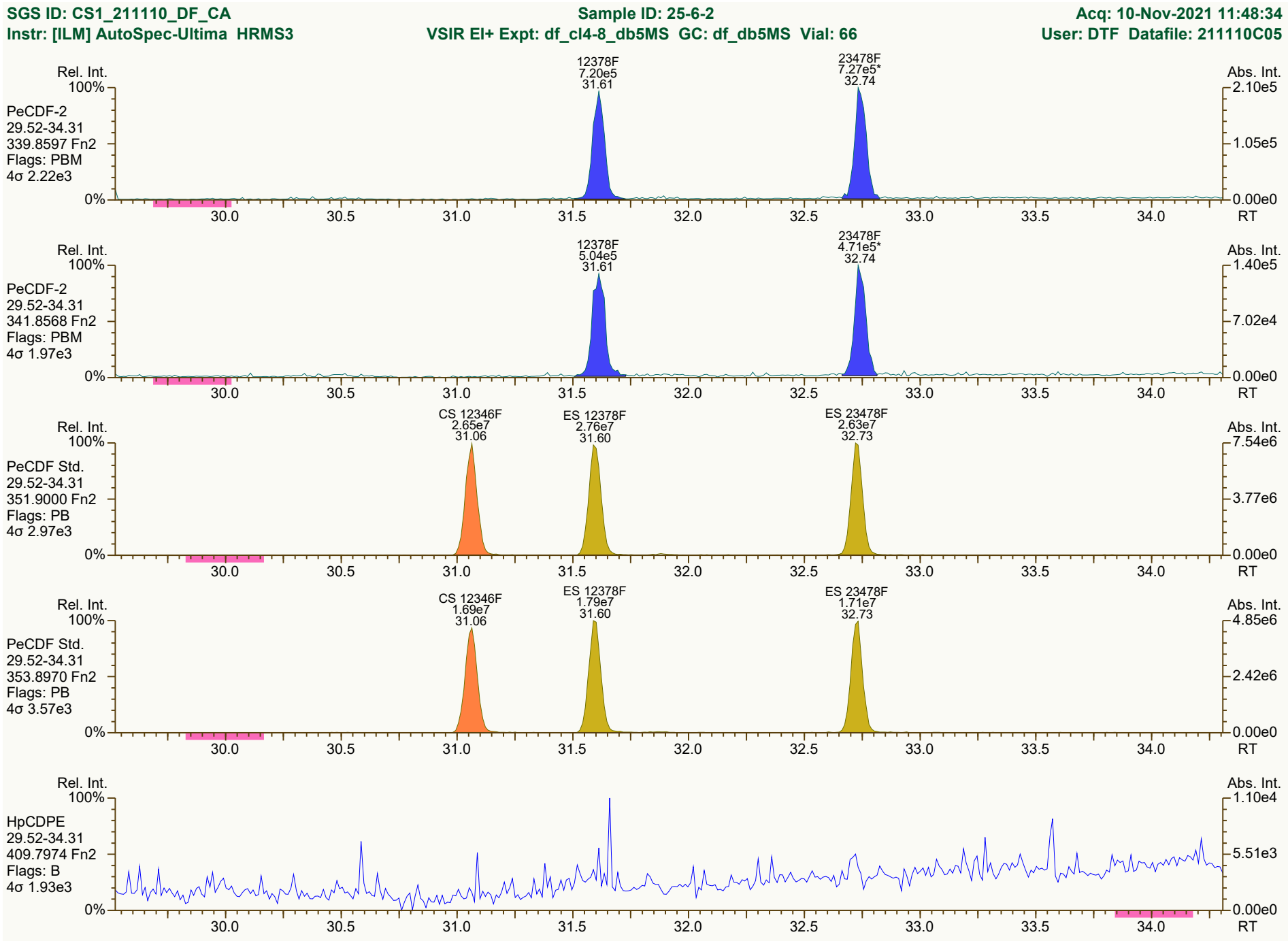

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D
4.24e5*
37.03
123678D
4.51e5*
37.15
123789D
4.65e5*
37.46
Abs. Int.
1.53e5
7.67e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D
3.28e5*
37.03
123678D
3.41e5*
37.15
123789D
3.78e5*
37.46
Abs. Int.
1.16e5
5.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D
1.89e7
35.96
ES 123678D
1.47e7
37.13
ES 123478D
1.50e7
37.02
ES 123789D
1.63e7*
37.44
JS 123467D
7.96e6*
37.34
Abs. Int.
6.03e6
3.01e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
1.53e7
35.97
ES 123678D
1.13e7
37.13
ES 123478D
1.17e7
37.02
ES 123789D
1.31e7*
37.44
JS 123467D
6.45e6*
37.34
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

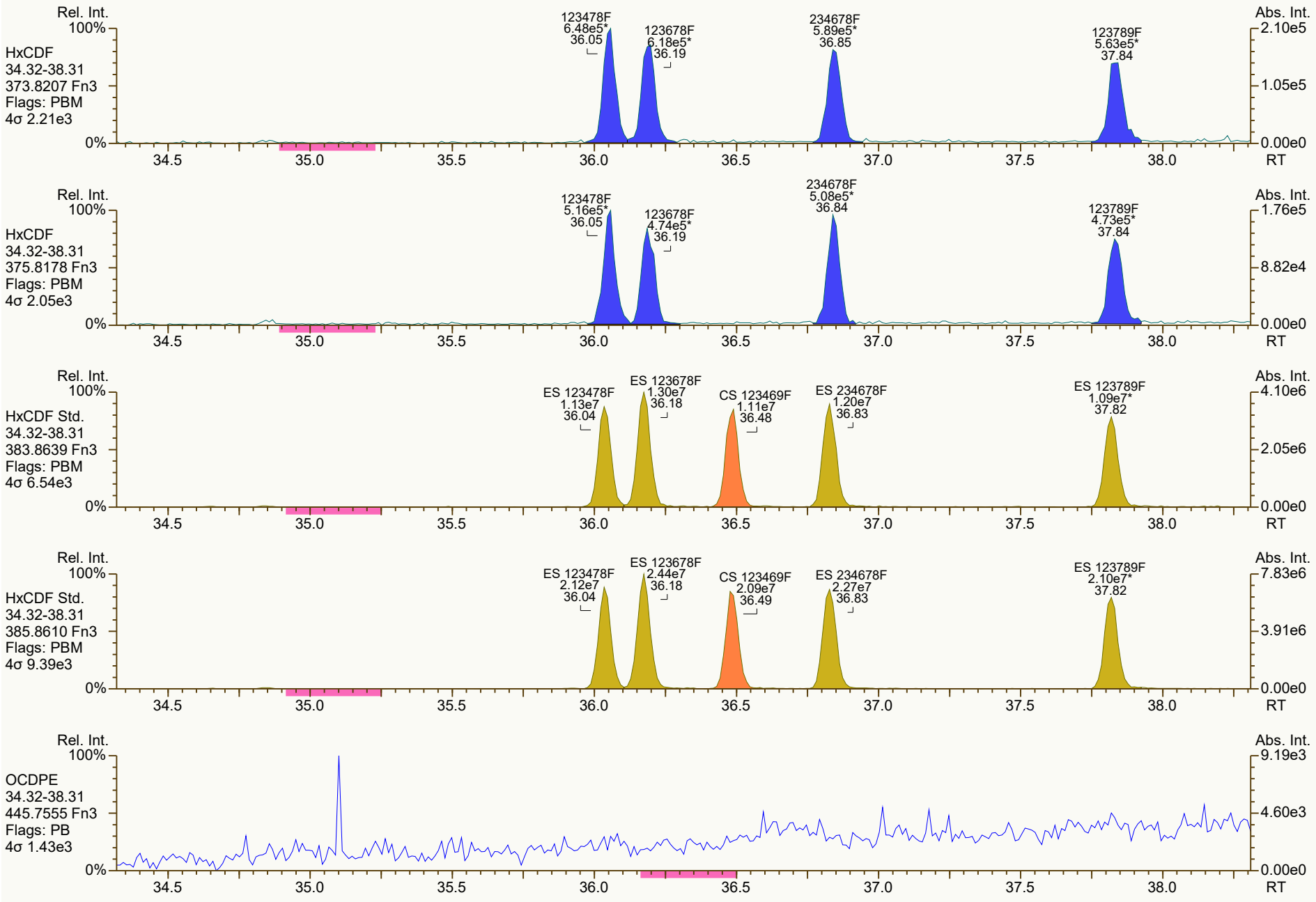

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
0%
1234678D
3.76e5*
40.27
Abs. Int.
1.39e5
6.97e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
0%
1234678D
3.51e5*
40.27
Abs. Int.
1.26e5
6.28e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
0%
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
Abs. Int.
6.94e6
3.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
0%
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
Abs. Int.
6.28e6
3.14e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.45e7
7.27e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
4.71e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
1.34e5
6.72e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
Abs. Int.
1.71e5
8.53e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
Abs. Int.
4.93e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.56e7
7.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

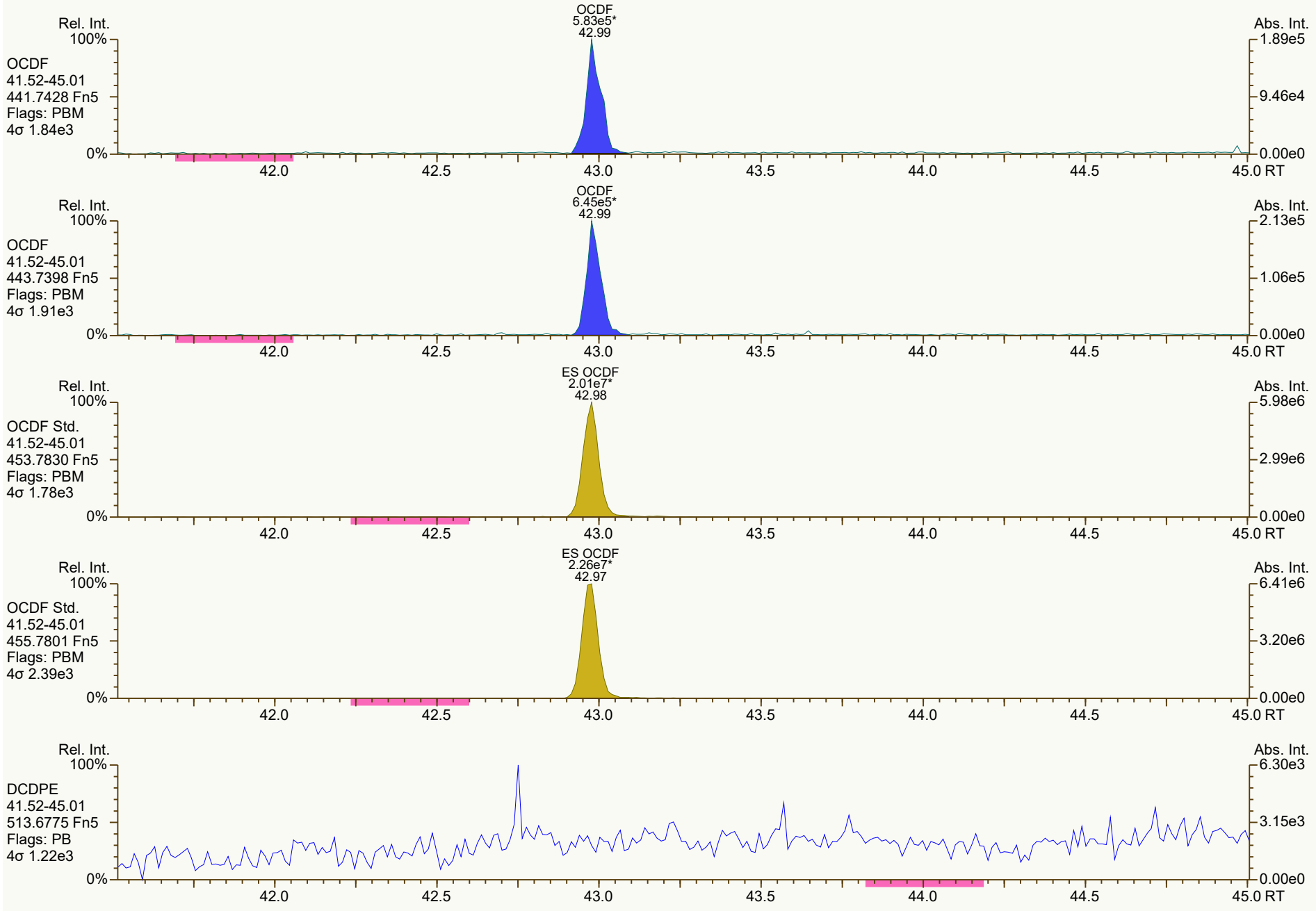

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.28e5*
26.67
Abs. Int.
2.58e4
1.29e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.70e5*
26.67
Abs. Int.
3.72e4
1.86e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.68e4
0%
AS 1368F
2.56e7
21.48
JS 1234F
2.29e7
25.24
ES 2378F
2.41e7
26.65
Abs. Int.
5.19e6
2.60e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
3.21e7
21.48
JS 1234F
2.84e7
25.23
ES 2378F
2.96e7
26.65
Abs. Int.
6.71e6
3.36e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.65e3
4.82e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.69e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.01e4
5.03e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.68e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
2.10e5
1.05e5
0.00e0
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
1.40e5
7.02e4
0.00e0
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.63e7
32.73
7.54e6
3.77e6
0.00e0
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
CS 12346F
1.69e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
4.85e6
2.42e6
0.00e0
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
1.10e4
5.51e3
0.00e0
100%
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9368, 4994, 0902 scc: 419-111
Revised: 10-Nov-2021 13:38 (DTF) Printed: 11-Nov-2021 10:40 Page 9 of 12


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.21e3
0%
123478F
6.48e5*
36.05
123678F
6.18e5*
36.19
234678F
5.89e5*
36.85
123789F
5.63e5*
37.84
Abs. Int.
2.10e5
1.05e5
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.05e3
123478F
5.16e5*
36.05
123678F
4.74e5*
36.19
234678F
5.08e5*
36.84
123789F
4.73e5*
37.84
1.76e5
8.82e4
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 6.54e3
ES 123478F
1.13e7
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.11e7
36.48
ES 234678F
1.20e7
36.83
ES 123789F
1.09e7*
37.82
4.10e6
2.05e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.39e3
ES 123478F
2.12e7
36.04
ES 123678F
2.44e7
36.18
CS 123469F
2.09e7
36.49
ES 234678F
2.27e7
36.83
ES 123789F
2.10e7*
37.82
7.83e6
3.91e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.43e3
9.19e3
4.60e3


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.51e3
0%
1234678F
5.15e5*
39.34
1234789F
3.83e5*
40.70
Abs. Int.
2.00e5
9.99e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.63e3
0%
1234678F
4.85e5*
39.34
1234789F
4.12e5*
40.70
Abs. Int.
1.67e5
8.36e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 3.90e3
0%
ES 1234678F
7.77e6*
39.33
CS 1234689F
8.09e6*
39.74
ES 1234789F
7.34e6*
40.69
Abs. Int.
3.13e6
1.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.97e3
0%
ES 1234678F
1.82e7*
39.33
CS 1234689F
1.73e7*
39.74
ES 1234789F
1.63e7*
40.69
Abs. Int.
6.42e6
3.21e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.46e3
0%
Abs. Int.
3.72e3
1.86e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

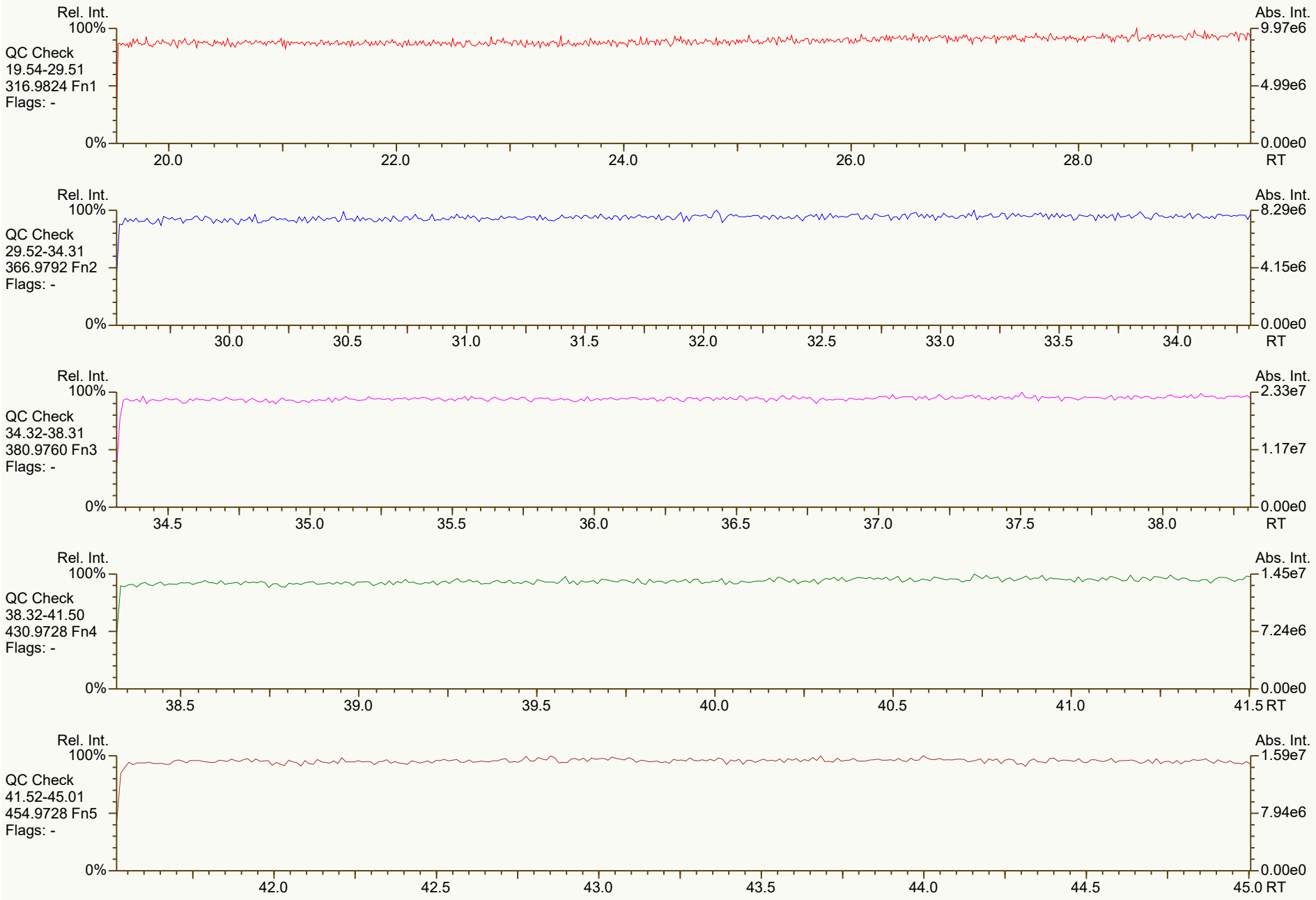

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
0%
OCDF
5.83e5*
42.99
Abs. Int.
1.89e5
9.46e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
0%
OCDF
6.45e5*
42.99
Abs. Int.
2.13e5
1.06e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
0%
ES OCDF
2.01e7*
42.98
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
0%
ES OCDF
2.26e7*
42.97
Abs. Int.
6.41e6
3.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

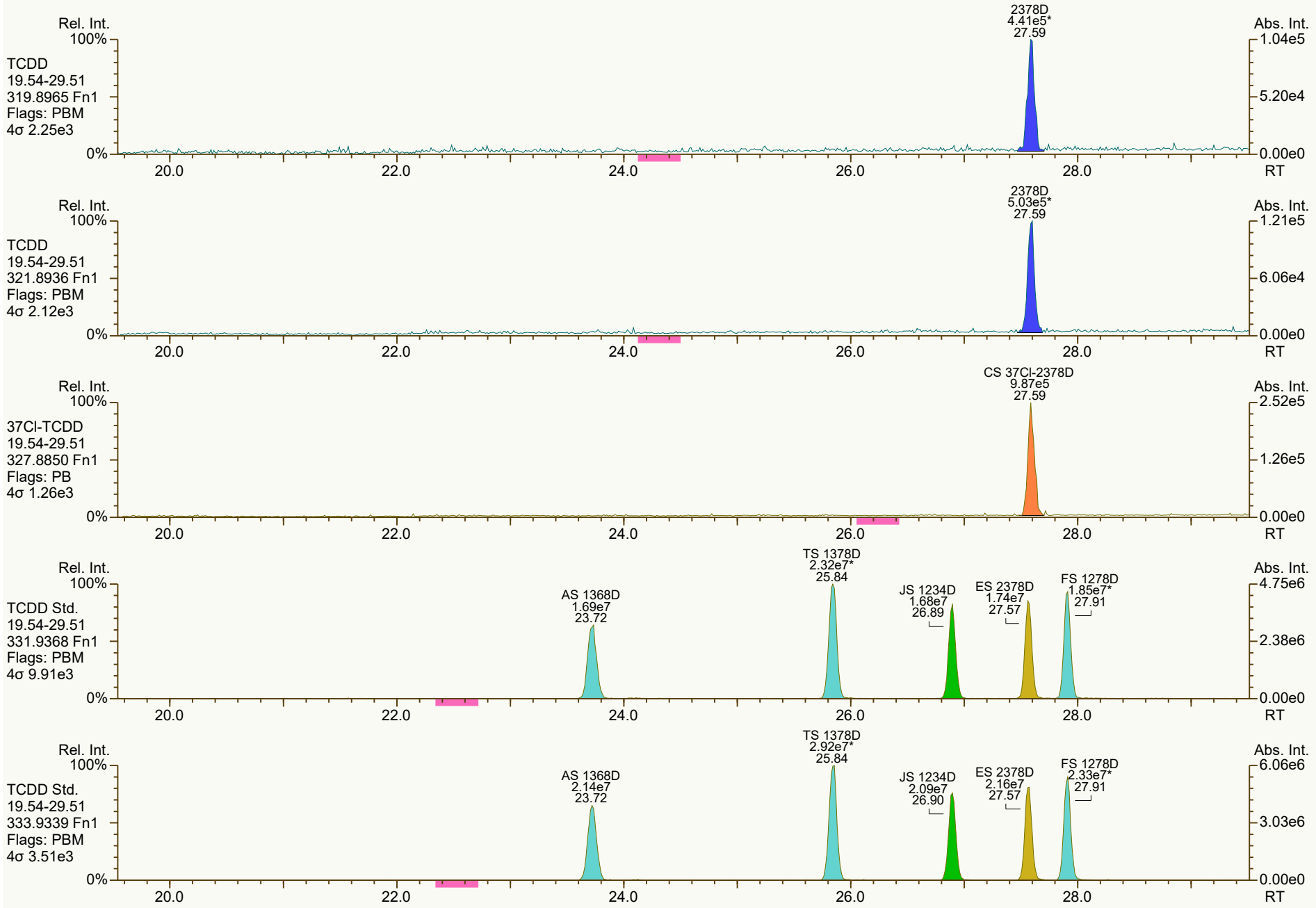
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

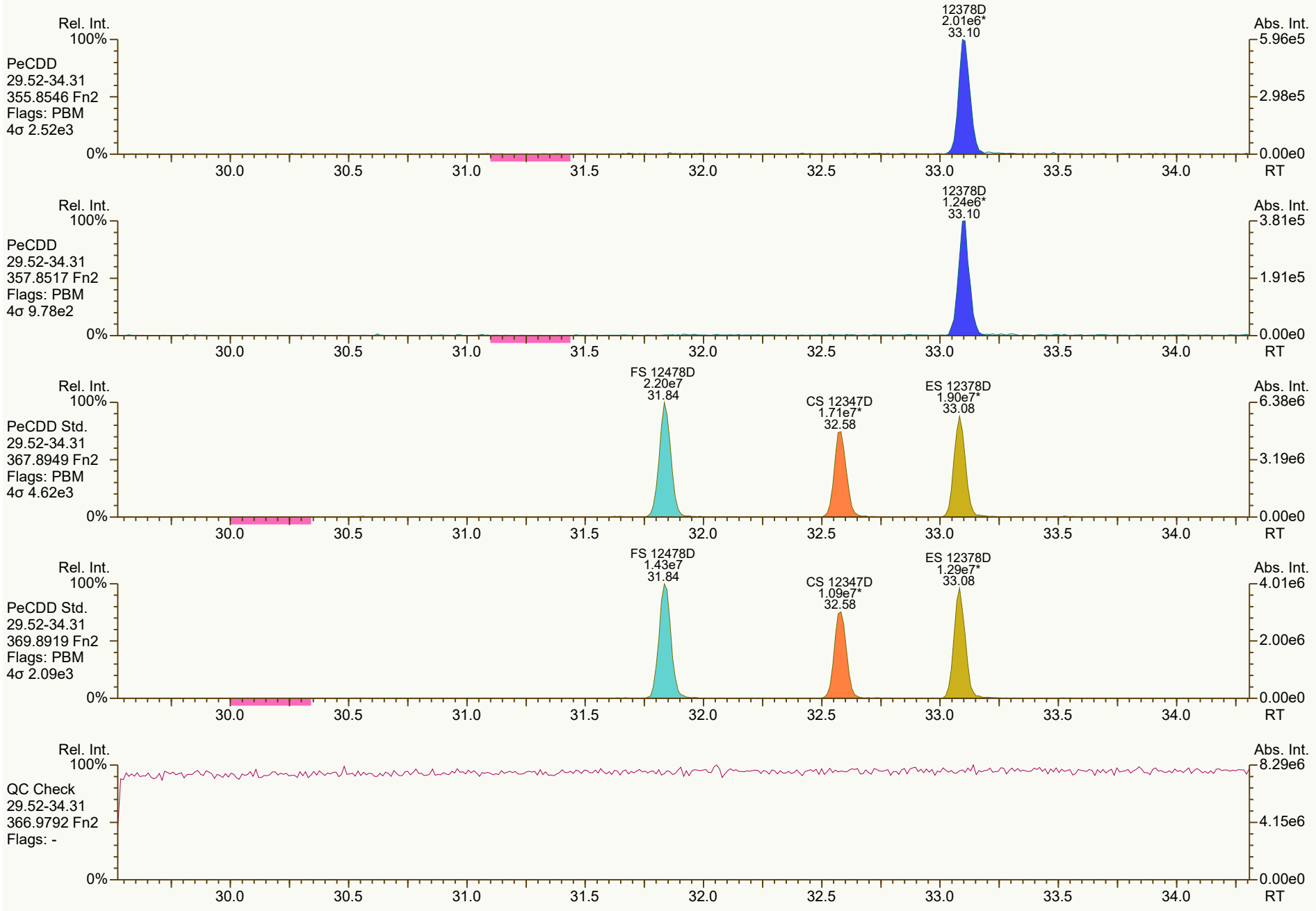
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

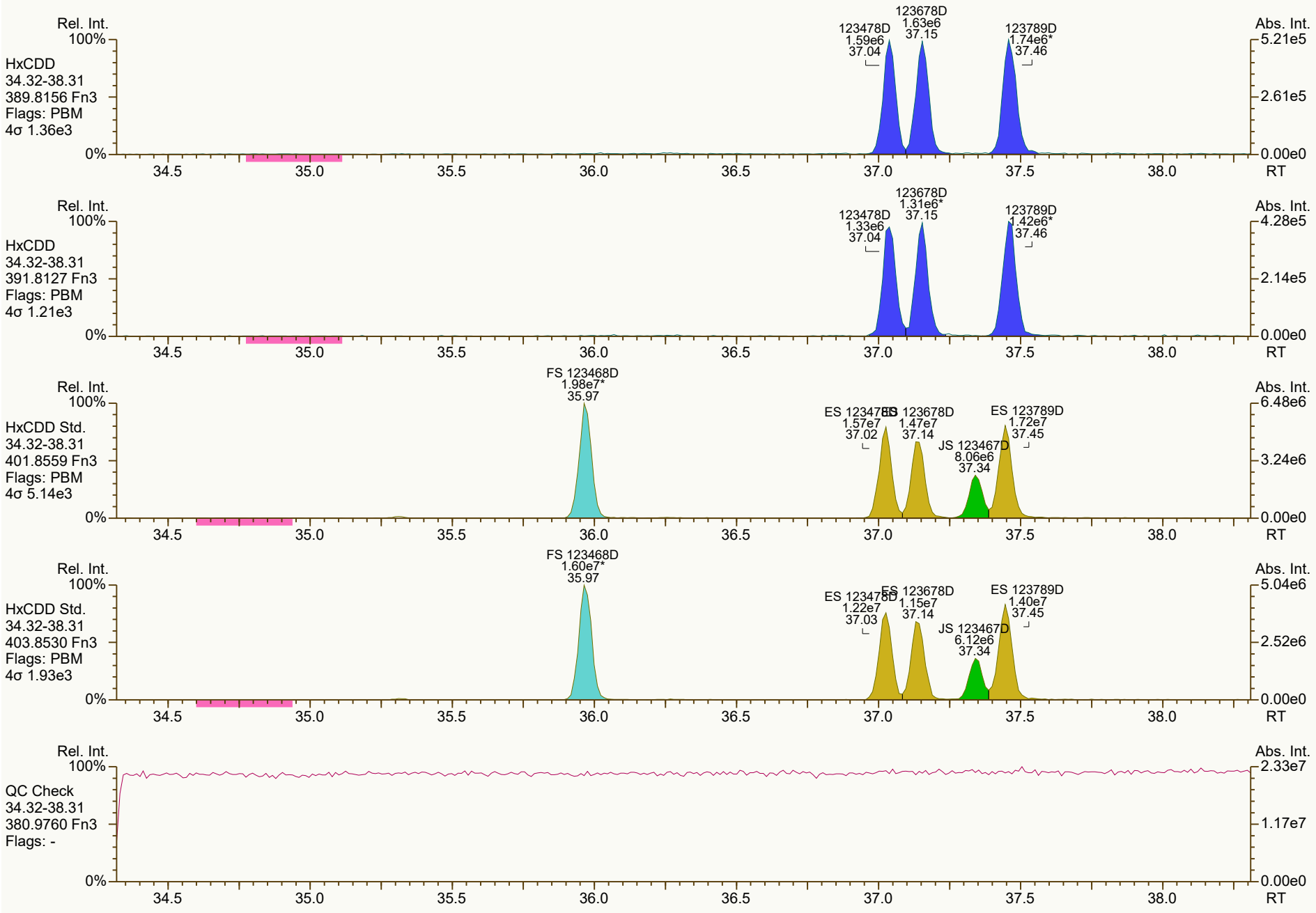
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

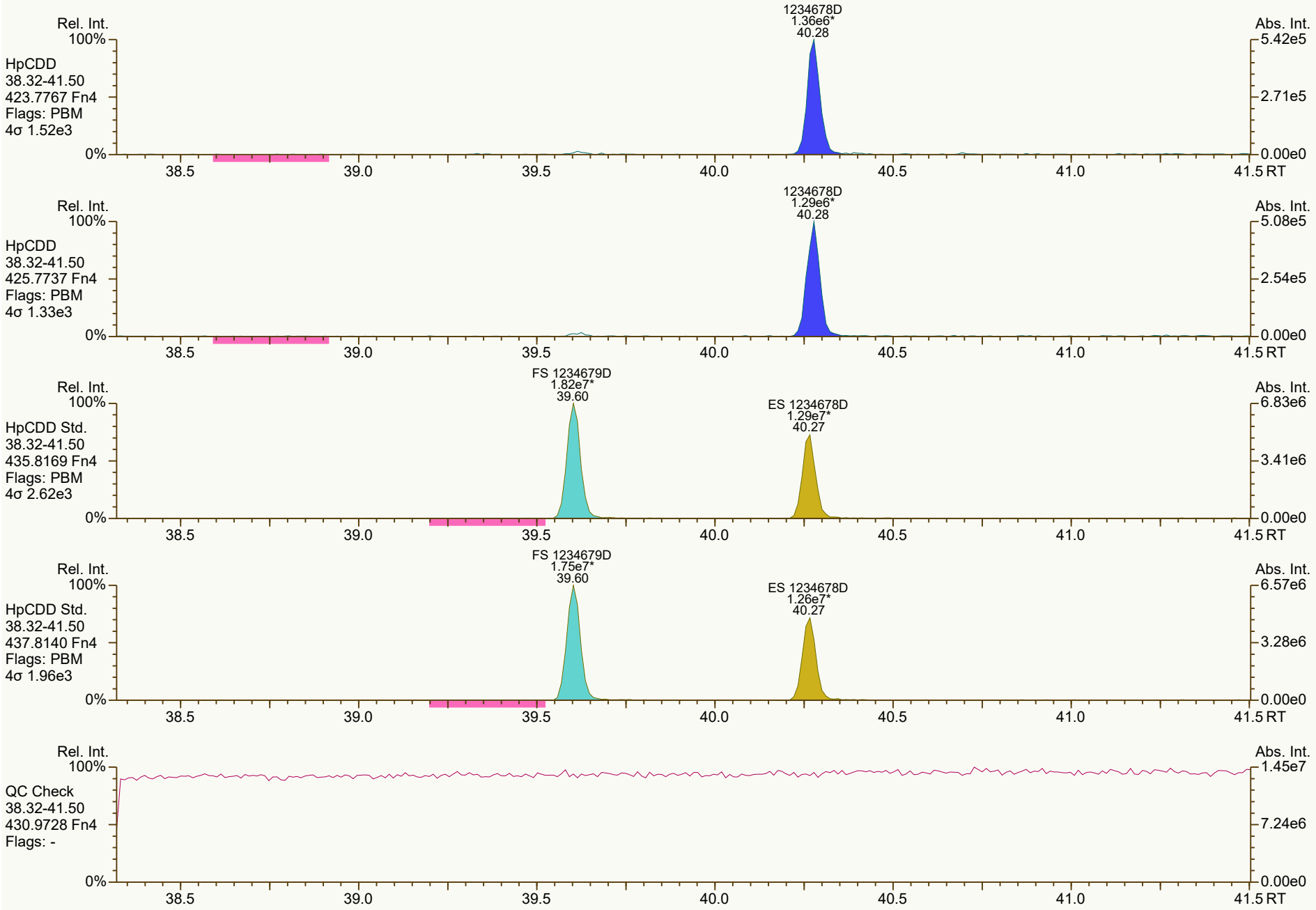
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%

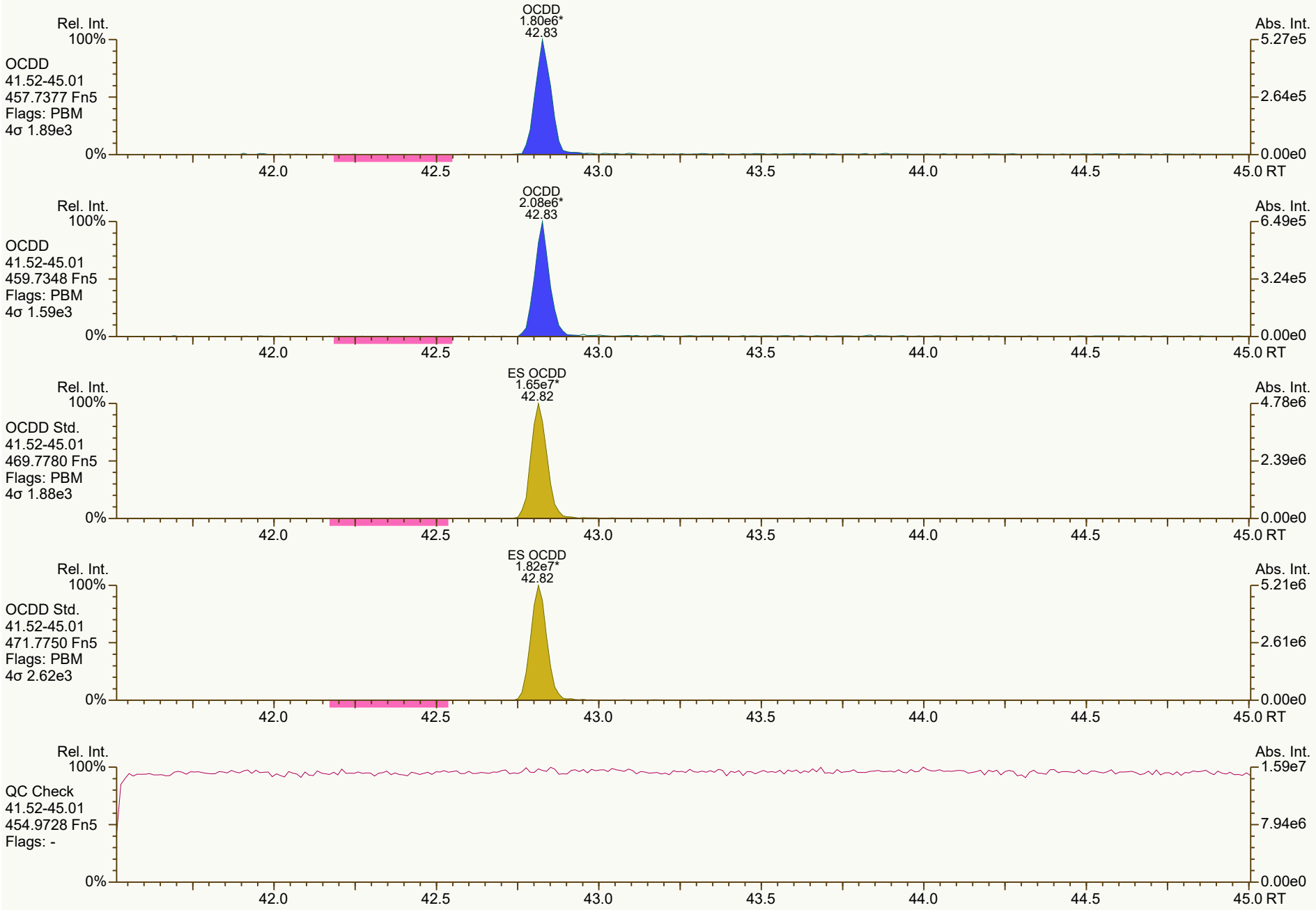

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.29e6
4.15e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.45e7
7.24e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.94e6
0.00e0

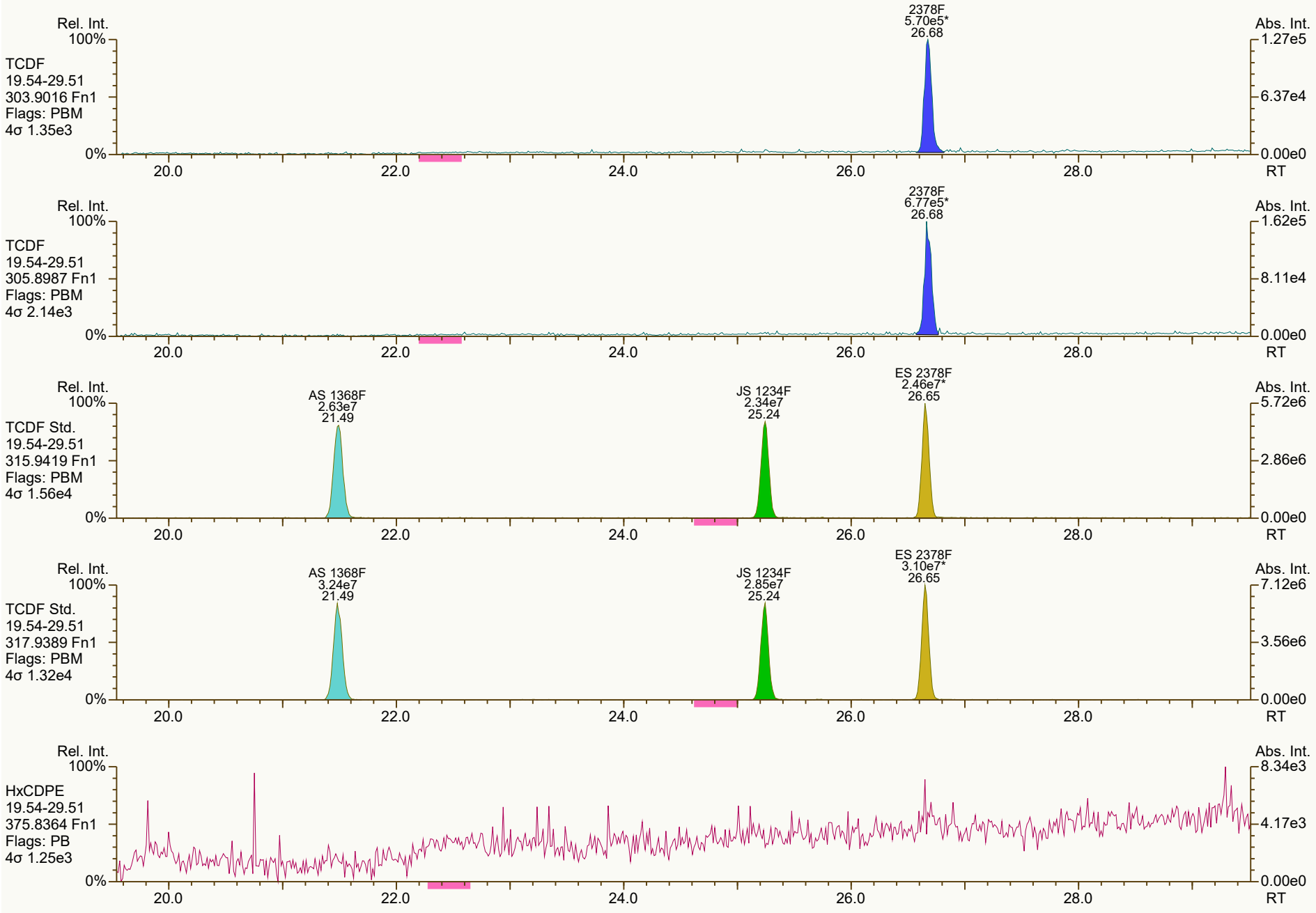

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
0%
2378D
4.41e5*
27.59
Abs. Int.
1.04e5
5.20e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
0%
2378D
5.03e5*
27.59
Abs. Int.
1.21e5
6.06e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
0%
CS 37Cl-2378D
9.87e5
27.59
Abs. Int.
2.52e5
1.26e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
0%
AS 1368D
1.69e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.85e7*
27.91
Abs. Int.
4.75e6
2.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
0%
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.52e3
12378D
2.01e6*
33.10
Abs. Int.
5.96e5
2.98e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 9.78e2
12378D
1.24e6*
33.10
Abs. Int.
3.81e5
1.91e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 4.62e3
FS 12478D
2.20e7
31.84
CS 12347D
1.71e7*
32.58
ES 12378D
1.90e7*
33.08
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 2.09e3
FS 12478D
1.43e7
31.84
CS 12347D
1.09e7*
32.58
ES 12378D
1.29e7*
33.08
Abs. Int.
4.01e6
2.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.29e6
4.15e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123478D
1.59e6
37.04
123678D
1.63e6
37.15
123789D
1.74e6*
37.46
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123478D
1.33e6
37.04
123678D
1.31e6*
37.15
123789D
1.42e6*
37.46
Abs. Int.
4.28e5
2.14e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D
1.98e7*
35.97
ES 123478D
1.57e7
37.02
ES 123678D
1.47e7
37.14
JS 123467D
8.06e6
37.34
ES 123789D
1.72e7
37.45
Abs. Int.
6.48e6
3.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D
1.60e7*
35.97
ES 123478D
1.22e7
37.03
ES 123678D
1.15e7
37.14
JS 123467D
6.12e6
37.34
ES 123789D
1.40e7
37.45
Abs. Int.
5.04e6
2.52e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.36e6*
40.28
Abs. Int.
5.42e5
2.71e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
Abs. Int.
5.08e5
2.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
Abs. Int.
6.83e6
3.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.96e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
Abs. Int.
6.57e6
3.28e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.45e7
7.24e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.80e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
5.27e5
2.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.08e6*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
6.49e5
3.24e5
ES OCDD
1.65e7*
42.82
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
4.78e6
2.39e6
ES OCDD
1.82e7*
42.82
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
5.21e6
2.61e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.59e7
7.94e6


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
0%
2378F
5.70e5*
26.68
Abs. Int.
1.27e5
6.37e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
0%
2378F
6.77e5*
26.68
Abs. Int.
1.62e5
8.11e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
0%
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
26.65
Abs. Int.
5.72e6
2.86e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
0%
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
26.65
Abs. Int.
7.12e6
3.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

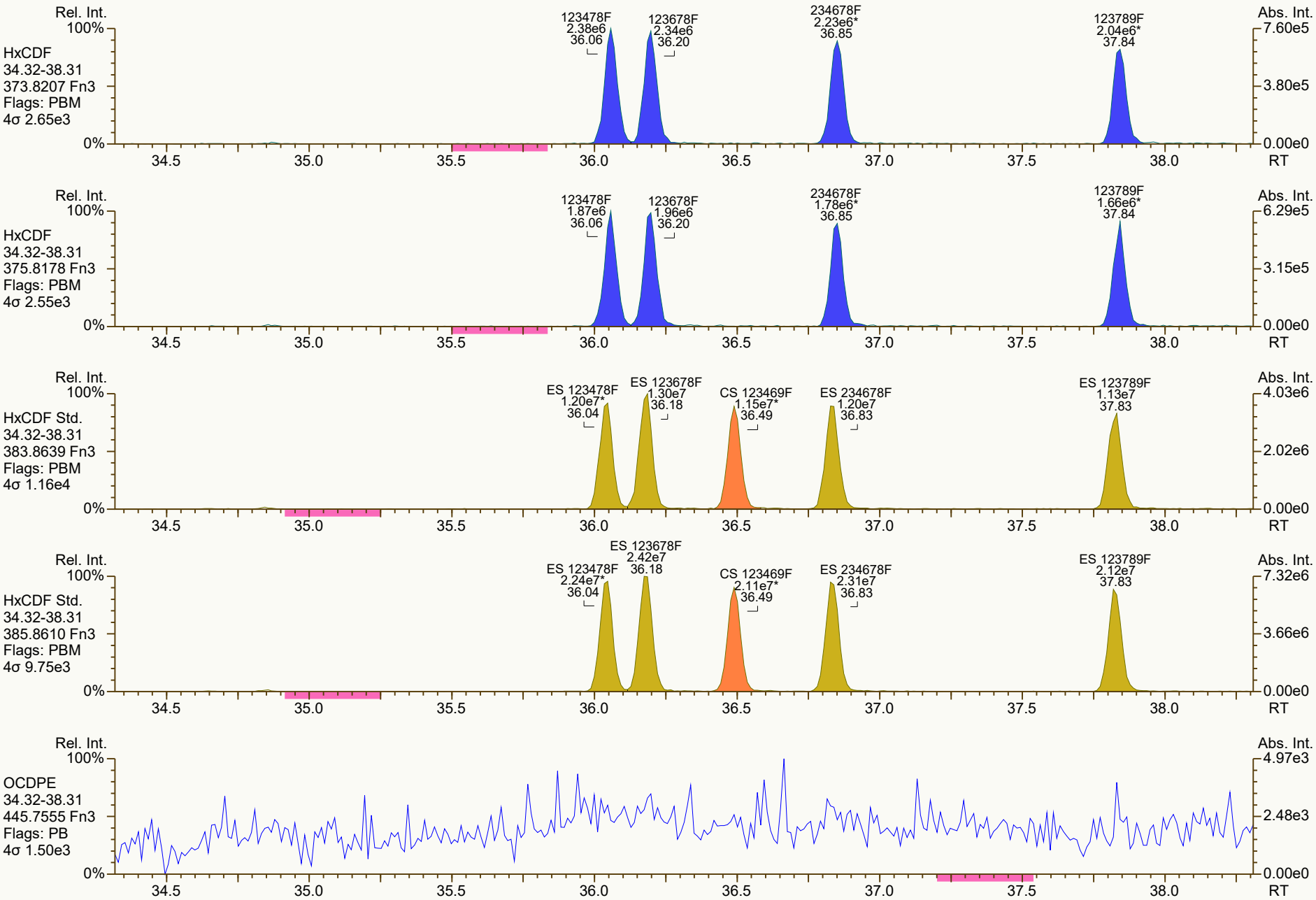

Rel. Int.
100%
0%
Abs. Int.
9.23e3
4.62e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.32e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.97e6
4.99e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
0%
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
Abs. Int.
8.19e5
4.10e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
0%
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
Abs. Int.
5.27e5
2.63e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
0%
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
Abs. Int.
8.01e6
4.01e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
0%
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
Abs. Int.
5.19e6
2.59e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
0%
Abs. Int.
6.67e3
3.33e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

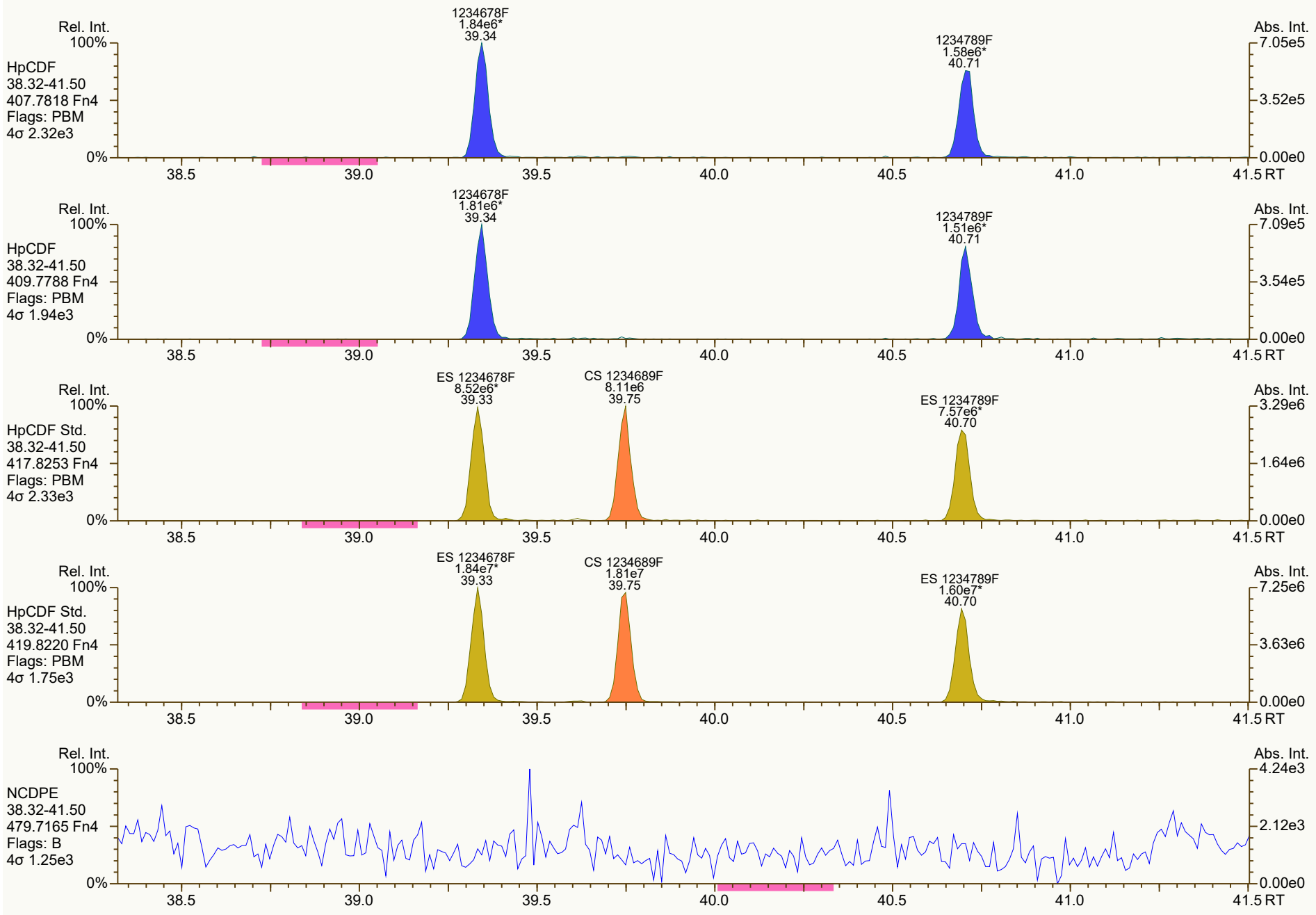
SGS ID: CS2_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

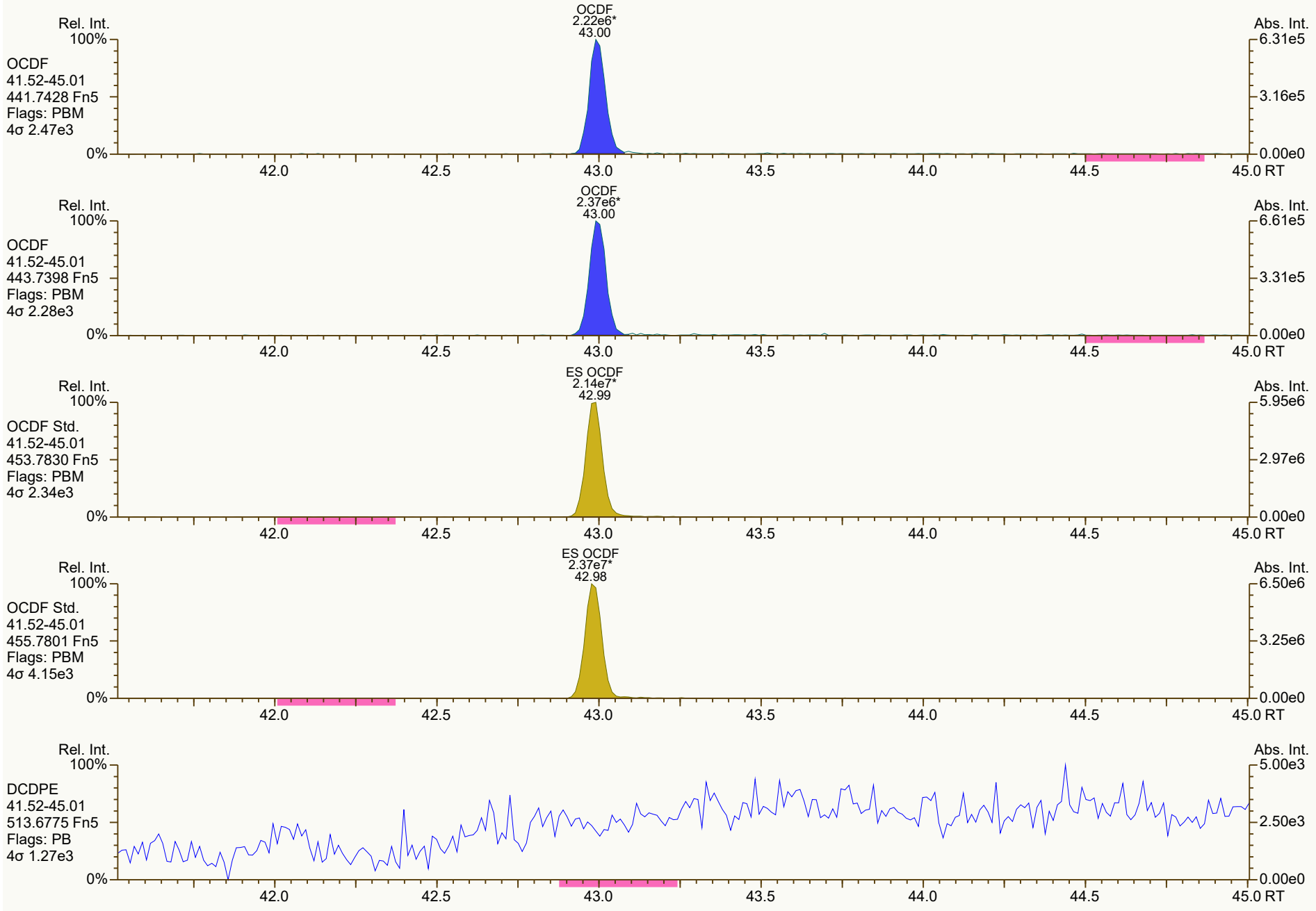
Sample ID: 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67

Acq: 10-Nov-2021 12:34:54
User: DTF Datafile: 211110C06



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7496, 9123, 5141 scc: 385-758
Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 10 of 12

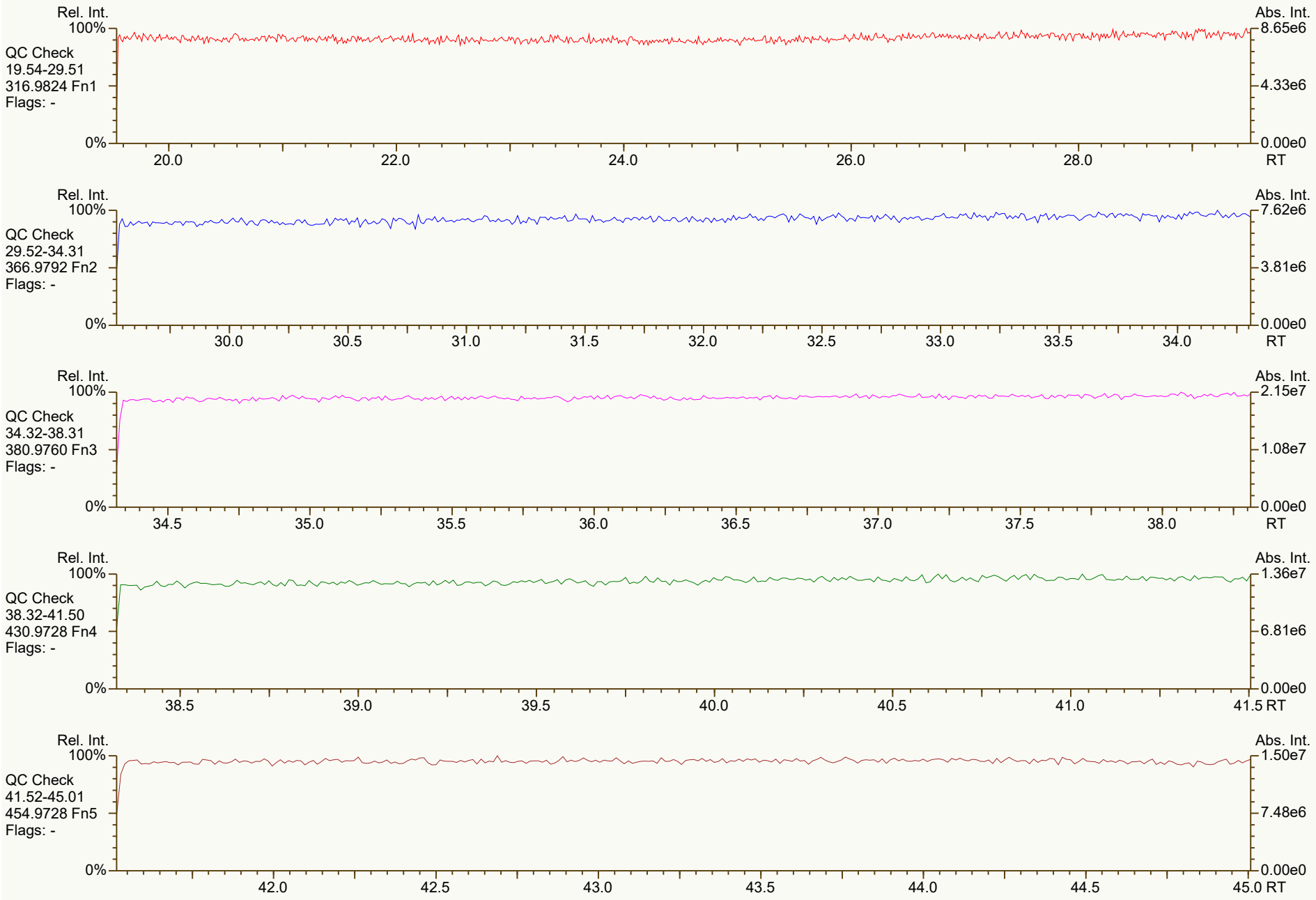

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.32e3
0%
1234678F
1.84e6*
39.34
1234789F
1.58e6*
40.71
Abs. Int.
7.05e5
3.52e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.94e3
0%
1234678F
1.81e6*
39.34
1234789F
1.51e6*
40.71
Abs. Int.
7.09e5
3.54e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.33e3
0%
ES 1234678F
8.52e6*
39.33
CS 1234689F
8.11e6
39.75
ES 1234789F
7.57e6*
40.70
Abs. Int.
3.29e6
1.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.75e3
0%
ES 1234678F
1.84e7*
39.33
CS 1234689F
1.81e7
39.75
ES 1234789F
1.60e7*
40.70
Abs. Int.
7.25e6
3.63e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.25e3
0%
Abs. Int.
4.24e3
2.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
2.22e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
0%
Abs. Int.
6.31e5
3.16e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.37e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
0%
Abs. Int.
6.61e5
3.31e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.37e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
6.50e6
3.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.00e3
2.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

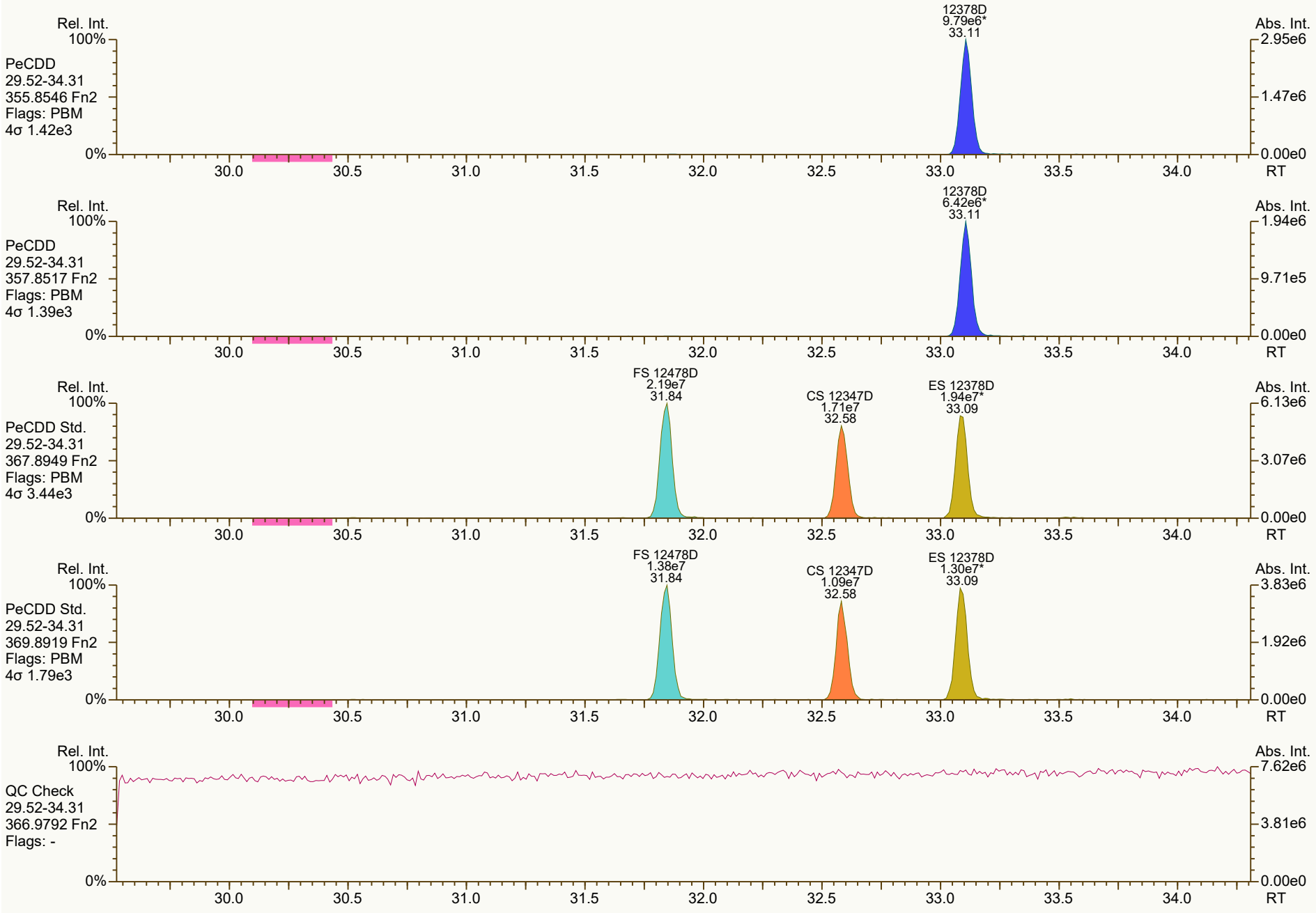
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

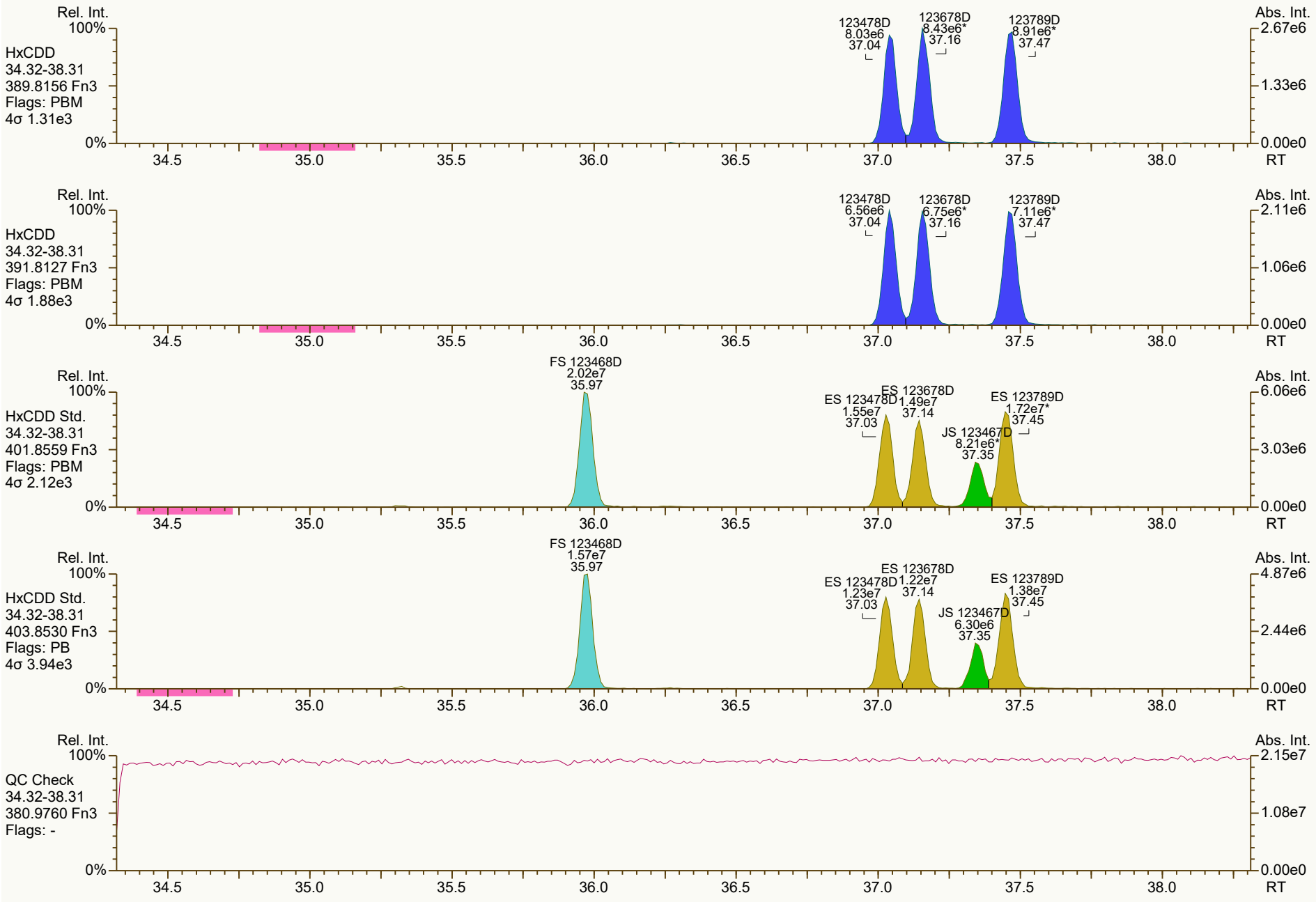
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 13:21 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211110_DF_CB	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 507-474-MKW
Sample ID: 23-672-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C07

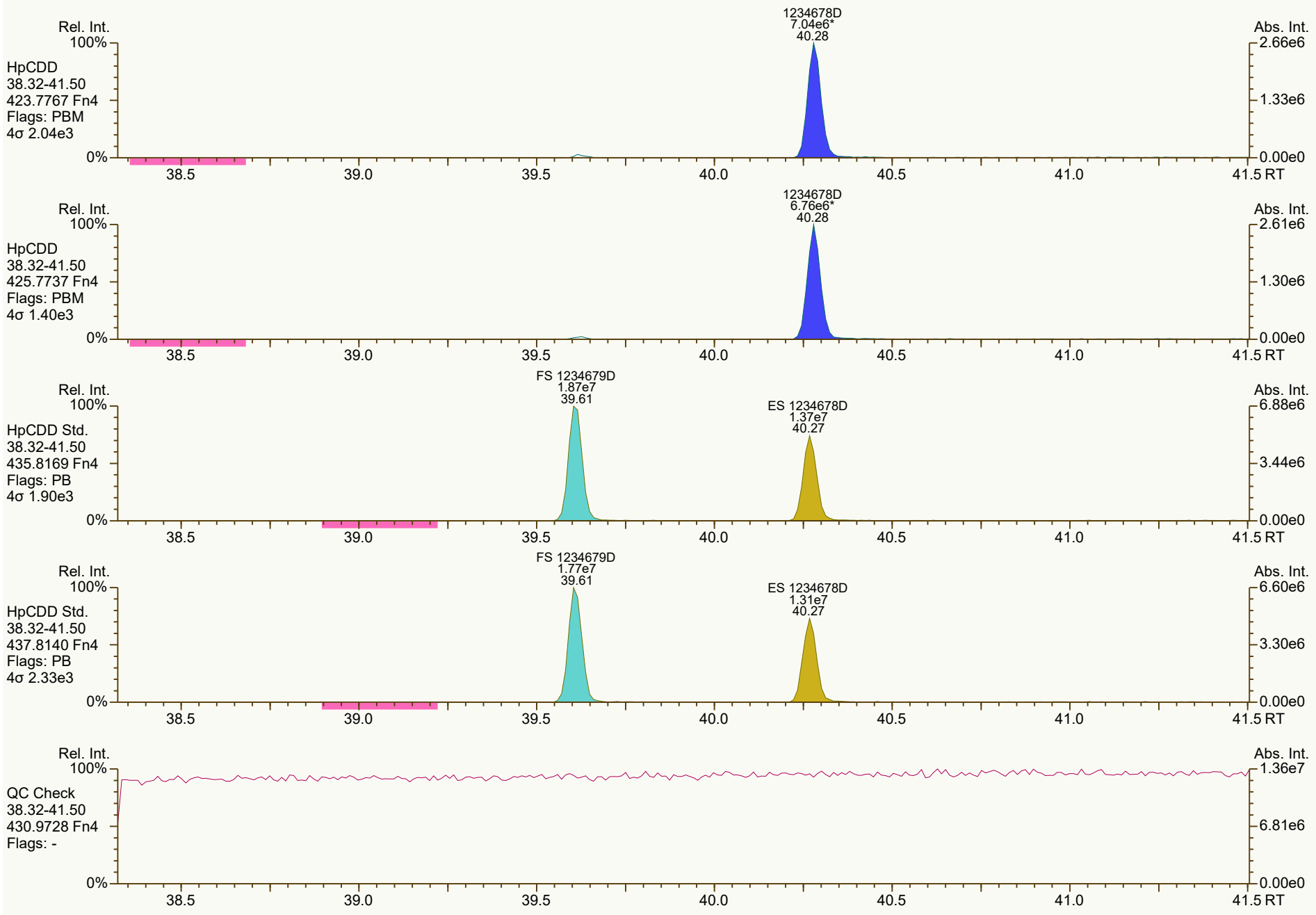
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%


Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.65e6
4.33e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.62e6
3.81e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.15e7
1.08e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.36e7
6.81e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.50e7
7.48e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
0%
2378D
1.99e6
27.60
Abs. Int.
4.35e5
2.17e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
0%
2378D
2.55e6
27.60
Abs. Int.
5.98e5
2.99e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
Abs. Int.
1.03e6
5.16e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
0%
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
Abs. Int.
4.80e6
2.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
0%
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.42e3
12378D
9.79e6*
33.11
Abs. Int.
2.95e6
1.47e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.39e3
12378D
6.42e6*
33.11
Abs. Int.
1.94e6
9.71e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 3.44e3
FS 12478D
2.19e7
31.84
CS 12347D
1.71e7
32.58
ES 12378D
1.94e7*
33.09
Abs. Int.
6.13e6
3.07e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 1.79e3
FS 12478D
1.38e7
31.84
CS 12347D
1.09e7
32.58
ES 12378D
1.30e7*
33.09
Abs. Int.
3.83e6
1.92e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
7.62e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.31e3
123478D
8.03e6
37.04
123678D
8.43e6*
37.16
123789D
8.91e6*
37.47
Abs. Int.
2.67e6
1.33e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.88e3
123478D
6.56e6
37.04
123678D
6.75e6*
37.16
123789D
7.11e6*
37.47
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.12e3
FS 123468D
2.02e7
35.97
ES 123478D
1.55e7
37.03
ES 123678D
1.49e7
37.14
JS 123467D
8.21e6*
37.35
ES 123789D
1.72e7*
37.45
Abs. Int.
6.06e6
3.03e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.94e3
FS 123468D
1.57e7
35.97
ES 123478D
1.23e7
37.03
ES 123678D
1.22e7
37.14
JS 123467D
6.30e6
37.35
ES 123789D
1.38e7
37.45
Abs. Int.
4.87e6
2.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.15e7
1.08e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

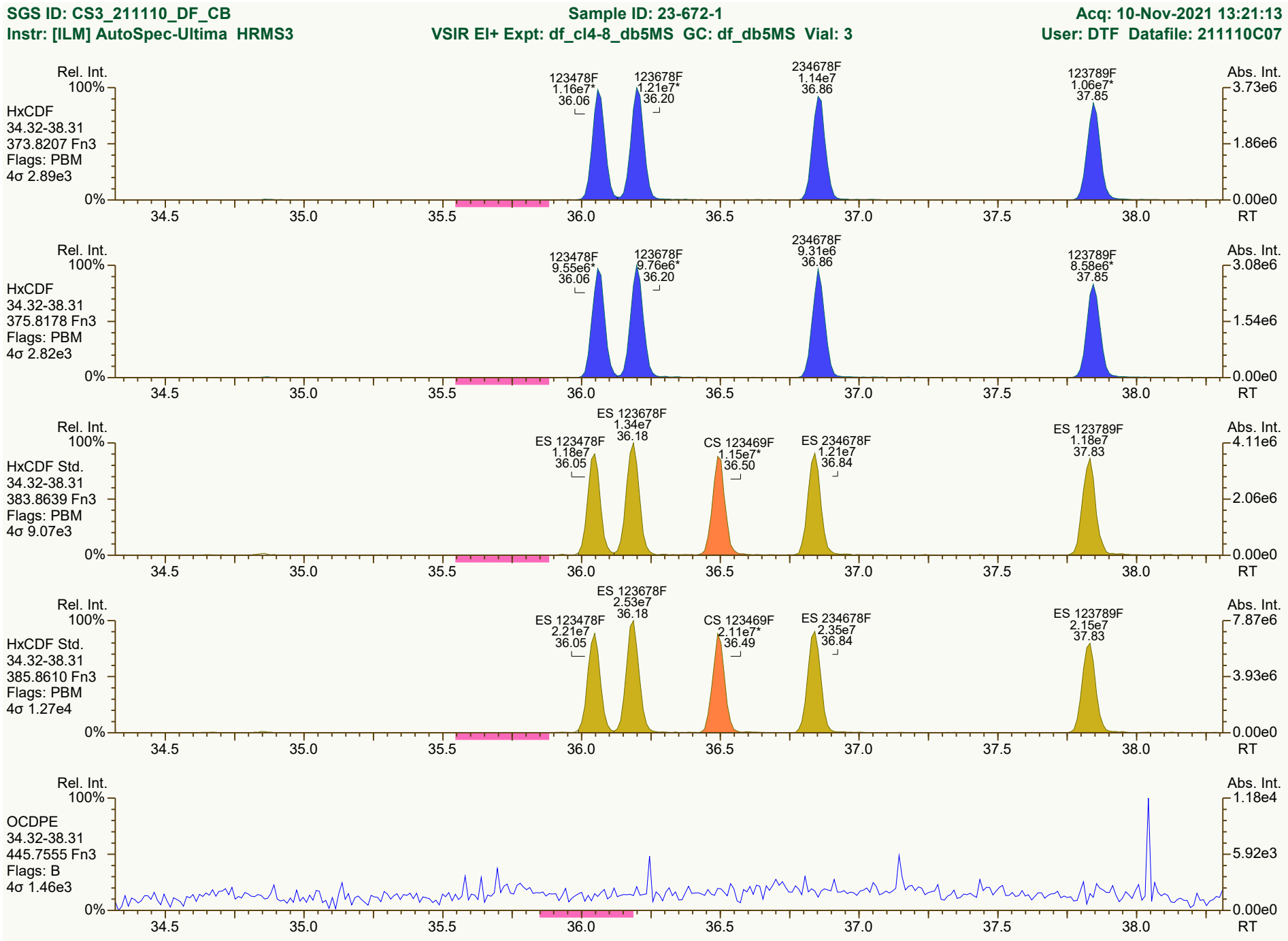

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.61
ES 1234678D
1.37e7
40.27
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.61
ES 1234678D
1.31e7
40.27
Abs. Int.
6.60e6
3.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

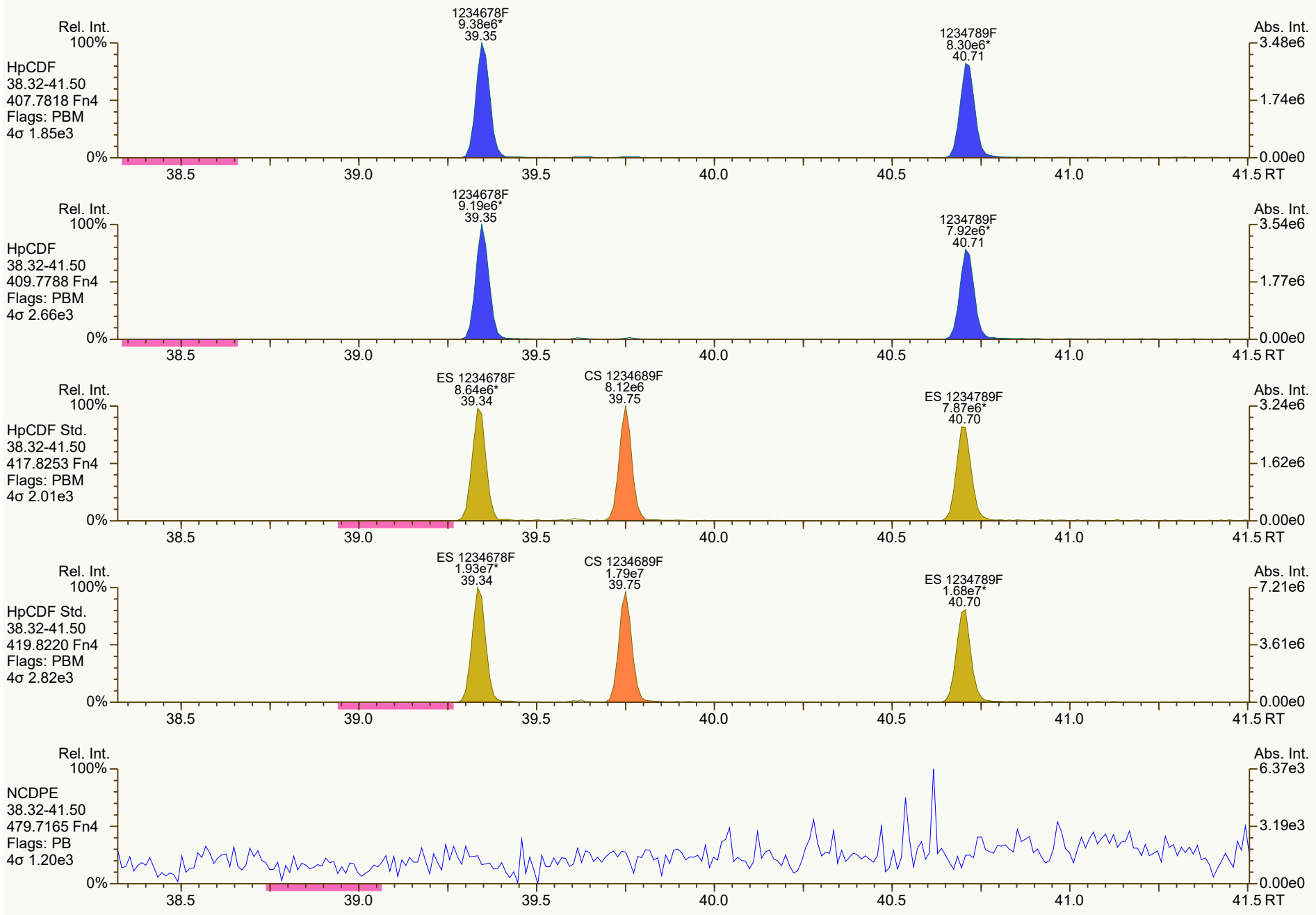

OCDD
9.25e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 9.43e2
0%
Abs. Int.
2.59e6
1.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.02e7*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.14e3
2.86e6
1.43e6
ES OCDD
1.70e7
42.82
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.74e3
4.76e6
2.38e6
ES OCDD
1.86e7
42.82
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.08e3
5.07e6
2.54e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.50e7
7.48e6


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.54e3
0%
2378F
2.58e6
26.68
Abs. Int.
5.81e5
2.91e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.71e3
0%
2378F
3.32e6
26.68
Abs. Int.
7.66e5
3.83e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.69e4
0%
AS 1368F
2.59e7
21.50
JS 1234F
2.21e7
25.25
ES 2378F
2.41e7
26.66
Abs. Int.
5.45e6
2.73e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.04e4
0%
AS 1368F
3.25e7
21.50
JS 1234F
2.82e7
25.25
ES 2378F
3.03e7
26.66
Abs. Int.
6.76e6
3.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.54e3
0%
Abs. Int.
6.84e3
3.42e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.76e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.65e6
4.33e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.86e3
12378F
1.38e7*
31.62
23478F
1.36e7
32.75
Abs. Int.
3.85e6
1.93e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.34e3
12378F
8.95e6*
31.62
23478F
9.01e6
32.75
Abs. Int.
2.59e6
1.29e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 5.91e3
CS 12346F
2.68e7
31.07
ES 12378F
2.82e7
31.61
ES 23478F
2.73e7
32.74
Abs. Int.
7.61e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 5.66e3
CS 12346F
1.70e7
31.07
ES 12378F
1.80e7
31.61
ES 23478F
1.77e7
32.74
Abs. Int.
5.00e6
2.50e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.57e3
Abs. Int.
1.17e4
5.86e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07
Rel. Int.
100%
0%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.89e3
123478F 1.16e7* 36.06
123678F 1.21e7* 36.20
234678F 1.14e7 36.86
123789F 1.06e7* 37.85
Abs. Int.
3.73e6
1.86e6
0.00e0
RT
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.82e3
123478F 9.55e6* 36.06
123678F 9.76e6* 36.20
234678F 9.31e6 36.86
123789F 8.58e6* 37.85
3.08e6
1.54e6
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 9.07e3
ES 123478F 1.18e7 36.05
ES 123678F 1.34e7 36.18
CS 123469F 1.15e7* 36.50
ES 234678F 1.21e7 36.84
ES 123789F 1.18e7 37.83
4.11e6
2.06e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 1.27e4
ES 123478F 2.21e7 36.05
ES 123678F 2.53e7 36.18
CS 123469F 2.11e7* 36.49
ES 234678F 2.35e7 36.84
ES 123789F 2.15e7 37.83
7.87e6
3.93e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.46e3
1.18e4
5.92e3
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0985, 9027, 6556 scc: 507-474
Revised: 10-Nov-2021 14:18 (DTF) Printed: 11-Nov-2021 10:41 Page 10 of 12

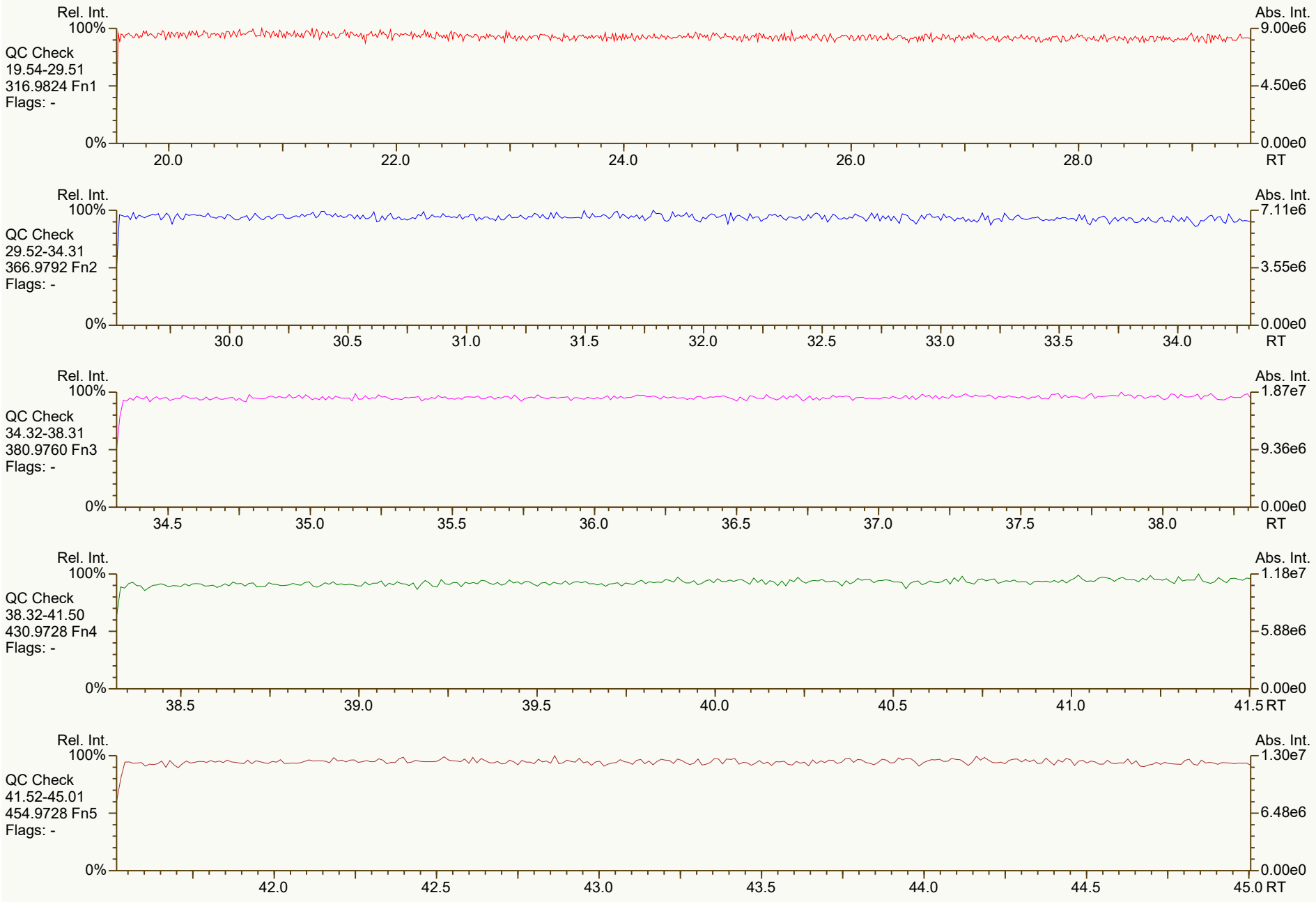

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.85e3
0%
1234678F
9.38e6*
39.35
1234789F
8.30e6*
40.71
Abs. Int.
3.48e6
1.74e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.66e3
0%
1234678F
9.19e6*
39.35
1234789F
7.92e6*
40.71
Abs. Int.
3.54e6
1.77e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.01e3
0%
ES 1234678F
8.64e6*
39.34
CS 1234689F
8.12e6
39.75
ES 1234789F
7.87e6*
40.70
Abs. Int.
3.24e6
1.62e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.82e3
0%
ES 1234678F
1.93e7*
39.34
CS 1234689F
1.79e7
39.75
ES 1234789F
1.68e7*
40.70
Abs. Int.
7.21e6
3.61e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.20e3
0%
Abs. Int.
6.37e3
3.19e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

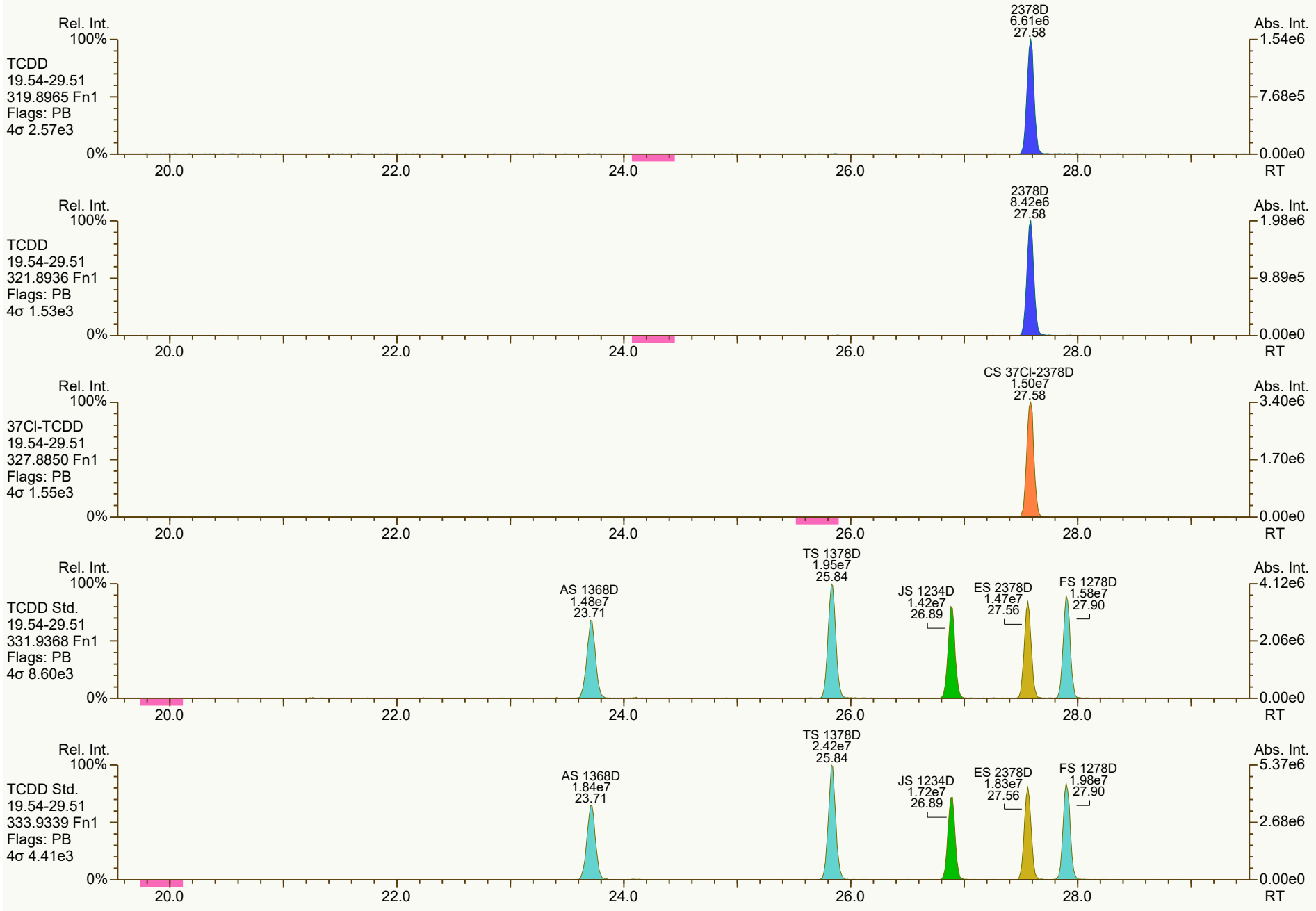

OCDF
1.15e7*
43.00
Rel. Int.
Abs. Int.
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
OCDF
1.28e7*
43.00
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
ES OCDF
2.21e7*
42.99
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
ES OCDF
2.39e7*
42.99
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

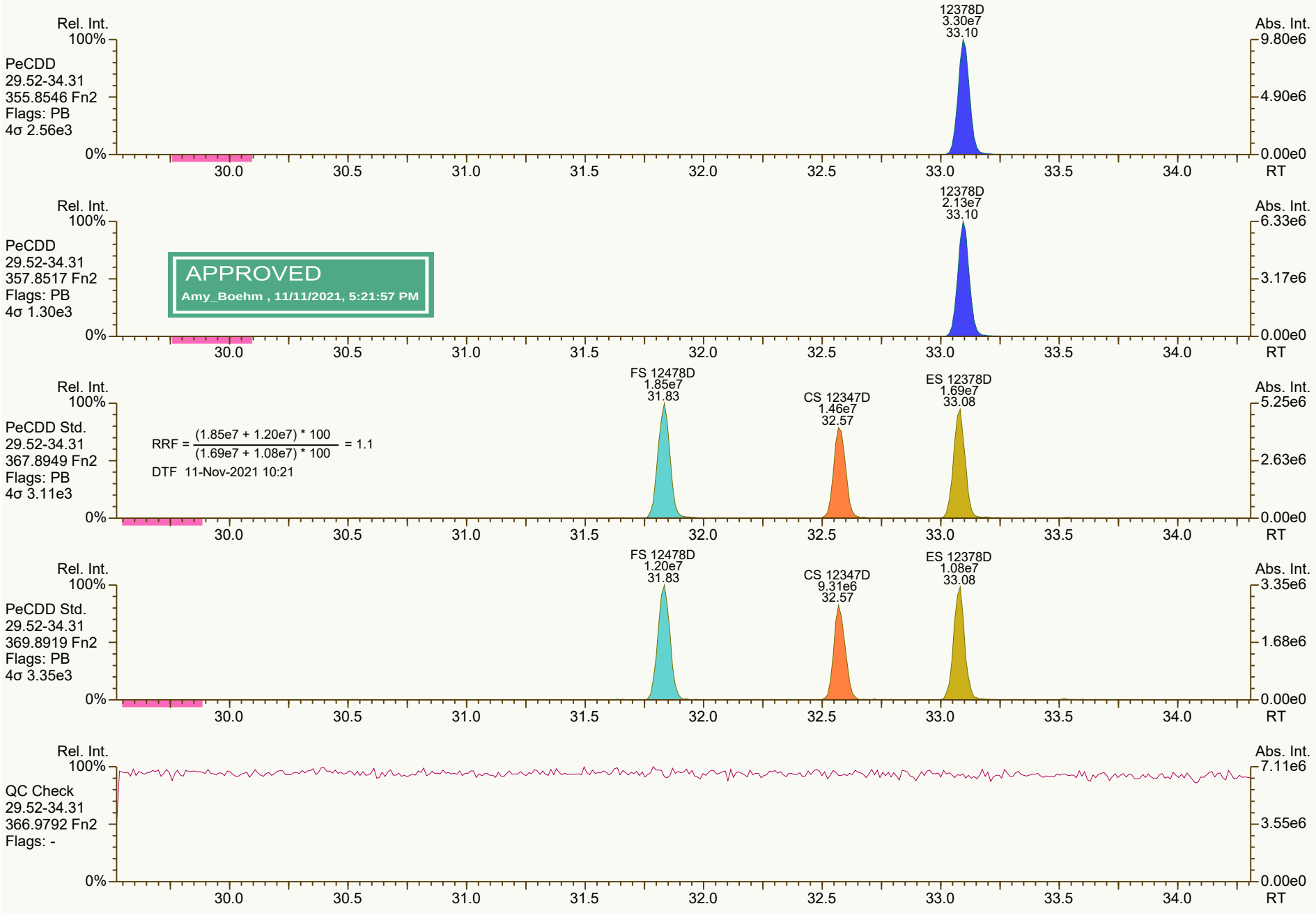
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:07 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS4_211110_DF_CA	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 855-576-PGM
Sample ID: 25-5-4	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C08

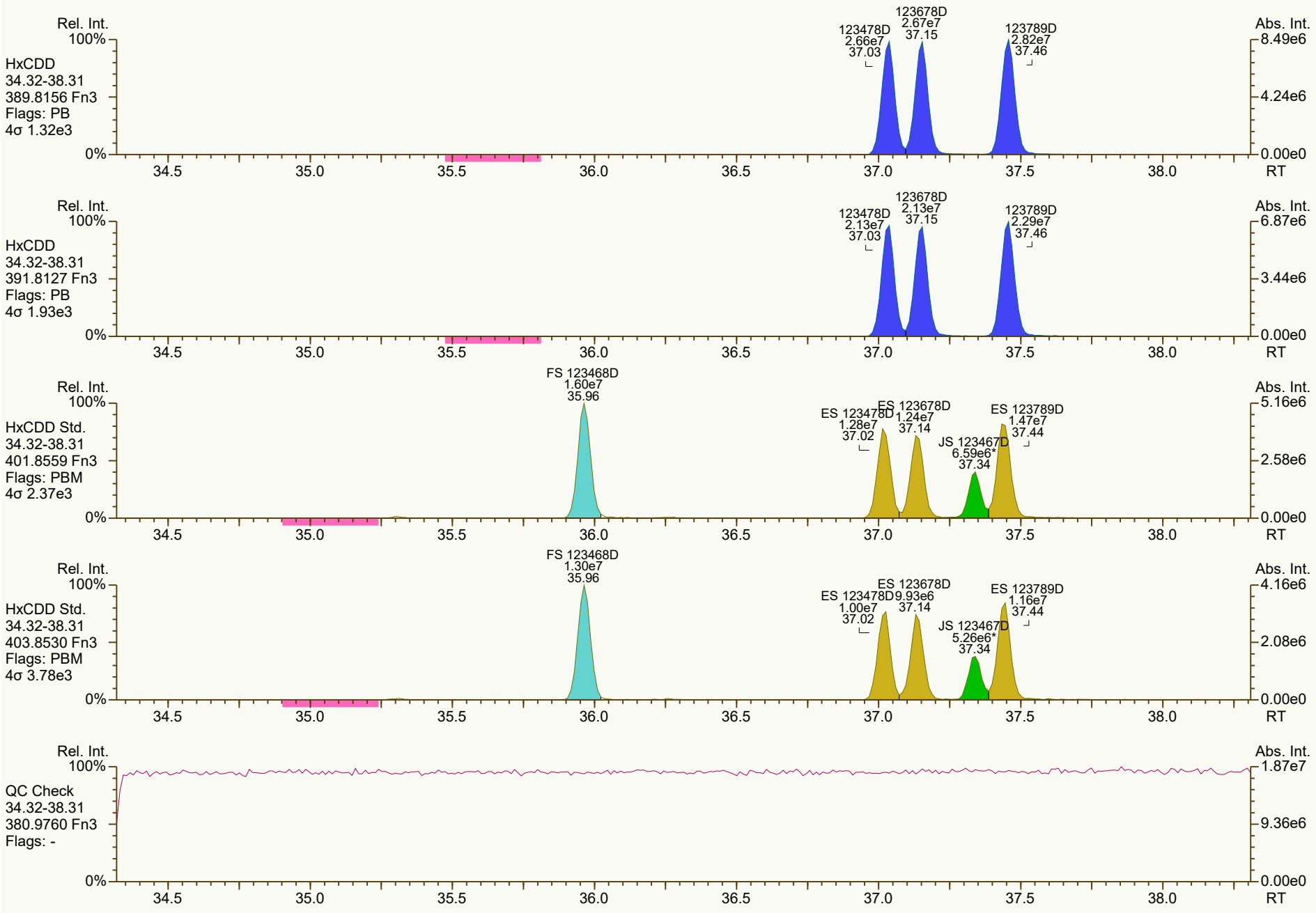
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

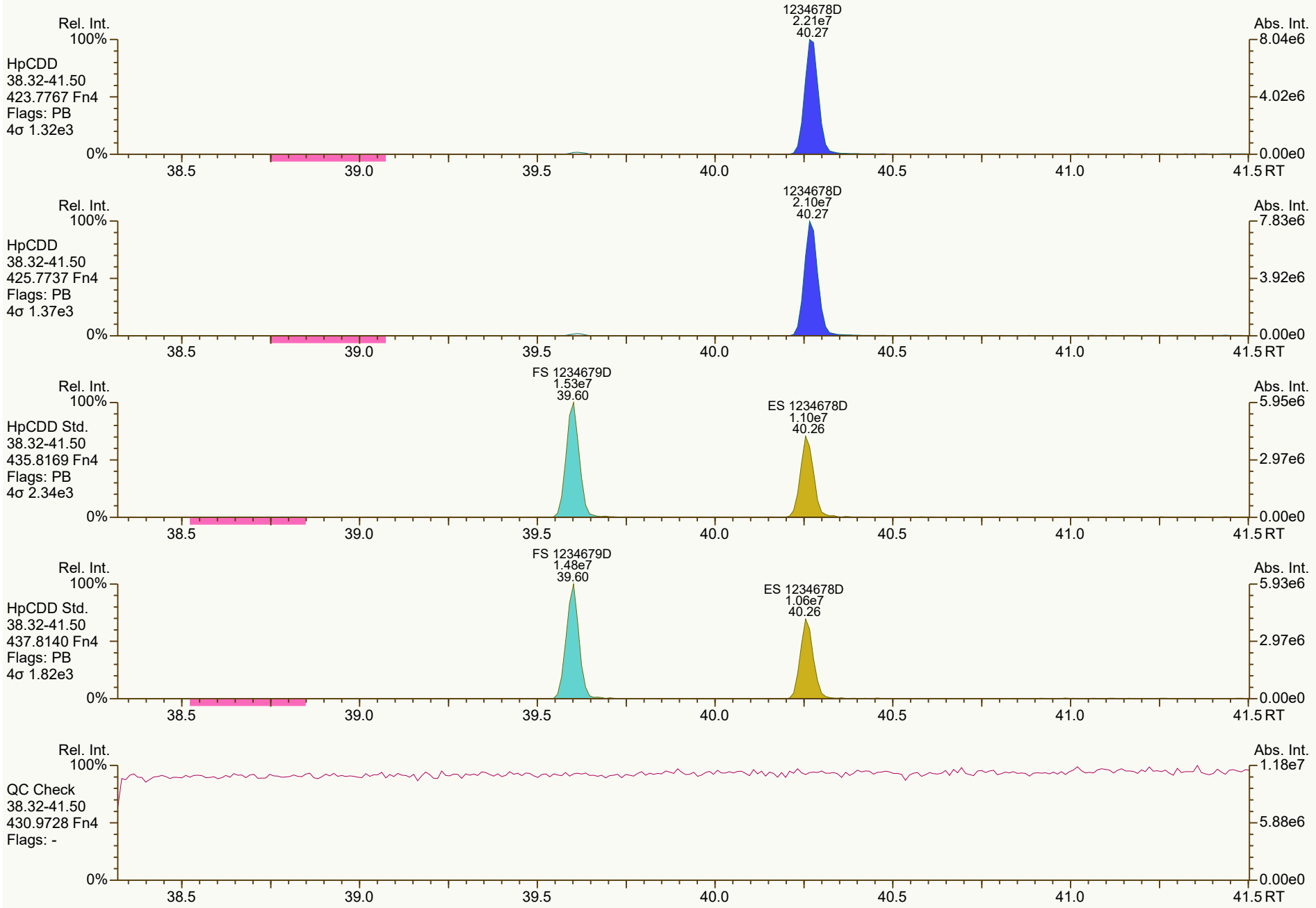
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

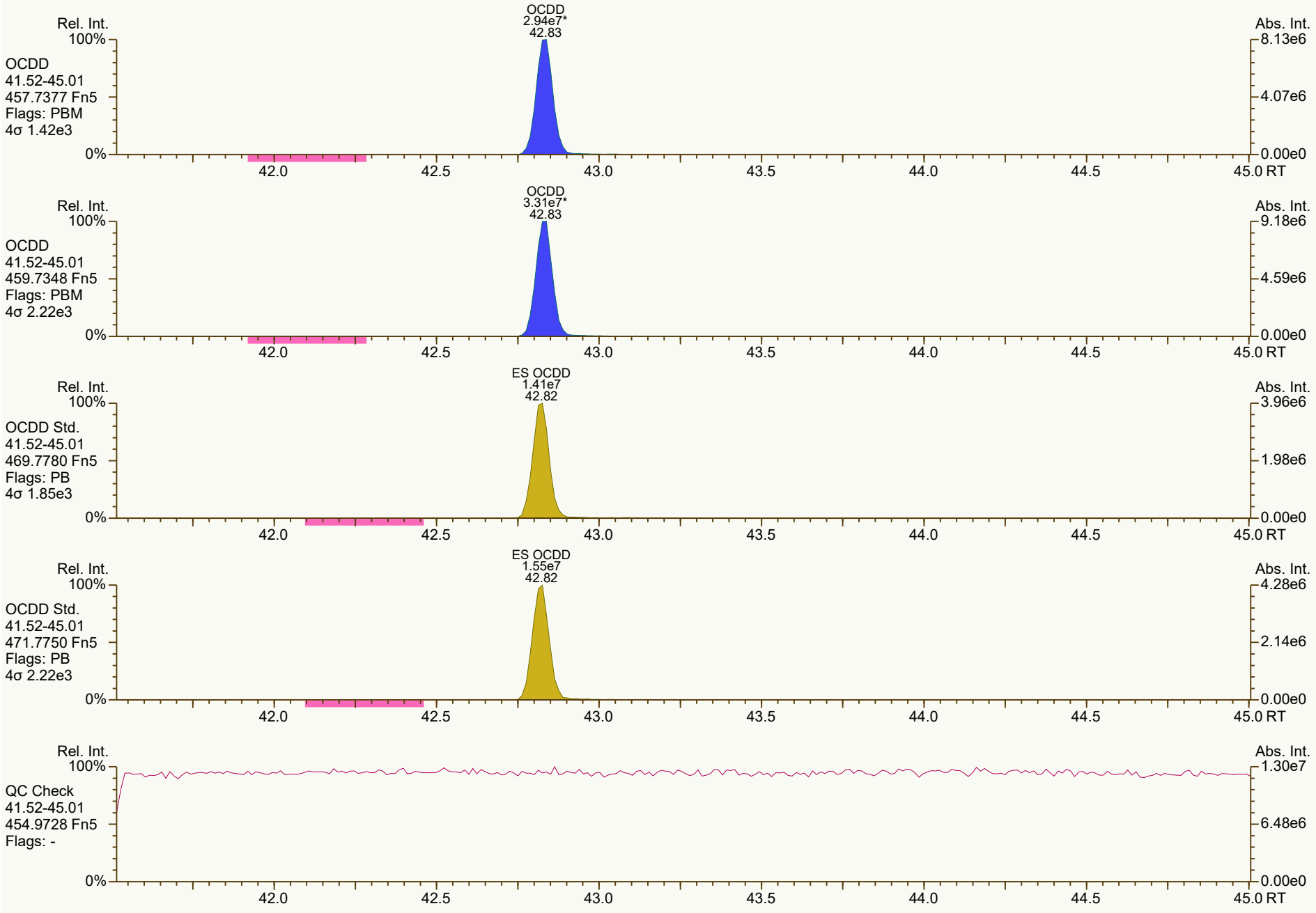

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
Abs. Int.
9.00e6
4.50e6
0.00e0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
Abs. Int.
7.11e6
3.55e6
0.00e0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Abs. Int.
1.87e7
9.36e6
0.00e0
RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
Abs. Int.
1.18e7
5.88e6
0.00e0
RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
Abs. Int.
1.30e7
6.48e6
0.00e0
RT


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
0%
2378D
6.61e6
27.58
Abs. Int.
1.54e6
7.68e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
0%
2378D
8.42e6
27.58
Abs. Int.
1.98e6
9.89e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
0%
CS 37Cl-2378D
1.50e7
27.58
Abs. Int.
3.40e6
1.70e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
0%
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
Abs. Int.
4.12e6
2.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
0%
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
Abs. Int.
5.37e6
2.68e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PB
4σ 2.56e3
0%
12378D
3.30e7
33.10
Abs. Int.
9.80e6
4.90e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PB
4σ 1.30e3
APPROVED
Amy_Boehm , 11/11/2021, 5:21:57 PM
0%
12378D
2.13e7
33.10
Abs. Int.
6.33e6
3.17e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 3.11e3
RRF = (1.85e7 + 1.20e7) * 100 / (1.69e7 + 1.08e7) * 100 = 1.1
DTF 11-Nov-2021 10:21
0%
FS 12478D
1.85e7
31.83
CS 12347D
1.46e7
32.57
ES 12378D
1.69e7
33.08
Abs. Int.
5.25e6
2.63e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 3.35e3
0%
FS 12478D
1.20e7
31.83
CS 12347D
9.31e6
32.57
ES 12378D
1.08e7
33.08
Abs. Int.
3.35e6
1.68e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.11e6
3.55e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123478D
2.66e7
37.03
123678D
2.67e7
37.15
123789D
2.82e7
37.46
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123478D
2.13e7
37.03
123678D
2.13e7
37.15
123789D
2.29e7
37.46
Abs. Int.
6.87e6
3.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D
1.60e7
35.96
ES 123478D
1.28e7
37.02
ES 123678D
1.24e7
37.14
JS 123467D
6.59e6*
37.34
ES 123789D
1.47e7
37.44
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D
1.30e7
35.96
ES 123478D
1.00e7
37.02
ES 123678D
9.93e6
37.14
JS 123467D
5.26e6*
37.34
ES 123789D
1.16e7
37.44
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.87e7
9.36e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

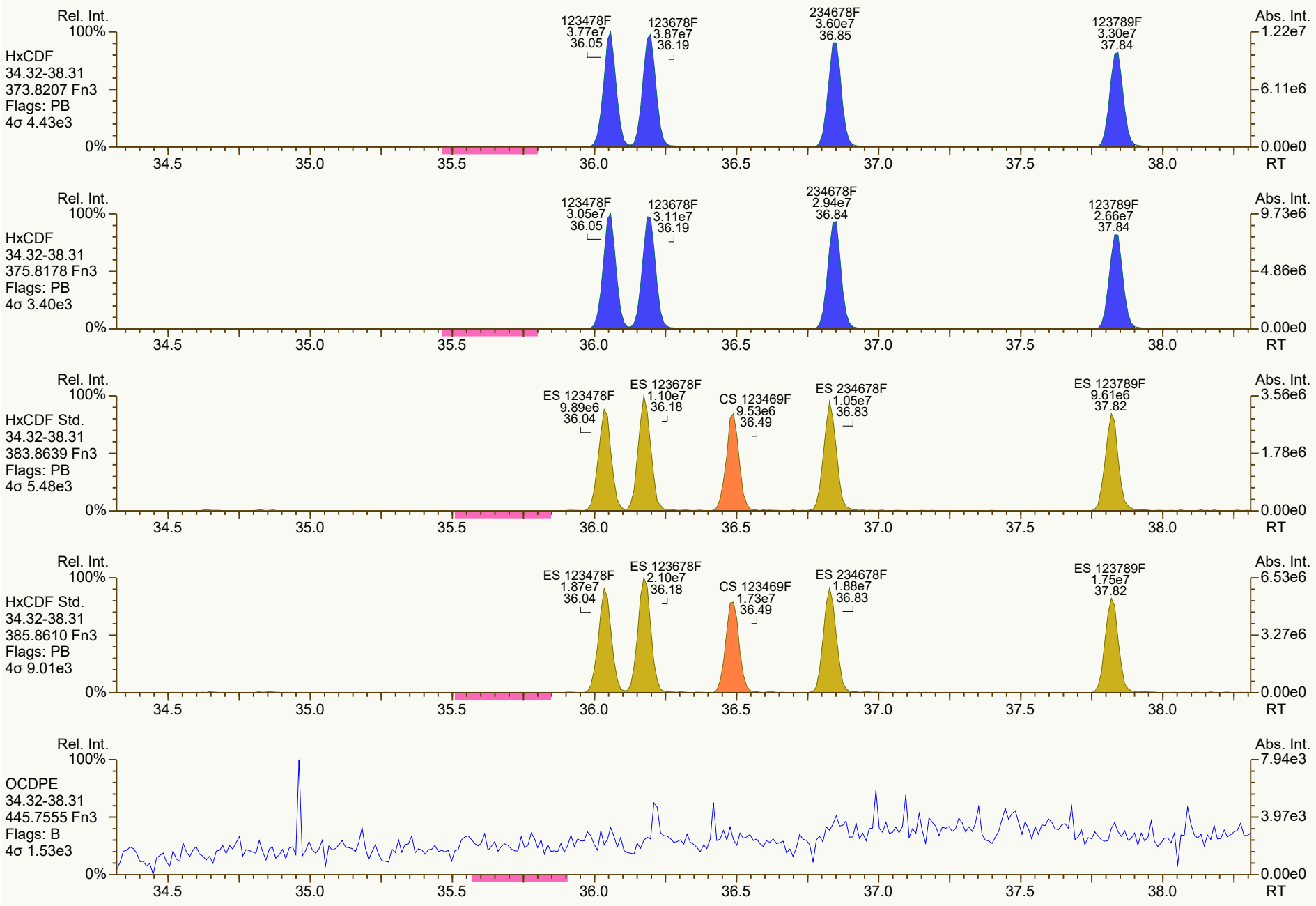

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
1234678D
2.21e7
40.27
Abs. Int.
8.04e6
4.02e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
1234678D
2.10e7
40.27
Abs. Int.
7.83e6
3.92e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
Abs. Int.
5.95e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
Abs. Int.
5.93e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.18e7
5.88e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

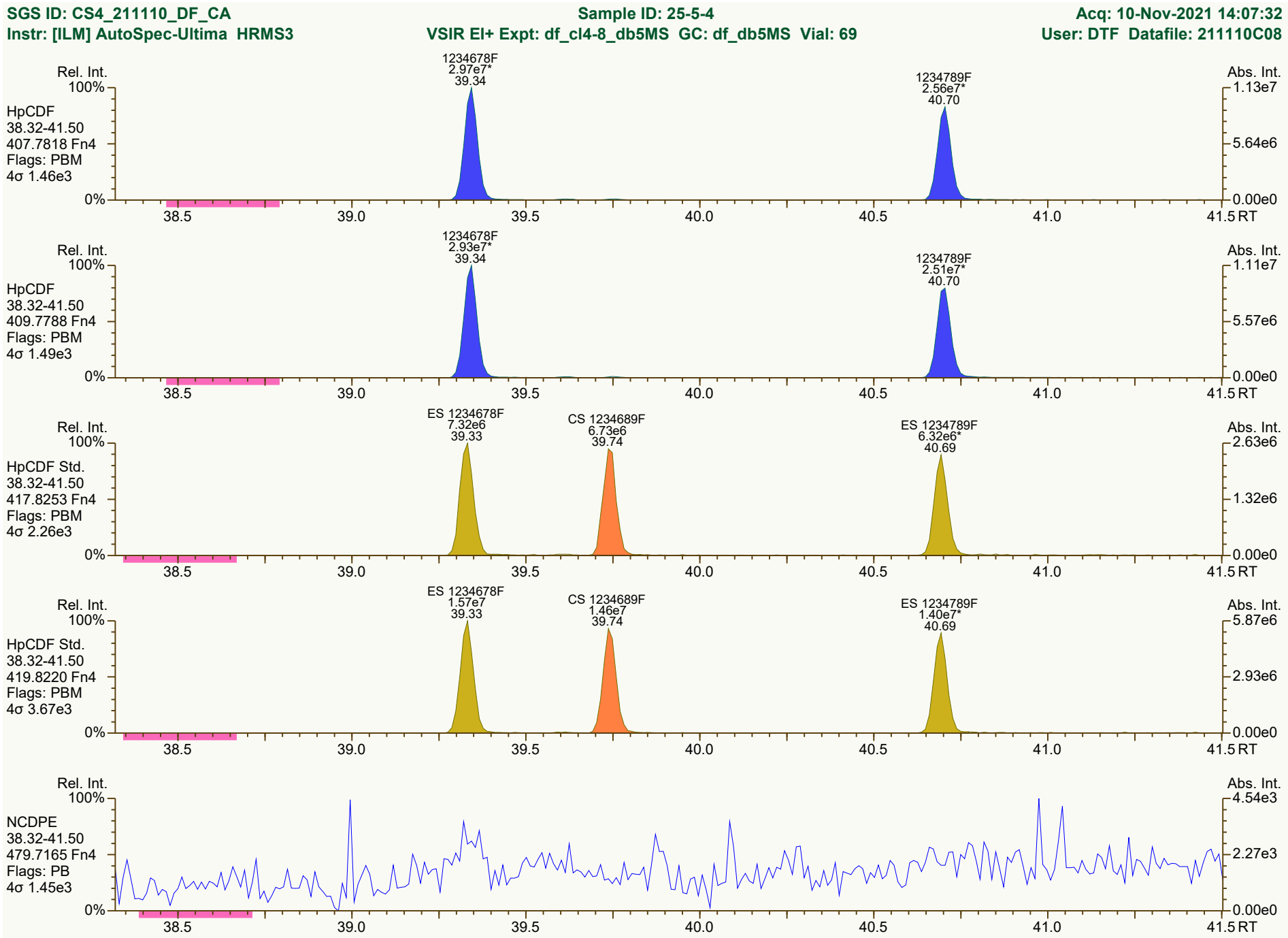

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.42e3
0%
OCDD
2.94e7*
42.83
Abs. Int.
8.13e6
4.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.22e3
0%
OCDD
3.31e7*
42.83
Abs. Int.
9.18e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
ES OCDD
1.41e7
42.82
Abs. Int.
3.96e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.22e3
0%
ES OCDD
1.55e7
42.82
Abs. Int.
4.28e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

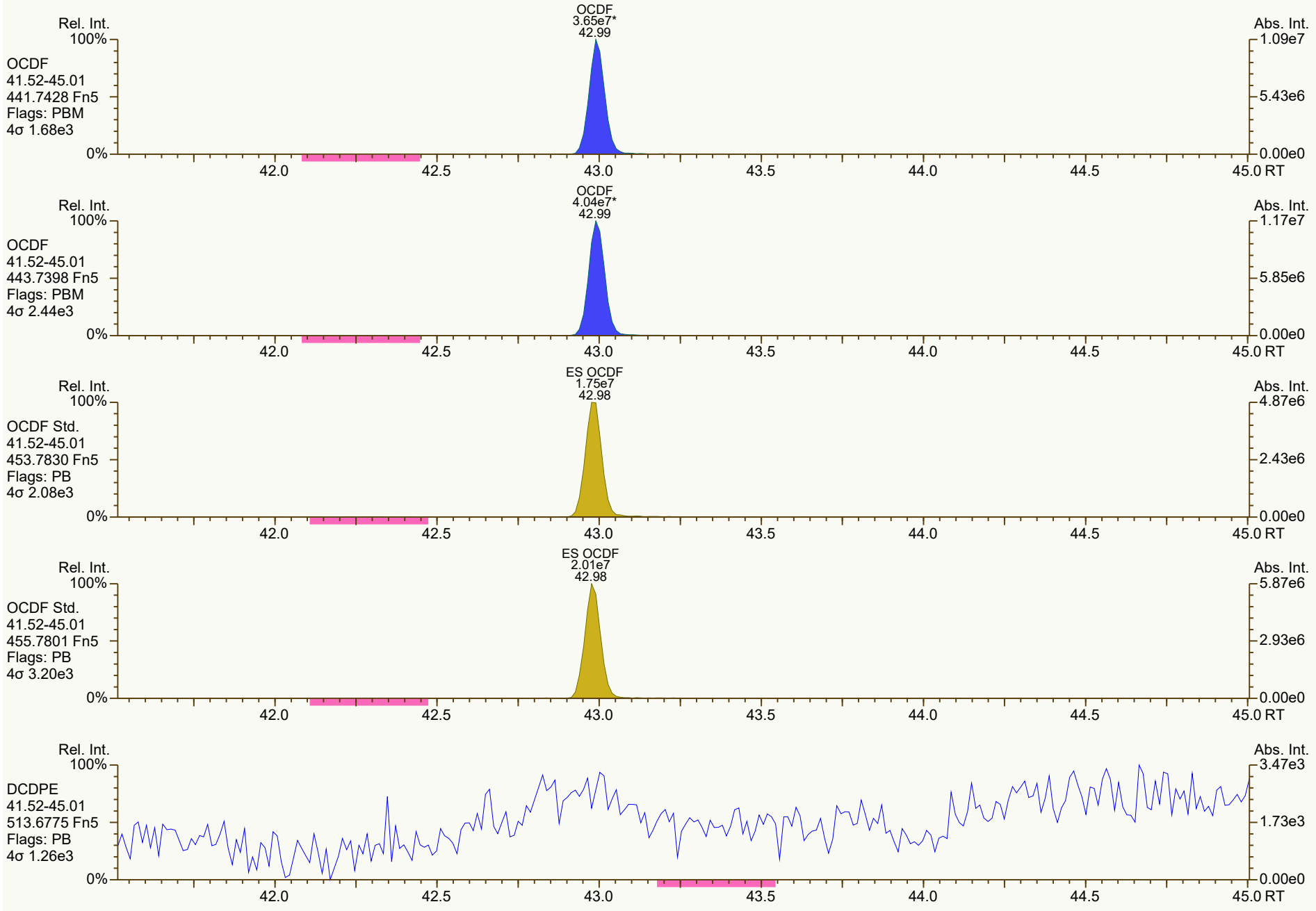

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
0%
2378F
8.36e6
26.67
Abs. Int.
1.89e6
9.43e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
2378F
1.07e7
26.67
2.41e6
1.20e6
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7*
25.23
ES 2378F
2.05e7
26.65
4.47e6
2.23e6
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7*
25.23
ES 2378F
2.57e7
26.65
5.68e6
2.84e6
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
9.44e3
4.72e3


Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.83e3
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
8.94e3
4.47e3
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
9.00e6
4.50e6


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
Abs. Int.
1.30e7
6.48e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
Abs. Int.
8.36e6
4.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12346F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
Abs. Int.
6.66e6
3.33e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12346F
1.46e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
Abs. Int.
4.36e6
2.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
Abs. Int.
7.51e3
3.76e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 4.43e3
0%
123478F 3.77e7 36.05
123678F 3.87e7 36.19
234678F 3.60e7 36.85
123789F 3.30e7 37.84
Abs. Int.
1.22e7
6.11e6
0.00e0
RT
34.5 35.0 35.5 36.0 36.5 37.0 37.5 38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 3.40e3
123478F 3.05e7 36.05
123678F 3.11e7 36.19
234678F 2.94e7 36.84
123789F 2.66e7 37.84
9.73e6
4.86e6
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.48e3
ES 123478F 9.89e6 36.04
ES 123678F 1.10e7 36.18
CS 123469F 9.53e6 36.49
ES 234678F 1.05e7 36.83
ES 123789F 9.61e6 37.82
3.56e6
1.78e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 9.01e3
ES 123478F 1.87e7 36.04
ES 123678F 2.10e7 36.18
CS 123469F 1.73e7 36.49
ES 234678F 1.88e7 36.83
ES 123789F 1.75e7 37.82
6.53e6
3.27e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.53e3
7.94e3
3.97e3

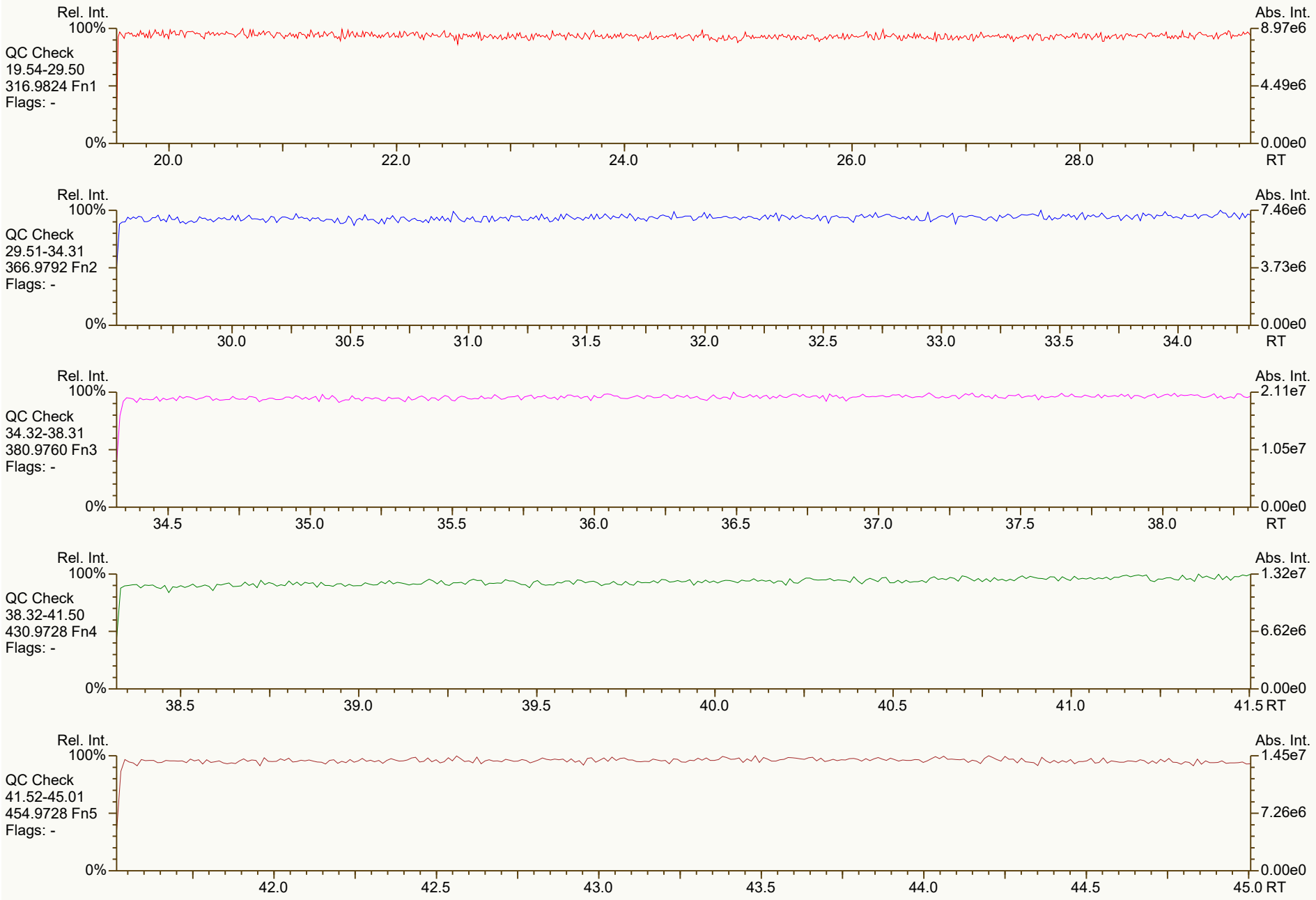

SGS ID: CS4_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-5-4
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
Acq: 10-Nov-2021 14:07:32
User: DTF Datafile: 211110C08
Rel. Int.
100%
0%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
1234678F
2.97e7*
39.34
1234789F
2.56e7*
40.70
Abs. Int.
1.13e7
5.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
1.11e7
5.57e6
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
2.63e6
1.32e6
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
ES 1234678F
1.57e7
39.33
CS 1234689F
1.46e7
39.74
ES 1234789F
1.40e7*
40.69
5.87e6
2.93e6
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
4.54e3
2.27e3
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2764, 9565, 4492 scc: 855-576
Revised: 10-Nov-2021 15:17 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

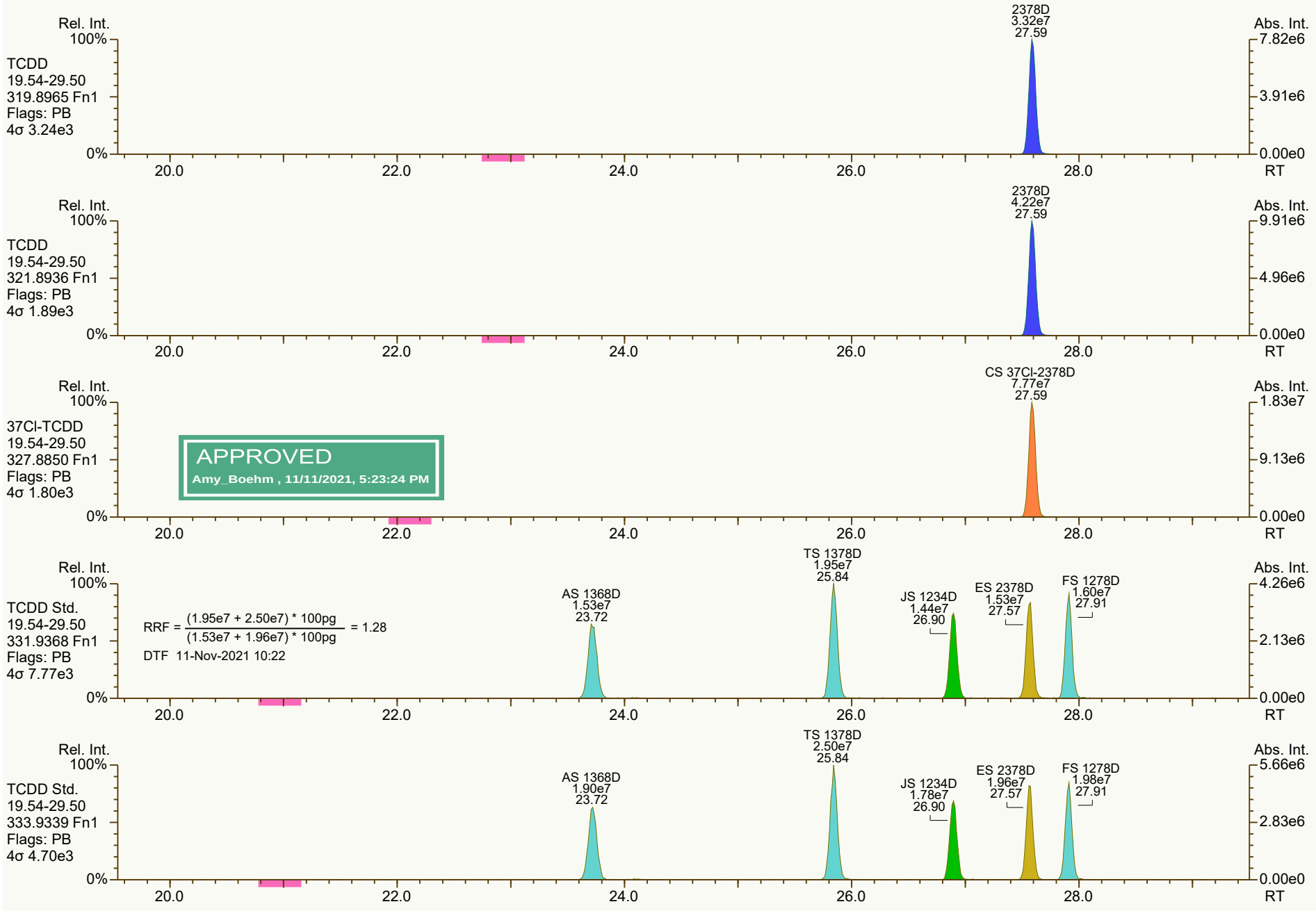

OCDF
3.65e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.04e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.75e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
0%
Abs. Int.
4.87e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
0%
Abs. Int.
5.87e6
2.93e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
0%
Abs. Int.
3.47e3
1.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

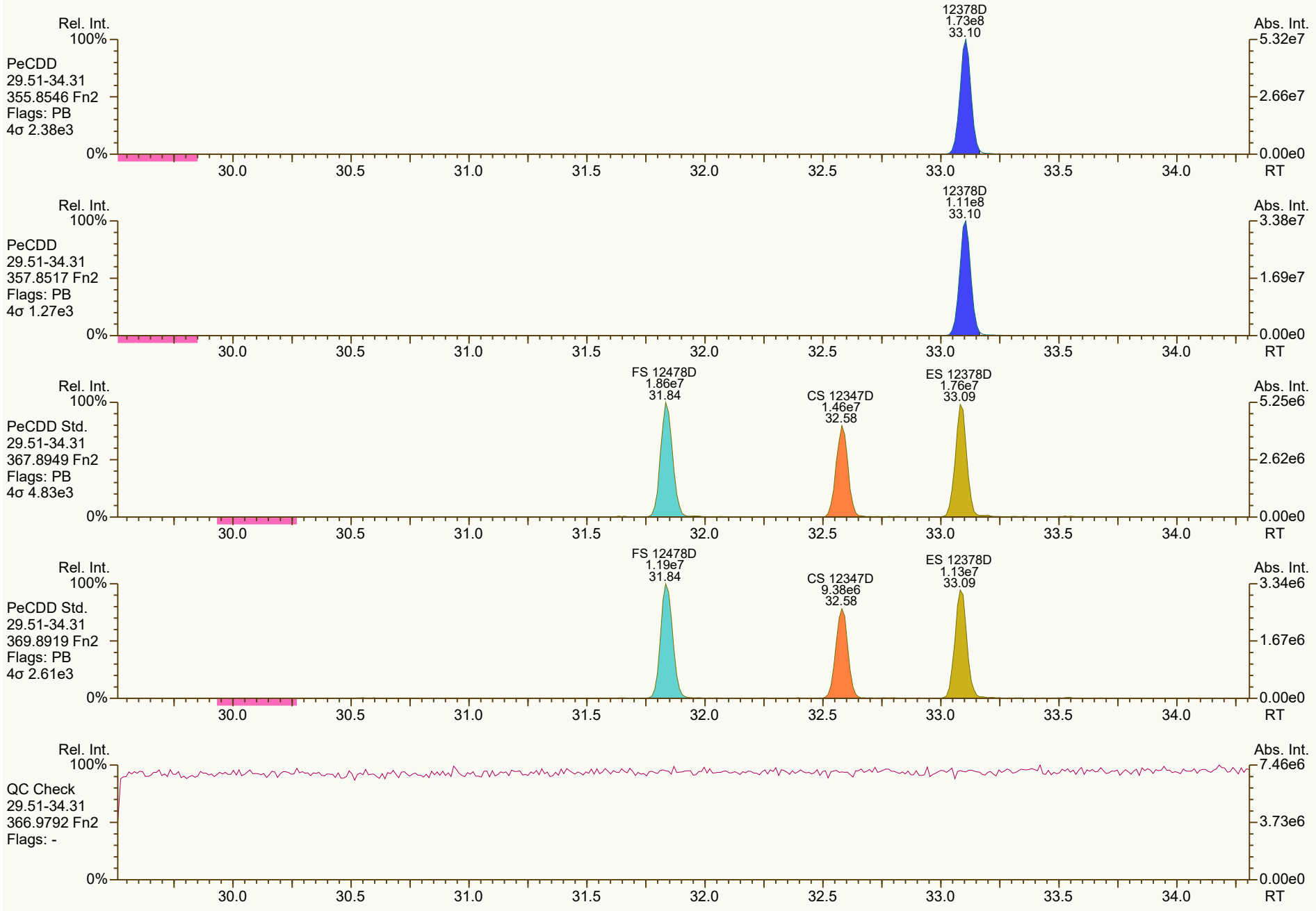
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:53 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS5_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF				Checkcode: 573-489-BMZ	
Sample ID: 25-5-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C09	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

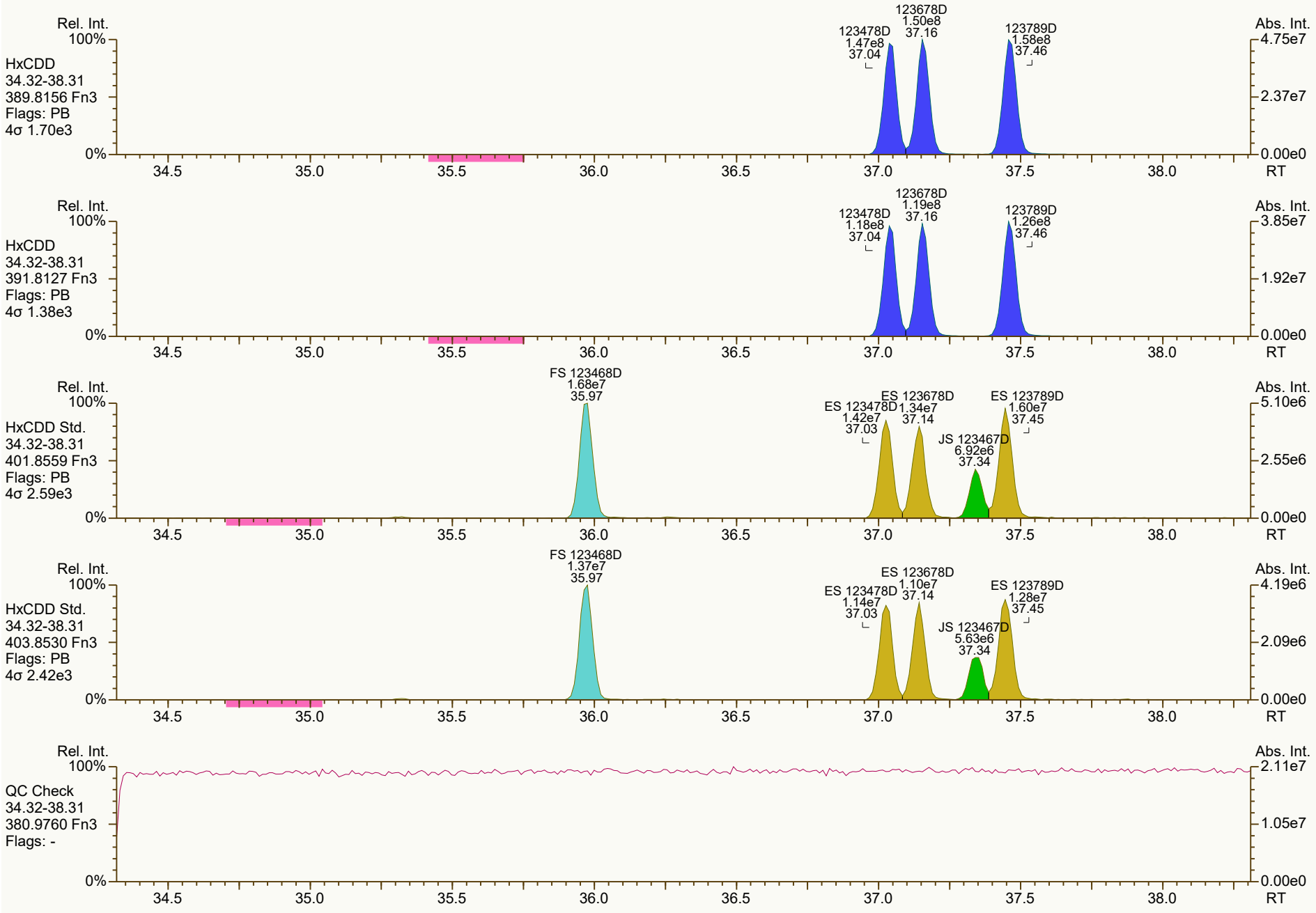
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

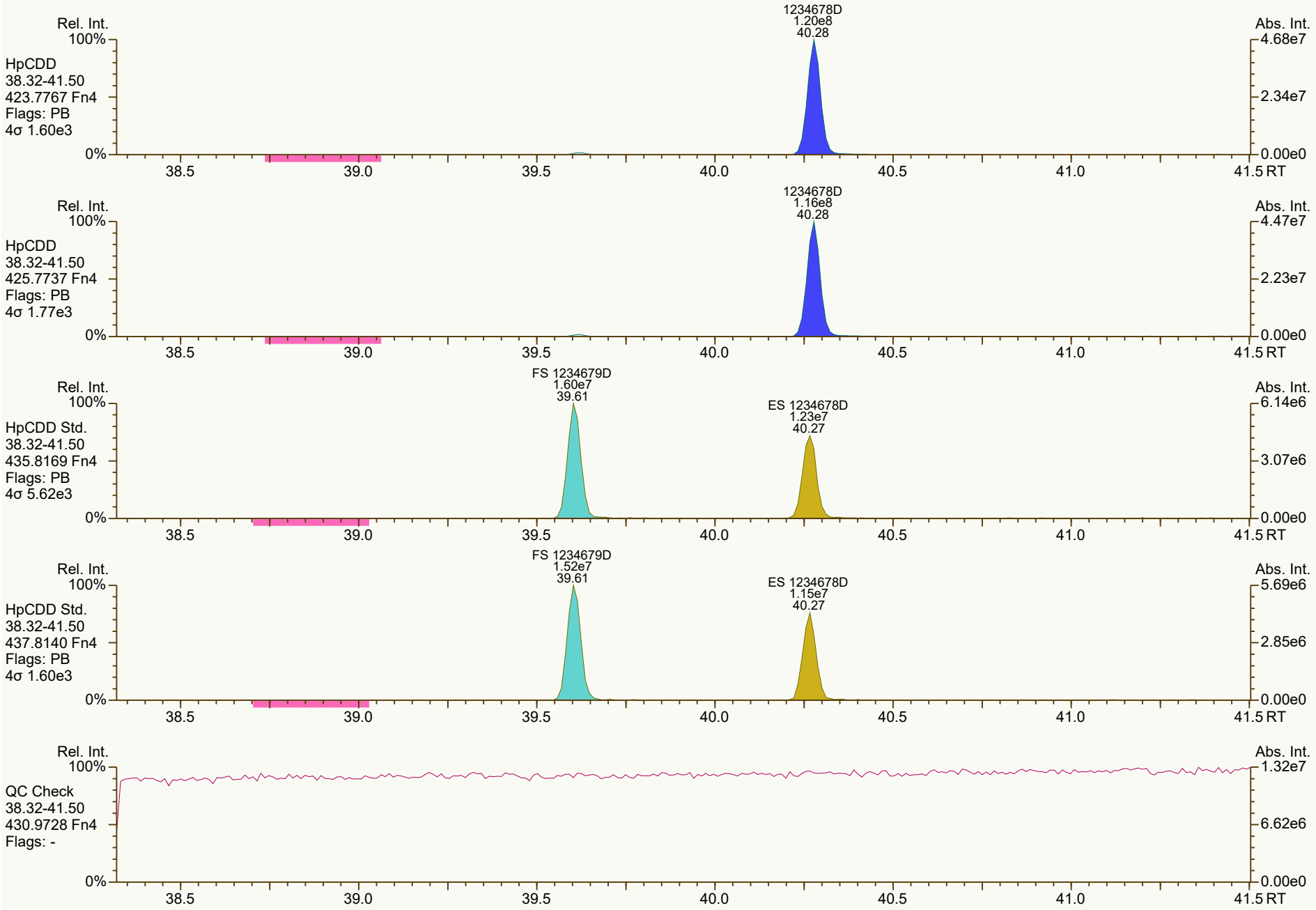
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

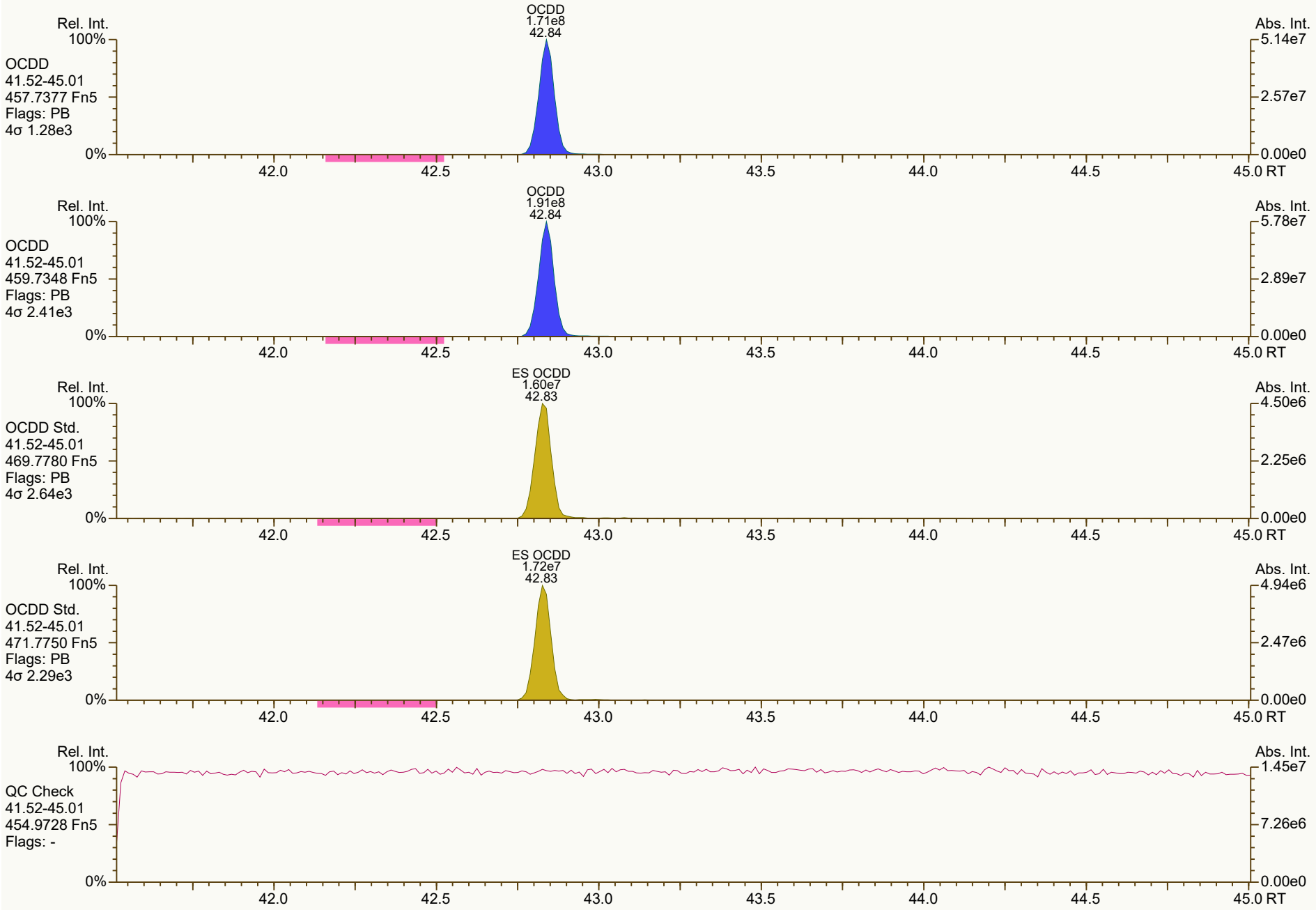

Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
7.46e6
3.73e6
0.00e0
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.11e7
1.05e7
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.32e7
6.62e6
0.00e0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
0%
Abs. Int.
1.45e7
7.26e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PB
4σ 3.24e3
0%
2378D
3.32e7
27.59
Abs. Int.
7.82e6
3.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: PB
4σ 1.89e3
0%
2378D
4.22e7
27.59
Abs. Int.
9.91e6
4.96e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: PB
4σ 1.80e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:23:24 PM
CS 37Cl-2378D
7.77e7
27.59
Abs. Int.
1.83e7
9.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 7.77e3
0%
RRF = (1.95e7 + 2.50e7) * 100pg / (1.53e7 + 1.96e7) * 100pg = 1.28
DTF 11-Nov-2021 10:22
AS 1368D
1.53e7
23.72
TS 1378D
1.95e7
25.84
JS 1234D
1.44e7
26.90
ES 2378D
1.53e7
27.57
FS 1278D
1.60e7
27.91
Abs. Int.
4.26e6
2.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.70e3
0%
AS 1368D
1.90e7
23.72
TS 1378D
2.50e7
25.84
JS 1234D
1.78e7
26.90
ES 2378D
1.96e7
27.57
FS 1278D
1.98e7
27.91
Abs. Int.
5.66e6
2.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
0%
12378D
1.73e8
33.10
Abs. Int.
5.32e7
2.66e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
0%
12378D
1.11e8
33.10
Abs. Int.
3.38e7
1.69e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
1.86e7
31.84
CS 12347D
1.46e7
32.58
ES 12378D
1.76e7
33.09
Abs. Int.
5.25e6
2.62e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
0%
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
Abs. Int.
3.34e6
1.67e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.46e6
3.73e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

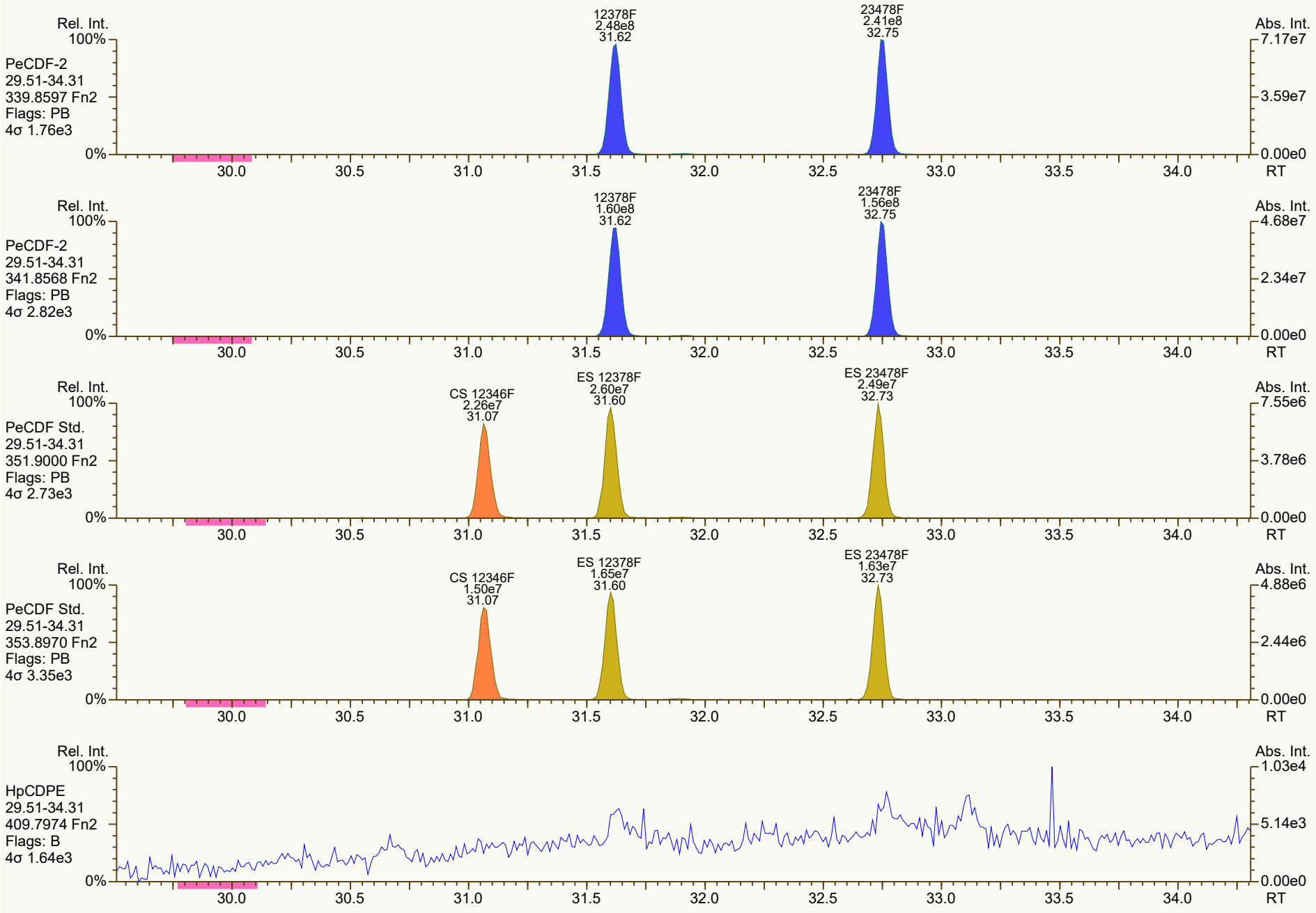

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
123678D
1.50e8
37.16
123478D
1.47e8
37.04
123789D
1.58e8
37.46
Abs. Int.
4.75e7
2.37e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
123678D
1.19e8
37.16
123478D
1.18e8
37.04
123789D
1.26e8
37.46
Abs. Int.
3.85e7
1.92e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
FS 123468D
1.68e7
35.97
ES 123678D
1.34e7
37.14
ES 123478D
1.42e7
37.03
ES 123789D
1.60e7
37.45
JS 123467D
6.92e6
37.34
Abs. Int.
5.10e6
2.55e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
FS 123468D
1.37e7
35.97
ES 123678D
1.10e7
37.14
ES 123478D
1.14e7
37.03
ES 123789D
1.28e7
37.45
JS 123467D
5.63e6
37.34
Abs. Int.
4.19e6
2.09e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.11e7
1.05e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

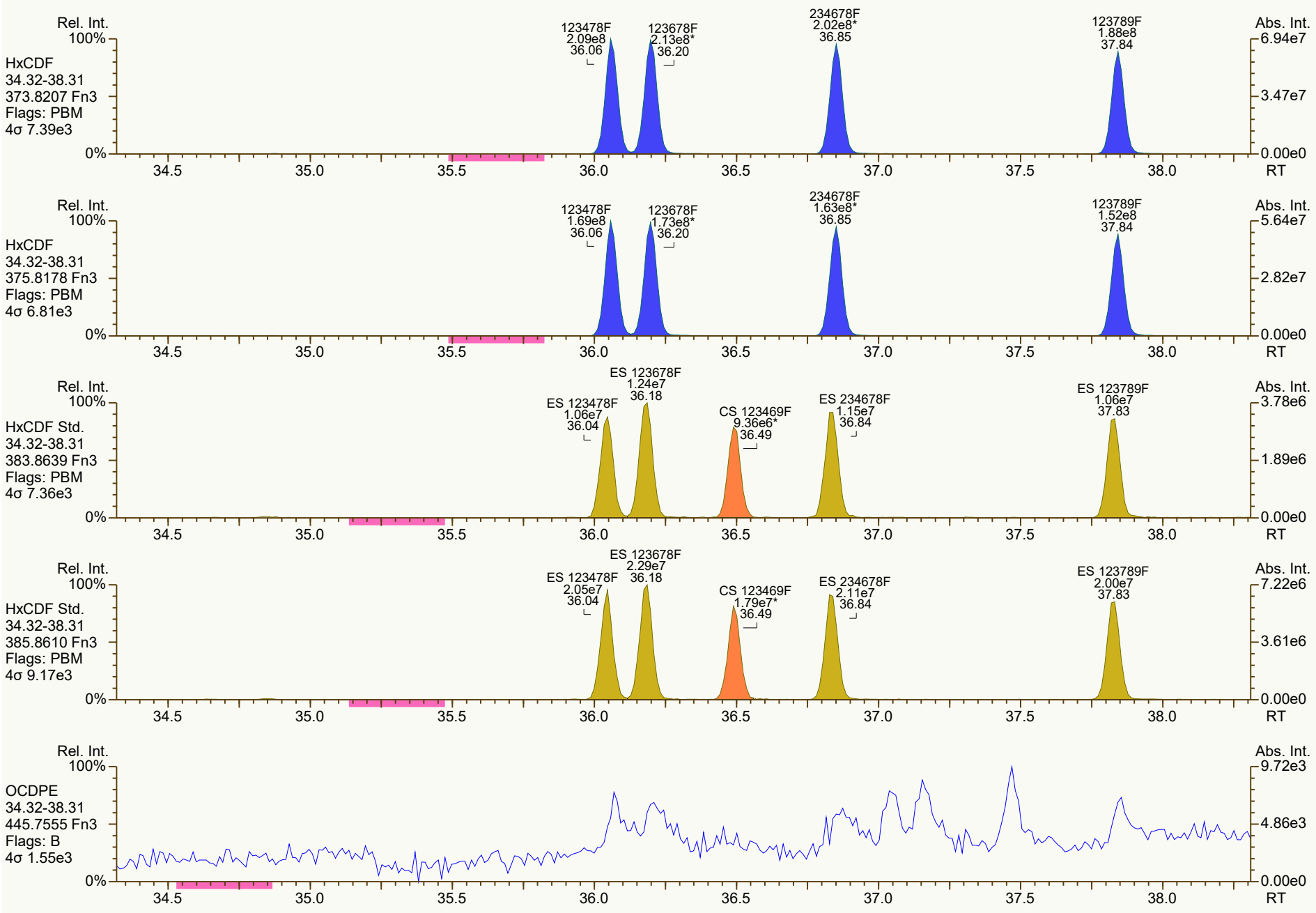

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
1.20e8
40.28
Abs. Int.
4.68e7
2.34e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.77e3
1234678D
1.16e8
40.28
Abs. Int.
4.47e7
2.23e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 5.62e3
FS 1234679D
1.60e7
39.61
ES 1234678D
1.23e7
40.27
Abs. Int.
6.14e6
3.07e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.60e3
FS 1234679D
1.52e7
39.61
ES 1234678D
1.15e7
40.27
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.32e7
6.62e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

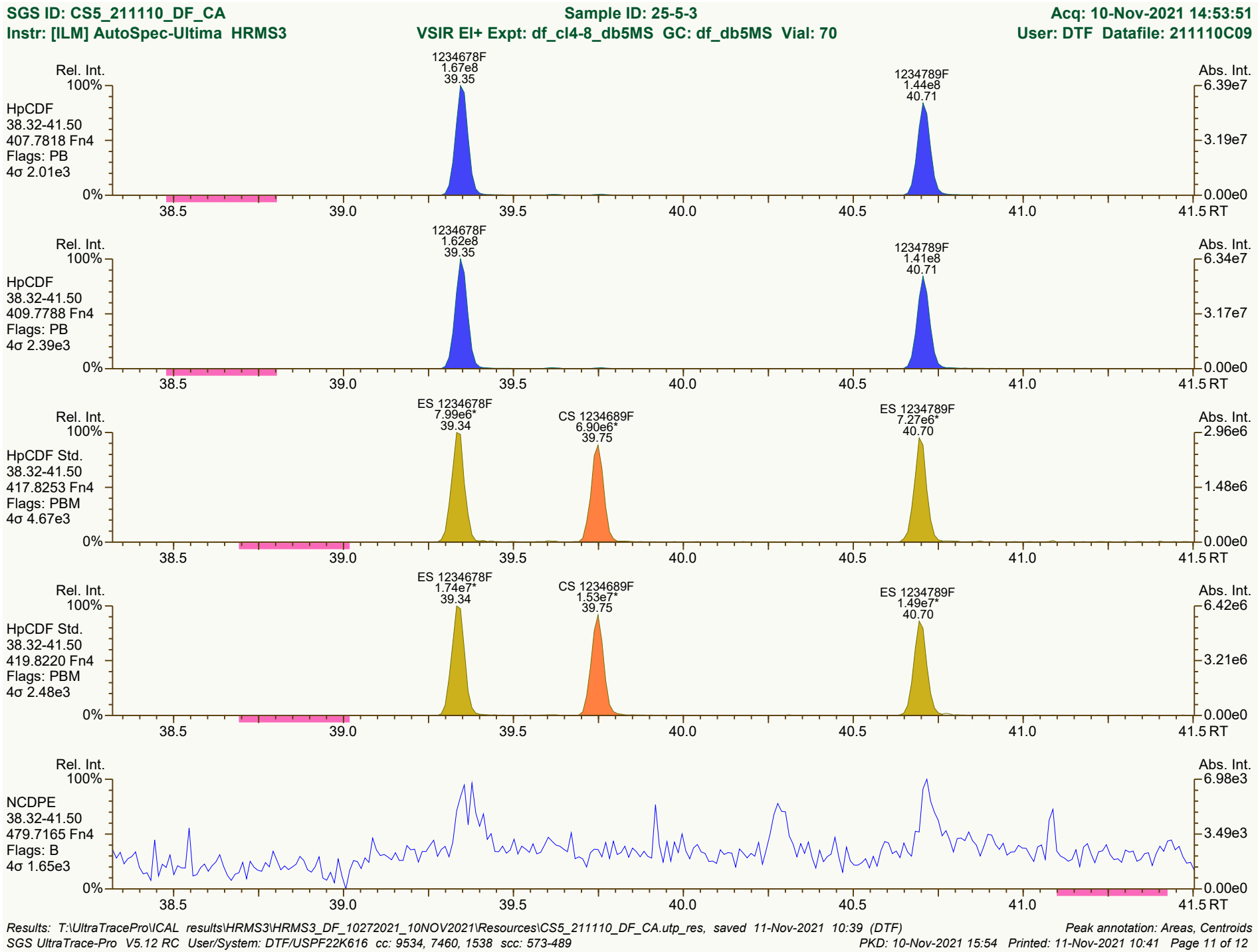

OCDD
1.71e8
42.84
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
0%
Abs. Int.
5.14e7
2.57e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e8
42.84
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
5.78e7
2.89e7
ES OCDD
1.60e7
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
4.50e6
2.25e6
ES OCDD
1.72e7
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
4.94e6
2.47e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6

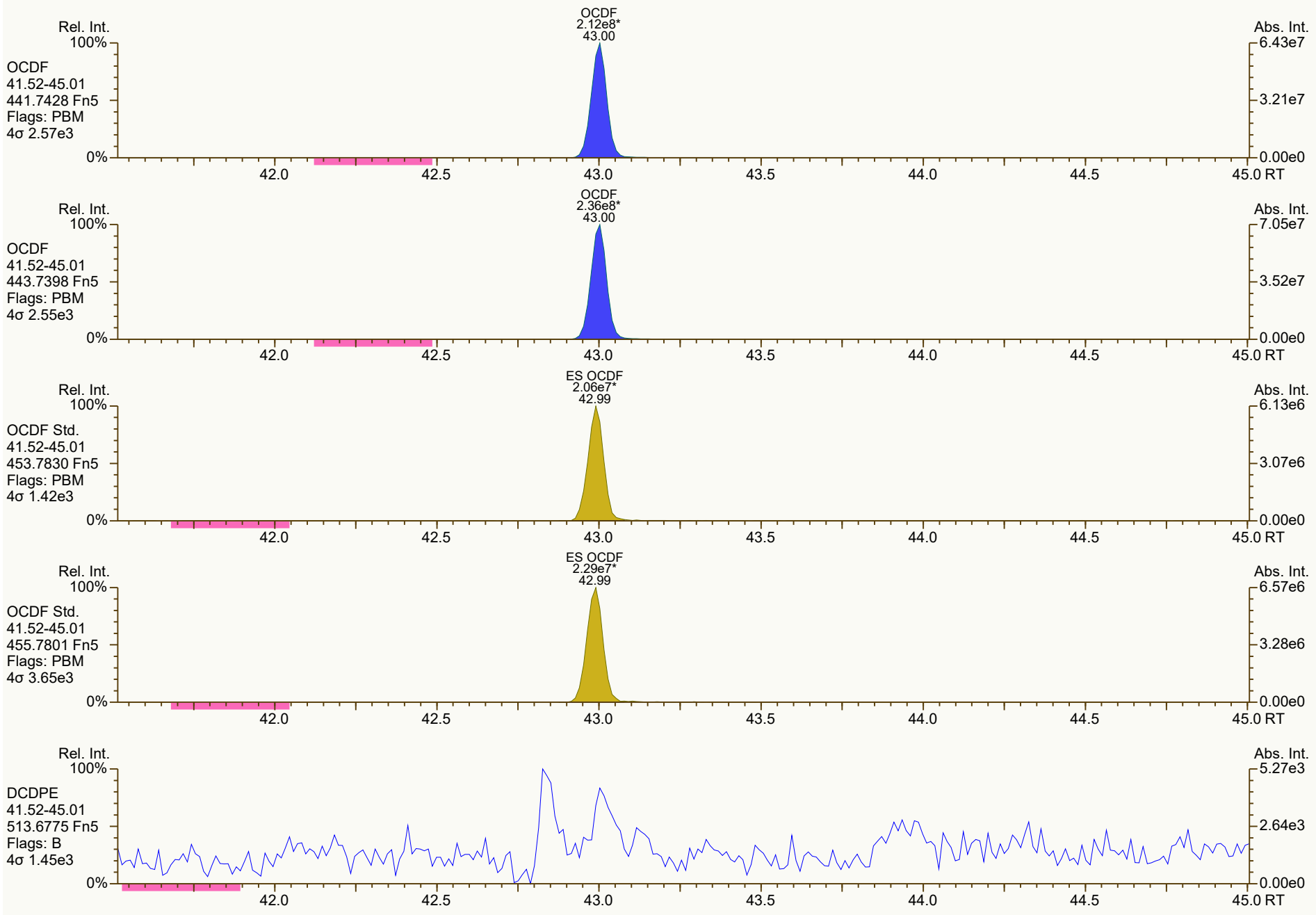

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
0%
2378F
4.22e7
26.68
Abs. Int.
9.59e6
4.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
0%
2378F
5.40e7
26.68
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
0%
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
Abs. Int.
4.70e6
2.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
Abs. Int.
5.78e6
2.89e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
0%
Abs. Int.
7.47e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.43e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 2.08e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
0%
12378F
2.48e8
31.62
23478F
2.41e8
32.75
Abs. Int.
7.17e7
3.59e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
0%
12378F
1.60e8
31.62
23478F
1.56e8
32.75
Abs. Int.
4.68e7
2.34e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
0%
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
Abs. Int.
7.55e6
3.78e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
0%
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.63e7
32.73
Abs. Int.
4.88e6
2.44e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 7.39e3
0%
123478F
2.09e8
36.06
123678F
2.13e8*
36.20
234678F
2.02e8*
36.85
123789F
1.88e8
37.84
Abs. Int.
6.94e7
3.47e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 6.81e3
0%
123478F
1.69e8
36.06
123678F
1.73e8*
36.20
234678F
1.63e8*
36.85
123789F
1.52e8
37.84
Abs. Int.
5.64e7
2.82e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.36e3
0%
ES 123478F
1.06e7
36.04
ES 123678F
1.24e7
36.18
CS 123469F
9.36e6*
36.49
ES 234678F
1.15e7
36.84
ES 123789F
1.06e7
37.83
Abs. Int.
3.78e6
1.89e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.17e3
0%
ES 123478F
2.05e7
36.04
ES 123678F
2.29e7
36.18
CS 123469F
1.79e7*
36.49
ES 234678F
2.11e7
36.84
ES 123789F
2.00e7
37.83
Abs. Int.
7.22e6
3.61e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.55e3
0%
Abs. Int.
9.72e3
4.86e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 2.01e3
1234678F
1.67e8
39.35
1234789F
1.44e8
40.71
6.39e7
3.19e7
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 2.39e3
1234678F
1.62e8
39.35
1234789F
1.41e8
40.71
6.34e7
3.17e7
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.67e3
ES 1234678F
7.99e6*
39.34
CS 1234689F
6.90e6*
39.75
ES 1234789F
7.27e6*
40.70
2.96e6
1.48e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.48e3
ES 1234678F
1.74e7*
39.34
CS 1234689F
1.53e7*
39.75
ES 1234789F
1.49e7*
40.70
6.42e6
3.21e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.65e3
6.98e3
3.49e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9534, 7460, 1538 scc: 573-489
PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 11 of 12

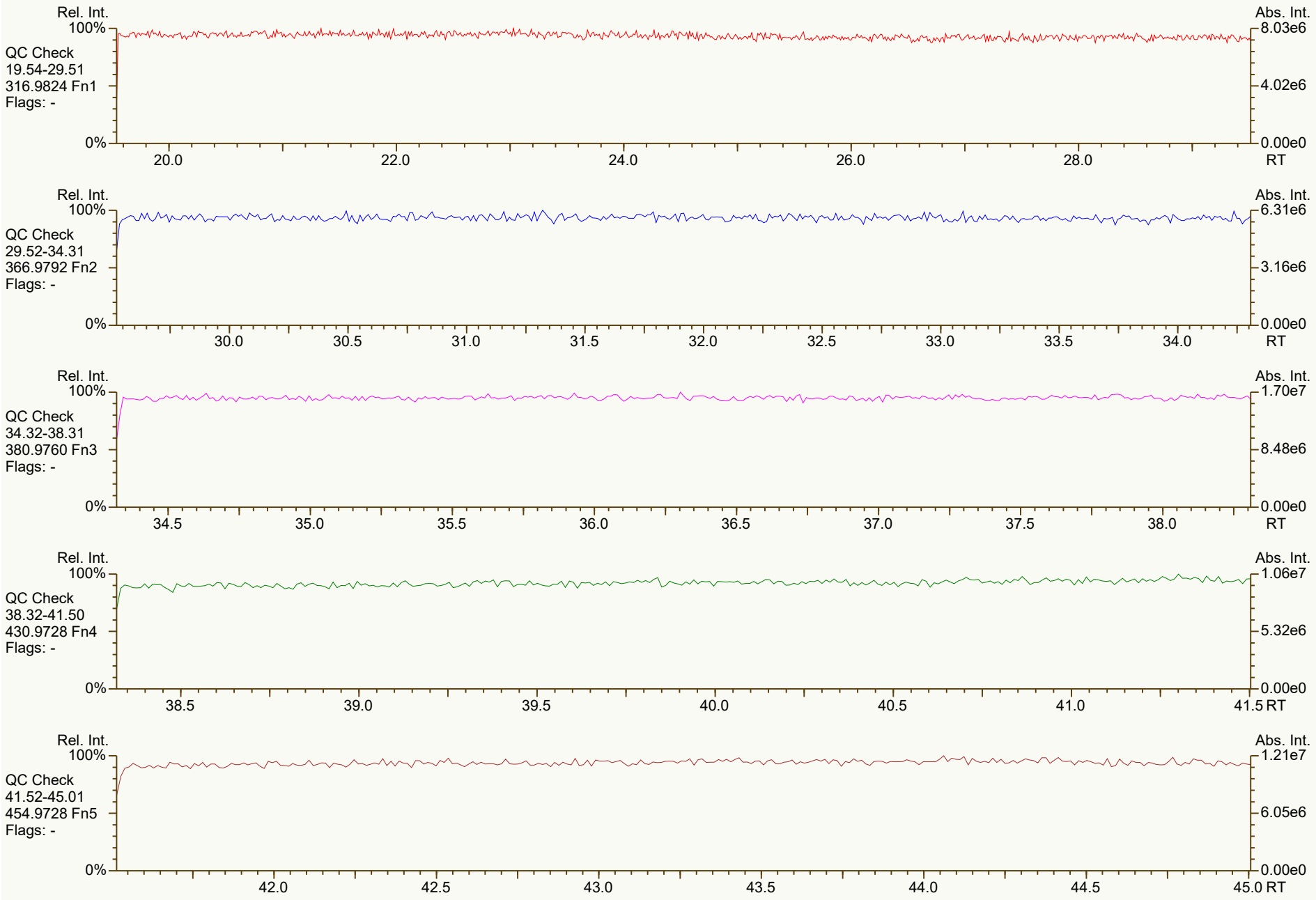

OCDF
2.12e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
6.43e7
3.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.36e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
0%
Abs. Int.
7.05e7
3.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
6.13e6
3.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
6.57e6
3.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
5.27e3
2.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

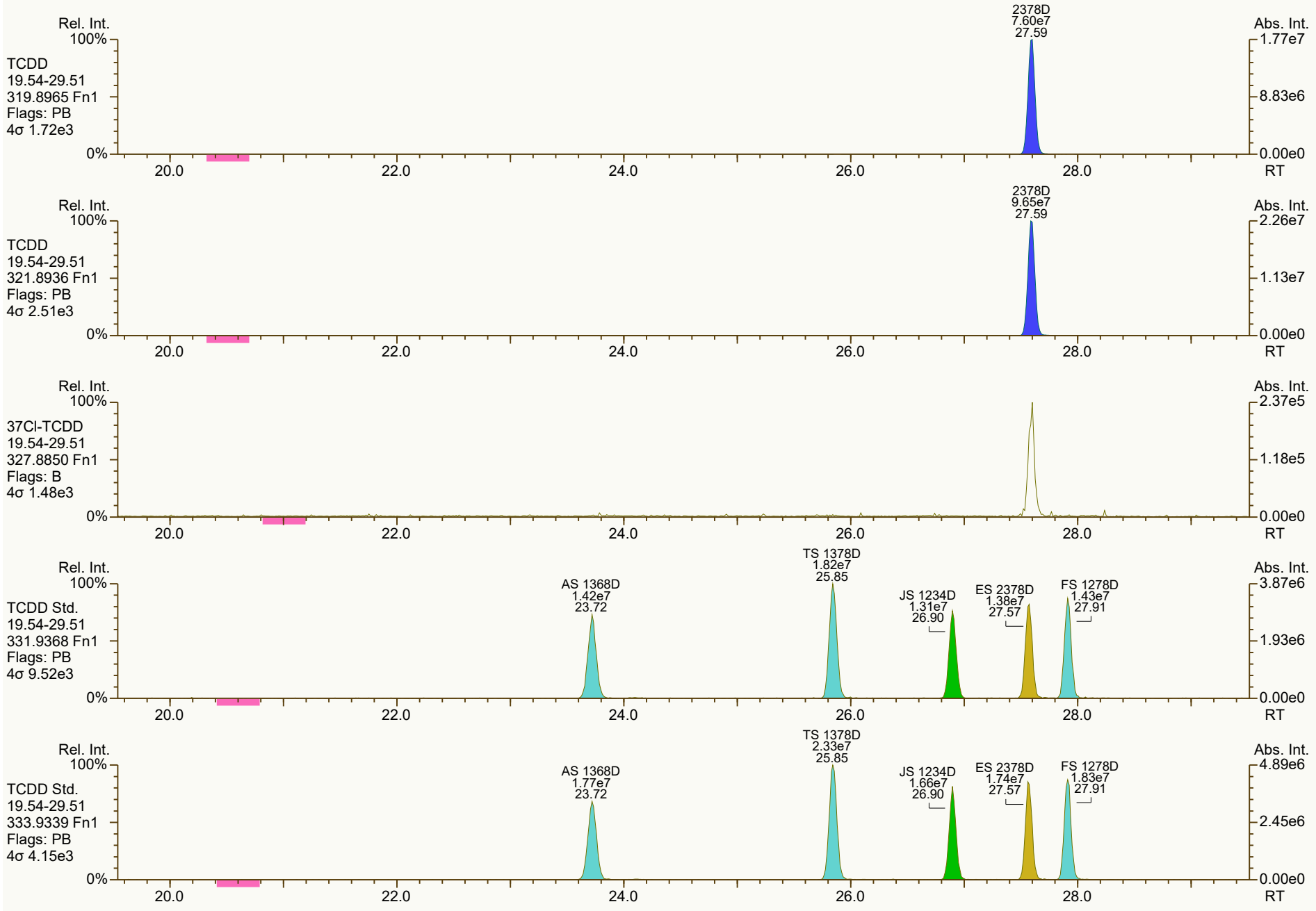
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

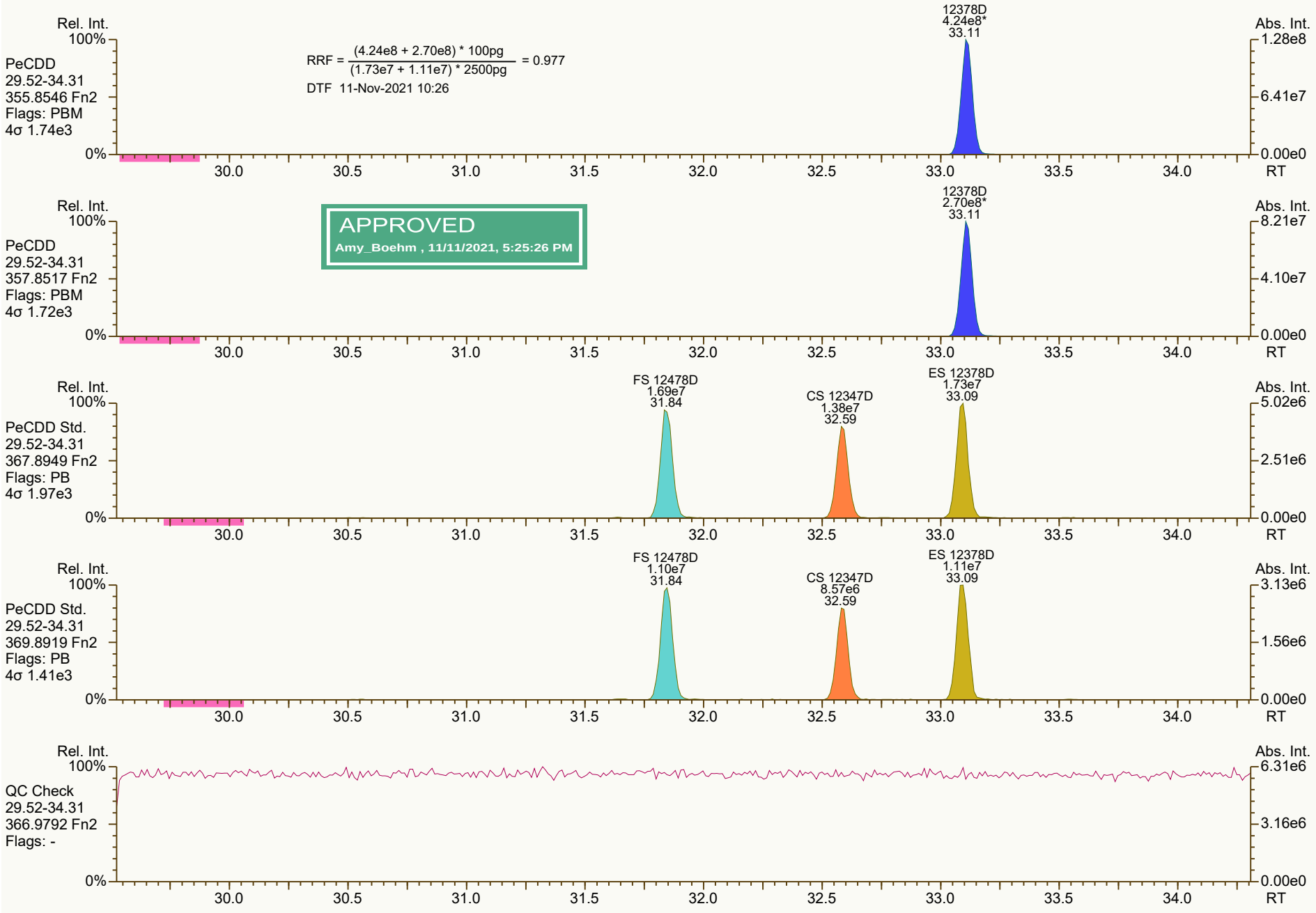
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

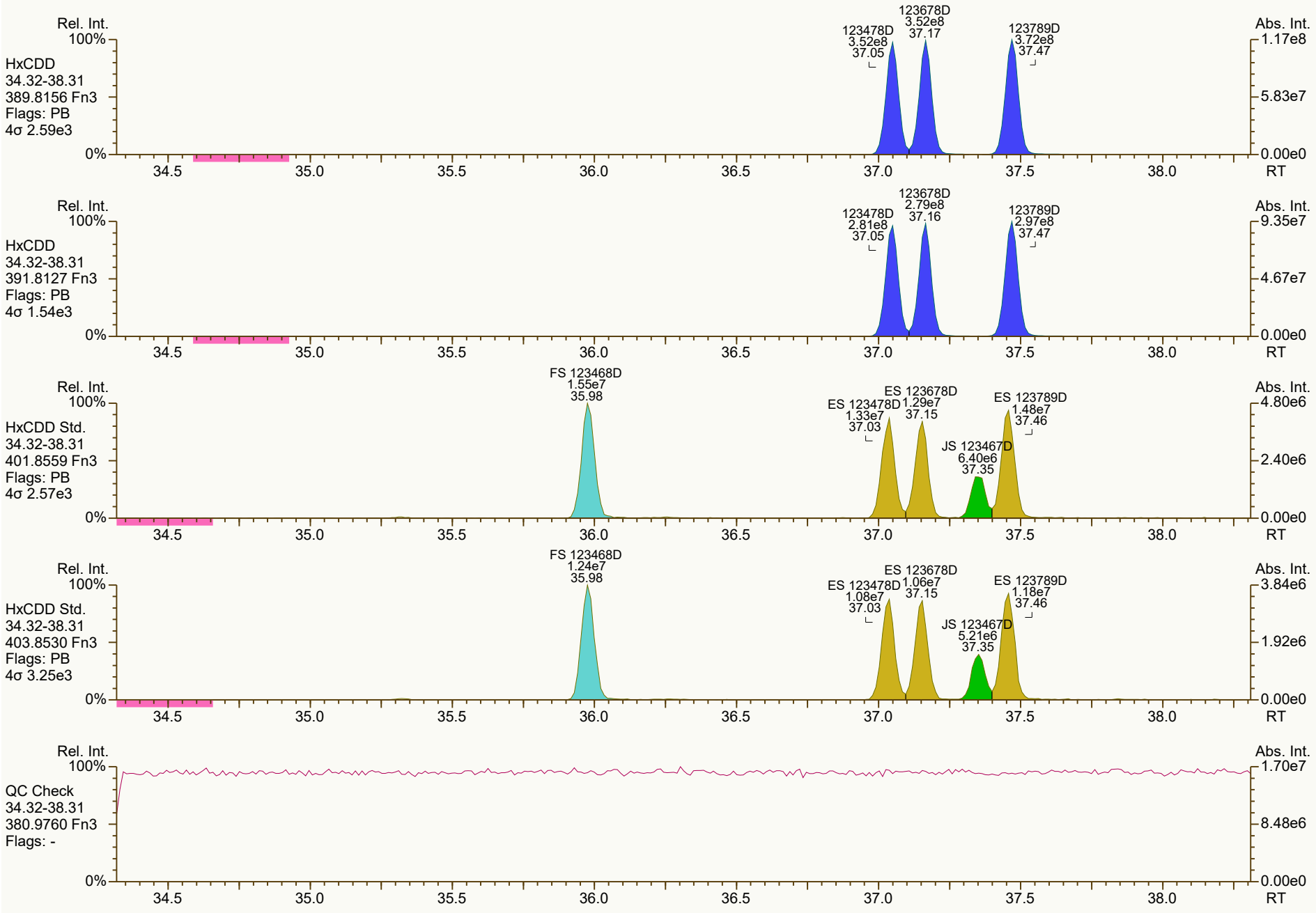
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

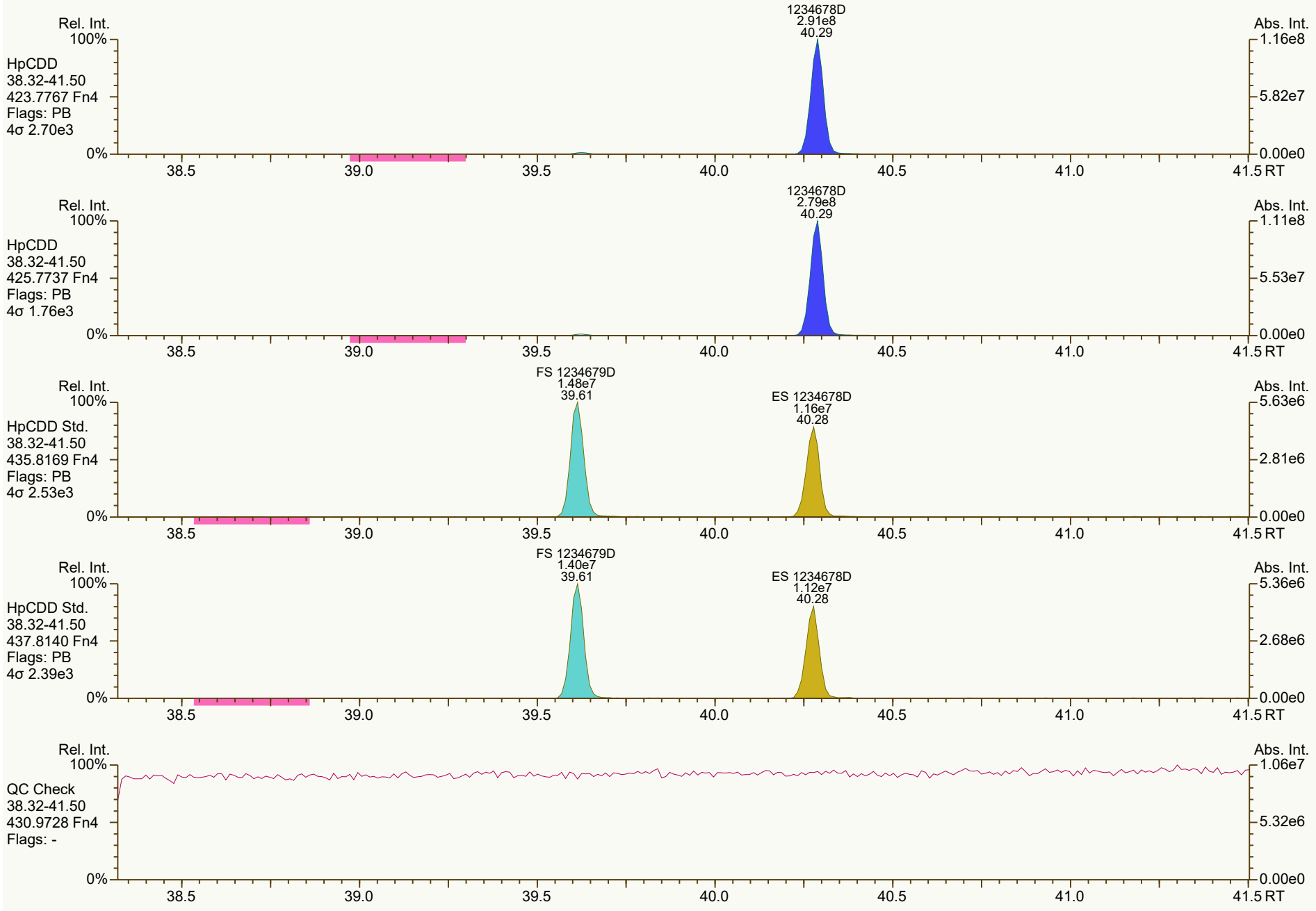
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

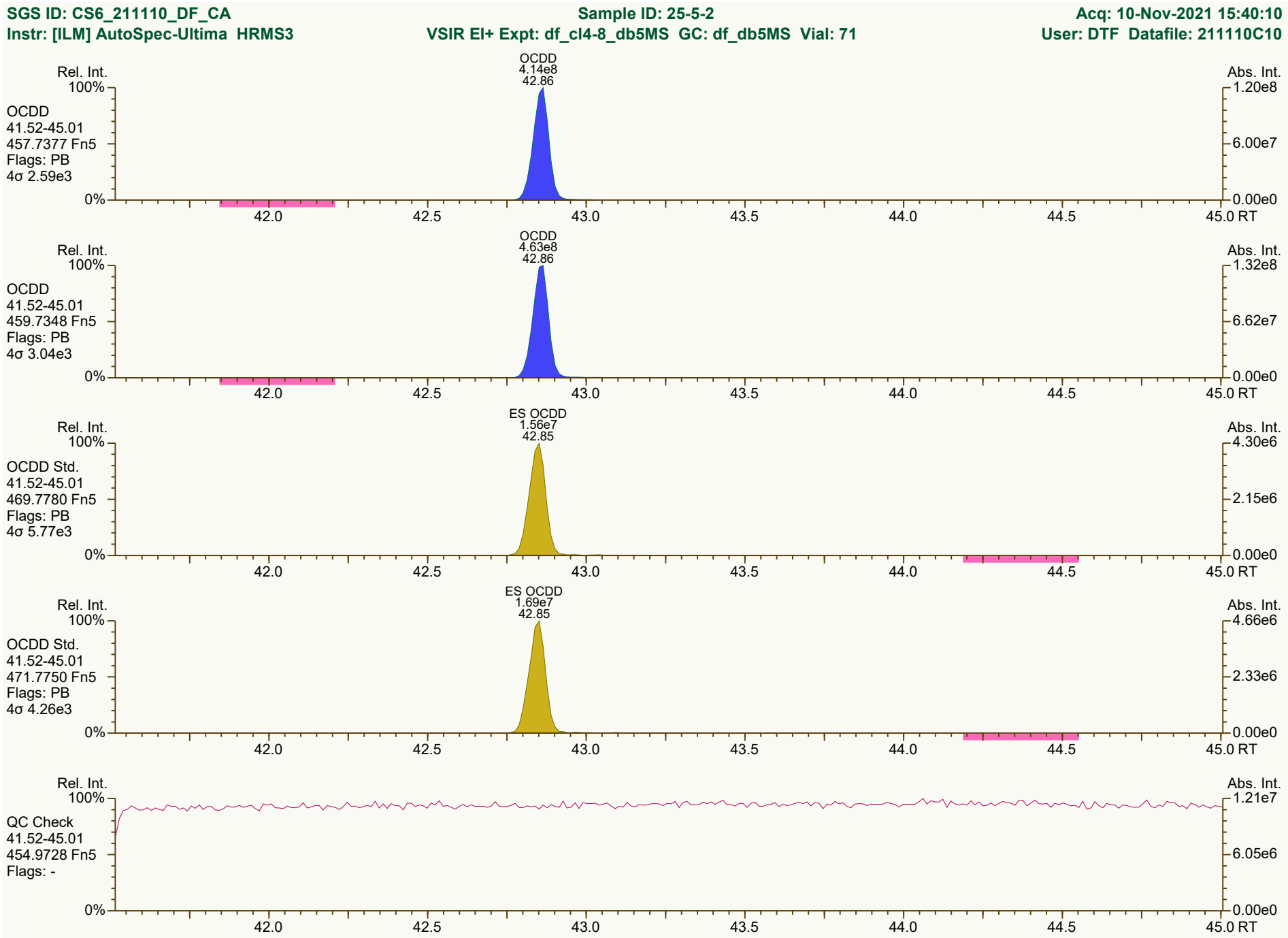

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.03e6
4.02e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
6.31e6
3.16e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.70e7
8.48e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.06e7
5.32e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.21e7
6.05e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
0%
2378D
7.60e7
27.59
Abs. Int.
1.77e7
8.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
0%
2378D
9.65e7
27.59
Abs. Int.
2.26e7
1.13e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
2.37e5
1.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
0%
AS 1368D
1.42e7
23.72
TS 1378D
1.82e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
Abs. Int.
3.87e6
1.93e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
0%
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.83e7
27.91
Abs. Int.
4.89e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.74e3
0%
RRF = (4.24e8 + 2.70e8) * 100pg / (1.73e7 + 1.11e7) * 2500pg = 0.977
DTF 11-Nov-2021 10:26
12378D
4.24e8*
33.11
Abs. Int.
1.28e8
6.41e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.72e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:25:26 PM
12378D
2.70e8*
33.11
Abs. Int.
8.21e7
4.10e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 1.97e3
0%
FS 12478D
1.69e7
31.84
CS 12347D
1.38e7
32.59
ES 12378D
1.73e7
33.09
Abs. Int.
5.02e6
2.51e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 1.41e3
0%
FS 12478D
1.10e7
31.84
CS 12347D
8.57e6
32.59
ES 12378D
1.11e7
33.09
Abs. Int.
3.13e6
1.56e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.31e6
3.16e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

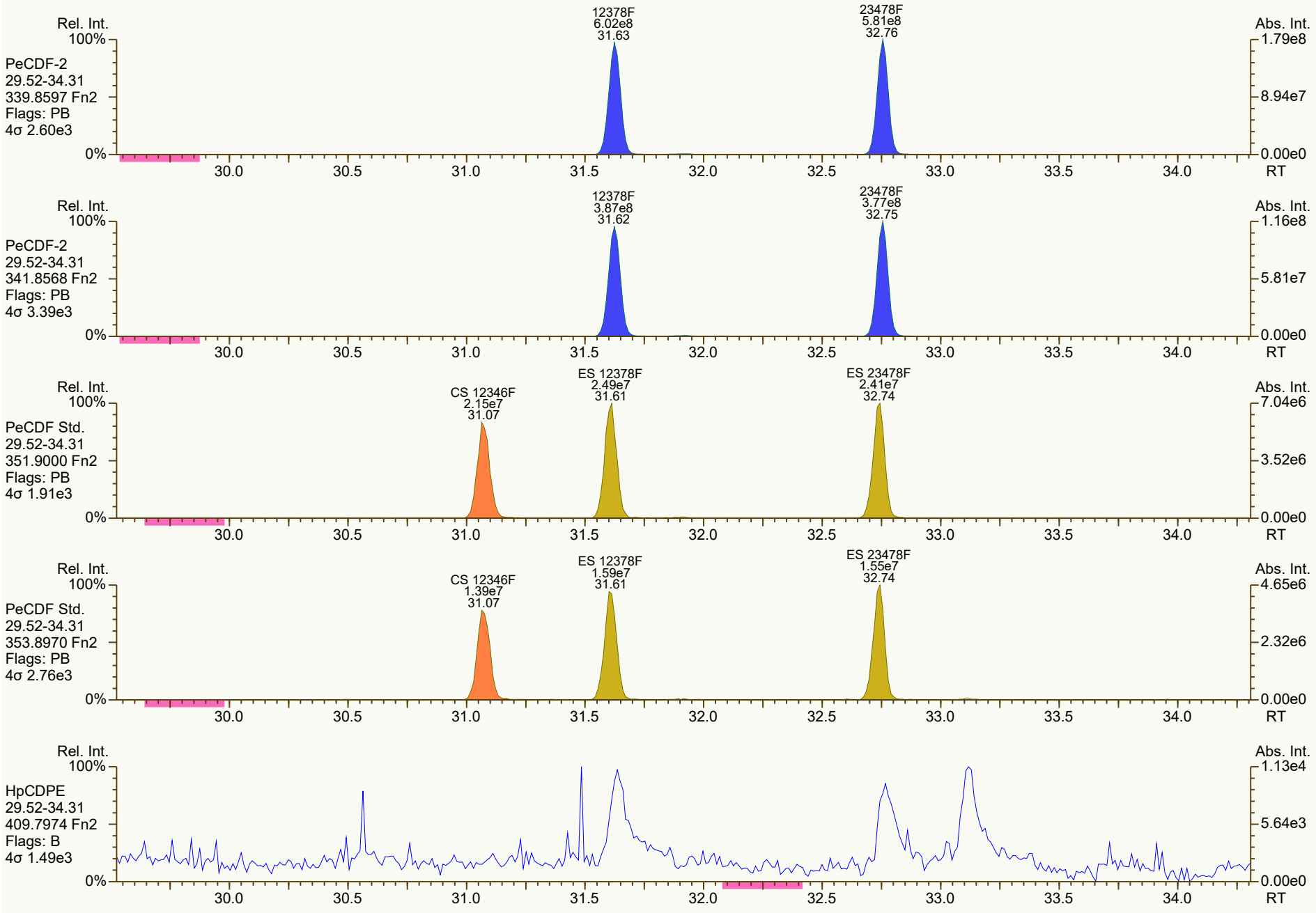

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
123478D
3.52e8
37.05
123678D
3.52e8
37.17
123789D
3.72e8
37.47
Abs. Int.
1.17e8
5.83e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
123478D
2.81e8
37.05
123678D
2.79e8
37.16
123789D
2.97e8
37.47
Abs. Int.
9.35e7
4.67e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
FS 123468D
1.55e7
35.98
ES 123478D
1.33e7
37.03
ES 123678D
1.29e7
37.15
JS 123467D
6.40e6
37.35
ES 123789D
1.48e7
37.46
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
FS 123468D
1.24e7
35.98
ES 123478D
1.08e7
37.03
ES 123678D
1.06e7
37.15
JS 123467D
5.21e6
37.35
ES 123789D
1.18e7
37.46
Abs. Int.
3.84e6
1.92e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.70e7
8.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

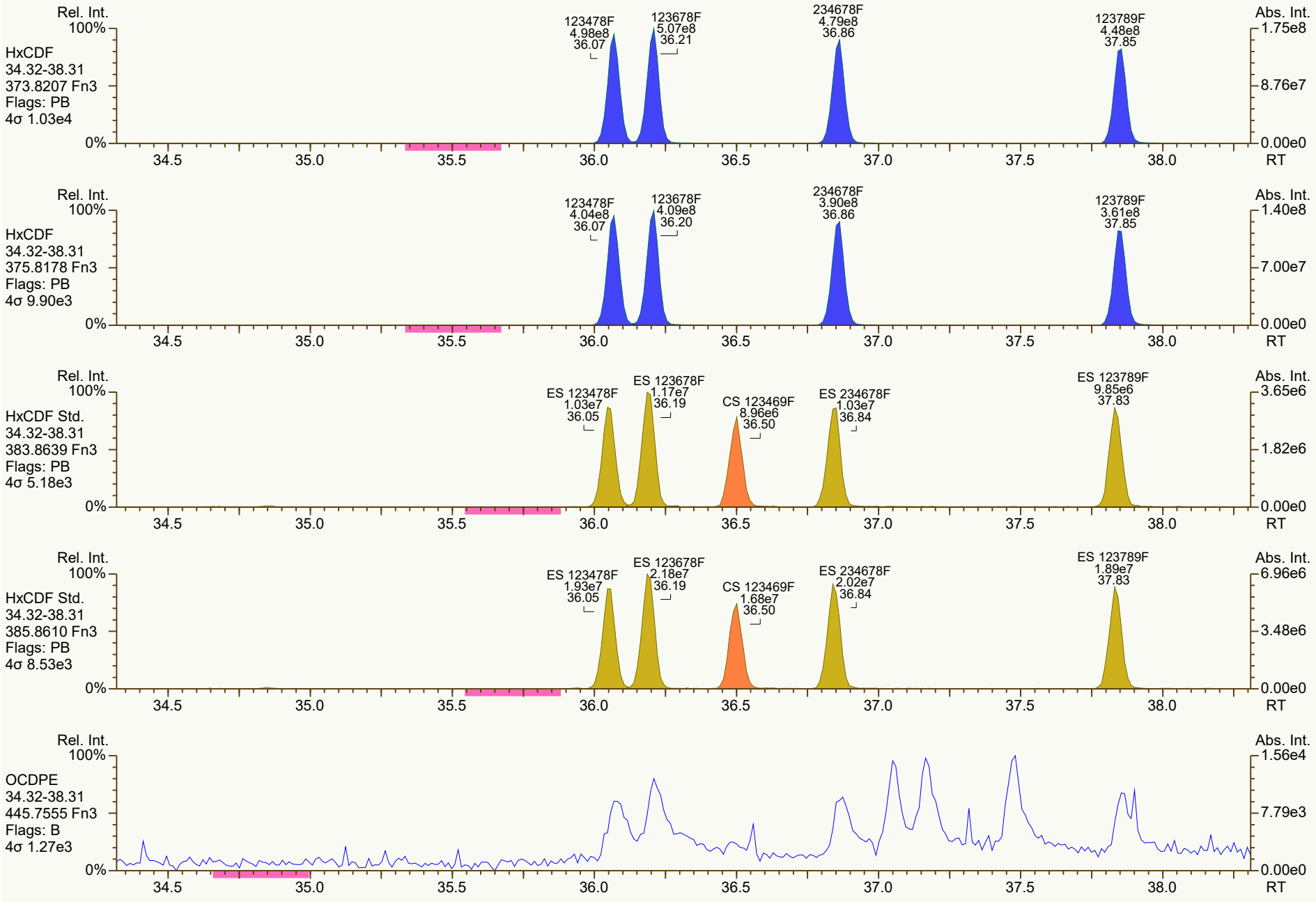

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
0%
1234678D
2.91e8
40.29
Abs. Int.
1.16e8
5.82e7
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
0%
1234678D
2.79e8
40.29
Abs. Int.
1.11e8
5.53e7
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
0%
FS 1234679D
1.48e7
39.61
ES 1234678D
1.16e7
40.28
Abs. Int.
5.63e6
2.81e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
0%
FS 1234679D
1.40e7
39.61
ES 1234678D
1.12e7
40.28
Abs. Int.
5.36e6
2.68e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.06e7
5.32e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

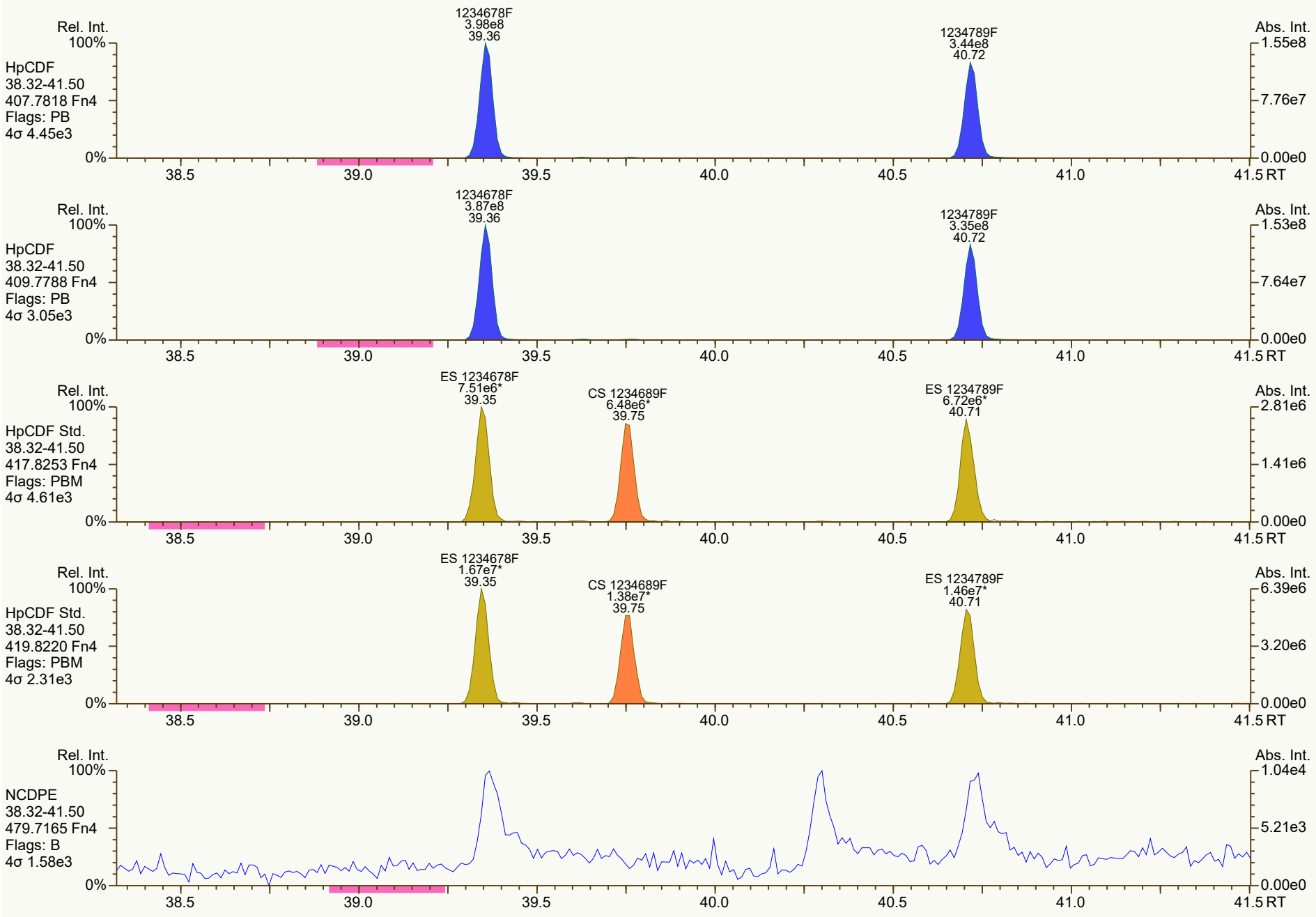

SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
Rel. Int.
Abs. Int.
OCDD
4.14e8
42.86
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.59e3
1.20e8
6.00e7
0.00e0
OCDD
4.63e8
42.86
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
1.32e8
6.62e7
ES OCDD
1.56e7
42.85
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.77e3
4.30e6
2.15e6
ES OCDD
1.69e7
42.85
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.26e3
4.66e6
2.33e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.21e7
6.05e6
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6614, 8805 scc: 172-736
PKD: 10-Nov-2021 16:46 Printed: 11-Nov-2021 10:41 Page 6 of 12

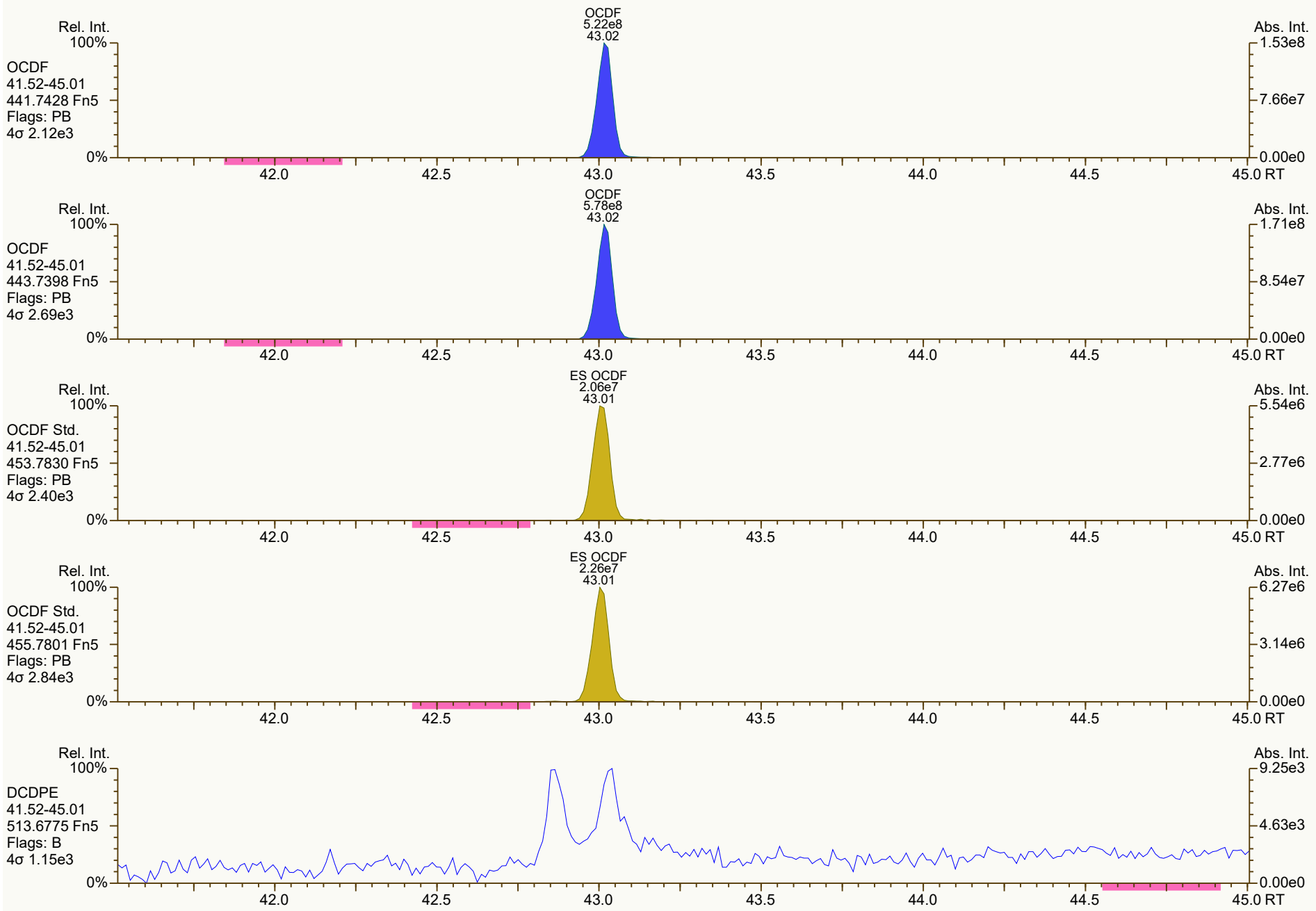

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 2.26e3
0%
2378F
9.73e7
26.68
Abs. Int.
2.17e7
1.08e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 2.01e3
0%
2378F
1.26e8
26.68
Abs. Int.
2.85e7
1.42e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.95e4
0%
AS 1368F
2.07e7
21.49
JS 1234F
1.84e7
25.24
ES 2378F
1.95e7
26.66
Abs. Int.
4.38e6
2.19e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 7.53e3
0%
AS 1368F
2.62e7
21.49
JS 1234F
2.32e7
25.24
ES 2378F
2.51e7
26.65
Abs. Int.
5.43e6
2.72e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.55e3
0%
Abs. Int.
6.34e3
3.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

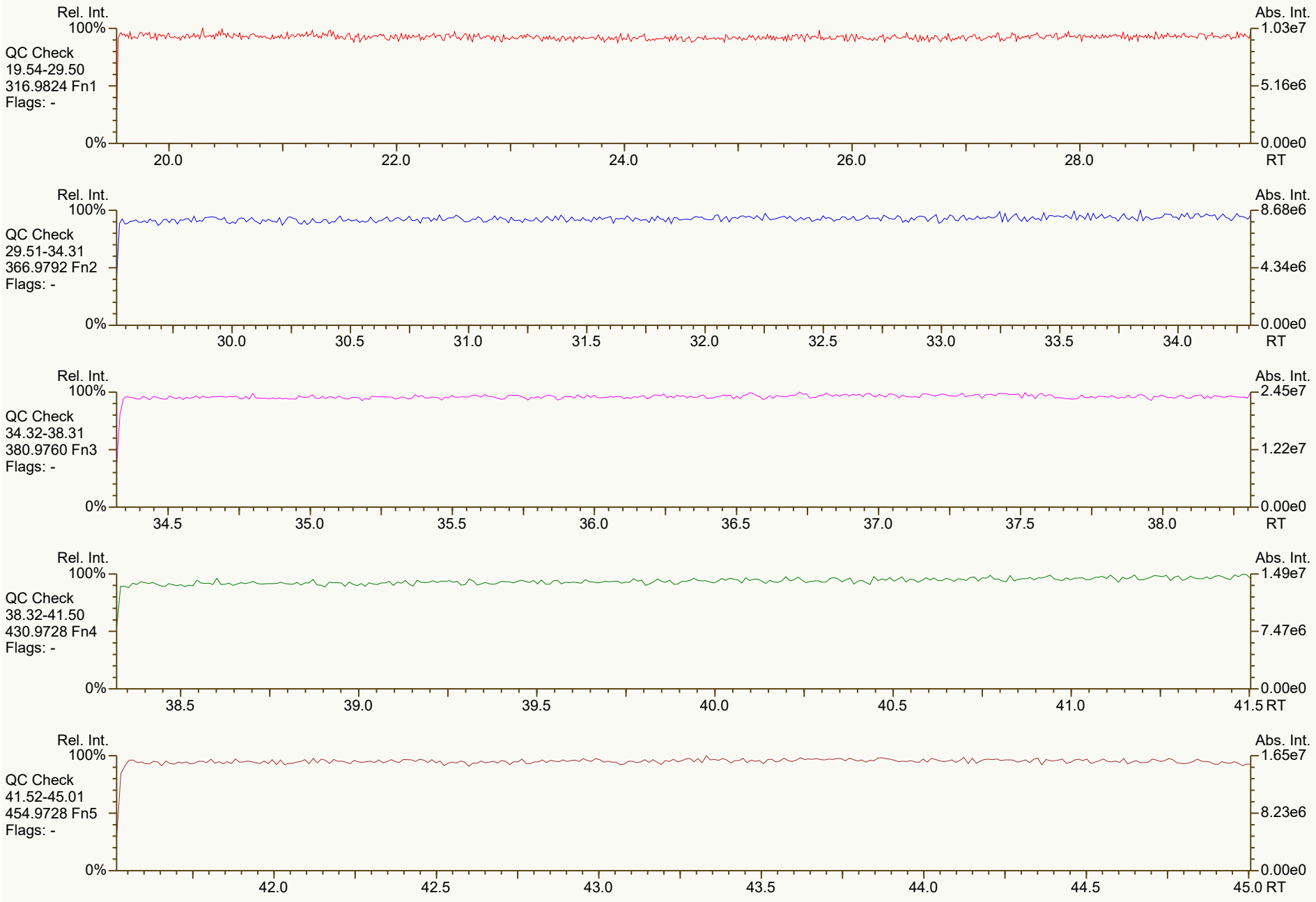

Rel. Int.
100%
0%
Abs. Int.
9.54e3
4.77e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 2.51e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.38e4
6.90e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.99e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.03e6
4.02e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PB
4σ 2.60e3
12378F
6.02e8
31.63
23478F
5.81e8
32.76
Abs. Int.
1.79e8
8.94e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PB
4σ 3.39e3
12378F
3.87e8
31.62
23478F
3.77e8
32.75
Abs. Int.
1.16e8
5.81e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 1.91e3
CS 12346F
2.15e7
31.07
ES 12378F
2.49e7
31.61
ES 23478F
2.41e7
32.74
Abs. Int.
7.04e6
3.52e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.76e3
CS 12346F
1.39e7
31.07
ES 12378F
1.59e7
31.61
ES 23478F
1.55e7
32.74
Abs. Int.
4.65e6
2.32e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.49e3
Abs. Int.
1.13e4
5.64e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 1.03e4
123478F
4.98e8
36.07
123678F
5.07e8
36.21
234678F
4.79e8
36.86
123789F
4.48e8
37.85
Abs. Int.
1.75e8
8.76e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 9.90e3
123478F
4.04e8
36.07
123678F
4.09e8
36.20
234678F
3.90e8
36.86
123789F
3.61e8
37.85
Abs. Int.
1.40e8
7.00e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.18e3
ES 123478F
1.03e7
36.05
ES 123678F
1.17e7
36.19
CS 123469F
8.96e6
36.50
ES 234678F
1.03e7
36.84
ES 123789F
9.85e6
37.83
Abs. Int.
3.65e6
1.82e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 8.53e3
ES 123478F
1.93e7
36.05
ES 123678F
2.18e7
36.19
CS 123469F
1.68e7
36.50
ES 234678F
2.02e7
36.84
ES 123789F
1.89e7
37.83
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.27e3
Abs. Int.
1.56e4
7.79e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e8
39.36
1234789F
3.44e8
40.72
Abs. Int.
1.55e8
7.76e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e8
39.36
1234789F
3.35e8
40.72
Abs. Int.
1.53e8
7.64e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
Abs. Int.
2.81e6
1.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
Abs. Int.
1.04e4
5.21e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
OCDF
5.22e8
43.02
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
OCDF
5.78e8
43.02
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
ES OCDF
2.06e7
43.01
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDF
2.26e7
43.01
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.03e7
5.16e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.68e6
4.34e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.45e7
1.22e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.49e7
7.47e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.65e7
8.23e6
0.00e0

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

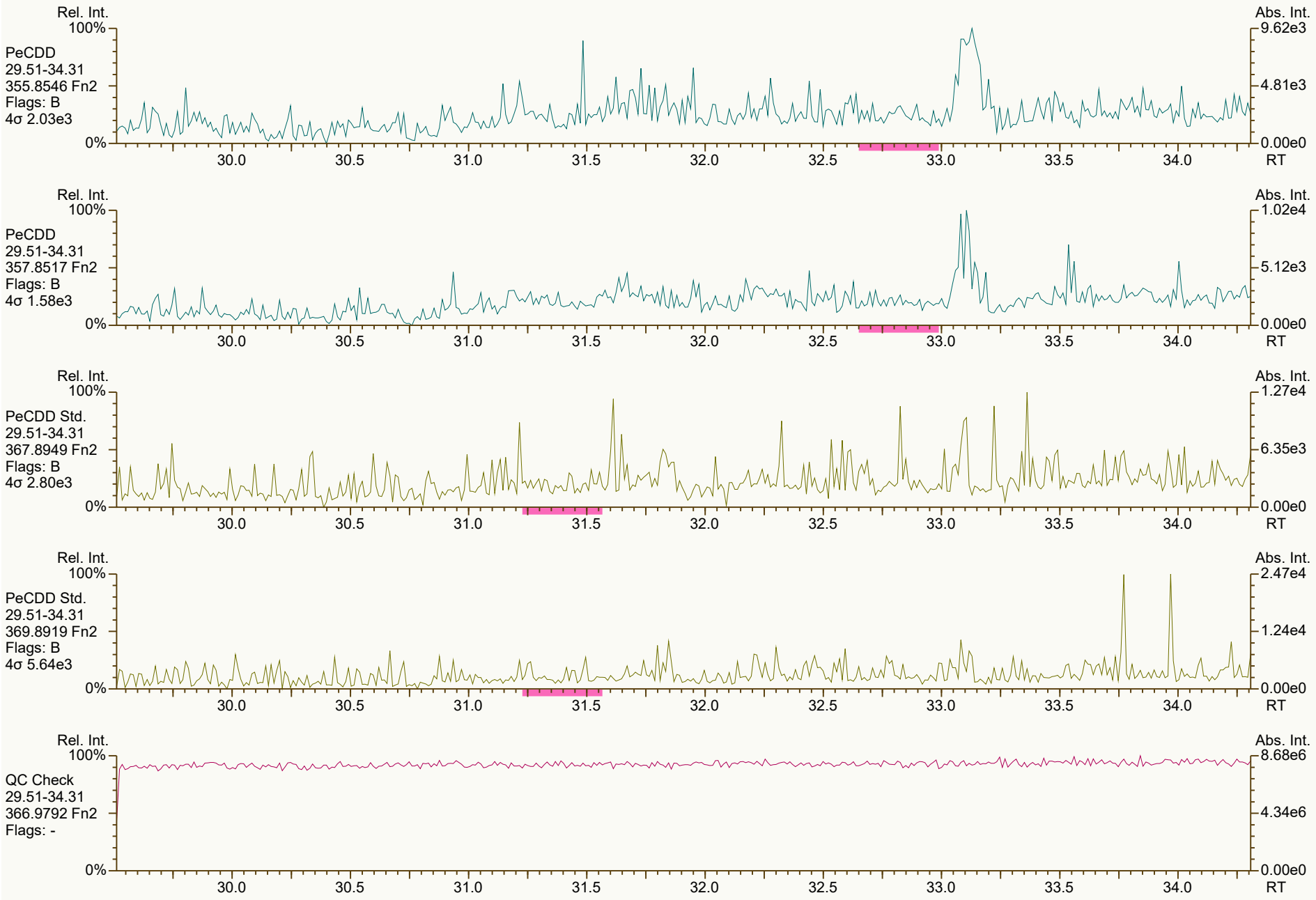
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4939, 4247, 1318 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1*


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: B
4σ 2.56e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.75e3
0%
Abs. Int.
8.16e3
4.08e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: B
4σ 7.98e3
0%
Abs. Int.
2.72e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: B
4σ 6.62e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: B
4σ 2.80e3
0%
Abs. Int.
1.27e4
6.35e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: B
4σ 5.64e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.68e6
4.34e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: B
4σ 5.99e3
0%
Abs. Int.
1.61e4
8.05e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.45e7
1.22e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.62e4
8.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: B
4σ 2.39e3
0%
Abs. Int.
2.45e4
1.23e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: B
4σ 2.97e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.49e7
7.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.07e4
5.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.42e4
7.11e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.65e7
8.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
2468F
3.48e5*
22.78
Abs. Int.
7.07e4
3.53e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
2468F
5.04e5*
22.78
Abs. Int.
1.06e5
5.32e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
Abs. Int.
5.11e4
2.56e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
Abs. Int.
2.83e4
1.42e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
9.47e3
4.73e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT

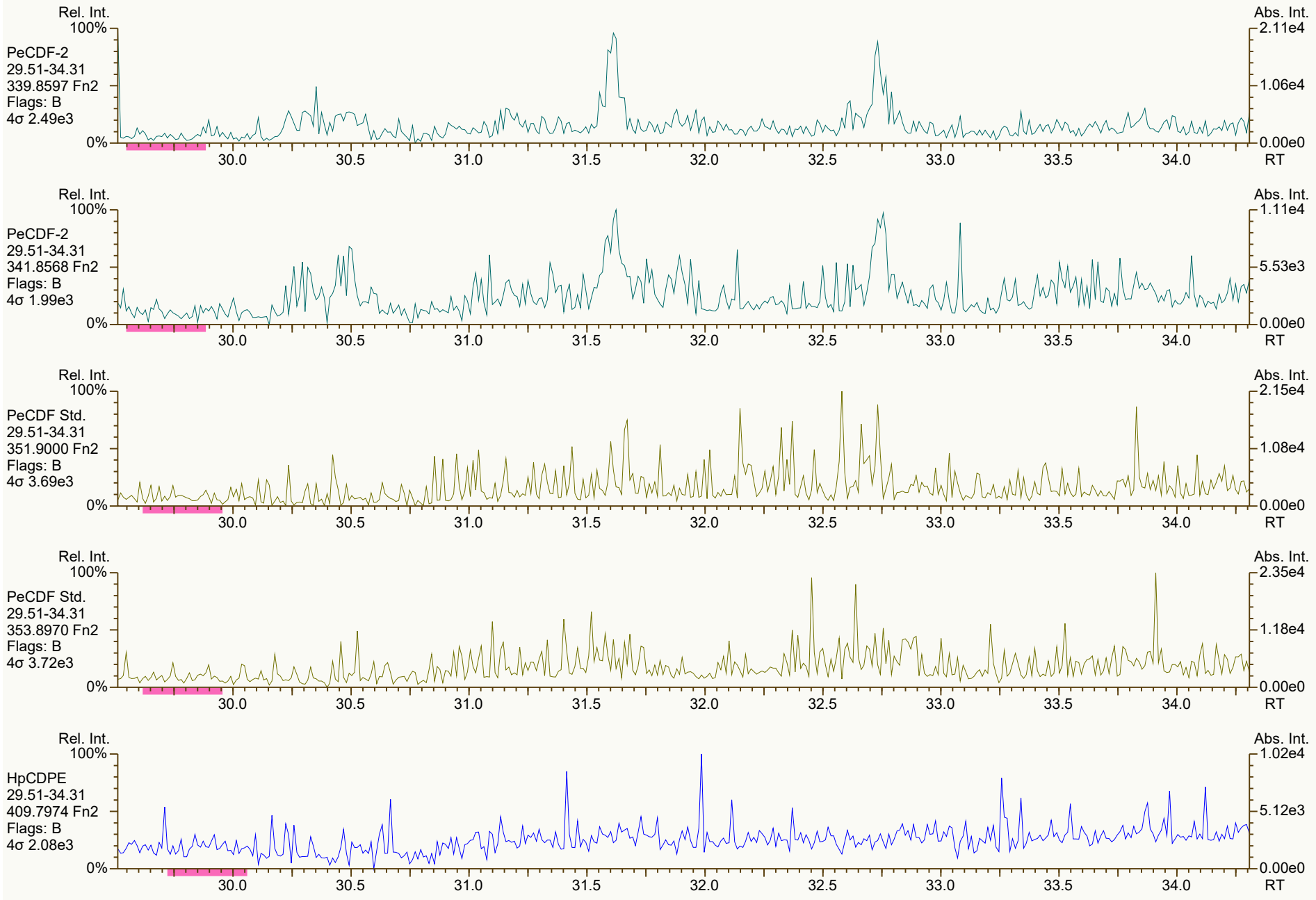
SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

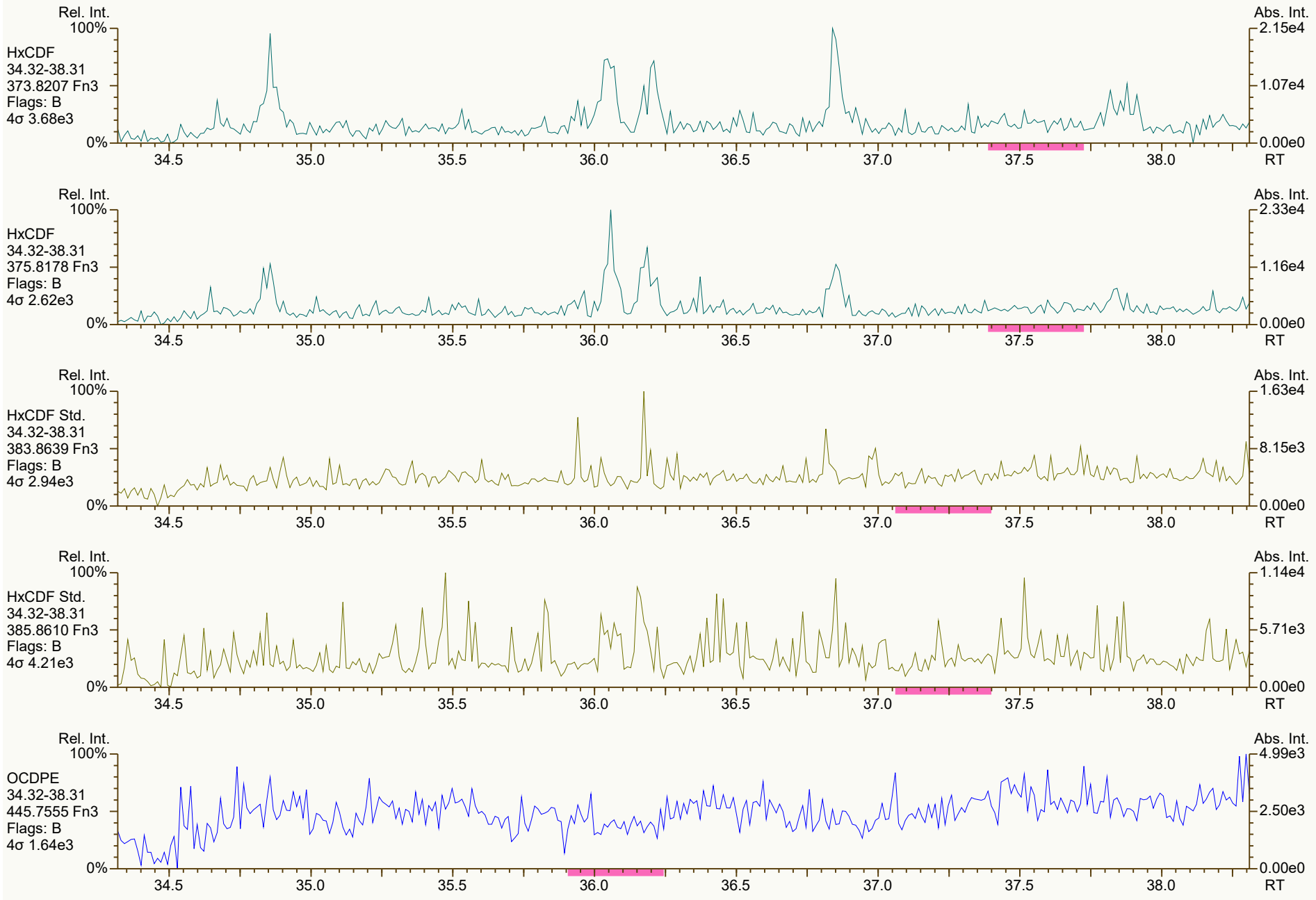
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4115 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: B
4σ 2.49e3
0%
Abs. Int.
2.11e4
1.06e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: B
4σ 3.69e3
0%
Abs. Int.
2.15e4
1.08e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: B
4σ 3.72e3
0%
Abs. Int.
2.35e4
1.18e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
2.15e4
1.07e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.33e4
1.16e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: B
4σ 4.21e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.64e3
0%
Abs. Int.
4.99e3
2.50e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

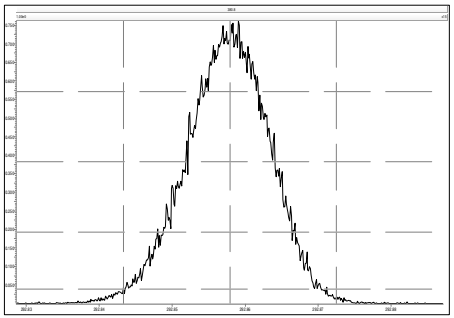

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: B
4σ 2.83e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: B
4σ 5.26e3
0%
Abs. Int.
2.80e4
1.40e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.49e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.02e4
5.08e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
6.88e3
3.44e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.40e3
0%
Abs. Int.
4.10e3
2.05e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

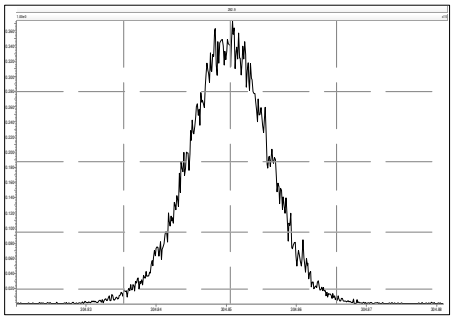
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

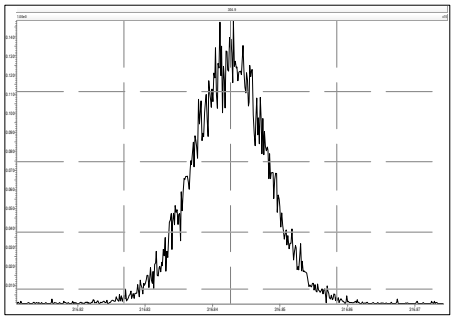
M 292.9824 R 10731



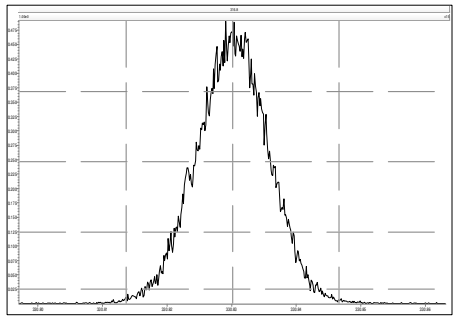
M 304.9824 R 11311



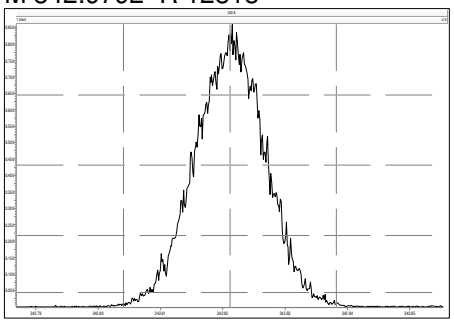
M 316.9824 R 12373



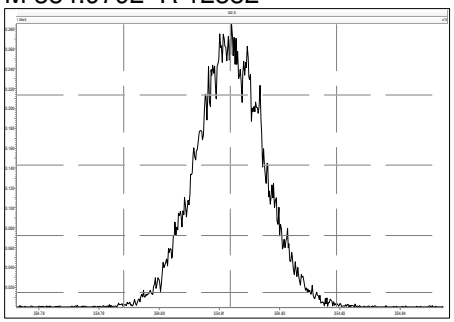
M 330.9792 R 12887



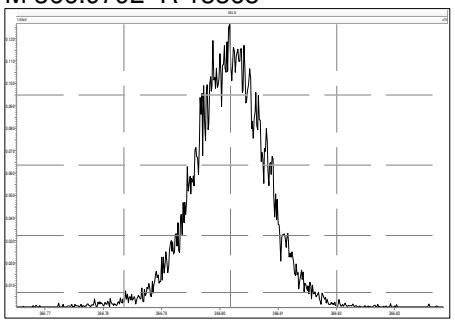
M 342.9792 R 12818



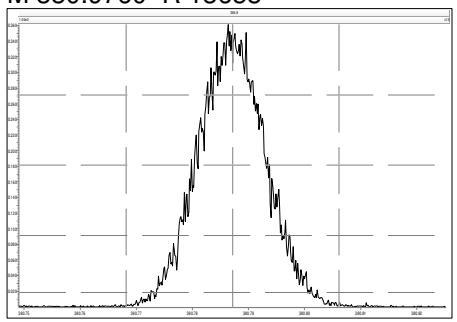
M 354.9792 R 12882



M 366.9792 R 13368



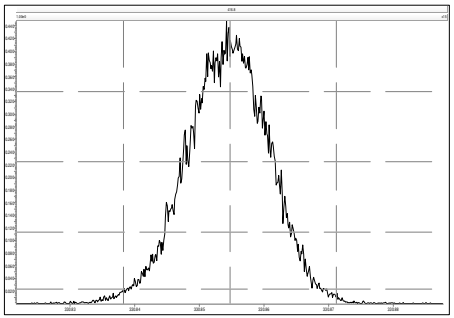
M 380.9760 R 13658



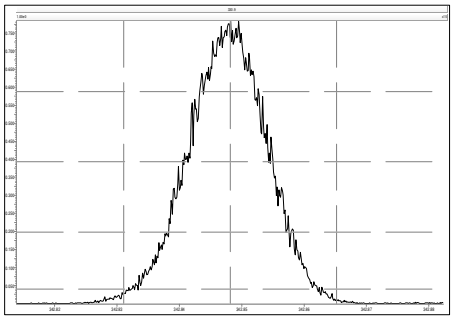
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

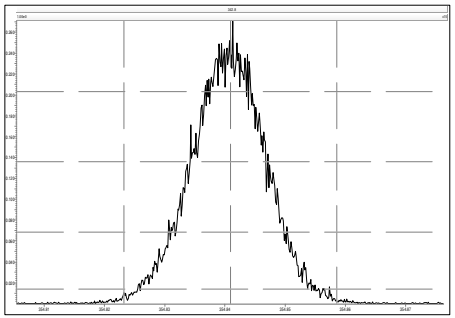
M 330.9792 R 11112



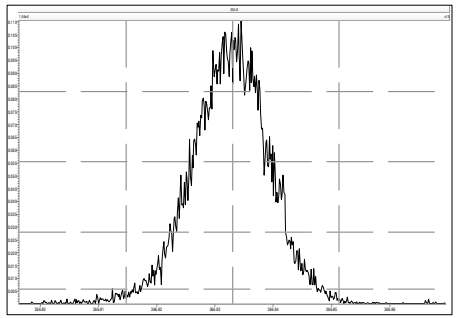
M 342.9792 R 11909



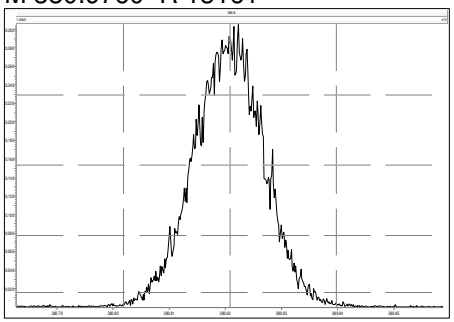
M 354.9792 R 11684



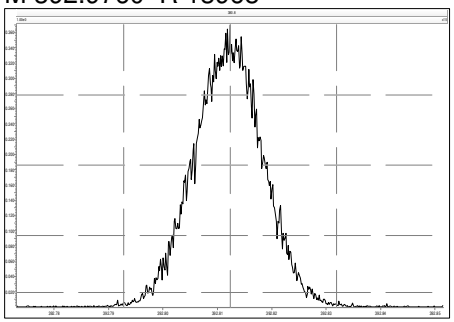
M 366.9792 R 11962



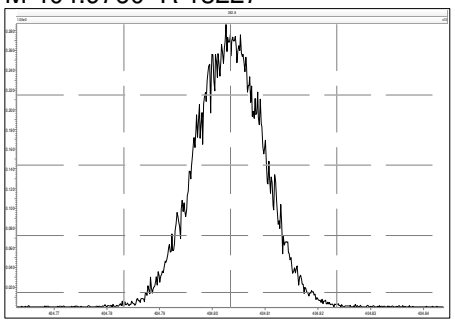
M 380.9760 R 13161



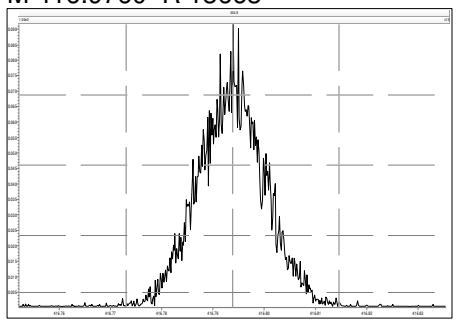
M 392.9760 R 13968



M 404.9760 R 13227



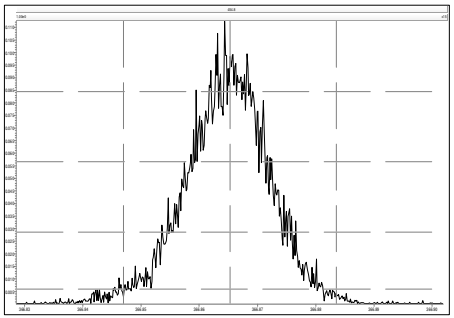
M 416.9760 R 13663



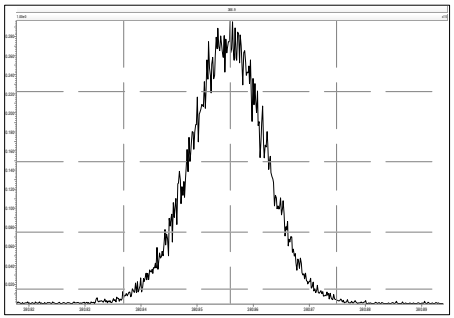
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

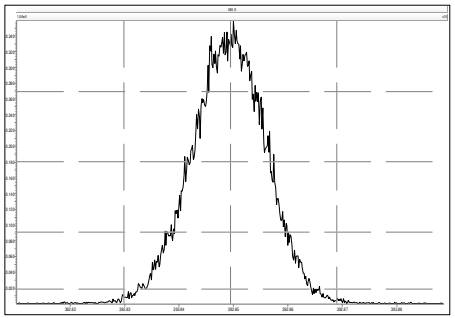
M 366.9792 R 10680



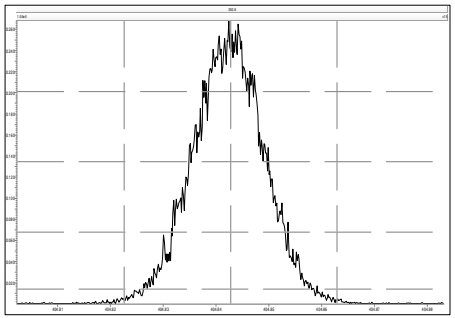
M 380.9760 R 12315



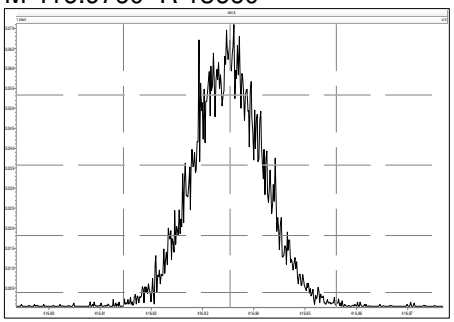
M 392.9760 R 12197



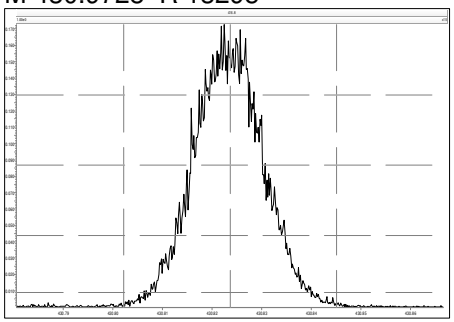
M 404.9760 R 12433



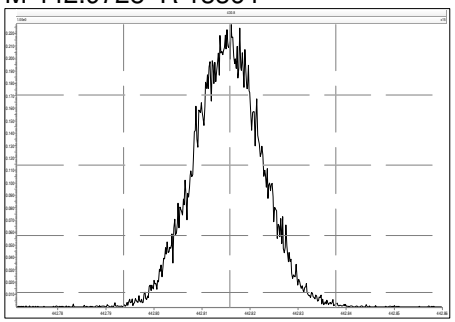
M 416.9760 R 13660



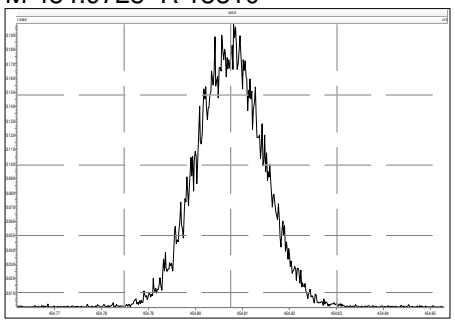
M 430.9728 R 13295



M 442.9728 R 13364



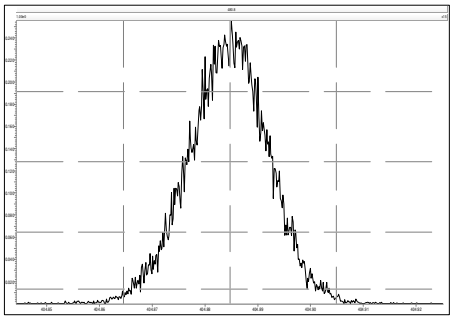
M 454.9728 R 13810



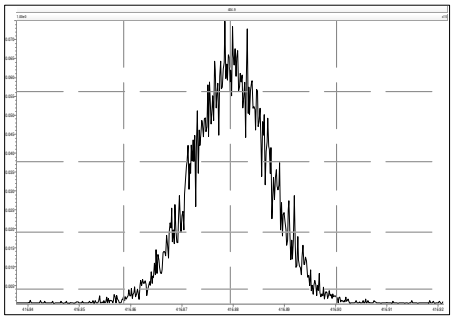
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

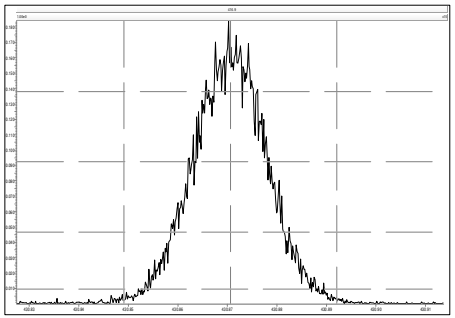
M 404.9760 R 11679



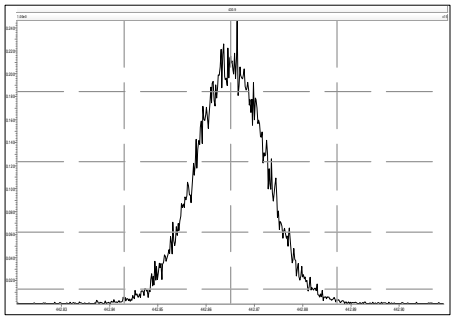
M 416.9760 R 12886



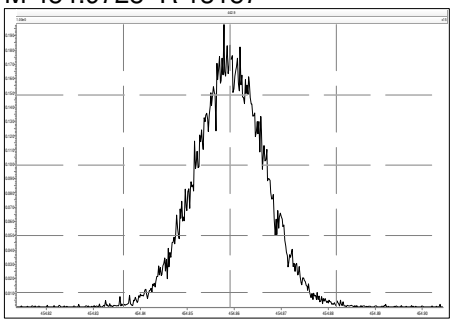
M 430.9728 R 12253



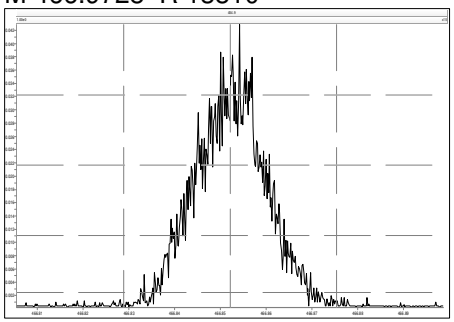
M 442.9728 R 12756



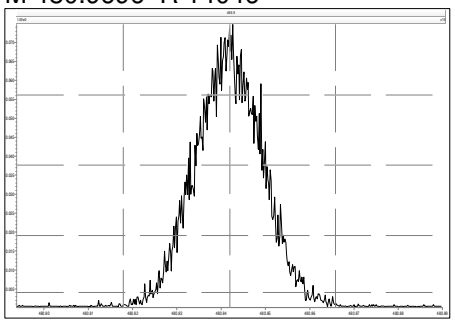
M 454.9728 R 13157



M 466.9728 R 13810



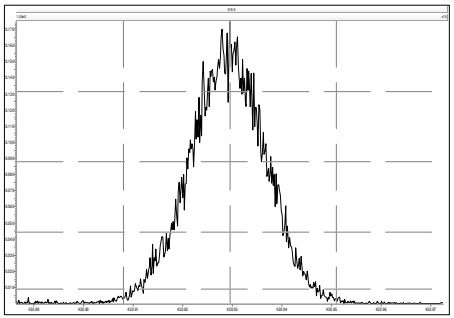
M 480.9696 R 14046



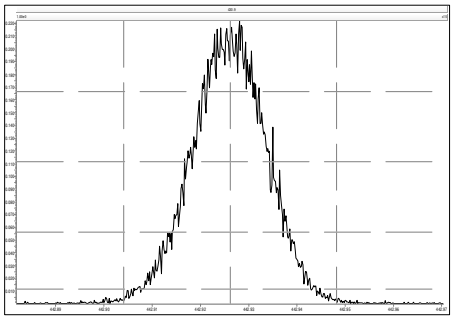
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

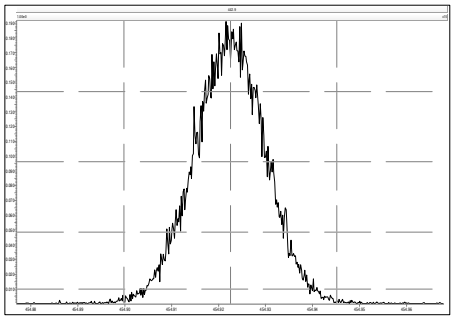
M 430.9728 R 11574



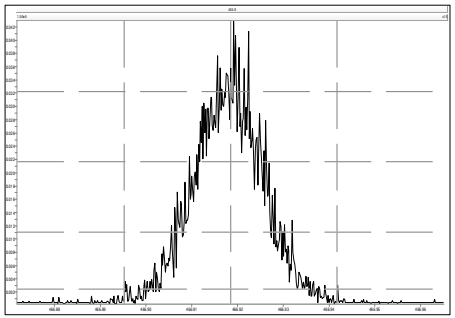
M 442.9728 R 12198



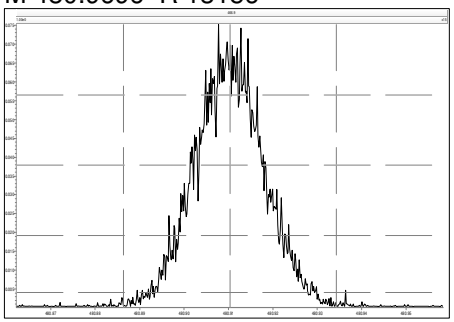
M 454.9728 R 12950



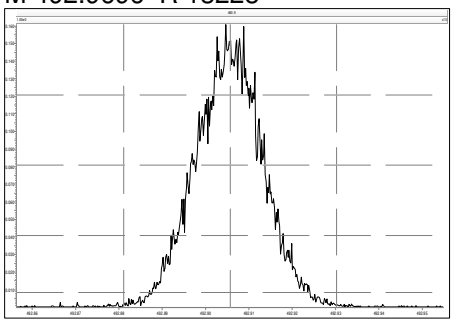
M 466.9728 R 13088



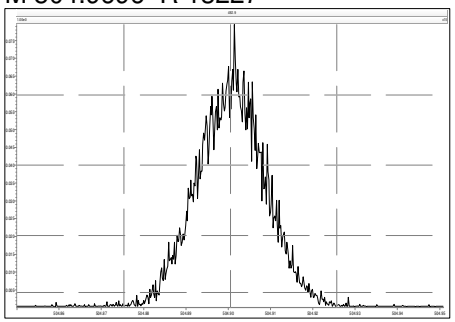
M 480.9696 R 13156



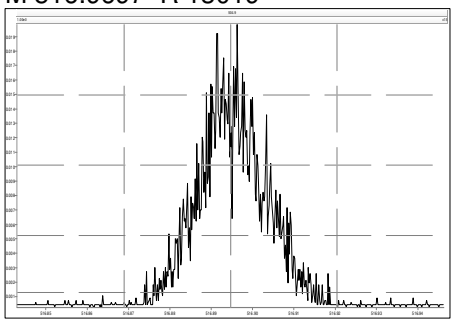
M 492.9696 R 13228



M 504.9696 R 13227



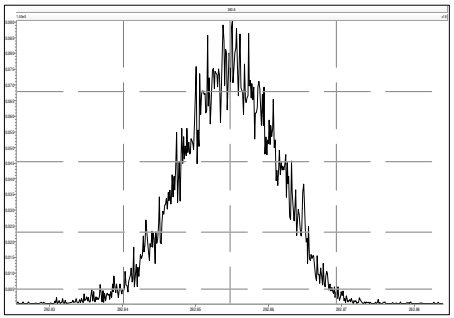
M 516.9697 R 13019



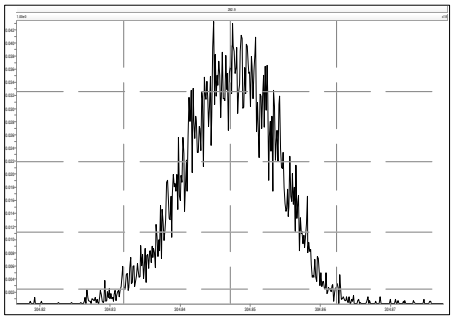
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

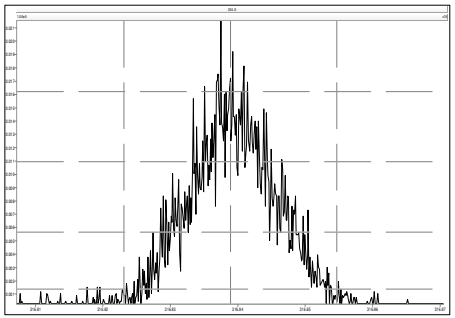
M 292.9824 R 10122



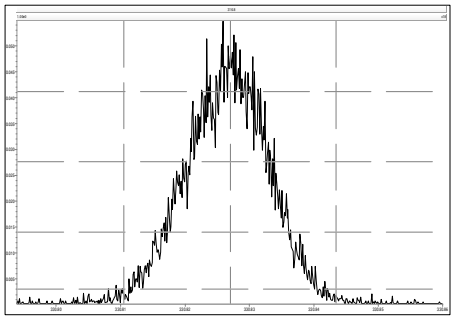
M 304.9824 R 10329



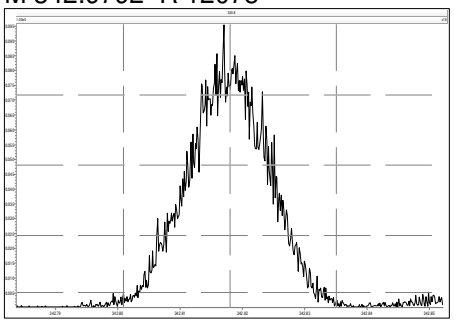
M 316.9824 R 11964



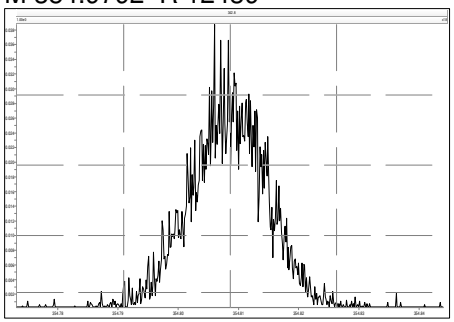
M 330.9792 R 11062



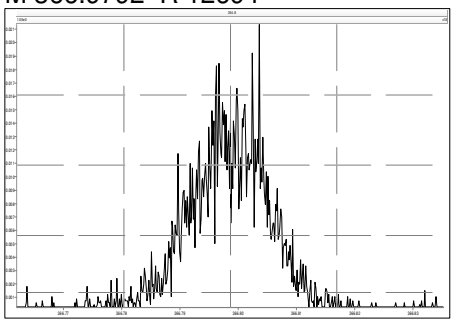
M 342.9792 R 12075



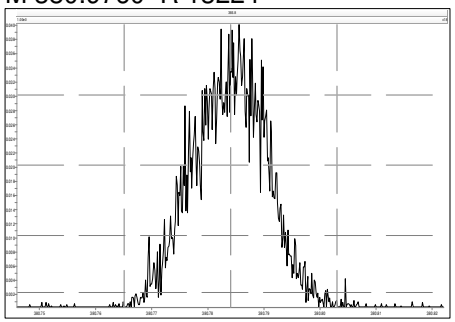
M 354.9792 R 12439



M 366.9792 R 12694



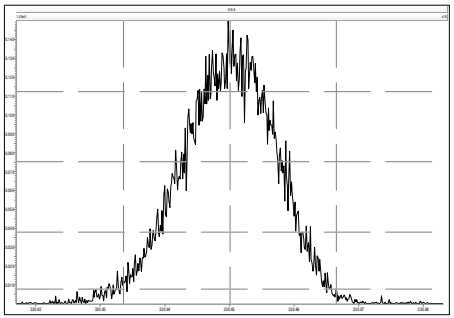
M 380.9760 R 13224



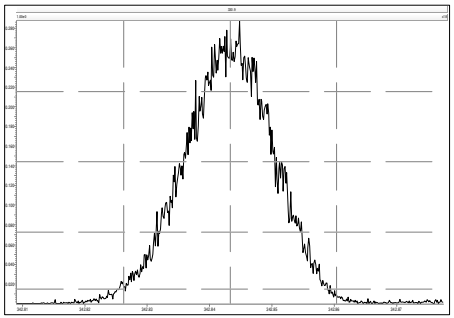
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

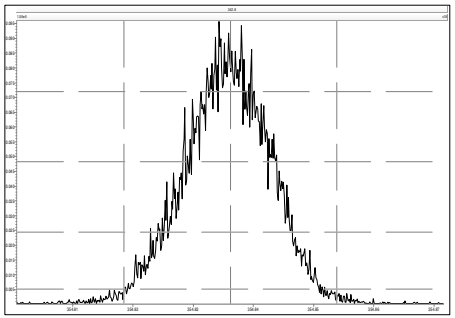
M 330.9792 R 10730



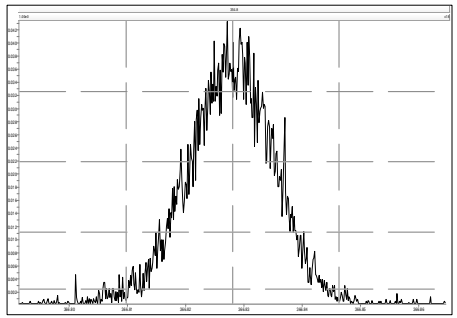
M 342.9792 R 10039



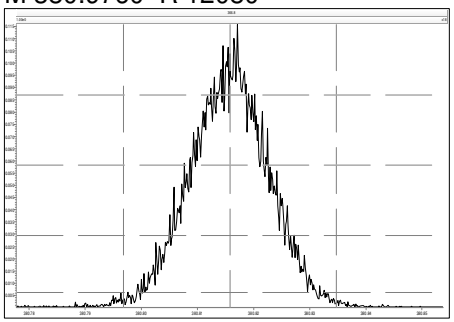
M 354.9792 R 11108



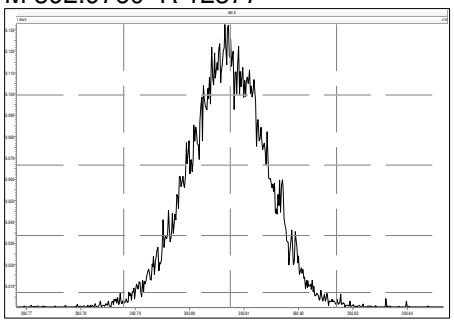
M 366.9792 R 11520



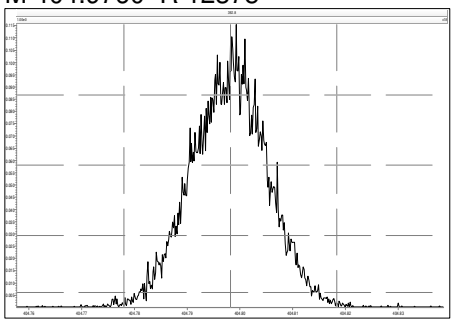
M 380.9760 R 12080



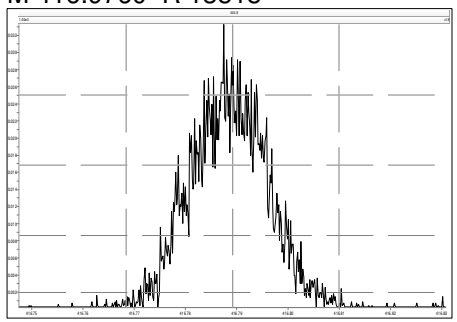
M 392.9760 R 12377



M 404.9760 R 12375



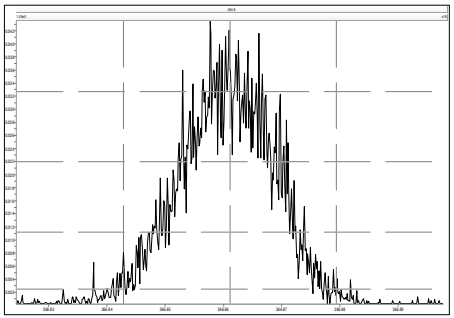
M 416.9760 R 13515



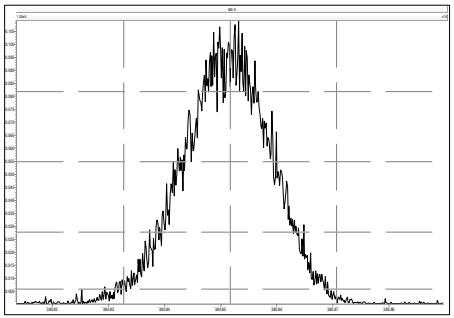
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

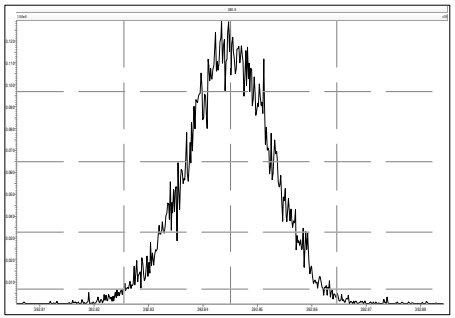
M 366.9792 R 10866



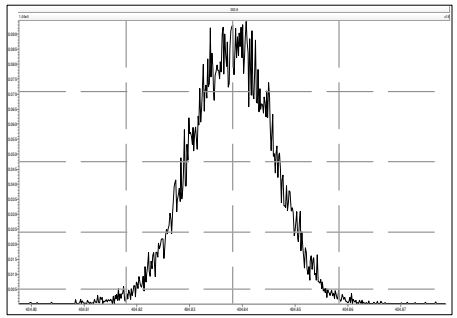
M 380.9760 R 10416



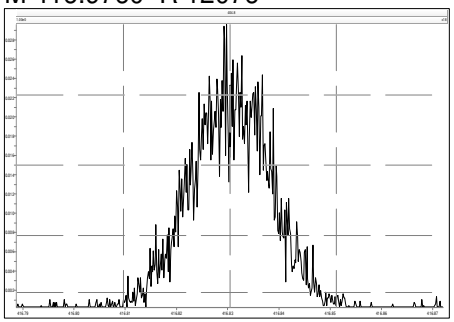
M 392.9760 R 10640



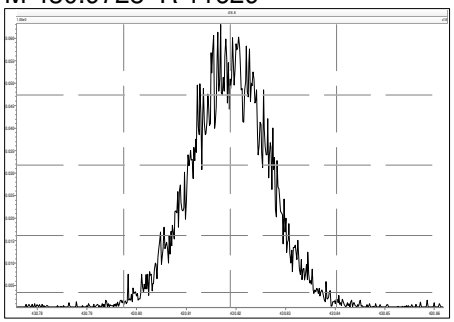
M 404.9760 R 11957



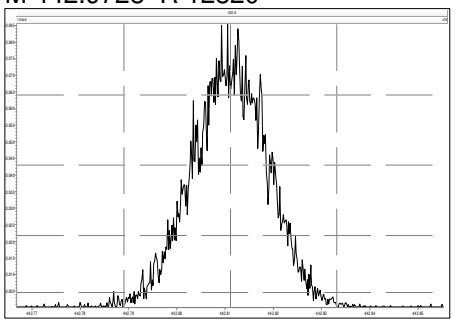
M 416.9760 R 12076



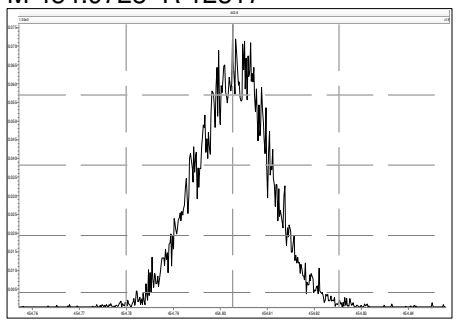
M 430.9728 R 11629



M 442.9728 R 12820



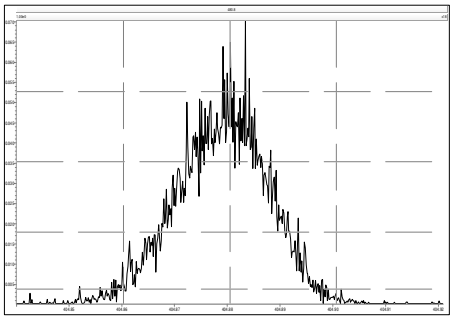
M 454.9728 R 12317



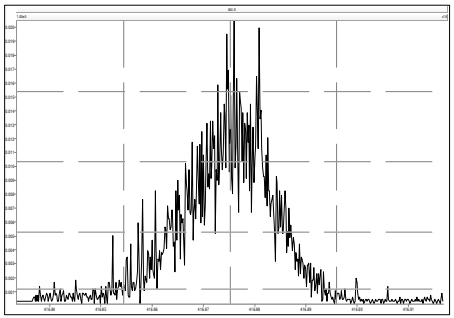
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

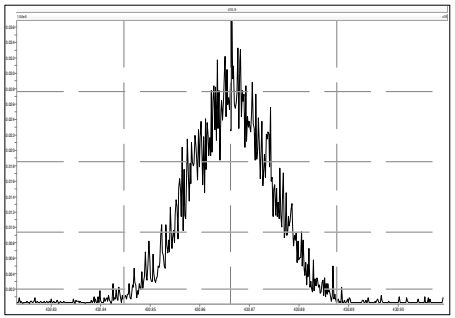
M 404.9760 R 10505



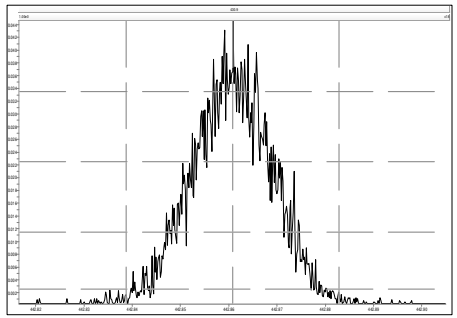
M 416.9760 R 12500



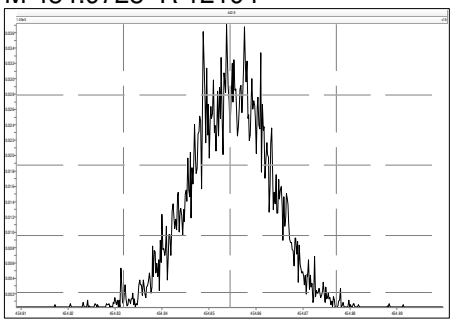
M 430.9728 R 11362



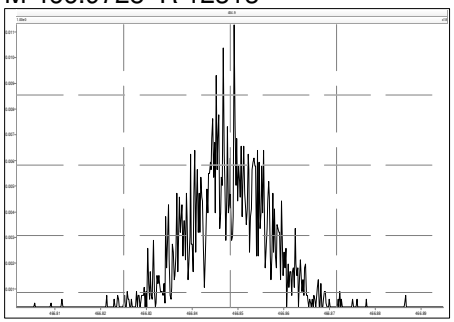
M 442.9728 R 12756



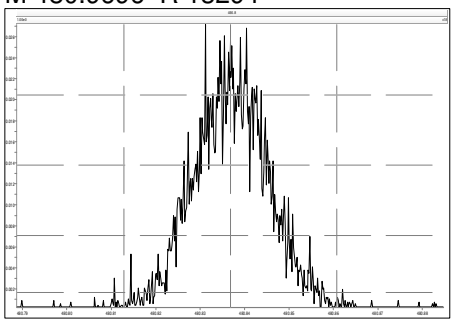
M 454.9728 R 12194



M 466.9728 R 12313



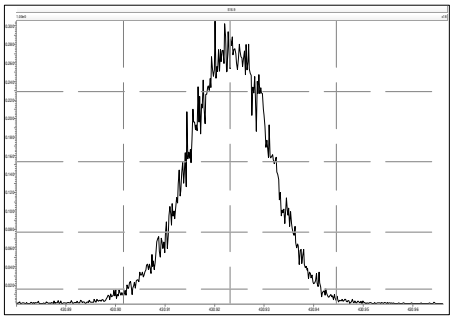
M 480.9696 R 13294



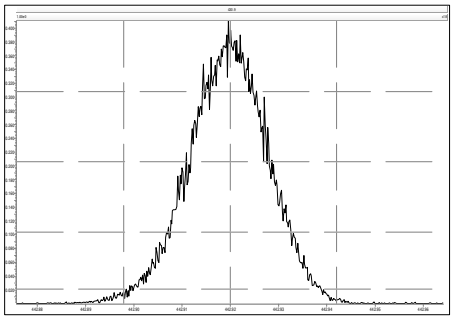
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

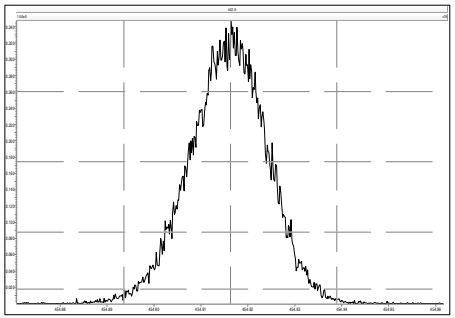
M 430.9728 R 11312



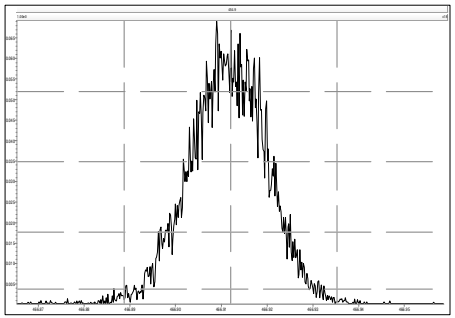
M 442.9728 R 11110



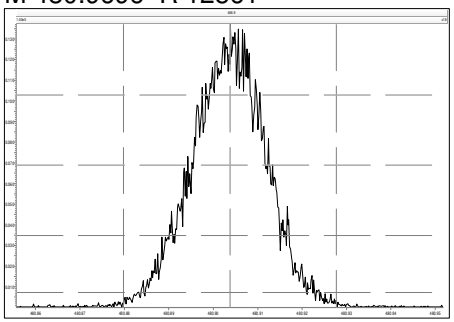
M 454.9728 R 11906



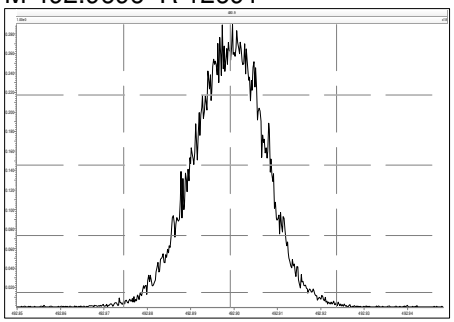
M 466.9728 R 12562



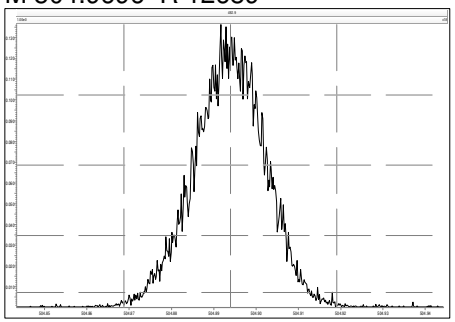
M 480.9696 R 12561



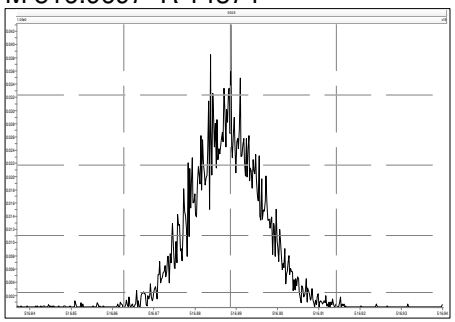
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



REVIEWED
Tamara Burkamper , 2/21/2022, 1:41:23 PM

Lab ID: OPR1_18911_DF **Acq'd:** 19 Feb 2022 18:04 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR001 **UTP:** 21-Feb-2022 10:21:14 DTF **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 320-676-ZPS

Datafile: 220219C02 **Report:** 21 Feb 2022 10:33 TF **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.23		1.0008	1.0008	0	3.56E+06	0.80	Y	1.18	11.7	4737.647	0.171
12378-PeCDD	33.63		1.0007	1.0006	-0.2	1.13E+07	1.58	Y	1.04	50.5	4309.427	0.179
123478-HxCDD	37.56		1.0004	1.0004	0	1.18E+07	1.29	Y	1.09	54.5	3601.285	0.148
123678-HxCDD	37.68		1.0036	1.0036	0	1.31E+07	1.25	Y	1.15	56.6	3601.285	0.146
123789-HxCDD	37.99		1.0118	1.0117	-0.2	1.15E+07	1.29	Y	1.05	52.2	3601.285	0.148
1234678-HpCDD	40.72		1.0002	1.0003	+0.2	1.08E+07	1.02	Y	1.06	54.9	4312.014	0.183
OCDD	43.42		1.0003	1.0003	0	1.48E+07	0.91	Y	1.13	112	3115.786	0.284
2378-TCDF	27.36		1.0008	1.0008	0	4.24E+06	0.74	Y	1.08	10.9	2688.114	0.0822
12378-PeCDF	32.17		1.0005	1.0006	+0.2	1.82E+07	1.53	Y	1.02	48.7	8840.749	0.222
23478-PeCDF	33.29		1.0005	1.0005	0	1.83E+07	1.54	Y	1.02	54.1	8840.749	0.238
123478-HxCDF	36.56		1.0004	1.0005	+0.2	1.58E+07	1.23	Y	1.27	51.5	4297.3	0.112
123678-HxCDF	36.70		1.0004	1.0005	+0.2	1.80E+07	1.23	Y	1.15	53.7	4297.3	0.107
234678-HxCDF	37.38		1.0005	1.0005	0	1.87E+07	1.23	Y	1.19	54.4	4297.3	0.116
123789-HxCDF	38.35		1.0004	1.0004	0	1.29E+07	1.22	Y	1.16	48.7	4297.3	0.129
1234678-HpCDF	39.77		1.0003	1.0003	0	1.47E+07	1.03	Y	1.37	50.9	2466.46	0.0653
1234789-HpCDF	41.18		1.0003	1.0003	0	1.15E+07	1.03	Y	1.31	51.7	2466.46	0.0967
OCDF	43.59		1.0002	1.0002	0	1.69E+07	0.89	Y	1.07	103	4841.252	0.375

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.21	1.0243	1.0244	+0.2	2.57E+07	0.79	Y	1.05	91.5
ES 12378-PeCDD	33.61	1.2198	1.2206	+1.6	2.15E+07	1.57	Y	0.88	90.9
ES 123478-HxCDD	37.55	0.9916	0.9916	0	1.99E+07	1.24	Y	0.97	98.2
ES 123678-HxCDD	37.67	0.9947	0.9948	+0.2	2.01E+07	1.25	Y	0.94	102
ES 123789-HxCDD	37.97	1.0029	1.0028	-0.2	2.10E+07	1.19	Y	1.09	92
ES 1234678-HpCDD	40.71	1.0749	1.0749	0	1.86E+07	1.12	Y	0.91	97.5
ES OCDD	43.40	1.1460	1.1462	+0.5	2.35E+07	0.91	Y	0.62	90
ES 2378-TCDF	27.34	1.0531	1.0534	+0.5	3.60E+07	0.80	Y	1.06	77.7
ES 12378-PeCDF	32.15	1.2378	1.2387	+1.7	3.64E+07	1.55	Y	0.91	91.4
ES 23478-PeCDF	33.27	1.2810	1.2820	+2.0	3.31E+07	1.61	Y	0.88	85.6
ES 123478-HxCDF	36.54	0.9650	0.9650	0	2.41E+07	0.52	Y	1.20	96.2
ES 123678-HxCDF	36.68	0.9688	0.9687	-0.2	2.91E+07	0.53	Y	1.35	103
ES 234678-HxCDF	37.36	0.9866	0.9866	0	2.89E+07	0.54	Y	1.24	111
ES 123789-HxCDF	38.34	1.0125	1.0124	-0.2	2.28E+07	0.51	Y	1.16	94.4
ES 1234678-HpCDF	39.76	1.0501	1.0500	-0.2	2.11E+07	0.49	Y	0.97	104
ES 1234789-HpCDF	41.16	1.0870	1.0870	0	1.70E+07	0.46	Y	0.85	95.5
ES OCDF	43.58	1.1505	1.1508	+0.8	3.08E+07	0.89	Y	0.81	91.2

Lab ID: OPR1_18911_DF | **Acq'd:** 19 Feb 2022 18:04 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR001 | **UTP:** 21-Feb-2022 10:21:14 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 320-676-ZPS

Datafile: 220219C02 | **Report:** 21 Feb 2022 10:33 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.54		-	-	-	2.69E+07	0.82	Y	-	-
JS 1234-TCDF	25.95		-	-	-	4.38E+07	0.81	Y	-	-
JS 123467-HxCDD	37.87		-	-	-	1.04E+07	1.26	Y	-	-
CS 37Cl-2378-TCDD	28.23		1.0251	1.0252	+0.2	1.26E+07	n/a	-	1.20	97.6
CS 12347-PeCDD	33.11		1.2016	1.2022	+1.2	2.18E+07	1.58	Y	0.75	108
CS 12346-PeCDF	31.62		1.2172	1.2182	+1.9	3.66E+07	1.61	Y	0.85	98.4
CS 123469-HxCDF	37.00		0.9771	0.9770	-0.2	2.77E+07	0.54	Y	1.12	119
CS 1234689-HpCDF	40.17		1.0608	1.0608	0	2.10E+07	0.45	Y	0.89	113
~~SS 37Cl-2378-TCDD~~	~~28.23~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~1.26E+07~~	~~n/a~~		~~1.15~~	~~107~~
~~SS 12347-PeCDD~~	~~33.11~~		~~1.2016~~	~~1.2022~~	~~+1.2~~	~~2.18E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~110~~
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2172~~	~~1.2182~~	~~+1.9~~	~~3.66E+07~~	~~1.61~~	~~Y~~	~~0.94~~	~~107~~
~~SS 123469-HxCDF~~	~~37.00~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~2.77E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~115~~
~~SS 1234689-HpCDF~~	~~40.17~~		~~1.0608~~	~~1.0608~~	~~0~~	~~2.10E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~108~~

Totals	Conc	EMPC
Total TCDD	53.1	53.1
Total PeCDD	77.7	77.7
Total HxCDD	179	179
Total HpCDD	68.4	68.4
Total Tetra-Octa Dioxins	490	490
Total TCDF	63.5	63.5
Total PeCDF	206	206
Total HxCDF	334	334
Total HpCDF	103	103
Total Tetra-Octa Furans	809	809
Total Tetra-Octa Dioxins & Furans	1300	1300

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.795	0.80
Response	3.56E+06	3.56E+06

Lab ID: OPR1_18911_DF **Acq'd: 19 Feb 2022 18:04 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18911_OPR001 **UTP: 21-Feb-2022 10:21:14 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 320-676-ZPS**

Datafile: 220219C02 **Report: 21 Feb 2022 10:33 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.53		0.8701	0.8695	-0.9	4.68E+06	0.83	Y	1.18	15.4	4737.647	0.171
1379-TCDD	NotFnd		0.8829						1.18		4737.647	0.171
1369-TCDD	NotFnd		0.8982						1.18		4737.647	0.171
1469-TCDD	NotFnd		0.9261						1.18		4737.647	0.171
1247/1246/1248/1249-TCDD	NotFnd		0.9348						1.18		4737.647	0.171
1378-TCDD	NotFnd		0.9417						1.18		4737.647	0.171
1268-TCDD	NotFnd		0.9487						1.18		4737.647	0.171
1478-TCDD	NotFnd		0.9576						1.18		4737.647	0.171
1279-TCDD	NotFnd		0.9636						1.18		4737.647	0.171
1234/1269-TCDD	NotFnd		0.9761						1.18		4737.647	0.171
1236-TCDD	NotFnd		0.9812						1.18		4737.647	0.171
1237/1238-TCDD	NotFnd		0.9905						1.18		4737.647	0.171
1239-TCDD	28.07		0.9951	0.9951	0	3.39E+06	0.82	Y	1.18	11.1	4737.647	0.171
2378-TCDD	**28.23**		**1.0008**	1.0008	**0**	3.56E+06	0.80	Y	**1.18**	**11.7**	**4737.647**	**0.171**
1278-TCDD	NotFnd		1.0124						1.18		4737.647	0.171
1267-TCDD	NotFnd		1.0172						1.18		4737.647	0.171
1289-TCDD	29.21		1.0354	1.0356	+0.4	4.56E+06	0.77	Y	1.18	15	4737.647	0.171
12479/12468-PeCDD	31.11		0.9255	0.9254	-0.2	2.98E+06	1.53	Y	1.04	13.4	4309.427	0.179
12469-PeCDD	NotFnd		0.9416						1.04		4309.427	0.179
12368-PeCDD	NotFnd		0.9582						1.04		4309.427	0.179
12478-PeCDD	NotFnd		0.9637						1.04		4309.427	0.179
12379-PeCDD	NotFnd		0.9668						1.04		4309.427	0.179
12369/12467/12489-PeCDD	NotFnd		0.9746						1.04		4309.427	0.179
12346/12347-PeCDD	NotFnd		0.9858						1.04		4309.427	0.179
12378-PeCDD	33.63		**1.0007**	**1.0006**	**-0.2**	**1.13E+07**	**1.58**	**Y**	**1.04**	**50.5**	**4309.427**	**0.179**
12367-PeCDD	NotFnd		1.0036						1.04		4309.427	0.179
12389-PeCDD	34.07		1.0137	1.0137	0	3.06E+06	1.61	Y	1.04	13.8	4309.427	0.179
124679/124689-HxCDD	35.82		0.9540	0.9539	-0.2	3.45E+06	1.27	Y	1.10	15.5	3601.285	0.147
123468-HxCDD	NotFnd		0.9715						1.10		3601.285	0.147
123679/123689-HxCDD	NotFnd		0.9793						1.10		3601.285	0.147
123469-HxCDD	NotFnd		0.9829						1.10		3601.285	0.147
123478-HxCDD	37.56		**1.0004**	**1.0004**	**0**	**1.18E+07**	**1.29**	**Y**	1.09	**54.5**	**3601.285**	**0.148**
123678-HxCDD	37.68		**1.0036**	**1.0036**	**0**	**1.31E+07**	**1.25**	**Y**	1.15	**56.6**	**3601.285**	**0.146**
123467-HxCDD	NotFnd		1.0089						1.10		3601.285	0.147
123789-HxCDD	37.99		**1.0118**	**1.0117**	**-0.2**	**1.15E+07**	**1.29**	**Y**	1.05	**52.2**	**3601.285**	**0.148**

Lab ID: OPR1_18911_DF **Acq'd: 19 Feb 2022 18:04 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18911_OPR001 **UTP: 21-Feb-2022 10:21:14 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 320-676-ZPS**

Datafile: 220219C02 **Report: 21 Feb 2022 10:33 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9836	0.9836	0	2.67E+06	1.00	Y	1.06	13.5	4312.014	0.183
1234678-HpCDD	**40.72**		**1.0002**	**1.0003**	**+0.2**	**1.08E+07**	**1.02**	**Y**	**1.06**	**54.9**	**4312.014**	**0.183**
OCDD	**43.42**		**1.0003**	**1.0003**	**0**	**1.48E+07**	**0.91**	**Y**	**1.13**	**112**	**3115.786**	**0.284**
OCDD-a	43.41	**EMPC**	1.0002	1.0002	0	6.52E+05	3.38	N	0.07	77.2	4555.212	6.49
1368-TCDF	22.37		0.8191	0.8181	-1.3	6.15E+06	0.76	Y	1.08	15.8	2688.114	0.0822
1468-TCDF	NotFnd		0.8408						1.08		2688.114	0.0822
2468-TCDF	23.62		0.8645	0.8639	-0.9	1.47E+06	0.84	Y	1.08	3.77	2688.114	0.0822
1346/1246-TCDF	NotFnd		0.8772						1.08		2688.114	0.0822
1347/1378/1247-TCDF	NotFnd		0.8833						1.08		2688.114	0.0822
1348-TCDF	NotFnd		0.8932						1.08		2688.114	0.0822
1248/1367/1379-TCDF	NotFnd		0.8980						1.08		2688.114	0.0822
1268-TCDF	NotFnd		0.9119						1.08		2688.114	0.0822
1467-TCDF	NotFnd		0.9170						1.08		2688.114	0.0822
1478-TCDF	NotFnd		0.9234						1.08		2688.114	0.0822
1369/1237-TCDF	NotFnd		0.9369						1.08		2688.114	0.0822
2467-TCDF	NotFnd		0.9415						1.08		2688.114	0.0822
2368-TCDF	NotFnd		0.9475						1.08		2688.114	0.0822
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9507						1.08		2688.114	0.0822
1278-TCDF	NotFnd		0.9676						1.08		2688.114	0.0822
1349-TCDF	NotFnd		0.9722						1.08		2688.114	0.0822
1267-TCDF	NotFnd		0.9777						1.08		2688.114	0.0822
2346/1249-TCDF	NotFnd		0.9843						1.08		2688.114	0.0822
2347/1279-TCDF	NotFnd		0.9926						1.08		2688.114	0.0822
2348-TCDF	27.25		0.9968	0.9968	0	6.14E+06	0.83	Y	1.08	15.8	2688.114	0.0822
2378-TCDF	**27.36**		**1.0008**	**1.0008**	**0**	**4.24E+06**	**0.74**	**Y**	**1.08**	**10.9**	**2688.114**	**0.0822**
2367/3467-TCDF	NotFnd		1.0142						1.08		2688.114	0.0822
1269-TCDF	NotFnd		1.0235						1.08		2688.114	0.0822
1239-TCDF	NotFnd		1.0329						1.08		2688.114	0.0822
1289-TCDF	29.39		1.0742	1.0748	+1.1	6.68E+06	0.76	Y	1.08	17.2	2688.114	0.0822
13468/12468-PeCDF	29.31		0.9122	0.9116	-1.1	3.29E+07	1.55	Y	1.02	92.6	3214.62	0.0834
13678/13467/12467-PeCDF	NotFnd		0.9606						1.02		8840.749	0.229
12368/13478/12478-PeCDF	NotFnd		0.9655						1.02		8840.749	0.229
14678-PeCDF	NotFnd		0.9685						1.02		8840.749	0.229
13479-PeCDF	NotFnd		0.9716						1.02		8840.749	0.229
13469/12479-PeCDF	NotFnd		0.9794						1.02		8840.749	0.229
12346-PeCDF	NotFnd		0.9836						1.02		8840.749	0.229

Lab ID: OPR1_18911_DF | **Acq'd: 19 Feb 2022 18:04 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18911_OPR001 | **UTP: 21-Feb-2022 10:21:14 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 320-676-ZPS**

Datafile: 220219C02 | **Report: 21 Feb 2022 10:33 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9866						1.02		8840.749	0.229
12347-PeCDF	NotFnd		0.9891						1.02		8840.749	0.229
12348-PeCDF	NotFnd		0.9938						1.02		8840.749	0.229
12378-PeCDF	**32.17**		**1.0005**	**1.0006**	**+0.2**	**1.82E+07**	**1.53**	**Y**	**1.02**	**48.7**	**8840.749**	**0.222**
12678/12367-PeCDF	NotFnd		1.0091						1.02		8840.749	0.229
12379-PeCDF	NotFnd		1.0144						1.02		8840.749	0.229
12679-PeCDF	NotFnd		0.9927						1.02		8840.749	0.229
23467/12369-PeCDF	NotFnd		0.9965						1.02		8840.749	0.229
23478-PeCDF	**33.29**		**1.0005**	**1.0005**	**0**	**1.83E+07**	**1.54**	**Y**	**1.02**	**54.1**	**8840.749**	**0.238**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		8840.749	0.229
12349-PeCDF	NotFnd		1.0101						1.02		8840.749	0.229
12389-PeCDF	34.37		1.0330	1.0330	0	3.90E+06	1.60	Y	1.02	11	8840.749	0.229
123468-HxCDF	35.16		0.9622	0.9622	0	3.94E+07	1.25	Y	1.19	126	4297.3	0.115
124678/134678-HxCDF	NotFnd		0.9678						1.19		4297.3	0.115
134679-HxCDF	NotFnd		0.9741						1.19		4297.3	0.115
124679-HxCDF	NotFnd		0.9795						1.19		4297.3	0.115
124689-HxCDF	NotFnd		0.9856						1.19		4297.3	0.115
123467-HxCDF	NotFnd		0.9972						1.19		4297.3	0.115
123478-HxCDF	**36.56**		**1.0004**	**1.0005**	**+0.2**	**1.58E+07**	**1.23**	**Y**	**1.27**	**51.5**	**4297.3**	**0.112**
123678-HxCDF	**36.70**		**1.0004**	**1.0005**	**+0.2**	**1.80E+07**	**1.23**	**Y**	**1.15**	**53.7**	**4297.3**	**0.107**
123479-HxCDF	NotFnd		1.0048						1.19		4297.3	0.115
123469-HxCDF	NotFnd		1.0089						1.19		4297.3	0.115
123679-HxCDF	NotFnd		0.9942						1.19		4297.3	0.115
234678-HxCDF	**37.38**		**1.0005**	**1.0005**	**0**	**1.87E+07**	**1.23**	**Y**	**1.19**	**54.4**	**4297.3**	**0.116**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4297.3	0.115
123789-HxCDF	**38.35**		**1.0004**	**1.0004**	**0**	**1.29E+07**	**1.22**	**Y**	**1.16**	**48.7**	**4297.3**	**0.129**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		4297.3	0.115
1234678-HpCDF	**39.77**		**1.0003**	**1.0003**	**0**	**1.47E+07**	**1.03**	**Y**	**1.37**	**50.9**	**2466.46**	**0.0653**
1234679-HpCDF	NotFnd		1.0068						1.34		2466.46	0.0792
1234689-HpCDF	NotFnd		1.0104						1.34		2466.46	0.0792
1234789-HpCDF	**41.18**		**1.0003**	**1.0003**	**0**	**1.15E+07**	**1.03**	**Y**	**1.31**	**51.7**	**2466.46**	**0.0967**
OCDF	**43.59**		**1.0002**	**1.0002**	**0**	**1.69E+07**	**0.89**	**Y**	**1.07**	**103**	**4841.252**	**0.375**
OCDF-a	43.58		1.0001	1.0001	0	1.01E+06	2.78	Y	0.07	99.1	3888.99	4.86

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220219C02	Analysis Date:	19-FEB-2022 18:04:19
Lab ID:	OPR1_18911_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11.7	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	50.5	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	54.5	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	56.6	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	52.2	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	54.9	35	-	70	Y
OCDD	100	112	78	-	144	Y
2,3,7,8-TCDF	10	10.9	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	48.7	40	-	67	Y
2,3,4,7,8-PeCDF	50	54.1	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	51.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53.7	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	54.4	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	48.7	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	50.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	51.7	39	-	69	Y
OCDF	100	103	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Feb 2022 10:33 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220219C02	Analysis Date:	19-FEB-2022 18:04:19
Lab ID:	OPR1_18911_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	91.5	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	90.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	98.2	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	102	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	92	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	97.5	26	-	166	Y
13C-OCDD	200	180	26	-	397	Y
13C-2,3,7,8-TCDF	100	77.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	91.4	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	85.6	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	96.2	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	103	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	111	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	94.4	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	104	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	95.5	20	-	186	Y
13C-OCDF	200	182	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	39.1	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 21 Feb 2022 10:33 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220219C02	Analysis Date:	19-FEB-2022 18:04:19
Lab ID:	OPR1_18911_DF		

Window Defining Standards Results

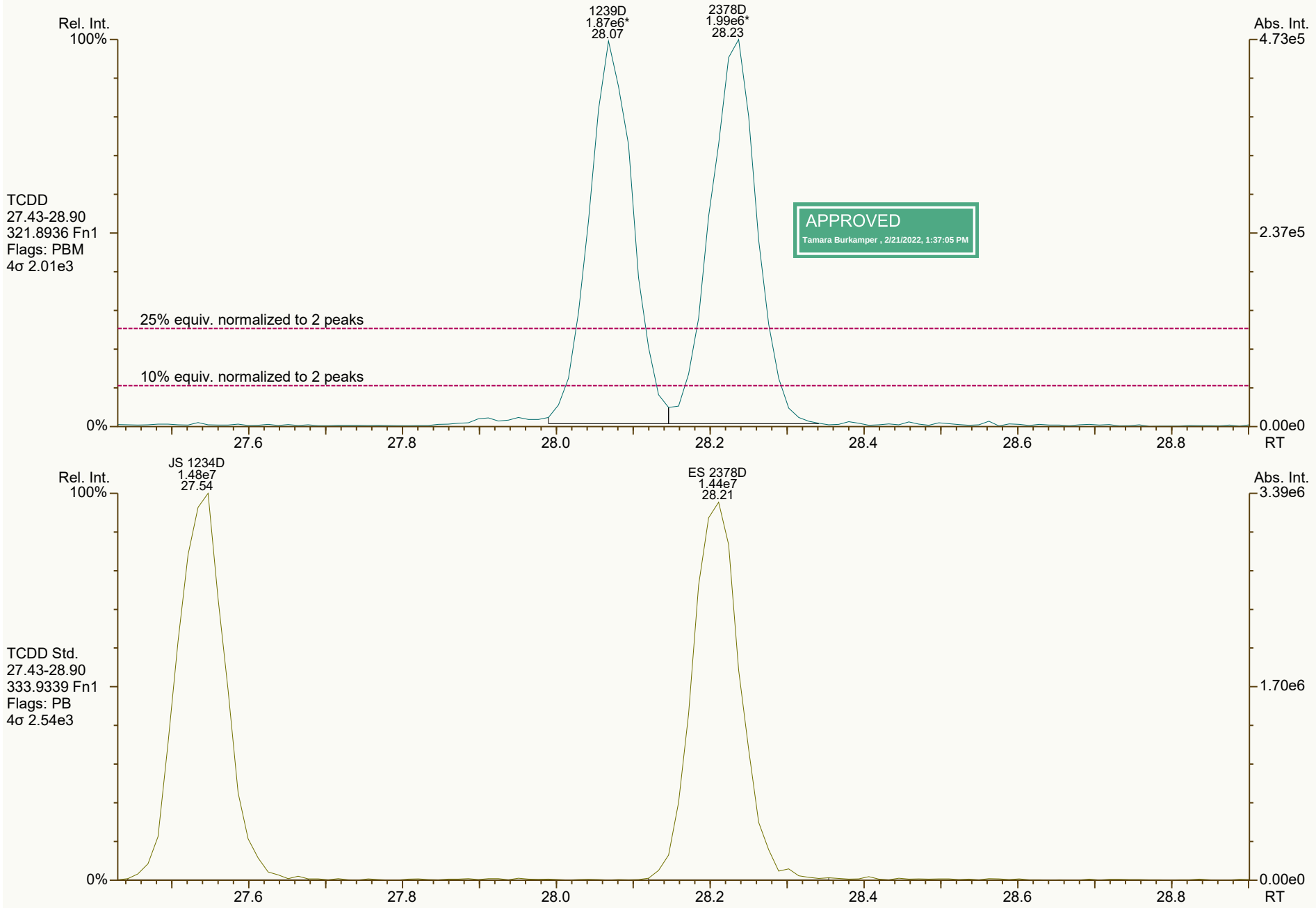
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.53	1289-TCDD	29.21
12479/12468-PeCDD	31.11	12389-PeCDD	34.07
124679/124689-HxCDD	35.82	123789-HxCDD	37.99
1234679-HpCDD	40.04	1234678-HpCDD	40.72
1368-TCDF	22.37	1289-TCDF	29.39
13468/12468-PeCDF	29.31	12389-PeCDF	34.37
123468-HxCDF	35.16	123789-HxCDF	38.35
1234678-HpCDF	39.77	1234789-HpCDF	41.18

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.07	2378-TCDD	28.23
2348-TCDF	27.25	2378-TCDF	27.36

Processed: 21 Feb 2022 10:33 Analyst: TF

SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02



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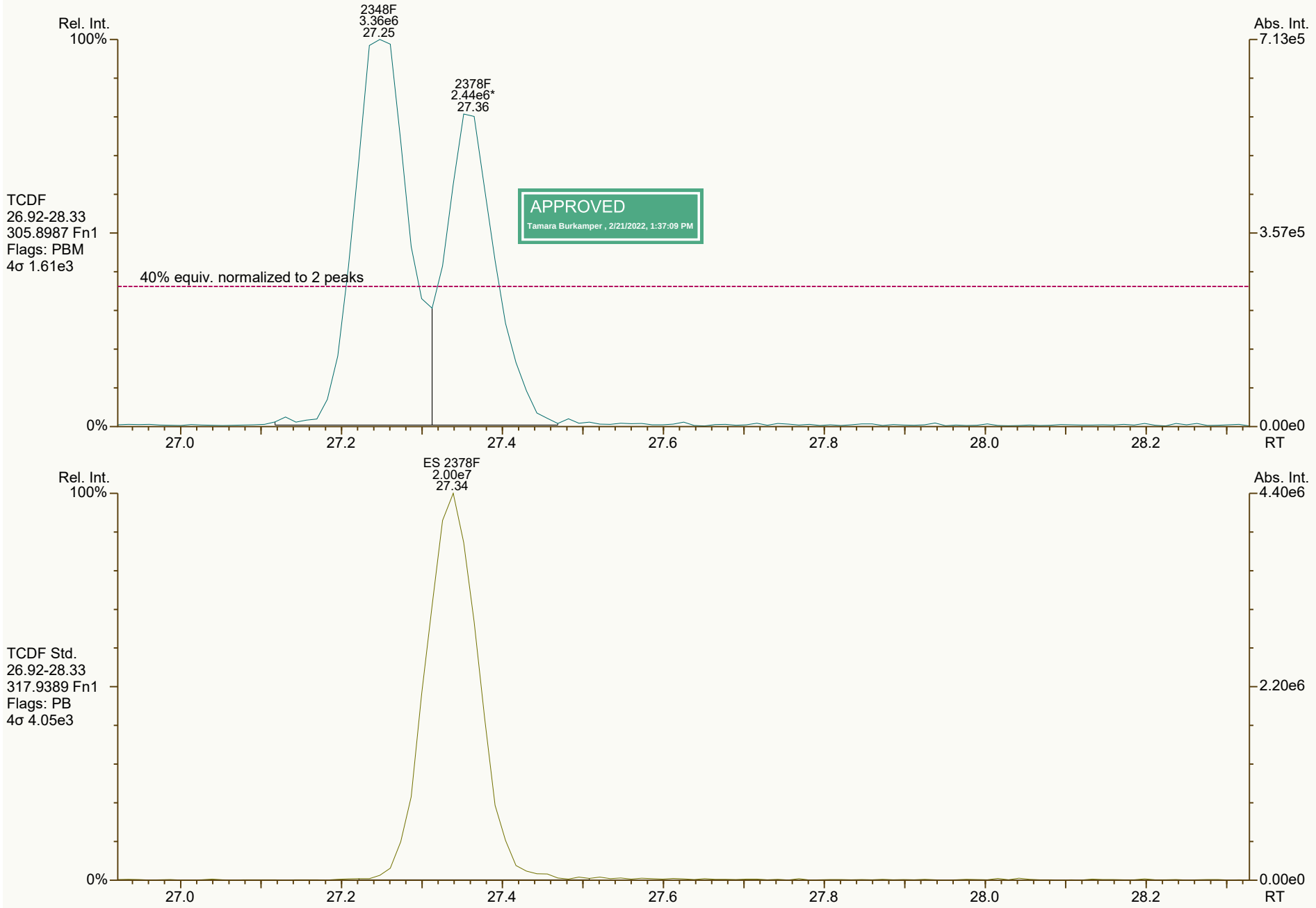
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
Revised: 21-Feb-2022 09:56 (DTF) Printed: 21-Feb-2022 10:34

SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02



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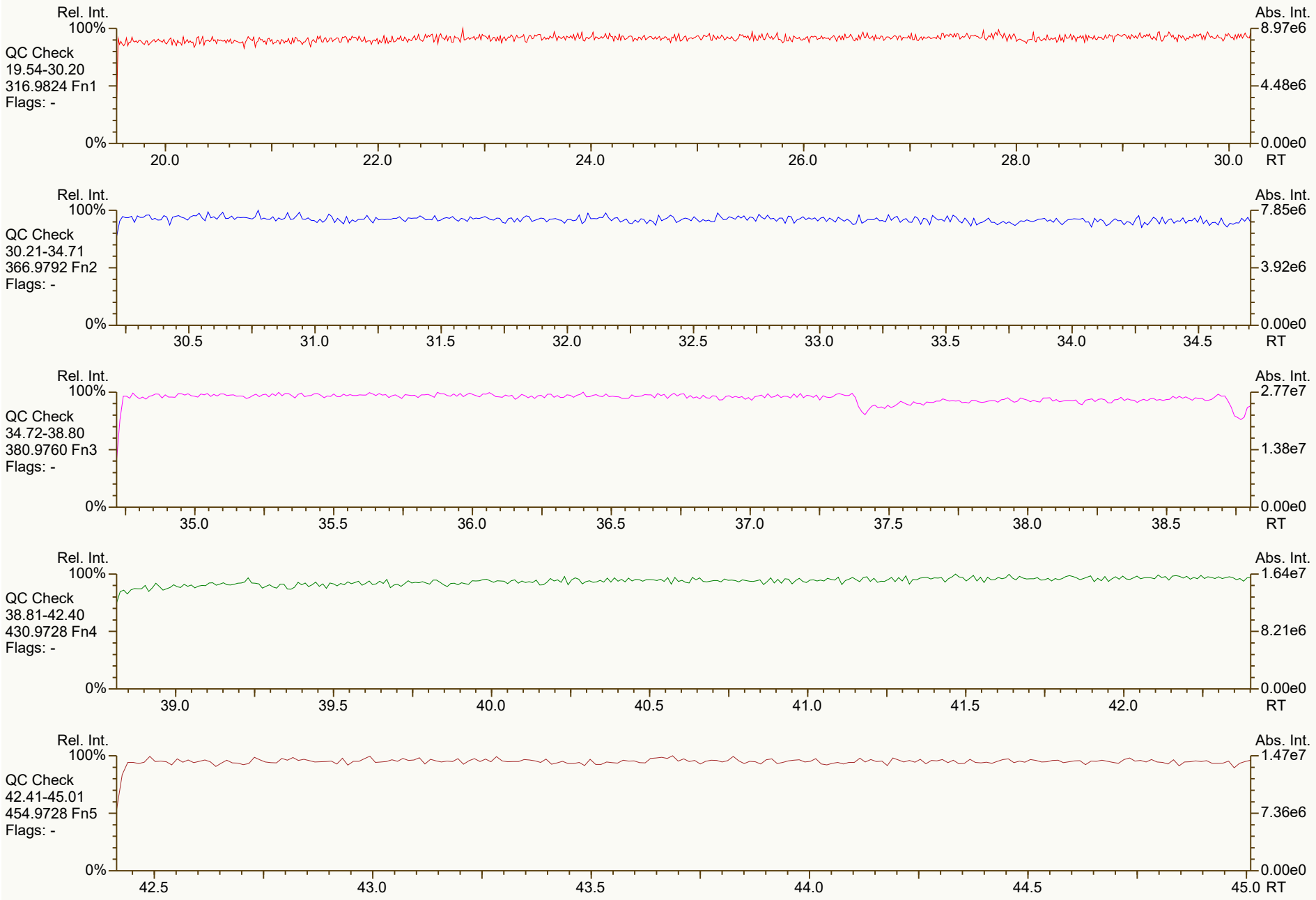
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
Revised: 21-Feb-2022 09:56 (DTF) Printed: 21-Feb-2022 10:34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QC Check
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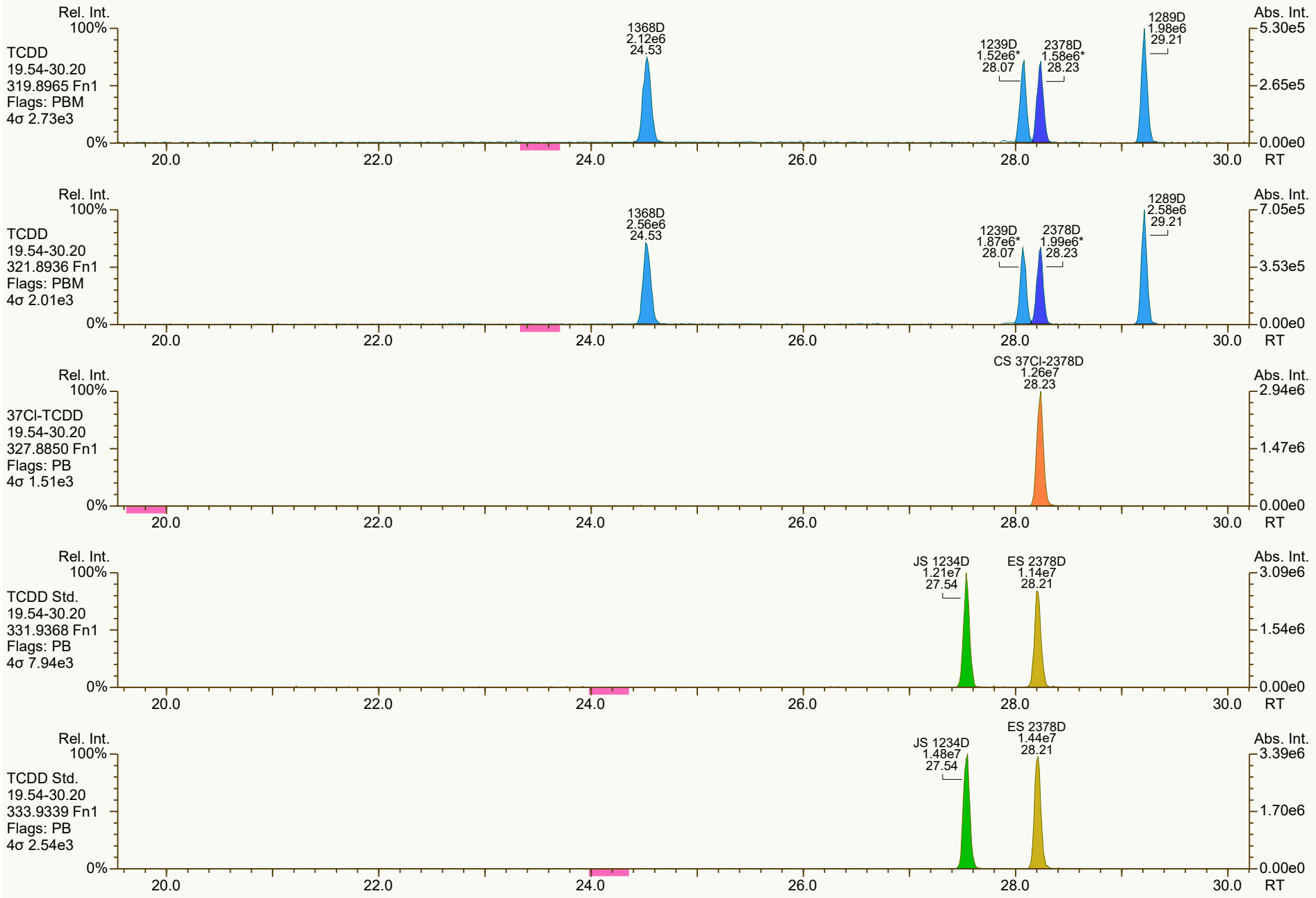
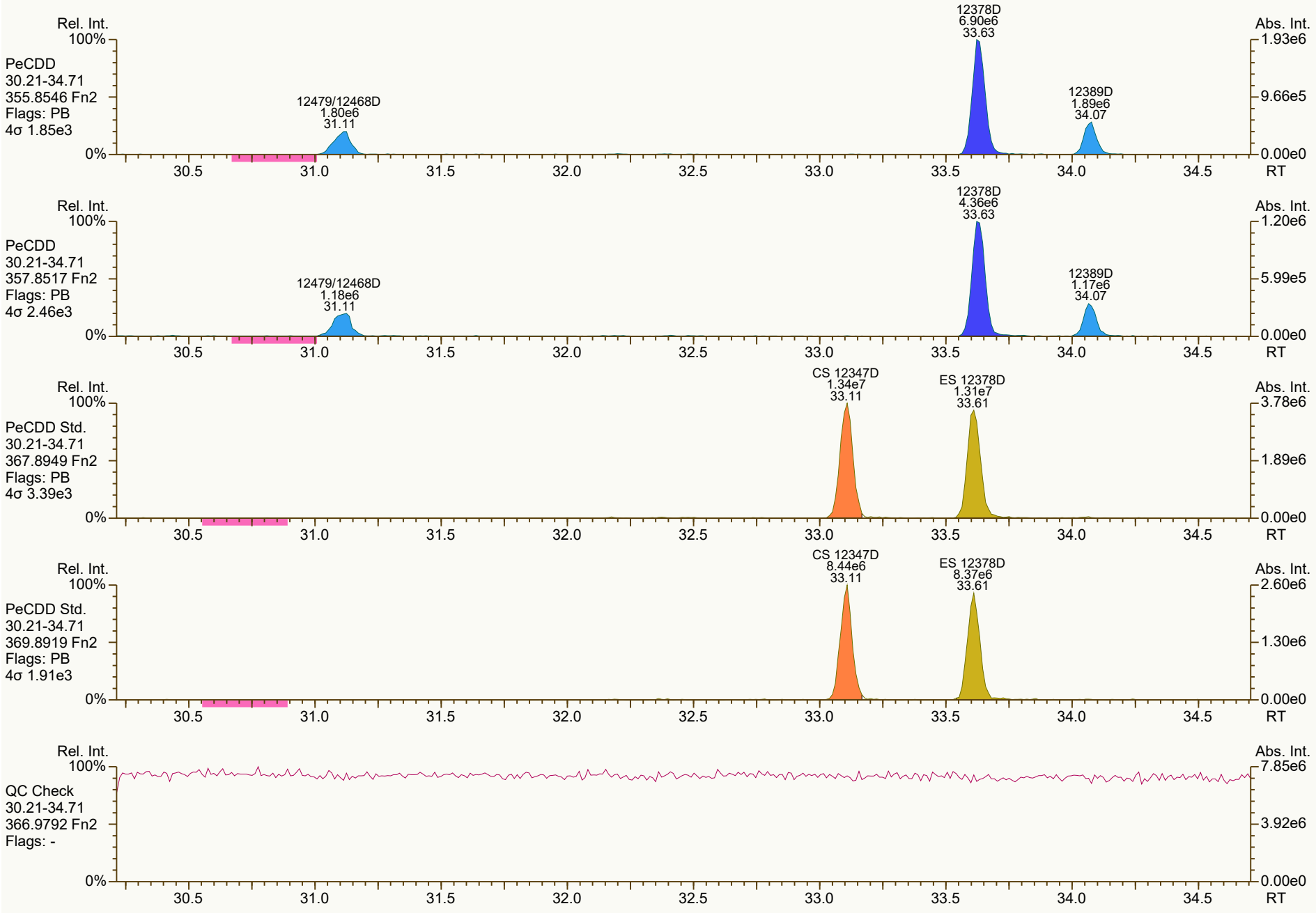
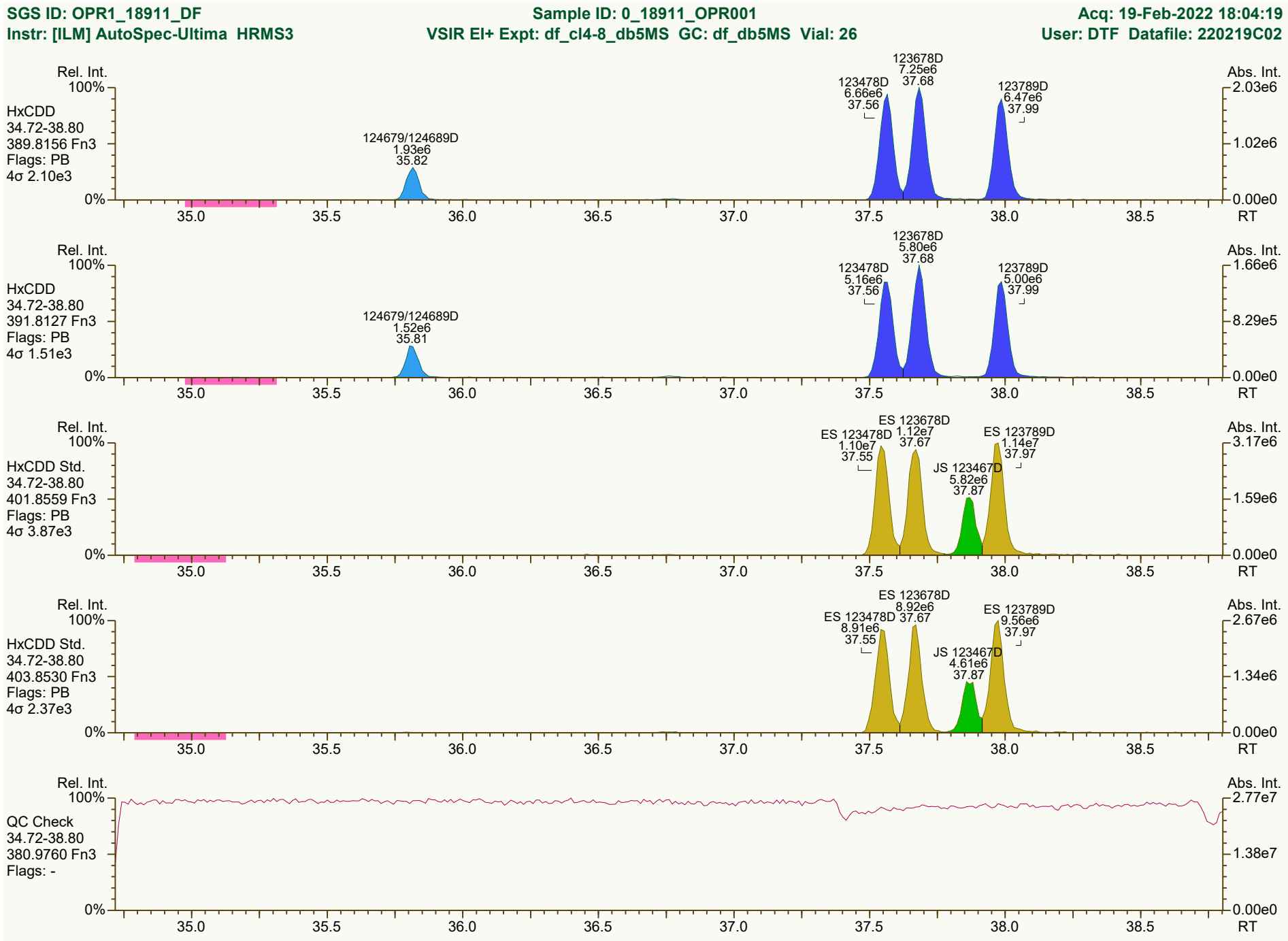
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
8.97e6
4.48e6
0.00e0
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
7.85e6
3.92e6
0.00e0
Rel. Int.
100%
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
2.77e7
1.38e7
0.00e0
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.64e7
8.21e6
0.00e0
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.47e7
7.36e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: PBM
4σ 2.73e3
0%
1368D
2.12e6
24.53
1239D
1.52e6*
28.07
2378D
1.58e6*
28.23
1289D
1.98e6
29.21
Abs. Int.
5.30e5
2.65e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: PBM
4σ 2.01e3
0%
1368D
2.56e6
24.53
1239D
1.87e6*
28.07
2378D
1.99e6*
28.23
1289D
2.58e6
29.21
Abs. Int.
7.05e5
3.53e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.51e3
0%
CS 37Cl-2378D
1.26e7
28.23
Abs. Int.
2.94e6
1.47e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 7.94e3
0%
JS 1234D
1.21e7
27.54
ES 2378D
1.14e7
28.21
Abs. Int.
3.09e6
1.54e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 2.54e3
0%
JS 1234D
1.48e7
27.54
ES 2378D
1.44e7
28.21
Abs. Int.
3.39e6
1.70e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.21-34.71
355.8546 Fn2
Flags: PB
4σ 1.85e3
12479/12468D
1.80e6
31.11
12378D
6.90e6
33.63
12389D
1.89e6
34.07
Abs. Int.
1.93e6
9.66e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PB
4σ 2.46e3
12479/12468D
1.18e6
31.11
12378D
4.36e6
33.63
12389D
1.17e6
34.07
Abs. Int.
1.20e6
5.99e5
0.00e0
0%
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PB
4σ 3.39e3
CS 12347D
1.34e7
33.11
ES 12378D
1.31e7
33.61
Abs. Int.
3.78e6
1.89e6
0.00e0
0%
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 1.91e3
CS 12347D
8.44e6
33.11
ES 12378D
8.37e6
33.61
Abs. Int.
2.60e6
1.30e6
0.00e0
0%
RT
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
Abs. Int.
7.85e6
3.92e6
0.00e0
0%
RT

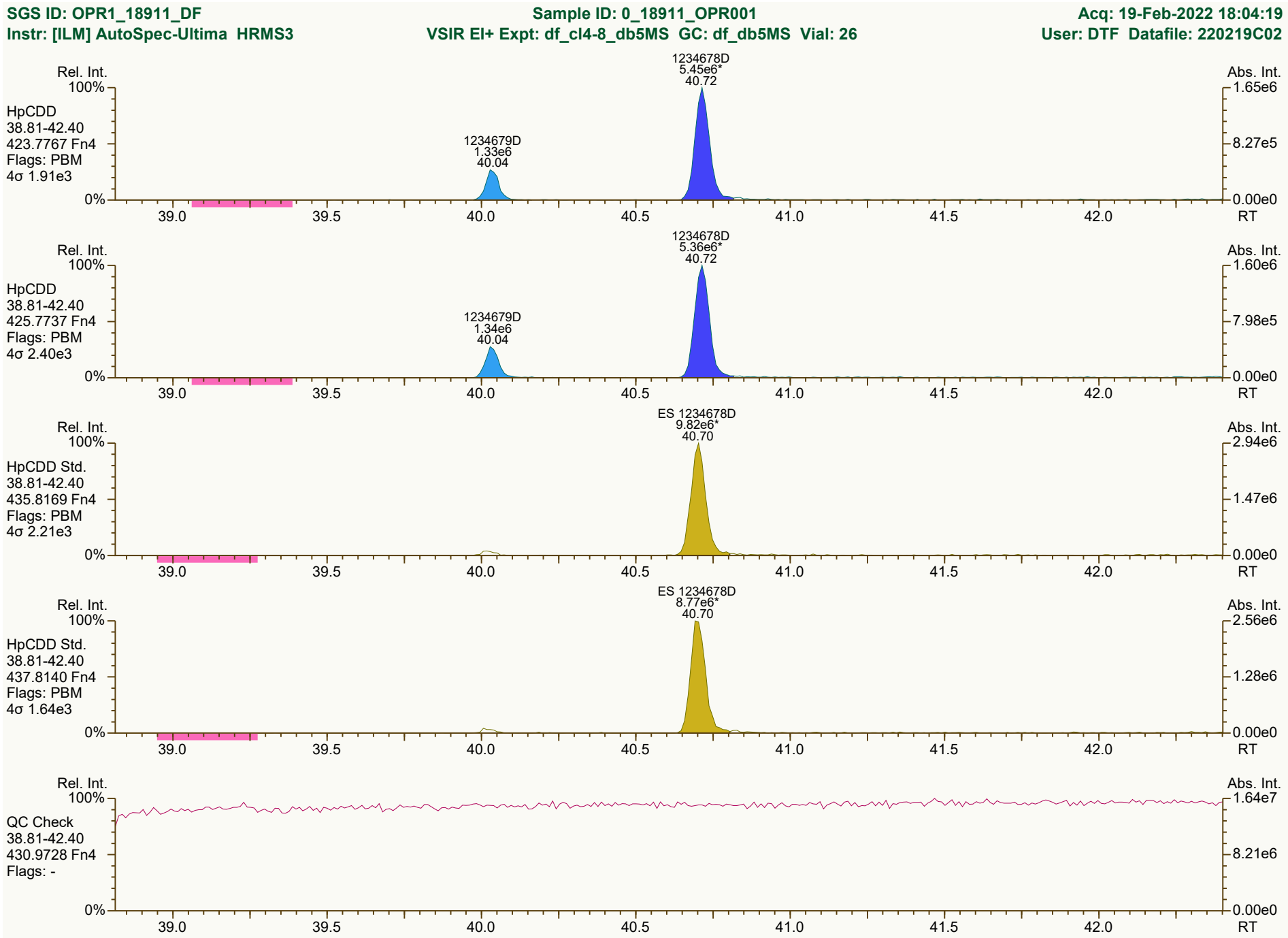


Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4808, 0287 scc: 320-676
PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:36 Page 4 of 12

SGS ID: OPR1_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

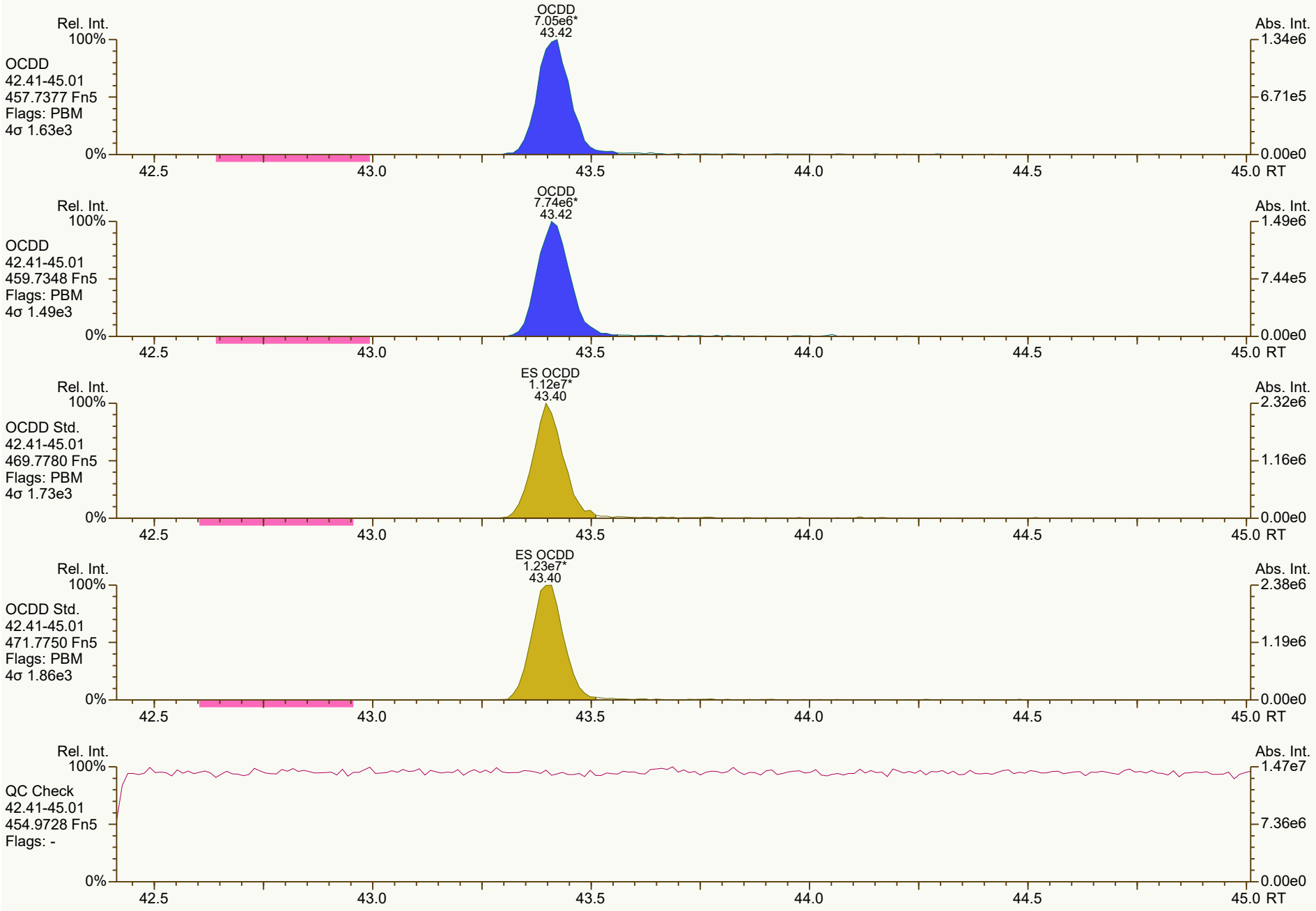
Sample ID: 0_18911_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26

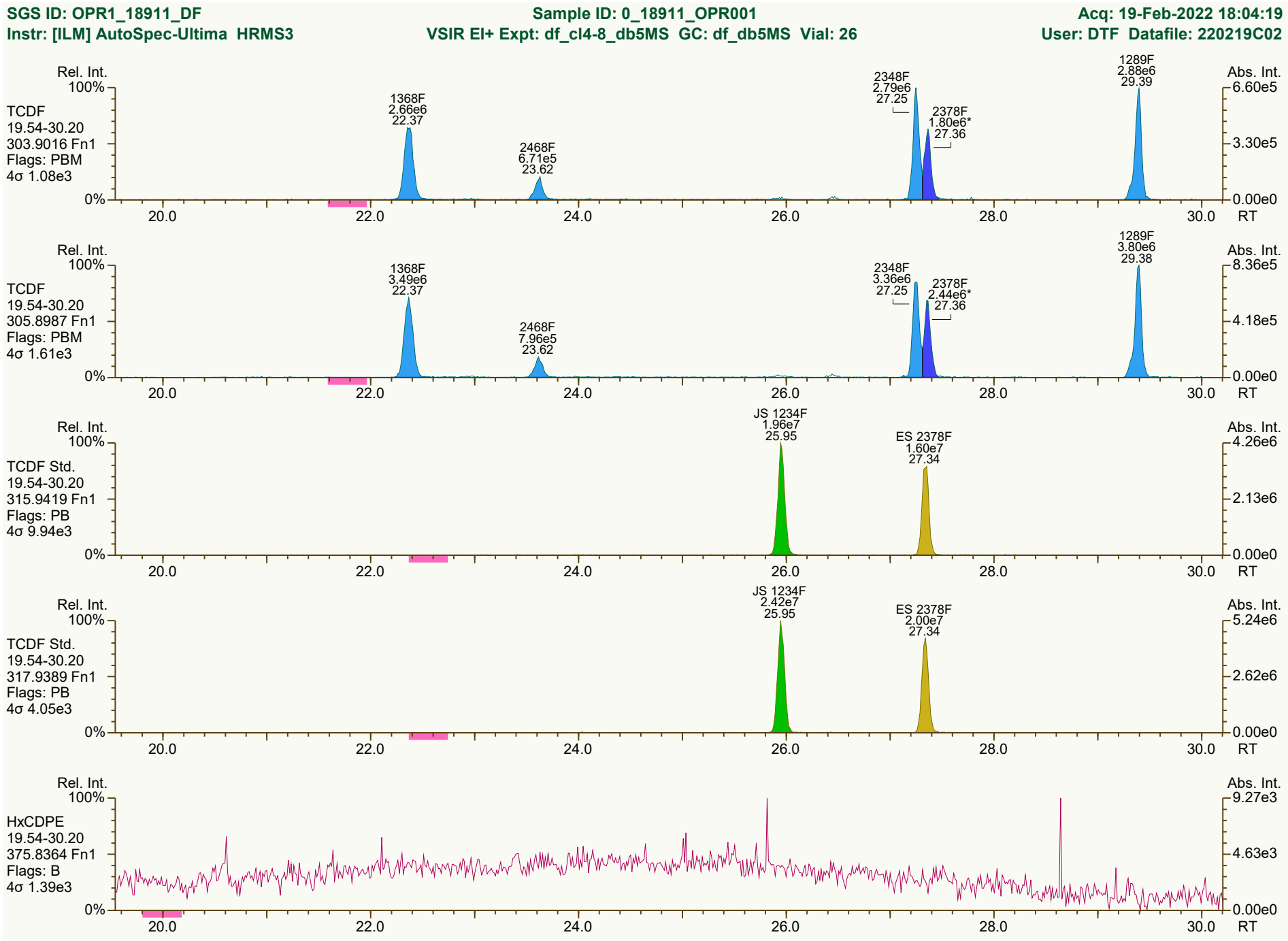
Acq: 19-Feb-2022 18:04:19
User: DTF Datafile: 220219C02



Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4827, 2312 scc: 320-676

Peak annotation: Areas, Centroids
Revised: 21-Feb-2022 09:56 (DTF) Printed: 21-Feb-2022 10:36 Page 5 of 12

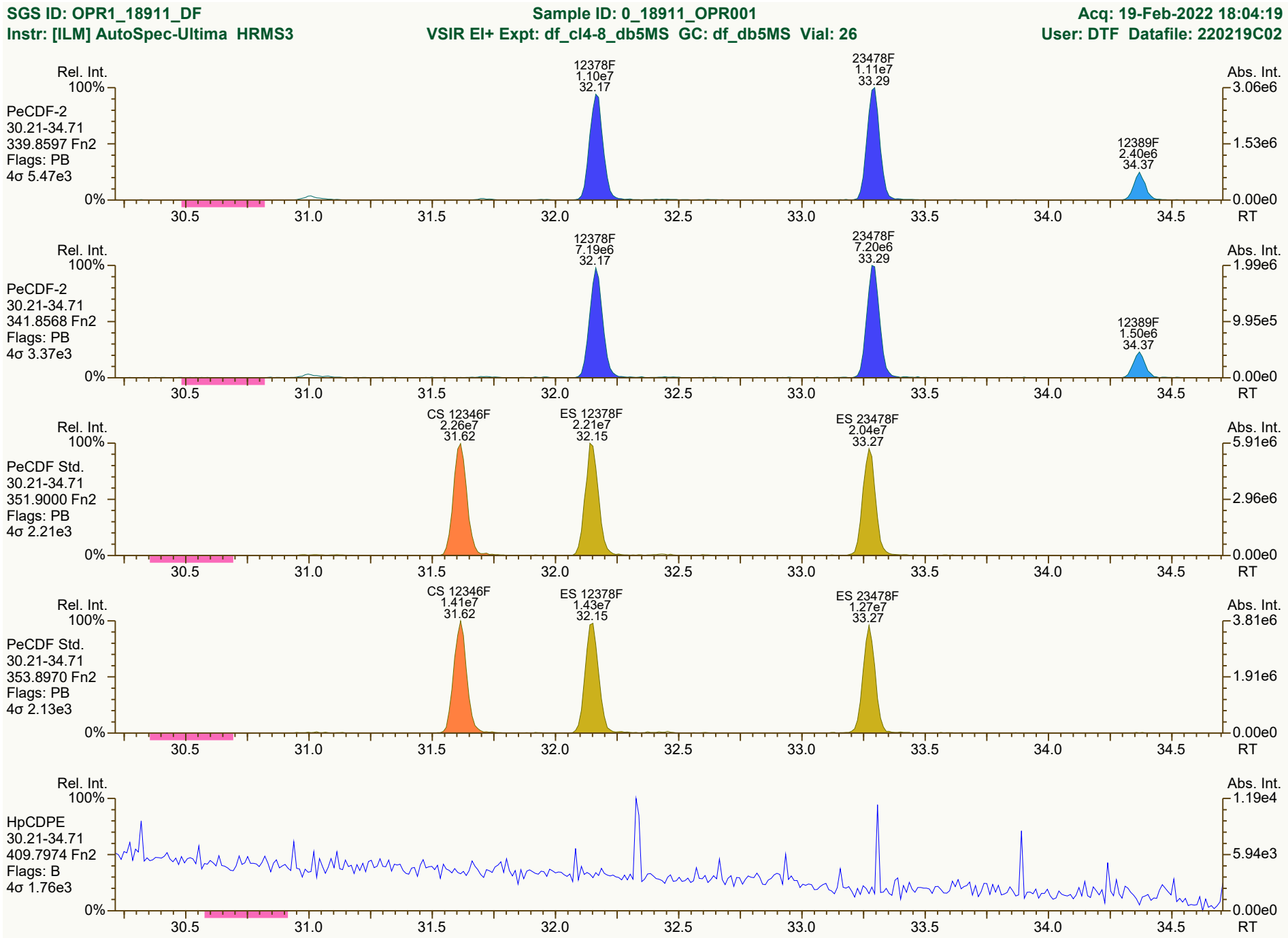

OCDD
7.05e6*
43.42
Rel. Int.
100%
OCDD
42.41-45.01
457.7377 Fn5
Flags: PBM
4σ 1.63e3
0%
Abs. Int.
1.34e6
6.71e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
7.74e6*
43.42
OCDD
42.41-45.01
459.7348 Fn5
Flags: PBM
4σ 1.49e3
1.49e6
7.44e5
ES OCDD
1.12e7*
43.40
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PBM
4σ 1.73e3
2.32e6
1.16e6
ES OCDD
1.23e7*
43.40
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PBM
4σ 1.86e3
2.38e6
1.19e6
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
1.47e7
7.36e6

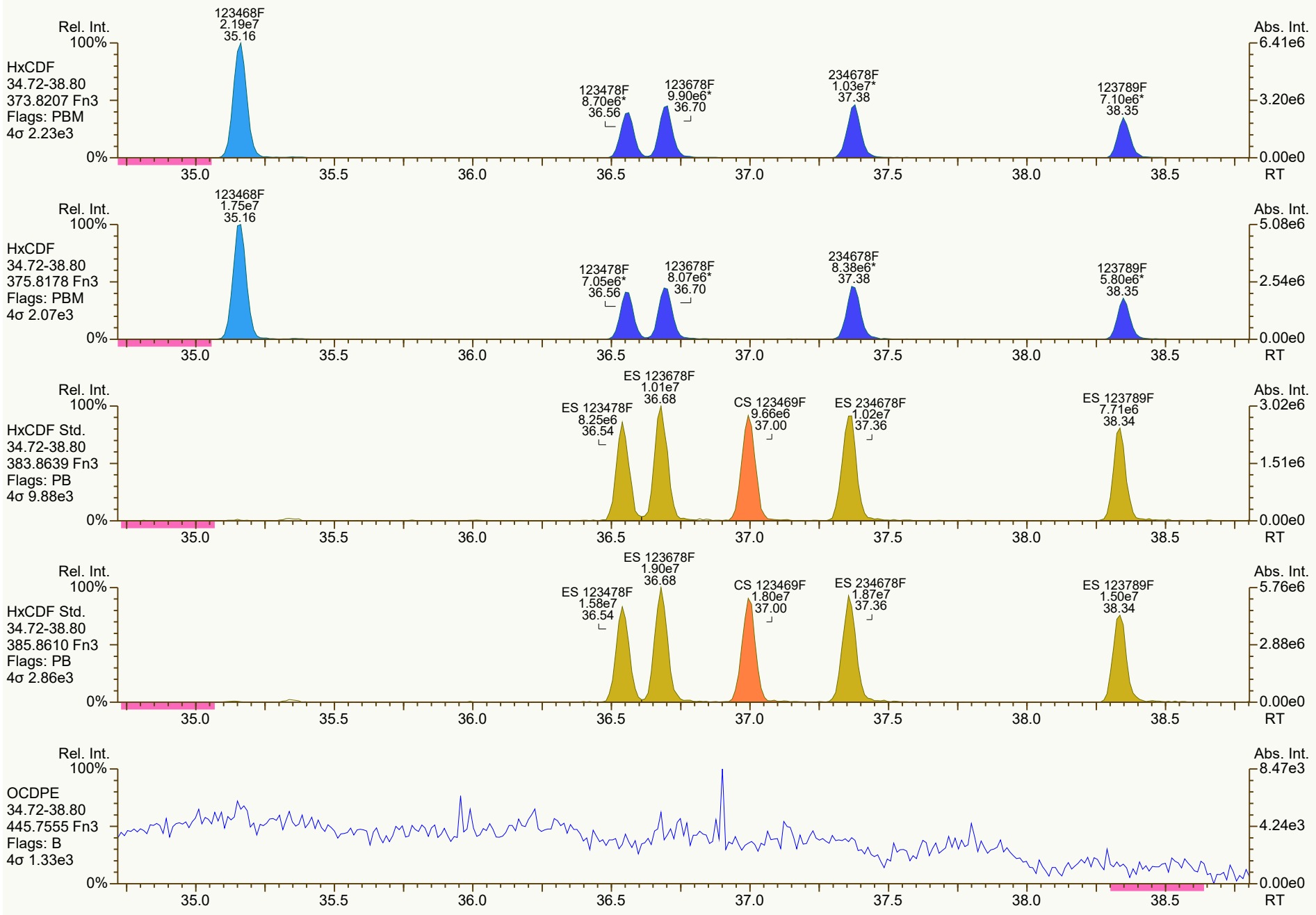

SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
TCDF
19.54-30.20
303.9016 Fn1
Flags: PBM
4σ 1.08e3
1368F 2.66e6 22.37
2468F 6.71e5 23.62
2348F 2.79e6 27.25
2378F 1.80e6* 27.36
1289F 2.88e6 29.39
6.60e5
3.30e5
0.00e0
TCDF
19.54-30.20
305.8987 Fn1
Flags: PBM
4σ 1.61e3
1368F 3.49e6 22.37
2468F 7.96e5 23.62
2348F 3.36e6 27.25
2378F 2.44e6* 27.36
1289F 3.80e6 29.38
8.36e5
4.18e5
0.00e0
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 9.94e3
JS 1234F 1.96e7 25.95
ES 2378F 1.60e7 27.34
4.26e6
2.13e6
0.00e0
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 4.05e3
JS 1234F 2.42e7 25.95
ES 2378F 2.00e7 27.34
5.24e6
2.62e6
0.00e0
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.39e3
9.27e3
4.63e3
0.00e0
100%
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1430, 6706, 7026 scc: 320-676
Revised: 21-Feb-2022 09:56 (DTF) Printed: 21-Feb-2022 10:36 Page 7 of 12

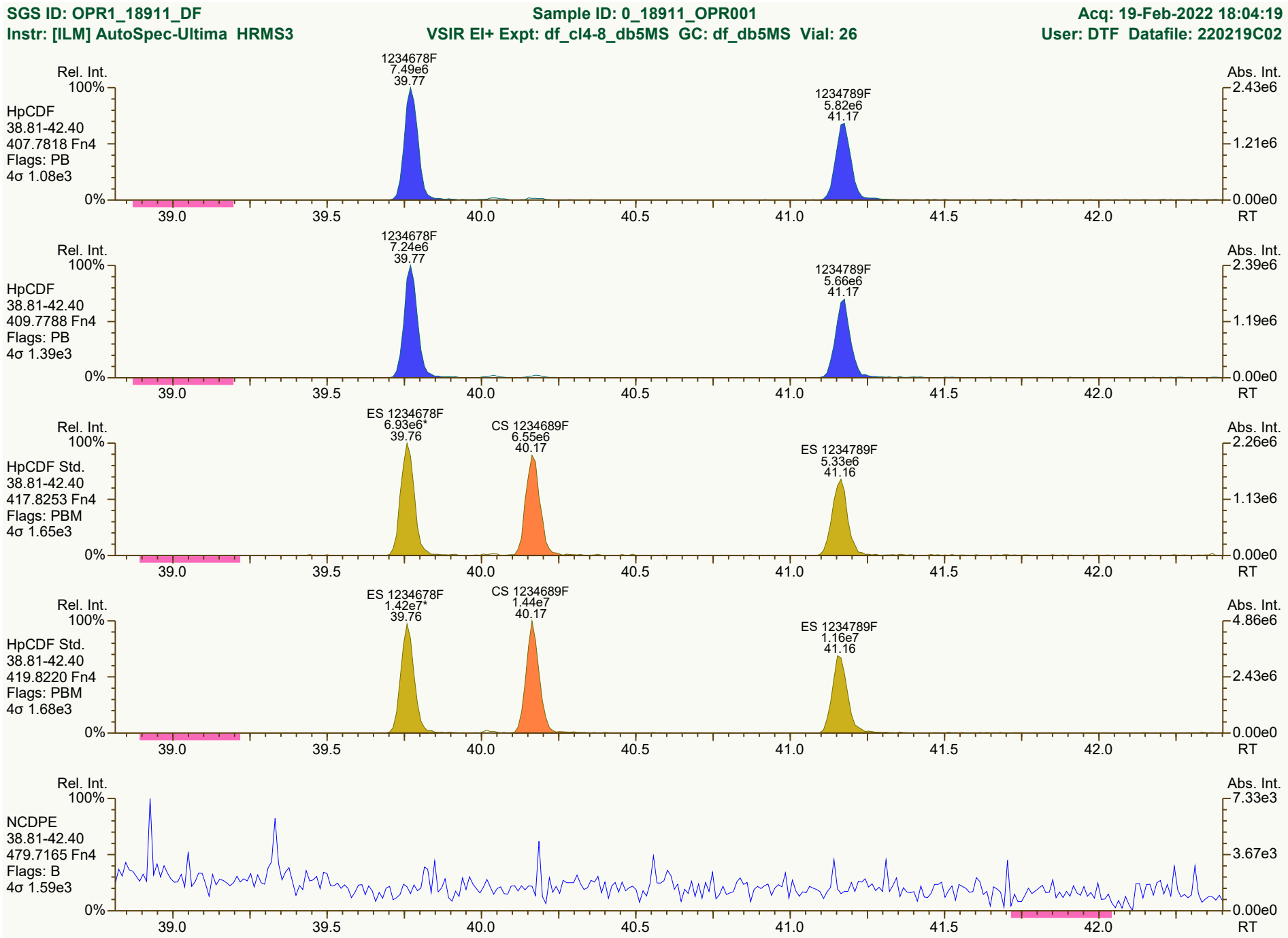
SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02



Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6476 scc: 320-676
PKD: 21-Feb-2022 09:55 Printed: 21-Feb-2022 10:36 Page 8 of 12


SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PB
4σ 5.47e3
12378F
1.10e7
32.17
23478F
1.11e7
33.29
12389F
2.40e6
34.37
3.06e6
1.53e6
0.00e0
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: PB
4σ 3.37e3
12378F
7.19e6
32.17
23478F
7.20e6
33.29
12389F
1.50e6
34.37
1.99e6
9.95e5
0.00e0
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 2.21e3
CS 12346F
2.26e7
31.62
ES 12378F
2.21e7
32.15
ES 23478F
2.04e7
33.27
5.91e6
2.96e6
0.00e0
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 2.13e3
CS 12346F
1.41e7
31.62
ES 12378F
1.43e7
32.15
ES 23478F
1.27e7
33.27
3.81e6
1.91e6
0.00e0
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: B
4σ 1.76e3
1.19e4
5.94e3
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6039, 5543, 7701 scc: 320-676
PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:36 Page 9 of 12


Rel. Int.
100%
HxCDF
34.72-38.80
373.8207 Fn3
Flags: PBM
4σ 2.23e3
0%
123468F
2.19e7
35.16
123478F
8.70e6*
36.56
123678F
9.90e6*
36.70
234678F
1.03e7*
37.38
123789F
7.10e6*
38.35
Abs. Int.
6.41e6
3.20e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.72-38.80
375.8178 Fn3
Flags: PBM
4σ 2.07e3
0%
123468F
1.75e7
35.16
123478F
7.05e6*
36.56
123678F
8.07e6*
36.70
234678F
8.38e6*
37.38
123789F
5.80e6*
38.35
Abs. Int.
5.08e6
2.54e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: PB
4σ 9.88e3
0%
ES 123678F
1.01e7
36.68
ES 123478F
8.25e6
36.54
CS 123469F
9.66e6
37.00
ES 234678F
1.02e7
37.36
ES 123789F
7.71e6
38.34
Abs. Int.
3.02e6
1.51e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: PB
4σ 2.86e3
0%
ES 123678F
1.90e7
36.68
ES 123478F
1.58e7
36.54
CS 123469F
1.80e7
37.00
ES 234678F
1.87e7
37.36
ES 123789F
1.50e7
38.34
Abs. Int.
5.76e6
2.88e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.72-38.80
445.7555 Fn3
Flags: B
4σ 1.33e3
0%
Abs. Int.
8.47e3
4.24e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PB
4σ 1.08e3
1234678F
7.49e6
39.77
1234789F
5.82e6
41.17
2.43e6
1.21e6
0.00e0
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PB
4σ 1.39e3
1234678F
7.24e6
39.77
1234789F
5.66e6
41.17
2.39e6
1.19e6
0.00e0
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PBM
4σ 1.65e3
ES 1234678F
6.93e6*
39.76
CS 1234689F
6.55e6
40.17
ES 1234789F
5.33e6
41.16
2.26e6
1.13e6
0.00e0
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PBM
4σ 1.68e3
ES 1234678F
1.42e7*
39.76
CS 1234689F
1.44e7
40.17
ES 1234789F
1.16e7
41.16
4.86e6
2.43e6
0.00e0
NCDPE
38.81-42.40
479.7165 Fn4
Flags: B
4σ 1.59e3
7.33e3
3.67e3
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDF
7.97e6*
43.59
Rel. Int.
Abs. Int.
OCDF
42.41-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
OCDF
8.93e6*
43.59
OCDF
42.41-45.01
443.7398 Fn5
Flags: PBM
4σ 3.16e3
ES OCDF
1.44e7
43.58
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: PB
4σ 2.14e3
ES OCDF
1.63e7
43.58
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: PB
4σ 1.74e3
DCDPE
42.41-45.01
513.6775 Fn5
Flags: PB
4σ 1.21e3
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
1.72e6
8.59e5
0.00e0
1.82e6
9.12e5
2.83e6
1.41e6
3.22e6
1.61e6
7.11e3
3.55e3

Lab ID: OPR2_18911_DF **Acq'd: 20 Feb 2022 05:55 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18911_OPR002 **UTP: 21-Feb-2022 10:21:17 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 488-895-CRP**

Datafile: 220219C17 **Report: 21 Feb 2022 10:33 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25		1.0008	1.0008	0	3.07E+06	0.81	Y	1.18	11.1	3950.923	0.148
12378-PeCDD	33.64		1.0007	1.0006	-0.2	1.02E+07	1.56	Y	1.04	47.5	5313.903	0.214
123478-HxCDD	37.56		1.0004	1.0004	0	1.08E+07	1.27	Y	1.09	52.2	4150.967	0.177
123678-HxCDD	37.69		1.0036	1.0036	0	1.22E+07	1.26	Y	1.15	54.5	4150.967	0.16
123789-HxCDD	37.99		1.0118	1.0117	-0.2	1.08E+07	1.25	Y	1.05	51.6	4150.967	0.164
1234678-HpCDD	40.71		1.0002	1.0003	+0.2	9.84E+06	1.04	Y	1.06	52.2	4096.641	0.179
OCDD	43.40		1.0003	1.0003	0	1.41E+07	0.87	Y	1.13	109	3700.127	0.359
2378-TCDF	27.38		1.0008	1.0008	0	3.77E+06	0.76	Y	1.08	10.7	4704.21	0.149
12378-PeCDF	32.18		1.0005	1.0005	0	1.62E+07	1.53	Y	1.02	49.7	5913.964	0.17
23478-PeCDF	33.30		1.0005	1.0005	0	1.67E+07	1.53	Y	1.02	50.9	5913.964	0.162
123478-HxCDF	36.56		1.0004	1.0005	+0.2	1.43E+07	1.20	Y	1.27	51.4	6194.584	0.187
123678-HxCDF	36.70		1.0004	1.0005	+0.2	1.64E+07	1.24	Y	1.15	50.6	6194.584	0.157
234678-HxCDF	37.38		1.0005	1.0004	-0.2	1.70E+07	1.22	Y	1.19	50.7	6194.584	0.164
123789-HxCDF	38.35		1.0004	1.0004	0	1.20E+07	1.28	Y	1.16	47.8	6194.584	0.216
1234678-HpCDF	39.77		1.0003	1.0003	0	1.40E+07	1.02	Y	1.37	49.8	3861.13	0.103
1234789-HpCDF	41.17		1.0003	1.0003	0	1.03E+07	1.04	Y	1.31	49.1	3861.13	0.152
OCDF	43.57		1.0002	1.0002	0	1.64E+07	0.92	Y	1.07	103	4020.581	0.297

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0243	1.0243	0	2.34E+07	0.80	Y	1.05	97.9
ES 12378-PeCDD	33.62	1.2198	1.2200	+0.4	2.07E+07	1.60	Y	0.88	103
ES 123478-HxCDD	37.55	0.9916	0.9916	0	1.90E+07	1.28	Y	0.97	98.4
ES 123678-HxCDD	37.67	0.9947	0.9948	+0.2	1.96E+07	1.24	Y	0.94	104
ES 123789-HxCDD	37.97	1.0029	1.0027	-0.5	2.00E+07	1.24	Y	1.09	91.9
ES 1234678-HpCDD	40.70	1.0749	1.0747	-0.5	1.78E+07	1.04	Y	0.91	98
ES OCDD	43.39	1.1460	1.1458	-0.5	2.30E+07	0.90	Y	0.62	92.5
ES 2378-TCDF	27.36	1.0531	1.0533	+0.3	3.27E+07	0.80	Y	1.06	85.1
ES 12378-PeCDF	32.16	1.2378	1.2382	+0.8	3.18E+07	1.60	Y	0.91	96.4
ES 23478-PeCDF	33.28	1.2810	1.2814	+0.8	3.21E+07	1.62	Y	0.88	100
ES 123478-HxCDF	36.54	0.9650	0.9650	0	2.19E+07	0.52	Y	1.20	91.9
ES 123678-HxCDF	36.69	0.9688	0.9688	0	2.81E+07	0.55	Y	1.35	105
ES 234678-HxCDF	37.36	0.9866	0.9866	0	2.82E+07	0.56	Y	1.24	114
ES 123789-HxCDF	38.34	1.0125	1.0124	-0.2	2.16E+07	0.54	Y	1.16	94
ES 1234678-HpCDF	39.76	1.0501	1.0500	-0.2	2.05E+07	0.47	Y	0.97	107
ES 1234789-HpCDF	41.15	1.0870	1.0868	-0.5	1.61E+07	0.50	Y	0.85	95.3
ES OCDF	43.56	1.1505	1.1503	-0.5	2.97E+07	0.89	Y	0.81	92.3

Lab ID: OPR2_18911_DF | **Acq'd:** 20 Feb 2022 05:55 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR002 | **UTP:** 21-Feb-2022 10:21:17 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 488-895-CRP

Datafile: 220219C17 | **Report:** 21 Feb 2022 10:33 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.56		-	-	-	2.29E+07	0.79	Y	-	-
JS 1234-TCDF	25.97		-	-	-	3.62E+07	0.85	Y	-	-
JS 123467-HxCDD	37.87		-	-	-	9.94E+06	1.24	Y	-	-
CS 37Cl-2378-TCDD	28.25		1.0251	1.0252	+0.2	1.11E+07	n/a	-	1.20	101
CS 12347-PeCDD	33.11		1.2016	1.2017	+0.2	2.00E+07	1.54	Y	0.75	116
CS 12346-PeCDF	31.63		1.2172	1.2177	+0.9	3.25E+07	1.62	Y	0.85	105
CS 123469-HxCDF	37.00		0.9771	0.9771	0	2.43E+07	0.52	Y	1.12	109
CS 1234689-HpCDF	40.17		1.0608	1.0607	-0.2	1.87E+07	0.47	Y	0.89	106
~~SS 37Cl-2378-TCDD~~	~~28.25~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~1.11E+07~~	~~n/a~~		~~1.15~~	~~103~~
~~SS 12347-PeCDD~~	~~33.11~~		~~1.2016~~	~~1.2017~~	~~+0.2~~	~~2.00E+07~~	~~1.54~~	~~Y~~	~~0.86~~	~~113~~
~~SS 12346-PeCDF~~	~~31.63~~		~~1.2172~~	~~1.2177~~	~~+0.9~~	~~3.25E+07~~	~~1.62~~	~~Y~~	~~0.94~~	~~109~~
~~SS 123469-HxCDF~~	~~37.00~~		~~0.9771~~	~~0.9771~~	~~0~~	~~2.43E+07~~	~~0.52~~	~~Y~~	~~0.83~~	~~104~~
~~SS 1234689-HpCDF~~	~~40.17~~		~~1.0608~~	~~1.0607~~	~~-0.2~~	~~1.87E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~99.3~~

Totals	Conc	EMPC
Total TCDD	52.3	52.3
Total PeCDD	73.6	73.6
Total HxCDD	174	174
Total HpCDD	65.2	65.2
Total Tetra-Octa Dioxins	474	474
Total TCDF	63.4	63.4
Total PeCDF	197	197
Total HxCDF	320	320
Total HpCDF	98.8	98.8
Total Tetra-Octa Furans	783	783
Total Tetra-Octa Dioxins & Furans	1260	1260

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.804	0.81
Response	3.07E+06	3.07E+06

Lab ID: OPR2_18911_DF **Acq'd: 20 Feb 2022 05:55 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18911_OPR002 **UTP: 21-Feb-2022 10:21:17 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 488-895-CRP**

Datafile: 220219C17 **Report: 21 Feb 2022 10:33 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.55		0.8701	0.8699	-0.3	4.12E+06	0.81	Y	1.18	14.9	3950.923	0.148
1379-TCDD	NotFnd		0.8829						1.18		3950.923	0.148
1369-TCDD	NotFnd		0.8982						1.18		3950.923	0.148
1469-TCDD	NotFnd		0.9261						1.18		3950.923	0.148
1247/1246/1248/1249-TCDD	NotFnd		0.9348						1.18		3950.923	0.148
1378-TCDD	NotFnd		0.9417						1.18		3950.923	0.148
1268-TCDD	NotFnd		0.9487						1.18		3950.923	0.148
1478-TCDD	NotFnd		0.9576						1.18		3950.923	0.148
1279-TCDD	NotFnd		0.9636						1.18		3950.923	0.148
1234/1269-TCDD	NotFnd		0.9761						1.18		3950.923	0.148
1236-TCDD	NotFnd		0.9812						1.18		3950.923	0.148
1237/1238-TCDD	NotFnd		0.9905						1.18		3950.923	0.148
1239-TCDD	28.09		0.9951	0.9951	0	3.30E+06	0.85	Y	1.18	11.9	3950.923	0.148
2378-TCDD	**28.25**		**1.0008**	1.0008	**0**	3.07E+06	0.81	Y	**1.18**	**11.1**	**3950.923**	**0.148**
1278-TCDD	NotFnd		1.0124						1.18		3950.923	0.148
1267-TCDD	NotFnd		1.0172						1.18		3950.923	0.148
1289-TCDD	29.23		1.0354	1.0356	+0.4	3.99E+06	0.80	Y	1.18	14.4	3950.923	0.148
12479/12468-PeCDD	31.12		0.9255	0.9257	+0.4	2.80E+06	1.51	Y	1.04	13.1	5313.903	0.214
12469-PeCDD	NotFnd		0.9416						1.04		5313.903	0.214
12368-PeCDD	NotFnd		0.9582						1.04		5313.903	0.214
12478-PeCDD	NotFnd		0.9637						1.04		5313.903	0.214
12379-PeCDD	NotFnd		0.9668						1.04		5313.903	0.214
12369/12467/12489-PeCDD	NotFnd		0.9746						1.04		5313.903	0.214
12346/12347-PeCDD	NotFnd		0.9858						1.04		5313.903	0.214
12378-PeCDD	33.64		**1.0007**	**1.0006**	**-0.2**	**1.02E+07**	**1.56**	**Y**	**1.04**	**47.5**	**5313.903**	**0.214**
12367-PeCDD	NotFnd		1.0036						1.04		5313.903	0.214
12389-PeCDD	34.08		1.0137	1.0137	0	2.78E+06	1.56	Y	1.04	13	5313.903	0.214
124679/124689-HxCDD	35.82		0.9540	0.9540	0	3.28E+06	1.31	Y	1.10	15.4	4150.967	0.167
123468-HxCDD	NotFnd		0.9715						1.10		4150.967	0.167
123679/123689-HxCDD	NotFnd		0.9793						1.10		4150.967	0.167
123469-HxCDD	NotFnd		0.9829						1.10		4150.967	0.167
123478-HxCDD	37.56		**1.0004**	**1.0004**	**0**	**1.08E+07**	**1.27**	**Y**	1.09	**52.2**	**4150.967**	**0.177**
123678-HxCDD	37.69		**1.0036**	**1.0036**	**0**	**1.22E+07**	**1.26**	**Y**	1.15	**54.5**	**4150.967**	**0.16**
123467-HxCDD	NotFnd		1.0089						1.10		4150.967	0.167
123789-HxCDD	37.99		**1.0118**	**1.0117**	**-0.2**	**1.08E+07**	**1.25**	**Y**	1.05	**51.6**	**4150.967**	**0.164**

Lab ID: OPR2_18911_DF **Acq'd: 20 Feb 2022 05:55 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18911_OPR002 **UTP: 21-Feb-2022 10:21:17 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 488-895-CRP**

Datafile: 220219C17 **Report: 21 Feb 2022 10:33 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.03		0.9836	0.9836	0	2.46E+06	1.02	Y	1.06	13	4096.641	0.179
1234678-HpCDD	**40.71**		**1.0002**	**1.0003**	**+0.2**	**9.84E+06**	**1.04**	**Y**	**1.06**	**52.2**	**4096.641**	**0.179**
OCDD	**43.40**		**1.0003**	**1.0003**	**0**	**1.41E+07**	**0.87**	**Y**	**1.13**	**109**	**3700.127**	**0.359**
OCDD-a	NotFnd		1.0002						0.07		3841.736	5.82
1368-TCDF	22.40		0.8191	0.8187	-0.5	5.60E+06	0.78	Y	1.08	15.9	4704.21	0.149
1468-TCDF	NotFnd		0.8408						1.08		4704.21	0.149
2468-TCDF	23.64		0.8645	0.8643	-0.3	1.46E+06	0.78	Y	1.08	4.15	4704.21	0.149
1346/1246-TCDF	NotFnd		0.8772						1.08		4704.21	0.149
1347/1378/1247-TCDF	NotFnd		0.8833						1.08		4704.21	0.149
1348-TCDF	NotFnd		0.8932						1.08		4704.21	0.149
1248/1367/1379-TCDF	NotFnd		0.8980						1.08		4704.21	0.149
1268-TCDF	NotFnd		0.9119						1.08		4704.21	0.149
1467-TCDF	NotFnd		0.9170						1.08		4704.21	0.149
1478-TCDF	NotFnd		0.9234						1.08		4704.21	0.149
1369/1237-TCDF	NotFnd		0.9369						1.08		4704.21	0.149
2467-TCDF	NotFnd		0.9415						1.08		4704.21	0.149
2368-TCDF	NotFnd		0.9475						1.08		4704.21	0.149
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9507						1.08		4704.21	0.149
1278-TCDF	NotFnd		0.9676						1.08		4704.21	0.149
1349-TCDF	NotFnd		0.9722						1.08		4704.21	0.149
1267-TCDF	NotFnd		0.9777						1.08		4704.21	0.149
2346/1249-TCDF	NotFnd		0.9843						1.08		4704.21	0.149
2347/1279-TCDF	NotFnd		0.9926						1.08		4704.21	0.149
2348-TCDF	27.27		0.9968	0.9967	-0.2	5.44E+06	0.82	Y	1.08	15.4	4704.21	0.149
2378-TCDF	**27.38**		**1.0008**	**1.0008**	**0**	**3.77E+06**	**0.76**	**Y**	**1.08**	**10.7**	**4704.21**	**0.149**
2367/3467-TCDF	NotFnd		1.0142						1.08		4704.21	0.149
1269-TCDF	NotFnd		1.0235						1.08		4704.21	0.149
1239-TCDF	NotFnd		1.0329						1.08		4704.21	0.149
1289-TCDF	29.40		1.0742	1.0746	+0.7	6.08E+06	0.81	Y	1.08	17.2	4704.21	0.149
13468/12468-PeCDF	29.32		0.9122	0.9118	-0.7	2.80E+07	1.58	Y	1.02	85.7	3202.845	0.0899
13678/13467/12467-PeCDF	NotFnd		0.9606						1.02		5913.964	0.166
12368/13478/12478-PeCDF	NotFnd		0.9655						1.02		5913.964	0.166
14678-PeCDF	NotFnd		0.9685						1.02		5913.964	0.166
13479-PeCDF	NotFnd		0.9716						1.02		5913.964	0.166
13469/12479-PeCDF	NotFnd		0.9794						1.02		5913.964	0.166
12346-PeCDF	NotFnd		0.9836						1.02		5913.964	0.166

Lab ID: OPR2_18911_DF | **Acq'd: 20 Feb 2022 05:55 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18911_OPR002 | **UTP: 21-Feb-2022 10:21:17 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 488-895-CRP**

Datafile: 220219C17 | **Report: 21 Feb 2022 10:33 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9866						1.02		5913.964	0.166
12347-PeCDF	NotFnd		0.9891						1.02		5913.964	0.166
12348-PeCDF	NotFnd		0.9938						1.02		5913.964	0.166
12378-PeCDF	**32.18**		**1.0005**	**1.0005**	**0**	**1.62E+07**	**1.53**	**Y**	**1.02**	**49.7**	**5913.964**	**0.17**
12678/12367-PeCDF	NotFnd		1.0091						1.02		5913.964	0.166
12379-PeCDF	NotFnd		1.0144						1.02		5913.964	0.166
12679-PeCDF	NotFnd		0.9927						1.02		5913.964	0.166
23467/12369-PeCDF	NotFnd		0.9965						1.02		5913.964	0.166
23478-PeCDF	**33.30**		**1.0005**	**1.0005**	**0**	**1.67E+07**	**1.53**	**Y**	**1.02**	**50.9**	**5913.964**	**0.162**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		5913.964	0.166
12349-PeCDF	NotFnd		1.0101						1.02		5913.964	0.166
12389-PeCDF	34.38		1.0330	1.0329	-0.2	3.53E+06	1.50	Y	1.02	10.8	5913.964	0.166
123468-HxCDF	35.17		0.9622	0.9623	+0.2	3.57E+07	1.24	Y	1.19	120	6194.584	0.178
124678/134678-HxCDF	NotFnd		0.9678						1.19		6194.584	0.178
134679-HxCDF	NotFnd		0.9741						1.19		6194.584	0.178
124679-HxCDF	NotFnd		0.9795						1.19		6194.584	0.178
124689-HxCDF	NotFnd		0.9856						1.19		6194.584	0.178
123467-HxCDF	NotFnd		0.9972						1.19		6194.584	0.178
123478-HxCDF	**36.56**		**1.0004**	**1.0005**	**+0.2**	**1.43E+07**	**1.20**	**Y**	**1.27**	**51.4**	**6194.584**	**0.187**
123678-HxCDF	**36.70**		**1.0004**	**1.0005**	**+0.2**	**1.64E+07**	**1.24**	**Y**	**1.15**	**50.6**	**6194.584**	**0.157**
123479-HxCDF	NotFnd		1.0048						1.19		6194.584	0.178
123469-HxCDF	NotFnd		1.0089						1.19		6194.584	0.178
123679-HxCDF	NotFnd		0.9942						1.19		6194.584	0.178
234678-HxCDF	**37.38**		**1.0005**	**1.0004**	**-0.2**	**1.70E+07**	**1.22**	**Y**	**1.19**	**50.7**	**6194.584**	**0.164**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6194.584	0.178
123789-HxCDF	**38.35**		**1.0004**	**1.0004**	**0**	**1.20E+07**	**1.28**	**Y**	**1.16**	**47.8**	**6194.584**	**0.216**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		6194.584	0.178
1234678-HpCDF	**39.77**		**1.0003**	**1.0003**	**0**	**1.40E+07**	**1.02**	**Y**	**1.37**	**49.8**	**3861.13**	**0.103**
1234679-HpCDF	NotFnd		1.0068						1.34		3861.13	0.124
1234689-HpCDF	NotFnd		1.0104						1.34		3861.13	0.124
1234789-HpCDF	**41.17**		**1.0003**	**1.0003**	**0**	**1.03E+07**	**1.04**	**Y**	**1.31**	**49.1**	**3861.13**	**0.152**
OCDF	**43.57**		**1.0002**	**1.0002**	**0**	**1.64E+07**	**0.92**	**Y**	**1.07**	**103**	**4020.581**	**0.297**
OCDF-a	43.57		1.0001	1.0002	+0.3	1.04E+06	2.23	Y	0.07	105	3176.37	3.79

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220219C17	Analysis Date:	20-FEB-2022 05:55:34
Lab ID:	OPR2_18911_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11.1	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	47.5	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	52.2	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	54.5	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.6	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	52.2	35	-	70	Y
OCDD	100	109	78	-	144	Y
2,3,7,8-TCDF	10	10.7	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	49.7	40	-	67	Y
2,3,4,7,8-PeCDF	50	50.9	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	51.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	50.6	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	50.7	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	47.8	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	49.8	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	49.1	39	-	69	Y
OCDF	100	103	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Feb 2022 10:33 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220219C17	Analysis Date:	20-FEB-2022 05:55:34
Lab ID:	OPR2_18911_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	97.9	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	103	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	98.4	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	104	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	91.9	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	98	26	-	166	Y
13C-OCDD	200	185	26	-	397	Y
13C-2,3,7,8-TCDF	100	85.1	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	96.4	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	100	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	91.9	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	105	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	114	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	94	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	107	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	95.3	20	-	186	Y
13C-OCDF	200	185	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	40.2	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 21 Feb 2022 10:33 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220219C17	Analysis Date:	20-FEB-2022 05:55:34
Lab ID:	OPR2_18911_DF		

Window Defining Standards Results

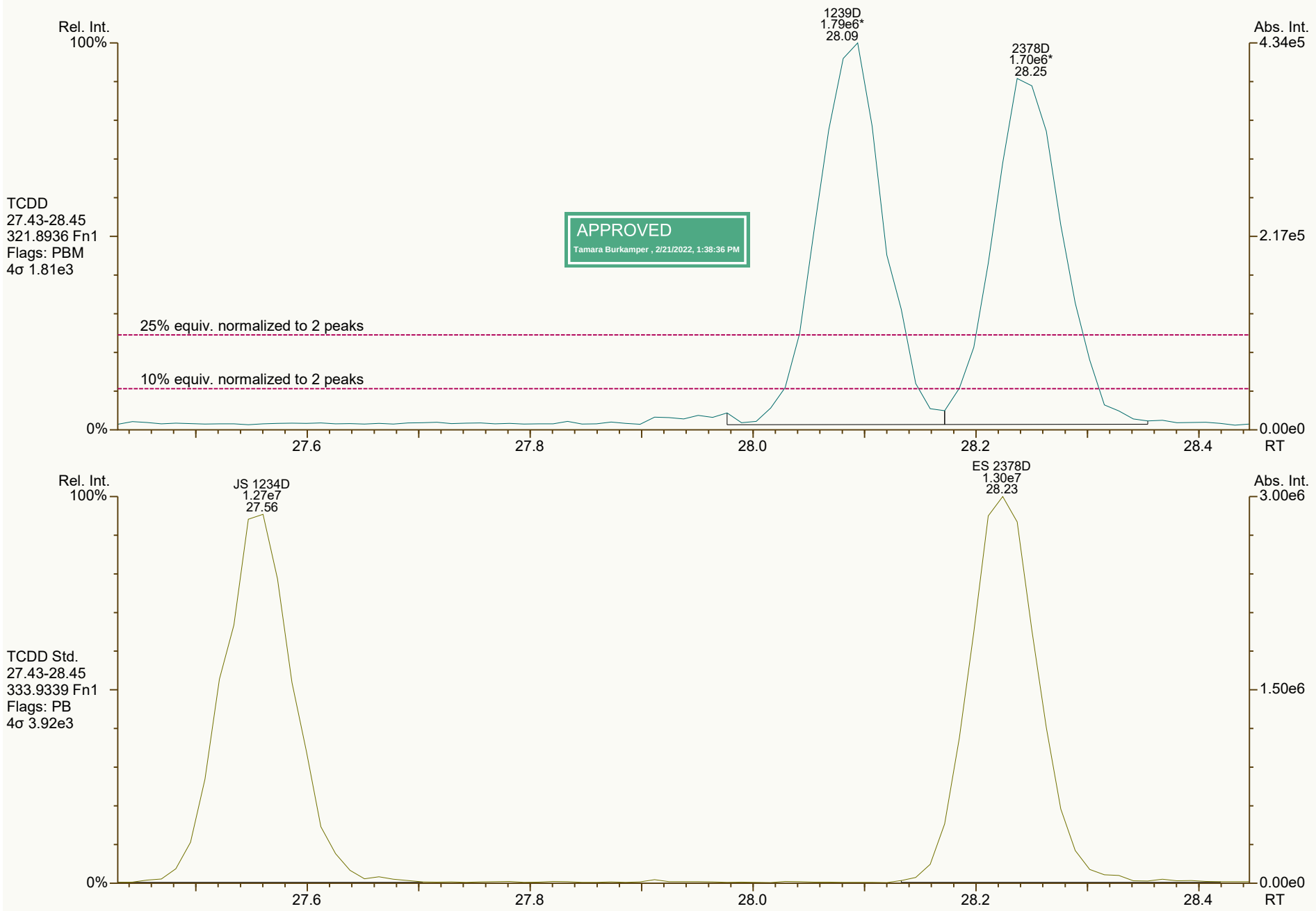
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.55	1289-TCDD	29.23
12479/12468-PeCDD	31.12	12389-PeCDD	34.08
124679/124689-HxCDD	35.82	123789-HxCDD	37.99
1234679-HpCDD	40.03	1234678-HpCDD	40.71
1368-TCDF	22.40	1289-TCDF	29.40
13468/12468-PeCDF	29.32	12389-PeCDF	34.38
123468-HxCDF	35.17	123789-HxCDF	38.35
1234678-HpCDF	39.77	1234789-HpCDF	41.17

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.09	2378-TCDD	28.25
2348-TCDF	27.27	2378-TCDF	27.38

Processed: 21 Feb 2022 10:33 Analyst: TF

SGS ID: OPR2_18911_DF
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17



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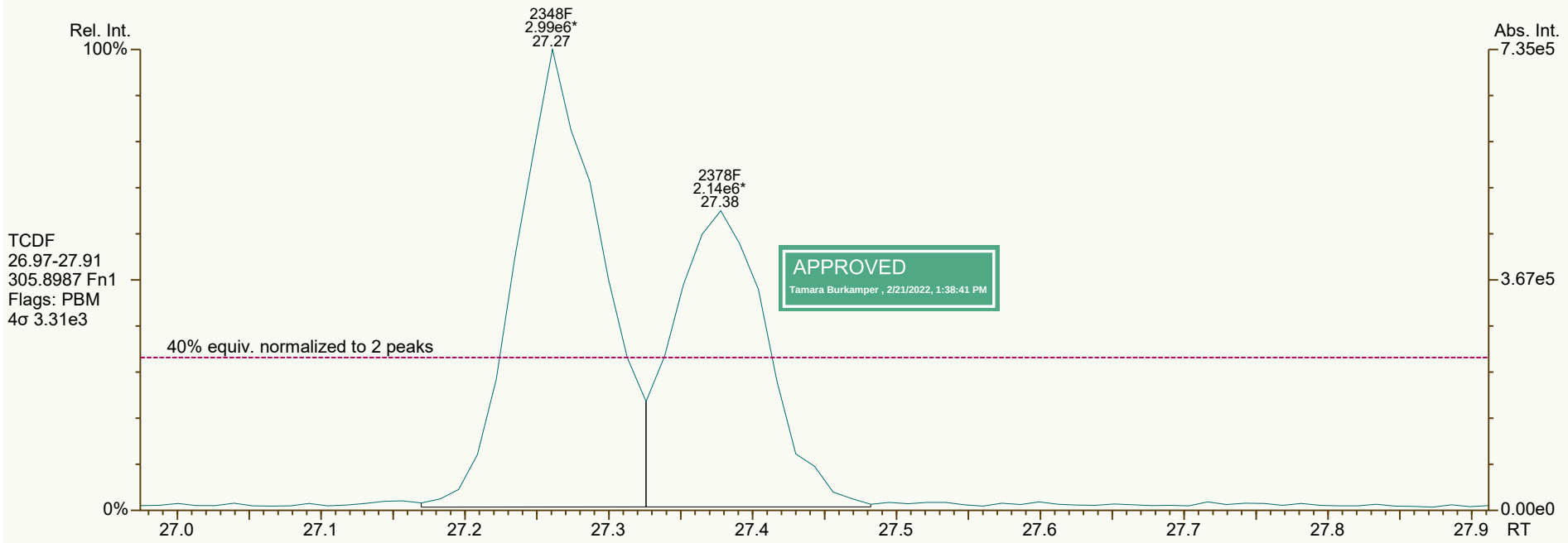
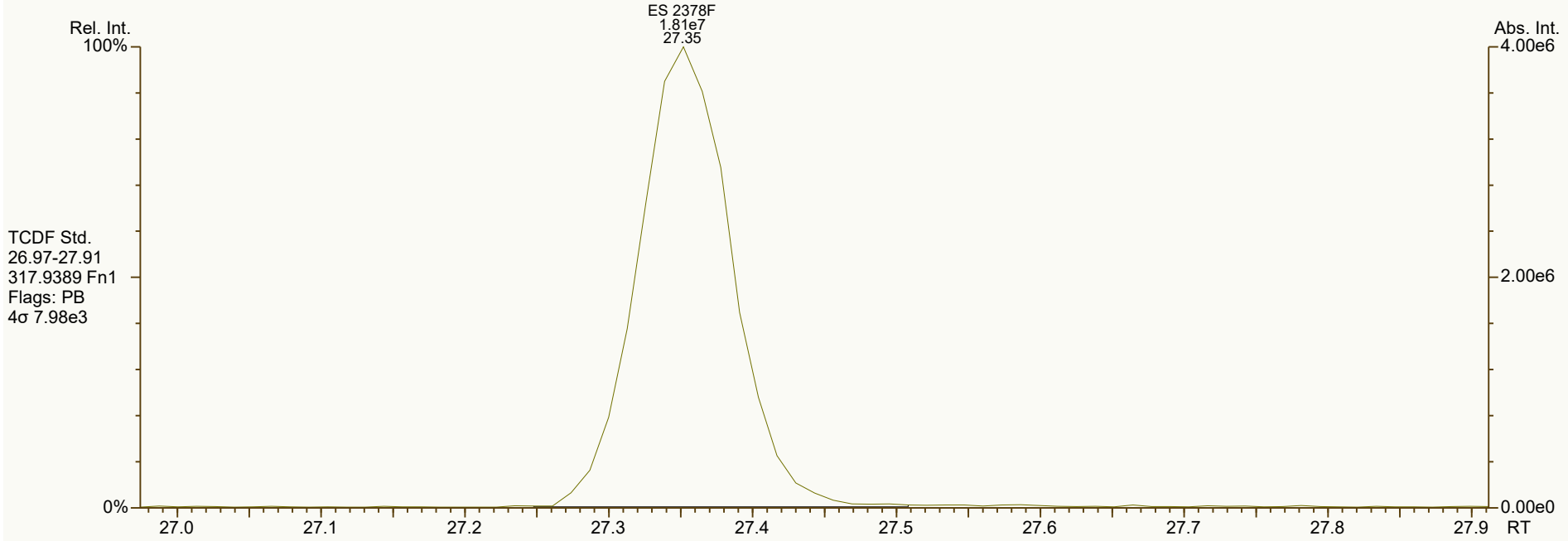
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:35

SGS ID: OPR2_18911_DF
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17





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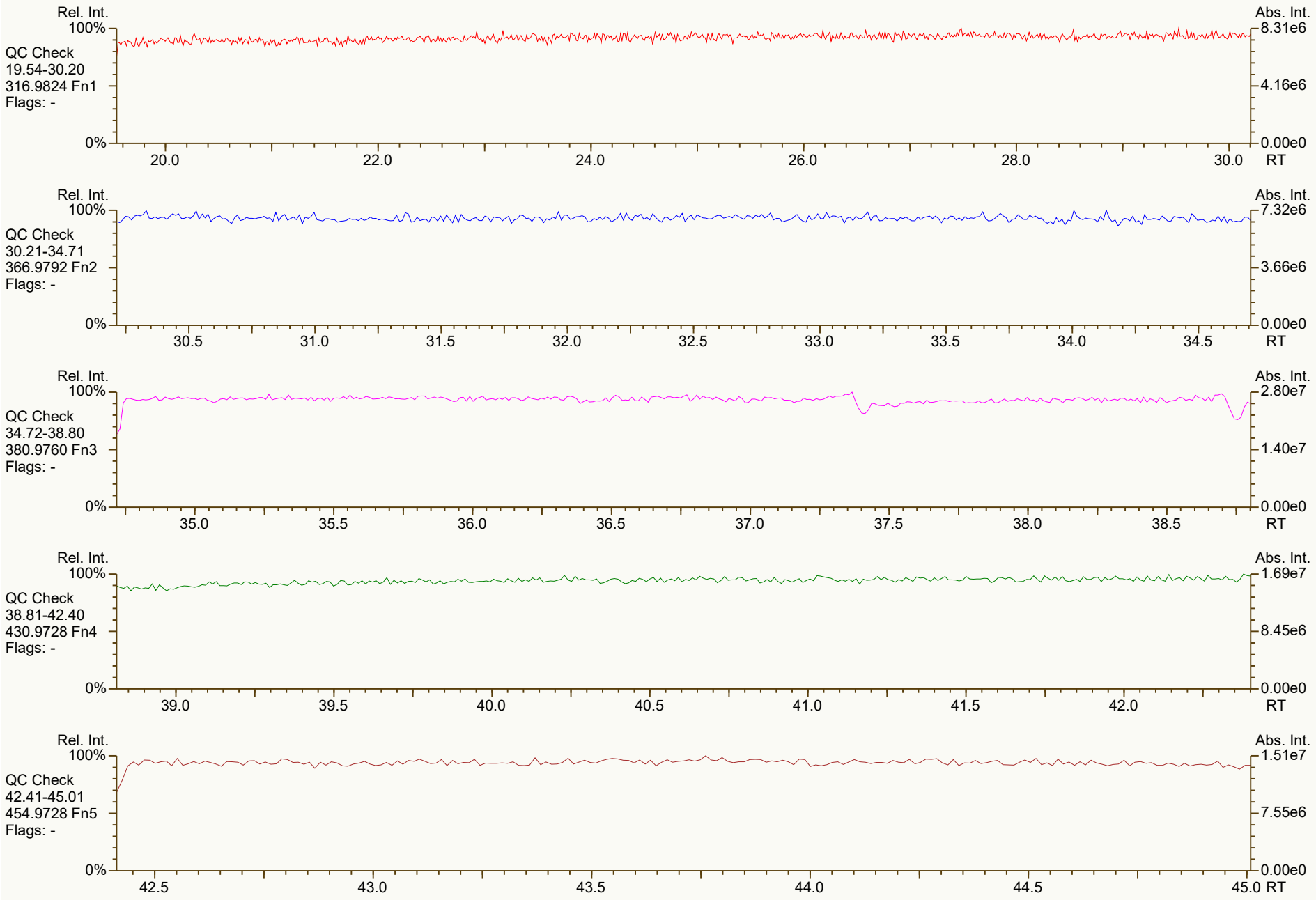
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:35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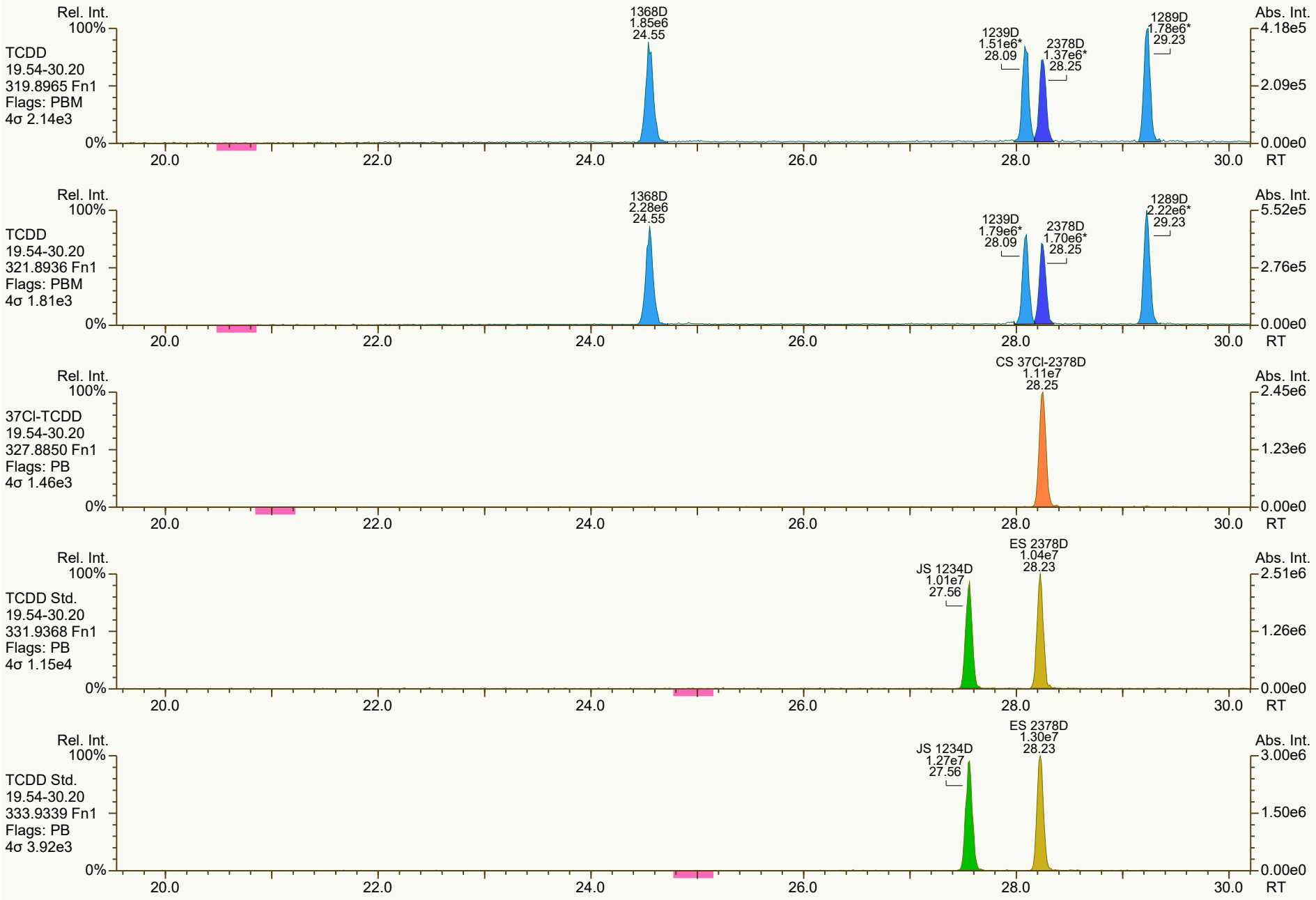
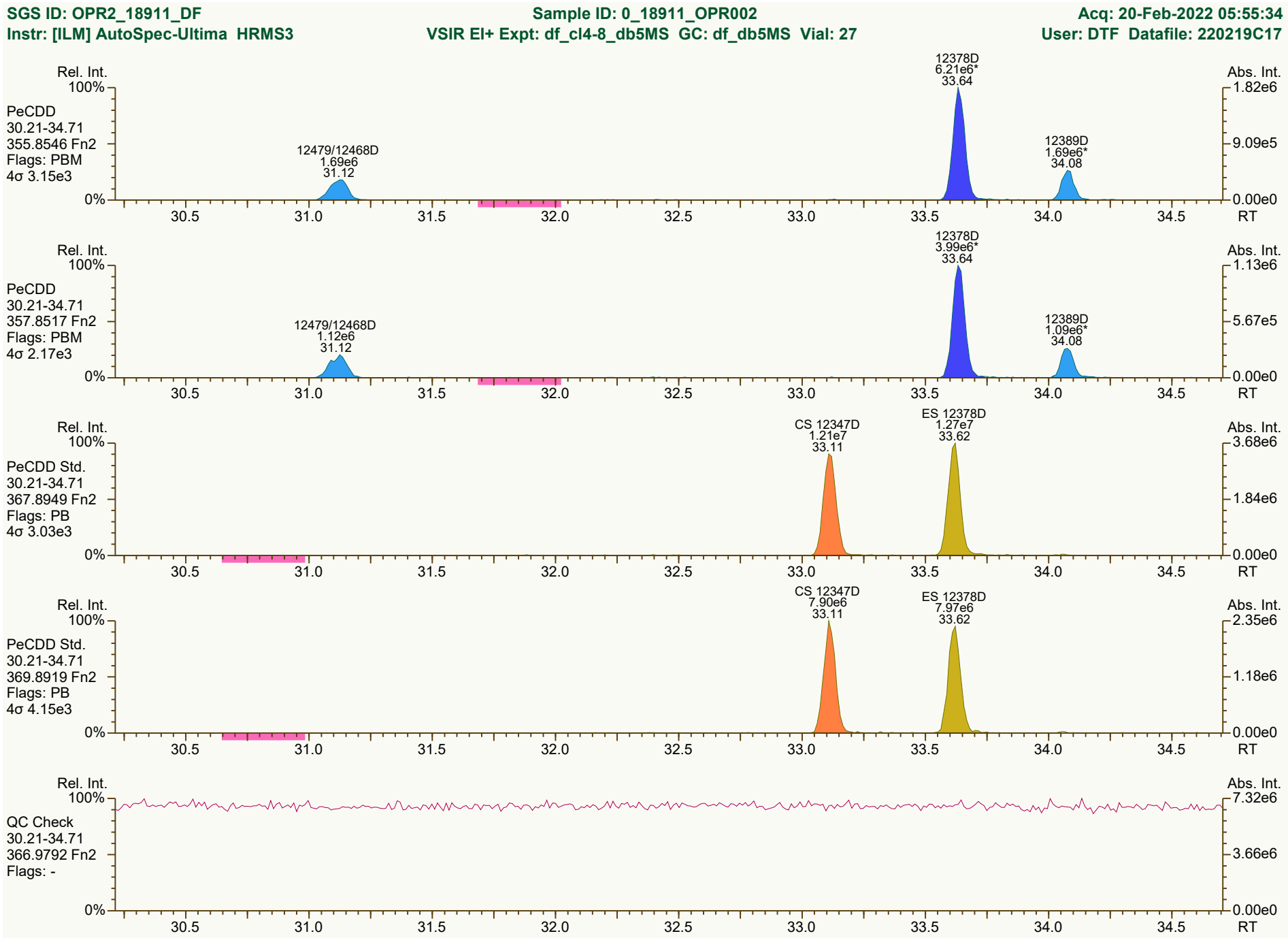
19.54-30.20
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
8.31e6
4.16e6
0.00e0
Rel. Int.
100%
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
7.32e6
3.66e6
0.00e0
Rel. Int.
100%
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
2.80e7
1.40e7
0.00e0
Rel. Int.
100%
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.69e7
8.45e6
0.00e0
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.51e7
7.55e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: PBM
4σ 2.14e3
0%
1368D
1.85e6
24.55
1239D
1.51e6*
28.09
2378D
1.37e6*
28.25
1289D
1.78e6*
29.23
Abs. Int.
4.18e5
2.09e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: PBM
4σ 1.81e3
0%
1368D
2.28e6
24.55
1239D
1.79e6*
28.09
2378D
1.70e6*
28.25
1289D
2.22e6*
29.23
Abs. Int.
5.52e5
2.76e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.46e3
0%
CS 37Cl-2378D
1.11e7
28.25
Abs. Int.
2.45e6
1.23e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 1.15e4
0%
JS 1234D
1.01e7
27.56
ES 2378D
1.04e7
28.23
Abs. Int.
2.51e6
1.26e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 3.92e3
0%
JS 1234D
1.27e7
27.56
ES 2378D
1.30e7
28.23
Abs. Int.
3.00e6
1.50e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

SGS ID: OPR2_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18911_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

Acq: 20-Feb-2022 05:55:34
User: DTF Datafile: 220219C17



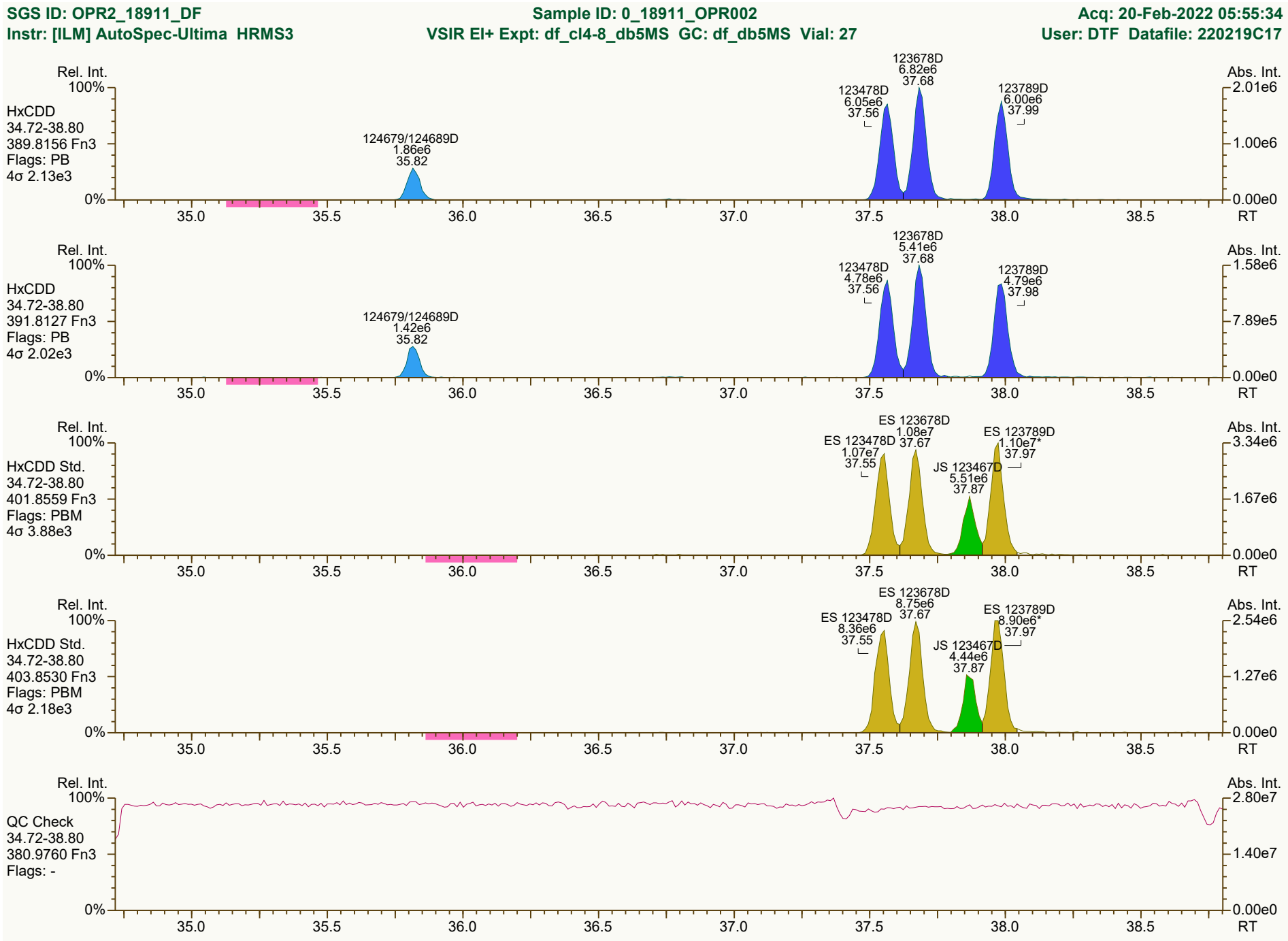
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2578, 6695 scc: 488-895

Peak annotation: Areas, Centroids
Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:37 Page 3 of 12

SGS ID: OPR2_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18911_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

Acq: 20-Feb-2022 05:55:34
User: DTF Datafile: 220219C17



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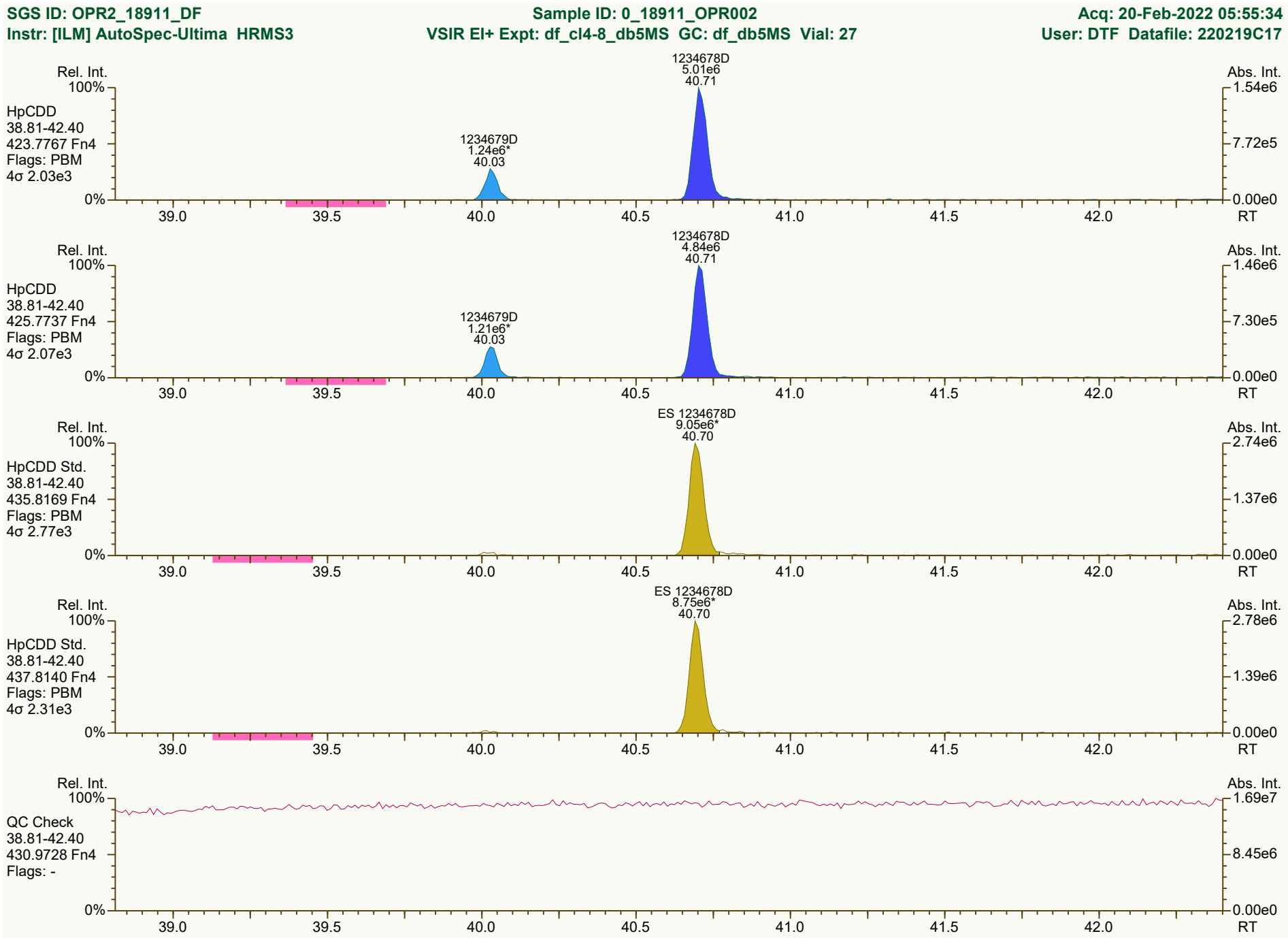
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0675, 7530 scc: 488-895

Peak annotation: Areas, Centroids
PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:37 Page 4 of 12

SGS ID: OPR2_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

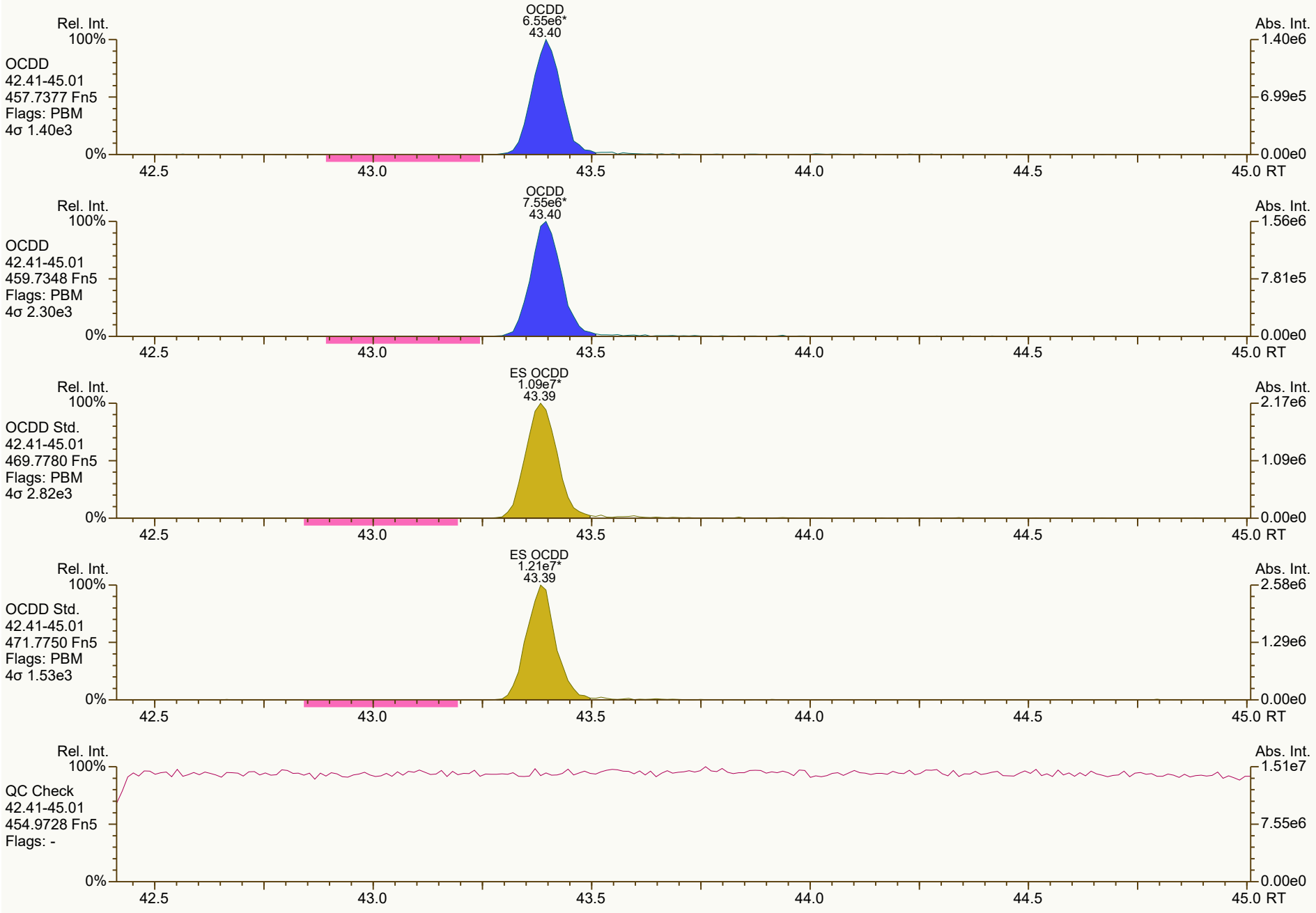
Sample ID: 0_18911_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

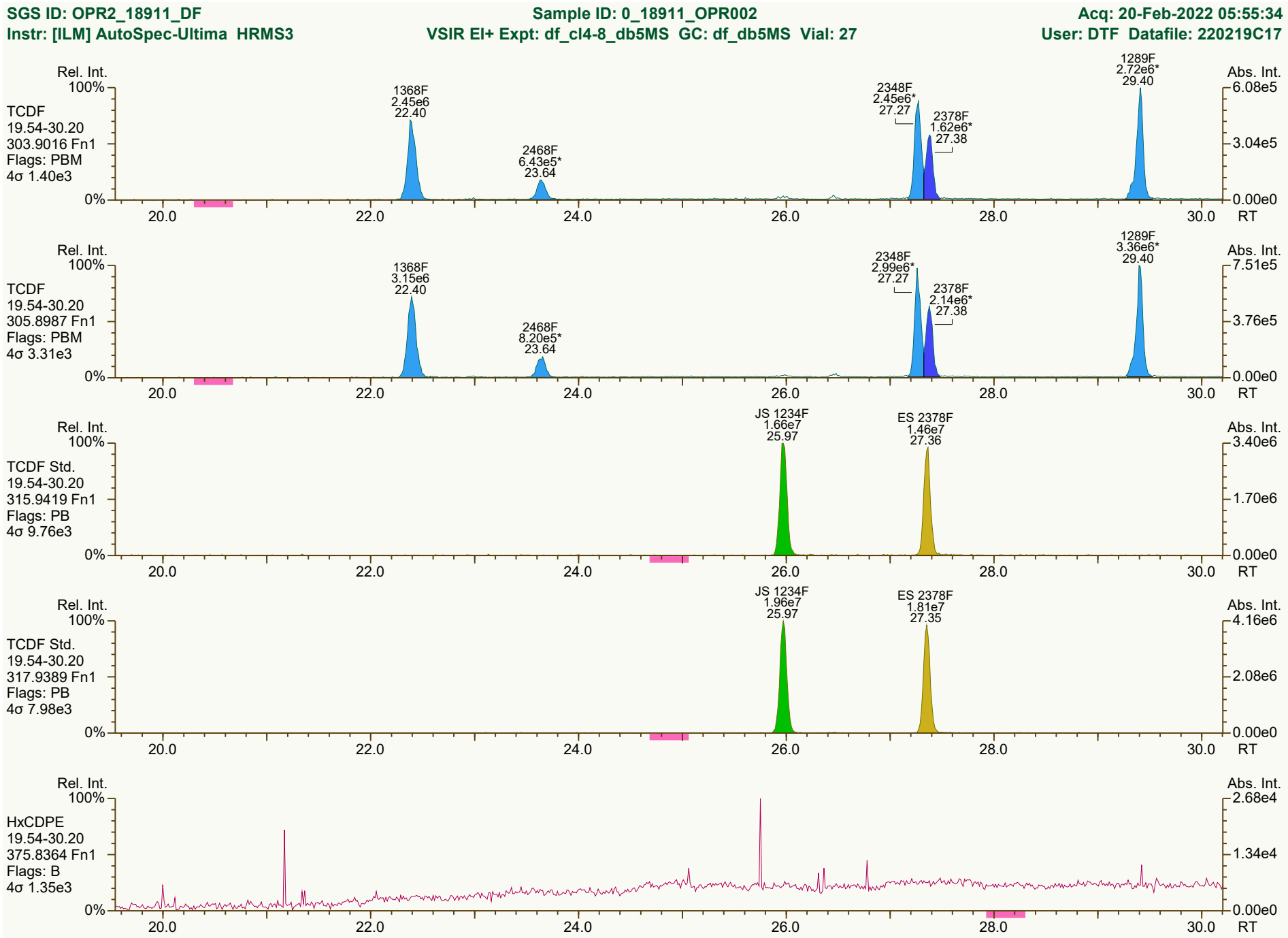
Acq: 20-Feb-2022 05:55:34
User: DTF Datafile: 220219C17



Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6613, 2029 scc: 488-895

Peak annotation: Areas, Centroids
PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:37 Page 5 of 12


OCDD
6.55e6*
43.40
Rel. Int.
100%
OCDD
42.41-45.01
457.7377 Fn5
Flags: PBM
4σ 1.40e3
0%
Abs. Int.
1.40e6
6.99e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
7.55e6*
43.40
OCDD
42.41-45.01
459.7348 Fn5
Flags: PBM
4σ 2.30e3
1.56e6
7.81e5
ES OCDD
1.09e7*
43.39
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PBM
4σ 2.82e3
2.17e6
1.09e6
ES OCDD
1.21e7*
43.39
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PBM
4σ 1.53e3
2.58e6
1.29e6
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
1.51e7
7.55e6

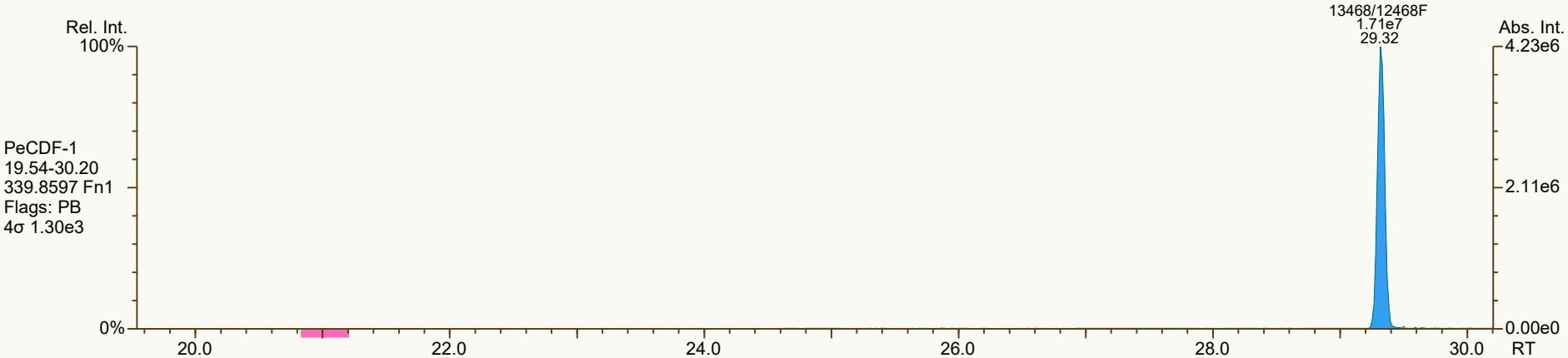


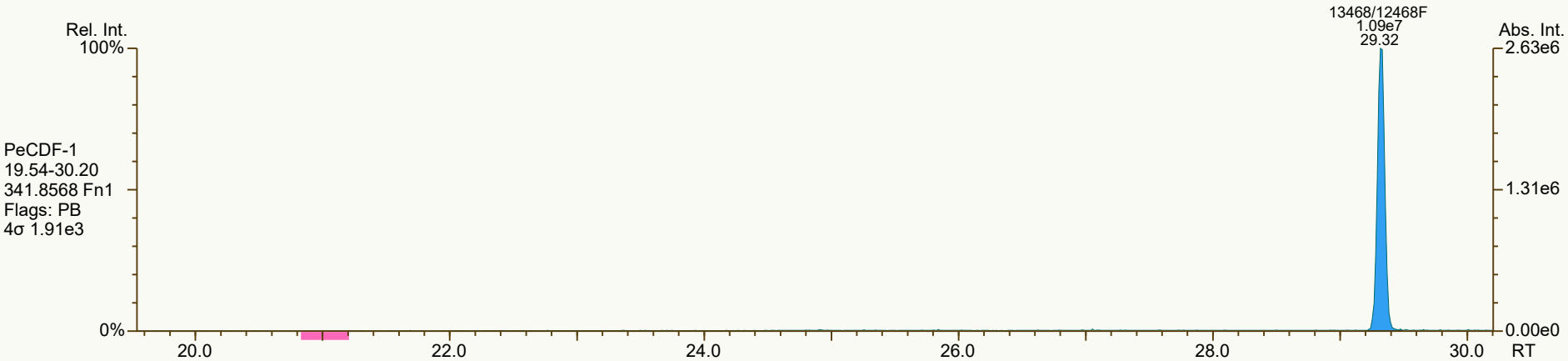
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3357, 9674, 4960 scc: 488-895
Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:37 Page 7 of 12

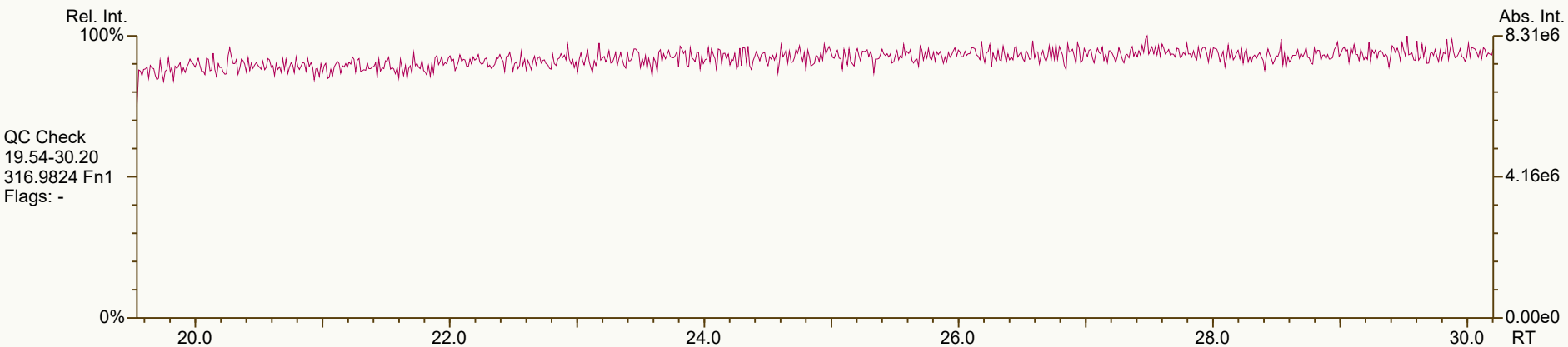
SGS ID: OPR2_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18911_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

Acq: 20-Feb-2022 05:55:34
User: DTF Datafile: 220219C17







Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9329 scc: 488-895

Peak annotation: Areas, Centroids
PKD: 21-Feb-2022 09:58 Printed: 21-Feb-2022 10:37 Page 8 of 12

SGS ID: OPR2_18911_DF | Sample ID: 0_18911_OPR002 | Acq: 20-Feb-2022 05:55:34

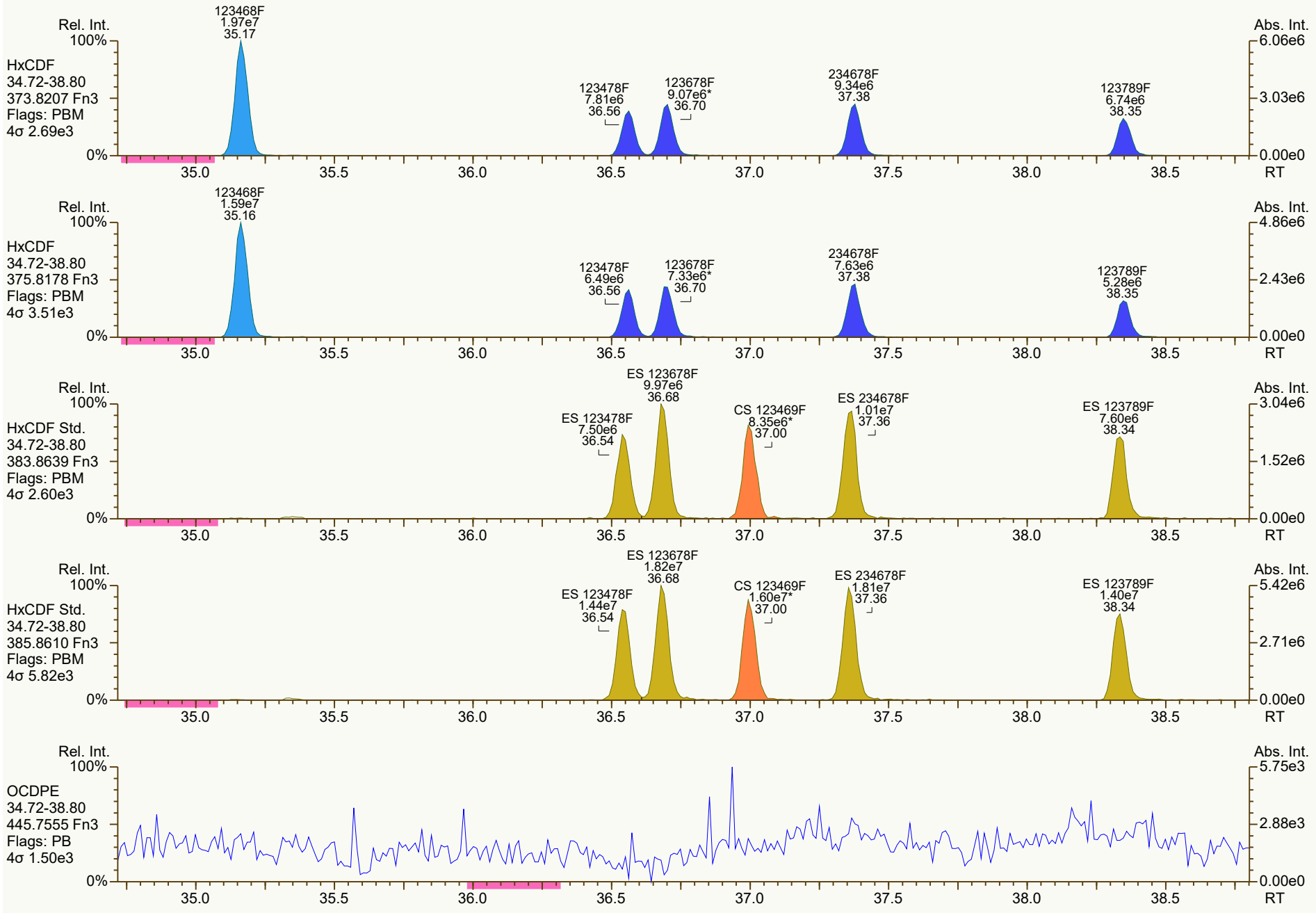
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27 | User: DTF Datafile: 220219C17



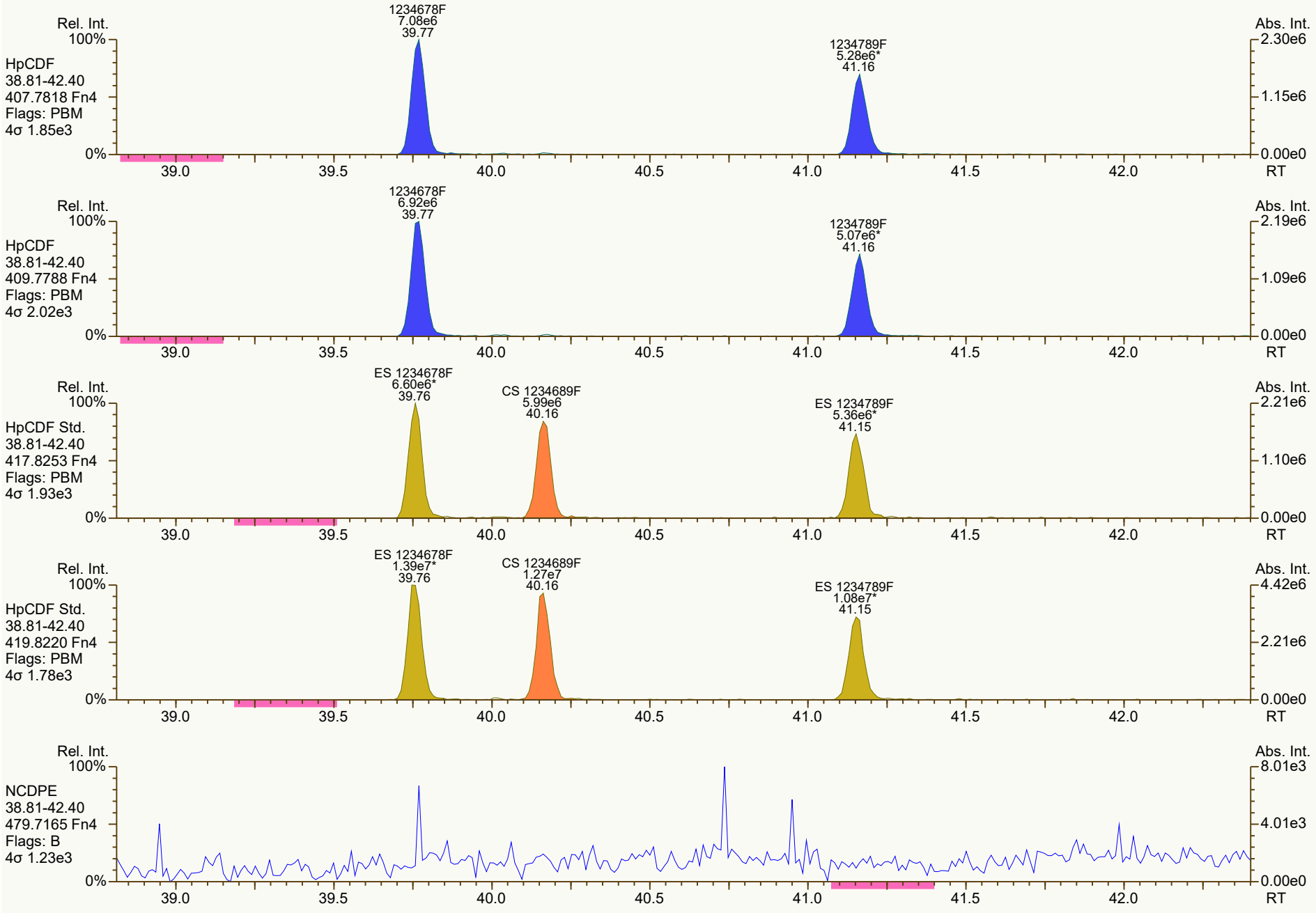
Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0481, 2901, 2285 scc: 488-895 | *Revised: 21-Feb-2022 10:00 (DTF) Printed: 21-Feb-2022 10:37 Page 9 of 12*

SGS ID: OPR2_18911_DF
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17



Results: P:\B5900_B5999\B5962\B5962_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:21 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1624, 5513, 1896 scc: 488-895
Revised: 21-Feb-2022 10:00 (DTF) Printed: 21-Feb-2022 10:37 Page 10 of 12


Rel. Int.
100%
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PBM
4σ 1.85e3
1234678F
7.08e6
39.77
1234789F
5.28e6*
41.16
Abs. Int.
2.30e6
1.15e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PBM
4σ 2.02e3
1234678F
6.92e6
39.77
1234789F
5.07e6*
41.16
Abs. Int.
2.19e6
1.09e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PBM
4σ 1.93e3
ES 1234678F
6.60e6*
39.76
CS 1234689F
5.99e6
40.16
ES 1234789F
5.36e6*
41.15
Abs. Int.
2.21e6
1.10e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PBM
4σ 1.78e3
ES 1234678F
1.39e7*
39.76
CS 1234689F
1.27e7
40.16
ES 1234789F
1.08e7*
41.15
Abs. Int.
4.42e6
2.21e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
38.81-42.40
479.7165 Fn4
Flags: B
4σ 1.23e3
Abs. Int.
8.01e3
4.01e3
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDF
7.88e6*
43.57
Rel. Int.
100%
OCDF
42.41-45.01
441.7428 Fn5
Flags: PBM
4σ 2.24e3
0%
Abs. Int.
1.68e6
8.41e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
8.57e6*
43.57
Rel. Int.
100%
OCDF
42.41-45.01
443.7398 Fn5
Flags: PBM
4σ 1.79e3
0%
Abs. Int.
1.84e6
9.21e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.40e7*
43.56
Rel. Int.
100%
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: PBM
4σ 2.70e3
0%
Abs. Int.
2.98e6
1.49e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.57e7*
43.56
Rel. Int.
100%
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: PBM
4σ 3.28e3
0%
Abs. Int.
3.27e6
1.63e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.41-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
4.24e3
2.12e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996. and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.13.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

11215131-120221-S-SPS-SW-S-17 required a d2 solvent dilution.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120121-S-SPS-NE-S-11 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.89 g	Lab Sample ID	B5963_18710_DF_001	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	78.9 %	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:26:16

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	191				ES 2378-TCDD	72.9	
12378-PeCDD	3.23				ES 12378-PeCDD	78.9	
123478-HxCDD	3.74				ES 123478-HxCDD	74.6	
123678-HxCDD	11.3				ES 123678-HxCDD	76.1	
123789-HxCDD	6.22				ES 123789-HxCDD	74.8	
1234678-HpCDD	419				ES 1234678-HpCDD	73.7	
OCDD	4,550				ES OCDD	47.1	
2378-TCDF	485				ES 2378-TCDF	69	
12378-PeCDF	19				ES 12378-PeCDF	73.2	
23478-PeCDF	17.4				ES 23478-PeCDF	73.5	
123478-HxCDF	28.7				ES 123478-HxCDF	86	
123678-HxCDF	9.29				ES 123678-HxCDF	87.2	
234678-HxCDF	5.7				ES 234678-HxCDF	84.7	
123789-HxCDF	ND	0.142			ES 123789-HxCDF	87.6	
1234678-HpCDF	62.4				ES 1234678-HpCDF	85	
1234789-HpCDF	8.1				ES 1234789-HpCDF	85.3	
OCDF	271				ES OCDF	51.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77	
Total TCDD	210		216		CS 12347-PeCDD	89	
Total PeCDD	14.4		14.8		CS 12346-PeCDF	76.4	
Total HxCDD	102		108		CS 123469-HxCDF	94.6	
Total HpCDD	885		885		CS 1234689-HpCDF	91.6	
Total TCDF	973		973				
Total PeCDF	83		83.4				
Total HxCDF	113		113				
Total HpCDF	201		201				
Total PCDD/Fs	**7,400**		**7,410**				
WHO-2005 TEQs							
TEQ: ND=0	261		261				
TEQ: ND=DL/2	261	0.237	261				
TEQ: ND=DL	261	0.473	261				

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Sample ID: 11215131-120121-S-SPS-NE-S-11 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.89 g	Lab Sample ID:	B5963_18710_DF_001	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	78.9 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:26:16

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[1.19]		12479/12468D	3.38		124679/124689D	35.8		1234679D	466	
1379D	[0.439]		12469D	1.95		123468D	[5.65]		1234678D	419	
1369D	[0.189]	J	12368D	1.64	J	123679/123689D	38.3				
1469D	[1.17]		12478D	1.38	J	123469D	4.19				
1247D...[4]	0.668		12379D	0.743	J	123478D	3.74				
1378D	0.986		12369D...[3]	1.25	J	123678D	11.3				
1268D	(0.136)		12346/12347D	0.533	J	123467D	2.76				
1478D	[0.511]		12378D	3.23		123789D	6.22		**Conc.**	885	
1279D	(0.136)		12367D	[0.39]	J				**EMPC**	885	
1234/1269D	[0.338]	J	12389D	0.319	J						
1236D	(0.136)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	[3]									**(pg/g)**	
1239D	(0.136)								OCDD	4550	
2378D	191										
1278D	17										
1267D	(0.136)										
1289D	(0.136)										
Conc.	210		**Conc.**	14.4		**Conc.**	102				
EMPC	216		**EMPC**	14.8		**EMPC**	108				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	261	261
TEQ: ND=DL/2	261	261
TEQ: ND=DL	261	261

	Conc.	EMPC
Total PCDD/Fs	7,400	7,410

Checkcode: 183-178-PFB

Report Created: 08-Dec-2021 16:03 Analyst: TF

Sample ID: 11215131-120121-S-SPS-NE-S-11 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.89 g	Lab Sample ID:	B5963_18710_DF_001	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	78.9 %	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:26:16

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.455		13468/12468F	9.67		123468F	7.46		1234678F	62.4	
1468F	1.59		13678F...[3]	2.72		124678/134678F	26.8		1234679F	4.26	
2468F	2.65		12368F...[3]	17.9		134679F	(0.127)		1234689F	126	
1346/1246F	1.29		14678F	(0.129)		124679F	1.08	J	1234789F	8.1	
1347F...[3]	6.72		13479F	(0.129)		124689F	28.9				
1348F	(0.142)		13469/12479F	[0.364]	J	123467F	1.74	J			
1248F...[3]	25.3		12346F	0.462	J	123478F	28.7				
1268F	9.12		23468/12469F	2.68		123678F	9.29				
1467F	1.68		12347F	0.864	J	123479F	(0.127)				
1478F	21.2		12348F	2.44		123469F	0.636	J			
1369/1237F	5.91		12378F	19		123679F	(0.127)				
2467F	1.21		12678/12367F	7.35		234678F	5.7		**Conc.**	201	
2368F	14.3		12379F	(0.129)		234678/123689F	0		**EMPC**	201	
1238F...[5]	28.2		12679F	(0.129)		123689F	(0.127)				
1278F	232		23467/12369F	1.59	J	123789F	(0.142)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.142)		23478F	17.4		123789/123489F	0				
1267F	13.1		23478/12489F	0		123489F	2.93		OCDF	271	
2346/1249F	1.85		12489F	(0.129)							
2347/1279F	5.79		12349F	(0.129)							
2348F	30.4		12389F	0.927	J						
2378F	485										
2367/3467F	40.3										
1269F	7.31										
1239F	(0.142)										
1289F	37.3										
Conc.	973		**Conc.**	83		**Conc.**	113				
EMPC	973		**EMPC**	83.4		**EMPC**	113				

Checkcode: 183-178-PFB

Report Created: 08-Dec-2021 16:03 Analyst: TF

Sample ID: 11215131-120121-S-SPS-NE-S-11 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5963_18710_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.89 g	QC Batch No.:	18710
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	07-Dec-2021 23:26
Lab Project No:	B5963	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	191		0.136	191	191	191
12378-PeCDD	3.23		0.178	1.62	3.23	3.23
123478-HxCDD	3.74		0.162	0.374	0.374	0.374
123678-HxCDD	11.3		0.162	1.13	1.13	1.13
123789-HxCDD	6.22		0.16	0.622	0.622	0.622
1234678-HpCDD	419		0.214	4.19	4.19	4.19
OCDD	4550		0.917	4.55	0.455	1.36
2378-TCDF	485		0.142	48.5	48.5	48.5
12378-PeCDF	19		0.133	0.949	0.949	0.569
23478-PeCDF	17.4		0.125	8.71	8.71	5.23
123478-HxCDF	28.7		0.122	2.87	2.87	2.87
123678-HxCDF	9.29		0.115	0.929	0.929	0.929
234678-HxCDF	5.7		0.13	0.57	0.57	0.57
123789-HxCDF	(0.142)		0.142	(0.0142)	(0.0142)	(0.0142)
1234678-HpCDF	62.4		0.0855	0.624	0.624	0.624
1234789-HpCDF	8.1		0.107	0.081	0.081	0.081
OCDF	271		0.451	0.271	0.0271	0.0814

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Wilmington, NC 28405, USA
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TEQ Summaries			
EMPC = 0, ND = 0	267	264	261
EMPC = 0, ND = DL / 2	267	264	261
EMPC = 0, ND = DL	267	264	261
EMPC = 0, < J-level = 0	267	264	261
EMPC = EMPC, ND = 0	267	264	261
EMPC = EMPC, ND = DL / 2	267	264	261
EMPC = EMPC, ND = DL	267	264	261
EMPC = EMPC, < J-level = 0	267	264	261

Sample ID: 11215131-120221-S-SPS-SW-S-17 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.56 g	Lab Sample ID	B5963_18710_DF_002-D2	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	74.5 %	QC Batch No:	18710	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	15:18:52

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	5,360			E	ES 2378-TCDD	75.3	
12378-PeCDD	59				ES 12378-PeCDD	78	
123478-HxCDD	EMPC		3.31		ES 123478-HxCDD	83.1	
123678-HxCDD	14.4				ES 123678-HxCDD	80.5	
123789-HxCDD	7.46				ES 123789-HxCDD	82.2	
1234678-HpCDD	439				ES 1234678-HpCDD	82.9	
OCDD	6,110				ES OCDD	85	
2378-TCDF	13,600			E	ES 2378-TCDF	77.5	
12378-PeCDF	497				ES 12378-PeCDF	79.1	
23478-PeCDF	389				ES 23478-PeCDF	79.2	
123478-HxCDF	832				ES 123478-HxCDF	79.9	
123678-HxCDF	206				ES 123678-HxCDF	84.1	
234678-HxCDF	46.9				ES 234678-HxCDF	78.1	
123789-HxCDF	ND	0.42			ES 123789-HxCDF	77.1	
1234678-HpCDF	344				ES 1234678-HpCDF	82.4	
1234789-HpCDF	105				ES 1234789-HpCDF	79.6	
OCDF	2,600				ES OCDF	82.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	68.3	
Total TCDD	5,910		5,940	E	CS 12347-PeCDD	82.1	
Total PeCDD	95.4		100		CS 12346-PeCDF	82.9	
Total HxCDD	169		173		CS 123469-HxCDF	83.5	
Total HpCDD	881		881		CS 1234689-HpCDF	83.3	
Total TCDF	26,000		26,000	E			
Total PeCDF	1,430		1,430				
Total HxCDF	1,320		1,320				
Total HpCDF	624		624				
Total PCDD/Fs	**45,100**		**45,200**	E			
WHO-2005 TEQs							
TEQ: ND=0	7030		7030				
TEQ: ND=DL/2	7030	0.551	7030				
TEQ: ND=DL	7030	1.1	7030				

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Wilmington, NC 28405, USA
www.us.sgs.com
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Sample ID: 11215131-120221-S-SPS-SW-S-17 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.56 g	Lab Sample ID:	B5963_18710_DF_002-D2	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	74.5 %	QC Batch No.:	18710	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	15:18:52

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	8.21		12479/12468D	8.31		124679/124689D	90.8		1234679D	443	
1379D	3.8		12469D	6.76		123468D	7.67		1234678D	439	
1369D	0.557		12368D	8.18		123679/123689D	44.1				
1469D	4.84		12478D	4.61		123469D	2.69				
1247D...[4]	[8.61]		12379D	3.21		123478D	[3.31]				
1378D	16.8		12369D...[3]	3.83		123678D	14.4				
1268D	1.32		12346/12347D	1.55	J	123467D	2.26				
1478D	13.2		12378D	59		123789D	7.46		**Conc.**	881	
1279D	(0.235)		12367D	[3.33]					**EMPC**	881	
1234/1269D	2.52		12389D	[1.36]	J						
1236D	[1.41]								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	80.3										
1239D	(0.235)								OCDD	6110	
2378D	5360	E									
1278D	418										
1267D	[18.7]										
1289D	(0.235)										
Conc.	5,910		**Conc.**	95.4		**Conc.**	169				
EMPC	5,940		**EMPC**	100		**EMPC**	173				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	7,030	7,030
TEQ: ND=DL/2	7,030	7,030
TEQ: ND=DL	7,030	7,030

	Conc.	EMPC
Total PCDD/Fs	45,100	45,200

Checkcode: 248-879-KQW

Report Created: 08-Dec-2021 16:18 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-S-17 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.56 g	Lab Sample ID:	B5963_18710_DF_002-D2	Date Extracted: 03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	74.5 %	QC Batch No.:	18710	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 15:18:52

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	3.94		13468/12468F	36.7		123468F	15.7		1234678F	344	
1468F	23.8		13678F...[3]	8.63		124678/134678F	87.6		1234679F	16.2	
2468F	18		12368F...[3]	241		134679F	(0.399)		1234689F	158	
1346/1246F	(0.11)		14678F	(0.412)		124679F	2.25		1234789F	105	
1347F...[3]	147		13479F	(0.412)		124689F	58.8				
1348F	(0.11)		13469/12479F	[1.65]	J	123467F	5.76				
1248F...[3]	588		12346F	(0.412)		123478F	832				
1268F	200		23468/12469F	15.4		123678F	206				
1467F	29.9		12347F	11.8		123479F	(0.399)				
1478F	499		12348F	51.1		123469F	4.19				
1369/1237F	140		12378F	497		123679F	2.06				
2467F	16.7		12678/12367F	146		234678F	46.9		**Conc.**	624	
2368F	360		12379F	(0.412)		234678/123689F	0		**EMPC**	624	
1238F...[5]	677		12679F	1.53	J	123689F	(0.399)				
1278F	6100	E	23467/12369F	7.42		123789F	(0.42)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.11)		23478F	389		123789/123489F	0				
1267F	303		23478/12489F	0		123489F	61.9		OCDF	2600	
2346/1249F	38.4		12489F	(0.412)							
2347/1279F	162		12349F	(0.412)							
2348F	867	E	12389F	21.5							
2378F	13600	E									
2367/3467F	1060	E									
1269F	179										
1239F	16.4										
1289F	972	E									
Conc.	26,000		**Conc.**	1,430		**Conc.**	1,320				
EMPC	26,000		**EMPC**	1,430		**EMPC**	1,320				

Checkcode: 248-879-KQW

Report Created: 08-Dec-2021 16:18 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-S-17 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5963_18710_DF_002-D2
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.56 g	QC Batch No.:	18710
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 15:18
Lab Project No:	B5963	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	5360	E	0.235	5360	5360	5360
12378-PeCDD	59		0.305	29.5	59	59
123478-HxCDD	[3.31]		0.798	[0.331]	[0.331]	[0.331]
123678-HxCDD	14.4		0.797	1.44	1.44	1.44
123789-HxCDD	7.46		0.753	0.746	0.746	0.746
1234678-HpCDD	439		0.791	4.39	4.39	4.39
OCDD	6110		0.404	6.11	0.611	1.83
2378-TCDF	13600	E	0.11	1360	1360	1360
12378-PeCDF	497		0.393	24.8	24.8	14.9
23478-PeCDF	389		0.431	194	194	117
123478-HxCDF	832		0.409	83.2	83.2	83.2
123678-HxCDF	206		0.377	20.6	20.6	20.6
234678-HxCDF	46.9		0.396	4.69	4.69	4.69
123789-HxCDF	(0.42)		0.42	(0.042)	(0.042)	(0.042)
1234678-HpCDF	344		0.222	3.44	3.44	3.44
1234789-HpCDF	105		0.338	1.05	1.05	1.05
OCDF	2600		0.28	2.6	0.26	0.779

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TEQ Summaries			
EMPC = 0, ND = 0	7100	7120	7030
EMPC = 0, ND = DL / 2	7100	7120	7030
EMPC = 0, ND = DL	7100	7120	7030
EMPC = 0, < J-level = 0	7100	7120	7030
EMPC = EMPC, ND = 0	7100	7120	7030
EMPC = EMPC, ND = DL / 2	7100	7120	7030
EMPC = EMPC, ND = DL	7100	7120	7030
EMPC = EMPC, < J-level = 0	7100	7120	7030

Checkcode: 248-879-KQW

Sample ID: 11215131-120221-S-SPS-SW-S-18 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.27 g	Lab Sample ID	B5963_18710_DF_003	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	79.2 %	QC Batch No:	18710	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:58:56

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	114				ES 2378-TCDD	93	
12378-PeCDD	1.8				ES 12378-PeCDD	108	
123478-HxCDD	0.812			J	ES 123478-HxCDD	95.1	
123678-HxCDD	1.56			J	ES 123678-HxCDD	96.8	
123789-HxCDD	1.79				ES 123789-HxCDD	95.2	
1234678-HpCDD	73.6				ES 1234678-HpCDD	85.6	
OCDD	1,470				ES OCDD	46.4	
2378-TCDF	330				ES 2378-TCDF	83.8	
12378-PeCDF	16.1				ES 12378-PeCDF	97.8	
23478-PeCDF	12.7				ES 23478-PeCDF	92.6	
123478-HxCDF	26.7				ES 123478-HxCDF	109	
123678-HxCDF	6.84				ES 123678-HxCDF	114	
234678-HxCDF	1.54			J	ES 234678-HxCDF	108	
123789-HxCDF	ND	0.161			ES 123789-HxCDF	106	
1234678-HpCDF	8.94				ES 1234678-HpCDF	114	
1234789-HpCDF	3.31				ES 1234789-HpCDF	87	
OCDF	11.9				ES OCDF	46.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	93.9	
Total TCDD	129		132		CS 12347-PeCDD	113	
Total PeCDD	6.67		6.81		CS 12346-PeCDF	96.8	
Total HxCDD	28.2		29		CS 123469-HxCDF	122	
Total HpCDD	171		171		CS 1234689-HpCDF	106	
Total TCDF	677		678				
Total PeCDF	46.5		47.4				
Total HxCDF	43.6		43.6				
Total HpCDF	17.8		17.8				
Total PCDD/Fs	**2,600**		**2,610**				
WHO-2005 TEQs							
TEQ: ND=0	158		158				
TEQ: ND=DL/2	158	0.209	158				
TEQ: ND=DL	158	0.418	158				

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Sample ID: 11215131-120221-S-SPS-SW-S-18 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.27 g	Lab Sample ID:	B5963_18710_DF_003	Date Extracted: 03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	79.2 %	QC Batch No.:	18710	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 0:58:56

Tetra-Dioxins	Conc. (pg/g)	Qualifiers
1368D	0.613	
1379D	0.355	
1369D	(0.145)	
1469D	1.56	
1247D...[4]	0.433	
1378D	0.582	
1268D	(0.145)	
1478D	0.381	
1279D	(0.145)	
1234/1269D	0.361	
1236D	(0.145)	
1237/1238D	[1.95]	
1239D	(0.145)	
2378D	114	
1278D	11	
1267D	[0.548]	
1289D	[0.355]	
Conc.	129	
EMPC	132	

Penta-Dioxins	Conc. (pg/g)	Qualifiers
12479/12468D	0.883	J
12469D	1.51	J
12368D	0.379	J
12478D	0.482	J
12379D	0.325	J
12369D...[3]	0.866	J
12346/12347D	[0.146]	J
12378D	1.8	
12367D	0.191	J
12389D	0.227	J
Conc.	6.67	
EMPC	6.81	

Hexa-Dioxins	Conc (pg/g)	Qualifiers
124679/124689D	15	
123468D	1.32	J
123679/123689D	6.99	
123469D	[0.821]	J
123478D	0.812	J
123678D	1.56	J
123467D	0.753	J
123789D	1.79	
Conc.	28.2	
EMPC	29	

Hepta-Dioxins	Conc (pg/g)	Qualifiers
1234679D	96.9	
1234678D	73.6	
Conc.	171	
EMPC	171	

Octa-Dioxin	Conc (pg/g)	Qualifiers
OCDD	1470	

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	158	158
TEQ: ND=DL/2	158	158
TEQ: ND=DL	158	158

	Conc.	EMPC
Total PCDD/Fs	2,600	2,610

Checkcode: 231-881-WKG

Report Created: 08-Dec-2021 16:03 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-S-18 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.27 g	Lab Sample ID:	B5963_18710_DF_003	Date Extracted: 03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	79.2 %	QC Batch No.:	18710	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 0:58:56

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.634		13468/12468F	0.864	J	123468F	0.743	J	1234678F	8.94	
1468F	[0.805]		13678F...[3]	0.771	J	124678/134678F	3.55		1234679F	0.479	J
2468F	1.93		12368F...[3]	8.18		134679F	(0.135)		1234689F	5.12	
1346/1246F	(0.191)		14678F	(0.0802)		124679F	(0.135)		1234789F	3.31	
1347F...[3]	6.28		13479F	(0.0802)		124689F	1.95				
1348F	(0.191)		13469/12479F	(0.0802)		123467F	0.241	J			
1248F...[3]	19.2		12346F	(0.0802)		123478F	26.7				
1268F	6.24		23468/12469F	0.544	J	123678F	6.84				
1467F	1.07		12347F	0.461	J	123479F	(0.135)				
1478F	15.5		12348F	1.62	J	123469F	(0.135)				
1369/1237F	4.67		12378F	16.1		123679F	(0.135)				
2467F	0.707		12678/12367F	5.18		234678F	1.54	J	**Conc.**	17.8	
2368F	10.6		12379F	(0.0802)		234678/123689F	0		**EMPC**	17.8	
1238F...[5]	20.4		12679F	(0.0802)		123689F	(0.135)				
1278F	158		23467/12369F	[0.35]	J	123789F	(0.161)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.191)		23478F	12.7		123789/123489F	0				
1267F	9.55		23478/12489F	0		123489F	2.02		OCDF	11.9	
2346/1249F	1.29		12489F	(0.0802)							
2347/1279F	6.12		12349F	(0.0802)							
2348F	22.9		12389F	[0.589]	J						
2378F	330										
2367/3467F	28.9										
1269F	6.03										
1239F	0.537										
1289F	27.2										
Conc.	677		**Conc.**	46.5		**Conc.**	43.6				
EMPC	678		**EMPC**	47.4		**EMPC**	43.6				

Checkcode: 231-881-WKG

Report Created: 08-Dec-2021 16:03 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-S-18 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5963_18710_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.27 g	QC Batch No.:	18710
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 00:58
Lab Project No:	B5963	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	114		0.145	114	114	114
12378-PeCDD	1.8		0.119	0.902	1.8	1.8
123478-HxCDD	0.812	J	0.157	0.0812	0.0812	0.0812
123678-HxCDD	1.56	J	0.161	0.156	0.156	0.156
123789-HxCDD	1.79		0.16	0.179	0.179	0.179
1234678-HpCDD	73.6		0.177	0.736	0.736	0.736
OCDD	1470		1.21	1.47	0.147	0.442
2378-TCDF	330		0.191	33	33	33
12378-PeCDF	16.1		0.0773	0.805	0.805	0.483
23478-PeCDF	12.7		0.0832	6.37	6.37	3.82
123478-HxCDF	26.7		0.128	2.67	2.67	2.67
123678-HxCDF	6.84		0.12	0.684	0.684	0.684
234678-HxCDF	1.54	J	0.135	0.154	0.154	0.154
123789-HxCDF	(0.161)		0.161	(0.0161)	(0.0161)	(0.0161)
1234678-HpCDF	8.94		0.11	0.0894	0.0894	0.0894
1234789-HpCDF	3.31		0.2	0.0331	0.0331	0.0331
OCDF	11.9		0.613	0.0119	0.00119	0.00358

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TEQ Summaries			
EMPC = 0, ND = 0	161	160	158
EMPC = 0, ND = DL / 2	161	160	158
EMPC = 0, ND = DL	161	160	158
EMPC = 0, < J-level = 0	160	160	157
EMPC = EMPC, ND = 0	161	160	158
EMPC = EMPC, ND = DL / 2	161	160	158
EMPC = EMPC, ND = DL	161	160	158
EMPC = EMPC, < J-level = 0	160	160	157

Checkcode: 231-881-WKG

Sample ID: 11215131-120221-S-SPS-SW-S-19 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.81 g	Lab Sample ID	B5963_18710_DF_004	Date Extracted:	03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	82.5 %	QC Batch No:	18710	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:45:17

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	573				ES 2378-TCDD	84.6	
12378-PeCDD	6.72				ES 12378-PeCDD	94.4	
123478-HxCDD	EMPC		0.832	J	ES 123478-HxCDD	89.5	
123678-HxCDD	EMPC		2.16		ES 123678-HxCDD	91.5	
123789-HxCDD	2.89				ES 123789-HxCDD	88.4	
1234678-HpCDD	87.4				ES 1234678-HpCDD	81	
OCDD	1,200				ES OCDD	42.3	
2378-TCDF	1,590			E	ES 2378-TCDF	77.5	
12378-PeCDF	75.9				ES 12378-PeCDF	89.7	
23478-PeCDF	58.1				ES 23478-PeCDF	87.2	
123478-HxCDF	141				ES 123478-HxCDF	102	
123678-HxCDF	35.1				ES 123678-HxCDF	108	
234678-HxCDF	7.17				ES 234678-HxCDF	99.7	
123789-HxCDF	ND	0.119			ES 123789-HxCDF	97.1	
1234678-HpCDF	38.4				ES 1234678-HpCDF	110	
1234789-HpCDF	19.8				ES 1234789-HpCDF	80.2	
OCDF	38.7				ES OCDF	41	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	93	
Total TCDD	649		654		CS 12347-PeCDD	113	
Total PeCDD	21.9		22.8		CS 12346-PeCDF	101	
Total HxCDD	80.9		85.4		CS 123469-HxCDF	121	
Total HpCDD	213		213		CS 1234689-HpCDF	111	
Total TCDF	3,180		3,180	E			
Total PeCDF	214		214				
Total HxCDF	216		216				
Total HpCDF	75		75				
Total PCDD/Fs	**5,890**		**5,900**	E			
WHO-2005 TEQs							
TEQ: ND=0	779		779				
TEQ: ND=DL/2	779	0.258	779				
TEQ: ND=DL	779	0.516	779				

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Sample ID: 11215131-120221-S-SPS-SW-S-19 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.81 g	Lab Sample ID:	B5963_18710_DF_004	Date Extracted: 03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	82.5 %	QC Batch No.:	18710	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 1:45:17

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.978		12479/12468D	2.36		124679/124689D	63		1234679D	126	
1379D	0.7		12469D	8.27		123468D	[1.53]	J	1234678D	87.4	
1369D	0.29	J	12368D	0.972	J	123679/123689D	12.4				
1469D	7.32		12478D	[0.609]	J	123469D	1.44	J			
1247D...[4]	[1.37]		12379D	0.739	J	123478D	[0.832]	J			
1378D	1.8		12369D...[3]	2.57		123678D	[2.16]				
1268D	(0.151)		12346/12347D	0.313	J	123467D	1.18	J			
1478D	1.61		12378D	6.72		123789D	2.89		**Conc.**	213	
1279D	(0.151)		12367D	(0.241)					**EMPC**	213	
1234/1269D	1.39		12389D	[0.286]	J						
1236D	(0.151)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	9.13										
1239D	(0.151)								OCDD	1200	
2378D	573										
1278D	52.3										
1267D	[2.29]										
1289D	[1.66]										
Conc.	649		**Conc.**	21.9		**Conc.**	80.9				
EMPC	654		**EMPC**	22.8		**EMPC**	85.4				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	779	779
TEQ: ND=DL/2	779	779
TEQ: ND=DL	779	779

	Conc.	EMPC
Total PCDD/Fs	5,890	5,900

Checkcode: 300-957-CBW

Report Created: 08-Dec-2021 16:03 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-S-19 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.81 g	Lab Sample ID:	B5963_18710_DF_004	Date Extracted: 03-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	82.5 %	QC Batch No.:	18710	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 1:45:17

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.54		13468/12468F	1.75		123468F	2.04		1234678F	38.4	
1468F	3.64		13678F...[3]	1.23	J	124678/134678F	13.4		1234679F	1.05	J
2468F	2.19		12368F...[3]	36.8		134679F	(0.0984)		1234689F	15.7	
1346/1246F	(0.141)		14678F	(0.0673)		124679F	[0.261]	J	1234789F	19.8	
1347F...[3]	20.4		13479F	(0.0673)		124689F	6.37				
1348F	(0.141)		13469/12479F	(0.0673)		123467F	0.904	J			
1248F...[3]	84		12346F	(0.0673)		123478F	141				
1268F	27.8		23468/12469F	1.72		123678F	35.1				
1467F	3.77		12347F	1.44	J	123479F	(0.0984)				
1478F	65.7		12348F	7.76		123469F	(0.0984)				
1369/1237F	19		12378F	75.9		123679F	(0.0984)				
2467F	1.82		12678/12367F	24.8		234678F	7.17		**Conc.**	75	
2368F	42.8		12379F	(0.0673)		234678/123689F	0		**EMPC**	75	
1238F...[5]	94.9		12679F	(0.0673)		123689F	(0.0984)				
1278F	754	E	23467/12369F	1.12	J	123789F	(0.119)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.141)		23478F	58.1		123789/123489F	0				
1267F	42.5		23478/12489F	0		123489F	10		OCDF	38.7	
2346/1249F	5.21		12489F	(0.0673)							
2347/1279F	21.3		12349F	(0.0673)							
2348F	104		12389F	3.4							
2378F	1590	E									
2367/3467F	127										
1269F	34										
1239F	2.57										
1289F	132										
Conc.	3,180		**Conc.**	214		**Conc.**	216				
EMPC	3,180		**EMPC**	214		**EMPC**	216				

Checkcode: 300-957-CBW

Report Created: 08-Dec-2021 16:03 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-S-19 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5963_18710_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.81 g	QC Batch No.:	18710
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 01:45
Lab Project No:	B5963	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	573		0.151	573	573	573
12378-PeCDD	6.72		0.241	3.36	6.72	6.72
123478-HxCDD	[0.832]	J	0.141	[0.0832]	[0.0832]	[0.0832]
123678-HxCDD	[2.16]		0.145	[0.216]	[0.216]	[0.216]
123789-HxCDD	2.89		0.142	0.289	0.289	0.289
1234678-HpCDD	87.4		0.197	0.874	0.874	0.874
OCDD	1200		0.768	1.2	0.12	0.361
2378-TCDF	1590	E	0.141	159	159	159
12378-PeCDF	75.9		0.0677	3.8	3.8	2.28
23478-PeCDF	58.1		0.0669	29	29	17.4
123478-HxCDF	141		0.0956	14.1	14.1	14.1
123678-HxCDF	35.1		0.0862	3.51	3.51	3.51
234678-HxCDF	7.17		0.0979	0.717	0.717	0.717
123789-HxCDF	(0.119)		0.119	(0.0119)	(0.0119)	(0.0119)
1234678-HpCDF	38.4		0.0892	0.384	0.384	0.384
1234789-HpCDF	19.8		0.152	0.198	0.198	0.198
OCDF	38.7		0.395	0.0387	0.00387	0.0116

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TEQ Summaries			
EMPC = 0, ND = 0	790	792	779
EMPC = 0, ND = DL / 2	790	792	779
EMPC = 0, ND = DL	790	792	779
EMPC = 0, < J-level = 0	790	792	779
EMPC = EMPC, ND = 0	790	792	779
EMPC = EMPC, ND = DL / 2	790	792	779
EMPC = EMPC, ND = DL	790	792	779
EMPC = EMPC, < J-level = 0	790	792	779

Checkcode: 300-957-CBW

Sample ID: Method Blank B5963_18710 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18710_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:48:16

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.137			ES 2378-TCDD	99.3	
12378-PeCDD	ND	0.13			ES 12378-PeCDD	109	
123478-HxCDD	ND	0.103			ES 123478-HxCDD	102	
123678-HxCDD	ND	0.105			ES 123678-HxCDD	101	
123789-HxCDD	ND	0.108			ES 123789-HxCDD	99.5	
1234678-HpCDD	ND	0.105			ES 1234678-HpCDD	91.4	
OCDD	ND	0.597			ES OCDD	46	
2378-TCDF	ND	0.0741			ES 2378-TCDF	95.2	
12378-PeCDF	ND	0.0845			ES 12378-PeCDF	107	
23478-PeCDF	ND	0.079			ES 23478-PeCDF	105	
123478-HxCDF	ND	0.0832			ES 123478-HxCDF	114	
123678-HxCDF	ND	0.0785			ES 123678-HxCDF	123	
234678-HxCDF	ND	0.0792			ES 234678-HxCDF	119	
123789-HxCDF	ND	0.0996			ES 123789-HxCDF	117	
1234678-HpCDF	ND	0.0851			ES 1234678-HpCDF	111	
1234789-HpCDF	ND	0.122			ES 1234789-HpCDF	99.5	
OCDF	ND	0.399			ES OCDF	50.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	101	
Total TCDD	ND	0.137	ND		CS 12347-PeCDD	124	
Total PeCDD	ND	0.13	ND		CS 12346-PeCDF	116	
Total HxCDD	ND	0.105	ND		CS 123469-HxCDF	132	V
Total HpCDD	ND	0.105	ND		CS 1234689-HpCDF	115	
Total TCDF	ND	0.0741	ND				
Total PeCDF	ND	0.0818	ND				
Total HxCDF	ND	0.0844	ND				
Total HpCDF	ND	0.101	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.185	0.185	0.185				
TEQ: ND=DL	0.37	0.37	0.37				

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Sample ID: Method Blank B5963_18710 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18710_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:48:16

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.137)		12479/12468D	(0.13)		124679/124689D	(0.105)		1234679D	(0.105)	
1379D	(0.137)		12469D	(0.13)		123468D	(0.105)		1234678D	(0.105)	
1369D	(0.137)		12368D	(0.13)		123679/123689D	(0.105)				
1469D	(0.137)		12478D	(0.13)		123469D	(0.105)				
1247D...[4]	(0.137)		12379D	(0.13)		123478D	(0.103)				
1378D	(0.137)		12369D...[3]	(0.13)		123678D	(0.105)				
1268D	(0.137)		12346/12347D	(0.13)		123467D	(0.105)				
1478D	(0.137)		12378D	(0.13)		123789D	(0.108)		**Conc.**	0	
1279D	(0.137)		12367D	(0.13)					**EMPC**	0	
1234/1269D	(0.137)		12389D	(0.13)							
1236D	(0.137)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.137)										
1239D	(0.137)								OCDD	(0.597)	
2378D	(0.137)										
1278D	(0.137)										
1267D	(0.137)										
1289D	(0.137)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.185	0.185
TEQ: ND=DL	0.37	0.37

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 192-567-JJX

Report Created: 08-Dec-2021 16:03 Analyst: TF

Sample ID: Method Blank B5963_18710 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18710_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:48:16

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.0741)		13468/12468F	(0.0717)		123468F	(0.0844)		1234678F	(0.0851)	
1468F	(0.0741)		13678F...[3]	(0.0818)		124678/134678F	(0.0844)		1234679F	(0.101)	
2468F	(0.0741)		12368F...[3]	(0.0818)		134679F	(0.0844)		1234689F	(0.101)	
1346/1246F	(0.0741)		14678F	(0.0818)		124679F	(0.0844)		1234789F	(0.122)	
1347F...[3]	(0.0741)		13479F	(0.0818)		124689F	(0.0844)				
1348F	(0.0741)		13469/12479F	(0.0818)		123467F	(0.0844)				
1248F...[3]	(0.0741)		12346F	(0.0818)		123478F	(0.0832)				
1268F	(0.0741)		23468/12469F	(0.0818)		123678F	(0.0785)				
1467F	(0.0741)		12347F	(0.0818)		123479F	(0.0844)				
1478F	(0.0741)		12348F	(0.0818)		123469F	(0.0844)				
1369/1237F	(0.0741)		12378F	(0.0845)		123679F	(0.0844)				
2467F	(0.0741)		12678/12367F	(0.0818)		234678F	(0.0792)		**Conc.**	0	
2368F	(0.0741)		12379F	(0.0818)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.0741)		12679F	(0.0818)		123689F	(0.0844)				
1278F	(0.0741)		23467/12369F	(0.0818)		123789F	(0.0996)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.0741)		23478F	(0.079)		123789/123489F	0				
1267F	(0.0741)		23478/12489F	0		123489F	(0.0844)		OCDF	(0.399)	
2346/1249F	(0.0741)		12489F	(0.0818)							
2347/1279F	(0.0741)		12349F	(0.0818)							
2348F	(0.0741)		12389F	(0.0818)							
2378F	(0.0741)										
2367/3467F	(0.0741)										
1269F	(0.0741)										
1239F	(0.0741)										
1289F	(0.0741)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 192-567-JJX

Report Created: 08-Dec-2021 16:03 Analyst: TF

Sample ID: Method Blank B5963_18710 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18710_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18710
Date Collected:	n/a	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	07-Dec-2021 18:48
Lab Project No:	B5963	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.137)		0.137	(0.137)	(0.137)	(0.137)
12378-PeCDD	(0.13)		0.13	(0.065)	(0.13)	(0.13)
123478-HxCDD	(0.103)		0.103	(0.0103)	(0.0103)	(0.0103)
123678-HxCDD	(0.105)		0.105	(0.0105)	(0.0105)	(0.0105)
123789-HxCDD	(0.108)		0.108	(0.0108)	(0.0108)	(0.0108)
1234678-HpCDD	(0.105)		0.105	(0.00105)	(0.00105)	(0.00105)
OCDD	(0.597)		0.597	(0.000597)	(0.0000597)	(0.000179)
2378-TCDF	(0.0741)		0.0741	(0.00741)	(0.00741)	(0.00741)
12378-PeCDF	(0.0845)		0.0845	(0.00423)	(0.00423)	(0.00254)
23478-PeCDF	(0.079)		0.079	(0.0395)	(0.0395)	(0.0237)
123478-HxCDF	(0.0832)		0.0832	(0.00832)	(0.00832)	(0.00832)
123678-HxCDF	(0.0785)		0.0785	(0.00785)	(0.00785)	(0.00785)
234678-HxCDF	(0.0792)		0.0792	(0.00792)	(0.00792)	(0.00792)
123789-HxCDF	(0.0996)		0.0996	(0.00996)	(0.00996)	(0.00996)
1234678-HpCDF	(0.0851)		0.0851	(0.000851)	(0.000851)	(0.000851)
1234789-HpCDF	(0.122)		0.122	(0.00122)	(0.00122)	(0.00122)
OCDF	(0.399)		0.399	(0.000399)	(0.0000399)	(0.00012)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.162	0.194	0.185
EMPC = 0, ND = DL	0.323	0.387	0.37
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.162	0.194	0.185
EMPC = EMPC, ND = DL	0.323	0.387	0.37
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 192-567-JJX

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Sample ID: 0_18710_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18710_DF-RJ	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	16:29:16

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.3				ES 2378-TCDD	97.1	
12378-PeCDD	54.3				ES 12378-PeCDD	111	
123478-HxCDD	59.2				ES 123478-HxCDD	106	
123678-HxCDD	57.8				ES 123678-HxCDD	107	
123789-HxCDD	55.4				ES 123789-HxCDD	106	
1234678-HpCDD	55.9				ES 1234678-HpCDD	103	
OCDD	112				ES OCDD	56.4	
2378-TCDF	12				ES 2378-TCDF	91.9	
12378-PeCDF	54.9				ES 12378-PeCDF	109	
23478-PeCDF	59.6				ES 23478-PeCDF	103	
123478-HxCDF	55.5				ES 123478-HxCDF	116	
123678-HxCDF	55.4				ES 123678-HxCDF	124	
234678-HxCDF	57.4				ES 234678-HxCDF	115	
123789-HxCDF	52.7				ES 123789-HxCDF	129	
1234678-HpCDF	55.5				ES 1234678-HpCDF	124	
1234789-HpCDF	56.8				ES 1234789-HpCDF	111	
OCDF	112				ES OCDF	59.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	101	
Total TCDD	59.8		59.8		CS 12347-PeCDD	123	
Total PeCDD	83.6		83.6		CS 12346-PeCDF	112	
Total HxCDD	189		189		CS 123469-HxCDF	124	
Total HpCDD	72		72		CS 1234689-HpCDF	139	
Total TCDF	72.2		72.2				
Total PeCDF	212		212				
Total HxCDF	361		361				
Total HpCDF	112		112				
Total PCDD/Fs	**1,390**		**1,390**				
WHO-2005 TEQs							
TEQ: ND=0	128		128				
TEQ: ND=DL/2	128	0.138	128				
TEQ: ND=DL	128	0.275	128				

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Sample ID: 0_18710_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5963	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18710_DF	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18710	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:15:35

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.6				ES 2378-TCDD	101	
12378-PeCDD	53.3				ES 12378-PeCDD	112	
123478-HxCDD	58				ES 123478-HxCDD	106	
123678-HxCDD	59.3				ES 123678-HxCDD	105	
123789-HxCDD	55.3				ES 123789-HxCDD	105	
1234678-HpCDD	56				ES 1234678-HpCDD	99.5	
OCDD	114				ES OCDD	53.2	
2378-TCDF	12.6				ES 2378-TCDF	91.7	
12378-PeCDF	56				ES 12378-PeCDF	104	
23478-PeCDF	60.1				ES 23478-PeCDF	103	
123478-HxCDF	57.5				ES 123478-HxCDF	120	
123678-HxCDF	56				ES 123678-HxCDF	127	
234678-HxCDF	54.9				ES 234678-HxCDF	125	
123789-HxCDF	54.4				ES 123789-HxCDF	125	
1234678-HpCDF	56.1				ES 1234678-HpCDF	124	
1234789-HpCDF	53.8				ES 1234789-HpCDF	106	
OCDF	111				ES OCDF	57.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	102	
Total TCDD	58.6		58.6		CS 12347-PeCDD	125	
Total PeCDD	84.1		84.1		CS 12346-PeCDF	108	
Total HxCDD	191		191		CS 123469-HxCDF	133	
Total HpCDD	72.7		72.7		CS 1234689-HpCDF	118	
Total TCDF	71.2		71.2				
Total PeCDF	208		208				
Total HxCDF	378		378				
Total HpCDF	110		110				
Total PCDD/Fs	**1,400**		**1,400**				
WHO-2005 TEQs							
TEQ: ND=0	128		128				
TEQ: ND=DL/2	128	0.128	128				
TEQ: ND=DL	128	0.256	128				

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Sample DUP

Method 1613B

Sample ID: 0_18710_OPR001

Analyte	OPR1_18710_DF-RJ pg/uL	OPR2_18710_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	12.3	12.6	2.5%
1,2,3,7,8-PeCDD	54.3	53.3	1.8%
1,2,3,4,7,8-HxCDD	59.2	58	2.1%
1,2,3,6,7,8-HxCDD	57.8	59.3	2.6%
1,2,3,7,8,9-HxCDD	55.4	55.3	0.1%
1,2,3,4,6,7,8-HpCDD	55.9	56	0.3%
OCDD	112	114	1.2%
2,3,7,8-TCDF	12	12.6	4.5%
1,2,3,7,8-PeCDF	54.9	56	1.9%
2,3,4,7,8-PeCDF	59.6	60.1	0.8%
1,2,3,4,7,8-HxCDF	55.5	57.5	3.5%
1,2,3,6,7,8-HxCDF	55.4	56	1.1%
2,3,4,6,7,8-HxCDF	57.4	54.9	4.3%
1,2,3,7,8,9-HxCDF	52.7	54.4	3.2%
1,2,3,4,6,7,8-HpCDF	55.5	56.1	1.1%
1,2,3,4,7,8,9-HpCDF	56.8	53.8	5.4%
OCDF	112	111	1.0%
Totals			
Total TCDD	59.8	58.6	2.0%
Total PeCDD	83.6	84.1	0.5%
Total HxCDD	189	191	1.1%
Total HpCDD	72	72.7	0.9%
Total TCDF	72.2	71.2	1.5%
Total PeCDF	212	208	1.9%
Total HxCDF	361	378	4.8%
Total HpCDF	112	110	2.1%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5963*
Requested TAT:	*3 business days*
Projected due date:	*8-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120121-S-SPS-NE-S-11	B5963_001	Solid	1	4oz Amber	01-Dec-21	13:30	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-S-17	B5963_002	Solid	1	4oz Amber	02-Dec-21	08:30	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-S-18	B5963_003	Solid	1	4oz Amber	02-Dec-21	08:55	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-S-19	B5963_004	Solid	1	4oz Amber	02-Dec-21	09:20	0.4	2	4905 2704 1834

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* TB 12/3/2021

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B59163 1/2

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV
SPECIAL DELIVERABLES:
☐ DoD ☒ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120221-S-SPS-NE-S-11	12/1/21	1330	C	S	4 oz		X					RUSH *
11215131-120221-S-SPS-NE-O-8		1355			4 oz		X					NE-O is overburden, not EDD
11215131-120221-S-SPS-NE-O-9		1425			4 oz		X					"
11215131-120221-S-SPS-NE-B-2	↓	1430			4 oz		X					
11215131-120221-S-SPS-SW-S-17	12/2/21	930			4 oz		X					RUSH *
11215131-120221-S-SPS-SW-S-18		955			4 oz		X					RUSH *
11215131-120221-S-SPS-SW-S-19		920	↓		4 oz		X					RUSH *
~~11215131-120221-S-SPS-SW-O-6~~		~~1015~~			4 oz							error
11215131-120221-S-SPS-SW-O-7		1015			4 oz		X					SW-O is overburden, not EDD
11215131-120221-S-SPS-SW-B-9	↓	1020	↓	↓	4 oz		X	X	X			MS/MSD

	DATE:	TIME:	
COLLECTED/RELINQUISHED BY (1): Stephen Sollar	12/2/21	1345	RECEIVED BY: Eddie Caston
RELINQUISHED BY (2): Eddie Caston	12-2-21	1525	RECEIVED BY: 12/2/21 1525
RELINQUISHED BY (3):	12/2/21	1525	RECEIVED BY:

RECEIVED BY LABORATORY: ASHLEY ORDAS DATE: 12/3/21 TIME: 10:47
COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT
CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT
CARRIER: FedEx TEMP °C 0.4°
TRACKING #: 4905 2704 1274

*=Samples in this project.

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CHAIN OF CUSTODY

B59963 2/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS
11215131-10221-S-SPS-SW-B-4N1	12/2/21	1025			4 oz	X					HOLD
[illegible]					4 oz						error
11215131-120221-S-SPS-SW-B-W2		1030			4 oz	X					HOLD
11215131-120221-S-SPS-DUP2		—			4 oz	X			X		
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Stephen Sellers	12/2/21	1345	Eddie Custer
RELINQUISHED BY (2): Eddie Custer	12/2/21	1525	RECEIVED BY: [signature] 12/2/21 1525
RELINQUISHED BY (3): [signature]	12/2/21	1525	RECEIVED BY:

RECEIVED BY LABORATORY:	DATE:	TIME:
Ashley Orvino	12/3/21	10:47

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT

CARRIER: FedEx TEMP: °C 0.4°

TRACKING #: 4905 2704 1834

*= Samples in this project.

Page 2 of 2

B59163

1/1

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 02DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405

(910) 350-1903

12/3/2021
10:47
0.40

FedEx Express

2 of 2

MPS# 0283 4905 2704 1834

Mstr# 4906 2704 1823

0201

FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

TB
12/3/21

SGS

Project Initiation Form

Project Number: B5963
Initiation Date: 03-Dec-21

Client Name: GHD Services Inc.
Analysis Method: 1613 PCDD/F

Sample Matrix: Solid
TAT: 3 days
Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Read and understood, initial and date: Prep Lab: YE 12/3/21 HRMS Lab:

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: tburkamper Date: 03-Dec-2021

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Methods: PCB, PAH, (PCDD/F) WHO-2, QUANTICS USV, DoD PCDD/F PEST

Extraction Type: (SDS) CLL, TALEX Carbon SPE

[Solid] Final Volume: 20 µL

Batch# 18710 | Split: ~~1/2~~ ~~1/4~~ | Extract Initial/Date: KE 12/3/21 | Clean-up Initial/Date: RAB 12/6/21 | Transfer Init/Date: RAB 12/6/21

Lab Sample ID	Extraction Position (Solvent: Tol.)	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5961_18710_001	4	21.78				brown/gray, clay-like
B5961_18710_002	5	19.98				gray, clay-like
B5961_18710_003	6	20.97				gray, clay-like, oil/fuel smell
B5961_18710_004	7	19.33				gray, clay-like
B5961_18710_005	8	18.95				gray, clay-like
B5963_18710_001	9	17.61				gray, clay-like, sandy
B5963_18710_002	10	18.20				gray, clay-like, fuel/oil smell
B5963_18710_003	11	19.28				gray, clay-like
B5963_18710_004	12	19.16				gray, clay-like
MB1_18710	1	10.00				sodium sulfate
OPR1_18710	2	10.00				sodium sulfate
OPR2_18710	3	10.00				sodium sulfate

C1 08DEC21

Supply IDs

Toluene	STL14.16
MeCHL	STL14.2
Florisil	SPLS.66
Hexane	STL14.19
Silica	SPLS.28D
S Nitrate	N/A
Base Silica	SPLS.63
HydroMatrix	N/A
Tetradecane	SPLS.28B
H_2SO_4	N/A
A Silica	SPLS.65
Sodium Sulfate	SBLS.28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	08DEC21 C1
Carbon Column Date/Initial:	
GPC Date/Initial:	
Bond-Elute Date/Initial:	

RAB 12/6/21

Cycle Time

TOL	Start:	1600
	Stop:	0915
HEX	Start:	
	Stop:	08DEC21 C1
DCM	Start:	
	Stop:	

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Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18710

Inter-Department Communication Sheet

08 Dec 21

Co

SGS

Wt. Volume Results

Batch #: 18710

Comments:

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5961_001	0.8	4.39	3.56	76.88%	76.88%			13.01	21.78	16.74
B5961_002	0.8	3.33	2.63	72.33%	72.33%			13.83	19.98	14.45
B5961_003	0.82	3.5	2.51	63.06%	63.06%			15.86	20.97	13.22
B5961_004	0.81	5.37	4.42	79.17%	79.17%			12.63	19.33	15.3
B5961_005	0.8	4.55	3.66	76.27%	76.27%			13.11	18.95	14.45
B5963_001	0.82	3.33	2.8	78.88%	78.88%			12.68	17.61	13.89
B5963_002	0.8	4.02	3.2	74.53%	74.53%			13.42	18.2	13.56
B5963_003	0.8	3.49	2.93	79.18%	79.18%			12.63	19.28	15.27
B5963_004	0.81	4.59	3.93	82.54%	82.54%			12.12	19.16	15.81

reviewed
cos Dec 21

% Solid Determination WorkSheet

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Batch: 18710

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5961_18710_001	0.80	4.39	3.56	
B5961_18710_002	0.80	3.33	2.63	
B5961_18710_003	0.82	3.50	2.51	
B5961_18710_004	0.81	5.37	4.42	
B5961_18710_005	0.80	4.55	3.66	
B5963_18710_001	0.82	3.33	2.80	
B5963_18710_002	0.80	4.02	3.20	
B5963_18710_003	0.80	3.49	2.93	6 05DEC21
B5963_18710_004	0.81	4.59	3.93	

PAB 12/6/21

Date/Initials: KE 12/6/21

SGS

Methods: PCB / PAH | (PCDD/F) WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Solid

Batch # 18710

Lab Sample ID	Spiker Initials/Date: JRH 12/3/21	JRH 12/3/21	JRH 12/3/21	RAS 12/6/21	RAS 12/6/21		
	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
	Amount: 10mL	Amount: 20mL	Amount: 20mL	Amount: 20µL	Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5961_18710_001	—	—	KE	KE	KE		
B5961_18710_002	—	—	KE	KE	KE		
B5961_18710_003	—	—	KE	KE	KE		
B5961_18710_004	—	—	KE	KE	KE		
B5961_18710_005	—	—	KE	KE	KE		
B5963_18710_001	—	—	KE	KE	KE		
B5963_18710_002	—	—	KE	KE	KE		
B5963_18710_003	—	—	KE	KE	KE		
B5963_18710_004	—	—	KE	KE	KE		
MB1_18710	—	—	KE	KE	KE		
OPR1_18710	KE	KE	KE	KE	KE		
OPR2_18710	KE	KE	KE	KE	KE		

RAS 12/6/21

Standard Information

Pipette ID						
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS	
SIL#	24-15-4	25-187-2	26-1-7	25-273-1	25-309-1	
Concentration	10pg/mL	10pg/mL	100 pg/mL	100 pg/µL	100 pg/µL	
Expiration Date	7/9/23	6/22/22	8/2023	9/8/22	10/8/22	

RAS 12/6/21

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	211207C01	3	CS3_211207_DF_CA	1.00	SIL 25-347-1	DTF	468-803	07-Dec-2021	14:18:24
3	211207C03	26	OPR1_18710_DF-RJ	1.00	0_18710_OPR001	DTF	348-095	07-Dec-2021	16:29:16
4	211207C04	27	OPR2_18710_DF	1.00	0_18710_OPR002	DTF	493-149	07-Dec-2021	17:15:35
5	211207C05	2	SBS_211207_DF_CA	1.00	20-61-1	DTF	956-405	07-Dec-2021	18:01:56
6	211207C06	25	MB1_18710_DF_SDS	10.00	Method Blank	DTF	192-567	07-Dec-2021	18:48:16
7	211207C12	33	B5963_18710_DF_001	13.89	11215131-120121-S-SPS-NE-S-11	DTF	183-178	07-Dec-2021	23:26:16
9	211207C14	35	B5963_18710_DF_003	15.27	11215131-120221-S-SPS-SW-S-18	DTF	231-881	08-Dec-2021	00:58:56
10	211207C15	36	B5963_18710_DF_004	15.81	11215131-120221-S-SPS-SW-S-19	DTF	300-957	08-Dec-2021	01:45:17
3	211208C03	3	CS3_211208_DF_CA	1.00	SIL 25-347-1	DTF	876-357	08-Dec-2021	12:59:58
4	211208C04	27	OPR2_18710_DF-RJ	1.00	0_18710_OPR002 CPSM only	DTF	666-316	08-Dec-2021	13:46:16
5	211208C05	2	SBS_211208_DF_CA	1.00	20-61-1 CL 08Dec21	DTF	170-897	08-Dec-2021	14:32:35
6	211208C06	34	B5963_18710_DF_002-D2	13.56	11215131-120221-S-SPS-SW-S-17	DTF	248-879	08-Dec-2021	15:18:52

REVIEWED
Tyler_Fritz , 12/8/2021, 4:20:28 PM

APPROVED
Carla_Lyon , 12/8/2021, 7:14:19 PM

Lab ID: MB1_18710_DF_SDS **Acq'd:** 07 Dec 2021 18:48 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5963_18710 **UTP:** 08-Dec-2021 15:59:14 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 192-567-JJX

Datafile: 211207C06 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0009	-		-	-	-	1.18	-	5044.673	0.137
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	5136.982	0.13
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3494.357	0.103
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	3494.357	0.105
123789-HxCDD	NotFnd		1.0117	-		-	-	-	1.05	-	3494.357	0.108
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2831.227	0.105
OCDD	NotFnd		1.0003	-		-	-	-	1.13	-	4395.405	0.597
2378-TCDF	NotFnd		1.0009	-		-	-	-	1.08	-	3966.524	0.0741
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	4972.626	0.0845
23478-PeCDF	NotFnd		1.0006	-		-	-	-	1.02	-	4972.626	0.079
123478-HxCDF	NotFnd		1.0005	-		-	-	-	1.27	-	4451.71	0.0832
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	4451.71	0.0785
234678-HxCDF	NotFnd		1.0004	-		-	-	-	1.19	-	4451.71	0.0792
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	4451.71	0.0996
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	4192.288	0.0851
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	4192.288	0.122
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	3721.805	0.399

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.12	1.0260	1.0261	+0.2	7.01E+07	0.84	Y	1.05	99.3
ES 12378-PeCDD	32.77	1.2396	1.2399	+0.6	6.50E+07	1.64	Y	0.88	109
ES 123478-HxCDD	36.77	0.9916	0.9915	-0.2	5.07E+07	1.25	Y	0.97	102
ES 123678-HxCDD	36.88	0.9947	0.9946	-0.2	4.88E+07	1.26	Y	0.94	101
ES 123789-HxCDD	37.18	1.0027	1.0028	+0.2	5.54E+07	1.24	Y	1.09	99.5
ES 1234678-HpCDD	40.14	1.0828	1.0825	-0.7	4.26E+07	1.06	Y	0.91	91.4
ES OCDD	42.75	1.1528	1.1529	+0.3	2.93E+07	0.90	Y	0.62	46
ES 2378-TCDF	26.18	1.0591	1.0592	+0.2	1.14E+08	0.78	Y	1.06	95.2
ES 12378-PeCDF	31.25	1.2643	1.2646	+0.6	1.10E+08	1.56	Y	0.91	107
ES 23478-PeCDF	32.41	1.3110	1.3113	+0.6	1.05E+08	1.56	Y	0.88	105
ES 123478-HxCDF	35.77	0.9648	0.9647	-0.2	7.00E+07	0.52	Y	1.20	114
ES 123678-HxCDF	35.91	0.9686	0.9685	-0.2	8.49E+07	0.53	Y	1.35	123
ES 234678-HxCDF	36.57	0.9865	0.9864	-0.2	7.52E+07	0.54	Y	1.24	119
ES 123789-HxCDF	37.56	1.0129	1.0128	-0.2	6.87E+07	0.52	Y	1.16	117
ES 1234678-HpCDF	39.17	1.0565	1.0563	-0.5	5.50E+07	0.47	Y	0.97	111
ES 1234789-HpCDF	40.56	1.0943	1.0940	-0.7	4.32E+07	0.47	Y	0.85	99.5
ES OCDF	42.91	1.1569	1.1571	+0.5	4.18E+07	0.92	Y	0.81	50.7

Lab ID: MB1_18710_DF_SDS | **Acq'd:** 07 Dec 2021 18:48 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5963_18710 | **UTP:** 08-Dec-2021 15:59:14 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 192-567-JJX

Datafile: 211207C06 | **Report:** 08 Dec 2021 16:03 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.43		-	-	-	6.75E+07	0.83	Y	-	-	
JS 1234-TCDF	24.71		-	-	-	1.13E+08	0.78	Y	-	-	
JS 123467-HxCDD	37.08		-	-	-	2.55E+07	1.33	Y	-	-	
CS 37Cl-2378-TCDD	27.14		1.0269	1.0270	+0.2	3.29E+07	n/a	-	1.20	101	
CS 12347-PeCDD	32.26		1.2203	1.2205	+0.4	6.33E+07	1.63	Y	0.75	124	
CS 12346-PeCDF	30.71		1.2424	1.2426	+0.4	1.11E+08	1.57	Y	0.85	116	
CS 123469-HxCDF	36.23	V	0.9771	0.9770	-0.2	7.53E+07	0.54	Y	1.12	132	
CS 1234689-HpCDF	39.60		1.0681	1.0679	-0.5	5.19E+07	0.45	Y	0.89	115	
~~SS 37Cl-2378-TCDD~~	~~27.14~~		~~1.0269~~	~~1.0270~~	~~+0.2~~	~~3.29E+07~~	~~n/a~~		~~1.15~~	~~102~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.26~~		~~1.2203~~	~~1.2205~~	~~+0.4~~	~~6.33E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~114~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.71~~		~~1.2424~~	~~1.2426~~	~~+0.4~~	~~1.11E+08~~	~~1.57~~	~~Y~~	~~0.94~~	~~100~~	
~~SS 123469-HxCDF~~	~~36.23~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~7.53E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~107~~	
~~SS 1234689-HpCDF~~	~~39.60~~		~~1.0681~~	~~1.0679~~	~~-0.5~~	~~5.19E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~103~~	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18710_DF_SDS **Acq'd: 07 Dec 2021 18:48 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5963_18710 **UTP: 08-Dec-2021 15:59:14 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 192-567-JJX**

Datafile: 211207C06 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8545						1.18		5044.673	0.137
1379-TCDD	NotFnd		0.8692						1.18		5044.673	0.137
1369-TCDD	NotFnd		0.8868						1.18		5044.673	0.137
1469-TCDD	NotFnd		0.9185						1.18		5044.673	0.137
1247/1246/1248/1249-TCDD	NotFnd		0.9282						1.18		5044.673	0.137
1378-TCDD	NotFnd		0.9355						1.18		5044.673	0.137
1268-TCDD	NotFnd		0.9435						1.18		5044.673	0.137
1478-TCDD	NotFnd		0.9533						1.18		5044.673	0.137
1279-TCDD	NotFnd		0.9601						1.18		5044.673	0.137
1234/1269-TCDD	NotFnd		0.9741						1.18		5044.673	0.137
1236-TCDD	NotFnd		0.9797						1.18		5044.673	0.137
1237/1238-TCDD	NotFnd		0.9898						1.18		5044.673	0.137
1239-TCDD	NotFnd		0.9952						1.18		5044.673	0.137
2378-TCDD	**NotFnd**		**1.0009**						**1.18**		**5044.673**	**0.137**
1278-TCDD	NotFnd		1.0139						1.18		5044.673	0.137
1267-TCDD	NotFnd		1.0193						1.18		5044.673	0.137
1289-TCDD	NotFnd		1.0393						1.18		5044.673	0.137
12479/12468-PeCDD	NotFnd		0.9216						1.04		5136.982	0.13
12469-PeCDD	NotFnd		0.9386						1.04		5136.982	0.13
12368-PeCDD	NotFnd		0.9560						1.04		5136.982	0.13
12478-PeCDD	NotFnd		0.9619						1.04		5136.982	0.13
12379-PeCDD	NotFnd		0.9651						1.04		5136.982	0.13
12369/12467/12489-PeCDD	NotFnd		0.9735						1.04		5136.982	0.13
12346/12347-PeCDD	NotFnd		0.9852						1.04		5136.982	0.13
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**5136.982**	**0.13**
12367-PeCDD	NotFnd		1.0037						1.04		5136.982	0.13
12389-PeCDD	NotFnd		1.0145						1.04		5136.982	0.13
124679/124689-HxCDD	NotFnd		0.9535						1.10		3494.357	0.105
123468-HxCDD	NotFnd		0.9716						1.10		3494.357	0.105
123679/123689-HxCDD	NotFnd		0.9796						1.10		3494.357	0.105
123469-HxCDD	NotFnd		0.9833						1.10		3494.357	0.105
123478-HxCDD	NotFnd		**1.0004**						1.09		**3494.357**	**0.103**
123678-HxCDD	NotFnd		**1.0035**						1.15		**3494.357**	**0.105**
123467-HxCDD	NotFnd		1.0088						1.10		3494.357	0.105
123789-HxCDD	NotFnd		**1.0117**						1.05		**3494.357**	**0.108**

Lab ID: MB1_18710_DF_SDS **Acq'd:** 07 Dec 2021 18:48 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5963_18710 **UTP:** 08-Dec-2021 15:59:14 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 192-567-JJX

Datafile: 211207C06 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

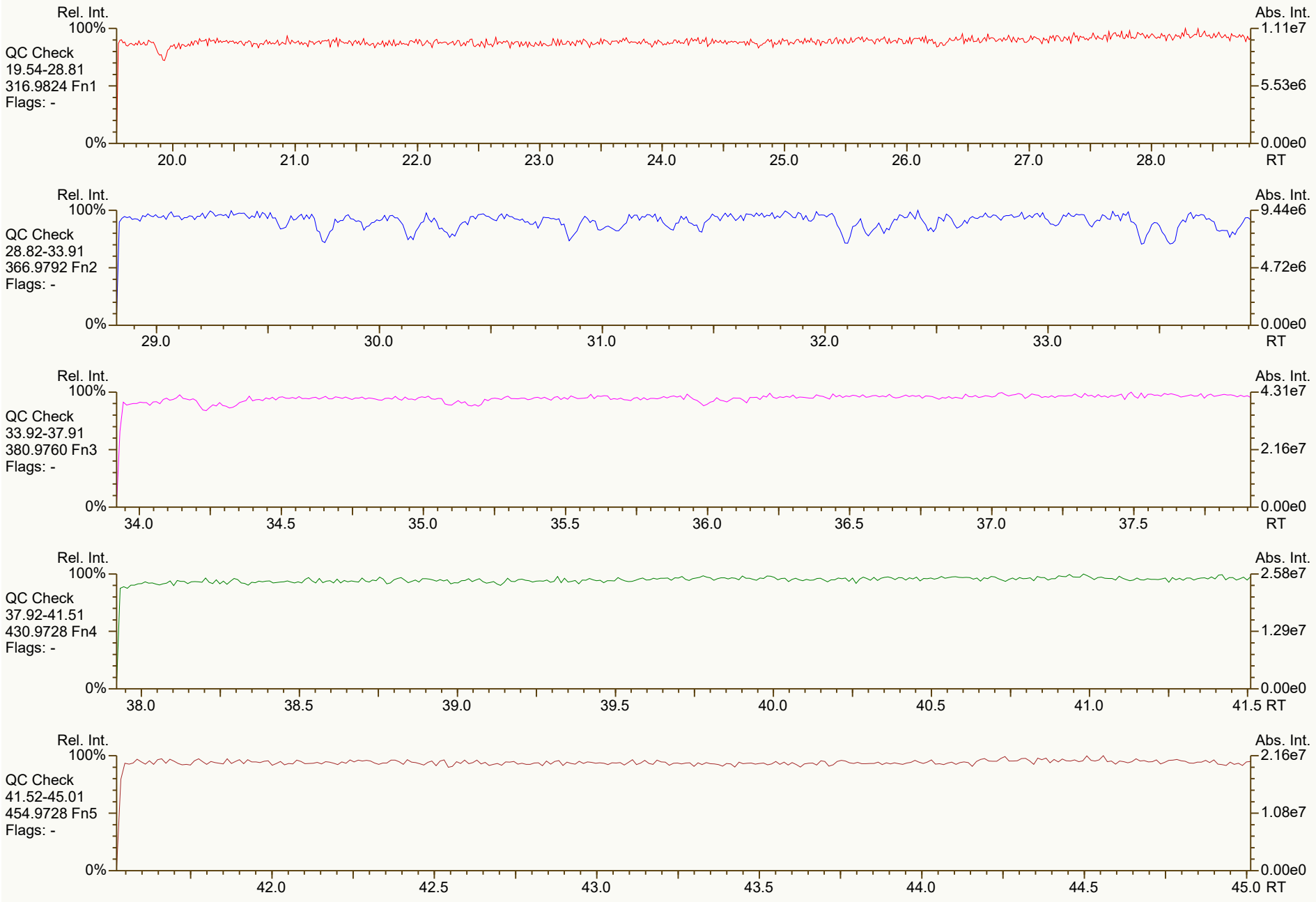
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9833						1.06		2831.227	0.105
1234678-HpCDD	**NotFnd**		**1.0003**						**1.06**		**2831.227**	**0.105**
OCDD	**NotFnd**		**1.0003**						**1.13**		**4395.405**	**0.597**
OCDD-a	NotFnd		1.0002						0.07		6131.781	13
1368-TCDF	NotFnd		0.7998						1.08		3966.524	0.0741
1468-TCDF	NotFnd		0.8214						1.08		3966.524	0.0741
2468-TCDF	NotFnd		0.8463						1.08		3966.524	0.0741
1346/1246-TCDF	NotFnd		0.8608						1.08		3966.524	0.0741
1347/1378/1247-TCDF	NotFnd		0.8675						1.08		3966.524	0.0741
1348-TCDF	NotFnd		0.8793						1.08		3966.524	0.0741
1248/1367/1379-TCDF	NotFnd		0.8850						1.08		3966.524	0.0741
1268-TCDF	NotFnd		0.9010						1.08		3966.524	0.0741
1467-TCDF	NotFnd		0.9068						1.08		3966.524	0.0741
1478-TCDF	NotFnd		0.9139						1.08		3966.524	0.0741
1369/1237-TCDF	NotFnd		0.9294						1.08		3966.524	0.0741
2467-TCDF	NotFnd		0.9350						1.08		3966.524	0.0741
2368-TCDF	NotFnd		0.9410						1.08		3966.524	0.0741
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9451						1.08		3966.524	0.0741
1278-TCDF	NotFnd		0.9642						1.08		3966.524	0.0741
1349-TCDF	NotFnd		0.9695						1.08		3966.524	0.0741
1267-TCDF	NotFnd		0.9753						1.08		3966.524	0.0741
2346/1249-TCDF	NotFnd		0.9832						1.08		3966.524	0.0741
2347/1279-TCDF	NotFnd		0.9921						1.08		3966.524	0.0741
2348-TCDF	NotFnd		0.9970						1.08		3966.524	0.0741
2378-TCDF	**NotFnd**		**1.0009**						**1.08**		**3966.524**	**0.0741**
2367/3467-TCDF	NotFnd		1.0162						1.08		3966.524	0.0741
1269-TCDF	NotFnd		1.0259						1.08		3966.524	0.0741
1239-TCDF	NotFnd		1.0370						1.08		3966.524	0.0741
1289-TCDF	NotFnd		1.0829						1.08		3966.524	0.0741
13468/12468-PeCDF	NotFnd		0.9067						1.02		4354.971	0.0717
13678/13467/12467-PeCDF	NotFnd		0.9583						1.02		4972.626	0.0818
12368/13478/12478-PeCDF	NotFnd		0.9635						1.02		4972.626	0.0818
14678-PeCDF	NotFnd		0.9669						1.02		4972.626	0.0818
13479-PeCDF	NotFnd		0.9701						1.02		4972.626	0.0818
13469/12479-PeCDF	NotFnd		0.9784						1.02		4972.626	0.0818
12346-PeCDF	NotFnd		0.9831						1.02		4972.626	0.0818

Lab ID: MB1_18710_DF_SDS **Acq'd: 07 Dec 2021 18:48 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5963_18710 **UTP: 08-Dec-2021 15:59:14 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 192-567-JJX**

Datafile: 211207C06 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

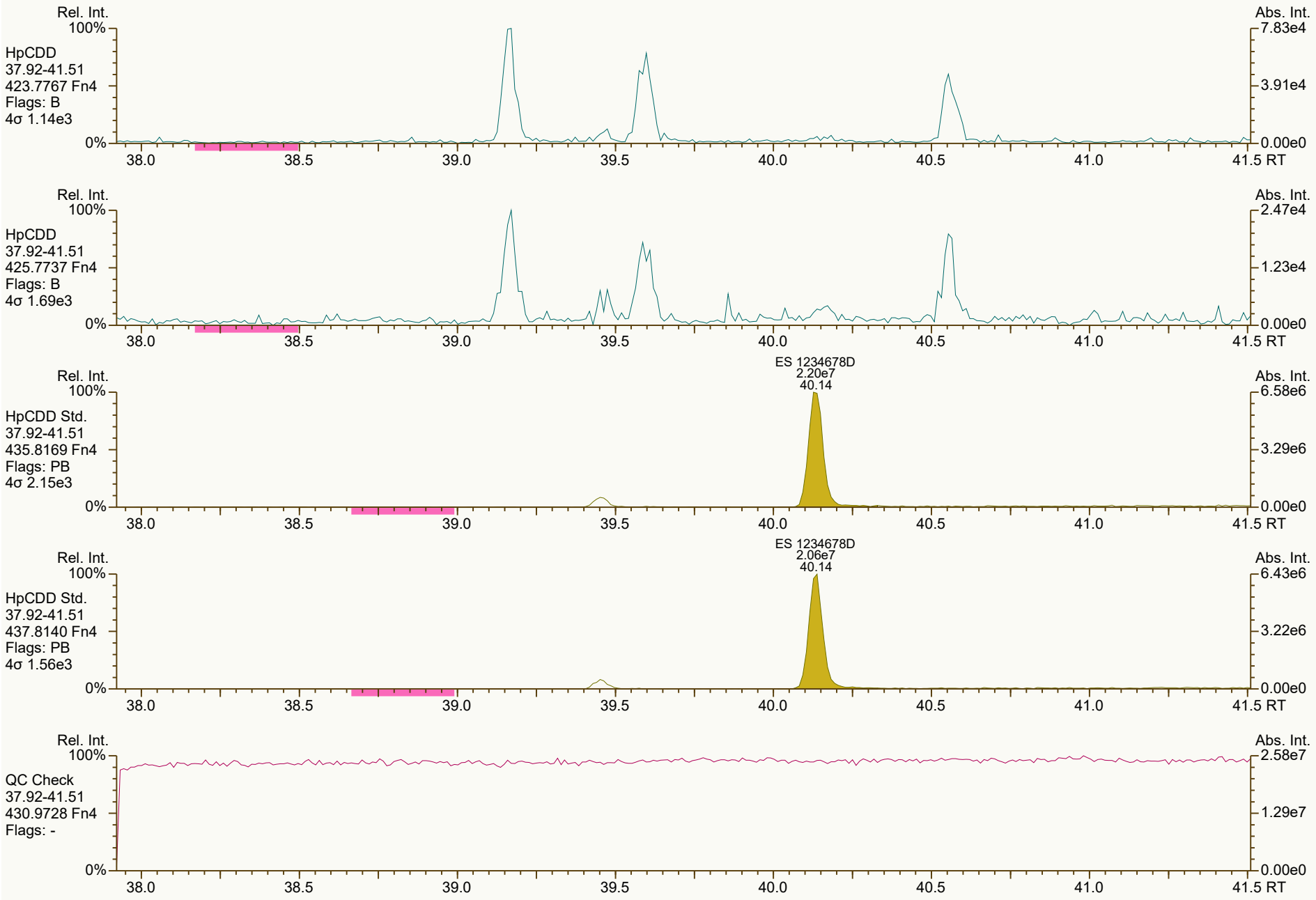
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9859						1.02		4972.626	0.0818
12347-PeCDF	NotFnd		0.9885						1.02		4972.626	0.0818
12348-PeCDF	NotFnd		0.9937						1.02		4972.626	0.0818
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**4972.626**	**0.0845**
12678/12367-PeCDF	NotFnd		1.0097						1.02		4972.626	0.0818
12379-PeCDF	NotFnd		1.0153						1.02		4972.626	0.0818
12679-PeCDF	NotFnd		0.9925						1.02		4972.626	0.0818
23467/12369-PeCDF	NotFnd		0.9966						1.02		4972.626	0.0818
23478-PeCDF	**NotFnd**		**1.0006**						**1.02**		**4972.626**	**0.079**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		4972.626	0.0818
12349-PeCDF	NotFnd		1.0108						1.02		4972.626	0.0818
12389-PeCDF	NotFnd		1.0346						1.02		4972.626	0.0818
123468-HxCDF	NotFnd		0.9610						1.19		4451.71	0.0844
124678/134678-HxCDF	NotFnd		0.9667						1.19		4451.71	0.0844
134679-HxCDF	NotFnd		0.9732						1.19		4451.71	0.0844
124679-HxCDF	NotFnd		0.9788						1.19		4451.71	0.0844
124689-HxCDF	NotFnd		0.9852						1.19		4451.71	0.0844
123467-HxCDF	NotFnd		0.9971						1.19		4451.71	0.0844
123478-HxCDF	**NotFnd**		**1.0005**						**1.27**		**4451.71**	**0.0832**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**4451.71**	**0.0785**
123479-HxCDF	NotFnd		1.0050						1.19		4451.71	0.0844
123469-HxCDF	NotFnd		1.0091						1.19		4451.71	0.0844
123679-HxCDF	NotFnd		0.9943						1.19		4451.71	0.0844
234678-HxCDF	**NotFnd**		**1.0004**						**1.19**		**4451.71**	**0.0792**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4451.71	0.0844
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**4451.71**	**0.0996**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0008						1.19		4451.71	0.0844
1234678-HpCDF	**NotFnd**		**1.0003**						**1.37**		**4192.288**	**0.0851**
1234679-HpCDF	NotFnd		1.0075						1.34		4192.288	0.101
1234689-HpCDF	NotFnd		1.0113						1.34		4192.288	0.101
1234789-HpCDF	**NotFnd**		**1.0002**						**1.31**		**4192.288**	**0.122**
OCDF	**NotFnd**		**1.0003**						**1.07**		**3721.805**	**0.399**
OCDF-a	NotFnd		1.0002						0.07		6107.359	10.6

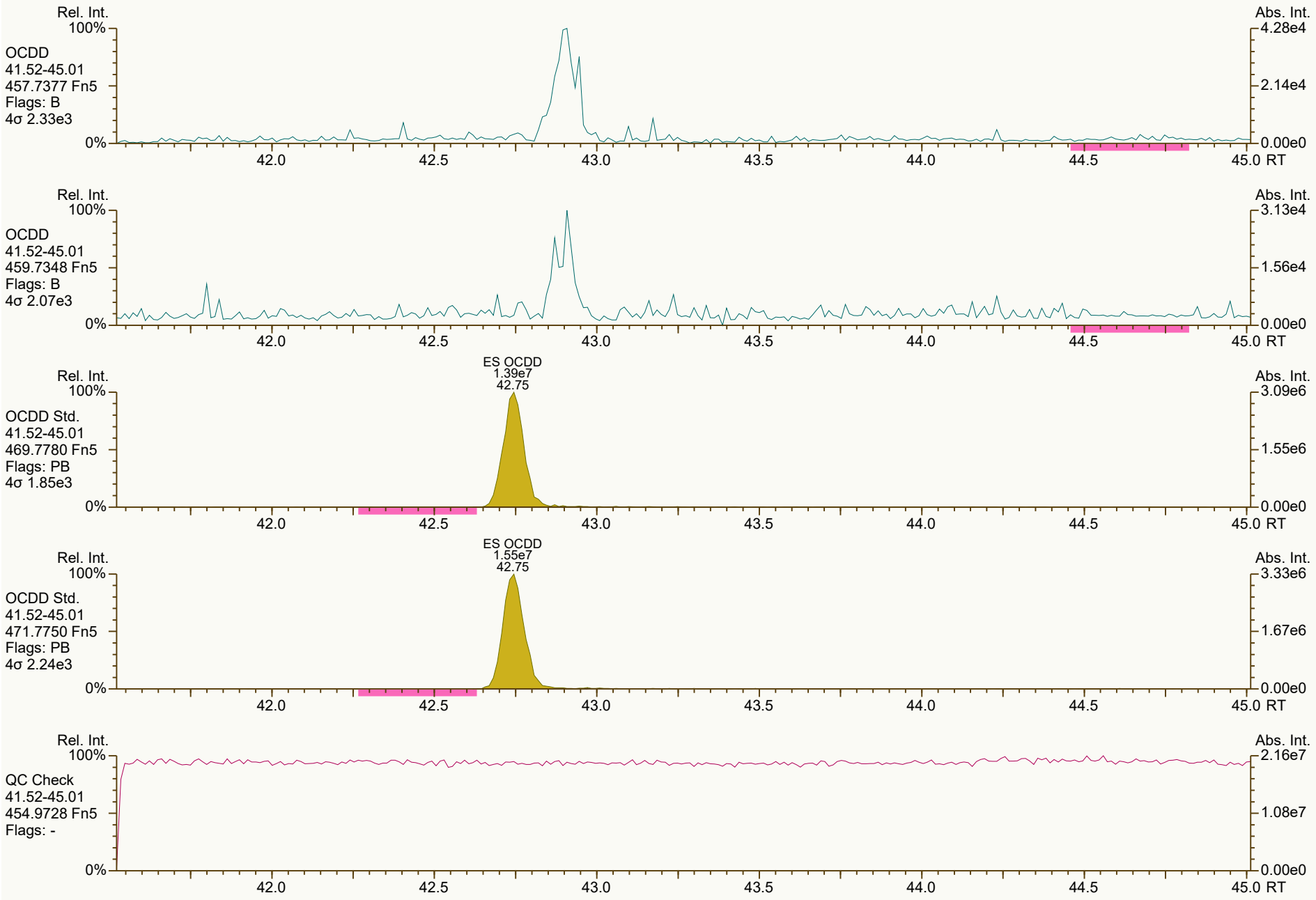

Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Abs. Int.
1.11e7
5.53e6
0.00e0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
29.0
30.0
31.0
32.0
33.0
Abs. Int.
9.44e6
4.72e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
Abs. Int.
4.31e7
2.16e7
0.00e0
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
2.58e7
1.29e7
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
2.16e7
1.08e7
0.00e0

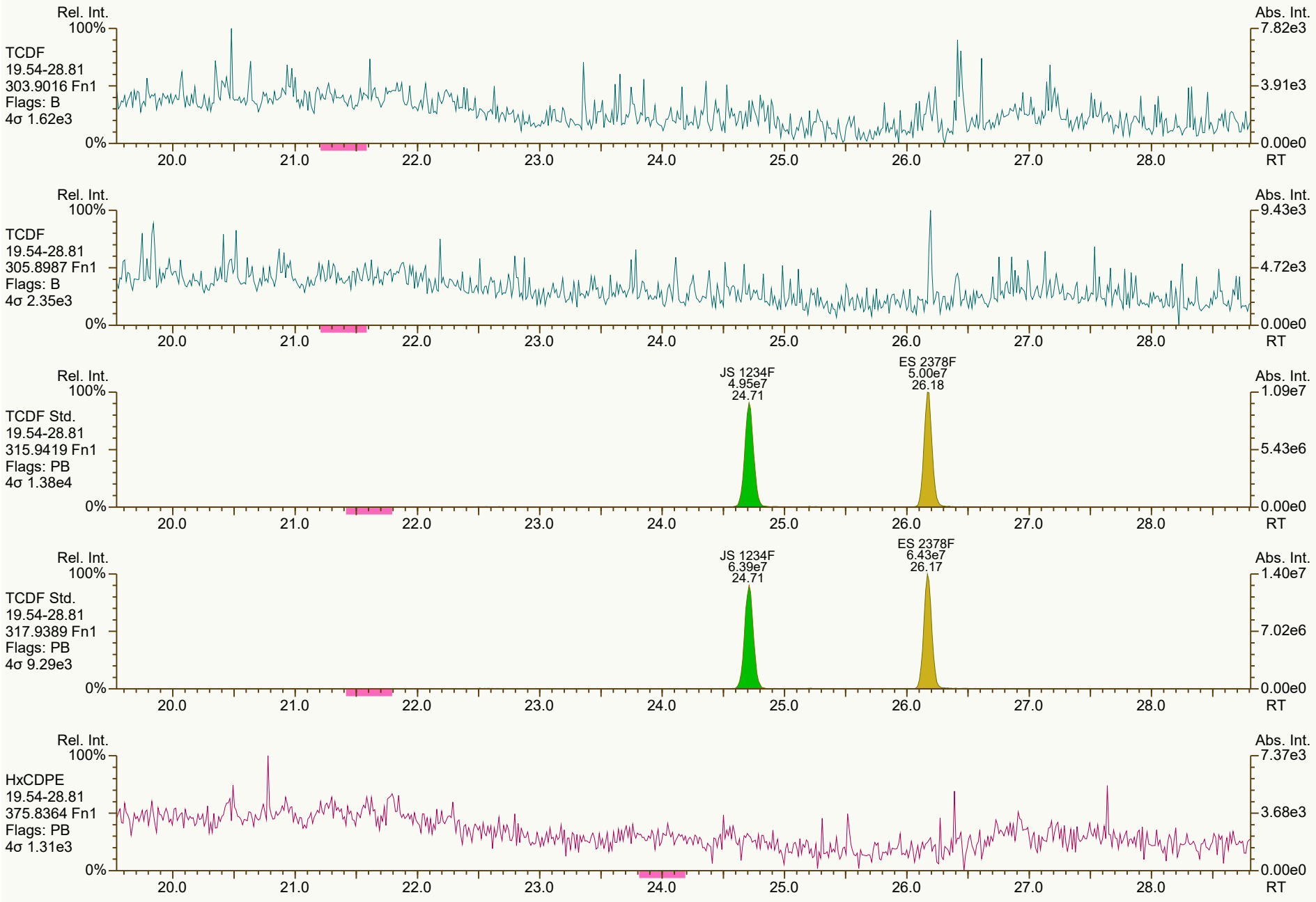

Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: B
4σ 2.82e3
0%
Abs. Int.
2.99e4
1.50e4
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: B
4σ 2.22e3
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 2.01e3
CS 37Cl-2378D
3.29e7
27.14
0%
Abs. Int.
7.74e6
3.87e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 1.52e4
JS 1234D
3.06e7
26.43
ES 2378D
3.21e7
27.12
0%
Abs. Int.
7.10e6
3.55e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 5.20e3
JS 1234D
3.69e7
26.43
ES 2378D
3.80e7
27.12
0%
Abs. Int.
8.62e6
4.31e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: B
4σ 3.02e3
0%
Abs. Int.
3.08e4
1.54e4
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: B
4σ 2.12e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 3.97e3
0%
CS 12347D
3.93e7
32.26
ES 12378D
4.04e7
32.77
Abs. Int.
1.19e7
5.93e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 1.74e3
0%
CS 12347D
2.40e7
32.25
ES 12378D
2.46e7
32.77
Abs. Int.
7.21e6
3.60e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.44e6
4.72e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT

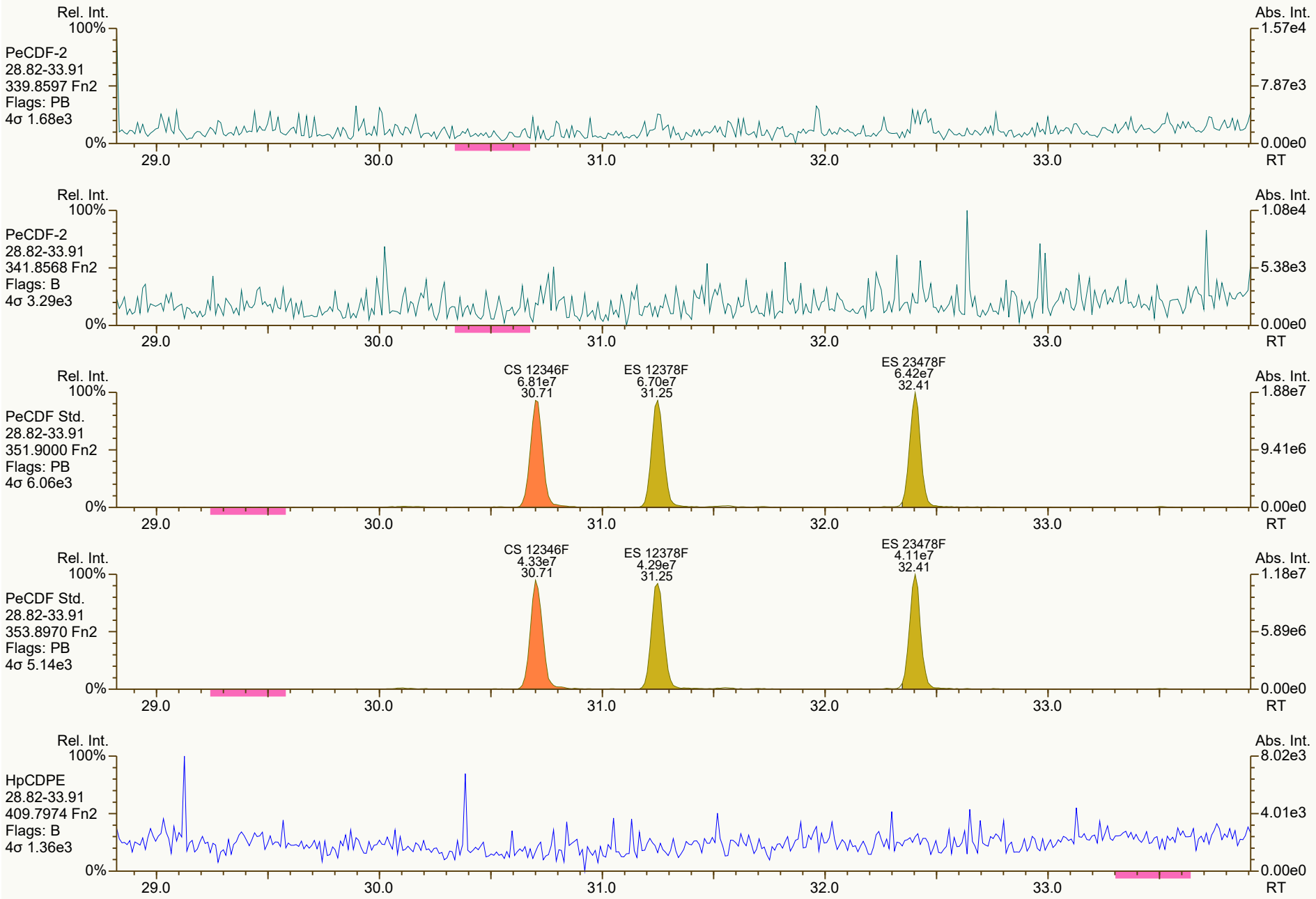

Rel. Int.
100%
HxCDD
33.92-37.91
389.8156 Fn3
Flags: B
4σ 1.53e3
0%
Abs. Int.
5.89e4
2.94e4
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.91
391.8127 Fn3
Flags: B
4σ 1.96e3
0%
Abs. Int.
1.74e4
8.69e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PBM
4σ 6.01e3
0%
ES 123678D
ES 123478D 2.72e7
2.81e7 36.88
36.77
ES 123789D
3.06e7*
37.18
JS 123467D
1.45e7*
37.08
Abs. Int.
8.64e6
4.32e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PB
4σ 6.04e3
0%
ES 123678D
ES 123478D 2.15e7
2.25e7 36.88
36.77
ES 123789D
2.48e7
37.18
JS 123467D
1.10e7
37.08
Abs. Int.
6.90e6
3.45e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.31e7
2.16e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT

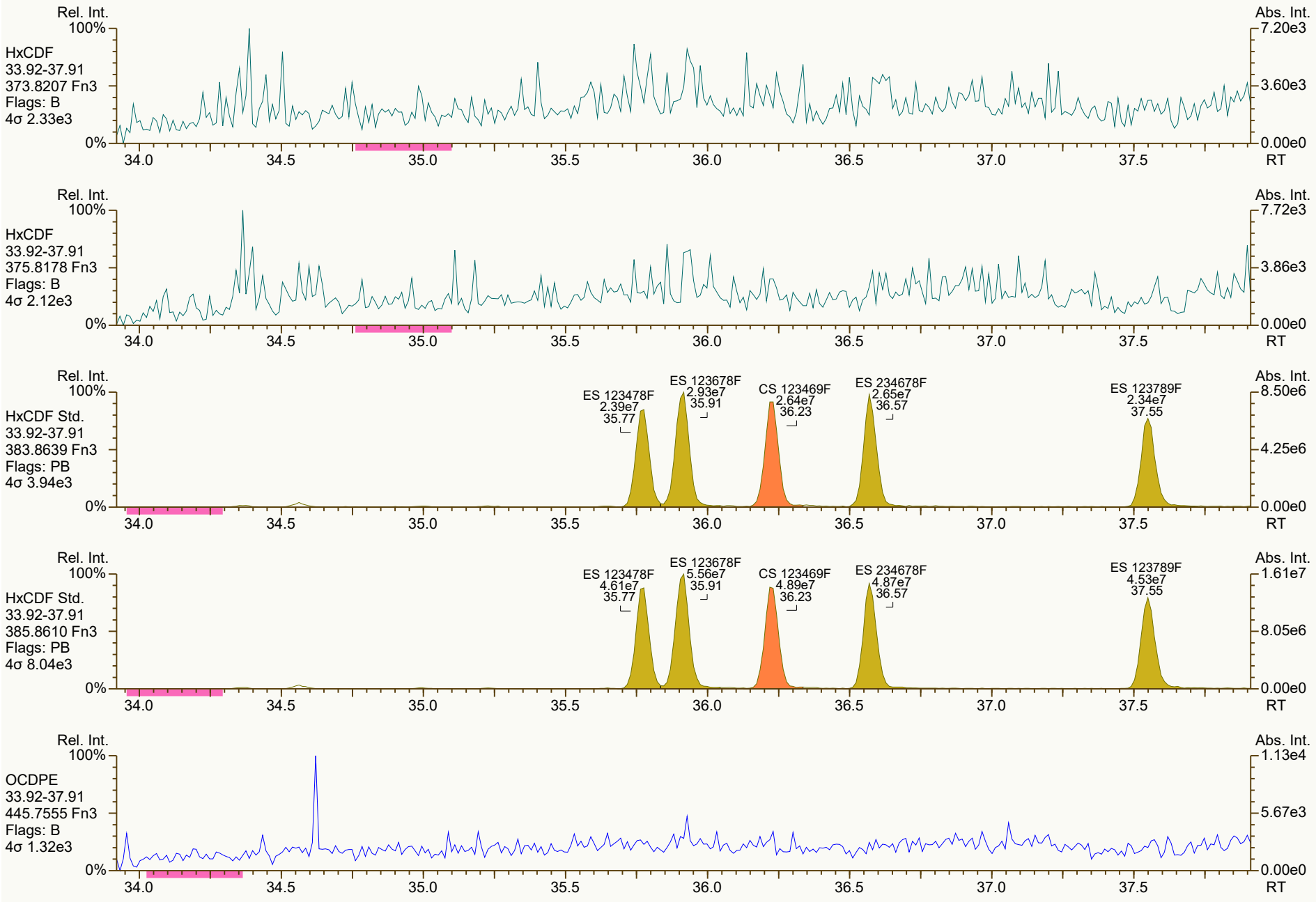

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: B
4σ 1.14e3
0%
Abs. Int.
7.83e4
3.91e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: B
4σ 1.69e3
0%
Abs. Int.
2.47e4
1.23e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
ES 1234678D
2.20e7
40.14
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 2.15e3
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
ES 1234678D
2.06e7
40.14
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 1.56e3
0%
Abs. Int.
6.43e6
3.22e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.58e7
1.29e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

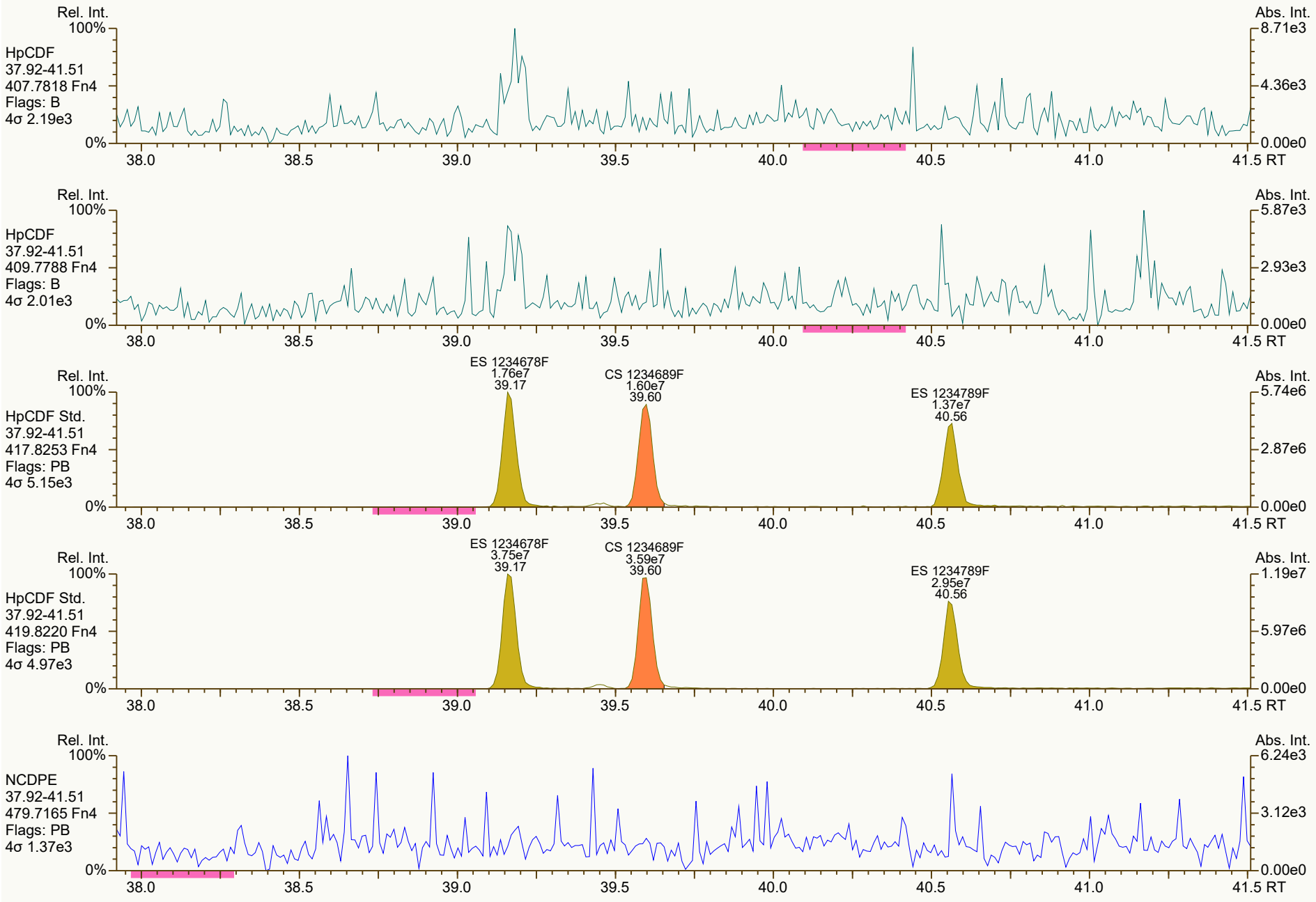

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
4.28e4
2.14e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.07e3
0%
Abs. Int.
3.13e4
1.56e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.39e7
42.75
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
Abs. Int.
3.09e6
1.55e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.55e7
42.75
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
3.33e6
1.67e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.16e7
1.08e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: B
4σ 1.62e3
0%
Abs. Int.
7.82e3
3.91e3
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: B
4σ 2.35e3
0%
Abs. Int.
9.43e3
4.72e3
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.38e4
0%
JS 1234F
4.95e7
24.71
ES 2378F
5.00e7
26.18
Abs. Int.
1.09e7
5.43e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 9.29e3
0%
JS 1234F
6.39e7
24.71
ES 2378F
6.43e7
26.17
Abs. Int.
1.40e7
7.02e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: PB
4σ 1.31e3
0%
Abs. Int.
7.37e3
3.68e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.52e4
7.58e3
0.00e0
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: B
4σ 2.09e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.41e4
7.05e3
0.00e0
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: B
4σ 2.26e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.11e7
5.53e6
0.00e0
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PB
4σ 1.68e3
0%
Abs. Int.
1.57e4
7.87e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: B
4σ 3.29e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 6.06e3
0%
CS 12346F
6.81e7
30.71
ES 12378F
6.70e7
31.25
ES 23478F
6.42e7
32.41
Abs. Int.
1.88e7
9.41e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 5.14e3
0%
CS 12346F
4.33e7
30.71
ES 12378F
4.29e7
31.25
ES 23478F
4.11e7
32.41
Abs. Int.
1.18e7
5.89e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.36e3
0%
Abs. Int.
8.02e3
4.01e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
7.20e3
3.60e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF
33.92-37.91
375.8178 Fn3
Flags: B
4σ 2.12e3
0%
Abs. Int.
7.72e3
3.86e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PB
4σ 3.94e3
0%
ES 123478F
2.39e7
35.77
ES 123678F
2.93e7
35.91
CS 123469F
2.64e7
36.23
ES 234678F
2.65e7
36.57
ES 123789F
2.34e7
37.55
Abs. Int.
8.50e6
4.25e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PB
4σ 8.04e3
0%
ES 123478F
4.61e7
35.77
ES 123678F
5.56e7
35.91
CS 123469F
4.89e7
36.23
ES 234678F
4.87e7
36.57
ES 123789F
4.53e7
37.55
Abs. Int.
1.61e7
8.05e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 1.32e3
0%
Abs. Int.
1.13e4
5.67e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT


Rel. Int.
100%
HpCDF
37.92-41.51
407.7818 Fn4
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.71e3
4.36e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.92-41.51
409.7788 Fn4
Flags: B
4σ 2.01e3
0%
Abs. Int.
5.87e3
2.93e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PB
4σ 5.15e3
0%
ES 1234678F
1.76e7
39.17
CS 1234689F
1.60e7
39.60
ES 1234789F
1.37e7
40.56
Abs. Int.
5.74e6
2.87e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PB
4σ 4.97e3
0%
ES 1234678F
3.75e7
39.17
CS 1234689F
3.59e7
39.60
ES 1234789F
2.95e7
40.56
Abs. Int.
1.19e7
5.97e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.92-41.51
479.7165 Fn4
Flags: PB
4σ 1.37e3
0%
Abs. Int.
6.24e3
3.12e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.68e3
0%
Abs. Int.
1.16e4
5.81e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.04e3
0%
Abs. Int.
1.17e4
5.84e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.00e7
42.90
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 3.30e3
0%
Abs. Int.
4.18e6
2.09e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.18e7
42.90
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.65e3
0%
Abs. Int.
4.63e6
2.32e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.43e3
0%
Abs. Int.
4.29e3
2.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5963_18710_DF_001 **Acq'd:** 07 Dec 2021 23:26 DTF **Wt/Vol:** 13.89 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-SPS-NE-S-11 **UTP:** 08-Dec-2021 15:59:14 DTF **J-level:** 0.36 pg/g **Split:** 1 **Checkcode:** 183-178-PFB

Datafile: 211207C12 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.14		1.0009	1.0009	0	8.91E+07	0.81	Y	1.18	191	5637.115	0.136
12378-PeCDD	32.79		1.0006	1.0006	0	1.20E+06	1.60	Y	1.04	3.23	7206.29	0.178
123478-HxCDD	36.78		1.0004	1.0004	0	1.15E+06	1.25	Y	1.09	3.74	6199.226	0.162
123678-HxCDD	36.89		1.0035	1.0035	0	3.64E+06	1.31	Y	1.15	11.3	6199.226	0.162
123789-HxCDD	37.20		1.0117	1.0118	+0.2	2.08E+06	1.25	Y	1.05	6.22	6199.226	0.16
1234678-HpCDD	40.16		1.0003	1.0003	0	1.17E+08	1.05	Y	1.06	419	7597.163	0.214
OCDD	42.77		1.0003	1.0003	0	5.89E+08	0.90	Y	1.13	4,550	10506.97	0.917
2378-TCDF	26.19		1.0009	1.0009	0	3.34E+08	0.80	Y	1.08	485	8331.693	0.142
12378-PeCDF	31.27		1.0005	1.0006	+0.2	1.13E+07	1.57	Y	1.02	19	8140.088	0.133
23478-PeCDF	32.42		1.0006	1.0008	+0.4	1.01E+07	1.53	Y	1.02	17.4	8140.088	0.125
123478-HxCDF	35.79		1.0005	1.0005	0	1.47E+07	1.25	Y	1.27	28.7	7534.067	0.122
123678-HxCDF	35.93		1.0004	1.0004	0	4.94E+06	1.24	Y	1.15	9.29	7534.067	0.115
234678-HxCDF	36.59		1.0004	1.0004	0	2.78E+06	1.25	Y	1.19	5.7	7534.067	0.13
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	7534.067	0.142
1234678-HpCDF	39.18		1.0003	1.0003	0	2.75E+07	1.03	Y	1.37	62.4	4663.662	0.0855
1234789-HpCDF	40.58		1.0002	1.0002	0	3.01E+06	1.01	Y	1.31	8.1	4663.662	0.107
OCDF	42.92		1.0003	1.0003	0	4.70E+07	0.91	Y	1.07	271	6783.778	0.451

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.11	1.0260	1.0260	0	5.67E+07	0.81	Y	1.05	72.9
ES 12378-PeCDD	32.77	1.2396	1.2399	+0.6	5.16E+07	1.60	Y	0.88	78.9
ES 123478-HxCDD	36.76	0.9916	0.9916	0	4.08E+07	1.23	Y	0.97	74.6
ES 123678-HxCDD	36.88	0.9947	0.9946	-0.2	4.04E+07	1.23	Y	0.94	76.1
ES 123789-HxCDD	37.18	1.0027	1.0028	+0.2	4.59E+07	1.33	Y	1.09	74.8
ES 1234678-HpCDD	40.15	1.0828	1.0829	+0.2	3.78E+07	1.10	Y	0.91	73.7
ES OCDD	42.76	1.1528	1.1533	+1.3	3.31E+07	0.88	Y	0.62	47.1
ES 2378-TCDF	26.17	1.0591	1.0592	+0.2	9.18E+07	0.80	Y	1.06	69
ES 12378-PeCDF	31.25	1.2643	1.2647	+0.7	8.37E+07	1.56	Y	0.91	73.2
ES 23478-PeCDF	32.40	1.3110	1.3113	+0.6	8.15E+07	1.54	Y	0.88	73.5
ES 123478-HxCDF	35.77	0.9648	0.9647	-0.2	5.80E+07	0.55	Y	1.20	86
ES 123678-HxCDF	35.91	0.9686	0.9686	0	6.64E+07	0.53	Y	1.35	87.2
ES 234678-HxCDF	36.57	0.9865	0.9865	0	5.92E+07	0.53	Y	1.24	84.7
ES 123789-HxCDF	37.56	1.0129	1.0130	+0.2	5.69E+07	0.53	Y	1.16	87.6
ES 1234678-HpCDF	39.17	1.0565	1.0565	0	4.63E+07	0.46	Y	0.97	85
ES 1234789-HpCDF	40.57	1.0943	1.0944	+0.2	4.09E+07	0.46	Y	0.85	85.3
ES OCDF	42.91	1.1569	1.1574	+1.3	4.65E+07	0.94	Y	0.81	51.2

Lab ID: B5963_18710_DF_001 **Acq'd:** 07 Dec 2021 23:26 DTF **Wt/Vol:** 13.89 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120121-S-SPS-NE-S-11 **UTP:** 08-Dec-2021 15:59:14 DTF **J-level:** 0.36 pg/g **Split:** 1 **Checkcode:** 183-178-PFB

Datafile: 211207C12 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.43		-	-	-	7.43E+07	0.82	Y	-	-	
JS 1234-TCDF	24.71		-	-	-	1.26E+08	0.78	Y	-	-	
JS 123467-HxCDD	37.08		-	-	-	2.81E+07	1.20	Y	-	-	
CS 37Cl-2378-TCDD	27.14		1.0269	1.0270	+0.2	2.75E+07	n/a	-	1.20	77	
CS 12347-PeCDD	32.25		1.2203	1.2205	+0.4	4.98E+07	1.60	Y	0.75	89	
CS 12346-PeCDF	30.71		1.2424	1.2427	+0.6	8.16E+07	1.59	Y	0.85	76.4	
CS 123469-HxCDF	36.22		0.9771	0.9771	0	5.95E+07	0.53	Y	1.12	94.6	
CS 1234689-HpCDF	39.60		1.0681	1.0681	0	4.57E+07	0.47	Y	0.89	91.6	
~~SS 37Cl-2378-TCDD~~	~~27.14~~		~~1.0269~~	~~1.0270~~	~~+0.2~~	~~2.75E+07~~	~~n/a~~		~~1.15~~	~~106~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.25~~		~~1.2203~~	~~1.2205~~	~~+0.4~~	~~4.98E+07~~	~~1.60~~	~~Y~~	~~0.86~~	~~112~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.71~~		~~1.2424~~	~~1.2427~~	~~+0.6~~	~~8.16E+07~~	~~1.59~~	~~Y~~	~~0.94~~	~~104~~	
~~SS 123469-HxCDF~~	~~36.22~~		~~0.9771~~	~~0.9771~~	~~0~~	~~5.95E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~108~~	
~~SS 1234689-HpCDF~~	~~39.60~~		~~1.0681~~	~~1.0681~~	~~0~~	~~4.57E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~108~~	

Totals	Conc	EMPC
Total TCDD	210	216
Total PeCDD	14.4	14.8
Total HxCDD	102	108
Total HpCDD	885	885
Total Tetra-Octa Dioxins	5760	5770
Total TCDF	973	973
Total PeCDF	83	83.4
Total HxCDF	113	113
Total HpCDF	201	201
Total Tetra-Octa Furans	1,640	1640
Total Tetra-Octa Dioxins & Furans	7400	7410

Lab ID: B5963_18710_DF_001 **Acq'd: 07 Dec 2021 23:26 DTF** **Wt/Vol: 13.89 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-SPS-NE-S-11 **UTP: 08-Dec-2021 15:59:14 DTF** **J-level: 0.36 pg/g** **Split: 1** **Checkcode: 183-178-PFB**

Datafile: 211207C12 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.15	EMPC	0.8545	0.8538	-1.0	5.55E+05	0.89	N	1.18	1.19	5637.115	0.136
1379-TCDD	23.55	EMPC	0.8692	0.8687	-0.7	2.04E+05	1.07	N	1.18	0.439	5637.115	0.136
1369-TCDD	24.05	J EMPC	0.8868	0.8869	+0.1	8.83E+04	1.34	N	1.18	0.189	5637.115	0.136
1469-TCDD	24.90	EMPC	0.9185	0.9182	-0.4	5.47E+05	0.90	N	1.18	1.17	5637.115	0.136
1247/1246/1248/1249-TCDD	25.17		0.9282	0.9283	+0.2	3.11E+05	0.87	Y	1.18	0.668	5637.115	0.136
1378-TCDD	25.36		0.9355	0.9353	-0.3	4.60E+05	0.76	Y	1.18	0.986	5637.115	0.136
1268-TCDD	NotFnd		0.9435						1.18		5637.115	0.136
1478-TCDD	25.85	EMPC	0.9533	0.9536	+0.5	2.38E+05	0.94	N	1.18	0.511	5637.115	0.136
1279-TCDD	NotFnd		0.9601						1.18		5637.115	0.136
1234/1269-TCDD	26.41	J EMPC	0.9741	0.9740	-0.2	1.58E+05	0.97	N	1.18	0.338	5637.115	0.136
1236-TCDD	NotFnd		0.9797						1.18		5637.115	0.136
1237/1238-TCDD	26.82	EMPC	0.9898	0.9892	-1.0	1.40E+06	0.92	N	1.18	3	5637.115	0.136
1239-TCDD	NotFnd		0.9952						1.18		5637.115	0.136
2378-TCDD	**27.14**		**1.0009**	1.0009	**0**	8.91E+07	0.81	Y	**1.18**	**191**	**5637.115**	**0.136**
1278-TCDD	27.49		1.0139	1.0140	+0.2	7.92E+06	0.83	Y	1.18	17	5637.115	0.136
1267-TCDD	NotFnd		1.0193						1.18		5637.115	0.136
1289-TCDD	NotFnd		1.0393						1.18		5637.115	0.136
12479/12468-PeCDD	30.19		0.9216	0.9214	-0.4	1.25E+06	1.44	Y	1.04	3.38	7206.29	0.178
12469-PeCDD	30.74		0.9386	0.9383	-0.6	7.25E+05	1.68	Y	1.04	1.95	7206.29	0.178
12368-PeCDD	31.31	J	0.9560	0.9557	-0.6	6.09E+05	1.67	Y	1.04	1.64	7206.29	0.178
12478-PeCDD	31.52	J	0.9619	0.9620	+0.2	5.11E+05	1.40	Y	1.04	1.38	7206.29	0.178
12379-PeCDD	31.62	J	0.9651	0.9651	0	2.76E+05	1.73	Y	1.04	0.743	7206.29	0.178
12369/12467/12489-PeCDD	31.89	J	0.9735	0.9734	-0.2	4.65E+05	1.45	Y	1.04	1.25	7206.29	0.178
12346/12347-PeCDD	32.28	J	0.9852	0.9851	-0.2	1.98E+05	1.60	Y	1.04	0.533	7206.29	0.178
12378-PeCDD	32.79		**1.0006**	**1.0006**	**0**	**1.20E+06**	**1.60**	**Y**	**1.04**	**3.23**	**7206.29**	**0.178**
12367-PeCDD	32.89	J EMPC	1.0037	1.0037	0	1.45E+05	2.23	N	1.04	0.39	7206.29	0.178
12389-PeCDD	33.24	J	1.0145	1.0144	-0.2	1.19E+05	1.57	Y	1.04	0.319	7206.29	0.178
124679/124689-HxCDD	35.05		0.9535	0.9535	0	1.15E+07	1.27	Y	1.10	35.8	6199.226	0.161
123468-HxCDD	35.72	EMPC	0.9716	0.9717	+0.2	1.82E+06	1.48	N	1.10	5.65	6199.226	0.161
123679/123689-HxCDD	36.02		0.9796	0.9796	0	1.24E+07	1.27	Y	1.10	38.3	6199.226	0.161
123469-HxCDD	36.14		0.9833	0.9832	-0.2	1.35E+06	1.33	Y	1.10	4.19	6199.226	0.161
123478-HxCDD	36.78		**1.0004**	**1.0004**	**0**	**1.15E+06**	**1.25**	**Y**	1.09	**3.74**	**6199.226**	**0.162**
123678-HxCDD	36.89		**1.0035**	**1.0035**	**0**	**3.64E+06**	**1.31**	**Y**	1.15	**11.3**	**6199.226**	**0.162**
123467-HxCDD	37.09		1.0088	1.0089	+0.2	8.90E+05	1.16	Y	1.10	2.76	6199.226	0.161
123789-HxCDD	37.20		**1.0117**	**1.0118**	**+0.2**	**2.08E+06**	**1.25**	**Y**	1.05	**6.22**	**6199.226**	**0.16**

Lab ID: B5963_18710_DF_001 **Acq'd: 07 Dec 2021 23:26 DTF** **Wt/Vol: 13.89 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120121-S-SPS-NE-S-11 **UTP: 08-Dec-2021 15:59:14 DTF** **J-level: 0.36 pg/g** **Split: 1** **Checkcode: 183-178-PFB**

Datafile: 211207C12 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

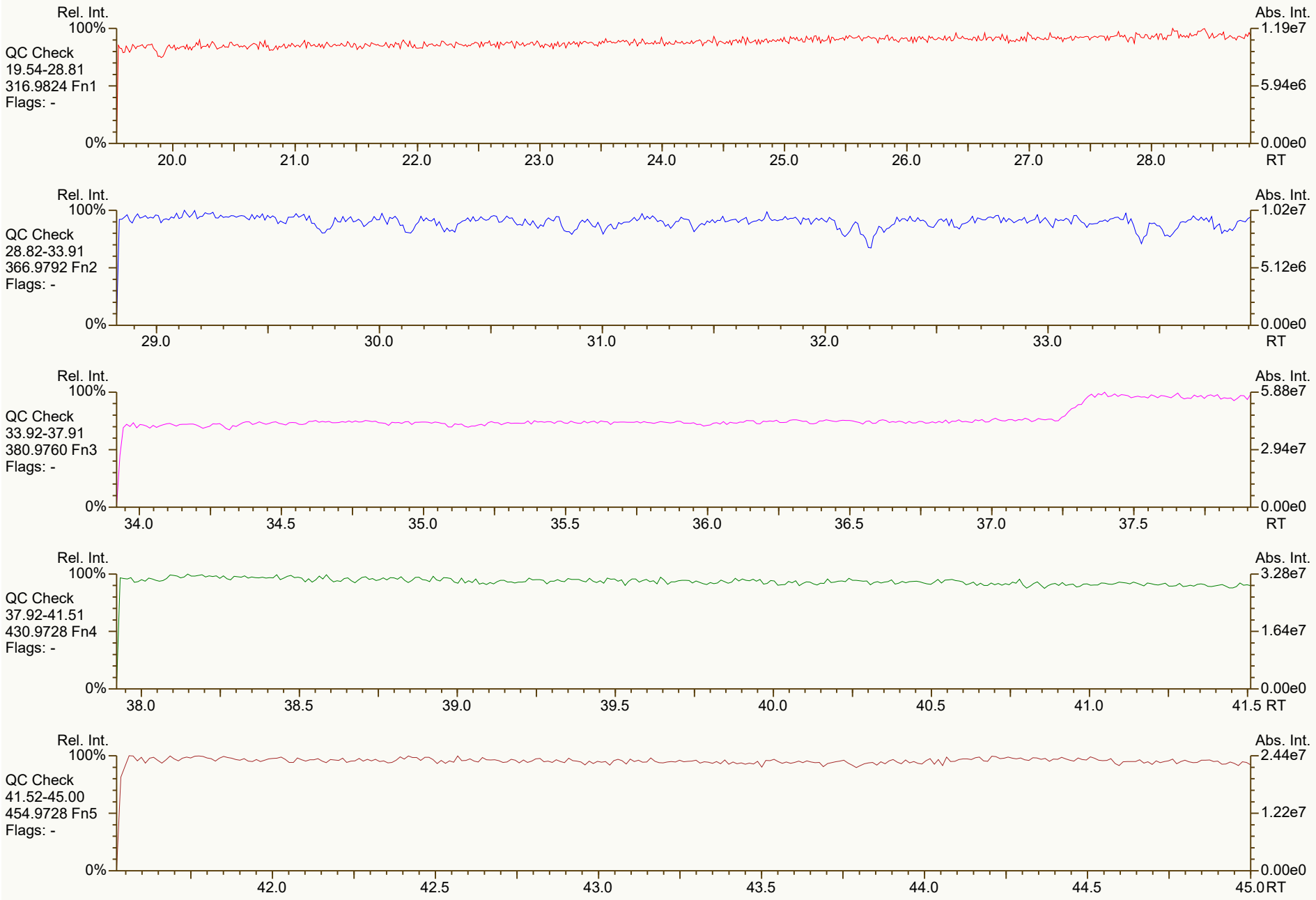
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9832	-0.2	1.30E+08	1.06	Y	1.06	466	7597.163	0.214
1234678-HpCDD	**40.16**		**1.0003**	**1.0003**	**0**	**1.17E+08**	**1.05**	**Y**	**1.06**	**419**	**7597.163**	**0.214**
OCDD	**42.77**		**1.0003**	**1.0003**	**0**	**5.89E+08**	**0.90**	**Y**	**1.13**	**4,550**	**10506.97**	**0.917**
OCDD-a	42.77		1.0002	1.0002	0	3.63E+07	2.51	Y	0.07	4,390	8012.636	10.9
1368-TCDF	20.91		0.7998	0.7991	-0.9	3.13E+05	0.82	Y	1.08	0.455	8331.693	0.142
1468-TCDF	21.48		0.8214	0.8208	-0.8	1.10E+06	0.84	Y	1.08	1.59	8331.693	0.142
2468-TCDF	22.13		0.8463	0.8456	-0.9	1.82E+06	0.84	Y	1.08	2.65	8331.693	0.142
1346/1246-TCDF	22.59		0.8608	0.8631	+3.1	8.88E+05	0.75	Y	1.08	1.29	8331.693	0.142
1347/1378/1247-TCDF	22.73		0.8675	0.8684	+1.2	4.62E+06	0.82	Y	1.08	6.72	8331.693	0.142
1348-TCDF	NotFnd		0.8793						1.08		8331.693	0.142
1248/1367/1379-TCDF	23.11		0.8850	0.8829	-2.9	1.74E+07	0.79	Y	1.08	25.3	8331.693	0.142
1268-TCDF	23.58		0.9010	0.9009	-0.1	6.27E+06	0.82	Y	1.08	9.12	8331.693	0.142
1467-TCDF	23.72		0.9068	0.9065	-0.4	1.15E+06	0.86	Y	1.08	1.68	8331.693	0.142
1478-TCDF	23.91		0.9139	0.9136	-0.4	1.46E+07	0.79	Y	1.08	21.2	8331.693	0.142
1369/1237-TCDF	24.32		0.9294	0.9294	0	4.06E+06	0.82	Y	1.08	5.91	8331.693	0.142
2467-TCDF	24.46		0.9350	0.9348	-0.3	8.29E+05	0.73	Y	1.08	1.21	8331.693	0.142
2368-TCDF	24.62		0.9410	0.9409	-0.1	9.80E+06	0.78	Y	1.08	14.3	8331.693	0.142
1238/1234/1678/1469/1236-TCDF	24.72		0.9451	0.9444	-1.0	1.94E+07	0.82	Y	1.08	28.2	8331.693	0.142
1278-TCDF	25.23		0.9642	0.9639	-0.5	1.60E+08	0.80	Y	1.08	232	8331.693	0.142
1349-TCDF	NotFnd		0.9695						1.08		8331.693	0.142
1267-TCDF	25.52		0.9753	0.9752	-0.2	9.04E+06	0.81	Y	1.08	13.1	8331.693	0.142
2346/1249-TCDF	25.75		0.9832	0.9838	+0.9	1.27E+06	0.79	Y	1.08	1.85	8331.693	0.142
2347/1279-TCDF	25.95		0.9921	0.9916	-0.8	3.98E+06	0.83	Y	1.08	5.79	8331.693	0.142
2348-TCDF	26.07		0.9970	0.9960	-1.6	2.09E+07	0.79	Y	1.08	30.4	8331.693	0.142
2378-TCDF	**26.19**		**1.0009**	**1.0009**	**0**	**3.34E+08**	**0.80**	**Y**	**1.08**	**485**	**8331.693**	**0.142**
2367/3467-TCDF	26.58		1.0162	1.0156	-1.0	2.77E+07	0.81	Y	1.08	40.3	8331.693	0.142
1269-TCDF	26.85		1.0259	1.0258	-0.2	5.02E+06	0.81	Y	1.08	7.31	8331.693	0.142
1239-TCDF	NotFnd		1.0370						1.08		8331.693	0.142
1289-TCDF	28.34		1.0829	1.0829	0	2.57E+07	0.81	Y	1.08	37.3	8331.693	0.142
13468/12468-PeCDF	28.35		0.9067	0.9072	+0.9	5.67E+06	1.60	Y	1.02	9.67	5261.17	0.0831
13678/13467/12467-PeCDF	29.96		0.9583	0.9588	+0.9	1.60E+06	1.67	Y	1.02	2.72	8140.088	0.129
12368/13478/12478-PeCDF	30.13		0.9635	0.9642	+1.3	1.05E+07	1.53	Y	1.02	17.9	8140.088	0.129
14678-PeCDF	NotFnd		0.9669						1.02		8140.088	0.129
13479-PeCDF	NotFnd		0.9701						1.02		8140.088	0.129
13469/12479-PeCDF	30.55	J EMPC	0.9784	0.9778	-1.1	2.13E+05	1.92	N	1.02	0.364	8140.088	0.129
12346-PeCDF	30.72	J	0.9831	0.9831	0	2.71E+05	1.72	Y	1.02	0.462	8140.088	0.129

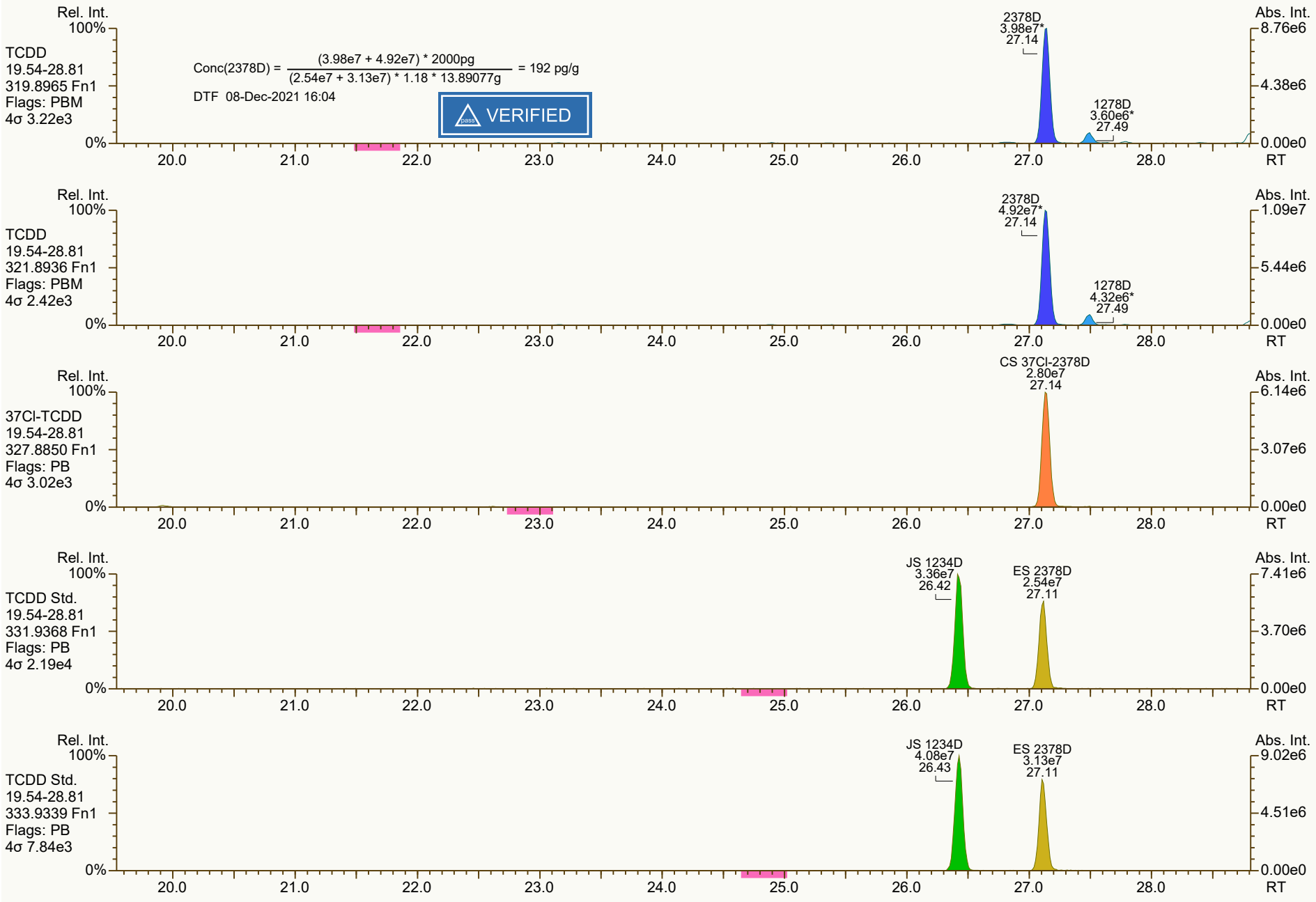
Lab ID: B5963_18710_DF_001 **Acq'd: 07 Dec 2021 23:26 DTF** **Wt/Vol: 13.89 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

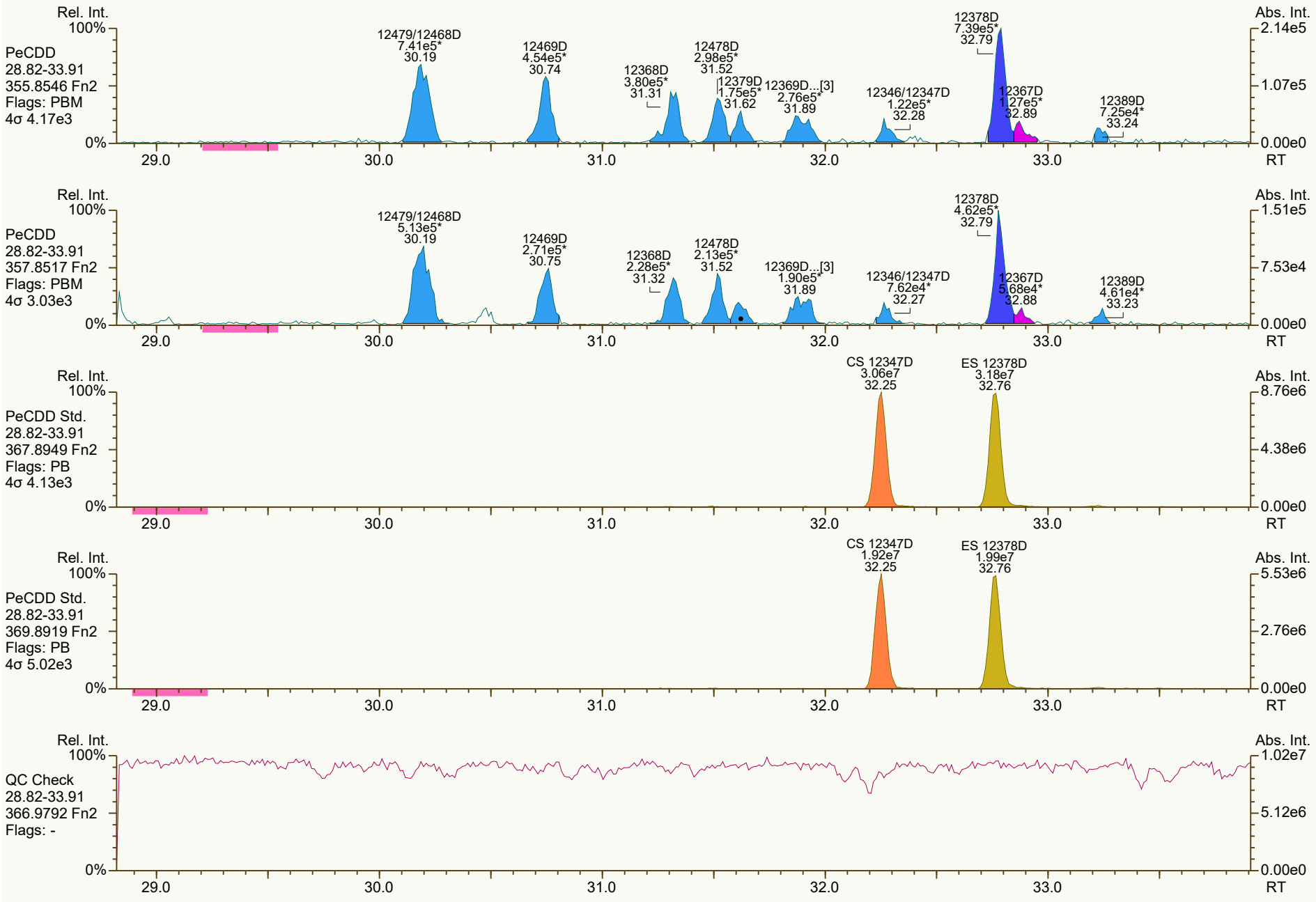
Client ID: 11215131-120121-S-SPS-NE-S-11 **UTP: 08-Dec-2021 15:59:14 DTF** **J-level: 0.36 pg/g** **Split: 1** **Checkcode: 183-178-PFB**

Datafile: 211207C12 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

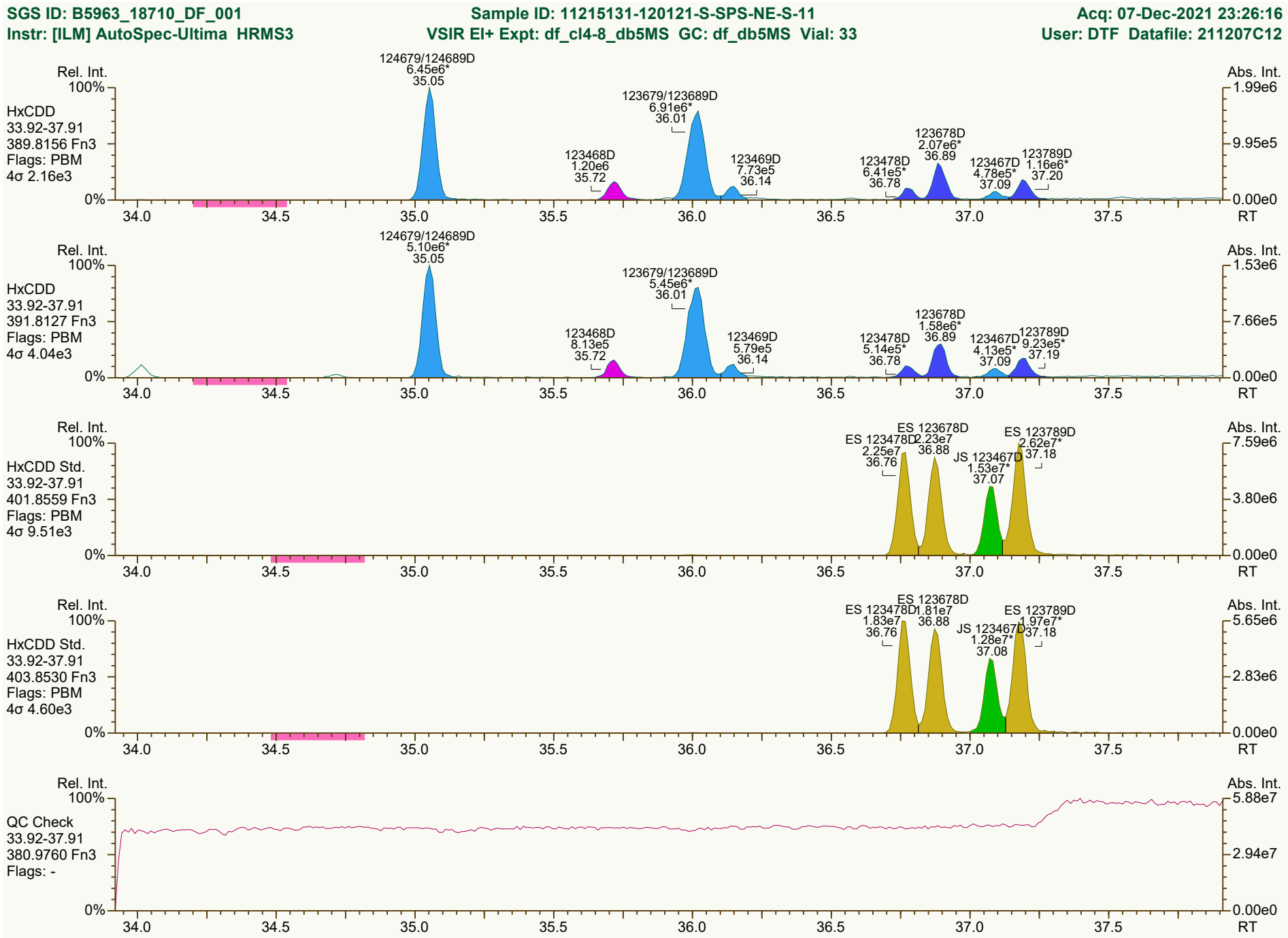
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.81		0.9859	0.9861	+0.4	1.57E+06	1.69	Y	1.02	2.68	8140.088	0.129
12347-PeCDF	30.89	J	0.9885	0.9885	0	5.06E+05	1.60	Y	1.02	0.864	8140.088	0.129
12348-PeCDF	31.05		0.9937	0.9938	+0.2	1.43E+06	1.64	Y	1.02	2.44	8140.088	0.129
12378-PeCDF	**31.27**		**1.0005**	**1.0006**	**+0.2**	**1.13E+07**	**1.57**	**Y**	**1.02**	**19**	**8140.088**	**0.133**
12678/12367-PeCDF	31.57		1.0097	1.0104	+1.3	4.31E+06	1.55	Y	1.02	7.35	8140.088	0.129
12379-PeCDF	NotFnd		1.0153						1.02		8140.088	0.129
12679-PeCDF	NotFnd		0.9925						1.02		8140.088	0.129
23467/12369-PeCDF	32.29	J	0.9966	0.9965	-0.2	9.35E+05	1.53	Y	1.02	1.59	8140.088	0.129
23478-PeCDF	**32.42**		**1.0006**	**1.0008**	**+0.4**	**1.01E+07**	**1.53**	**Y**	**1.02**	**17.4**	**8140.088**	**0.125**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		8140.088	0.129
12349-PeCDF	NotFnd		1.0108						1.02		8140.088	0.129
12389-PeCDF	33.52	J	1.0346	1.0347	+0.2	5.44E+05	1.48	Y	1.02	0.927	8140.088	0.129
123468-HxCDF	34.38		0.9610	0.9611	+0.2	3.72E+06	1.23	Y	1.19	7.46	7534.067	0.127
124678/134678-HxCDF	34.58		0.9667	0.9667	0	1.34E+07	1.24	Y	1.19	26.8	7534.067	0.127
134679-HxCDF	NotFnd		0.9732						1.19		7534.067	0.127
124679-HxCDF	35.01	J	0.9788	0.9788	0	5.38E+05	1.28	Y	1.19	1.08	7534.067	0.127
124689-HxCDF	35.24		0.9852	0.9852	0	1.44E+07	1.24	Y	1.19	28.9	7534.067	0.127
123467-HxCDF	35.66	J	0.9971	0.9971	0	8.66E+05	1.34	Y	1.19	1.74	7534.067	0.127
123478-HxCDF	**35.79**		**1.0005**	**1.0005**	**0**	**1.47E+07**	**1.25**	**Y**	**1.27**	**28.7**	**7534.067**	**0.122**
123678-HxCDF	**35.93**		**1.0004**	**1.0004**	**0**	**4.94E+06**	**1.24**	**Y**	**1.15**	**9.29**	**7534.067**	**0.115**
123479-HxCDF	NotFnd		1.0050						1.19		7534.067	0.127
123469-HxCDF	36.25	J	1.0091	1.0093	+0.4	3.17E+05	1.36	Y	1.19	0.636	7534.067	0.127
123679-HxCDF	NotFnd		0.9943						1.19		7534.067	0.127
234678-HxCDF	**36.59**		**1.0004**	**1.0004**	**0**	**2.78E+06**	**1.25**	**Y**	**1.19**	**5.7**	**7534.067**	**0.13**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		7534.067	0.127
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**7534.067**	**0.142**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	37.60		1.0008	1.0013	+1.1	1.46E+06	1.20	Y	1.19	2.93	7534.067	0.127
1234678-HpCDF	**39.18**		**1.0003**	**1.0003**	**0**	**2.75E+07**	**1.03**	**Y**	**1.37**	**62.4**	**4663.662**	**0.0855**
1234679-HpCDF	39.46		1.0075	1.0075	0	1.73E+06	1.01	Y	1.34	4.26	4663.662	0.0953
1234689-HpCDF	39.61		1.0113	1.0113	0	5.10E+07	1.05	Y	1.34	126	4663.662	0.0953
1234789-HpCDF	**40.58**		**1.0002**	**1.0002**	**0**	**3.01E+06**	**1.01**	**Y**	**1.31**	**8.1**	**4663.662**	**0.107**
OCDF	**42.92**		**1.0003**	**1.0003**	**0**	**4.70E+07**	**0.91**	**Y**	**1.07**	**271**	**6783.778**	**0.451**
OCDF-a	42.92		1.0002	1.0001	-0.3	2.89E+06	2.27	Y	0.07	269	4490.415	4.82


Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.19e7
5.94e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.02e7
5.12e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
5.88e7
2.94e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
3.28e7
1.64e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.44e7
1.22e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

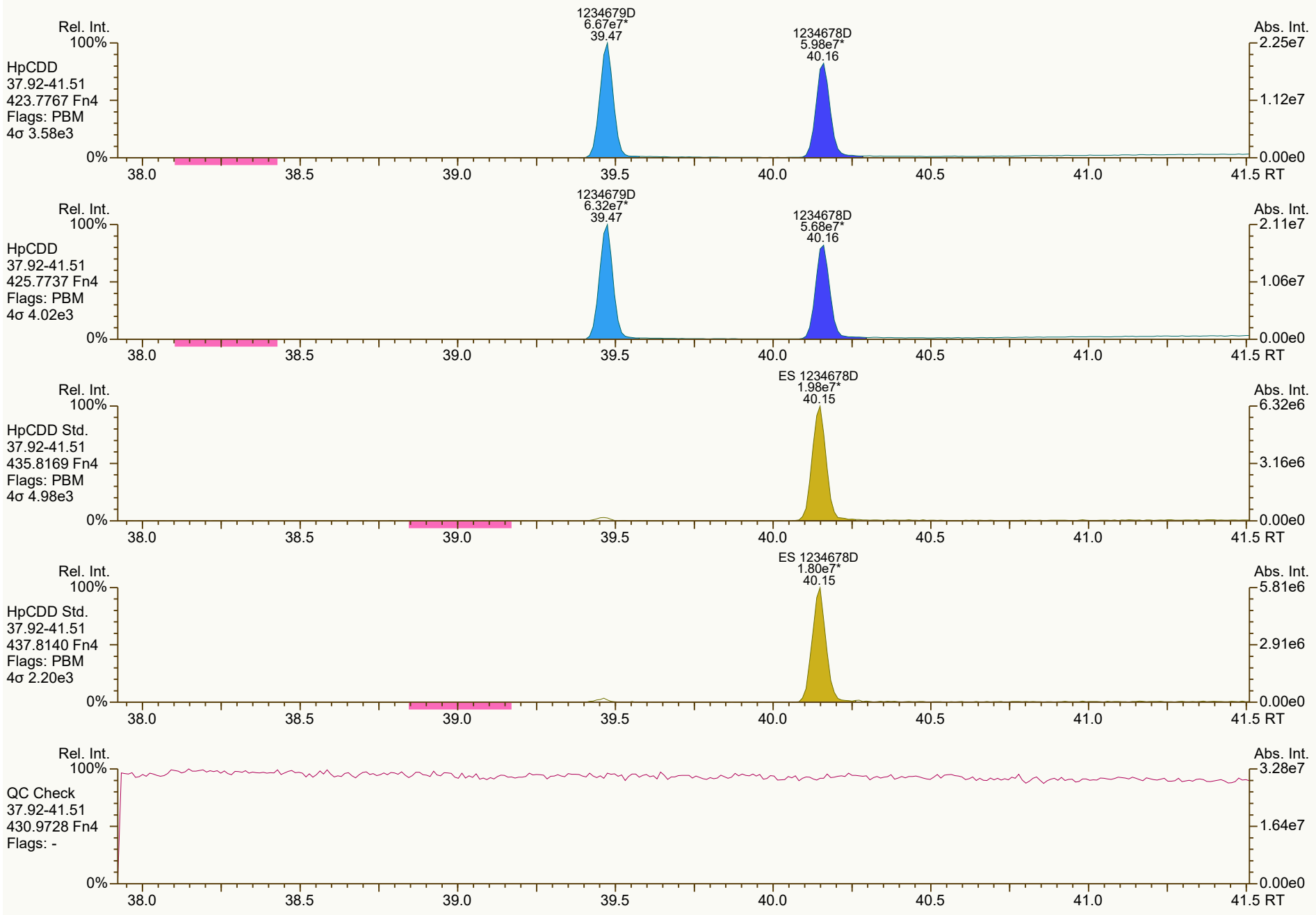

Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: PBM
4σ 3.22e3
0%
Conc(2378D) = (3.98e7 + 4.92e7) * 2000pg / (2.54e7 + 3.13e7) * 1.18 * 13.89077g = 192 pg/g
DTF 08-Dec-2021 16:04
VERIFIED
2378D
3.98e7*
27.14
1278D
3.60e6*
27.49
Abs. Int.
8.76e6
4.38e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 2.42e3
0%
2378D
4.92e7*
27.14
1278D
4.32e6*
27.49
Abs. Int.
1.09e7
5.44e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 3.02e3
0%
CS 37Cl-2378D
2.80e7
27.14
Abs. Int.
6.14e6
3.07e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 2.19e4
0%
JS 1234D
3.36e7
26.42
ES 2378D
2.54e7
27.11
Abs. Int.
7.41e6
3.70e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 7.84e3
0%
JS 1234D
4.08e7
26.43
ES 2378D
3.13e7
27.11
Abs. Int.
9.02e6
4.51e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PBM
4σ 4.17e3
0%
12479/12468D
7.41e5*
30.19
12469D
4.54e5*
30.74
12368D
3.80e5*
31.31
12478D
2.98e5*
31.52
12379D
1.75e5*
31.62
12369D...[3]
2.76e5*
31.89
12346/12347D
1.22e5*
32.28
12378D
7.39e5*
32.79
12367D
1.27e5*
32.89
12389D
7.25e4*
33.24
Abs. Int.
2.14e5
1.07e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PBM
4σ 3.03e3
0%
12479/12468D
5.13e5*
30.19
12469D
2.71e5*
30.75
12368D
2.28e5*
31.32
12478D
2.13e5*
31.52
12369D...[3]
1.90e5*
31.89
12346/12347D
7.62e4*
32.27
12378D
4.62e5*
32.79
12367D
5.68e4*
32.88
12389D
4.61e4*
33.23
Abs. Int.
1.51e5
7.53e4
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 4.13e3
0%
CS 12347D
3.06e7
32.25
ES 12378D
3.18e7
32.76
Abs. Int.
8.76e6
4.38e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 5.02e3
0%
CS 12347D
1.92e7
32.25
ES 12378D
1.99e7
32.76
Abs. Int.
5.53e6
2.76e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.02e7
5.12e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT

SGS ID: B5963_18710_DF_001 Sample ID: 11215131-120121-S-SPS-NE-S-11 Acq: 07-Dec-2021 23:26:16
Instr: [ILM] AutoSpec-Ultima HRMS3 VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33 User: DTF Datafile: 211207C12

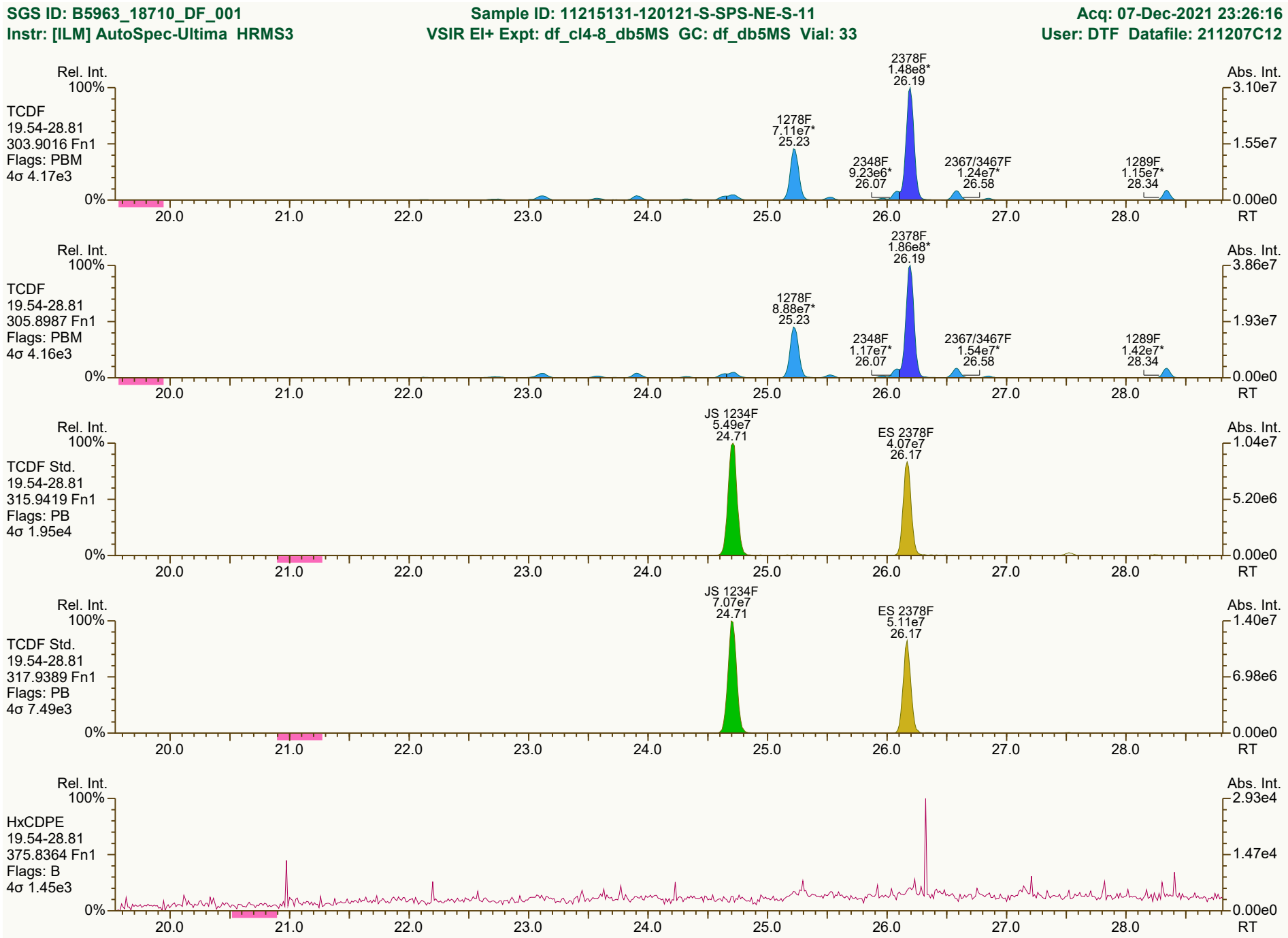


Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_001.utp_res, saved 08-Dec-2021 16:05 (DTF) Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3245, 5859 scc: 183-178 PKD: 08-Dec-2021 14:10 Printed: 08-Dec-2021 16:07 Page 4 of 12


Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PBM
4σ 3.58e3
0%
1234679D
6.67e7*
39.47
1234678D
5.98e7*
40.16
Abs. Int.
2.25e7
1.12e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PBM
4σ 4.02e3
0%
1234679D
6.32e7*
39.47
1234678D
5.68e7*
40.16
Abs. Int.
2.11e7
1.06e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PBM
4σ 4.98e3
0%
ES 1234678D
1.98e7*
40.15
Abs. Int.
6.32e6
3.16e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PBM
4σ 2.20e3
0%
ES 1234678D
1.80e7*
40.15
Abs. Int.
5.81e6
2.91e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
3.28e7
1.64e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

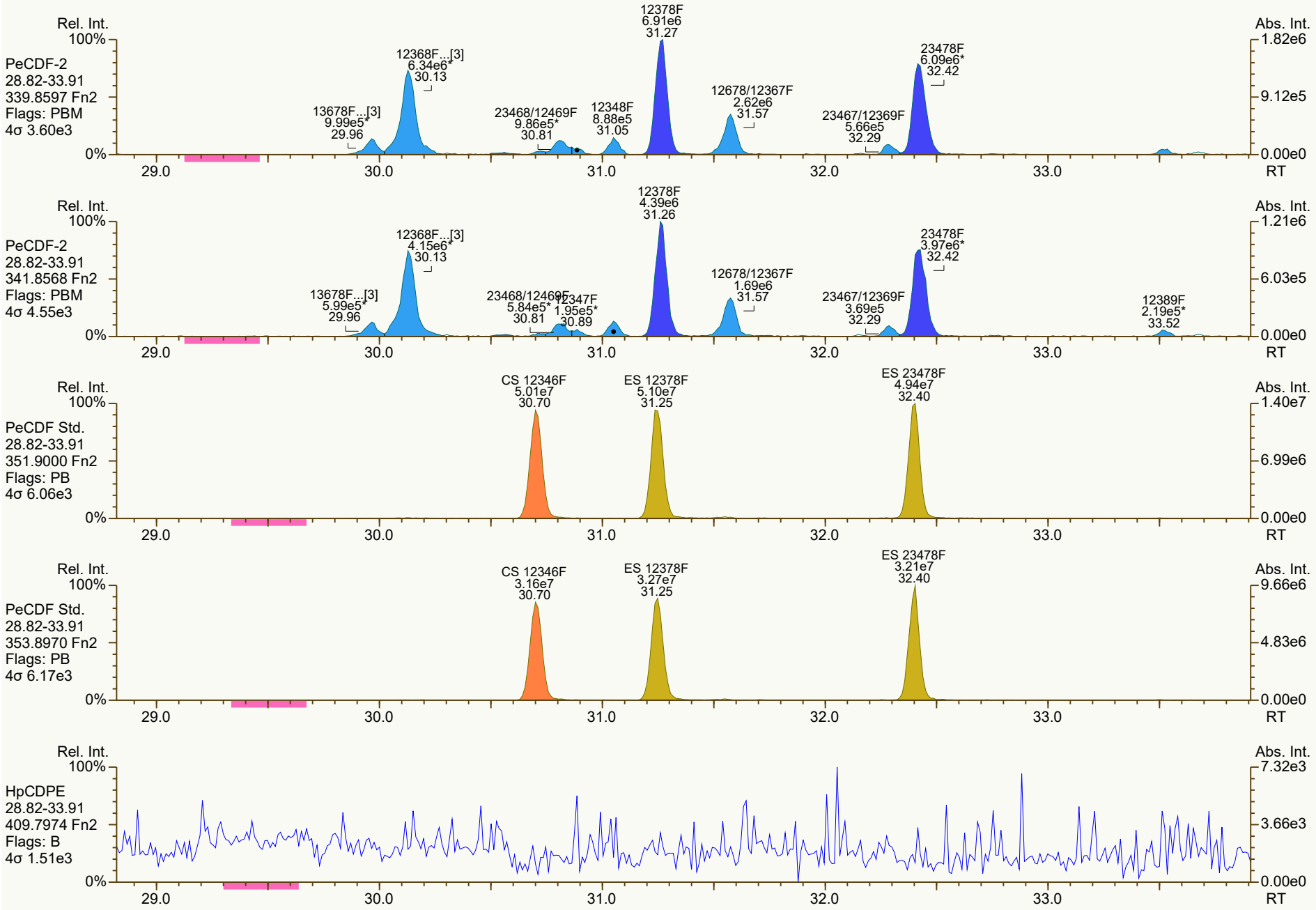

OCDD
2.79e8
42.77
Rel. Int.
100%
OCDD
41.52-45.00
457.7377 Fn5
Flags: PB
4σ 4.67e3
0%
Abs. Int.
6.10e7
3.05e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.10e8
42.77
Rel. Int.
100%
OCDD
41.52-45.00
459.7348 Fn5
Flags: PB
4σ 5.84e3
0%
Abs. Int.
6.72e7
3.36e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.55e7
42.76
Rel. Int.
100%
OCDD Std.
41.52-45.00
469.7780 Fn5
Flags: PB
4σ 4.58e3
0%
Abs. Int.
3.43e6
1.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.76
Rel. Int.
100%
OCDD Std.
41.52-45.00
471.7750 Fn5
Flags: PB
4σ 5.66e3
0%
Abs. Int.
3.75e6
1.88e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.44e7
1.22e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

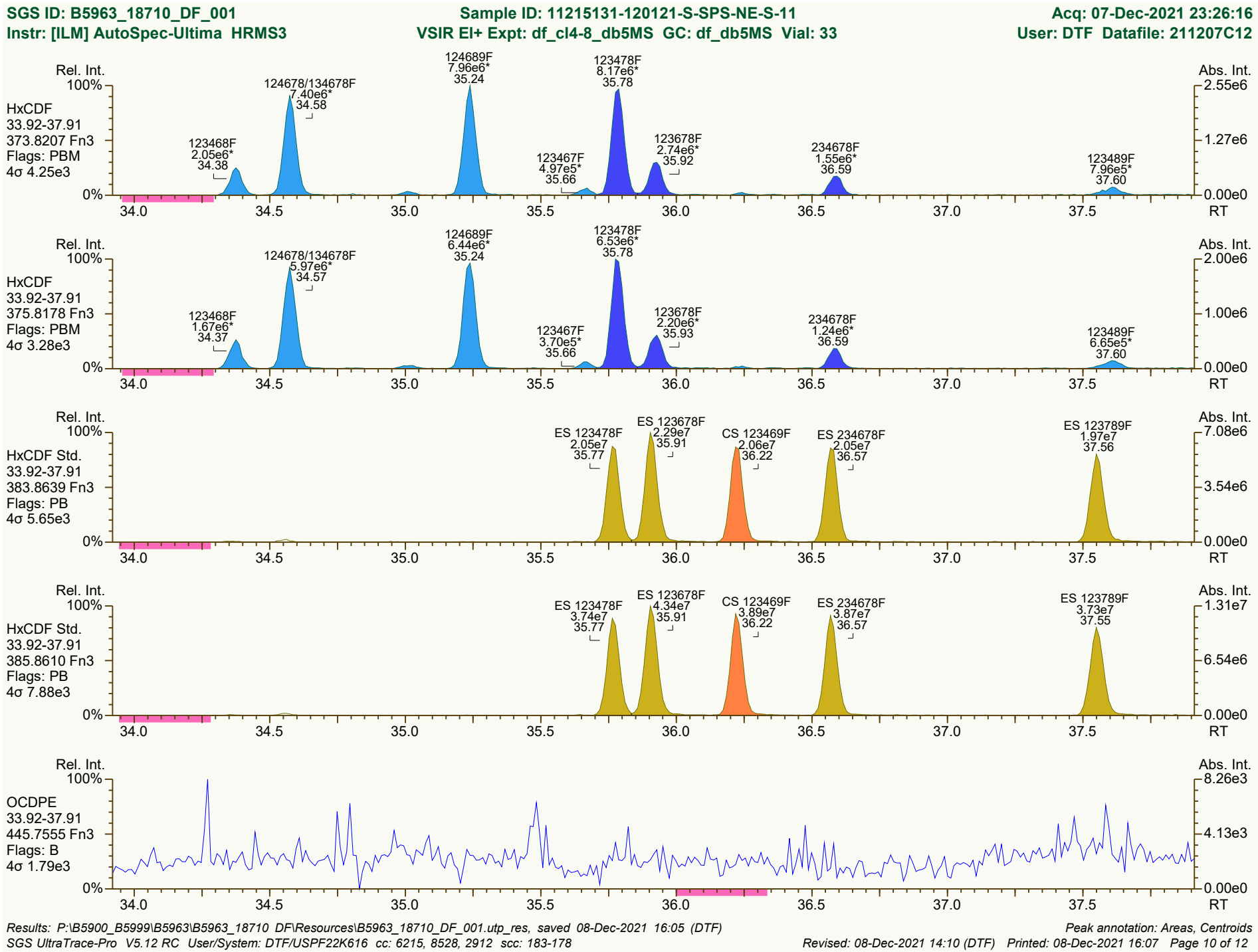
SGS ID: B5963_18710_DF_001 Sample ID: 11215131-120121-S-SPS-NE-S-11 Acq: 07-Dec-2021 23:26:16
Instr: [ILM] AutoSpec-Ultima HRMS3 VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33 User: DTF Datafile: 211207C12



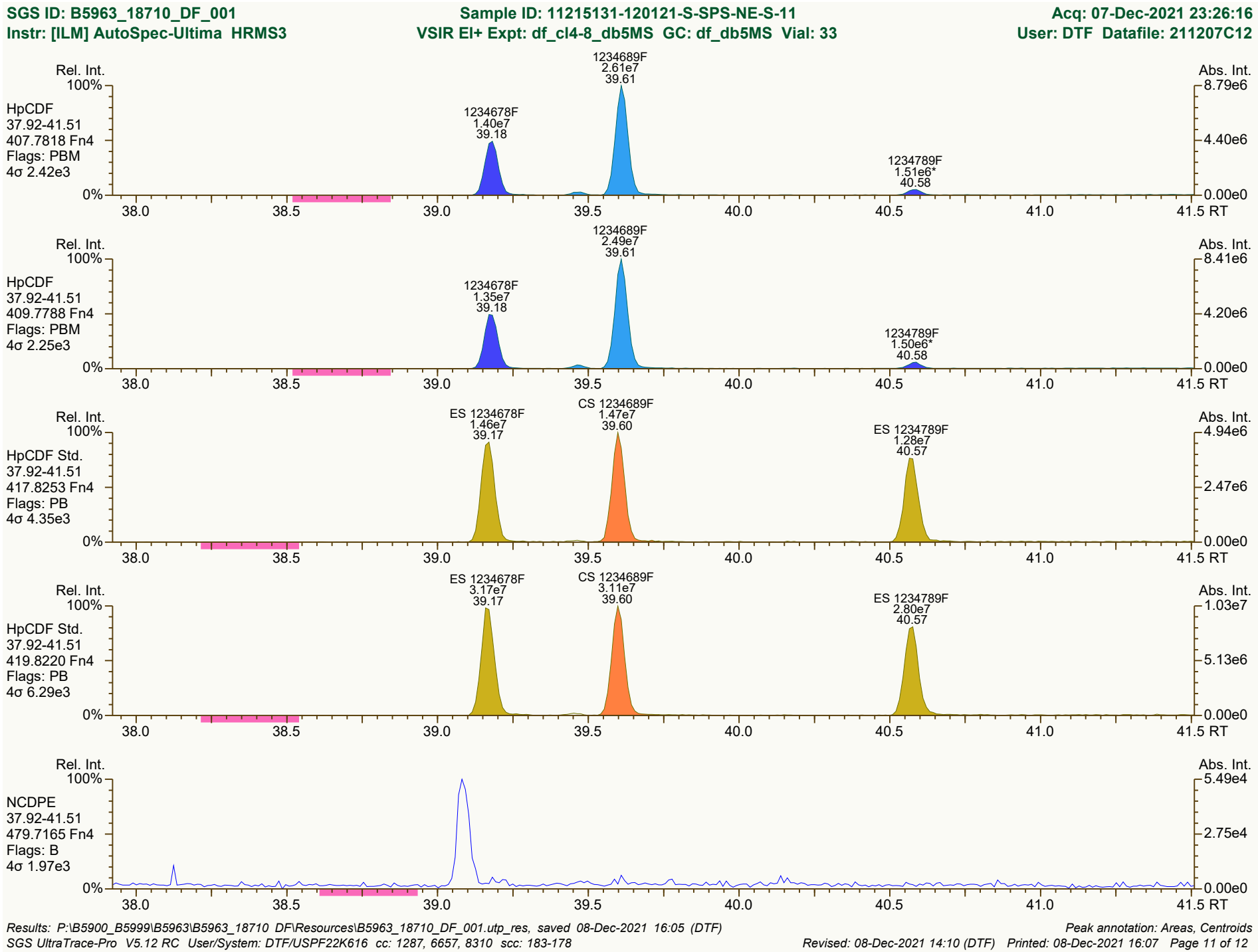
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_001.utp_res, saved 08-Dec-2021 16:05 (DTF) Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1239, 0341, 7756 scc: 183-178 PKD: 08-Dec-2021 14:10 Printed: 08-Dec-2021 16:07 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 1.36e3
13468/12468F
3.49e6
28.35
Abs. Int.
8.76e5
4.38e5
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 3.90e3
13468/12468F
2.18e6
28.35
5.21e5
2.60e5
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
1.19e7
5.94e6


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PBM
4σ 3.60e3
0%
12378F 6.91e6 31.27
12368F...[3] 6.34e6* 30.13
13678F...[3] 9.99e5* 29.96
23468/12469F 9.86e5* 30.81
12348F 8.88e5 31.05
12678/12367F 2.62e6 31.57
23467/12369F 5.66e5 32.29
23478F 6.09e6* 32.42
Abs. Int.
1.82e6
9.12e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PBM
4σ 4.55e3
0%
12378F 4.39e6 31.26
12368F...[3] 4.15e6* 30.13
13678F...[3] 5.99e5* 29.96
23468/12469F 5.84e5* 30.81
12347F 1.95e5* 30.89
12678/12367F 1.69e6 31.57
23467/12369F 3.69e5 32.29
23478F 3.97e6* 32.42
12389F 2.19e5* 33.52
Abs. Int.
1.21e6
6.03e5
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 6.06e3
0%
CS 12346F 5.01e7 30.70
ES 12378F 5.10e7 31.25
ES 23478F 4.94e7 32.40
Abs. Int.
1.40e7
6.99e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 6.17e3
0%
CS 12346F 3.16e7 30.70
ES 12378F 3.27e7 31.25
ES 23478F 3.21e7 32.40
Abs. Int.
9.66e6
4.83e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.51e3
0%
Abs. Int.
7.32e3
3.66e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT

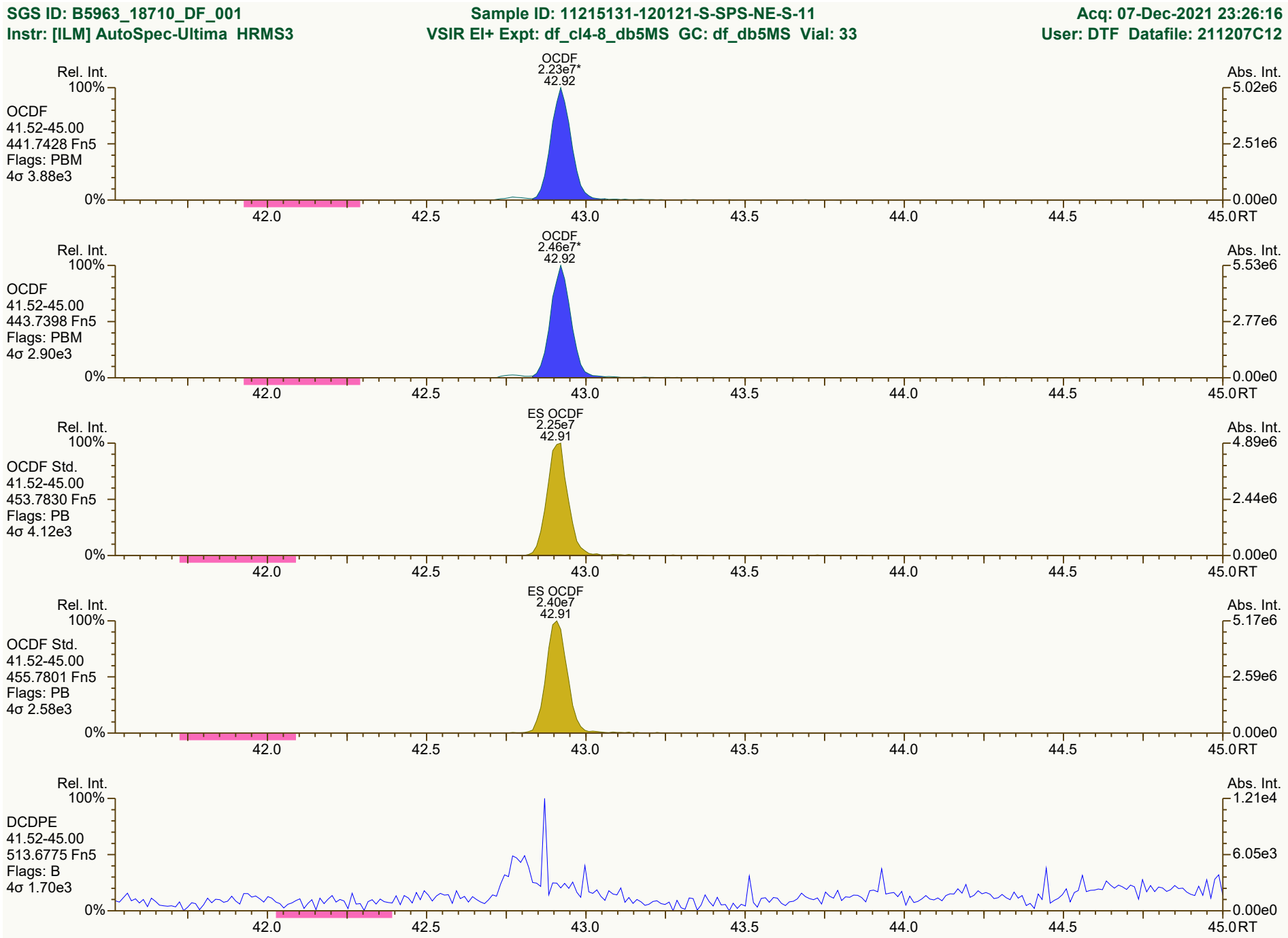

SGS ID: B5963_18710_DF_001
Sample ID: 11215131-120121-S-SPS-NE-S-11
Acq: 07-Dec-2021 23:26:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: DTF Datafile: 211207C12
Rel. Int.
Abs. Int.
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PBM
4σ 4.25e3
123468F 2.05e6* 34.38
124678/134678F 7.40e6* 34.58
124689F 7.96e6* 35.24
123467F 4.97e5* 35.66
123478F 8.17e6* 35.78
123678F 2.74e6* 35.92
234678F 1.55e6* 36.59
123489F 7.96e5* 37.60
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PBM
4σ 3.28e3
123468F 1.67e6* 34.37
124678/134678F 5.97e6* 34.57
124689F 6.44e6* 35.24
123467F 3.70e5* 35.66
123478F 6.53e6* 35.78
123678F 2.20e6* 35.93
234678F 1.24e6* 36.59
123489F 6.65e5* 37.60
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PB
4σ 5.65e3
ES 123478F 2.05e7 35.77
ES 123678F 2.29e7 35.91
CS 123469F 2.06e7 36.22
ES 234678F 2.05e7 36.57
ES 123789F 1.97e7 37.56
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PB
4σ 7.88e3
ES 123478F 3.74e7 35.77
ES 123678F 4.34e7 35.91
CS 123469F 3.89e7 36.22
ES 234678F 3.87e7 36.57
ES 123789F 3.73e7 37.55
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 1.79e3
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_001.utp_res, saved 08-Dec-2021 16:05 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6215, 8528, 2912 scc: 183-178
Revised: 08-Dec-2021 14:10 (DTF) Printed: 08-Dec-2021 16:07 Page 10 of 12

SGS ID: B5963_18710_DF_001 | Sample ID: 11215131-120121-S-SPS-NE-S-11 | Acq: 07-Dec-2021 23:26:16
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33 | User: DTF Datafile: 211207C12



Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_001.utp_res, saved 08-Dec-2021 16:05 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1287, 6657, 8310 scc: 183-178 | Revised: 08-Dec-2021 14:10 (DTF) Printed: 08-Dec-2021 16:07 Page 11 of 12

SGS ID: B5963_18710_DF_001 | Sample ID: 11215131-120121-S-SPS-NE-S-11 | Acq: 07-Dec-2021 23:26:16
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33 | User: DTF Datafile: 211207C12



Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_001.utp_res, saved 08-Dec-2021 16:05 (DTF) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1003, 3843, 0898 scc: 183-178 | *Revised: 08-Dec-2021 14:03 (DTF) Printed: 08-Dec-2021 16:07 Page 12 of 12*

Lab ID: B5963_18710_DF_002-D2 **Acq'd:** 08 Dec 2021 15:18 DTF **Wt/Vol:** 13.56 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-17 **UTP:** 08-Dec-2021 16:18:01 DTF **J-level:** 0.369 pg/g **Split:** 1 **Checkcode:** 248-879-KQW

Datafile: 211208C06 **Report:** 08 Dec 2021 16:18 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.40	E	1.0008	1.0007	-0.2	1.10E+09	0.79	Y	1.18	5,360	5393.763	0.235
12378-PeCDD	34.55		1.0005	1.0006	+0.2	9.21E+06	1.59	Y	1.04	59	5783.96	0.305
123478-HxCDD	38.37	EMPC	1.0003	1.0003	0	4.47E+05	0.98	N	1.09	3.31	14771.651	0.798
123678-HxCDD	38.47		1.0030	1.0030	0	1.93E+06	1.25	Y	1.15	14.4	14771.651	0.797
123789-HxCDD	38.74		1.0099	1.0099	0	1.08E+06	1.33	Y	1.05	7.46	14771.651	0.753
1234678-HpCDD	41.28		1.0003	1.0003	0	5.40E+07	1.03	Y	1.06	439	14193.57	0.791
OCDD	43.99		1.0002	1.0003	+0.3	5.60E+08	0.89	Y	1.13	6,110	4363.2	0.404
2378-TCDF	28.58	E	1.0007	1.0007	0	3.67E+09	0.79	Y	1.08	13,600	2811.721	0.11
12378-PeCDF	33.16		1.0005	1.0005	0	1.12E+08	1.54	Y	1.02	497	10280.183	0.393
23478-PeCDF	34.23		1.0006	1.0007	+0.2	8.45E+07	1.55	Y	1.02	389	10280.183	0.431
123478-HxCDF	37.42		1.0004	1.0005	+0.2	1.55E+08	1.23	Y	1.27	832	9548.105	0.409
123678-HxCDF	37.57		1.0004	1.0005	+0.2	4.14E+07	1.21	Y	1.15	206	9548.105	0.377
234678-HxCDF	38.21		1.0004	1.0004	0	8.28E+06	1.24	Y	1.19	46.9	9548.105	0.396
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	9548.105	0.42
1234678-HpCDF	40.34		1.0003	1.0003	0	5.77E+07	1.02	Y	1.37	344	6191.266	0.222
1234789-HpCDF	41.74		1.0003	1.0003	0	1.43E+07	0.99	Y	1.31	105	6191.266	0.338
OCDF	44.19		1.0003	1.0003	0	2.84E+08	0.88	Y	1.07	2,600	3362.348	0.28

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.38	1.0213	1.0211	-0.4	2.55E+07	0.85	Y	1.05	75.3
ES 12378-PeCDD	34.53	1.2004	1.2001	-0.6	2.22E+07	1.56	Y	0.88	78
ES 123478-HxCDD	38.36	0.9928	0.9928	0	1.83E+07	1.29	Y	0.97	83.1
ES 123678-HxCDD	38.46	0.9955	0.9954	-0.2	1.72E+07	1.22	Y	0.94	80.5
ES 123789-HxCDD	38.73	1.0023	1.0023	0	2.03E+07	1.25	Y	1.09	82.2
ES 1234678-HpCDD	41.26	1.0681	1.0680	-0.2	1.71E+07	1.03	Y	0.91	82.9
ES OCDD	43.98	1.1386	1.1383	-0.8	2.40E+07	0.96	Y	0.62	85
ES 2378-TCDF	28.56	1.0460	1.0461	+0.2	3.69E+07	0.80	Y	1.06	77.5
ES 12378-PeCDF	33.14	1.2137	1.2138	+0.2	3.24E+07	1.56	Y	0.91	79.1
ES 23478-PeCDF	34.20	1.2527	1.2528	+0.2	3.14E+07	1.52	Y	0.88	79.2
ES 123478-HxCDF	37.40	0.9681	0.9681	0	2.17E+07	0.54	Y	1.20	79.9
ES 123678-HxCDF	37.55	0.9718	0.9719	+0.2	2.57E+07	0.54	Y	1.35	84.1
ES 234678-HxCDF	38.19	0.9885	0.9885	0	2.19E+07	0.52	Y	1.24	78.1
ES 123789-HxCDF	39.05	1.0106	1.0106	0	2.01E+07	0.54	Y	1.16	77.1
ES 1234678-HpCDF	40.33	1.0440	1.0438	-0.5	1.80E+07	0.45	Y	0.97	82.4
ES 1234789-HpCDF	41.73	1.0803	1.0801	-0.5	1.53E+07	0.44	Y	0.85	79.6
ES OCDF	44.18	1.1435	1.1434	-0.3	3.01E+07	0.94	Y	0.81	82.3

Lab ID: B5963_18710_DF_002-D2 **Acq'd:** 08 Dec 2021 15:18 DTF **Wt/Vol:** 13.56 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-17 **UTP:** 08-Dec-2021 16:18:01 DTF **J-level:** 0.369 pg/g **Split:** 1 **Checkcode:** 248-879-KQW

Datafile: 211208C06 **Report:** 08 Dec 2021 16:18 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.77		-	-	-	3.24E+07	0.81	Y	-	-	
JS 1234-TCDF	27.30		-	-	-	4.49E+07	0.76	Y	-	-	
JS 123467-HxCDD	38.64		-	-	-	1.13E+07	1.19	Y	-	-	
CS 37Cl-2378-TCDD	29.40		1.0220	1.0219	-0.2	1.06E+07	n/a	-	1.20	68.3	
CS 12347-PeCDD	34.05		1.1836	1.1834	-0.4	2.00E+07	1.59	Y	0.75	82.1	
CS 12346-PeCDF	32.64		1.1952	1.1953	+0.2	3.17E+07	1.53	Y	0.85	82.9	
CS 123469-HxCDF	37.87		0.9802	0.9802	0	2.11E+07	0.53	Y	1.12	83.5	
CS 1234689-HpCDF	40.73		1.0543	1.0542	-0.2	1.67E+07	0.45	Y	0.89	83.3	
~~SS 37Cl-2378-TCDD~~	~~29.40~~		~~1.0220~~	~~1.0219~~	~~-0.2~~	~~1.06E+07~~	~~n/a~~		~~1.15~~	~~91~~	Not used in this project.
~~SS 12347-PeCDD~~	~~34.05~~		~~1.1836~~	~~1.1834~~	~~-0.4~~	~~2.00E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~105~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~32.64~~		~~1.1952~~	~~1.1953~~	~~+0.2~~	~~3.17E+07~~	~~1.53~~	~~Y~~	~~0.94~~	~~105~~	
~~SS 123469-HxCDF~~	~~37.87~~		~~0.9802~~	~~0.9802~~	~~0~~	~~2.11E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~99.1~~	
~~SS 1234689-HpCDF~~	~~40.73~~		~~1.0543~~	~~1.0542~~	~~-0.2~~	~~1.67E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~101~~	

Totals	Conc	EMPC
Total TCDD	5910	5940
Total PeCDD	95.4	100
Total HxCDD	169	173
Total HpCDD	881	881
Total Tetra-Octa Dioxins	13200	13200
Total TCDF	26,000	26000
Total PeCDF	1,430	1430
Total HxCDF	1,320	1320
Total HpCDF	624	624
Total Tetra-Octa Furans	32,000	32000
Total Tetra-Octa Dioxins & Furans	45100	45200

Lab ID: B5963_18710_DF_002-D2 **Acq'd:** 08 Dec 2021 15:18 DTF **Wt/Vol:** 13.56 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-17 **UTP:** 08-Dec-2021 16:18:01 DTF **J-level:** 0.369 pg/g **Split:** 1 **Checkcode:** 248-879-KQW

Datafile: 211208C06 **Report:** 08 Dec 2021 16:18 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.98		0.8842	0.8844	+0.3	1.68E+06	0.81	Y	1.18	8.21	5393.763	0.235
1379-TCDD	26.32		0.8956	0.8957	+0.2	7.78E+05	0.83	Y	1.18	3.8	5393.763	0.235
1369-TCDD	26.71		0.9090	0.9090	0	1.14E+05	0.79	Y	1.18	0.557	5393.763	0.235
1469-TCDD	27.44		0.9340	0.9339	-0.2	9.93E+05	0.82	Y	1.18	4.84	5393.763	0.235
1247/1246/1248/1249-TCDD	27.66	EMPC	0.9417	0.9415	-0.3	1.76E+06	0.92	N	1.18	8.61	5393.763	0.235
1378-TCDD	27.83		0.9476	0.9472	-0.7	3.45E+06	0.84	Y	1.18	16.8	5393.763	0.235
1268-TCDD	28.03		0.9538	0.9539	+0.2	2.69E+05	0.70	Y	1.18	1.32	5393.763	0.235
1478-TCDD	28.26		0.9616	0.9618	+0.3	2.70E+06	0.81	Y	1.18	13.2	5393.763	0.235
1279-TCDD	NotFnd		0.9674						1.18		5393.763	0.235
1234/1269-TCDD	28.76		0.9787	0.9787	0	5.16E+05	0.75	Y	1.18	2.52	5393.763	0.235
1236-TCDD	28.90	EMPC	0.9834	0.9837	+0.5	2.89E+05	1.02	N	1.18	1.41	5393.763	0.235
1237/1238-TCDD	29.12		0.9914	0.9912	-0.3	1.65E+07	0.84	Y	1.18	80.3	5393.763	0.235
1239-TCDD	NotFnd		0.9960						1.18		5393.763	0.235
2378-TCDD	**29.40**	E	**1.0008**	1.0007	**-0.2**	1.10E+09	0.79	Y	**1.18**	**5,360**	**5393.763**	**0.235**
1278-TCDD	29.71		1.0113	1.0113	0	8.56E+07	0.79	Y	1.18	418	5393.763	0.235
1267-TCDD	29.83	EMPC	1.0157	1.0154	-0.5	3.84E+06	1.19	N	1.18	18.7	5393.763	0.235
1289-TCDD	NotFnd		1.0324						1.18		5393.763	0.235
12479/12468-PeCDD	32.13		0.9304	0.9305	+0.2	1.30E+06	1.61	Y	1.04	8.31	5783.96	0.305
12469-PeCDD	32.65		0.9454	0.9456	+0.4	1.06E+06	1.56	Y	1.04	6.76	5783.96	0.305
12368-PeCDD	33.17		0.9607	0.9607	0	1.28E+06	1.51	Y	1.04	8.18	5783.96	0.305
12478-PeCDD	33.36		0.9659	0.9661	+0.4	7.19E+05	1.55	Y	1.04	4.61	5783.96	0.305
12379-PeCDD	33.46		0.9689	0.9691	+0.4	5.02E+05	1.61	Y	1.04	3.21	5783.96	0.305
12369/12467/12489-PeCDD	33.72		0.9762	0.9764	+0.4	5.99E+05	1.40	Y	1.04	3.83	5783.96	0.305
12346/12347-PeCDD	34.07	J	0.9867	0.9867	0	2.42E+05	1.69	Y	1.04	1.55	5783.96	0.305
12378-PeCDD	34.55		**1.0005**	**1.0006**	**+0.2**	**9.21E+06**	**1.59**	**Y**	**1.04**	**59**	**5783.96**	**0.305**
12367-PeCDD	34.66	EMPC	1.0031	1.0038	+1.5	5.20E+05	2.12	N	1.04	3.33	5783.96	0.305
12389-PeCDD	34.98	J EMPC	1.0130	1.0130	0	2.12E+05	1.92	N	1.04	1.36	5783.96	0.305
124679/124689-HxCDD	36.67		0.9559	0.9560	+0.2	1.25E+07	1.22	Y	1.10	90.8	14771.651	0.78
123468-HxCDD	37.33		0.9731	0.9732	+0.2	1.06E+06	1.25	Y	1.10	7.67	14771.651	0.78
123679/123689-HxCDD	37.63		0.9810	0.9811	+0.2	6.09E+06	1.26	Y	1.10	44.1	14771.651	0.78
123469-HxCDD	37.77		0.9846	0.9847	+0.2	3.71E+05	1.34	Y	1.10	2.69	14771.651	0.78
123478-HxCDD	38.37	EMPC	**1.0003**	**1.0003**	**0**	**4.47E+05**	**0.98**	**N**	1.09	**3.31**	**14771.651**	**0.798**
123678-HxCDD	38.47		**1.0030**	**1.0030**	**0**	**1.93E+06**	**1.25**	**Y**	1.15	**14.4**	**14771.651**	**0.797**
123467-HxCDD	38.65		1.0076	1.0075	-0.2	3.12E+05	1.20	Y	1.10	2.26	14771.651	0.78
123789-HxCDD	38.74		**1.0099**	**1.0099**	**0**	**1.08E+06**	**1.33**	**Y**	1.05	**7.46**	**14771.651**	**0.753**

Lab ID: B5963_18710_DF_002-D2 **Acq'd:** 08 Dec 2021 15:18 DTF **Wt/Vol:** 13.56 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-17 **UTP:** 08-Dec-2021 16:18:01 DTF **J-level:** 0.369 pg/g **Split:** 1 **Checkcode:** 248-879-KQW

Datafile: 211208C06 **Report:** 08 Dec 2021 16:18 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

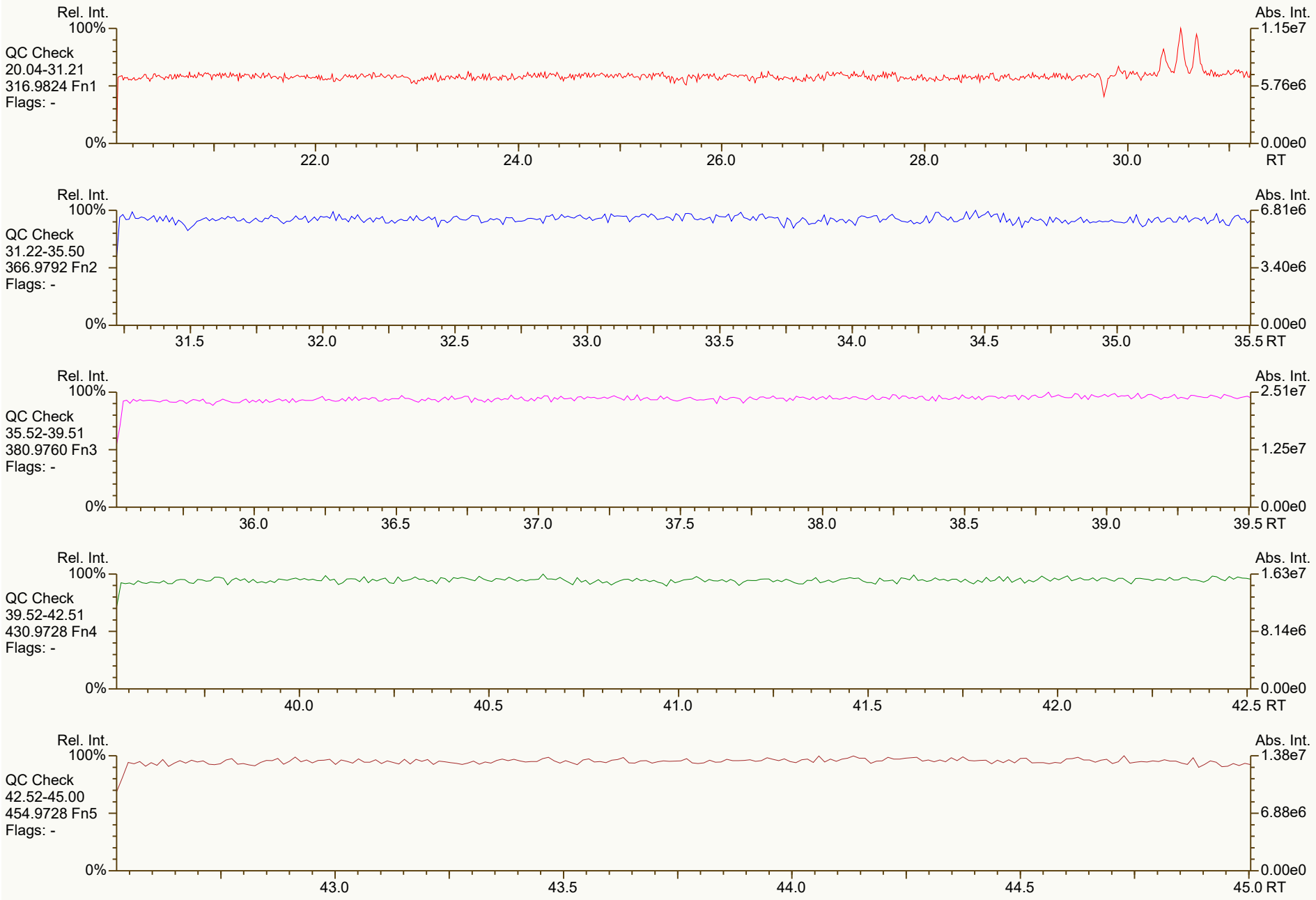
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.59		0.9838	0.9838	0	5.44E+07	1.04	Y	1.06	443	14193.57	0.791
1234678-HpCDD	**41.28**		**1.0003**	**1.0003**	**0**	**5.40E+07**	**1.03**	**Y**	**1.06**	**439**	**14193.57**	**0.791**
OCDD	**43.99**		**1.0002**	**1.0003**	**+0.3**	**5.60E+08**	**0.89**	**Y**	**1.13**	**6,110**	**4363.2**	**0.404**
OCDD-a	43.99		1.0002	1.0002	0	3.52E+07	2.54	Y	0.07	6,000	5860.457	8.49
1368-TCDF	24.06		0.8425	0.8425	0	1.06E+06	0.80	Y	1.08	3.94	2811.721	0.11
1468-TCDF	24.59		0.8609	0.8611	+0.3	6.43E+06	0.80	Y	1.08	23.8	2811.721	0.11
2468-TCDF	25.16		0.8807	0.8808	+0.2	4.85E+06	0.76	Y	1.08	18	2811.721	0.11
1346/1246-TCDF	NotFnd		0.8922						1.08		2811.721	0.11
1347/1378/1247-TCDF	25.65		0.8973	0.8982	+1.4	3.97E+07	0.78	Y	1.08	147	2811.721	0.11
1348-TCDF	NotFnd		0.9060						1.08		2811.721	0.11
1248/1367/1379-TCDF	25.96		0.9102	0.9090	-1.9	1.59E+08	0.79	Y	1.08	588	2811.721	0.11
1268-TCDF	26.35		0.9224	0.9224	0	5.41E+07	0.79	Y	1.08	200	2811.721	0.11
1467-TCDF	26.47		0.9267	0.9269	+0.3	8.06E+06	0.79	Y	1.08	29.9	2811.721	0.11
1478-TCDF	26.63		0.9322	0.9322	0	1.35E+08	0.79	Y	1.08	499	2811.721	0.11
1369/1237-TCDF	26.98		0.9443	0.9446	+0.5	3.77E+07	0.78	Y	1.08	140	2811.721	0.11
2467-TCDF	27.08		0.9482	0.9481	-0.2	4.51E+06	0.79	Y	1.08	16.7	2811.721	0.11
2368-TCDF	27.22		0.9532	0.9530	-0.3	9.70E+07	0.77	Y	1.08	360	2811.721	0.11
1238/1234/1678/1469/1236-TCDF	27.31		0.9567	0.9560	-1.1	1.83E+08	0.79	Y	1.08	677	2811.721	0.11
1278-TCDF	27.75	E	0.9716	0.9714	-0.3	1.65E+09	0.78	Y	1.08	6,100	2811.721	0.11
1349-TCDF	NotFnd		0.9756						1.08		2811.721	0.11
1267-TCDF	28.00		0.9805	0.9804	-0.2	8.19E+07	0.79	Y	1.08	303	2811.721	0.11
2346/1249-TCDF	28.18		0.9865	0.9867	+0.3	1.04E+07	0.80	Y	1.08	38.4	2811.721	0.11
2347/1279-TCDF	28.37		0.9937	0.9934	-0.5	4.37E+07	0.77	Y	1.08	162	2811.721	0.11
2348-TCDF	28.47	E	0.9976	0.9969	-1.2	2.34E+08	0.77	Y	1.08	867	2811.721	0.11
2378-TCDF	**28.58**	E	**1.0007**	**1.0007**	**0**	**3.67E+09**	**0.79**	**Y**	**1.08**	**13,600**	**2811.721**	**0.11**
2367/3467-TCDF	28.92	E	1.0131	1.0126	-0.9	2.86E+08	0.78	Y	1.08	1,060	2811.721	0.11
1269-TCDF	29.16		1.0212	1.0210	-0.3	4.84E+07	0.79	Y	1.08	179	2811.721	0.11
1239-TCDF	29.41		1.0304	1.0297	-1.2	4.41E+06	0.82	Y	1.08	16.4	2811.721	0.11
1289-TCDF	30.51	E	1.0675	1.0681	+1.1	2.62E+08	0.79	Y	1.08	972	2811.721	0.11
13468/12468-PeCDF	30.46		0.9187	0.9192	+0.9	8.12E+06	1.53	Y	1.02	36.7	3454.638	0.138
13678/13467/12467-PeCDF	31.95		0.9635	0.9640	+1.0	1.91E+06	1.38	Y	1.02	8.63	10280.183	0.412
12368/13478/12478-PeCDF	32.10		0.9679	0.9686	+1.3	5.33E+07	1.54	Y	1.02	241	10280.183	0.412
14678-PeCDF	NotFnd		0.9709						1.02		10280.183	0.412
13479-PeCDF	NotFnd		0.9740						1.02		10280.183	0.412
13469/12479-PeCDF	32.47	J EMPC	0.9809	0.9799	-1.9	3.64E+05	1.30	N	1.02	1.65	10280.183	0.412
12346-PeCDF	NotFnd		0.9849						1.02		10280.183	0.412

Lab ID: B5963_18710_DF_002-D2 **Acq'd: 08 Dec 2021 15:18 DTF** **Wt/Vol: 13.56 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-SPS-SW-S-17 **UTP: 08-Dec-2021 16:18:01 DTF** **J-level: 0.369 pg/g** **Split: 1** **Checkcode: 248-879-KQW**

Datafile: 211208C06 **Report: 08 Dec 2021 16:18 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.71		0.9869	0.9870	+0.2	3.41E+06	1.55	Y	1.02	15.4	10280.183	0.412
12347-PeCDF	32.80		0.9899	0.9898	-0.2	2.61E+06	1.57	Y	1.02	11.8	10280.183	0.412
12348-PeCDF	32.95		0.9944	0.9944	0	1.13E+07	1.55	Y	1.02	51.1	10280.183	0.412
12378-PeCDF	**33.16**		**1.0005**	**1.0005**	**0**	**1.12E+08**	**1.54**	**Y**	**1.02**	**497**	**10280.183**	**0.393**
12678/12367-PeCDF	33.44		1.0085	1.0091	+1.2	3.22E+07	1.53	Y	1.02	146	10280.183	0.412
12379-PeCDF	NotFnd		1.0135						1.02		10280.183	0.412
12679-PeCDF	33.98	J	0.9936	0.9934	-0.4	3.39E+05	1.73	Y	1.02	1.53	10280.183	0.412
23467/12369-PeCDF	34.10		0.9971	0.9970	-0.2	1.64E+06	1.46	Y	1.02	7.42	10280.183	0.412
23478-PeCDF	**34.23**		**1.0006**	**1.0007**	**+0.2**	**8.45E+07**	**1.55**	**Y**	**1.02**	**389**	**10280.183**	**0.431**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		10280.183	0.412
12349-PeCDF	NotFnd		1.0101						1.02		10280.183	0.412
12389-PeCDF	35.27		1.0313	1.0313	0	4.76E+06	1.42	Y	1.02	21.5	10280.183	0.412
123468-HxCDF	36.04		0.9635	0.9637	+0.4	2.84E+06	1.20	Y	1.19	15.7	9548.105	0.399
124678/134678-HxCDF	36.24		0.9688	0.9688	0	1.59E+07	1.21	Y	1.19	87.6	9548.105	0.399
134679-HxCDF	NotFnd		0.9747						1.19		9548.105	0.399
124679-HxCDF	36.65		0.9798	0.9799	+0.2	4.07E+05	1.24	Y	1.19	2.25	9548.105	0.399
124689-HxCDF	36.87		0.9856	0.9857	+0.2	1.06E+07	1.23	Y	1.19	58.8	9548.105	0.399
123467-HxCDF	37.30		0.9973	0.9972	-0.2	1.04E+06	1.30	Y	1.19	5.76	9548.105	0.399
123478-HxCDF	**37.42**		**1.0004**	**1.0005**	**+0.2**	**1.55E+08**	**1.23**	**Y**	**1.27**	**832**	**9548.105**	**0.409**
123678-HxCDF	**37.57**		**1.0004**	**1.0005**	**+0.2**	**4.14E+07**	**1.21**	**Y**	**1.15**	**206**	**9548.105**	**0.377**
123479-HxCDF	NotFnd		1.0050						1.19		9548.105	0.399
123469-HxCDF	37.88		1.0089	1.0088	-0.2	7.59E+05	1.27	Y	1.19	4.19	9548.105	0.399
123679-HxCDF	38.00		0.9950	0.9949	-0.2	3.73E+05	1.24	Y	1.19	2.06	9548.105	0.399
234678-HxCDF	**38.21**		**1.0004**	**1.0004**	**0**	**8.28E+06**	**1.24**	**Y**	**1.19**	**46.9**	**9548.105**	**0.396**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		9548.105	0.399
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**9548.105**	**0.42**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	39.09		1.0006	1.0010	+0.9	1.12E+07	1.23	Y	1.19	61.9	9548.105	0.399
1234678-HpCDF	**40.34**		**1.0003**	**1.0003**	**0**	**5.77E+07**	**1.02**	**Y**	**1.37**	**344**	**6191.266**	**0.222**
1234679-HpCDF	40.60		1.0068	1.0067	-0.2	2.45E+06	1.09	Y	1.34	16.2	6191.266	0.275
1234689-HpCDF	40.74		1.0102	1.0102	0	2.39E+07	1.03	Y	1.34	158	6191.266	0.275
1234789-HpCDF	**41.74**		**1.0003**	**1.0003**	**0**	**1.43E+07**	**0.99**	**Y**	**1.31**	**105**	**6191.266**	**0.338**
OCDF	**44.19**		**1.0003**	**1.0003**	**0**	**2.84E+08**	**0.88**	**Y**	**1.07**	**2,600**	**3362.348**	**0.28**
OCDF-a	44.18		1.0002	1.0002	0	1.83E+07	2.30	Y	0.07	2,700	3064.856	4.12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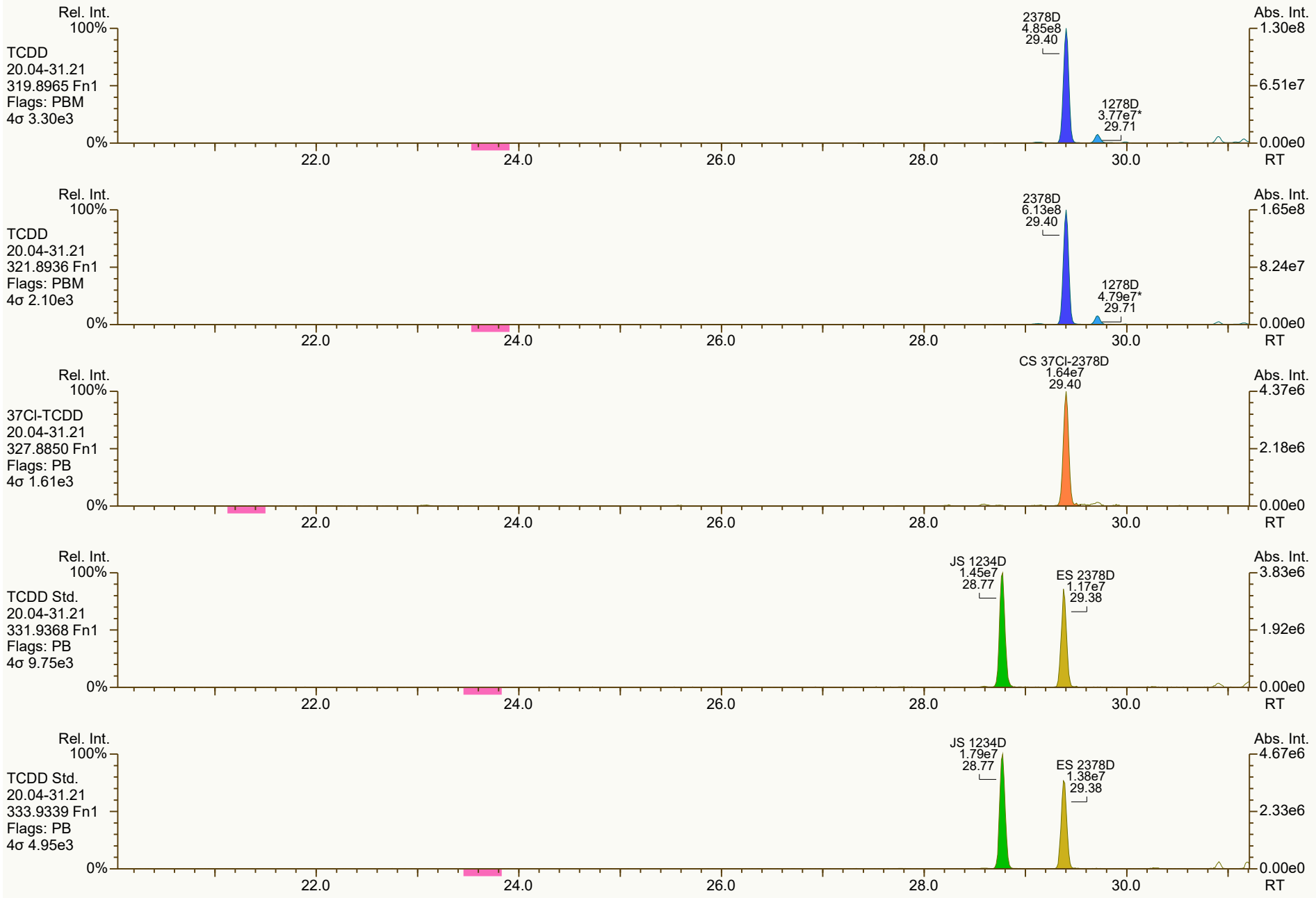
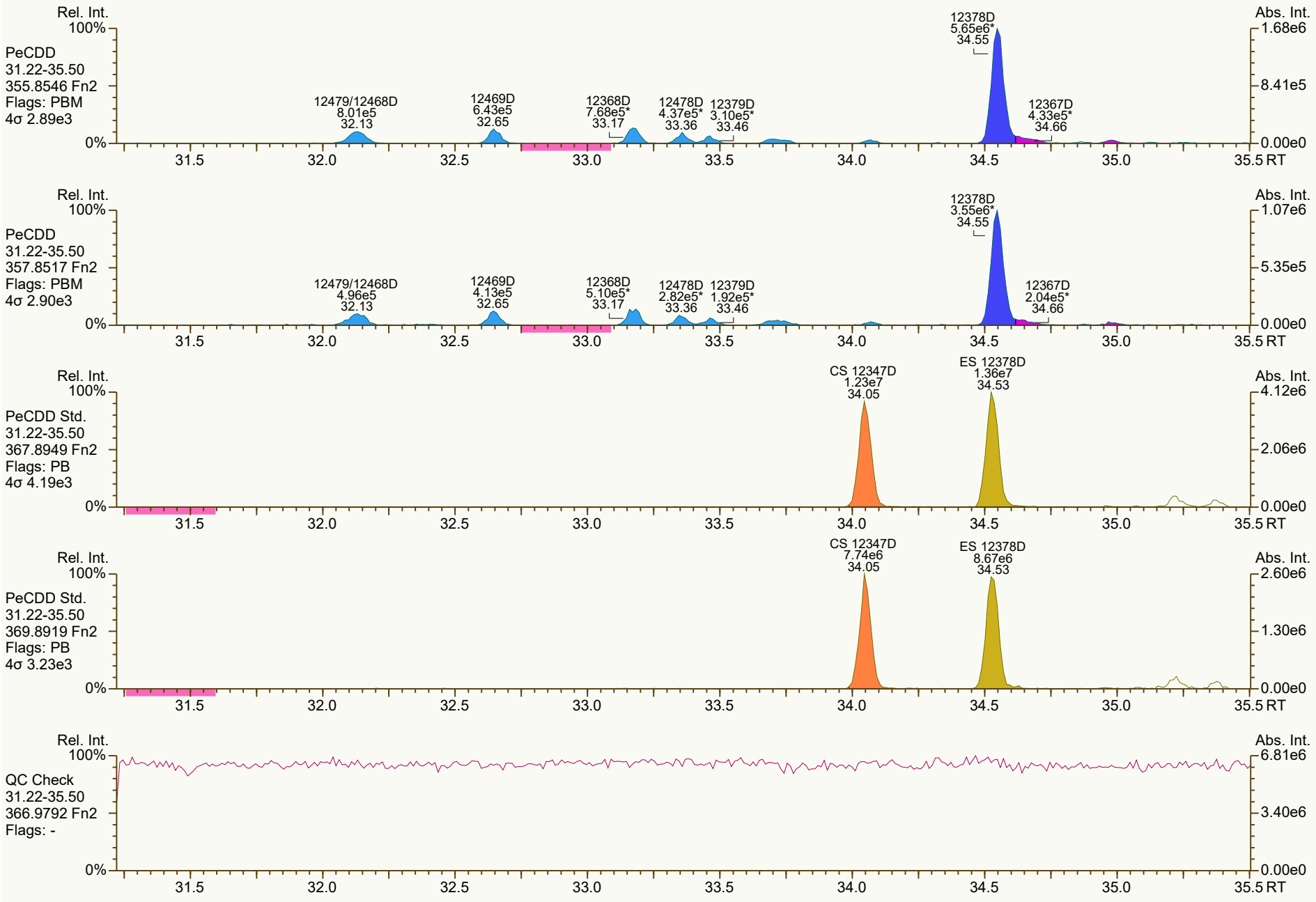
100%
QC Check
20.04-31.21
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.15e7
5.76e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
31.22-35.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.81e6
3.40e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
QC Check
35.52-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.51e7
1.25e7
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.63e7
8.14e6
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.38e7
6.88e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
20.04-31.21
319.8965 Fn1
Flags: PBM
4σ 3.30e3
0%
2378D
4.85e8
29.40
1278D
3.77e7*
29.71
Abs. Int.
1.30e8
6.51e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.21
321.8936 Fn1
Flags: PBM
4σ 2.10e3
0%
2378D
6.13e8
29.40
1278D
4.79e7*
29.71
Abs. Int.
1.65e8
8.24e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.21
327.8850 Fn1
Flags: PB
4σ 1.61e3
0%
CS 37Cl-2378D
1.64e7
29.40
Abs. Int.
4.37e6
2.18e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.21
331.9368 Fn1
Flags: PB
4σ 9.75e3
0%
JS 1234D
1.45e7
28.77
ES 2378D
1.17e7
29.38
Abs. Int.
3.83e6
1.92e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.21
333.9339 Fn1
Flags: PB
4σ 4.95e3
0%
JS 1234D
1.79e7
28.77
ES 2378D
1.38e7
29.38
Abs. Int.
4.67e6
2.33e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
31.22-35.50
355.8546 Fn2
Flags: PBM
4σ 2.89e3
12479/12468D
8.01e5
32.13
12469D
6.43e5
32.65
12368D
7.68e5*
33.17
12478D
4.37e5*
33.36
12379D
3.10e5*
33.46
12378D
5.65e6*
34.55
12367D
4.33e5*
34.66
Abs. Int.
1.68e6
8.41e5
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD
31.22-35.50
357.8517 Fn2
Flags: PBM
4σ 2.90e3
12479/12468D
4.96e5
32.13
12469D
4.13e5
32.65
12368D
5.10e5*
33.17
12478D
2.82e5*
33.36
12379D
1.92e5*
33.46
12378D
3.55e6*
34.55
12367D
2.04e5*
34.66
Abs. Int.
1.07e6
5.35e5
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD Std.
31.22-35.50
367.8949 Fn2
Flags: PB
4σ 4.19e3
CS 12347D
1.23e7
34.05
ES 12378D
1.36e7
34.53
Abs. Int.
4.12e6
2.06e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD Std.
31.22-35.50
369.8919 Fn2
Flags: PB
4σ 3.23e3
CS 12347D
7.74e6
34.05
ES 12378D
8.67e6
34.53
Abs. Int.
2.60e6
1.30e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
QC Check
31.22-35.50
366.9792 Fn2
Flags: -
Abs. Int.
6.81e6
3.40e6
0.00e0
0%
31.5
32.0
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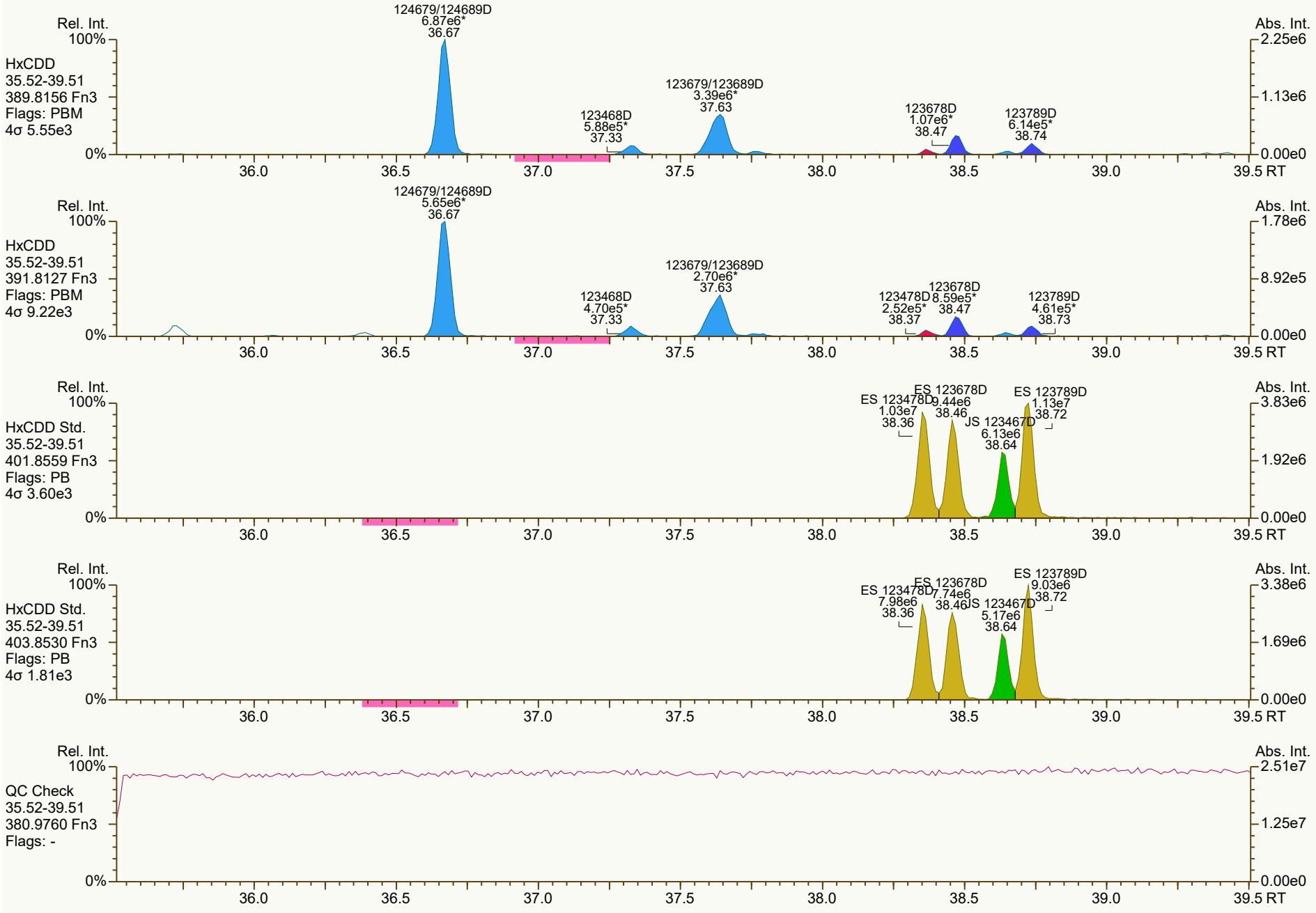
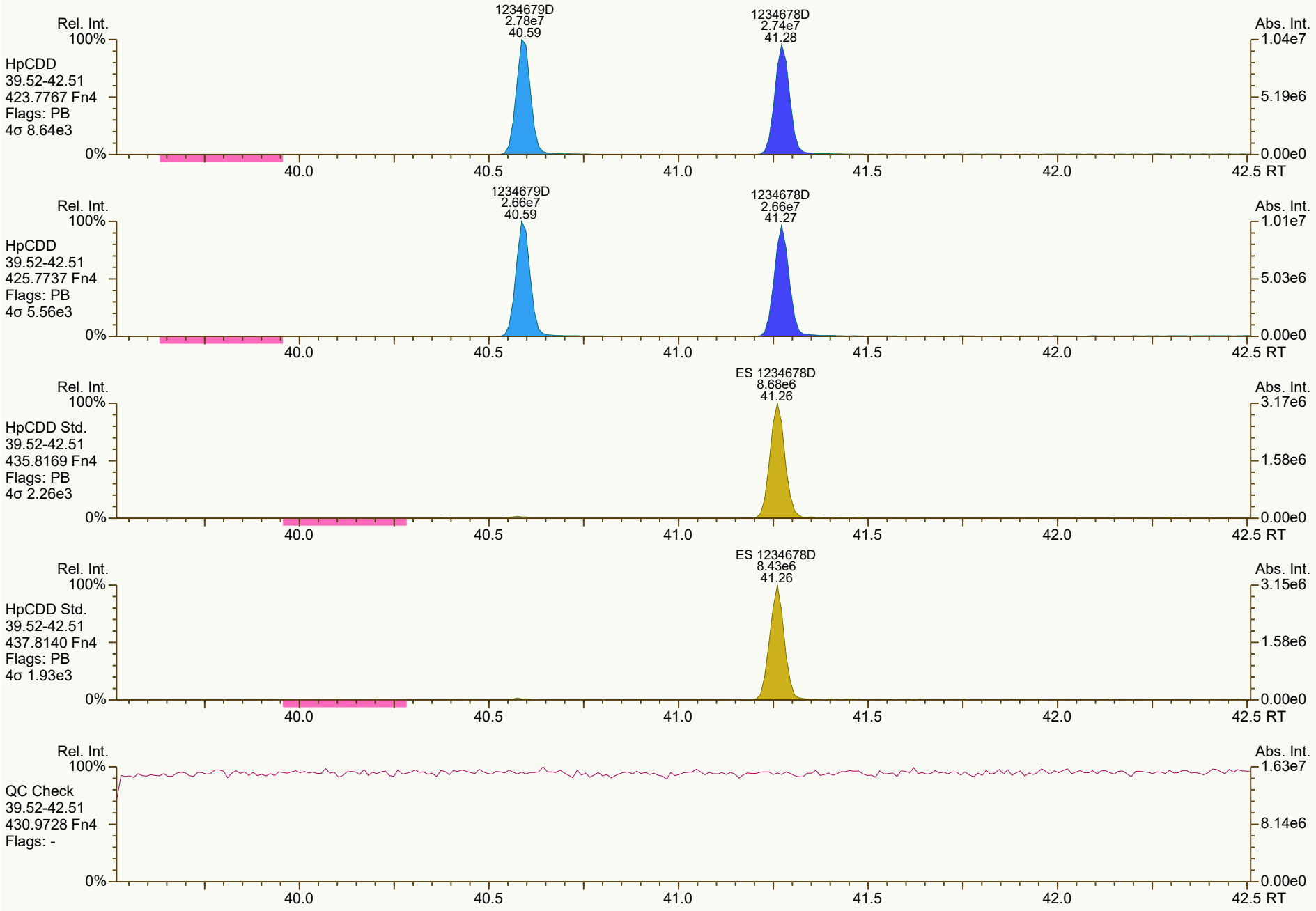
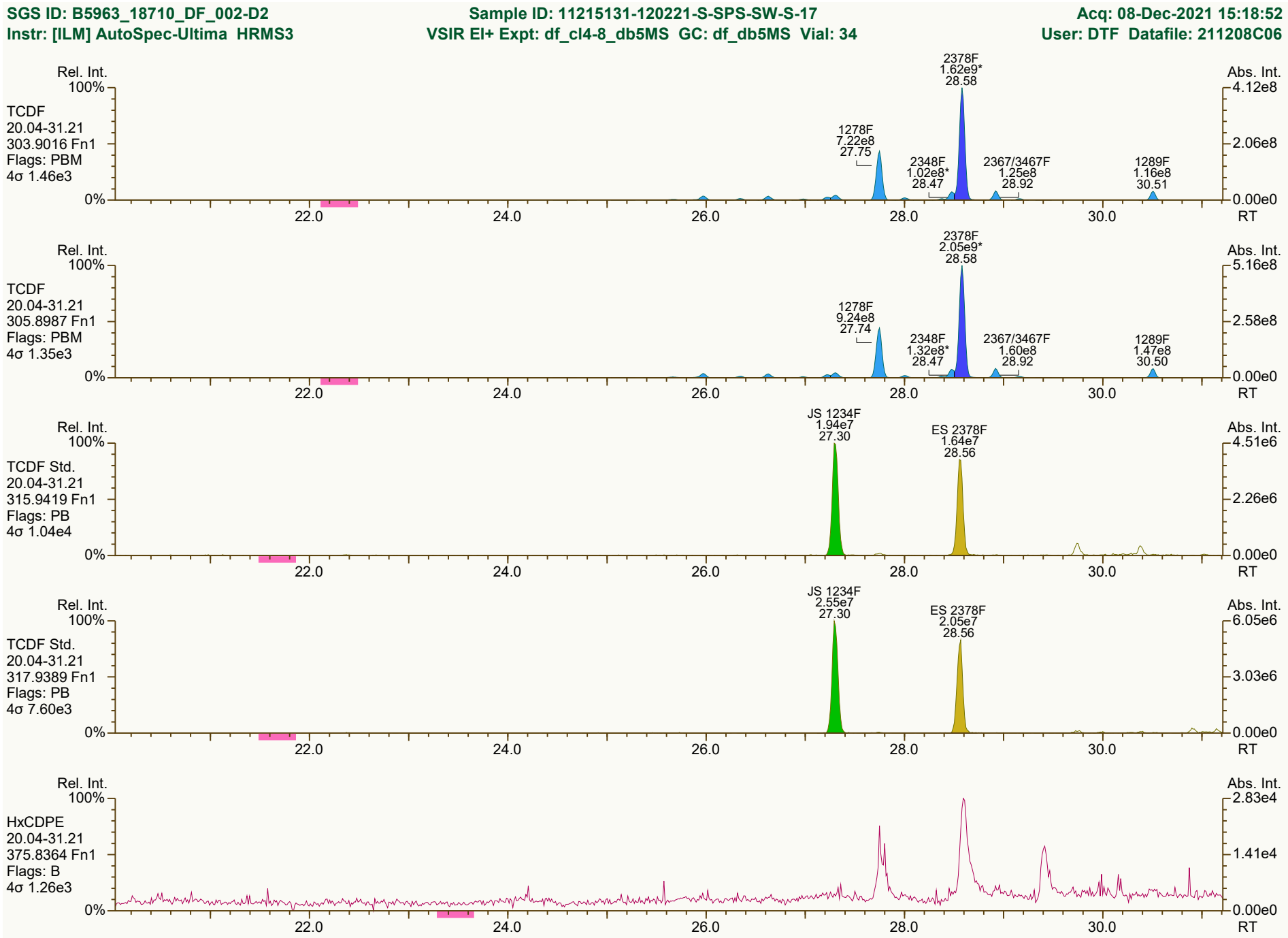
33.0
33.5
34.0
34.5
35.0
35.5 RT


Rel. Int.
Abs. Int.
HxCDD
35.52-39.51
389.8156 Fn3
Flags: PBM
4σ 5.55e3
124679/124689D
6.87e6*
36.67
123468D
5.88e5*
37.33
123679/123689D
3.39e6*
37.63
123678D
1.07e6*
38.47
123789D
6.14e5*
38.74
HxCDD
35.52-39.51
391.8127 Fn3
Flags: PBM
4σ 9.22e3
124679/124689D
5.65e6*
36.67
123468D
4.70e5*
37.33
123679/123689D
2.70e6*
37.63
123478D
2.52e5*
38.37
123678D
8.59e5*
38.47
123789D
4.61e5*
38.73
HxCDD Std.
35.52-39.51
401.8559 Fn3
Flags: PB
4σ 3.60e3
ES 123478D
1.03e7
38.36
ES 123678D
9.44e6
38.46
JS 123467D
6.13e6
38.64
ES 123789D
1.13e7
38.72
HxCDD Std.
35.52-39.51
403.8530 Fn3
Flags: PB
4σ 1.81e3
ES 123478D
7.98e6
38.36
ES 123678D
7.74e6
38.46
JS 123467D
5.17e6
38.64
ES 123789D
9.03e6
38.72
QC Check
35.52-39.51
380.9760 Fn3
Flags: -
100%
0%
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
2.25e6
1.13e6
0.00e0
1.78e6
8.92e5
3.83e6
1.92e6
3.38e6
1.69e6
2.51e7
1.25e7


Rel. Int.
100%
HpCDD
39.52-42.51
423.7767 Fn4
Flags: PB
4σ 8.64e3
1234679D
2.78e7
40.59
1234678D
2.74e7
41.28
Abs. Int.
1.04e7
5.19e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.52-42.51
425.7737 Fn4
Flags: PB
4σ 5.56e3
1234679D
2.66e7
40.59
1234678D
2.66e7
41.27
Abs. Int.
1.01e7
5.03e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.52-42.51
435.8169 Fn4
Flags: PB
4σ 2.26e3
ES 1234678D
8.68e6
41.26
Abs. Int.
3.17e6
1.58e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.52-42.51
437.8140 Fn4
Flags: PB
4σ 1.93e3
ES 1234678D
8.43e6
41.26
Abs. Int.
3.15e6
1.58e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.52-42.51
430.9728 Fn4
Flags: -
Abs. Int.
1.63e7
8.14e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT

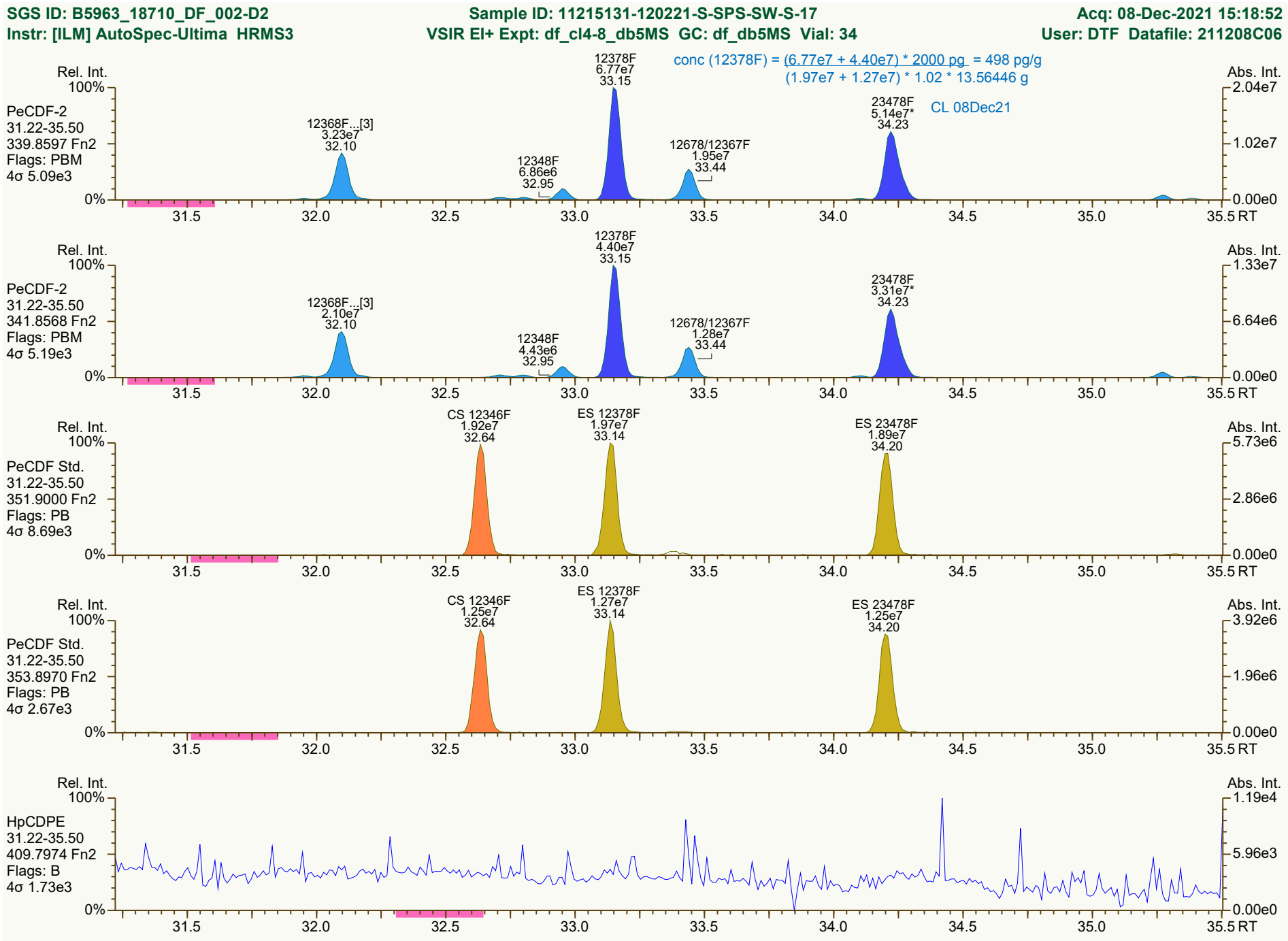

OCDD
2.64e8*
43.99
Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PBM
4σ 2.35e3
0%
Abs. Int.
7.48e7
3.74e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.96e8*
43.99
OCDD
42.52-45.00
459.7348 Fn5
Flags: PBM
4σ 2.01e3
8.19e7
4.10e7
ES OCDD
1.17e7
43.98
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 3.29e3
3.46e6
1.73e6
ES OCDD
1.22e7
43.98
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 2.55e3
3.33e6
1.66e6
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
1.38e7
6.88e6

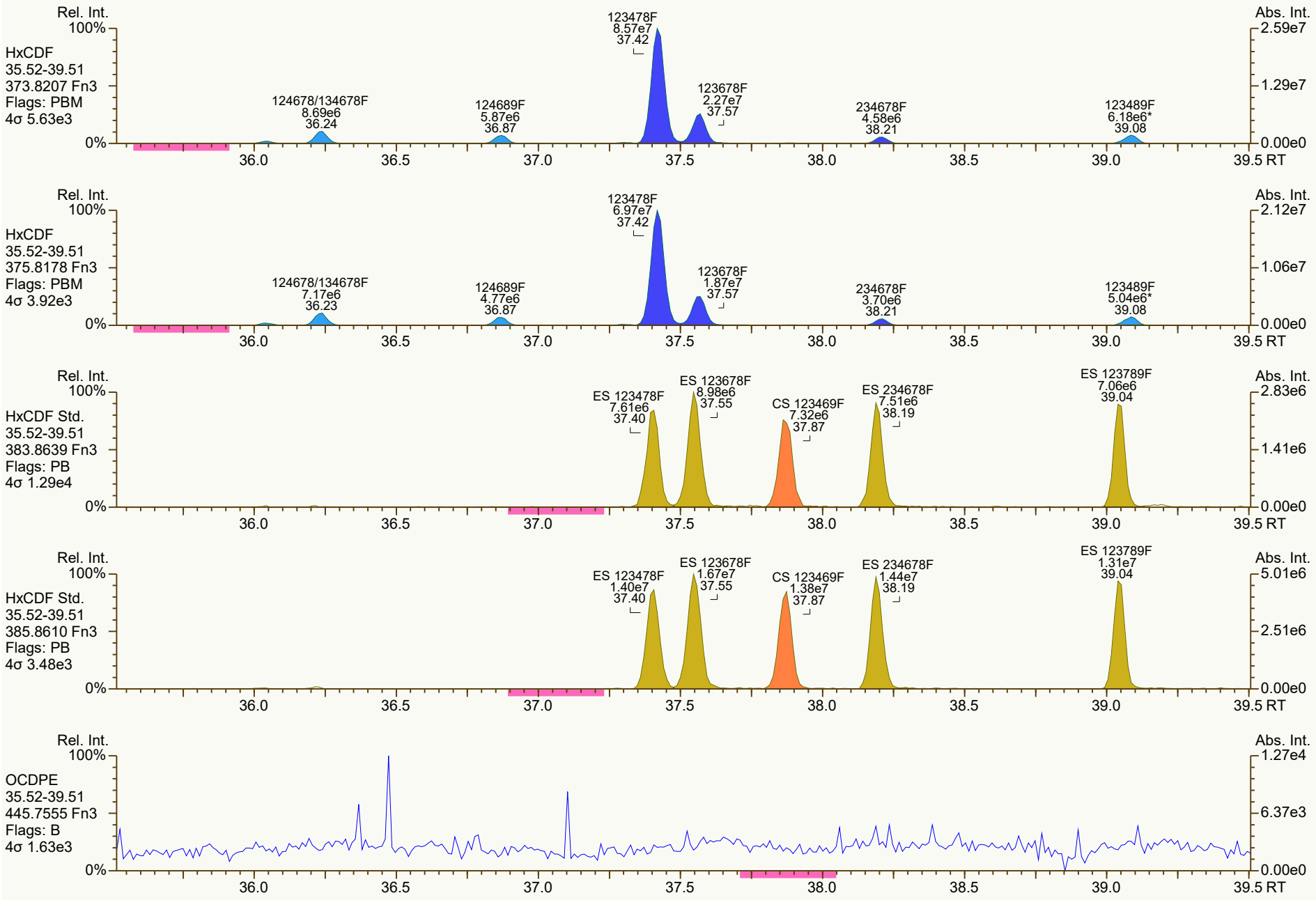
SGS ID: B5963_18710_DF_002-D2 | Sample ID: 11215131-120221-S-SPS-SW-S-17 | Acq: 08-Dec-2021 15:18:52
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34 | User: DTF Datafile: 211208C06

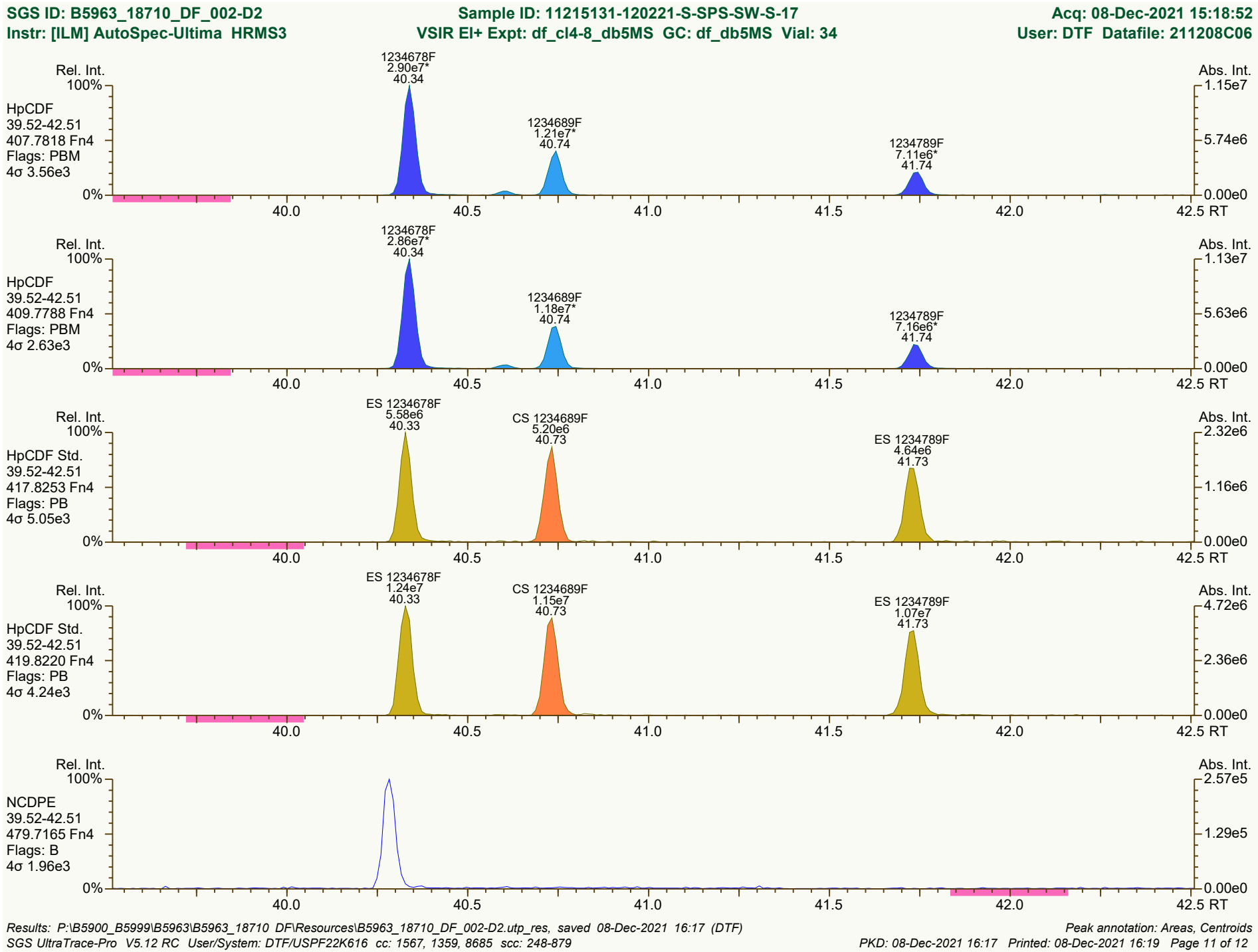


Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_002-D2.utp_res, saved 08-Dec-2021 16:17 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9700, 7680, 4987 scc: 248-879 | Revised: 08-Dec-2021 16:16 (DTF) Printed: 08-Dec-2021 16:19 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
20.04-31.21
339.8597 Fn1
Flags: PB
4σ 1.49e3
13468/12468F
4.91e6
30.46
Abs. Int.
1.30e6
6.48e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
20.04-31.21
341.8568 Fn1
Flags: PB
4σ 1.97e3
13468/12468F
3.21e6
30.46
Abs. Int.
8.62e5
4.31e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
20.04-31.21
316.9824 Fn1
Flags: -
Abs. Int.
1.15e7
5.76e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

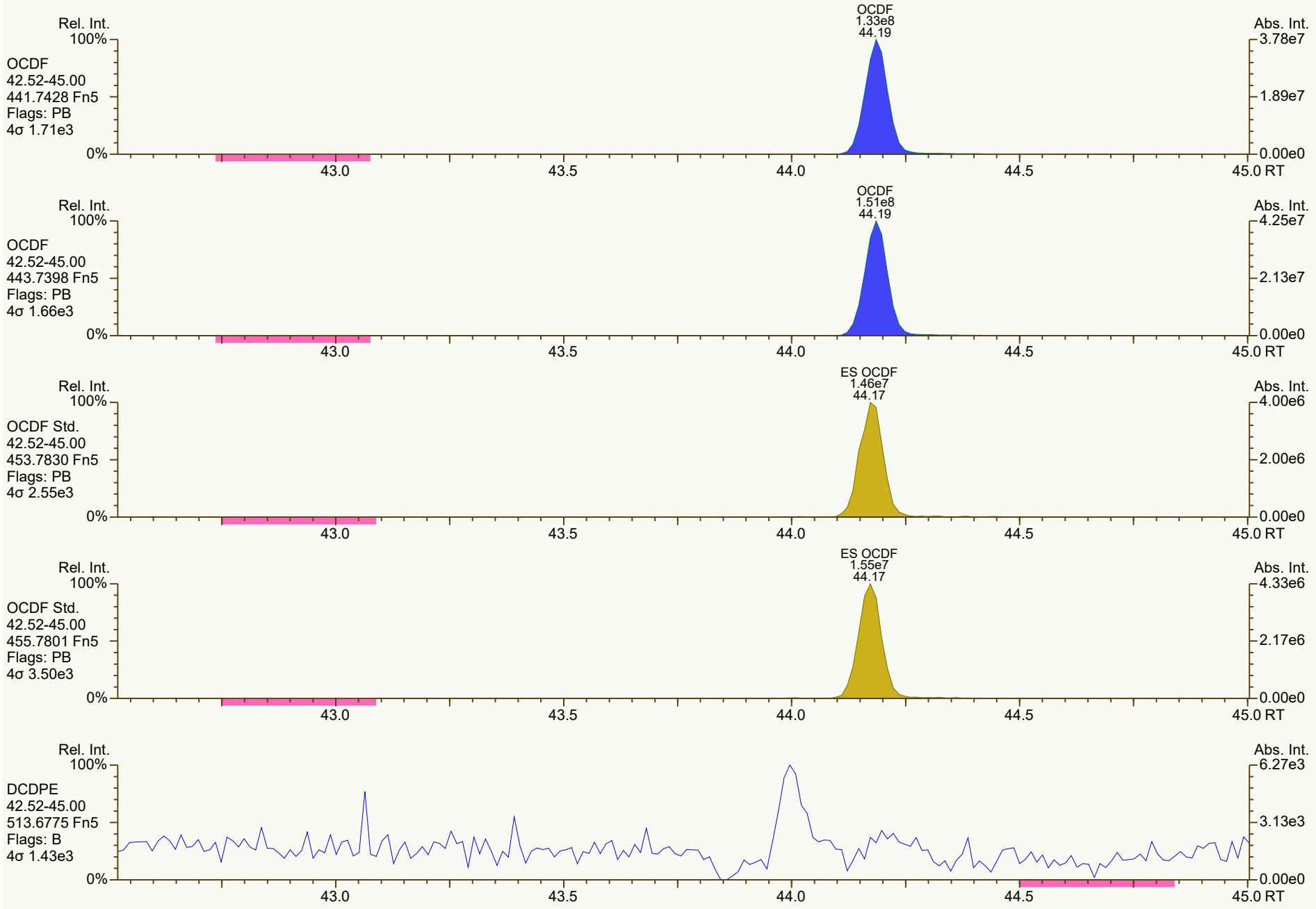

SGS ID: B5963_18710_DF_002-D2
Sample ID: 11215131-120221-S-SPS-SW-S-17
Acq: 08-Dec-2021 15:18:52
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34
User: DTF Datafile: 211208C06
conc (12378F) = (6.77e7 + 4.40e7) * 2000 pg = 498 pg/g
(1.97e7 + 1.27e7) * 1.02 * 13.56446 g
CL 08Dec21
PeCDF-2
31.22-35.50
339.8597 Fn2
Flags: PBM
4σ 5.09e3
12368F...[3] 3.23e7 32.10
12348F 6.86e6 32.95
12378F 6.77e7 33.15
12678/12367F 1.95e7 33.44
23478F 5.14e7* 34.23
PeCDF-2
31.22-35.50
341.8568 Fn2
Flags: PBM
4σ 5.19e3
12368F...[3] 2.10e7 32.10
12348F 4.43e6 32.95
12378F 4.40e7 33.15
12678/12367F 1.28e7 33.44
23478F 3.31e7* 34.23
PeCDF Std.
31.22-35.50
351.9000 Fn2
Flags: PB
4σ 8.69e3
CS 12346F 1.92e7 32.64
ES 12378F 1.97e7 33.14
ES 23478F 1.89e7 34.20
PeCDF Std.
31.22-35.50
353.8970 Fn2
Flags: PB
4σ 2.67e3
CS 12346F 1.25e7 32.64
ES 12378F 1.27e7 33.14
ES 23478F 1.25e7 34.20
HpCDPE
31.22-35.50
409.7974 Fn2
Flags: B
4σ 1.73e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_002-D2.utp_res, saved 08-Dec-2021 16:17 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0329, 5165, 5446 scc: 248-879
Revised: 08-Dec-2021 16:17 (DTF) Printed: 08-Dec-2021 16:19 Page 9 of 12


Rel. Int.
100%
HxCDF
35.52-39.51
373.8207 Fn3
Flags: PBM
4σ 5.63e3
123478F
8.57e7
37.42
124678/134678F
8.69e6
36.24
124689F
5.87e6
36.87
123678F
2.27e7
37.57
234678F
4.58e6
38.21
123489F
6.18e6*
39.08
Abs. Int.
2.59e7
1.29e7
0.00e0
0%
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
HxCDF
35.52-39.51
375.8178 Fn3
Flags: PBM
4σ 3.92e3
123478F
6.97e7
37.42
124678/134678F
7.17e6
36.23
124689F
4.77e6
36.87
123678F
1.87e7
37.57
234678F
3.70e6
38.21
123489F
5.04e6*
39.08
2.12e7
1.06e7
HxCDF Std.
35.52-39.51
383.8639 Fn3
Flags: PB
4σ 1.29e4
ES 123478F
7.61e6
37.40
ES 123678F
8.98e6
37.55
CS 123469F
7.32e6
37.87
ES 234678F
7.51e6
38.19
ES 123789F
7.06e6
39.04
2.83e6
1.41e6
HxCDF Std.
35.52-39.51
385.8610 Fn3
Flags: PB
4σ 3.48e3
ES 123478F
1.40e7
37.40
ES 123678F
1.67e7
37.55
CS 123469F
1.38e7
37.87
ES 234678F
1.44e7
38.19
ES 123789F
1.31e7
39.04
5.01e6
2.51e6
OCDPE
35.52-39.51
445.7555 Fn3
Flags: B
4σ 1.63e3
1.27e4
6.37e3


SGS ID: B5963_18710_DF_002-D2
Sample ID: 11215131-120221-S-SPS-SW-S-17
Acq: 08-Dec-2021 15:18:52
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34
User: DTF Datafile: 211208C06
Rel. Int.
Abs. Int.
HpCDF
39.52-42.51
407.7818 Fn4
Flags: PBM
4σ 3.56e3
1234678F
2.90e7*
40.34
1234689F
1.21e7*
40.74
1234789F
7.11e6*
41.74
HpCDF
39.52-42.51
409.7788 Fn4
Flags: PBM
4σ 2.63e3
1234678F
2.86e7*
40.34
1234689F
1.18e7*
40.74
1234789F
7.16e6*
41.74
HpCDF Std.
39.52-42.51
417.8253 Fn4
Flags: PB
4σ 5.05e3
ES 1234678F
5.58e6
40.33
CS 1234689F
5.20e6
40.73
ES 1234789F
4.64e6
41.73
HpCDF Std.
39.52-42.51
419.8220 Fn4
Flags: PB
4σ 4.24e3
ES 1234678F
1.24e7
40.33
CS 1234689F
1.15e7
40.73
ES 1234789F
1.07e7
41.73
NCDPE
39.52-42.51
479.7165 Fn4
Flags: B
4σ 1.96e3
40.0
40.5
41.0
41.5
42.0
42.5 RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_002-D2.utp_res, saved 08-Dec-2021 16:17 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1567, 1359, 8685 scc: 248-879
PKD: 08-Dec-2021 16:17 Printed: 08-Dec-2021 16:19 Page 11 of 12

SGS ID: B5963_18710_DF_002-D2 | Sample ID: 11215131-120221-S-SPS-SW-S-17 | Acq: 08-Dec-2021 15:18:52

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34 | User: DTF Datafile: 211208C06



Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_002-D2.utp_res, saved 08-Dec-2021 16:17 (DTF)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1123, 7290, 9622 scc: 248-879

PKD: 08-Dec-2021 16:14 Printed: 08-Dec-2021 16:19 Page 12 of 12

Lab ID: B5963_18710_DF_003 **Acq'd:** 08 Dec 2021 00:58 DTF **Wt/Vol:** 15.27 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-18 **UTP:** 08-Dec-2021 15:59:15 DTF **J-level:** 0.328 pg/g **Split:** 1 **Checkcode:** 231-881-WKG

Datafile: 211207C14 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.13		1.0009	1.0009	0	7.25E+07	0.81	Y	1.18	114	8802.471	0.145
12378-PeCDD	32.78		1.0006	1.0006	0	9.87E+05	1.43	Y	1.04	1.8	7250.05	0.119
123478-HxCDD	36.77	J	1.0004	1.0005	+0.2	3.70E+05	1.28	Y	1.09	0.812	9090.999	0.157
123678-HxCDD	36.89	J	1.0035	1.0035	0	7.40E+05	1.38	Y	1.15	1.56	9090.999	0.161
123789-HxCDD	37.19		1.0117	1.0117	0	8.80E+05	1.34	Y	1.05	1.79	9090.999	0.16
1234678-HpCDD	40.16		1.0003	1.0005	+0.5	2.76E+07	1.07	Y	1.06	73.6	8785.839	0.177
OCDD	42.77		1.0003	1.0003	0	2.18E+08	0.91	Y	1.13	1,470	15254.288	1.21
2378-TCDF	26.19		1.0009	1.0008	-0.2	3.06E+08	0.80	Y	1.08	330	14771.971	0.191
12378-PeCDF	31.26		1.0005	1.0006	+0.2	1.42E+07	1.56	Y	1.02	16.1	7511.859	0.0773
23478-PeCDF	32.42		1.0006	1.0008	+0.4	1.03E+07	1.51	Y	1.02	12.7	7511.859	0.0832
123478-HxCDF	35.78		1.0005	1.0005	0	2.00E+07	1.28	Y	1.27	26.7	11973.145	0.128
123678-HxCDF	35.92		1.0004	1.0005	+0.2	5.51E+06	1.21	Y	1.15	6.84	11973.145	0.12
234678-HxCDF	36.58	J	1.0004	1.0004	0	1.12E+06	1.39	Y	1.19	1.54	11973.145	0.135
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	11973.145	0.161
1234678-HpCDF	39.17		1.0003	1.0003	0	6.12E+06	1.02	Y	1.37	8.94	10441.321	0.11
1234789-HpCDF	40.58		1.0002	1.0002	0	1.45E+06	0.99	Y	1.31	3.31	10441.321	0.2
OCDF	42.91		1.0003	1.0002	-0.3	2.17E+06	0.80	Y	1.07	11.9	9897.355	0.613

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.11	1.0260	1.0261	+0.2	7.06E+07	0.82	Y	1.05	93
ES 12378-PeCDD	32.76	1.2396	1.2400	+0.8	6.92E+07	1.57	Y	0.88	108
ES 123478-HxCDD	36.76	0.9916	0.9916	0	5.49E+07	1.26	Y	0.97	95.1
ES 123678-HxCDD	36.87	0.9947	0.9946	-0.2	5.42E+07	1.25	Y	0.94	96.8
ES 123789-HxCDD	37.17	1.0027	1.0028	+0.2	6.16E+07	1.24	Y	1.09	95.2
ES 1234678-HpCDD	40.14	1.0828	1.0828	0	4.63E+07	1.07	Y	0.91	85.6
ES OCDD	42.75	1.1528	1.1534	+1.5	3.44E+07	0.91	Y	0.62	46.4
ES 2378-TCDF	26.17	1.0591	1.0592	+0.2	1.13E+08	0.78	Y	1.06	83.8
ES 12378-PeCDF	31.24	1.2643	1.2647	+0.7	1.13E+08	1.57	Y	0.91	97.8
ES 23478-PeCDF	32.40	1.3110	1.3114	+0.8	1.04E+08	1.57	Y	0.88	92.6
ES 123478-HxCDF	35.76	0.9648	0.9648	0	7.72E+07	0.53	Y	1.20	109
ES 123678-HxCDF	35.90	0.9686	0.9686	0	9.16E+07	0.53	Y	1.35	114
ES 234678-HxCDF	36.57	0.9865	0.9864	-0.2	7.98E+07	0.55	Y	1.24	108
ES 123789-HxCDF	37.55	1.0129	1.0129	0	7.24E+07	0.54	Y	1.16	106
ES 1234678-HpCDF	39.16	1.0565	1.0564	-0.2	6.55E+07	0.46	Y	0.97	114
ES 1234789-HpCDF	40.57	1.0943	1.0944	+0.2	4.39E+07	0.48	Y	0.85	87
ES OCDF	42.90	1.1569	1.1574	+1.3	4.45E+07	0.88	Y	0.81	46.5

Lab ID: B5963_18710_DF_003 **Acq'd:** 08 Dec 2021 00:58 DTF **Wt/Vol:** 15.27 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-18 **UTP:** 08-Dec-2021 15:59:15 DTF **J-level:** 0.328 pg/g **Split:** 1 **Checkcode:** 231-881-WKG

Datafile: 211207C14 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.42		-	-	-	7.26E+07	0.83	Y	-	-	
JS 1234-TCDF	24.70		-	-	-	1.27E+08	0.77	Y	-	-	
JS 123467-HxCDD	37.07		-	-	-	2.96E+07	1.31	Y	-	-	
CS 37Cl-2378-TCDD	27.13		1.0269	1.0270	+0.2	3.28E+07	n/a	-	1.20	93.9	
CS 12347-PeCDD	32.25		1.2203	1.2207	+0.8	6.15E+07	1.62	Y	0.75	113	
CS 12346-PeCDF	30.70		1.2424	1.2428	+0.7	1.05E+08	1.54	Y	0.85	96.8	
CS 123469-HxCDF	36.22		0.9771	0.9771	0	8.09E+07	0.54	Y	1.12	122	
CS 1234689-HpCDF	39.59		1.0681	1.0681	0	5.59E+07	0.47	Y	0.89	106	
~~SS 37Cl-2378-TCDD~~	~~27.13~~		~~1.0269~~	~~1.0270~~	~~+0.2~~	~~3.28E+07~~	~~n/a~~		~~1.15~~	~~101~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.25~~		~~1.2203~~	~~1.2207~~	~~+0.8~~	~~6.15E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~104~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.70~~		~~1.2424~~	~~1.2428~~	~~+0.7~~	~~1.05E+08~~	~~1.54~~	~~Y~~	~~0.94~~	~~98.8~~	
~~SS 123469-HxCDF~~	~~36.22~~		~~0.9771~~	~~0.9771~~	~~0~~	~~8.09E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~107~~	
~~SS 1234689-HpCDF~~	~~39.59~~		~~1.0681~~	~~1.0681~~	~~0~~	~~5.59E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~92.9~~	

Totals	Conc	EMPC
Total TCDD	129	132
Total PeCDD	6.67	6.81
Total HxCDD	28.2	29
Total HpCDD	171	171
Total Tetra-Octa Dioxins	1810	1810
Total TCDF	677	678
Total PeCDF	46.5	47.4
Total HxCDF	43.6	43.6
Total HpCDF	17.8	17.8
Total Tetra-Octa Furans	797	799
Total Tetra-Octa Dioxins & Furans	2600	2610

Lab ID: B5963_18710_DF_003 **Acq'd: 08 Dec 2021 00:58 DTF** **Wt/Vol: 15.27 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-SPS-SW-S-18 **UTP: 08-Dec-2021 15:59:15 DTF** **J-level: 0.328 pg/g** **Split: 1** **Checkcode: 231-881-WKG**

Datafile: 211207C14 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.15		0.8545	0.8540	-0.7	3.92E+05	0.82	Y	1.18	0.613	8802.471	0.145
1379-TCDD	23.56		0.8692	0.8691	-0.1	2.27E+05	0.77	Y	1.18	0.355	8802.471	0.145
1369-TCDD	NotFnd		0.8868						1.18		8802.471	0.145
1469-TCDD	24.89		0.9185	0.9182	-0.4	9.99E+05	0.70	Y	1.18	1.56	8802.471	0.145
1247/1246/1248/1249-TCDD	25.17		0.9282	0.9284	+0.3	2.76E+05	0.81	Y	1.18	0.433	8802.471	0.145
1378-TCDD	25.35		0.9355	0.9353	-0.3	3.72E+05	0.76	Y	1.18	0.582	8802.471	0.145
1268-TCDD	NotFnd		0.9435						1.18		8802.471	0.145
1478-TCDD	25.84		0.9533	0.9533	0	2.43E+05	0.81	Y	1.18	0.381	8802.471	0.145
1279-TCDD	NotFnd		0.9601						1.18		8802.471	0.145
1234/1269-TCDD	26.39		0.9741	0.9734	-1.1	2.30E+05	0.79	Y	1.18	0.361	8802.471	0.145
1236-TCDD	NotFnd		0.9797						1.18		8802.471	0.145
1237/1238-TCDD	26.82	EMPC	0.9898	0.9895	-0.5	1.25E+06	0.89	N	1.18	1.95	8802.471	0.145
1239-TCDD	NotFnd		0.9952						1.18		8802.471	0.145
2378-TCDD	**27.13**		**1.0009**	1.0009	**0**	7.25E+07	0.81	Y	**1.18**	**114**	**8802.471**	**0.145**
1278-TCDD	27.48		1.0139	1.0139	0	7.01E+06	0.80	Y	1.18	11	8802.471	0.145
1267-TCDD	27.62	EMPC	1.0193	1.0189	-0.7	3.50E+05	1.02	N	1.18	0.548	8802.471	0.145
1289-TCDD	28.13	EMPC	1.0393	1.0377	-2.7	2.27E+05	1.26	N	1.18	0.355	8802.471	0.145
12479/12468-PeCDD	30.19	J	0.9216	0.9215	-0.2	4.83E+05	1.77	Y	1.04	0.883	7250.05	0.119
12469-PeCDD	30.74	J	0.9386	0.9383	-0.6	8.27E+05	1.68	Y	1.04	1.51	7250.05	0.119
12368-PeCDD	31.31	J	0.9560	0.9559	-0.2	2.07E+05	1.56	Y	1.04	0.379	7250.05	0.119
12478-PeCDD	31.51	J	0.9619	0.9619	0	2.63E+05	1.64	Y	1.04	0.482	7250.05	0.119
12379-PeCDD	31.62	J	0.9651	0.9651	0	1.78E+05	1.33	Y	1.04	0.325	7250.05	0.119
12369/12467/12489-PeCDD	31.89	J	0.9735	0.9736	+0.2	4.74E+05	1.41	Y	1.04	0.866	7250.05	0.119
12346/12347-PeCDD	32.27	J EMPC	0.9852	0.9852	0	8.00E+04	1.28	N	1.04	0.146	7250.05	0.119
12378-PeCDD	32.78		**1.0006**	**1.0006**	**0**	**9.87E+05**	**1.43**	**Y**	**1.04**	**1.8**	**7250.05**	**0.119**
12367-PeCDD	32.88	J	1.0037	1.0037	0	1.05E+05	1.52	Y	1.04	0.191	7250.05	0.119
12389-PeCDD	33.24	J	1.0145	1.0145	0	1.24E+05	1.70	Y	1.04	0.227	7250.05	0.119
124679/124689-HxCDD	35.05		0.9535	0.9535	0	7.11E+06	1.25	Y	1.10	15	9090.999	0.159
123468-HxCDD	35.73	J	0.9716	0.9720	+0.9	6.28E+05	1.41	Y	1.10	1.32	9090.999	0.159
123679/123689-HxCDD	36.01		0.9796	0.9797	+0.2	3.32E+06	1.23	Y	1.10	6.99	9090.999	0.159
123469-HxCDD	36.14	J EMPC	0.9833	0.9832	-0.2	3.90E+05	1.05	N	1.10	0.821	9090.999	0.159
123478-HxCDD	36.77	J	**1.0004**	**1.0005**	**+0.2**	**3.70E+05**	**1.28**	**Y**	1.09	**0.812**	**9090.999**	**0.157**
123678-HxCDD	36.89	J	**1.0035**	**1.0035**	**0**	**7.40E+05**	**1.38**	**Y**	1.15	**1.56**	**9090.999**	**0.161**
123467-HxCDD	37.08	J	1.0088	1.0089	+0.2	3.58E+05	1.34	Y	1.10	0.753	9090.999	0.159
123789-HxCDD	37.19		**1.0117**	**1.0117**	**0**	**8.80E+05**	**1.34**	**Y**	1.05	**1.79**	**9090.999**	**0.16**

Lab ID: B5963_18710_DF_003 **Acq'd: 08 Dec 2021 00:58 DTF** **Wt/Vol: 15.27 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-SPS-SW-S-18 **UTP: 08-Dec-2021 15:59:15 DTF** **J-level: 0.328 pg/g** **Split: 1** **Checkcode: 231-881-WKG**

Datafile: 211207C14 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

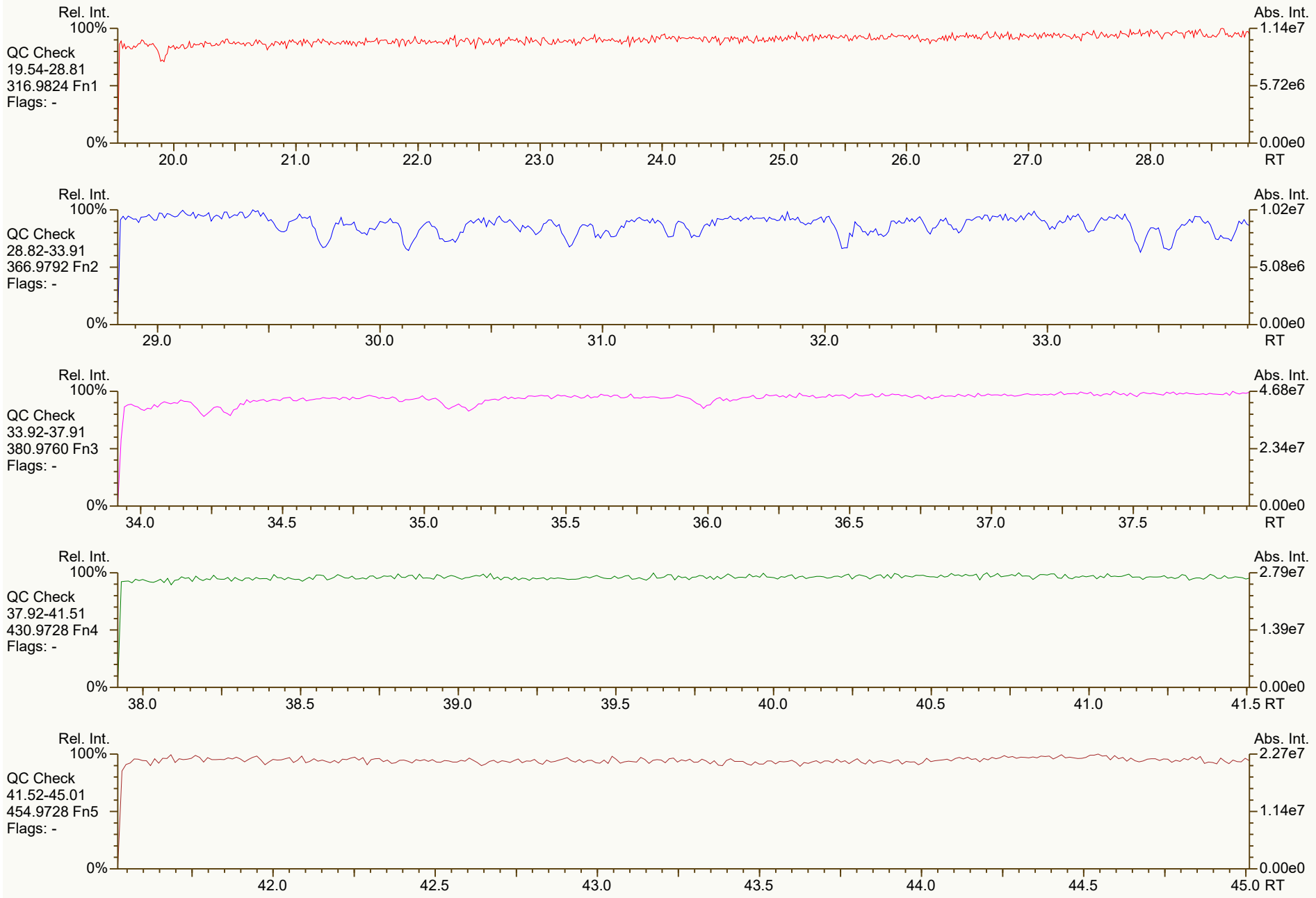
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9832	-0.2	3.63E+07	1.08	Y	1.06	96.9	8785.839	0.177
1234678-HpCDD	**40.16**		**1.0003**	**1.0005**	**+0.5**	**2.76E+07**	**1.07**	**Y**	**1.06**	**73.6**	**8785.839**	**0.177**
OCDD	**42.77**		**1.0003**	**1.0003**	**0**	**2.18E+08**	**0.91**	**Y**	**1.13**	**1,470**	**15254.288**	**1.21**
OCDD-a	42.76		1.0002	1.0002	0	1.36E+07	2.45	Y	0.07	1,440	12328.001	15.3
1368-TCDF	20.92		0.7998	0.7997	-0.1	5.89E+05	0.87	Y	1.08	0.634	14771.971	0.191
1468-TCDF	21.48	EMPC	0.8214	0.8209	-0.6	7.47E+05	0.93	N	1.08	0.805	14771.971	0.191
2468-TCDF	22.13		0.8463	0.8459	-0.5	1.79E+06	0.78	Y	1.08	1.93	14771.971	0.191
1346/1246-TCDF	NotFnd		0.8608						1.08		14771.971	0.191
1347/1378/1247-TCDF	22.71		0.8675	0.8678	+0.4	5.83E+06	0.78	Y	1.08	6.28	14771.971	0.191
1348-TCDF	NotFnd		0.8793						1.08		14771.971	0.191
1248/1367/1379-TCDF	23.11		0.8850	0.8830	-2.8	1.78E+07	0.81	Y	1.08	19.2	14771.971	0.191
1268-TCDF	23.57		0.9010	0.9010	0	5.79E+06	0.81	Y	1.08	6.24	14771.971	0.191
1467-TCDF	23.72		0.9068	0.9066	-0.3	9.89E+05	0.77	Y	1.08	1.07	14771.971	0.191
1478-TCDF	23.91		0.9139	0.9137	-0.3	1.44E+07	0.80	Y	1.08	15.5	14771.971	0.191
1369/1237-TCDF	24.32		0.9294	0.9296	+0.3	4.33E+06	0.82	Y	1.08	4.67	14771.971	0.191
2467-TCDF	24.46		0.9350	0.9350	0	6.56E+05	0.83	Y	1.08	0.707	14771.971	0.191
2368-TCDF	24.62		0.9410	0.9410	0	9.88E+06	0.78	Y	1.08	10.6	14771.971	0.191
1238/1234/1678/1469/1236-TCDF	24.71		0.9451	0.9445	-0.9	1.89E+07	0.80	Y	1.08	20.4	14771.971	0.191
1278-TCDF	25.22		0.9642	0.9640	-0.3	1.46E+08	0.80	Y	1.08	158	14771.971	0.191
1349-TCDF	NotFnd		0.9695						1.08		14771.971	0.191
1267-TCDF	25.52		0.9753	0.9752	-0.2	8.86E+06	0.81	Y	1.08	9.55	14771.971	0.191
2346/1249-TCDF	25.74		0.9832	0.9839	+1.1	1.19E+06	0.78	Y	1.08	1.29	14771.971	0.191
2347/1279-TCDF	25.96		0.9921	0.9922	+0.2	5.68E+06	0.80	Y	1.08	6.12	14771.971	0.191
2348-TCDF	26.07		0.9970	0.9963	-1.1	2.12E+07	0.80	Y	1.08	22.9	14771.971	0.191
2378-TCDF	**26.19**		**1.0009**	**1.0008**	**-0.2**	**3.06E+08**	**0.80**	**Y**	**1.08**	**330**	**14771.971**	**0.191**
2367/3467-TCDF	26.57		1.0162	1.0156	-1.0	2.68E+07	0.81	Y	1.08	28.9	14771.971	0.191
1269-TCDF	26.84		1.0259	1.0259	0	5.59E+06	0.82	Y	1.08	6.03	14771.971	0.191
1239-TCDF	27.13		1.0370	1.0367	-0.5	4.99E+05	0.78	Y	1.08	0.537	14771.971	0.191
1289-TCDF	28.34		1.0829	1.0829	0	2.52E+07	0.79	Y	1.08	27.2	14771.971	0.191
13468/12468-PeCDF	28.34	J	0.9067	0.9071	+0.7	7.30E+05	1.45	Y	1.02	0.864	6723.46	0.0717
13678/13467/12467-PeCDF	29.95	J	0.9583	0.9586	+0.5	6.52E+05	1.51	Y	1.02	0.771	7511.859	0.0802
12368/13478/12478-PeCDF	30.13		0.9635	0.9643	+1.4	6.92E+06	1.50	Y	1.02	8.18	7511.859	0.0802
14678-PeCDF	NotFnd		0.9669						1.02		7511.859	0.0802
13479-PeCDF	NotFnd		0.9701						1.02		7511.859	0.0802
13469/12479-PeCDF	NotFnd		0.9784						1.02		7511.859	0.0802
12346-PeCDF	NotFnd		0.9831						1.02		7511.859	0.0802

Lab ID: B5963_18710_DF_003 **Acq'd: 08 Dec 2021 00:58 DTF** **Wt/Vol: 15.27 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-SPS-SW-S-18 **UTP: 08-Dec-2021 15:59:15 DTF** **J-level: 0.328 pg/g** **Split: 1** **Checkcode: 231-881-WKG**

Datafile: 211207C14 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.80	J	0.9859	0.9859	0	4.60E+05	1.64	Y	1.02	0.544	7511.859	0.0802
12347-PeCDF	30.88	J	0.9885	0.9884	-0.2	3.90E+05	1.46	Y	1.02	0.461	7511.859	0.0802
12348-PeCDF	31.05	J	0.9937	0.9938	+0.2	1.37E+06	1.64	Y	1.02	1.62	7511.859	0.0802
12378-PeCDF	**31.26**		**1.0005**	**1.0006**	**+0.2**	**1.42E+07**	**1.56**	**Y**	**1.02**	**16.1**	**7511.859**	**0.0773**
12678/12367-PeCDF	31.57		1.0097	1.0104	+1.3	4.38E+06	1.64	Y	1.02	5.18	7511.859	0.0802
12379-PeCDF	NotFnd		1.0153						1.02		7511.859	0.0802
12679-PeCDF	NotFnd		0.9925						1.02		7511.859	0.0802
23467/12369-PeCDF	32.29	J EMPC	0.9966	0.9967	+0.2	2.96E+05	1.31	N	1.02	0.35	7511.859	0.0802
23478-PeCDF	**32.42**		**1.0006**	**1.0008**	**+0.4**	**1.03E+07**	**1.51**	**Y**	**1.02**	**12.7**	**7511.859**	**0.0832**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		7511.859	0.0802
12349-PeCDF	NotFnd		1.0108						1.02		7511.859	0.0802
12389-PeCDF	33.52	J EMPC	1.0346	1.0345	-0.2	4.98E+05	1.89	N	1.02	0.589	7511.859	0.0802
123468-HxCDF	34.37	J	0.9610	0.9610	0	5.43E+05	1.42	Y	1.19	0.743	11973.145	0.135
124678/134678-HxCDF	34.57		0.9667	0.9667	0	2.60E+06	1.15	Y	1.19	3.55	11973.145	0.135
134679-HxCDF	NotFnd		0.9732						1.19		11973.145	0.135
124679-HxCDF	NotFnd		0.9788						1.19		11973.145	0.135
124689-HxCDF	35.24		0.9852	0.9853	+0.2	1.42E+06	1.23	Y	1.19	1.95	11973.145	0.135
123467-HxCDF	35.66	J	0.9971	0.9970	-0.2	1.76E+05	1.17	Y	1.19	0.241	11973.145	0.135
123478-HxCDF	**35.78**		**1.0005**	**1.0005**	**0**	**2.00E+07**	**1.28**	**Y**	**1.27**	**26.7**	**11973.145**	**0.128**
123678-HxCDF	**35.92**		**1.0004**	**1.0005**	**+0.2**	**5.51E+06**	**1.21**	**Y**	**1.15**	**6.84**	**11973.145**	**0.12**
123479-HxCDF	NotFnd		1.0050						1.19		11973.145	0.135
123469-HxCDF	NotFnd		1.0091						1.19		11973.145	0.135
123679-HxCDF	NotFnd		0.9943						1.19		11973.145	0.135
234678-HxCDF	**36.58**	J	**1.0004**	**1.0004**	**0**	**1.12E+06**	**1.39**	**Y**	**1.19**	**1.54**	**11973.145**	**0.135**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		11973.145	0.135
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**11973.145**	**0.161**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	37.60		1.0008	1.0014	+1.4	1.47E+06	1.22	Y	1.19	2.02	11973.145	0.135
1234678-HpCDF	**39.17**		**1.0003**	**1.0003**	**0**	**6.12E+06**	**1.02**	**Y**	**1.37**	**8.94**	**10441.321**	**0.11**
1234679-HpCDF	39.46	**J**	1.0075	1.0078	+0.7	2.68E+05	0.95	Y	1.34	0.479	10441.321	0.146
1234689-HpCDF	39.60		1.0113	1.0113	0	2.86E+06	1.06	Y	1.34	5.12	10441.321	0.146
1234789-HpCDF	**40.58**		**1.0002**	**1.0002**	**0**	**1.45E+06**	**0.99**	**Y**	**1.31**	**3.31**	**10441.321**	**0.2**
OCDF	**42.91**		**1.0003**	**1.0002**	**-0.3**	**2.17E+06**	**0.80**	**Y**	**1.07**	**11.9**	**9897.355**	**0.613**
OCDF-a	42.91	**EMPC**	1.0002	1.0002	0	7.86E+04	1.92	N	0.07	6.96	7444.302	7.44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19.54-28.81
316.9824 Fn1
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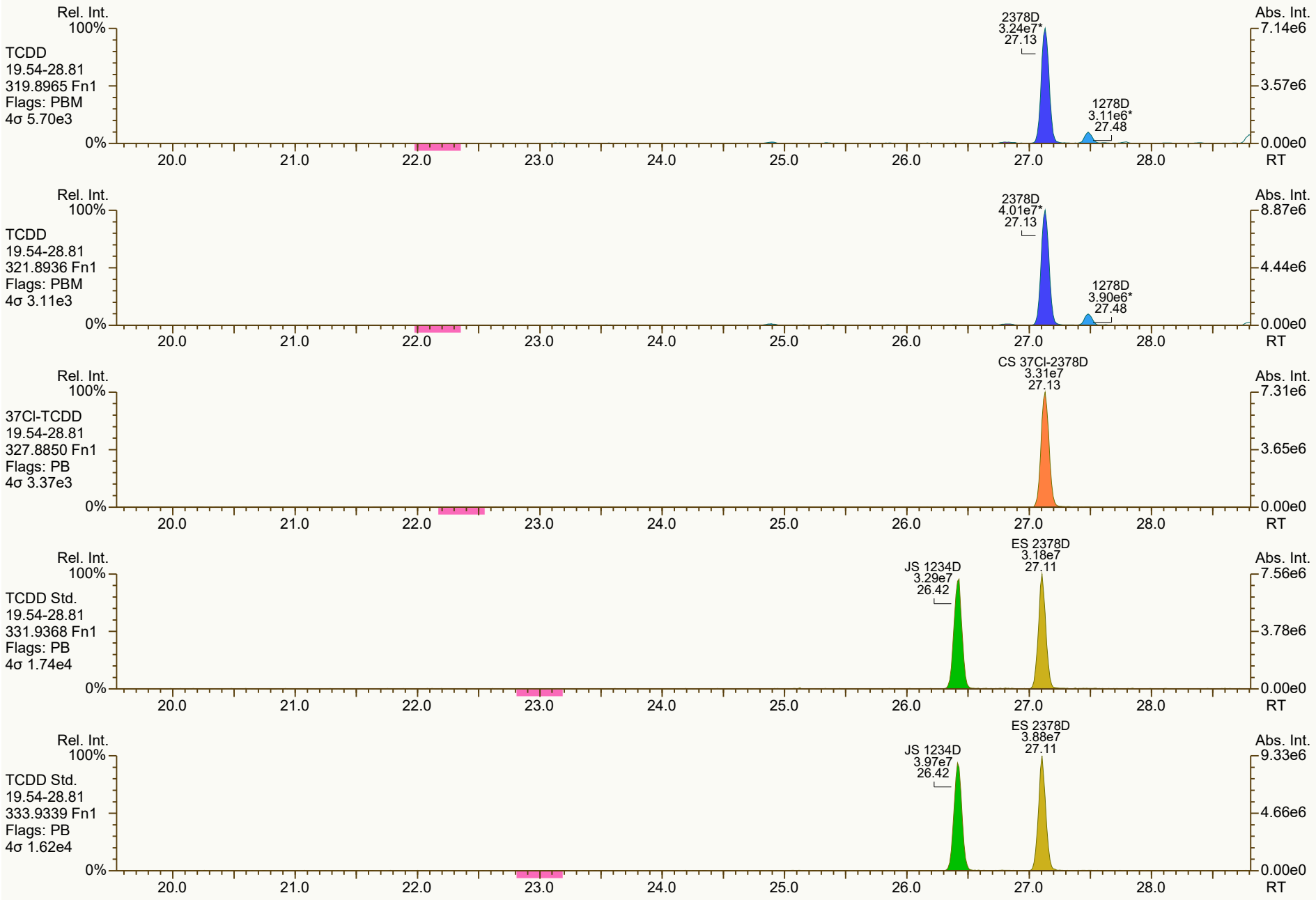
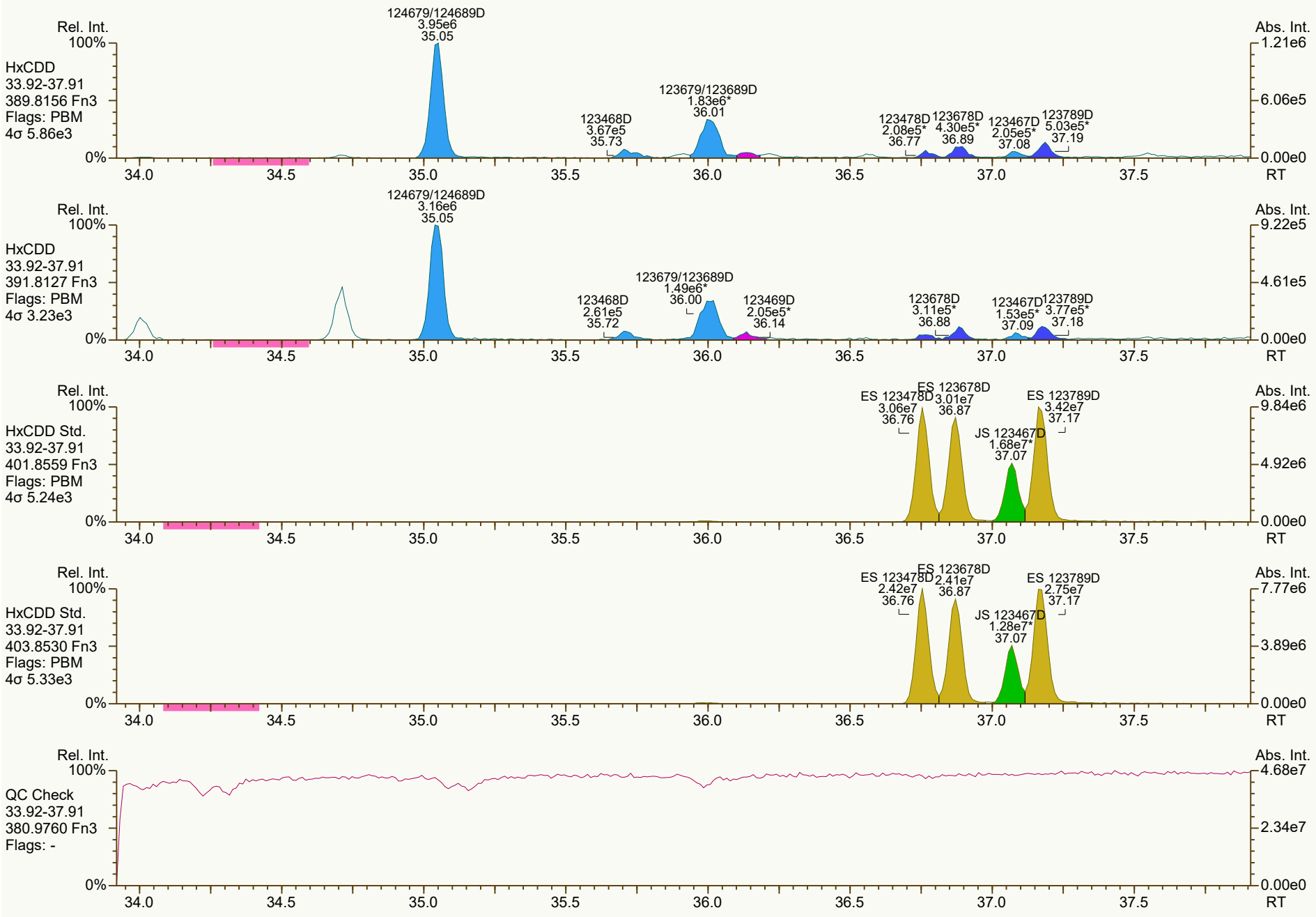
5.72e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.02e7
5.08e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.68e7
2.34e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.79e7
1.39e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: PBM
4σ 5.70e3
0%
2378D
3.24e7*
27.13
1278D
3.11e6*
27.48
Abs. Int.
7.14e6
3.57e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 3.11e3
0%
2378D
4.01e7*
27.13
1278D
3.90e6*
27.48
Abs. Int.
8.87e6
4.44e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 3.37e3
0%
CS 37Cl-2378D
3.31e7
27.13
Abs. Int.
7.31e6
3.65e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 1.74e4
0%
JS 1234D
3.29e7
26.42
ES 2378D
3.18e7
27.11
Abs. Int.
7.56e6
3.78e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 1.62e4
0%
JS 1234D
3.97e7
26.42
ES 2378D
3.88e7
27.11
Abs. Int.
9.33e6
4.66e6
0.00e0
20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PBM
4σ 4.30e3
12479/12468D
3.09e5*
30.19
12469D
5.18e5*
30.74
12368D
1.26e5*
31.31
12478D
1.64e5*
31.51
12369D...[3]
2.77e5*
31.89
12346/12347D
4.86e4*
32.27
12378D
5.81e5*
32.78
12367D
6.31e4*
32.88
12389D
7.80e4*
33.23
Abs. Int.
1.57e5
7.86e4
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PBM
4σ 2.95e3
12479/12468D
1.74e5*
30.19
12469D
3.09e5*
30.74
12368D
8.08e4*
31.31
12478D
9.96e4*
31.51
12369D...[3]
1.96e5*
31.89
12346/12347D
3.81e4*
32.28
12378D
4.06e5*
32.78
12367D
4.16e4*
32.87
12389D
4.60e4*
33.23
Abs. Int.
1.12e5
5.58e4
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 9.73e3
CS 12347D
3.81e7
32.25
ES 12378D
4.22e7
32.76
Abs. Int.
1.18e7
5.88e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 7.61e3
CS 12347D
2.35e7
32.25
ES 12378D
2.70e7
32.76
Abs. Int.
7.38e6
3.69e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
Abs. Int.
1.02e7
5.08e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDD
33.92-37.91
389.8156 Fn3
Flags: PBM
4σ 5.86e3
0%
124679/124689D
3.95e6
35.05
123468D
3.67e5
35.73
123679/123689D
1.83e6*
36.01
123478D
2.08e5*
36.77
123678D
4.30e5*
36.89
123467D
2.05e5*
37.08
123789D
5.03e5*
37.19
Abs. Int.
1.21e6
6.06e5
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.91
391.8127 Fn3
Flags: PBM
4σ 3.23e3
0%
124679/124689D
3.16e6
35.05
123468D
2.61e5
35.72
123679/123689D
1.49e6*
36.00
123469D
2.05e5*
36.14
123678D
3.11e5*
36.88
123467D
1.53e5*
37.09
123789D
3.77e5*
37.18
Abs. Int.
9.22e5
4.61e5
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PBM
4σ 5.24e3
0%
ES 123478D
3.06e7
36.76
ES 123678D
3.01e7
36.87
JS 123467D
1.68e7*
37.07
ES 123789D
3.42e7
37.17
Abs. Int.
9.84e6
4.92e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PBM
4σ 5.33e3
0%
ES 123478D
2.42e7
36.76
ES 123678D
2.41e7
36.87
JS 123467D
1.28e7*
37.07
ES 123789D
2.75e7
37.17
Abs. Int.
7.77e6
3.89e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.68e7
2.34e7
0.00e0
34.0
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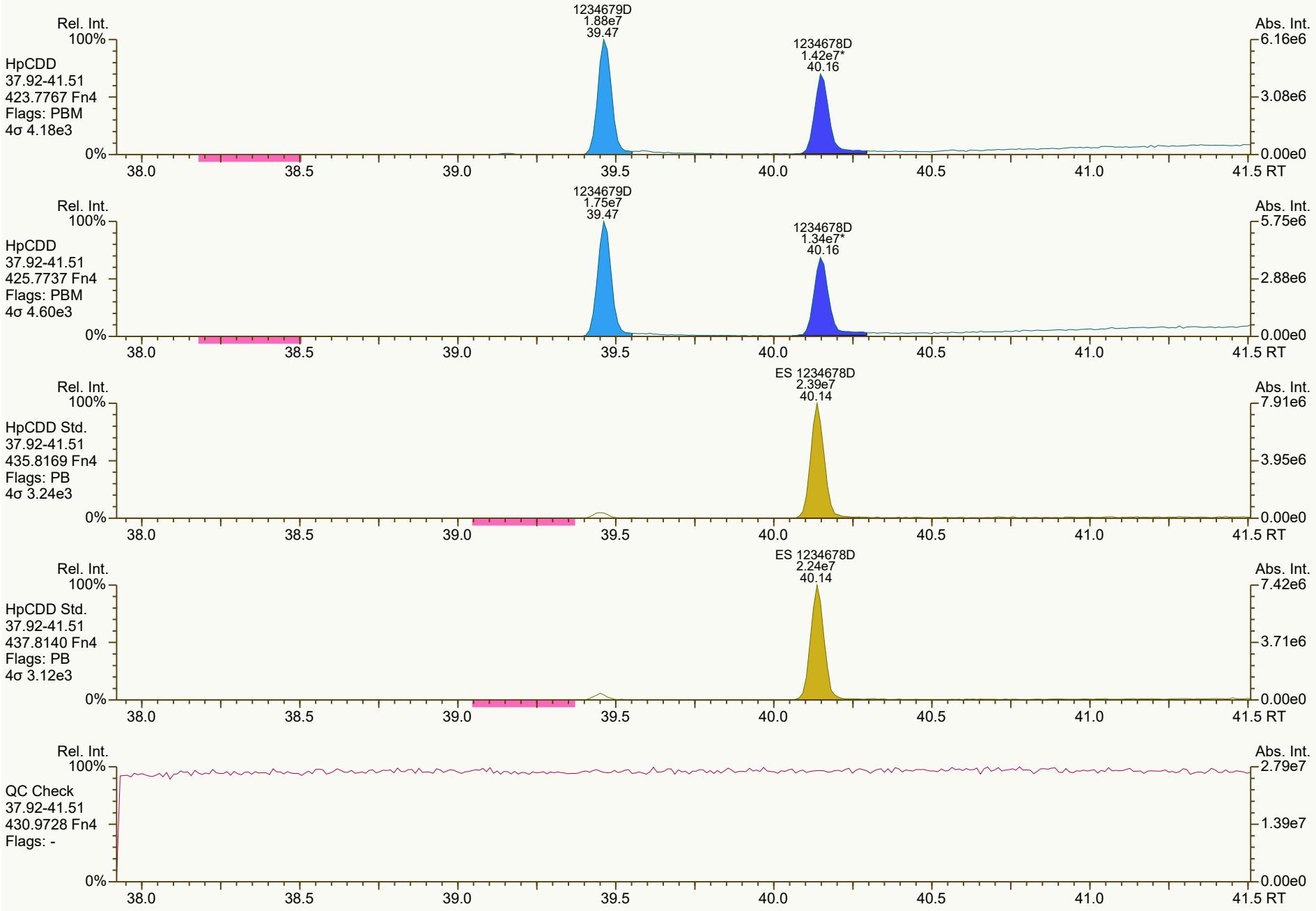
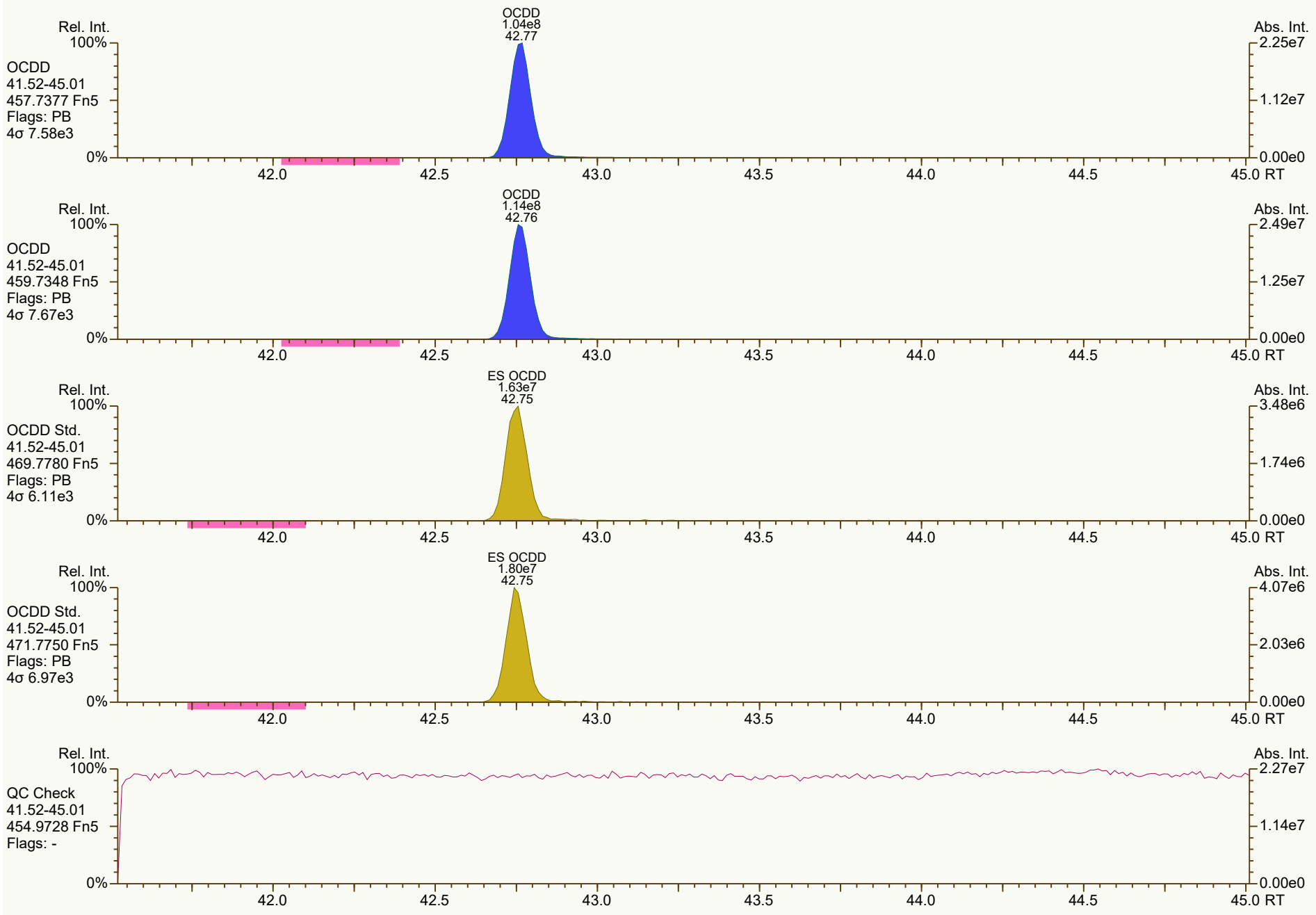
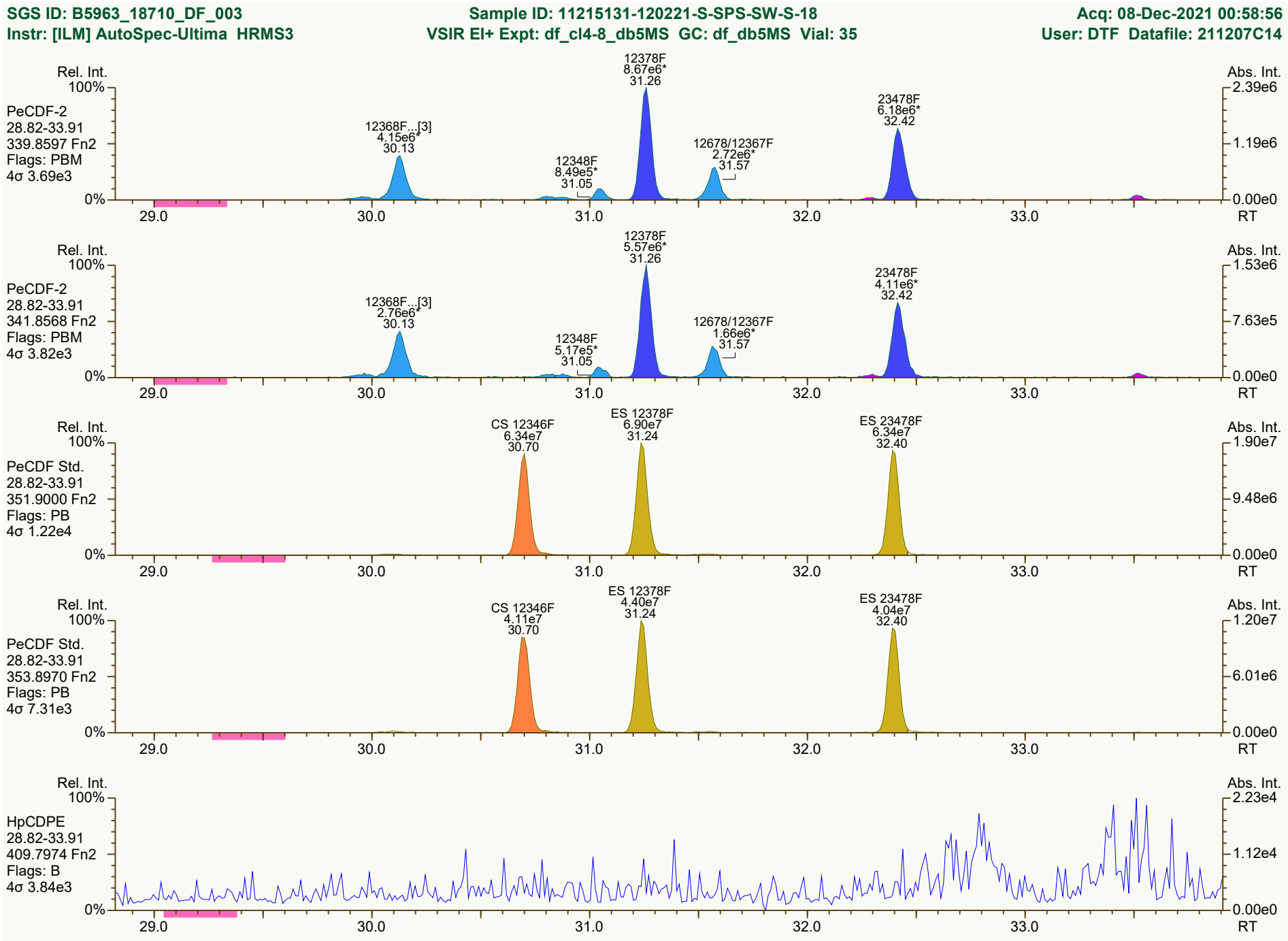
36.0
36.5
37.0
37.5
RT

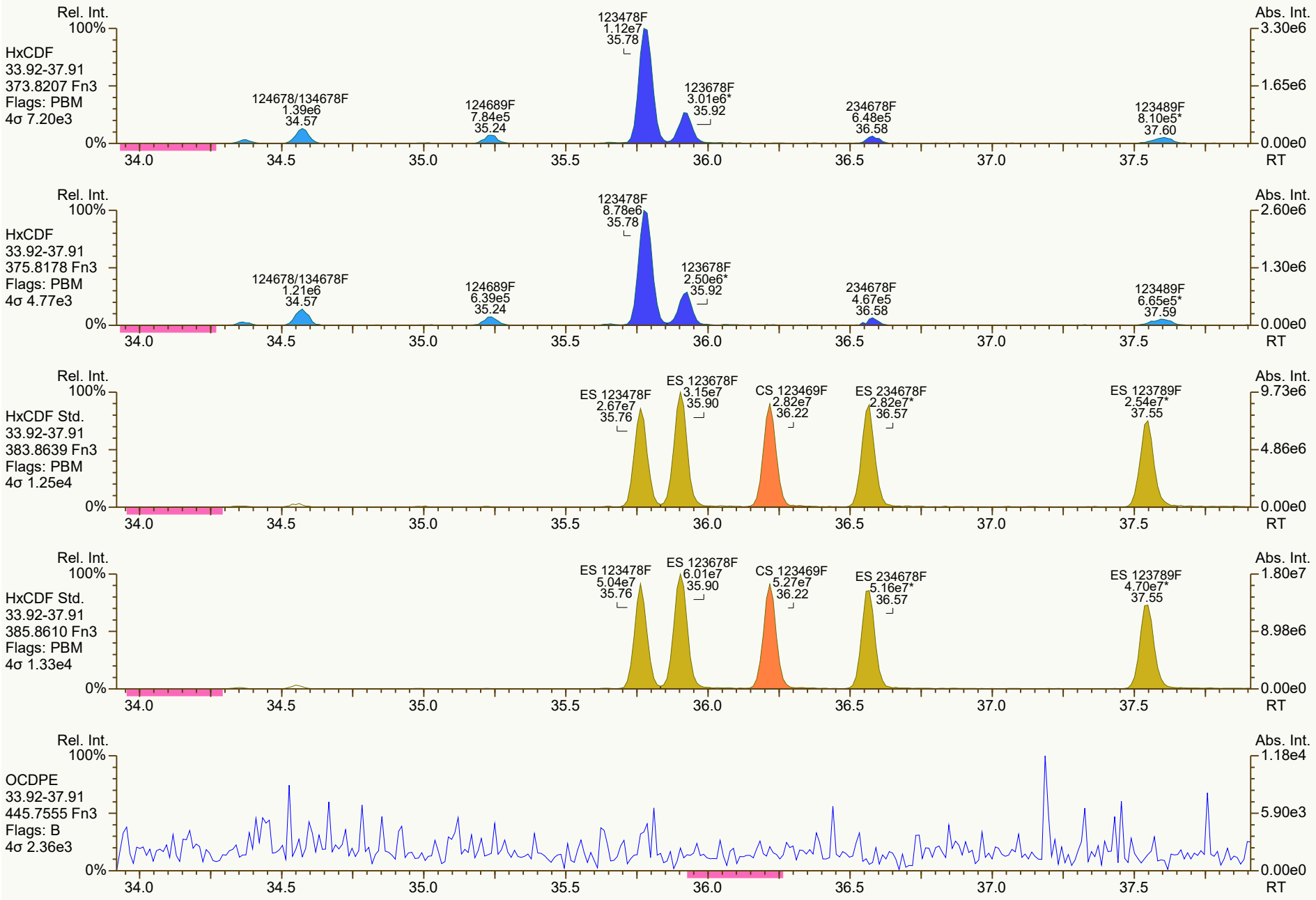

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PBM
4σ 4.18e3
0%
1234679D
1.88e7
39.47
1234678D
1.42e7*
40.16
Abs. Int.
6.16e6
3.08e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PBM
4σ 4.60e3
0%
1234679D
1.75e7
39.47
1234678D
1.34e7*
40.16
Abs. Int.
5.75e6
2.88e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 3.24e3
0%
ES 1234678D
2.39e7
40.14
Abs. Int.
7.91e6
3.95e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 3.12e3
0%
ES 1234678D
2.24e7
40.14
Abs. Int.
7.42e6
3.71e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.79e7
1.39e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

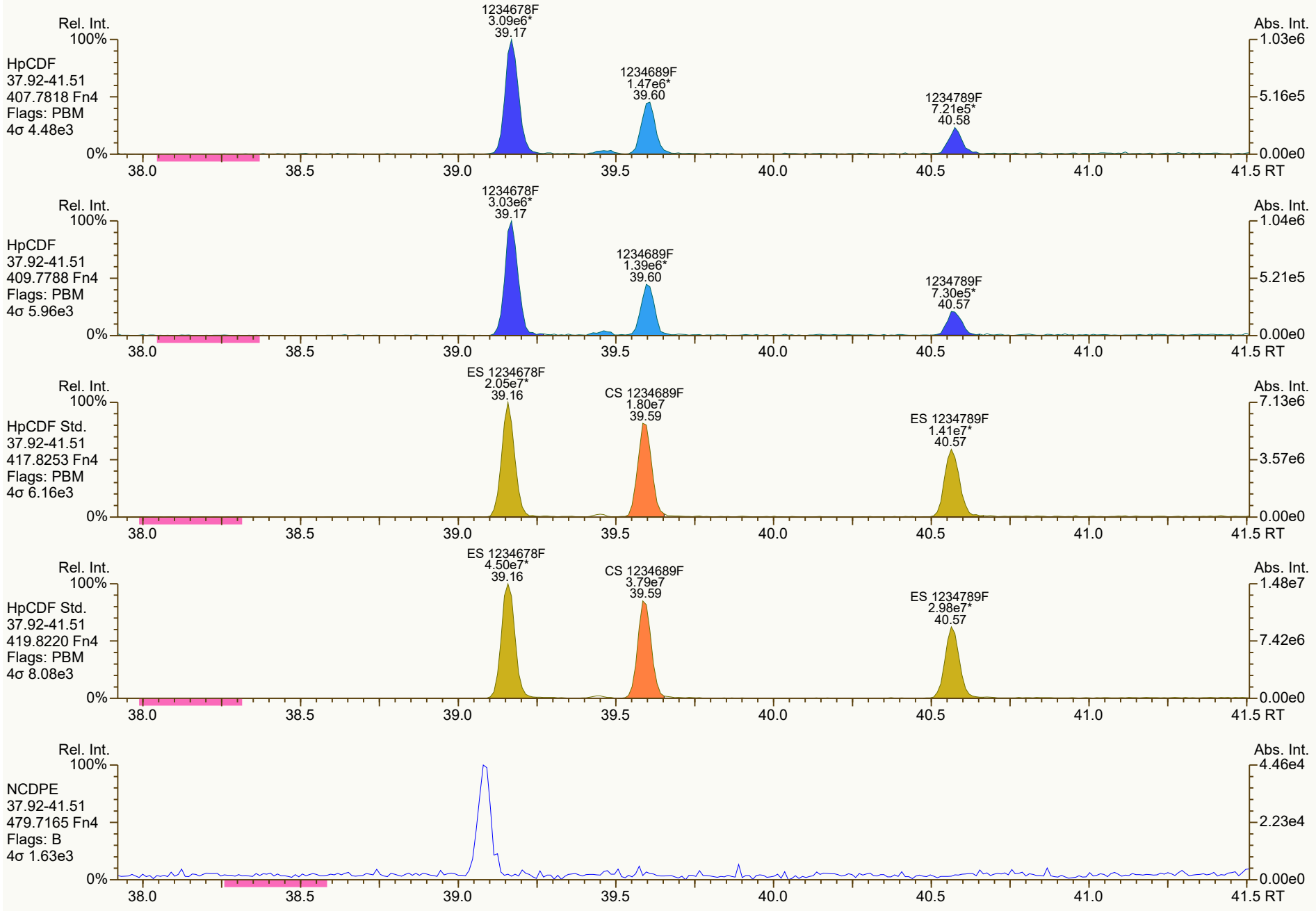

OCDD
1.04e8
42.77
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 7.58e3
0%
Abs. Int.
2.25e7
1.12e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.14e8
42.76
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 7.67e3
0%
Abs. Int.
2.49e7
1.25e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.63e7
42.75
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 6.11e3
0%
Abs. Int.
3.48e6
1.74e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.80e7
42.75
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 6.97e3
0%
Abs. Int.
4.07e6
2.03e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

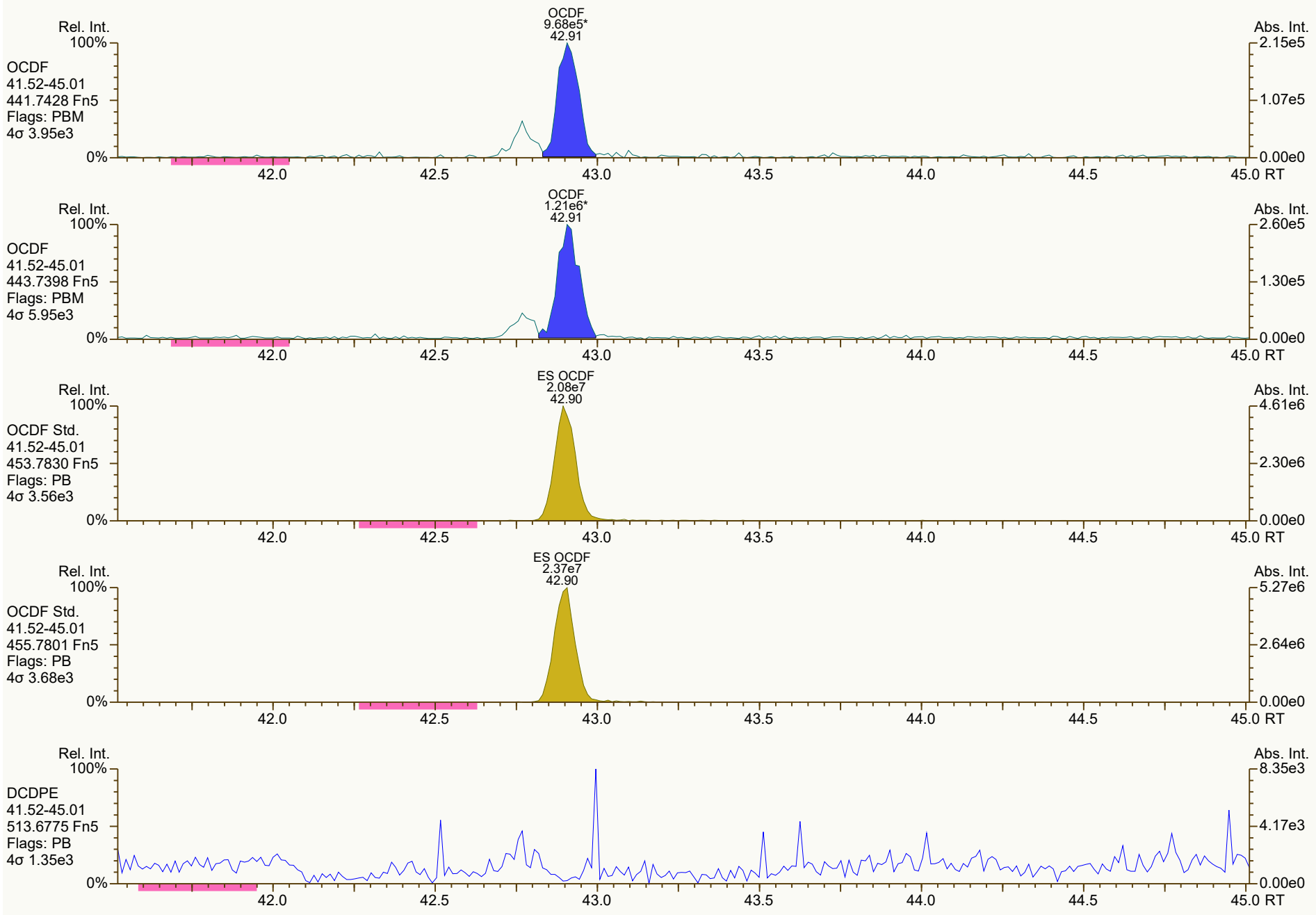

Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 6.87e3
0%
2378F
1.36e8*
26.19
1278F
6.49e7*
25.22
1238F...[5]
8.36e6*
24.71
2348F
9.39e6*
26.07
2367/3467F
1.20e7*
26.57
1289F
1.11e7*
28.34
Abs. Int.
2.84e7
1.42e7
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 7.90e3
0%
2378F
1.70e8*
26.19
1278F
8.15e7*
25.22
1238F...[5]
1.05e7*
24.71
2348F
1.18e7*
26.07
2367/3467F
1.48e7*
26.57
1289F
1.41e7*
28.33
Abs. Int.
3.58e7
1.79e7
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.33e4
0%
JS 1234F
5.51e7
24.70
ES 2378F
4.92e7
26.17
Abs. Int.
1.07e7
5.35e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 9.38e3
0%
JS 1234F
7.18e7
24.70
ES 2378F
6.34e7
26.16
Abs. Int.
1.37e7
6.85e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.80e3
0%
Abs. Int.
1.48e4
7.42e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.03e5
5.14e4
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
13468/12468F
4.32e5*
28.34
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PBM
4σ 3.59e3
13468/12468F
2.98e5*
28.33
7.88e4
3.94e4
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PBM
4σ 3.13e3
1.14e7
5.72e6
QC Check
19.54-28.81
316.9824 Fn1
Flags: -


SGS ID: B5963_18710_DF_003
Sample ID: 11215131-120221-S-SPS-SW-S-18
Acq: 08-Dec-2021 00:58:56
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35
User: DTF Datafile: 211207C14
Rel. Int.
Abs. Int.
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PBM
4σ 3.69e3
12368F...[3]
4.15e6*
30.13
12348F
8.49e5*
31.05
12378F
8.67e6*
31.26
12678/12367F
2.72e6*
31.57
23478F
6.18e6*
32.42
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PBM
4σ 3.82e3
12368F...[3]
2.76e6*
30.13
12348F
5.17e5*
31.05
12378F
5.57e6*
31.26
12678/12367F
1.66e6*
31.57
23478F
4.11e6*
32.42
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 1.22e4
CS 12346F
6.34e7
30.70
ES 12378F
6.90e7
31.24
ES 23478F
6.34e7
32.40
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 7.31e3
CS 12346F
4.11e7
30.70
ES 12378F
4.40e7
31.24
ES 23478F
4.04e7
32.40
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 3.84e3
RT


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PBM
4σ 7.20e3
0%
123478F
1.12e7
35.78
124678/134678F
1.39e6
34.57
124689F
7.84e5
35.24
123678F
3.01e6*
35.92
234678F
6.48e5
36.58
123489F
8.10e5*
37.60
Abs. Int.
3.30e6
1.65e6
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PBM
4σ 4.77e3
123478F
8.78e6
35.78
124678/134678F
1.21e6
34.57
124689F
6.39e5
35.24
123678F
2.50e6*
35.92
234678F
4.67e5
36.58
123489F
6.65e5*
37.59
2.60e6
1.30e6
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 1.25e4
ES 123478F
2.67e7
35.76
ES 123678F
3.15e7
35.90
CS 123469F
2.82e7
36.22
ES 234678F
2.82e7*
36.57
ES 123789F
2.54e7*
37.55
9.73e6
4.86e6
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PBM
4σ 1.33e4
ES 123478F
5.04e7
35.76
ES 123678F
6.01e7
35.90
CS 123469F
5.27e7
36.22
ES 234678F
5.16e7*
36.57
ES 123789F
4.70e7*
37.55
1.80e7
8.98e6
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 2.36e3
1.18e4
5.90e3


Rel. Int.
100%
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PBM
4σ 4.48e3
0%
1234678F
3.09e6*
39.17
1234689F
1.47e6*
39.60
1234789F
7.21e5*
40.58
Abs. Int.
1.03e6
5.16e5
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PBM
4σ 5.96e3
0%
1234678F
3.03e6*
39.17
1234689F
1.39e6*
39.60
1234789F
7.30e5*
40.57
Abs. Int.
1.04e6
5.21e5
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PBM
4σ 6.16e3
0%
ES 1234678F
2.05e7*
39.16
CS 1234689F
1.80e7
39.59
ES 1234789F
1.41e7*
40.57
Abs. Int.
7.13e6
3.57e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PBM
4σ 8.08e3
0%
ES 1234678F
4.50e7*
39.16
CS 1234689F
3.79e7
39.59
ES 1234789F
2.98e7*
40.57
Abs. Int.
1.48e7
7.42e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.63e3
0%
Abs. Int.
4.46e4
2.23e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
9.68e5*
42.91
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 3.95e3
0%
Abs. Int.
2.15e5
1.07e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.21e6*
42.91
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 5.95e3
2.60e5
1.30e5
ES OCDF
2.08e7
42.90
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 3.56e3
4.61e6
2.30e6
ES OCDF
2.37e7
42.90
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.68e3
5.27e6
2.64e6
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.35e3
8.35e3
4.17e3

Lab ID: B5963_18710_DF_004 **Acq'd:** 08 Dec 2021 01:45 DTF **Wt/Vol:** 15.81 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-19 **UTP:** 08-Dec-2021 15:59:15 DTF **J-level:** 0.316 pg/g **Split:** 1 **Checkcode:** 300-957-CBW

Datafile: 211207C15 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.14		1.0009	1.0009	0	3.36E+08	0.81	Y	1.18	573	8101.126	0.151
12378-PeCDD	32.78		1.0006	1.0006	0	3.24E+06	1.56	Y	1.04	6.72	13410.226	0.241
123478-HxCDD	36.77	J EMPC	1.0004	1.0004	0	3.34E+05	1.53	N	1.09	0.832	7159.43	0.141
123678-HxCDD	36.89	EMPC	1.0035	1.0036	+0.2	9.08E+05	1.47	N	1.15	2.16	7159.43	0.145
123789-HxCDD	37.19		1.0117	1.0117	0	1.24E+06	1.24	Y	1.05	2.89	7159.43	0.142
1234678-HpCDD	40.15		1.0003	1.0003	0	2.90E+07	1.03	Y	1.06	87.4	8532.321	0.197
OCDD	42.75		1.0003	1.0003	0	1.52E+08	0.90	Y	1.13	1,200	8075.145	0.768
2378-TCDF	26.19	E	1.0009	1.0009	0	1.34E+09	0.80	Y	1.08	1,590	9775.138	0.141
12378-PeCDF	31.26		1.0005	1.0006	+0.2	6.05E+07	1.57	Y	1.02	75.9	5633.637	0.0677
23478-PeCDF	32.42		1.0006	1.0007	+0.2	4.35E+07	1.58	Y	1.02	58.1	5633.637	0.0669
123478-HxCDF	35.78		1.0005	1.0005	0	9.25E+07	1.26	Y	1.27	141	7476.091	0.0956
123678-HxCDF	35.92		1.0004	1.0005	+0.2	2.50E+07	1.25	Y	1.15	35.1	7476.091	0.0862
234678-HxCDF	36.58		1.0004	1.0004	0	4.47E+06	1.26	Y	1.19	7.17	7476.091	0.0979
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	7476.091	0.119
1234678-HpCDF	39.17		1.0003	1.0003	0	2.36E+07	1.05	Y	1.37	38.4	7242.1	0.0892
1234789-HpCDF	40.58		1.0002	1.0003	+0.2	7.50E+06	1.04	Y	1.31	19.8	7242.1	0.152
OCDF	42.90		1.0003	1.0003	0	5.83E+06	0.89	Y	1.07	38.7	5218.238	0.395

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.11	1.0260	1.0260	0	6.26E+07	0.80	Y	1.05	84.6
ES 12378-PeCDD	32.76	1.2396	1.2398	+0.4	5.88E+07	1.60	Y	0.88	94.4
ES 123478-HxCDD	36.76	0.9916	0.9916	0	4.66E+07	1.26	Y	0.97	89.5
ES 123678-HxCDD	36.87	0.9947	0.9946	-0.2	4.63E+07	1.31	Y	0.94	91.5
ES 123789-HxCDD	37.17	1.0027	1.0027	0	5.17E+07	1.26	Y	1.09	88.4
ES 1234678-HpCDD	40.14	1.0828	1.0827	-0.2	3.96E+07	1.07	Y	0.91	81
ES OCDD	42.73	1.1528	1.1527	-0.3	2.83E+07	0.91	Y	0.62	42.3
ES 2378-TCDF	26.17	1.0591	1.0592	+0.2	9.90E+07	0.80	Y	1.06	77.5
ES 12378-PeCDF	31.25	1.2643	1.2647	+0.7	9.84E+07	1.55	Y	0.91	89.7
ES 23478-PeCDF	32.40	1.3110	1.3114	+0.8	9.28E+07	1.57	Y	0.88	87.2
ES 123478-HxCDF	35.77	0.9648	0.9648	0	6.54E+07	0.54	Y	1.20	102
ES 123678-HxCDF	35.91	0.9686	0.9686	0	7.82E+07	0.52	Y	1.35	108
ES 234678-HxCDF	36.57	0.9865	0.9864	-0.2	6.64E+07	0.55	Y	1.24	99.7
ES 123789-HxCDF	37.55	1.0129	1.0129	0	6.01E+07	0.54	Y	1.16	97.1
ES 1234678-HpCDF	39.16	1.0565	1.0563	-0.5	5.69E+07	0.45	Y	0.97	110
ES 1234789-HpCDF	40.57	1.0943	1.0943	0	3.66E+07	0.47	Y	0.85	80.2
ES OCDF	42.89	1.1569	1.1570	+0.3	3.55E+07	0.92	Y	0.81	41

Lab ID: B5963_18710_DF_004 **Acq'd:** 08 Dec 2021 01:45 DTF **Wt/Vol:** 15.81 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-19 **UTP:** 08-Dec-2021 15:59:15 DTF **J-level:** 0.316 pg/g **Split:** 1 **Checkcode:** 300-957-CBW

Datafile: 211207C15 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.42		-	-	-	7.08E+07	0.80	Y	-	-	
JS 1234-TCDF	24.71		-	-	-	1.21E+08	0.78	Y	-	-	
JS 123467-HxCDD	37.07		-	-	-	2.68E+07	1.29	Y	-	-	
CS 37Cl-2378-TCDD	27.13		1.0269	1.0269	0	3.17E+07	n/a	-	1.20	93	
CS 12347-PeCDD	32.25		1.2203	1.2205	+0.4	6.03E+07	1.62	Y	0.75	113	
CS 12346-PeCDF	30.70		1.2424	1.2428	+0.7	1.04E+08	1.54	Y	0.85	101	
CS 123469-HxCDF	36.22		0.9771	0.9770	-0.2	7.23E+07	0.55	Y	1.12	121	
CS 1234689-HpCDF	39.59		1.0681	1.0680	-0.2	5.30E+07	0.46	Y	0.89	111	
~~SS 37Cl-2378-TCDD~~	~~27.13~~		~~1.0269~~	~~1.0269~~	~~0~~	~~3.17E+07~~	~~n/a~~		~~1.15~~	~~110~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.25~~		~~1.2203~~	~~1.2205~~	~~+0.4~~	~~6.03E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~119~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.70~~		~~1.2424~~	~~1.2428~~	~~+0.7~~	~~1.04E+08~~	~~1.54~~	~~Y~~	~~0.94~~	~~113~~	
~~SS 123469-HxCDF~~	~~36.22~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~7.23E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~112~~	
~~SS 1234689-HpCDF~~	~~39.59~~		~~1.0681~~	~~1.0680~~	~~-0.2~~	~~5.30E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~101~~	

Totals	Conc	EMPC
Total TCDD	649	654
Total PeCDD	21.9	22.8
Total HxCDD	80.9	85.4
Total HpCDD	213	213
Total Tetra-Octa Dioxins	2170	2180
Total TCDF	3,180	3180
Total PeCDF	214	214
Total HxCDF	216	216
Total HpCDF	75	75
Total Tetra-Octa Furans	3,720	3720
Total Tetra-Octa Dioxins & Furans	5890	5900

Lab ID: B5963_18710_DF_004 **Acq'd: 08 Dec 2021 01:45 DTF** **Wt/Vol: 15.81 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-SPS-SW-S-19 **UTP: 08-Dec-2021 15:59:15 DTF** **J-level: 0.316 pg/g** **Split: 1** **Checkcode: 300-957-CBW**

Datafile: 211207C15 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.15		0.8545	0.8540	-0.7	5.74E+05	0.78	Y	1.18	0.978	8101.126	0.151
1379-TCDD	23.56		0.8692	0.8690	-0.3	4.10E+05	0.83	Y	1.18	0.7	8101.126	0.151
1369-TCDD	24.03	J	0.8868	0.8863	-0.7	1.70E+05	0.84	Y	1.18	0.29	8101.126	0.151
1469-TCDD	24.89		0.9185	0.9183	-0.3	4.29E+06	0.79	Y	1.18	7.32	8101.126	0.151
1247/1246/1248/1249-TCDD	25.17	EMPC	0.9282	0.9286	+0.6	8.03E+05	0.89	N	1.18	1.37	8101.126	0.151
1378-TCDD	25.36		0.9355	0.9355	0	1.06E+06	0.77	Y	1.18	1.8	8101.126	0.151
1268-TCDD	NotFnd		0.9435						1.18		8101.126	0.151
1478-TCDD	25.85		0.9533	0.9535	+0.3	9.47E+05	0.82	Y	1.18	1.61	8101.126	0.151
1279-TCDD	NotFnd		0.9601						1.18		8101.126	0.151
1234/1269-TCDD	26.40		0.9741	0.9738	-0.5	8.16E+05	0.83	Y	1.18	1.39	8101.126	0.151
1236-TCDD	NotFnd		0.9797						1.18		8101.126	0.151
1237/1238-TCDD	26.82		0.9898	0.9894	-0.6	5.36E+06	0.84	Y	1.18	9.13	8101.126	0.151
1239-TCDD	NotFnd		0.9952						1.18		8101.126	0.151
2378-TCDD	**27.14**		**1.0009**	1.0009	**0**	3.36E+08	0.81	Y	**1.18**	**573**	**8101.126**	**0.151**
1278-TCDD	27.49		1.0139	1.0139	0	3.07E+07	0.83	Y	1.18	52.3	8101.126	0.151
1267-TCDD	27.62	EMPC	1.0193	1.0189	-0.7	1.34E+06	1.06	N	1.18	2.29	8101.126	0.151
1289-TCDD	28.14	EMPC	1.0393	1.0380	-2.2	9.77E+05	1.08	N	1.18	1.66	8101.126	0.151
12479/12468-PeCDD	30.19		0.9216	0.9216	0	1.14E+06	1.63	Y	1.04	2.36	13410.226	0.241
12469-PeCDD	30.75		0.9386	0.9385	-0.2	3.98E+06	1.60	Y	1.04	8.27	13410.226	0.241
12368-PeCDD	31.32	J	0.9560	0.9560	0	4.68E+05	1.63	Y	1.04	0.972	13410.226	0.241
12478-PeCDD	31.52	J EMPC	0.9619	0.9621	+0.4	2.93E+05	1.81	N	1.04	0.609	13410.226	0.241
12379-PeCDD	31.62	J	0.9651	0.9652	+0.2	3.56E+05	1.37	Y	1.04	0.739	13410.226	0.241
12369/12467/12489-PeCDD	31.90		0.9735	0.9736	+0.2	1.24E+06	1.63	Y	1.04	2.57	13410.226	0.241
12346/12347-PeCDD	32.28	J	0.9852	0.9853	+0.2	1.51E+05	1.75	Y	1.04	0.313	13410.226	0.241
12378-PeCDD	32.78		**1.0006**	**1.0006**	**0**	**3.24E+06**	**1.56**	**Y**	**1.04**	**6.72**	**13410.226**	**0.241**
12367-PeCDD	NotFnd		1.0037						1.04		13410.226	0.241
12389-PeCDD	33.23	J EMPC	1.0145	1.0144	-0.2	1.38E+05	2.26	N	1.04	0.286	13410.226	0.241
124679/124689-HxCDD	35.05		0.9535	0.9535	0	2.63E+07	1.29	Y	1.10	63	7159.43	0.143
123468-HxCDD	35.73	J EMPC	0.9716	0.9719	+0.6	6.37E+05	1.57	N	1.10	1.53	7159.43	0.143
123679/123689-HxCDD	36.01		0.9796	0.9796	0	5.16E+06	1.30	Y	1.10	12.4	7159.43	0.143
123469-HxCDD	36.14	J	0.9833	0.9831	-0.4	6.01E+05	1.20	Y	1.10	1.44	7159.43	0.143
123478-HxCDD	36.77	J EMPC	**1.0004**	**1.0004**	**0**	**3.34E+05**	**1.53**	**N**	1.09	**0.832**	**7159.43**	**0.141**
123678-HxCDD	36.89	EMPC	**1.0035**	**1.0036**	**+0.2**	**9.08E+05**	**1.47**	**N**	1.15	**2.16**	**7159.43**	**0.145**
123467-HxCDD	37.09	J	1.0088	1.0089	+0.2	4.94E+05	1.32	Y	1.10	1.18	7159.43	0.143
123789-HxCDD	37.19		**1.0117**	**1.0117**	**0**	**1.24E+06**	**1.24**	**Y**	1.05	**2.89**	**7159.43**	**0.142**

Lab ID: B5963_18710_DF_004 **Acq'd:** 08 Dec 2021 01:45 DTF **Wt/Vol:** 15.81 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-S-19 **UTP:** 08-Dec-2021 15:59:15 DTF **J-level:** 0.316 pg/g **Split:** 1 **Checkcode:** 300-957-CBW

Datafile: 211207C15 **Report:** 08 Dec 2021 16:03 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

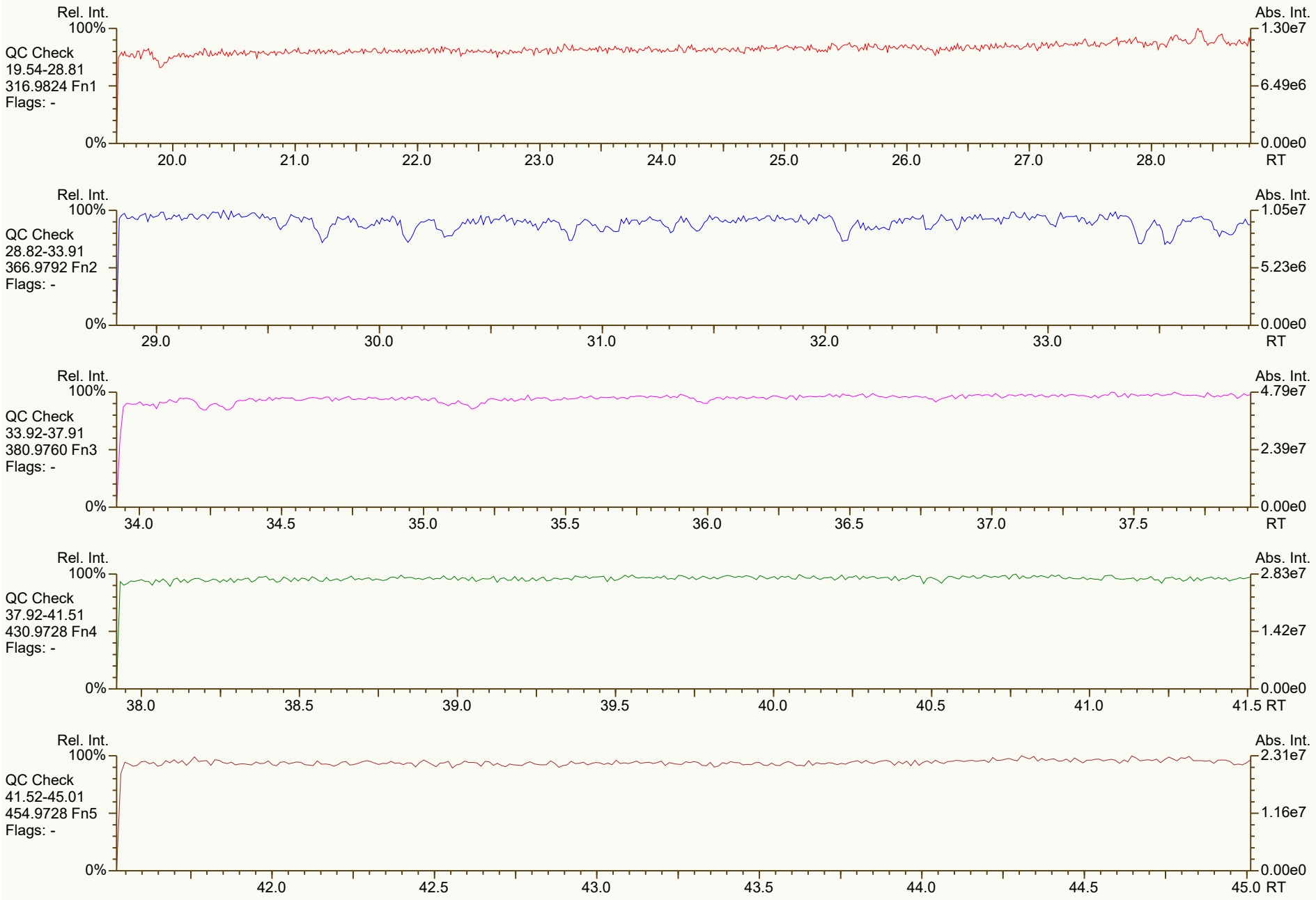
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9833	0	4.17E+07	1.05	Y	1.06	126	8532.321	0.197
1234678-HpCDD	**40.15**		**1.0003**	**1.0003**	**0**	**2.90E+07**	**1.03**	**Y**	**1.06**	**87.4**	**8532.321**	**0.197**
OCDD	**42.75**		**1.0003**	**1.0003**	**0**	**1.52E+08**	**0.90**	**Y**	**1.13**	**1,200**	**8075.145**	**0.768**
OCDD-a	42.74		1.0002	1.0002	0	9.40E+06	2.37	Y	0.07	1,170	9801.104	14.6
1368-TCDF	20.92		0.7998	0.7995	-0.4	4.56E+05	0.84	Y	1.08	0.54	9775.138	0.141
1468-TCDF	21.49		0.8214	0.8211	-0.4	3.08E+06	0.78	Y	1.08	3.64	9775.138	0.141
2468-TCDF	22.14		0.8463	0.8459	-0.5	1.85E+06	0.79	Y	1.08	2.19	9775.138	0.141
1346/1246-TCDF	NotFnd		0.8608						1.08		9775.138	0.141
1347/1378/1247-TCDF	22.72		0.8675	0.8682	+1.0	1.72E+07	0.78	Y	1.08	20.4	9775.138	0.141
1348-TCDF	NotFnd		0.8793						1.08		9775.138	0.141
1248/1367/1379-TCDF	23.11		0.8850	0.8831	-2.6	7.10E+07	0.80	Y	1.08	84	9775.138	0.141
1268-TCDF	23.58		0.9010	0.9011	+0.1	2.35E+07	0.82	Y	1.08	27.8	9775.138	0.141
1467-TCDF	23.73		0.9068	0.9067	-0.1	3.19E+06	0.81	Y	1.08	3.77	9775.138	0.141
1478-TCDF	23.91		0.9139	0.9137	-0.3	5.55E+07	0.80	Y	1.08	65.7	9775.138	0.141
1369/1237-TCDF	24.33		0.9294	0.9296	+0.3	1.61E+07	0.80	Y	1.08	19	9775.138	0.141
2467-TCDF	24.47		0.9350	0.9349	-0.1	1.54E+06	0.85	Y	1.08	1.82	9775.138	0.141
2368-TCDF	24.62		0.9410	0.9410	0	3.61E+07	0.79	Y	1.08	42.8	9775.138	0.141
1238/1234/1678/1469/1236-TCDF	24.72		0.9451	0.9445	-0.9	8.02E+07	0.81	Y	1.08	94.9	9775.138	0.141
1278-TCDF	25.23	E	0.9642	0.9640	-0.3	6.37E+08	0.80	Y	1.08	754	9775.138	0.141
1349-TCDF	NotFnd		0.9695						1.08		9775.138	0.141
1267-TCDF	25.52		0.9753	0.9753	0	3.59E+07	0.82	Y	1.08	42.5	9775.138	0.141
2346/1249-TCDF	25.75		0.9832	0.9840	+1.2	4.40E+06	0.80	Y	1.08	5.21	9775.138	0.141
2347/1279-TCDF	25.96		0.9921	0.9919	-0.3	1.80E+07	0.80	Y	1.08	21.3	9775.138	0.141
2348-TCDF	26.07		0.9970	0.9962	-1.3	8.82E+07	0.79	Y	1.08	104	9775.138	0.141
2378-TCDF	**26.19**	E	**1.0009**	**1.0009**	**0**	**1.34E+09**	**0.80**	**Y**	**1.08**	**1,590**	**9775.138**	**0.141**
2367/3467-TCDF	26.58		1.0162	1.0157	-0.8	1.08E+08	0.80	Y	1.08	127	9775.138	0.141
1269-TCDF	26.85		1.0259	1.0259	0	2.87E+07	0.81	Y	1.08	34	9775.138	0.141
1239-TCDF	27.13		1.0370	1.0368	-0.3	2.17E+06	0.73	Y	1.08	2.57	9775.138	0.141
1289-TCDF	28.34		1.0829	1.0829	0	1.11E+08	0.80	Y	1.08	132	9775.138	0.141
13468/12468-PeCDF	28.34		0.9067	0.9071	+0.7	1.35E+06	1.55	Y	1.02	1.75	5742.641	0.0686
13678/13467/12467-PeCDF	29.96	J	0.9583	0.9588	+0.9	9.54E+05	1.74	Y	1.02	1.23	5633.637	0.0673
12368/13478/12478-PeCDF	30.13		0.9635	0.9643	+1.4	2.85E+07	1.54	Y	1.02	36.8	5633.637	0.0673
14678-PeCDF	NotFnd		0.9669						1.02		5633.637	0.0673
13479-PeCDF	NotFnd		0.9701						1.02		5633.637	0.0673
13469/12479-PeCDF	NotFnd		0.9784						1.02		5633.637	0.0673
12346-PeCDF	NotFnd		0.9831						1.02		5633.637	0.0673

Lab ID: B5963_18710_DF_004 **Acq'd: 08 Dec 2021 01:45 DTF** **Wt/Vol: 15.81 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-SPS-SW-S-19 **UTP: 08-Dec-2021 15:59:15 DTF** **J-level: 0.316 pg/g** **Split: 1** **Checkcode: 300-957-CBW**

Datafile: 211207C15 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	30.81		0.9859	0.9861	+0.4	1.33E+06	1.34	Y	1.02	1.72	5633.637	0.0673
12347-PeCDF	30.88	J	0.9885	0.9885	0	1.11E+06	1.65	Y	1.02	1.44	5633.637	0.0673
12348-PeCDF	31.05		0.9937	0.9938	+0.2	5.99E+06	1.59	Y	1.02	7.76	5633.637	0.0673
12378-PeCDF	**31.26**		**1.0005**	**1.0006**	**+0.2**	**6.05E+07**	**1.57**	**Y**	**1.02**	**75.9**	**5633.637**	**0.0677**
12678/12367-PeCDF	31.57		1.0097	1.0105	+1.5	1.91E+07	1.59	Y	1.02	24.8	5633.637	0.0673
12379-PeCDF	NotFnd		1.0153						1.02		5633.637	0.0673
12679-PeCDF	NotFnd		0.9925						1.02		5633.637	0.0673
23467/12369-PeCDF	32.28	J	0.9966	0.9963	-0.6	8.63E+05	1.62	Y	1.02	1.12	5633.637	0.0673
23478-PeCDF	**32.42**		**1.0006**	**1.0007**	**+0.2**	**4.35E+07**	**1.58**	**Y**	**1.02**	**58.1**	**5633.637**	**0.0669**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		5633.637	0.0673
12349-PeCDF	NotFnd		1.0108						1.02		5633.637	0.0673
12389-PeCDF	33.52		1.0346	1.0345	-0.2	2.63E+06	1.58	Y	1.02	3.4	5633.637	0.0673
123468-HxCDF	34.37		0.9610	0.9610	0	1.30E+06	1.31	Y	1.19	2.04	7476.091	0.0984
124678/134678-HxCDF	34.57		0.9667	0.9666	-0.2	8.52E+06	1.24	Y	1.19	13.4	7476.091	0.0984
134679-HxCDF	NotFnd		0.9732						1.19		7476.091	0.0984
124679-HxCDF	35.02	J EMPC	0.9788	0.9791	+0.6	1.66E+05	1.65	N	1.19	0.261	7476.091	0.0984
124689-HxCDF	35.24		0.9852	0.9852	0	4.06E+06	1.25	Y	1.19	6.37	7476.091	0.0984
123467-HxCDF	35.66	J	0.9971	0.9970	-0.2	5.76E+05	1.18	Y	1.19	0.904	7476.091	0.0984
123478-HxCDF	**35.78**		**1.0005**	**1.0005**	**0**	**9.25E+07**	**1.26**	**Y**	**1.27**	**141**	**7476.091**	**0.0956**
123678-HxCDF	**35.92**		**1.0004**	**1.0005**	**+0.2**	**2.50E+07**	**1.25**	**Y**	**1.15**	**35.1**	**7476.091**	**0.0862**
123479-HxCDF	NotFnd		1.0050						1.19		7476.091	0.0984
123469-HxCDF	NotFnd		1.0091						1.19		7476.091	0.0984
123679-HxCDF	NotFnd		0.9943						1.19		7476.091	0.0984
234678-HxCDF	**36.58**		**1.0004**	**1.0004**	**0**	**4.47E+06**	**1.26**	**Y**	**1.19**	**7.17**	**7476.091**	**0.0979**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		7476.091	0.0984
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**7476.091**	**0.119**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	37.60		1.0008	1.0013	+1.1	6.37E+06	1.25	Y	1.19	10	7476.091	0.0984
1234678-HpCDF	**39.17**		**1.0003**	**1.0003**	**0**	**2.36E+07**	**1.05**	**Y**	**1.37**	**38.4**	**7242.1**	**0.0892**
1234679-HpCDF	39.46	**J**	1.0075	1.0076	+0.2	5.21E+05	0.99	Y	1.34	1.05	7242.1	0.114
1234689-HpCDF	39.60		1.0113	1.0113	0	7.79E+06	1.03	Y	1.34	15.7	7242.1	0.114
1234789-HpCDF	**40.58**		**1.0002**	**1.0003**	**+0.2**	**7.50E+06**	**1.04**	**Y**	**1.31**	**19.8**	**7242.1**	**0.152**
OCDF	**42.90**		**1.0003**	**1.0003**	**0**	**5.83E+06**	**0.89**	**Y**	**1.07**	**38.7**	**5218.238**	**0.395**
OCDF-a	42.90		1.0002	1.0001	-0.3	3.19E+05	2.78	Y	0.07	34.2	5784.277	7.07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21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
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5.23e6
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29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.79e7
2.39e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.83e7
1.42e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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1.16e7
0.00e0
42.0
42.5
43.0
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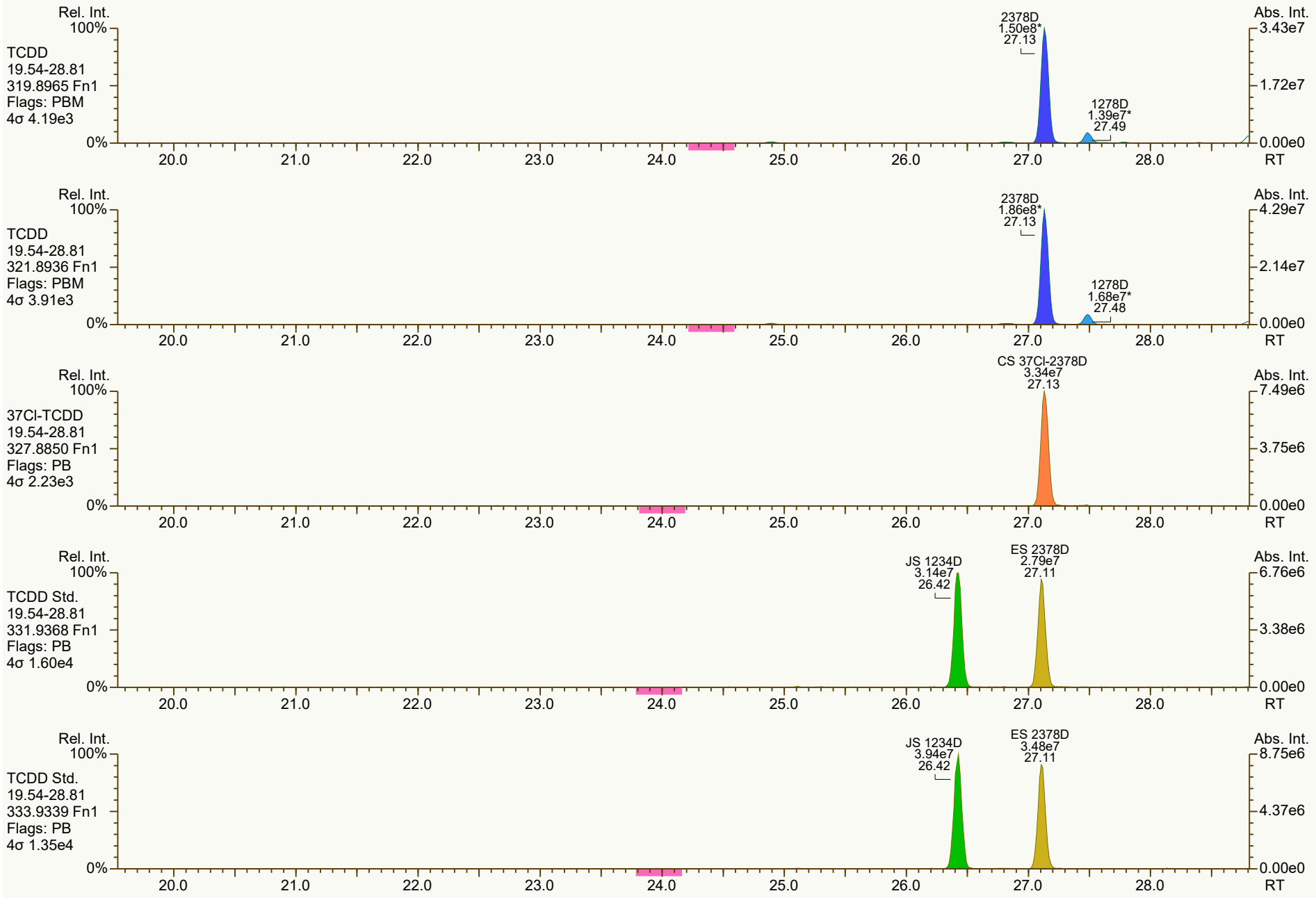
44.0
44.5
45.0 RT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100%
TCDD
19.54-28.81
319.8965 Fn1
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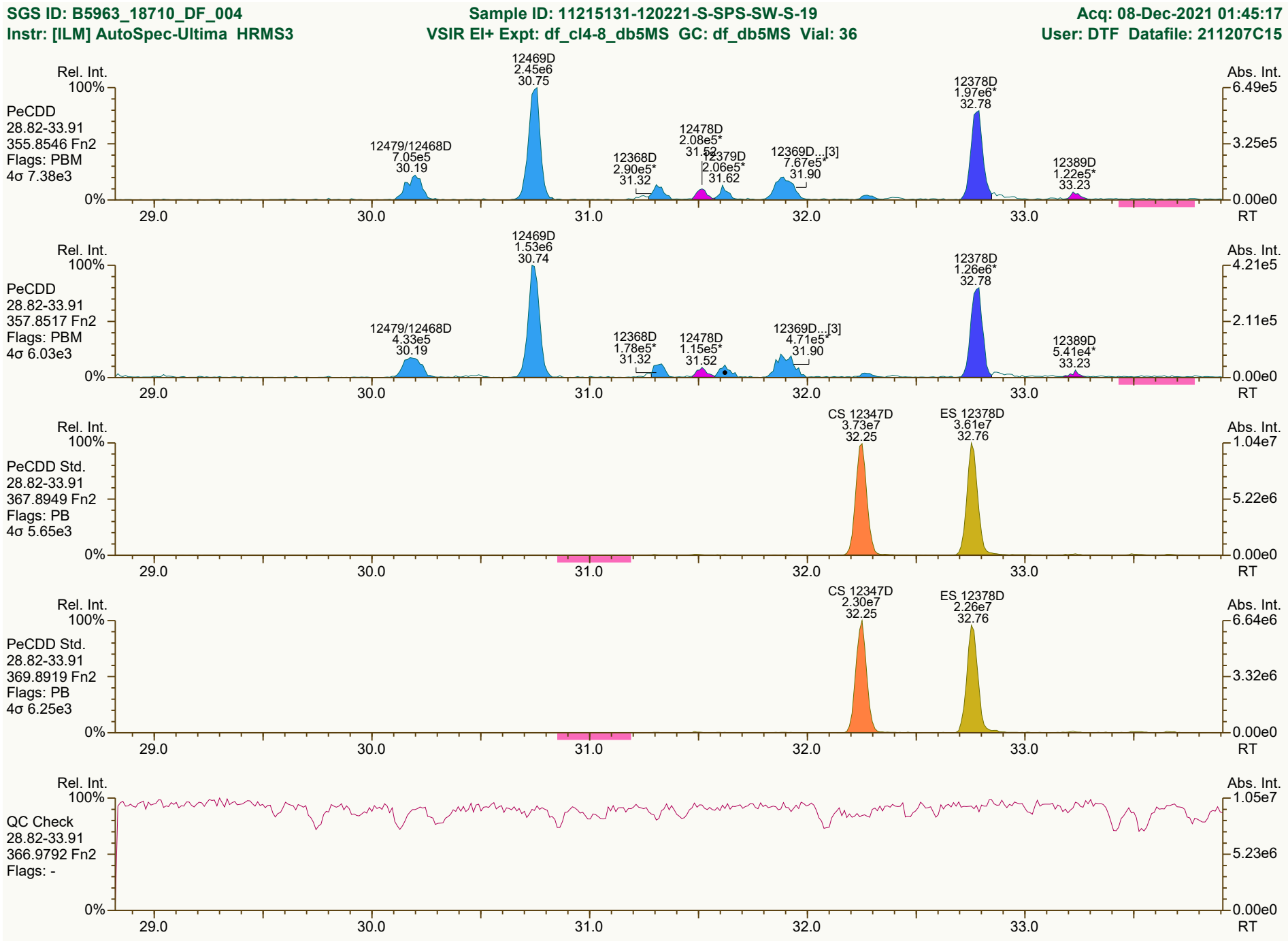
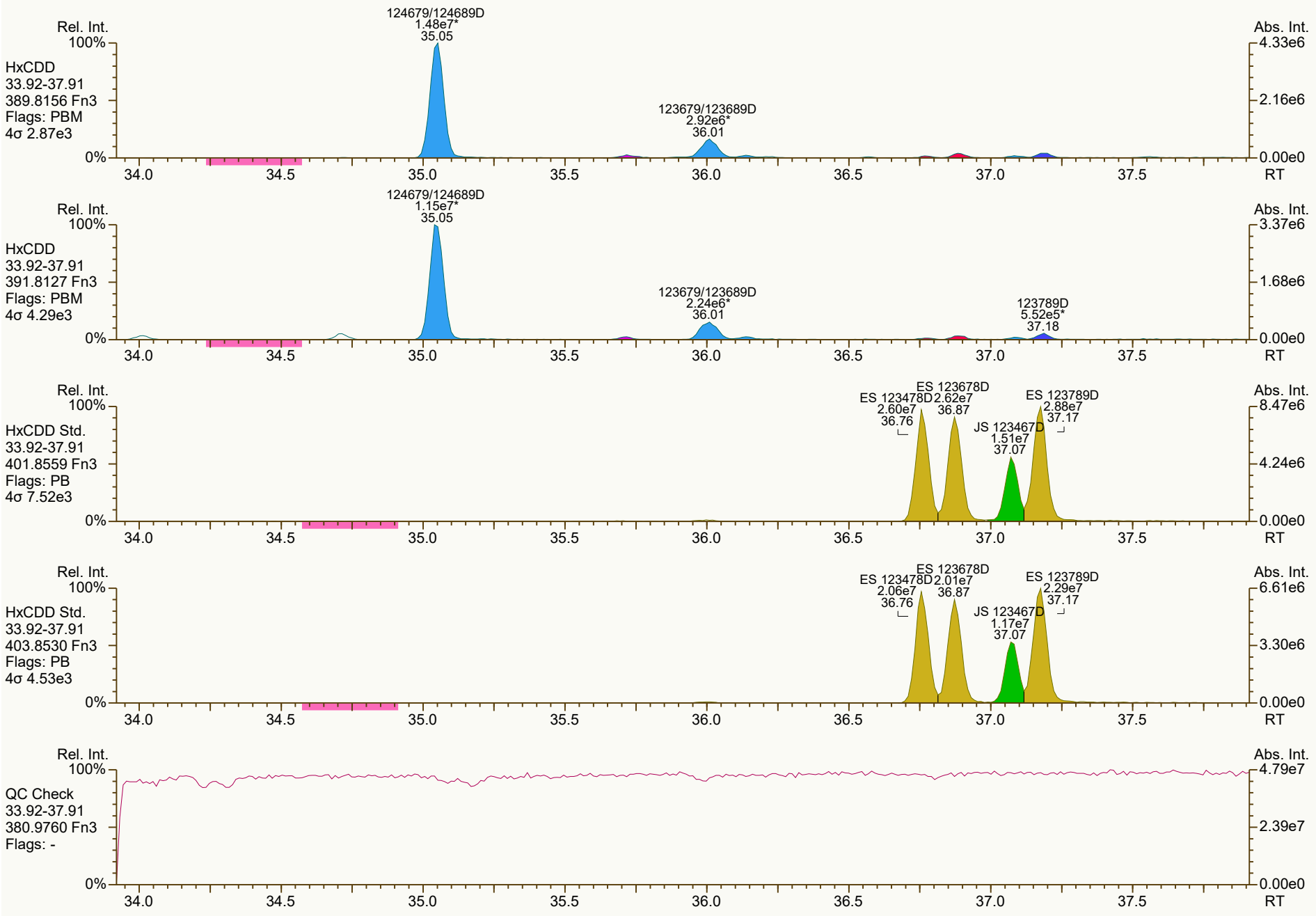
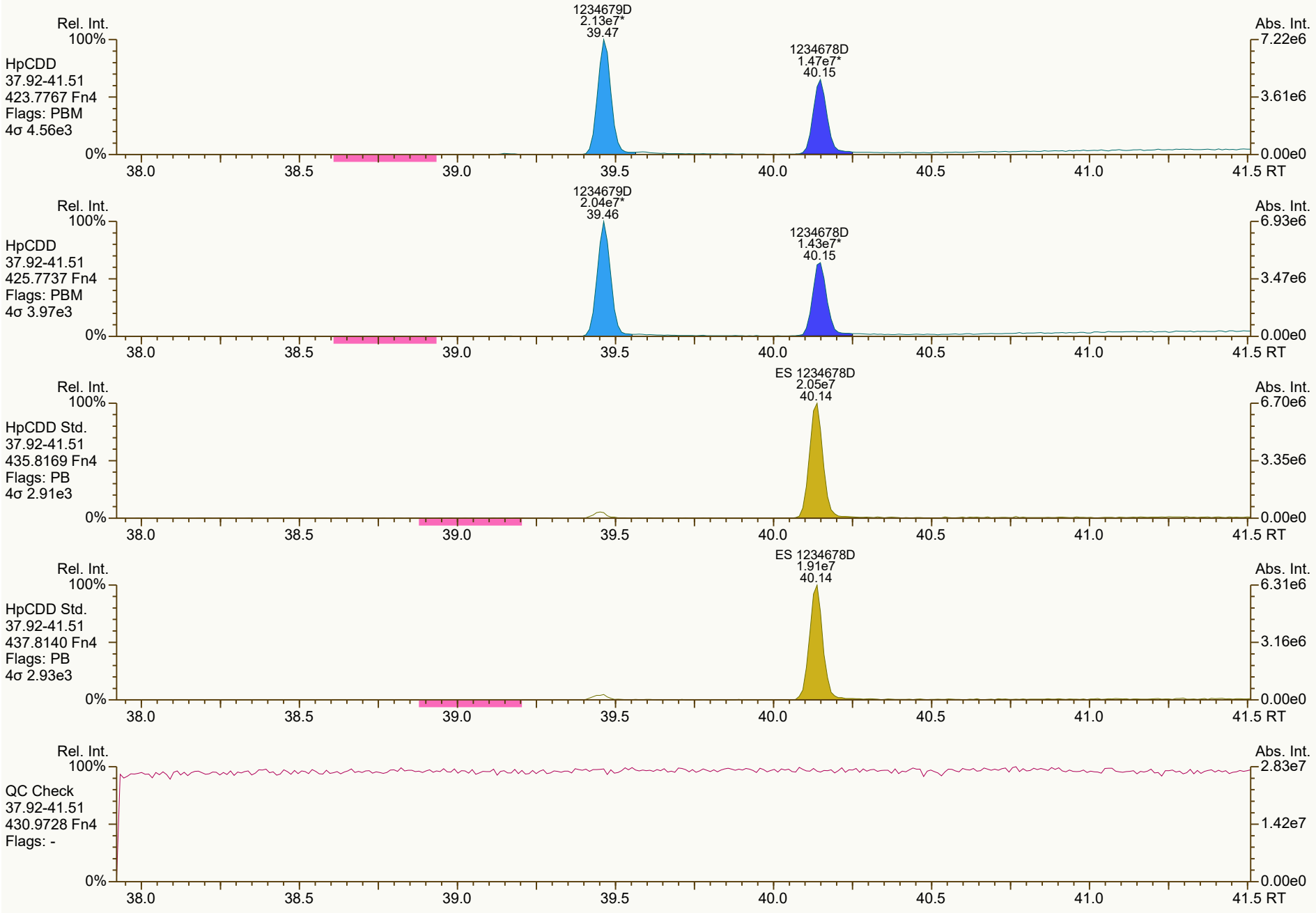
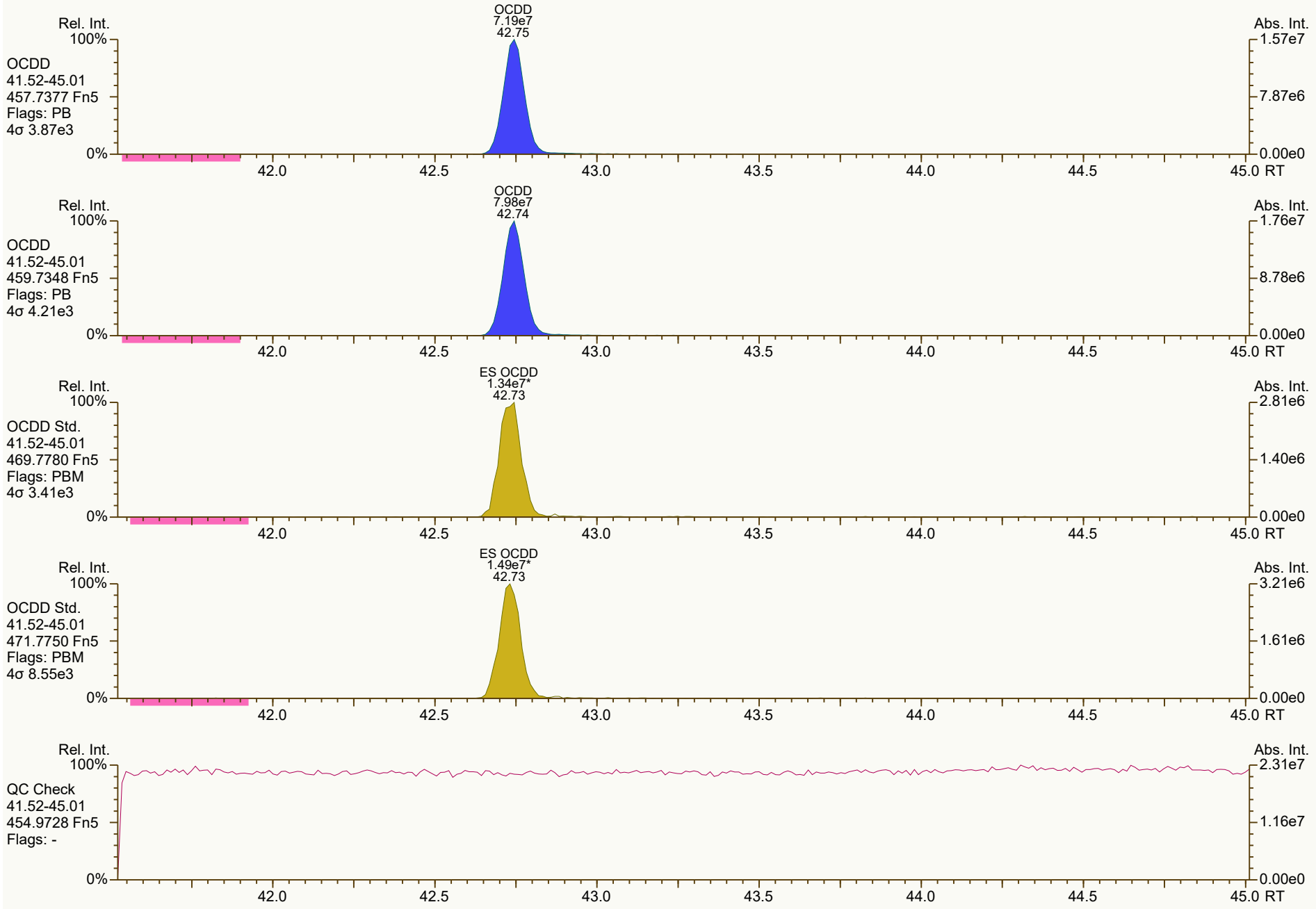
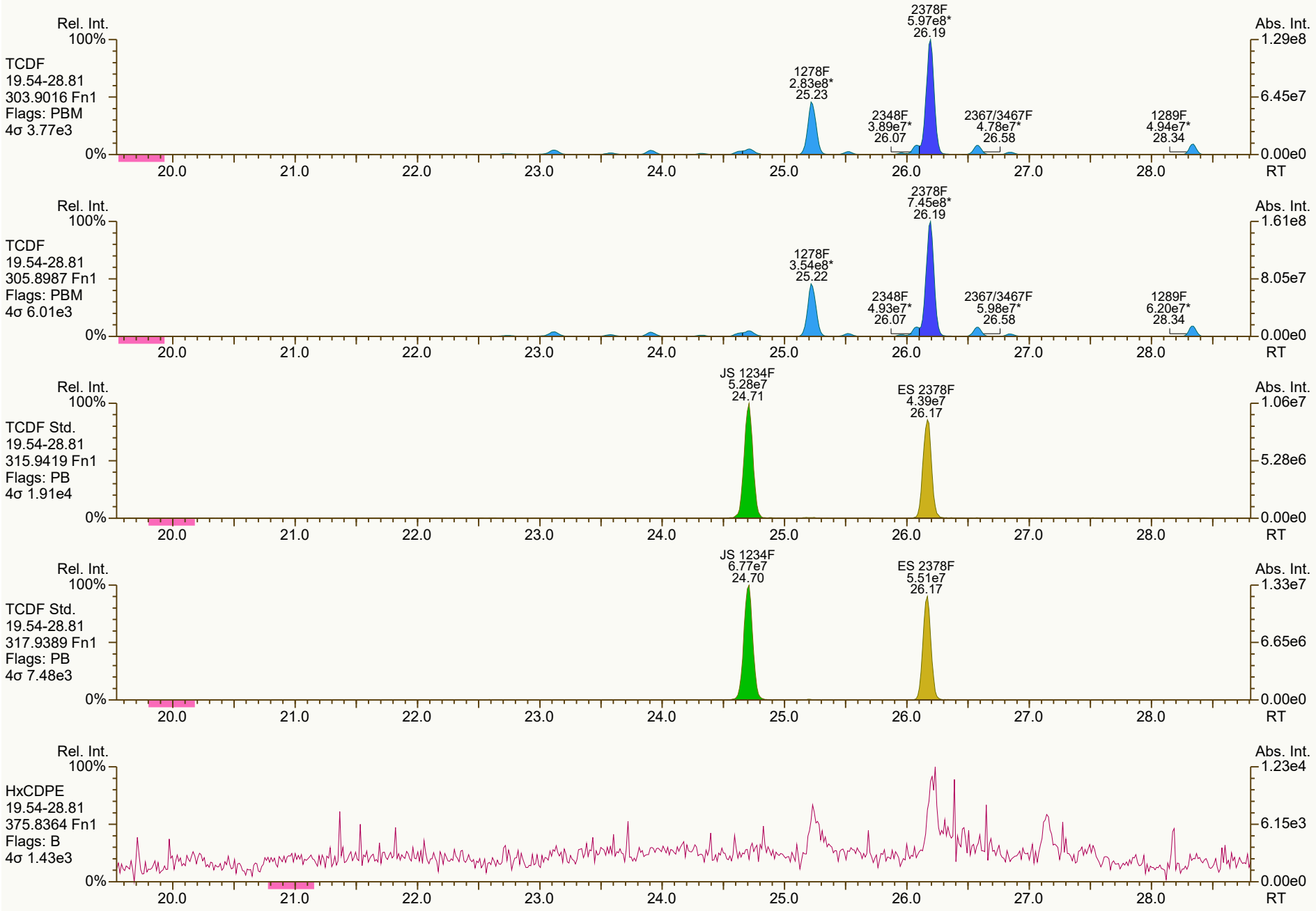
0%
2378D
1.50e8*
27.13
1278D
1.39e7*
27.49
Abs. Int.
3.43e7
1.72e7
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 3.91e3
0%
2378D
1.86e8*
27.13
1278D
1.68e7*
27.48
Abs. Int.
4.29e7
2.14e7
0.00e0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 2.23e3
0%
CS 37Cl-2378D
3.34e7
27.13
Abs. Int.
7.49e6
3.75e6
0.00e0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 1.60e4
0%
JS 1234D
3.14e7
26.42
ES 2378D
2.79e7
27.11
Abs. Int.
6.76e6
3.38e6
0.00e0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 1.35e4
0%
JS 1234D
3.94e7
26.42
ES 2378D
3.48e7
27.11
Abs. Int.
8.75e6
4.37e6
0.00e0
RT


SGS ID: B5963_18710_DF_004
Sample ID: 11215131-120221-S-SPS-SW-S-19
Acq: 08-Dec-2021 01:45:17
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36
User: DTF Datafile: 211207C15
Rel. Int.
Abs. Int.
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PBM
4σ 7.38e3
12469D
2.45e6
30.75
12479/12468D
7.05e5
30.19
12368D
2.90e5*
31.32
12478D
2.08e5*
31.52
12379D
2.06e5*
31.62
12369D...[3]
7.67e5*
31.90
12378D
1.97e6*
32.78
12389D
1.22e5*
33.23
6.49e5
3.25e5
0.00e0
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PBM
4σ 6.03e3
12469D
1.53e6
30.74
12479/12468D
4.33e5
30.19
12368D
1.78e5*
31.32
12478D
1.15e5*
31.52
12369D...[3]
4.71e5*
31.90
12378D
1.26e6*
32.78
12389D
5.41e4*
33.23
4.21e5
2.11e5
0.00e0
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 5.65e3
CS 12347D
3.73e7
32.25
ES 12378D
3.61e7
32.76
1.04e7
5.22e6
0.00e0
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 6.25e3
CS 12347D
2.30e7
32.25
ES 12378D
2.26e7
32.76
6.64e6
3.32e6
0.00e0
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
1.05e7
5.23e6
0.00e0
100%
0%
29.0
30.0
31.0
32.0
33.0
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\B5963_18710_DF_004.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8098, 5216 scc: 300-957
PKD: 08-Dec-2021 14:22 Printed: 08-Dec-2021 16:08 Page 3 of 12

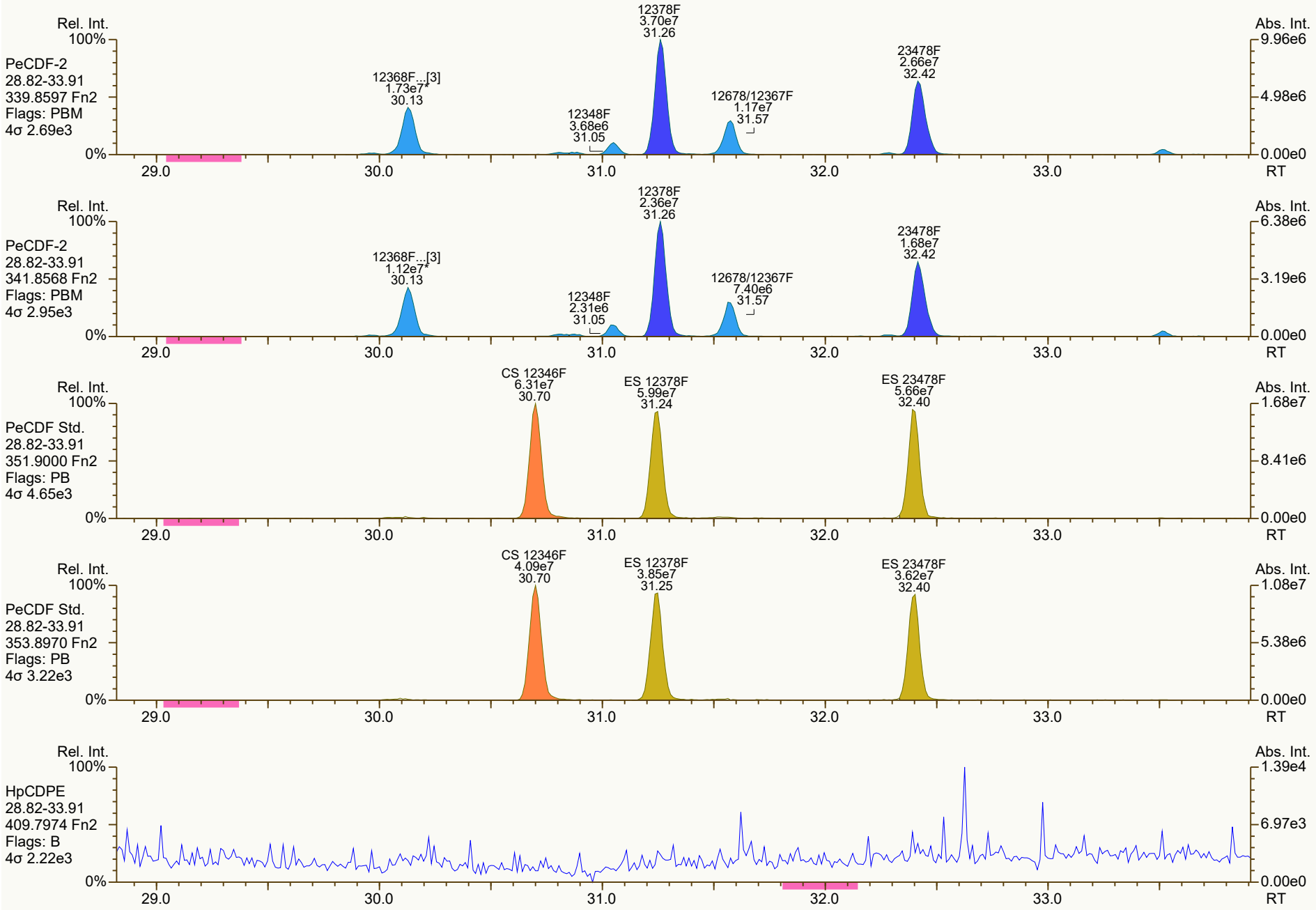

Rel. Int.
100%
HxCDD
33.92-37.91
389.8156 Fn3
Flags: PBM
4σ 2.87e3
124679/124689D
1.48e7*
35.05
123679/123689D
2.92e6*
36.01
Abs. Int.
4.33e6
2.16e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.91
391.8127 Fn3
Flags: PBM
4σ 4.29e3
124679/124689D
1.15e7*
35.05
123679/123689D
2.24e6*
36.01
123789D
5.52e5*
37.18
Abs. Int.
3.37e6
1.68e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PB
4σ 7.52e3
ES 123478D
2.60e7
36.76
ES 123678D
2.62e7
36.87
JS 123467D
1.51e7
37.07
ES 123789D
2.88e7
37.17
Abs. Int.
8.47e6
4.24e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PB
4σ 4.53e3
ES 123478D
2.06e7
36.76
ES 123678D
2.01e7
36.87
JS 123467D
1.17e7
37.07
ES 123789D
2.29e7
37.17
Abs. Int.
6.61e6
3.30e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
Abs. Int.
4.79e7
2.39e7
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT

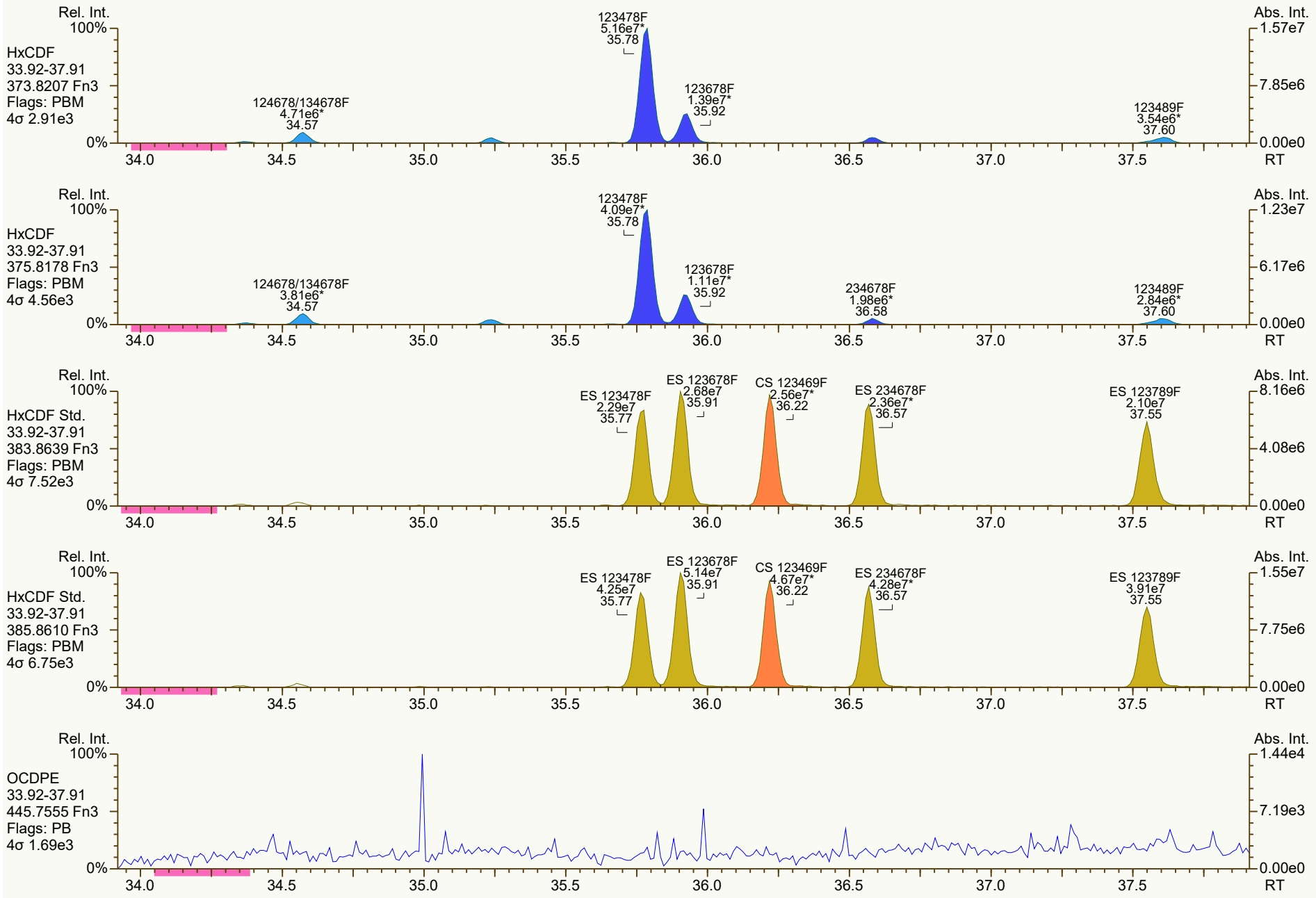

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PBM
4σ 4.56e3
0%
1234679D
2.13e7*
39.47
1234678D
1.47e7*
40.15
Abs. Int.
7.22e6
3.61e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PBM
4σ 3.97e3
0%
1234679D
2.04e7*
39.46
1234678D
1.43e7*
40.15
Abs. Int.
6.93e6
3.47e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 2.91e3
0%
ES 1234678D
2.05e7
40.14
Abs. Int.
6.70e6
3.35e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 2.93e3
0%
ES 1234678D
1.91e7
40.14
Abs. Int.
6.31e6
3.16e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.83e7
1.42e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

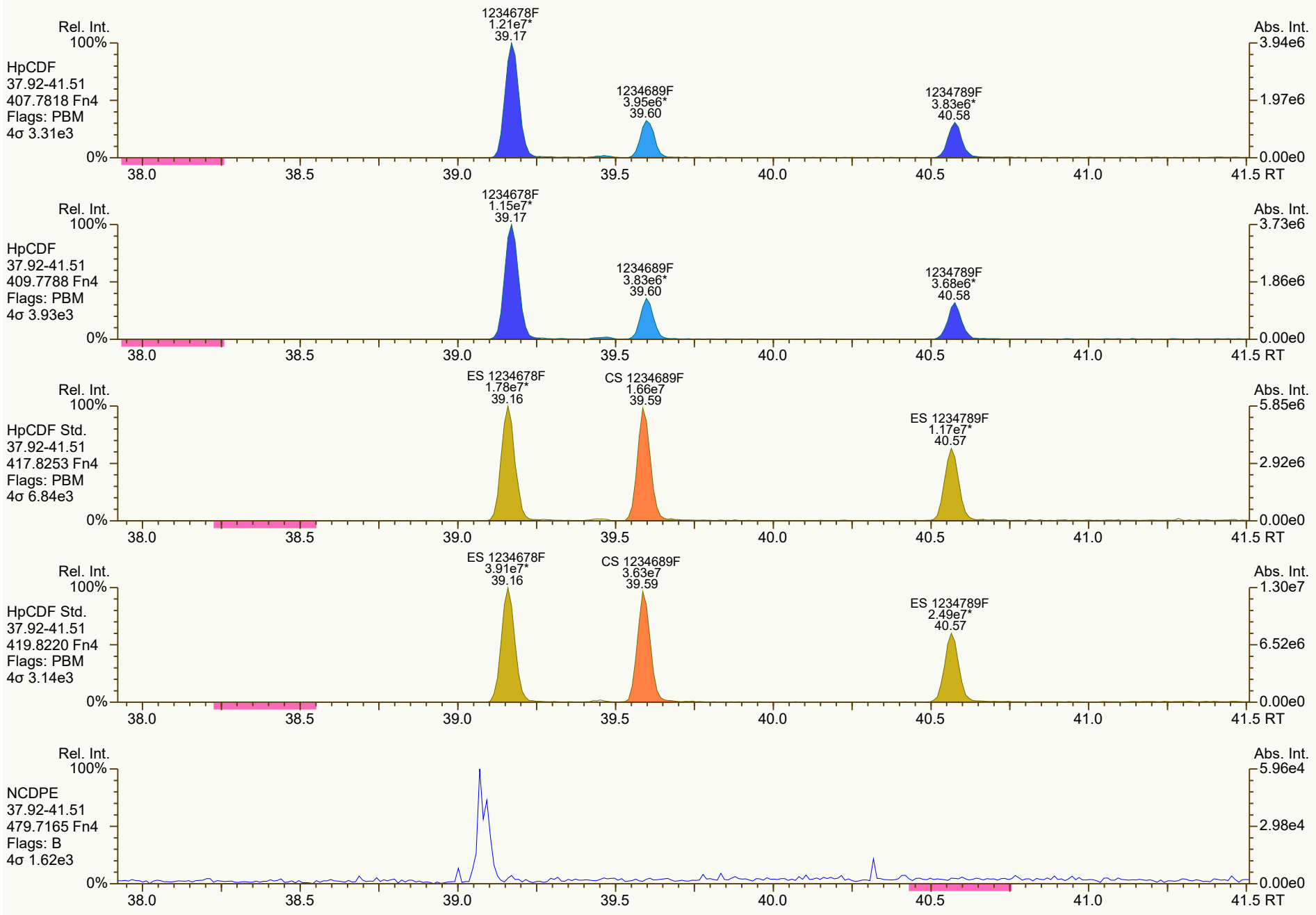

OCDD
7.19e7
42.75
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 3.87e3
0%
Abs. Int.
1.57e7
7.87e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
7.98e7
42.74
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 4.21e3
0%
Abs. Int.
1.76e7
8.78e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.34e7*
42.73
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 3.41e3
0%
Abs. Int.
2.81e6
1.40e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.49e7*
42.73
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 8.55e3
0%
Abs. Int.
3.21e6
1.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.31e7
1.16e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

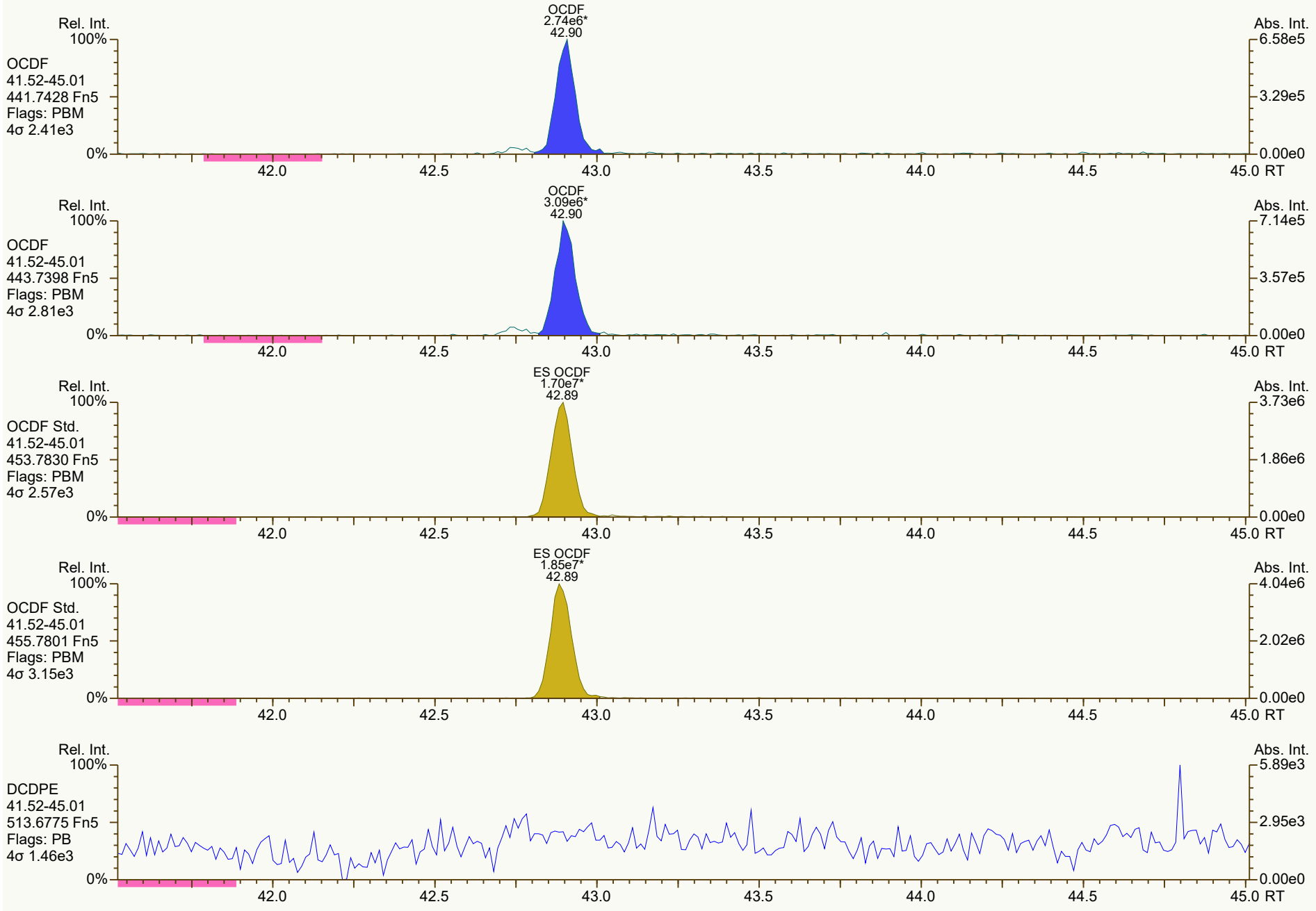

Rel. Int.
100%
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 3.77e3
0%
2378F
5.97e8*
26.19
1278F
2.83e8*
25.23
2348F
3.89e7*
26.07
2367/3467F
4.78e7*
26.58
1289F
4.94e7*
28.34
Abs. Int.
1.29e8
6.45e7
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 6.01e3
0%
2378F
7.45e8*
26.19
1278F
3.54e8*
25.22
2348F
4.93e7*
26.07
2367/3467F
5.98e7*
26.58
1289F
6.20e7*
28.34
Abs. Int.
1.61e8
8.05e7
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.91e4
0%
JS 1234F
5.28e7
24.71
ES 2378F
4.39e7
26.17
Abs. Int.
1.06e7
5.28e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 7.48e3
0%
JS 1234F
6.77e7
24.70
ES 2378F
5.51e7
26.17
Abs. Int.
1.33e7
6.65e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.43e3
0%
Abs. Int.
1.23e4
6.15e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.11e5
1.06e5
0.00e0
RT
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
13468/12468F
8.21e5
28.34
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 1.78e3
13468/12468F
5.31e5
28.34
1.27e5
6.34e4
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 3.96e3
1.30e7
6.49e6
QC Check
19.54-28.81
316.9824 Fn1
Flags: -


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PBM
4σ 2.69e3
12368F...[3]
1.73e7*
30.13
12348F
3.68e6
31.05
12378F
3.70e7
31.26
12678/12367F
1.17e7
31.57
23478F
2.66e7
32.42
Abs. Int.
9.96e6
4.98e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PBM
4σ 2.95e3
12368F...[3]
1.12e7*
30.13
12348F
2.31e6
31.05
12378F
2.36e7
31.26
12678/12367F
7.40e6
31.57
23478F
1.68e7
32.42
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 4.65e3
CS 12346F
6.31e7
30.70
ES 12378F
5.99e7
31.24
ES 23478F
5.66e7
32.40
Abs. Int.
1.68e7
8.41e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 3.22e3
CS 12346F
4.09e7
30.70
ES 12378F
3.85e7
31.25
ES 23478F
3.62e7
32.40
Abs. Int.
1.08e7
5.38e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 2.22e3
Abs. Int.
1.39e4
6.97e3
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PBM
4σ 2.91e3
123478F
5.16e7*
35.78
123678F
1.39e7*
35.92
124678/134678F
4.71e6*
34.57
123489F
3.54e6*
37.60
Abs. Int.
1.57e7
7.85e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PBM
4σ 4.56e3
123478F
4.09e7*
35.78
123678F
1.11e7*
35.92
124678/134678F
3.81e6*
34.57
234678F
1.98e6*
36.58
123489F
2.84e6*
37.60
1.23e7
6.17e6
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 7.52e3
ES 123478F
2.29e7
35.77
ES 123678F
2.68e7
35.91
CS 123469F
2.56e7*
36.22
ES 234678F
2.36e7*
36.57
ES 123789F
2.10e7
37.55
8.16e6
4.08e6
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PBM
4σ 6.75e3
ES 123478F
4.25e7
35.77
ES 123678F
5.14e7
35.91
CS 123469F
4.67e7*
36.22
ES 234678F
4.28e7*
36.57
ES 123789F
3.91e7
37.55
1.55e7
7.75e6
OCDPE
33.92-37.91
445.7555 Fn3
Flags: PB
4σ 1.69e3
1.44e4
7.19e3


Rel. Int.
100%
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PBM
4σ 3.31e3
0%
1234678F
1.21e7*
39.17
1234689F
3.95e6*
39.60
1234789F
3.83e6*
40.58
Abs. Int.
3.94e6
1.97e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PBM
4σ 3.93e3
0%
1234678F
1.15e7*
39.17
1234689F
3.83e6*
39.60
1234789F
3.68e6*
40.58
Abs. Int.
3.73e6
1.86e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PBM
4σ 6.84e3
0%
ES 1234678F
1.78e7*
39.16
CS 1234689F
1.66e7
39.59
ES 1234789F
1.17e7*
40.57
Abs. Int.
5.85e6
2.92e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PBM
4σ 3.14e3
0%
ES 1234678F
3.91e7*
39.16
CS 1234689F
3.63e7
39.59
ES 1234789F
2.49e7*
40.57
Abs. Int.
1.30e7
6.52e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.62e3
0%
Abs. Int.
5.96e4
2.98e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
2.74e6*
42.90
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.41e3
0%
Abs. Int.
6.58e5
3.29e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.09e6*
42.90
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.81e3
0%
Abs. Int.
7.14e5
3.57e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.70e7*
42.89
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
3.73e6
1.86e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.85e7*
42.89
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.15e3
0%
Abs. Int.
4.04e6
2.02e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.46e3
0%
Abs. Int.
5.89e3
2.95e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	211207C01	3	CS3_211207_DF_CA	1.00	SIL 25-347-1	DTF	468-803	07-Dec-2021	14:18:24
3	211207C03	26	OPR1_18710_DF-RJ	1.00	0_18710_OPR001	DTF	348-095	07-Dec-2021	16:29:16
4	211207C04	27	OPR2_18710_DF	1.00	0_18710_OPR002	DTF	493-149	07-Dec-2021	17:15:35
5	211207C05	2	SBS_211207_DF_CA	1.00	20-61-1	DTF	956-405	07-Dec-2021	18:01:56
6	211207C06	25	MB1_18710_DF_SDS	10.00	Method Blank	DTF	192-567	07-Dec-2021	18:48:16
7	211207C12	33	B5963_18710_DF_001	13.89	11215131-120121-S-SPS-NE-S-11	DTF	183-178	07-Dec-2021	23:26:16
9	211207C14	35	B5963_18710_DF_003	15.27	11215131-120221-S-SPS-SW-S-18	DTF	231-881	08-Dec-2021	00:58:56
10	211207C15	36	B5963_18710_DF_004	15.81	11215131-120221-S-SPS-SW-S-19	DTF	300-957	08-Dec-2021	01:45:17
3	211208C03	3	CS3_211208_DF_CA	1.00	SIL 25-347-1	DTF	876-357	08-Dec-2021	12:59:58
4	211208C04	27	OPR2_18710_DF-RJ	1.00	0_18710_OPR002 CPSM only	DTF	666-316	08-Dec-2021	13:46:16
5	211208C05	2	SBS_211208_DF_CA	1.00	20-61-1 CL 08Dec21	DTF	170-897	08-Dec-2021	14:32:35
6	211208C06	34	B5963_18710_DF_002-D2	13.56	11215131-120221-S-SPS-SW-S-17	DTF	248-879	08-Dec-2021	15:18:52

REVIEWED
Tyler_Fritz , 12/8/2021, 4:20:28 PM

APPROVED
Carla_Lyon , 12/8/2021, 6:18:07 PM

Dioxin/Furan QC Summary	Acq'd: 07 Dec 2021 14:18 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211207_DF_CA	UTP: 08-Dec-2021 15:59:12 DTF	Checkcode: 468-803-YZW
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 16:01 TF	Datafile: 211207C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.28	1.06E+07	0.83	Y	1.18	1.23	3%
12378-PeCDD	32.88	4.12E+07	1.56	Y	1.04	1.07	3%
123478-HxCDD	36.87	3.67E+07	1.28	Y	1.09	1.14	5%
123678-HxCDD	36.99	3.80E+07	1.29	Y	1.15	1.20	5%
123789-HxCDD	37.29	4.00E+07	1.26	Y	1.05	1.10	5%
1234678-HpCDD	40.21	3.35E+07	1.06	Y	1.06	1.05	-1%
OCDD	42.82	4.01E+07	0.91	Y	1.13	1.13	1%
2378-TCDF	26.35	1.66E+07	0.81	Y	1.08	1.17	9%
12378-PeCDF	31.38	6.54E+07	1.55	Y	1.02	1.06	4%
23478-PeCDF	32.52	6.43E+07	1.56	Y	1.02	1.05	3%
123478-HxCDF	35.88	5.81E+07	1.27	Y	1.27	1.30	2%
123678-HxCDF	36.02	6.14E+07	1.26	Y	1.15	1.20	4%
234678-HxCDF	36.68	5.77E+07	1.25	Y	1.19	1.21	1%
123789-HxCDF	37.67	5.16E+07	1.26	Y	1.16	1.18	2%
1234678-HpCDF	39.25	5.17E+07	1.04	Y	1.37	1.40	2%
1234789-HpCDF	40.64	4.48E+07	1.05	Y	1.31	1.35	3%
OCDF	42.98	5.32E+07	0.91	Y	1.07	1.10	3%
ES 2378-TCDD	27.26	8.66E+07	0.81	Y	1.05	1.02	-2%
ES 12378-PeCDD	32.865	7.73E+07	1.56	Y	0.88	0.91	4%
ES 123478-HxCDD	36.854	6.41E+07	1.27	Y	0.97	0.97	0%
ES 123678-HxCDD	36.969	6.33E+07	1.26	Y	0.94	0.96	2%
ES 123789-HxCDD	37.272	7.26E+07	1.26	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.201	6.38E+07	1.08	Y	0.91	0.97	6%
ES OCDD	42.811	7.07E+07	0.92	Y	0.62	0.54	-14%
ES 2378-TCDF	26.329	1.42E+08	0.78	Y	1.06	1.01	-4%
ES 12378-PeCDF	31.36	1.23E+08	1.56	Y	0.91	0.88	-3%
ES 23478-PeCDF	32.506	1.22E+08	1.55	Y	0.88	0.87	-1%
ES 123478-HxCDF	35.861	8.96E+07	0.54	Y	1.20	1.36	13%
ES 123678-HxCDF	36.001	1.02E+08	0.53	Y	1.35	1.55	15%
ES 234678-HxCDF	36.665	9.58E+07	0.54	Y	1.24	1.45	17%
ES 123789-HxCDF	37.65	8.72E+07	0.54	Y	1.16	1.32	15%
ES 1234678-HpCDF	39.236	7.38E+07	0.46	Y	0.97	1.12	16%
ES 1234789-HpCDF	40.632	6.63E+07	0.46	Y	0.85	1.01	18%
ES OCDF	42.968	9.68E+07	0.93	Y	0.81	0.73	-9%

Dioxin/Furan QC Summary	Acq'd: 07 Dec 2021 14:18 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211207_DF_CA	UTP: 08-Dec-2021 15:59:12 DTF	Checkcode: 468-803-YZW
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 16:01 TF	Datafile: 211207C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.58	8.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	24.89	1.40E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.17	3.29E+07	1.27	Y	-	-	-
CS 37Cl-2378-TCDD	27.28	1.16E+07	n/a	-	1.20	1.37	14%
CS 12347-PeCDD	32.36	6.99E+07	1.59	Y	0.75	0.83	10%
CS 12346-PeCDF	30.82	1.20E+08	1.56	Y	0.85	0.86	1%
CS 123469-HxCDF	36.32	9.38E+07	0.53	Y	1.12	1.42	27%
CS 1234689-HpCDF	39.66	7.49E+07	0.46	Y	0.89	1.14	28%
~~SS 37Cl-2378-TCDD~~	~~27.28~~	~~1.16E+07~~	~~n/a~~	~~-~~	~~1.15~~	~~1.34~~	~~17%~~
~~SS 12347-PeCDD~~	~~32.36~~	~~6.99E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~0.90~~	~~5%~~
~~SS 12346-PeCDF~~	~~30.82~~	~~1.20E+08~~	~~1.56~~	~~Y~~	~~0.94~~	~~0.97~~	~~4%~~
~~SS 123469-HxCDF~~	~~36.32~~	~~9.38E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~0.92~~	~~11%~~
~~SS 1234689-HpCDF~~	~~39.66~~	~~7.49E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~1.01~~	~~10%~~
Not used in this project.							
CL 08Dec21							
~~OCDD-a~~	~~42.82~~	~~2.56E+06~~	~~2.53~~	~~Y~~	~~0.07~~	~~0.07~~	~~0%~~
~~OCDF-a~~	~~42.98~~	~~3.24E+06~~	~~2.41~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 211207C01 Analysis Date: 07-DEC-2021 14:18:24

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.83	0.65 - 0.89	Y	10.3	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	51.5	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	52.5	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	52.3	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	52.5	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88 - 1.20	Y	49.5	43 - 58	Y
OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	101	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.81	0.65 - 0.89	Y	10.9	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	51.9	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	51.7	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	51.1	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	52	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.7	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	51.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	51.7	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 08 Dec 2021 16:01 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

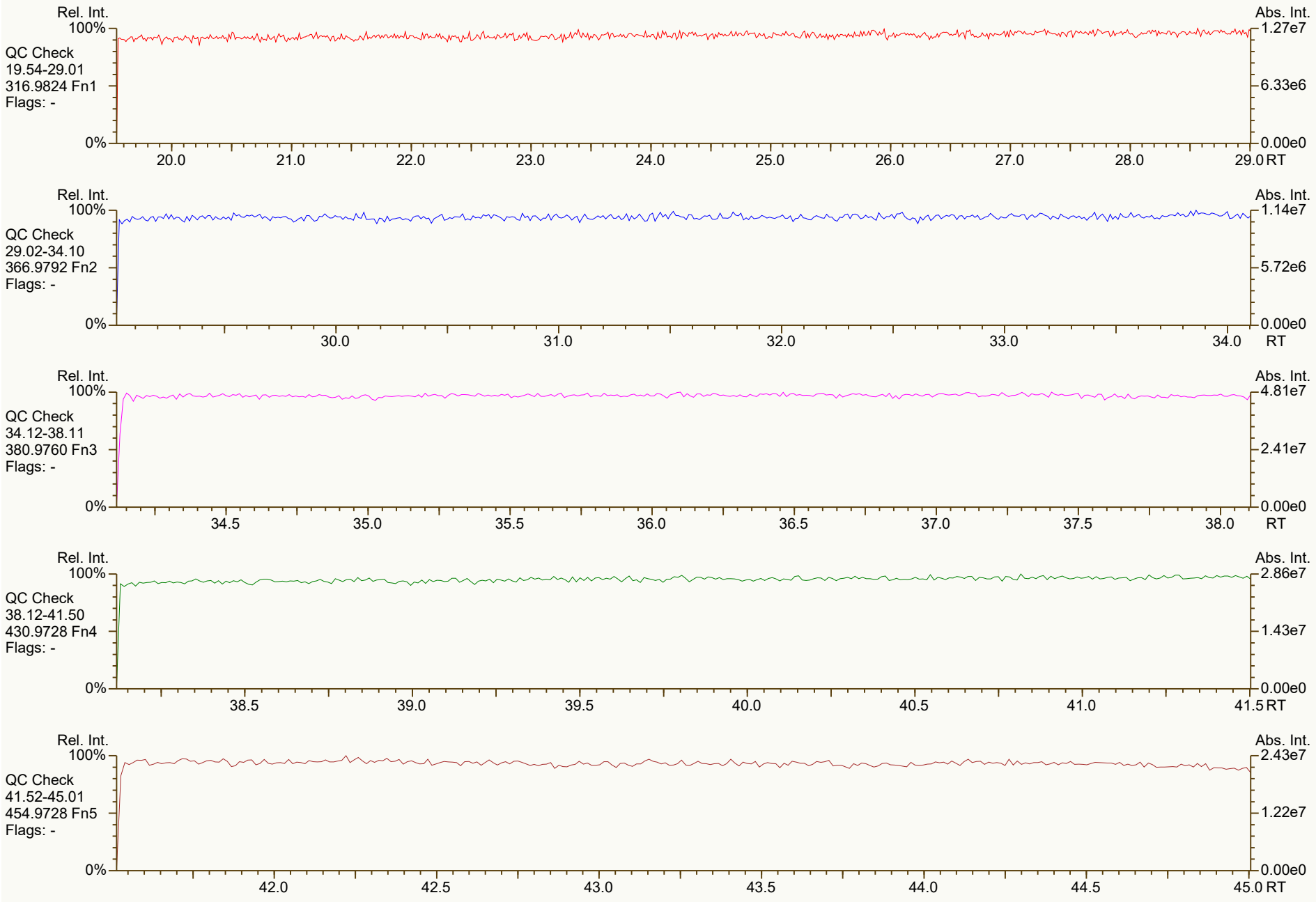
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

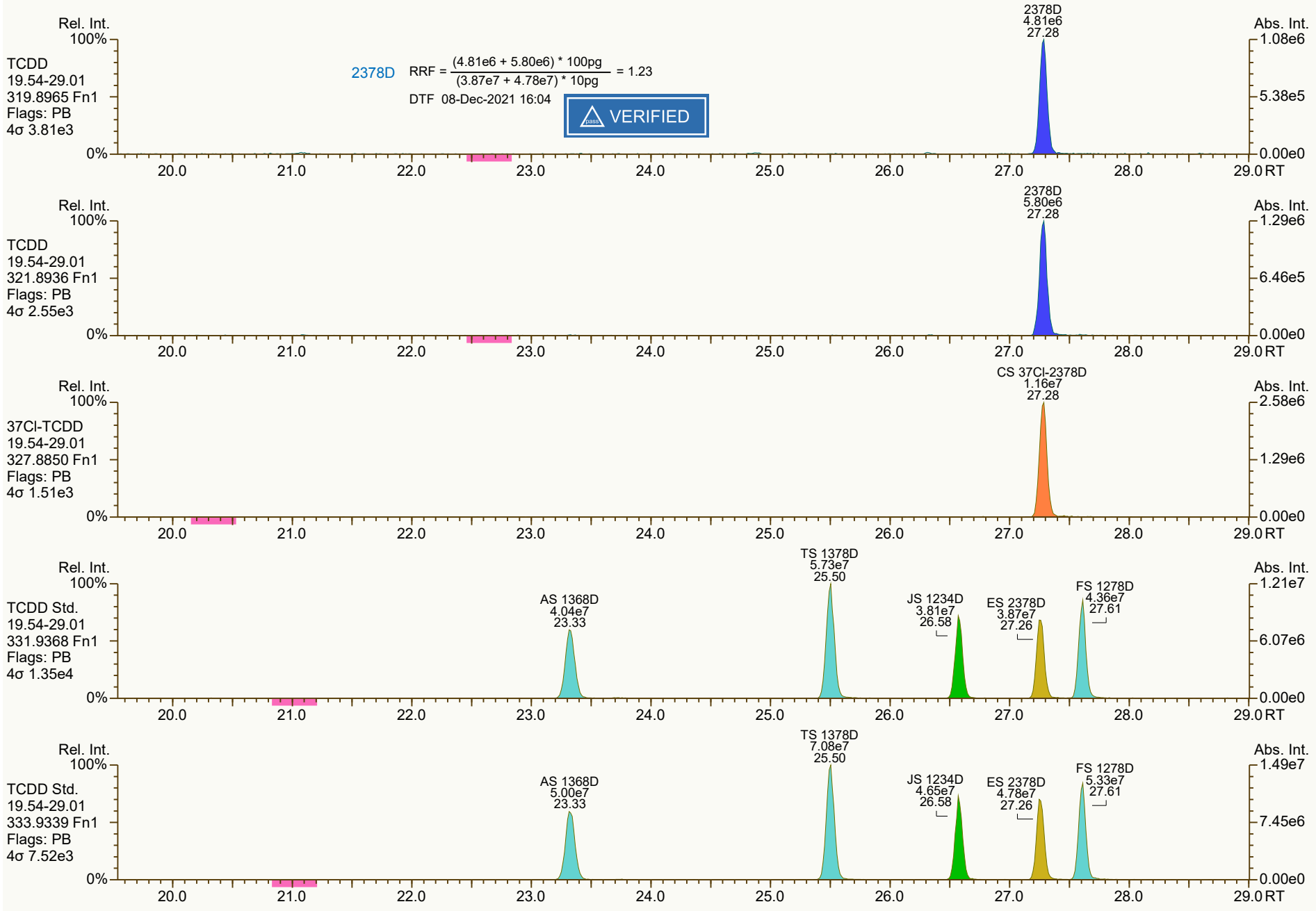
Instrument ID: HRMS3 GC Column ID: ZB-5ms

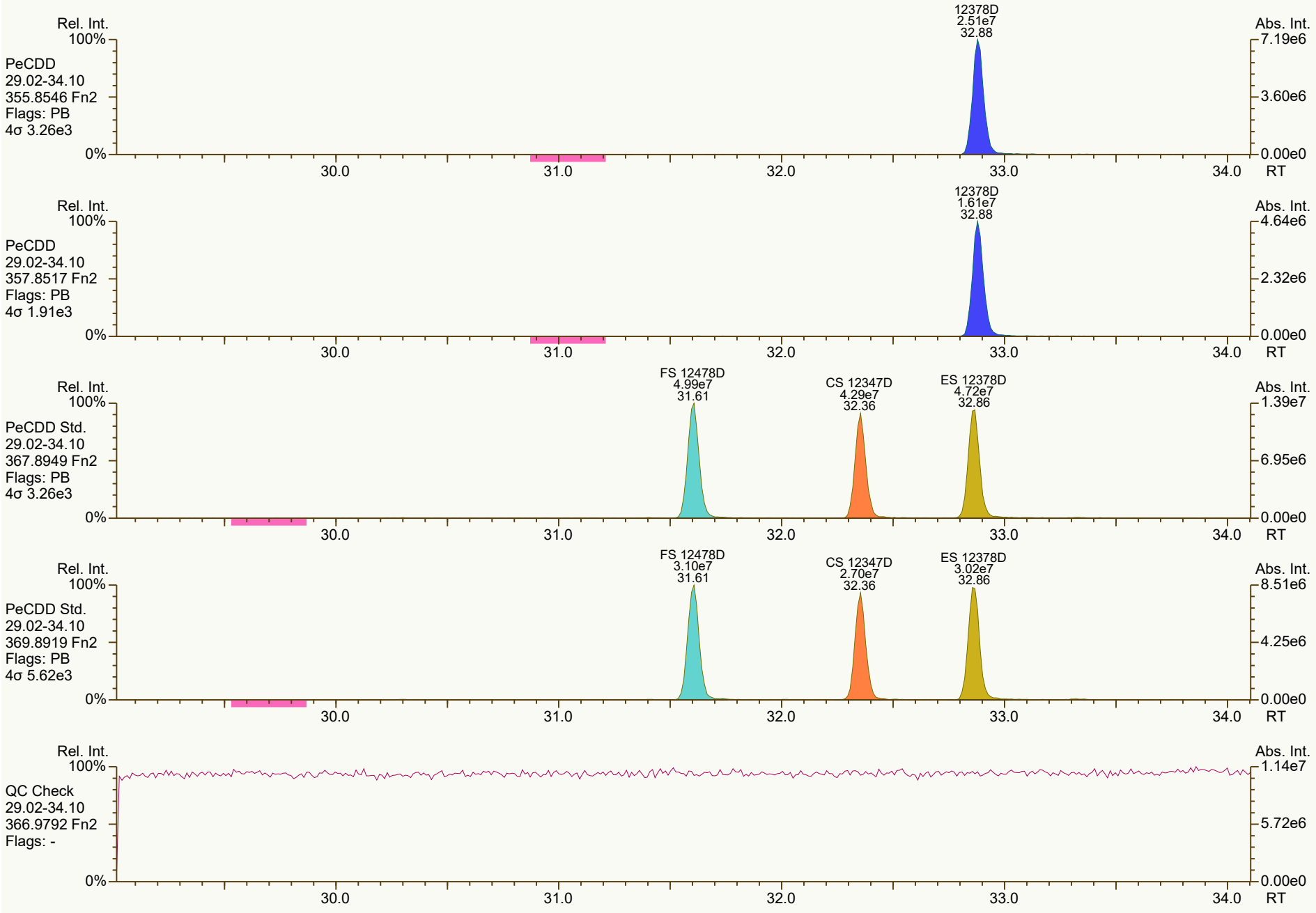
VER Data Filename: 211207C01 Analysis Date: 07-DEC-2021 14:18:24

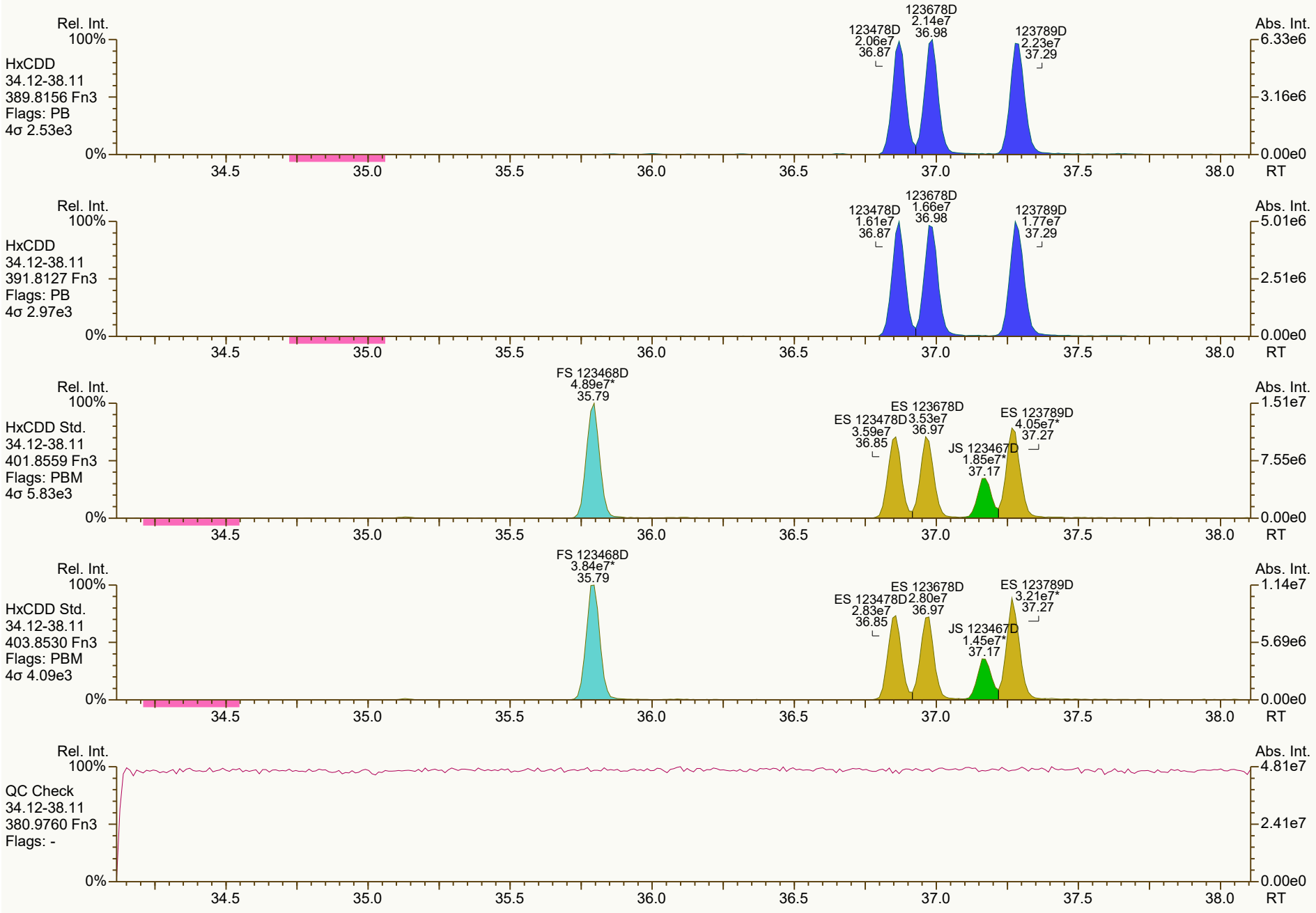
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	97.9	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	104	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	100	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	102	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	101	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88 - 1.20	Y	106	72 - 138	Y
13C-OCDD	M+2/M+4	0.92	0.76 - 1.02	Y	172	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65 - 0.89	Y	95.5	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	96.5	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	98.7	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	113	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	115	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	117	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	115	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	116	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	118	77 - 129	Y
13C-OCDF	M+2/M+4	0.93	0.76 - 1.02	Y	182	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				11.4	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.59	1.32 - 1.78	Y	110	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	101	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	127	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	128	70 - 130	Y

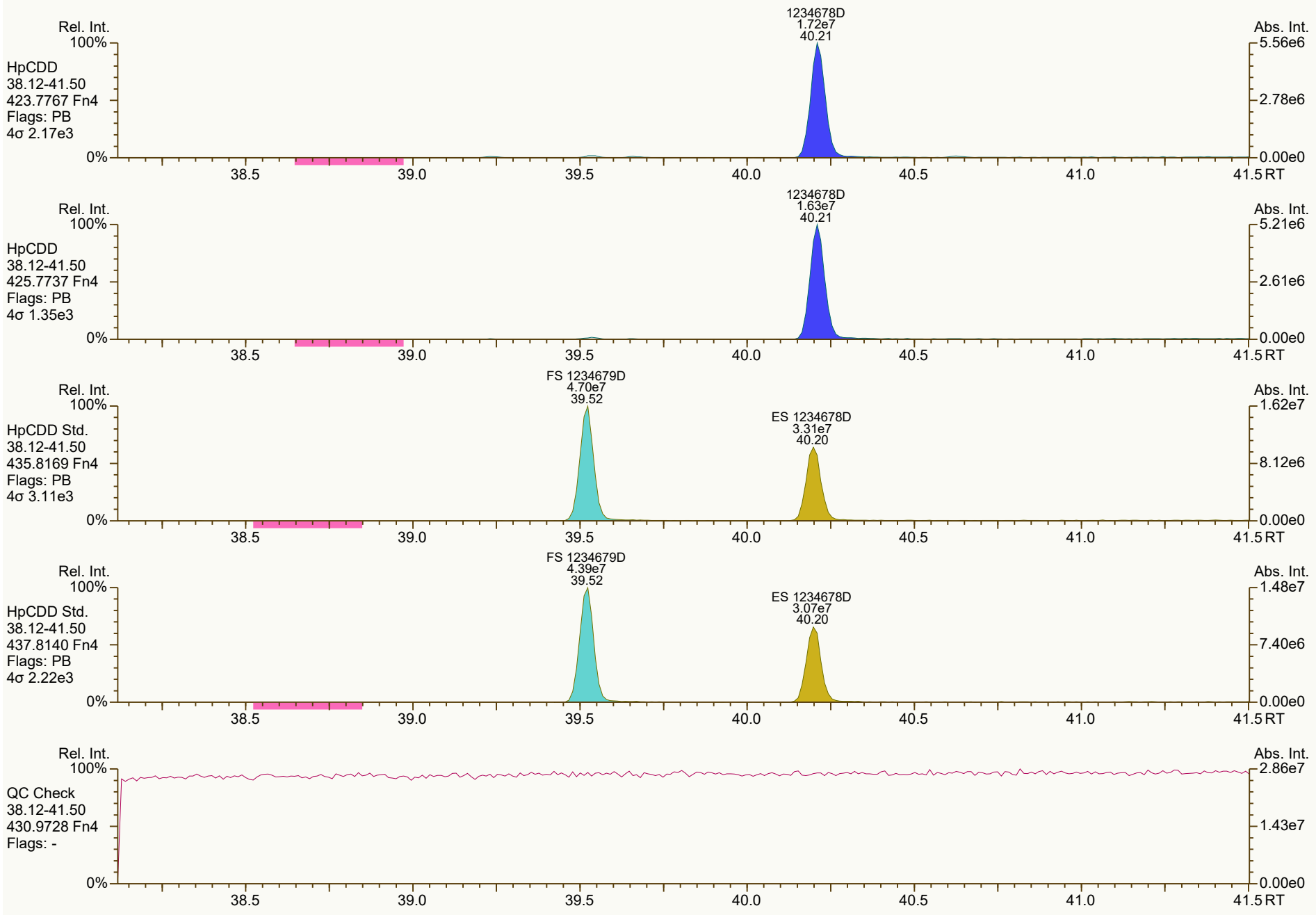
Processed: 08 Dec 2021 16:01 Analyst: TF

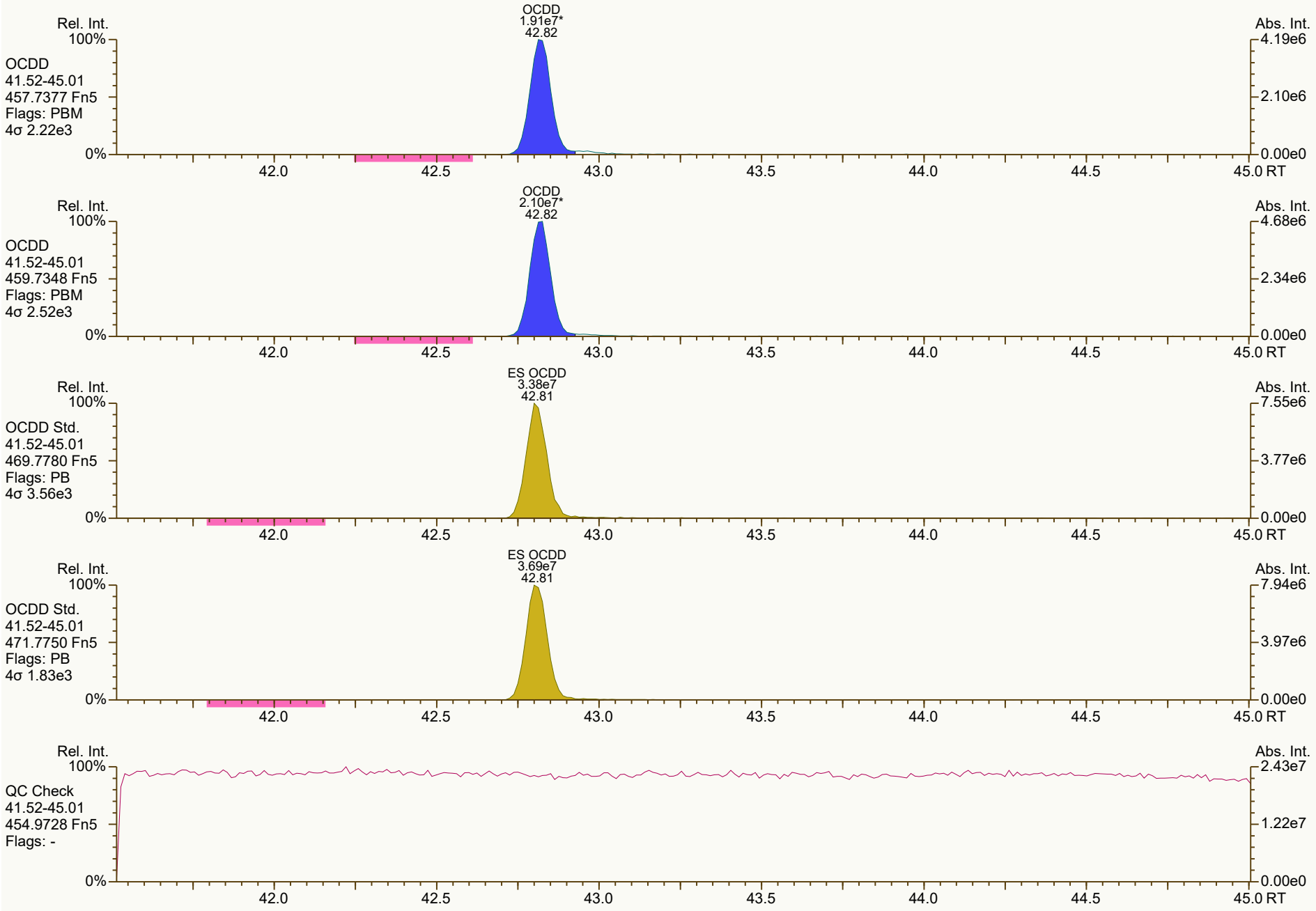

Rel. Int.
100%
QC Check
19.54-29.01
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.27e7
6.33e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
QC Check
29.02-34.10
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.14e7
5.72e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
34.12-38.11
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.81e7
2.41e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
38.12-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.86e7
1.43e7
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.43e7
1.22e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

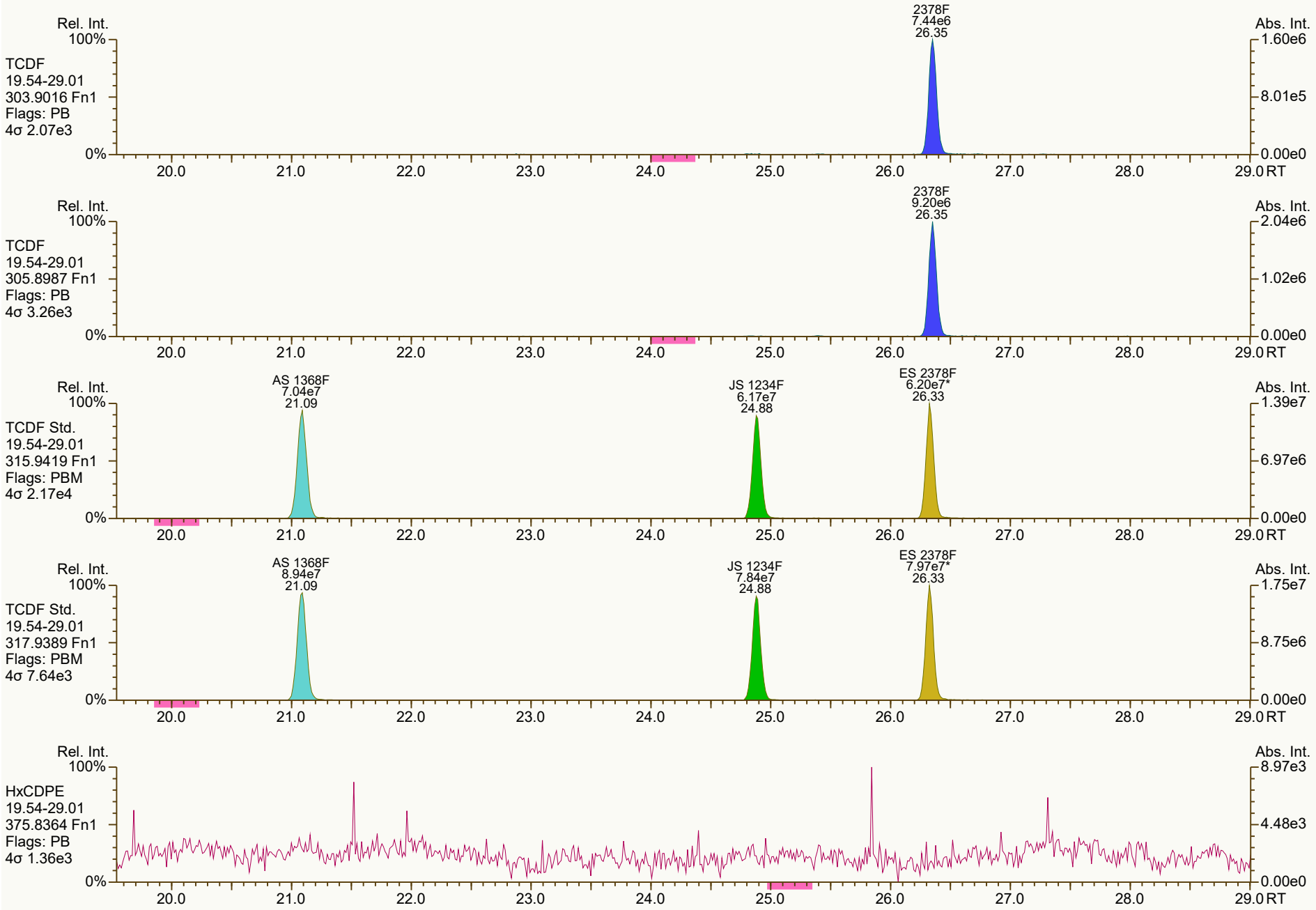

Rel. Int.
100%
TCDD
19.54-29.01
319.8965 Fn1
Flags: PB
4σ 3.81e3
0%
2378D
4.81e6
27.28
Abs. Int.
1.08e6
5.38e5
0.00e0
2378D RRF = (4.81e6 + 5.80e6) * 100pg / (3.87e7 + 4.78e7) * 10pg = 1.23
DTF 08-Dec-2021 16:04
VERIFIED
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDD
19.54-29.01
321.8936 Fn1
Flags: PB
4σ 2.55e3
0%
2378D
5.80e6
27.28
Abs. Int.
1.29e6
6.46e5
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.01
327.8850 Fn1
Flags: PB
4σ 1.51e3
0%
CS 37Cl-2378D
1.16e7
27.28
Abs. Int.
2.58e6
1.29e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDD Std.
19.54-29.01
331.9368 Fn1
Flags: PB
4σ 1.35e4
0%
AS 1368D
4.04e7
23.33
TS 1378D
5.73e7
25.50
JS 1234D
3.81e7
26.58
ES 2378D
3.87e7
27.26
FS 1278D
4.36e7
27.61
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDD Std.
19.54-29.01
333.9339 Fn1
Flags: PB
4σ 7.52e3
0%
AS 1368D
5.00e7
23.33
TS 1378D
7.08e7
25.50
JS 1234D
4.65e7
26.58
ES 2378D
4.78e7
27.26
FS 1278D
5.33e7
27.61
Abs. Int.
1.49e7
7.45e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT


Rel. Int.
100%
PeCDD
29.02-34.10
355.8546 Fn2
Flags: PB
4σ 3.26e3
0%
12378D
2.51e7
32.88
Abs. Int.
7.19e6
3.60e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD
29.02-34.10
357.8517 Fn2
Flags: PB
4σ 1.91e3
0%
12378D
1.61e7
32.88
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.02-34.10
367.8949 Fn2
Flags: PB
4σ 3.26e3
0%
FS 12478D
4.99e7
31.61
CS 12347D
4.29e7
32.36
ES 12378D
4.72e7
32.86
Abs. Int.
1.39e7
6.95e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.02-34.10
369.8919 Fn2
Flags: PB
4σ 5.62e3
0%
FS 12478D
3.10e7
31.61
CS 12347D
2.70e7
32.36
ES 12378D
3.02e7
32.86
Abs. Int.
8.51e6
4.25e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
QC Check
29.02-34.10
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.14e7
5.72e6
0.00e0
30.0
31.0
32.0
33.0
34.0
RT

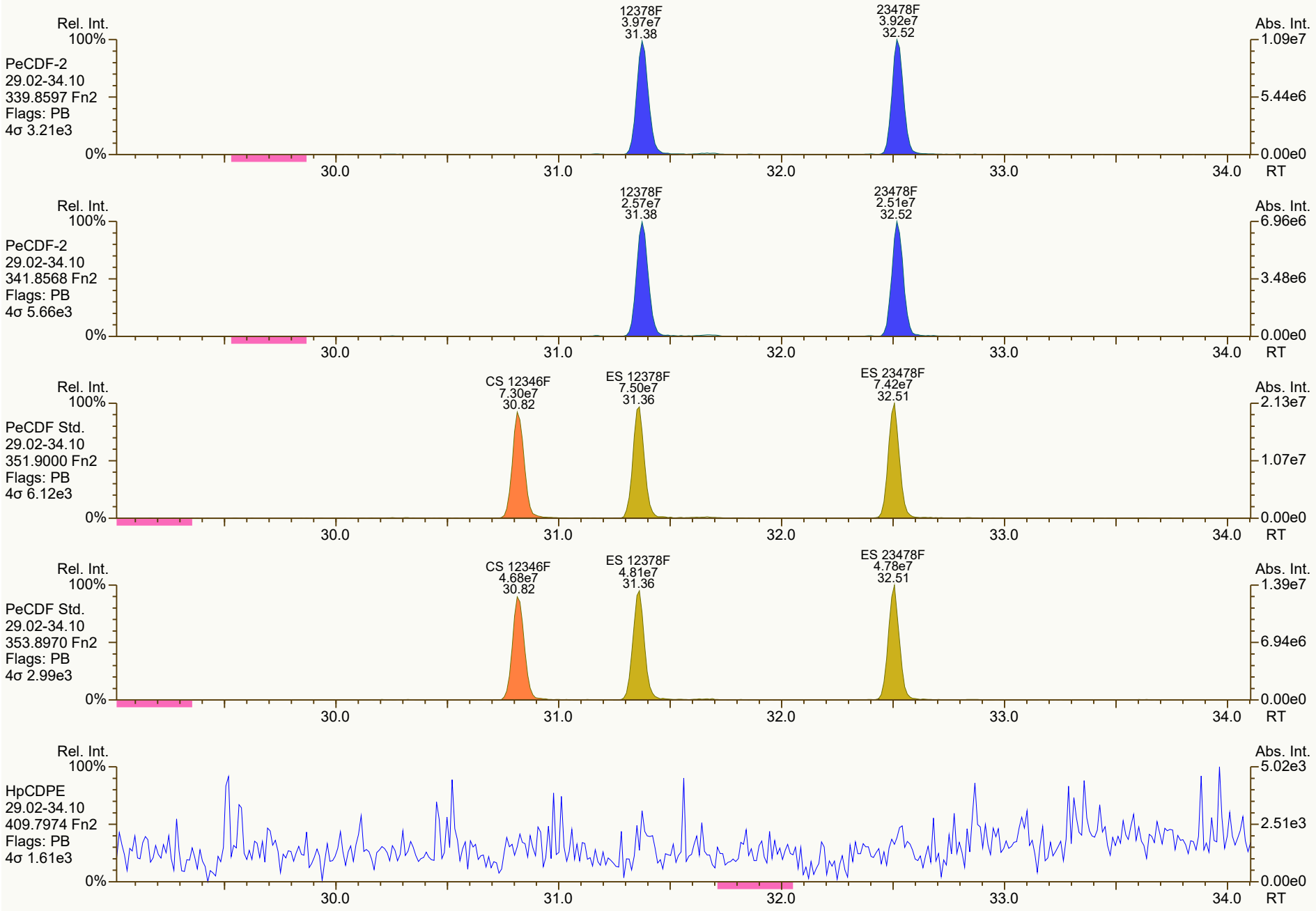

Rel. Int.
100%
HxCDD
34.12-38.11
389.8156 Fn3
Flags: PB
4σ 2.53e3
123478D
2.06e7
36.87
123678D
2.14e7
36.98
123789D
2.23e7
37.29
Abs. Int.
6.33e6
3.16e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.12-38.11
391.8127 Fn3
Flags: PB
4σ 2.97e3
123478D
1.61e7
36.87
123678D
1.66e7
36.98
123789D
1.77e7
37.29
Abs. Int.
5.01e6
2.51e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.12-38.11
401.8559 Fn3
Flags: PBM
4σ 5.83e3
FS 123468D
4.89e7*
35.79
ES 123478D
3.59e7
36.85
ES 123678D
3.53e7
36.97
JS 123467D
1.85e7*
37.17
ES 123789D
4.05e7*
37.27
Abs. Int.
1.51e7
7.55e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.12-38.11
403.8530 Fn3
Flags: PBM
4σ 4.09e3
FS 123468D
3.84e7*
35.79
ES 123478D
2.83e7
36.85
ES 123678D
2.80e7
36.97
JS 123467D
1.45e7*
37.17
ES 123789D
3.21e7*
37.27
Abs. Int.
1.14e7
5.69e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.12-38.11
380.9760 Fn3
Flags: -
Abs. Int.
4.81e7
2.41e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

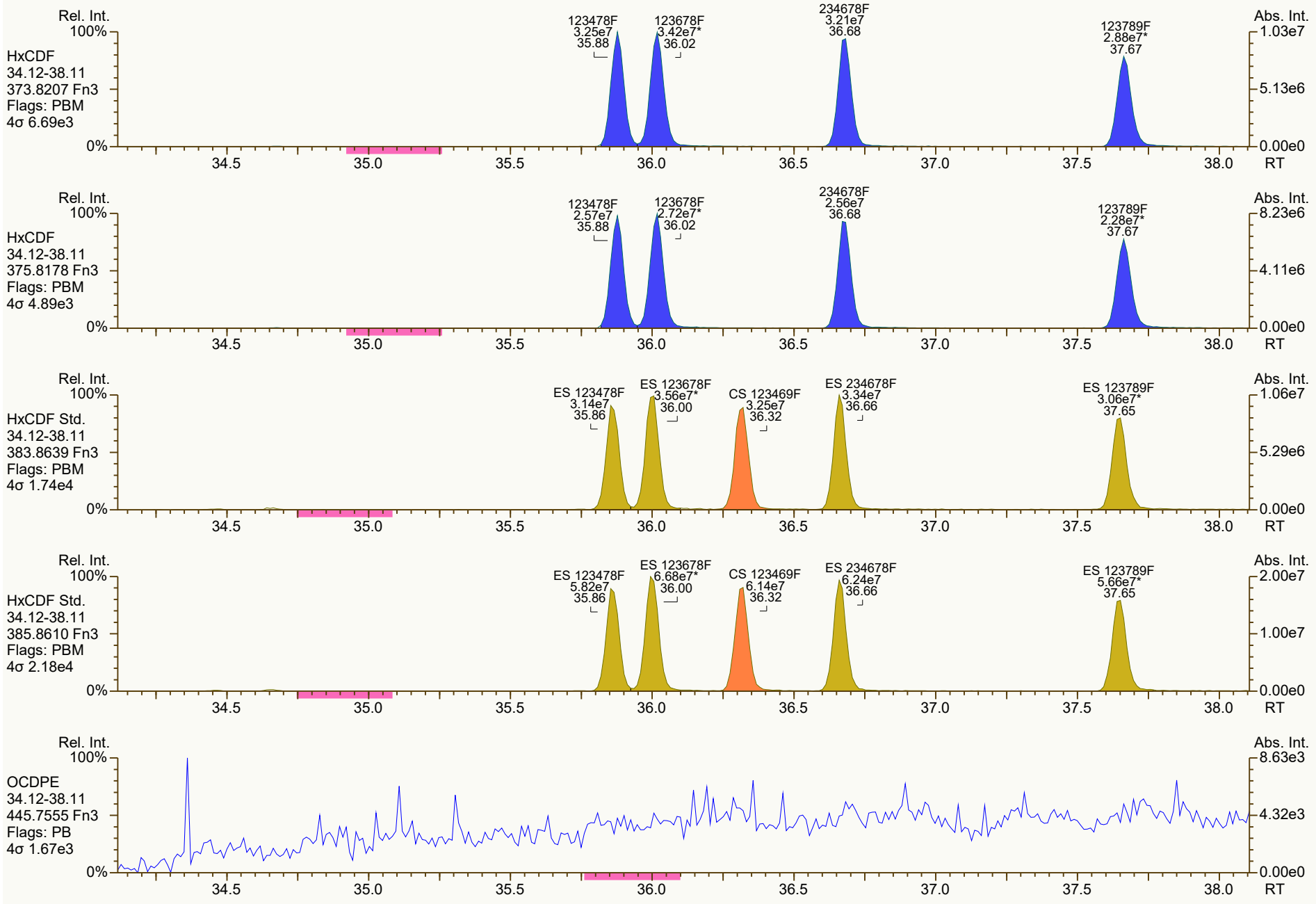

Rel. Int.
100%
HpCDD
38.12-41.50
423.7767 Fn4
Flags: PB
4σ 2.17e3
1234678D
1.72e7
40.21
Abs. Int.
5.56e6
2.78e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.12-41.50
425.7737 Fn4
Flags: PB
4σ 1.35e3
1234678D
1.63e7
40.21
Abs. Int.
5.21e6
2.61e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.12-41.50
435.8169 Fn4
Flags: PB
4σ 3.11e3
FS 1234679D
4.70e7
39.52
ES 1234678D
3.31e7
40.20
Abs. Int.
1.62e7
8.12e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.12-41.50
437.8140 Fn4
Flags: PB
4σ 2.22e3
FS 1234679D
4.39e7
39.52
ES 1234678D
3.07e7
40.20
Abs. Int.
1.48e7
7.40e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.12-41.50
430.9728 Fn4
Flags: -
Abs. Int.
2.86e7
1.43e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.91e7*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 2.22e3
0%
Abs. Int.
4.19e6
2.10e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.10e7*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.38e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 3.56e3
0%
Abs. Int.
7.55e6
3.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.69e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 1.83e3
0%
Abs. Int.
7.94e6
3.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.43e7
1.22e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.01
303.9016 Fn1
Flags: PB
4σ 2.07e3
0%
2378F
7.44e6
26.35
Abs. Int.
1.60e6
8.01e5
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDF
19.54-29.01
305.8987 Fn1
Flags: PB
4σ 3.26e3
0%
2378F
9.20e6
26.35
Abs. Int.
2.04e6
1.02e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDF Std.
19.54-29.01
315.9419 Fn1
Flags: PBM
4σ 2.17e4
0%
AS 1368F
7.04e7
21.09
JS 1234F
6.17e7
24.88
ES 2378F
6.20e7*
26.33
Abs. Int.
1.39e7
6.97e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
TCDF Std.
19.54-29.01
317.9389 Fn1
Flags: PBM
4σ 7.64e3
0%
AS 1368F
8.94e7
21.09
JS 1234F
7.84e7
24.88
ES 2378F
7.97e7*
26.33
Abs. Int.
1.75e7
8.75e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
HxCDPE
19.54-29.01
375.8364 Fn1
Flags: PB
4σ 1.36e3
0%
Abs. Int.
8.97e3
4.48e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT


Rel. Int.
100%
0%
Abs. Int.
1.00e4
5.00e3
0.00e0
PeCDF-1
19.54-29.01
339.8597 Fn1
Flags: B
4σ 1.80e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.65e3
0.00e0
PeCDF-1
19.54-29.01
341.8568 Fn1
Flags: B
4σ 3.54e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.27e7
6.33e6
0.00e0
QC Check
19.54-29.01
316.9824 Fn1
Flags: -
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0 RT


Rel. Int.
100%
PeCDF-2
29.02-34.10
339.8597 Fn2
Flags: PB
4σ 3.21e3
12378F
3.97e7
31.38
23478F
3.92e7
32.52
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF-2
29.02-34.10
341.8568 Fn2
Flags: PB
4σ 5.66e3
12378F
2.57e7
31.38
23478F
2.51e7
32.52
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.02-34.10
351.9000 Fn2
Flags: PB
4σ 6.12e3
CS 12346F
7.30e7
30.82
ES 12378F
7.50e7
31.36
ES 23478F
7.42e7
32.51
Abs. Int.
2.13e7
1.07e7
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.02-34.10
353.8970 Fn2
Flags: PB
4σ 2.99e3
CS 12346F
4.68e7
30.82
ES 12378F
4.81e7
31.36
ES 23478F
4.78e7
32.51
Abs. Int.
1.39e7
6.94e6
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT
Rel. Int.
100%
HpCDPE
29.02-34.10
409.7974 Fn2
Flags: PB
4σ 1.61e3
Abs. Int.
5.02e3
2.51e3
0.00e0
0%
30.0
31.0
32.0
33.0
34.0
RT


Rel. Int.
100%
HxCDF
34.12-38.11
373.8207 Fn3
Flags: PBM
4σ 6.69e3
0%
123478F
3.25e7
35.88
123678F
3.42e7*
36.02
234678F
3.21e7
36.68
123789F
2.88e7*
37.67
Abs. Int.
1.03e7
5.13e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.12-38.11
375.8178 Fn3
Flags: PBM
4σ 4.89e3
0%
123478F
2.57e7
35.88
123678F
2.72e7*
36.02
234678F
2.56e7
36.68
123789F
2.28e7*
37.67
Abs. Int.
8.23e6
4.11e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.12-38.11
383.8639 Fn3
Flags: PBM
4σ 1.74e4
0%
ES 123478F
3.14e7
35.86
ES 123678F
3.56e7*
36.00
CS 123469F
3.25e7
36.32
ES 234678F
3.34e7
36.66
ES 123789F
3.06e7*
37.65
Abs. Int.
1.06e7
5.29e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.12-38.11
385.8610 Fn3
Flags: PBM
4σ 2.18e4
0%
ES 123478F
5.82e7
35.86
ES 123678F
6.68e7*
36.00
CS 123469F
6.14e7
36.32
ES 234678F
6.24e7
36.66
ES 123789F
5.66e7*
37.65
Abs. Int.
2.00e7
1.00e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.12-38.11
445.7555 Fn3
Flags: PB
4σ 1.67e3
0%
Abs. Int.
8.63e3
4.32e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.12-41.50
407.7818 Fn4
Flags: PB
4σ 2.13e3
1234678F
2.63e7
39.25
1234789F
2.29e7
40.64
Abs. Int.
8.76e6
4.38e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.12-41.50
409.7788 Fn4
Flags: PB
4σ 3.02e3
1234678F
2.53e7
39.25
1234789F
2.19e7
40.64
Abs. Int.
8.53e6
4.26e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.12-41.50
417.8253 Fn4
Flags: PBM
4σ 4.28e3
ES 1234678F
2.32e7*
39.24
CS 1234689F
2.35e7*
39.66
ES 1234789F
2.08e7
40.63
Abs. Int.
8.62e6
4.31e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.12-41.50
419.8220 Fn4
Flags: PBM
4σ 4.55e3
ES 1234678F
5.06e7*
39.24
CS 1234689F
5.14e7*
39.66
ES 1234789F
4.56e7
40.63
Abs. Int.
1.79e7
8.96e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.12-41.50
479.7165 Fn4
Flags: B
4σ 1.46e3
Abs. Int.
7.39e3
3.70e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
2.53e7*
42.98
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.57e3
0%
Abs. Int.
5.89e6
2.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.79e7*
42.98
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.67e3
0%
Abs. Int.
6.23e6
3.12e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
4.66e7*
42.97
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
5.02e7*
42.97
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.07e3
0%
Abs. Int.
1.12e7
5.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.33e3
0%
Abs. Int.
5.80e3
2.90e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 08 Dec 2021 12:59 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211208_DF_CA	UTP: 08-Dec-2021 15:59:16 DTF	Checkcode: 876-357-XDJ
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 16:01 TF	Datafile: 211208C03

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	29.39	6.90E+06	0.78	Y	1.18	1.12	-6%
12378-PeCDD	34.54	2.54E+07	1.57	Y	1.04	1.00	-4%
123478-HxCDD	38.37	2.31E+07	1.26	Y	1.09	1.06	-2%
123678-HxCDD	38.47	2.33E+07	1.26	Y	1.15	1.11	-3%
123789-HxCDD	38.73	2.41E+07	1.24	Y	1.05	0.99	-6%
1234678-HpCDD	41.27	2.04E+07	1.02	Y	1.06	0.97	-8%
OCDD	43.99	3.22E+07	0.89	Y	1.13	1.08	-4%
2378-TCDF	28.57	9.08E+06	0.77	Y	1.08	1.04	-4%
12378-PeCDF	33.14	3.55E+07	1.52	Y	1.02	0.98	-4%
23478-PeCDF	34.21	3.46E+07	1.49	Y	1.02	0.95	-7%
123478-HxCDF	37.41	3.18E+07	1.25	Y	1.27	1.19	-6%
123678-HxCDF	37.56	3.25E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	38.20	3.07E+07	1.23	Y	1.19	1.13	-4%
123789-HxCDF	39.06	2.80E+07	1.22	Y	1.16	1.11	-5%
1234678-HpCDF	40.34	2.83E+07	1.01	Y	1.37	1.30	-5%
1234789-HpCDF	41.74	2.45E+07	1.01	Y	1.31	1.27	-3%
OCDF	44.18	3.94E+07	0.89	Y	1.07	1.04	-3%
ES 2378-TCDD	29.37	6.18E+07	0.80	Y	1.05	1.01	-3%
ES 12378-PeCDD	34.523	5.09E+07	1.56	Y	0.88	0.84	-5%
ES 123478-HxCDD	38.353	4.35E+07	1.22	Y	0.97	1.03	6%
ES 123678-HxCDD	38.456	4.20E+07	1.24	Y	0.94	0.99	5%
ES 123789-HxCDD	38.72	4.90E+07	1.23	Y	1.09	1.16	6%
ES 1234678-HpCDD	41.258	4.20E+07	1.08	Y	0.91	0.99	9%
ES OCDD	43.98	5.99E+07	0.92	Y	0.62	0.71	13%
ES 2378-TCDF	28.545	8.73E+07	0.76	Y	1.06	1.00	-6%
ES 12378-PeCDF	33.127	7.24E+07	1.52	Y	0.91	0.83	-9%
ES 23478-PeCDF	34.191	7.28E+07	1.50	Y	0.88	0.83	-6%
ES 123478-HxCDF	37.397	5.35E+07	0.52	Y	1.20	1.26	5%
ES 123678-HxCDF	37.543	5.93E+07	0.54	Y	1.35	1.40	4%
ES 234678-HxCDF	38.186	5.42E+07	0.53	Y	1.24	1.28	3%
ES 123789-HxCDF	39.043	5.06E+07	0.52	Y	1.16	1.20	4%
ES 1234678-HpCDF	40.326	4.37E+07	0.47	Y	0.97	1.03	7%
ES 1234789-HpCDF	41.728	3.87E+07	0.46	Y	0.85	0.91	7%
ES OCDF	44.169	7.61E+07	0.91	Y	0.81	0.90	11%

Dioxin/Furan QC Summary	Acq'd: 08 Dec 2021 12:59 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211208_DF_CA	UTP: 08-Dec-2021 15:59:16 DTF	Checkcode: 876-357-XDJ
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 16:01 TF	Datafile: 211208C03

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	28.76	6.10E+07	0.81	Y	-	-	-
JS 1234-TCDF	27.29	8.77E+07	0.76	Y	-	-	-
JS 123467-HxCDD	38.63	2.12E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	29.39	7.84E+06	n/a	-	1.20	1.29	7%
CS 12347-PeCDD	34.04	4.64E+07	1.58	Y	0.75	0.76	1%
CS 12346-PeCDF	32.62	7.07E+07	1.51	Y	0.85	0.81	-5%
CS 123469-HxCDF	37.87	5.42E+07	0.52	Y	1.12	1.28	15%
CS 1234689-HpCDF	40.73	4.33E+07	0.47	Y	0.89	1.02	15%
~~SS 37Cl-2378-TCDD~~	~~29.39~~	~~7.84E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.27~~	~~11%~~
~~SS 12347-PeCDD~~	~~34.04~~	~~4.64E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~0.91~~	~~6%~~
~~SS 12346-PeCDF~~	~~32.62~~	~~7.07E+07~~	~~1.51~~	~~Y~~	~~0.94~~	~~0.98~~	~~4%~~
~~SS 123469-HxCDF~~	~~37.87~~	~~5.42E+07~~	~~0.52~~	~~Y~~	~~0.83~~	~~0.91~~	~~10%~~
~~SS 1234689-HpCDF~~	~~40.73~~	~~4.33E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~0.99~~	~~8%~~
Not used in this project.							
CL 08Dec21							
~~OCDD-a~~	~~43.99~~	~~2.04E+06~~	~~2.58~~	~~Y~~	~~0.07~~	~~0.07~~	~~-5%~~
~~OCDF-a~~	~~0.00~~	~~0.00E+00~~	~~0.00~~	~~0~~	~~0.07~~	~~0.00~~	~~-100%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 211208C03 Analysis Date: 08-DEC-2021 12:59:58

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.78	0.65 - 0.89	Y	9.42	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32 - 1.78	Y	48.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	48.8	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	48.3	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	47	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88 - 1.20	Y	45.8	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	95.5	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.77	0.65 - 0.89	Y	9.65	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	47.9	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.49	1.32 - 1.78	Y	46.5	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	46.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	47.5	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	47.8	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	47.6	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	47.3	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	48.5	43 - 58	Y
OCDF	M+2/M+4	0.89	0.76 - 1.02	Y	96.7	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 08 Dec 2021 16:01 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

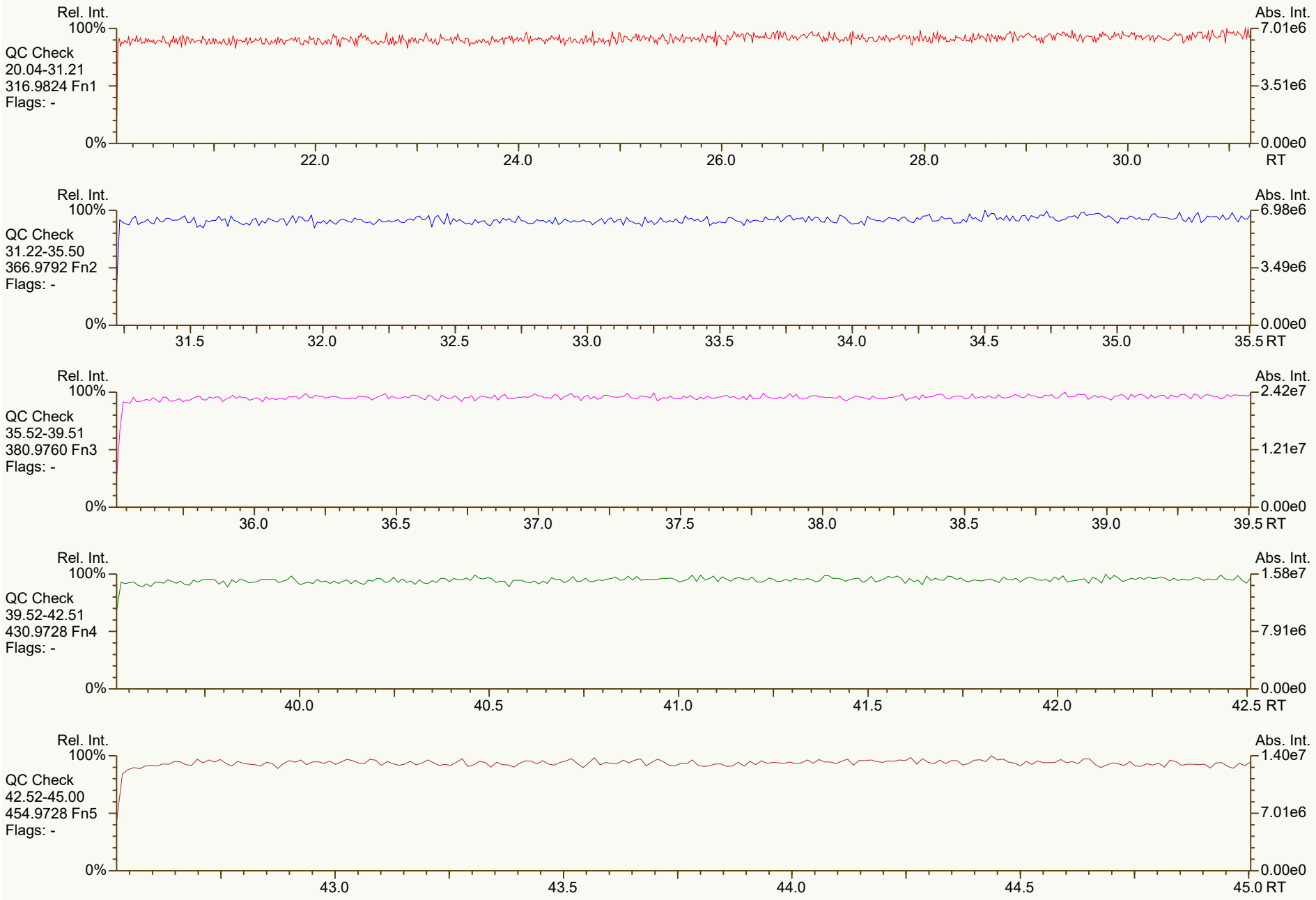
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 211208C03 Analysis Date: 08-DEC-2021 12:59:58

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65 - 0.89	Y	97	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	95	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.22	1.05 - 1.43	Y	106	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	105	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05 - 1.43	Y	106	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88 - 1.20	Y	109	72 - 138	Y
13C-OCDD	M+2/M+4	0.92	0.76 - 1.02	Y	227	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.76	0.65 - 0.89	Y	94	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	90.7	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.50	1.32 - 1.78	Y	94.1	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	105	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	104	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	103	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	104	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	107	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	107	77 - 129	Y
13C-OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	223	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				10.7	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	101	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.51	1.32 - 1.78	Y	94.8	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	115	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	115	70 - 130	Y

Processed: 08 Dec 2021 16:01 Analyst: TF


Rel. Int.
100%
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20.04-31.21
316.9824 Fn1
Flags: -
0%
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24.0
26.0
28.0
30.0
RT
Abs. Int.
7.01e6
3.51e6
0.00e0
Rel. Int.
100%
QC Check
31.22-35.50
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Abs. Int.
6.98e6
3.49e6
0.00e0
Rel. Int.
100%
QC Check
35.52-39.51
380.9760 Fn3
Flags: -
0%
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Abs. Int.
2.42e7
1.21e7
0.00e0
Rel. Int.
100%
QC Check
39.52-42.51
430.9728 Fn4
Flags: -
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
1.58e7
7.91e6
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
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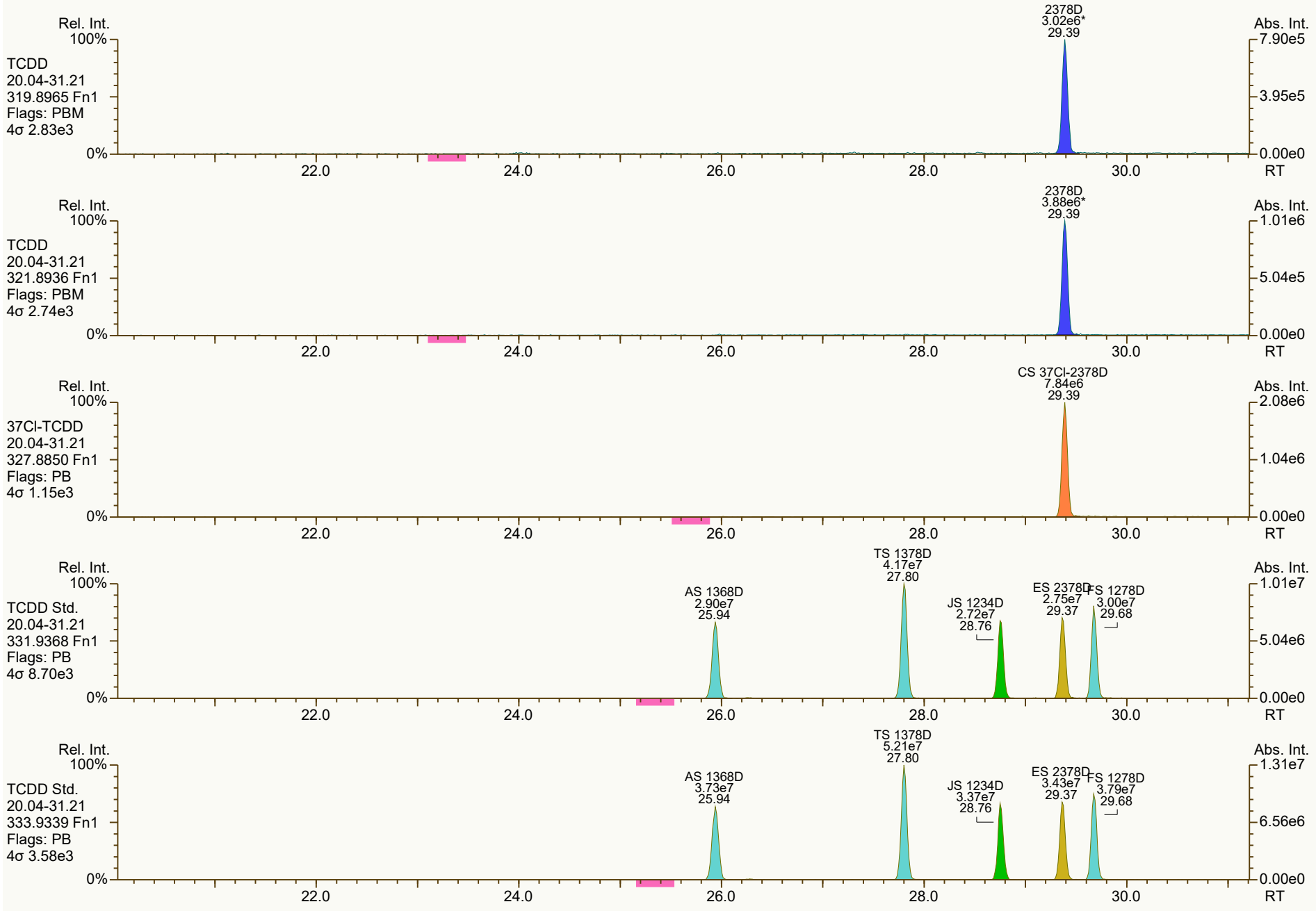
7.01e6
0.00e0


Rel. Int.
100%
TCDD
20.04-31.21
319.8965 Fn1
Flags: PBM
4σ 2.83e3
0%
2378D
3.02e6*
29.39
Abs. Int.
7.90e5
3.95e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.21
321.8936 Fn1
Flags: PBM
4σ 2.74e3
0%
2378D
3.88e6*
29.39
Abs. Int.
1.01e6
5.04e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.21
327.8850 Fn1
Flags: PB
4σ 1.15e3
0%
CS 37Cl-2378D
7.84e6
29.39
Abs. Int.
2.08e6
1.04e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.21
331.9368 Fn1
Flags: PB
4σ 8.70e3
0%
AS 1368D
2.90e7
25.94
TS 1378D
4.17e7
27.80
JS 1234D
2.72e7
28.76
ES 2378D
2.75e7
29.37
FS 1278D
3.00e7
29.68
Abs. Int.
1.01e7
5.04e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.21
333.9339 Fn1
Flags: PB
4σ 3.58e3
0%
AS 1368D
3.73e7
25.94
TS 1378D
5.21e7
27.80
JS 1234D
3.37e7
28.76
ES 2378D
3.43e7
29.37
FS 1278D
3.79e7
29.68
Abs. Int.
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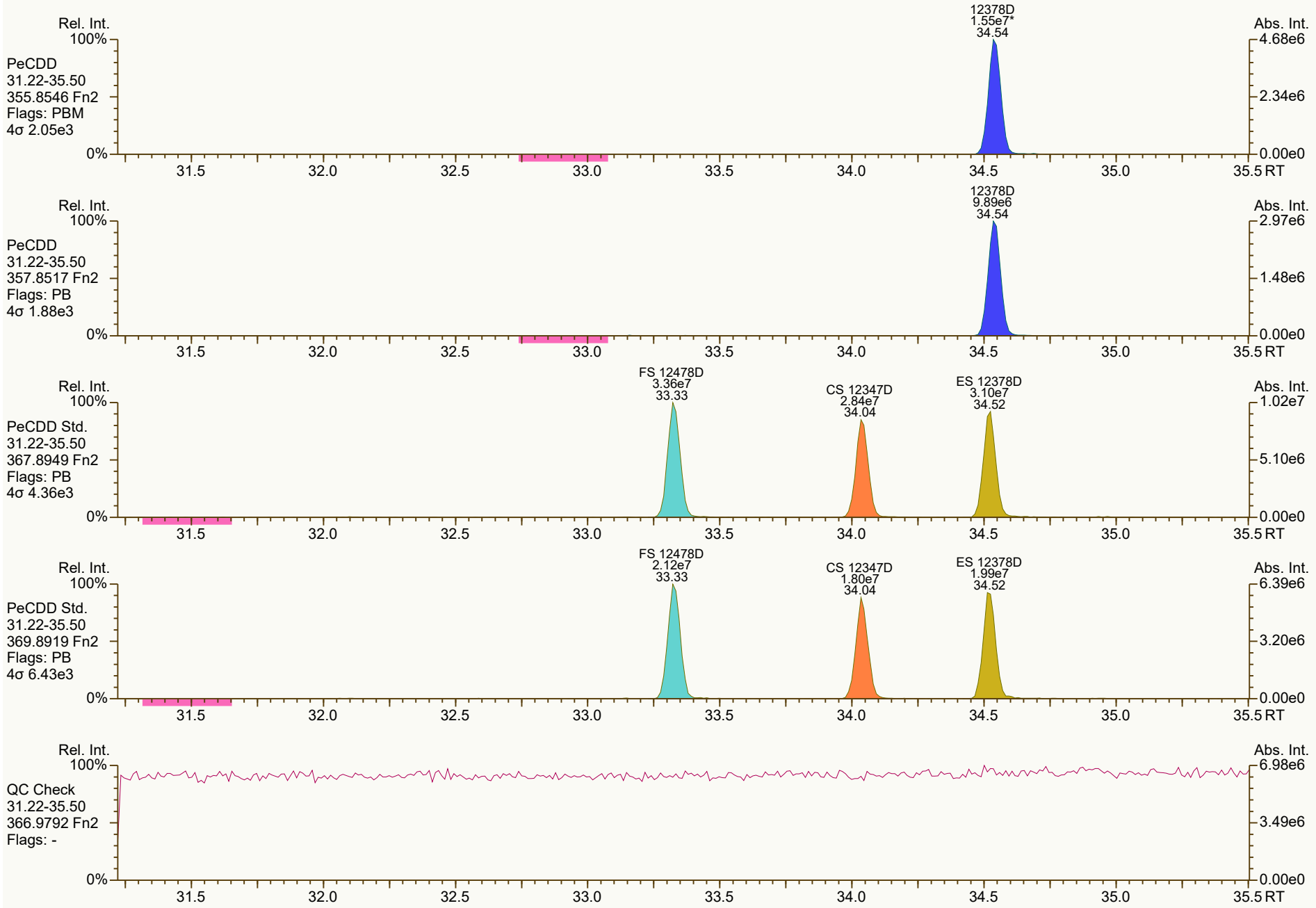
24.0
26.0
28.0
30.0
RT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100%
PeCDD
31.22-35.50
355.8546 Fn2
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4σ 2.05e3
12378D
1.55e7*
34.54
Abs. Int.
4.68e6
2.34e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD
31.22-35.50
357.8517 Fn2
Flags: PB
4σ 1.88e3
12378D
9.89e6
34.54
Abs. Int.
2.97e6
1.48e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD Std.
31.22-35.50
367.8949 Fn2
Flags: PB
4σ 4.36e3
FS 12478D
3.36e7
33.33
CS 12347D
2.84e7
34.04
ES 12378D
3.10e7
34.52
Abs. Int.
1.02e7
5.10e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD Std.
31.22-35.50
369.8919 Fn2
Flags: PB
4σ 6.43e3
FS 12478D
2.12e7
33.33
CS 12347D
1.80e7
34.04
ES 12378D
1.99e7
34.52
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
QC Check
31.22-35.50
366.9792 Fn2
Flags: -
Abs. Int.
6.98e6
3.49e6
0.00e0
0%
31.5
32.0
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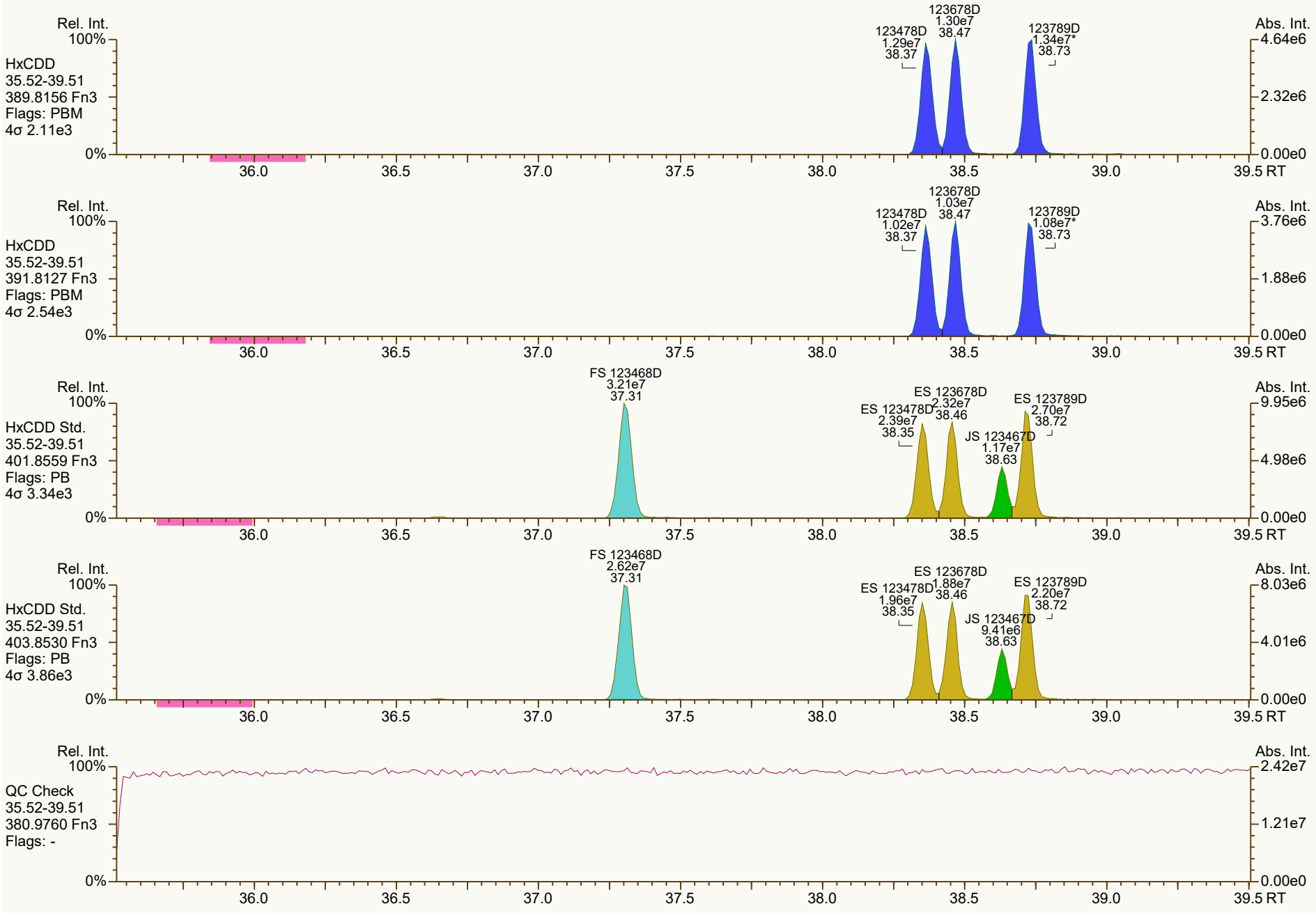
34.0
34.5
35.0
35.5 RT


Rel. Int.
100%
HxCDD
35.52-39.51
389.8156 Fn3
Flags: PBM
4σ 2.11e3
123678D
1.30e7
38.47
123478D
1.29e7
38.37
123789D
1.34e7*
38.73
Abs. Int.
4.64e6
2.32e6
0.00e0
0%
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.52-39.51
391.8127 Fn3
Flags: PBM
4σ 2.54e3
123678D
1.03e7
38.47
123478D
1.02e7
38.37
123789D
1.08e7*
38.73
Abs. Int.
3.76e6
1.88e6
0.00e0
0%
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.52-39.51
401.8559 Fn3
Flags: PB
4σ 3.34e3
FS 123468D
3.21e7
37.31
ES 123678D
2.32e7
38.46
ES 123478D
2.39e7
38.35
ES 123789D
2.70e7
38.72
JS 123467D
1.17e7
38.63
Abs. Int.
9.95e6
4.98e6
0.00e0
0%
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.52-39.51
403.8530 Fn3
Flags: PB
4σ 3.86e3
FS 123468D
2.62e7
37.31
ES 123678D
1.88e7
38.46
ES 123478D
1.96e7
38.35
ES 123789D
2.20e7
38.72
JS 123467D
9.41e6
38.63
Abs. Int.
8.03e6
4.01e6
0.00e0
0%
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.52-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.42e7
1.21e7
0.00e0
0%
36.0
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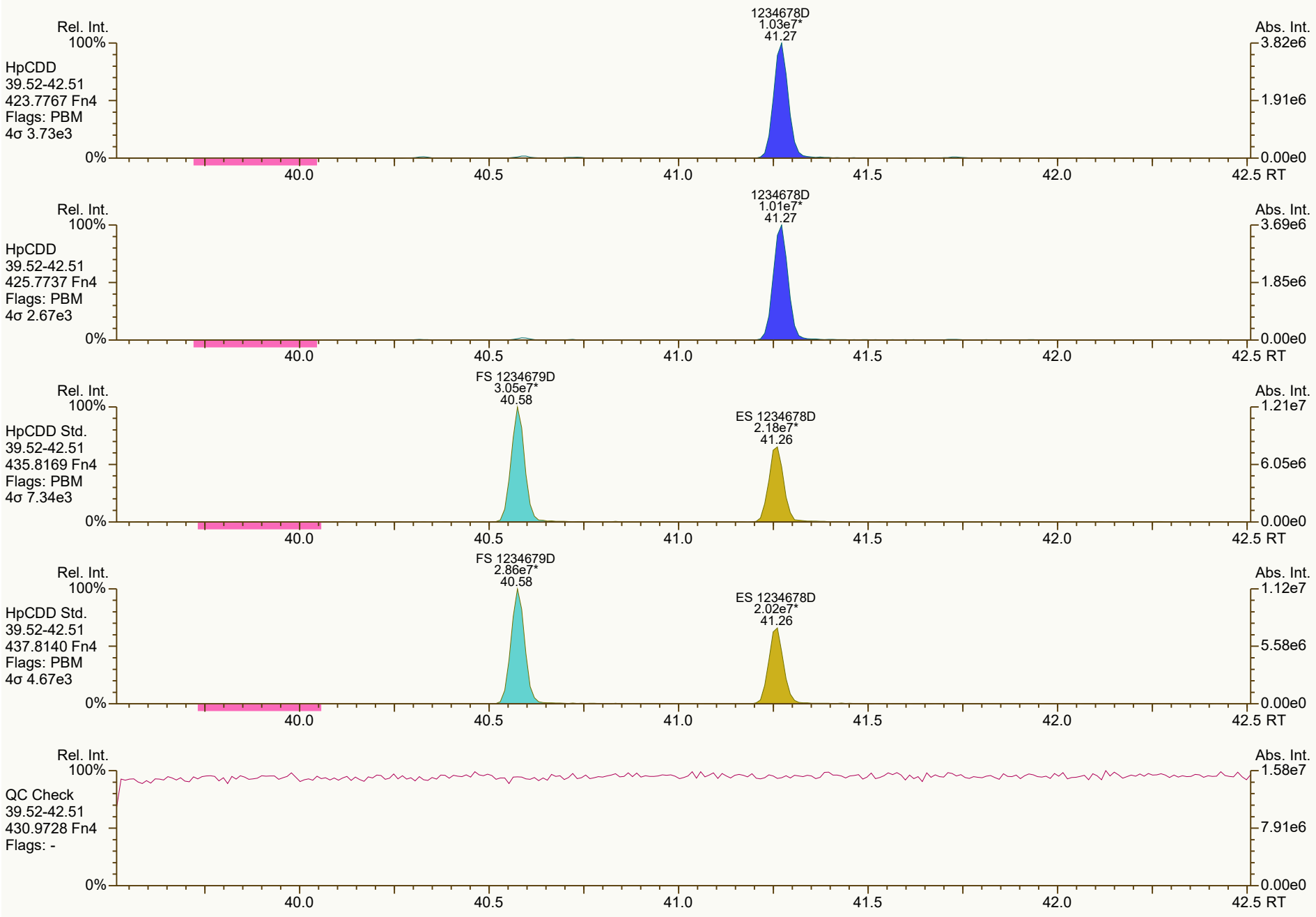
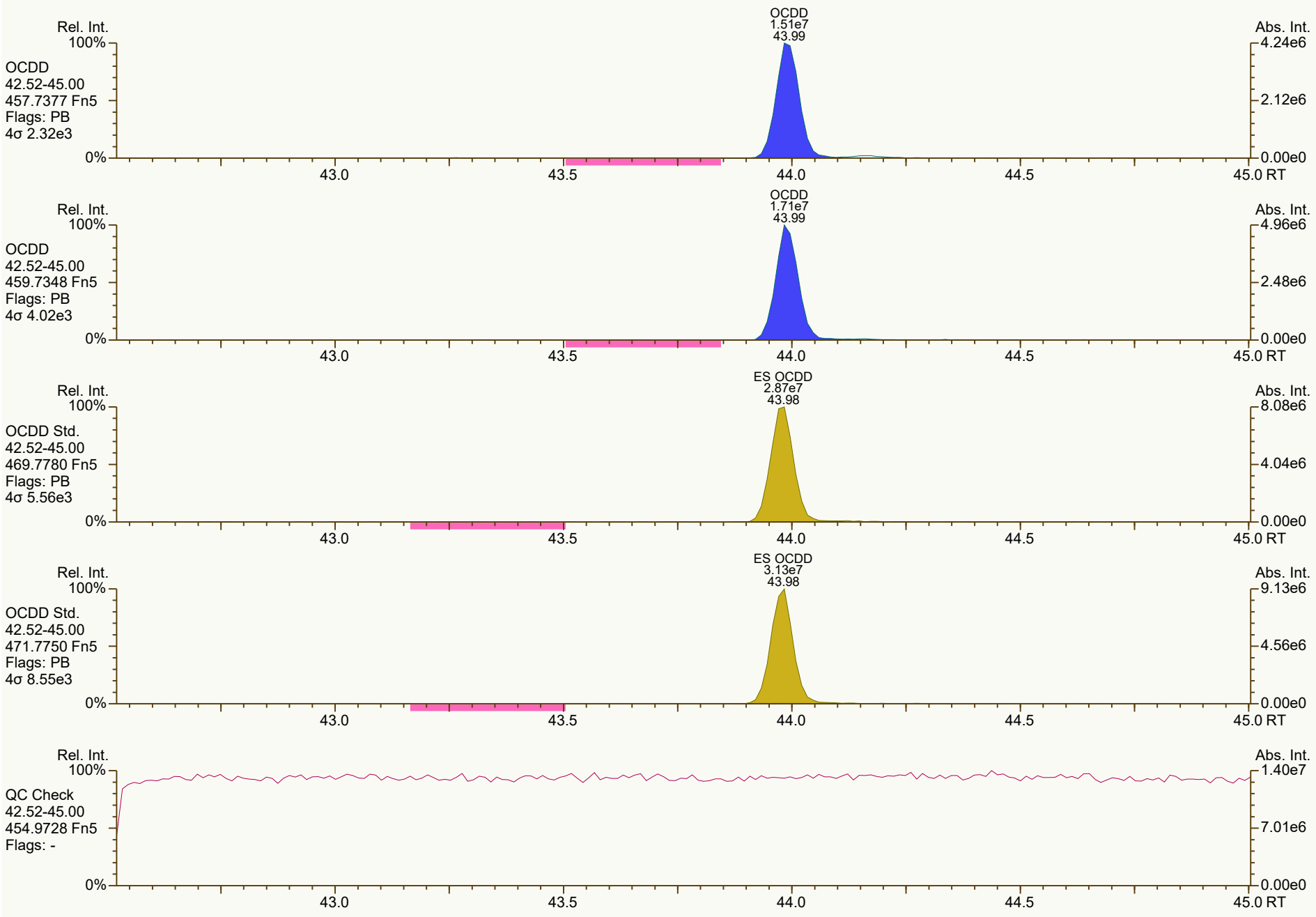
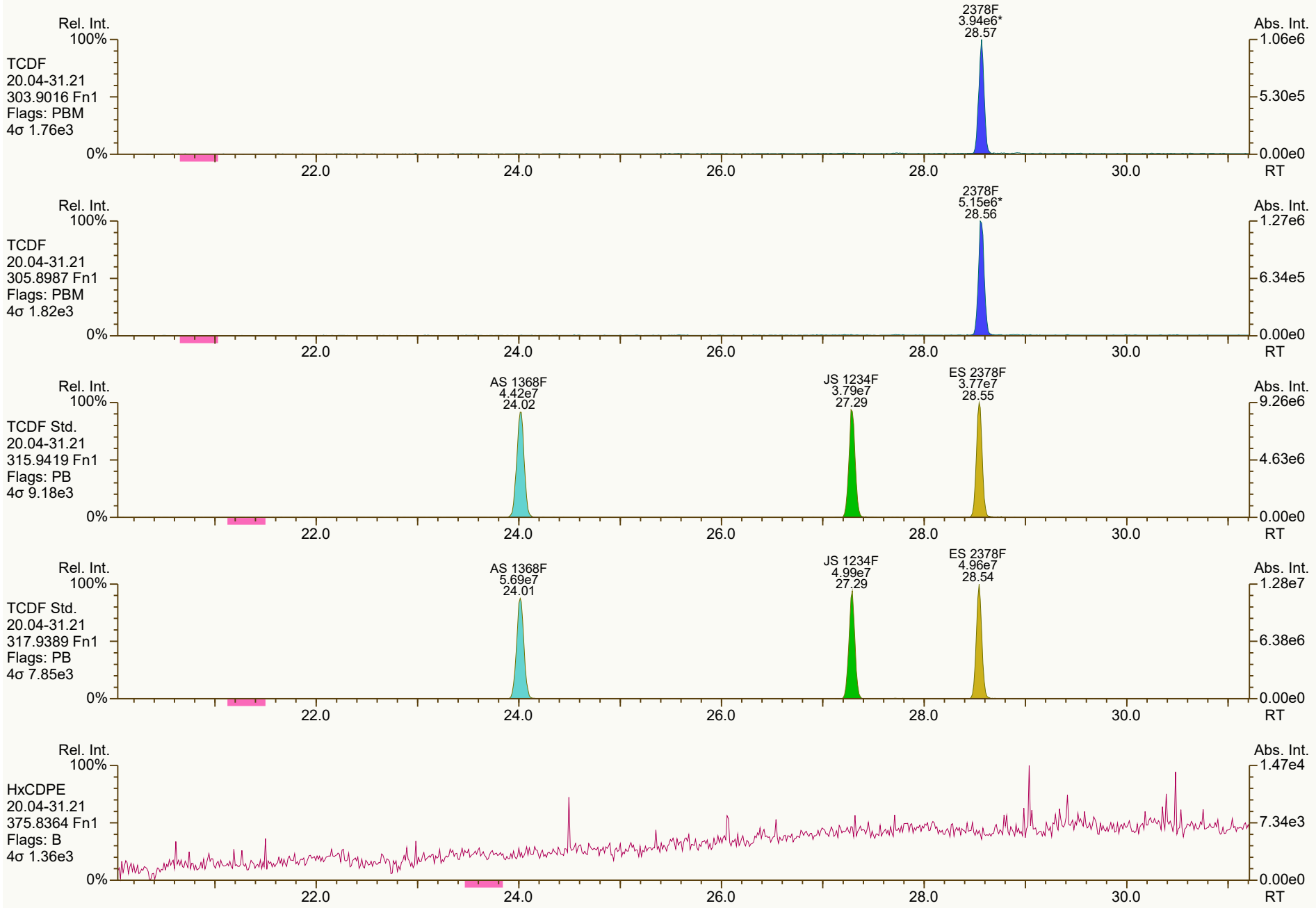
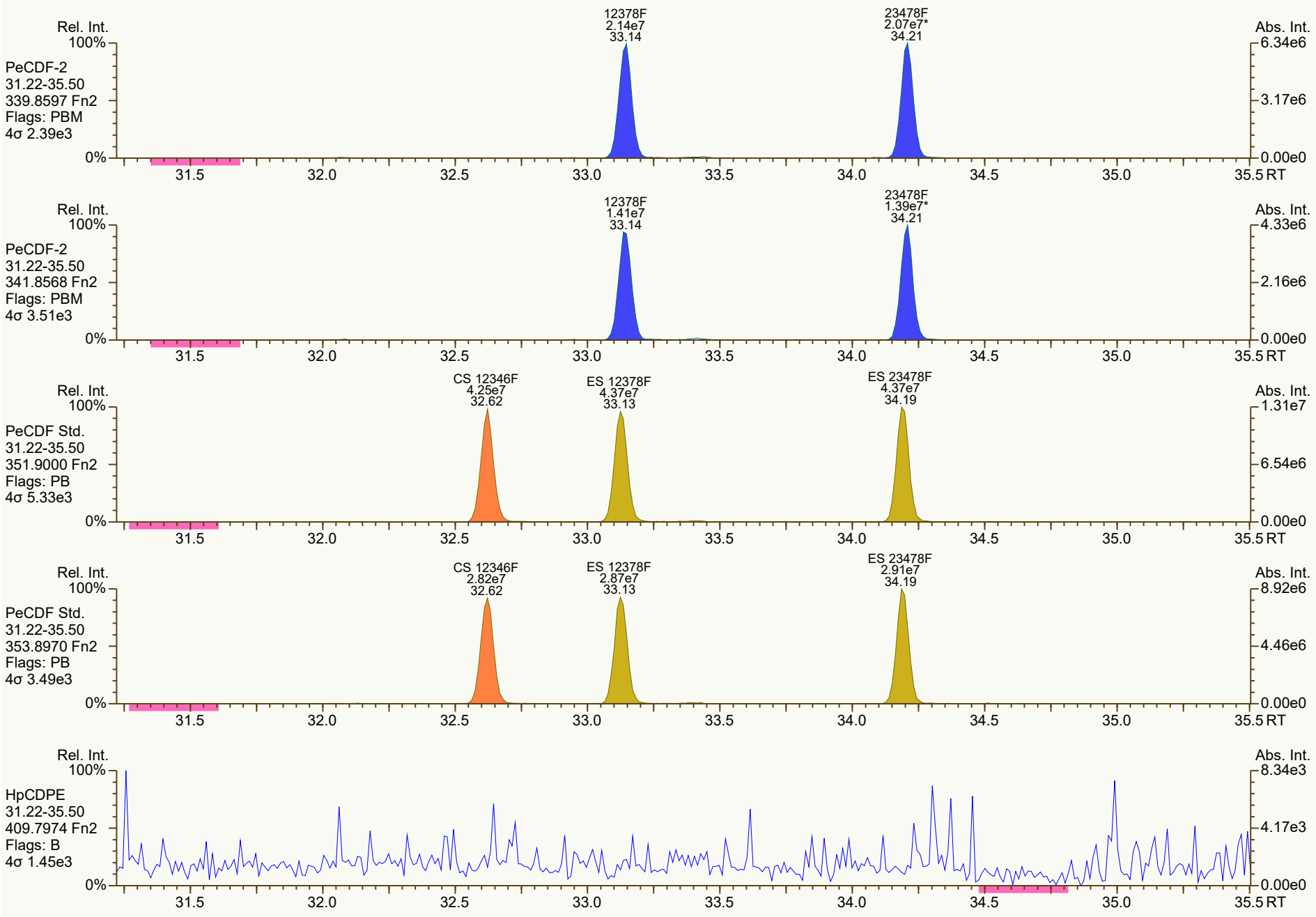
38.0
38.5
39.0
39.5 RT

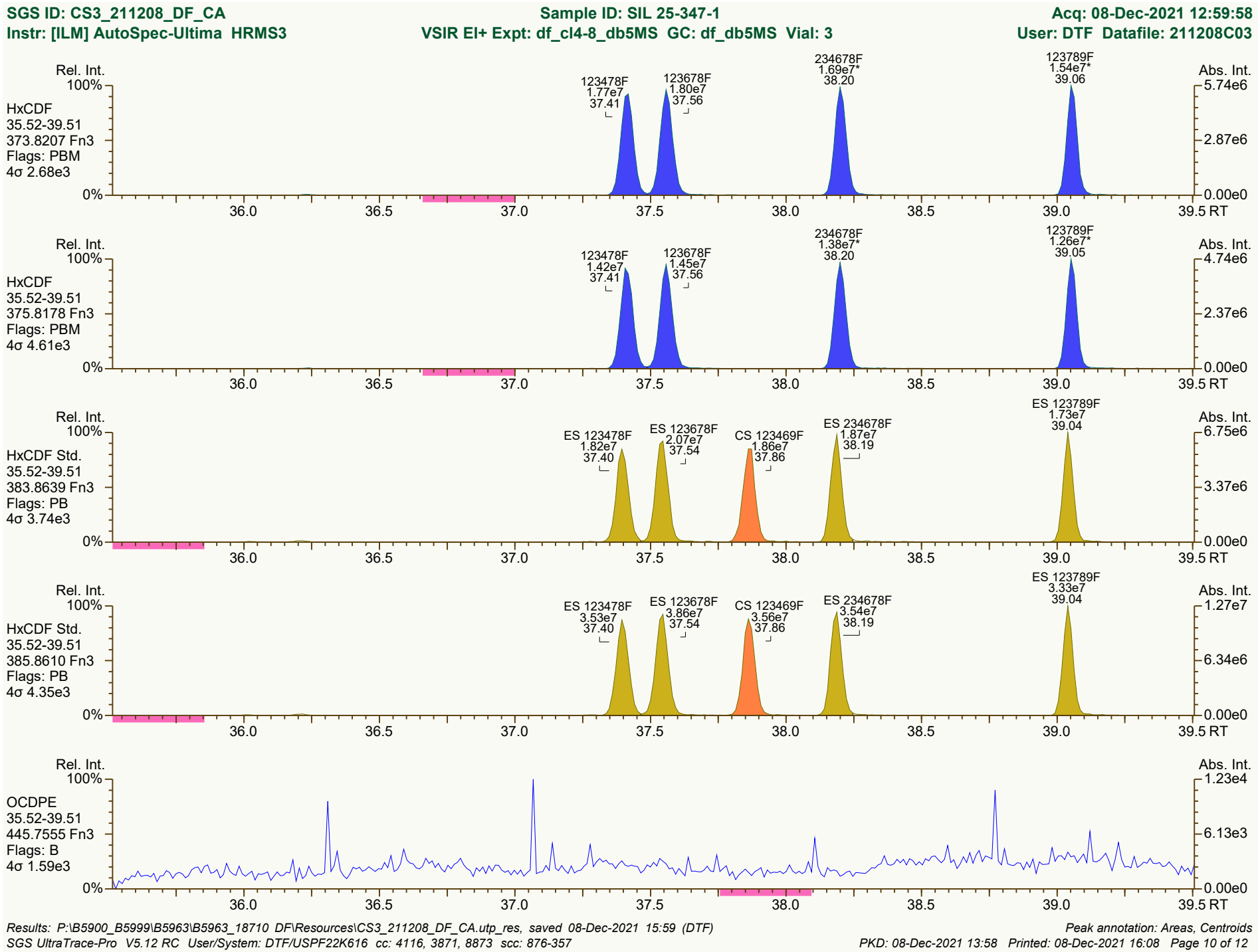

Rel. Int.
100%
HpCDD
39.52-42.51
423.7767 Fn4
Flags: PBM
4σ 3.73e3
1234678D
1.03e7*
41.27
Abs. Int.
3.82e6
1.91e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.52-42.51
425.7737 Fn4
Flags: PBM
4σ 2.67e3
1234678D
1.01e7*
41.27
Abs. Int.
3.69e6
1.85e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.52-42.51
435.8169 Fn4
Flags: PBM
4σ 7.34e3
FS 1234679D
3.05e7*
40.58
ES 1234678D
2.18e7*
41.26
Abs. Int.
1.21e7
6.05e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.52-42.51
437.8140 Fn4
Flags: PBM
4σ 4.67e3
FS 1234679D
2.86e7*
40.58
ES 1234678D
2.02e7*
41.26
Abs. Int.
1.12e7
5.58e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.52-42.51
430.9728 Fn4
Flags: -
Abs. Int.
1.58e7
7.91e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT

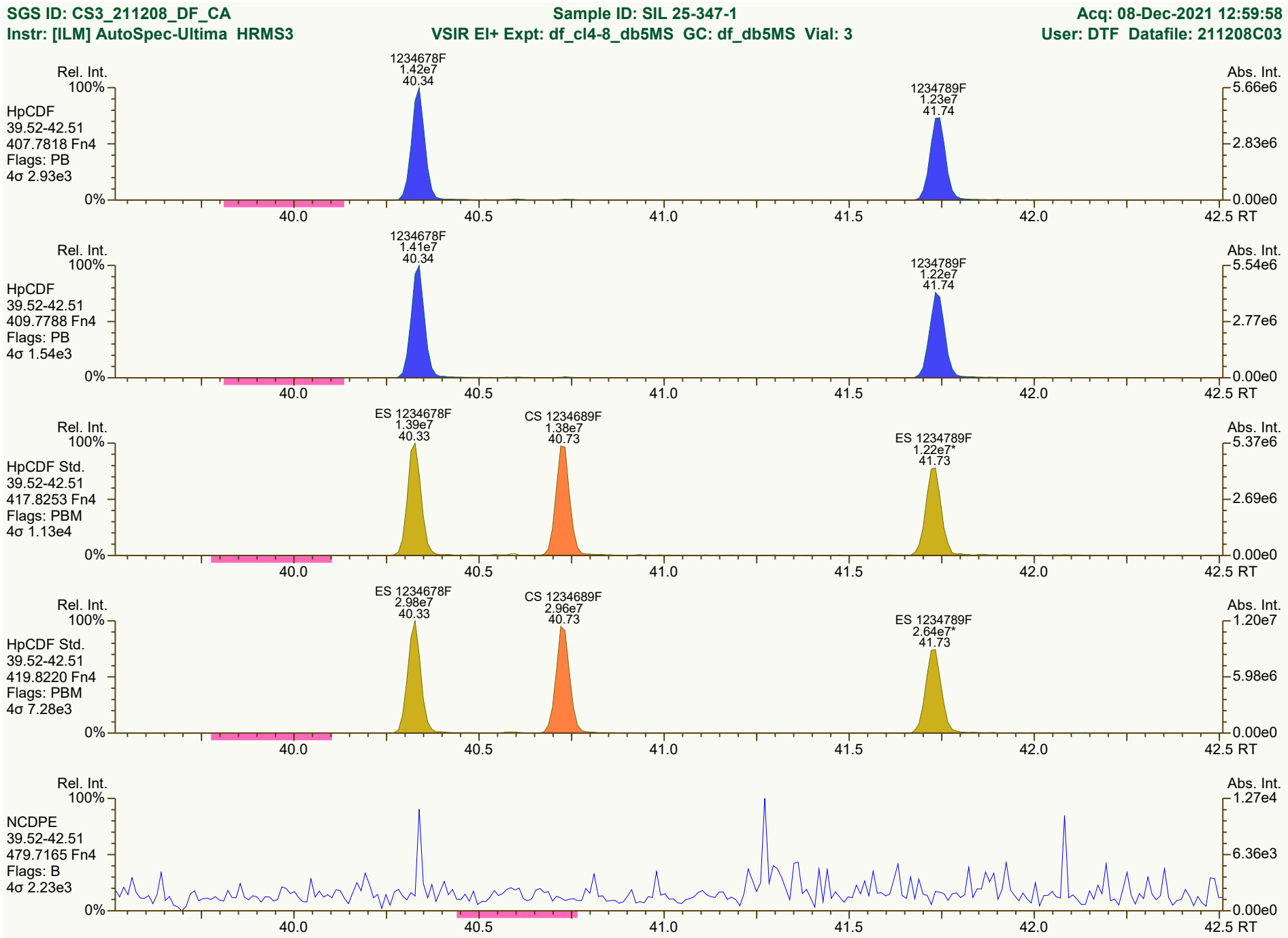

OCDD
1.51e7
43.99
Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PB
4σ 2.32e3
0%
Abs. Int.
4.24e6
2.12e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.71e7
43.99
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 4.02e3
4.96e6
2.48e6
ES OCDD
2.87e7
43.98
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 5.56e3
8.08e6
4.04e6
ES OCDD
3.13e7
43.98
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 8.55e3
9.13e6
4.56e6
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
1.40e7
7.01e6

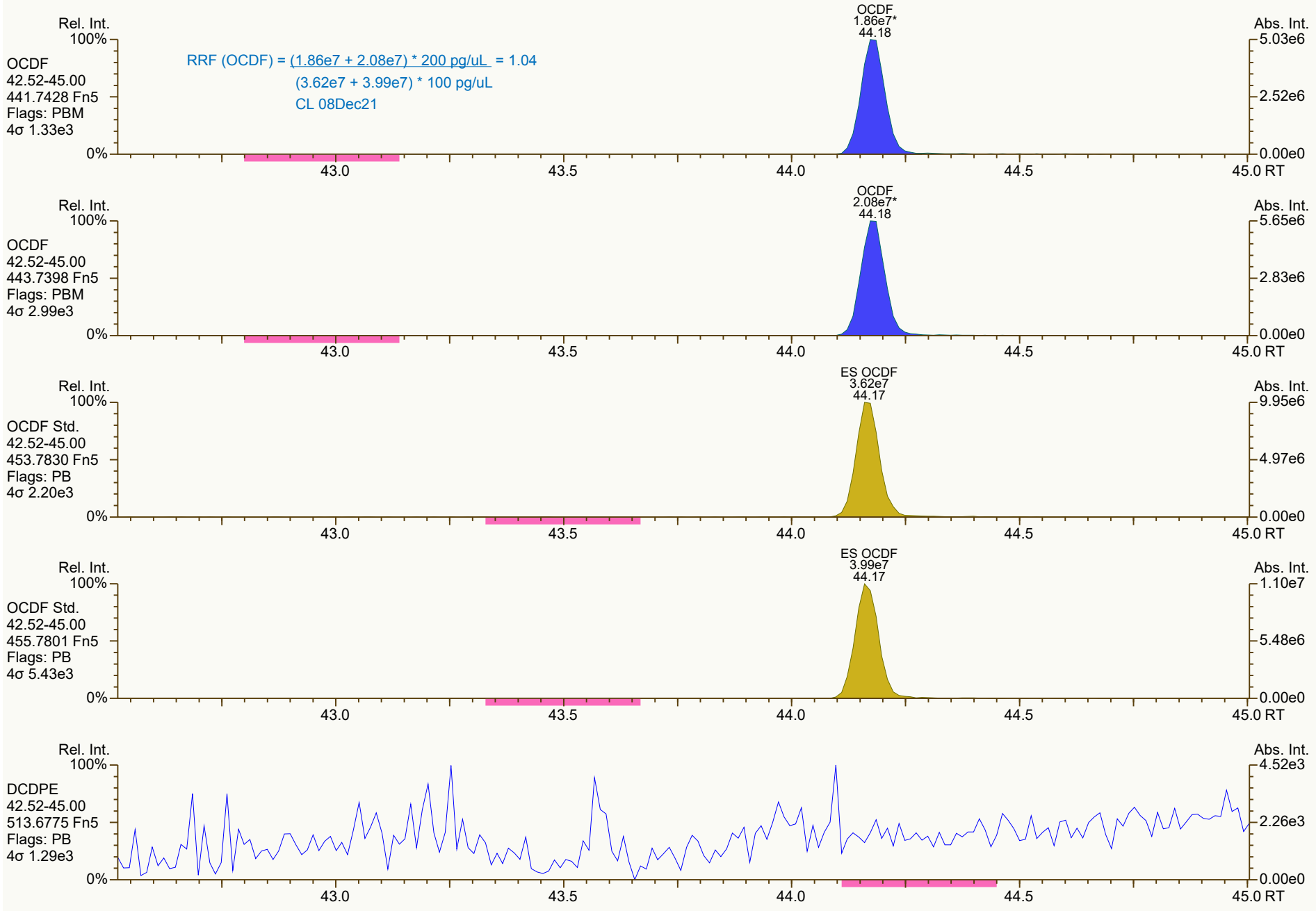

Rel. Int.
100%
TCDF
20.04-31.21
303.9016 Fn1
Flags: PBM
4σ 1.76e3
0%
2378F
3.94e6*
28.57
Abs. Int.
1.06e6
5.30e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.21
305.8987 Fn1
Flags: PBM
4σ 1.82e3
0%
2378F
5.15e6*
28.56
Abs. Int.
1.27e6
6.34e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.21
315.9419 Fn1
Flags: PB
4σ 9.18e3
0%
AS 1368F
4.42e7
24.02
JS 1234F
3.79e7
27.29
ES 2378F
3.77e7
28.55
Abs. Int.
9.26e6
4.63e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.21
317.9389 Fn1
Flags: PB
4σ 7.85e3
0%
AS 1368F
5.69e7
24.01
JS 1234F
4.99e7
27.29
ES 2378F
4.96e7
28.54
Abs. Int.
1.28e7
6.38e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.21
375.8364 Fn1
Flags: B
4σ 1.36e3
0%
Abs. Int.
1.47e4
7.34e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

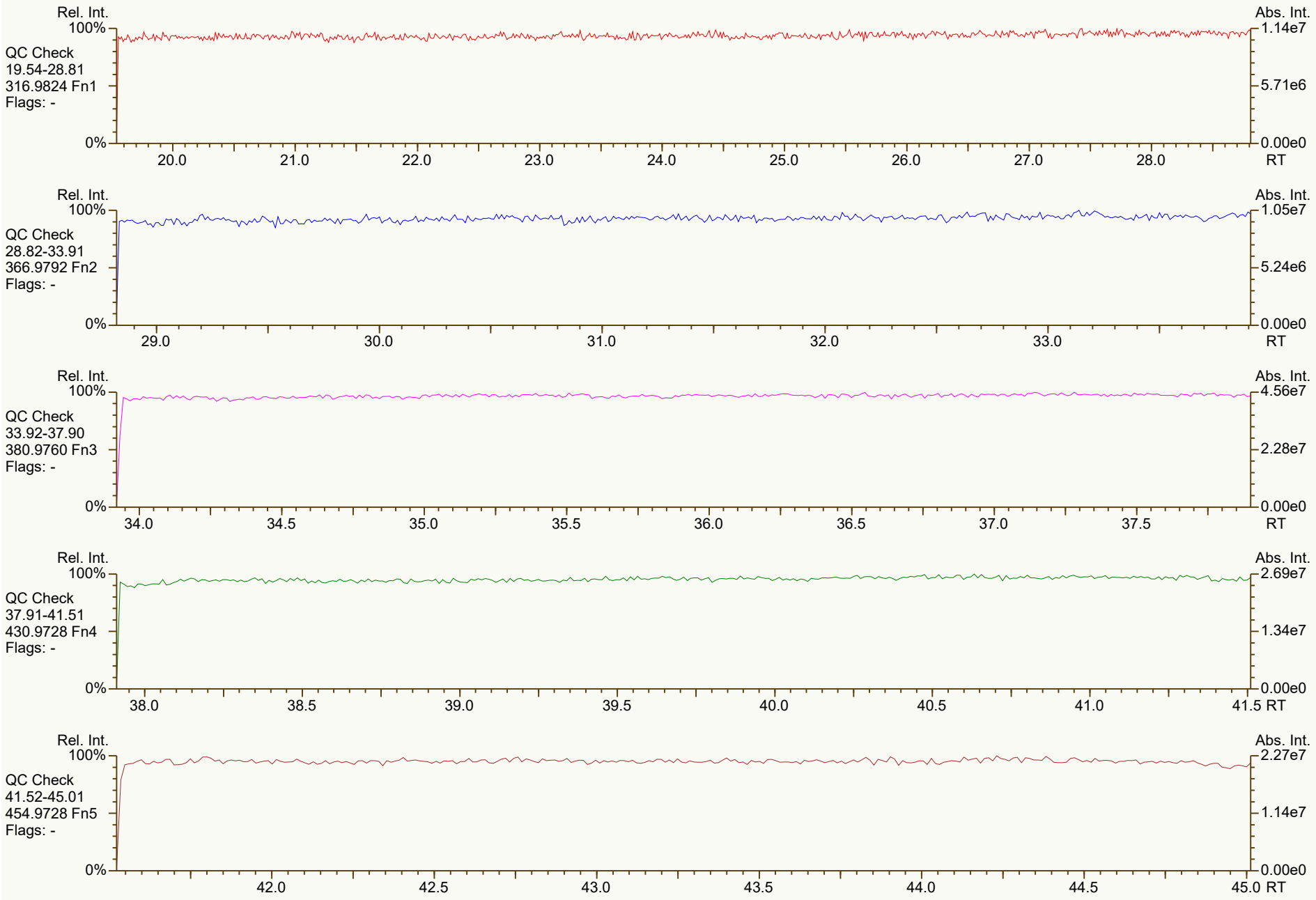

Rel. Int.
100%
0%
Abs. Int.
1.95e4
9.73e3
0.00e0
PeCDF-1
20.04-31.21
339.8597 Fn1
Flags: B
4σ 2.33e3
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.02e4
1.51e4
0.00e0
PeCDF-1
20.04-31.21
341.8568 Fn1
Flags: B
4σ 2.14e3
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
7.01e6
3.51e6
0.00e0
QC Check
20.04-31.21
316.9824 Fn1
Flags: -
22.0
24.0
26.0
28.0
30.0
RT

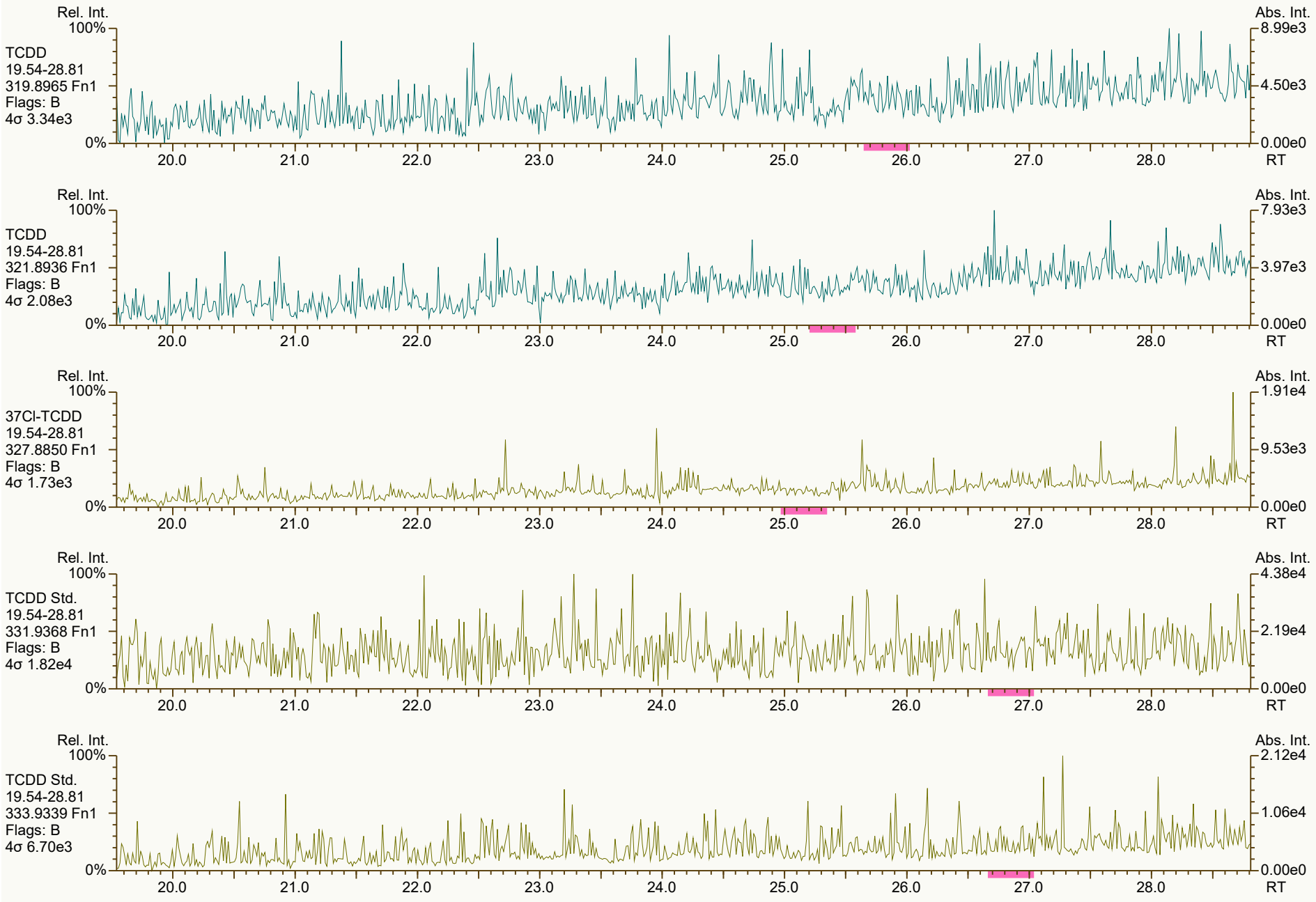

Rel. Int.
100%
PeCDF-2
31.22-35.50
339.8597 Fn2
Flags: PBM
4σ 2.39e3
0%
12378F
2.14e7
33.14
23478F
2.07e7*
34.21
Abs. Int.
6.34e6
3.17e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF-2
31.22-35.50
341.8568 Fn2
Flags: PBM
4σ 3.51e3
0%
12378F
1.41e7
33.14
23478F
1.39e7*
34.21
Abs. Int.
4.33e6
2.16e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF Std.
31.22-35.50
351.9000 Fn2
Flags: PB
4σ 5.33e3
0%
CS 12346F
4.25e7
32.62
ES 12378F
4.37e7
33.13
ES 23478F
4.37e7
34.19
Abs. Int.
1.31e7
6.54e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF Std.
31.22-35.50
353.8970 Fn2
Flags: PB
4σ 3.49e3
0%
CS 12346F
2.82e7
32.62
ES 12378F
2.87e7
33.13
ES 23478F
2.91e7
34.19
Abs. Int.
8.92e6
4.46e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
HpCDPE
31.22-35.50
409.7974 Fn2
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT


SGS ID: CS3_211208_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
Acq: 08-Dec-2021 12:59:58
User: DTF Datafile: 211208C03
Rel. Int.
Abs. Int.
HxCDF
35.52-39.51
373.8207 Fn3
Flags: PBM
4σ 2.68e3
123478F 1.77e7 37.41
123678F 1.80e7 37.56
234678F 1.69e7* 38.20
123789F 1.54e7* 39.06
HxCDF
35.52-39.51
375.8178 Fn3
Flags: PBM
4σ 4.61e3
123478F 1.42e7 37.41
123678F 1.45e7 37.56
234678F 1.38e7* 38.20
123789F 1.26e7* 39.05
HxCDF Std.
35.52-39.51
383.8639 Fn3
Flags: PB
4σ 3.74e3
ES 123478F 1.82e7 37.40
ES 123678F 2.07e7 37.54
CS 123469F 1.86e7 37.86
ES 234678F 1.87e7 38.19
ES 123789F 1.73e7 39.04
HxCDF Std.
35.52-39.51
385.8610 Fn3
Flags: PB
4σ 4.35e3
ES 123478F 3.53e7 37.40
ES 123678F 3.86e7 37.54
CS 123469F 3.56e7 37.86
ES 234678F 3.54e7 38.19
ES 123789F 3.33e7 39.04
OCDPE
35.52-39.51
445.7555 Fn3
Flags: B
4σ 1.59e3
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\CS3_211208_DF_CA.utp_res, saved 08-Dec-2021 15:59 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4116, 3871, 8873 scc: 876-357
Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 13:58 Printed: 08-Dec-2021 16:08 Page 10 of 12


SGS ID: CS3_211208_DF_CA
Sample ID: SIL 25-347-1
Acq: 08-Dec-2021 12:59:58
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211208C03
Rel. Int.
Abs. Int.
HpCDF
39.52-42.51
407.7818 Fn4
Flags: PB
4σ 2.93e3
1234678F
1.42e7
40.34
1234789F
1.23e7
41.74
5.66e6
2.83e6
0.00e0
HpCDF
39.52-42.51
409.7788 Fn4
Flags: PB
4σ 1.54e3
1234678F
1.41e7
40.34
1234789F
1.22e7
41.74
5.54e6
2.77e6
0.00e0
HpCDF Std.
39.52-42.51
417.8253 Fn4
Flags: PBM
4σ 1.13e4
ES 1234678F
1.39e7
40.33
CS 1234689F
1.38e7
40.73
ES 1234789F
1.22e7*
41.73
5.37e6
2.69e6
0.00e0
HpCDF Std.
39.52-42.51
419.8220 Fn4
Flags: PBM
4σ 7.28e3
ES 1234678F
2.98e7
40.33
CS 1234689F
2.96e7
40.73
ES 1234789F
2.64e7*
41.73
1.20e7
5.98e6
0.00e0
NCDPE
39.52-42.51
479.7165 Fn4
Flags: B
4σ 2.23e3
1.27e4
6.36e3
0.00e0
100%
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\CS3_211208_DF_CA.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9785, 3118, 1155 scc: 876-357
Revised: 08-Dec-2021 13:57 (DTF) Printed: 08-Dec-2021 16:08 Page 11 of 12


Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PBM
4σ 1.33e3
0%
RRF (OCDF) = (1.86e7 + 2.08e7) * 200 pg/uL = 1.04
(3.62e7 + 3.99e7) * 100 pg/uL
CL 08Dec21
OCDF
1.86e7*
44.18
Abs. Int.
5.03e6
2.52e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: PBM
4σ 2.99e3
0%
OCDF
2.08e7*
44.18
Abs. Int.
5.65e6
2.83e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PB
4σ 2.20e3
0%
ES OCDF
3.62e7
44.17
Abs. Int.
9.95e6
4.97e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PB
4σ 5.43e3
0%
ES OCDF
3.99e7
44.17
Abs. Int.
1.10e7
5.48e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: PB
4σ 1.29e3
0%
Abs. Int.
4.52e3
2.26e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

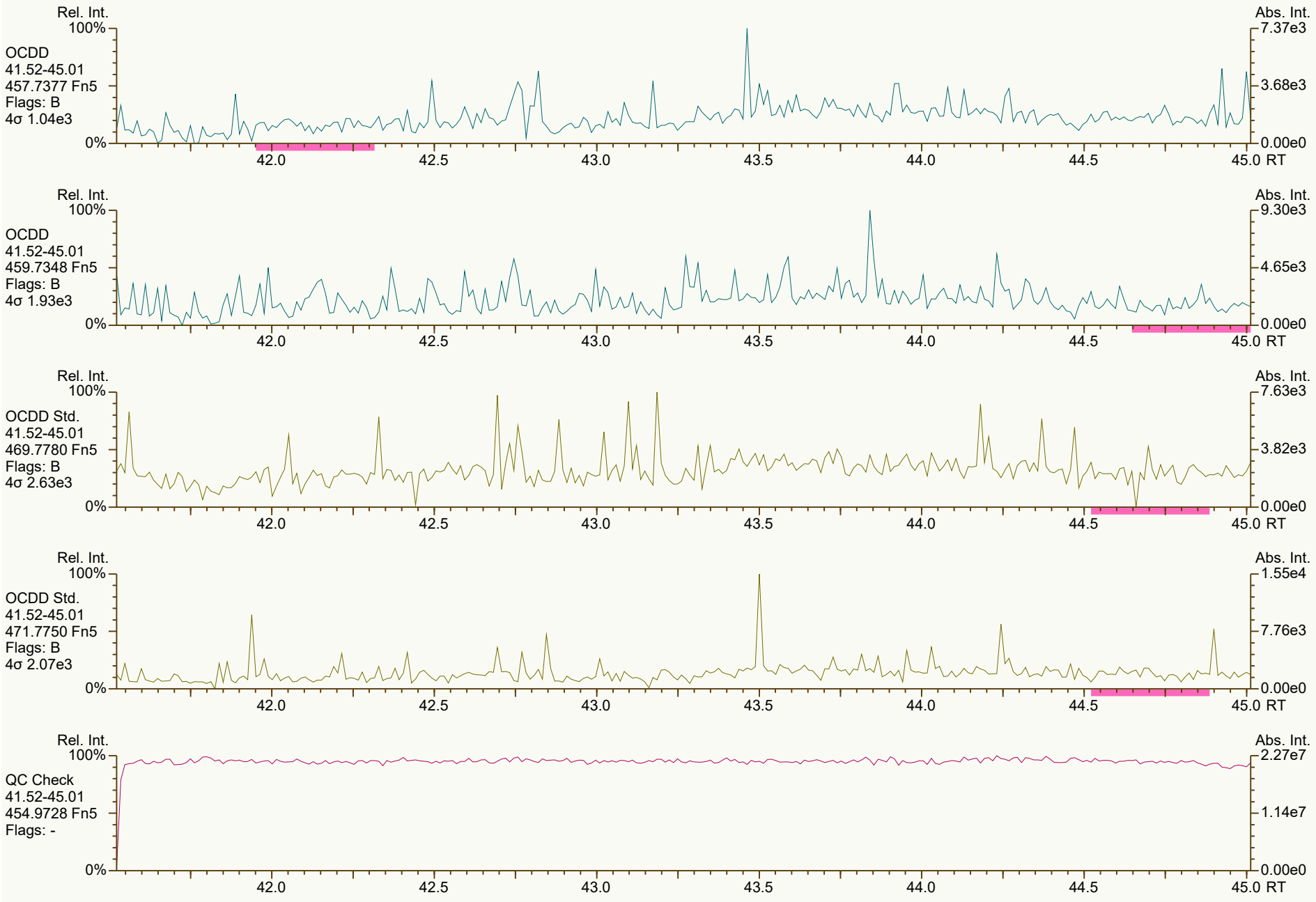

Rel. Int.
100%
0%
Abs. Int.
1.14e7
5.71e6
0.00e0
RT
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
1.05e7
5.24e6
29.0
30.0
31.0
32.0
33.0
QC Check
33.92-37.90
380.9760 Fn3
Flags: -
4.56e7
2.28e7
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
QC Check
37.91-41.51
430.9728 Fn4
Flags: -
2.69e7
1.34e7
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
2.27e7
1.14e7
42.0
42.5
43.0
43.5
44.0
44.5
45.0


Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: B
4σ 3.34e3
0%
Abs. Int.
8.99e3
4.50e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.93e3
3.97e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: B
4σ 1.73e3
0%
Abs. Int.
1.91e4
9.53e3
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: B
4σ 1.82e4
0%
Abs. Int.
4.38e4
2.19e4
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: B
4σ 6.70e3
0%
Abs. Int.
2.12e4
1.06e4
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PB
4σ 2.29e3
0%
Abs. Int.
7.74e3
3.87e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PB
4σ 1.94e3
0%
Abs. Int.
6.73e3
3.36e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: B
4σ 1.92e3
0%
Abs. Int.
1.85e4
9.24e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: B
4σ 1.38e3
0%
Abs. Int.
1.14e4
5.69e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDD
33.92-37.90
389.8156 Fn3
Flags: B
4σ 1.34e3
0%
Abs. Int.
6.46e3
3.23e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.90
391.8127 Fn3
Flags: B
4σ 1.94e3
0%
Abs. Int.
6.66e3
3.33e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.90
401.8559 Fn3
Flags: B
4σ 5.54e3
0%
Abs. Int.
2.23e4
1.12e4
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.90
403.8530 Fn3
Flags: B
4σ 1.76e3
0%
Abs. Int.
9.91e3
4.96e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.90
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.56e7
2.28e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT

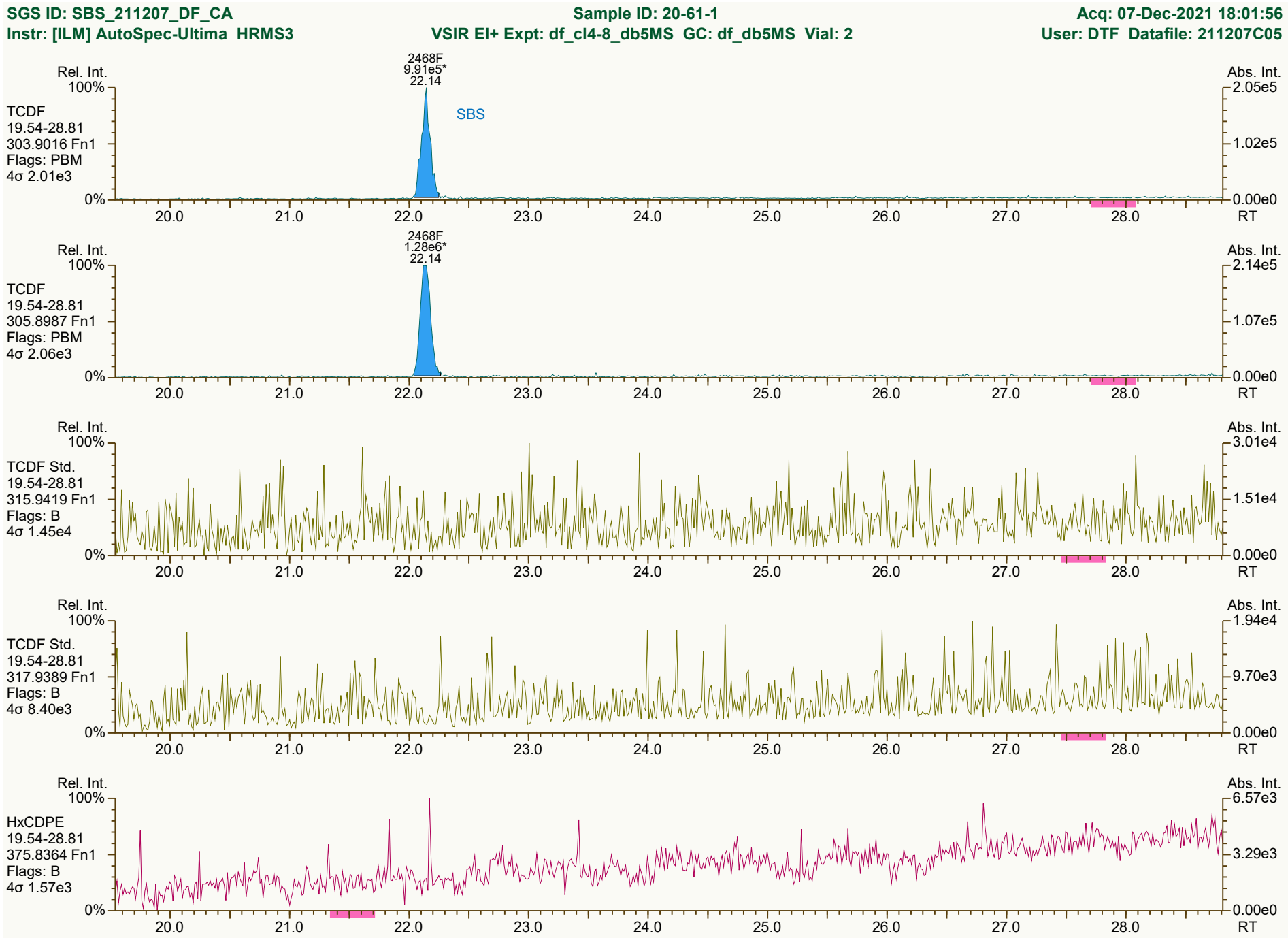

Rel. Int.
100%
HpCDD
37.91-41.51
423.7767 Fn4
Flags: B
4σ 1.29e3
0%
Abs. Int.
6.01e3
3.01e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.91-41.51
425.7737 Fn4
Flags: B
4σ 1.44e3
0%
Abs. Int.
4.63e3
2.31e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.91-41.51
435.8169 Fn4
Flags: B
4σ 2.92e3
0%
Abs. Int.
2.53e4
1.27e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.91-41.51
437.8140 Fn4
Flags: B
4σ 1.67e3
0%
Abs. Int.
7.62e3
3.81e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.91-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.69e7
1.34e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.04e3
0%
Abs. Int.
7.37e3
3.68e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 1.93e3
0%
Abs. Int.
9.30e3
4.65e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.63e3
0%
Abs. Int.
7.63e3
3.82e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.07e3
0%
Abs. Int.
1.55e4
7.76e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_211207_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 07-Dec-2021 18:01:56
User: DTF Datafile: 211207C05



Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\SBS_211207_DF_CA.utp_res, saved 08-Dec-2021 09:07 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6508, 6306, 5940 scc: 956-405

Peak annotation: Areas, Centroids
Revised: 08-Dec-2021 09:07 (DTF) Printed: 08-Dec-2021 16:07 Page 7 of 12

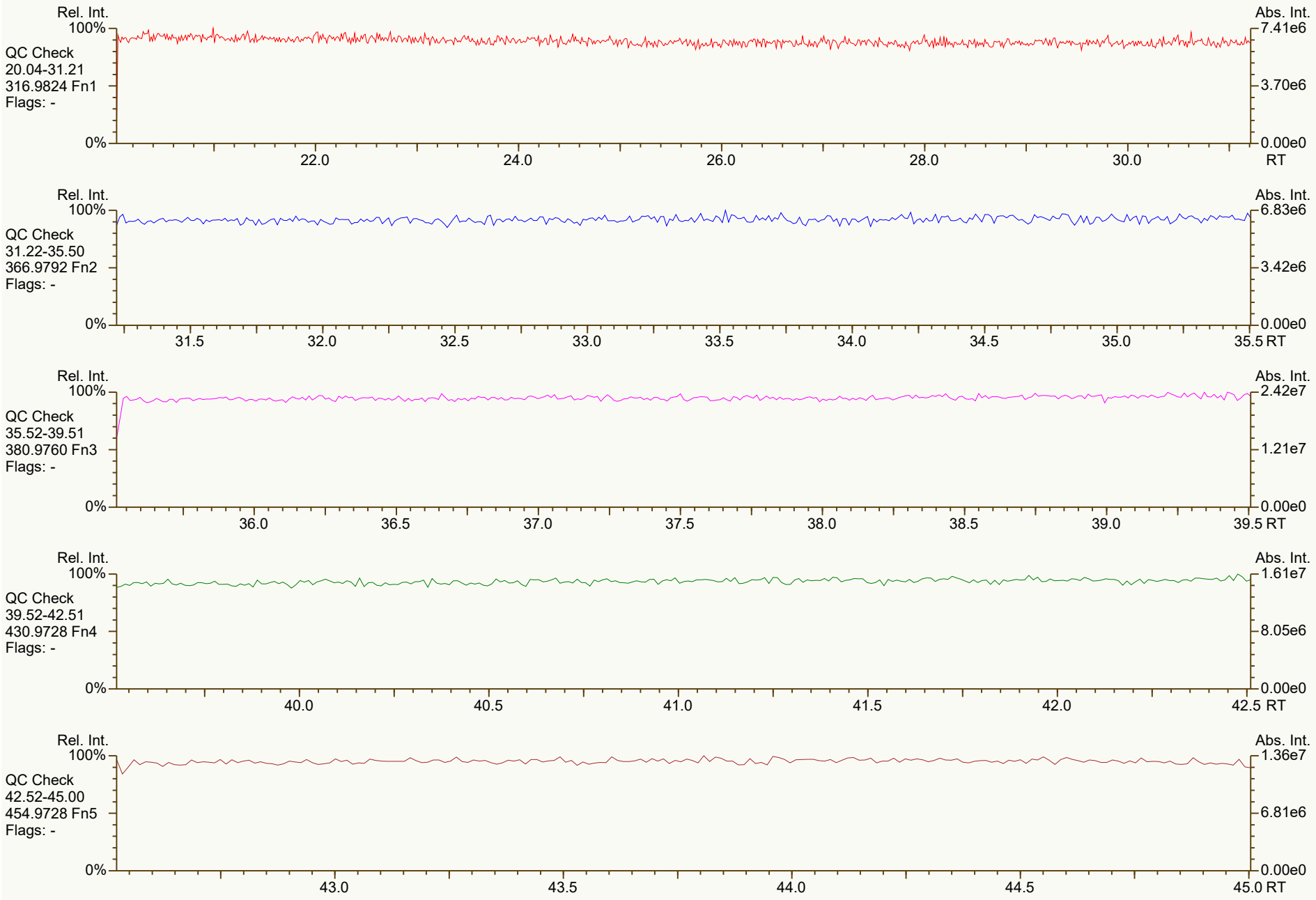

Rel. Int.
100%
0%
Abs. Int.
1.21e4
6.07e3
0.00e0
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: B
4σ 1.61e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: B
4σ 2.55e3
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.14e7
5.71e6
0.00e0
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT

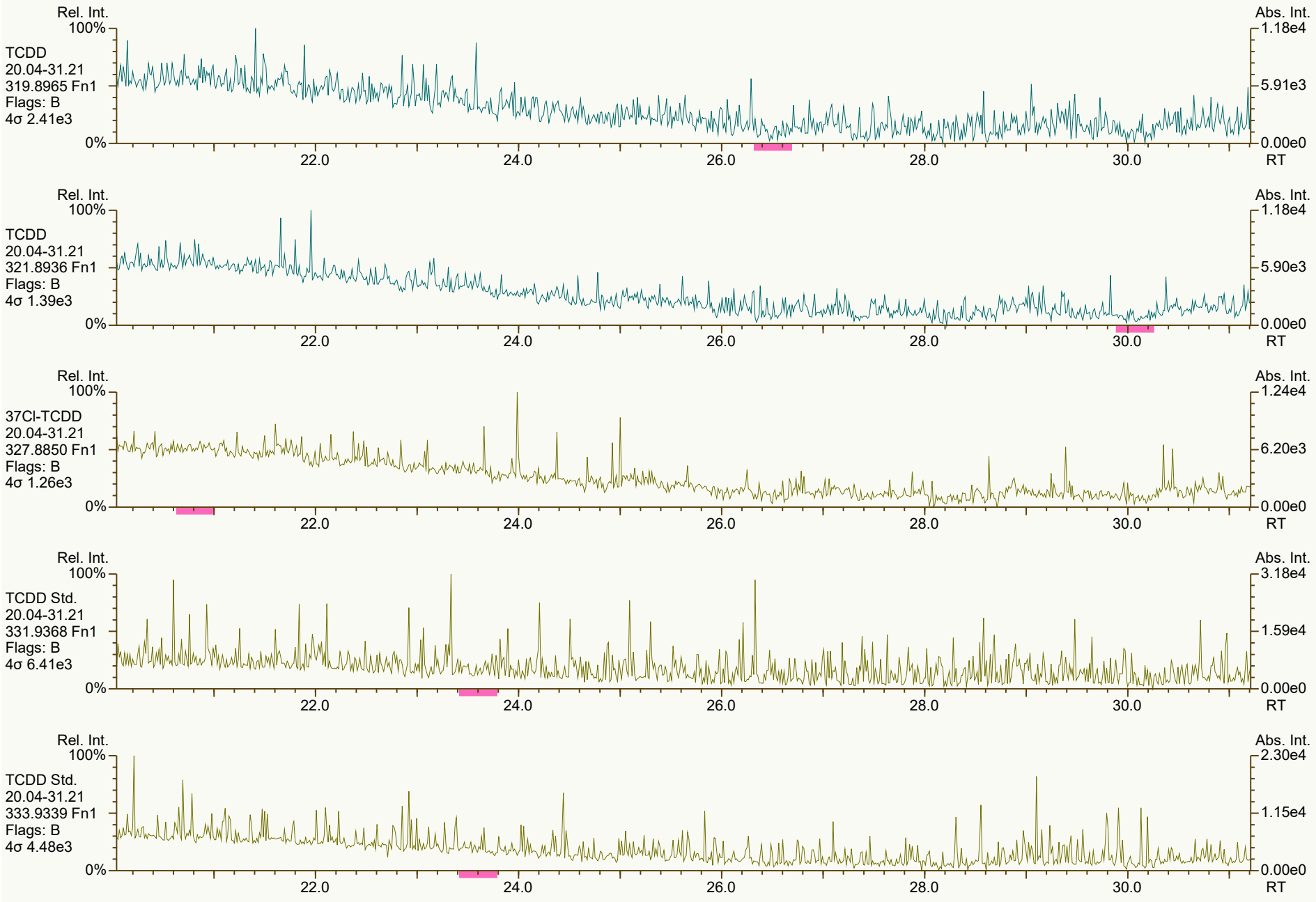

Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: B
4σ 1.46e3
0%
Abs. Int.
1.33e4
6.64e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.21e3
4.10e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: B
4σ 4.84e3
0%
Abs. Int.
1.89e4
9.46e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: B
4σ 2.73e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.23e3
0%
Abs. Int.
1.08e4
5.41e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


Rel. Int.
100%
HxCDF
33.92-37.90
373.8207 Fn3
Flags: B
4σ 1.95e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF
33.92-37.90
375.8178 Fn3
Flags: B
4σ 3.19e3
0%
Abs. Int.
9.53e3
4.77e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.90
383.8639 Fn3
Flags: B
4σ 2.09e3
0%
Abs. Int.
1.87e4
9.33e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDF Std.
33.92-37.90
385.8610 Fn3
Flags: B
4σ 8.21e3
0%
Abs. Int.
3.85e4
1.93e4
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
OCDPE
33.92-37.90
445.7555 Fn3
Flags: PB
4σ 1.29e3
0%
Abs. Int.
6.90e3
3.45e3
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT


Rel. Int.
100%
HpCDF
37.91-41.51
407.7818 Fn4
Flags: PB
4σ 1.86e3
0%
Abs. Int.
2.03e4
1.01e4
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.91-41.51
409.7788 Fn4
Flags: B
4σ 2.03e3
0%
Abs. Int.
8.79e3
4.40e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.91-41.51
417.8253 Fn4
Flags: B
4σ 5.61e3
0%
Abs. Int.
1.60e4
8.02e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.91-41.51
419.8220 Fn4
Flags: B
4σ 1.63e3
0%
Abs. Int.
1.94e4
9.69e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.91-41.51
479.7165 Fn4
Flags: PB
4σ 1.45e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.53e3
0%
Abs. Int.
9.16e3
4.58e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.94e3
0%
Abs. Int.
7.28e3
3.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.20e3
0%
Abs. Int.
1.19e4
5.94e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 2.74e3
0%
Abs. Int.
1.77e4
8.86e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.29e3
0%
Abs. Int.
7.14e3
3.57e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
20.04-31.21
316.9824 Fn1
Flags: -
0%
Abs. Int.
7.41e6
3.70e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
31.22-35.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.83e6
3.42e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
QC Check
35.52-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.42e7
1.21e7
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.61e7
8.05e6
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.36e7
6.81e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

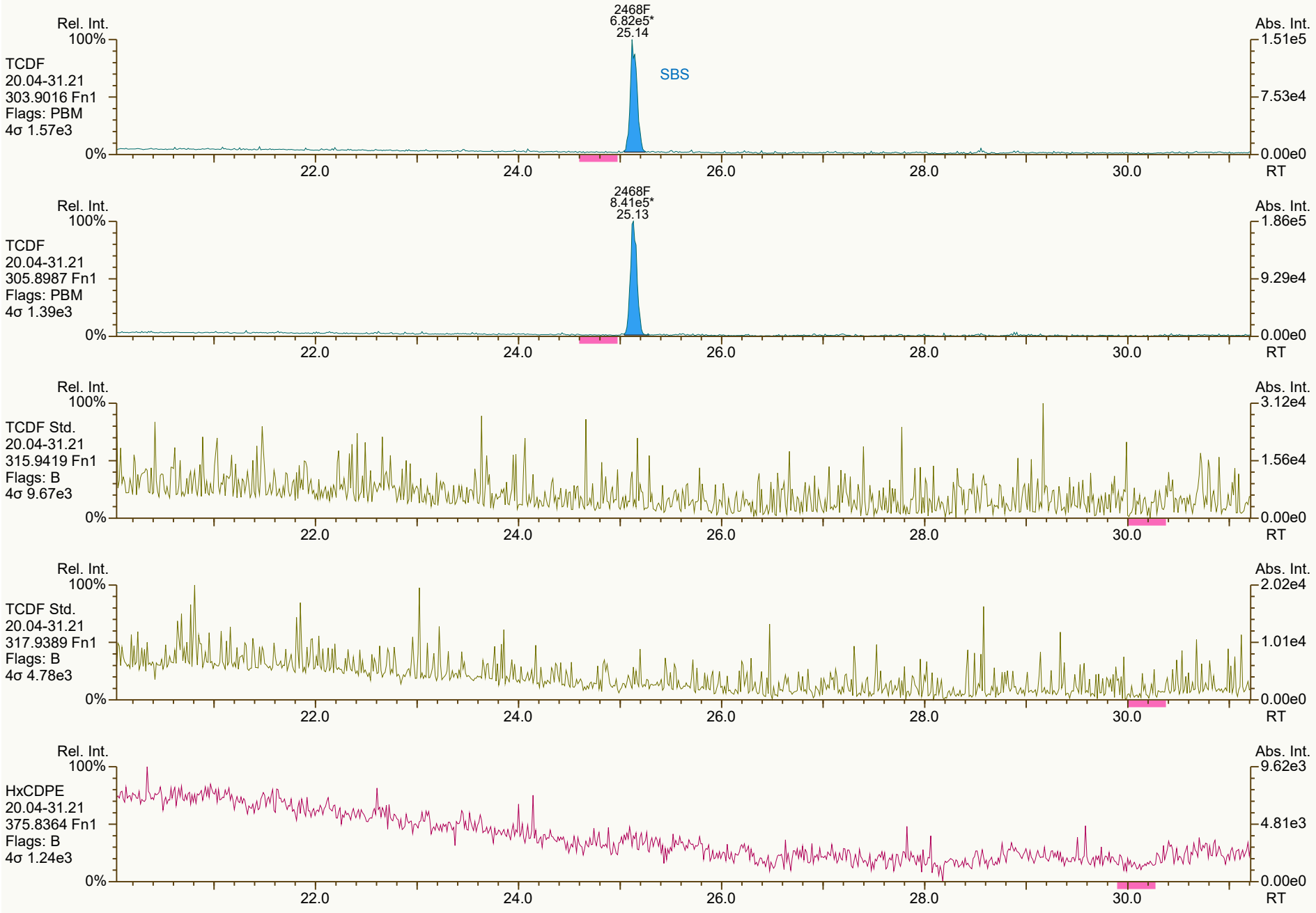

Rel. Int.
100%
TCDD
20.04-31.21
319.8965 Fn1
Flags: B
4σ 2.41e3
0%
Abs. Int.
1.18e4
5.91e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.21
321.8936 Fn1
Flags: B
4σ 1.39e3
0%
Abs. Int.
1.18e4
5.90e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.21
327.8850 Fn1
Flags: B
4σ 1.26e3
0%
Abs. Int.
1.24e4
6.20e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.21
331.9368 Fn1
Flags: B
4σ 6.41e3
0%
Abs. Int.
3.18e4
1.59e4
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.21
333.9339 Fn1
Flags: B
4σ 4.48e3
0%
Abs. Int.
2.30e4
1.15e4
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
31.22-35.50
355.8546 Fn2
Flags: B
4σ 1.42e3
0%
Abs. Int.
5.41e3
2.71e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD
31.22-35.50
357.8517 Fn2
Flags: B
4σ 1.71e3
0%
Abs. Int.
5.22e3
2.61e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD Std.
31.22-35.50
367.8949 Fn2
Flags: B
4σ 2.23e3
0%
Abs. Int.
9.14e3
4.57e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD Std.
31.22-35.50
369.8919 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
8.91e3
4.45e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
QC Check
31.22-35.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.83e6
3.42e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT


Rel. Int.
100%
HxCDD
35.52-39.51
389.8156 Fn3
Flags: B
4σ 1.67e3
0%
Abs. Int.
7.45e3
3.73e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.52-39.51
391.8127 Fn3
Flags: B
4σ 1.12e3
0%
Abs. Int.
9.37e3
4.69e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.52-39.51
401.8559 Fn3
Flags: B
4σ 1.59e3
0%
Abs. Int.
1.70e4
8.49e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.52-39.51
403.8530 Fn3
Flags: B
4σ 1.86e3
0%
Abs. Int.
1.24e4
6.22e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.52-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.42e7
1.21e7
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.51
423.7767 Fn4
Flags: B
4σ 1.65e3
0%
Abs. Int.
4.91e3
2.46e3
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.52-42.51
425.7737 Fn4
Flags: B
4σ 1.13e3
0%
Abs. Int.
7.83e3
3.92e3
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.52-42.51
435.8169 Fn4
Flags: B
4σ 1.85e3
0%
Abs. Int.
1.52e4
7.60e3
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.52-42.51
437.8140 Fn4
Flags: B
4σ 1.60e3
0%
Abs. Int.
2.65e4
1.33e4
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.52-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.61e7
8.05e6
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: B
4σ 1.43e3
0%
Abs. Int.
5.24e3
2.62e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: B
4σ 1.80e3
0%
Abs. Int.
1.20e4
6.01e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: B
4σ 1.46e3
0%
Abs. Int.
9.44e3
4.72e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 2.31e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.36e7
6.81e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
20.04-31.21
303.9016 Fn1
Flags: PBM
4σ 1.57e3
2468F
6.82e5*
25.14
SBS
Abs. Int.
1.51e5
7.53e4
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.21
305.8987 Fn1
Flags: PBM
4σ 1.39e3
2468F
8.41e5*
25.13
Abs. Int.
1.86e5
9.29e4
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.21
315.9419 Fn1
Flags: B
4σ 9.67e3
Abs. Int.
3.12e4
1.56e4
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.21
317.9389 Fn1
Flags: B
4σ 4.78e3
Abs. Int.
2.02e4
1.01e4
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.21
375.8364 Fn1
Flags: B
4σ 1.24e3
Abs. Int.
9.62e3
4.81e3
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.28e4
6.41e3
0.00e0
PeCDF-1
20.04-31.21
339.8597 Fn1
Flags: B
4σ 1.88e3
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.64e4
8.20e3
0.00e0
PeCDF-1
20.04-31.21
341.8568 Fn1
Flags: B
4σ 1.66e3
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
7.41e6
3.70e6
0.00e0
QC Check
20.04-31.21
316.9824 Fn1
Flags: -
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
31.22-35.50
339.8597 Fn2
Flags: B
4σ 1.47e3
0%
Abs. Int.
8.84e3
4.42e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF-2
31.22-35.50
341.8568 Fn2
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF Std.
31.22-35.50
351.9000 Fn2
Flags: B
4σ 2.04e3
0%
Abs. Int.
1.42e4
7.09e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF Std.
31.22-35.50
353.8970 Fn2
Flags: B
4σ 1.40e3
0%
Abs. Int.
1.05e4
5.23e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
HpCDPE
31.22-35.50
409.7974 Fn2
Flags: B
4σ 1.47e3
0%
Abs. Int.
1.17e4
5.85e3
0.00e0
31.5
32.0
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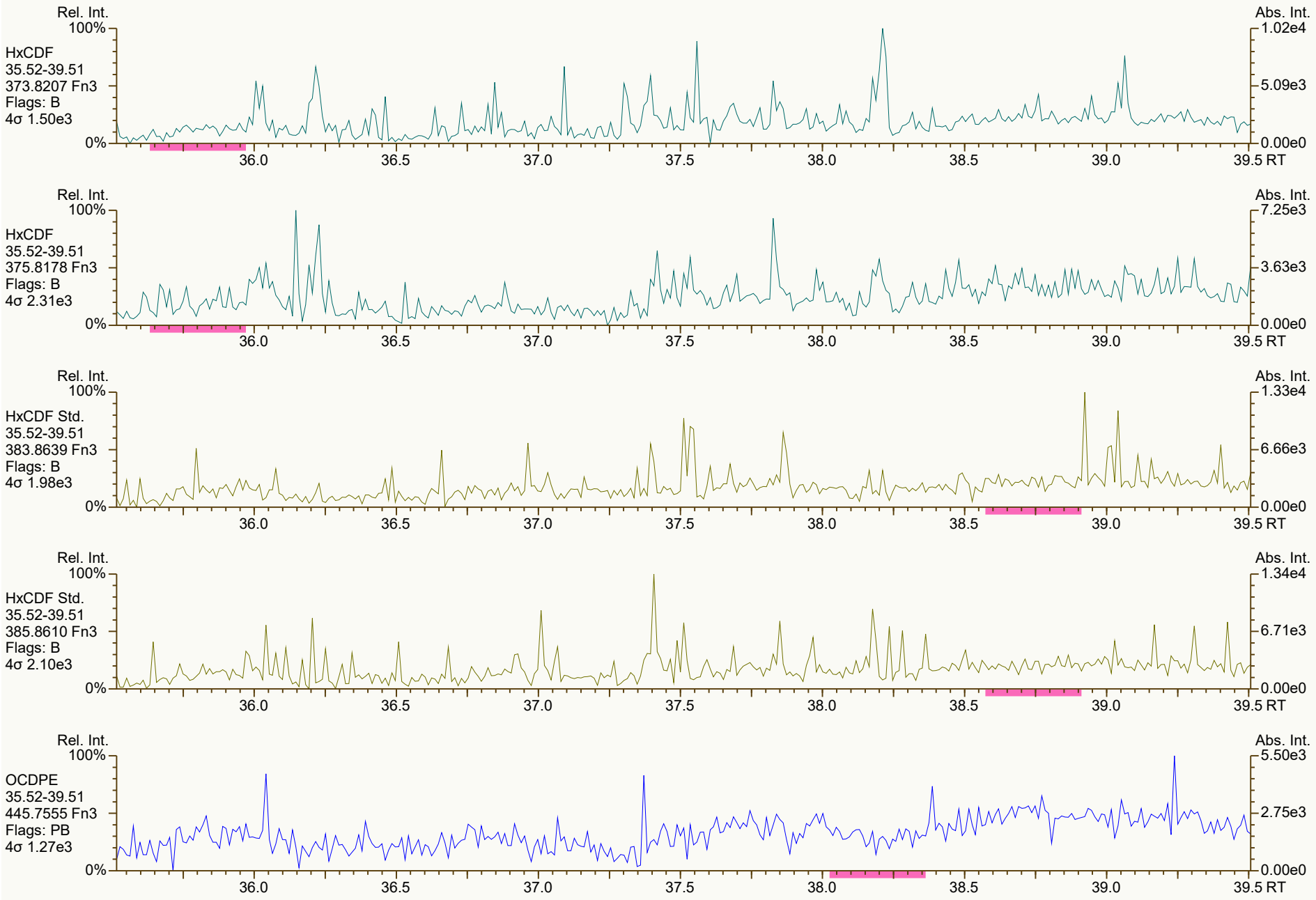
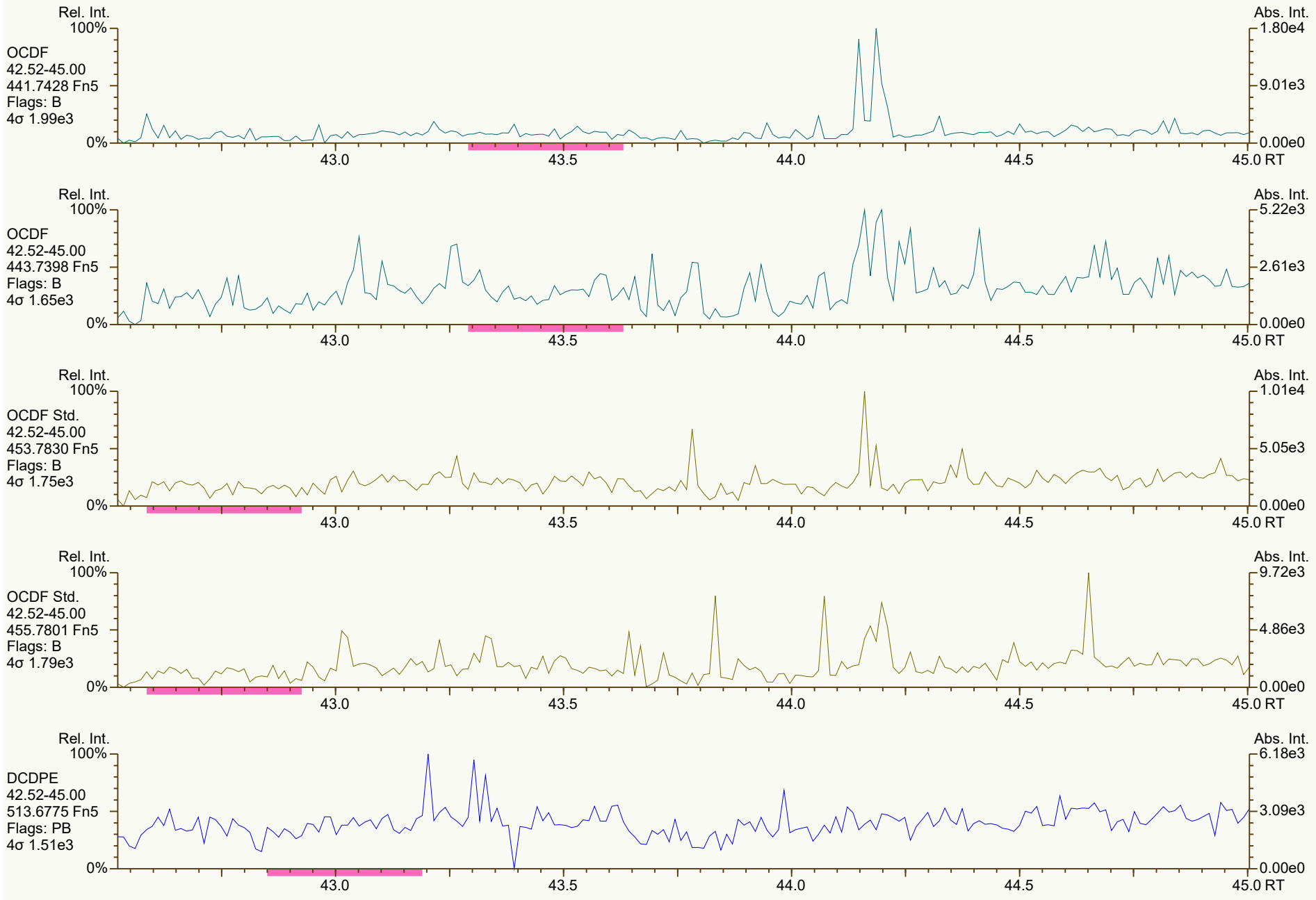
33.0
33.5
34.0
34.5
35.0
35.5 RT

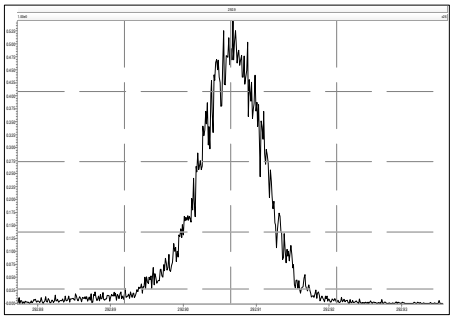

Rel. Int.
100%
HxCDF
35.52-39.51
373.8207 Fn3
Flags: B
4σ 1.50e3
0%
Abs. Int.
1.02e4
5.09e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.52-39.51
375.8178 Fn3
Flags: B
4σ 2.31e3
0%
Abs. Int.
7.25e3
3.63e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.52-39.51
383.8639 Fn3
Flags: B
4σ 1.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.52-39.51
385.8610 Fn3
Flags: B
4σ 2.10e3
0%
Abs. Int.
1.34e4
6.71e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.52-39.51
445.7555 Fn3
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.50e3
2.75e3
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.51
407.7818 Fn4
Flags: B
4σ 1.46e3
0%
Abs. Int.
6.90e3
3.45e3
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF
39.52-42.51
409.7788 Fn4
Flags: B
4σ 1.41e3
0%
Abs. Int.
7.98e3
3.99e3
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.52-42.51
417.8253 Fn4
Flags: B
4σ 1.71e3
0%
Abs. Int.
1.27e4
6.37e3
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.52-42.51
419.8220 Fn4
Flags: B
4σ 4.42e3
0%
Abs. Int.
2.44e4
1.22e4
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
NCDPE
39.52-42.51
479.7165 Fn4
Flags: B
4σ 1.28e3
0%
Abs. Int.
4.65e3
2.33e3
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT

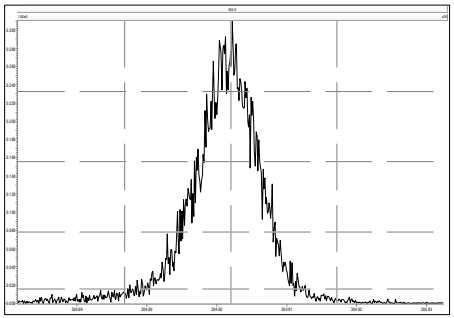

Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.80e4
9.01e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: B
4σ 1.65e3
0%
Abs. Int.
5.22e3
2.61e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
1.01e4
5.05e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
9.72e3
4.86e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: PB
4σ 1.51e3
0%
Abs. Int.
6.18e3
3.09e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

Printed: Tuesday, December 07, 2021 14:13:59 Eastern Standard Time

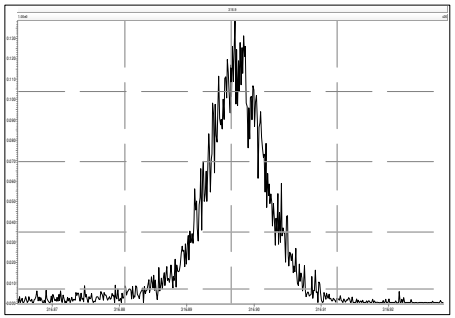
M 292.9824 R 13335



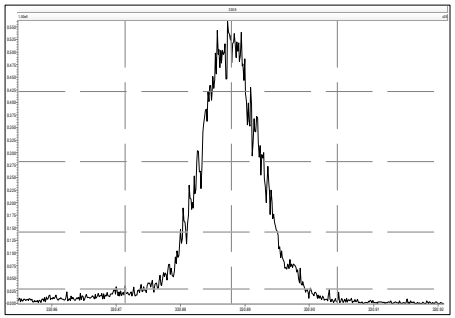
M 304.9824 R 14414



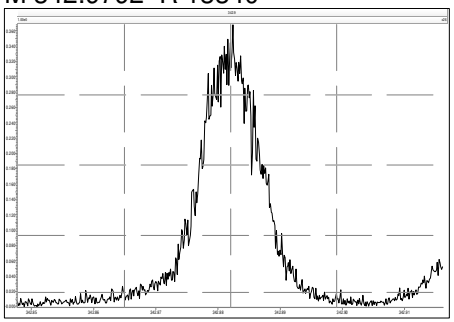
M 316.9824 R 15497



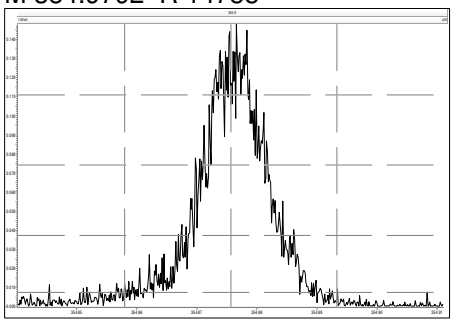
M 330.9792 R 14164



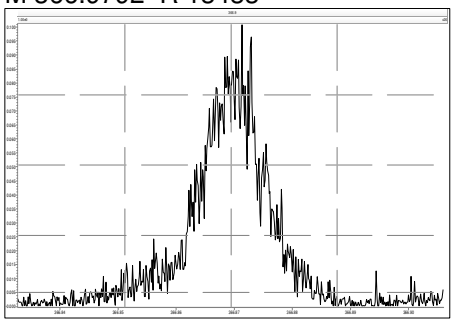
M 342.9792 R 13340



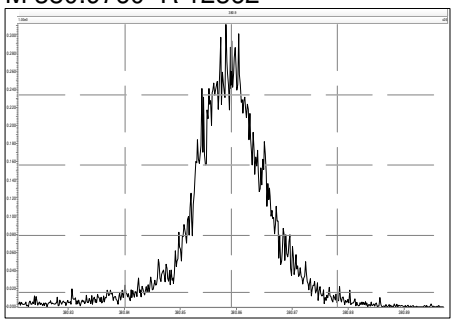
M 354.9792 R 14755



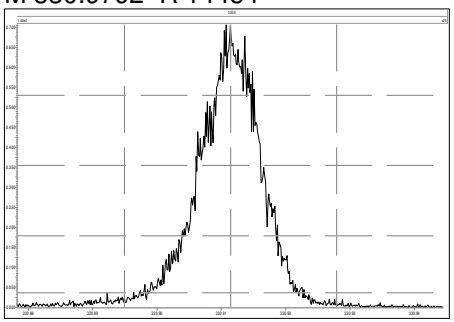
M 366.9792 R 13433



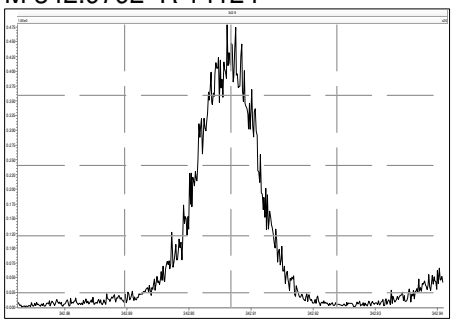
M 380.9760 R 12362



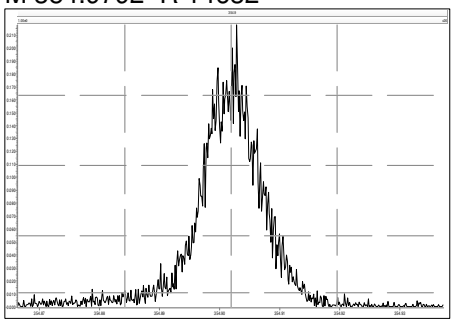
M 330.9792 R 14454



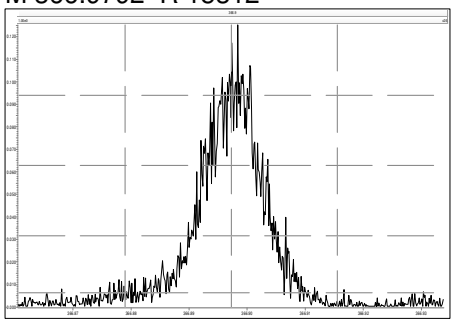
M 342.9792 R 14124



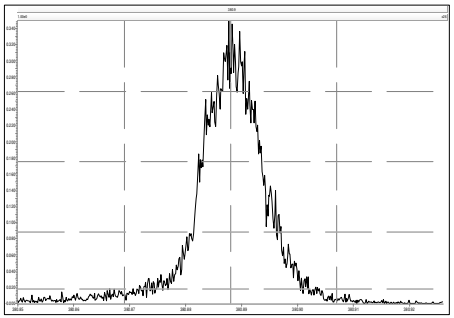
M 354.9792 R 14632



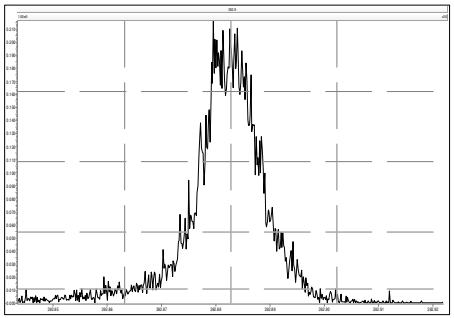
M 366.9792 R 15312



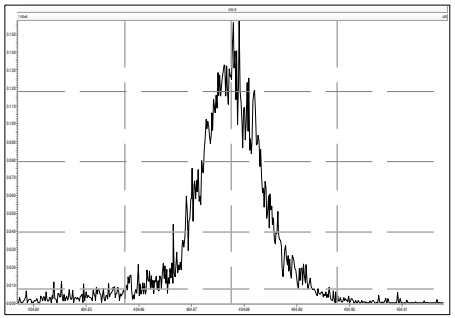
M 380.9760 R 15166



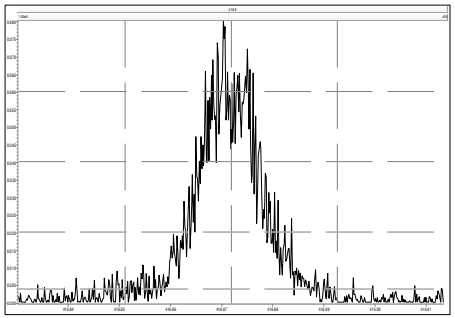
M 392.9760 R 13903



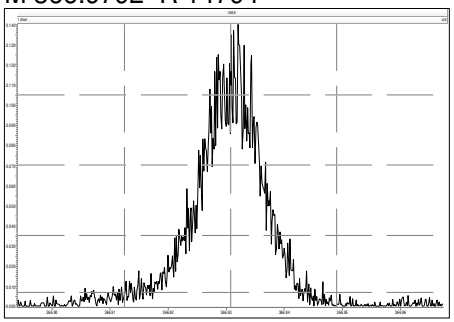
M 404.9760 R 14014



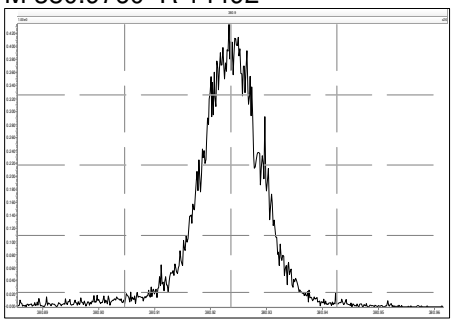
M 416.9760 R 15155



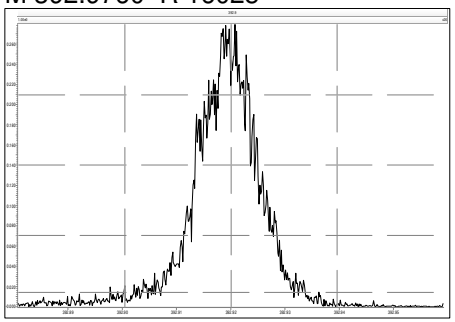
M 366.9792 R 14794



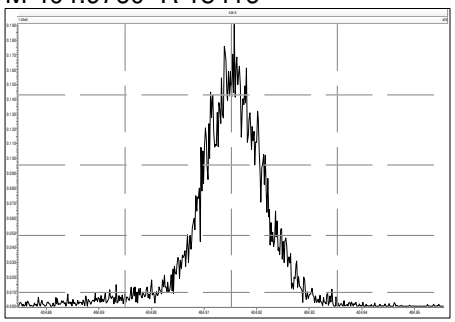
M 380.9760 R 14492



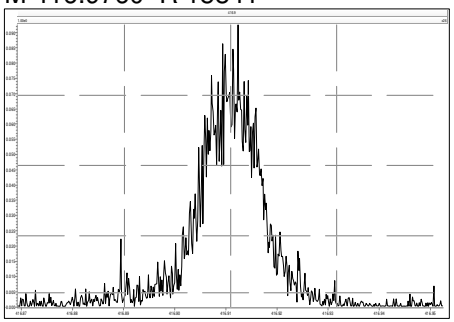
M 392.9760 R 16025



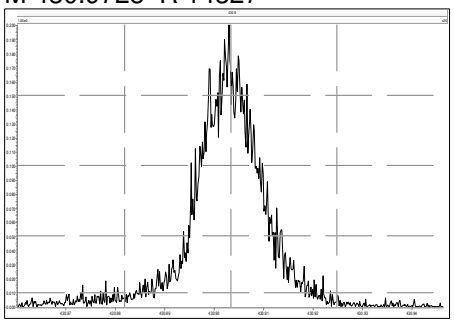
M 404.9760 R 15416



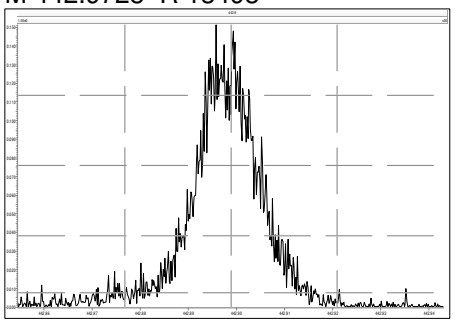
M 416.9760 R 15841



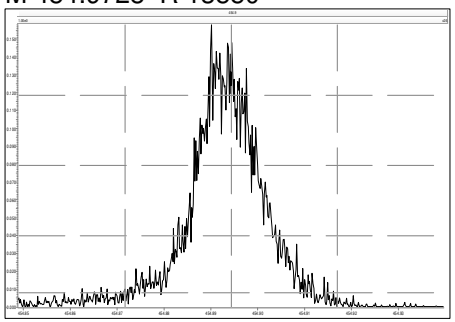
M 430.9728 R 14327



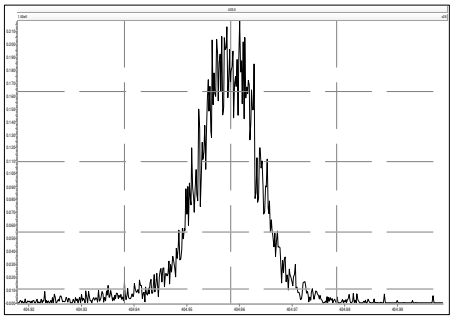
M 442.9728 R 13498



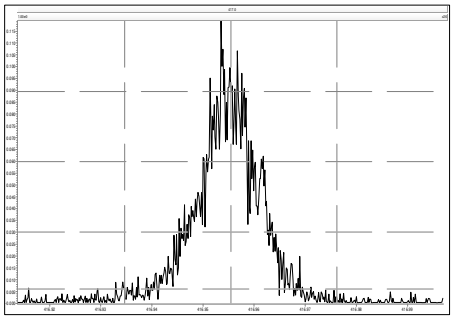
M 454.9728 R 13550



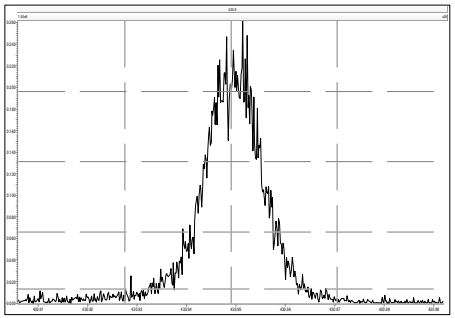
M 404.9760 R 14978



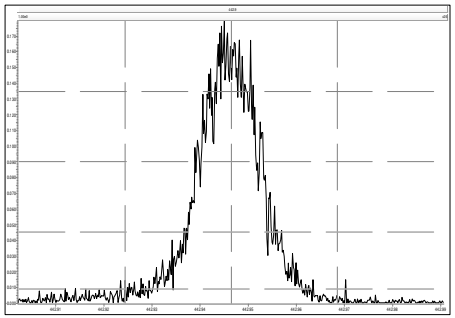
M 416.9760 R 16713



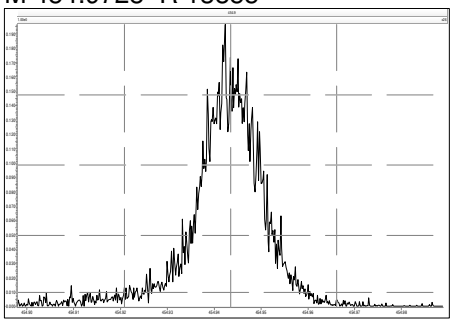
M 430.9728 R 15385



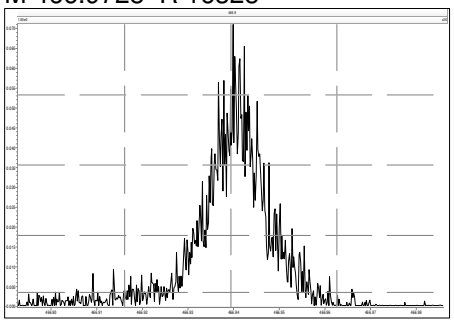
M 442.9728 R 14683



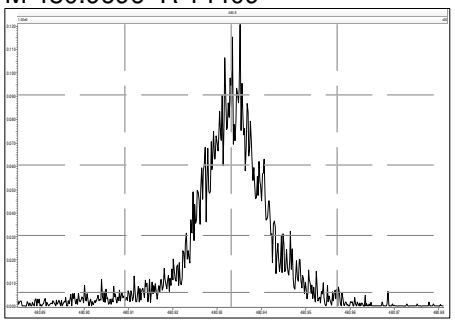
M 454.9728 R 13855



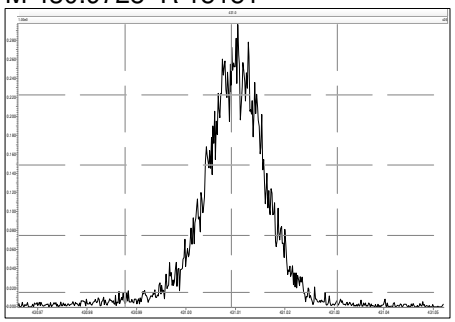
M 466.9728 R 16325



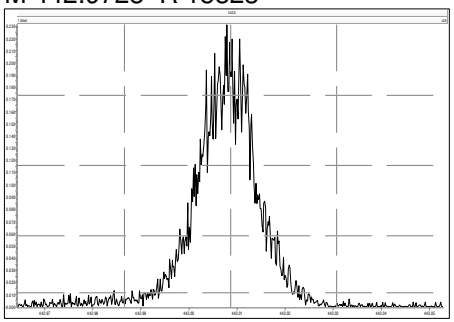
M 480.9696 R 14409



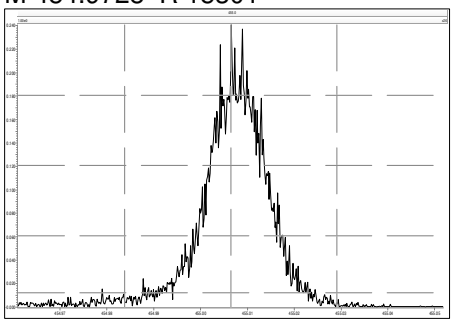
M 430.9728 R 15151



M 442.9728 R 15823



M 454.9728 R 15301



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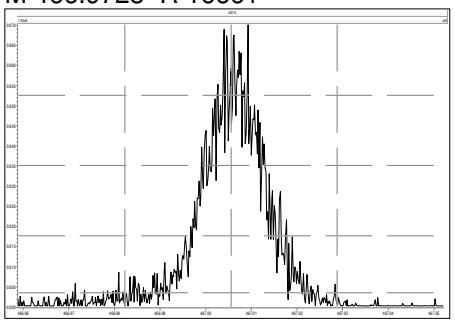

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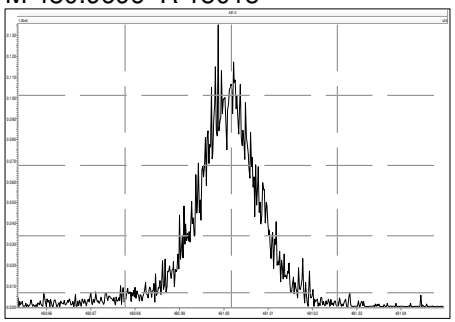
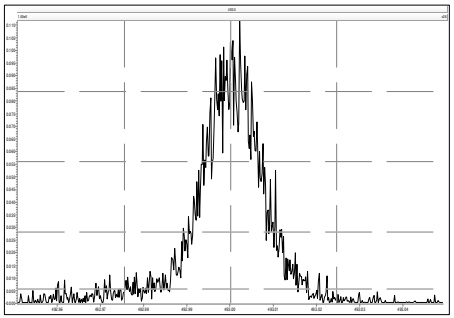


M 492.9696 R 15201



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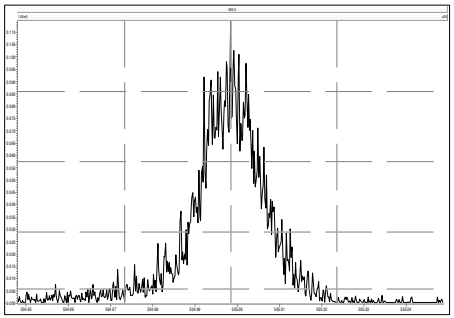
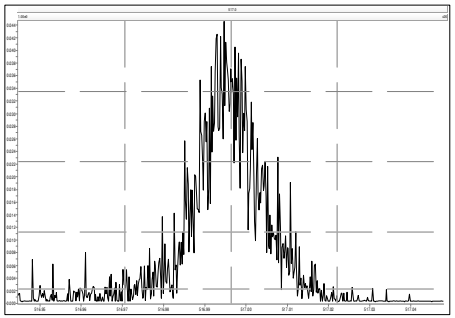


M 516.9697 R 16090



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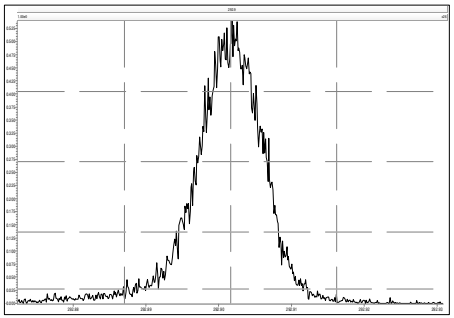
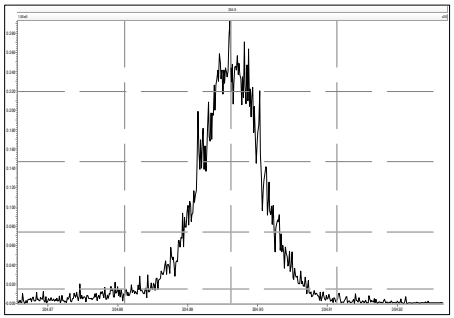
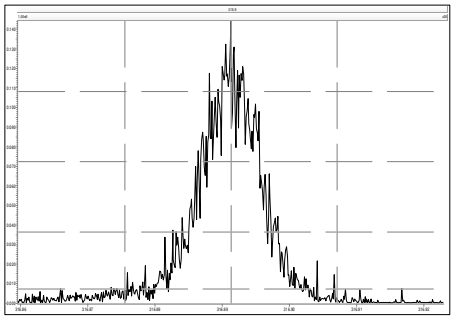


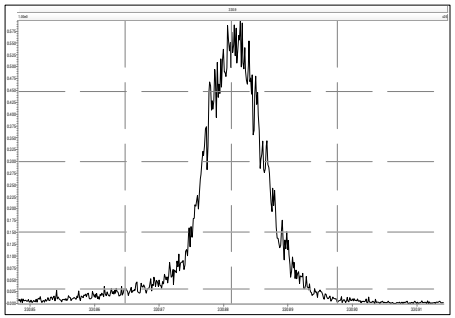
M 304.9824 R 13776



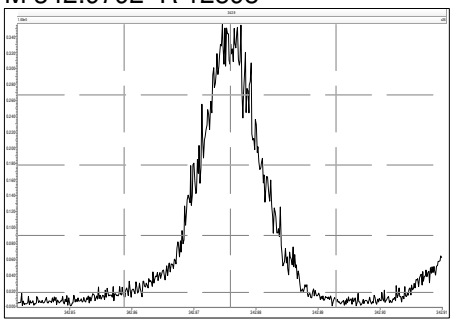
M 316.9824 R 15279



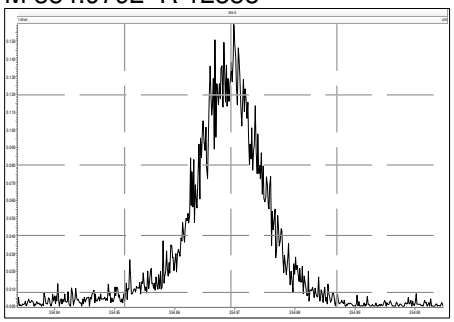
M 330.9792 R 13549



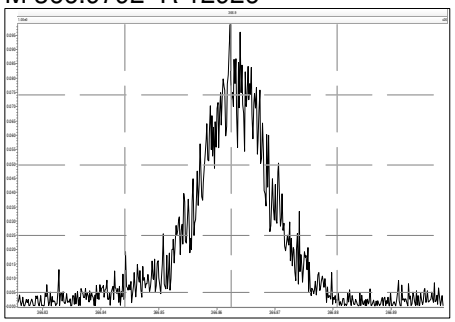
M 342.9792 R 12598



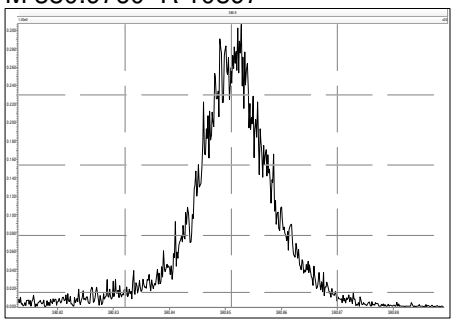
M 354.9792 R 12858



M 366.9792 R 12926



M 380.9760 R 10897



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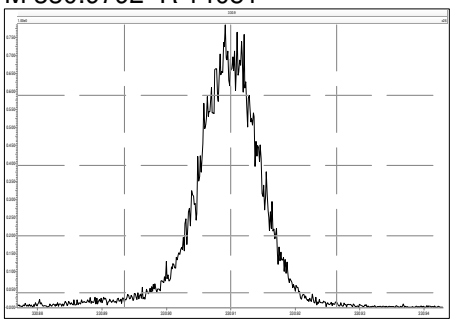
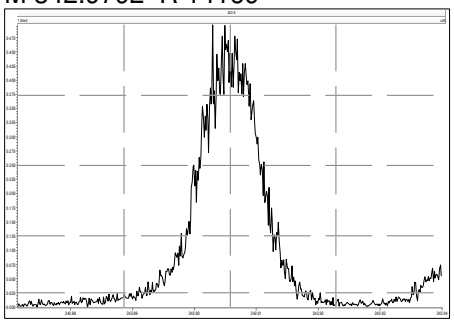


M 342.9792 R 14169



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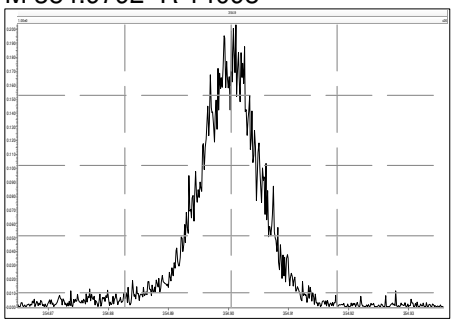

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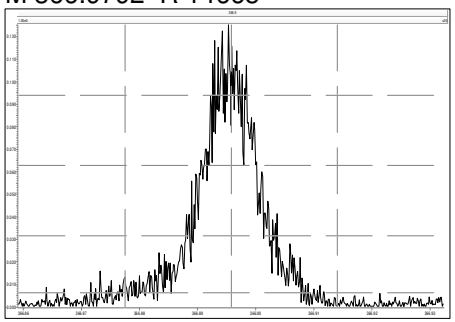

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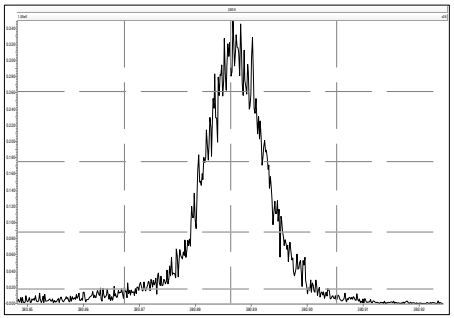

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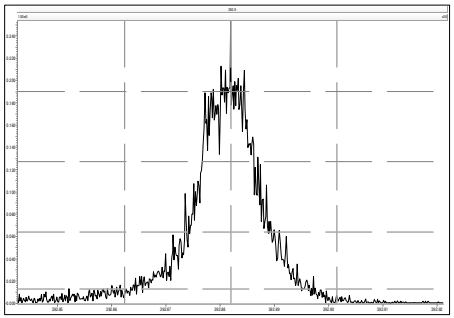

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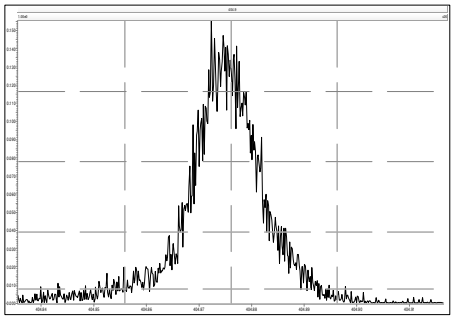
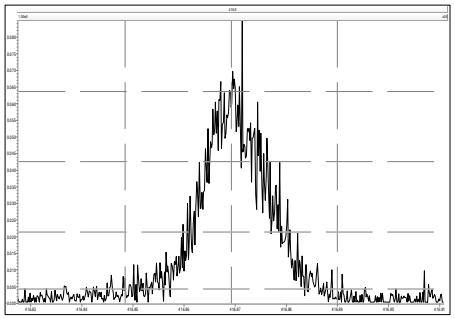


M 416.9760 R 14540



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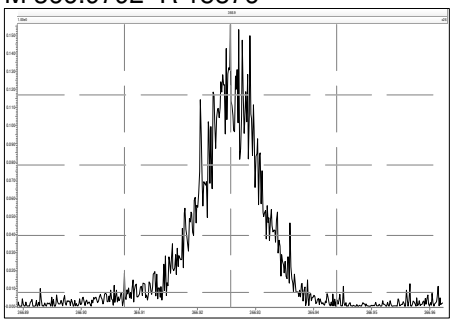

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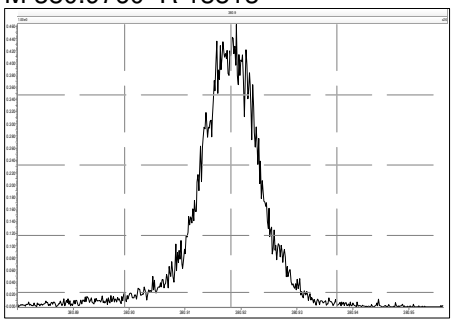

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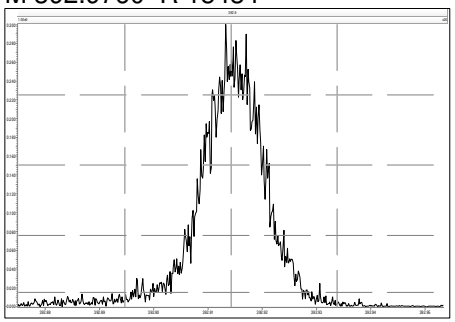

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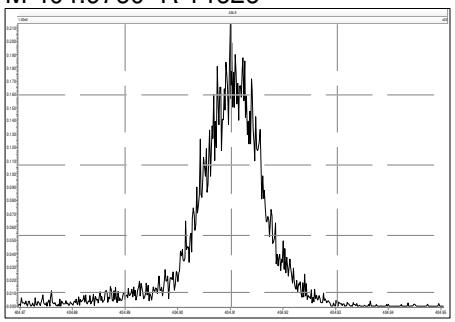

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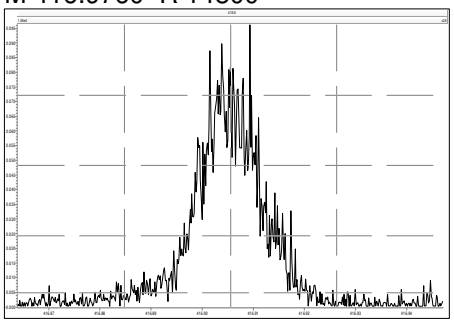
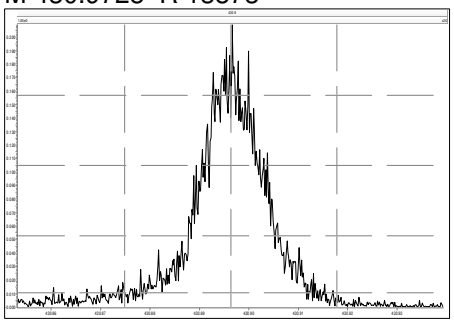


M 430.9728 R 13873



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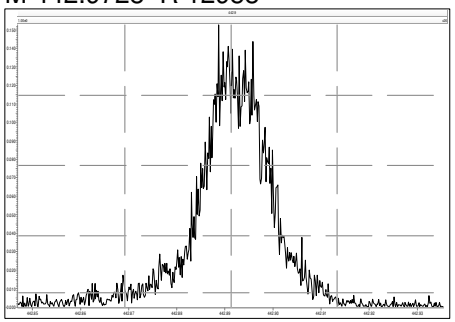

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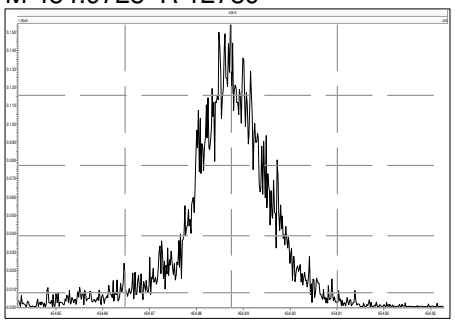

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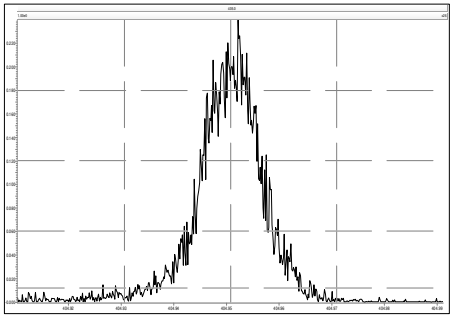

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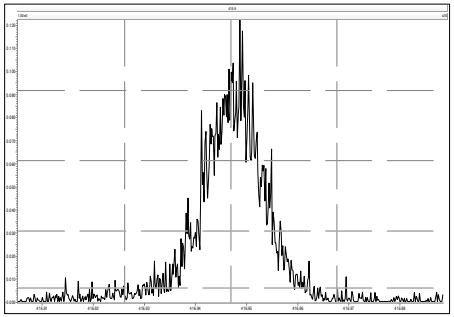

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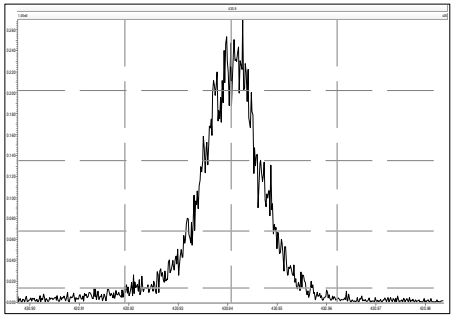

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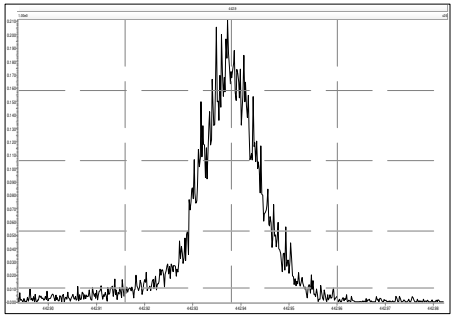

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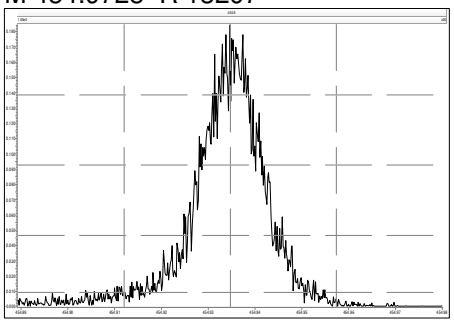

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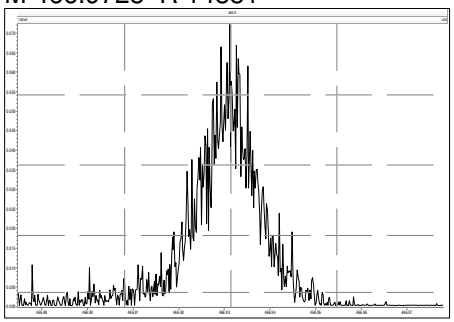

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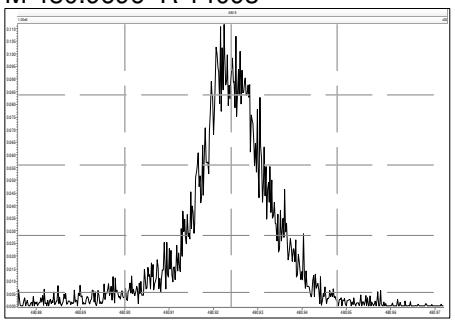

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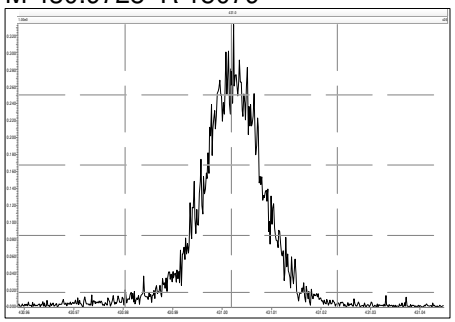

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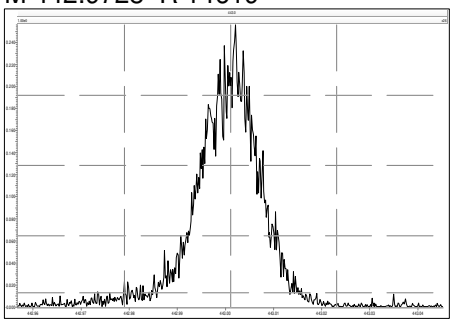

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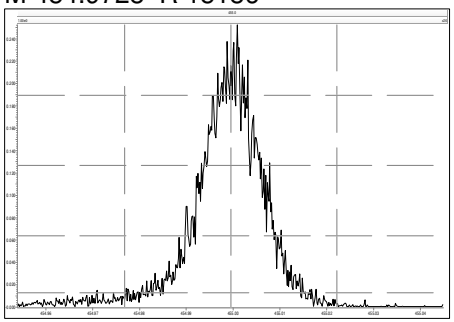

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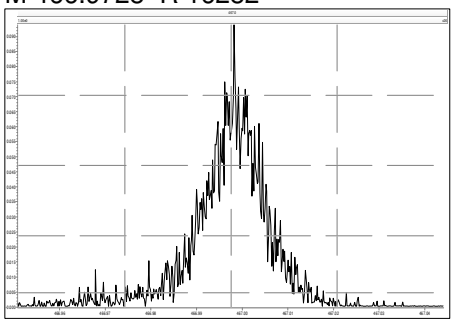

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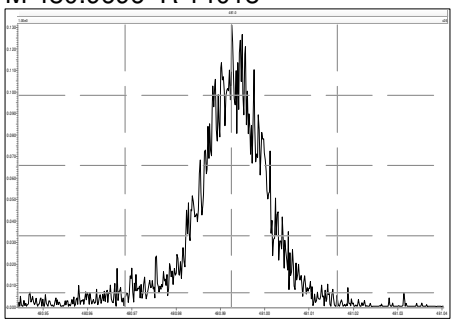

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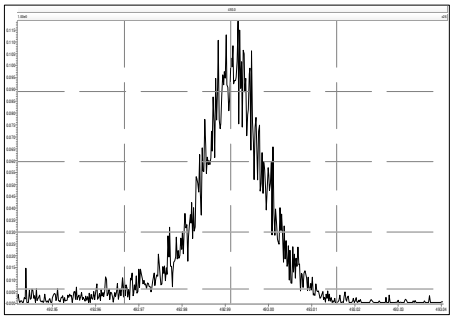
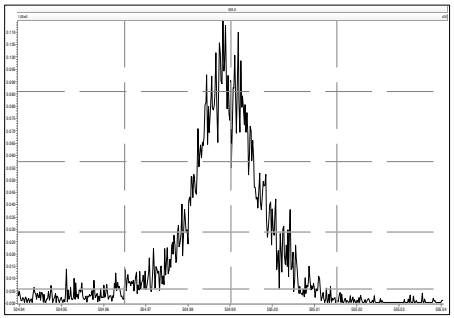


M 504.9696 R 13042



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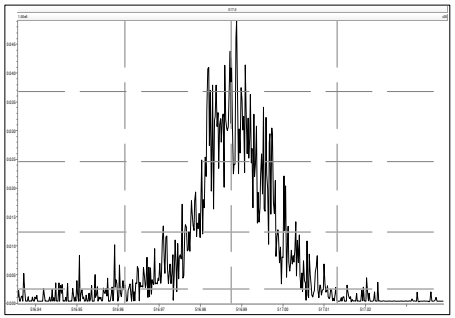

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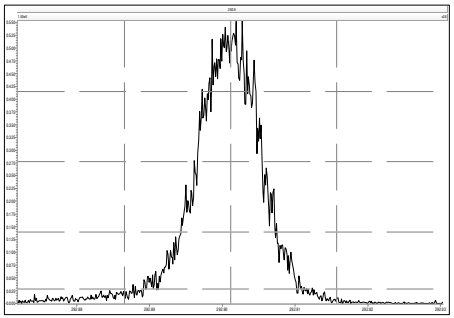
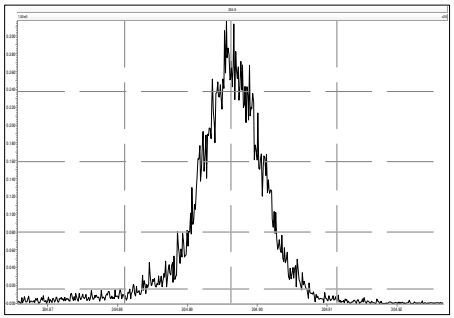
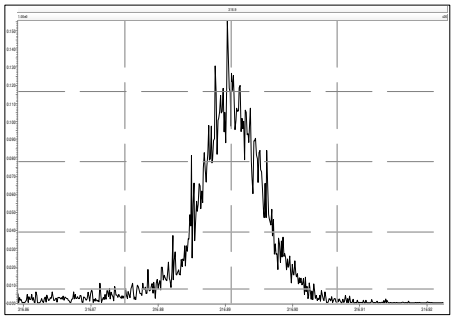


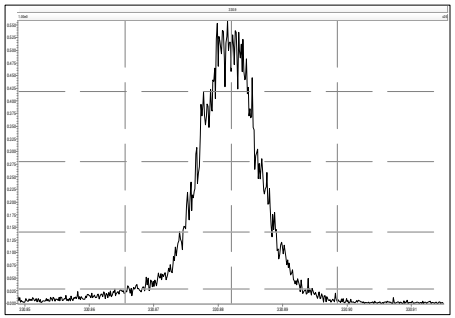
M 304.9824 R 13444



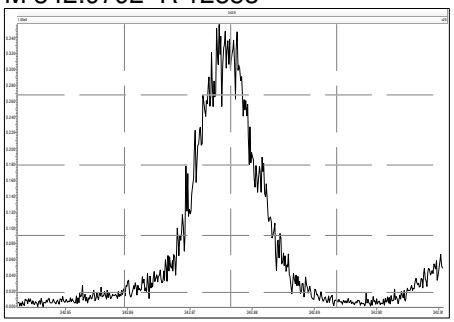
M 316.9824 R 14331



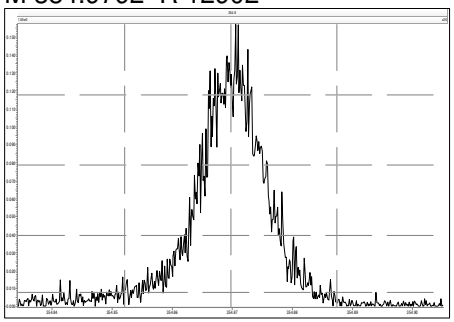
M 330.9792 R 13818



M 342.9792 R 12858



M 354.9792 R 12902



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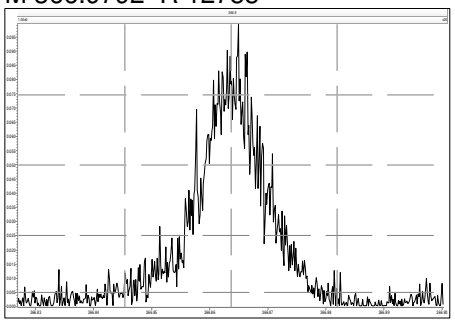

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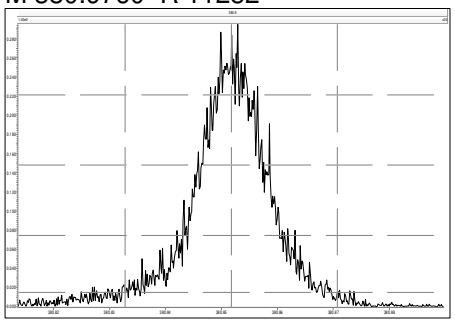
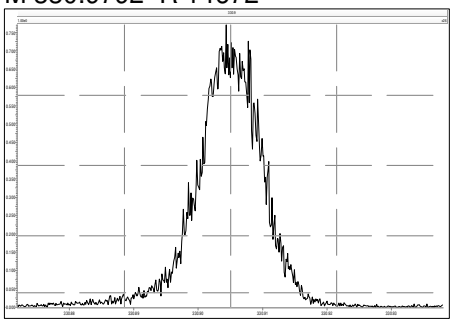
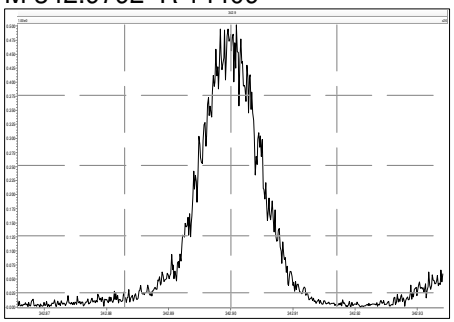


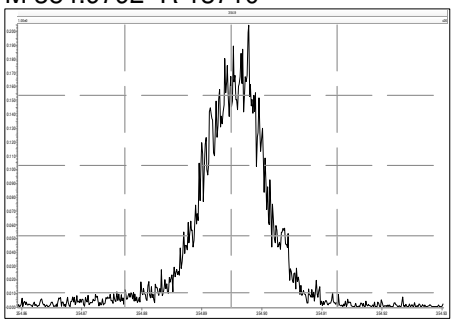
M 330.9792 R 14672



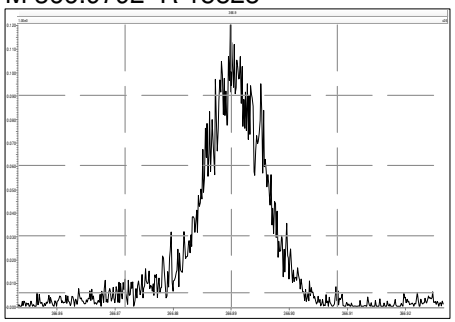
M 342.9792 R 14409



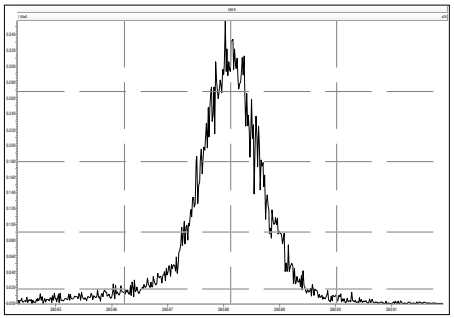
M 354.9792 R 13710



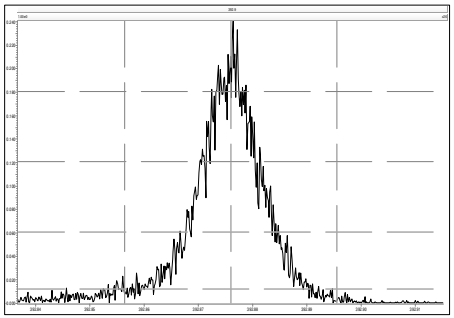
M 366.9792 R 15828



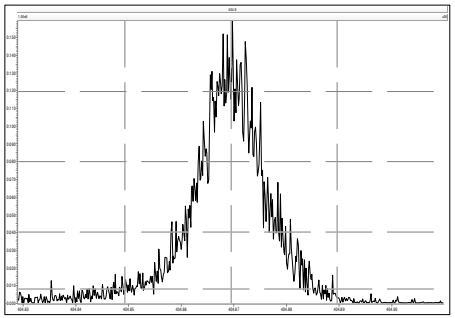
M 380.9760 R 12659



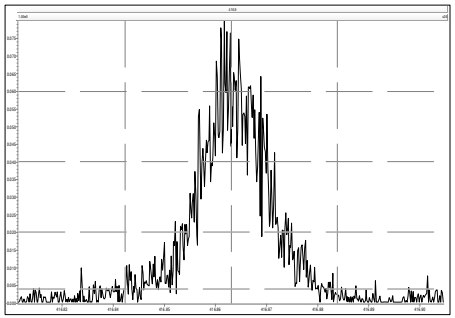
M 392.9760 R 13245



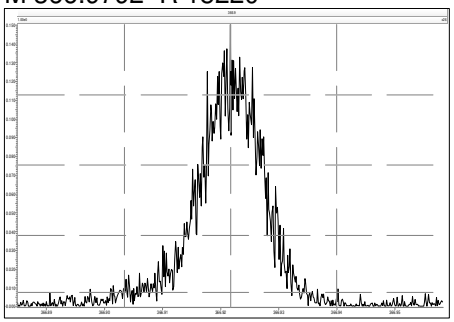
M 404.9760 R 12785



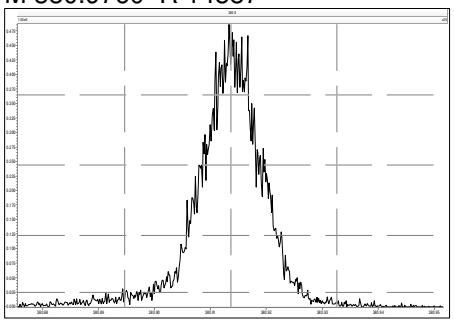
M 416.9760 R 13245



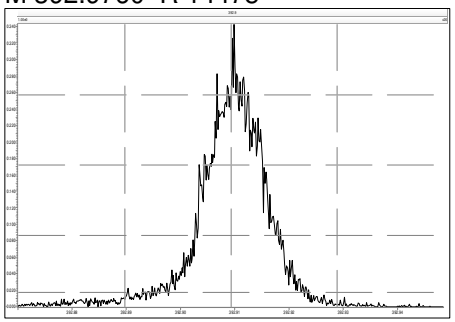
M 366.9792 R 15220



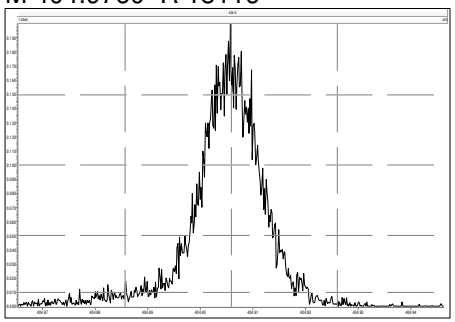
M 380.9760 R 14587



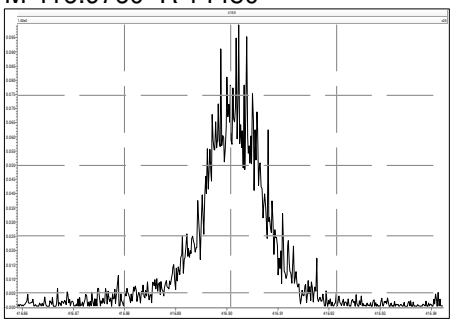
M 392.9760 R 14475



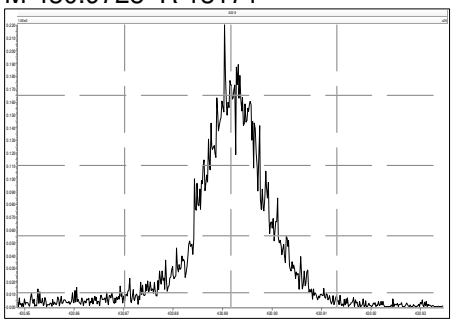
M 404.9760 R 15116



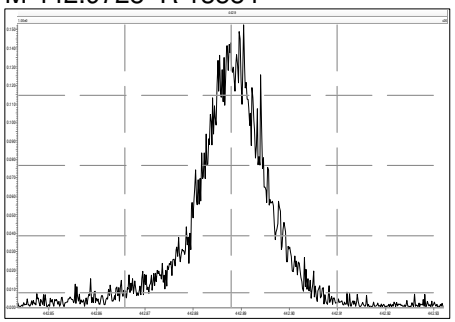
M 416.9760 R 14450



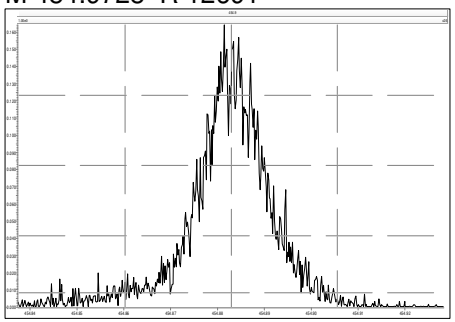
M 430.9728 R 13171



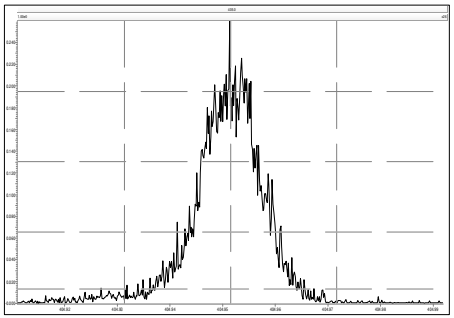
M 442.9728 R 13584



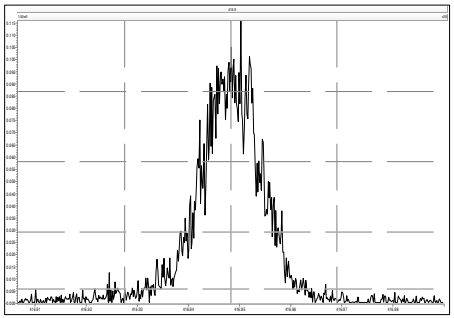
M 454.9728 R 12691



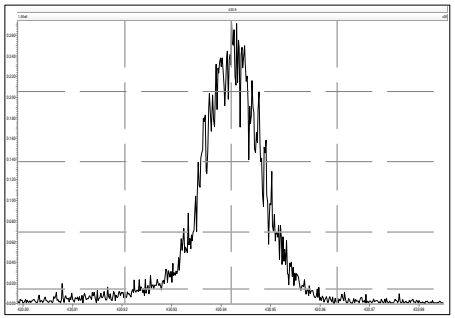
M 404.9760 R 14250



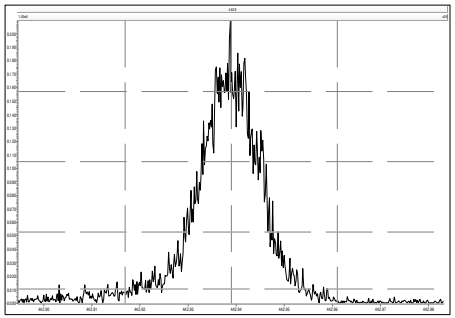
M 416.9760 R 16091



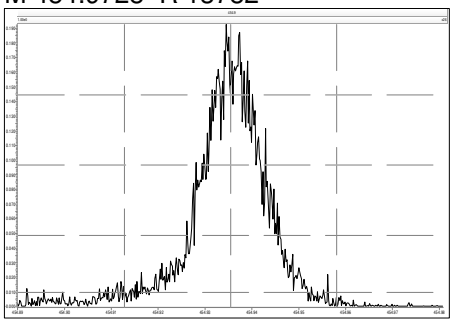
M 430.9728 R 14220



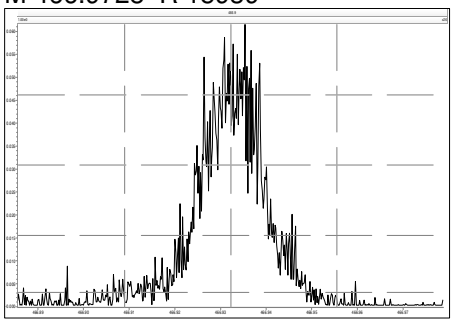
M 442.9728 R 14532



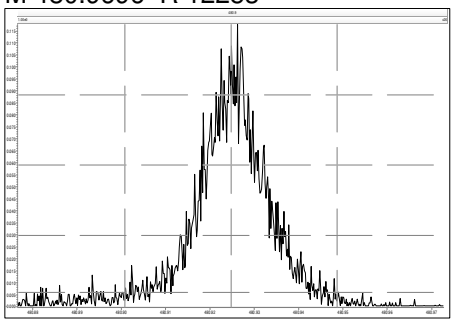
M 454.9728 R 13782



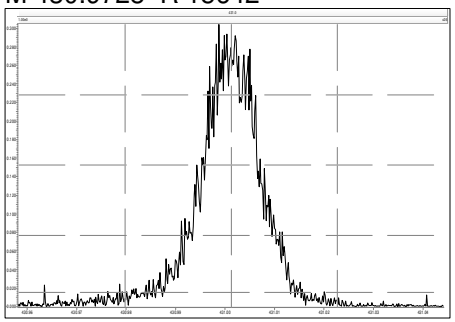
M 466.9728 R 15939



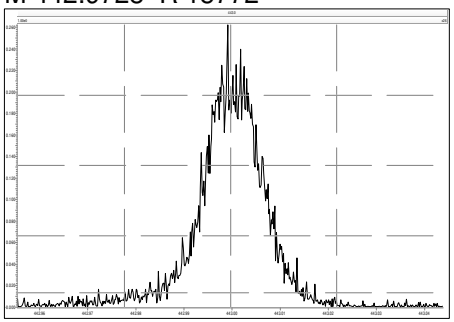
M 480.9696 R 12253



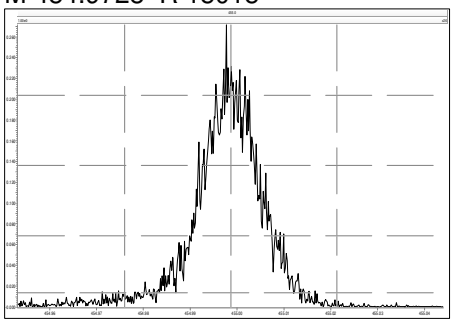
M 430.9728 R 15642



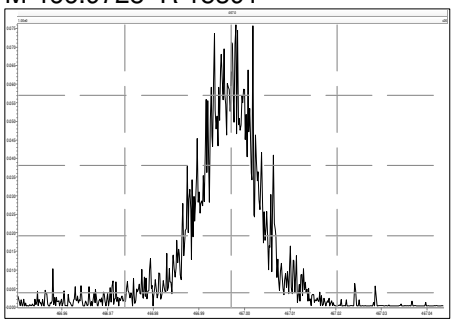
M 442.9728 R 15772



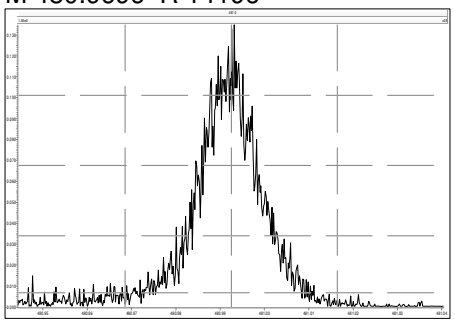
M 454.9728 R 15015



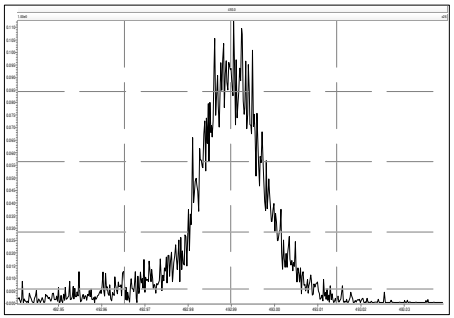
M 466.9728 R 15391



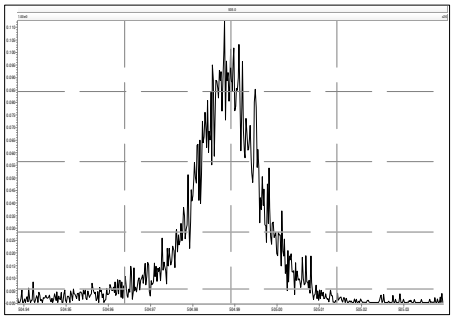
M 480.9696 R 14196



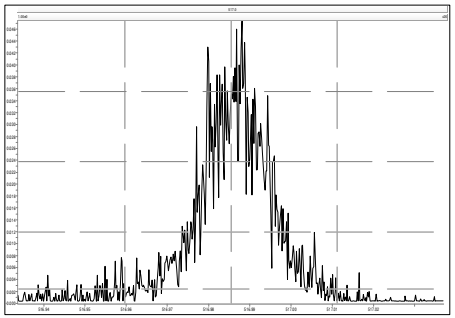
M 492.9696 R 14183



M 504.9696 R 14116



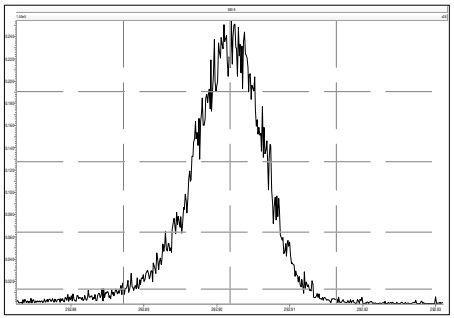
M 516.9697 R 13606



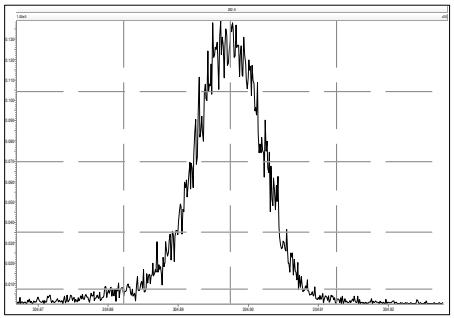
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, December 08, 2021 12:10:48 Eastern Standard Time

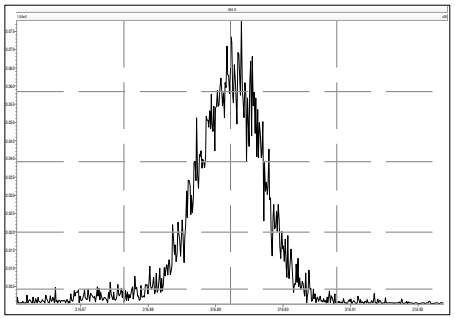
M 292.9824 R 12252



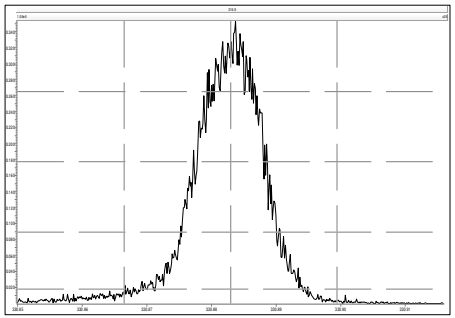
M 304.9824 R 13021



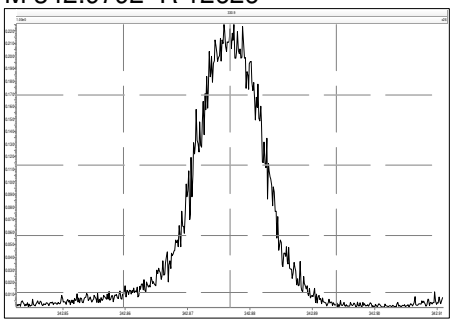
M 316.9824 R 14284



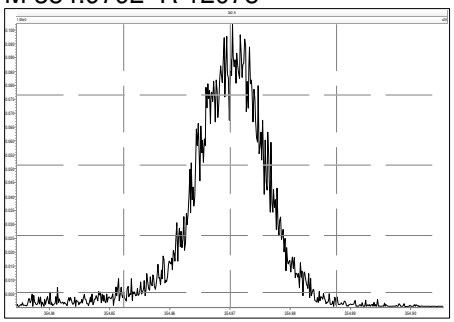
M 330.9792 R 14454



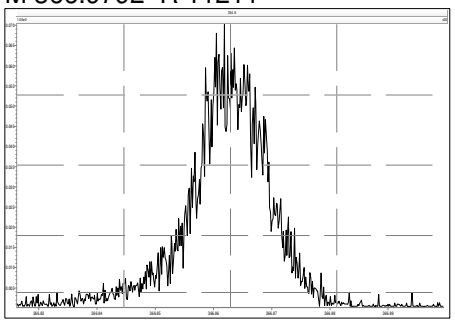
M 342.9792 R 12626



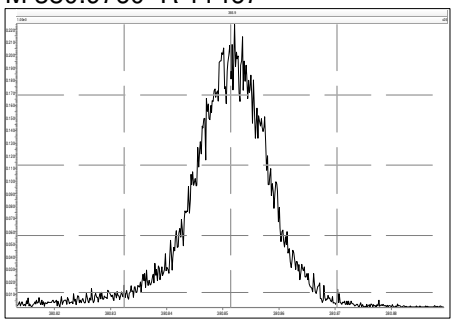
M 354.9792 R 12075



M 366.9792 R 11211



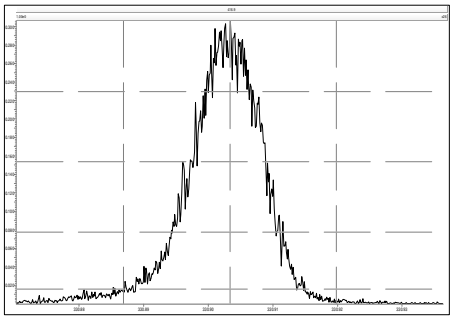
M 380.9760 R 11467



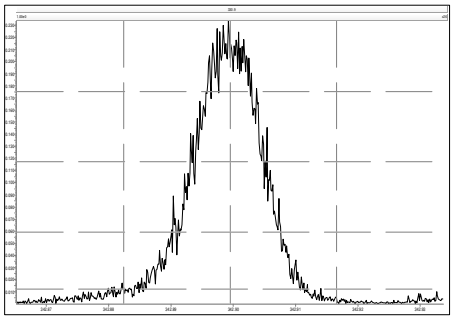
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, December 08, 2021 12:11:09 Eastern Standard Time

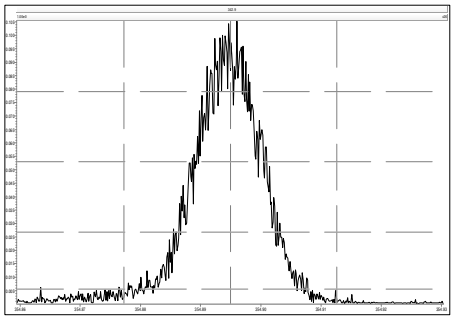
M 330.9792 R 12629



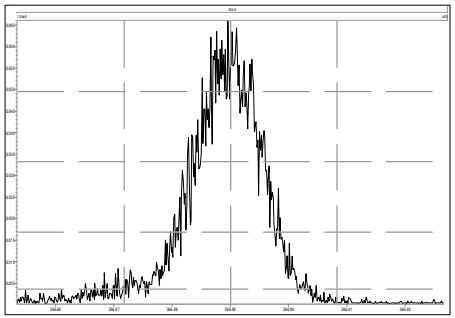
M 342.9792 R 13662



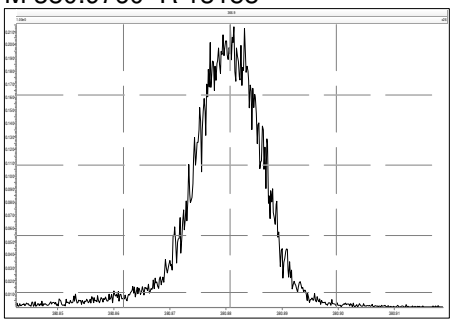
M 354.9792 R 14879



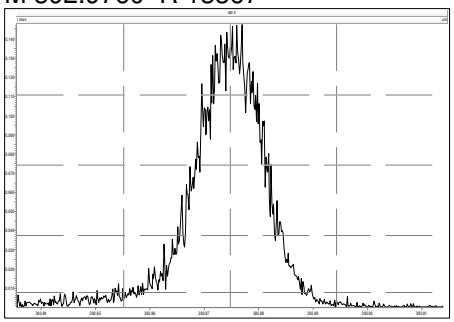
M 366.9792 R 14288



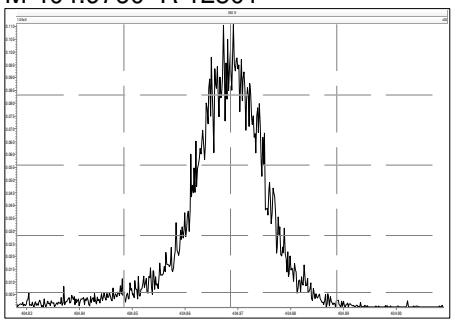
M 380.9760 R 13158



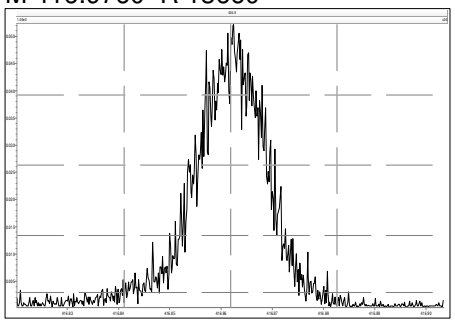
M 392.9760 R 13367



M 404.9760 R 12501



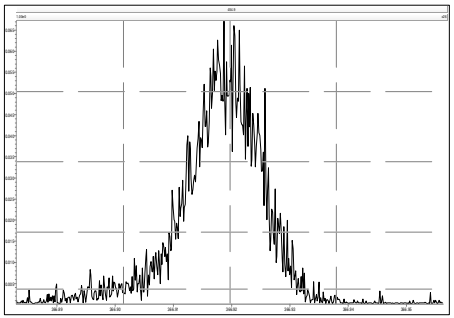
M 416.9760 R 13660



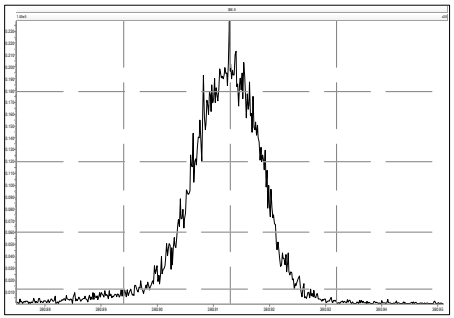
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, December 08, 2021 12:11:26 Eastern Standard Time

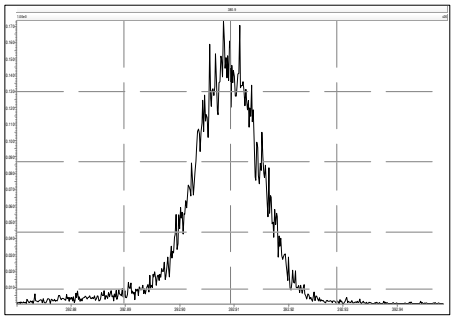
M 366.9792 R 13590



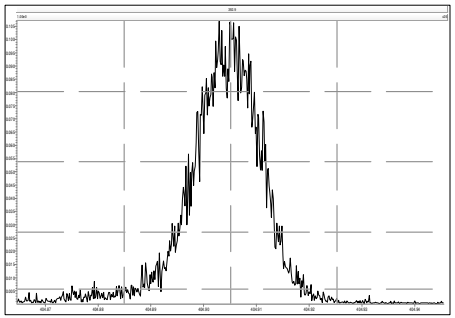
M 380.9760 R 13588



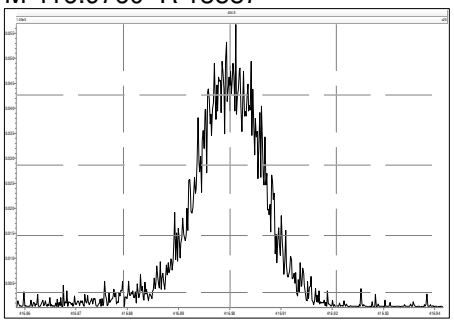
M 392.9760 R 14204



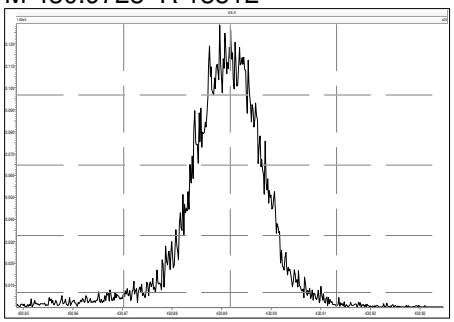
M 404.9760 R 13366



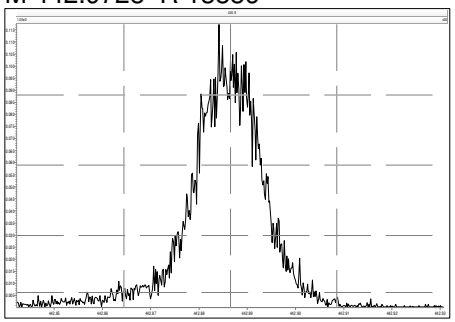
M 416.9760 R 13587



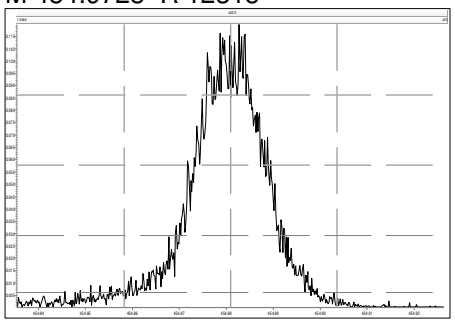
M 430.9728 R 13512



M 442.9728 R 13886



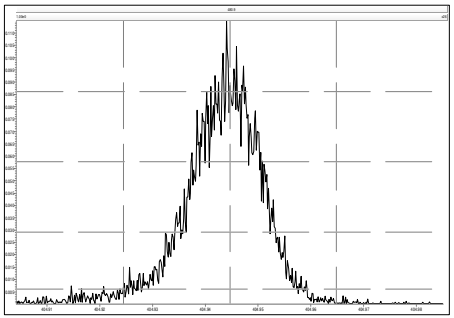
M 454.9728 R 12315



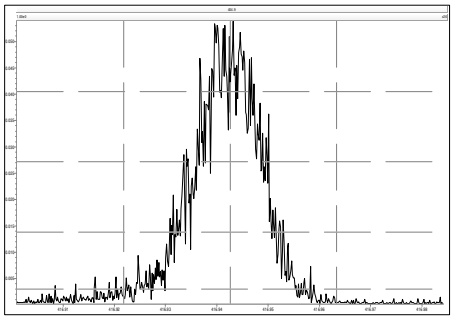
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, December 08, 2021 12:11:41 Eastern Standard Time

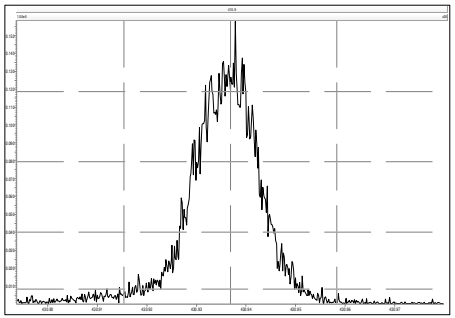
M 404.9760 R 13660



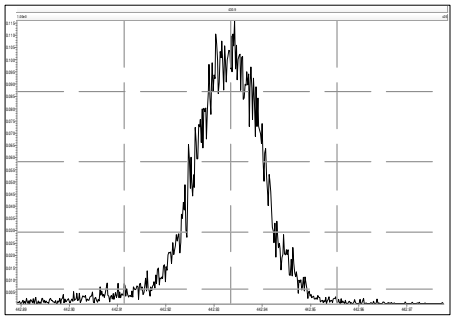
M 416.9760 R 14708



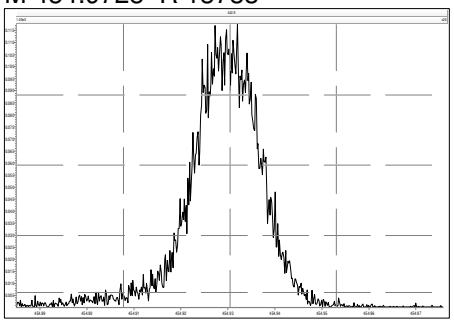
M 430.9728 R 13662



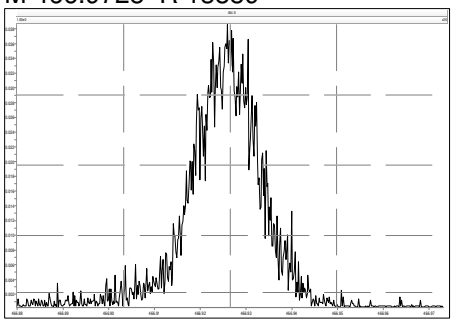
M 442.9728 R 14449



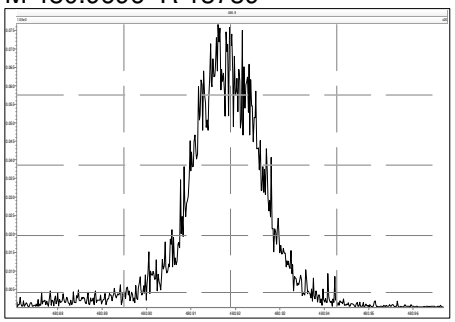
M 454.9728 R 13733



M 466.9728 R 13889



M 480.9696 R 13739



File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

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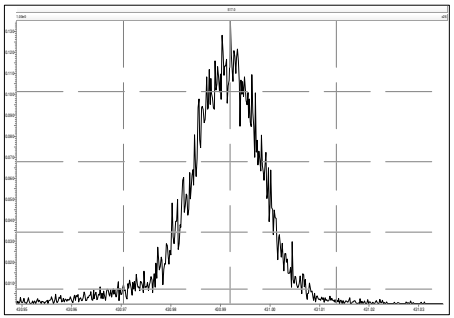
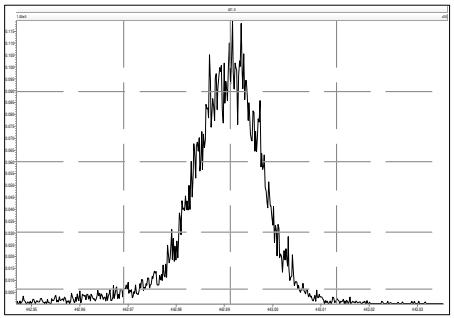
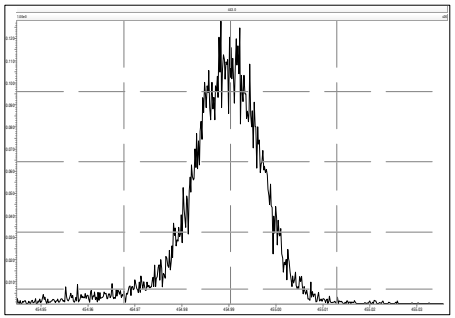
M 430.9728 R 12257



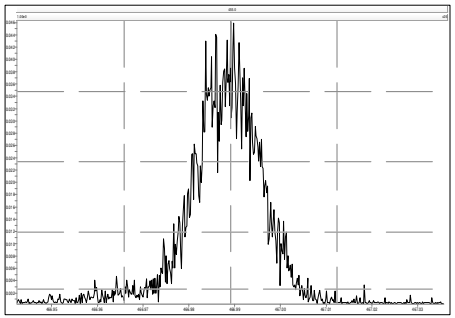
M 442.9728 R 12821



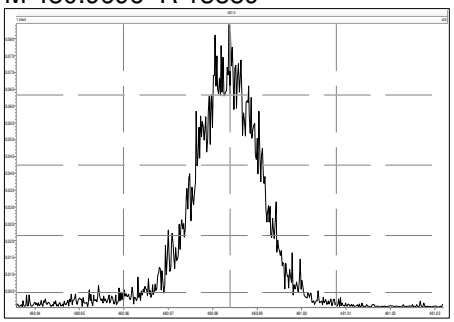
M 454.9728 R 13157



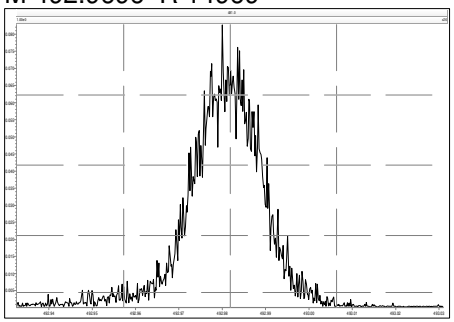
M 466.9728 R 15153



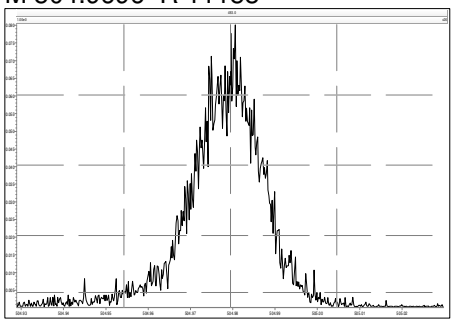
M 480.9696 R 13889



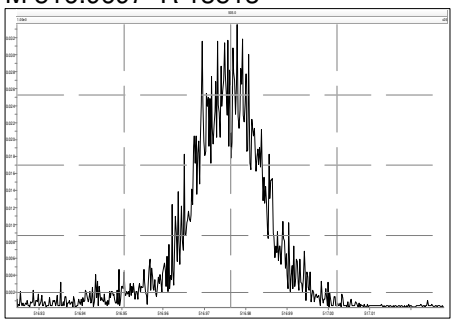
M 492.9696 R 14969



M 504.9696 R 11158



M 516.9697 R 13513



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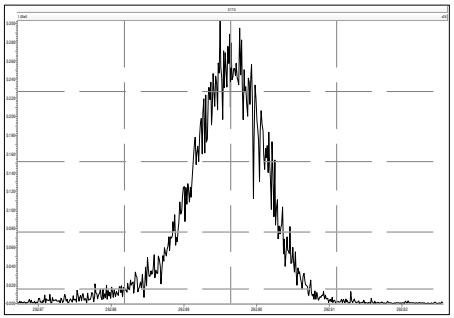
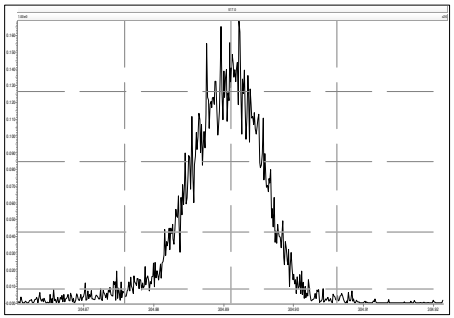
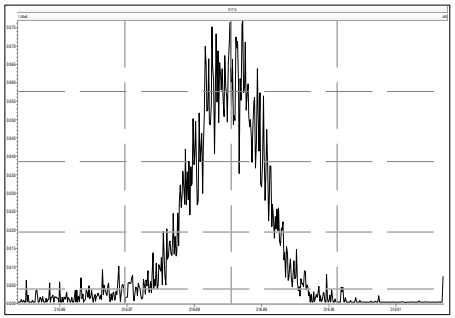
M 292.9824 R 12297



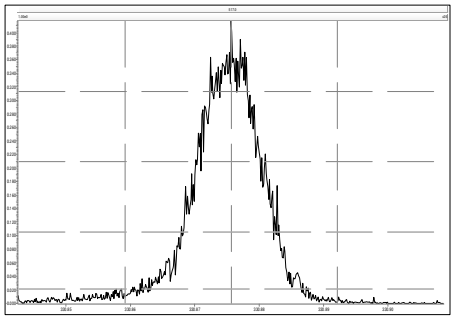
M 304.9824 R 12681



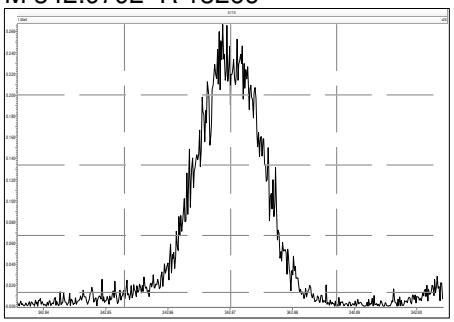
M 316.9824 R 14189



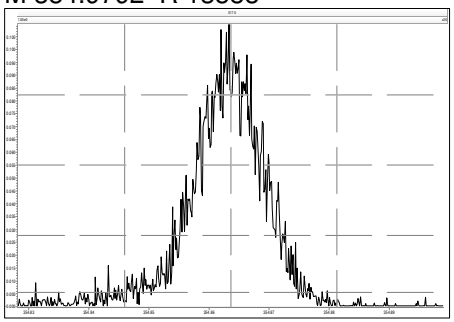
M 330.9792 R 14247



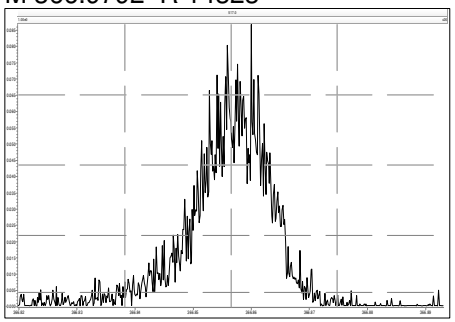
M 342.9792 R 13266



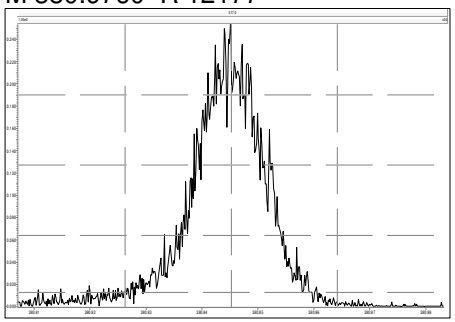
M 354.9792 R 13588



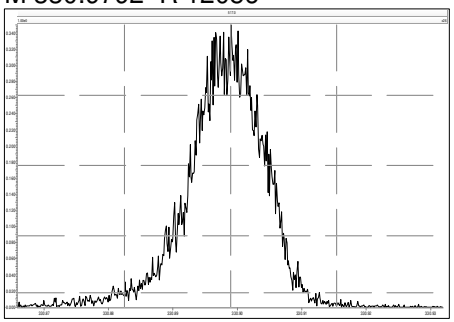
M 366.9792 R 14323



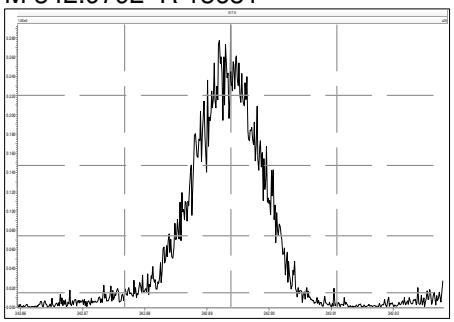
M 380.9760 R 12177



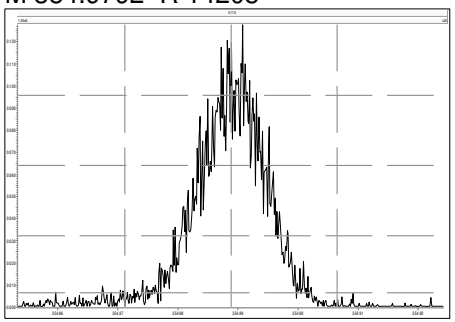
M 330.9792 R 12056



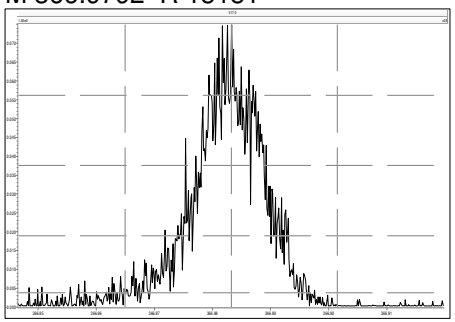
M 342.9792 R 13631



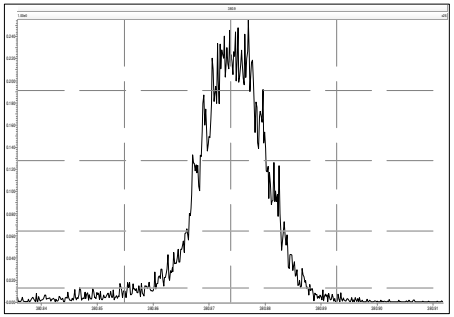
M 354.9792 R 14205



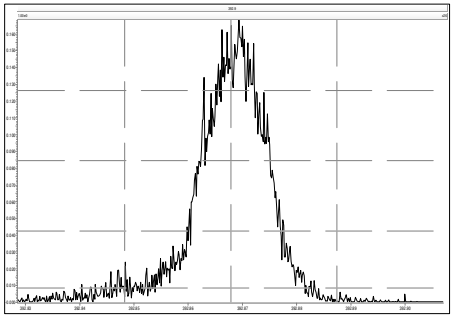
M 366.9792 R 15151



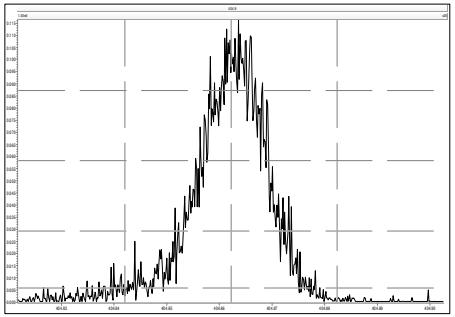
M 380.9760 R 13852



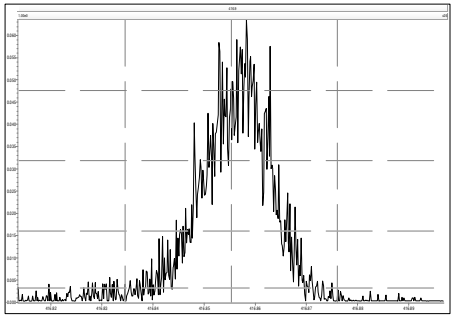
M 392.9760 R 13652



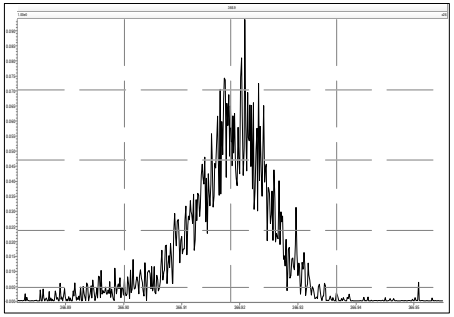
M 404.9760 R 15530



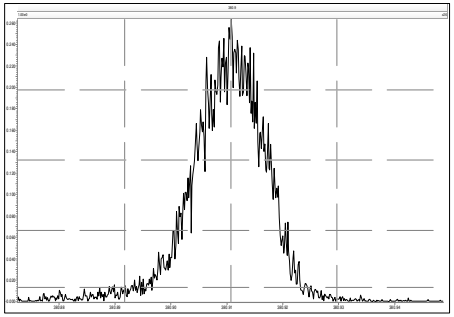
M 416.9760 R 14643



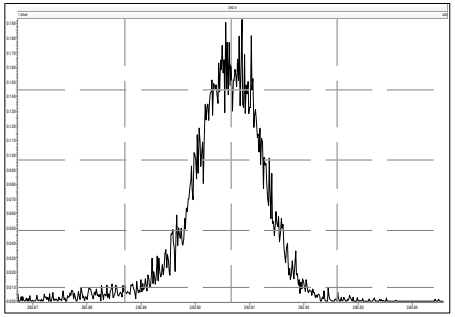
M 366.9792 R 14264



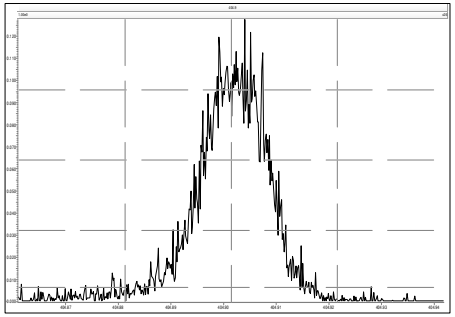
M 380.9760 R 14326



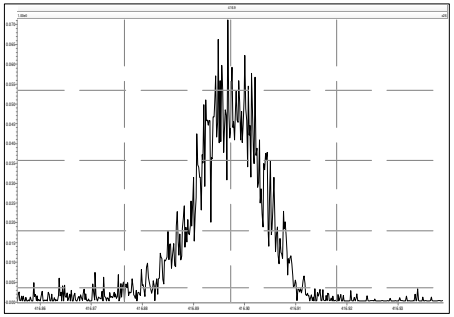
M 392.9760 R 14125



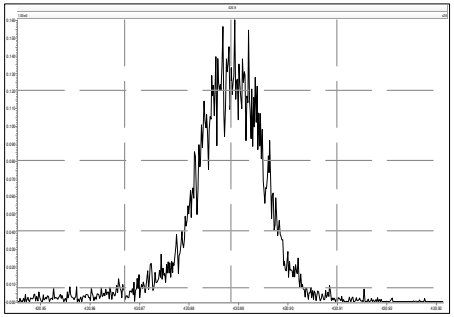
M 404.9760 R 13736



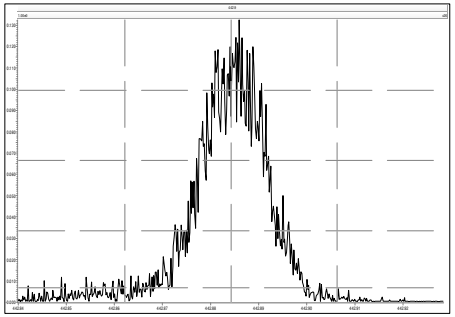
M 416.9760 R 15198



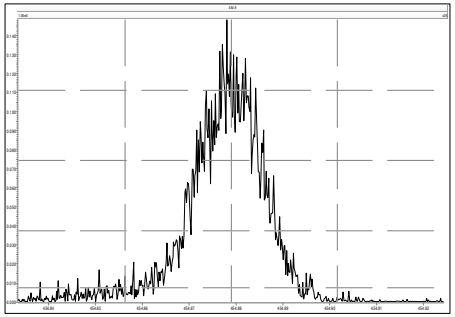
M 430.9728 R 14080



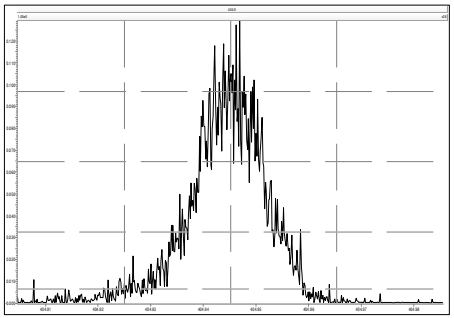
M 442.9728 R 14414



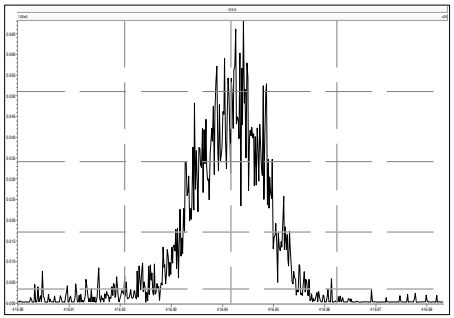
M 454.9728 R 15021



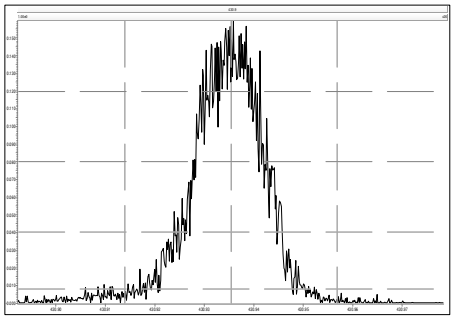
M 404.9760 R 13818



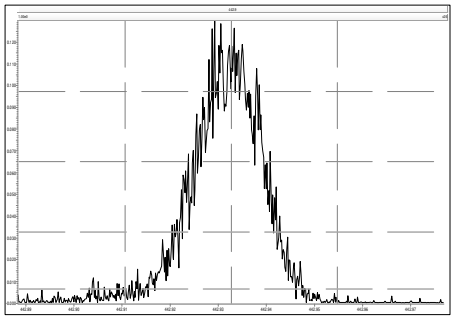
M 416.9760 R 16226



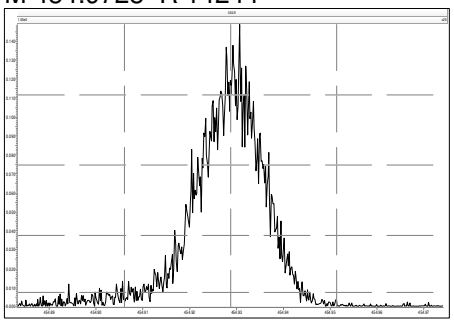
M 430.9728 R 15034



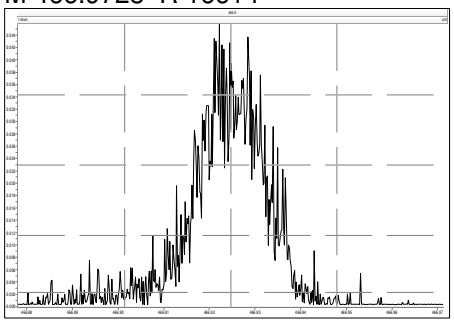
M 442.9728 R 14018



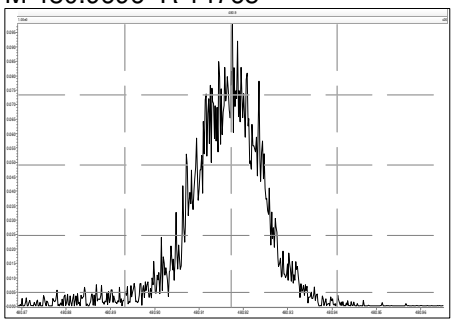
M 454.9728 R 14244



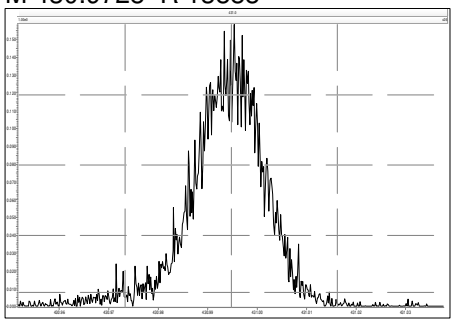
M 466.9728 R 16614



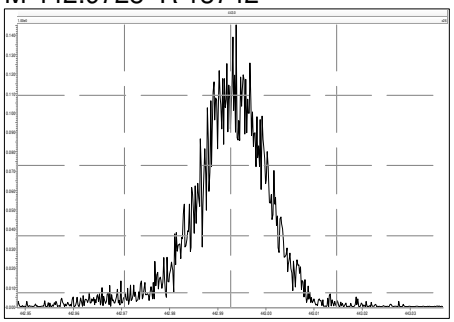
M 480.9696 R 14765



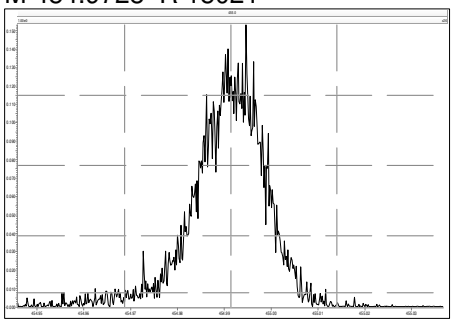
M 430.9728 R 13888



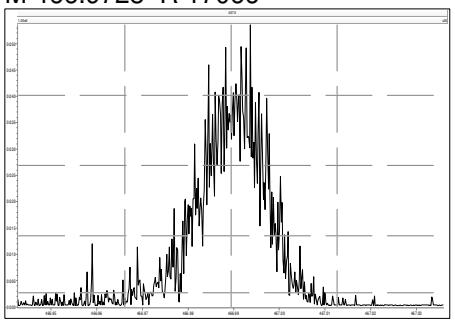
M 442.9728 R 13742



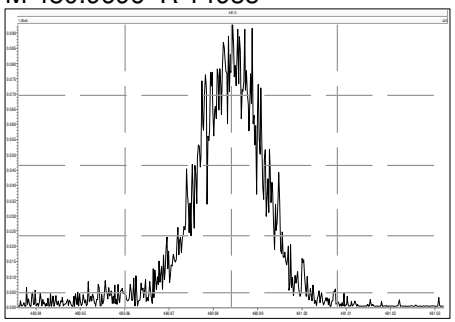
M 454.9728 R 15021



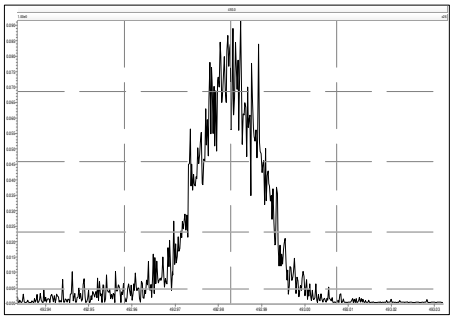
M 466.9728 R 17066



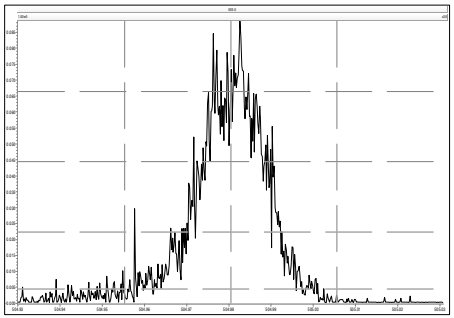
M 480.9696 R 14935



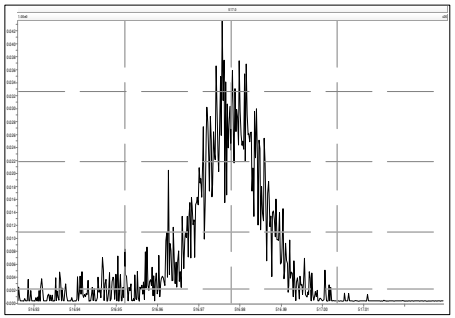
M 492.9696 R 15823



M 504.9696 R 14805



M 516.9697 R 17752



Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 0.25 pg/uL CS0	211110C05 0.5 pg/uL CS1	211110C06 2 pg/uL CS2	211110C07 10 pg/uL CS3	211110C08 40 pg/uL CS4	211110C09 200 pg/uL CS5	211110C10 500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34 ✓	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98 ✓
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84 ✓	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 **0.25 pg/uL CS0**	211110C05 **0.5 pg/uL CS1**	211110C06 **2 pg/uL CS2**	211110C07 **10 pg/uL CS3**	211110C08 **40 pg/uL CS4**	211110C09 **200 pg/uL CS5**	211110C10 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28	1.33

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

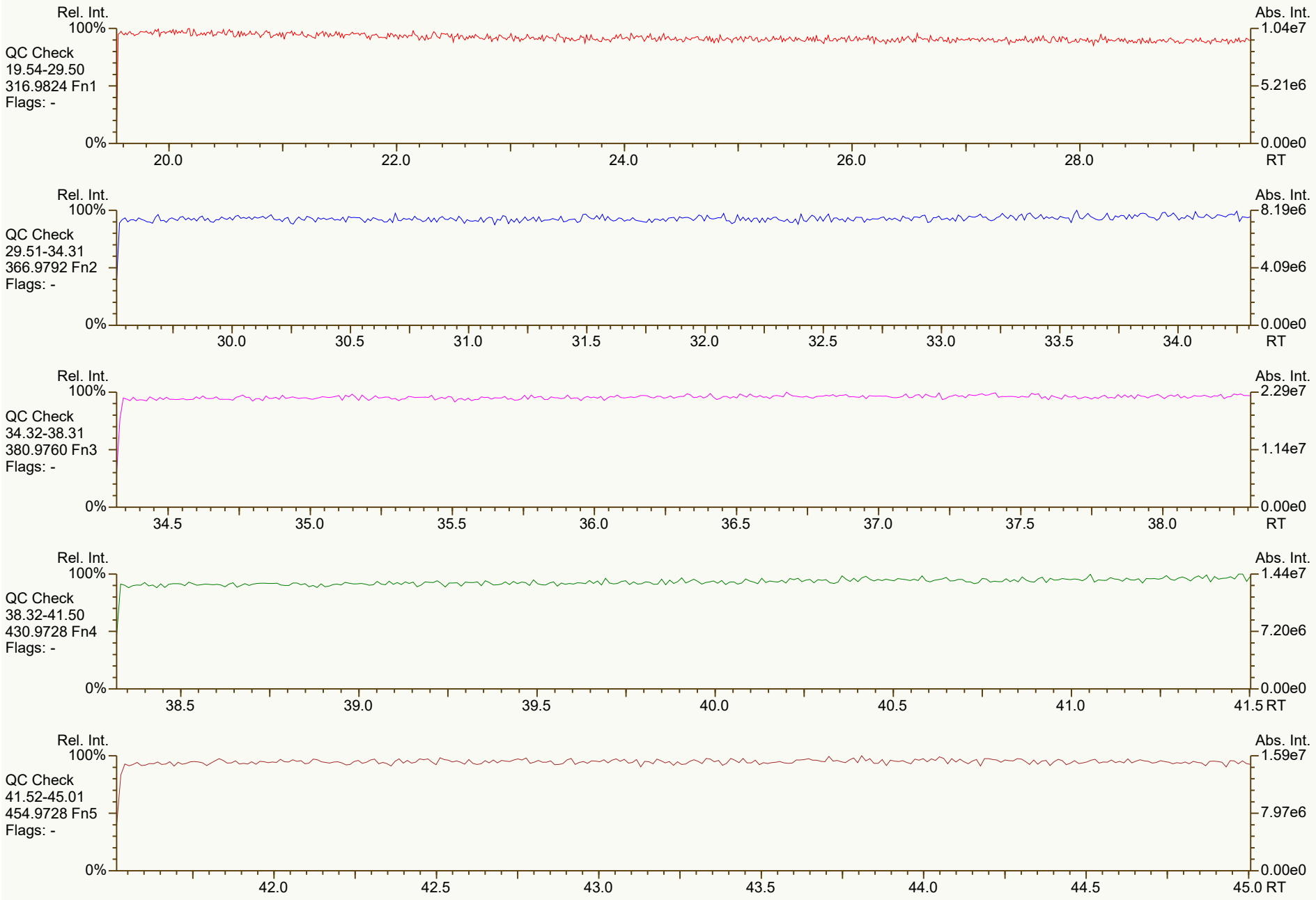
APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF				Checkcode: 245-007-QLD	
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C04	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:02 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA	UTP: 11-Nov-2021 16:23:33 DTF	Checkcode: 245-007-QLD
Sample ID: 25-6-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C04

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%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316.9824 Fn1
Flags: -
0%
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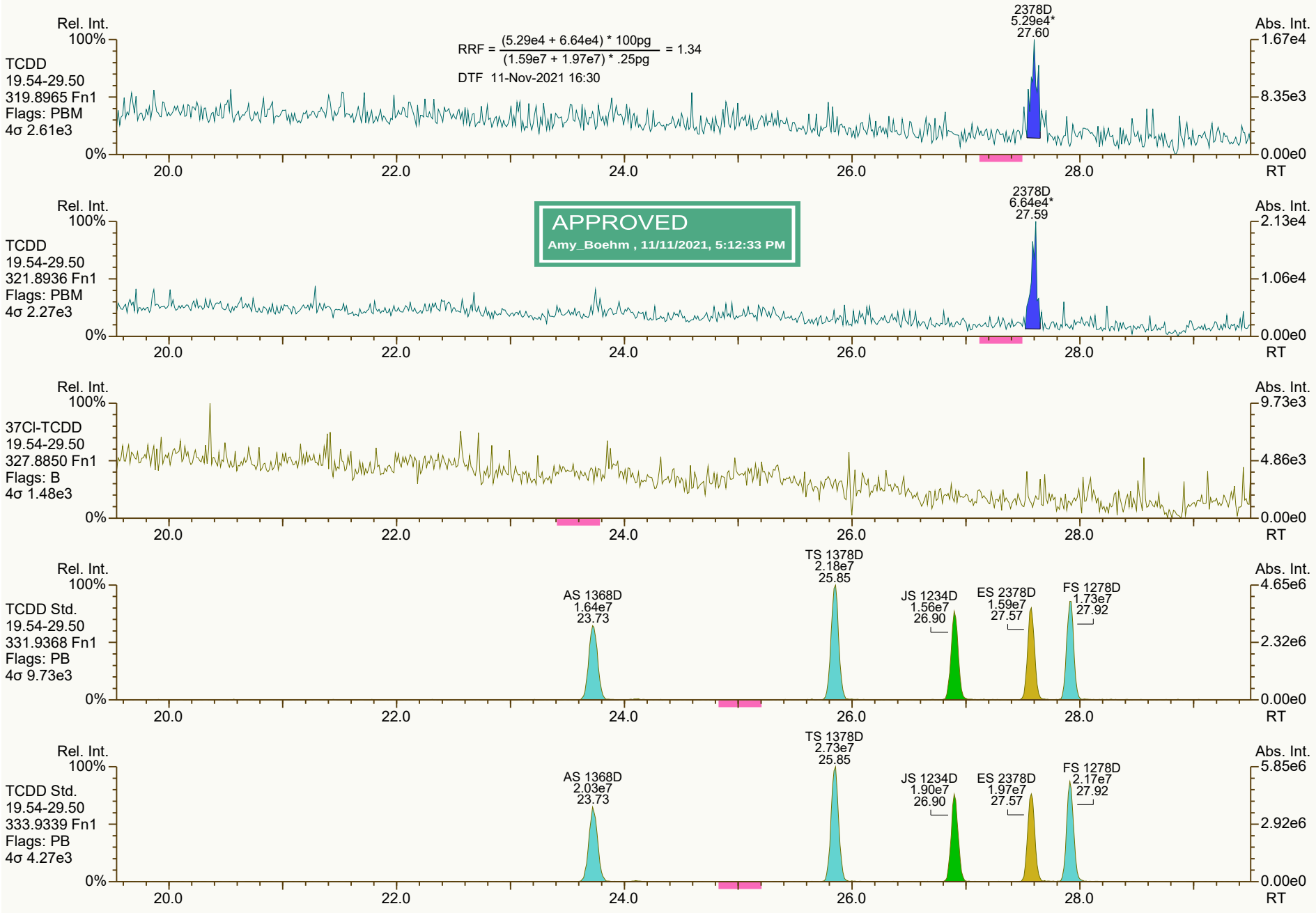
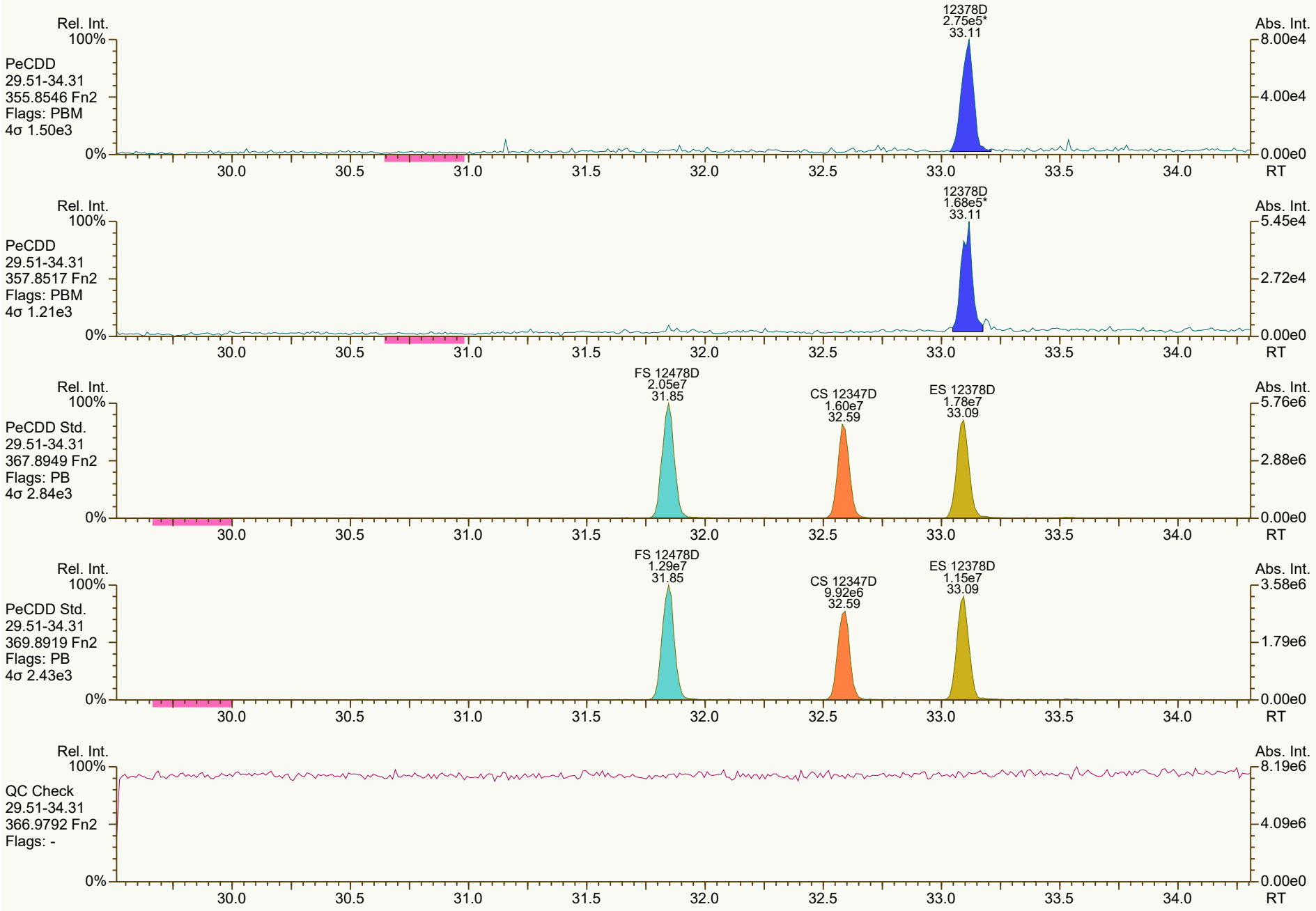
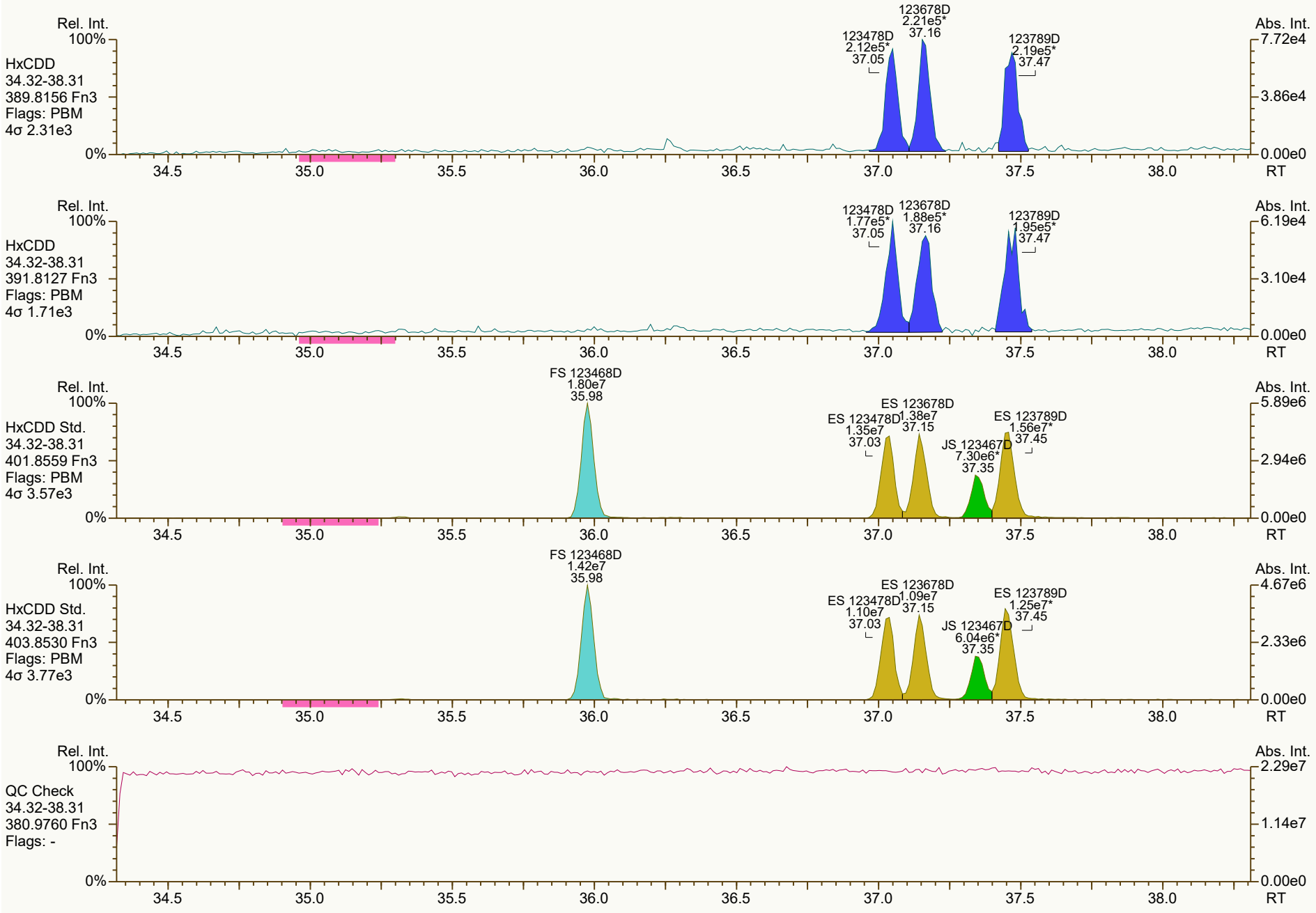
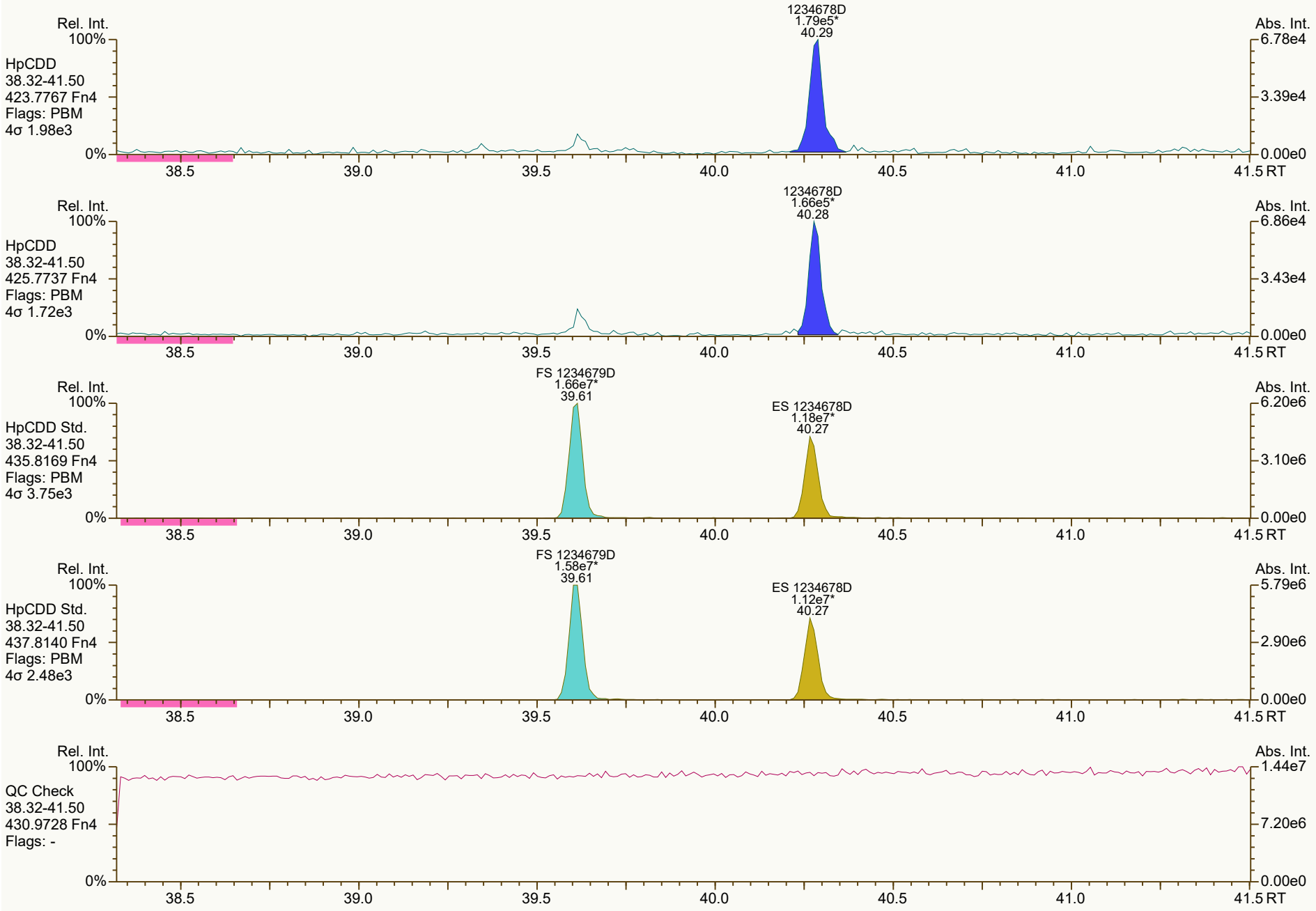
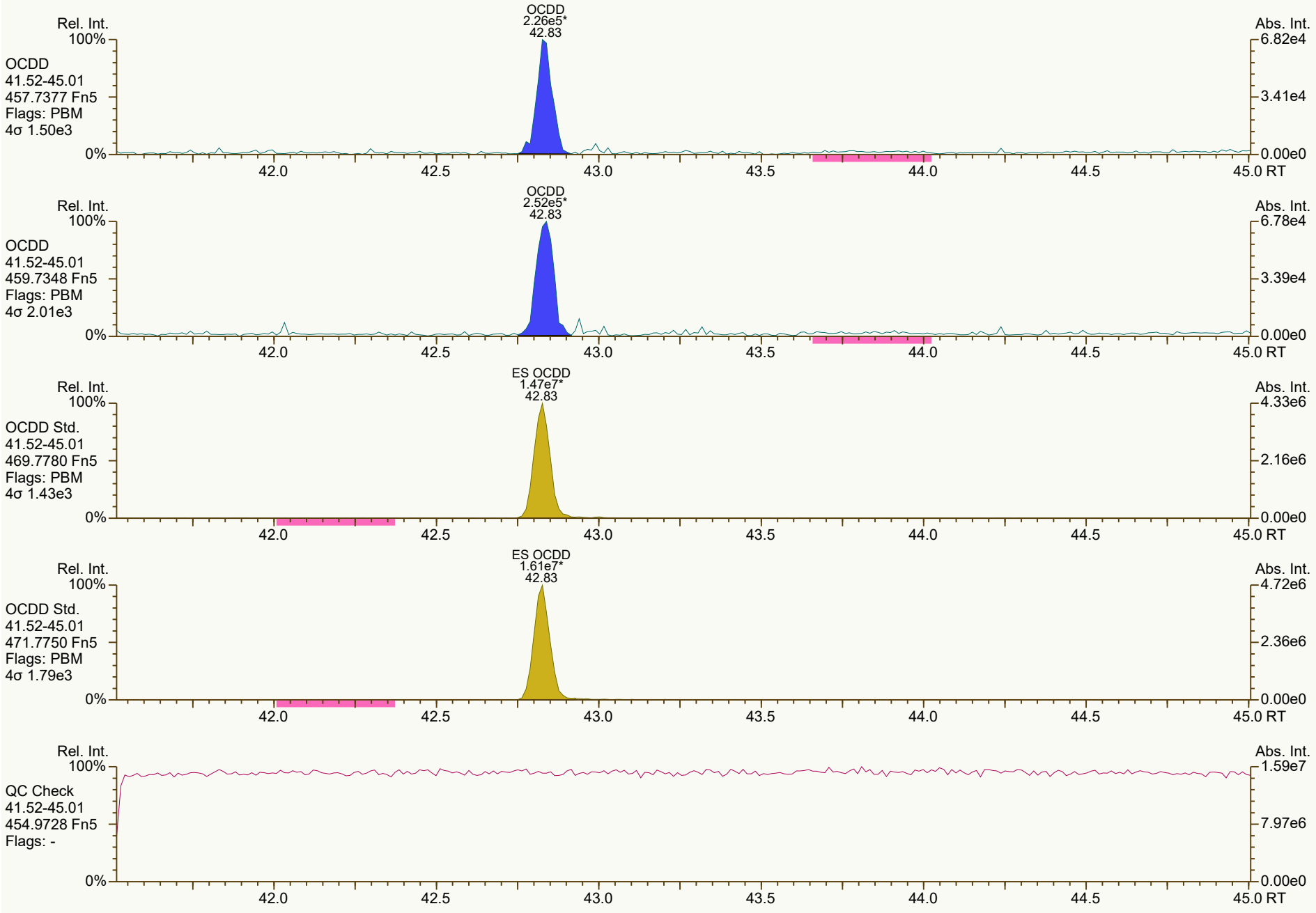
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.04e7
5.21e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.19e6
4.09e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.29e7
1.14e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.44e7
7.20e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.97e6
0.00e0

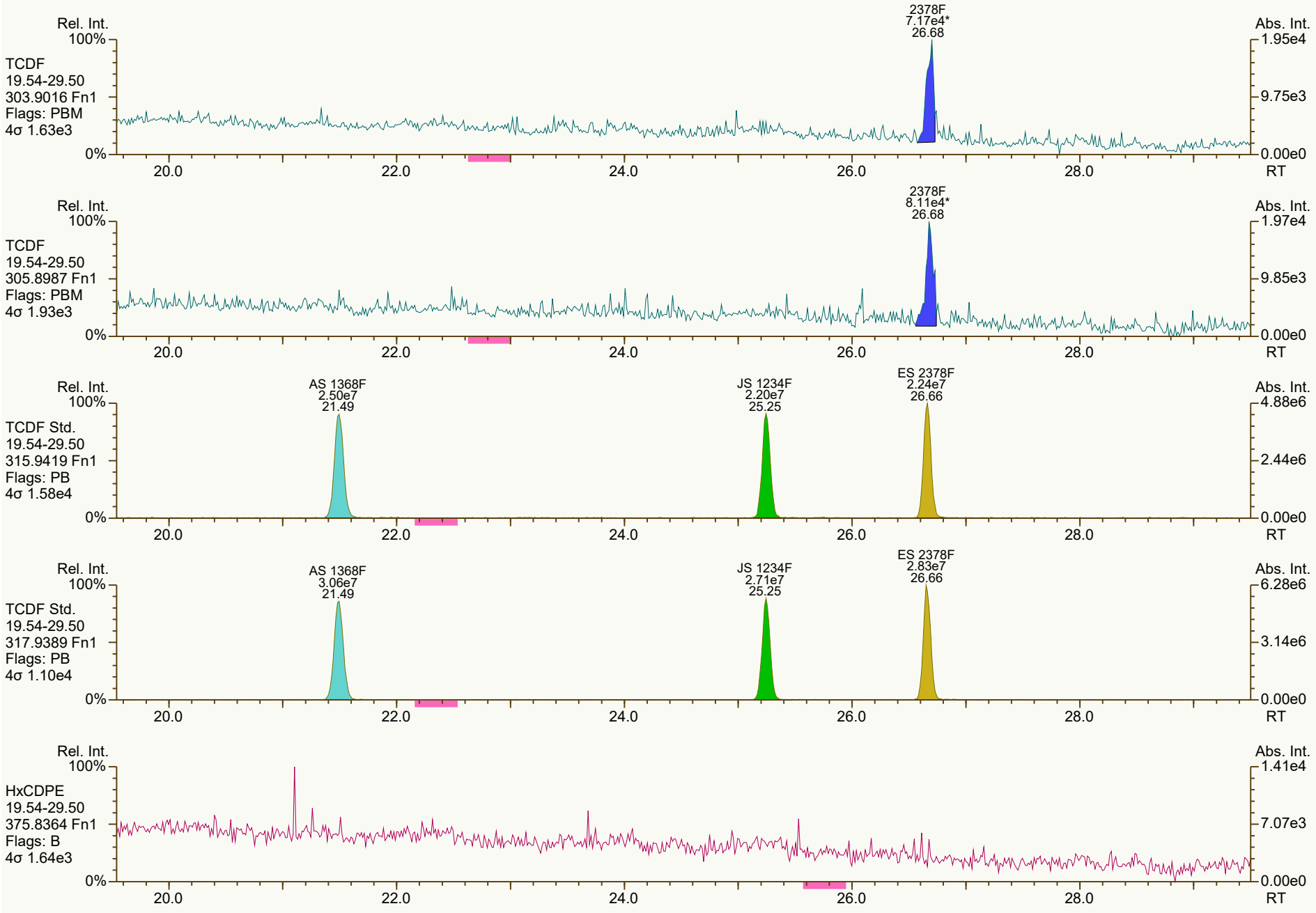

Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PBM
4σ 2.61e3
0%
RRF = (5.29e4 + 6.64e4) * 100pg / (1.59e7 + 1.97e7) * .25pg = 1.34
DTF 11-Nov-2021 16:30
2378D
5.29e4*
27.60
Abs. Int.
1.67e4
8.35e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
APPROVED
Amy_Boehm , 11/11/2021, 5:12:33 PM
TCDD
19.54-29.50
321.8936 Fn1
Flags: PBM
4σ 2.27e3
2378D
6.64e4*
27.59
2.13e4
1.06e4
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.48e3
9.73e3
4.86e3
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 9.73e3
AS 1368D
1.64e7
23.73
TS 1378D
2.18e7
25.85
JS 1234D
1.56e7
26.90
ES 2378D
1.59e7
27.57
FS 1278D
1.73e7
27.92
4.65e6
2.32e6
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.27e3
AS 1368D
2.03e7
23.73
TS 1378D
2.73e7
25.85
JS 1234D
1.90e7
26.90
ES 2378D
1.97e7
27.57
FS 1278D
2.17e7
27.92
5.85e6
2.92e6


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
Abs. Int.
8.00e4
4.00e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.68e5*
33.11
Abs. Int.
5.45e4
2.72e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
Abs. Int.
5.76e6
2.88e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
0%
123478D
2.12e5*
37.05
123678D
2.21e5*
37.16
123789D
2.19e5*
37.47
Abs. Int.
7.72e4
3.86e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
0%
123478D
1.77e5*
37.05
123678D
1.88e5*
37.16
123789D
1.95e5*
37.47
Abs. Int.
6.19e4
3.10e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
0%
FS 123468D
1.80e7
35.98
ES 123478D
1.35e7
37.03
ES 123678D
1.38e7
37.15
JS 123467D
7.30e6*
37.35
ES 123789D
1.56e7*
37.45
Abs. Int.
5.89e6
2.94e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
0%
FS 123468D
1.42e7
35.98
ES 123478D
1.10e7
37.03
ES 123678D
1.09e7
37.15
JS 123467D
6.04e6*
37.35
ES 123789D
1.25e7*
37.45
Abs. Int.
4.67e6
2.33e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

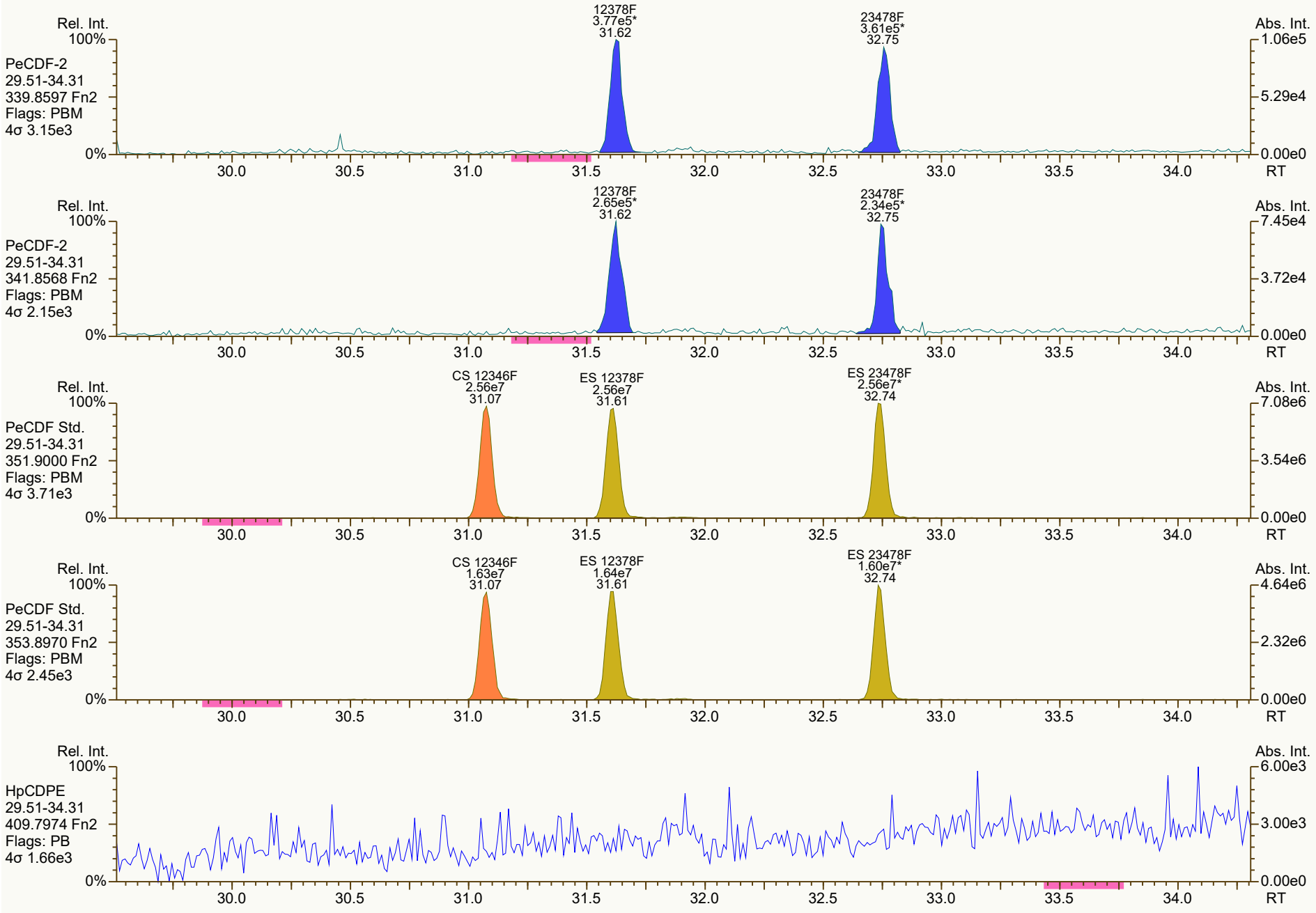

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
0%
1234678D
1.79e5*
40.29
Abs. Int.
6.78e4
3.39e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
0%
1234678D
1.66e5*
40.28
Abs. Int.
6.86e4
3.43e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
0%
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
Abs. Int.
6.20e6
3.10e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
0%
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
Abs. Int.
5.79e6
2.90e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

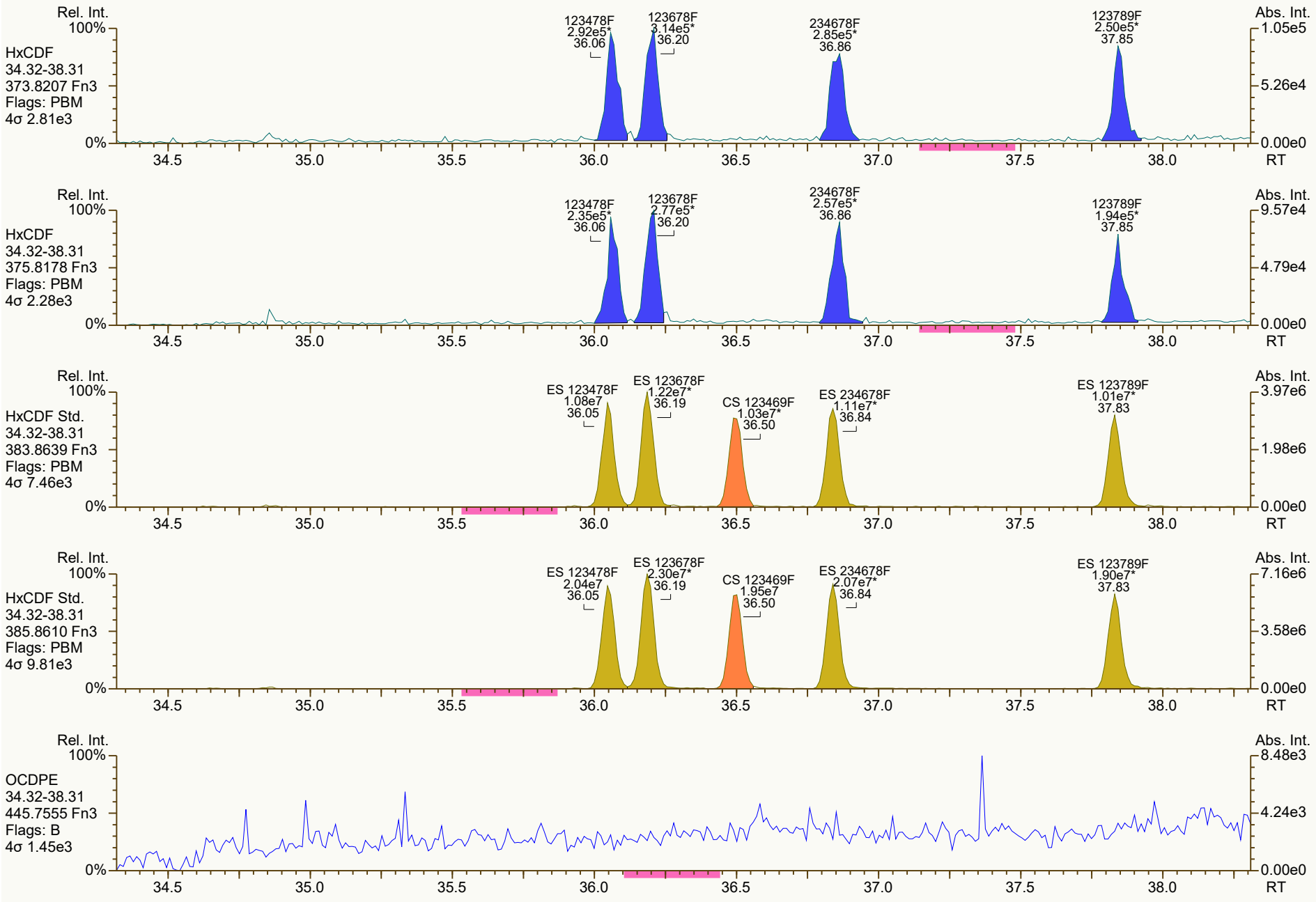

OCDD
2.26e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
6.82e4
3.41e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.52e5*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
ES OCDD
1.47e7*
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
4.33e6
2.16e6
ES OCDD
1.61e7*
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
4.72e6
2.36e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.59e7
7.97e6

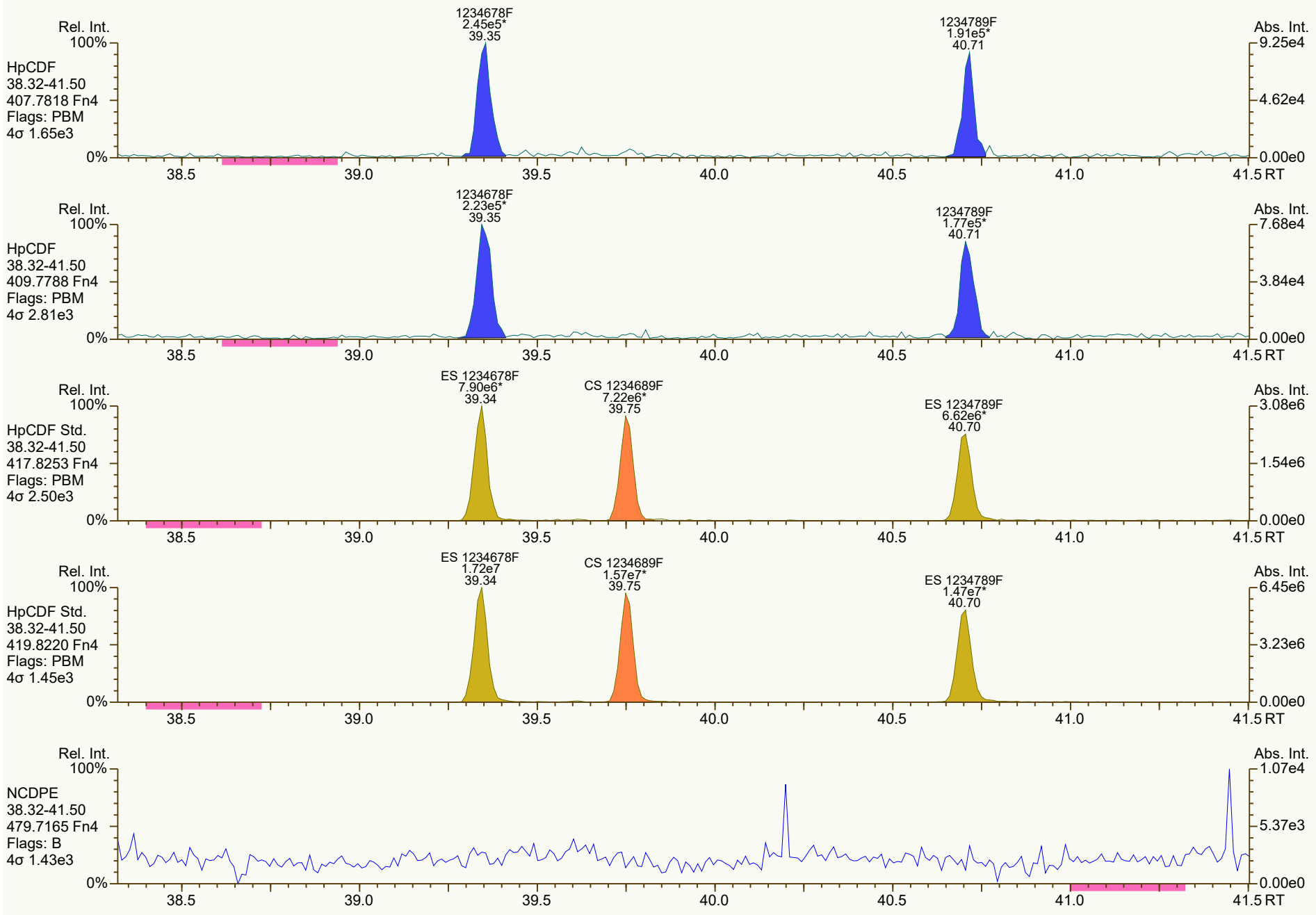

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
2378F
7.17e4*
26.68
Abs. Int.
1.95e4
9.75e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
2378F
8.11e4*
26.68
Abs. Int.
1.97e4
9.85e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
Abs. Int.
4.88e6
2.44e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
26.66
Abs. Int.
6.28e6
3.14e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
Abs. Int.
1.41e4
7.07e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT

SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04




Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12378F
3.77e5*
31.62
23478F
3.61e5*
32.75
Abs. Int.
1.06e5
5.29e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
0%
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
Abs. Int.
7.45e4
3.72e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
0%
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
Abs. Int.
7.08e6
3.54e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
0%
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

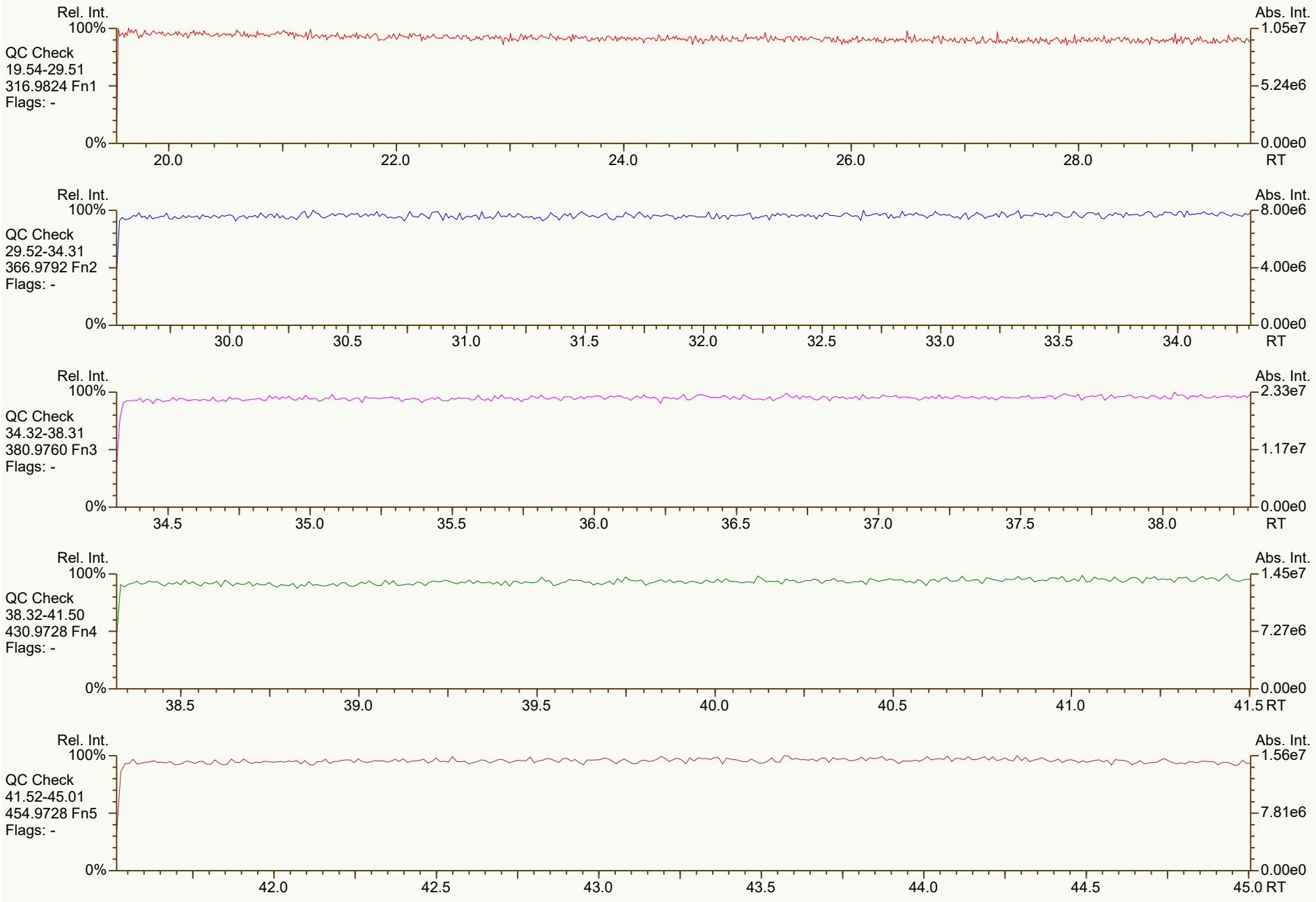

Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.81e3
0%
123478F
2.92e5*
36.06
123678F
3.14e5*
36.20
234678F
2.85e5*
36.86
123789F
2.50e5*
37.85
Abs. Int.
1.05e5
5.26e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.28e3
0%
123478F
2.35e5*
36.06
123678F
2.77e5*
36.20
234678F
2.57e5*
36.86
123789F
1.94e5*
37.85
Abs. Int.
9.57e4
4.79e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.46e3
0%
ES 123478F
1.08e7
36.05
ES 123678F
1.22e7*
36.19
CS 123469F
1.03e7*
36.50
ES 234678F
1.11e7*
36.84
ES 123789F
1.01e7*
37.83
Abs. Int.
3.97e6
1.98e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.81e3
0%
ES 123478F
2.04e7
36.05
ES 123678F
2.30e7*
36.19
CS 123469F
1.95e7
36.50
ES 234678F
2.07e7*
36.84
ES 123789F
1.90e7*
37.83
Abs. Int.
7.16e6
3.58e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

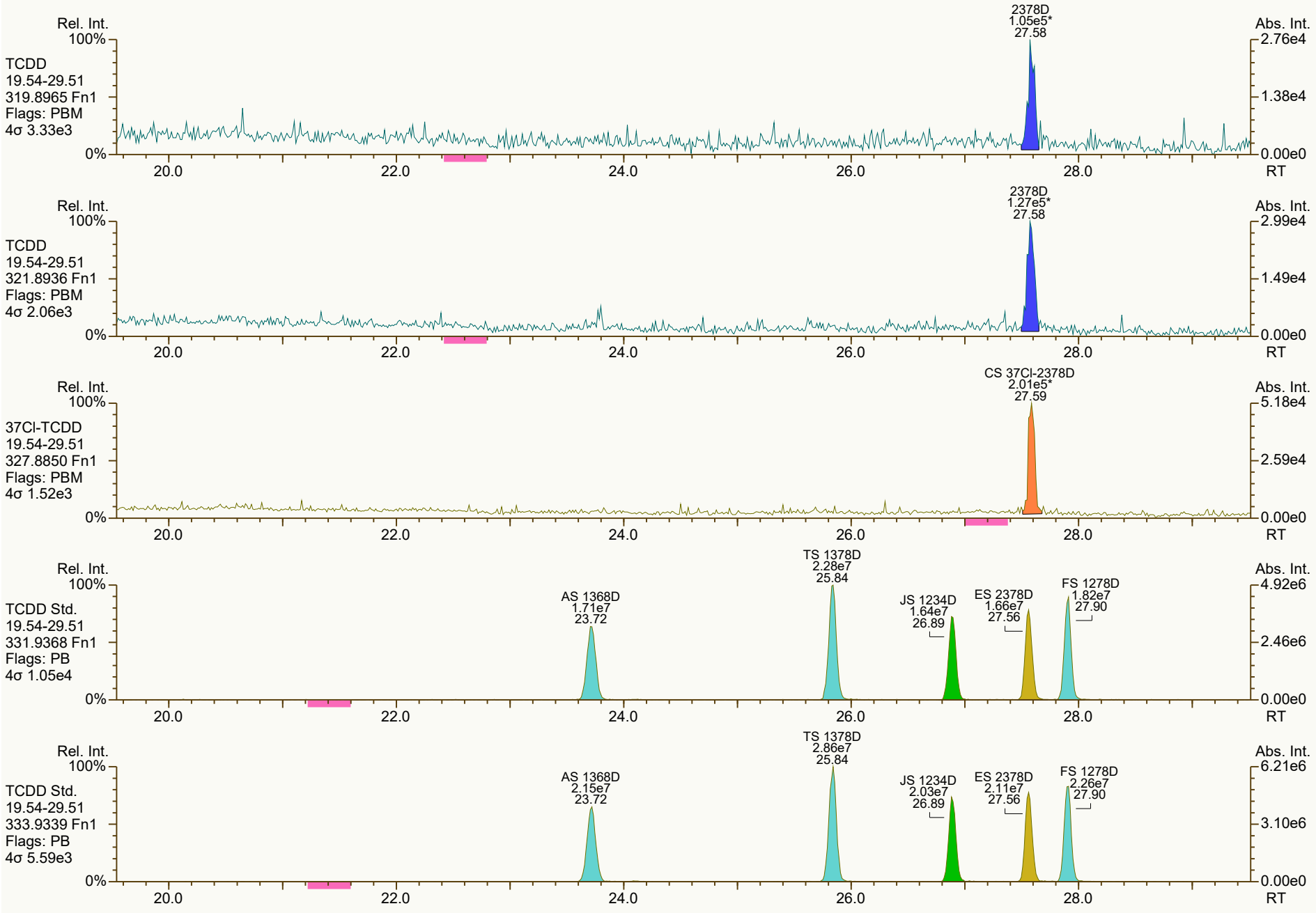

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
Abs. Int.
9.25e4
4.62e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
Abs. Int.
7.68e4
3.84e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
Abs. Int.
3.08e6
1.54e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
Abs. Int.
6.45e6
3.23e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
Abs. Int.
1.07e4
5.37e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

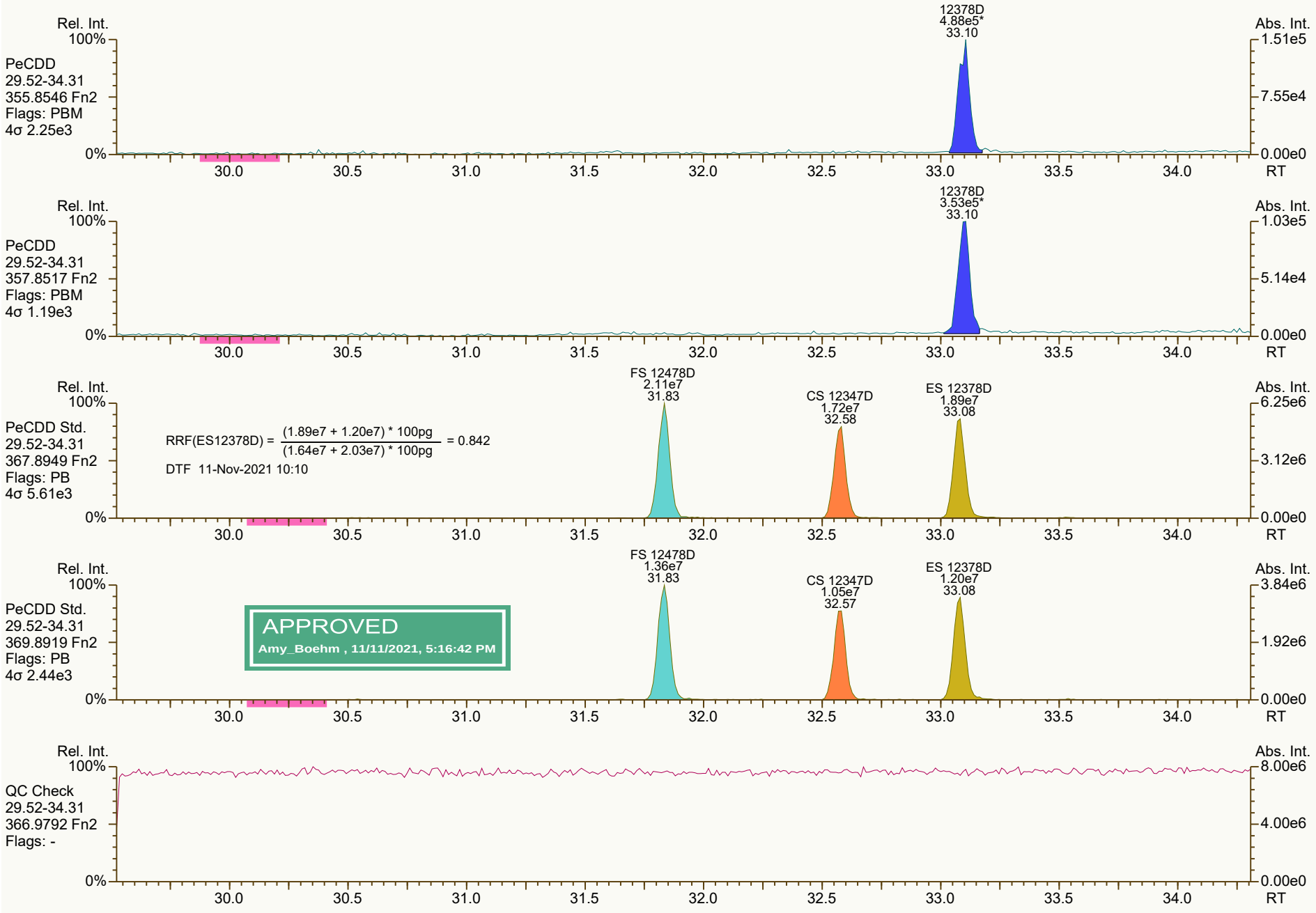

OCDF
2.83e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.07e3
0%
Abs. Int.
9.68e4
4.84e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.12e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.63e3
0%
Abs. Int.
8.96e4
4.48e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.88e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.90e3
0%
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.08e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.27e3
0%
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.52e3
0%
Abs. Int.
5.12e3
2.56e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

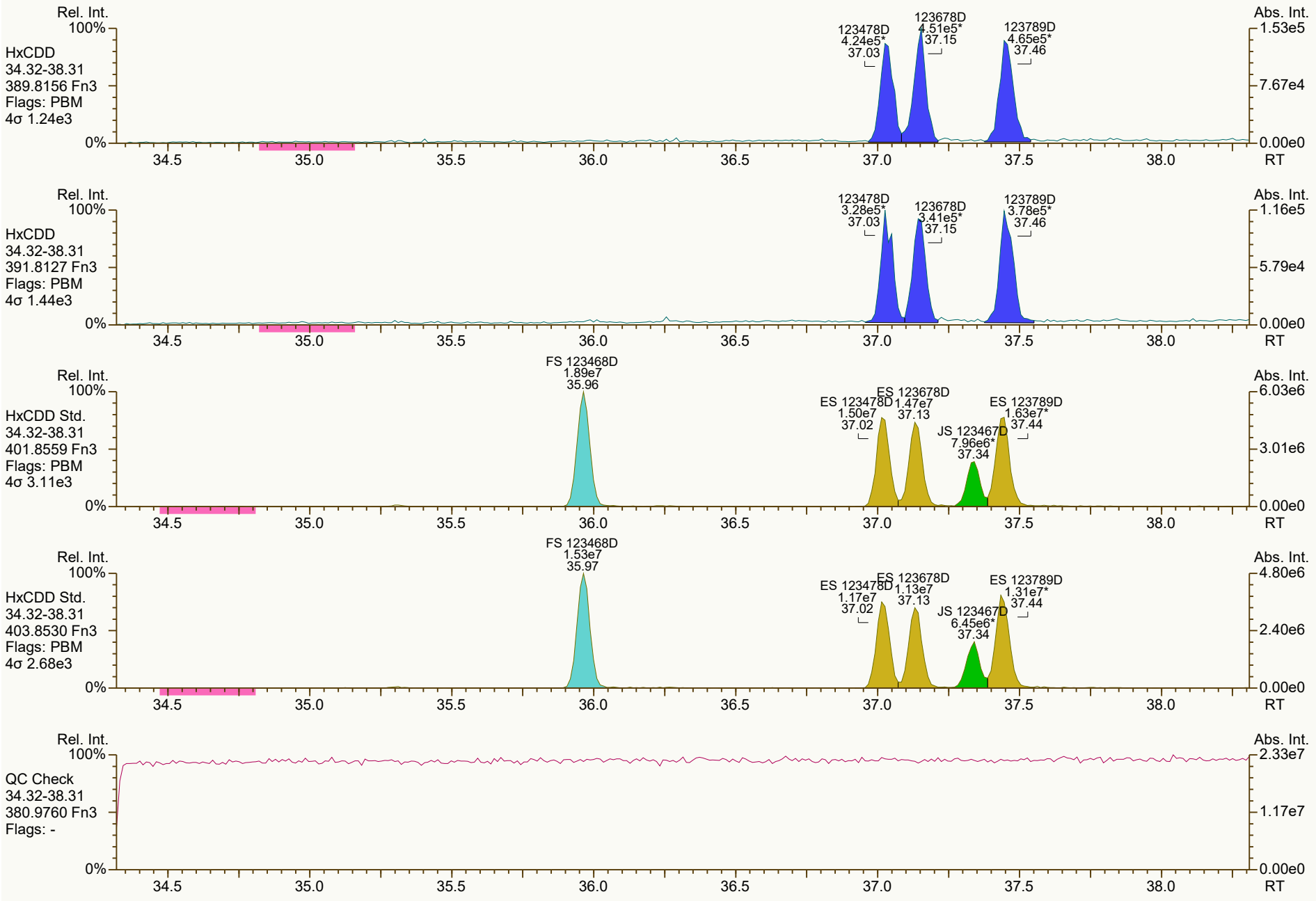
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

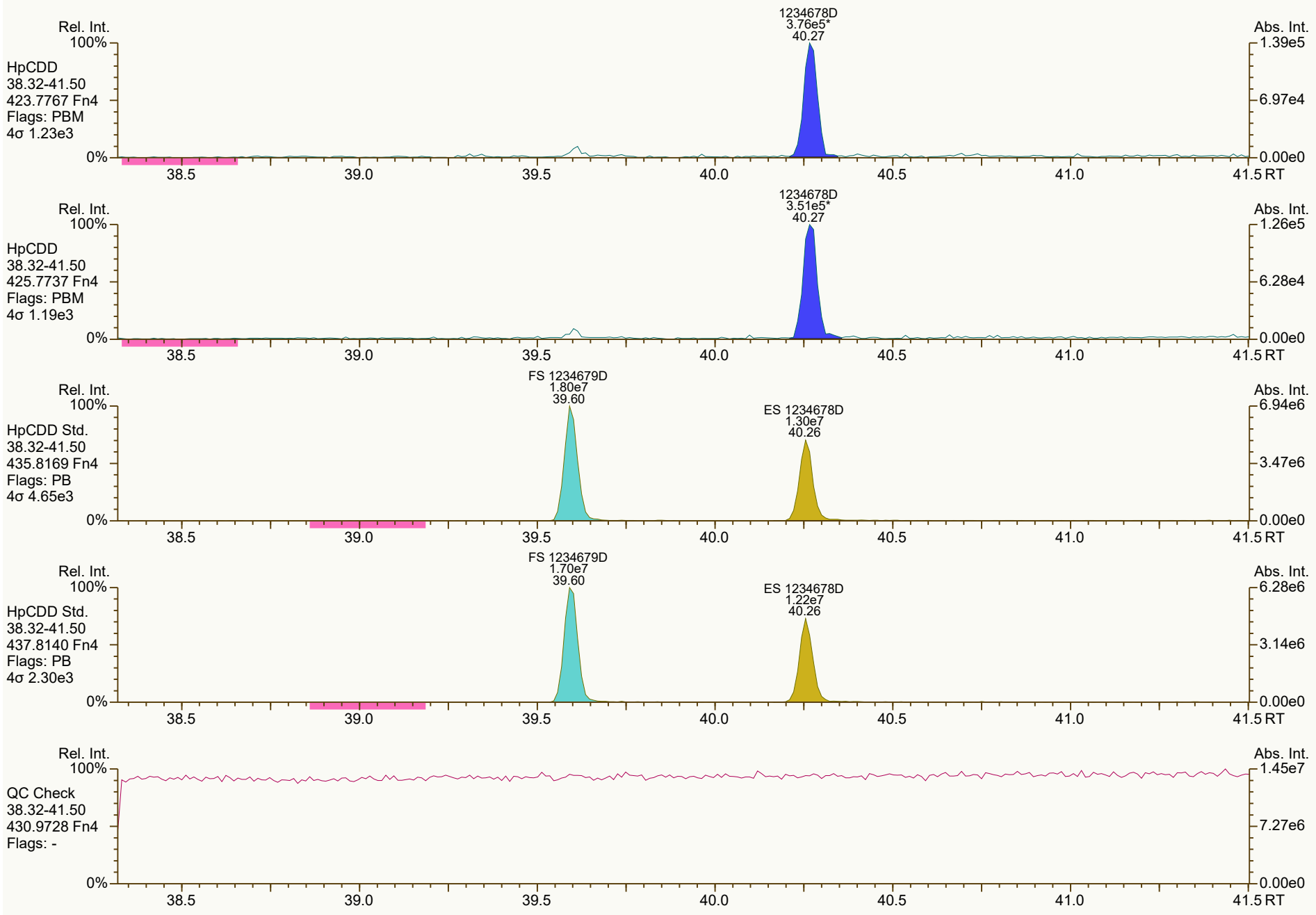
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

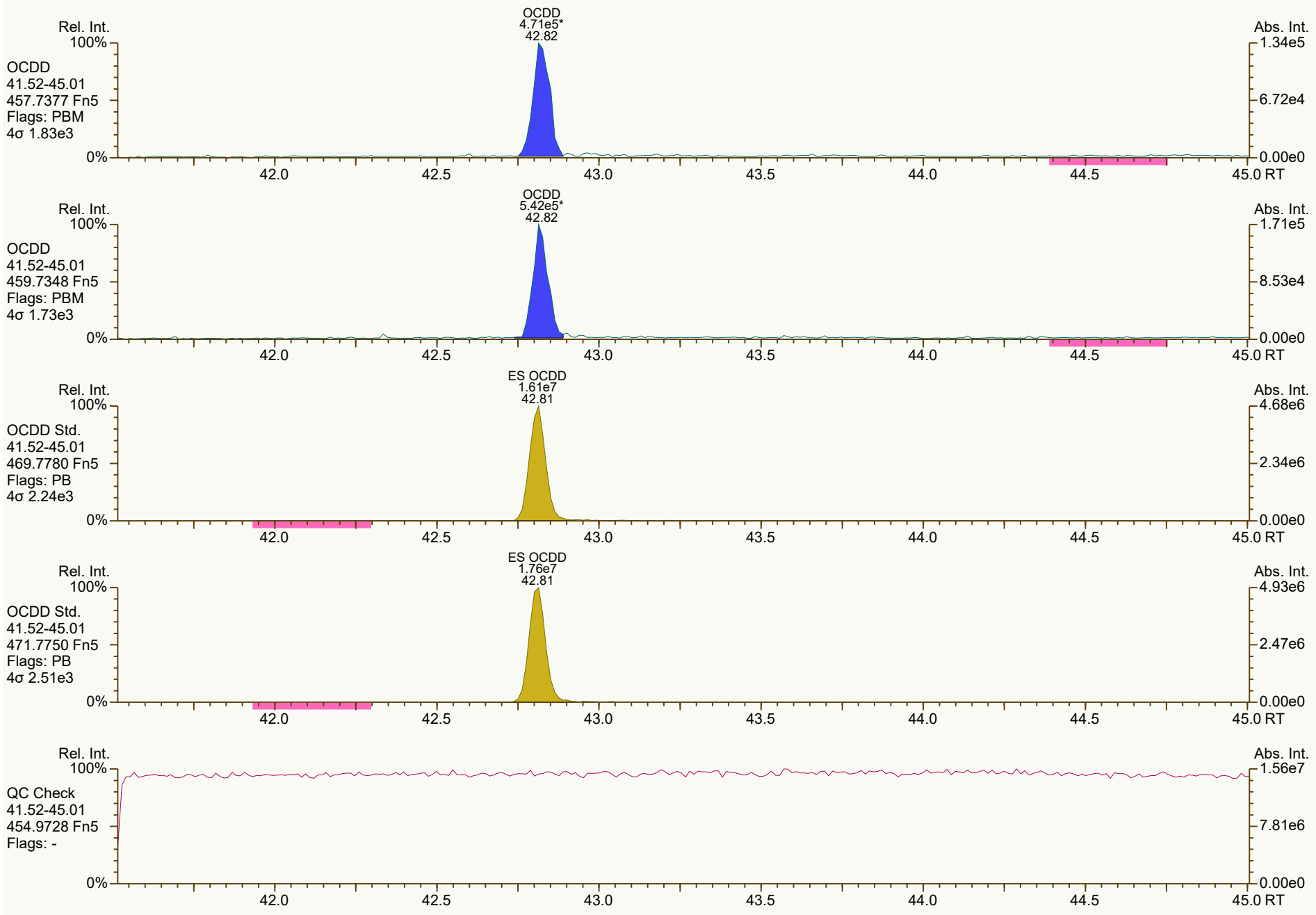

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.05e7
5.24e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.00e6
4.00e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.45e7
7.27e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.56e7
7.81e6
0.00e0

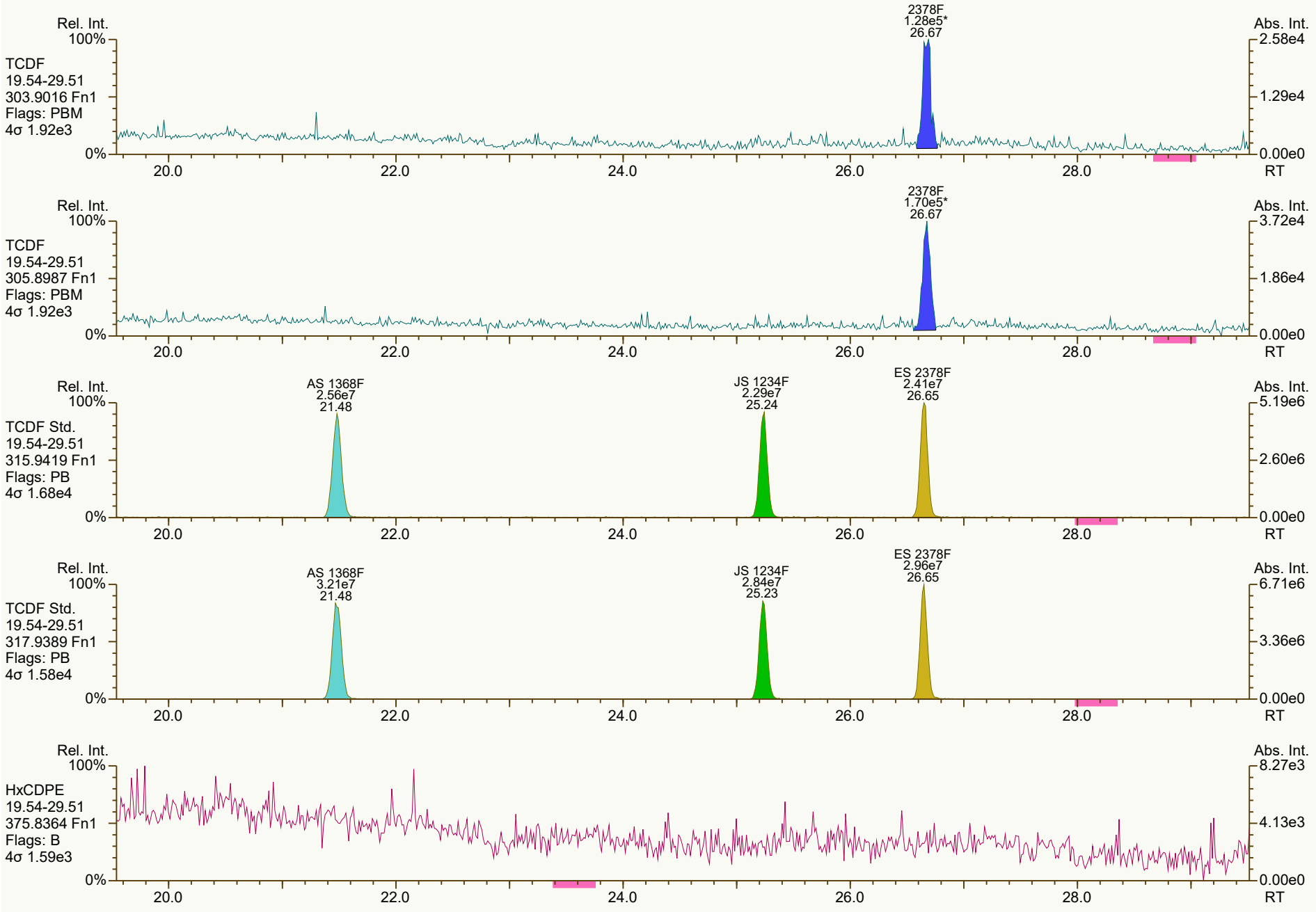

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 3.33e3
0%
2378D
1.05e5*
27.58
Abs. Int.
2.76e4
1.38e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.06e3
0%
2378D
1.27e5*
27.58
Abs. Int.
2.99e4
1.49e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.52e3
0%
CS 37Cl-2378D
2.01e5*
27.59
Abs. Int.
5.18e4
2.59e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 1.05e4
0%
AS 1368D
1.71e7
23.72
TS 1378D
2.28e7
25.84
JS 1234D
1.64e7
26.89
ES 2378D
1.66e7
27.56
FS 1278D
1.82e7
27.90
Abs. Int.
4.92e6
2.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 5.59e3
0%
AS 1368D
2.15e7
23.72
TS 1378D
2.86e7
25.84
JS 1234D
2.03e7
26.89
ES 2378D
2.11e7
27.56
FS 1278D
2.26e7
27.90
Abs. Int.
6.21e6
3.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

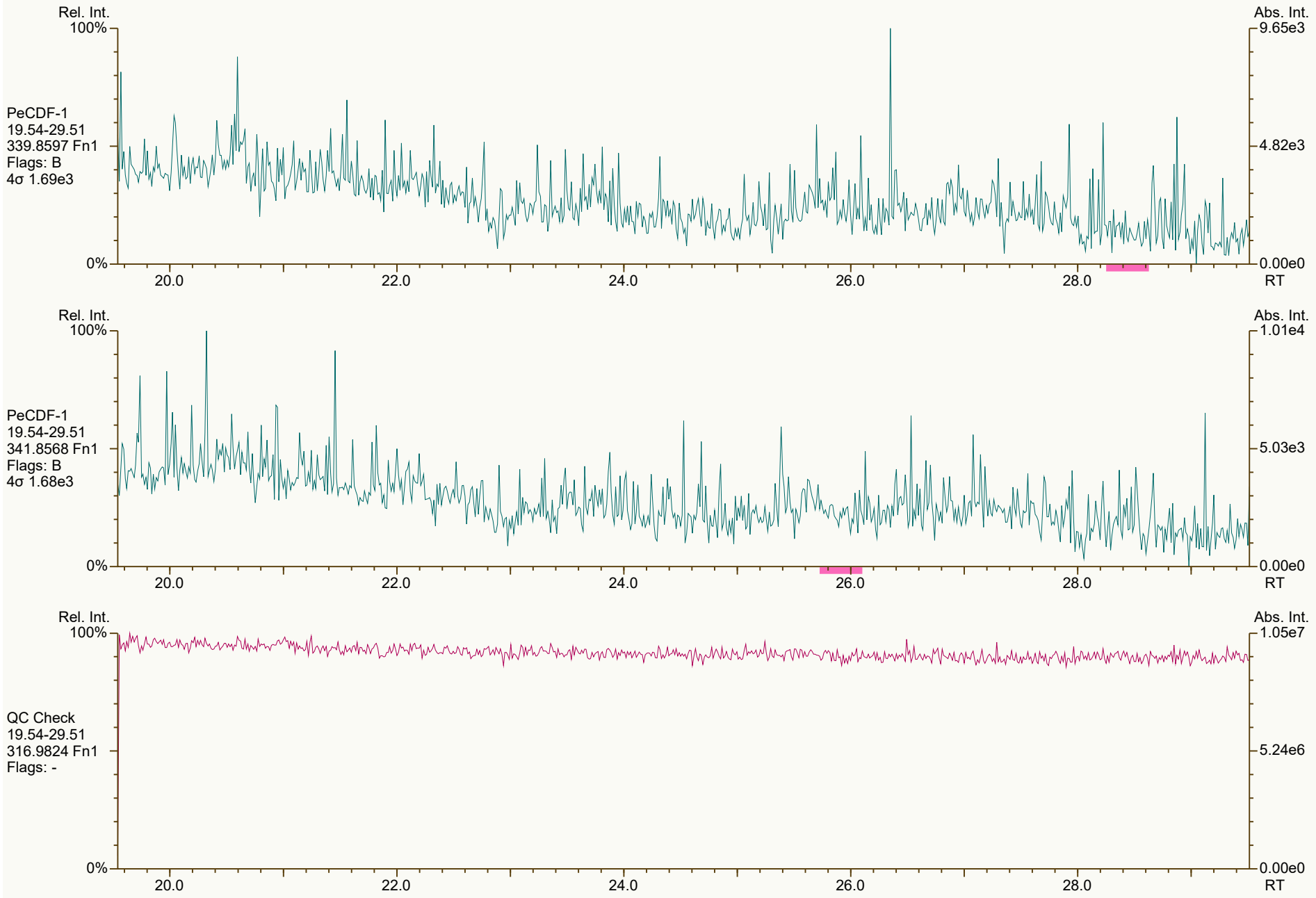

Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.25e3
12378D
4.88e5*
33.10
Abs. Int.
1.51e5
7.55e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.19e3
12378D
3.53e5*
33.10
1.03e5
5.14e4
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 5.61e3
RRF(ES12378D) = (1.89e7 + 1.20e7) * 100pg / (1.64e7 + 2.03e7) * 100pg = 0.842
DTF 11-Nov-2021 10:10
FS 12478D
2.11e7
31.83
CS 12347D
1.72e7
32.58
ES 12378D
1.89e7
33.08
6.25e6
3.12e6
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 2.44e3
APPROVED
Amy_Boehm , 11/11/2021, 5:16:42 PM
FS 12478D
1.36e7
31.83
CS 12347D
1.05e7
32.57
ES 12378D
1.20e7
33.08
3.84e6
1.92e6
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
8.00e6
4.00e6


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D
4.24e5*
37.03
123678D
4.51e5*
37.15
123789D
4.65e5*
37.46
Abs. Int.
1.53e5
7.67e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D
3.28e5*
37.03
123678D
3.41e5*
37.15
123789D
3.78e5*
37.46
Abs. Int.
1.16e5
5.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D
1.89e7
35.96
ES 123678D
1.47e7
37.13
ES 123478D
1.50e7
37.02
ES 123789D
1.63e7*
37.44
JS 123467D
7.96e6*
37.34
Abs. Int.
6.03e6
3.01e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
1.53e7
35.97
ES 123678D
1.13e7
37.13
ES 123478D
1.17e7
37.02
ES 123789D
1.31e7*
37.44
JS 123467D
6.45e6*
37.34
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

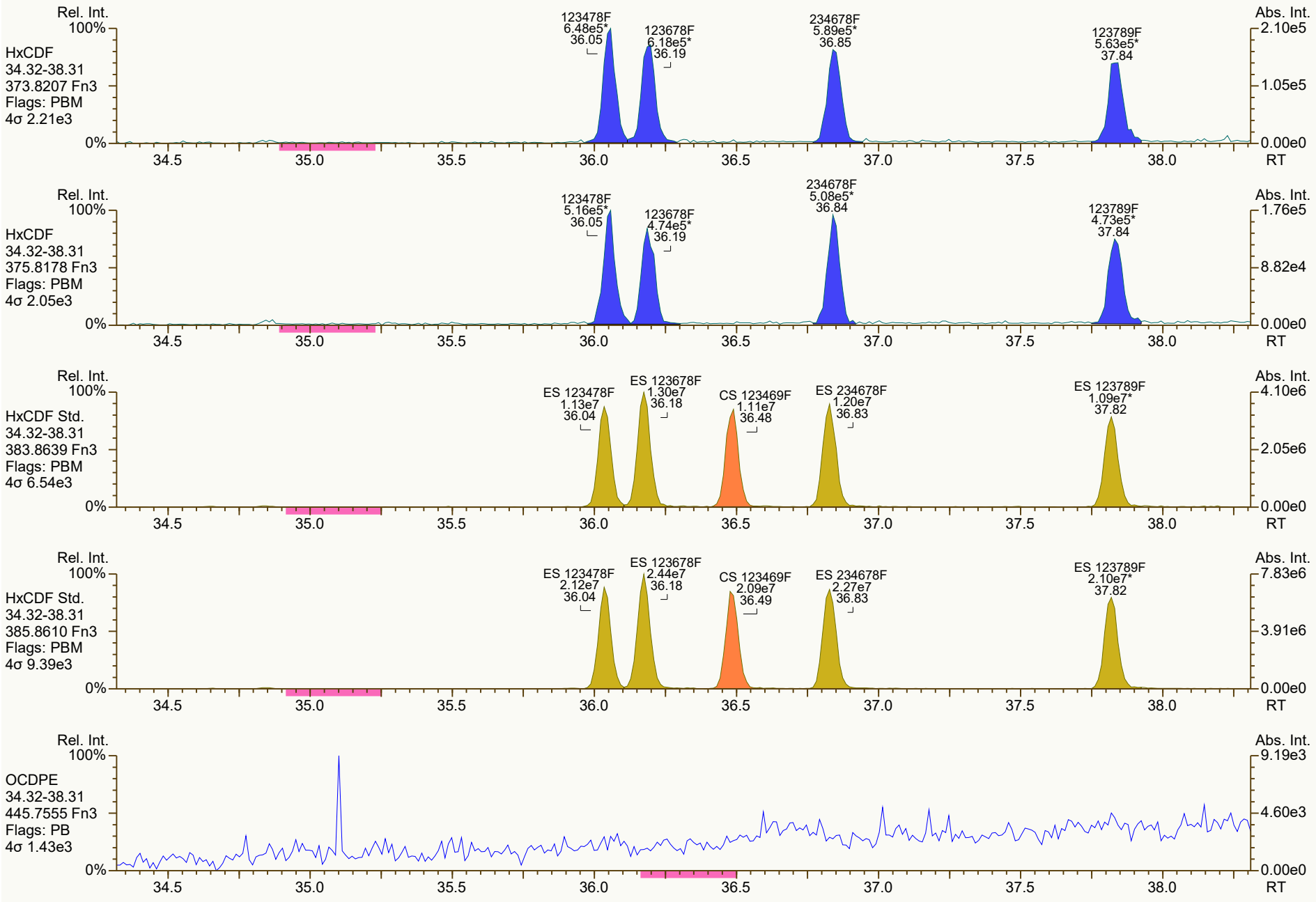

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
0%
1234678D
3.76e5*
40.27
Abs. Int.
1.39e5
6.97e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
0%
1234678D
3.51e5*
40.27
Abs. Int.
1.26e5
6.28e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
0%
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
Abs. Int.
6.94e6
3.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
0%
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
Abs. Int.
6.28e6
3.14e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.45e7
7.27e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
4.71e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
1.34e5
6.72e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
Abs. Int.
1.71e5
8.53e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
Abs. Int.
4.93e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.56e7
7.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

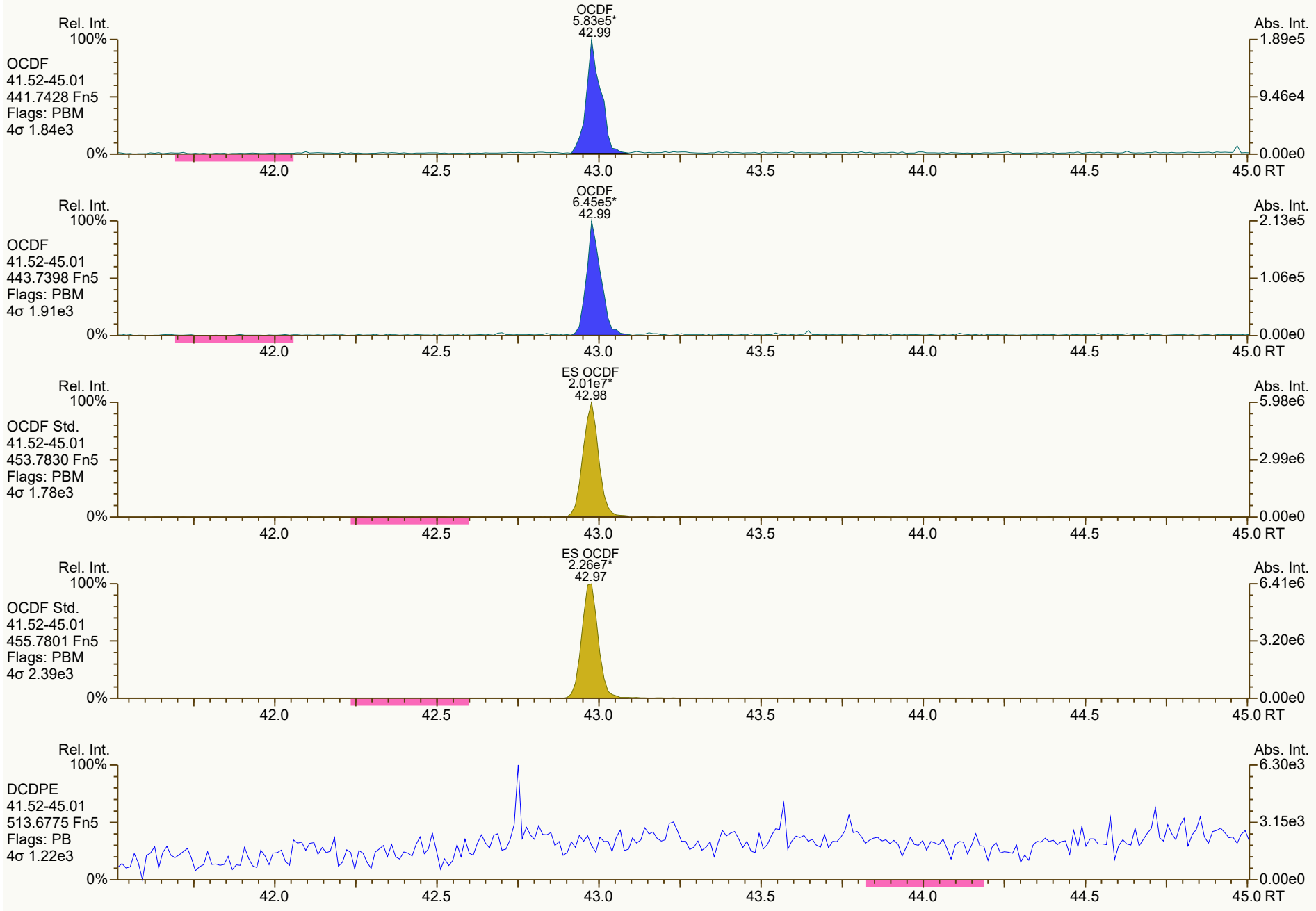

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.28e5*
26.67
Abs. Int.
2.58e4
1.29e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.70e5*
26.67
Abs. Int.
3.72e4
1.86e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.68e4
0%
AS 1368F
2.56e7
21.48
JS 1234F
2.29e7
25.24
ES 2378F
2.41e7
26.65
Abs. Int.
5.19e6
2.60e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
3.21e7
21.48
JS 1234F
2.84e7
25.23
ES 2378F
2.96e7
26.65
Abs. Int.
6.71e6
3.36e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.65e3
4.82e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.69e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.01e4
5.03e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.68e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
Abs. Int.
2.10e5
1.05e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
Abs. Int.
1.40e5
7.02e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.63e7
32.73
Abs. Int.
7.54e6
3.77e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
CS 12346F
1.69e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
Abs. Int.
4.85e6
2.42e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
Abs. Int.
1.10e4
5.51e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.21e3
0%
123478F
6.48e5*
36.05
123678F
6.18e5*
36.19
234678F
5.89e5*
36.85
123789F
5.63e5*
37.84
Abs. Int.
2.10e5
1.05e5
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.05e3
0%
123478F
5.16e5*
36.05
123678F
4.74e5*
36.19
234678F
5.08e5*
36.84
123789F
4.73e5*
37.84
Abs. Int.
1.76e5
8.82e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 6.54e3
0%
ES 123478F
1.13e7
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.11e7
36.48
ES 234678F
1.20e7
36.83
ES 123789F
1.09e7*
37.82
Abs. Int.
4.10e6
2.05e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.39e3
0%
ES 123478F
2.12e7
36.04
ES 123678F
2.44e7
36.18
CS 123469F
2.09e7
36.49
ES 234678F
2.27e7
36.83
ES 123789F
2.10e7*
37.82
Abs. Int.
7.83e6
3.91e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.43e3
0%
Abs. Int.
9.19e3
4.60e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.51e3
0%
1234678F
5.15e5*
39.34
1234789F
3.83e5*
40.70
Abs. Int.
2.00e5
9.99e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.63e3
0%
1234678F
4.85e5*
39.34
1234789F
4.12e5*
40.70
Abs. Int.
1.67e5
8.36e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 3.90e3
0%
ES 1234678F
7.77e6*
39.33
CS 1234689F
8.09e6*
39.74
ES 1234789F
7.34e6*
40.69
Abs. Int.
3.13e6
1.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.97e3
0%
ES 1234678F
1.82e7*
39.33
CS 1234689F
1.73e7*
39.74
ES 1234789F
1.63e7*
40.69
Abs. Int.
6.42e6
3.21e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.46e3
0%
Abs. Int.
3.72e3
1.86e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

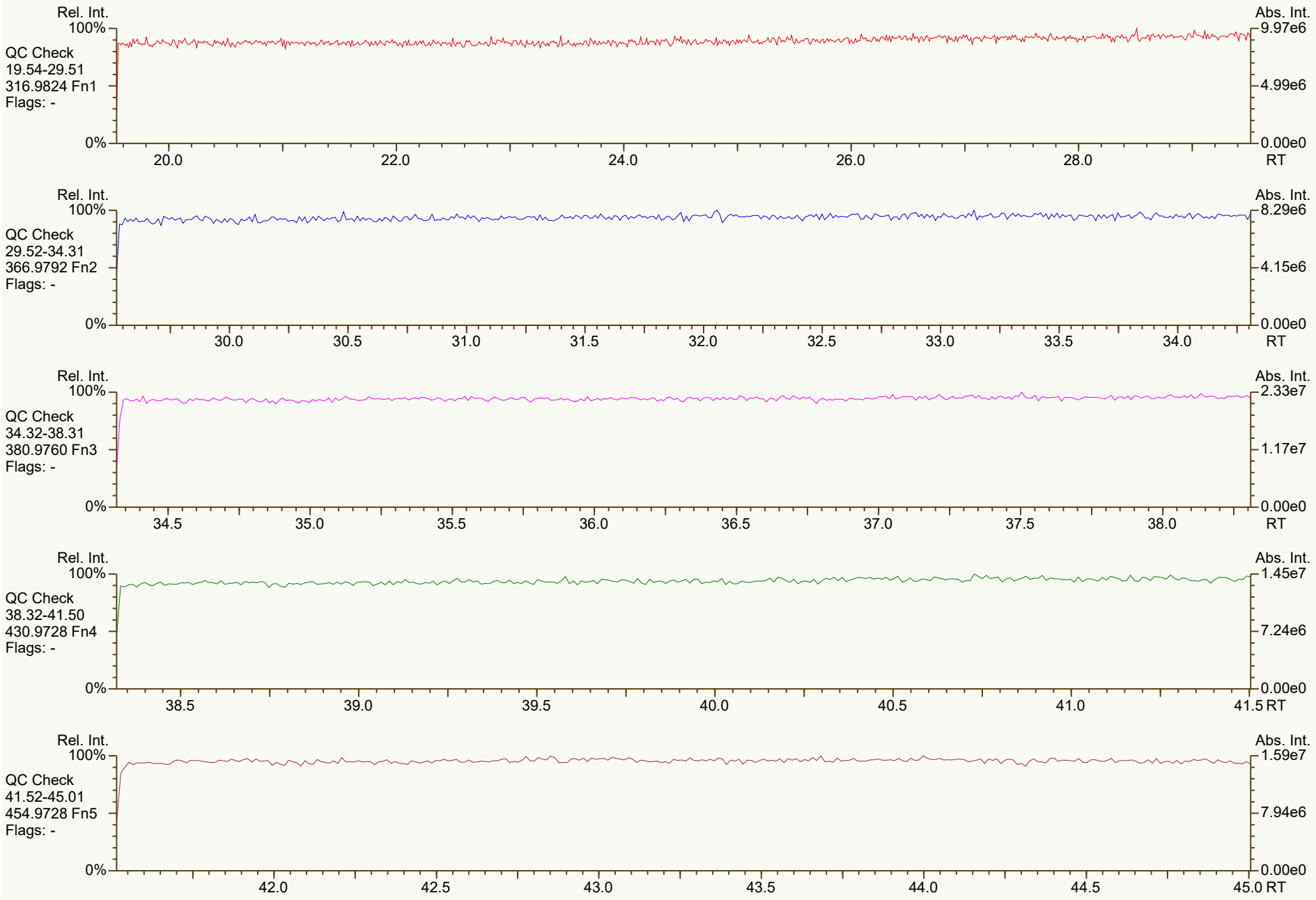

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
0%
OCDF
5.83e5*
42.99
Abs. Int.
1.89e5
9.46e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
0%
OCDF
6.45e5*
42.99
Abs. Int.
2.13e5
1.06e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
0%
ES OCDF
2.01e7*
42.98
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
0%
ES OCDF
2.26e7*
42.97
Abs. Int.
6.41e6
3.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

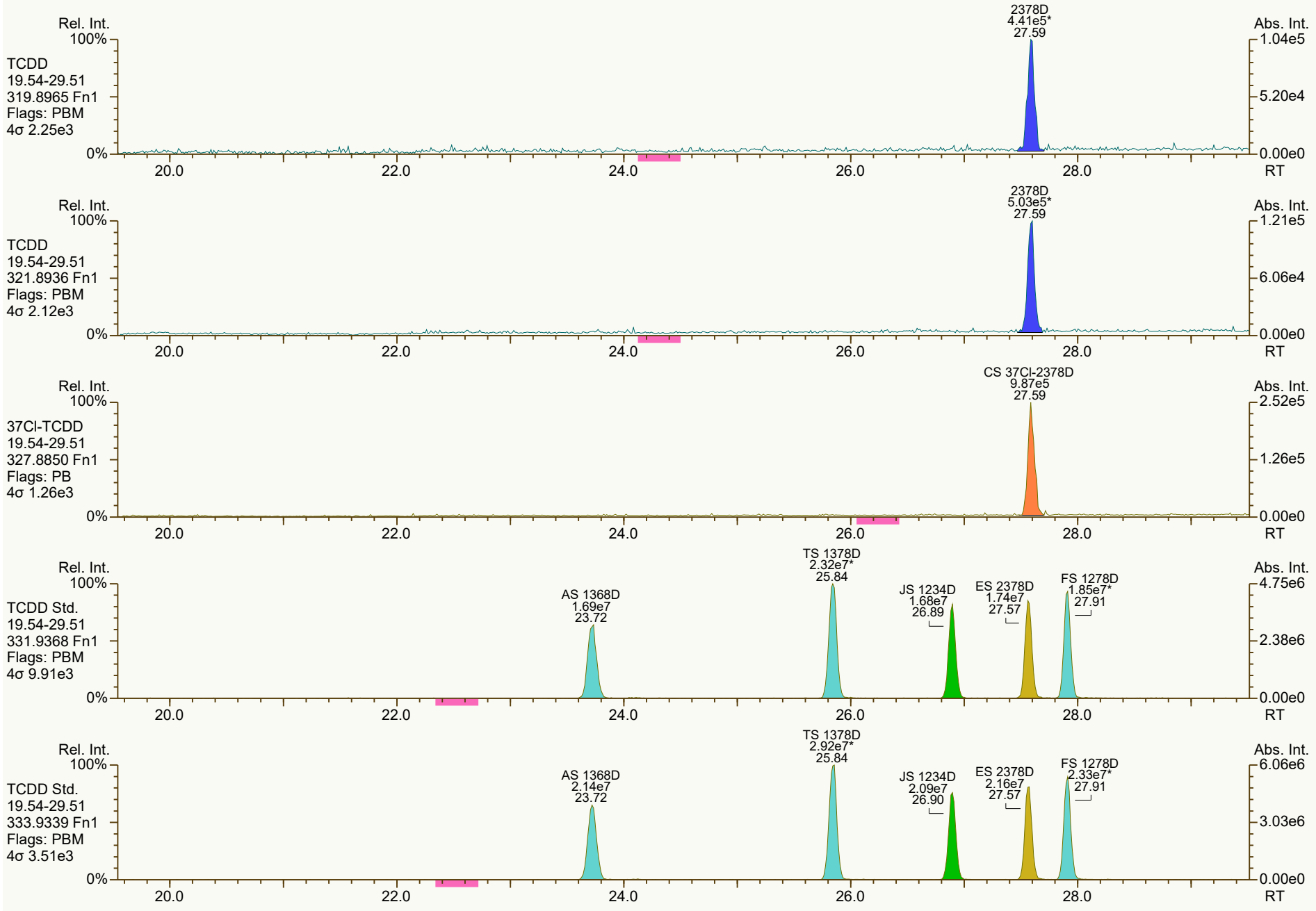
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

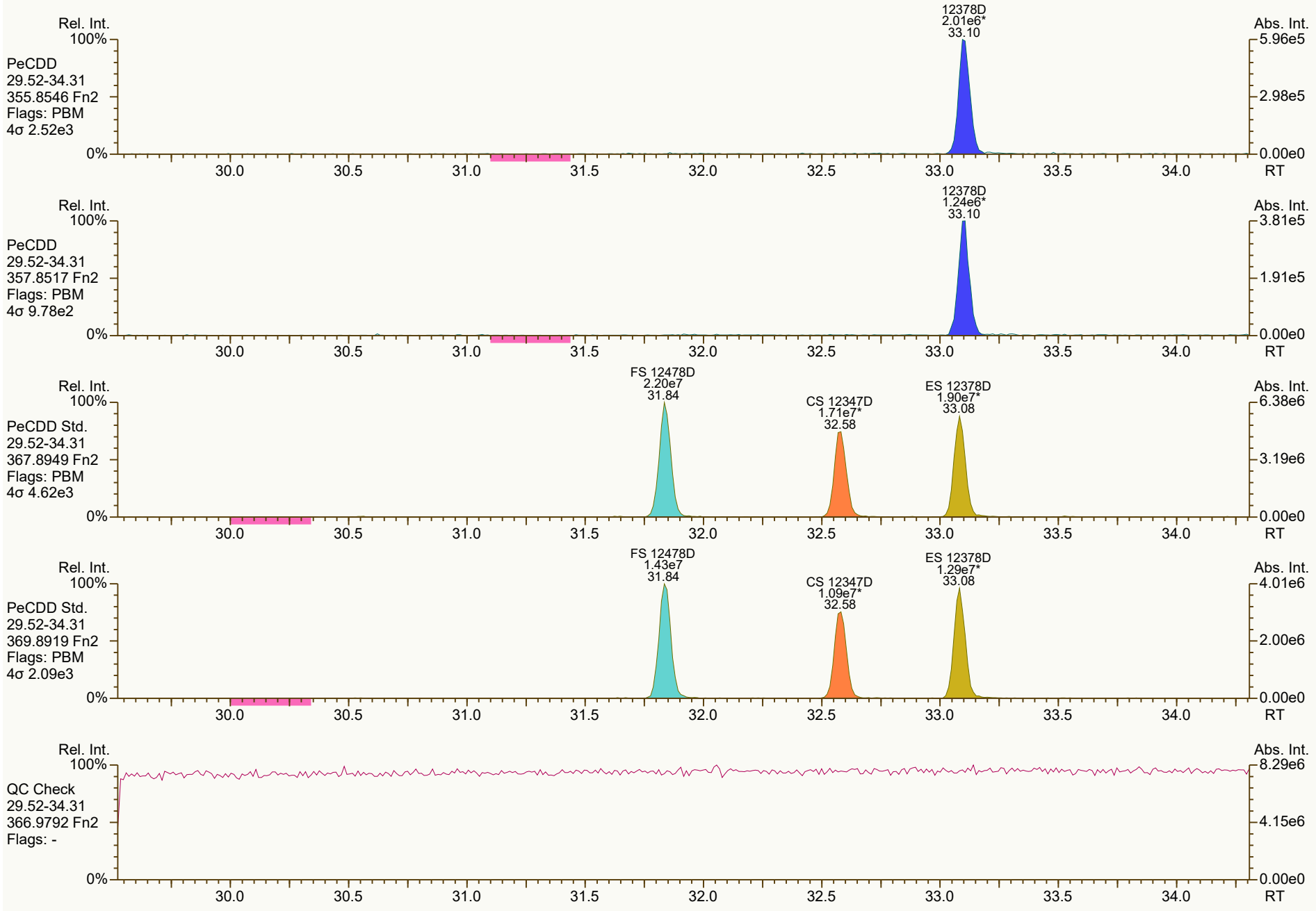
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

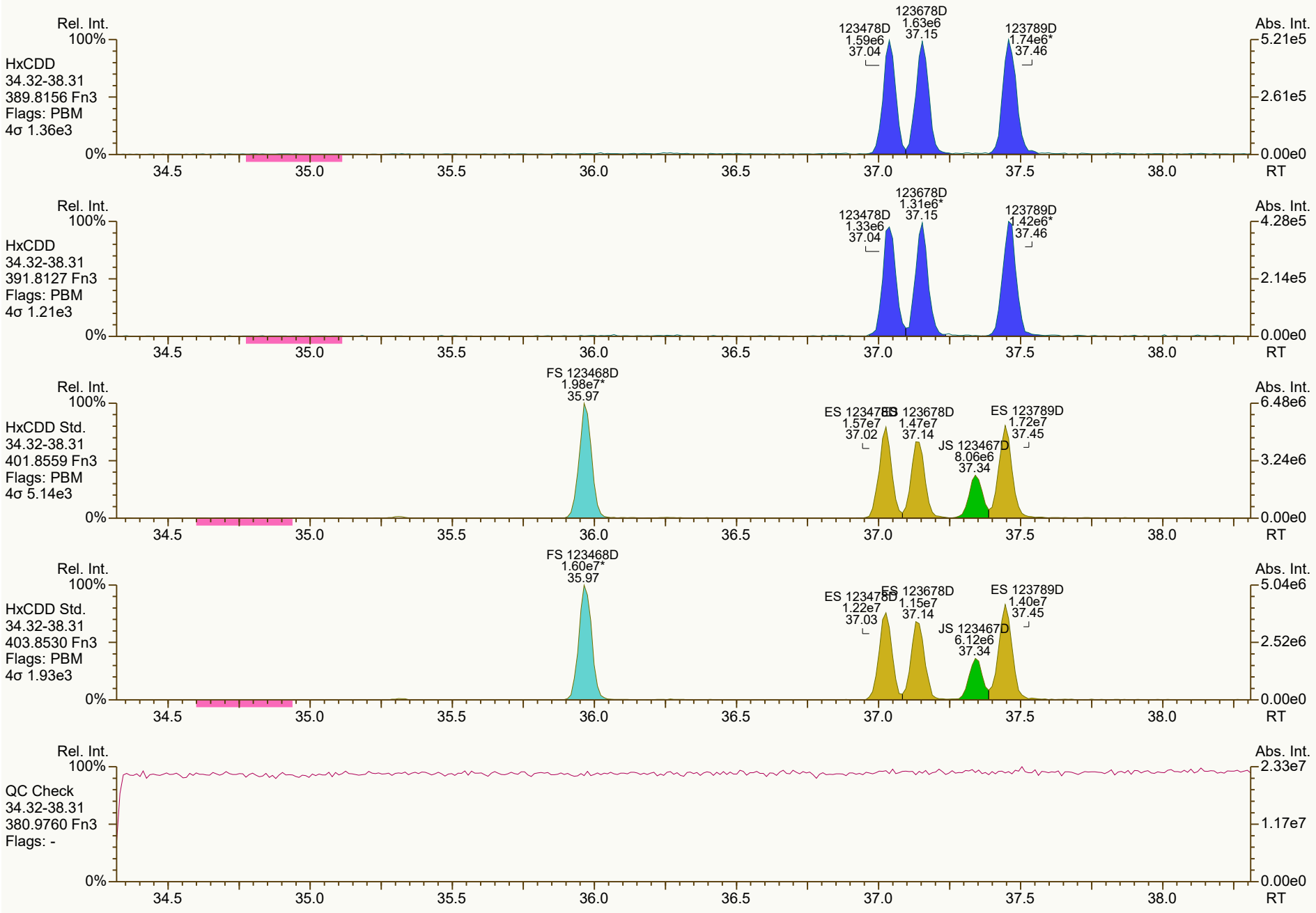
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

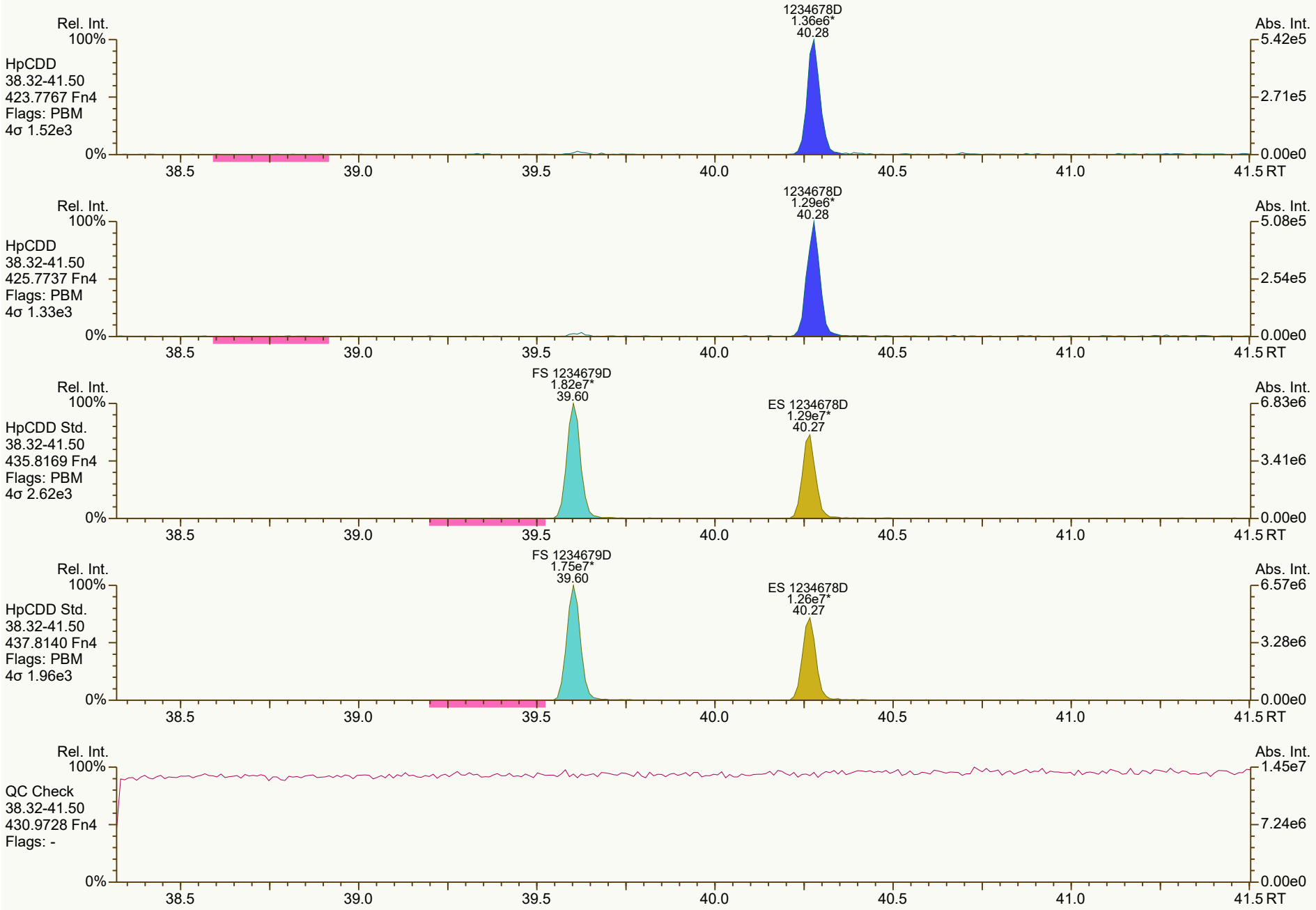
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%


Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.29e6
4.15e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.45e7
7.24e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.94e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
0%
2378D
4.41e5*
27.59
Abs. Int.
1.04e5
5.20e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
0%
2378D
5.03e5*
27.59
Abs. Int.
1.21e5
6.06e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
0%
CS 37Cl-2378D
9.87e5
27.59
Abs. Int.
2.52e5
1.26e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
0%
AS 1368D
1.69e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.85e7*
27.91
Abs. Int.
4.75e6
2.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
0%
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.52e3
12378D
2.01e6*
33.10
Abs. Int.
5.96e5
2.98e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 9.78e2
12378D
1.24e6*
33.10
Abs. Int.
3.81e5
1.91e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 4.62e3
FS 12478D
2.20e7
31.84
CS 12347D
1.71e7*
32.58
ES 12378D
1.90e7*
33.08
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 2.09e3
FS 12478D
1.43e7
31.84
CS 12347D
1.09e7*
32.58
ES 12378D
1.29e7*
33.08
Abs. Int.
4.01e6
2.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.29e6
4.15e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123478D
1.59e6
37.04
123678D
1.63e6
37.15
123789D
1.74e6*
37.46
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123478D
1.33e6
37.04
123678D
1.31e6*
37.15
123789D
1.42e6*
37.46
4.28e5
2.14e5
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D
1.98e7*
35.97
ES 123478D
1.57e7
37.02
ES 123678D
1.47e7
37.14
JS 123467D
8.06e6
37.34
ES 123789D
1.72e7
37.45
6.48e6
3.24e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D
1.60e7*
35.97
ES 123478D
1.22e7
37.03
ES 123678D
1.15e7
37.14
JS 123467D
6.12e6
37.34
ES 123789D
1.40e7
37.45
5.04e6
2.52e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.33e7
1.17e7

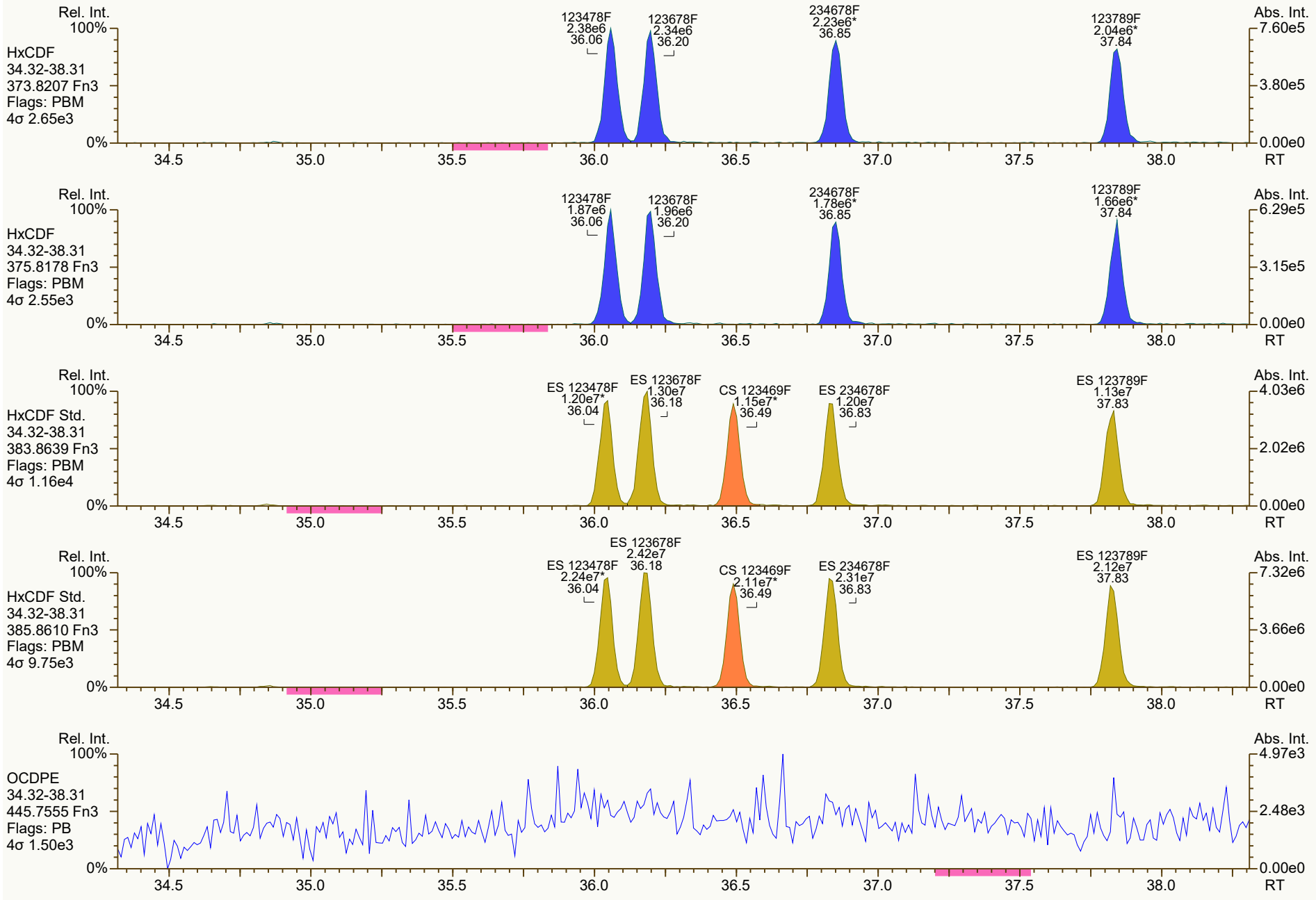

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.36e6*
40.28
Abs. Int.
5.42e5
2.71e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
Abs. Int.
5.08e5
2.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
Abs. Int.
6.83e6
3.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.96e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
Abs. Int.
6.57e6
3.28e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.45e7
7.24e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

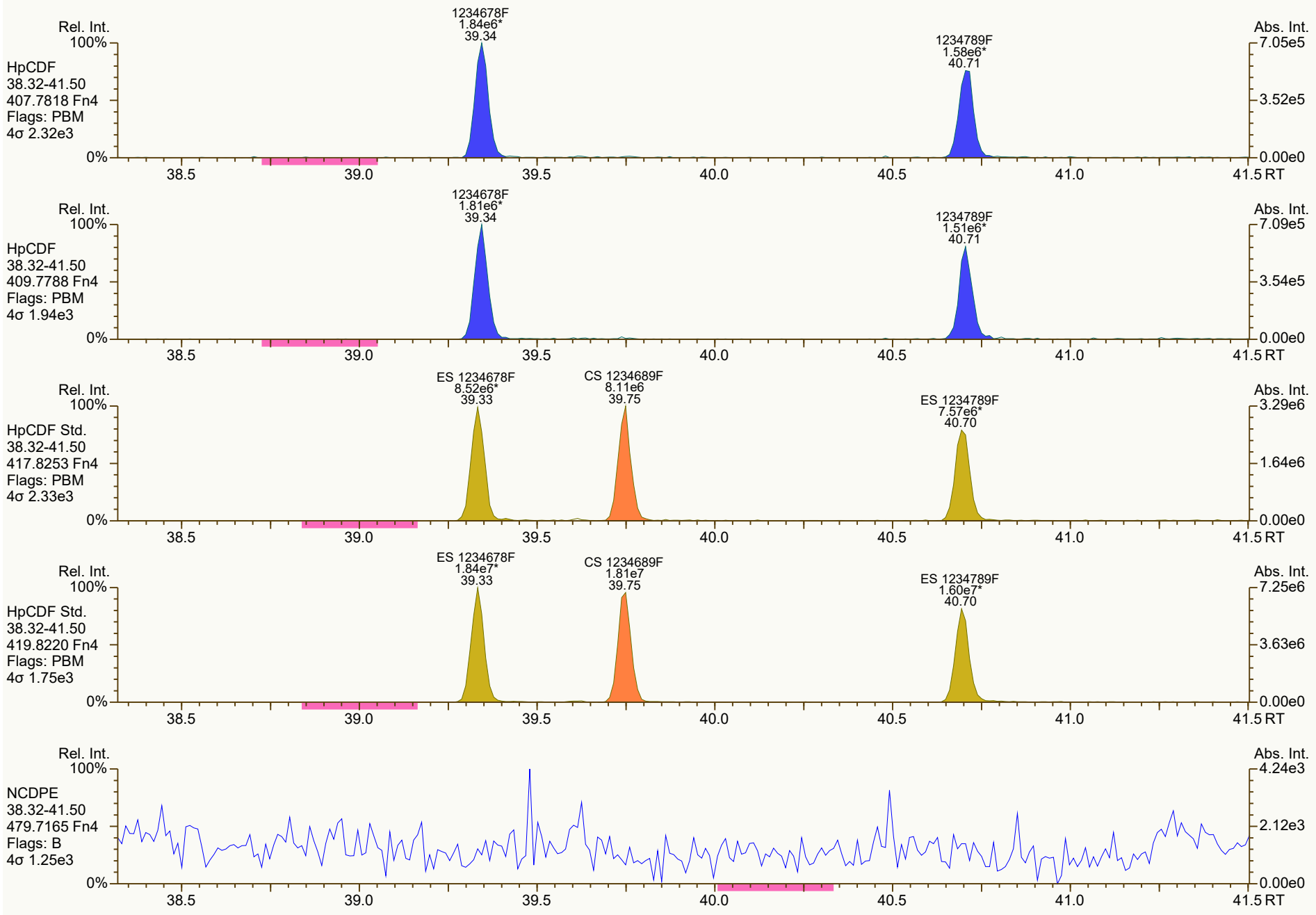

OCDD
1.80e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
5.27e5
2.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.08e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
0%
Abs. Int.
6.49e5
3.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.65e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.82e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
5.21e6
2.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

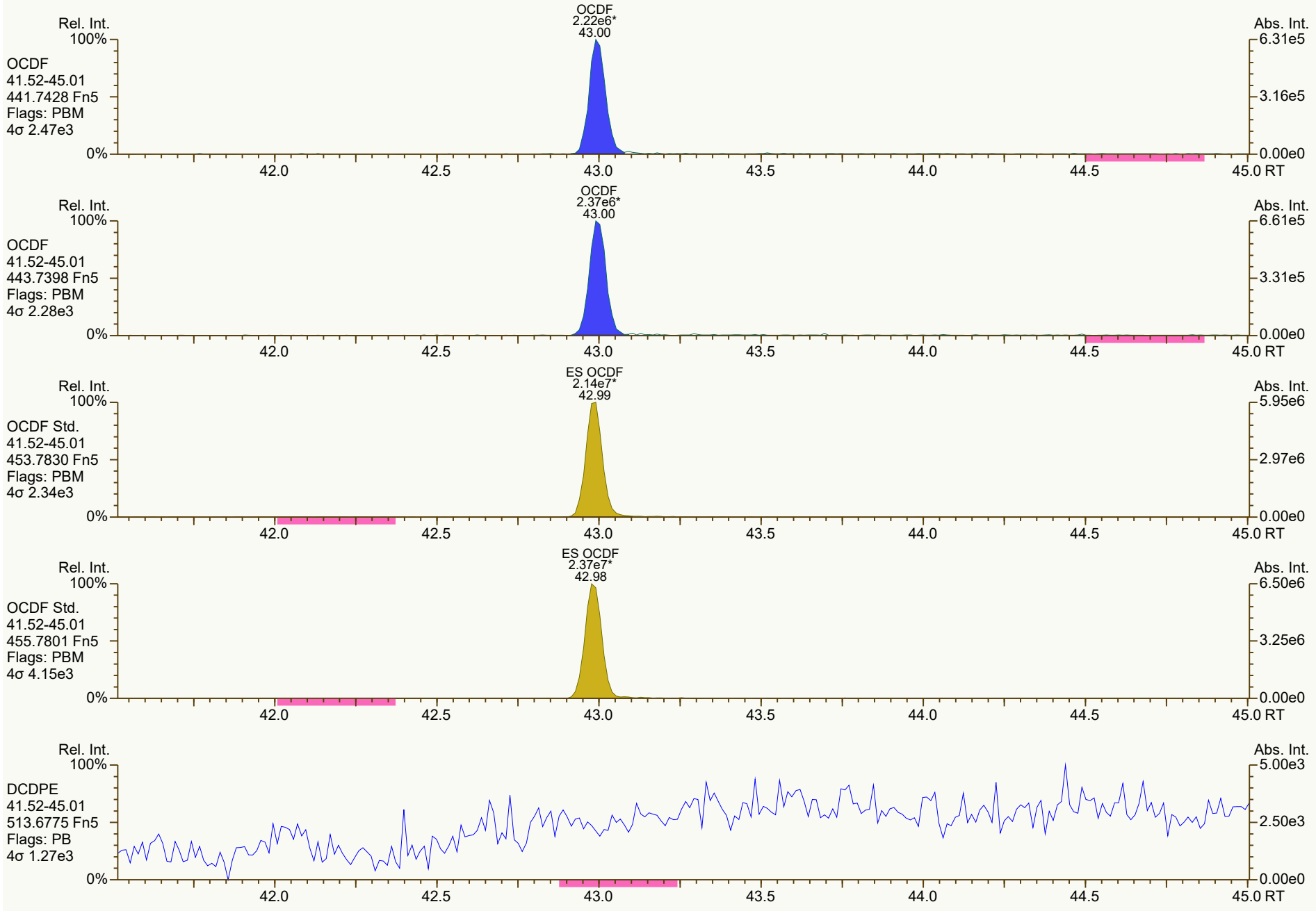

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
0%
2378F
5.70e5*
26.68
Abs. Int.
1.27e5
6.37e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
0%
2378F
6.77e5*
26.68
Abs. Int.
1.62e5
8.11e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
0%
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
26.65
Abs. Int.
5.72e6
2.86e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
0%
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
26.65
Abs. Int.
7.12e6
3.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.23e3
4.62e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.32e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.97e6
4.99e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
0%
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
Abs. Int.
8.19e5
4.10e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
5.27e5
2.63e5
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
8.01e6
4.01e6
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
5.19e6
2.59e6
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
6.67e3
3.33e3


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.65e3
0%
123478F
2.38e6
36.06
123678F
2.34e6
36.20
234678F
2.23e6*
36.85
123789F
2.04e6*
37.84
Abs. Int.
7.60e5
3.80e5
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.55e3
123478F
1.87e6
36.06
123678F
1.96e6
36.20
234678F
1.78e6*
36.85
123789F
1.66e6*
37.84
6.29e5
3.15e5
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 1.16e4
ES 123478F
1.20e7*
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.15e7*
36.49
ES 234678F
1.20e7
36.83
ES 123789F
1.13e7
37.83
4.03e6
2.02e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.75e3
ES 123478F
2.24e7*
36.04
ES 123678F
2.42e7
36.18
CS 123469F
2.11e7*
36.49
ES 234678F
2.31e7
36.83
ES 123789F
2.12e7
37.83
7.32e6
3.66e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.50e3
4.97e3
2.48e3

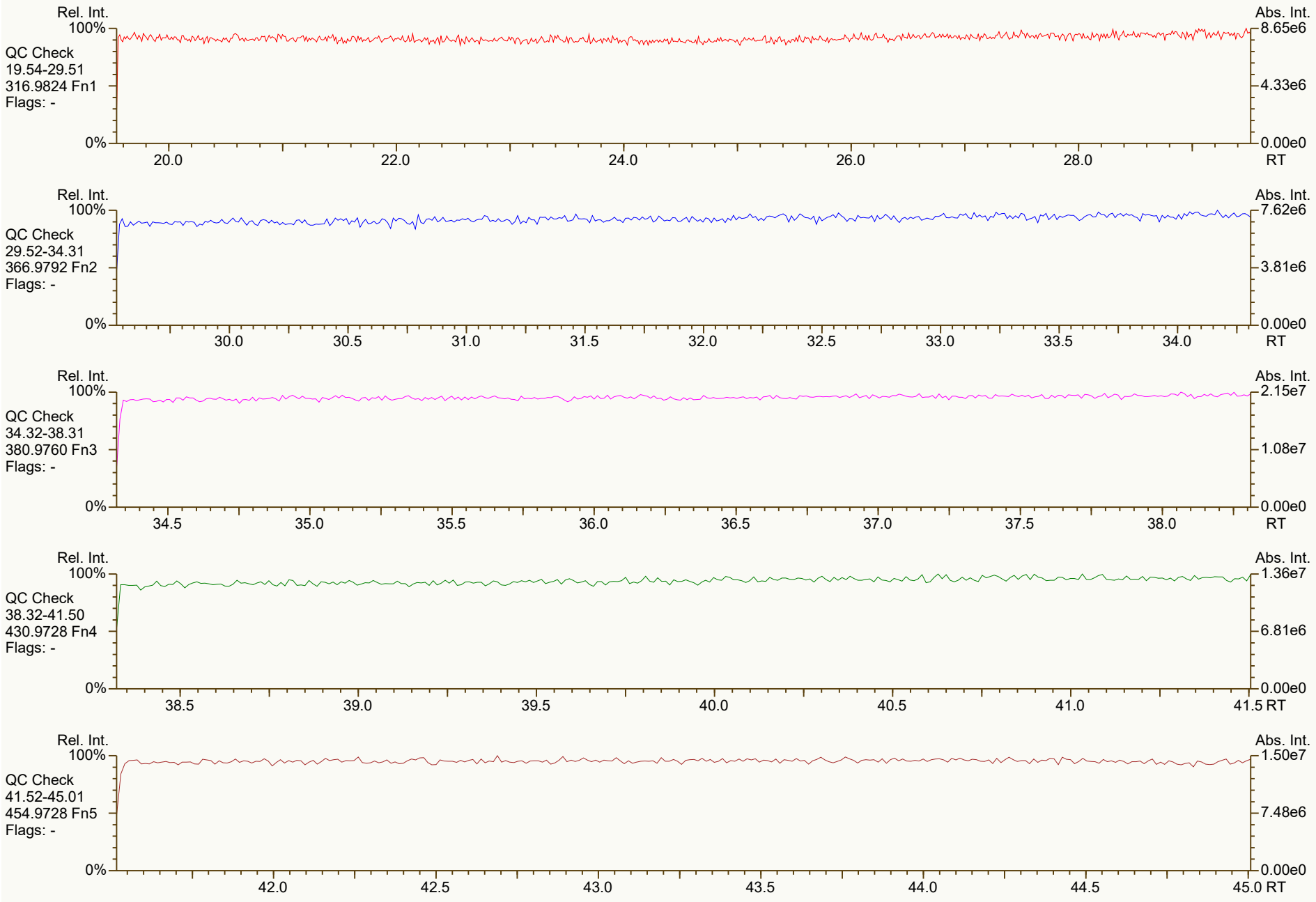

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.32e3
0%
1234678F
1.84e6*
39.34
1234789F
1.58e6*
40.71
Abs. Int.
7.05e5
3.52e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.94e3
0%
1234678F
1.81e6*
39.34
1234789F
1.51e6*
40.71
Abs. Int.
7.09e5
3.54e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.33e3
0%
ES 1234678F
8.52e6*
39.33
CS 1234689F
8.11e6
39.75
ES 1234789F
7.57e6*
40.70
Abs. Int.
3.29e6
1.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.75e3
0%
ES 1234678F
1.84e7*
39.33
CS 1234689F
1.81e7
39.75
ES 1234789F
1.60e7*
40.70
Abs. Int.
7.25e6
3.63e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.25e3
0%
Abs. Int.
4.24e3
2.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
2.22e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
0%
Abs. Int.
6.31e5
3.16e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.37e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
0%
Abs. Int.
6.61e5
3.31e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.37e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
6.50e6
3.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.00e3
2.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

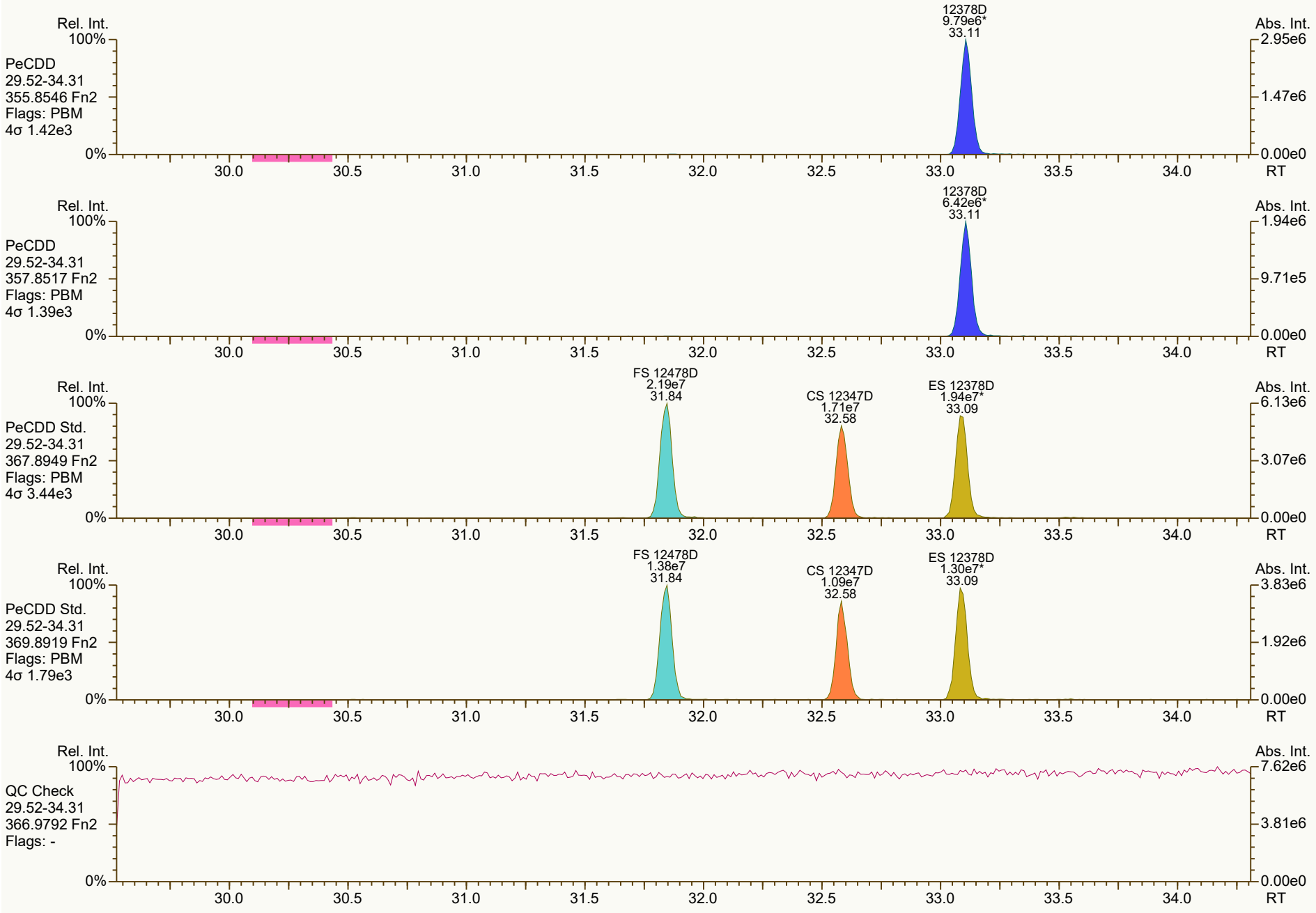
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

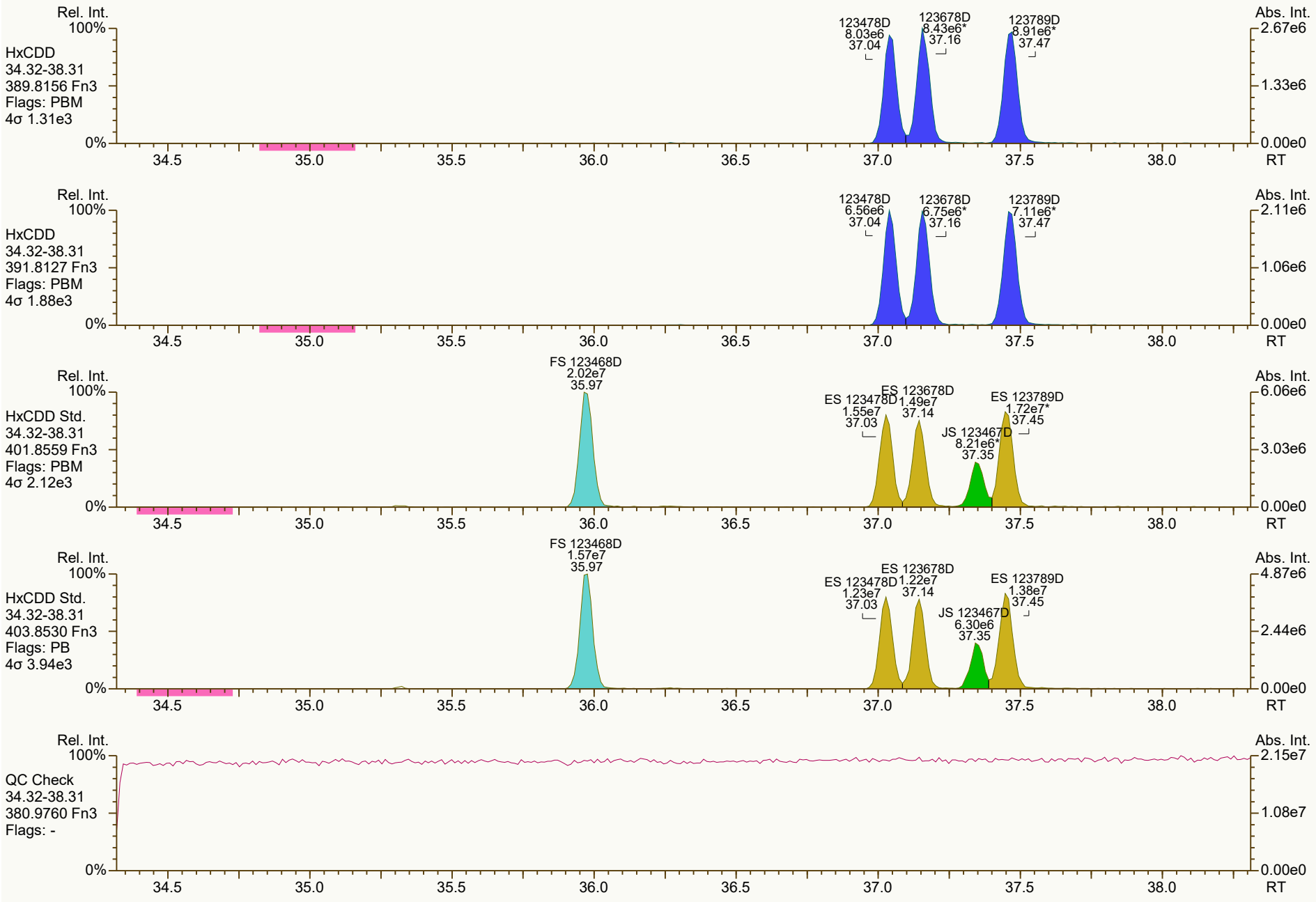
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 13:21 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211110_DF_CB	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 507-474-MKW
Sample ID: 23-672-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C07

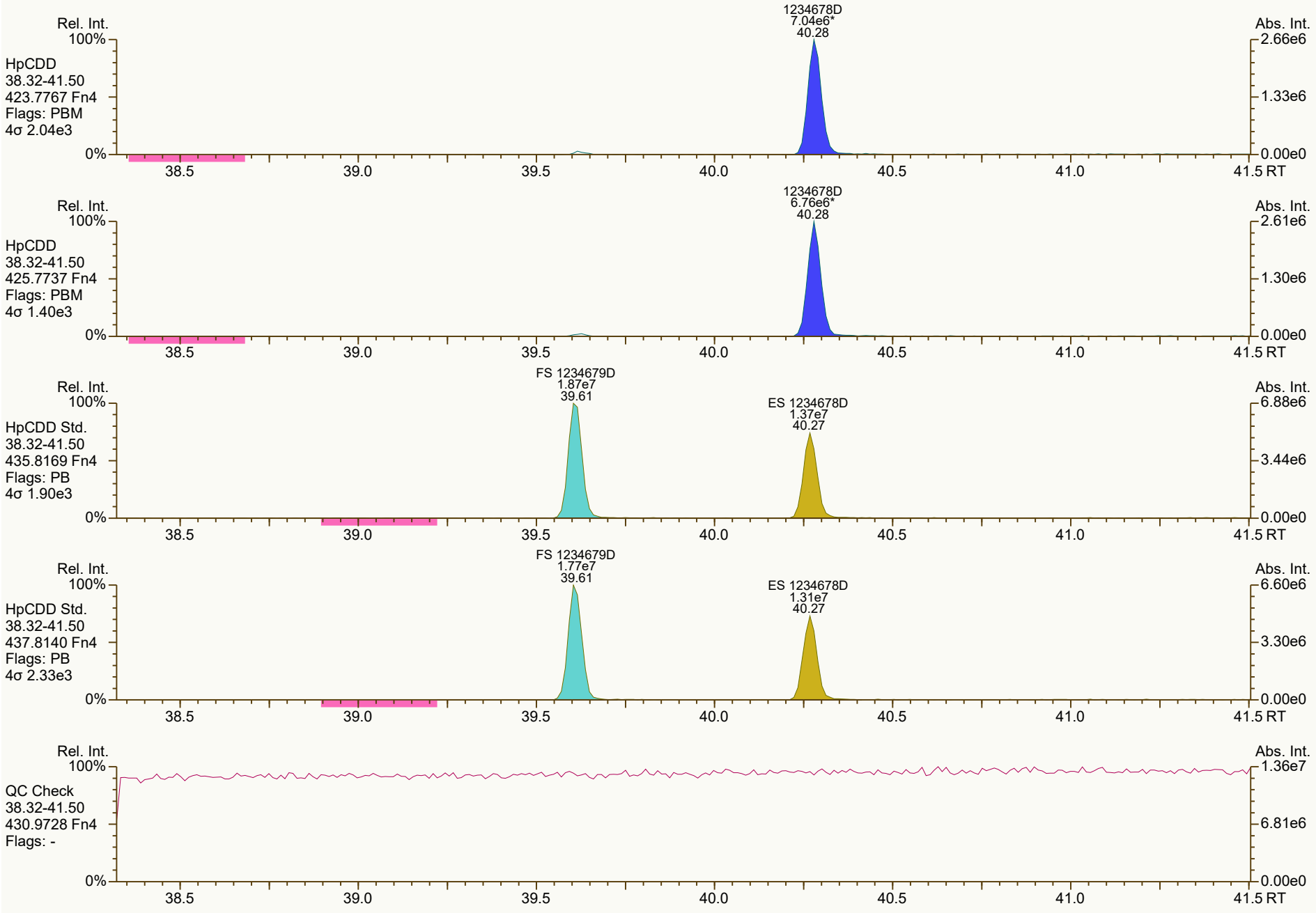
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%

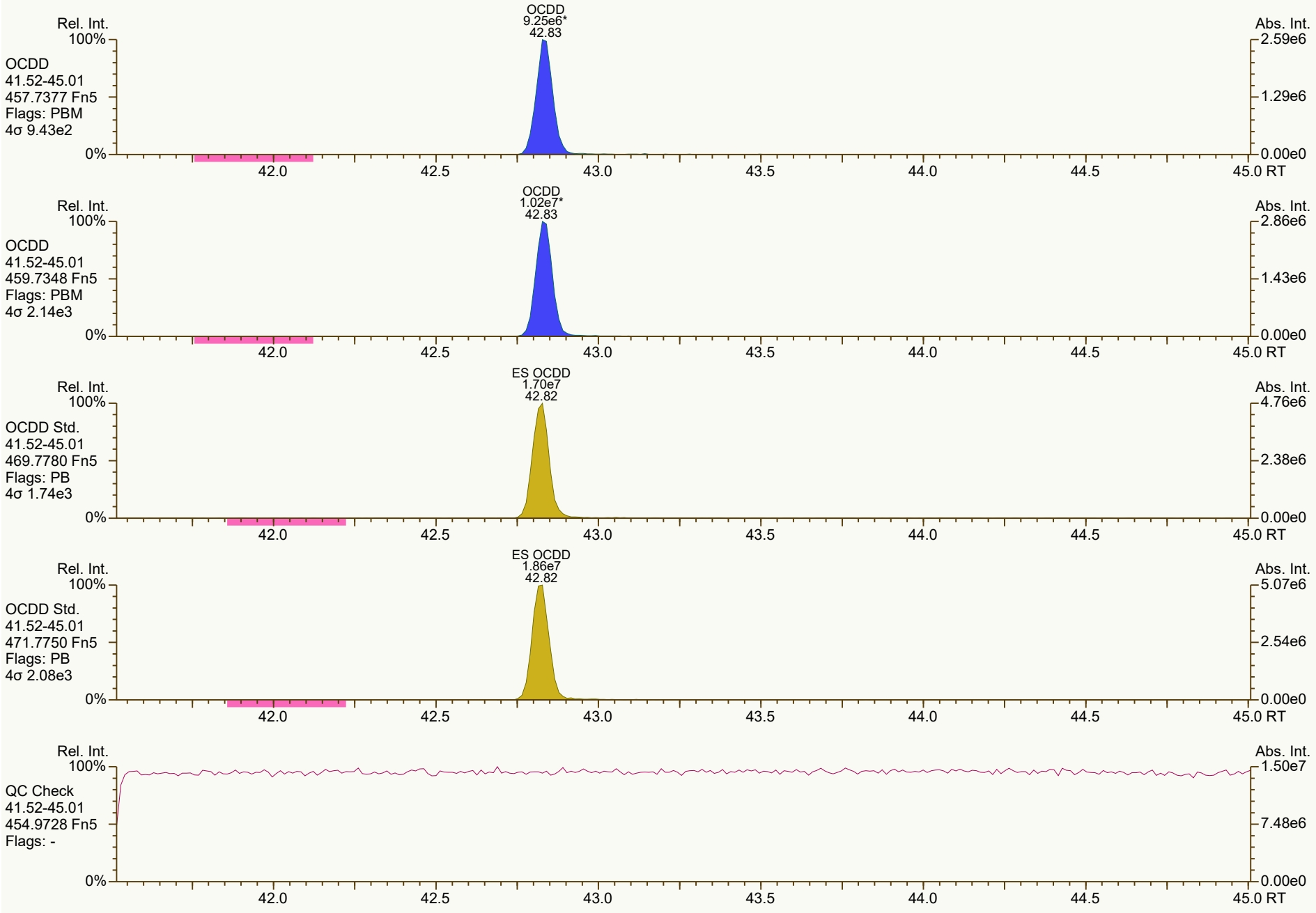

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.65e6
4.33e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.62e6
3.81e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.15e7
1.08e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.36e7
6.81e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.50e7
7.48e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
0%
2378D
1.99e6
27.60
Abs. Int.
4.35e5
2.17e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
0%
2378D
2.55e6
27.60
Abs. Int.
5.98e5
2.99e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
Abs. Int.
1.03e6
5.16e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
0%
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
Abs. Int.
4.80e6
2.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
0%
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.42e3
12378D
9.79e6*
33.11
Abs. Int.
2.95e6
1.47e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.39e3
12378D
6.42e6*
33.11
Abs. Int.
1.94e6
9.71e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 3.44e3
FS 12478D
2.19e7
31.84
CS 12347D
1.71e7
32.58
ES 12378D
1.94e7*
33.09
Abs. Int.
6.13e6
3.07e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 1.79e3
FS 12478D
1.38e7
31.84
CS 12347D
1.09e7
32.58
ES 12378D
1.30e7*
33.09
Abs. Int.
3.83e6
1.92e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
7.62e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.31e3
123478D
8.03e6
37.04
123678D
8.43e6*
37.16
123789D
8.91e6*
37.47
Abs. Int.
2.67e6
1.33e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.88e3
123478D
6.56e6
37.04
123678D
6.75e6*
37.16
123789D
7.11e6*
37.47
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.12e3
FS 123468D
2.02e7
35.97
ES 123478D
1.55e7
37.03
ES 123678D
1.49e7
37.14
JS 123467D
8.21e6*
37.35
ES 123789D
1.72e7*
37.45
Abs. Int.
6.06e6
3.03e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.94e3
FS 123468D
1.57e7
35.97
ES 123478D
1.23e7
37.03
ES 123678D
1.22e7
37.14
JS 123467D
6.30e6
37.35
ES 123789D
1.38e7
37.45
Abs. Int.
4.87e6
2.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.15e7
1.08e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

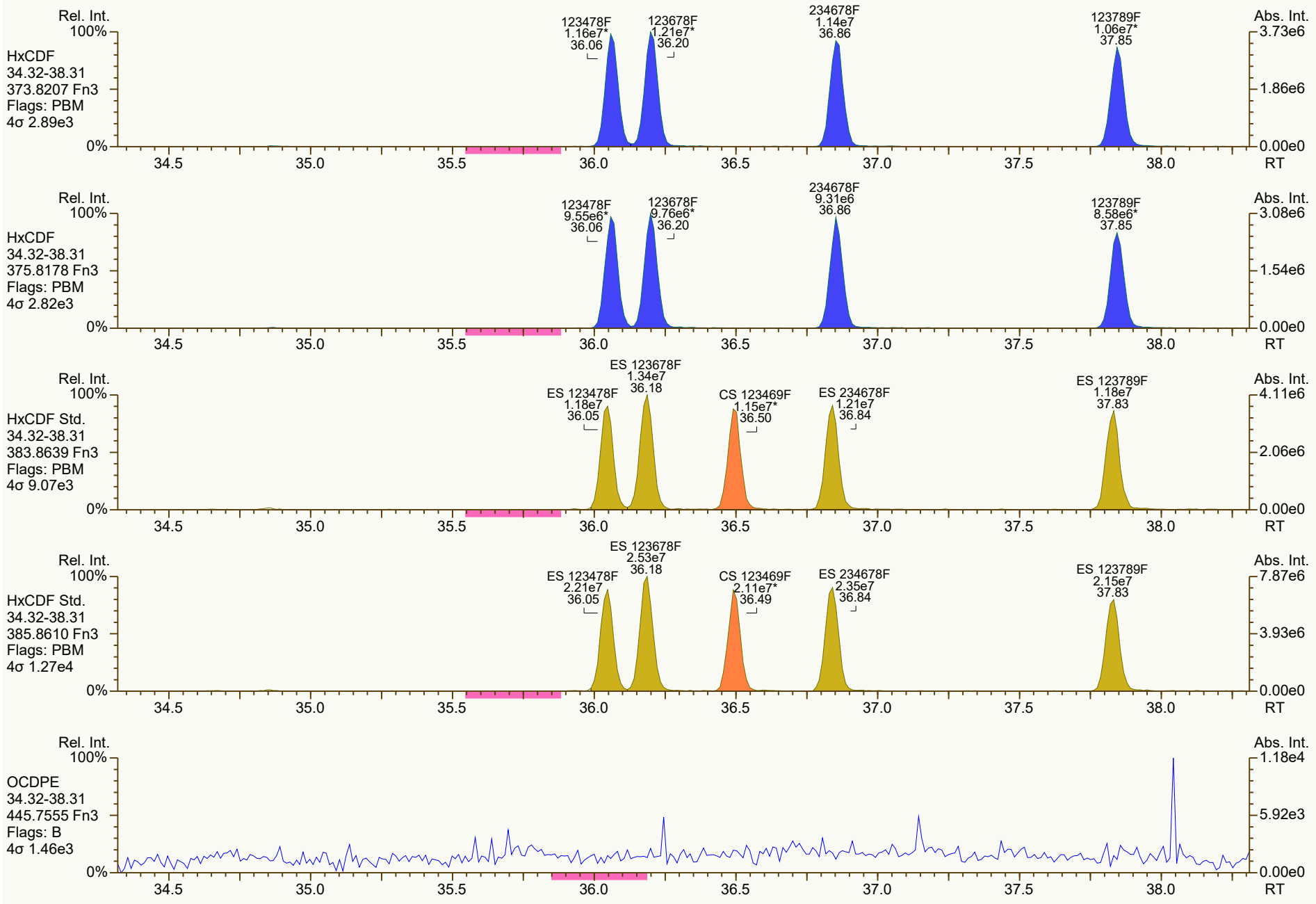

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.61
ES 1234678D
1.37e7
40.27
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.61
ES 1234678D
1.31e7
40.27
Abs. Int.
6.60e6
3.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

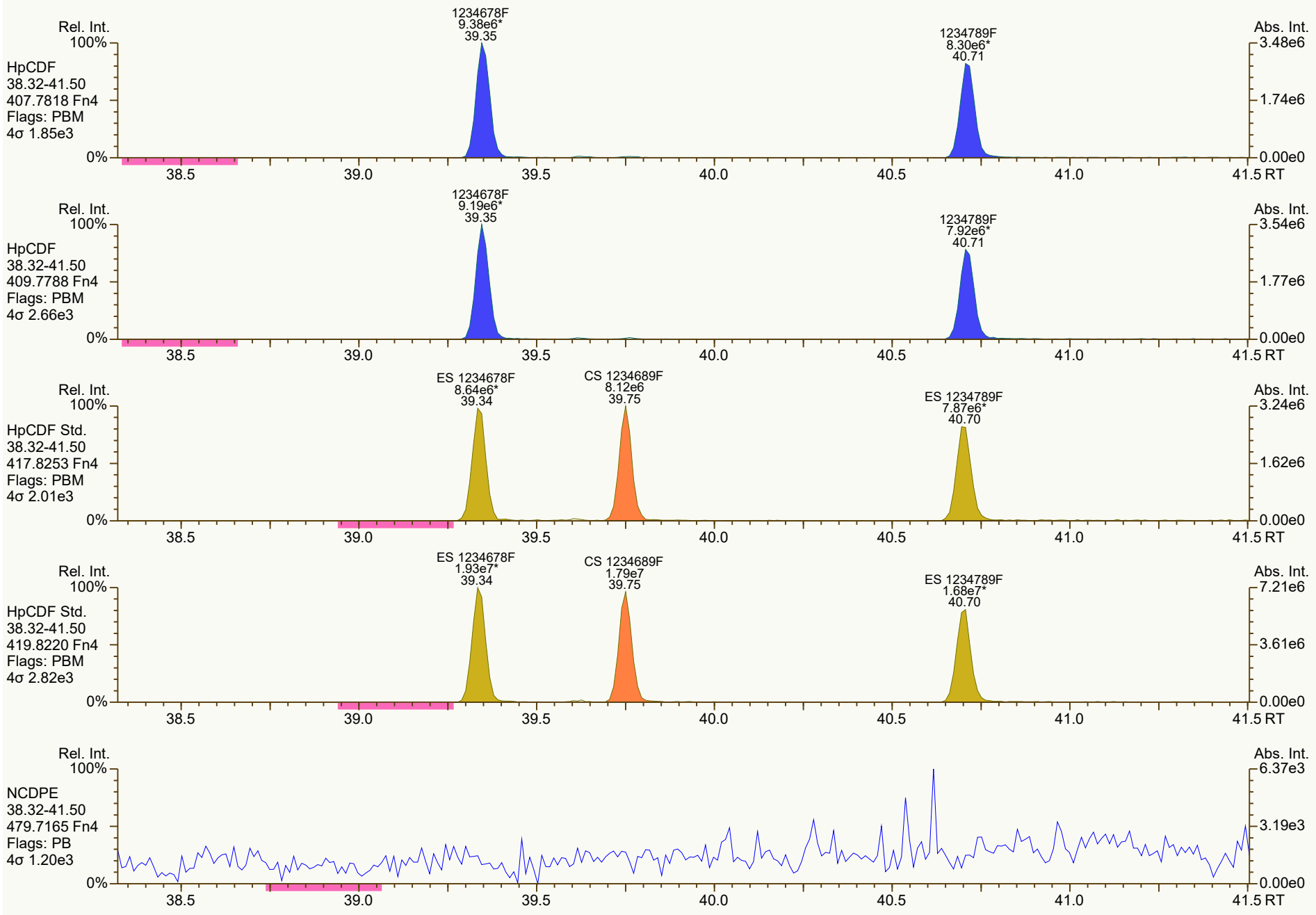

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 9.43e2
0%
OCDD
9.25e6*
42.83
Abs. Int.
2.59e6
1.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.14e3
0%
OCDD
1.02e7*
42.83
Abs. Int.
2.86e6
1.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.74e3
0%
ES OCDD
1.70e7
42.82
Abs. Int.
4.76e6
2.38e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.08e3
0%
ES OCDD
1.86e7
42.82
Abs. Int.
5.07e6
2.54e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.50e7
7.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.54e3
0%
2378F
2.58e6
26.68
Abs. Int.
5.81e5
2.91e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.71e3
0%
2378F
3.32e6
26.68
Abs. Int.
7.66e5
3.83e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.69e4
0%
AS 1368F
2.59e7
21.50
JS 1234F
2.21e7
25.25
ES 2378F
2.41e7
26.66
Abs. Int.
5.45e6
2.73e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.04e4
0%
AS 1368F
3.25e7
21.50
JS 1234F
2.82e7
25.25
ES 2378F
3.03e7
26.66
Abs. Int.
6.76e6
3.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.54e3
0%
Abs. Int.
6.84e3
3.42e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.76e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.65e6
4.33e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.86e3
12378F
1.38e7*
31.62
23478F
1.36e7
32.75
Abs. Int.
3.85e6
1.93e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.34e3
12378F
8.95e6*
31.62
23478F
9.01e6
32.75
Abs. Int.
2.59e6
1.29e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 5.91e3
CS 12346F
2.68e7
31.07
ES 12378F
2.82e7
31.61
ES 23478F
2.73e7
32.74
Abs. Int.
7.61e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 5.66e3
CS 12346F
1.70e7
31.07
ES 12378F
1.80e7
31.61
ES 23478F
1.77e7
32.74
Abs. Int.
5.00e6
2.50e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.57e3
Abs. Int.
1.17e4
5.86e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.89e3
0%
123478F
1.16e7*
36.06
123678F
1.21e7*
36.20
234678F
1.14e7
36.86
123789F
1.06e7*
37.85
Abs. Int.
3.73e6
1.86e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.82e3
0%
123478F
9.55e6*
36.06
123678F
9.76e6*
36.20
234678F
9.31e6
36.86
123789F
8.58e6*
37.85
Abs. Int.
3.08e6
1.54e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 9.07e3
0%
ES 123678F
1.34e7
36.18
ES 123478F
1.18e7
36.05
CS 123469F
1.15e7*
36.50
ES 234678F
1.21e7
36.84
ES 123789F
1.18e7
37.83
Abs. Int.
4.11e6
2.06e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 1.27e4
0%
ES 123678F
2.53e7
36.18
ES 123478F
2.21e7
36.05
CS 123469F
2.11e7*
36.49
ES 234678F
2.35e7
36.84
ES 123789F
2.15e7
37.83
Abs. Int.
7.87e6
3.93e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.46e3
0%
Abs. Int.
1.18e4
5.92e3
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0

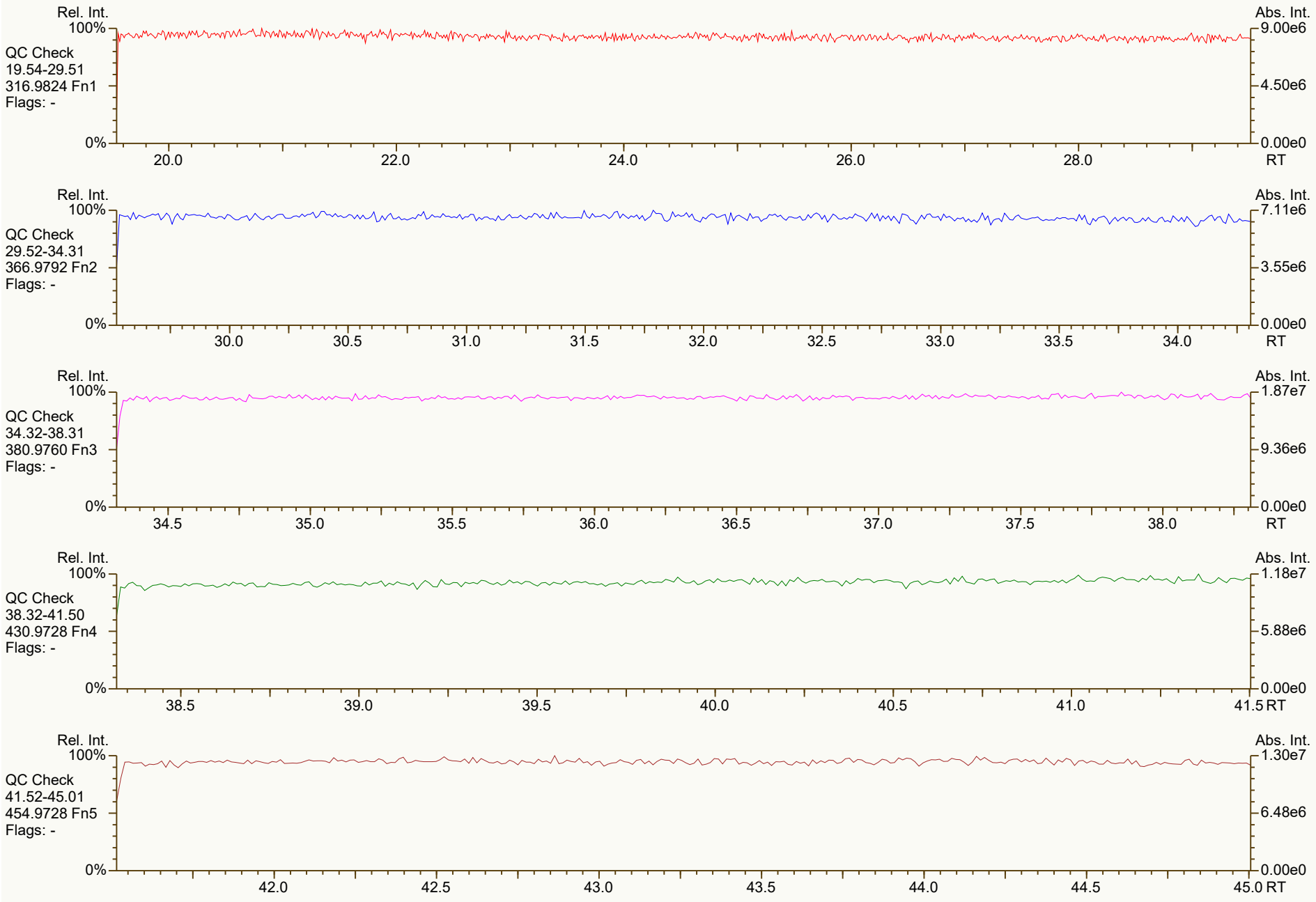

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.85e3
0%
1234678F
9.38e6*
39.35
1234789F
8.30e6*
40.71
Abs. Int.
3.48e6
1.74e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.66e3
0%
1234678F
9.19e6*
39.35
1234789F
7.92e6*
40.71
Abs. Int.
3.54e6
1.77e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.01e3
0%
ES 1234678F
8.64e6*
39.34
CS 1234689F
8.12e6
39.75
ES 1234789F
7.87e6*
40.70
Abs. Int.
3.24e6
1.62e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.82e3
0%
ES 1234678F
1.93e7*
39.34
CS 1234689F
1.79e7
39.75
ES 1234789F
1.68e7*
40.70
Abs. Int.
7.21e6
3.61e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.20e3
0%
Abs. Int.
6.37e3
3.19e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

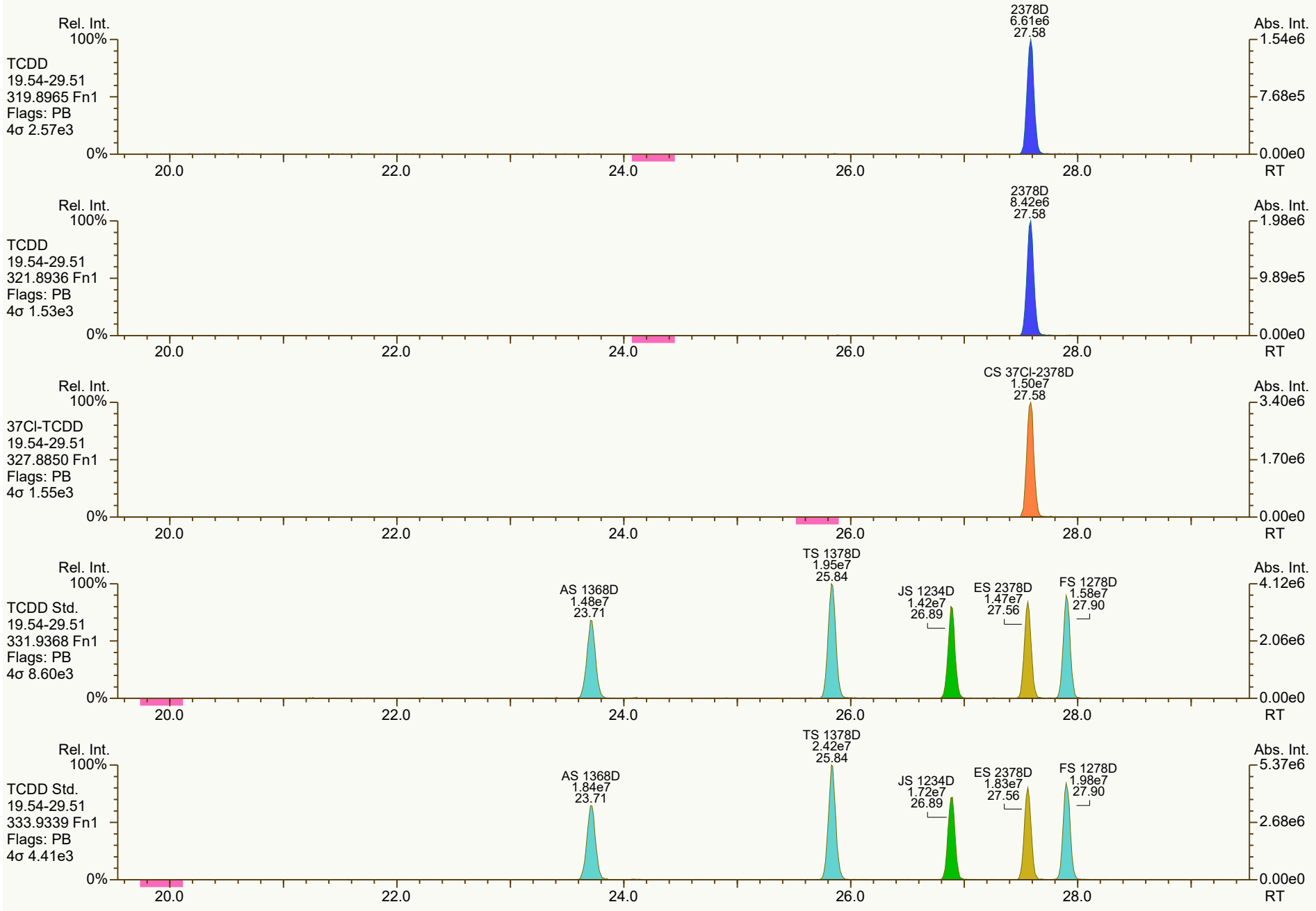

OCDF
1.15e7*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
3.25e6
1.62e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.28e7*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
0%
Abs. Int.
3.53e6
1.76e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.21e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
0%
Abs. Int.
6.08e6
3.04e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.39e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
0%
Abs. Int.
6.65e6
3.32e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3
0%
Abs. Int.
4.82e3
2.41e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

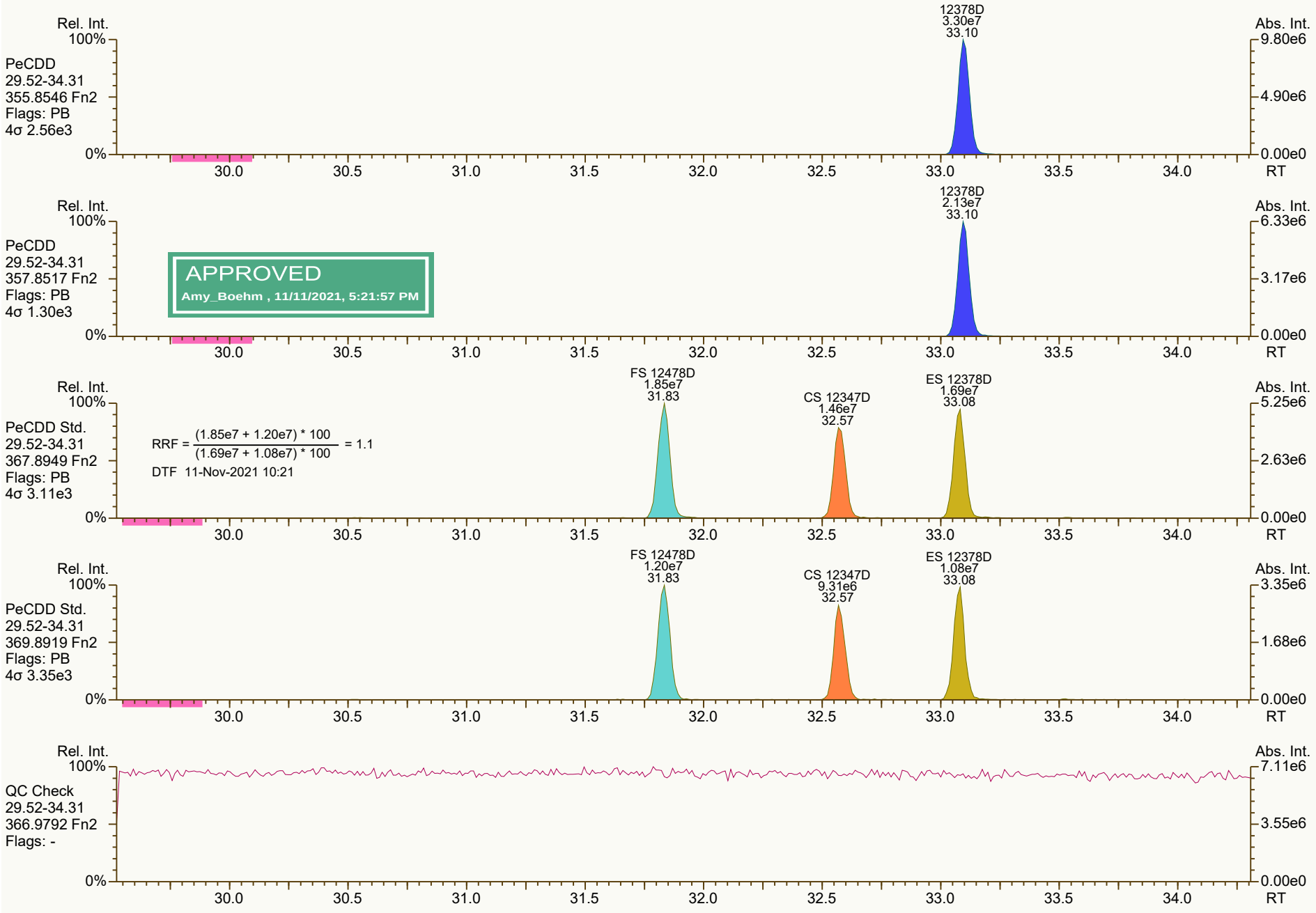
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:07 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS4_211110_DF_CA	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 855-576-PGM
Sample ID: 25-5-4	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C08

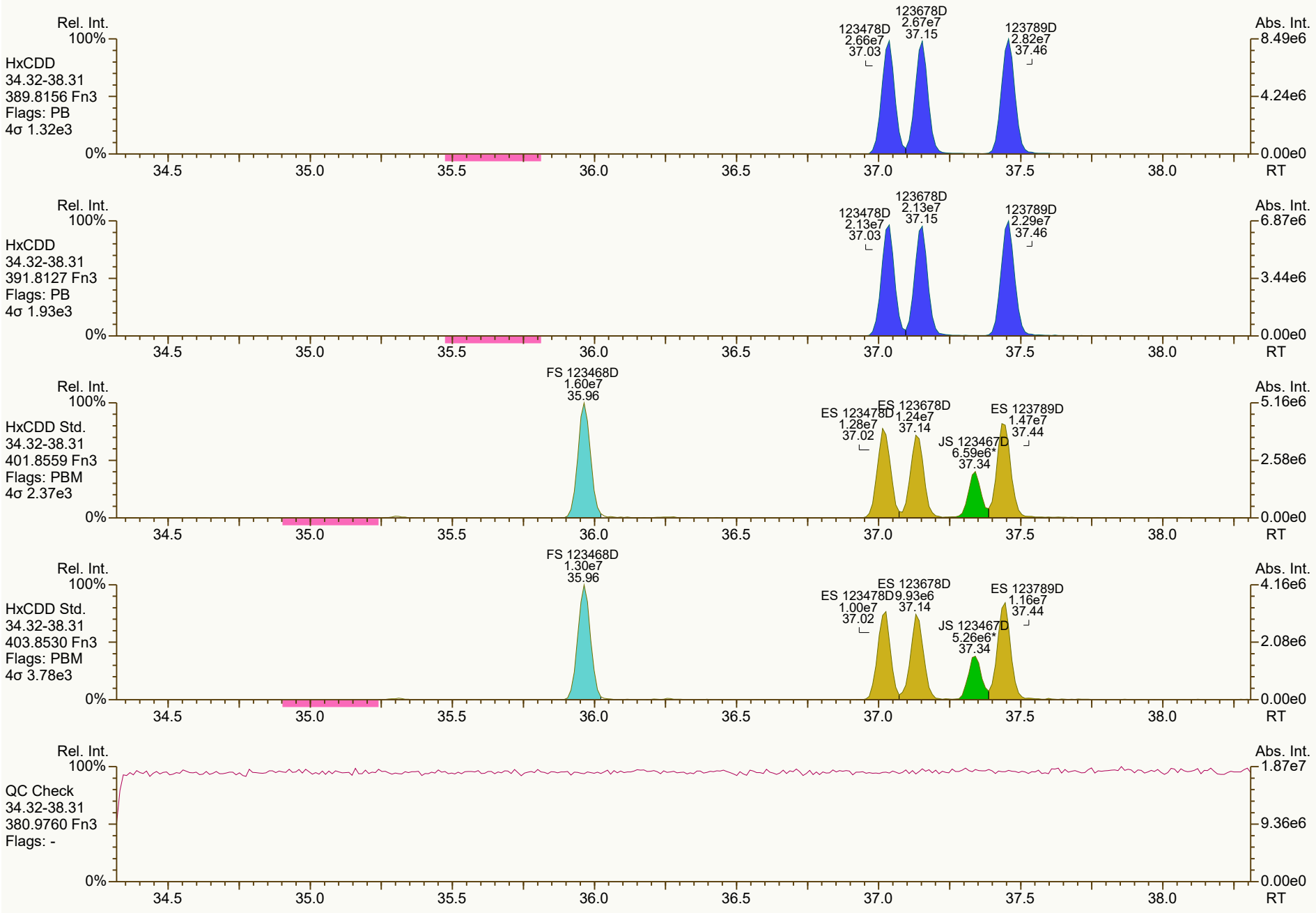
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

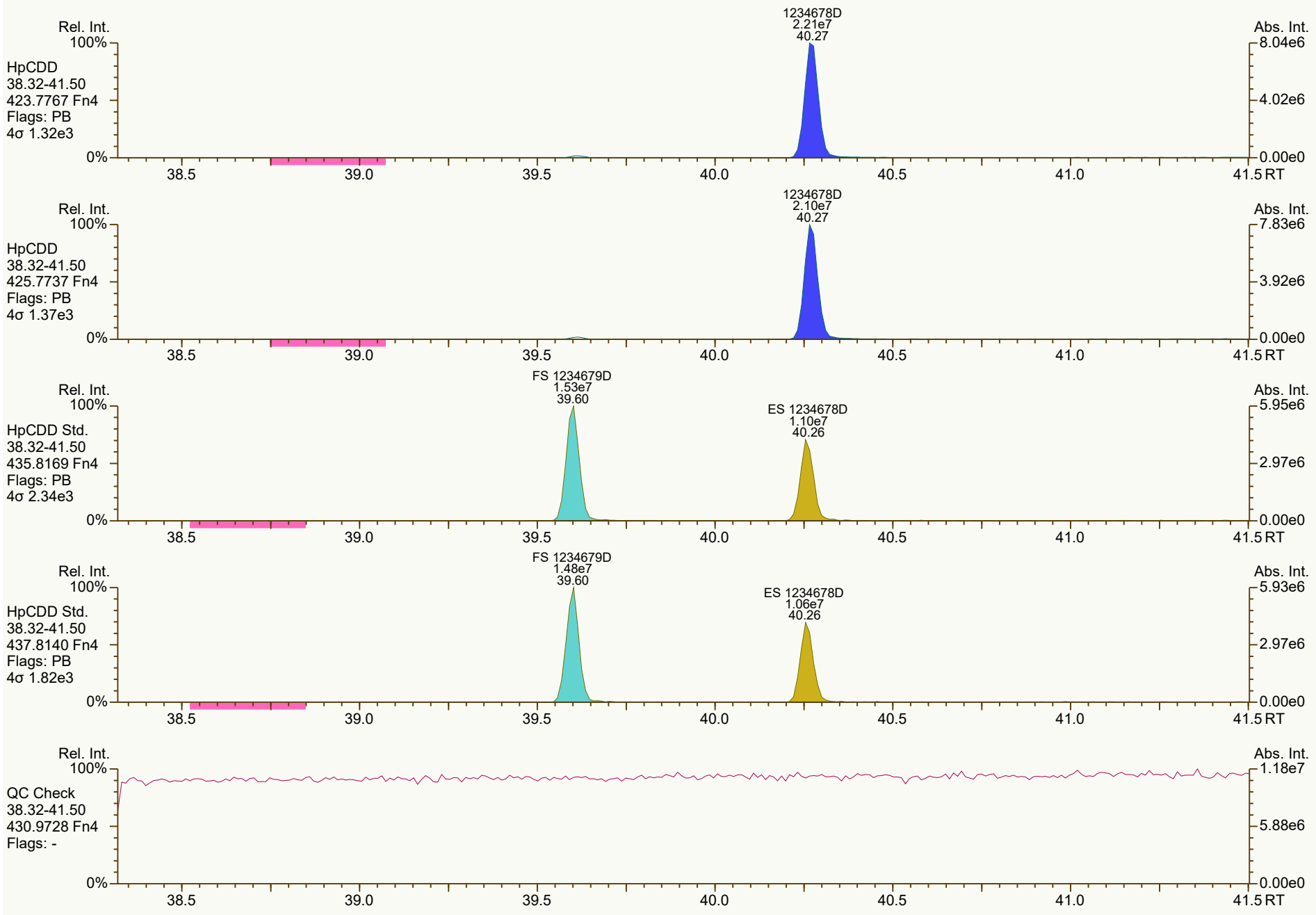
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

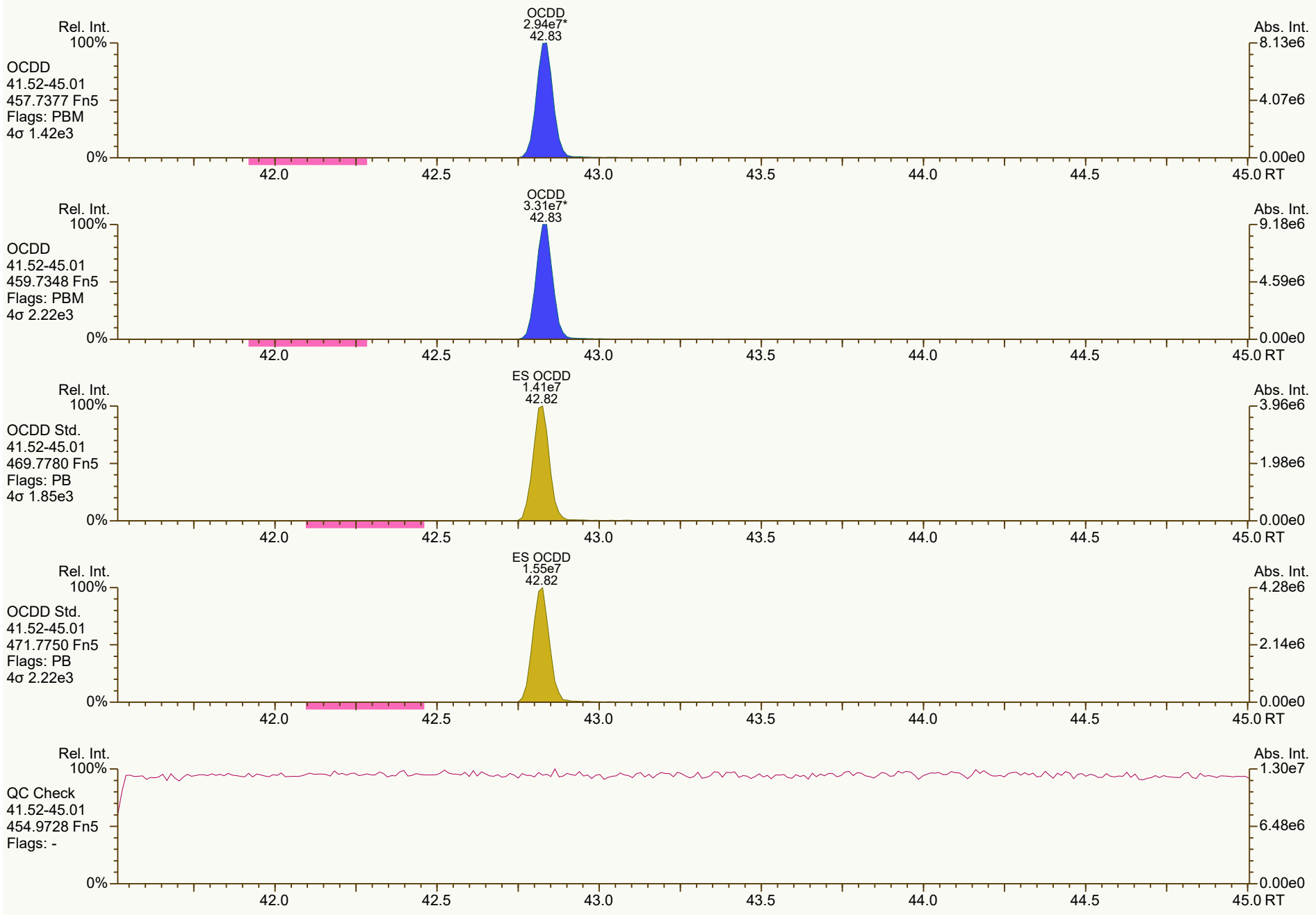

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.00e6
4.50e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.11e6
3.55e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.87e7
9.36e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.18e7
5.88e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.30e7
6.48e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
0%
2378D
6.61e6
27.58
Abs. Int.
1.54e6
7.68e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
0%
2378D
8.42e6
27.58
Abs. Int.
1.98e6
9.89e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
0%
CS 37Cl-2378D
1.50e7
27.58
Abs. Int.
3.40e6
1.70e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
0%
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
Abs. Int.
4.12e6
2.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
0%
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
Abs. Int.
5.37e6
2.68e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PB
4σ 2.56e3
0%
12378D
3.30e7
33.10
Abs. Int.
9.80e6
4.90e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PB
4σ 1.30e3
APPROVED
Amy_Boehm , 11/11/2021, 5:21:57 PM
0%
12378D
2.13e7
33.10
Abs. Int.
6.33e6
3.17e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 3.11e3
RRF = (1.85e7 + 1.20e7) * 100 / (1.69e7 + 1.08e7) * 100 = 1.1
DTF 11-Nov-2021 10:21
0%
FS 12478D
1.85e7
31.83
CS 12347D
1.46e7
32.57
ES 12378D
1.69e7
33.08
Abs. Int.
5.25e6
2.63e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 3.35e3
0%
FS 12478D
1.20e7
31.83
CS 12347D
9.31e6
32.57
ES 12378D
1.08e7
33.08
Abs. Int.
3.35e6
1.68e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.11e6
3.55e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123478D
2.66e7
37.03
123678D
2.67e7
37.15
123789D
2.82e7
37.46
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123478D
2.13e7
37.03
123678D
2.13e7
37.15
123789D
2.29e7
37.46
Abs. Int.
6.87e6
3.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D
1.60e7
35.96
ES 123478D
1.28e7
37.02
ES 123678D
1.24e7
37.14
JS 123467D
6.59e6*
37.34
ES 123789D
1.47e7
37.44
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D
1.30e7
35.96
ES 123478D
1.00e7
37.02
ES 123678D
9.93e6
37.14
JS 123467D
5.26e6*
37.34
ES 123789D
1.16e7
37.44
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.87e7
9.36e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

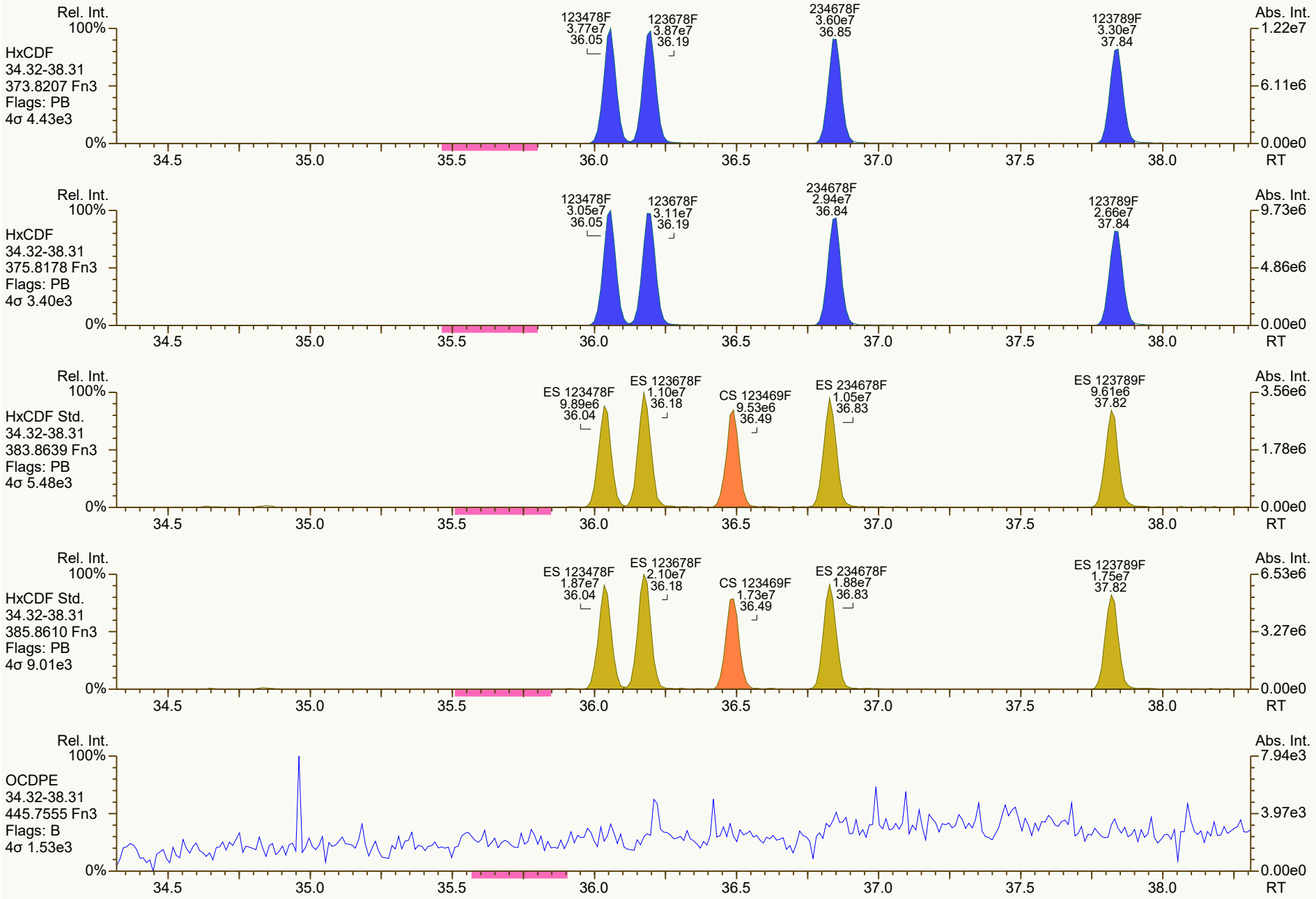

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
1234678D
2.21e7
40.27
Abs. Int.
8.04e6
4.02e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
1234678D
2.10e7
40.27
Abs. Int.
7.83e6
3.92e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
Abs. Int.
5.95e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
Abs. Int.
5.93e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.18e7
5.88e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

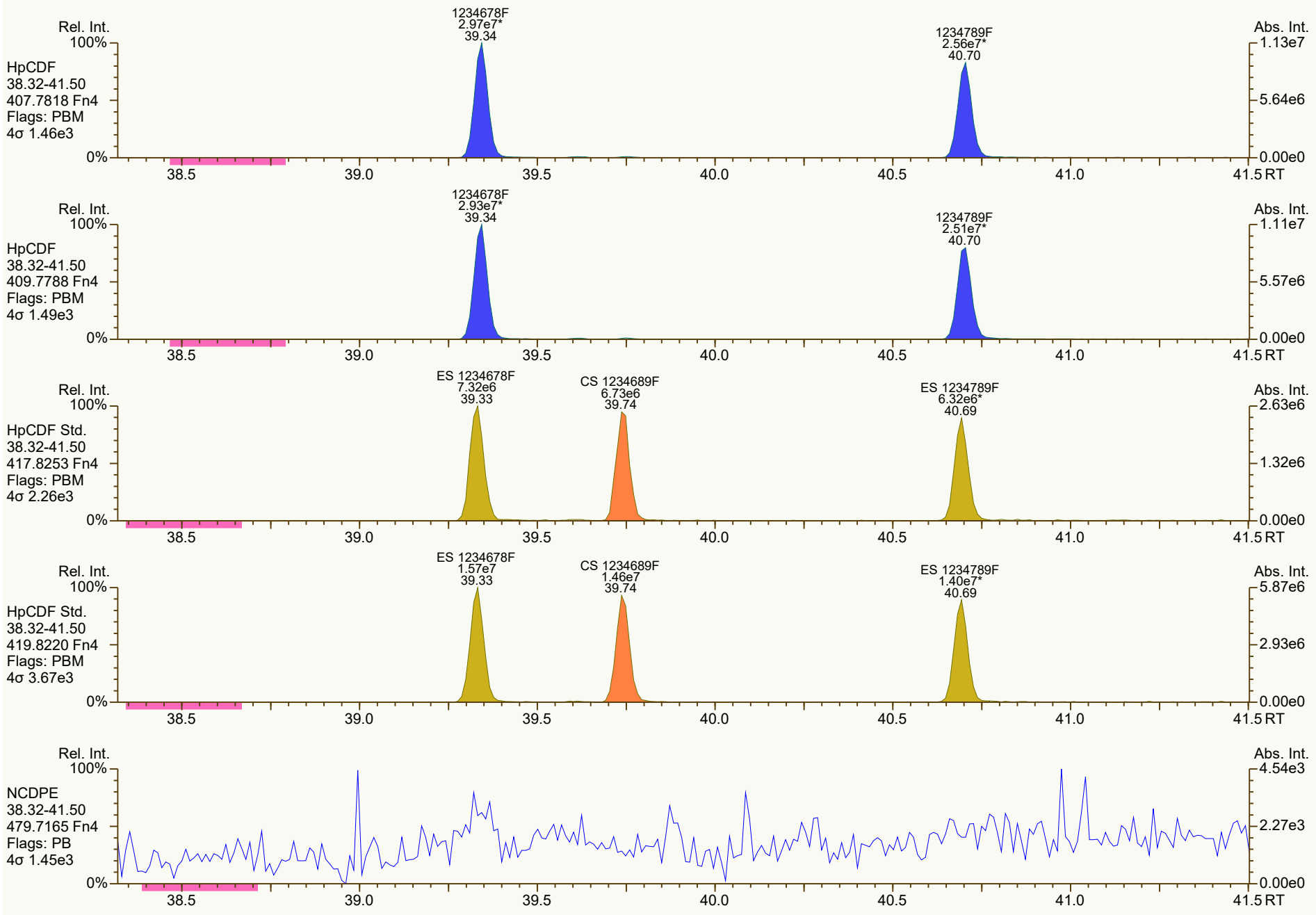

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.42e3
0%
OCDD
2.94e7*
42.83
Abs. Int.
8.13e6
4.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.22e3
0%
OCDD
3.31e7*
42.83
Abs. Int.
9.18e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
ES OCDD
1.41e7
42.82
Abs. Int.
3.96e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.22e3
0%
ES OCDD
1.55e7
42.82
Abs. Int.
4.28e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

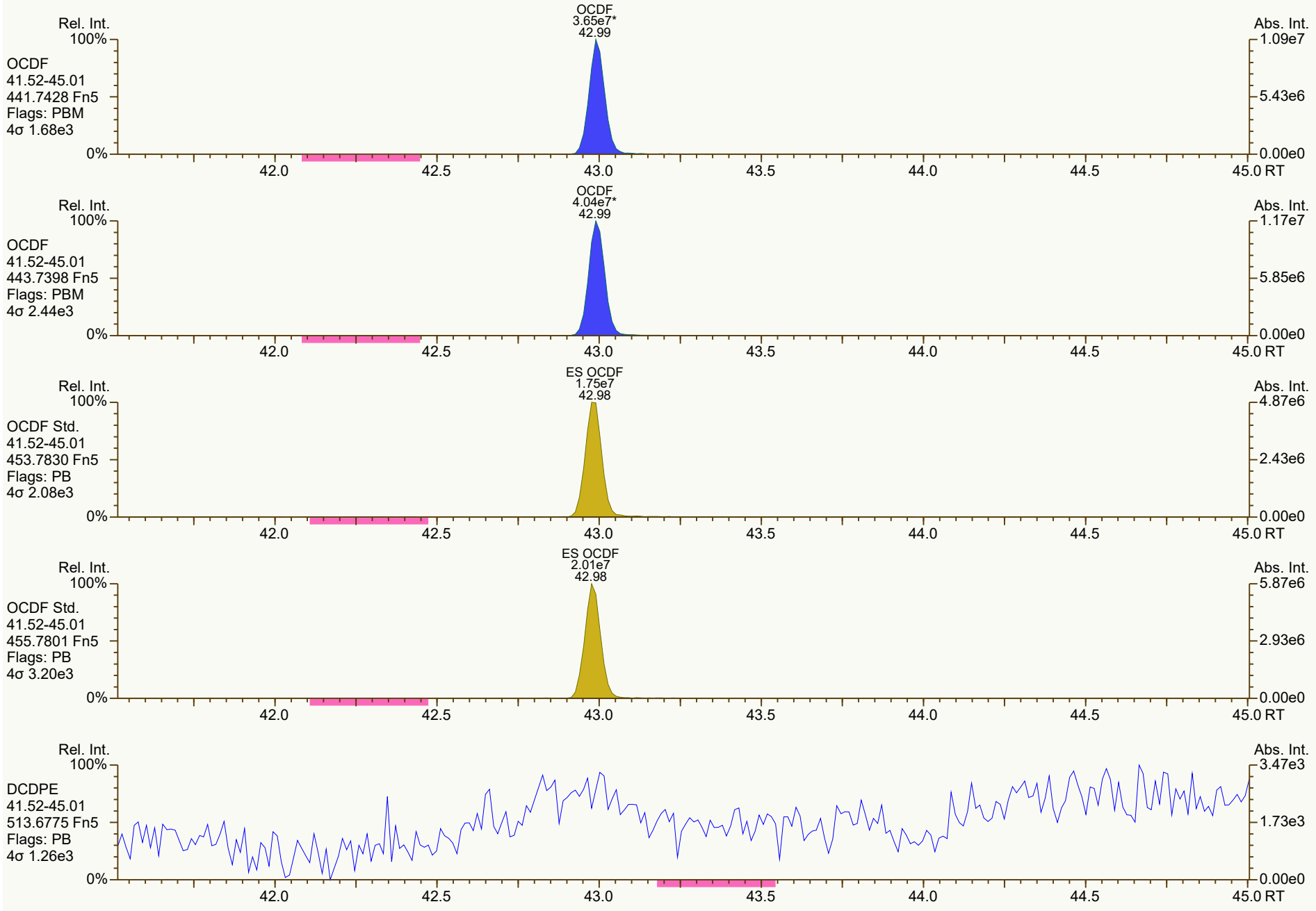

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
0%
2378F
8.36e6
26.67
Abs. Int.
1.89e6
9.43e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
0%
2378F
1.07e7
26.67
Abs. Int.
2.41e6
1.20e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
0%
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7*
25.23
ES 2378F
2.05e7
26.65
Abs. Int.
4.47e6
2.23e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
0%
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7*
25.23
ES 2378F
2.57e7
26.65
Abs. Int.
5.68e6
2.84e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
0%
Abs. Int.
9.44e3
4.72e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.83e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.94e3
4.47e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.00e6
4.50e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
Abs. Int.
1.30e7
6.48e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
Abs. Int.
8.36e6
4.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12346F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
Abs. Int.
6.66e6
3.33e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12346F
1.46e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
Abs. Int.
4.36e6
2.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
Abs. Int.
7.51e3
3.76e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 4.43e3
0%
123478F
3.77e7
36.05
123678F
3.87e7
36.19
234678F
3.60e7
36.85
123789F
3.30e7
37.84
Abs. Int.
1.22e7
6.11e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 3.40e3
123478F
3.05e7
36.05
123678F
3.11e7
36.19
234678F
2.94e7
36.84
123789F
2.66e7
37.84
9.73e6
4.86e6
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.48e3
ES 123478F
9.89e6
36.04
ES 123678F
1.10e7
36.18
CS 123469F
9.53e6
36.49
ES 234678F
1.05e7
36.83
ES 123789F
9.61e6
37.82
3.56e6
1.78e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 9.01e3
ES 123478F
1.87e7
36.04
ES 123678F
2.10e7
36.18
CS 123469F
1.73e7
36.49
ES 234678F
1.88e7
36.83
ES 123789F
1.75e7
37.82
6.53e6
3.27e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.53e3
7.94e3
3.97e3


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
0%
1234678F
2.97e7*
39.34
1234789F
2.56e7*
40.70
Abs. Int.
1.13e7
5.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
0%
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
Abs. Int.
1.11e7
5.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
0%
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
Abs. Int.
2.63e6
1.32e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
0%
ES 1234678F
1.57e7
39.33
CS 1234689F
1.46e7
39.74
ES 1234789F
1.40e7*
40.69
Abs. Int.
5.87e6
2.93e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
0%
Abs. Int.
4.54e3
2.27e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

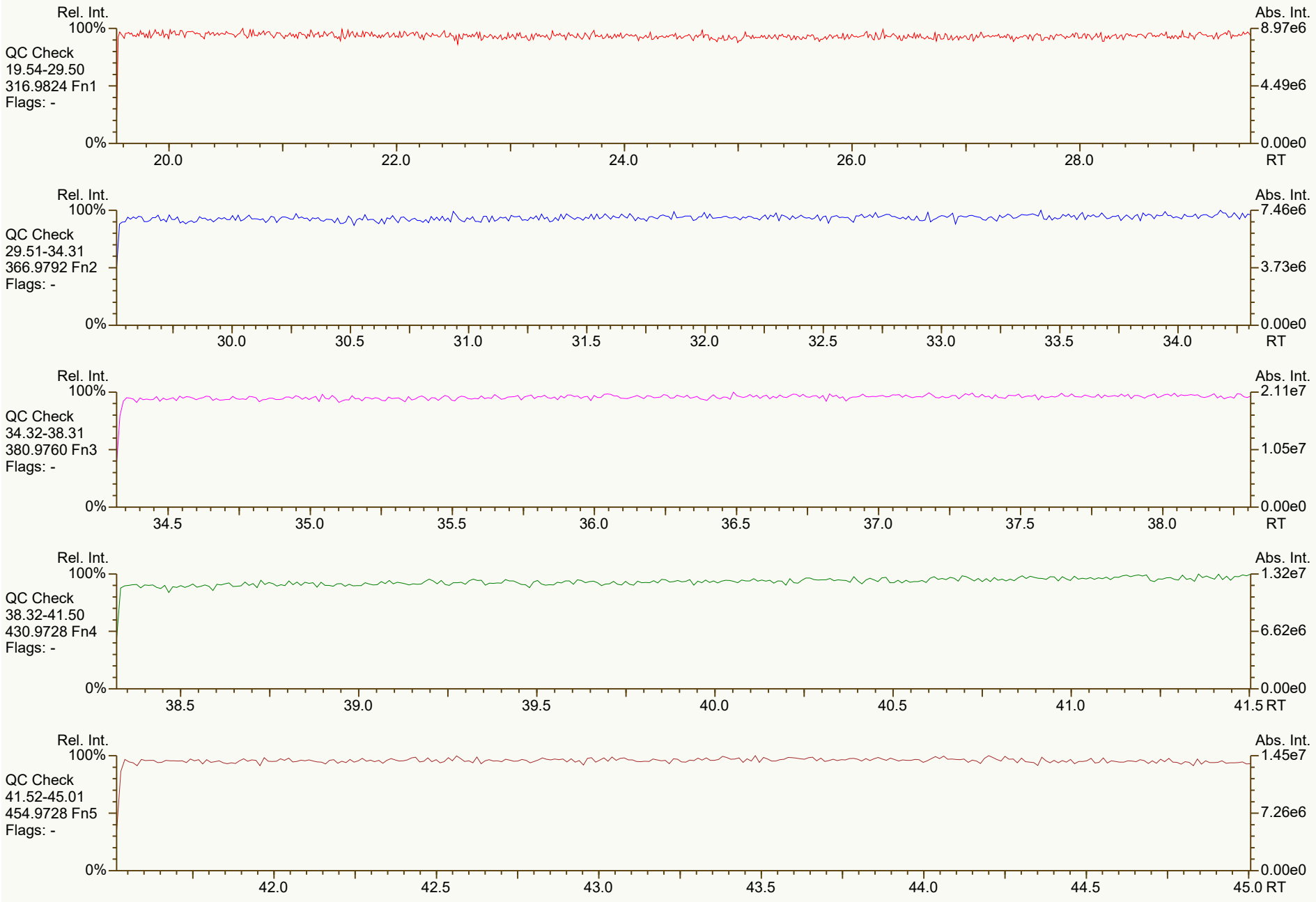

OCDF
3.65e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.04e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.75e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
0%
Abs. Int.
4.87e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
0%
Abs. Int.
5.87e6
2.93e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
0%
Abs. Int.
3.47e3
1.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

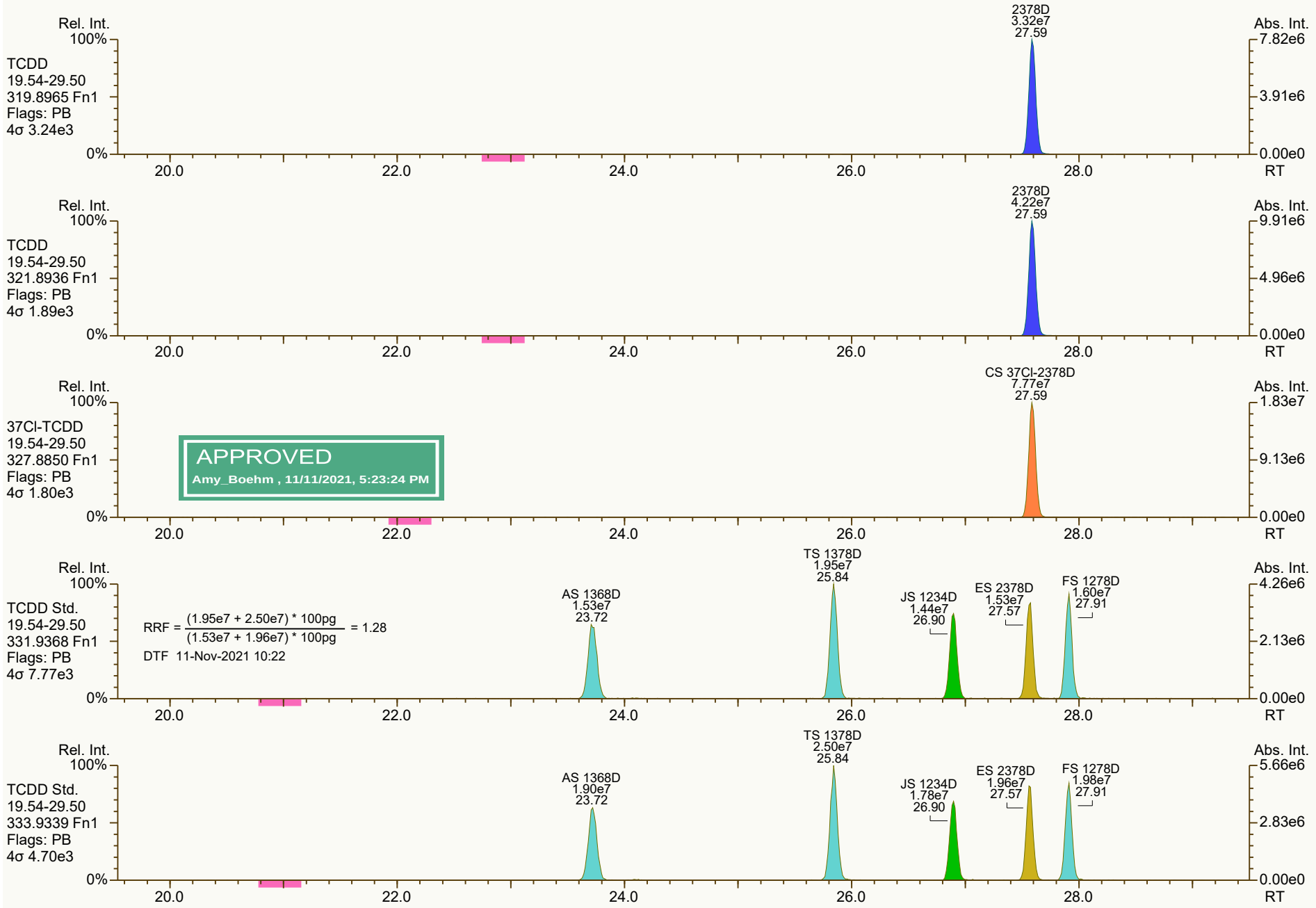
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

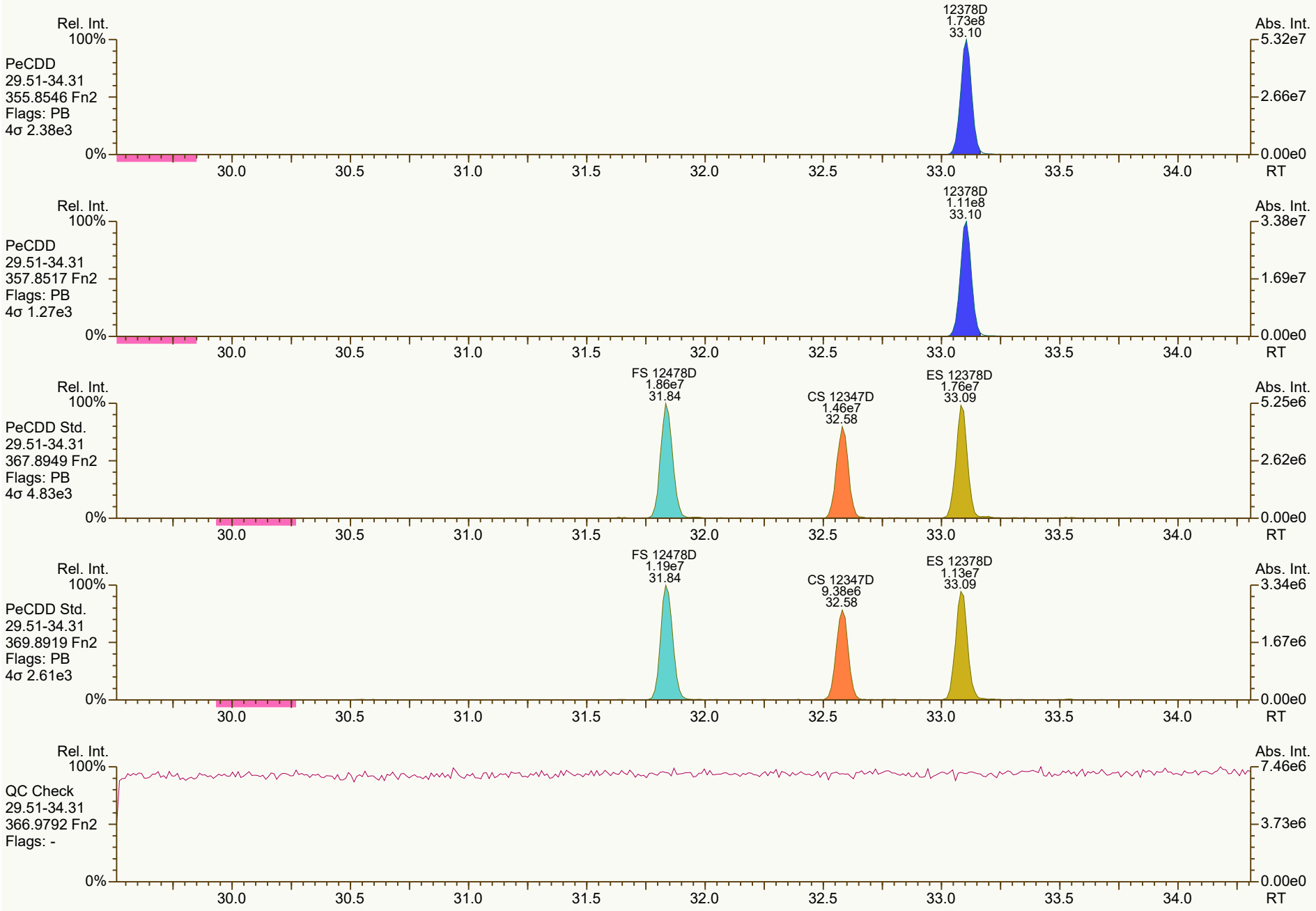
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

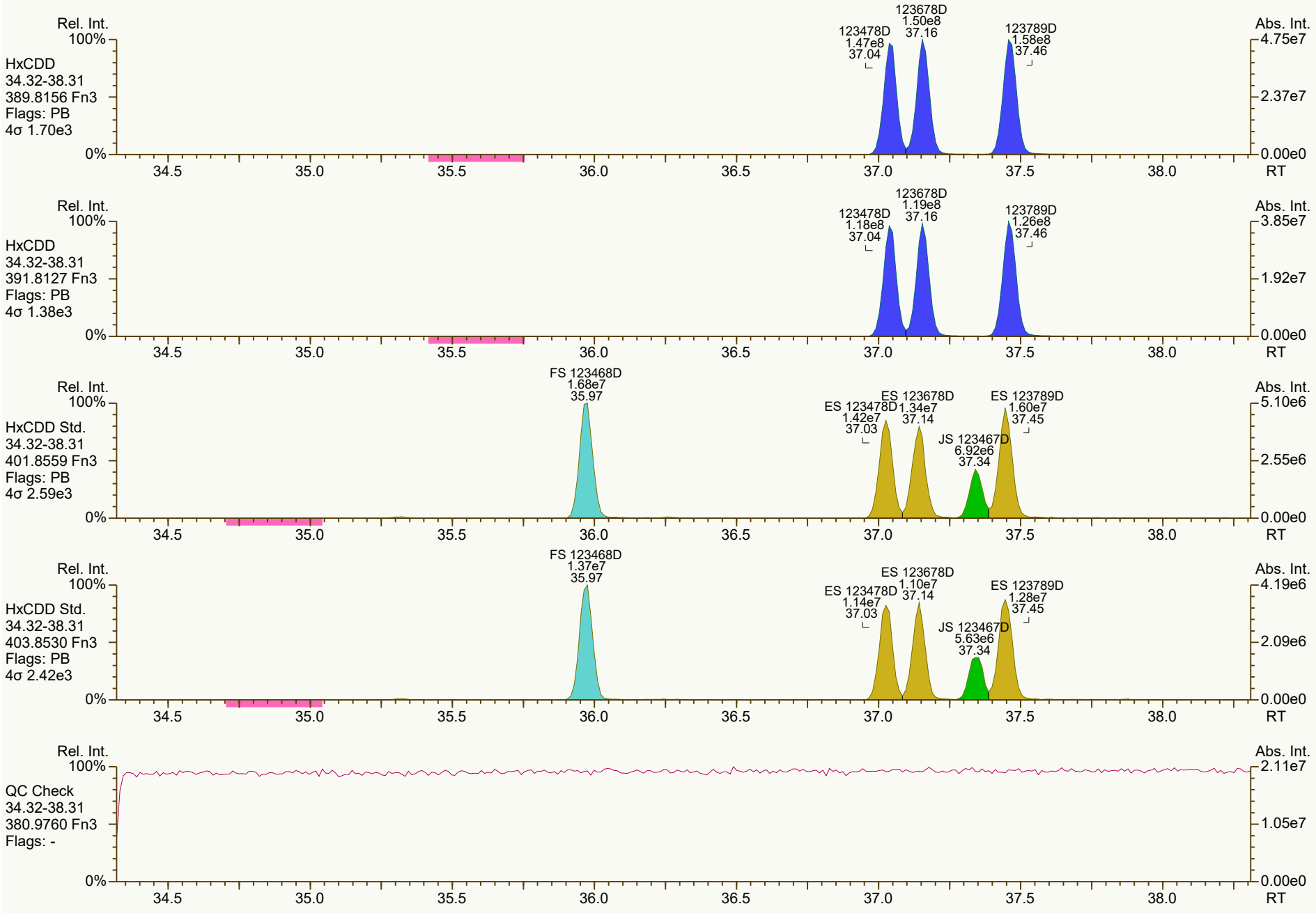
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

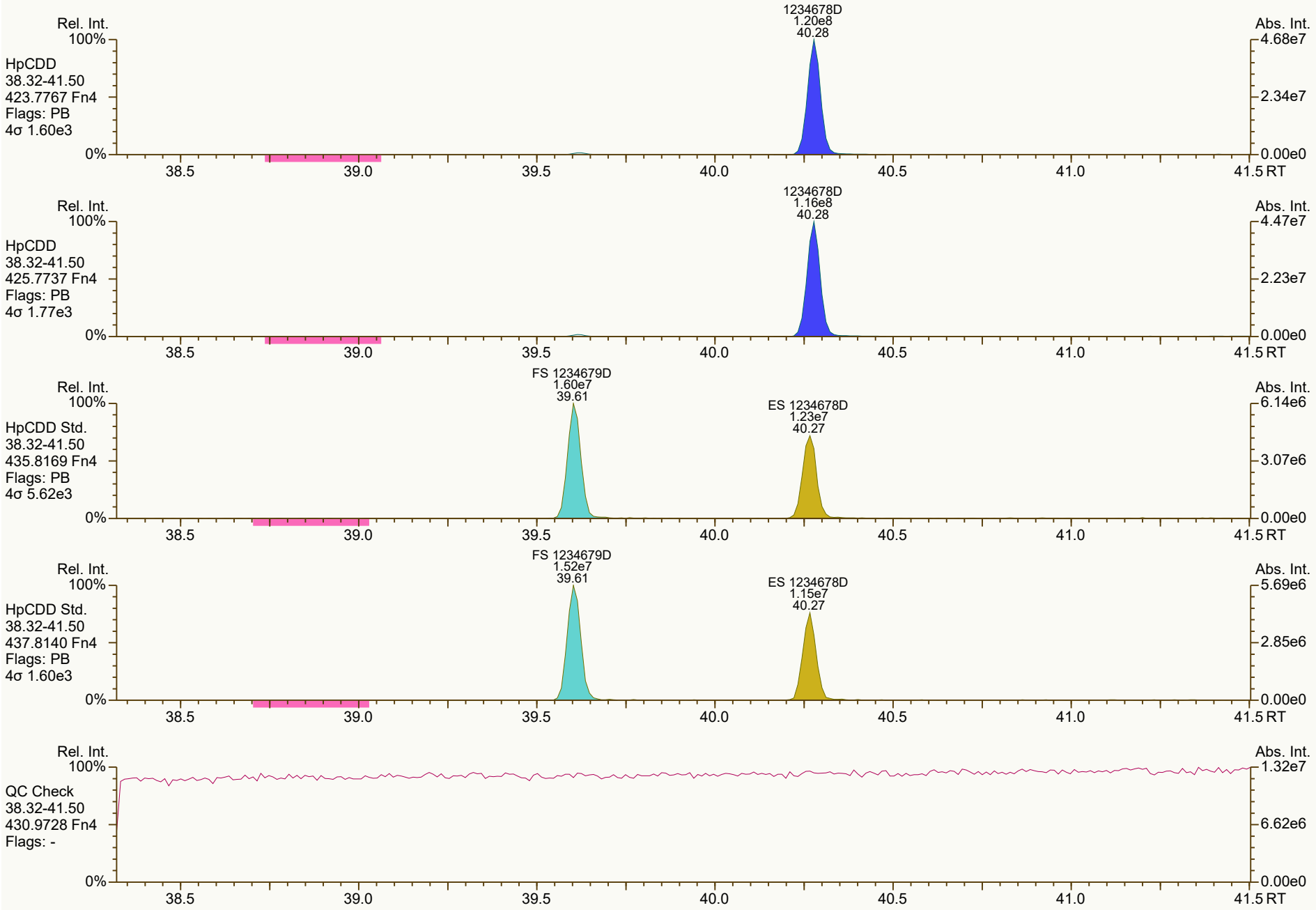
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

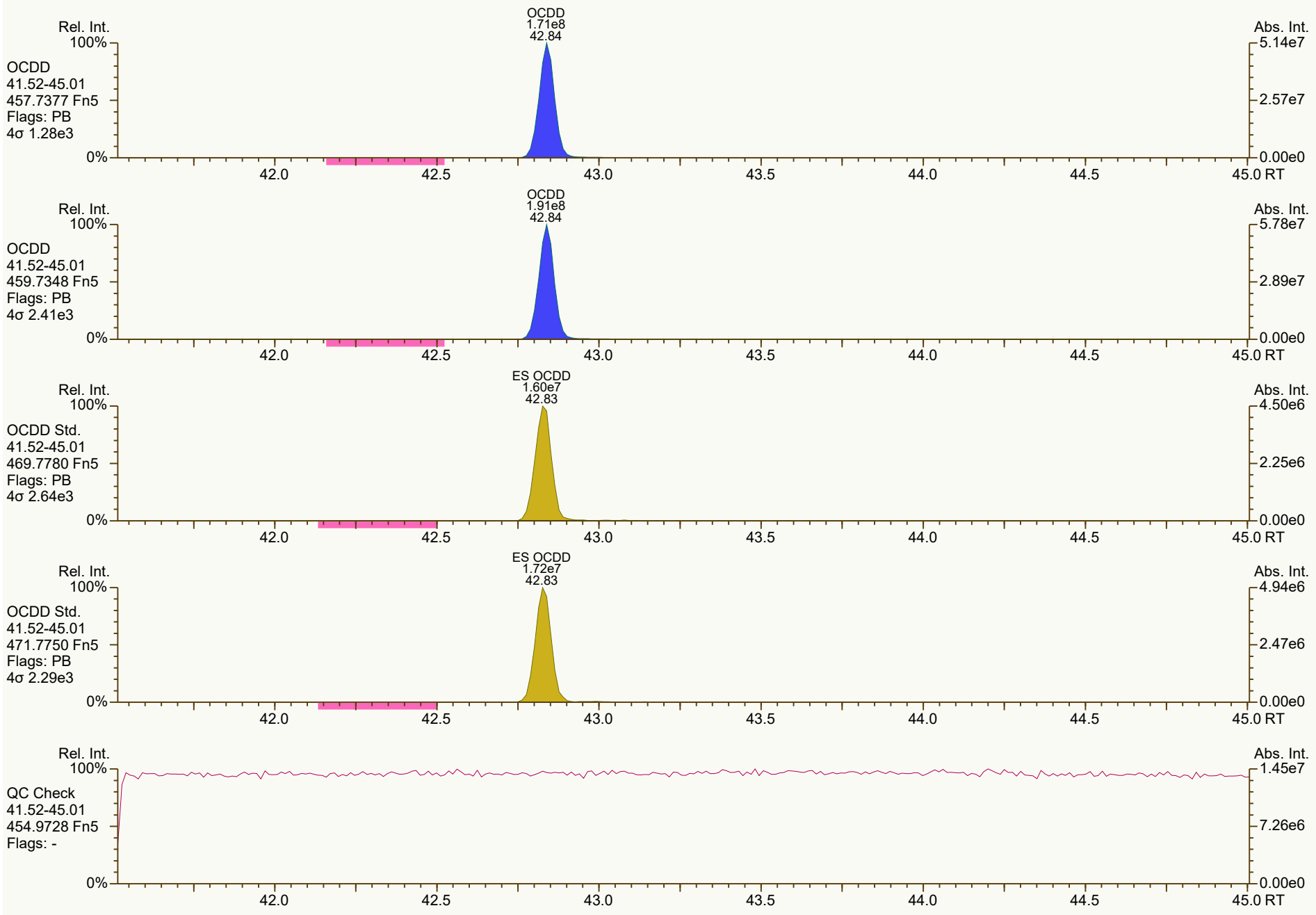

Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
RT
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
7.46e6
3.73e6
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.11e7
1.05e7
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.32e7
6.62e6
38.5
39.0
39.5
40.0
40.5
41.0
41.5
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6
42.0
42.5
43.0
43.5
44.0
44.5
45.0


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PB
4σ 3.24e3
0%
2378D
3.32e7
27.59
Abs. Int.
7.82e6
3.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: PB
4σ 1.89e3
0%
2378D
4.22e7
27.59
Abs. Int.
9.91e6
4.96e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: PB
4σ 1.80e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:23:24 PM
CS 37Cl-2378D
7.77e7
27.59
Abs. Int.
1.83e7
9.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 7.77e3
0%
RRF = (1.95e7 + 2.50e7) * 100pg / (1.53e7 + 1.96e7) * 100pg = 1.28
DTF 11-Nov-2021 10:22
AS 1368D
1.53e7
23.72
TS 1378D
1.95e7
25.84
JS 1234D
1.44e7
26.90
ES 2378D
1.53e7
27.57
FS 1278D
1.60e7
27.91
Abs. Int.
4.26e6
2.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.70e3
0%
AS 1368D
1.90e7
23.72
TS 1378D
2.50e7
25.84
JS 1234D
1.78e7
26.90
ES 2378D
1.96e7
27.57
FS 1278D
1.98e7
27.91
Abs. Int.
5.66e6
2.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
0%
12378D
1.73e8
33.10
Abs. Int.
5.32e7
2.66e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
0%
12378D
1.11e8
33.10
Abs. Int.
3.38e7
1.69e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
1.86e7
31.84
CS 12347D
1.46e7
32.58
ES 12378D
1.76e7
33.09
Abs. Int.
5.25e6
2.62e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
0%
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
Abs. Int.
3.34e6
1.67e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.46e6
3.73e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

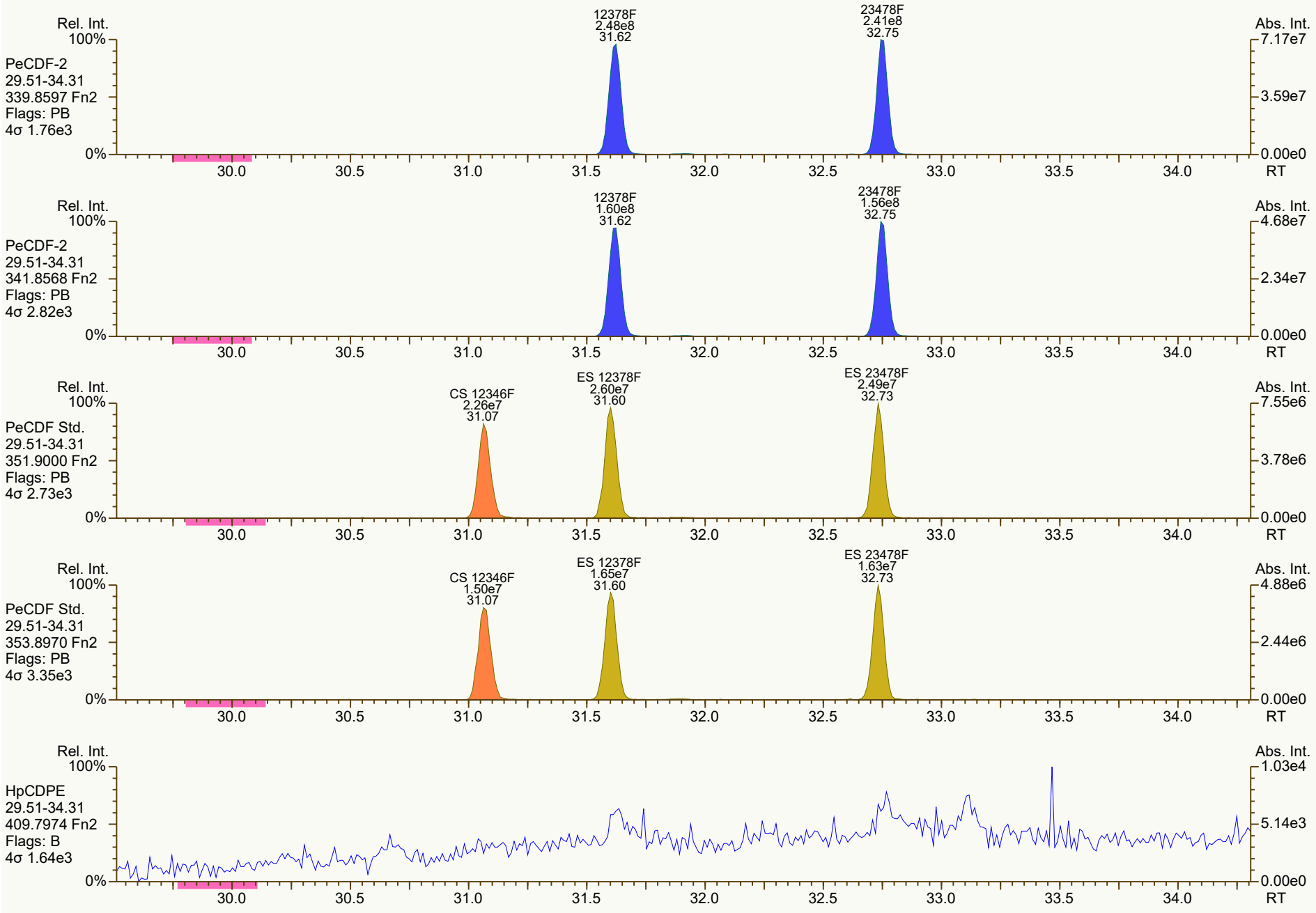

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
123478D
1.47e8
37.04
123678D
1.50e8
37.16
123789D
1.58e8
37.46
Abs. Int.
4.75e7
2.37e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
123478D
1.18e8
37.04
123678D
1.19e8
37.16
123789D
1.26e8
37.46
Abs. Int.
3.85e7
1.92e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
FS 123468D
1.68e7
35.97
ES 123478D
1.42e7
37.03
ES 123678D
1.34e7
37.14
JS 123467D
6.92e6
37.34
ES 123789D
1.60e7
37.45
Abs. Int.
5.10e6
2.55e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
FS 123468D
1.37e7
35.97
ES 123478D
1.14e7
37.03
ES 123678D
1.10e7
37.14
JS 123467D
5.63e6
37.34
ES 123789D
1.28e7
37.45
Abs. Int.
4.19e6
2.09e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.11e7
1.05e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

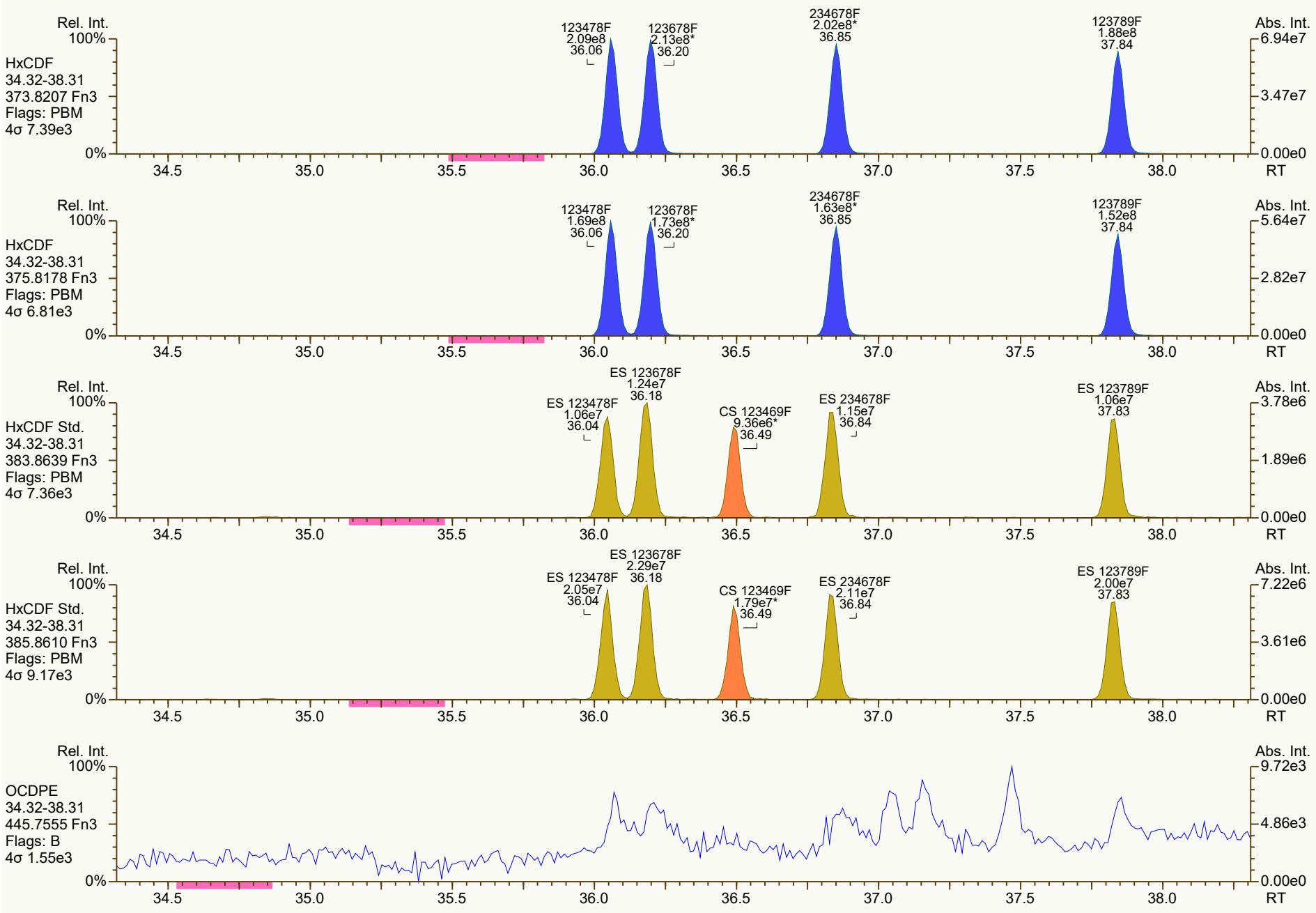

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
1.20e8
40.28
Abs. Int.
4.68e7
2.34e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.77e3
1234678D
1.16e8
40.28
Abs. Int.
4.47e7
2.23e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 5.62e3
FS 1234679D
1.60e7
39.61
ES 1234678D
1.23e7
40.27
Abs. Int.
6.14e6
3.07e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.60e3
FS 1234679D
1.52e7
39.61
ES 1234678D
1.15e7
40.27
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.32e7
6.62e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.71e8
42.84
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
0%
Abs. Int.
5.14e7
2.57e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e8
42.84
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
5.78e7
2.89e7
ES OCDD
1.60e7
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
4.50e6
2.25e6
ES OCDD
1.72e7
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
4.94e6
2.47e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
0%
2378F
4.22e7
26.68
Abs. Int.
9.59e6
4.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
0%
2378F
5.40e7
26.68
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
0%
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
Abs. Int.
4.70e6
2.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
Abs. Int.
5.78e6
2.89e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
0%
Abs. Int.
7.47e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.43e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 2.08e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT

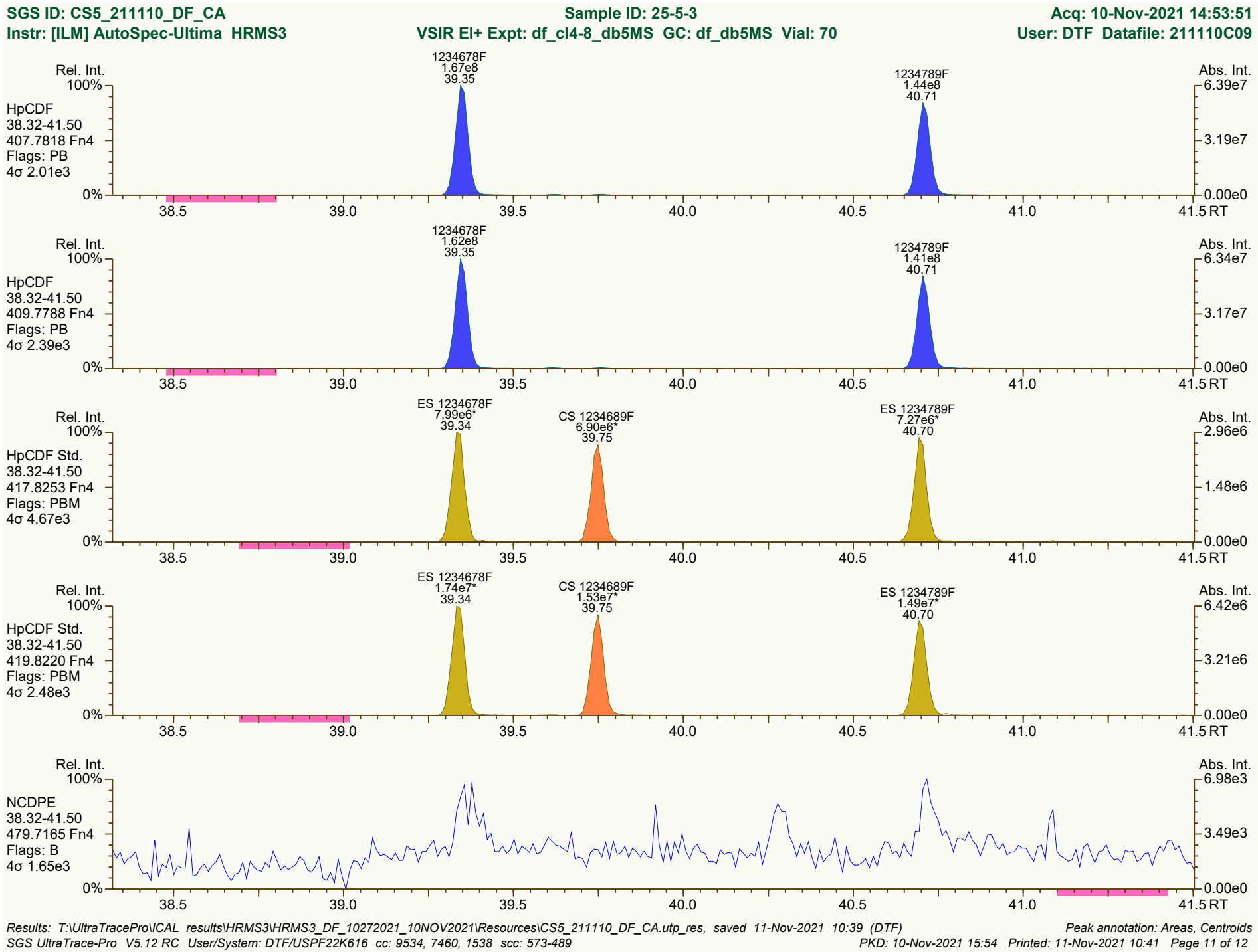

Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
0%
12378F
2.48e8
31.62
23478F
2.41e8
32.75
Abs. Int.
7.17e7
3.59e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
0%
12378F
1.60e8
31.62
23478F
1.56e8
32.75
Abs. Int.
4.68e7
2.34e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
0%
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
Abs. Int.
7.55e6
3.78e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
0%
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.63e7
32.73
Abs. Int.
4.88e6
2.44e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 7.39e3
0%
123478F
2.09e8
36.06
123678F
2.13e8*
36.20
234678F
2.02e8*
36.85
123789F
1.88e8
37.84
Abs. Int.
6.94e7
3.47e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 6.81e3
0%
123478F
1.69e8
36.06
123678F
1.73e8*
36.20
234678F
1.63e8*
36.85
123789F
1.52e8
37.84
Abs. Int.
5.64e7
2.82e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.36e3
0%
ES 123478F
1.06e7
36.04
ES 123678F
1.24e7
36.18
CS 123469F
9.36e6*
36.49
ES 234678F
1.15e7
36.84
ES 123789F
1.06e7
37.83
Abs. Int.
3.78e6
1.89e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.17e3
0%
ES 123478F
2.05e7
36.04
ES 123678F
2.29e7
36.18
CS 123469F
1.79e7*
36.49
ES 234678F
2.11e7
36.84
ES 123789F
2.00e7
37.83
Abs. Int.
7.22e6
3.61e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.55e3
0%
Abs. Int.
9.72e3
4.86e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

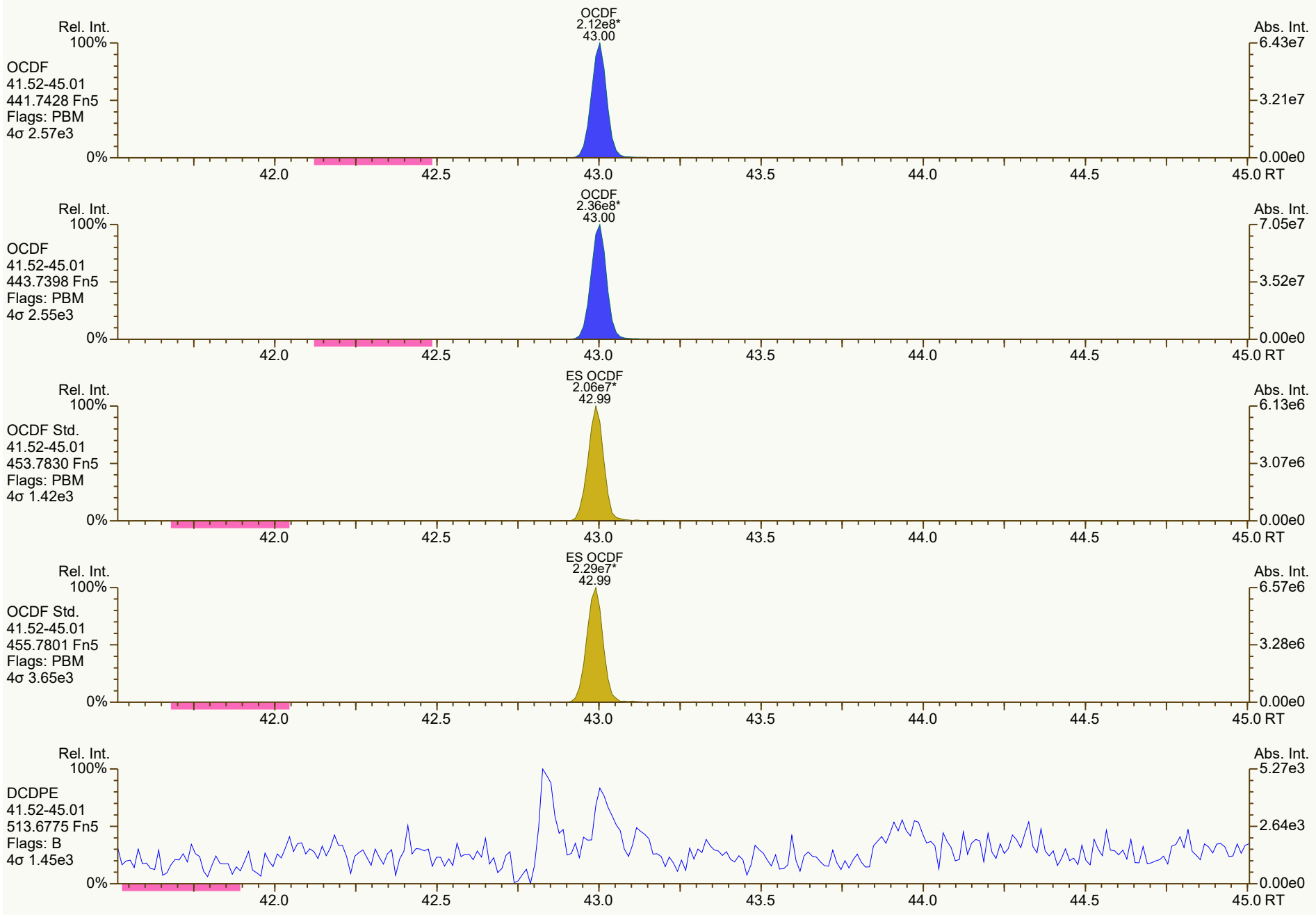
SGS ID: CS5_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70

Acq: 10-Nov-2021 14:53:51
User: DTF Datafile: 211110C09



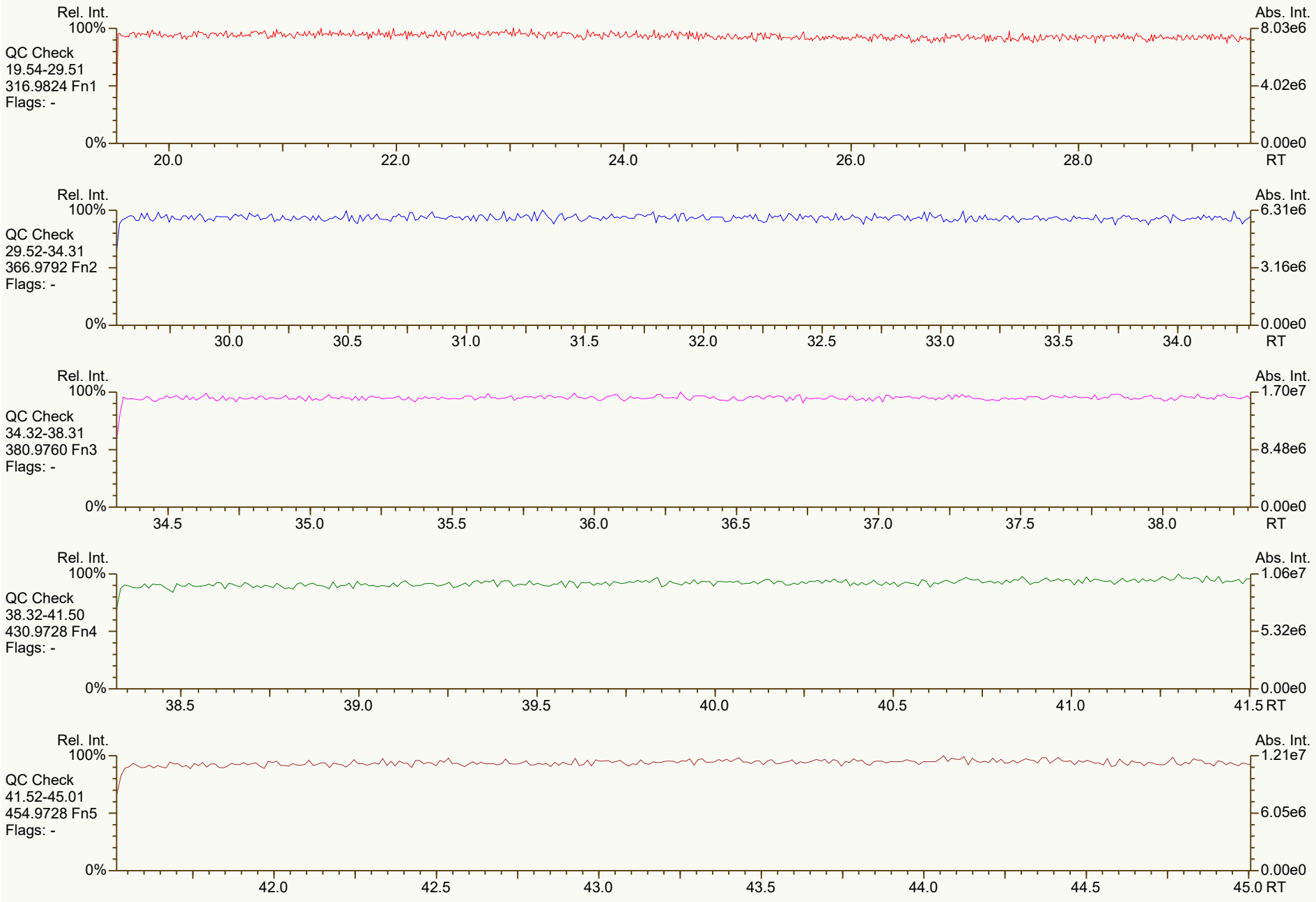
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9534, 7460, 1538 scc: 573-489
PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 11 of 12

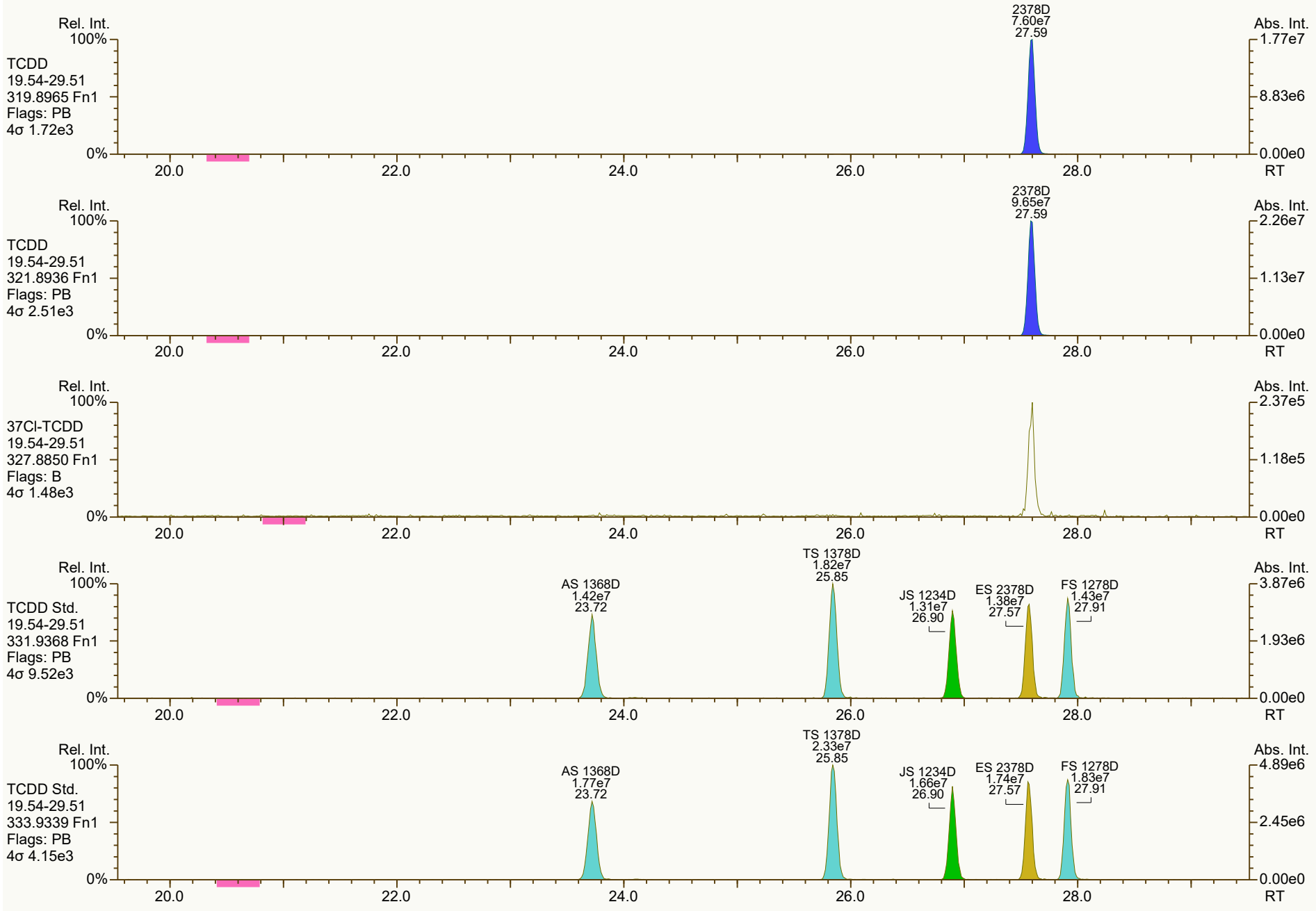

OCDF
2.12e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
6.43e7
3.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.36e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
0%
Abs. Int.
7.05e7
3.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
6.13e6
3.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
6.57e6
3.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
5.27e3
2.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

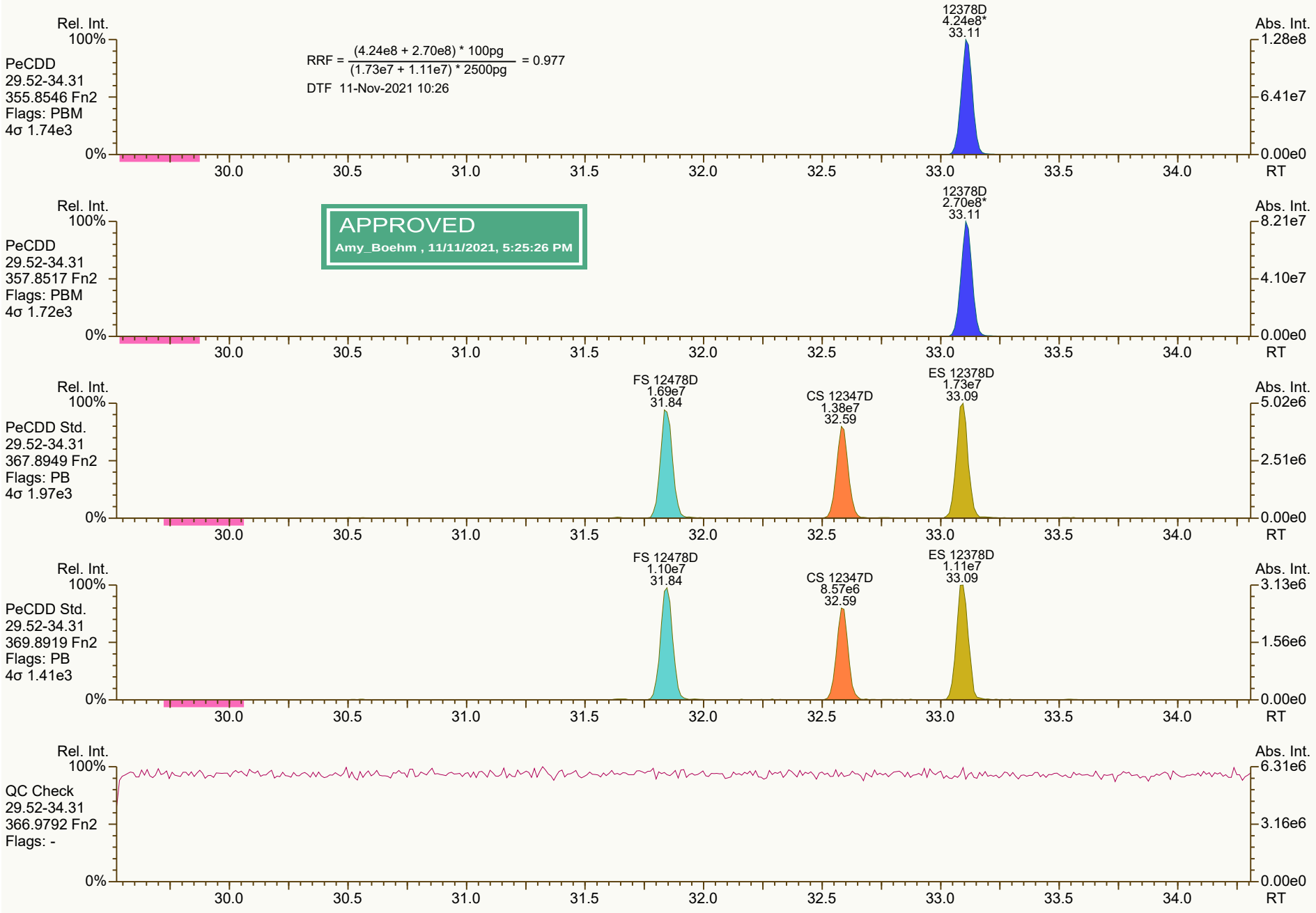
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

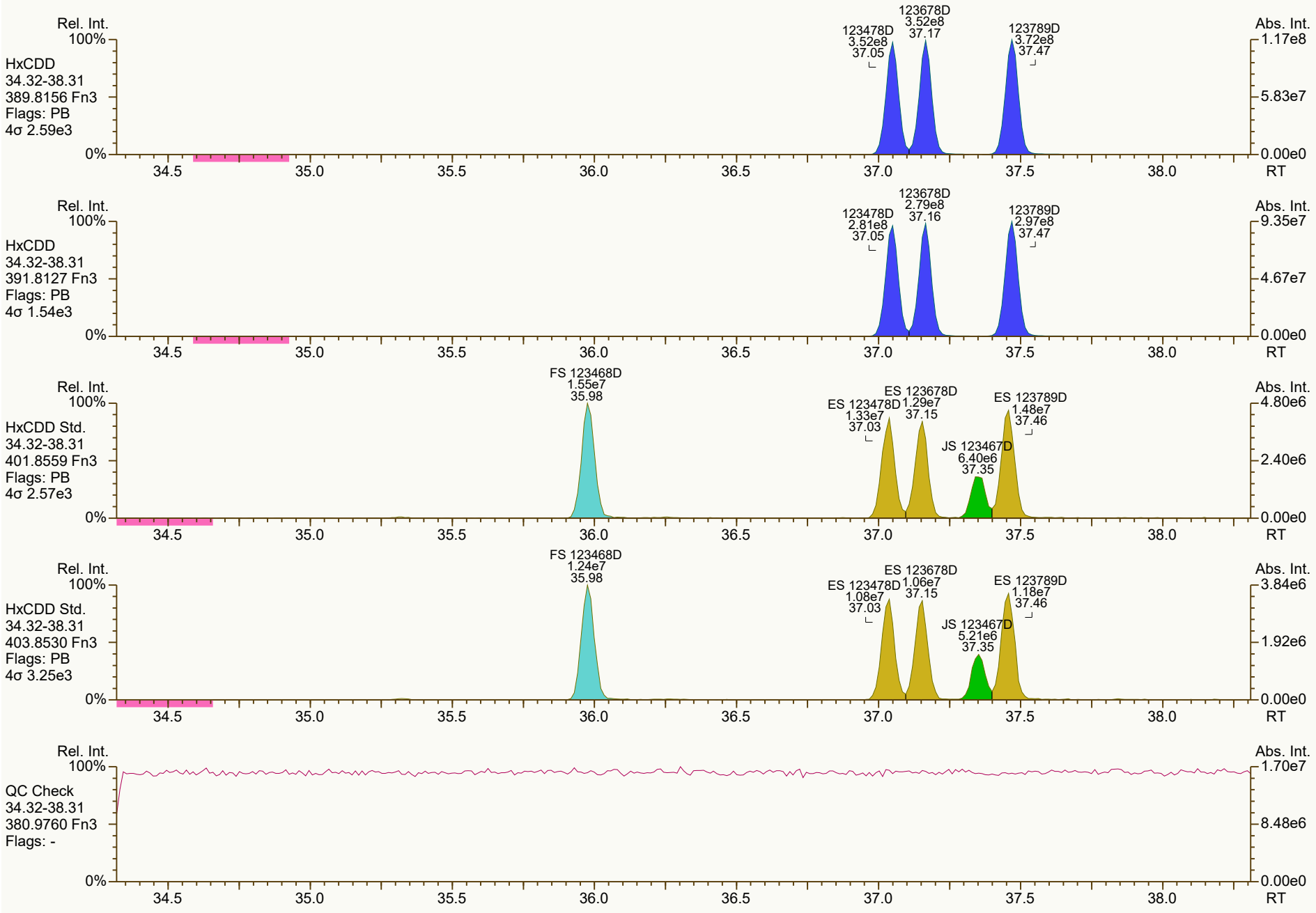
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

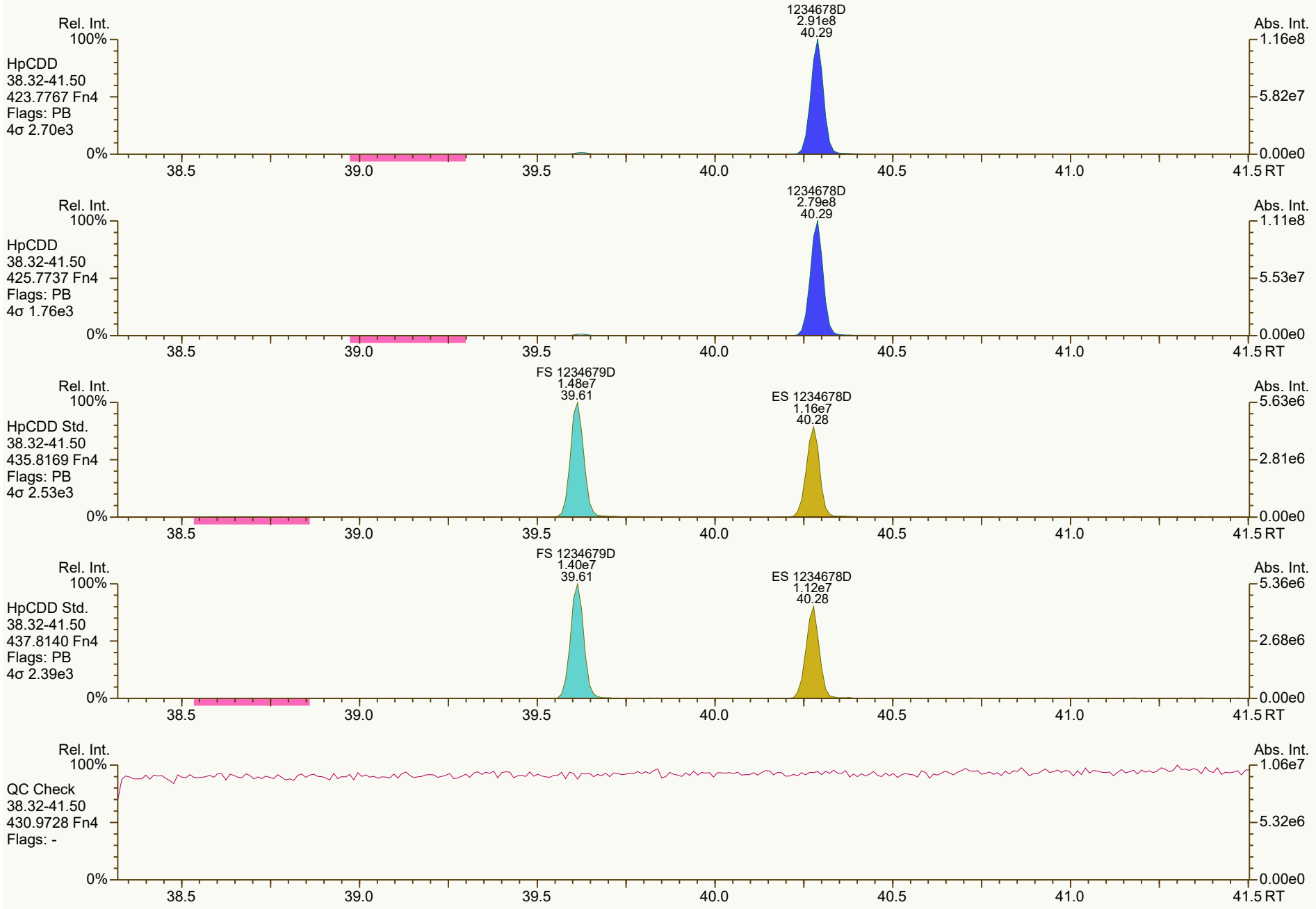
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF				Checkcode: 172-736-WQL	
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C10	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

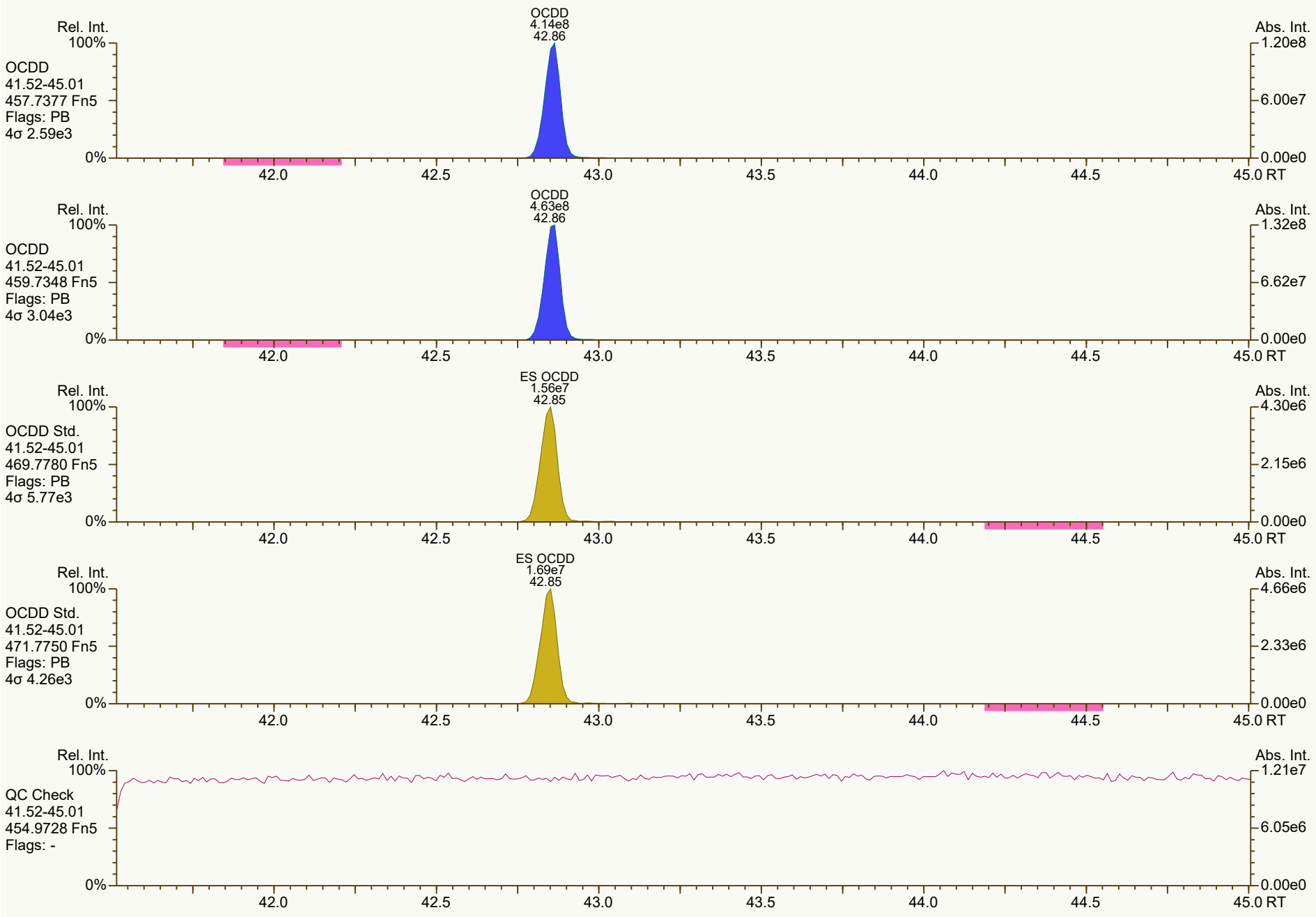

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
Abs. Int.
8.03e6
4.02e6
0.00e0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
Abs. Int.
6.31e6
3.16e6
0.00e0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Abs. Int.
1.70e7
8.48e6
0.00e0
RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
Abs. Int.
1.06e7
5.32e6
0.00e0
RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
Abs. Int.
1.21e7
6.05e6
0.00e0
RT


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
0%
2378D
7.60e7
27.59
Abs. Int.
1.77e7
8.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
0%
2378D
9.65e7
27.59
Abs. Int.
2.26e7
1.13e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
2.37e5
1.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
0%
AS 1368D
1.42e7
23.72
TS 1378D
1.82e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
Abs. Int.
3.87e6
1.93e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
0%
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.83e7
27.91
Abs. Int.
4.89e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.74e3
0%
RRF = (4.24e8 + 2.70e8) * 100pg / (1.73e7 + 1.11e7) * 2500pg = 0.977
DTF 11-Nov-2021 10:26
12378D
4.24e8*
33.11
Abs. Int.
1.28e8
6.41e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.72e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:25:26 PM
12378D
2.70e8*
33.11
Abs. Int.
8.21e7
4.10e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 1.97e3
0%
FS 12478D
1.69e7
31.84
CS 12347D
1.38e7
32.59
ES 12378D
1.73e7
33.09
Abs. Int.
5.02e6
2.51e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 1.41e3
0%
FS 12478D
1.10e7
31.84
CS 12347D
8.57e6
32.59
ES 12378D
1.11e7
33.09
Abs. Int.
3.13e6
1.56e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.31e6
3.16e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

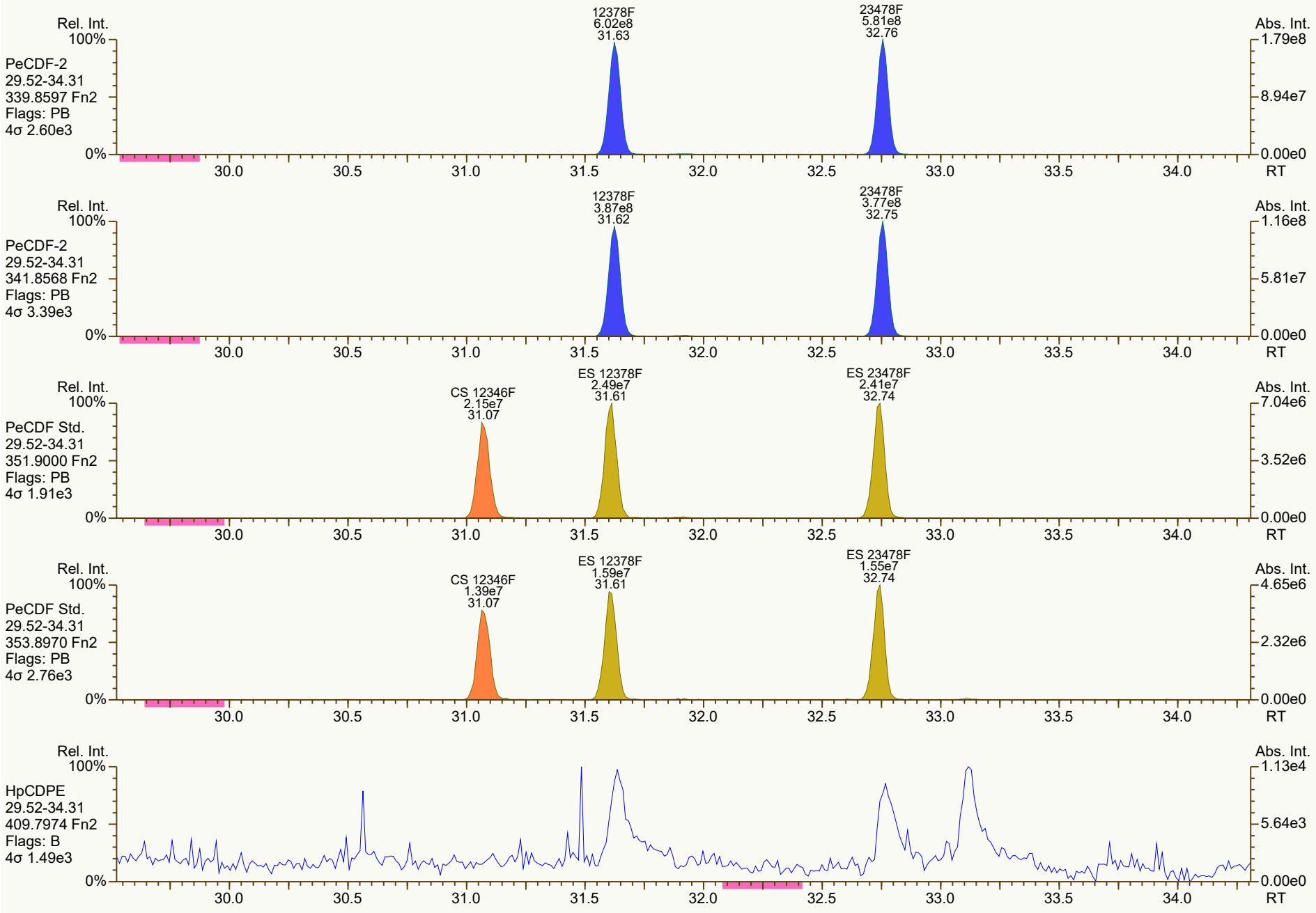

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
0%
123478D
3.52e8
37.05
123678D
3.52e8
37.17
123789D
3.72e8
37.47
Abs. Int.
1.17e8
5.83e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
0%
123478D
2.81e8
37.05
123678D
2.79e8
37.16
123789D
2.97e8
37.47
Abs. Int.
9.35e7
4.67e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
0%
FS 123468D
1.55e7
35.98
ES 123478D
1.33e7
37.03
ES 123678D
1.29e7
37.15
JS 123467D
6.40e6
37.35
ES 123789D
1.48e7
37.46
Abs. Int.
4.80e6
2.40e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
0%
FS 123468D
1.24e7
35.98
ES 123478D
1.08e7
37.03
ES 123678D
1.06e7
37.15
JS 123467D
5.21e6
37.35
ES 123789D
1.18e7
37.46
Abs. Int.
3.84e6
1.92e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.70e7
8.48e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

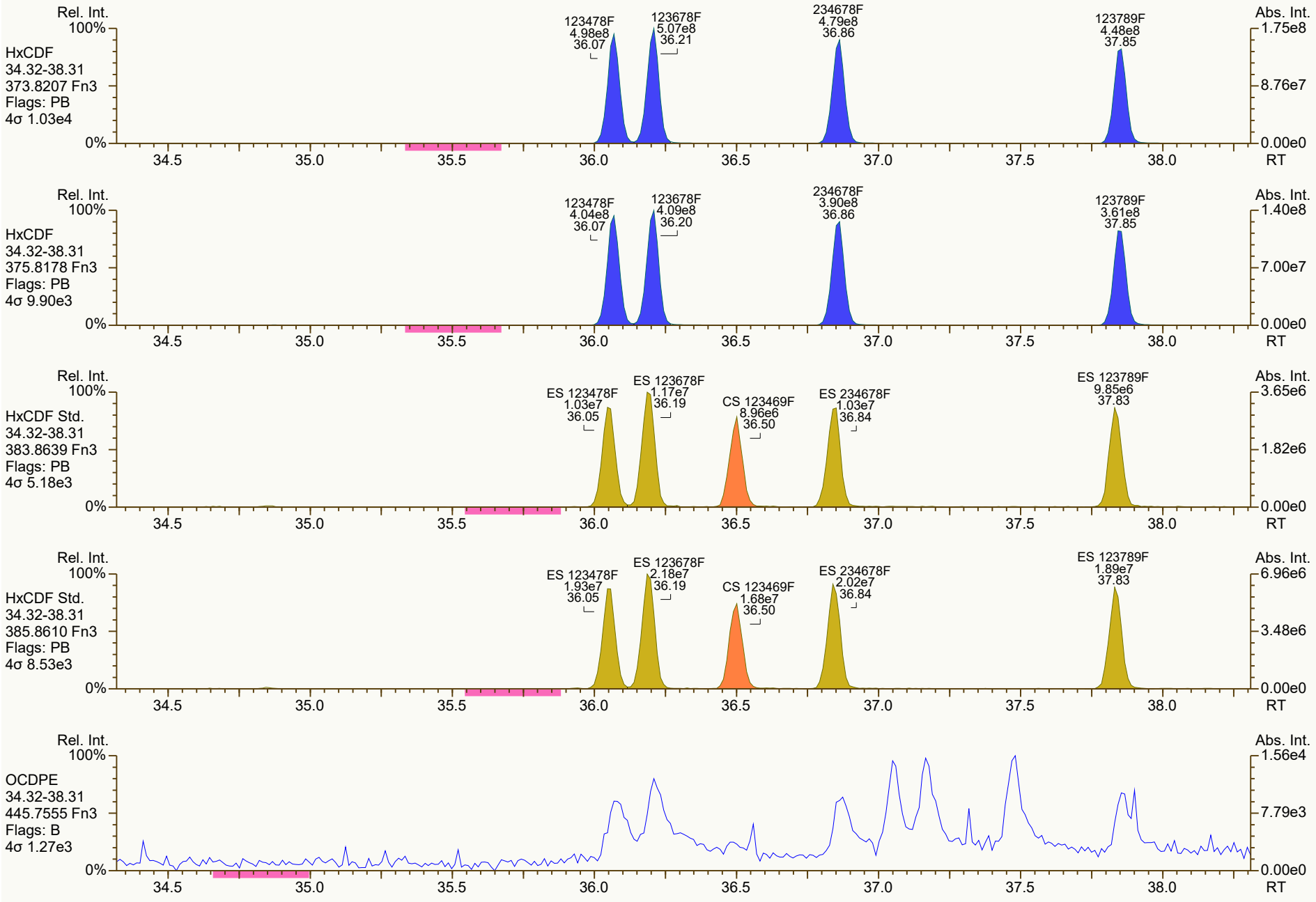

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
1234678D
2.91e8
40.29
Abs. Int.
1.16e8
5.82e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
1234678D
2.79e8
40.29
Abs. Int.
1.11e8
5.53e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
FS 1234679D
1.48e7
39.61
ES 1234678D
1.16e7
40.28
Abs. Int.
5.63e6
2.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
FS 1234679D
1.40e7
39.61
ES 1234678D
1.12e7
40.28
Abs. Int.
5.36e6
2.68e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.06e7
5.32e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

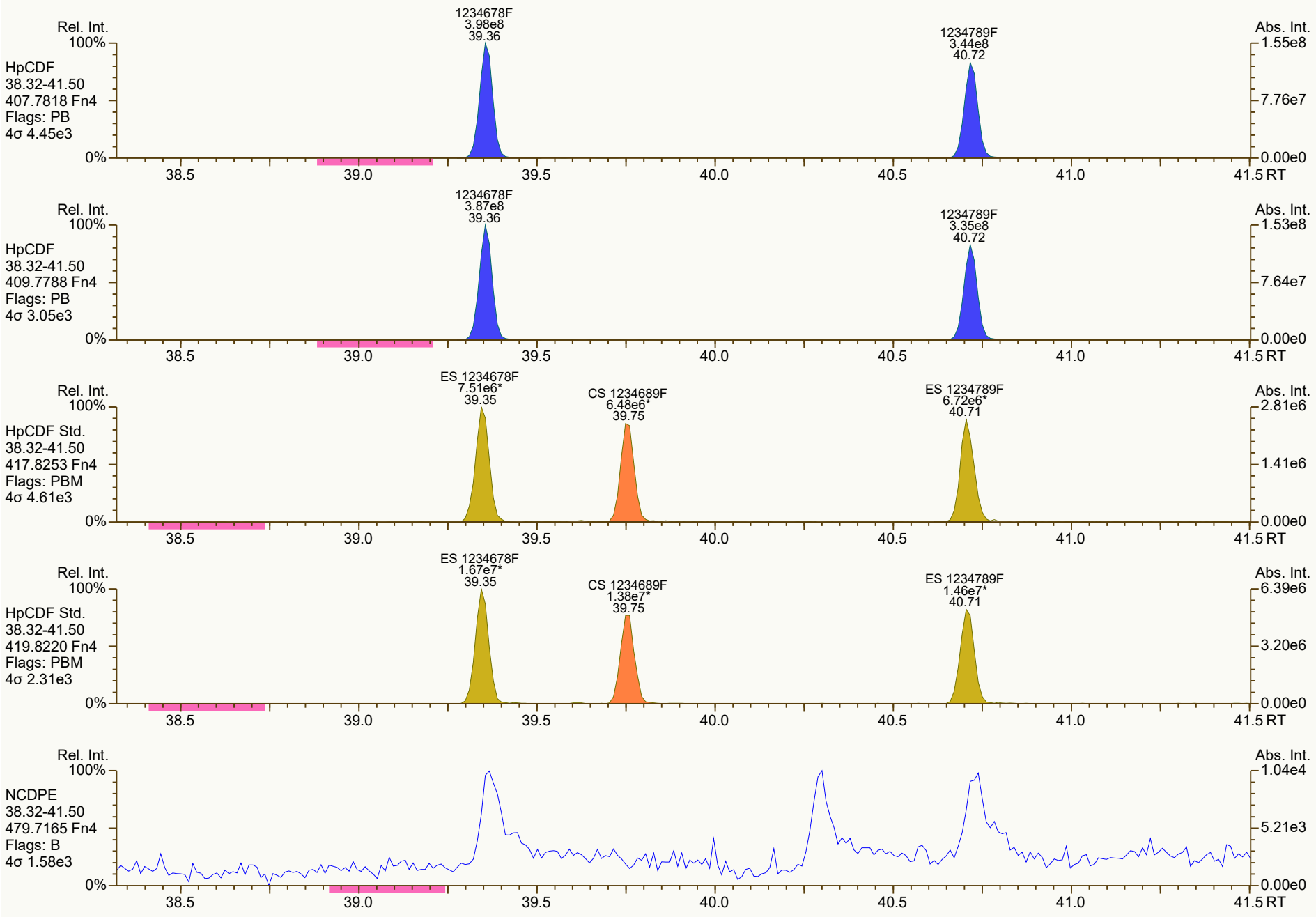

OCDD
4.14e8
42.86
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.59e3
0%
Abs. Int.
1.20e8
6.00e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.63e8
42.86
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
1.32e8
6.62e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.56e7
42.85
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.77e3
0%
Abs. Int.
4.30e6
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.69e7
42.85
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.26e3
0%
Abs. Int.
4.66e6
2.33e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.21e7
6.05e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

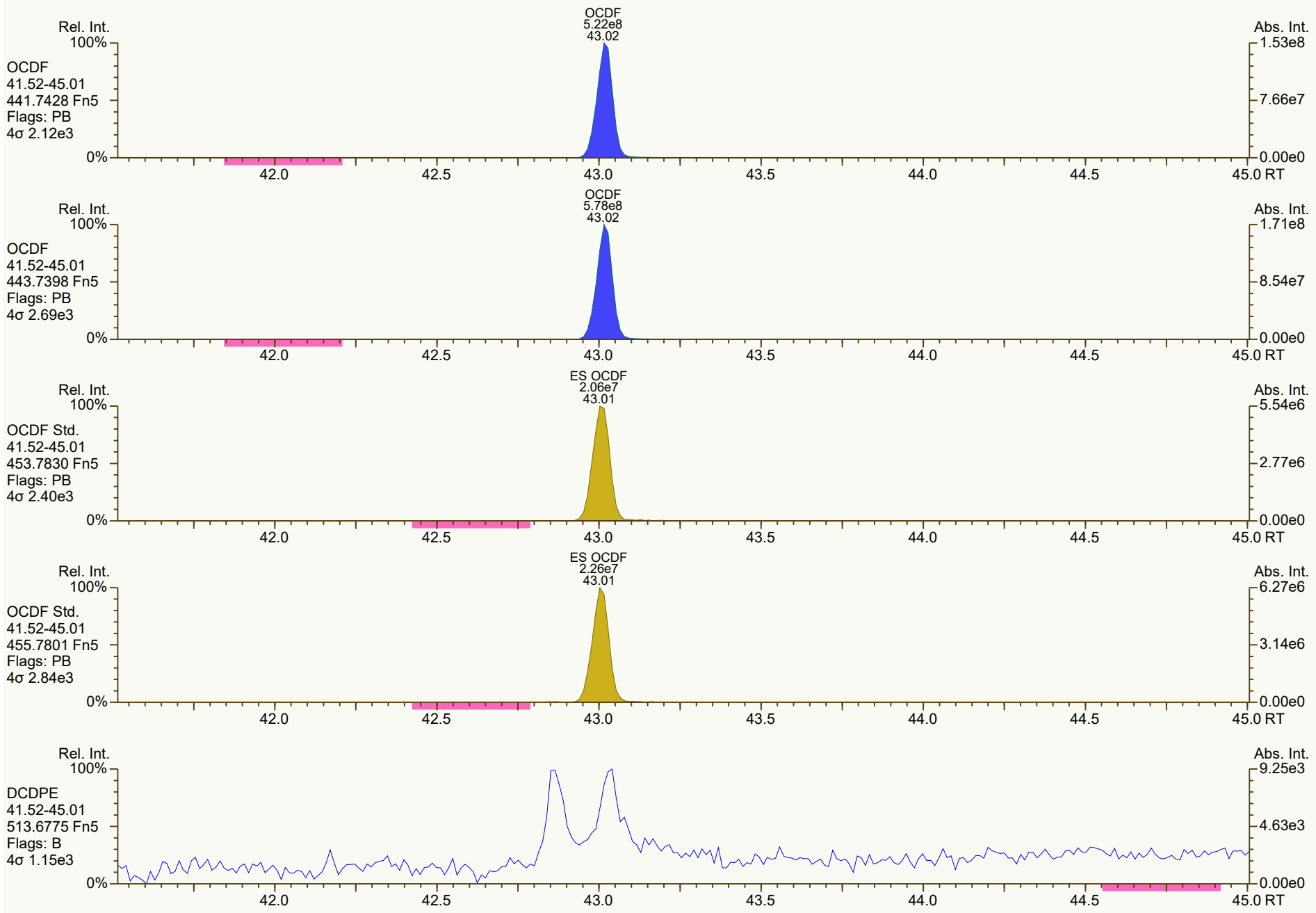

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 2.26e3
0%
2378F
9.73e7
26.68
Abs. Int.
2.17e7
1.08e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 2.01e3
0%
2378F
1.26e8
26.68
Abs. Int.
2.85e7
1.42e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.95e4
0%
AS 1368F
2.07e7
21.49
JS 1234F
1.84e7
25.24
ES 2378F
1.95e7
26.66
Abs. Int.
4.38e6
2.19e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 7.53e3
0%
AS 1368F
2.62e7
21.49
JS 1234F
2.32e7
25.24
ES 2378F
2.51e7
26.65
Abs. Int.
5.43e6
2.72e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.55e3
0%
Abs. Int.
6.34e3
3.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

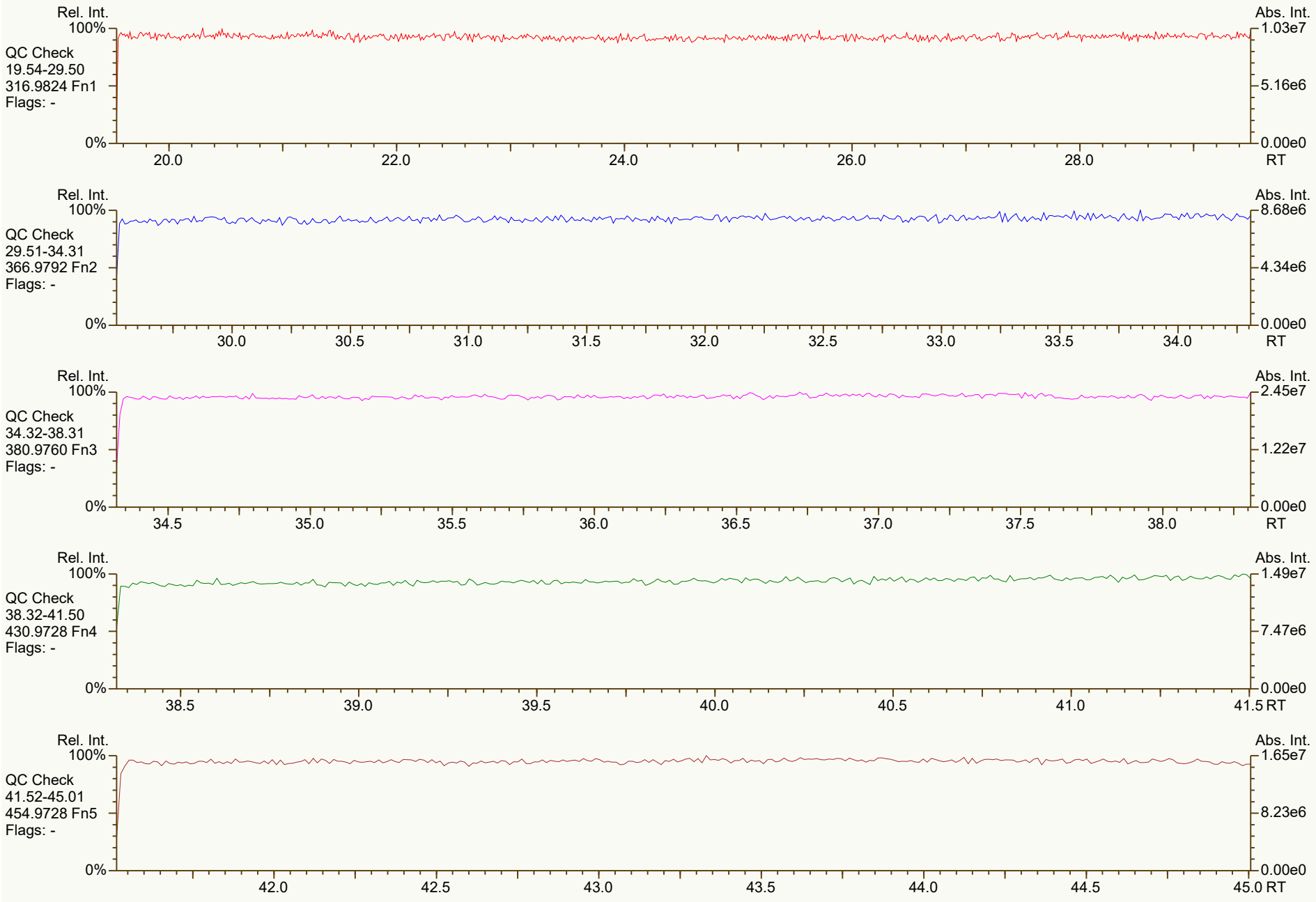

Rel. Int.
100%
0%
Abs. Int.
9.54e3
4.77e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 2.51e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.38e4
6.90e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.99e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.03e6
4.02e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PB
4σ 2.60e3
0%
12378F
6.02e8
31.63
23478F
5.81e8
32.76
Abs. Int.
1.79e8
8.94e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PB
4σ 3.39e3
0%
12378F
3.87e8
31.62
23478F
3.77e8
32.75
Abs. Int.
1.16e8
5.81e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 1.91e3
0%
CS 12346F
2.15e7
31.07
ES 12378F
2.49e7
31.61
ES 23478F
2.41e7
32.74
Abs. Int.
7.04e6
3.52e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.76e3
0%
CS 12346F
1.39e7
31.07
ES 12378F
1.59e7
31.61
ES 23478F
1.55e7
32.74
Abs. Int.
4.65e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.49e3
0%
Abs. Int.
1.13e4
5.64e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 1.03e4
123478F
4.98e8
36.07
123678F
5.07e8
36.21
234678F
4.79e8
36.86
123789F
4.48e8
37.85
Abs. Int.
1.75e8
8.76e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 9.90e3
123478F
4.04e8
36.07
123678F
4.09e8
36.20
234678F
3.90e8
36.86
123789F
3.61e8
37.85
Abs. Int.
1.40e8
7.00e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.18e3
ES 123478F
1.03e7
36.05
ES 123678F
1.17e7
36.19
CS 123469F
8.96e6
36.50
ES 234678F
1.03e7
36.84
ES 123789F
9.85e6
37.83
Abs. Int.
3.65e6
1.82e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 8.53e3
ES 123478F
1.93e7
36.05
ES 123678F
2.18e7
36.19
CS 123469F
1.68e7
36.50
ES 234678F
2.02e7
36.84
ES 123789F
1.89e7
37.83
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.27e3
Abs. Int.
1.56e4
7.79e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e8
39.36
1234789F
3.44e8
40.72
Abs. Int.
1.55e8
7.76e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e8
39.36
1234789F
3.35e8
40.72
Abs. Int.
1.53e8
7.64e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
Abs. Int.
2.81e6
1.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
Abs. Int.
1.04e4
5.21e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
OCDF
5.22e8
43.02
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
OCDF
5.78e8
43.02
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
ES OCDF
2.06e7
43.01
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDF
2.26e7
43.01
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.03e7
5.16e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.68e6
4.34e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.45e7
1.22e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.49e7
7.47e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.65e7
8.23e6
0.00e0

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

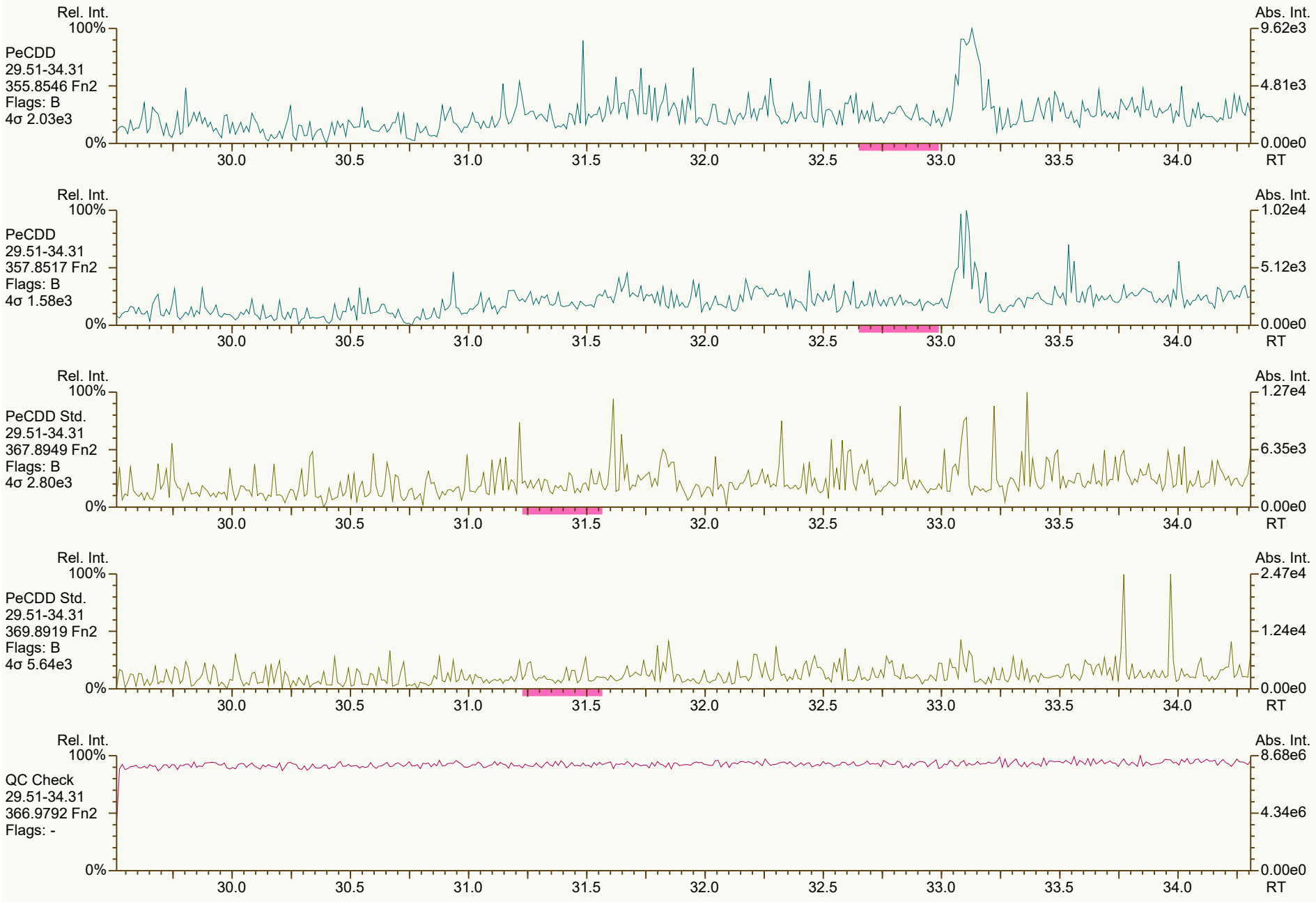
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4939, 4247, 1318 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1*


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: B
4σ 2.56e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.75e3
0%
Abs. Int.
8.16e3
4.08e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: B
4σ 7.98e3
0%
Abs. Int.
2.72e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: B
4σ 6.62e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: B
4σ 2.80e3
0%
Abs. Int.
1.27e4
6.35e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: B
4σ 5.64e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.68e6
4.34e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

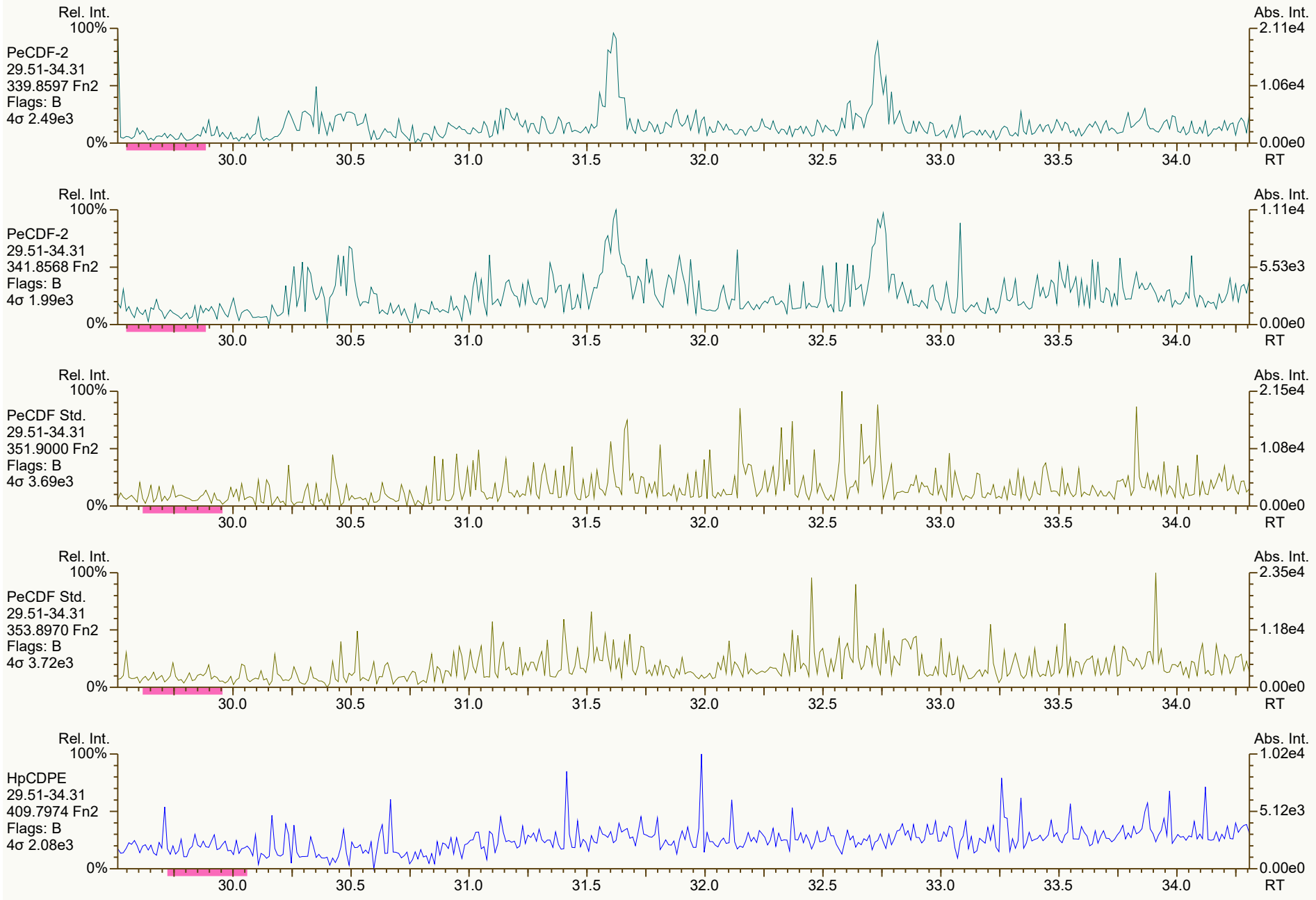

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: B
4σ 5.99e3
0%
Abs. Int.
1.61e4
8.05e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.45e7
1.22e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

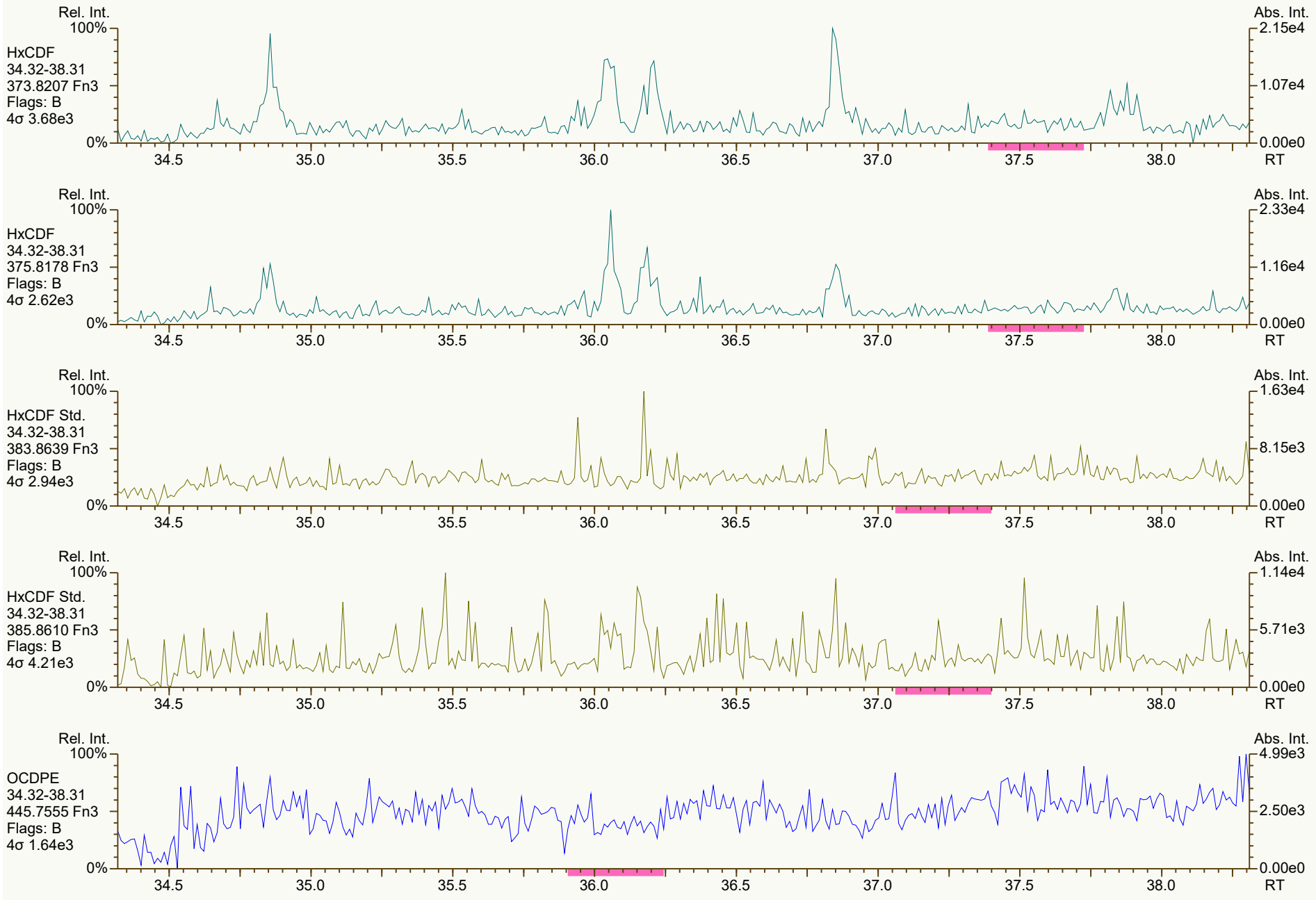

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.62e4
8.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: B
4σ 2.39e3
0%
Abs. Int.
2.45e4
1.23e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: B
4σ 2.97e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.49e7
7.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.07e4
5.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.42e4
7.11e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.65e7
8.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
2468F
3.48e5*
22.78
Abs. Int.
7.07e4
3.53e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
2468F
5.04e5*
22.78
Abs. Int.
1.06e5
5.32e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
Abs. Int.
5.11e4
2.56e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
Abs. Int.
2.83e4
1.42e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
9.47e3
4.73e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
8.70e3
4.35e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.84e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.49e3
4.75e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 3.09e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.03e7
5.16e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: B
4σ 2.49e3
0%
Abs. Int.
2.11e4
1.06e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: B
4σ 3.69e3
0%
Abs. Int.
2.15e4
1.08e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: B
4σ 3.72e3
0%
Abs. Int.
2.35e4
1.18e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
2.15e4
1.07e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.33e4
1.16e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: B
4σ 4.21e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.64e3
0%
Abs. Int.
4.99e3
2.50e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

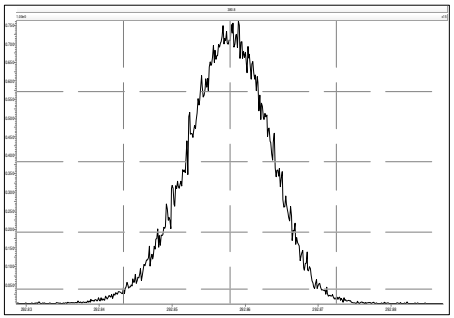

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: B
4σ 2.83e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: B
4σ 5.26e3
0%
Abs. Int.
2.80e4
1.40e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.49e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.02e4
5.08e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
6.88e3
3.44e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.40e3
0%
Abs. Int.
4.10e3
2.05e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

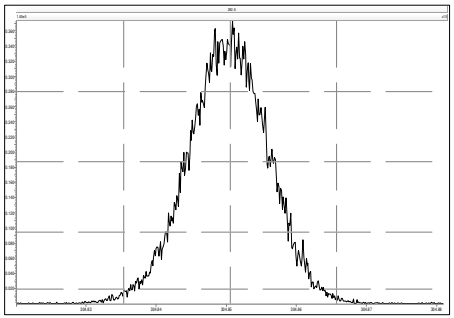
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

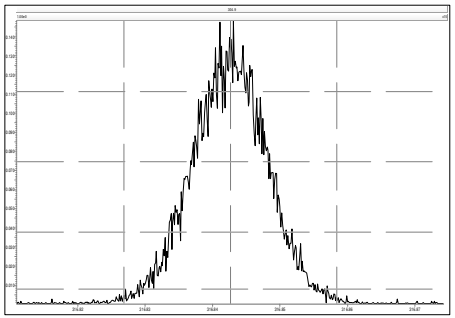
M 292.9824 R 10731



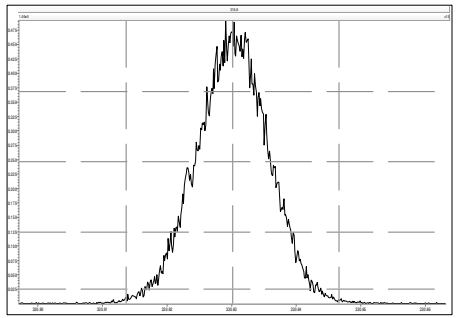
M 304.9824 R 11311



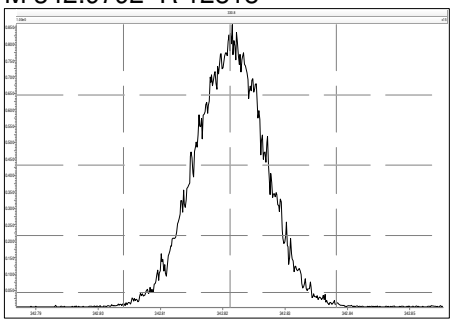
M 316.9824 R 12373



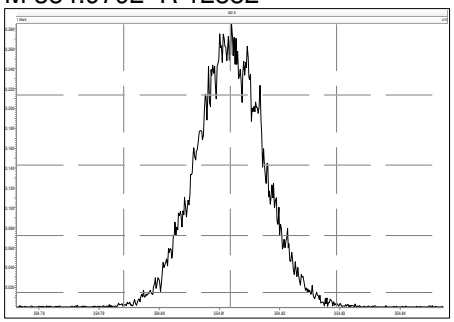
M 330.9792 R 12887



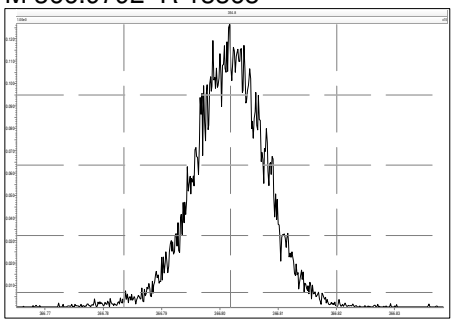
M 342.9792 R 12818



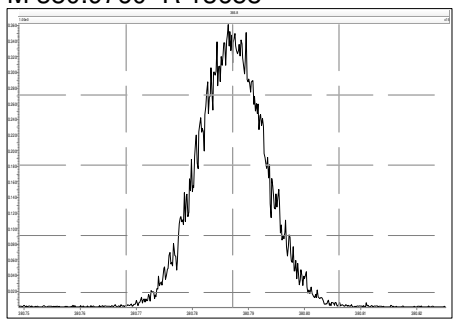
M 354.9792 R 12882



M 366.9792 R 13368



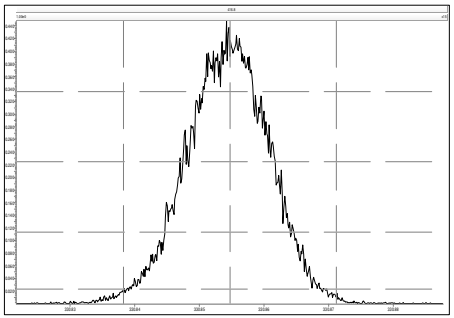
M 380.9760 R 13658



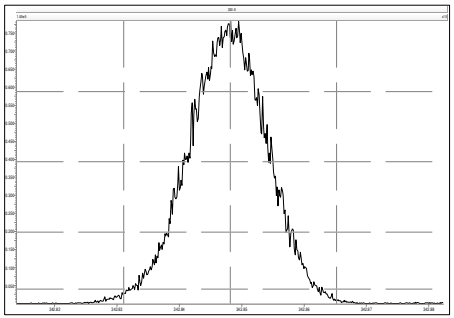
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

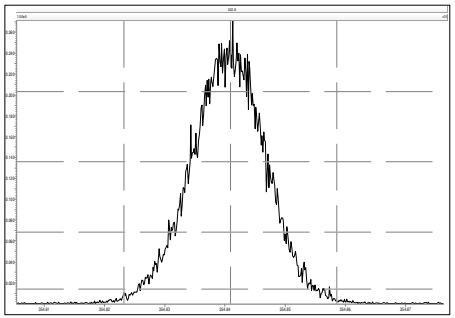
M 330.9792 R 11112



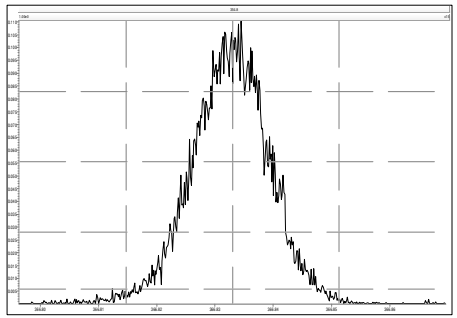
M 342.9792 R 11909



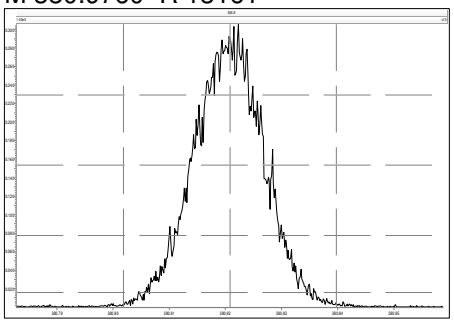
M 354.9792 R 11684



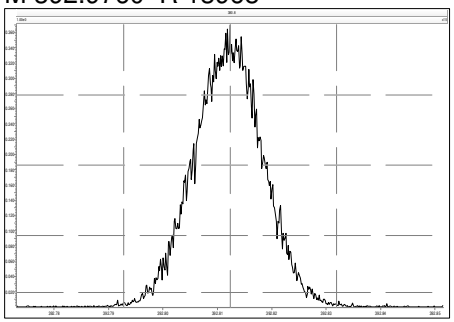
M 366.9792 R 11962



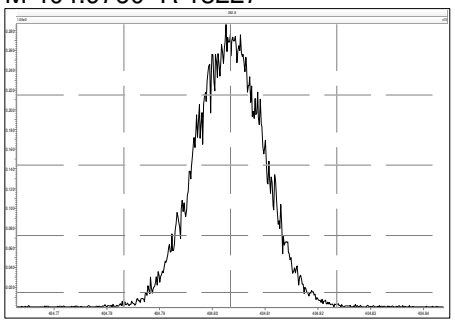
M 380.9760 R 13161



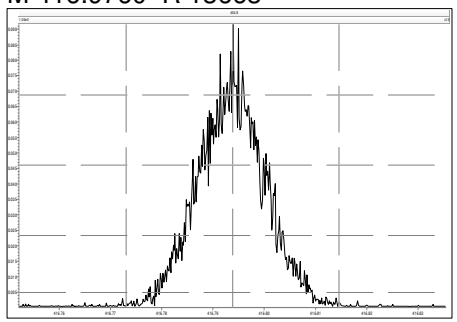
M 392.9760 R 13968



M 404.9760 R 13227



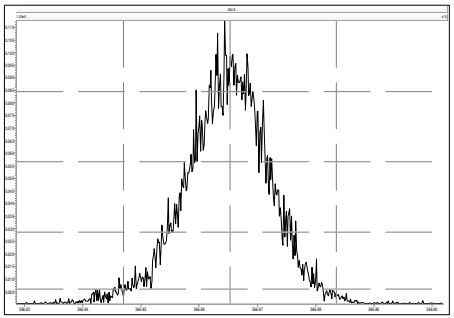
M 416.9760 R 13663



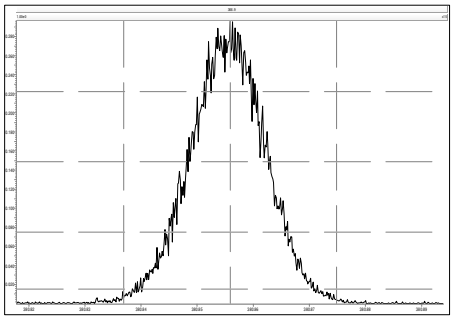
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

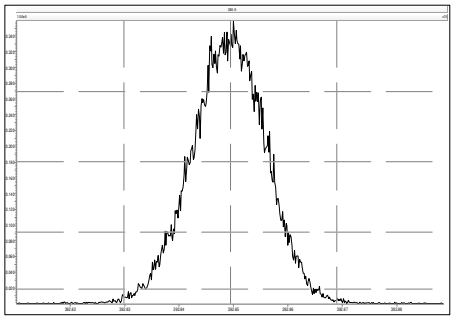
M 366.9792 R 10680



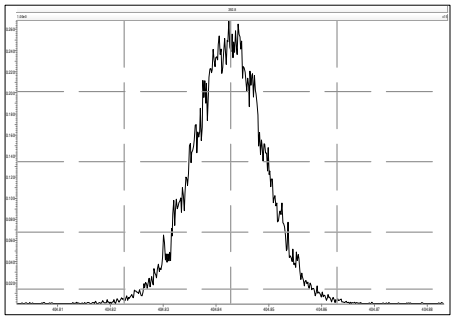
M 380.9760 R 12315



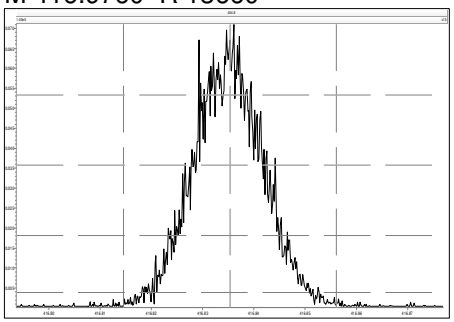
M 392.9760 R 12197



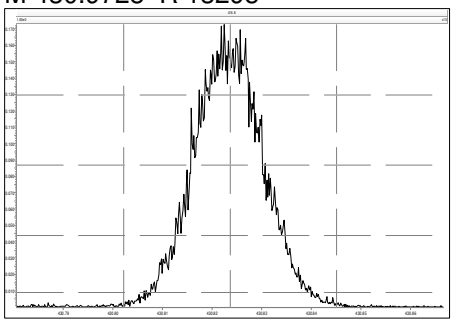
M 404.9760 R 12433



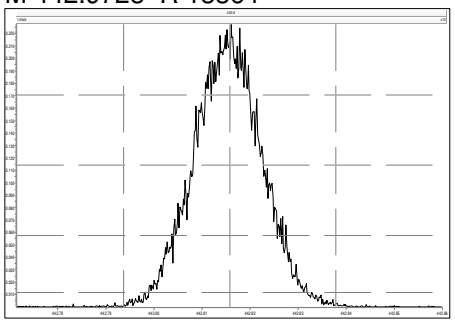
M 416.9760 R 13660



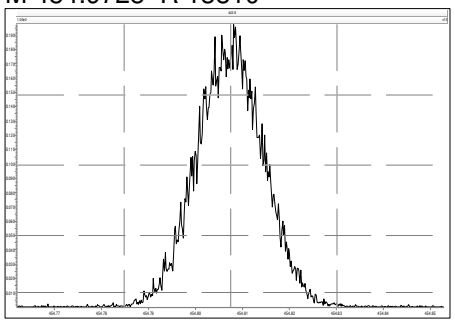
M 430.9728 R 13295



M 442.9728 R 13364



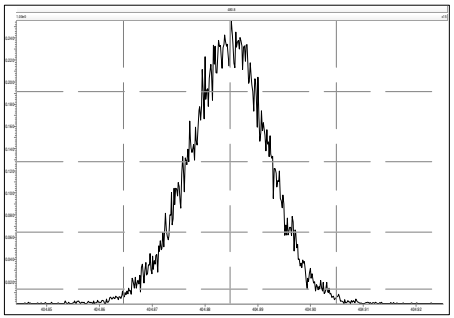
M 454.9728 R 13810



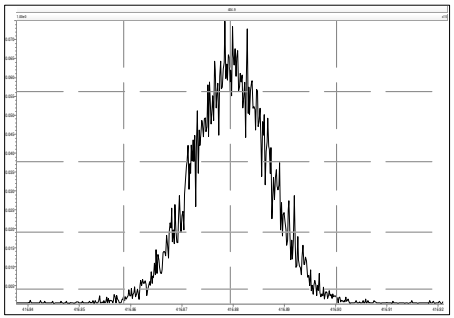
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

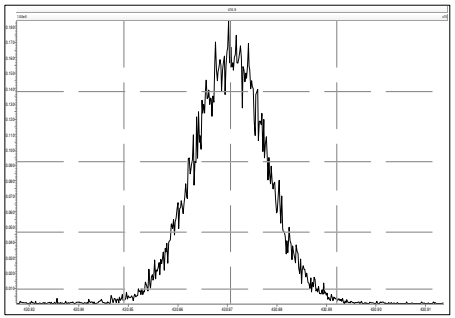
M 404.9760 R 11679



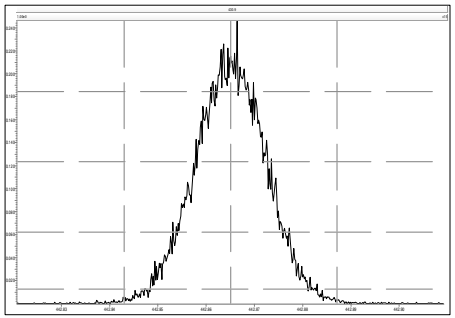
M 416.9760 R 12886



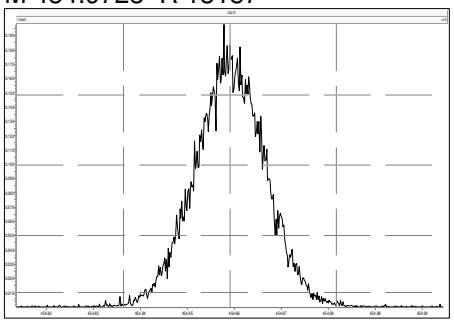
M 430.9728 R 12253



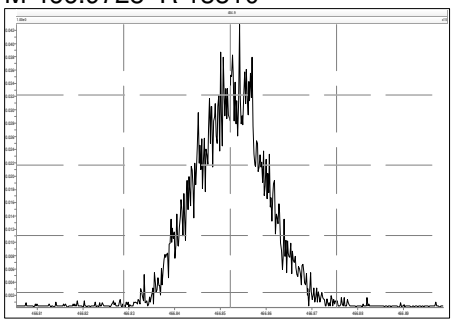
M 442.9728 R 12756



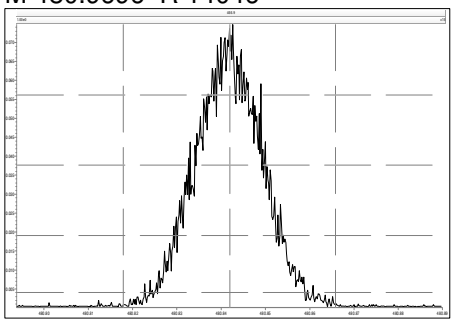
M 454.9728 R 13157



M 466.9728 R 13810



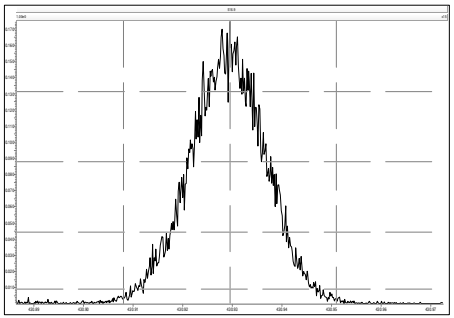
M 480.9696 R 14046



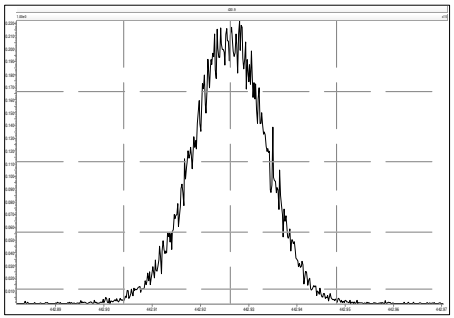
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

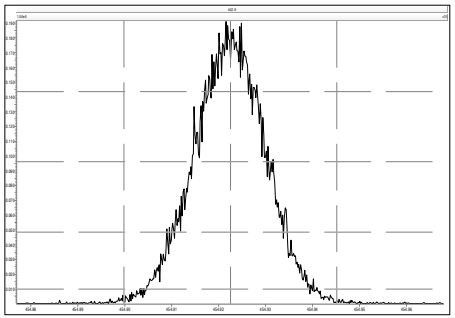
M 430.9728 R 11574



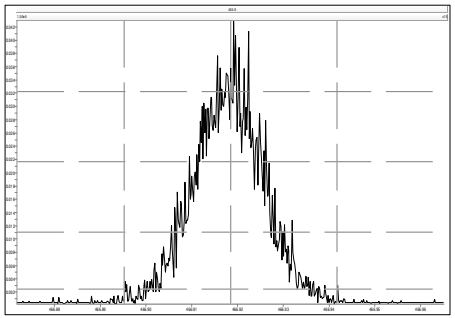
M 442.9728 R 12198



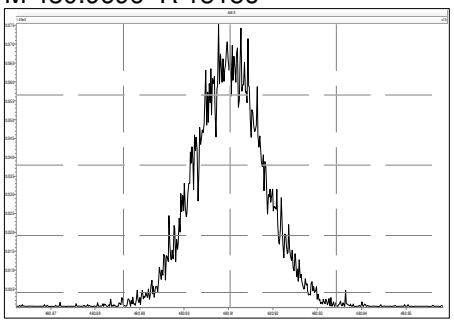
M 454.9728 R 12950



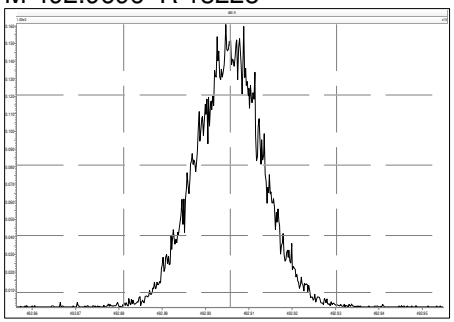
M 466.9728 R 13088



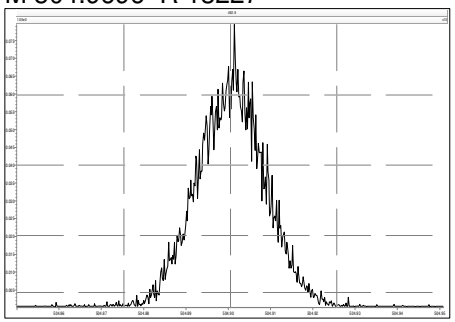
M 480.9696 R 13156



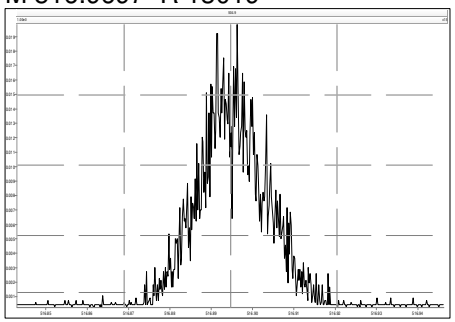
M 492.9696 R 13228



M 504.9696 R 13227



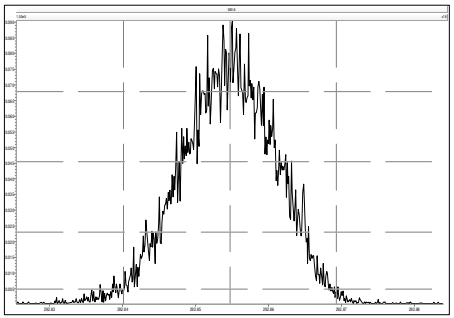
M 516.9697 R 13019



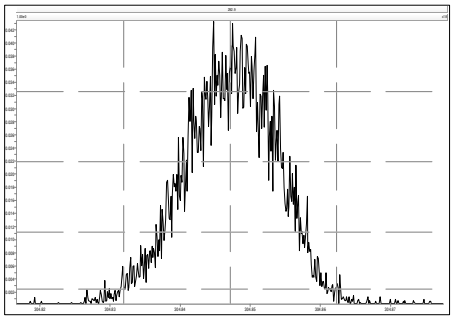
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

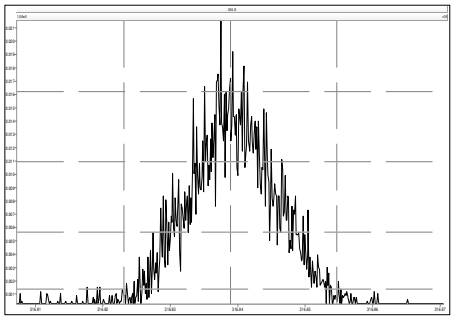
M 292.9824 R 10122



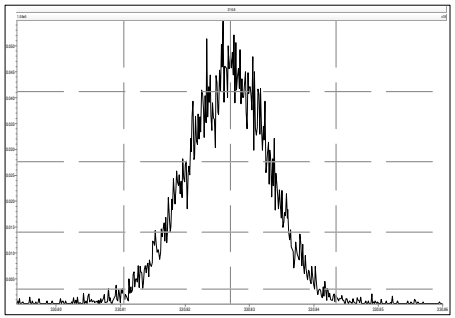
M 304.9824 R 10329



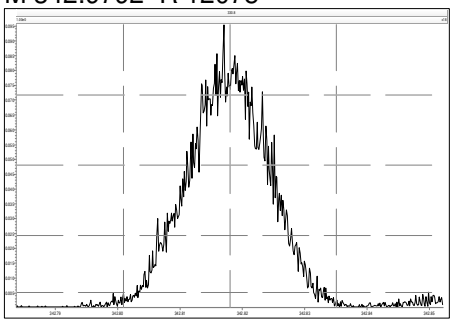
M 316.9824 R 11964



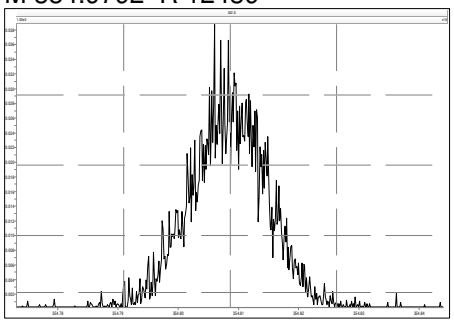
M 330.9792 R 11062



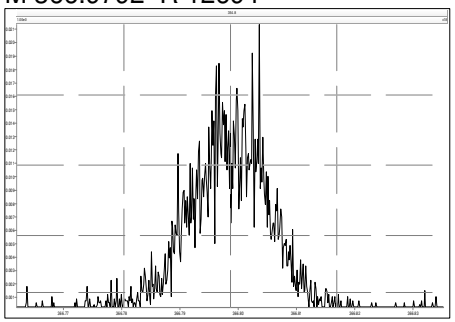
M 342.9792 R 12075



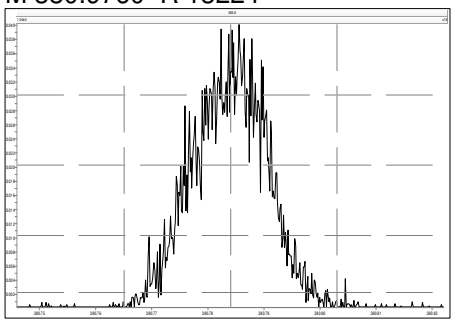
M 354.9792 R 12439



M 366.9792 R 12694



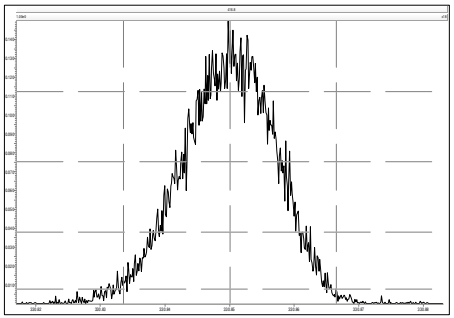
M 380.9760 R 13224



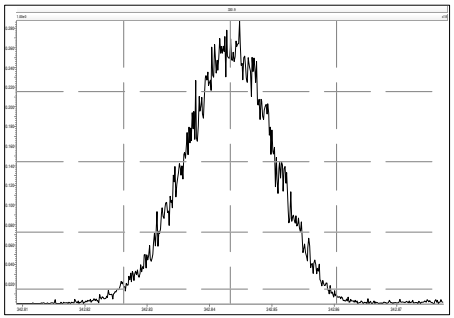
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

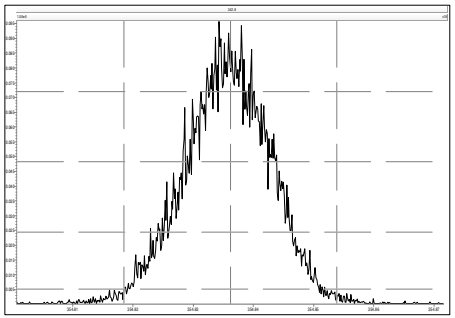
M 330.9792 R 10730



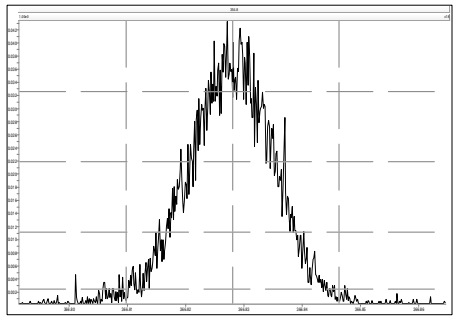
M 342.9792 R 10039



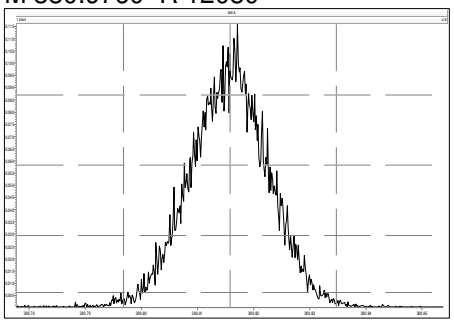
M 354.9792 R 11108



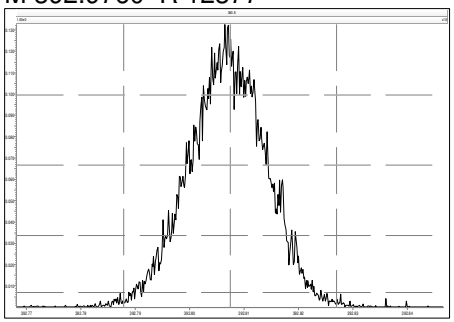
M 366.9792 R 11520



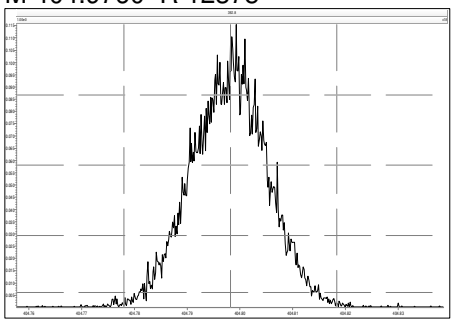
M 380.9760 R 12080



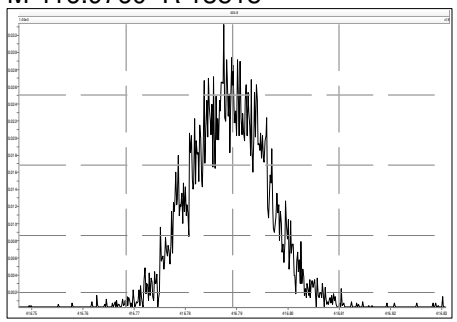
M 392.9760 R 12377



M 404.9760 R 12375



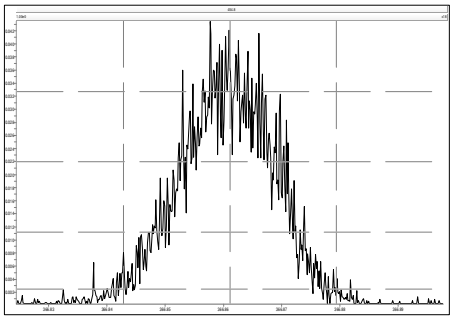
M 416.9760 R 13515



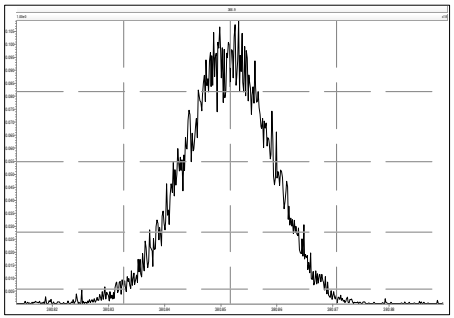
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

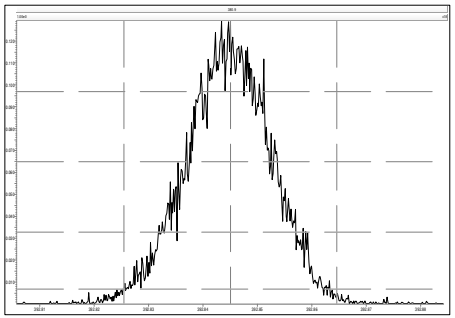
M 366.9792 R 10866



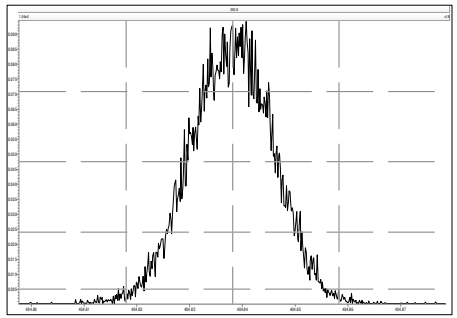
M 380.9760 R 10416



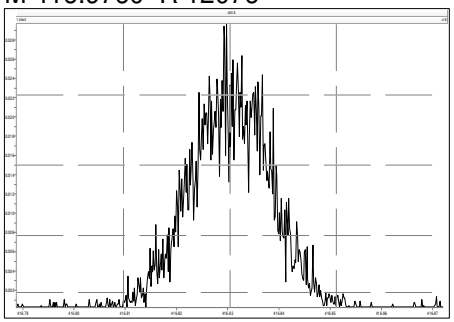
M 392.9760 R 10640



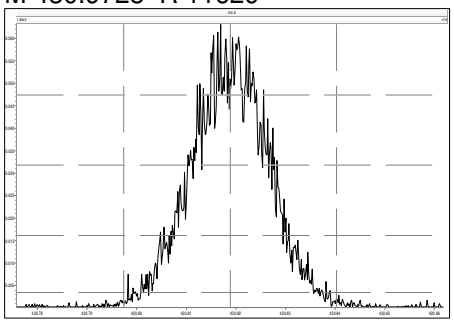
M 404.9760 R 11957



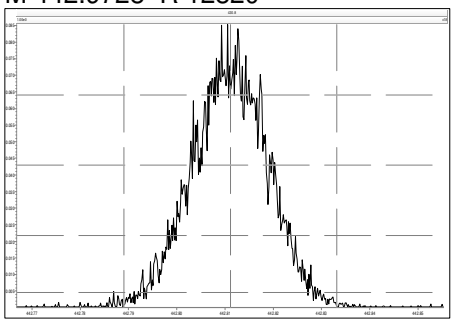
M 416.9760 R 12076



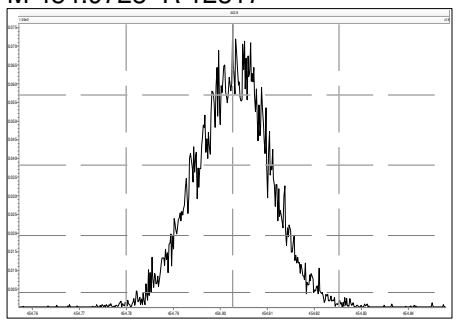
M 430.9728 R 11629



M 442.9728 R 12820



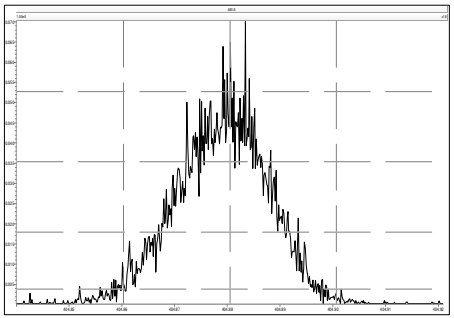
M 454.9728 R 12317



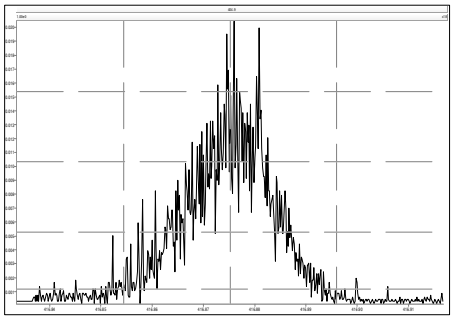
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

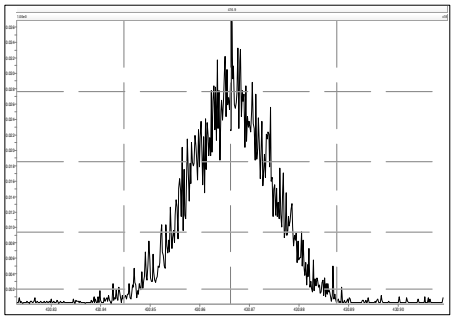
M 404.9760 R 10505



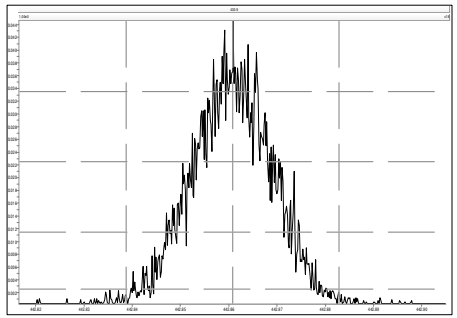
M 416.9760 R 12500



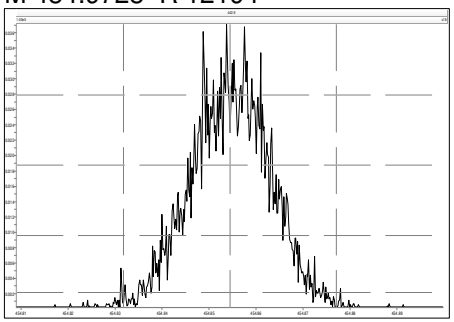
M 430.9728 R 11362



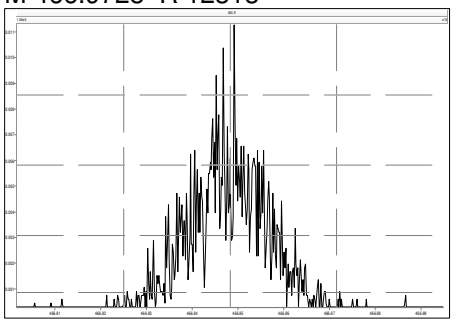
M 442.9728 R 12756



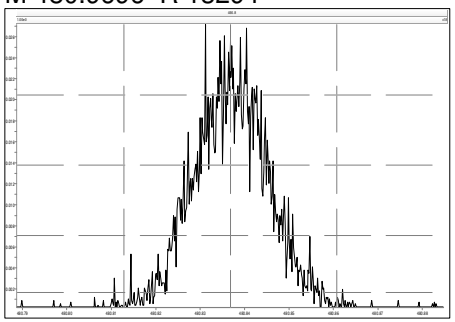
M 454.9728 R 12194



M 466.9728 R 12313



M 480.9696 R 13294



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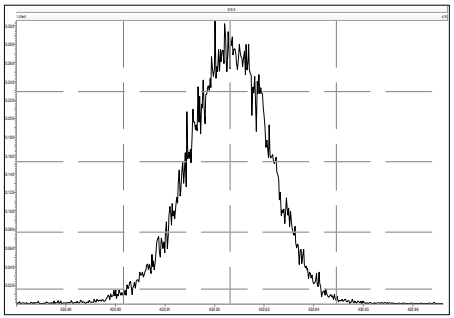
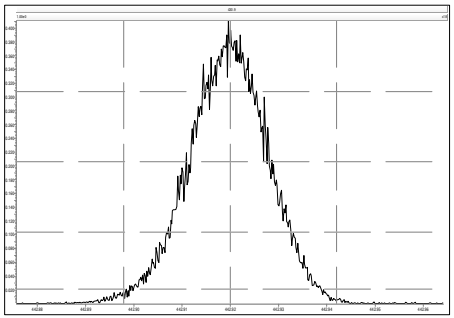
Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

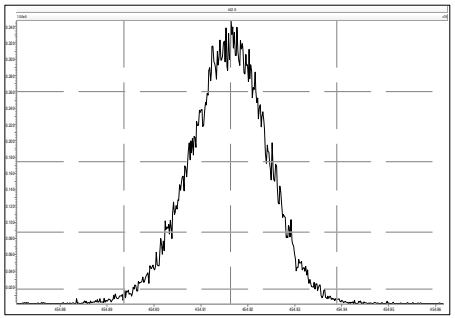
M 430.9728 R 11312



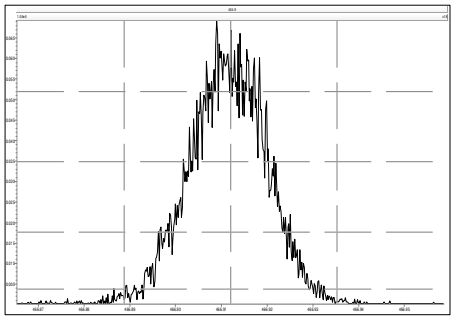
M 442.9728 R 11110



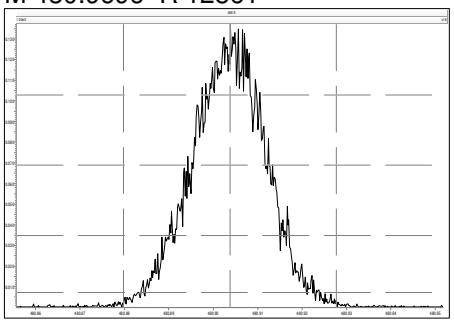
M 454.9728 R 11906



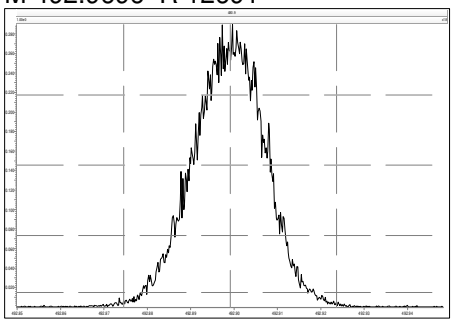
M 466.9728 R 12562



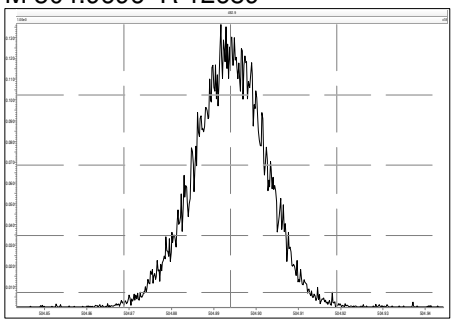
M 480.9696 R 12561



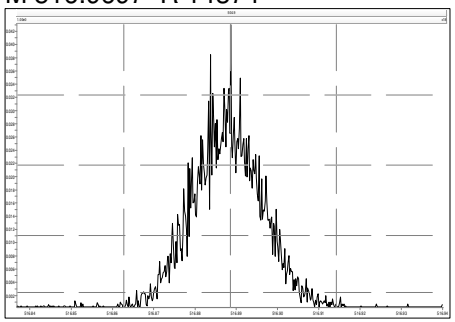
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



Lab ID: OPR1_18710_DF-RJ

APPROVED
Carla_Lyon , 12/8/2021, 6:27:21 PM

Acq'd: 07 Dec 2021 16:29 DTF

Wt/Vol: 1 uL

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR001

UTP: 08-Dec-2021 15:59:13 DTF

J-level: 0.25 pg/uL Split: 1

Checkcode: 348-095-BPM

Datafile: 211207C03

Report: 08 Dec 2021 16:02 TF

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.16		1.0009	1.0009	0	9.86E+06	0.79	Y	1.18	12.3	5673.426	0.0764
12378-PeCDD	32.80		1.0006	1.0006	0	3.67E+07	1.58	Y	1.04	54.3	4710.967	0.0629
123478-HxCDD	36.80		1.0004	1.0004	0	3.60E+07	1.30	Y	1.09	59.2	5787.098	0.0768
123678-HxCDD	36.92		1.0035	1.0035	0	3.60E+07	1.27	Y	1.15	57.8	5787.098	0.0784
123789-HxCDD	37.22		1.0117	1.0117	0	3.63E+07	1.27	Y	1.05	55.4	5787.098	0.0773
1234678-HpCDD	40.18		1.0003	1.0003	0	2.99E+07	1.04	Y	1.06	55.9	2806.4	0.0412
OCDD	42.77		1.0003	1.0003	0	2.39E+07	0.89	Y	1.13	112	4913.517	0.273
2378-TCDF	26.22		1.0009	1.0009	0	1.43E+07	0.81	Y	1.08	12	5331.351	0.0517
12378-PeCDF	31.28		1.0005	1.0006	+0.2	6.34E+07	1.58	Y	1.02	54.9	15674.925	0.128
23478-PeCDF	32.44		1.0006	1.0005	-0.2	6.27E+07	1.53	Y	1.02	59.6	15674.925	0.134
123478-HxCDF	35.80		1.0005	1.0005	0	5.29E+07	1.25	Y	1.27	55.5	17764.038	0.153
123678-HxCDF	35.94		1.0004	1.0004	0	5.79E+07	1.26	Y	1.15	55.4	17764.038	0.141
234678-HxCDF	36.61		1.0004	1.0005	+0.2	5.25E+07	1.27	Y	1.19	57.4	17764.038	0.155
123789-HxCDF	37.59		1.0003	1.0004	+0.2	4.91E+07	1.27	Y	1.16	52.7	17764.038	0.168
1234678-HpCDF	39.20		1.0003	1.0003	0	4.91E+07	1.05	Y	1.37	55.5	5647.813	0.0507
1234789-HpCDF	40.60		1.0002	1.0003	+0.2	3.79E+07	1.05	Y	1.31	56.8	5647.813	0.0706
OCDF	42.93		1.0003	1.0002	-0.3	3.12E+07	0.91	Y	1.07	112	4471.795	0.185

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.13	1.0260	1.0260	0	6.77E+07	0.81	Y	1.05	97.1
ES 12378-PeCDD	32.78	1.2396	1.2395	-0.2	6.53E+07	1.60	Y	0.88	111
ES 123478-HxCDD	36.79	0.9916	0.9916	0	5.57E+07	1.30	Y	0.97	106
ES 123678-HxCDD	36.90	0.9947	0.9947	0	5.43E+07	1.26	Y	0.94	107
ES 123789-HxCDD	37.20	1.0027	1.0028	+0.2	6.26E+07	1.27	Y	1.09	106
ES 1234678-HpCDD	40.16	1.0828	1.0827	-0.2	5.05E+07	1.10	Y	0.91	103
ES OCDD	42.76	1.1528	1.1527	-0.3	3.79E+07	0.91	Y	0.62	56.4
ES 2378-TCDF	26.19	1.0591	1.0590	-0.2	1.10E+08	0.77	Y	1.06	91.9
ES 12378-PeCDF	31.27	1.2643	1.2641	-0.4	1.13E+08	1.59	Y	0.91	109
ES 23478-PeCDF	32.42	1.3110	1.3107	-0.6	1.03E+08	1.56	Y	0.88	103
ES 123478-HxCDF	35.79	0.9648	0.9647	-0.2	7.51E+07	0.55	Y	1.20	116
ES 123678-HxCDF	35.93	0.9686	0.9685	-0.2	9.06E+07	0.53	Y	1.35	124
ES 234678-HxCDF	36.59	0.9865	0.9864	-0.2	7.71E+07	0.54	Y	1.24	115
ES 123789-HxCDF	37.58	1.0129	1.0129	0	8.00E+07	0.53	Y	1.16	129
ES 1234678-HpCDF	39.19	1.0565	1.0563	-0.5	6.46E+07	0.45	Y	0.97	124
ES 1234789-HpCDF	40.59	1.0943	1.0942	-0.2	5.10E+07	0.46	Y	0.85	111
ES OCDF	42.92	1.1569	1.1570	+0.3	5.20E+07	0.92	Y	0.81	59.8

Lab ID: OPR1_18710_DF-RJ | Acq'd: 07 Dec 2021 16:29 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR001 | UTP: 08-Dec-2021 15:59:13 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 348-095-BPM

Datafile: 211207C03 | Report: 08 Dec 2021 16:02 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.45		-	-	-	6.67E+07	0.83	Y	-	-	
JS 1234-TCDF	24.73		-	-	-	1.13E+08	0.76	Y	-	-	
JS 123467-HxCDD	37.10		-	-	-	2.69E+07	1.25	Y	-	-	
CS 37Cl-2378-TCDD	27.16		1.0269	1.0269	0	3.23E+07	n/a	-	1.20	101	
CS 12347-PeCDD	32.27		1.2203	1.2202	-0.2	6.18E+07	1.62	Y	0.75	123	
CS 12346-PeCDF	30.72		1.2424	1.2421	-0.6	1.08E+08	1.56	Y	0.85	112	
CS 123469-HxCDF	36.24		0.9771	0.9770	-0.2	7.48E+07	0.54	Y	1.12	124	
CS 1234689-HpCDF	39.62		1.0681	1.0680	-0.2	6.62E+07	0.47	Y	0.89	139	
~~SS 37Cl-2378-TCDD~~	~~27.16~~		~~1.0269~~	~~1.0269~~	~~0~~	~~3.23E+07~~	~~n/a~~		~~1.15~~	~~104~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.27~~		~~1.2203~~	~~1.2202~~	~~-0.2~~	~~6.18E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~110~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.72~~		~~1.2424~~	~~1.2421~~	~~-0.6~~	~~1.08E+08~~	~~1.56~~	~~Y~~	~~0.94~~	~~102~~	
~~SS 123469-HxCDF~~	~~36.24~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~7.48E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~99.7~~	
~~SS 1234689-HpCDF~~	~~39.62~~		~~1.0681~~	~~1.0680~~	~~-0.2~~	~~6.62E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~112~~	

Totals	Conc	EMPC
Total TCDD	59.8	59.8
Total PeCDD	83.6	83.6
Total HxCDD	189	189
Total HpCDD	72	72
Total Tetra-Octa Dioxins	517	517
Total TCDF	72.2	72.2
Total PeCDF	212	212
Total HxCDF	361	361
Total HpCDF	112	112
Total Tetra-Octa Furans	869	869
Total Tetra-Octa Dioxins & Furans	1390	1390

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.79	0.79
Response	9.88E+06	9.86E+06

Lab ID: OPR1_18710_DF-RJ | **Acq'd: 07 Dec 2021 16:29 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR001 | **UTP: 08-Dec-2021 15:59:13 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 348-095-BPM**

Datafile: 211207C03 | **Report: 08 Dec 2021 16:02 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.19		0.8545	0.8547	+0.3	1.33E+07	0.79	Y	1.18	16.5	5673.426	0.0764
1379-TCDD	NotFnd		0.8692						1.18		5673.426	0.0764
1369-TCDD	NotFnd		0.8868						1.18		5673.426	0.0764
1469-TCDD	NotFnd		0.9185						1.18		5673.426	0.0764
1247/1246/1248/1249-TCDD	NotFnd		0.9282						1.18		5673.426	0.0764
1378-TCDD	NotFnd		0.9355						1.18		5673.426	0.0764
1268-TCDD	NotFnd		0.9435						1.18		5673.426	0.0764
1478-TCDD	NotFnd		0.9533						1.18		5673.426	0.0764
1279-TCDD	NotFnd		0.9601						1.18		5673.426	0.0764
1234/1269-TCDD	NotFnd		0.9741						1.18		5673.426	0.0764
1236-TCDD	NotFnd		0.9797						1.18		5673.426	0.0764
1237/1238-TCDD	NotFnd		0.9898						1.18		5673.426	0.0764
1239-TCDD	27.00		0.9952	0.9951	-0.2	9.57E+06	0.83	Y	1.18	11.9	5673.426	0.0764
2378-TCDD	**27.16**		**1.0009**	1.0009	**0**	9.86E+06	0.79	Y	**1.18**	**12.3**	**5673.426**	**0.0764**
1278-TCDD	NotFnd		1.0139						1.18		5673.426	0.0764
1267-TCDD	NotFnd		1.0193						1.18		5673.426	0.0764
1289-TCDD	28.20		1.0393	1.0392	-0.2	1.53E+07	0.81	Y	1.18	19.1	5673.426	0.0764
12479/12468-PeCDD	30.21		0.9216	0.9217	+0.2	9.35E+06	1.57	Y	1.04	13.8	4710.967	0.0629
12469-PeCDD	NotFnd		0.9386						1.04		4710.967	0.0629
12368-PeCDD	NotFnd		0.9560						1.04		4710.967	0.0629
12478-PeCDD	NotFnd		0.9619						1.04		4710.967	0.0629
12379-PeCDD	NotFnd		0.9651						1.04		4710.967	0.0629
12369/12467/12489-PeCDD	NotFnd		0.9735						1.04		4710.967	0.0629
12346/12347-PeCDD	NotFnd		0.9852						1.04		4710.967	0.0629
12378-PeCDD	32.80		**1.0006**	**1.0006**	**0**	**3.67E+07**	**1.58**	**Y**	**1.04**	**54.3**	**4710.967**	**0.0629**
12367-PeCDD	NotFnd		1.0037						1.04		4710.967	0.0629
12389-PeCDD	33.25		1.0145	1.0145	0	1.05E+07	1.57	Y	1.04	15.6	4710.967	0.0629
124679/124689-HxCDD	35.07		0.9535	0.9534	-0.2	1.06E+07	1.27	Y	1.10	16.9	5787.098	0.0774
123468-HxCDD	NotFnd		0.9716						1.10		5787.098	0.0774
123679/123689-HxCDD	NotFnd		0.9796						1.10		5787.098	0.0774
123469-HxCDD	NotFnd		0.9833						1.10		5787.098	0.0774
123478-HxCDD	36.80		**1.0004**	**1.0004**	**0**	**3.60E+07**	**1.30**	**Y**	1.09	**59.2**	**5787.098**	**0.0768**
123678-HxCDD	36.92		**1.0035**	**1.0035**	**0**	**3.60E+07**	**1.27**	**Y**	1.15	**57.8**	**5787.098**	**0.0784**
123467-HxCDD	NotFnd		1.0088						1.10		5787.098	0.0774
123789-HxCDD	37.22		**1.0117**	**1.0117**	**0**	**3.63E+07**	**1.27**	**Y**	1.05	**55.4**	**5787.098**	**0.0773**

Lab ID: OPR1_18710_DF-RJ **Acq'd: 07 Dec 2021 16:29 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR001 **UTP: 08-Dec-2021 15:59:13 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 348-095-BPM**

Datafile: 211207C03 **Report: 08 Dec 2021 16:02 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.49		0.9833	0.9832	-0.2	8.64E+06	1.08	Y	1.06	16.1	2806.4	0.0412
1234678-HpCDD	**40.18**		**1.0003**	**1.0003**	**0**	**2.99E+07**	**1.04**	**Y**	**1.06**	**55.9**	**2806.4**	**0.0412**
OCDD	**42.77**		**1.0003**	**1.0003**	**0**	**2.39E+07**	**0.89**	**Y**	**1.13**	**112**	**4913.517**	**0.273**
OCDD-a	42.77		1.0002	1.0002	0	1.60E+06	2.79	Y	0.07	117	7578.982	6.6
1368-TCDF	20.96		0.7998	0.8001	+0.4	2.14E+07	0.79	Y	1.08	18	5331.351	0.0517
1468-TCDF	NotFnd		0.8214						1.08		5331.351	0.0517
2468-TCDF	22.17		0.8463	0.8464	+0.1	5.40E+06	0.81	Y	1.08	4.54	5331.351	0.0517
1346/1246-TCDF	NotFnd		0.8608						1.08		5331.351	0.0517
1347/1378/1247-TCDF	NotFnd		0.8675						1.08		5331.351	0.0517
1348-TCDF	NotFnd		0.8793						1.08		5331.351	0.0517
1248/1367/1379-TCDF	NotFnd		0.8850						1.08		5331.351	0.0517
1268-TCDF	NotFnd		0.9010						1.08		5331.351	0.0517
1467-TCDF	NotFnd		0.9068						1.08		5331.351	0.0517
1478-TCDF	NotFnd		0.9139						1.08		5331.351	0.0517
1369/1237-TCDF	NotFnd		0.9294						1.08		5331.351	0.0517
2467-TCDF	NotFnd		0.9350						1.08		5331.351	0.0517
2368-TCDF	NotFnd		0.9410						1.08		5331.351	0.0517
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9451						1.08		5331.351	0.0517
1278-TCDF	NotFnd		0.9642						1.08		5331.351	0.0517
1349-TCDF	NotFnd		0.9695						1.08		5331.351	0.0517
1267-TCDF	NotFnd		0.9753						1.08		5331.351	0.0517
2346/1249-TCDF	NotFnd		0.9832						1.08		5331.351	0.0517
2347/1279-TCDF	NotFnd		0.9921						1.08		5331.351	0.0517
2348-TCDF	26.11		0.9970	0.9966	-0.6	2.14E+07	0.78	Y	1.08	18	5331.351	0.0517
2378-TCDF	**26.22**		**1.0009**	**1.0009**	**0**	**1.43E+07**	**0.81**	**Y**	**1.08**	**12**	**5331.351**	**0.0517**
2367/3467-TCDF	NotFnd		1.0162						1.08		5331.351	0.0517
1269-TCDF	NotFnd		1.0259						1.08		5331.351	0.0517
1239-TCDF	NotFnd		1.0370						1.08		5331.351	0.0517
1289-TCDF	28.36		1.0829	1.0826	-0.5	2.35E+07	0.81	Y	1.08	19.7	5331.351	0.0517
13468/12468-PeCDF	28.33		0.9067	0.9062	-0.8	9.22E+07	1.57	Y	1.02	83.6	3528.121	0.0294
13678/13467/12467-PeCDF	NotFnd		0.9583						1.02		15674.925	0.131
12368/13478/12478-PeCDF	NotFnd		0.9635						1.02		15674.925	0.131
14678-PeCDF	NotFnd		0.9669						1.02		15674.925	0.131
13479-PeCDF	NotFnd		0.9701						1.02		15674.925	0.131
13469/12479-PeCDF	NotFnd		0.9784						1.02		15674.925	0.131
12346-PeCDF	NotFnd		0.9831						1.02		15674.925	0.131

Lab ID: OPR1_18710_DF-RJ **Acq'd: 07 Dec 2021 16:29 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR001 **UTP: 08-Dec-2021 15:59:13 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 348-095-BPM**

Datafile: 211207C03 **Report: 08 Dec 2021 16:02 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9859						1.02		15674.925	0.131
12347-PeCDF	NotFnd		0.9885						1.02		15674.925	0.131
12348-PeCDF	NotFnd		0.9937						1.02		15674.925	0.131
12378-PeCDF	**31.28**		**1.0005**	**1.0006**	**+0.2**	**6.34E+07**	**1.58**	**Y**	**1.02**	**54.9**	**15674.925**	**0.128**
12678/12367-PeCDF	NotFnd		1.0097						1.02		15674.925	0.131
12379-PeCDF	NotFnd		1.0153						1.02		15674.925	0.131
12679-PeCDF	NotFnd		0.9925						1.02		15674.925	0.131
23467/12369-PeCDF	NotFnd		0.9966						1.02		15674.925	0.131
23478-PeCDF	**32.44**		**1.0006**	**1.0005**	**-0.2**	**6.27E+07**	**1.53**	**Y**	**1.02**	**59.6**	**15674.925**	**0.134**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		15674.925	0.131
12349-PeCDF	NotFnd		1.0108						1.02		15674.925	0.131
12389-PeCDF	33.54		1.0346	1.0345	-0.2	1.50E+07	1.58	Y	1.02	13.6	15674.925	0.131
123468-HxCDF	34.39		0.9610	0.9611	+0.2	1.34E+08	1.25	Y	1.19	140	17764.038	0.153
124678/134678-HxCDF	NotFnd		0.9667						1.19		17764.038	0.153
134679-HxCDF	NotFnd		0.9732						1.19		17764.038	0.153
124679-HxCDF	NotFnd		0.9788						1.19		17764.038	0.153
124689-HxCDF	NotFnd		0.9852						1.19		17764.038	0.153
123467-HxCDF	NotFnd		0.9971						1.19		17764.038	0.153
123478-HxCDF	**35.80**		**1.0005**	**1.0005**	**0**	**5.29E+07**	**1.25**	**Y**	**1.27**	**55.5**	**17764.038**	**0.153**
123678-HxCDF	**35.94**		**1.0004**	**1.0004**	**0**	**5.79E+07**	**1.26**	**Y**	**1.15**	**55.4**	**17764.038**	**0.141**
123479-HxCDF	NotFnd		1.0050						1.19		17764.038	0.153
123469-HxCDF	NotFnd		1.0091						1.19		17764.038	0.153
123679-HxCDF	NotFnd		0.9943						1.19		17764.038	0.153
234678-HxCDF	**36.61**		**1.0004**	**1.0005**	**+0.2**	**5.25E+07**	**1.27**	**Y**	**1.19**	**57.4**	**17764.038**	**0.155**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		17764.038	0.153
123789-HxCDF	**37.59**		**1.0003**	**1.0004**	**+0.2**	**4.91E+07**	**1.27**	**Y**	**1.16**	**52.7**	**17764.038**	**0.168**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0008						1.19		17764.038	0.153
1234678-HpCDF	**39.20**		**1.0003**	**1.0003**	**0**	**4.91E+07**	**1.05**	**Y**	**1.37**	**55.5**	**5647.813**	**0.0507**
1234679-HpCDF	NotFnd		1.0075						1.34		5647.813	0.0594
1234689-HpCDF	NotFnd		1.0113						1.34		5647.813	0.0594
1234789-HpCDF	**40.60**		**1.0002**	**1.0003**	**+0.2**	**3.79E+07**	**1.05**	**Y**	**1.31**	**56.8**	**5647.813**	**0.0706**
OCDF	**42.93**		**1.0003**	**1.0002**	**-0.3**	**3.12E+07**	**0.91**	**Y**	**1.07**	**112**	**4471.795**	**0.185**
OCDF-a	42.93		1.0002	1.0002	0	1.91E+06	2.56	Y	0.07	111	6114.017	4.08

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211207C03	Analysis Date:	07-DEC-2021 16:29:16
Lab ID:	OPR1_18710_DF-RJ		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.3	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	54.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	59.2	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	57.8	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	55.4	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	55.9	35	-	70	Y
OCDD	100	112	78	-	144	Y
2,3,7,8-TCDF	10	12	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.9	40	-	67	Y
2,3,4,7,8-PeCDF	50	59.6	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	55.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	55.4	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	57.4	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	52.7	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	55.5	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	56.8	39	-	69	Y
OCDF	100	112	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Dec 2021 16:02 Analyst: TF

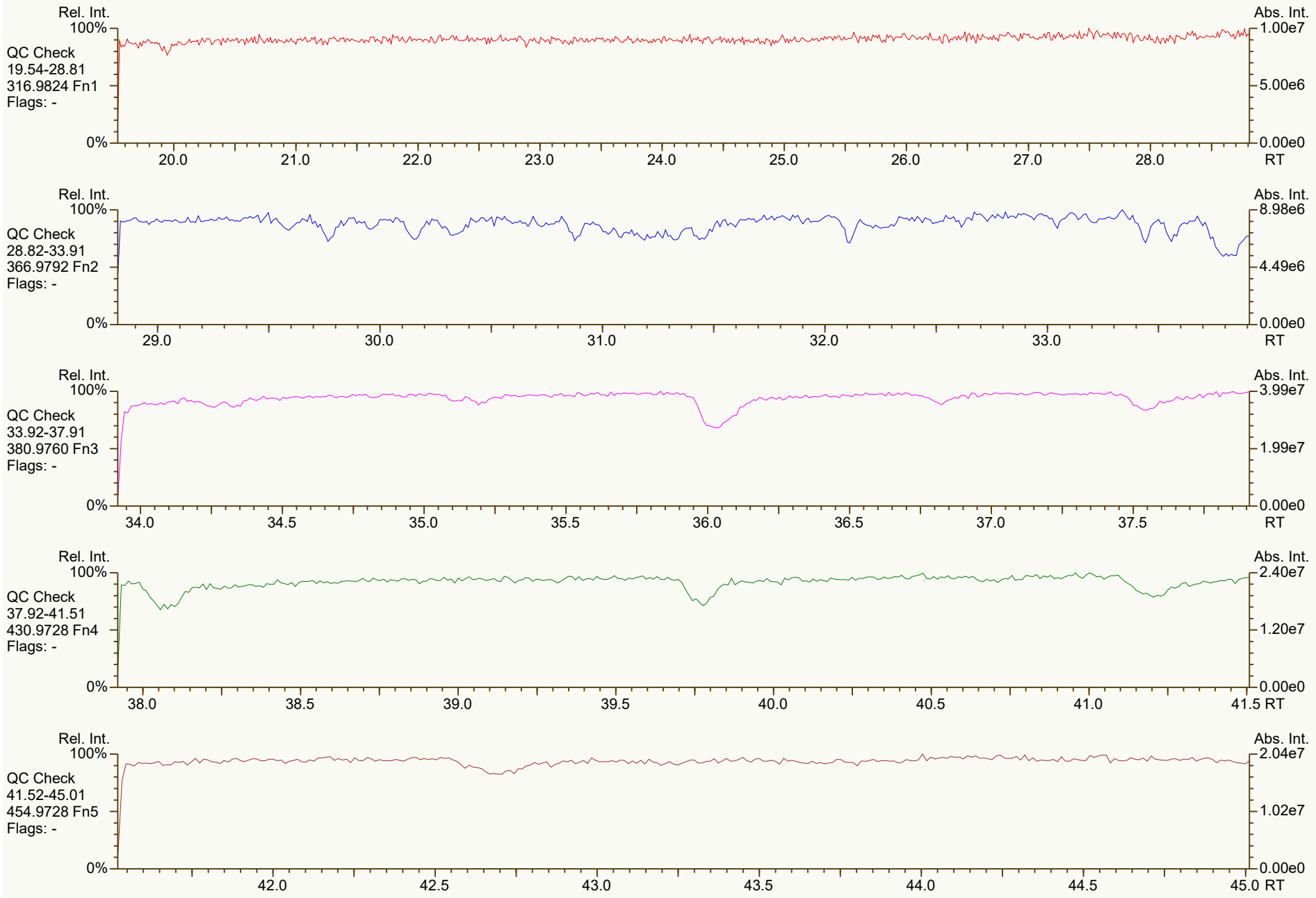
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

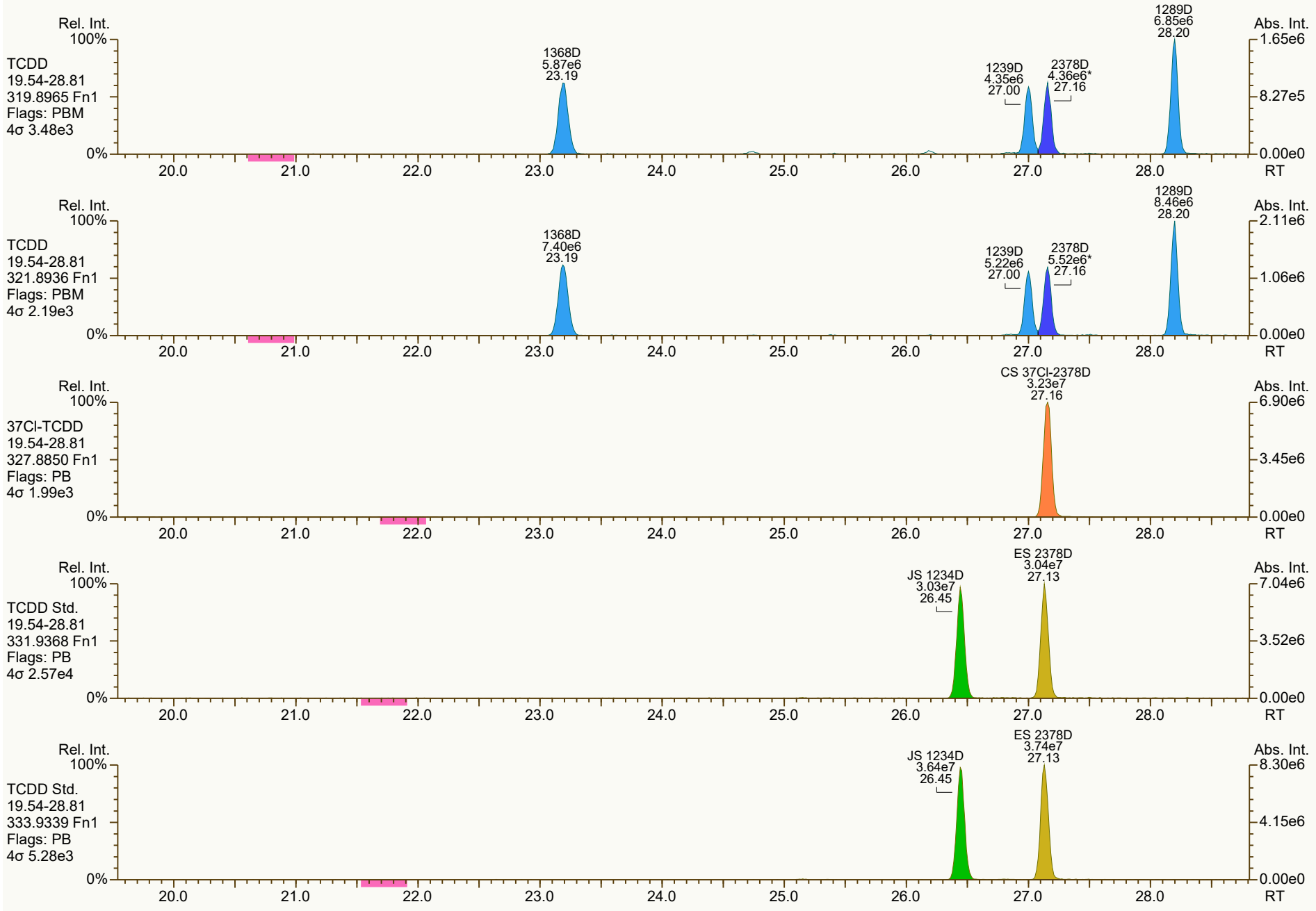
Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211207C03	Analysis Date:	07-DEC-2021 16:29:16
Lab ID:	OPR1_18710_DF-RJ		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	97.1	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	111	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	106	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	107	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	106	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	103	26	-	166	Y
13C-OCDD	200	113	26	-	397	Y
13C-2,3,7,8-TCDF	100	91.9	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	109	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	103	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	116	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	124	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	115	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	129	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	124	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	111	20	-	186	Y
13C-OCDF	200	120	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	40.3	12.4	-	76.4	Y

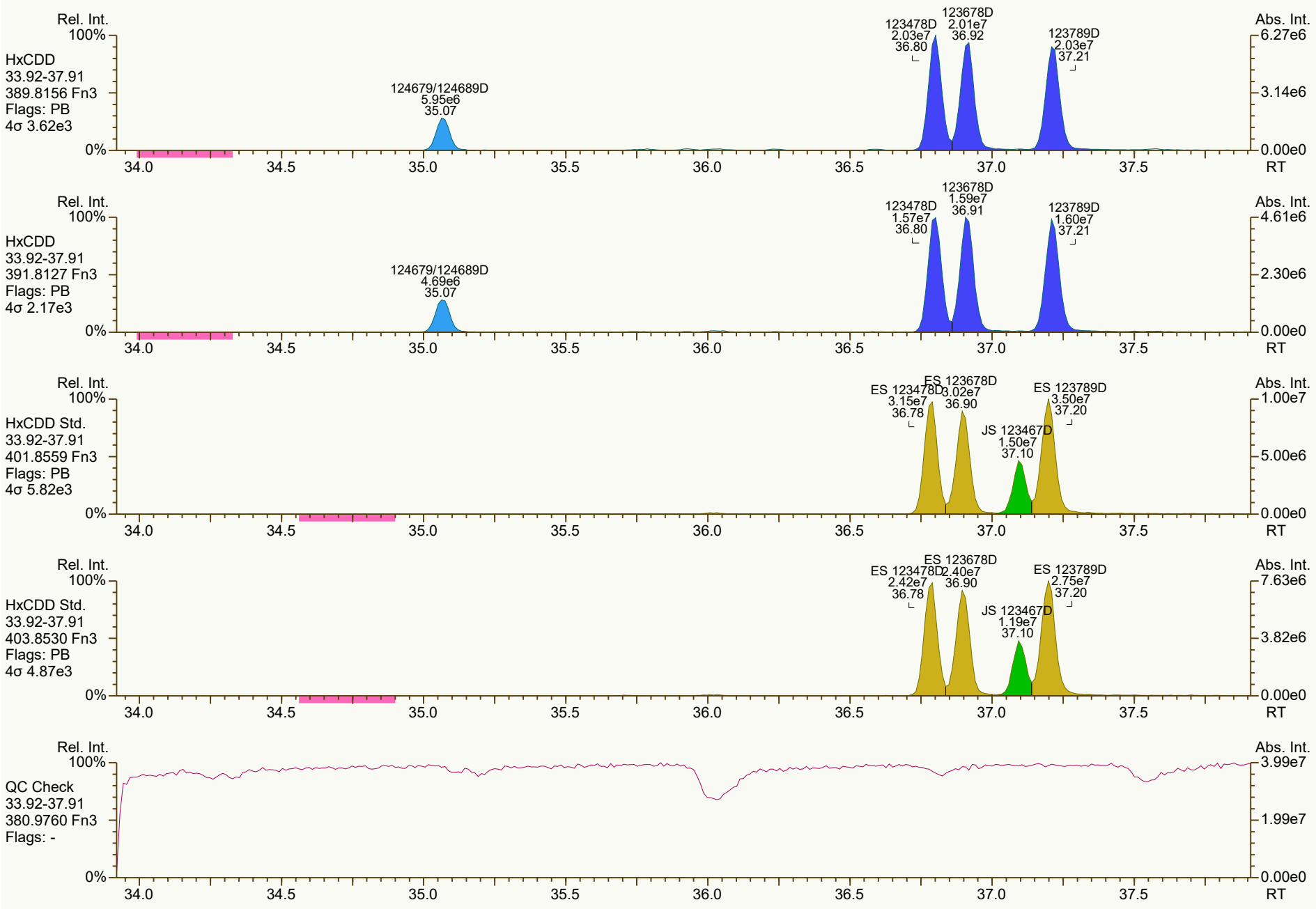
Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

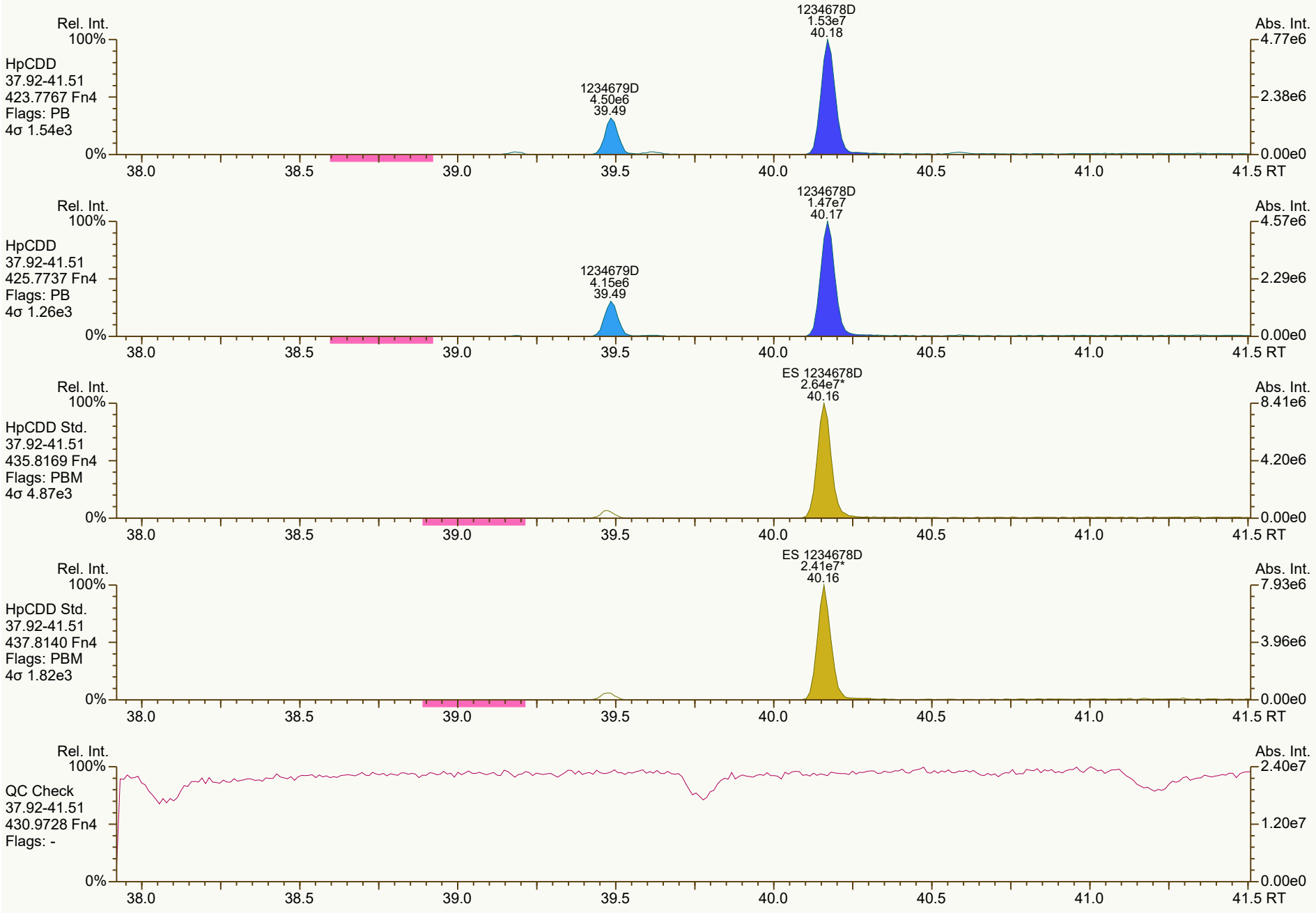
Processed: 08 Dec 2021 16:02 Analyst: TF

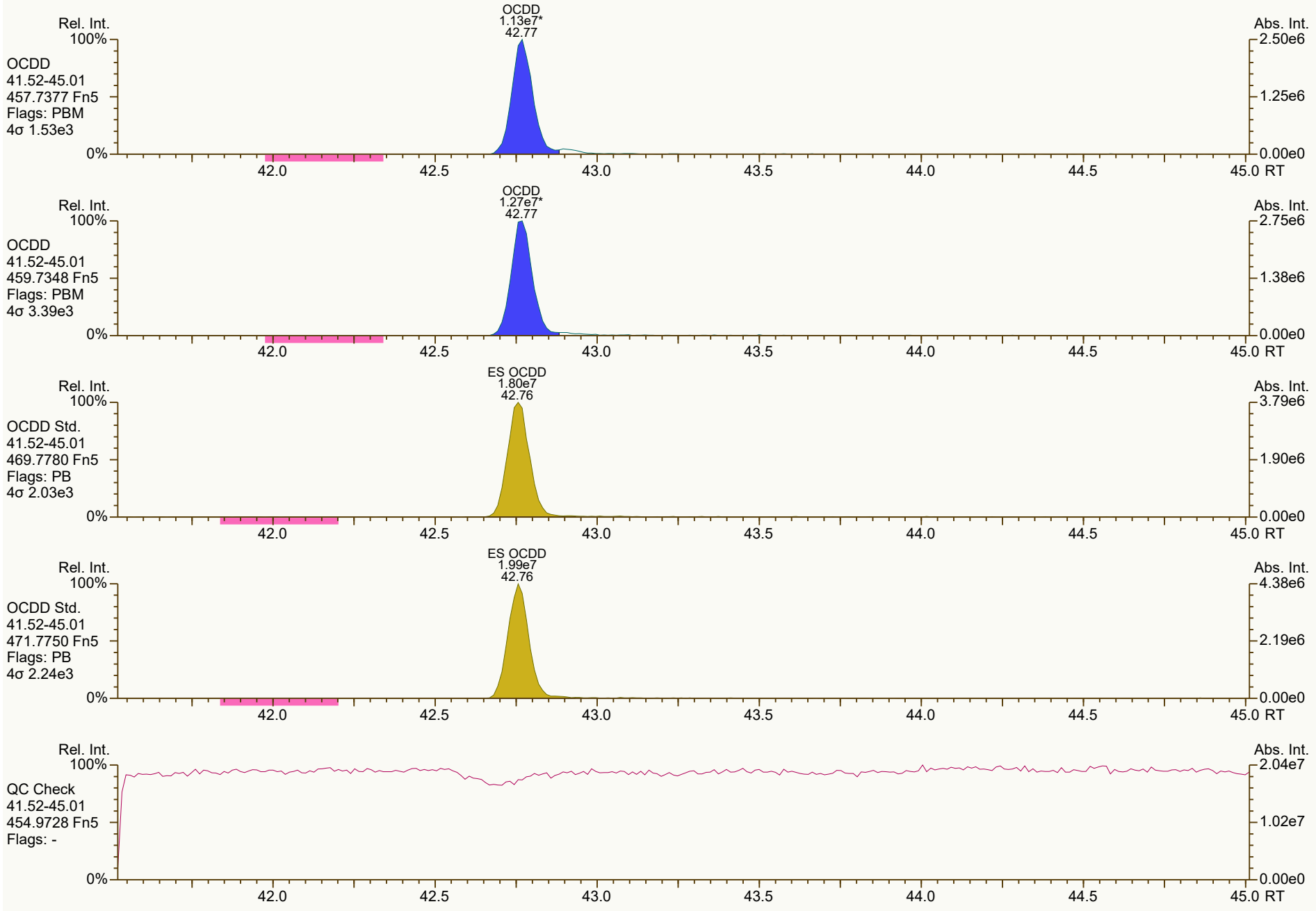

Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
Abs. Int.
1.00e7
5.00e6
0.00e0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
29.0
30.0
31.0
32.0
33.0
Abs. Int.
8.98e6
4.49e6
0.00e0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
Abs. Int.
3.99e7
1.99e7
0.00e0
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
2.40e7
1.20e7
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
2.04e7
1.02e7
0.00e0

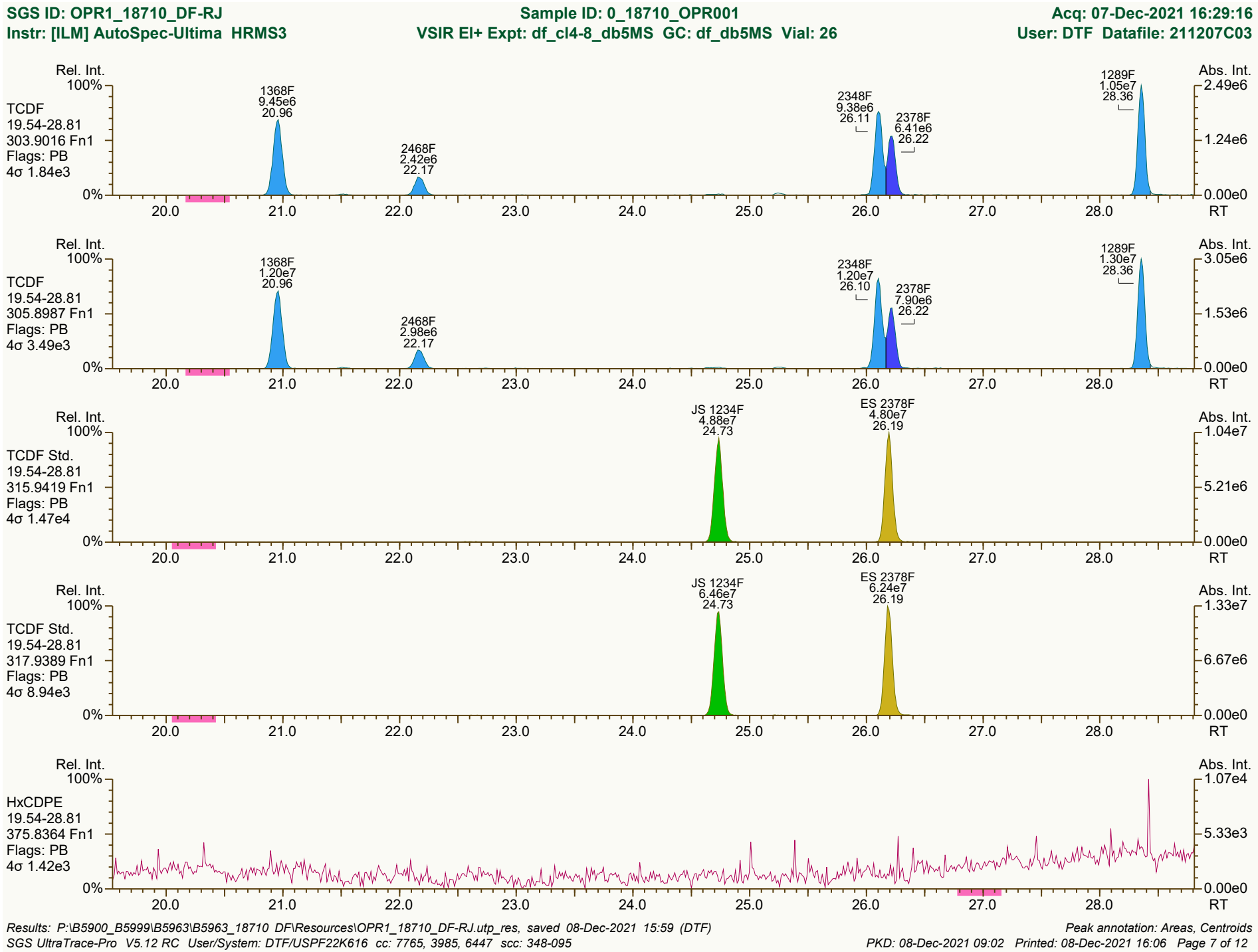

Rel. Int.
100%
TCDD
19.54-28.81
319.8965 Fn1
Flags: PBM
4σ 3.48e3
1368D
5.87e6
23.19
1239D
4.35e6
27.00
2378D
4.36e6*
27.16
1289D
6.85e6
28.20
Abs. Int.
1.65e6
8.27e5
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-28.81
321.8936 Fn1
Flags: PBM
4σ 2.19e3
1368D
7.40e6
23.19
1239D
5.22e6
27.00
2378D
5.52e6*
27.16
1289D
8.46e6
28.20
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 1.99e3
CS 37Cl-2378D
3.23e7
27.16
Abs. Int.
6.90e6
3.45e6
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PB
4σ 2.57e4
JS 1234D
3.03e7
26.45
ES 2378D
3.04e7
27.13
Abs. Int.
7.04e6
3.52e6
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PB
4σ 5.28e3
JS 1234D
3.64e7
26.45
ES 2378D
3.74e7
27.13
Abs. Int.
8.30e6
4.15e6
0.00e0
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PB
4σ 2.89e3
12479/12468D
5.71e6
30.21
12378D
2.25e7
32.80
12389D
6.43e6
33.25
Abs. Int.
6.09e6
3.04e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PB
4σ 1.82e3
12479/12468D
3.64e6
30.21
12378D
1.42e7
32.80
12389D
4.10e6
33.25
Abs. Int.
3.87e6
1.94e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 2.63e3
CS 12347D
3.82e7
32.27
ES 12378D
4.02e7
32.78
Abs. Int.
1.11e7
5.56e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 3.21e3
CS 12347D
2.36e7
32.27
ES 12378D
2.51e7
32.78
Abs. Int.
7.04e6
3.52e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
Abs. Int.
8.98e6
4.49e6
0.00e0
0%
29.0
30.0
31.0
32.0
33.0
RT

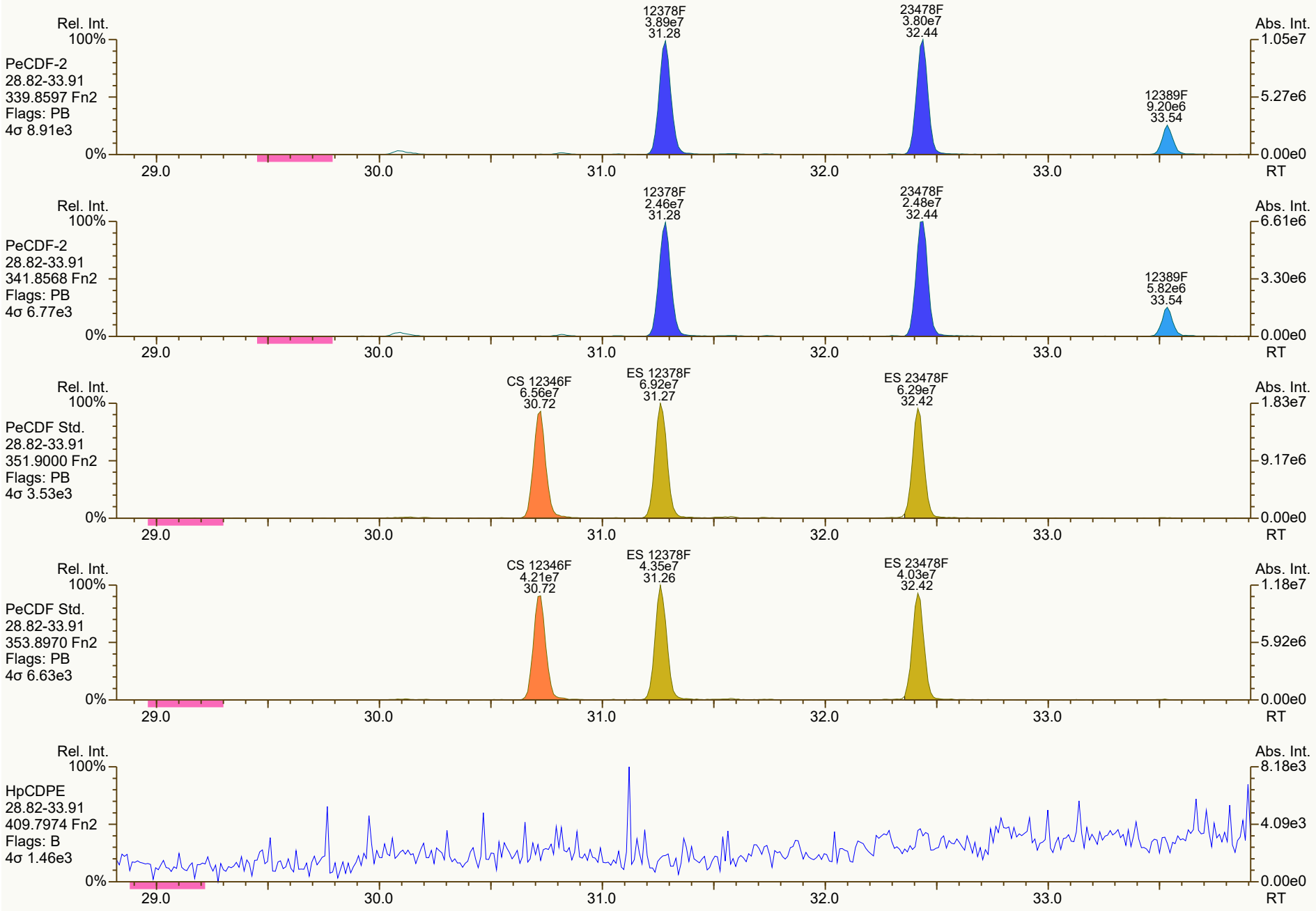

Rel. Int.
100%
HxCDD
33.92-37.91
389.8156 Fn3
Flags: PB
4σ 3.62e3
124679/124689D
5.95e6
35.07
123478D
2.03e7
36.80
123678D
2.01e7
36.92
123789D
2.03e7
37.21
Abs. Int.
6.27e6
3.14e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD
33.92-37.91
391.8127 Fn3
Flags: PB
4σ 2.17e3
124679/124689D
4.69e6
35.07
123478D
1.57e7
36.80
123678D
1.59e7
36.91
123789D
1.60e7
37.21
Abs. Int.
4.61e6
2.30e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
401.8559 Fn3
Flags: PB
4σ 5.82e3
ES 123478D
3.15e7
36.78
ES 123678D
3.02e7
36.90
JS 123467D
1.50e7
37.10
ES 123789D
3.50e7
37.20
Abs. Int.
1.00e7
5.00e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
HxCDD Std.
33.92-37.91
403.8530 Fn3
Flags: PB
4σ 4.87e3
ES 123478D
2.42e7
36.78
ES 123678D
2.40e7
36.90
JS 123467D
1.19e7
37.10
ES 123789D
2.75e7
37.20
Abs. Int.
7.63e6
3.82e6
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
Abs. Int.
3.99e7
1.99e7
0.00e0
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT

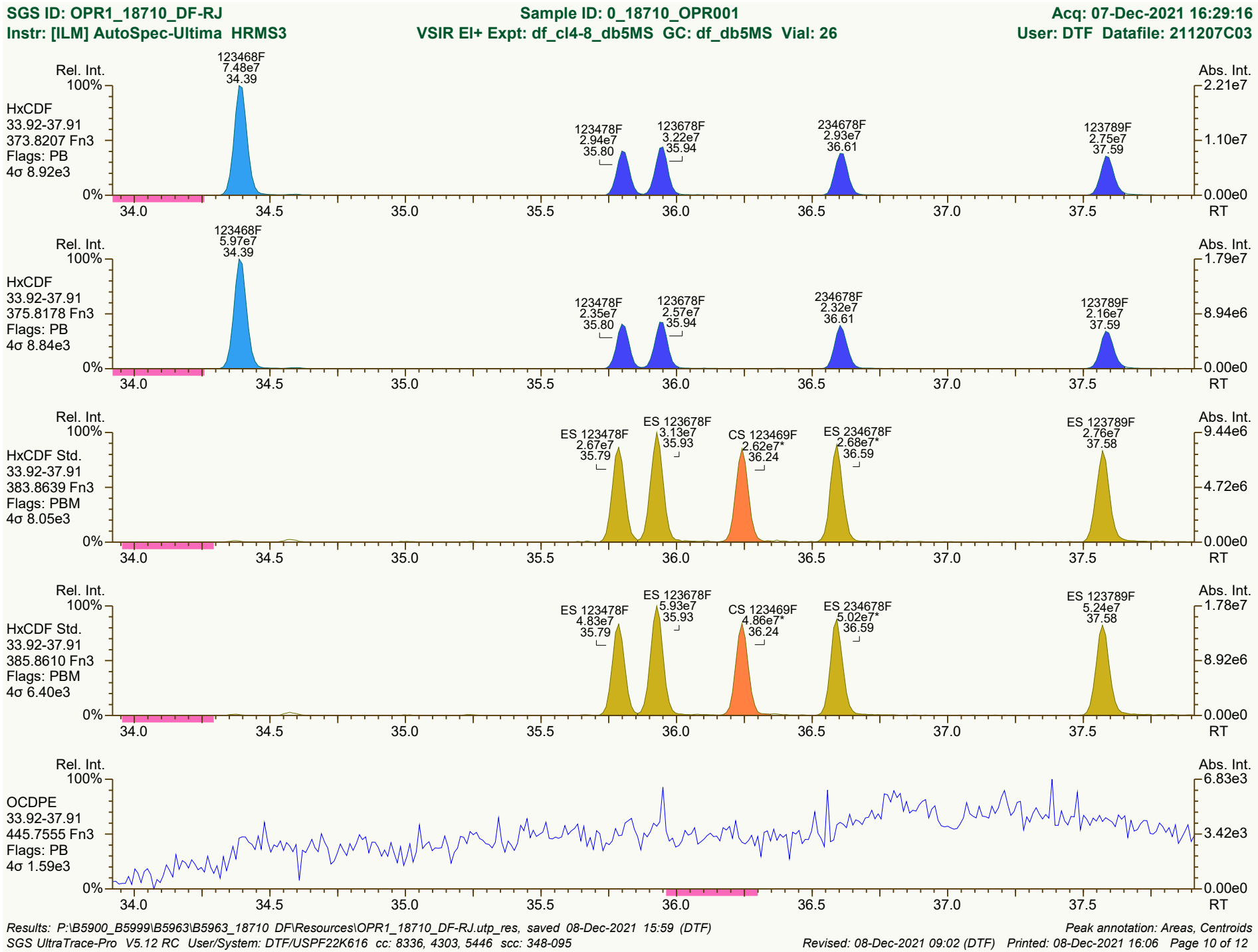

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PB
4σ 1.54e3
1234678D
1.53e7
40.18
1234679D
4.50e6
39.49
Abs. Int.
4.77e6
2.38e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PB
4σ 1.26e3
1234678D
1.47e7
40.17
1234679D
4.15e6
39.49
Abs. Int.
4.57e6
2.29e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PBM
4σ 4.87e3
ES 1234678D
2.64e7*
40.16
Abs. Int.
8.41e6
4.20e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PBM
4σ 1.82e3
ES 1234678D
2.41e7*
40.16
Abs. Int.
7.93e6
3.96e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
Abs. Int.
2.40e7
1.20e7
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

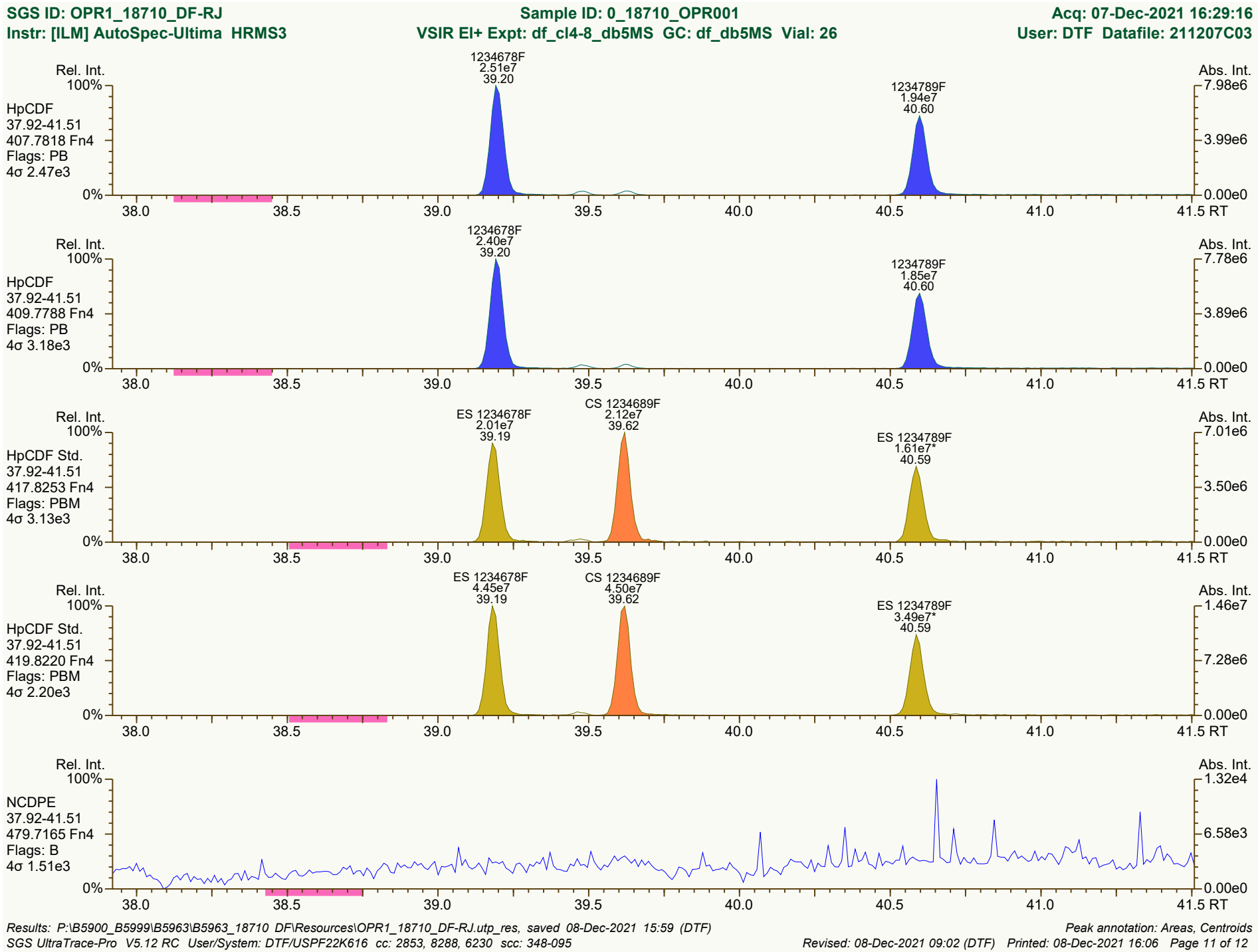

OCDD
1.13e7*
42.77
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.53e3
0%
Abs. Int.
2.50e6
1.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.27e7*
42.77
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 3.39e3
0%
Abs. Int.
2.75e6
1.38e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.80e7
42.76
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.03e3
0%
Abs. Int.
3.79e6
1.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.99e7
42.76
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.38e6
2.19e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.04e7
1.02e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

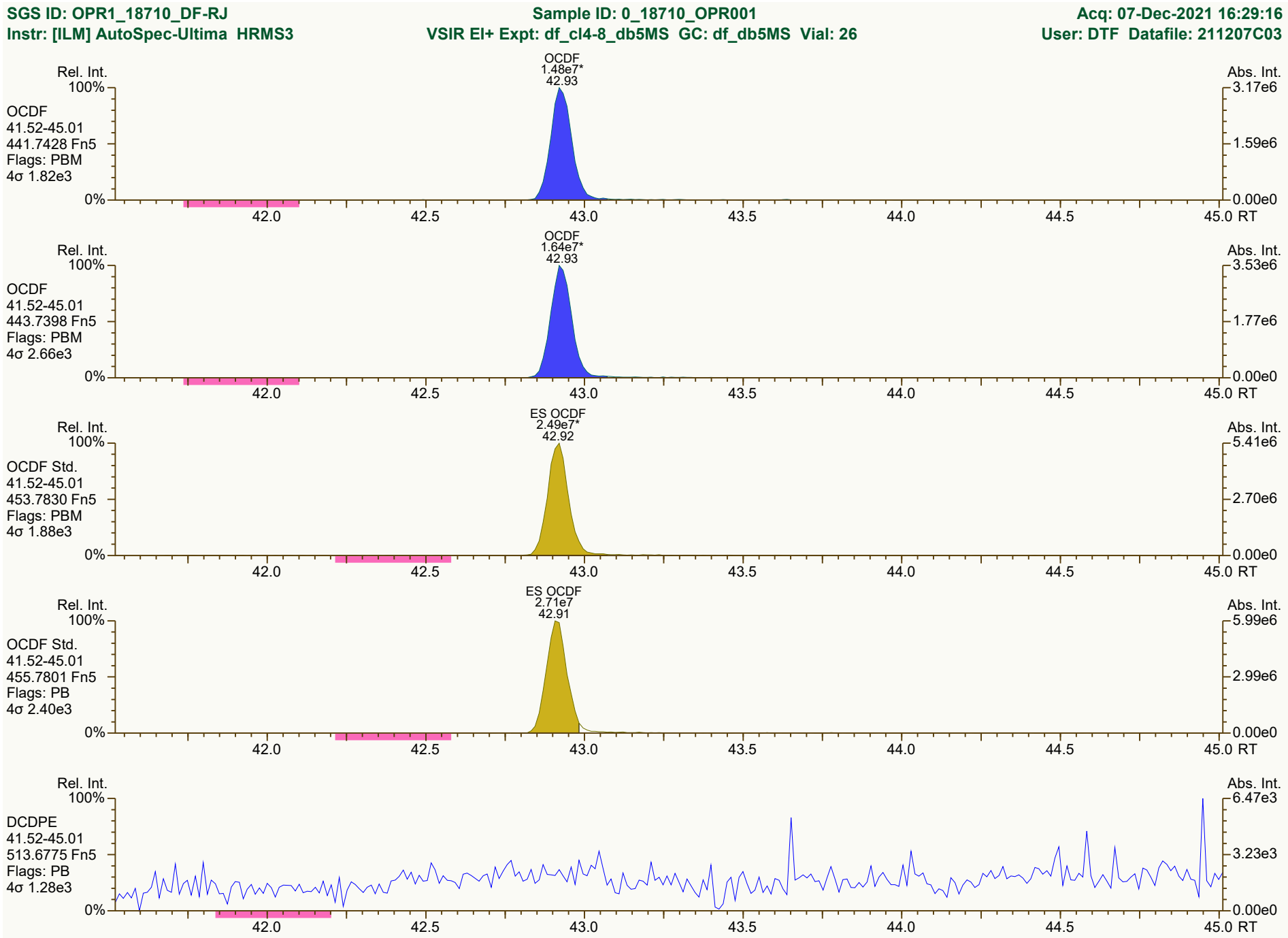

SGS ID: OPR1_18710_DF-RJ
Sample ID: 0_18710_OPR001
Acq: 07-Dec-2021 16:29:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 211207C03
Rel. Int.
Abs. Int.
TCDF
19.54-28.81
303.9016 Fn1
Flags: PB
4σ 1.84e3
1368F
9.45e6
20.96
2468F
2.42e6
22.17
2348F
9.38e6
26.11
2378F
6.41e6
26.22
1289F
1.05e7
28.36
2.49e6
1.24e6
0.00e0
TCDF
19.54-28.81
305.8987 Fn1
Flags: PB
4σ 3.49e3
1368F
1.20e7
20.96
2468F
2.98e6
22.17
2348F
1.20e7
26.10
2378F
7.90e6
26.22
1289F
1.30e7
28.36
3.05e6
1.53e6
0.00e0
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.47e4
JS 1234F
4.88e7
24.73
ES 2378F
4.80e7
26.19
1.04e7
5.21e6
0.00e0
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 8.94e3
JS 1234F
6.46e7
24.73
ES 2378F
6.24e7
26.19
1.33e7
6.67e6
0.00e0
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: PB
4σ 1.42e3
1.07e4
5.33e3
0.00e0
100%
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR1_18710_DF-RJ.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7765, 3985, 6447 scc: 348-095
PKD: 08-Dec-2021 09:02 Printed: 08-Dec-2021 16:06 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 2.18e3
13468/12468F
5.63e7
28.33
Abs. Int.
1.36e7
6.81e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 1.35e3
13468/12468F
3.59e7
28.33
Abs. Int.
8.55e6
4.28e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
Abs. Int.
1.00e7
5.00e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PB
4σ 8.91e3
0%
12378F
3.89e7
31.28
23478F
3.80e7
32.44
12389F
9.20e6
33.54
Abs. Int.
1.05e7
5.27e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PB
4σ 6.77e3
0%
12378F
2.46e7
31.28
23478F
2.48e7
32.44
12389F
5.82e6
33.54
Abs. Int.
6.61e6
3.30e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 3.53e3
0%
CS 12346F
6.56e7
30.72
ES 12378F
6.92e7
31.27
ES 23478F
6.29e7
32.42
Abs. Int.
1.83e7
9.17e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 6.63e3
0%
CS 12346F
4.21e7
30.72
ES 12378F
4.35e7
31.26
ES 23478F
4.03e7
32.42
Abs. Int.
1.18e7
5.92e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: B
4σ 1.46e3
0%
Abs. Int.
8.18e3
4.09e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT


SGS ID: OPR1_18710_DF-RJ
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 0_18710_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
Acq: 07-Dec-2021 16:29:16
User: DTF Datafile: 211207C03
Rel. Int.
Abs. Int.
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PB
4σ 8.92e3
123468F 7.48e7 34.39
123478F 2.94e7 35.80
123678F 3.22e7 35.94
234678F 2.93e7 36.61
123789F 2.75e7 37.59
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PB
4σ 8.84e3
123468F 5.97e7 34.39
123478F 2.35e7 35.80
123678F 2.57e7 35.94
234678F 2.32e7 36.61
123789F 2.16e7 37.59
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 8.05e3
ES 123478F 2.67e7 35.79
ES 123678F 3.13e7 35.93
CS 123469F 2.62e7* 36.24
ES 234678F 2.68e7* 36.59
ES 123789F 2.76e7 37.58
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PBM
4σ 6.40e3
ES 123478F 4.83e7 35.79
ES 123678F 5.93e7 35.93
CS 123469F 4.86e7* 36.24
ES 234678F 5.02e7* 36.59
ES 123789F 5.24e7 37.58
OCDPE
33.92-37.91
445.7555 Fn3
Flags: PB
4σ 1.59e3
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR1_18710_DF-RJ.utp_res, saved 08-Dec-2021 15:59 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8336, 4303, 5446 scc: 348-095
Peak annotation: Areas, Centroids
Revised: 08-Dec-2021 09:02 (DTF) Printed: 08-Dec-2021 16:06 Page 10 of 12


SGS ID: OPR1_18710_DF-RJ
Sample ID: 0_18710_OPR001
Acq: 07-Dec-2021 16:29:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 211207C03
Rel. Int.
Abs. Int.
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PB
4σ 2.47e3
1234678F
2.51e7
39.20
1234789F
1.94e7
40.60
7.98e6
3.99e6
0.00e0
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PB
4σ 3.18e3
1234678F
2.40e7
39.20
1234789F
1.85e7
40.60
7.78e6
3.89e6
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PBM
4σ 3.13e3
ES 1234678F
2.01e7
39.19
CS 1234689F
2.12e7
39.62
ES 1234789F
1.61e7*
40.59
7.01e6
3.50e6
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PBM
4σ 2.20e3
ES 1234678F
4.45e7
39.19
CS 1234689F
4.50e7
39.62
ES 1234789F
3.49e7*
40.59
1.46e7
7.28e6
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.51e3
1.32e4
6.58e3
100%
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR1_18710_DF-RJ.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2853, 8288, 6230 scc: 348-095
Revised: 08-Dec-2021 09:02 (DTF) Printed: 08-Dec-2021 16:06 Page 11 of 12


SGS ID: OPR1_18710_DF-RJ
Sample ID: 0_18710_OPR001
Acq: 07-Dec-2021 16:29:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 211207C03
Rel. Int.
Abs. Int.
OCDF
1.48e7*
42.93
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.82e3
3.17e6
1.59e6
0.00e0
OCDF
1.64e7*
42.93
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.66e3
3.53e6
1.77e6
ES OCDF
2.49e7*
42.92
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.88e3
5.41e6
2.70e6
ES OCDF
2.71e7
42.91
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.40e3
5.99e6
2.99e6
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.28e3
6.47e3
3.23e3
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR1_18710_DF-RJ.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2339, 5660, 9072 scc: 348-095
Revised: 08-Dec-2021 09:02 (DTF) Printed: 08-Dec-2021 16:06 Page 12 of 12

Lab ID: OPR2_18710_DF **Acq'd: 07 Dec 2021 17:15 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 **UTP: 08-Dec-2021 15:59:13 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 493-149-SMV**

Datafile: 211207C04 **Report: 08 Dec 2021 16:02 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	27.13		1.0009	1.0009	0	9.93E+06	0.83	Y	1.18	12.6	5585.795	0.0782
12378-PeCDD	32.78		1.0006	1.0006	0	3.42E+07	1.60	Y	1.04	53.3	5660.385	0.0794
123478-HxCDD	36.77		1.0004	1.0004	0	3.10E+07	1.25	Y	1.09	58	3659.466	0.0569
123678-HxCDD	36.88		1.0035	1.0035	0	3.23E+07	1.26	Y	1.15	59.3	3659.466	0.0533
123789-HxCDD	37.18		1.0117	1.0117	0	3.17E+07	1.25	Y	1.05	55.3	3659.466	0.0565
1234678-HpCDD	40.16		1.0003	1.0003	0	2.58E+07	1.07	Y	1.06	56	4120.351	0.0743
OCDD	42.77		1.0003	1.0003	0	2.03E+07	0.93	Y	1.13	114	5262.012	0.334
2378-TCDF	26.18		1.0009	1.0008	-0.2	1.45E+07	0.78	Y	1.08	12.6	4830.041	0.0477
12378-PeCDF	31.26		1.0005	1.0006	+0.2	5.98E+07	1.56	Y	1.02	56	17726.316	0.154
23478-PeCDF	32.41		1.0006	1.0005	-0.2	6.16E+07	1.55	Y	1.02	60.1	17726.316	0.154
123478-HxCDF	35.78		1.0005	1.0005	0	5.03E+07	1.26	Y	1.27	57.5	6175.615	0.0586
123678-HxCDF	35.92		1.0004	1.0004	0	5.32E+07	1.26	Y	1.15	56	6175.615	0.0541
234678-HxCDF	36.58		1.0004	1.0004	0	4.85E+07	1.26	Y	1.19	54.9	6175.615	0.059
123789-HxCDF	37.56		1.0003	1.0005	+0.5	4.36E+07	1.28	Y	1.16	54.4	6175.615	0.07
1234678-HpCDF	39.17		1.0003	1.0003	0	4.40E+07	1.05	Y	1.37	56.1	3727.574	0.0379
1234789-HpCDF	40.58		1.0002	1.0002	0	3.05E+07	1.06	Y	1.31	53.8	3727.574	0.0551
OCDF	42.93		1.0003	1.0002	-0.3	2.63E+07	0.90	Y	1.07	111	4925.776	0.251

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	27.10	1.0260	1.0261	+0.2	6.65E+07	0.81	Y	1.05	101
ES 12378-PeCDD	32.76	1.2396	1.2401	+1.0	6.20E+07	1.61	Y	0.88	112
ES 123478-HxCDD	36.75	0.9916	0.9916	0	4.91E+07	1.28	Y	0.97	106
ES 123678-HxCDD	36.87	0.9947	0.9947	0	4.75E+07	1.27	Y	0.94	105
ES 123789-HxCDD	37.17	1.0027	1.0028	+0.2	5.47E+07	1.30	Y	1.09	105
ES 1234678-HpCDD	40.15	1.0828	1.0831	+0.7	4.34E+07	1.10	Y	0.91	99.5
ES OCDD	42.76	1.1528	1.1536	+2.1	3.17E+07	0.94	Y	0.62	53.2
ES 2378-TCDF	26.16	1.0591	1.0593	+0.3	1.07E+08	0.79	Y	1.06	91.7
ES 12378-PeCDF	31.24	1.2643	1.2649	+1.1	1.04E+08	1.56	Y	0.91	104
ES 23478-PeCDF	32.39	1.3110	1.3116	+1.2	1.00E+08	1.56	Y	0.88	103
ES 123478-HxCDF	35.76	0.9648	0.9648	0	6.89E+07	0.54	Y	1.20	120
ES 123678-HxCDF	35.90	0.9686	0.9686	0	8.23E+07	0.54	Y	1.35	127
ES 234678-HxCDF	36.56	0.9865	0.9864	-0.2	7.43E+07	0.54	Y	1.24	125
ES 123789-HxCDF	37.54	1.0129	1.0129	0	6.88E+07	0.54	Y	1.16	125
ES 1234678-HpCDF	39.16	1.0565	1.0566	+0.2	5.72E+07	0.46	Y	0.97	124
ES 1234789-HpCDF	40.58	1.0943	1.0947	+1.0	4.33E+07	0.46	Y	0.85	106
ES OCDF	42.92	1.1569	1.1579	+2.6	4.42E+07	0.93	Y	0.81	57.3

Lab ID: OPR2_18710_DF | Acq'd: 07 Dec 2021 17:15 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR002 | UTP: 08-Dec-2021 15:59:13 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 493-149-SMV

Datafile: 211207C04 | Report: 08 Dec 2021 16:02 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	26.41		-	-	-	6.28E+07	0.83	Y	-	-	
JS 1234-TCDF	24.70		-	-	-	1.10E+08	0.79	Y	-	-	
JS 123467-HxCDD	37.07		-	-	-	2.39E+07	1.19	Y	-	-	
CS 37Cl-2378-TCDD	27.13		1.0269	1.0269	0	3.07E+07	n/a	-	1.20	102	
CS 12347-PeCDD	32.24		1.2203	1.2207	+0.8	5.91E+07	1.59	Y	0.75	125	
CS 12346-PeCDF	30.70		1.2424	1.2429	+0.9	1.01E+08	1.58	Y	0.85	108	
CS 123469-HxCDF	36.21		0.9771	0.9771	0	7.08E+07	0.55	Y	1.12	133	
CS 1234689-HpCDF	39.59		1.0681	1.0682	+0.2	5.00E+07	0.45	Y	0.89	118	
~~SS 37Cl-2378-TCDD~~	~~27.13~~		~~1.0269~~	~~1.0269~~	~~0~~	~~3.07E+07~~	~~n/a~~		~~1.15~~	~~101~~	Not used in this project.
~~SS 12347-PeCDD~~	~~32.24~~		~~1.2203~~	~~1.2207~~	~~+0.8~~	~~5.91E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~111~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~30.70~~		~~1.2424~~	~~1.2429~~	~~+0.9~~	~~1.01E+08~~	~~1.58~~	~~Y~~	~~0.94~~	~~104~~	
~~SS 123469-HxCDF~~	~~36.21~~		~~0.9771~~	~~0.9771~~	~~0~~	~~7.08E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~104~~	
~~SS 1234689-HpCDF~~	~~39.59~~		~~1.0681~~	~~1.0682~~	~~+0.2~~	~~5.00E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~95~~	

Totals	Conc	EMPC
Total TCDD	58.6	58.6
Total PeCDD	84.1	84.1
Total HxCDD	191	191
Total HpCDD	72.7	72.7
Total Tetra-Octa Dioxins	520	520
Total TCDF	71.2	71.2
Total PeCDF	208	208
Total HxCDF	378	378
Total HpCDF	110	110
Total Tetra-Octa Furans	878	878
Total Tetra-Octa Dioxins & Furans	1400	1400

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.823	0.83
Response	9.94E+06	9.93E+06

Lab ID: OPR2_18710_DF **Acq'd: 07 Dec 2021 17:15 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 **UTP: 08-Dec-2021 15:59:13 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 493-149-SMV**

Datafile: 211207C04 **Report: 08 Dec 2021 16:02 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	23.15		0.8545	0.8542	-0.4	1.33E+07	0.82	Y	1.18	16.8	5585.795	0.0782
1379-TCDD	NotFnd		0.8692						1.18		5585.795	0.0782
1369-TCDD	NotFnd		0.8868						1.18		5585.795	0.0782
1469-TCDD	NotFnd		0.9185						1.18		5585.795	0.0782
1247/1246/1248/1249-TCDD	NotFnd		0.9282						1.18		5585.795	0.0782
1378-TCDD	NotFnd		0.9355						1.18		5585.795	0.0782
1268-TCDD	NotFnd		0.9435						1.18		5585.795	0.0782
1478-TCDD	NotFnd		0.9533						1.18		5585.795	0.0782
1279-TCDD	NotFnd		0.9601						1.18		5585.795	0.0782
1234/1269-TCDD	NotFnd		0.9741						1.18		5585.795	0.0782
1236-TCDD	NotFnd		0.9797						1.18		5585.795	0.0782
1237/1238-TCDD	NotFnd		0.9898						1.18		5585.795	0.0782
1239-TCDD	26.97		0.9952	0.9951	-0.2	9.75E+06	0.79	Y	1.18	12.4	5585.795	0.0782
2378-TCDD	**27.13**		**1.0009**	1.0009	**0**	9.93E+06	0.83	Y	**1.18**	**12.6**	**5585.795**	**0.0782**
1278-TCDD	NotFnd		1.0139						1.18		5585.795	0.0782
1267-TCDD	NotFnd		1.0193						1.18		5585.795	0.0782
1289-TCDD	28.17		1.0393	1.0394	+0.2	1.32E+07	0.80	Y	1.18	16.8	5585.795	0.0782
12479/12468-PeCDD	30.19		0.9216	0.9216	0	9.32E+06	1.60	Y	1.04	14.5	5660.385	0.0794
12469-PeCDD	NotFnd		0.9386						1.04		5660.385	0.0794
12368-PeCDD	NotFnd		0.9560						1.04		5660.385	0.0794
12478-PeCDD	NotFnd		0.9619						1.04		5660.385	0.0794
12379-PeCDD	NotFnd		0.9651						1.04		5660.385	0.0794
12369/12467/12489-PeCDD	NotFnd		0.9735						1.04		5660.385	0.0794
12346/12347-PeCDD	NotFnd		0.9852						1.04		5660.385	0.0794
12378-PeCDD	32.78		**1.0006**	**1.0006**	**0**	**3.42E+07**	**1.60**	**Y**	**1.04**	**53.3**	**5660.385**	**0.0794**
12367-PeCDD	NotFnd		1.0037						1.04		5660.385	0.0794
12389-PeCDD	33.23		1.0145	1.0144	-0.2	1.04E+07	1.57	Y	1.04	16.2	5660.385	0.0794
124679/124689-HxCDD	35.05		0.9535	0.9535	0	1.03E+07	1.25	Y	1.10	18.7	3659.466	0.0555
123468-HxCDD	NotFnd		0.9716						1.10		3659.466	0.0555
123679/123689-HxCDD	NotFnd		0.9796						1.10		3659.466	0.0555
123469-HxCDD	NotFnd		0.9833						1.10		3659.466	0.0555
123478-HxCDD	36.77		**1.0004**	**1.0004**	**0**	**3.10E+07**	**1.25**	**Y**	1.09	**58**	**3659.466**	**0.0569**
123678-HxCDD	36.88		**1.0035**	**1.0035**	**0**	**3.23E+07**	**1.26**	**Y**	1.15	**59.3**	**3659.466**	**0.0533**
123467-HxCDD	NotFnd		1.0088						1.10		3659.466	0.0555
123789-HxCDD	37.18		**1.0117**	**1.0117**	**0**	**3.17E+07**	**1.25**	**Y**	1.05	**55.3**	**3659.466**	**0.0565**

Lab ID: OPR2_18710_DF **Acq'd: 07 Dec 2021 17:15 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 **UTP: 08-Dec-2021 15:59:13 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 493-149-SMV**

Datafile: 211207C04 **Report: 08 Dec 2021 16:02 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.47		0.9833	0.9831	-0.5	7.67E+06	1.06	Y	1.06	16.7	4120.351	0.0743
1234678-HpCDD	**40.16**		**1.0003**	**1.0003**	**0**	**2.58E+07**	**1.07**	**Y**	**1.06**	**56**	**4120.351**	**0.0743**
OCDD	**42.77**		**1.0003**	**1.0003**	**0**	**2.03E+07**	**0.93**	**Y**	**1.13**	**114**	**5262.012**	**0.334**
OCDD-a	42.76		1.0002	1.0001	-0.3	1.19E+06	2.60	Y	0.07	104	6880.302	6.84
1368-TCDF	20.92		0.7998	0.7995	-0.4	2.06E+07	0.81	Y	1.08	17.8	4830.041	0.0477
1468-TCDF	NotFnd		0.8214						1.08		4830.041	0.0477
2468-TCDF	22.13		0.8463	0.8459	-0.5	5.11E+06	0.77	Y	1.08	4.43	4830.041	0.0477
1346/1246-TCDF	NotFnd		0.8608						1.08		4830.041	0.0477
1347/1378/1247-TCDF	NotFnd		0.8675						1.08		4830.041	0.0477
1348-TCDF	NotFnd		0.8793						1.08		4830.041	0.0477
1248/1367/1379-TCDF	NotFnd		0.8850						1.08		4830.041	0.0477
1268-TCDF	NotFnd		0.9010						1.08		4830.041	0.0477
1467-TCDF	NotFnd		0.9068						1.08		4830.041	0.0477
1478-TCDF	NotFnd		0.9139						1.08		4830.041	0.0477
1369/1237-TCDF	NotFnd		0.9294						1.08		4830.041	0.0477
2467-TCDF	NotFnd		0.9350						1.08		4830.041	0.0477
2368-TCDF	NotFnd		0.9410						1.08		4830.041	0.0477
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9451						1.08		4830.041	0.0477
1278-TCDF	NotFnd		0.9642						1.08		4830.041	0.0477
1349-TCDF	NotFnd		0.9695						1.08		4830.041	0.0477
1267-TCDF	NotFnd		0.9753						1.08		4830.041	0.0477
2346/1249-TCDF	NotFnd		0.9832						1.08		4830.041	0.0477
2347/1279-TCDF	NotFnd		0.9921						1.08		4830.041	0.0477
2348-TCDF	26.07		0.9970	0.9965	-0.8	2.05E+07	0.79	Y	1.08	17.7	4830.041	0.0477
2378-TCDF	**26.18**		**1.0009**	**1.0008**	**-0.2**	**1.45E+07**	**0.78**	**Y**	**1.08**	**12.6**	**4830.041**	**0.0477**
2367/3467-TCDF	NotFnd		1.0162						1.08		4830.041	0.0477
1269-TCDF	NotFnd		1.0259						1.08		4830.041	0.0477
1239-TCDF	NotFnd		1.0370						1.08		4830.041	0.0477
1289-TCDF	28.33		1.0829	1.0828	-0.2	2.15E+07	0.79	Y	1.08	18.6	4830.041	0.0477
13468/12468-PeCDF	28.30		0.9067	0.9060	-1.2	8.10E+07	1.60	Y	1.02	77.4	3749.795	0.0326
13678/13467/12467-PeCDF	NotFnd		0.9583						1.02		17726.316	0.154
12368/13478/12478-PeCDF	NotFnd		0.9635						1.02		17726.316	0.154
14678-PeCDF	NotFnd		0.9669						1.02		17726.316	0.154
13479-PeCDF	NotFnd		0.9701						1.02		17726.316	0.154
13469/12479-PeCDF	NotFnd		0.9784						1.02		17726.316	0.154
12346-PeCDF	NotFnd		0.9831						1.02		17726.316	0.154

Lab ID: OPR2_18710_DF | **Acq'd: 07 Dec 2021 17:15 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 | **UTP: 08-Dec-2021 15:59:13 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 493-149-SMV**

Datafile: 211207C04 | **Report: 08 Dec 2021 16:02 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9859						1.02		17726.316	0.154
12347-PeCDF	NotFnd		0.9885						1.02		17726.316	0.154
12348-PeCDF	NotFnd		0.9937						1.02		17726.316	0.154
12378-PeCDF	**31.26**		**1.0005**	**1.0006**	**+0.2**	**5.98E+07**	**1.56**	**Y**	**1.02**	**56**	**17726.316**	**0.154**
12678/12367-PeCDF	NotFnd		1.0097						1.02		17726.316	0.154
12379-PeCDF	NotFnd		1.0153						1.02		17726.316	0.154
12679-PeCDF	NotFnd		0.9925						1.02		17726.316	0.154
23467/12369-PeCDF	NotFnd		0.9966						1.02		17726.316	0.154
23478-PeCDF	**32.41**		**1.0006**	**1.0005**	**-0.2**	**6.16E+07**	**1.55**	**Y**	**1.02**	**60.1**	**17726.316**	**0.154**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		17726.316	0.154
12349-PeCDF	NotFnd		1.0108						1.02		17726.316	0.154
12389-PeCDF	33.52		1.0346	1.0347	+0.2	1.49E+07	1.56	Y	1.02	14.2	17726.316	0.154
123468-HxCDF	34.37		0.9610	0.9610	0	1.37E+08	1.27	Y	1.19	155	6175.615	0.06
124678/134678-HxCDF	NotFnd		0.9667						1.19		6175.615	0.06
134679-HxCDF	NotFnd		0.9732						1.19		6175.615	0.06
124679-HxCDF	NotFnd		0.9788						1.19		6175.615	0.06
124689-HxCDF	NotFnd		0.9852						1.19		6175.615	0.06
123467-HxCDF	NotFnd		0.9971						1.19		6175.615	0.06
123478-HxCDF	**35.78**		**1.0005**	**1.0005**	**0**	**5.03E+07**	**1.26**	**Y**	**1.27**	**57.5**	**6175.615**	**0.0586**
123678-HxCDF	**35.92**		**1.0004**	**1.0004**	**0**	**5.32E+07**	**1.26**	**Y**	**1.15**	**56**	**6175.615**	**0.0541**
123479-HxCDF	NotFnd		1.0050						1.19		6175.615	0.06
123469-HxCDF	NotFnd		1.0091						1.19		6175.615	0.06
123679-HxCDF	NotFnd		0.9943						1.19		6175.615	0.06
234678-HxCDF	**36.58**		**1.0004**	**1.0004**	**0**	**4.85E+07**	**1.26**	**Y**	**1.19**	**54.9**	**6175.615**	**0.059**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6175.615	0.06
123789-HxCDF	**37.56**		**1.0003**	**1.0005**	**+0.5**	**4.36E+07**	**1.28**	**Y**	**1.16**	**54.4**	**6175.615**	**0.07**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0008						1.19		6175.615	0.06
1234678-HpCDF	**39.17**		**1.0003**	**1.0003**	**0**	**4.40E+07**	**1.05**	**Y**	**1.37**	**56.1**	**3727.574**	**0.0379**
1234679-HpCDF	NotFnd		1.0075						1.34		3727.574	0.0452
1234689-HpCDF	NotFnd		1.0113						1.34		3727.574	0.0452
1234789-HpCDF	**40.58**		**1.0002**	**1.0002**	**0**	**3.05E+07**	**1.06**	**Y**	**1.31**	**53.8**	**3727.574**	**0.0551**
OCDF	**42.93**		**1.0003**	**1.0002**	**-0.3**	**2.63E+07**	**0.90**	**Y**	**1.07**	**111**	**4925.776**	**0.251**
OCDF-a	42.92		1.0002	1.0002	0	1.56E+06	2.46	Y	0.07	106	6452.045	5.31

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211207C04	Analysis Date:	07-DEC-2021 17:15:35
Lab ID:	OPR2_18710_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.6	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	53.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	58	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	59.3	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	55.3	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56	35	-	70	Y
OCDD	100	114	78	-	144	Y
2,3,7,8-TCDF	10	12.6	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	56	40	-	67	Y
2,3,4,7,8-PeCDF	50	60.1	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	57.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	56	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	54.9	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	54.4	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	56.1	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	53.8	39	-	69	Y
OCDF	100	111	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Dec 2021 16:02 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211207C04	Analysis Date:	07-DEC-2021 17:15:35
Lab ID:	OPR2_18710_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	101	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	112	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	106	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	105	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	105	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	99.5	26	-	166	Y
13C-OCDD	200	106	26	-	397	Y
13C-2,3,7,8-TCDF	100	91.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	104	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	103	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	120	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	127	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	125	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	125	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	124	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	106	20	-	186	Y
13C-OCDF	200	115	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	40.7	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 08 Dec 2021 16:02 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211207C04	Analysis Date:	07-DEC-2021 17:15:35
Lab ID:	OPR2_18710_DF		

Window Defining Standards Results

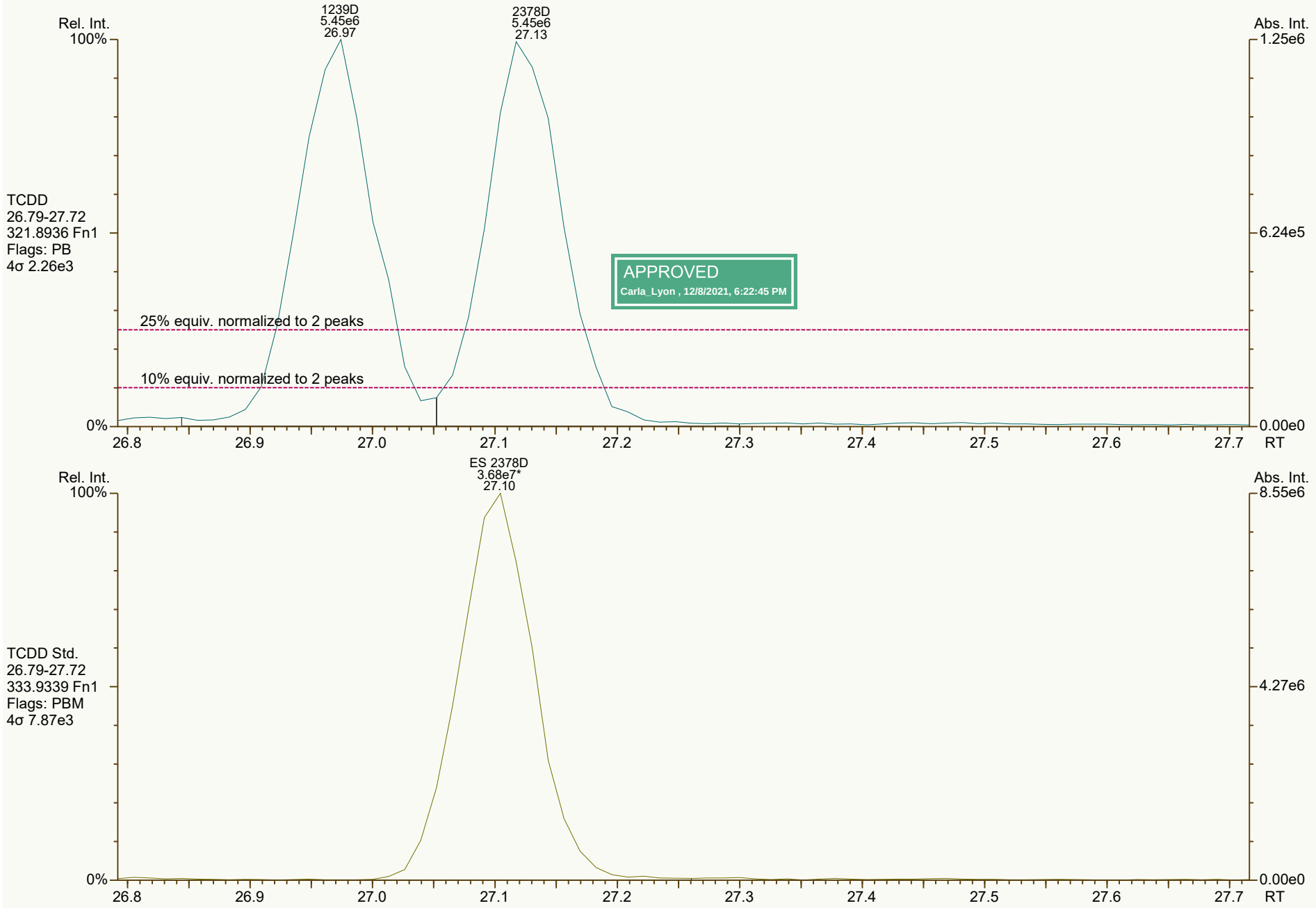
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	23.15	1289-TCDD	28.17
12479/12468-PeCDD	30.19	12389-PeCDD	33.23
124679/124689-HxCDD	35.05	123789-HxCDD	37.18
1234679-HpCDD	39.47	1234678-HpCDD	40.16
1368-TCDF	20.92	1289-TCDF	28.33
13468/12468-PeCDF	28.30	12389-PeCDF	33.52
123468-HxCDF	34.37	123789-HxCDF	37.56
1234678-HpCDF	39.17	1234789-HpCDF	40.58

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	26.97	2378-TCDD	27.13
2348-TCDF	26.07	2378-TCDF	26.18

Processed: 08 Dec 2021 16:02 Analyst: TF

SGS ID: OPR2_18710_DF
Sample ID: 0_18710_OPR002
Acq: 07-Dec-2021 17:15:35
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04

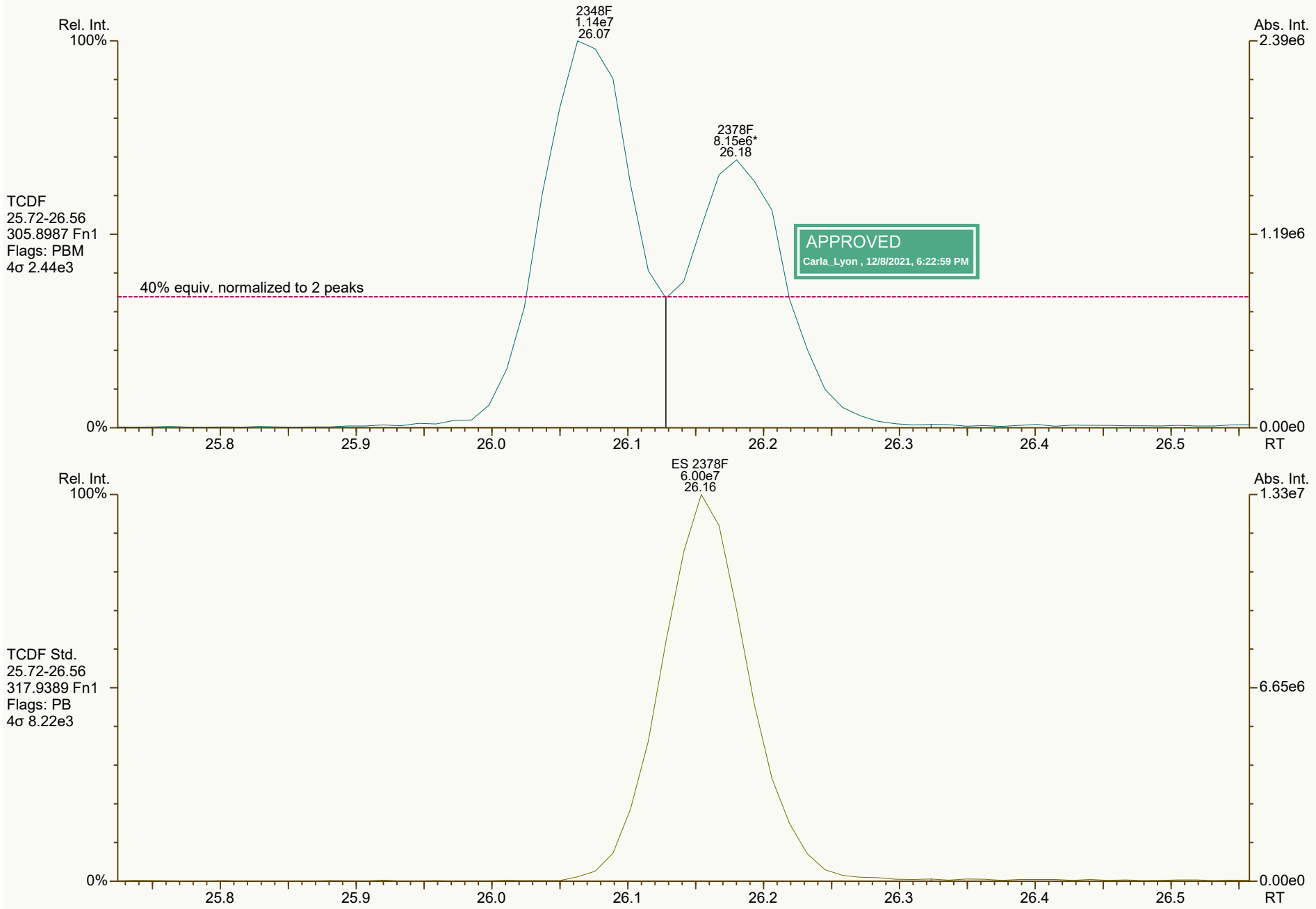


Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 16:05

SGS ID: OPR2_18710_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

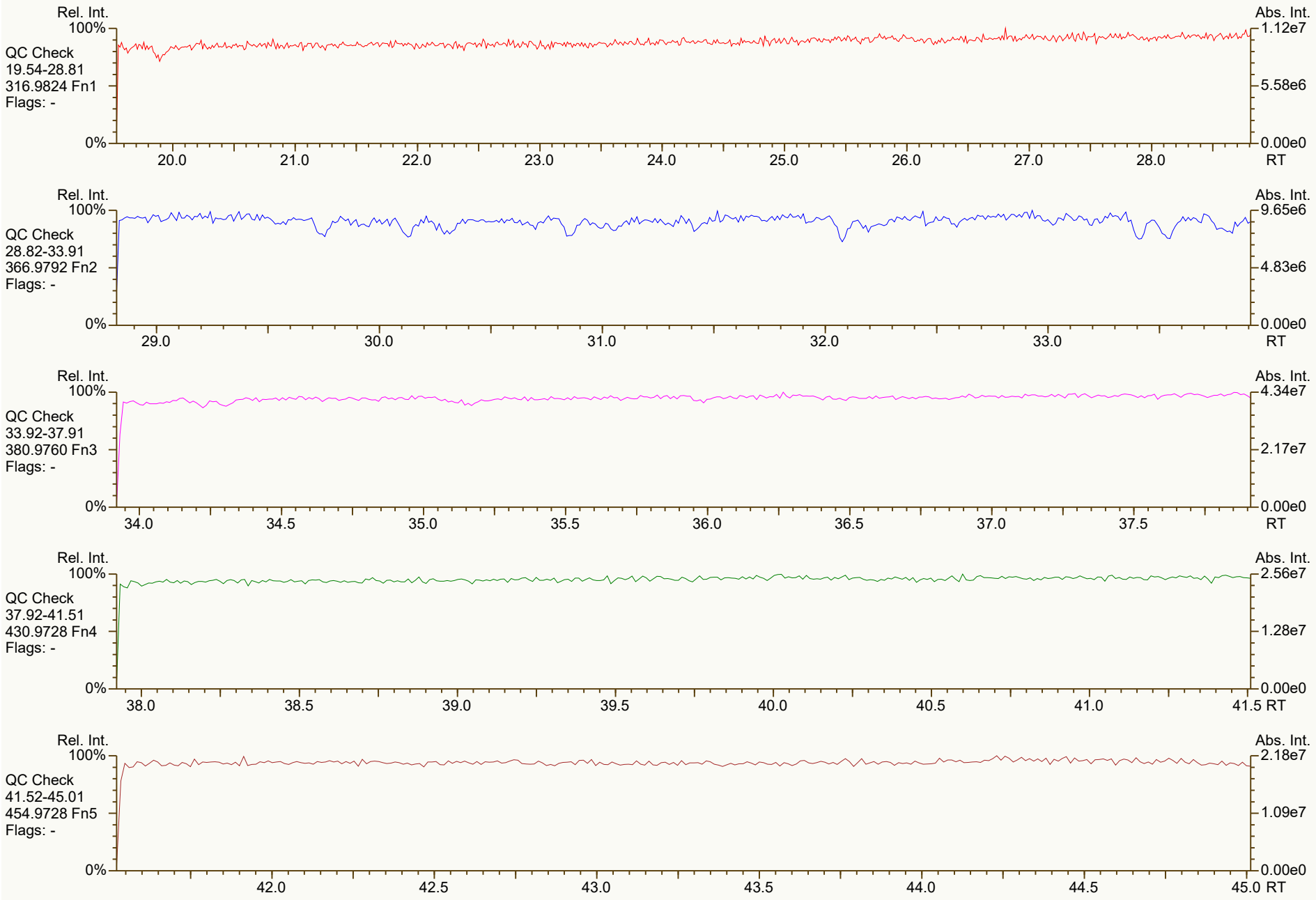
Sample ID: 0_18710_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

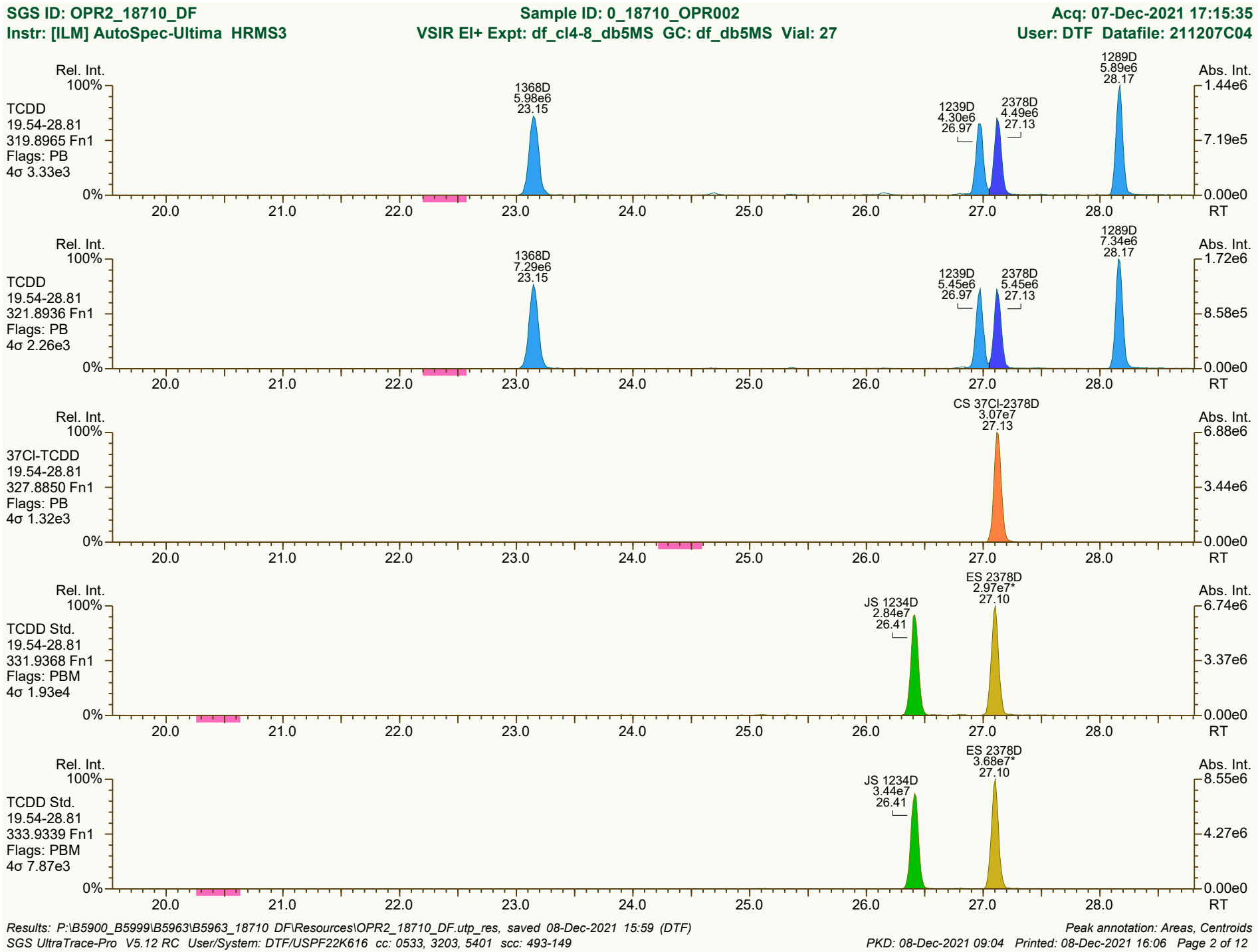
Acq: 07-Dec-2021 17:15:35
User: DTF Datafile: 211207C04

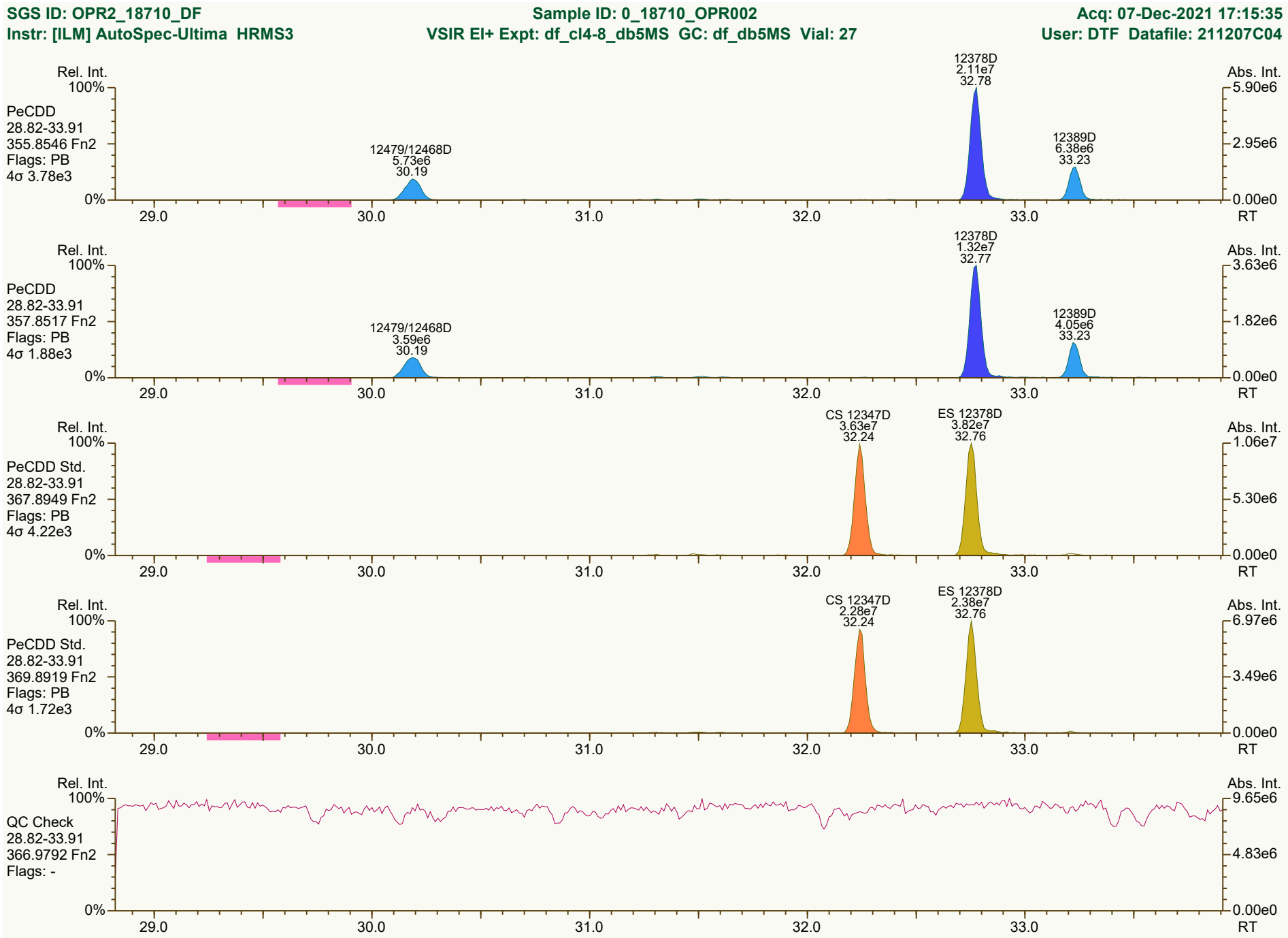


Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF.utp_res, saved 08-Dec-2021 15:59 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616

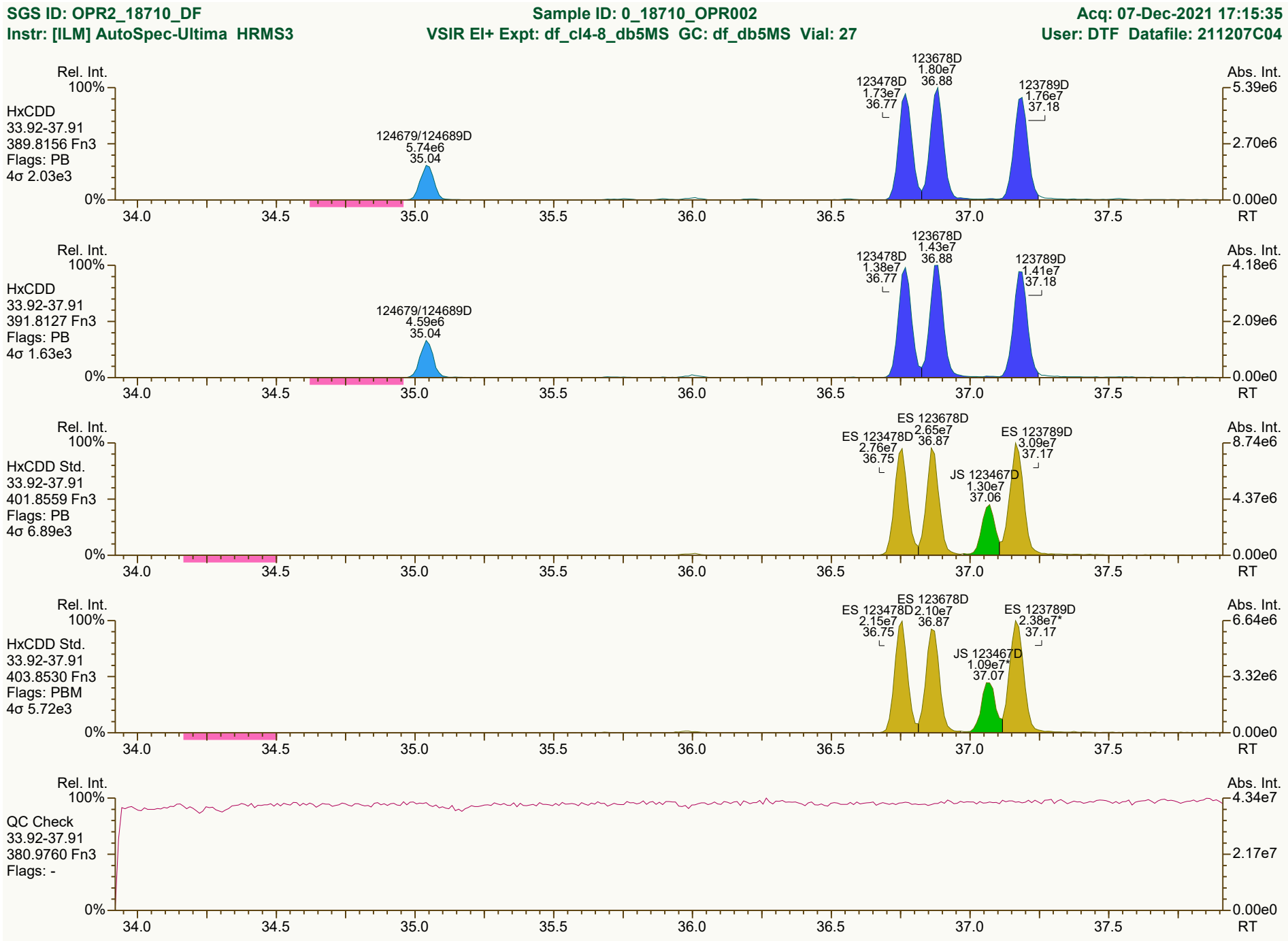
Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 16:05

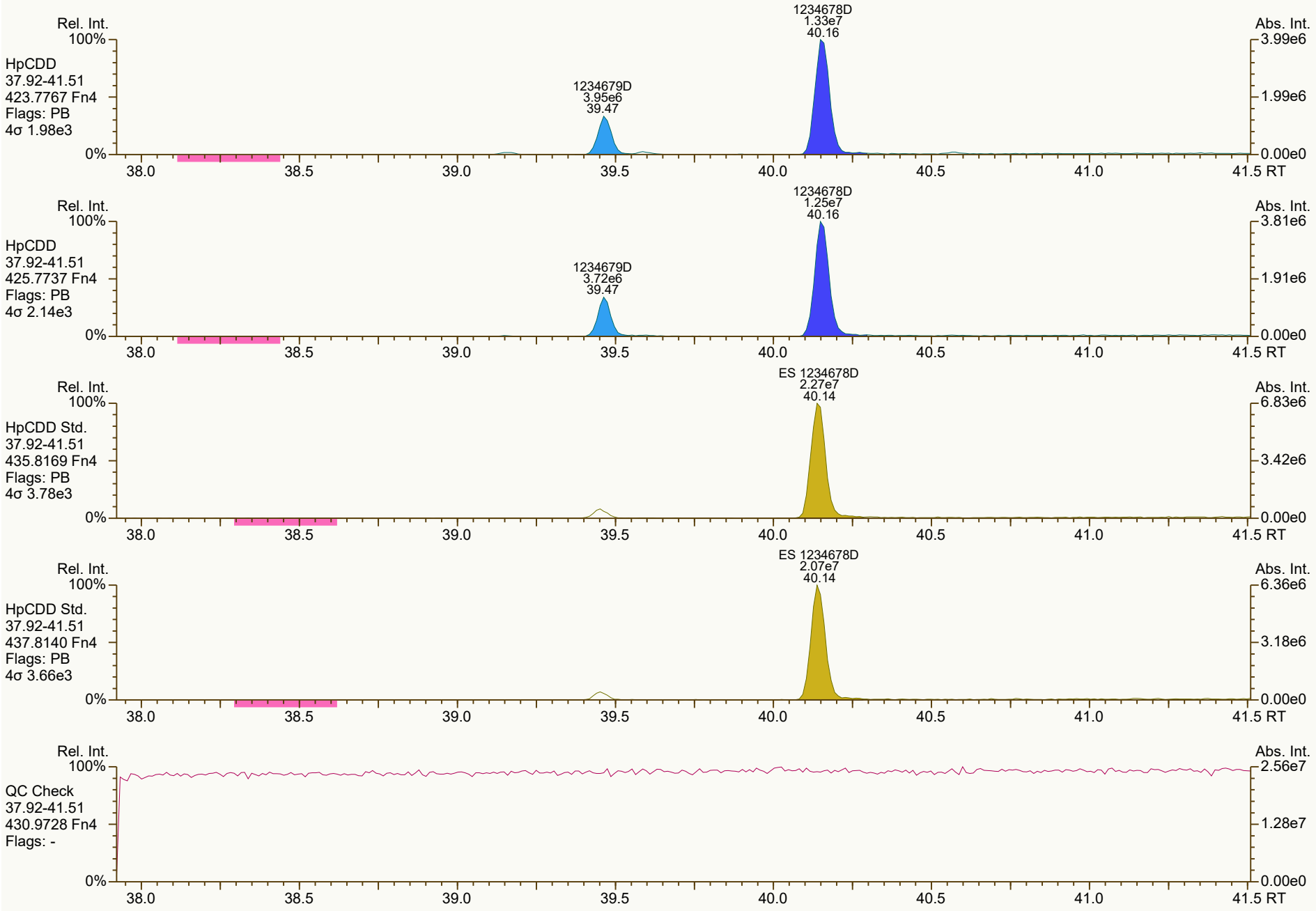

Rel. Int.
100%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.12e7
5.58e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.65e6
4.83e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
QC Check
33.92-37.91
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.34e7
2.17e7
0.00e0
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.56e7
1.28e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.18e7
1.09e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR2_18710_DF
Sample ID: 0_18710_OPR002
Acq: 07-Dec-2021 17:15:35
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04
Rel. Int.
Abs. Int.
TCDD
19.54-28.81
319.8965 Fn1
Flags: PB
4σ 3.33e3
1368D 5.98e6 23.15
1239D 4.30e6 26.97
2378D 4.49e6 27.13
1289D 5.89e6 28.17
1.44e6
7.19e5
0.00e0
TCDD
19.54-28.81
321.8936 Fn1
Flags: PB
4σ 2.26e3
1368D 7.29e6 23.15
1239D 5.45e6 26.97
2378D 5.45e6 27.13
1289D 7.34e6 28.17
1.72e6
8.58e5
0.00e0
37Cl-TCDD
19.54-28.81
327.8850 Fn1
Flags: PB
4σ 1.32e3
CS 37Cl-2378D 3.07e7 27.13
6.88e6
3.44e6
0.00e0
TCDD Std.
19.54-28.81
331.9368 Fn1
Flags: PBM
4σ 1.93e4
JS 1234D 2.84e7 26.41
ES 2378D 2.97e7* 27.10
6.74e6
3.37e6
0.00e0
TCDD Std.
19.54-28.81
333.9339 Fn1
Flags: PBM
4σ 7.87e3
JS 1234D 3.44e7 26.41
ES 2378D 3.68e7* 27.10
8.55e6
4.27e6
0.00e0
100%
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0533, 3203, 5401 scc: 493-149
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 16:06 Page 2 of 12

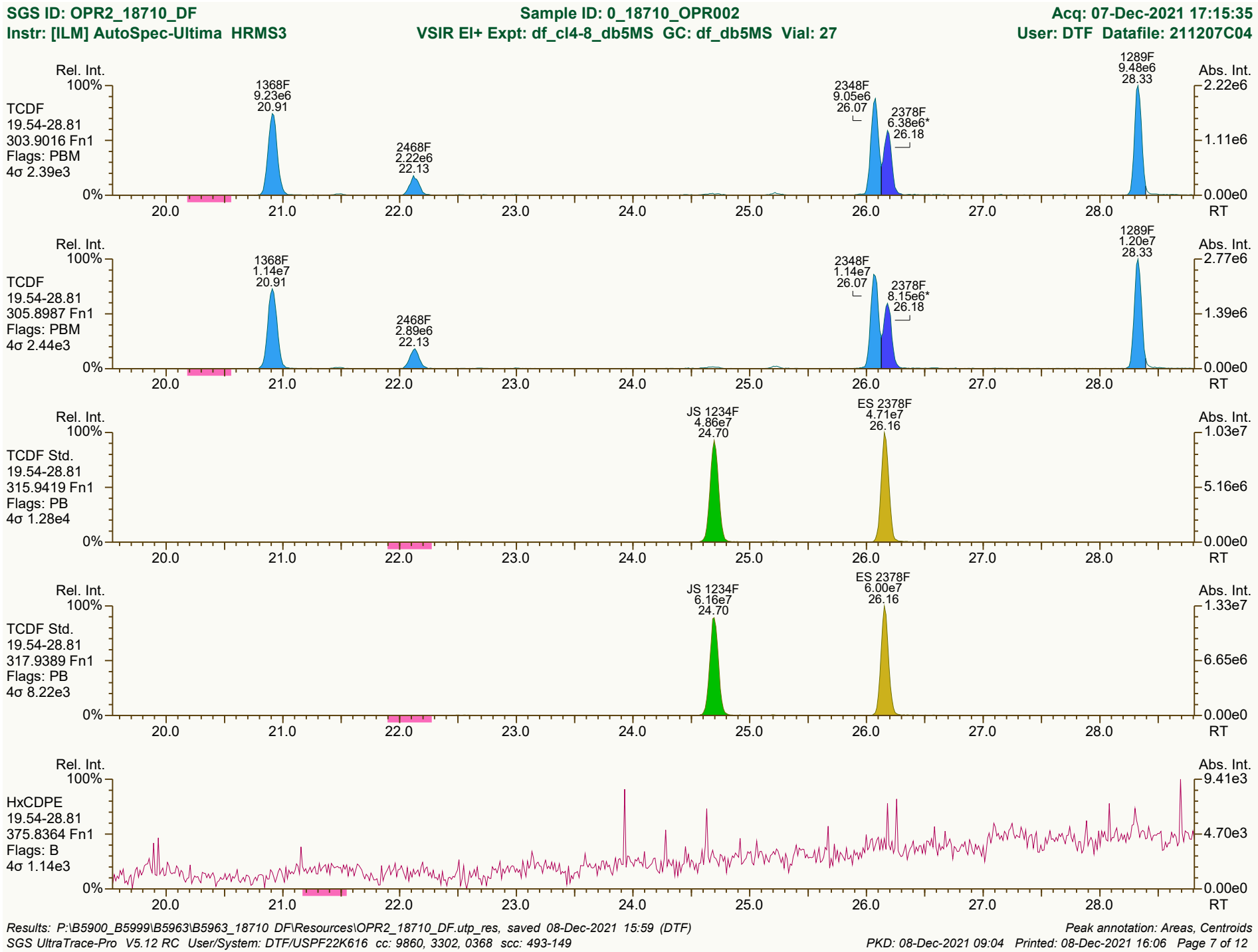

SGS ID: OPR2_18710_DF
Sample ID: 0_18710_OPR002
Acq: 07-Dec-2021 17:15:35
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04
Rel. Int.
Abs. Int.
PeCDD
28.82-33.91
355.8546 Fn2
Flags: PB
4σ 3.78e3
12479/12468D
5.73e6
30.19
12378D
2.11e7
32.78
12389D
6.38e6
33.23
5.90e6
2.95e6
0.00e0
PeCDD
28.82-33.91
357.8517 Fn2
Flags: PB
4σ 1.88e3
12479/12468D
3.59e6
30.19
12378D
1.32e7
32.77
12389D
4.05e6
33.23
3.63e6
1.82e6
0.00e0
PeCDD Std.
28.82-33.91
367.8949 Fn2
Flags: PB
4σ 4.22e3
CS 12347D
3.63e7
32.24
ES 12378D
3.82e7
32.76
1.06e7
5.30e6
0.00e0
PeCDD Std.
28.82-33.91
369.8919 Fn2
Flags: PB
4σ 1.72e3
CS 12347D
2.28e7
32.24
ES 12378D
2.38e7
32.76
6.97e6
3.49e6
0.00e0
QC Check
28.82-33.91
366.9792 Fn2
Flags: -
9.65e6
4.83e6
0.00e0
100%
0%
29.0
30.0
31.0
32.0
33.0
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5625, 3884 scc: 493-149
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 16:06 Page 3 of 12

SGS ID: OPR2_18710_DF
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 0_18710_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
Acq: 07-Dec-2021 17:15:35
User: DTF Datafile: 211207C04

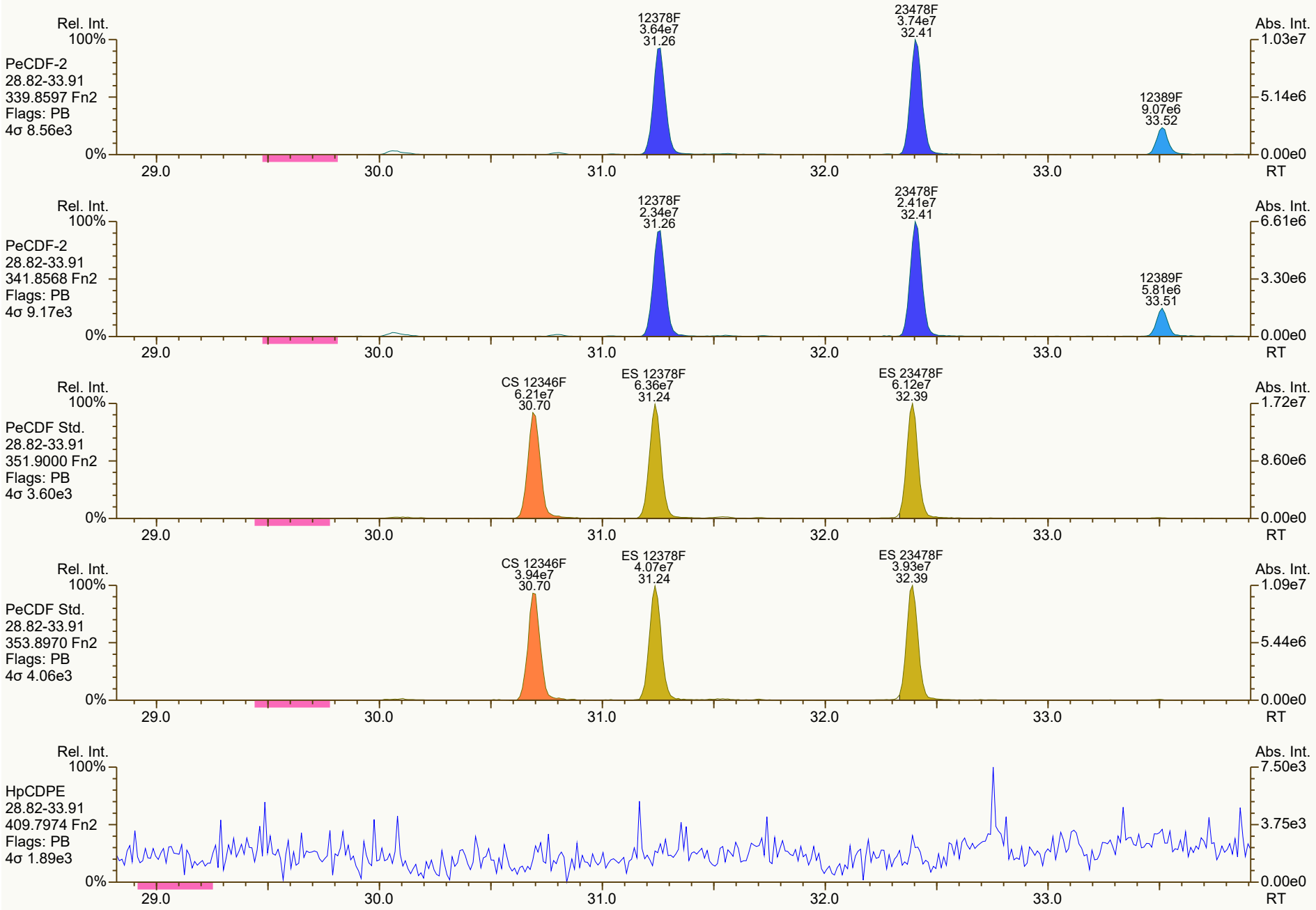


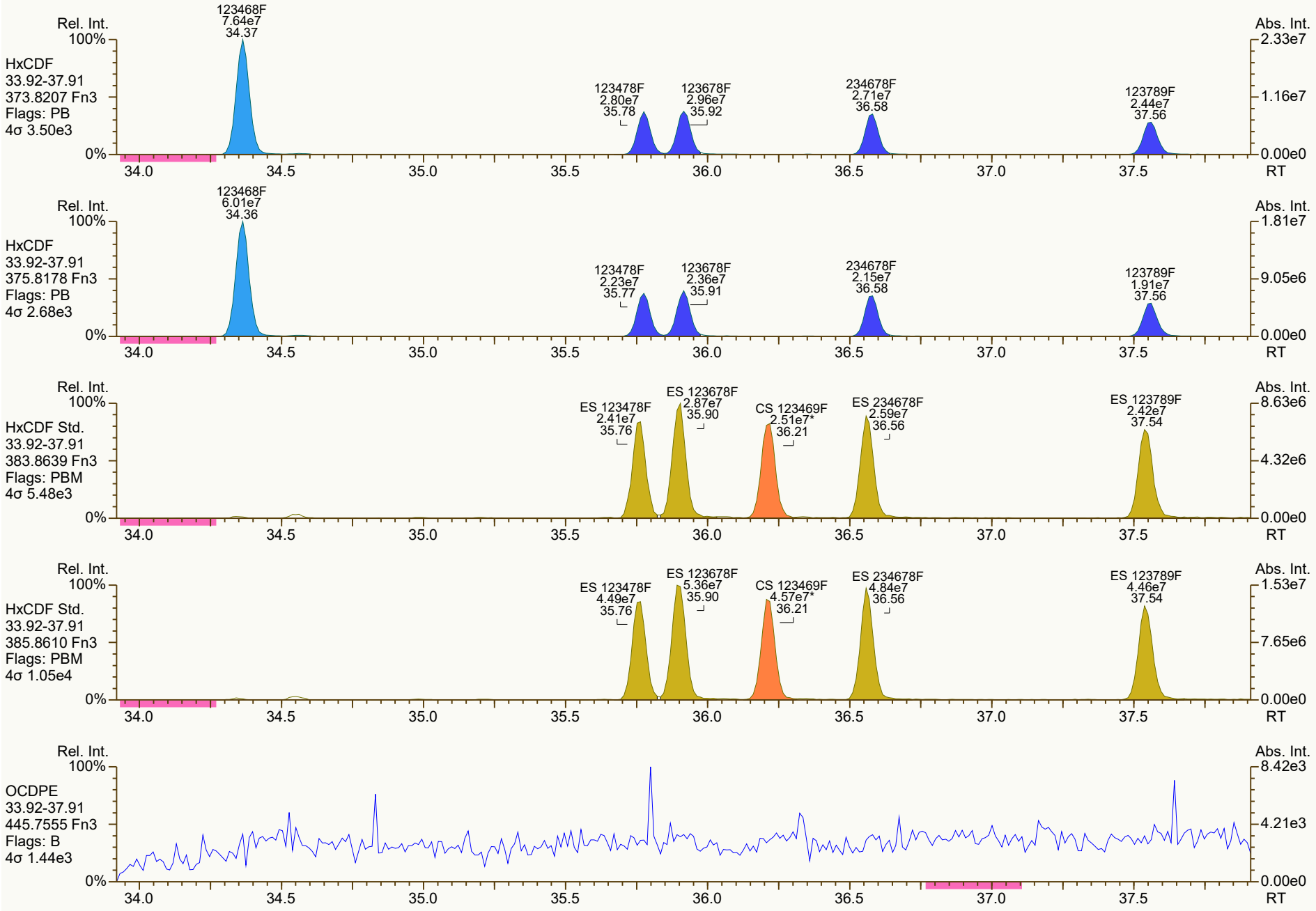

Rel. Int.
100%
HpCDD
37.92-41.51
423.7767 Fn4
Flags: PB
4σ 1.98e3
0%
1234678D
1.33e7
40.16
1234679D
3.95e6
39.47
Abs. Int.
3.99e6
1.99e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
37.92-41.51
425.7737 Fn4
Flags: PB
4σ 2.14e3
0%
1234678D
1.25e7
40.16
1234679D
3.72e6
39.47
Abs. Int.
3.81e6
1.91e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
435.8169 Fn4
Flags: PB
4σ 3.78e3
0%
ES 1234678D
2.27e7
40.14
Abs. Int.
6.83e6
3.42e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
37.92-41.51
437.8140 Fn4
Flags: PB
4σ 3.66e3
0%
ES 1234678D
2.07e7
40.14
Abs. Int.
6.36e6
3.18e6
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
37.92-41.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.56e7
1.28e7
0.00e0
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

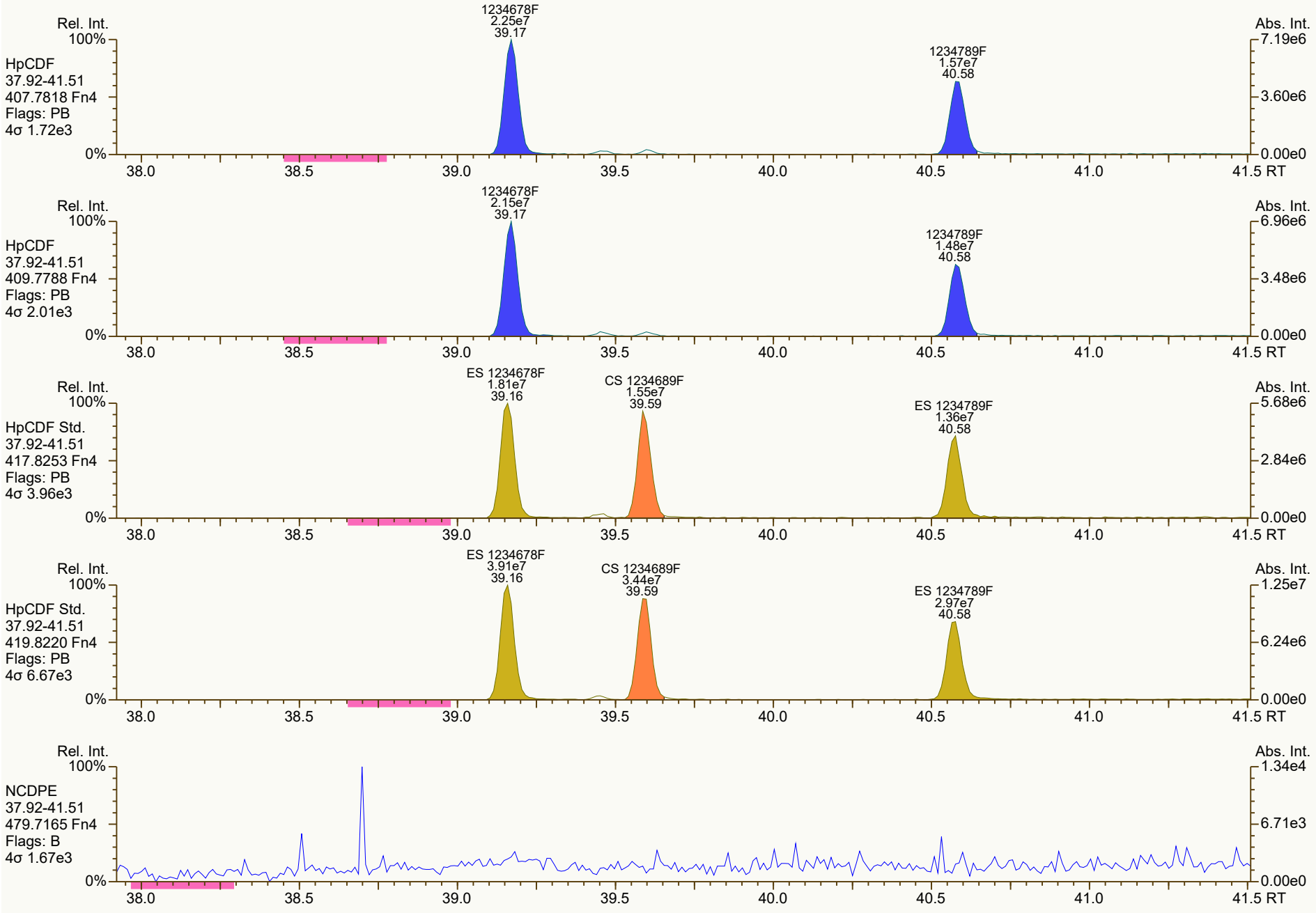

OCDD
9.76e6*
42.77
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.86e3
0%
Abs. Int.
2.14e6
1.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.05e7*
42.77
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 3.40e3
2.18e6
1.09e6
ES OCDD
1.54e7
42.76
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.30e3
3.39e6
1.70e6
ES OCDD
1.63e7
42.76
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 3.05e3
3.43e6
1.71e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
2.18e7
1.09e7


SGS ID: OPR2_18710_DF
Sample ID: 0_18710_OPR002
Acq: 07-Dec-2021 17:15:35
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211207C04
Rel. Int.
Abs. Int.
TCDF
19.54-28.81
303.9016 Fn1
Flags: PBM
4σ 2.39e3
1368F 9.23e6 20.91
2468F 2.22e6 22.13
2348F 9.05e6 26.07
2378F 6.38e6* 26.18
1289F 9.48e6 28.33
2.22e6
1.11e6
0.00e0
TCDF
19.54-28.81
305.8987 Fn1
Flags: PBM
4σ 2.44e3
1368F 1.14e7 20.91
2468F 2.89e6 22.13
2348F 1.14e7 26.07
2378F 8.15e6* 26.18
1289F 1.20e7 28.33
2.77e6
1.39e6
0.00e0
TCDF Std.
19.54-28.81
315.9419 Fn1
Flags: PB
4σ 1.28e4
JS 1234F 4.86e7 24.70
ES 2378F 4.71e7 26.16
1.03e7
5.16e6
0.00e0
TCDF Std.
19.54-28.81
317.9389 Fn1
Flags: PB
4σ 8.22e3
JS 1234F 6.16e7 24.70
ES 2378F 6.00e7 26.16
1.33e7
6.65e6
0.00e0
HxCDPE
19.54-28.81
375.8364 Fn1
Flags: B
4σ 1.14e3
9.41e3
4.70e3
0.00e0
100%
0%
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9860, 3302, 0368 scc: 493-149
PKD: 08-Dec-2021 09:04 Printed: 08-Dec-2021 16:06 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
19.54-28.81
339.8597 Fn1
Flags: PB
4σ 1.53e3
13468/12468F
4.99e7
28.30
Abs. Int.
1.22e7
6.09e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
PeCDF-1
19.54-28.81
341.8568 Fn1
Flags: PB
4σ 2.22e3
13468/12468F
3.11e7
28.30
Abs. Int.
7.55e6
3.77e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT
Rel. Int.
100%
0%
QC Check
19.54-28.81
316.9824 Fn1
Flags: -
Abs. Int.
1.12e7
5.58e6
0.00e0
20.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
RT


Rel. Int.
100%
PeCDF-2
28.82-33.91
339.8597 Fn2
Flags: PB
4σ 8.56e3
0%
12378F
3.64e7
31.26
23478F
3.74e7
32.41
12389F
9.07e6
33.52
Abs. Int.
1.03e7
5.14e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF-2
28.82-33.91
341.8568 Fn2
Flags: PB
4σ 9.17e3
0%
12378F
2.34e7
31.26
23478F
2.41e7
32.41
12389F
5.81e6
33.51
Abs. Int.
6.61e6
3.30e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
351.9000 Fn2
Flags: PB
4σ 3.60e3
0%
CS 12346F
6.21e7
30.70
ES 12378F
6.36e7
31.24
ES 23478F
6.12e7
32.39
Abs. Int.
1.72e7
8.60e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
PeCDF Std.
28.82-33.91
353.8970 Fn2
Flags: PB
4σ 4.06e3
0%
CS 12346F
3.94e7
30.70
ES 12378F
4.07e7
31.24
ES 23478F
3.93e7
32.39
Abs. Int.
1.09e7
5.44e6
0.00e0
29.0
30.0
31.0
32.0
33.0
RT
Rel. Int.
100%
HpCDPE
28.82-33.91
409.7974 Fn2
Flags: PB
4σ 1.89e3
0%
Abs. Int.
7.50e3
3.75e3
0.00e0
29.0
30.0
31.0
32.0
33.0
RT

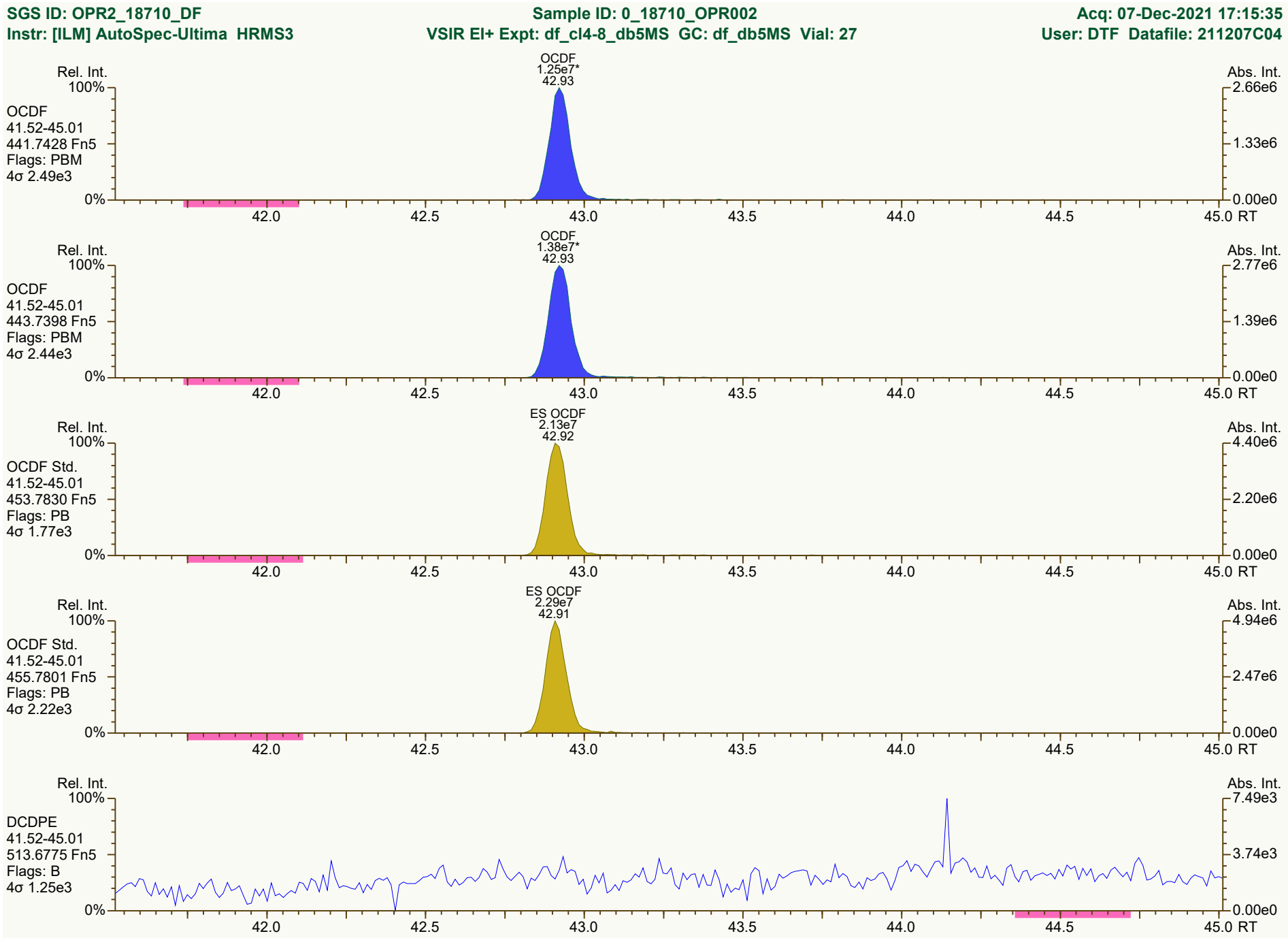

Rel. Int.
Abs. Int.
HxCDF
33.92-37.91
373.8207 Fn3
Flags: PB
4σ 3.50e3
123468F 7.64e7 34.37
123478F 2.80e7 35.78
123678F 2.96e7 35.92
234678F 2.71e7 36.58
123789F 2.44e7 37.56
HxCDF
33.92-37.91
375.8178 Fn3
Flags: PB
4σ 2.68e3
123468F 6.01e7 34.36
123478F 2.23e7 35.77
123678F 2.36e7 35.91
234678F 2.15e7 36.58
123789F 1.91e7 37.56
HxCDF Std.
33.92-37.91
383.8639 Fn3
Flags: PBM
4σ 5.48e3
ES 123478F 2.41e7 35.76
ES 123678F 2.87e7 35.90
CS 123469F 2.51e7* 36.21
ES 234678F 2.59e7 36.56
ES 123789F 2.42e7 37.54
HxCDF Std.
33.92-37.91
385.8610 Fn3
Flags: PBM
4σ 1.05e4
ES 123478F 4.49e7 35.76
ES 123678F 5.36e7 35.90
CS 123469F 4.57e7* 36.21
ES 234678F 4.84e7 36.56
ES 123789F 4.46e7 37.54
OCDPE
33.92-37.91
445.7555 Fn3
Flags: B
4σ 1.44e3
100%
0%
34.0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
RT


Rel. Int.
100%
HpCDF
37.92-41.51
407.7818 Fn4
Flags: PB
4σ 1.72e3
1234678F
2.25e7
39.17
1234789F
1.57e7
40.58
Abs. Int.
7.19e6
3.60e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
37.92-41.51
409.7788 Fn4
Flags: PB
4σ 2.01e3
1234678F
2.15e7
39.17
1234789F
1.48e7
40.58
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
417.8253 Fn4
Flags: PB
4σ 3.96e3
ES 1234678F
1.81e7
39.16
CS 1234689F
1.55e7
39.59
ES 1234789F
1.36e7
40.58
Abs. Int.
5.68e6
2.84e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
37.92-41.51
419.8220 Fn4
Flags: PB
4σ 6.67e3
ES 1234678F
3.91e7
39.16
CS 1234689F
3.44e7
39.59
ES 1234789F
2.97e7
40.58
Abs. Int.
1.25e7
6.24e6
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
37.92-41.51
479.7165 Fn4
Flags: B
4σ 1.67e3
Abs. Int.
1.34e4
6.71e3
0.00e0
0%
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

SGS ID: OPR2_18710_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18710_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

Acq: 07-Dec-2021 17:15:35
User: DTF Datafile: 211207C04



Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF.utp_res, saved 08-Dec-2021 15:59 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0419, 8083, 5575 scc: 493-149

Peak annotation: Areas, Centroids
Revised: 08-Dec-2021 09:04 (DTF) Printed: 08-Dec-2021 16:07 Page 12 of 12

Lab ID: OPR2_18710_DF-RJ CPSM only | **Acq'd: 08 Dec 2021 13:46 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 | **UTP: 08-Dec-2021 15:59:16 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 666-316-HLS**

Datafile: 211208C04 | **Report: 08 Dec 2021 16:03 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.39		1.0008	1.0007	-0.2	7.49E+06	0.79	Y	1.18	11.2	3503.322	0.0491
12378-PeCDD	34.54		1.0005	1.0006	+0.2	2.43E+07	1.55	Y	1.04	48.2	7126.719	0.116
123478-HxCDD	38.36		1.0003	1.0004	+0.2	2.26E+07	1.22	Y	1.09	51.7	4462.03	0.0695
123678-HxCDD	38.47		1.0030	1.0030	0	2.39E+07	1.25	Y	1.15	53.1	4462.03	0.0727
123789-HxCDD	38.73		1.0099	1.0099	0	2.45E+07	1.25	Y	1.05	51.7	4462.03	0.0676
1234678-HpCDD	41.27		1.0003	1.0003	0	2.02E+07	1.06	Y	1.06	52.3	3388.191	0.0599
OCDD	43.99		1.0002	1.0003	+0.3	2.77E+07	0.90	Y	1.13	108	4376.149	0.143
2378-TCDF	28.56		1.0007	1.0008	+0.2	8.90E+06	0.77	Y	1.08	10.6	3660.066	0.0438
12378-PeCDF	33.14		1.0005	1.0005	0	3.86E+07	1.53	Y	1.02	49.4	10368.317	0.112
23478-PeCDF	34.21		1.0006	1.0005	-0.2	3.93E+07	1.54	Y	1.02	52.7	10368.317	0.113
123478-HxCDF	37.41		1.0004	1.0005	+0.2	3.25E+07	1.22	Y	1.27	52.5	4238.79	0.0564
123678-HxCDF	37.56		1.0004	1.0005	+0.2	3.71E+07	1.24	Y	1.15	51	4238.79	0.0482
234678-HxCDF	38.20		1.0004	1.0004	0	3.30E+07	1.22	Y	1.19	51.7	4238.79	0.05
123789-HxCDF	39.05		1.0003	1.0004	+0.2	2.66E+07	1.23	Y	1.16	50	4238.79	0.0557
1234678-HpCDF	40.33		1.0003	1.0003	0	2.85E+07	1.02	Y	1.37	50.5	3346.015	0.0359
1234789-HpCDF	41.74		1.0003	1.0002	-0.3	2.17E+07	1.04	Y	1.31	50	3346.015	0.0528
OCDF	44.18		1.0003	1.0002	-0.3	3.05E+07	0.89	Y	1.07	102	3456.994	0.0985

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.37	1.0213	1.0213	0	5.64E+07	0.79	Y	1.05	97.8
ES 12378-PeCDD	34.52	1.2004	1.2006	+0.4	4.87E+07	1.55	Y	0.88	100
ES 123478-HxCDD	38.35	0.9928	0.9928	0	4.02E+07	1.27	Y	0.97	104
ES 123678-HxCDD	38.45	0.9955	0.9954	-0.2	3.92E+07	1.21	Y	0.94	104
ES 123789-HxCDD	38.72	1.0023	1.0023	0	4.53E+07	1.24	Y	1.09	104
ES 1234678-HpCDD	41.26	1.0681	1.0680	-0.2	3.64E+07	1.05	Y	0.91	99.9
ES OCDD	43.98	1.1386	1.1385	-0.3	4.57E+07	0.90	Y	0.62	91.7
ES 2378-TCDF	28.54	1.0460	1.0460	0	7.77E+07	0.75	Y	1.06	87.9
ES 12378-PeCDF	33.13	1.2137	1.2140	+0.6	7.62E+07	1.48	Y	0.91	100
ES 23478-PeCDF	34.19	1.2527	1.2530	+0.6	7.32E+07	1.50	Y	0.88	99.4
ES 123478-HxCDF	37.40	0.9681	0.9681	0	4.86E+07	0.54	Y	1.20	102
ES 123678-HxCDF	37.54	0.9718	0.9718	0	6.30E+07	0.52	Y	1.35	117
ES 234678-HxCDF	38.19	0.9885	0.9885	0	5.38E+07	0.54	Y	1.24	109
ES 123789-HxCDF	39.04	1.0106	1.0106	0	4.57E+07	0.53	Y	1.16	99.3
ES 1234678-HpCDF	40.32	1.0440	1.0438	-0.5	4.12E+07	0.45	Y	0.97	107
ES 1234789-HpCDF	41.73	1.0803	1.0802	-0.3	3.31E+07	0.46	Y	0.85	97.5
ES OCDF	44.17	1.1435	1.1434	-0.3	5.60E+07	0.89	Y	0.81	87

Lab ID: OPR2_18710_DF-RJ | **Acq'd:** 08 Dec 2021 13:46 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR002 | **UTP:** 08-Dec-2021 15:59:16 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 666-316-HLS

Datafile: 211208C04 | **Report:** 08 Dec 2021 16:03 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.75		-	-	-	5.51E+07	0.79	Y	-	-	
JS 1234-TCDF	27.29		-	-	-	8.34E+07	0.74	Y	-	-	
JS 123467-HxCDD	38.63		-	-	-	1.99E+07	1.23	Y	-	-	
CS 37Cl-2378-TCDD	29.39		1.0220	1.0220	0	2.51E+07	n/a	-	1.20	94.8	
CS 12347-PeCDD	34.04		1.1836	1.1838	+0.4	4.55E+07	1.55	Y	0.75	110	
CS 12346-PeCDF	32.62		1.1952	1.1954	+0.4	7.11E+07	1.50	Y	0.85	100	
CS 123469-HxCDF	37.86		0.9802	0.9802	0	4.85E+07	0.53	Y	1.12	109	
CS 1234689-HpCDF	40.72		1.0543	1.0542	-0.2	3.76E+07	0.46	Y	0.89	106	
~~SS 37Cl-2378-TCDD~~	~~29.39~~		~~1.0220~~	~~1.0220~~	~~0~~	~~2.51E+07~~	~~n/a~~		~~1.15~~	~~97.1~~	Not used in this project.
~~SS 12347-PeCDD~~	~~34.04~~		~~1.1836~~	~~1.1838~~	~~+0.4~~	~~4.55E+07~~	~~1.55~~	~~Y~~	~~0.86~~	~~109~~	CL 08Dec21
~~SS 12346-PeCDF~~	~~32.62~~		~~1.1952~~	~~1.1954~~	~~+0.4~~	~~7.11E+07~~	~~1.50~~	~~Y~~	~~0.94~~	~~99.5~~	
~~SS 123469-HxCDF~~	~~37.86~~		~~0.9802~~	~~0.9802~~	~~0~~	~~4.85E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~92.9~~	
~~SS 1234689-HpCDF~~	~~40.72~~		~~1.0543~~	~~1.0542~~	~~-0.2~~	~~3.76E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~99.4~~	

Totals	Conc	EMPC
Total TCDD	53	53
Total PeCDD	76.6	76.6
Total HxCDD	175	175
Total HpCDD	66.6	66.6
Total Tetra-Octa Dioxins	479	479
Total TCDF	63	63
Total PeCDF	213	213
Total HxCDF	333	333
Total HpCDF	101	101
Total Tetra-Octa Furans	811	811
Total Tetra-Octa Dioxins & Furans	1290	1290

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.792	0.79
Response	7.51E+06	7.49E+06

Lab ID: OPR2_18710_DF-RJ **Acq'd: 08 Dec 2021 13:46 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 **UTP: 08-Dec-2021 15:59:16 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 666-316-HLS**

Datafile: 211208C04 **Report: 08 Dec 2021 16:03 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.96		0.8842	0.8841	-0.2	1.05E+07	0.79	Y	1.18	15.7	3503.322	0.0491
1379-TCDD	NotFnd		0.8956						1.18		3503.322	0.0491
1369-TCDD	NotFnd		0.9090						1.18		3503.322	0.0491
1469-TCDD	NotFnd		0.9340						1.18		3503.322	0.0491
1247/1246/1248/1249-TCDD	NotFnd		0.9417						1.18		3503.322	0.0491
1378-TCDD	NotFnd		0.9476						1.18		3503.322	0.0491
1268-TCDD	NotFnd		0.9538						1.18		3503.322	0.0491
1478-TCDD	NotFnd		0.9616						1.18		3503.322	0.0491
1279-TCDD	NotFnd		0.9674						1.18		3503.322	0.0491
1234/1269-TCDD	NotFnd		0.9787						1.18		3503.322	0.0491
1236-TCDD	NotFnd		0.9834						1.18		3503.322	0.0491
1237/1238-TCDD	NotFnd		0.9914						1.18		3503.322	0.0491
1239-TCDD	29.25		0.9960	0.9959	-0.2	7.41E+06	0.82	Y	1.18	11.1	3503.322	0.0491
2378-TCDD	**29.39**		**1.0008**	1.0007	**-0.2**	7.49E+06	0.79	Y	**1.18**	**11.2**	**3503.322**	**0.0491**
1278-TCDD	NotFnd		1.0113						1.18		3503.322	0.0491
1267-TCDD	NotFnd		1.0157						1.18		3503.322	0.0491
1289-TCDD	30.32		1.0324	1.0324	0	1.00E+07	0.80	Y	1.18	15	3503.322	0.0491
12479/12468-PeCDD	32.12		0.9304	0.9304	0	7.04E+06	1.59	Y	1.04	13.9	7126.719	0.116
12469-PeCDD	NotFnd		0.9454						1.04		7126.719	0.116
12368-PeCDD	NotFnd		0.9607						1.04		7126.719	0.116
12478-PeCDD	NotFnd		0.9659						1.04		7126.719	0.116
12379-PeCDD	NotFnd		0.9689						1.04		7126.719	0.116
12369/12467/12489-PeCDD	NotFnd		0.9762						1.04		7126.719	0.116
12346/12347-PeCDD	NotFnd		0.9867						1.04		7126.719	0.116
12378-PeCDD	34.54		**1.0005**	**1.0006**	**+0.2**	**2.43E+07**	**1.55**	**Y**	**1.04**	**48.2**	**7126.719**	**0.116**
12367-PeCDD	NotFnd		1.0031						1.04		7126.719	0.116
12389-PeCDD	34.97		1.0130	1.0131	+0.2	7.30E+06	1.56	Y	1.04	14.5	7126.719	0.116
124679/124689-HxCDD	36.66		0.9559	0.9560	+0.2	8.31E+06	1.21	Y	1.10	18.3	4462.03	0.0698
123468-HxCDD	NotFnd		0.9731						1.10		4462.03	0.0698
123679/123689-HxCDD	NotFnd		0.9810						1.10		4462.03	0.0698
123469-HxCDD	NotFnd		0.9846						1.10		4462.03	0.0698
123478-HxCDD	38.36		**1.0003**	**1.0004**	**+0.2**	**2.26E+07**	**1.22**	**Y**	1.09	**51.7**	**4462.03**	**0.0695**
123678-HxCDD	38.47		**1.0030**	**1.0030**	**0**	**2.39E+07**	**1.25**	**Y**	1.15	**53.1**	**4462.03**	**0.0727**
123467-HxCDD	NotFnd		1.0076						1.10		4462.03	0.0698
123789-HxCDD	38.73		**1.0099**	**1.0099**	**0**	**2.45E+07**	**1.25**	**Y**	1.05	**51.7**	**4462.03**	**0.0676**

Lab ID: OPR2_18710_DF-RJ | **Acq'd:** 08 Dec 2021 13:46 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18710_OPR002 | **UTP:** 08-Dec-2021 15:59:16 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 666-316-HLS

Datafile: 211208C04 | **Report:** 08 Dec 2021 16:03 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.59		0.9838	0.9837	-0.2	5.55E+06	1.06	Y	1.06	14.4	3388.191	0.0599
1234678-HpCDD	**41.27**		**1.0003**	**1.0003**	**0**	**2.02E+07**	**1.06**	**Y**	**1.06**	**52.3**	**3388.191**	**0.0599**
OCDD	**43.99**		**1.0002**	**1.0003**	**+0.3**	**2.77E+07**	**0.90**	**Y**	**1.13**	**108**	**4376.149**	**0.143**
OCDD-a	43.99		1.0002	1.0002	0	1.75E+06	2.54	Y	0.07	107	3640.991	1.86
1368-TCDF	24.04		0.8425	0.8424	-0.1	1.32E+07	0.77	Y	1.08	15.8	3660.066	0.0438
1468-TCDF	NotFnd		0.8609						1.08		3660.066	0.0438
2468-TCDF	25.14		0.8807	0.8806	-0.2	3.32E+06	0.81	Y	1.08	3.96	3660.066	0.0438
1346/1246-TCDF	NotFnd		0.8922						1.08		3660.066	0.0438
1347/1378/1247-TCDF	NotFnd		0.8973						1.08		3660.066	0.0438
1348-TCDF	NotFnd		0.9060						1.08		3660.066	0.0438
1248/1367/1379-TCDF	NotFnd		0.9102						1.08		3660.066	0.0438
1268-TCDF	NotFnd		0.9224						1.08		3660.066	0.0438
1467-TCDF	NotFnd		0.9267						1.08		3660.066	0.0438
1478-TCDF	NotFnd		0.9322						1.08		3660.066	0.0438
1369/1237-TCDF	NotFnd		0.9443						1.08		3660.066	0.0438
2467-TCDF	NotFnd		0.9482						1.08		3660.066	0.0438
2368-TCDF	NotFnd		0.9532						1.08		3660.066	0.0438
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9567						1.08		3660.066	0.0438
1278-TCDF	NotFnd		0.9716						1.08		3660.066	0.0438
1349-TCDF	NotFnd		0.9756						1.08		3660.066	0.0438
1267-TCDF	NotFnd		0.9805						1.08		3660.066	0.0438
2346/1249-TCDF	NotFnd		0.9865						1.08		3660.066	0.0438
2347/1279-TCDF	NotFnd		0.9937						1.08		3660.066	0.0438
2348-TCDF	28.46		0.9976	0.9972	-0.7	1.33E+07	0.77	Y	1.08	15.9	3660.066	0.0438
2378-TCDF	**28.56**		**1.0007**	**1.0008**	**+0.2**	**8.90E+06**	**0.77**	**Y**	**1.08**	**10.6**	**3660.066**	**0.0438**
2367/3467-TCDF	NotFnd		1.0131						1.08		3660.066	0.0438
1269-TCDF	NotFnd		1.0212						1.08		3660.066	0.0438
1239-TCDF	NotFnd		1.0304						1.08		3660.066	0.0438
1289-TCDF	30.48		1.0675	1.0679	+0.7	1.41E+07	0.79	Y	1.08	16.8	3660.066	0.0438
13468/12468-PeCDF	30.42		0.9187	0.9182	-0.9	7.58E+07	1.53	Y	1.02	99.3	3966.884	0.0429
13678/13467/12467-PeCDF	NotFnd		0.9635						1.02		10368.317	0.112
12368/13478/12478-PeCDF	NotFnd		0.9679						1.02		10368.317	0.112
14678-PeCDF	NotFnd		0.9709						1.02		10368.317	0.112
13479-PeCDF	NotFnd		0.9740						1.02		10368.317	0.112
13469/12479-PeCDF	NotFnd		0.9809						1.02		10368.317	0.112
12346-PeCDF	NotFnd		0.9849						1.02		10368.317	0.112

Lab ID: OPR2_18710_DF-RJ | **Acq'd: 08 Dec 2021 13:46 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18710_OPR002 | **UTP: 08-Dec-2021 15:59:16 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 666-316-HLS**

Datafile: 211208C04 | **Report: 08 Dec 2021 16:03 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9869						1.02		10368.317	0.112
12347-PeCDF	NotFnd		0.9899						1.02		10368.317	0.112
12348-PeCDF	NotFnd		0.9944						1.02		10368.317	0.112
12378-PeCDF	**33.14**		**1.0005**	**1.0005**	**0**	**3.86E+07**	**1.53**	**Y**	**1.02**	**49.4**	**10368.317**	**0.112**
12678/12367-PeCDF	NotFnd		1.0085						1.02		10368.317	0.112
12379-PeCDF	NotFnd		1.0135						1.02		10368.317	0.112
12679-PeCDF	NotFnd		0.9936						1.02		10368.317	0.112
23467/12369-PeCDF	NotFnd		0.9971						1.02		10368.317	0.112
23478-PeCDF	**34.21**		**1.0006**	**1.0005**	**-0.2**	**3.93E+07**	**1.54**	**Y**	**1.02**	**52.7**	**10368.317**	**0.113**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		10368.317	0.112
12349-PeCDF	NotFnd		1.0101						1.02		10368.317	0.112
12389-PeCDF	35.26		1.0313	1.0314	+0.2	8.55E+06	1.56	Y	1.02	11.2	10368.317	0.112
123468-HxCDF	36.03		0.9635	0.9636	+0.2	8.07E+07	1.23	Y	1.19	128	4238.79	0.0521
124678/134678-HxCDF	NotFnd		0.9688						1.19		4238.79	0.0521
134679-HxCDF	NotFnd		0.9747						1.19		4238.79	0.0521
124679-HxCDF	NotFnd		0.9798						1.19		4238.79	0.0521
124689-HxCDF	NotFnd		0.9856						1.19		4238.79	0.0521
123467-HxCDF	NotFnd		0.9973						1.19		4238.79	0.0521
123478-HxCDF	**37.41**		**1.0004**	**1.0005**	**+0.2**	**3.25E+07**	**1.22**	**Y**	**1.27**	**52.5**	**4238.79**	**0.0564**
123678-HxCDF	**37.56**		**1.0004**	**1.0005**	**+0.2**	**3.71E+07**	**1.24**	**Y**	**1.15**	**51**	**4238.79**	**0.0482**
123479-HxCDF	NotFnd		1.0050						1.19		4238.79	0.0521
123469-HxCDF	NotFnd		1.0089						1.19		4238.79	0.0521
123679-HxCDF	NotFnd		0.9950						1.19		4238.79	0.0521
234678-HxCDF	**38.20**		**1.0004**	**1.0004**	**0**	**3.30E+07**	**1.22**	**Y**	**1.19**	**51.7**	**4238.79**	**0.05**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4238.79	0.0521
123789-HxCDF	**39.05**		**1.0003**	**1.0004**	**+0.2**	**2.66E+07**	**1.23**	**Y**	**1.16**	**50**	**4238.79**	**0.0557**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		4238.79	0.0521
1234678-HpCDF	**40.33**		**1.0003**	**1.0003**	**0**	**2.85E+07**	**1.02**	**Y**	**1.37**	**50.5**	**3346.015**	**0.0359**
1234679-HpCDF	NotFnd		1.0068						1.34		3346.015	0.0434
1234689-HpCDF	NotFnd		1.0102						1.34		3346.015	0.0434
1234789-HpCDF	**41.74**		**1.0003**	**1.0002**	**-0.3**	**2.17E+07**	**1.04**	**Y**	**1.31**	**50**	**3346.015**	**0.0528**
OCDF	**44.18**		**1.0003**	**1.0002**	**-0.3**	**3.05E+07**	**0.89**	**Y**	**1.07**	**102**	**3456.994**	**0.0985**
OCDF-a	44.17		1.0002	1.0002	0	1.91E+06	2.48	Y	0.07	103	3662.982	1.69

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211208C04	Analysis Date:	08-DEC-2021 13:46:16
Lab ID:	OPR2_18710_DF-RJ		

CPSM only

Window Defining Standards Results

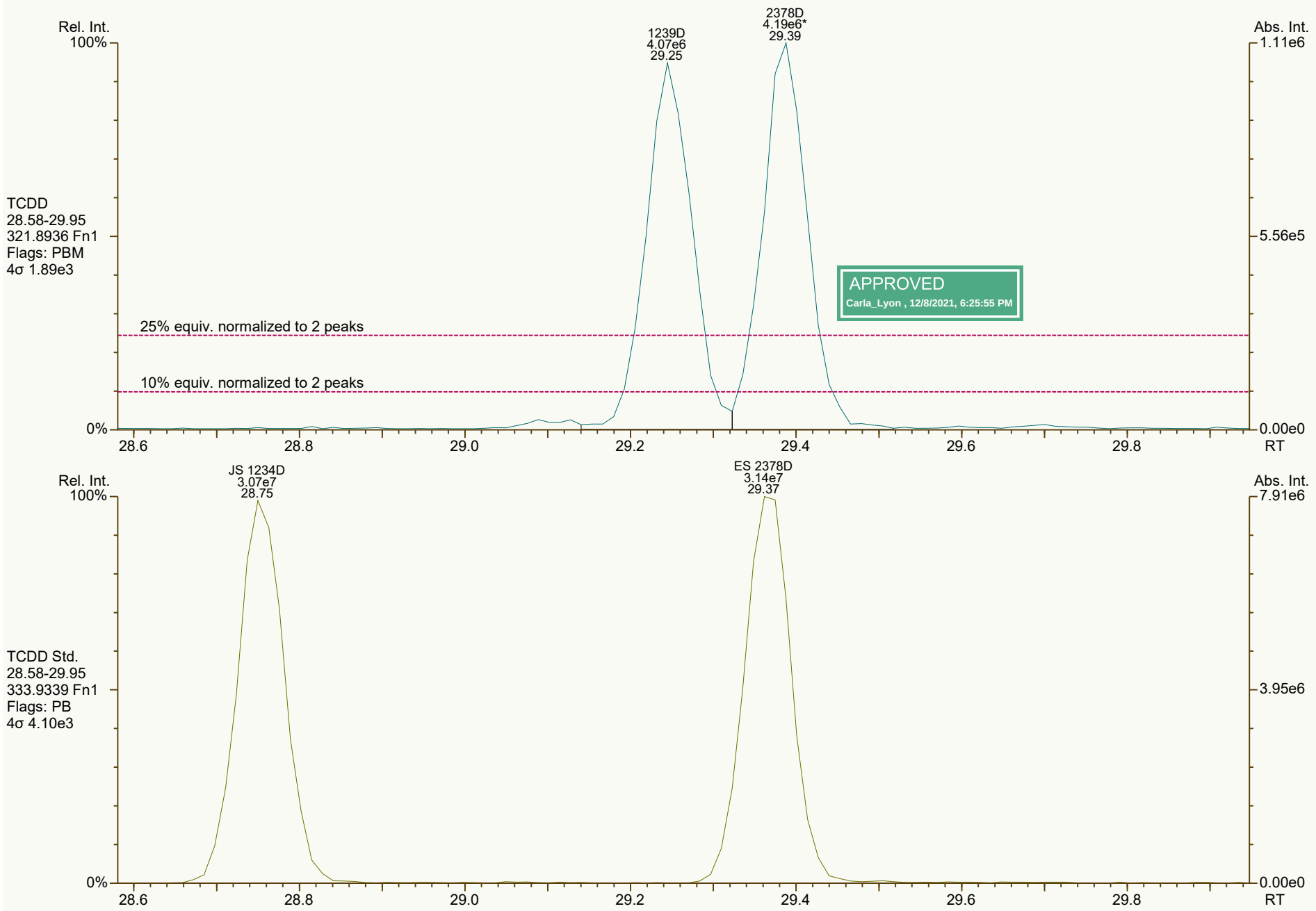
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.96	1289-TCDD	30.32
12479/12468-PeCDD	32.12	12389-PeCDD	34.97
124679/124689-HxCDD	36.66	123789-HxCDD	38.73
1234679-HpCDD	40.59	1234678-HpCDD	41.27
1368-TCDF	24.04	1289-TCDF	30.48
13468/12468-PeCDF	30.42	12389-PeCDF	35.26
123468-HxCDF	36.03	123789-HxCDF	39.05
1234678-HpCDF	40.33	1234789-HpCDF	41.74

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	29.25	2378-TCDD	29.39
2348-TCDF	28.46	2378-TCDF	28.56

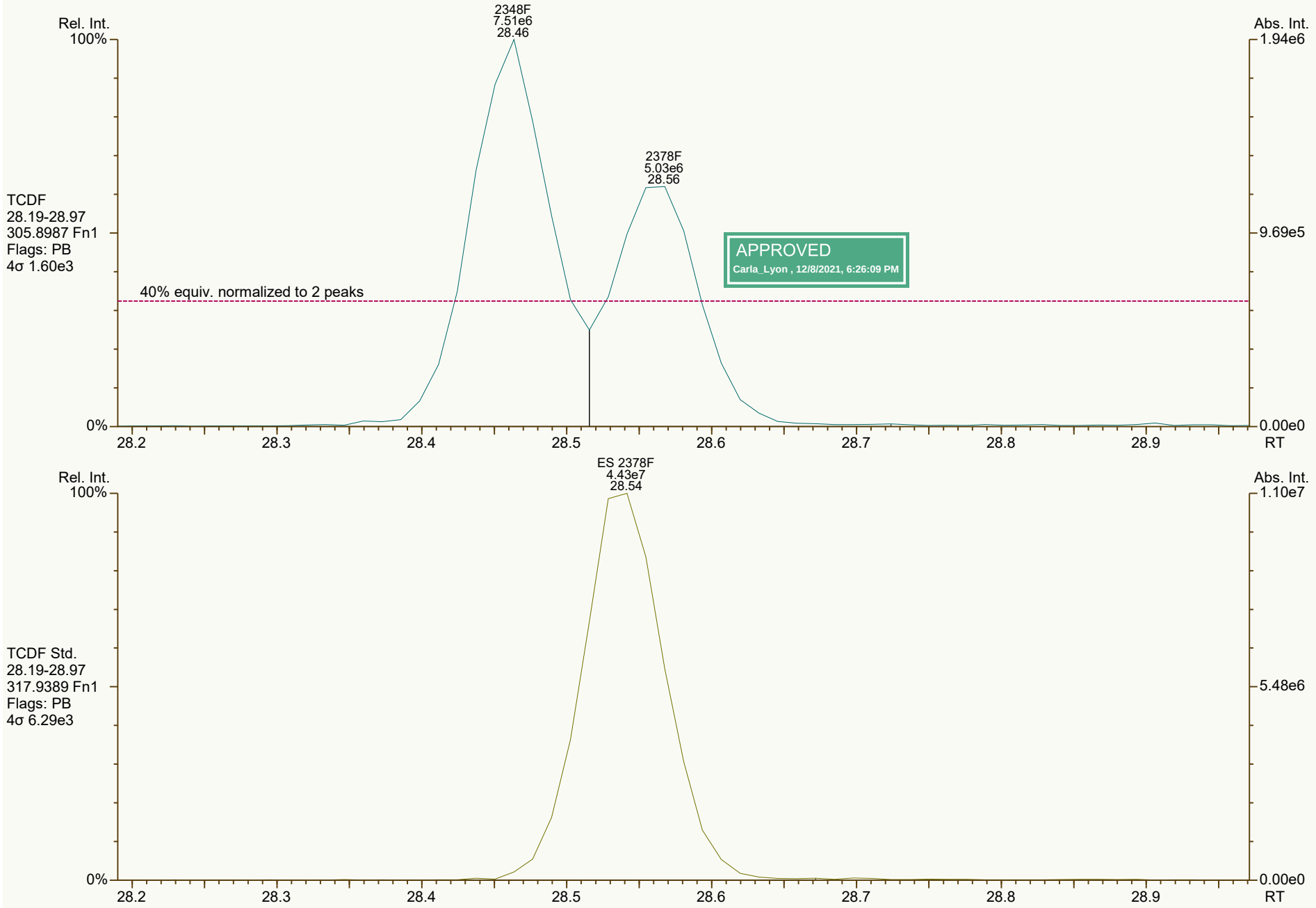
Processed: 08 Dec 2021 16:03 Analyst: TF

SGS ID: OPR2_18710_DF-RJ
Sample ID: 0_18710_OPR002
Acq: 08-Dec-2021 13:46:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211208C04

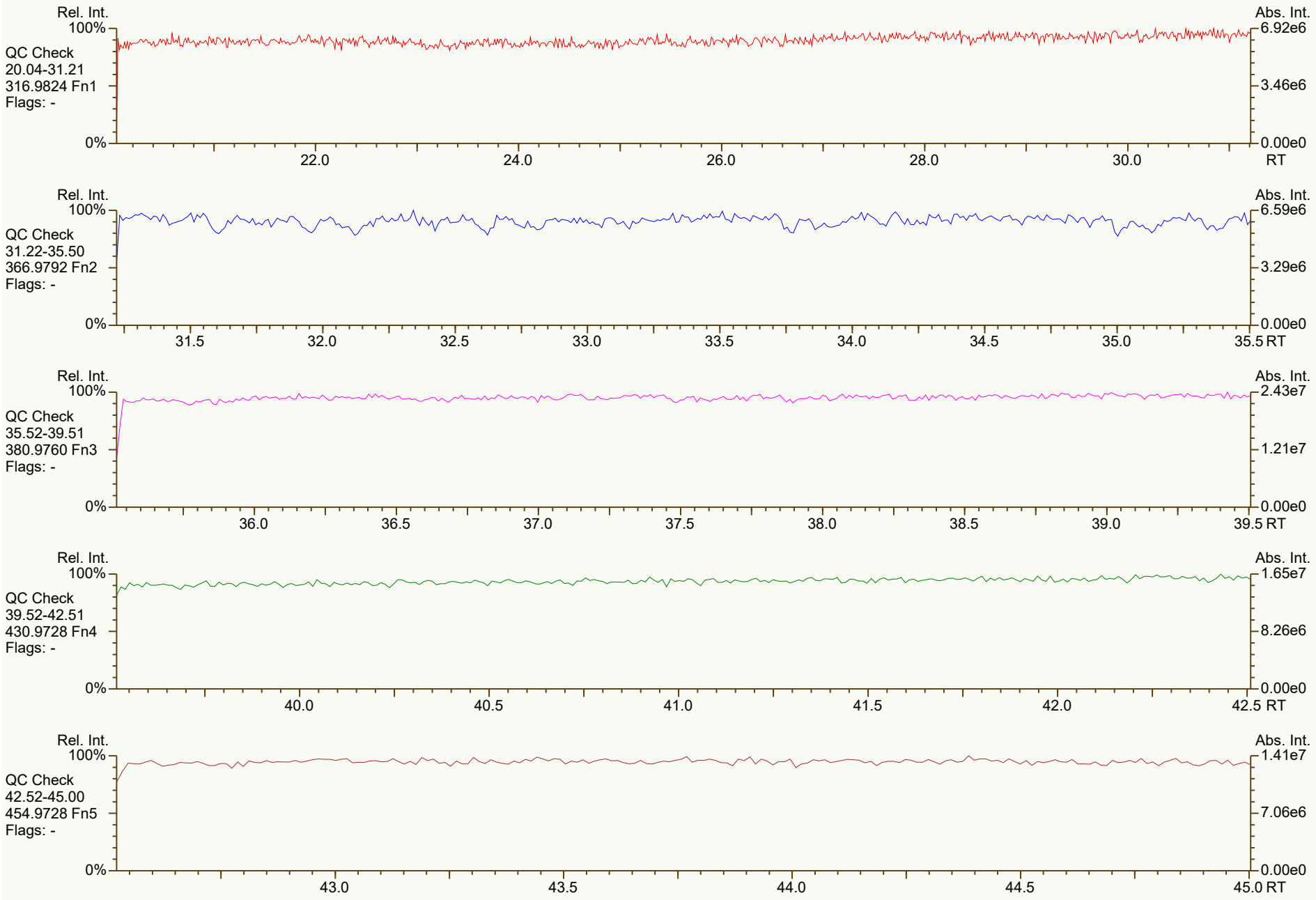


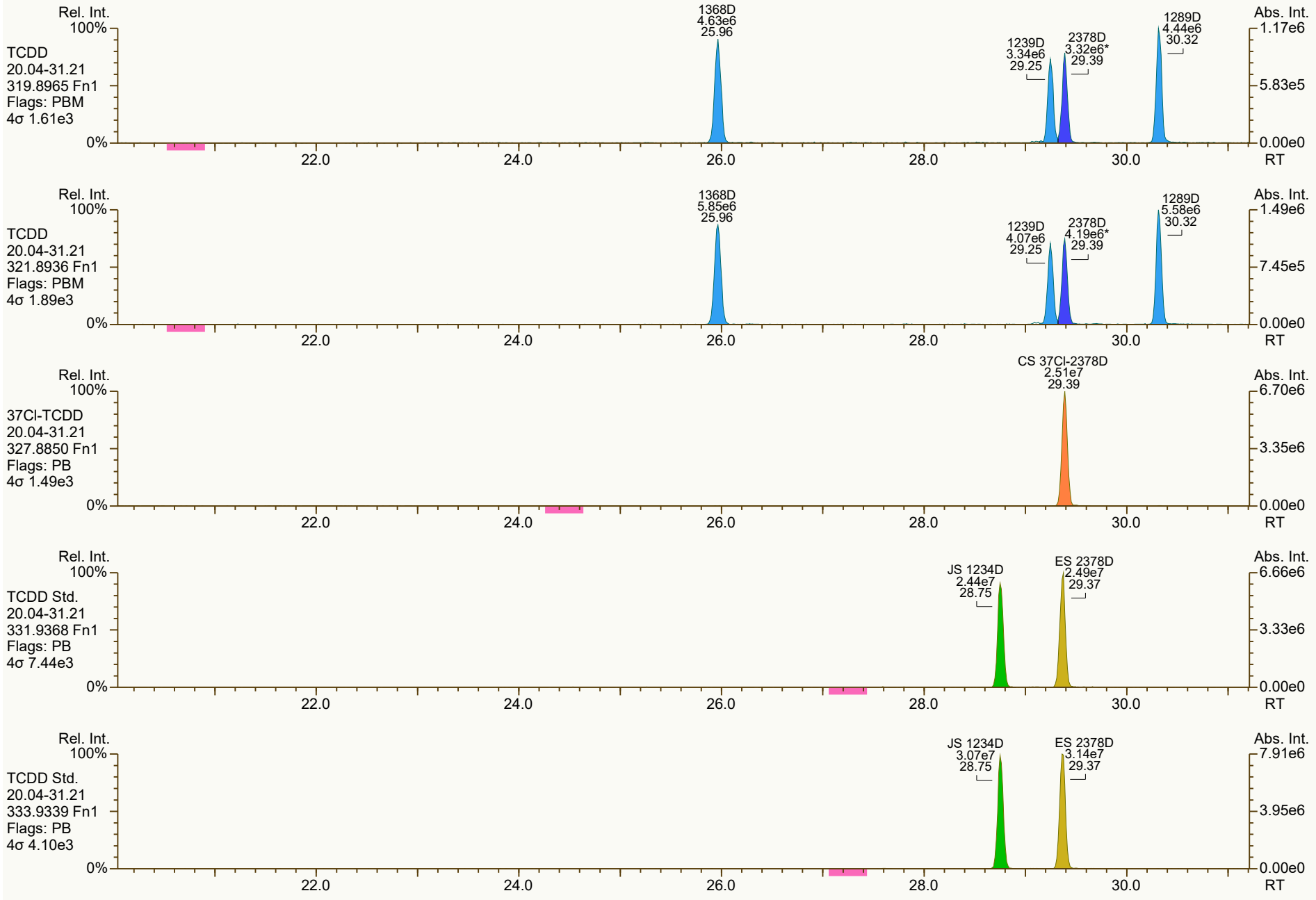
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF-RJ.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616
PKD: 08-Dec-2021 15:05 Printed: 08-Dec-2021 16:06

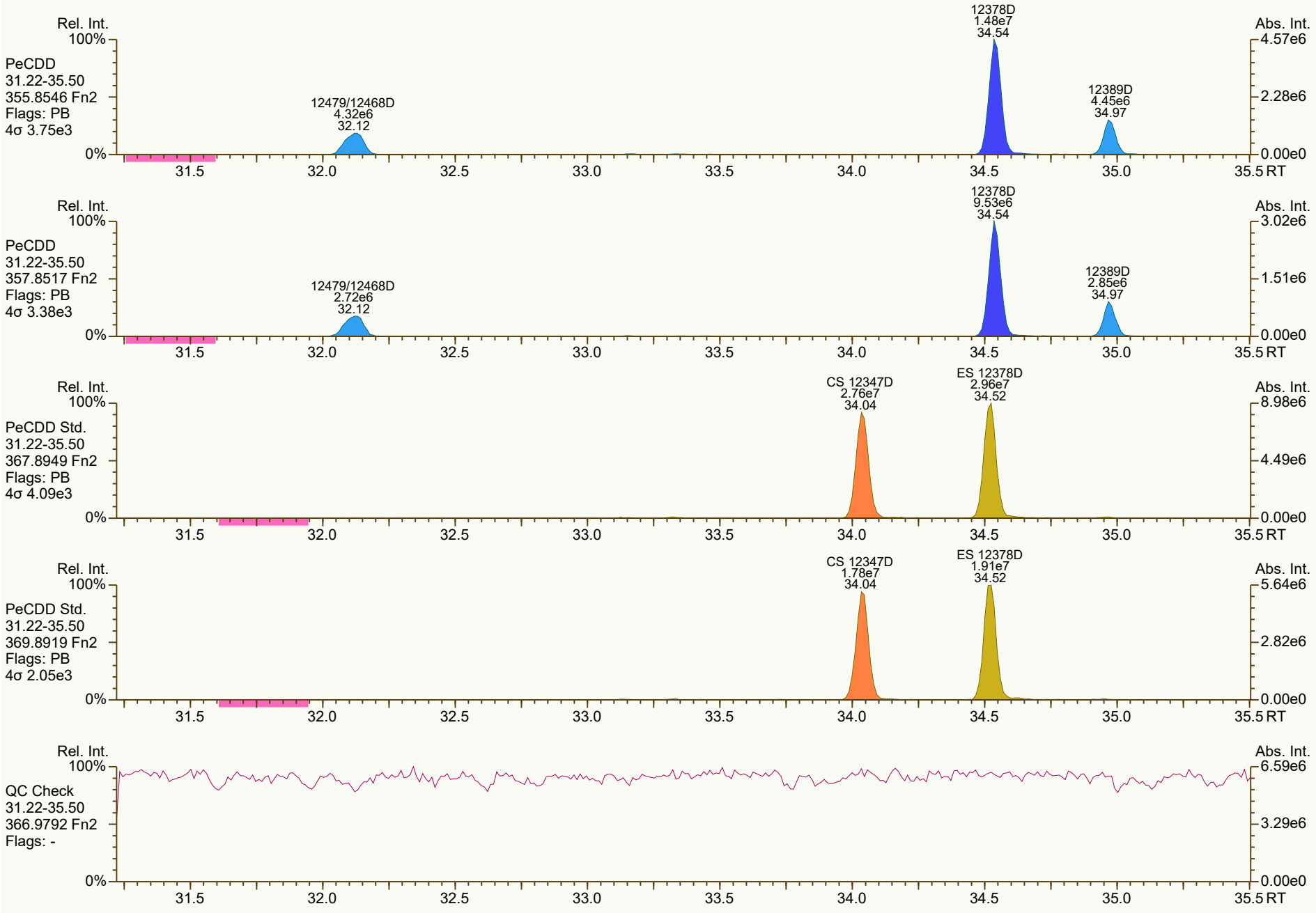
SGS ID: OPR2_18710_DF-RJ
Sample ID: 0_18710_OPR002
Acq: 08-Dec-2021 13:46:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211208C04

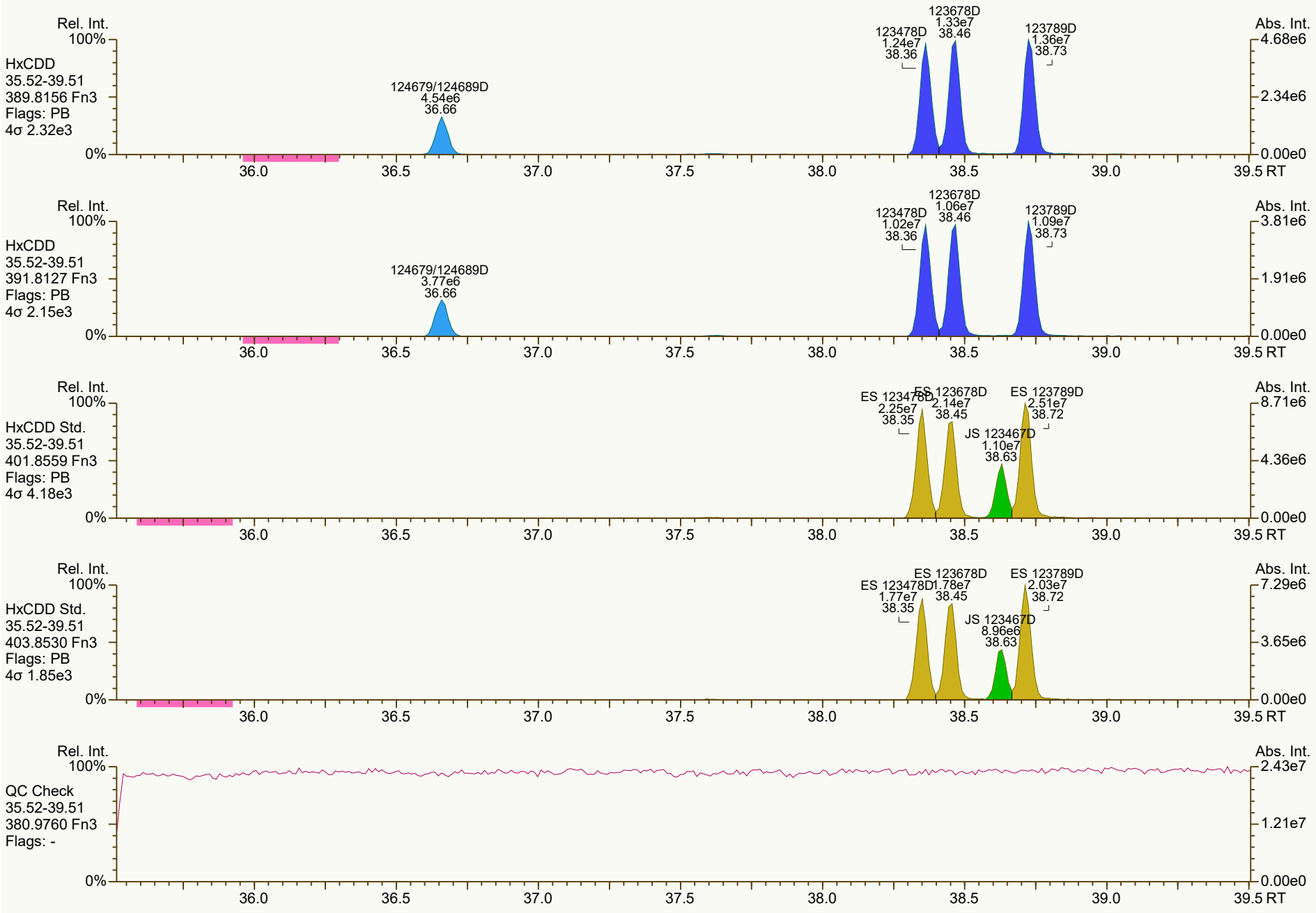


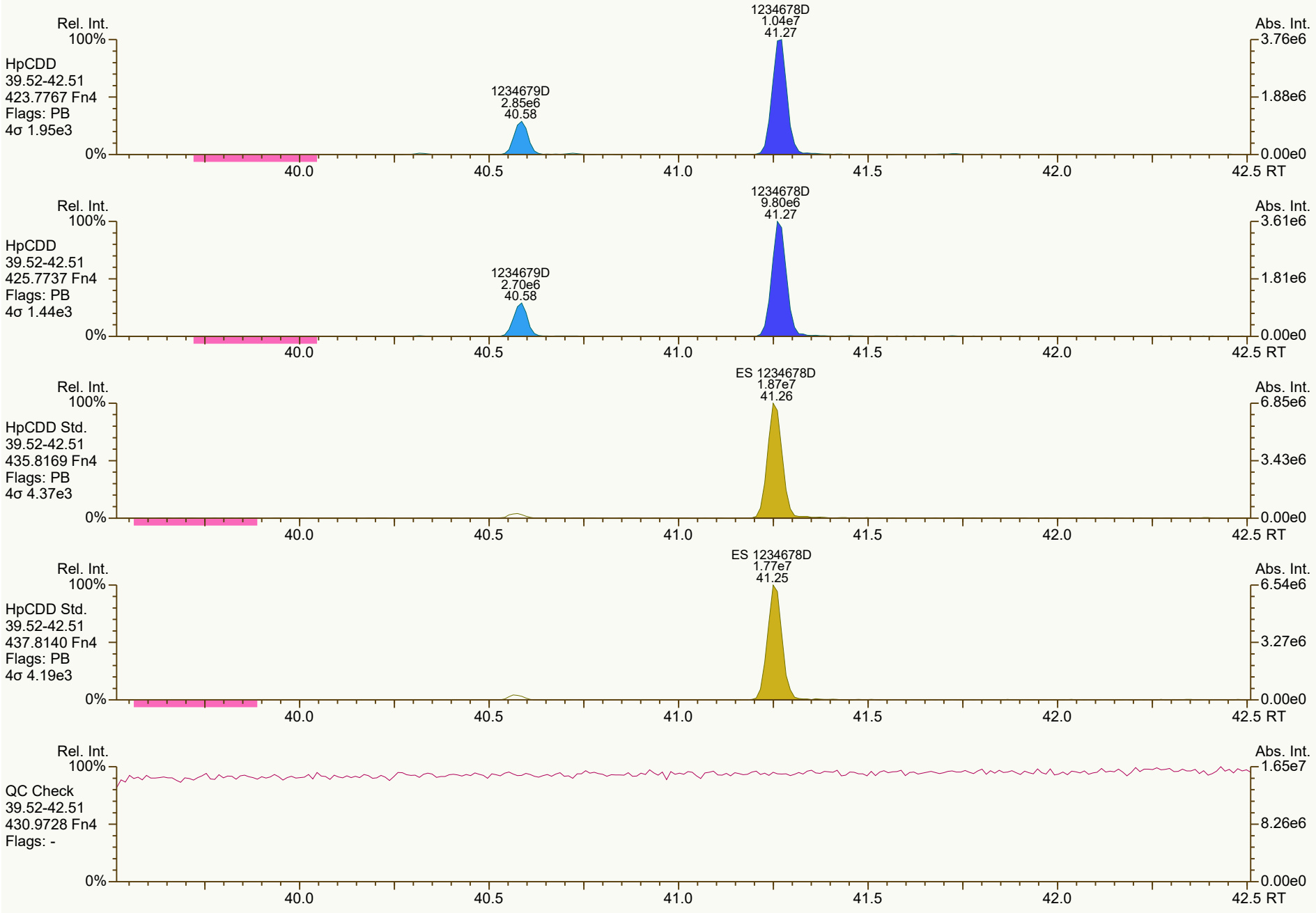
Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF-RJ.utp_res, saved 08-Dec-2021 15:59 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616
PKD: 08-Dec-2021 15:05 Printed: 08-Dec-2021 16:06

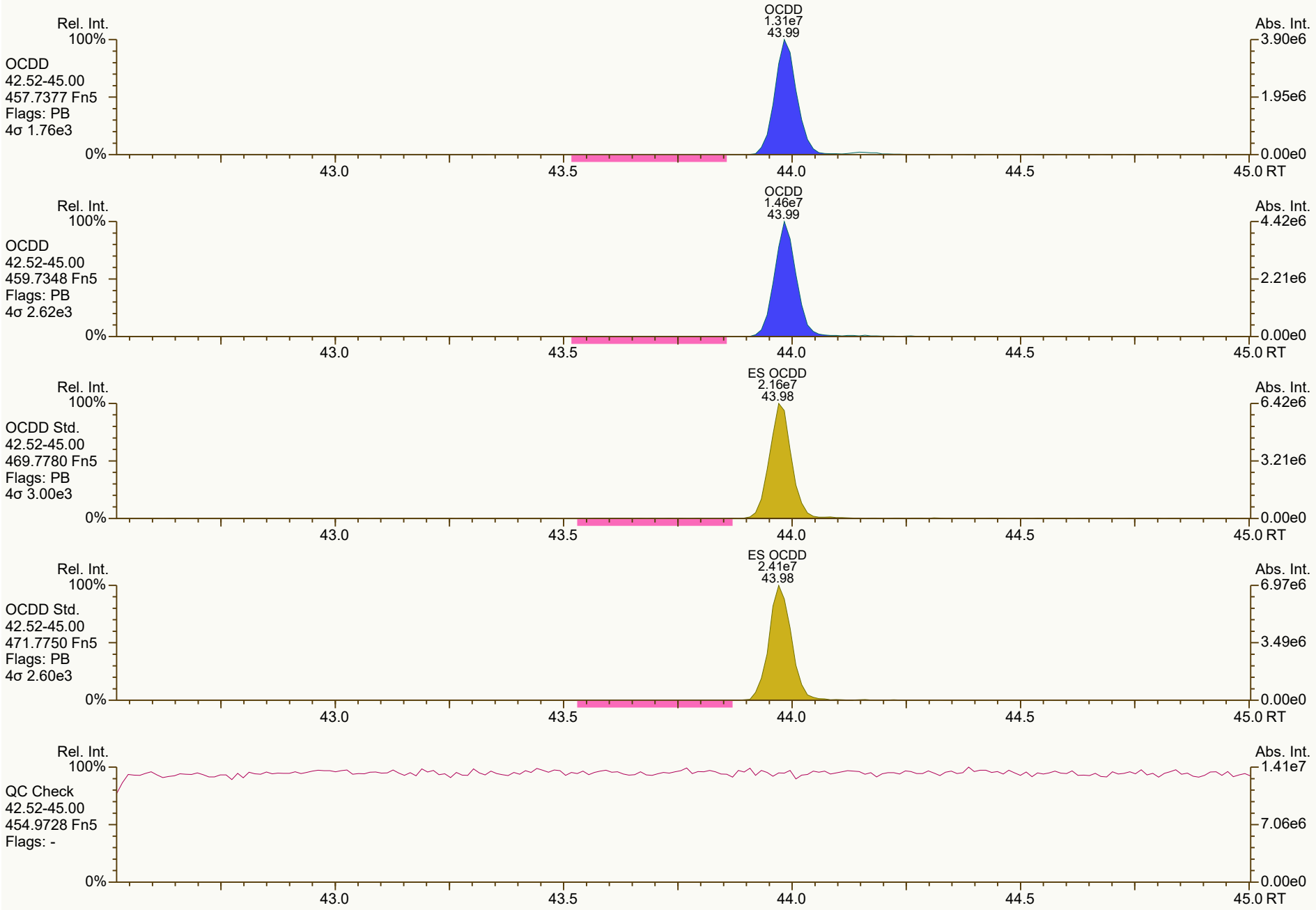

Rel. Int.
100%
QC Check
20.04-31.21
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.92e6
3.46e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
31.22-35.50
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.59e6
3.29e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
QC Check
35.52-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.43e7
1.21e7
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.65e7
8.26e6
0.00e0
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.41e7
7.06e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

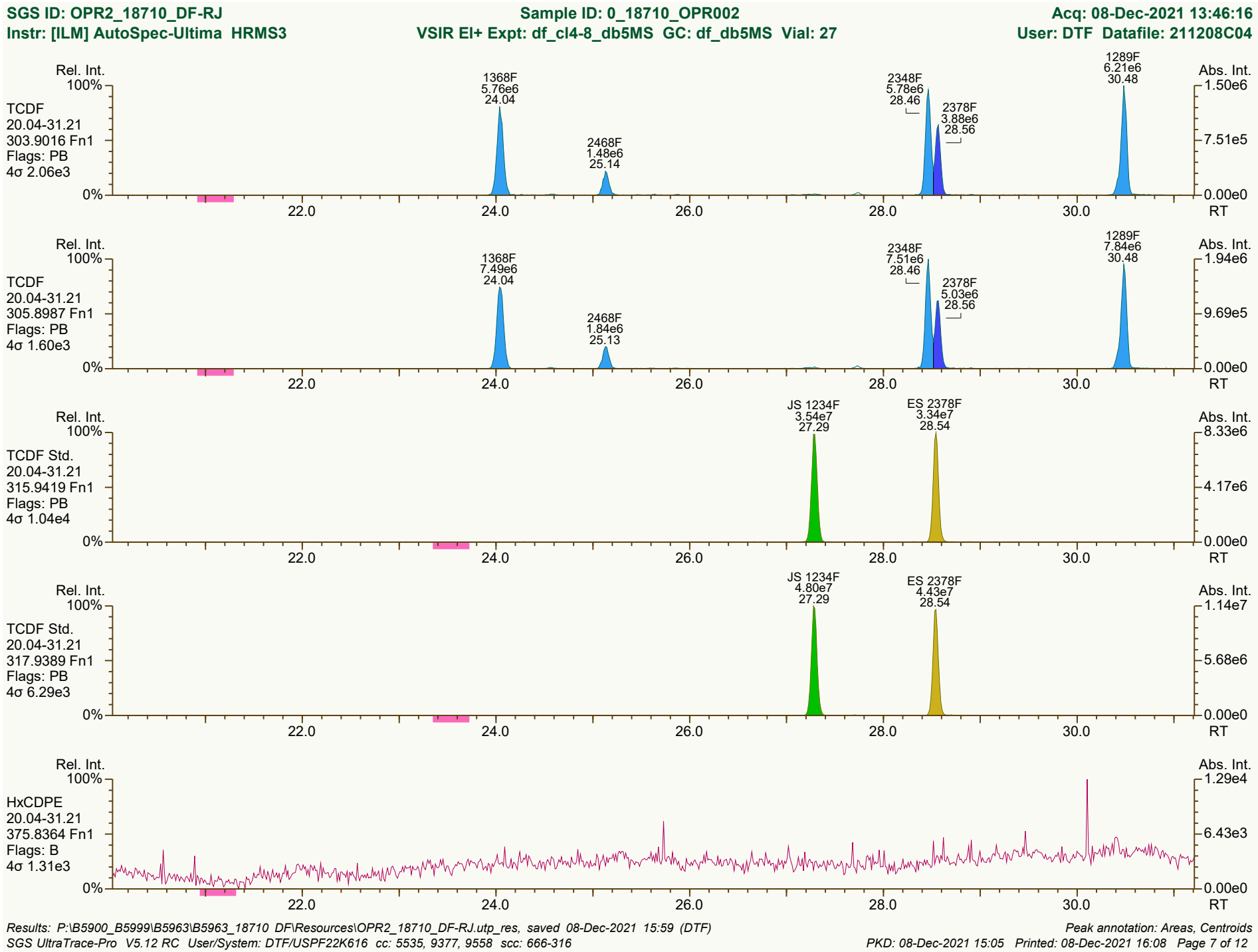

Rel. Int.
100%
TCDD
20.04-31.21
319.8965 Fn1
Flags: PBM
4σ 1.61e3
0%
1368D
4.63e6
25.96
1239D
3.34e6
29.25
2378D
3.32e6*
29.39
1289D
4.44e6
30.32
Abs. Int.
1.17e6
5.83e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.21
321.8936 Fn1
Flags: PBM
4σ 1.89e3
0%
1368D
5.85e6
25.96
1239D
4.07e6
29.25
2378D
4.19e6*
29.39
1289D
5.58e6
30.32
Abs. Int.
1.49e6
7.45e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.21
327.8850 Fn1
Flags: PB
4σ 1.49e3
0%
CS 37Cl-2378D
2.51e7
29.39
Abs. Int.
6.70e6
3.35e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.21
331.9368 Fn1
Flags: PB
4σ 7.44e3
0%
JS 1234D
2.44e7
28.75
ES 2378D
2.49e7
29.37
Abs. Int.
6.66e6
3.33e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.21
333.9339 Fn1
Flags: PB
4σ 4.10e3
0%
JS 1234D
3.07e7
28.75
ES 2378D
3.14e7
29.37
Abs. Int.
7.91e6
3.95e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
31.22-35.50
355.8546 Fn2
Flags: PB
4σ 3.75e3
12479/12468D
4.32e6
32.12
12378D
1.48e7
34.54
12389D
4.45e6
34.97
Abs. Int.
4.57e6
2.28e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD
31.22-35.50
357.8517 Fn2
Flags: PB
4σ 3.38e3
12479/12468D
2.72e6
32.12
12378D
9.53e6
34.54
12389D
2.85e6
34.97
Abs. Int.
3.02e6
1.51e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD Std.
31.22-35.50
367.8949 Fn2
Flags: PB
4σ 4.09e3
CS 12347D
2.76e7
34.04
ES 12378D
2.96e7
34.52
Abs. Int.
8.98e6
4.49e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDD Std.
31.22-35.50
369.8919 Fn2
Flags: PB
4σ 2.05e3
CS 12347D
1.78e7
34.04
ES 12378D
1.91e7
34.52
Abs. Int.
5.64e6
2.82e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
QC Check
31.22-35.50
366.9792 Fn2
Flags: -
Abs. Int.
6.59e6
3.29e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT

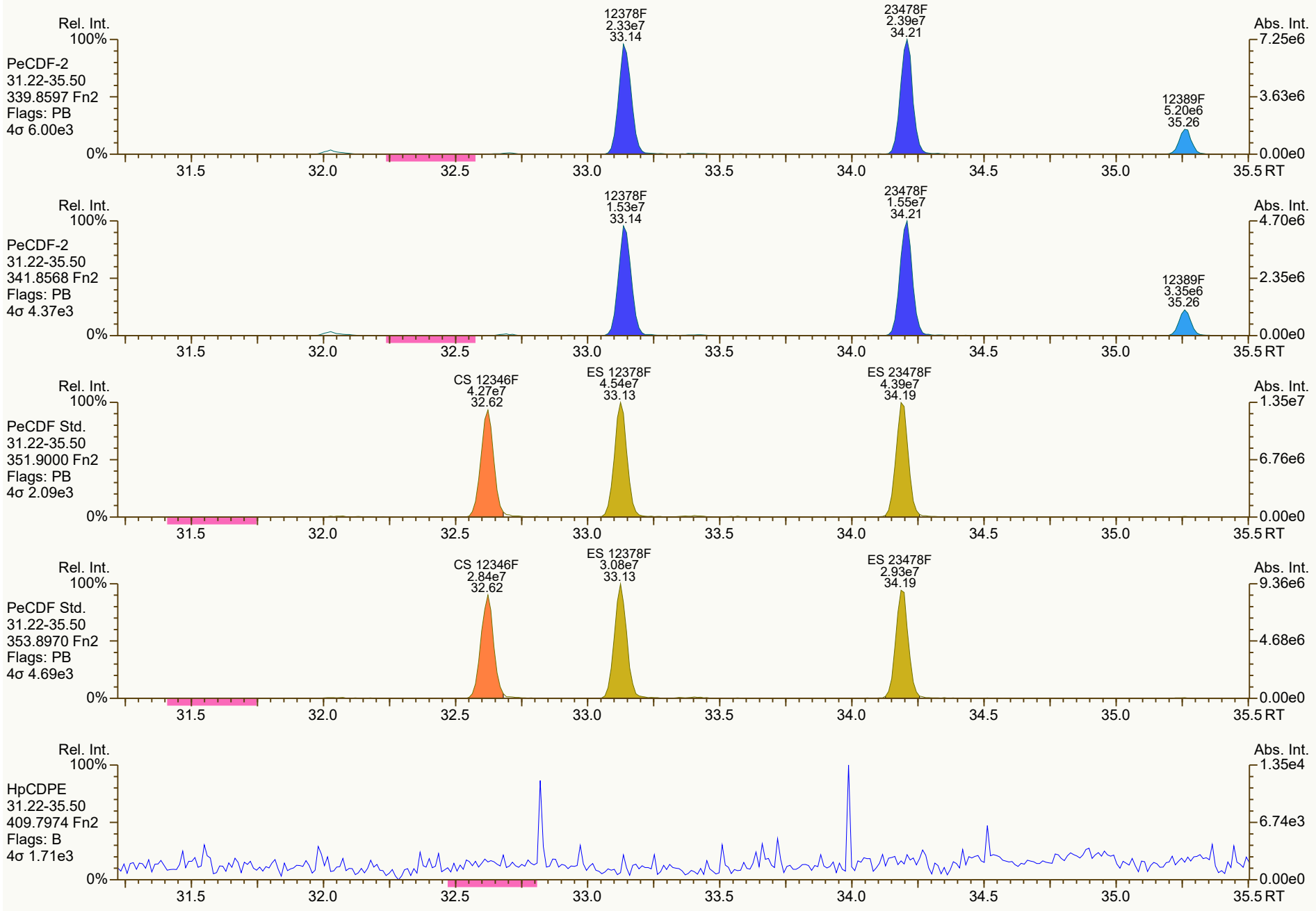

Rel. Int.
100%
HxCDD
35.52-39.51
389.8156 Fn3
Flags: PB
4σ 2.32e3
0%
124679/124689D
4.54e6
36.66
123678D
1.33e7
38.46
123478D
1.24e7
38.36
123789D
1.36e7
38.73
Abs. Int.
4.68e6
2.34e6
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.52-39.51
391.8127 Fn3
Flags: PB
4σ 2.15e3
0%
124679/124689D
3.77e6
36.66
123678D
1.06e7
38.46
123478D
1.02e7
38.36
123789D
1.09e7
38.73
Abs. Int.
3.81e6
1.91e6
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.52-39.51
401.8559 Fn3
Flags: PB
4σ 4.18e3
0%
ES 123478D
2.25e7
38.35
ES 123678D
2.14e7
38.45
JS 123467D
1.10e7
38.63
ES 123789D
2.51e7
38.72
Abs. Int.
8.71e6
4.36e6
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.52-39.51
403.8530 Fn3
Flags: PB
4σ 1.85e3
0%
ES 123478D
1.77e7
38.35
ES 123678D
1.78e7
38.45
JS 123467D
8.96e6
38.63
ES 123789D
2.03e7
38.72
Abs. Int.
7.29e6
3.65e6
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.52-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.43e7
1.21e7
0.00e0
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.51
423.7767 Fn4
Flags: PB
4σ 1.95e3
1234678D
1.04e7
41.27
1234679D
2.85e6
40.58
Abs. Int.
3.76e6
1.88e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.52-42.51
425.7737 Fn4
Flags: PB
4σ 1.44e3
1234678D
9.80e6
41.27
1234679D
2.70e6
40.58
Abs. Int.
3.61e6
1.81e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.52-42.51
435.8169 Fn4
Flags: PB
4σ 4.37e3
ES 1234678D
1.87e7
41.26
Abs. Int.
6.85e6
3.43e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.52-42.51
437.8140 Fn4
Flags: PB
4σ 4.19e3
ES 1234678D
1.77e7
41.25
Abs. Int.
6.54e6
3.27e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.52-42.51
430.9728 Fn4
Flags: -
Abs. Int.
1.65e7
8.26e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PB
4σ 1.76e3
0%
OCDD
1.31e7
43.99
Abs. Int.
3.90e6
1.95e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 2.62e3
0%
OCDD
1.46e7
43.99
Abs. Int.
4.42e6
2.21e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 3.00e3
0%
ES OCDD
2.16e7
43.98
Abs. Int.
6.42e6
3.21e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 2.60e3
0%
ES OCDD
2.41e7
43.98
Abs. Int.
6.97e6
3.49e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.41e7
7.06e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR2_18710_DF-RJ
Sample ID: 0_18710_OPR002
Acq: 08-Dec-2021 13:46:16
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 211208C04
Rel. Int.
Abs. Int.
TCDF
20.04-31.21
303.9016 Fn1
Flags: PB
4σ 2.06e3
1368F 5.76e6 24.04
2468F 1.48e6 25.14
2348F 5.78e6 28.46
2378F 3.88e6 28.56
1289F 6.21e6 30.48
1.50e6
7.51e5
0.00e0
TCDF
20.04-31.21
305.8987 Fn1
Flags: PB
4σ 1.60e3
1368F 7.49e6 24.04
2468F 1.84e6 25.13
2348F 7.51e6 28.46
2378F 5.03e6 28.56
1289F 7.84e6 30.48
1.94e6
9.69e5
0.00e0
TCDF Std.
20.04-31.21
315.9419 Fn1
Flags: PB
4σ 1.04e4
JS 1234F 3.54e7 27.29
ES 2378F 3.34e7 28.54
8.33e6
4.17e6
0.00e0
TCDF Std.
20.04-31.21
317.9389 Fn1
Flags: PB
4σ 6.29e3
JS 1234F 4.80e7 27.29
ES 2378F 4.43e7 28.54
1.14e7
5.68e6
0.00e0
HxCDPE
20.04-31.21
375.8364 Fn1
Flags: B
4σ 1.31e3
1.29e4
6.43e3
0.00e0
100%
0%
22.0
24.0
26.0
28.0
30.0
RT

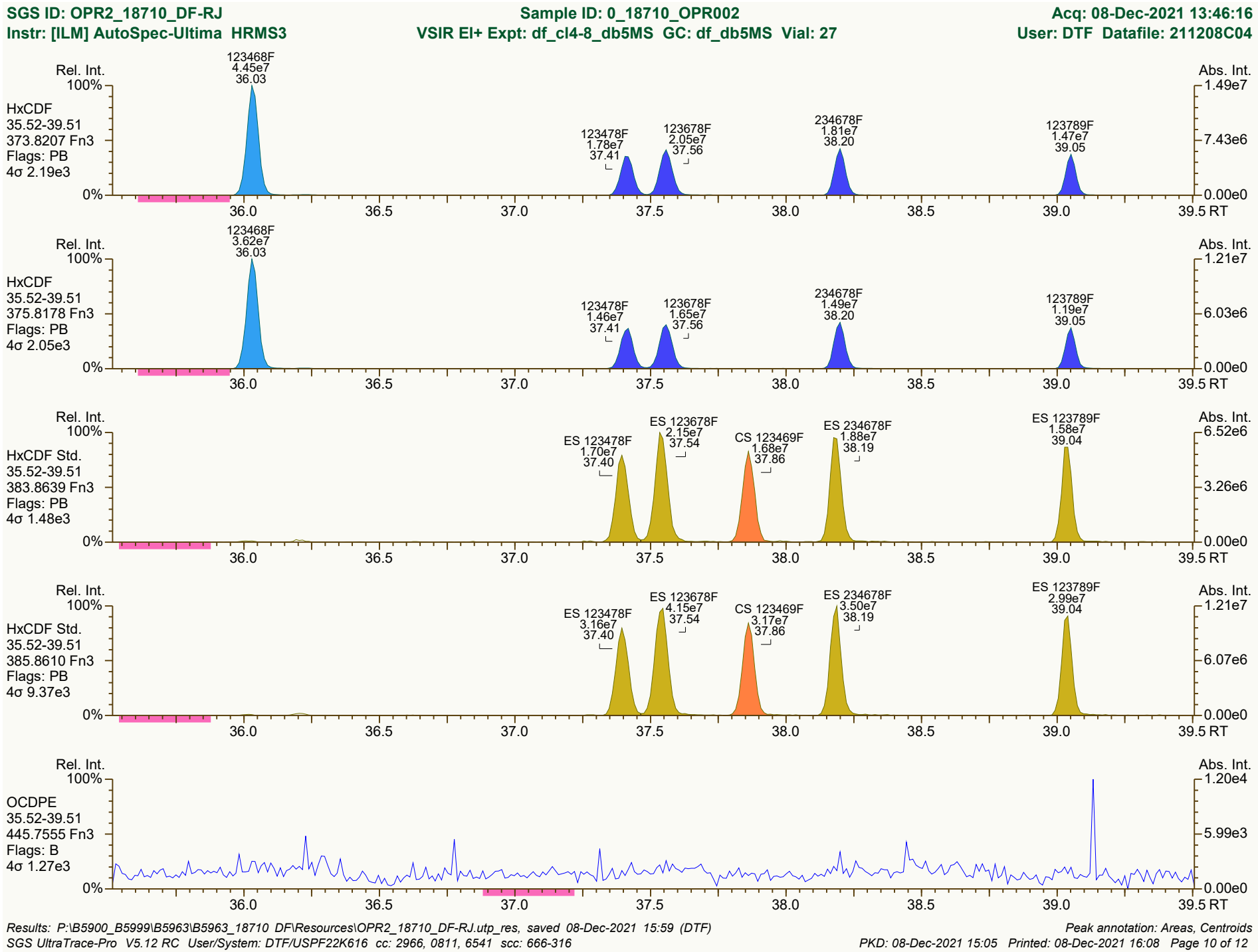

Rel. Int.
100%
0%
PeCDF-1
20.04-31.21
339.8597 Fn1
Flags: PB
4σ 1.53e3
13468/12468F
4.58e7
30.42
Abs. Int.
1.25e7
6.23e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
20.04-31.21
341.8568 Fn1
Flags: PB
4σ 2.44e3
13468/12468F
3.00e7
30.42
Abs. Int.
8.26e6
4.13e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
20.04-31.21
316.9824 Fn1
Flags: -
Abs. Int.
6.92e6
3.46e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
31.22-35.50
339.8597 Fn2
Flags: PB
4σ 6.00e3
0%
12378F
2.33e7
33.14
23478F
2.39e7
34.21
12389F
5.20e6
35.26
Abs. Int.
7.25e6
3.63e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF-2
31.22-35.50
341.8568 Fn2
Flags: PB
4σ 4.37e3
0%
12378F
1.53e7
33.14
23478F
1.55e7
34.21
12389F
3.35e6
35.26
Abs. Int.
4.70e6
2.35e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF Std.
31.22-35.50
351.9000 Fn2
Flags: PB
4σ 2.09e3
0%
CS 12346F
4.27e7
32.62
ES 12378F
4.54e7
33.13
ES 23478F
4.39e7
34.19
Abs. Int.
1.35e7
6.76e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
PeCDF Std.
31.22-35.50
353.8970 Fn2
Flags: PB
4σ 4.69e3
0%
CS 12346F
2.84e7
32.62
ES 12378F
3.08e7
33.13
ES 23478F
2.93e7
34.19
Abs. Int.
9.36e6
4.68e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT
Rel. Int.
100%
HpCDPE
31.22-35.50
409.7974 Fn2
Flags: B
4σ 1.71e3
0%
Abs. Int.
1.35e4
6.74e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
35.5 RT

SGS ID: OPR2_18710_DF-RJ
Instr: [ILM] AutoSpec-Ultima HRMS3

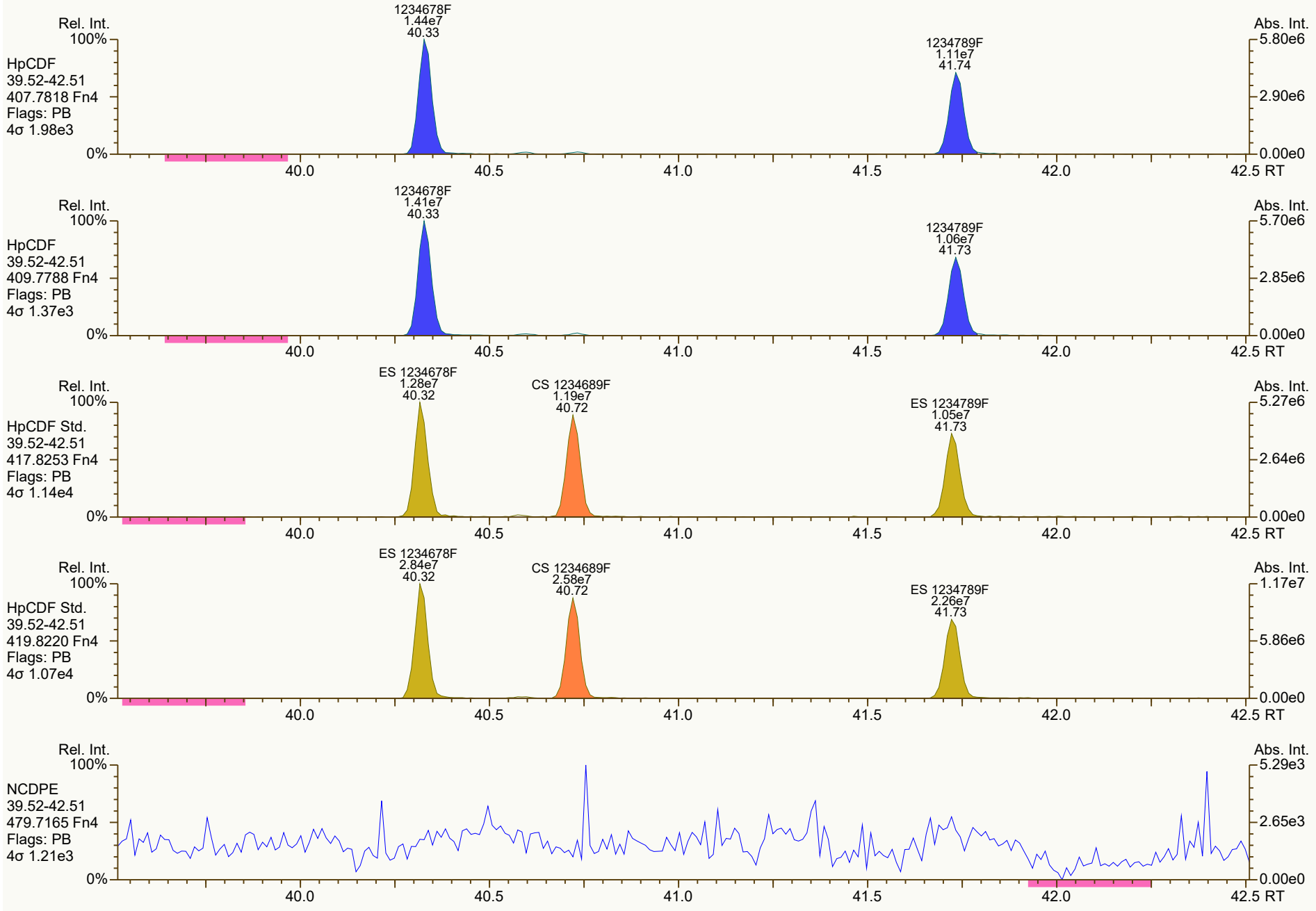
Sample ID: 0_18710_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

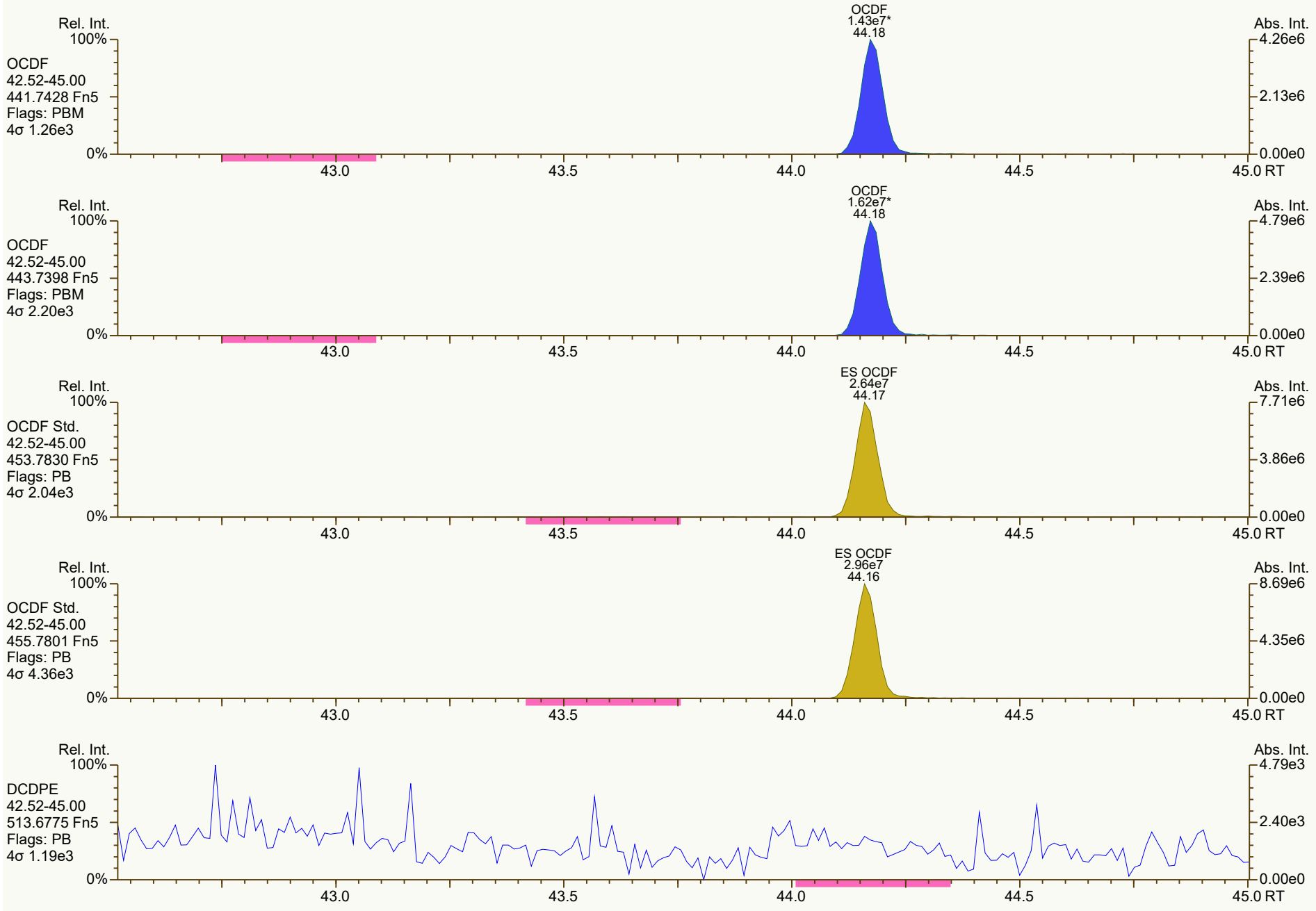
Acq: 08-Dec-2021 13:46:16
User: DTF Datafile: 211208C04



Results: P:\B5900_B5999\B5963\B5963_18710 DF\Resources\OPR2_18710_DF-RJ.utp_res, saved 08-Dec-2021 15:59 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2966, 0811, 6541 scc: 666-316

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 15:05 Printed: 08-Dec-2021 16:08 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.51
407.7818 Fn4
Flags: PB
4σ 1.98e3
1234678F
1.44e7
40.33
1234789F
1.11e7
41.74
Abs. Int.
5.80e6
2.90e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF
39.52-42.51
409.7788 Fn4
Flags: PB
4σ 1.37e3
1234678F
1.41e7
40.33
1234789F
1.06e7
41.73
Abs. Int.
5.70e6
2.85e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.52-42.51
417.8253 Fn4
Flags: PB
4σ 1.14e4
ES 1234678F
1.28e7
40.32
CS 1234689F
1.19e7
40.72
ES 1234789F
1.05e7
41.73
Abs. Int.
5.27e6
2.64e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.52-42.51
419.8220 Fn4
Flags: PB
4σ 1.07e4
ES 1234678F
2.84e7
40.32
CS 1234689F
2.58e7
40.72
ES 1234789F
2.26e7
41.73
Abs. Int.
1.17e7
5.86e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
NCDPE
39.52-42.51
479.7165 Fn4
Flags: PB
4σ 1.21e3
Abs. Int.
5.29e3
2.65e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PBM
4σ 1.26e3
0%
OCDF
1.43e7*
44.18
Abs. Int.
4.26e6
2.13e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: PBM
4σ 2.20e3
0%
OCDF
1.62e7*
44.18
Abs. Int.
4.79e6
2.39e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PB
4σ 2.04e3
0%
ES OCDF
2.64e7
44.17
Abs. Int.
7.71e6
3.86e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PB
4σ 4.36e3
0%
ES OCDF
2.96e7
44.16
Abs. Int.
8.69e6
4.35e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: PB
4σ 1.19e3
0%
Abs. Int.
4.79e3
2.40e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120221-S-SPS-SW-B-9H1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.12 g	Lab Sample ID	B5964_18819_DF_006	Date Extracted:	10-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	76.2 %	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	14:39:09

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	56.3				ES 2378-TCDD	82.2	
12378-PeCDD	1.26			J	ES 12378-PeCDD	83.9	
123478-HxCDD	ND	0.647			ES 123478-HxCDD	78	
123678-HxCDD	2.62				ES 123678-HxCDD	90.5	
123789-HxCDD	2.29			J	ES 123789-HxCDD	77.3	
1234678-HpCDD	69.4				ES 1234678-HpCDD	86.7	
OCDD	1,310				ES OCDD	82.8	
2378-TCDF	176				ES 2378-TCDF	75.7	
12378-PeCDF	5.16				ES 12378-PeCDF	80.1	
23478-PeCDF	5.92				ES 23478-PeCDF	83.6	
123478-HxCDF	7.81				ES 123478-HxCDF	87.7	
123678-HxCDF	2.91				ES 123678-HxCDF	93.3	
234678-HxCDF	EMPC		1.51	J	ES 234678-HxCDF	80.1	
123789-HxCDF	ND	0.515			ES 123789-HxCDF	87.1	
1234678-HpCDF	46.9				ES 1234678-HpCDF	97.4	
1234789-HpCDF	3.44				ES 1234789-HpCDF	96.2	
OCDF	884				ES OCDF	98	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.9	
Total TCDD	60.3		65.5		CS 12347-PeCDD	91.8	
Total PeCDD	7.75		11.3		CS 12346-PeCDF	85.6	
Total HxCDD	48.1		49.6		CS 123469-HxCDF	104	
Total HpCDD	188		188		CS 1234689-HpCDF	114	
Total TCDF	334		342				
Total PeCDF	37.8		38.8				
Total HxCDF	33.2		37.6				
Total HpCDF	80.8		80.8				
Total PCDD/Fs	**2,980**		**3,000**				
WHO-2005 TEQs							
TEQ: ND=0	80.5		80.6				
TEQ: ND=DL/2	80.5	1.09	80.7				
TEQ: ND=DL	80.6	2.18	80.7				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: 11215131-120221-S-SPS-SW-B-9H1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.12 g	Lab Sample ID:	B5964_18819_DF_006	Date Extracted:	10-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	76.2 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	14:39:09

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[1.59]		12479/12468D	2.82		124679/124689D	28.9		1234679D	118	
1379D	(0.639)		12469D	3.67		123468D	[1.52]	J	1234678D	69.4	
1369D	(0.639)		12368D	[1]	J	123679/123689D	14.3				
1469D	4.05		12478D	[0.685]	J	123469D	(0.645)				
1247D...[4]	(0.639)		12379D	(0.915)		123478D	(0.647)				
1378D	(0.639)		12369D...[3]	[1.82]	J	123678D	2.62				
1268D	(0.639)		12346/12347D	(0.915)		123467D	(0.645)				
1478D	(0.639)		12378D	1.26	J	123789D	2.29	J	**Conc.**	188	
1279D	(0.639)		12367D	(0.915)					**EMPC**	188	
1234/1269D	(0.639)		12389D	(0.915)							
1236D	(0.639)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	(0.639)									**(pg/g)**	
1239D	(0.639)								OCDD	1310	
2378D	56.3										
1278D	[3.65]										
1267D	(0.639)										
1289D	(0.639)										
Conc.	60.3		**Conc.**	7.75		**Conc.**	48.1				
EMPC	65.5		**EMPC**	11.3		**EMPC**	49.6				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	80.5	80.6
TEQ: ND=DL/2	80.5	80.7
TEQ: ND=DL	80.6	80.7

	Conc.	EMPC
Total PCDD/Fs	2,980	3,000

Checkcode: 530-035-MYN

Report Created: 21-Jan-2022 10:50 Analyst: MS

Sample ID: 11215131-120221-S-SPS-SW-B-9H1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.12 g	Lab Sample ID:	B5964_18819_DF_006	Date Extracted:	10-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	76.2 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	14:39:09

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.618]		13468/12468F	10.7		123468F	[2.92]		1234678F	46.9	
1468F	1.35		13678F...[3]	1.75	J	124678/134678F	11		1234679F	2.62	
2468F	4		12368F...[3]	8.76		134679F	(0.483)		1234689F	27.9	
1346/1246F	(0.705)		14678F	(0.468)		124679F	(0.483)		1234789F	3.44	
1347F...[3]	[3.78]		13479F	(0.468)		124689F	9.32				
1348F	[0.904]		13469/12479F	(0.468)		123467F	0.945	J			
1248F...[3]	9.42		12346F	(0.468)		123478F	7.81				
1268F	4.63		23468/12469F	1.91	J	123678F	2.91				
1467F	(0.705)		12347F	[0.439]	J	123479F	(0.483)				
1478F	8.04		12348F	1.14	J	123469F	(0.483)				
1369/1237F	[1.41]		12378F	5.16		123679F	(0.483)				
2467F	(0.705)		12678/12367F	2.45	J	234678F	[1.51]	J	**Conc.**	80.8	
2368F	6.71		12379F	(0.468)		234678/123689F	0		**EMPC**	80.8	
1238F...[5]	8.29		12679F	(0.468)		123689F	(0.483)				
1278F	72.4		23467/12369F	[0.564]	J	123789F	(0.515)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.705)		23478F	5.92		123789/123489F	0				
1267F	4.37		23478/12489F	0		123489F	1.14	J	OCDF	884	
2346/1249F	(0.705)		12489F	(0.468)							
2347/1279F	[1.34]		12349F	(0.468)							
2348F	11		12389F	(0.468)							
2378F	176										
2367/3467F	14.3										
1269F	1.89										
1239F	(0.705)										
1289F	11.6										
Conc.	334		**Conc.**	37.8		**Conc.**	33.2				
EMPC	342		**EMPC**	38.8		**EMPC**	37.6				

Checkcode: 530-035-MYN

Report Created: 21-Jan-2022 10:50 Analyst: MS

Sample ID: 11215131-120221-S-SPS-SW-B-9H1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5964_18819_DF_006
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.12 g	QC Batch No.:	18819
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	20-Jan-2022 14:39
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	56.3		0.639	56.3	56.3	56.3
12378-PeCDD	1.26	J	0.915	0.631	1.26	1.26
123478-HxCDD	(0.647)		0.647	(0.0647)	(0.0647)	(0.0647)
123678-HxCDD	2.62		0.612	0.262	0.262	0.262
123789-HxCDD	2.29	J	0.679	0.229	0.229	0.229
1234678-HpCDD	69.4		0.598	0.694	0.694	0.694
OCDD	1310		0.782	1.31	0.131	0.392
2378-TCDF	176		0.705	17.6	17.6	17.6
12378-PeCDF	5.16		0.485	0.258	0.258	0.155
23478-PeCDF	5.92		0.451	2.96	2.96	1.78
123478-HxCDF	7.81		0.481	0.781	0.781	0.781
123678-HxCDF	2.91		0.421	0.291	0.291	0.291
234678-HxCDF	[1.51]	J	0.533	[0.151]	[0.151]	[0.151]
123789-HxCDF	(0.515)		0.515	(0.0515)	(0.0515)	(0.0515)
1234678-HpCDF	46.9		0.259	0.469	0.469	0.469
1234789-HpCDF	3.44		0.347	0.0344	0.0344	0.0344
OCDF	884		0.607	0.884	0.0884	0.265

TEQ Summaries			
EMPC = 0, ND = 0	82.6	81.3	80.5
EMPC = 0, ND = DL / 2	82.7	81.4	80.5
EMPC = 0, ND = DL	82.8	81.4	80.6
EMPC = 0, < J-level = 0	81.8	79.8	79
EMPC = EMPC, ND = 0	82.8	81.5	80.6
EMPC = EMPC, ND = DL / 2	82.9	81.5	80.7
EMPC = EMPC, ND = DL	82.9	81.6	80.7
EMPC = EMPC, < J-level = 0	81.8	79.8	79

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Checkcode: 530-035-MYN

Sample ID: Method Blank B5964_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.984			ES 2378-TCDD	78.2	
12378-PeCDD	ND	0.644			ES 12378-PeCDD	93.4	
123478-HxCDD	ND	0.522			ES 123478-HxCDD	80.8	
123678-HxCDD	ND	0.481			ES 123678-HxCDD	92.6	
123789-HxCDD	ND	0.468			ES 123789-HxCDD	83.7	
1234678-HpCDD	ND	0.46			ES 1234678-HpCDD	89.9	
OCDD	ND	1.04			ES OCDD	70.7	
2378-TCDF	ND	0.616			ES 2378-TCDF	86.7	
12378-PeCDF	ND	0.355			ES 12378-PeCDF	91	
23478-PeCDF	ND	0.327			ES 23478-PeCDF	93.6	
123478-HxCDF	ND	0.33			ES 123478-HxCDF	93.7	
123678-HxCDF	ND	0.321			ES 123678-HxCDF	99.4	
234678-HxCDF	ND	0.437			ES 234678-HxCDF	79.2	
123789-HxCDF	ND	0.448			ES 123789-HxCDF	84	
1234678-HpCDF	ND	0.226			ES 1234678-HpCDF	113	
1234789-HpCDF	ND	0.354			ES 1234789-HpCDF	91.8	
OCDF	ND	0.655			ES OCDF	84.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	79.4	
Total TCDD	ND	0.984	ND		CS 12347-PeCDD	104	
Total PeCDD	ND	0.644	ND		CS 12346-PeCDF	96.3	
Total HxCDD	ND	0.489	ND		CS 123469-HxCDF	108	
Total HpCDD	ND	0.46	ND		CS 1234689-HpCDF	119	
Total TCDF	ND	0.616	ND				
Total PeCDF	ND	0.341	ND				
Total HxCDF	ND	0.376	ND				
Total HpCDF	ND	0.279	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	1.06	1.06	1.06				
TEQ: ND=DL	2.11	2.11	2.11				

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Sample ID: Method Blank B5964_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.984)		12479/12468D	(0.644)		124679/124689D	(0.489)		1234679D	(0.46)	
1379D	(0.984)		12469D	(0.644)		123468D	(0.489)		1234678D	(0.46)	
1369D	(0.984)		12368D	(0.644)		123679/123689D	(0.489)				
1469D	(0.984)		12478D	(0.644)		123469D	(0.489)				
1247D...[4]	(0.984)		12379D	(0.644)		123478D	(0.522)				
1378D	(0.984)		12369D...[3]	(0.644)		123678D	(0.481)				
1268D	(0.984)		12346/12347D	(0.644)		123467D	(0.489)				
1478D	(0.984)		12378D	(0.644)		123789D	(0.468)		**Conc.**	0	
1279D	(0.984)		12367D	(0.644)					**EMPC**	0	
1234/1269D	(0.984)		12389D	(0.644)							
1236D	(0.984)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.984)										
1239D	(0.984)								OCDD	(1.04)	
2378D	(0.984)										
1278D	(0.984)										
1267D	(0.984)										
1289D	(0.984)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	1.06	1.06
TEQ: ND=DL	2.11	2.11

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 248-046-QCQ

Report Created: 21-Jan-2022 10:50 Analyst: MS

Sample ID: Method Blank B5964_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.616)		13468/12468F	(0.343)		123468F	(0.376)		1234678F	(0.226)	
1468F	(0.616)		13678F...[3]	(0.341)		124678/134678F	(0.376)		1234679F	(0.279)	
2468F	(0.616)		12368F...[3]	(0.341)		134679F	(0.376)		1234689F	(0.279)	
1346/1246F	(0.616)		14678F	(0.341)		124679F	(0.376)		1234789F	(0.354)	
1347F...[3]	(0.616)		13479F	(0.341)		124689F	(0.376)				
1348F	(0.616)		13469/12479F	(0.341)		123467F	(0.376)				
1248F...[3]	(0.616)		12346F	(0.341)		123478F	(0.33)				
1268F	(0.616)		23468/12469F	(0.341)		123678F	(0.321)				
1467F	(0.616)		12347F	(0.341)		123479F	(0.376)				
1478F	(0.616)		12348F	(0.341)		123469F	(0.376)				
1369/1237F	(0.616)		12378F	(0.355)		123679F	(0.376)				
2467F	(0.616)		12678/12367F	(0.341)		234678F	(0.437)		**Conc.**	0	
2368F	(0.616)		12379F	(0.341)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.616)		12679F	(0.341)		123689F	(0.376)				
1278F	(0.616)		23467/12369F	(0.341)		123789F	(0.448)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.616)		23478F	(0.327)		123789/123489F	0			**(pg/g)**	
1267F	(0.616)		23478/12489F	0		123489F	(0.376)		OCDF	(0.655)	
2346/1249F	(0.616)		12489F	(0.341)							
2347/1279F	(0.616)		12349F	(0.341)							
2348F	(0.616)		12389F	(0.341)							
2378F	(0.616)										
2367/3467F	(0.616)										
1269F	(0.616)										
1239F	(0.616)										
1289F	(0.616)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 248-046-QCQ

Report Created: 21-Jan-2022 10:50 Analyst: MS

Sample ID: Method Blank B5964_18819 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18819_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18819
Date Collected:	n/a	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	20-Jan-2022 13:52
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.984)		0.984	(0.984)	(0.984)	(0.984)
12378-PeCDD	(0.644)		0.644	(0.322)	(0.644)	(0.644)
123478-HxCDD	(0.522)		0.522	(0.0522)	(0.0522)	(0.0522)
123678-HxCDD	(0.481)		0.481	(0.0481)	(0.0481)	(0.0481)
123789-HxCDD	(0.468)		0.468	(0.0468)	(0.0468)	(0.0468)
1234678-HpCDD	(0.46)		0.46	(0.0046)	(0.0046)	(0.0046)
OCDD	(1.04)		1.04	(0.00104)	(0.000104)	(0.000312)
2378-TCDF	(0.616)		0.616	(0.0616)	(0.0616)	(0.0616)
12378-PeCDF	(0.355)		0.355	(0.0178)	(0.0178)	(0.0107)
23478-PeCDF	(0.327)		0.327	(0.164)	(0.164)	(0.0981)
123478-HxCDF	(0.33)		0.33	(0.033)	(0.033)	(0.033)
123678-HxCDF	(0.321)		0.321	(0.0321)	(0.0321)	(0.0321)
234678-HxCDF	(0.437)		0.437	(0.0437)	(0.0437)	(0.0437)
123789-HxCDF	(0.448)		0.448	(0.0448)	(0.0448)	(0.0448)
1234678-HpCDF	(0.226)		0.226	(0.00226)	(0.00226)	(0.00226)
1234789-HpCDF	(0.354)		0.354	(0.00354)	(0.00354)	(0.00354)
OCDF	(0.655)		0.655	(0.000655)	(0.0000655)	(0.000197)

TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.931	1.09	1.06
EMPC = 0, ND = DL	1.86	2.18	2.11
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.931	1.09	1.06
EMPC = EMPC, ND = DL	1.86	2.18	2.11
EMPC = EMPC, < J-level = 0	0	0	0

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Checkcode: 248-046-QCQ

Sample ID: 0_18819_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18819_DF	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	11:32:05

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.1				ES 2378-TCDD	90.8	
12378-PeCDD	52				ES 12378-PeCDD	92.9	
123478-HxCDD	59.9				ES 123478-HxCDD	90.3	
123678-HxCDD	56.9				ES 123678-HxCDD	98	
123789-HxCDD	51.3				ES 123789-HxCDD	99.3	
1234678-HpCDD	56.3				ES 1234678-HpCDD	102	
OCDD	114				ES OCDD	89.1	
2378-TCDF	10.9				ES 2378-TCDF	87.1	
12378-PeCDF	51.3				ES 12378-PeCDF	99.6	
23478-PeCDF	56.6				ES 23478-PeCDF	99.7	
123478-HxCDF	56.5				ES 123478-HxCDF	106	
123678-HxCDF	56.4				ES 123678-HxCDF	116	
234678-HxCDF	57.4				ES 234678-HxCDF	82.7	
123789-HxCDF	52.5				ES 123789-HxCDF	109	
1234678-HpCDF	54.9				ES 1234678-HpCDF	139	
1234789-HpCDF	55.9				ES 1234789-HpCDF	111	
OCDF	115				ES OCDF	94.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	88.2	
Total TCDD	60		60		CS 12347-PeCDD	32.5	
Total PeCDD	82.9		82.9		CS 12346-PeCDF	95.9	
Total HxCDD	186		186		CS 123469-HxCDF	120	
Total HpCDD	71.1		71.1		CS 1234689-HpCDF	126	
Total TCDF	71.1		71.1				
Total PeCDF	206		206				
Total HxCDF	377		377				
Total HpCDF	111		111				
Total PCDD/Fs	**1,390**		**1,390**				
WHO-2005 TEQs							
TEQ: ND=0	125		125				
TEQ: ND=DL/2	125	0.568	125				
TEQ: ND=DL	125	1.14	125				

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Sample ID: 0_18819_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18819_DF	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	12:20:14

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.3				ES 2378-TCDD	80.5	
12378-PeCDD	55.2				ES 12378-PeCDD	87.9	
123478-HxCDD	57.7				ES 123478-HxCDD	87	
123678-HxCDD	61				ES 123678-HxCDD	95.7	
123789-HxCDD	58.5				ES 123789-HxCDD	84	
1234678-HpCDD	56.7				ES 1234678-HpCDD	98.7	
OCDD	120				ES OCDD	91.4	
2378-TCDF	12				ES 2378-TCDF	72.9	
12378-PeCDF	54.5				ES 12378-PeCDF	83.1	
23478-PeCDF	59				ES 23478-PeCDF	80.6	
123478-HxCDF	58.9				ES 123478-HxCDF	94.1	
123678-HxCDF	60.3				ES 123678-HxCDF	103	
234678-HxCDF	55				ES 234678-HxCDF	88.6	
123789-HxCDF	56.7				ES 123789-HxCDF	91.3	
1234678-HpCDF	63.4			V	ES 1234678-HpCDF	113	
1234789-HpCDF	57.3				ES 1234789-HpCDF	111	
OCDF	116				ES OCDF	98.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.3	
Total TCDD	62.7		62.7		CS 12347-PeCDD	96.3	
Total PeCDD	87.1		87.1		CS 12346-PeCDF	82.9	
Total HxCDD	196		196		CS 123469-HxCDF	111	
Total HpCDD	71.8		71.8		CS 1234689-HpCDF	122	
Total TCDF	76.3		76.3				
Total PeCDF	230		230				
Total HxCDF	396		396				
Total HpCDF	121		121				
Total PCDD/Fs	**1,480**		**1,480**				
WHO-2005 TEQs							
TEQ: ND=0	131		131				
TEQ: ND=DL/2	131	0.435	131				
TEQ: ND=DL	131	0.87	131				

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Sample DUP

Method 1613B

Sample ID: 0_18819_OPR001

Analyte	OPR1_18819_DF pg/uL	OPR2_18819_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	12.1	12.3	1.9%
1,2,3,7,8-PeCDD	52	55.2	5.9%
1,2,3,4,7,8-HxCDD	59.9	57.7	3.8%
1,2,3,6,7,8-HxCDD	56.9	61	7.0%
1,2,3,7,8,9-HxCDD	51.3	58.5	13.1%
1,2,3,4,6,7,8-HpCDD	56.3	56.7	0.7%
OCDD	114	120	4.6%
2,3,7,8-TCDF	10.9	12	10.3%
1,2,3,7,8-PeCDF	51.3	54.5	6.0%
2,3,4,7,8-PeCDF	56.6	59	4.2%
1,2,3,4,7,8-HxCDF	56.5	58.9	4.1%
1,2,3,6,7,8-HxCDF	56.4	60.3	6.6%
2,3,4,6,7,8-HxCDF	57.4	55	4.2%
1,2,3,7,8,9-HxCDF	52.5	56.7	7.7%
1,2,3,4,6,7,8-HpCDF	54.9	63.4	14.4%
1,2,3,4,7,8,9-HpCDF	55.9	57.3	2.6%
OCDF	115	116	1.0%
Totals			
Total TCDD	60	62.7	4.3%
Total PeCDD	82.9	87.1	4.9%
Total HxCDD	186	196	5.2%
Total HpCDD	71.1	71.8	1.0%
Total TCDF	71.1	76.3	7.1%
Total PeCDF	206	230	10.9%
Total HxCDF	377	396	5.0%
Total HpCDF	111	121	8.6%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5964*
Requested TAT:	*10 business days*
Projected due date:	*19-Jan-22*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120121-S-SPS-NE-O-8	B5964_001	Solid	1	4oz Amber	01-Dec-21	13:55	0.4	2	4905 2704 1834
11215131-120121-S-SPS-NE-O-9	B5964_002	Solid	1	4oz Amber	01-Dec-21	14:25	0.4	2	4905 2704 1834
11215131-120121-S-SPS-NE-B-2	B5964_003	Solid	1	4oz Amber	01-Dec-21	14:30	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-O-7	B5964_004	Solid	1	4oz Amber	02-Dec-21	10:15	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9	B5964_005	Solid - MS/MSD	1	4oz Amber	02-Dec-21	10:20	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9H1	B5964_006*	Solid	1	4oz Amber	02-Dec-21	10:25	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9H2	B5964_007	Solid - HOLD	1	4oz Amber	02-Dec-21	10:30	0.4	2	4905 2704 1834
11215131-120221-S-SPS-DUP2	B5964_008	Solid	1	4oz Amber	02-Dec-21	n/a	0.4	2	4905 2704 1834

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact * sample 006 taken off HOLD per client email dated 1/5/2022

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* TB 1/5/2022

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B59164 1/2

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV
SPECIAL DELIVERABLES:
☐ DoD ■ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120121-S-SPS-NE-S-11	12/1/21	1330	C	S	4 oz		X					RUSH
11215131-120121-S-SPS-NE-O-8		1355			4 oz		X					NE-O is overburden, not zero *
11215131-120121-S-SPS-NE-O-9		1425			4 oz		X					" " *
11215131-120121-S-SPS-NE-B-2		1430			4 oz		X					*
11215131-120221-S-SPS-SW-S-17	12/2/21	830			4 oz		X					RUSH
11215131-120221-S-SPS-SW-S-18		855			4 oz		X					RUSH
11215131-120221-S-SPS-SW-S-19		920			4 oz		X					RUSH
~~11215131-120221-S-SPS-SW-O-7~~		~~1015~~			4 oz							error
11215131-120221-S-SPS-SW-O-7		1015			4 oz		X					SW-O is overburden, not zero *
11215131-120221-S-SPS-SW-B-9		1020			4 oz		X	X	X			MS/MSD *

COLLECTED/RELINQUISHED BY (1): Stephen Sollar	DATE: 12/2/21	TIME: 1345	RECEIVED BY: Eddie Castro
RELINQUISHED BY (2): Eddie Castro	DATE: 12-2-21	TIME: 1525	RECEIVED BY: 12/2/21 1525
RELINQUISHED BY (3):	DATE: 12/2/21	TIME: 1525	RECEIVED BY:

RECEIVED BY LABORATORY: DATE: TIME:
Ashley Brown 12/3/21 10:47
COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT
CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT
CARRIER: FedEx TEMP: °C 0.4°
TRACKING #: 4905 2704 1834

*=Samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

SGS CHAIN OF CUSTODY

B59164 2/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remark

REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV

SPECIAL DELIVERABLES:

☐ DoD ■ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120221-S-SJRS-SW-B-FILL	12/2/21	1025			4 oz		X					HOLD *
~~11215131-120221-SP~~					4 oz							error
11215131-120221-S-SJRS-SW-B-FILL2		1030			4 oz		X					HOLD *
11215131-120221-S-SJRS-DUP2		—			4 oz		X			X		*
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							

	DATE:	TIME:	
COLLECTED/RELINQUISHED BY (1): Skylar Sikes	12/2/21	1345	RECEIVED BY: Eddie Custer
RELINQUISHED BY (2): Eddie Custer	12-2-21	1535	RECEIVED BY: 12/2/21 1525
RELINQUISHED BY (3):	12/2/21	1525	RECEIVED BY:

RECEIVED BY LABORATORY: Ashley Ontiveros DATE: 12/3/21 TIME: 10:47

COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT

CARRIER: FedEx TEMP: °C 0.4°

TRACKING #: 4905 2704 1834

*=Samples in this project.

Page 2 of 2

1/1

B59164

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 02DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903 REF:
INV:
PO: DEPT:

12/3/2021
10:47
0.40

565C3/E934/05A2

FedEx Express

J191219082001uv

2 of 2

MPS# 0263 4905 2704 1834
Mstr# 4905 2704 1823

0201

FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US **RDU**

Part # 156148-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5964

Initiation Date: 05-Jan-22

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Sample 006 only off HOLD

Read and understood, initial and date: Prep Lab: KE 1/10/22 HRMS Lab: 1/21/22

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab: 1/21/22

PM Initials: tburkamper Date: 05-Jan-2022

SGS

Methods: PCB / PAH; (PCDD/F) / WHO-2; QUANTICS / USV; DoD PCDD/F / PEST

Extraction Type: (SDS) / CLL; TALEX / Carbon SPE

Solid

Final Volume: 2 mL

Batch# 18819

Split: 1/2 1/4

Extract Initial/Date: KF 1/10/22

Clean-up Initial/Date: JRH 1/13/22

Transfer Init/Date: JRH 1/14/22

Lab Sample ID	Extraction Position / Solvent: TOL	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5964_18819_006	20	13.28				gray, clay-like, oil smell
B5971_18819_002	21	13.73				gray, clay-like, sandy
B5971_18819_003	22	12.56				gray, clay-like
B5971_18819_005	23	13.23				gray, clay-like
B5987_18819_001	24	12.61				gray, clay-like, oil smell
B5987_18819_002	43	20.88				gray, clay-like, oil smell
B5992_18819_001	44	13.73				gray, clay-like, oil smell
B5992_18819_003	45	15.02		TB 1/24/22		brown/gray, clay-like, oil smell
B5992_18819_004	46	12.59				gray-brown, clay-like
B6001_18819_001	47	12.65				gray-brown, clay-like
B6008_18819_002	48	12.69				gray, clay-like
MB1_18819	17	10.00				sodium sulfate
OPR1_18819	18	10.00				sodium sulfate
OPR2_18819	19	10.00				sodium sulfate

BB3 1/14/22

Supply IDs

Toluene	STL 1423
MeCHL	STL14-21
Florisil	SPLS-77
Hexane	ST44-22
Silica	SPLS-69
S Nitrate	N/A
Base Silica	SPLS-78
HydroMatrix	N/A
Tetradecane	SPLS-73D
H_2SO_4	N/A
A Silica	SPLS-79
Sodium Sulfate	SPLS-28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	TB 1/24/22
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1300
	Stop: 0930
HEX	Start:
	Stop: TB 1/24/22
DCM	Start:
	Stop:

SGS

Methods: PCB PAH PCDD/F WHO-2 QUANTICS USV DoD PCDD/F PEST

Solid

Batch# 18819

Inter-Department Communication Sheet

TB 1/24/22

SGS

Wt. Volume Results

Batch #: 18819

Comments:

AK 11/20/22

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5964_006	0.84	3.95	3.21	76.21%	76.21%			13.12	13.28	10.12
B5971_002	0.85	4.65	3.66	73.95%	73.95%			13.52	13.73	10.15
B5971_003	0.8	4.38	3.66	79.89%	79.89%			12.52	12.56	10.03
B5971_005	0.81	4.21	3.41	76.47%	76.47%			13.08	13.23	10.12
B5987_001	0.8	4.16	3.49	80.06%	80.06%			12.49	12.61	10.1
B5987_002	0.81	4.71	2.68	47.95%	47.95%			20.86	20.88	10.01
B5992_001	0.81	4.49	3.5	73.10%	73.10%			13.68	13.73	10.04
B5992_003	0.81	4.53	3.31	67.20%	67.20%			14.88	15.02	10.09
B5992_004	0.8	4.41	3.68	79.78%	79.78%			12.53	12.59	10.04
B6001_001	0.79	4.76	3.97	80.10%	80.10%			12.48	12.65	10.13
B6008_002	0.8	4.04	3.36	79.01%	79.01%			12.66	12.69	10.03

TB 1/24/22

% Solid Determination WorkSheet

SGS

Batch: 18819

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	10g DWE	Comments
B5964_18819_006	0.84	3.95	3.21	13.12	
B5971_18819_002	0.85	4.65	3.66	13.52	
B5971_18819_003	0.80	4.38	3.66	12.52	
B5971_18819_005	0.81	4.21	3.41	13.08	
B5987_18819_001	0.80	4.16	3.49	12.49	
B5987_18819_002	0.81	4.71	2.68	20.86	
B5992_18819_001	0.81	4.49	3.50	13.68	
B5992_18819_003	0.81	4.53	3.31	14.88	
B5992_18819_004	0.80	4.41	3.68	12.53	
B6001_18819_001	0.79	4.76	3.97	12.48	
B6008_18819_002	0.80	4.64	3.36	12.66	

RDS 1/14/22

Date/Initials: 1/10/22 KE

SGS

Methods: PCB, PAH, PCDD/F WHO-2 (circled), QUANTICS USV, DoD PCDD/F PEST

Solid

Batch # 18819

Lab Sample ID	Spiker Initials/Date:	JRH 1/10/22	JRH 1/10/22	JRH 1/10/22	JRH 1/13/22	[illegible] 1/13/22		
		D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
		Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount:	Amount:
		Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5964_18819_006		–	–	KE	[illegible]	JRH		
B5971_18819_002		–	–	KE	[illegible]	JRH		
B5971_18819_003		–	–	KE	[illegible]	JRH		
B5971_18819_005		–	–	KE	[illegible]	JRH		
B5987_18819_001		–	–	KE	[illegible]	JRH		
B5987_18819_002		–	–	KE	[illegible]	JRH		
B5992_18819_001		–	–	KE	[illegible]	JRH		
B5992_18819_003		–	–	KE	[illegible]	JRH		
B5992_18819_004		–	–	KE	[illegible]	JRH		
B6001_18819_001		–	–	KE	[illegible]	JRH		
B6008_18819_002		–	–	KE	[illegible]	JRH		
MB1_18819		–	–	KE	[illegible]	JRH		
OPR1_18819		KE	KE	KE	[illegible]	JRH		
OPR2_18819		KE	KE	KE	[illegible]	JRH		

[illegible] 1/14/22

Standard Information

Pipette ID							[illegible] 1/14/22
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
SIL #	26-2-8	as-187-2	26-2-9	25.338.1	25.309.1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/28	6/22/22	[illegible]	11/16/22	10/8/22		

REVIEWED
Megan_Shannahan , 1/21/2022, 11:25:00 AM

SGS Environmental Services — Run Log **Project: B5964_18819_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	220120C01	3	CS3_220120_DF_CA	1.00	SIL 25-347-1	DTF, MLS	343-977	20-Jan-2022	10:26:30
2	220120C02	50	OPR1_18819_DF	1.00	0_18819_OPR001	DTF, MLS	697-611	20-Jan-2022	11:32:05
3	220120C03	51	OPR2_18819_DF	1.00	0_18819_OPR002	DTF, MLS	751-300	20-Jan-2022	12:20:14
4	220120C04	2	SBS_220120_DF_CA	1.00	20-61-1	DTF	981-901	20-Jan-2022	13:06:33
5	220120C05	49	MB1_18819_DF_SDS	10.00	Method Blank	DTF, MLS	248-046	20-Jan-2022	13:52:51
6	220120C06	52	B5964_18819_DF_006	10.12	11215131-120221-S-SPS-SW-B-9H1	DTF, MLS	530-035	20-Jan-2022	14:39:09

REVIEWED
Amber_Kornegay , 1/21/2022, 3:39:12 PM

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18819 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 248-046-QCQ

Datafile: 220120C05 **Report:** 21 Jan 2022 10:50 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	6558.717	0.984
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	4628.235	0.644
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3273.325	0.522
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.15	-	3273.325	0.481
123789-HxCDD	NotFnd		1.0109	-		-	-	-	1.05	-	3273.325	0.468
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	3096.852	0.46
OCDD	NotFnd		1.0002	-		-	-	-	1.13	-	3168.45	1.04
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	6140.069	0.616
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3857.122	0.355
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3857.122	0.327
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	3495.234	0.33
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	3495.234	0.321
234678-HxCDF	NotFnd		1.0004	-		-	-	-	1.19	-	3495.234	0.437
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3495.234	0.448
1234678-HpCDF	NotFnd		1.0002	-		-	-	-	1.37	-	2900.075	0.226
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	2900.075	0.354
OCDF	NotFnd		1.0002	-		-	-	-	1.07	-	3066.141	0.655

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.64	1.0233	1.0235	+0.3	1.25E+07	0.80	Y	1.05	78.2
ES 12378-PeCDD	33.95	1.2121	1.2129	+1.6	1.26E+07	1.64	Y	0.88	93.4
ES 123478-HxCDD	37.84	0.9921	0.9921	0	1.04E+07	1.24	Y	0.97	80.8
ES 123678-HxCDD	37.95	0.9951	0.9950	-0.2	1.16E+07	1.29	Y	0.94	92.6
ES 123789-HxCDD	38.24	1.0025	1.0026	+0.2	1.21E+07	1.22	Y	1.09	83.7
ES 1234678-HpCDD	40.86	1.0709	1.0714	+1.2	1.09E+07	1.16	Y	0.91	89.9
ES OCDD	43.50	1.1403	1.1407	+1.0	1.17E+07	0.93	Y	0.62	70.7
ES 2378-TCDF	27.79	1.0506	1.0511	+0.8	2.20E+07	0.81	Y	1.06	86.7
ES 12378-PeCDF	32.51	1.2281	1.2294	+2.5	1.99E+07	1.64	Y	0.91	91
ES 23478-PeCDF	33.61	1.2698	1.2711	+2.6	1.98E+07	1.61	Y	0.88	93.6
ES 123478-HxCDF	36.83	0.9657	0.9656	-0.2	1.49E+07	0.54	Y	1.20	93.7
ES 123678-HxCDF	36.97	0.9695	0.9694	-0.2	1.78E+07	0.54	Y	1.35	99.4
ES 234678-HxCDF	37.65	0.9874	0.9873	-0.2	1.30E+07	0.57	Y	1.24	79.2
ES 123789-HxCDF	38.59	1.0116	1.0118	+0.5	1.29E+07	0.54	Y	1.16	84
ES 1234678-HpCDF	39.93	1.0467	1.0470	+0.7	1.44E+07	0.48	Y	0.97	113
ES 1234789-HpCDF	41.32	1.0830	1.0834	+1.0	1.04E+07	0.46	Y	0.85	91.8
ES OCDF	43.69	1.1451	1.1456	+1.3	1.80E+07	0.89	Y	0.81	84.4

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18819 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 248-046-QCQ

Datafile: 220120C05 **Report:** 21 Jan 2022 10:50 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.99		-	-	-	1.53E+07	0.83	Y	-	-
JS 1234-TCDF	26.44		-	-	-	2.40E+07	0.83	Y	-	-
JS 123467-HxCDD	38.14		-	-	-	6.62E+06	1.33	Y	-	-
CS 37Cl-2378-TCDD	28.67		1.0241	1.0243	+0.3	5.85E+06	n/a	-	1.20	79.4
CS 12347-PeCDD	33.44		1.1943	1.1950	+1.4	1.20E+07	1.67	Y	0.75	104
CS 12346-PeCDF	31.98		1.2083	1.2094	+2.1	1.97E+07	1.64	Y	0.85	96.3
CS 123469-HxCDF	37.29		0.9778	0.9777	-0.2	1.60E+07	0.53	Y	1.12	108
CS 1234689-HpCDF	40.33		1.0571	1.0575	+1.0	1.40E+07	0.48	Y	0.89	119
~~SS 37Cl-2378-TCDD~~	~~28.67~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~5.05E+06~~	~~n/a~~		~~1.15~~	~~102~~
~~SS 12347-PeCDD~~	~~33.44~~		~~1.1943~~	~~1.1950~~	~~+1.4~~	~~1.20E+07~~	~~1.67~~	~~Y~~	~~0.86~~	~~111~~
~~SS 12346-PeCDF~~	~~31.98~~		~~1.2083~~	~~1.2094~~	~~+2.1~~	~~1.97E+07~~	~~1.64~~	~~Y~~	~~0.94~~	~~106~~
~~SS 123469-HxCDF~~	~~37.29~~		~~0.9778~~	~~0.9777~~	~~-0.2~~	~~1.60E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~100~~
~~SS 1234689-HpCDF~~	~~40.33~~		~~1.0571~~	~~1.0575~~	~~+1.0~~	~~1.40E+07~~	~~0.48~~	~~Y~~	~~0.92~~	~~105~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18819 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 248-046-QCQ

Datafile: 220120C05 **Report:** 21 Jan 2022 10:50 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8755						1.18		6558.717	0.984
1379-TCDD	NotFnd		0.8876						1.18		6558.717	0.984
1369-TCDD	NotFnd		0.9023						1.18		6558.717	0.984
1469-TCDD	NotFnd		0.9291						1.18		6558.717	0.984
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		6558.717	0.984
1378-TCDD	NotFnd		0.9440						1.18		6558.717	0.984
1268-TCDD	NotFnd		0.9506						1.18		6558.717	0.984
1478-TCDD	NotFnd		0.9591						1.18		6558.717	0.984
1279-TCDD	NotFnd		0.9649						1.18		6558.717	0.984
1234/1269-TCDD	NotFnd		0.9771						1.18		6558.717	0.984
1236-TCDD	NotFnd		0.9820						1.18		6558.717	0.984
1237/1238-TCDD	NotFnd		0.9908						1.18		6558.717	0.984
1239-TCDD	NotFnd		0.9954						1.18		6558.717	0.984
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**6558.717**	**0.984**
1278-TCDD	NotFnd		1.0121						1.18		6558.717	0.984
1267-TCDD	NotFnd		1.0167						1.18		6558.717	0.984
1289-TCDD	NotFnd		1.0341						1.18		6558.717	0.984
12479/12468-PeCDD	NotFnd		0.9273						1.04		4628.235	0.644
12469-PeCDD	NotFnd		0.9430						1.04		4628.235	0.644
12368-PeCDD	NotFnd		0.9592						1.04		4628.235	0.644
12478-PeCDD	NotFnd		0.9647						1.04		4628.235	0.644
12379-PeCDD	NotFnd		0.9676						1.04		4628.235	0.644
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		4628.235	0.644
12346/12347-PeCDD	NotFnd		0.9860						1.04		4628.235	0.644
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**4628.235**	**0.644**
12367-PeCDD	NotFnd		1.0034						1.04		4628.235	0.644
12389-PeCDD	NotFnd		1.0134						1.04		4628.235	0.644
124679/124689-HxCDD	NotFnd		0.9545						1.10		3273.325	0.489
123468-HxCDD	NotFnd		0.9715						1.10		3273.325	0.489
123679/123689-HxCDD	NotFnd		0.9793						1.10		3273.325	0.489
123469-HxCDD	NotFnd		0.9829						1.10		3273.325	0.489
123478-HxCDD	NotFnd		**1.0004**						1.09		**3273.325**	**0.522**
123678-HxCDD	NotFnd		**1.0034**						1.15		**3273.325**	**0.481**
123467-HxCDD	NotFnd		1.0082						1.10		3273.325	0.489
123789-HxCDD	NotFnd		**1.0109**						1.05		**3273.325**	**0.468**

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18819 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 248-046-QCQ

Datafile: 220120C05 **Report:** 21 Jan 2022 10:50 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

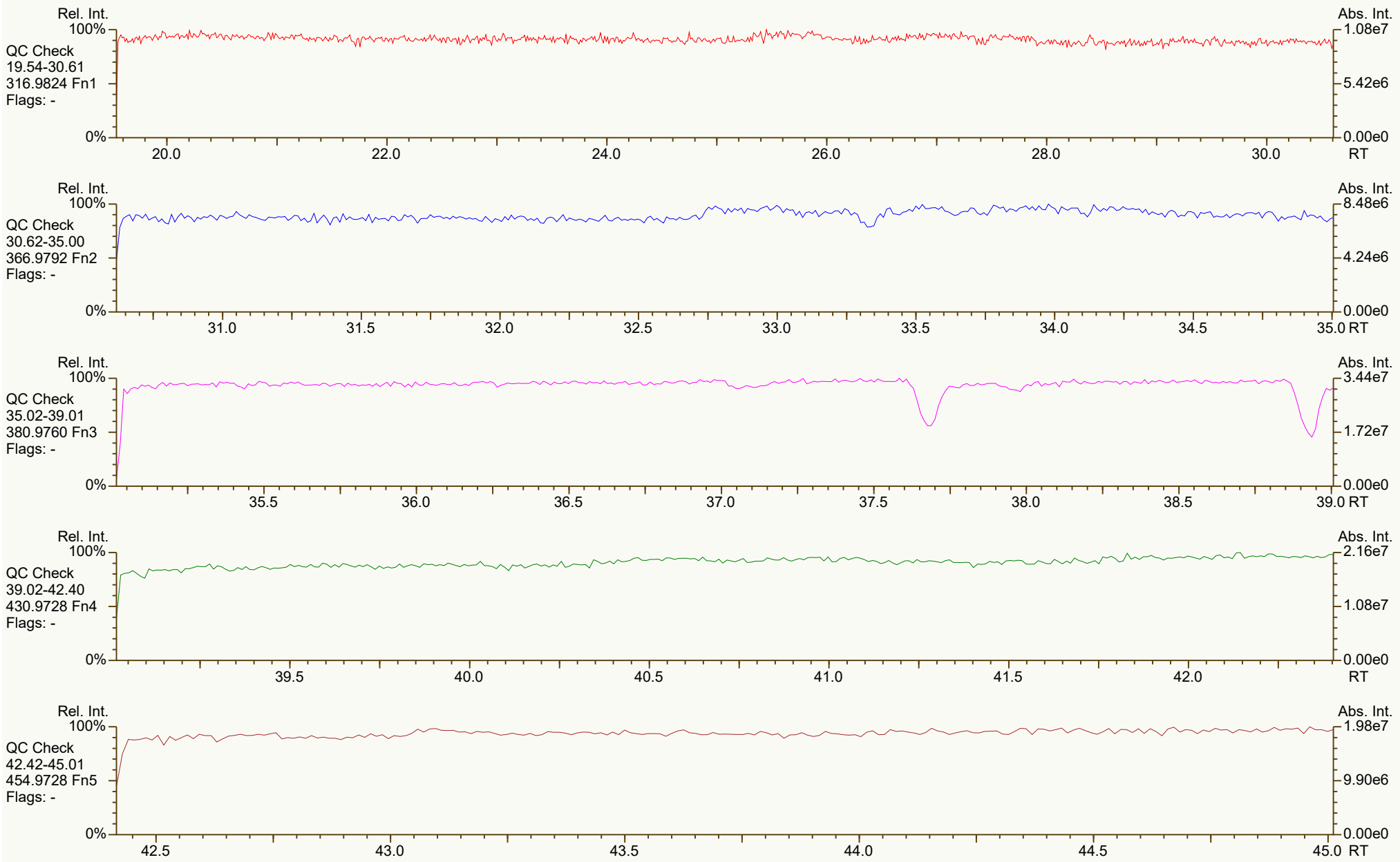
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9838						1.06		3096.852	0.46
1234678-HpCDD	**NotFnd**		**1.0003**						**1.06**		**3096.852**	**0.46**
OCDD	**NotFnd**		**1.0002**						**1.13**		**3168.45**	**1.04**
OCDD-a	NotFnd		1.0002						0.07		4053.297	20.8
1368-TCDF	NotFnd		0.8282						1.08		6140.069	0.616
1468-TCDF	NotFnd		0.8485						1.08		6140.069	0.616
2468-TCDF	NotFnd		0.8709						1.08		6140.069	0.616
1346/1246-TCDF	NotFnd		0.8829						1.08		6140.069	0.616
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		6140.069	0.616
1348-TCDF	NotFnd		0.8980						1.08		6140.069	0.616
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		6140.069	0.616
1268-TCDF	NotFnd		0.9158						1.08		6140.069	0.616
1467-TCDF	NotFnd		0.9206						1.08		6140.069	0.616
1478-TCDF	NotFnd		0.9266						1.08		6140.069	0.616
1369/1237-TCDF	NotFnd		0.9397						1.08		6140.069	0.616
2467-TCDF	NotFnd		0.9440						1.08		6140.069	0.616
2368-TCDF	NotFnd		0.9497						1.08		6140.069	0.616
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		6140.069	0.616
1278-TCDF	NotFnd		0.9690						1.08		6140.069	0.616
1349-TCDF	NotFnd		0.9730						1.08		6140.069	0.616
1267-TCDF	NotFnd		0.9787						1.08		6140.069	0.616
2346/1249-TCDF	NotFnd		0.9850						1.08		6140.069	0.616
2347/1279-TCDF	NotFnd		0.9929						1.08		6140.069	0.616
2348-TCDF	NotFnd		0.9970						1.08		6140.069	0.616
2378-TCDF	**NotFnd**		**1.0008**						**1.08**		**6140.069**	**0.616**
2367/3467-TCDF	NotFnd		1.0136						1.08		6140.069	0.616
1269-TCDF	NotFnd		1.0221						1.08		6140.069	0.616
1239-TCDF	NotFnd		1.0319						1.08		6140.069	0.616
1289-TCDF	NotFnd		1.0740						1.08		6140.069	0.616
13468/12468-PeCDF	NotFnd		0.9145						1.02		3874.537	0.343
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		3857.122	0.341
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		3857.122	0.341
14678-PeCDF	NotFnd		0.9695						1.02		3857.122	0.341
13479-PeCDF	NotFnd		0.9724						1.02		3857.122	0.341
13469/12479-PeCDF	NotFnd		0.9801						1.02		3857.122	0.341
12346-PeCDF	NotFnd		0.9842						1.02		3857.122	0.341

Lab ID: MB1_18819_DF_SDS | **Acq'd:** 20 Jan 2022 13:52 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18819 | **UTP:** 21-Jan-2022 10:45:31 MLS | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 248-046-QCQ

Datafile: 220120C05 | **Report:** 21 Jan 2022 10:50 MS | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		3857.122	0.341
12347-PeCDF	NotFnd		0.9895						1.02		3857.122	0.341
12348-PeCDF	NotFnd		0.9941						1.02		3857.122	0.341
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3857.122**	**0.355**
12678/12367-PeCDF	NotFnd		1.0090						1.02		3857.122	0.341
12379-PeCDF	NotFnd		1.0142						1.02		3857.122	0.341
12679-PeCDF	NotFnd		0.9931						1.02		3857.122	0.341
23467/12369-PeCDF	NotFnd		0.9966						1.02		3857.122	0.341
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3857.122**	**0.327**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3857.122	0.341
12349-PeCDF	NotFnd		1.0101						1.02		3857.122	0.341
12389-PeCDF	NotFnd		1.0322						1.02		3857.122	0.341
123468-HxCDF	NotFnd		0.9627						1.19		3495.234	0.376
124678/134678-HxCDF	NotFnd		0.9684						1.19		3495.234	0.376
134679-HxCDF	NotFnd		0.9747						1.19		3495.234	0.376
124679-HxCDF	NotFnd		0.9802						1.19		3495.234	0.376
124689-HxCDF	NotFnd		0.9858						1.19		3495.234	0.376
123467-HxCDF	NotFnd		0.9972						1.19		3495.234	0.376
123478-HxCDF	**NotFnd**		**1.0004**						**1.27**		**3495.234**	**0.33**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**3495.234**	**0.321**
123479-HxCDF	NotFnd		1.0051						1.19		3495.234	0.376
123469-HxCDF	NotFnd		1.0091						1.19		3495.234	0.376
123679-HxCDF	NotFnd		0.9943						1.19		3495.234	0.376
234678-HxCDF	**NotFnd**		**1.0004**						**1.19**		**3495.234**	**0.437**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3495.234	0.376
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**3495.234**	**0.448**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		3495.234	0.376
1234678-HpCDF	**NotFnd**		**1.0002**						**1.37**		**2900.075**	**0.226**
1234679-HpCDF	NotFnd		1.0067						1.34		2900.075	0.279
1234689-HpCDF	NotFnd		1.0101						1.34		2900.075	0.279
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**2900.075**	**0.354**
OCDF	**NotFnd**		**1.0002**						**1.07**		**3066.141**	**0.655**
OCDF-a	NotFnd		1.0002						0.07		3258.893	11.2


Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.08e7
5.42e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.48e6
4.24e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.44e7
1.72e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.16e7
1.08e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.98e7
9.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
Abs. Int.
TCDD
19.54-30.61
319.8965 Fn1
Flags: B
4σ 3.85e3
1.04e4
5.22e3
0.00e0
TCDD
19.54-30.61
321.8936 Fn1
Flags: B
4σ 2.71e3
1.08e4
5.42e3
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 2.34e3
CS 37Cl-2378D
5.85e6
28.66
1.32e6
6.62e5
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 7.54e3
JS 1234D
6.96e6
27.99
ES 2378D
5.56e6
28.64
1.64e6
8.18e5
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 6.73e3
JS 1234D
8.36e6
27.98
ES 2378D
6.97e6
28.64
2.04e6
1.02e6
100%
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.62-35.00
355.8546 Fn2
Flags: B
4σ 2.54e3
0%
Abs. Int.
1.05e4
5.24e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.00
357.8517 Fn2
Flags: B
4σ 2.09e3
0%
Abs. Int.
8.03e3
4.01e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PB
4σ 4.34e3
CS 12347D
7.51e6
33.44
ES 12378D
7.82e6
33.94
0%
Abs. Int.
2.15e6
1.08e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PB
4σ 1.92e3
CS 12347D
4.49e6
33.44
ES 12378D
4.77e6
33.94
0%
Abs. Int.
1.29e6
6.47e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.48e6
4.24e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PB
4σ 1.52e3
6.30e3
3.15e3
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: B
4σ 1.76e3
7.98e3
3.99e3
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.37e3
ES 123678D
6.52e6
37.95
ES 123478D
5.76e6
37.84
JS 123467D
3.78e6*
38.14
ES 123789D
6.66e6*
38.24
1.84e6
9.18e5
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.47e3
ES 123678D
5.05e6
37.95
ES 123478D
4.64e6
37.83
JS 123467D
2.84e6
38.14
ES 123789D
5.44e6*
38.24
1.46e6
7.30e5
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.44e7
1.72e7
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

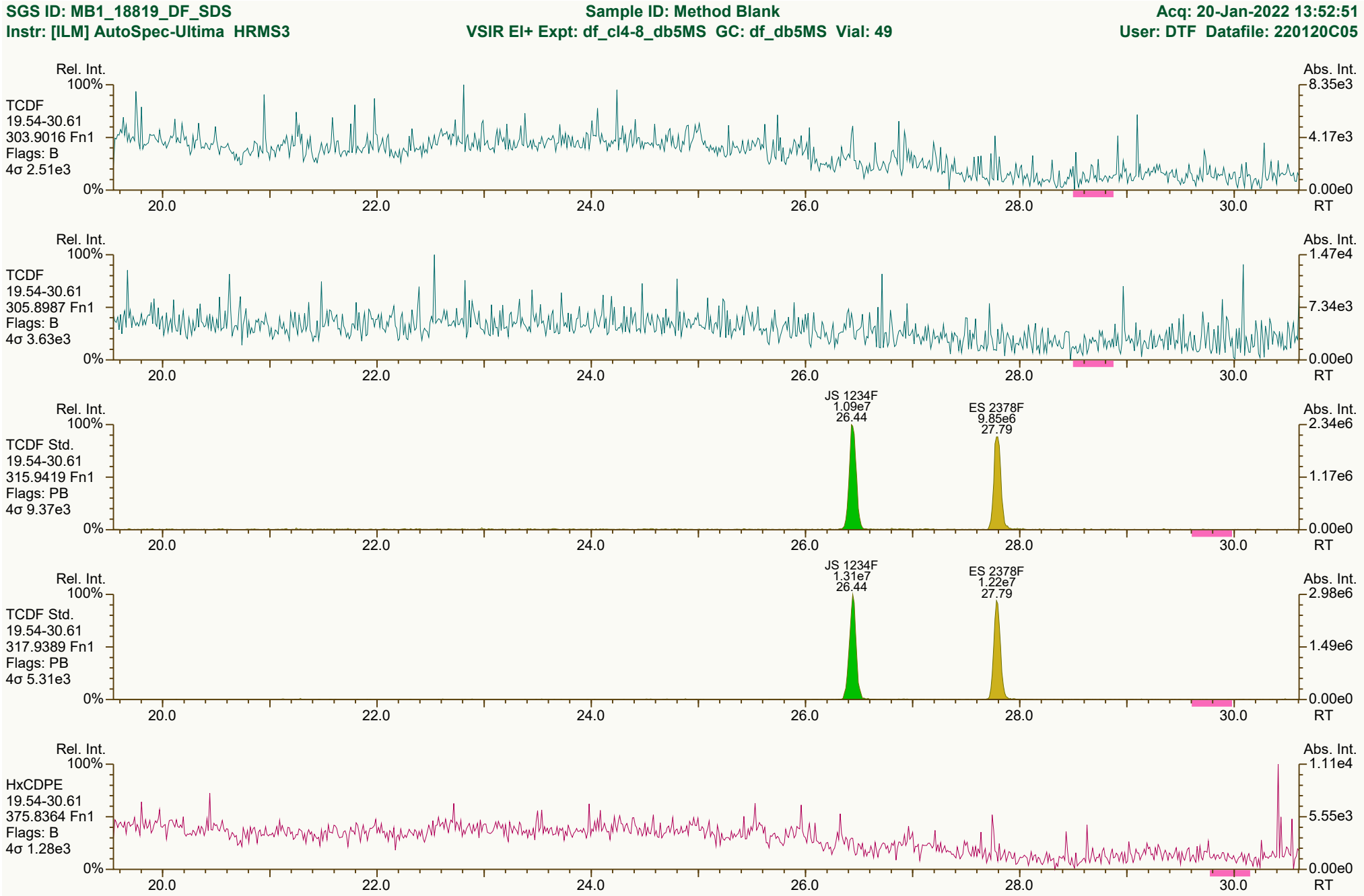

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.70e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: B
4σ 1.40e3
0%
Abs. Int.
5.56e3
2.78e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.48e3
ES 1234678D
5.82e6*
40.86
0%
Abs. Int.
1.70e6
8.52e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 2.11e3
ES 1234678D
5.04e6*
40.86
0%
Abs. Int.
1.47e6
7.37e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.16e7
1.08e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PB
4σ 1.48e3
0%
Abs. Int.
5.92e3
2.96e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: PB
4σ 1.69e3
0%
Abs. Int.
6.13e3
3.06e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.84e3
0%
ES OCDD
5.65e6*
43.50
Abs. Int.
1.31e6
6.55e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 1.39e3
0%
ES OCDD
6.04e6*
43.50
Abs. Int.
1.44e6
7.22e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.98e7
9.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: MB1_18819_DF_SDS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 49

Acq: 20-Jan-2022 13:52:51
User: DTF Datafile: 220120C05



Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\MB1_18819_DF_SDS.utp_res, saved 21-Jan-2022 10:45 (MLS)
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 6724, 0315, 9338 scc: 248-046

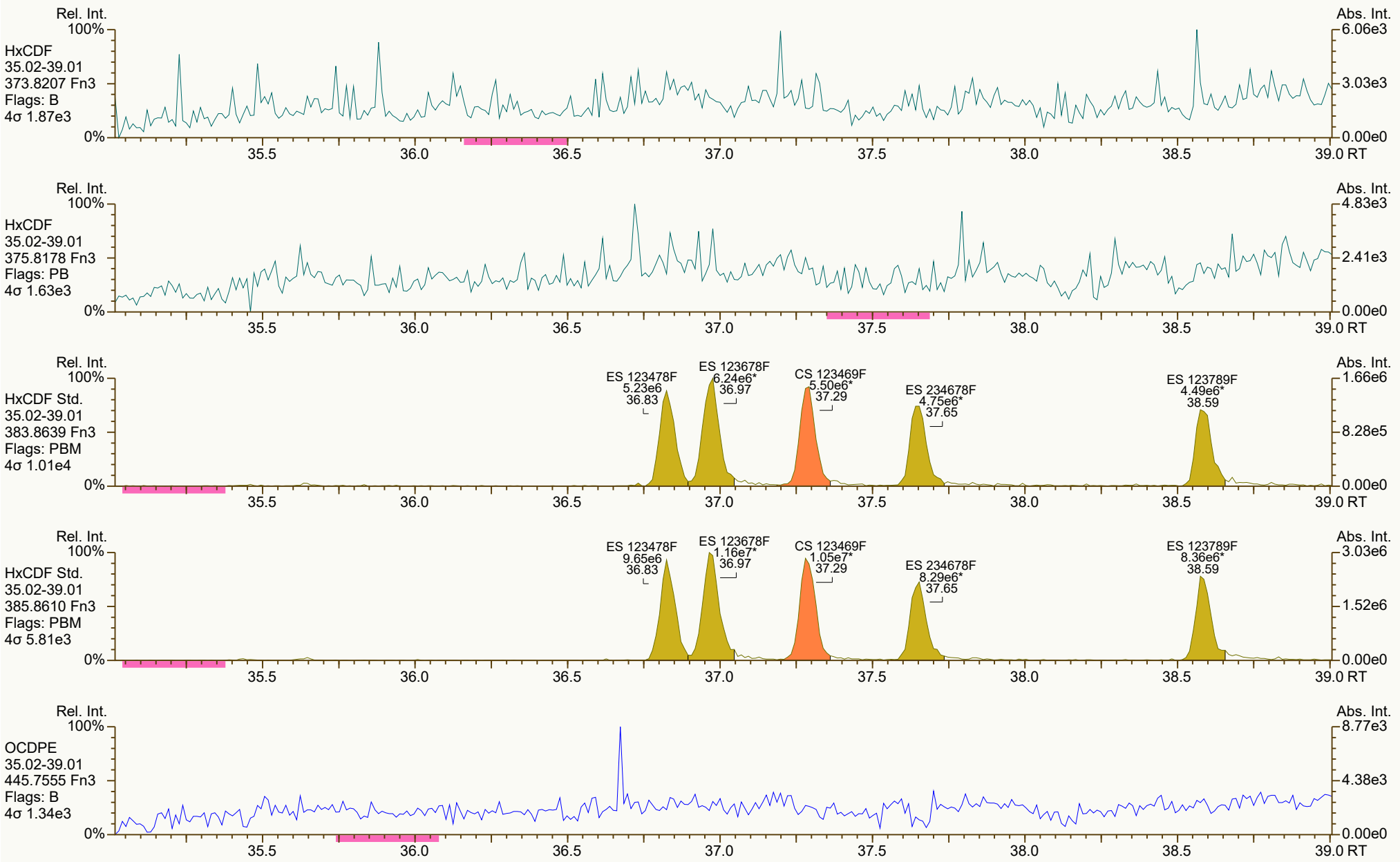
Peak annotation: Areas, Centroids
PKD: 21-Jan-2022 10:05 Printed: 21-Jan-2022 11:19 Page 7 of 12

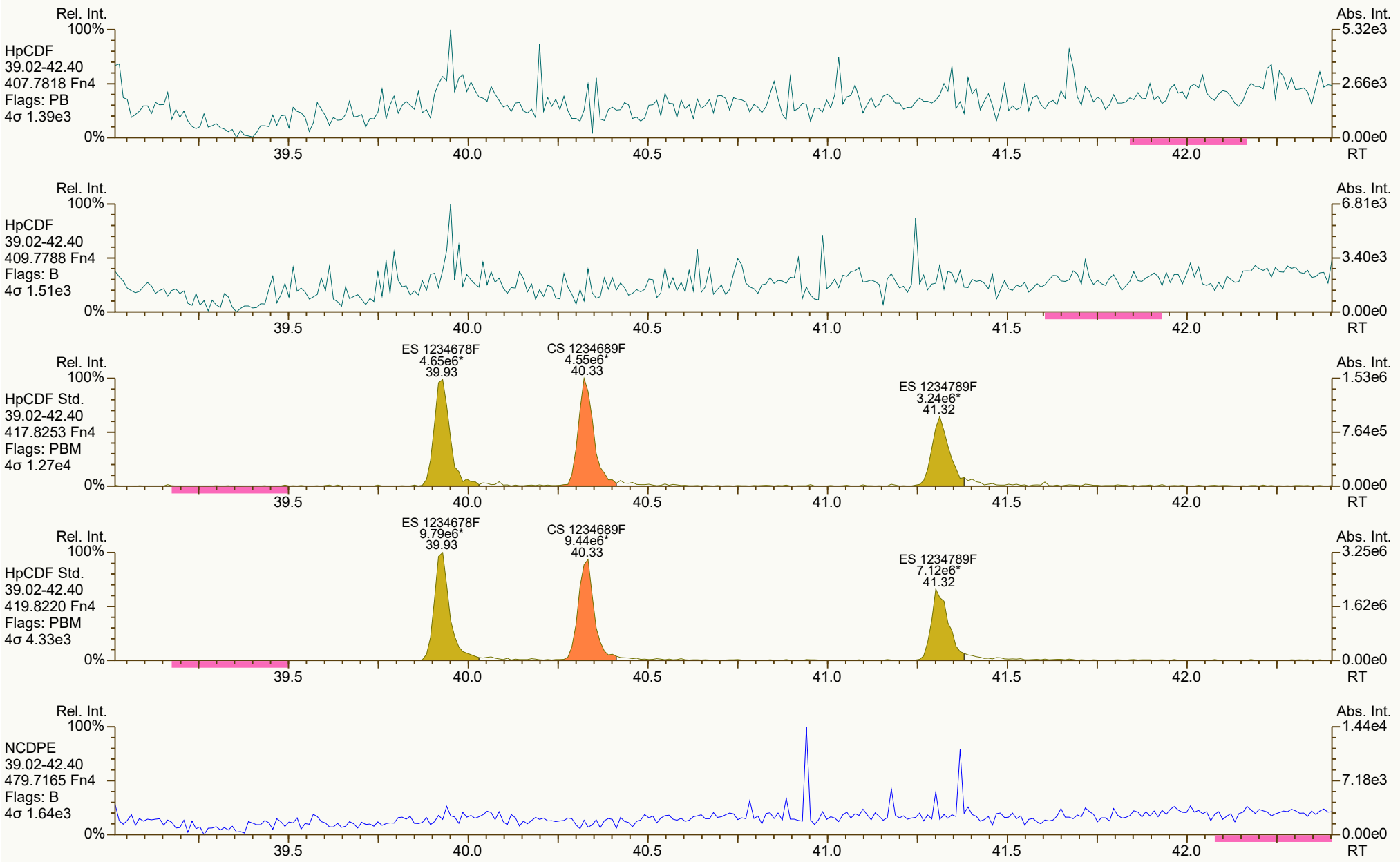
SGS ID: MB1_18819_DF_SDS
Sample ID: Method Blank
Acq: 20-Jan-2022 13:52:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 49
User: DTF Datafile: 220120C05



Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\MB1_18819_DF_SDS.utp_res, saved 21-Jan-2022 10:45 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 8146 scc: 248-046
PKD: 21-Jan-2022 10:05 Printed: 21-Jan-2022 11:19 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PB
4σ 1.78e3
0%
Abs. Int.
6.18e3
3.09e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
6.27e3
3.13e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 6.77e3
0%
CS 12346F
1.22e7
31.98
ES 12378F
1.24e7
32.51
ES 23478F
1.22e7
33.61
Abs. Int.
3.57e6
1.79e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 4.03e3
0%
CS 12346F
7.46e6
31.98
ES 12378F
7.52e6
32.51
ES 23478F
7.59e6
33.61
Abs. Int.
2.02e6
1.01e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: PB
4σ 1.64e3
0%
Abs. Int.
1.26e4
6.30e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: B
4σ 1.87e3
0%
Abs. Int.
6.06e3
3.03e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PB
4σ 1.63e3
0%
Abs. Int.
4.83e3
2.41e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 1.01e4
0%
ES 123478F
5.23e6
36.83
ES 123678F
6.24e6*
36.97
CS 123469F
5.50e6*
37.29
ES 234678F
4.75e6*
37.65
ES 123789F
4.49e6*
38.59
Abs. Int.
1.66e6
8.28e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 5.81e3
0%
ES 123478F
9.65e6
36.83
ES 123678F
1.16e7*
36.97
CS 123469F
1.05e7*
37.29
ES 234678F
8.29e6*
37.65
ES 123789F
8.36e6*
38.59
Abs. Int.
3.03e6
1.52e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.34e3
0%
Abs. Int.
8.77e3
4.38e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PB
4σ 1.39e3
0%
Abs. Int.
5.32e3
2.66e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: B
4σ 1.51e3
0%
Abs. Int.
6.81e3
3.40e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 1.27e4
ES 1234678F
4.65e6*
39.93
CS 1234689F
4.55e6*
40.33
ES 1234789F
3.24e6*
41.32
0%
Abs. Int.
1.53e6
7.64e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 4.33e3
ES 1234678F
9.79e6*
39.93
CS 1234689F
9.44e6*
40.33
ES 1234789F
7.12e6*
41.32
0%
Abs. Int.
3.25e6
1.62e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.44e4
7.18e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 1.48e3
0%
Abs. Int.
4.76e3
2.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.49e3
4.25e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.52e6*
43.69
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 3.78e3
0%
Abs. Int.
2.06e6
1.03e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.53e6*
43.69
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 1.93e3
0%
Abs. Int.
2.16e6
1.08e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.02e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5964_18819_DF_006 **Acq'd:** 20 Jan 2022 14:39 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H1 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 530-035-MYN

Datafile: 220120C06 **Report:** 21 Jan 2022 10:51 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.65		1.0008	1.0008	0	4.29E+06	0.79	Y	1.18	56.3	4561.973	0.639
12378-PeCDD	33.94	J	1.0006	1.0005	-0.2	7.22E+04	1.63	Y	1.04	1.26	5766.908	0.915
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	4178.9	0.647
123678-HxCDD	37.95		1.0034	1.0034	0	1.68E+05	1.19	Y	1.15	2.62	4178.9	0.612
123789-HxCDD	38.23	J	1.0109	1.0109	0	1.33E+05	1.39	Y	1.05	2.29	4178.9	0.679
1234678-HpCDD	40.86		1.0003	1.0003	0	3.82E+06	0.97	Y	1.06	69.4	3924.582	0.598
OCDD	43.51		1.0002	1.0003	+0.3	4.99E+07	0.91	Y	1.13	1,310	2737.893	0.782
2378-TCDF	27.80		1.0008	1.0008	0	1.84E+07	0.80	Y	1.08	176	6572.572	0.705
12378-PeCDF	32.51		1.0005	1.0005	0	4.66E+05	1.74	Y	1.02	5.16	4571.526	0.485
23478-PeCDF	33.62		1.0005	1.0008	+0.6	5.39E+05	1.36	Y	1.02	5.92	4571.526	0.451
123478-HxCDF	36.83		1.0004	1.0005	+0.2	6.85E+05	1.20	Y	1.27	7.81	4453.964	0.481
123678-HxCDF	36.97		1.0004	1.0005	+0.2	2.78E+05	1.08	Y	1.15	2.91	4453.964	0.421
234678-HxCDF	37.65	J EMPC	1.0004	1.0004	0	1.18E+05	1.64	N	1.19	1.51	4453.964	0.533
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	4453.964	0.515
1234678-HpCDF	39.93		1.0002	1.0003	+0.2	3.97E+06	1.07	Y	1.37	46.9	2909.832	0.259
1234789-HpCDF	41.31		1.0003	1.0001	-0.5	2.42E+05	1.04	Y	1.31	3.44	2909.832	0.347
OCDF	43.70		1.0002	1.0003	+0.3	4.92E+07	0.89	Y	1.07	884	3361.772	0.607

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.62		1.0233	1.0235	+0.3	1.27E+07	0.77	Y	1.05	82.2
ES 12378-PeCDD	33.93		1.2121	1.2131	+2.0	1.09E+07	1.65	Y	0.88	83.9
ES 123478-HxCDD	37.82		0.9921	0.9921	0	9.83E+06	1.31	Y	0.97	78
ES 123678-HxCDD	37.94		0.9951	0.9951	0	1.11E+07	1.31	Y	0.94	90.5
ES 123789-HxCDD	38.22		1.0025	1.0026	+0.2	1.09E+07	1.32	Y	1.09	77.3
ES 1234678-HpCDD	40.85		1.0709	1.0715	+1.5	1.03E+07	1.11	Y	0.91	86.7
ES OCDD	43.50		1.1403	1.1411	+2.1	1.34E+07	0.94	Y	0.62	82.8
ES 2378-TCDF	27.77		1.0506	1.0510	+0.7	1.92E+07	0.79	Y	1.06	75.7
ES 12378-PeCDF	32.49		1.2281	1.2294	+2.5	1.74E+07	1.63	Y	0.91	80.1
ES 23478-PeCDF	33.59		1.2698	1.2712	+2.8	1.76E+07	1.59	Y	0.88	83.6
ES 123478-HxCDF	36.82		0.9657	0.9657	0	1.36E+07	0.56	Y	1.20	87.7
ES 123678-HxCDF	36.96		0.9695	0.9694	-0.2	1.64E+07	0.50	Y	1.35	93.3
ES 234678-HxCDF	37.64		0.9874	0.9873	-0.2	1.29E+07	0.55	Y	1.24	80.1
ES 123789-HxCDF	38.58		1.0116	1.0120	+0.9	1.31E+07	0.54	Y	1.16	87.1
ES 1234678-HpCDF	39.92		1.0467	1.0471	+1.0	1.22E+07	0.48	Y	0.97	97.4
ES 1234789-HpCDF	41.31		1.0830	1.0836	+1.5	1.06E+07	0.43	Y	0.85	96.2
ES OCDF	43.68		1.1451	1.1459	+2.1	2.05E+07	0.95	Y	0.81	98

Lab ID: B5964_18819_DF_006 **Acq'd:** 20 Jan 2022 14:39 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H1 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 530-035-MYN

Datafile: 220120C06 **Report:** 21 Jan 2022 10:51 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.97		-	-	-	1.48E+07	0.83	Y	-	-
JS 1234-TCDF	26.43		-	-	-	2.39E+07	0.82	Y	-	-
JS 123467-HxCDD	38.12		-	-	-	6.48E+06	1.31	Y	-	-
CS 37Cl-2378-TCDD	28.65		1.0241	1.0243	+0.3	5.75E+06	n/a	-	1.20	80.9
CS 12347-PeCDD	33.42		1.1943	1.1952	+1.8	1.02E+07	1.61	Y	0.75	91.8
CS 12346-PeCDF	31.96		1.2083	1.2094	+2.1	1.74E+07	1.52	Y	0.85	85.6
CS 123469-HxCDF	37.28		0.9778	0.9778	0	1.50E+07	0.55	Y	1.12	104
CS 1234689-HpCDF	40.32		1.0571	1.0576	+1.2	1.31E+07	0.48	Y	0.89	114
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~5.75E+06~~	~~n/a~~		~~1.15~~	~~98.7~~
~~SS 12347-PeCDD~~	~~33.42~~		~~1.1943~~	~~1.1952~~	~~+1.8~~	~~1.02E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~109~~
~~SS 12346-PeCDF~~	~~31.96~~		~~1.2083~~	~~1.2094~~	~~+2.1~~	~~1.74E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~107~~
~~SS 123469-HxCDF~~	~~37.28~~		~~0.9778~~	~~0.9778~~	~~0~~	~~1.50E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~111~~
~~SS 1234689-HpCDF~~	~~40.32~~		~~1.0571~~	~~1.0576~~	~~+1.2~~	~~1.31E+07~~	~~0.48~~	~~Y~~	~~0.92~~	~~116~~

Totals	Conc	EMPC
Total TCDD	60.3	65.5
Total PeCDD	7.75	11.3
Total HxCDD	48.1	49.6
Total HpCDD	188	188
Total Tetra-Octa Dioxins	1610	1620
Total TCDF	334	342
Total PeCDF	37.8	38.8
Total HxCDF	33.2	37.6
Total HpCDF	80.8	80.8
Total Tetra-Octa Furans	1,370	1380
Total Tetra-Octa Dioxins & Furans	2980	3000

Lab ID: B5964_18819_DF_006 **Acq'd:** 20 Jan 2022 14:39 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H1 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 530-035-MYN

Datafile: 220120C06 **Report:** 21 Jan 2022 10:51 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04	EMPC	0.8755	0.8749	-0.9	1.21E+05	0.94	N	1.18	1.59	4561.973	0.639
1379-TCDD	NotFnd		0.8876						1.18		4561.973	0.639
1369-TCDD	NotFnd		0.9023						1.18		4561.973	0.639
1469-TCDD	26.58		0.9291	0.9287	-0.6	3.08E+05	0.87	Y	1.18	4.05	4561.973	0.639
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		4561.973	0.639
1378-TCDD	NotFnd		0.9440						1.18		4561.973	0.639
1268-TCDD	NotFnd		0.9506						1.18		4561.973	0.639
1478-TCDD	NotFnd		0.9591						1.18		4561.973	0.639
1279-TCDD	NotFnd		0.9649						1.18		4561.973	0.639
1234/1269-TCDD	NotFnd		0.9771						1.18		4561.973	0.639
1236-TCDD	NotFnd		0.9820						1.18		4561.973	0.639
1237/1238-TCDD	NotFnd		0.9908						1.18		4561.973	0.639
1239-TCDD	NotFnd		0.9954						1.18		4561.973	0.639
2378-TCDD	**28.65**		**1.0008**	1.0008	**0**	4.29E+06	0.79	Y	**1.18**	**56.3**	**4561.973**	**0.639**
1278-TCDD	28.97	EMPC	1.0121	1.0119	-0.3	2.78E+05	0.97	N	1.18	3.65	4561.973	0.639
1267-TCDD	NotFnd		1.0167						1.18		4561.973	0.639
1289-TCDD	NotFnd		1.0341						1.18		4561.973	0.639
12479/12468-PeCDD	31.45		0.9273	0.9270	-0.6	1.61E+05	1.47	Y	1.04	2.82	5766.908	0.915
12469-PeCDD	31.98		0.9430	0.9427	-0.6	2.10E+05	1.59	Y	1.04	3.67	5766.908	0.915
12368-PeCDD	32.53	J EMPC	0.9592	0.9589	-0.6	5.74E+04	1.21	N	1.04	1	5766.908	0.915
12478-PeCDD	32.72	J EMPC	0.9647	0.9646	-0.2	3.92E+04	0.96	N	1.04	0.685	5766.908	0.915
12379-PeCDD	NotFnd		0.9676						1.04		5766.908	0.915
12369/12467/12489-PeCDD	33.09	J EMPC	0.9752	0.9755	+0.6	1.04E+05	1.26	N	1.04	1.82	5766.908	0.915
12346/12347-PeCDD	NotFnd		0.9860						1.04		5766.908	0.915
12378-PeCDD	33.94	J	**1.0006**	**1.0005**	**-0.2**	**7.22E+04**	**1.63**	**Y**	**1.04**	**1.26**	**5766.908**	**0.915**
12367-PeCDD	NotFnd		1.0034						1.04		5766.908	0.915
12389-PeCDD	NotFnd		1.0134						1.04		5766.908	0.915
124679/124689-HxCDD	36.09		0.9545	0.9542	-0.6	1.70E+06	1.26	Y	1.10	28.9	4178.9	0.645
123468-HxCDD	36.74	J EMPC	0.9715	0.9715	0	8.92E+04	1.01	N	1.10	1.52	4178.9	0.645
123679/123689-HxCDD	37.04		0.9793	0.9794	+0.2	8.40E+05	1.32	Y	1.10	14.3	4178.9	0.645
123469-HxCDD	NotFnd		0.9829						1.10		4178.9	0.645
123478-HxCDD	NotFnd		**1.0004**						1.09		**4178.9**	**0.647**
123678-HxCDD	37.95		**1.0034**	**1.0034**	**0**	**1.68E+05**	**1.19**	**Y**	1.15	**2.62**	**4178.9**	**0.612**
123467-HxCDD	NotFnd		1.0082						1.10		4178.9	0.645
123789-HxCDD	38.23	J	**1.0109**	**1.0109**	**0**	**1.33E+05**	**1.39**	**Y**	1.05	**2.29**	**4178.9**	**0.679**

Lab ID: B5964_18819_DF_006 **Acq'd:** 20 Jan 2022 14:39 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H1 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 530-035-MYN

Datafile: 220120C06 **Report:** 21 Jan 2022 10:51 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

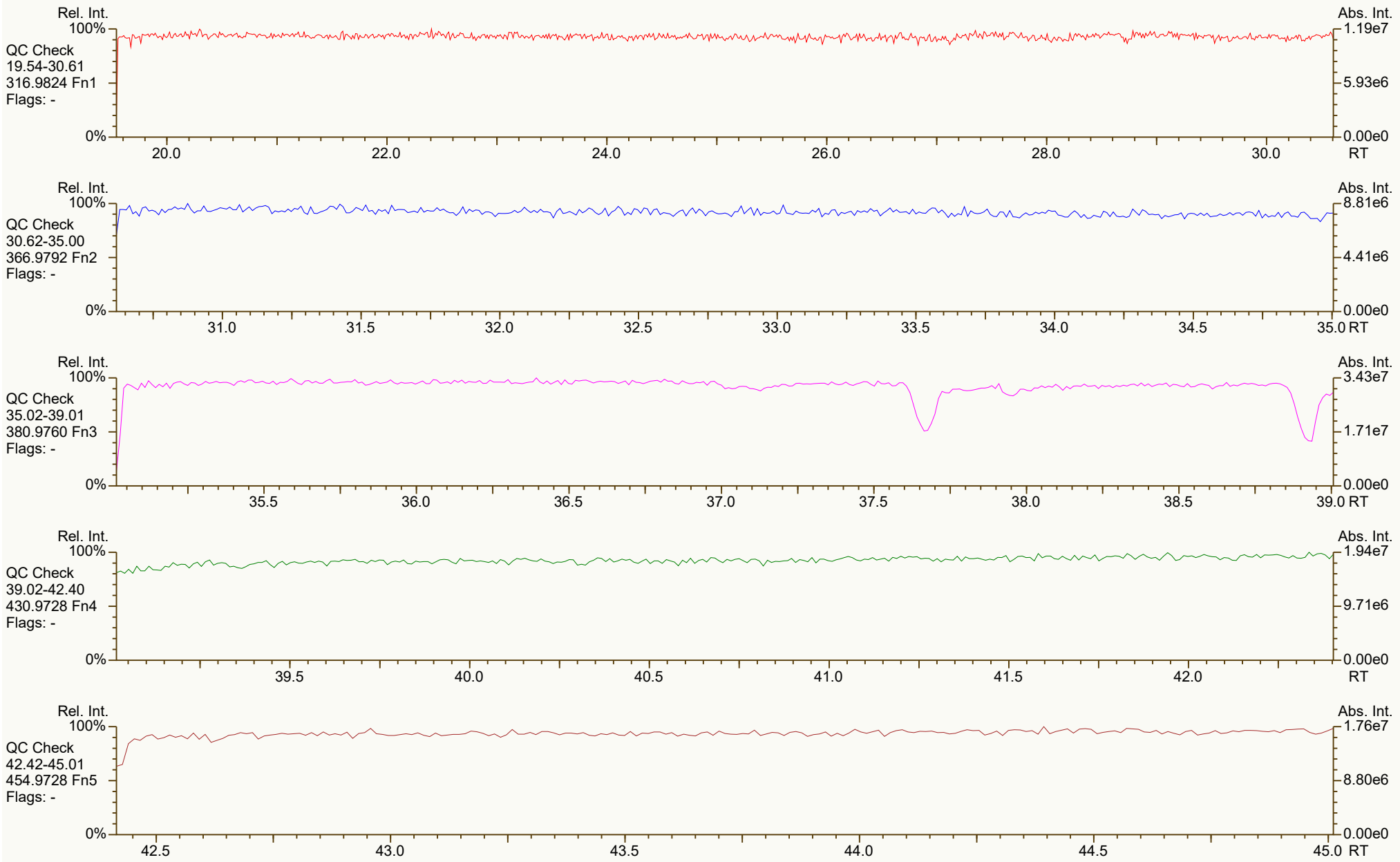
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.18		0.9838	0.9837	-0.2	6.50E+06	1.02	Y	1.06	118	3924.582	0.598
1234678-HpCDD	**40.86**		**1.0003**	**1.0003**	**0**	**3.82E+06**	**0.97**	**Y**	**1.06**	**69.4**	**3924.582**	**0.598**
OCDD	**43.51**		**1.0002**	**1.0003**	**+0.3**	**4.99E+07**	**0.91**	**Y**	**1.13**	**1,310**	**2737.893**	**0.782**
OCDD-a	43.51		1.0002	1.0002	0	3.07E+06	2.55	Y	0.07	1,260	3627.77	16.2
1368-TCDF	22.97	EMPC	0.8282	0.8270	-1.7	6.46E+04	0.49	N	1.08	0.618	6572.572	0.705
1468-TCDF	23.53		0.8485	0.8471	-2.0	1.41E+05	0.76	Y	1.08	1.35	6572.572	0.705
2468-TCDF	24.17		0.8709	0.8701	-1.2	4.19E+05	0.72	Y	1.08	4	6572.572	0.705
1346/1246-TCDF	NotFnd		0.8829						1.08		6572.572	0.705
1347/1378/1247-TCDF	24.67	EMPC	0.8884	0.8883	-0.1	3.96E+05	0.95	N	1.08	3.78	6572.572	0.705
1348-TCDF	24.94	EMPC	0.8980	0.8979	-0.1	9.46E+04	1.64	N	1.08	0.904	6572.572	0.705
1248/1367/1379-TCDF	25.02		0.9026	0.9009	-2.6	9.86E+05	0.72	Y	1.08	9.42	6572.572	0.705
1268-TCDF	25.42		0.9158	0.9153	-0.8	4.85E+05	0.83	Y	1.08	4.63	6572.572	0.705
1467-TCDF	NotFnd		0.9206						1.08		6572.572	0.705
1478-TCDF	25.73		0.9266	0.9262	-0.6	8.42E+05	0.82	Y	1.08	8.04	6572.572	0.705
1369/1237-TCDF	26.09	EMPC	0.9397	0.9394	-0.5	1.47E+05	0.61	N	1.08	1.41	6572.572	0.705
2467-TCDF	NotFnd		0.9440						1.08		6572.572	0.705
2368-TCDF	26.37		0.9497	0.9495	-0.3	7.02E+05	0.73	Y	1.08	6.71	6572.572	0.705
1238/1234/1678/1469/1236-TCDF	26.44		0.9528	0.9520	-1.3	8.68E+05	0.79	Y	1.08	8.29	6572.572	0.705
1278-TCDF	26.91		0.9690	0.9688	-0.3	7.58E+06	0.80	Y	1.08	72.4	6572.572	0.705
1349-TCDF	NotFnd		0.9730						1.08		6572.572	0.705
1267-TCDF	27.18		0.9787	0.9785	-0.3	4.57E+05	0.70	Y	1.08	4.37	6572.572	0.705
2346/1249-TCDF	NotFnd		0.9850						1.08		6572.572	0.705
2347/1279-TCDF	27.57	EMPC	0.9929	0.9926	-0.5	1.40E+05	1.09	N	1.08	1.34	6572.572	0.705
2348-TCDF	27.68		0.9970	0.9967	-0.5	1.15E+06	0.73	Y	1.08	11	6572.572	0.705
2378-TCDF	**27.80**		**1.0008**	**1.0008**	**0**	**1.84E+07**	**0.80**	**Y**	**1.08**	**176**	**6572.572**	**0.705**
2367/3467-TCDF	28.14		1.0136	1.0133	-0.5	1.49E+06	0.80	Y	1.08	14.3	6572.572	0.705
1269-TCDF	28.39		1.0221	1.0222	+0.2	1.98E+05	0.80	Y	1.08	1.89	6572.572	0.705
1239-TCDF	NotFnd		1.0319						1.08		6572.572	0.705
1289-TCDF	29.78		1.0740	1.0724	-2.9	1.21E+06	0.86	Y	1.08	11.6	6572.572	0.705
13468/12468-PeCDF	29.72		0.9145	0.9147	+0.4	9.73E+05	1.67	Y	1.02	10.7	4571.424	0.468
13678/13467/12467-PeCDF	31.25	J	0.9619	0.9620	+0.2	1.59E+05	1.33	Y	1.02	1.75	4571.526	0.468
12368/13478/12478-PeCDF	31.41		0.9665	0.9669	+0.8	7.95E+05	1.58	Y	1.02	8.76	4571.526	0.468
14678-PeCDF	NotFnd		0.9695						1.02		4571.526	0.468
13479-PeCDF	NotFnd		0.9724						1.02		4571.526	0.468
13469/12479-PeCDF	NotFnd		0.9801						1.02		4571.526	0.468
12346-PeCDF	NotFnd		0.9842						1.02		4571.526	0.468

Lab ID: B5964_18819_DF_006 **Acq'd:** 20 Jan 2022 14:39 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H1 **UTP:** 21-Jan-2022 10:45:31 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 530-035-MYN

Datafile: 220120C06 **Report:** 21 Jan 2022 10:51 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.05	J	0.9868	0.9867	-0.2	1.73E+05	1.50	Y	1.02	1.91	4571.526	0.468
12347-PeCDF	32.13	J EMPC	0.9895	0.9889	-1.2	3.98E+04	2.32	N	1.02	0.439	4571.526	0.468
12348-PeCDF	32.30	J	0.9941	0.9941	0	1.03E+05	1.69	Y	1.02	1.14	4571.526	0.468
12378-PeCDF	**32.51**		**1.0005**	**1.0005**	**0**	**4.66E+05**	**1.74**	**Y**	**1.02**	**5.16**	**4571.526**	**0.485**
12678/12367-PeCDF	32.80	J	1.0090	1.0095	+1.0	2.23E+05	1.34	Y	1.02	2.45	4571.526	0.468
12379-PeCDF	NotFnd		1.0142						1.02		4571.526	0.468
12679-PeCDF	NotFnd		0.9931						1.02		4571.526	0.468
23467/12369-PeCDF	33.48	J EMPC	0.9966	0.9967	+0.2	5.11E+04	1.22	N	1.02	0.564	4571.526	0.468
23478-PeCDF	**33.62**		**1.0005**	**1.0008**	**+0.6**	**5.39E+05**	**1.36**	**Y**	**1.02**	**5.92**	**4571.526**	**0.451**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		4571.526	0.468
12349-PeCDF	NotFnd		1.0101						1.02		4571.526	0.468
12389-PeCDF	NotFnd		1.0322						1.02		4571.526	0.468
123468-HxCDF	35.44	EMPC	0.9627	0.9627	0	2.47E+05	1.03	N	1.19	2.92	4453.964	0.483
124678/134678-HxCDF	35.64		0.9684	0.9681	-0.6	9.32E+05	1.33	Y	1.19	11	4453.964	0.483
134679-HxCDF	NotFnd		0.9747						1.19		4453.964	0.483
124679-HxCDF	NotFnd		0.9802						1.19		4453.964	0.483
124689-HxCDF	36.29		0.9858	0.9856	-0.4	7.88E+05	1.34	Y	1.19	9.32	4453.964	0.483
123467-HxCDF	36.71	J	0.9972	0.9972	0	7.99E+04	1.16	Y	1.19	0.945	4453.964	0.483
123478-HxCDF	**36.83**		**1.0004**	**1.0005**	**+0.2**	**6.85E+05**	**1.20**	**Y**	**1.27**	**7.81**	**4453.964**	**0.481**
123678-HxCDF	**36.97**		**1.0004**	**1.0005**	**+0.2**	**2.78E+05**	**1.08**	**Y**	**1.15**	**2.91**	**4453.964**	**0.421**
123479-HxCDF	NotFnd		1.0051						1.19		4453.964	0.483
123469-HxCDF	NotFnd		1.0091						1.19		4453.964	0.483
123679-HxCDF	NotFnd		0.9943						1.19		4453.964	0.483
234678-HxCDF	**37.65**	J EMPC	**1.0004**	**1.0004**	**0**	**1.18E+05**	**1.64**	**N**	**1.19**	**1.51**	**4453.964**	**0.533**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4453.964	0.483
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**4453.964**	**0.515**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.62	J	1.0007	1.0010	+0.7	9.61E+04	1.12	Y	1.19	1.14	4453.964	0.483
1234678-HpCDF	**39.93**		**1.0002**	**1.0003**	**+0.2**	**3.97E+06**	**1.07**	**Y**	**1.37**	**46.9**	**2909.832**	**0.259**
1234679-HpCDF	40.19		1.0067	1.0068	+0.2	2.03E+05	0.92	Y	1.34	2.62	2909.832	0.299
1234689-HpCDF	40.33		1.0101	1.0102	+0.2	2.16E+06	1.04	Y	1.34	27.9	2909.832	0.299
1234789-HpCDF	**41.31**		**1.0003**	**1.0001**	**-0.5**	**2.42E+05**	**1.04**	**Y**	**1.31**	**3.44**	**2909.832**	**0.347**
OCDF	**43.70**		**1.0002**	**1.0003**	**+0.3**	**4.92E+07**	**0.89**	**Y**	**1.07**	**884**	**3361.772**	**0.607**
OCDF-a	43.69		1.0002	1.0002	0	3.07E+06	2.32	Y	0.07	891	4145.484	12.1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20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
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4.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
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1.71e7
0.00e0
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37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
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9.71e6
0.00e0
39.5
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40.5
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41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
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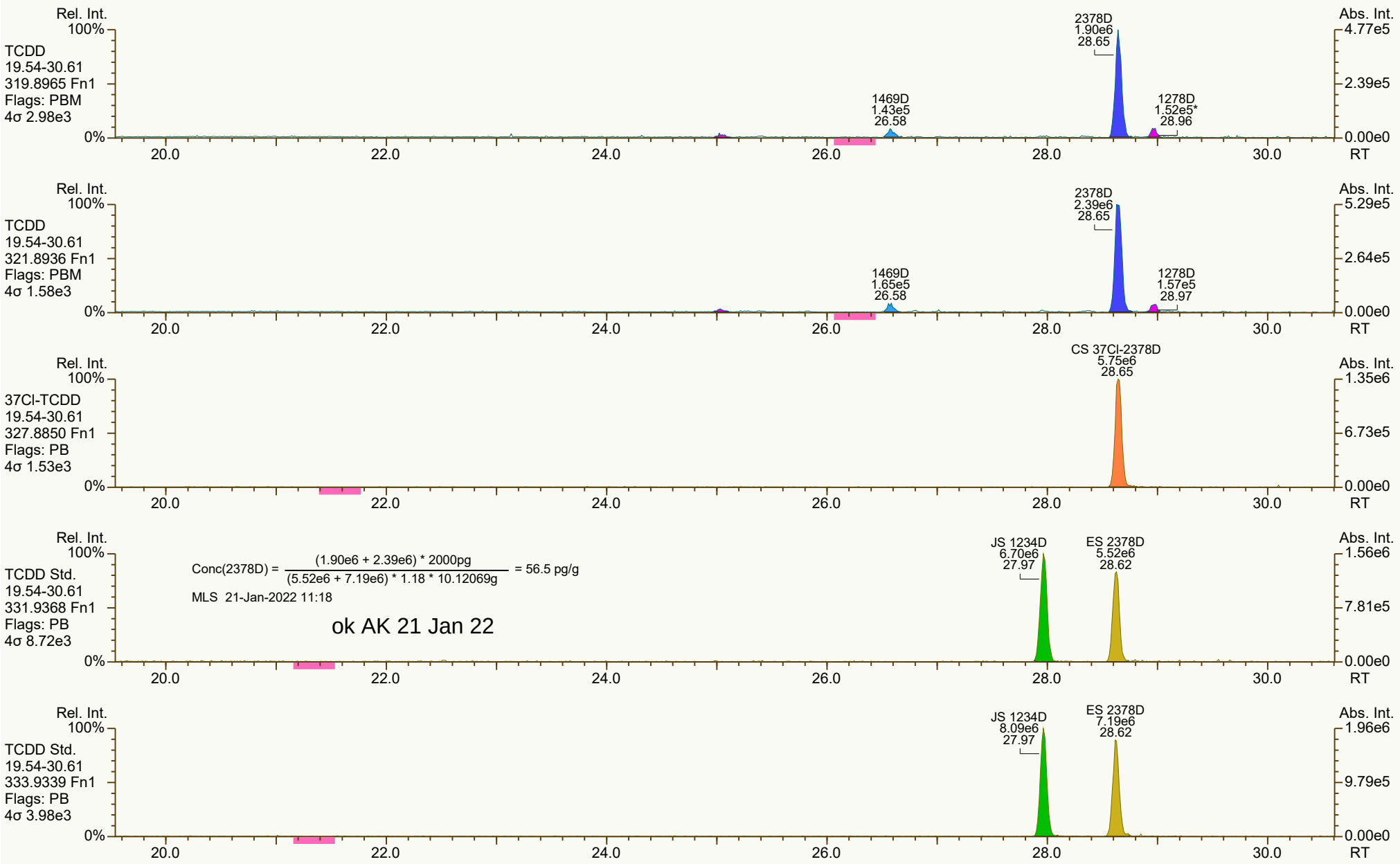
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TCDD
19.54-30.61
319.8965 Fn1
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0%
2378D
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28.65
1469D
1.43e5
26.58
1278D
1.52e5*
28.96
Abs. Int.
4.77e5
2.39e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.58e3
0%
2378D
2.39e6
28.65
1469D
1.65e5
26.58
1278D
1.57e5
28.97
Abs. Int.
5.29e5
2.64e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.53e3
0%
CS 37Cl-2378D
5.75e6
28.65
Abs. Int.
1.35e6
6.73e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 8.72e3
0%
Conc(2378D) = (1.90e6 + 2.39e6) * 2000pg / (5.52e6 + 7.19e6) * 1.18 * 10.12069g = 56.5 pg/g
MLS 21-Jan-2022 11:18
ok AK 21 Jan 22
JS 1234D
6.70e6
27.97
ES 2378D
5.52e6
28.62
Abs. Int.
1.56e6
7.81e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
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0%
JS 1234D
8.09e6
27.97
ES 2378D
7.19e6
28.62
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24.0
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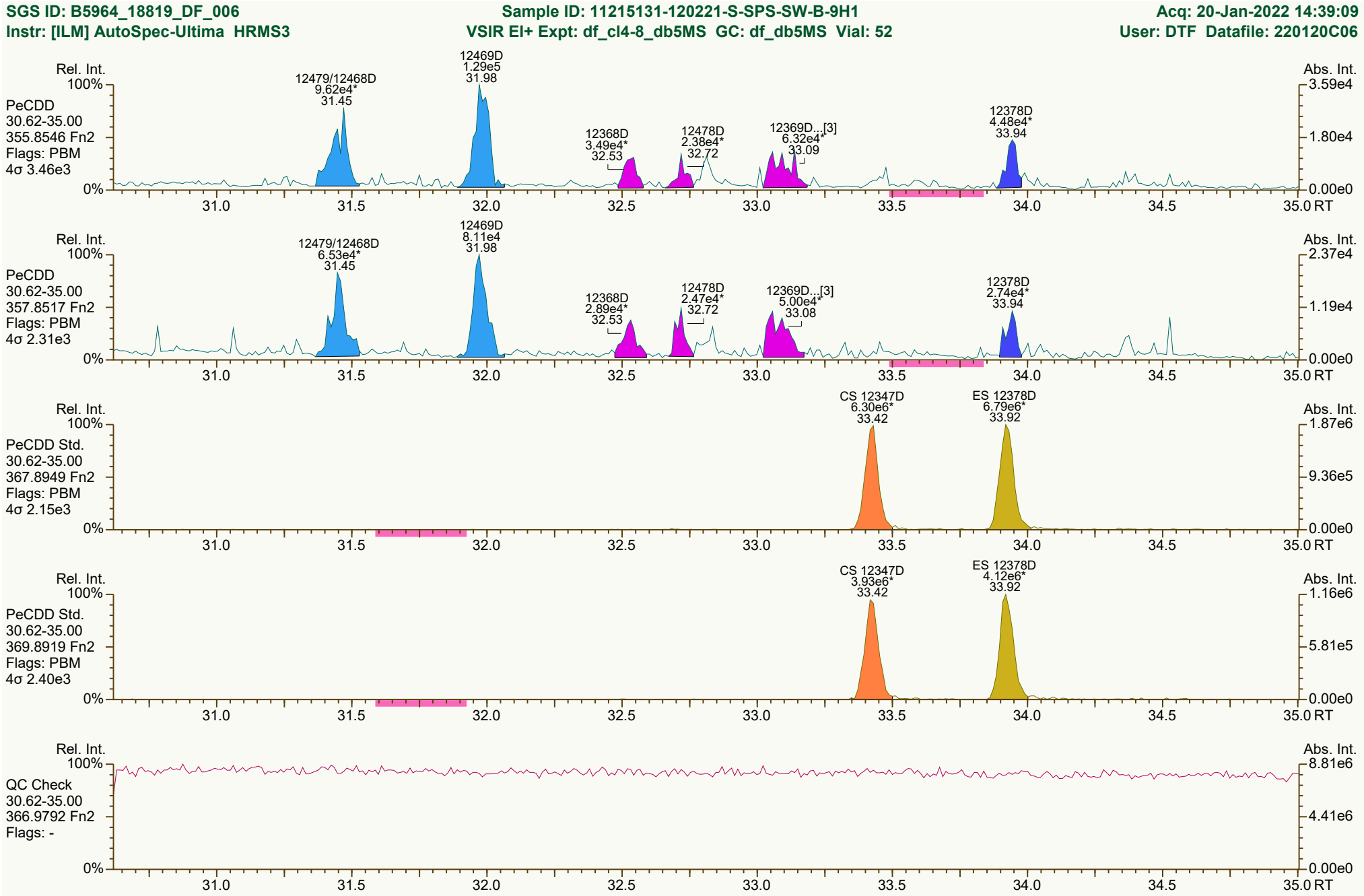
28.0
30.0
RT



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Peak annotation: Areas, Centroids
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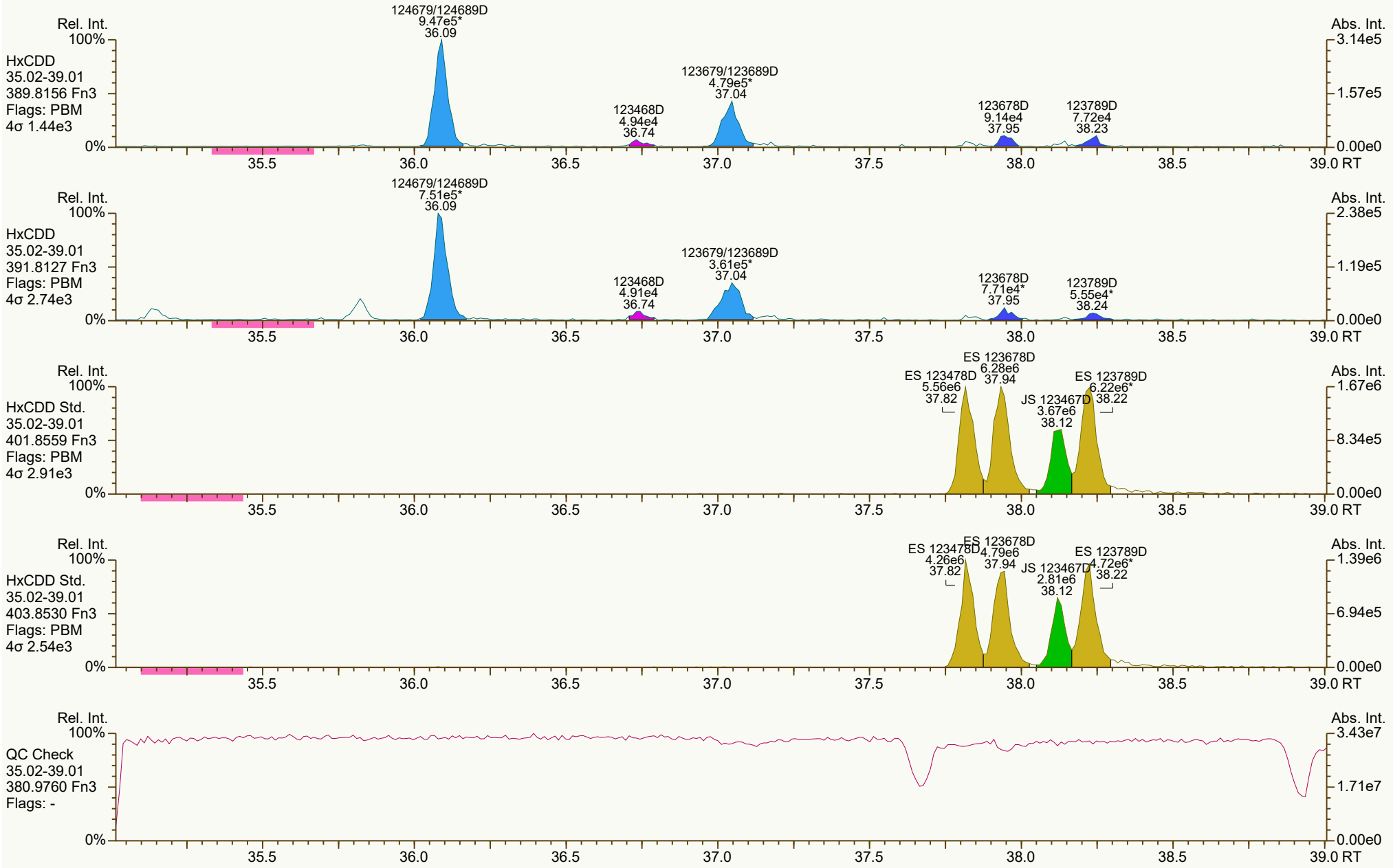
Revised: 21-Jan-2022 10:40 (MLS) Printed: 21-Jan-2022 11:20 Page 3 of 12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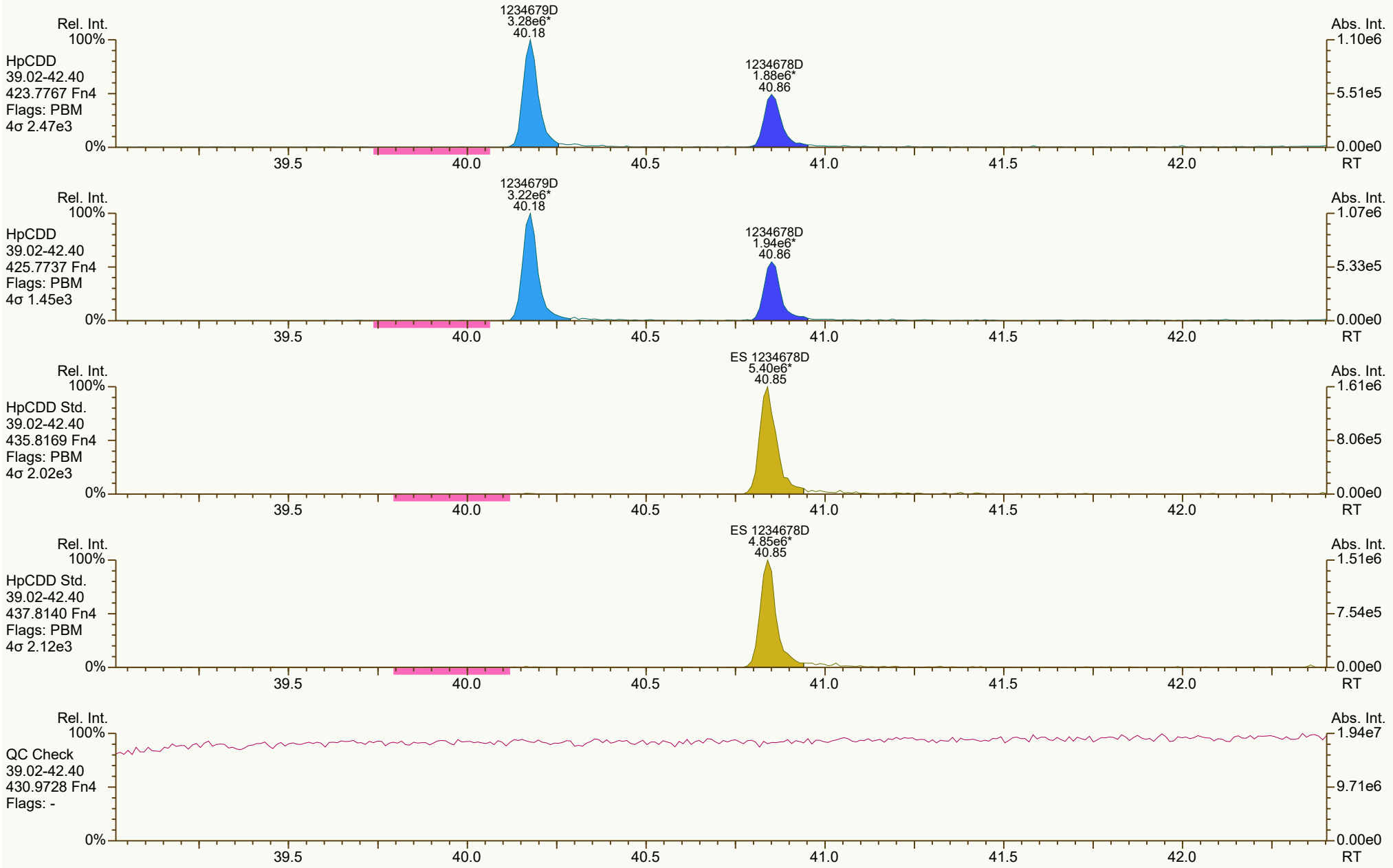
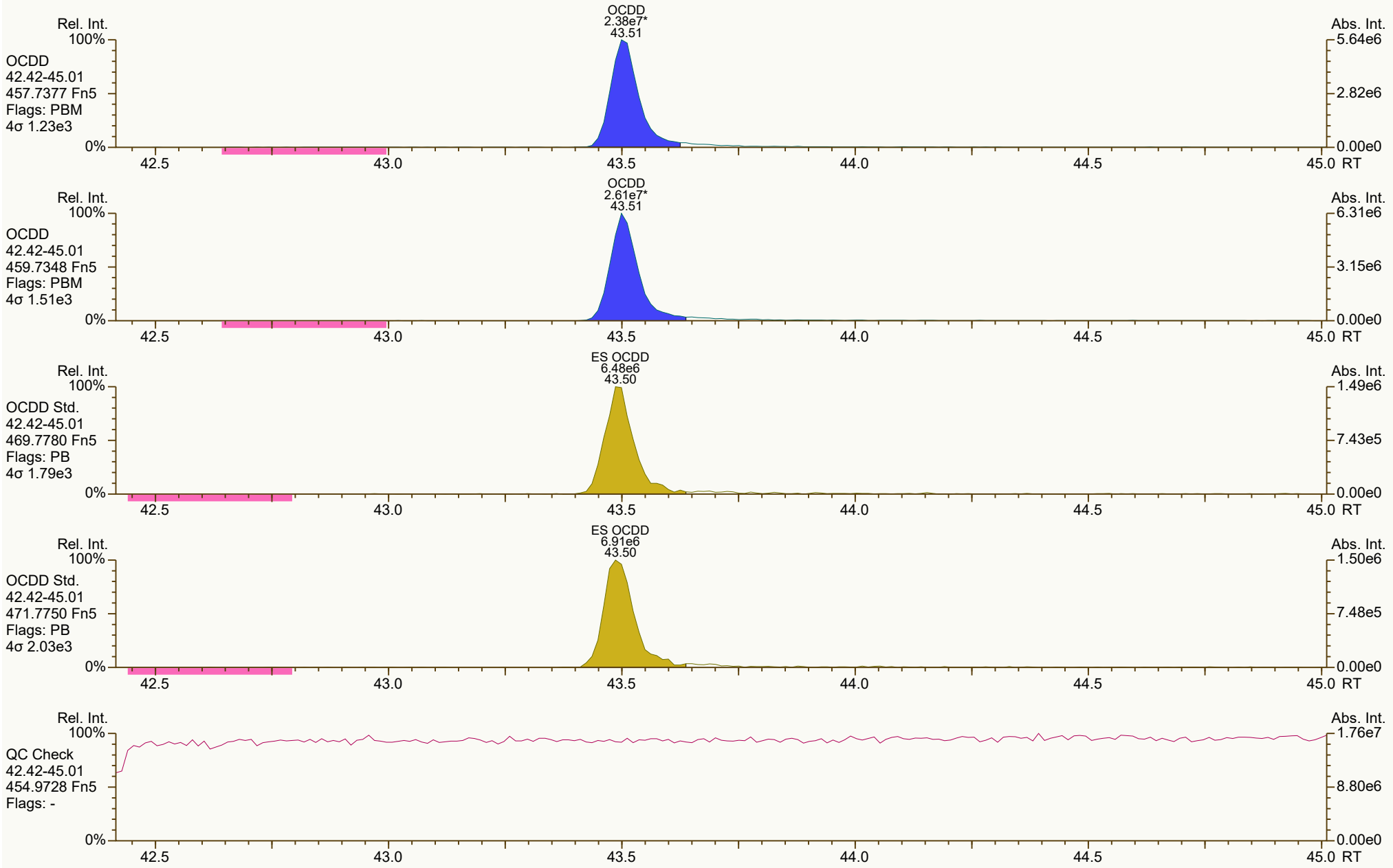
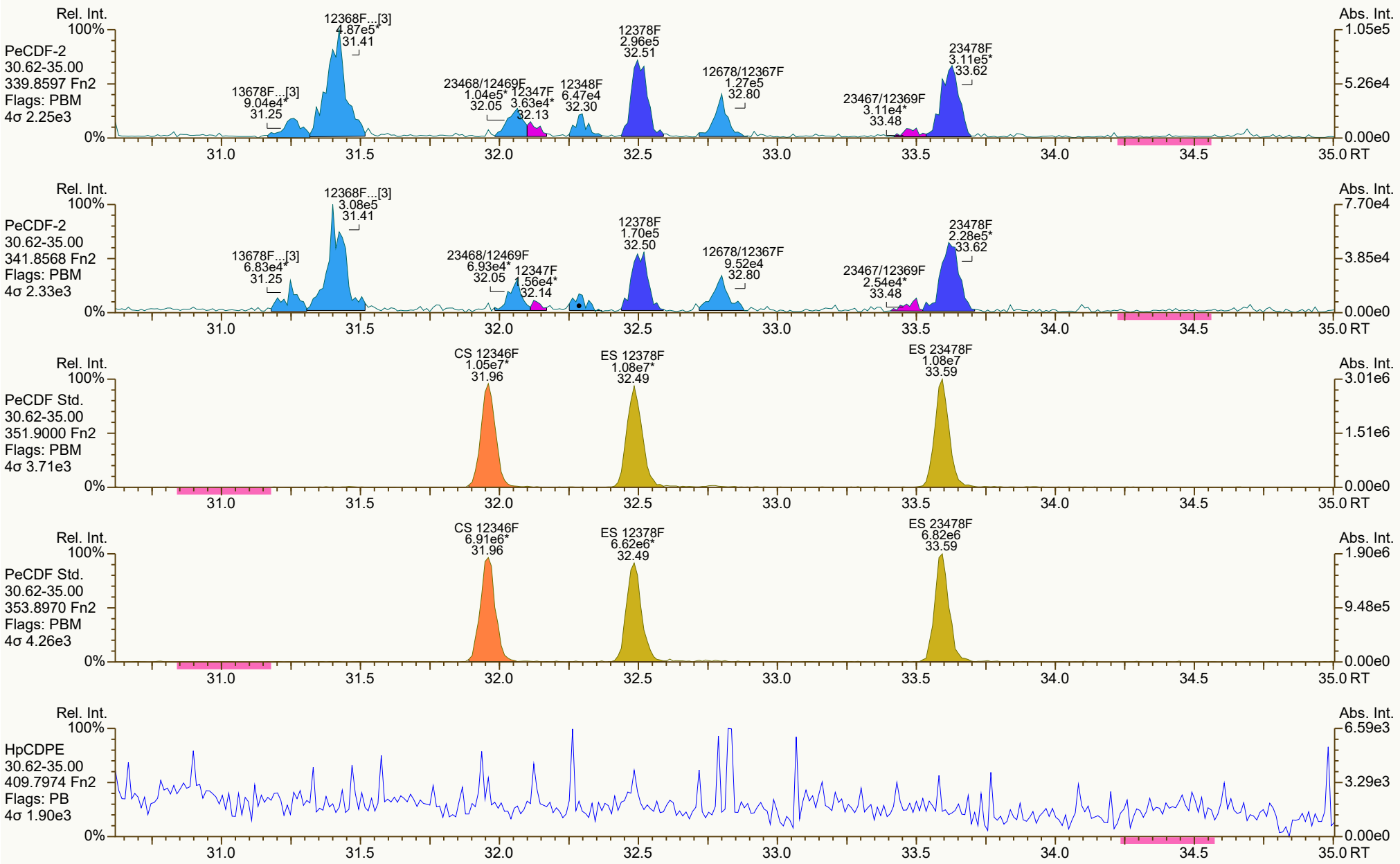
124679/124689D
9.47e5*
36.09
123468D
4.94e4
36.74
123679/123689D
4.79e5*
37.04
123678D
9.14e4
37.95
123789D
7.72e4
38.23
Abs. Int.
3.14e5
1.57e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 2.74e3
124679/124689D
7.51e5*
36.09
123468D
4.91e4
36.74
123679/123689D
3.61e5*
37.04
123678D
7.71e4*
37.95
123789D
5.55e4*
38.24
Abs. Int.
2.38e5
1.19e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 2.91e3
ES 123478D
5.56e6
37.82
ES 123678D
6.28e6
37.94
JS 123467D
3.67e6
38.12
ES 123789D
6.22e6*
38.22
Abs. Int.
1.67e6
8.34e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.54e3
ES 123478D
4.26e6
37.82
ES 123678D
4.79e6
37.94
JS 123467D
2.81e6
38.12
ES 123789D
4.72e6*
38.22
Abs. Int.
1.39e6
6.94e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
Abs. Int.
3.43e7
1.71e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

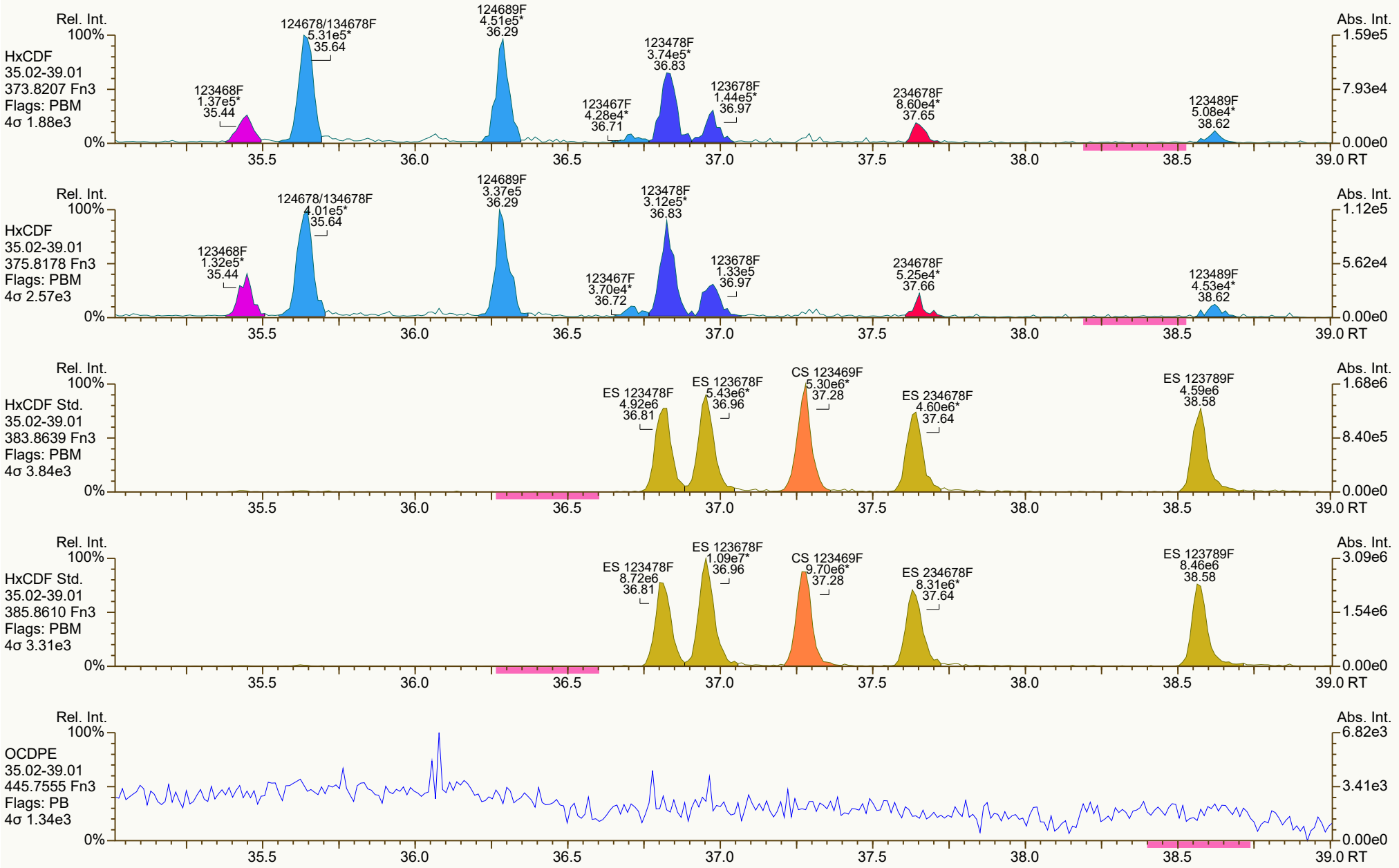

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.47e3
1234679D
3.28e6*
40.18
1234678D
1.88e6*
40.86
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.10e6
5.51e5
0.00e0
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.45e3
1234679D
3.22e6*
40.18
1234678D
1.94e6*
40.86
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.07e6
5.33e5
0.00e0
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.02e3
ES 1234678D
5.40e6*
40.85
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.61e6
8.06e5
0.00e0
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 2.12e3
ES 1234678D
4.85e6*
40.85
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.51e6
7.54e5
0.00e0
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.94e7
9.71e6
0.00e0

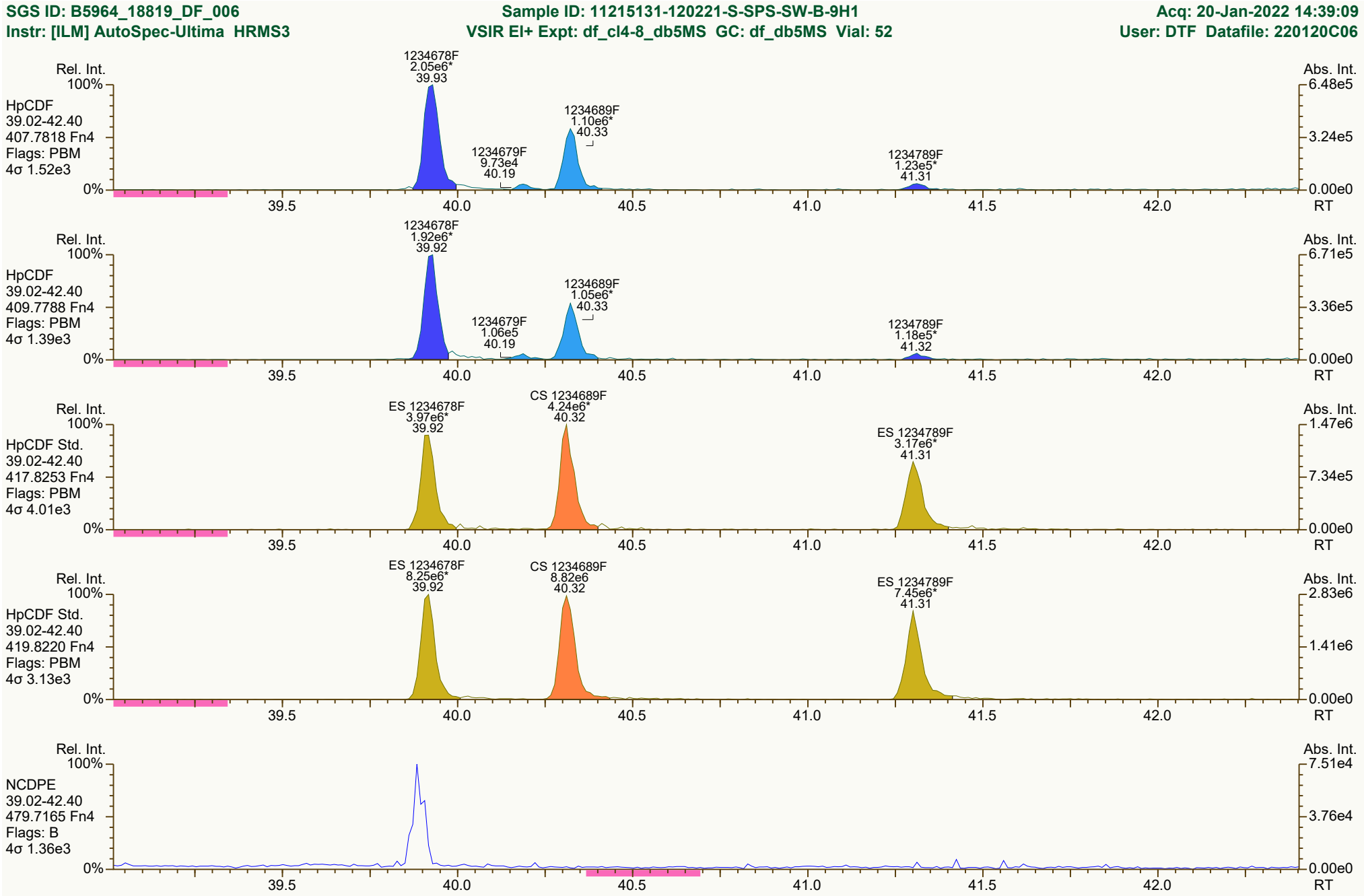

OCDD
2.38e7*
43.51
Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 1.23e3
0%
Abs. Int.
5.64e6
2.82e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.61e7*
43.51
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 1.51e3
0%
Abs. Int.
6.31e6
3.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.48e6
43.50
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PB
4σ 1.79e3
0%
Abs. Int.
1.49e6
7.43e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.91e6
43.50
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PB
4σ 2.03e3
0%
Abs. Int.
1.50e6
7.48e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.76e7
8.80e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

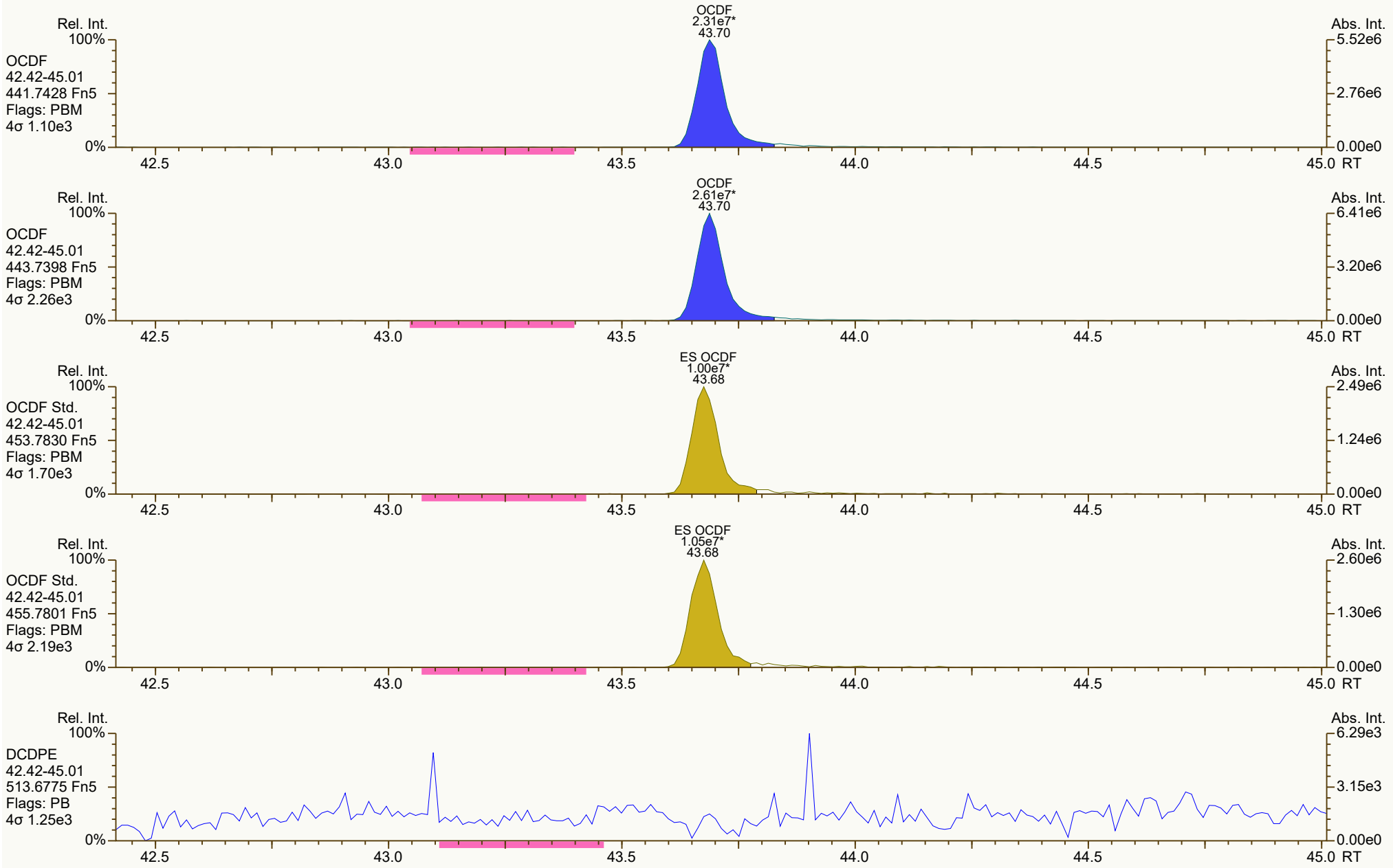

Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.97e3
0%
2378F
8.19e6*
27.80
1278F
3.36e6
26.91
1248F...[3]
4.13e5*
25.02
2348F
4.83e5*
27.68
2367/3467F
6.63e5
28.14
1289F
5.58e5*
29.78
Abs. Int.
1.88e6
9.39e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.60e3
0%
2378F
1.02e7*
27.79
1278F
4.22e6
26.91
1248F...[3]
5.73e5*
25.02
2348F
6.64e5*
27.68
2367/3467F
8.31e5
28.14
1289F
6.51e5*
29.78
Abs. Int.
2.34e6
1.17e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 8.48e3
0%
JS 1234F
1.08e7
26.43
ES 2378F
8.45e6
27.77
Abs. Int.
2.28e6
1.14e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 5.69e3
0%
JS 1234F
1.31e7
26.43
ES 2378F
1.07e7
27.77
Abs. Int.
2.88e6
1.44e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.45e3
0%
Abs. Int.
9.59e3
4.80e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.71e5
8.57e4
0.00e0
13468/12468F
6.08e5*
29.72
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PBM
4σ 1.94e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.07e5
5.35e4
0.00e0
13468/12468F
3.64e5*
29.71
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PBM
4σ 2.63e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.19e7
5.93e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
Abs. Int.
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PBM
4σ 2.25e3
13678F...[3] 9.04e4* 31.25
12368F...[3] 4.87e5* 31.41
23468/12469F 1.04e5* 32.05
12347F 3.63e4* 32.13
12348F 6.47e4 32.30
12378F 2.96e5 32.51
12678/12367F 1.27e5 32.80
23467/12369F 3.11e4* 33.48
23478F 3.11e5* 33.62
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: PBM
4σ 2.33e3
13678F...[3] 6.83e4* 31.25
12368F...[3] 3.08e5 31.41
23468/12469F 6.93e4* 32.05
12347F 1.56e4* 32.14
12378F 1.70e5 32.50
12678/12367F 9.52e4 32.80
23467/12369F 2.54e4* 33.48
23478F 2.28e5* 33.62
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PBM
4σ 3.71e3
CS 12346F 1.05e7* 31.96
ES 12378F 1.08e7* 32.49
ES 23478F 1.08e7 33.59
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PBM
4σ 4.26e3
CS 12346F 6.91e6* 31.96
ES 12378F 6.62e6* 32.49
ES 23478F 6.82e6 33.59
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: PB
4σ 1.90e3
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.88e3
123468F 1.37e5* 35.44
124678/134678F 5.31e5* 35.64
124689F 4.51e5* 36.29
123467F 4.28e4* 36.71
123478F 3.74e5* 36.83
123678F 1.44e5* 36.97
234678F 8.60e4* 37.65
123489F 5.08e4* 38.62
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.57e3
123468F 1.32e5* 35.44
124678/134678F 4.01e5* 35.64
124689F 3.37e5 36.29
123467F 3.70e4* 36.72
123478F 3.12e5* 36.83
123678F 1.33e5 36.97
234678F 5.25e4* 37.66
123489F 4.53e4* 38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 3.84e3
ES 123478F 4.92e6 36.81
ES 123678F 5.43e6* 36.96
CS 123469F 5.30e6* 37.28
ES 234678F 4.60e6* 37.64
ES 123789F 4.59e6 38.58
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 3.31e3
ES 123478F 8.72e6 36.81
ES 123678F 1.09e7* 36.96
CS 123469F 9.70e6* 37.28
ES 234678F 8.31e6* 37.64
ES 123789F 8.46e6 38.58
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.34e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


SGS ID: B5964_18819_DF_006
Sample ID: 11215131-120221-S-SPS-SW-B-9H1
Acq: 20-Jan-2022 14:39:09
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 52
User: DTF Datafile: 220120C06
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 1.52e3
1234678F
2.05e6*
39.93
1234679F
9.73e4
40.19
1234689F
1.10e6*
40.33
1234789F
1.23e5*
41.31
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.39e3
1234678F
1.92e6*
39.92
1234679F
1.06e5
40.19
1234689F
1.05e6*
40.33
1234789F
1.18e5*
41.32
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 4.01e3
ES 1234678F
3.97e6*
39.92
CS 1234689F
4.24e6*
40.32
ES 1234789F
3.17e6*
41.31
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 3.13e3
ES 1234678F
8.25e6*
39.92
CS 1234689F
8.82e6
40.32
ES 1234789F
7.45e6*
41.31
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.36e3
RT


OCDF
2.31e7*
43.70
Rel. Int.
Abs. Int.
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 1.10e3
OCDF
2.61e7*
43.70
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 2.26e3
ES OCDF
1.00e7*
43.68
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 1.70e3
ES OCDF
1.05e7*
43.68
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 2.19e3
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.25e3
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
5.52e6
2.76e6
0.00e0
6.41e6
3.20e6
2.49e6
1.24e6
2.60e6
1.30e6
6.29e3
3.15e3

REVIEWED
Megan_Shannahan , 1/21/2022, 11:25:00 AM

SGS Environmental Services — Run Log **Project: B5964_18819_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	220120C01	3	CS3_220120_DF_CA	1.00	SIL 25-347-1	DTF, MLS	343-977	20-Jan-2022	10:26:30
2	220120C02	50	OPR1_18819_DF	1.00	0_18819_OPR001	DTF, MLS	697-611	20-Jan-2022	11:32:05
3	220120C03	51	OPR2_18819_DF	1.00	0_18819_OPR002	DTF, MLS	751-300	20-Jan-2022	12:20:14
4	220120C04	2	SBS_220120_DF_CA	1.00	20-61-1	DTF	981-901	20-Jan-2022	13:06:33
5	220120C05	49	MB1_18819_DF_SDS	10.00	Method Blank	DTF, MLS	248-046	20-Jan-2022	13:52:51
6	220120C06	52	B5964_18819_DF_006	10.12	11215131-120221-S-SPS-SW-B-9H1	DTF, MLS	530-035	20-Jan-2022	14:39:09

REVIEWED
Amber_Kornegay , 1/21/2022, 2:48:08 PM

Dioxin/Furan QC Summary	Acq'd: 20 Jan 2022 10:26 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220120_DF_CA	UTP: 21-Jan-2022 10:45:29 MLS	Checkcode: 343-977-NFN
Sample ID: SIL 25-347-1	Report: 21 Jan 2022 10:47 MS	Datafile: 220120C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.65	1.80E+06	0.84	Y	1.18	1.29	9%
12378-PeCDD	33.95	7.00E+06	1.54	Y	1.04	1.07	3%
123478-HxCDD	37.84	6.03E+06	1.27	Y	1.09	1.16	7%
123678-HxCDD	37.96	6.80E+06	1.19	Y	1.15	1.23	7%
123789-HxCDD	38.24	6.39E+06	1.29	Y	1.05	1.02	-2%
1234678-HpCDD	40.86	5.82E+06	1.01	Y	1.06	1.10	3%
OCDD	43.50	8.90E+06	0.91	Y	1.13	1.19	6%
2378-TCDF	27.80	2.80E+06	0.78	Y	1.08	1.15	6%
12378-PeCDF	32.51	1.18E+07	1.56	Y	1.02	1.10	7%
23478-PeCDF	33.62	1.13E+07	1.58	Y	1.02	1.05	3%
123478-HxCDF	36.83	1.06E+07	1.22	Y	1.27	1.34	6%
123678-HxCDF	36.98	1.14E+07	1.27	Y	1.15	1.19	3%
234678-HxCDF	37.66	1.09E+07	1.31	Y	1.19	1.27	7%
123789-HxCDF	38.60	9.04E+06	1.28	Y	1.16	1.26	8%
1234678-HpCDF	39.93	9.31E+06	1.01	Y	1.37	1.39	1%
1234789-HpCDF	41.32	7.60E+06	1.02	Y	1.31	1.37	5%
OCDF	43.70	1.34E+07	0.92	Y	1.07	1.17	9%
ES 2378-TCDD	28.63	1.39E+07	0.82	Y	1.05	1.00	-4%
ES 12378-PeCDD	33.932	1.31E+07	1.55	Y	0.88	0.94	7%
ES 123478-HxCDD	37.822	1.04E+07	1.27	Y	0.97	0.95	-2%
ES 123678-HxCDD	37.938	1.11E+07	1.21	Y	0.94	1.02	8%
ES 123789-HxCDD	38.227	1.25E+07	1.33	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.846	1.06E+07	1.06	Y	0.91	0.97	7%
ES OCDD	43.494	1.49E+07	0.89	Y	0.62	0.68	10%
ES 2378-TCDF	27.78	2.44E+07	0.80	Y	1.06	0.99	-7%
ES 12378-PeCDF	32.493	2.14E+07	1.56	Y	0.91	0.87	-5%
ES 23478-PeCDF	33.598	2.16E+07	1.58	Y	0.88	0.87	-1%
ES 123478-HxCDF	36.817	1.57E+07	0.55	Y	1.20	1.44	20%
ES 123678-HxCDF	36.961	1.92E+07	0.54	Y	1.35	1.76	30% *
ES 234678-HxCDF	37.644	1.71E+07	0.54	Y	1.24	1.57	27%
ES 123789-HxCDF	38.576	1.44E+07	0.53	Y	1.16	1.32	14%
ES 1234678-HpCDF	39.914	1.34E+07	0.47	Y	0.97	1.23	27%
ES 1234789-HpCDF	41.307	1.11E+07	0.45	Y	0.85	1.02	20%
ES OCDF	43.683	2.29E+07	0.92	Y	0.81	1.05	30% *

*OK-meets M1613B criteria.
AK 21 Jan 22

Dioxin/Furan QC Summary	Acq'd: 20 Jan 2022 10:26 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220120_DF_CA	UTP: 21-Jan-2022 10:45:29 MLS	Checkcode: 343-977-NFN
Sample ID: SIL 25-347-1	Report: 21 Jan 2022 10:47 MS	Datafile: 220120C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.97	1.39E+07	0.85	Y	-	-	-
JS 1234-TCDF	26.43	2.47E+07	0.81	Y	-	-	-
JS 123467-HxCDD	38.12	5.44E+06	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.65	1.89E+06	n/a	-	1.20	1.36	13%
CS 12347-PeCDD	33.43	1.20E+07	1.57	Y	0.75	0.86	15%
CS 12346-PeCDF	31.96	2.09E+07	1.65	Y	0.85	0.85	0%
CS 123469-HxCDF	37.28	1.70E+07	0.55	Y	1.12	1.56	40%
CS 1234689-HpCDF	40.31	1.45E+07	0.46	Y	0.89	1.33	50%
~~SS 37Cl-2378-TCDD~~	~~28.65~~	~~1.09E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.36~~	~~18%~~
~~SS 12347-PeCDD~~	~~33.43~~	~~1.20E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~0.92~~	~~7%~~
~~SS 12346-PeCDF~~	~~31.96~~	~~2.09E+07~~	~~1.65~~	~~Y~~	~~0.94~~	~~0.90~~	~~5%~~
~~SS 123469-HxCDF~~	~~37.28~~	~~1.70E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~0.89~~	~~7%~~
~~SS 1234689-HpCDF~~	~~40.31~~	~~1.45E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~1.08~~	~~17%~~
~~OCDD a~~	~~43.50~~	~~5.10E+05~~	~~1.77~~	~~N~~	~~0.07~~	~~0.07~~	~~-4%~~
~~OCDF a~~	~~43.69~~	~~8.65E+05~~	~~2.71~~	~~Y~~	~~0.07~~	~~0.08~~	~~14%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220120C01 Analysis Date: 20-JAN-2022 10:26:30

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.84	0.65 - 0.89	Y	10.9	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32 - 1.78	Y	51.7	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	53.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.19	1.05 - 1.43	Y	53.4	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	48.9	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.01	0.88 - 1.20	Y	51.7	43 - 58	Y
OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	106	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.78	0.65 - 0.89	Y	10.6	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	53.7	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	51.5	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	52.9	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	51.7	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.31	1.05 - 1.43	Y	53.4	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	54	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	50.6	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	52.5	43 - 58	Y
OCDF	M+2/M+4	0.92	0.76 - 1.02	Y	109	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 21 Jan 2022 10:47 Analyst: MS

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

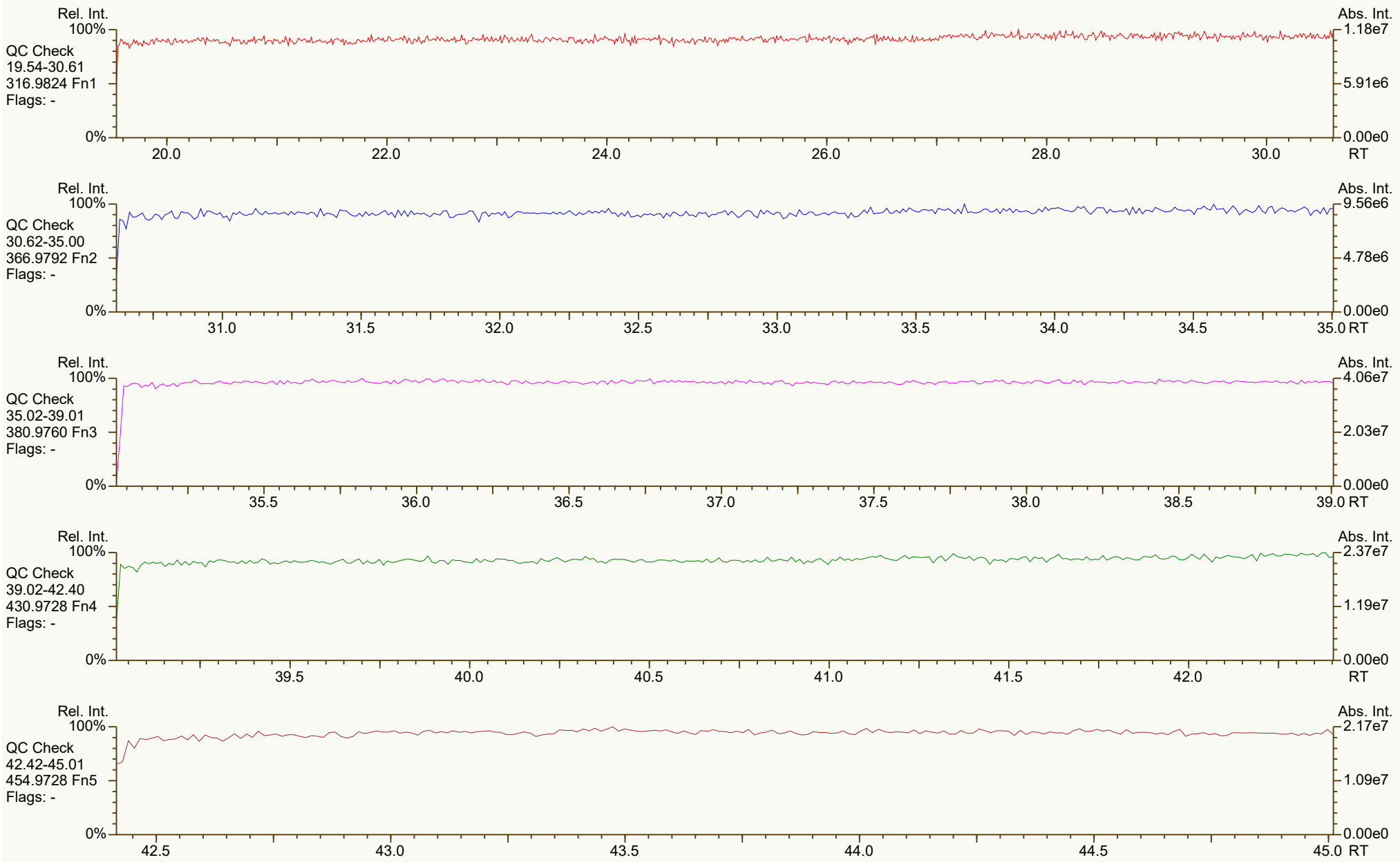
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220120C01 Analysis Date: 20-JAN-2022 10:26:30

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65	-	0.89	Y	95.7	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	107	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	98	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.21	1.05	-	1.43	Y	108	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.33	1.05	-	1.43	Y	105	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	107	72	-	138	Y
13C-OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	219	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	93.4	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	95.1	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	120	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	130	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	127	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	114	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	127	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	120	77	-	129	Y
13C-OCDF	M+2/M+4	0.92	0.76	-	1.02	Y	260	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						11.3	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.57	1.32	-	1.78	Y	115	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.65	1.32	-	1.78	Y	99.6	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	140	70	-	130	N
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	150	70	-	130	N

Processed: 21 Jan 2022 10:47 Analyst: MS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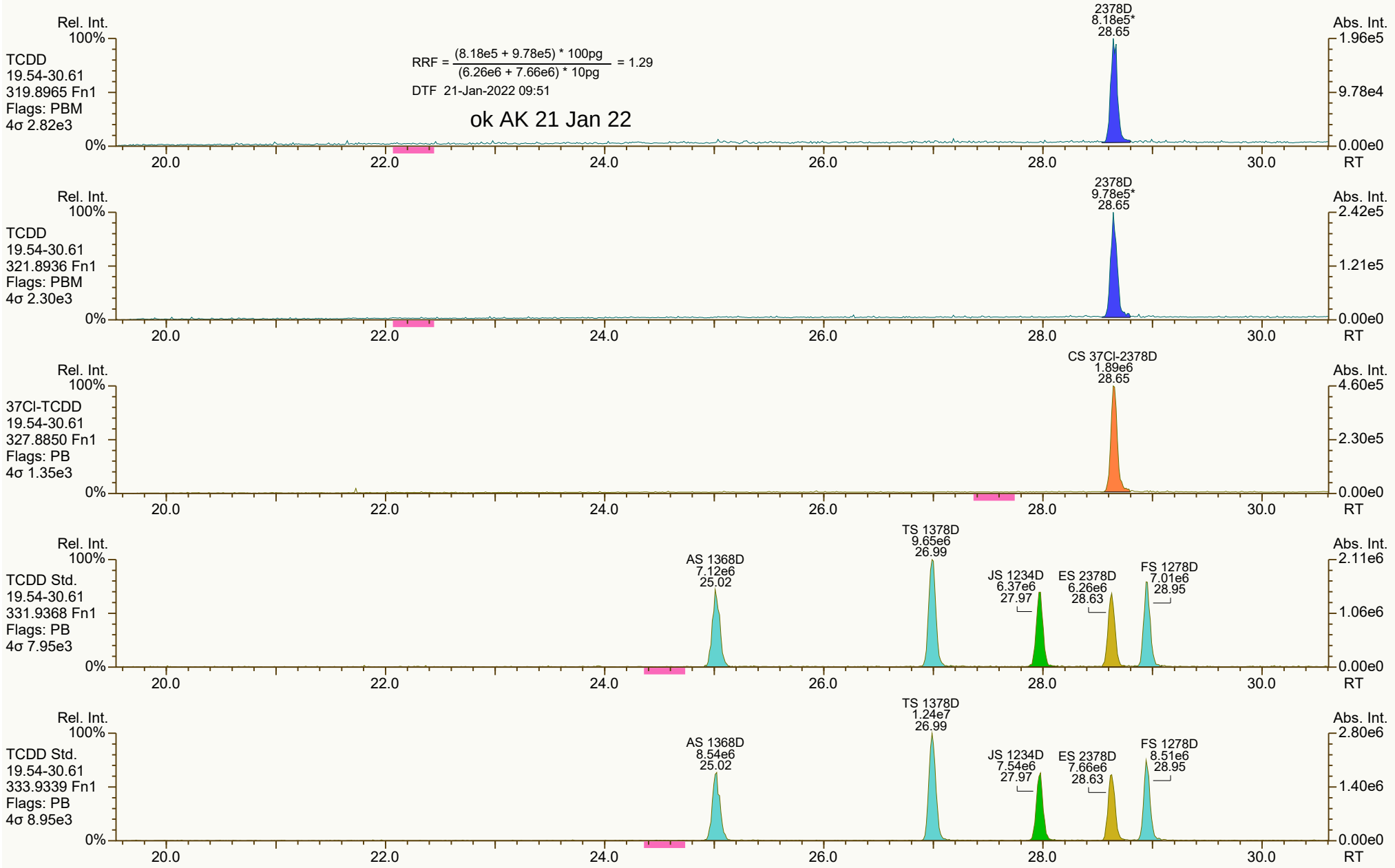
19.54-30.61
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.56e6
4.78e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.06e7
2.03e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.37e7
1.19e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.17e7
1.09e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
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4σ 2.82e3
0%
RRF = (8.18e5 + 9.78e5) * 100pg / (6.26e6 + 7.66e6) * 10pg = 1.29
DTF 21-Jan-2022 09:51
ok AK 21 Jan 22
2378D
8.18e5*
28.65
Abs. Int.
1.96e5
9.78e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.30e3
0%
2378D
9.78e5*
28.65
Abs. Int.
2.42e5
1.21e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.35e3
0%
CS 37Cl-2378D
1.89e6
28.65
Abs. Int.
4.60e5
2.30e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 7.95e3
0%
AS 1368D
7.12e6
25.02
TS 1378D
9.65e6
26.99
JS 1234D
6.37e6
27.97
ES 2378D
6.26e6
28.63
FS 1278D
7.01e6
28.95
Abs. Int.
2.11e6
1.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 8.95e3
0%
AS 1368D
8.54e6
25.02
TS 1378D
1.24e7
26.99
JS 1234D
7.54e6
27.97
ES 2378D
7.66e6
28.63
FS 1278D
8.51e6
28.95
Abs. Int.
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1.40e6
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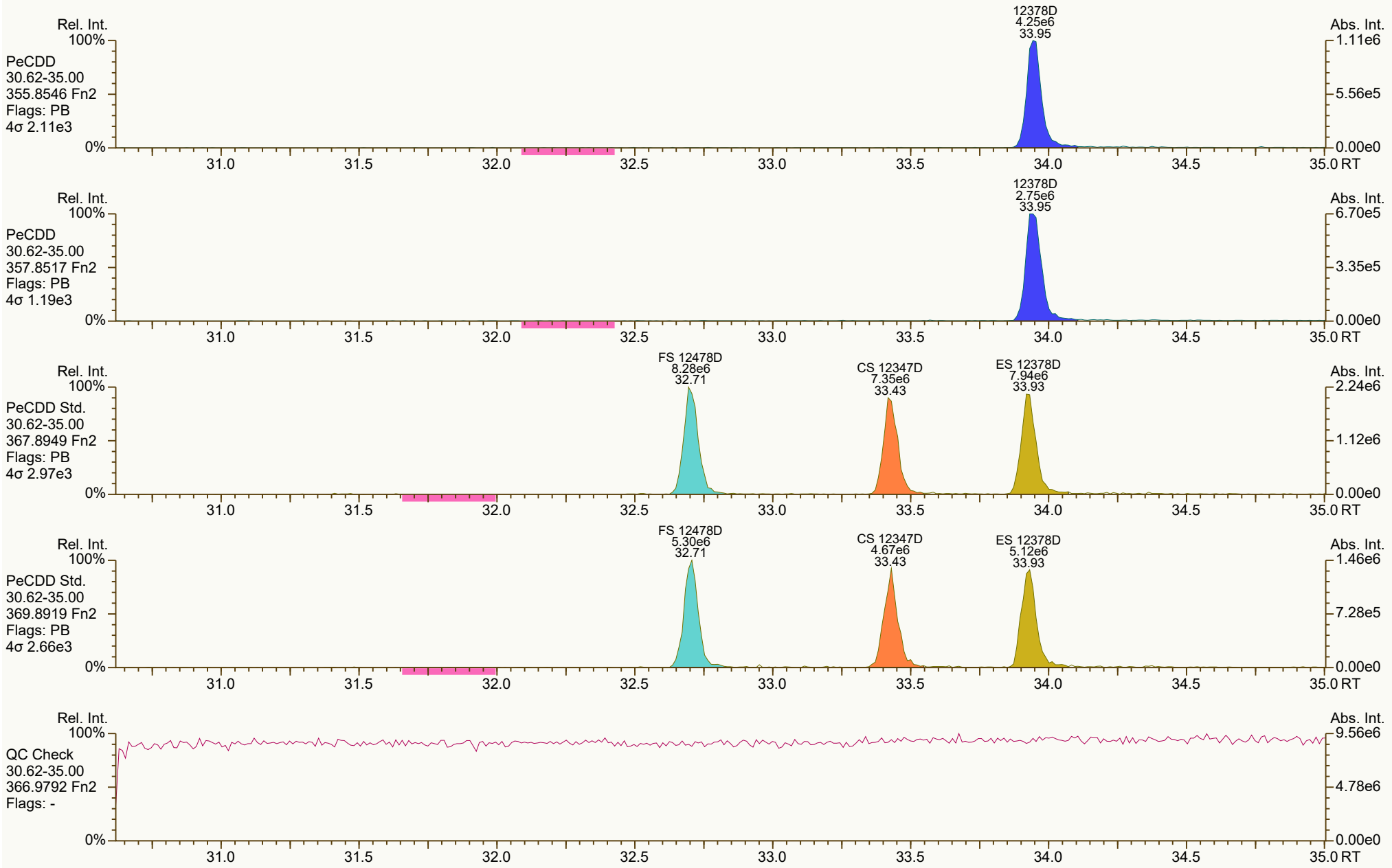
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
Abs. Int.
PeCDD
30.62-35.00
355.8546 Fn2
Flags: PB
4σ 2.11e3
12378D
4.25e6
33.95
1.11e6
5.56e5
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.19e3
12378D
2.75e6
33.95
6.70e5
3.35e5
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PB
4σ 2.97e3
FS 12478D
8.28e6
32.71
CS 12347D
7.35e6
33.43
ES 12378D
7.94e6
33.93
2.24e6
1.12e6
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PB
4σ 2.66e3
FS 12478D
5.30e6
32.71
CS 12347D
4.67e6
33.43
ES 12378D
5.12e6
33.93
1.46e6
7.28e5
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
9.56e6
4.78e6
100%
0%
31.0
31.5
32.0
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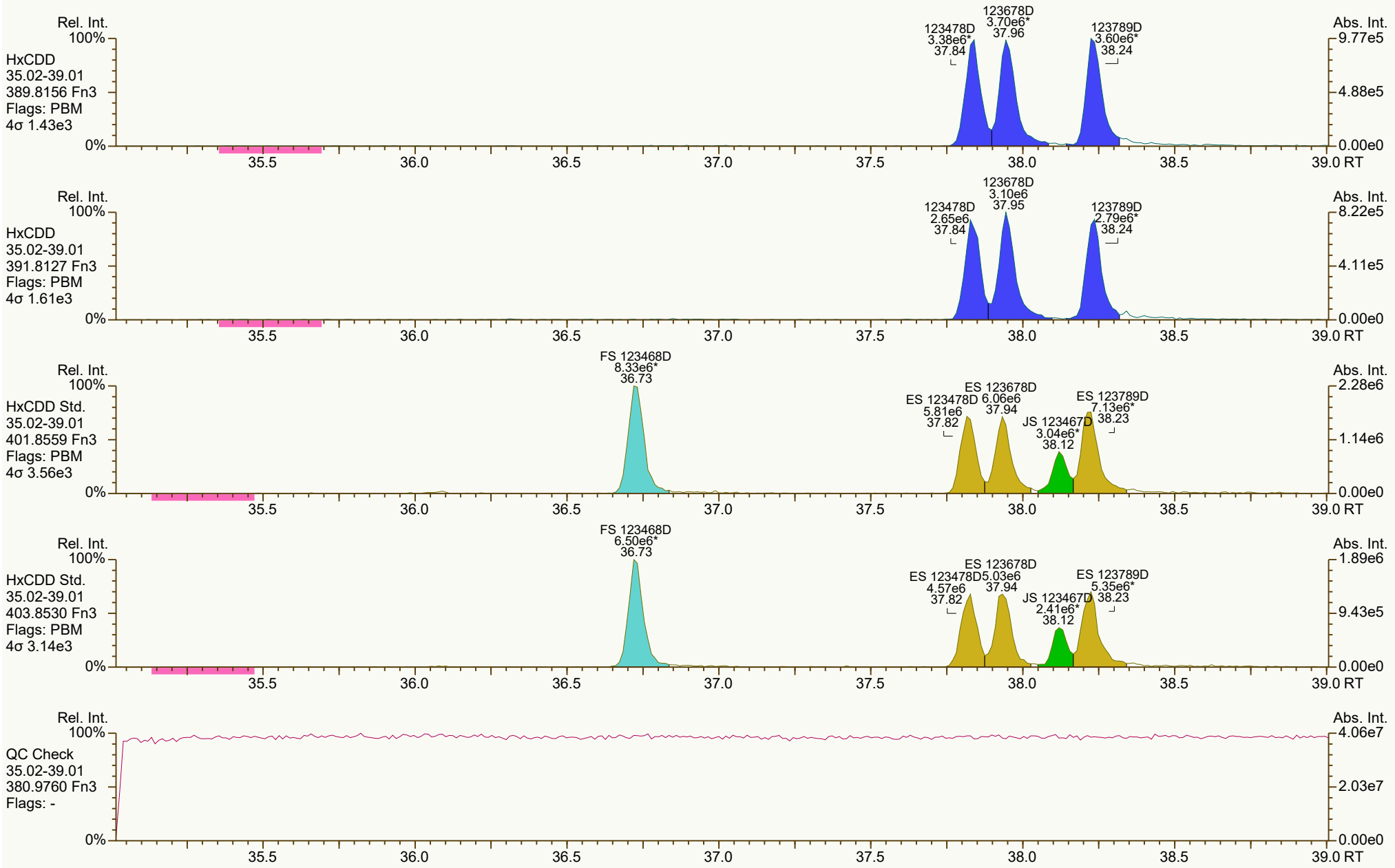
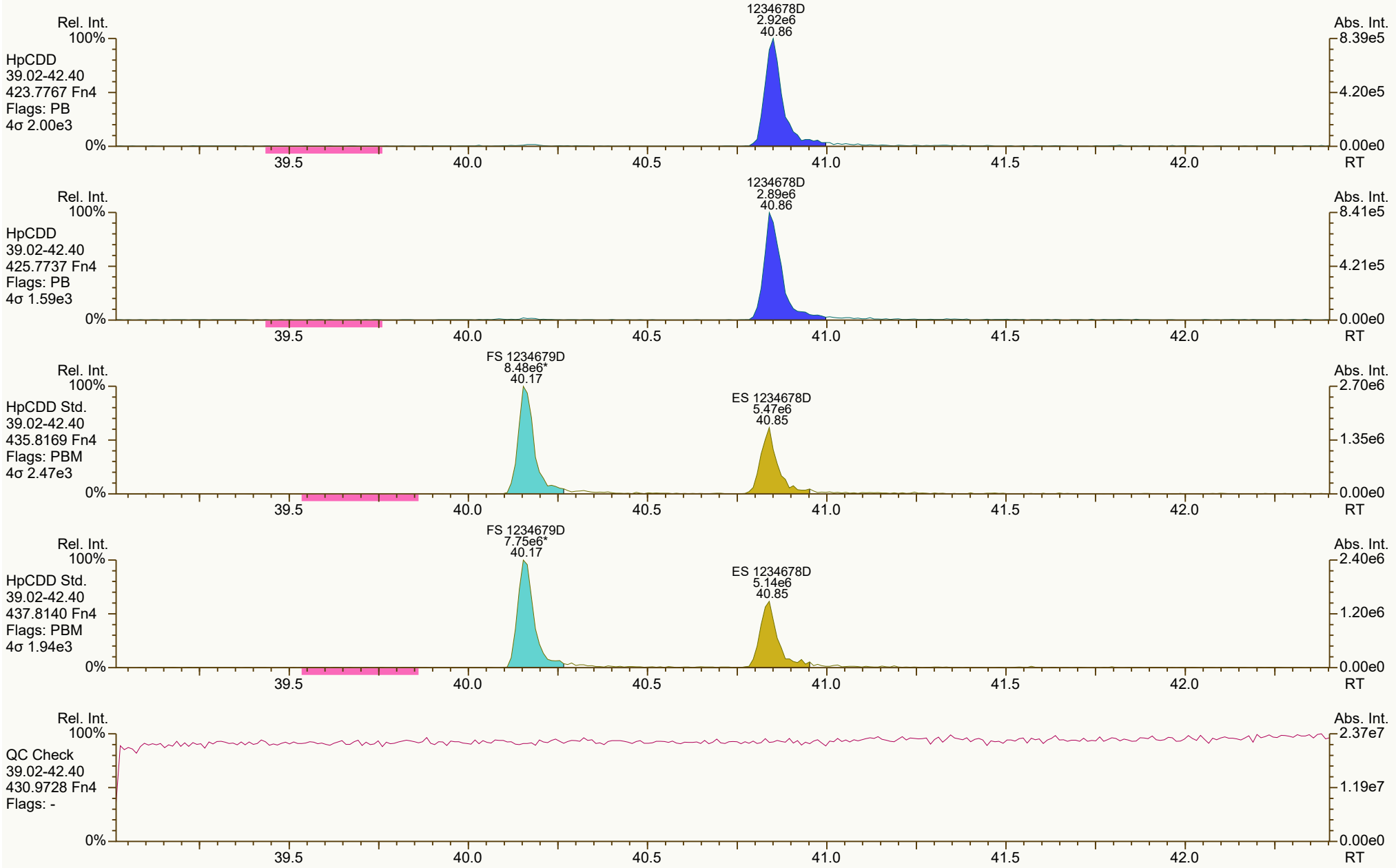
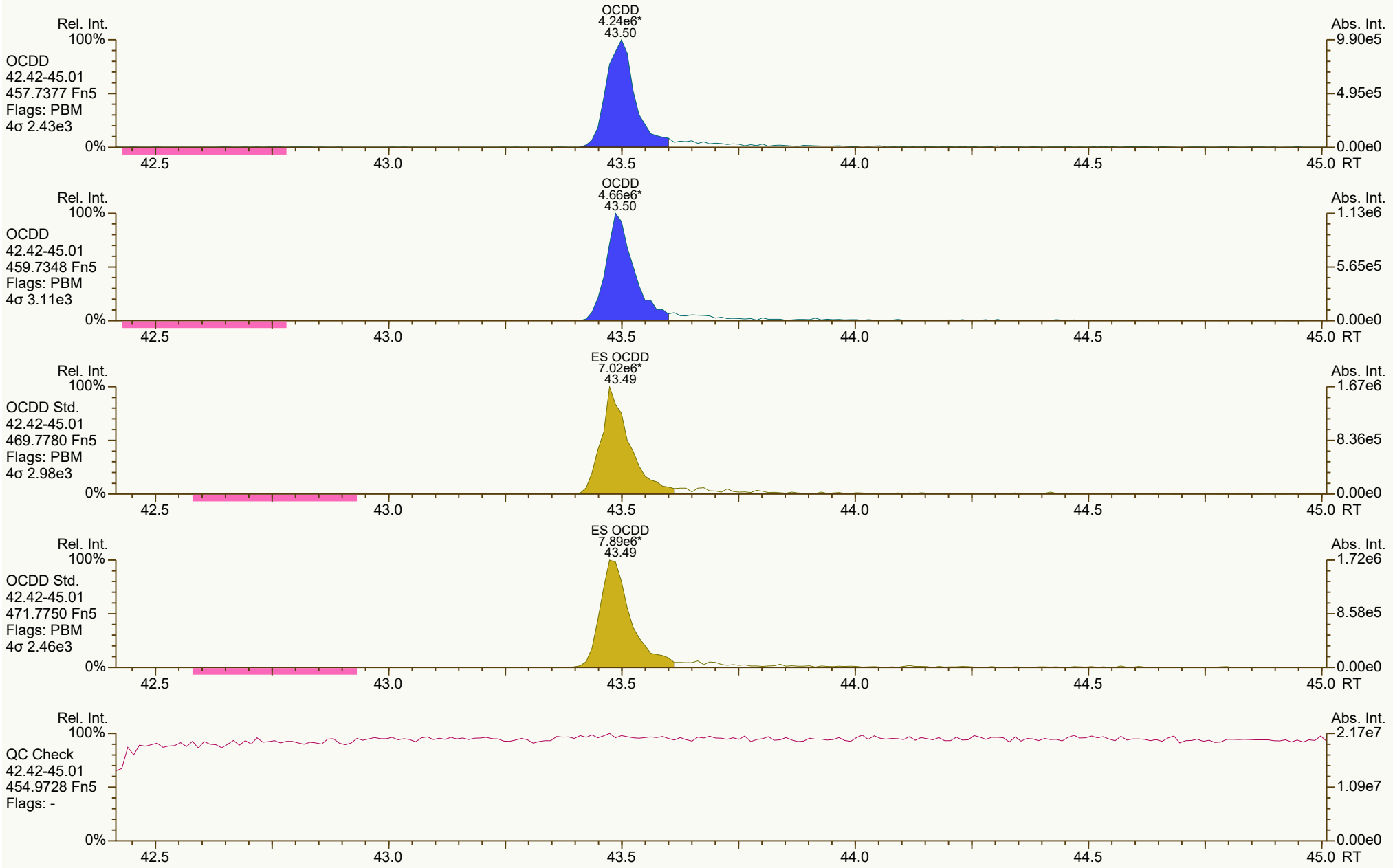
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.43e3
123478D 3.38e6* 37.84
123678D 3.70e6* 37.96
123789D 3.60e6* 38.24
9.77e5
4.88e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 1.61e3
123478D 2.65e6 37.84
123678D 3.10e6 37.95
123789D 2.79e6* 38.24
8.22e5
4.11e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.56e3
FS 123468D 8.33e6* 36.73
ES 123478D 5.81e6 37.82
ES 123678D 6.06e6 37.94
JS 123467D 3.04e6* 38.12
ES 123789D 7.13e6* 38.23
2.28e6
1.14e6
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 3.14e3
FS 123468D 6.50e6* 36.73
ES 123478D 4.57e6 37.82
ES 123678D 5.03e6 37.94
JS 123467D 2.41e6* 38.12
ES 123789D 5.35e6* 38.23
1.89e6
9.43e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
4.06e7
2.03e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 2.00e3
1234678D
2.92e6
40.86
Abs. Int.
8.39e5
4.20e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PB
4σ 1.59e3
1234678D
2.89e6
40.86
Abs. Int.
8.41e5
4.21e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.47e3
FS 1234679D
8.48e6*
40.17
ES 1234678D
5.47e6
40.85
Abs. Int.
2.70e6
1.35e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.94e3
FS 1234679D
7.75e6*
40.17
ES 1234678D
5.14e6
40.85
Abs. Int.
2.40e6
1.20e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
2.37e7
1.19e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDD
4.24e6*
43.50
Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 2.43e3
0%
Abs. Int.
9.90e5
4.95e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.66e6*
43.50
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 3.11e3
0%
Abs. Int.
1.13e6
5.65e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.02e6*
43.49
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.98e3
0%
Abs. Int.
1.67e6
8.36e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.89e6*
43.49
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 2.46e3
0%
Abs. Int.
1.72e6
8.58e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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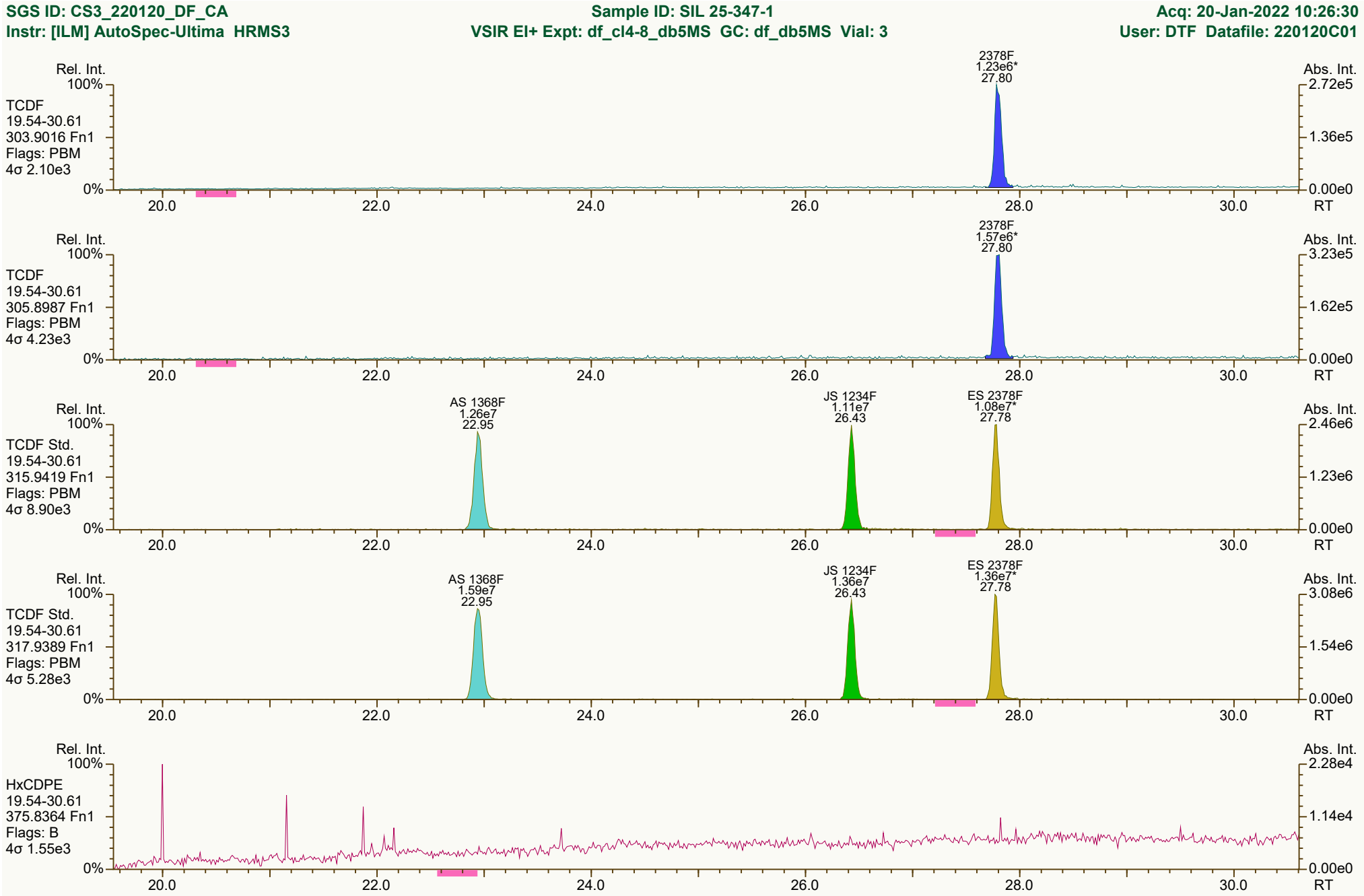
1.09e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT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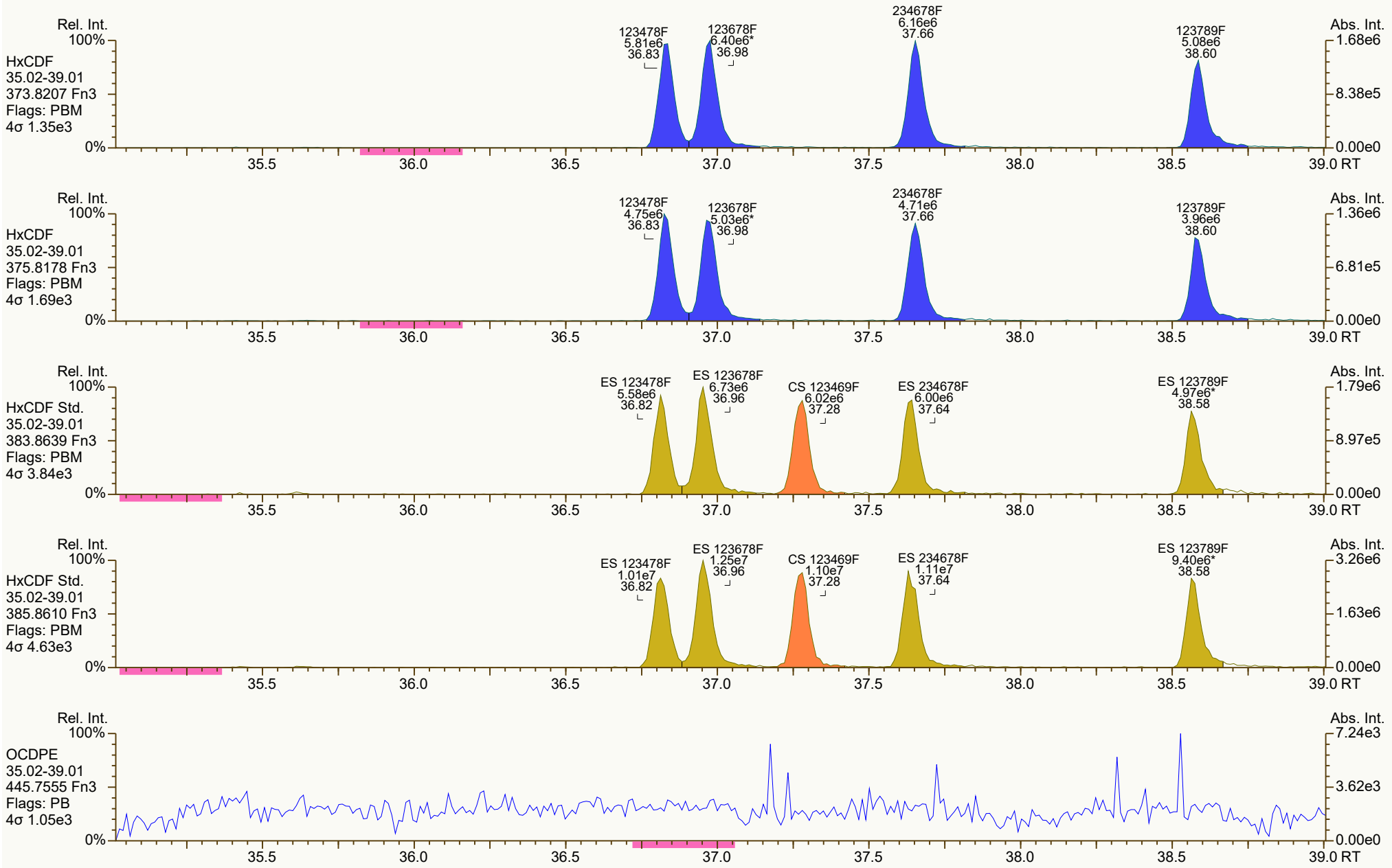
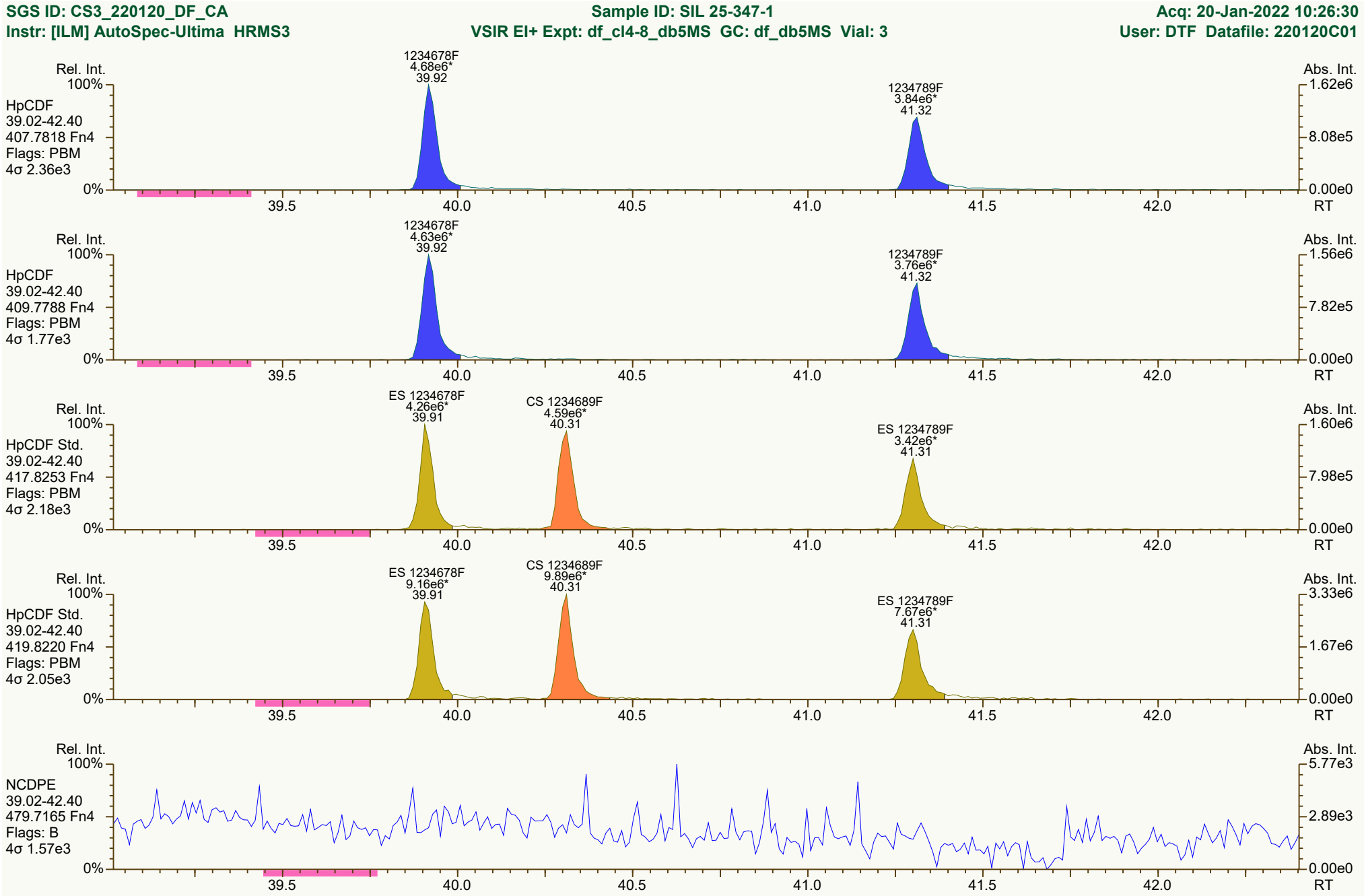
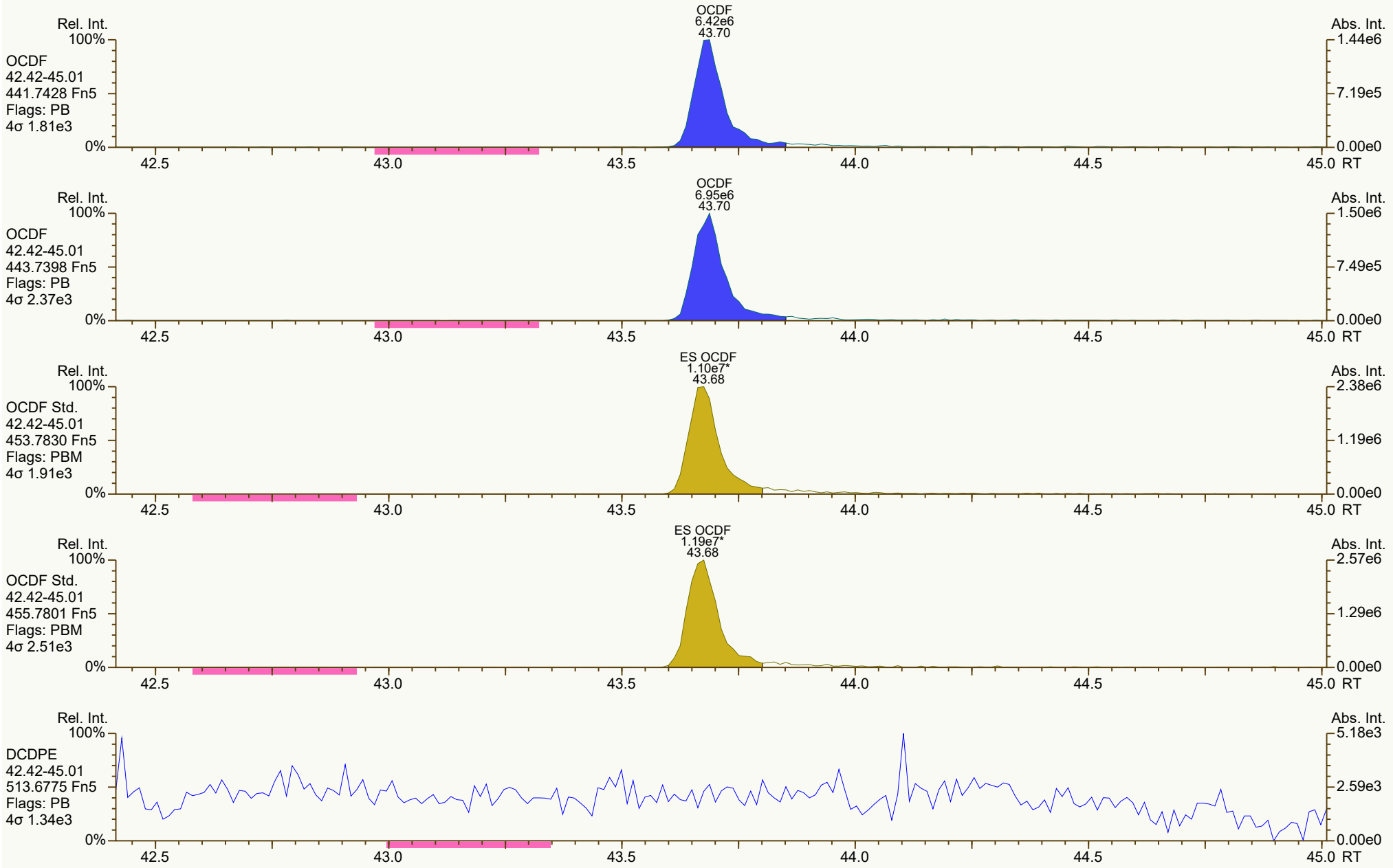
Sample ID: SIL 25-347-1
Acq: 20-Jan-2022 10:26:30
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220120C01
Rel. Int.
Abs. Int.
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 2.10e3
2378F
1.23e6*
27.80
2.72e5
1.36e5
0.00e0
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.23e3
2378F
1.57e6*
27.80
3.23e5
1.62e5
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 8.90e3
AS 1368F
1.26e7
22.95
JS 1234F
1.11e7
26.43
ES 2378F
1.08e7*
27.78
2.46e6
1.23e6
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 5.28e3
AS 1368F
1.59e7
22.95
JS 1234F
1.36e7
26.43
ES 2378F
1.36e7*
27.78
3.08e6
1.54e6
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.55e3
2.28e4
1.14e4
100%
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\CS3_220120_DF_CA.utp_res, saved 21-Jan-2022 10:45 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 9907, 6647, 1020 scc: 343-977
Revised: 20-Jan-2022 11:23 (DTF) Printed: 21-Jan-2022 11:18 Page 7 of 12

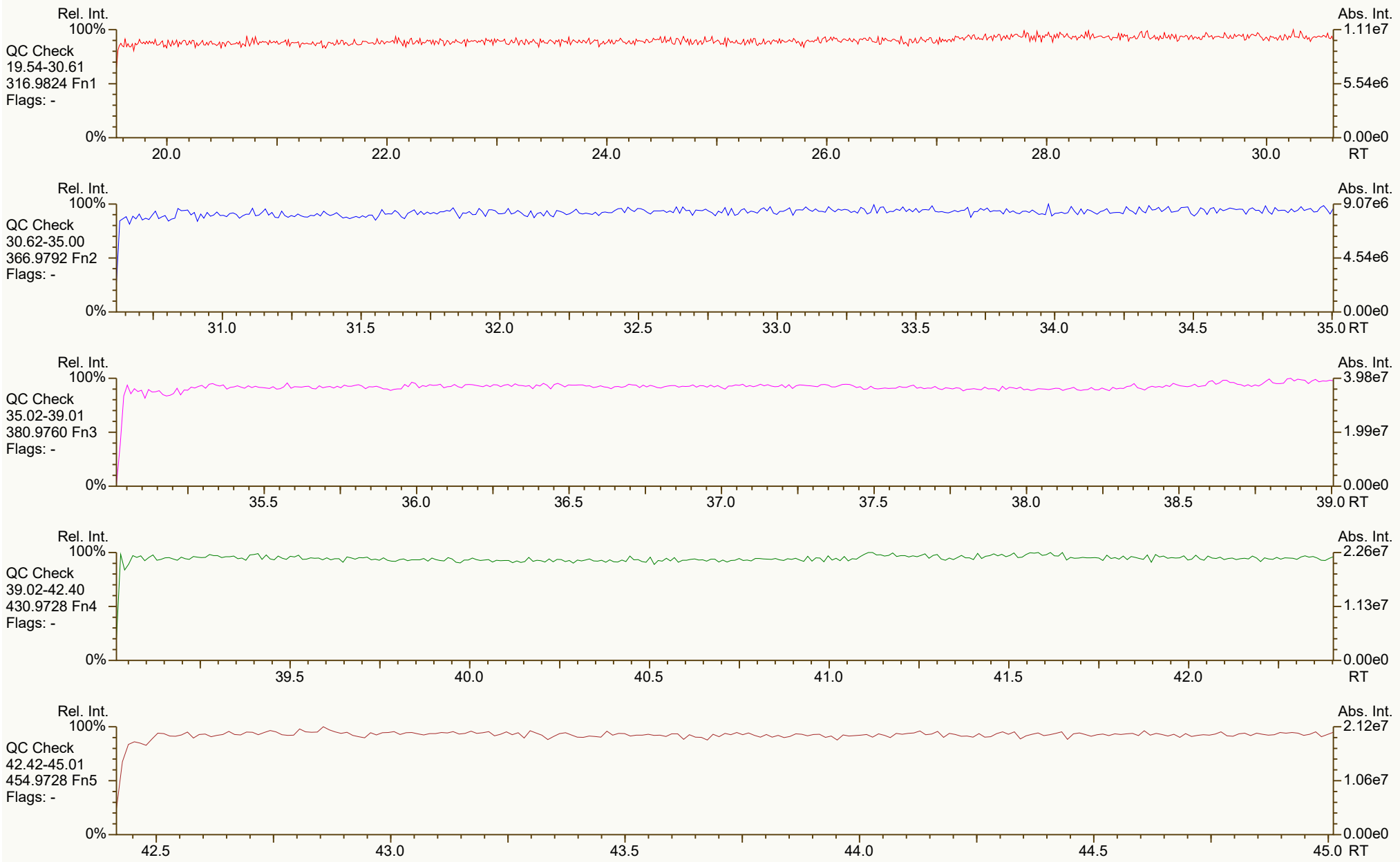

Rel. Int.
100%
0%
Abs. Int.
1.11e4
5.57e3
0.00e0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.42e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.74e3
0.00e0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 2.52e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PB
4σ 2.17e3
0%
12378F
7.17e6
32.51
23478F
6.94e6
33.62
Abs. Int.
1.90e6
9.52e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: PB
4σ 4.29e3
0%
12378F
4.59e6
32.51
23478F
4.38e6
33.61
Abs. Int.
1.16e6
5.80e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 3.31e3
0%
CS 12346F
1.30e7
31.96
ES 12378F
1.30e7
32.49
ES 23478F
1.32e7
33.60
Abs. Int.
3.55e6
1.78e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 3.64e3
0%
CS 12346F
7.90e6
31.96
ES 12378F
8.34e6
32.49
ES 23478F
8.35e6
33.60
Abs. Int.
2.38e6
1.19e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.71e3
0%
Abs. Int.
8.23e3
4.12e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.35e3
0%
123478F
5.81e6
36.83
123678F
6.40e6*
36.98
234678F
6.16e6
37.66
123789F
5.08e6
38.60
Abs. Int.
1.68e6
8.38e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 1.69e3
0%
123478F
4.75e6
36.83
123678F
5.03e6*
36.98
234678F
4.71e6
37.66
123789F
3.96e6
38.60
Abs. Int.
1.36e6
6.81e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 3.84e3
0%
ES 123478F
5.58e6
36.82
ES 123678F
6.73e6
36.96
CS 123469F
6.02e6
37.28
ES 234678F
6.00e6
37.64
ES 123789F
4.97e6*
38.58
Abs. Int.
1.79e6
8.97e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 4.63e3
0%
ES 123478F
1.01e7
36.82
ES 123678F
1.25e7
36.96
CS 123469F
1.10e7
37.28
ES 234678F
1.11e7
37.64
ES 123789F
9.40e6*
38.58
Abs. Int.
3.26e6
1.63e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.05e3
0%
Abs. Int.
7.24e3
3.62e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


SGS ID: CS3_220120_DF_CA
Sample ID: SIL 25-347-1
Acq: 20-Jan-2022 10:26:30
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220120C01
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.36e3
1234678F
4.68e6*
39.92
1234789F
3.84e6*
41.32
1.62e6
8.08e5
0.00e0
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.77e3
1234678F
4.63e6*
39.92
1234789F
3.76e6*
41.32
1.56e6
7.82e5
0.00e0
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 2.18e3
ES 1234678F
4.26e6*
39.91
CS 1234689F
4.59e6*
40.31
ES 1234789F
3.42e6*
41.31
1.60e6
7.98e5
0.00e0
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.05e3
ES 1234678F
9.16e6*
39.91
CS 1234689F
9.89e6*
40.31
ES 1234789F
7.67e6*
41.31
3.33e6
1.67e6
0.00e0
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.57e3
5.77e3
2.89e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\CS3_220120_DF_CA.utp_res, saved 21-Jan-2022 10:45 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 1642, 7197, 8271 scc: 343-977
Revised: 20-Jan-2022 11:26 (DTF) Printed: 21-Jan-2022 11:18 Page 11 of 12


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 1.81e3
0%
OCDF
6.42e6
43.70
Abs. Int.
1.44e6
7.19e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PB
4σ 2.37e3
0%
OCDF
6.95e6
43.70
Abs. Int.
1.50e6
7.49e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 1.91e3
0%
ES OCDF
1.10e7*
43.68
Abs. Int.
2.38e6
1.19e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 2.51e3
0%
ES OCDF
1.19e7*
43.68
Abs. Int.
2.57e6
1.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.34e3
0%
Abs. Int.
5.18e3
2.59e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

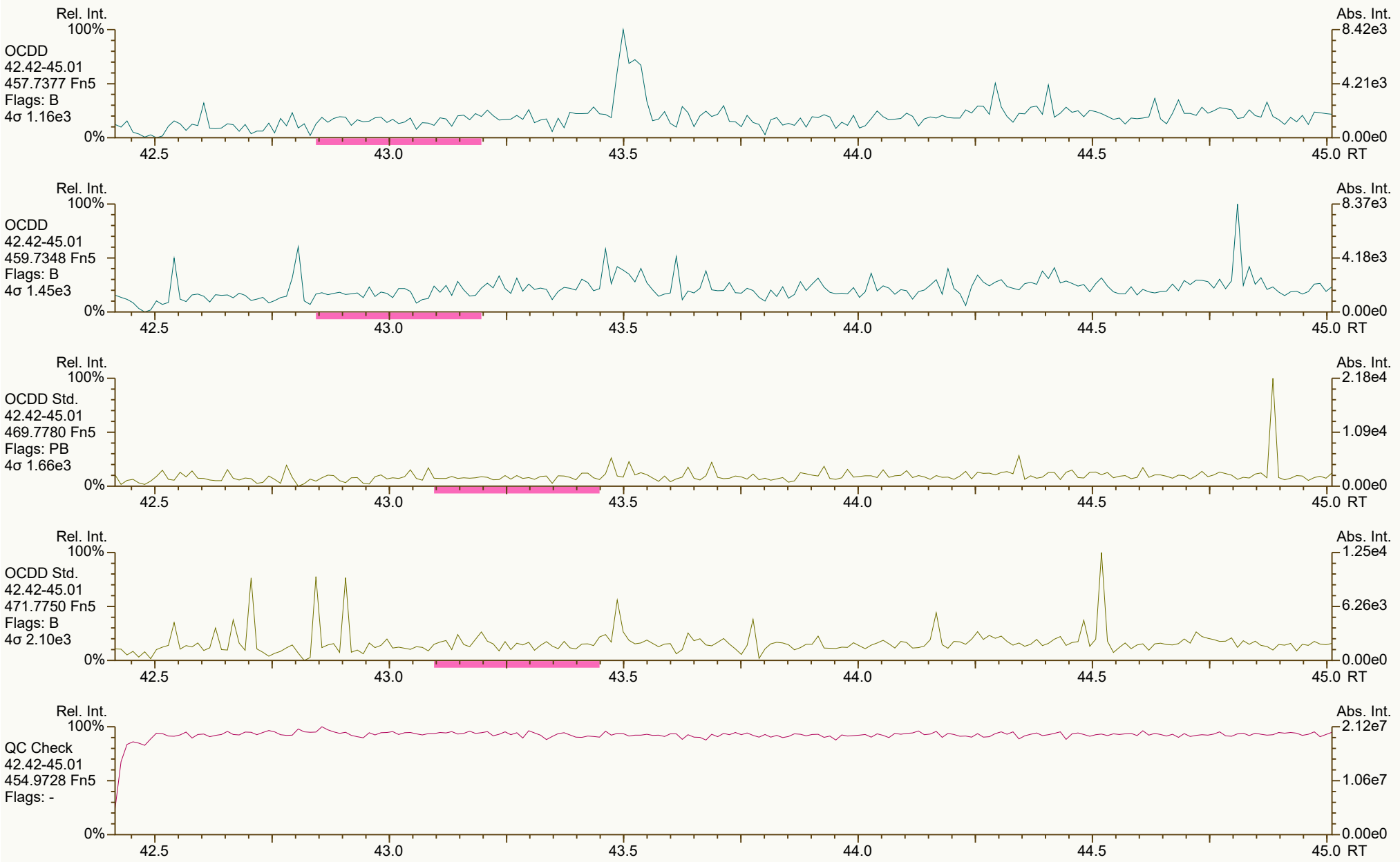

Rel. Int.
100%
0%
Abs. Int.
1.11e7
5.54e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.07e6
4.54e6
0.00e0
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
0%
Abs. Int.
3.98e7
1.99e7
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.26e7
1.13e7
0.00e0
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.12e7
1.06e7
0.00e0
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
42.5
43.0
43.5
44.0
44.5
45.0 RT

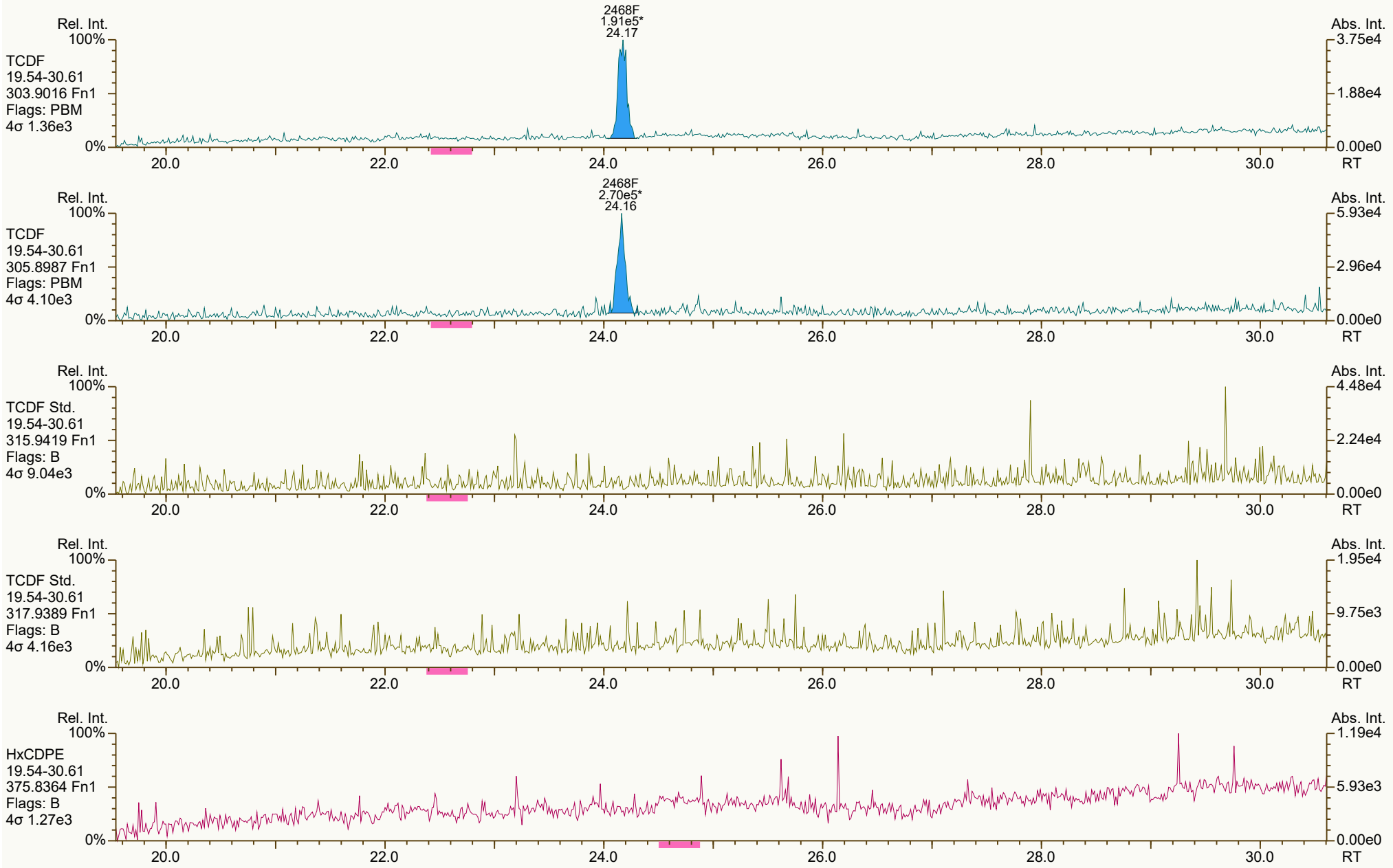

Rel. Int.
100%
0%
Abs. Int.
TCDD
19.54-30.61
319.8965 Fn1
Flags: B
4σ 2.38e3
1.37e4
6.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
TCDD
19.54-30.61
321.8936 Fn1
Flags: B
4σ 1.44e3
1.26e4
6.31e3
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: B
4σ 1.05e3
1.29e4
6.46e3
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: B
4σ 8.82e3
2.87e4
1.43e4
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: B
4σ 4.45e3
3.71e4
1.86e4


Rel. Int.
Abs. Int.
PeCDD
30.62-35.00
355.8546 Fn2
Flags: B
4σ 9.21e2
1.11e4
5.54e3
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.61e3
8.11e3
4.06e3
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: B
4σ 2.06e3
1.94e4
9.69e3
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: B
4σ 2.45e3
1.39e4
6.96e3
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
9.07e6
4.54e6
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PB
4σ 1.18e3
0%
Abs. Int.
7.52e3
3.76e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.02-39.01
391.8127 Fn3
Flags: B
4σ 2.00e3
0%
Abs. Int.
6.90e3
3.45e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: B
4σ 3.93e3
0%
Abs. Int.
1.64e4
8.20e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: B
4σ 1.80e3
0%
Abs. Int.
1.65e4
8.23e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.98e7
1.99e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

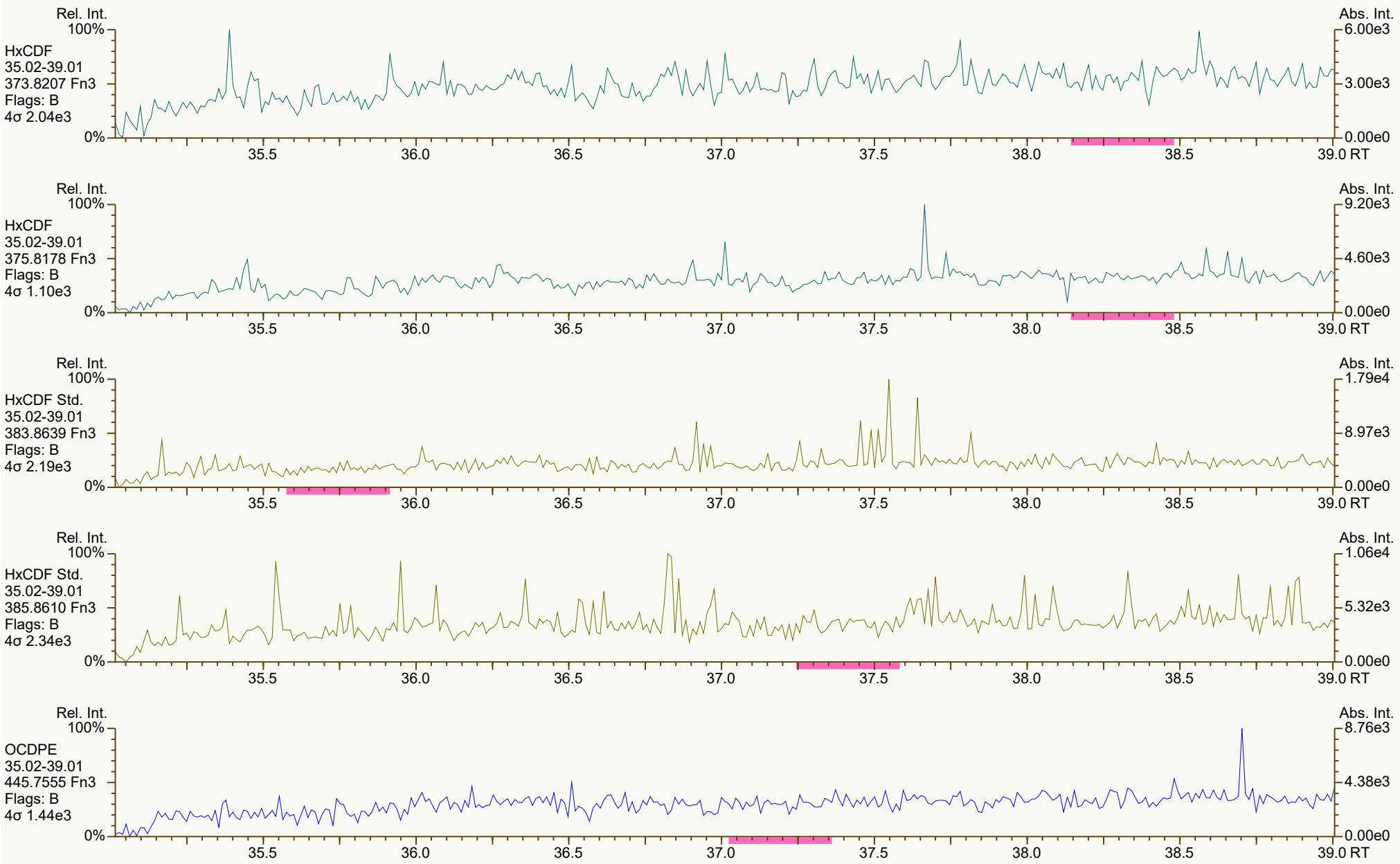

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.82e3
0%
Abs. Int.
4.47e3
2.24e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: B
4σ 1.06e3
0%
Abs. Int.
3.92e3
1.96e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: B
4σ 1.43e3
0%
Abs. Int.
1.20e4
6.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: B
4σ 1.50e3
0%
Abs. Int.
5.87e3
2.94e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.26e7
1.13e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: B
4σ 1.16e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.37e3
4.18e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PB
4σ 1.66e3
0%
Abs. Int.
2.18e4
1.09e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: B
4σ 2.10e3
0%
Abs. Int.
1.25e4
6.26e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.12e7
1.06e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.36e3
2468F
1.91e5*
24.17
3.75e4
1.88e4
0.00e0
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.10e3
2468F
2.70e5*
24.16
5.93e4
2.96e4
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: B
4σ 9.04e3
4.48e4
2.24e4
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: B
4σ 4.16e3
1.95e4
9.75e3
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.27e3
1.19e4
5.93e3
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.13e4
5.64e3
0.00e0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.73e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.85e4
1.43e4
0.00e0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 1.53e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.11e7
5.54e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: B
4σ 1.25e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: B
4σ 2.29e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: B
4σ 1.31e3
0%
Abs. Int.
1.42e4
7.12e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: B
4σ 2.35e3
0%
Abs. Int.
1.75e4
8.75e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.65e3
0%
Abs. Int.
1.50e4
7.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
0%
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: B
4σ 2.04e3
6.00e3
3.00e3
0.00e0
HxCDF
35.02-39.01
375.8178 Fn3
Flags: B
4σ 1.10e3
9.20e3
4.60e3
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: B
4σ 2.19e3
1.79e4
8.97e3
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: B
4σ 2.34e3
1.06e4
5.32e3
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.44e3
8.76e3
4.38e3
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

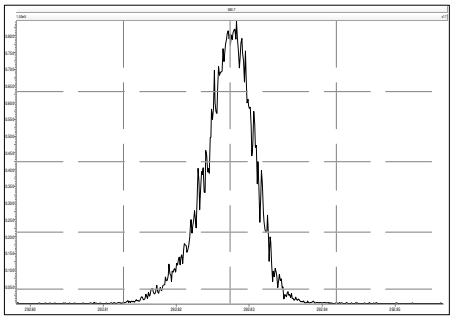

Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.03e3
4.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: B
4σ 1.36e3
0%
Abs. Int.
6.09e3
3.04e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PB
4σ 1.48e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: B
4σ 1.94e3
0%
Abs. Int.
8.51e3
4.26e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.41e3
0%
Abs. Int.
2.94e3
1.47e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: B
4σ 1.88e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PB
4σ 1.84e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: B
4σ 2.14e3
0%
Abs. Int.
2.56e4
1.28e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: B
4σ 1.90e3
0%
Abs. Int.
1.19e4
5.95e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.24e3
0%
Abs. Int.
6.85e3
3.42e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

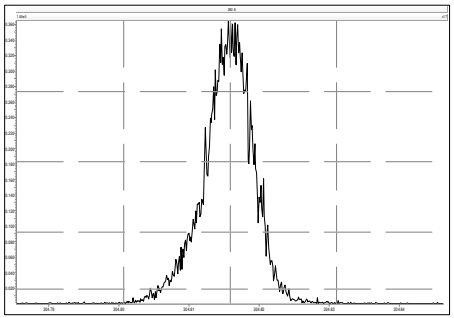
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:23:58 Eastern Standard Time

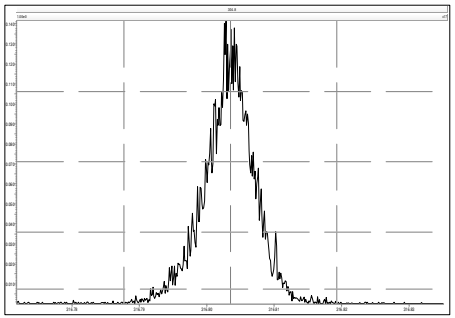
M 292.9824 R 17483



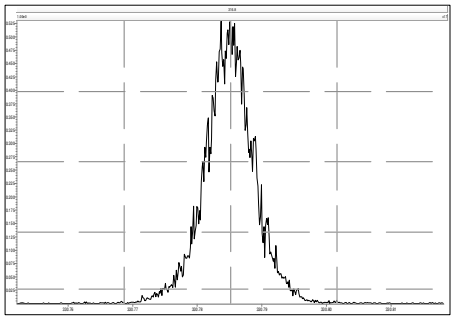
M 304.9824 R 17991



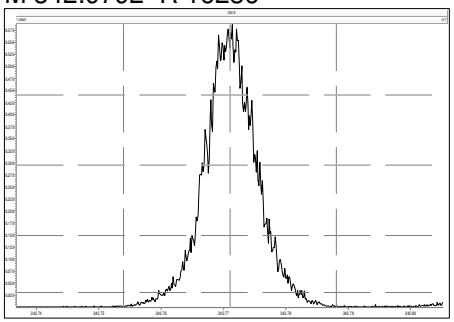
M 316.9824 R 17598



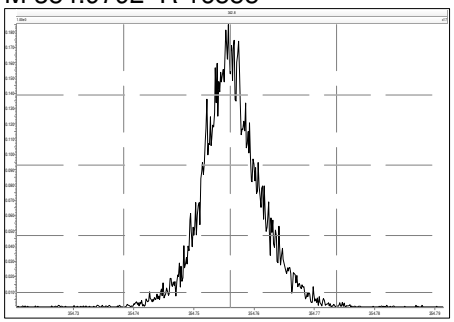
M 330.9792 R 17481



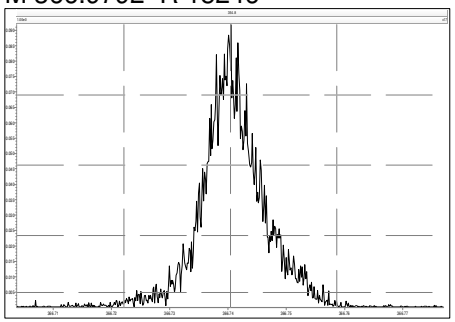
M 342.9792 R 16236



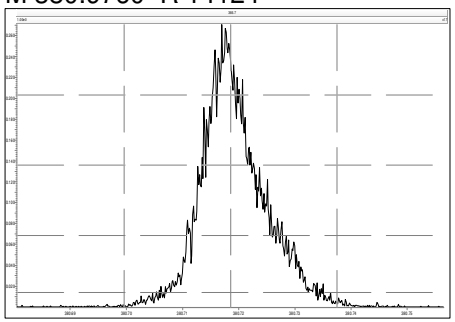
M 354.9792 R 16555



M 366.9792 R 15246



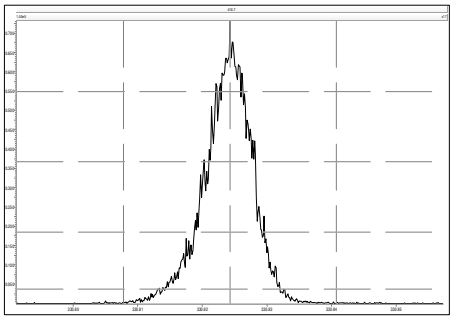
M 380.9760 R 14124



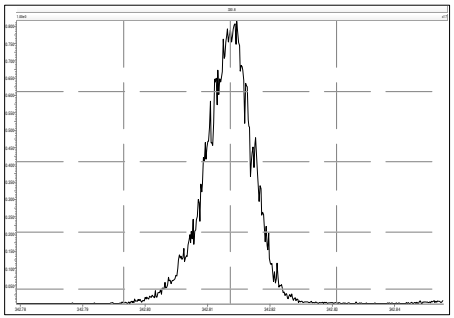
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:24:19 Eastern Standard Time

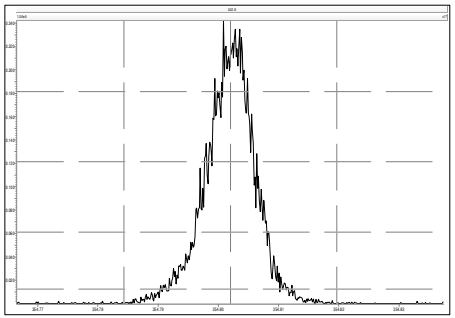
M 330.9792 R 18519



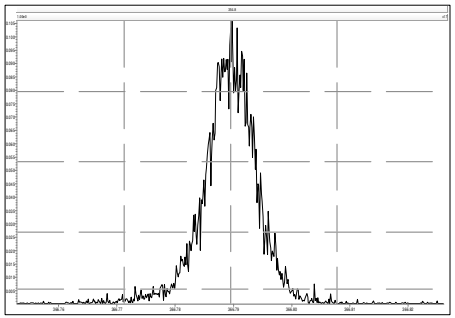
M 342.9792 R 17610



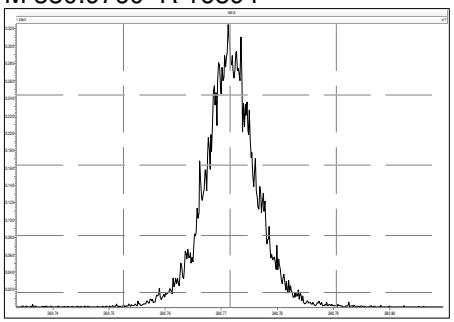
M 354.9792 R 18249



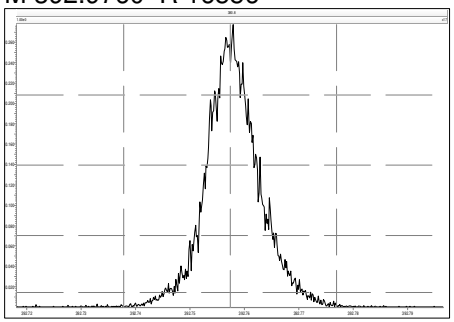
M 366.9792 R 17728



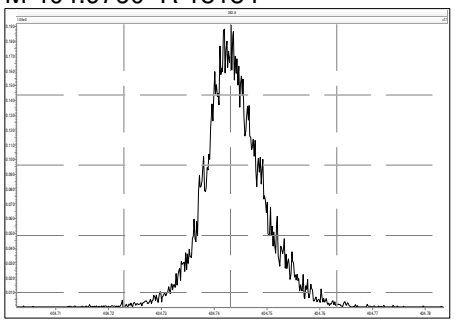
M 380.9760 R 16894



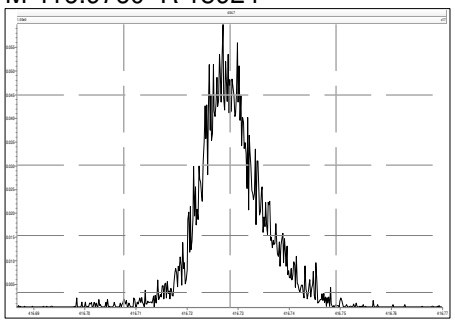
M 392.9760 R 16556



M 404.9760 R 15154



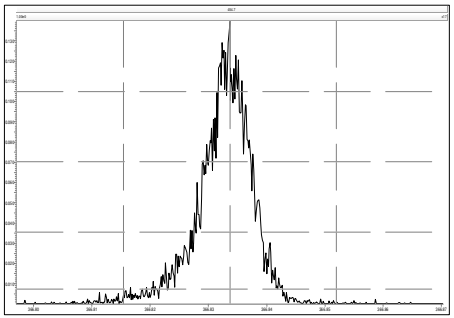
M 416.9760 R 15924



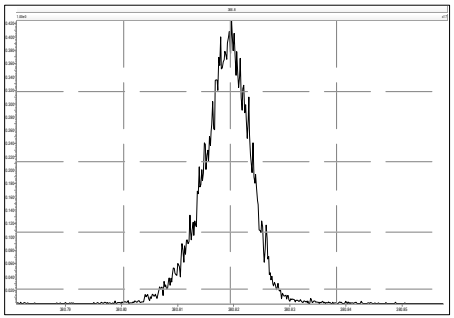
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:24:53 Eastern Standard Time

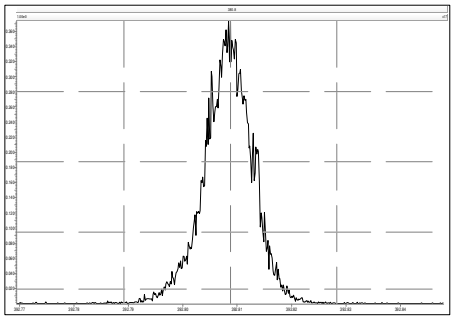
M 366.9792 R 17241



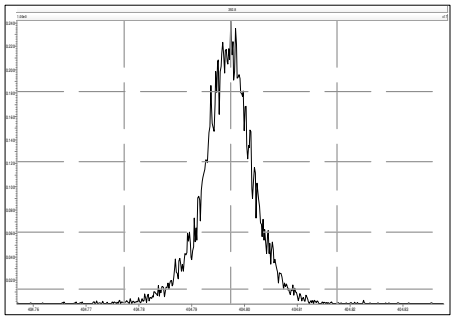
M 380.9760 R 18387



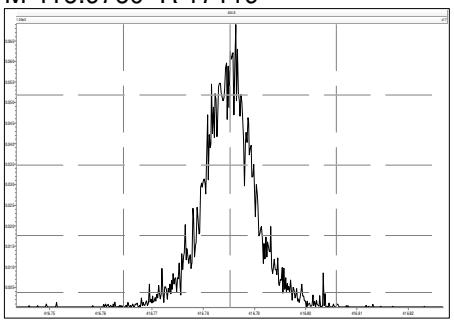
M 392.9760 R 17484



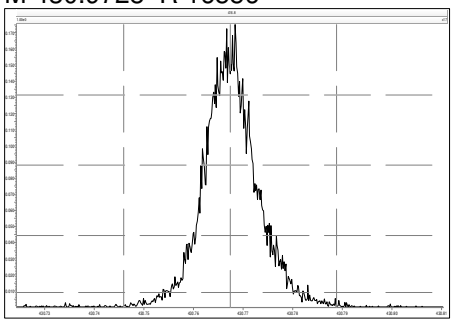
M 404.9760 R 17128



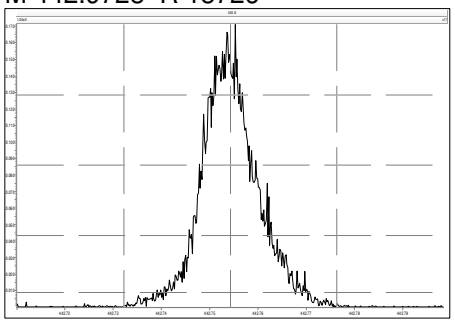
M 416.9760 R 17119



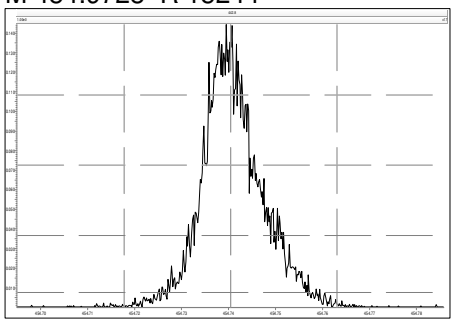
M 430.9728 R 16556



M 442.9728 R 15726



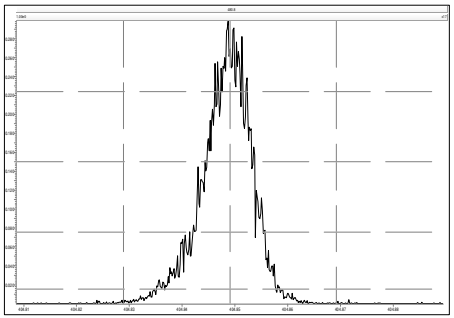
M 454.9728 R 15244



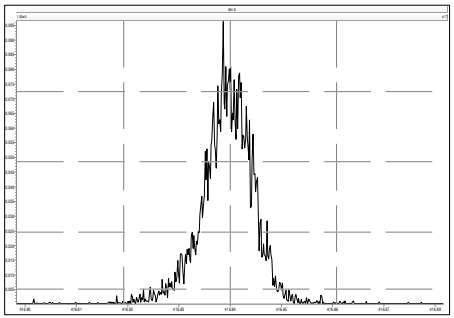
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:25:19 Eastern Standard Time

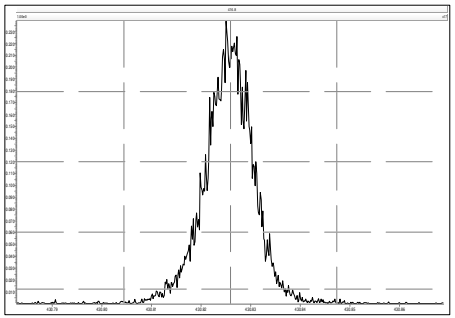
M 404.9760 R 17725



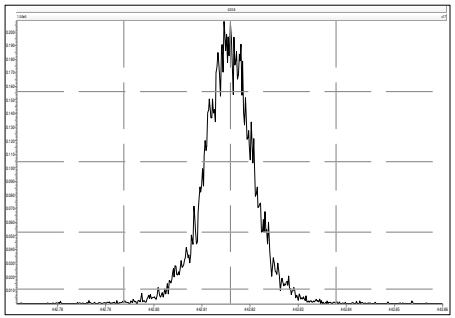
M 416.9760 R 18517



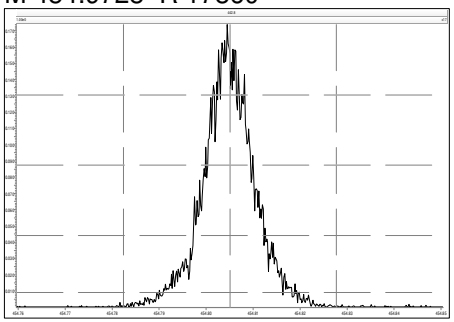
M 430.9728 R 18521



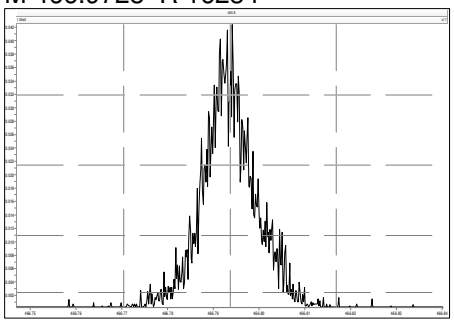
M 442.9728 R 17361



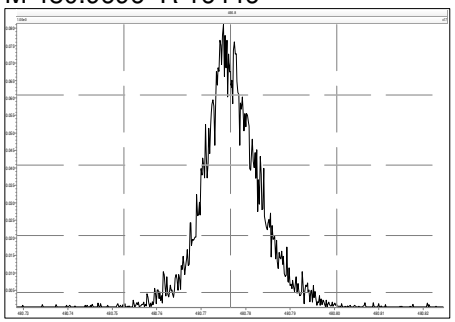
M 454.9728 R 17860



M 466.9728 R 16234



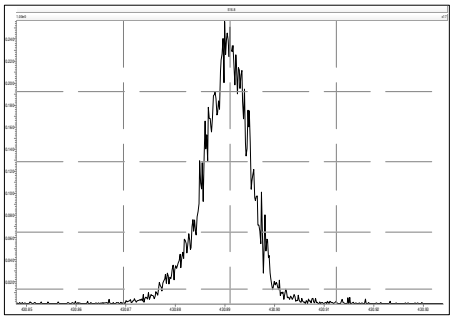
M 480.9696 R 16446



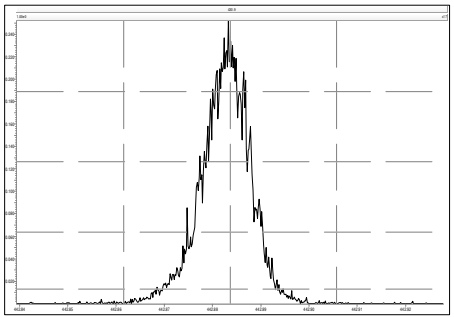
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:25:39 Eastern Standard Time

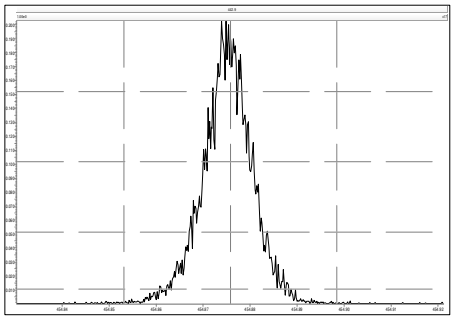
M 430.9728 R 18115



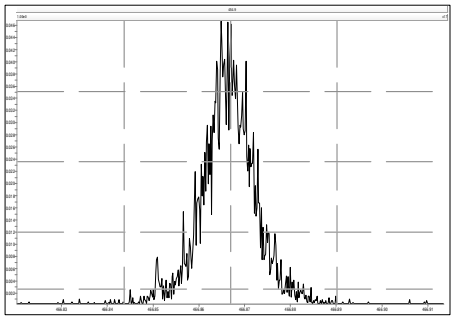
M 442.9728 R 17853



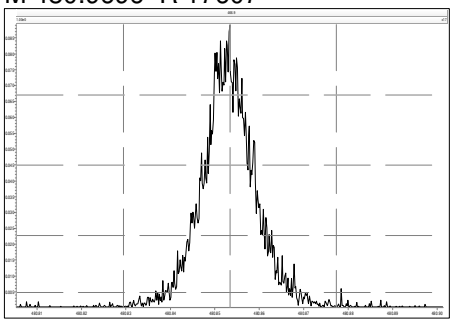
M 454.9728 R 17986



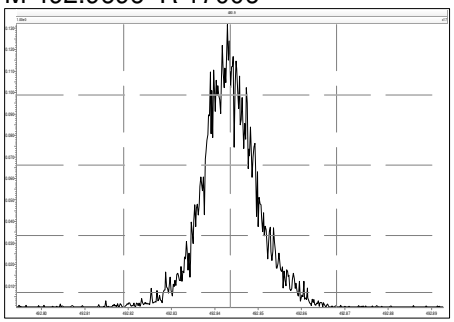
M 466.9728 R 19845



M 480.9696 R 17607



M 492.9696 R 17006



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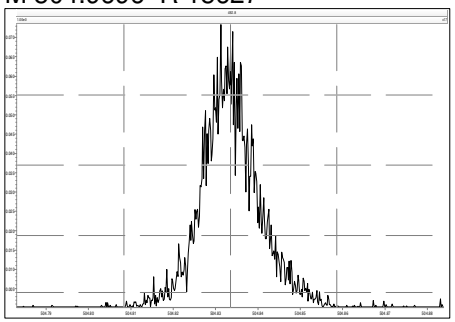

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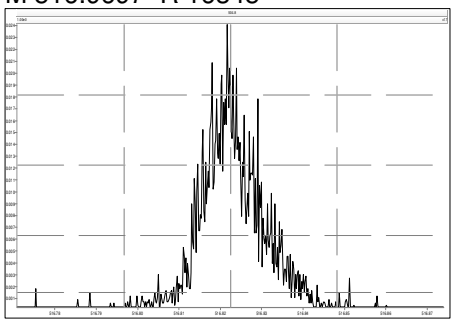

Printed: Thursday, January 20, 2022 23:16:44 Eastern Standard Time

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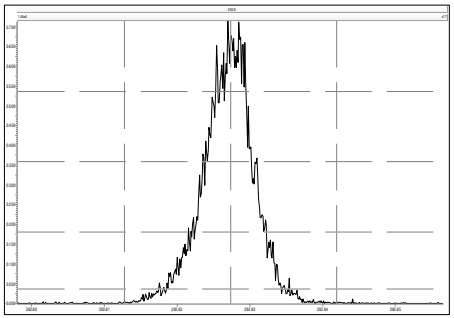

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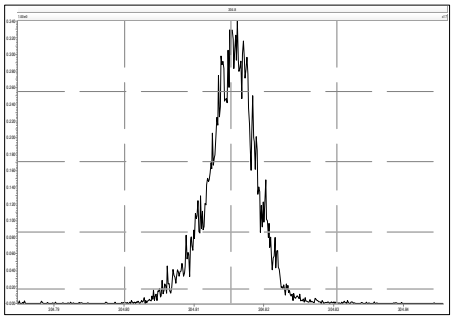

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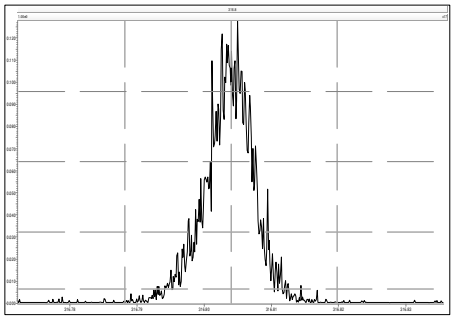

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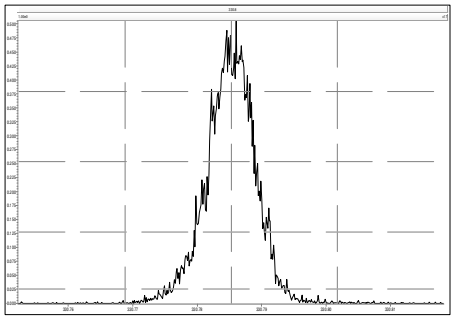

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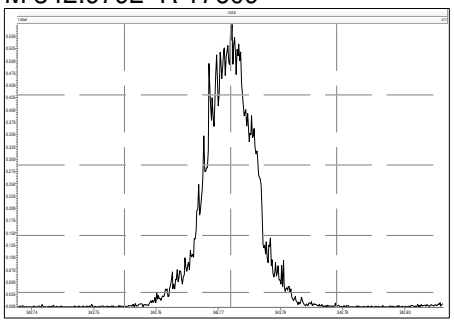

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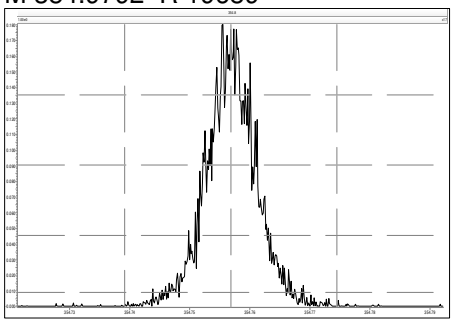

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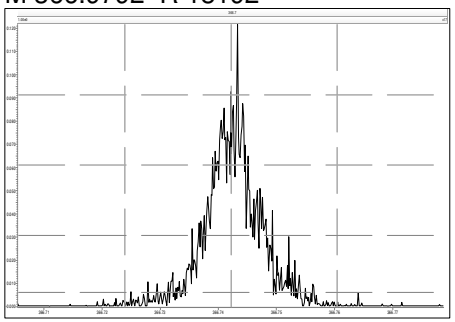

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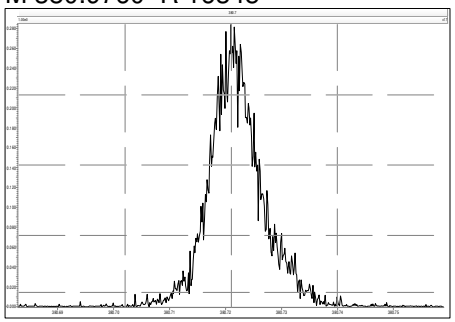

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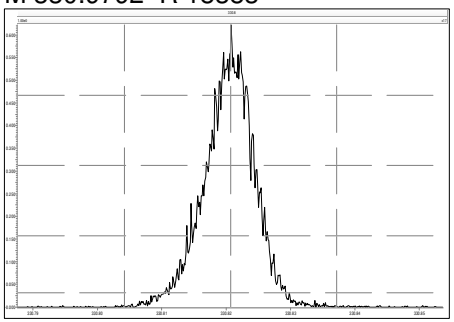

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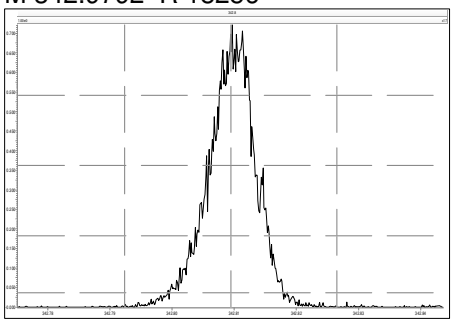

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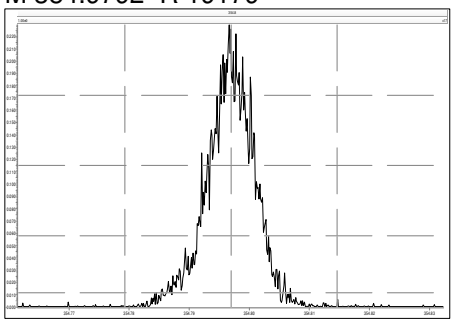

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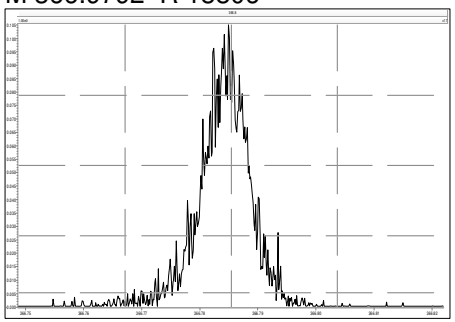

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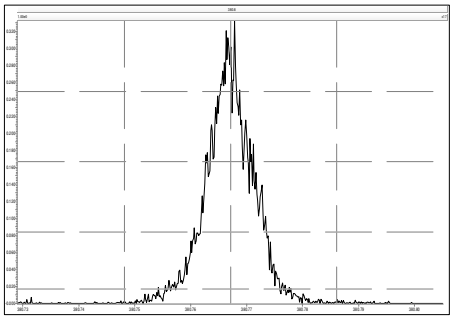

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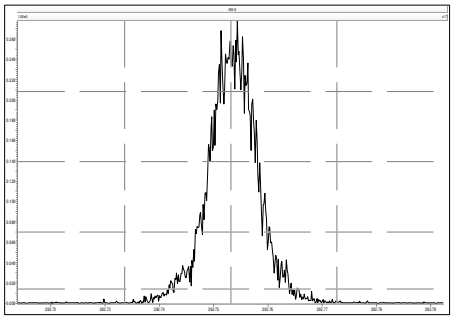

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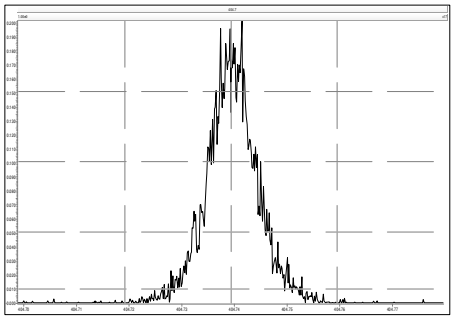

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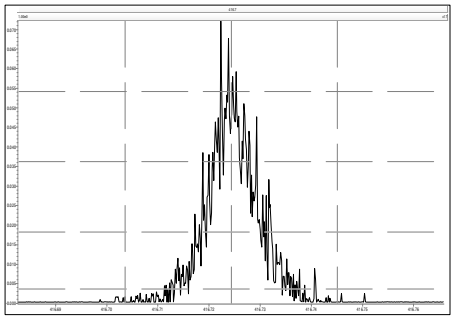

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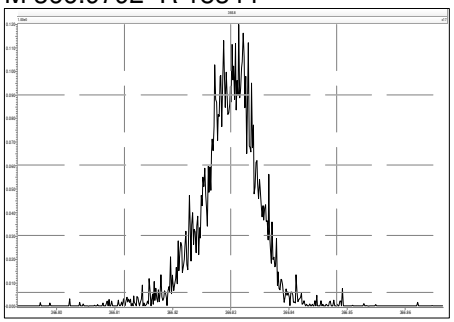

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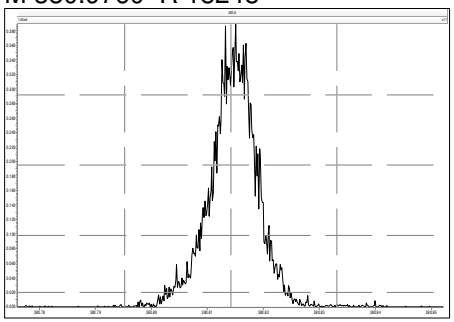

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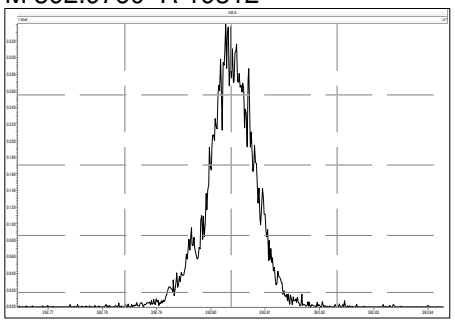

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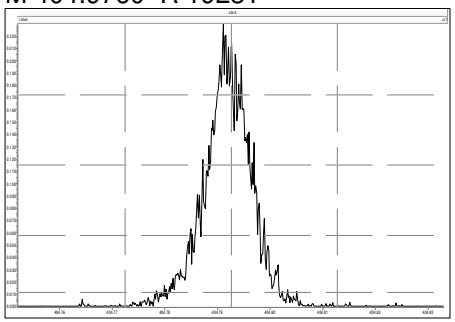

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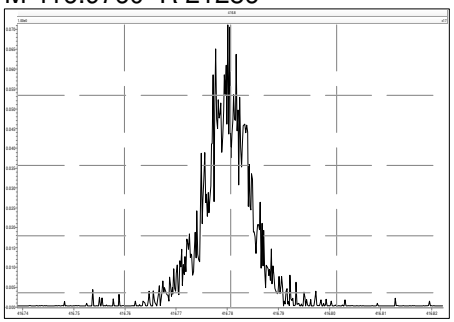

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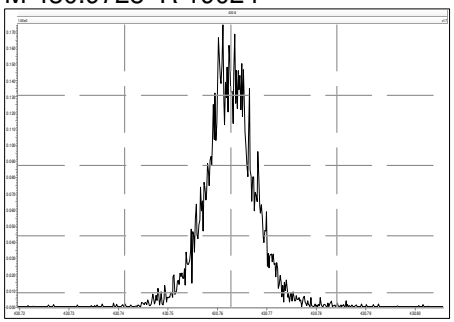

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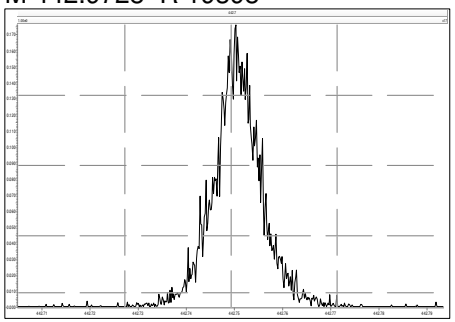

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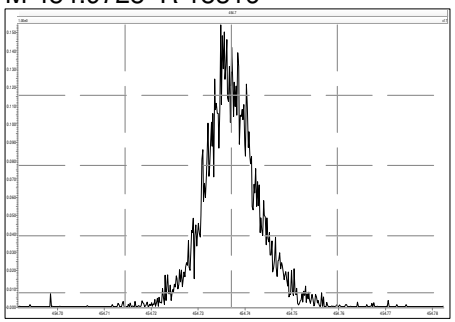

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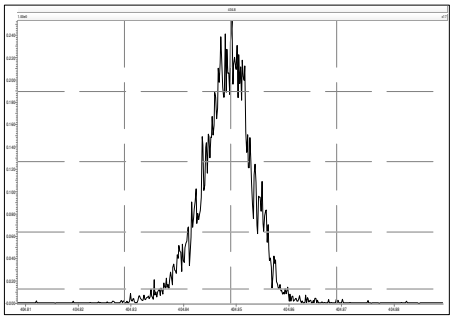

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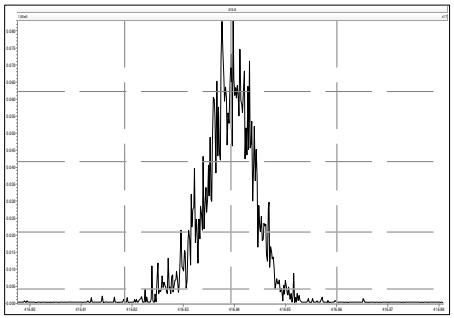

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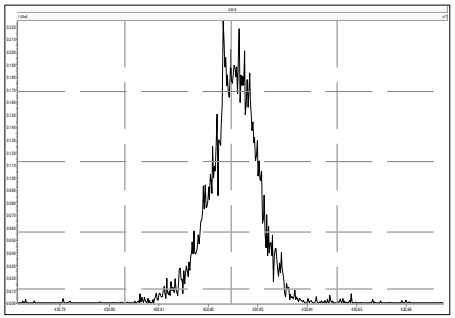

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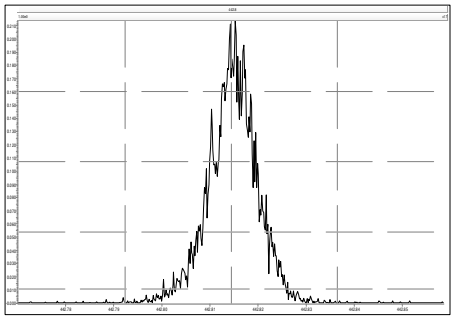

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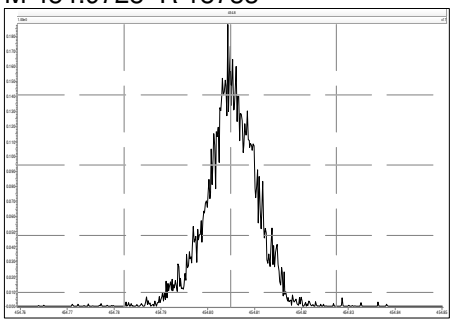

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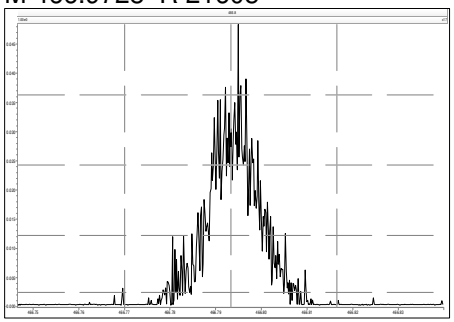

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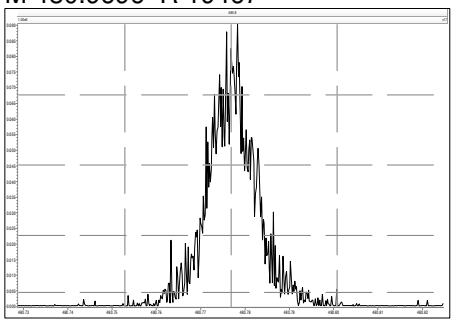

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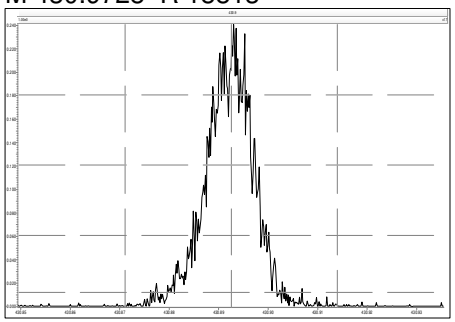

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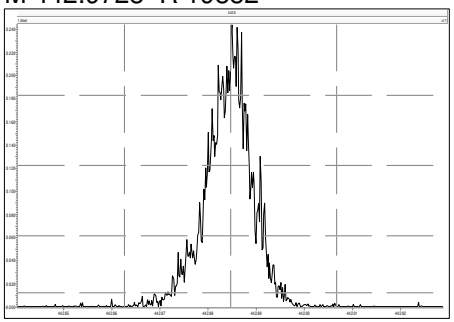

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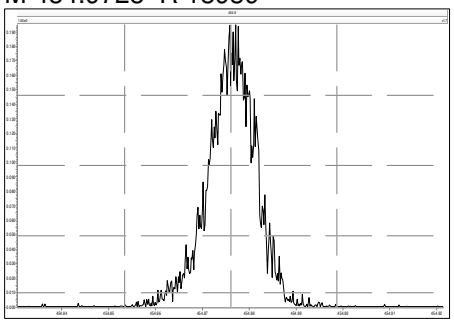
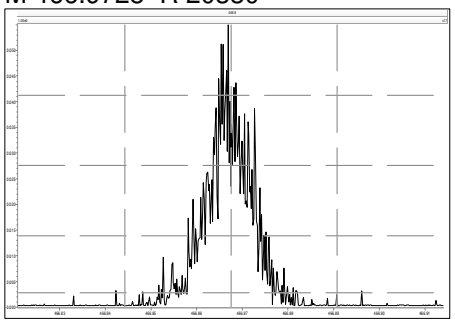
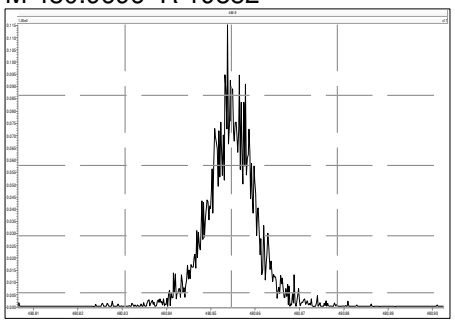


M 466.9728 R 20330



M 480.9696 R 19852



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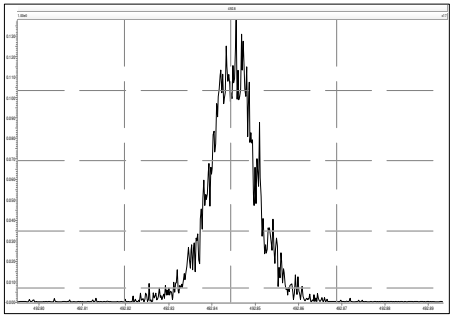

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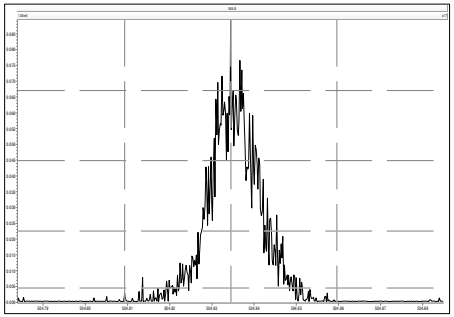

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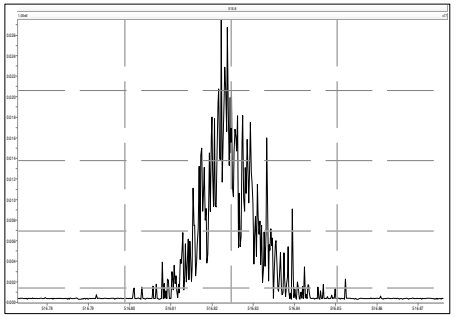


Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 0.25 pg/uL CS0	211110C05 0.5 pg/uL CS1	211110C06 2 pg/uL CS2	211110C07 10 pg/uL CS3	211110C08 40 pg/uL CS4	211110C09 200 pg/uL CS5	211110C10 500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 **0.25 pg/uL CS0**	211110C05 **0.5 pg/uL CS1**	211110C06 **2 pg/uL CS2**	211110C07 **10 pg/uL CS3**	211110C08 **40 pg/uL CS4**	211110C09 **200 pg/uL CS5**	211110C10 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86 ✓	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07 ✓	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10 ✓	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28 ✓	1.33

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

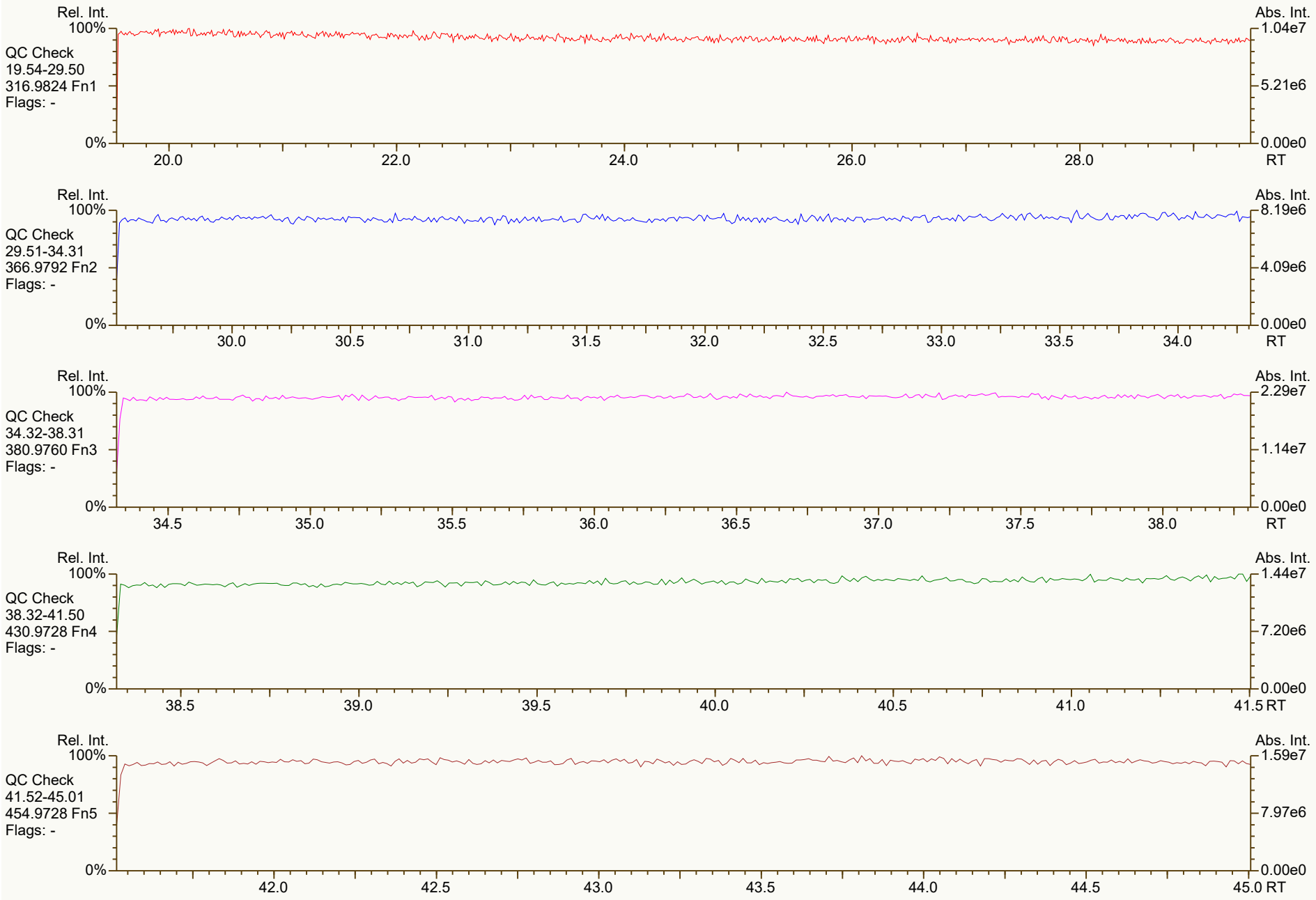
APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

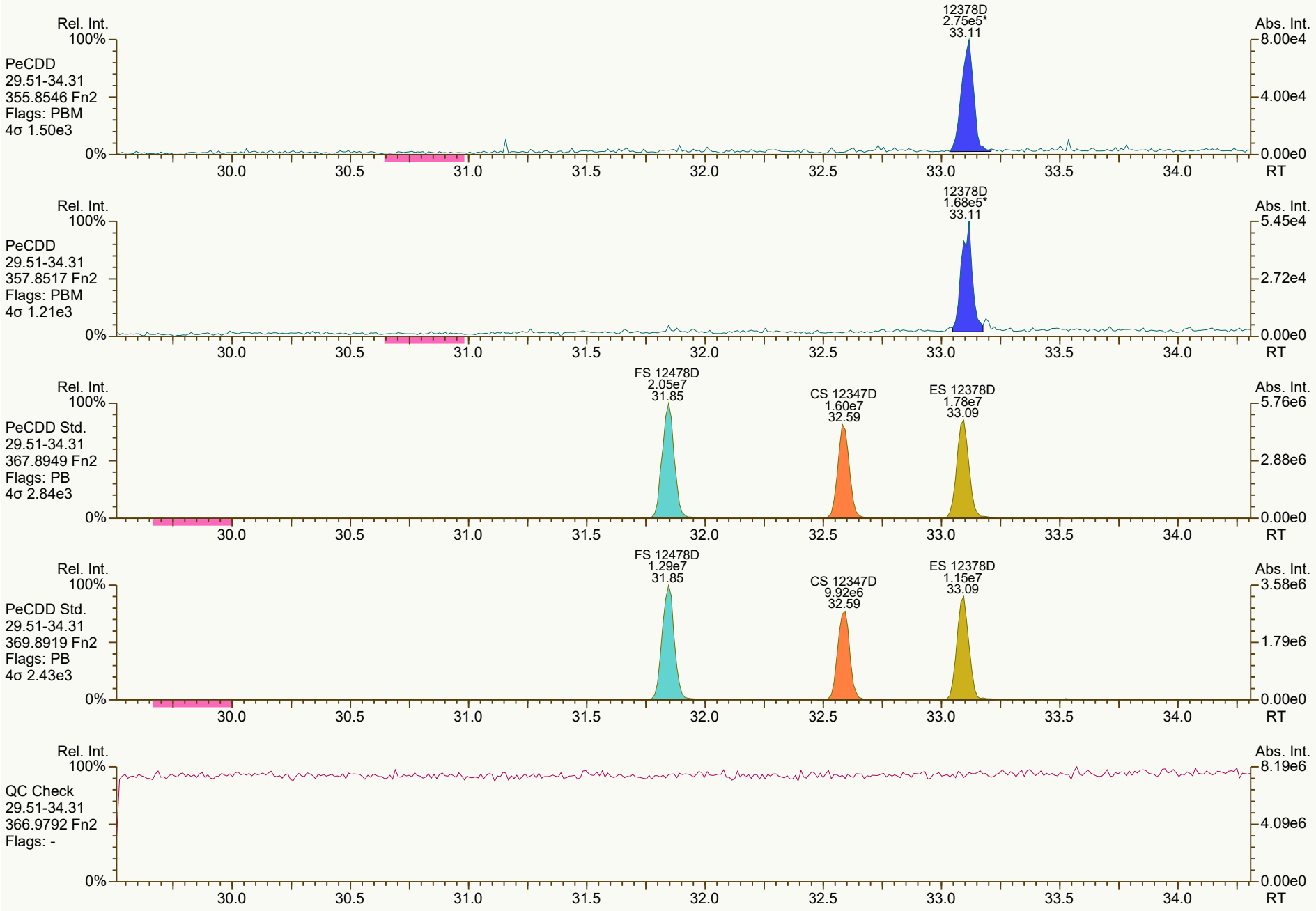
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:02 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA	UTP: 11-Nov-2021 16:23:33 DTF	Checkcode: 245-007-QLD
Sample ID: 25-6-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C04

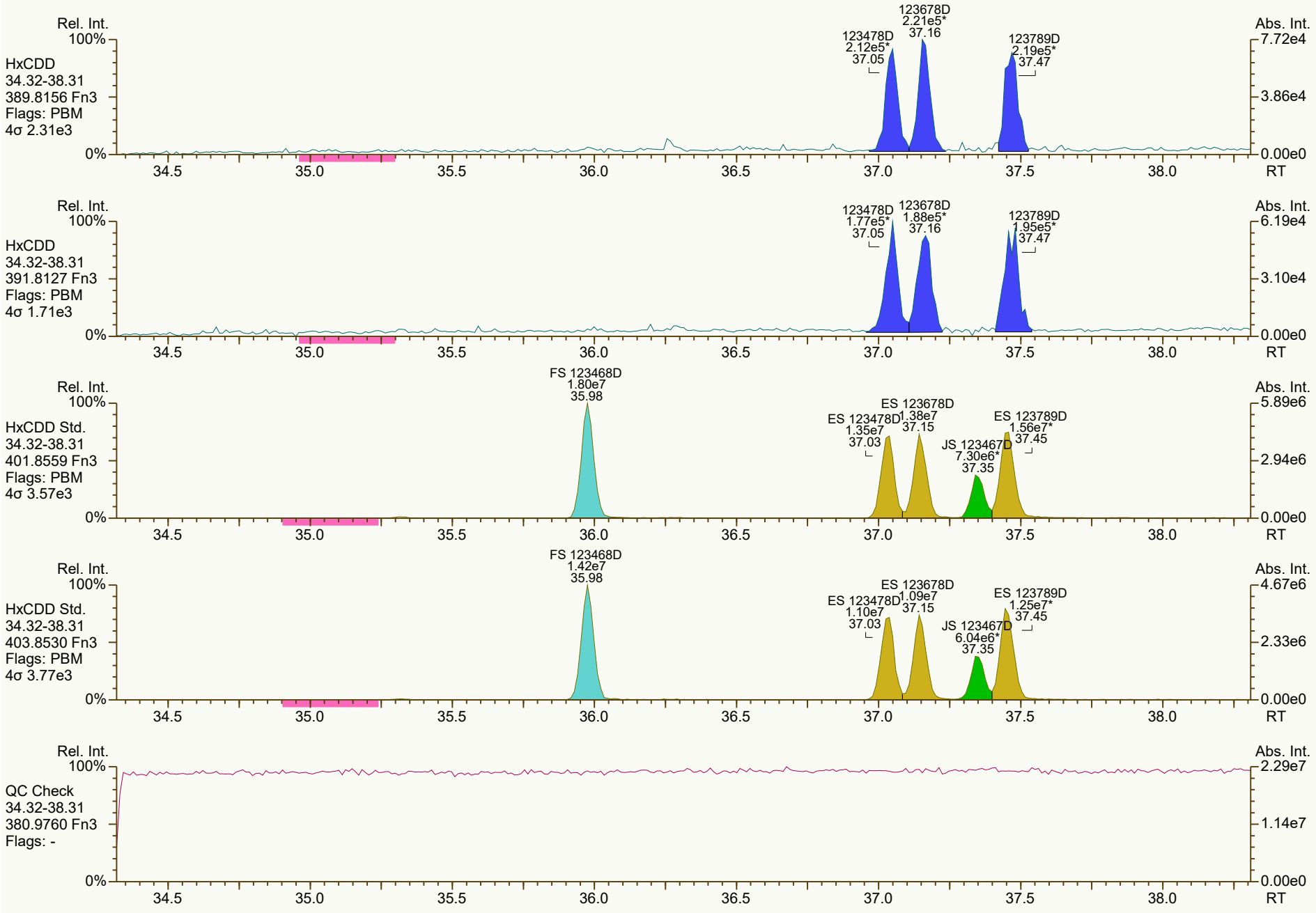
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

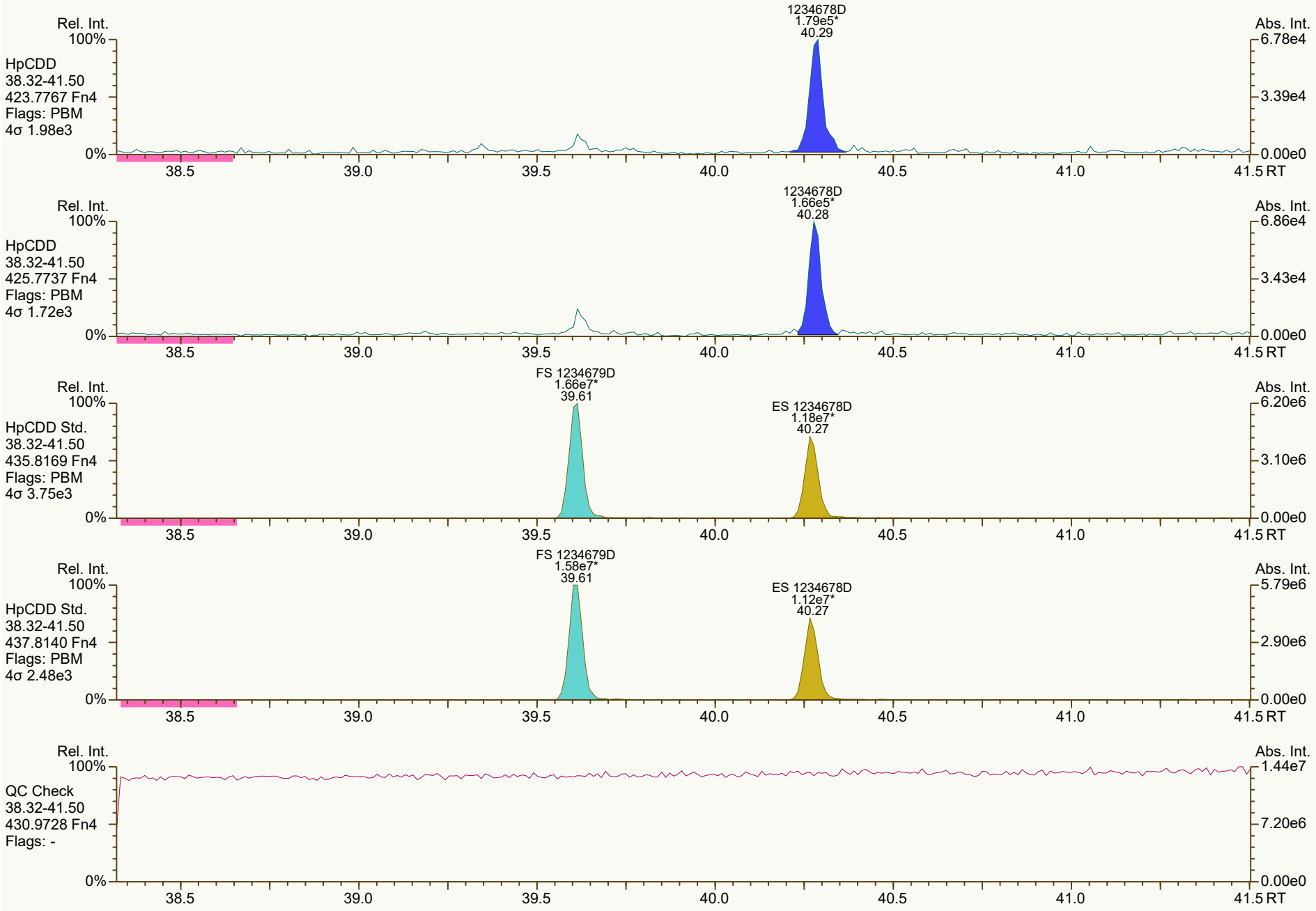
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF				Checkcode: 245-007-QLD	
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C04	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%

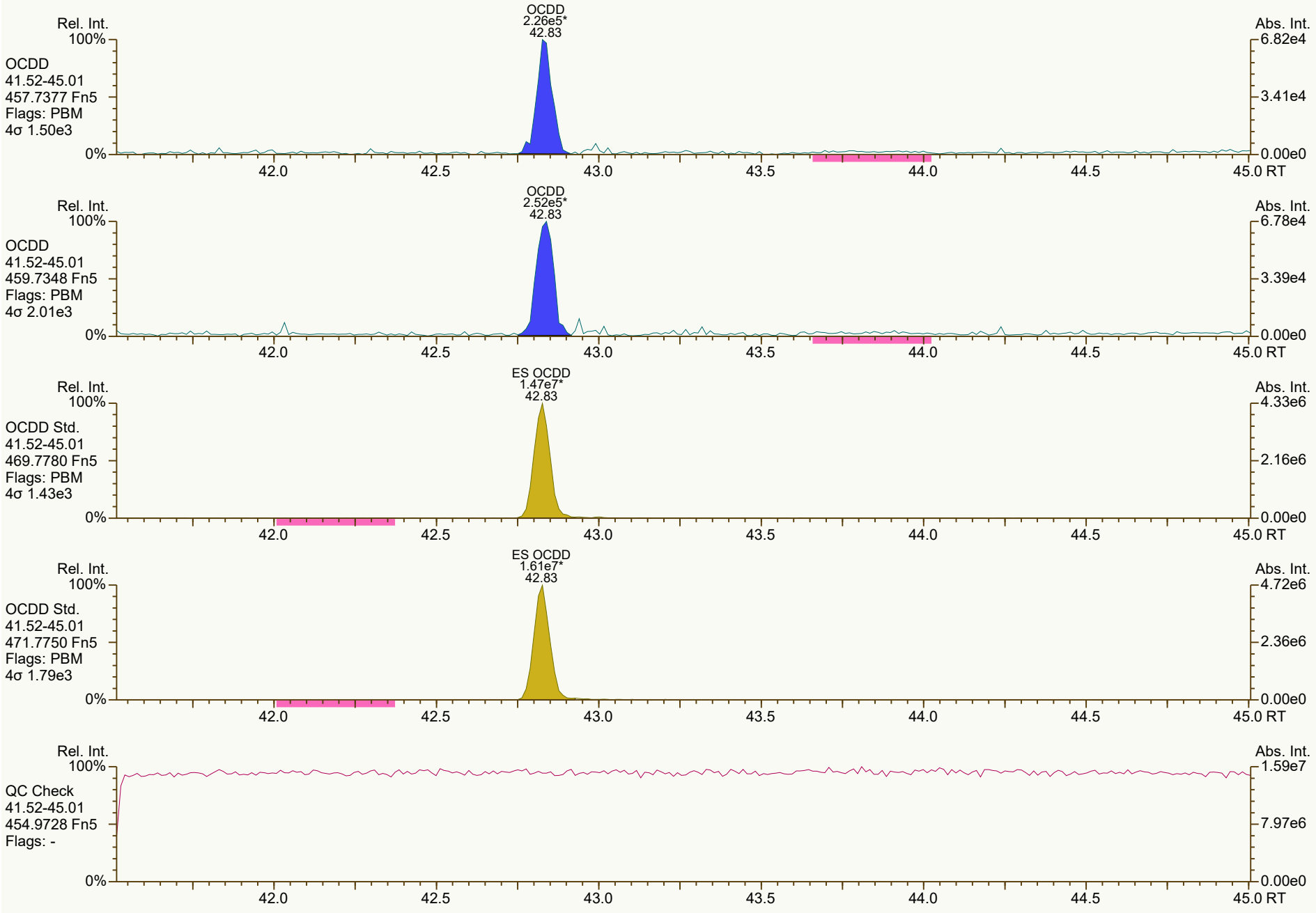

Rel. Int.
100%
0%
Abs. Int.
1.04e7
5.21e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.19e6
4.09e6
0.00e0
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
0%
Abs. Int.
1.59e7
7.97e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

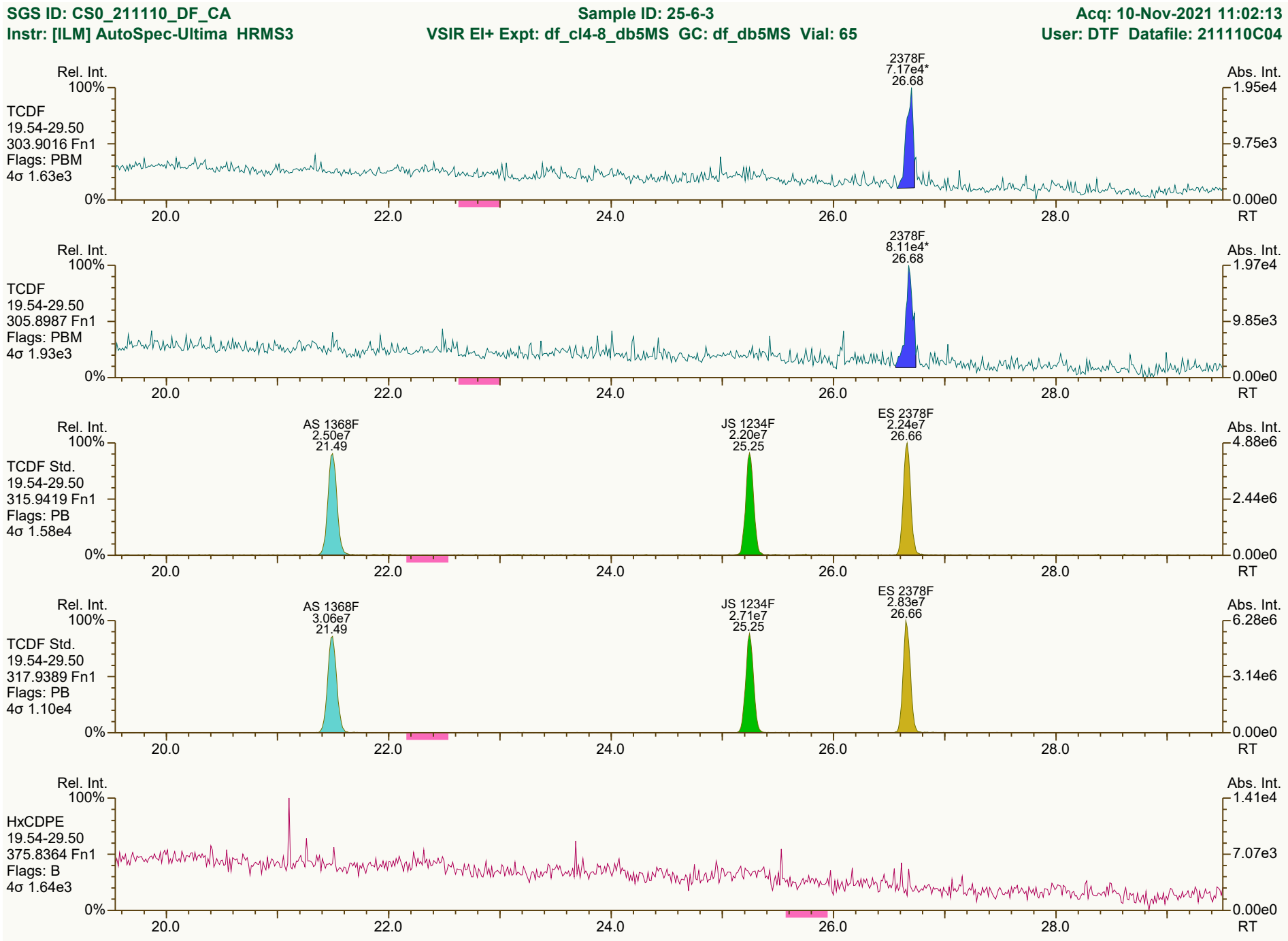

SGS ID: CS0_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
Acq: 10-Nov-2021 11:02:13
User: DTF Datafile: 211110C04
Rel. Int.
100%
0%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PBM
4σ 2.61e3
RRF = (5.29e4 + 6.64e4) * 100pg / (1.59e7 + 1.97e7) * .25pg = 1.34
DTF 11-Nov-2021 16:30
2378D
5.29e4*
27.60
Abs. Int.
1.67e4
8.35e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
APPROVED
Amy_Boehm , 11/11/2021, 5:12:33 PM
TCDD
19.54-29.50
321.8936 Fn1
Flags: PBM
4σ 2.27e3
2378D
6.64e4*
27.59
2.13e4
1.06e4
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.48e3
9.73e3
4.86e3
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 9.73e3
AS 1368D
1.64e7
23.73
TS 1378D
2.18e7
25.85
JS 1234D
1.56e7
26.90
ES 2378D
1.59e7
27.57
FS 1278D
1.73e7
27.92
4.65e6
2.32e6
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.27e3
AS 1368D
2.03e7
23.73
TS 1378D
2.73e7
25.85
JS 1234D
1.90e7
26.90
ES 2378D
1.97e7
27.57
FS 1278D
2.17e7
27.92
5.85e6
2.92e6
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3504, 1483, 2998 scc: 245-007
Revised: 11-Nov-2021 16:18 (DTF) Printed: 11-Nov-2021 16:32 Page 2 of 12


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
Abs. Int.
8.00e4
4.00e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.68e5*
33.11
Abs. Int.
5.45e4
2.72e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
Abs. Int.
5.76e6
2.88e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
123478D 2.12e5* 37.05
123678D 2.21e5* 37.16
123789D 2.19e5* 37.47
7.72e4
3.86e4
0.00e0
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
123478D 1.77e5* 37.05
123678D 1.88e5* 37.16
123789D 1.95e5* 37.47
6.19e4
3.10e4
0.00e0
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
FS 123468D 1.80e7 35.98
ES 123478D 1.35e7 37.03
ES 123678D 1.38e7 37.15
JS 123467D 7.30e6* 37.35
ES 123789D 1.56e7* 37.45
5.89e6
2.94e6
0.00e0
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
FS 123468D 1.42e7 35.98
ES 123478D 1.10e7 37.03
ES 123678D 1.09e7 37.15
JS 123467D 6.04e6* 37.35
ES 123789D 1.25e7* 37.45
4.67e6
2.33e6
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.29e7
1.14e7
0.00e0
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
0%
1234678D
1.79e5*
40.29
Abs. Int.
6.78e4
3.39e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
0%
1234678D
1.66e5*
40.28
Abs. Int.
6.86e4
3.43e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
0%
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
Abs. Int.
6.20e6
3.10e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
0%
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
Abs. Int.
5.79e6
2.90e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

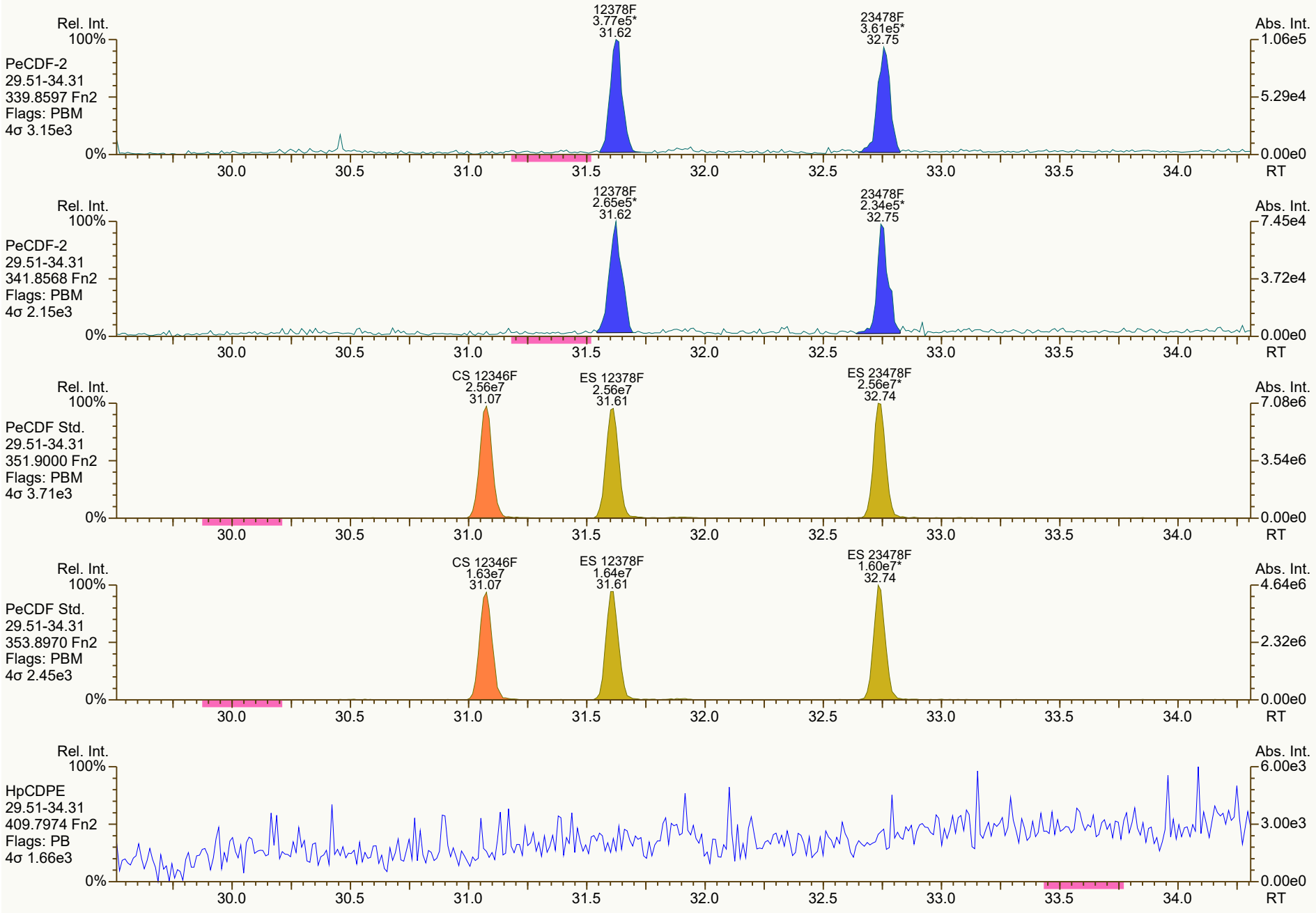

OCDD
2.26e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
6.82e4
3.41e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.52e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.47e7*
42.83
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
0%
Abs. Int.
4.33e6
2.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7*
42.83
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
0%
Abs. Int.
4.72e6
2.36e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

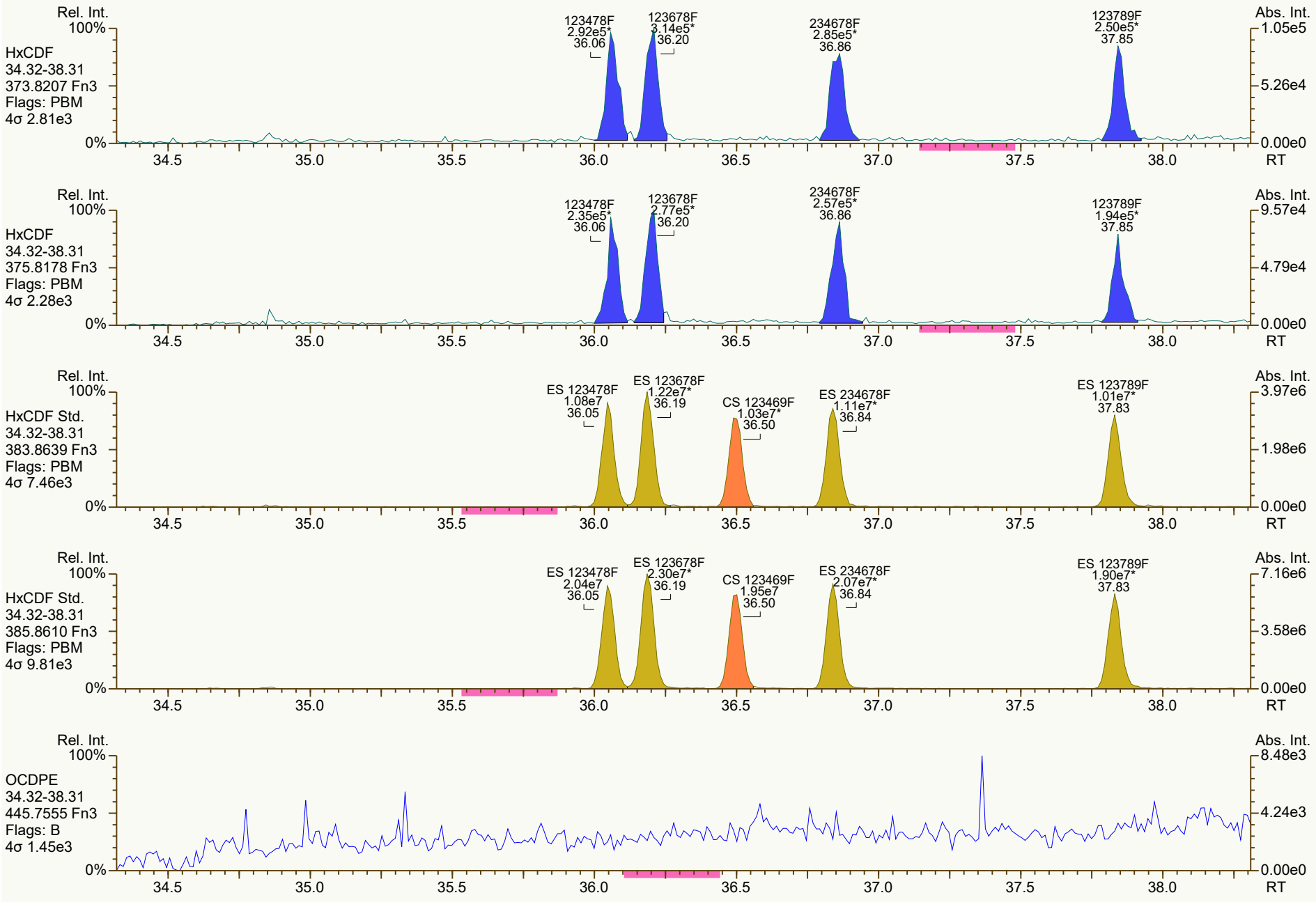

SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
100%
0%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
2378F
7.17e4*
26.68
Abs. Int.
1.95e4
9.75e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
2378F
8.11e4*
26.68
1.97e4
9.85e3
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
4.88e6
2.44e6
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
26.66
6.28e6
3.14e6
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
1.41e4
7.07e3
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5762, 7924, 6610 scc: 245-007
Revised: 10-Nov-2021 13:35 (DTF) Printed: 11-Nov-2021 16:32 Page 7 of 12

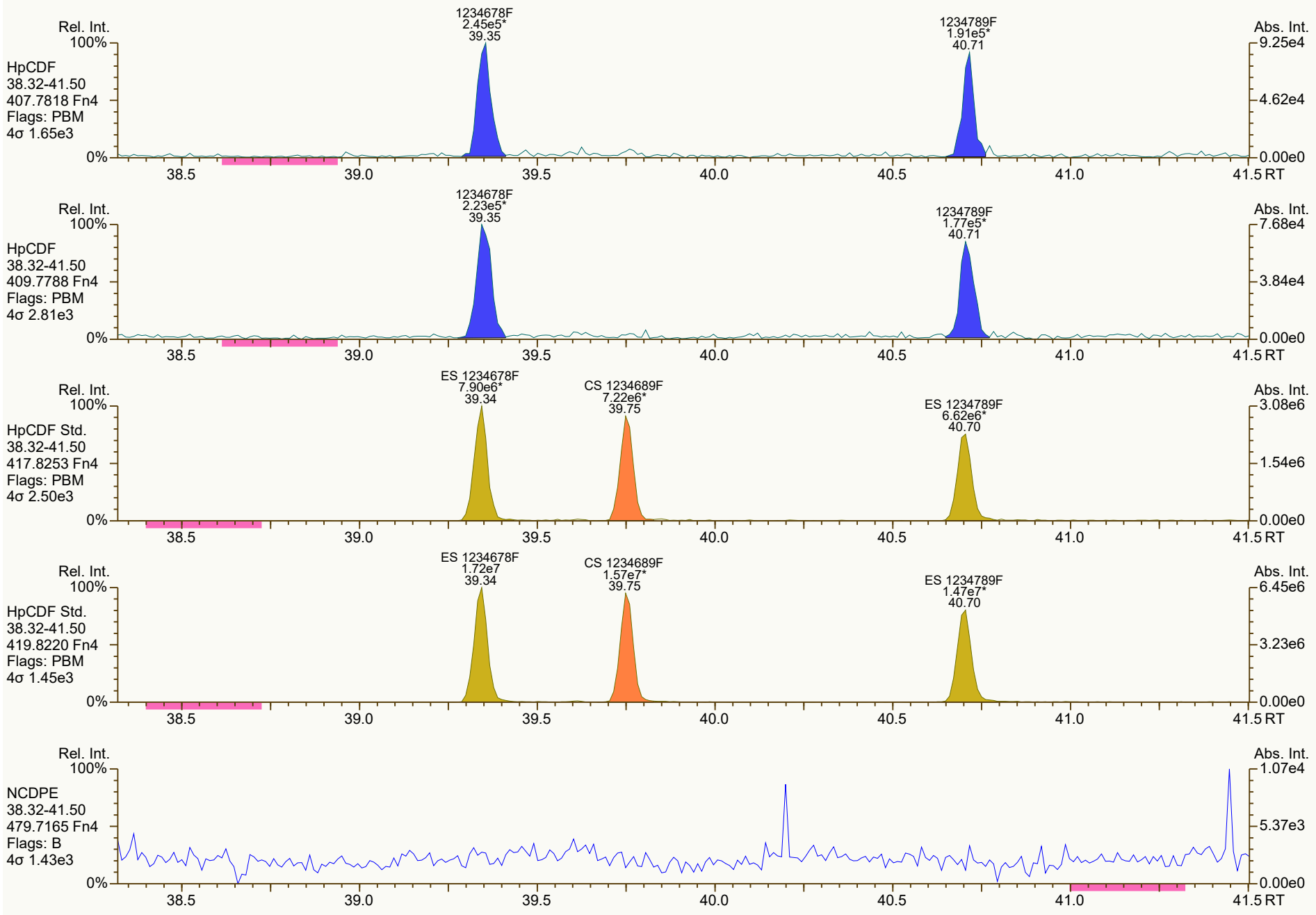
SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6412 scc: 245-007
PKD: 10-Nov-2021 13:30 Printed: 11-Nov-2021 16:32 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12378F
3.77e5*
31.62
23478F
3.61e5*
32.75
Abs. Int.
1.06e5
5.29e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
0%
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
Abs. Int.
7.45e4
3.72e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
0%
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
Abs. Int.
7.08e6
3.54e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
0%
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.81e3
0%
123478F
2.92e5*
36.06
123678F
3.14e5*
36.20
234678F
2.85e5*
36.86
123789F
2.50e5*
37.85
Abs. Int.
1.05e5
5.26e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.28e3
0%
123478F
2.35e5*
36.06
123678F
2.77e5*
36.20
234678F
2.57e5*
36.86
123789F
1.94e5*
37.85
Abs. Int.
9.57e4
4.79e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.46e3
0%
ES 123478F
1.08e7
36.05
ES 123678F
1.22e7*
36.19
CS 123469F
1.03e7*
36.50
ES 234678F
1.11e7*
36.84
ES 123789F
1.01e7*
37.83
Abs. Int.
3.97e6
1.98e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.81e3
0%
ES 123478F
2.04e7
36.05
ES 123678F
2.30e7*
36.19
CS 123469F
1.95e7
36.50
ES 234678F
2.07e7*
36.84
ES 123789F
1.90e7*
37.83
Abs. Int.
7.16e6
3.58e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
Abs. Int.
9.25e4
4.62e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
Abs. Int.
7.68e4
3.84e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
Abs. Int.
3.08e6
1.54e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
Abs. Int.
6.45e6
3.23e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
Abs. Int.
1.07e4
5.37e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

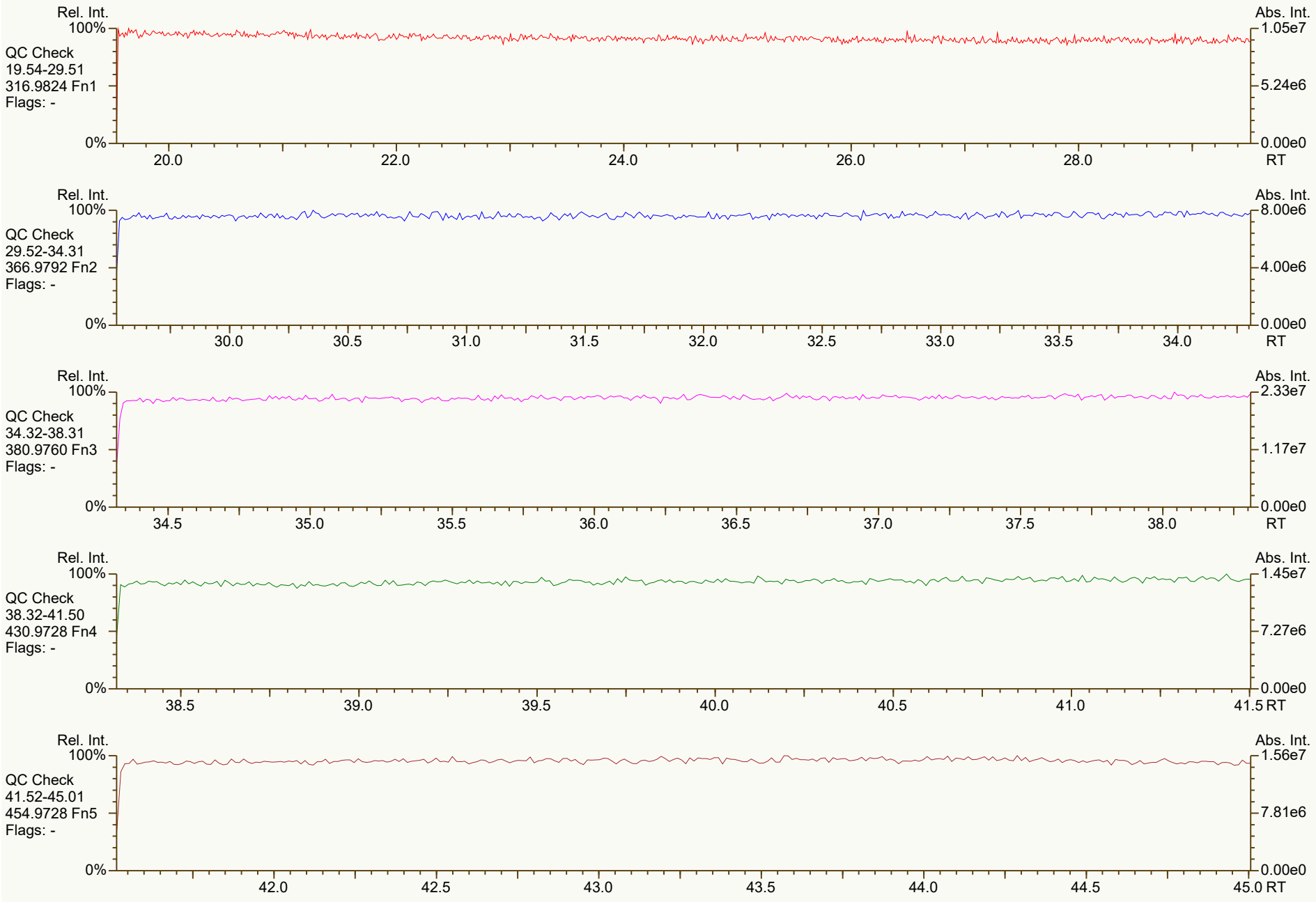

OCDF
2.83e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.07e3
0%
Abs. Int.
9.68e4
4.84e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.12e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.63e3
0%
Abs. Int.
8.96e4
4.48e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.88e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.90e3
0%
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.08e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.27e3
0%
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.52e3
0%
Abs. Int.
5.12e3
2.56e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:48 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS1_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 419-111-CRN
Sample ID: 25-6-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C05

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

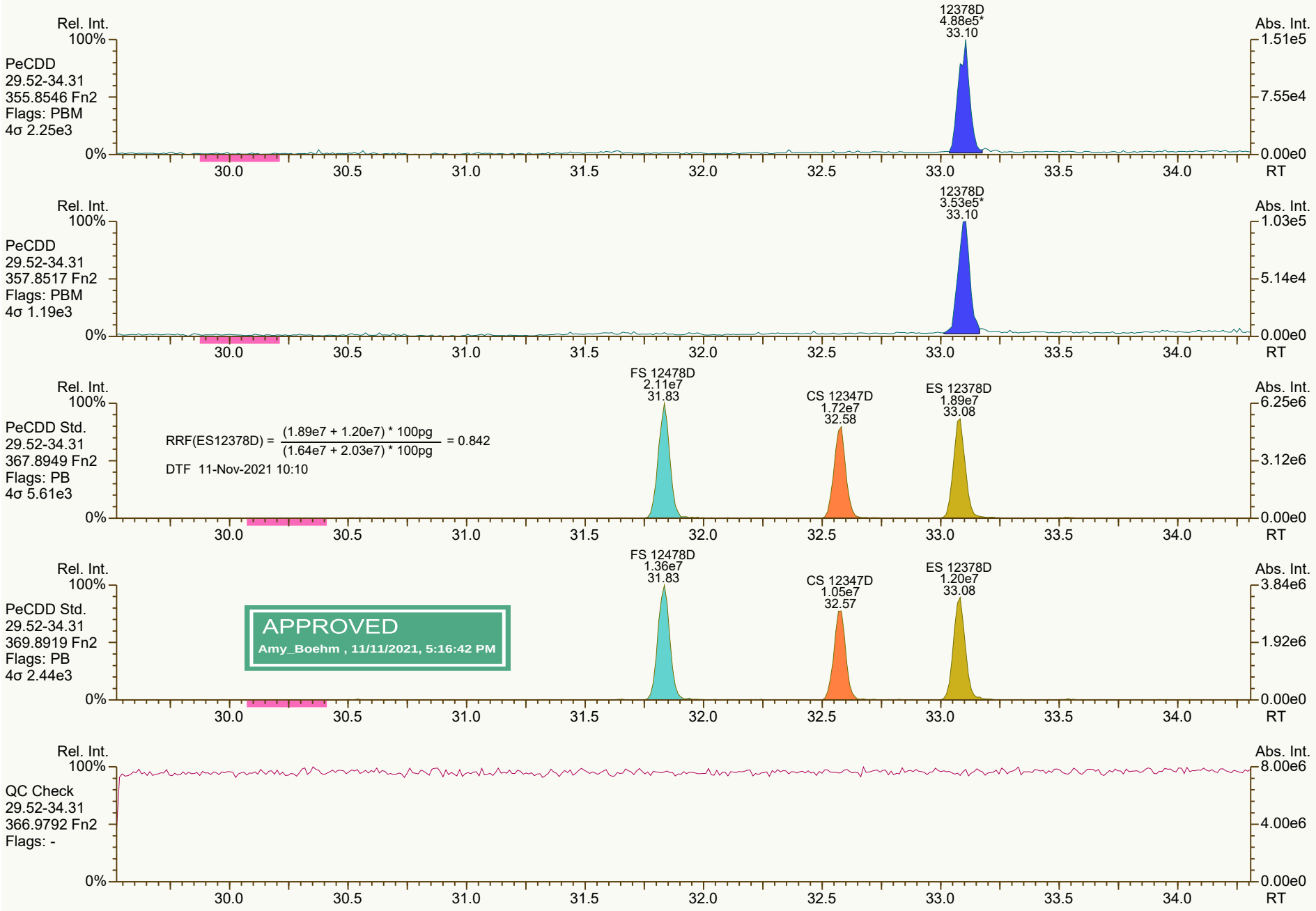
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

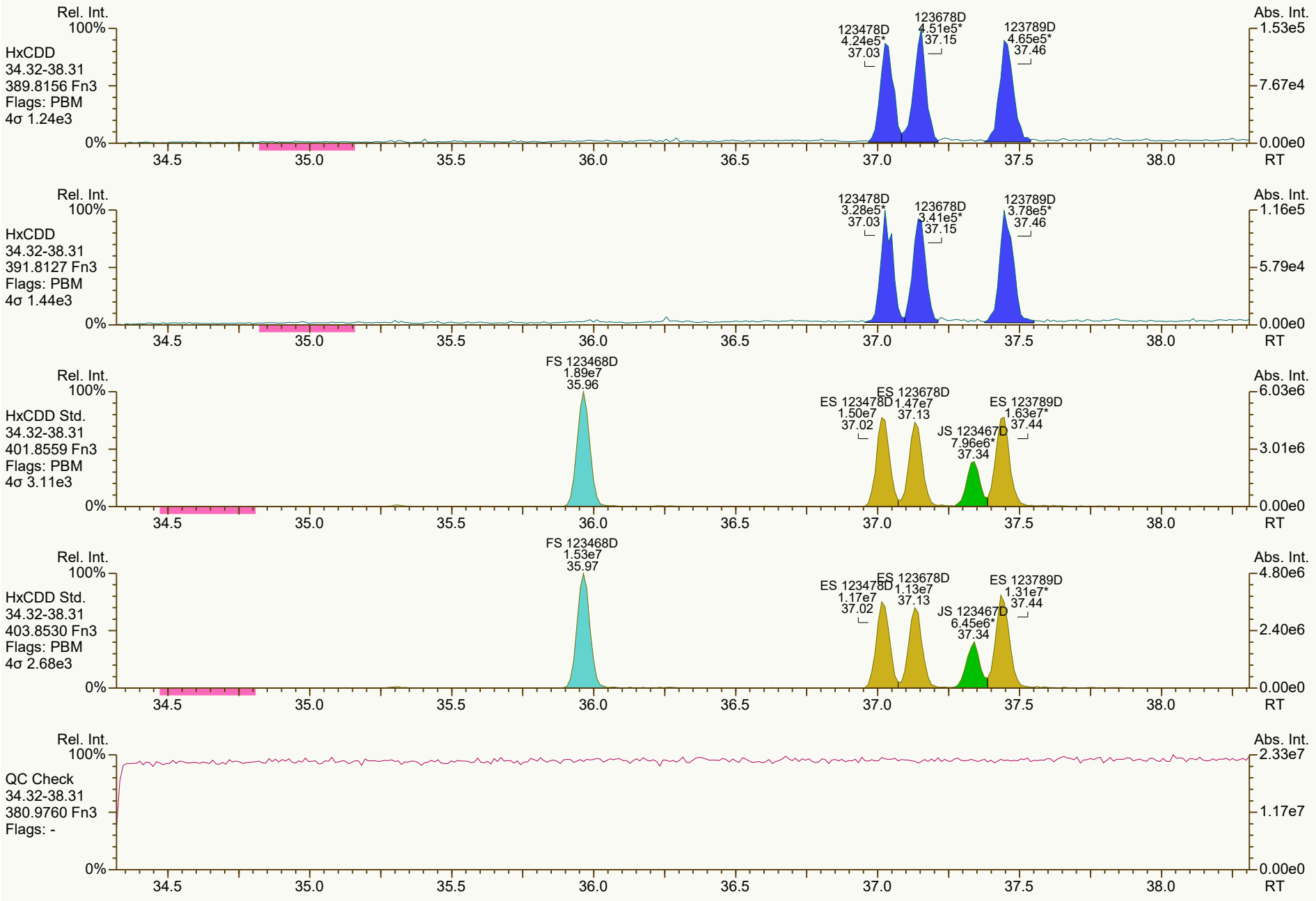
SGS ID: CS1_211110_DF_CA **Sample ID: 25-6-2** **Acq: 10-Nov-2021 11:48:34**
Instr: [ILM] AutoSpec-Ultima HRMS3 **VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66** **User: DTF Datafile: 211110C05**

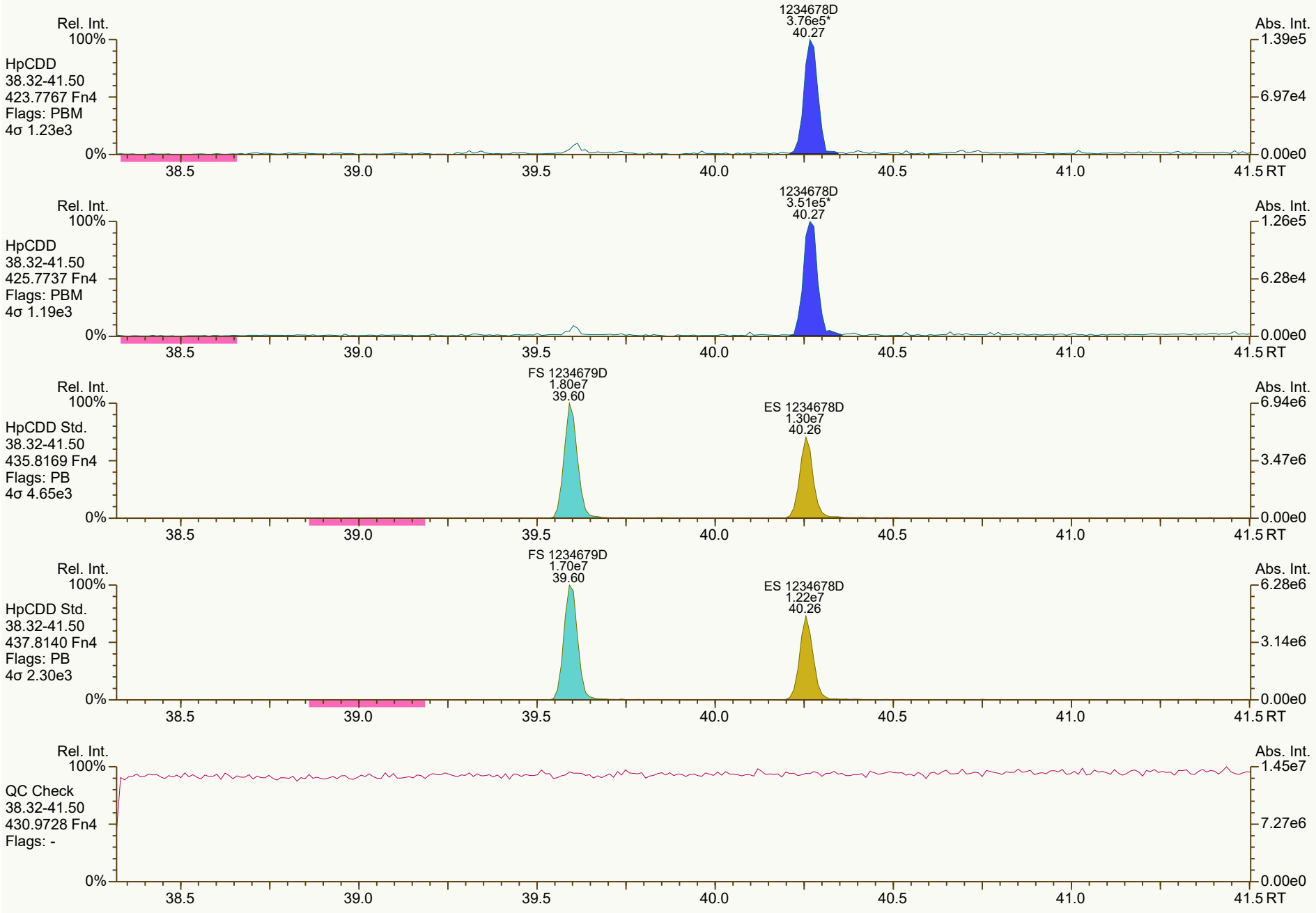


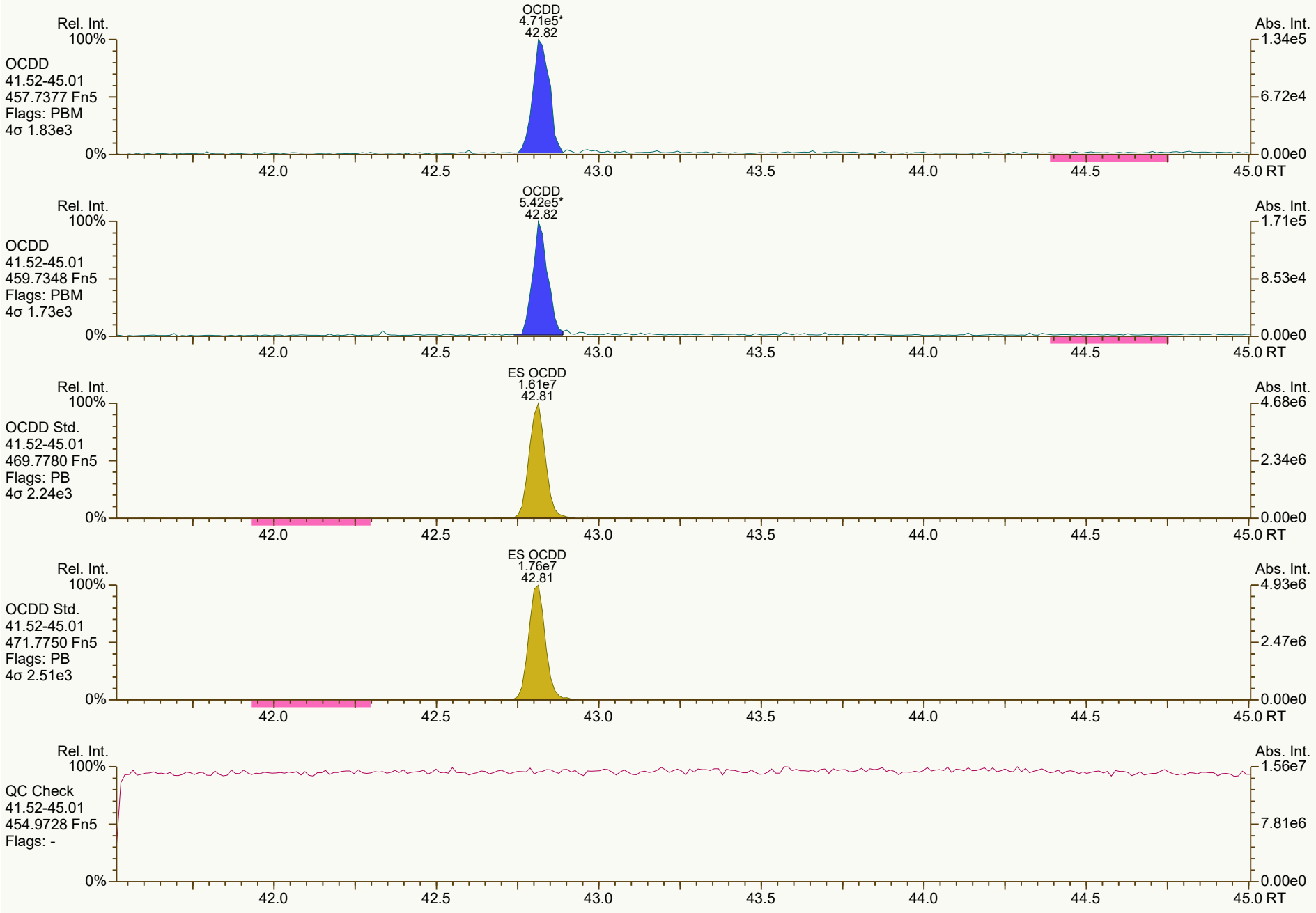
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 scc: 419-111 *PKD: n/a Printed: 11-Nov-2021 10:40 Page 1 of 12*

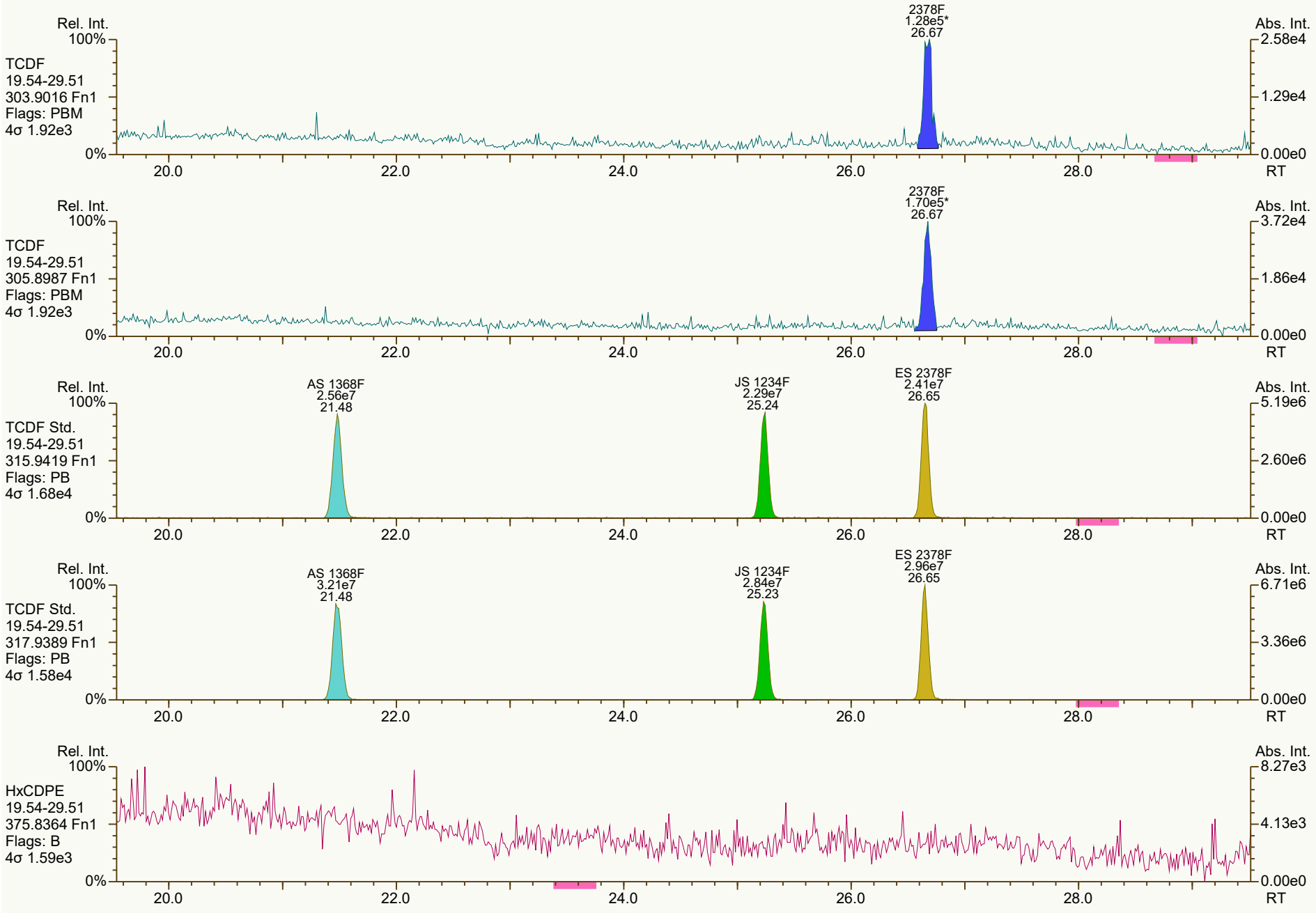

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 3.33e3
0%
2378D
1.05e5*
27.58
Abs. Int.
2.76e4
1.38e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.06e3
0%
2378D
1.27e5*
27.58
Abs. Int.
2.99e4
1.49e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.52e3
0%
CS 37Cl-2378D
2.01e5*
27.59
Abs. Int.
5.18e4
2.59e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 1.05e4
0%
AS 1368D
1.71e7
23.72
TS 1378D
2.28e7
25.84
JS 1234D
1.64e7
26.89
ES 2378D
1.66e7
27.56
FS 1278D
1.82e7
27.90
Abs. Int.
4.92e6
2.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 5.59e3
0%
AS 1368D
2.15e7
23.72
TS 1378D
2.86e7
25.84
JS 1234D
2.03e7
26.89
ES 2378D
2.11e7
27.56
FS 1278D
2.26e7
27.90
Abs. Int.
6.21e6
3.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

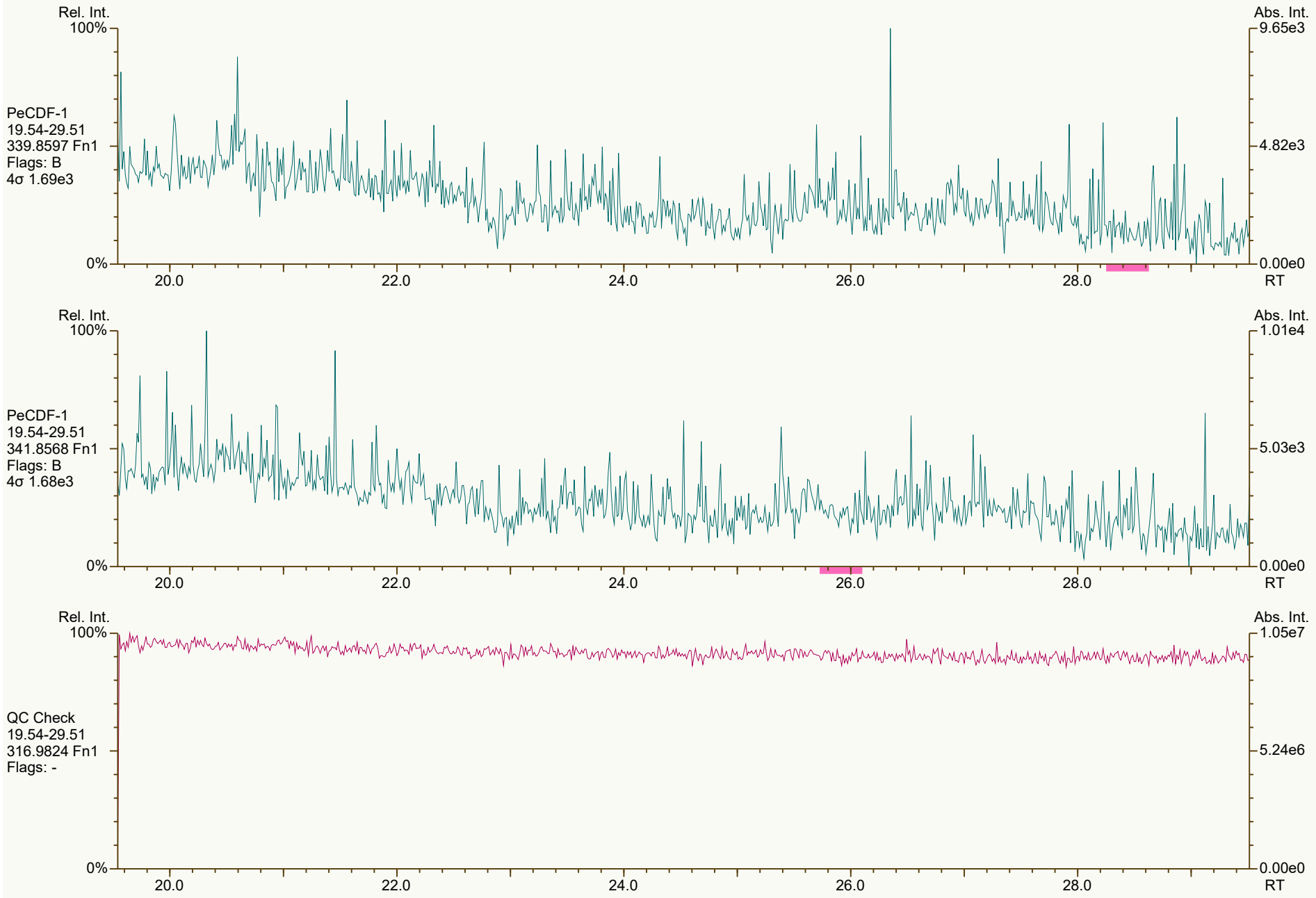

Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.25e3
12378D
4.88e5*
33.10
Abs. Int.
1.51e5
7.55e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.19e3
12378D
3.53e5*
33.10
1.03e5
5.14e4
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 5.61e3
RRF(ES12378D) = (1.89e7 + 1.20e7) * 100pg / (1.64e7 + 2.03e7) * 100pg = 0.842
DTF 11-Nov-2021 10:10
FS 12478D
2.11e7
31.83
CS 12347D
1.72e7
32.58
ES 12378D
1.89e7
33.08
6.25e6
3.12e6
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 2.44e3
APPROVED
Amy_Boehm , 11/11/2021, 5:16:42 PM
FS 12478D
1.36e7
31.83
CS 12347D
1.05e7
32.57
ES 12378D
1.20e7
33.08
3.84e6
1.92e6
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
8.00e6
4.00e6

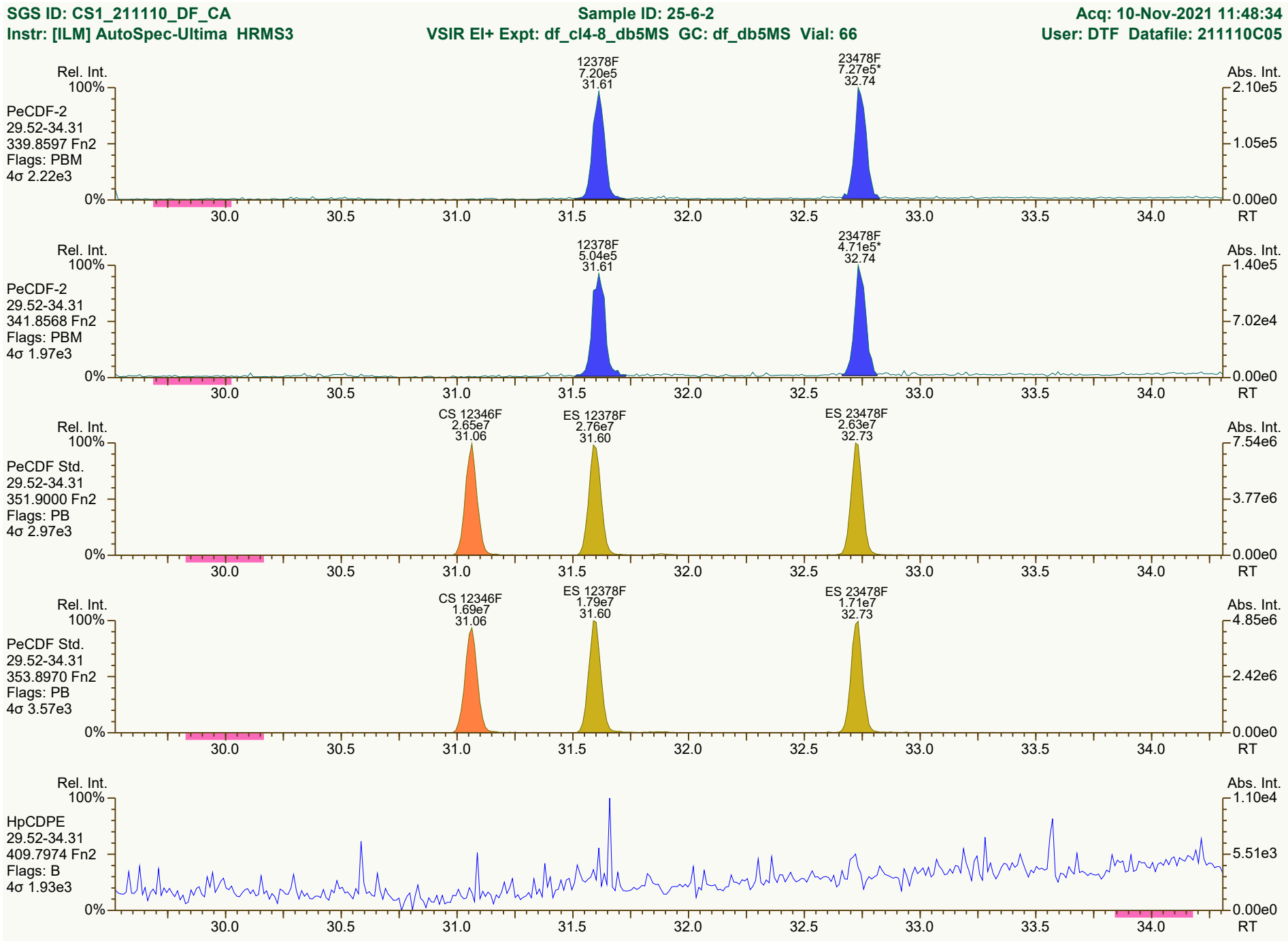

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D
4.24e5*
37.03
123678D
4.51e5*
37.15
123789D
4.65e5*
37.46
Abs. Int.
1.53e5
7.67e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D
3.28e5*
37.03
123678D
3.41e5*
37.15
123789D
3.78e5*
37.46
Abs. Int.
1.16e5
5.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D
1.89e7
35.96
ES 123478D
1.50e7
37.02
ES 123678D
1.47e7
37.13
JS 123467D
7.96e6*
37.34
ES 123789D
1.63e7*
37.44
Abs. Int.
6.03e6
3.01e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
1.53e7
35.97
ES 123478D
1.17e7
37.02
ES 123678D
1.13e7
37.13
JS 123467D
6.45e6*
37.34
ES 123789D
1.31e7*
37.44
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

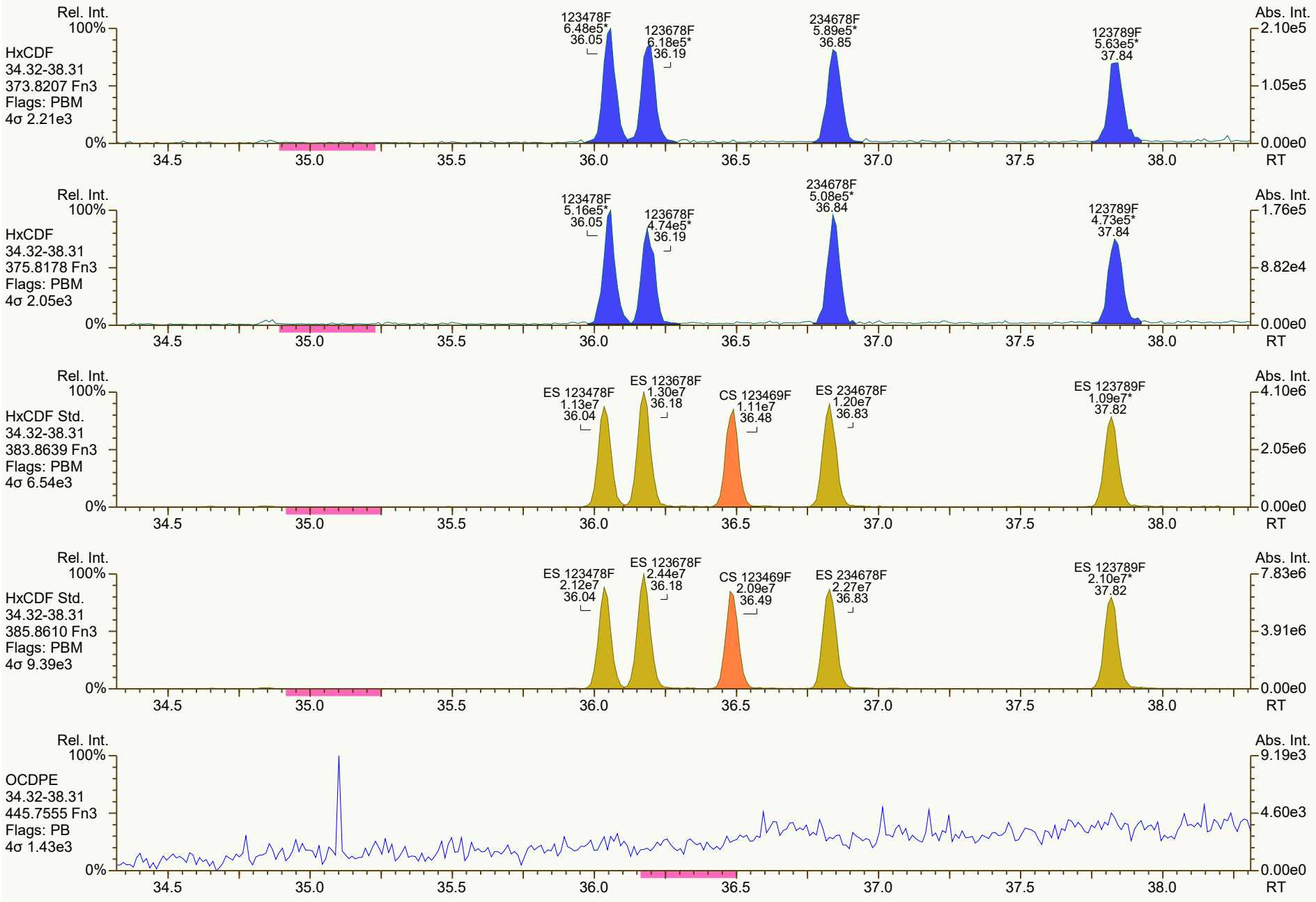

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
0%
1234678D
3.76e5*
40.27
Abs. Int.
1.39e5
6.97e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
0%
1234678D
3.51e5*
40.27
Abs. Int.
1.26e5
6.28e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
0%
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
Abs. Int.
6.94e6
3.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
0%
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
Abs. Int.
6.28e6
3.14e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.45e7
7.27e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

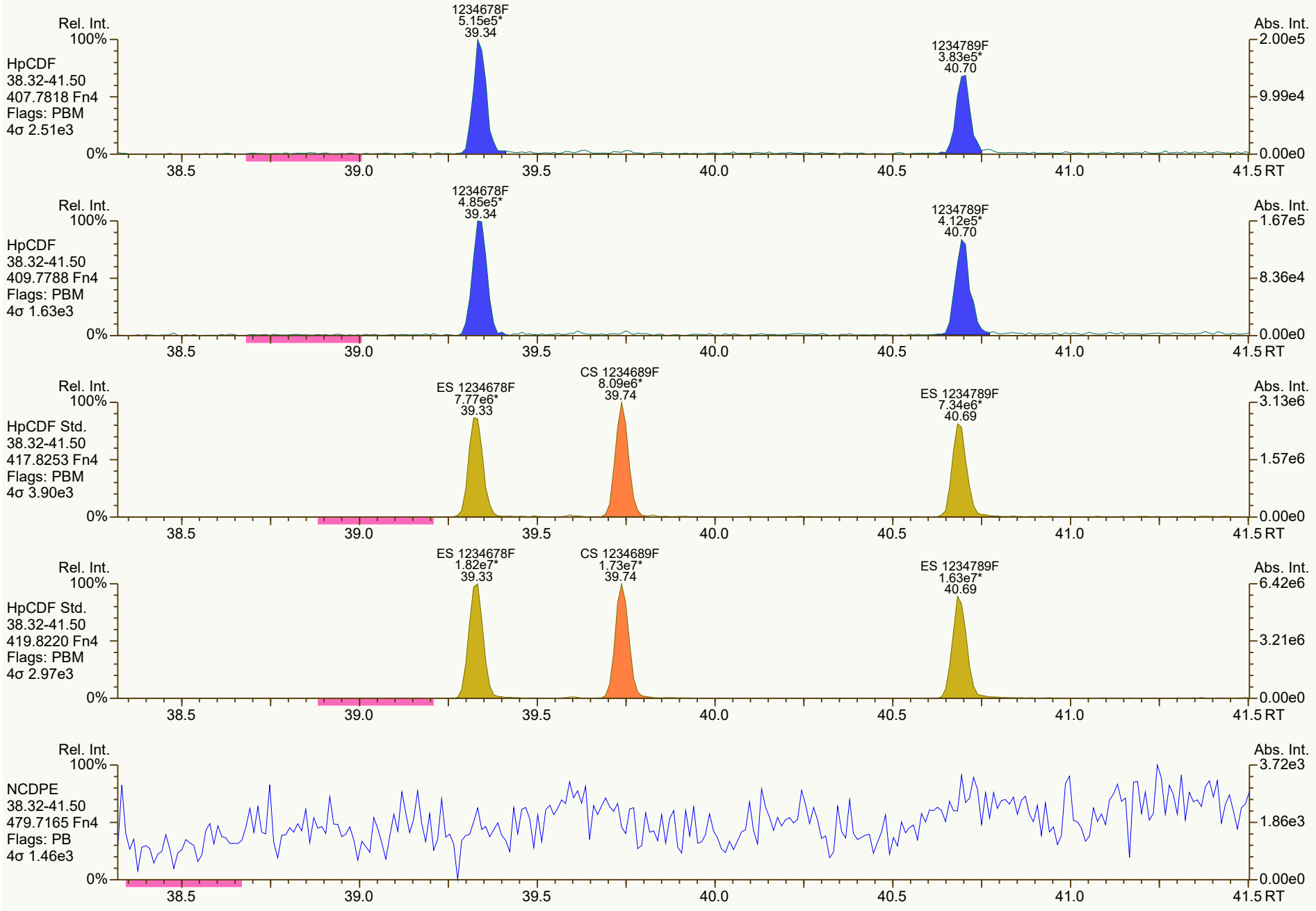

OCDD
4.71e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
1.34e5
6.72e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
Abs. Int.
1.71e5
8.53e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
Abs. Int.
4.93e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.56e7
7.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

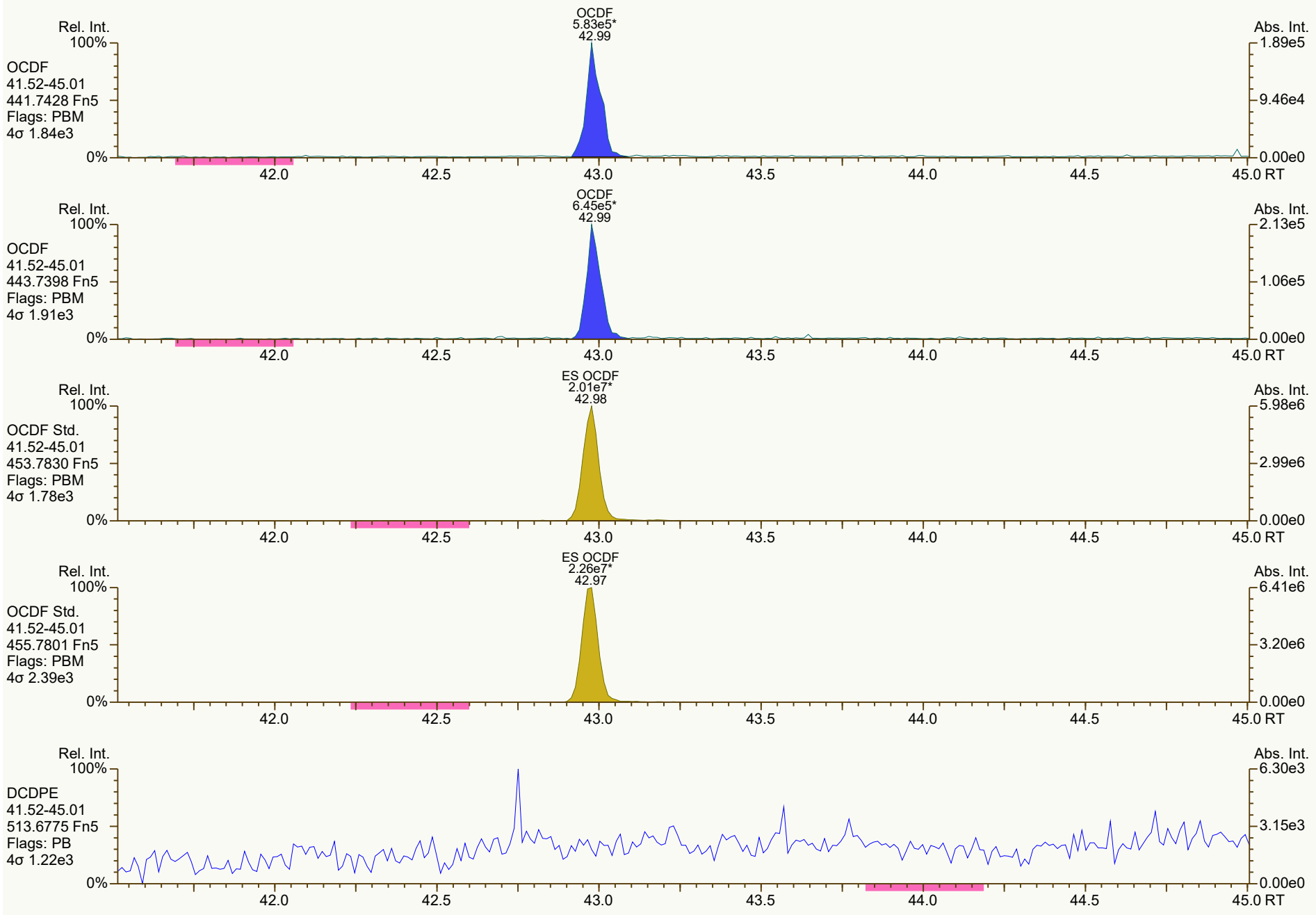

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.28e5*
26.67
Abs. Int.
2.58e4
1.29e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.70e5*
26.67
Abs. Int.
3.72e4
1.86e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.68e4
0%
AS 1368F
2.56e7
21.48
JS 1234F
2.29e7
25.24
ES 2378F
2.41e7
26.65
Abs. Int.
5.19e6
2.60e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
3.21e7
21.48
JS 1234F
2.84e7
25.23
ES 2378F
2.96e7
26.65
Abs. Int.
6.71e6
3.36e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.65e3
4.82e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.69e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.01e4
5.03e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.68e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.63e7
32.73
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
CS 12346F
1.69e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9368, 4994, 0902 scc: 419-111
Revised: 10-Nov-2021 13:38 (DTF) Printed: 11-Nov-2021 10:40 Page 9 of 12


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.21e3
0%
123478F
6.48e5*
36.05
123678F
6.18e5*
36.19
234678F
5.89e5*
36.85
123789F
5.63e5*
37.84
Abs. Int.
2.10e5
1.05e5
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.05e3
0%
123478F
5.16e5*
36.05
123678F
4.74e5*
36.19
234678F
5.08e5*
36.84
123789F
4.73e5*
37.84
Abs. Int.
1.76e5
8.82e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 6.54e3
0%
ES 123478F
1.13e7
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.11e7
36.48
ES 234678F
1.20e7
36.83
ES 123789F
1.09e7*
37.82
Abs. Int.
4.10e6
2.05e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.39e3
0%
ES 123478F
2.12e7
36.04
ES 123678F
2.44e7
36.18
CS 123469F
2.09e7
36.49
ES 234678F
2.27e7
36.83
ES 123789F
2.10e7*
37.82
Abs. Int.
7.83e6
3.91e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.43e3
0%
Abs. Int.
9.19e3
4.60e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

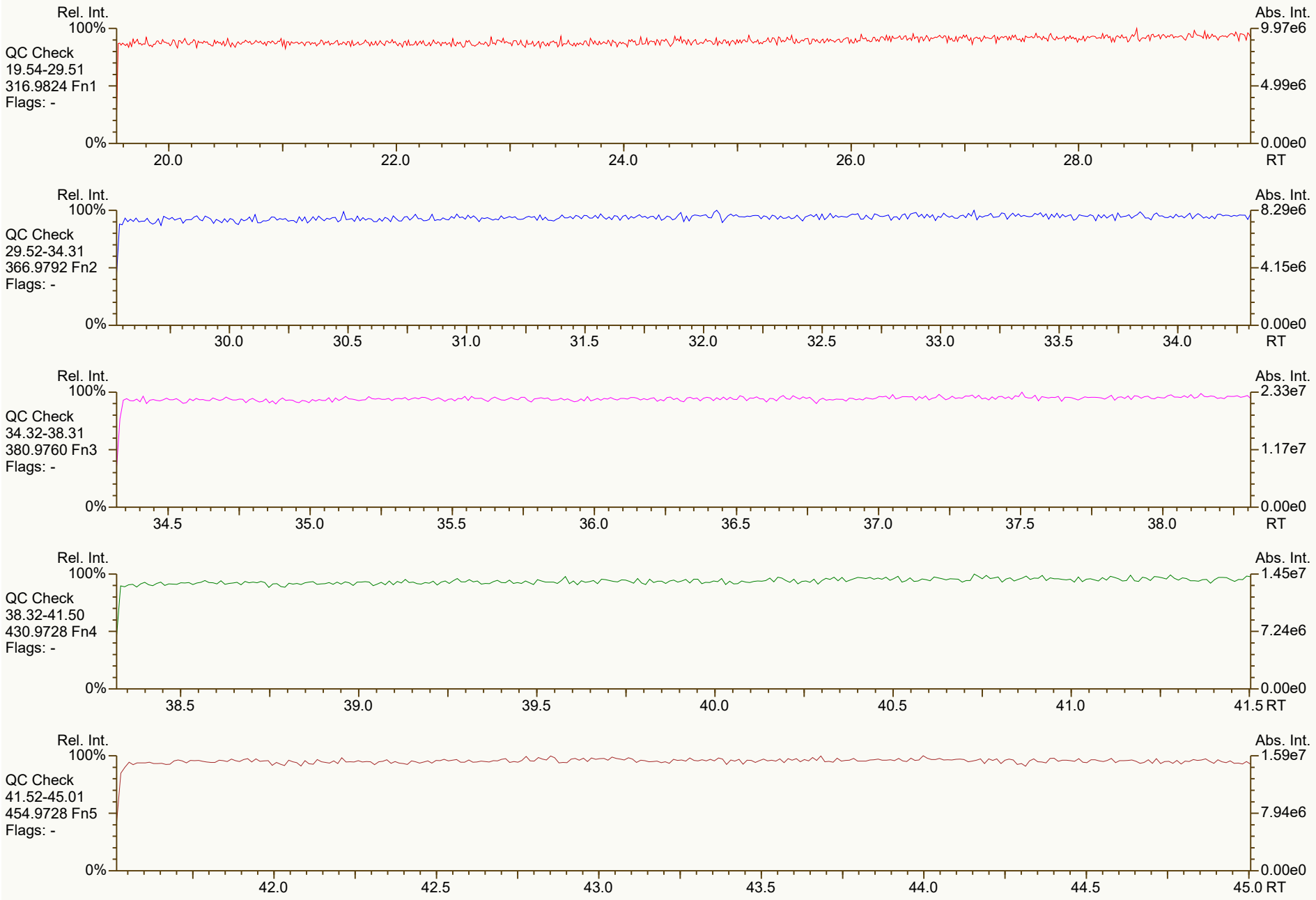

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.51e3
0%
1234678F
5.15e5*
39.34
1234789F
3.83e5*
40.70
Abs. Int.
2.00e5
9.99e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.63e3
0%
1234678F
4.85e5*
39.34
1234789F
4.12e5*
40.70
Abs. Int.
1.67e5
8.36e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 3.90e3
0%
ES 1234678F
7.77e6*
39.33
CS 1234689F
8.09e6*
39.74
ES 1234789F
7.34e6*
40.69
Abs. Int.
3.13e6
1.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.97e3
0%
ES 1234678F
1.82e7*
39.33
CS 1234689F
1.73e7*
39.74
ES 1234789F
1.63e7*
40.69
Abs. Int.
6.42e6
3.21e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.46e3
0%
Abs. Int.
3.72e3
1.86e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

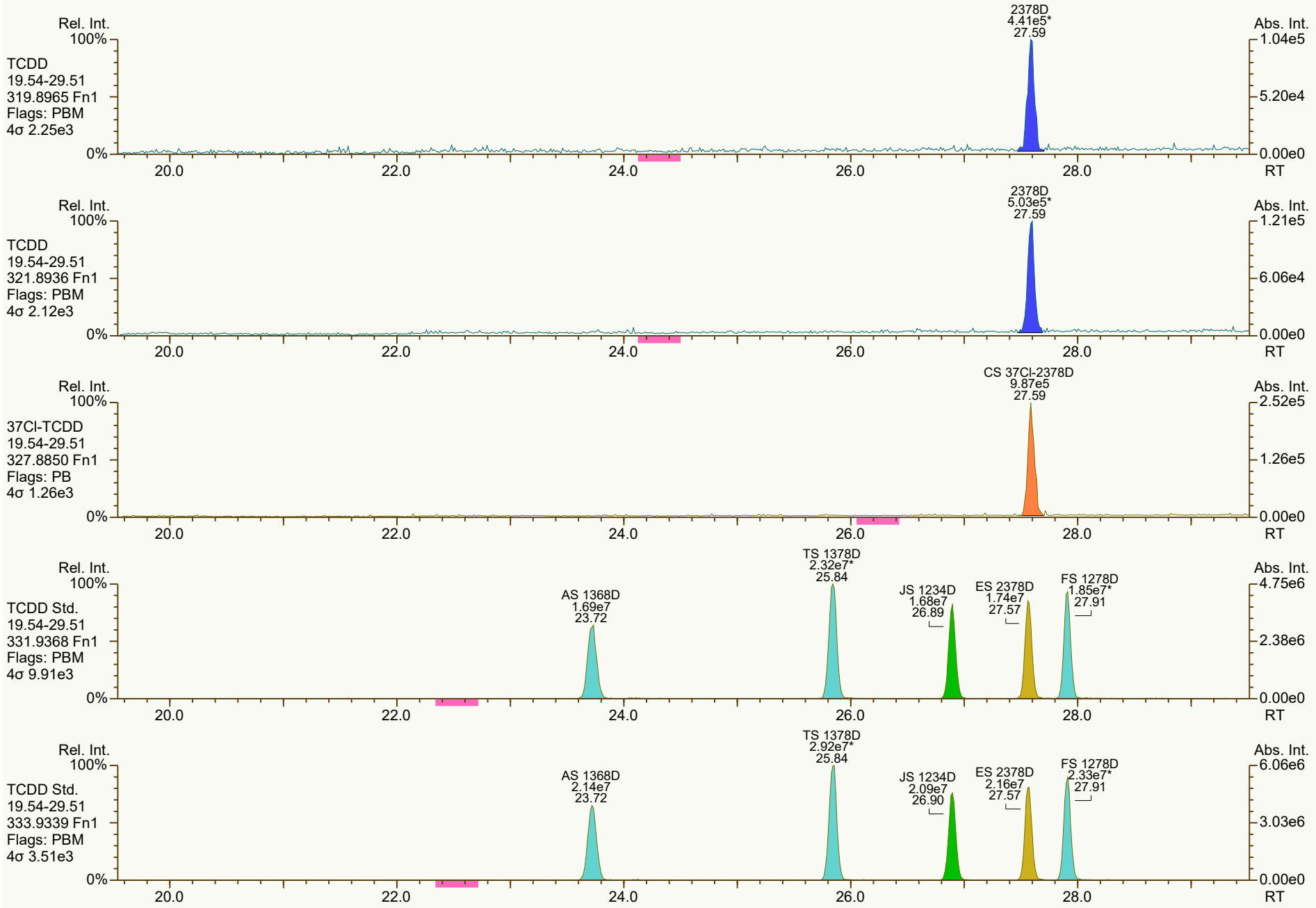

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
0%
OCDF
5.83e5*
42.99
Abs. Int.
1.89e5
9.46e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
0%
OCDF
6.45e5*
42.99
Abs. Int.
2.13e5
1.06e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
0%
ES OCDF
2.01e7*
42.98
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
0%
ES OCDF
2.26e7*
42.97
Abs. Int.
6.41e6
3.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

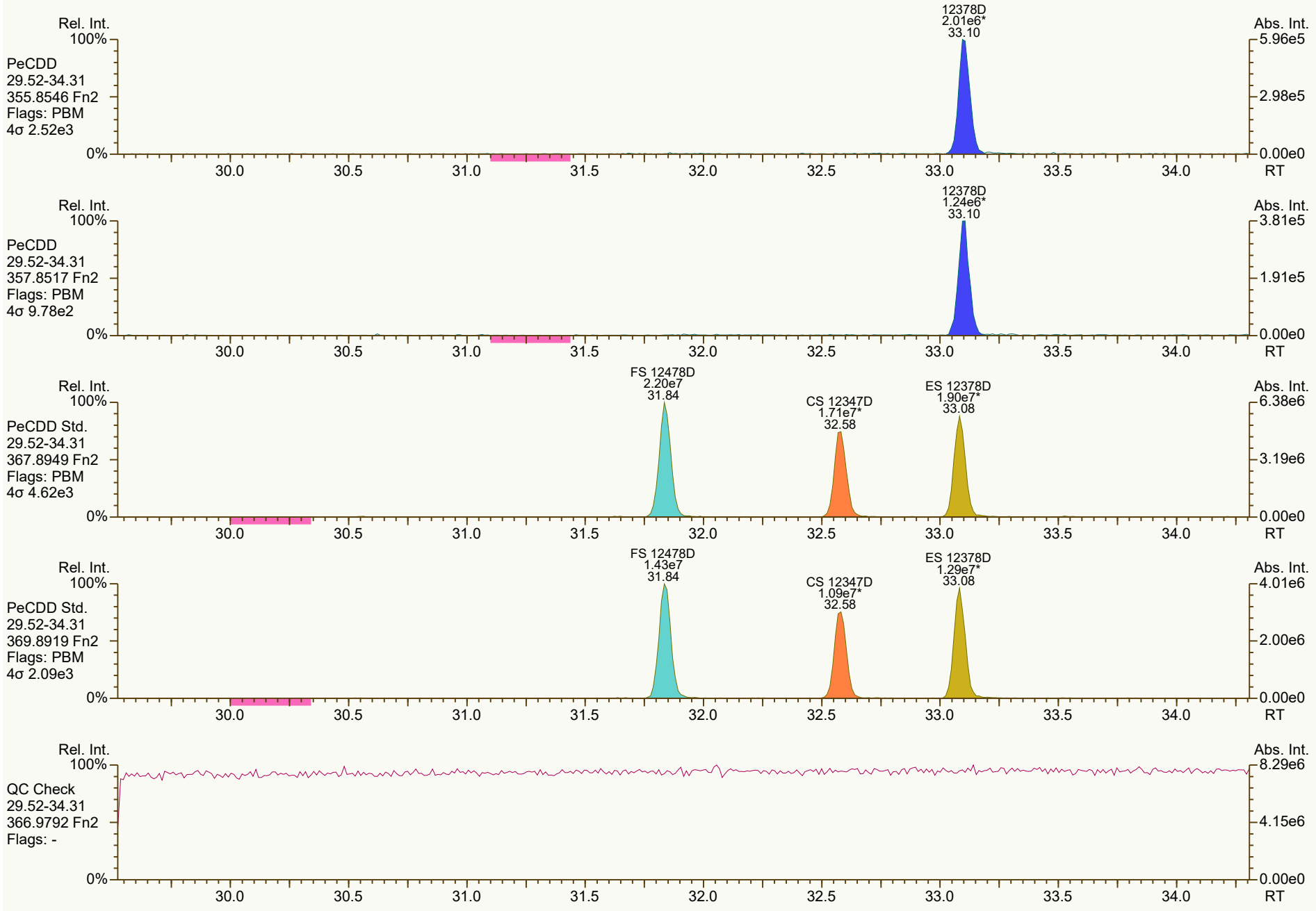
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 12:34 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS2_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 385-758-WQN	
Sample ID: 25-6-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C06	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

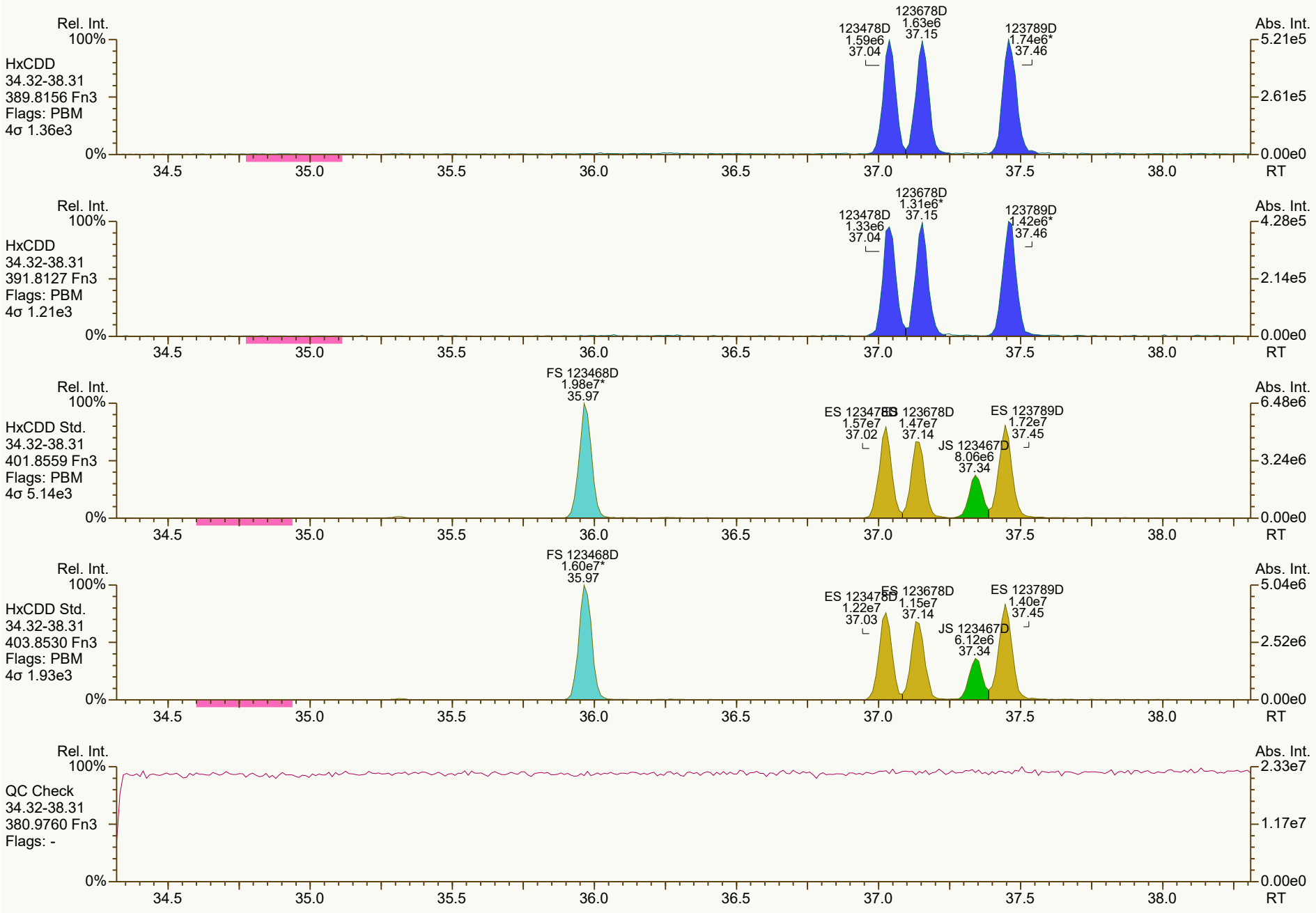
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

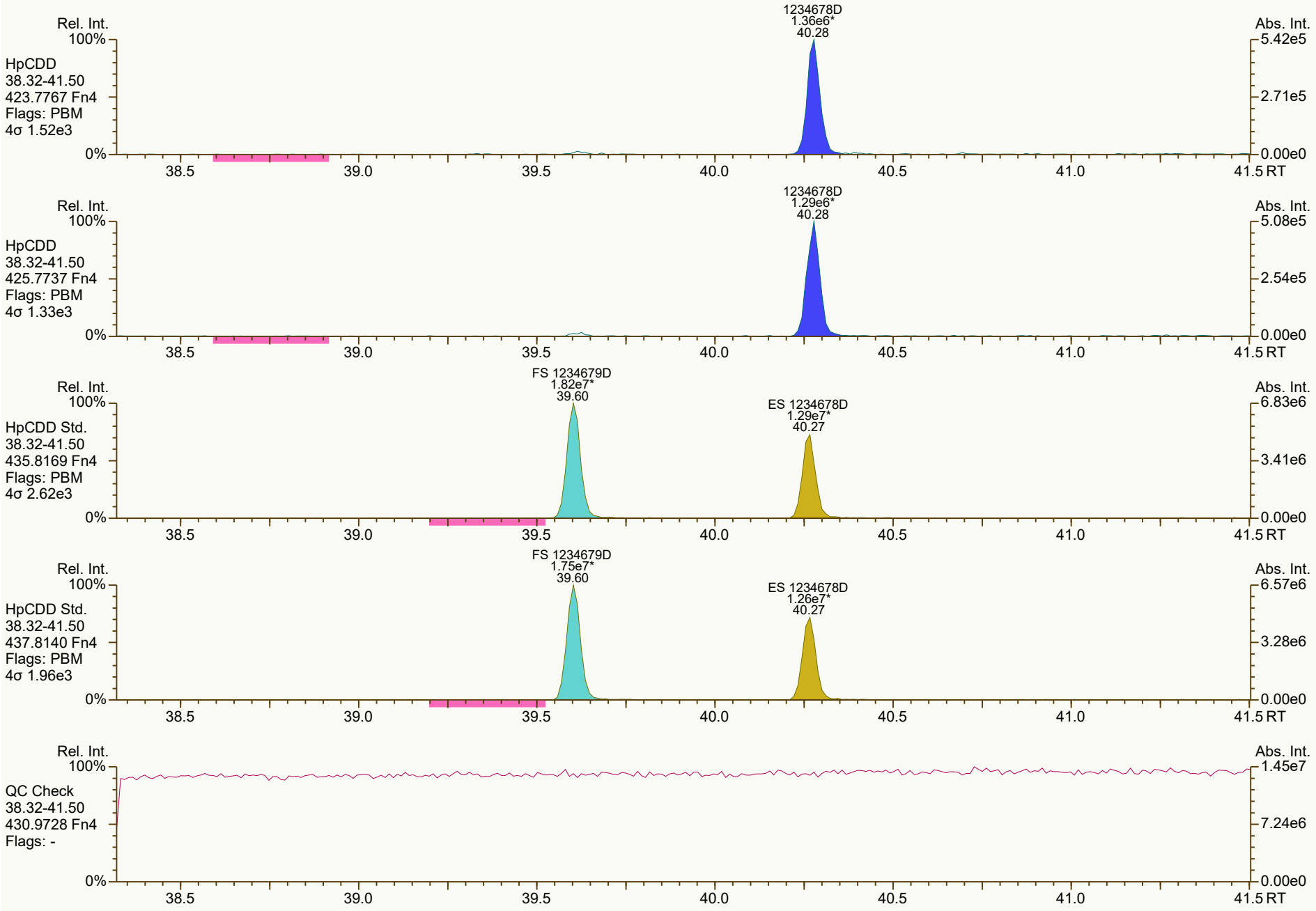
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%


Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.29e6
4.15e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.45e7
7.24e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.94e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
0%
2378D
4.41e5*
27.59
Abs. Int.
1.04e5
5.20e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
0%
2378D
5.03e5*
27.59
Abs. Int.
1.21e5
6.06e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
0%
CS 37Cl-2378D
9.87e5
27.59
Abs. Int.
2.52e5
1.26e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
0%
AS 1368D
1.69e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.85e7*
27.91
Abs. Int.
4.75e6
2.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
0%
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.52e3
12378D
2.01e6*
33.10
Abs. Int.
5.96e5
2.98e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 9.78e2
12378D
1.24e6*
33.10
Abs. Int.
3.81e5
1.91e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 4.62e3
FS 12478D
2.20e7
31.84
CS 12347D
1.71e7*
32.58
ES 12378D
1.90e7*
33.08
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 2.09e3
FS 12478D
1.43e7
31.84
CS 12347D
1.09e7*
32.58
ES 12378D
1.29e7*
33.08
Abs. Int.
4.01e6
2.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.29e6
4.15e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123478D
1.59e6
37.04
123678D
1.63e6
37.15
123789D
1.74e6*
37.46
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123478D
1.33e6
37.04
123678D
1.31e6*
37.15
123789D
1.42e6*
37.46
4.28e5
2.14e5
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D
1.98e7*
35.97
ES 123478D
1.57e7
37.02
ES 123678D
1.47e7
37.14
JS 123467D
8.06e6
37.34
ES 123789D
1.72e7
37.45
6.48e6
3.24e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D
1.60e7*
35.97
ES 123478D
1.22e7
37.03
ES 123678D
1.15e7
37.14
JS 123467D
6.12e6
37.34
ES 123789D
1.40e7
37.45
5.04e6
2.52e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.33e7
1.17e7

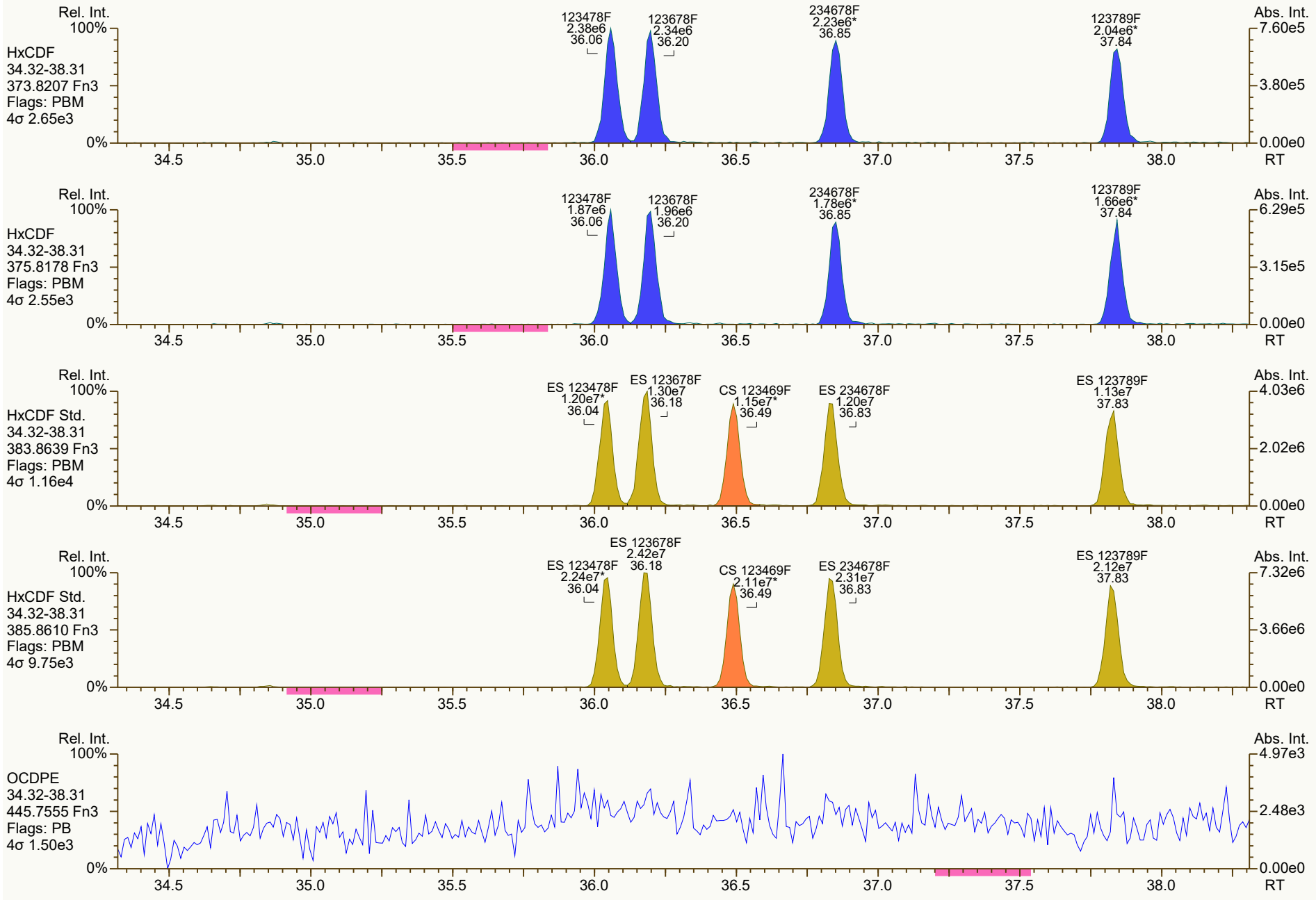

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.36e6*
40.28
Abs. Int.
5.42e5
2.71e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
Abs. Int.
5.08e5
2.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
Abs. Int.
6.83e6
3.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.96e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
Abs. Int.
6.57e6
3.28e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.45e7
7.24e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

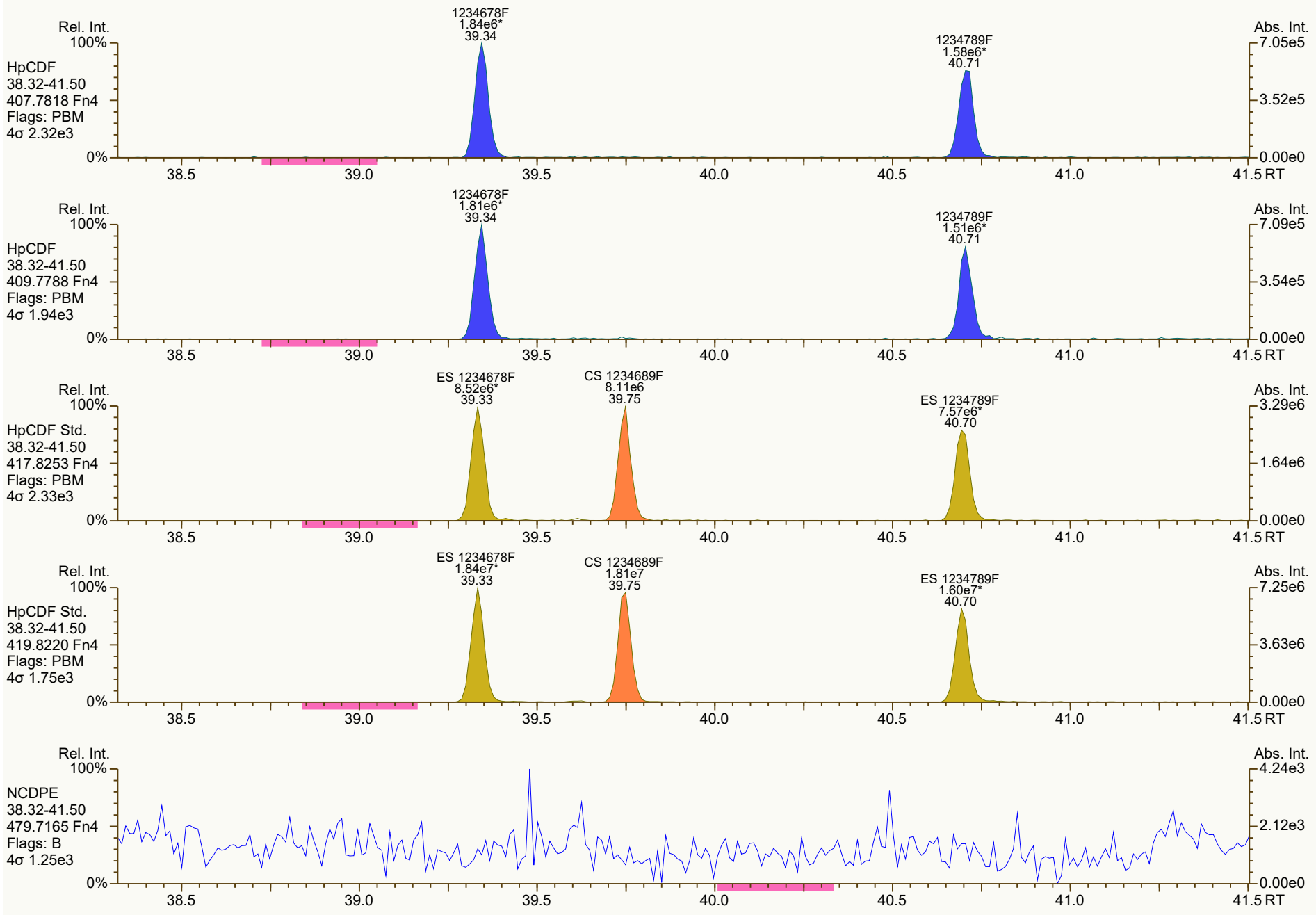

OCDD
1.80e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
5.27e5
2.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.08e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
0%
Abs. Int.
6.49e5
3.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.65e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.82e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
5.21e6
2.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

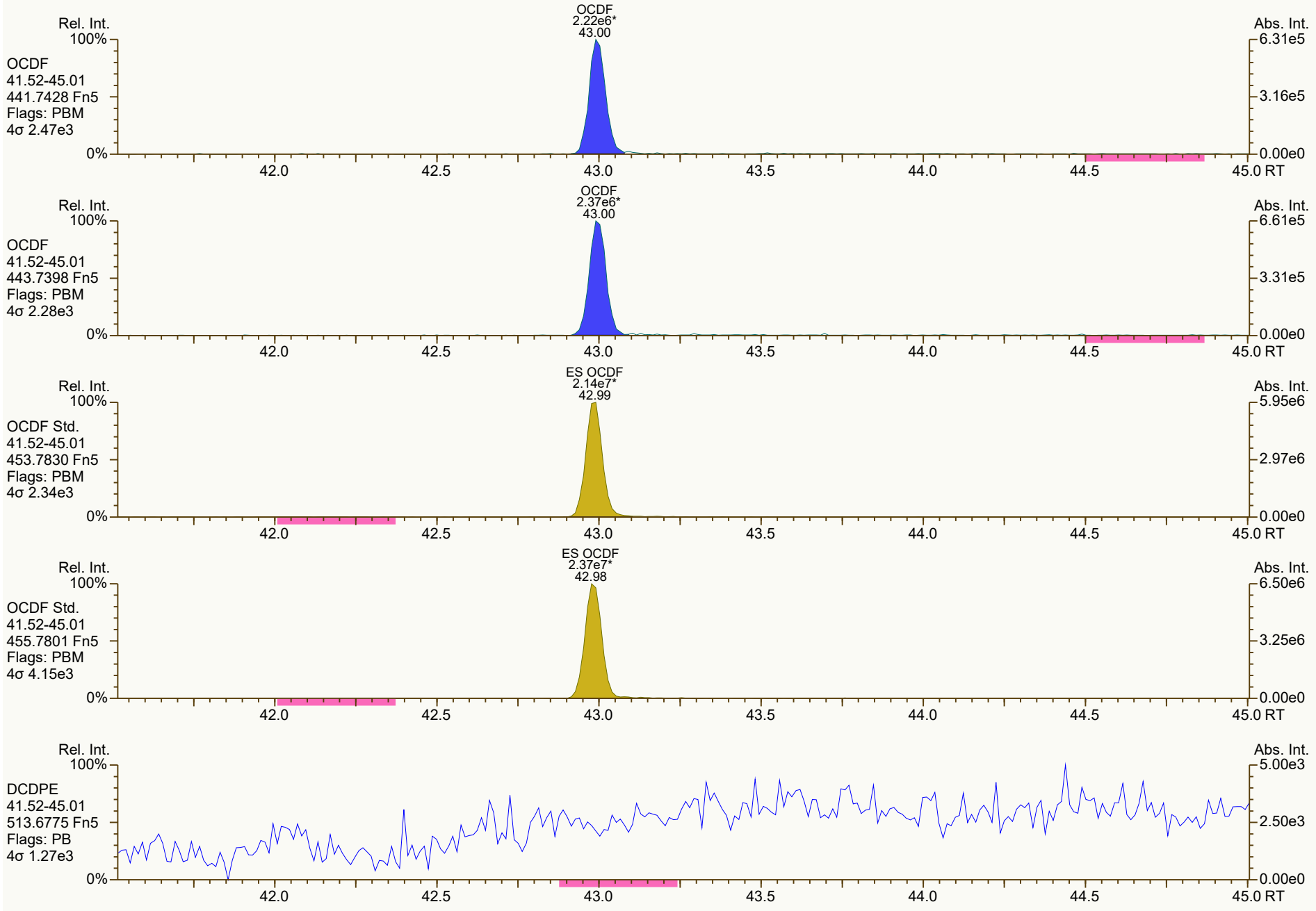

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
2378F
5.70e5*
26.68
Abs. Int.
1.27e5
6.37e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
2378F
6.77e5*
26.68
Abs. Int.
1.62e5
8.11e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
26.65
Abs. Int.
5.72e6
2.86e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
26.65
Abs. Int.
7.12e6
3.56e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
Abs. Int.
8.34e3
4.17e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.23e3
4.62e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.32e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.97e6
4.99e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
0%
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
Abs. Int.
8.19e5
4.10e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
5.27e5
2.63e5
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
8.01e6
4.01e6
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
5.19e6
2.59e6
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
6.67e3
3.33e3

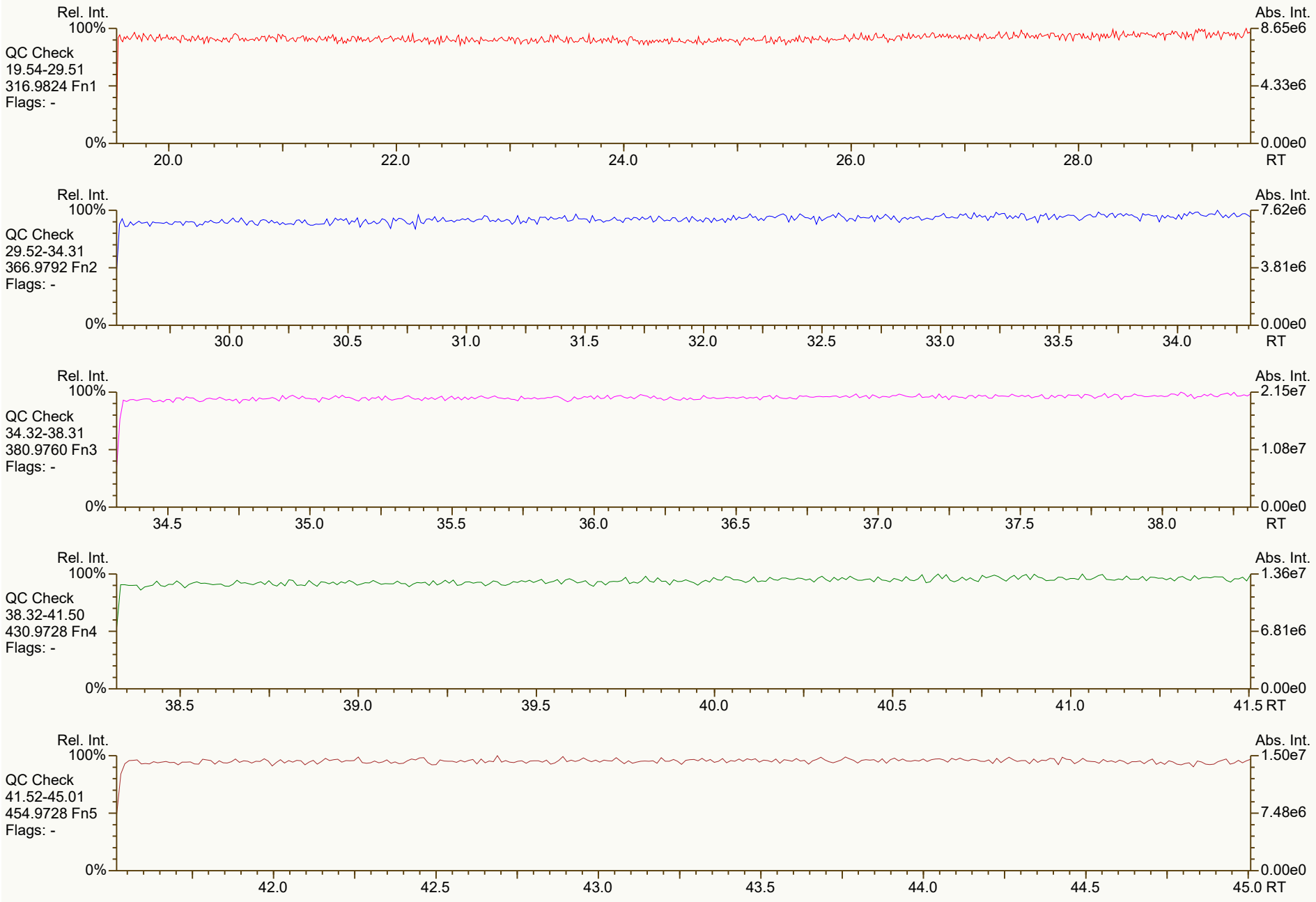

Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.65e3
0%
123478F
2.38e6
36.06
123678F
2.34e6
36.20
234678F
2.23e6*
36.85
123789F
2.04e6*
37.84
Abs. Int.
7.60e5
3.80e5
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.55e3
123478F
1.87e6
36.06
123678F
1.96e6
36.20
234678F
1.78e6*
36.85
123789F
1.66e6*
37.84
6.29e5
3.15e5
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 1.16e4
ES 123478F
1.20e7*
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.15e7*
36.49
ES 234678F
1.20e7
36.83
ES 123789F
1.13e7
37.83
4.03e6
2.02e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.75e3
ES 123478F
2.24e7*
36.04
ES 123678F
2.42e7
36.18
CS 123469F
2.11e7*
36.49
ES 234678F
2.31e7
36.83
ES 123789F
2.12e7
37.83
7.32e6
3.66e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.50e3
4.97e3
2.48e3


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.32e3
1234678F
1.84e6*
39.34
1234789F
1.58e6*
40.71
Abs. Int.
7.05e5
3.52e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.94e3
1234678F
1.81e6*
39.34
1234789F
1.51e6*
40.71
Abs. Int.
7.09e5
3.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.33e3
ES 1234678F
8.52e6*
39.33
CS 1234689F
8.11e6
39.75
ES 1234789F
7.57e6*
40.70
Abs. Int.
3.29e6
1.64e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.75e3
ES 1234678F
1.84e7*
39.33
CS 1234689F
1.81e7
39.75
ES 1234789F
1.60e7*
40.70
Abs. Int.
7.25e6
3.63e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.25e3
Abs. Int.
4.24e3
2.12e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

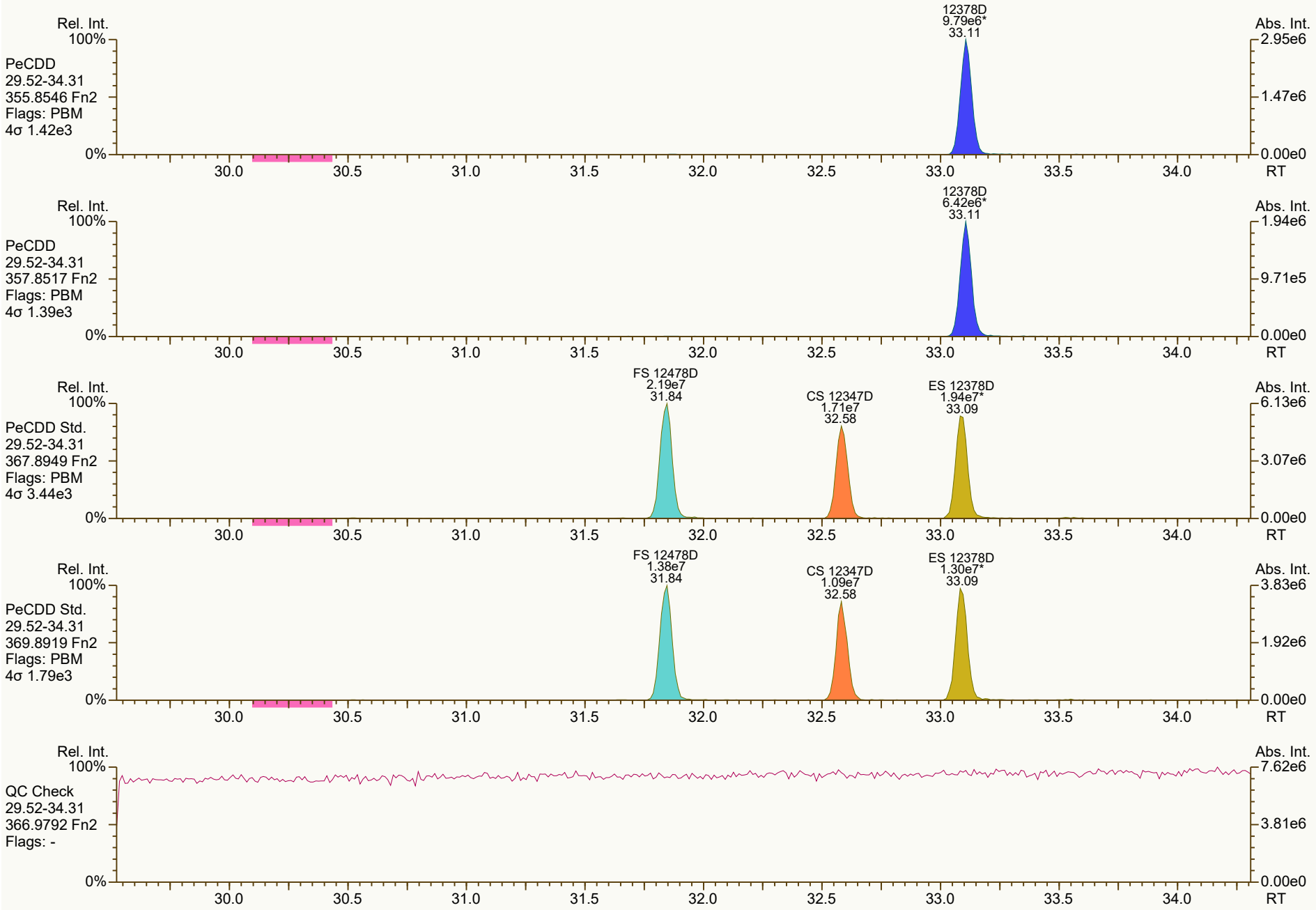

OCDF
2.22e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
0%
Abs. Int.
6.31e5
3.16e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.37e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
0%
Abs. Int.
6.61e5
3.31e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.37e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
6.50e6
3.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.00e3
2.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

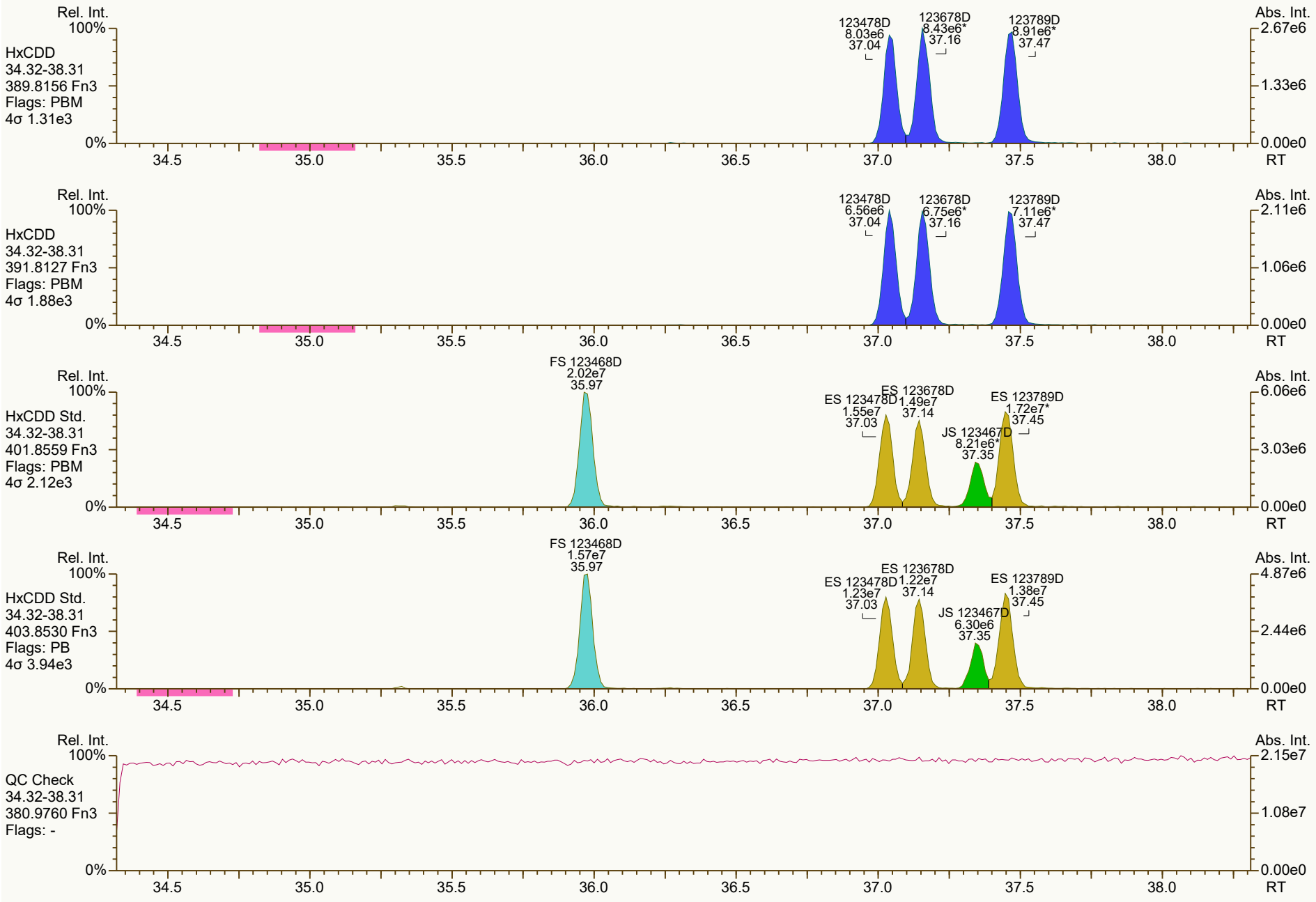
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

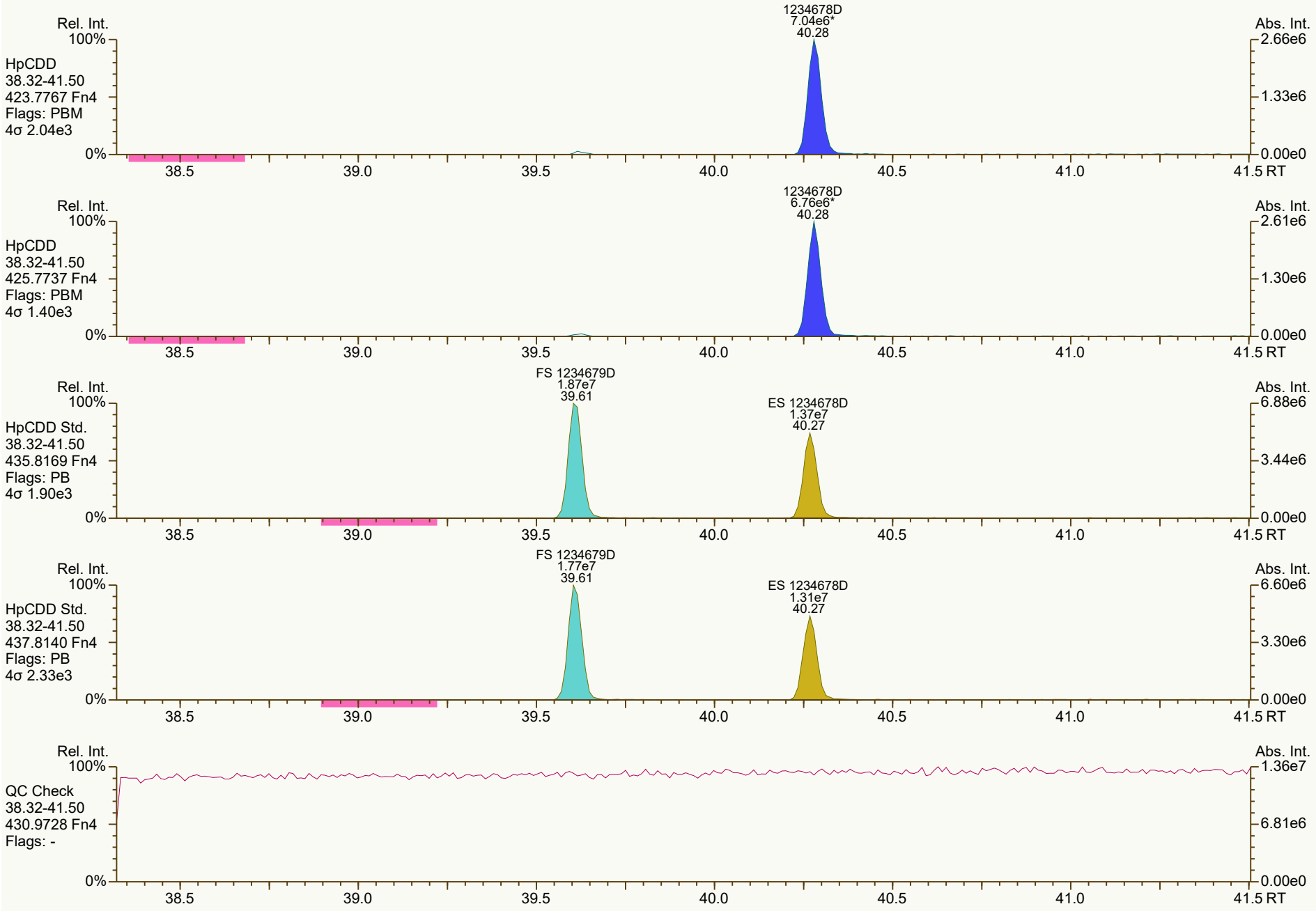
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%


Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
Abs. Int.
8.65e6
4.33e6
0.00e0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
Abs. Int.
7.62e6
3.81e6
0.00e0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Abs. Int.
2.15e7
1.08e7
0.00e0
RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.36e7
6.81e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.50e7
7.48e6
0.00e0


Rel. Int.
100%
0%
Abs. Int.
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
2378D
1.99e6
27.60
4.35e5
2.17e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
2378D
2.55e6
27.60
5.98e5
2.99e5
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
1.03e6
5.16e5
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
4.80e6
2.40e6
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
6.06e6
3.03e6


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.42e3
0%
12378D
9.79e6*
33.11
Abs. Int.
2.95e6
1.47e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.39e3
0%
12378D
6.42e6*
33.11
Abs. Int.
1.94e6
9.71e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 3.44e3
0%
FS 12478D
2.19e7
31.84
CS 12347D
1.71e7
32.58
ES 12378D
1.94e7*
33.09
Abs. Int.
6.13e6
3.07e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 1.79e3
0%
FS 12478D
1.38e7
31.84
CS 12347D
1.09e7
32.58
ES 12378D
1.30e7*
33.09
Abs. Int.
3.83e6
1.92e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.62e6
3.81e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.31e3
123478D
8.03e6
37.04
123678D
8.43e6*
37.16
123789D
8.91e6*
37.47
Abs. Int.
2.67e6
1.33e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.88e3
123478D
6.56e6
37.04
123678D
6.75e6*
37.16
123789D
7.11e6*
37.47
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.12e3
FS 123468D
2.02e7
35.97
ES 123478D
1.55e7
37.03
ES 123678D
1.49e7
37.14
JS 123467D
8.21e6*
37.35
ES 123789D
1.72e7*
37.45
Abs. Int.
6.06e6
3.03e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.94e3
FS 123468D
1.57e7
35.97
ES 123478D
1.23e7
37.03
ES 123678D
1.22e7
37.14
JS 123467D
6.30e6
37.35
ES 123789D
1.38e7
37.45
Abs. Int.
4.87e6
2.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.15e7
1.08e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.61
ES 1234678D
1.37e7
40.27
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.61
ES 1234678D
1.31e7
40.27
Abs. Int.
6.60e6
3.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
9.25e6*
42.83
Rel. Int.
Abs. Int.
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 9.43e2
OCDD
1.02e7*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.14e3
ES OCDD
1.70e7
42.82
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.74e3
ES OCDD
1.86e7
42.82
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.08e3
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

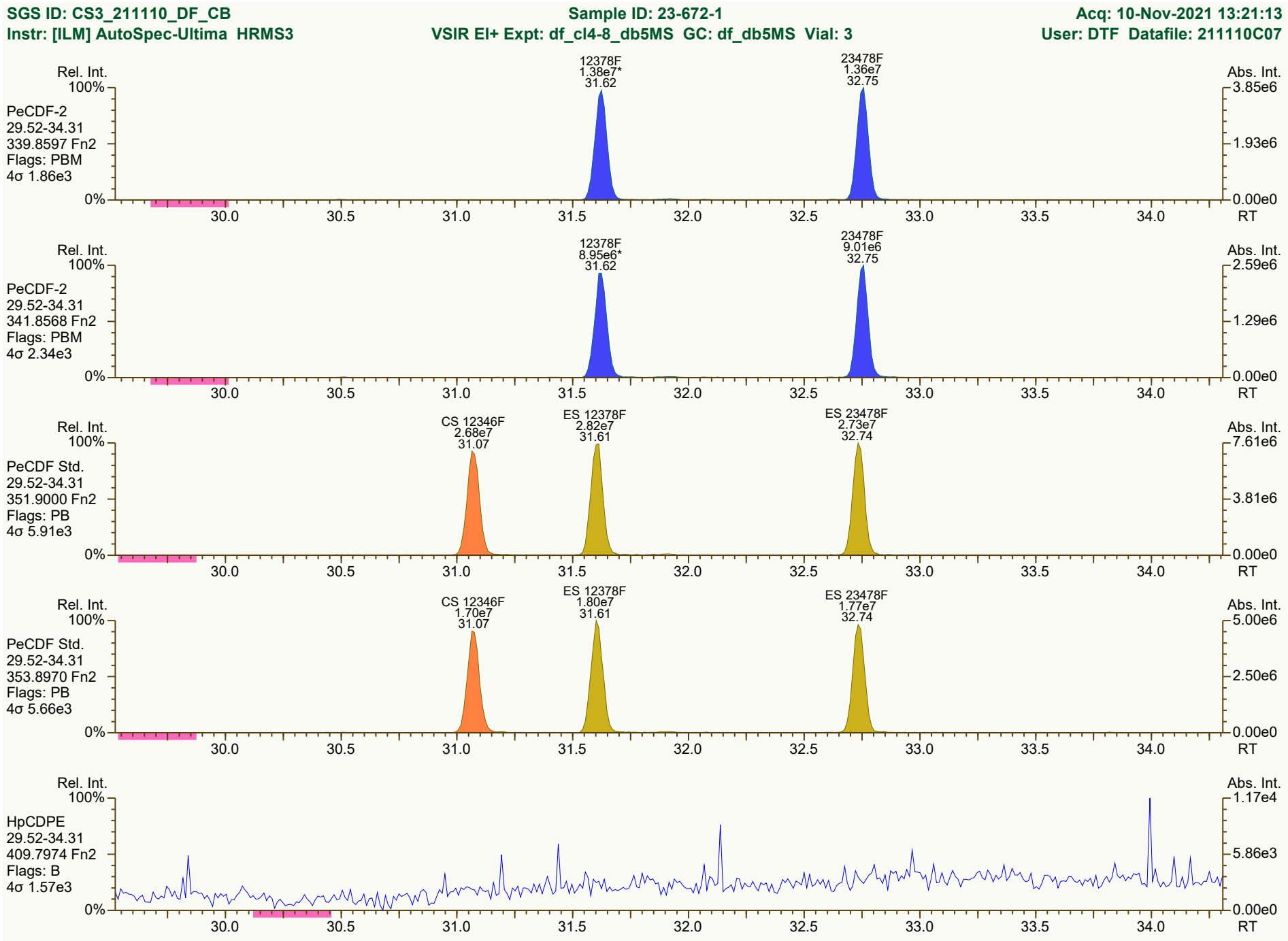

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.54e3
0%
2378F
2.58e6
26.68
Abs. Int.
5.81e5
2.91e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.71e3
0%
2378F
3.32e6
26.68
Abs. Int.
7.66e5
3.83e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.69e4
0%
AS 1368F
2.59e7
21.50
JS 1234F
2.21e7
25.25
ES 2378F
2.41e7
26.66
Abs. Int.
5.45e6
2.73e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.04e4
0%
AS 1368F
3.25e7
21.50
JS 1234F
2.82e7
25.25
ES 2378F
3.03e7
26.66
Abs. Int.
6.76e6
3.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.54e3
0%
Abs. Int.
6.84e3
3.42e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.76e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.65e6
4.33e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT

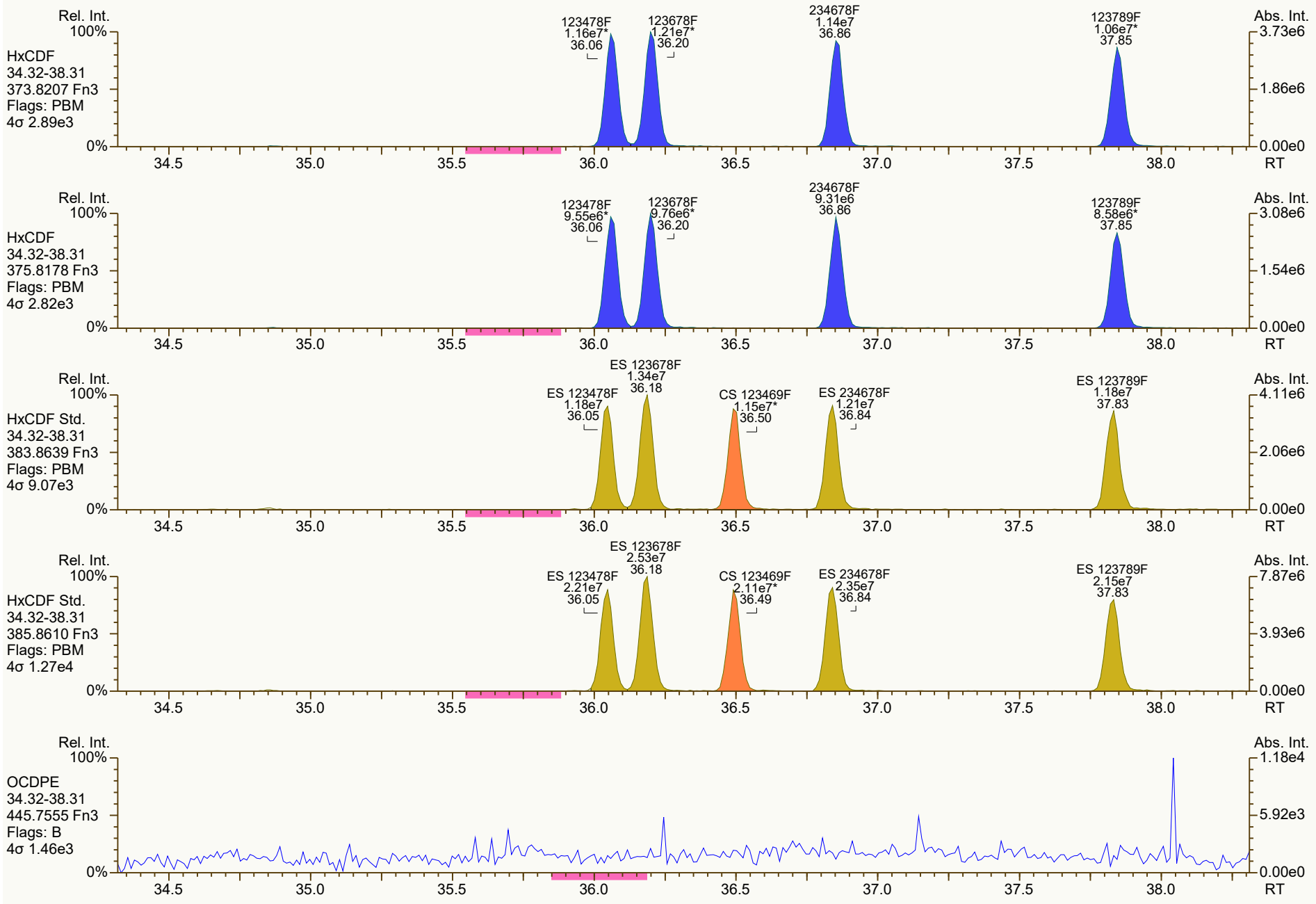
SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07



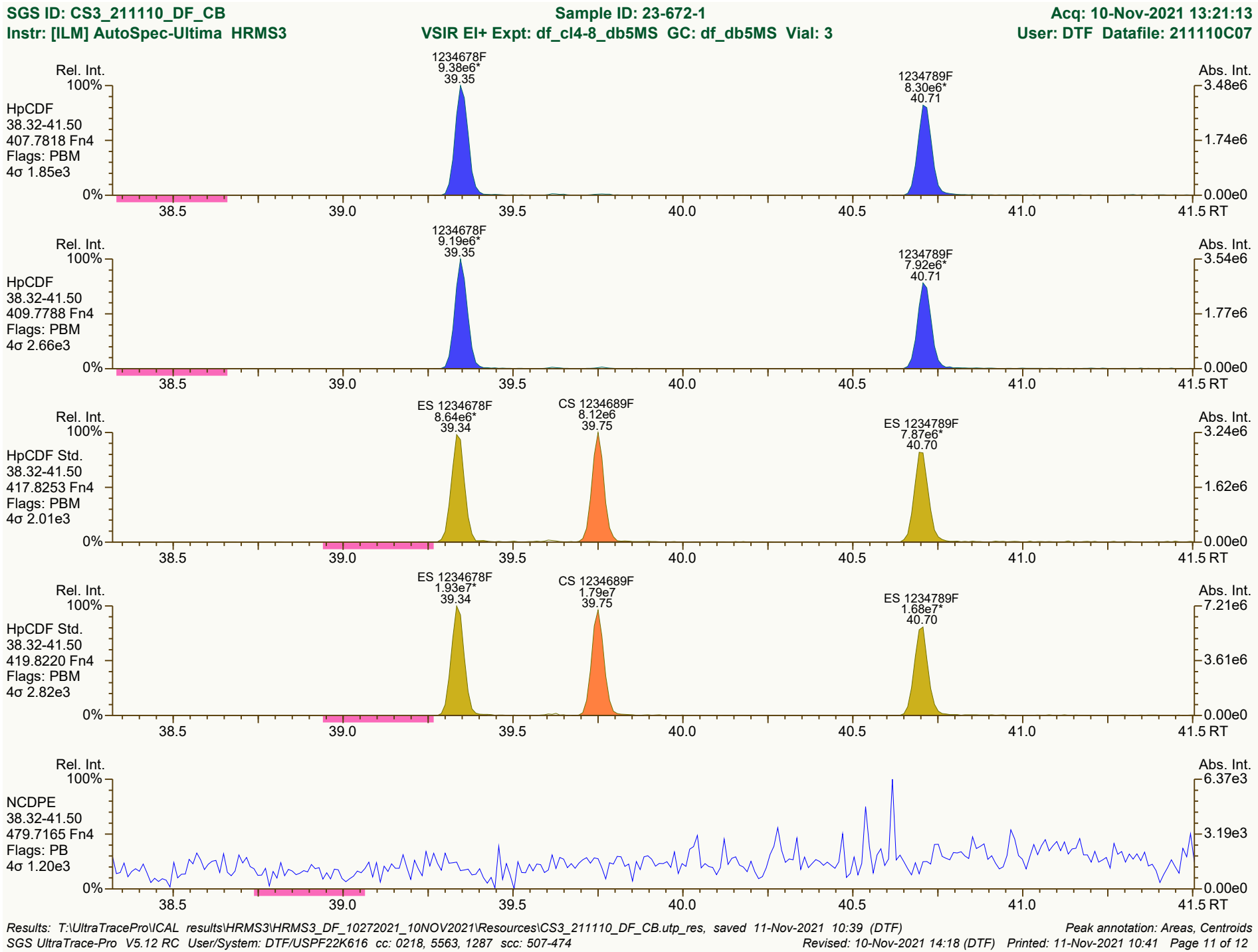
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0728, 8378, 8418 scc: 507-474
Revised: 10-Nov-2021 14:17 (DTF) Printed: 11-Nov-2021 10:41 Page 9 of 12


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.89e3
0%
123478F
1.16e7*
36.06
123678F
1.21e7*
36.20
234678F
1.14e7
36.86
123789F
1.06e7*
37.85
Abs. Int.
3.73e6
1.86e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.82e3
0%
123478F
9.55e6*
36.06
123678F
9.76e6*
36.20
234678F
9.31e6
36.86
123789F
8.58e6*
37.85
Abs. Int.
3.08e6
1.54e6
0.00e0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 9.07e3
0%
ES 123478F
1.18e7
36.05
ES 123678F
1.34e7
36.18
CS 123469F
1.15e7*
36.50
ES 234678F
1.21e7
36.84
ES 123789F
1.18e7
37.83
Abs. Int.
4.11e6
2.06e6
0.00e0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 1.27e4
0%
ES 123478F
2.21e7
36.05
ES 123678F
2.53e7
36.18
CS 123469F
2.11e7*
36.49
ES 234678F
2.35e7
36.84
ES 123789F
2.15e7
37.83
Abs. Int.
7.87e6
3.93e6
0.00e0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.46e3
0%
Abs. Int.
1.18e4
5.92e3
0.00e0
RT

SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07

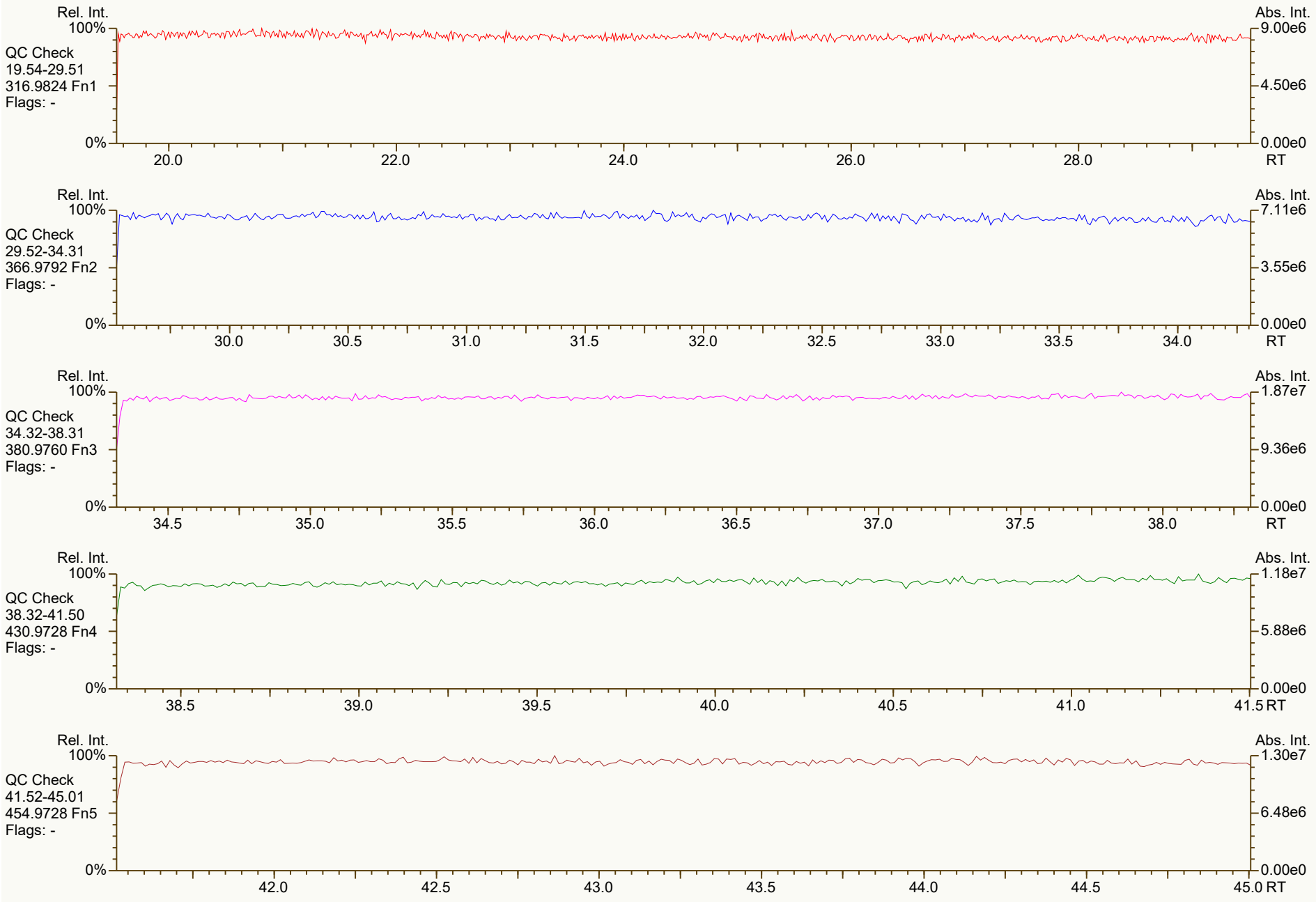


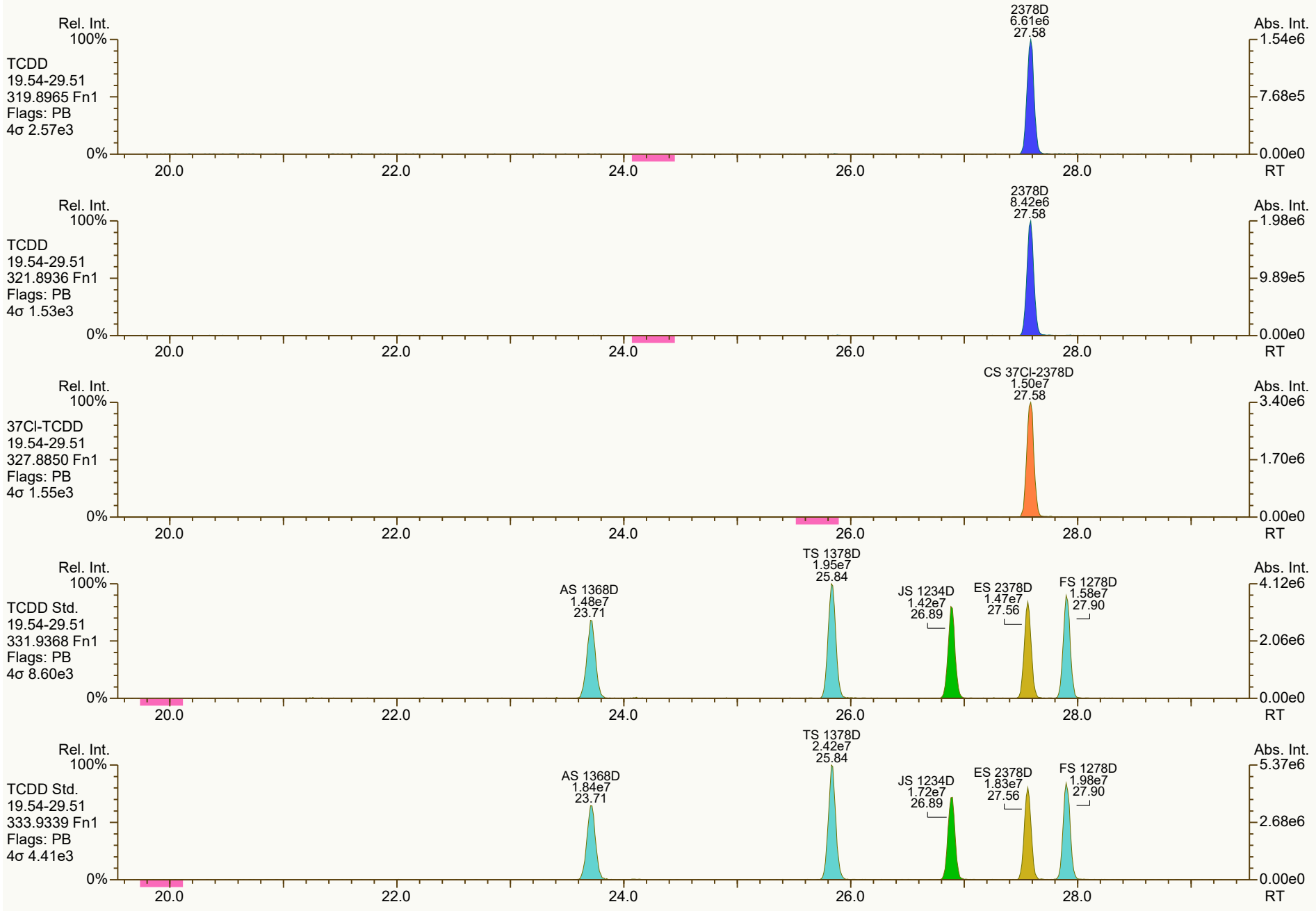
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0218, 5563, 1287 scc: 507-474
Revised: 10-Nov-2021 14:18 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

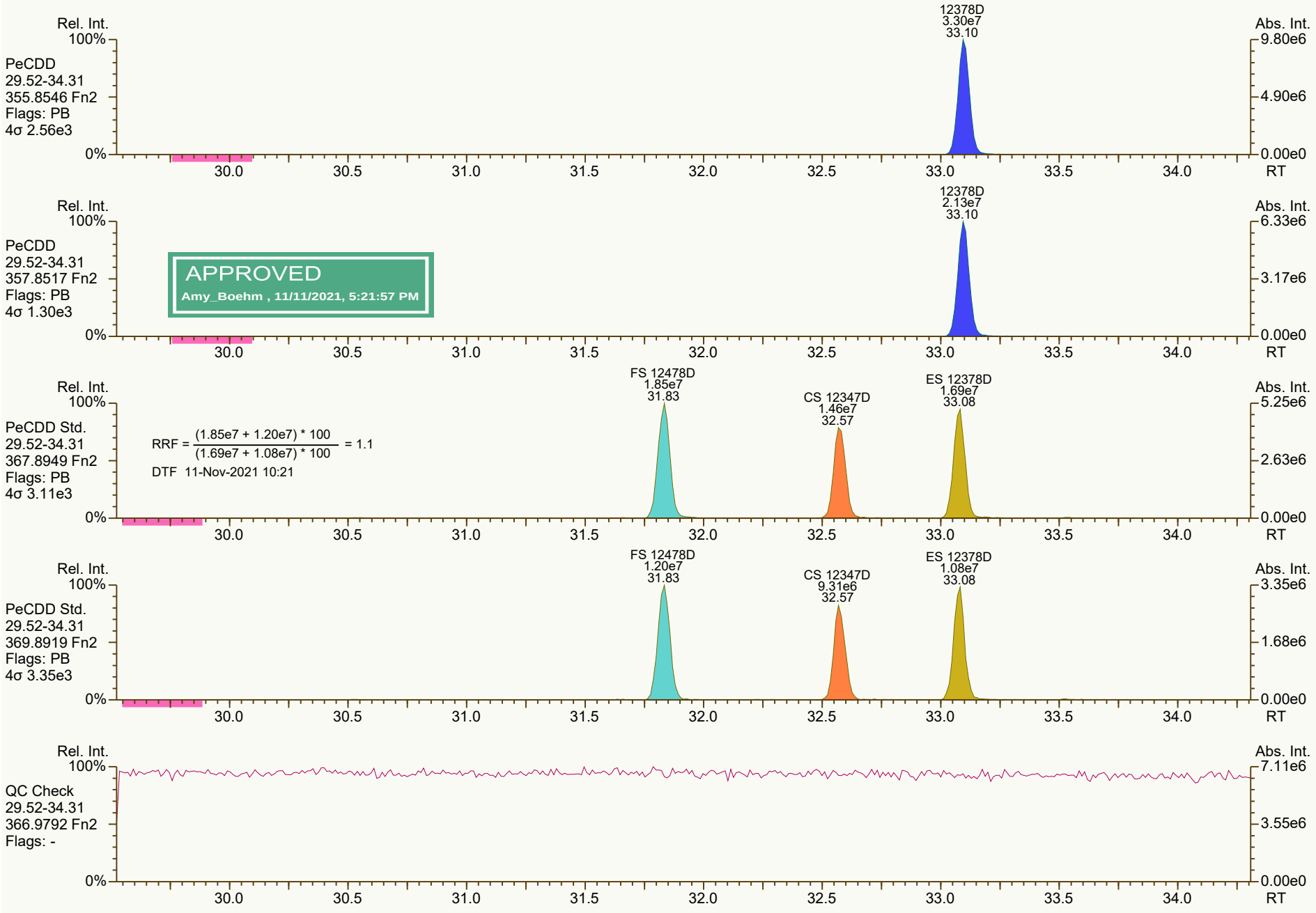

OCDF
1.15e7*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
3.25e6
1.62e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.28e7*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
0%
Abs. Int.
3.53e6
1.76e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.21e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
0%
Abs. Int.
6.08e6
3.04e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.39e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
0%
Abs. Int.
6.65e6
3.32e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3
0%
Abs. Int.
4.82e3
2.41e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

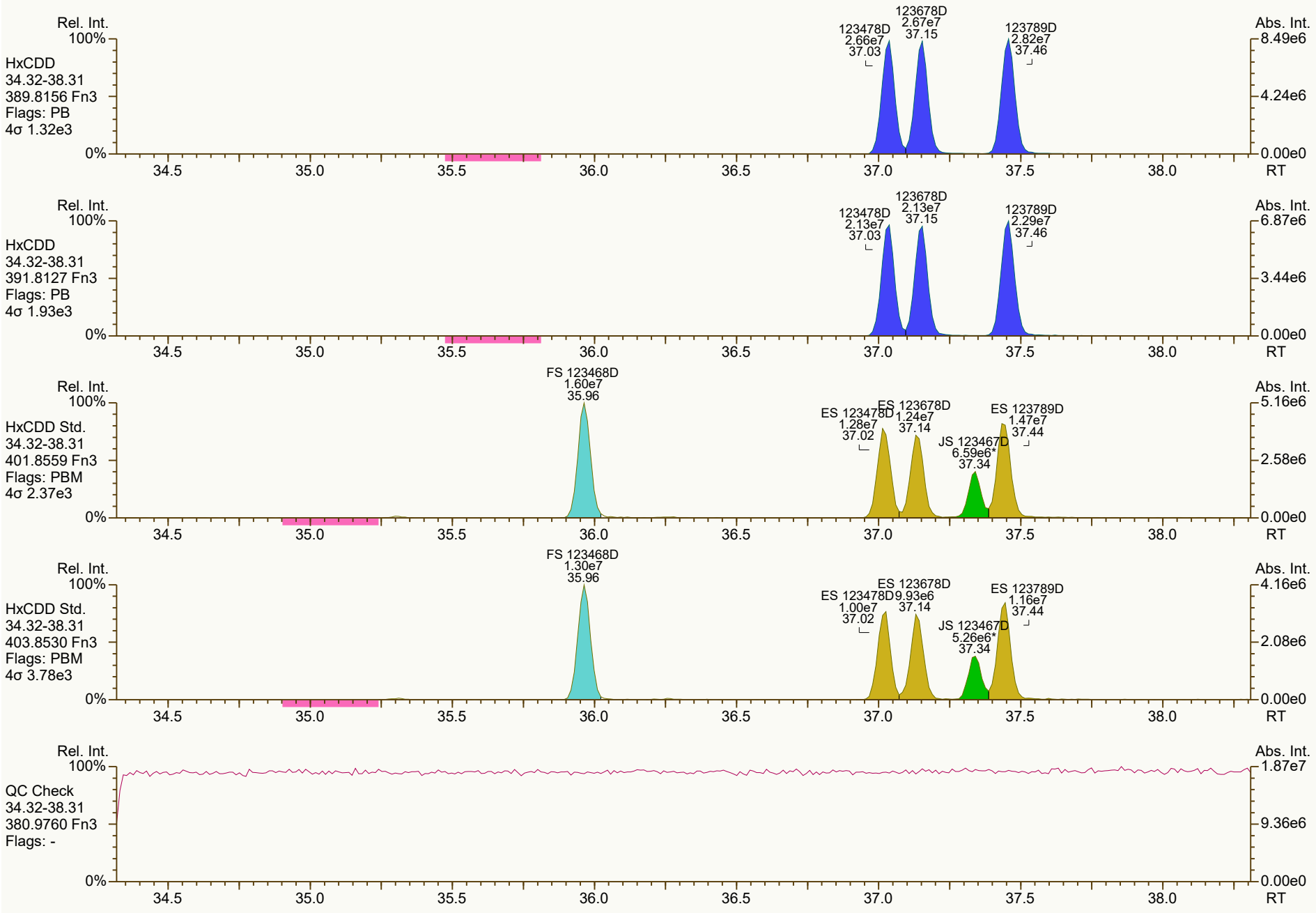
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

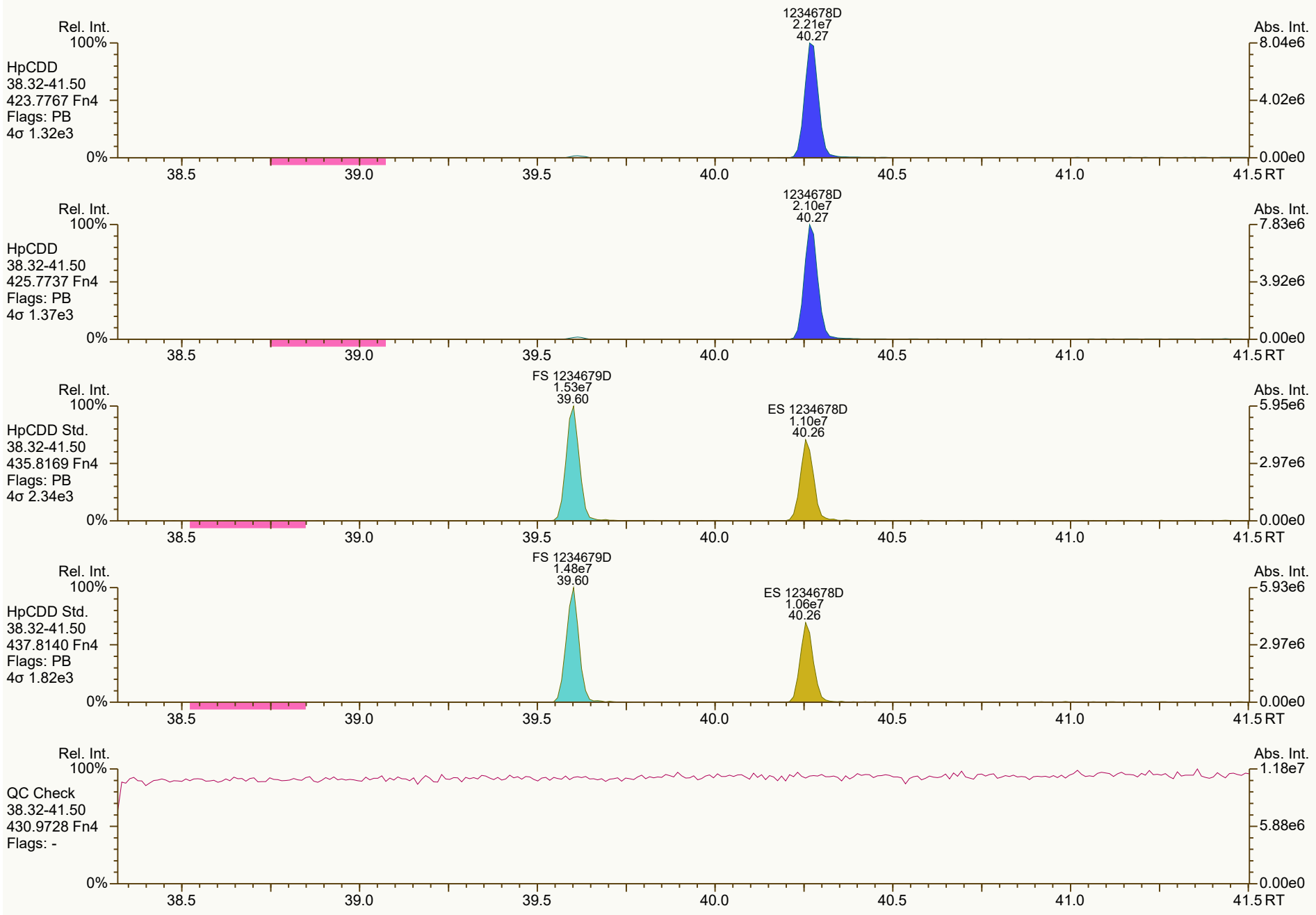
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

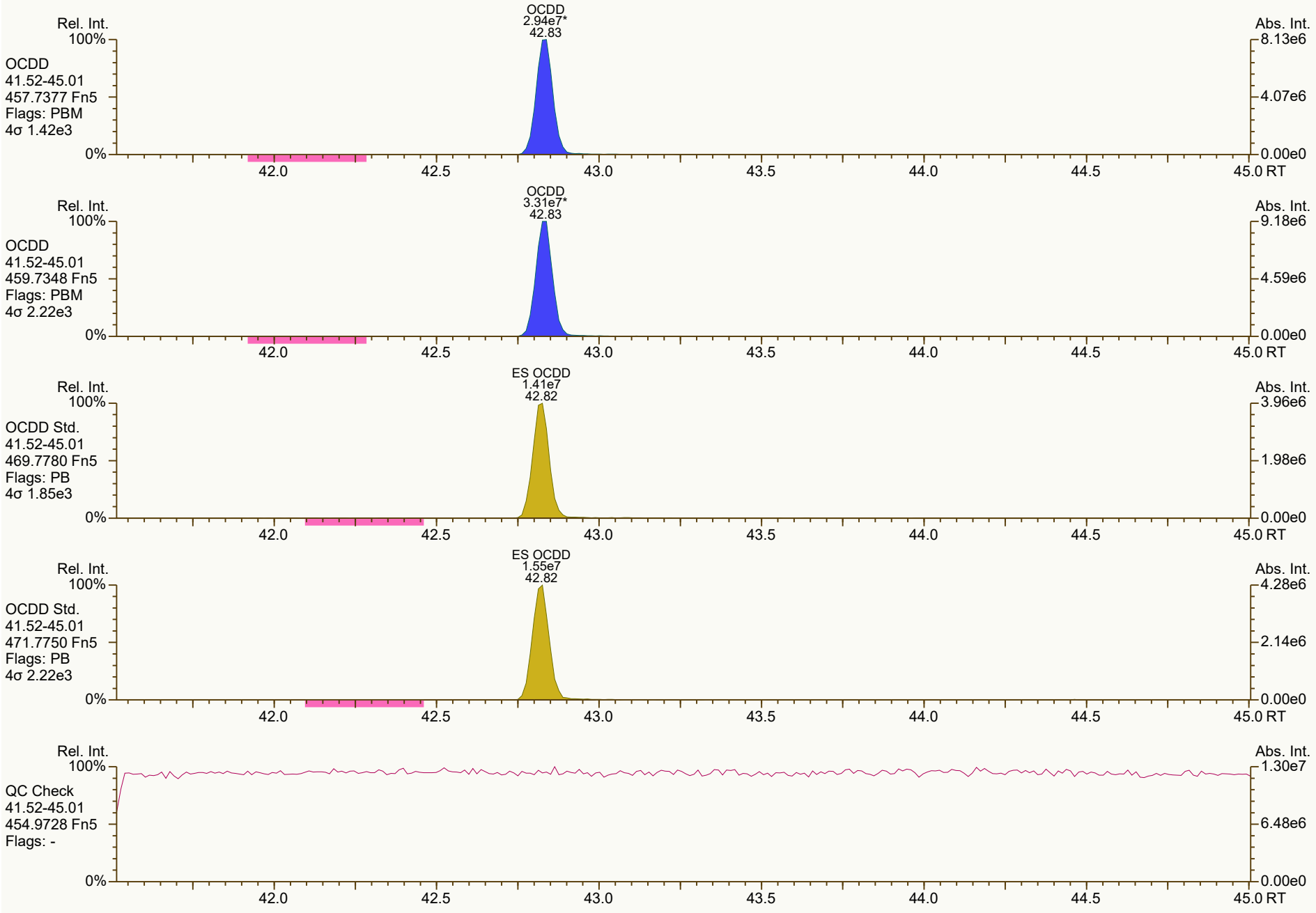

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
Abs. Int.
9.00e6
4.50e6
0.00e0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
Abs. Int.
7.11e6
3.55e6
0.00e0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Abs. Int.
1.87e7
9.36e6
0.00e0
RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
Abs. Int.
1.18e7
5.88e6
0.00e0
RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
Abs. Int.
1.30e7
6.48e6
0.00e0
RT


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
0%
2378D
6.61e6
27.58
Abs. Int.
1.54e6
7.68e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
0%
2378D
8.42e6
27.58
Abs. Int.
1.98e6
9.89e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
0%
CS 37Cl-2378D
1.50e7
27.58
Abs. Int.
3.40e6
1.70e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
0%
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
Abs. Int.
4.12e6
2.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
0%
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
Abs. Int.
5.37e6
2.68e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PB
4σ 2.56e3
0%
12378D
3.30e7
33.10
Abs. Int.
9.80e6
4.90e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PB
4σ 1.30e3
APPROVED
Amy_Boehm , 11/11/2021, 5:21:57 PM
0%
12378D
2.13e7
33.10
Abs. Int.
6.33e6
3.17e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 3.11e3
RRF = (1.85e7 + 1.20e7) * 100 / (1.69e7 + 1.08e7) * 100 = 1.1
DTF 11-Nov-2021 10:21
0%
FS 12478D
1.85e7
31.83
CS 12347D
1.46e7
32.57
ES 12378D
1.69e7
33.08
Abs. Int.
5.25e6
2.63e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 3.35e3
0%
FS 12478D
1.20e7
31.83
CS 12347D
9.31e6
32.57
ES 12378D
1.08e7
33.08
Abs. Int.
3.35e6
1.68e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.11e6
3.55e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

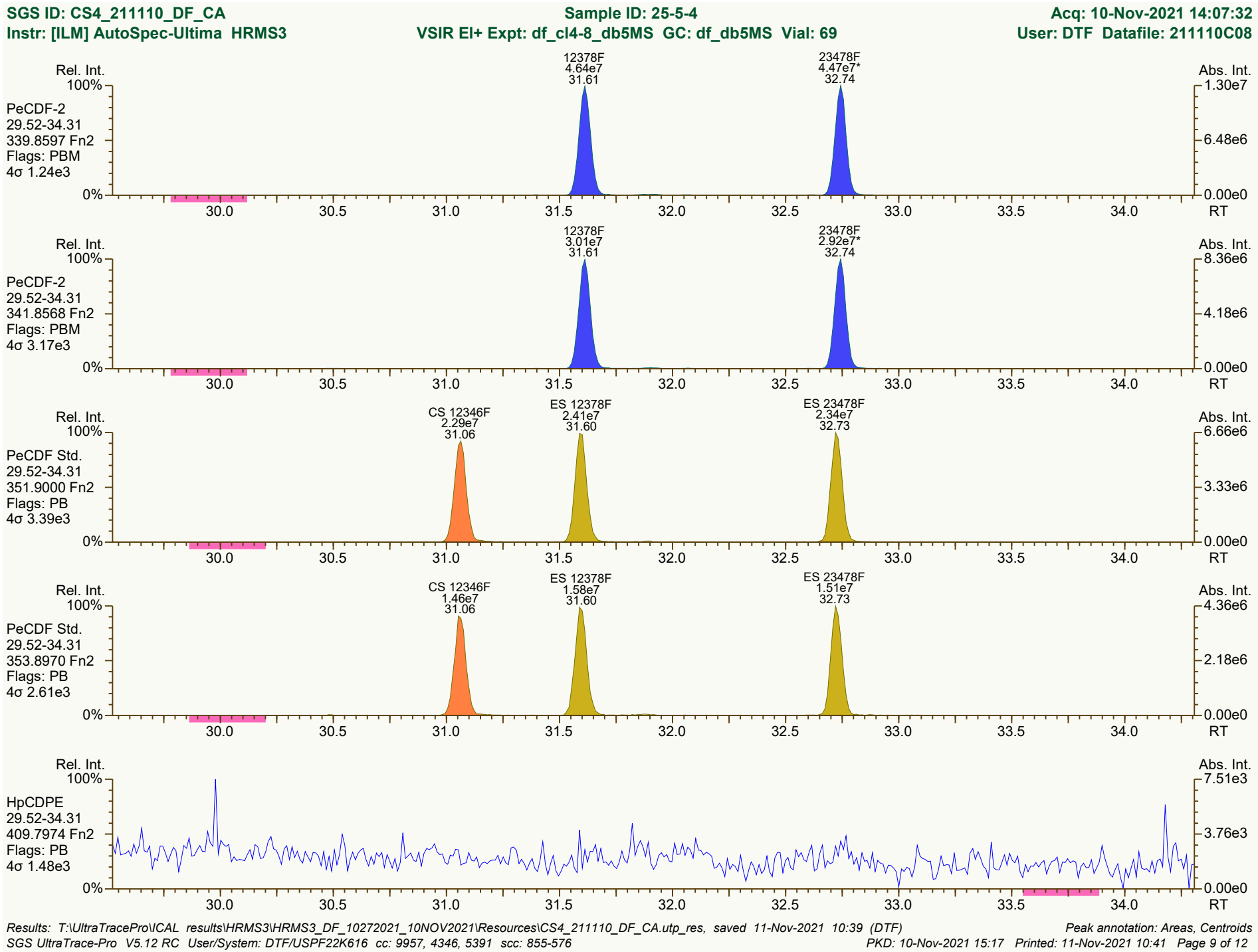

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123478D
2.66e7
37.03
123678D
2.67e7
37.15
123789D
2.82e7
37.46
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123478D
2.13e7
37.03
123678D
2.13e7
37.15
123789D
2.29e7
37.46
Abs. Int.
6.87e6
3.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D
1.60e7
35.96
ES 123478D
1.28e7
37.02
ES 123678D
1.24e7
37.14
JS 123467D
6.59e6*
37.34
ES 123789D
1.47e7
37.44
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D
1.30e7
35.96
ES 123478D
1.00e7
37.02
ES 123678D
9.93e6
37.14
JS 123467D
5.26e6*
37.34
ES 123789D
1.16e7
37.44
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.87e7
9.36e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

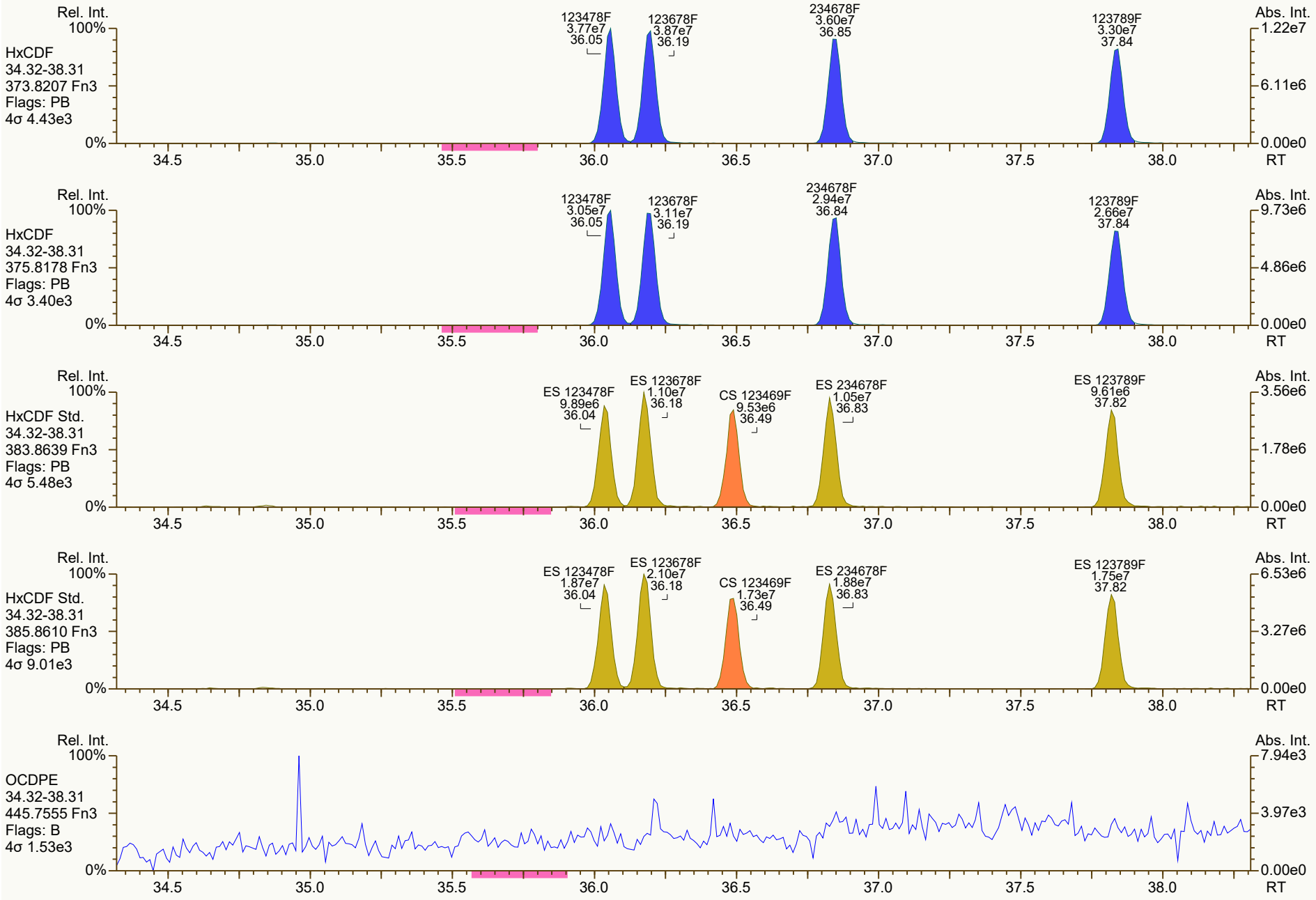

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
1234678D
2.21e7
40.27
Abs. Int.
8.04e6
4.02e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
1234678D
2.10e7
40.27
Abs. Int.
7.83e6
3.92e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
Abs. Int.
5.95e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
Abs. Int.
5.93e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.18e7
5.88e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

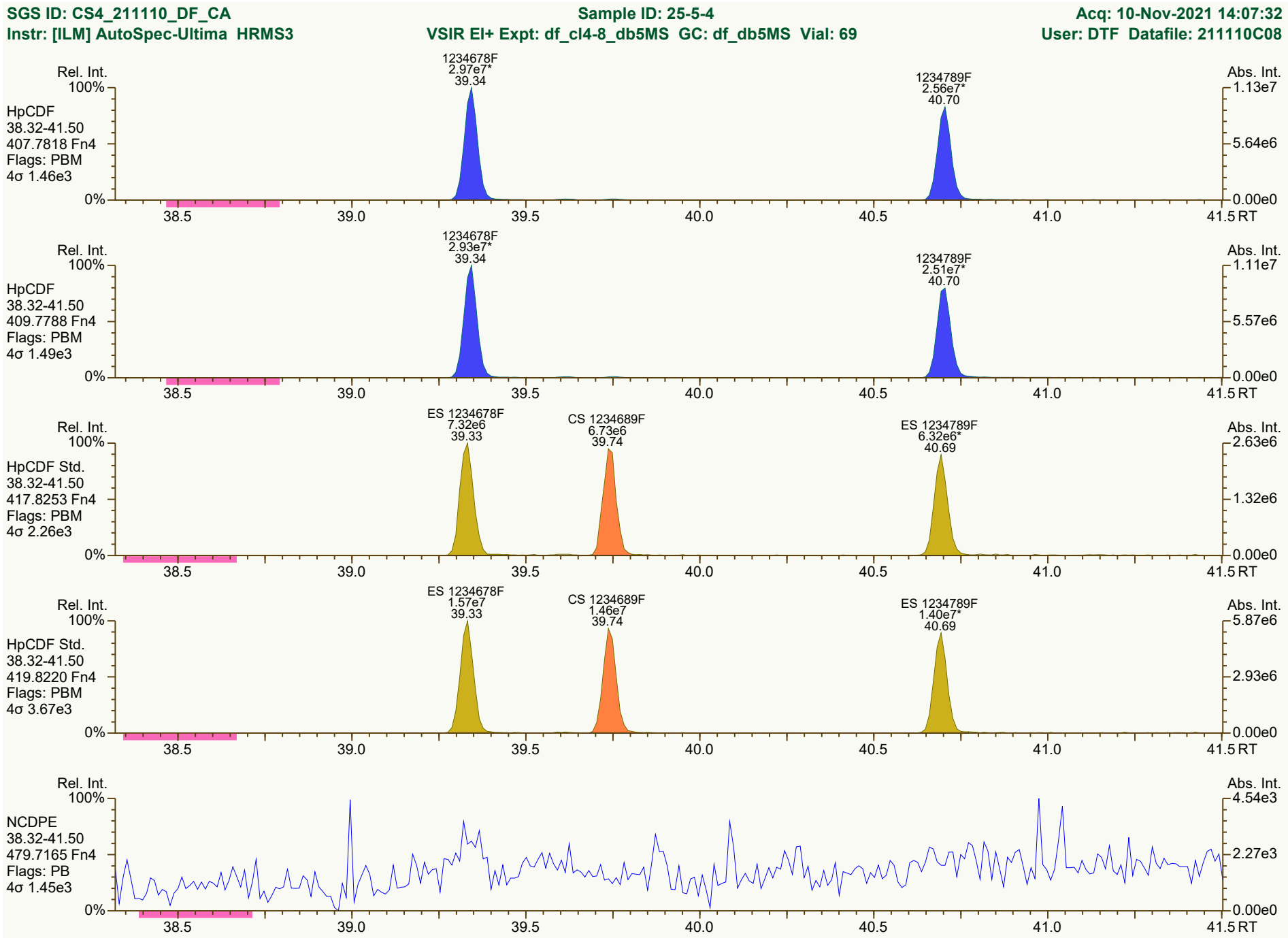

OCDD
2.94e7*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
8.13e6
4.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.31e7*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.22e3
0%
Abs. Int.
9.18e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.41e7
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
Abs. Int.
3.96e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.55e7
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.22e3
0%
Abs. Int.
4.28e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

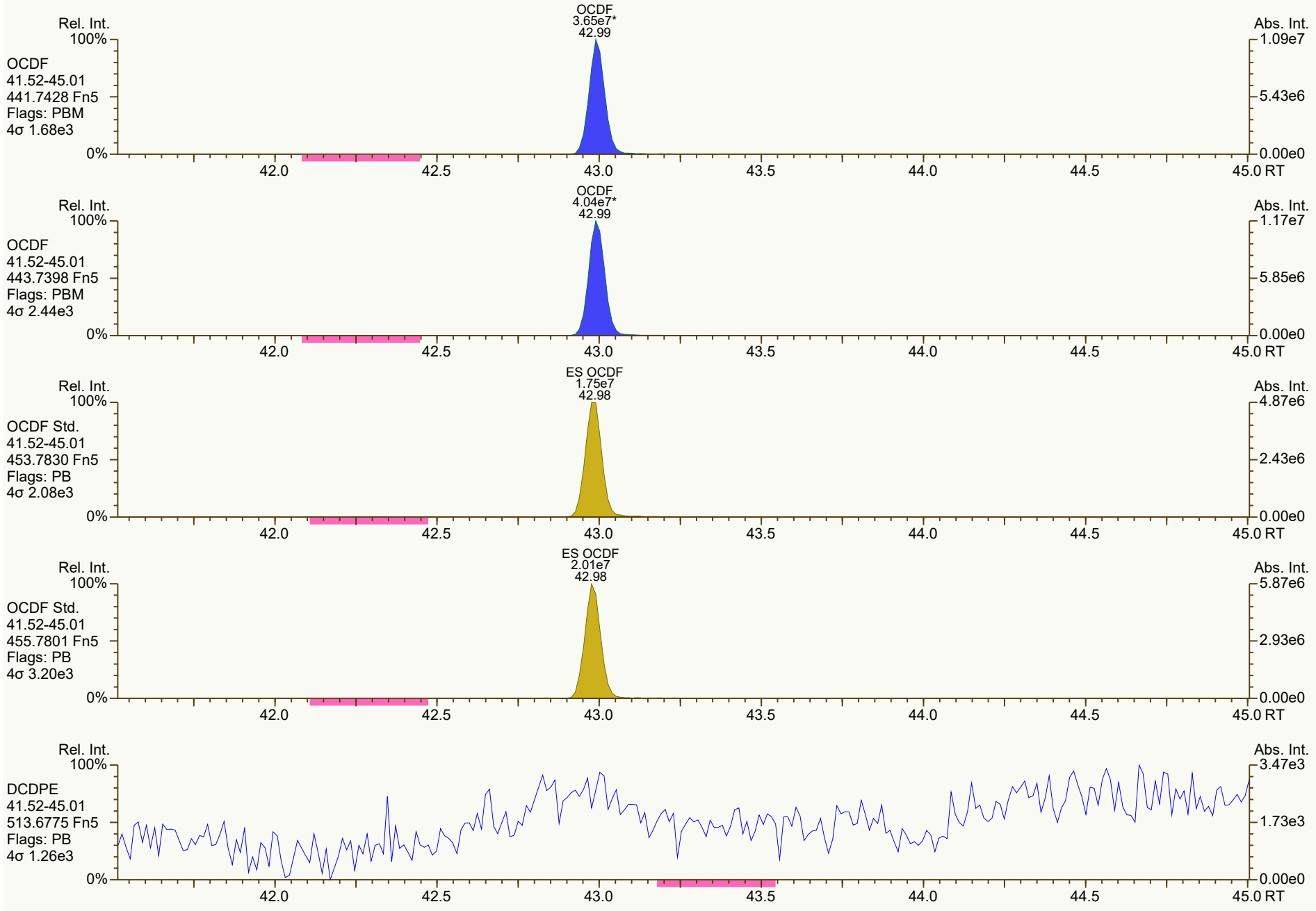

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
0%
2378F
8.36e6
26.67
Abs. Int.
1.89e6
9.43e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
0%
2378F
1.07e7
26.67
Abs. Int.
2.41e6
1.20e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
0%
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7*
25.23
ES 2378F
2.05e7
26.65
Abs. Int.
4.47e6
2.23e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
0%
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7*
25.23
ES 2378F
2.57e7
26.65
Abs. Int.
5.68e6
2.84e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
0%
Abs. Int.
9.44e3
4.72e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.83e3
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
8.94e3
4.47e3
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
9.00e6
4.50e6


SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
1.30e7
6.48e6
0.00e0
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
8.36e6
4.18e6
0.00e0
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12346F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
6.66e6
3.33e6
0.00e0
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12346F
1.46e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
4.36e6
2.18e6
0.00e0
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
7.51e3
3.76e3
0.00e0
100%
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9957, 4346, 5391 scc: 855-576
PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 9 of 12


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 4.43e3
0%
123478F
3.77e7
36.05
123678F
3.87e7
36.19
234678F
3.60e7
36.85
123789F
3.30e7
37.84
Abs. Int.
1.22e7
6.11e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 3.40e3
123478F
3.05e7
36.05
123678F
3.11e7
36.19
234678F
2.94e7
36.84
123789F
2.66e7
37.84
9.73e6
4.86e6
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.48e3
ES 123478F
9.89e6
36.04
ES 123678F
1.10e7
36.18
CS 123469F
9.53e6
36.49
ES 234678F
1.05e7
36.83
ES 123789F
9.61e6
37.82
3.56e6
1.78e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 9.01e3
ES 123478F
1.87e7
36.04
ES 123678F
2.10e7
36.18
CS 123469F
1.73e7
36.49
ES 234678F
1.88e7
36.83
ES 123789F
1.75e7
37.82
6.53e6
3.27e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.53e3
7.94e3
3.97e3


SGS ID: CS4_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-5-4
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
Acq: 10-Nov-2021 14:07:32
User: DTF Datafile: 211110C08
Rel. Int.
100%
0%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
1234678F
2.97e7*
39.34
1234789F
2.56e7*
40.70
Abs. Int.
1.13e7
5.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
1.11e7
5.57e6
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
2.63e6
1.32e6
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
ES 1234678F
1.57e7
39.33
CS 1234689F
1.46e7
39.74
ES 1234789F
1.40e7*
40.69
5.87e6
2.93e6
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
4.54e3
2.27e3
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2764, 9565, 4492 scc: 855-576
Revised: 10-Nov-2021 15:17 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

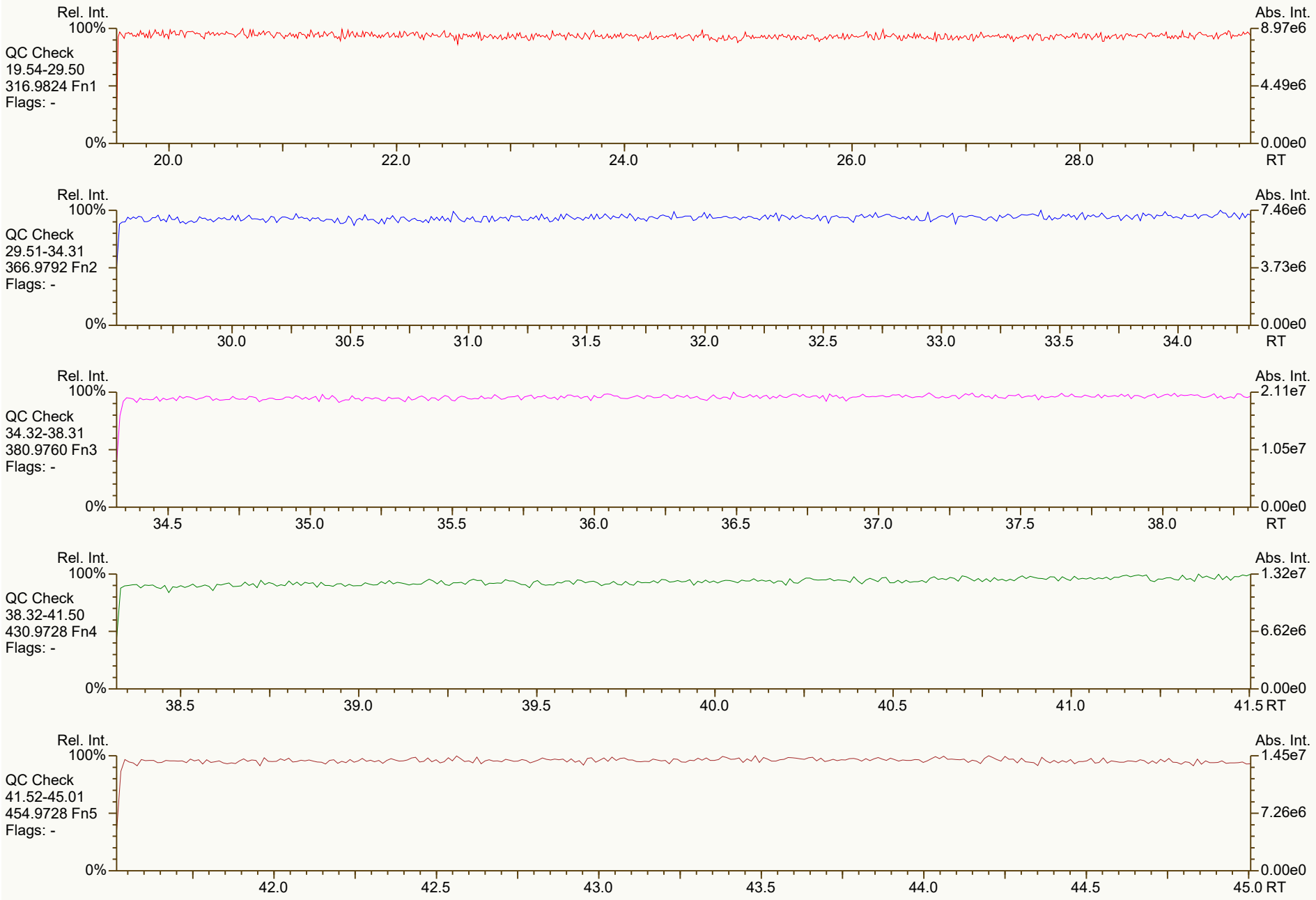

OCDF
3.65e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.04e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.75e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
0%
Abs. Int.
4.87e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
0%
Abs. Int.
5.87e6
2.93e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
0%
Abs. Int.
3.47e3
1.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

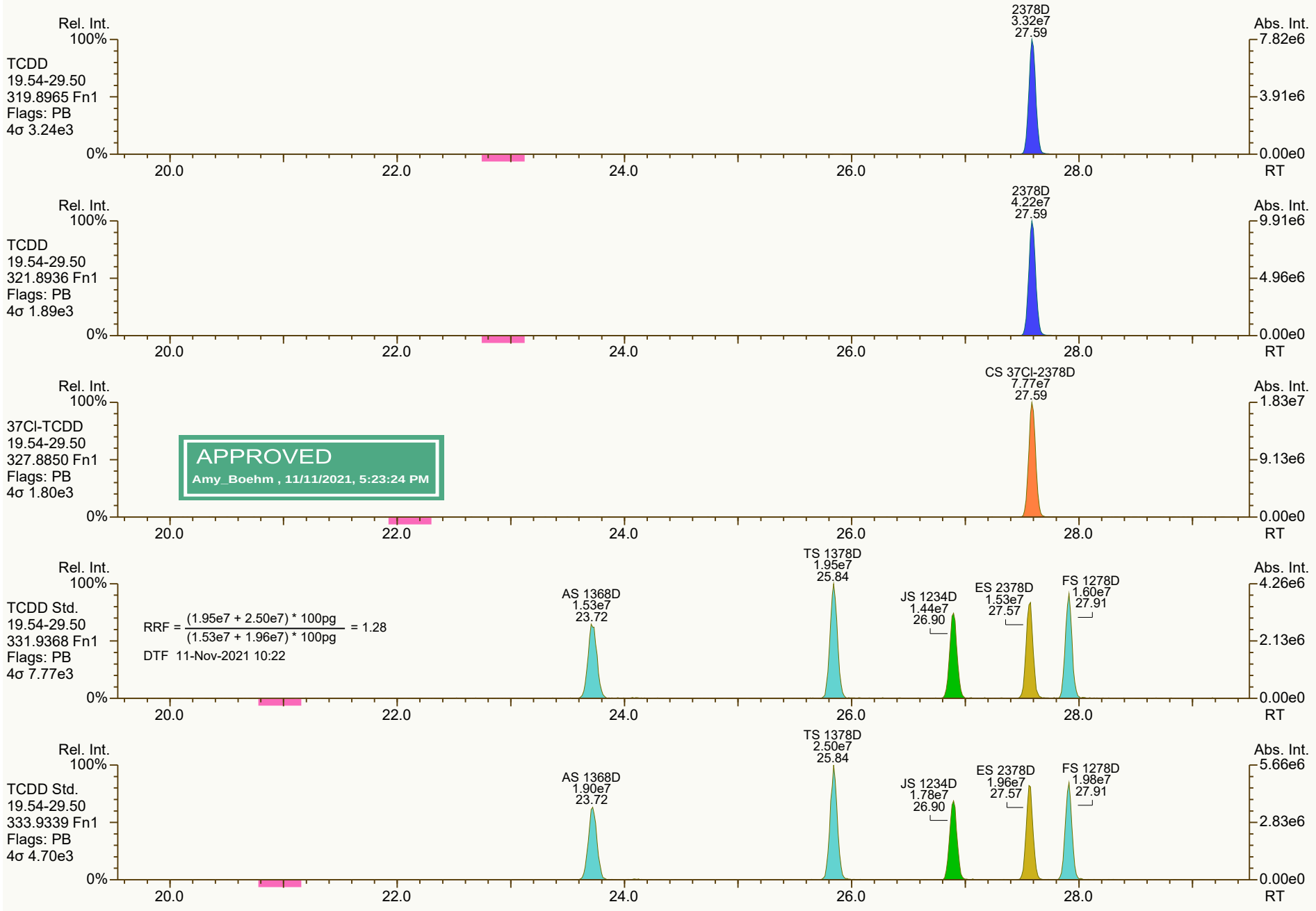
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

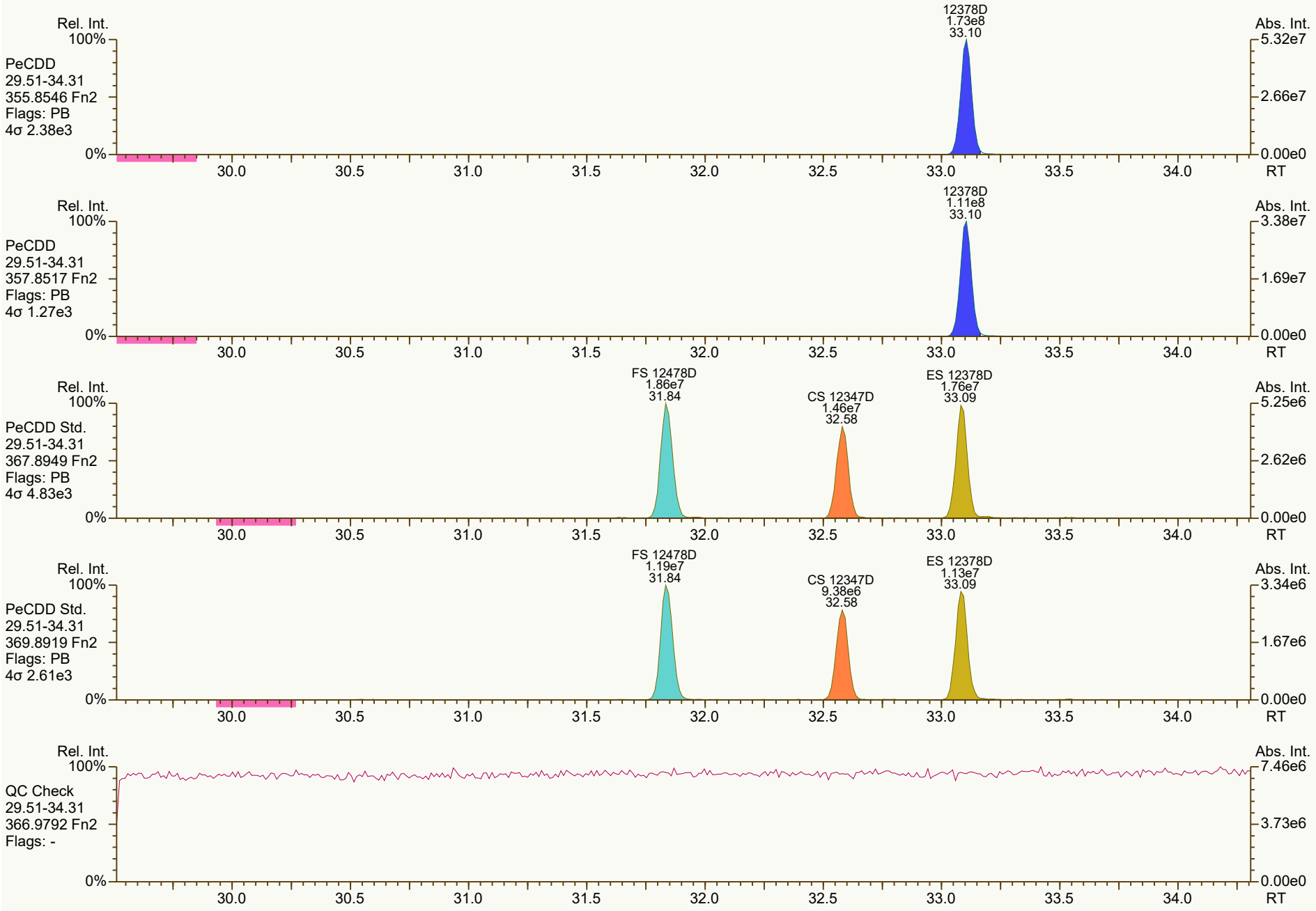
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

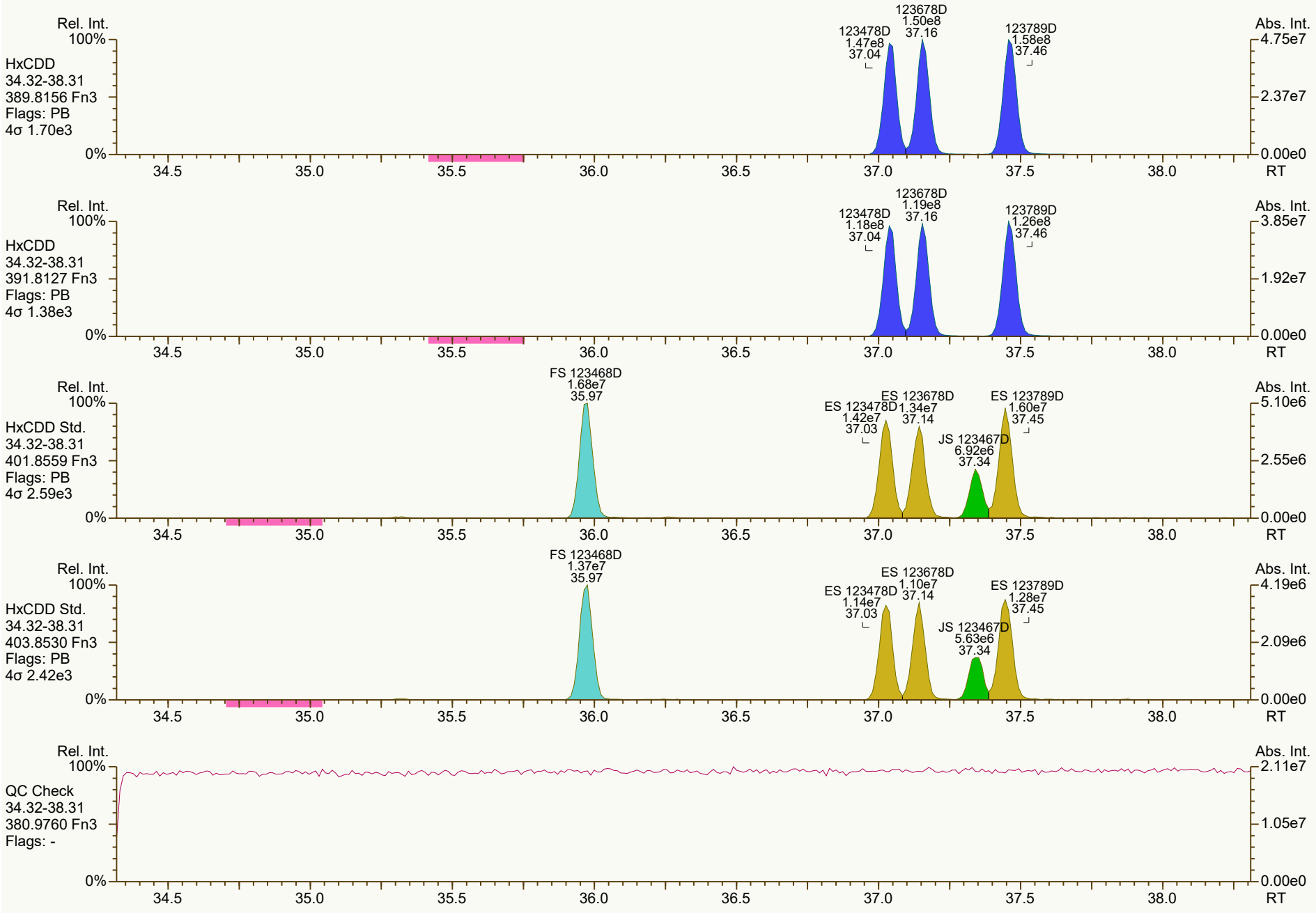
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

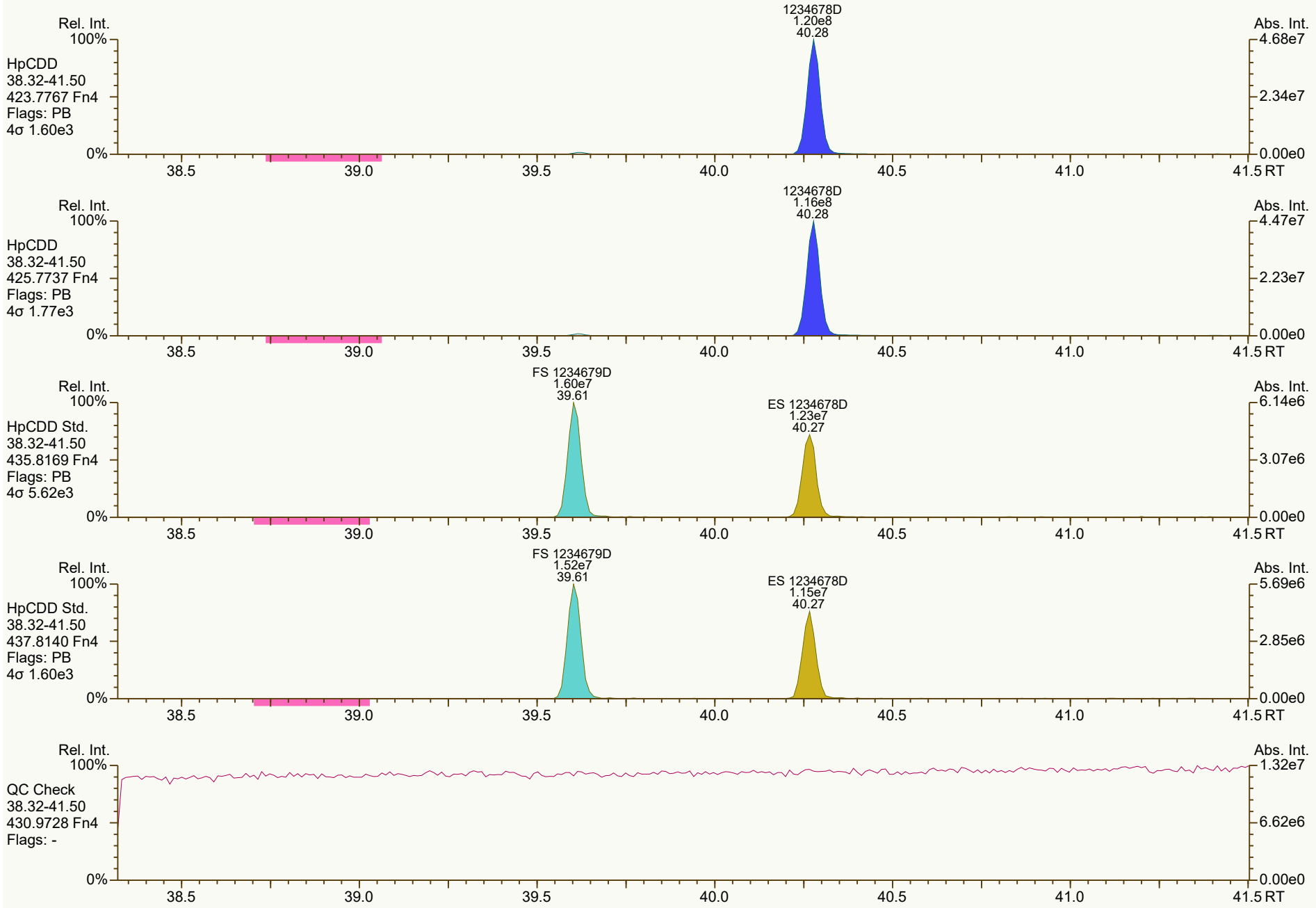
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

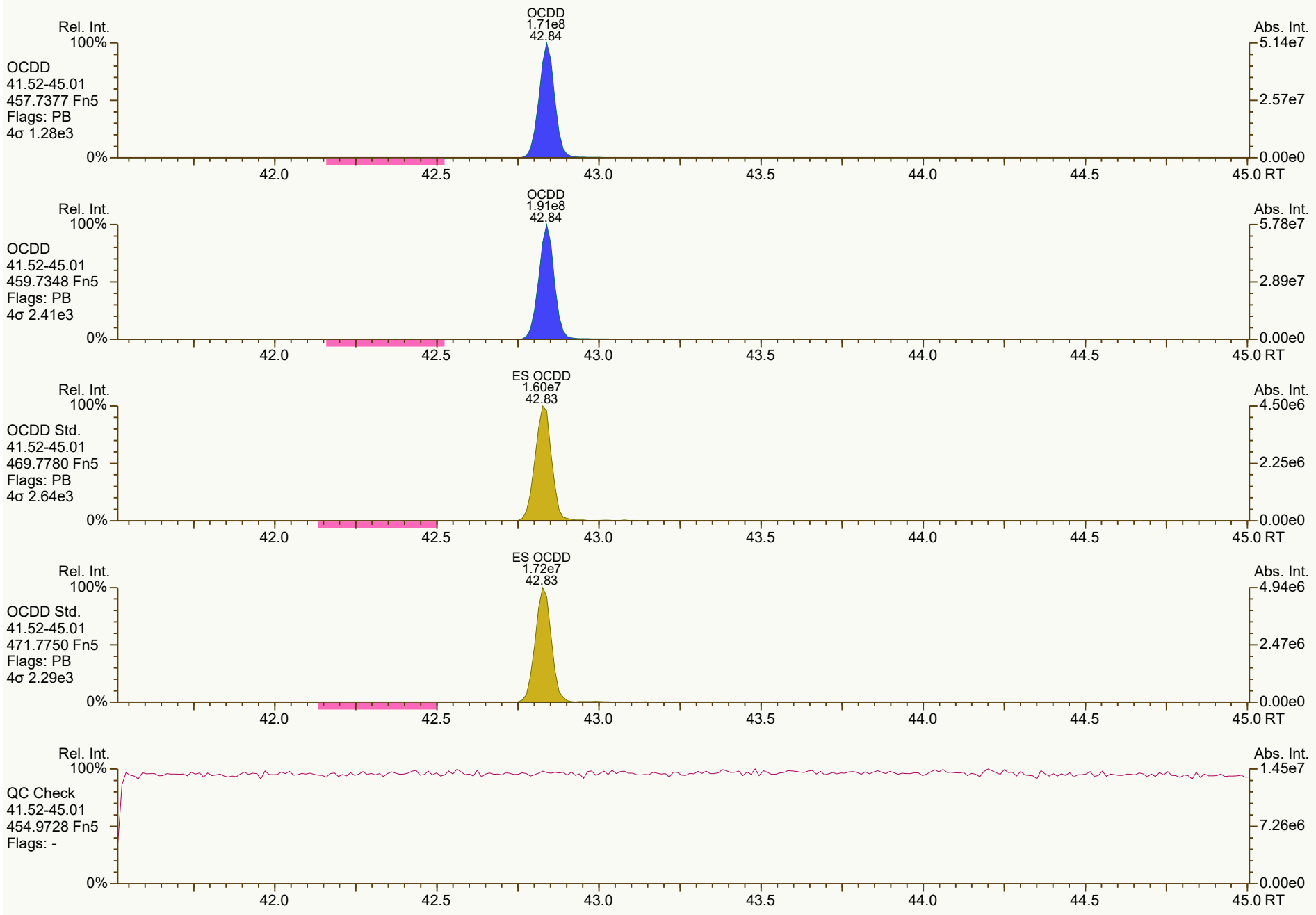

Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
7.46e6
3.73e6
0.00e0
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.11e7
1.05e7
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.32e7
6.62e6
0.00e0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
0%
Abs. Int.
1.45e7
7.26e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PB
4σ 3.24e3
0%
2378D
3.32e7
27.59
Abs. Int.
7.82e6
3.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: PB
4σ 1.89e3
0%
2378D
4.22e7
27.59
Abs. Int.
9.91e6
4.96e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: PB
4σ 1.80e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:23:24 PM
CS 37Cl-2378D
7.77e7
27.59
Abs. Int.
1.83e7
9.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 7.77e3
0%
RRF = (1.95e7 + 2.50e7) * 100pg / (1.53e7 + 1.96e7) * 100pg = 1.28
DTF 11-Nov-2021 10:22
AS 1368D
1.53e7
23.72
TS 1378D
1.95e7
25.84
JS 1234D
1.44e7
26.90
ES 2378D
1.53e7
27.57
FS 1278D
1.60e7
27.91
Abs. Int.
4.26e6
2.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.70e3
0%
AS 1368D
1.90e7
23.72
TS 1378D
2.50e7
25.84
JS 1234D
1.78e7
26.90
ES 2378D
1.96e7
27.57
FS 1278D
1.98e7
27.91
Abs. Int.
5.66e6
2.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
12378D
1.73e8
33.10
Abs. Int.
5.32e7
2.66e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
12378D
1.11e8
33.10
Abs. Int.
3.38e7
1.69e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
FS 12478D
1.86e7
31.84
CS 12347D
1.46e7
32.58
ES 12378D
1.76e7
33.09
Abs. Int.
5.25e6
2.62e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
Abs. Int.
3.34e6
1.67e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
7.46e6
3.73e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

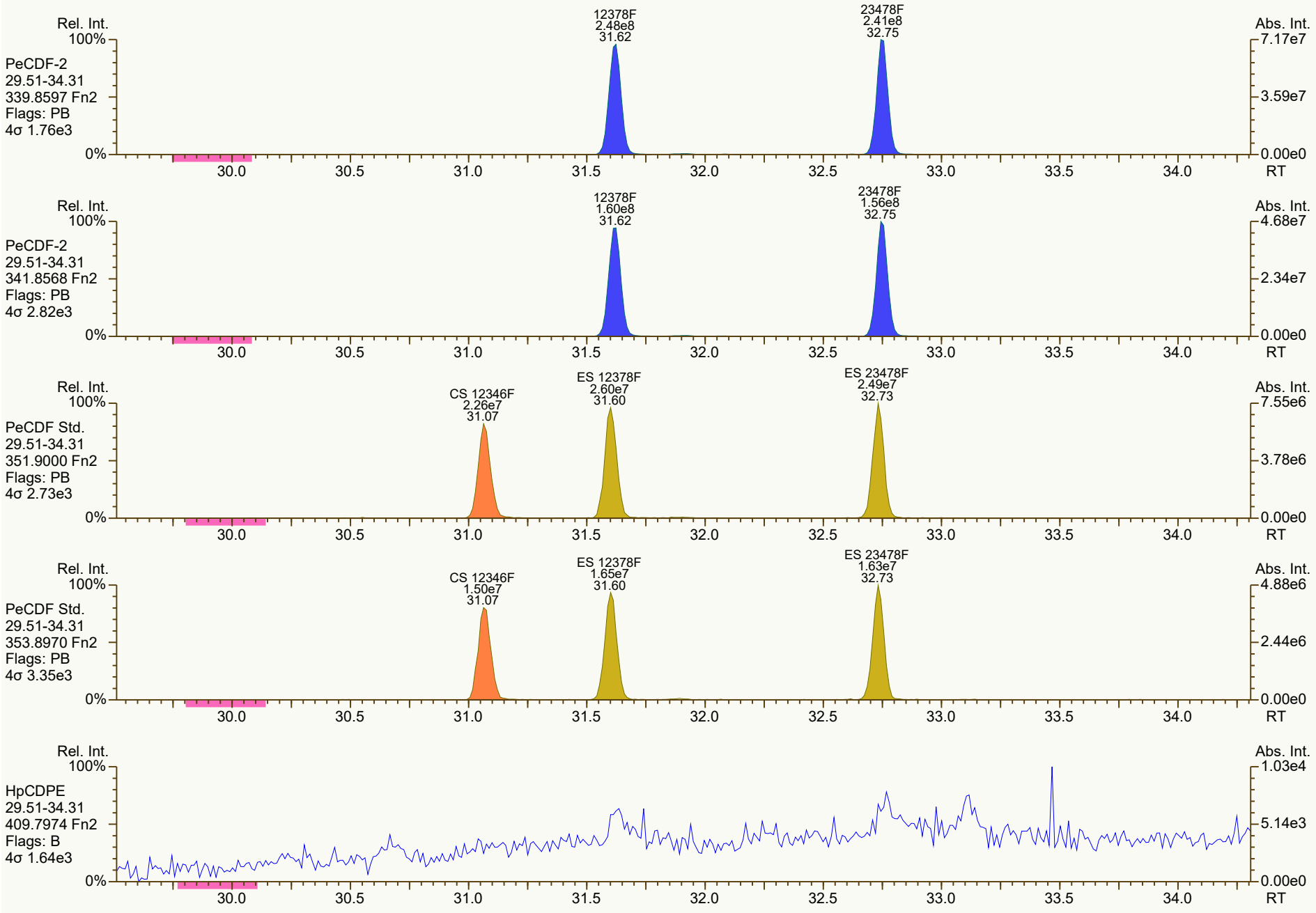

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
123478D
1.47e8
37.04
123678D
1.50e8
37.16
123789D
1.58e8
37.46
Abs. Int.
4.75e7
2.37e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
123478D
1.18e8
37.04
123678D
1.19e8
37.16
123789D
1.26e8
37.46
Abs. Int.
3.85e7
1.92e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
FS 123468D
1.68e7
35.97
ES 123478D
1.42e7
37.03
ES 123678D
1.34e7
37.14
JS 123467D
6.92e6
37.34
ES 123789D
1.60e7
37.45
Abs. Int.
5.10e6
2.55e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
FS 123468D
1.37e7
35.97
ES 123478D
1.14e7
37.03
ES 123678D
1.10e7
37.14
JS 123467D
5.63e6
37.34
ES 123789D
1.28e7
37.45
Abs. Int.
4.19e6
2.09e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.11e7
1.05e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

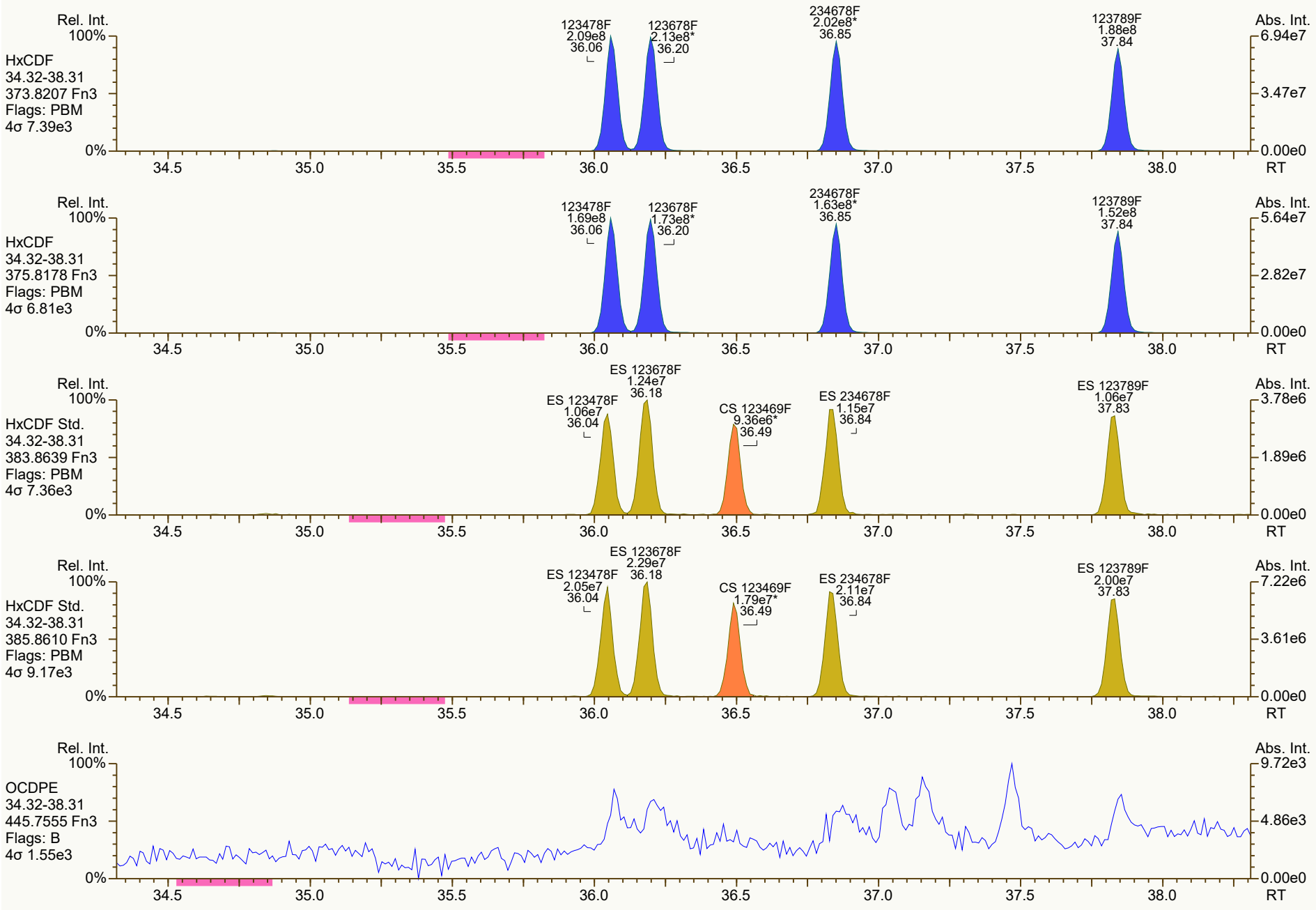

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
1.20e8
40.28
Abs. Int.
4.68e7
2.34e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.77e3
1234678D
1.16e8
40.28
Abs. Int.
4.47e7
2.23e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 5.62e3
FS 1234679D
1.60e7
39.61
ES 1234678D
1.23e7
40.27
Abs. Int.
6.14e6
3.07e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.60e3
FS 1234679D
1.52e7
39.61
ES 1234678D
1.15e7
40.27
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.32e7
6.62e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

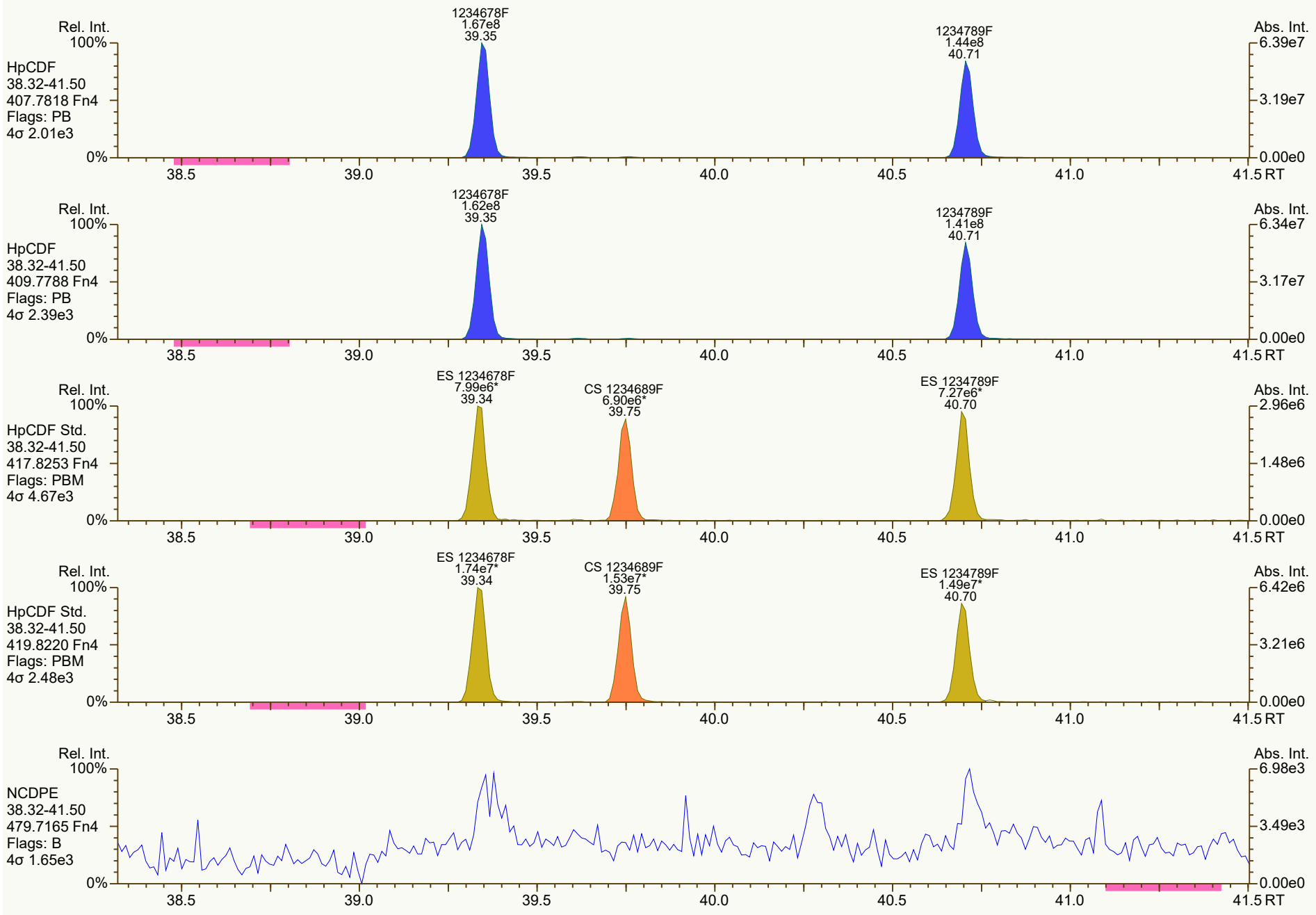

OCDD
1.71e8
42.84
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
0%
Abs. Int.
5.14e7
2.57e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e8
42.84
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
5.78e7
2.89e7
ES OCDD
1.60e7
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
4.50e6
2.25e6
ES OCDD
1.72e7
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
4.94e6
2.47e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6

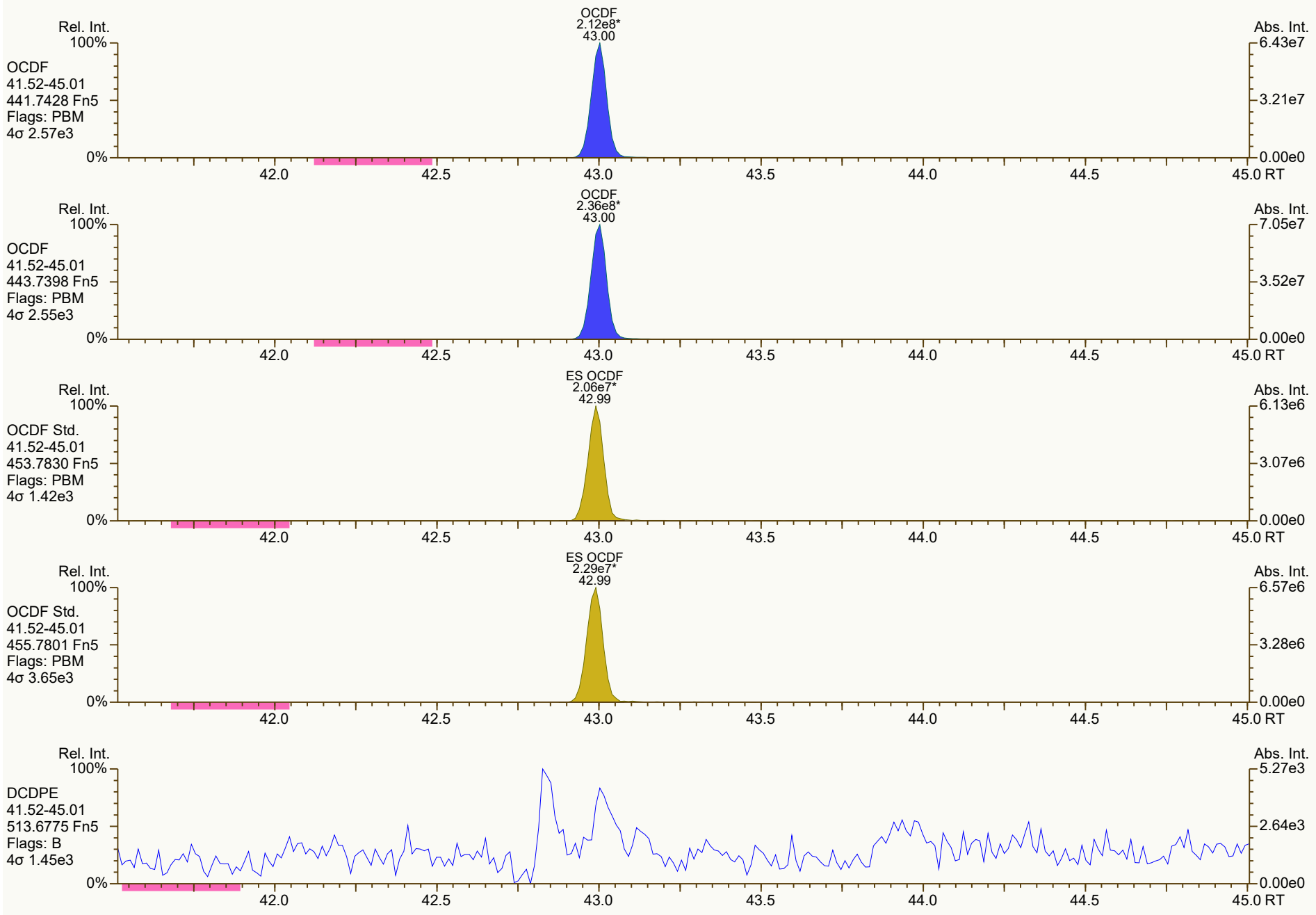

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
0%
2378F
4.22e7
26.68
Abs. Int.
9.59e6
4.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
0%
2378F
5.40e7
26.68
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
0%
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
Abs. Int.
4.70e6
2.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
Abs. Int.
5.78e6
2.89e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
0%
Abs. Int.
7.47e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.43e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 2.08e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
0%
12378F
2.48e8
31.62
23478F
2.41e8
32.75
Abs. Int.
7.17e7
3.59e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
0%
12378F
1.60e8
31.62
23478F
1.56e8
32.75
Abs. Int.
4.68e7
2.34e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
0%
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
Abs. Int.
7.55e6
3.78e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
0%
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.63e7
32.73
Abs. Int.
4.88e6
2.44e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 7.39e3
0%
123478F
2.09e8
36.06
123678F
2.13e8*
36.20
234678F
2.02e8*
36.85
123789F
1.88e8
37.84
Abs. Int.
6.94e7
3.47e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 6.81e3
0%
123478F
1.69e8
36.06
123678F
1.73e8*
36.20
234678F
1.63e8*
36.85
123789F
1.52e8
37.84
Abs. Int.
5.64e7
2.82e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.36e3
0%
ES 123478F
1.06e7
36.04
ES 123678F
1.24e7
36.18
CS 123469F
9.36e6*
36.49
ES 234678F
1.15e7
36.84
ES 123789F
1.06e7
37.83
Abs. Int.
3.78e6
1.89e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.17e3
0%
ES 123478F
2.05e7
36.04
ES 123678F
2.29e7
36.18
CS 123469F
1.79e7*
36.49
ES 234678F
2.11e7
36.84
ES 123789F
2.00e7
37.83
Abs. Int.
7.22e6
3.61e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.55e3
0%
Abs. Int.
9.72e3
4.86e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

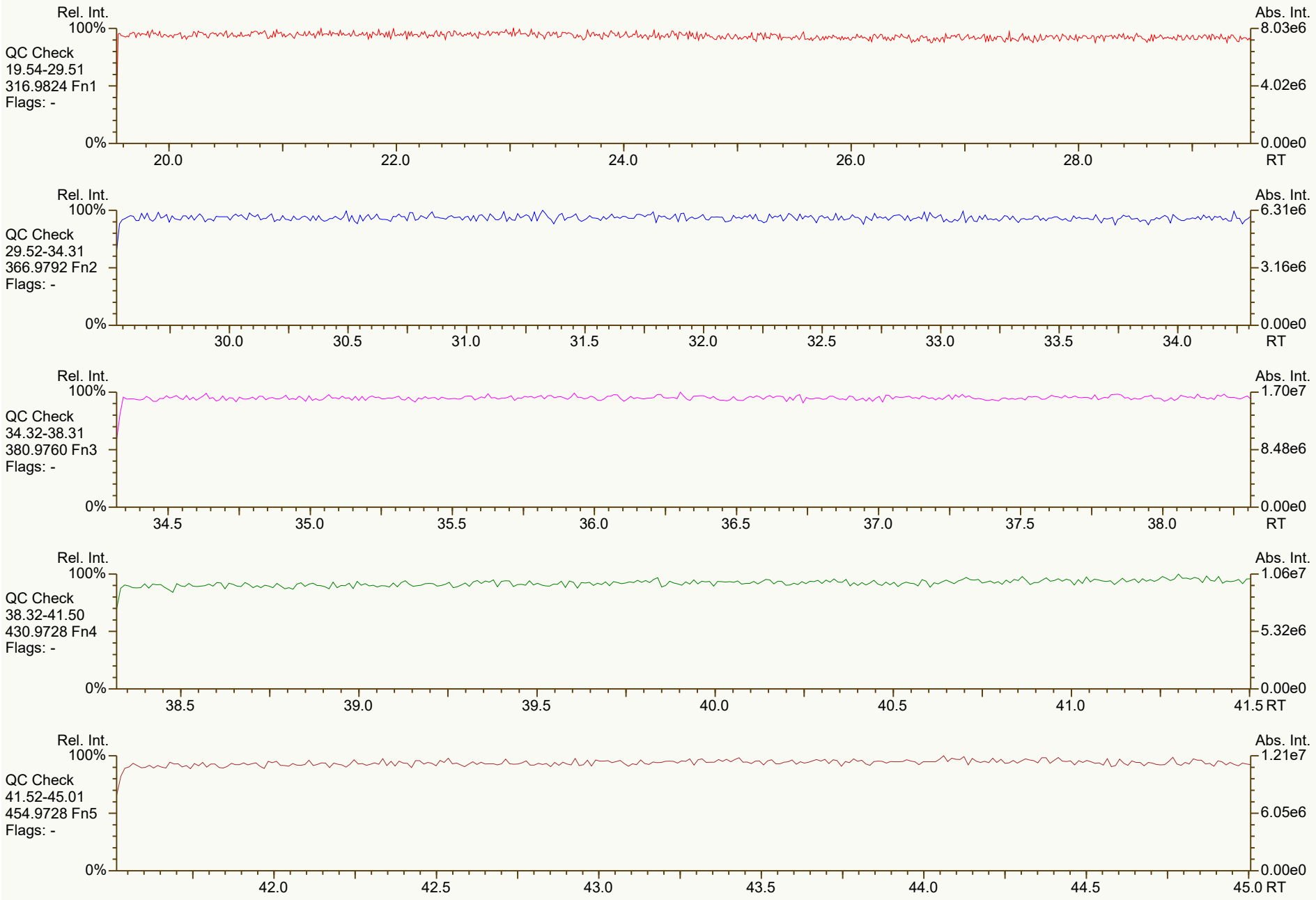

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 2.01e3
1234678F
1.67e8
39.35
1234789F
1.44e8
40.71
Abs. Int.
6.39e7
3.19e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 2.39e3
1234678F
1.62e8
39.35
1234789F
1.41e8
40.71
Abs. Int.
6.34e7
3.17e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.67e3
ES 1234678F
7.99e6*
39.34
CS 1234689F
6.90e6*
39.75
ES 1234789F
7.27e6*
40.70
Abs. Int.
2.96e6
1.48e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.48e3
ES 1234678F
1.74e7*
39.34
CS 1234689F
1.53e7*
39.75
ES 1234789F
1.49e7*
40.70
Abs. Int.
6.42e6
3.21e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.65e3
Abs. Int.
6.98e3
3.49e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

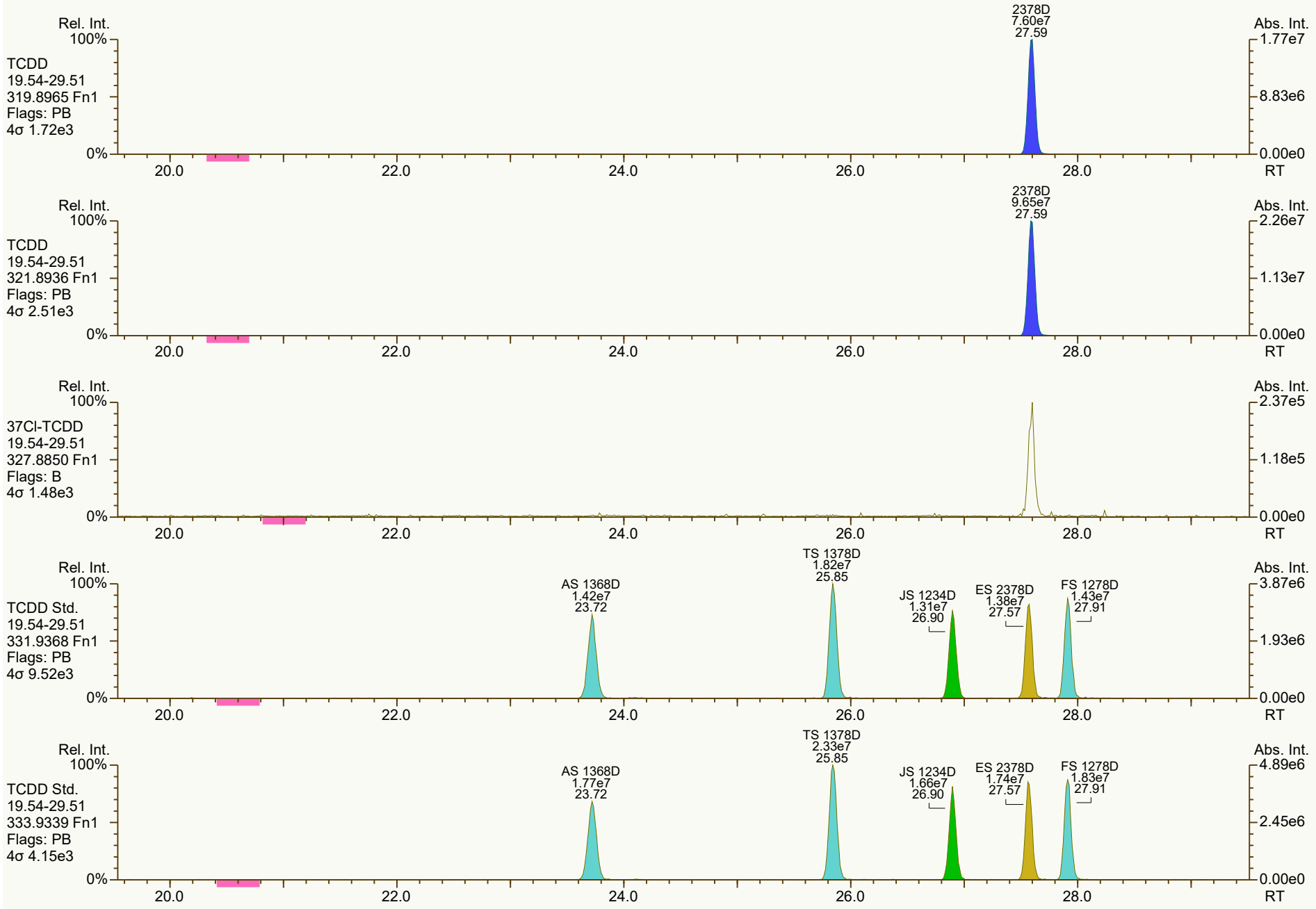

OCDF
2.12e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
6.43e7
3.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.36e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
0%
Abs. Int.
7.05e7
3.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
6.13e6
3.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
6.57e6
3.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
5.27e3
2.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

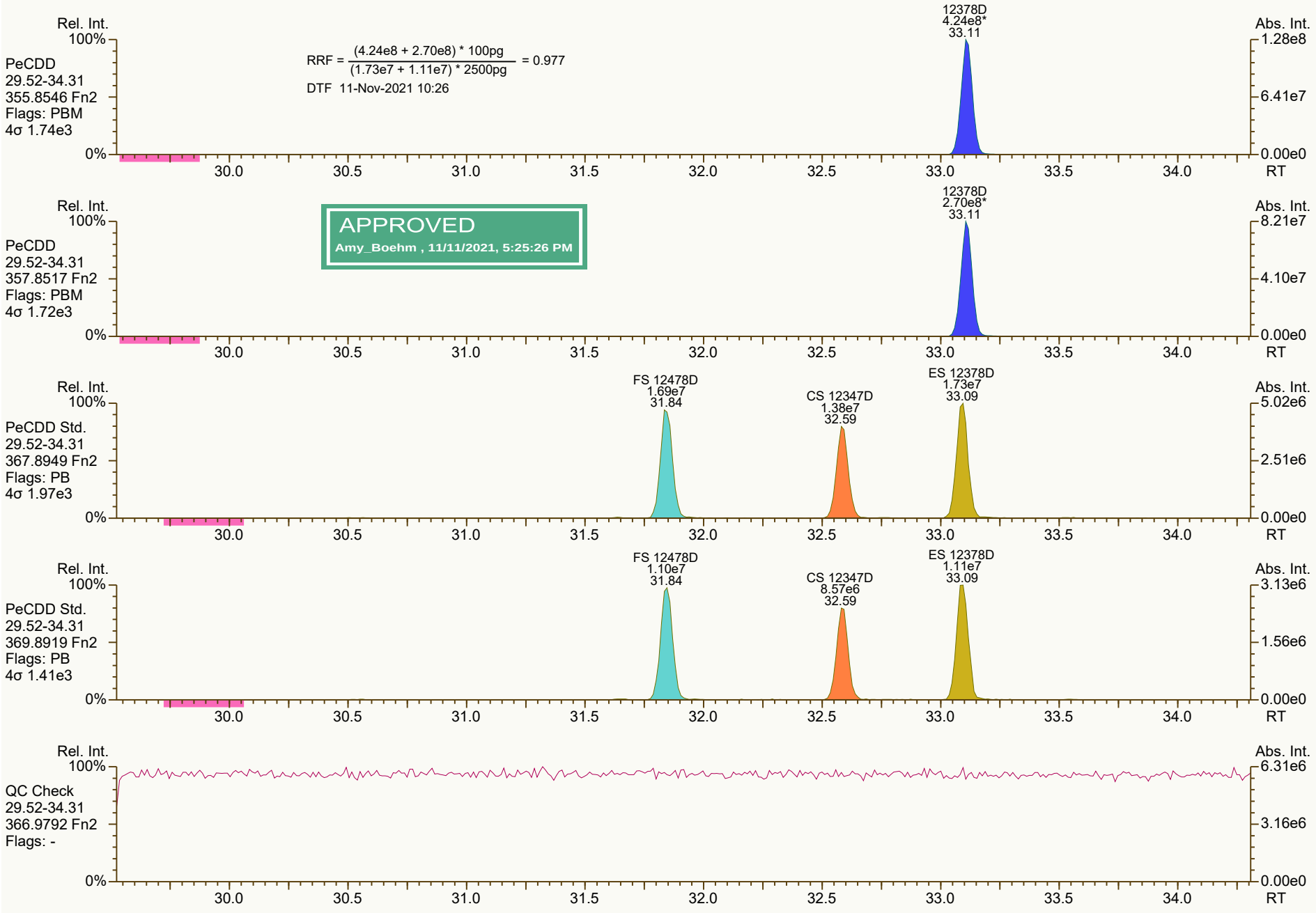
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

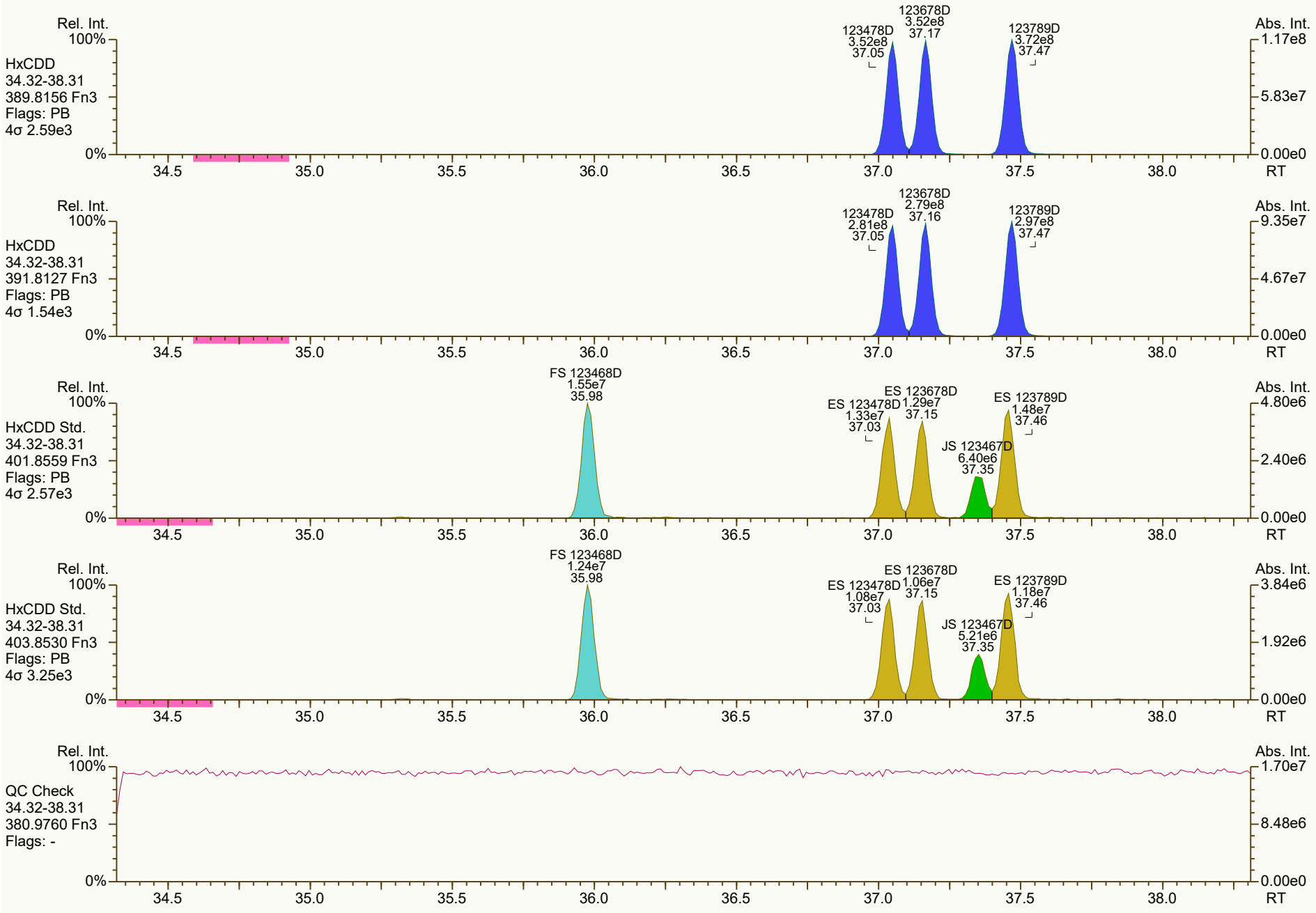
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

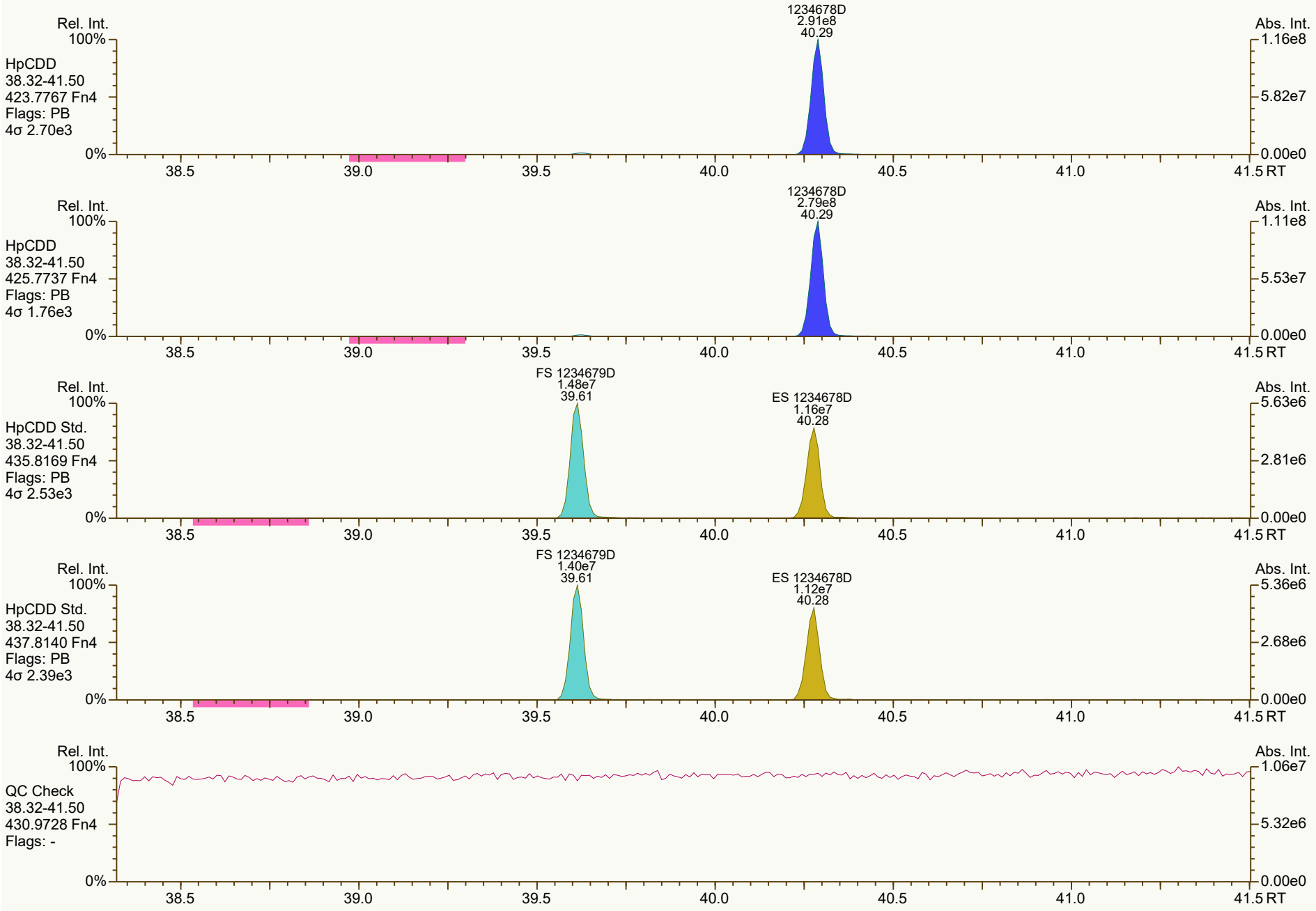
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF				Checkcode: 172-736-WQL	
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C10	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

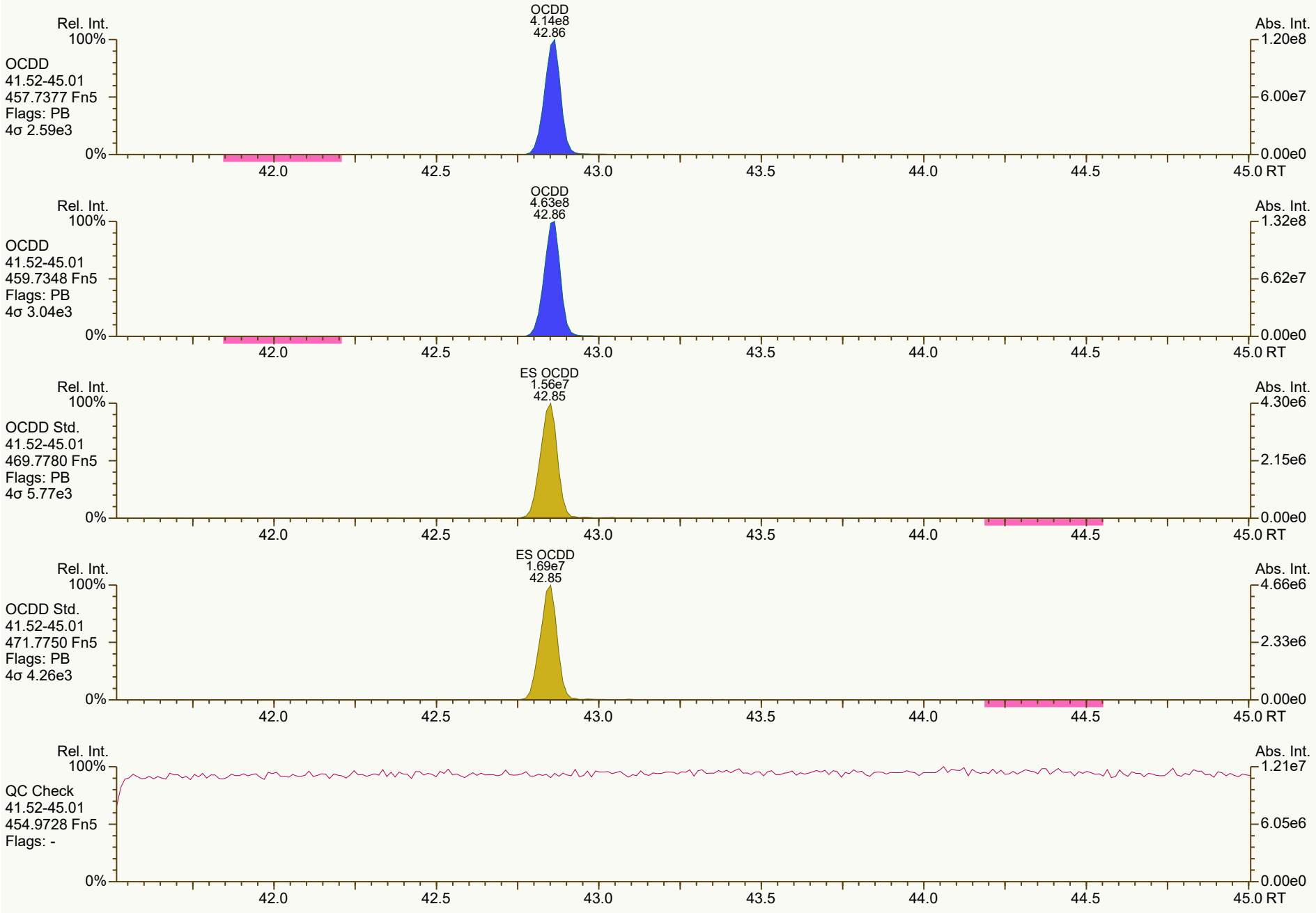

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.03e6
4.02e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
6.31e6
3.16e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.70e7
8.48e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.06e7
5.32e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.21e7
6.05e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
0%
2378D
7.60e7
27.59
Abs. Int.
1.77e7
8.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
0%
2378D
9.65e7
27.59
Abs. Int.
2.26e7
1.13e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
2.37e5
1.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
0%
AS 1368D
1.42e7
23.72
TS 1378D
1.82e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
Abs. Int.
3.87e6
1.93e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
0%
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.83e7
27.91
Abs. Int.
4.89e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.74e3
0%
RRF = (4.24e8 + 2.70e8) * 100pg / (1.73e7 + 1.11e7) * 2500pg = 0.977
DTF 11-Nov-2021 10:26
12378D
4.24e8*
33.11
Abs. Int.
1.28e8
6.41e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.72e3
APPROVED
Amy_Boehm , 11/11/2021, 5:25:26 PM
12378D
2.70e8*
33.11
Abs. Int.
8.21e7
4.10e7
0.00e0
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 1.97e3
FS 12478D
1.69e7
31.84
CS 12347D
1.38e7
32.59
ES 12378D
1.73e7
33.09
Abs. Int.
5.02e6
2.51e6
0.00e0
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 1.41e3
FS 12478D
1.10e7
31.84
CS 12347D
8.57e6
32.59
ES 12378D
1.11e7
33.09
Abs. Int.
3.13e6
1.56e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
6.31e6
3.16e6
0.00e0


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
123478D
3.52e8
37.05
123678D
3.52e8
37.17
123789D
3.72e8
37.47
Abs. Int.
1.17e8
5.83e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
123478D
2.81e8
37.05
123678D
2.79e8
37.16
123789D
2.97e8
37.47
Abs. Int.
9.35e7
4.67e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
FS 123468D
1.55e7
35.98
ES 123478D
1.33e7
37.03
ES 123678D
1.29e7
37.15
JS 123467D
6.40e6
37.35
ES 123789D
1.48e7
37.46
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
FS 123468D
1.24e7
35.98
ES 123478D
1.08e7
37.03
ES 123678D
1.06e7
37.15
JS 123467D
5.21e6
37.35
ES 123789D
1.18e7
37.46
Abs. Int.
3.84e6
1.92e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.70e7
8.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
1234678D
2.91e8
40.29
Abs. Int.
1.16e8
5.82e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
1234678D
2.79e8
40.29
Abs. Int.
1.11e8
5.53e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
FS 1234679D
1.48e7
39.61
ES 1234678D
1.16e7
40.28
Abs. Int.
5.63e6
2.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
FS 1234679D
1.40e7
39.61
ES 1234678D
1.12e7
40.28
Abs. Int.
5.36e6
2.68e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.06e7
5.32e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
4.14e8
42.86
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.59e3
0%
Abs. Int.
1.20e8
6.00e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.63e8
42.86
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
1.32e8
6.62e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.56e7
42.85
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.77e3
0%
Abs. Int.
4.30e6
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.69e7
42.85
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.26e3
0%
Abs. Int.
4.66e6
2.33e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.21e7
6.05e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 2.26e3
0%
2378F
9.73e7
26.68
Abs. Int.
2.17e7
1.08e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 2.01e3
0%
2378F
1.26e8
26.68
Abs. Int.
2.85e7
1.42e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.95e4
0%
AS 1368F
2.07e7
21.49
JS 1234F
1.84e7
25.24
ES 2378F
1.95e7
26.66
Abs. Int.
4.38e6
2.19e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 7.53e3
0%
AS 1368F
2.62e7
21.49
JS 1234F
2.32e7
25.24
ES 2378F
2.51e7
26.65
Abs. Int.
5.43e6
2.72e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.55e3
0%
Abs. Int.
6.34e3
3.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

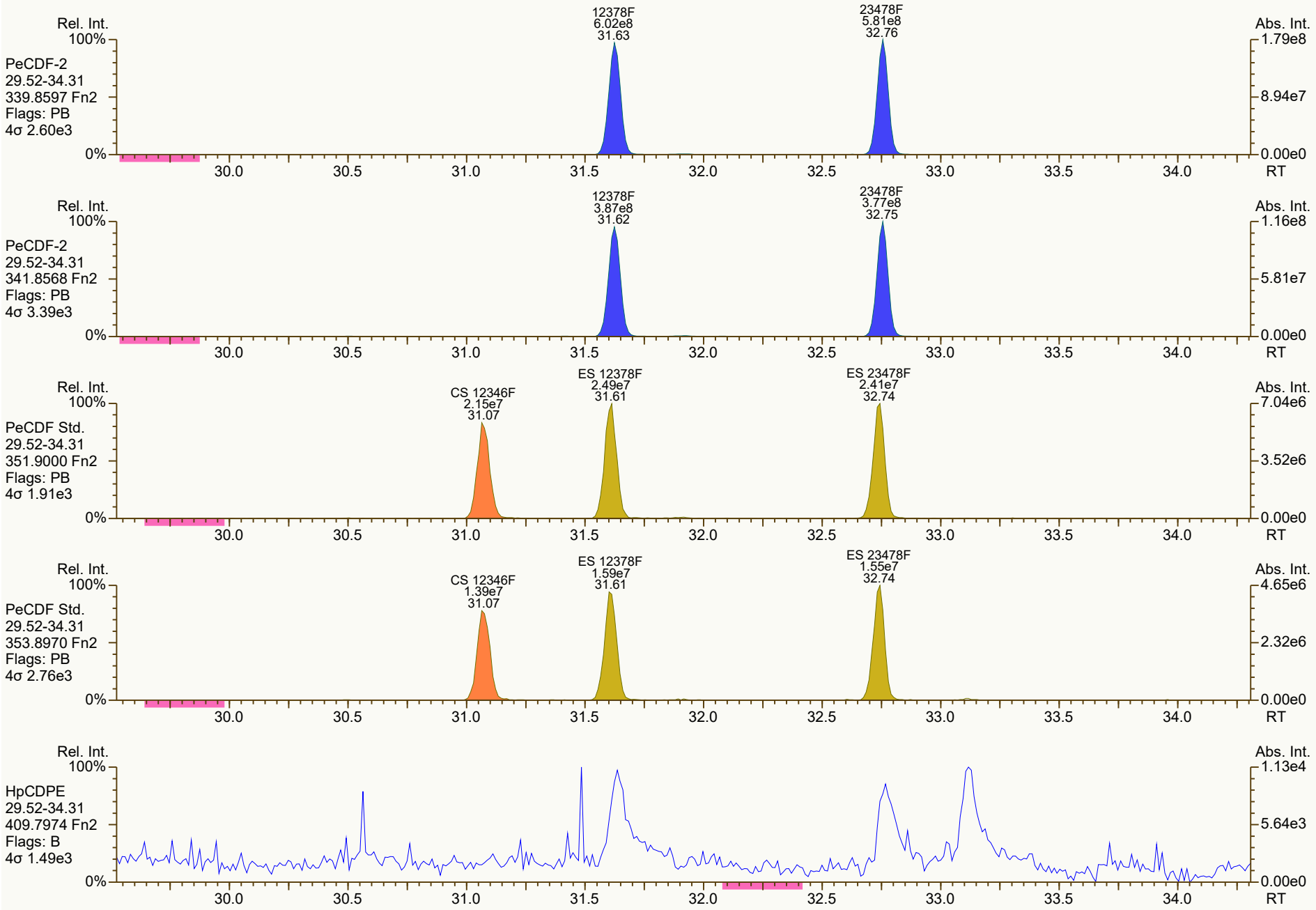
SGS ID: CS6_211110_DF_CA | Sample ID: 25-5-2 | Acq: 10-Nov-2021 15:40:10

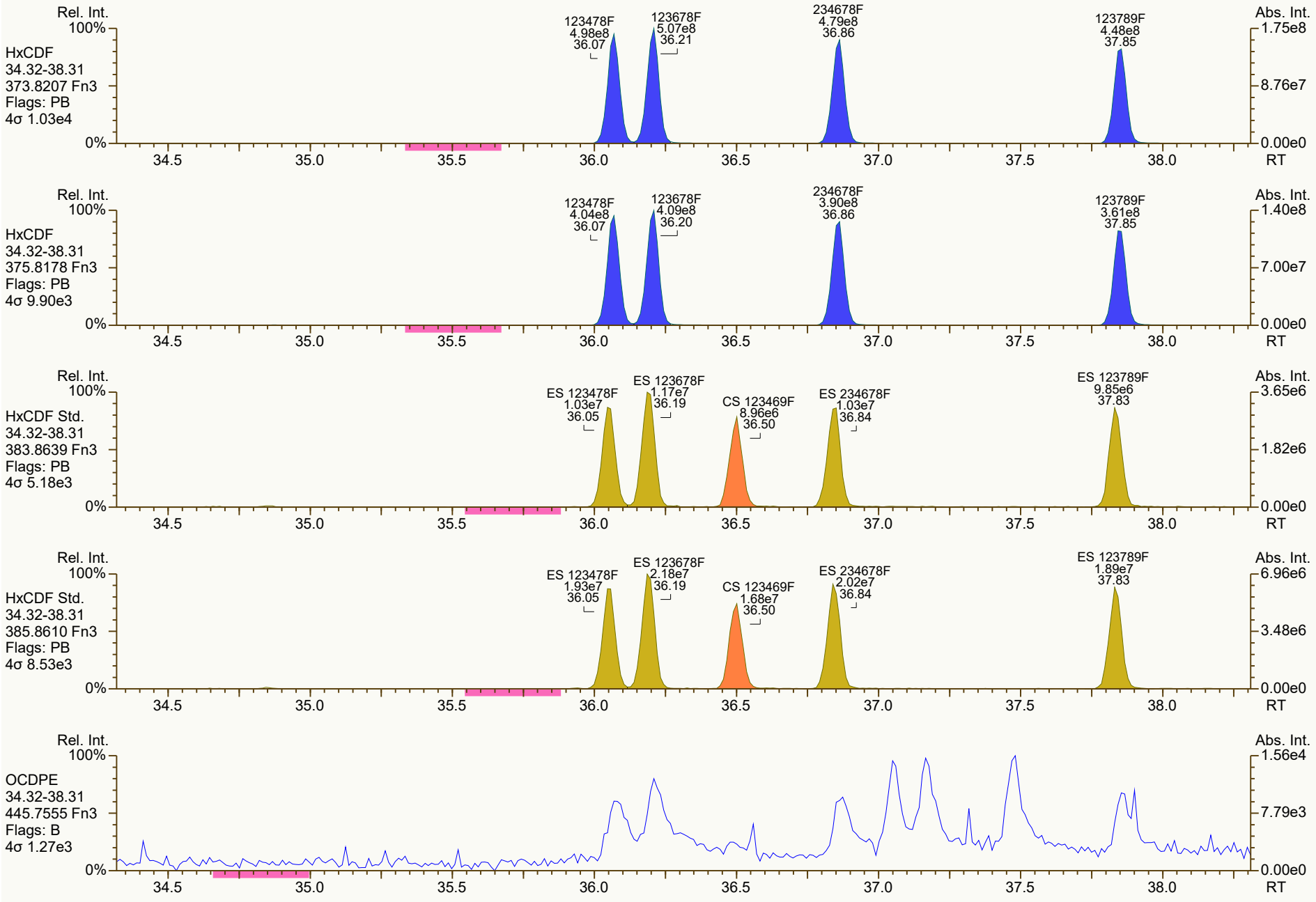
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71 | User: DTF Datafile: 211110C10

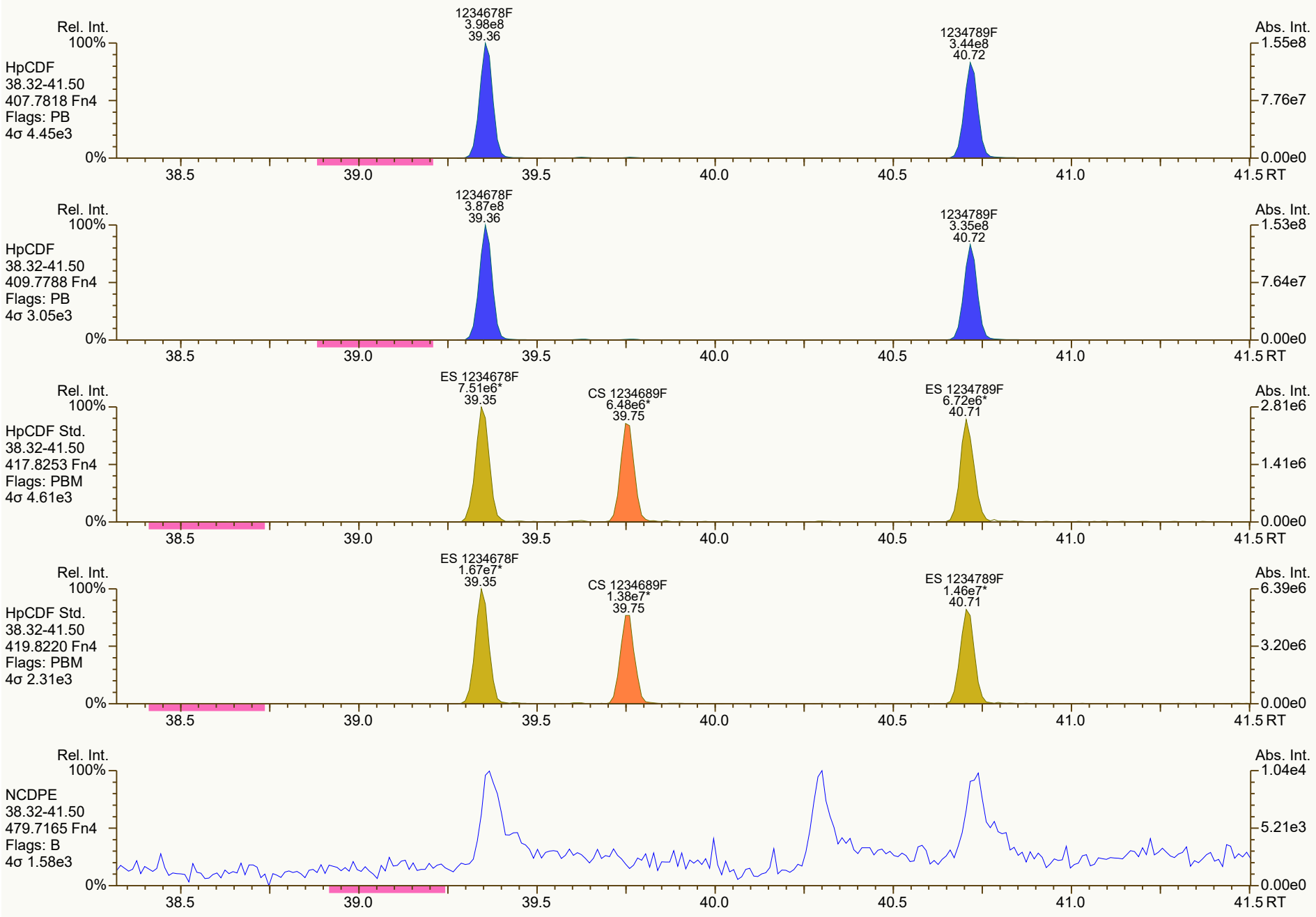


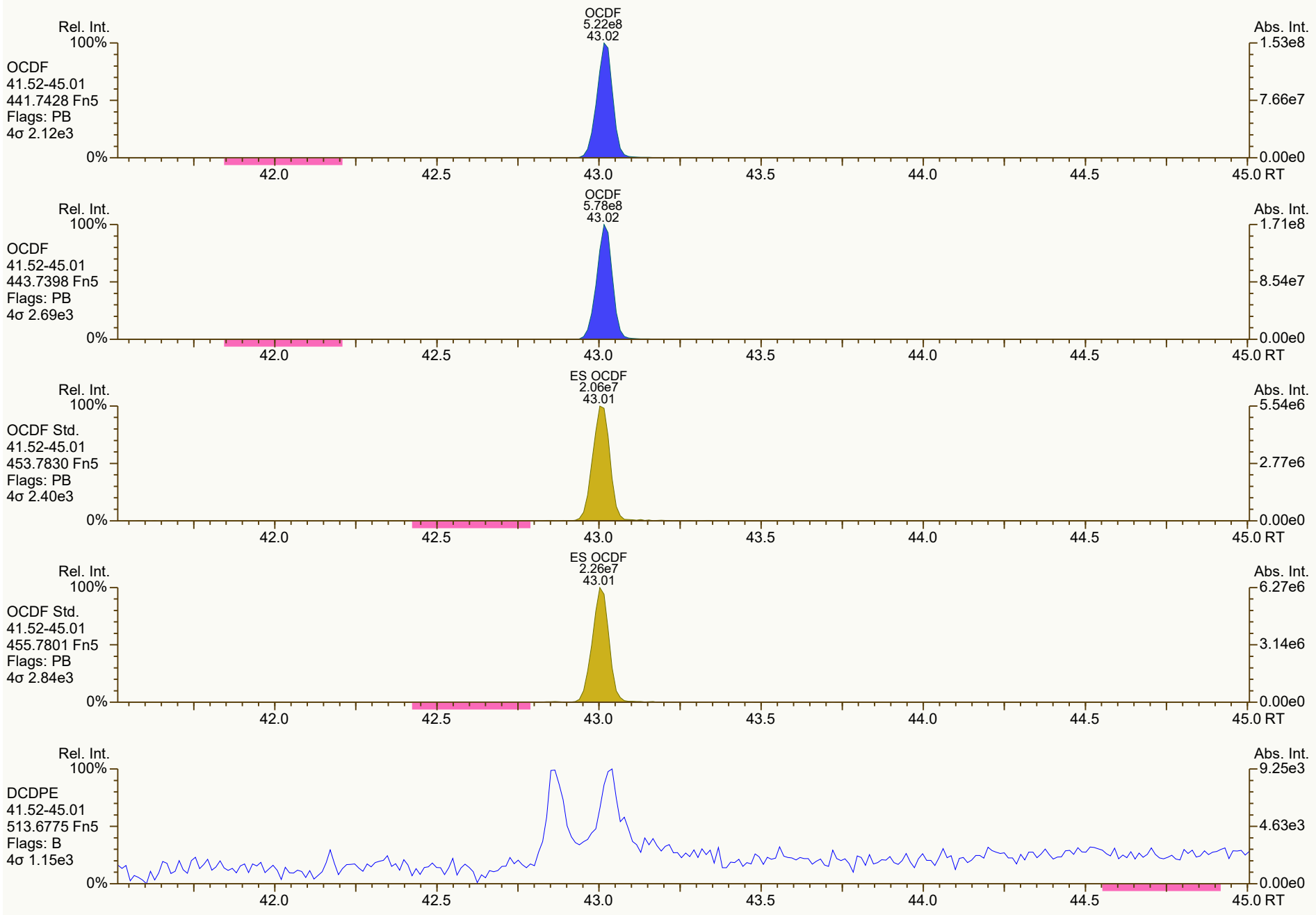
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

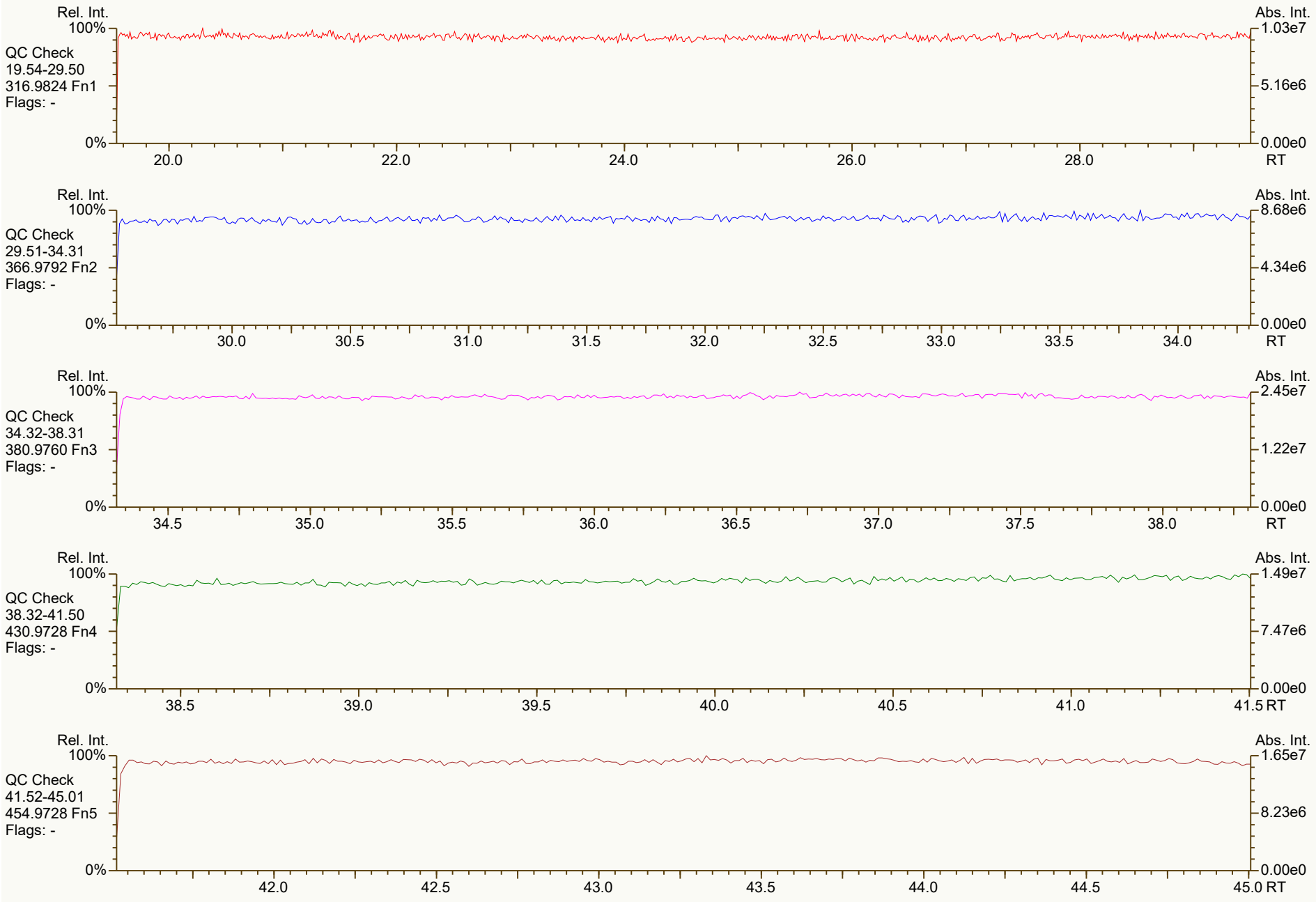
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4239 scc: 172-736 *PKD: 10-Nov-2021 16:46 Printed: 11-Nov-2021 10:41 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PB
4σ 2.60e3
0%
12378F
6.02e8
31.63
23478F
5.81e8
32.76
Abs. Int.
1.79e8
8.94e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PB
4σ 3.39e3
0%
12378F
3.87e8
31.62
23478F
3.77e8
32.75
Abs. Int.
1.16e8
5.81e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 1.91e3
0%
CS 12346F
2.15e7
31.07
ES 12378F
2.49e7
31.61
ES 23478F
2.41e7
32.74
Abs. Int.
7.04e6
3.52e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.76e3
0%
CS 12346F
1.39e7
31.07
ES 12378F
1.59e7
31.61
ES 23478F
1.55e7
32.74
Abs. Int.
4.65e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.49e3
0%
Abs. Int.
1.13e4
5.64e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 1.03e4
123478F
4.98e8
36.07
123678F
5.07e8
36.21
234678F
4.79e8
36.86
123789F
4.48e8
37.85
Abs. Int.
1.75e8
8.76e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 9.90e3
123478F
4.04e8
36.07
123678F
4.09e8
36.20
234678F
3.90e8
36.86
123789F
3.61e8
37.85
Abs. Int.
1.40e8
7.00e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.18e3
ES 123478F
1.03e7
36.05
ES 123678F
1.17e7
36.19
CS 123469F
8.96e6
36.50
ES 234678F
1.03e7
36.84
ES 123789F
9.85e6
37.83
Abs. Int.
3.65e6
1.82e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 8.53e3
ES 123478F
1.93e7
36.05
ES 123678F
2.18e7
36.19
CS 123469F
1.68e7
36.50
ES 234678F
2.02e7
36.84
ES 123789F
1.89e7
37.83
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.27e3
Abs. Int.
1.56e4
7.79e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e8
39.36
1234789F
3.44e8
40.72
Abs. Int.
1.55e8
7.76e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e8
39.36
1234789F
3.35e8
40.72
Abs. Int.
1.53e8
7.64e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
Abs. Int.
2.81e6
1.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
Abs. Int.
1.04e4
5.21e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
OCDF
5.22e8
43.02
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
OCDF
5.78e8
43.02
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
ES OCDF
2.06e7
43.01
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDF
2.26e7
43.01
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.03e7
5.16e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.68e6
4.34e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.45e7
1.22e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.49e7
7.47e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.65e7
8.23e6
0.00e0

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

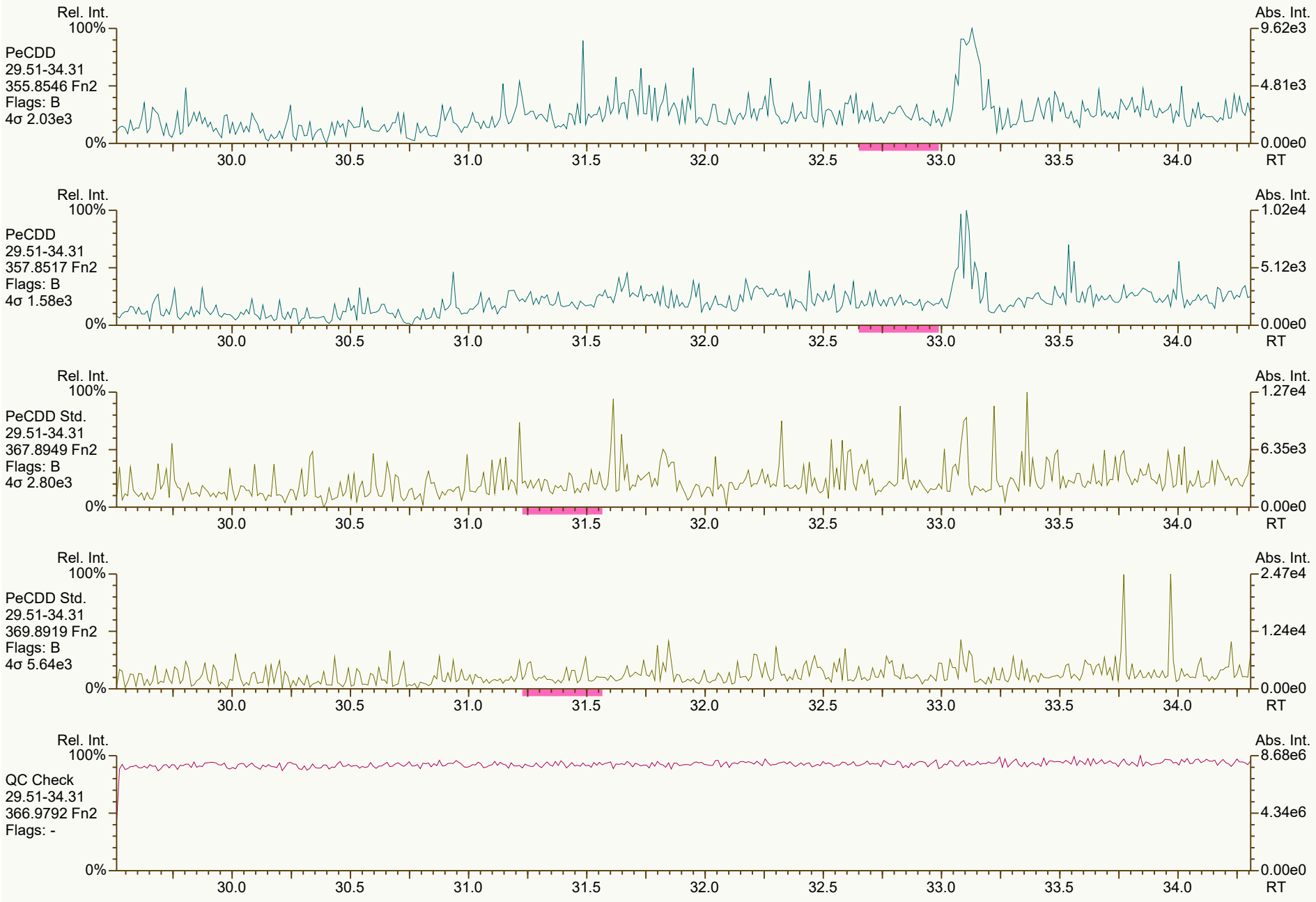
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4939, 4247, 1318 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1*


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: B
4σ 2.56e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.75e3
0%
Abs. Int.
8.16e3
4.08e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: B
4σ 7.98e3
0%
Abs. Int.
2.72e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: B
4σ 6.62e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: B
4σ 2.80e3
0%
Abs. Int.
1.27e4
6.35e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: B
4σ 5.64e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.68e6
4.34e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

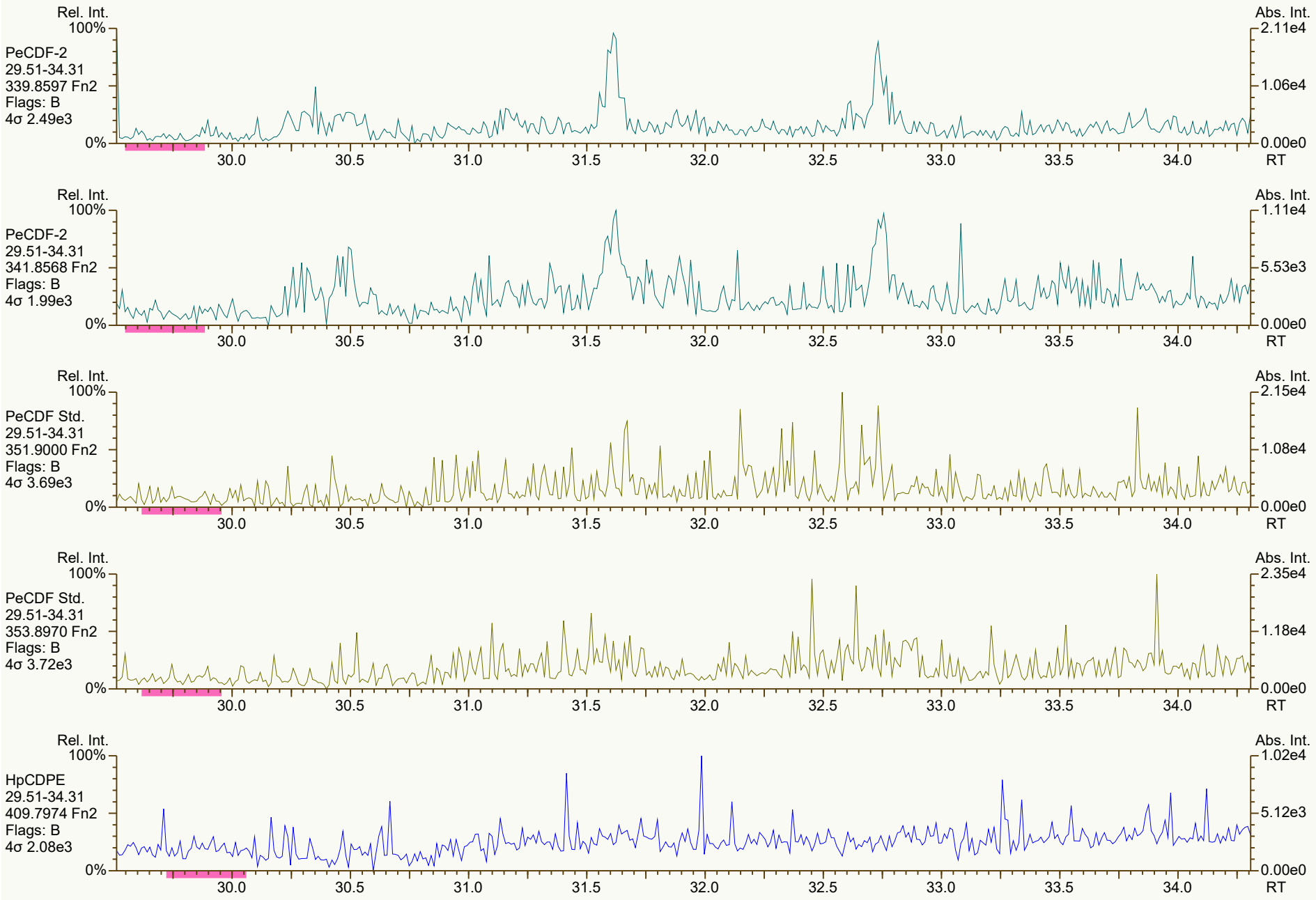

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: B
4σ 5.99e3
0%
Abs. Int.
1.61e4
8.05e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.45e7
1.22e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

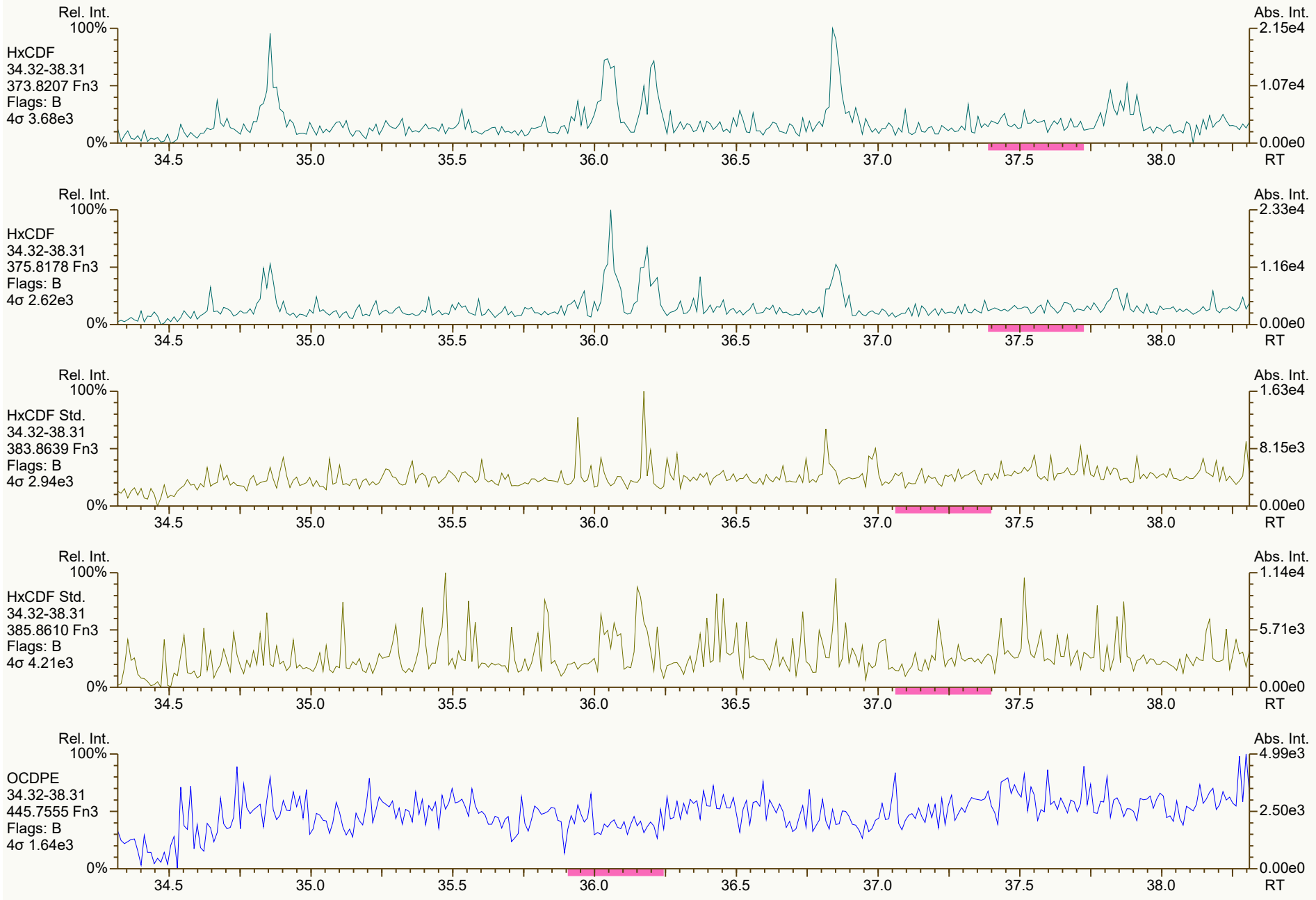

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.62e4
8.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: B
4σ 2.39e3
0%
Abs. Int.
2.45e4
1.23e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: B
4σ 2.97e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.49e7
7.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.07e4
5.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.42e4
7.11e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.65e7
8.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
2468F
3.48e5*
22.78
Abs. Int.
7.07e4
3.53e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
2468F
5.04e5*
22.78
Abs. Int.
1.06e5
5.32e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
Abs. Int.
5.11e4
2.56e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
Abs. Int.
2.83e4
1.42e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
9.47e3
4.73e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
8.70e3
4.35e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.84e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.49e3
4.75e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 3.09e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.03e7
5.16e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: B
4σ 2.49e3
0%
Abs. Int.
2.11e4
1.06e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: B
4σ 3.69e3
0%
Abs. Int.
2.15e4
1.08e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: B
4σ 3.72e3
0%
Abs. Int.
2.35e4
1.18e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
2.15e4
1.07e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.33e4
1.16e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: B
4σ 4.21e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.64e3
0%
Abs. Int.
4.99e3
2.50e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

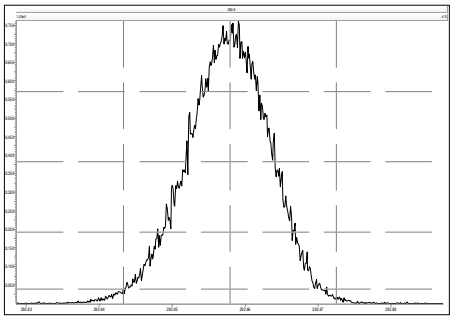

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: B
4σ 2.83e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: B
4σ 5.26e3
0%
Abs. Int.
2.80e4
1.40e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.49e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.02e4
5.08e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
6.88e3
3.44e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.40e3
0%
Abs. Int.
4.10e3
2.05e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

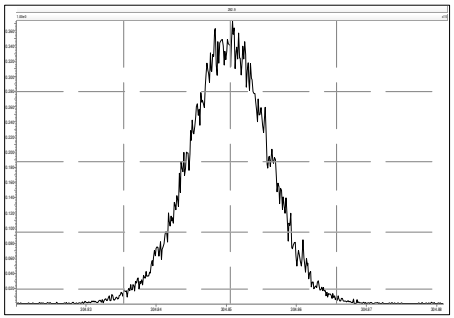
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

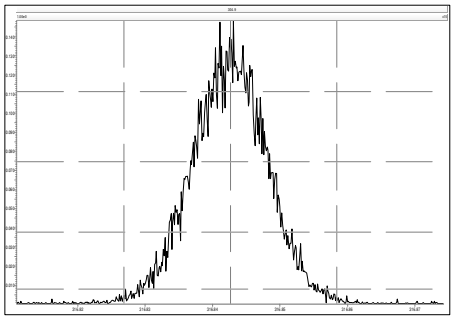
M 292.9824 R 10731



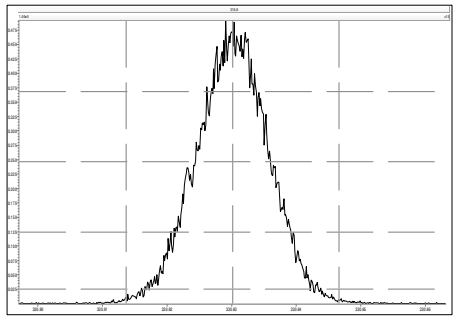
M 304.9824 R 11311



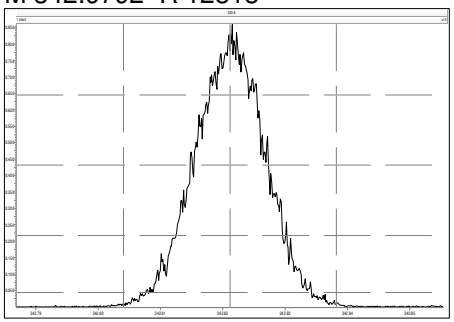
M 316.9824 R 12373



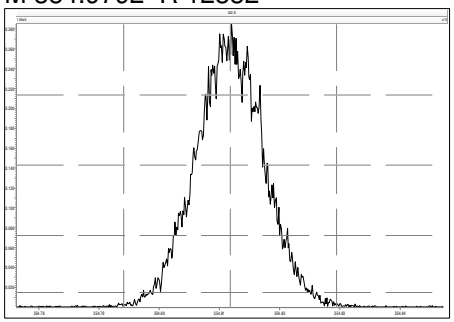
M 330.9792 R 12887



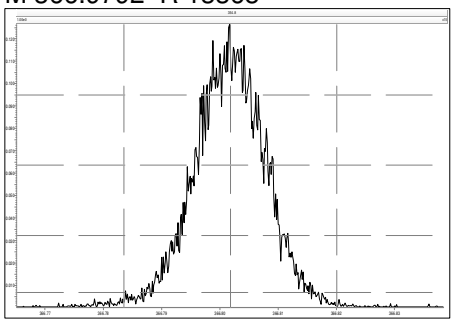
M 342.9792 R 12818



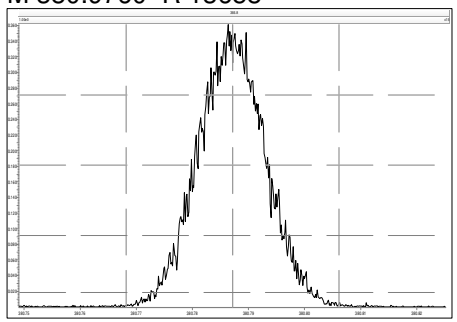
M 354.9792 R 12882



M 366.9792 R 13368



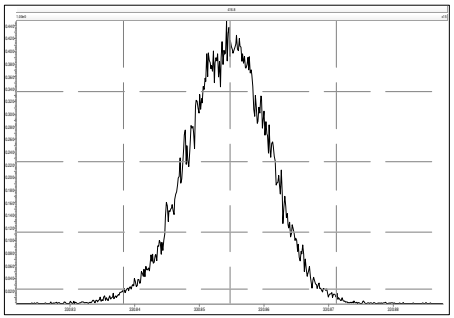
M 380.9760 R 13658



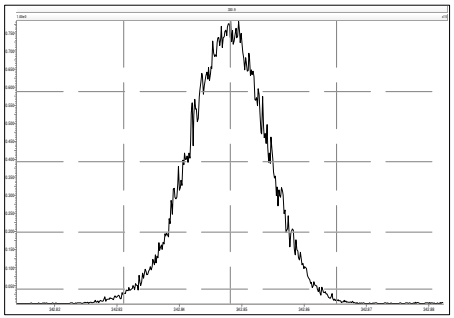
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

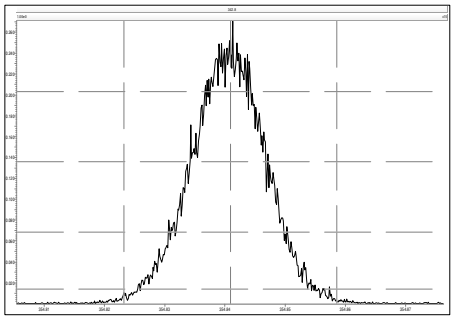
M 330.9792 R 11112



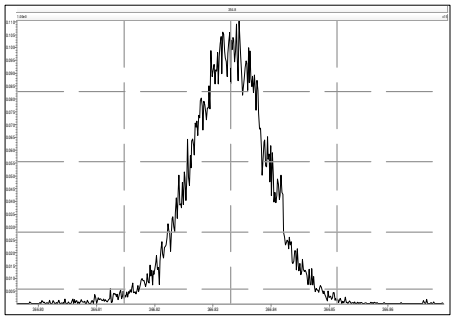
M 342.9792 R 11909



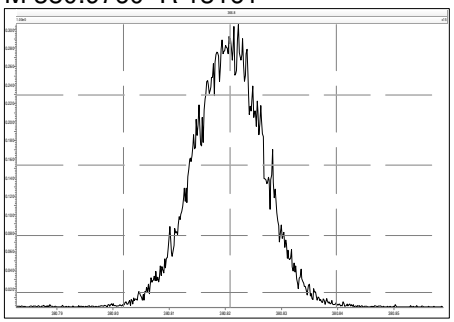
M 354.9792 R 11684



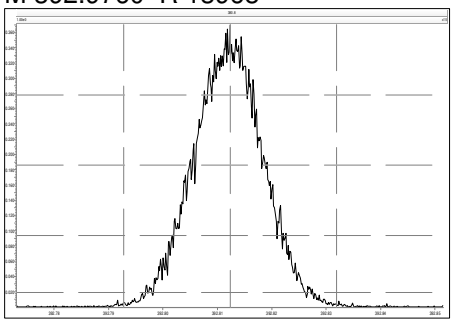
M 366.9792 R 11962



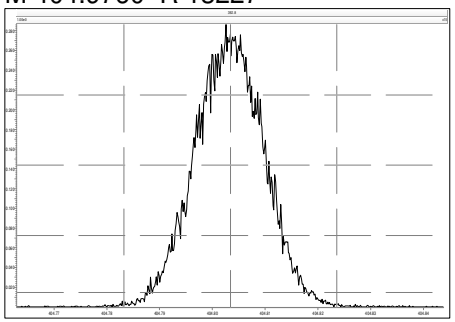
M 380.9760 R 13161



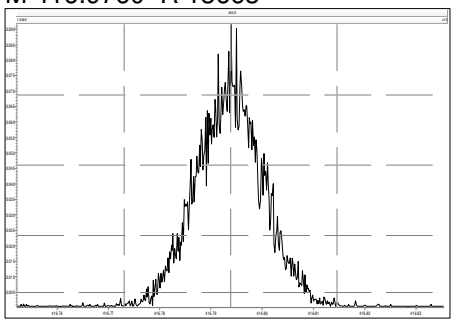
M 392.9760 R 13968



M 404.9760 R 13227



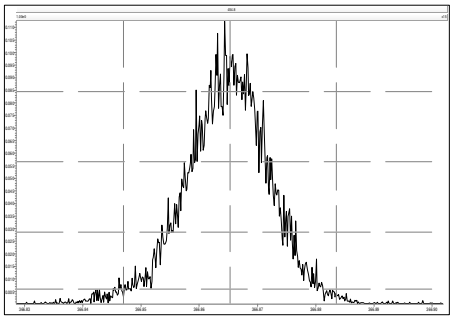
M 416.9760 R 13663



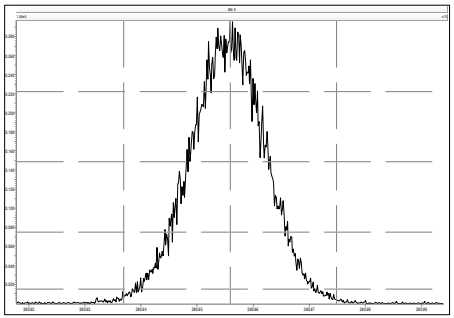
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

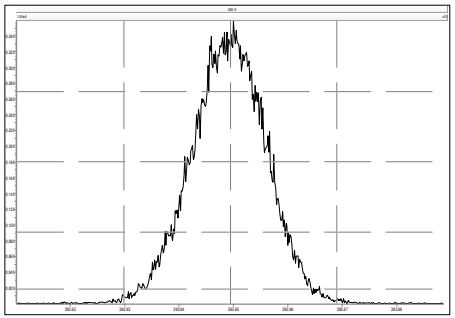
M 366.9792 R 10680



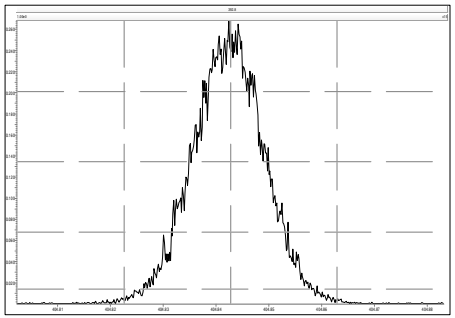
M 380.9760 R 12315



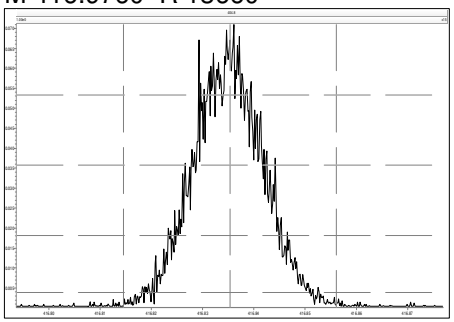
M 392.9760 R 12197



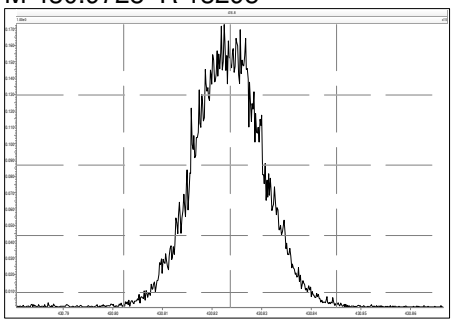
M 404.9760 R 12433



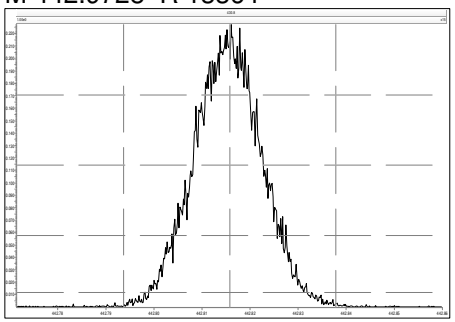
M 416.9760 R 13660



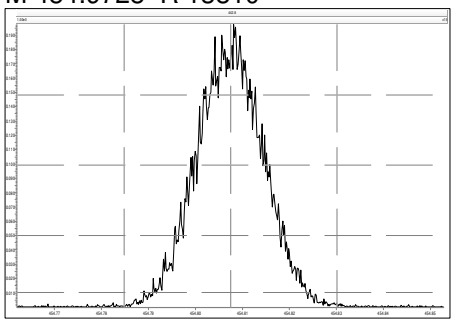
M 430.9728 R 13295



M 442.9728 R 13364



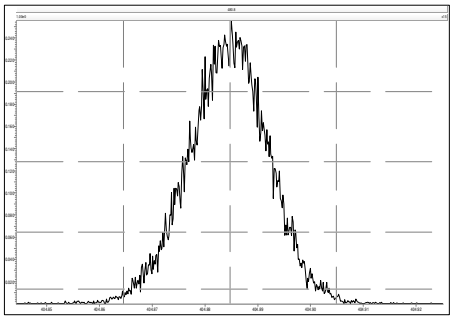
M 454.9728 R 13810



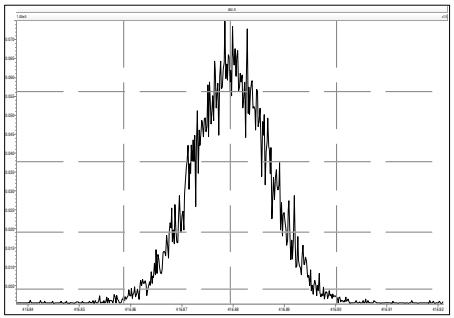
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

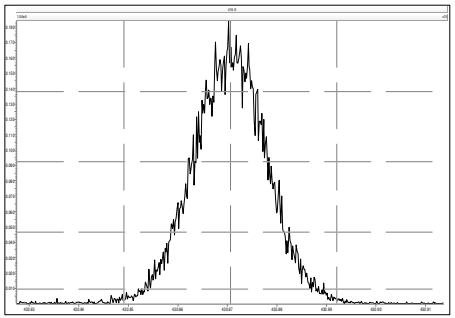
M 404.9760 R 11679



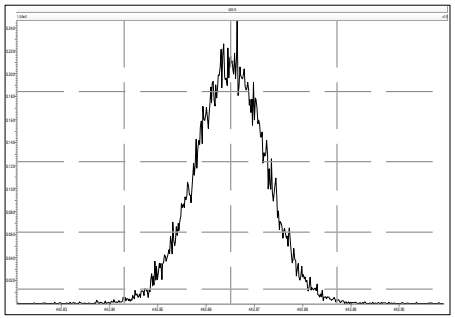
M 416.9760 R 12886



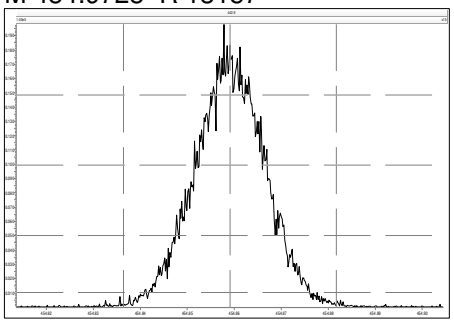
M 430.9728 R 12253



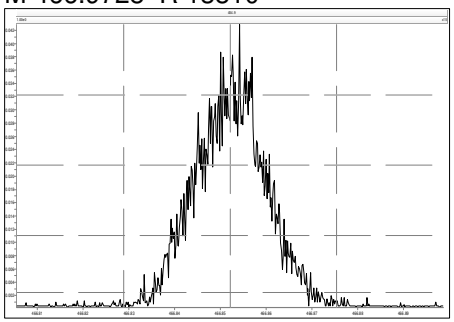
M 442.9728 R 12756



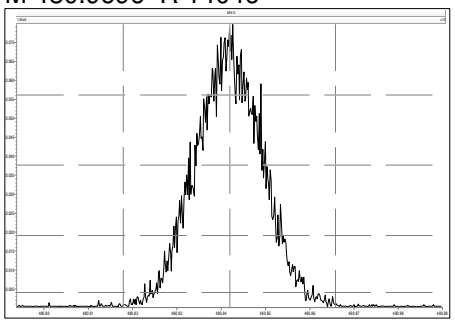
M 454.9728 R 13157



M 466.9728 R 13810



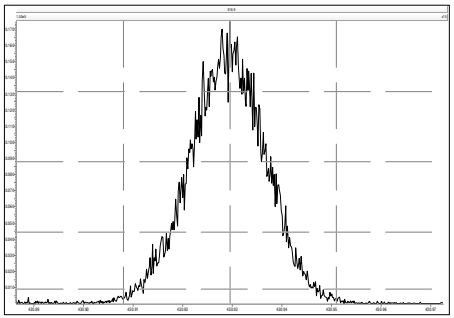
M 480.9696 R 14046



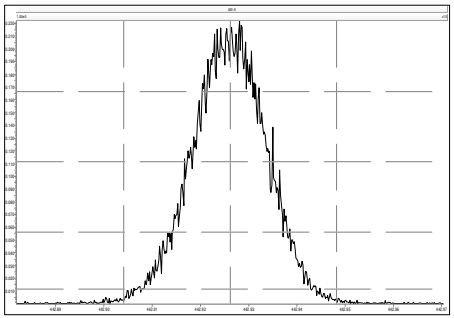
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

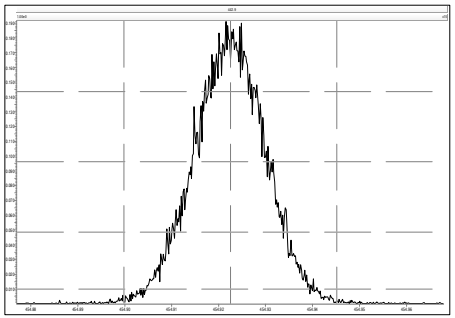
M 430.9728 R 11574



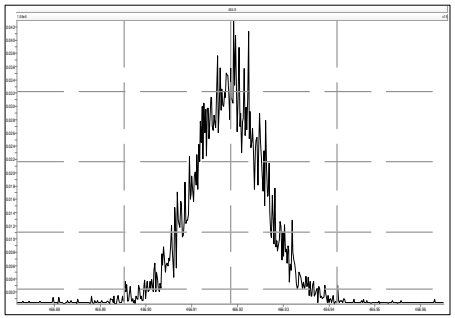
M 442.9728 R 12198



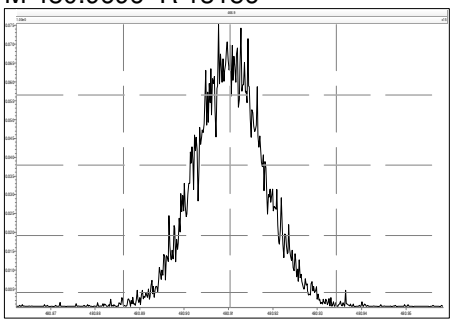
M 454.9728 R 12950



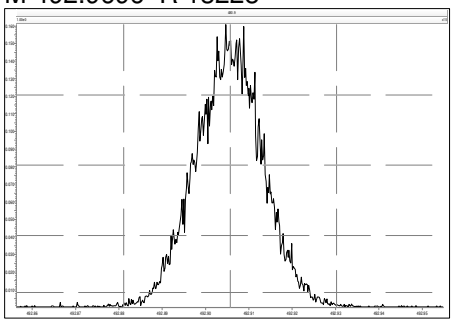
M 466.9728 R 13088



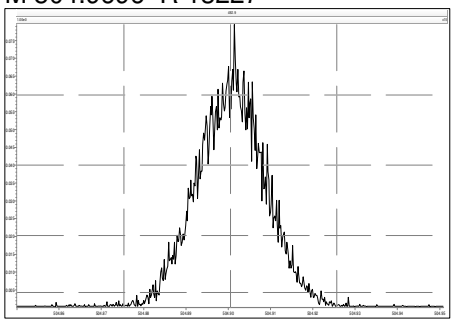
M 480.9696 R 13156



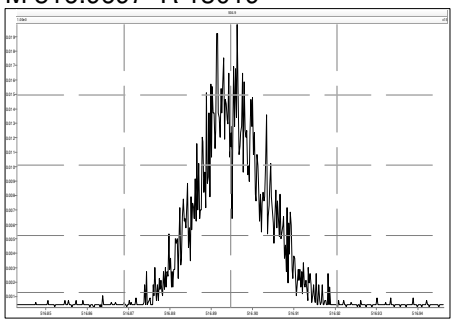
M 492.9696 R 13228



M 504.9696 R 13227



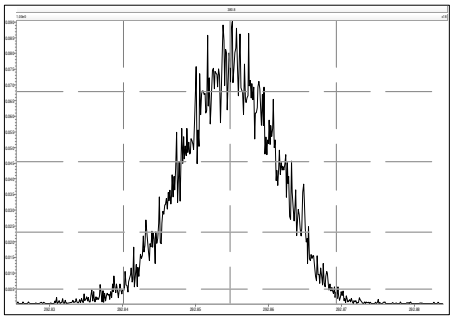
M 516.9697 R 13019



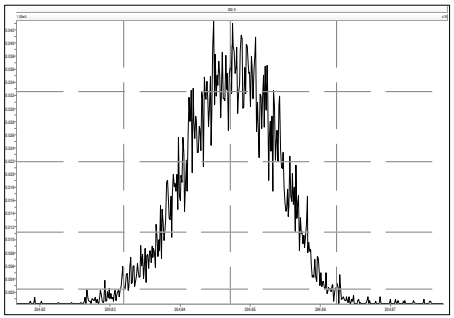
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

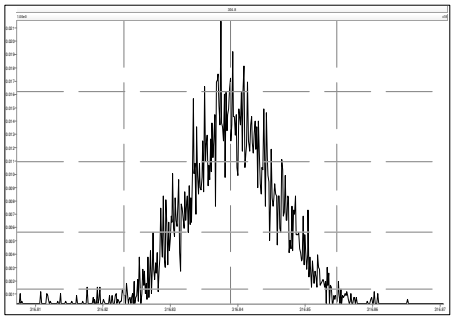
M 292.9824 R 10122



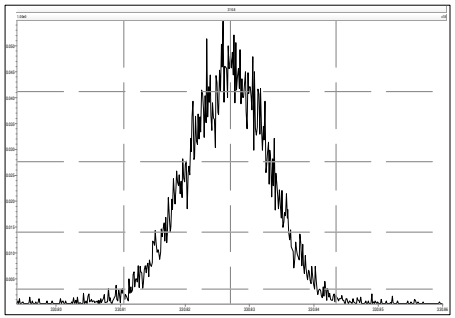
M 304.9824 R 10329



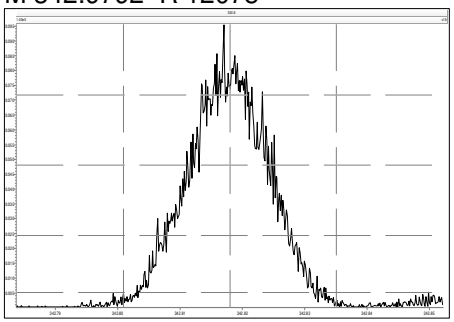
M 316.9824 R 11964



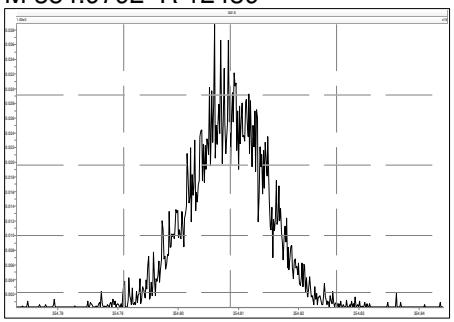
M 330.9792 R 11062



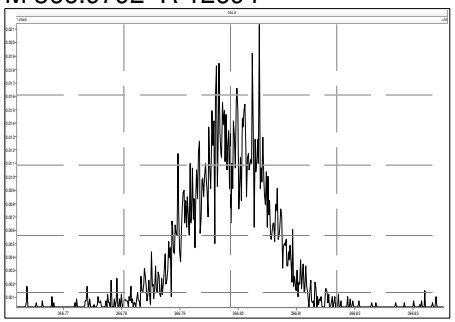
M 342.9792 R 12075



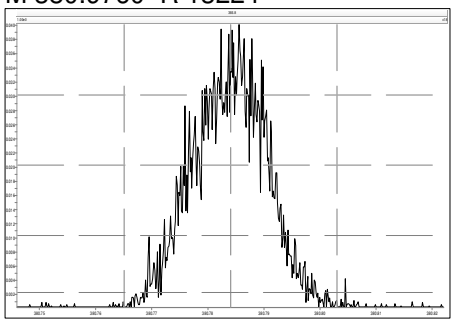
M 354.9792 R 12439



M 366.9792 R 12694



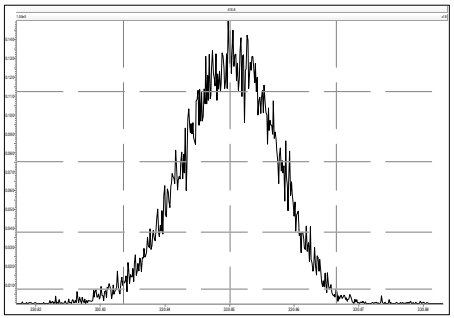
M 380.9760 R 13224



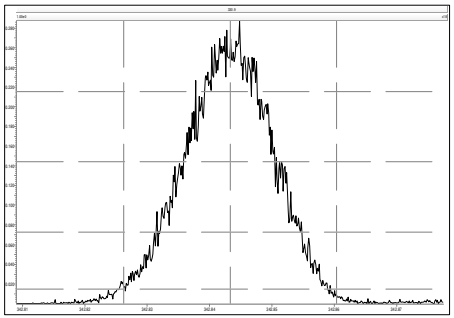
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

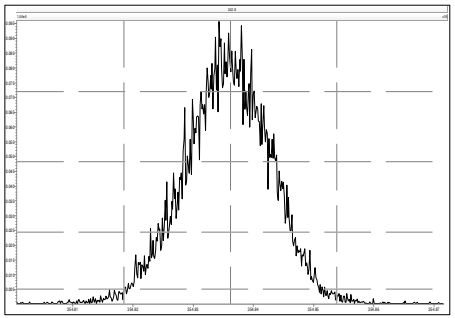
M 330.9792 R 10730



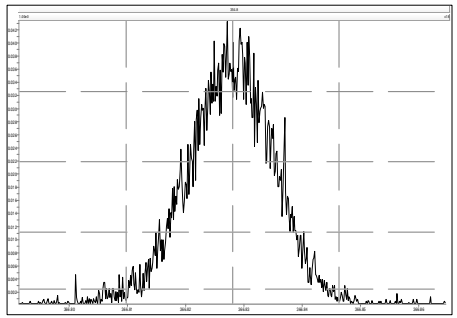
M 342.9792 R 10039



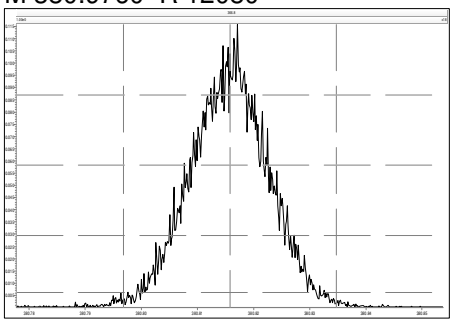
M 354.9792 R 11108



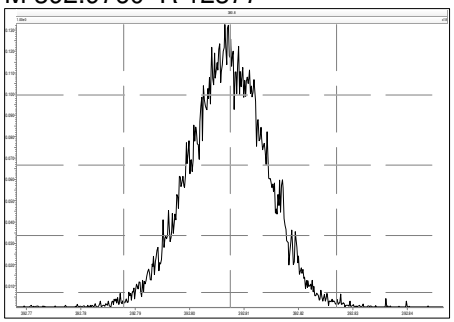
M 366.9792 R 11520



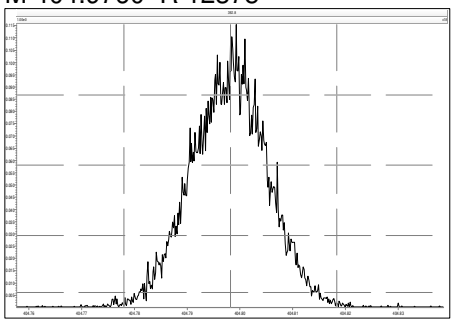
M 380.9760 R 12080



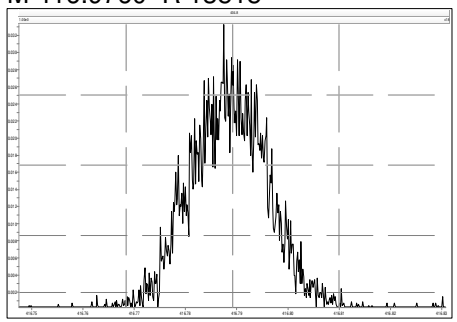
M 392.9760 R 12377



M 404.9760 R 12375



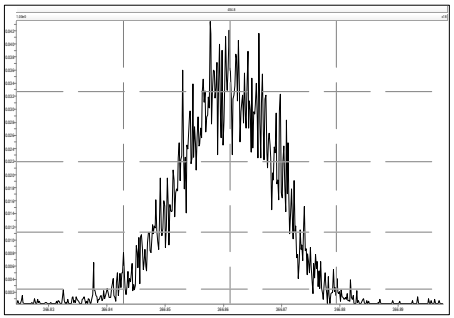
M 416.9760 R 13515



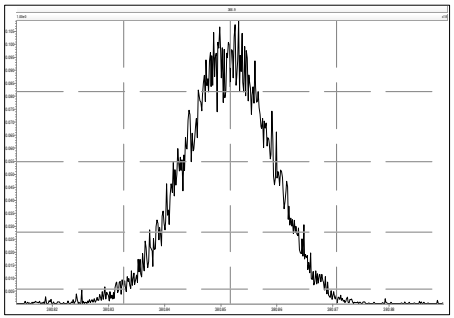
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

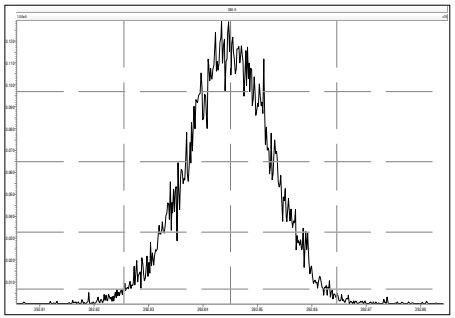
M 366.9792 R 10866



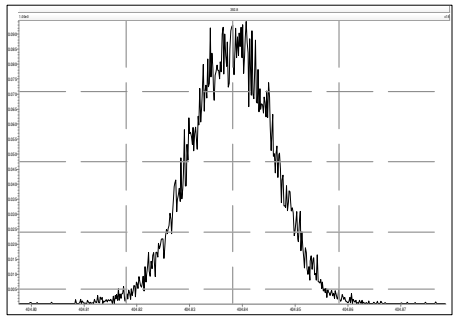
M 380.9760 R 10416



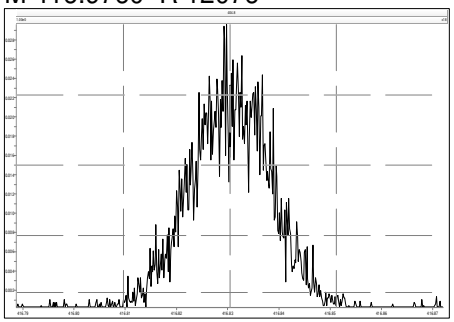
M 392.9760 R 10640



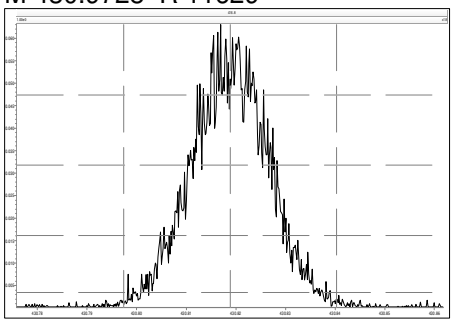
M 404.9760 R 11957



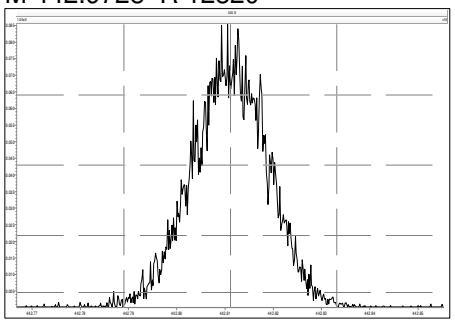
M 416.9760 R 12076



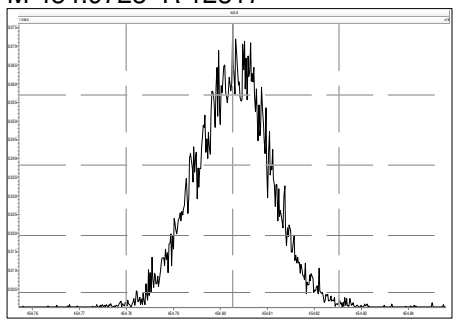
M 430.9728 R 11629



M 442.9728 R 12820



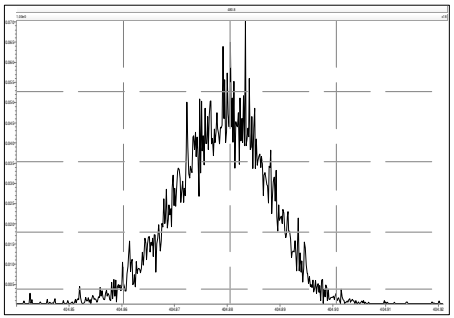
M 454.9728 R 12317



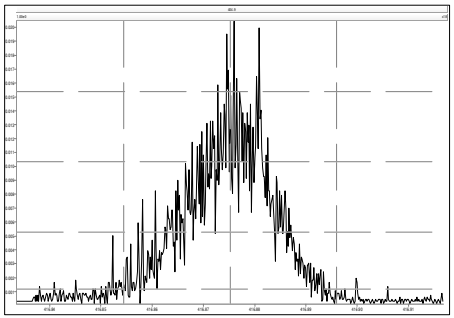
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

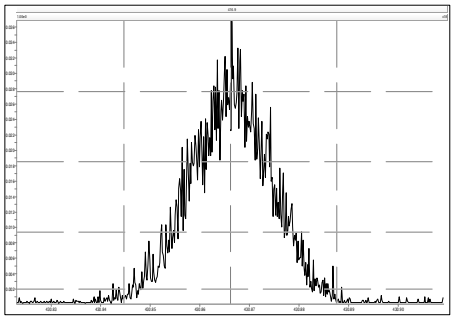
M 404.9760 R 10505



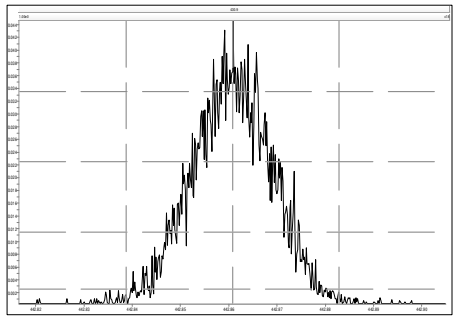
M 416.9760 R 12500



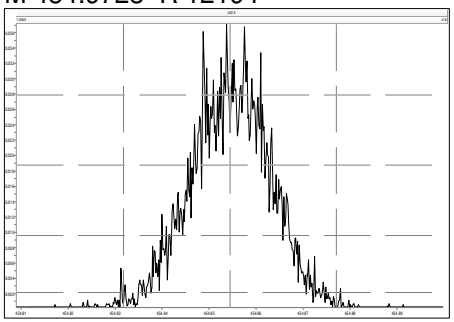
M 430.9728 R 11362



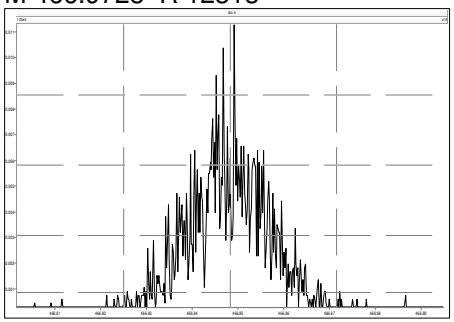
M 442.9728 R 12756



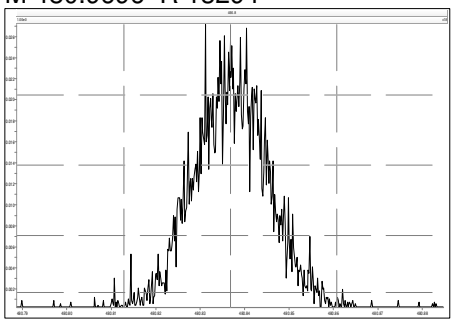
M 454.9728 R 12194



M 466.9728 R 12313



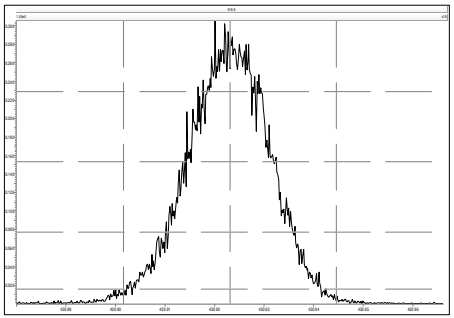
M 480.9696 R 13294



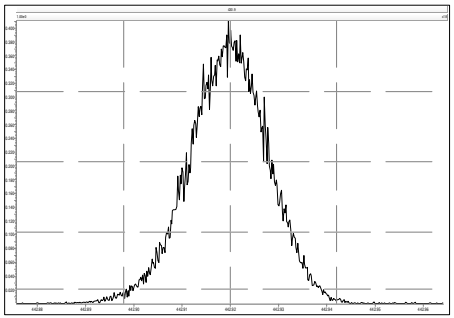
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

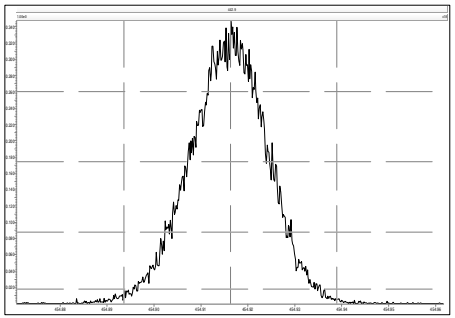
M 430.9728 R 11312



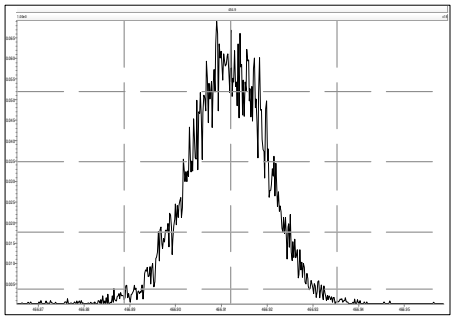
M 442.9728 R 11110



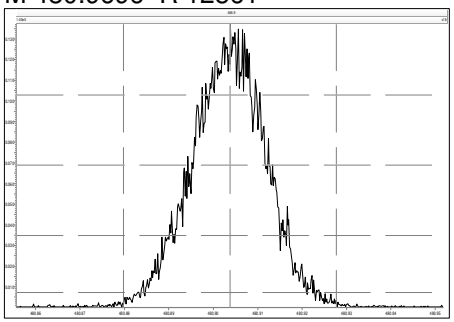
M 454.9728 R 11906



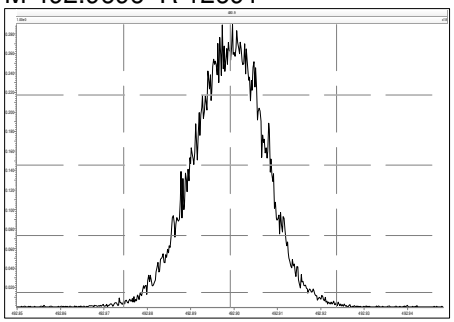
M 466.9728 R 12562



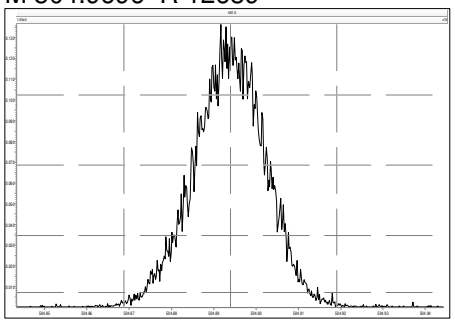
M 480.9696 R 12561



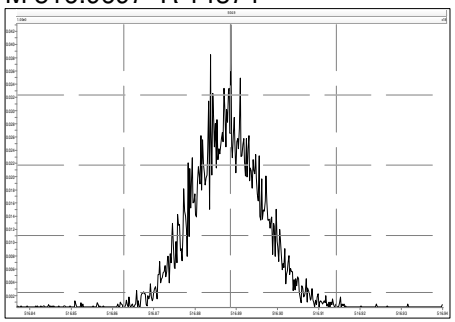
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



Lab ID: OPR1_18819_DF

REVIEWED
Amber_Kornegay , 1/21/2022, 3:20:52 PM

Acq'd: 20 Jan 2022 11:32 DTF

Wt/Vol: 1 uL

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Client ID: 0_18819_OPR001

UTP: 21-Jan-2022 10:45:30 MLS

J-level: 0.25 pg/uL Split: 1

Checkcode: 697-611-TLV

Datafile: 220120C02

Report: 21 Jan 2022 10:47 MS

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.68		1.0008	1.0007	-0.2	2.12E+06	0.81	Y	1.18	12.1	5655.871	0.321
12378-PeCDD	34.00		1.0006	1.0006	0	6.85E+06	1.65	Y	1.04	52	6070.623	0.483
123478-HxCDD	37.86		1.0004	1.0004	0	7.78E+06	1.28	Y	1.09	59.9	4977.852	0.336
123678-HxCDD	37.98		1.0034	1.0034	0	8.21E+06	1.27	Y	1.15	56.9	4977.852	0.327
123789-HxCDD	38.26		1.0109	1.0109	0	7.91E+06	1.24	Y	1.05	51.3	4977.852	0.31
1234678-HpCDD	40.88		1.0003	1.0003	0	7.52E+06	1.06	Y	1.06	56.3	4678.282	0.284
OCDD	43.53		1.0002	1.0003	+0.3	9.74E+06	0.94	Y	1.13	114	3010.956	0.402
2378-TCDF	27.84		1.0008	1.0009	+0.2	2.82E+06	0.82	Y	1.08	10.9	6908.662	0.297
12378-PeCDF	32.54		1.0005	1.0005	0	1.24E+07	1.53	Y	1.02	51.3	9493.019	0.387
23478-PeCDF	33.65		1.0005	1.0005	0	1.33E+07	1.58	Y	1.02	56.6	9493.019	0.403
123478-HxCDF	36.86		1.0004	1.0004	0	1.24E+07	1.24	Y	1.27	56.5	3655.327	0.153
123678-HxCDF	37.01		1.0004	1.0005	+0.2	1.38E+07	1.25	Y	1.15	56.4	3655.327	0.139
234678-HxCDF	37.69		1.0004	1.0005	+0.2	9.51E+06	1.23	Y	1.19	57.4	3655.327	0.208
123789-HxCDF	38.62		1.0004	1.0004	0	1.04E+07	1.27	Y	1.16	52.5	3655.327	0.161
1234678-HpCDF	39.95		1.0002	1.0003	+0.2	1.37E+07	1.04	Y	1.37	54.9	3595.802	0.104
1234789-HpCDF	41.34		1.0003	1.0003	0	9.41E+06	1.07	Y	1.31	55.9	3595.802	0.181
OCDF	43.71		1.0002	1.0003	+0.3	1.28E+07	0.89	Y	1.07	115	3429.035	0.3

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.66	1.0233	1.0234	+0.2	1.48E+07	0.79	Y	1.05	90.8
ES 12378-PeCDD	33.98	1.2121	1.2133	+2.4	1.27E+07	1.59	Y	0.88	92.9
ES 123478-HxCDD	37.85	0.9921	0.9922	+0.2	1.19E+07	1.26	Y	0.97	90.3
ES 123678-HxCDD	37.97	0.9951	0.9952	+0.2	1.26E+07	1.19	Y	0.94	98
ES 123789-HxCDD	38.25	1.0025	1.0027	+0.5	1.47E+07	1.26	Y	1.09	99.3
ES 1234678-HpCDD	40.87	1.0709	1.0712	+0.7	1.26E+07	1.12	Y	0.91	102
ES OCDD	43.51	1.1403	1.1407	+1.0	1.51E+07	0.90	Y	0.62	89.1
ES 2378-TCDF	27.82	1.0506	1.0512	+1.0	2.41E+07	0.82	Y	1.06	87.1
ES 12378-PeCDF	32.53	1.2281	1.2292	+2.1	2.37E+07	1.49	Y	0.91	99.6
ES 23478-PeCDF	33.64	1.2698	1.2712	+2.8	2.30E+07	1.56	Y	0.88	99.7
ES 123478-HxCDF	36.85	0.9657	0.9659	+0.4	1.73E+07	0.52	Y	1.20	106
ES 123678-HxCDF	36.99	0.9695	0.9696	+0.2	2.13E+07	0.53	Y	1.35	116
ES 234678-HxCDF	37.67	0.9874	0.9874	0	1.40E+07	0.56	Y	1.24	82.7
ES 123789-HxCDF	38.60	1.0116	1.0120	+0.9	1.71E+07	0.53	Y	1.16	109
ES 1234678-HpCDF	39.94	1.0467	1.0470	+0.7	1.83E+07	0.49	Y	0.97	139
ES 1234789-HpCDF	41.33	1.0830	1.0833	+0.7	1.29E+07	0.48	Y	0.85	111
ES OCDF	43.70	1.1451	1.1455	+1.0	2.07E+07	0.93	Y	0.81	94.2

Lab ID: OPR1_18819_DF | **Acq'd:** 20 Jan 2022 11:32 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 | **UTP:** 21-Jan-2022 10:45:30 MLS | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 697-611-TLV

Datafile: 220120C02 | **Report:** 21 Jan 2022 10:47 MS | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	28.01		-	-	-	1.56E+07	0.82	Y	-	-
JS 1234-TCDF	26.46		-	-	-	2.61E+07	0.83	Y	-	-
JS 123467-HxCDD	38.15		-	-	-	6.79E+06	1.32	Y	-	-
CS 37Cl-2378-TCDD	28.69		1.0241	1.0242	+0.2	6.60E+06	n/a	-	1.20	88.2
CS 12347-PeCDD	33.46		1.1943	1.1947	+0.8	3.81E+06	1.69	Y	0.75	32.5
CS 12346-PeCDF	32.00		1.2083	1.2091	+1.5	2.13E+07	1.52	Y	0.85	95.9
CS 123469-HxCDF	37.30		0.9778	0.9779	+0.2	1.82E+07	0.54	Y	1.12	120
CS 1234689-HpCDF	40.34		1.0571	1.0574	+0.7	1.52E+07	0.47	Y	0.89	126
~~SS 37Cl-2378-TCDD~~	~~28.69~~		~~1.0241~~	~~1.0242~~	~~+0.2~~	~~6.60E+06~~	~~n/a~~		~~1.15~~	~~97.3~~
~~SS 12347-PeCDD~~	~~33.46~~		~~1.1943~~	~~1.1947~~	~~+0.8~~	~~3.81E+06~~	~~1.69~~	~~Y~~	~~0.86~~	~~34.9~~
~~SS 12346-PeCDF~~	~~32.00~~		~~1.2083~~	~~1.2091~~	~~+1.5~~	~~2.13E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~96.1~~
~~SS 123469-HxCDF~~	~~37.30~~		~~0.9778~~	~~0.9779~~	~~+0.2~~	~~1.82E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~104~~
~~SS 1234689-HpCDF~~	~~40.34~~		~~1.0571~~	~~1.0574~~	~~+0.7~~	~~1.52E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~90.4~~

Totals	Conc	EMPC
Total TCDD	60	60
Total PeCDD	82.9	82.9
Total HxCDD	186	186
Total HpCDD	71.1	71.1
Total Tetra-Octa Dioxins	514	514
Total TCDF	71.1	71.1
Total PeCDF	206	206
Total HxCDF	377	377
Total HpCDF	111	111
Total Tetra-Octa Furans	880	880
Total Tetra-Octa Dioxins & Furans	1390	1390

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.811	0.81
Response	2.12E+06	2.12E+06

Lab ID: OPR1_18819_DF **Acq'd:** 20 Jan 2022 11:32 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 **UTP:** 21-Jan-2022 10:45:30 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 697-611-TLV

Datafile: 220120C02 **Report:** 21 Jan 2022 10:47 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.08		0.8755	0.8751	-0.6	3.10E+06	0.82	Y	1.18	17.7	5655.871	0.321
1379-TCDD	NotFnd		0.8876						1.18		5655.871	0.321
1369-TCDD	NotFnd		0.9023						1.18		5655.871	0.321
1469-TCDD	NotFnd		0.9291						1.18		5655.871	0.321
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		5655.871	0.321
1378-TCDD	NotFnd		0.9440						1.18		5655.871	0.321
1268-TCDD	NotFnd		0.9506						1.18		5655.871	0.321
1478-TCDD	NotFnd		0.9591						1.18		5655.871	0.321
1279-TCDD	NotFnd		0.9649						1.18		5655.871	0.321
1234/1269-TCDD	NotFnd		0.9771						1.18		5655.871	0.321
1236-TCDD	NotFnd		0.9820						1.18		5655.871	0.321
1237/1238-TCDD	NotFnd		0.9908						1.18		5655.871	0.321
1239-TCDD	28.52		0.9954	0.9952	-0.3	2.17E+06	0.80	Y	1.18	12.4	5655.871	0.321
2378-TCDD	**28.68**		**1.0008**	1.0007	**-0.2**	2.12E+06	0.81	Y	**1.18**	**12.1**	**5655.871**	**0.321**
1278-TCDD	NotFnd		1.0121						1.18		5655.871	0.321
1267-TCDD	NotFnd		1.0167						1.18		5655.871	0.321
1289-TCDD	29.64		1.0341	1.0343	+0.4	3.12E+06	0.85	Y	1.18	17.8	5655.871	0.321
12479/12468-PeCDD	31.49		0.9273	0.9267	-1.1	2.01E+06	1.56	Y	1.04	15.3	6070.623	0.483
12469-PeCDD	NotFnd		0.9430						1.04		6070.623	0.483
12368-PeCDD	NotFnd		0.9592						1.04		6070.623	0.483
12478-PeCDD	NotFnd		0.9647						1.04		6070.623	0.483
12379-PeCDD	NotFnd		0.9676						1.04		6070.623	0.483
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		6070.623	0.483
12346/12347-PeCDD	NotFnd		0.9860						1.04		6070.623	0.483
12378-PeCDD	34.00		**1.0006**	**1.0006**	**0**	**6.85E+06**	**1.65**	**Y**	**1.04**	**52**	**6070.623**	**0.483**
12367-PeCDD	NotFnd		1.0034						1.04		6070.623	0.483
12389-PeCDD	34.46		1.0134	1.0142	+1.7	2.05E+06	1.71	Y	1.04	15.6	6070.623	0.483
124679/124689-HxCDD	36.13		0.9545	0.9545	0	2.52E+06	1.24	Y	1.10	17.6	4977.852	0.323
123468-HxCDD	NotFnd		0.9715						1.10		4977.852	0.323
123679/123689-HxCDD	NotFnd		0.9793						1.10		4977.852	0.323
123469-HxCDD	NotFnd		0.9829						1.10		4977.852	0.323
123478-HxCDD	37.86		**1.0004**	**1.0004**	**0**	**7.78E+06**	**1.28**	**Y**	1.09	**59.9**	**4977.852**	**0.336**
123678-HxCDD	37.98		**1.0034**	**1.0034**	**0**	**8.21E+06**	**1.27**	**Y**	1.15	**56.9**	**4977.852**	**0.327**
123467-HxCDD	NotFnd		1.0082						1.10		4977.852	0.323
123789-HxCDD	38.26		**1.0109**	**1.0109**	**0**	**7.91E+06**	**1.24**	**Y**	1.05	**51.3**	**4977.852**	**0.31**

Lab ID: OPR1_18819_DF | **Acq'd:** 20 Jan 2022 11:32 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 | **UTP:** 21-Jan-2022 10:45:30 MLS | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 697-611-TLV

Datafile: 220120C02 | **Report:** 21 Jan 2022 10:47 MS | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.21		0.9838	0.9839	+0.2	1.97E+06	1.06	Y	1.06	14.8	4678.282	0.284
1234678-HpCDD	**40.88**		**1.0003**	**1.0003**	**0**	**7.52E+06**	**1.06**	**Y**	**1.06**	**56.3**	**4678.282**	**0.284**
OCDD	**43.53**		**1.0002**	**1.0003**	**+0.3**	**9.74E+06**	**0.94**	**Y**	**1.13**	**114**	**3010.956**	**0.402**
OCDD-a	NotFnd		1.0002						0.07		3401.432	7.11
1368-TCDF	23.02		0.8282	0.8274	-1.1	4.64E+06	0.80	Y	1.08	17.9	6908.662	0.297
1468-TCDF	NotFnd		0.8485						1.08		6908.662	0.297
2468-TCDF	24.20		0.8709	0.8701	-1.2	1.23E+06	0.80	Y	1.08	4.74	6908.662	0.297
1346/1246-TCDF	NotFnd		0.8829						1.08		6908.662	0.297
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		6908.662	0.297
1348-TCDF	NotFnd		0.8980						1.08		6908.662	0.297
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		6908.662	0.297
1268-TCDF	NotFnd		0.9158						1.08		6908.662	0.297
1467-TCDF	NotFnd		0.9206						1.08		6908.662	0.297
1478-TCDF	NotFnd		0.9266						1.08		6908.662	0.297
1369/1237-TCDF	NotFnd		0.9397						1.08		6908.662	0.297
2467-TCDF	NotFnd		0.9440						1.08		6908.662	0.297
2368-TCDF	NotFnd		0.9497						1.08		6908.662	0.297
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		6908.662	0.297
1278-TCDF	NotFnd		0.9690						1.08		6908.662	0.297
1349-TCDF	NotFnd		0.9730						1.08		6908.662	0.297
1267-TCDF	NotFnd		0.9787						1.08		6908.662	0.297
2346/1249-TCDF	NotFnd		0.9850						1.08		6908.662	0.297
2347/1279-TCDF	NotFnd		0.9929						1.08		6908.662	0.297
2348-TCDF	27.73		0.9970	0.9969	-0.2	5.04E+06	0.78	Y	1.08	19.4	6908.662	0.297
2378-TCDF	**27.84**		**1.0008**	**1.0009**	**+0.2**	**2.82E+06**	**0.82**	**Y**	**1.08**	**10.9**	**6908.662**	**0.297**
2367/3467-TCDF	NotFnd		1.0136						1.08		6908.662	0.297
1269-TCDF	NotFnd		1.0221						1.08		6908.662	0.297
1239-TCDF	NotFnd		1.0319						1.08		6908.662	0.297
1289-TCDF	29.82		1.0740	1.0719	-3.8	4.74E+06	0.79	Y	1.08	18.2	6908.662	0.297
13468/12468-PeCDF	29.72		0.9145	0.9137	-1.4	2.05E+07	1.56	Y	1.02	86	3957.628	0.165
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		9493.019	0.395
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		9493.019	0.395
14678-PeCDF	NotFnd		0.9695						1.02		9493.019	0.395
13479-PeCDF	NotFnd		0.9724						1.02		9493.019	0.395
13469/12479-PeCDF	NotFnd		0.9801						1.02		9493.019	0.395
12346-PeCDF	NotFnd		0.9842						1.02		9493.019	0.395

Lab ID: OPR1_18819_DF | **Acq'd: 20 Jan 2022 11:32 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18819_OPR001 | **UTP: 21-Jan-2022 10:45:30 MLS** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 697-611-TLV**

Datafile: 220120C02 | **Report: 21 Jan 2022 10:47 MS** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		9493.019	0.395
12347-PeCDF	NotFnd		0.9895						1.02		9493.019	0.395
12348-PeCDF	NotFnd		0.9941						1.02		9493.019	0.395
12378-PeCDF	**32.54**		**1.0005**	**1.0005**	**0**	**1.24E+07**	**1.53**	**Y**	**1.02**	**51.3**	**9493.019**	**0.387**
12678/12367-PeCDF	NotFnd		1.0090						1.02		9493.019	0.395
12379-PeCDF	NotFnd		1.0142						1.02		9493.019	0.395
12679-PeCDF	NotFnd		0.9931						1.02		9493.019	0.395
23467/12369-PeCDF	NotFnd		0.9966						1.02		9493.019	0.395
23478-PeCDF	**33.65**		**1.0005**	**1.0005**	**0**	**1.33E+07**	**1.58**	**Y**	**1.02**	**56.6**	**9493.019**	**0.403**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		9493.019	0.395
12349-PeCDF	NotFnd		1.0101						1.02		9493.019	0.395
12389-PeCDF	34.75		1.0322	1.0331	+1.9	2.96E+06	1.70	Y	1.02	12.4	9493.019	0.395
123468-HxCDF	35.50		0.9627	0.9635	+1.7	3.20E+07	1.22	Y	1.19	154	3655.327	0.162
124678/134678-HxCDF	NotFnd		0.9684						1.19		3655.327	0.162
134679-HxCDF	NotFnd		0.9747						1.19		3655.327	0.162
124679-HxCDF	NotFnd		0.9802						1.19		3655.327	0.162
124689-HxCDF	NotFnd		0.9858						1.19		3655.327	0.162
123467-HxCDF	NotFnd		0.9972						1.19		3655.327	0.162
123478-HxCDF	**36.86**		**1.0004**	**1.0004**	**0**	**1.24E+07**	**1.24**	**Y**	**1.27**	**56.5**	**3655.327**	**0.153**
123678-HxCDF	**37.01**		**1.0004**	**1.0005**	**+0.2**	**1.38E+07**	**1.25**	**Y**	**1.15**	**56.4**	**3655.327**	**0.139**
123479-HxCDF	NotFnd		1.0051						1.19		3655.327	0.162
123469-HxCDF	NotFnd		1.0091						1.19		3655.327	0.162
123679-HxCDF	NotFnd		0.9943						1.19		3655.327	0.162
234678-HxCDF	**37.69**		**1.0004**	**1.0005**	**+0.2**	**9.51E+06**	**1.23**	**Y**	**1.19**	**57.4**	**3655.327**	**0.208**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3655.327	0.162
123789-HxCDF	**38.62**		**1.0004**	**1.0004**	**0**	**1.04E+07**	**1.27**	**Y**	**1.16**	**52.5**	**3655.327**	**0.161**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		3655.327	0.162
1234678-HpCDF	**39.95**		**1.0002**	**1.0003**	**+0.2**	**1.37E+07**	**1.04**	**Y**	**1.37**	**54.9**	**3595.802**	**0.104**
1234679-HpCDF	NotFnd		1.0067						1.34		3595.802	0.136
1234689-HpCDF	NotFnd		1.0101						1.34		3595.802	0.136
1234789-HpCDF	**41.34**		**1.0003**	**1.0003**	**0**	**9.41E+06**	**1.07**	**Y**	**1.31**	**55.9**	**3595.802**	**0.181**
OCDF	**43.71**		**1.0002**	**1.0003**	**+0.3**	**1.28E+07**	**0.89**	**Y**	**1.07**	**115**	**3429.035**	**0.3**
OCDF-a	43.71		1.0002	1.0003	+0.3	7.09E+05	2.71	Y	0.07	103	3550.28	5.02

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.1	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	52	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	59.9	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	56.9	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.3	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.3	35	-	70	Y
OCDD	100	114	78	-	144	Y
2,3,7,8-TCDF	10	10.9	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	51.3	40	-	67	Y
2,3,4,7,8-PeCDF	50	56.6	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	56.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	56.4	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	57.4	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	52.5	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	54.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	55.9	39	-	69	Y
OCDF	100	115	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Jan 2022 10:47 Analyst: MS

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	90.8	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	92.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	90.3	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	98	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	99.3	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	102	26	-	166	Y
13C-OCDD	200	178	26	-	397	Y
13C-2,3,7,8-TCDF	100	87.1	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	99.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	99.7	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	106	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	116	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	82.7	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	109	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	139	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	111	20	-	186	Y
13C-OCDF	200	188	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	35.3	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Jan 2022 10:47 Analyst: MS

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

Window Defining Standards Results

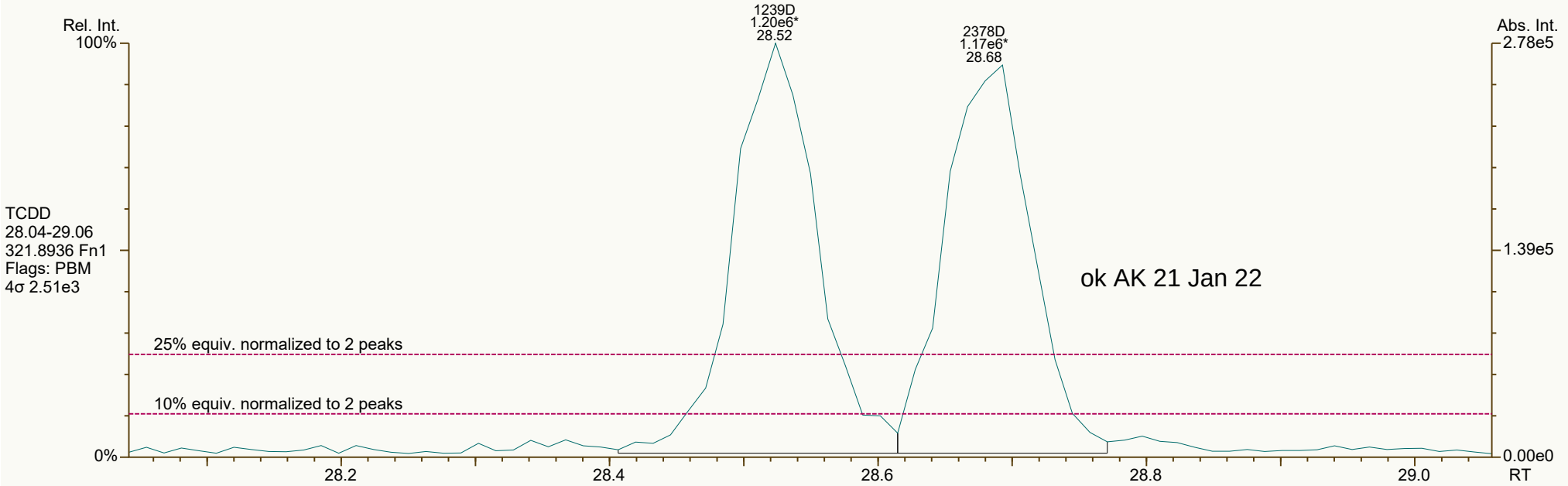
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.08	1289-TCDD	29.64
12479/12468-PeCDD	31.49	12389-PeCDD	34.46
124679/124689-HxCDD	36.13	123789-HxCDD	38.26
1234679-HpCDD	40.21	1234678-HpCDD	40.88
1368-TCDF	23.02	1289-TCDF	29.82
13468/12468-PeCDF	29.72	12389-PeCDF	34.75
123468-HxCDF	35.50	123789-HxCDF	38.62
1234678-HpCDF	39.95	1234789-HpCDF	41.34

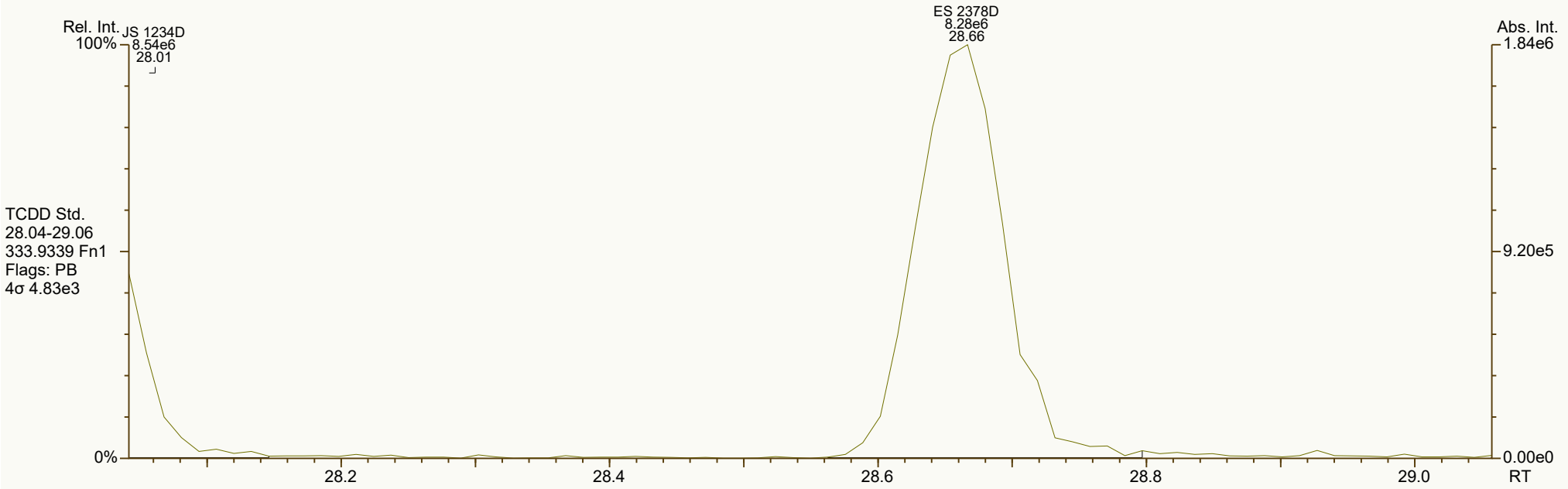
Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.52	2378-TCDD	28.68
2348-TCDF	27.73	2378-TCDF	27.84

Processed: 21 Jan 2022 10:47 Analyst: MS

SGS ID: OPR1_18819_DF
Sample ID: 0_18819_OPR001
Acq: 20-Jan-2022 11:32:05
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 50
User: DTF Datafile: 220120C02



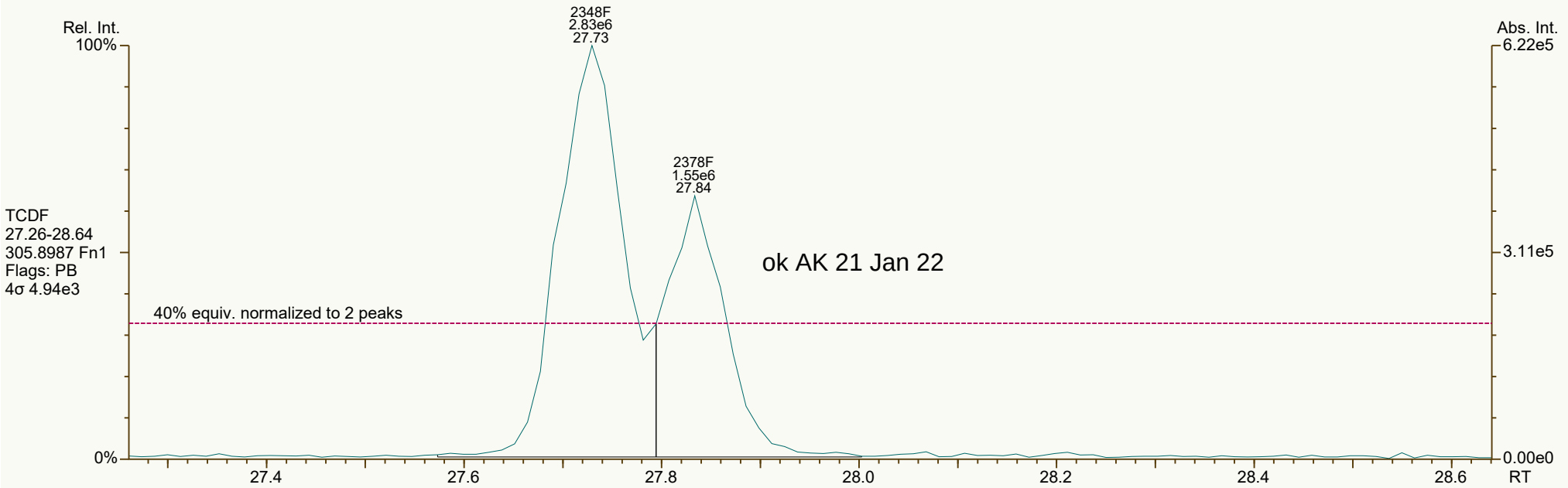


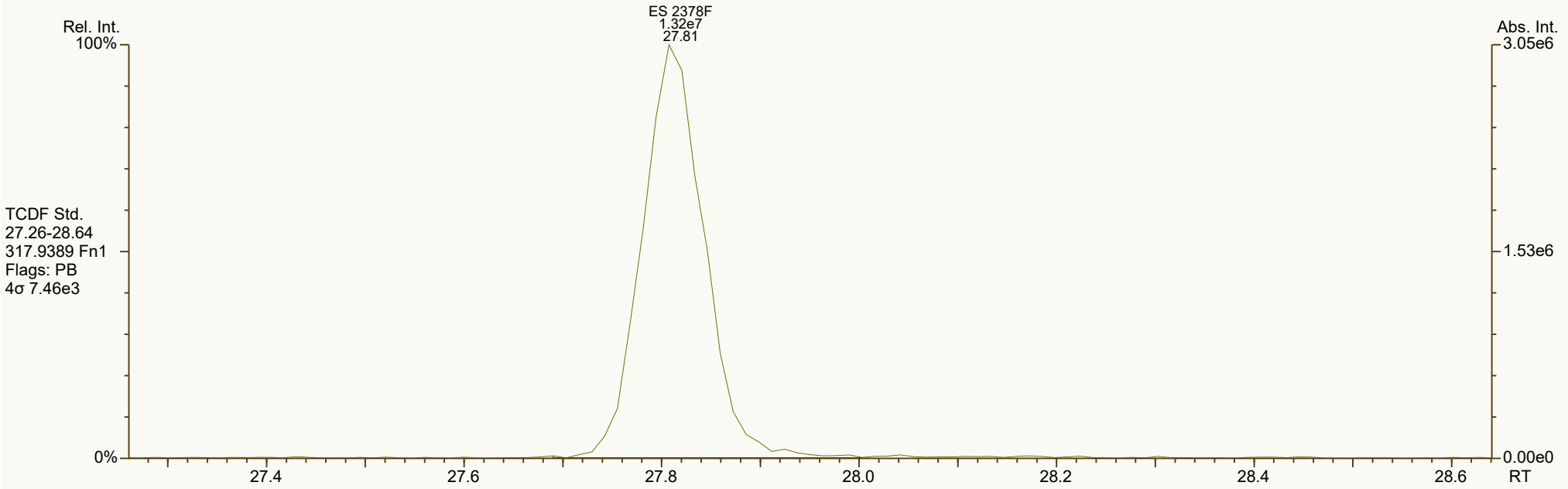
Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\OPR1_18819_DF.utp_res, saved 21-Jan-2022 10:45 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW
Revised: 21-Jan-2022 09:59 (DTF) Printed: 21-Jan-2022 11:40

SGS ID: OPR1_18819_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18819_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 50

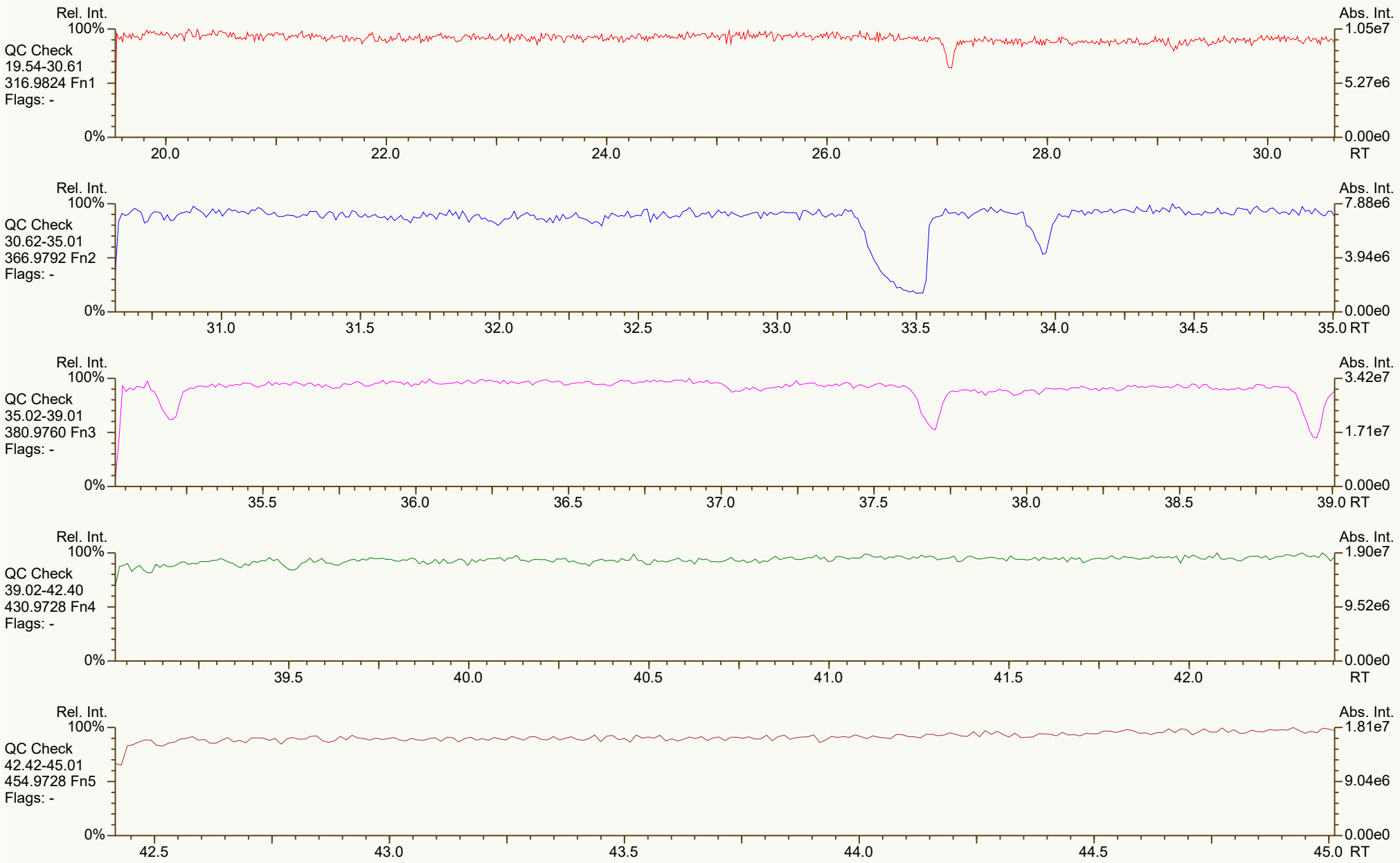
Acq: 20-Jan-2022 11:32:05
User: DTF Datafile: 220120C02



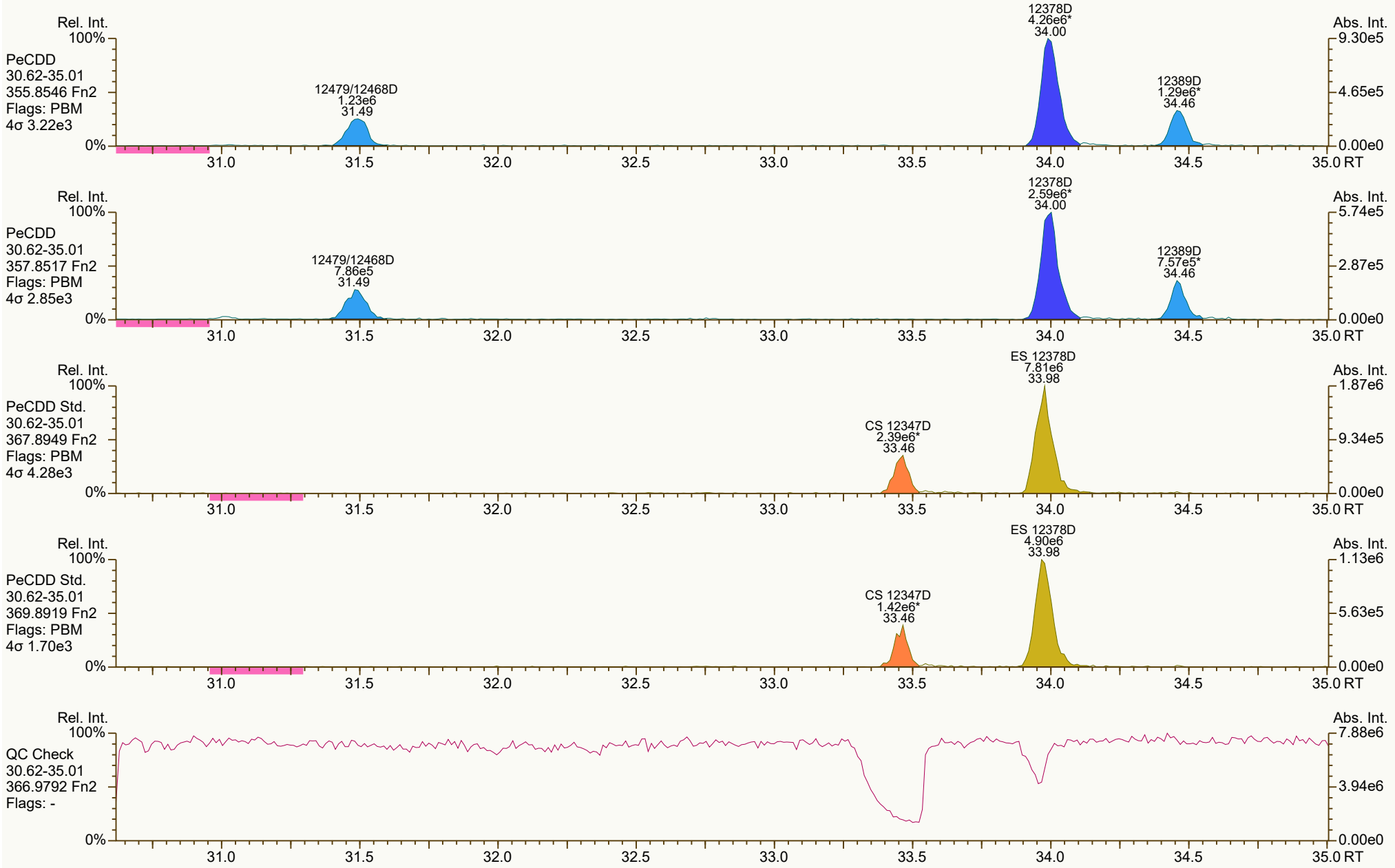


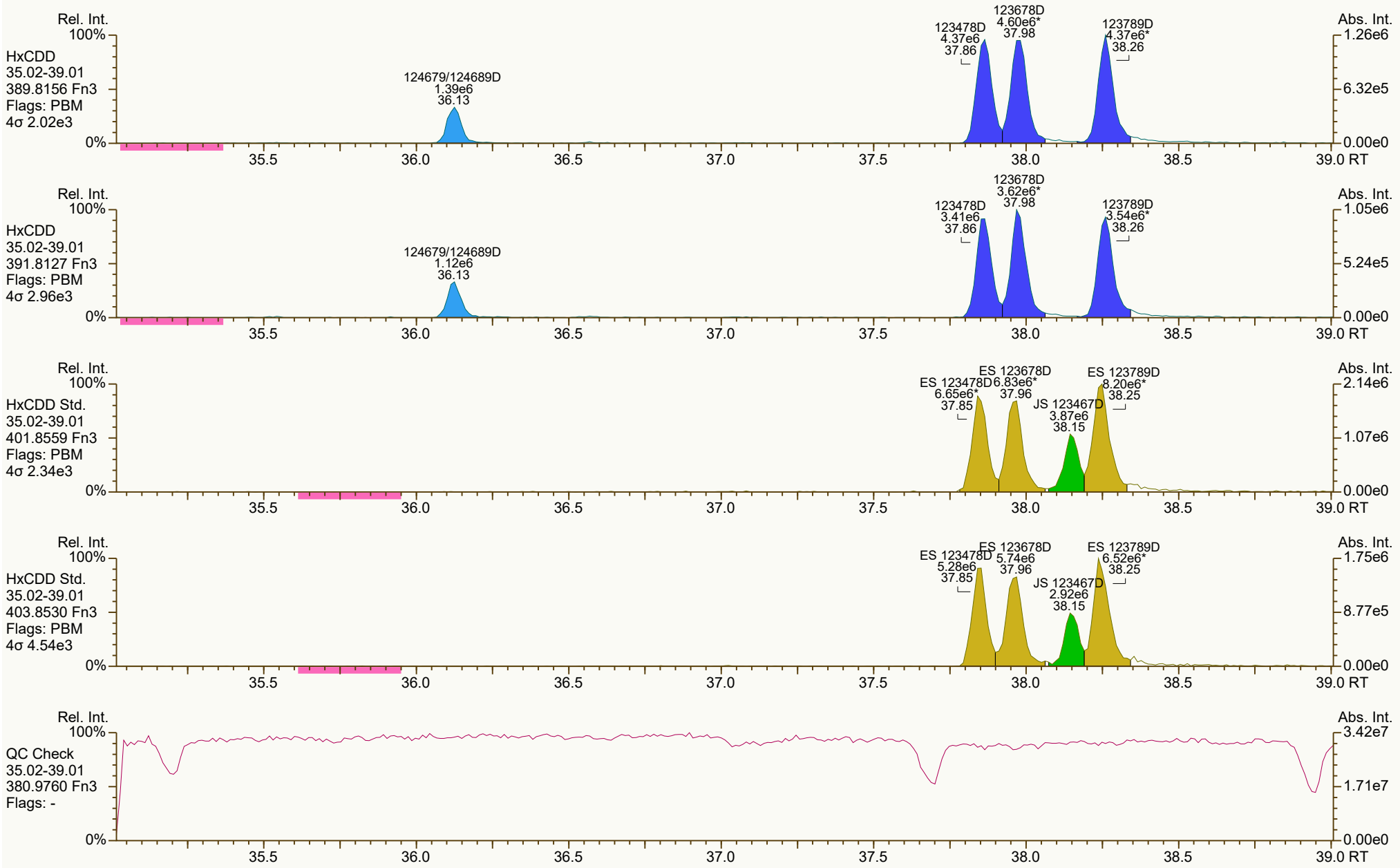
Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\OPR1_18819_DF.utp_res, saved 21-Jan-2022 10:45 (MLS)
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW

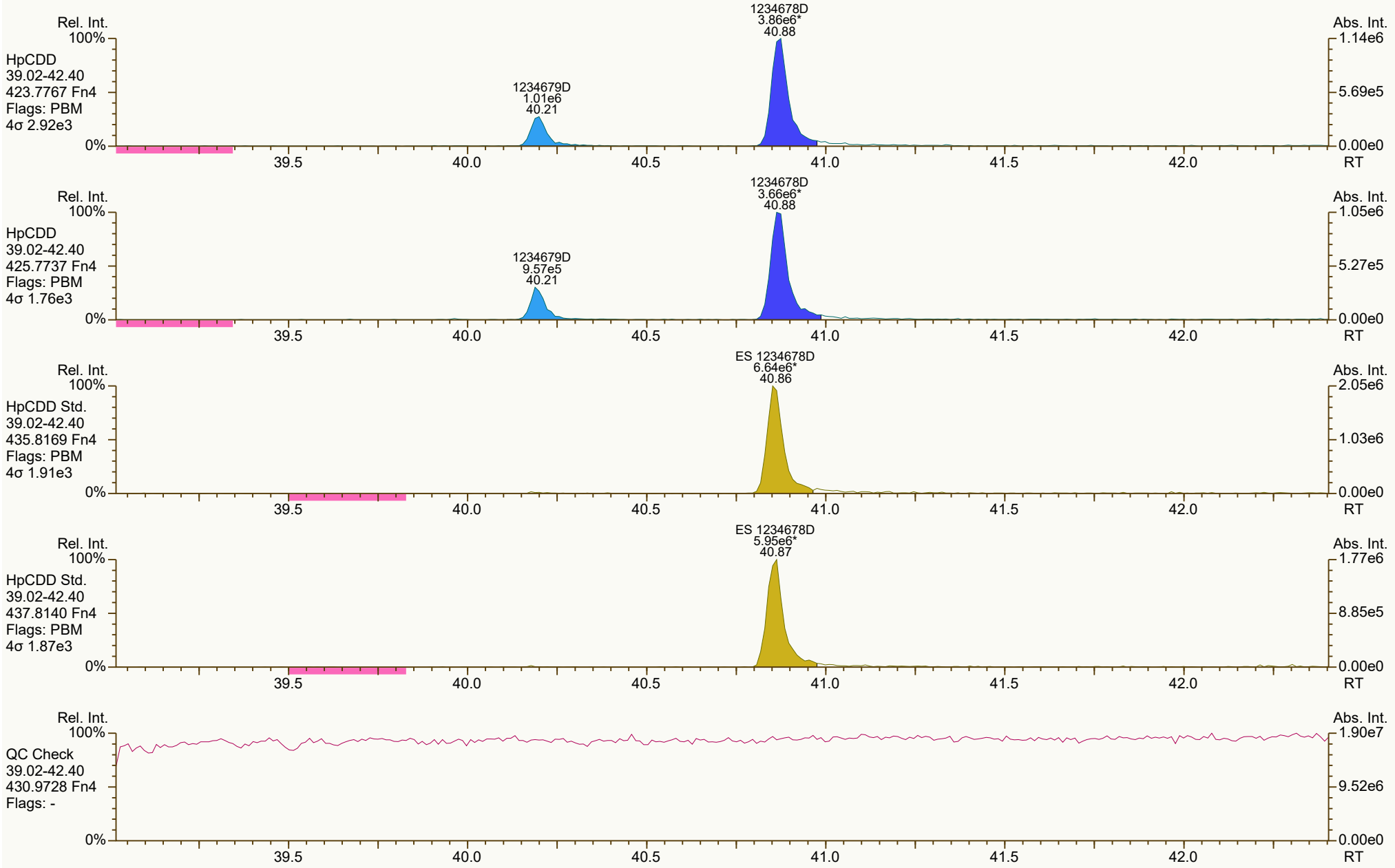
Peak annotation: Areas, Centroids
Revised: 21-Jan-2022 10:00 (DTF) Printed: 21-Jan-2022 11:40

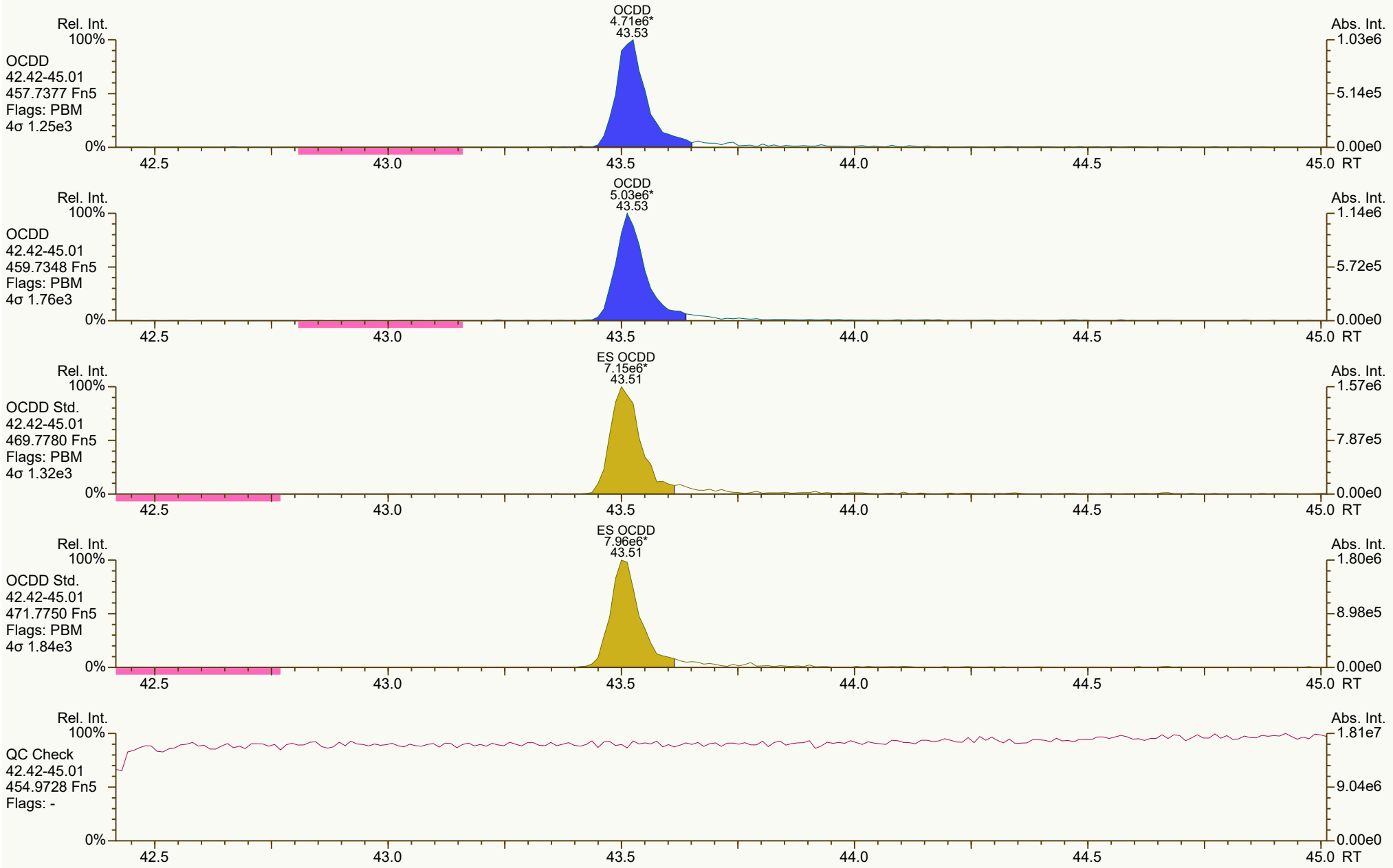

Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
1.05e7
5.27e6
0.00e0
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
7.88e6
3.94e6
0.00e0
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
3.42e7
1.71e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.90e7
9.52e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.81e7
9.04e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 3.15e3
1368D
1.40e6
25.08
1239D
9.65e5*
28.52
2378D
9.52e5*
28.68
1289D
1.43e6*
29.64
Abs. Int.
3.58e5
1.79e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.51e3
1368D
1.71e6
25.08
1239D
1.20e6*
28.52
2378D
1.17e6*
28.68
1289D
1.69e6*
29.64
Abs. Int.
4.18e5
2.09e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 4.06e3
CS 37Cl-2378D
6.60e6
28.68
Abs. Int.
1.54e6
7.69e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 1.02e4
JS 1234D
7.03e6
28.01
ES 2378D
6.50e6
28.66
Abs. Int.
1.64e6
8.20e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 4.83e3
JS 1234D
8.54e6
28.01
ES 2378D
8.28e6
28.66
Abs. Int.
2.07e6
1.03e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.62-35.01
355.8546 Fn2
Flags: PBM
4σ 3.22e3
12479/12468D
1.23e6
31.49
12378D
4.26e6*
34.00
12389D
1.29e6*
34.46
Abs. Int.
9.30e5
4.65e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.01
357.8517 Fn2
Flags: PBM
4σ 2.85e3
12479/12468D
7.86e5
31.49
12378D
2.59e6*
34.00
12389D
7.57e5*
34.46
Abs. Int.
5.74e5
2.87e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.01
367.8949 Fn2
Flags: PBM
4σ 4.28e3
CS 12347D
2.39e6*
33.46
ES 12378D
7.81e6
33.98
Abs. Int.
1.87e6
9.34e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.01
369.8919 Fn2
Flags: PBM
4σ 1.70e3
CS 12347D
1.42e6*
33.46
ES 12378D
4.90e6
33.98
Abs. Int.
1.13e6
5.63e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
Abs. Int.
7.88e6
3.94e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

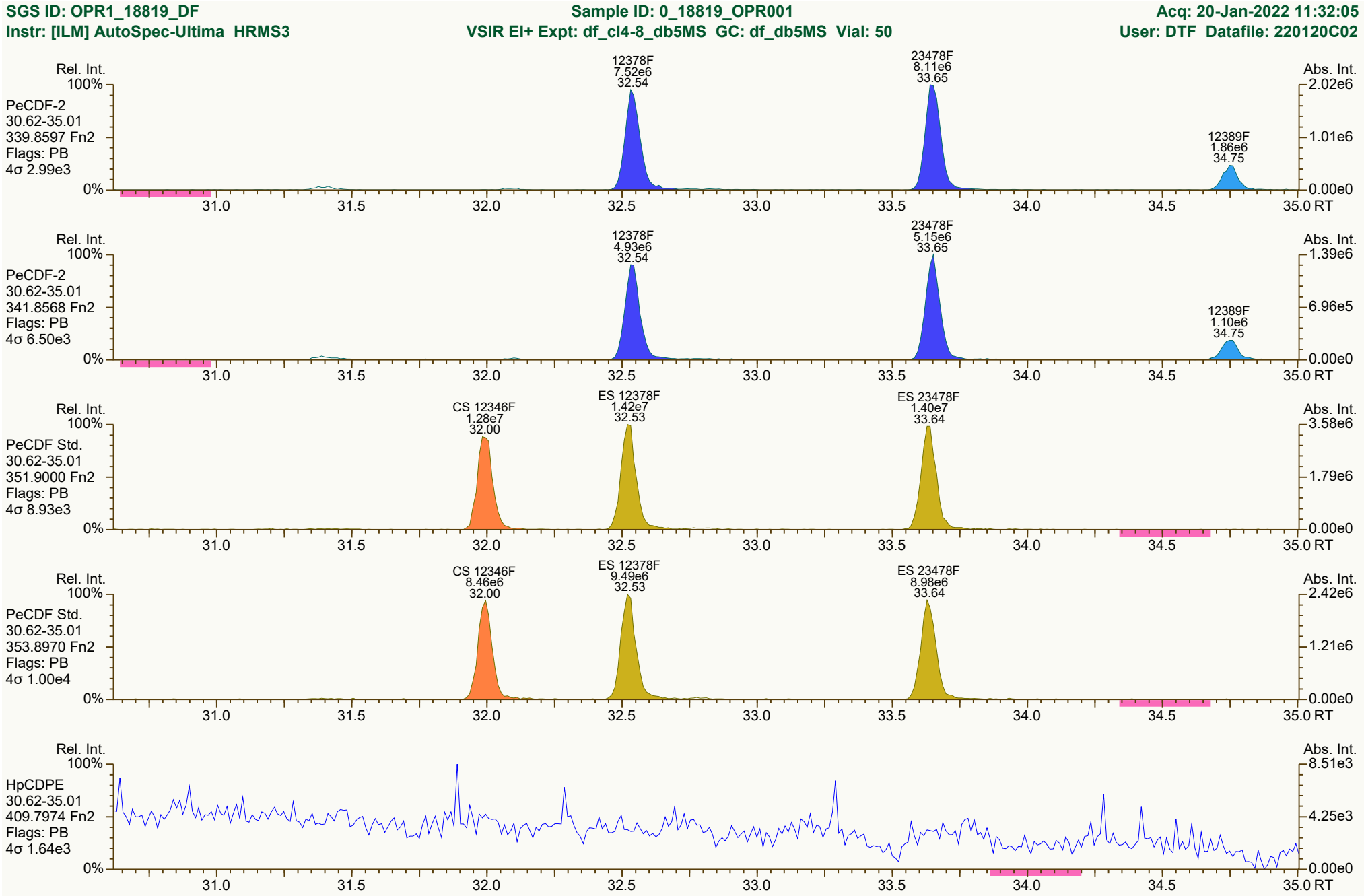

Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 2.02e3
124679/124689D
1.39e6
36.13
123478D
4.37e6
37.86
123678D
4.60e6*
37.98
123789D
4.37e6*
38.26
1.26e6
6.32e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 2.96e3
124679/124689D
1.12e6
36.13
123478D
3.41e6
37.86
123678D
3.62e6*
37.98
123789D
3.54e6*
38.26
1.05e6
5.24e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 2.34e3
ES 123478D
6.65e6*
37.85
ES 123678D
6.83e6*
37.96
JS 123467D
3.87e6
38.15
ES 123789D
8.20e6*
38.25
2.14e6
1.07e6
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 4.54e3
ES 123478D
5.28e6
37.85
ES 123678D
5.74e6
37.96
JS 123467D
2.92e6
38.15
ES 123789D
6.52e6*
38.25
1.75e6
8.77e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.42e7
1.71e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

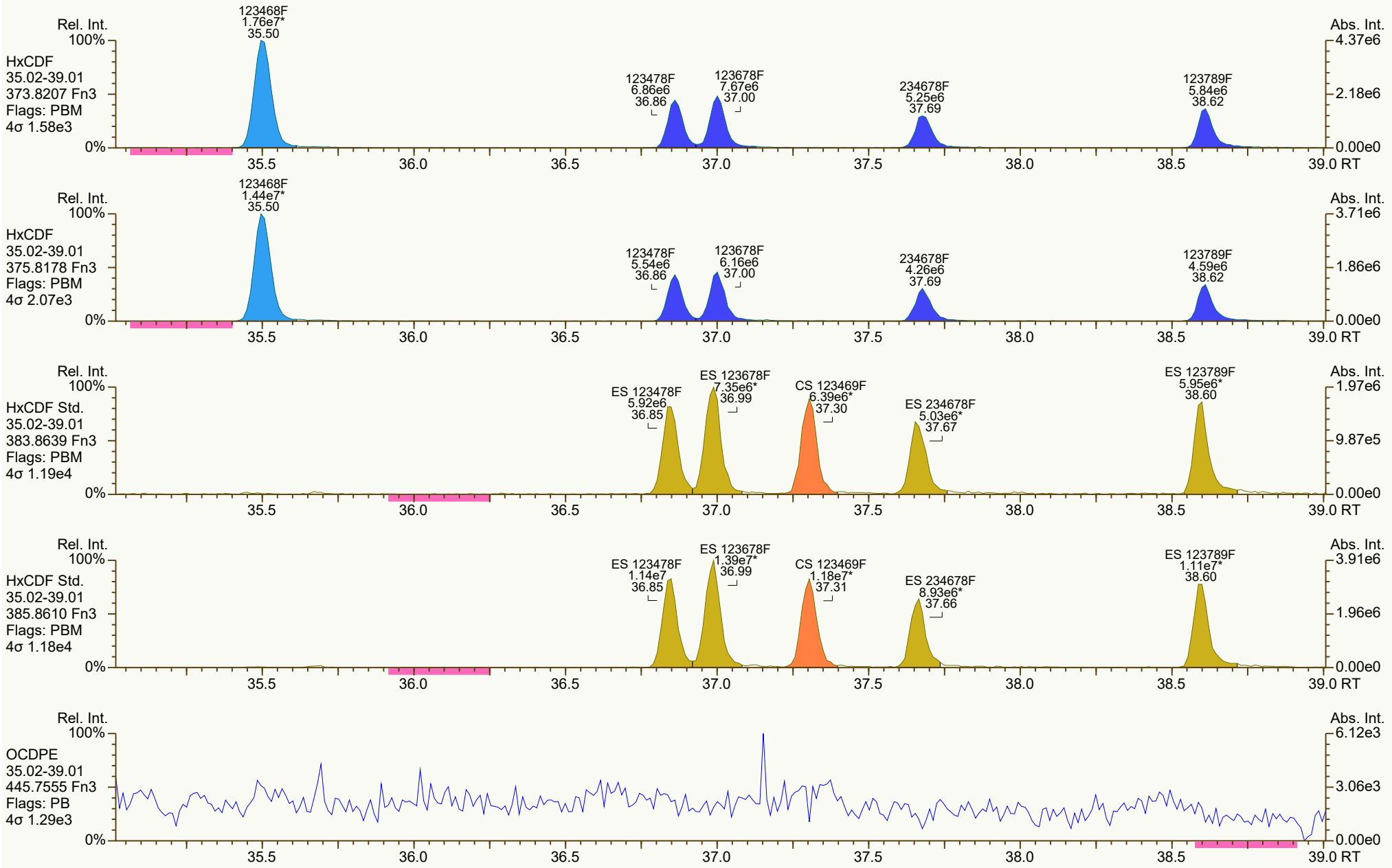

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.92e3
1234678D
3.86e6*
40.88
1234679D
1.01e6
40.21
Abs. Int.
1.14e6
5.69e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.76e3
1234678D
3.66e6*
40.88
1234679D
9.57e5
40.21
Abs. Int.
1.05e6
5.27e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 1.91e3
ES 1234678D
6.64e6*
40.86
Abs. Int.
2.05e6
1.03e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.87e3
ES 1234678D
5.95e6*
40.87
Abs. Int.
1.77e6
8.85e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.90e7
9.52e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

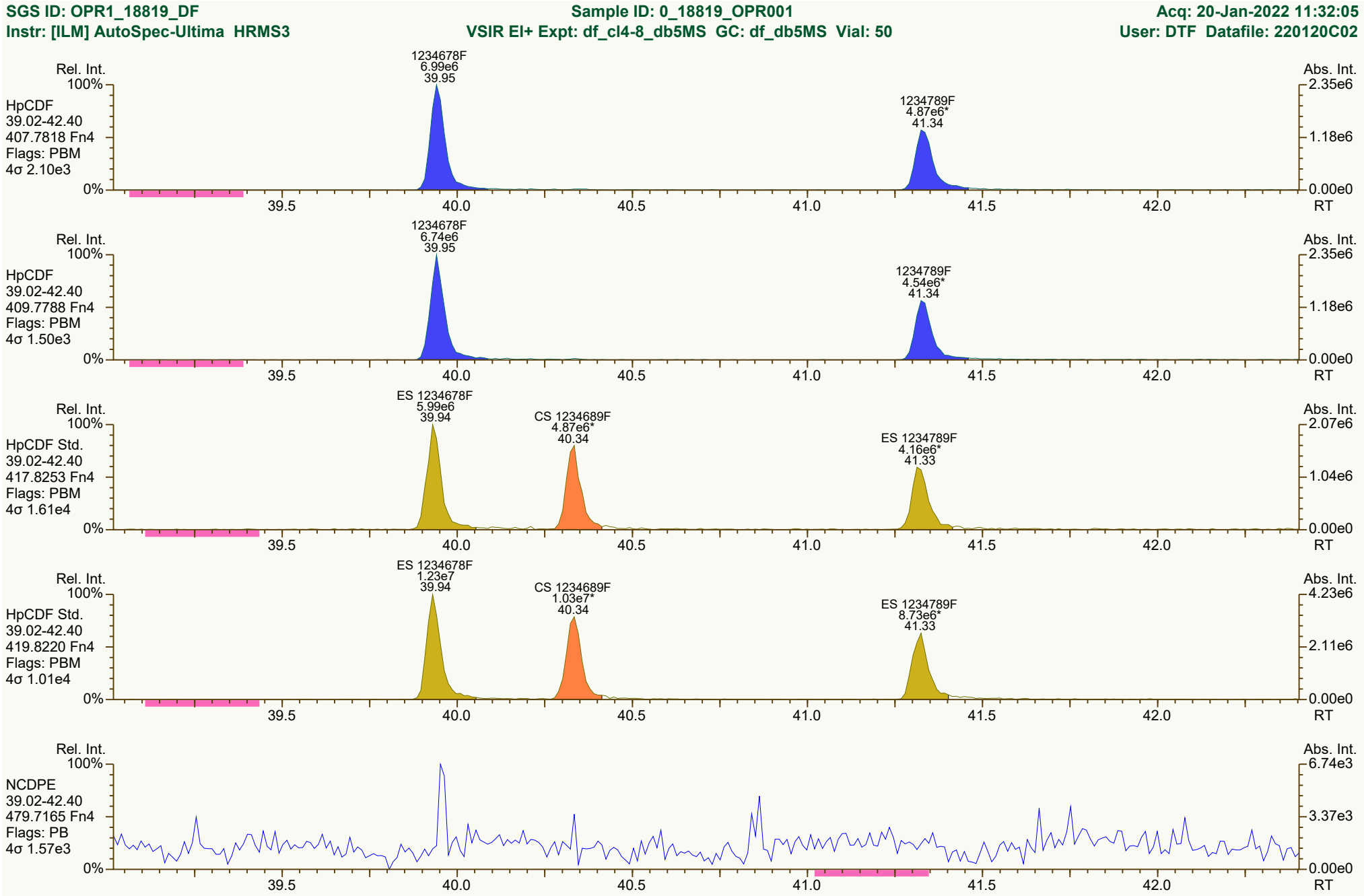

Rel. Int.
Abs. Int.
OCDD
4.71e6*
43.53
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 1.25e3
1.03e6
5.14e5
0.00e0
OCDD
5.03e6*
43.53
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 1.76e3
1.14e6
5.72e5
0.00e0
ES OCDD
7.15e6*
43.51
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 1.32e3
1.57e6
7.87e5
0.00e0
ES OCDD
7.96e6*
43.51
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 1.84e3
1.80e6
8.98e5
0.00e0
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
1.81e7
9.04e6
0.00e0
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.97e3
1368F
2.06e6
23.02
2468F
5.49e5
24.20
2348F
2.21e6
27.73
2378F
1.27e6
27.84
1289F
2.10e6*
29.82
Abs. Int.
5.09e5
2.55e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.94e3
1368F
2.58e6
23.02
2468F
6.83e5
24.20
2348F
2.83e6
27.73
2378F
1.55e6
27.84
1289F
2.65e6*
29.82
Abs. Int.
6.22e5
3.11e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 1.29e4
JS 1234F
1.18e7
26.46
ES 2378F
1.09e7
27.82
Abs. Int.
2.46e6
1.23e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 7.46e3
JS 1234F
1.43e7
26.46
ES 2378F
1.32e7
27.81
Abs. Int.
3.10e6
1.55e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.46e3
Abs. Int.
1.22e4
6.09e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PB
4σ 1.52e3
13468/12468F
1.25e7
29.72
Abs. Int.
3.11e6
1.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PB
4σ 2.44e3
13468/12468F
8.00e6
29.72
Abs. Int.
1.99e6
9.97e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
Abs. Int.
1.05e7
5.27e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


SGS ID: OPR1_18819_DF
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 0_18819_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 50
Acq: 20-Jan-2022 11:32:05
User: DTF Datafile: 220120C02
Rel. Int.
Abs. Int.
PeCDF-2
30.62-35.01
339.8597 Fn2
Flags: PB
4σ 2.99e3
12378F
7.52e6
32.54
23478F
8.11e6
33.65
12389F
1.86e6
34.75
PeCDF-2
30.62-35.01
341.8568 Fn2
Flags: PB
4σ 6.50e3
12378F
4.93e6
32.54
23478F
5.15e6
33.65
12389F
1.10e6
34.75
PeCDF Std.
30.62-35.01
351.9000 Fn2
Flags: PB
4σ 8.93e3
CS 12346F
1.28e7
32.00
ES 12378F
1.42e7
32.53
ES 23478F
1.40e7
33.64
PeCDF Std.
30.62-35.01
353.8970 Fn2
Flags: PB
4σ 1.00e4
CS 12346F
8.46e6
32.00
ES 12378F
9.49e6
32.53
ES 23478F
8.98e6
33.64
HpCDPE
30.62-35.01
409.7974 Fn2
Flags: PB
4σ 1.64e3
RT
Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\OPR1_18819_DF.utp_res, saved 21-Jan-2022 10:45 (MLS)
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 9830, 6090, 2140 scc: 697-611
Peak annotation: Areas, Centroids
Revised: 21-Jan-2022 10:00 (DTF) Printed: 21-Jan-2022 11:19 Page 9 of 12


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.58e3
123468F 1.76e7* 35.50
123478F 6.86e6 36.86
123678F 7.67e6 37.00
234678F 5.25e6 37.69
123789F 5.84e6 38.62
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.07e3
123468F 1.44e7* 35.50
123478F 5.54e6 36.86
123678F 6.16e6 37.00
234678F 4.26e6 37.69
123789F 4.59e6 38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 1.19e4
ES 123478F 5.92e6 36.85
ES 123678F 7.35e6* 36.99
CS 123469F 6.39e6* 37.30
ES 234678F 5.03e6* 37.67
ES 123789F 5.95e6* 38.60
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 1.18e4
ES 123478F 1.14e7 36.85
ES 123678F 1.39e7* 36.99
CS 123469F 1.18e7* 37.31
ES 234678F 8.93e6* 37.66
ES 123789F 1.11e7* 38.60
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.29e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
4.37e6
2.18e6
0.00e0
3.71e6
1.86e6
1.97e6
9.87e5
3.91e6
1.96e6
6.12e3
3.06e3


SGS ID: OPR1_18819_DF
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 0_18819_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 50
Acq: 20-Jan-2022 11:32:05
User: DTF Datafile: 220120C02
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.10e3
1234678F
6.99e6
39.95
1234789F
4.87e6*
41.34
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.50e3
1234678F
6.74e6
39.95
1234789F
4.54e6*
41.34
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 1.61e4
ES 1234678F
5.99e6
39.94
CS 1234689F
4.87e6*
40.34
ES 1234789F
4.16e6*
41.33
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 1.01e4
ES 1234678F
1.23e7
39.94
CS 1234689F
1.03e7*
40.34
ES 1234789F
8.73e6*
41.33
NCDPE
39.02-42.40
479.7165 Fn4
Flags: PB
4σ 1.57e3
RT
Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\OPR1_18819_DF.utp_res, saved 21-Jan-2022 10:45 (MLS)
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 0349, 6925, 6710 scc: 697-611
Peak annotation: Areas, Centroids
PKD: 21-Jan-2022 10:00 Printed: 21-Jan-2022 11:19 Page 11 of 12


OCDF
6.00e6*
43.71
Rel. Int.
Abs. Int.
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 1.69e3
OCDF
6.76e6*
43.71
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 1.74e3
ES OCDF
9.95e6*
43.70
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 2.26e3
ES OCDF
1.07e7*
43.70
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 3.70e3
DCDPE
42.42-45.01
513.6775 Fn5
Flags: B
4σ 1.39e3
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT

Lab ID: OPR2_18819_DF **Acq'd:** 20 Jan 2022 12:20 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 **UTP:** 21-Jan-2022 10:45:30 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 751-300-QNZ

Datafile: 220120C03 **Report:** 21 Jan 2022 10:50 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.64		1.0008	1.0007	-0.2	1.77E+06	0.83	Y	1.18	12.3	4131.919	0.33
12378-PeCDD	33.95		1.0006	1.0006	0	6.35E+06	1.58	Y	1.04	55.2	2666.107	0.204
123478-HxCDD	37.84		1.0004	1.0004	0	6.59E+06	1.28	Y	1.09	57.7	3320.354	0.245
123678-HxCDD	37.95		1.0034	1.0035	+0.2	7.85E+06	1.27	Y	1.15	61	3320.354	0.246
123789-HxCDD	38.24		1.0109	1.0110	+0.2	6.97E+06	1.24	Y	1.05	58.5	3320.354	0.243
1234678-HpCDD	40.85		1.0003	1.0003	0	6.71E+06	1.03	Y	1.06	56.7	3097.87	0.213
OCDD	43.50		1.0002	1.0003	+0.3	9.54E+06	0.92	Y	1.13	120	4377.598	0.608
2378-TCDF	27.79		1.0008	1.0007	-0.2	2.51E+06	0.80	Y	1.08	12	5324.253	0.27
12378-PeCDF	32.51		1.0005	1.0005	0	1.06E+07	1.54	Y	1.02	54.5	6761.989	0.322
23478-PeCDF	33.61		1.0005	1.0005	0	1.07E+07	1.57	Y	1.02	59	6761.989	0.333
123478-HxCDF	36.83		1.0004	1.0004	0	1.05E+07	1.27	Y	1.27	58.9	5856.549	0.279
123678-HxCDF	36.97		1.0004	1.0004	0	1.20E+07	1.27	Y	1.15	60.3	5856.549	0.242
234678-HxCDF	37.66		1.0004	1.0005	+0.2	8.92E+06	1.26	Y	1.19	55	5856.549	0.335
123789-HxCDF	38.59		1.0004	1.0004	0	8.64E+06	1.25	Y	1.16	56.7	5856.549	0.34
1234678-HpCDF	39.93	V	1.0002	1.0004	+0.5	1.18E+07	1.04	Y	1.37	63.4	4496.819	0.169
1234789-HpCDF	41.31		1.0003	1.0002	-0.2	8.79E+06	1.05	Y	1.31	57.3	4496.819	0.256
OCDF	43.68		1.0002	1.0002	0	1.23E+07	0.89	Y	1.07	116	4554.276	0.462

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.62		1.0233	1.0235	+0.3	1.21E+07	0.84	Y	1.05	80.5
ES 12378-PeCDD	33.92		1.2121	1.2131	+2.0	1.11E+07	1.49	Y	0.88	87.9
ES 123478-HxCDD	37.82		0.9921	0.9920	-0.2	1.05E+07	1.32	Y	0.97	87
ES 123678-HxCDD	37.94		0.9951	0.9951	0	1.12E+07	1.28	Y	0.94	95.7
ES 123789-HxCDD	38.22		1.0025	1.0025	0	1.14E+07	1.32	Y	1.09	84
ES 1234678-HpCDD	40.84		1.0709	1.0713	+1.0	1.12E+07	1.05	Y	0.91	98.7
ES OCDD	43.49		1.1403	1.1408	+1.3	1.41E+07	0.90	Y	0.62	91.4
ES 2378-TCDF	27.77		1.0506	1.0510	+0.7	1.93E+07	0.78	Y	1.06	72.9
ES 12378-PeCDF	32.49		1.2281	1.2294	+2.5	1.89E+07	1.57	Y	0.91	83.1
ES 23478-PeCDF	33.59		1.2698	1.2712	+2.8	1.78E+07	1.57	Y	0.88	80.6
ES 123478-HxCDF	36.81		0.9657	0.9657	0	1.40E+07	0.55	Y	1.20	94.1
ES 123678-HxCDF	36.96		0.9695	0.9694	-0.2	1.72E+07	0.54	Y	1.35	103
ES 234678-HxCDF	37.64		0.9874	0.9872	-0.5	1.37E+07	0.52	Y	1.24	88.6
ES 123789-HxCDF	38.57		1.0116	1.0118	+0.5	1.31E+07	0.57	Y	1.16	91.3
ES 1234678-HpCDF	39.91		1.0467	1.0469	+0.5	1.35E+07	0.49	Y	0.97	113
ES 1234789-HpCDF	41.30		1.0830	1.0834	+1.0	1.17E+07	0.47	Y	0.85	111
ES OCDF	43.67		1.1451	1.1455	+1.0	1.97E+07	0.88	Y	0.81	98.6

Lab ID: OPR2_18819_DF **Acq'd:** 20 Jan 2022 12:20 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 **UTP:** 21-Jan-2022 10:45:30 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 751-300-QNZ

Datafile: 220120C03 **Report:** 21 Jan 2022 10:50 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.97		-	-	-	1.44E+07	0.87	Y	-	-
JS 1234-TCDF	26.43		-	-	-	2.50E+07	0.82	Y	-	-
JS 123467-HxCDD	38.12		-	-	-	6.20E+06	1.30	Y	-	-
CS 37Cl-2378-TCDD	28.65		1.0241	1.0243	+0.3	5.55E+06	n/a	-	1.20	80.3
CS 12347-PeCDD	33.42		1.1943	1.1952	+1.8	1.04E+07	1.61	Y	0.75	96.3
CS 12346-PeCDF	31.96		1.2083	1.2094	+2.1	1.76E+07	1.56	Y	0.85	82.9
CS 123469-HxCDF	37.27		0.9778	0.9777	-0.2	1.53E+07	0.52	Y	1.12	111
CS 1234689-HpCDF	40.31		1.0571	1.0575	+1.0	1.34E+07	0.43	Y	0.89	122
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~5.55E+06~~	~~n/a~~		~~1.15~~	~~100~~
~~SS 12347-PeCDD~~	~~33.42~~		~~1.1943~~	~~1.1952~~	~~+1.8~~	~~1.04E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~109~~
~~SS 12346-PeCDF~~	~~31.96~~		~~1.2083~~	~~1.2094~~	~~+2.1~~	~~1.76E+07~~	~~1.56~~	~~Y~~	~~0.94~~	~~99.5~~
~~SS 123469-HxCDF~~	~~37.27~~		~~0.9778~~	~~0.9777~~	~~-0.2~~	~~1.53E+07~~	~~0.52~~	~~Y~~	~~0.83~~	~~107~~
~~SS 1234689-HpCDF~~	~~40.31~~		~~1.0571~~	~~1.0575~~	~~+1.0~~	~~1.34E+07~~	~~0.43~~	~~Y~~	~~0.92~~	~~108~~

Totals	Conc	EMPC
Total TCDD	62.7	62.7
Total PeCDD	87.1	87.1
Total HxCDD	196	196
Total HpCDD	71.8	71.8
Total Tetra-Octa Dioxins	537	537
Total TCDF	76.3	76.3
Total PeCDF	230	230
Total HxCDF	396	396
Total HpCDF	121	121
Total Tetra-Octa Furans	940	940
Total Tetra-Octa Dioxins & Furans	1480	1480

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.829	0.83
Response	1.77E+06	1.77E+06

Lab ID: OPR2_18819_DF | **Acq'd:** 20 Jan 2022 12:20 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 | **UTP:** 21-Jan-2022 10:45:30 MLS | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 751-300-QNZ

Datafile: 220120C03 | **Report:** 21 Jan 2022 10:50 MS | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8755	0.8748	-1.1	2.84E+06	0.77	Y	1.18	19.9	4131.919	0.33
1379-TCDD	NotFnd		0.8876						1.18		4131.919	0.33
1369-TCDD	NotFnd		0.9023						1.18		4131.919	0.33
1469-TCDD	NotFnd		0.9291						1.18		4131.919	0.33
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		4131.919	0.33
1378-TCDD	NotFnd		0.9440						1.18		4131.919	0.33
1268-TCDD	NotFnd		0.9506						1.18		4131.919	0.33
1478-TCDD	NotFnd		0.9591						1.18		4131.919	0.33
1279-TCDD	NotFnd		0.9649						1.18		4131.919	0.33
1234/1269-TCDD	NotFnd		0.9771						1.18		4131.919	0.33
1236-TCDD	NotFnd		0.9820						1.18		4131.919	0.33
1237/1238-TCDD	NotFnd		0.9908						1.18		4131.919	0.33
1239-TCDD	28.49		0.9954	0.9952	-0.3	1.90E+06	0.80	Y	1.18	13.3	4131.919	0.33
2378-TCDD	**28.64**		**1.0008**	1.0007	**-0.2**	1.77E+06	0.83	Y	**1.18**	**12.3**	**4131.919**	**0.33**
1278-TCDD	NotFnd		1.0121						1.18		4131.919	0.33
1267-TCDD	NotFnd		1.0167						1.18		4131.919	0.33
1289-TCDD	29.60		1.0341	1.0343	+0.4	2.47E+06	0.78	Y	1.18	17.2	4131.919	0.33
12479/12468-PeCDD	31.45		0.9273	0.9271	-0.4	1.73E+06	1.60	Y	1.04	15	2666.107	0.204
12469-PeCDD	NotFnd		0.9430						1.04		2666.107	0.204
12368-PeCDD	NotFnd		0.9592						1.04		2666.107	0.204
12478-PeCDD	NotFnd		0.9647						1.04		2666.107	0.204
12379-PeCDD	NotFnd		0.9676						1.04		2666.107	0.204
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		2666.107	0.204
12346/12347-PeCDD	NotFnd		0.9860						1.04		2666.107	0.204
12378-PeCDD	33.95		**1.0006**	**1.0006**	**0**	**6.35E+06**	**1.58**	**Y**	**1.04**	**55.2**	**2666.107**	**0.204**
12367-PeCDD	NotFnd		1.0034						1.04		2666.107	0.204
12389-PeCDD	34.38		1.0134	1.0135	+0.2	1.94E+06	1.45	Y	1.04	16.8	2666.107	0.204
124679/124689-HxCDD	36.09		0.9545	0.9542	-0.6	2.21E+06	1.20	Y	1.10	18.3	3320.354	0.245
123468-HxCDD	NotFnd		0.9715						1.10		3320.354	0.245
123679/123689-HxCDD	NotFnd		0.9793						1.10		3320.354	0.245
123469-HxCDD	NotFnd		0.9829						1.10		3320.354	0.245
123478-HxCDD	37.84		**1.0004**	**1.0004**	**0**	**6.59E+06**	**1.28**	**Y**	1.09	**57.7**	**3320.354**	**0.245**
123678-HxCDD	37.95		**1.0034**	**1.0035**	**+0.2**	**7.85E+06**	**1.27**	**Y**	1.15	**61**	**3320.354**	**0.246**
123467-HxCDD	NotFnd		1.0082						1.10		3320.354	0.245
123789-HxCDD	38.24		**1.0109**	**1.0110**	**+0.2**	**6.97E+06**	**1.24**	**Y**	1.05	**58.5**	**3320.354**	**0.243**

Lab ID: OPR2_18819_DF | **Acq'd:** 20 Jan 2022 12:20 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 | **UTP:** 21-Jan-2022 10:45:30 MLS | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 751-300-QNZ

Datafile: 220120C03 | **Report:** 21 Jan 2022 10:50 MS | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.17		0.9838	0.9837	-0.2	1.78E+06	1.03	Y	1.06	15.1	3097.87	0.213
1234678-HpCDD	**40.85**		**1.0003**	**1.0003**	**0**	**6.71E+06**	**1.03**	**Y**	**1.06**	**56.7**	**3097.87**	**0.213**
OCDD	**43.50**		**1.0002**	**1.0003**	**+0.3**	**9.54E+06**	**0.92**	**Y**	**1.13**	**120**	**4377.598**	**0.608**
OCDD-a	43.50		1.0002	1.0001	-0.3	6.00E+05	2.32	Y	0.07	118	3306.42	7.18
1368-TCDF	22.97		0.8282	0.8270	-1.7	4.24E+06	0.82	Y	1.08	20.4	5324.253	0.27
1468-TCDF	NotFnd		0.8485						1.08		5324.253	0.27
2468-TCDF	24.16		0.8709	0.8698	-1.6	1.04E+06	0.86	Y	1.08	4.98	5324.253	0.27
1346/1246-TCDF	NotFnd		0.8829						1.08		5324.253	0.27
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		5324.253	0.27
1348-TCDF	NotFnd		0.8980						1.08		5324.253	0.27
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		5324.253	0.27
1268-TCDF	NotFnd		0.9158						1.08		5324.253	0.27
1467-TCDF	NotFnd		0.9206						1.08		5324.253	0.27
1478-TCDF	NotFnd		0.9266						1.08		5324.253	0.27
1369/1237-TCDF	NotFnd		0.9397						1.08		5324.253	0.27
2467-TCDF	NotFnd		0.9440						1.08		5324.253	0.27
2368-TCDF	NotFnd		0.9497						1.08		5324.253	0.27
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		5324.253	0.27
1278-TCDF	NotFnd		0.9690						1.08		5324.253	0.27
1349-TCDF	NotFnd		0.9730						1.08		5324.253	0.27
1267-TCDF	NotFnd		0.9787						1.08		5324.253	0.27
2346/1249-TCDF	NotFnd		0.9850						1.08		5324.253	0.27
2347/1279-TCDF	NotFnd		0.9929						1.08		5324.253	0.27
2348-TCDF	27.69		0.9970	0.9968	-0.3	4.01E+06	0.79	Y	1.08	19.3	5324.253	0.27
2378-TCDF	**27.79**		**1.0008**	**1.0007**	**-0.2**	**2.51E+06**	**0.80**	**Y**	**1.08**	**12**	**5324.253**	**0.27**
2367/3467-TCDF	NotFnd		1.0136						1.08		5324.253	0.27
1269-TCDF	NotFnd		1.0221						1.08		5324.253	0.27
1239-TCDF	NotFnd		1.0319						1.08		5324.253	0.27
1289-TCDF	29.78		1.0740	1.0721	-3.4	4.08E+06	0.79	Y	1.08	19.6	5324.253	0.27
13468/12468-PeCDF	29.69		0.9145	0.9137	-1.4	1.92E+07	1.63	Y	1.02	102	3756.146	0.182
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		6761.989	0.327
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		6761.989	0.327
14678-PeCDF	NotFnd		0.9695						1.02		6761.989	0.327
13479-PeCDF	NotFnd		0.9724						1.02		6761.989	0.327
13469/12479-PeCDF	NotFnd		0.9801						1.02		6761.989	0.327
12346-PeCDF	NotFnd		0.9842						1.02		6761.989	0.327

Lab ID: OPR2_18819_DF | Acq'd: 20 Jan 2022 12:20 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 | UTP: 21-Jan-2022 10:45:30 MLS | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 751-300-QNZ

Datafile: 220120C03 | Report: 21 Jan 2022 10:50 MS | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		6761.989	0.327
12347-PeCDF	NotFnd		0.9895						1.02		6761.989	0.327
12348-PeCDF	NotFnd		0.9941						1.02		6761.989	0.327
12378-PeCDF	**32.51**		**1.0005**	**1.0005**	**0**	**1.06E+07**	**1.54**	**Y**	**1.02**	**54.5**	**6761.989**	**0.322**
12678/12367-PeCDF	NotFnd		1.0090						1.02		6761.989	0.327
12379-PeCDF	NotFnd		1.0142						1.02		6761.989	0.327
12679-PeCDF	NotFnd		0.9931						1.02		6761.989	0.327
23467/12369-PeCDF	NotFnd		0.9966						1.02		6761.989	0.327
23478-PeCDF	**33.61**		**1.0005**	**1.0005**	**0**	**1.07E+07**	**1.57**	**Y**	**1.02**	**59**	**6761.989**	**0.333**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6761.989	0.327
12349-PeCDF	NotFnd		1.0101						1.02		6761.989	0.327
12389-PeCDF	34.68		1.0322	1.0324	+0.4	2.62E+06	1.55	Y	1.02	14	6761.989	0.327
123468-HxCDF	35.44		0.9627	0.9628	+0.2	2.86E+07	1.25	Y	1.19	165	5856.549	0.294
124678/134678-HxCDF	NotFnd		0.9684						1.19		5856.549	0.294
134679-HxCDF	NotFnd		0.9747						1.19		5856.549	0.294
124679-HxCDF	NotFnd		0.9802						1.19		5856.549	0.294
124689-HxCDF	NotFnd		0.9858						1.19		5856.549	0.294
123467-HxCDF	NotFnd		0.9972						1.19		5856.549	0.294
123478-HxCDF	**36.83**		**1.0004**	**1.0004**	**0**	**1.05E+07**	**1.27**	**Y**	**1.27**	**58.9**	**5856.549**	**0.279**
123678-HxCDF	**36.97**		**1.0004**	**1.0004**	**0**	**1.20E+07**	**1.27**	**Y**	**1.15**	**60.3**	**5856.549**	**0.242**
123479-HxCDF	NotFnd		1.0051						1.19		5856.549	0.294
123469-HxCDF	NotFnd		1.0091						1.19		5856.549	0.294
123679-HxCDF	NotFnd		0.9943						1.19		5856.549	0.294
234678-HxCDF	**37.66**		**1.0004**	**1.0005**	**+0.2**	**8.92E+06**	**1.26**	**Y**	**1.19**	**55**	**5856.549**	**0.335**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		5856.549	0.294
123789-HxCDF	**38.59**		**1.0004**	**1.0004**	**0**	**8.64E+06**	**1.25**	**Y**	**1.16**	**56.7**	**5856.549**	**0.34**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		5856.549	0.294
1234678-HpCDF	**39.93**		**1.0002**	**1.0004**	**+0.5**	**1.18E+07**	**1.04**	**Y**	**1.37**	**63.4**	**4496.819**	**0.169**
1234679-HpCDF	NotFnd		1.0067						1.34		4496.819	0.209
1234689-HpCDF	NotFnd		1.0101						1.34		4496.819	0.209
1234789-HpCDF	**41.31**		**1.0003**	**1.0002**	**-0.2**	**8.79E+06**	**1.05**	**Y**	**1.31**	**57.3**	**4496.819**	**0.256**
OCDF	**43.68**		**1.0002**	**1.0002**	**0**	**1.23E+07**	**0.89**	**Y**	**1.07**	**116**	**4554.276**	**0.462**
OCDF-a	43.68		1.0002	1.0001	-0.3	7.47E+05	2.33	Y	0.07	114	3100.175	5.08

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C03	Analysis Date:	20-JAN-2022 12:20:14
Lab ID:	OPR2_18819_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.3	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	55.2	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	57.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	61	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	58.5	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.7	35	-	70	Y
OCDD	100	120	78	-	144	Y
2,3,7,8-TCDF	10	12	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.5	40	-	67	Y
2,3,4,7,8-PeCDF	50	59	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	58.9	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	60.3	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	56.7	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	63.4	41	-	61	N
1,2,3,4,7,8,9-HpCDF	50	57.3	39	-	69	Y
OCDF	100	116	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Jan 2022 10:50 Analyst: MS

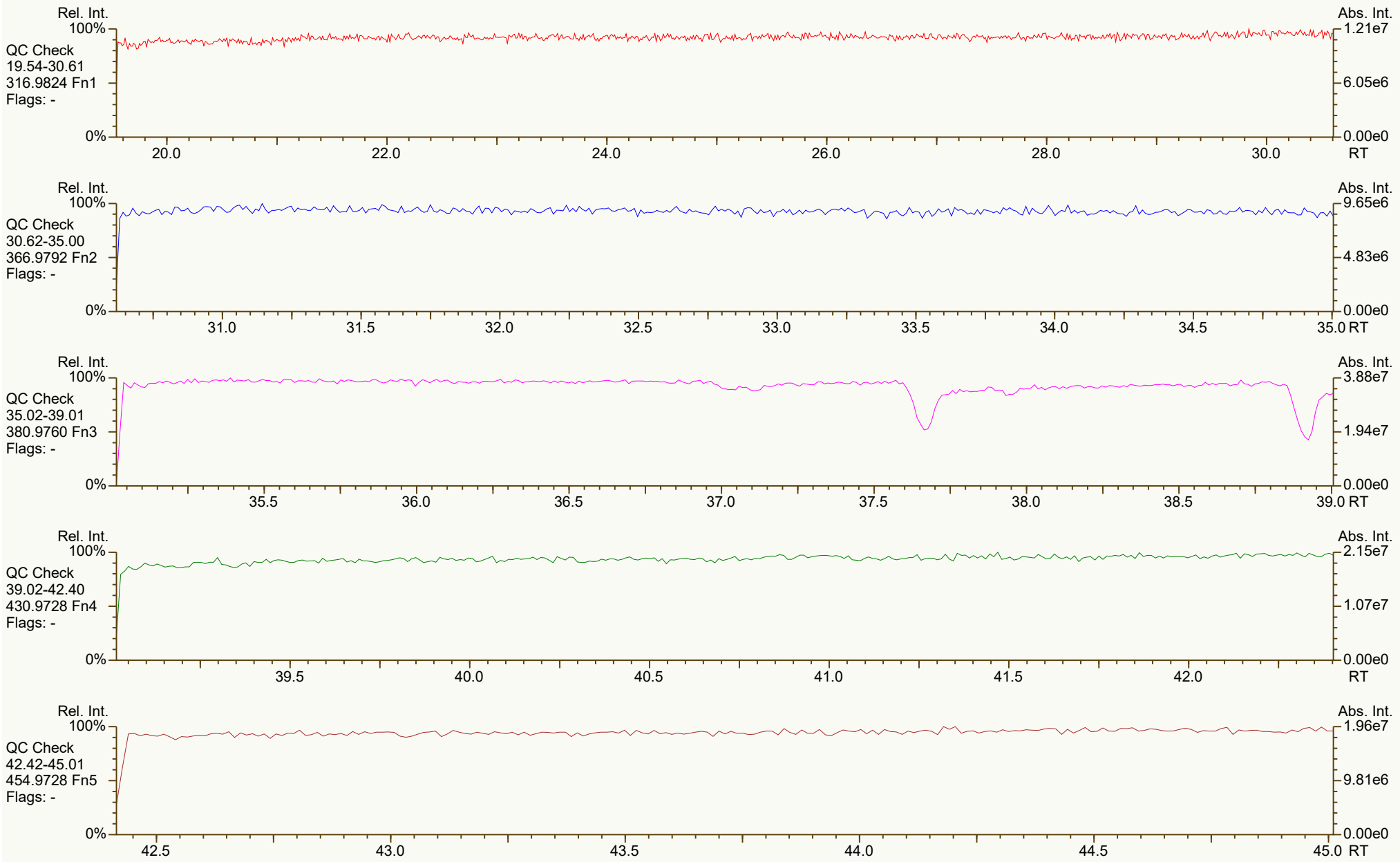
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C03	Analysis Date:	20-JAN-2022 12:20:14
Lab ID:	OPR2_18819_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	80.5	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	87.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	87	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	95.7	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	84	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	98.7	26	-	166	Y
13C-OCDD	200	183	26	-	397	Y
13C-2,3,7,8-TCDF	100	72.9	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	83.1	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	80.6	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	94.1	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	103	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	88.6	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	91.3	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	113	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	111	20	-	186	Y
13C-OCDF	200	197	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	32.1	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Jan 2022 10:50 Analyst: MS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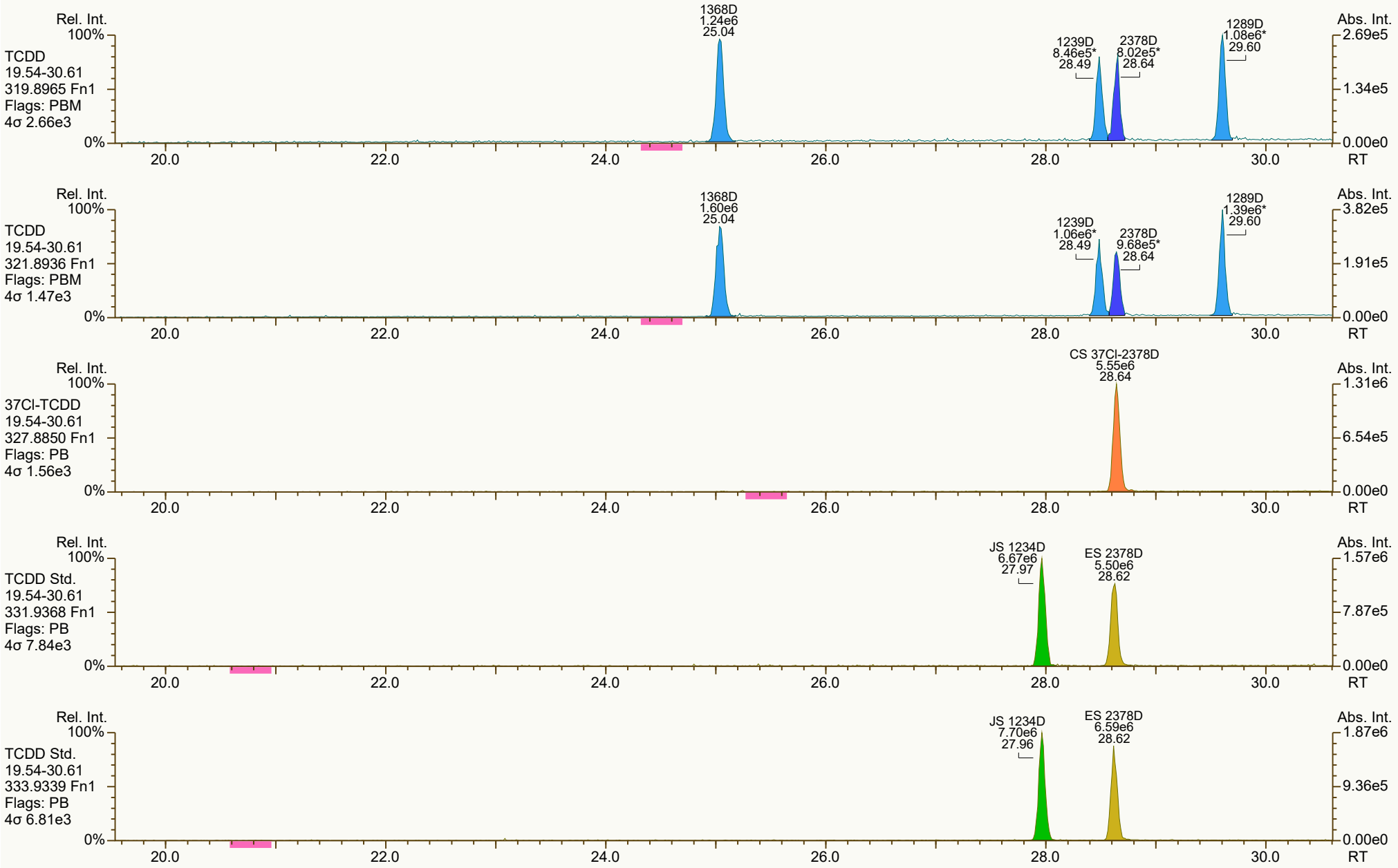
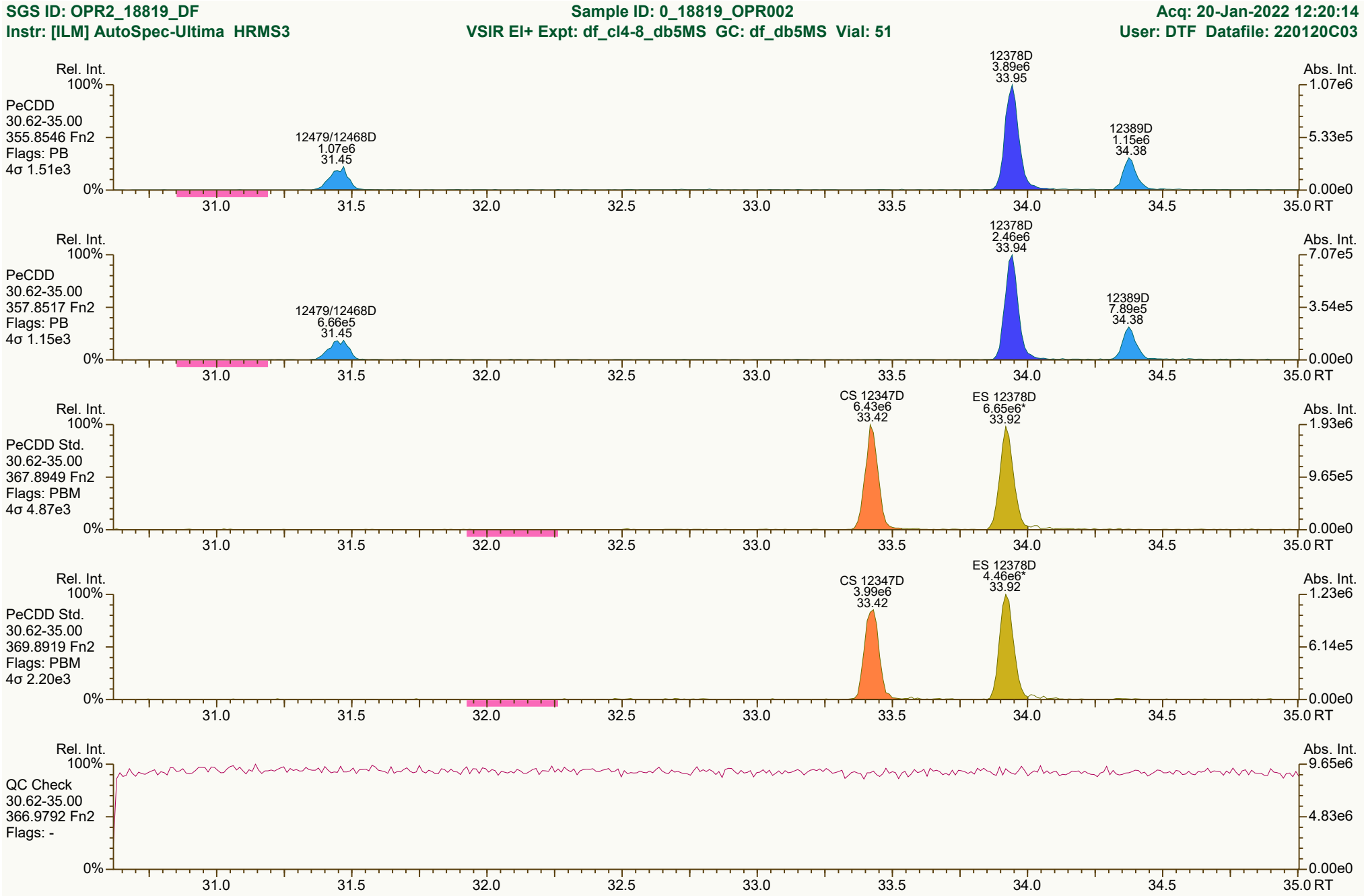
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
1.21e7
6.05e6
0.00e0
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
9.65e6
4.83e6
0.00e0
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
3.88e7
1.94e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
2.15e7
1.07e7
0.00e0
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.96e7
9.81e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 2.66e3
1368D
1.24e6
25.04
1239D
8.46e5*
28.49
2378D
8.02e5*
28.64
1289D
1.08e6*
29.60
Abs. Int.
2.69e5
1.34e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.47e3
1368D
1.60e6
25.04
1239D
1.06e6*
28.49
2378D
9.68e5*
28.64
1289D
1.39e6*
29.60
Abs. Int.
3.82e5
1.91e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.56e3
CS 37Cl-2378D
5.55e6
28.64
Abs. Int.
1.31e6
6.54e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 7.84e3
JS 1234D
6.67e6
27.97
ES 2378D
5.50e6
28.62
Abs. Int.
1.57e6
7.87e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 6.81e3
JS 1234D
7.70e6
27.96
ES 2378D
6.59e6
28.62
Abs. Int.
1.87e6
9.36e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT

SGS ID: OPR2_18819_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18819_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 51

Acq: 20-Jan-2022 12:20:14
User: DTF Datafile: 220120C03



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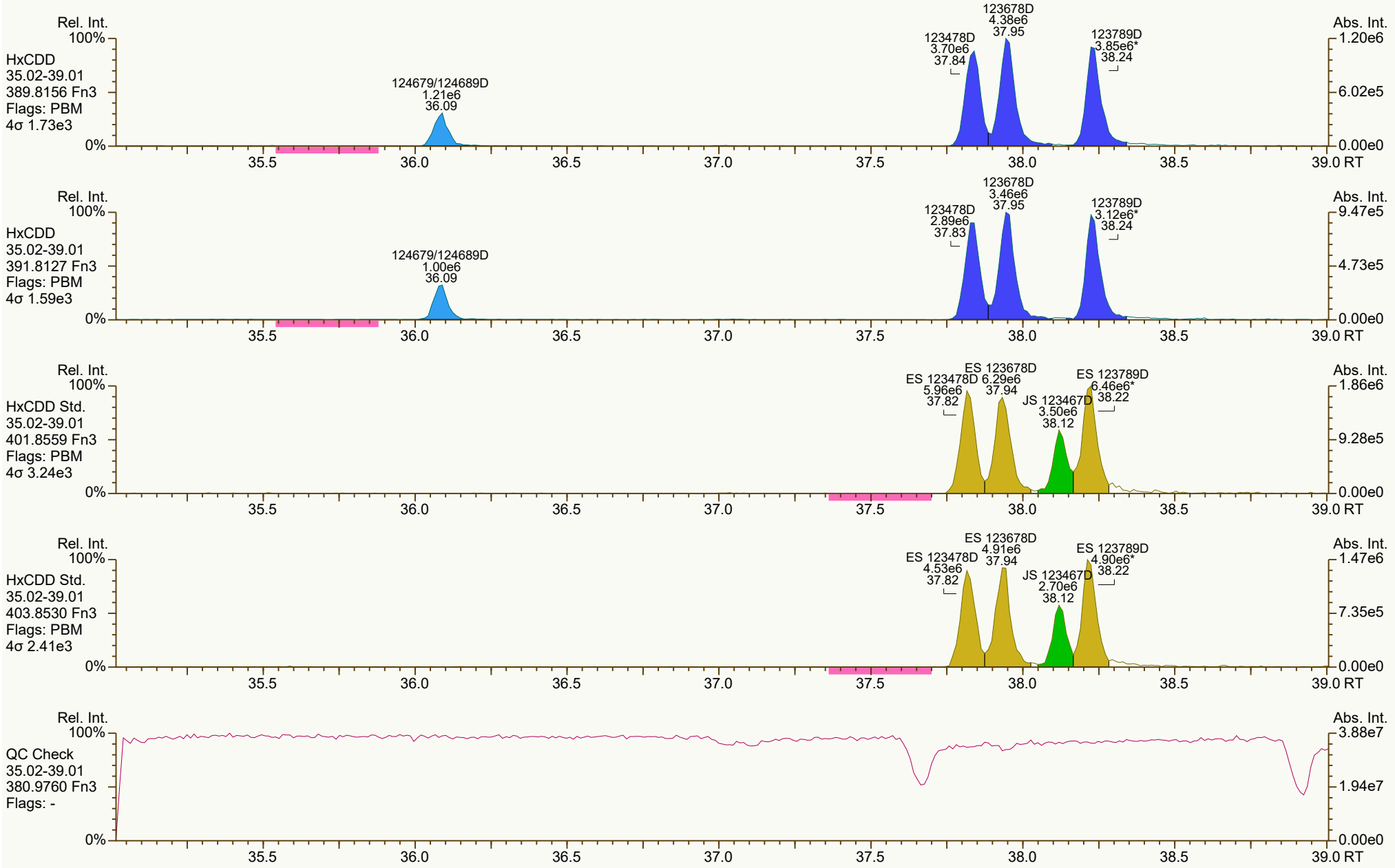
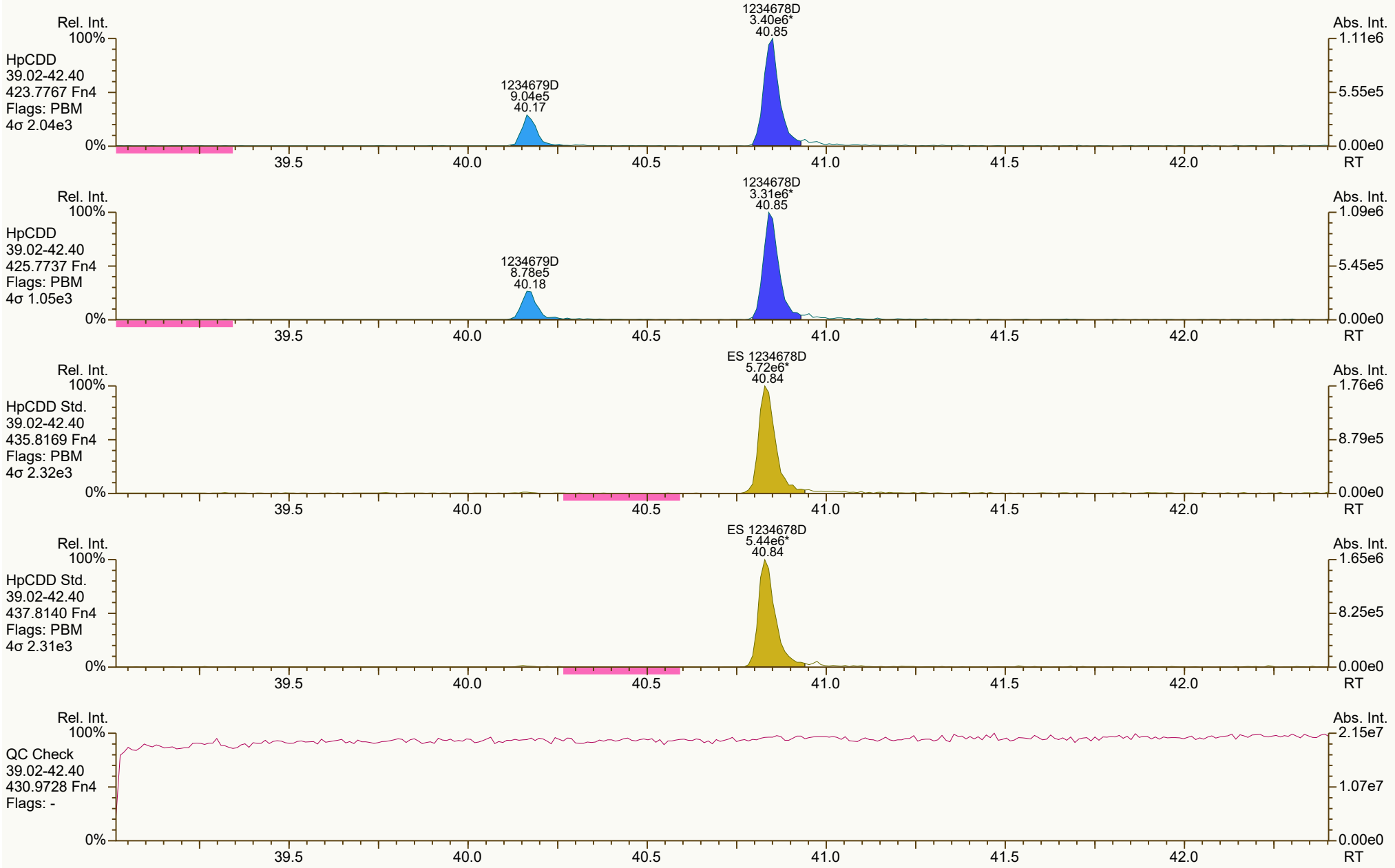
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 1800, 3700 scc: 751-300

Peak annotation: Areas, Centroids
PKD: 21-Jan-2022 10:04 Printed: 21-Jan-2022 11:19 Page 3 of 12


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.73e3
124679/124689D
1.21e6
36.09
123478D
3.70e6
37.84
123678D
4.38e6
37.95
123789D
3.85e6*
38.24
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 1.59e3
124679/124689D
1.00e6
36.09
123478D
2.89e6
37.83
123678D
3.46e6
37.95
123789D
3.12e6*
38.24
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.24e3
ES 123478D
5.96e6
37.82
ES 123678D
6.29e6
37.94
JS 123467D
3.50e6
38.12
ES 123789D
6.46e6*
38.22
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.41e3
ES 123478D
4.53e6
37.82
ES 123678D
4.91e6
37.94
JS 123467D
2.70e6
38.12
ES 123789D
4.90e6*
38.22
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
3.40e6*
40.85
1234679D
9.04e5
40.17
Abs. Int.
1.11e6
5.55e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.05e3
1234678D
3.31e6*
40.85
1234679D
8.78e5
40.18
Abs. Int.
1.09e6
5.45e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.32e3
ES 1234678D
5.72e6*
40.84
Abs. Int.
1.76e6
8.79e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678D
5.44e6*
40.84
Abs. Int.
1.65e6
8.25e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
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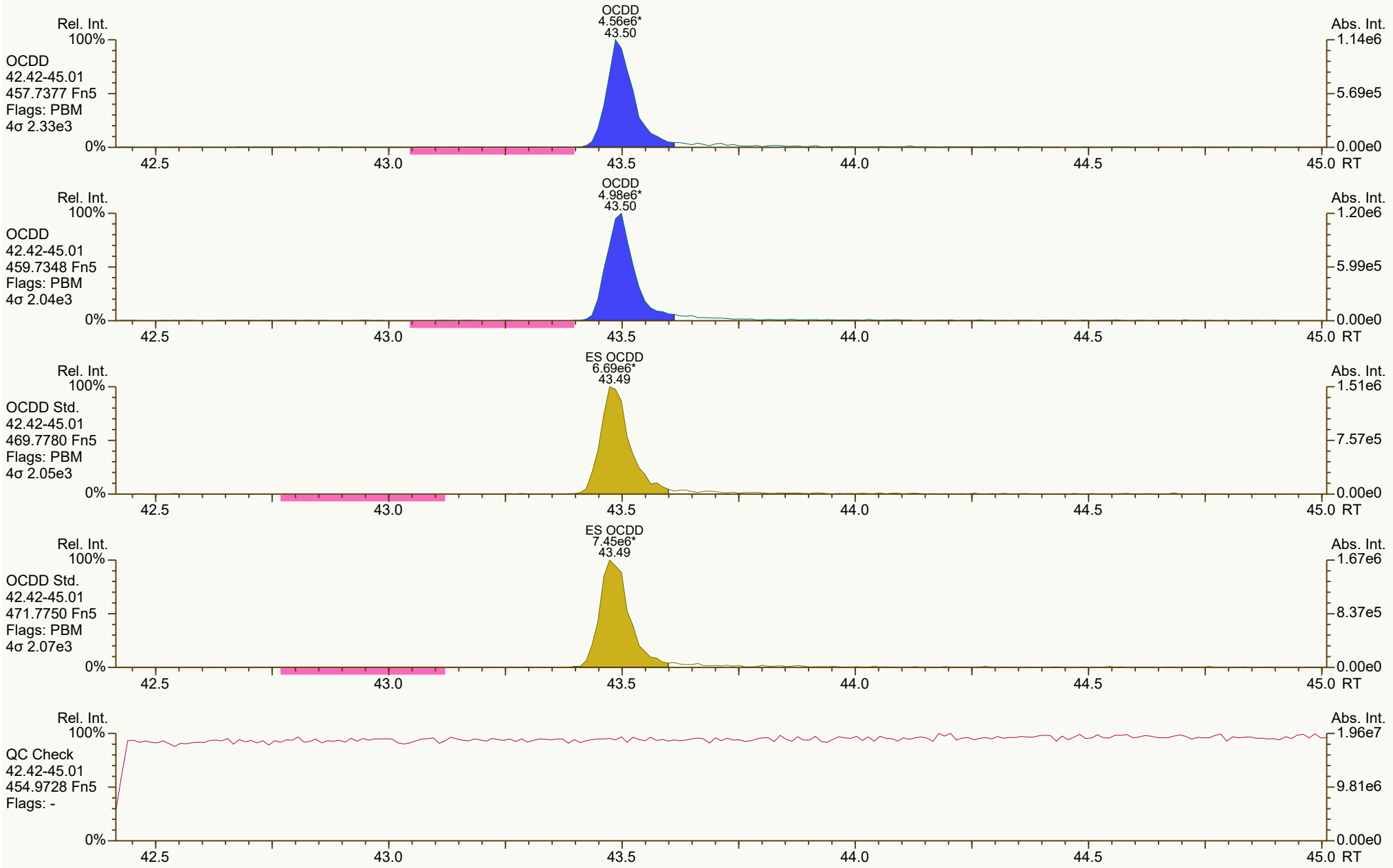
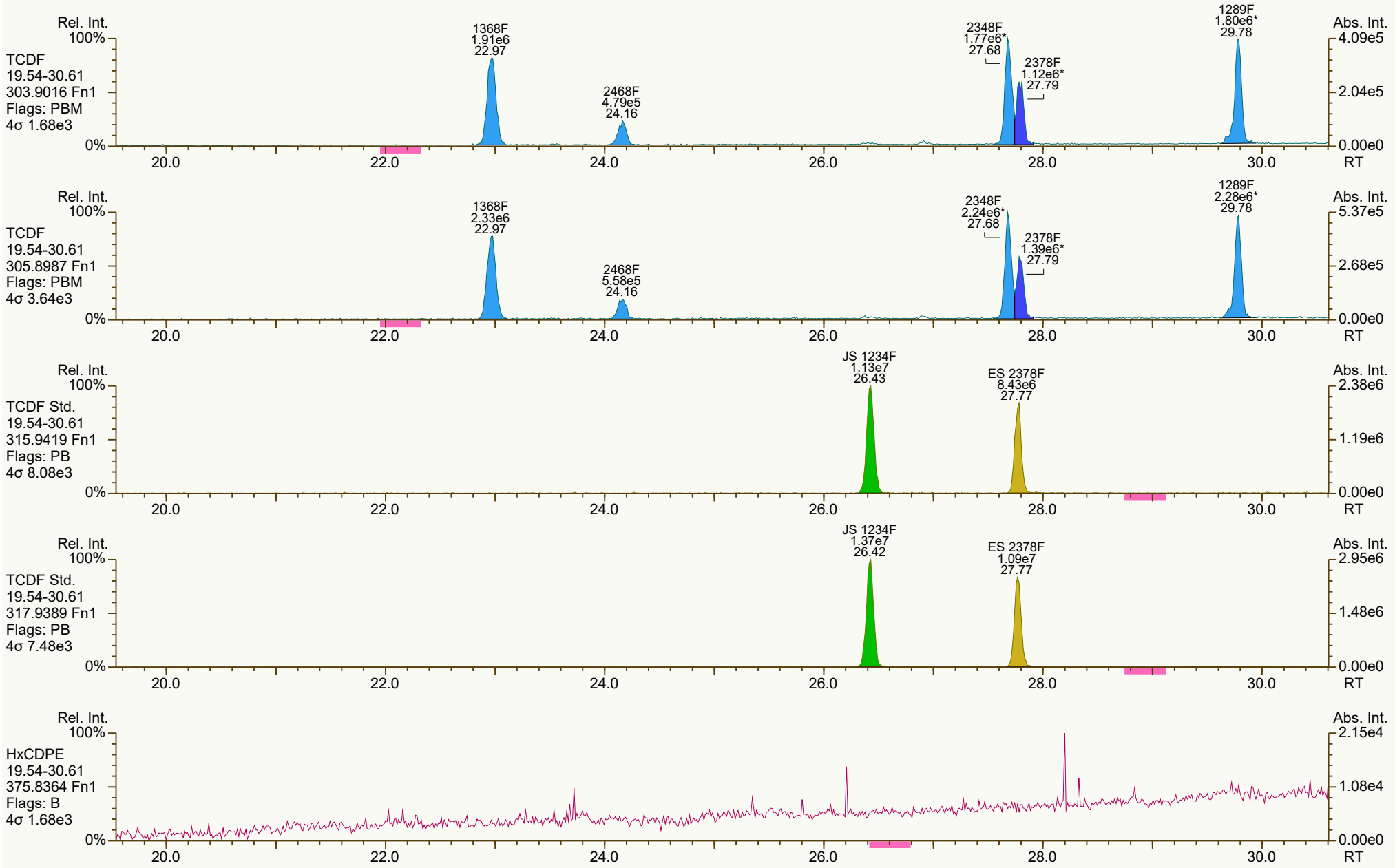
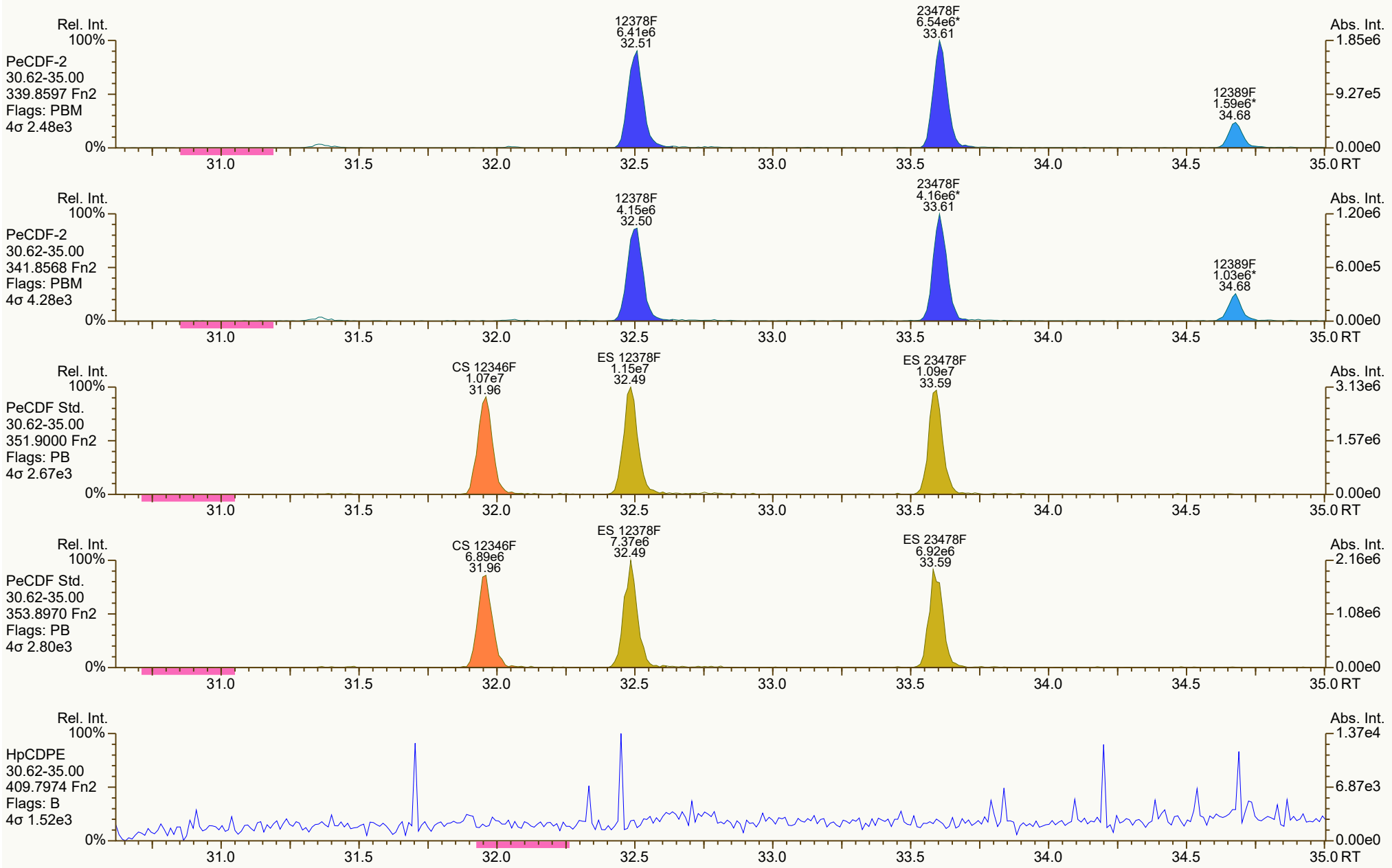
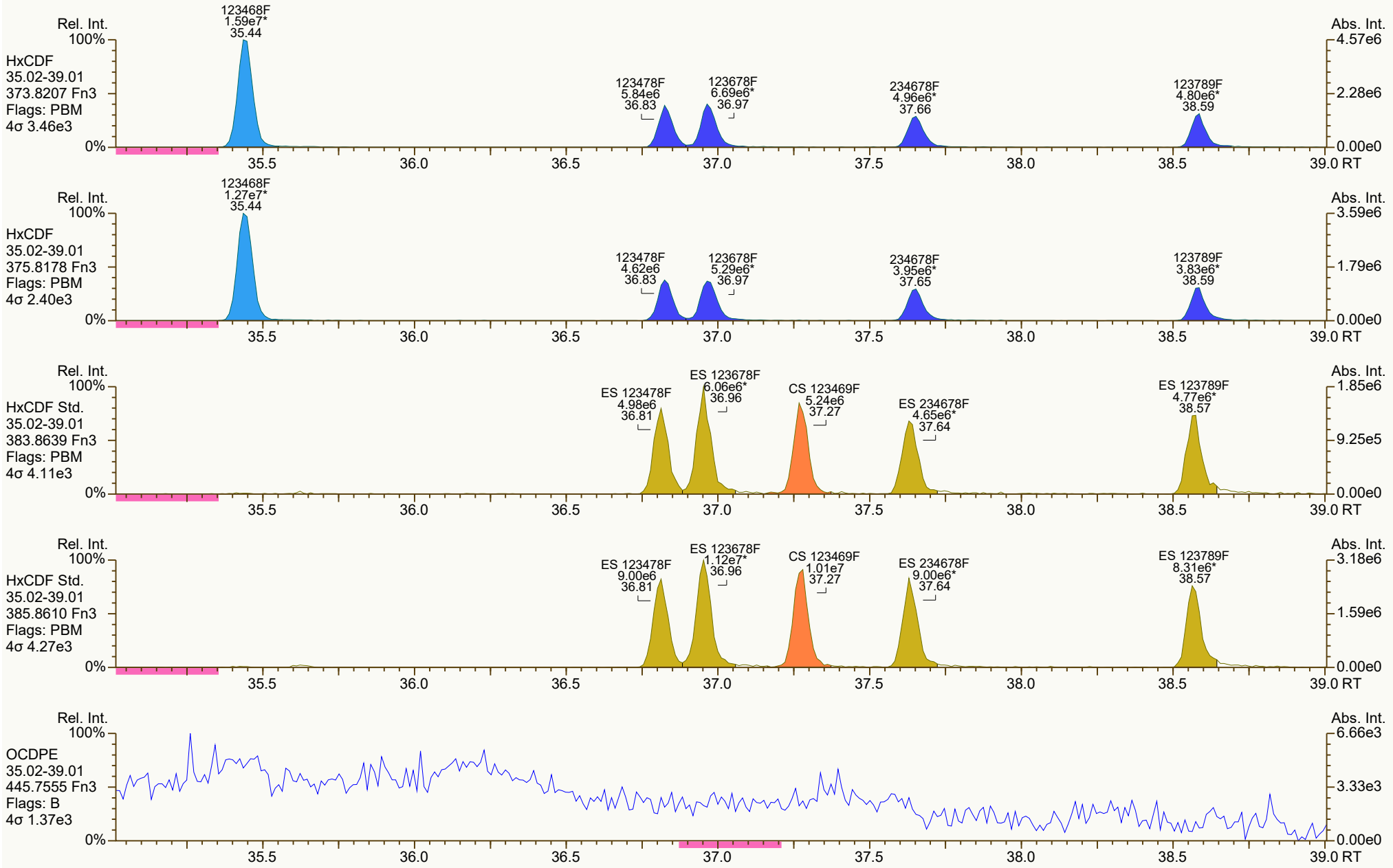
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

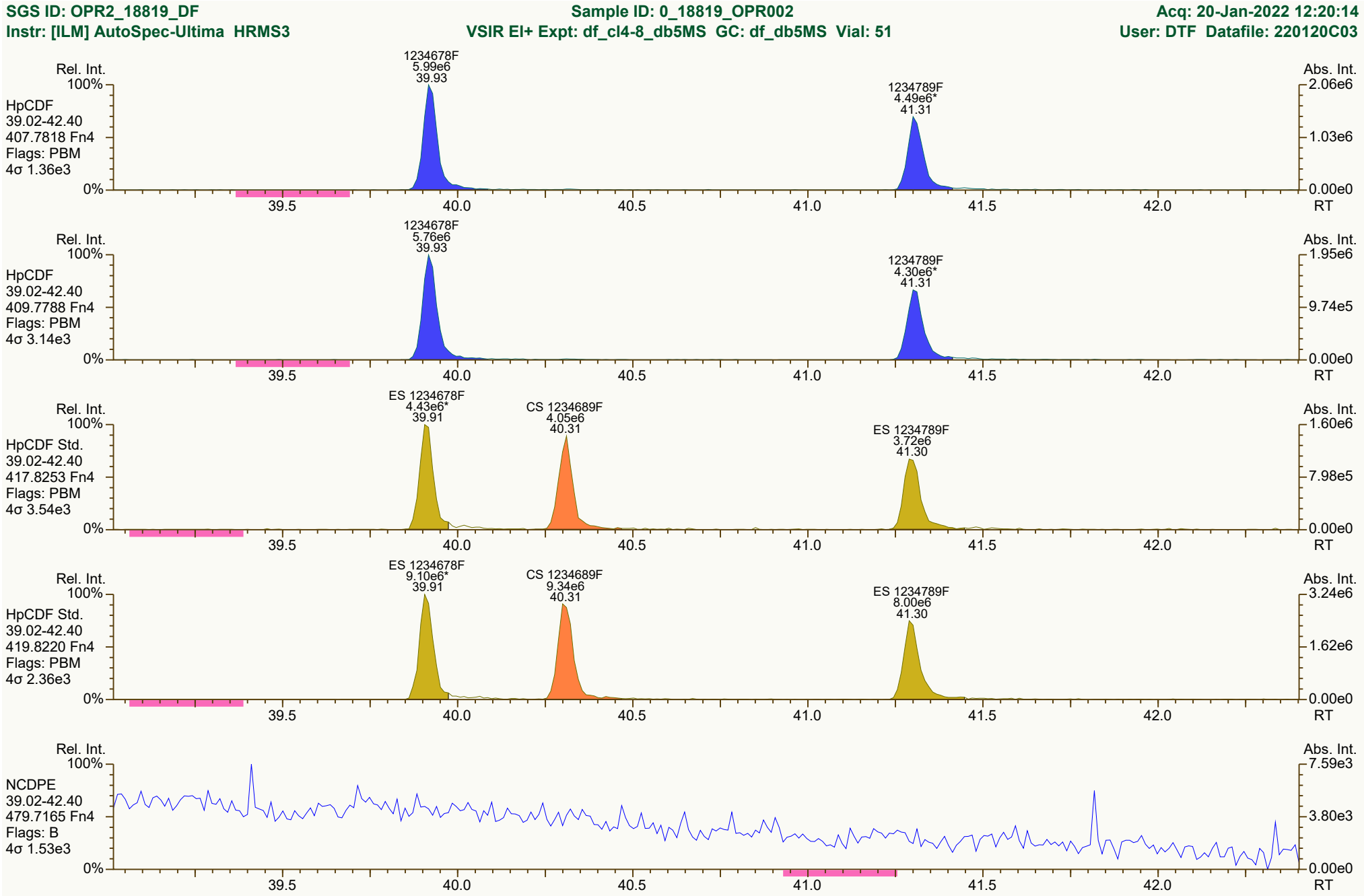

OCDD
4.56e6*
43.50
Rel. Int.
Abs. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 2.33e3
1.14e6
5.69e5
0.00e0
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.98e6*
43.50
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 2.04e3
1.20e6
5.99e5
ES OCDD
6.69e6*
43.49
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.05e3
1.51e6
7.57e5
ES OCDD
7.45e6*
43.49
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 2.07e3
1.67e6
8.37e5
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
1.96e7
9.81e6

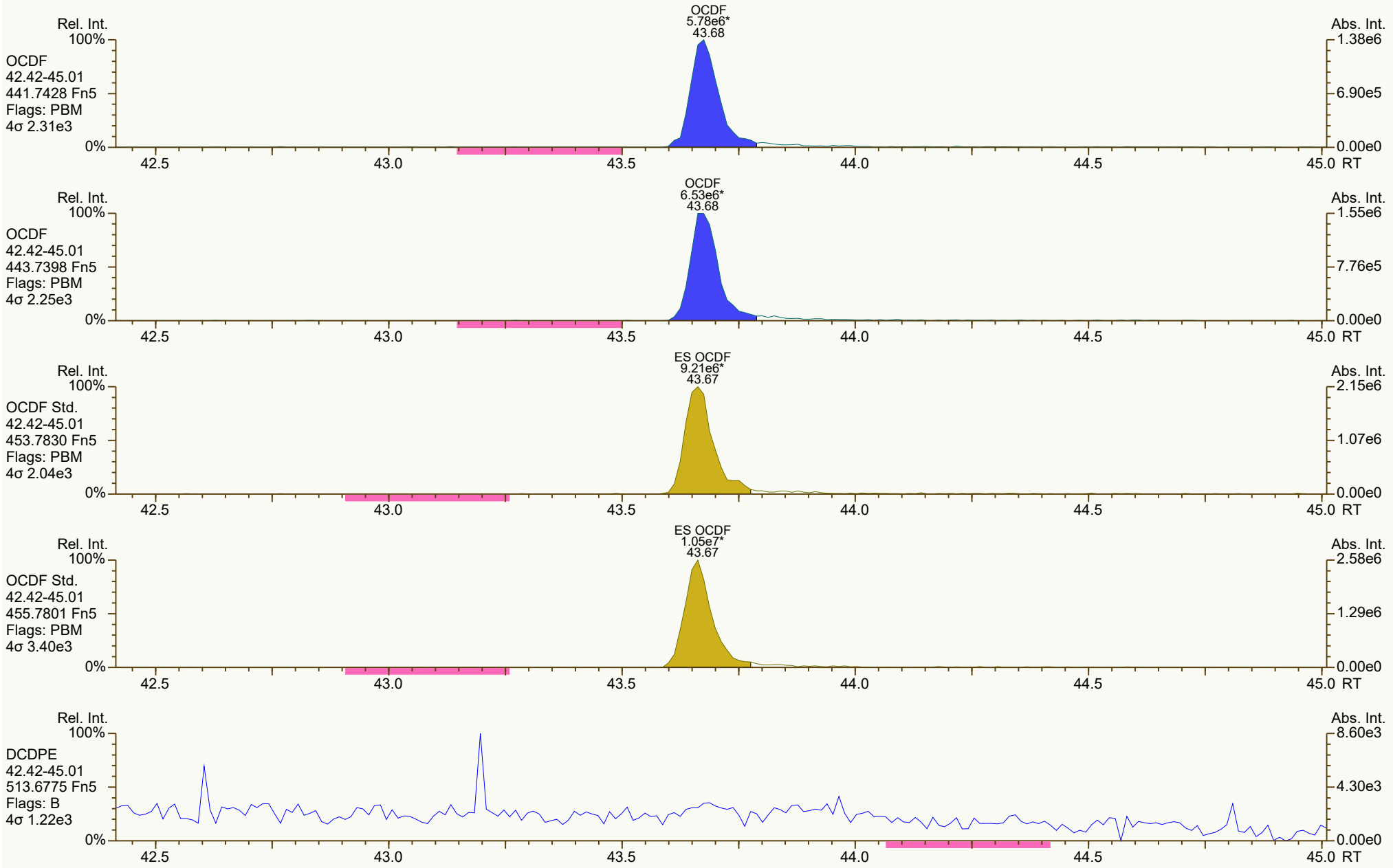

Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.68e3
1368F
1.91e6
22.97
2468F
4.79e5
24.16
2348F
1.77e6*
27.68
2378F
1.12e6*
27.79
1289F
1.80e6*
29.78
Abs. Int.
4.09e5
2.04e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 3.64e3
1368F
2.33e6
22.97
2468F
5.58e5
24.16
2348F
2.24e6*
27.68
2378F
1.39e6*
27.79
1289F
2.28e6*
29.78
Abs. Int.
5.37e5
2.68e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 8.08e3
JS 1234F
1.13e7
26.43
ES 2378F
8.43e6
27.77
Abs. Int.
2.38e6
1.19e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 7.48e3
JS 1234F
1.37e7
26.42
ES 2378F
1.09e7
27.77
Abs. Int.
2.95e6
1.48e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.68e3
Abs. Int.
2.15e4
1.08e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.93e6
1.46e6
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PB
4σ 1.76e3
13468/12468F
1.19e7
29.68
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PB
4σ 1.99e3
13468/12468F
7.31e6
29.69
1.68e6
8.40e5
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
1.21e7
6.05e6


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PBM
4σ 2.48e3
12378F
6.41e6
32.51
23478F
6.54e6*
33.61
12389F
1.59e6*
34.68
Abs. Int.
1.85e6
9.27e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: PBM
4σ 4.28e3
12378F
4.15e6
32.50
23478F
4.16e6*
33.61
12389F
1.03e6*
34.68
Abs. Int.
1.20e6
6.00e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 2.67e3
CS 12346F
1.07e7
31.96
ES 12378F
1.15e7
32.49
ES 23478F
1.09e7
33.59
Abs. Int.
3.13e6
1.57e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 2.80e3
CS 12346F
6.89e6
31.96
ES 12378F
7.37e6
32.49
ES 23478F
6.92e6
33.59
Abs. Int.
2.16e6
1.08e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.52e3
Abs. Int.
1.37e4
6.87e3
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 3.46e3
123468F 1.59e7* 35.44
123478F 5.84e6 36.83
123678F 6.69e6* 36.97
234678F 4.96e6* 37.66
123789F 4.80e6* 38.59
4.57e6
2.28e6
0.00e0
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.40e3
123468F 1.27e7* 35.44
123478F 4.62e6 36.83
123678F 5.29e6* 36.97
234678F 3.95e6* 37.65
123789F 3.83e6* 38.59
3.59e6
1.79e6
0.00e0
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 4.11e3
ES 123478F 4.98e6 36.81
ES 123678F 6.06e6* 36.96
CS 123469F 5.24e6 37.27
ES 234678F 4.65e6* 37.64
ES 123789F 4.77e6* 38.57
1.85e6
9.25e5
0.00e0
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 4.27e3
ES 123478F 9.00e6 36.81
ES 123678F 1.12e7* 36.96
CS 123469F 1.01e7 37.27
ES 234678F 9.00e6* 37.64
ES 123789F 8.31e6* 38.57
3.18e6
1.59e6
0.00e0
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.37e3
6.66e3
3.33e3
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


SGS ID: OPR2_18819_DF
Sample ID: 0_18819_OPR002
Acq: 20-Jan-2022 12:20:14
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 51
User: DTF Datafile: 220120C03
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 1.36e3
1234678F
5.99e6
39.93
1234789F
4.49e6*
41.31
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 3.14e3
1234678F
5.76e6
39.93
1234789F
4.30e6*
41.31
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 3.54e3
ES 1234678F
4.43e6*
39.91
CS 1234689F
4.05e6
40.31
ES 1234789F
3.72e6
41.30
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.36e3
ES 1234678F
9.10e6*
39.91
CS 1234689F
9.34e6
40.31
ES 1234789F
8.00e6
41.30
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.53e3
RT
Results: P:\B5900_B5999\B5964\B5964_18819 DF\Resources\OPR2_18819_DF.utp_res, saved 21-Jan-2022 10:45 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 4143, 2075, 2891 scc: 751-300
PKD: 21-Jan-2022 10:04 Printed: 21-Jan-2022 11:19 Page 11 of 12


OCDF
5.78e6*
43.68
Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 2.31e3
0%
Abs. Int.
1.38e6
6.90e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.53e6*
43.68
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 2.25e3
0%
Abs. Int.
1.55e6
7.76e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.21e6*
43.67
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 2.04e3
0%
Abs. Int.
2.15e6
1.07e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.05e7*
43.67
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 3.40e3
0%
Abs. Int.
2.58e6
1.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: B
4σ 1.22e3
0%
Abs. Int.
8.60e3
4.30e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5964B

22-Feb-2022

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

Meagan Willis

11451 Katy Fwy #400
Houston, TX 77079
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper
CN=Tamara Burkamper,
E=tamara.burkamper@sgs.com
I have reviewed this document
2022-02-22 08:00:15

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5964B
Analytical Protocol(s)	1613B
No. Samples Submitted	8 (Sample 007 taken off HOLD)
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	2
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.4
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996 and per SOPs DC_441.7, clean up per DC_365.11 and analyzed per DC_364.15.

MDL and/or validation studies provided upon request.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

Sample B5964_007 was taken off HOLD per email dated February 4, 2022 and extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

OPR1/OPR2_18911 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120221-S-SPS-SW-B-9H2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.41 g	Lab Sample ID:	B5964_18911_DF_007	Date Extracted:	16-Feb-2022
Date Collected:	02-Dec-2021	% Solid:	76.2 %	QC Batch No:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	21:09:42

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.341			ES 2378-TCDD	93.8	
12378-PeCDD	ND	0.331			ES 12378-PeCDD	98.5	
123478-HxCDD	ND	0.426			ES 123478-HxCDD	102	
123678-HxCDD	0.846			J	ES 123678-HxCDD	104	
123789-HxCDD	1.19			J	ES 123789-HxCDD	94.5	
1234678-HpCDD	18.1				ES 1234678-HpCDD	102	
OCDD	350				ES OCDD	103	
2378-TCDF	ND	0.207			ES 2378-TCDF	82.9	
12378-PeCDF	ND	0.18			ES 12378-PeCDF	94.9	
23478-PeCDF	ND	0.176			ES 23478-PeCDF	93.4	
123478-HxCDF	ND	0.159			ES 123478-HxCDF	101	
123678-HxCDF	ND	0.147			ES 123678-HxCDF	107	
234678-HxCDF	ND	0.141			ES 234678-HxCDF	115	
123789-HxCDF	ND	0.168			ES 123789-HxCDF	96.7	
1234678-HpCDF	ND	0.162			ES 1234678-HpCDF	113	
1234789-HpCDF	ND	0.257			ES 1234789-HpCDF	96.9	
OCDF	ND	0.546			ES OCDF	98.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	91.7	
Total TCDD	ND		1.24		CS 12347-PeCDD	103	
Total PeCDD	ND		0.886		CS 12346-PeCDF	96.6	
Total HxCDD	15.3		15.3		CS 123469-HxCDF	110	
Total HpCDD	52.6		52.6		CS 1234689-HpCDF	112	
Total TCDF	0.765		0.765				
Total PeCDF	ND	0.178	ND				
Total HxCDF	ND	0.152	ND				
Total HpCDF	ND	0.203	ND				
Total PCDD/Fs	**419**		**421**				
WHO-2005 TEQs							
TEQ: ND=0	0.489		0.489				
TEQ: ND=DL/2	0.918	0.472	0.918				
TEQ: ND=DL	1.35	0.945	1.35				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: 11215131-120221-S-SPS-SW-B-9H2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.41 g	Lab Sample ID:	B5964_18911_DF_007	Date Extracted:	16-Feb-2022
Date Collected:	02-Dec-2021	% Solid:	76.2 %	QC Batch No.:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	21:09:42

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.341)		12479/12468D	(0.331)		124679/124689D	8.42		1234679D	34.6	
1379D	(0.341)		12469D	[0.886]	J	123468D	(0.41)		1234678D	18.1	
1369D	(0.341)		12368D	(0.331)		123679/123689D	4.08				
1469D	[1.24]		12478D	(0.331)		123469D	0.797	J			
1247D...[4]	(0.341)		12379D	(0.331)		123478D	(0.426)				
1378D	(0.341)		12369D...[3]	(0.331)		123678D	0.846	J			
1268D	(0.341)		12346/12347D	(0.331)		123467D	(0.41)				
1478D	(0.341)		12378D	(0.331)		123789D	1.19	J	**Conc.**	52.6	
1279D	(0.341)		12367D	(0.331)					**EMPC**	52.6	
1234/1269D	(0.341)		12389D	(0.331)							
1236D	(0.341)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.341)										
1239D	(0.341)								OCDD	350	
2378D	(0.341)										
1278D	(0.341)										
1267D	(0.341)										
1289D	(0.341)										
Conc.	0		**Conc.**	0		**Conc.**	15.3				
EMPC	1.24		**EMPC**	0.886		**EMPC**	15.3				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0.489	0.489
TEQ: ND=DL/2	0.918	0.918
TEQ: ND=DL	1.35	1.35

	Conc.	EMPC
Total PCDD/Fs	419	421

Checkcode: 989-059-WCJ

Report Created: 21-Feb-2022 10:47 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-B-9H2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.41 g	Lab Sample ID:	B5964_18911_DF_007	Date Extracted:	16-Feb-2022
Date Collected:	02-Dec-2021	% Solid:	76.2 %	QC Batch No.:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	21:09:42

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.207)		13468/12468F	(0.165)		123468F	(0.152)		1234678F	(0.162)	
1468F	(0.207)		13678F...[3]	(0.178)		124678/134678F	(0.152)		1234679F	(0.203)	
2468F	0.765		12368F...[3]	(0.178)		134679F	(0.152)		1234689F	(0.203)	
1346/1246F	(0.207)		14678F	(0.178)		124679F	(0.152)		1234789F	(0.257)	
1347F...[3]	(0.207)		13479F	(0.178)		124689F	(0.152)				
1348F	(0.207)		13469/12479F	(0.178)		123467F	(0.152)				
1248F...[3]	(0.207)		12346F	(0.178)		123478F	(0.159)				
1268F	(0.207)		23468/12469F	(0.178)		123678F	(0.147)				
1467F	(0.207)		12347F	(0.178)		123479F	(0.152)				
1478F	(0.207)		12348F	(0.178)		123469F	(0.152)				
1369/1237F	(0.207)		12378F	(0.18)		123679F	(0.152)				
2467F	(0.207)		12678/12367F	(0.178)		234678F	(0.141)		**Conc.**	0	
2368F	(0.207)		12379F	(0.178)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.207)		12679F	(0.178)		123689F	(0.152)				
1278F	(0.207)		23467/12369F	(0.178)		123789F	(0.168)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.207)		23478F	(0.176)		123789/123489F	0				
1267F	(0.207)		23478/12489F	0		123489F	(0.152)		OCDF	(0.546)	
2346/1249F	(0.207)		12489F	(0.178)							
2347/1279F	(0.207)		12349F	(0.178)							
2348F	(0.207)		12389F	(0.178)							
2378F	(0.207)										
2367/3467F	(0.207)										
1269F	(0.207)										
1239F	(0.207)										
1289F	(0.207)										
Conc.	0.765		**Conc.**	0		**Conc.**	0				
EMPC	0.765		**EMPC**	0		**EMPC**	0				

Checkcode: 989-059-WCJ

Report Created: 21-Feb-2022 10:47 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-B-9H2 TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5964_18911_DF_007
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.41 g	QC Batch No.:	18911
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	16-Feb-2022
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	19-Feb-2022 21:09
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.341)		0.341	(0.341)	(0.341)	(0.341)
12378-PeCDD	(0.331)		0.331	(0.165)	(0.331)	(0.331)
123478-HxCDD	(0.426)		0.426	(0.0426)	(0.0426)	(0.0426)
123678-HxCDD	0.846	J	0.392	0.0846	0.0846	0.0846
123789-HxCDD	1.19	J	0.413	0.119	0.119	0.119
1234678-HpCDD	18.1		0.494	0.181	0.181	0.181
OCDD	350		0.815	0.35	0.035	0.105
2378-TCDF	(0.207)		0.207	(0.0207)	(0.0207)	(0.0207)
12378-PeCDF	(0.18)		0.18	(0.00898)	(0.00898)	(0.00539)
23478-PeCDF	(0.176)		0.176	(0.0878)	(0.0878)	(0.0527)
123478-HxCDF	(0.159)		0.159	(0.0159)	(0.0159)	(0.0159)
123678-HxCDF	(0.147)		0.147	(0.0147)	(0.0147)	(0.0147)
234678-HxCDF	(0.141)		0.141	(0.0141)	(0.0141)	(0.0141)
123789-HxCDF	(0.168)		0.168	(0.0168)	(0.0168)	(0.0168)
1234678-HpCDF	(0.162)		0.162	(0.00162)	(0.00162)	(0.00162)
1234789-HpCDF	(0.257)		0.257	(0.00257)	(0.00257)	(0.00257)
OCDF	(0.546)		0.546	(0.000546)	(0.0000546)	(0.000164)

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TEQ Summaries			
EMPC = 0, ND = 0	0.734	0.419	0.489
EMPC = 0, ND = DL / 2	1.1	0.867	0.918
EMPC = 0, ND = DL	1.47	1.32	1.35
EMPC = 0, < J-level = 0	0.531	0.216	0.286
EMPC = EMPC, ND = 0	0.734	0.419	0.489
EMPC = EMPC, ND = DL / 2	1.1	0.867	0.918
EMPC = EMPC, ND = DL	1.47	1.32	1.35
EMPC = EMPC, < J-level = 0	0.531	0.216	0.286

Checkcode: 989-059-WCJ

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Sample ID: Method Blank B5964_18911 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18911_DF_SDS	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:37:00

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.388			ES 2378-TCDD	89.5	
12378-PeCDD	ND	0.236			ES 12378-PeCDD	98.9	
123478-HxCDD	ND	0.269			ES 123478-HxCDD	90.6	
123678-HxCDD	ND	0.25			ES 123678-HxCDD	95.4	
123789-HxCDD	ND	0.266			ES 123789-HxCDD	88.3	
1234678-HpCDD	ND	0.39			ES 1234678-HpCDD	93.1	
OCDD	ND	0.598			ES OCDD	88.9	
2378-TCDF	ND	0.224			ES 2378-TCDF	79.3	
12378-PeCDF	ND	0.182			ES 12378-PeCDF	93.4	
23478-PeCDF	ND	0.183			ES 23478-PeCDF	93.7	
123478-HxCDF	ND	0.184			ES 123478-HxCDF	90.9	
123678-HxCDF	ND	0.173			ES 123678-HxCDF	102	
234678-HxCDF	ND	0.178			ES 234678-HxCDF	106	
123789-HxCDF	ND	0.198			ES 123789-HxCDF	88.6	
1234678-HpCDF	ND	0.211			ES 1234678-HpCDF	97.9	
1234789-HpCDF	ND	0.31			ES 1234789-HpCDF	89.8	
OCDF	ND	0.451			ES OCDF	88.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	95.7	
Total TCDD	ND	0.388	ND		CS 12347-PeCDD	120	
Total PeCDD	ND	0.236	ND		CS 12346-PeCDF	105	
Total HxCDD	ND	0.261	ND		CS 123469-HxCDF	113	
Total HpCDD	ND	0.39	ND		CS 1234689-HpCDF	106	
Total TCDF	ND	0.224	ND				
Total PeCDF	ND	0.183	ND				
Total HxCDF	ND	0.182	ND				
Total HpCDF	ND	0.254	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.434	0.434	0.434				
TEQ: ND=DL	0.868	0.868	0.868				

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Sample ID: Method Blank B5964_18911 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18911_DF_SDS	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:37:00

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.388)		12479/12468D	(0.236)		124679/124689D	(0.261)		1234679D	(0.39)	
1379D	(0.388)		12469D	(0.236)		123468D	(0.261)		1234678D	(0.39)	
1369D	(0.388)		12368D	(0.236)		123679/123689D	(0.261)				
1469D	(0.388)		12478D	(0.236)		123469D	(0.261)				
1247D...[4]	(0.388)		12379D	(0.236)		123478D	(0.269)				
1378D	(0.388)		12369D...[3]	(0.236)		123678D	(0.25)				
1268D	(0.388)		12346/12347D	(0.236)		123467D	(0.261)				
1478D	(0.388)		12378D	(0.236)		123789D	(0.266)		**Conc.**	0	
1279D	(0.388)		12367D	(0.236)					**EMPC**	0	
1234/1269D	(0.388)		12389D	(0.236)							
1236D	(0.388)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.388)										
1239D	(0.388)								OCDD	(0.598)	
2378D	(0.388)										
1278D	(0.388)										
1267D	(0.388)										
1289D	(0.388)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.434	0.434
TEQ: ND=DL	0.868	0.868

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 399-492-BMX

Report Created: 21-Feb-2022 10:47 Analyst: TF

Sample ID: Method Blank B5964_18911 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18911_DF_SDS	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:37:00

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.224)		13468/12468F	(0.17)		123468F	(0.182)		1234678F	(0.211)	
1468F	(0.224)		13678F...[3]	(0.183)		124678/134678F	(0.182)		1234679F	(0.254)	
2468F	(0.224)		12368F...[3]	(0.183)		134679F	(0.182)		1234689F	(0.254)	
1346/1246F	(0.224)		14678F	(0.183)		124679F	(0.182)		1234789F	(0.31)	
1347F...[3]	(0.224)		13479F	(0.183)		124689F	(0.182)				
1348F	(0.224)		13469/12479F	(0.183)		123467F	(0.182)				
1248F...[3]	(0.224)		12346F	(0.183)		123478F	(0.184)				
1268F	(0.224)		23468/12469F	(0.183)		123678F	(0.173)				
1467F	(0.224)		12347F	(0.183)		123479F	(0.182)				
1478F	(0.224)		12348F	(0.183)		123469F	(0.182)				
1369/1237F	(0.224)		12378F	(0.182)		123679F	(0.182)				
2467F	(0.224)		12678/12367F	(0.183)		234678F	(0.178)		**Conc.**	0	
2368F	(0.224)		12379F	(0.183)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.224)		12679F	(0.183)		123689F	(0.182)				
1278F	(0.224)		23467/12369F	(0.183)		123789F	(0.198)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.224)		23478F	(0.183)		123789/123489F	0				
1267F	(0.224)		23478/12489F	0		123489F	(0.182)		OCDF	(0.451)	
2346/1249F	(0.224)		12489F	(0.183)							
2347/1279F	(0.224)		12349F	(0.183)							
2348F	(0.224)		12389F	(0.183)							
2378F	(0.224)										
2367/3467F	(0.224)										
1269F	(0.224)										
1239F	(0.224)										
1289F	(0.224)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 399-492-BMX

Report Created: 21-Feb-2022 10:47 Analyst: TF

Sample ID: Method Blank B5964_18911 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18911_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18911
Date Collected:	n/a	Split:	-	Date Extracted:	16-Feb-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	19-Feb-2022 19:37
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.388)		0.388	(0.388)	(0.388)	(0.388)
12378-PeCDD	(0.236)		0.236	(0.118)	(0.236)	(0.236)
123478-HxCDD	(0.269)		0.269	(0.0269)	(0.0269)	(0.0269)
123678-HxCDD	(0.25)		0.25	(0.025)	(0.025)	(0.025)
123789-HxCDD	(0.266)		0.266	(0.0266)	(0.0266)	(0.0266)
1234678-HpCDD	(0.39)		0.39	(0.0039)	(0.0039)	(0.0039)
OCDD	(0.598)		0.598	(0.000598)	(0.0000598)	(0.000179)
2378-TCDF	(0.224)		0.224	(0.0224)	(0.0224)	(0.0224)
12378-PeCDF	(0.182)		0.182	(0.00912)	(0.00912)	(0.00547)
23478-PeCDF	(0.183)		0.183	(0.0915)	(0.0915)	(0.0549)
123478-HxCDF	(0.184)		0.184	(0.0184)	(0.0184)	(0.0184)
123678-HxCDF	(0.173)		0.173	(0.0173)	(0.0173)	(0.0173)
234678-HxCDF	(0.178)		0.178	(0.0178)	(0.0178)	(0.0178)
123789-HxCDF	(0.198)		0.198	(0.0198)	(0.0198)	(0.0198)
1234678-HpCDF	(0.211)		0.211	(0.00211)	(0.00211)	(0.00211)
1234789-HpCDF	(0.31)		0.31	(0.0031)	(0.0031)	(0.0031)
OCDF	(0.451)		0.451	(0.000451)	(0.0000451)	(0.000135)

TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.395	0.454	0.434
EMPC = 0, ND = DL	0.791	0.908	0.868
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.395	0.454	0.434
EMPC = EMPC, ND = DL	0.791	0.908	0.868
EMPC = EMPC, < J-level = 0	0	0	0

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Checkcode: 399-492-BMX

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Sample ID: 0_18911_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID:	OPR1_18911_DF	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18911	Date Analyzed:	19-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	18:04:19

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	11.7				ES 2378-TCDD	91.5	
12378-PeCDD	50.5				ES 12378-PeCDD	90.9	
123478-HxCDD	54.5				ES 123478-HxCDD	98.2	
123678-HxCDD	56.6				ES 123678-HxCDD	102	
123789-HxCDD	52.2				ES 123789-HxCDD	92	
1234678-HpCDD	54.9				ES 1234678-HpCDD	97.5	
OCDD	112				ES OCDD	90	
2378-TCDF	10.9				ES 2378-TCDF	77.7	
12378-PeCDF	48.7				ES 12378-PeCDF	91.4	
23478-PeCDF	54.1				ES 23478-PeCDF	85.6	
123478-HxCDF	51.5				ES 123478-HxCDF	96.2	
123678-HxCDF	53.7				ES 123678-HxCDF	103	
234678-HxCDF	54.4				ES 234678-HxCDF	111	
123789-HxCDF	48.7				ES 123789-HxCDF	94.4	
1234678-HpCDF	50.9				ES 1234678-HpCDF	104	
1234789-HpCDF	51.7				ES 1234789-HpCDF	95.5	
OCDF	103				ES OCDF	91.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	97.6	
Total TCDD	53.1		53.1		CS 12347-PeCDD	108	
Total PeCDD	77.7		77.7		CS 12346-PeCDF	98.4	
Total HxCDD	179		179		CS 123469-HxCDF	119	
Total HpCDD	68.4		68.4		CS 1234689-HpCDF	113	
Total TCDF	63.5		63.5				
Total PeCDF	206		206				
Total HxCDF	334		334				
Total HpCDF	103		103				
Total PCDD/Fs	**1,300**		**1,300**				
WHO-2005 TEQs							
TEQ: ND=0	120		120				
TEQ: ND=DL/2	120	0.265	120				
TEQ: ND=DL	120	0.53	120				

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Sample ID: 0_18911_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID:	OPR2_18911_DF	Date Extracted:	16-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18911	Date Analyzed:	20-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	5:55:34

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	11.1				ES 2378-TCDD	97.9	
12378-PeCDD	47.5				ES 12378-PeCDD	103	
123478-HxCDD	52.2				ES 123478-HxCDD	98.4	
123678-HxCDD	54.5				ES 123678-HxCDD	104	
123789-HxCDD	51.6				ES 123789-HxCDD	91.9	
1234678-HpCDD	52.2				ES 1234678-HpCDD	98	
OCDD	109				ES OCDD	92.5	
2378-TCDF	10.7				ES 2378-TCDF	85.1	
12378-PeCDF	49.7				ES 12378-PeCDF	96.4	
23478-PeCDF	50.9				ES 23478-PeCDF	100	
123478-HxCDF	51.4				ES 123478-HxCDF	91.9	
123678-HxCDF	50.6				ES 123678-HxCDF	105	
234678-HxCDF	50.7				ES 234678-HxCDF	114	
123789-HxCDF	47.8				ES 123789-HxCDF	94	
1234678-HpCDF	49.8				ES 1234678-HpCDF	107	
1234789-HpCDF	49.1				ES 1234789-HpCDF	95.3	
OCDF	103				ES OCDF	92.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	101	
Total TCDD	52.3		52.3		CS 12347-PeCDD	116	
Total PeCDD	73.6		73.6		CS 12346-PeCDF	105	
Total HxCDD	174		174		CS 123469-HxCDF	109	
Total HpCDD	65.2		65.2		CS 1234689-HpCDF	106	
Total TCDF	63.4		63.4				
Total PeCDF	197		197				
Total HxCDF	320		320				
Total HpCDF	98.8		98.8				
Total PCDD/Fs	**1,260**		**1,260**				
WHO-2005 TEQs							
TEQ: ND=0	114		114				
TEQ: ND=DL/2	114	0.279	114				
TEQ: ND=DL	114	0.558	114				

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5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample DUP			Method 1613B
Sample ID: 0_18911_OPR001			
Analyte	**OPR1_18911_DF pg/uL**	**OPR2_18911_DF (DUP) pg/uL**	**RPD**
2,3,7,8-TCDD	11.7	11.1	5.3%
1,2,3,7,8-PeCDD	50.5	47.5	6.1%
1,2,3,4,7,8-HxCDD	54.5	52.2	4.3%
1,2,3,6,7,8-HxCDD	56.6	54.5	3.9%
1,2,3,7,8,9-HxCDD	52.2	51.6	1.2%
1,2,3,4,6,7,8-HpCDD	54.9	52.2	5.0%
OCDD	112	109	2.6%
2,3,7,8-TCDF	10.9	10.7	2.1%
1,2,3,7,8-PeCDF	48.7	49.7	2.1%
2,3,4,7,8-PeCDF	54.1	50.9	6.3%
1,2,3,4,7,8-HxCDF	51.5	51.4	0.2%
1,2,3,6,7,8-HxCDF	53.7	50.6	5.9%
2,3,4,6,7,8-HxCDF	54.4	50.7	7.0%
1,2,3,7,8,9-HxCDF	48.7	47.8	1.9%
1,2,3,4,6,7,8-HpCDF	50.9	49.8	2.3%
1,2,3,4,7,8,9-HpCDF	51.7	49.1	5.3%
OCDF	103	103	0.9%
Totals			
Total TCDD	53.1	52.3	1.6%
Total PeCDD	77.7	73.6	5.4%
Total HxCDD	179	174	3.0%
Total HpCDD	68.4	65.2	4.8%
Total TCDF	63.5	63.4	0.1%
Total PeCDF	206	197	4.6%
Total HxCDF	334	320	4.2%
Total HpCDF	103	98.8	3.8%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5964*
Requested TAT:	*10 business days*
Projected due date:	*21-Feb-22*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120121-S-SPS-NE-O-8	B5964_001	Solid	1	4oz Amber	01-Dec-21	13:55	0.4	2	4905 2704 1834
11215131-120121-S-SPS-NE-O-9	B5964_002	Solid	1	4oz Amber	01-Dec-21	14:25	0.4	2	4905 2704 1834
11215131-120121-S-SPS-NE-B-2	B5964_003	Solid	1	4oz Amber	01-Dec-21	14:30	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-O-7	B5964_004	Solid	1	4oz Amber	02-Dec-21	10:15	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9	B5964_005	Solid - MS/MSD	1	4oz Amber	02-Dec-21	10:20	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9H1	B5964_006	Solid	1	4oz Amber	02-Dec-21	10:25	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9H2	B5964_007**	Solid	1	4oz Amber	02-Dec-21	10:30	0.4	2	4905 2704 1834
11215131-120221-S-SPS-DUP2	B5964_008	Solid	1	4oz Amber	02-Dec-21	n/a	0.4	2	4905 2704 1834

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact * sample 006 taken off HOLD per client email dated 1/5/2022
**sample taken off HOLD per email dated 2/4/2022

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* TB 2/7/2022

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS

CHAIN OF CUSTODY

B59964 1/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS
11215131-120221-S-SPS-NE-S-11	12/1/21	1330	C	S	4 oz	X					RUSH
11215131-120221-S-SPS-NE-O-8	↓	1355	↓	↓	4 oz	X					NE-O is overburden, not zero *
11215131-120221-S-SPS-NE-O-9	↓	1425	↓	↓	4 oz	X					" " *
11215131-120221-S-SPS-NE-B-2	↓	1430	↓	↓	4 oz	X					*
11215131-120221-S-SPS-SW-S-17	12/2/21	830	↓	↓	4 oz	X					RUSH
11215131-120221-S-SPS-SW-S-18	↓	855	↓	↓	4 oz	X					RUSH
11215131-120221-S-SPS-SW-S-19	↓	920	↓	↓	4 oz	X					RUSH
~~11215131-120221-S-SPS-SW-O-7~~	↓	~~1015~~	↓	↓	~~4 oz~~						error
11215131-120221-S-SPS-SW-O-7	↓	1015	↓	↓	4 oz	X					SW-O is overburden, not zero *
11215131-120221-S-SPS-SW-B-9	↓	1020	↓	↓	4 oz	X	X	X			MS/MSD *

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE:	TIME:
Stephen Sollar	12/2/21	1345	Eddie Castro	Ashley Owens	12/3/21	10:47
RELINQUISHED BY (2): Eddie Castro	DATE: 12-2-21	TIME: 1525	RECEIVED BY: [signature] 12/2/21 1525	COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT		
				CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT		
RELINQUISHED BY (3): [signature]	DATE: 12/2/21	TIME: 1525	RECEIVED BY:	CARRIER: FedEx	TEMP: °C 0.4°	
				TRACKING #: 4905 2704 1834		

*=samples in this project.

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CHAIN OF CUSTODY

B59964 2/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS
11215131-120221-S-SPS-SW-B-9111	12/2/21	1025			4 oz	X					HOLD *
~~[illegible]~~					4 oz						error
11215131-120221-S-SPS-SW-B-9112		1030			4 oz	X					HOLD *
11215131-120221-S-SPS-DUP2		—			4 oz	X			X		*
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE:	TIME:
Stephen Sellers	12/2/21	1345	Eddie Custer	Ashley Orcano	12/3/21	10:47
RELINQUISHED BY (2): Eddie Custer	DATE: 12-2-21	TIME: 1525	RECEIVED BY: [signature] 12/2/21 1525	COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT		
				CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT		
RELINQUISHED BY (3): [signature]	DATE: 12/2/21	TIME: 1525	RECEIVED BY:	CARRIER: FedEx	TEMP: °C 0.4°	
				TRACKING #: 4905 2704 1834		

*=samples in this project.

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1/1

B5964

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 02DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405

(910) 350-1903 REF:
INV:
PO: DEPT:

12/3/2021
10:47
0.4°

S65C3/E934/05A2

FedEx Express

E

J191219082001uv

2 of 2

MPS# 0263 4905 2704 1834

Mstr# 4905 2704 1823

0201

FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US **RDU**

Part # 158146-434 MTW EXP 07/22

Project Initiation Form

Project Number:	B5964B	Initiation Date:	2/7/2022
Client Name:	GHD Services Inc.	Sample Matrix:	Solid
Analysis Method:	1613 PCDD/F	TAT:	10 days
		Project Manager:	Tamara

Special Instructions

M1613B w/ OPR

10 g DWE extraction

Sample 007 taken OFF HOLD
TB 2/21/2022

Read and understood, initial and date: Prep Lab: _____ HRMS Lab: _____

Reporting Instructions

M1613B
Full Report

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab: _____

PM Initials: tburkamper Date: 07-Feb-2022

SGS

Methods: PCB PAH ~~PCDD/F~~ WHO-2 QUANTICS USV DoD PCDD/F PEST Extraction Type: ~~SDS~~ CLL TALEX Carbon SPE

Solid

Final Volume: 20 mL

Batch# 18911

Split: ~~1/2~~ ~~1/4~~

Extract Initial/Date: JHH 2/16/22

Clean-up Initial/Date: ~~BAB~~ 2/18/22

Transfer Init/Date: ~~RAB~~ 2/18/22

Lab Sample ID	Extraction Position / Solvent: DCM	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5962_18911_003	4	15.46				black/gray, sticky, clay-like
B5964_18911_007	5	13.65				black/gray, sticky, clay-like
B5992_18911_002	6	13.35				fuel smell, gray, clay-like
B6008_18911_001	7	13.84				black/gray, sticky, clay-like
B6008_18911_003	8	13.82				black/gray, clay-like
B6080_18911_002	9	16.54				black/gray, clay-like, moist, fuel smell
B6110_18911_002	10	14.58				black/gray, clay-like
B6140_18911_001	11	13.22		TB 2/21/2022		black/gray, clay-like
B6148_18911_002	12	14.15				black/gray, clay-like
B6148_18911_004	13	13.42				black/gray, clay-like
B6154_18911_001	14	12.87				gray, sandy/clay-like
B6154_18911_002	15	14.03				gray, clay-like
B6208_18911_001	16	12.78				gray, clay-like
B6208_18911_002	17	14.25				gray, clay-like, fuel smell
B6208_18911_003	18	13.32				gray, clay-like, fuel smell
B6208_18911_004	19	13.66				black/gray, clay-like, strong fuel smell
MB1_18911	1	10.00				sodium sulfate
OPR1_18911	2	10.00				sodium sulfate
OPR2_18911	3	10.00				sodium sulfate

RAB 2/18/22

Supply IDs

Toluene	STL 14-26
MeCHL	STL14-17
Florisil	SPLS-83
Hexane	STL14-29
Silica	SPLS-69
S Nitrate	N/A
Base Silica	SPLS-86
HydroMatrix	N/A
Tetradecane	SPLS-730
H_2SO_4	N/A
A Silica	SPLS-90
Sodium Sulfate	SPLS-808

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	TB 2/21/2022
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1650 Stop: 0900
HEX	Start: Stop:
DCM	Start: Stop:

TB 2/21/2022

TB 2/21/2022

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Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18911

Inter-Department Communication Sheet

TB
2/21/2022

SGS

Wt. Volume Results

Batch #: 18911

Comments:

ak 2/21/22

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5962_003	2.36	5.09	4.16	65.93%	65.93%			15.17	15.46	10.19
B5964_007	2.3	4.53	4	76.23%	76.23%			13.12	13.65	10.41
B5992_002	2.37	4.8	4.22	76.13%	76.13%			13.14	13.35	10.16
B6008_001	2.37	4.44	3.92	74.88%	74.88%			13.35	13.84	10.36
B6008_003	2.41	4.46	3.98	76.59%	76.59%			13.06	13.22	10.13
B6080_002	2.39	4.82	3.98	65.43%	65.43%			15.28	16.54	10.82
B6110_002	2.4	4.86	4.13	70.33%	70.33%			14.22	14.58	10.25
B6140_001	2.36	5.24	4.6	77.78%	77.78%			12.86	13.22	10.28
B6148_002	2.35	4.43	3.93	75.96%	75.96%			13.16	14.15	10.75
B6148_004	2.36	4.55	4.03	76.26%	76.26%			13.11	13.42	10.23
B6154_001	2.33	5.22	4.64	79.93%	79.93%			12.51	12.82	10.25
B6154_002	2.38	4.5	3.96	74.53%	74.53%			13.42	14.03	10.46
B6208_001	2.33	5.5	4.85	79.50%	79.50%			12.58	12.78	10.16
B6208_002	2.33	4.77	4.1	72.54%	72.54%			13.79	14.25	10.34
B6208_003	2.33	5.23	4.56	76.90%	76.90%			13	13.32	10.24
B6208_004	2.32	5.1	4.45	76.62%	76.62%			13.05	13.66	10.47

TB 2/21/2022

TB 2/21/2022

% Solid Determination WorkSheet

SGS

Batch: 18911

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	10g DWE	Comments
B5962_18911_003	2.36	5.09	4.16	15.17	
B5964_18911_007	2.36	4.53	4.00	13.17	
B5992_18911_002	2.37	4.80	4.22	13.14	
B6008_18911_001	2.37	4.44	3.92	13.35	
B6008_18911_003	2.41	4.46	3.98	13.06	
B6080_18911_002	2.39	4.82	3.97	15.28	
B6110_18911_002	2.40	4.86	4.13	14.22	
B6140_18911_001	2.36	5.24	4.60	12.86	
B6148_18911_002	2.35	4.43	3.93	13.16	
B6148_18911_004	2.36	4.55	4.03	13.11	
B6154_18911_001	2.33	5.22	4.64	12.51	
B6154_18911_002	2.38	4.50	3.96	13.42	
B6208_18911_001	2.33	5.50	4.85	12.58	
B6208_18911_002	2.33	4.77	4.10	13.79	
B6208_18911_003	2.33	5.23	4.56	13.00	
B6208_18911_004	2.32	5.10	4.45	13.05	
		2/18/22			
Date/Initials: JRH 2/14/22					

SGS

Methods: PCB, PAH, PCDD/F, WHO-2, QUANTICS, USV, DoD PCDD/F, PEST — Solid

Batch # 18911

Lab Sample ID	Spiker Initials/Date: JRH 2/16/22	JRH 2/16/22	JRH 2/16/22	RBS 2/18/22	RBS 2/18/22		
	D/E Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5962_18911_003	–	–	RBS	JRH	JRH		
B5964_18911_007	–	–	RBS	JRH	JRH		
B5992_18911_002	–	–	RBS	JRH	JRH		
B6008_18911_001	–	–	RBS	JRH	JRH		
B6008_18911_003	–	–	RBS	JRH	JRH		
B6080_18911_002	–	–	RBS	JRH	JRH		
B6110_18911_002	–	–	RBS	JRH	JRH		
B6140_18911_001	–	–	RBS	JRH	JRH		
B6148_18911_002	–	–	RBS	JRH	JRH		
B6148_18911_004	–	–	RBS	JRH	JRH		
B6154_18911_001	–	–	RBS	JRH	JRH		
B6154_18911_002	–	–	RBS	JRH	JRH		
B6208_18911_001	–	–	RBS	JRH	JRH		
B6208_18911_002	–	–	RBS	JRH	JRH		
B6208_18911_003	–	–	RBS	JRH	JRH		
B6208_18911_004	–	–	RBS	JRH	JRH		
MB1_18911	–	–	RBS	JRH	JRH		
OPR1_18911	RBS	RBS	RBS	JRH	JRH		
OPR2_18911	RBS	RBS	RBS	JRH	JRH		

RBS 2/18/22

Standard Information

Pipette ID							RBS 2/18/22
Spike ID	D/E Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
SIL #	26-2-8	25-187-2	26-2-9	25-338-1	25-384-1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/24	6/22/23	8/2024	11/16/22	1/28/23		

REVIEWED
Tamara Burkamper , 2/21/2022, 2:44:48 PM

SGS Environmental Services — Run Log **Project: B5964_18911_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
0	220219C01	3	CS3_220219_DF_CA	1.00	25-347-1	DTF	910-087	19-Feb-2022	17:17:59
1	220219C02	26	OPR1_18911_DF	1.00	0_18911_OPR001	DTF	320-676	19-Feb-2022	18:04:19
2	220219C03	2	SBS_220219_DF_CA	1.00	20-61-1	DTF	501-491	19-Feb-2022	18:50:40
4	220219C04	25	MB1_18911_DF_SDS	10.00	Method Blank	DTF	399-492	19-Feb-2022	19:37:00
5	220219C06	29	B5964_18911_DF_007	10.41	11215131-120221-S-SPS-SW-B-9H2	DTF	989-059	19-Feb-2022	21:09:42
16	220219C16	3	CS3_220219_DF_CB	1.00	25-347-1	DTF	111-739	20-Feb-2022	05:01:11
17	220219C17	27	OPR2_18911_DF	1.00	0_18911_OPR002	DTF	488-895	20-Feb-2022	05:55:34

REVIEWED
Tyler_Fritz , 2/21/2022, 11:06:01 AM

Lab ID: MB1_18911_DF_SDS | Acq'd: 19 Feb 2022 19:37 DTF | Wt/Vol: 10.00 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18911 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.5 pg/g | Split: 1 | Checkcode: 399-492-BMX

Datafile: 220219C04 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	4631.374	0.388
12378-PeCDD	NotFnd		1.0007	-		-	-	-	1.04	-	2783.22	0.236
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3118.687	0.269
123678-HxCDD	NotFnd		1.0036	-		-	-	-	1.15	-	3118.687	0.25
123789-HxCDD	NotFnd		1.0118	-		-	-	-	1.05	-	3118.687	0.266
1234678-HpCDD	NotFnd		1.0002	-		-	-	-	1.06	-	4399.488	0.39
OCDD	NotFnd		1.0003	-		-	-	-	1.13	-	3230.665	0.598
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	3471.373	0.224
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3188.391	0.182
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3188.391	0.183
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	3096.37	0.184
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	3096.37	0.173
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	3096.37	0.178
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3096.37	0.198
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	3605.552	0.211
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	3605.552	0.31
OCDF	NotFnd		1.0002	-		-	-	-	1.07	-	2961.523	0.451

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0243	1.0243	0	2.20E+07	0.81	Y	1.05	89.5
ES 12378-PeCDD	33.63	1.2198	1.2203	+1.0	2.05E+07	1.59	Y	0.88	98.9
ES 123478-HxCDD	37.56	0.9916	0.9916	0	1.85E+07	1.28	Y	0.97	90.6
ES 123678-HxCDD	37.68	0.9947	0.9948	+0.2	1.89E+07	1.29	Y	0.94	95.4
ES 123789-HxCDD	37.99	1.0029	1.0028	-0.2	2.02E+07	1.23	Y	1.09	88.3
ES 1234678-HpCDD	40.72	1.0749	1.0749	0	1.78E+07	1.06	Y	0.91	93.1
ES OCDD	43.41	1.1460	1.1460	0	2.32E+07	0.89	Y	0.62	88.9
ES 2378-TCDF	27.36	1.0531	1.0534	+0.5	3.24E+07	0.79	Y	1.06	79.3
ES 12378-PeCDF	32.17	1.2378	1.2386	+1.5	3.28E+07	1.56	Y	0.91	93.4
ES 23478-PeCDF	33.29	1.2810	1.2818	+1.6	3.19E+07	1.50	Y	0.88	93.7
ES 123478-HxCDF	36.55	0.9650	0.9650	0	2.28E+07	0.54	Y	1.20	90.9
ES 123678-HxCDF	36.70	0.9688	0.9687	-0.2	2.90E+07	0.56	Y	1.35	102
ES 234678-HxCDF	37.38	0.9866	0.9867	+0.2	2.76E+07	0.53	Y	1.24	106
ES 123789-HxCDF	38.35	1.0125	1.0124	-0.2	2.14E+07	0.55	Y	1.16	88.6
ES 1234678-HpCDF	39.78	1.0501	1.0500	-0.2	1.98E+07	0.44	Y	0.97	97.9
ES 1234789-HpCDF	41.17	1.0870	1.0869	-0.2	1.60E+07	0.46	Y	0.85	89.8
ES OCDF	43.59	1.1505	1.1505	0	3.00E+07	0.93	Y	0.81	88.7

Lab ID: MB1_18911_DF_SDS | Acq'd: 19 Feb 2022 19:37 DTF | Wt/Vol: 10.00 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18911 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.5 pg/g | Split: 1 | Checkcode: 399-492-BMX

Datafile: 220219C04 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.56		-	-	-	2.35E+07	0.80	Y	-	-
JS 1234-TCDF	25.97		-	-	-	3.86E+07	0.80	Y	-	-
JS 123467-HxCDD	37.88		-	-	-	1.05E+07	1.32	Y	-	-
CS 37Cl-2378-TCDD	28.25		1.0251	1.0252	+0.2	1.08E+07	n/a	-	1.20	95.7
CS 12347-PeCDD	33.12		1.2016	1.2020	+0.8	2.12E+07	1.58	Y	0.75	120
CS 12346-PeCDF	31.63		1.2172	1.2180	+1.5	3.45E+07	1.61	Y	0.85	105
CS 123469-HxCDF	37.01		0.9771	0.9770	-0.2	2.65E+07	0.53	Y	1.12	113
CS 1234689-HpCDF	40.18		1.0608	1.0607	-0.2	1.98E+07	0.46	Y	0.89	106
~~SS 37Cl-2378-TCDD~~	~~28.25~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~1.80E+07~~	~~n/a~~		~~1.15~~	~~107~~
~~SS 12347-PeCDD~~	~~33.12~~		~~1.2016~~	~~1.2020~~	~~+0.8~~	~~2.12E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~121~~
~~SS 12346-PeCDF~~	~~31.63~~		~~1.2172~~	~~1.2180~~	~~+1.5~~	~~3.45E+07~~	~~1.61~~	~~Y~~	~~0.94~~	~~115~~
~~SS 123469-HxCDF~~	~~37.01~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~2.65E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~110~~
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0608~~	~~1.0607~~	~~-0.2~~	~~1.98E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~108~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18911_DF_SDS | Acq'd: 19 Feb 2022 19:37 DTF | Wt/Vol: 10.00 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18911 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.5 pg/g | Split: 1 | Checkcode: 399-492-BMX

Datafile: 220219C04 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8701						1.18		4631.374	0.388
1379-TCDD	NotFnd		0.8829						1.18		4631.374	0.388
1369-TCDD	NotFnd		0.8982						1.18		4631.374	0.388
1469-TCDD	NotFnd		0.9261						1.18		4631.374	0.388
1247/1246/1248/1249-TCDD	NotFnd		0.9348						1.18		4631.374	0.388
1378-TCDD	NotFnd		0.9417						1.18		4631.374	0.388
1268-TCDD	NotFnd		0.9487						1.18		4631.374	0.388
1478-TCDD	NotFnd		0.9576						1.18		4631.374	0.388
1279-TCDD	NotFnd		0.9636						1.18		4631.374	0.388
1234/1269-TCDD	NotFnd		0.9761						1.18		4631.374	0.388
1236-TCDD	NotFnd		0.9812						1.18		4631.374	0.388
1237/1238-TCDD	NotFnd		0.9905						1.18		4631.374	0.388
1239-TCDD	NotFnd		0.9951						1.18		4631.374	0.388
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**4631.374**	**0.388**
1278-TCDD	NotFnd		1.0124						1.18		4631.374	0.388
1267-TCDD	NotFnd		1.0172						1.18		4631.374	0.388
1289-TCDD	NotFnd		1.0354						1.18		4631.374	0.388
12479/12468-PeCDD	NotFnd		0.9255						1.04		2783.22	0.236
12469-PeCDD	NotFnd		0.9416						1.04		2783.22	0.236
12368-PeCDD	NotFnd		0.9582						1.04		2783.22	0.236
12478-PeCDD	NotFnd		0.9637						1.04		2783.22	0.236
12379-PeCDD	NotFnd		0.9668						1.04		2783.22	0.236
12369/12467/12489-PeCDD	NotFnd		0.9746						1.04		2783.22	0.236
12346/12347-PeCDD	NotFnd		0.9858						1.04		2783.22	0.236
12378-PeCDD	NotFnd		**1.0007**						**1.04**		**2783.22**	**0.236**
12367-PeCDD	NotFnd		1.0036						1.04		2783.22	0.236
12389-PeCDD	NotFnd		1.0137						1.04		2783.22	0.236
124679/124689-HxCDD	NotFnd		0.9540						1.10		3118.687	0.261
123468-HxCDD	NotFnd		0.9715						1.10		3118.687	0.261
123679/123689-HxCDD	NotFnd		0.9793						1.10		3118.687	0.261
123469-HxCDD	NotFnd		0.9829						1.10		3118.687	0.261
123478-HxCDD	NotFnd		**1.0004**						1.09		**3118.687**	**0.269**
123678-HxCDD	NotFnd		**1.0036**						1.15		**3118.687**	**0.25**
123467-HxCDD	NotFnd		1.0089						1.10		3118.687	0.261
123789-HxCDD	NotFnd		**1.0118**						1.05		**3118.687**	**0.266**

Lab ID: MB1_18911_DF_SDS | Acq'd: 19 Feb 2022 19:37 DTF | Wt/Vol: 10.00 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5964_18911 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.5 pg/g | Split: 1 | Checkcode: 399-492-BMX

Datafile: 220219C04 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9836						1.06		4399.488	0.39
1234678-HpCDD	**NotFnd**		**1.0002**						**1.06**		**4399.488**	**0.39**
OCDD	**NotFnd**		**1.0003**						**1.13**		**3230.665**	**0.598**
OCDD-a	NotFnd		1.0002						0.07		3130.658	9.06
1368-TCDF	NotFnd		0.8191						1.08		3471.373	0.224
1468-TCDF	NotFnd		0.8408						1.08		3471.373	0.224
2468-TCDF	NotFnd		0.8645						1.08		3471.373	0.224
1346/1246-TCDF	NotFnd		0.8772						1.08		3471.373	0.224
1347/1378/1247-TCDF	NotFnd		0.8833						1.08		3471.373	0.224
1348-TCDF	NotFnd		0.8932						1.08		3471.373	0.224
1248/1367/1379-TCDF	NotFnd		0.8980						1.08		3471.373	0.224
1268-TCDF	NotFnd		0.9119						1.08		3471.373	0.224
1467-TCDF	NotFnd		0.9170						1.08		3471.373	0.224
1478-TCDF	NotFnd		0.9234						1.08		3471.373	0.224
1369/1237-TCDF	NotFnd		0.9369						1.08		3471.373	0.224
2467-TCDF	NotFnd		0.9415						1.08		3471.373	0.224
2368-TCDF	NotFnd		0.9475						1.08		3471.373	0.224
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9507						1.08		3471.373	0.224
1278-TCDF	NotFnd		0.9676						1.08		3471.373	0.224
1349-TCDF	NotFnd		0.9722						1.08		3471.373	0.224
1267-TCDF	NotFnd		0.9777						1.08		3471.373	0.224
2346/1249-TCDF	NotFnd		0.9843						1.08		3471.373	0.224
2347/1279-TCDF	NotFnd		0.9926						1.08		3471.373	0.224
2348-TCDF	NotFnd		0.9968						1.08		3471.373	0.224
2378-TCDF	**NotFnd**		**1.0008**						**1.08**		**3471.373**	**0.224**
2367/3467-TCDF	NotFnd		1.0142						1.08		3471.373	0.224
1269-TCDF	NotFnd		1.0235						1.08		3471.373	0.224
1239-TCDF	NotFnd		1.0329						1.08		3471.373	0.224
1289-TCDF	NotFnd		1.0742						1.08		3471.373	0.224
13468/12468-PeCDF	NotFnd		0.9122						1.02		2974.037	0.17
13678/13467/12467-PeCDF	NotFnd		0.9606						1.02		3188.391	0.183
12368/13478/12478-PeCDF	NotFnd		0.9655						1.02		3188.391	0.183
14678-PeCDF	NotFnd		0.9685						1.02		3188.391	0.183
13479-PeCDF	NotFnd		0.9716						1.02		3188.391	0.183
13469/12479-PeCDF	NotFnd		0.9794						1.02		3188.391	0.183
12346-PeCDF	NotFnd		0.9836						1.02		3188.391	0.183

Lab ID: MB1_18911_DF_SDS | Acq'd: 19 Feb 2022 19:37 DTF | Wt/Vol: 10.00 g | ICAL: HRMS3_DF_10272021 10NOV2021

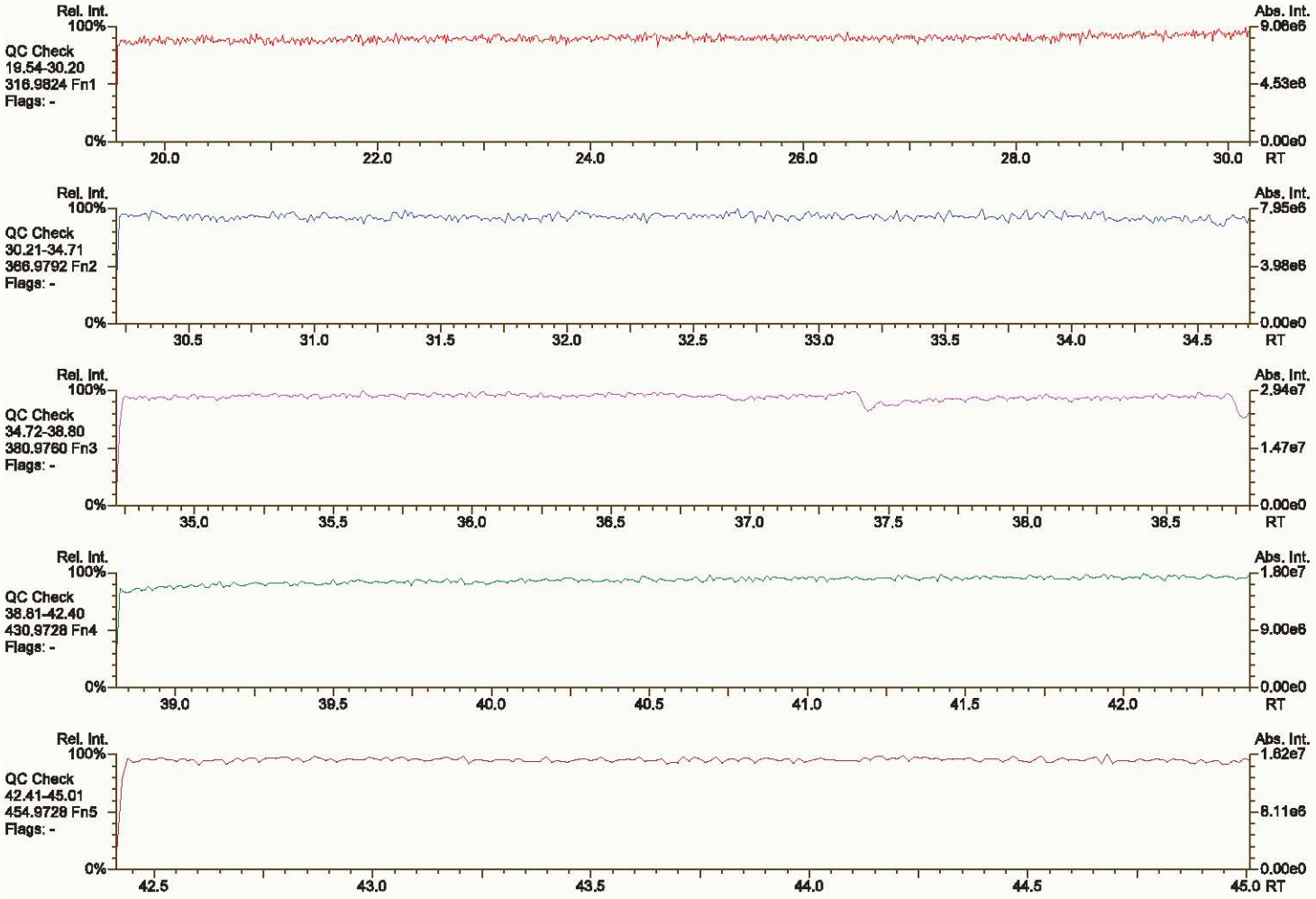
Client ID: Method Blank B5964_18911 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.5 pg/g | Split: 1 | Checkcode: 399-492-BMX

Datafile: 220219C04 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Rs	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9866						1.02		3188.391	0.183
12347-PeCDF	NotFnd		0.9891						1.02		3188.391	0.183
12348-PeCDF	NotFnd		0.9938						1.02		3188.391	0.183
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3188.391**	**0.182**
12678/12367-PeCDF	NotFnd		1.0091						1.02		3188.391	0.183
12379-PeCDF	NotFnd		1.0144						1.02		3188.391	0.183
12679-PeCDF	NotFnd		0.9927						1.02		3188.391	0.183
23467/12369-PeCDF	NotFnd		0.9965						1.02		3188.391	0.183
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3188.391**	**0.183**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3188.391	0.183
12349-PeCDF	NotFnd		1.0101						1.02		3188.391	0.183
12389-PeCDF	NotFnd		1.0330						1.02		3188.391	0.183
123468-HxCDF	NotFnd		0.9622						1.19		3096.37	0.182
124678/134678-HxCDF	NotFnd		0.9678						1.19		3096.37	0.182
134679-HxCDF	NotFnd		0.9741						1.19		3096.37	0.182
124679-HxCDF	NotFnd		0.9795						1.19		3096.37	0.182
124689-HxCDF	NotFnd		0.9856						1.19		3096.37	0.182
123467-HxCDF	NotFnd		0.9972						1.19		3096.37	0.182
123478-HxCDF	**NotFnd**		**1.0004**						**1.27**		**3096.37**	**0.184**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**3096.37**	**0.173**
123479-HxCDF	NotFnd		1.0048						1.19		3096.37	0.182
123469-HxCDF	NotFnd		1.0089						1.19		3096.37	0.182
123679-HxCDF	NotFnd		0.9942						1.19		3096.37	0.182
234678-HxCDF	**NotFnd**		**1.0005**						**1.19**		**3096.37**	**0.178**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3096.37	0.182
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**3096.37**	**0.198**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		3096.37	0.182
1234678-HpCDF	**NotFnd**		**1.0003**						**1.37**		**3605.552**	**0.211**
1234679-HpCDF	NotFnd		1.0068						1.34		3605.552	0.254
1234689-HpCDF	NotFnd		1.0104						1.34		3605.552	0.254
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**3605.552**	**0.31**
OCDF	**NotFnd**		**1.0002**						**1.07**		**2961.523**	**0.451**
OCDF-a	NotFnd		1.0001						0.07		3481.601	8.57

SGS ID: MB1_18911_DF_SDS | Sample ID: Method Blank | Acq: 19-Feb-2022 19:37:00

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25 | User: DTF Datafile: 220219C04

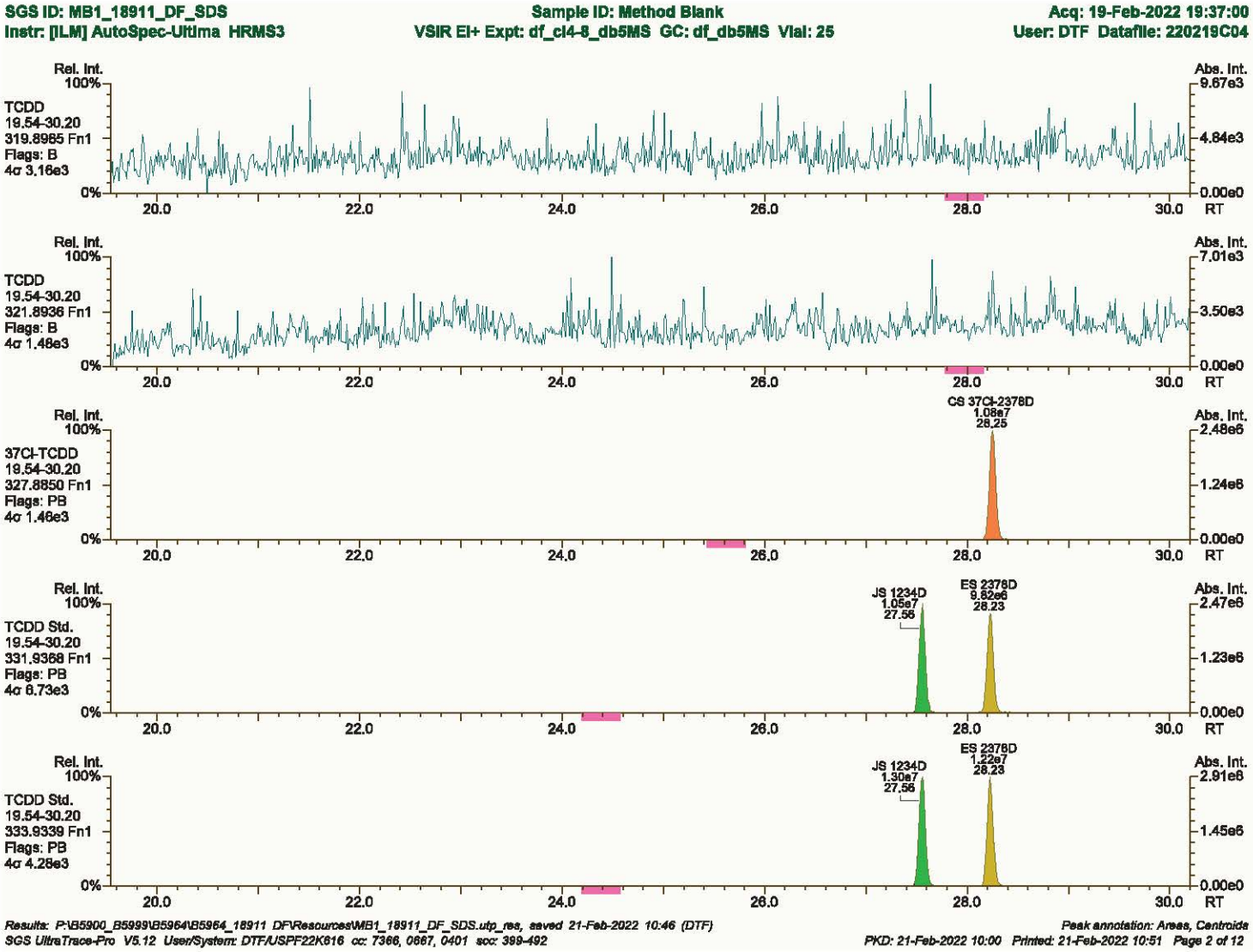


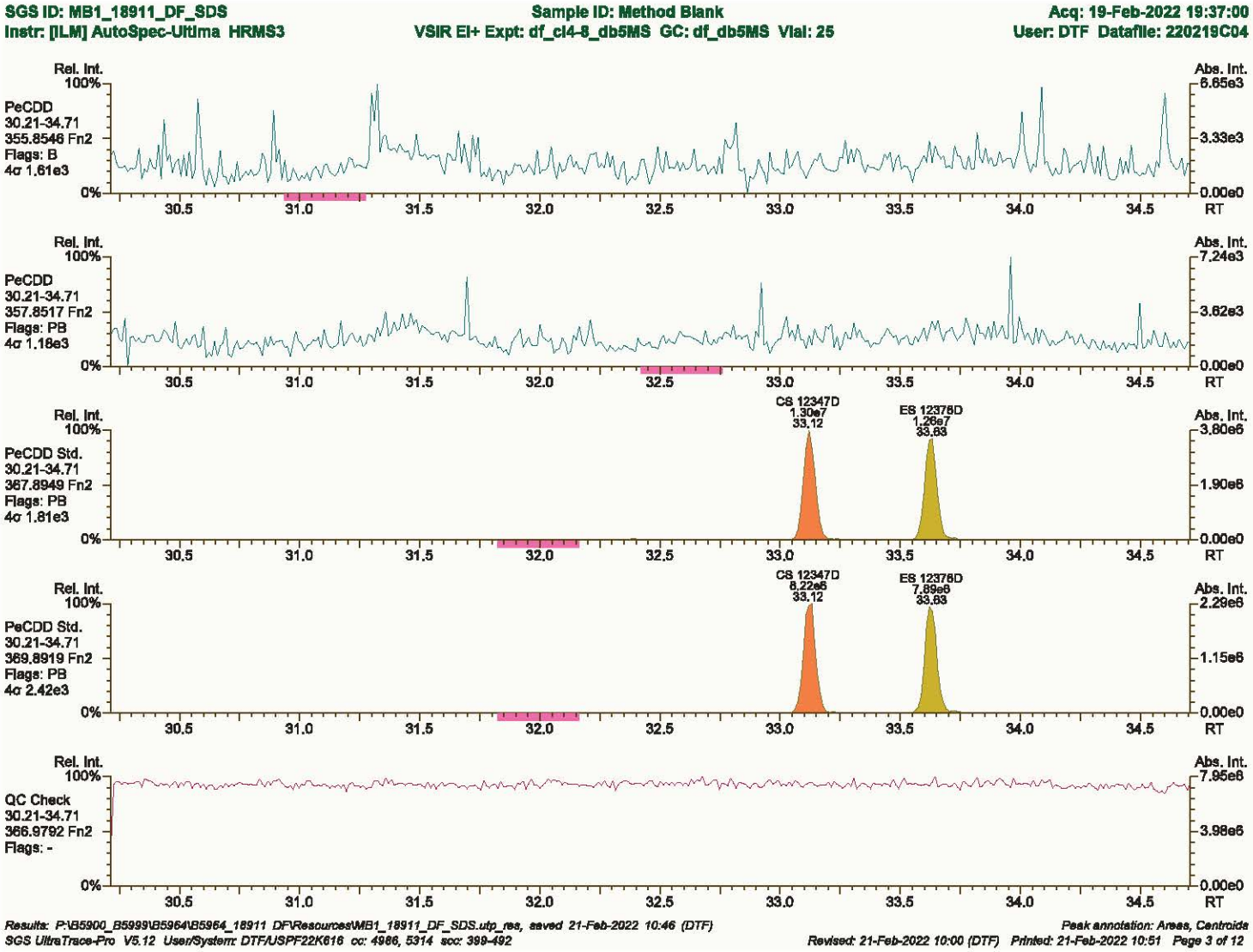
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 scc: 399-492

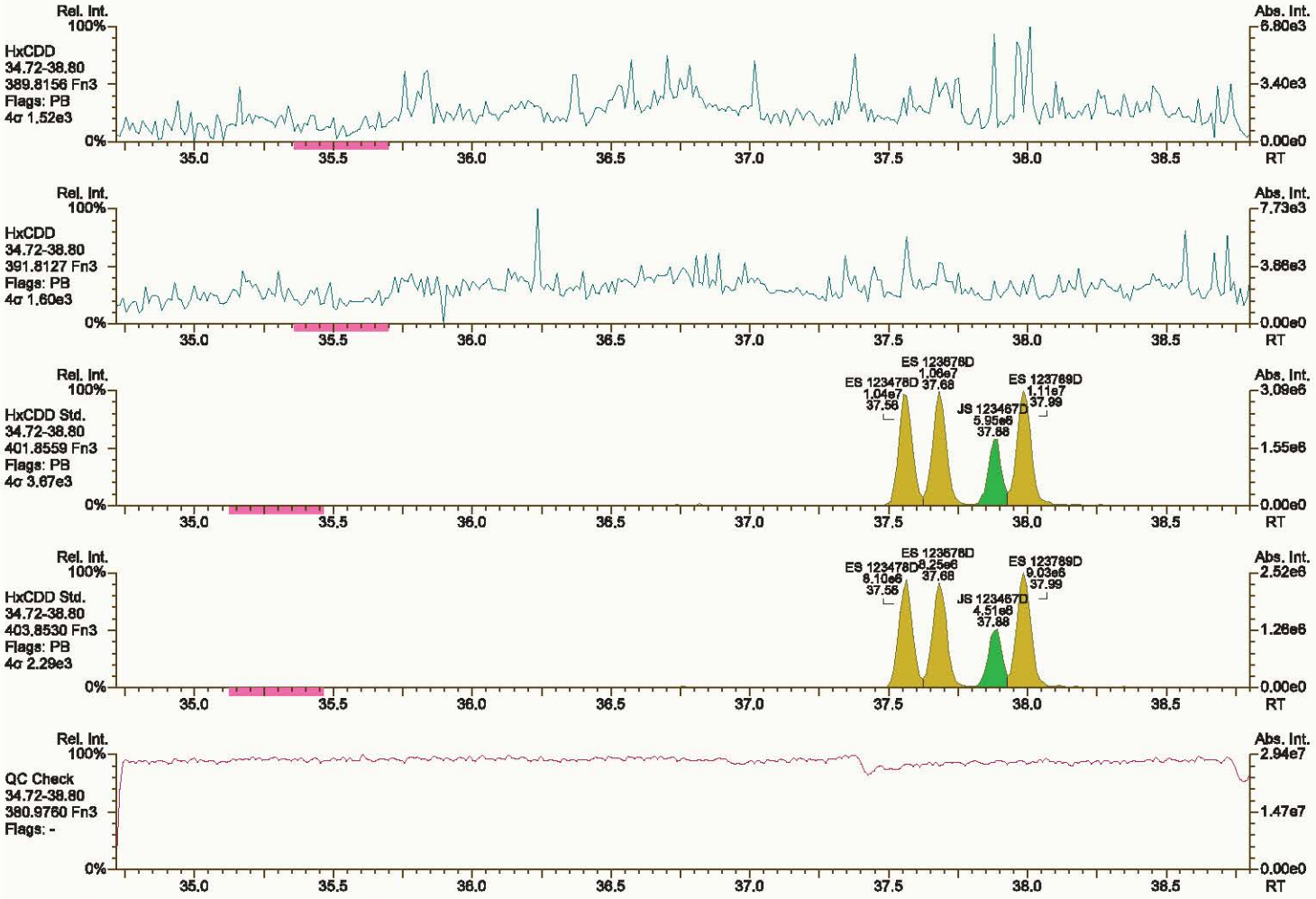
PKD: n/a Printed: 21-Feb-2022 10:51 Page 1 of 12


SGS ID: MB1_18911_DF_SDS
Sample ID: Method Blank
Acq: 19-Feb-2022 19:37:00
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25
User: DTF Datafile: 220219C04
Rel. Int.
Abs. Int.
TCDD
19.54-30.20
319.8965 Fn1
Flags: B
4σ 3.16e3
9.67e3
4.84e3
0.00e0
TCDD
19.54-30.20
321.8936 Fn1
Flags: B
4σ 1.48e3
7.01e3
3.50e3
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.46e3
CS 37Cl-2378D
1.08e7
28.25
2.48e6
1.24e6
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 6.73e3
JS 1234D
1.05e7
27.56
ES 2378D
9.82e6
28.23
2.47e6
1.23e6
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 4.28e3
JS 1234D
1.30e7
27.56
ES 2378D
1.22e7
28.23
2.91e6
1.45e6
0%
100%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7366, 0667, 0401 scc: 399-492
PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:51 Page 2 of 12


SGS ID: MB1_18911_DF_SDS
Sample ID: Method Blank
Acq: 19-Feb-2022 19:37:00
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25
User: DTF Datafile: 220219C04
Rel. Int.
Abs. Int.
PeCDD
30.21-34.71
355.8546 Fn2
Flags: B
4σ 1.61e3
6.65e3
3.33e3
0.00e0
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PB
4σ 1.18e3
7.24e3
3.62e3
CS 12347D
1.30e7
33.12
ES 12378D
1.26e7
33.83
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PB
4σ 1.81e3
3.80e6
1.90e6
CS 12347D
8.22e5
33.12
ES 12378D
7.89e5
33.83
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 2.42e3
2.29e6
1.15e6
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
7.95e6
3.98e6
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4986, 5314 scc: 399-492
Revised: 21-Feb-2022 10:00 (DTF) Printed: 21-Feb-2022 10:51 Page 3 of 12

SGS ID: MB1_18911_DF_SDS | Sample ID: Method Blank | Acq: 19-Feb-2022 19:37:00

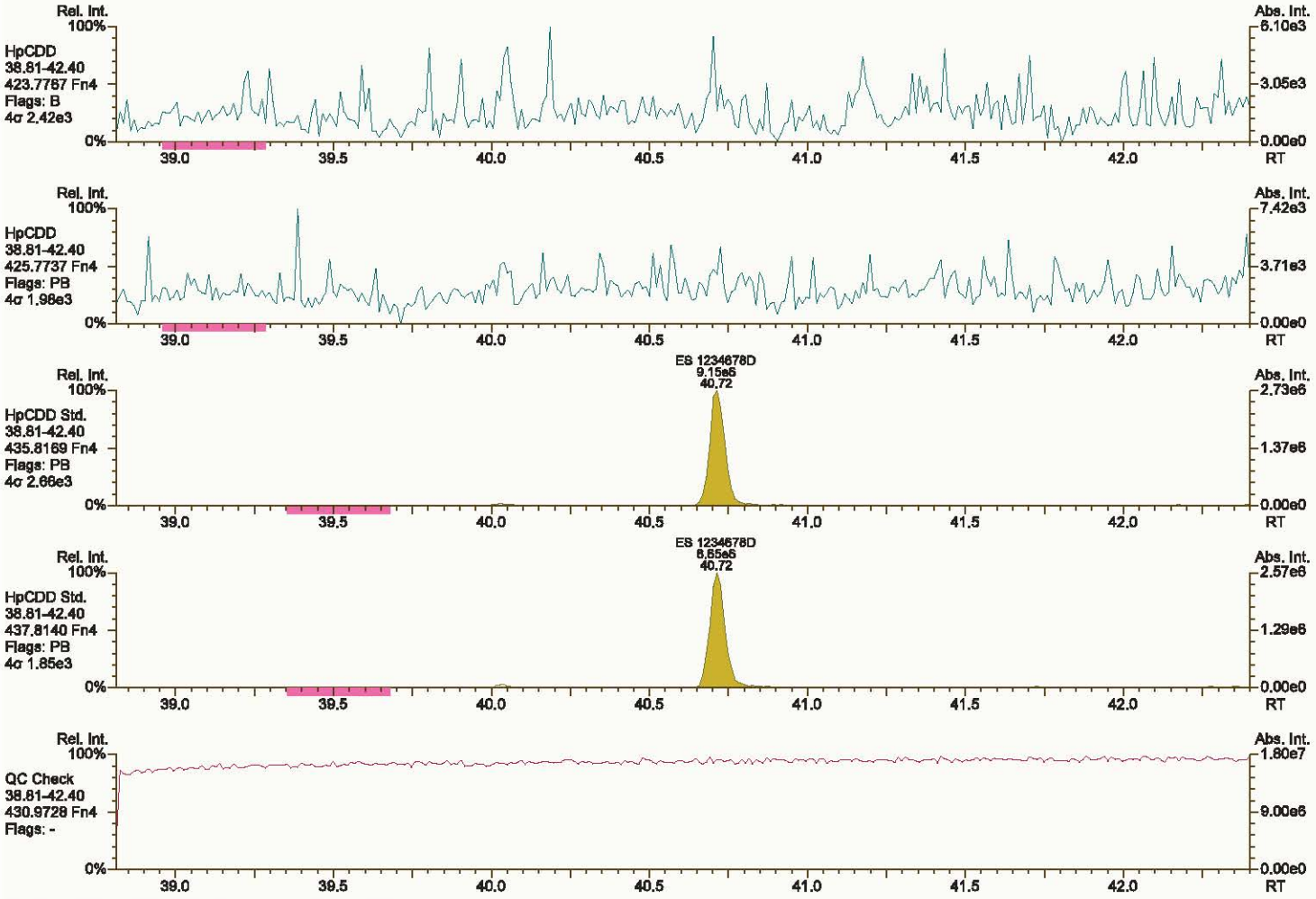
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25 | User: DTF Datafile: 220219C04



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9974, 6515 scc: 399-492 | *PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:51 Page 4 of 12*

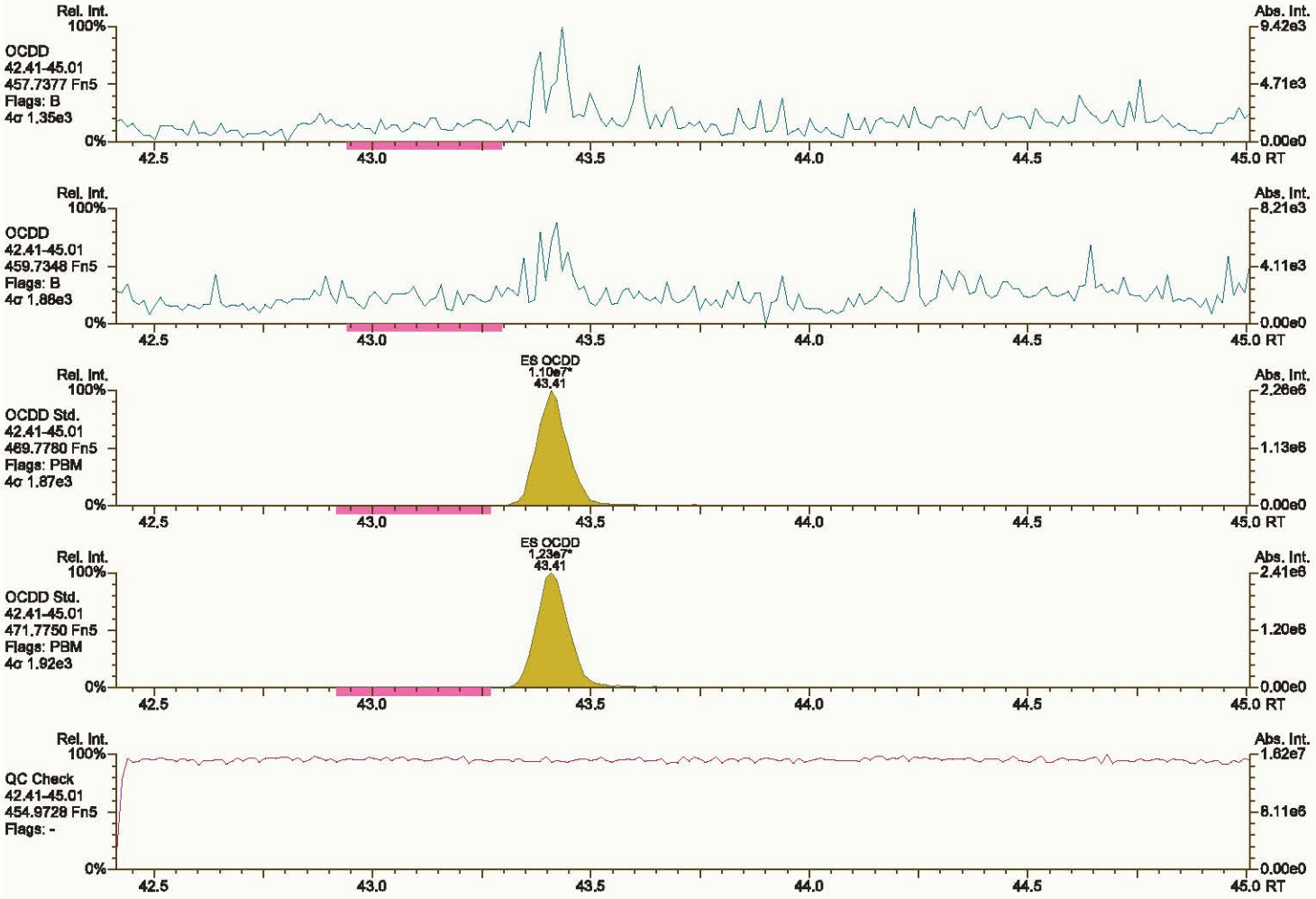
SGS ID: MB1_18911_DF_SDS | Sample ID: Method Blank | Acq: 19-Feb-2022 19:37:00
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25 | User: DTF Datafile: 220219C04



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8168, 6048 scc: 399-492 *Revised: 21-Feb-2022 10:01 (DTF) Printed: 21-Feb-2022 10:51 Page 5 of 12*

SGS ID: MB1_18911_DF_SDS | Sample ID: Method Blank | Acq: 19-Feb-2022 19:37:00

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25 | User: DTF Datafile: 220219C04

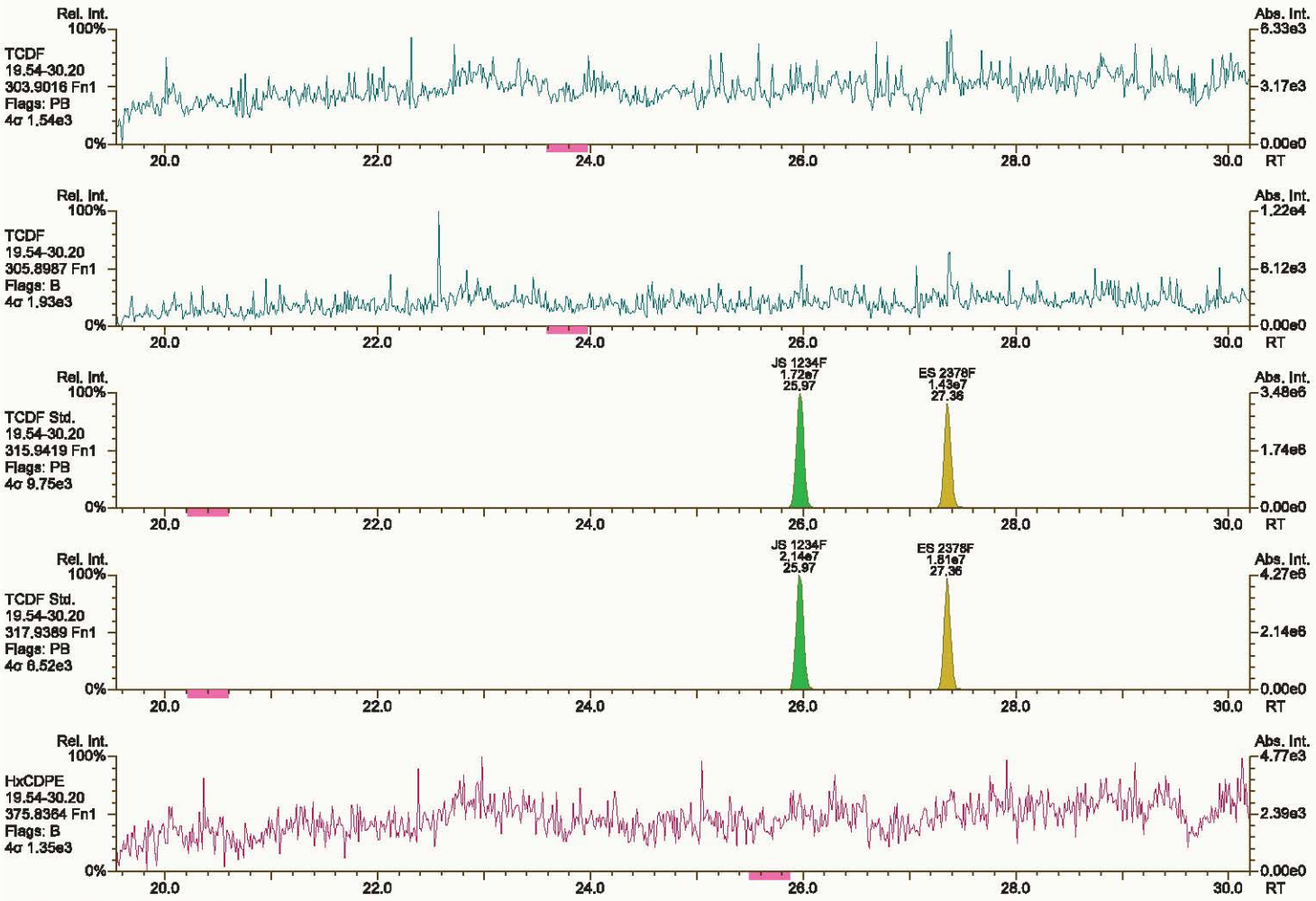


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9880, 7864 scc: 399-492 *Revised: 21-Feb-2022 10:01 (DTF) Printed: 21-Feb-2022 10:51 Page 6 of 12*

SGS ID: MB1_18911_DF_SDS | Sample ID: Method Blank | Acq: 19-Feb-2022 19:37:00

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25 | User: DTF Datafile: 220219C04



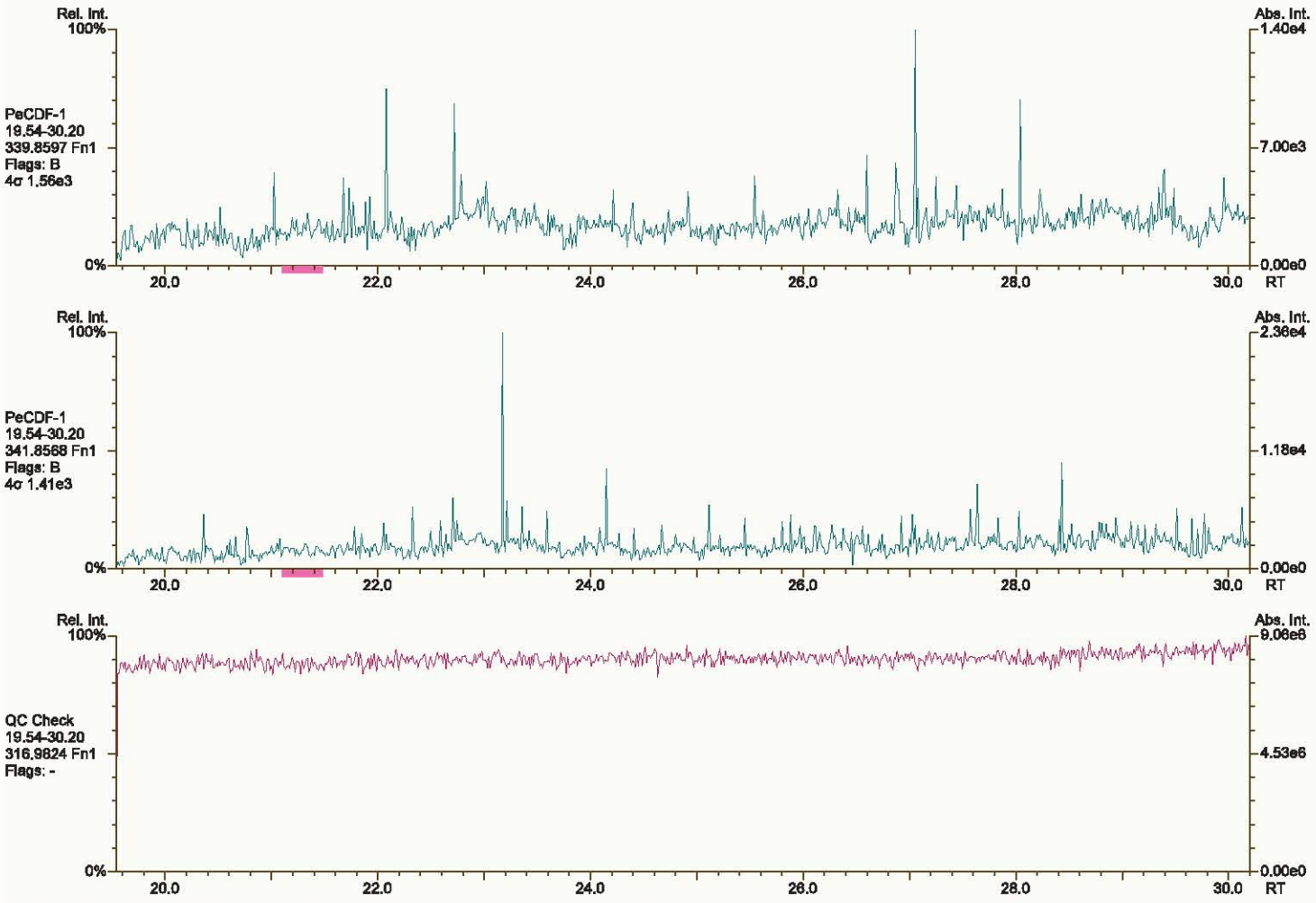
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6195, 1212, 7290 scc: 399-492 *PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:51 Page 7 of 12*

SGS ID: MB1_18911_DF_SDS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25

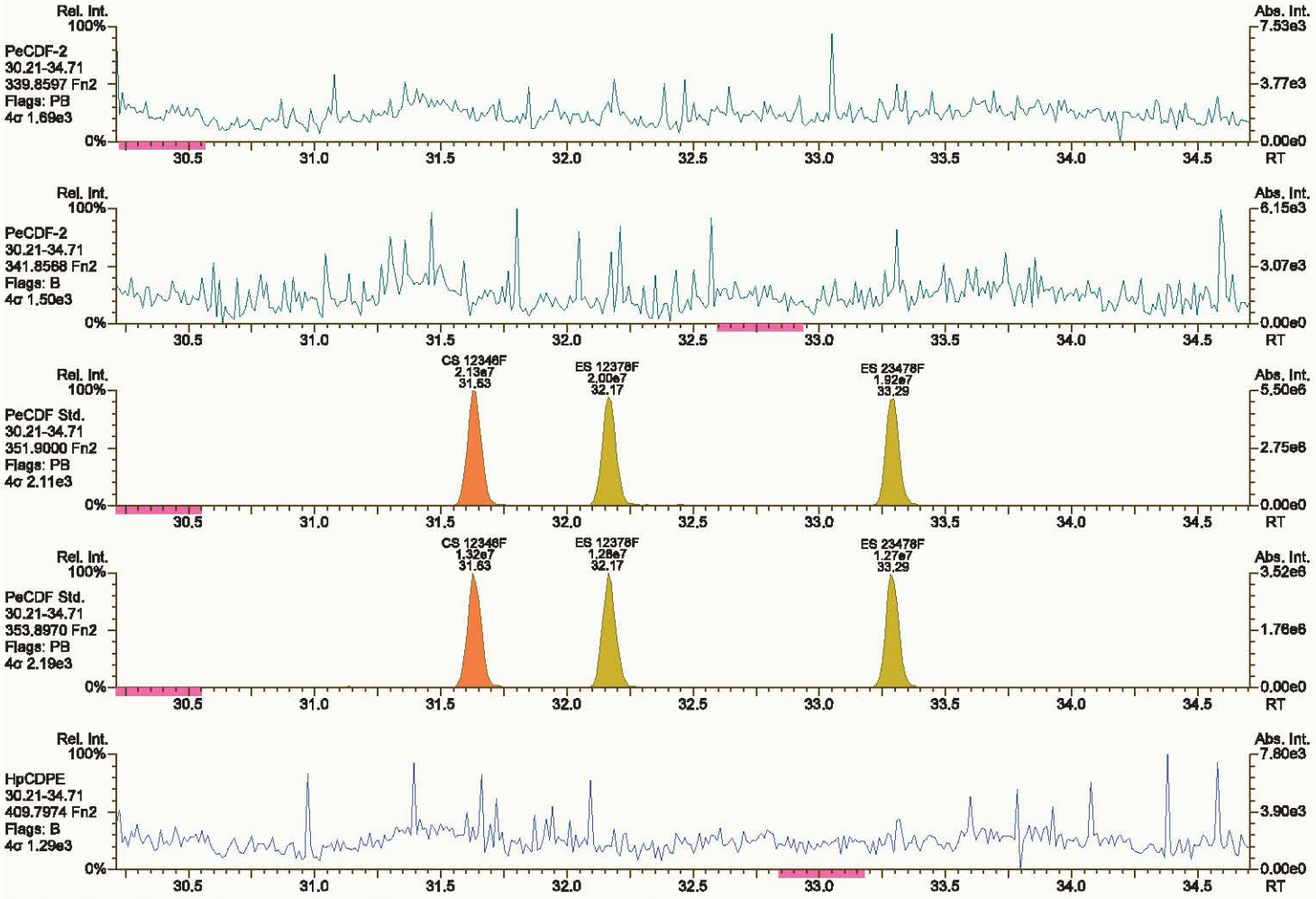
Acq: 19-Feb-2022 19:37:00
User: DTF Datafile: 220219C04



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2244 scc: 399-492
PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:51 Page 8 of 12

SGS ID: MB1_18911_DF_SDS | Sample ID: Method Blank | Acq: 19-Feb-2022 19:37:00

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25 | User: DTF Datafile: 220219C04

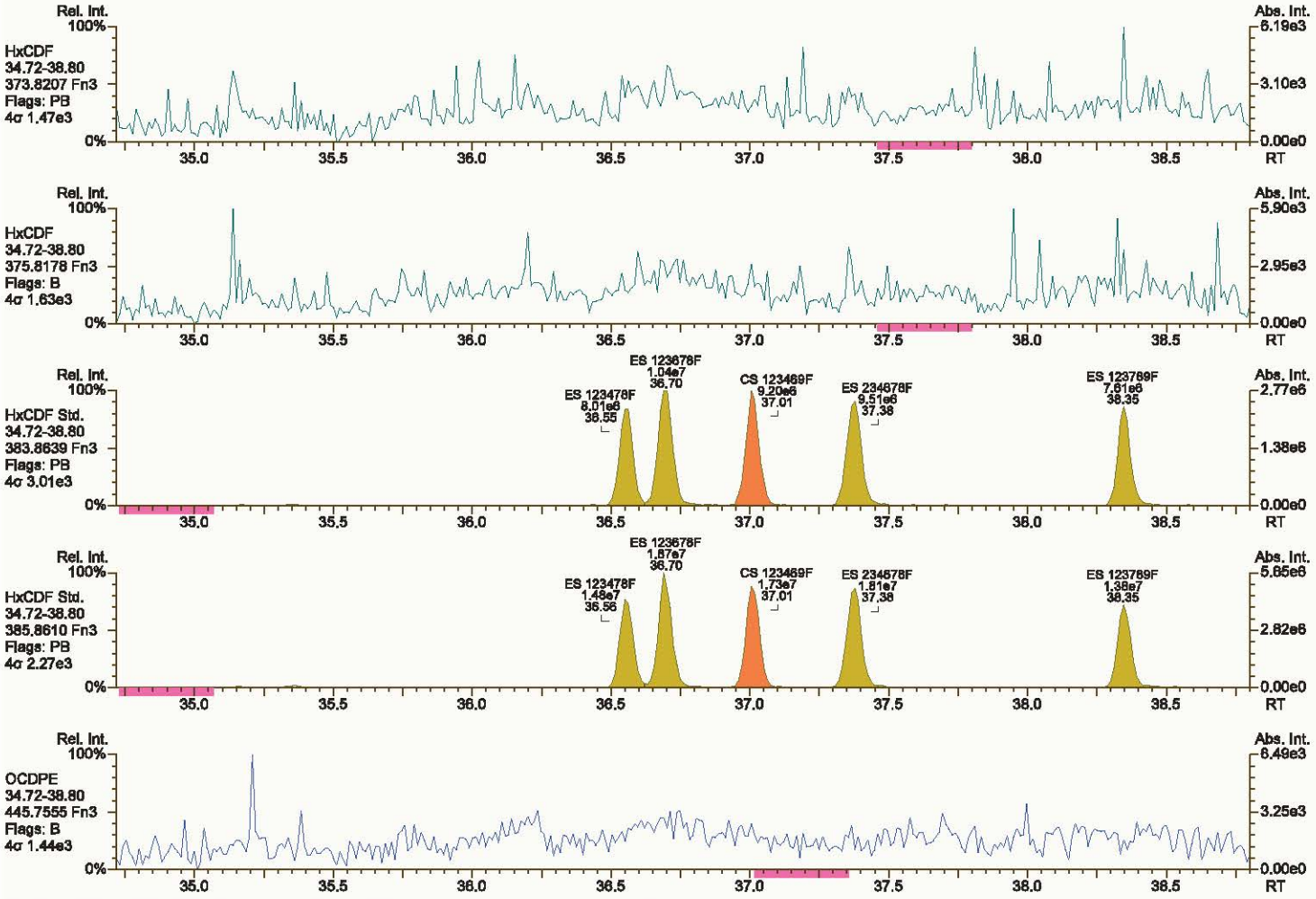


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6083, 2733, 1424 scc: 393-492 *PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:51 Page 9 of 12*

SGS ID: MB1_18911_DF_SDS | **Sample ID: Method Blank** | **Acq: 19-Feb-2022 19:37:00**

Instr: [ILM] AutoSpec-Ultima HRMS3 | **VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25** | **User: DTF Datafile: 220219C04**

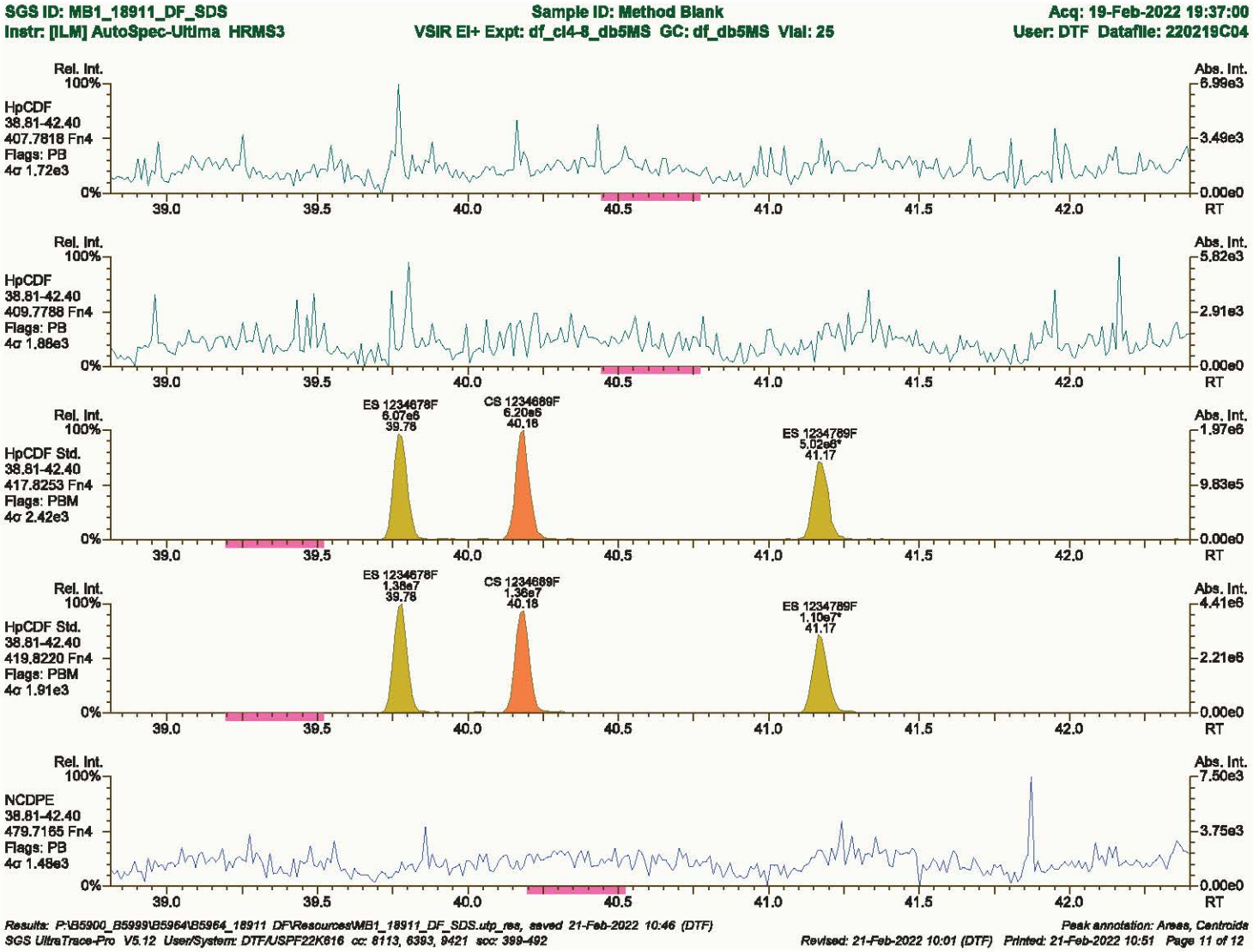


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF)

Peak annotation: Areas, Centroids

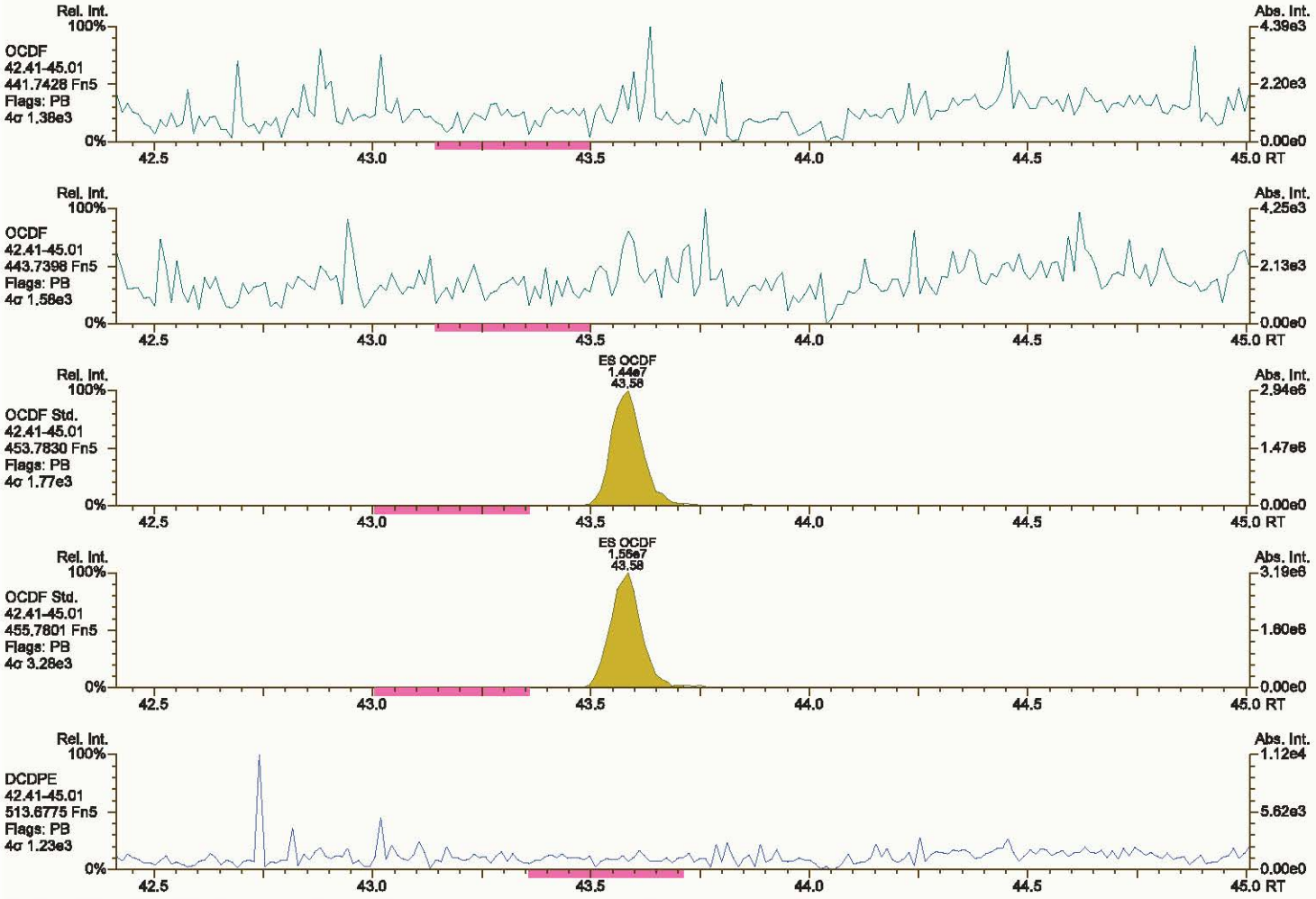
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6793, 1276, 5182 scc: 393-492

PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:51 Page 10 of 12


SGS ID: MB1_18911_DF_SDS
Sample ID: Method Blank
Acq: 19-Feb-2022 19:37:00
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25
User: DTF Datafile: 220219C04
Rel. Int.
Abs. Int.
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PB
4σ 1.72e3
6.99e3
3.49e3
0.00e0
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PB
4σ 1.88e3
5.82e3
2.91e3
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PBM
4σ 2.42e3
ES 1234678F
6.07e6
39.78
CS 1234689F
6.20e6
40.16
ES 1234789F
5.02e6*
41.17
1.97e6
9.83e5
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PBM
4σ 1.91e3
ES 1234678F
1.38e7
39.78
CS 1234689F
1.36e7
40.16
ES 1234789F
1.10e7*
41.17
4.41e6
2.21e6
NCDPE
38.81-42.40
479.7165 Fn4
Flags: PB
4σ 1.48e3
7.50e3
3.75e3
0%
100%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT

SGS ID: MB1_18911_DF_SDS | Sample ID: Method Blank | Acq: 19-Feb-2022 19:37:00

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25 | User: DTF Datafile: 220219C04



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\MB1_18911_DF_SDS.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7192, 3054, 7558 scc: 399-492 *PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:51 Page 12 of 12*

Lab ID: B5964_18911_DF_007 | Acq'd: 19 Feb 2022 21:09 DTF | Wt/Vol: 10.41 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H2 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.481 pg/g | Split: 1 | Checkcode: 989-059-WCJ

Datafile: 220219C06 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	4899.204	0.341
12378-PeCDD	NotFnd		1.0007	-		-	-	-	1.04	-	4199.999	0.331
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	5042.136	0.426
123678-HxCDD	37.69	J	1.0036	1.0036	0	9.58E+04	1.38	Y	1.15	0.846	5042.136	0.392
123789-HxCDD	37.99	J	1.0118	1.0116	-0.5	1.29E+05	1.18	Y	1.05	1.19	5042.136	0.413
1234678-HpCDD	40.72		1.0002	1.0003	+0.2	1.80E+06	0.99	Y	1.06	18.1	5938.939	0.494
OCDD	43.41		1.0003	1.0003	0	2.55E+07	0.93	Y	1.13	350	4733.79	0.815
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	3480.262	0.207
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3451.622	0.18
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3451.622	0.176
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2825.197	0.159
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2825.197	0.147
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2825.197	0.141
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2825.197	0.168
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	3154.378	0.162
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	3154.378	0.257
OCDF	NotFnd		1.0002	-		-	-	-	1.07	-	3912.134	0.546

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.22	1.0243	1.0243	0	2.41E+07	0.82	Y	1.05	93.8
ES 12378-PeCDD	33.62	1.2198	1.2204	+1.2	2.13E+07	1.59	Y	0.88	98.5
ES 123478-HxCDD	37.55	0.9916	0.9916	0	1.93E+07	1.23	Y	0.97	102
ES 123678-HxCDD	37.67	0.9947	0.9948	+0.2	1.90E+07	1.26	Y	0.94	104
ES 123789-HxCDD	37.97	1.0029	1.0028	-0.2	1.99E+07	1.29	Y	1.09	94.5
ES 1234678-HpCDD	40.70	1.0749	1.0748	-0.2	1.81E+07	1.10	Y	0.91	102
ES OCDD	43.40	1.1460	1.1460	0	2.49E+07	0.88	Y	0.62	103
ES 2378-TCDF	27.35	1.0531	1.0534	+0.5	3.44E+07	0.80	Y	1.06	82.9
ES 12378-PeCDF	32.16	1.2378	1.2386	+1.5	3.39E+07	1.57	Y	0.91	94.9
ES 23478-PeCDF	33.28	1.2810	1.2819	+1.8	3.23E+07	1.58	Y	0.88	93.4
ES 123478-HxCDF	36.55	0.9650	0.9651	+0.2	2.33E+07	0.54	Y	1.20	101
ES 123678-HxCDF	36.69	0.9688	0.9688	0	2.79E+07	0.52	Y	1.35	107
ES 234678-HxCDF	37.36	0.9866	0.9866	0	2.77E+07	0.52	Y	1.24	115
ES 123789-HxCDF	38.34	1.0125	1.0124	-0.2	2.16E+07	0.53	Y	1.16	96.7
ES 1234678-HpCDF	39.76	1.0501	1.0500	-0.2	2.12E+07	0.44	Y	0.97	113
ES 1234789-HpCDF	41.16	1.0870	1.0869	-0.2	1.59E+07	0.47	Y	0.85	96.9
ES OCDF	43.57	1.1505	1.1505	0	3.08E+07	0.90	Y	0.81	98.5

Lab ID: B5964_18911_DF_007 | Acq'd: 19 Feb 2022 21:09 DTF | Wt/Vol: 10.41 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H2 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.481 pg/g | Split: 1 | Checkcode: 989-059-WCJ

Datafile: 220219C06 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.55		-	-	-	2.46E+07	0.80	Y	-	-
JS 1234-TCDF	25.96		-	-	-	3.92E+07	0.82	Y	-	-
JS 123467-HxCDD	37.87		-	-	-	9.66E+06	1.18	Y	-	-
CS 37Cl-2378-TCDD	28.24		1.0251	1.0252	+0.2	1.08E+07	n/a	-	1.20	91.7
CS 12347-PeCDD	33.11		1.2016	1.2021	+1.0	1.91E+07	1.65	Y	0.75	103
CS 12346-PeCDF	31.62		1.2172	1.2180	+1.5	3.22E+07	1.57	Y	0.85	96.6
CS 123469-HxCDF	37.00		0.9771	0.9770	-0.2	2.37E+07	0.53	Y	1.12	110
CS 1234689-HpCDF	40.17		1.0608	1.0607	-0.2	1.92E+07	0.44	Y	0.89	112
~~SS 37Cl-2378-TCDD~~	~~28.24~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~1.08E+07~~	~~n/a~~		~~1.15~~	~~90~~
~~SS 12347-PeCDD~~	~~33.11~~		~~1.2016~~	~~1.2021~~	~~+1.0~~	~~1.91E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~105~~
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2172~~	~~1.2180~~	~~+1.5~~	~~3.22E+07~~	~~1.57~~	~~Y~~	~~0.94~~	~~102~~
~~SS 123469-HxCDF~~	~~37.00~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~2.37E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~105~~
~~SS 1234689-HpCDF~~	~~40.17~~		~~1.0608~~	~~1.0607~~	~~-0.2~~	~~1.92E+07~~	~~0.44~~	~~Y~~	~~0.92~~	~~98.7~~

Totals	Conc	EMPC
Total TCDD	0	1.24
Total PeCDD	0	0.886
Total HxCDD	15.3	15.3
Total HpCDD	52.6	52.6
Total Tetra-Octa Dioxins	418	420
Total TCDF	0.765	0.765
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0.765	0.765
Total Tetra-Octa Dioxins & Furans	419	421

Lab ID: B5964_18911_DF_007 | Acq'd: 19 Feb 2022 21:09 DTF | Wt/Vol: 10.41 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H2 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.481 pg/g | Split: 1 | Checkcode: 989-059-WCJ

Datafile: 220219C06 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8701						1.18		4899.204	0.341
1379-TCDD	NotFnd		0.8829						1.18		4899.204	0.341
1369-TCDD	NotFnd		0.8982						1.18		4899.204	0.341
1469-TCDD	26.13	EMPC	0.9261	0.9259	-0.3	1.84E+05	0.96	N	1.18	1.24	4899.204	0.341
1247/1246/1248/1249-TCDD	NotFnd		0.9348						1.18		4899.204	0.341
1378-TCDD	NotFnd		0.9417						1.18		4899.204	0.341
1268-TCDD	NotFnd		0.9487						1.18		4899.204	0.341
1478-TCDD	NotFnd		0.9576						1.18		4899.204	0.341
1279-TCDD	NotFnd		0.9636						1.18		4899.204	0.341
1234/1269-TCDD	NotFnd		0.9761						1.18		4899.204	0.341
1236-TCDD	NotFnd		0.9812						1.18		4899.204	0.341
1237/1238-TCDD	NotFnd		0.9905						1.18		4899.204	0.341
1239-TCDD	NotFnd		0.9951						1.18		4899.204	0.341
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**4899.204**	**0.341**
1278-TCDD	NotFnd		1.0124						1.18		4899.204	0.341
1267-TCDD	NotFnd		1.0172						1.18		4899.204	0.341
1289-TCDD	NotFnd		1.0354						1.18		4899.204	0.341
12479/12468-PeCDD	NotFnd		0.9255						1.04		4199.999	0.331
12469-PeCDD	31.65	J EMPC	0.9416	0.9414	-0.4	1.02E+05	1.91	N	1.04	0.886	4199.999	0.331
12368-PeCDD	NotFnd		0.9582						1.04		4199.999	0.331
12478-PeCDD	NotFnd		0.9637						1.04		4199.999	0.331
12379-PeCDD	NotFnd		0.9668						1.04		4199.999	0.331
12369/12467/12489-PeCDD	NotFnd		0.9746						1.04		4199.999	0.331
12346/12347-PeCDD	NotFnd		0.9858						1.04		4199.999	0.331
12378-PeCDD	NotFnd		**1.0007**						**1.04**		**4199.999**	**0.331**
12367-PeCDD	NotFnd		1.0036						1.04		4199.999	0.331
12389-PeCDD	NotFnd		1.0137						1.04		4199.999	0.331
124679/124689-HxCDD	35.82		0.9540	0.9539	-0.2	9.31E+05	1.33	Y	1.10	8.42	5042.136	0.41
123468-HxCDD	NotFnd		0.9715						1.10		5042.136	0.41
123679/123689-HxCDD	36.78		0.9793	0.9793	0	4.50E+05	1.27	Y	1.10	4.08	5042.136	0.41
123469-HxCDD	36.90	J	0.9829	0.9827	-0.4	8.80E+04	1.18	Y	1.10	0.797	5042.136	0.41
123478-HxCDD	NotFnd		**1.0004**						1.09		**5042.136**	**0.426**
123678-HxCDD	37.69	J	**1.0036**	**1.0036**	**0**	**9.58E+04**	**1.38**	**Y**	1.15	**0.846**	**5042.136**	**0.392**
123467-HxCDD	NotFnd		1.0089						1.10		5042.136	0.41
123789-HxCDD	37.99	J	**1.0118**	**1.0116**	**-0.5**	**1.29E+05**	**1.18**	**Y**	1.05	**1.19**	**5042.136**	**0.413**

Lab ID: B5964_18911_DF_007 | Acq'd: 19 Feb 2022 21:09 DTF | Wt/Vol: 10.41 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-9H2 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.481 pg/g | Split: 1 | Checkcode: 989-059-WCJ

Datafile: 220219C06 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9836	0.9836	0	3.45E+06	1.04	Y	1.06	34.6	5938.939	0.494
1234678-HpCDD	**40.72**		**1.0002**	**1.0003**	**+0.2**	**1.80E+06**	**0.99**	**Y**	**1.06**	**18.1**	**5938.939**	**0.494**
OCDD	**43.41**		**1.0003**	**1.0003**	**0**	**2.55E+07**	**0.93**	**Y**	**1.13**	**350**	**4733.79**	**0.815**
OCDD-a	43.41		1.0002	1.0002	0	1.55E+06	2.12	Y	0.07	333	3291.454	8.87
1368-TCDF	NotFnd		0.8191						1.08		3480.262	0.207
1468-TCDF	NotFnd		0.8408						1.08		3480.262	0.207
2468-TCDF	23.63		0.8645	0.8640	-0.7	1.48E+05	0.80	Y	1.08	0.765	3480.262	0.207
1346/1246-TCDF	NotFnd		0.8772						1.08		3480.262	0.207
1347/1378/1247-TCDF	NotFnd		0.8833						1.08		3480.262	0.207
1348-TCDF	NotFnd		0.8932						1.08		3480.262	0.207
1248/1367/1379-TCDF	NotFnd		0.8980						1.08		3480.262	0.207
1268-TCDF	NotFnd		0.9119						1.08		3480.262	0.207
1467-TCDF	NotFnd		0.9170						1.08		3480.262	0.207
1478-TCDF	NotFnd		0.9234						1.08		3480.262	0.207
1369/1237-TCDF	NotFnd		0.9369						1.08		3480.262	0.207
2467-TCDF	NotFnd		0.9415						1.08		3480.262	0.207
2368-TCDF	NotFnd		0.9475						1.08		3480.262	0.207
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9507						1.08		3480.262	0.207
1278-TCDF	NotFnd		0.9676						1.08		3480.262	0.207
1349-TCDF	NotFnd		0.9722						1.08		3480.262	0.207
1267-TCDF	NotFnd		0.9777						1.08		3480.262	0.207
2346/1249-TCDF	NotFnd		0.9843						1.08		3480.262	0.207
2347/1279-TCDF	NotFnd		0.9926						1.08		3480.262	0.207
2348-TCDF	NotFnd		0.9968						1.08		3480.262	0.207
2378-TCDF	**NotFnd**		**1.0008**						**1.08**		**3480.262**	**0.207**
2367/3467-TCDF	NotFnd		1.0142						1.08		3480.262	0.207
1269-TCDF	NotFnd		1.0235						1.08		3480.262	0.207
1239-TCDF	NotFnd		1.0329						1.08		3480.262	0.207
1289-TCDF	NotFnd		1.0742						1.08		3480.262	0.207
13468/12468-PeCDF	NotFnd		0.9122						1.02		3203.452	0.165
13678/13467/12467-PeCDF	NotFnd		0.9606						1.02		3451.622	0.178
12368/13478/12478-PeCDF	NotFnd		0.9655						1.02		3451.622	0.178
14678-PeCDF	NotFnd		0.9685						1.02		3451.622	0.178
13479-PeCDF	NotFnd		0.9716						1.02		3451.622	0.178
13469/12479-PeCDF	NotFnd		0.9794						1.02		3451.622	0.178
12346-PeCDF	NotFnd		0.9836						1.02		3451.622	0.178

Lab ID: B5964_18911_DF_007 | Acq'd: 19 Feb 2022 21:09 DTF | Wt/Vol: 10.41 g | ICAL: HRMS3_DF_10272021 10NOV2021

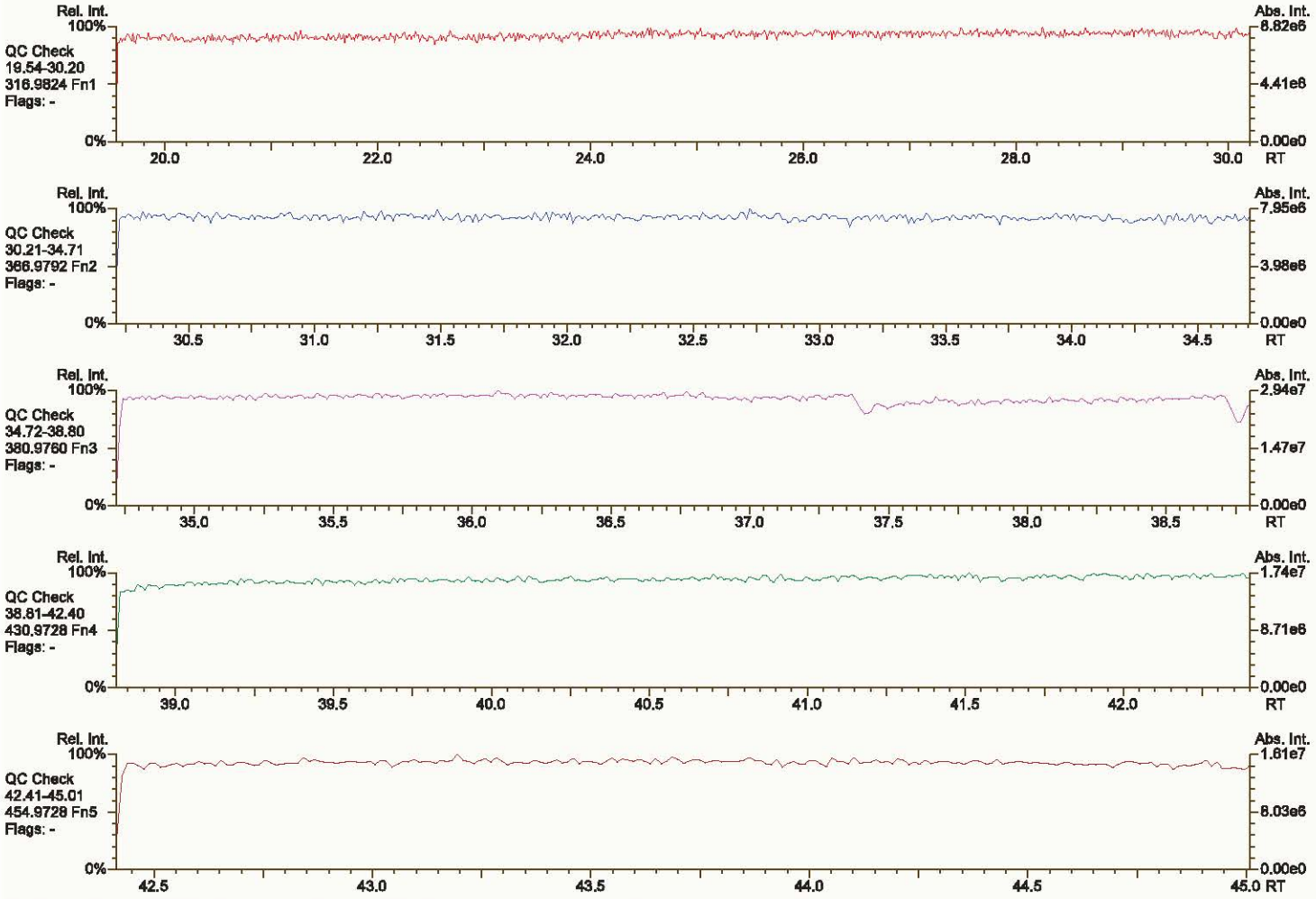
Client ID: 11215131-120221-S-SPS-SW-B-9H2 | UTP: 21-Feb-2022 10:46:47 DTF | J-level: 0.481 pg/g | Split: 1 | Checkcode: 989-059-WCJ

Datafile: 220219C06 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9866						1.02		3451.622	0.178
12347-PeCDF	NotFnd		0.9891						1.02		3451.622	0.178
12348-PeCDF	NotFnd		0.9938						1.02		3451.622	0.178
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3451.622**	**0.18**
12678/12367-PeCDF	NotFnd		1.0091						1.02		3451.622	0.178
12379-PeCDF	NotFnd		1.0144						1.02		3451.622	0.178
12679-PeCDF	NotFnd		0.9927						1.02		3451.622	0.178
23467/12369-PeCDF	NotFnd		0.9965						1.02		3451.622	0.178
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3451.622**	**0.176**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3451.622	0.178
12349-PeCDF	NotFnd		1.0101						1.02		3451.622	0.178
12389-PeCDF	NotFnd		1.0330						1.02		3451.622	0.178
123468-HxCDF	NotFnd		0.9622						1.19		2825.197	0.152
124678/134678-HxCDF	NotFnd		0.9678						1.19		2825.197	0.152
134679-HxCDF	NotFnd		0.9741						1.19		2825.197	0.152
124679-HxCDF	NotFnd		0.9795						1.19		2825.197	0.152
124689-HxCDF	NotFnd		0.9856						1.19		2825.197	0.152
123467-HxCDF	NotFnd		0.9972						1.19		2825.197	0.152
123478-HxCDF	**NotFnd**		**1.0004**						**1.27**		**2825.197**	**0.159**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**2825.197**	**0.147**
123479-HxCDF	NotFnd		1.0048						1.19		2825.197	0.152
123469-HxCDF	NotFnd		1.0089						1.19		2825.197	0.152
123679-HxCDF	NotFnd		0.9942						1.19		2825.197	0.152
234678-HxCDF	**NotFnd**		**1.0005**						**1.19**		**2825.197**	**0.141**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2825.197	0.152
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**2825.197**	**0.168**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		2825.197	0.152
1234678-HpCDF	**NotFnd**		**1.0003**						**1.37**		**3154.378**	**0.162**
1234679-HpCDF	NotFnd		1.0068						1.34		3154.378	0.203
1234689-HpCDF	NotFnd		1.0104						1.34		3154.378	0.203
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**3154.378**	**0.257**
OCDF	**NotFnd**		**1.0002**						**1.07**		**3912.134**	**0.546**
OCDF-a	NotFnd		1.0001						0.07		3316.904	7.47

SGS ID: B5964_18911_DF_007 | Sample ID: 11215131-120221-S-SPS-SW-B-9H2 | Acq: 19-Feb-2022 21:09:42

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: DTF Datafile: 220219C06



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF)

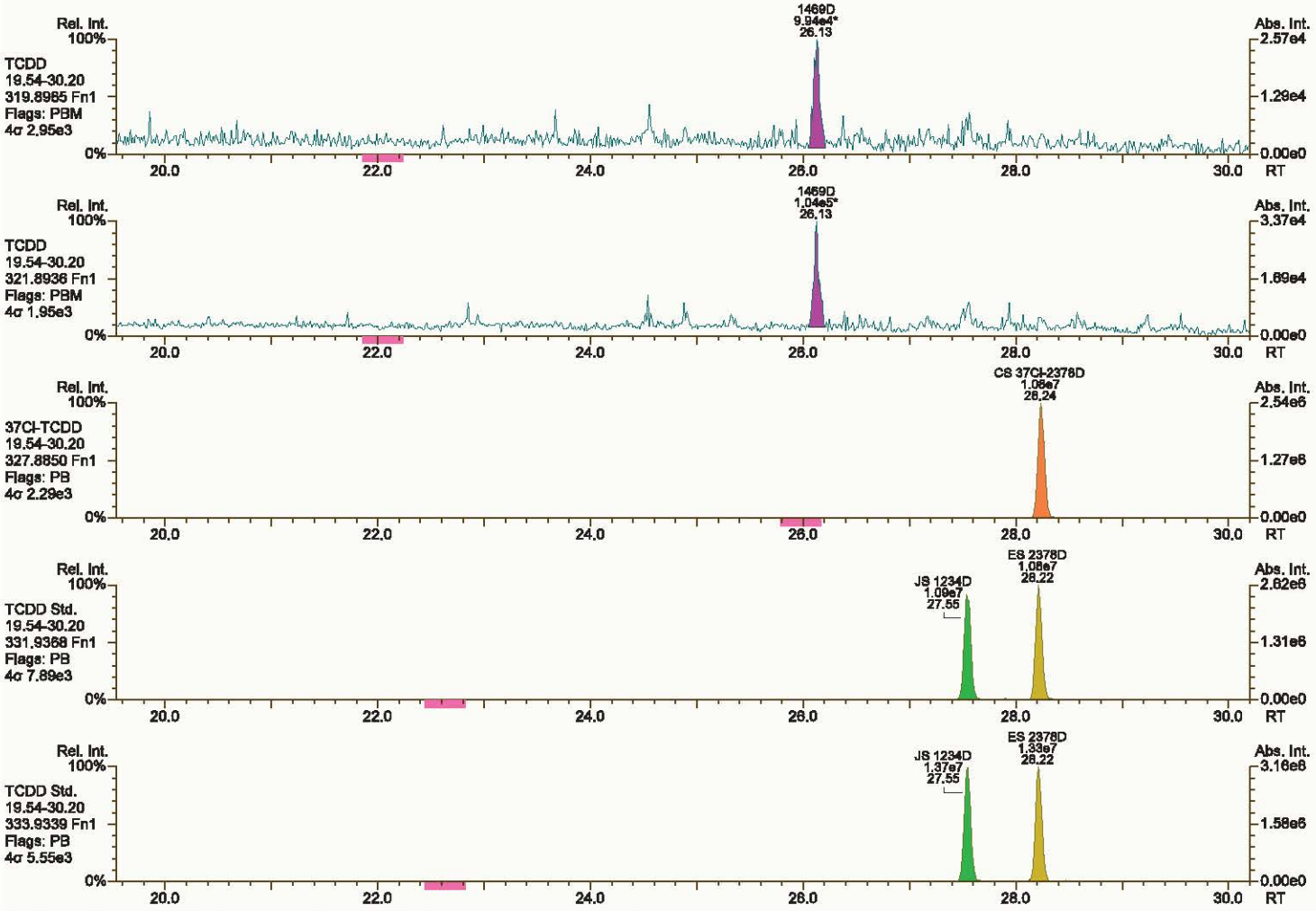
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 scc: 989-059

PKD: n/a Printed: 21-Feb-2022 10:51 Page 1 of 12

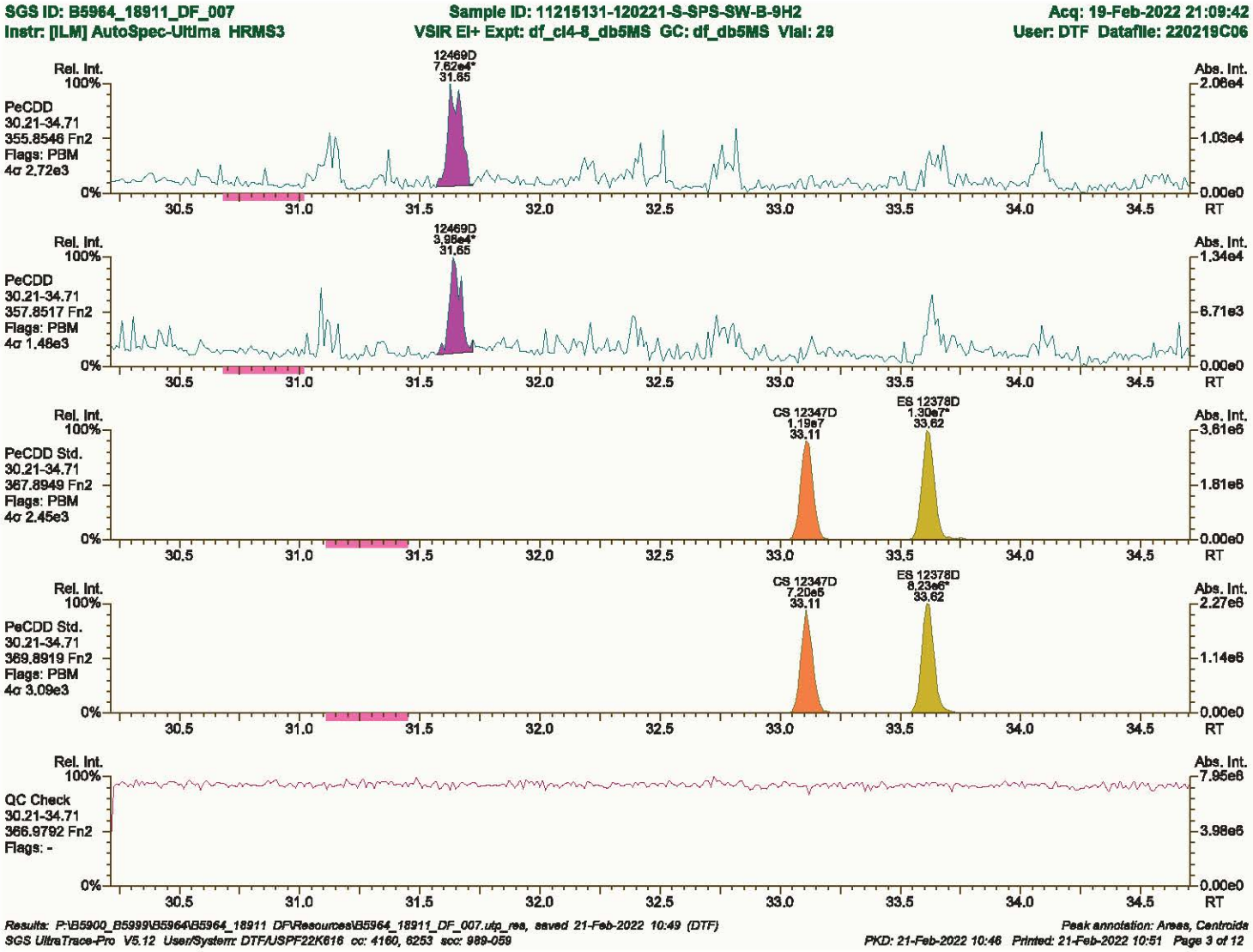
SGS ID: B5964_18911_DF_007 | Sample ID: 11215131-120221-S-SPS-SW-B-9H2 | Acq: 19-Feb-2022 21:09:42

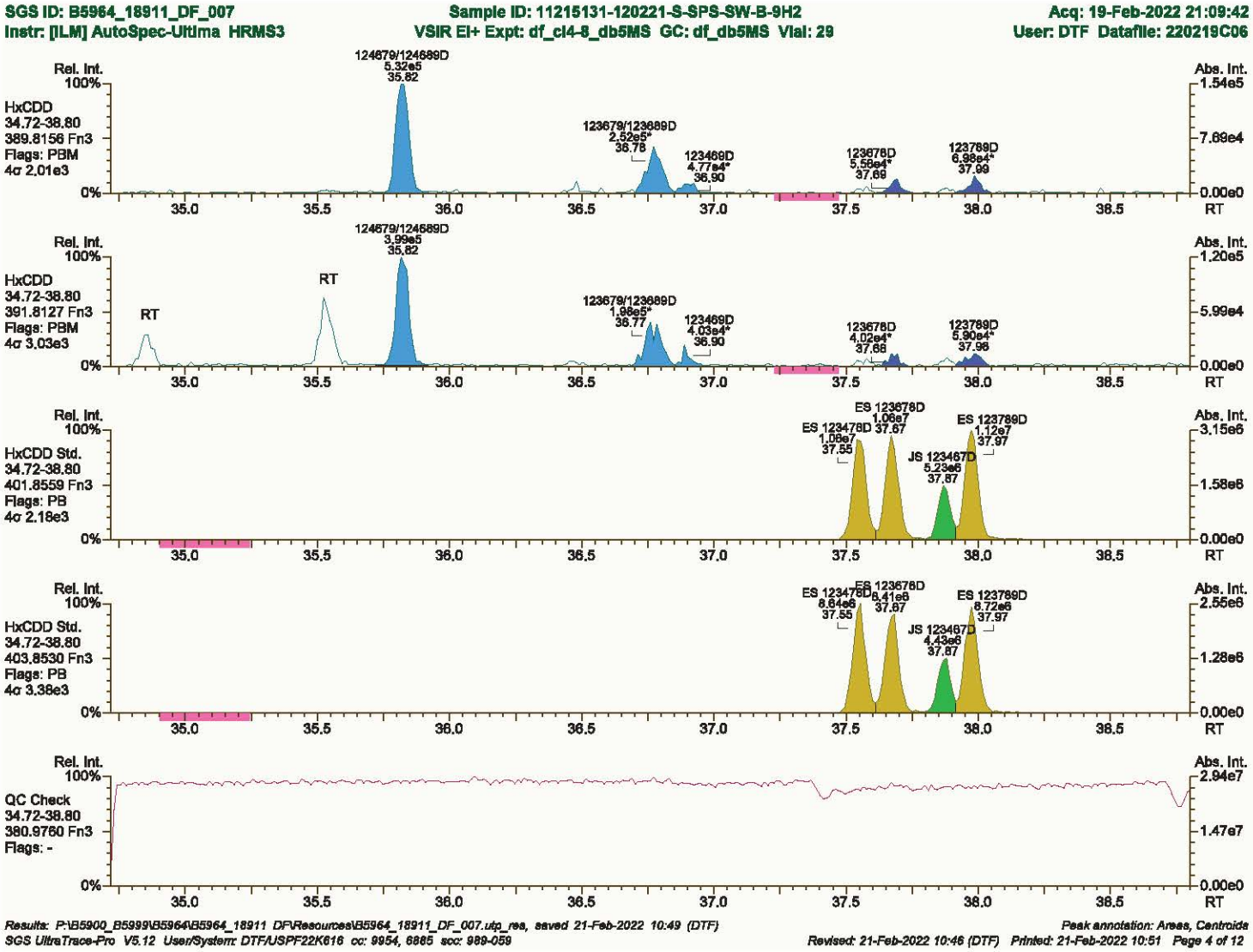
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: DTF Datafile: 220219C06



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF) | *Peak annotation: Areas, Centroids*

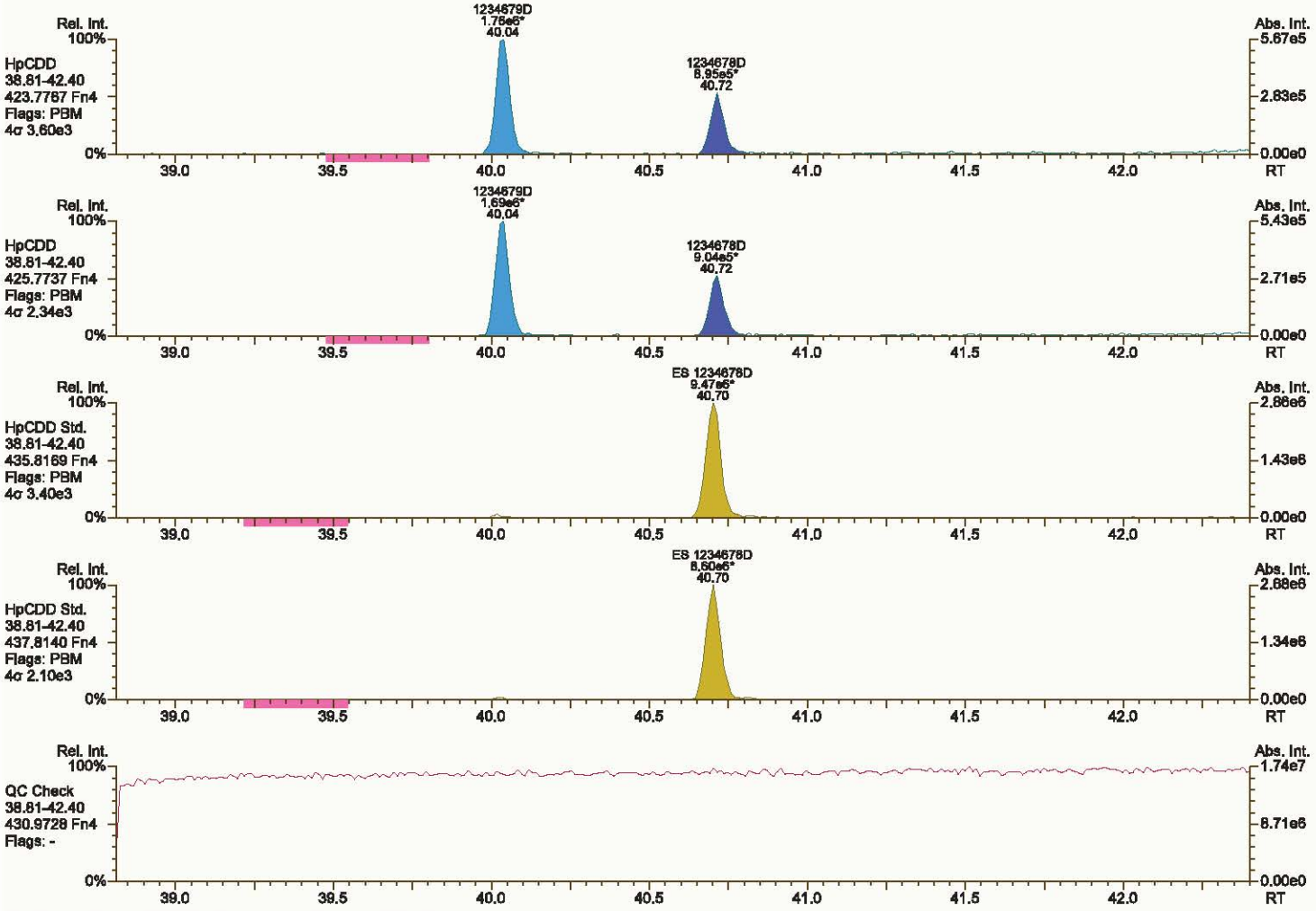
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4358, 6176, 7745 scc: 989-059 | *Revised: 21-Feb-2022 10:45 (DTF) Printed: 21-Feb-2022 10:51 Page 2 of 12*


SGS ID: B5964_18911_DF_007
Sample ID: 11215131-120221-S-SPS-SW-B-9H2
Acq: 19-Feb-2022 21:09:42
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: DTF Datafile: 220219C06
Rel. Int.
Abs. Int.
12469D
7.62e4*
31.65
PeCDD
30.21-34.71
355.8546 Fn2
Flags: PBM
4σ 2.72e3
2.06e4
1.03e4
0.00e0
12469D
3.98e4*
31.65
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PBM
4σ 1.48e3
1.34e4
6.71e3
CS 12347D
1.19e7
33.11
ES 12378D
1.30e7*
33.62
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PBM
4σ 2.45e3
3.61e6
1.81e6
CS 12347D
7.20e5
33.11
ES 12378D
8.23e6*
33.62
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PBM
4σ 3.09e3
2.27e6
1.14e6
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
7.95e6
3.98e6
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4160, 6253 scc: 989-059
PKD: 21-Feb-2022 10:46 Printed: 21-Feb-2022 10:51 Page 3 of 12


SGS ID: B5964_18911_DF_007
Sample ID: 11215131-120221-S-SPS-SW-B-9H2
Acq: 19-Feb-2022 21:09:42
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: DTF Datafile: 220219C06
Rel. Int.
Abs. Int.
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PBM
4σ 2.01e3
124679/124689D
5.32e5
35.82
123679/123689D
2.52e5*
36.78
123469D
4.77e4*
36.90
123678D
5.58e4*
37.69
123789D
6.98e4*
37.99
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PBM
4σ 3.03e3
RT
RT
124679/124689D
3.99e5
35.82
123679/123689D
1.98e5*
36.77
123469D
4.03e4*
36.90
123678D
4.02e4*
37.68
123789D
5.90e4*
37.96
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PB
4σ 2.18e3
ES 123678D
1.06e7
37.67
ES 123478D
1.06e7
37.55
ES 123789D
1.12e7
37.97
JS 123467D
5.23e6
37.87
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PB
4σ 3.38e3
ES 123678D
8.41e6
37.67
ES 123478D
8.64e6
37.55
ES 123789D
8.72e6
37.97
JS 123467D
4.43e6
37.87
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
1.54e5
7.69e4
0.00e0
1.20e5
5.99e4
3.15e6
1.58e6
2.55e6
1.28e6
2.94e7
1.47e7

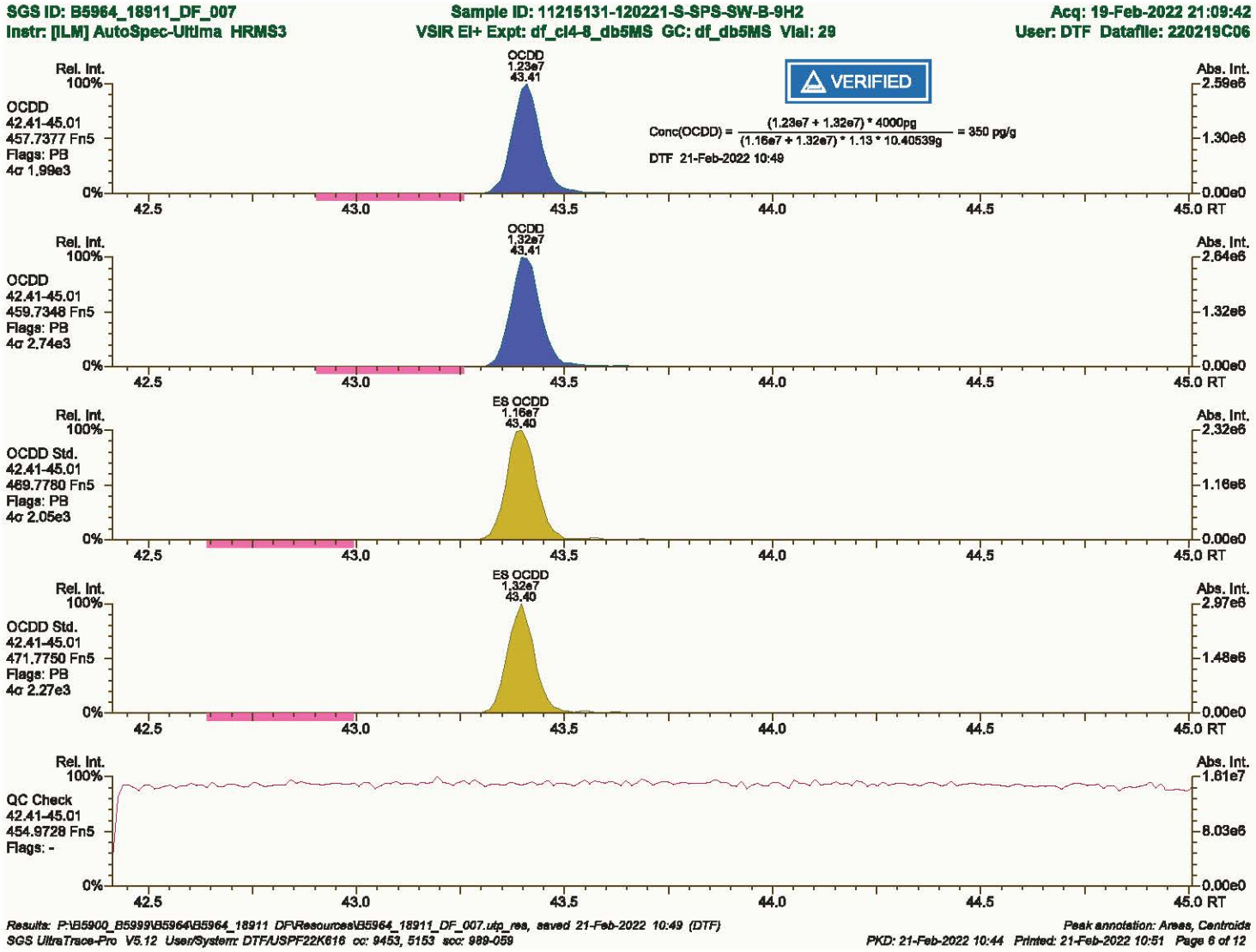
SGS ID: B5964_18911_DF_007 | Sample ID: 11215131-120221-S-SPS-SW-B-9H2 | Acq: 19-Feb-2022 21:09:42

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: DTF Datafile: 220219C06



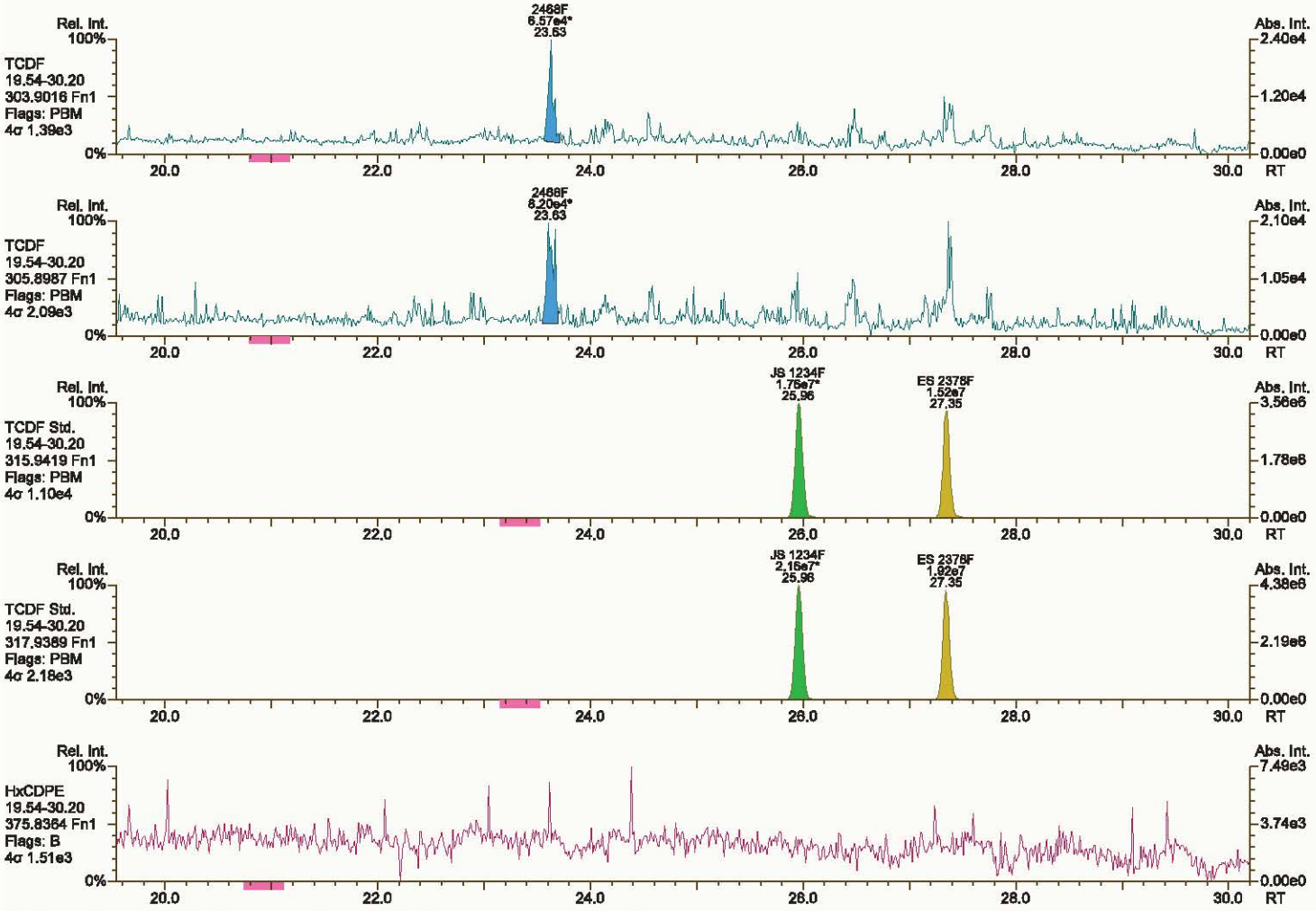
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2765, 8005 scc: 989-059 *PKD: 21-Feb-2022 10:46 Printed: 21-Feb-2022 10:51 Page 5 of 12*


SGS ID: B5964_18911_DF_007
Sample ID: 11215131-120221-S-SPS-SW-B-9H2
Acq: 19-Feb-2022 21:09:42
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: DTF Datafile: 220219C06
VERIFIED
Conc(OCDD) = (1.23e7 + 1.32e7) * 4000pg / (1.16e7 + 1.32e7) * 1.13 * 10.40539g = 350 pg/g
DTF 21-Feb-2022 10:49
OCDD
42.41-45.01
457.7377 Fn5
Flags: PB
4σ 1.99e3
OCDD
42.41-45.01
459.7348 Fn5
Flags: PB
4σ 2.74e3
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PB
4σ 2.05e3
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PB
4σ 2.27e3
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9453, 5153 scc: 989-059
PKD: 21-Feb-2022 10:44 Printed: 21-Feb-2022 10:51 Page 6 of 12

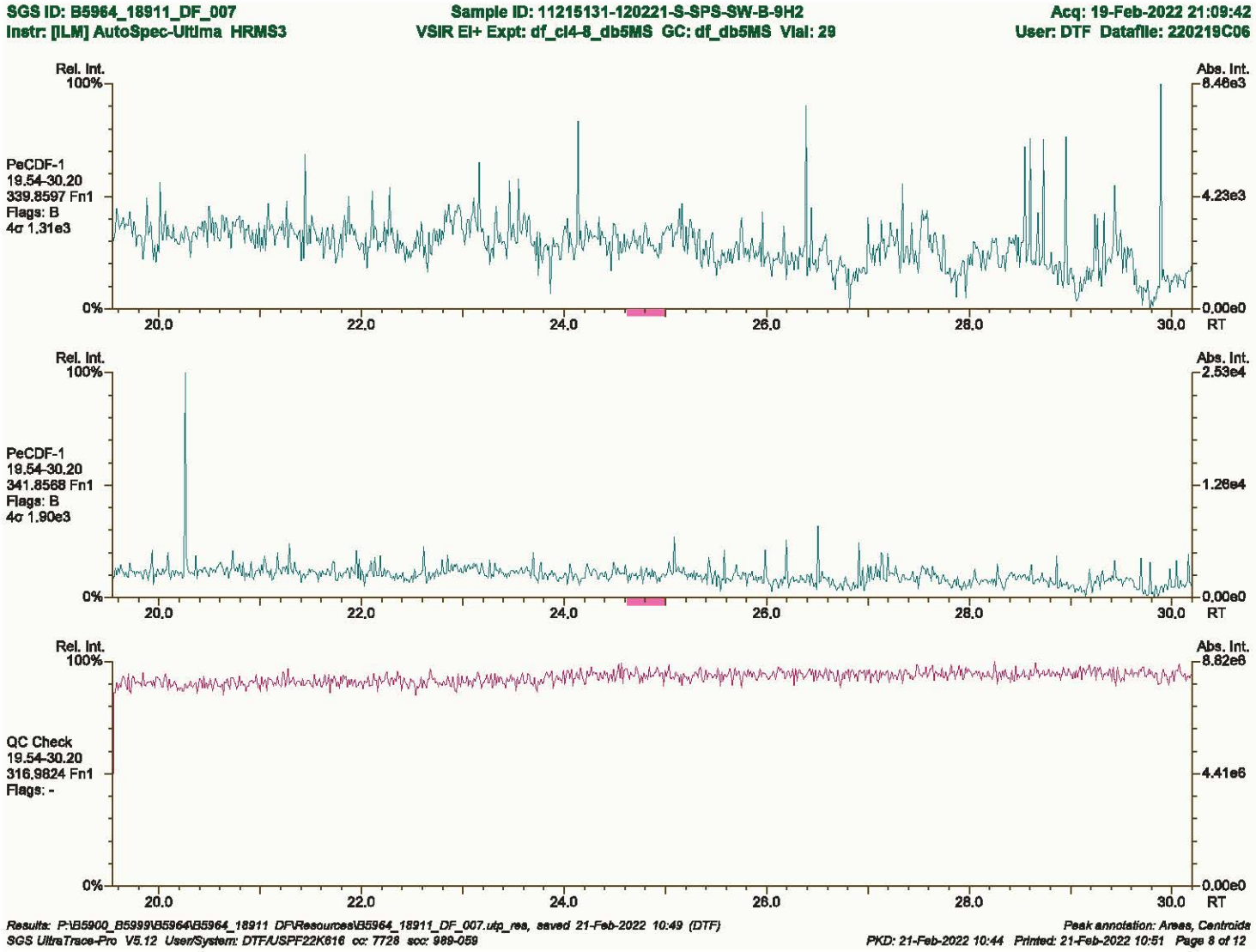
SGS ID: B5964_18911_DF_007 | Sample ID: 11215131-120221-S-SPS-SW-B-9H2 | Acq: 19-Feb-2022 21:09:42

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: DTF Datafile: 220219C06



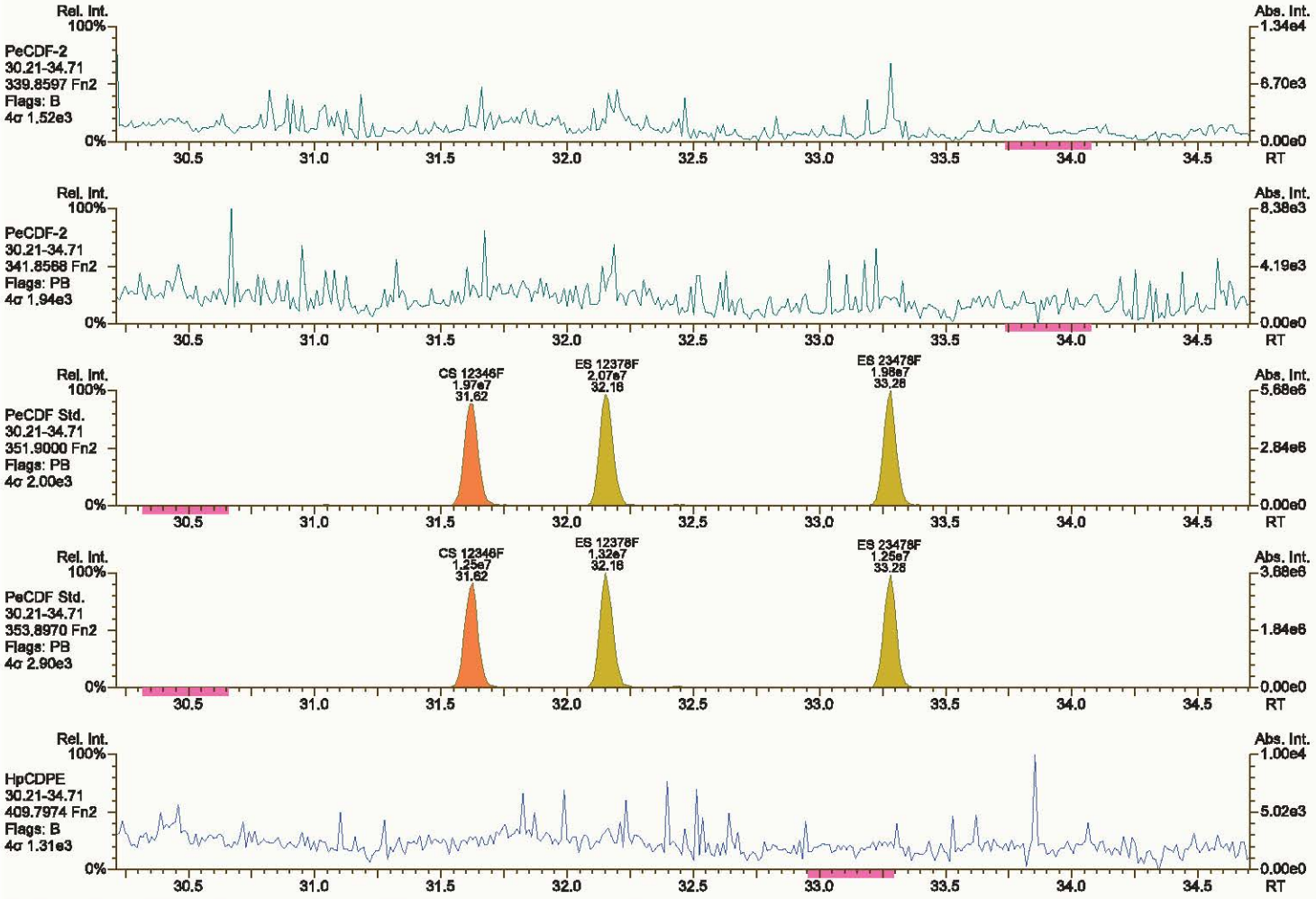
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1886, 2226, 7954 scc: 989-059 *Revised: 21-Feb-2022 10:46 (DTF) Printed: 21-Feb-2022 10:51 Page 7 of 12*


SGS ID: B5964_18911_DF_007
Sample ID: 11215131-120221-S-SPS-SW-B-9H2
Acq: 19-Feb-2022 21:09:42
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: DTF Datafile: 220219C06
Rel. Int.
100%
Abs. Int.
8.46e3
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: B
4σ 1.31e3
4.23e3
0%
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
Abs. Int.
2.53e4
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: B
4σ 1.90e3
1.26e4
0%
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
Abs. Int.
8.82e6
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
4.41e6
0%
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7728 scc: 989-059
PKD: 21-Feb-2022 10:44 Printed: 21-Feb-2022 10:51 Page 8 of 12

SGS ID: B5964_18911_DF_007 | Sample ID: 11215131-120221-S-SPS-SW-B-9H2 | Acq: 19-Feb-2022 21:09:42

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: DTF Datafile: 220219C06

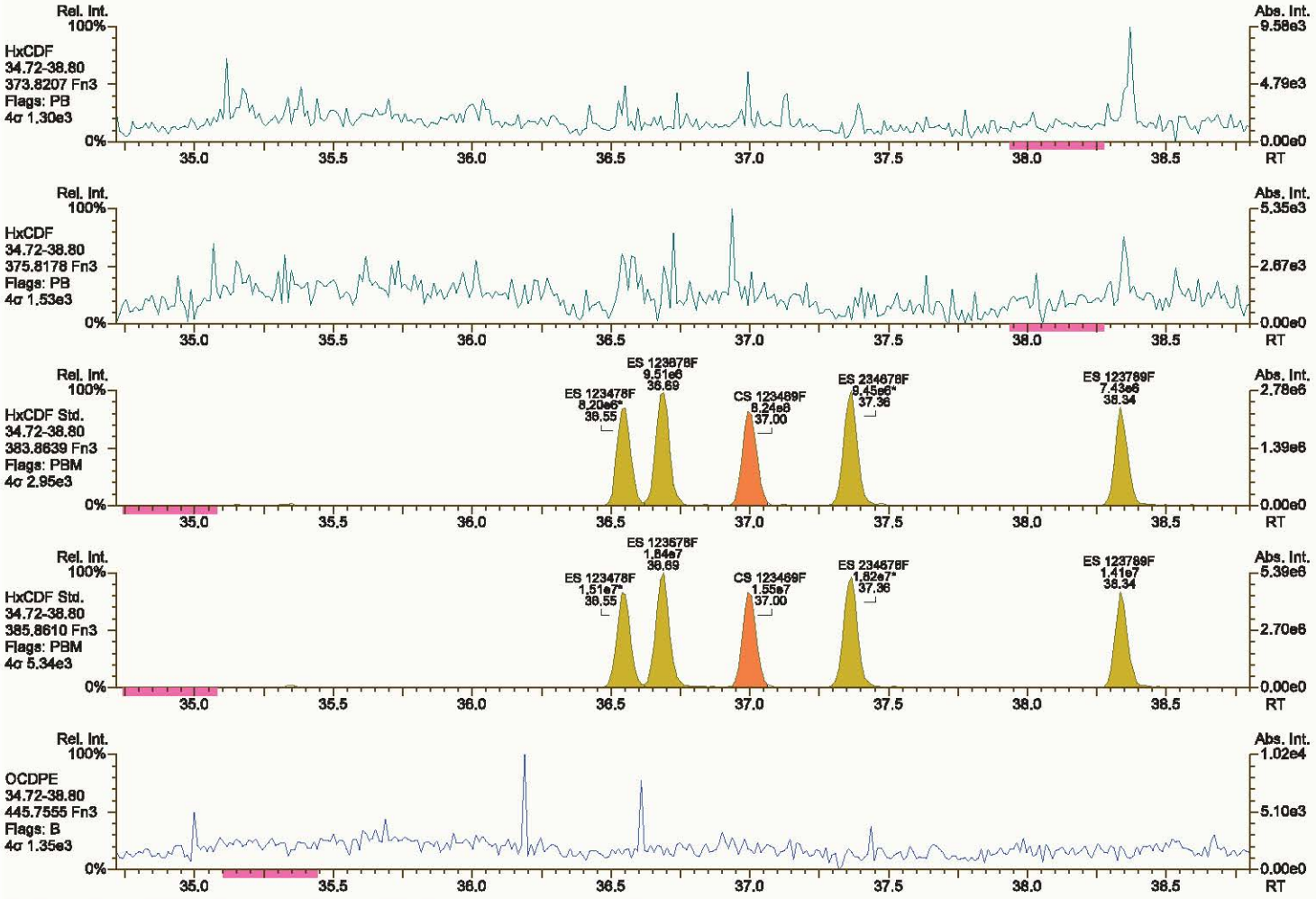


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9674, 2409, 5296 scc: 989-059 | *PKD: 21-Feb-2022 10:44 Printed: 21-Feb-2022 10:51 Page 9 of 12*

SGS ID: B5964_18911_DF_007 | Sample ID: 11215131-120221-S-SPS-SW-B-9H2 | Acq: 19-Feb-2022 21:09:42

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: DTF Datafile: 220219C06

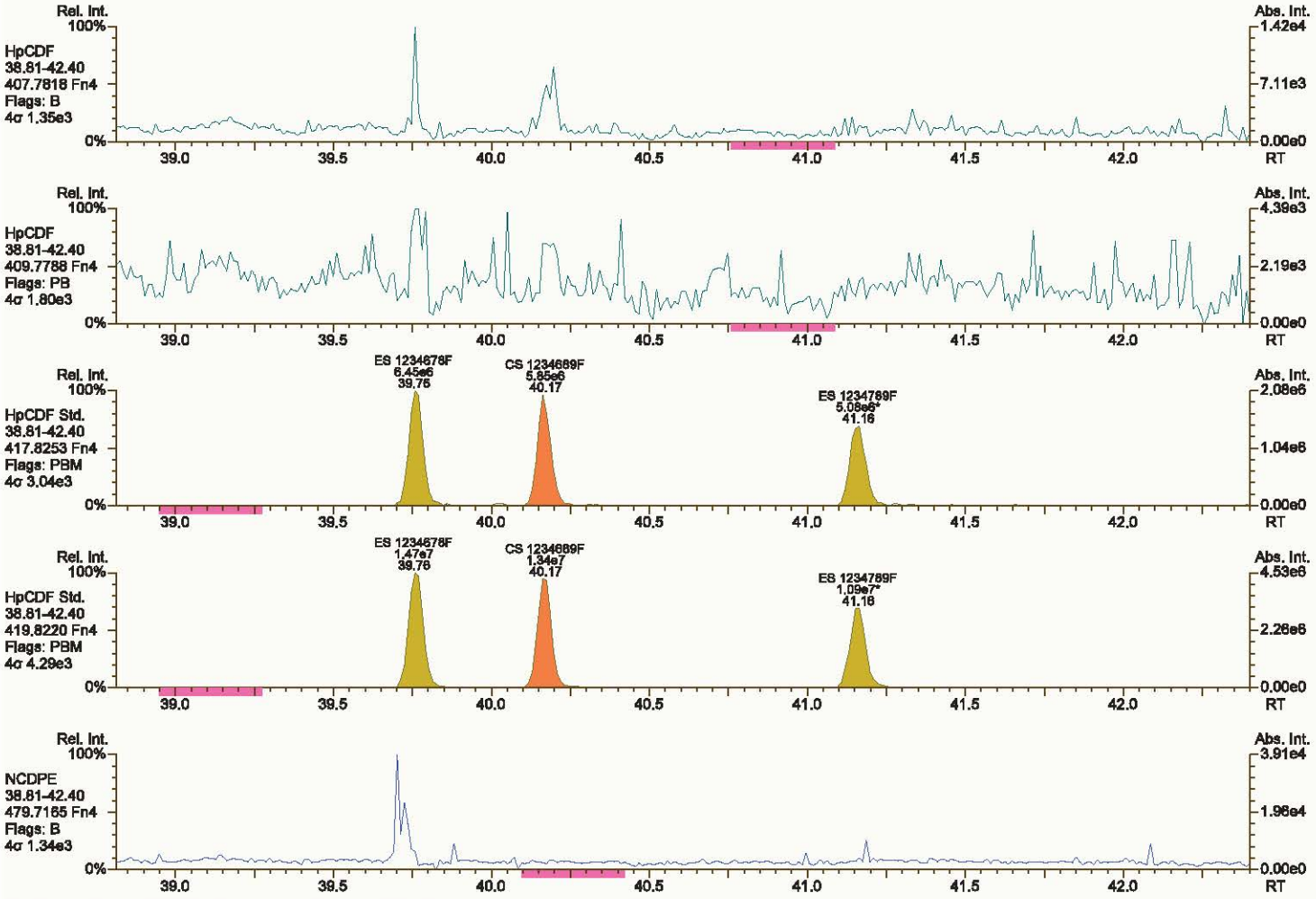


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3784, 7439, 6224 scc: 989-059 *PKD: 21-Feb-2022 10:46 Printed: 21-Feb-2022 10:51 Page 10 of 12*

SGS ID: B5964_18911_DF_007 | Sample ID: 11215131-120221-S-SPS-SW-B-9H2 | Acq: 19-Feb-2022 21:09:42

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: DTF Datafile: 220219C06

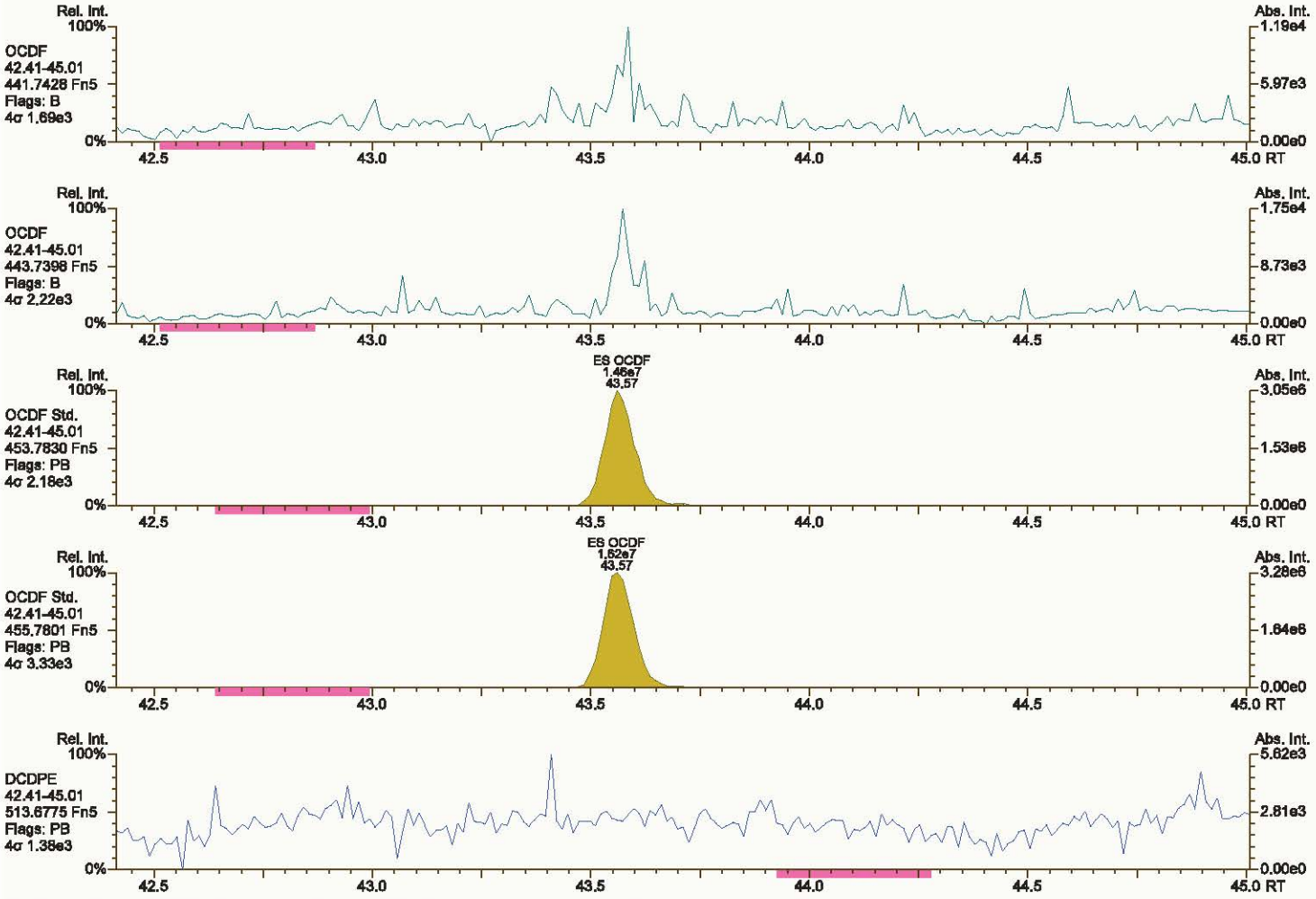


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6827, 9966, 9059 scc: 989-059 | *PKD: 21-Feb-2022 10:46 Printed: 21-Feb-2022 10:51 Page 11 of 12*

SGS ID: B5964_18911_DF_007 | Sample ID: 11215131-120221-S-SPS-SW-B-9H2 | Acq: 19-Feb-2022 21:09:42

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: DTF Datafile: 220219C06



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\B5964_18911_DF_007.utp_res, saved 21-Feb-2022 10:49 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4256, 9562, 8663 scc: 989-059 *PKD: 21-Feb-2022 10:44 Printed: 21-Feb-2022 10:51 Page 12 of 12*

REVIEWED
Tamara Burkamper , 2/21/2022, 2:29:17 PM

SGS Environmental Services — Run Log **Project: B5964_18911_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
0	220219C01	3	CS3_220219_DF_CA	1.00	25-347-1	DTF	910-087	19-Feb-2022	17:17:59
1	220219C02	26	OPR1_18911_DF	1.00	0_18911_OPR001	DTF	320-676	19-Feb-2022	18:04:19
2	220219C03	2	SBS_220219_DF_CA	1.00	20-61-1	DTF	501-491	19-Feb-2022	18:50:40
4	220219C04	25	MB1_18911_DF_SDS	10.00	Method Blank	DTF	399-492	19-Feb-2022	19:37:00
5	220219C06	29	B5964_18911_DF_007	10.41	11215131-120221-S-SPS-SW-B-9H2	DTF	989-059	19-Feb-2022	21:09:42
16	220219C16	3	CS3_220219_DF_CB	1.00	25-347-1	DTF	111-739	20-Feb-2022	05:01:11
17	220219C17	27	OPR2_18911_DF	1.00	0_18911_OPR002	DTF	488-895	20-Feb-2022	05:55:34

REVIEWED
Tyler_Fritz , 2/21/2022, 11:06:01 AM

Dioxin/Furan QC Summary		Acq'd: 19 Feb 2022 17:17 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_220219_DF_CA		UTP: 21-Feb-2022 10:46:46 DTF				Checkcode: 910-087-PNP	
Sample ID: 25-347-1		Report: 21 Feb 2022 10:47 TF				Datafile: 220219C01	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.26	4.72E+06	0.82	Y	1.18	1.22	3%
12378-PeCDD	33.64	1.81E+07	1.55	Y	1.04	1.03	0%
123478-HxCDD	37.57	1.64E+07	1.25	Y	1.09	1.11	2%
123678-HxCDD	37.69	1.71E+07	1.27	Y	1.15	1.15	1%
123789-HxCDD	38.00	1.80E+07	1.23	Y	1.05	1.03	-2%
1234678-HpCDD	40.72	1.61E+07	1.04	Y	1.06	1.07	1%
OCDD	43.42	2.64E+07	0.91	Y	1.13	1.10	-2%
2378-TCDF	27.39	6.75E+06	0.78	Y	1.08	1.12	4%
12378-PeCDF	32.18	2.71E+07	1.55	Y	1.02	1.02	-1%
23478-PeCDF	33.30	2.62E+07	1.50	Y	1.02	0.98	-3%
123478-HxCDF	36.57	2.44E+07	1.23	Y	1.27	1.23	-3%
123678-HxCDF	36.71	2.56E+07	1.23	Y	1.15	1.13	-2%
234678-HxCDF	37.39	2.43E+07	1.25	Y	1.19	1.15	-3%
123789-HxCDF	38.36	2.22E+07	1.26	Y	1.16	1.11	-5%
1234678-HpCDF	39.78	2.21E+07	1.06	Y	1.37	1.37	0%
1234789-HpCDF	41.17	1.96E+07	1.01	Y	1.31	1.30	0%
OCDF	43.59	3.40E+07	0.93	Y	1.07	1.05	-2%
ES 2378-TCDD	28.23	3.87E+07	0.82	Y	1.05	1.01	-3%
ES 12378-PeCDD	33.623	3.49E+07	1.62	Y	0.88	0.91	4%
ES 123478-HxCDD	37.554	2.95E+07	1.26	Y	0.97	0.98	1%
ES 123678-HxCDD	37.673	2.96E+07	1.28	Y	0.94	0.98	4%
ES 123789-HxCDD	37.979	3.50E+07	1.25	Y	1.09	1.16	6%
ES 1234678-HpCDD	40.706	3.01E+07	1.10	Y	0.91	1.00	10%
ES OCDD	43.406	4.79E+07	0.89	Y	0.62	0.80	28%
ES 2378-TCDF	27.366	6.03E+07	0.80	Y	1.06	1.01	-5%
ES 12378-PeCDF	32.162	5.31E+07	1.64	Y	0.91	0.89	-2%
ES 23478-PeCDF	33.285	5.33E+07	1.61	Y	0.88	0.89	1%
ES 123478-HxCDF	36.549	3.97E+07	0.54	Y	1.20	1.32	10%
ES 123678-HxCDF	36.689	4.53E+07	0.54	Y	1.35	1.51	11%
ES 234678-HxCDF	37.366	4.22E+07	0.55	Y	1.24	1.40	13%
ES 123789-HxCDF	38.343	4.00E+07	0.54	Y	1.16	1.33	15%
ES 1234678-HpCDF	39.764	3.22E+07	0.46	Y	0.97	1.07	11%
ES 1234789-HpCDF	41.161	3.02E+07	0.47	Y	0.85	1.00	18%
ES OCDF	43.579	6.45E+07	0.91	Y	0.81	1.07	33% *

*meets M1613B criteria
TB 2/21/2022

Dioxin/Furan QC Summary		Acq'd: 19 Feb 2022 17:17 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_220219_DF_CA		UTP: 21-Feb-2022 10:46:46 DTF				Checkcode: 910-087-PNP	
Sample ID: 25-347-1		Report: 21 Feb 2022 10:47 TF				Datafile: 220219C01	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.57	3.82E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.99	5.98E+07	0.83	Y	-	-	-
JS 123467-HxCDD	37.87	1.50E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.26	5.16E+06	n/a	-	1.20	1.35	12%
CS 12347-PeCDD	33.12	3.13E+07	1.61	Y	0.75	0.82	8%
CS 12346-PeCDF	31.63	5.27E+07	1.55	Y	0.85	0.88	4%
CS 123469-HxCDF	37.00	4.17E+07	0.54	Y	1.12	1.39	24%
CS 1234689-HpCDF	40.17	3.39E+07	0.48	Y	0.89	1.13	27%
~~SS 37Cl-2378-TCDD~~	~~28.26~~	~~5.16E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.33~~	~~16%~~
~~SS 12347-PeCDD~~	~~33.12~~	~~3.13E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~0.90~~	~~4%~~
~~SS 12346-PeCDF~~	~~31.63~~	~~5.27E+07~~	~~1.55~~	~~Y~~	~~0.94~~	~~0.99~~	~~6%~~
~~SS 123469-HxCDF~~	~~37.00~~	~~4.17E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~0.92~~	~~11%~~
~~SS 1234689-HpCDF~~	~~40.17~~	~~3.39E+07~~	~~0.48~~	~~Y~~	~~0.93~~	~~1.05~~	~~14%~~
~~OCDD-a~~	~~43.42~~	~~1.55E+06~~	~~2.64~~	~~Y~~	~~0.87~~	~~0.86~~	~~-10%~~
~~OCDF-a~~	~~43.59~~	~~2.17E+06~~	~~2.56~~	~~Y~~	~~0.87~~	~~0.87~~	~~1%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220219C01 Analysis Date: 19-FEB-2022 17:17:59

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.82	0.65 - 0.89	Y	10.3	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	49.9	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05 - 1.43	Y	49	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.3	43 - 58	Y
OCDD	M+2/M+4	0.91	0.78 - 1.02	Y	97.8	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.78	0.65 - 0.89	Y	10.4	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	49.7	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.50	1.32 - 1.78	Y	48.3	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	48.3	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	49	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.5	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	47.7	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88 - 1.20	Y	50.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	49.8	43 - 58	Y
OCDF	M+2/M+4	0.93	0.76 - 1.02	Y	98.4	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 21 Feb 2022 10:47 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

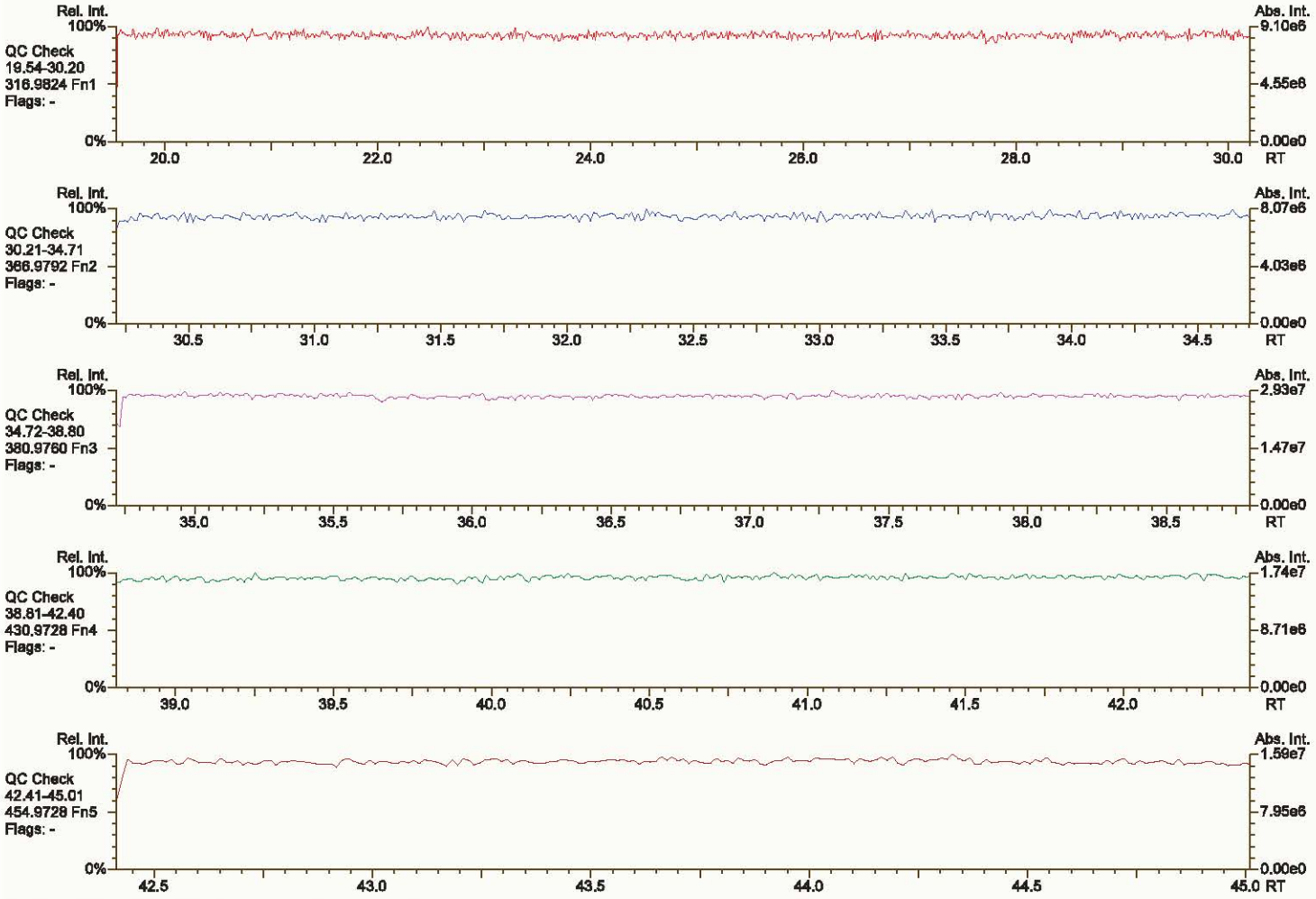
VER Data Filename: 220219C01 Analysis Date: 19-FEB-2022 17:17:59

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65 - 0.89	Y	96.7	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32 - 1.78	Y	104	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	101	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	104	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	106	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.10	0.88 - 1.20	Y	110	72 - 138	Y
13C-OCDD	M+2/M+4	0.89	0.78 - 1.02	Y	255	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	95.2	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.64	1.32 - 1.78	Y	97.6	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32 - 1.78	Y	101	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	110	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	111	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.55	0.43 - 0.59	Y	113	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	115	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	111	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	118	77 - 129	Y
13C-OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	266	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				11.2	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.61	1.32 - 1.78	Y	108	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	104	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	124	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.48	0.37 - 0.51	Y	127	70 - 130	Y

Processed: 21 Feb 2022 10:47 Analyst: TF

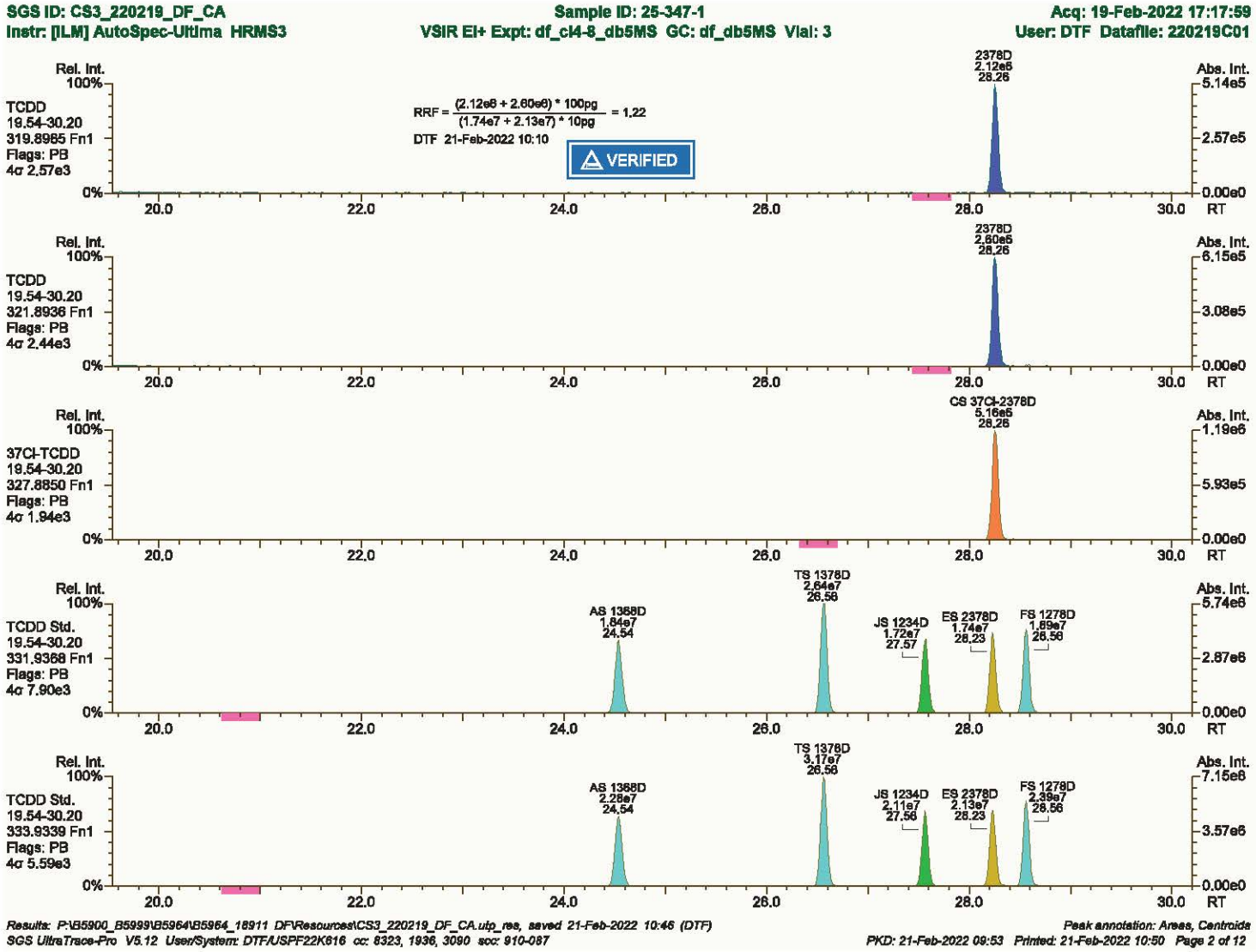
SGS ID: CS3_220219_DF_CA | Sample ID: 25-347-1 | Acq: 19-Feb-2022 17:17:59

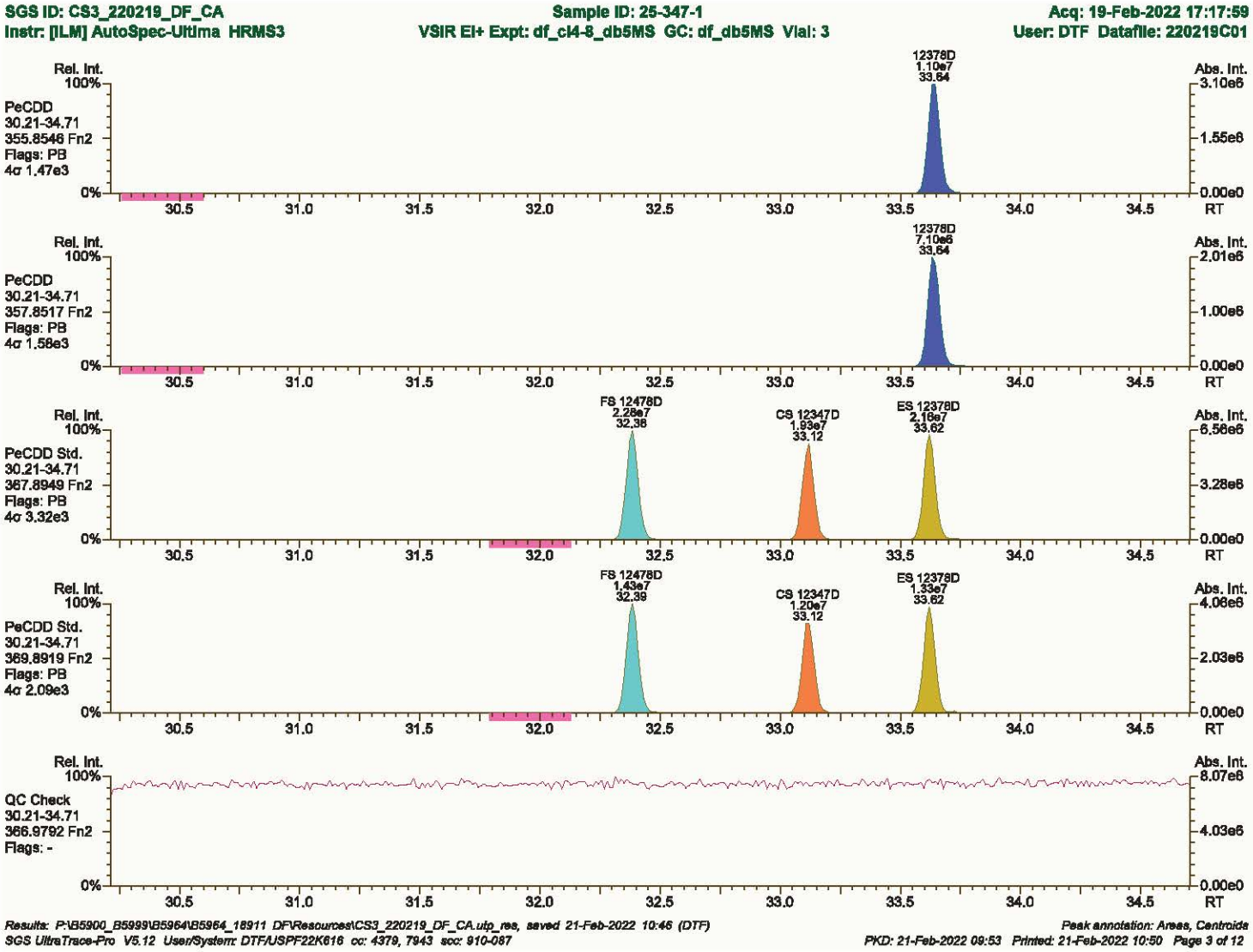
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C01

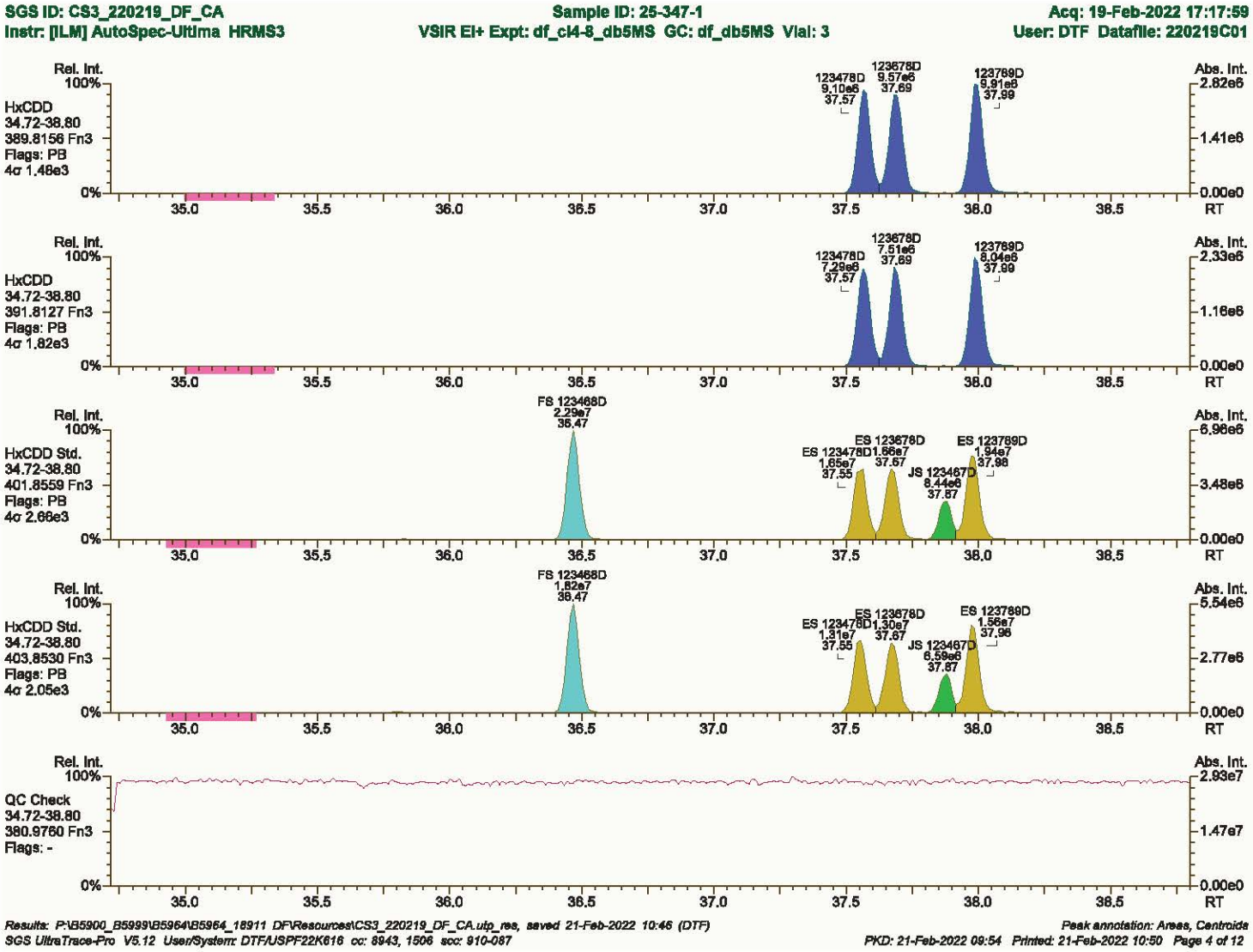


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 scc: 910-087 | *PKD: n/a Printed: 21-Feb-2022 10:50 Page 1 of 12*

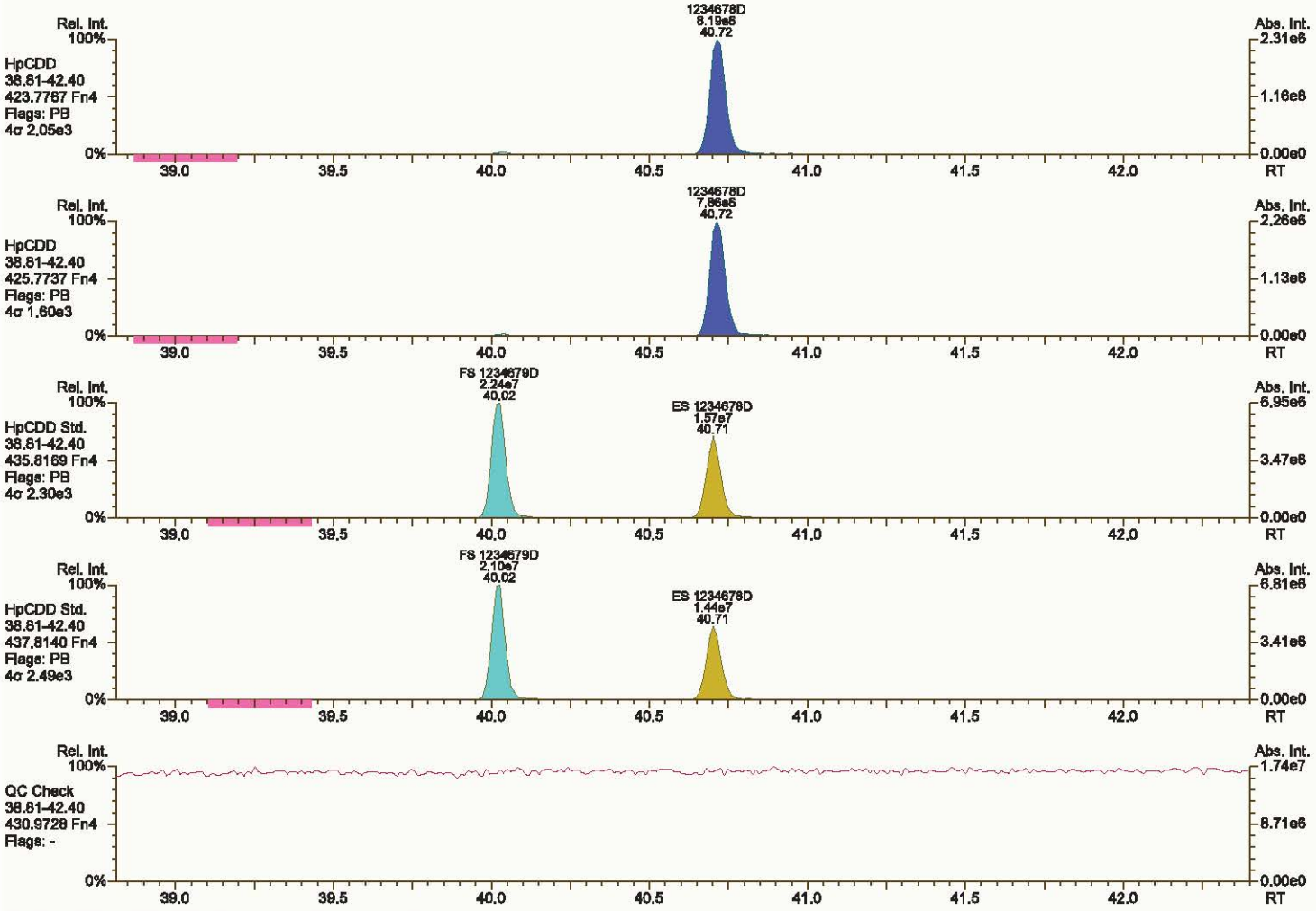

SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
TCDD
19.54-30.20
319.8965 Fn1
Flags: PB
4σ 2.57e3
2378D
2.12e5
28.26
5.14e5
2.57e5
0.00e0
RRF = (2.12e8 + 2.60e8) * 100pg / (1.74e7 + 2.13e7) * 10pg = 1.22
DTF 21-Feb-2022 10:10
VERIFIED
TCDD
19.54-30.20
321.8936 Fn1
Flags: PB
4σ 2.44e3
2378D
2.60e5
28.26
6.15e5
3.08e5
0.00e0
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.94e3
CS 37Cl-2378D
5.16e5
28.26
1.19e6
5.93e5
0.00e0
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 7.90e3
AS 1368D
1.84e7
24.54
TS 1378D
2.64e7
26.58
JS 1234D
1.72e7
27.57
ES 2378D
1.74e7
28.23
FS 1278D
1.89e7
28.56
5.74e6
2.87e6
0.00e0
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 5.59e3
AS 1368D
2.28e7
24.54
TS 1378D
3.17e7
26.58
JS 1234D
2.11e7
27.56
ES 2378D
2.13e7
28.23
FS 1278D
2.39e7
28.56
7.15e6
3.57e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8323, 1936, 3090 scc: 910-087
PKD: 21-Feb-2022 09:53 Printed: 21-Feb-2022 10:50 Page 2 of 12


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
PeCDD
30.21-34.71
355.8546 Fn2
Flags: PB
4σ 1.47e3
12378D
1.10e7
33.64
3.10e6
1.55e6
0.00e0
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PB
4σ 1.58e3
12378D
7.10e6
33.64
2.01e6
1.00e6
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PB
4σ 3.32e3
FS 12478D
2.28e7
32.38
CS 12347D
1.93e7
33.12
ES 12378D
2.16e7
33.62
6.56e6
3.28e6
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 2.09e3
FS 12478D
1.43e7
32.39
CS 12347D
1.20e7
33.12
ES 12378D
1.33e7
33.62
4.06e6
2.03e6
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
8.07e6
4.03e6
0%
100%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4379, 7943 scc: 910-087
PKD: 21-Feb-2022 09:53 Printed: 21-Feb-2022 10:50 Page 3 of 12


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PB
4σ 1.48e3
123478D 9.10e6 37.57
123678D 9.57e6 37.69
123789D 9.91e6 37.99
2.82e6
1.41e6
0.00e0
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PB
4σ 1.82e3
123478D 7.29e6 37.57
123678D 7.51e6 37.69
123789D 8.04e6 37.99
2.33e6
1.16e6
0.00e0
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PB
4σ 2.66e3
FS 123468D 2.29e7 36.47
ES 123478D 1.65e7 37.55
ES 123678D 1.66e7 37.67
JS 123467D 8.44e6 37.87
ES 123789D 1.94e7 37.98
6.96e6
3.48e6
0.00e0
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PB
4σ 2.05e3
FS 123468D 1.82e7 36.47
ES 123478D 1.31e7 37.55
ES 123678D 1.30e7 37.67
JS 123467D 6.59e6 37.87
ES 123789D 1.56e7 37.96
5.54e6
2.77e6
0.00e0
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
2.93e7
1.47e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8943, 1506 scc: 910-087
PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:50 Page 4 of 12

SGS ID: CS3_220219_DF_CA | Sample ID: 25-347-1 | Acq: 19-Feb-2022 17:17:59

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C01

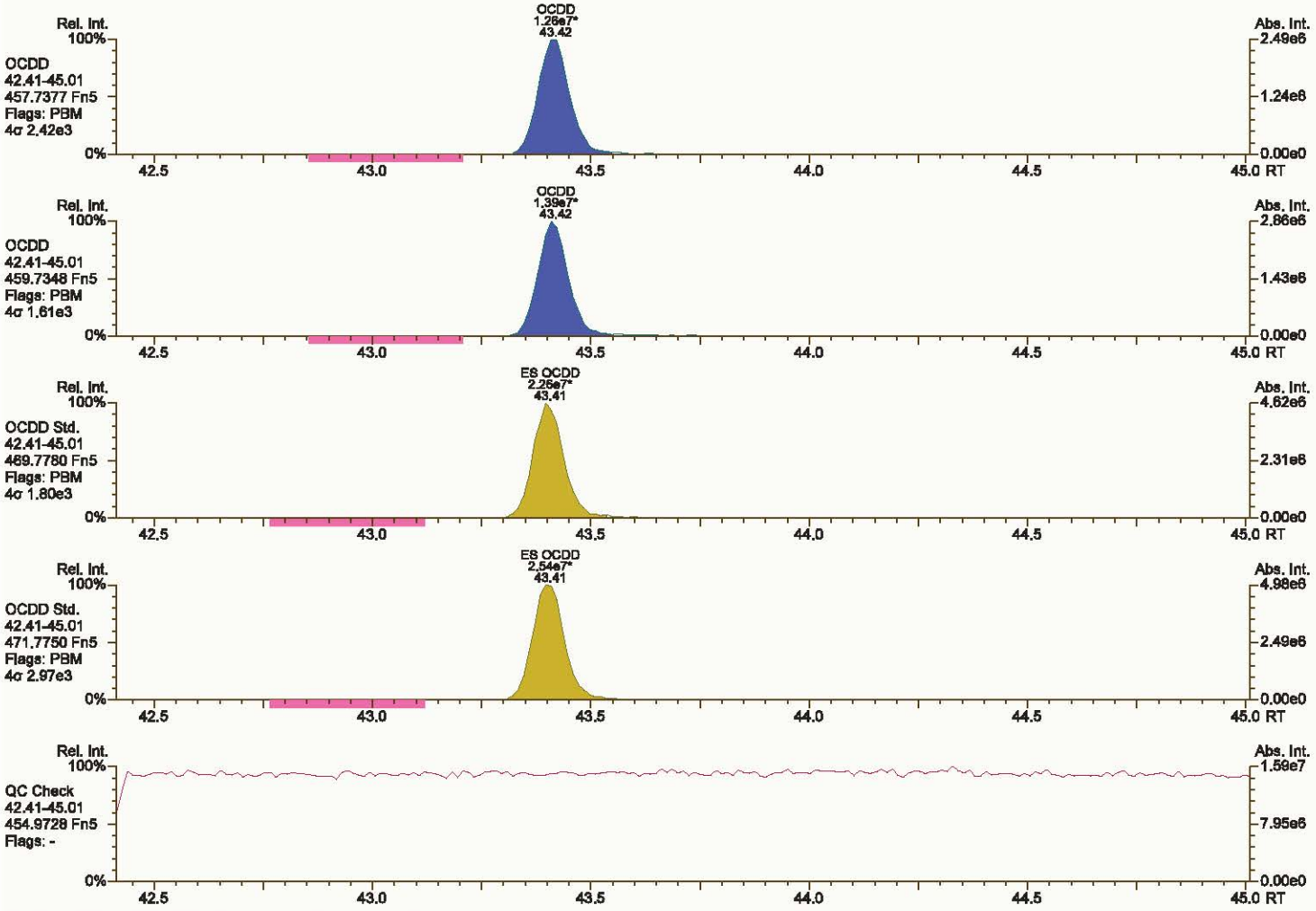


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1462, 1878 scc: 910-087 *PKD: 21-Feb-2022 09:53 Printed: 21-Feb-2022 10:50 Page 5 of 12*

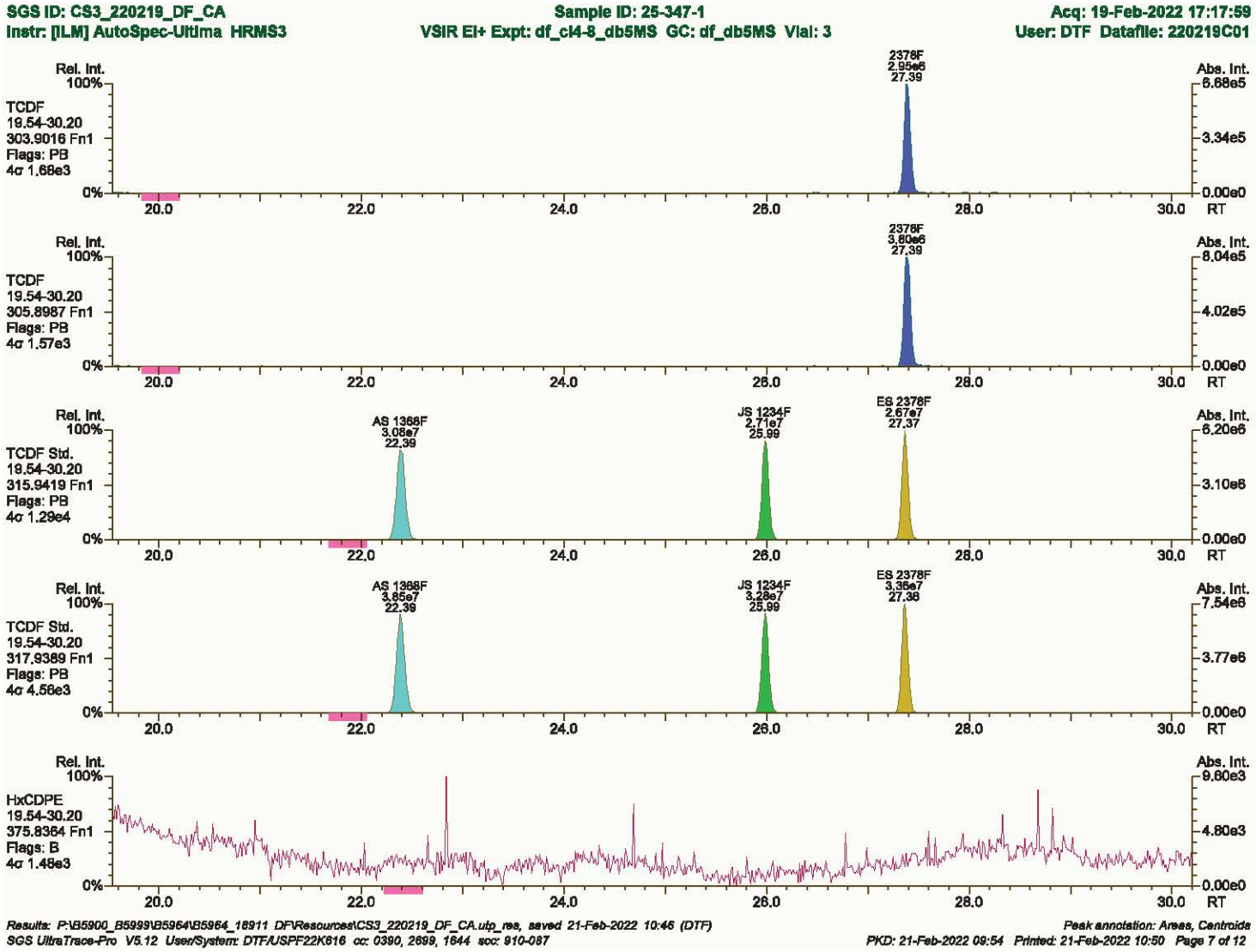
SGS ID: CS3_220219_DF_CA | Sample ID: 25-347-1 | Acq: 19-Feb-2022 17:17:59

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C01



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

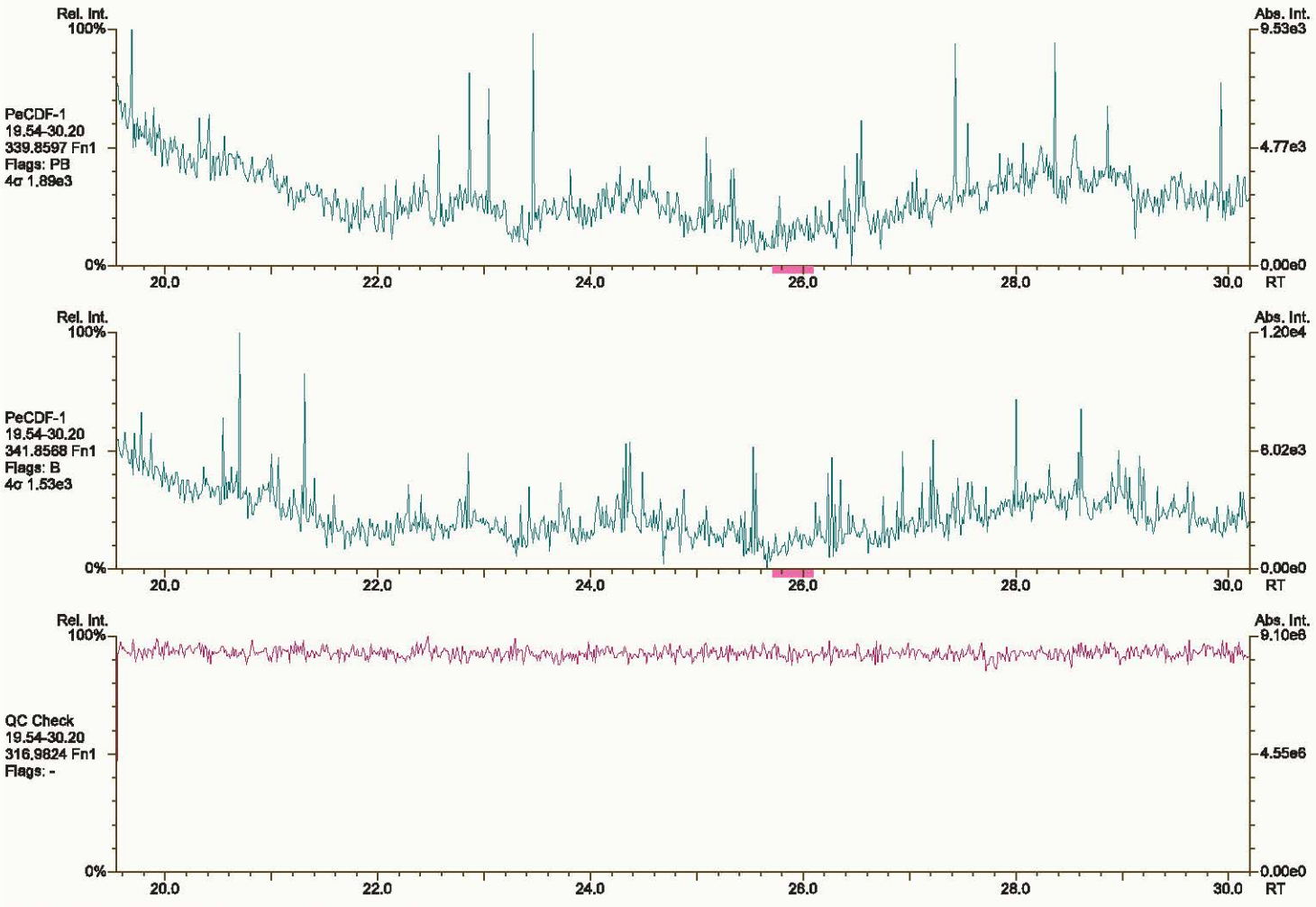
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8433, 0274 scc: 910-087 *Revised: 21-Feb-2022 09:54 (DTF) Printed: 21-Feb-2022 10:50 Page 6 of 12*


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
TCDF
19.54-30.20
303.9016 Fn1
Flags: PB
4σ 1.68e3
2378F
2.95e6
27.39
6.68e5
3.34e5
0.00e0
TCDF
19.54-30.20
305.8987 Fn1
Flags: PB
4σ 1.57e3
2378F
3.80e6
27.39
8.04e5
4.02e5
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 1.29e4
AS 1368F
3.08e7
22.39
JS 1234F
2.71e7
25.99
ES 2378F
2.67e7
27.37
6.20e6
3.10e6
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 4.58e3
AS 1368F
3.85e7
22.39
JS 1234F
3.28e7
25.99
ES 2378F
3.35e7
27.38
7.54e6
3.77e6
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.48e3
9.60e3
4.80e3
0%
100%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0390, 2699, 1644 scc: 910-087
PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:50 Page 7 of 12

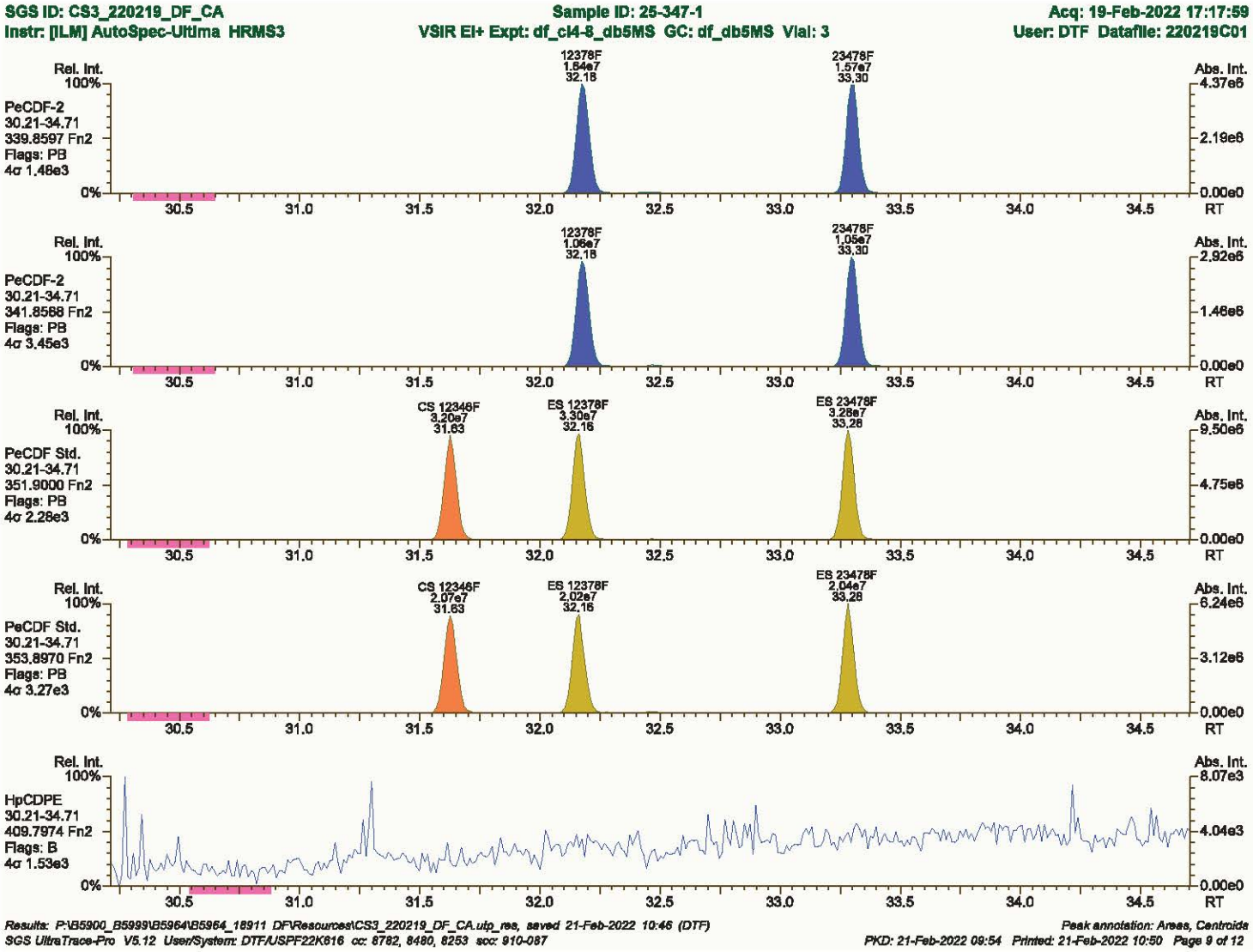
SGS ID: CS3_220219_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

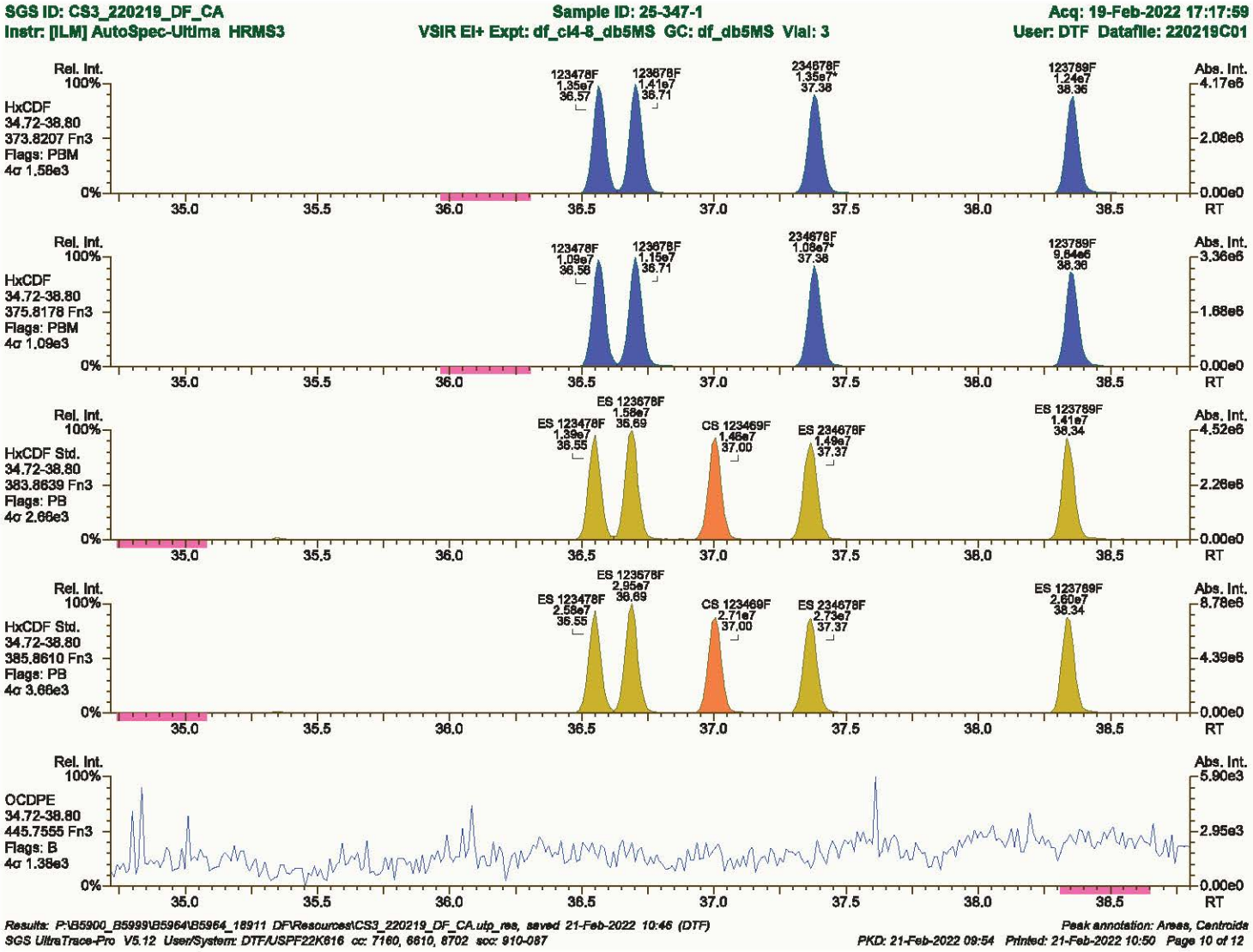
Sample ID: 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

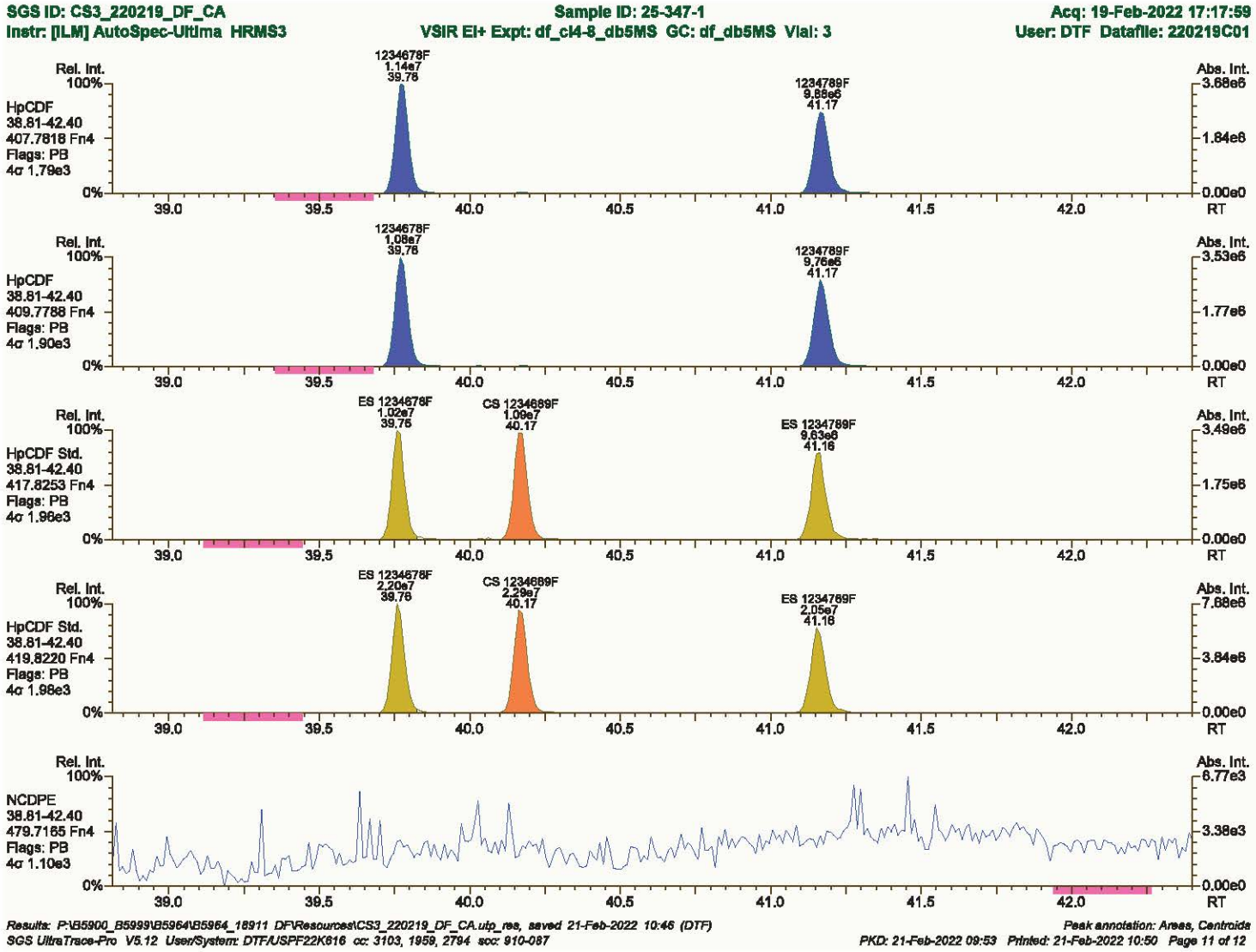
Acq: 19-Feb-2022 17:17:59
User: DTF Datafile: 220219C01

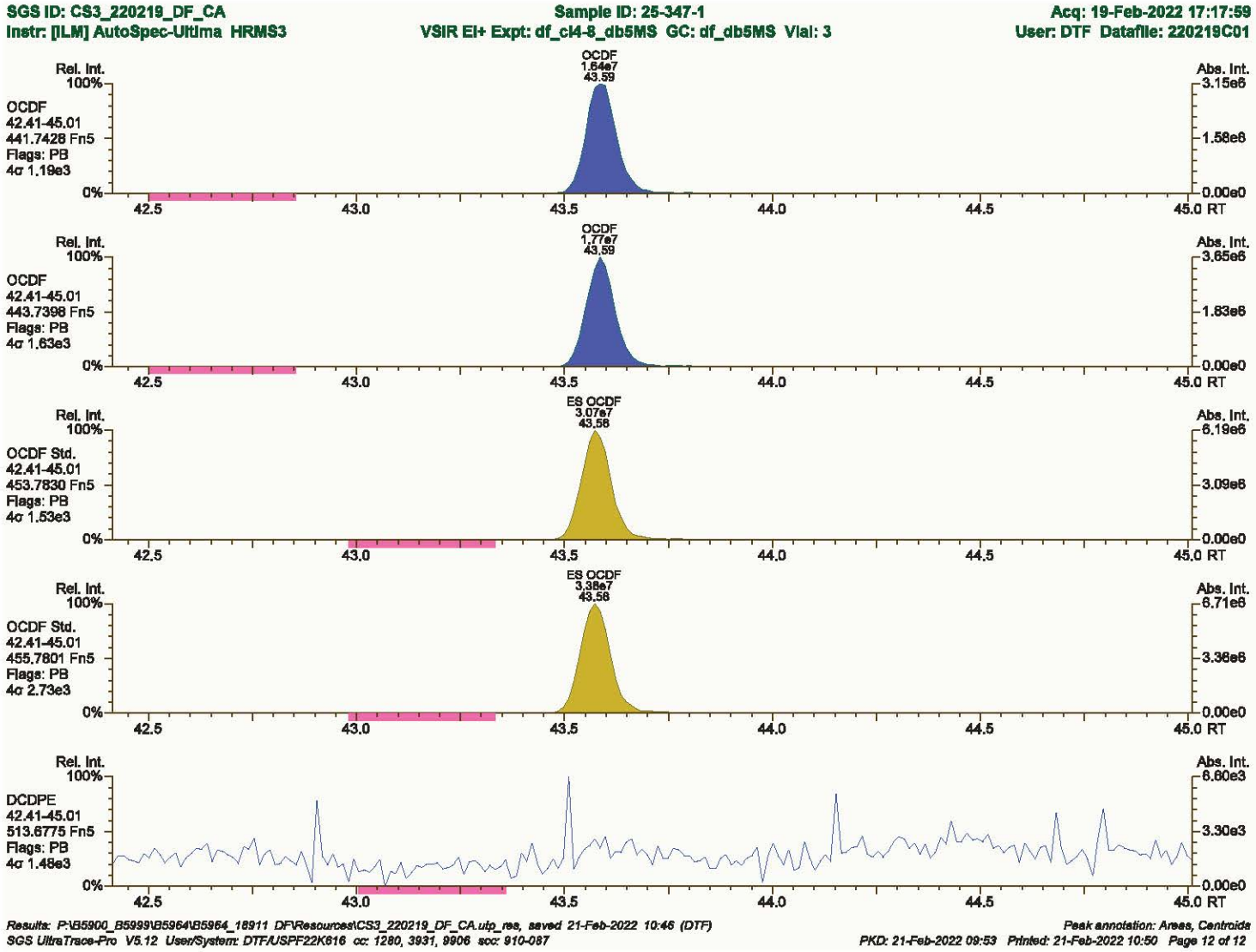


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9414 scc: 910-087
PKD: 21-Feb-2022 09:53 Printed: 21-Feb-2022 10:50 Page 8 of 12


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PB
4σ 1.48e3
12378F
1.64e7
32.16
23478F
1.57e7
33.30
4.37e6
2.19e6
0.00e0
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: PB
4σ 3.45e3
12378F
1.06e7
32.16
23478F
1.05e7
33.30
2.92e6
1.46e6
0.00e0
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 2.28e3
CS 12346F
3.20e7
31.63
ES 12378F
3.30e7
32.16
ES 23478F
3.28e7
33.28
9.50e6
4.75e6
0.00e0
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 3.27e3
CS 12346F
2.07e7
31.63
ES 12378F
2.02e7
32.16
ES 23478F
2.04e7
33.28
6.24e6
3.12e6
0.00e0
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: B
4σ 1.53e3
8.07e3
4.04e3
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8782, 8480, 8253 scc: 910-087
PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:50 Page 9 of 12


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
HxCDF
34.72-38.80
373.8207 Fn3
Flags: PBM
4σ 1.58e3
123478F 1.35e7 36.57
123678F 1.41e7 36.71
234678F 1.35e7* 37.38
123789F 1.24e7 38.36
HxCDF
34.72-38.80
375.8178 Fn3
Flags: PBM
4σ 1.09e3
123478F 1.09e7 36.56
123678F 1.15e7 36.71
234678F 1.08e7* 37.38
123789F 9.84e6 38.36
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: PB
4σ 2.66e3
ES 123678F 1.58e7 36.69
ES 123478F 1.39e7 36.55
CS 123469F 1.46e7 37.00
ES 234678F 1.49e7 37.37
ES 123789F 1.41e7 38.34
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: PB
4σ 3.66e3
ES 123678F 2.95e7 36.69
ES 123478F 2.58e7 36.55
CS 123469F 2.71e7 37.00
ES 234678F 2.73e7 37.37
ES 123789F 2.60e7 38.34
OCDPE
34.72-38.80
445.7555 Fn3
Flags: B
4σ 1.38e3
RT


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
Rel. Int.
Abs. Int.
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PB
4σ 1.79e3
1234678F
1.14e7
39.76
1234789F
9.88e6
41.17
3.68e6
1.84e6
0.00e0
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PB
4σ 1.90e3
1234678F
1.08e7
39.76
1234789F
9.76e6
41.17
3.53e6
1.77e6
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PB
4σ 1.96e3
ES 1234678F
1.02e7
39.76
CS 1234689F
1.09e7
40.17
ES 1234789F
9.63e6
41.16
3.49e6
1.75e6
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PB
4σ 1.98e3
ES 1234678F
2.20e7
39.76
CS 1234689F
2.29e7
40.17
ES 1234789F
2.05e7
41.16
7.68e6
3.84e6
NCDPE
38.81-42.40
479.7165 Fn4
Flags: PB
4σ 1.10e3
6.77e3
3.38e3
0%
100%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3103, 1959, 2794 scc: 910-087
PKD: 21-Feb-2022 09:53 Printed: 21-Feb-2022 10:50 Page 11 of 12


SGS ID: CS3_220219_DF_CA
Sample ID: 25-347-1
Acq: 19-Feb-2022 17:17:59
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C01
OCDF
1.64e7
43.59
Rel. Int.
100%
Abs. Int.
3.15e6
1.58e6
0.00e0
OCDF
42.41-45.01
441.7428 Fn5
Flags: PB
4σ 1.19e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.77e7
43.59
Rel. Int.
100%
Abs. Int.
3.65e6
1.83e6
0.00e0
OCDF
42.41-45.01
443.7398 Fn5
Flags: PB
4σ 1.63e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.07e7
43.58
Rel. Int.
100%
Abs. Int.
6.19e6
3.09e6
0.00e0
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: PB
4σ 1.53e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.38e7
43.58
Rel. Int.
100%
Abs. Int.
6.71e6
3.36e6
0.00e0
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: PB
4σ 2.73e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
Abs. Int.
6.60e3
3.30e3
0.00e0
DCDPE
42.41-45.01
513.6775 Fn5
Flags: PB
4σ 1.48e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CA.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1280, 3931, 9906 scc: 910-087
PKD: 21-Feb-2022 09:53 Printed: 21-Feb-2022 10:50 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 20 Feb 2022 05:01 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_220219_DF_CB		UTP: 21-Feb-2022 10:46:48 DTF				Checkcode: 111-739-KLT	
Sample ID: 25-347-1		Report: 21 Feb 2022 10:47 TF				Datafile: 220219C16	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.25	4.70E+06	0.75	Y	1.18	1.18	0%
12378-PeCDD	33.64	1.87E+07	1.58	Y	1.04	1.05	1%
123478-HxCDD	37.57	1.68E+07	1.28	Y	1.09	1.10	1%
123678-HxCDD	37.69	1.73E+07	1.30	Y	1.15	1.18	2%
123789-HxCDD	37.99	1.84E+07	1.25	Y	1.05	1.05	0%
1234678-HpCDD	40.72	1.66E+07	1.05	Y	1.06	1.04	-2%
OCDD	43.40	2.76E+07	0.92	Y	1.13	1.14	1%
2378-TCDF	27.39	6.83E+06	0.79	Y	1.08	1.07	-1%
12378-PeCDF	32.18	2.81E+07	1.56	Y	1.02	1.02	-1%
23478-PeCDF	33.30	2.73E+07	1.53	Y	1.02	1.02	0%
123478-HxCDF	36.56	2.55E+07	1.22	Y	1.27	1.21	-5%
123678-HxCDF	36.71	2.64E+07	1.21	Y	1.15	1.13	-2%
234678-HxCDF	37.38	2.50E+07	1.27	Y	1.19	1.15	-3%
123789-HxCDF	38.36	2.27E+07	1.24	Y	1.16	1.14	-2%
1234678-HpCDF	39.77	2.31E+07	1.04	Y	1.37	1.31	-4%
1234789-HpCDF	41.17	2.06E+07	1.03	Y	1.31	1.28	-2%
OCDF	43.58	3.51E+07	0.93	Y	1.07	1.06	-1%
ES 2378-TCDD	28.23	3.98E+07	0.82	Y	1.05	1.01	-3%
ES 12378-PeCDD	33.621	3.55E+07	1.56	Y	0.88	0.90	3%
ES 123478-HxCDD	37.55	3.06E+07	1.24	Y	0.97	0.95	-2%
ES 123678-HxCDD	37.672	2.94E+07	1.24	Y	0.94	0.91	-3%
ES 123789-HxCDD	37.977	3.51E+07	1.23	Y	1.09	1.09	0%
ES 1234678-HpCDD	40.707	3.19E+07	1.07	Y	0.91	0.99	8%
ES OCDD	43.391	4.86E+07	0.91	Y	0.62	0.75	21%
ES 2378-TCDF	27.363	6.37E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	32.159	5.53E+07	1.61	Y	0.91	0.90	-2%
ES 23478-PeCDF	33.282	5.37E+07	1.59	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.547	4.21E+07	0.54	Y	1.20	1.31	9%
ES 123678-HxCDF	36.688	4.69E+07	0.53	Y	1.35	1.45	8%
ES 234678-HxCDF	37.364	4.34E+07	0.53	Y	1.24	1.35	8%
ES 123789-HxCDF	38.343	3.96E+07	0.54	Y	1.16	1.23	6%
ES 1234678-HpCDF	39.764	3.53E+07	0.49	Y	0.97	1.10	13%
ES 1234789-HpCDF	41.162	3.21E+07	0.47	Y	0.85	1.00	17%
ES OCDF	43.572	6.63E+07	0.90	Y	0.81	1.03	27%

Dioxin/Furan QC Summary		Acq'd: 20 Feb 2022 05:01 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_220219_DF_CB		UTP: 21-Feb-2022 10:46:48 DTF				Checkcode: 111-739-KLT	
Sample ID: 25-347-1		Report: 21 Feb 2022 10:47 TF				Datafile: 220219C16	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.56	3.94E+07	0.80	Y	-	-	-
JS 1234-TCDF	25.98	6.18E+07	0.80	Y	-	-	-
JS 123467-HxCDD	37.88	1.61E+07	1.31	Y	-	-	-
CS 37Cl-2378-TCDD	28.25	5.65E+06	n/a	-	1.20	1.44	19%
CS 12347-PeCDD	33.11	3.20E+07	1.61	Y	0.75	0.81	8%
CS 12346-PeCDF	31.63	5.28E+07	1.56	Y	0.85	0.85	0%
CS 123469-HxCDF	37.00	4.19E+07	0.54	Y	1.12	1.30	16%
CS 1234689-HpCDF	40.17	3.57E+07	0.46	Y	0.89	1.11	25%
~~SS 37Cl-2378-TCDD~~	~~28.25~~	~~5.65E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.42~~	~~24%~~
~~SS 12347-PeCDD~~	~~33.11~~	~~3.20E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~0.90~~	~~5%~~
~~SS 12346-PeCDF~~	~~31.63~~	~~5.28E+07~~	~~1.56~~	~~Y~~	~~0.94~~	~~0.95~~	~~2%~~
~~SS 123469-HxCDF~~	~~37.00~~	~~4.19E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~0.89~~	~~6%~~
~~SS 1234689-HpCDF~~	~~40.17~~	~~3.57E+07~~	~~0.46~~	~~Y~~	~~0.93~~	~~1.01~~	~~10%~~
~~OCDD-a~~	~~43.40~~	~~1.62E+06~~	~~2.62~~	~~Y~~	~~0.87~~	~~0.87~~	~~0%~~
~~OCDF-a~~	~~43.50~~	~~2.27E+06~~	~~2.26~~	~~Y~~	~~0.87~~	~~0.87~~	~~0%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220219C16 Analysis Date: 20-FEB-2022 05:01:11

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.75	0.65 - 0.89	Y	9.95	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.7	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	50.6	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05 - 1.43	Y	51.2	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.9	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	49	43 - 58	Y
OCDD	M+2/M+4	0.92	0.78 - 1.02	Y	101	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.93	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	49.6	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32 - 1.78	Y	49.9	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	47.6	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.21	1.05 - 1.43	Y	48.9	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	48.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	47.8	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	43 - 58	Y
OCDF	M+2/M+4	0.93	0.76 - 1.02	Y	98.8	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 21 Feb 2022 10:47 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

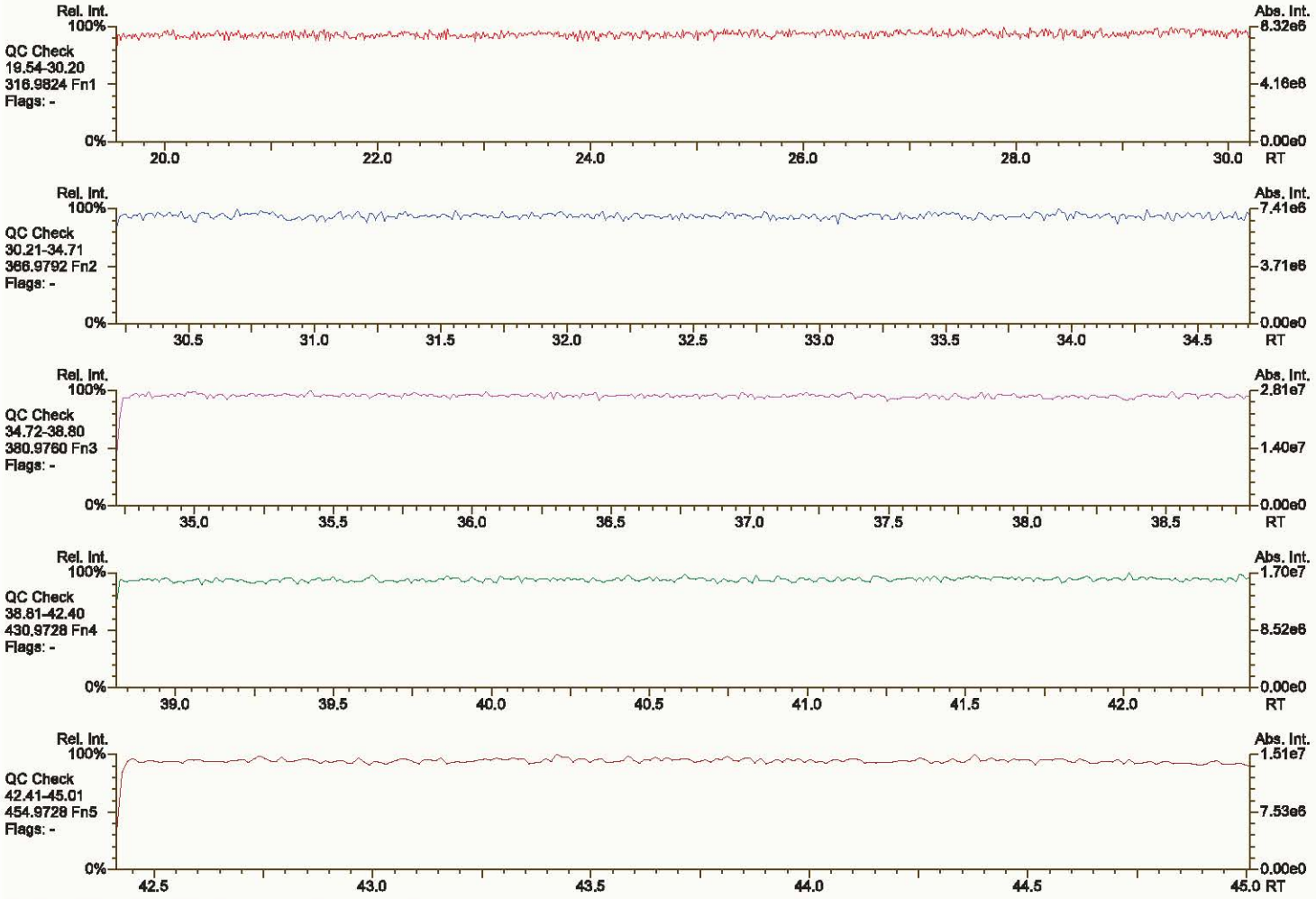
VER Data Filename: 220219C16 Analysis Date: 20-FEB-2022 05:01:11

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65 - 0.89	Y	96.8	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	103	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	97.5	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	96.8	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05 - 1.43	Y	99.7	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88 - 1.20	Y	108	72 - 138	Y
13C-OCDD	M+2/M+4	0.91	0.78 - 1.02	Y	242	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	97.4	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.61	1.32 - 1.78	Y	98.4	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32 - 1.78	Y	98.5	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	109	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	106	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	108	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	106	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.49	0.37 - 0.51	Y	113	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	117	77 - 129	Y
13C-OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	255	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				11.9	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.61	1.32 - 1.78	Y	108	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	100	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	116	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	125	70 - 130	Y

Processed: 21 Feb 2022 10:47 Analyst: TF

SGS ID: CS3_220219_DF_CB | Sample ID: 25-347-1 | Acq: 20-Feb-2022 05:01:11

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C16



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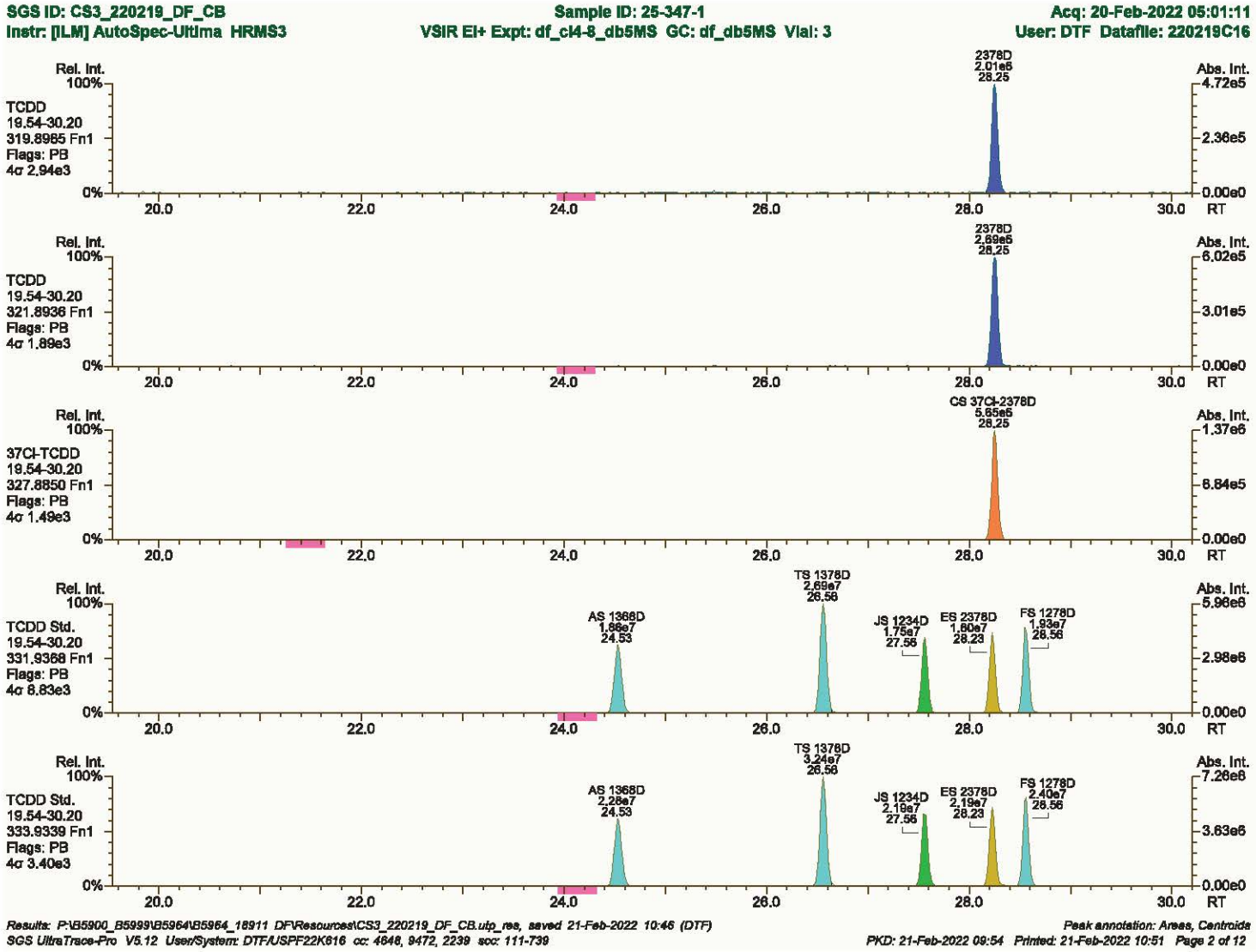
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 scc: 111-739

PKD: n/a Printed: 21-Feb-2022 10:51 Page 1 of 12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Sample ID: 25-347-1
Acq: 20-Feb-2022 05:01:11
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C16
Rel. Int.
Abs. Int.
TCDD
19.54-30.20
319.8965 Fn1
Flags: PB
4σ 2.94e3
2378D
2.01e5
28.25
4.72e5
2.36e5
0.00e0
TCDD
19.54-30.20
321.8936 Fn1
Flags: PB
4σ 1.89e3
2378D
2.69e5
28.25
6.02e5
3.01e5
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.49e3
CS 37Cl-2378D
5.65e5
28.25
1.37e6
6.84e5
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 8.83e3
AS 1368D
1.86e7
24.53
TS 1378D
2.69e7
26.58
JS 1234D
1.75e7
27.56
ES 2378D
1.80e7
28.23
FS 1278D
1.93e7
28.56
5.96e6
2.98e6
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 3.40e3
AS 1368D
2.28e7
24.53
TS 1378D
3.24e7
26.58
JS 1234D
2.19e7
27.56
ES 2378D
2.19e7
28.23
FS 1278D
2.40e7
28.56
7.26e6
3.63e6
0%
100%
20.0
22.0
24.0
26.0
28.0
30.0
RT
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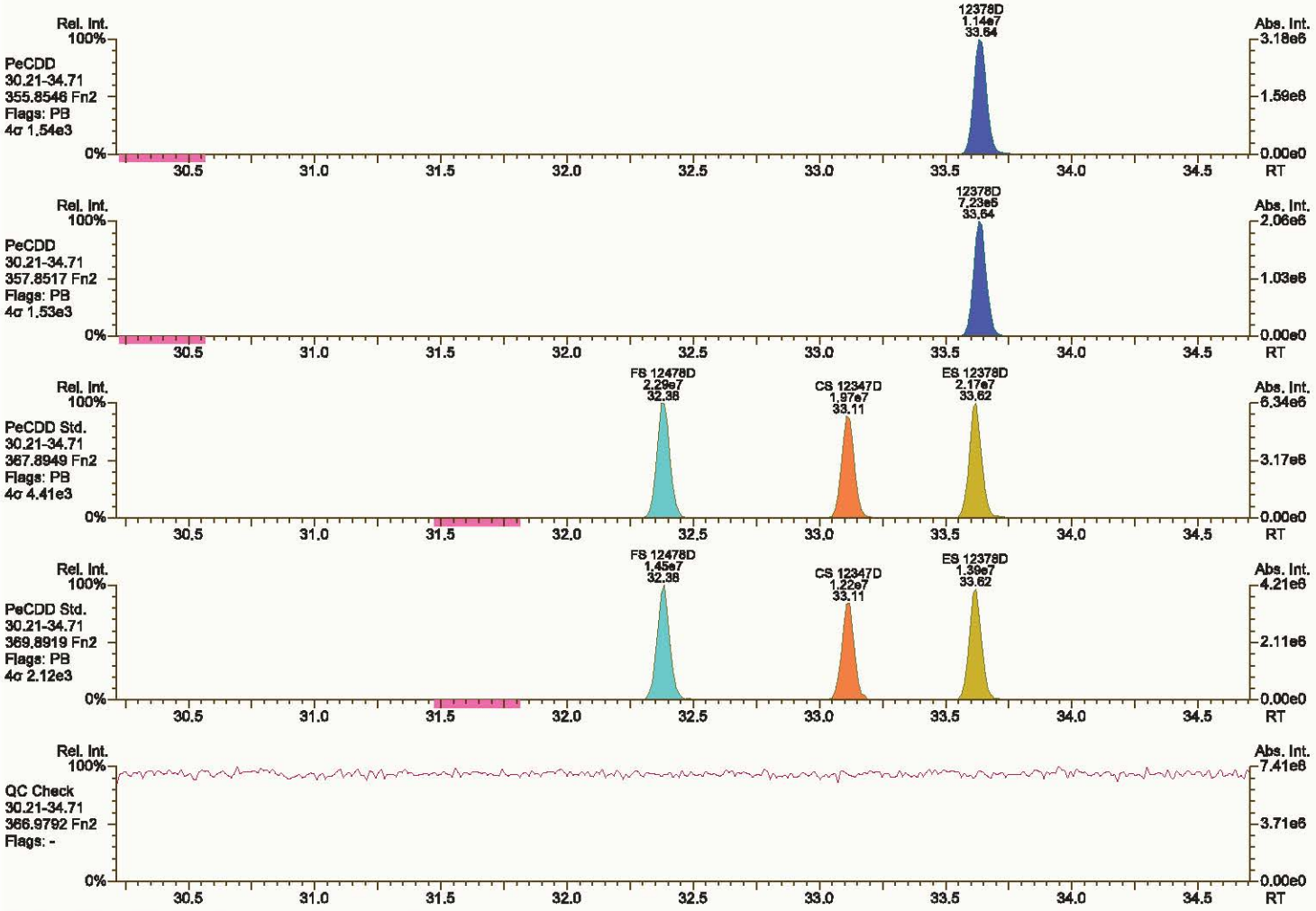
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4646, 9472, 2239 scc: 111-739
PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:51 Page 2 of 12

SGS ID: CS3_220219_DF_CB | Sample ID: 25-347-1 | Acq: 20-Feb-2022 05:01:11
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C16



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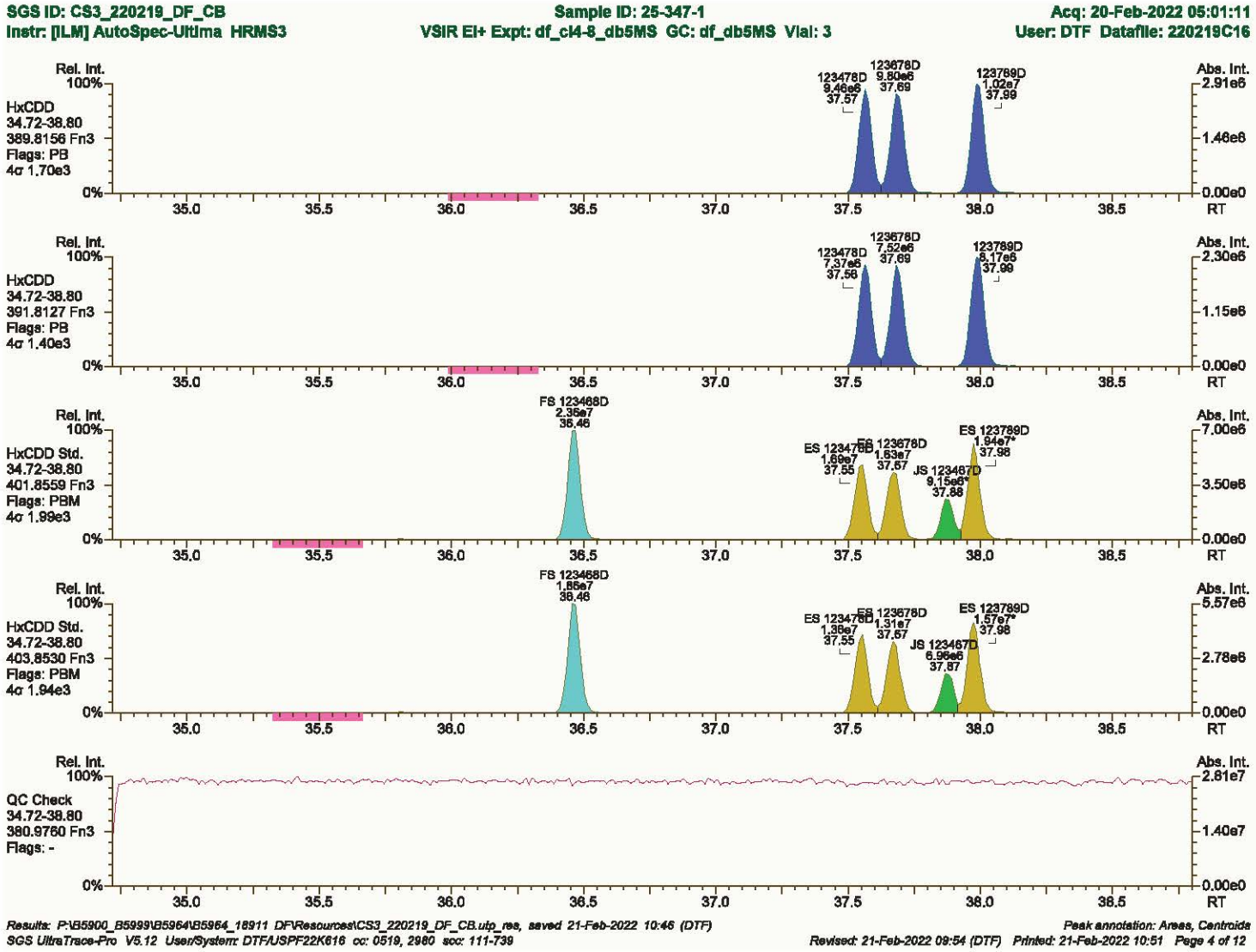
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6596, 4599 scc: 111-739 *PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:51 Page 3 of 12*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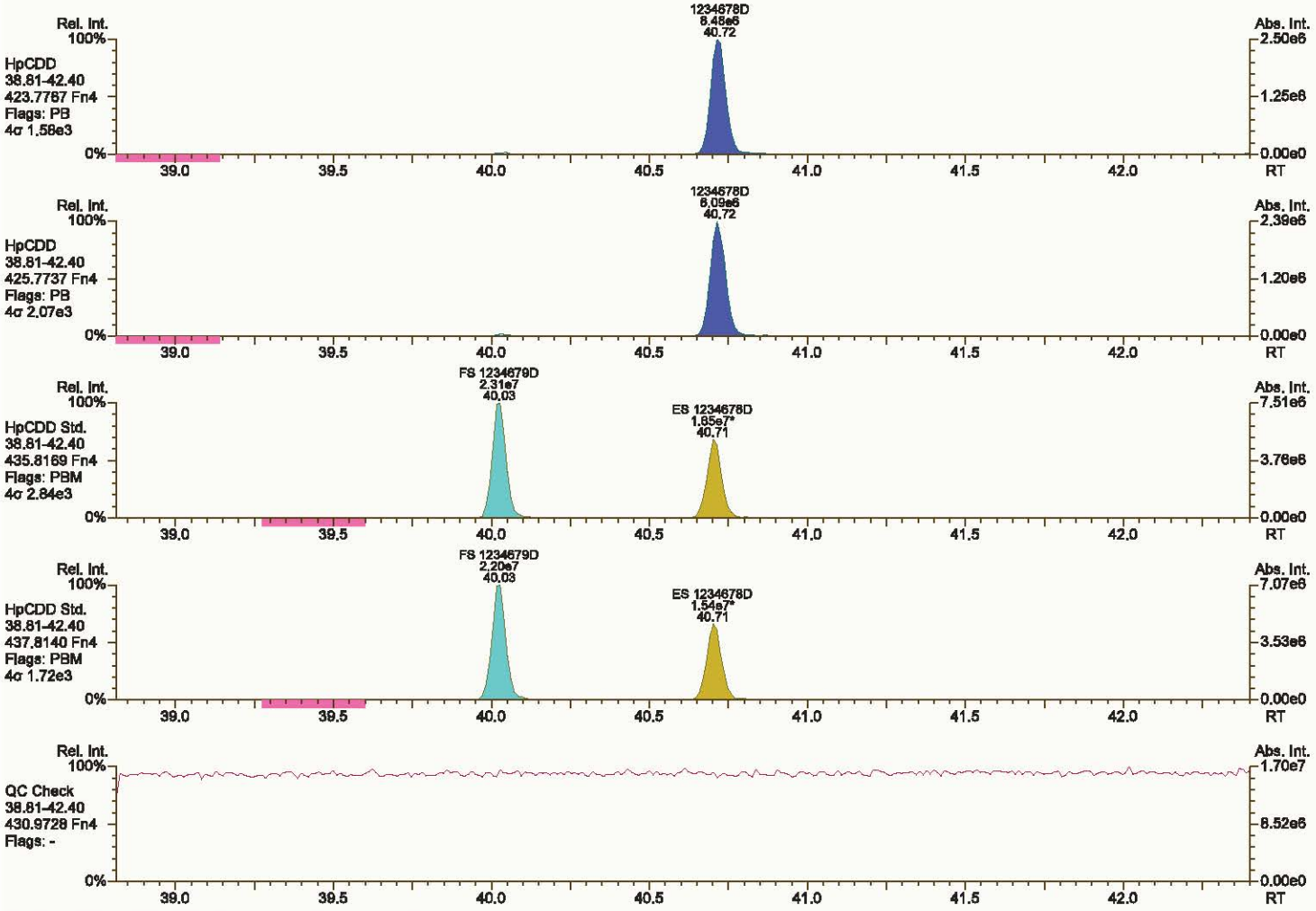
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C16
Rel. Int.
Abs. Int.
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PB
4σ 1.70e3
123678D 9.80e6 37.69
123478D 9.46e6 37.57
123789D 1.02e7 37.99
2.91e6
1.46e6
0.00e0
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PB
4σ 1.40e3
123678D 7.52e6 37.69
123478D 7.37e6 37.56
123789D 8.17e6 37.99
2.30e6
1.15e6
0.00e0
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PBM
4σ 1.99e3
FS 123468D 2.35e7 36.46
ES 123478D 1.69e7 37.55
ES 123678D 1.63e7 37.57
JS 123467D 9.15e6* 37.88
ES 123789D 1.94e7* 37.98
7.00e6
3.50e6
0.00e0
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PBM
4σ 1.94e3
FS 123468D 1.65e7 36.46
ES 123478D 1.36e7 37.55
ES 123678D 1.31e7 37.57
JS 123467D 6.96e6 37.87
ES 123789D 1.57e7* 37.98
5.57e6
2.78e6
0.00e0
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
2.81e7
1.40e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CB.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0519, 2980 scc: 111-739
Revised: 21-Feb-2022 09:54 (DTF) Printed: 21-Feb-2022 10:51 Page 4 of 12

SGS ID: CS3_220219_DF_CB | Sample ID: 25-347-1 | Acq: 20-Feb-2022 05:01:11

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C16



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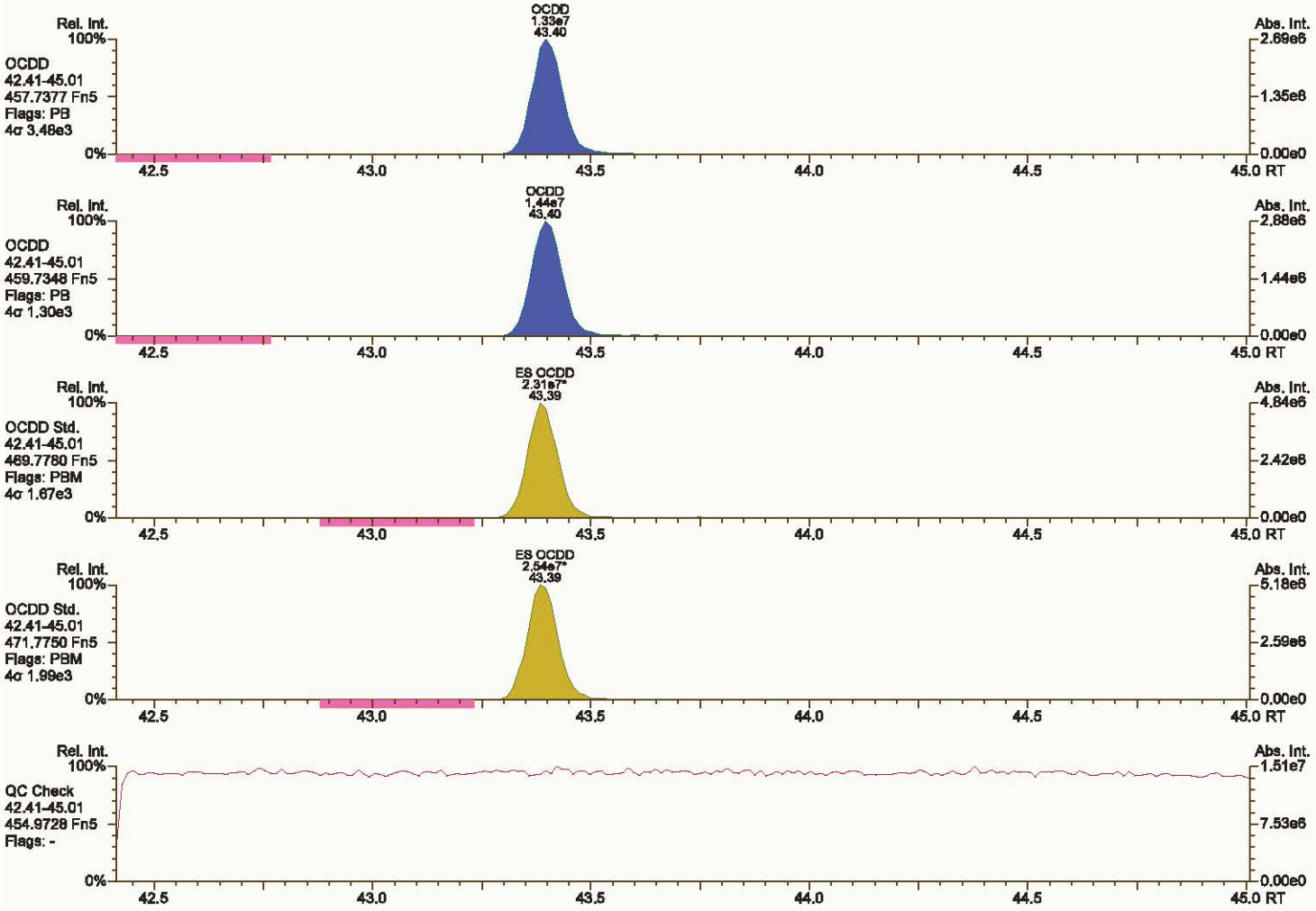
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3547, 7297 scc: 111-739 *Revised: 21-Feb-2022 09:55 (DTF) Printed: 21-Feb-2022 10:51 Page 5 of 12*

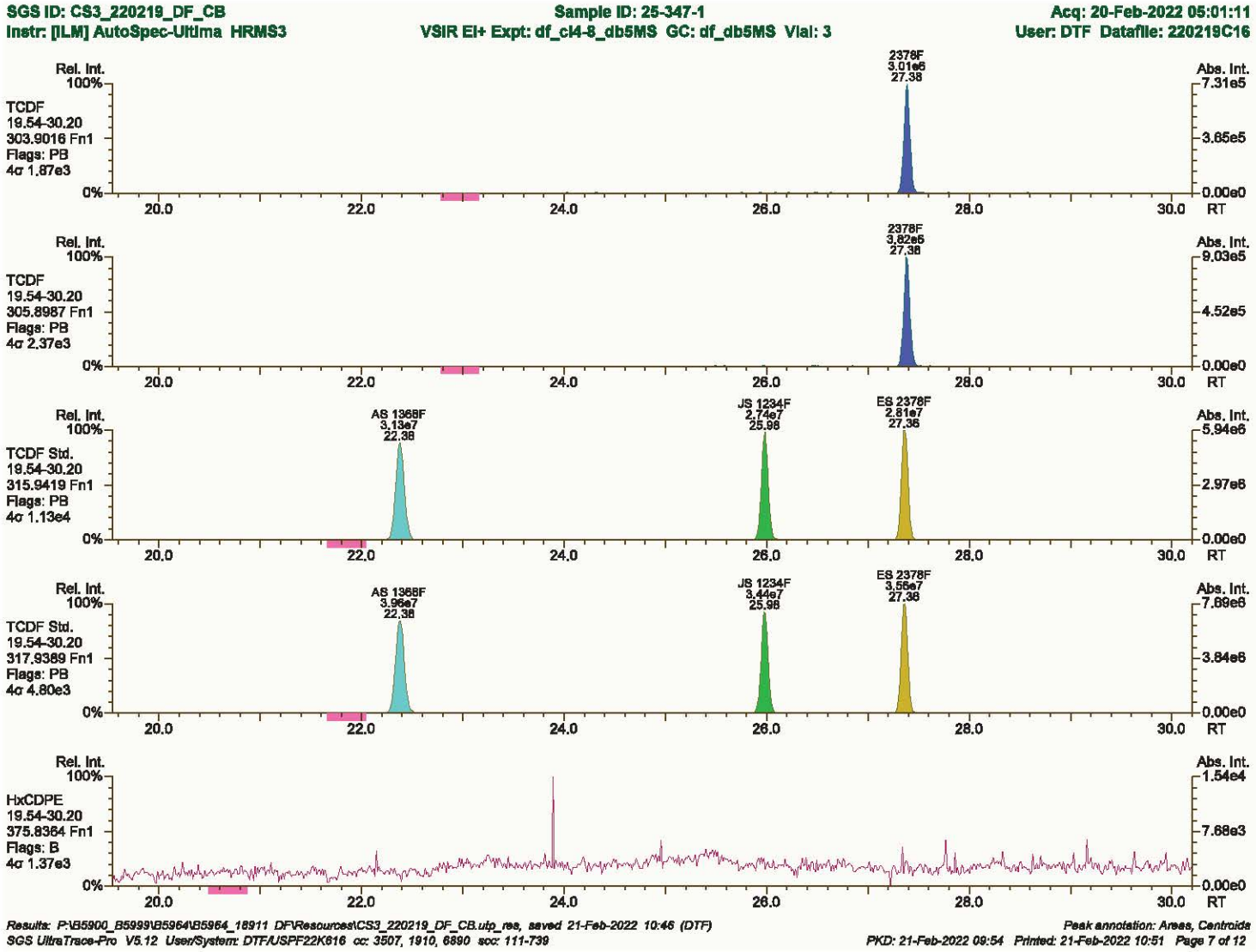
SGS ID: CS3_220219_DF_CB | Sample ID: 25-347-1 | Acq: 20-Feb-2022 05:01:11

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C16



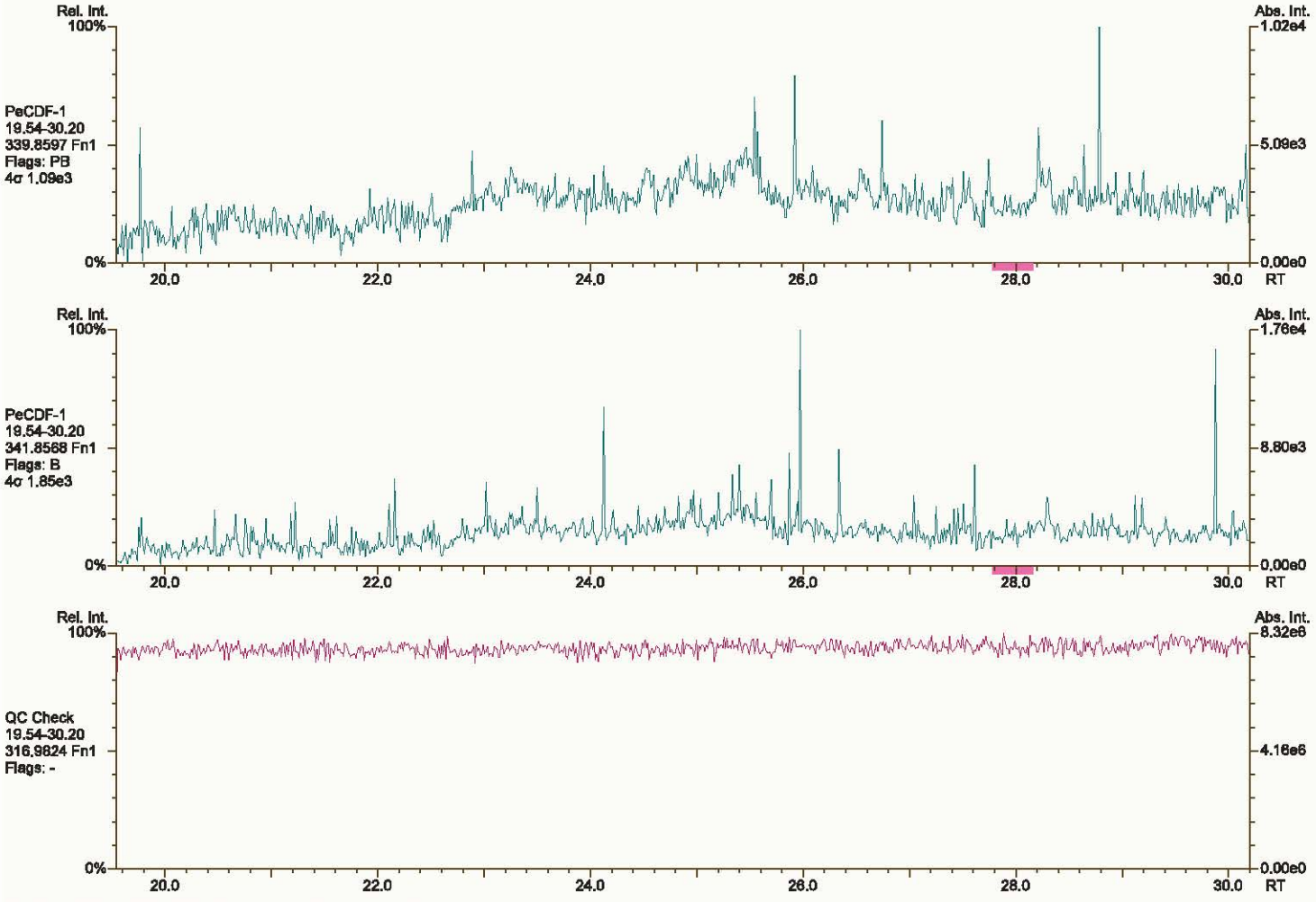
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CB.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8927, 3916 scc: 111-739 *Revised: 21-Feb-2022 09:55 (DTF) Printed: 21-Feb-2022 10:51 Page 6 of 12*


SGS ID: CS3_220219_DF_CB
Sample ID: 25-347-1
Acq: 20-Feb-2022 05:01:11
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C16
Rel. Int.
Abs. Int.
TCDF
19.54-30.20
303.9016 Fn1
Flags: PB
4σ 1.87e3
2378F
3.01e6
27.38
7.31e5
3.65e5
0.00e0
TCDF
19.54-30.20
305.8987 Fn1
Flags: PB
4σ 2.37e3
2378F
3.82e5
27.38
9.03e5
4.52e5
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 1.13e4
AS 1368F
3.13e7
22.38
JS 1234F
2.74e7
25.98
ES 2378F
2.81e7
27.38
5.94e6
2.97e6
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 4.80e3
AS 1368F
3.96e7
22.38
JS 1234F
3.44e7
25.98
ES 2378F
3.55e7
27.38
7.69e6
3.84e6
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.37e3
1.54e4
7.68e3
0%
100%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CB.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3507, 1910, 6890 scc: 111-739
PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:51 Page 7 of 12

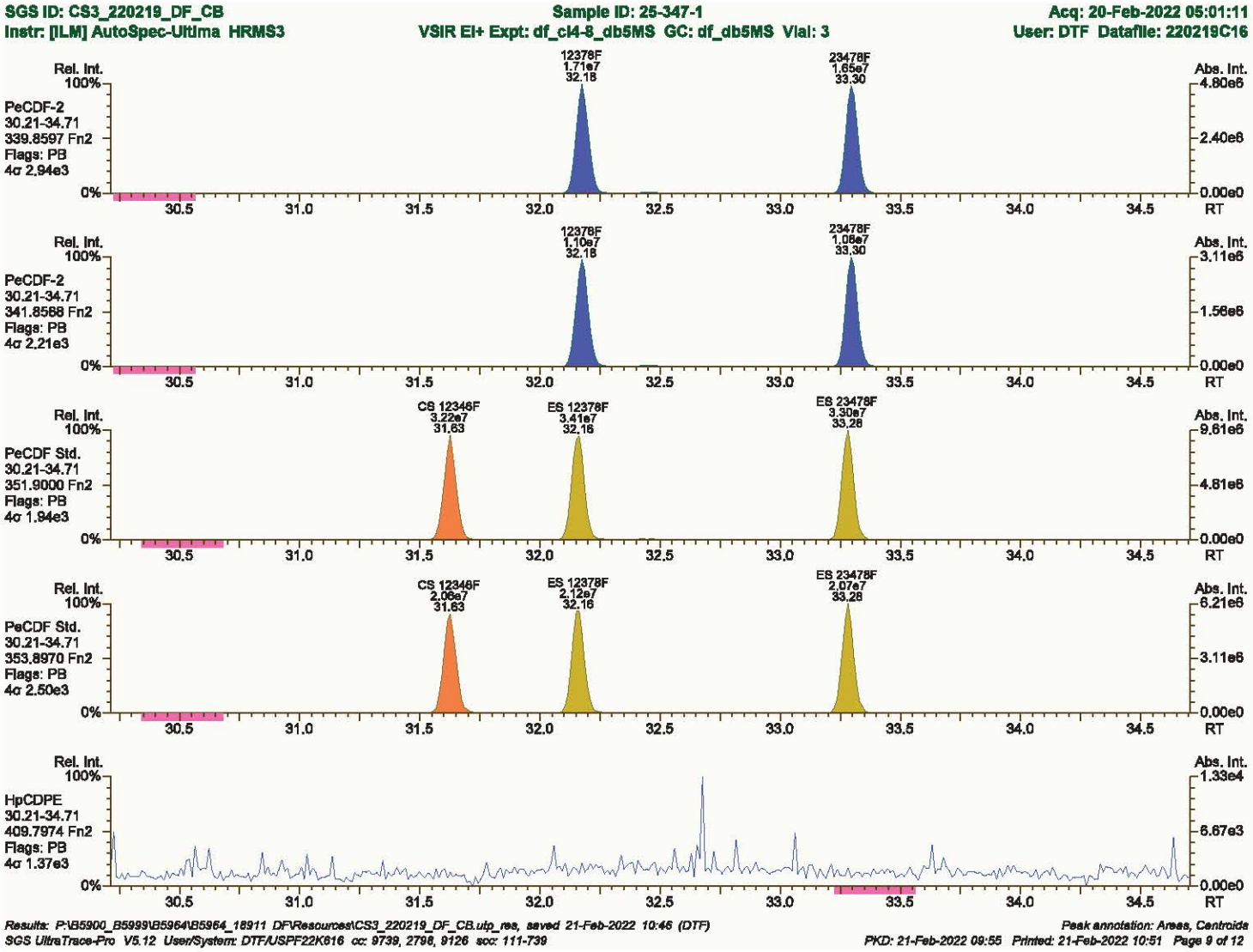
SGS ID: CS3_220219_DF_CB | Sample ID: 25-347-1 | Acq: 20-Feb-2022 05:01:11

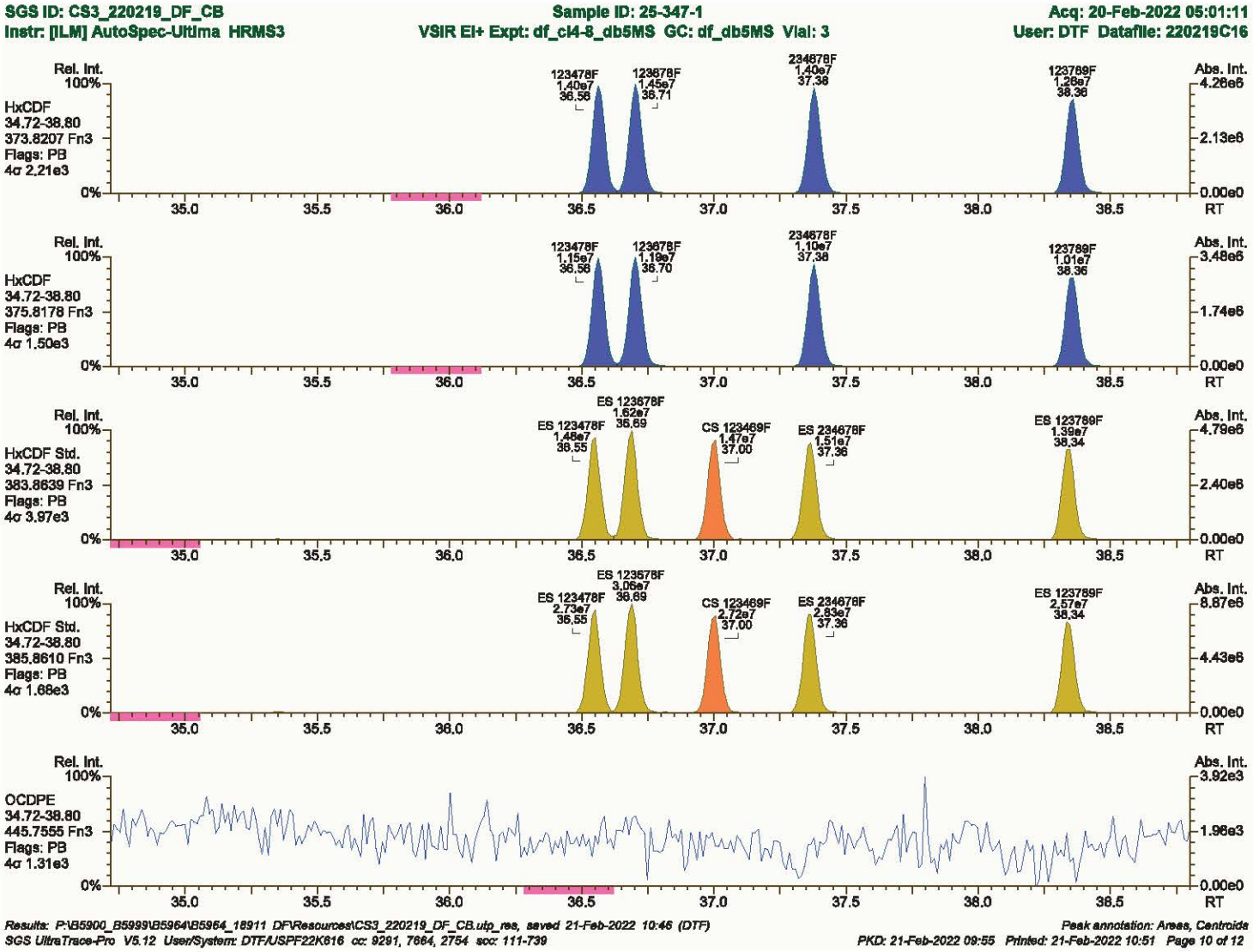
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C16

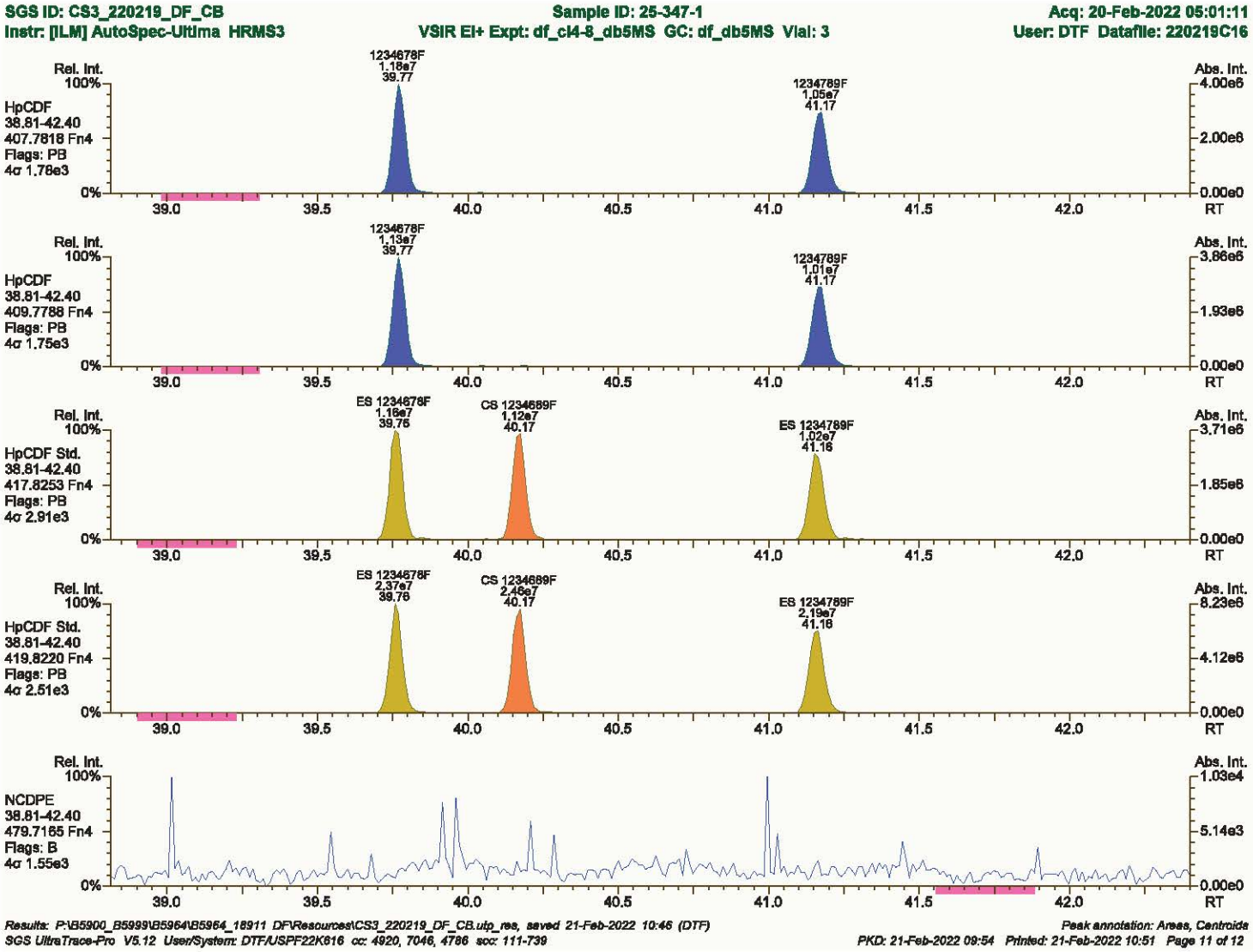


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CB.utp_res, saved 21-Feb-2022 10:46 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6111 scc: 111-739 | *PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:51 Page 8 of 12*


SGS ID: CS3_220219_DF_CB
Sample ID: 25-347-1
Acq: 20-Feb-2022 05:01:11
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C16
Rel. Int.
Abs. Int.
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PB
4σ 2.94e3
12378F
1.71e7
32.18
23478F
1.65e7
33.30
4.80e6
2.40e6
0.00e0
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: PB
4σ 2.21e3
12378F
1.10e7
32.18
23478F
1.06e7
33.30
3.11e6
1.56e6
0.00e0
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 1.94e3
CS 12346F
3.22e7
31.63
ES 12378F
3.41e7
32.16
ES 23478F
3.30e7
33.28
9.61e6
4.81e6
0.00e0
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 2.50e3
CS 12346F
2.06e7
31.63
ES 12378F
2.12e7
32.16
ES 23478F
2.07e7
33.28
6.21e6
3.11e6
0.00e0
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: PB
4σ 1.37e3
1.33e4
6.67e3
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CB.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9739, 2798, 9126 scc: 111-739
PKD: 21-Feb-2022 09:55 Printed: 21-Feb-2022 10:51 Page 9 of 12

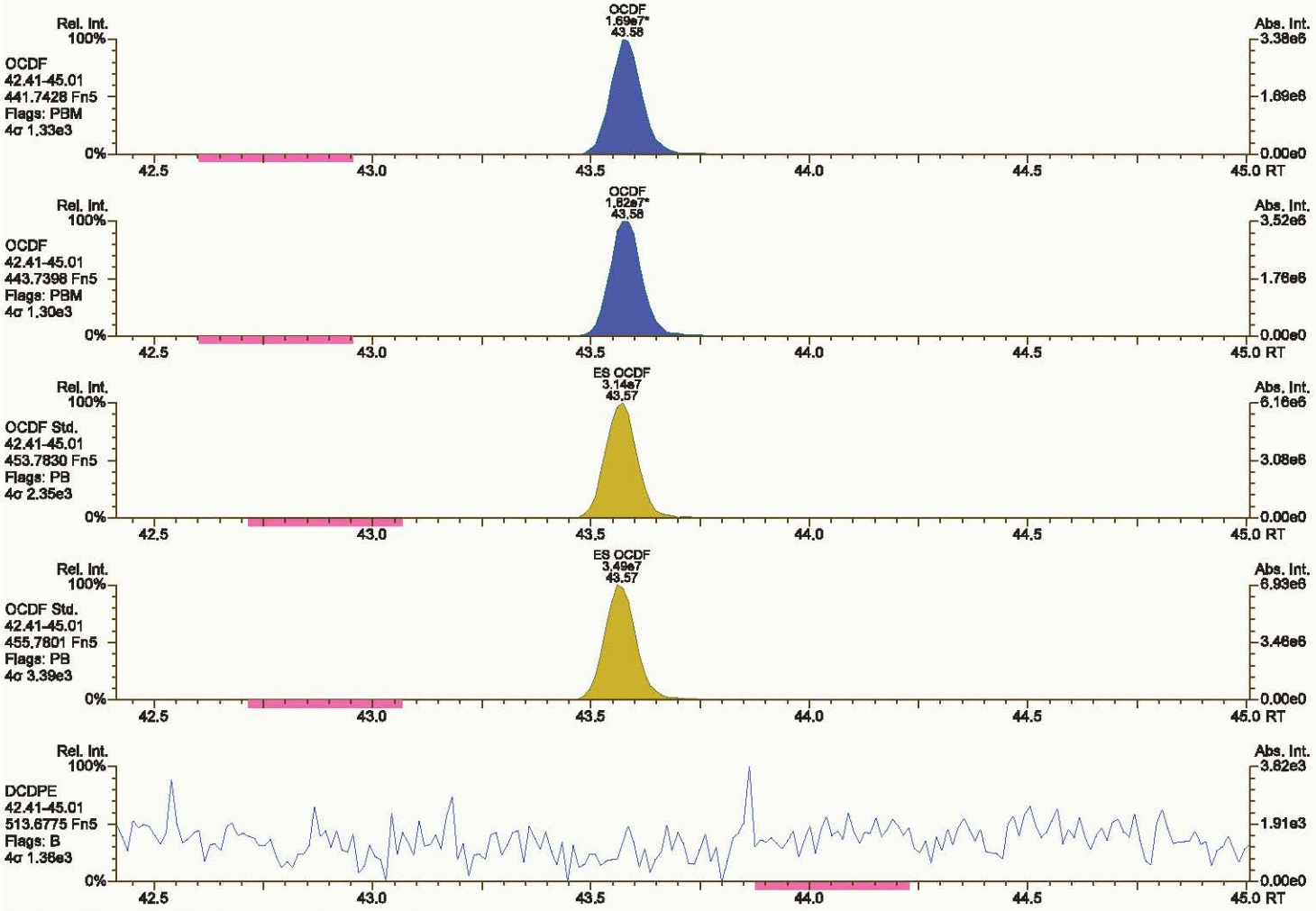

SGS ID: CS3_220219_DF_CB
Sample ID: 25-347-1
Acq: 20-Feb-2022 05:01:11
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220219C16
Rel. Int.
Abs. Int.
HxCDF
34.72-38.80
373.8207 Fn3
Flags: PB
4σ 2.21e3
123478F 1.40e7 36.56
123678F 1.45e7 36.71
234678F 1.40e7 37.38
123789F 1.26e7 38.36
4.26e6
2.13e6
0.00e0
HxCDF
34.72-38.80
375.8178 Fn3
Flags: PB
4σ 1.50e3
123478F 1.15e7 36.56
123678F 1.19e7 36.70
234678F 1.10e7 37.38
123789F 1.01e7 38.36
3.48e6
1.74e6
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: PB
4σ 3.97e3
ES 123678F 1.62e7 36.69
ES 123478F 1.48e7 36.55
CS 123469F 1.47e7 37.00
ES 234678F 1.51e7 37.36
ES 123789F 1.39e7 38.34
4.79e6
2.40e6
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: PB
4σ 1.68e3
ES 123678F 3.06e7 36.69
ES 123478F 2.73e7 36.55
CS 123469F 2.72e7 37.00
ES 234678F 2.83e7 37.36
ES 123789F 2.57e7 38.34
8.87e6
4.43e6
OCDPE
34.72-38.80
445.7555 Fn3
Flags: PB
4σ 1.31e3
3.92e3
1.96e3
0%
100%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
0.00e0



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CB.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4920, 7046, 4786 scc: 111-739
PKD: 21-Feb-2022 09:54 Printed: 21-Feb-2022 10:51 Page 11 of 12

SGS ID: CS3_220219_DF_CB | Sample ID: 25-347-1 | Acq: 20-Feb-2022 05:01:11

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 220219C16

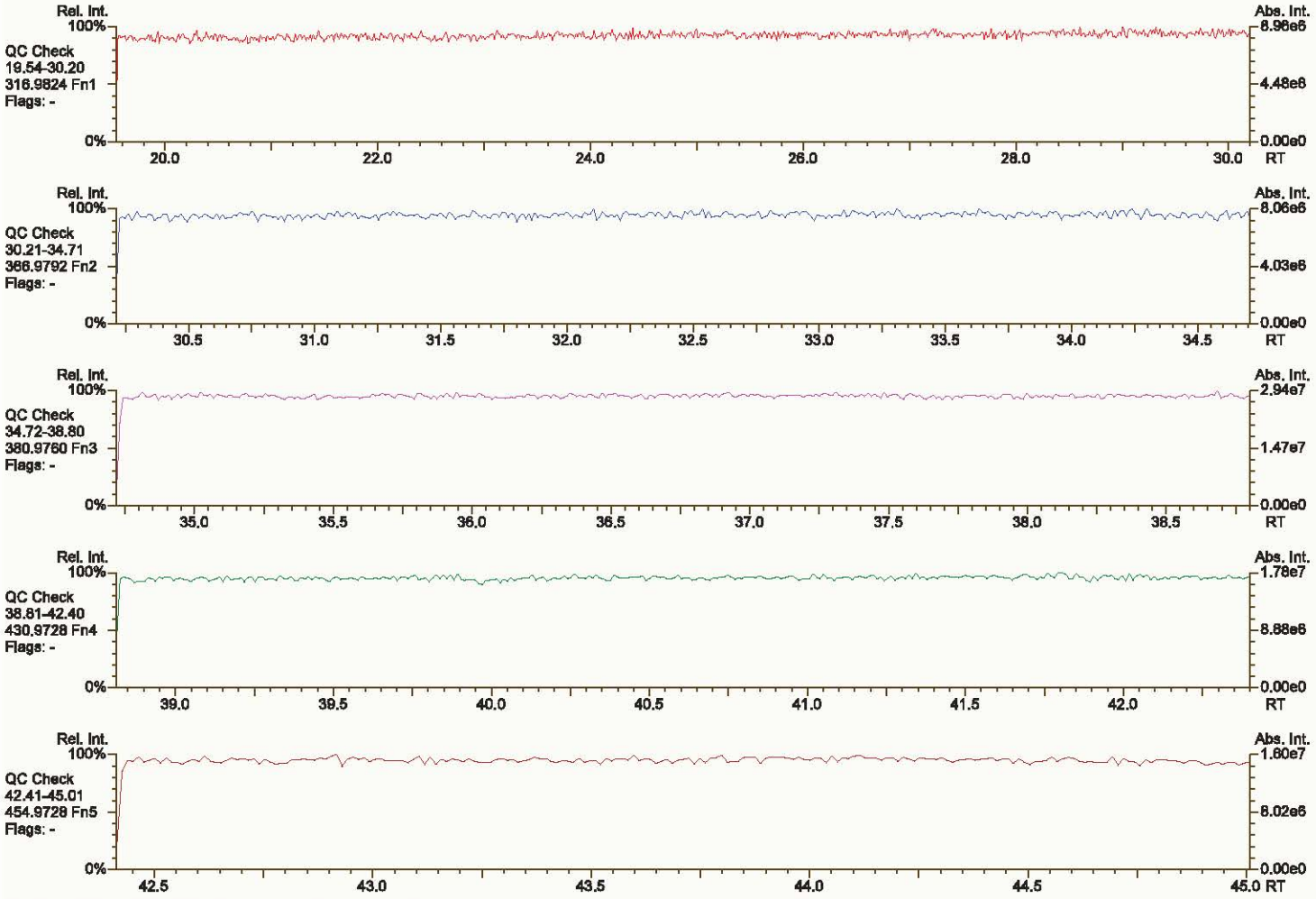


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\CS3_220219_DF_CB.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1984, 3565, 1205 scc: 111-739 *Revised: 21-Feb-2022 09:55 (DTF) Printed: 21-Feb-2022 10:51 Page 12 of 12*

SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF)

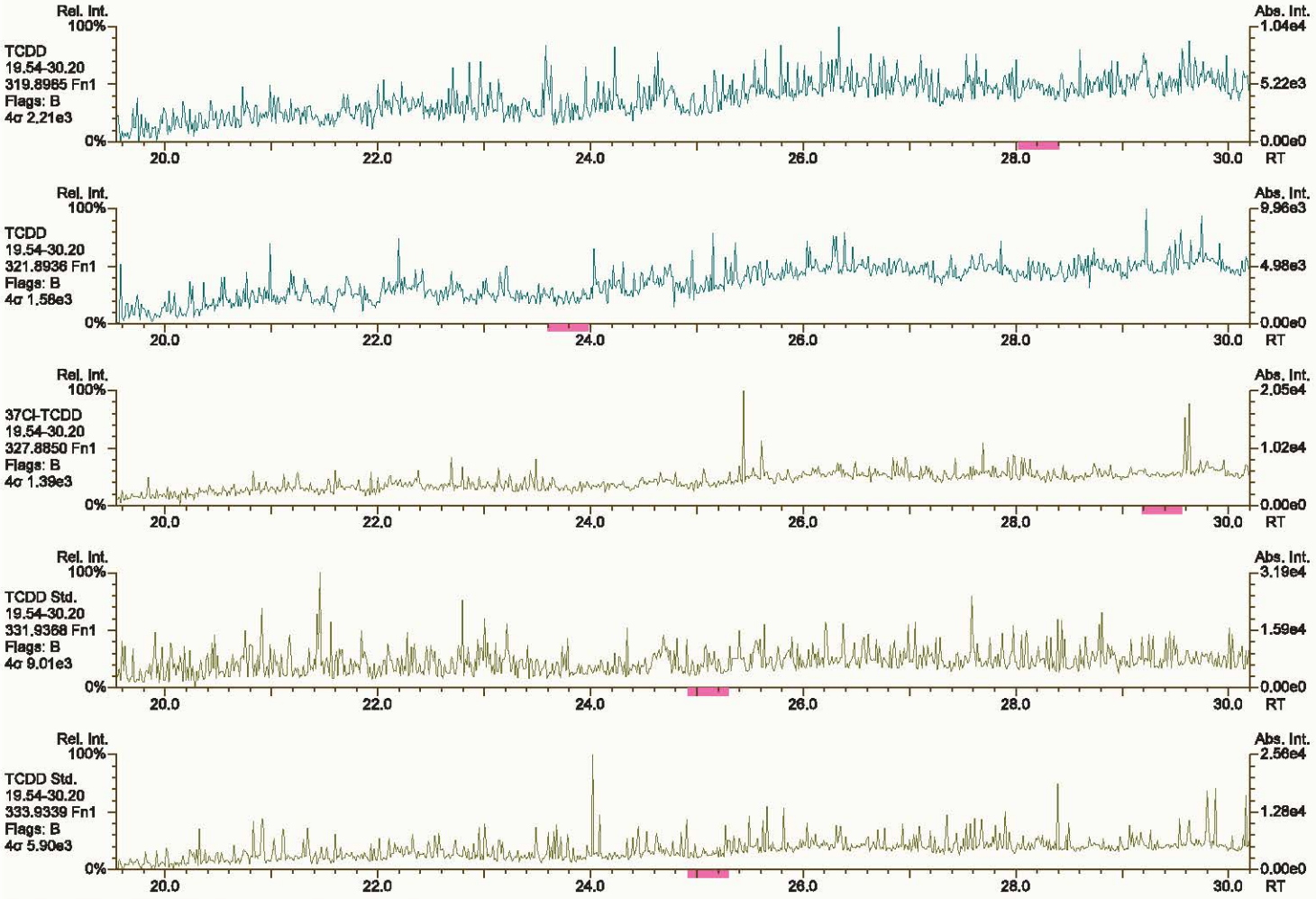
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 scc: 501-491

PKD: n/a Printed: 21-Feb-2022 10:50 Page 1 of 12

SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3551, 7362, 3543 scc: 501-491 *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:50 Page 2 of 12*

SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03

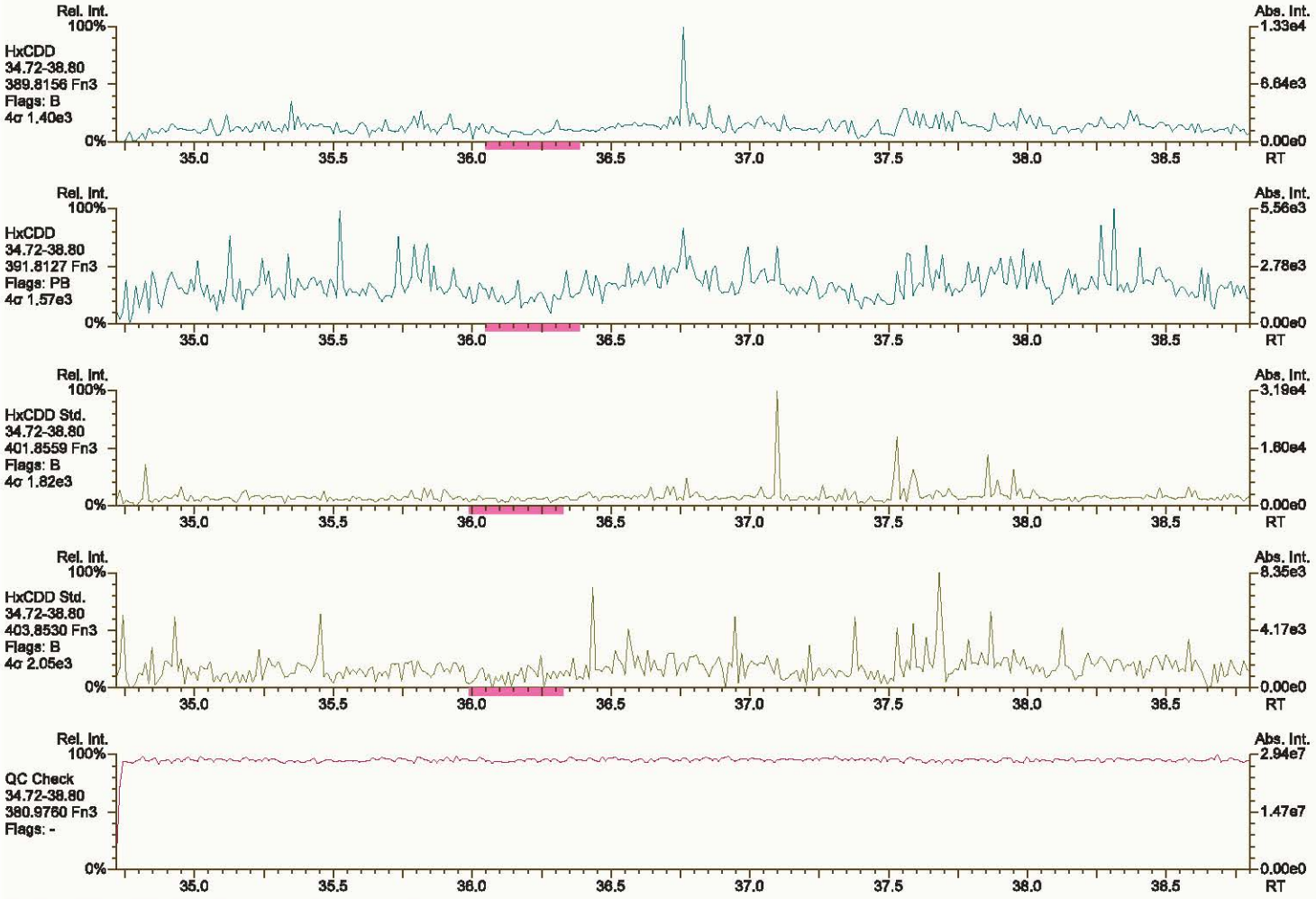


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6554, 0758 scc: 501-491 *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 3 of 12*

SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03

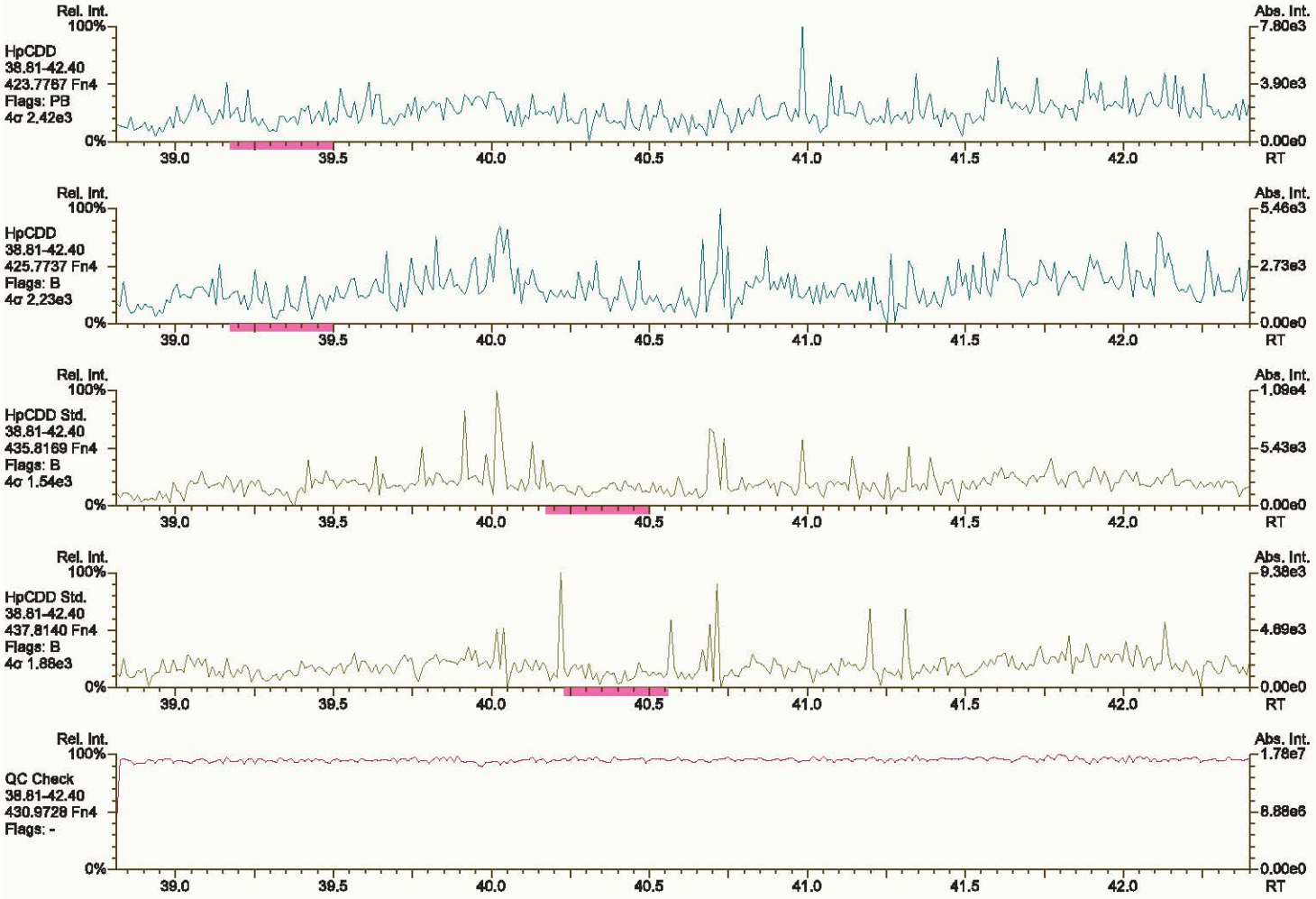


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1967, 9509 scc: 501-491 | *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 4 of 12*

SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03

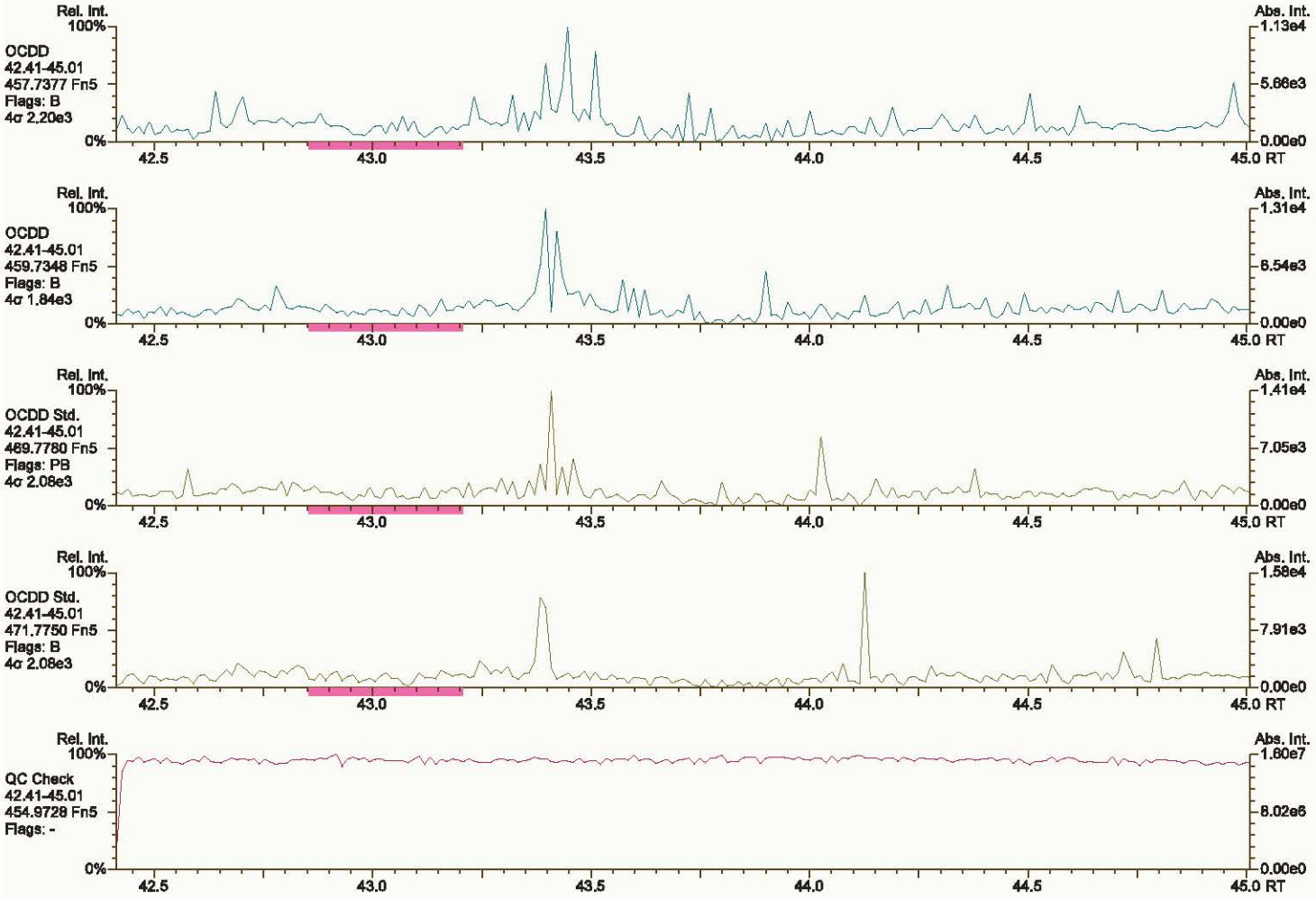


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8865, 7295 scc: 501-491 *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 5 of 12*

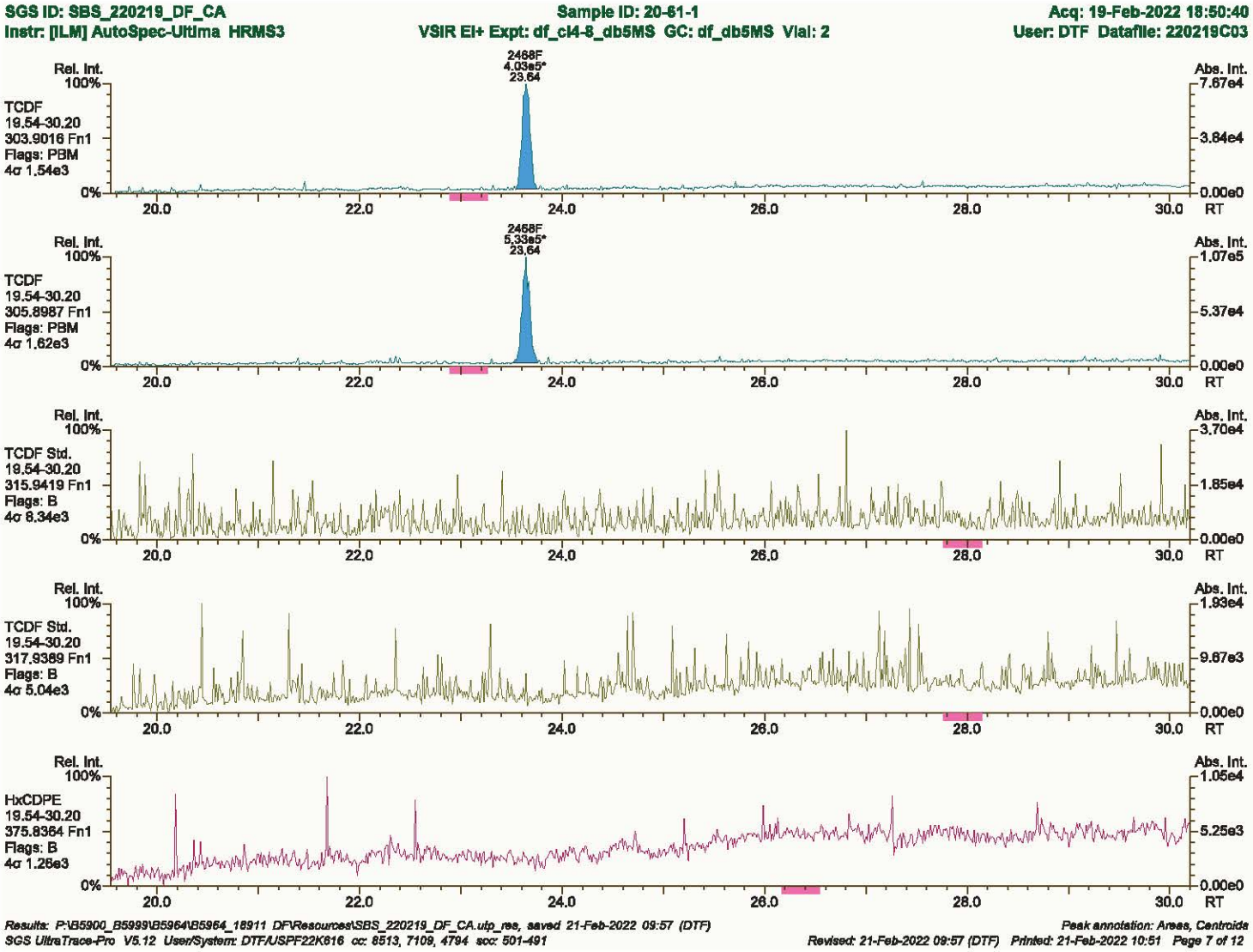
SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF) *Peak annotation: Areas, Centroids*

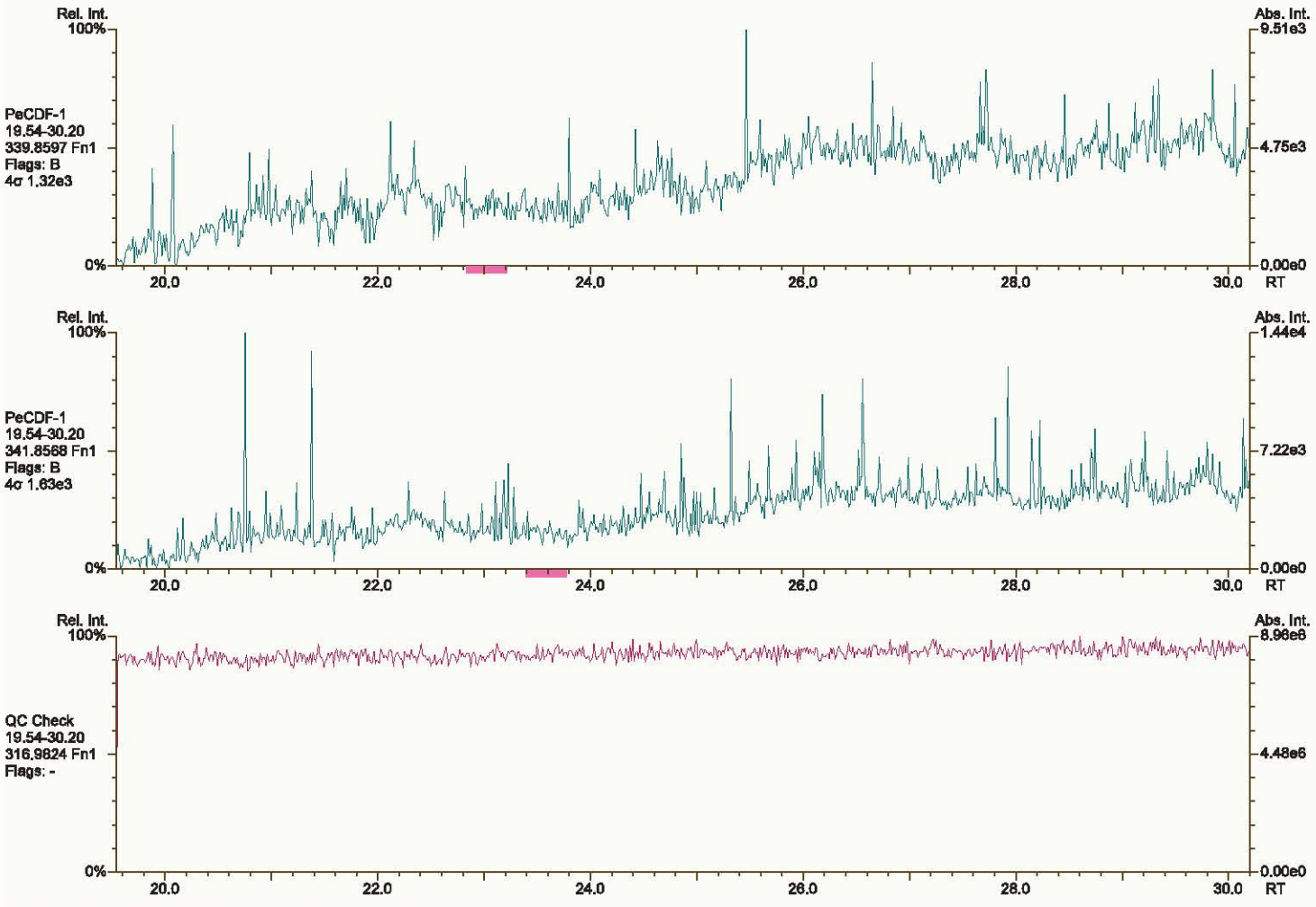
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9567, 5166 scc: 501-491 *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 6 of 12*


SGS ID: SBS_220219_DF_CA
Sample ID: 20-61-1
Acq: 19-Feb-2022 18:50:40
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
User: DTF Datafile: 220219C03
Rel. Int.
Abs. Int.
2468F
4.03e5*
23.64
TCDF
19.54-30.20
303.9016 Fn1
Flags: PBM
4σ 1.54e3
7.67e4
3.84e4
0.00e0
2468F
5.33e5*
23.64
TCDF
19.54-30.20
305.8987 Fn1
Flags: PBM
4σ 1.62e3
1.07e5
5.37e4
0.00e0
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: B
4σ 8.34e3
3.70e4
1.85e4
0.00e0
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: B
4σ 5.04e3
1.93e4
9.67e3
0.00e0
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.26e3
1.05e4
5.25e3
0.00e0
100%
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8513, 7109, 4794 scc: 501-491
Revised: 21-Feb-2022 09:57 (DTF) Printed: 21-Feb-2022 10:51 Page 7 of 12

SGS ID: SBS_220219_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

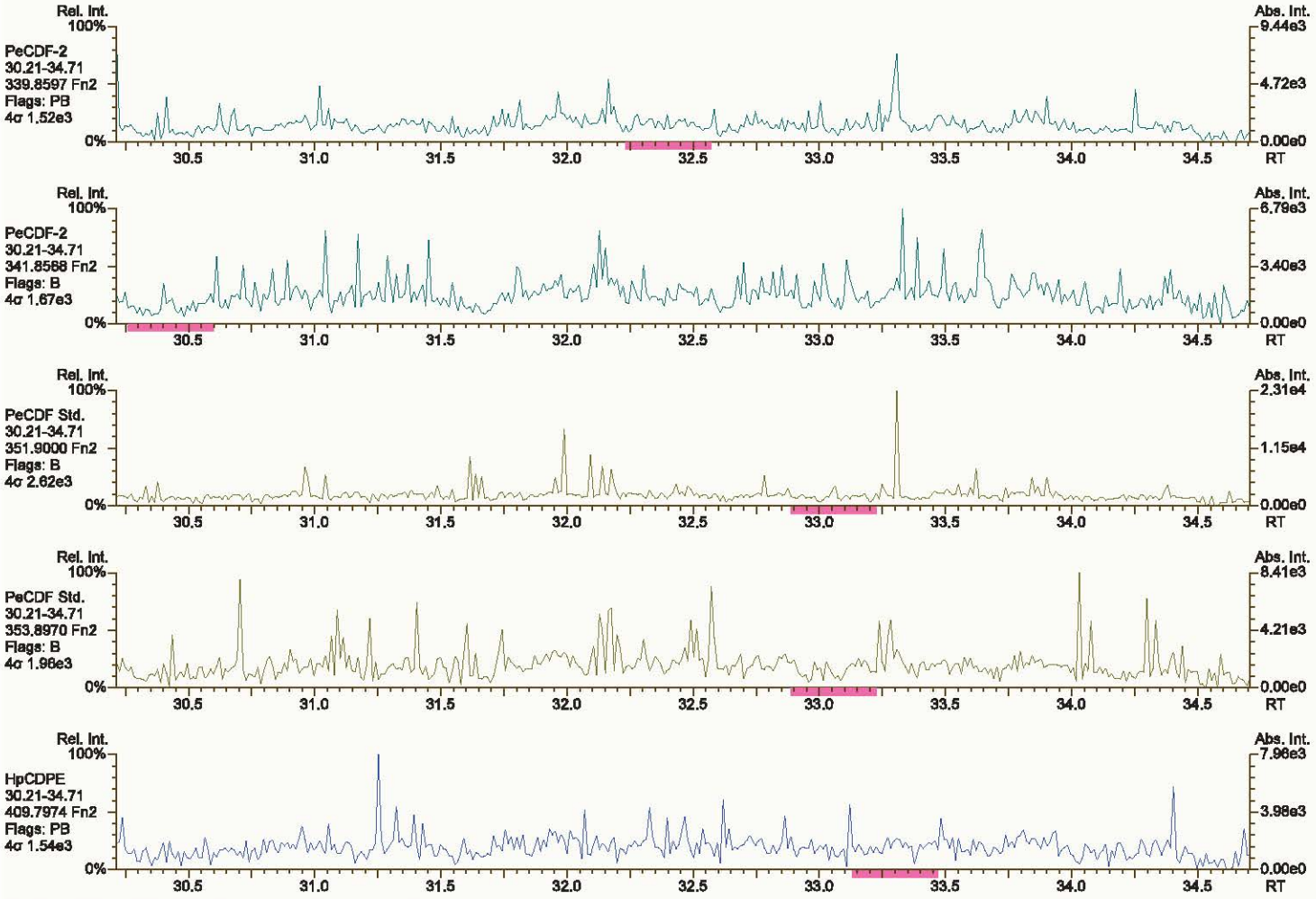
Acq: 19-Feb-2022 18:50:40
User: DTF Datafile: 220219C03



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4767 scc: 501-491
PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 8 of 12

SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03

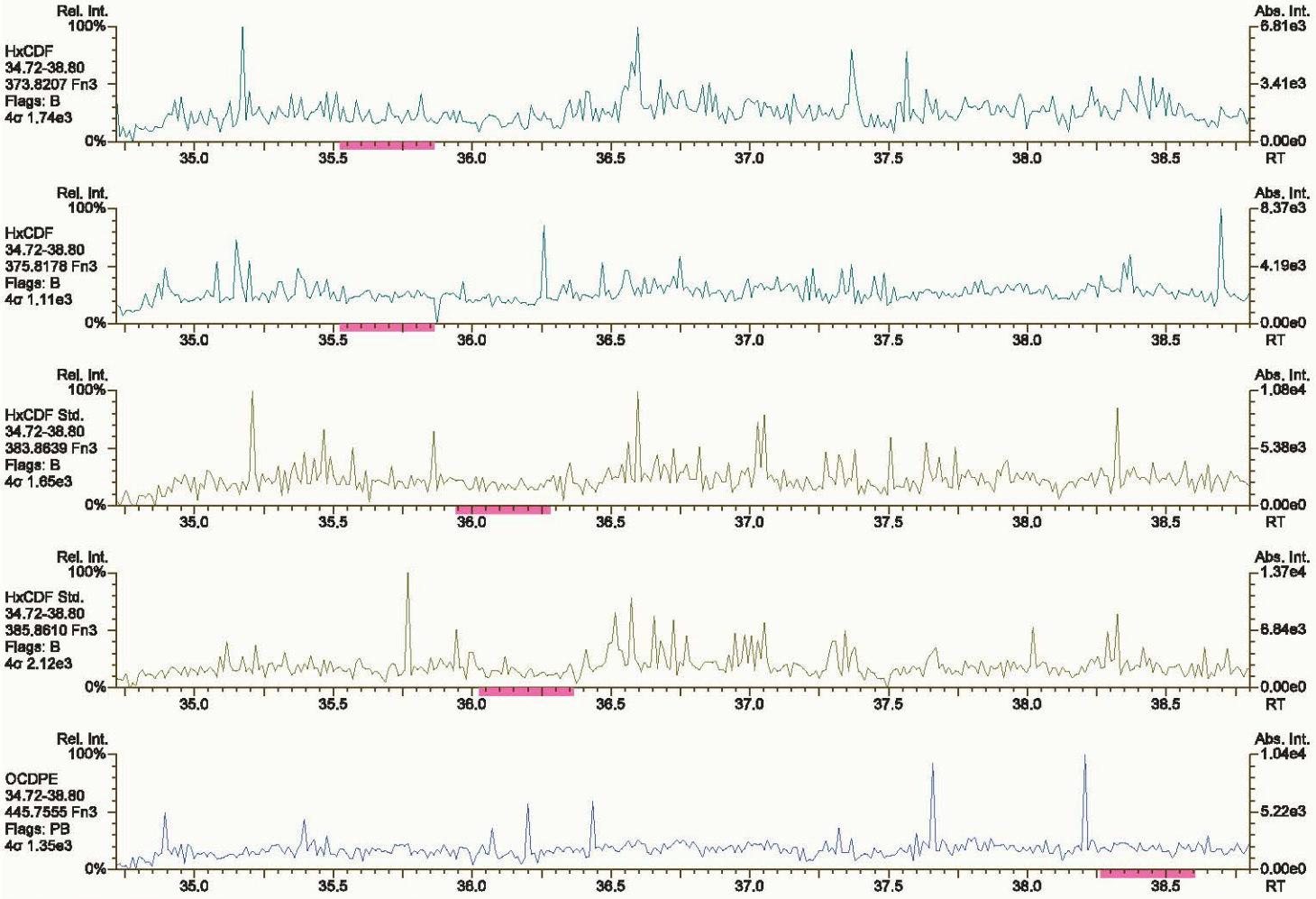


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1576, 8756, 8949 scc: 501-491 *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 9 of 12*

SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03



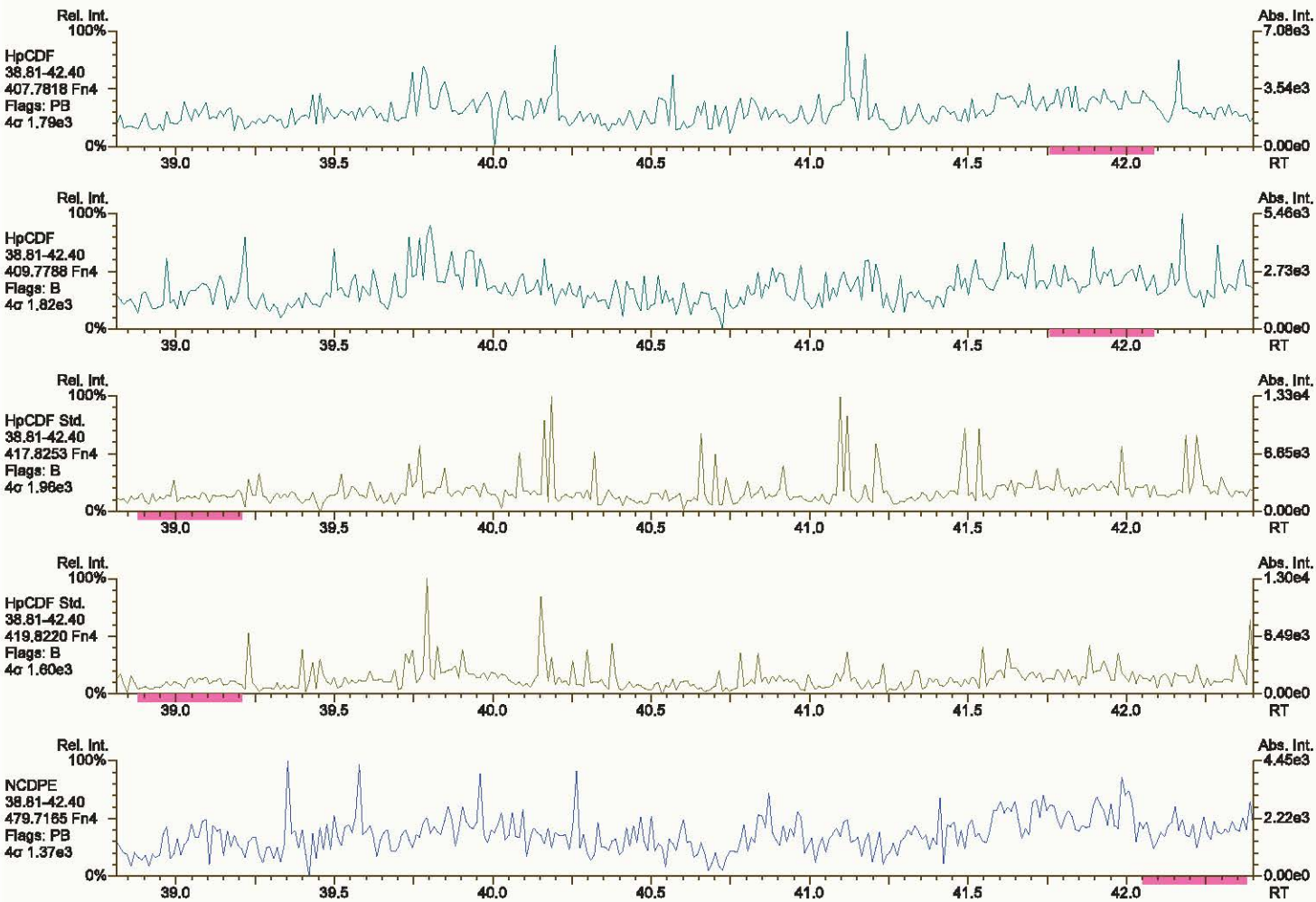
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 5212, 9481, 7634 scc: 501-491 *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 10 of 12*

SGS ID: SBS_220219_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 19-Feb-2022 18:50:40
User: DTF Datafile: 220219C03

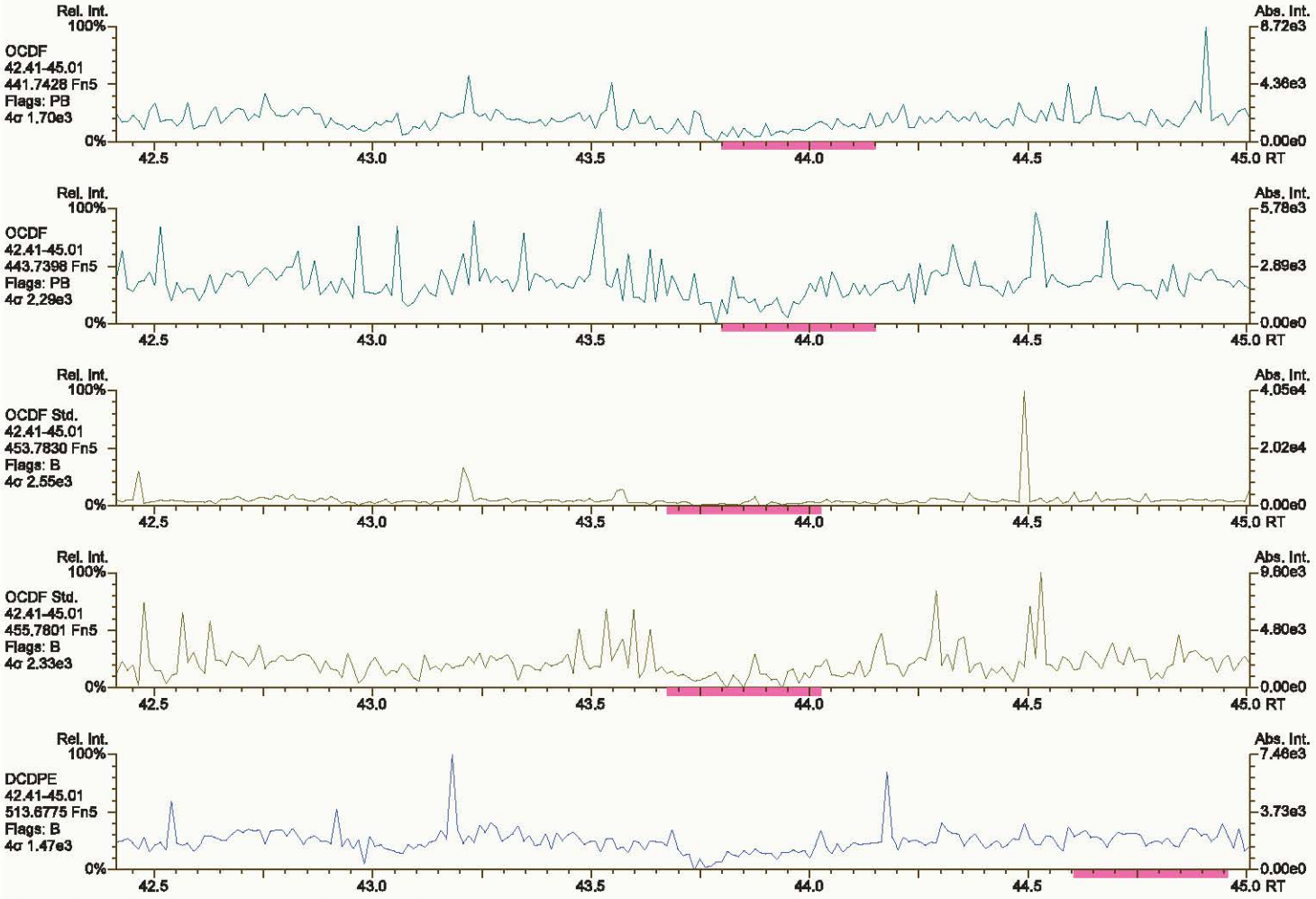


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8665, 7520, 8438 scc: 501-491

Peak annotation: Areas, Centroids
PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 11 of 12

SGS ID: SBS_220219_DF_CA | Sample ID: 20-61-1 | Acq: 19-Feb-2022 18:50:40

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 220219C03



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\SBS_220219_DF_CA.utp_res, saved 21-Feb-2022 09:57 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0959, 1586, 1936 scc: 501-491 *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:51 Page 12 of 12*

Printed: Saturday, February 19, 2022 17:17:54 Eastern Standard Time

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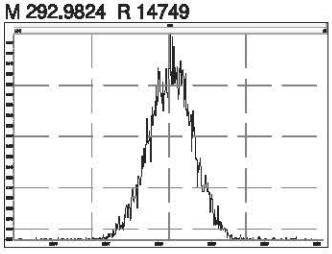

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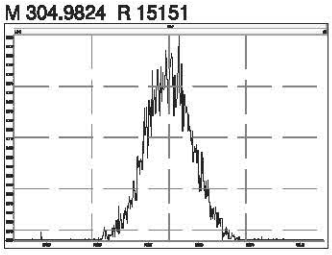

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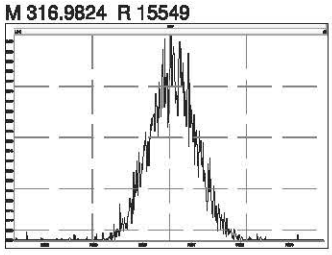

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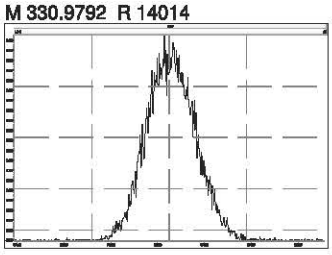

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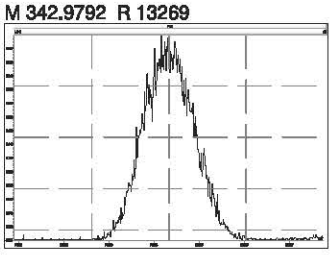

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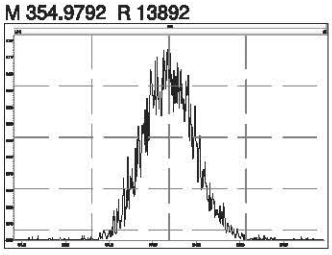

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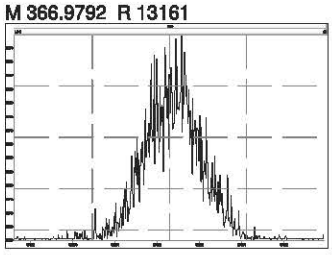

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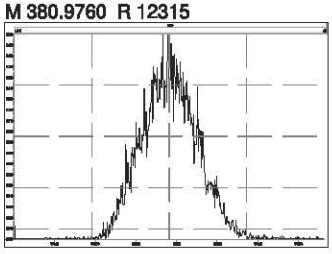

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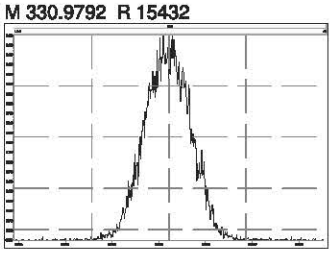

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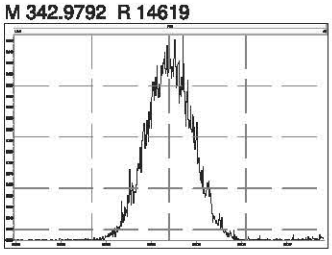

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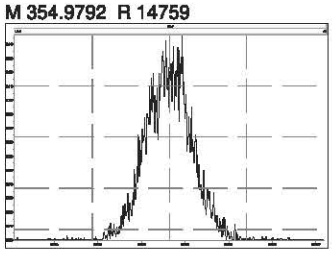

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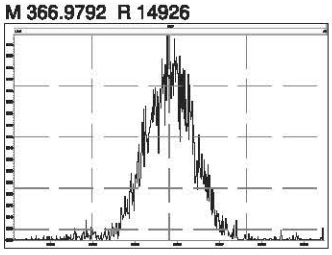

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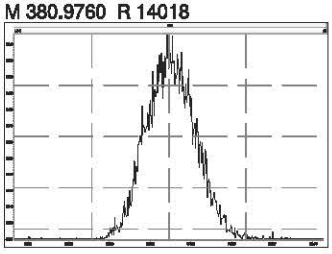

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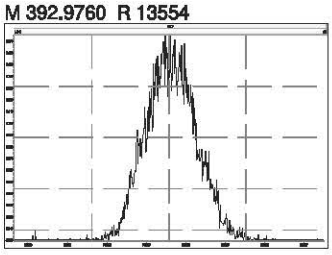

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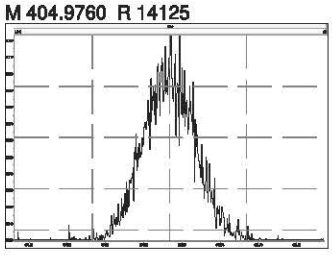

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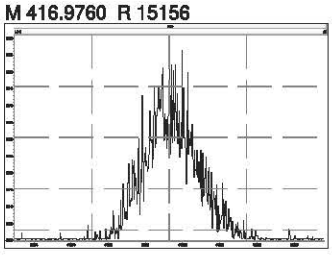

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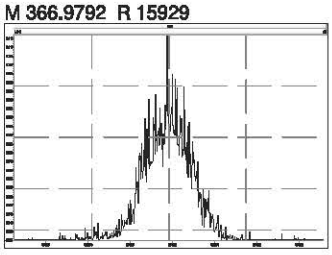

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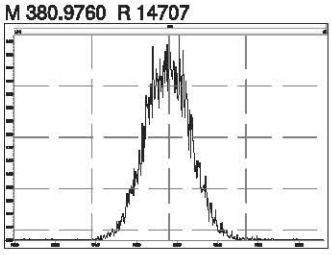

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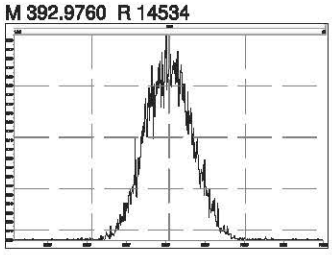

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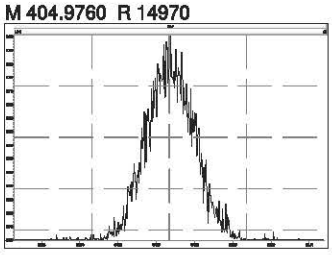

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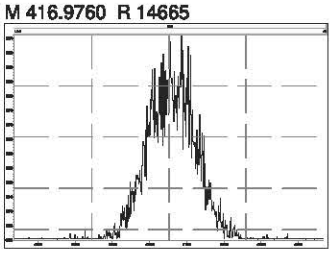

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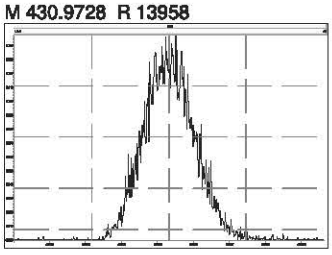

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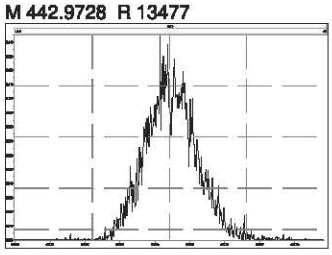

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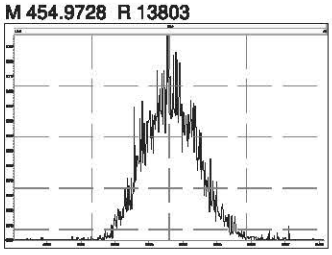

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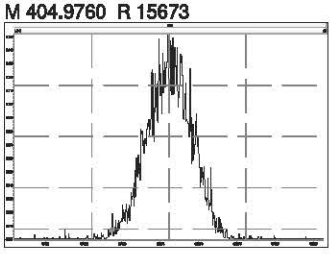

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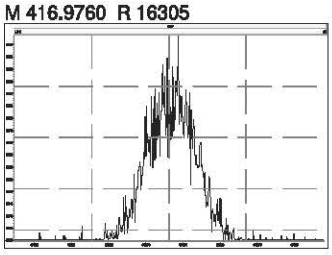

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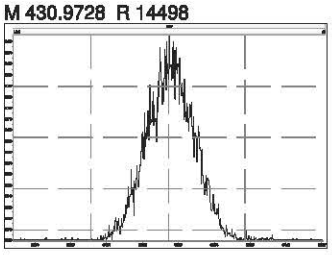

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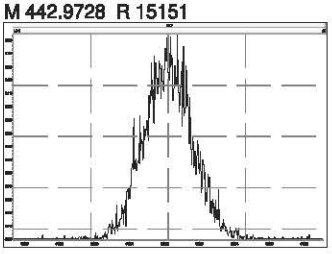

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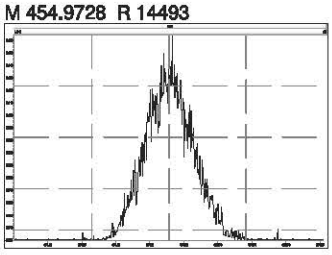

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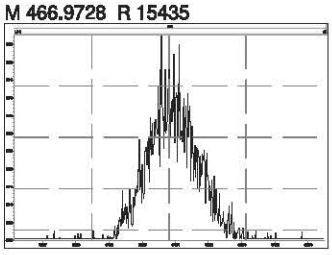

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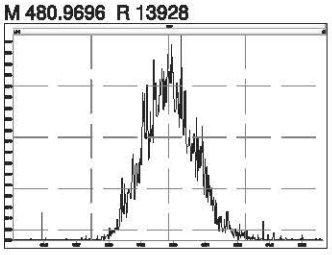

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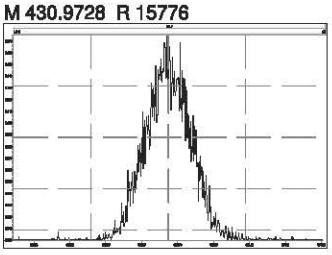

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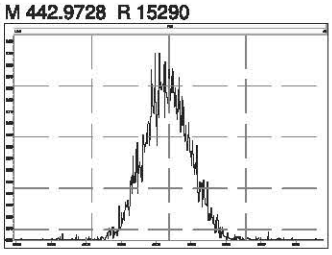

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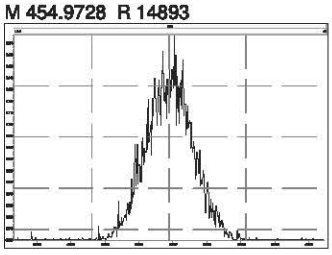

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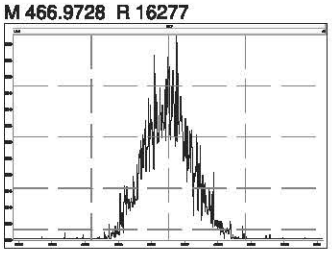

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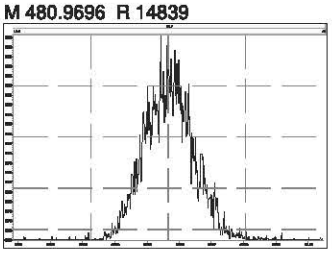

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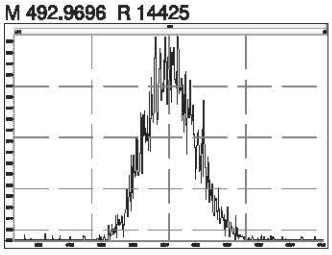

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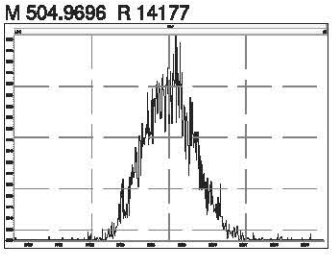

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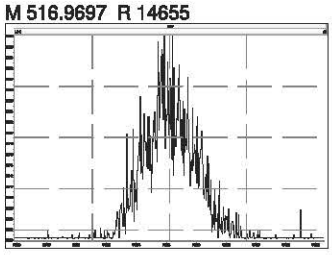

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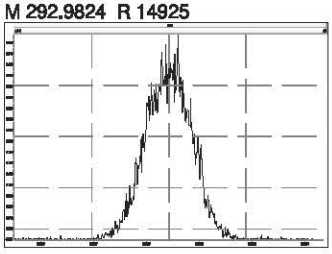

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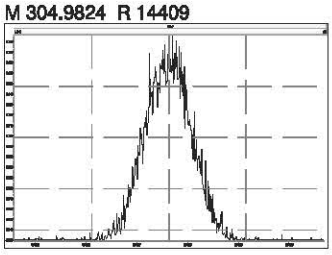

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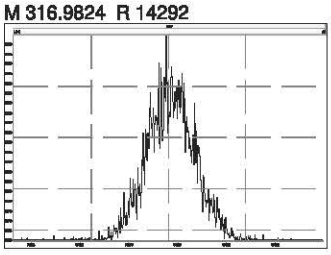

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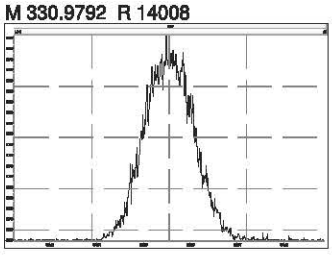

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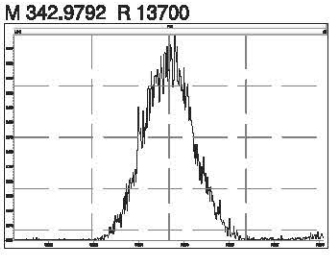

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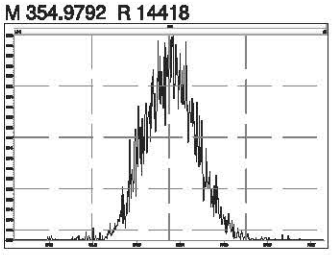

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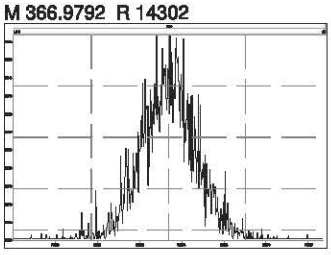

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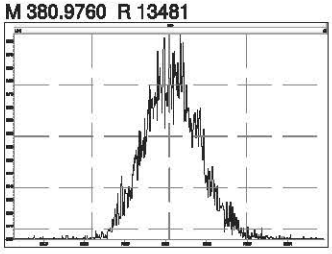

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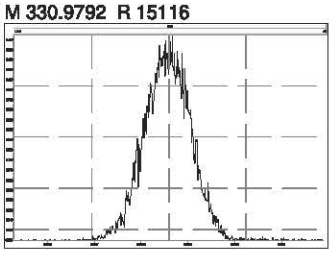

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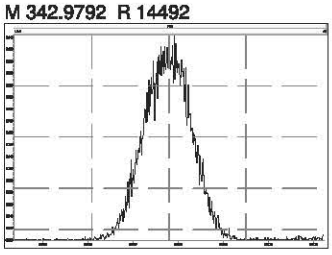

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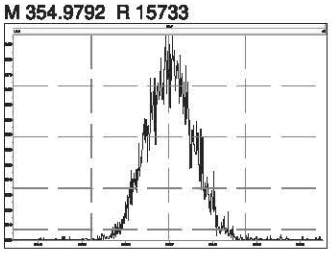

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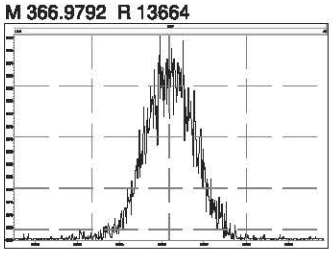

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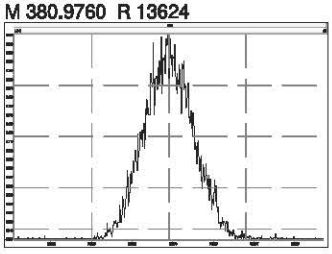

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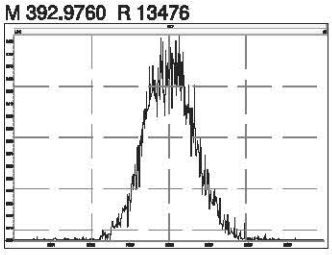

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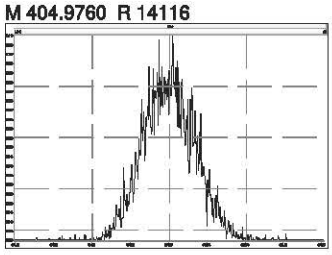

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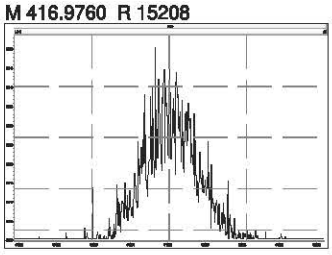

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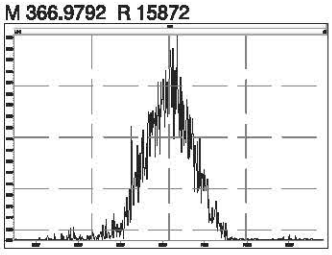
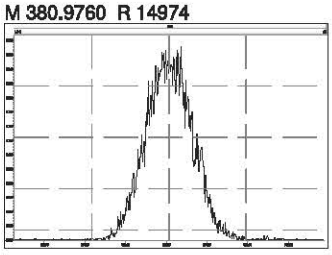
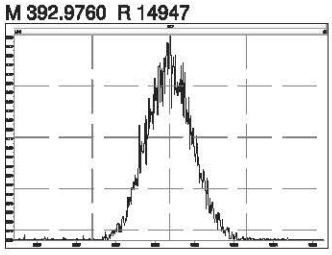


M 380.9760 R 14974



M 392.9760 R 14947



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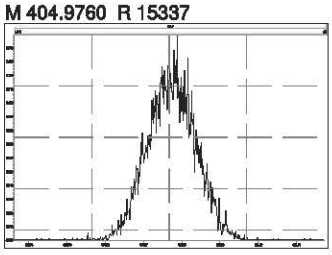

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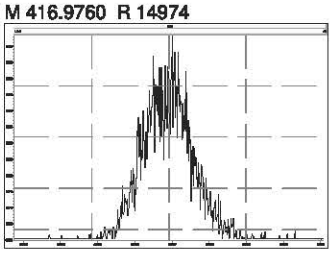
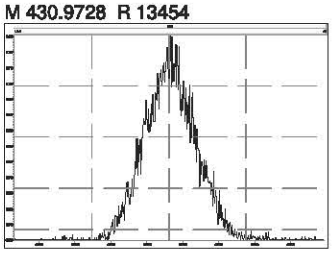
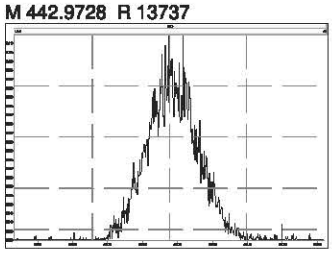


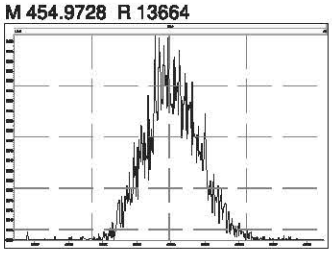
M 430.9728 R 13454



M 442.9728 R 13737



M 454.9728 R 13664



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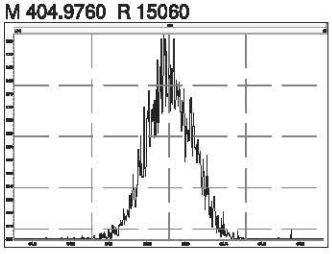
M 404.9760 R 15060



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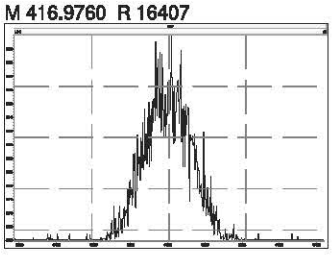

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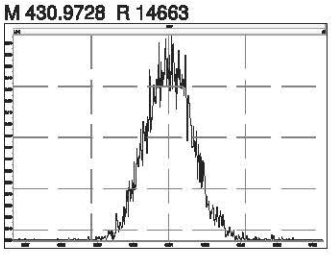

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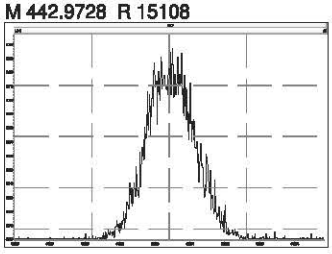
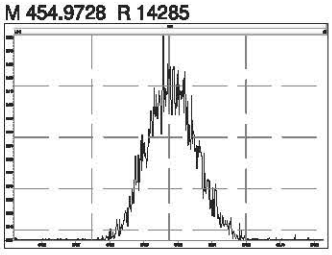


M 454.9728 R 14285



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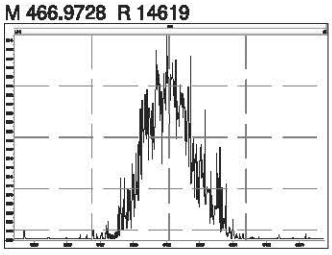

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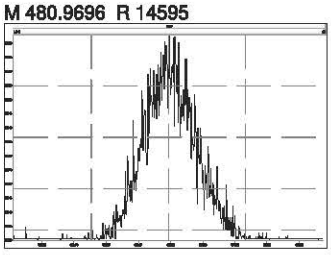

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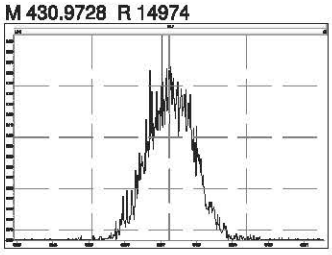

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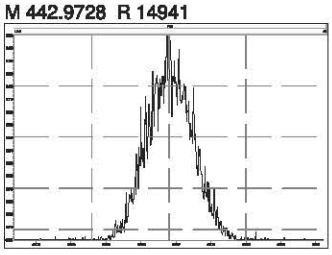

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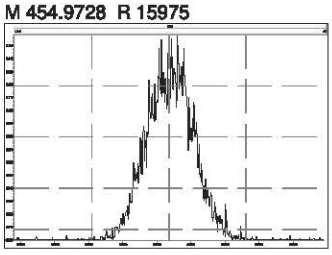

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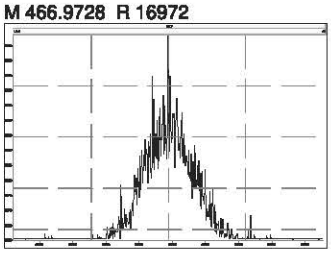

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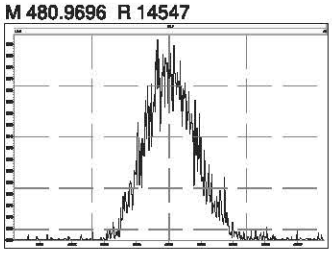

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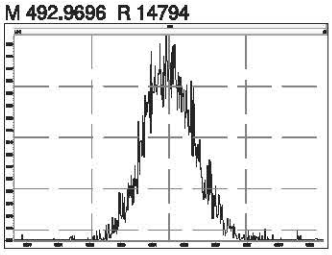
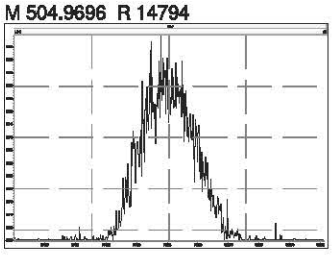


M 504.9696 R 14794



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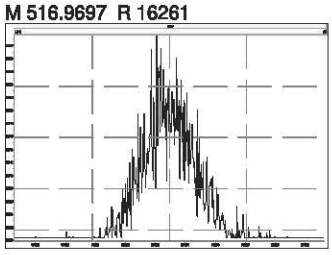

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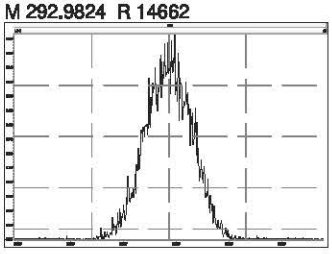

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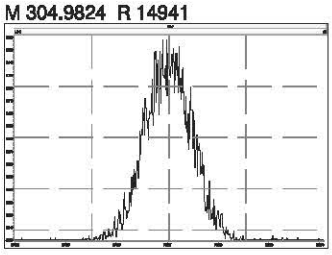

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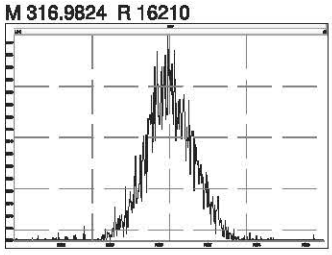
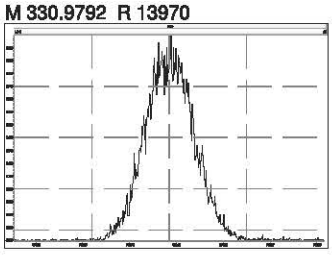


M 330.9792 R 13970



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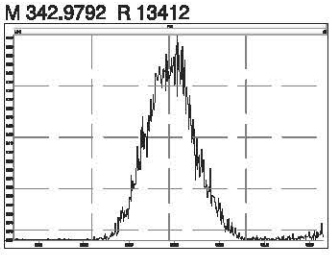
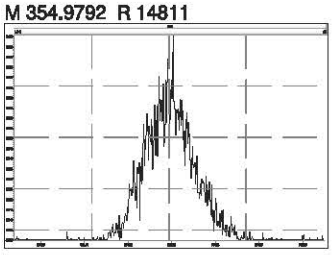
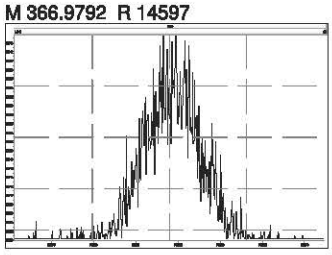


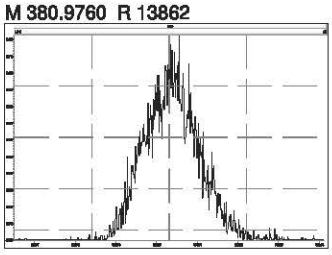
M 354.9792 R 14811



M 366.9792 R 14597



M 380.9760 R 13862



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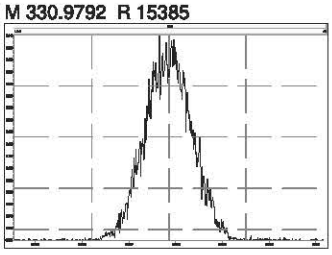

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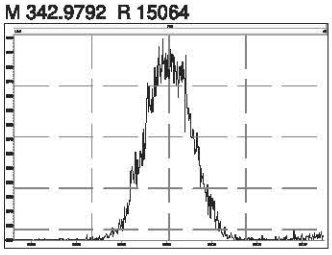

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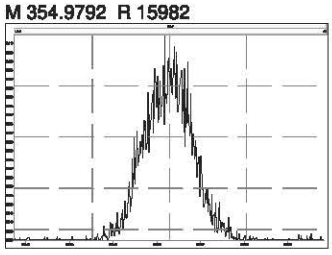

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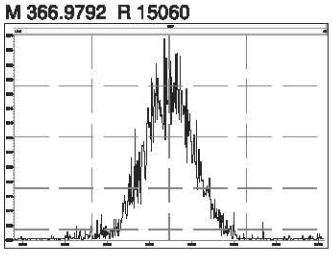

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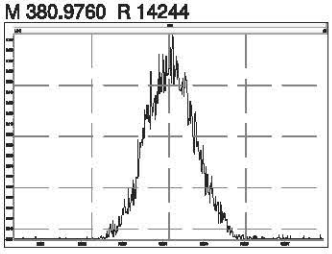
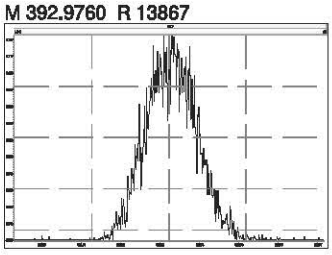
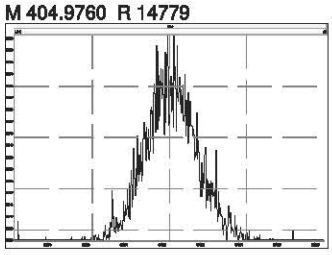


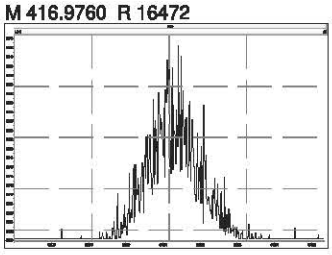
M 392.9760 R 13867



M 404.9760 R 14779



M 416.9760 R 16472



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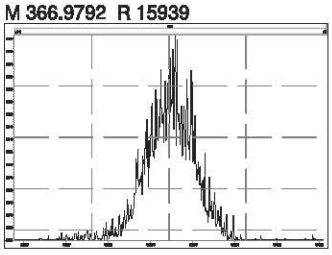

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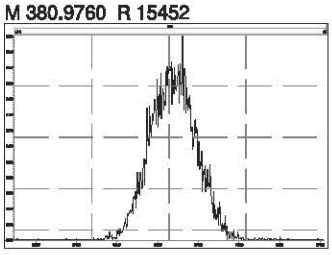
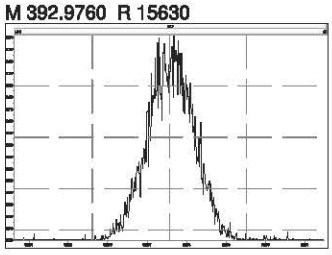
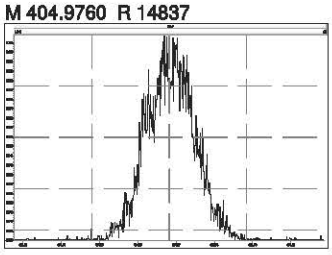


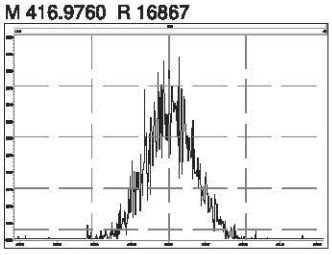
M 392.9760 R 15630



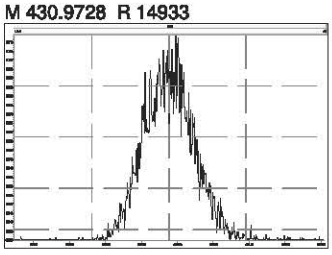
M 404.9760 R 14837



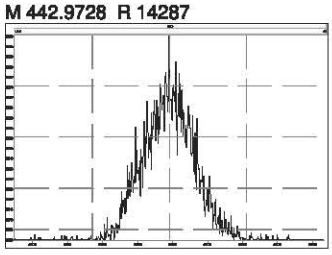
M 416.9760 R 16867



M 430.9728 R 14933



M 442.9728 R 14287



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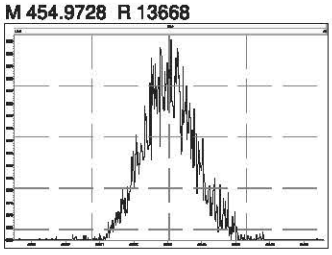

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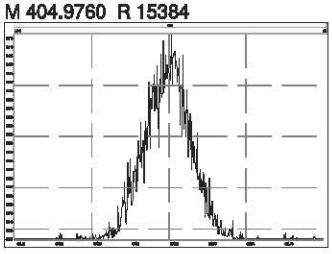
M 404.9760 R 15384



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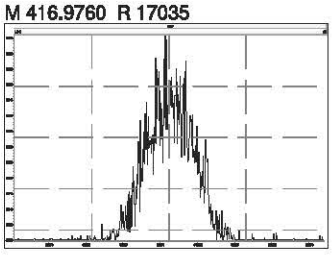

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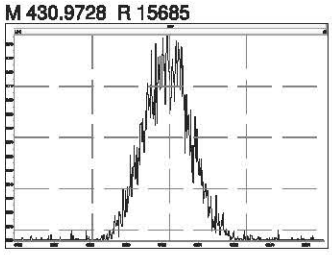
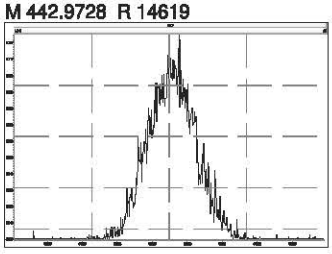
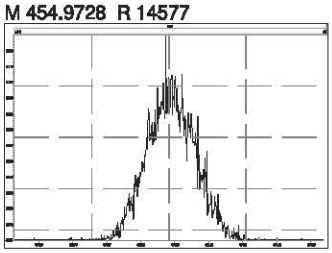


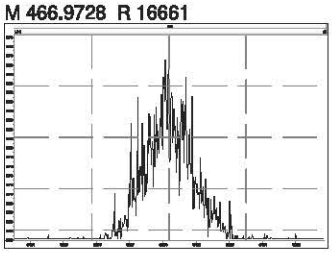
M 442.9728 R 14619



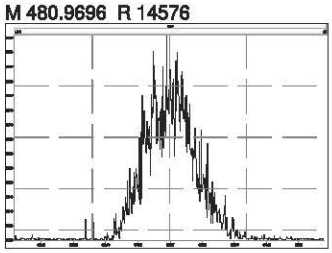
M 454.9728 R 14577



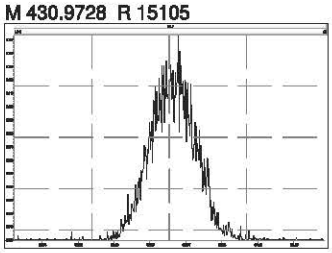
M 466.9728 R 16661



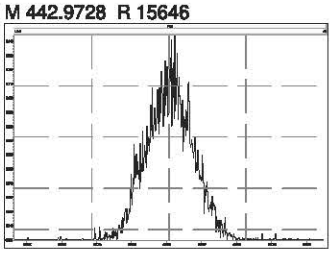
M 480.9696 R 14576



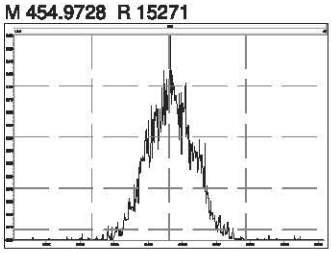
M 430.9728 R 15105



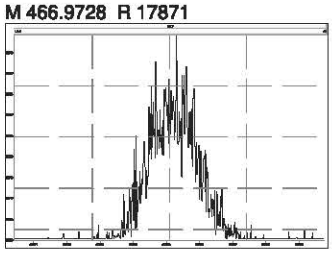
M 442.9728 R 15646



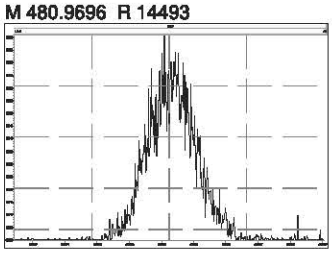
M 454.9728 R 15271



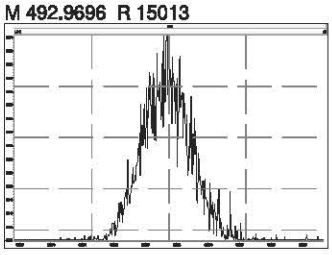
M 466.9728 R 17871



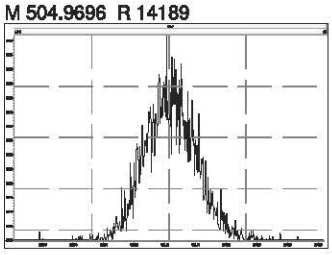
M 480.9696 R 14493



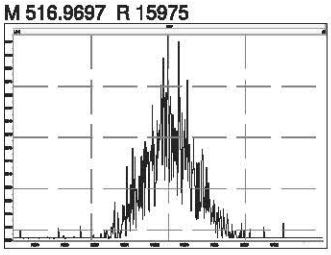
M 492.9696 R 15013



M 504.9696 R 14189



M 516.9697 R 15975



Dioxin/Furan ICAL Summary			SGS North America					Processed: 11 Nov 2021 16:24	
ICAL: HRMS3_DF_10272021 10NOV2021									
Data Acquired: 10-Nov-2021			211110C04	211110C05	211110C06	211110C07	211110C08	211110C09	211110C10
			0.25	0.5	2	10	40	200	500
			pg/uL	pg/uL	pg/uL	pg/uL	pg/uL	pg/uL	pg/uL
Name	Mean	% RSD	CS0	CS1	CS2	CS3	CS4	CS5	CS6
2378-TCDD	1.18	7.4%	1.34 ✓	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98 ✓
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84 ✓	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

Dioxin/Furan ICAL Summary			SGS North America					Processed: 11 Nov 2021 16:24	
ICAL: HRMS3_DF_10272021 10NOV2021									
Data Acquired: 10-Nov-2021			211110C04	211110C05	211110C06	211110C07	211110C08	211110C09	211110C10
			0.25	0.5	2	10	40	200	500
			pg/uL	pg/uL	pg/uL	pg/uL	pg/uL	pg/uL	pg/uL
Name	Mean	% RSD	CS0	CS1	CS2	CS3	CS4	CS5	CS6
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86 ✓	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07 ✓	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10 ✓	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28 ✓	1.33

SGS Environmental Services — Run Log **Project: HRMS3_DF_10272021 10NOV2021**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

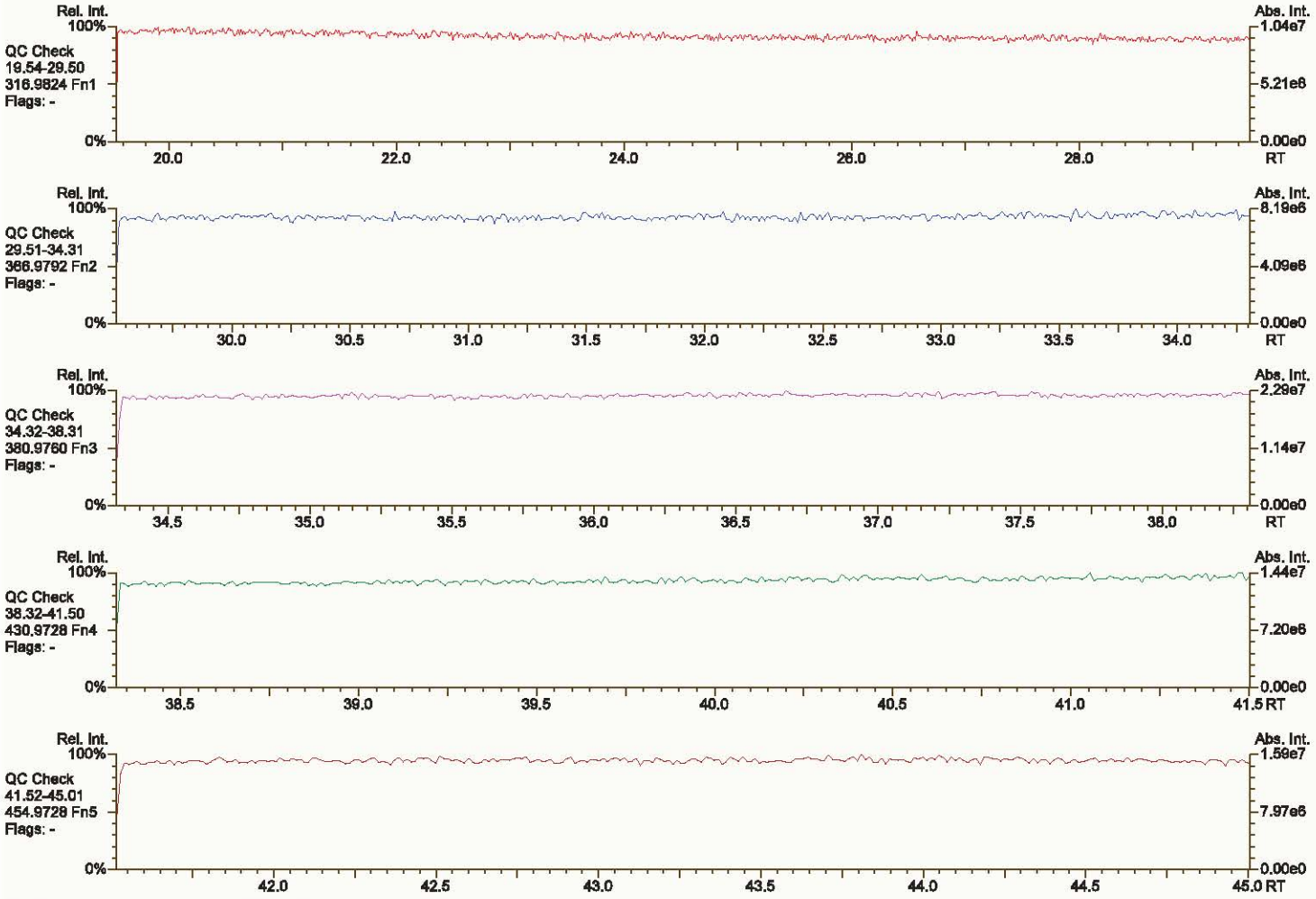
APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

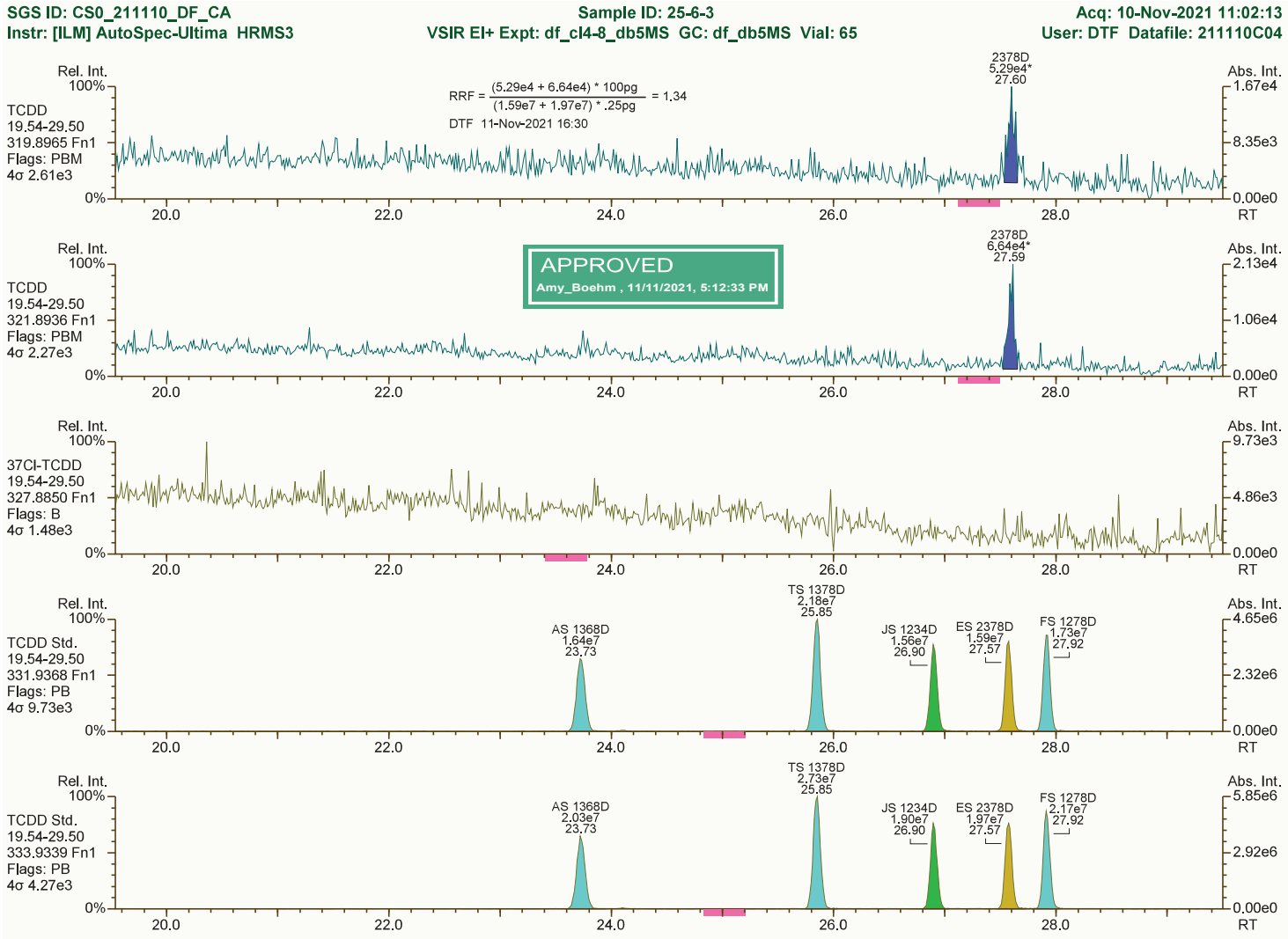
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 18:23:33 DTF				Checkcode: 245-007-QLD	
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C04	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

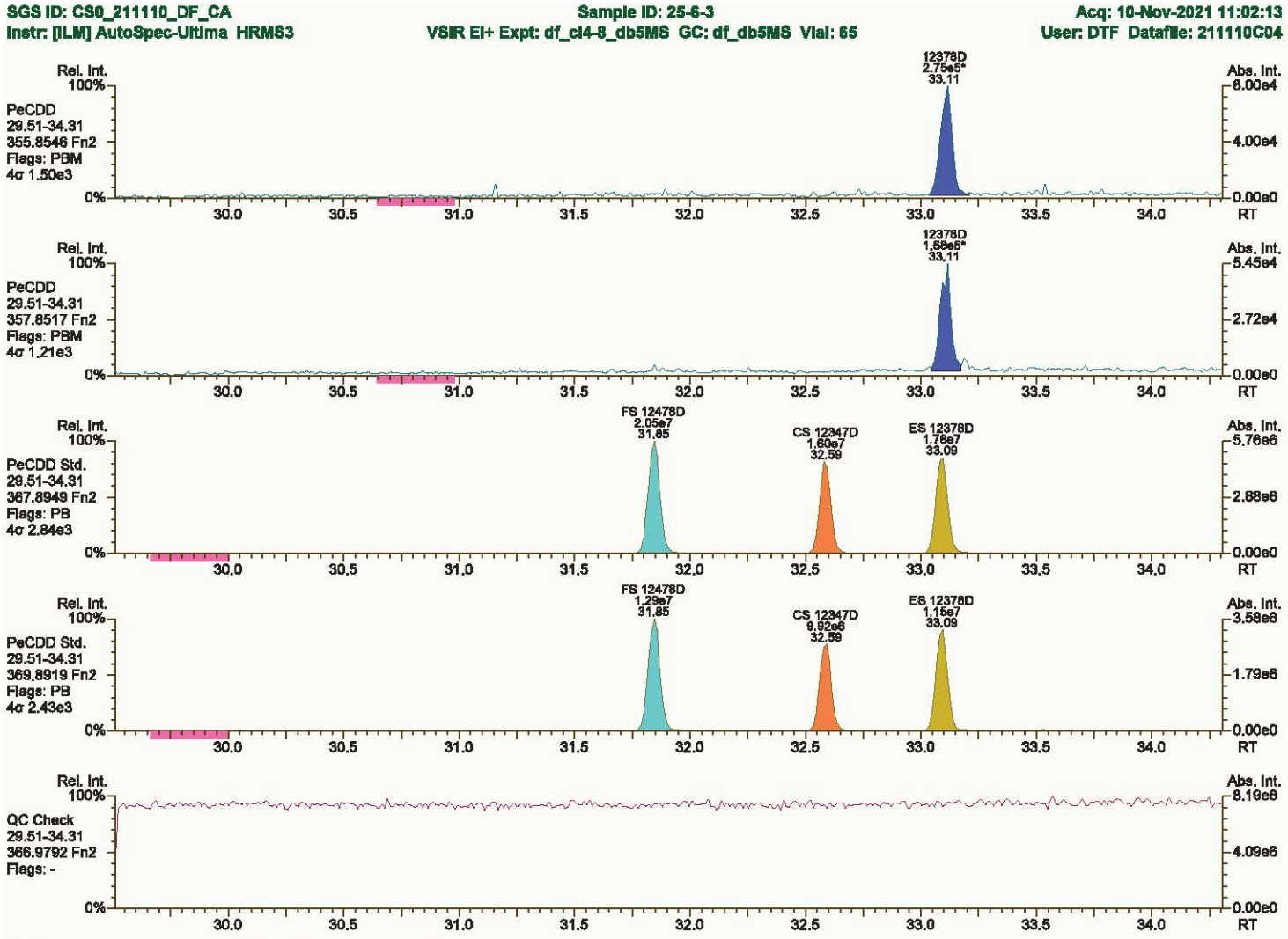
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 18:23:33 DTF				Checkcode: 245-007-QLD	
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C04	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%

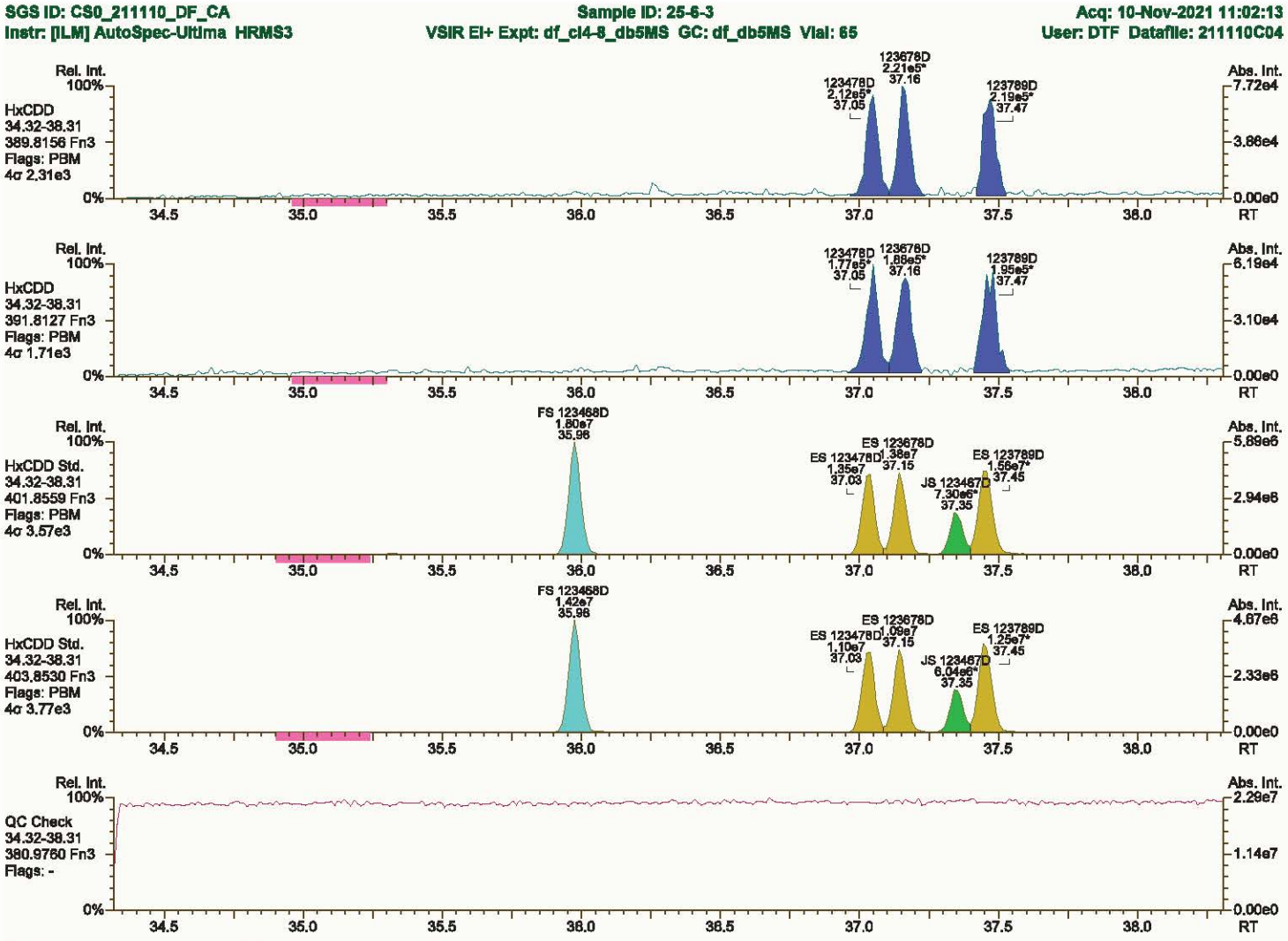
SGS ID: CS0_211110_DF_CA | Sample ID: 25-6-3 | Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 65 | User: DTF Datafile: 211110C04

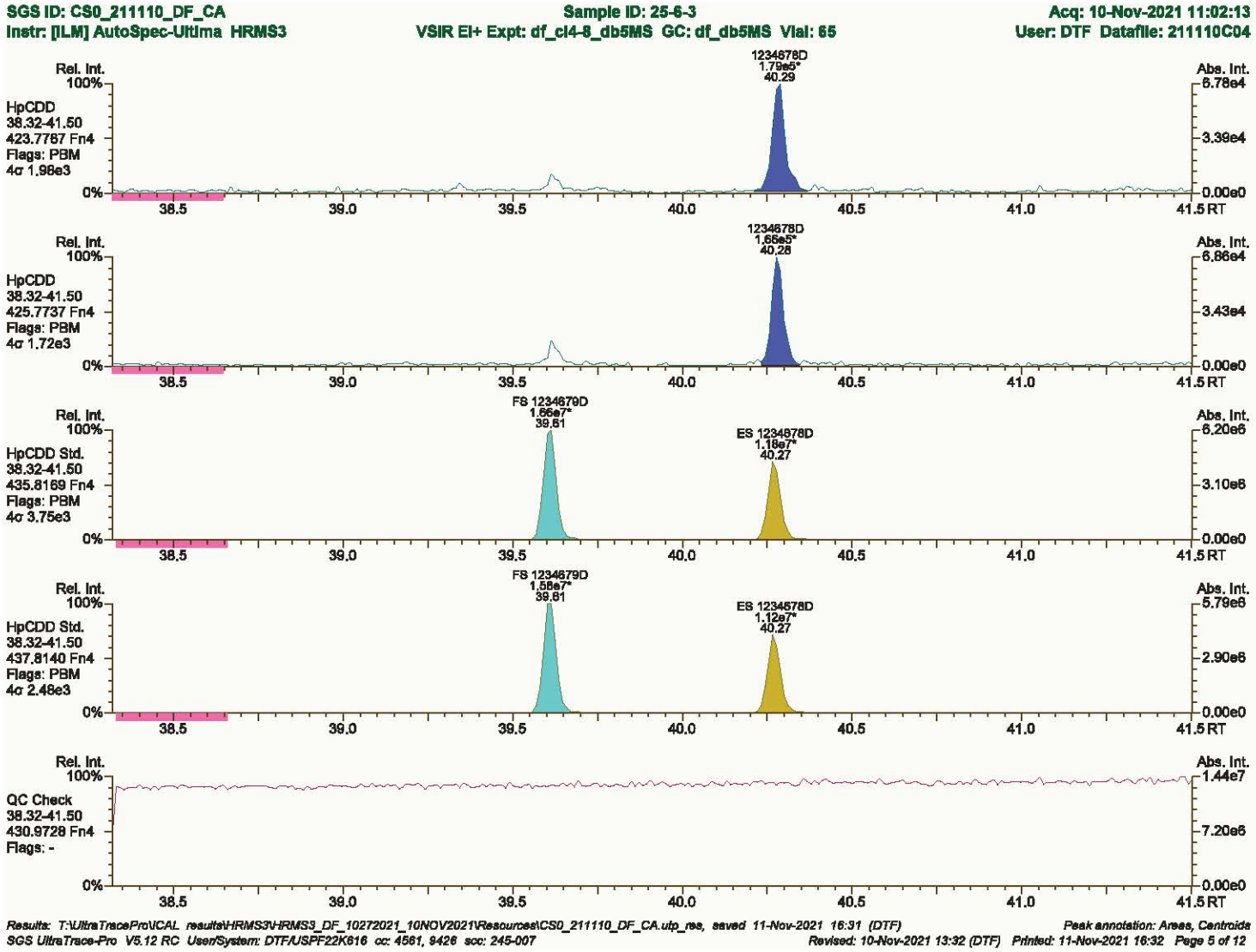


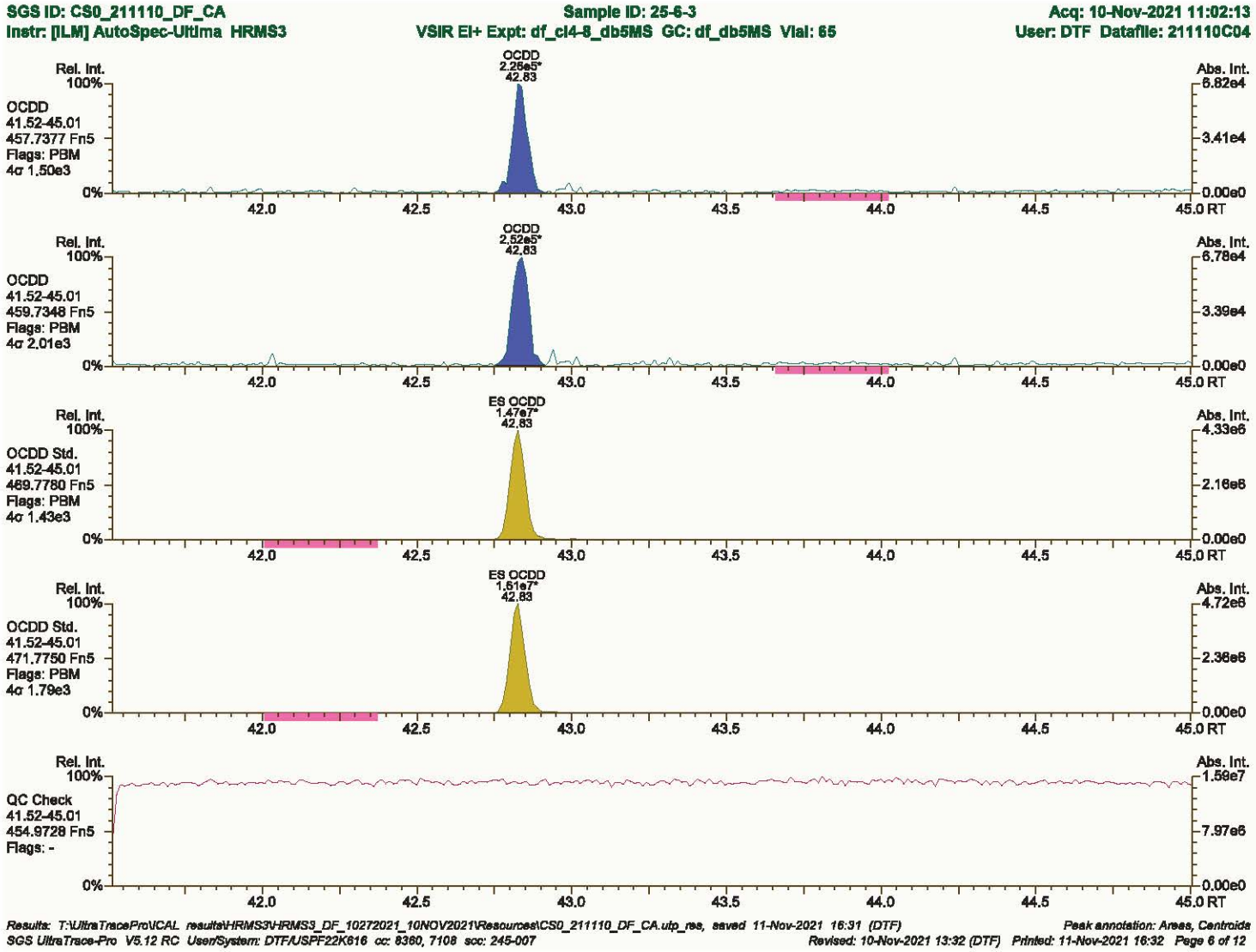
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 scc: 245-007
PKD: n/a Printed: 11-Nov-2021 16:32 Page 1 of 12

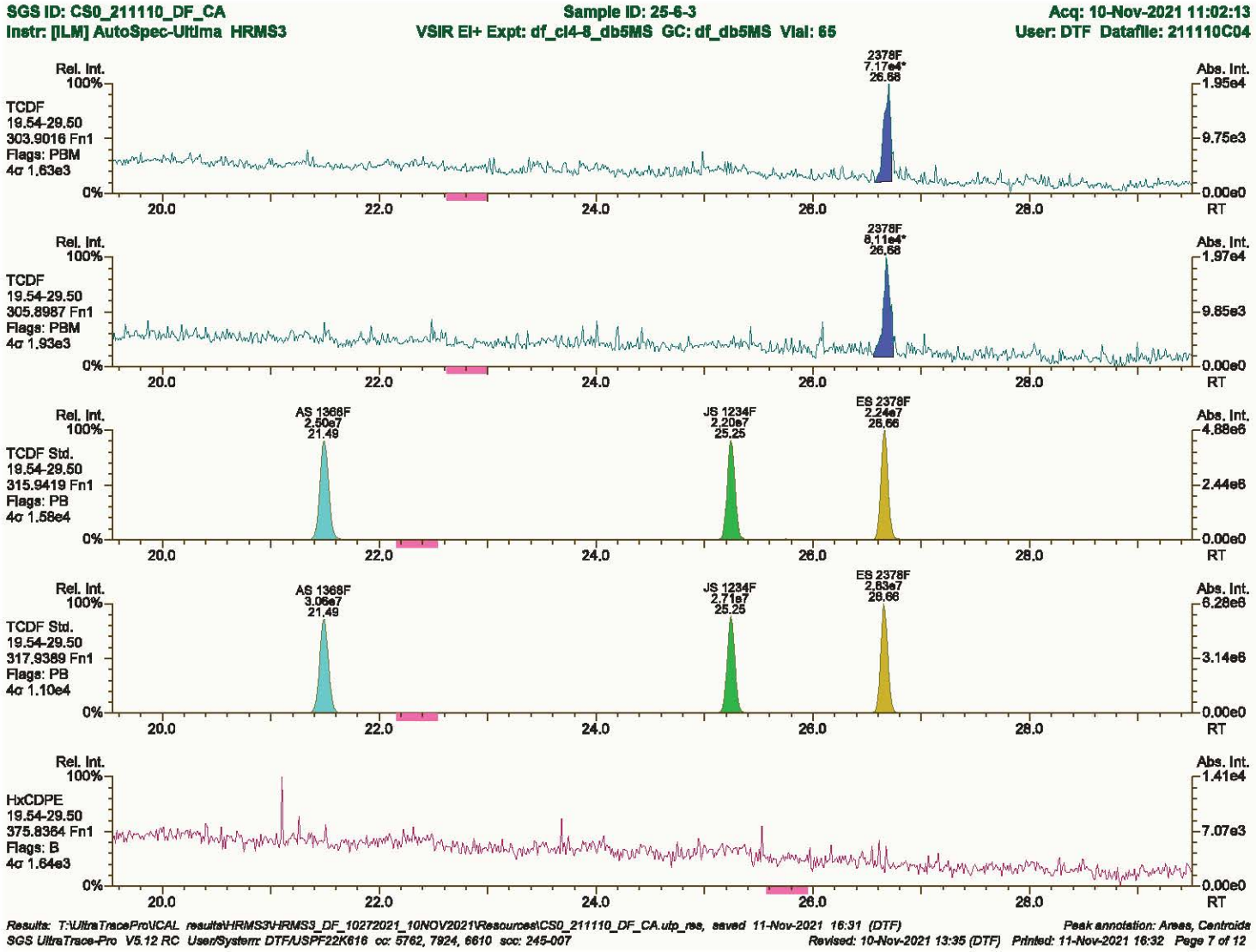

SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
TCDD
19.54-29.50
319.8965 Fn1
Flags: PBM
4σ 2.61e3
2378D
5.29e4*
27.60
RRF = (5.29e4 + 6.64e4) * 100pg / (1.59e7 + 1.97e7) * .25pg = 1.34
DTF 11-Nov-2021 16:30
APPROVED
Amy_Boehm , 11/11/2021, 5:12:33 PM
TCDD
19.54-29.50
321.8936 Fn1
Flags: PBM
4σ 2.27e3
2378D
6.64e4*
27.59
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.48e3
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 9.73e3
AS 1368D
1.64e7
23.73
TS 1378D
2.18e7
25.85
JS 1234D
1.56e7
26.90
ES 2378D
1.59e7
27.57
FS 1278D
1.73e7
27.92
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.27e3
AS 1368D
2.03e7
23.73
TS 1378D
2.73e7
25.85
JS 1234D
1.90e7
26.90
ES 2378D
1.97e7
27.57
FS 1278D
2.17e7
27.92
RT


SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
8.00e4
4.00e4
0.00e0
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.58e5*
33.11
5.45e4
2.72e4
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
5.76e6
2.88e6
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
3.58e6
1.79e6
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
8.19e6
4.09e6
0%
100%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

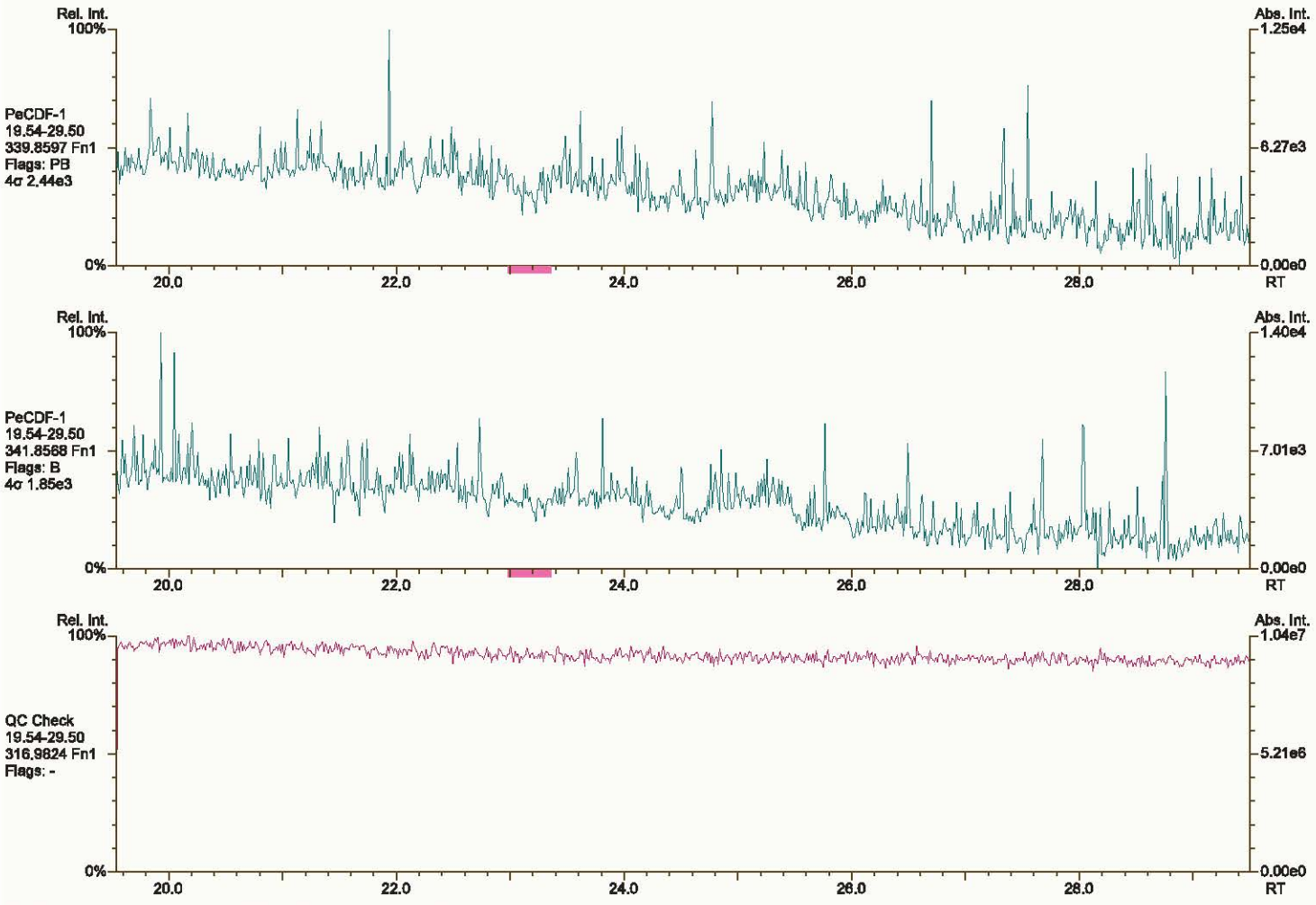

SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
123678D 2.21e5* 37.16
123478D 2.12e5* 37.05
123789D 2.19e5* 37.47
7.72e4
3.86e4
0.00e0
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
123478D 1.77e5* 37.05
123678D 1.88e5* 37.16
123789D 1.95e5* 37.47
6.19e4
3.10e4
0.00e0
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
FS 123468D 1.80e7 35.96
ES 123678D 1.38e7 37.15
ES 123478D 1.35e7 37.03
ES 123789D 1.56e7* 37.45
JS 123467D 7.30e6* 37.35
5.89e6
2.94e6
0.00e0
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
FS 123468D 1.42e7 35.96
ES 123678D 1.09e7 37.15
ES 123478D 1.10e7 37.03
ES 123789D 1.25e7* 37.45
JS 123467D 6.04e6* 37.35
4.67e6
2.33e6
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.29e7
1.14e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7939, 5923 scc: 245-007
Revised: 10-Nov-2021 13:32 (DTF) Printed: 11-Nov-2021 16:32 Page 4 of 12


SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
1234678D
1.79e5*
40.29
6.78e4
3.39e4
0.00e0
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
1234678D
1.66e5*
40.28
6.86e4
3.43e4
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
6.20e6
3.10e6
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
5.79e6
2.90e6
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.44e7
7.20e6
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4561, 9426 scc: 245-007
Revised: 10-Nov-2021 13:32 (DTF) Printed: 11-Nov-2021 16:32 Page 5 of 12

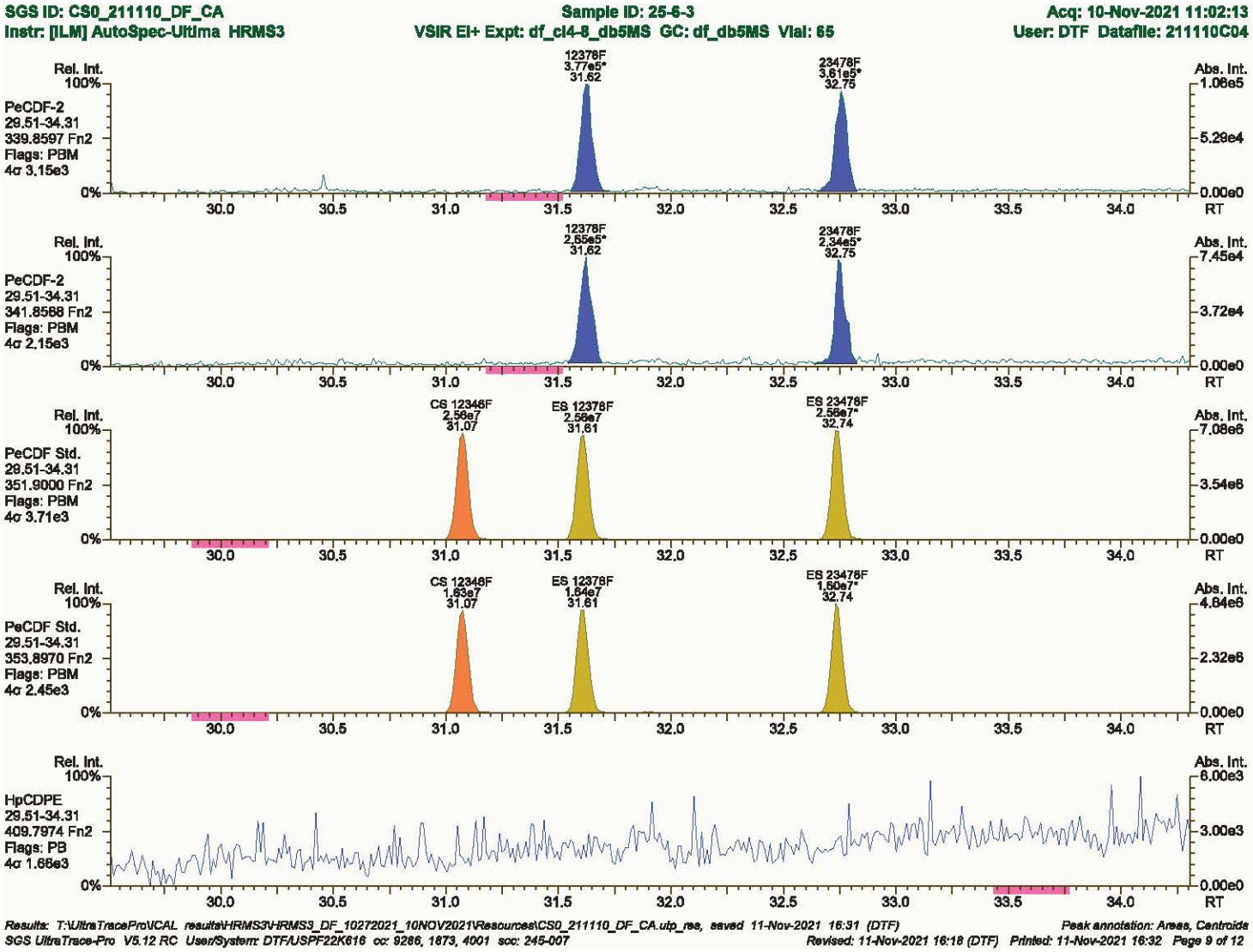

SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
OCDD
2.26e5*
42.83
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
6.82e4
3.41e4
0.00e0
OCDD
2.52e5*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
6.78e4
3.39e4
0.00e0
ES OCDD
1.47e7*
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
4.33e6
2.16e6
0.00e0
ES OCDD
1.61e7*
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
4.72e6
2.36e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.59e7
7.97e6
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
2378F
7.17e4*
26.68
1.95e4
9.75e3
0.00e0
RT
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
2378F
8.11e4*
26.68
1.97e4
9.85e3
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
4.88e6
2.44e6
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
28.66
6.28e6
3.14e6
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
1.41e4
7.07e3
20.0
22.0
24.0
26.0
28.0
0%
100%

SGS ID: CS0_211110_DF_CA | Sample ID: 25-6-3 | Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65 | User: DTF Datafile: 211110C04

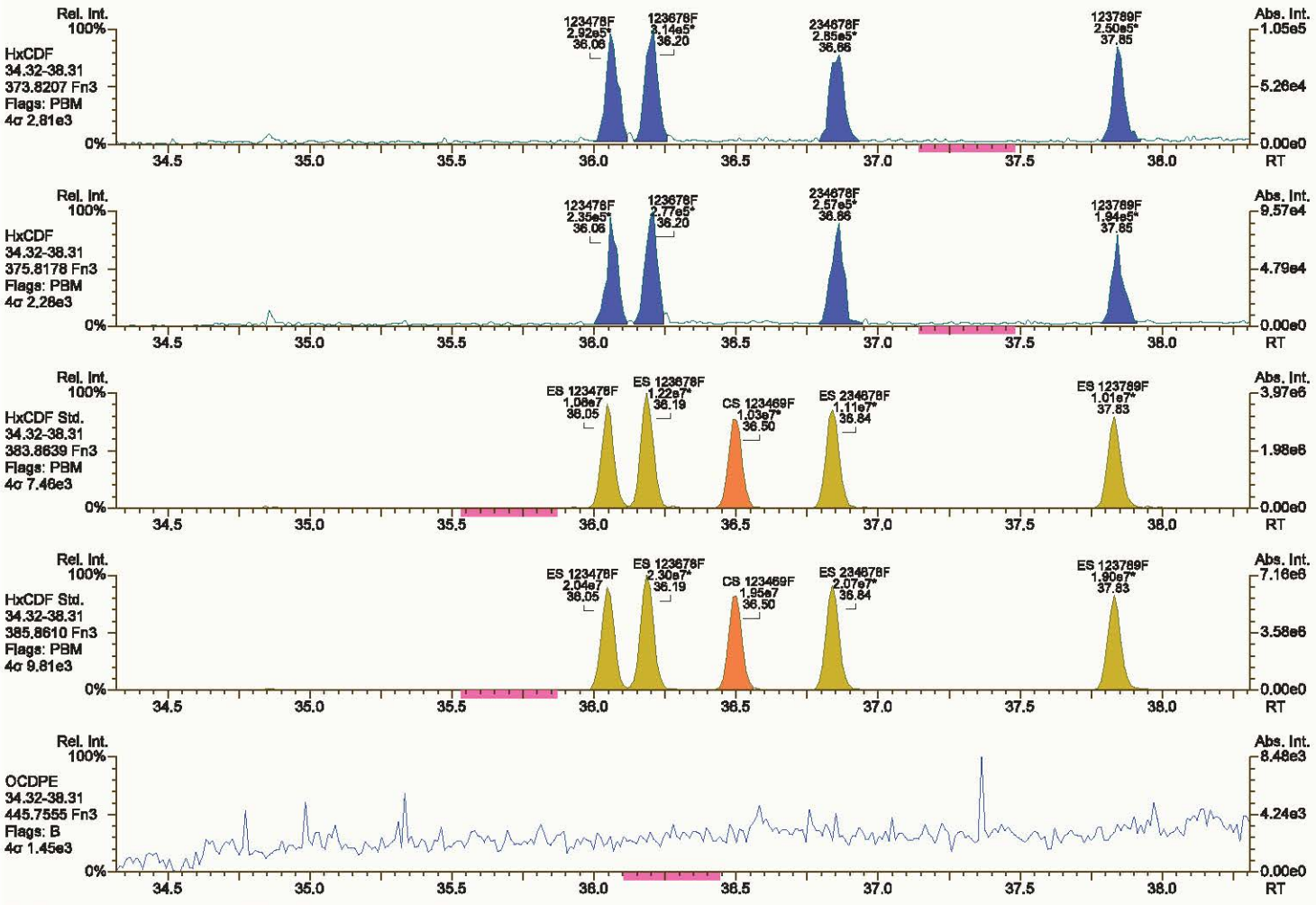


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6412 scc: 245-007 *PKD: 10-Nov-2021 13:30 Printed: 11-Nov-2021 16:32 Page 8 of 12*


SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
12378F
3.77e5*
31.62
23478F
3.81e5*
32.75
1.06e5
5.29e4
0.00e0
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
7.45e4
3.72e4
0.00e0
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
7.08e6
3.54e6
0.00e0
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
4.64e6
2.32e6
0.00e0
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
6.00e3
3.00e3
0.00e0
100%
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

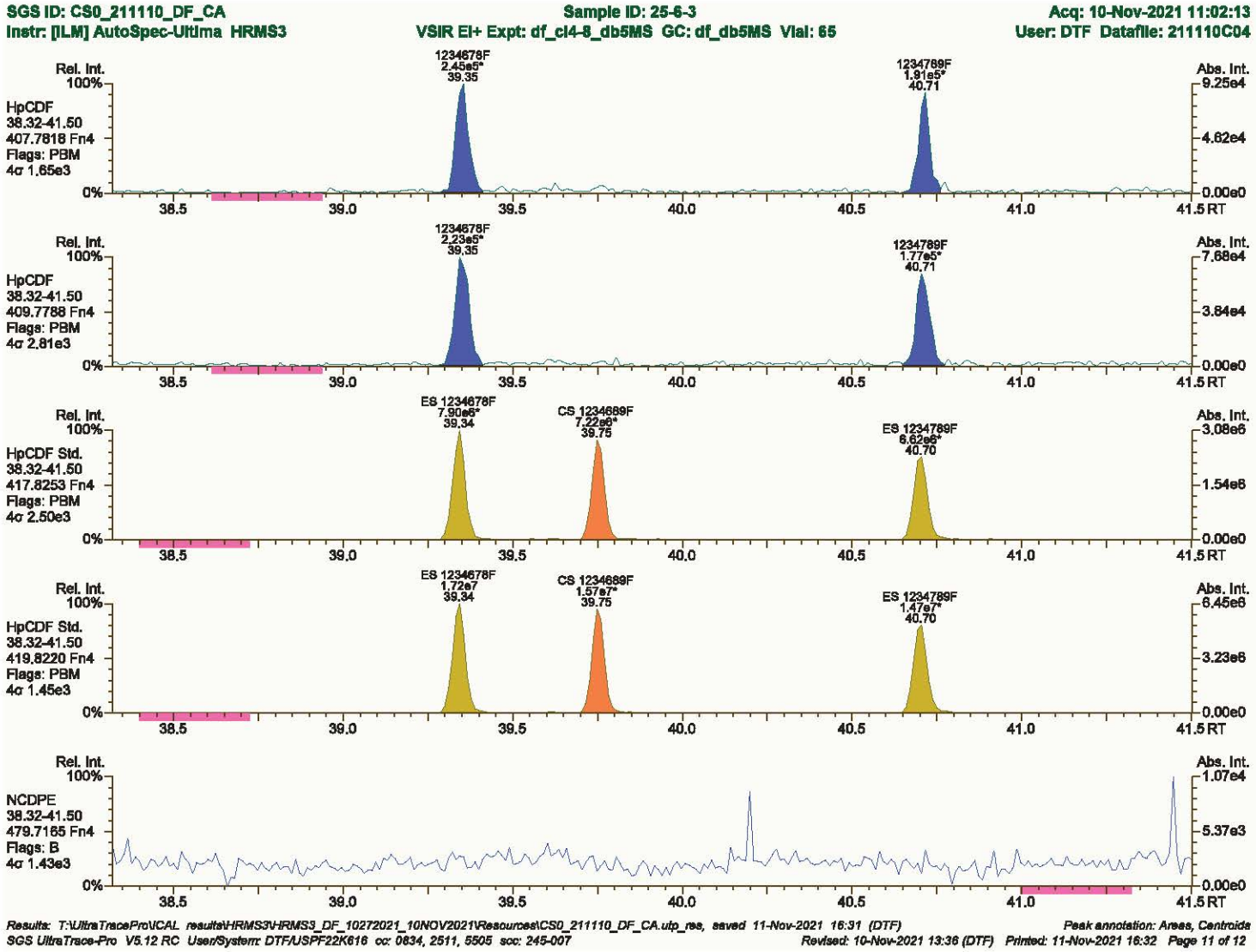
SGS ID: CS0_211110_DF_CA | Sample ID: 25-6-3 | Acq: 10-Nov-2021 11:02:13

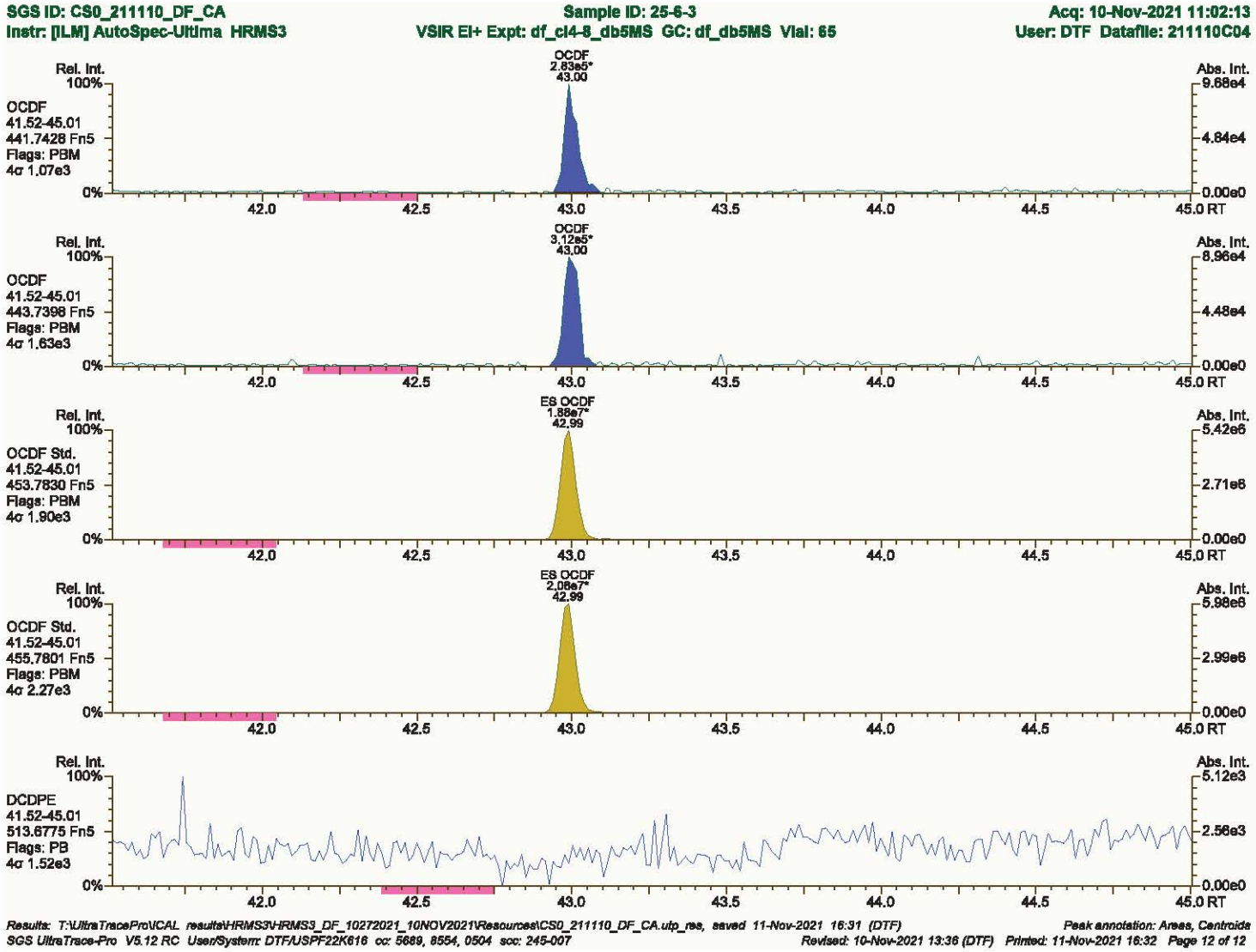
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65 | User: DTF Datafile: 211110C04



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 5279, 2751, 6411 scc: 245-007 *Revised: 11-Nov-2021 16:20 (DTF) Printed: 11-Nov-2021 16:32 Page 10 of 12*


SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
9.25e4
4.62e4
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
7.68e4
3.84e4
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
3.08e6
1.54e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
6.45e6
3.23e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
1.07e4
5.37e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 0834, 2511, 5505 scc: 245-007
Revised: 10-Nov-2021 13:36 (DTF) Printed: 11-Nov-2021 16:32 Page 11 of 12

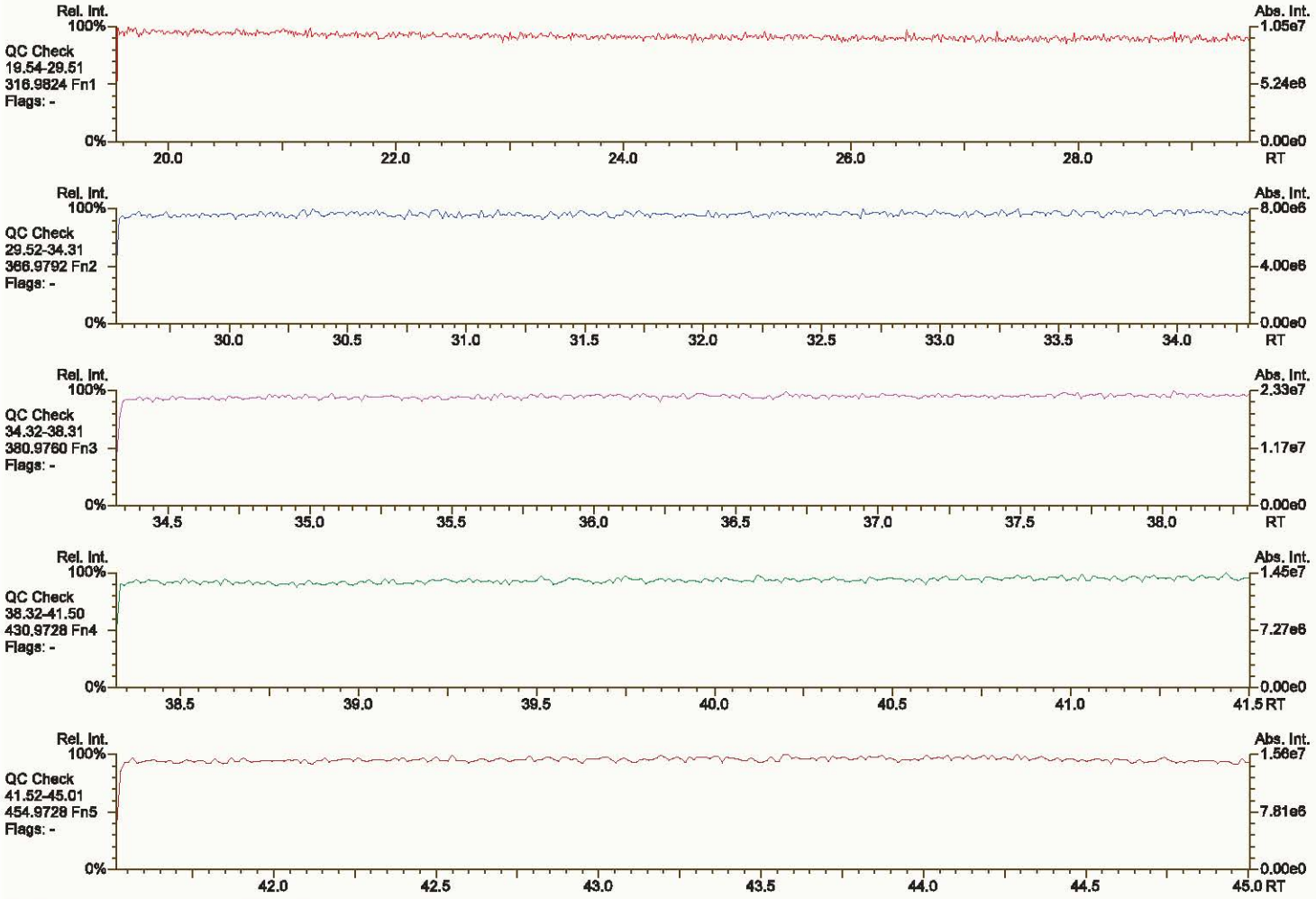

SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
OCDF
2.83e5*
43.00
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.07e3
9.68e4
4.84e4
0.00e0
OCDF
3.12e5*
43.00
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.63e3
8.96e4
4.48e4
0.00e0
ES OCDF
1.88e7*
42.99
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.90e3
5.42e6
2.71e6
0.00e0
ES OCDF
2.08e7*
42.99
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.27e3
5.98e6
2.99e6
0.00e0
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.52e3
5.12e3
2.56e3
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 5689, 8554, 0504 scc: 245-007
Revised: 10-Nov-2021 13:36 (DTF) Printed: 11-Nov-2021 16:32 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 18:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 18:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

SGS ID: CS1_211110_DF_CA | Sample ID: 25-6-2 | Acq: 10-Nov-2021 11:48:34

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 66 | User: DTF Datafile: 211110C05

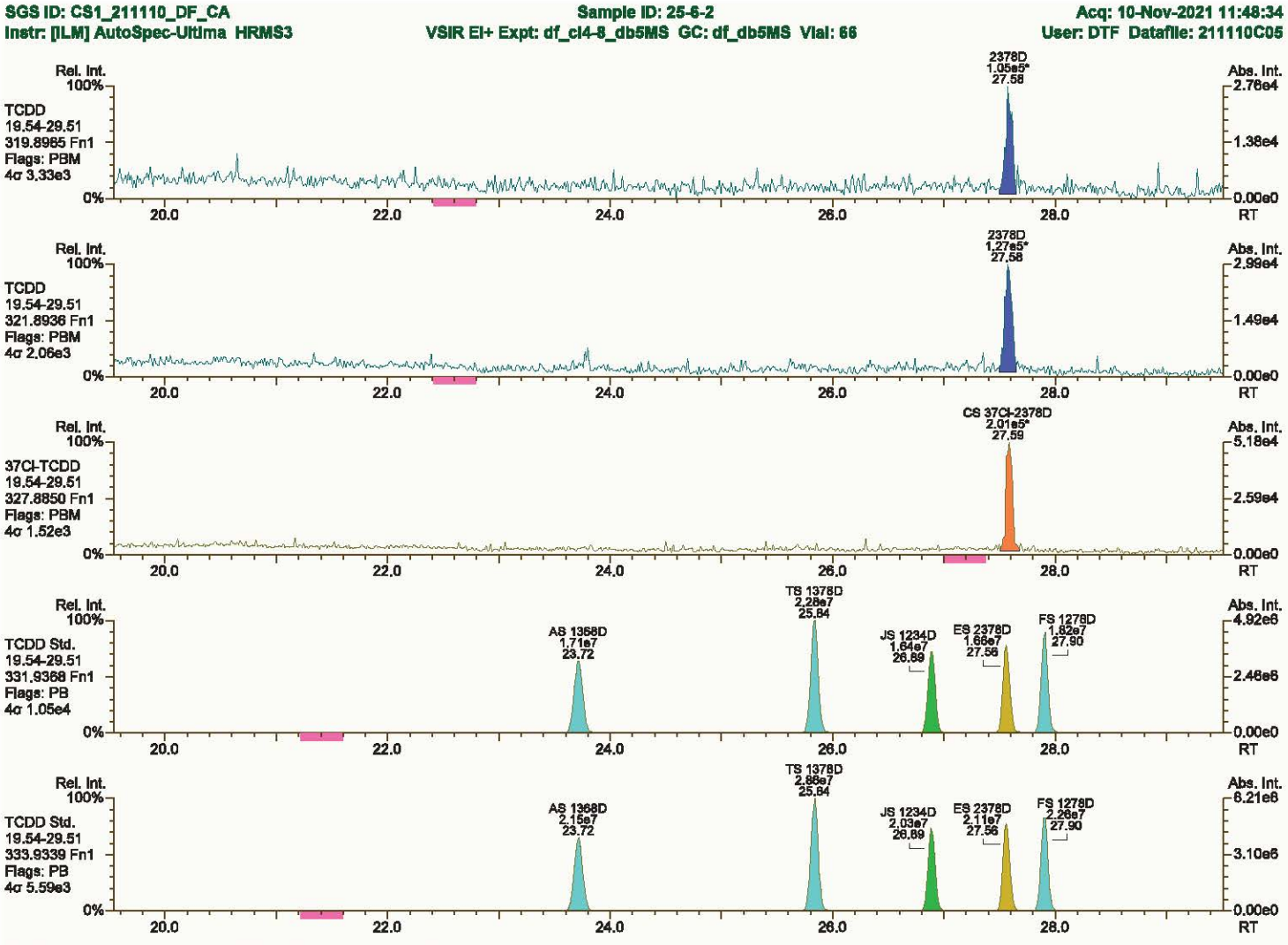


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 RC UserSystem: DTF/USPF22K616 scc: 419-111

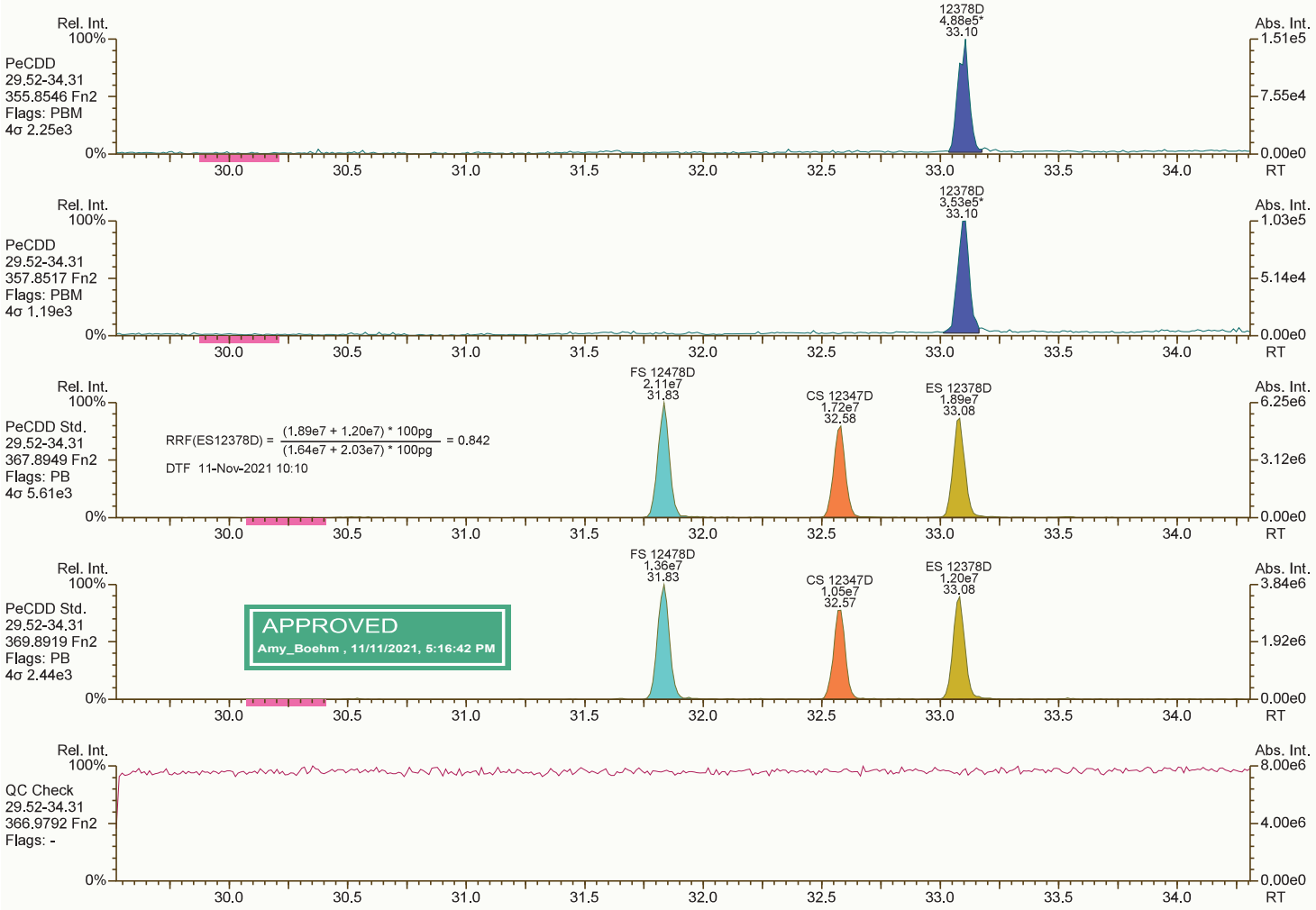
PKD: n/a Printed: 11-Nov-2021 10:40 Page 1 of 12


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 3.33e3
2378D
1.05e5*
27.58
Abs. Int.
2.76e4
1.38e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.06e3
2378D
1.27e5*
27.58
2.99e4
1.49e4
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.52e3
CS 37Cl-2378D
2.01e5*
27.59
5.18e4
2.59e4
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 1.05e4
AS 1368D
1.71e7
23.72
TS 1378D
2.28e7
25.84
JS 1234D
1.64e7
26.89
ES 2378D
1.66e7
27.56
FS 1278D
1.82e7
27.90
4.92e6
2.46e6
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 5.59e3
AS 1368D
2.15e7
23.72
TS 1378D
2.86e7
25.84
JS 1234D
2.03e7
26.89
ES 2378D
2.11e7
27.56
FS 1278D
2.26e7
27.90
6.21e6
3.10e6

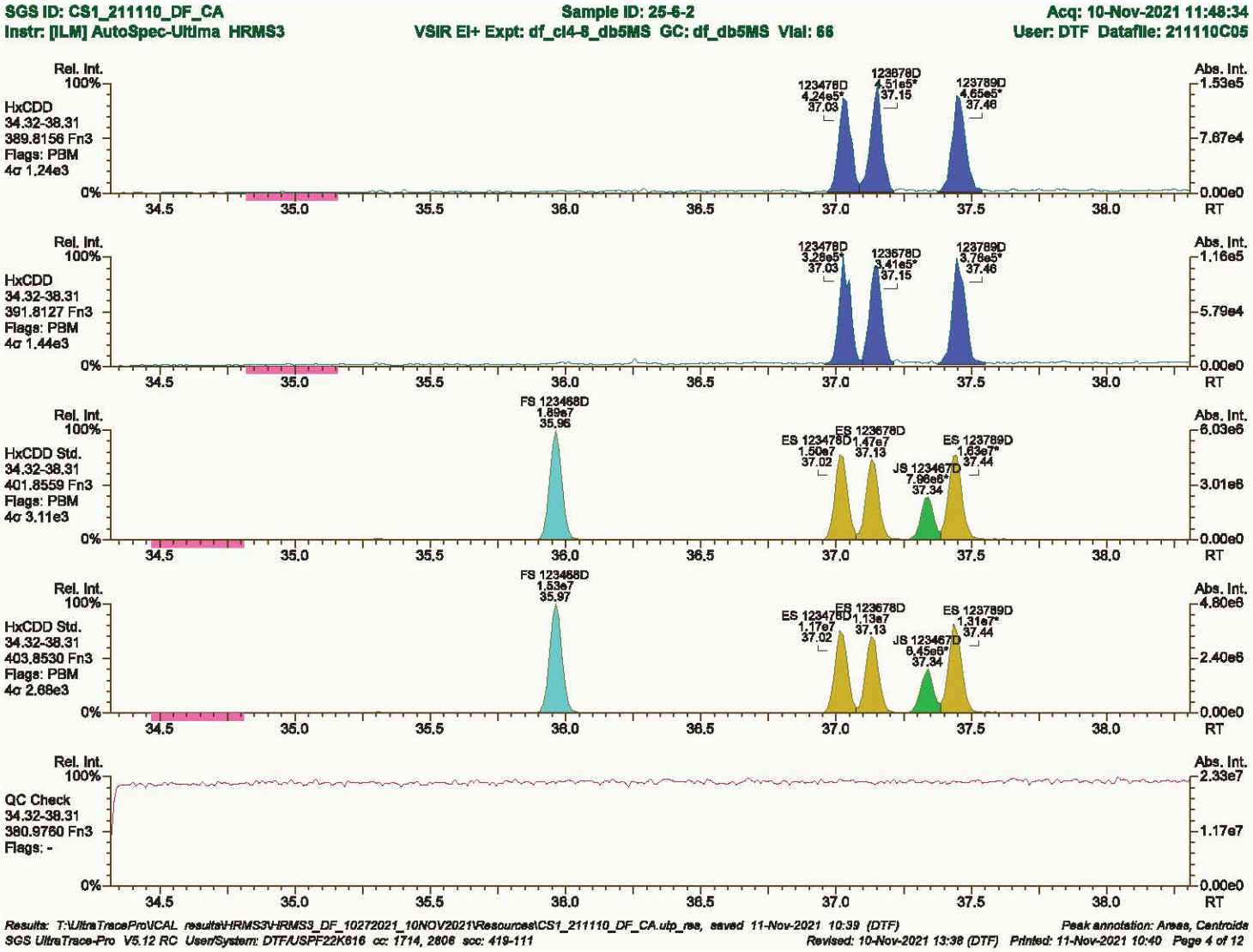
SGS ID: CS1_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

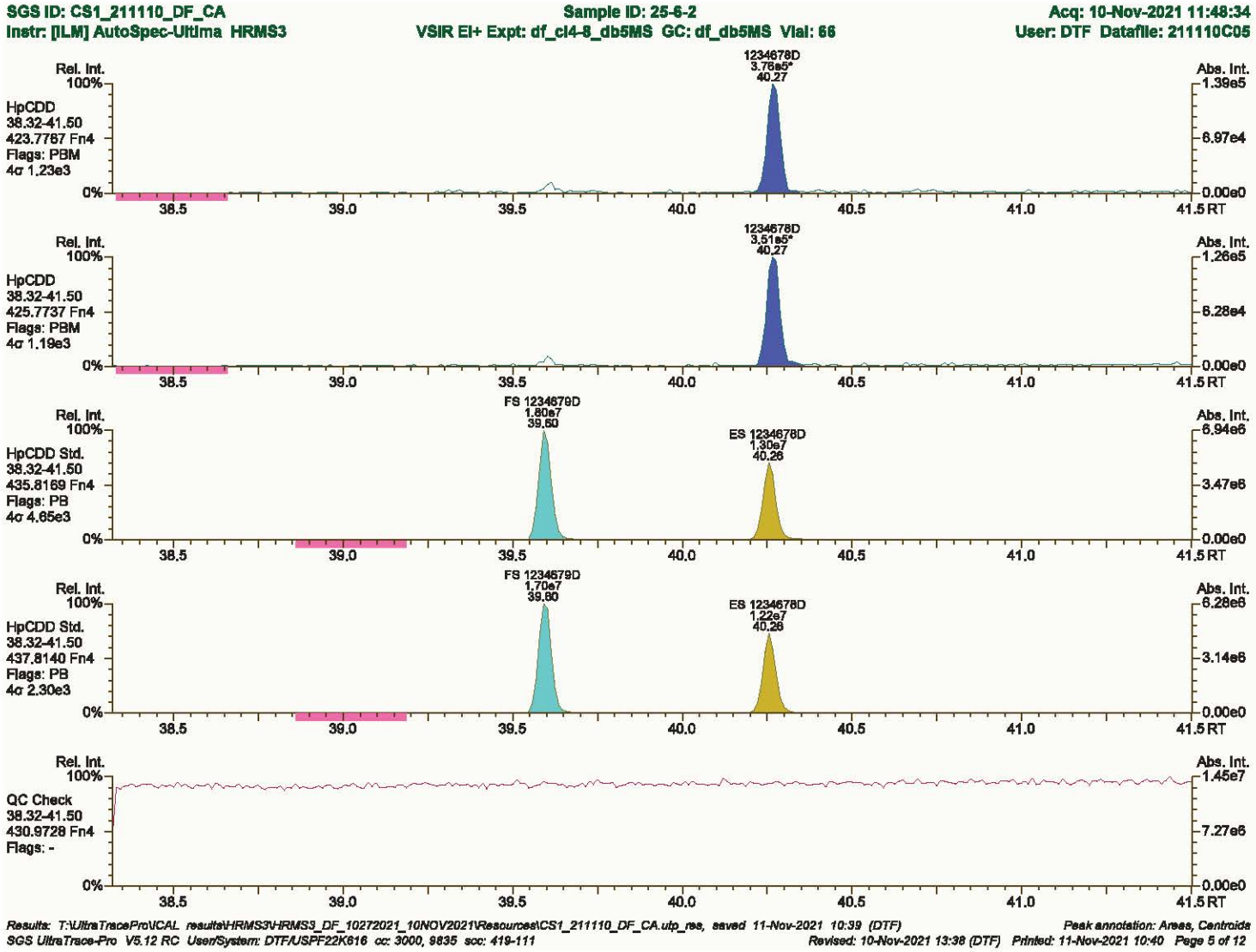
Sample ID: 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66

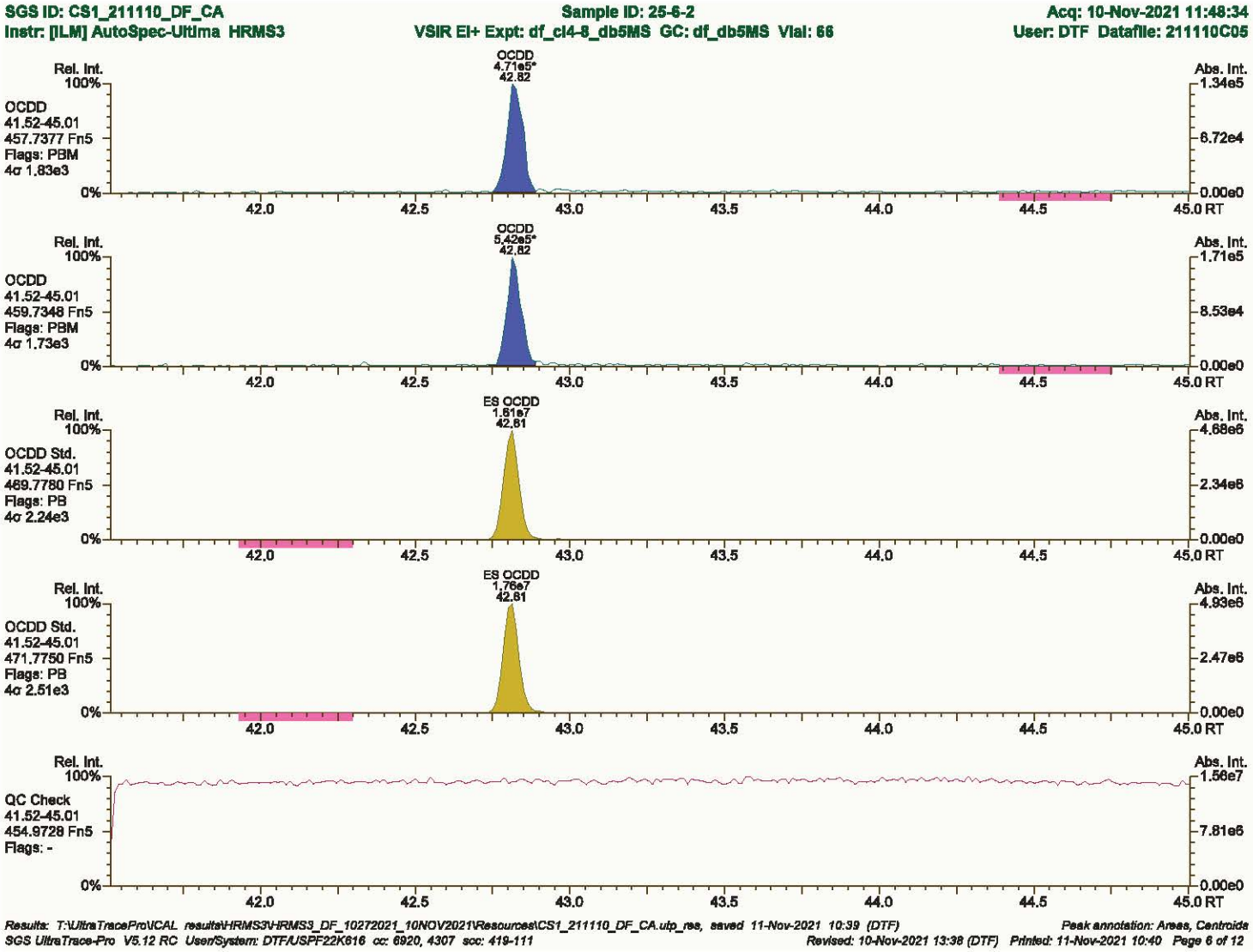
Acq: 10-Nov-2021 11:48:34
User: DTF Datafile: 211110C05

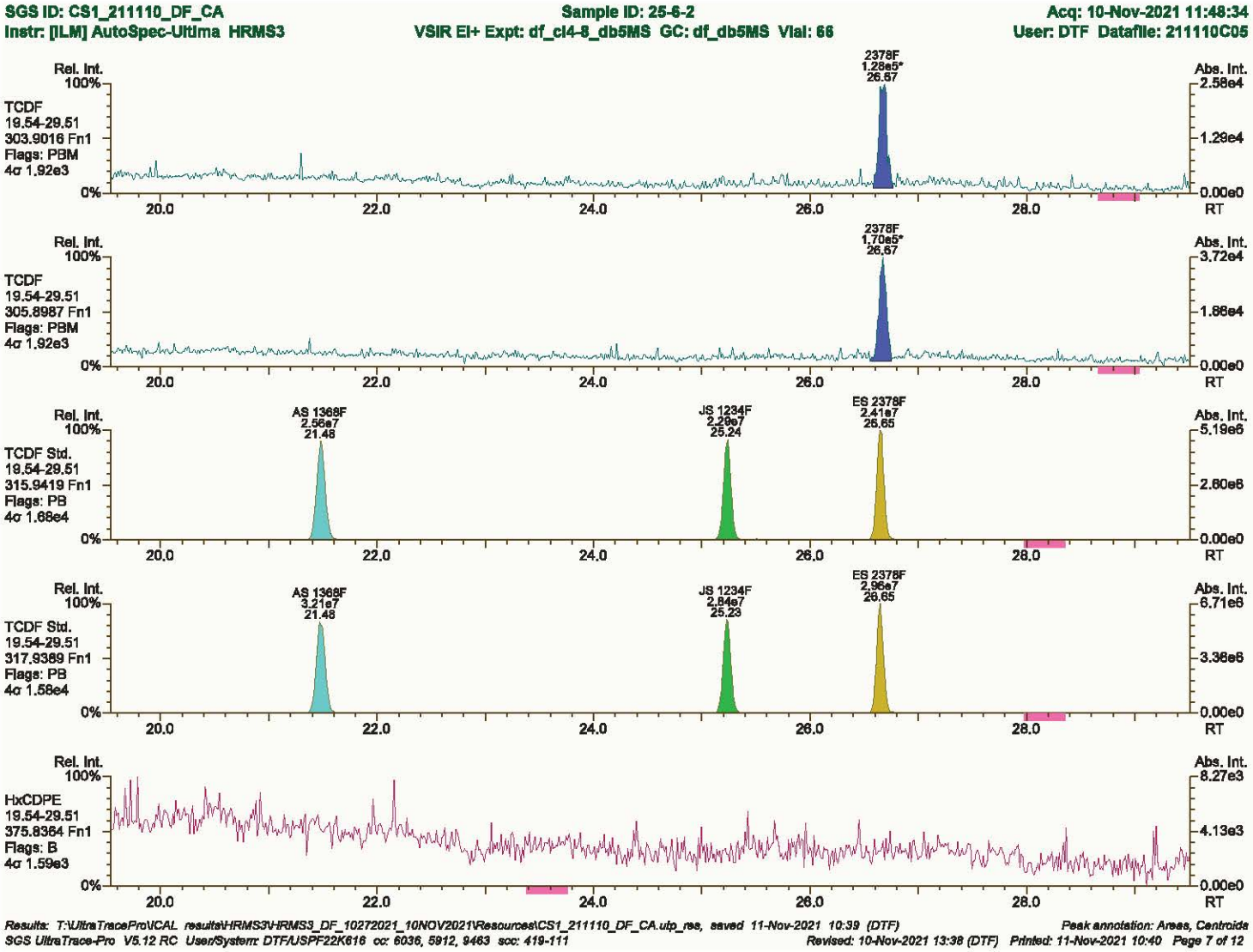


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0571, 3921 scc: 419-111 *Revised: 10-Nov-2021 13:37 (DTF) Printed: 11-Nov-2021 10:40 Page 3 of 12*


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D 4.24e5* 37.03
123678D 4.51e5* 37.15
123789D 4.65e5* 37.46
1.53e5
7.67e4
0.00e0
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D 3.28e5* 37.03
123678D 3.41e5* 37.15
123789D 3.78e5* 37.46
1.16e5
5.79e4
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D 1.89e7 35.96
ES 123478D 1.50e7 37.02
ES 123678D 1.47e7 37.13
JS 123467D 7.96e6* 37.34
ES 123789D 1.63e7* 37.44
6.03e6
3.01e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D 1.53e7 35.97
ES 123478D 1.17e7 37.02
ES 123678D 1.13e7 37.13
JS 123467D 6.45e6* 37.34
ES 123789D 1.31e7* 37.44
4.80e6
2.40e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.33e7
1.17e7
0%
100%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1714, 2806 scc: 419-111
Revised: 10-Nov-2021 13:38 (DTF) Printed: 11-Nov-2021 10:40 Page 4 of 12


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
Abs. Int.
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
1234678D
3.76e5*
40.27
1.39e5
6.97e4
0.00e0
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
1234678D
3.51e5*
40.27
1.26e5
6.28e4
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
6.94e6
3.47e6
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
6.28e6
3.14e6
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.45e7
7.27e6
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3000, 9835 scc: 419-111
Revised: 10-Nov-2021 13:38 (DTF) Printed: 11-Nov-2021 10:40 Page 5 of 12


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
OCDD
4.71e5*
42.82
Rel. Int.
100%
Abs. Int.
1.34e5
6.72e4
0.00e0
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
Abs. Int.
1.71e5
8.53e4
0.00e0
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
Abs. Int.
4.68e6
2.34e6
0.00e0
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
Abs. Int.
4.93e6
2.47e6
0.00e0
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
Abs. Int.
1.56e7
7.81e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6920, 4307 scc: 419-111
Revised: 10-Nov-2021 13:38 (DTF) Printed: 11-Nov-2021 10:40 Page 6 of 12

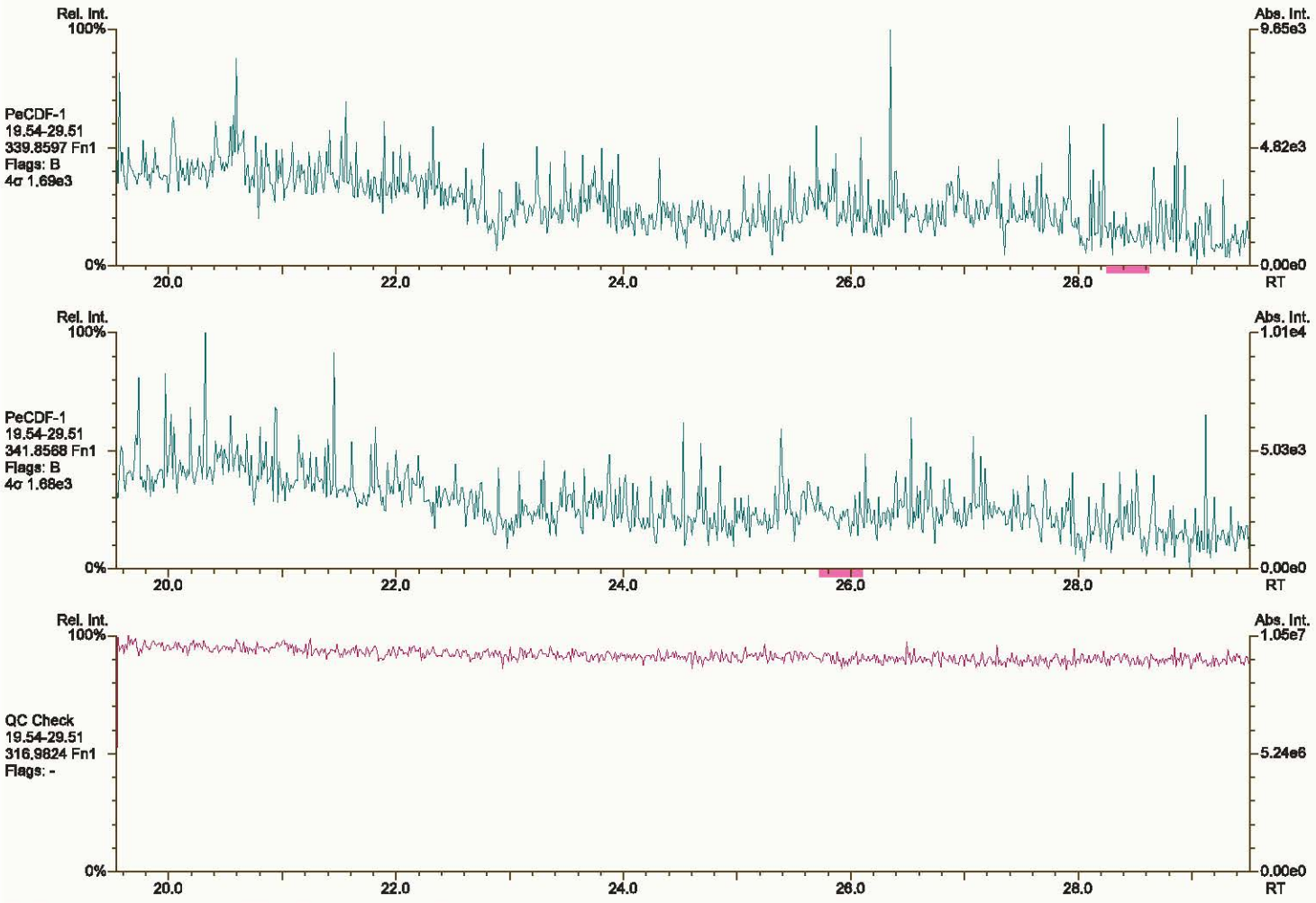


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6036, 5912, 9463 scc: 419-111 *Revised: 10-Nov-2021 13:38 (DTF)* *Printed: 11-Nov-2021 10:40* *Page 7 of 12*

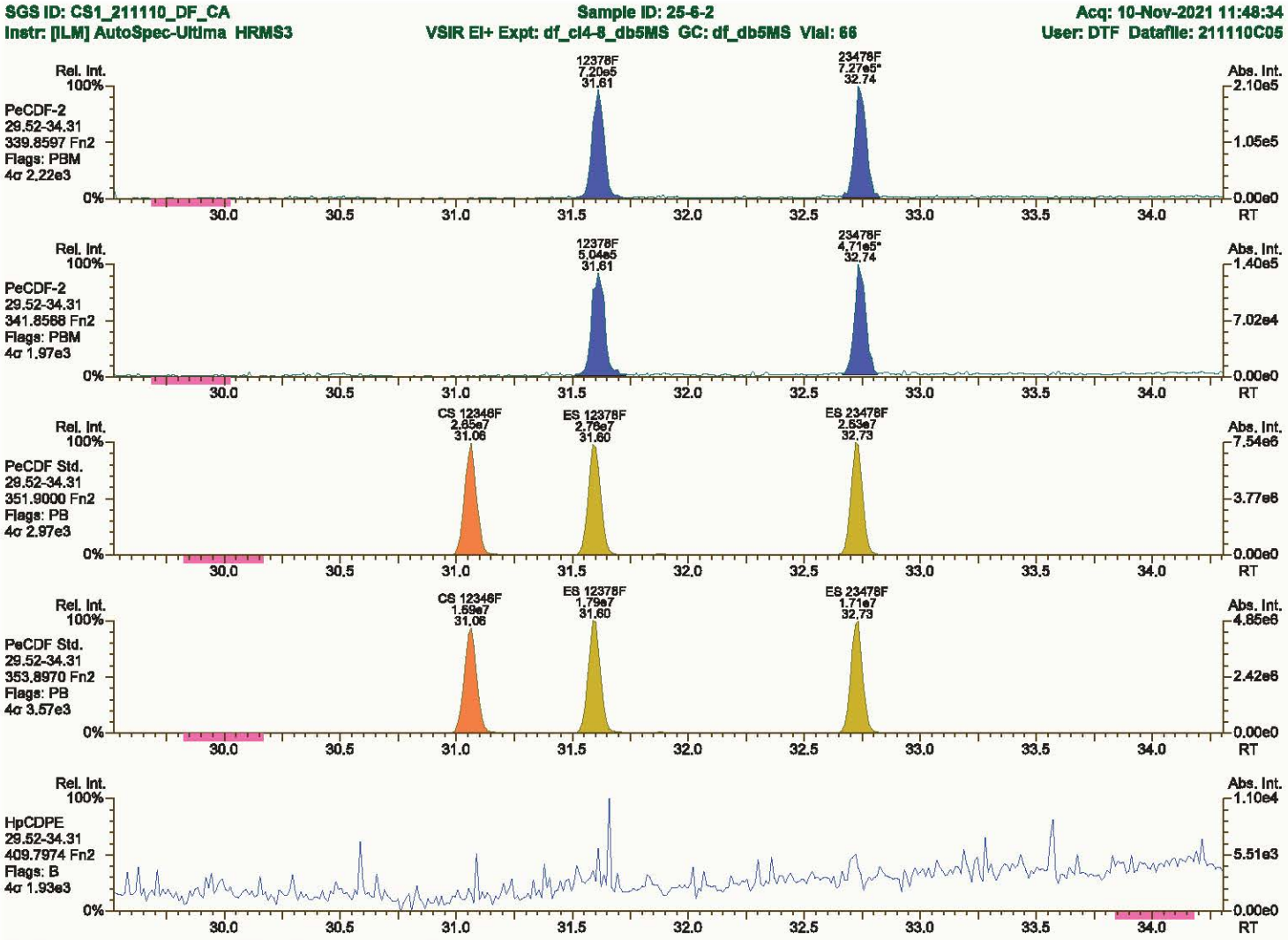
SGS ID: CS1_211110_DF_CA | Sample ID: 25-6-2 | Acq: 10-Nov-2021 11:48:34

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66 | User: DTF Datafile: 211110C05

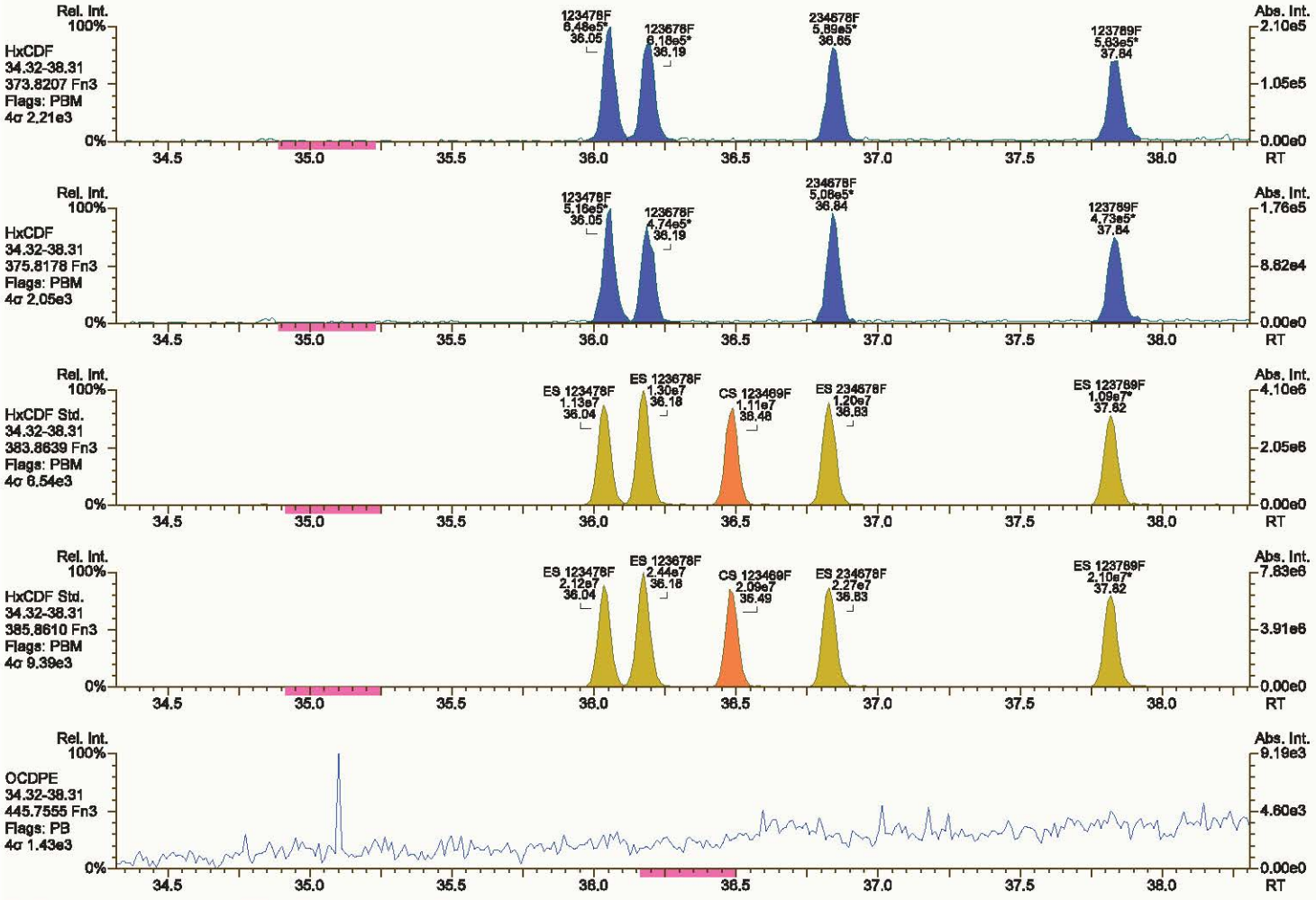


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

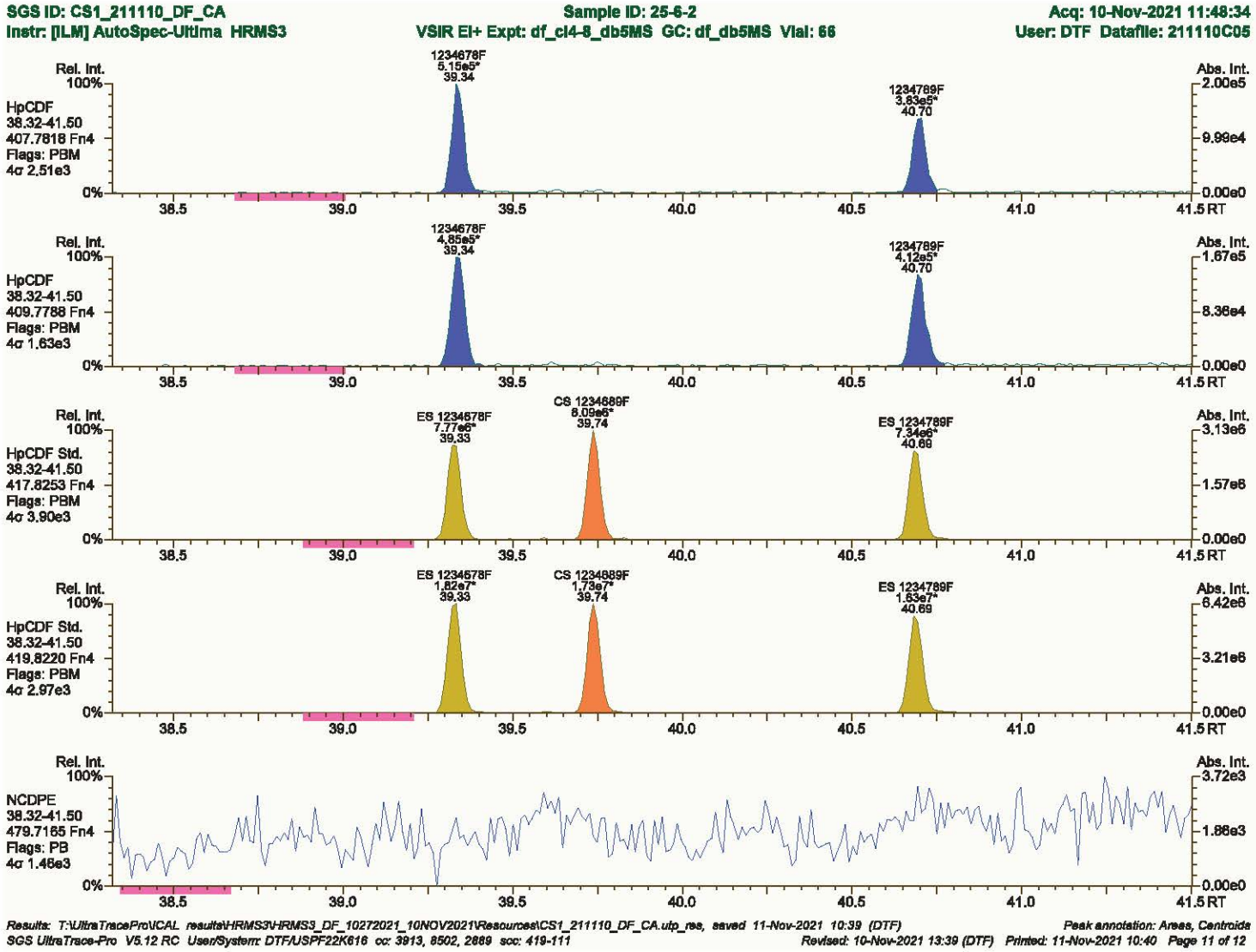
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2313 scc: 419-111 *Revised: 10-Nov-2021 13:36 (DTF) Printed: 11-Nov-2021 10:40 Page 8 of 12*


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
2.10e5
1.05e5
0.00e0
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
1.40e5
7.02e4
0.00e0
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.53e7
32.73
7.54e6
3.77e6
0.00e0
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
CS 12346F
1.59e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
4.85e6
2.42e6
0.00e0
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
1.10e4
5.51e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

SGS ID: CS1_211110_DF_CA | Sample ID: 25-6-2 | Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66 | User: DTF Datafile: 211110C05

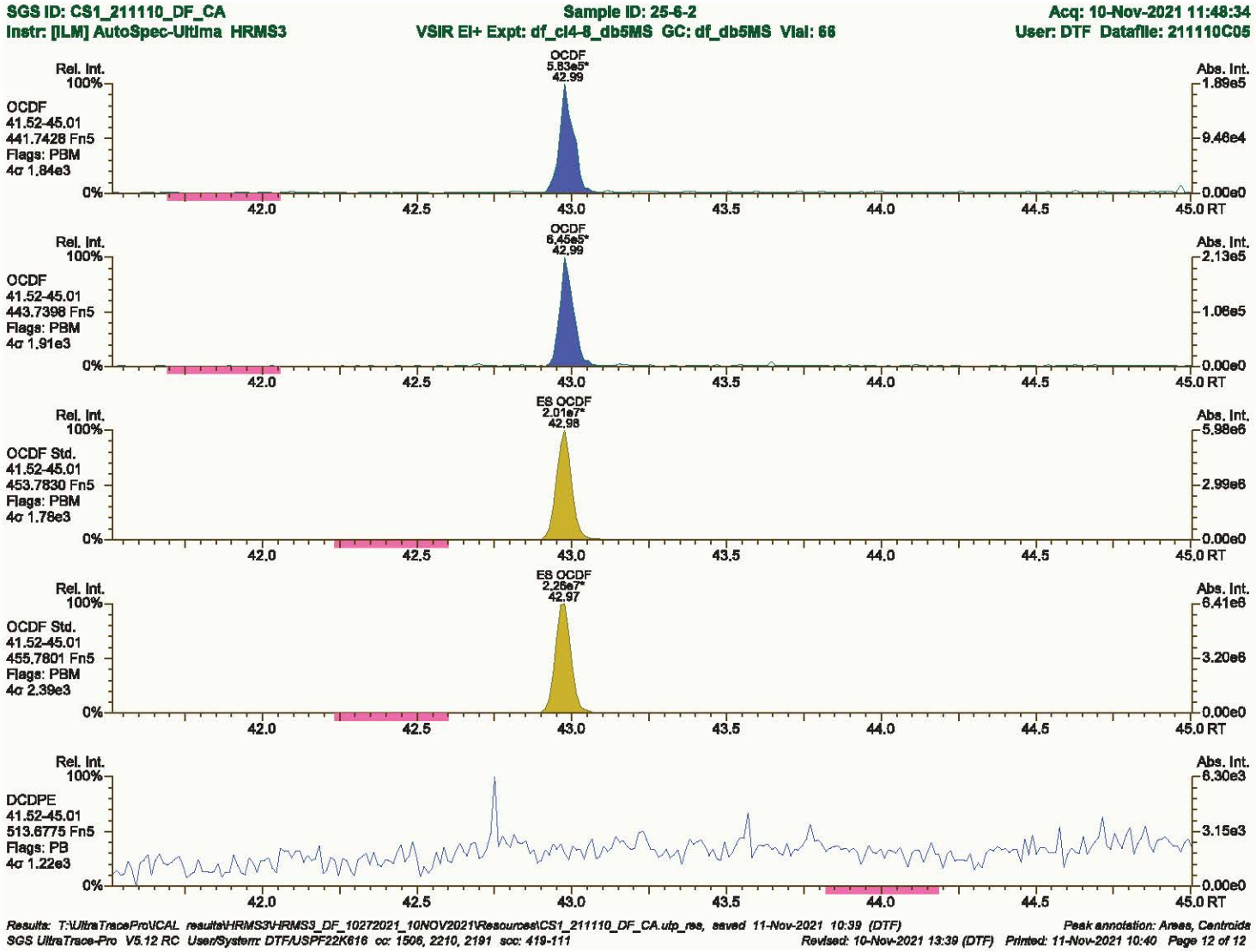


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 7945, 0639, 9686 scc: 419-111 *Revised: 10-Nov-2021 13:39 (DTF) Printed: 11-Nov-2021 10:40 Page 10 of 12*



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3913, 8502, 2889 scc: 419-111 *Revised: 10-Nov-2021 13:39 (DTF) Printed: 11-Nov-2021 10:40 Page 11 of 12*

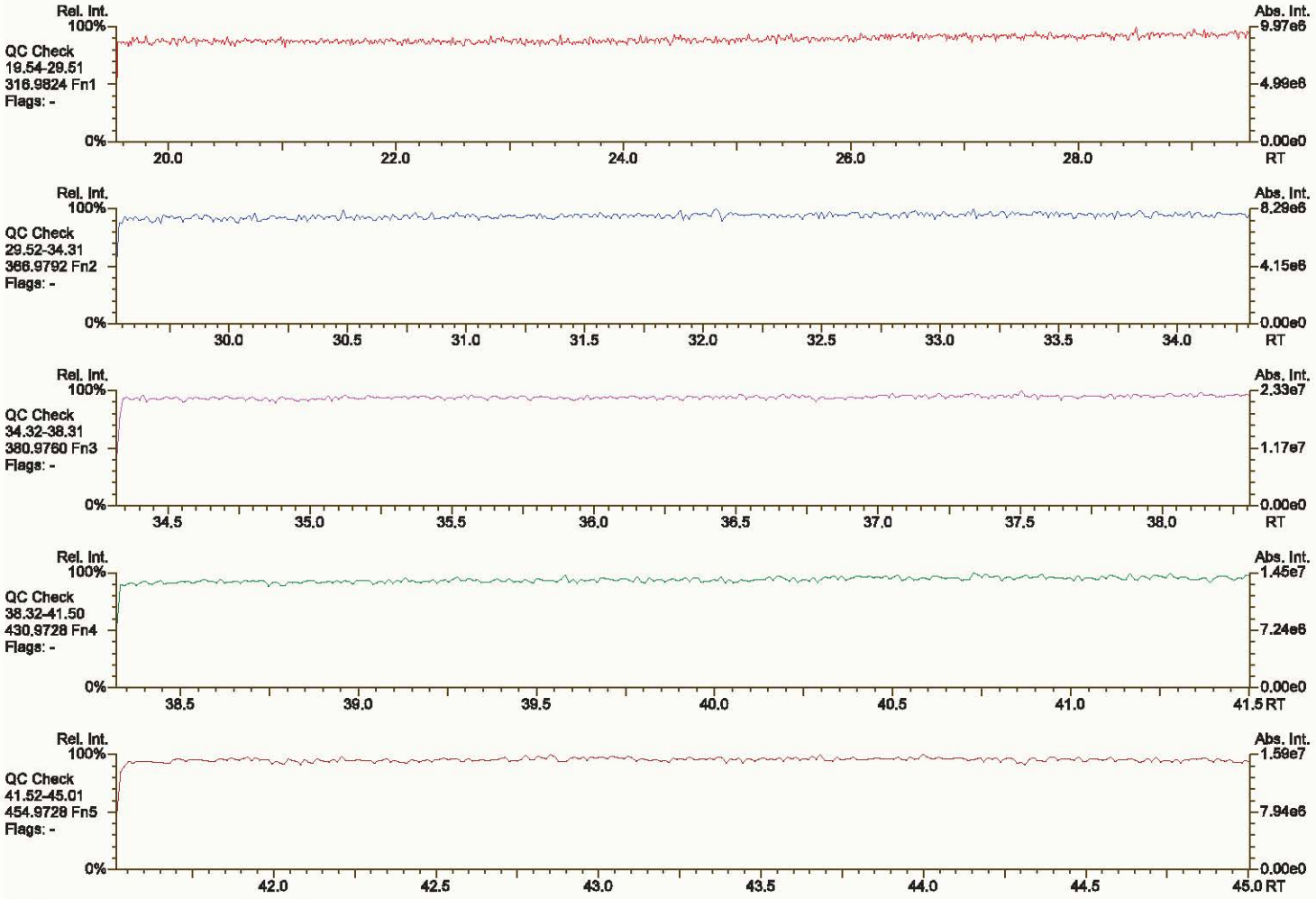

SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
Abs. Int.
OCDF
5.83e5*
42.99
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
1.89e5
9.46e4
0.00e0
OCDF
6.45e5*
42.99
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
2.13e5
1.06e5
ES OCDF
2.01e7*
42.98
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
5.98e6
2.99e6
ES OCDF
2.25e7*
42.97
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
6.41e6
3.20e6
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
6.30e3
3.15e3
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 12:34 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS2_211110_DF_CA		UTP: 11-Nov-2021 18:22:21 DTF				Checkcode: 385-758-WQN	
Sample ID: 25-6-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C06	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 12:34 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS2_211110_DF_CA		UTP: 11-Nov-2021 18:22:21 DTF				Checkcode: 385-758-WQN	
Sample ID: 25-6-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C06	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%

SGS ID: CS2_211110_DF_CA | Sample ID: 25-6-1 | Acq: 10-Nov-2021 12:34:54

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67 | User: DTF Datafile: 211110C06

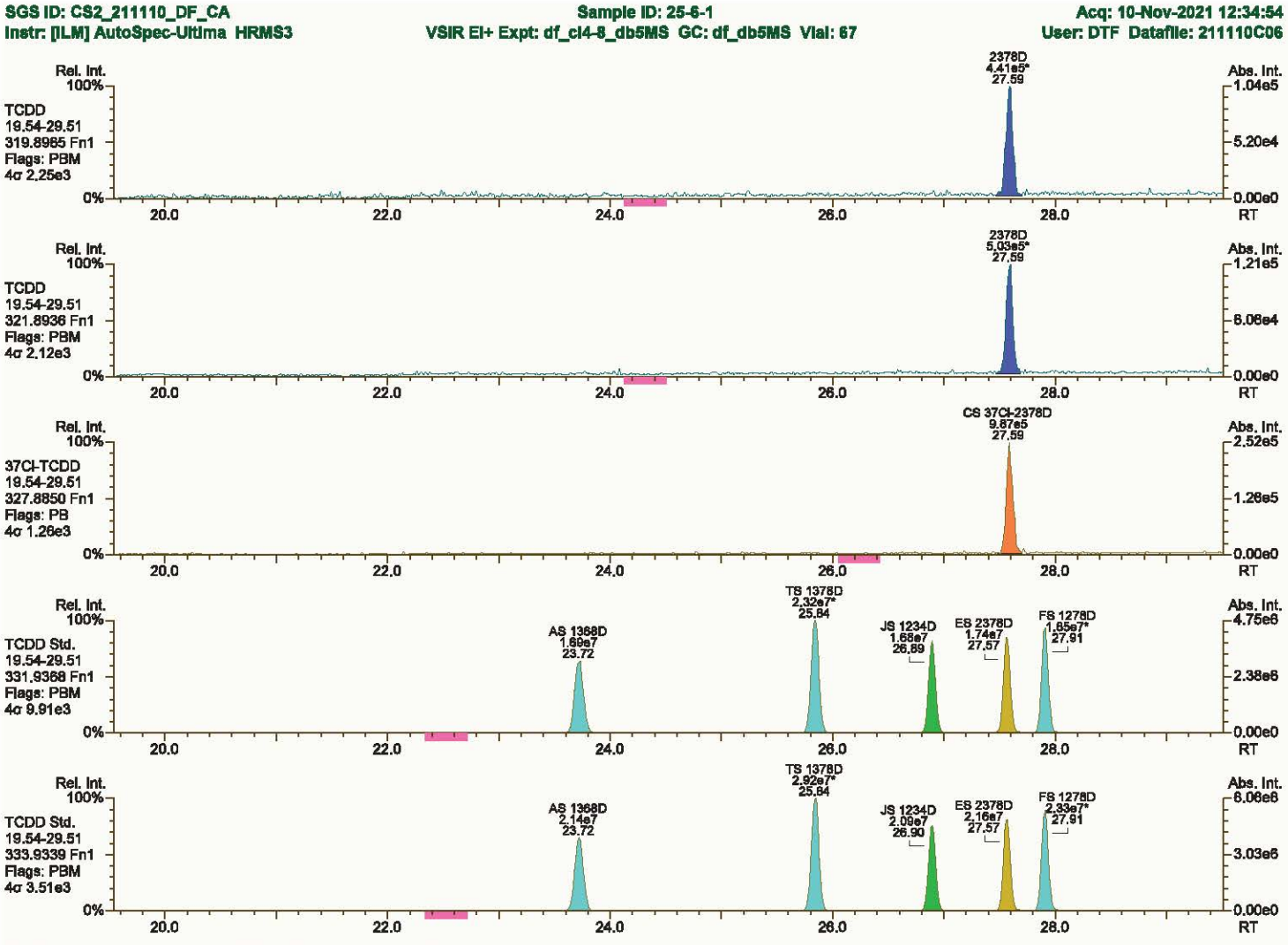


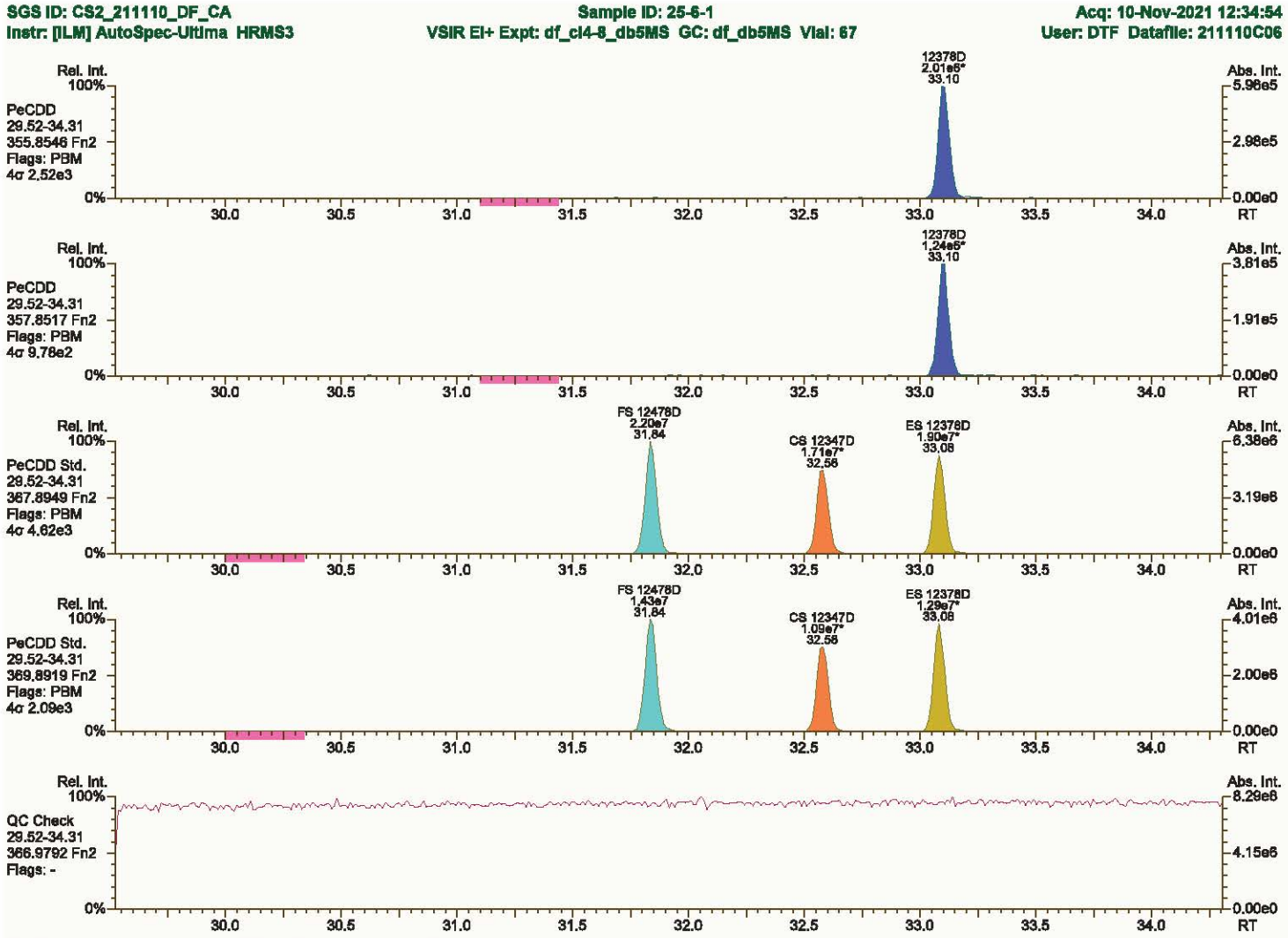
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 RC UserSystem: DTF/USPF22K616 scc: 385-756

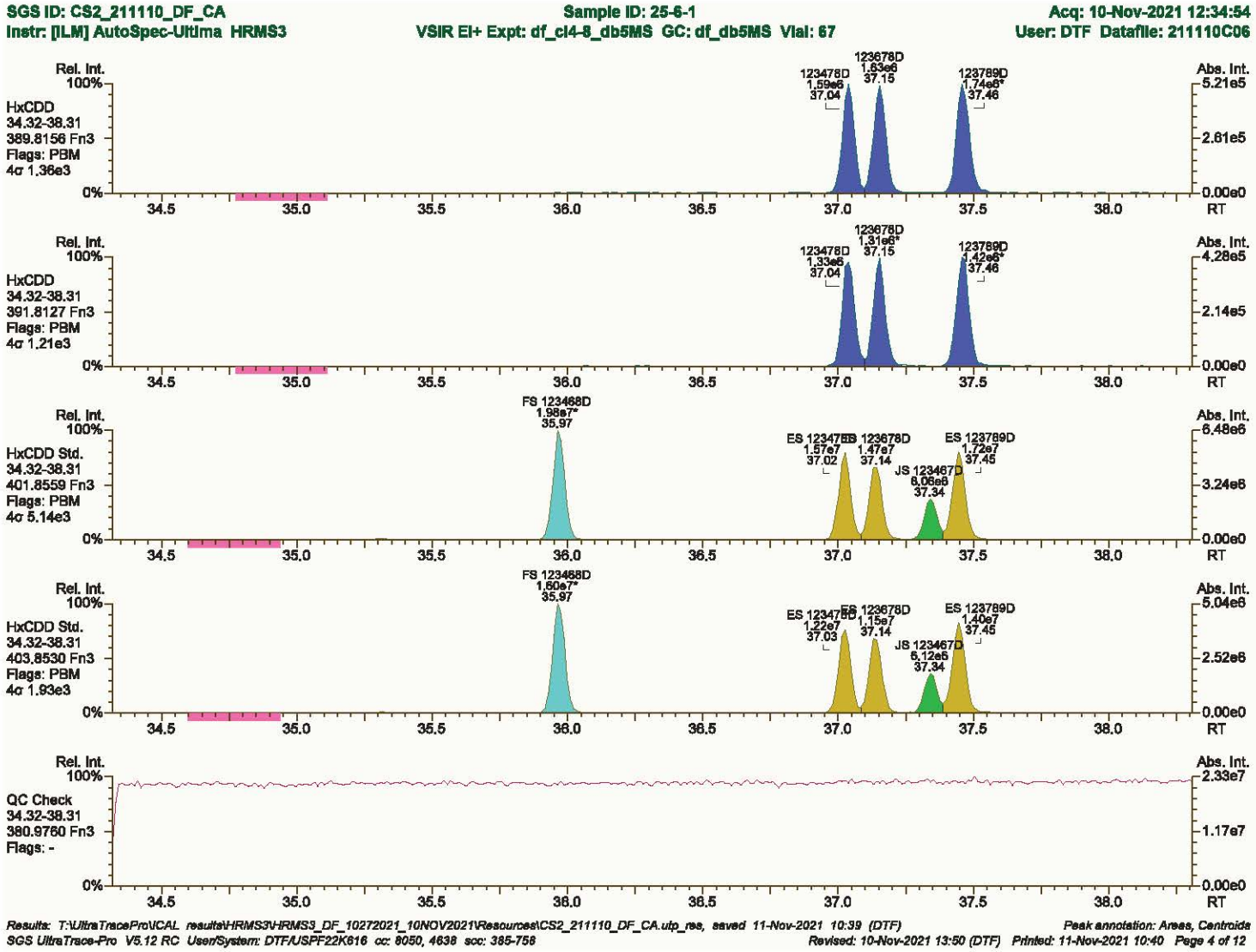
PKD: n/a Printed: 11-Nov-2021 10:40 Page 1 of 12

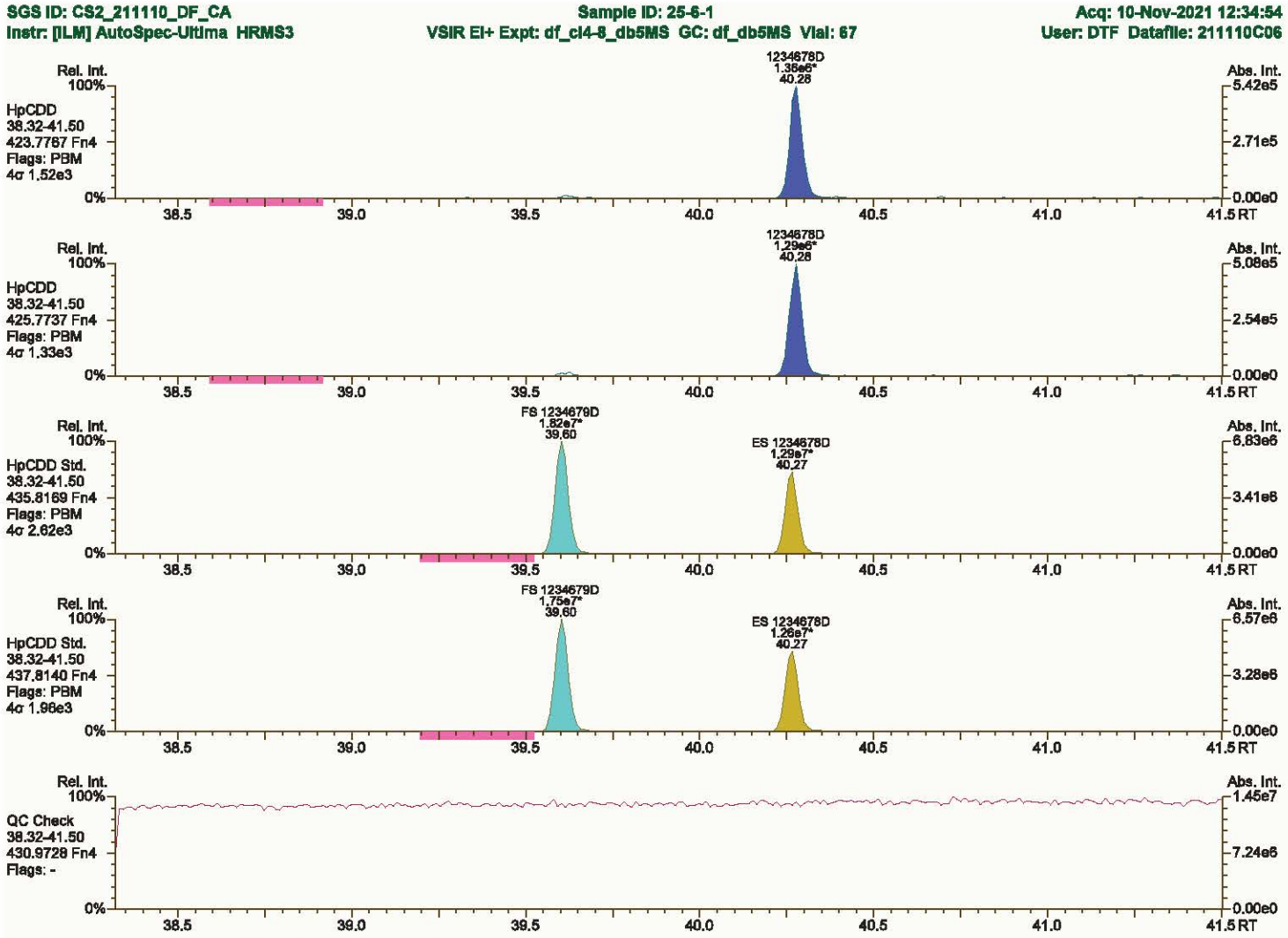

SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
2378D
4.41e5*
27.59
1.04e5
5.20e4
0.00e0
RT
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
2378D
5.03e5*
27.59
1.21e5
6.06e4
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
CS 37Cl-2378D
9.87e5
27.59
2.52e5
1.26e5
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
AS 1368D
1.68e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.65e7*
27.91
4.75e6
2.38e6
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
6.06e6
3.03e6
0%
100%
20.0
22.0
24.0
26.0
28.0
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 1584, 4976, 2477 scc: 385-758
Revised: 10-Nov-2021 13:50 (DTF)
Printed: 11-Nov-2021 10:40
Page 2 of 12

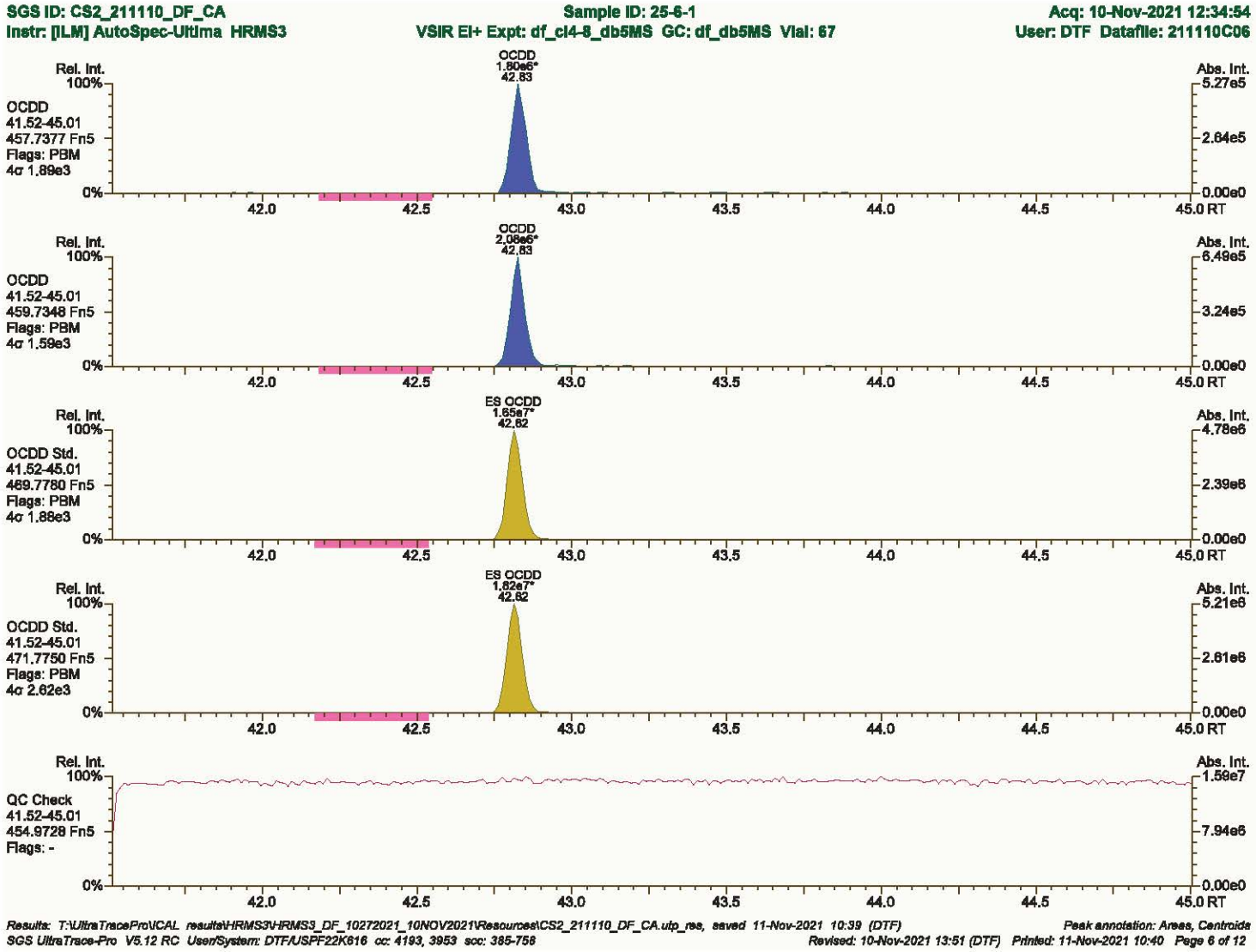


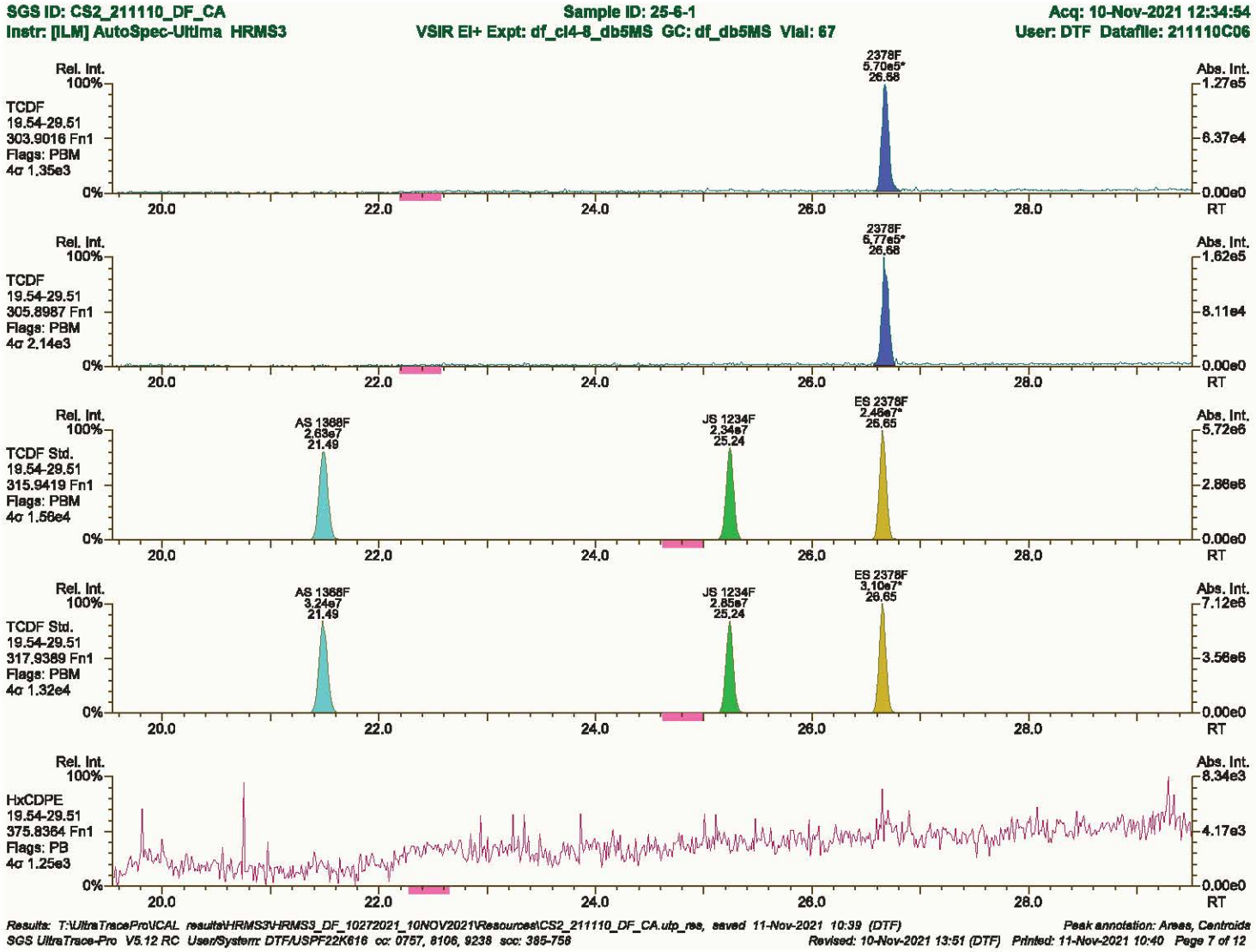
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1554, 8108 scc: 385-758 *Revised: 10-Nov-2021 13:50 (DTF) Printed: 11-Nov-2021 10:40 Page 3 of 12*


SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123678D 1.63e6 37.15
123478D 1.59e6 37.04
123789D 1.74e6* 37.46
5.21e5
2.61e5
0.00e0
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123678D 1.31e6* 37.15
123478D 1.33e6 37.04
123789D 1.42e6* 37.46
4.28e5
2.14e5
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D 1.98e7* 35.97
ES 123478D 1.57e7 37.02
123678D 1.47e7 37.14
JS 123467D 8.06e6 37.34
ES 123789D 1.72e7 37.45
6.48e6
3.24e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D 1.60e7* 35.97
ES 123478D 1.22e7 37.03
ES 123678D 1.15e7 37.14
JS 123467D 6.12e6 37.34
ES 123789D 1.40e7 37.45
5.04e6
2.52e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.33e7
1.17e7
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.35e6*
40.28
5.42e5
2.71e5
0.00e0
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
5.08e5
2.54e5
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
6.83e6
3.41e6
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.98e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
6.57e6
3.28e6
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.45e7
7.24e6
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

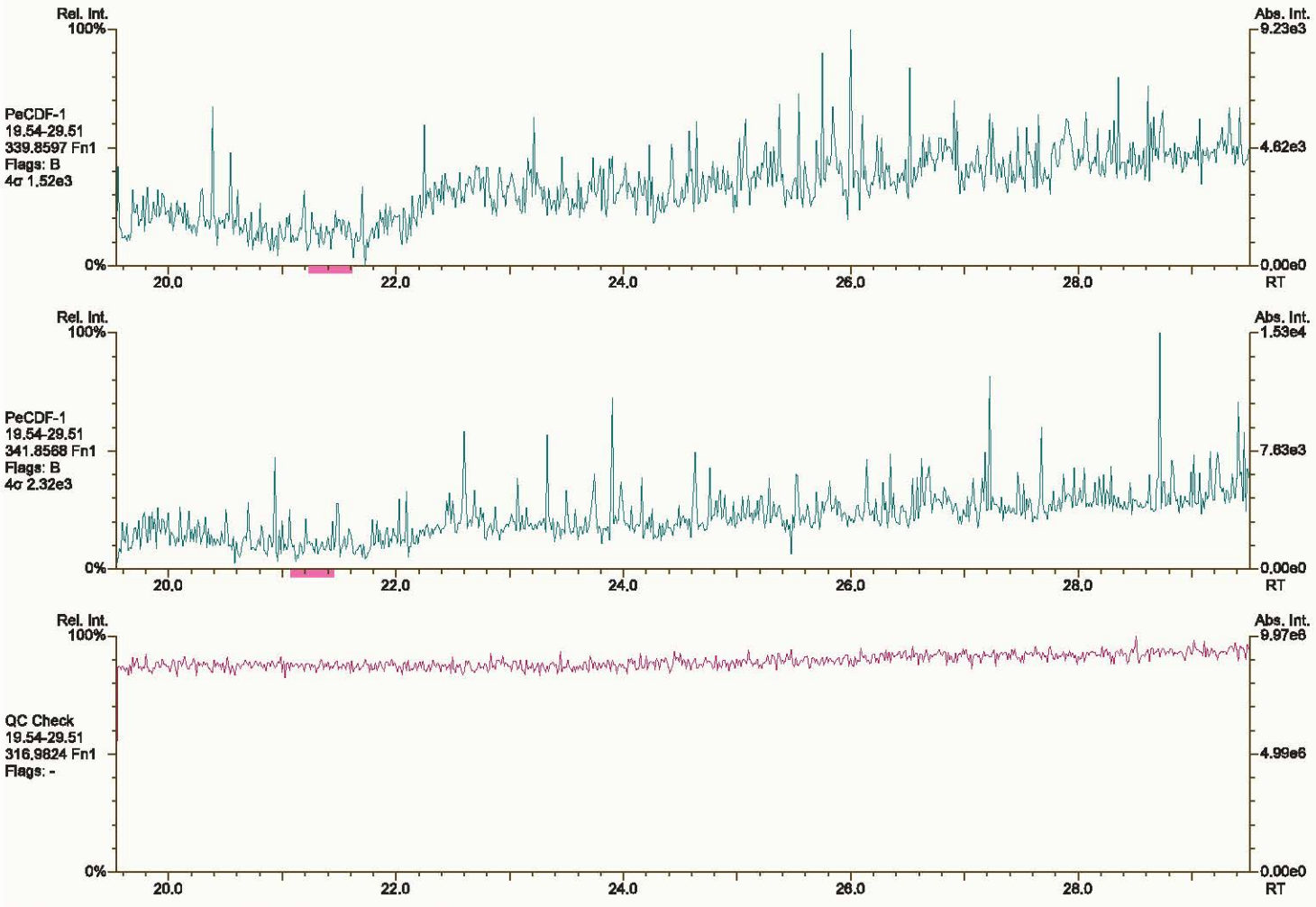

SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
OCDD
1.80e6*
42.83
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
5.27e5
2.64e5
0.00e0
OCDD
2.08e6*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
6.49e5
3.24e5
0.00e0
ES OCDD
1.65e7*
42.82
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
4.78e6
2.39e6
0.00e0
ES OCDD
1.82e7*
42.82
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
5.21e6
2.61e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.59e7
7.94e6
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
2378F
5.70e5*
26.58
1.27e5
6.37e4
0.00e0
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
2378F
5.77e5*
26.58
1.62e5
8.11e4
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
25.65
5.72e6
2.86e6
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
25.65
7.12e6
3.56e6
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
8.34e3
4.17e3
0%
100%
20.0
22.0
24.0
26.0
28.0
RT

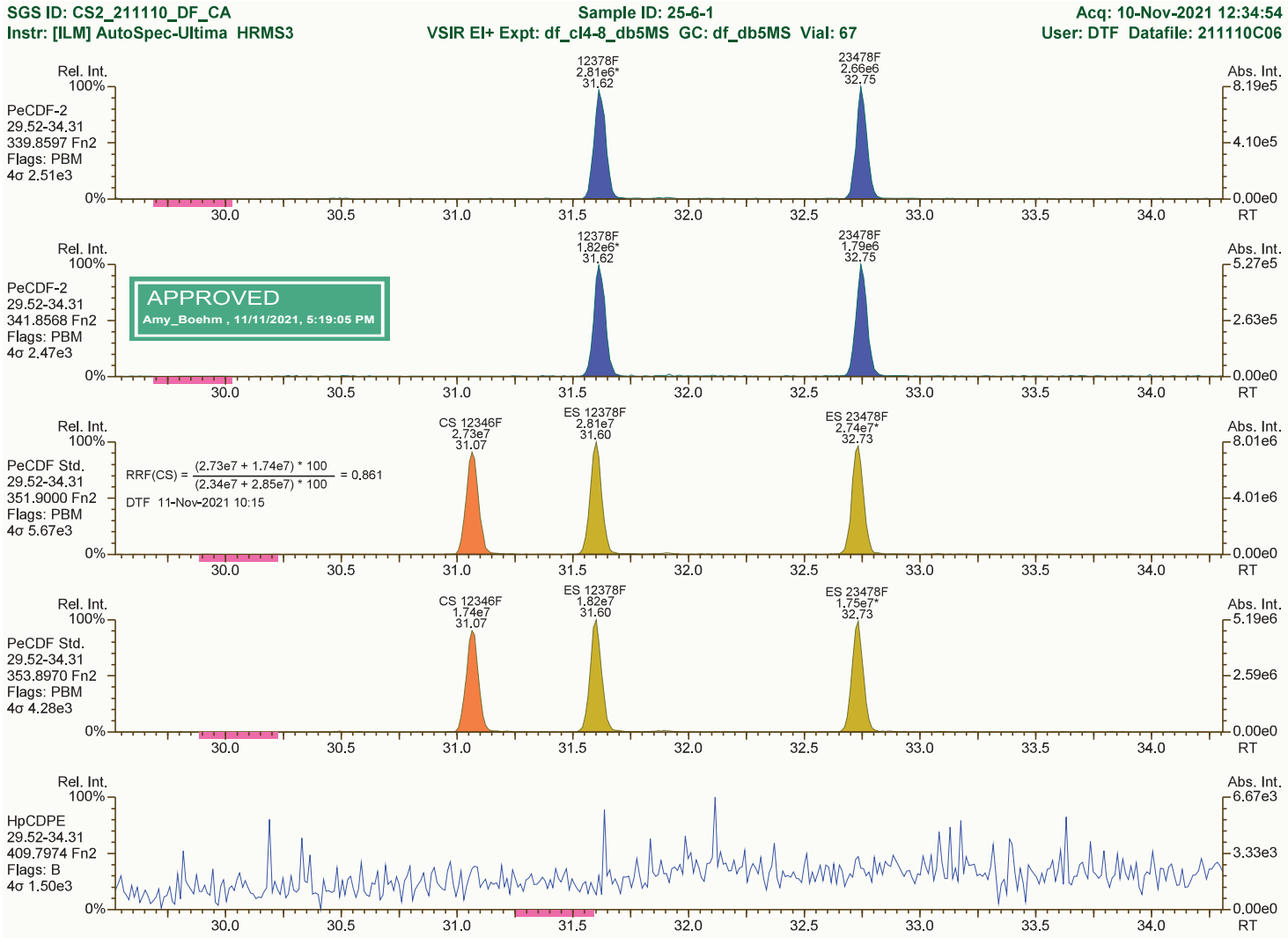
SGS ID: CS2_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

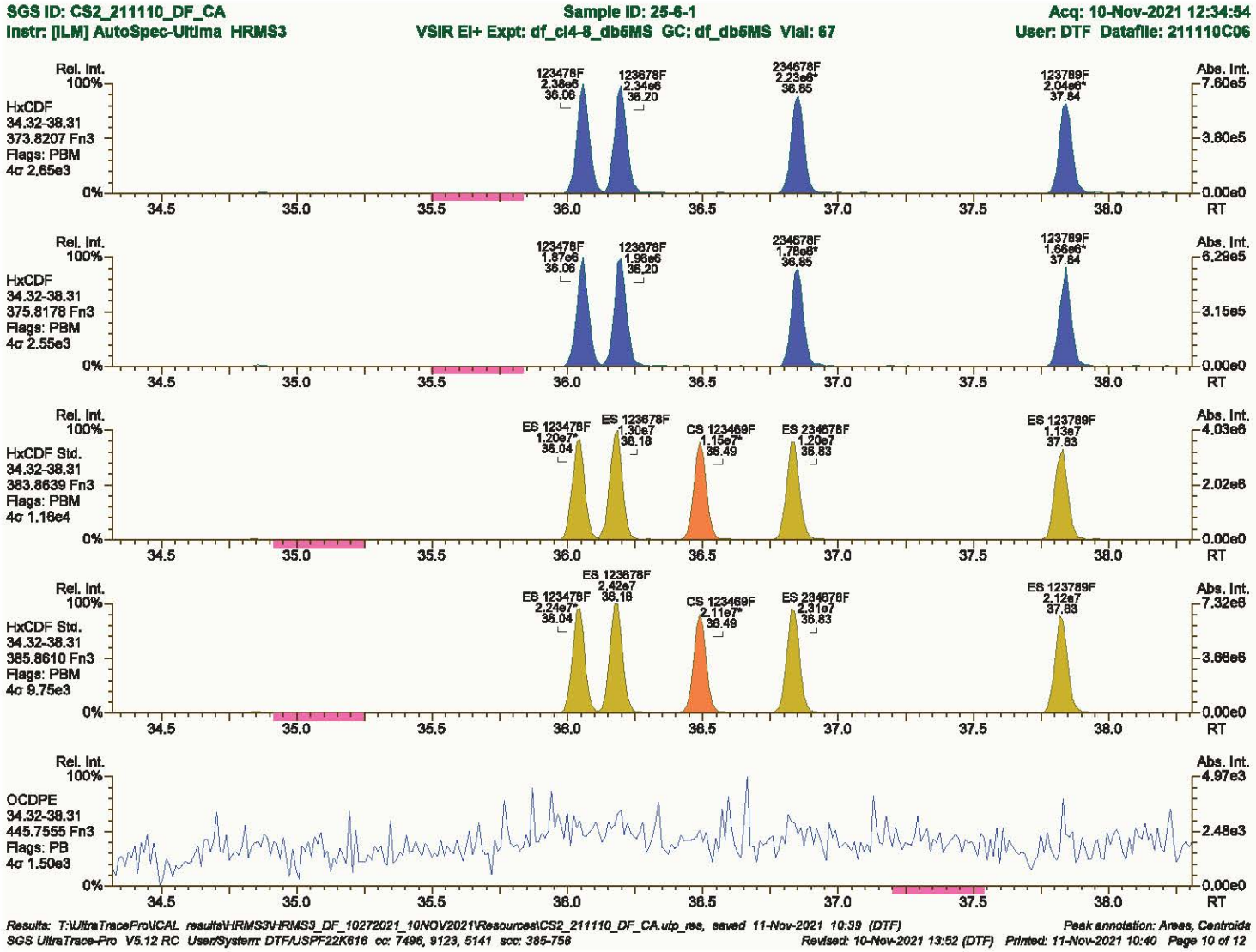
Sample ID: 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67

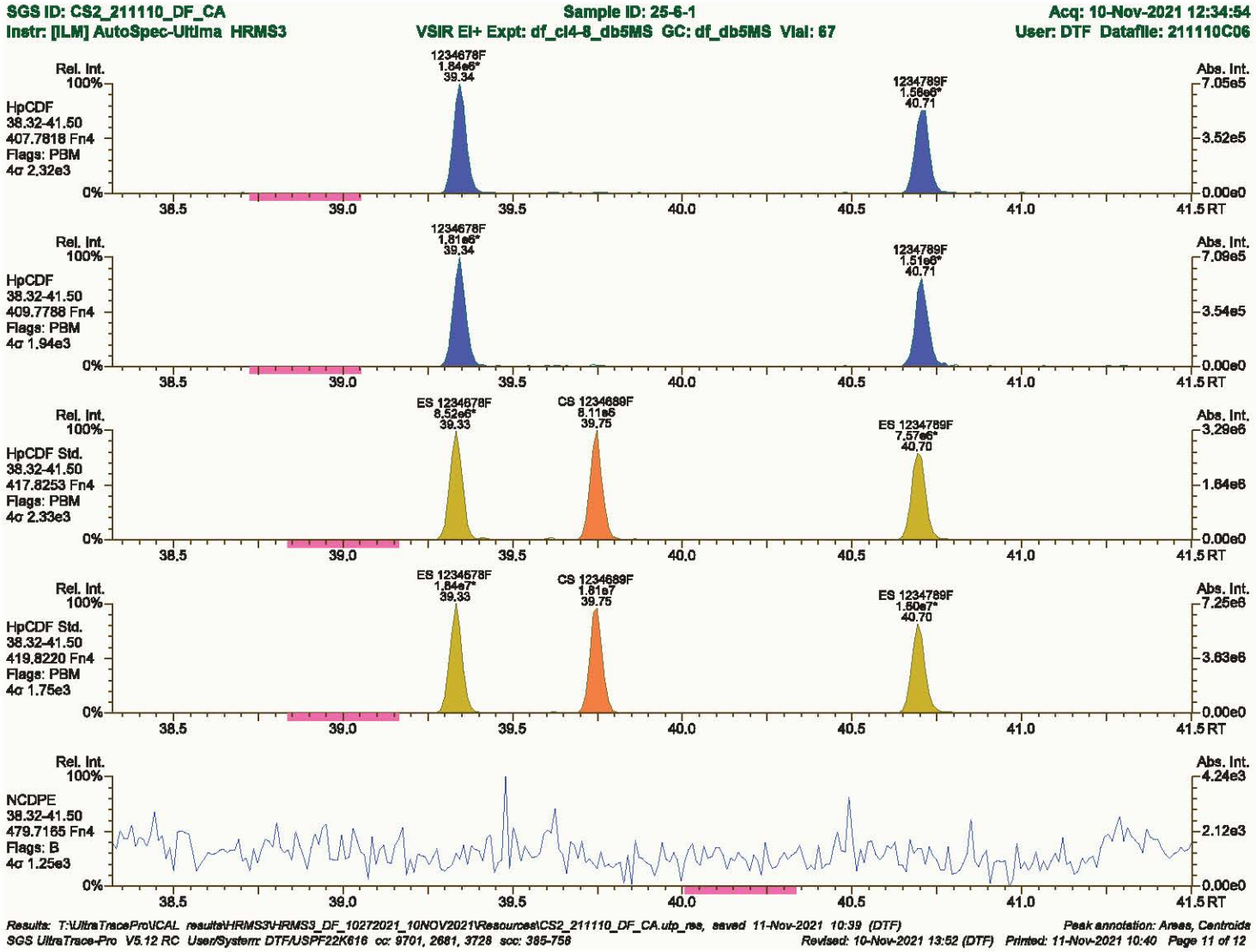
Acq: 10-Nov-2021 12:34:54
User: DTF Datafile: 211110C06



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0722 scc: 385-758
PKD: 10-Nov-2021 13:49 Printed: 11-Nov-2021 10:40 Page 8 of 12

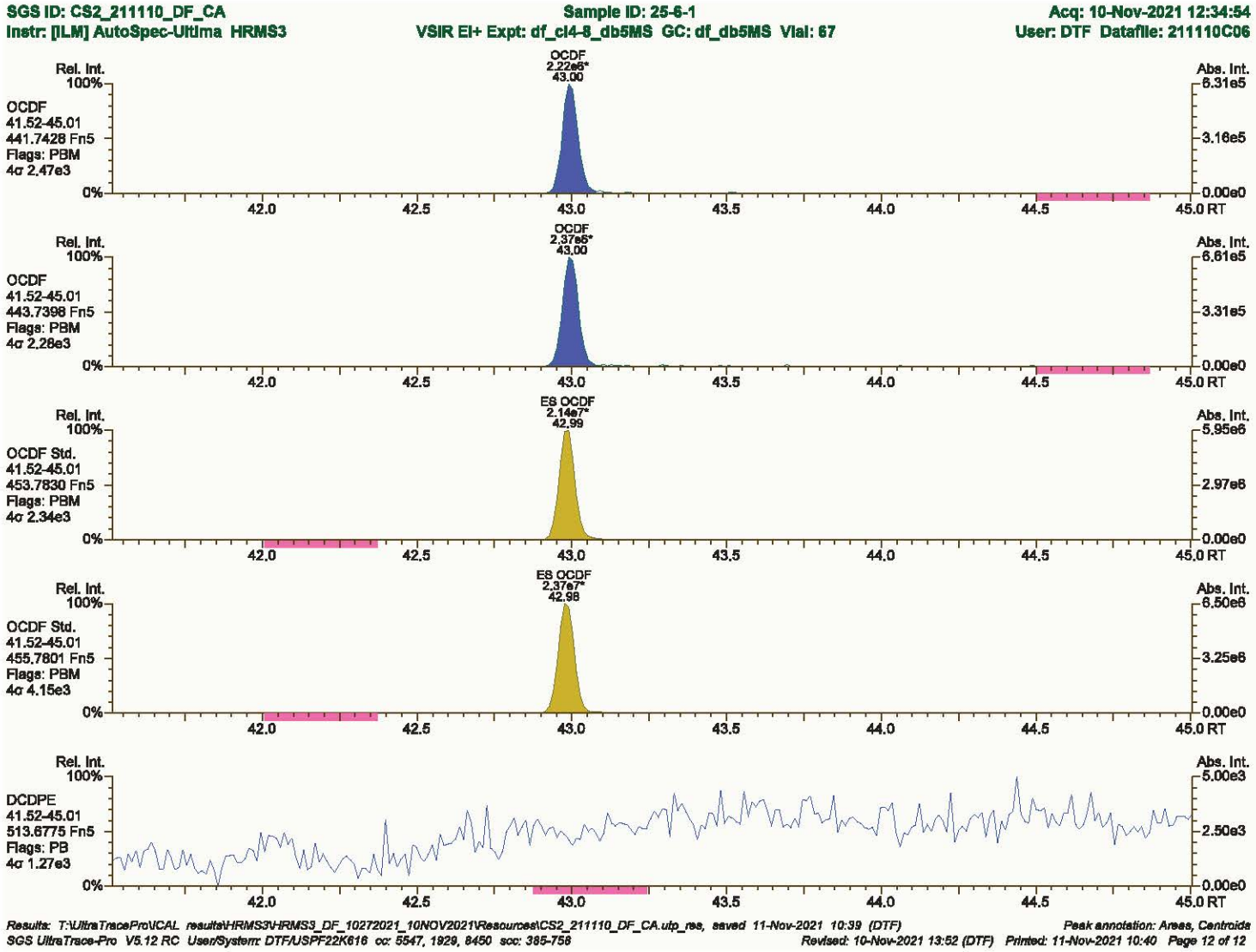

SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
8.19e5
4.10e5
0.00e0
RT
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
5.27e5
2.63e5
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
8.01e6
4.01e6
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
5.19e6
2.59e6
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
6.67e3
3.33e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
0%
100%


SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.65e3
123478F 2.38e6 36.06
123678F 2.34e6 36.20
234678F 2.23e6* 36.85
123789F 2.04e6* 37.84
7.60e5
3.80e5
0.00e0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.55e3
123478F 1.87e6 36.06
123678F 1.96e6 36.20
234678F 1.78e6* 36.85
123789F 1.66e6* 37.84
6.29e5
3.15e5
0.00e0
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 1.16e4
ES 123478F 1.20e7* 36.04
ES 123678F 1.30e7 36.18
CS 123469F 1.15e7* 36.49
ES 234678F 1.20e7 36.83
ES 123789F 1.13e7 37.83
4.03e6
2.02e6
0.00e0
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.75e3
ES 123478F 2.24e7* 36.04
ES 123678F 2.42e7 36.18
CS 123469F 2.11e7* 36.49
ES 234678F 2.31e7 36.83
ES 123789F 2.12e7 37.83
7.32e6
3.66e6
0.00e0
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.50e3
4.97e3
2.48e3
0.00e0
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 9701, 2681, 3728 scc: 385-758 *Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 11 of 12*

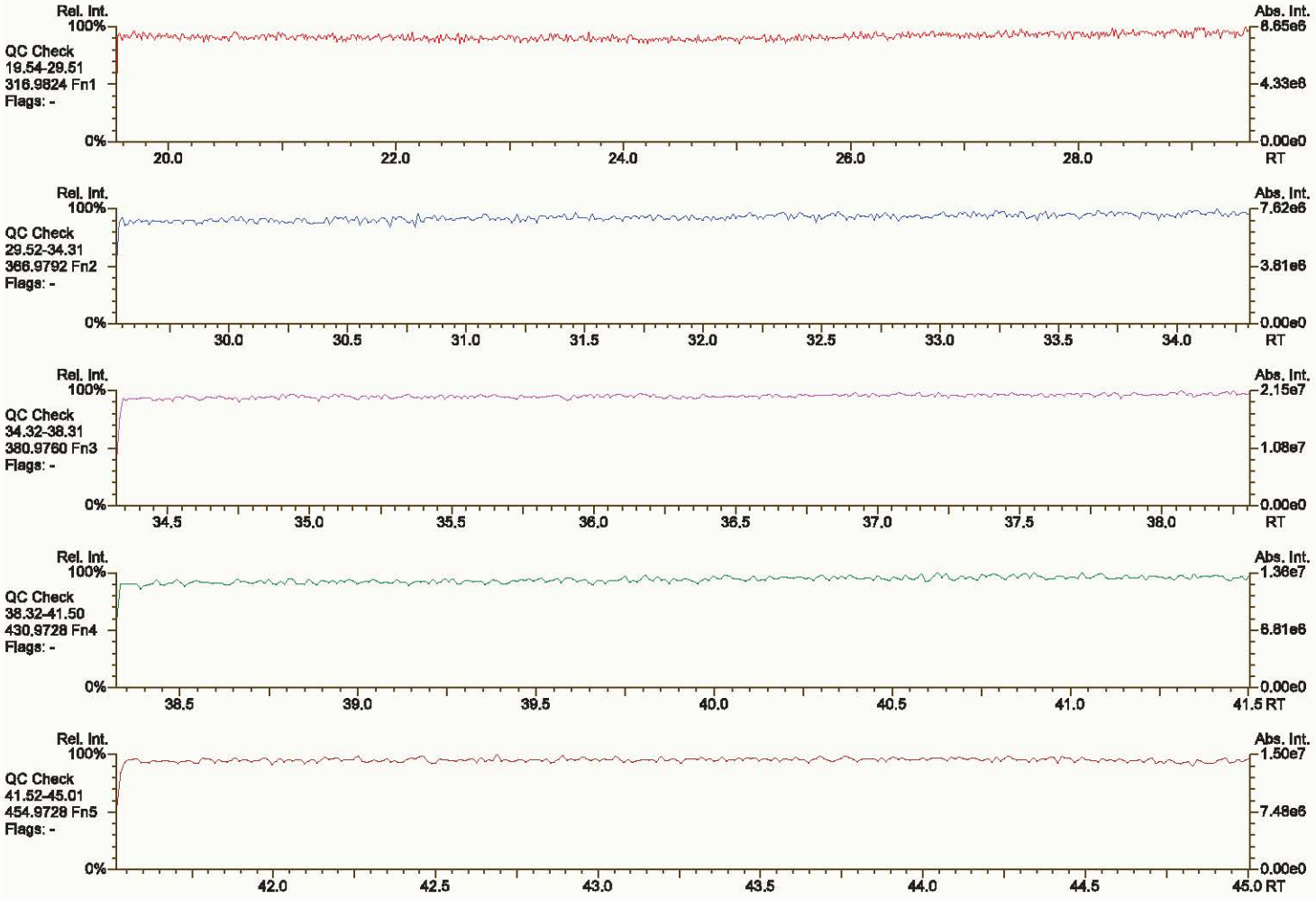

SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
OCDF
2.22e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
0%
Abs. Int.
6.31e5
3.16e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.37e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
0%
Abs. Int.
6.61e5
3.31e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.37e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
6.50e6
3.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.00e3
2.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 5547, 1929, 8450 scc: 385-758
Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 18:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 18:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%

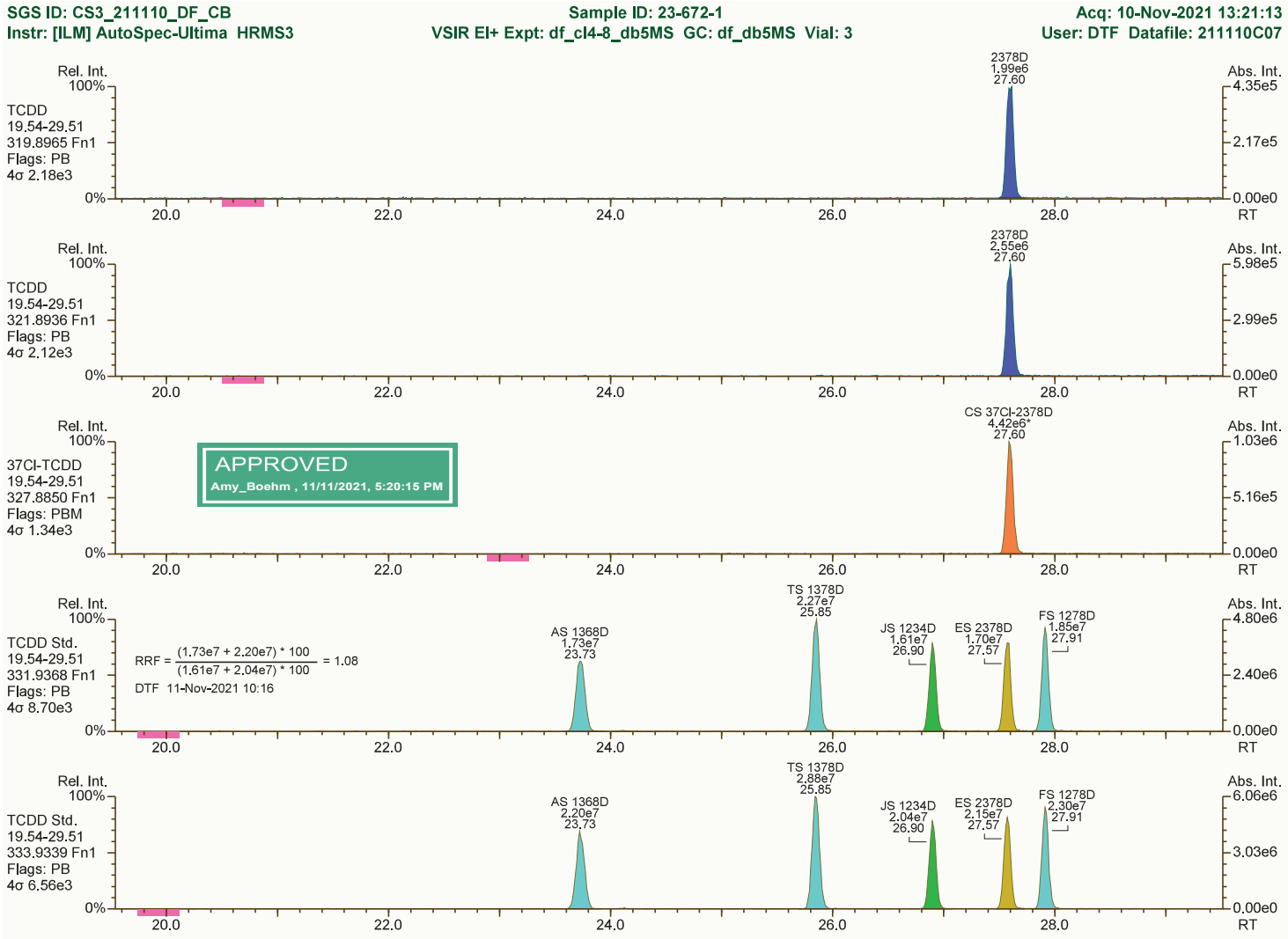
SGS ID: CS3_211110_DF_CB | Sample ID: 23-672-1 | Acq: 10-Nov-2021 13:21:13

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 211110C07

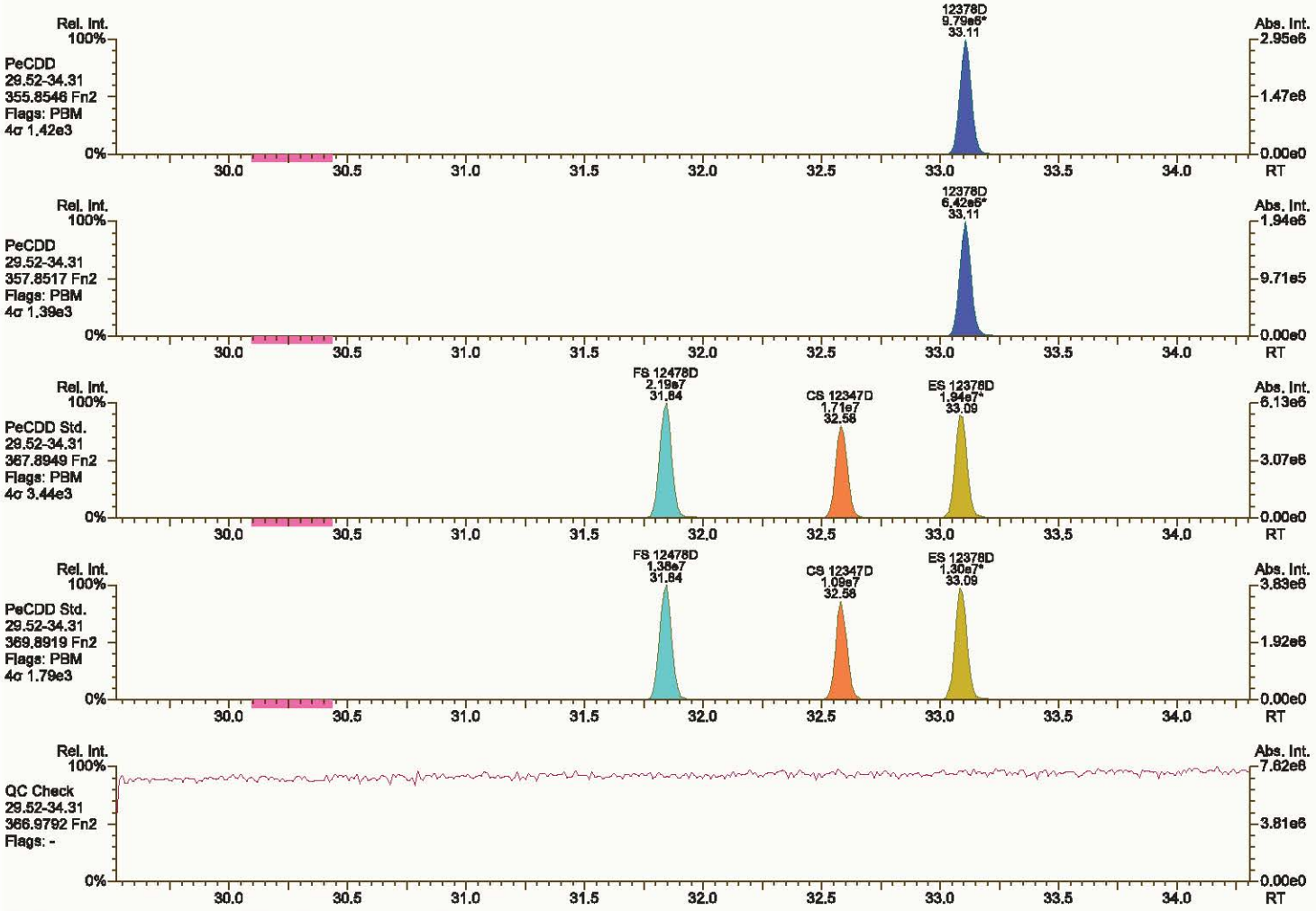


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC UserSystem: DTF/USPF22K616 scc: 507-474 *PKD: n/a Printed: 11-Nov-2021 10:40 Page 1 of 12*


SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
2378D
1.99e6
27.60
4.35e5
2.17e5
0.00e0
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
2378D
2.55e6
27.60
5.98e5
2.99e5
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
1.03e6
5.16e5
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
4.80e6
2.40e6
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
6.06e6
3.03e6
0%
100%
20.0
22.0
24.0
26.0
28.0
RT
0.00e0

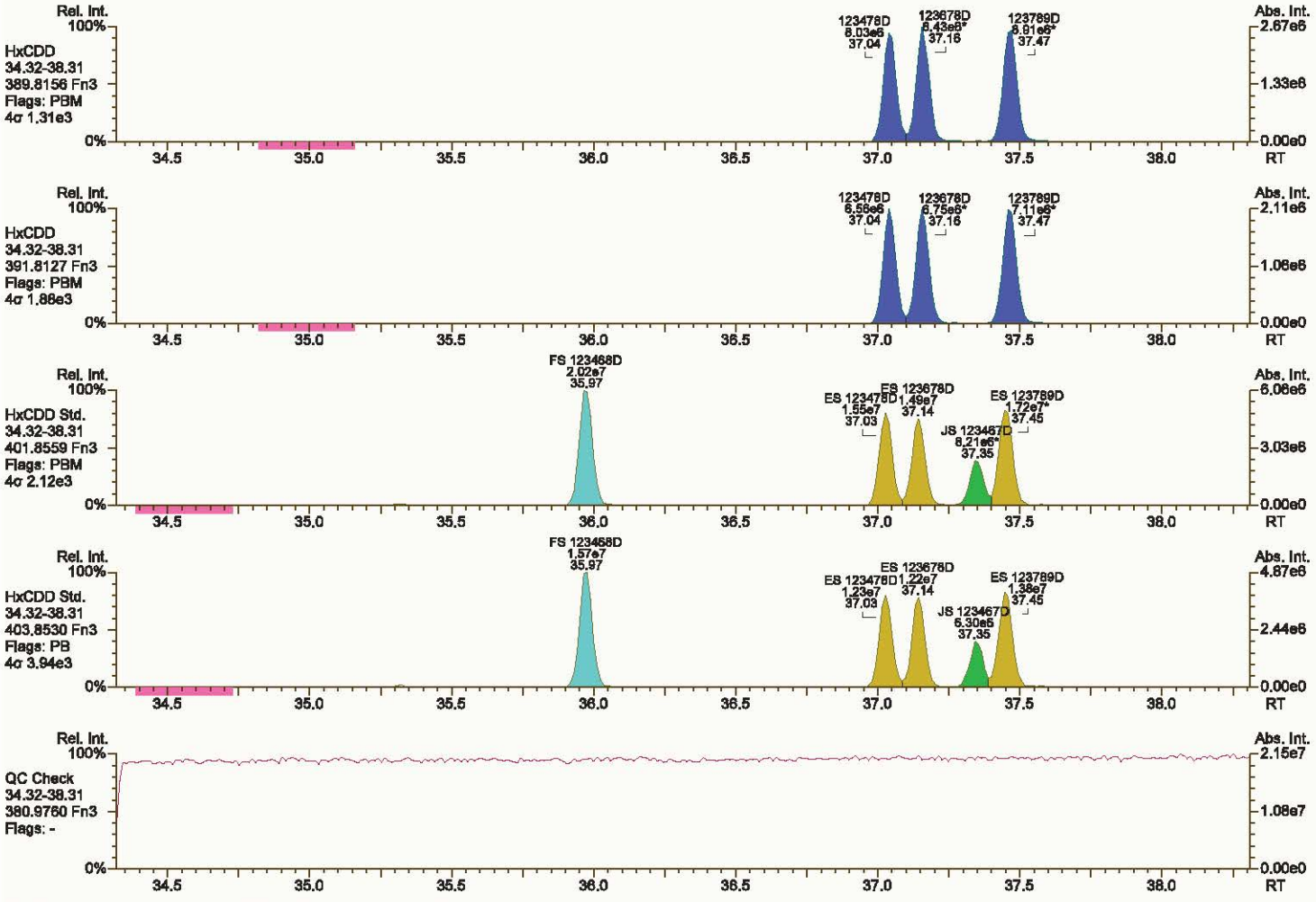
SGS ID: CS3_211110_DF_CB | Sample ID: 23-672-1 | Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 211110C07



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3355, 9798 scc: 507-474 *Revised: 10-Nov-2021 14:17 (DTF) Printed: 11-Nov-2021 10:40 Page 3 of 12*

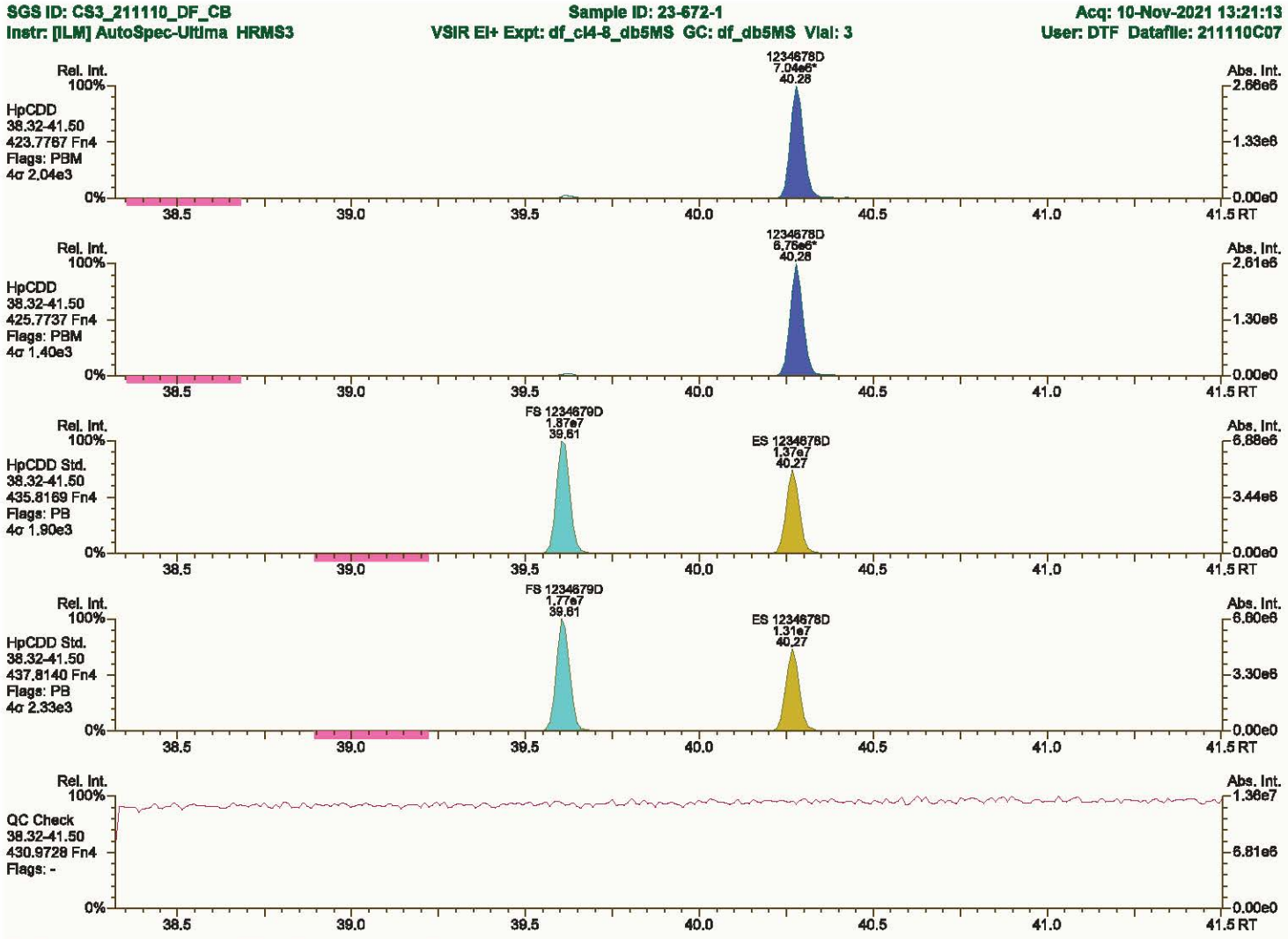
SGS ID: CS3_211110_DF_CB | Sample ID: 23-672-1 | Acq: 10-Nov-2021 13:21:13

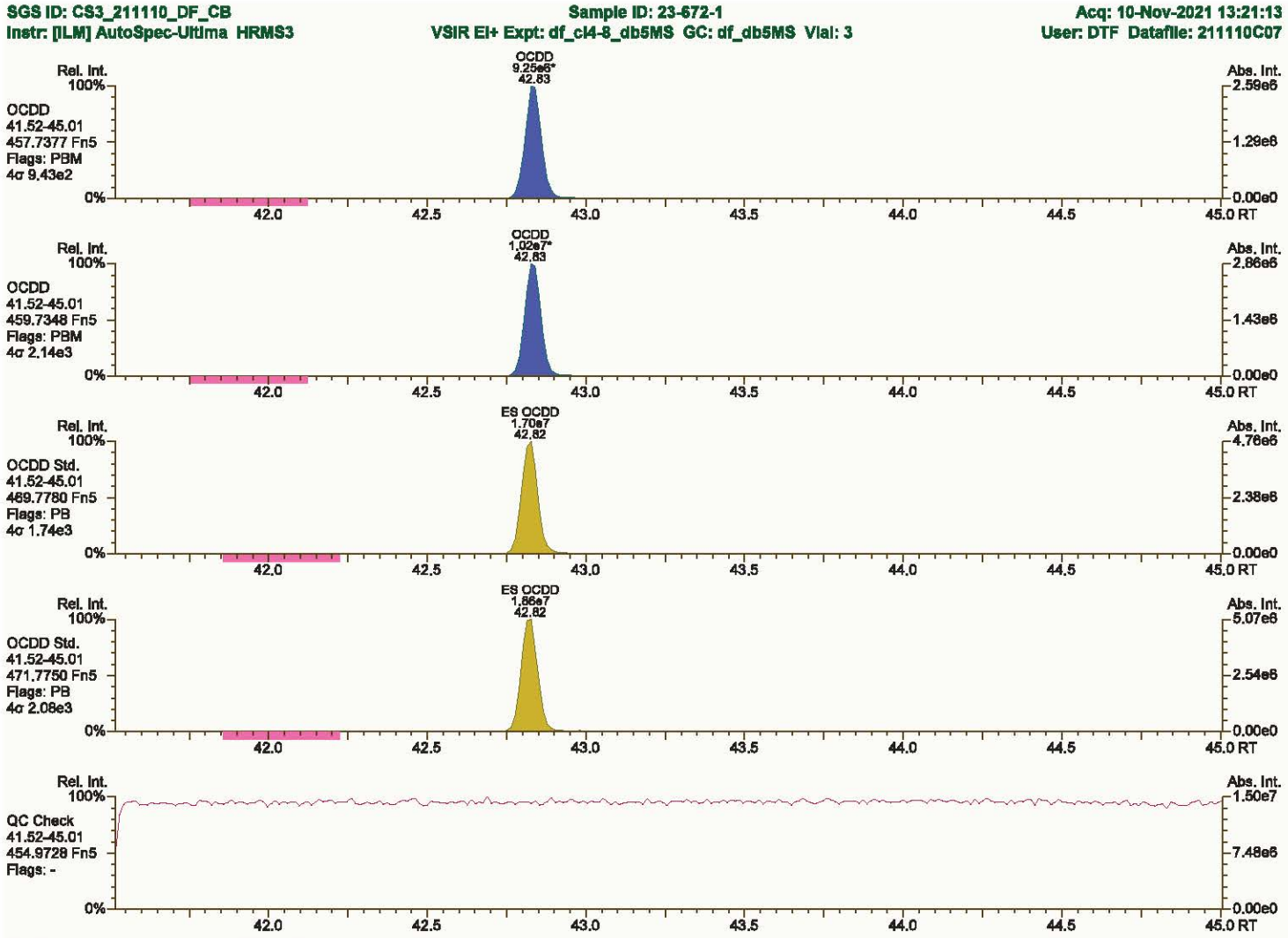
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 211110C07

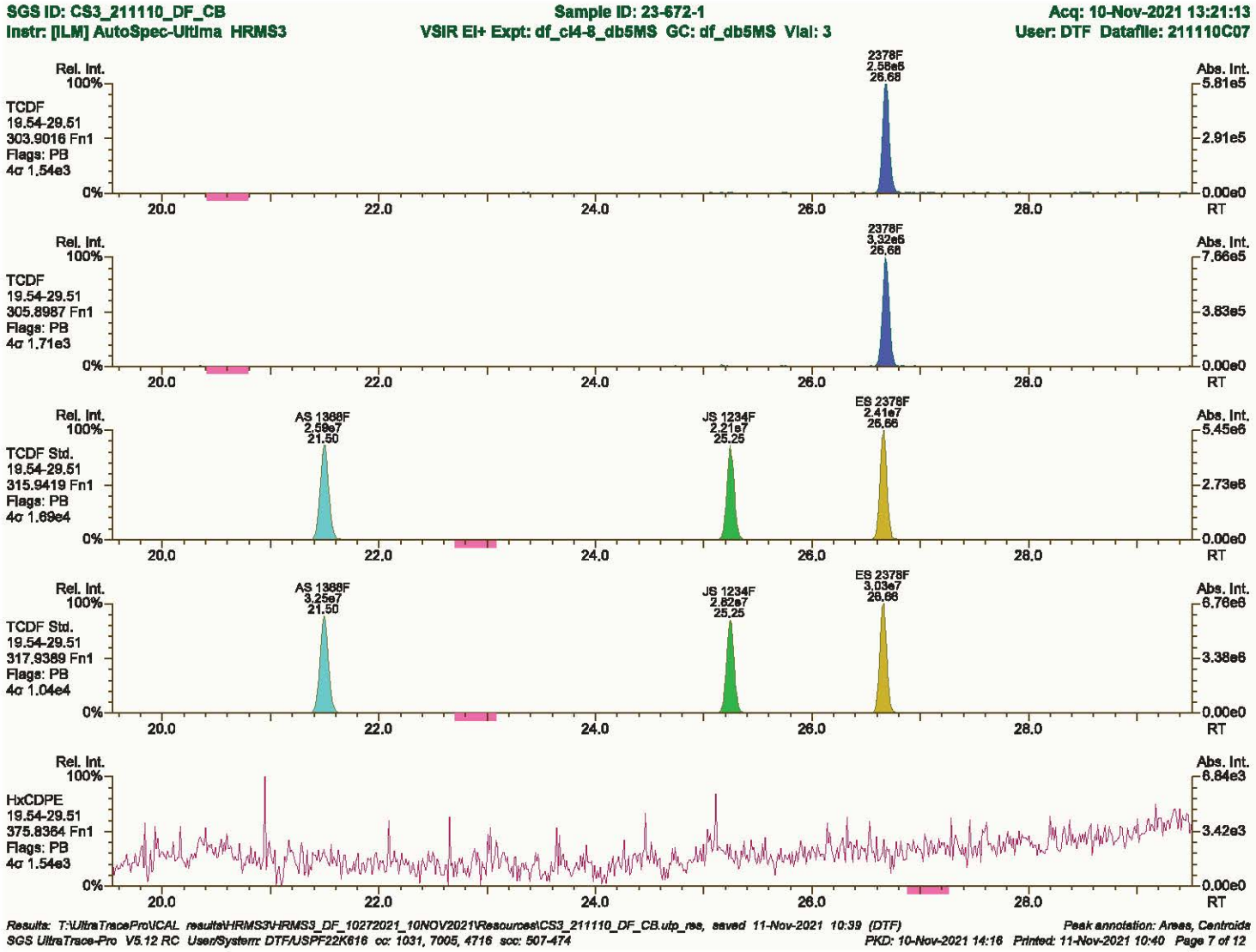


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4590, 3802 scc: 507-474 *Revised: 10-Nov-2021 14:17 (DTF) Printed: 11-Nov-2021 10:40 Page 4 of 12*


SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
2.66e6
1.33e6
0.00e0
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
2.61e6
1.30e6
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.81
ES 1234678D
1.37e7
40.27
6.88e6
3.44e6
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.81
ES 1234678D
1.31e7
40.27
6.60e6
3.30e6
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.36e7
6.81e6
0%
100%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
OCDD
9.25e6*
42.83
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 9.43e2
2.59e6
1.29e6
0.00e0
OCDD
1.02e7*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.14e3
2.86e6
1.43e6
ES OCDD
1.70e7
42.82
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.74e3
4.76e6
2.38e6
ES OCDD
1.86e7
42.82
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.08e3
5.07e6
2.54e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.50e7
7.48e6
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT



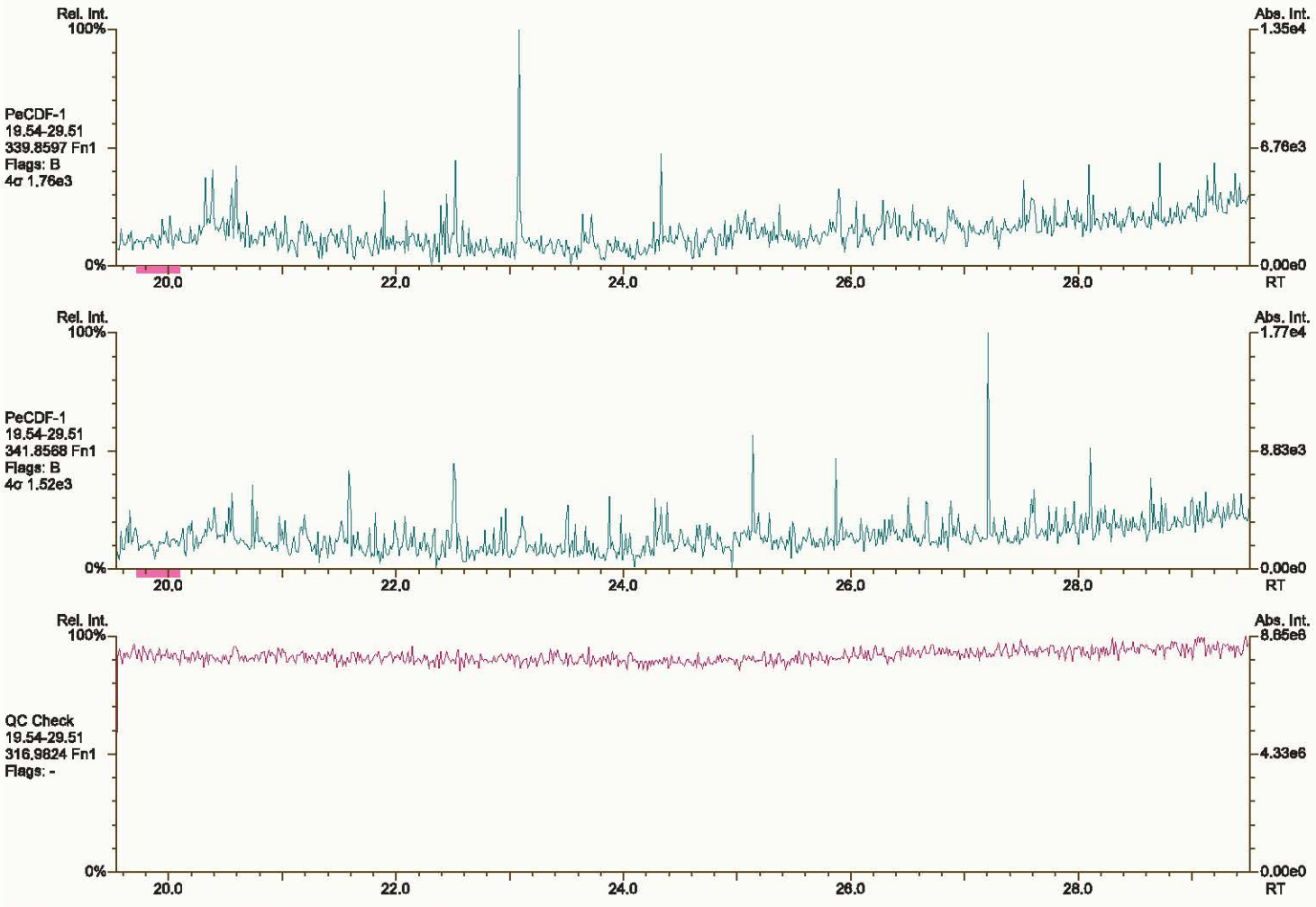
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 1031, 7005, 4716 scc: 507-474 *PKD: 10-Nov-2021 14:16 Printed: 11-Nov-2021 10:40 Page 7 of 12*

SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07

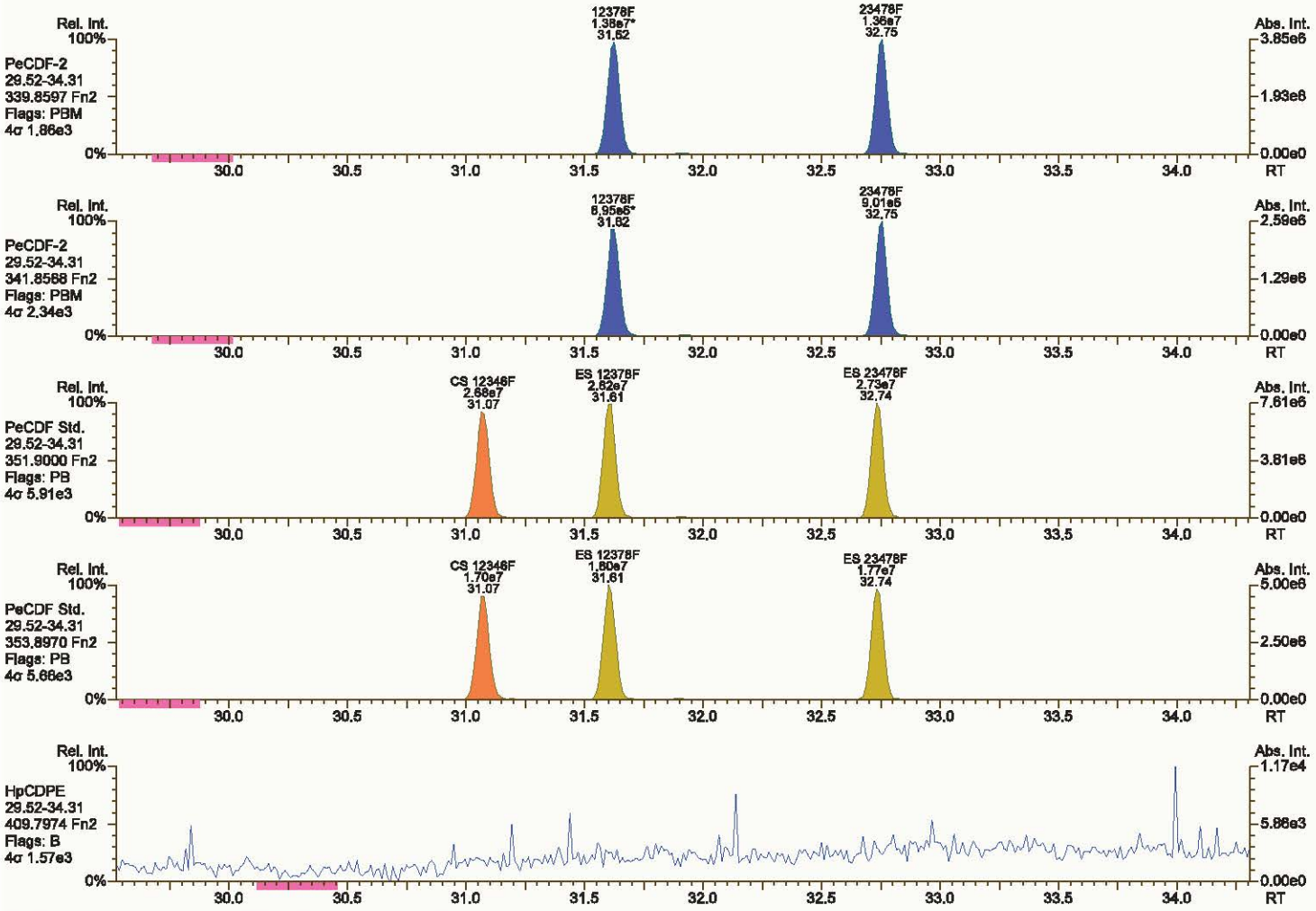


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2465 scc: 507-474
PKD: 10-Nov-2021 14:16 Printed: 11-Nov-2021 10:40 Page 8 of 12

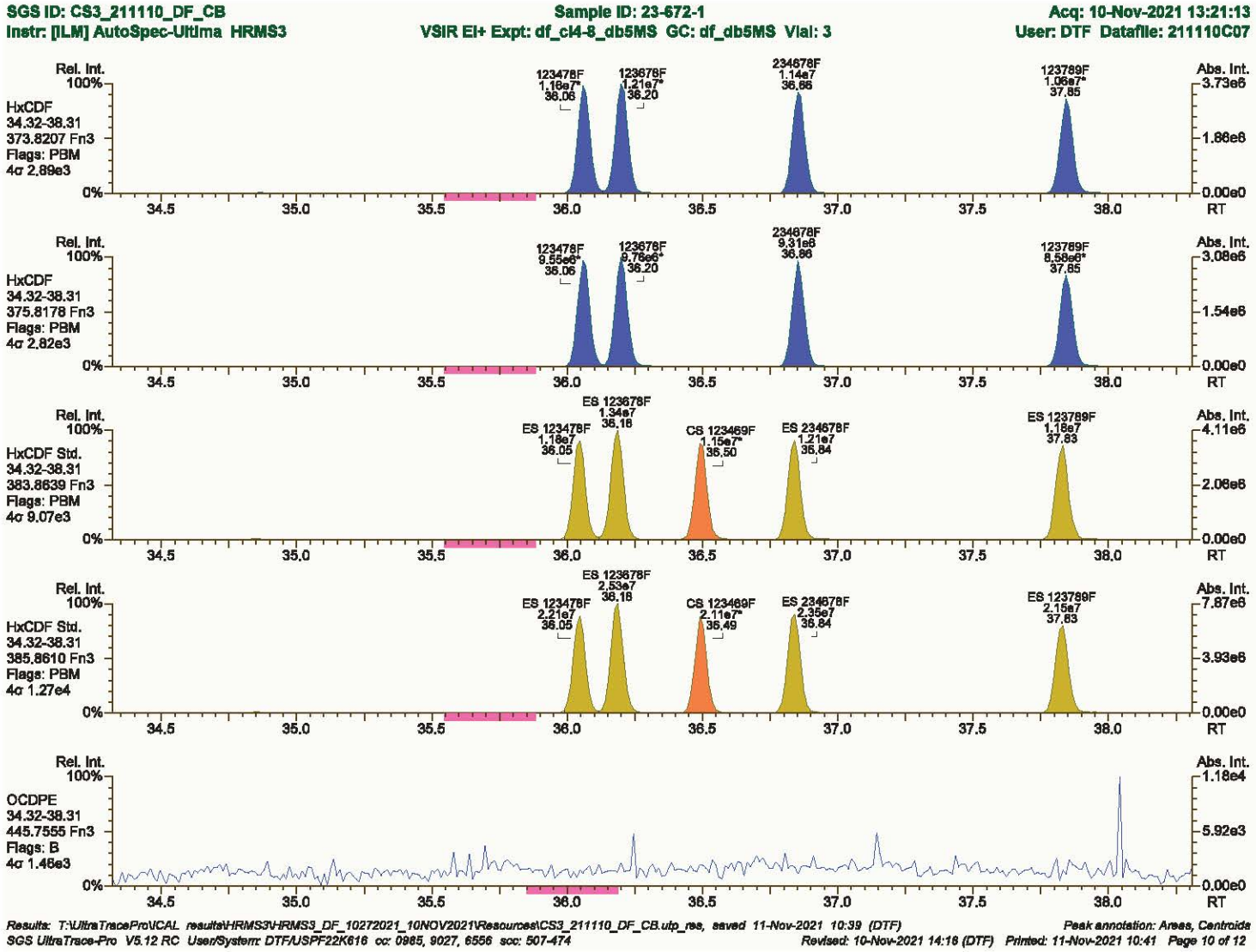
SGS ID: CS3_211110_DF_CB | Sample ID: 23-672-1 | Acq: 10-Nov-2021 13:21:13

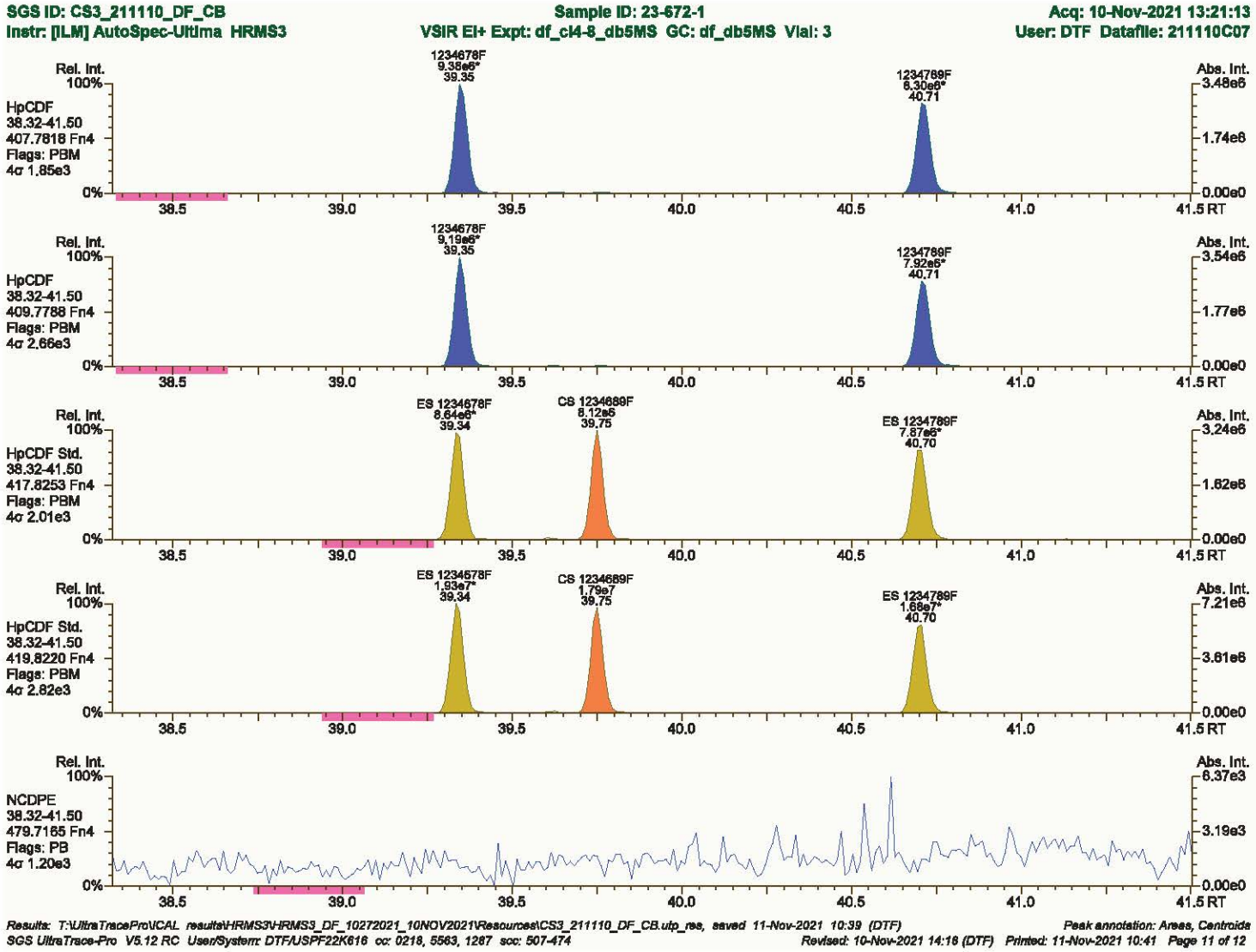
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 211110C07

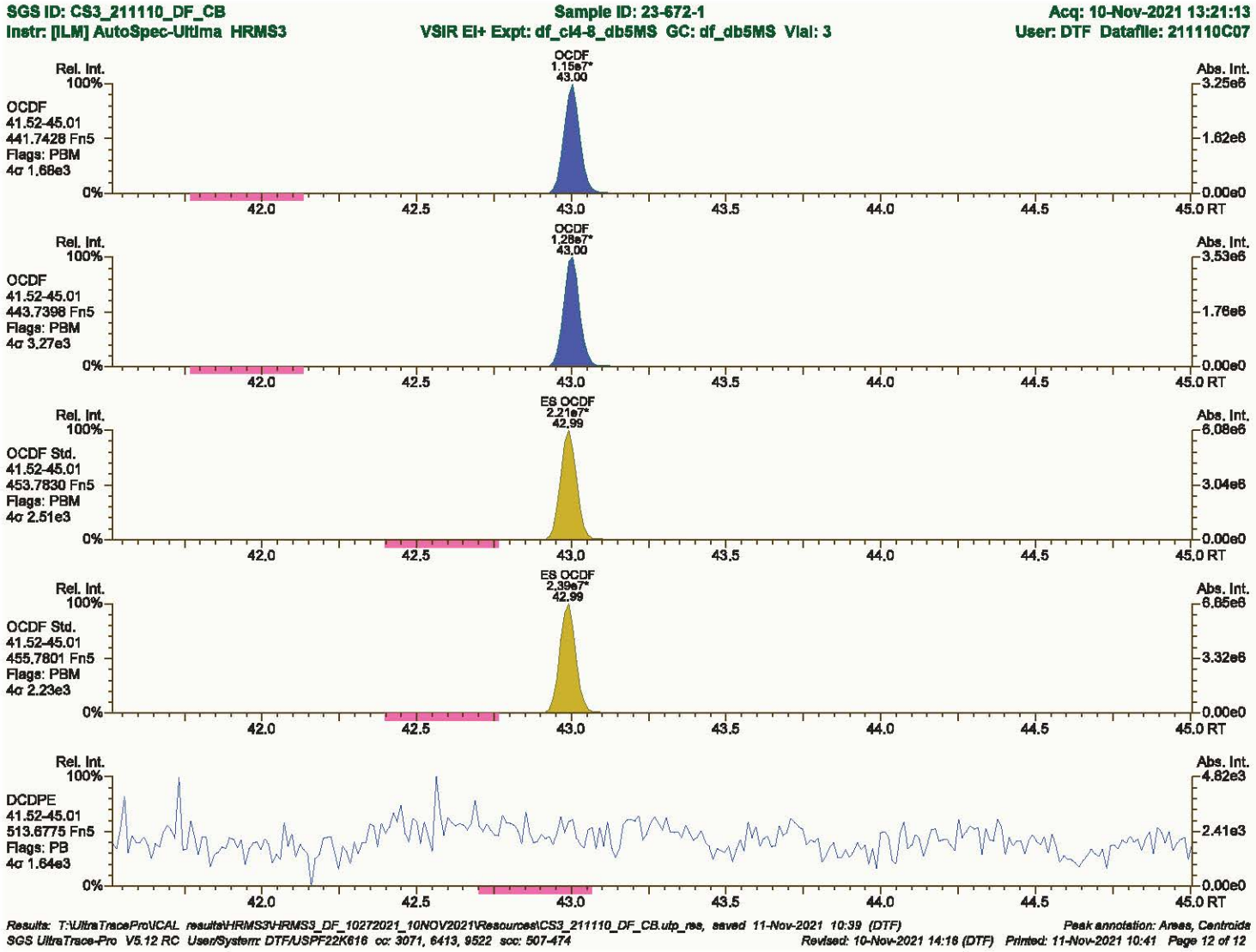


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 0728, 8378, 8418 scc: 507-474 *Revised: 10-Nov-2021 14:17 (DTF) Printed: 11-Nov-2021 10:41 Page 9 of 12*


SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.89e3
123478F
1.18e7*
36.06
123678F
1.21e7*
36.20
234678F
1.14e7
36.66
123789F
1.06e7*
37.85
3.73e6
1.86e6
0.00e0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.82e3
123478F
9.55e6*
36.06
123678F
9.76e6*
36.20
234678F
9.31e6
36.66
123789F
8.58e6*
37.85
3.08e6
1.54e6
0.00e0
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 9.07e3
ES 123478F
1.18e7
36.05
ES 123678F
1.34e7
36.18
CS 123469F
1.15e7*
36.50
ES 234678F
1.21e7
36.84
ES 123789F
1.18e7
37.83
4.11e6
2.06e6
0.00e0
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 1.27e4
ES 123478F
2.21e7
36.05
ES 123678F
2.53e7
36.18
CS 123469F
2.11e7*
36.49
ES 234678F
2.35e7
36.84
ES 123789F
2.15e7
37.83
7.87e6
3.93e6
0.00e0
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.46e3
1.18e4
5.92e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 0985, 9027, 6556 scc: 507-474
Revised: 10-Nov-2021 14:16 (DTF) Printed: 11-Nov-2021 10:41 Page 10 of 12

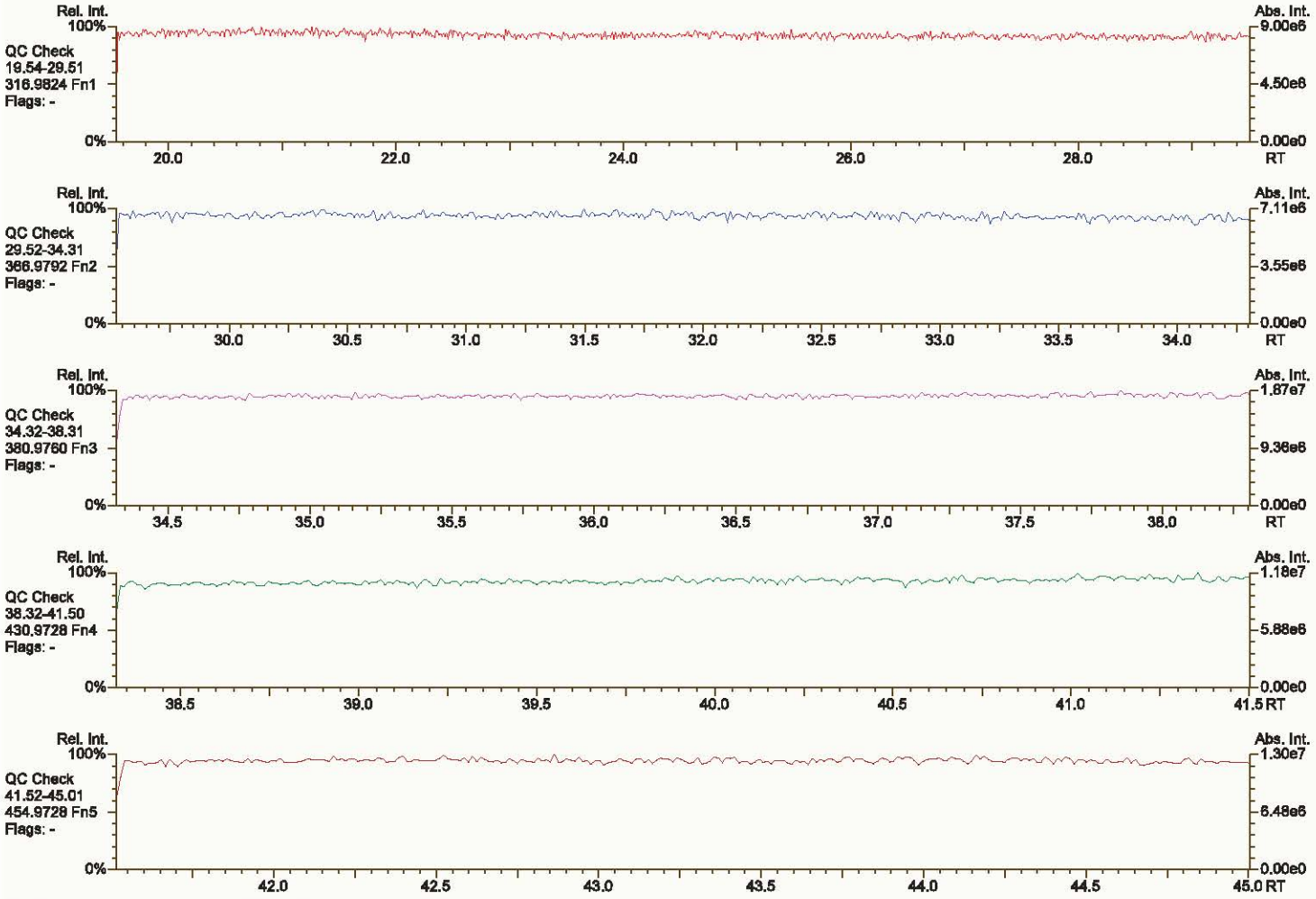

SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.85e3
1234678F
9.38e6*
39.35
1234789F
8.30e6*
40.71
3.48e6
1.74e6
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.66e3
1234678F
9.19e6*
39.35
1234789F
7.92e6*
40.71
3.54e6
1.77e6
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.01e3
ES 1234678F
8.64e6*
39.34
CS 1234689F
8.12e6
39.75
ES 1234789F
7.87e6*
40.70
3.24e6
1.62e6
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.82e3
ES 1234678F
1.93e7*
39.34
CS 1234689F
1.79e7
39.75
ES 1234789F
1.66e7*
40.70
7.21e6
3.61e6
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.20e3
6.37e3
3.19e3
0%
100%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
0.00e0


SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
OCDF
1.15e7*
43.00
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
3.25e6
1.62e6
0.00e0
OCDF
1.28e7*
43.00
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
3.53e6
1.76e6
ES OCDF
2.21e7*
42.99
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
6.08e6
3.04e6
ES OCDF
2.39e7*
42.99
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
6.65e6
3.32e6
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3
4.82e3
2.41e3
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 3071, 6413, 9522 scc: 507-474
Revised: 10-Nov-2021 14:16 (DTF) Printed: 11-Nov-2021 10:41 Page 12 of 12

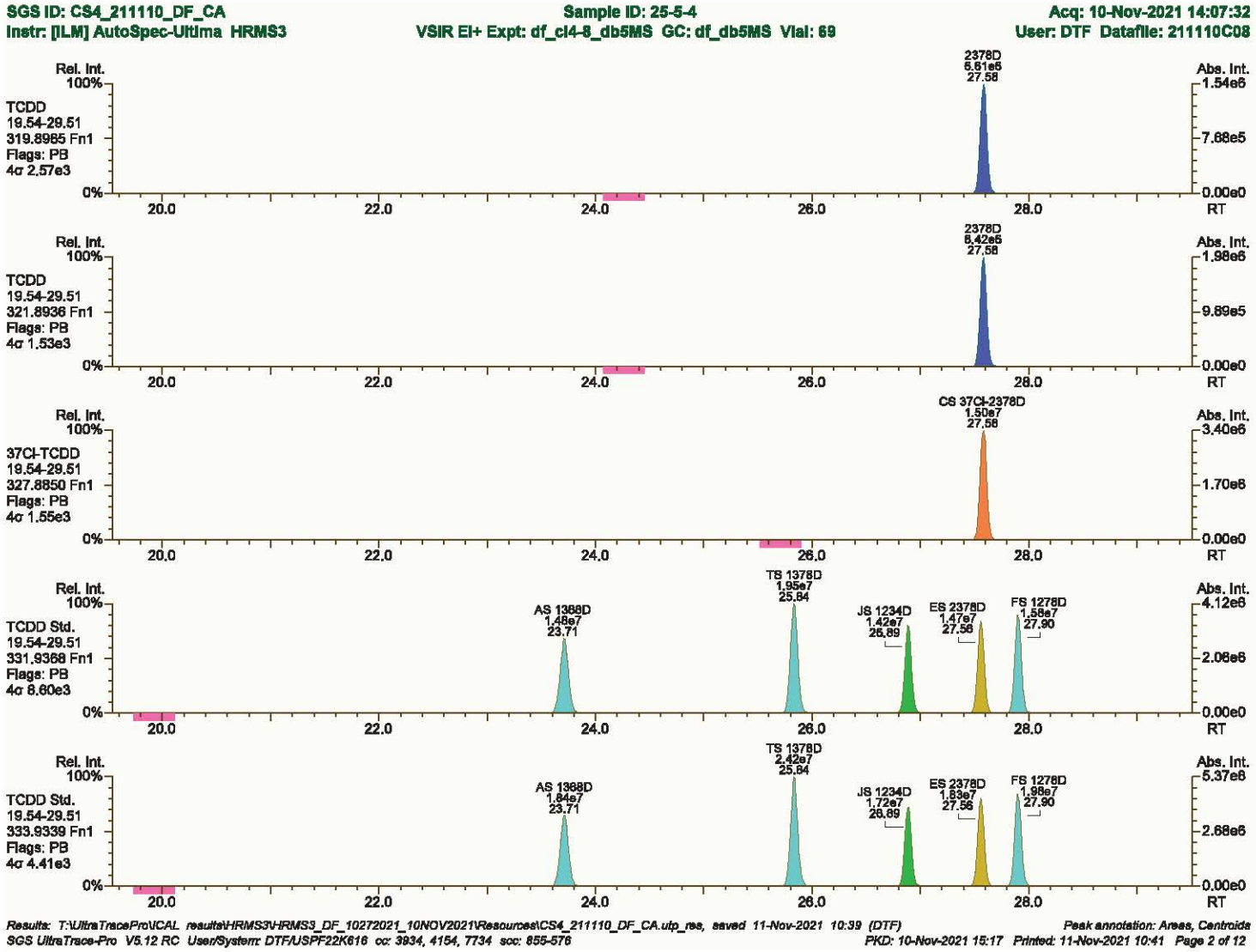
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 18:22:22 DTF				Checkcode: 855-578-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

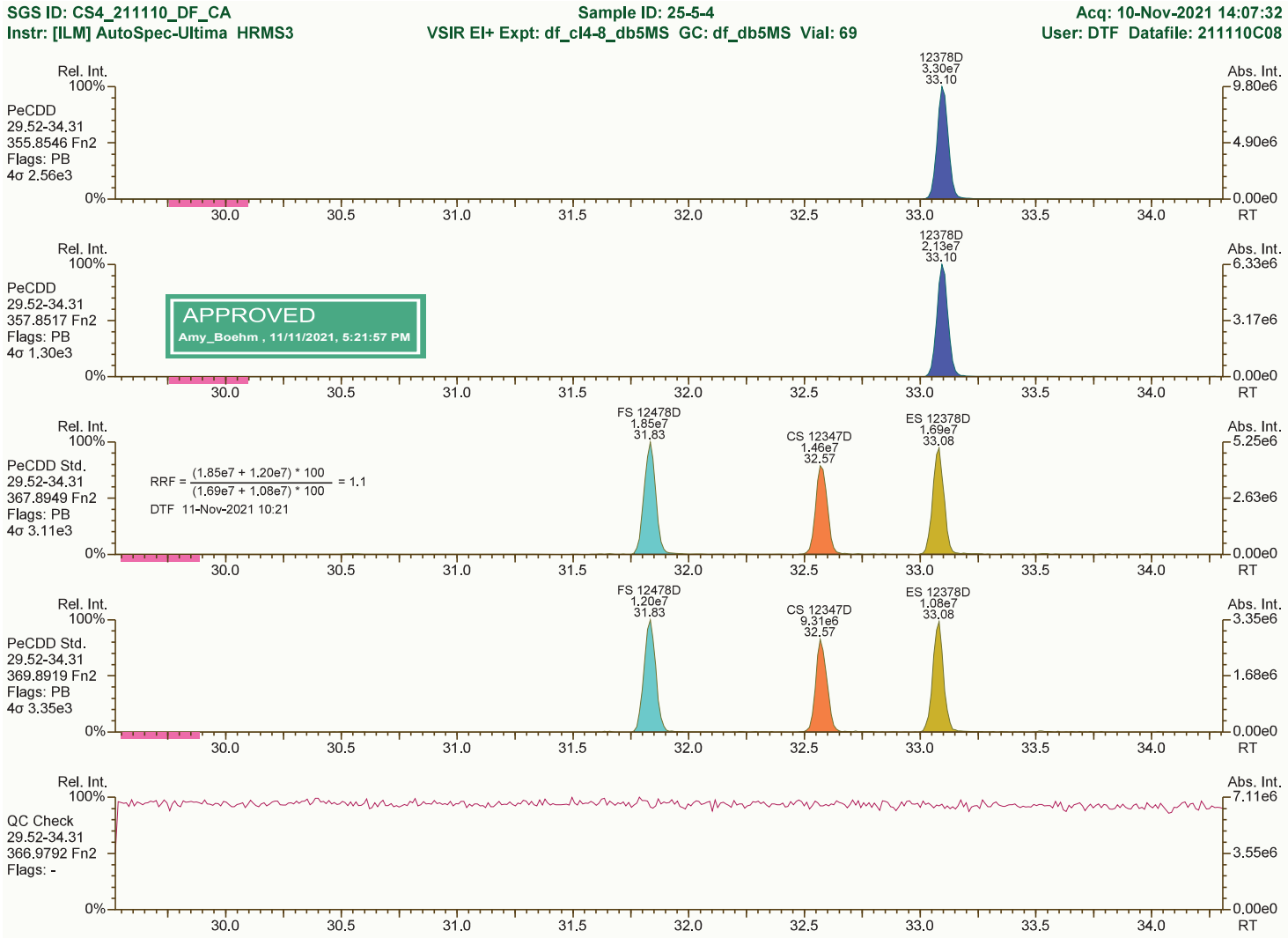
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 18:22:22 DTF				Checkcode: 855-578-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

SGS ID: CS4_211110_DF_CA | Sample ID: 25-5-4 | Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69 | User: DTF Datafile: 211110C08



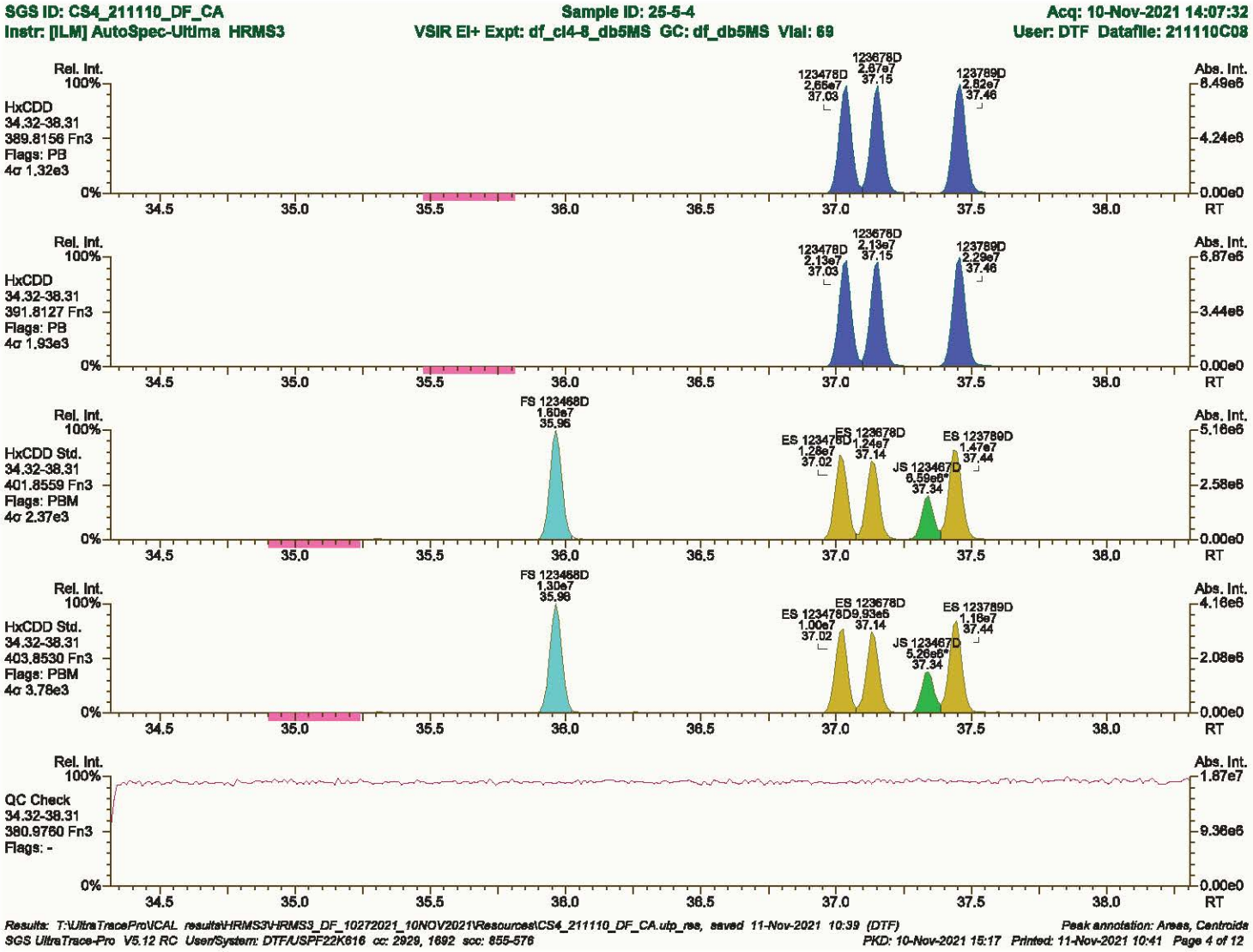
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC UserSystem: DTF/USPF22K616 scc: 855-576
PKD: n/a Printed: 11-Nov-2021 10:41 Page 1 of 12

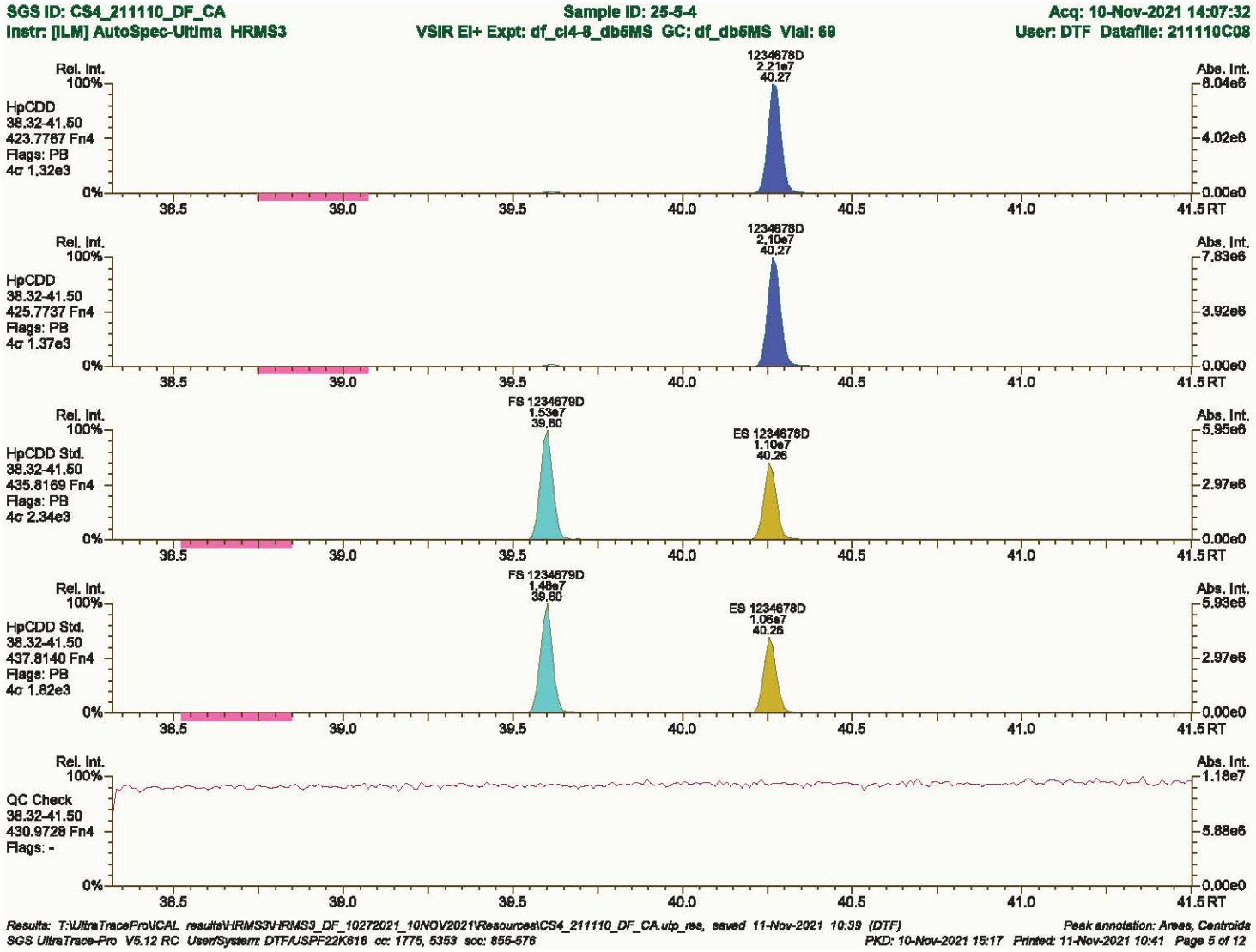

SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
2378D
6.61e6
27.58
1.54e6
7.68e5
0.00e0
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
2378D
6.42e6
27.58
1.98e6
9.89e5
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
CS 37Cl-2378D
1.50e7
27.58
3.40e6
1.70e6
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
4.12e6
2.06e6
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
5.37e6
2.68e6
0%
100%
20.0
22.0
24.0
26.0
28.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 3934, 4154, 7734 scc: 855-576
PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 2 of 12

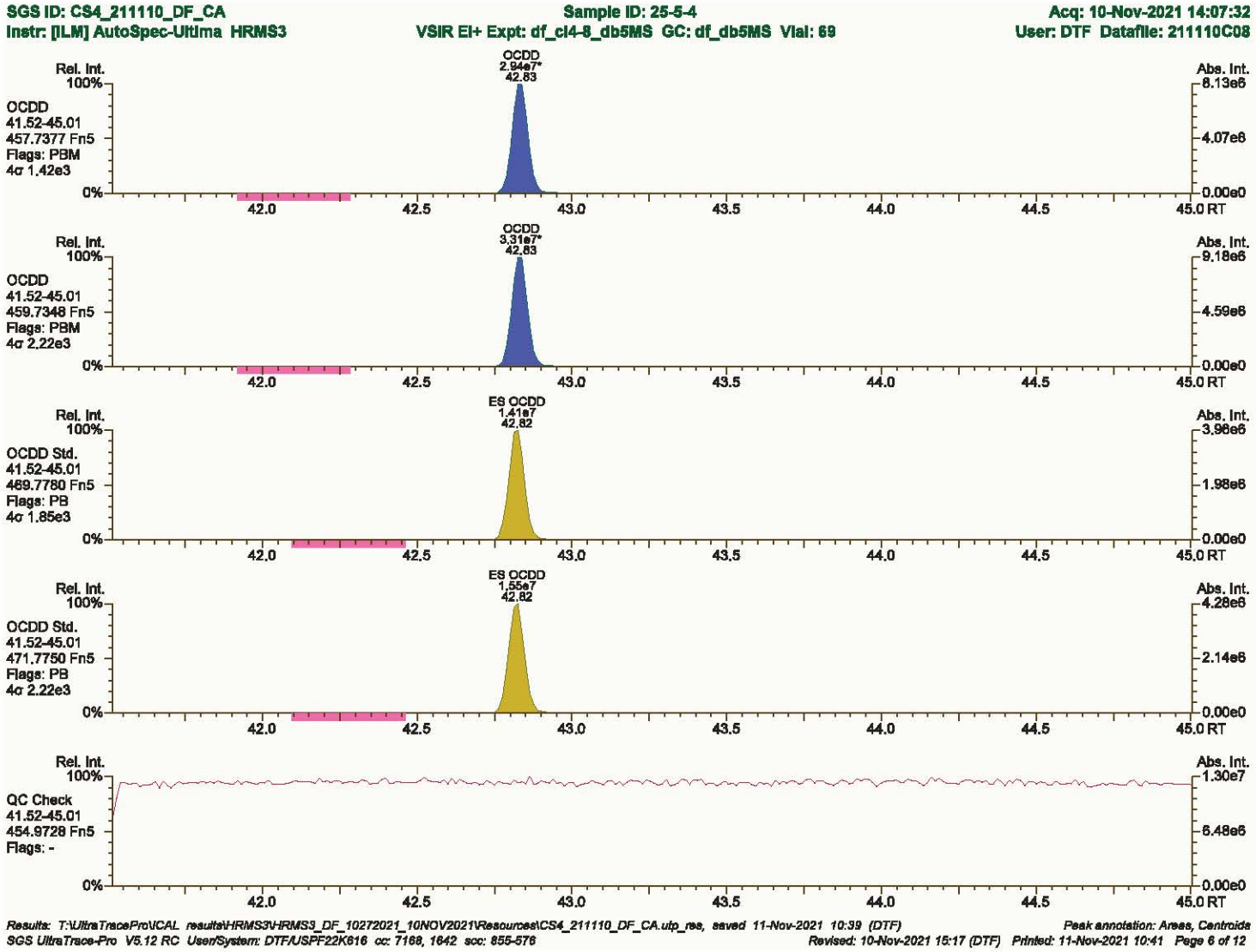


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8390, 5996 scc: 855-576 *PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 3 of 12*

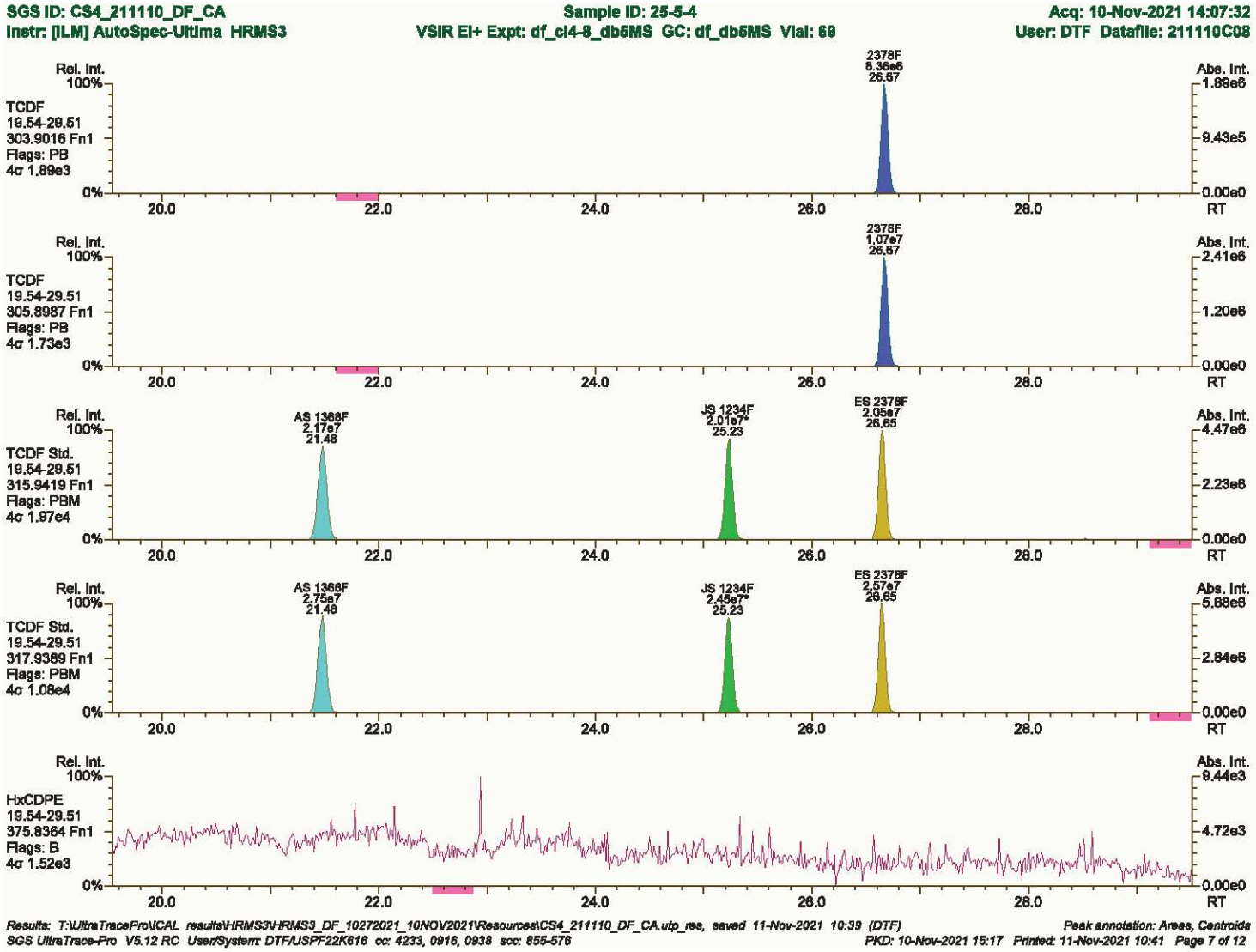

SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123678D 2.67e7 37.15
123478D 2.65e7 37.03
123789D 2.82e7 37.46
8.49e6
4.24e6
0.00e0
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123678D 2.13e7 37.15
123478D 2.13e7 37.03
123789D 2.29e7 37.46
6.87e6
3.44e6
0.00e0
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D 1.60e7 35.96
ES 123678D 1.24e7 37.14
ES 123478D 1.28e7 37.02
ES 123789D 1.47e7 37.44
JS 123467D 6.59e6* 37.34
5.16e6
2.58e6
0.00e0
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D 1.30e7 35.98
ES 123678D 9.93e6 37.14
ES 123478D 1.00e7 37.02
ES 123789D 1.16e7 37.44
JS 123467D 5.26e6* 37.34
4.16e6
2.08e6
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
1.87e7
9.36e6
0.00e0
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
1234678D
2.21e7
40.27
8.04e6
4.02e6
0.00e0
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
1234678D
2.10e7
40.27
7.83e6
3.92e6
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
5.95e6
2.97e6
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
5.93e6
2.97e6
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.18e7
5.88e6
0%
100%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1775, 5353 scc: 855-576
PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 5 of 12



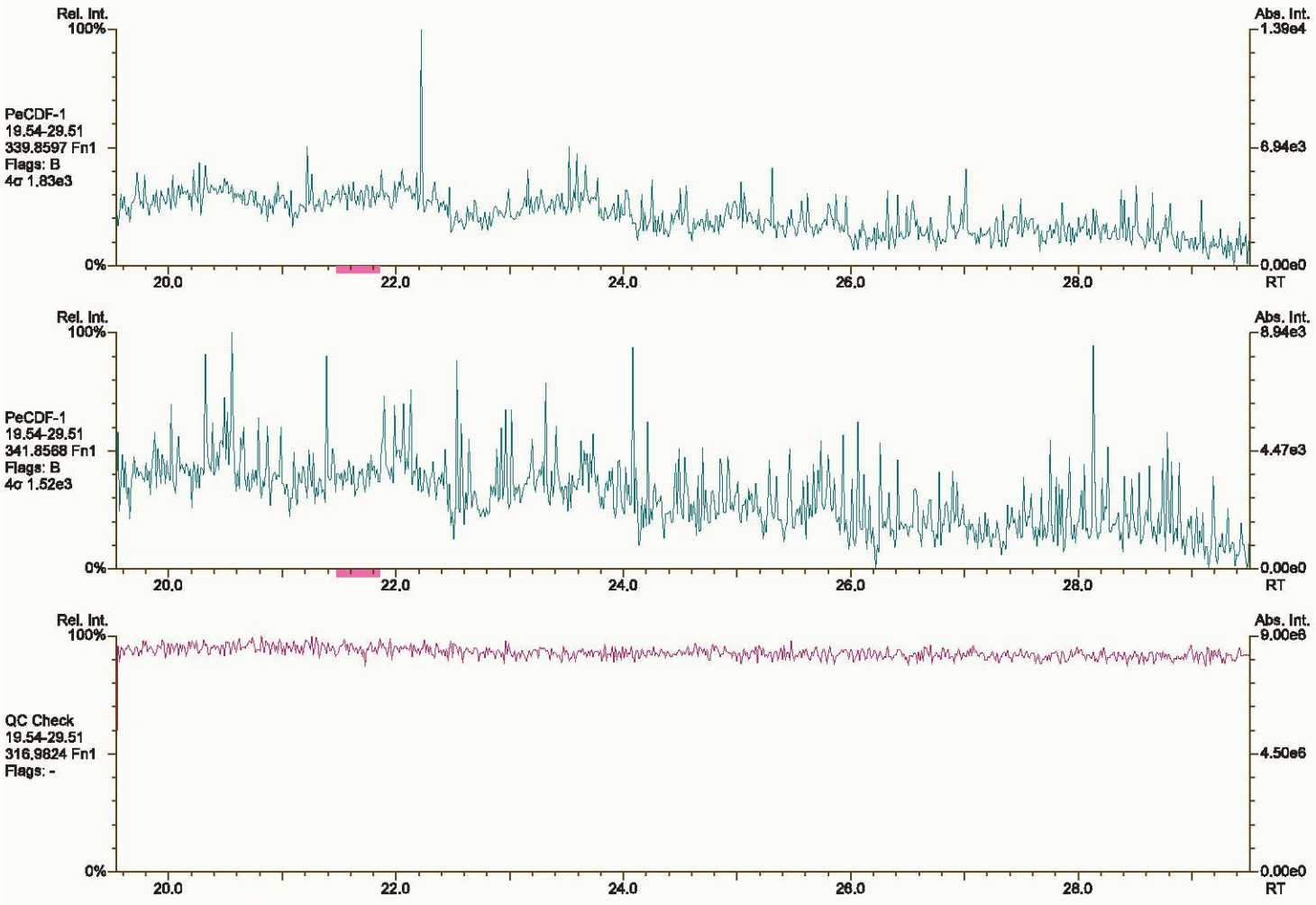
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7168, 1642 scc: 855-576 *Revised: 10-Nov-2021 15:17 (DTF) Printed: 11-Nov-2021 10:41 Page 6 of 12*


SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
2378F
5.36e6
26.57
1.89e6
9.43e5
0.00e0
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
2378F
1.07e7
26.57
2.41e6
1.20e6
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7
25.23
ES 2378F
2.05e7
25.65
4.47e6
2.23e6
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7
25.23
ES 2378F
2.57e7
25.65
5.68e6
2.84e6
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
9.44e3
4.72e3
0%
100%
20.0
22.0
24.0
26.0
28.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4233, 0916, 0938 scc: 855-576
PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 7 of 12

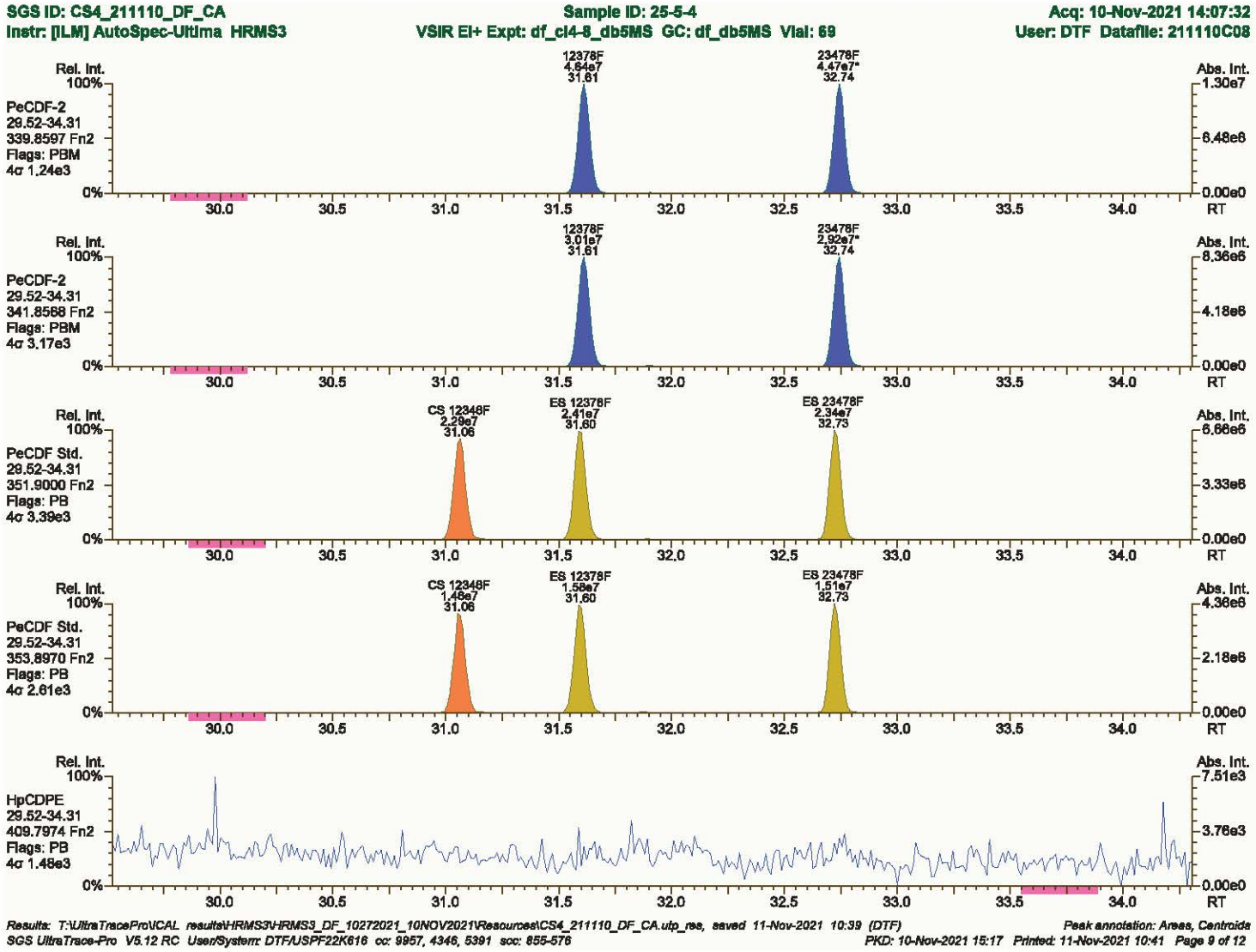
SGS ID: CS4_211110_DF_CA | Sample ID: 25-5-4 | Acq: 10-Nov-2021 14:07:32

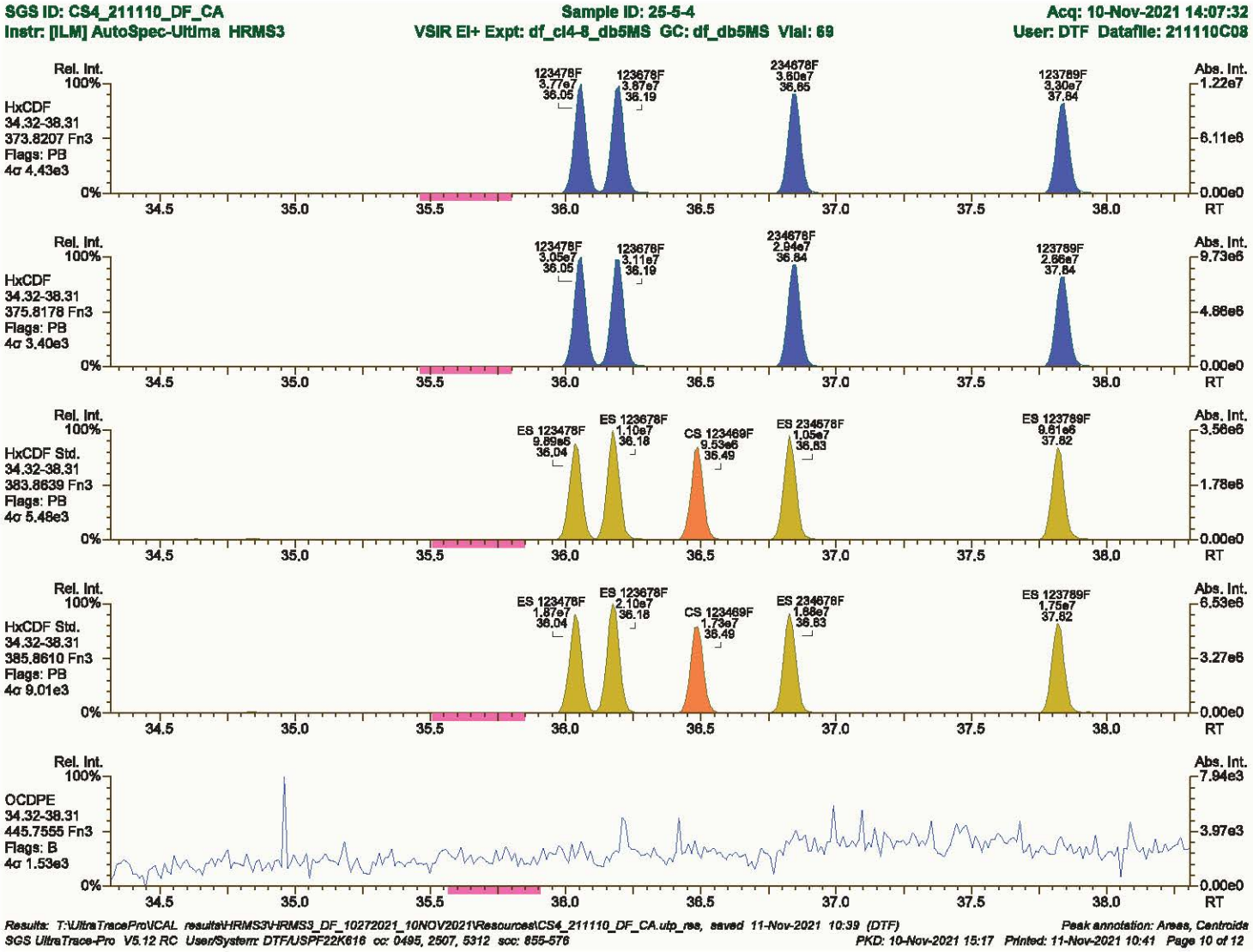
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69 | User: DTF Datafile: 211110C08

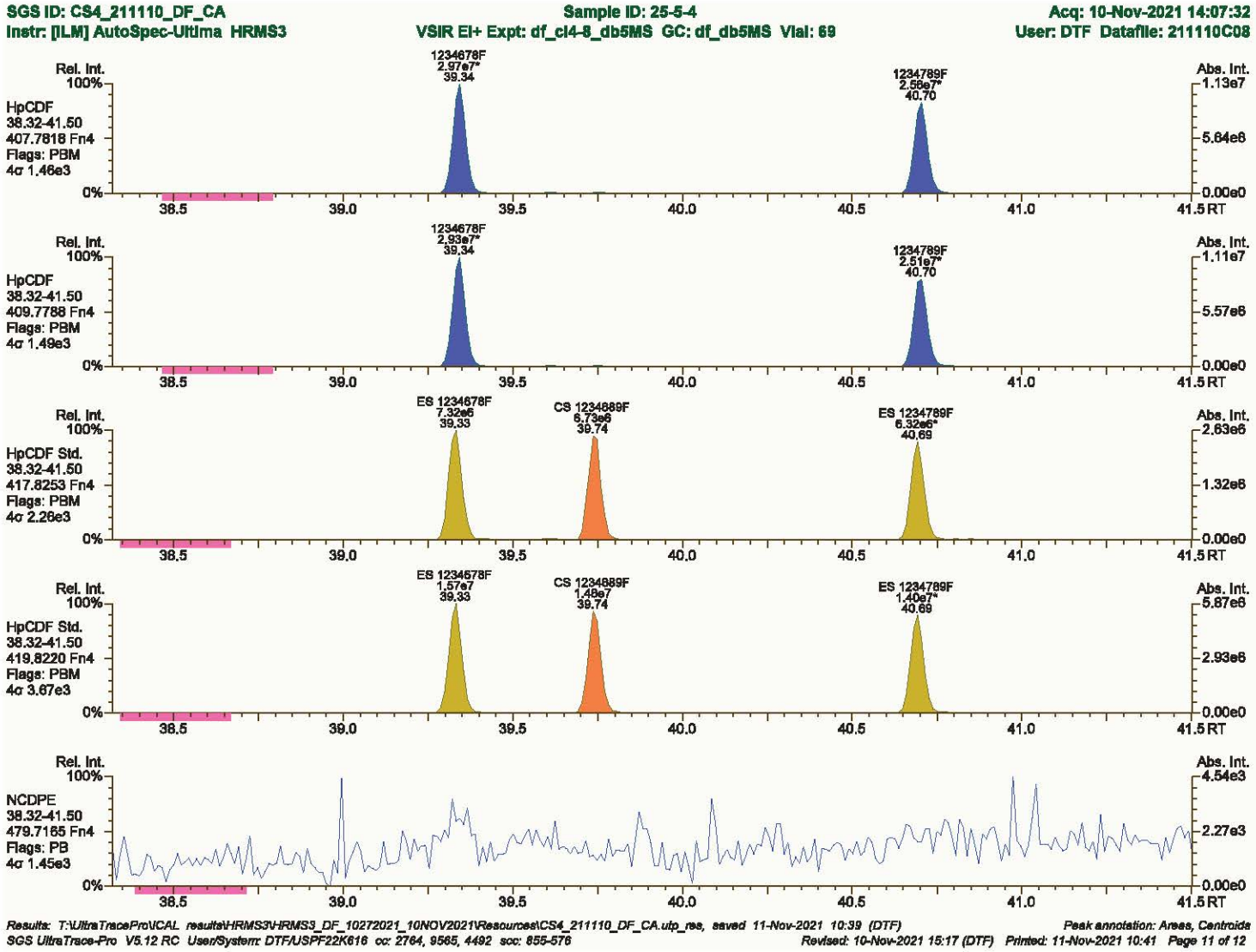


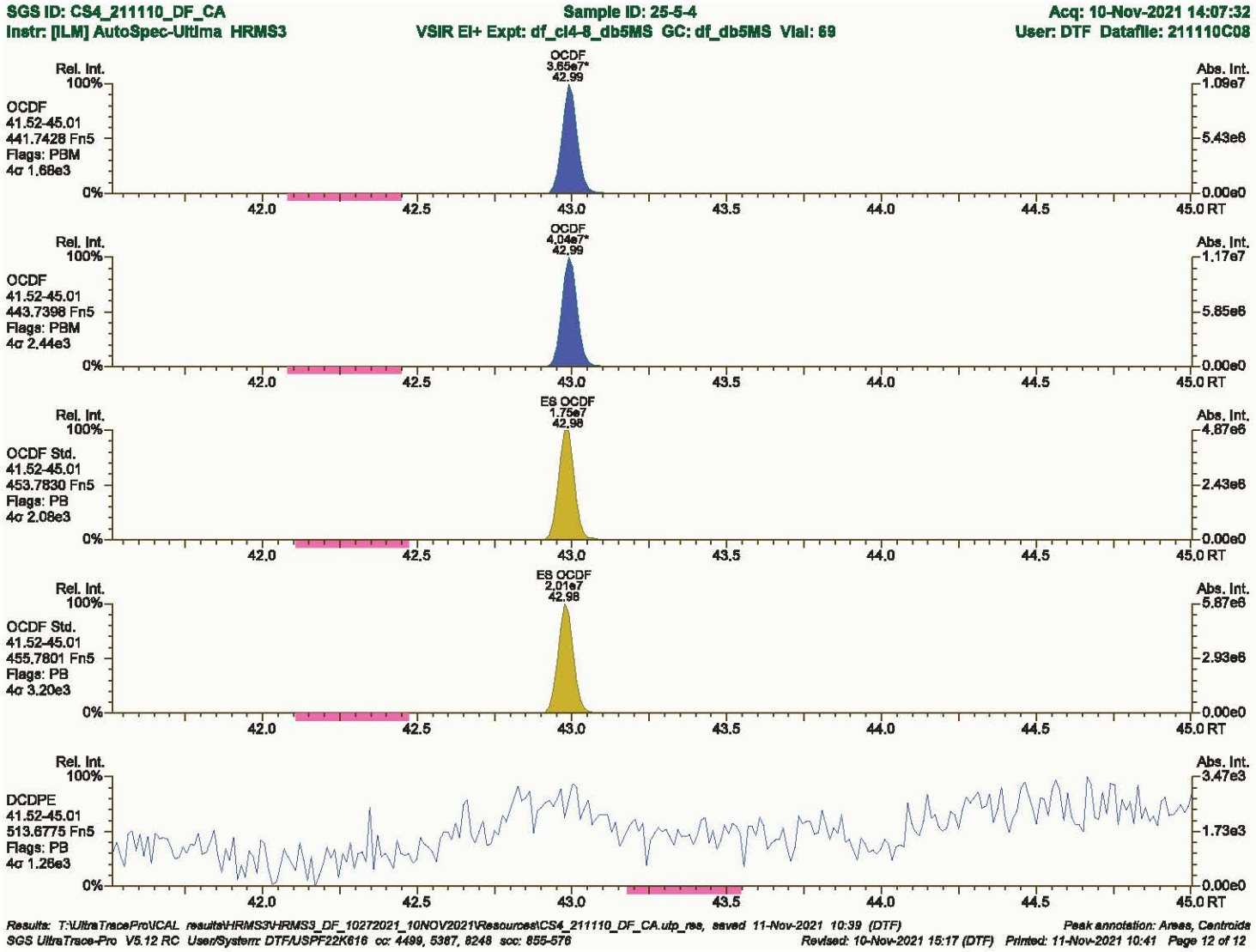
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9500 scc: 855-576 *PKD: 10-Nov-2021 15:16 Printed: 11-Nov-2021 10:41 Page 8 of 12*


SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
1.30e7
6.48e6
0.00e0
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
8.36e6
4.18e6
0.00e0
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12348F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
6.66e6
3.33e6
0.00e0
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12348F
1.48e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
4.36e6
2.18e6
0.00e0
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
7.51e3
3.76e3
0.00e0
100%
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9957, 4346, 5391 scc: 855-576
PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 9 of 12


SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 4.43e3
123478F 3.77e7 36.05
123678F 3.87e7 36.19
234678F 3.60e7 36.65
123789F 3.30e7 37.84
1.22e7
6.11e6
0.00e0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 3.40e3
123478F 3.05e7 36.05
123678F 3.11e7 36.19
234678F 2.94e7 36.64
123789F 2.66e7 37.84
9.73e6
4.86e6
0.00e0
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.48e3
ES 123478F 9.89e6 36.04
ES 123678F 1.10e7 36.18
CS 123469F 9.53e6 36.49
ES 234678F 1.05e7 36.63
ES 123789F 9.61e6 37.82
3.56e6
1.78e6
0.00e0
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 9.01e3
ES 123478F 1.87e7 36.04
ES 123678F 2.10e7 36.18
CS 123469F 1.73e7 36.49
ES 234678F 1.88e7 36.63
ES 123789F 1.75e7 37.82
6.53e6
3.27e6
0.00e0
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.53e3
7.94e3
3.97e3
0.00e0
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 0495, 2507, 5312 scc: 855-576
PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 10 of 12


SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
1234678F
2.97e7*
39.34
1234789F
2.58e7*
40.70
1.13e7
5.64e6
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
1.11e7
5.57e6
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
2.63e6
1.32e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
ES 1234678F
1.57e7
39.33
CS 1234689F
1.48e7
39.74
ES 1234789F
1.40e7*
40.69
5.87e6
2.93e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
4.54e3
2.27e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 2764, 9565, 4492 scc: 855-576
Revised: 10-Nov-2021 15:17 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

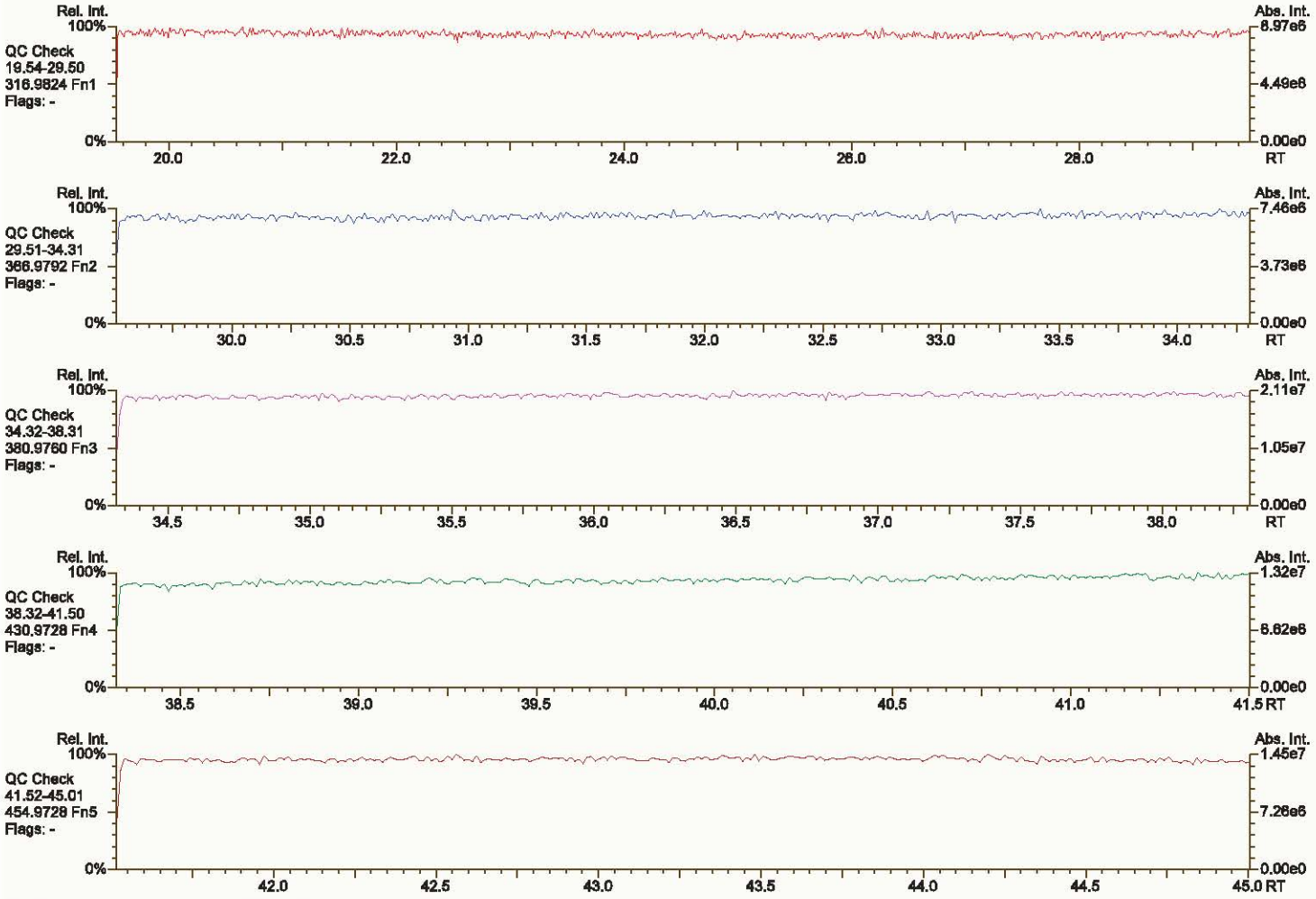

SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
OCDF
3.65e7*
42.99
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
1.09e7
5.43e6
0.00e0
OCDF
4.04e7*
42.99
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
1.17e7
5.85e6
0.00e0
ES OCDF
1.75e7
42.98
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
4.87e6
2.43e6
0.00e0
ES OCDF
2.01e7
42.98
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
5.87e6
2.93e6
0.00e0
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
3.47e3
1.73e3
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 4499, 5367, 8248 scc: 855-576
Revised: 10-Nov-2021 15:17 (DTF) Printed: 11-Nov-2021 10:41 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:53 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS5_211110_DF_CA		UTP: 11-Nov-2021 18:22:23 DTF				Checkcode: 573-489-BMZ	
Sample ID: 25-5-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C09	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:53 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS5_211110_DF_CA		UTP: 11-Nov-2021 18:22:23 DTF				Checkcode: 573-489-BMZ	
Sample ID: 25-5-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C09	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

SGS ID: CS5_211110_DF_CA | Sample ID: 25-5-3 | Acq: 10-Nov-2021 14:53:51

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70 | User: DTF Datafile: 211110C09



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)

Peak annotation: Areas, Centroids

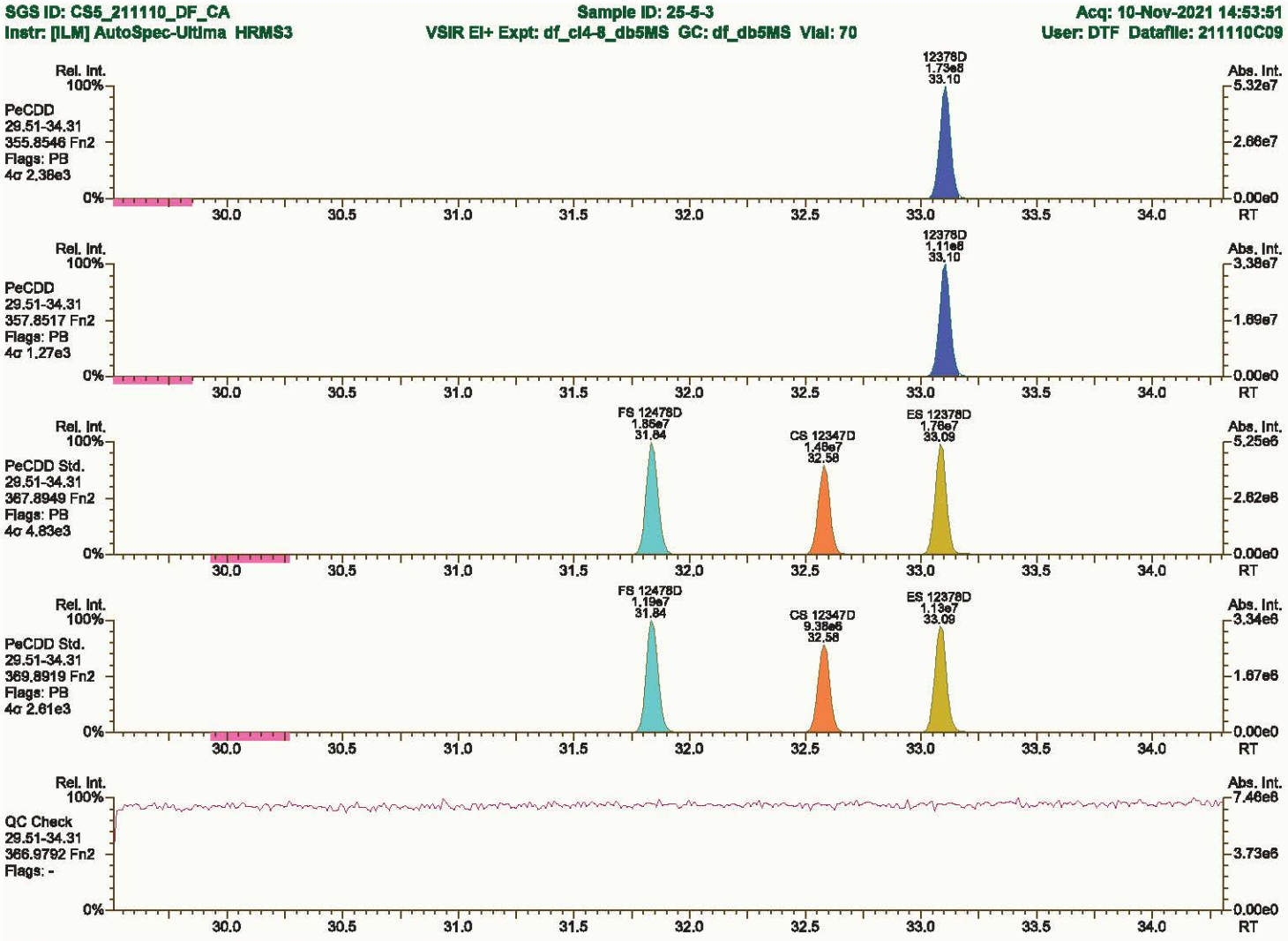
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 scc: 573-489

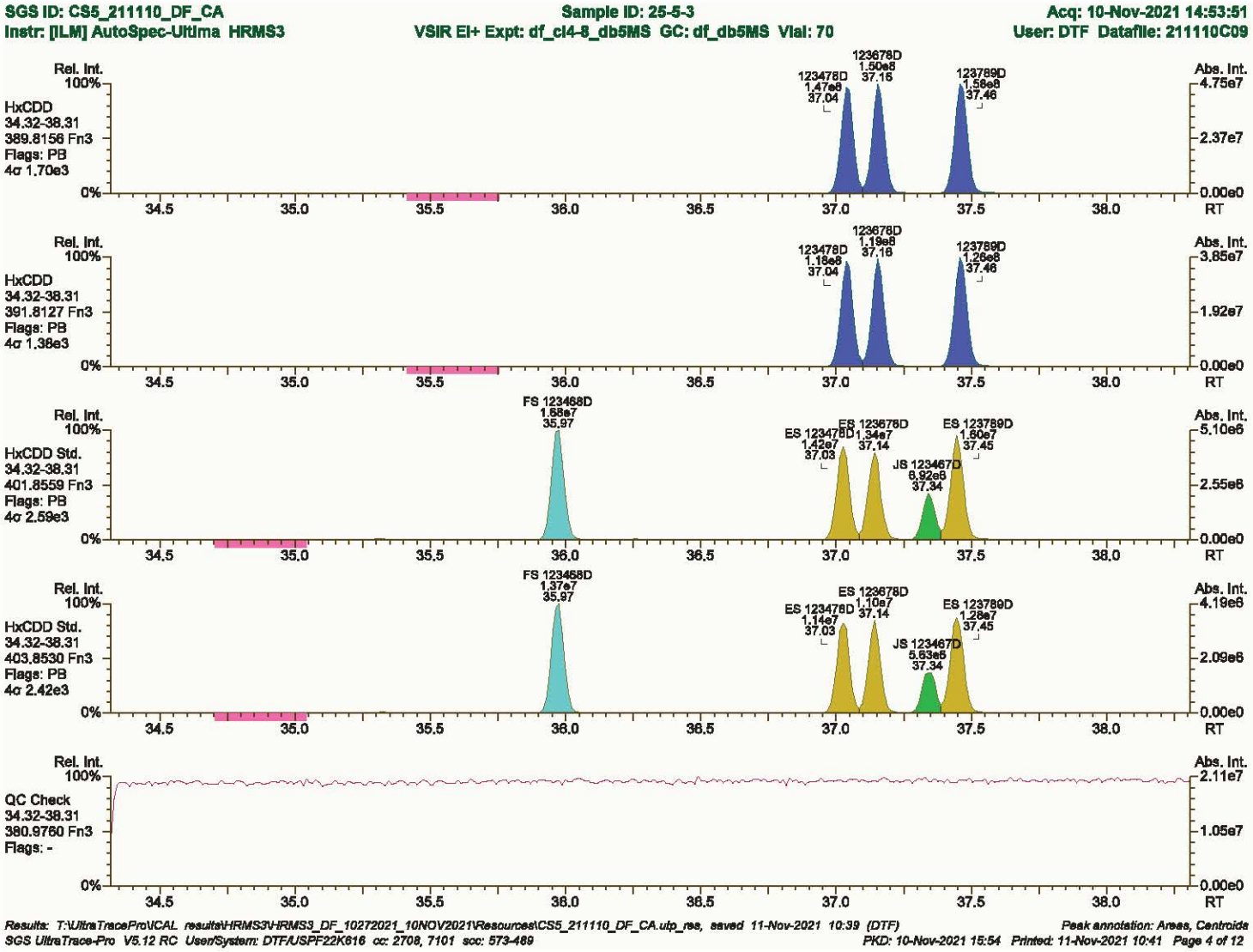
PKD: n/a Printed: 11-Nov-2021 10:41 Page 1 of 12

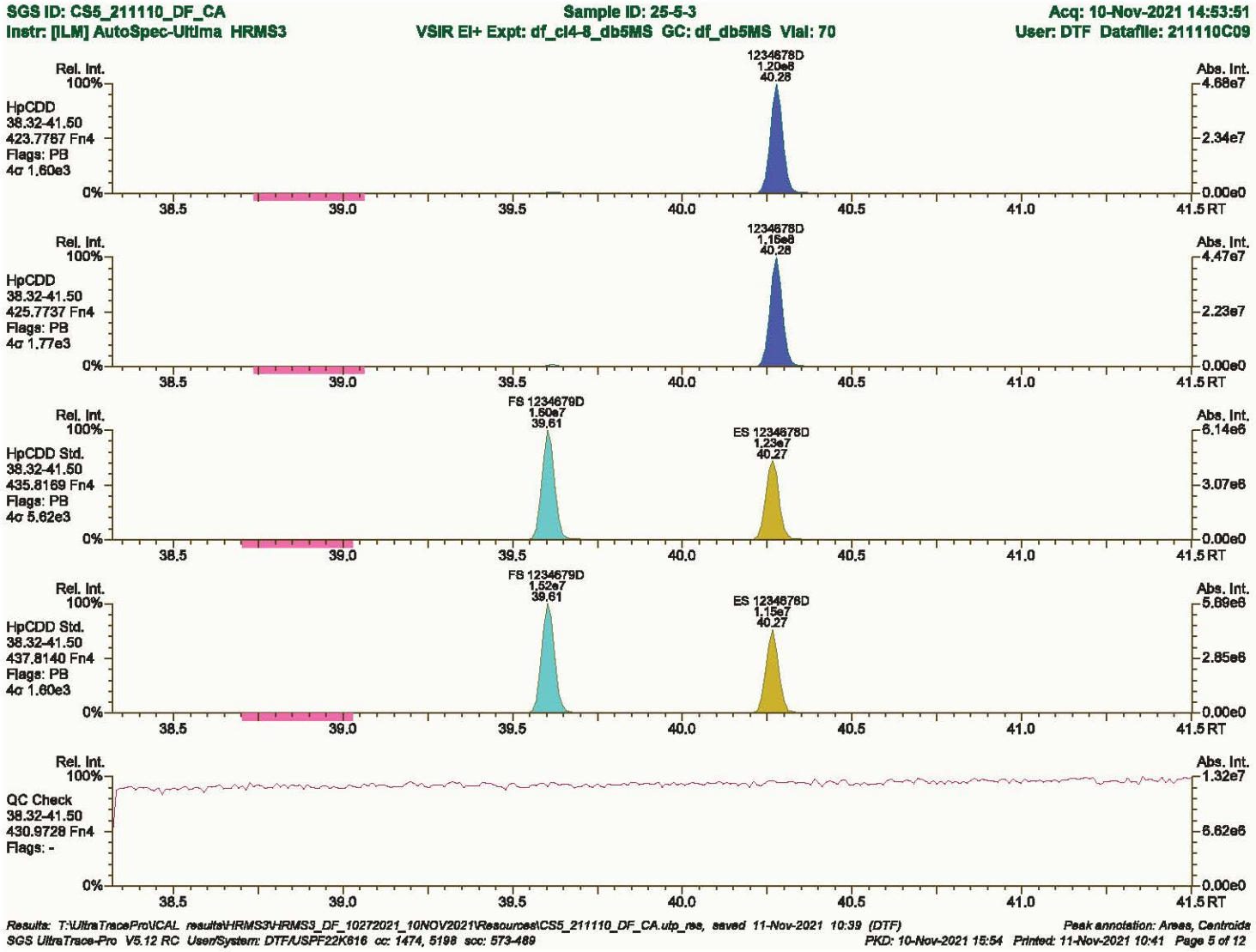
SGS ID: CS5_211110_DF_CA | Sample ID: 25-5-3 | Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70 | User: DTF Datafile: 211110C09



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7426, 8779, 8084 scc: 573-489 *PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 2 of 12*

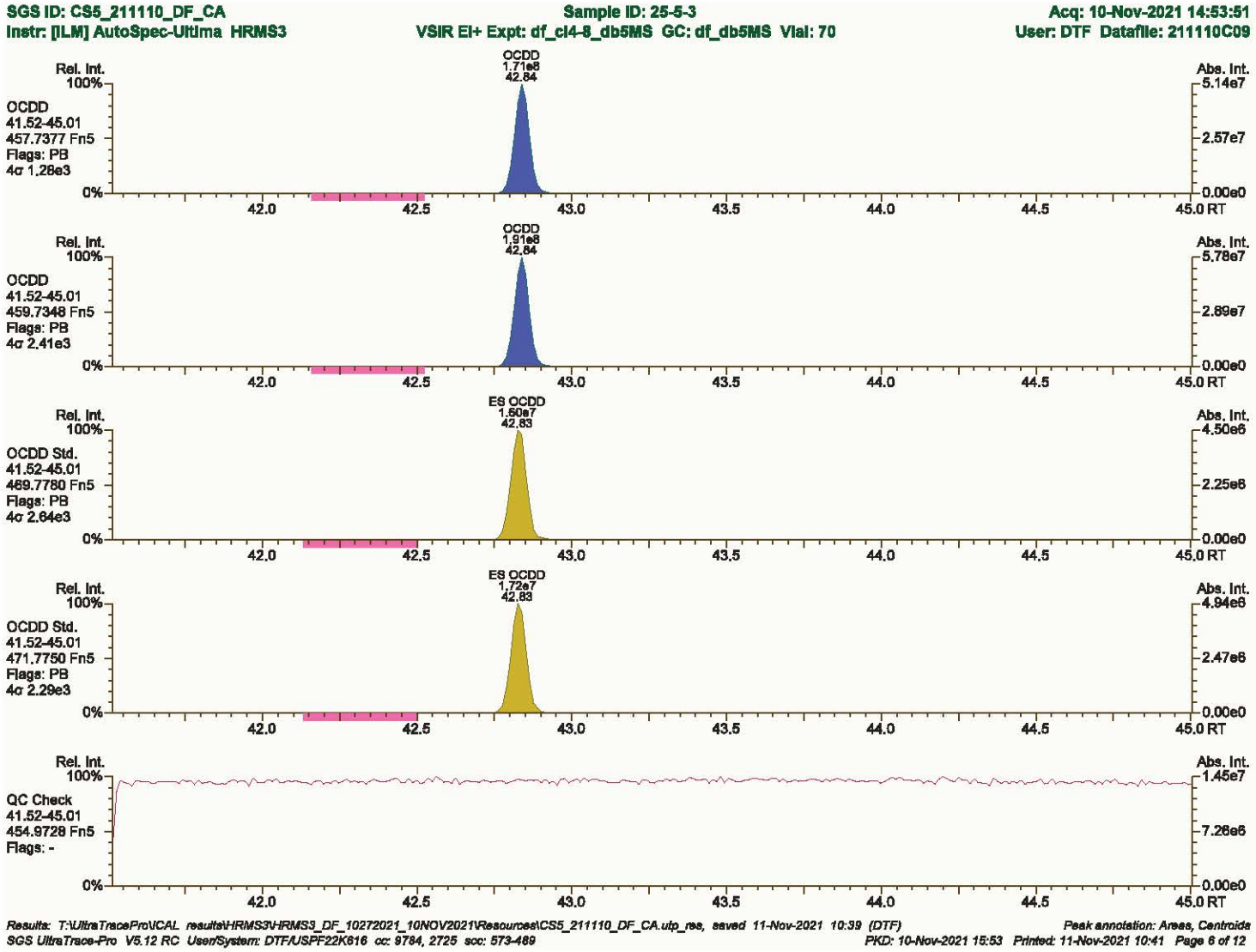

SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
12378D
1.73e8
33.10
5.32e7
2.66e7
0.00e0
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
12378D
1.11e8
33.10
3.38e7
1.69e7
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
FS 12478D
1.85e7
31.84
CS 12347D
1.48e7
32.58
ES 12378D
1.78e7
33.09
5.25e6
2.62e6
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
3.34e6
1.67e6
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
7.46e6
3.73e6
100%
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

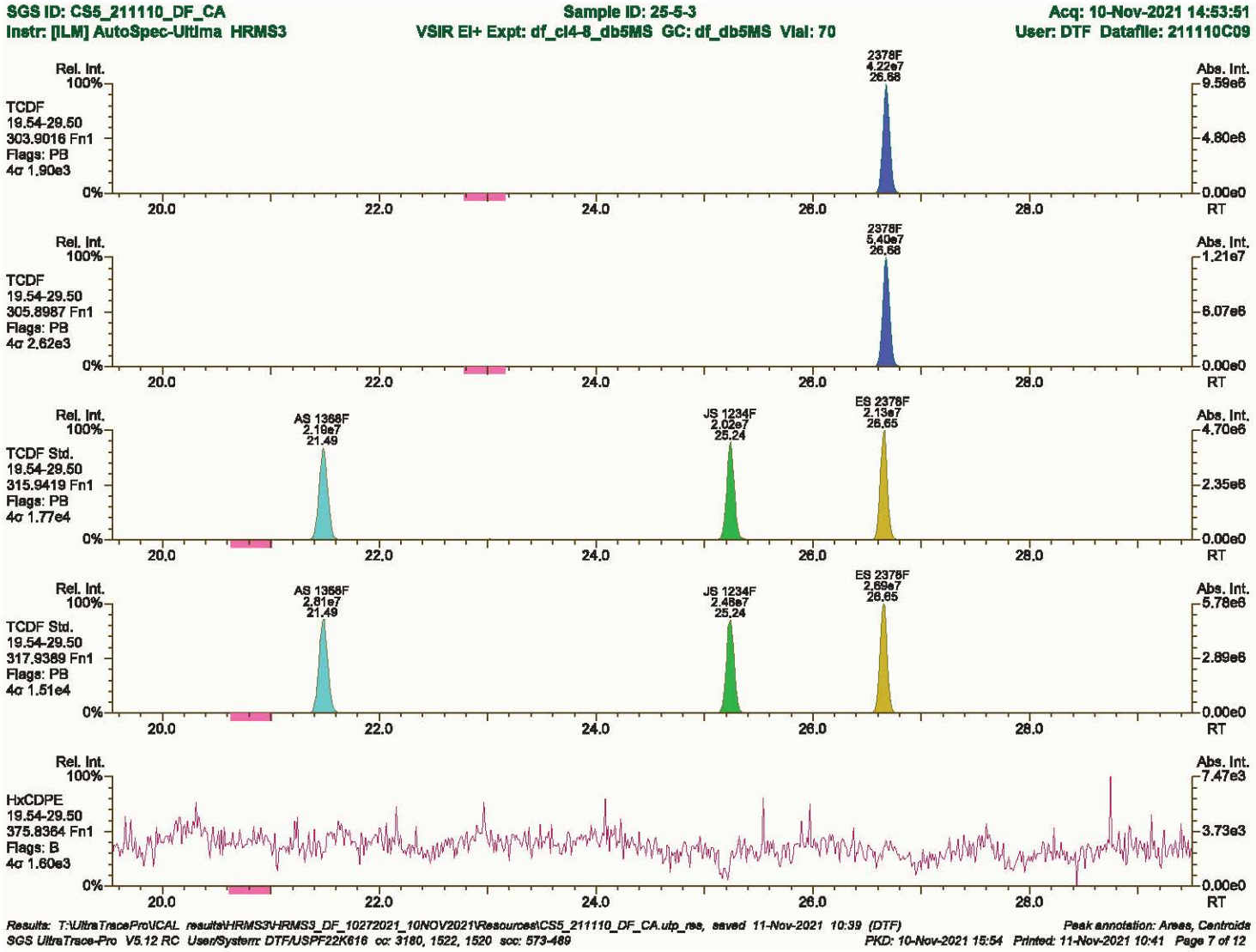

SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
123678D 1.50e8 37.16
123478D 1.47e8 37.04
123789D 1.58e8 37.46
4.75e7
2.37e7
0.00e0
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
123678D 1.19e8 37.16
123478D 1.18e8 37.04
123789D 1.26e8 37.46
3.85e7
1.92e7
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
FS 123468D 1.68e7 35.97
ES 123678D 1.34e7 37.14
ES 123478D 1.42e7 37.03
ES 123789D 1.80e7 37.45
JS 123467D 6.92e6 37.34
5.10e6
2.55e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
FS 123468D 1.37e7 35.97
ES 123678D 1.10e7 37.14
ES 123478D 1.14e7 37.03
ES 123789D 1.28e7 37.45
JS 123467D 5.63e6 37.34
4.19e6
2.09e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.11e7
1.05e7
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

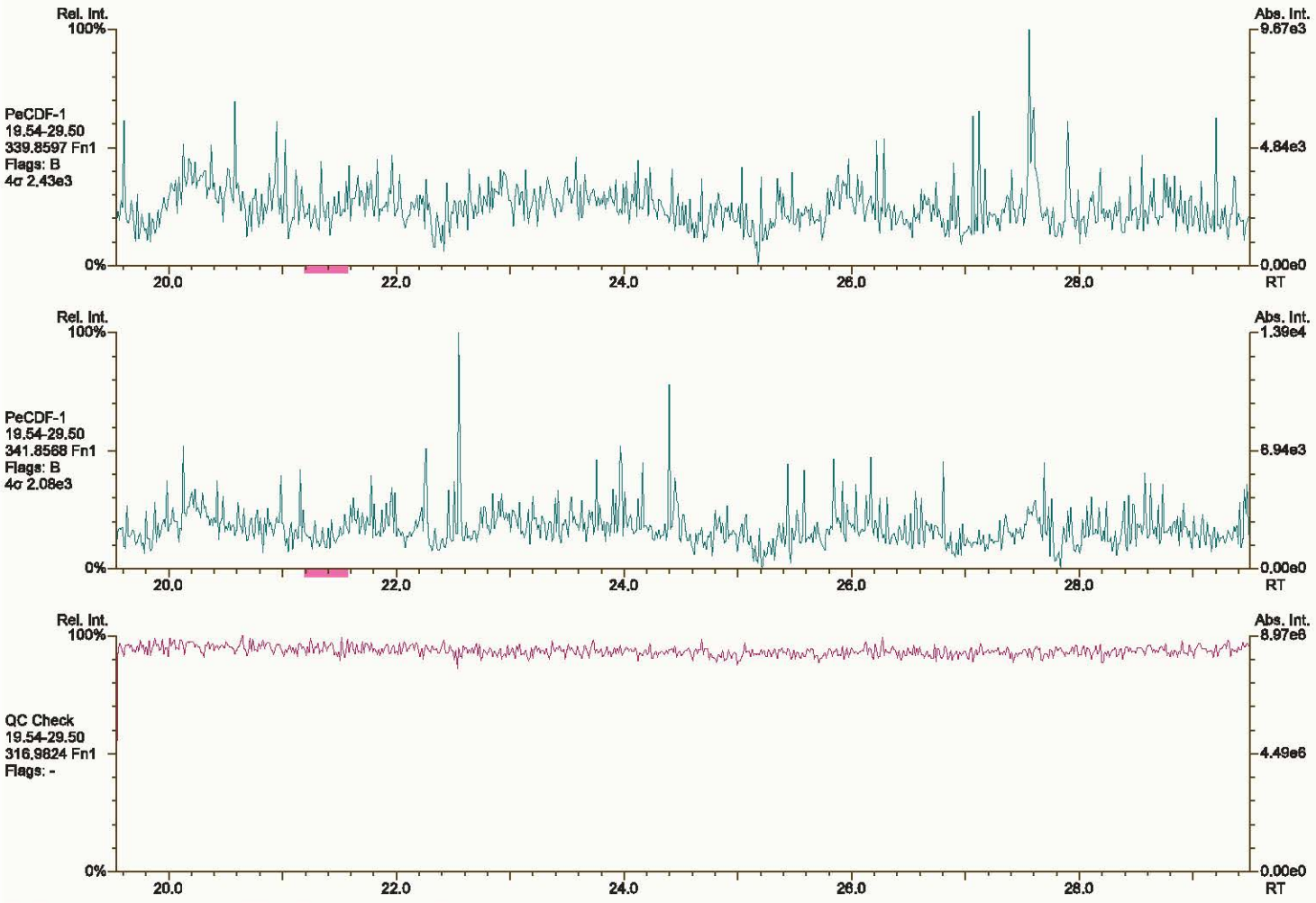
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1474, 5198 scc: 573-469 *PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 5 of 12*


SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
OCDD
1.71e8
42.84
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
5.14e7
2.57e7
0.00e0
OCDD
1.91e8
42.84
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
5.78e7
2.89e7
ES OCDD
1.60e7
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
4.50e6
2.25e6
ES OCDD
1.72e7
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
4.94e6
2.47e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
2378F
4.22e7
26.68
9.59e6
4.80e6
0.00e0
RT
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
2378F
5.40e7
26.68
1.21e7
6.07e6
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
4.70e6
2.35e6
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
5.78e6
2.89e6
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
7.47e3
3.73e3
0%
100%
20.0
22.0
24.0
26.0
28.0

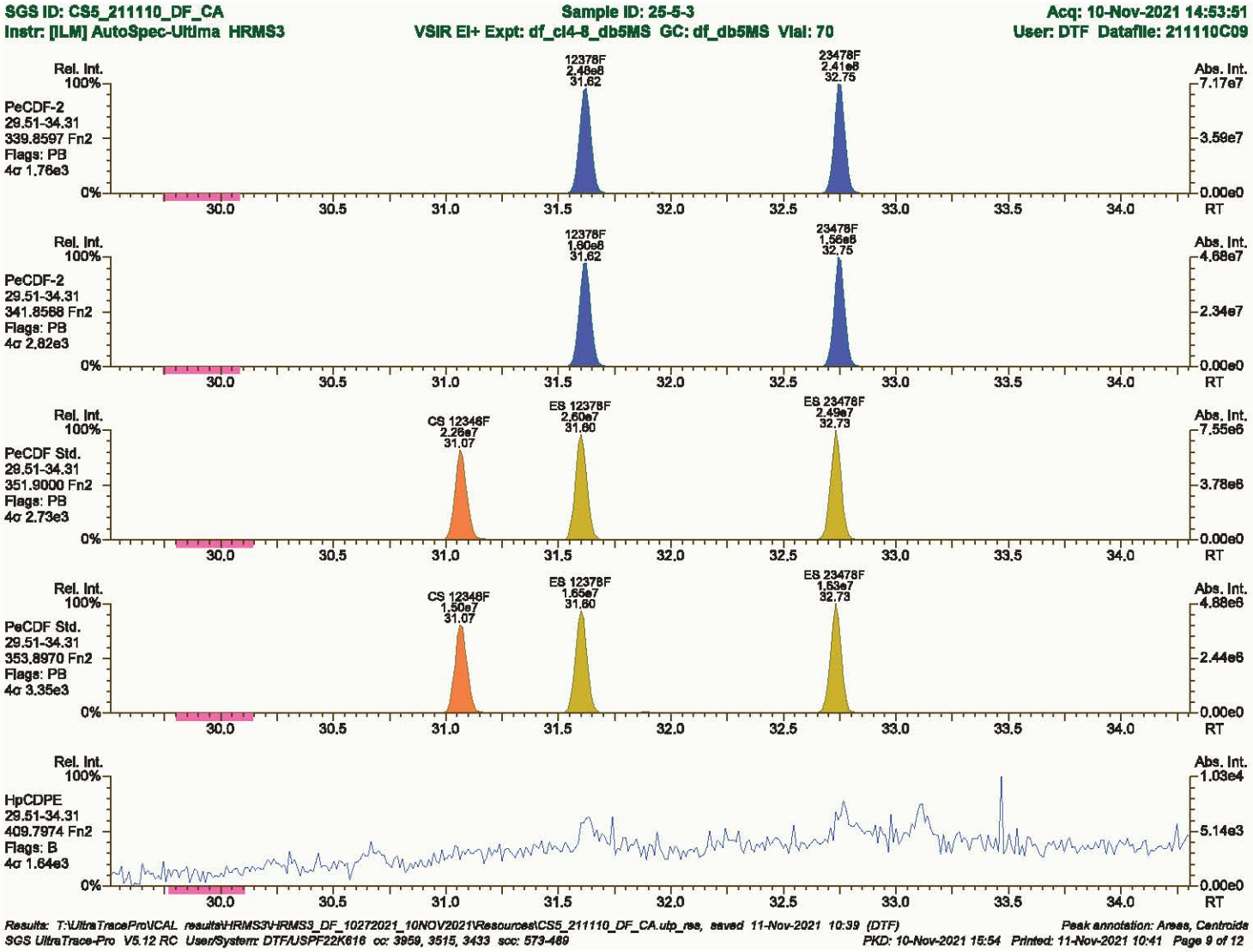
SGS ID: CS5_211110_DF_CA | Sample ID: 25-5-3 | Acq: 10-Nov-2021 14:53:51

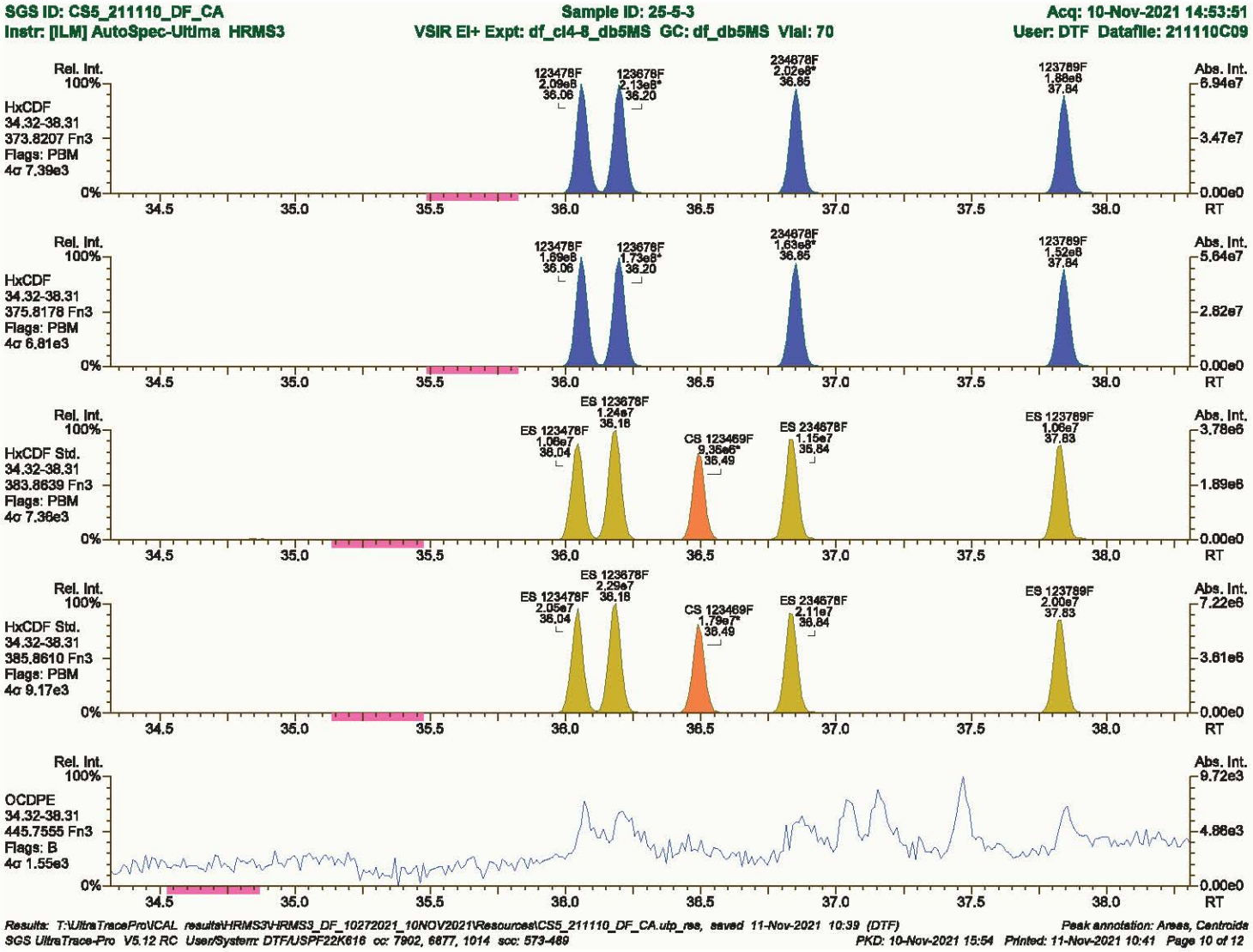
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70 | User: DTF Datafile: 211110C09



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

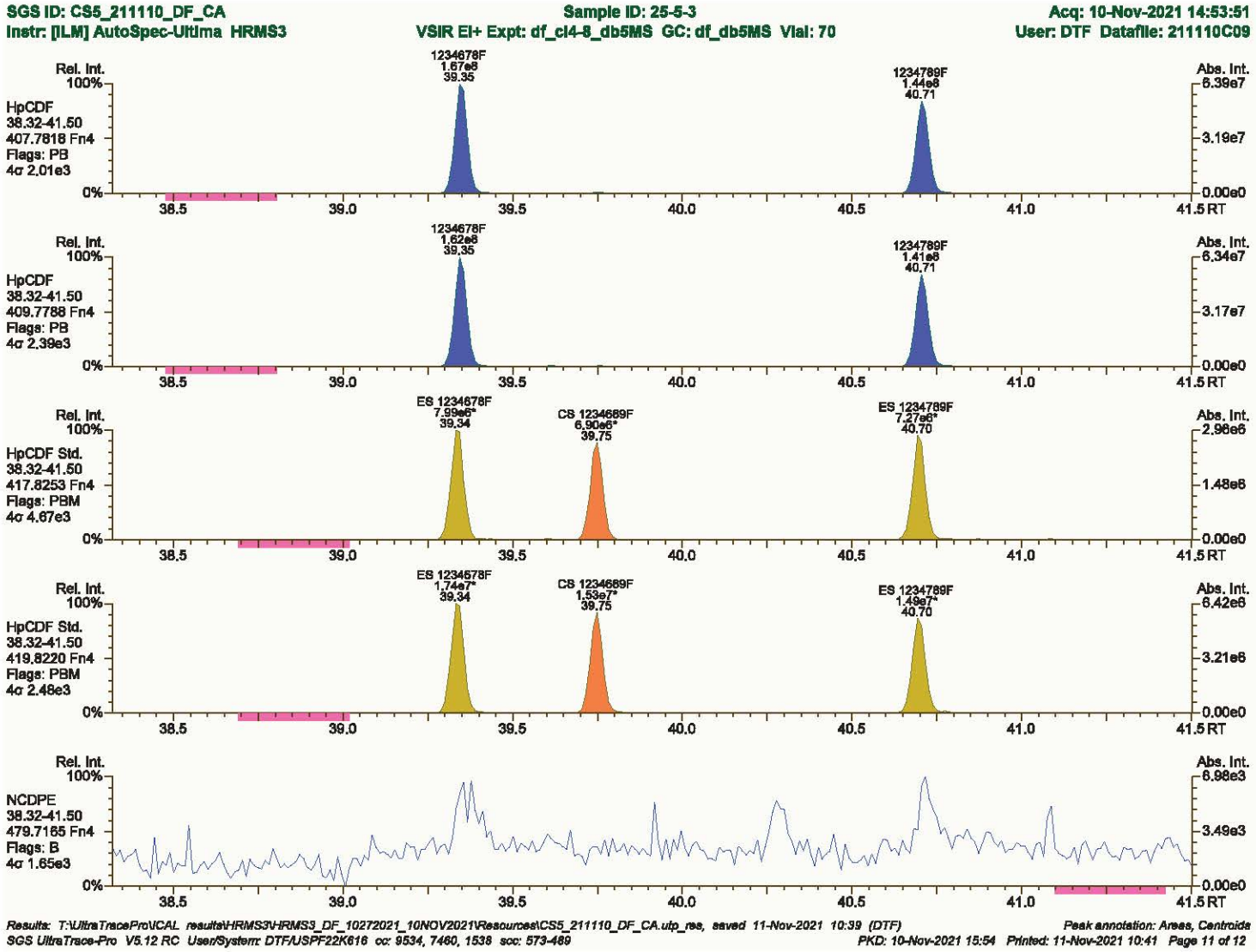
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1231 scc: 573-489 *PKD: 10-Nov-2021 15:53 Printed: 11-Nov-2021 10:41 Page 8 of 12*

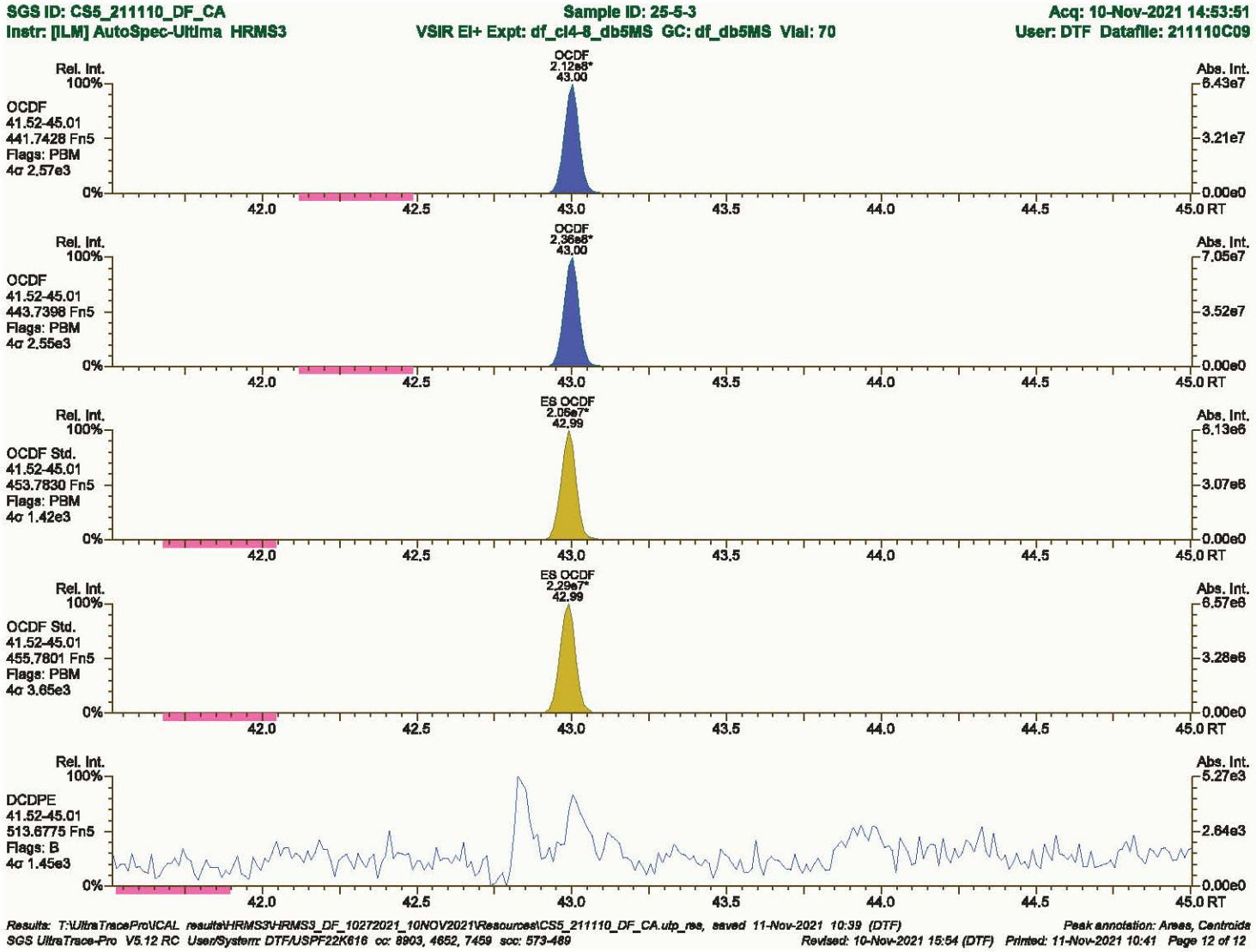

SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
12378F
2.48e8
31.62
23478F
2.41e8
32.75
7.17e7
3.59e7
0.00e0
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
12378F
1.90e8
31.62
23478F
1.56e8
32.75
4.68e7
2.34e7
0.00e0
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
7.55e6
3.78e6
0.00e0
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.53e7
32.73
4.88e6
2.44e6
0.00e0
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
1.03e4
5.14e3
0.00e0
100%
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 7902, 6877, 1014 scc: 573-489 *PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 10 of 12*


SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 2.01e3
1234678F
1.67e8
39.35
1234789F
1.44e8
40.71
6.39e7
3.19e7
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 2.39e3
1.62e8
1.41e8
6.34e7
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.67e3
ES 1234678F
7.99e6*
39.34
CS 1234689F
6.90e6*
39.75
ES 1234789F
7.27e6*
40.70
2.96e6
1.48e6
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.48e3
1.74e7*
1.53e7*
1.49e7*
6.42e6
3.21e6
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.65e3
6.98e3
3.49e3
0%
100%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

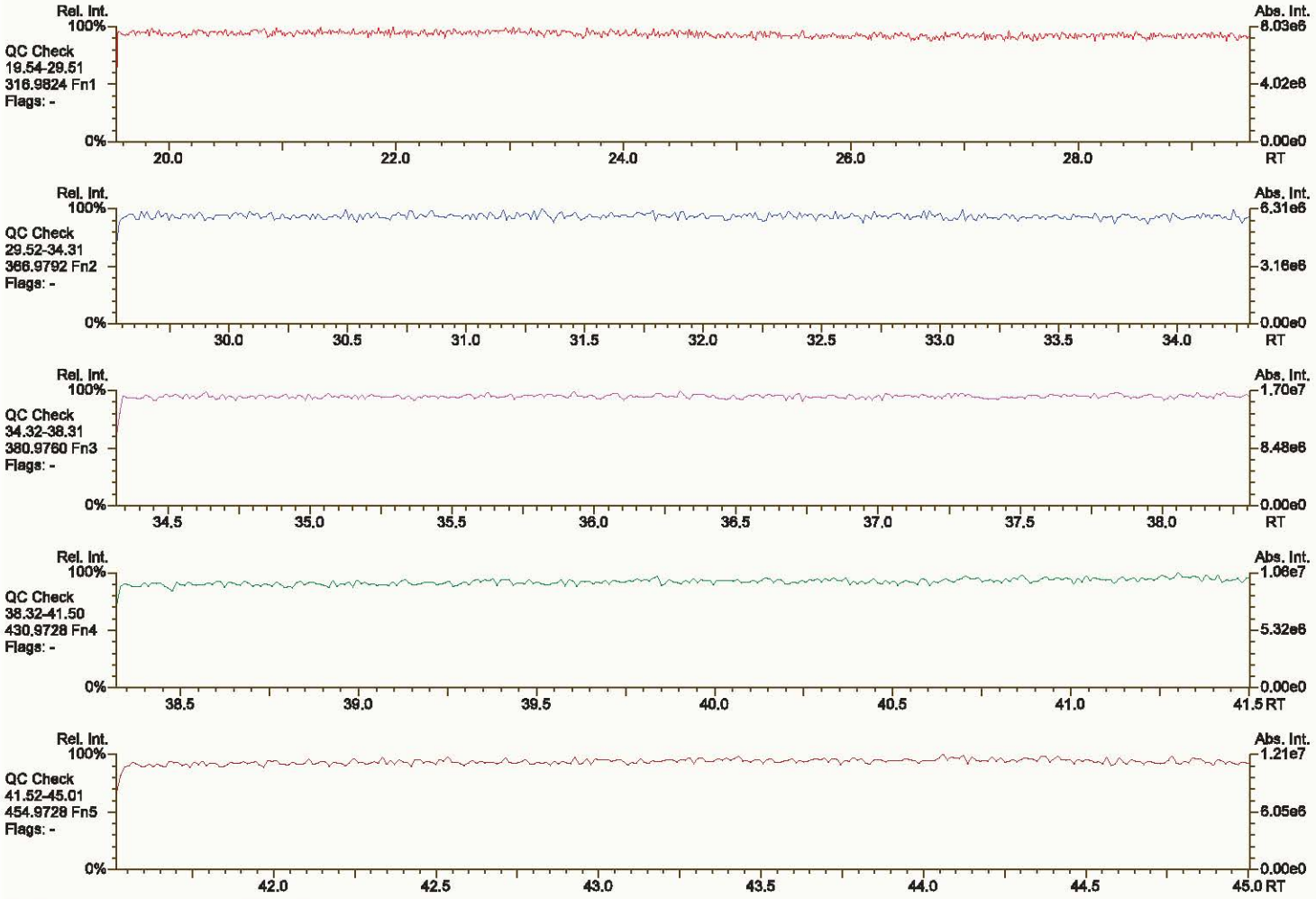

SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
OCDF
2.12e8*
43.00
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
6.43e7
3.21e7
0.00e0
OCDF
2.36e8*
43.00
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
7.05e7
3.52e7
0.00e0
ES OCDF
2.05e7*
42.99
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
6.13e6
3.07e6
0.00e0
ES OCDF
2.29e7*
42.99
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
6.57e6
3.28e6
0.00e0
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
5.27e3
2.64e3
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 8903, 4652, 7459 scc: 573-489
Revised: 10-Nov-2021 15:54 (DTF) Printed: 11-Nov-2021 10:41 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF				Checkcode: 172-738-WQL	
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C10	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 18:22:23 DTF				Checkcode: 172-738-WQL	
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C10	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

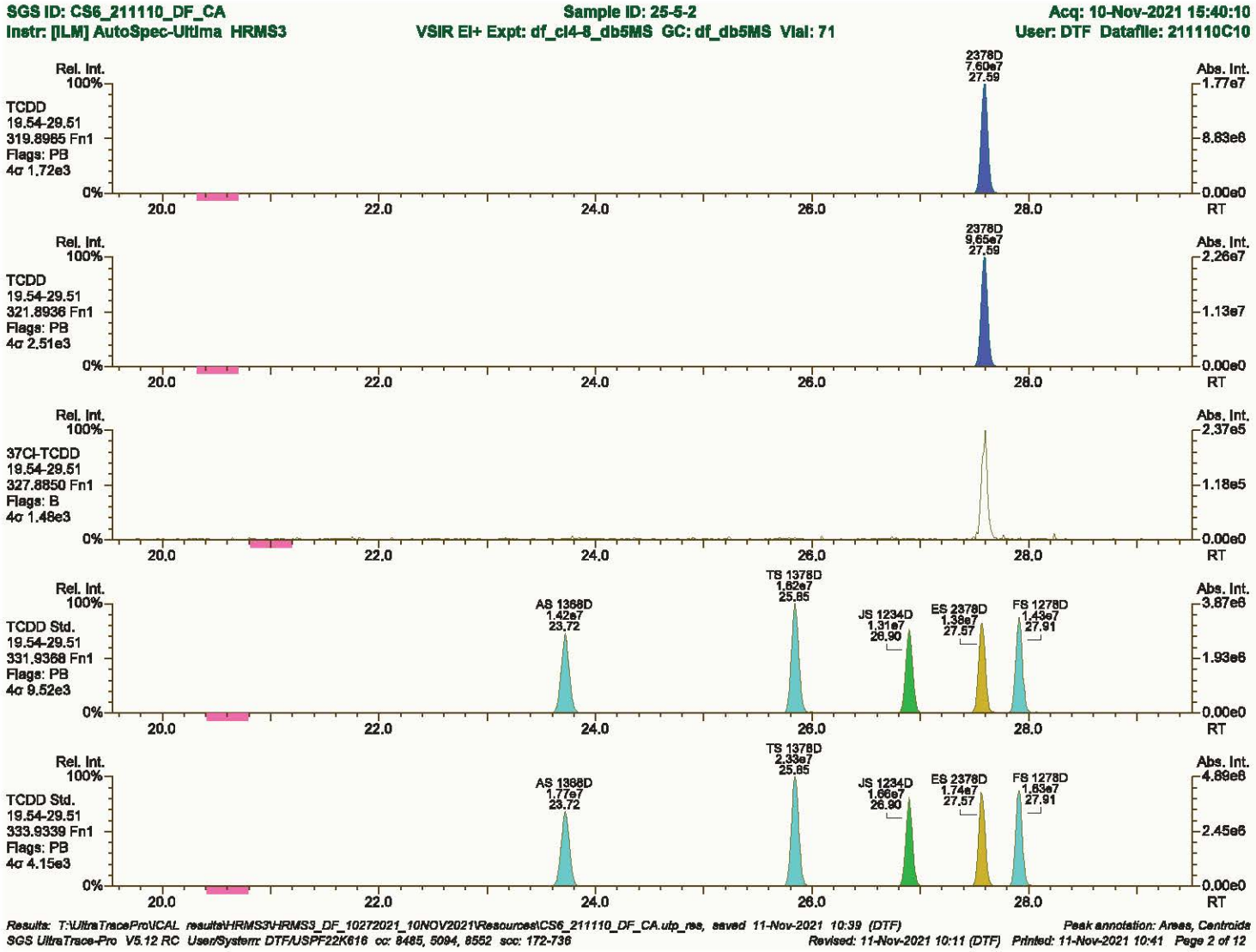
SGS ID: CS6_211110_DF_CA | Sample ID: 25-5-2 | Acq: 10-Nov-2021 15:40:10

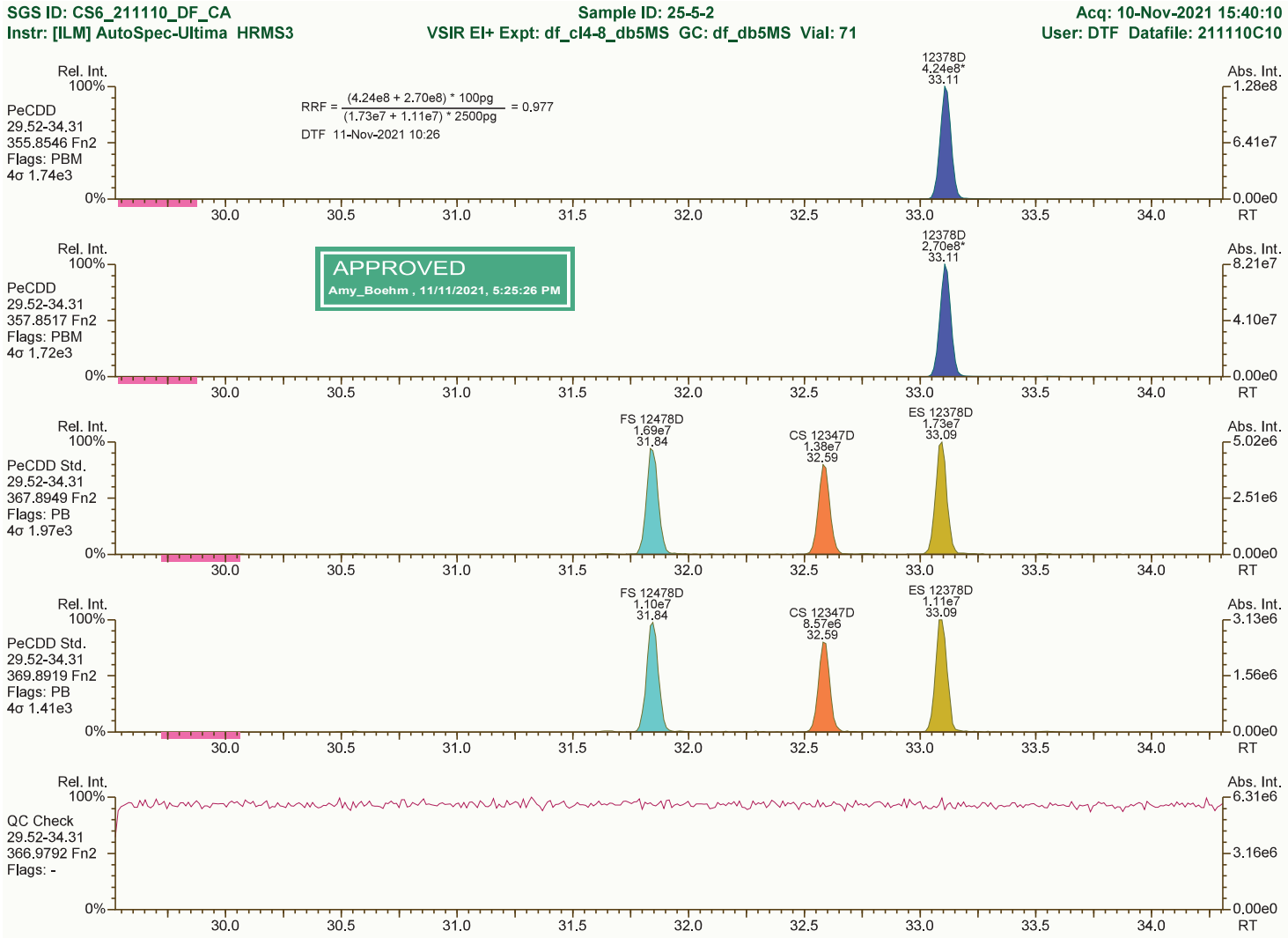
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 71 | User: DTF Datafile: 211110C10

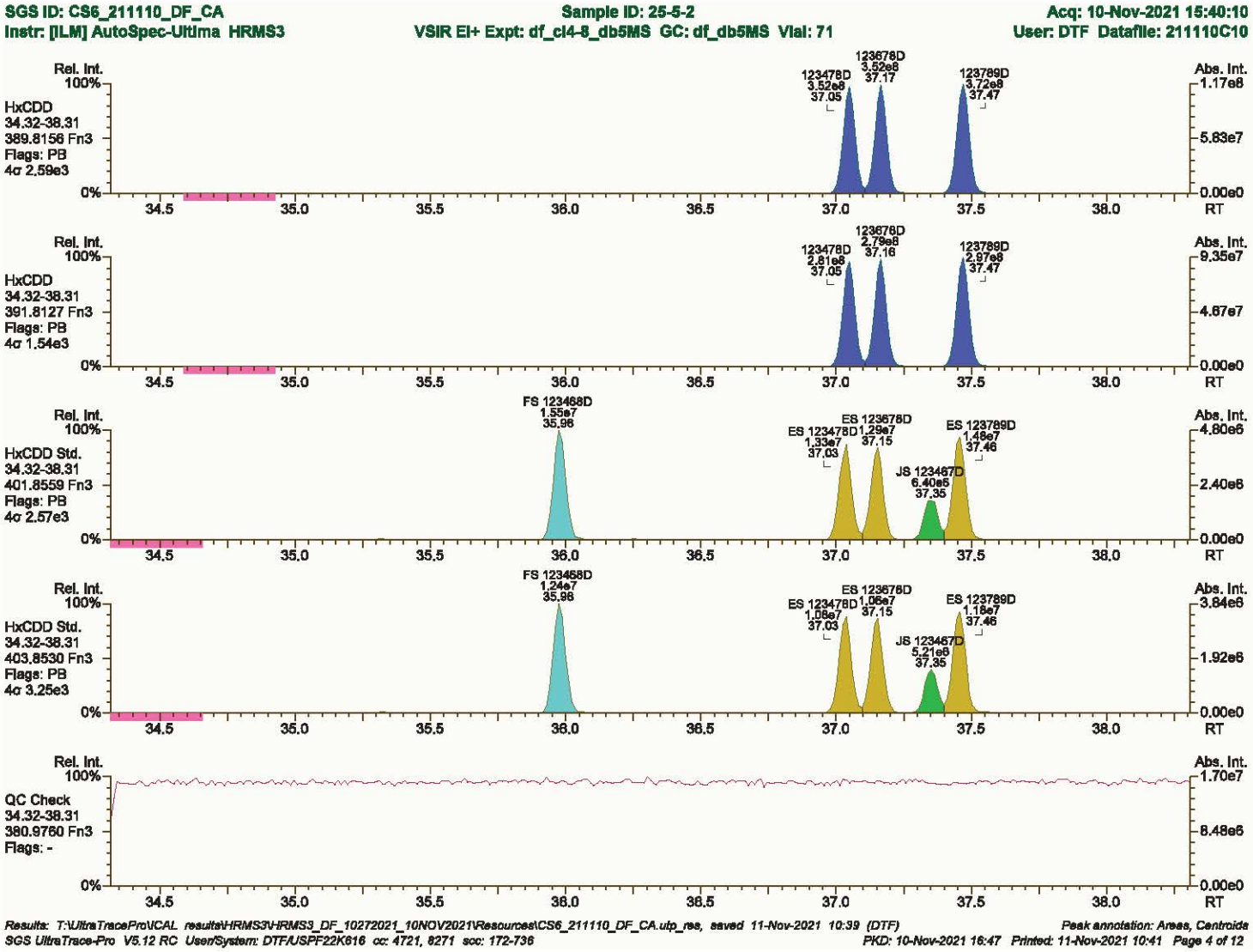


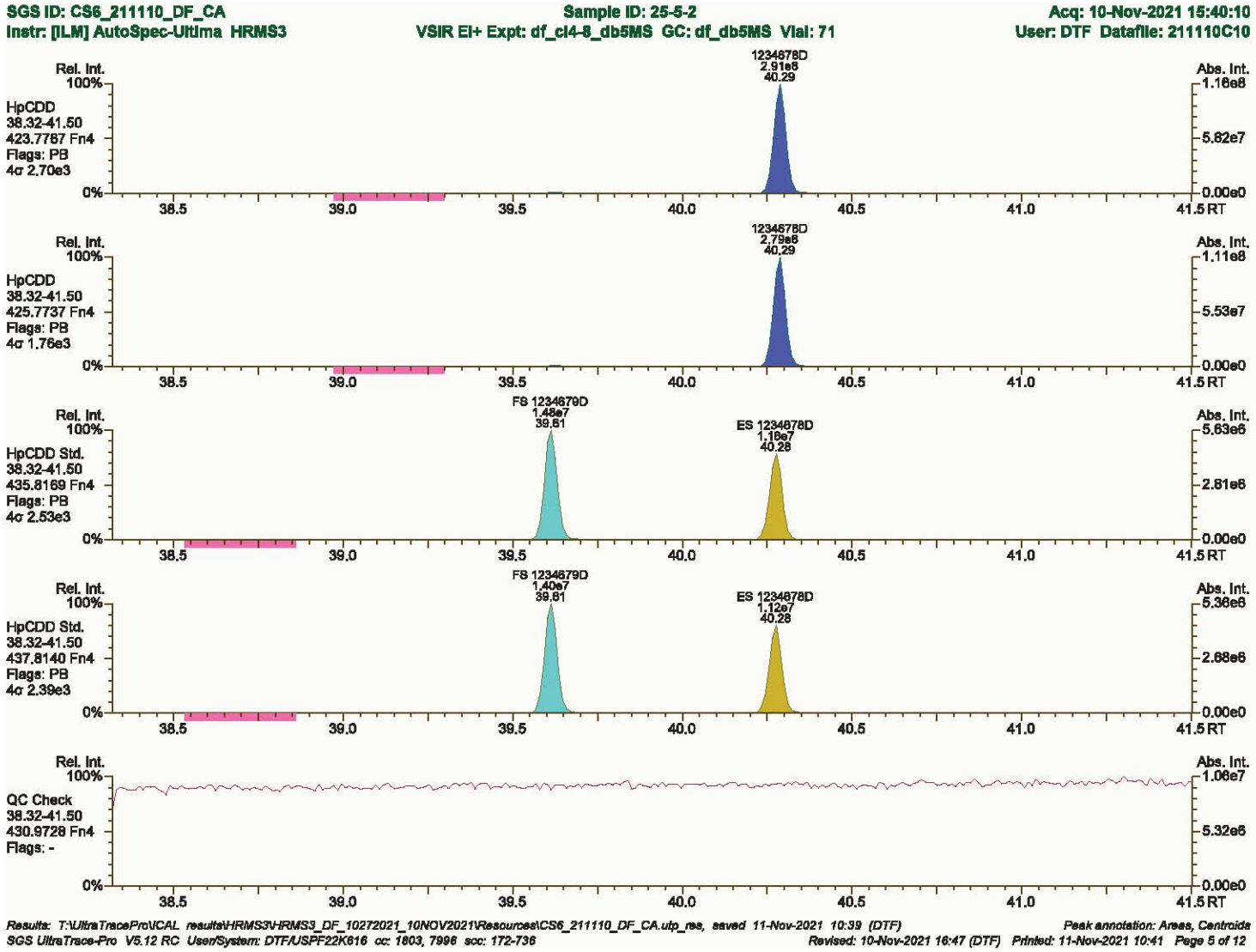
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC UserSystem: DTF/USPF22K616 scc: 172-736 *PKD: n/a Printed: 11-Nov-2021 10:41 Page 1 of 12*

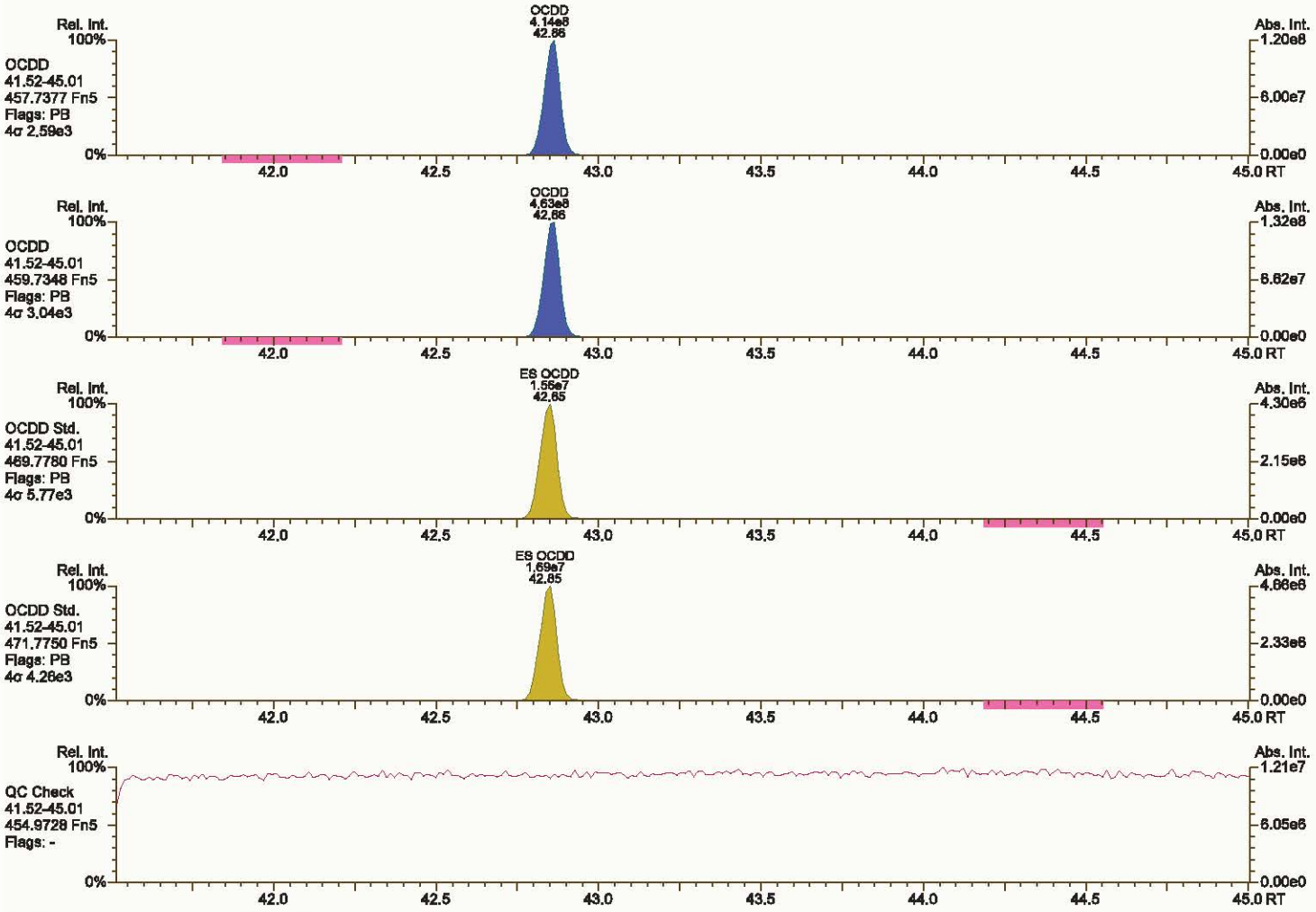

SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
Rel. Int.
Abs. Int.
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
2378D
7.60e7
27.59
1.77e7
8.83e6
0.00e0
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
2378D
9.65e7
27.59
2.26e7
1.13e7
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
2.37e5
1.18e5
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
AS 1368D
1.42e7
23.72
TS 1378D
1.62e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
3.87e6
1.93e6
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.63e7
27.91
4.89e6
2.45e6
Rel. Int.
100%
0%
20.0
22.0
24.0
26.0
28.0
RT
0.00e0


SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
Rel. Int.
Abs. Int.
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.74e3
RRF = (4.24e8 + 2.70e8) * 100pg / (1.73e7 + 1.11e7) * 2500pg = 0.977
DTF 11-Nov-2021 10:26
12378D
4.24e8*
33.11
APPROVED
Amy_Boehm , 11/11/2021, 5:25:26 PM
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.72e3
12378D
2.70e8*
33.11
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 1.97e3
FS 12478D
1.69e7
31.84
CS 12347D
1.38e7
32.59
ES 12378D
1.73e7
33.09
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 1.41e3
FS 12478D
1.10e7
31.84
CS 12347D
8.57e6
32.59
ES 12378D
1.11e7
33.09
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
RT

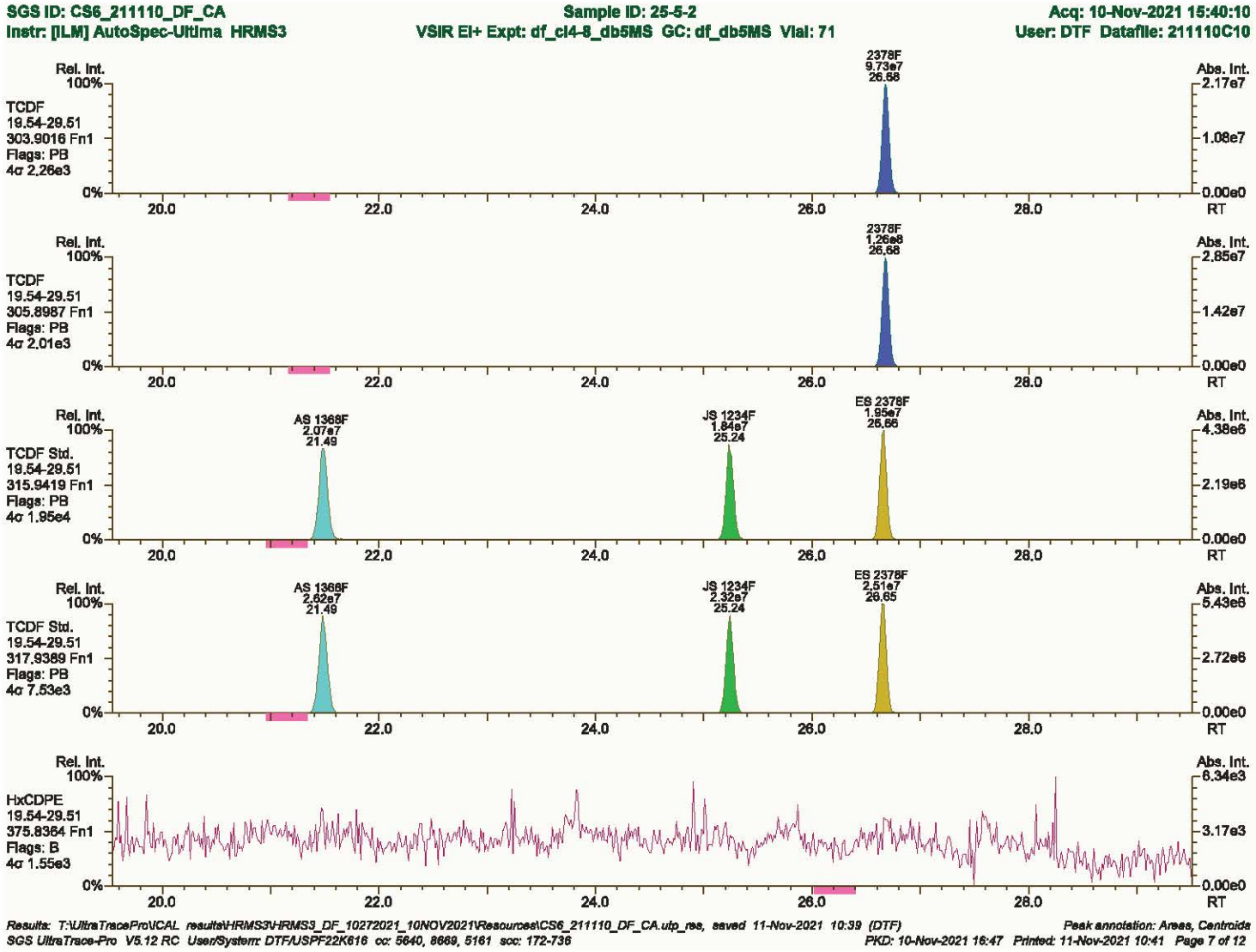

SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
123678D 3.52e8 37.17
123478D 3.52e8 37.05
123789D 3.72e8 37.47
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
123678D 2.79e8 37.16
123478D 2.81e8 37.05
123789D 2.97e8 37.47
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
FS 123468D 1.55e7 35.96
ES 123678D 1.29e7 37.15
ES 123478D 1.33e7 37.03
ES 123789D 1.48e7 37.46
JS 123467D 6.40e5 37.35
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
FS 123468D 1.24e7 35.96
ES 123678D 1.06e7 37.15
ES 123478D 1.08e7 37.03
ES 123789D 1.18e7 37.46
JS 123467D 5.21e5 37.35
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
RT


SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
Rel. Int.
Abs. Int.
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
1234678D
2.91e6
40.29
1.16e8
5.82e7
0.00e0
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
1234678D
2.79e6
40.29
1.11e8
5.53e7
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
FS 1234679D
1.48e7
39.81
ES 1234678D
1.16e7
40.28
5.63e6
2.81e6
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
FS 1234679D
1.40e7
39.81
ES 1234678D
1.12e7
40.28
5.36e6
2.68e6
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.06e7
5.32e6
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

SGS ID: CS6_211110_DF_CA | Sample ID: 25-5-2 | Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71 | User: DTF Datafile: 211110C10



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6614, 8805 scc: 172-736 *PKD: 10-Nov-2021 16:46 Printed: 11-Nov-2021 10:41 Page 6 of 12*



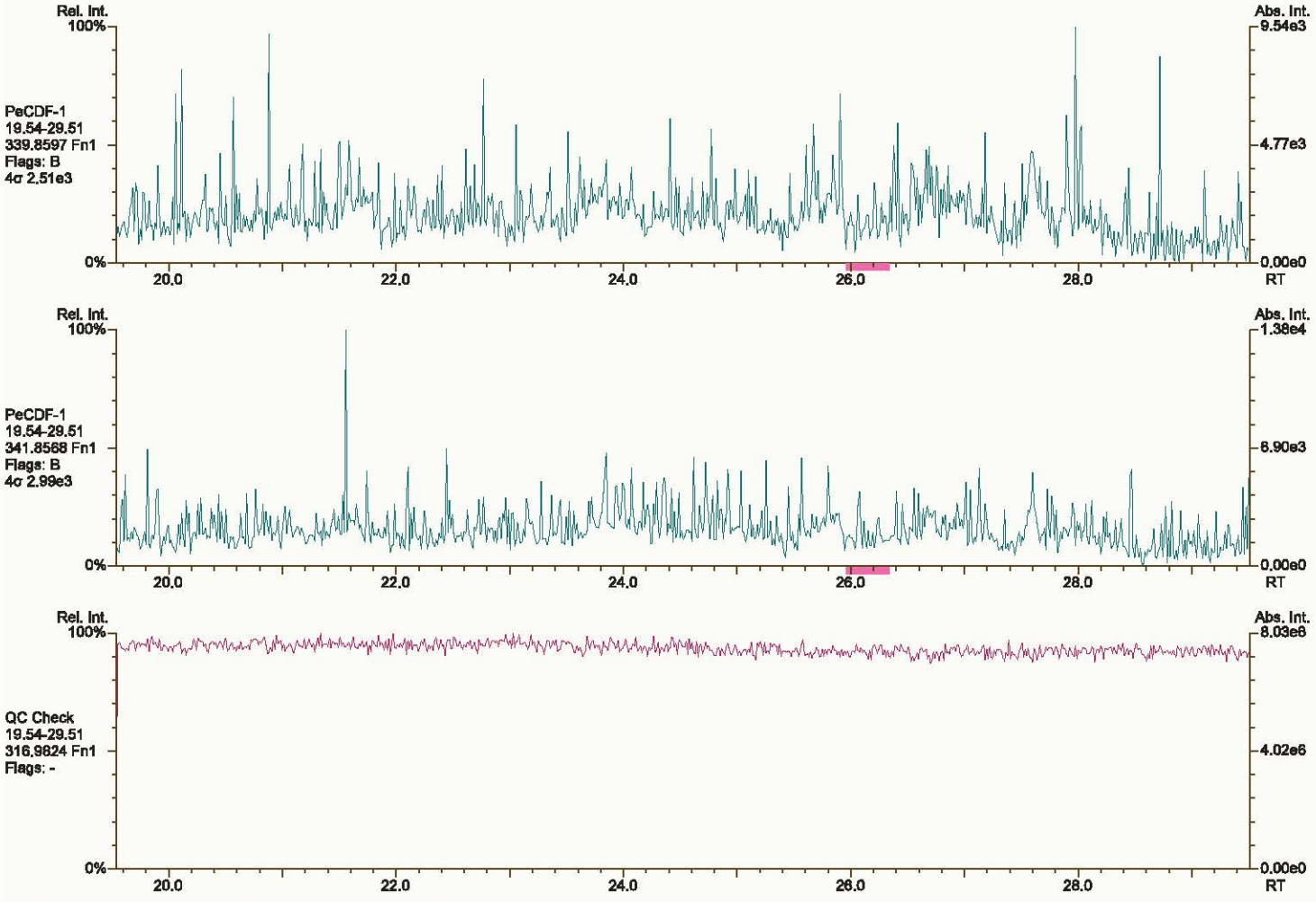
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 5640, 8669, 5161 scc: 172-736 *PKD: 10-Nov-2021 16:47 Printed: 11-Nov-2021 10:41 Page 7 of 12*

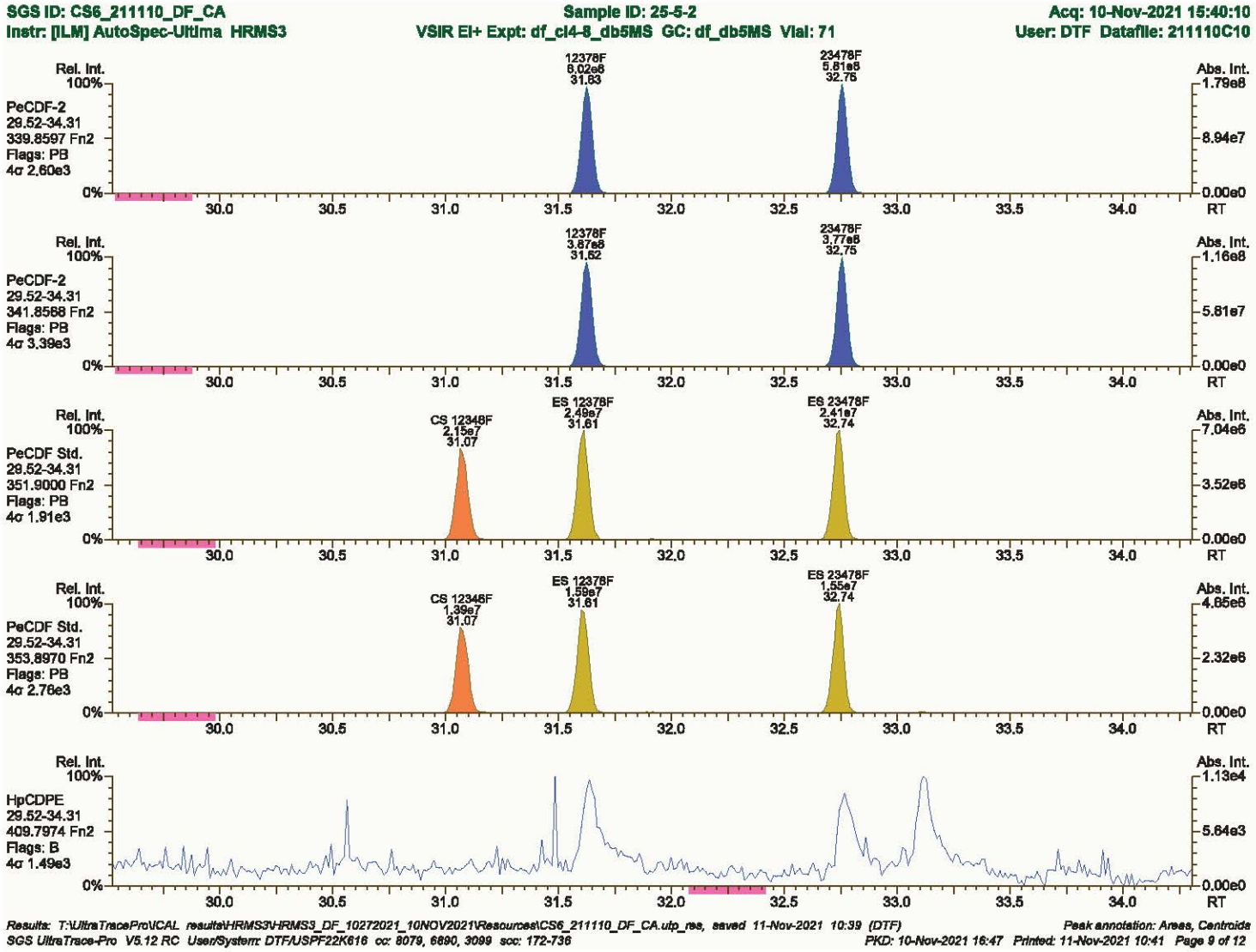
SGS ID: CS6_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-5-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71

Acq: 10-Nov-2021 15:40:10
User: DTF Datafile: 211110C10

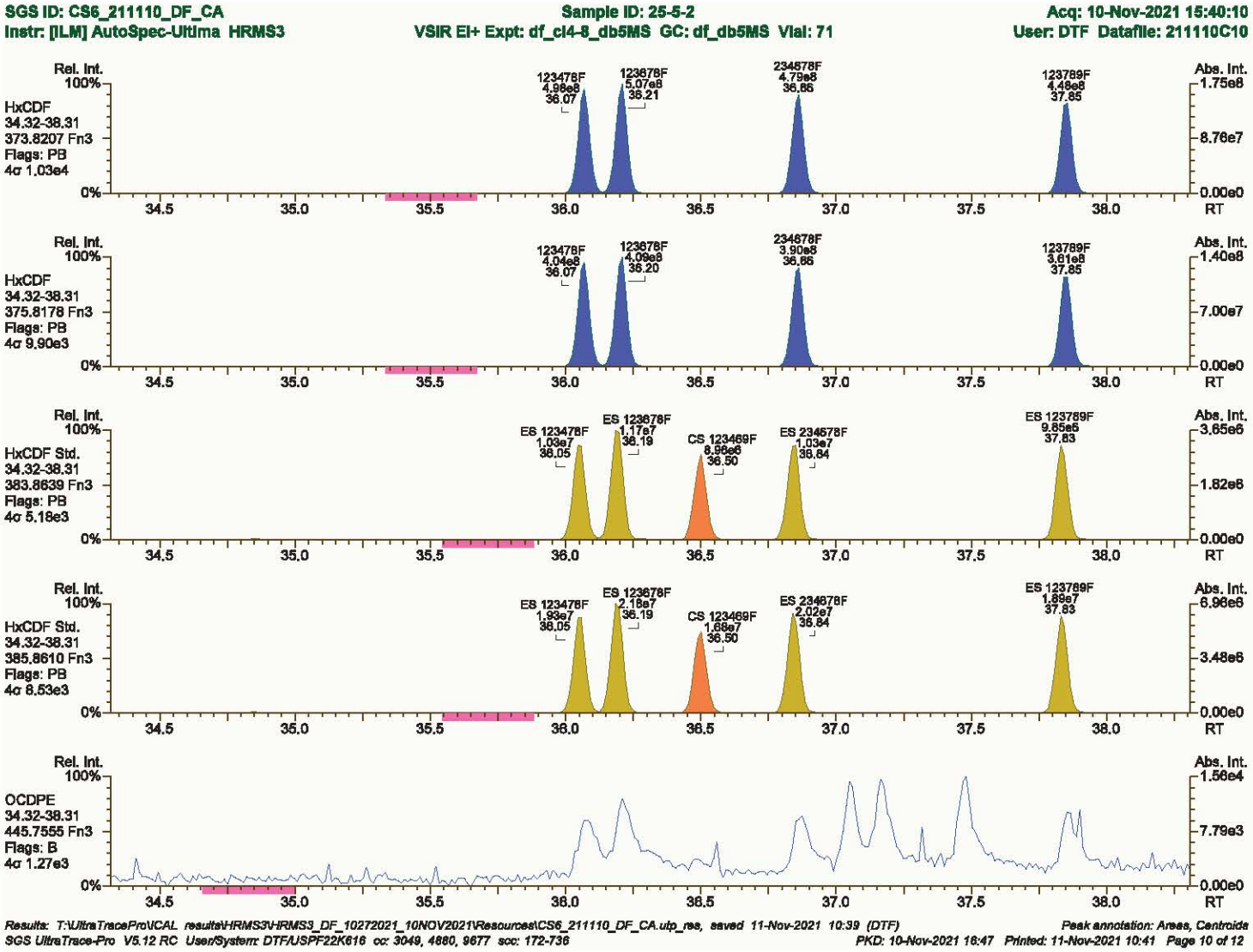


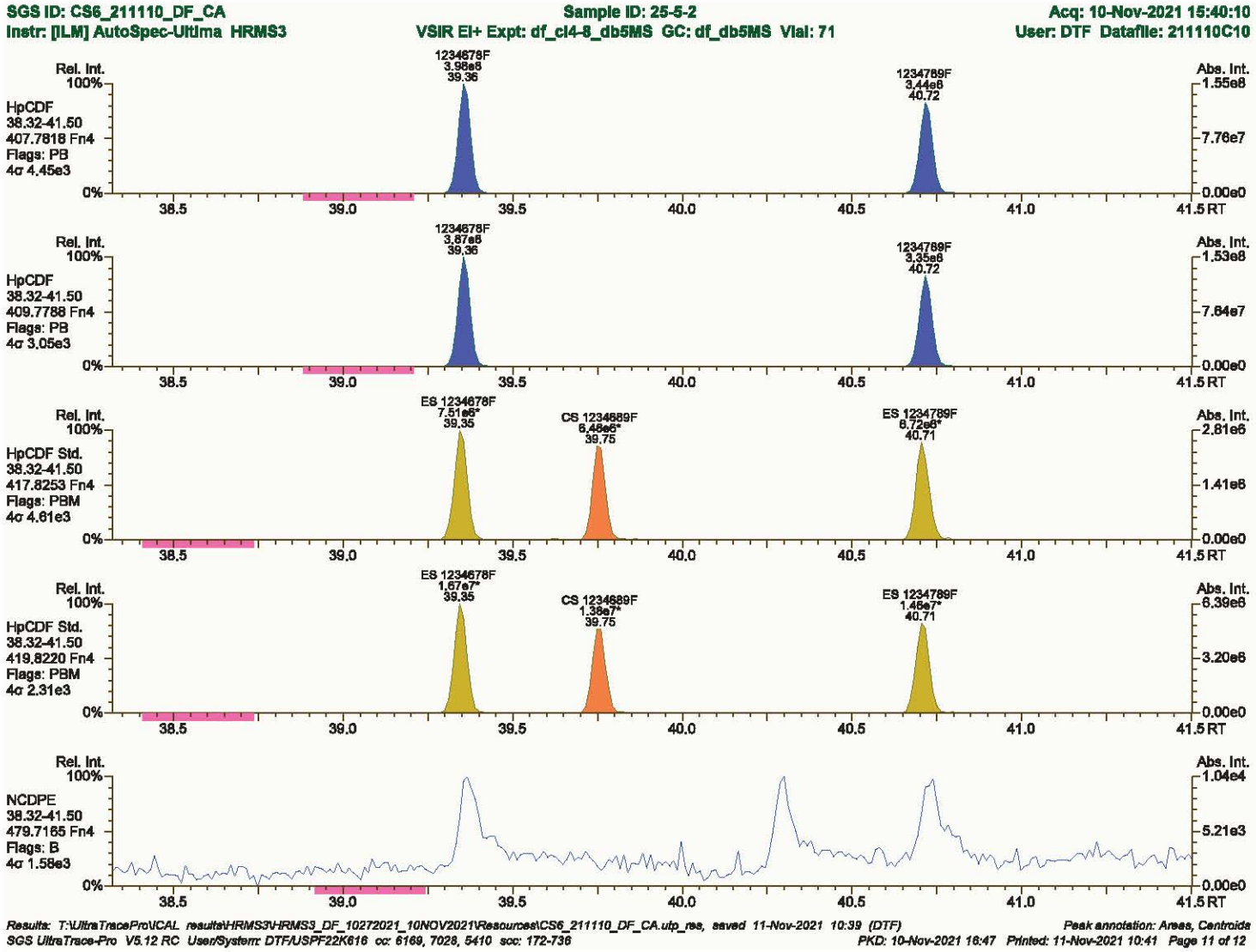
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4239 scc: 172-736
PKD: 10-Nov-2021 16:46 Printed: 11-Nov-2021 10:41 Page 8 of 12

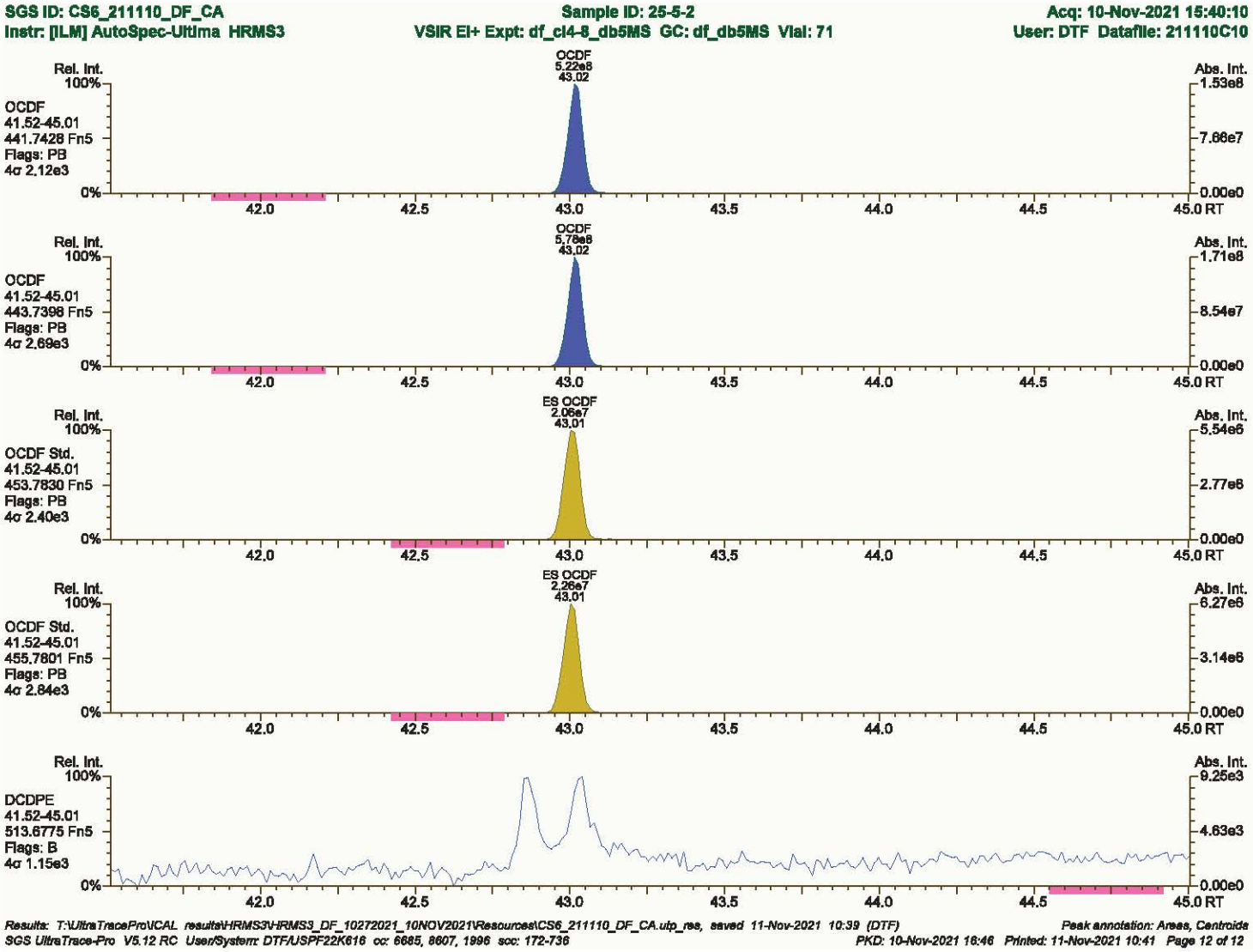


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8079, 6690, 3099 scc: 172-736 *PKD: 10-Nov-2021 16:47 Printed: 11-Nov-2021 10:41 Page 9 of 12*

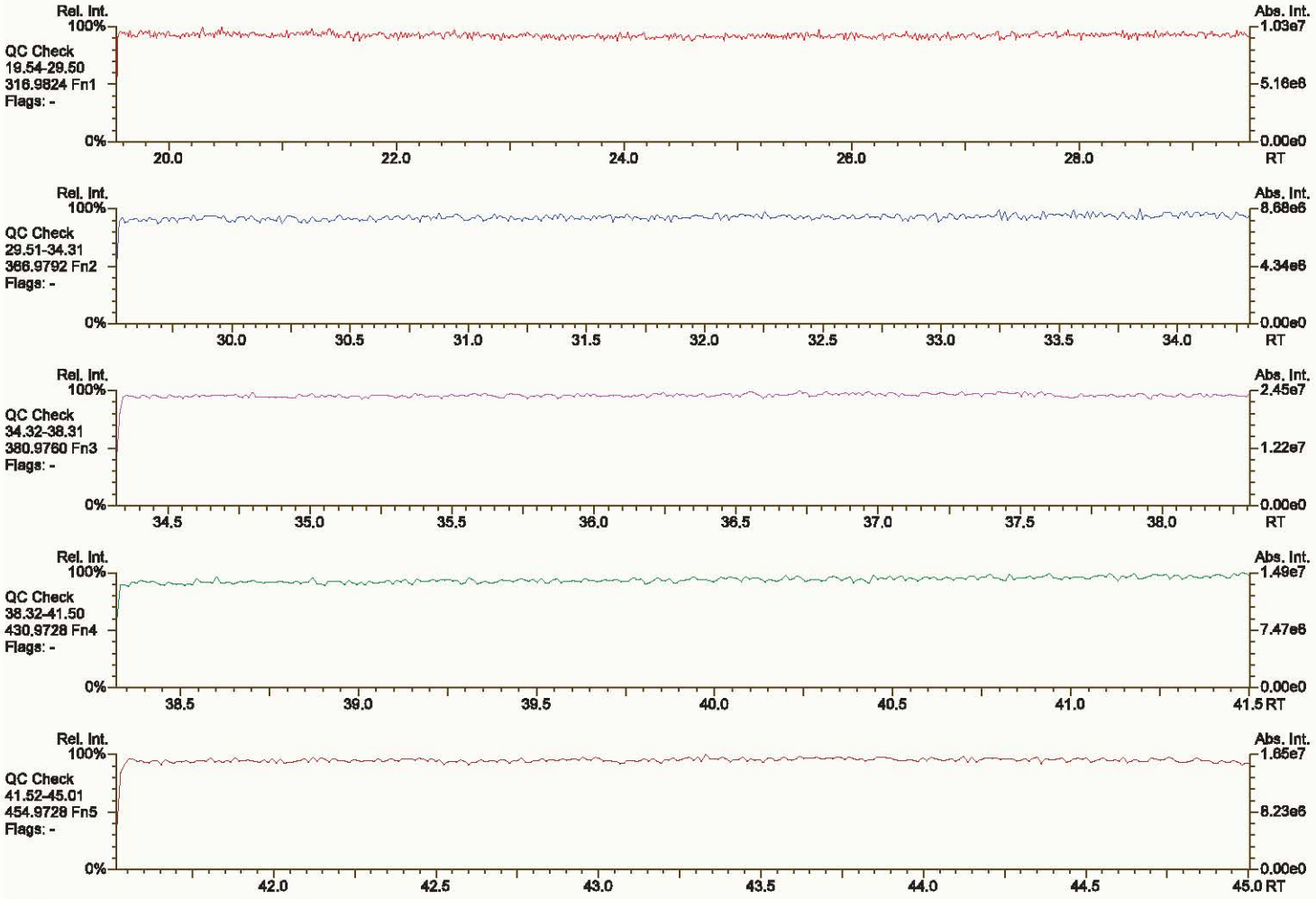

SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
Rel. Int.
Abs. Int.
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 1.03e4
123478F 4.98e8 36.07
123678F 5.07e8 36.21
234678F 4.79e8 36.66
123789F 4.46e8 37.85
1.75e8
8.76e7
0.00e0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 9.90e3
123478F 4.04e8 36.07
123678F 4.09e8 36.20
234678F 3.90e8 36.66
123789F 3.61e8 37.85
1.40e8
7.00e7
0.00e0
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.18e3
ES 123478F 1.03e7 36.05
ES 123678F 1.17e7 36.19
CS 123469F 8.96e6 36.50
ES 234678F 1.03e7 36.84
ES 123789F 9.85e5 37.83
3.65e6
1.82e6
0.00e0
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 8.53e3
ES 123478F 1.93e7 36.05
ES 123678F 2.18e7 36.19
CS 123469F 1.68e7 36.50
ES 234678F 2.02e7 36.84
ES 123789F 1.89e7 37.83
6.96e6
3.48e6
0.00e0
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.27e3
1.56e4
7.79e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 3049, 4660, 9677 scc: 172-736
PKD: 10-Nov-2021 16:47 Printed: 11-Nov-2021 10:41 Page 10 of 12


SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e6
39.36
1234789F
3.44e6
40.72
1.55e8
7.76e7
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e6
39.36
1234789F
3.35e6
40.72
1.53e8
7.64e7
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
2.81e6
1.41e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
6.39e6
3.20e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
1.04e4
5.21e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 6169, 7028, 5410 scc: 172-736
PKD: 10-Nov-2021 16:47 Printed: 11-Nov-2021 10:41 Page 11 of 12


SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
OCDF
5.22e8
43.02
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.78e8
43.02
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7
43.01
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.26e7
43.01
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 6685, 8607, 1996 scc: 172-736
PKD: 10-Nov-2021 16:46 Printed: 11-Nov-2021 10:41 Page 12 of 12

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)

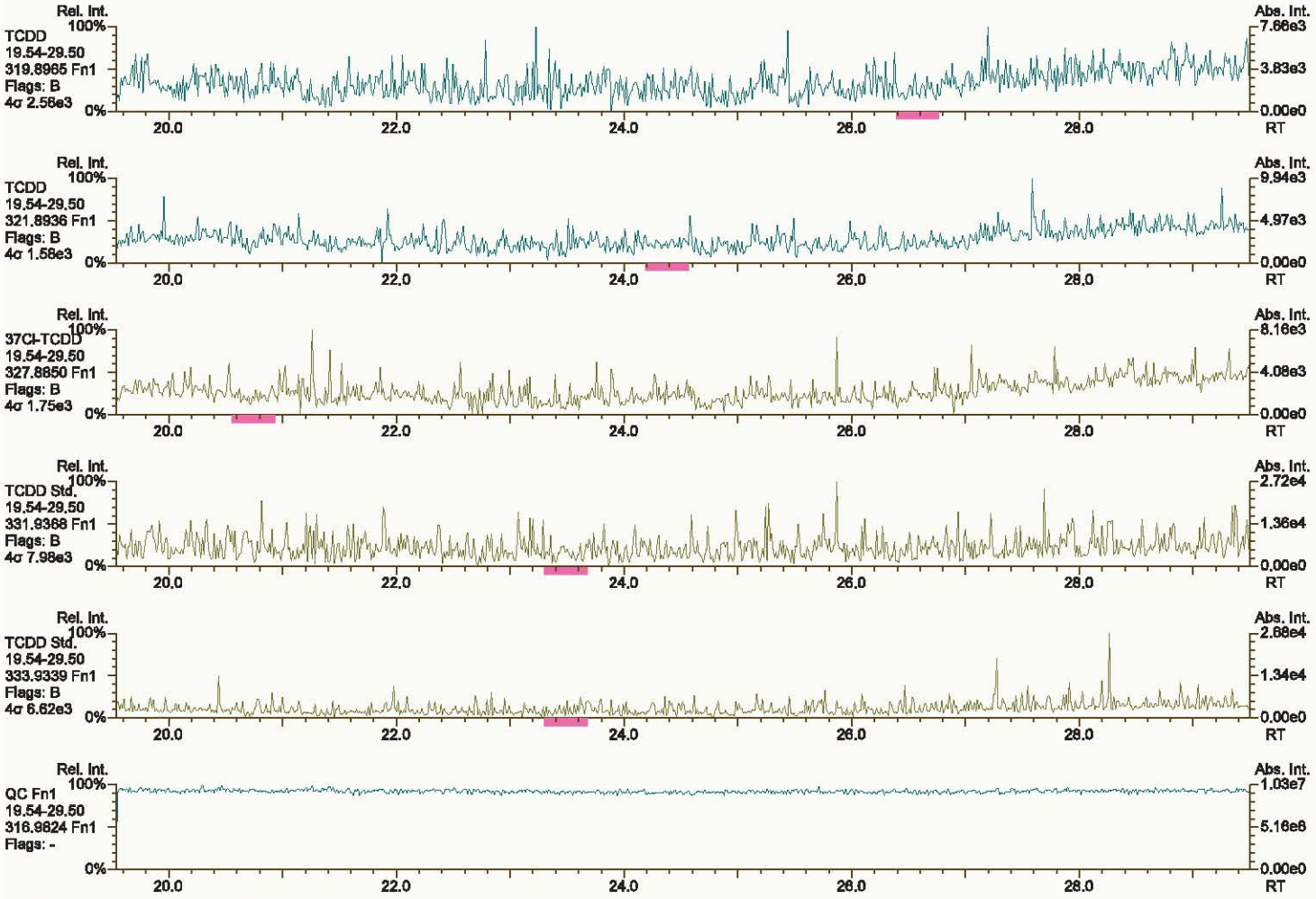
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 RC UserSystem: DTF/USPF22K616 scc: 876-647

PKD: n/a Printed: 11-Nov-2021 10:39 Page 1 of 12

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03

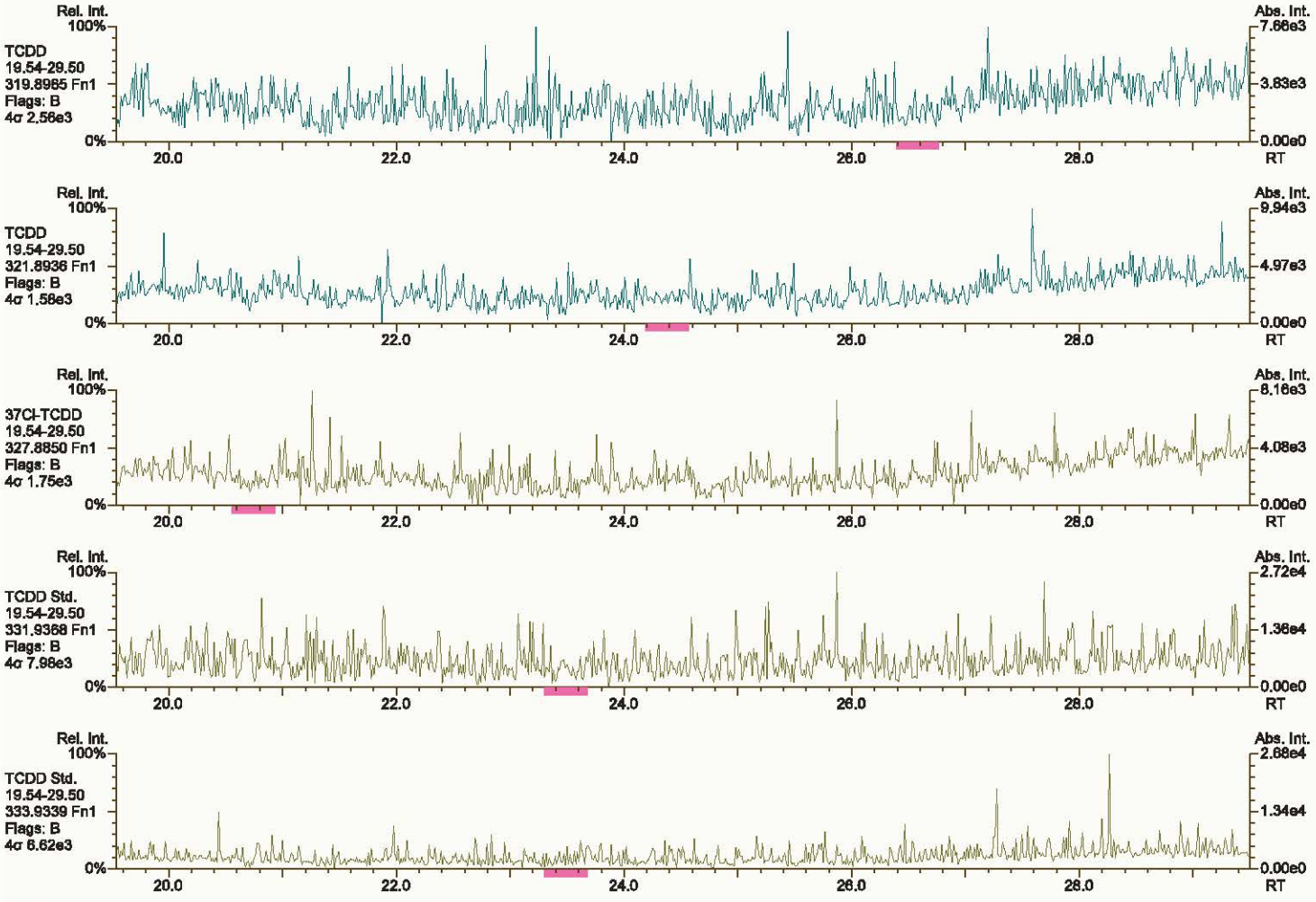


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 4939, 4247, 1318 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1*

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03

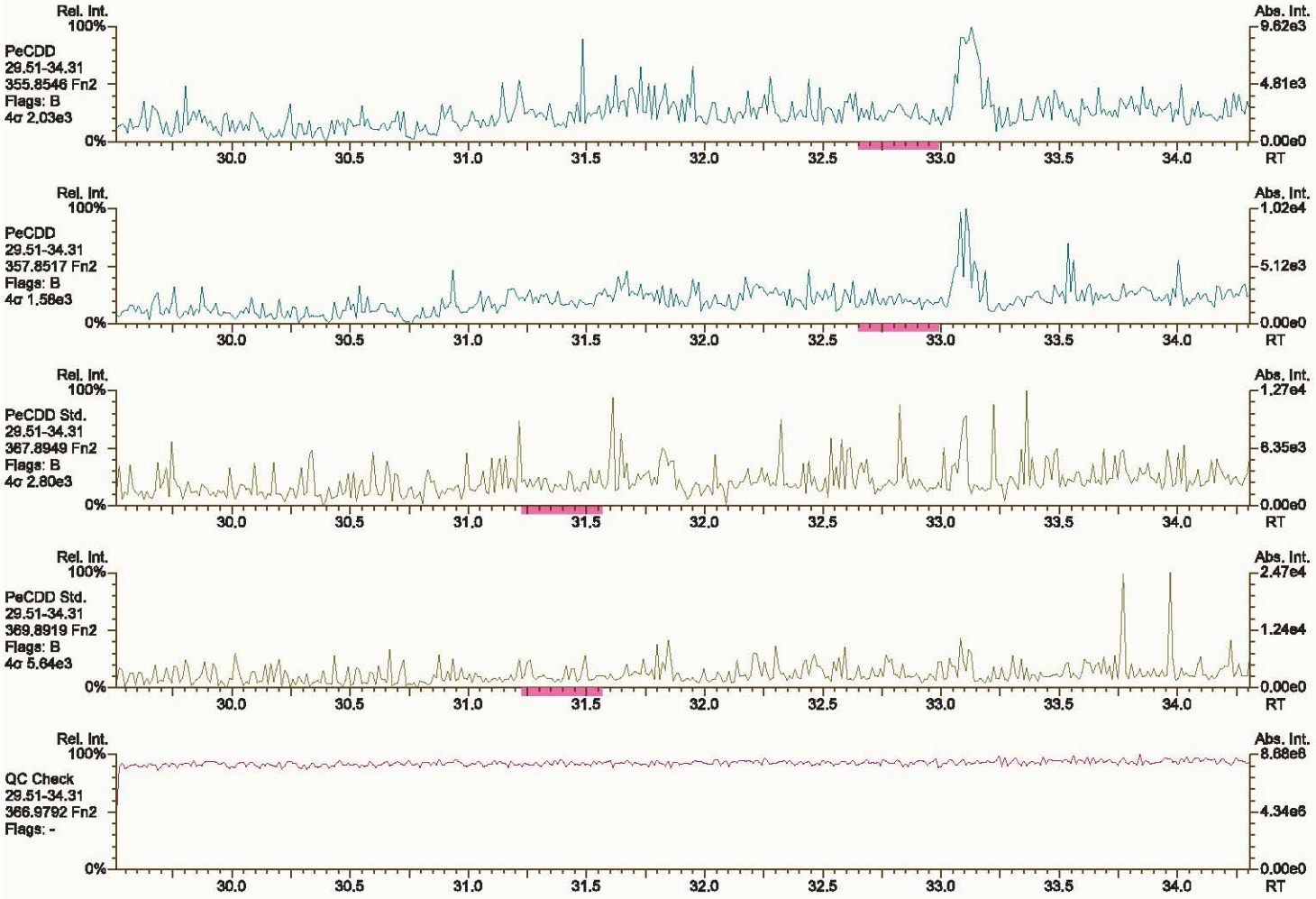


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 4939, 4247, 1318 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 2 of 12*

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

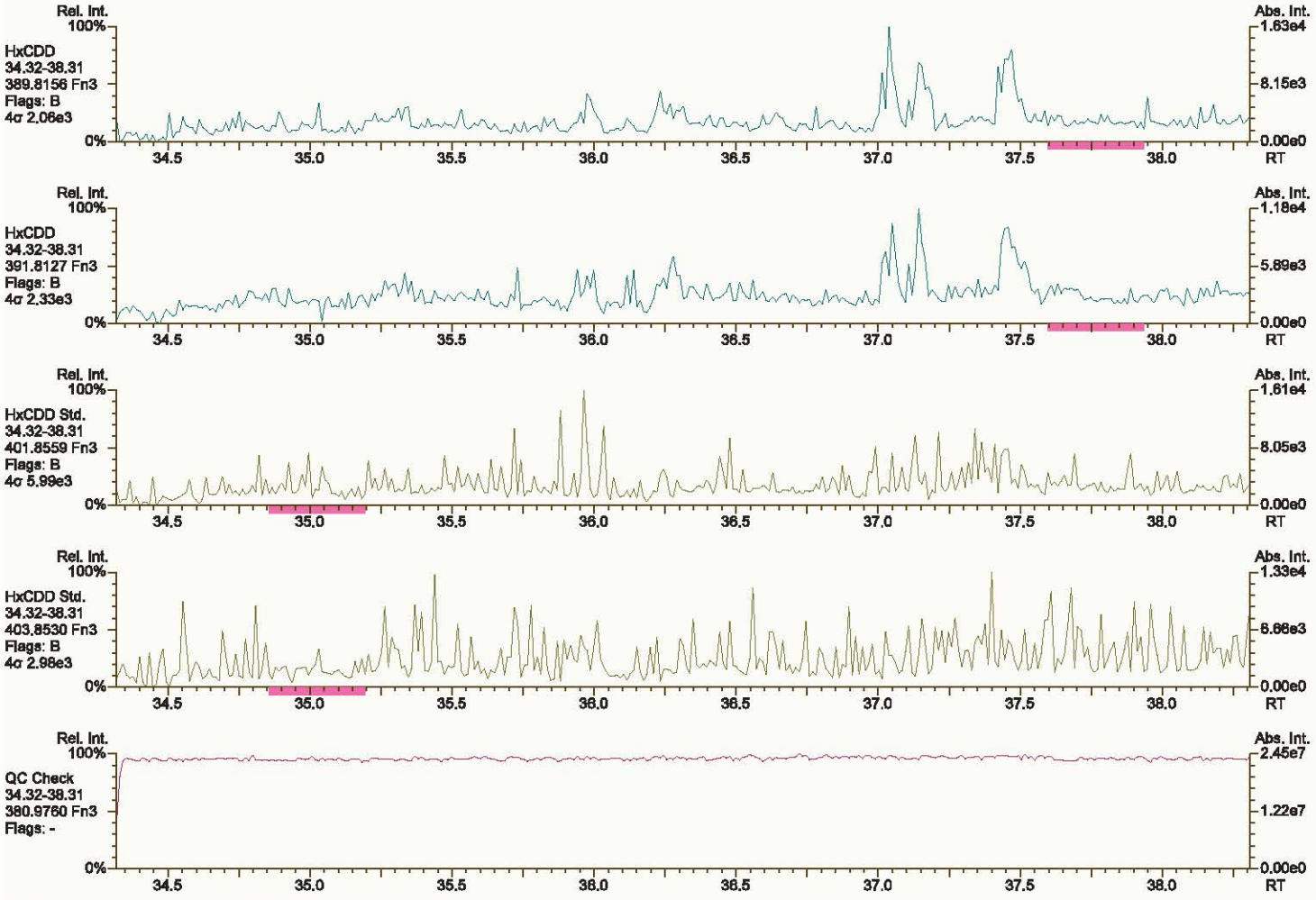
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

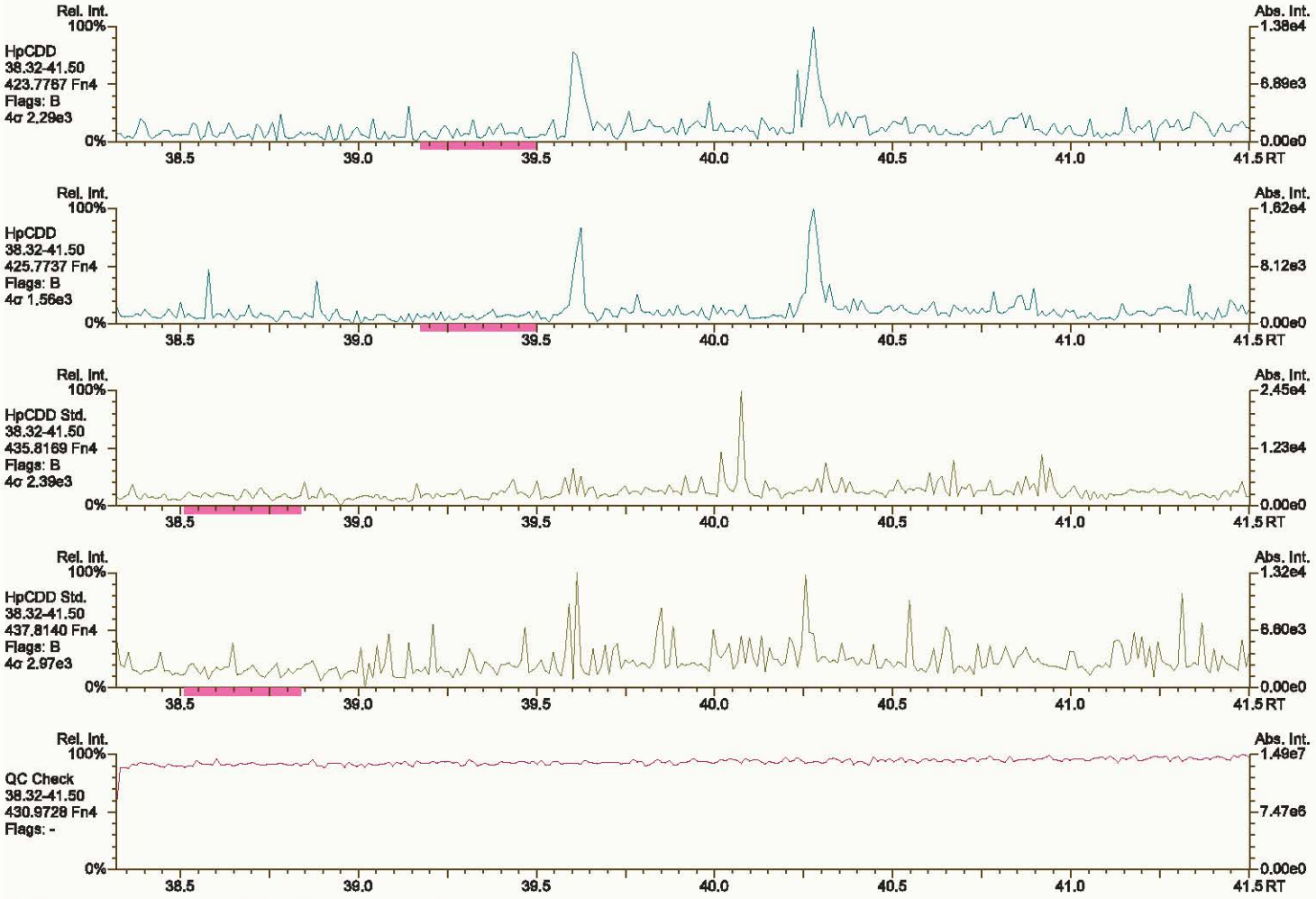
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8553, 6214 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 3 of 12*

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



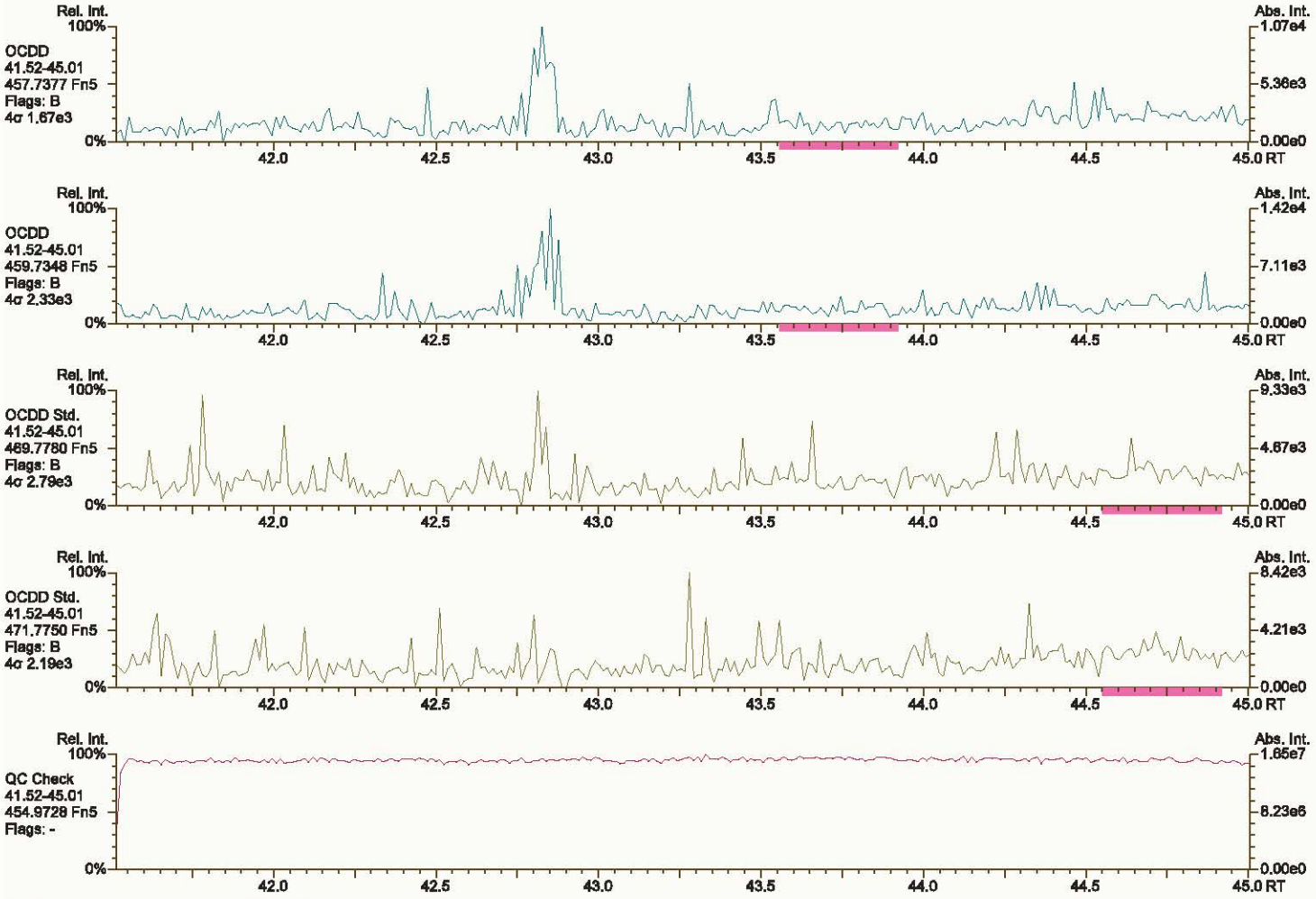
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1269, 2083 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 4 of 12*

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03

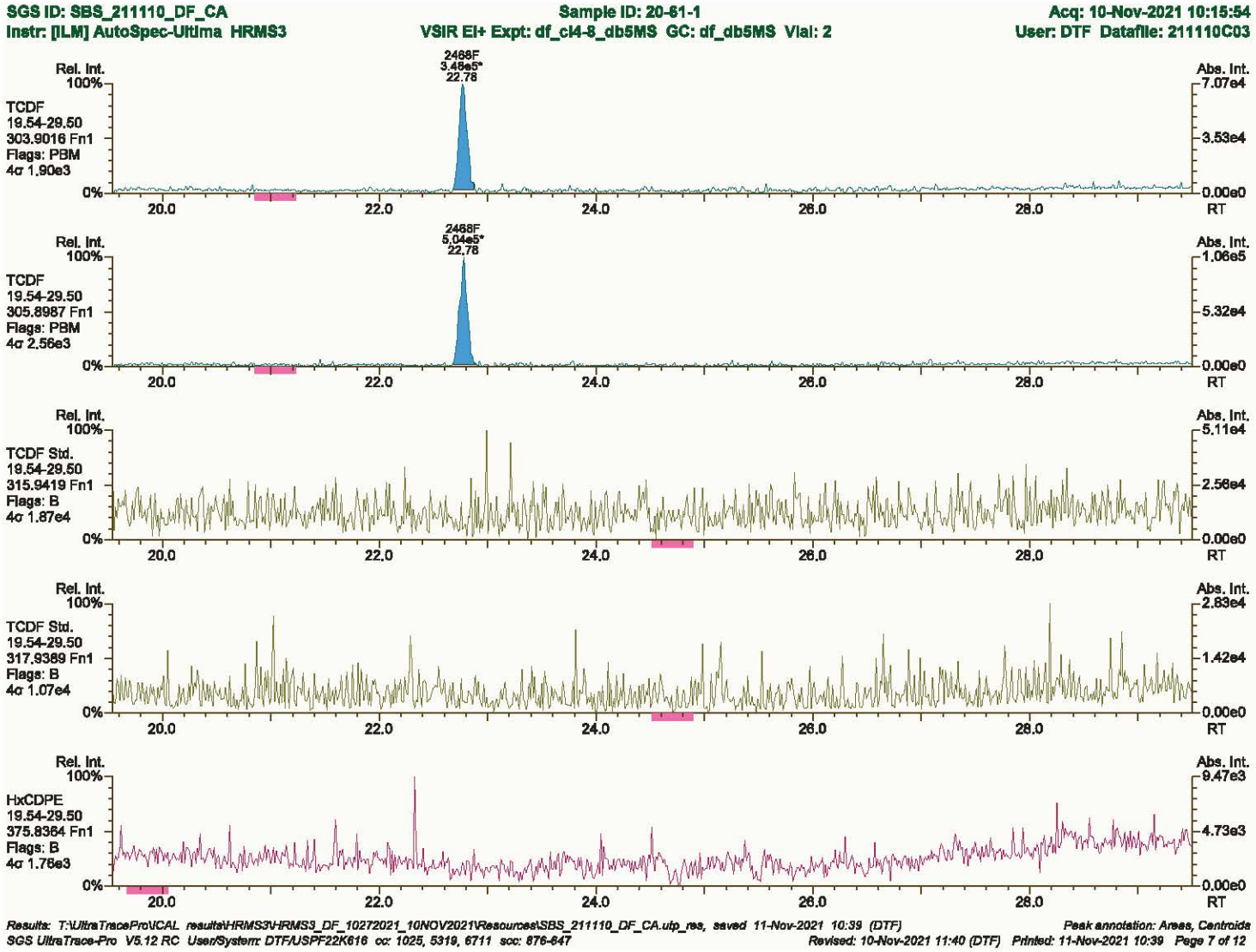


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5085, 1966 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 5 of 12*

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03

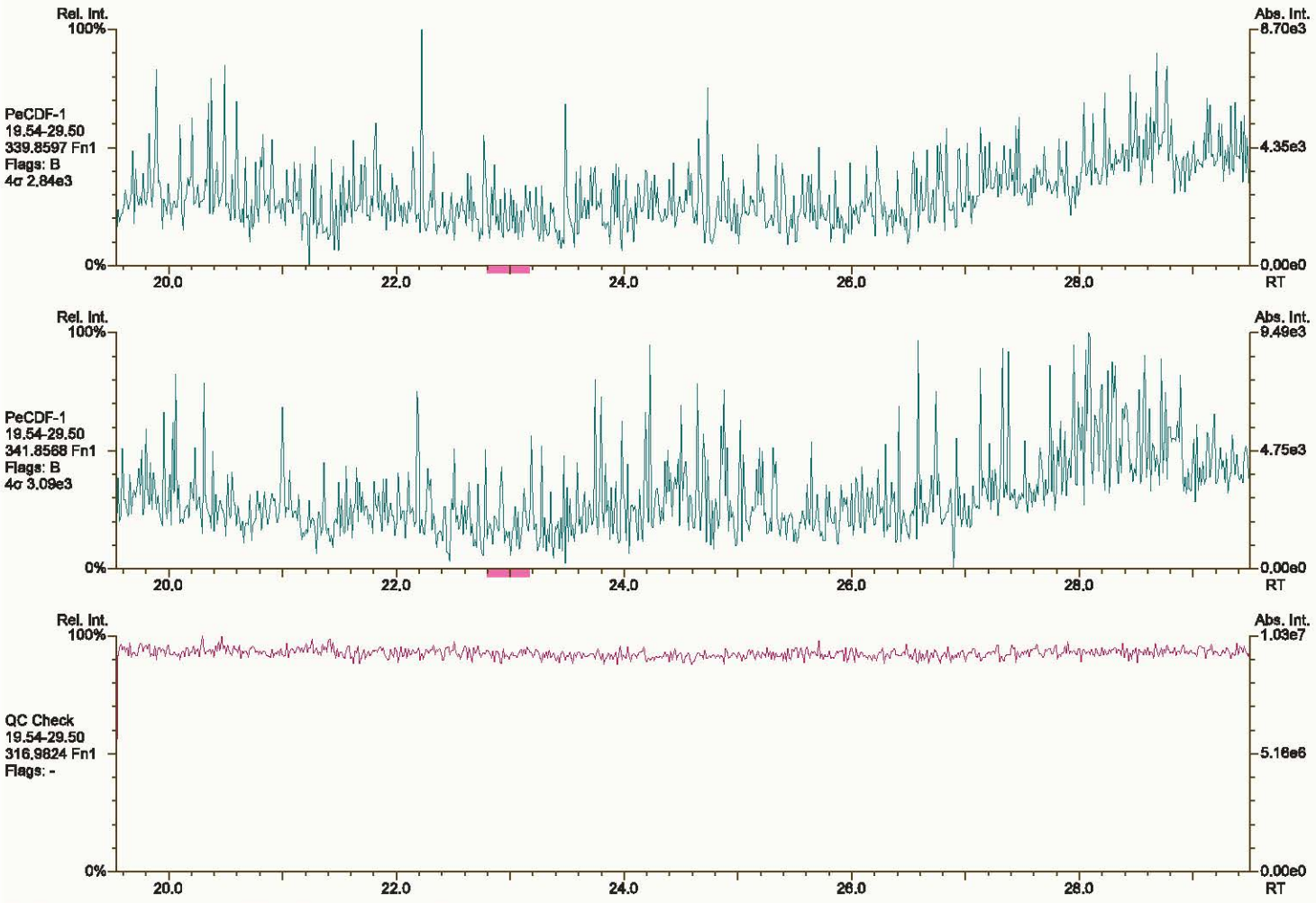


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6000, 0583 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 6 of 12*


SGS ID: SBS_211110_DF_CA
Sample ID: 20-61-1
Acq: 10-Nov-2021 10:15:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
User: DTF Datafile: 211110C03
Rel. Int.
Abs. Int.
2468F
3.48e5*
22.78
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
7.07e4
3.53e4
0.00e0
2468F
5.04e5*
22.78
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
1.06e5
5.32e4
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
5.11e4
2.56e4
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
2.83e4
1.42e4
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
9.47e3
4.73e3
100%
0%
20.0
22.0
24.0
26.0
28.0
RT
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 1025, 5319, 6711 scc: 876-647
Revised: 10-Nov-2021 11:40 (DTF) Printed: 11-Nov-2021 10:39 Page 7 of 12

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03

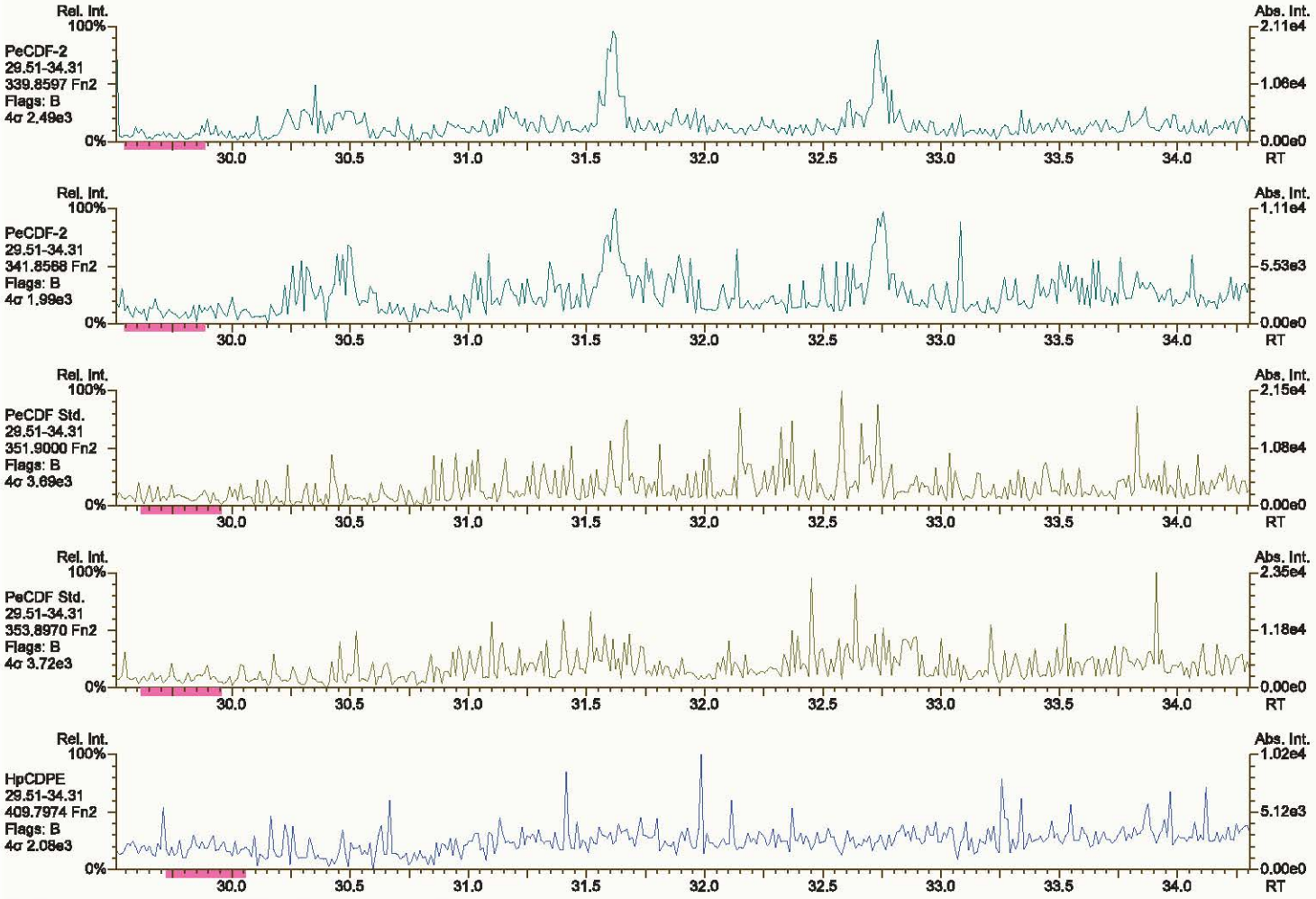


Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4115 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 8 of 12*

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

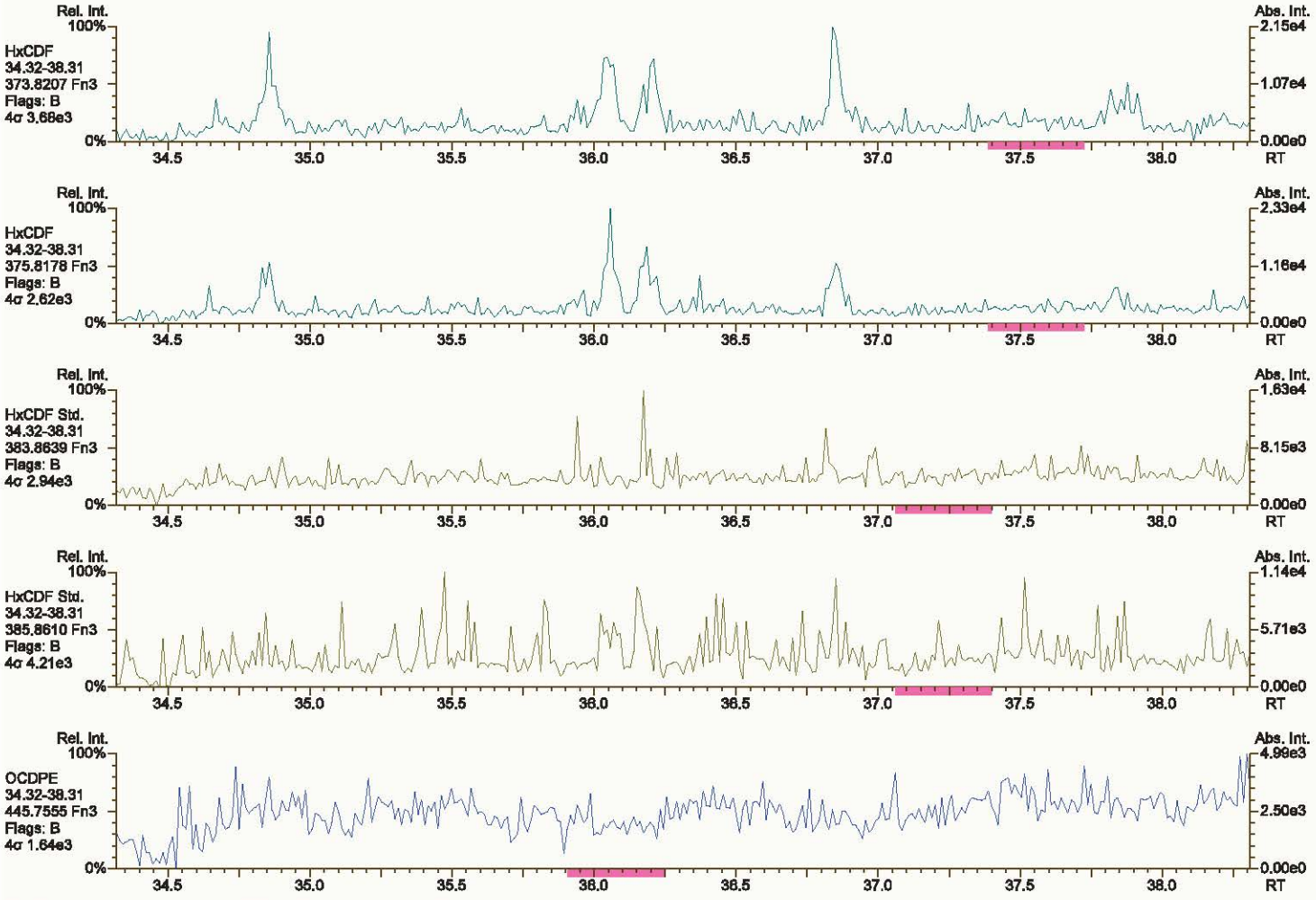
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

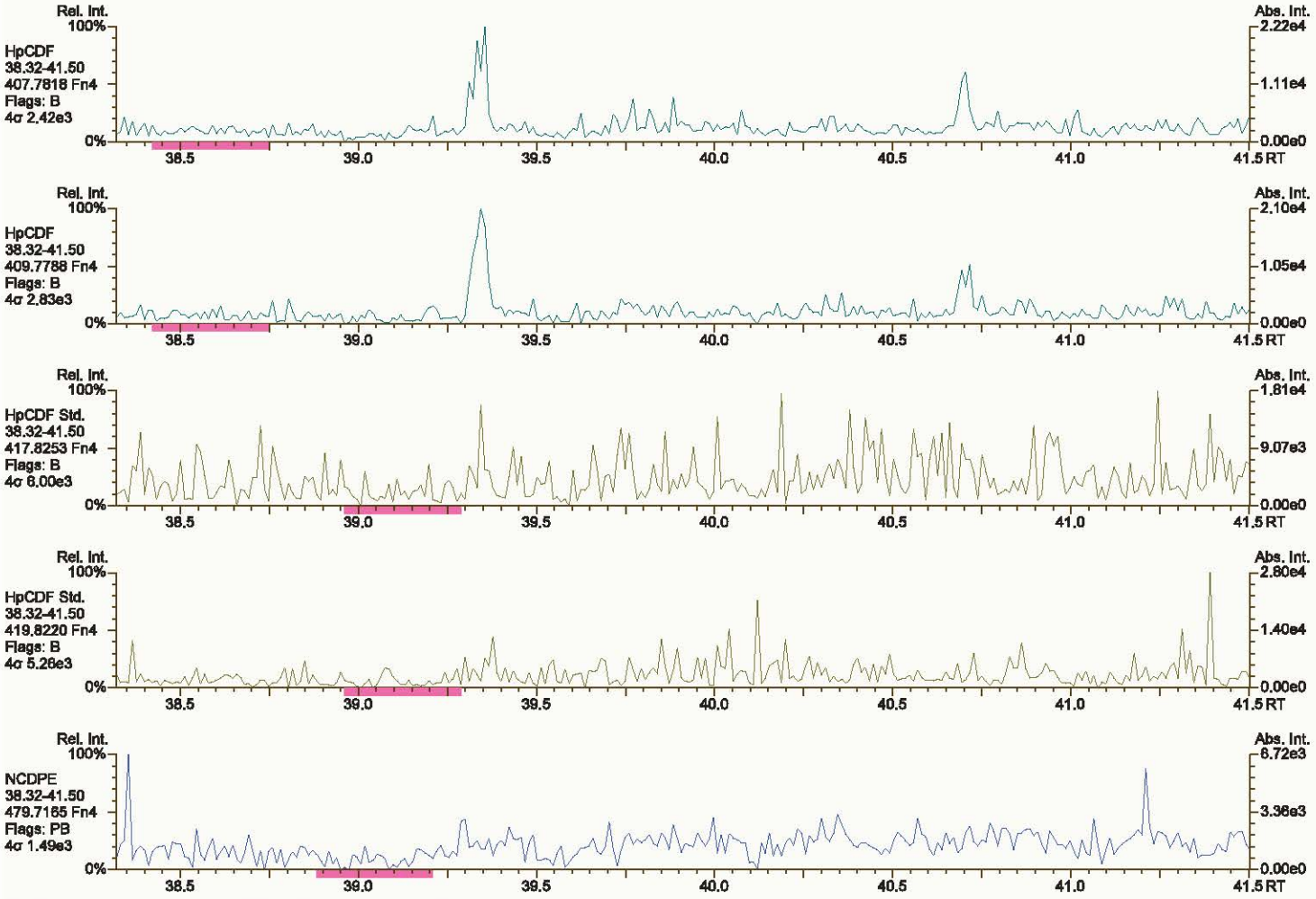
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 0221, 7509, 5832 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 9 of 12*

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 7123, 9758, 5295 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 10 of 12*

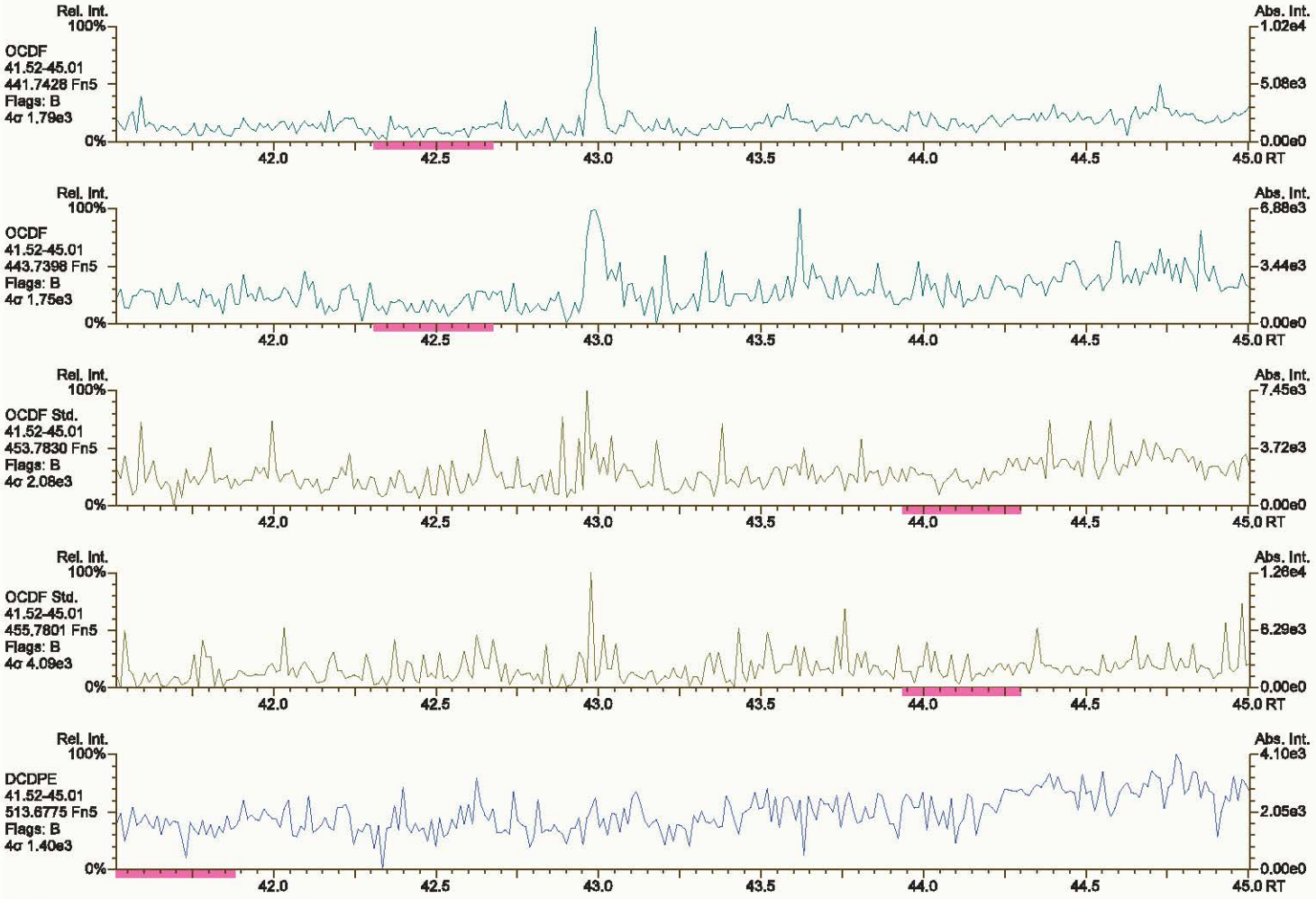
SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8393, 7378, 6851 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 11 of 12*

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



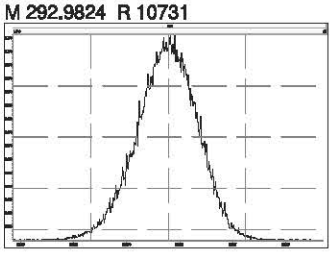
Results: T:\UltraTracePro\CAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K618 cc: 7331, 0427, 6414 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 12 of 12*

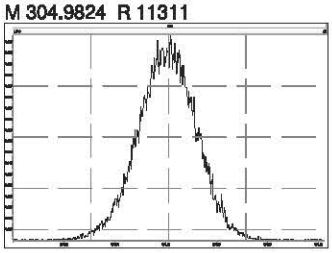
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

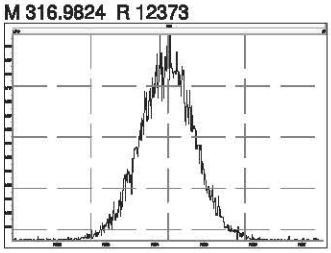
M 292.9824 R 10731



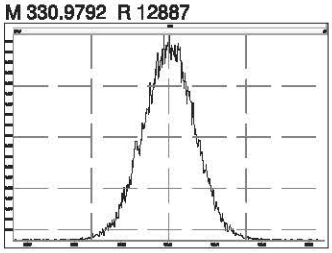
M 304.9824 R 11311



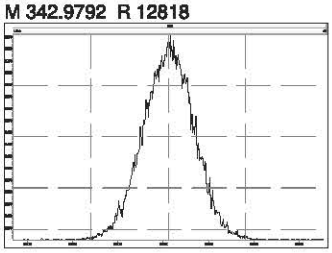
M 316.9824 R 12373



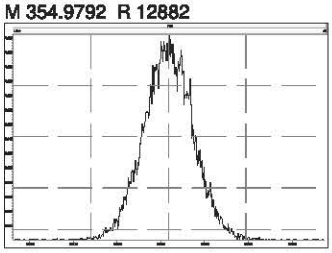
M 330.9792 R 12887



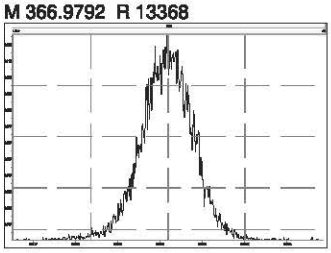
M 342.9792 R 12818



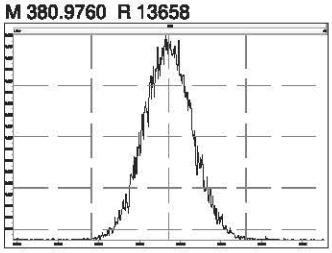
M 354.9792 R 12882



M 366.9792 R 13368



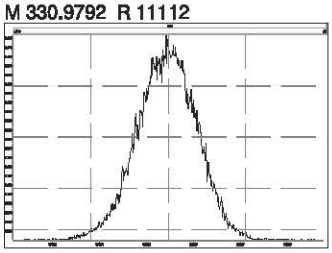
M 380.9760 R 13658



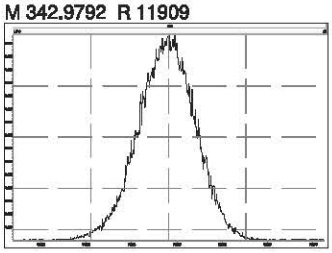
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

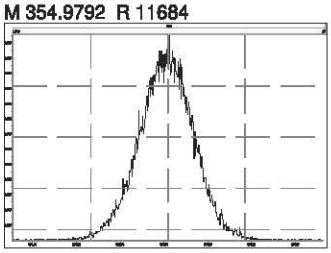
M 330.9792 R 11112



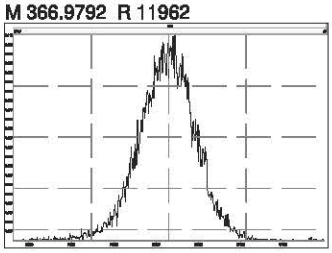
M 342.9792 R 11909



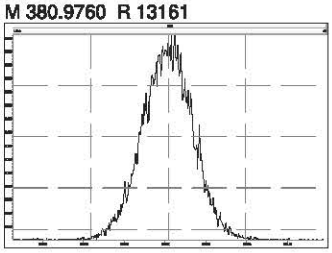
M 354.9792 R 11684



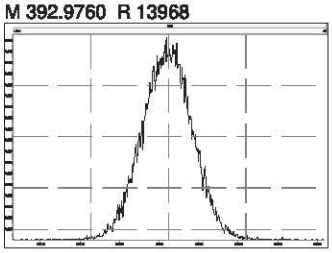
M 366.9792 R 11962



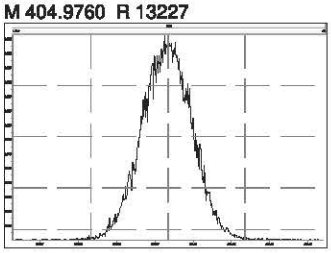
M 380.9760 R 13161



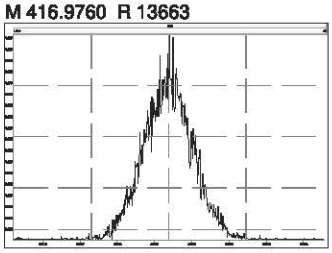
M 392.9760 R 13968



M 404.9760 R 13227



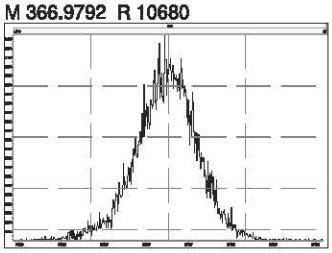
M 416.9760 R 13663



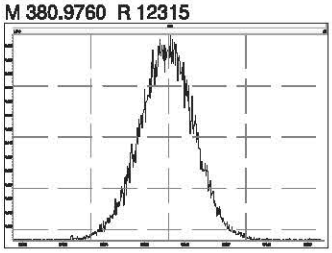
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

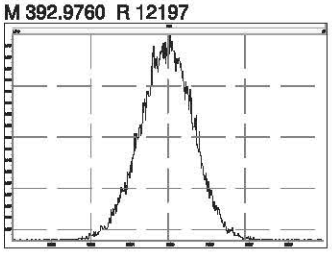
M 366.9792 R 10680



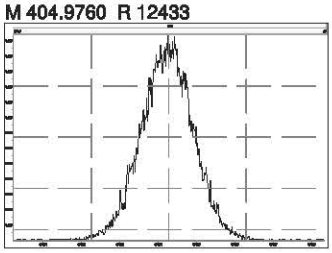
M 380.9760 R 12315



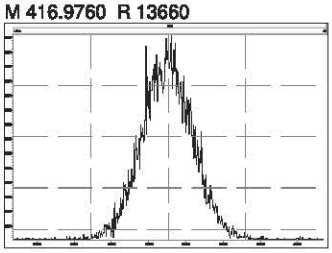
M 392.9760 R 12197



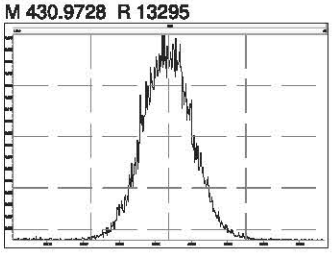
M 404.9760 R 12433



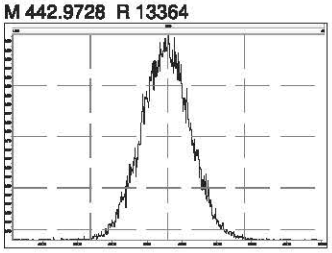
M 416.9760 R 13660



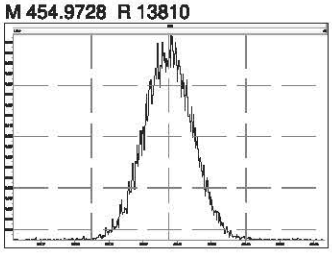
M 430.9728 R 13295



M 442.9728 R 13364



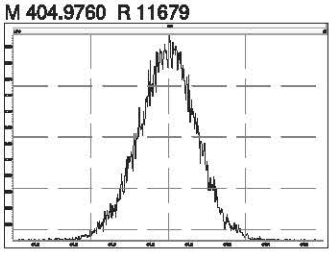
M 454.9728 R 13810



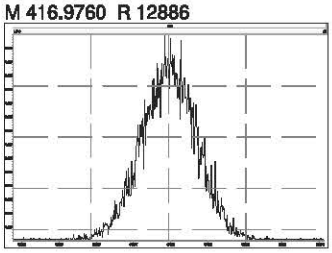
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

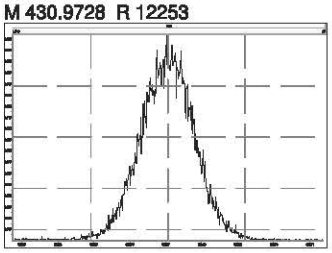
M 404.9760 R 11679



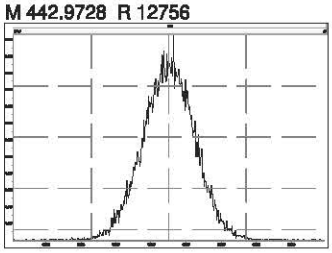
M 416.9760 R 12886



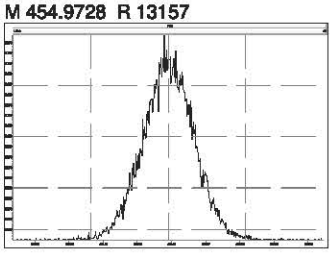
M 430.9728 R 12253



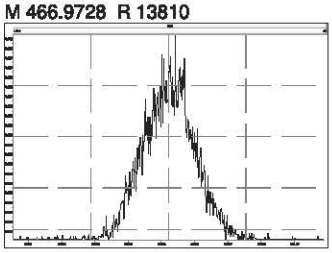
M 442.9728 R 12756



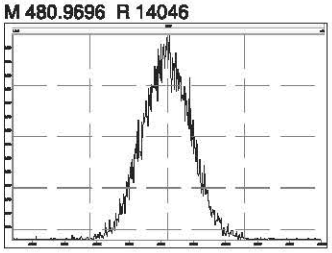
M 454.9728 R 13157



M 466.9728 R 13810



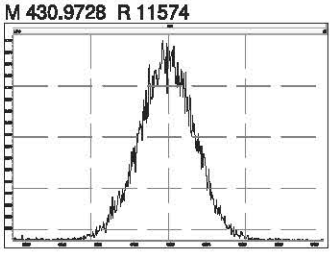
M 480.9696 R 14046



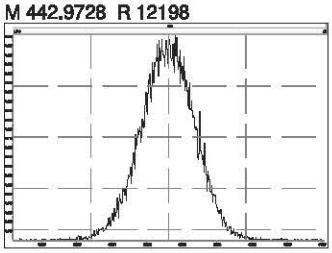
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

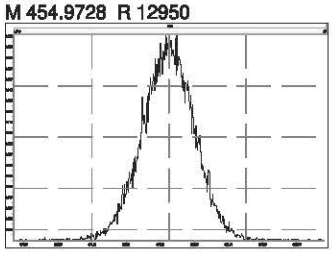
M 430.9728 R 11574



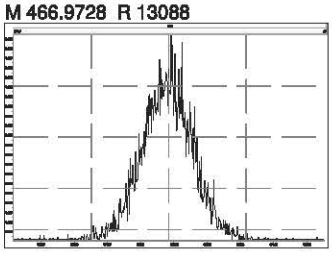
M 442.9728 R 12198



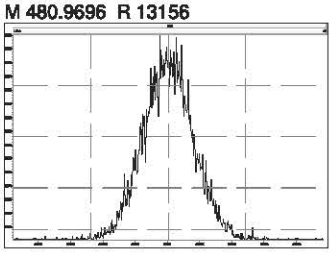
M 454.9728 R 12950



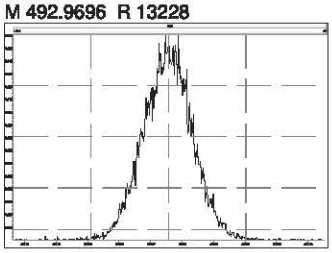
M 466.9728 R 13088



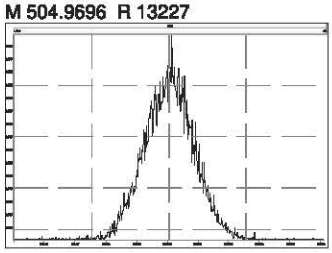
M 480.9696 R 13156



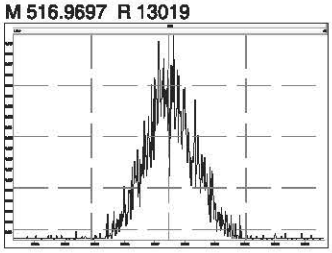
M 492.9696 R 13228



M 504.9696 R 13227



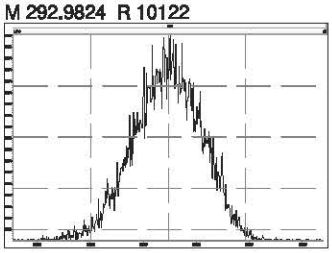
M 516.9697 R 13019



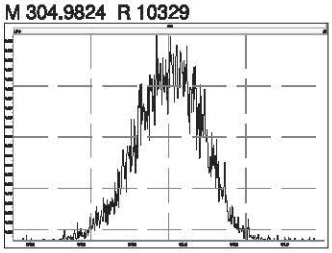
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

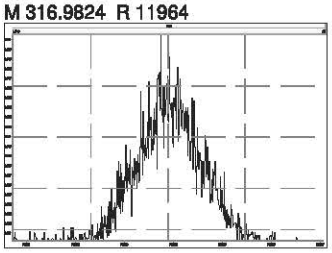
M 292.9824 R 10122



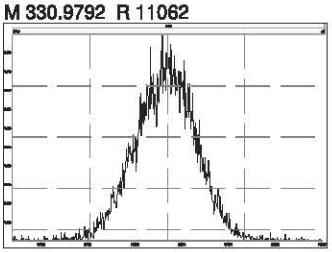
M 304.9824 R 10329



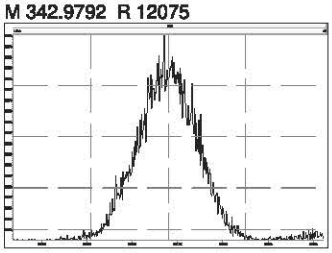
M 316.9824 R 11964



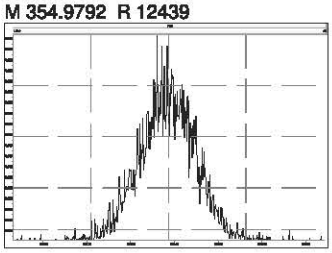
M 330.9792 R 11062



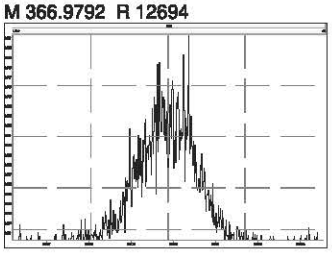
M 342.9792 R 12075



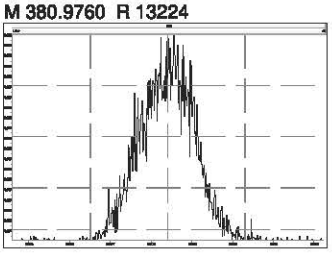
M 354.9792 R 12439



M 366.9792 R 12694



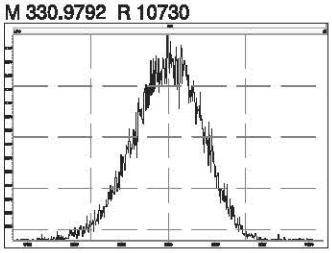
M 380.9760 R 13224



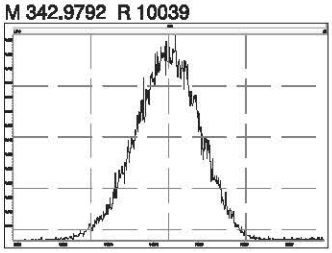
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

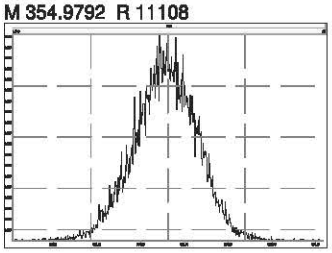
M 330.9792 R 10730



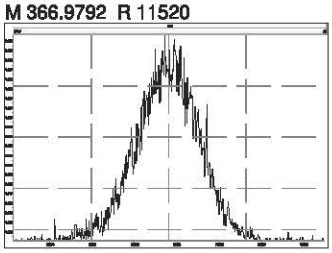
M 342.9792 R 10039



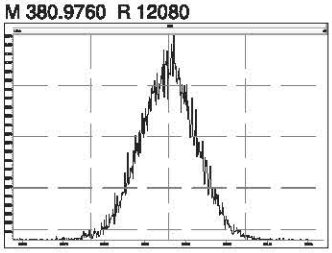
M 354.9792 R 11108



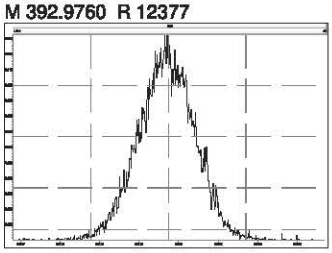
M 366.9792 R 11520



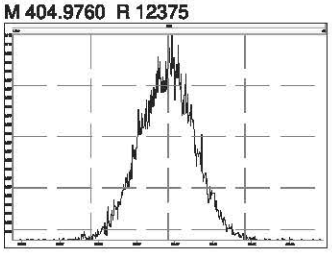
M 380.9760 R 12080



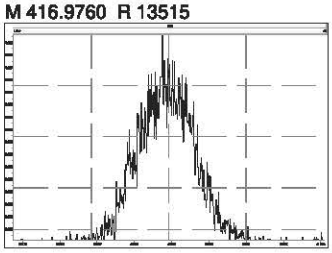
M 392.9760 R 12377



M 404.9760 R 12375



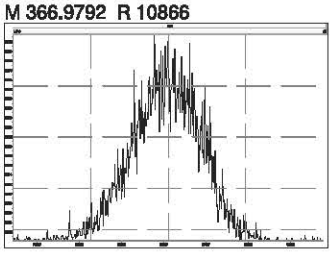
M 416.9760 R 13515



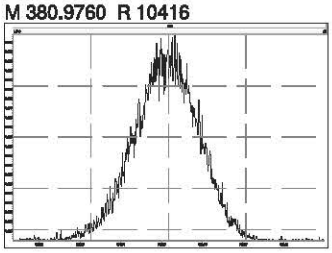
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

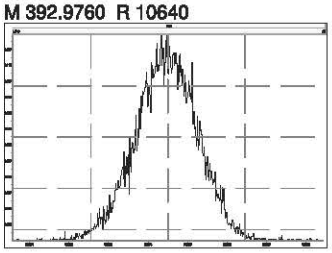
M 366.9792 R 10866



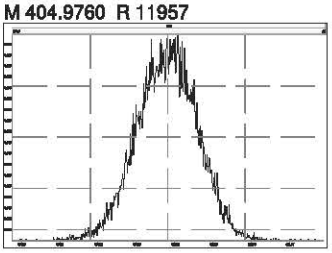
M 380.9760 R 10416



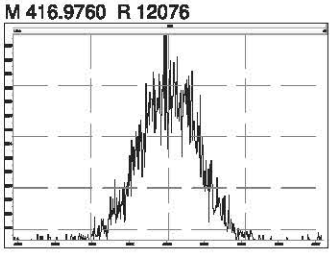
M 392.9760 R 10640



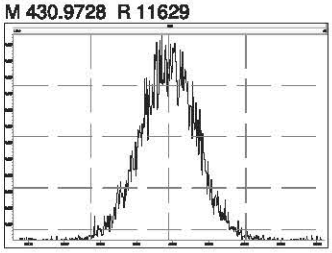
M 404.9760 R 11957



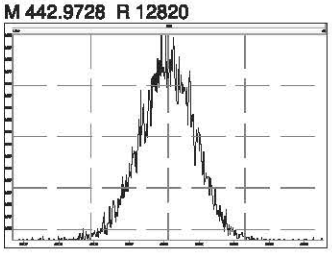
M 416.9760 R 12076



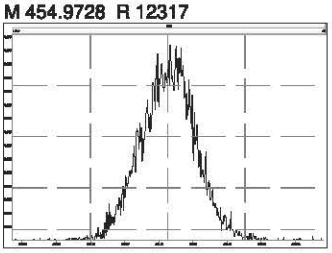
M 430.9728 R 11629



M 442.9728 R 12820



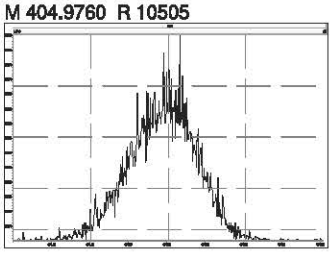
M 454.9728 R 12317



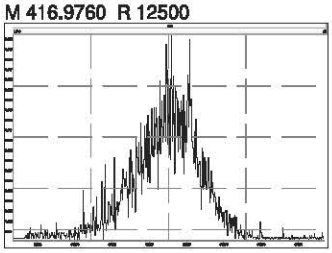
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

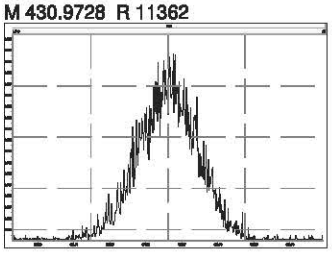
M 404.9760 R 10505



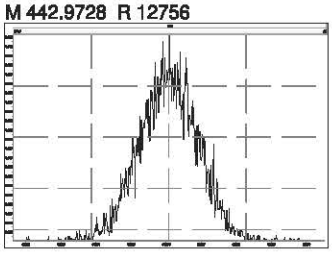
M 416.9760 R 12500



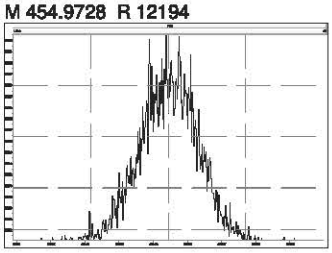
M 430.9728 R 11362



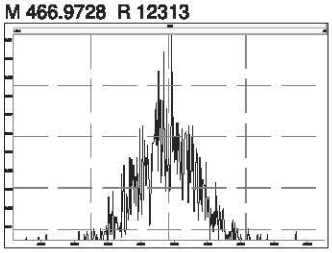
M 442.9728 R 12756



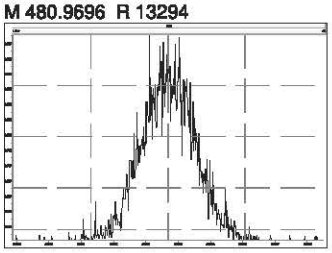
M 454.9728 R 12194



M 466.9728 R 12313



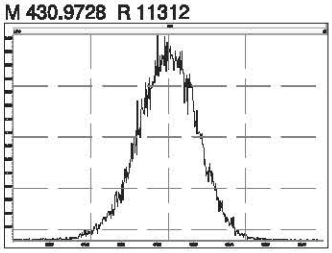
M 480.9696 R 13294



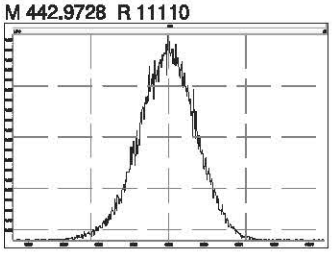
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

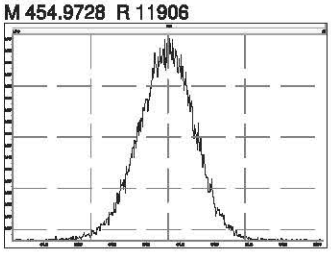
M 430.9728 R 11312



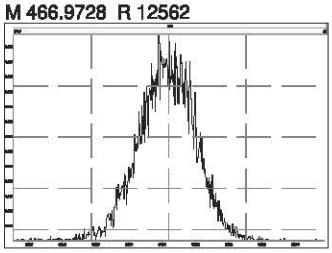
M 442.9728 R 11110



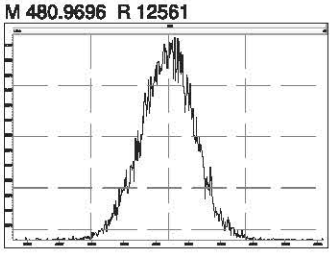
M 454.9728 R 11906



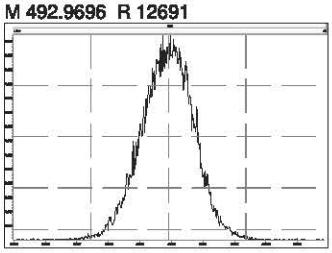
M 466.9728 R 12562



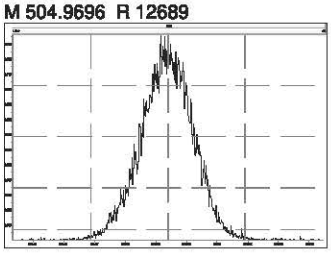
M 480.9696 R 12561



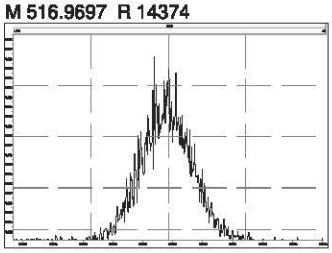
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



REVIEWED
Tamara Burkamper , 2/21/2022, 2:34:19 PM

Lab ID: OPR1_18911_DF | Acq'd: 19 Feb 2022 18:04 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR001 | UTP: 21-Feb-2022 10:46:46 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 320-676-ZPS

Datafile: 220219C02 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.23		1.0008	1.0008	0	3.56E+06	0.80	Y	1.18	11.7	4737.647	0.171
12378-PeCDD	33.63		1.0007	1.0006	-0.2	1.13E+07	1.58	Y	1.04	50.5	4309.427	0.179
123478-HxCDD	37.56		1.0004	1.0004	0	1.18E+07	1.29	Y	1.09	54.5	3601.285	0.148
123678-HxCDD	37.68		1.0036	1.0036	0	1.31E+07	1.25	Y	1.15	56.6	3601.285	0.146
123789-HxCDD	37.99		1.0118	1.0117	-0.2	1.15E+07	1.29	Y	1.05	52.2	3601.285	0.148
1234678-HpCDD	40.72		1.0002	1.0003	+0.2	1.08E+07	1.02	Y	1.06	54.9	4312.014	0.183
OCDD	43.42		1.0003	1.0003	0	1.48E+07	0.91	Y	1.13	112	3115.786	0.284
2378-TCDF	27.36		1.0008	1.0008	0	4.24E+06	0.74	Y	1.08	10.9	2688.114	0.0822
12378-PeCDF	32.17		1.0005	1.0006	+0.2	1.82E+07	1.53	Y	1.02	48.7	8840.749	0.222
23478-PeCDF	33.29		1.0005	1.0005	0	1.83E+07	1.54	Y	1.02	54.1	8840.749	0.238
123478-HxCDF	36.56		1.0004	1.0005	+0.2	1.58E+07	1.23	Y	1.27	51.5	4297.3	0.112
123678-HxCDF	36.70		1.0004	1.0005	+0.2	1.80E+07	1.23	Y	1.15	53.7	4297.3	0.107
234678-HxCDF	37.38		1.0005	1.0005	0	1.87E+07	1.23	Y	1.19	54.4	4297.3	0.116
123789-HxCDF	38.35		1.0004	1.0004	0	1.29E+07	1.22	Y	1.16	48.7	4297.3	0.129
1234678-HpCDF	39.77		1.0003	1.0003	0	1.47E+07	1.03	Y	1.37	50.9	2466.46	0.0653
1234789-HpCDF	41.18		1.0003	1.0003	0	1.15E+07	1.03	Y	1.31	51.7	2466.46	0.0967
OCDF	43.59		1.0002	1.0002	0	1.69E+07	0.89	Y	1.07	103	4841.252	0.375

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.21	1.0243	1.0244	+0.2	2.57E+07	0.79	Y	1.05	91.5
ES 12378-PeCDD	33.61	1.2198	1.2206	+1.6	2.15E+07	1.57	Y	0.88	90.9
ES 123478-HxCDD	37.55	0.9916	0.9916	0	1.99E+07	1.24	Y	0.97	98.2
ES 123678-HxCDD	37.67	0.9947	0.9948	+0.2	2.01E+07	1.25	Y	0.94	102
ES 123789-HxCDD	37.97	1.0029	1.0028	-0.2	2.10E+07	1.19	Y	1.09	92
ES 1234678-HpCDD	40.71	1.0749	1.0749	0	1.86E+07	1.12	Y	0.91	97.5
ES OCDD	43.40	1.1460	1.1462	+0.5	2.35E+07	0.91	Y	0.62	90
ES 2378-TCDF	27.34	1.0531	1.0534	+0.5	3.60E+07	0.80	Y	1.06	77.7
ES 12378-PeCDF	32.15	1.2378	1.2387	+1.7	3.64E+07	1.55	Y	0.91	91.4
ES 23478-PeCDF	33.27	1.2810	1.2820	+2.0	3.31E+07	1.61	Y	0.88	85.6
ES 123478-HxCDF	36.54	0.9650	0.9650	0	2.41E+07	0.52	Y	1.20	96.2
ES 123678-HxCDF	36.68	0.9688	0.9687	-0.2	2.91E+07	0.53	Y	1.35	103
ES 234678-HxCDF	37.36	0.9866	0.9866	0	2.89E+07	0.54	Y	1.24	111
ES 123789-HxCDF	38.34	1.0125	1.0124	-0.2	2.28E+07	0.51	Y	1.16	94.4
ES 1234678-HpCDF	39.76	1.0501	1.0500	-0.2	2.11E+07	0.49	Y	0.97	104
ES 1234789-HpCDF	41.16	1.0870	1.0870	0	1.70E+07	0.46	Y	0.85	95.5
ES OCDF	43.58	1.1505	1.1508	+0.8	3.08E+07	0.89	Y	0.81	91.2

Lab ID: OPR1_18911_DF | Acq'd: 19 Feb 2022 18:04 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR001 | UTP: 21-Feb-2022 10:46:46 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 320-676-ZPS

Datafile: 220219C02 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.54		-	-	-	2.69E+07	0.82	Y	-	-
JS 1234-TCDF	25.95		-	-	-	4.38E+07	0.81	Y	-	-
JS 123467-HxCDD	37.87		-	-	-	1.04E+07	1.26	Y	-	-
CS 37Cl-2378-TCDD	28.23		1.0251	1.0252	+0.2	1.26E+07	n/a	-	1.20	97.6
CS 12347-PeCDD	33.11		1.2016	1.2022	+1.2	2.18E+07	1.58	Y	0.75	108
CS 12346-PeCDF	31.62		1.2172	1.2182	+1.9	3.66E+07	1.61	Y	0.85	98.4
CS 123469-HxCDF	37.00		0.9771	0.9770	-0.2	2.77E+07	0.54	Y	1.12	119
CS 1234689-HpCDF	40.17		1.0608	1.0608	0	2.10E+07	0.45	Y	0.89	113
~~SS 37Cl-2378-TCDD~~	~~28.23~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~1.26E+07~~	~~n/a~~		~~1.15~~	~~107~~
~~SS 12347-PeCDD~~	~~33.11~~		~~1.2016~~	~~1.2022~~	~~+1.2~~	~~2.18E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~110~~
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2172~~	~~1.2182~~	~~+1.9~~	~~3.66E+07~~	~~1.61~~	~~Y~~	~~0.94~~	~~107~~
~~SS 123469-HxCDF~~	~~37.00~~		~~0.9771~~	~~0.9770~~	~~-0.2~~	~~2.77E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~115~~
~~SS 1234689-HpCDF~~	~~40.17~~		~~1.0608~~	~~1.0608~~	~~0~~	~~2.10E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~108~~

Totals	Conc	EMPC
Total TCDD	53.1	53.1
Total PeCDD	77.7	77.7
Total HxCDD	179	179
Total HpCDD	68.4	68.4
Total Tetra-Octa Dioxins	490	490
Total TCDF	63.5	63.5
Total PeCDF	206	206
Total HxCDF	334	334
Total HpCDF	103	103
Total Tetra-Octa Furans	809	809
Total Tetra-Octa Dioxins & Furans	1300	1300

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.795	0.80
Response	3.56E+06	3.56E+06

Lab ID: OPR1_18911_DF | Acq'd: 19 Feb 2022 18:04 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR001 | UTP: 21-Feb-2022 10:46:46 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 320-676-ZPS

Datafile: 220219C02 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.53		0.8701	0.8695	-0.9	4.68E+06	0.83	Y	1.18	15.4	4737.647	0.171
1379-TCDD	NotFnd		0.8829						1.18		4737.647	0.171
1369-TCDD	NotFnd		0.8982						1.18		4737.647	0.171
1469-TCDD	NotFnd		0.9261						1.18		4737.647	0.171
1247/1246/1248/1249-TCDD	NotFnd		0.9348						1.18		4737.647	0.171
1378-TCDD	NotFnd		0.9417						1.18		4737.647	0.171
1268-TCDD	NotFnd		0.9487						1.18		4737.647	0.171
1478-TCDD	NotFnd		0.9576						1.18		4737.647	0.171
1279-TCDD	NotFnd		0.9636						1.18		4737.647	0.171
1234/1269-TCDD	NotFnd		0.9761						1.18		4737.647	0.171
1236-TCDD	NotFnd		0.9812						1.18		4737.647	0.171
1237/1238-TCDD	NotFnd		0.9905						1.18		4737.647	0.171
1239-TCDD	28.07		0.9951	0.9951	0	3.39E+06	0.82	Y	1.18	11.1	4737.647	0.171
2378-TCDD	**28.23**		**1.0008**	1.0008	0	3.56E+06	0.80	Y	**1.18**	**11.7**	**4737.647**	**0.171**
1278-TCDD	NotFnd		1.0124						1.18		4737.647	0.171
1267-TCDD	NotFnd		1.0172						1.18		4737.647	0.171
1289-TCDD	29.21		1.0354	1.0356	+0.4	4.56E+06	0.77	Y	1.18	15	4737.647	0.171
12479/12468-PeCDD	31.11		0.9255	0.9254	-0.2	2.98E+06	1.53	Y	1.04	13.4	4309.427	0.179
12469-PeCDD	NotFnd		0.9416						1.04		4309.427	0.179
12368-PeCDD	NotFnd		0.9582						1.04		4309.427	0.179
12478-PeCDD	NotFnd		0.9637						1.04		4309.427	0.179
12379-PeCDD	NotFnd		0.9668						1.04		4309.427	0.179
12369/12467/12489-PeCDD	NotFnd		0.9746						1.04		4309.427	0.179
12346/12347-PeCDD	NotFnd		0.9858						1.04		4309.427	0.179
12378-PeCDD	33.63		**1.0007**	**1.0006**	**-0.2**	**1.13E+07**	**1.58**	**Y**	**1.04**	**50.5**	**4309.427**	**0.179**
12367-PeCDD	NotFnd		1.0036						1.04		4309.427	0.179
12389-PeCDD	34.07		1.0137	1.0137	0	3.06E+06	1.61	Y	1.04	13.8	4309.427	0.179
124679/124689-HxCDD	35.82		0.9540	0.9539	-0.2	3.45E+06	1.27	Y	1.10	15.5	3601.285	0.147
123468-HxCDD	NotFnd		0.9715						1.10		3601.285	0.147
123679/123689-HxCDD	NotFnd		0.9793						1.10		3601.285	0.147
123469-HxCDD	NotFnd		0.9829						1.10		3601.285	0.147
123478-HxCDD	37.56		**1.0004**	**1.0004**	**0**	**1.18E+07**	**1.29**	**Y**	1.09	**54.5**	**3601.285**	**0.148**
123678-HxCDD	37.68		**1.0036**	**1.0036**	**0**	**1.31E+07**	**1.25**	**Y**	1.15	**56.6**	**3601.285**	**0.146**
123467-HxCDD	NotFnd		1.0089						1.10		3601.285	0.147
123789-HxCDD	37.99		**1.0118**	**1.0117**	**-0.2**	**1.15E+07**	**1.29**	**Y**	1.05	**52.2**	**3601.285**	**0.148**

Lab ID: OPR1_18911_DF | Acq'd: 19 Feb 2022 18:04 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR001 | UTP: 21-Feb-2022 10:46:46 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 320-676-ZPS

Datafile: 220219C02 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9836	0.9836	0	2.67E+06	1.00	Y	1.06	13.5	4312.014	0.183
1234678-HpCDD	**40.72**		**1.0002**	**1.0003**	**+0.2**	**1.08E+07**	**1.02**	**Y**	**1.06**	**54.9**	**4312.014**	**0.183**
OCDD	**43.42**		**1.0003**	**1.0003**	**0**	**1.48E+07**	**0.91**	**Y**	**1.13**	**112**	**3115.786**	**0.284**
OCDD-a	43.41	EMPC	1.0002	1.0002	0	6.52E+05	3.38	N	0.07	77.2	4555.212	6.49
1368-TCDF	22.37		0.8191	0.8181	-1.3	6.15E+06	0.76	Y	1.08	15.8	2688.114	0.0822
1468-TCDF	NotFnd		0.8408						1.08		2688.114	0.0822
2468-TCDF	23.62		0.8645	0.8639	-0.9	1.47E+06	0.84	Y	1.08	3.77	2688.114	0.0822
1346/1246-TCDF	NotFnd		0.8772						1.08		2688.114	0.0822
1347/1378/1247-TCDF	NotFnd		0.8833						1.08		2688.114	0.0822
1348-TCDF	NotFnd		0.8932						1.08		2688.114	0.0822
1248/1367/1379-TCDF	NotFnd		0.8980						1.08		2688.114	0.0822
1268-TCDF	NotFnd		0.9119						1.08		2688.114	0.0822
1467-TCDF	NotFnd		0.9170						1.08		2688.114	0.0822
1478-TCDF	NotFnd		0.9234						1.08		2688.114	0.0822
1369/1237-TCDF	NotFnd		0.9369						1.08		2688.114	0.0822
2467-TCDF	NotFnd		0.9415						1.08		2688.114	0.0822
2368-TCDF	NotFnd		0.9475						1.08		2688.114	0.0822
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9507						1.08		2688.114	0.0822
1278-TCDF	NotFnd		0.9676						1.08		2688.114	0.0822
1349-TCDF	NotFnd		0.9722						1.08		2688.114	0.0822
1267-TCDF	NotFnd		0.9777						1.08		2688.114	0.0822
2346/1249-TCDF	NotFnd		0.9843						1.08		2688.114	0.0822
2347/1279-TCDF	NotFnd		0.9926						1.08		2688.114	0.0822
2348-TCDF	27.25		0.9968	0.9968	0	6.14E+06	0.83	Y	1.08	15.8	2688.114	0.0822
2378-TCDF	**27.36**		**1.0008**	**1.0008**	**0**	**4.24E+06**	**0.74**	**Y**	**1.08**	**10.9**	**2688.114**	**0.0822**
2367/3467-TCDF	NotFnd		1.0142						1.08		2688.114	0.0822
1269-TCDF	NotFnd		1.0235						1.08		2688.114	0.0822
1239-TCDF	NotFnd		1.0329						1.08		2688.114	0.0822
1289-TCDF	29.39		1.0742	1.0748	+1.1	6.68E+06	0.76	Y	1.08	17.2	2688.114	0.0822
13468/12468-PeCDF	29.31		0.9122	0.9116	-1.1	3.29E+07	1.55	Y	1.02	92.6	3214.62	0.0834
13678/13467/12467-PeCDF	NotFnd		0.9606						1.02		8840.749	0.229
12368/13478/12478-PeCDF	NotFnd		0.9655						1.02		8840.749	0.229
14678-PeCDF	NotFnd		0.9685						1.02		8840.749	0.229
13479-PeCDF	NotFnd		0.9716						1.02		8840.749	0.229
13469/12479-PeCDF	NotFnd		0.9794						1.02		8840.749	0.229
12346-PeCDF	NotFnd		0.9836						1.02		8840.749	0.229

Lab ID: OPR1_18911_DF | Acq'd: 19 Feb 2022 18:04 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR001 | UTP: 21-Feb-2022 10:46:46 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 320-676-ZPS

Datafile: 220219C02 | Report: 21 Feb 2022 10:47 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9866						1.02		8840.749	0.229
12347-PeCDF	NotFnd		0.9891						1.02		8840.749	0.229
12348-PeCDF	NotFnd		0.9938						1.02		8840.749	0.229
12378-PeCDF	**32.17**		**1.0005**	**1.0006**	**+0.2**	**1.62E+07**	**1.53**	**Y**	**1.02**	**48.7**	**8840.749**	**0.222**
12678/12367-PeCDF	NotFnd		1.0091						1.02		8840.749	0.229
12379-PeCDF	NotFnd		1.0144						1.02		8840.749	0.229
12679-PeCDF	NotFnd		0.9927						1.02		8840.749	0.229
23467/12369-PeCDF	NotFnd		0.9965						1.02		8840.749	0.229
23478-PeCDF	**33.29**		**1.0005**	**1.0005**	**0**	**1.83E+07**	**1.54**	**Y**	**1.02**	**54.1**	**8840.749**	**0.238**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		8840.749	0.229
12349-PeCDF	NotFnd		1.0101						1.02		8840.749	0.229
12389-PeCDF	34.37		1.0330	1.0330	0	3.90E+06	1.60	Y	1.02	11	8840.749	0.229
123468-HxCDF	35.16		0.9622	0.9622	0	3.94E+07	1.25	Y	1.19	126	4297.3	0.115
124678/134678-HxCDF	NotFnd		0.9678						1.19		4297.3	0.115
134679-HxCDF	NotFnd		0.9741						1.19		4297.3	0.115
124679-HxCDF	NotFnd		0.9795						1.19		4297.3	0.115
124689-HxCDF	NotFnd		0.9856						1.19		4297.3	0.115
123467-HxCDF	NotFnd		0.9972						1.19		4297.3	0.115
123478-HxCDF	**36.56**		**1.0004**	**1.0005**	**+0.2**	**1.58E+07**	**1.23**	**Y**	**1.27**	**51.5**	**4297.3**	**0.112**
123678-HxCDF	**36.70**		**1.0004**	**1.0005**	**+0.2**	**1.80E+07**	**1.23**	**Y**	**1.15**	**53.7**	**4297.3**	**0.107**
123479-HxCDF	NotFnd		1.0048						1.19		4297.3	0.115
123469-HxCDF	NotFnd		1.0089						1.19		4297.3	0.115
123679-HxCDF	NotFnd		0.9942						1.19		4297.3	0.115
234678-HxCDF	**37.38**		**1.0005**	**1.0005**	**0**	**1.87E+07**	**1.23**	**Y**	**1.19**	**54.4**	**4297.3**	**0.116**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4297.3	0.115
123789-HxCDF	**38.35**		**1.0004**	**1.0004**	**0**	**1.29E+07**	**1.22**	**Y**	**1.16**	**48.7**	**4297.3**	**0.129**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		4297.3	0.115
1234678-HpCDF	**39.77**		**1.0003**	**1.0003**	**0**	**1.47E+07**	**1.03**	**Y**	**1.37**	**50.9**	**2466.46**	**0.0653**
1234679-HpCDF	NotFnd		1.0068						1.34		2466.46	0.0792
1234689-HpCDF	NotFnd		1.0104						1.34		2466.46	0.0792
1234789-HpCDF	**41.18**		**1.0003**	**1.0003**	**0**	**1.15E+07**	**1.03**	**Y**	**1.31**	**51.7**	**2466.46**	**0.0967**
OCDF	**43.59**		**1.0002**	**1.0002**	**0**	**1.69E+07**	**0.89**	**Y**	**1.07**	**103**	**4841.252**	**0.375**
OCDF-a	43.58		1.0001	1.0001	0	1.01E+06	2.78	Y	0.07	99.1	3888.99	4.86

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220219C02	Analysis Date:	19-FEB-2022 18:04:19
Lab ID:	OPR1_18911_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11.7	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	50.5	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	54.5	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	56.6	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	52.2	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	54.9	35	-	70	Y
OCDD	100	112	78	-	144	Y
2,3,7,8-TCDF	10	10.9	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	48.7	40	-	67	Y
2,3,4,7,8-PeCDF	50	54.1	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	51.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53.7	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	54.4	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	48.7	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	50.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	51.7	39	-	69	Y
OCDF	100	103	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 21 Feb 2022 10:47 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220219C02	Analysis Date:	19-FEB-2022 18:04:19
Lab ID:	OPR1_18911_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	91.5	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	90.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	98.2	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	102	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	92	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	97.5	26	-	166	Y
13C-OCDD	200	180	26	-	397	Y
13C-2,3,7,8-TCDF	100	77.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	91.4	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	85.6	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	96.2	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	103	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	111	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	94.4	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	104	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	95.5	20	-	186	Y
13C-OCDF	200	182	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	39.1	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 21 Feb 2022 10:47 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220219C02	Analysis Date:	19-FEB-2022 18:04:19
Lab ID:	OPR1_18911_DF		

Window Defining Standards Results

First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.53	1289-TCDD	29.21
12479/12468-PeCDD	31.11	12389-PeCDD	34.07
124679/124689-HxCDD	35.82	123789-HxCDD	37.99
1234679-HpCDD	40.04	1234678-HpCDD	40.72
1368-TCDF	22.37	1289-TCDF	29.39
13468/12468-PeCDF	29.31	12389-PeCDF	34.37
123468-HxCDF	35.16	123789-HxCDF	38.35
1234678-HpCDF	39.77	1234789-HpCDF	41.18

Isomer Specificity Test Standard Results

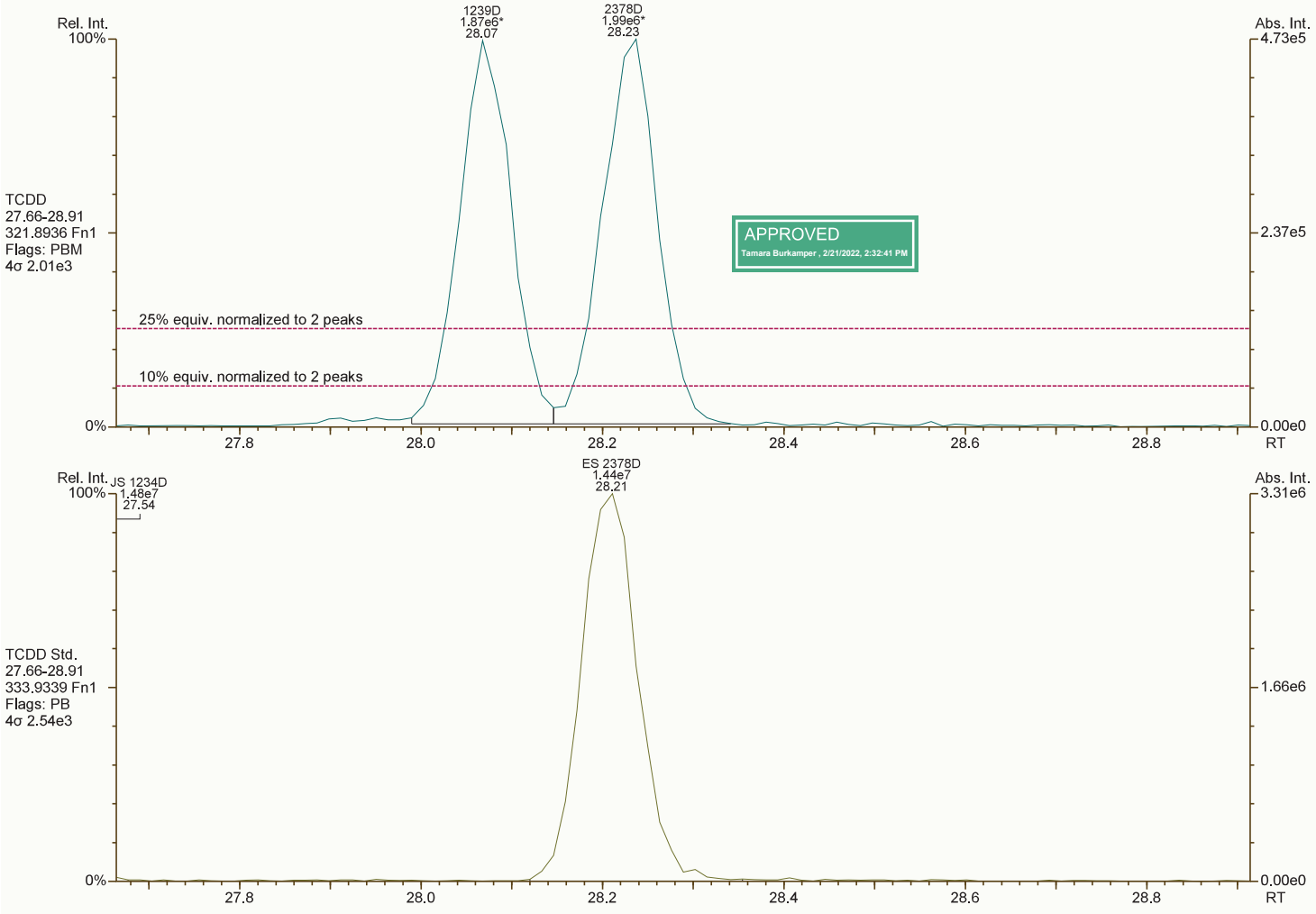
Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.07	2378-TCDD	28.23
2348-TCDF	27.25	2378-TCDF	27.36

Processed: 21 Feb 2022 10:47 Analyst: TF

SGS ID: OPR1_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18911_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26

Acq: 19-Feb-2022 18:04:19
User: DTF Datafile: 220219C02



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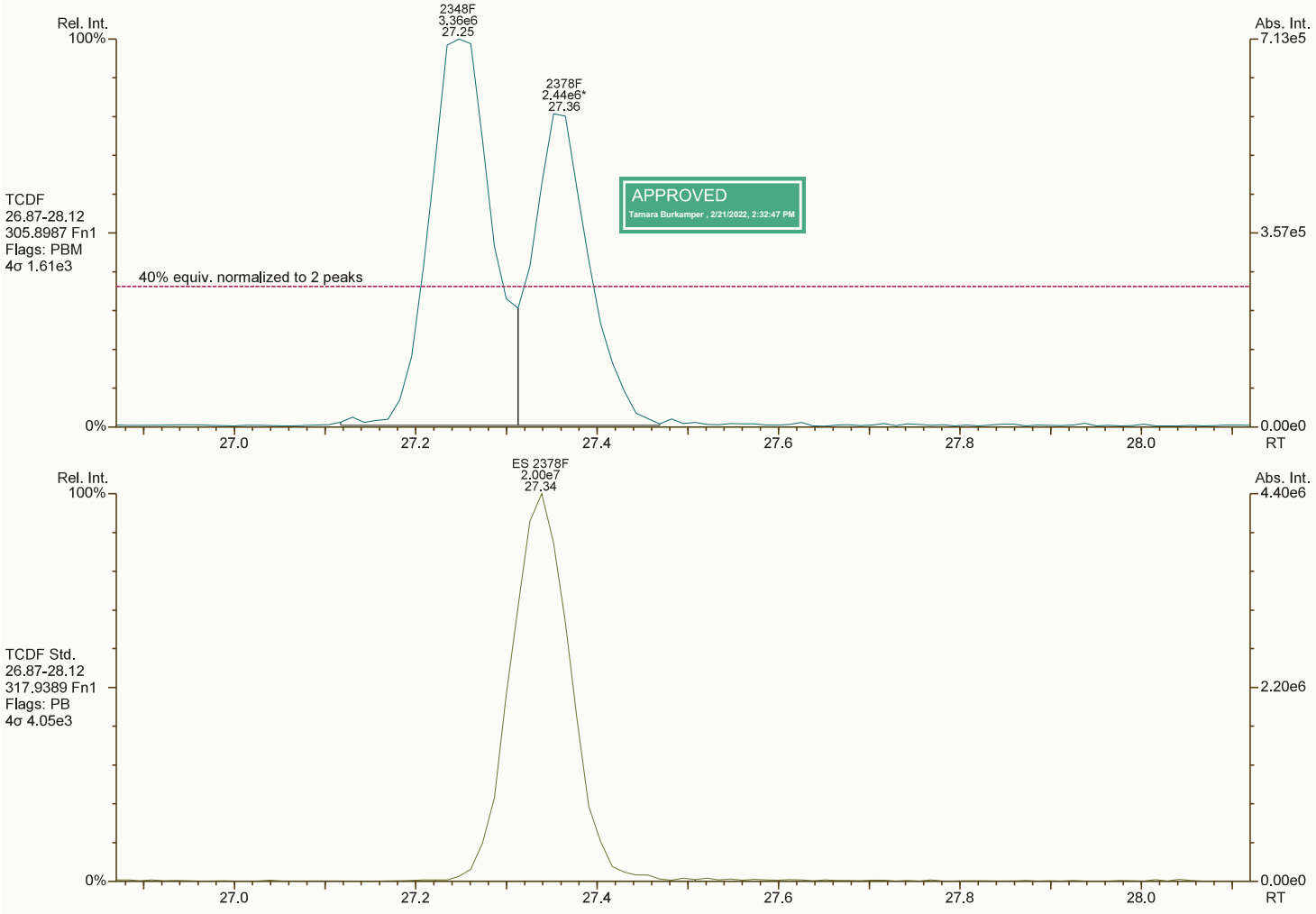
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
Revised: 21-Feb-2022 09:56 (DTF) Printed: 21-Feb-2022 10:49

SGS ID: OPR1_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18911_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26

Acq: 19-Feb-2022 18:04:19
User: DTF Datafile: 220219C02



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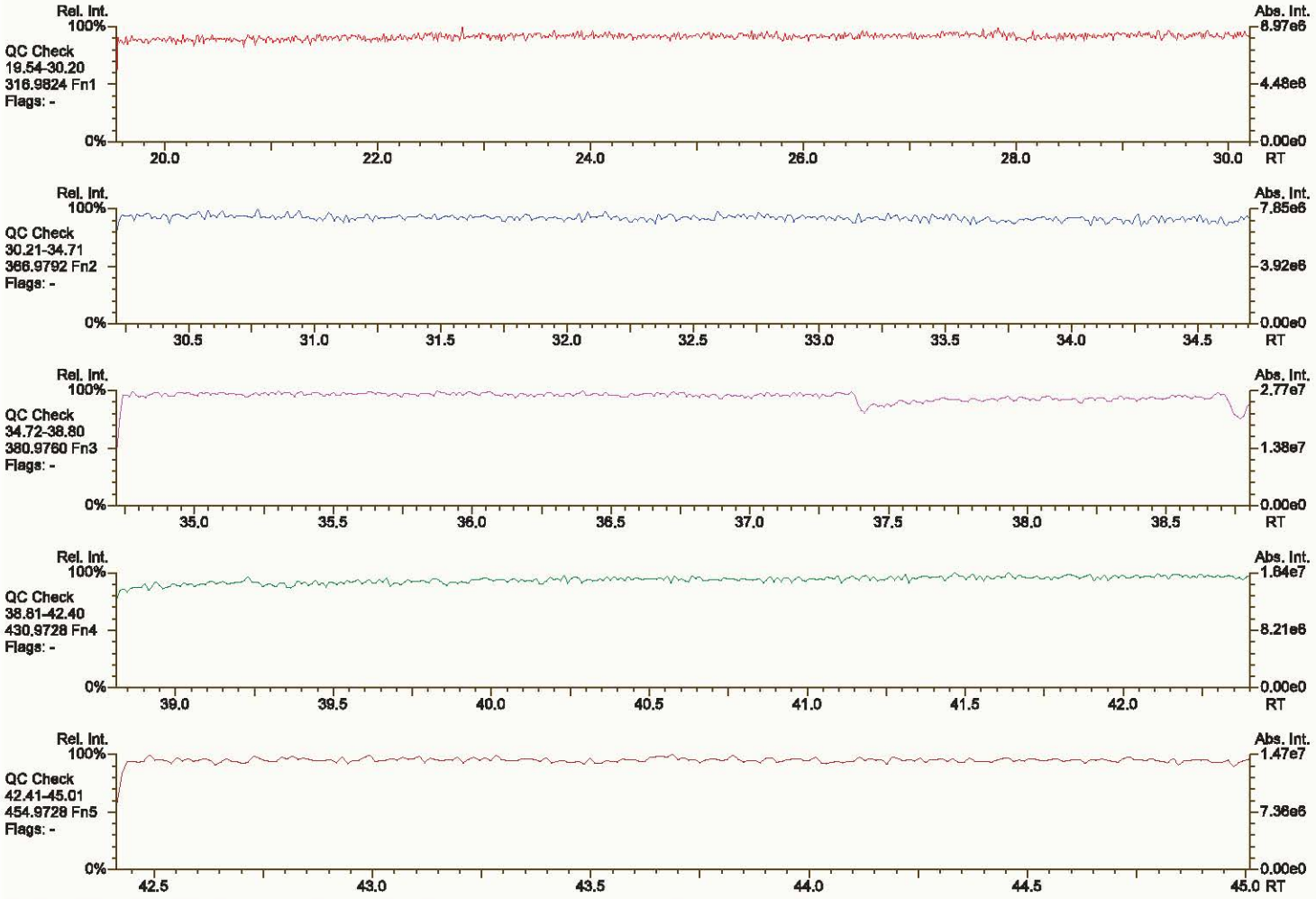
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616

Peak annotation: Areas, Centroids
Revised: 21-Feb-2022 09:56 (DTF) Printed: 21-Feb-2022 10:49

SGS ID: OPR1_18911_DF | Sample ID: 0_18911_OPR001 | Acq: 19-Feb-2022 18:04:19

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26 | User: DTF Datafile: 220219C02



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Peak annotation: Areas, Centroids

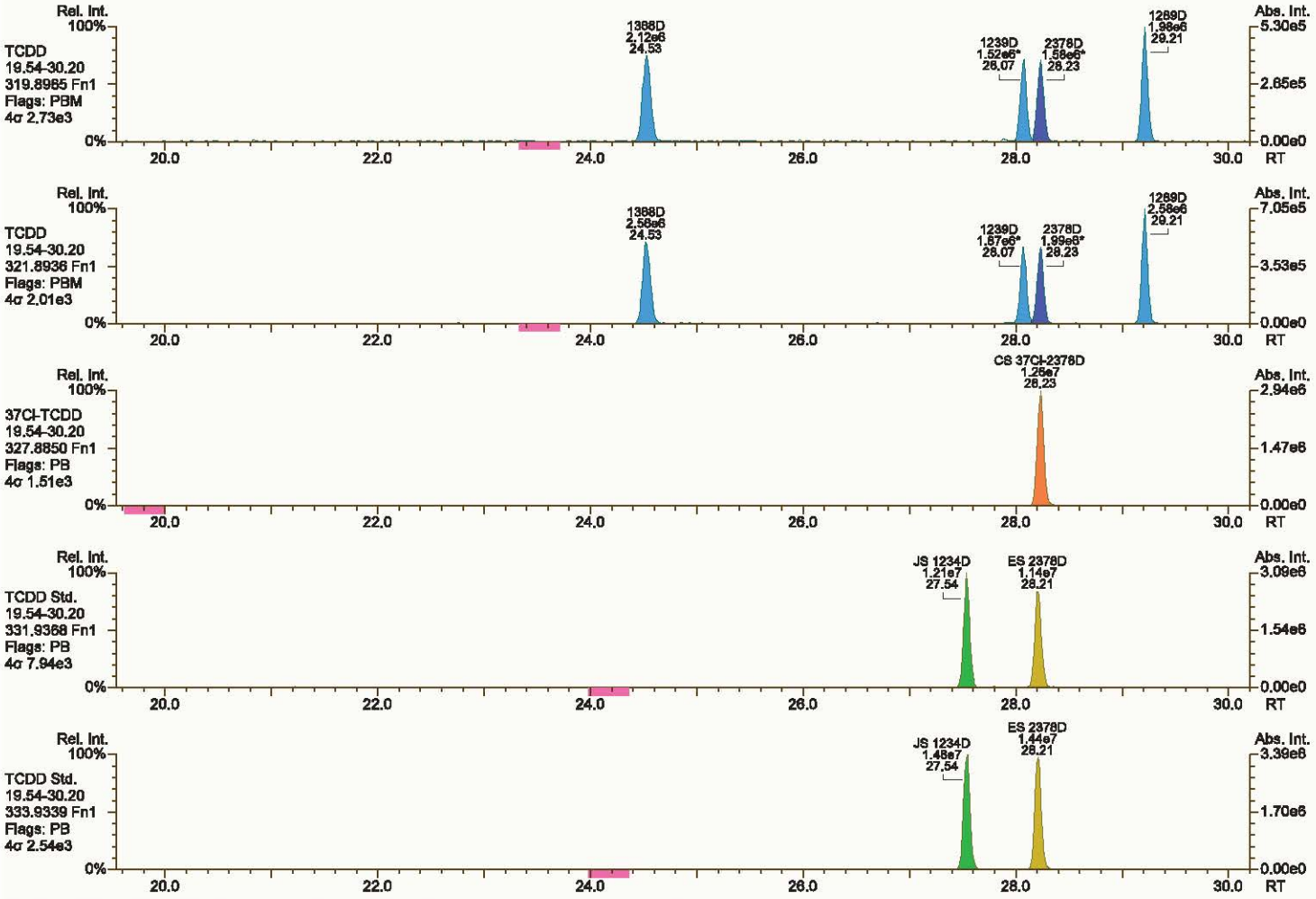
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 scc: 320-676

PKD: n/a Printed: 21-Feb-2022 10:50 Page 1 of 12

SGS ID: OPR1_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

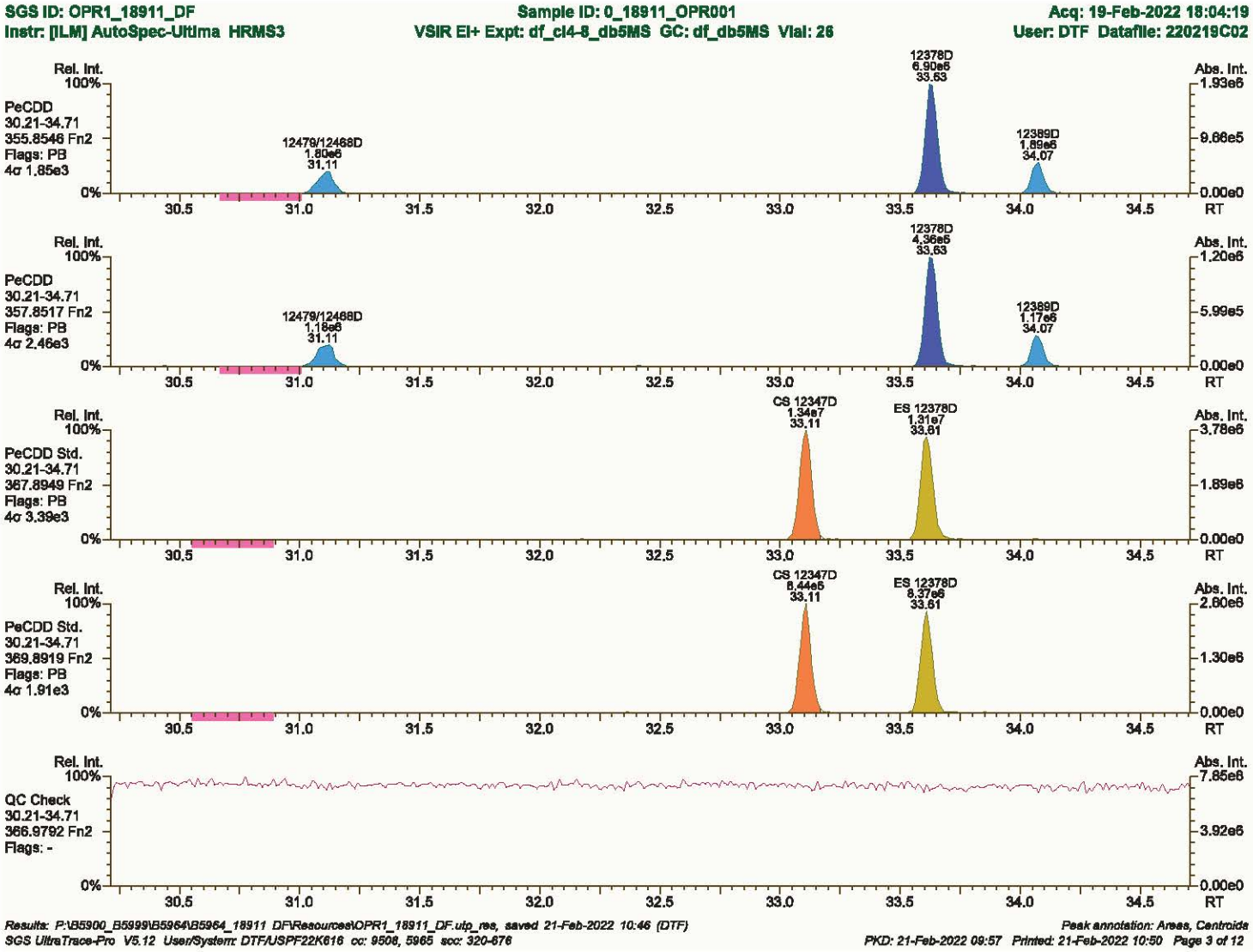
Sample ID: 0_18911_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26

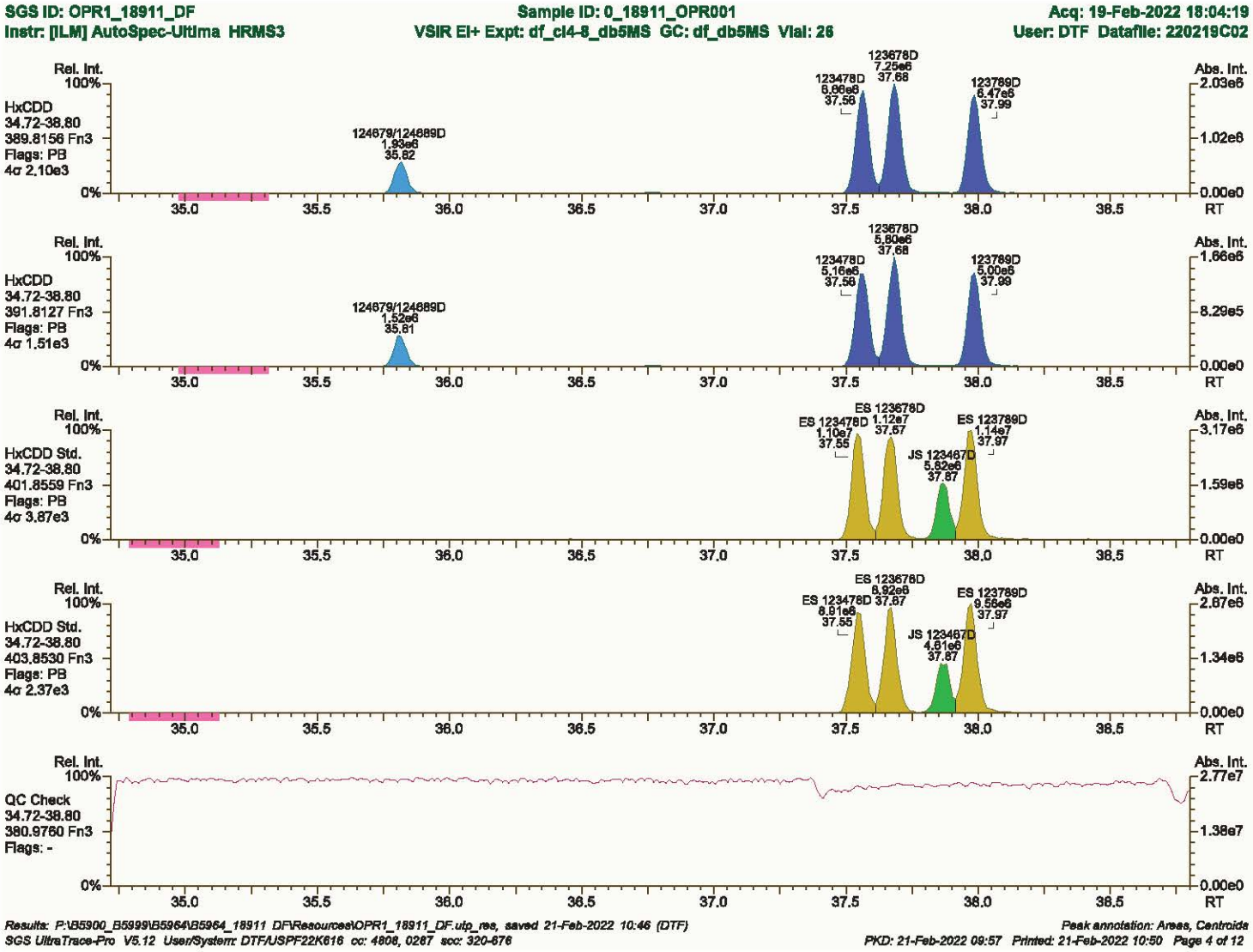
Acq: 19-Feb-2022 18:04:19
User: DTF Datafile: 220219C02

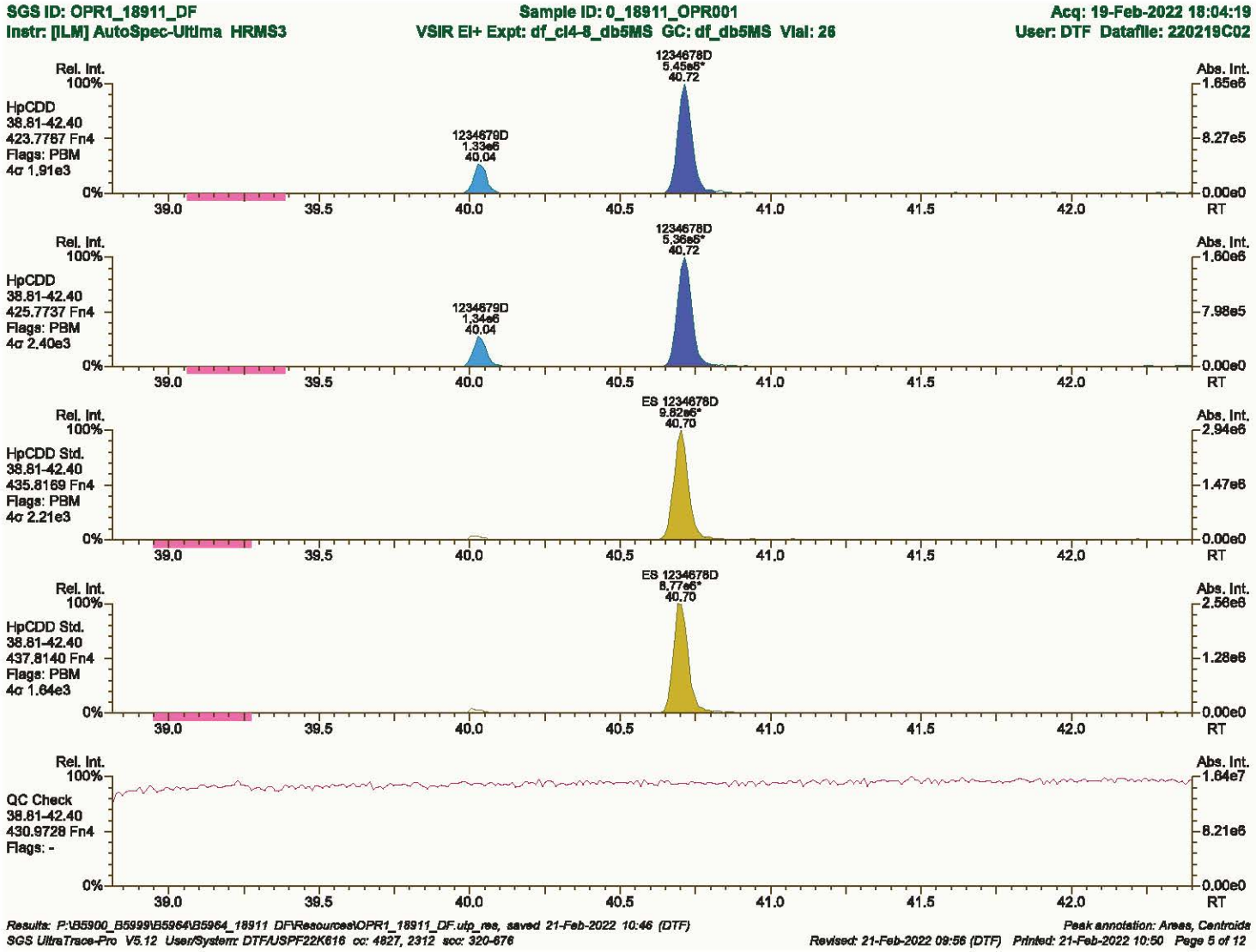


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 5839, 2331, 5791 scc: 320-676

Peak annotation: Areas, Centroids
Revised: 21-Feb-2022 09:56 (DTF) Printed: 21-Feb-2022 10:50 Page 2 of 12

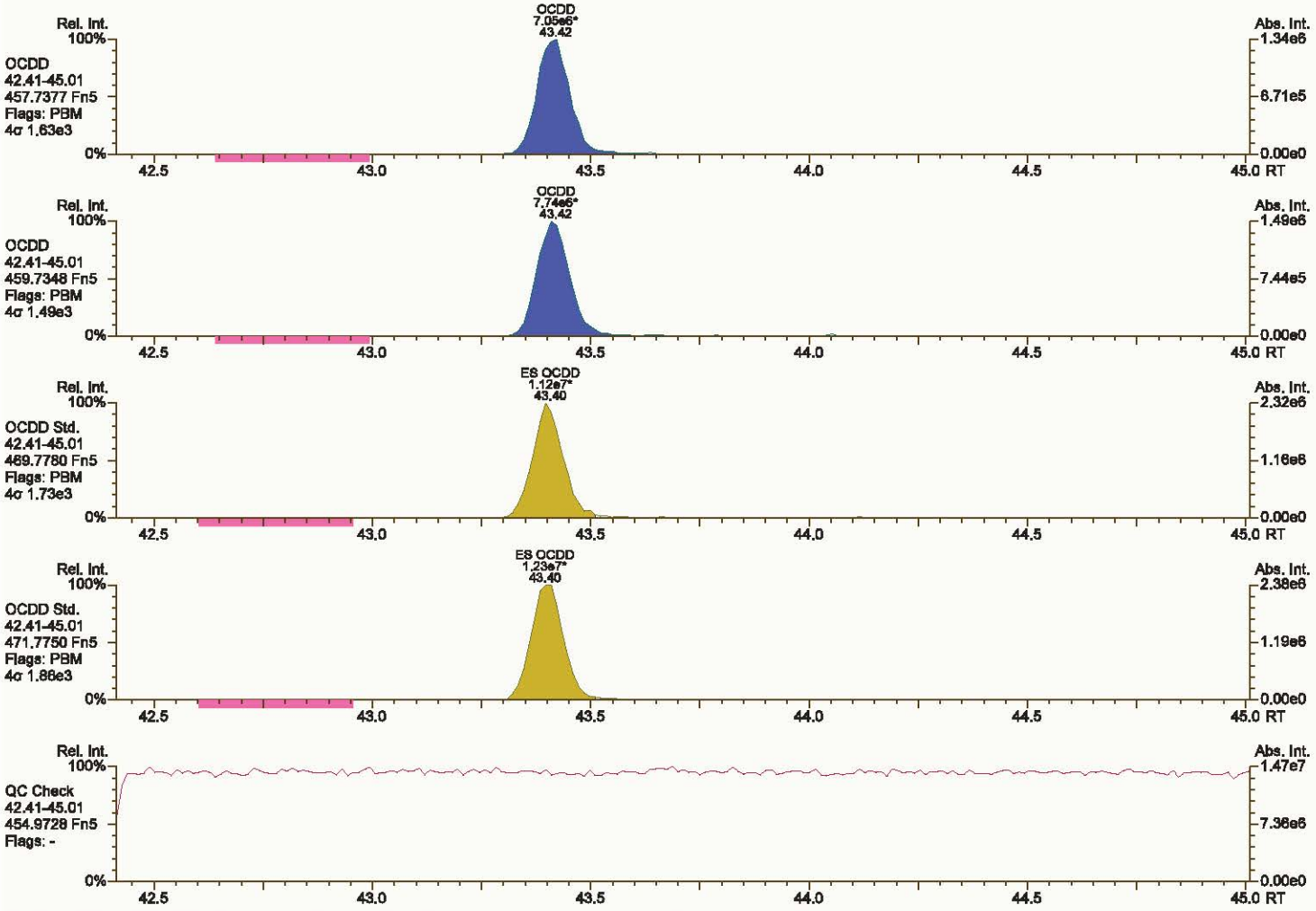

SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
PeCDD
30.21-34.71
355.8546 Fn2
Flags: PB
4σ 1.85e3
12479/12468D
1.80e6
31.11
12378D
6.90e6
33.63
12389D
1.89e5
34.07
PeCDD
30.21-34.71
357.8517 Fn2
Flags: PB
4σ 2.46e3
12479/12468D
1.18e6
31.11
12378D
4.36e5
33.63
12389D
1.17e6
34.07
PeCDD Std.
30.21-34.71
367.8949 Fn2
Flags: PB
4σ 3.39e3
CS 12347D
1.34e7
33.11
ES 12378D
1.31e7
33.61
PeCDD Std.
30.21-34.71
369.8919 Fn2
Flags: PB
4σ 1.91e3
CS 12347D
8.44e5
33.11
ES 12378D
8.37e6
33.61
QC Check
30.21-34.71
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9508, 5965 scc: 320-676
PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:50 Page 3 of 12


SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PB
4σ 2.10e3
124679/124689D
1.99e6
35.82
123678D
7.25e6
37.68
123478D
6.66e6
37.56
123789D
6.47e6
37.99
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PB
4σ 1.51e3
124679/124689D
1.52e6
35.81
123678D
5.80e6
37.68
123478D
5.16e6
37.56
123789D
5.00e6
37.99
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PB
4σ 3.87e3
ES 123678D
1.12e7
37.67
ES 123478D
1.10e7
37.55
ES 123789D
1.14e7
37.97
JS 123467D
5.62e6
37.87
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PB
4σ 2.37e3
ES 123678D
8.92e6
37.67
ES 123478D
8.91e6
37.55
ES 123789D
9.56e6
37.97
JS 123467D
4.81e6
37.87
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
0%
100%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
HpCDD
38.81-42.40
423.7767 Fn4
Flags: PBM
4σ 1.91e3
1234678D
5.45e5*
40.72
1234679D
1.33e6
40.04
1.65e6
8.27e5
0.00e0
HpCDD
38.81-42.40
425.7737 Fn4
Flags: PBM
4σ 2.40e3
1234678D
5.36e5*
40.72
1234679D
1.34e6
40.04
1.60e6
7.98e5
HpCDD Std.
38.81-42.40
435.8169 Fn4
Flags: PBM
4σ 2.21e3
ES 1234678D
9.82e6*
40.70
2.94e6
1.47e6
HpCDD Std.
38.81-42.40
437.8140 Fn4
Flags: PBM
4σ 1.64e3
ES 1234678D
8.77e6*
40.70
2.56e6
1.28e6
QC Check
38.81-42.40
430.9728 Fn4
Flags: -
1.64e7
8.21e6
0%
100%
39.0
39.5
40.0
40.5
41.0
41.5
42.0
RT

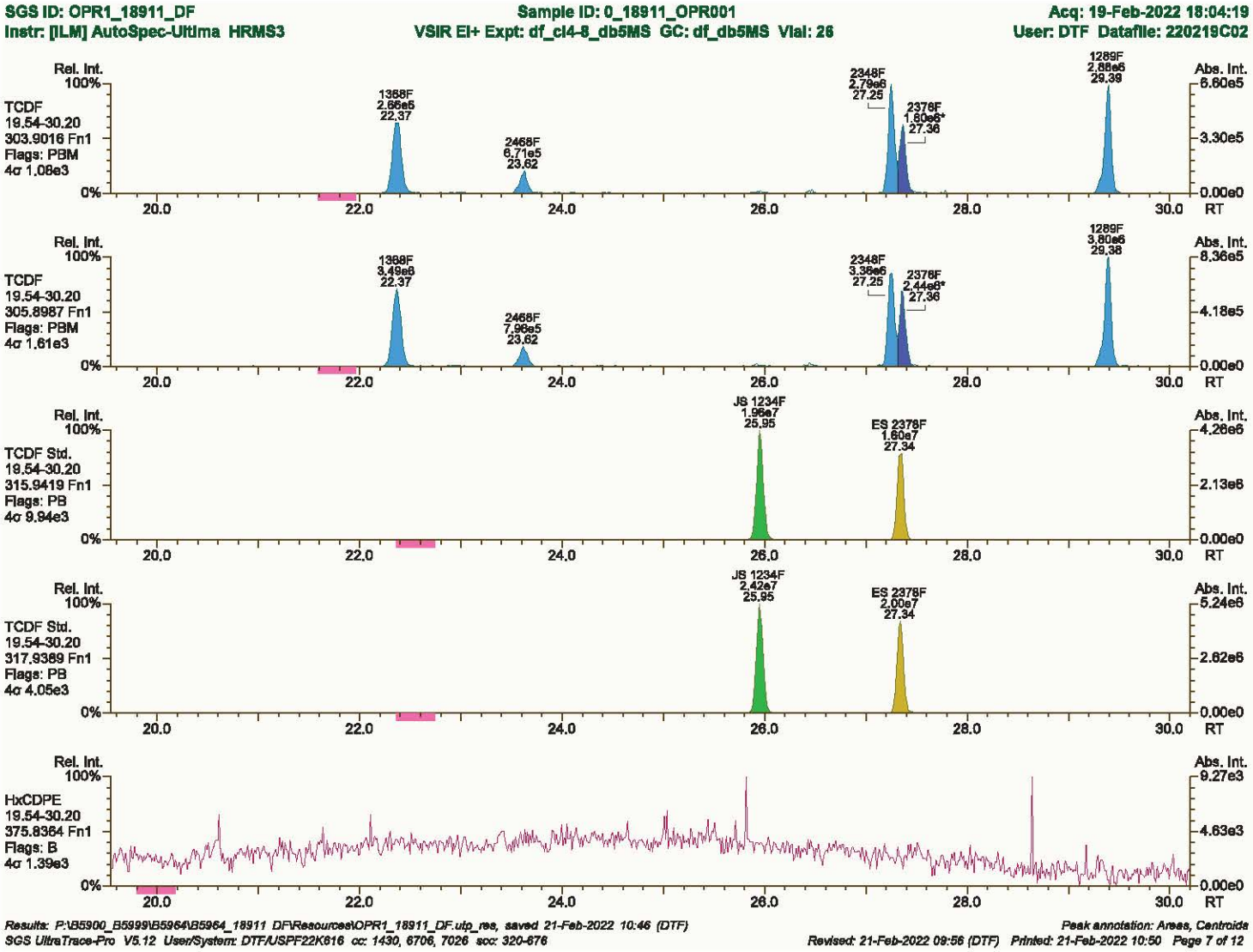
SGS ID: OPR1_18911_DF | Sample ID: 0_18911_OPR001 | Acq: 19-Feb-2022 18:04:19

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26 | User: DTF Datafile: 220219C02



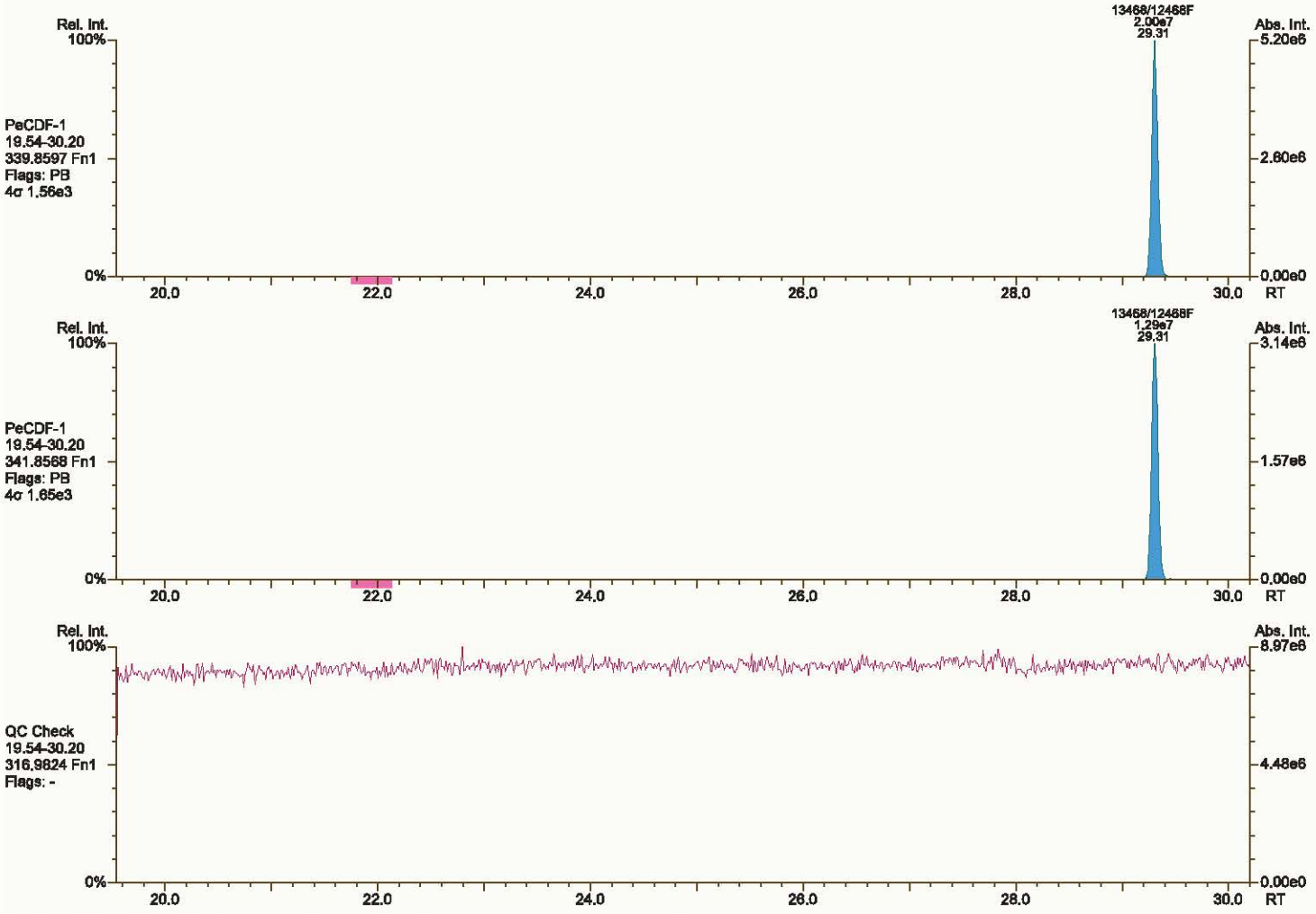
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2509, 7096 scc: 320-676 *PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:50 Page 6 of 12*


SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
TCDF
19.54-30.20
303.9016 Fn1
Flags: PBM
4σ 1.08e3
1368F
2.66e6
22.37
2468F
6.71e5
23.62
2348F
2.79e6
27.25
2378F
1.80e6*
27.36
1289F
2.88e6
29.39
6.60e5
3.30e5
0.00e0
TCDF
19.54-30.20
305.8987 Fn1
Flags: PBM
4σ 1.61e3
1368F
3.49e6
22.37
2468F
7.98e5
23.62
2348F
3.36e6
27.25
2378F
2.44e6*
27.36
1289F
3.80e6
29.38
8.36e5
4.18e5
0.00e0
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 9.94e3
JS 1234F
1.96e7
25.95
ES 2378F
1.60e7
27.34
4.26e6
2.13e6
0.00e0
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 4.05e3
JS 1234F
2.42e7
25.95
ES 2378F
2.00e7
27.34
5.24e6
2.62e6
0.00e0
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.39e3
9.27e3
4.63e3
0.00e0
0%
100%
20.0
22.0
24.0
26.0
28.0
30.0
RT

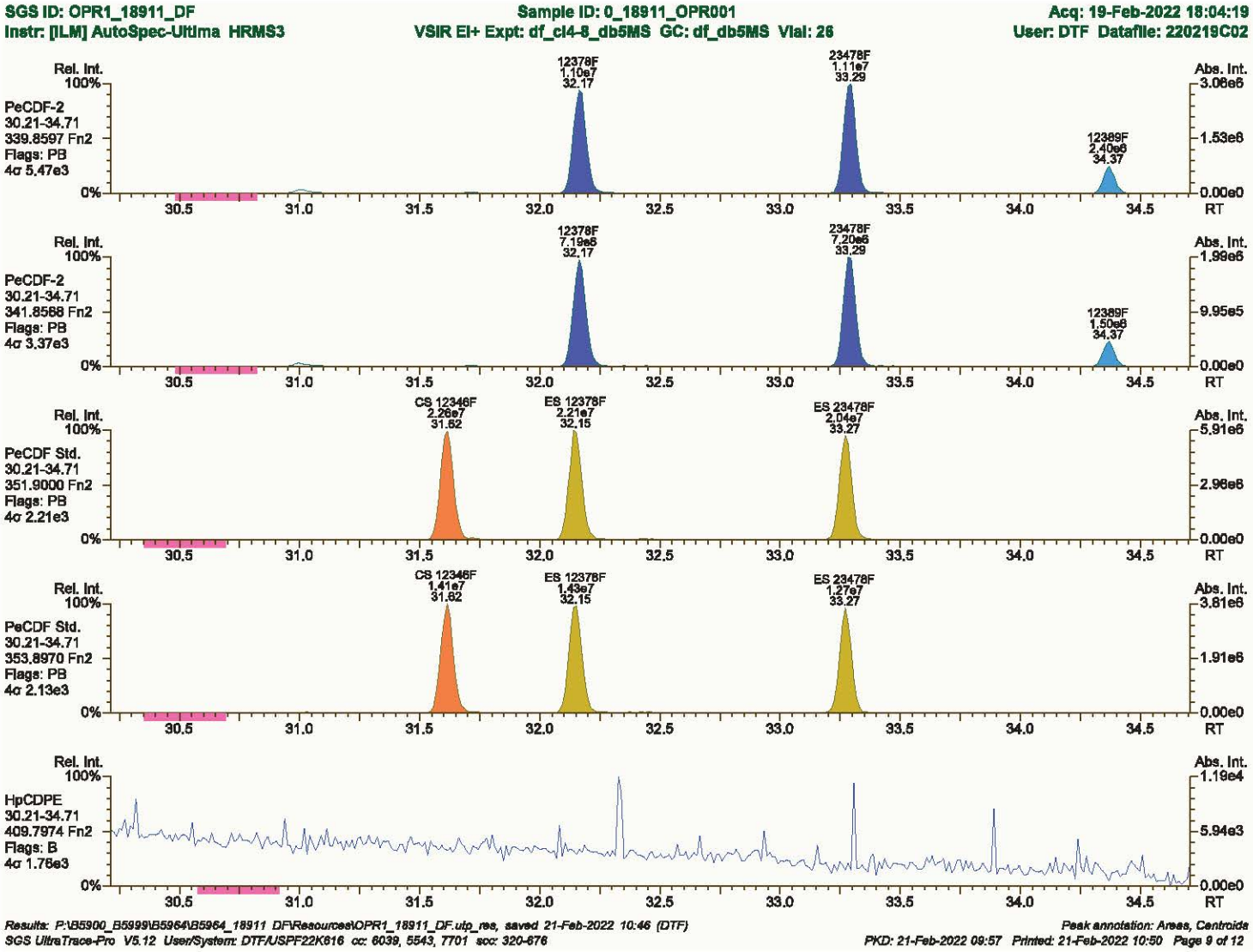
SGS ID: OPR1_18911_DF | Sample ID: 0_18911_OPR001 | Acq: 19-Feb-2022 18:04:19

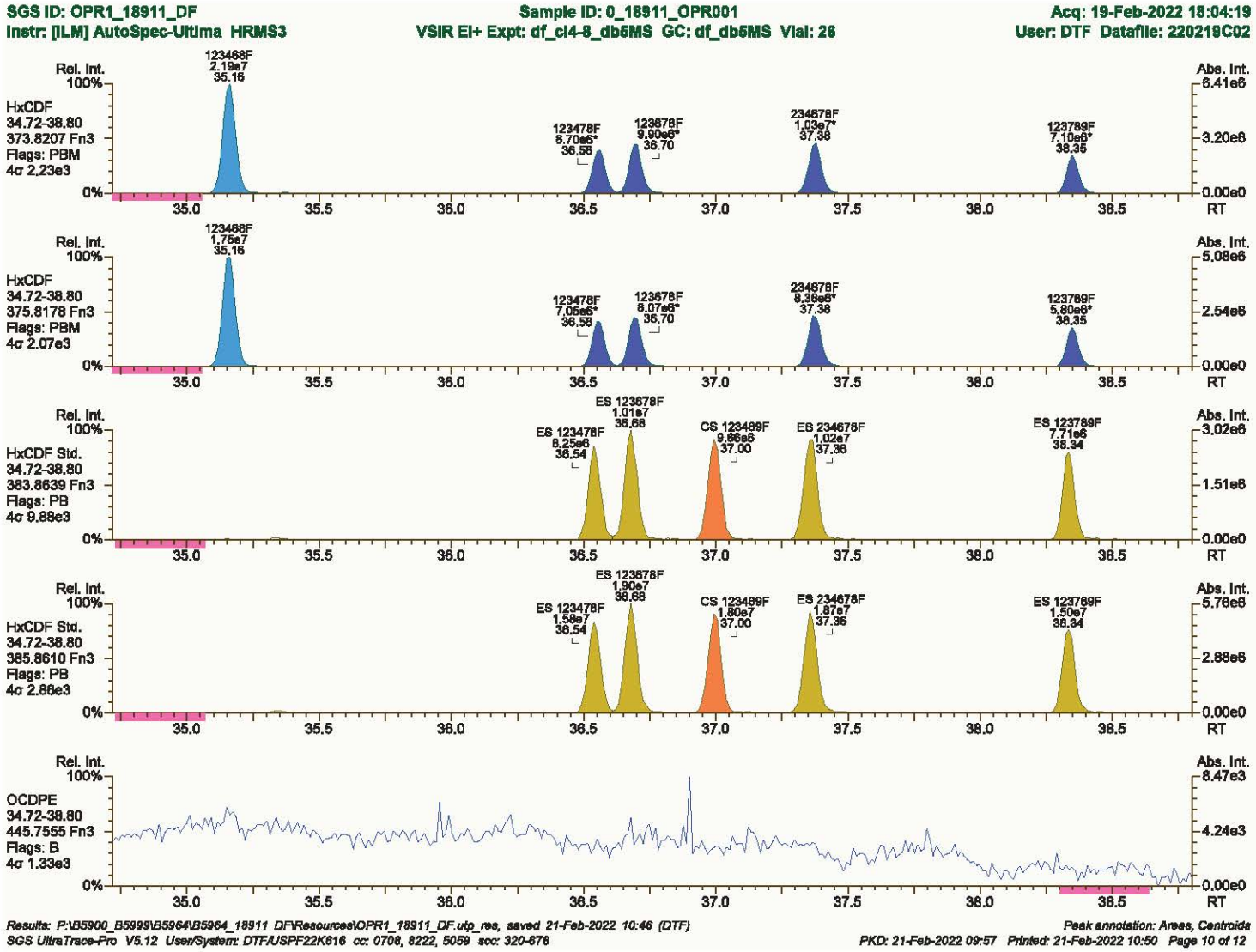
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26 | User: DTF Datafile: 220219C02

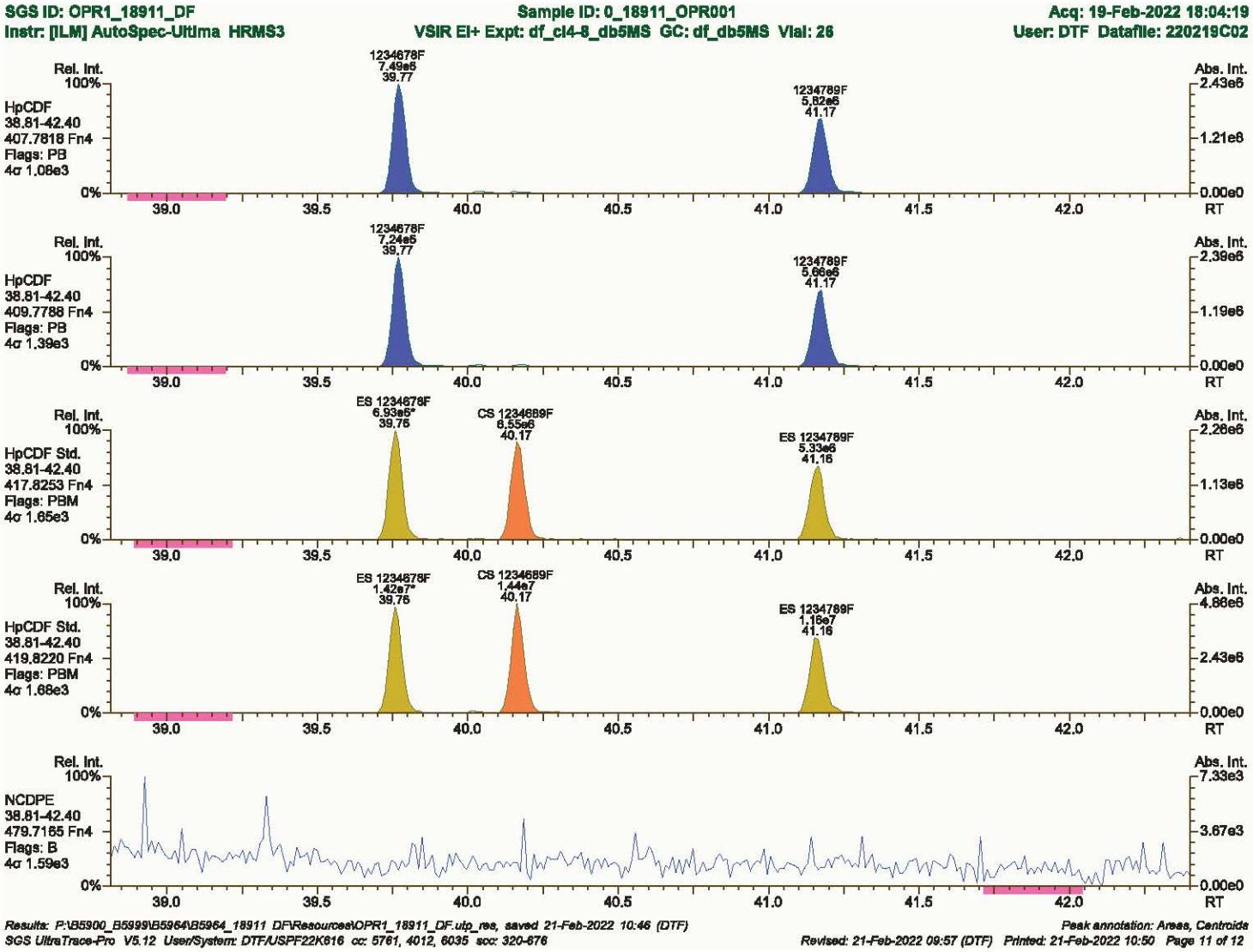


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6476 scc: 320-676 | *PKD: 21-Feb-2022 09:55 Printed: 21-Feb-2022 10:50 Page 8 of 12*


SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PB
4σ 5.47e3
12378F 1.10e7 32.17
23478F 1.11e7 33.29
12389F 2.40e6 34.37
3.06e6
1.53e6
0.00e0
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: PB
4σ 3.37e3
12378F 7.19e6 32.17
23478F 7.20e6 33.29
12389F 1.50e6 34.37
1.99e6
9.95e5
0.00e0
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 2.21e3
CS 12346F 2.26e7 31.62
ES 12378F 2.21e7 32.15
ES 23478F 2.04e7 33.27
5.91e6
2.96e6
0.00e0
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 2.13e3
CS 12346F 1.41e7 31.62
ES 12378F 1.43e7 32.15
ES 23478F 1.27e7 33.27
3.81e6
1.91e6
0.00e0
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: B
4σ 1.76e3
1.19e4
5.94e3
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6039, 5543, 7701 scc: 320-676
PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:50 Page 9 of 12

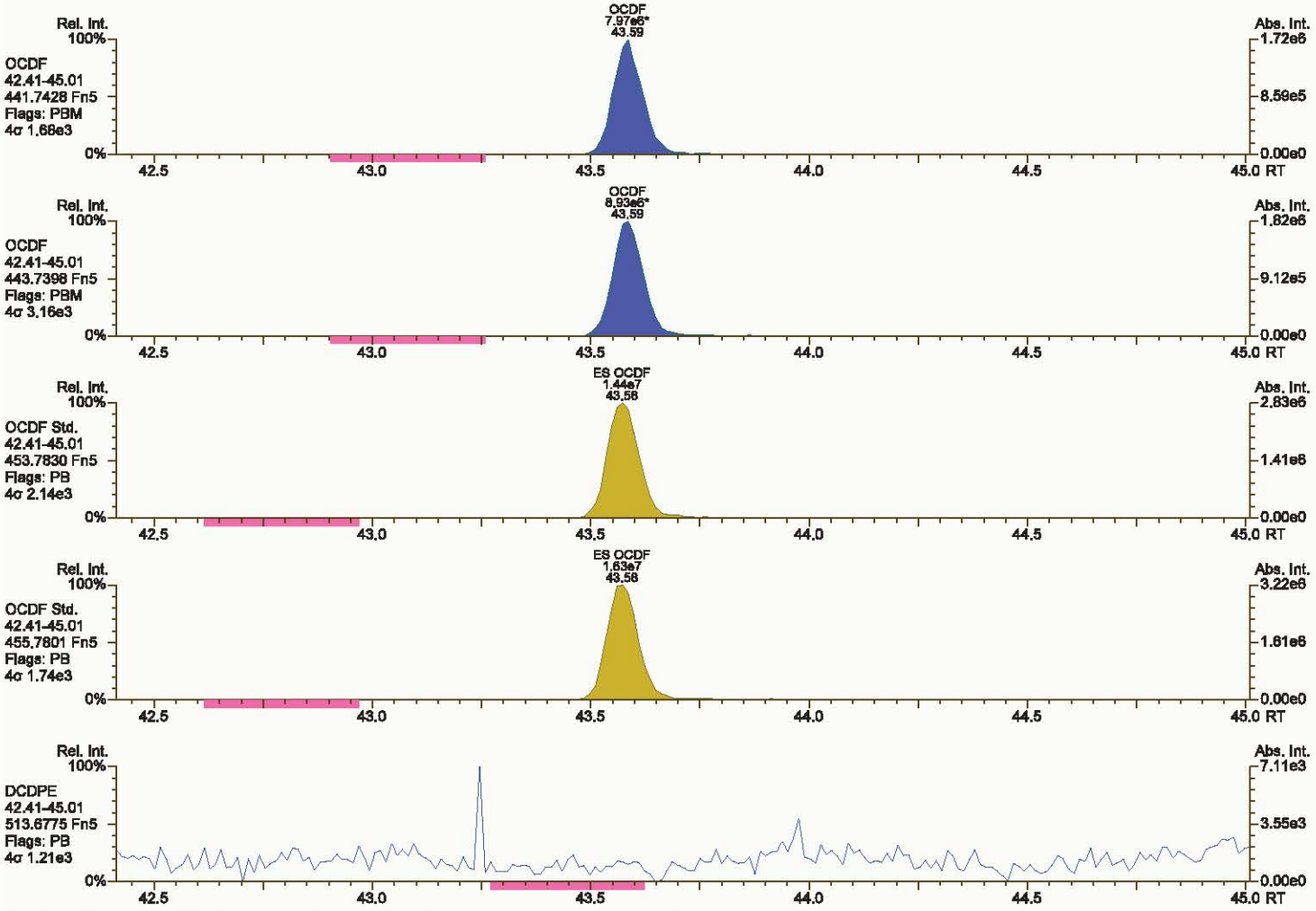

SGS ID: OPR1_18911_DF
Sample ID: 0_18911_OPR001
Acq: 19-Feb-2022 18:04:19
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 220219C02
Rel. Int.
Abs. Int.
HxCDF
34.72-38.80
373.8207 Fn3
Flags: PBM
4σ 2.23e3
123468F 2.19e7 35.16
123478F 8.70e6* 36.56
123678F 9.90e6* 36.70
234678F 1.03e7* 37.38
123789F 7.10e6* 38.35
6.41e6
3.20e6
0.00e0
RT
HxCDF
34.72-38.80
375.8178 Fn3
Flags: PBM
4σ 2.07e3
123468F 1.75e7 35.16
123478F 7.05e6* 36.56
123678F 8.07e6* 36.70
234678F 8.36e6* 37.38
123789F 5.80e6* 38.35
5.08e6
2.54e6
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: PB
4σ 9.88e3
ES 123678F 1.01e7 36.68
ES 123478F 8.25e6 36.54
CS 123489F 9.66e6 37.00
ES 234678F 1.02e7 37.36
ES 123789F 7.71e6 38.34
3.02e6
1.51e6
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: PB
4σ 2.86e3
ES 123678F 1.90e7 36.68
ES 123478F 1.58e7 36.54
CS 123489F 1.80e7 37.00
ES 234678F 1.87e7 37.36
ES 123789F 1.50e7 38.34
5.76e6
2.88e6
OCDPE
34.72-38.80
445.7555 Fn3
Flags: B
4σ 1.33e3
8.47e3
4.24e3
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0706, 8222, 5059 scc: 320-676
PKD: 21-Feb-2022 09:57 Printed: 21-Feb-2022 10:50 Page 10 of 12



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 5761, 4012, 6035 scc: 320-676
Revised: 21-Feb-2022 09:57 (DTF) Printed: 21-Feb-2022 10:50 Page 11 of 12

SGS ID: OPR1_18911_DF | Sample ID: 0_18911_OPR001 | Acq: 19-Feb-2022 18:04:19

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26 | User: DTF Datafile: 220219C02



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR1_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6297, 2189, 9189 scc: 320-676 *Revised: 21-Feb-2022 09:57 (DTF) Printed: 21-Feb-2022 10:50 Page 12 of 12*

Lab ID: OPR2_18911_DF | Acq'd: 20 Feb 2022 06:55 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR002 | UTP: 21-Feb-2022 10:46:49 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 488-895-CRP

Datafile: 220219C17 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25		1.0008	1.0008	0	3.07E+06	0.81	Y	1.18	11.1	3950.923	0.148
12378-PeCDD	33.64		1.0007	1.0006	-0.2	1.02E+07	1.56	Y	1.04	47.5	5313.903	0.214
123478-HxCDD	37.56		1.0004	1.0004	0	1.08E+07	1.27	Y	1.09	52.2	4150.967	0.177
123678-HxCDD	37.69		1.0036	1.0036	0	1.22E+07	1.26	Y	1.15	54.5	4150.967	0.16
123789-HxCDD	37.99		1.0118	1.0117	-0.2	1.08E+07	1.25	Y	1.05	51.6	4150.967	0.164
1234678-HpCDD	40.71		1.0002	1.0003	+0.2	9.84E+06	1.04	Y	1.06	52.2	4096.641	0.179
OCDD	43.40		1.0003	1.0003	0	1.41E+07	0.87	Y	1.13	109	3700.127	0.359
2378-TCDF	27.38		1.0008	1.0008	0	3.77E+06	0.76	Y	1.08	10.7	4704.21	0.149
12378-PeCDF	32.18		1.0005	1.0005	0	1.62E+07	1.53	Y	1.02	49.7	5913.964	0.17
23478-PeCDF	33.30		1.0005	1.0005	0	1.67E+07	1.53	Y	1.02	50.9	5913.964	0.162
123478-HxCDF	36.56		1.0004	1.0005	+0.2	1.43E+07	1.20	Y	1.27	51.4	6194.584	0.187
123678-HxCDF	36.70		1.0004	1.0005	+0.2	1.64E+07	1.24	Y	1.15	50.6	6194.584	0.157
234678-HxCDF	37.38		1.0005	1.0004	-0.2	1.70E+07	1.22	Y	1.19	50.7	6194.584	0.164
123789-HxCDF	38.35		1.0004	1.0004	0	1.20E+07	1.28	Y	1.16	47.8	6194.584	0.216
1234678-HpCDF	39.77		1.0003	1.0003	0	1.40E+07	1.02	Y	1.37	49.8	3861.13	0.103
1234789-HpCDF	41.17		1.0003	1.0003	0	1.03E+07	1.04	Y	1.31	49.1	3861.13	0.152
OCDF	43.57		1.0002	1.0002	0	1.64E+07	0.92	Y	1.07	103	4020.581	0.297

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0243	1.0243	0	2.34E+07	0.80	Y	1.05	97.9
ES 12378-PeCDD	33.62	1.2198	1.2200	+0.4	2.07E+07	1.60	Y	0.88	103
ES 123478-HxCDD	37.55	0.9916	0.9916	0	1.90E+07	1.28	Y	0.97	98.4
ES 123678-HxCDD	37.67	0.9947	0.9948	+0.2	1.96E+07	1.24	Y	0.94	104
ES 123789-HxCDD	37.97	1.0029	1.0027	-0.5	2.00E+07	1.24	Y	1.09	91.9
ES 1234678-HpCDD	40.70	1.0749	1.0747	-0.5	1.78E+07	1.04	Y	0.91	98
ES OCDD	43.39	1.1460	1.1458	-0.5	2.30E+07	0.90	Y	0.62	92.5
ES 2378-TCDF	27.36	1.0531	1.0533	+0.3	3.27E+07	0.80	Y	1.06	85.1
ES 12378-PeCDF	32.16	1.2378	1.2382	+0.8	3.18E+07	1.60	Y	0.91	96.4
ES 23478-PeCDF	33.28	1.2810	1.2814	+0.8	3.21E+07	1.62	Y	0.88	100
ES 123478-HxCDF	36.54	0.9650	0.9650	0	2.19E+07	0.52	Y	1.20	91.9
ES 123678-HxCDF	36.69	0.9688	0.9688	0	2.81E+07	0.55	Y	1.35	105
ES 234678-HxCDF	37.36	0.9866	0.9866	0	2.82E+07	0.56	Y	1.24	114
ES 123789-HxCDF	38.34	1.0125	1.0124	-0.2	2.16E+07	0.54	Y	1.16	94
ES 1234678-HpCDF	39.76	1.0501	1.0500	-0.2	2.05E+07	0.47	Y	0.97	107
ES 1234789-HpCDF	41.15	1.0870	1.0868	-0.5	1.61E+07	0.50	Y	0.85	95.3
ES OCDF	43.56	1.1505	1.1503	-0.5	2.97E+07	0.89	Y	0.81	92.3

Lab ID: OPR2_18911_DF | Acq'd: 20 Feb 2022 06:55 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR002 | UTP: 21-Feb-2022 10:46:49 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 488-895-CRP

Datafile: 220219C17 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.56		-	-	-	2.29E+07	0.79	Y	-	-
JS 1234-TCDF	25.97		-	-	-	3.62E+07	0.85	Y	-	-
JS 123467-HxCDD	37.87		-	-	-	9.94E+06	1.24	Y	-	-
CS 37Cl-2378-TCDD	28.25		1.0251	1.0252	+0.2	1.11E+07	n/a	-	1.20	101
CS 12347-PeCDD	33.11		1.2016	1.2017	+0.2	2.00E+07	1.54	Y	0.75	116
CS 12346-PeCDF	31.63		1.2172	1.2177	+0.9	3.25E+07	1.62	Y	0.85	105
CS 123469-HxCDF	37.00		0.9771	0.9771	0	2.43E+07	0.52	Y	1.12	109
CS 1234689-HpCDF	40.17		1.0608	1.0607	-0.2	1.87E+07	0.47	Y	0.89	106
~~SS 37Cl-2378-TCDD~~	~~28.25~~		~~1.0251~~	~~1.0252~~	~~+0.2~~	~~1.11E+07~~	~~n/a~~		~~1.15~~	~~103~~
~~SS 12347-PeCDD~~	~~33.11~~		~~1.2016~~	~~1.2017~~	~~+0.2~~	~~2.00E+07~~	~~1.54~~	~~Y~~	~~0.86~~	~~113~~
~~SS 12346-PeCDF~~	~~31.63~~		~~1.2172~~	~~1.2177~~	~~+0.9~~	~~3.25E+07~~	~~1.62~~	~~Y~~	~~0.94~~	~~109~~
~~SS 123469-HxCDF~~	~~37.00~~		~~0.9771~~	~~0.9771~~	~~0~~	~~2.43E+07~~	~~0.52~~	~~Y~~	~~0.83~~	~~104~~
~~SS 1234689-HpCDF~~	~~40.17~~		~~1.0608~~	~~1.0607~~	~~-0.2~~	~~1.87E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~99.3~~

Totals	Conc	EMPC
Total TCDD	52.3	52.3
Total PeCDD	73.6	73.6
Total HxCDD	174	174
Total HpCDD	65.2	65.2
Total Tetra-Octa Dioxins	474	474
Total TCDF	63.4	63.4
Total PeCDF	197	197
Total HxCDF	320	320
Total HpCDF	98.8	98.8
Total Tetra-Octa Furans	783	783
Total Tetra-Octa Dioxins & Furans	1260	1260

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.804	0.81
Response	3.07E+06	3.07E+06

Lab ID: OPR2_18911_DF | Acq'd: 20 Feb 2022 06:55 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR002 | UTP: 21-Feb-2022 10:46:49 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 488-895-CRP

Datafile: 220219C17 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.55		0.8701	0.8699	-0.3	4.12E+06	0.81	Y	1.18	14.9	3950.923	0.148
1379-TCDD	NotFnd		0.8829						1.18		3950.923	0.148
1369-TCDD	NotFnd		0.8982						1.18		3950.923	0.148
1469-TCDD	NotFnd		0.9261						1.18		3950.923	0.148
1247/1246/1248/1249-TCDD	NotFnd		0.9348						1.18		3950.923	0.148
1378-TCDD	NotFnd		0.9417						1.18		3950.923	0.148
1268-TCDD	NotFnd		0.9487						1.18		3950.923	0.148
1478-TCDD	NotFnd		0.9576						1.18		3950.923	0.148
1279-TCDD	NotFnd		0.9636						1.18		3950.923	0.148
1234/1269-TCDD	NotFnd		0.9761						1.18		3950.923	0.148
1236-TCDD	NotFnd		0.9812						1.18		3950.923	0.148
1237/1238-TCDD	NotFnd		0.9905						1.18		3950.923	0.148
1239-TCDD	28.09		0.9951	0.9951	0	3.30E+06	0.85	Y	1.18	11.9	3950.923	0.148
2378-TCDD	**28.25**		**1.0008**	1.0008	**0**	3.07E+06	0.81	Y	**1.18**	**11.1**	**3950.923**	**0.148**
1278-TCDD	NotFnd		1.0124						1.18		3950.923	0.148
1267-TCDD	NotFnd		1.0172						1.18		3950.923	0.148
1289-TCDD	29.23		1.0354	1.0356	+0.4	3.99E+06	0.80	Y	1.18	14.4	3950.923	0.148
12479/12468-PeCDD	31.12		0.9255	0.9257	+0.4	2.80E+06	1.51	Y	1.04	13.1	5313.903	0.214
12469-PeCDD	NotFnd		0.9416						1.04		5313.903	0.214
12368-PeCDD	NotFnd		0.9582						1.04		5313.903	0.214
12478-PeCDD	NotFnd		0.9637						1.04		5313.903	0.214
12379-PeCDD	NotFnd		0.9668						1.04		5313.903	0.214
12369/12467/12489-PeCDD	NotFnd		0.9746						1.04		5313.903	0.214
12346/12347-PeCDD	NotFnd		0.9858						1.04		5313.903	0.214
12378-PeCDD	33.64		**1.0007**	**1.0006**	**-0.2**	**1.02E+07**	**1.56**	**Y**	**1.04**	**47.5**	**5313.903**	**0.214**
12367-PeCDD	NotFnd		1.0036						1.04		5313.903	0.214
12389-PeCDD	34.08		1.0137	1.0137	0	2.78E+06	1.56	Y	1.04	13	5313.903	0.214
124679/124689-HxCDD	35.82		0.9540	0.9540	0	3.28E+06	1.31	Y	1.10	15.4	4150.967	0.167
123468-HxCDD	NotFnd		0.9715						1.10		4150.967	0.167
123679/123689-HxCDD	NotFnd		0.9793						1.10		4150.967	0.167
123469-HxCDD	NotFnd		0.9829						1.10		4150.967	0.167
123478-HxCDD	37.56		**1.0004**	**1.0004**	**0**	**1.08E+07**	**1.27**	**Y**	1.09	**52.2**	**4150.967**	**0.177**
123678-HxCDD	37.69		**1.0036**	**1.0036**	**0**	**1.22E+07**	**1.26**	**Y**	1.15	**54.5**	**4150.967**	**0.16**
123467-HxCDD	NotFnd		1.0089						1.10		4150.967	0.167
123789-HxCDD	37.99		**1.0118**	**1.0117**	**-0.2**	**1.08E+07**	**1.25**	**Y**	1.05	**51.6**	**4150.967**	**0.164**

Lab ID: OPR2_18911_DF | Acq'd: 20 Feb 2022 06:55 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR002 | UTP: 21-Feb-2022 10:46:49 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 488-895-CRP

Datafile: 220219C17 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.03		0.9836	0.9836	0	2.46E+06	1.02	Y	1.06	13	4096.641	0.179
1234678-HpCDD	**40.71**		**1.0002**	**1.0003**	**+0.2**	**9.84E+06**	**1.04**	**Y**	**1.06**	**52.2**	**4096.641**	**0.179**
OCDD	**43.40**		**1.0003**	**1.0003**	**0**	**1.41E+07**	**0.87**	**Y**	**1.13**	**109**	**3700.127**	**0.359**
OCDD-a	NotFnd		1.0002						0.07		3841.736	5.82
1368-TCDF	22.40		0.8191	0.8187	-0.5	5.60E+06	0.78	Y	1.08	15.9	4704.21	0.149
1468-TCDF	NotFnd		0.8408						1.08		4704.21	0.149
2468-TCDF	23.64		0.8645	0.8643	-0.3	1.46E+06	0.78	Y	1.08	4.15	4704.21	0.149
1346/1246-TCDF	NotFnd		0.8772						1.08		4704.21	0.149
1347/1378/1247-TCDF	NotFnd		0.8833						1.08		4704.21	0.149
1348-TCDF	NotFnd		0.8932						1.08		4704.21	0.149
1248/1367/1379-TCDF	NotFnd		0.8980						1.08		4704.21	0.149
1268-TCDF	NotFnd		0.9119						1.08		4704.21	0.149
1467-TCDF	NotFnd		0.9170						1.08		4704.21	0.149
1478-TCDF	NotFnd		0.9234						1.08		4704.21	0.149
1369/1237-TCDF	NotFnd		0.9369						1.08		4704.21	0.149
2467-TCDF	NotFnd		0.9415						1.08		4704.21	0.149
2368-TCDF	NotFnd		0.9475						1.08		4704.21	0.149
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9507						1.08		4704.21	0.149
1278-TCDF	NotFnd		0.9676						1.08		4704.21	0.149
1349-TCDF	NotFnd		0.9722						1.08		4704.21	0.149
1267-TCDF	NotFnd		0.9777						1.08		4704.21	0.149
2346/1249-TCDF	NotFnd		0.9843						1.08		4704.21	0.149
2347/1279-TCDF	NotFnd		0.9926						1.08		4704.21	0.149
2348-TCDF	27.27		0.9968	0.9967	-0.2	5.44E+06	0.82	Y	1.08	15.4	4704.21	0.149
2378-TCDF	**27.38**		**1.0008**	**1.0008**	**0**	**3.77E+06**	**0.76**	**Y**	**1.08**	**10.7**	**4704.21**	**0.149**
2367/3467-TCDF	NotFnd		1.0142						1.08		4704.21	0.149
1269-TCDF	NotFnd		1.0235						1.08		4704.21	0.149
1239-TCDF	NotFnd		1.0329						1.08		4704.21	0.149
1289-TCDF	29.40		1.0742	1.0746	+0.7	6.08E+06	0.81	Y	1.08	17.2	4704.21	0.149
13468/12468-PeCDF	29.32		0.9122	0.9118	-0.7	2.80E+07	1.58	Y	1.02	85.7	3202.845	0.0899
13678/13467/12467-PeCDF	NotFnd		0.9606						1.02		5913.964	0.166
12368/13478/12478-PeCDF	NotFnd		0.9655						1.02		5913.964	0.166
14678-PeCDF	NotFnd		0.9685						1.02		5913.964	0.166
13479-PeCDF	NotFnd		0.9716						1.02		5913.964	0.166
13469/12479-PeCDF	NotFnd		0.9794						1.02		5913.964	0.166
12346-PeCDF	NotFnd		0.9836						1.02		5913.964	0.166

Lab ID: OPR2_18911_DF | Acq'd: 20 Feb 2022 06:55 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18911_OPR002 | UTP: 21-Feb-2022 10:46:49 DTF | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 488-895-CRP

Datafile: 220219C17 | Report: 21 Feb 2022 10:48 TF | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9866						1.02		5913.964	0.166
12347-PeCDF	NotFnd		0.9891						1.02		5913.964	0.166
12348-PeCDF	NotFnd		0.9938						1.02		5913.964	0.166
12378-PeCDF	**32.18**		**1.0005**	**1.0005**	**0**	**1.62E+07**	**1.53**	**Y**	**1.02**	**49.7**	**5913.964**	**0.17**
12678/12367-PeCDF	NotFnd		1.0091						1.02		5913.964	0.166
12379-PeCDF	NotFnd		1.0144						1.02		5913.964	0.166
12679-PeCDF	NotFnd		0.9927						1.02		5913.964	0.166
23467/12369-PeCDF	NotFnd		0.9965						1.02		5913.964	0.166
23478-PeCDF	**33.30**		**1.0005**	**1.0005**	**0**	**1.67E+07**	**1.53**	**Y**	**1.02**	**50.9**	**5913.964**	**0.162**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		5913.964	0.166
12349-PeCDF	NotFnd		1.0101						1.02		5913.964	0.166
12389-PeCDF	34.38		1.0330	1.0329	-0.2	3.53E+06	1.50	Y	1.02	10.8	5913.964	0.166
123468-HxCDF	35.17		0.9622	0.9623	+0.2	3.57E+07	1.24	Y	1.19	120	6194.584	0.178
124678/134678-HxCDF	NotFnd		0.9678						1.19		6194.584	0.178
134679-HxCDF	NotFnd		0.9741						1.19		6194.584	0.178
124679-HxCDF	NotFnd		0.9795						1.19		6194.584	0.178
124689-HxCDF	NotFnd		0.9856						1.19		6194.584	0.178
123467-HxCDF	NotFnd		0.9972						1.19		6194.584	0.178
123478-HxCDF	**36.56**		**1.0004**	**1.0005**	**+0.2**	**1.43E+07**	**1.20**	**Y**	**1.27**	**51.4**	**6194.584**	**0.187**
123678-HxCDF	**36.70**		**1.0004**	**1.0005**	**+0.2**	**1.64E+07**	**1.24**	**Y**	**1.15**	**50.6**	**6194.584**	**0.157**
123479-HxCDF	NotFnd		1.0048						1.19		6194.584	0.178
123469-HxCDF	NotFnd		1.0089						1.19		6194.584	0.178
123679-HxCDF	NotFnd		0.9942						1.19		6194.584	0.178
234678-HxCDF	**37.38**		**1.0005**	**1.0004**	**-0.2**	**1.70E+07**	**1.22**	**Y**	**1.19**	**50.7**	**6194.584**	**0.164**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6194.584	0.178
123789-HxCDF	**38.35**		**1.0004**	**1.0004**	**0**	**1.20E+07**	**1.28**	**Y**	**1.16**	**47.8**	**6194.584**	**0.216**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0006						1.19		6194.584	0.178
1234678-HpCDF	**39.77**		**1.0003**	**1.0003**	**0**	**1.40E+07**	**1.02**	**Y**	**1.37**	**49.8**	**3861.13**	**0.103**
1234679-HpCDF	NotFnd		1.0068						1.34		3861.13	0.124
1234689-HpCDF	NotFnd		1.0104						1.34		3861.13	0.124
1234789-HpCDF	**41.17**		**1.0003**	**1.0003**	**0**	**1.03E+07**	**1.04**	**Y**	**1.31**	**49.1**	**3861.13**	**0.152**
OCDF	**43.57**		**1.0002**	**1.0002**	**0**	**1.64E+07**	**0.92**	**Y**	**1.07**	**103**	**4020.581**	**0.297**
OCDF-a	43.57		1.0001	1.0002	+0.3	1.04E+06	2.23	Y	0.07	105	3176.37	3.79

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220219C17	Analysis Date:	20-FEB-2022 05:55:34
Lab ID:	OPR2_18911_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11.1	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	47.5	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	52.2	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	54.5	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.6	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	52.2	35	-	70	Y
OCDD	100	109	78	-	144	Y
2,3,7,8-TCDF	10	10.7	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	49.7	40	-	67	Y
2,3,4,7,8-PeCDF	50	50.9	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	51.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	50.6	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	50.7	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	47.8	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	49.8	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	49.1	39	-	69	Y
OCDF	100	103	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 21 Feb 2022 10:48 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220219C17	Analysis Date:	20-FEB-2022 05:55:34
Lab ID:	OPR2_18911_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	97.9	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	103	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	98.4	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	104	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	91.9	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	98	26	-	166	Y
13C-OCDD	200	185	26	-	397	Y
13C-2,3,7,8-TCDF	100	85.1	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	96.4	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	100	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	91.9	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	105	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	114	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	94	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	107	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	95.3	20	-	186	Y
13C-OCDF	200	185	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	40.2	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 21 Feb 2022 10:48 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220219C17	Analysis Date:	20-FEB-2022 05:55:34
Lab ID:	OPR2_18911_DF		

Window Defining Standards Results

First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.55	1289-TCDD	29.23
12479/12468-PeCDD	31.12	12389-PeCDD	34.08
124679/124689-HxCDD	35.82	123789-HxCDD	37.99
1234679-HpCDD	40.03	1234678-HpCDD	40.71
1368-TCDF	22.40	1289-TCDF	29.40
13468/12468-PeCDF	29.32	12389-PeCDF	34.38
123468-HxCDF	35.17	123789-HxCDF	38.35
1234678-HpCDF	39.77	1234789-HpCDF	41.17

Isomer Specificity Test Standard Results

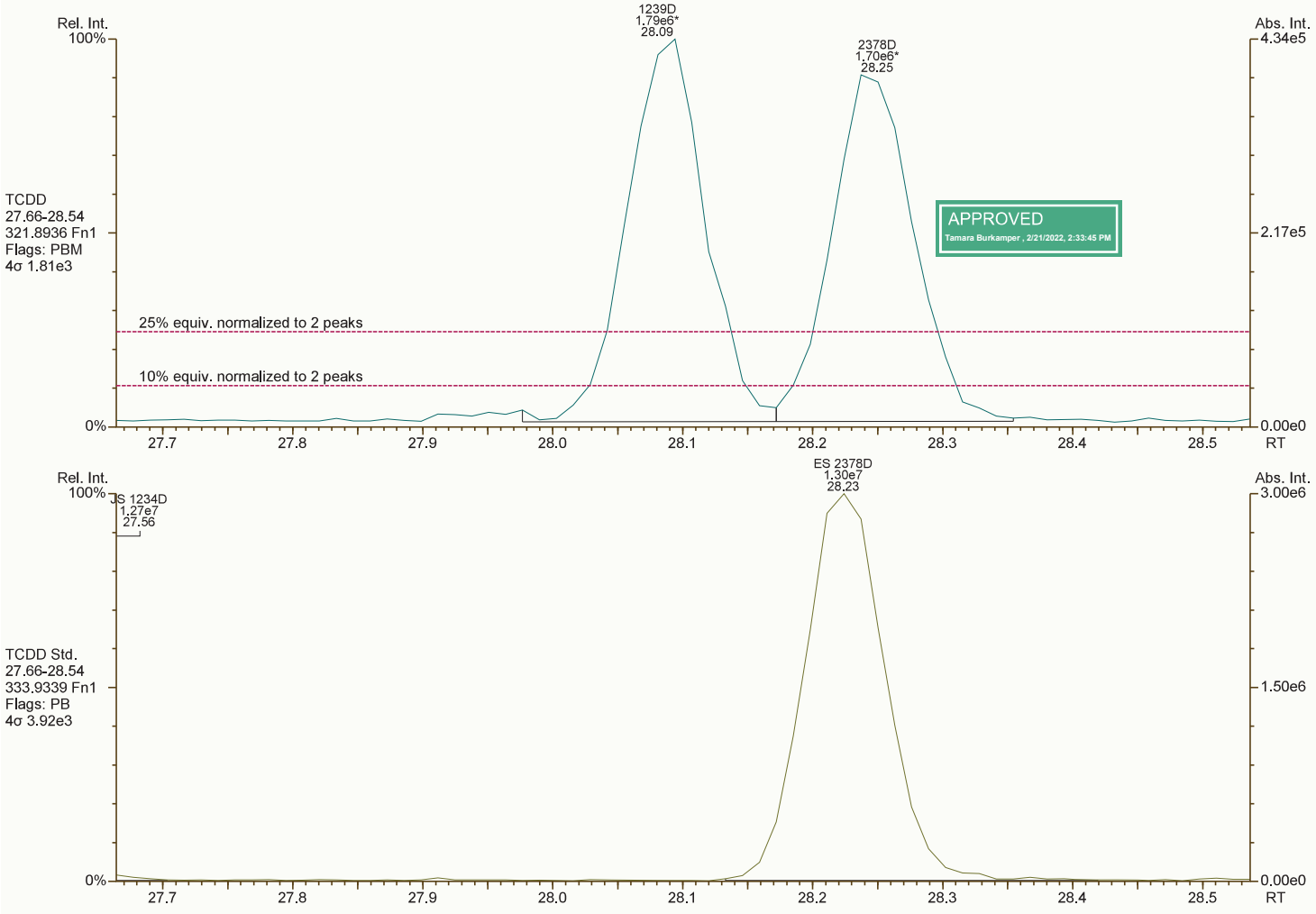
Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.09	2378-TCDD	28.25
2348-TCDF	27.27	2378-TCDF	27.38

Processed: 21 Feb 2022 10:48 Analyst: TF

SGS ID: OPR2_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18911_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

Acq: 20-Feb-2022 05:55:34
User: DTF Datafile: 220219C17



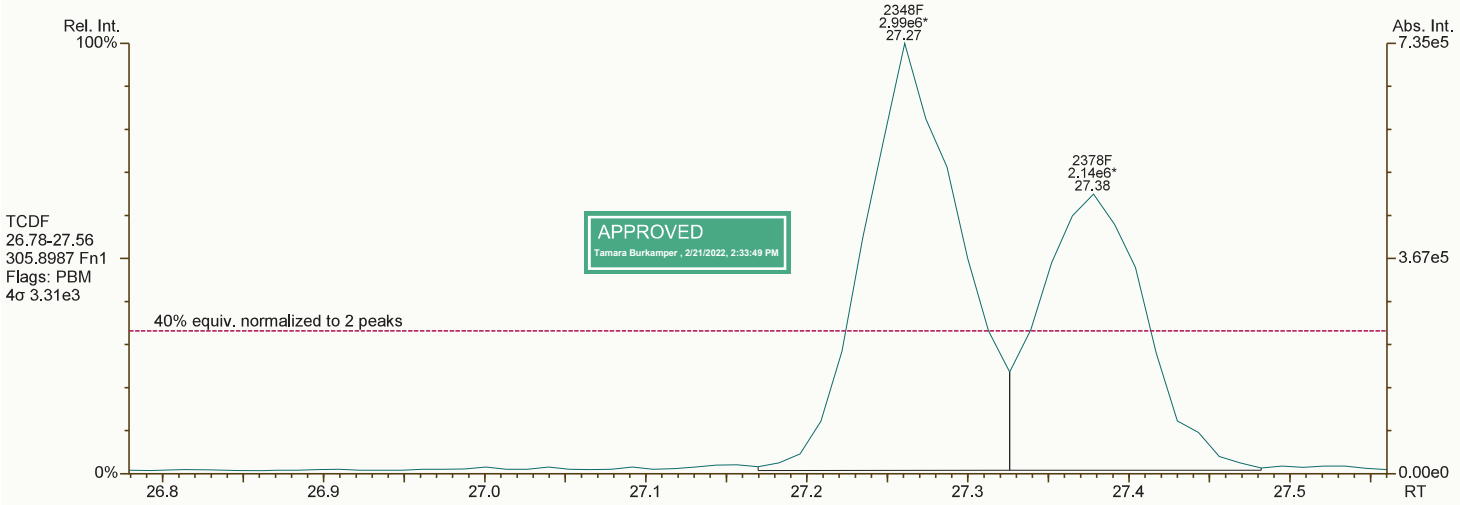
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616

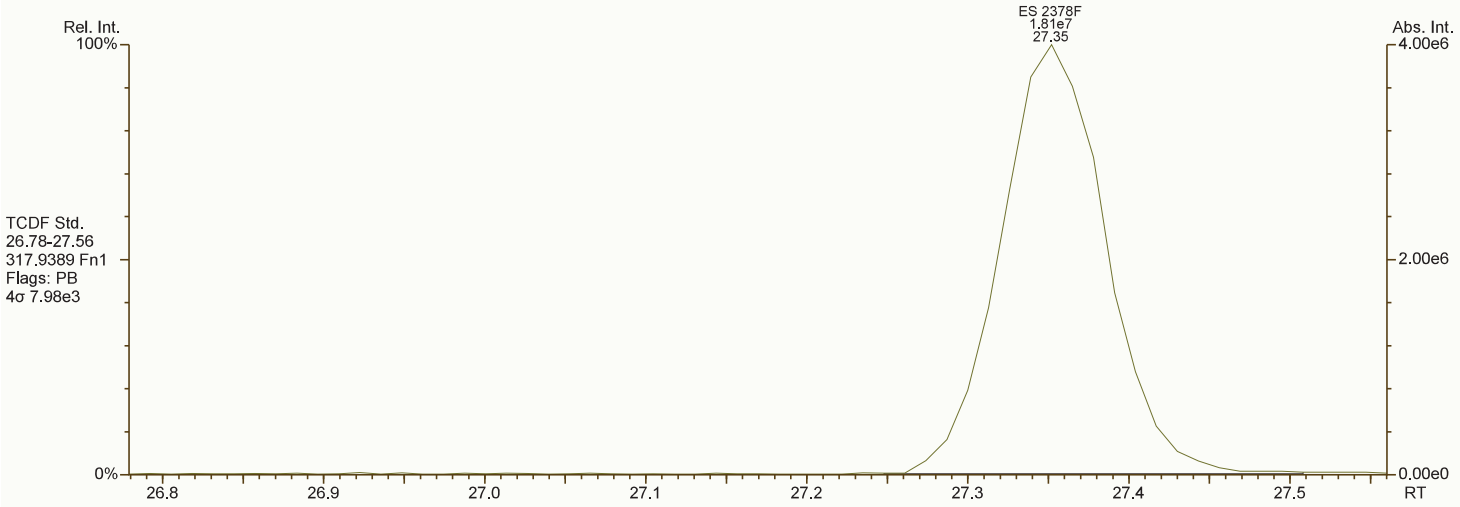
Peak annotation: Areas, Centroids
Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:49

SGS ID: OPR2_18911_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18911_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

Acq: 20-Feb-2022 05:55:34
User: DTF Datafile: 220219C17



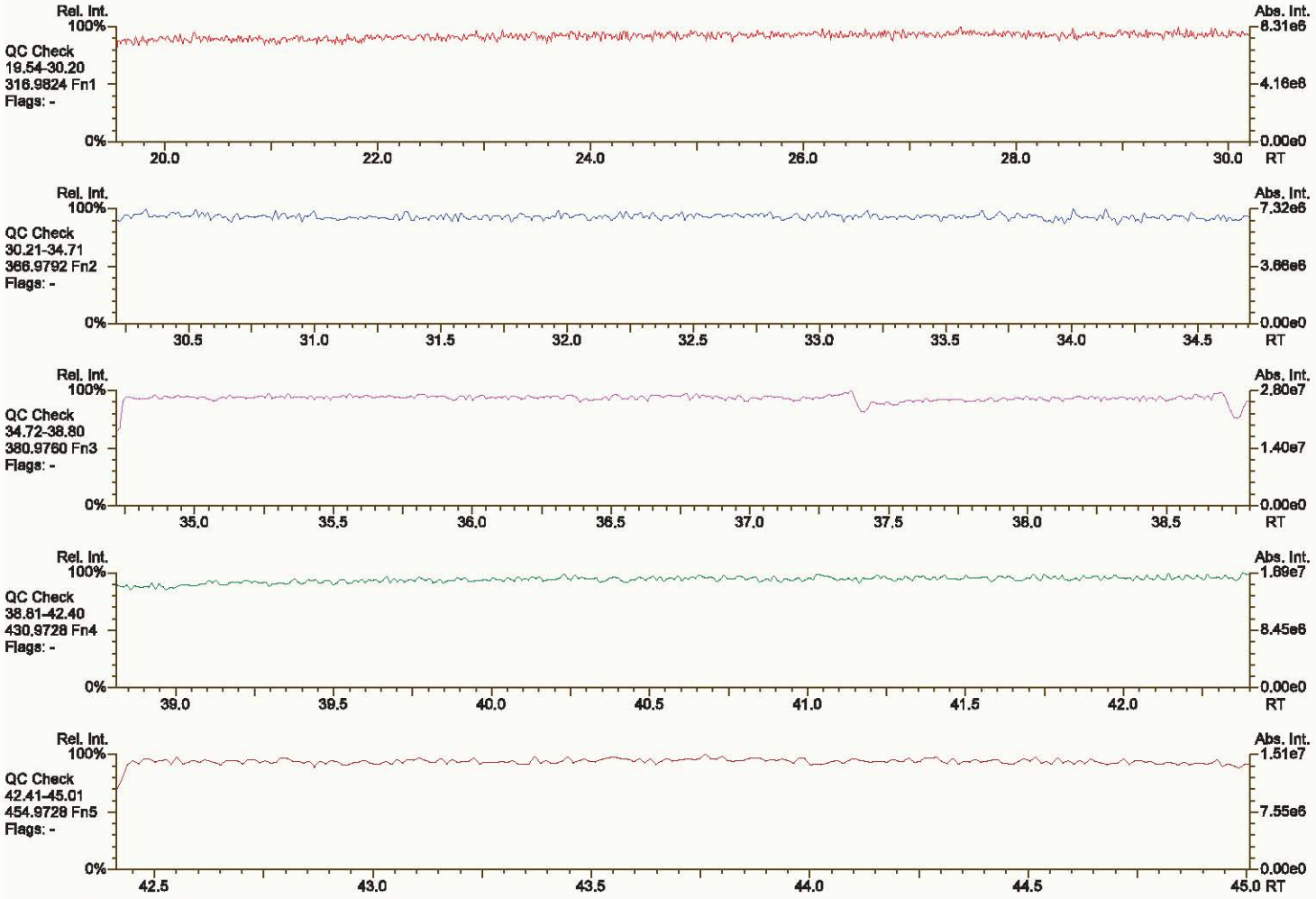


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616

Peak annotation: Areas, Centroids
Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:49

SGS ID: OPR2_18911_DF | Sample ID: 0_18911_OPR002 | Acq: 20-Feb-2022 05:55:34

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27 | User: DTF Datafile: 220219C17

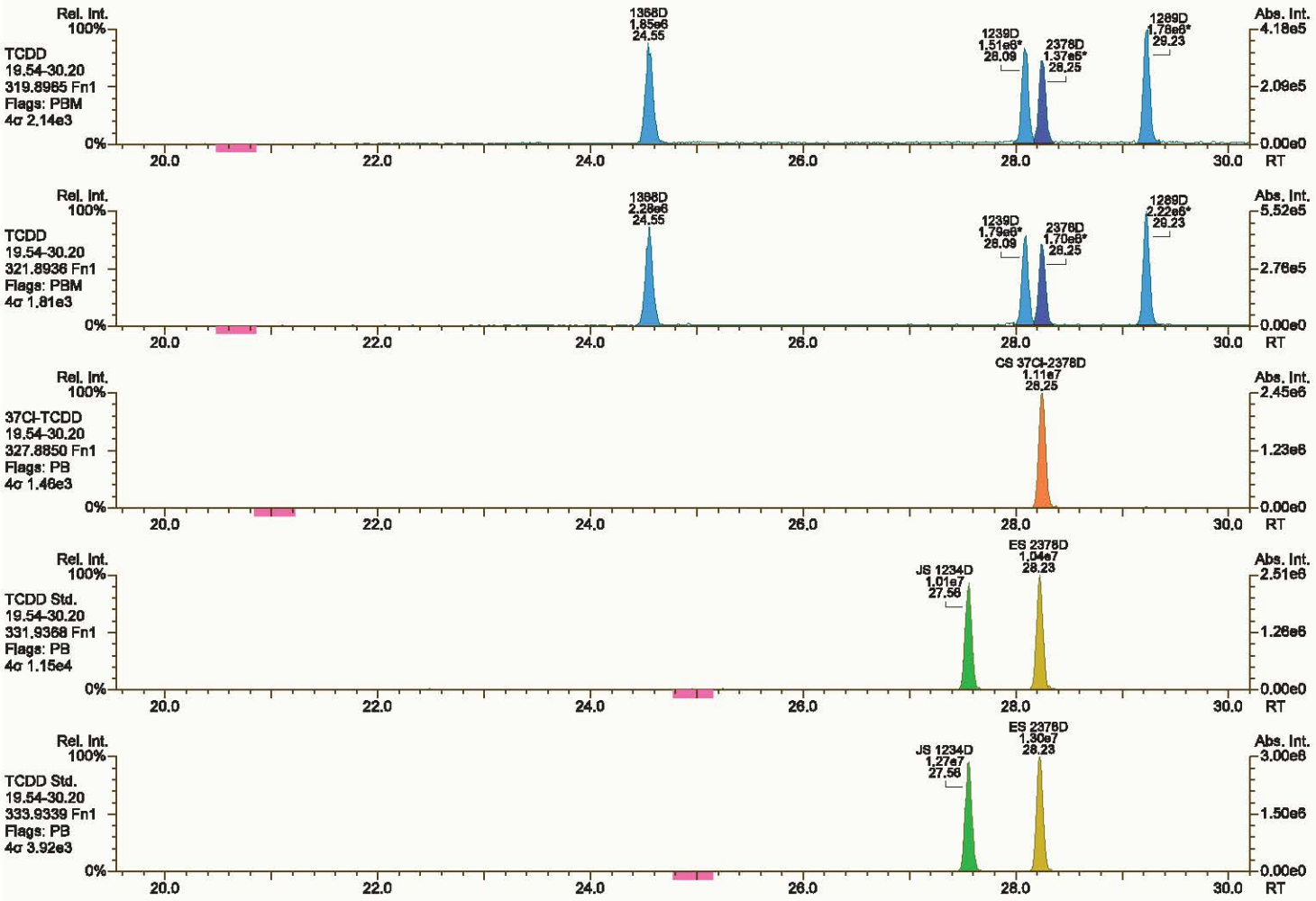


Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 scc: 488-695 | *PKD: n/a Printed: 21-Feb-2022 10:52 Page 1 of 12*

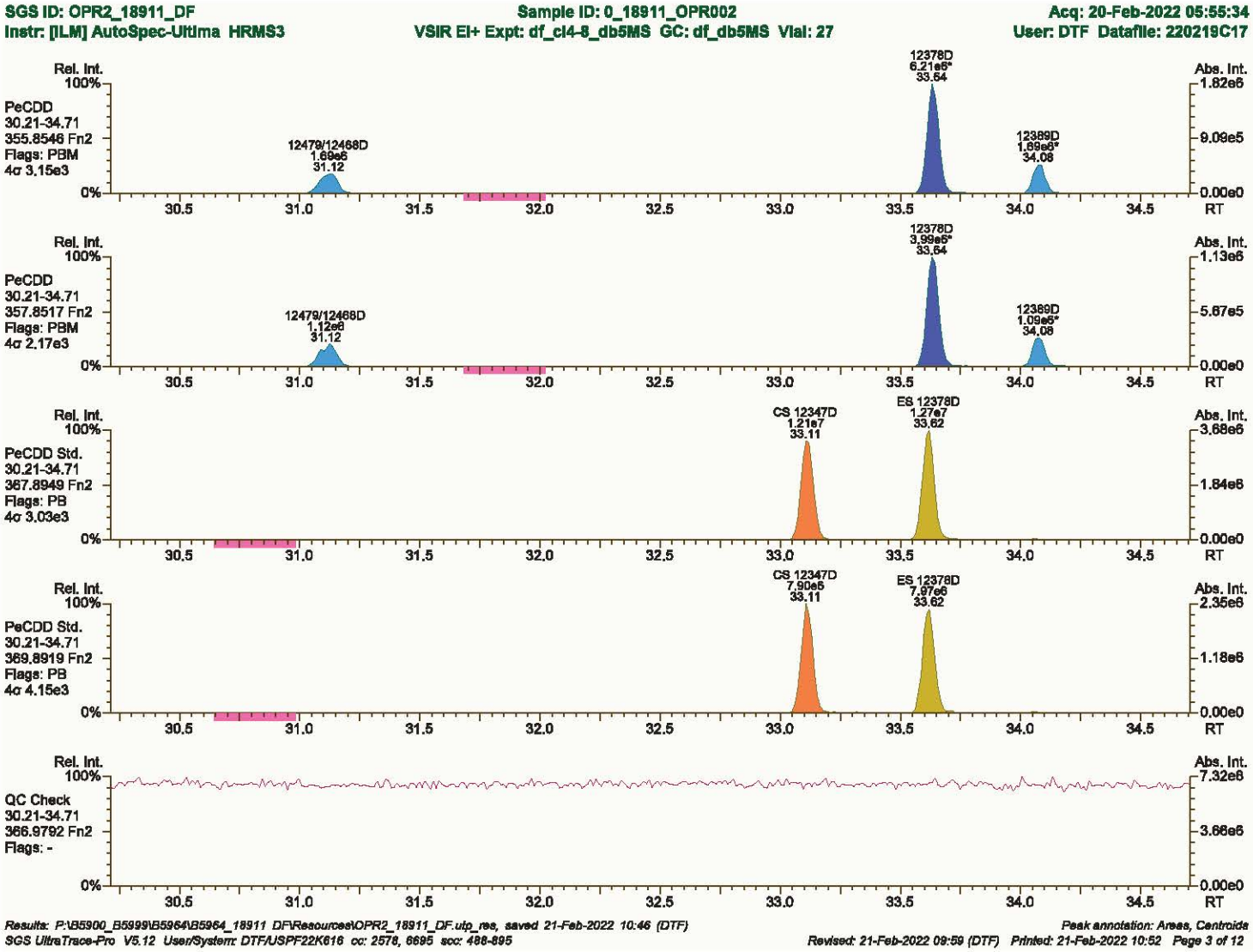
SGS ID: OPR2_18911_DF | Sample ID: 0_18911_OPR002 | Acq: 20-Feb-2022 05:55:34

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27 | User: DTF Datafile: 220219C17

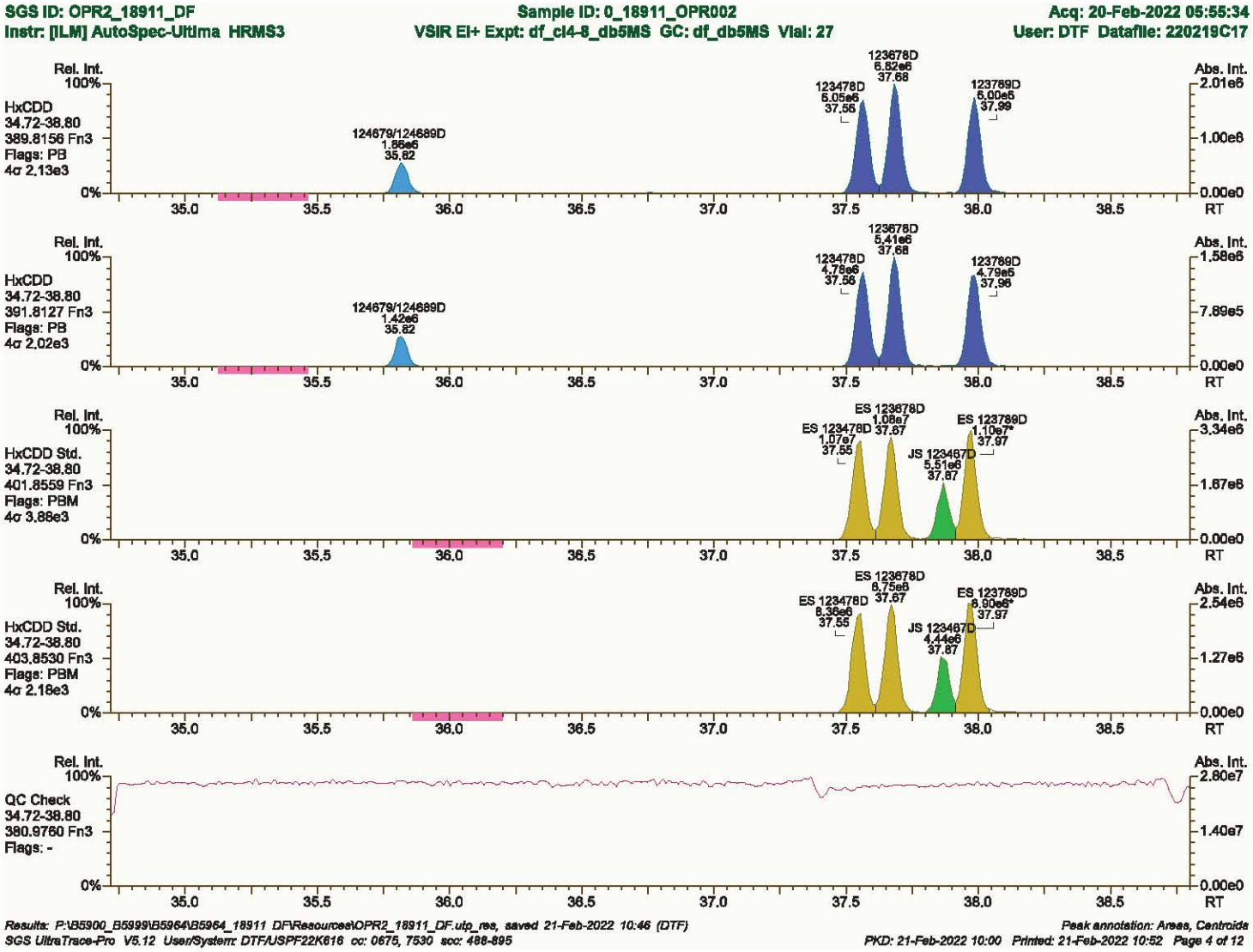


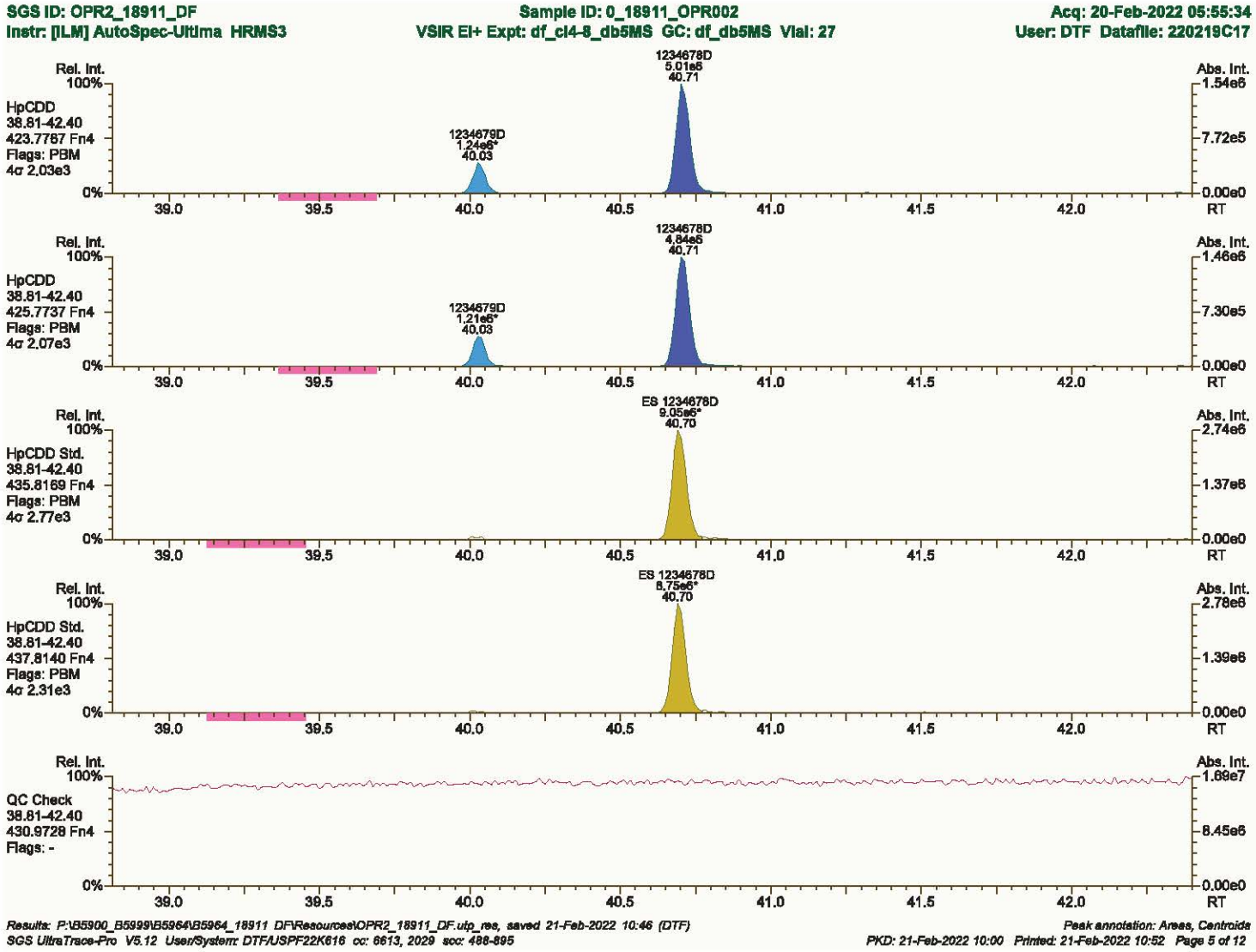
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9435, 7389, 0515 scc: 488-895 | *Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:52 Page 2 of 12*



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2578, 6695 scc: 486-895
Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:52 Page 3 of 12

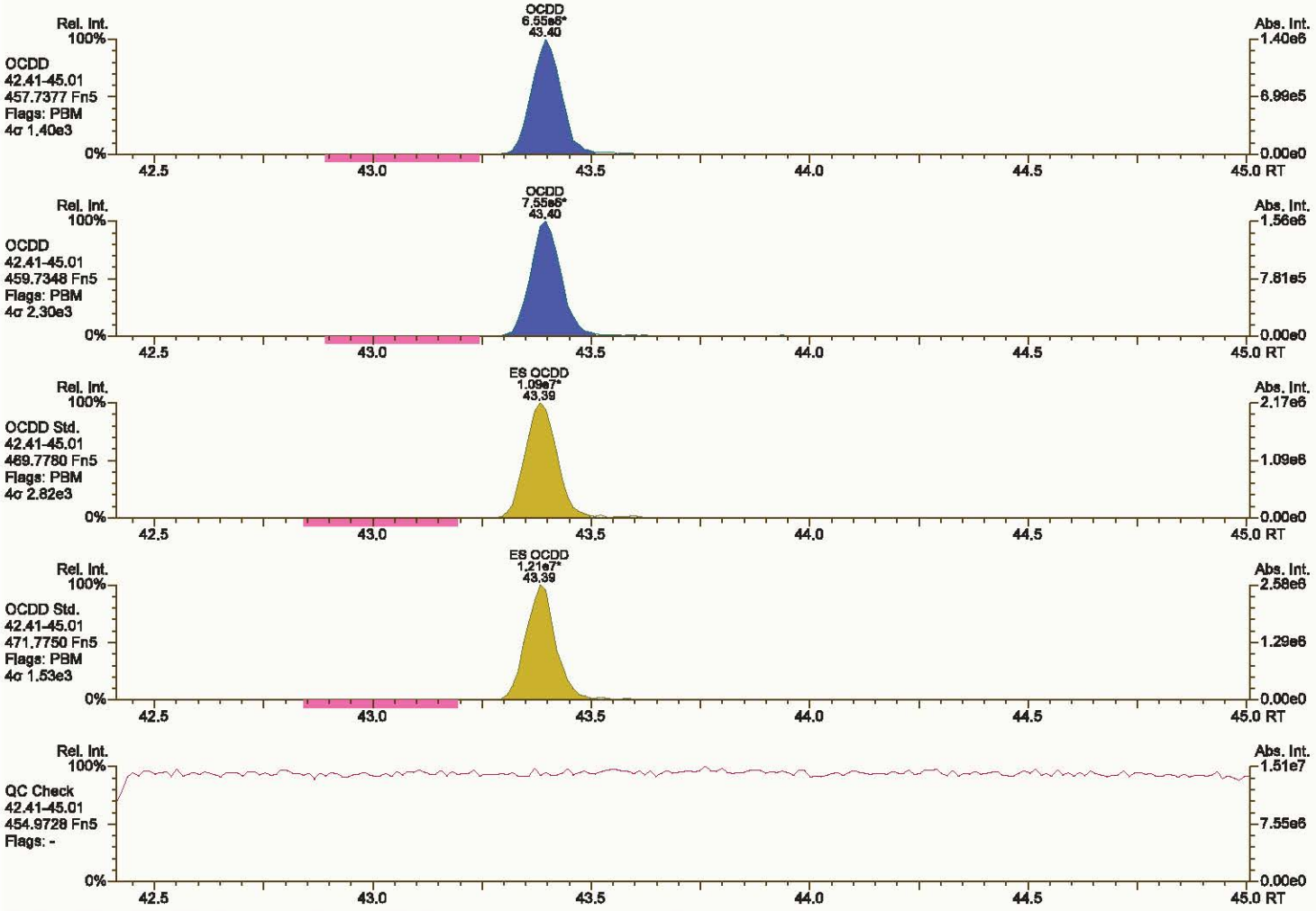

SGS ID: OPR2_18911_DF
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17
Rel. Int.
Abs. Int.
HxCDD
34.72-38.80
389.8156 Fn3
Flags: PB
4σ 2.13e3
124679/124689D
1.86e6
35.82
123478D
6.05e6
37.56
123678D
6.82e6
37.68
123789D
6.00e6
37.99
HxCDD
34.72-38.80
391.8127 Fn3
Flags: PB
4σ 2.02e3
124679/124689D
1.42e6
35.82
123478D
4.78e6
37.56
123678D
5.41e6
37.68
123789D
4.79e6
37.96
HxCDD Std.
34.72-38.80
401.8559 Fn3
Flags: PBM
4σ 3.88e3
ES 123478D
1.07e7
37.55
ES 123678D
1.08e7
37.67
JS 123467D
5.51e6
37.87
ES 123789D
1.10e7*
37.97
HxCDD Std.
34.72-38.80
403.8530 Fn3
Flags: PBM
4σ 2.18e3
ES 123478D
8.36e6
37.55
ES 123678D
8.75e6
37.67
JS 123467D
4.44e6
37.87
ES 123789D
8.90e6*
37.97
QC Check
34.72-38.80
380.9760 Fn3
Flags: -
RT



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6613, 2029 scc: 486-895
PKD: 21-Feb-2022 10:00 Printed: 21-Feb-2022 10:52 Page 5 of 12

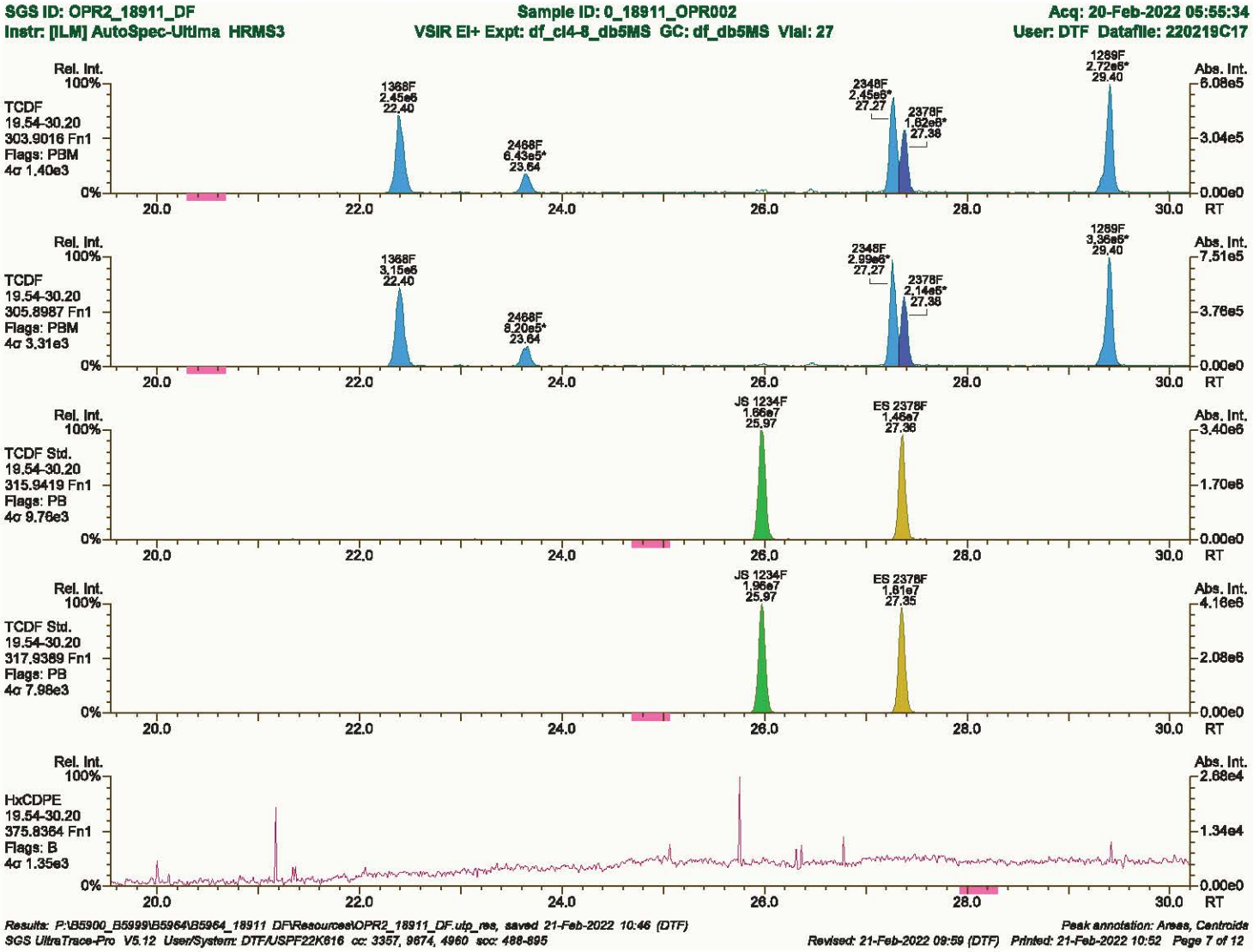
SGS ID: OPR2_18911_DF | Sample ID: 0_18911_OPR002 | Acq: 20-Feb-2022 05:55:34

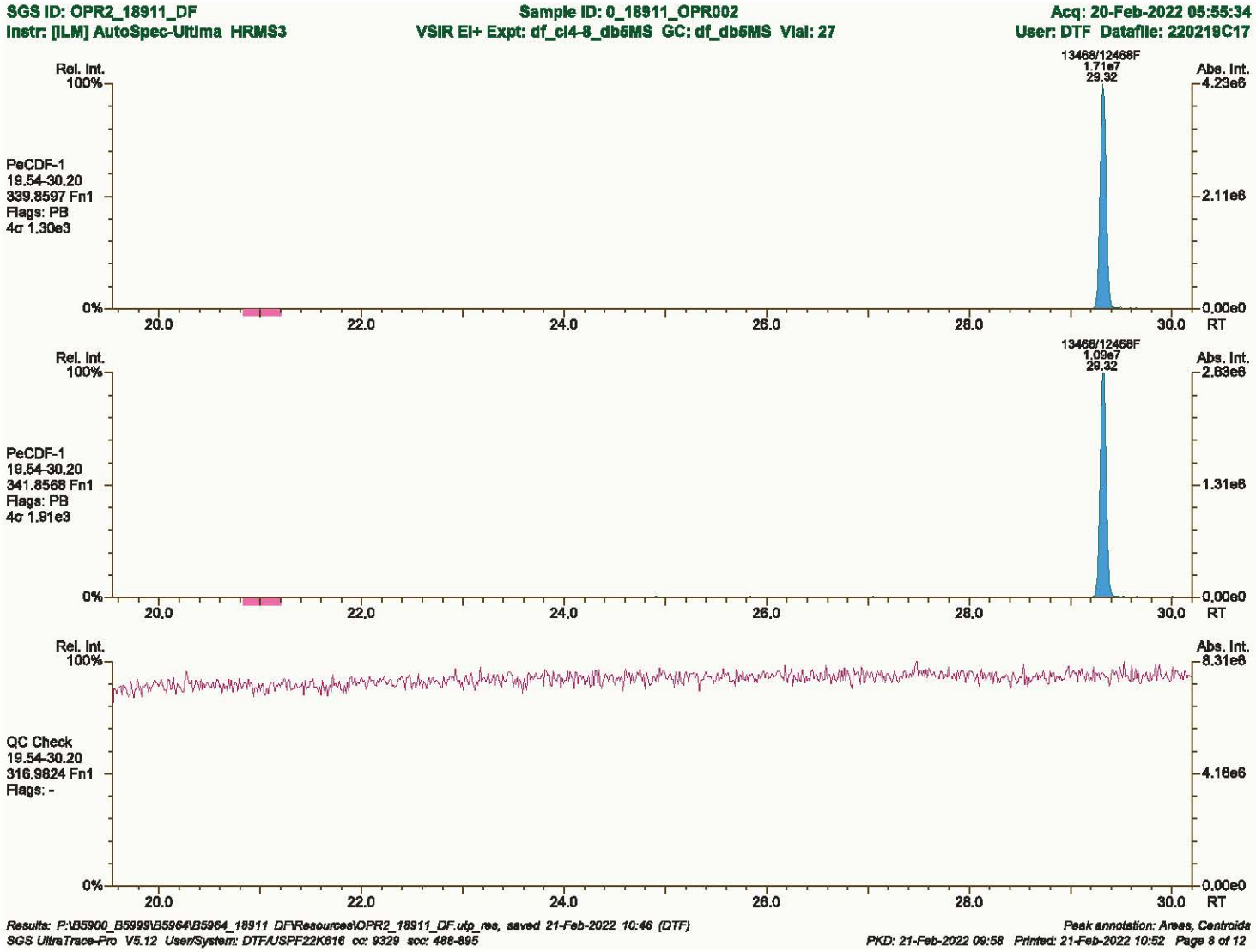
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27 | User: DTF Datafile: 220219C17



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1597, 6824 scc: 486-895 | *Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:52 Page 6 of 12*


SGS ID: OPR2_18911_DF
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17
Rel. Int.
Abs. Int.
TCDF
19.54-30.20
303.9016 Fn1
Flags: PBM
4σ 1.40e3
1368F 2.45e6 22.40
2468F 6.43e5* 23.64
2348F 2.45e6* 27.27
2378F 1.62e6* 27.38
1289F 2.72e6* 29.40
6.08e5
3.04e5
0.00e0
TCDF
19.54-30.20
305.8987 Fn1
Flags: PBM
4σ 3.31e3
1368F 3.15e6 22.40
2468F 8.20e5* 23.64
2348F 2.99e6* 27.27
2378F 2.14e6* 27.38
1289F 3.36e6* 29.40
7.51e5
3.76e5
0.00e0
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 9.76e3
JS 1234F 1.66e7 25.97
ES 2378F 1.46e7 27.36
3.40e6
1.70e6
0.00e0
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 7.98e3
JS 1234F 1.96e7 25.97
ES 2378F 1.81e7 27.35
4.16e6
2.08e6
0.00e0
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.35e3
2.68e4
1.34e4
0.00e0
100%
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3357, 9674, 4960 scc: 488-895
Revised: 21-Feb-2022 09:59 (DTF) Printed: 21-Feb-2022 10:52 Page 7 of 12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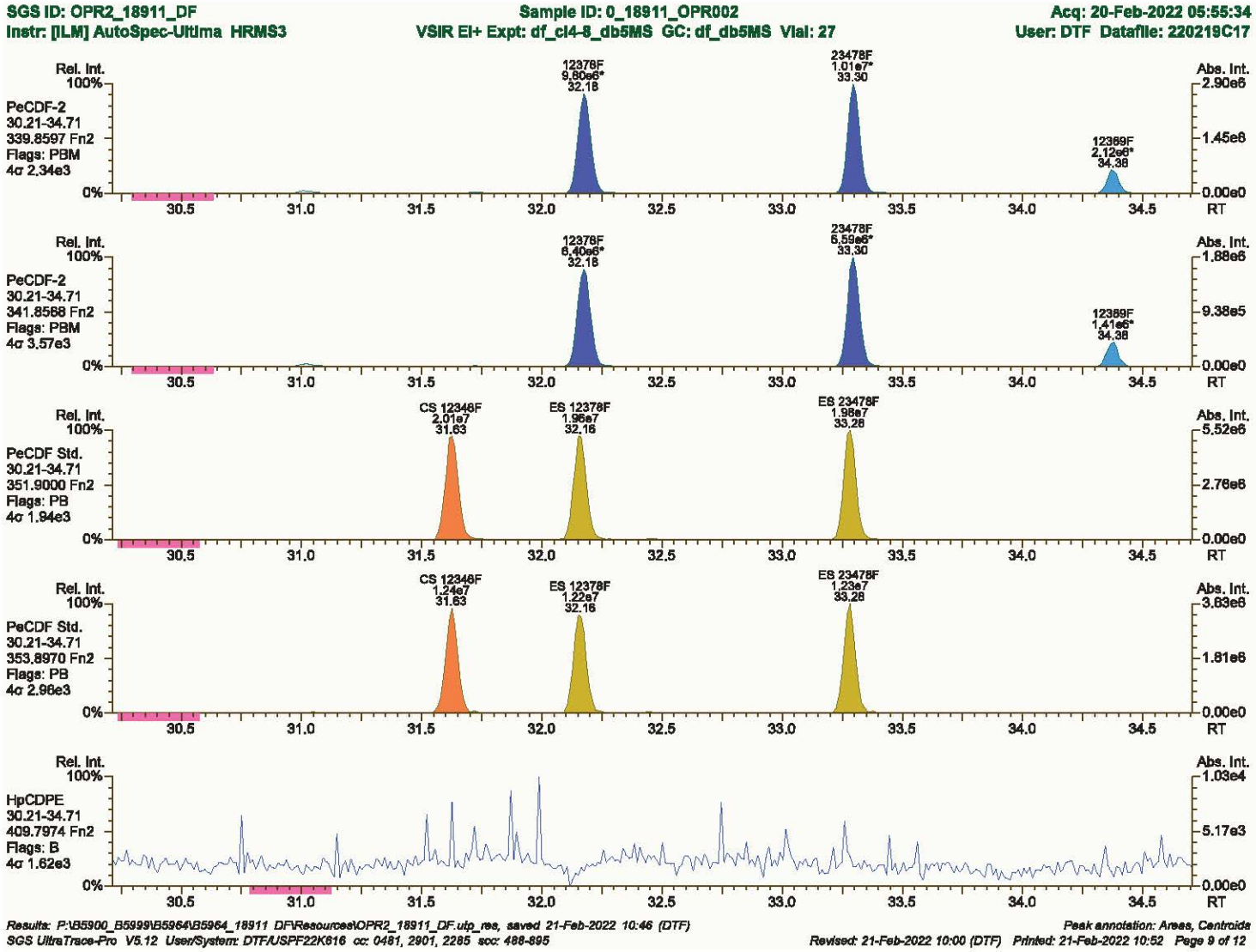
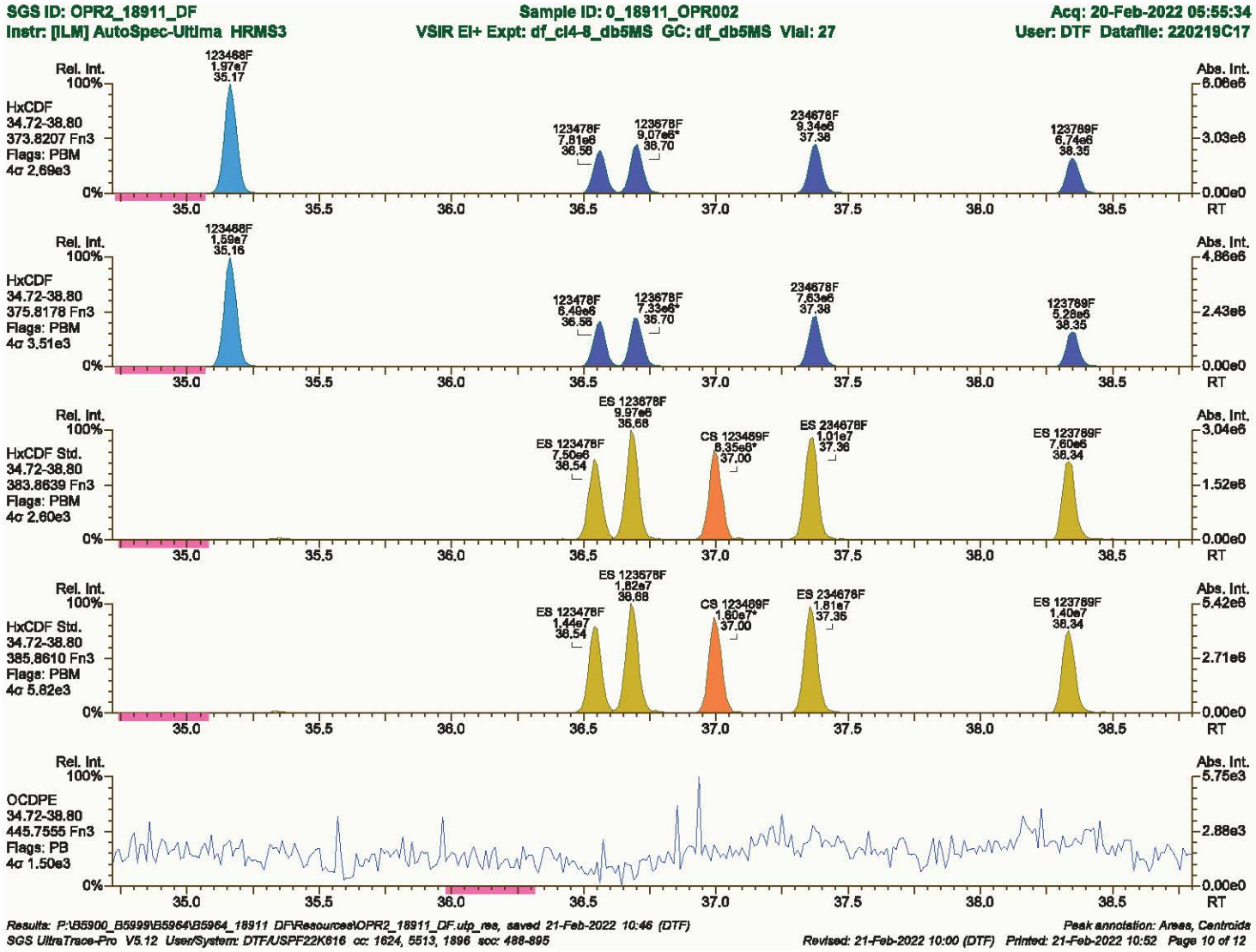
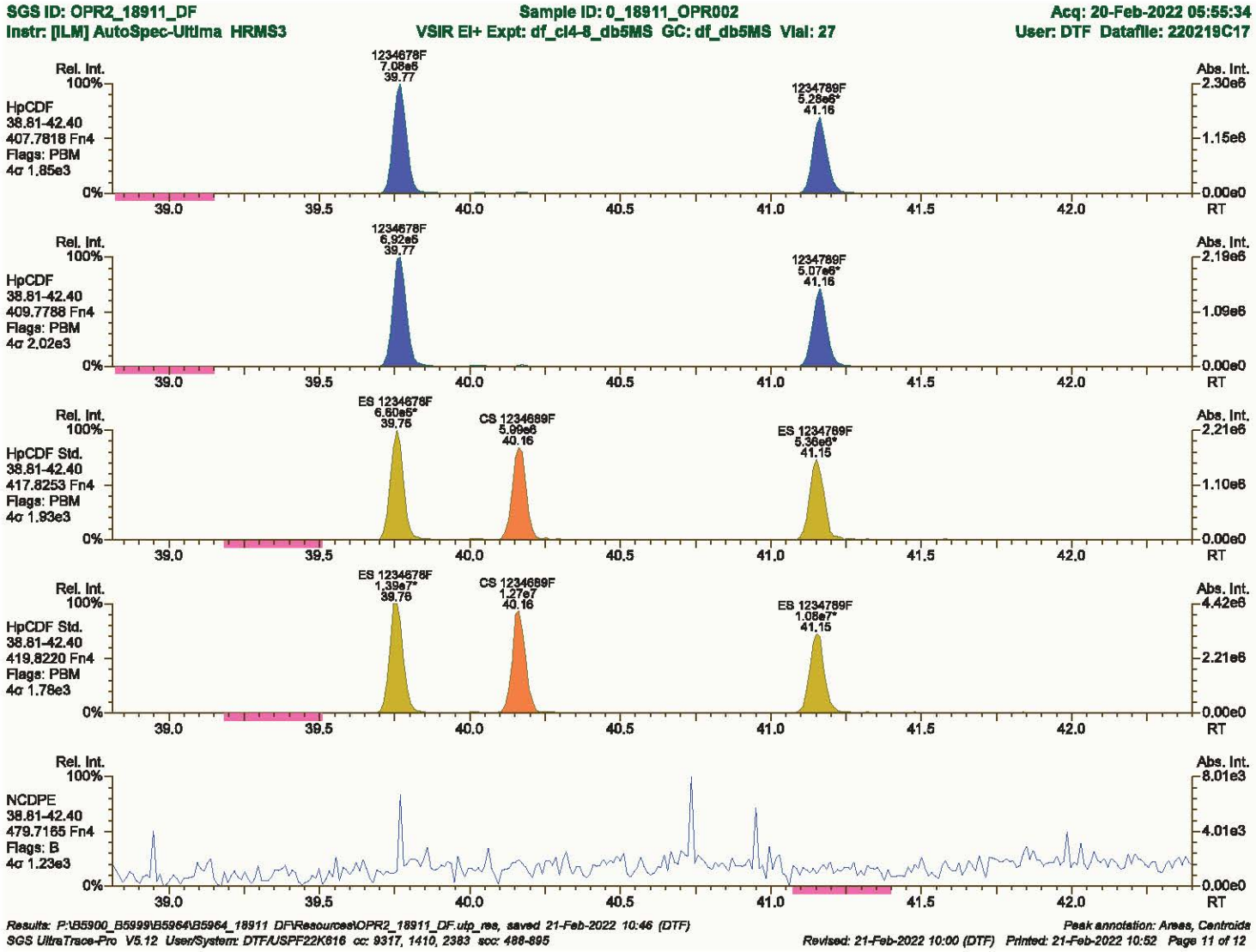
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17
Rel. Int.
100%
0%
Abs. Int.
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: PB
4σ 1.30e3
13468/12468F
1.71e7
29.32
4.23e6
2.11e6
0.00e0
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: PB
4σ 1.91e3
1.09e7
2.63e6
1.31e6
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
8.31e6
4.16e6
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: DTF/USPF22K616 cc: 9329 scc: 486-895
PKD: 21-Feb-2022 09:58 Printed: 21-Feb-2022 10:52 Page 8 of 12

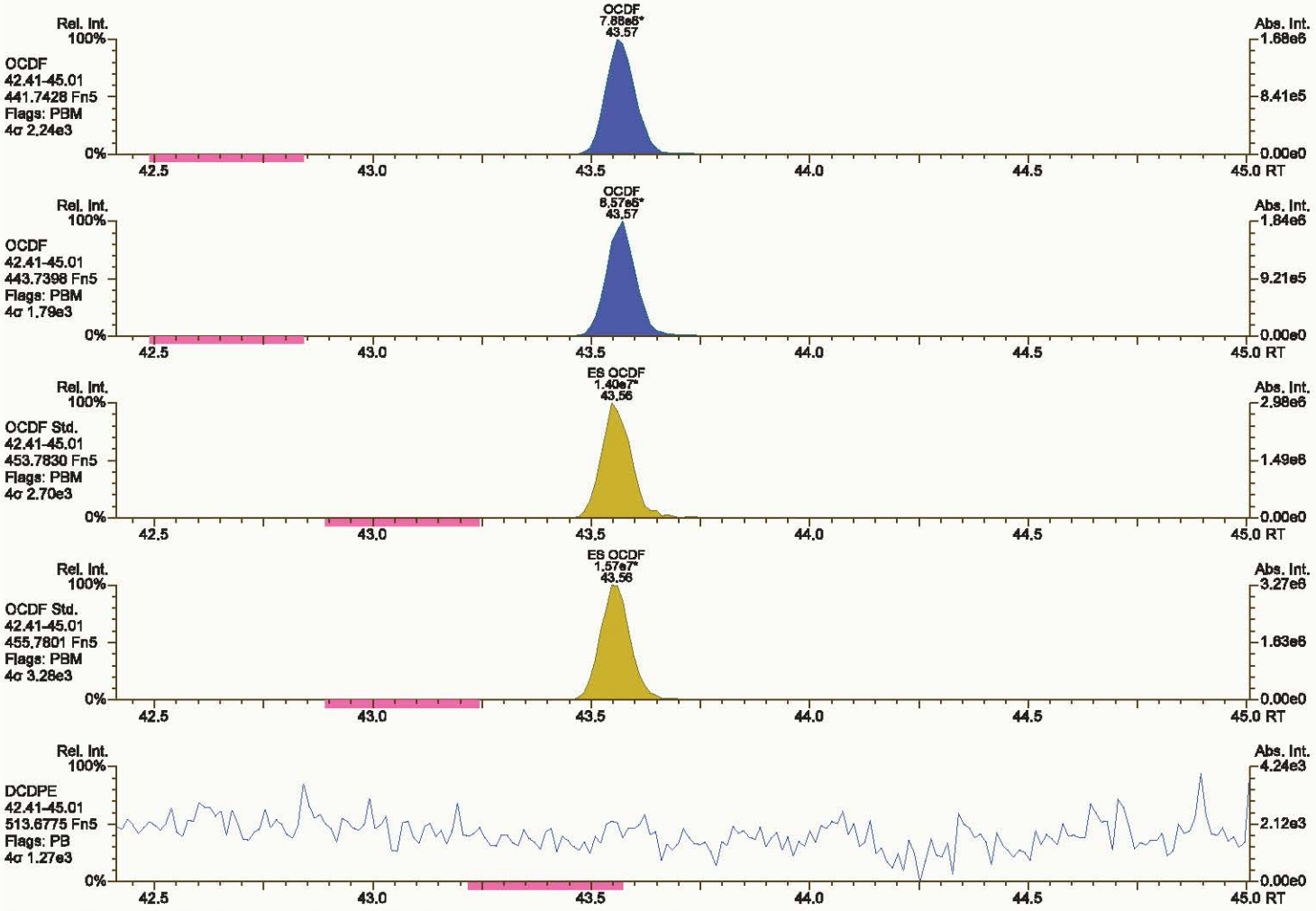

SGS ID: OPR2_18911_DF
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17
Rel. Int.
Abs. Int.
PeCDF-2
30.21-34.71
339.8597 Fn2
Flags: PBM
4σ 2.34e3
12378F
9.80e6*
32.18
23478F
1.01e7*
33.30
12389F
2.12e6*
34.38
2.90e6
1.45e6
0.00e0
PeCDF-2
30.21-34.71
341.8568 Fn2
Flags: PBM
4σ 3.57e3
12378F
6.40e6*
32.18
23478F
6.59e6*
33.30
12389F
1.41e6*
34.38
1.88e6
9.38e5
0.00e0
PeCDF Std.
30.21-34.71
351.9000 Fn2
Flags: PB
4σ 1.94e3
CS 12348F
2.01e7
31.63
ES 12378F
1.96e7
32.16
ES 23478F
1.98e7
33.28
5.52e6
2.76e6
0.00e0
PeCDF Std.
30.21-34.71
353.8970 Fn2
Flags: PB
4σ 2.96e3
CS 12348F
1.24e7
31.63
ES 12378F
1.22e7
32.16
ES 23478F
1.23e7
33.28
3.63e6
1.81e6
0.00e0
HpCDPE
30.21-34.71
409.7974 Fn2
Flags: B
4σ 1.62e3
1.03e4
5.17e3
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0481, 2901, 2285 scc: 488-895
Revised: 21-Feb-2022 10:00 (DTF) Printed: 21-Feb-2022 10:52 Page 9 of 12


SGS ID: OPR2_18911_DF
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17
Rel. Int.
Abs. Int.
HxCDF
34.72-38.80
373.8207 Fn3
Flags: PBM
4σ 2.69e3
123468F 1.97e7 35.17
123478F 7.81e8 36.56
123678F 9.07e6* 36.70
234678F 9.34e6 37.38
123789F 6.74e6 38.35
HxCDF
34.72-38.80
375.8178 Fn3
Flags: PBM
4σ 3.51e3
123468F 1.59e7 35.16
123478F 6.49e6 36.56
123678F 7.33e6* 36.70
234678F 7.63e6 37.38
123789F 5.28e6 38.35
HxCDF Std.
34.72-38.80
383.8639 Fn3
Flags: PBM
4σ 2.60e3
ES 123678F 9.97e6 36.68
ES 123478F 7.50e6 36.54
CS 123469F 8.35e6* 37.00
ES 234678F 1.01e7 37.36
ES 123789F 7.60e6 38.34
HxCDF Std.
34.72-38.80
385.8610 Fn3
Flags: PBM
4σ 5.82e3
ES 123678F 1.82e7 36.68
ES 123478F 1.44e7 36.54
CS 123469F 1.60e7* 37.00
ES 234678F 1.81e7 37.35
ES 123789F 1.40e7 38.34
OCDPE
34.72-38.80
445.7555 Fn3
Flags: PB
4σ 1.50e3
RT


SGS ID: OPR2_18911_DF
Sample ID: 0_18911_OPR002
Acq: 20-Feb-2022 05:55:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: DTF Datafile: 220219C17
Rel. Int.
Abs. Int.
HpCDF
38.81-42.40
407.7818 Fn4
Flags: PBM
4σ 1.85e3
1234678F
7.08e6
39.77
1234789F
5.28e6*
41.16
HpCDF
38.81-42.40
409.7788 Fn4
Flags: PBM
4σ 2.02e3
1234678F
6.92e6
39.77
1234789F
5.07e6*
41.16
HpCDF Std.
38.81-42.40
417.8253 Fn4
Flags: PBM
4σ 1.93e3
ES 1234678F
6.60e6*
39.76
CS 1234689F
5.99e6
40.16
ES 1234789F
5.36e6*
41.15
HpCDF Std.
38.81-42.40
419.8220 Fn4
Flags: PBM
4σ 1.78e3
ES 1234678F
1.39e7*
39.76
CS 1234689F
1.27e7
40.16
ES 1234789F
1.08e7*
41.15
NCDPE
38.81-42.40
479.7165 Fn4
Flags: B
4σ 1.23e3
RT

SGS ID: OPR2_18911_DF | Sample ID: 0_18911_OPR002 | Acq: 20-Feb-2022 05:55:34

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27 | User: DTF Datafile: 220219C17



Results: P:\B5900_B5999\B5964\B5964_18911 DF\Resources\OPR2_18911_DF.utp_res, saved 21-Feb-2022 10:46 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3369, 1134, 9552 scc: 488-895 | *Revised: 21-Feb-2022 10:00 (DTF) Printed: 21-Feb-2022 10:52 Page 12 of 12*



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5964-R1

14-Feb-2022

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

Meagan Willis

11451 Katy Fwy #400
Houston, TX 77079
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper
CN=Tamara Burkamper,
E=tamara.burkamper@sgs.com
I have reviewed this document
2022-02-14 11:08:06

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5964-R1
Analytical Protocol(s)	1613B
No. Samples Submitted	8 (2 samples on HOLD)
Additional QC Sample(s)	MS + MSD
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.4
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

MDL and/or validation studies provided upon request.

Soil samples are reported on “dry weight” basis.

Client designated MS/MSD analyzed for accuracy and precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No dilutions or re-extractions were required.

OPR1_18721 meets accuracy criteria.

MS/MSD do not meet accuracy or precision criteria due to high concentrations in the parent sample.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

2/14/2022: this report has been revised to target missed compound 1,2,3,7,8,9-HxCDF for sample B5964_005 MSD.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120121-S-SPS-NE-O-8 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	Lab Sample ID	B5964_18721_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	79.2 %	QC Batch No:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:51:27

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		0.277	J	ES 2378-TCDD	66.1	
12378-PeCDD	0.866			J	ES 12378-PeCDD	56.5	
123478-HxCDD	EMPC		1.6	J	ES 123478-HxCDD	73.6	
123678-HxCDD	5.81				ES 123678-HxCDD	78.9	
123789-HxCDD	EMPC		2.85		ES 123789-HxCDD	78.3	
1234678-HpCDD	440				ES 1234678-HpCDD	64.9	
OCDD	12,300			E	ES OCDD	49.2	
2378-TCDF	3.44				ES 2378-TCDF	62.6	
12378-PeCDF	0.478			J	ES 12378-PeCDF	65.1	
23478-PeCDF	1.22			J	ES 23478-PeCDF	62.2	
123478-HxCDF	EMPC		1.81	J	ES 123478-HxCDF	75	
123678-HxCDF	EMPC		0.844	J	ES 123678-HxCDF	79.1	
234678-HxCDF	1.58			J	ES 234678-HxCDF	74.9	
123789-HxCDF	ND	0.657			ES 123789-HxCDF	75.9	
1234678-HpCDF	34.5				ES 1234678-HpCDF	73.1	
1234789-HpCDF	EMPC		4.12		ES 1234789-HpCDF	71.8	
OCDF	186				ES OCDF	50	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	58.8	
Total TCDD	3.03		3.31		CS 12347-PeCDD	59.4	
Total PeCDD	3.06		4.7		CS 12346-PeCDF	67.1	
Total HxCDD	49		54.9		CS 123469-HxCDF	84	
Total HpCDD	809		809		CS 1234689-HpCDF	79.9	
Total TCDF	7.64		11.1				
Total PeCDF	8.88		10.1				
Total HxCDF	26.9		32.3				
Total HpCDF	136		140				
Total PCDD/Fs	**13,500**		**13,500**				
WHO-2005 TEQs							
TEQ: ND=0	10.8		11.8				
TEQ: ND=DL/2	10.8	0.853	11.9				
TEQ: ND=DL	10.9	1.71	11.9				

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Sample ID: 11215131-120121-S-SPS-NE-O-8 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	Lab Sample ID:	B5964_18721_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	79.2 %	QC Batch No.:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:51:27

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.598		12479/12468D	2.19	J	124679/124689D	23.5		1234679D	369	
1379D	(0.425)		12469D	[1.65]	J	123468D	2.45		1234678D	440	
1369D	(0.425)		12368D	(0.601)		123679/123689D	16				
1469D	2.43		12478D	(0.601)		123469D	[1.42]	J			
1247D...[4]	(0.425)		12379D	(0.601)		123478D	[1.6]	J			
1378D	(0.425)		12369D...[3]	(0.601)		123678D	5.81				
1268D	(0.425)		12346/12347D	(0.601)		123467D	1.2	J			
1478D	(0.425)		12378D	0.866	J	123789D	[2.85]		**Conc.**	809	
1279D	(0.425)		12367D	(0.601)					**EMPC**	809	
1234/1269D	(0.425)		12389D	(0.601)							
1236D	(0.425)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.425)										
1239D	(0.425)								OCDD	12300	E
2378D	[0.277]	J									
1278D	(0.425)										
1267D	(0.425)										
1289D	(0.425)										
Conc.	3.03		**Conc.**	3.06		**Conc.**	49				
EMPC	3.31		**EMPC**	4.7		**EMPC**	54.9				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	10.8	11.8
TEQ: ND=DL/2	10.8	11.9
TEQ: ND=DL	10.9	11.9

	Conc.	EMPC
Total PCDD/Fs	13,500	13,500

Checkcode: 417-132-RPL

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-O-8 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	Lab Sample ID:	B5964_18721_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	79.2 %	QC Batch No.:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:51:27

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.424)		13468/12468F	3.73		123468F	[2.13]	J	1234678F	34.5	
1468F	(0.424)		13678F...[3]	0.825	J	124678/134678F	9.13		1234679F	1.4	J
2468F	1.43		12368F...[3]	2.63		134679F	(0.592)		1234689F	99.6	
1346/1246F	(0.424)		14678F	[0.45]	J	124679F	(0.592)		1234789F	[4.12]	
1347F...[3]	0.981		13479F	(0.385)		124689F	16.2				
1348F	(0.424)		13469/12479F	(0.385)		123467F	[0.622]	J			
1248F...[3]	(0.424)		12346F	(0.385)		123478F	[1.81]	J			
1268F	(0.424)		23468/12469F	(0.385)		123678F	[0.844]	J			
1467F	(0.424)		12347F	(0.385)		123479F	(0.592)				
1478F	[0.482]	J	12348F	(0.385)		123469F	(0.592)				
1369/1237F	(0.424)		12378F	0.478	J	123679F	(0.592)				
2467F	(0.424)		12678/12367F	[0.795]	J	234678F	1.58	J	**Conc.**	136	
2368F	[0.864]		12379F	(0.385)		234678/123689F	0		**EMPC**	140	
1238F...[5]	0.347	J	12679F	(0.385)		123689F	(0.592)				
1278F	[0.578]		23467/12369F	(0.385)		123789F	(0.657)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.424)		23478F	1.22	J	123789/123489F	0				
1267F	(0.424)		23478/12489F	0		123489F	(0.592)		OCDF	186	
2346/1249F	(0.424)		12489F	(0.385)							
2347/1279F	[0.359]	J	12349F	(0.385)							
2348F	[0.249]	J	12389F	(0.385)							
2378F	3.44										
2367/3467F	1.43										
1269F	(0.424)										
1239F	(0.424)										
1289F	[0.905]										
Conc.	7.64		**Conc.**	8.88		**Conc.**	26.9				
EMPC	11.1		**EMPC**	10.1		**EMPC**	32.3				

Checkcode: 417-132-RPL

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-O-8 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5964_18721_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.26 g	QC Batch No.:	18721
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	16-Dec-2021 22:51
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	[0.277]	J	0.425	[0.277]	[0.277]	[0.277]
12378-PeCDD	0.866	J	0.601	0.433	0.866	0.866
123478-HxCDD	[1.6]	J	0.848	[0.16]	[0.16]	[0.16]
123678-HxCDD	5.81		0.889	0.581	0.581	0.581
123789-HxCDD	[2.85]		0.828	[0.285]	[0.285]	[0.285]
1234678-HpCDD	440		0.448	4.4	4.4	4.4
OCDD	12300	E	1.47	12.3	1.23	3.68
2378-TCDF	3.44		0.424	0.344	0.344	0.344
12378-PeCDF	0.478	J	0.378	0.0239	0.0239	0.0143
23478-PeCDF	1.22	J	0.392	0.612	0.612	0.367
123478-HxCDF	[1.81]	J	0.587	[0.181]	[0.181]	[0.181]
123678-HxCDF	[0.844]	J	0.549	[0.0844]	[0.0844]	[0.0844]
234678-HxCDF	1.58	J	0.587	0.158	0.158	0.158
123789-HxCDF	(0.657)		0.657	(0.0657)	(0.0657)	(0.0657)
1234678-HpCDF	34.5		0.336	0.345	0.345	0.345
1234789-HpCDF	[4.12]		0.486	[0.0412]	[0.0412]	[0.0412]
OCDF	186		1.33	0.186	0.0186	0.0557

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TEQ Summaries			
EMPC = 0, ND = 0	19.3	8.57	10.8
EMPC = 0, ND = DL / 2	19.4	8.6	10.8
EMPC = 0, ND = DL	19.4	8.64	10.9
EMPC = 0, < J-level = 0	18.1	6.91	9.4
EMPC = EMPC, ND = 0	20.4	9.6	11.8
EMPC = EMPC, ND = DL / 2	20.4	9.63	11.9
EMPC = EMPC, ND = DL	20.4	9.67	11.9
EMPC = EMPC, < J-level = 0	18.4	7.24	9.73

Checkcode: 417-132-RPL

SGS North America - DF v0.99

Sample ID: 11215131-120121-S-SPS-NE-O-9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.32 g	Lab Sample ID	B5964_18721_DF_002	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	72.9 %	QC Batch No:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:39:01

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.313			ES 2378-TCDD	85.2	
12378-PeCDD	EMPC		0.937	J	ES 12378-PeCDD	73.4	
123478-HxCDD	2.79				ES 123478-HxCDD	84.5	
123678-HxCDD	4.55				ES 123678-HxCDD	92.5	
123789-HxCDD	4.43				ES 123789-HxCDD	89.2	
1234678-HpCDD	722				ES 1234678-HpCDD	78	
OCDD	108,000			E	ES OCDD	69.5	
2378-TCDF	2.52				ES 2378-TCDF	82	
12378-PeCDF	0.535			J	ES 12378-PeCDF	79.4	
23478-PeCDF	1.23			J	ES 23478-PeCDF	80.2	
123478-HxCDF	1.22			J	ES 123478-HxCDF	89.1	
123678-HxCDF	EMPC		0.61	J	ES 123678-HxCDF	96.3	
234678-HxCDF	EMPC		0.882	J	ES 234678-HxCDF	89.2	
123789-HxCDF	ND	0.533			ES 123789-HxCDF	88.1	
1234678-HpCDF	16				ES 1234678-HpCDF	92.4	
1234789-HpCDF	EMPC		1.45	J	ES 1234789-HpCDF	80.8	
OCDF	69.3				ES OCDF	64.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	74.6	
Total TCDD	ND	0.313	ND		CS 12347-PeCDD	75.1	
Total PeCDD	0.859		5.38		CS 12346-PeCDF	81.5	
Total HxCDD	56.8		58.3		CS 123469-HxCDF	98.1	
Total HpCDD	1,570		1,570		CS 1234689-HpCDF	95.7	
Total TCDF	6.64		10.8				
Total PeCDF	10.3		11				
Total HxCDF	15.4		18.4				
Total HpCDF	57.4		58.8				
Total PCDD/Fs	**110,000**		**110,000**				
WHO-2005 TEQs							
TEQ: ND=0	41.9		43				
TEQ: ND=DL/2	42	0.613	43.1				
TEQ: ND=DL	42.2	1.23	43.3				

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Sample ID: 11215131-120121-S-SPS-NE-O-9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.32 g	Lab Sample ID:	B5964_18721_DF_002	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	72.9 %	QC Batch No.:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:39:01

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.313)		12479/12468D	[1.11]	J	124679/124689D	20.7		1234679D	851	
1379D	(0.313)		12469D	[0.845]	J	123468D	3.27		1234678D	722	
1369D	(0.313)		12368D	[0.581]	J	123679/123689D	19.1				
1469D	(0.313)		12478D	[1.04]	J	123469D	2.04	J			
1247D...[4]	(0.313)		12379D	(0.388)		123478D	2.79				
1378D	(0.313)		12369D...[3]	0.859	J	123678D	4.55				
1268D	(0.313)		12346/12347D	(0.388)		123467D	[1.44]	J			
1478D	(0.313)		12378D	[0.937]	J	123789D	4.43		**Conc.**	1,570	
1279D	(0.313)		12367D	(0.388)					**EMPC**	1,570	
1234/1269D	(0.313)		12389D	(0.388)							
1236D	(0.313)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.313)										
1239D	(0.313)								OCDD	108000	E
2378D	(0.313)										
1278D	(0.313)										
1267D	(0.313)										
1289D	(0.313)										
Conc.	0		**Conc.**	0.859		**Conc.**	56.8				
EMPC	0		**EMPC**	5.38		**EMPC**	58.3				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	41.9	43
TEQ: ND=DL/2	42	43.1
TEQ: ND=DL	42.2	43.3

	Conc.	EMPC
Total PCDD/Fs	110,000	110,000

Checkcode: 188-791-LDD

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-O-9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.32 g	Lab Sample ID:	B5964_18721_DF_002	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	72.9 %	QC Batch No.:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:39:01

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.304)		13468/12468F	4.05		123468F	[1.45]	J	1234678F	16	
1468F	(0.304)		13678F...[3]	[0.683]	J	124678/134678F	6.27		1234679F	1.26	J
2468F	[1.73]		12368F...[3]	2.23	J	134679F	(0.485)		1234689F	40.2	
1346/1246F	(0.304)		14678F	0.445	J	124679F	(0.485)		1234789F	[1.45]	J
1347F...[3]	0.951		13479F	(0.36)		124689F	7.94				
1348F	(0.304)		13469/12479F	(0.36)		123467F	(0.485)				
1248F...[3]	0.653		12346F	(0.36)		123478F	1.22	J			
1268F	(0.304)		23468/12469F	0.687	J	123678F	[0.61]	J			
1467F	(0.304)		12347F	(0.36)		123479F	(0.485)				
1478F	[0.581]		12348F	(0.36)		123469F	(0.485)				
1369/1237F	(0.304)		12378F	0.535	J	123679F	(0.485)				
2467F	(0.304)		12678/12367F	0.665	J	234678F	[0.882]	J	**Conc.**	57.4	
2368F	[0.567]		12379F	(0.36)		234678/123689F	0		**EMPC**	58.8	
1238F...[5]	[0.59]		12679F	(0.36)		123689F	(0.485)				
1278F	0.879		23467/12369F	0.425	J	123789F	(0.533)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.304)		23478F	1.23	J	123789/123489F	0				
1267F	[0.361]	J	23478/12489F	0		123489F	(0.485)		OCDF	69.3	
2346/1249F	(0.304)		12489F	(0.36)							
2347/1279F	0.292	J	12349F	(0.36)							
2348F	(0.304)		12389F	(0.36)							
2378F	2.52										
2367/3467F	1.35										
1269F	(0.304)										
1239F	(0.304)										
1289F	[0.344]	J									
Conc.	6.64		**Conc.**	10.3		**Conc.**	15.4				
EMPC	10.8		**EMPC**	11		**EMPC**	18.4				

Checkcode: 188-791-LDD

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-O-9 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5964_18721_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.32 g	QC Batch No.:	18721
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	16-Dec-2021 23:39
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.313)		0.313	(0.313)	(0.313)	(0.313)
12378-PeCDD	[0.937]	J	0.388	[0.468]	[0.937]	[0.937]
123478-HxCDD	2.79		0.579	0.279	0.279	0.279
123678-HxCDD	4.55		0.582	0.455	0.455	0.455
123789-HxCDD	4.43		0.54	0.443	0.443	0.443
1234678-HpCDD	722		0.569	7.22	7.22	7.22
OCDD	108000	E	1.84	108	10.8	32.5
2378-TCDF	2.52		0.304	0.252	0.252	0.252
12378-PeCDF	0.535	J	0.37	0.0268	0.0268	0.0161
23478-PeCDF	1.23	J	0.349	0.616	0.616	0.37
123478-HxCDF	1.22	J	0.473	0.122	0.122	0.122
123678-HxCDF	[0.61]	J	0.439	[0.061]	[0.061]	[0.061]
234678-HxCDF	[0.882]	J	0.508	[0.0882]	[0.0882]	[0.0882]
123789-HxCDF	(0.533)		0.533	(0.0533)	(0.0533)	(0.0533)
1234678-HpCDF	16		0.25	0.16	0.16	0.16
1234789-HpCDF	[1.45]	J	0.362	[0.0145]	[0.0145]	[0.0145]
OCDF	69.3		0.981	0.0693	0.00693	0.0208

TEQ Summaries			
EMPC = 0, ND = 0	118	20.4	41.9
EMPC = 0, ND = DL / 2	118	20.6	42
EMPC = 0, ND = DL	118	20.8	42.2
EMPC = 0, < J-level = 0	117	19.7	41.3
EMPC = EMPC, ND = 0	119	21.5	43
EMPC = EMPC, ND = DL / 2	119	21.7	43.1
EMPC = EMPC, ND = DL	119	21.9	43.3
EMPC = EMPC, < J-level = 0	117	19.7	41.3

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Checkcode: 188-791-LDD

Sample ID: 11215131-120121-S-SPS-NE-B-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.28 g	Lab Sample ID	B5964_18721_DF_003	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	68.1 %	QC Batch No:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:26:28

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	44.1				ES 2378-TCDD	84.7	
12378-PeCDD	1.32			J	ES 12378-PeCDD	72.6	
123478-HxCDD	1.65			J	ES 123478-HxCDD	80.3	
123678-HxCDD	4.76				ES 123678-HxCDD	84.9	
123789-HxCDD	2.9				ES 123789-HxCDD	84.5	
1234678-HpCDD	165				ES 1234678-HpCDD	78.3	
OCDD	6,550				ES OCDD	65.6	
2378-TCDF	196				ES 2378-TCDF	77.9	
12378-PeCDF	EMPC		3.65		ES 12378-PeCDF	82.3	
23478-PeCDF	5.55				ES 23478-PeCDF	79.1	
123478-HxCDF	5.86				ES 123478-HxCDF	83	
123678-HxCDF	EMPC		2.21	J	ES 123678-HxCDF	87.1	
234678-HxCDF	1.81			J	ES 234678-HxCDF	81.7	
123789-HxCDF	ND	0.655			ES 123789-HxCDF	83.4	
1234678-HpCDF	75				ES 1234678-HpCDF	86.2	
1234789-HpCDF	5.79				ES 1234789-HpCDF	82.1	
OCDF	1,750				ES OCDF	67.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	73.5	
Total TCDD	50.6		56.7		CS 12347-PeCDD	76.7	
Total PeCDD	3.16		11.8		CS 12346-PeCDF	83.4	
Total HxCDD	73.4		73.4		CS 123469-HxCDF	91.4	
Total HpCDD	425		425		CS 1234689-HpCDF	92	
Total TCDF	384		397				
Total PeCDF	31.5		37.8				
Total HxCDF	36.6		38.8				
Total HpCDF	135		135				
Total PCDD/Fs	**9,440**		**9,470**				
WHO-2005 TEQs							
TEQ: ND=0	73.3		73.6				
TEQ: ND=DL/2	73.3	1.23	73.7				
TEQ: ND=DL	73.4	2.47	73.7				

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Sample ID: 11215131-120121-S-SPS-NE-B-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.28 g	Lab Sample ID:	B5964_18721_DF_003	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	68.1 %	QC Batch No.:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:26:28

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.39		12479/12468D	[3.12]		124679/124689D	39.9		1234679D	260	
1379D	(0.578)		12469D	[3.69]		123468D	3.14		1234678D	165	
1369D	(0.578)		12368D	[0.995]	J	123679/123689D	19.3				
1469D	5.06		12478D	(1.04)		123469D	1.74	J			
1247D...[4]	(0.578)		12379D	[0.863]	J	123478D	1.65	J			
1378D	[0.566]		12369D...[3]	1.85	J	123678D	4.76				
1268D	(0.578)		12346/12347D	(1.04)		123467D	(1.22)				
1478D	(0.578)		12378D	1.32	J	123789D	2.9		**Conc.**	425	
1279D	(0.578)		12367D	(1.04)					**EMPC**	425	
1234/1269D	[0.857]		12389D	(1.04)							
1236D	(0.578)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[1.27]										
1239D	(0.578)								OCDD	6550	
2378D	44.1										
1278D	[3.46]										
1267D	(0.578)										
1289D	(0.578)										
Conc.	50.6		**Conc.**	3.16		**Conc.**	73.4				
EMPC	56.7		**EMPC**	11.8		**EMPC**	73.4				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	73.3	73.6
TEQ: ND=DL/2	73.3	73.7
TEQ: ND=DL	73.4	73.7

	Conc.	EMPC
Total PCDD/Fs	9,440	9,470

Checkcode: 502-032-NHC

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-B-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.28 g	Lab Sample ID:	B5964_18721_DF_003	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	68.1 %	QC Batch No.:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:26:28

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.486	J	13468/12468F	11.3		123468F	3.71		1234678F	75	
1468F	1.26		13678F...[3]	[1.64]	J	124678/134678F	11.5		1234679F	4.35	
2468F	3.75		12368F...[3]	7.57		134679F	(0.65)		1234689F	49.4	
1346/1246F	[1.13]		14678F	[1]	J	124679F	(0.65)		1234789F	5.79	
1347F...[3]	3.56		13479F	(0.471)		124689F	11.6				
1348F	[1.02]		13469/12479F	(0.471)		123467F	1.03	J			
1248F...[3]	10.9		12346F	(0.471)		123478F	5.86				
1268F	4.64		23468/12469F	1.89	J	123678F	[2.21]	J			
1467F	[0.977]		12347F	0.795	J	123479F	(0.65)				
1478F	9.58		12348F	1.26	J	123469F	(0.65)				
1369/1237F	2.14		12378F	[3.65]		123679F	(0.65)				
2467F	1.15		12678/12367F	2.46		234678F	1.81	J	**Conc.**	135	
2368F	[7.43]		12379F	(0.471)		234678/123689F	0		**EMPC**	135	
1238F...[5]	8.49		12679F	(0.471)		123689F	(0.65)				
1278F	90		23467/12369F	0.649	J	123789F	(0.655)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.422)		23478F	5.55		123789/123489F	0				
1267F	5.84		23478/12489F	0		123489F	1.09	J	OCDF	1750	
2346/1249F	(0.422)		12489F	(0.471)							
2347/1279F	1.75		12349F	(0.471)							
2348F	12.3		12389F	(0.471)							
2378F	196										
2367/3467F	17.9										
1269F	[2.89]										
1239F	(0.422)										
1289F	14.2										
Conc.	384		**Conc.**	31.5		**Conc.**	36.6				
EMPC	397		**EMPC**	37.8		**EMPC**	38.8				

Checkcode: 502-032-NHC

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-B-2 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5964_18721_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.28 g	QC Batch No.:	18721
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 00:26
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	44.1		0.578	44.1	44.1	44.1
12378-PeCDD	1.32	J	1.04	0.658	1.32	1.32
123478-HxCDD	1.65	J	1.3	0.165	0.165	0.165
123678-HxCDD	4.76		1.32	0.476	0.476	0.476
123789-HxCDD	2.9		1.07	0.29	0.29	0.29
1234678-HpCDD	165		1.23	1.65	1.65	1.65
OCDD	6550		4.26	6.55	0.655	1.97
2378-TCDF	196		0.422	19.6	19.6	19.6
12378-PeCDF	[3.65]		0.471	[0.183]	[0.183]	[0.11]
23478-PeCDF	5.55		0.471	2.78	2.78	1.67
123478-HxCDF	5.86		0.657	0.586	0.586	0.586
123678-HxCDF	[2.21]	J	0.604	[0.221]	[0.221]	[0.221]
234678-HxCDF	1.81	J	0.695	0.181	0.181	0.181
123789-HxCDF	(0.655)		0.655	(0.0655)	(0.0655)	(0.0655)
1234678-HpCDF	75		0.399	0.75	0.75	0.75
1234789-HpCDF	5.79		0.511	0.0579	0.0579	0.0579
OCDF	1750		0.832	1.75	0.175	0.524

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TEQ Summaries			
EMPC = 0, ND = 0	79.6	72.8	73.3
EMPC = 0, ND = DL / 2	79.6	72.8	73.3
EMPC = 0, ND = DL	79.6	72.8	73.4
EMPC = 0, < J-level = 0	78.6	71.1	71.6
EMPC = EMPC, ND = 0	80	73.2	73.6
EMPC = EMPC, ND = DL / 2	80	73.2	73.7
EMPC = EMPC, ND = DL	80	73.2	73.7
EMPC = EMPC, < J-level = 0	78.7	71.3	71.8

Checkcode: 502-032-NHC

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Sample ID: 11215131-120221-S-SPS-SW-O-7 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.37 g	Lab Sample ID	B5964_18721_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	83.9 %	QC Batch No:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:14:03

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	264				ES 2378-TCDD	87.6	
12378-PeCDD	3.8				ES 12378-PeCDD	75.4	
123478-HxCDD	1.03			J	ES 123478-HxCDD	89.7	
123678-HxCDD	EMPC		2.85		ES 123678-HxCDD	89.4	
123789-HxCDD	2.35			J	ES 123789-HxCDD	89.9	
1234678-HpCDD	111				ES 1234678-HpCDD	80.3	
OCDD	3,260				ES OCDD	60.2	
2378-TCDF	943				ES 2378-TCDF	82.7	
12378-PeCDF	34.4				ES 12378-PeCDF	88.5	
23478-PeCDF	26.6				ES 23478-PeCDF	87.1	
123478-HxCDF	58.3				ES 123478-HxCDF	88.8	
123678-HxCDF	14.9				ES 123678-HxCDF	99.2	
234678-HxCDF	3.86				ES 234678-HxCDF	90.8	
123789-HxCDF	ND	0.617			ES 123789-HxCDF	87.6	
1234678-HpCDF	27.6				ES 1234678-HpCDF	94.9	
1234789-HpCDF	6.42				ES 1234789-HpCDF	81.5	
OCDF	48.6				ES OCDF	58.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	73.6	
Total TCDD	293		295		CS 12347-PeCDD	77	
Total PeCDD	5.8		7.22		CS 12346-PeCDF	86.4	
Total HxCDD	33.8		39		CS 123469-HxCDF	95.2	
Total HpCDD	283		283		CS 1234689-HpCDF	88	
Total TCDF	1,850		1,850				
Total PeCDF	90.3		103				
Total HxCDF	101		101				
Total HpCDF	55.6		56.4				
Total PCDD/Fs	**6,030**		**6,050**				
WHO-2005 TEQs							
TEQ: ND=0	382		382				
TEQ: ND=DL/2	382	0.673	382				
TEQ: ND=DL	382	1.35	382				

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Sample ID: 11215131-120221-S-SPS-SW-O-7 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.37 g	Lab Sample ID:	B5964_18721_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	83.9 %	QC Batch No.:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:14:03

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.604]		12479/12468D	[0.835]	J	124679/124689D	18.2		1234679D	173	
1379D	(0.332)		12469D	1.15	J	123468D	1.91	J	1234678D	111	
1369D	(0.332)		12368D	[0.585]	J	123679/123689D	10.2				
1469D	[0.678]		12478D	(0.462)		123469D	[1.71]	J			
1247D...[4]	0.465	J	12379D	(0.462)		123478D	1.03	J			
1378D	0.849		12369D...[3]	0.849	J	123678D	[2.85]				
1268D	(0.332)		12346/12347D	(0.462)		123467D	[0.698]	J			
1478D	0.71		12378D	3.8		123789D	2.35	J	**Conc.**	283	
1279D	(0.332)		12367D	(0.462)					**EMPC**	283	
1234/1269D	(0.332)		12389D	(0.462)							
1236D	(0.332)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	3.59										
1239D	(0.332)								OCDD	3260	
2378D	264										
1278D	23.1										
1267D	[1.32]										
1289D	(0.332)										
Conc.	293		**Conc.**	5.8		**Conc.**	33.8				
EMPC	295		**EMPC**	7.22		**EMPC**	39				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	382	382
TEQ: ND=DL/2	382	382
TEQ: ND=DL	382	382

	Conc.	EMPC
Total PCDD/Fs	6,030	6,050

Checkcode: 695-857-QMR

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120221-S-SPS-SW-O-7 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.37 g	Lab Sample ID:	B5964_18721_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	83.9 %	QC Batch No.:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:14:03

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.419	J	13468/12468F	5.08		123468F	2.64		1234678F	27.6	
1468F	1.27		13678F...[3]	1.61	J	124678/134678F	11.1		1234679F	[0.848]	J
2468F	2.16		12368F...[3]	17.4		134679F	(0.555)		1234689F	21.6	
1346/1246F	1.29		14678F	0.576	J	124679F	(0.555)		1234789F	6.42	
1347F...[3]	9.98		13479F	(0.298)		124689F	5.84				
1348F	2.55		13469/12479F	(0.298)		123467F	0.831	J			
1248F...[3]	41.7		12346F	(0.298)		123478F	58.3				
1268F	14.4		23468/12469F	1.47	J	123678F	14.9				
1467F	2.61		12347F	[0.997]	J	123479F	(0.555)				
1478F	38.3		12348F	3.18		123469F	(0.555)				
1369/1237F	11.1		12378F	34.4		123679F	(0.555)				
2467F	1.5		12678/12367F	[9.43]		234678F	3.86		**Conc.**	55.6	
2368F	28.8		12379F	(0.298)		234678/123689F	0		**EMPC**	56.4	
1238F...[5]	47.9		12679F	(0.298)		123689F	(0.555)				
1278F	429		23467/12369F	[0.718]	J	123789F	(0.617)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	6.68		23478F	26.6		123789/123489F	0				
1267F	25.1		23478/12489F	0		123489F	3.88		OCDF	48.6	
2346/1249F	3.56		12489F	(0.298)							
2347/1279F	10.8		12349F	(0.298)							
2348F	68.3		12389F	[1.2]	J						
2378F	943										
2367/3467F	76.2										
1269F	14.5										
1239F	(0.347)										
1289F	71										
Conc.	1,850		**Conc.**	90.3		**Conc.**	101				
EMPC	1,850		**EMPC**	103		**EMPC**	101				

Checkcode: 695-857-QMR

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120221-S-SPS-SW-O-7 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5964_18721_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.37 g	QC Batch No.:	18721
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 01:14
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	264		0.332	264	264	264
12378-PeCDD	3.8		0.462	1.9	3.8	3.8
123478-HxCDD	1.03	J	0.585	0.103	0.103	0.103
123678-HxCDD	[2.85]		0.622	[0.285]	[0.285]	[0.285]
123789-HxCDD	2.35	J	0.583	0.235	0.235	0.235
1234678-HpCDD	111		0.88	1.11	1.11	1.11
OCDD	3260		2.89	3.26	0.326	0.979
2378-TCDF	943		0.347	94.3	94.3	94.3
12378-PeCDF	34.4		0.301	1.72	1.72	1.03
23478-PeCDF	26.6		0.295	13.3	13.3	7.99
123478-HxCDF	58.3		0.538	5.83	5.83	5.83
123678-HxCDF	14.9		0.528	1.49	1.49	1.49
234678-HxCDF	3.86		0.552	0.386	0.386	0.386
123789-HxCDF	(0.617)		0.617	(0.0617)	(0.0617)	(0.0617)
1234678-HpCDF	27.6		0.297	0.276	0.276	0.276
1234789-HpCDF	6.42		0.416	0.0642	0.0642	0.0642
OCDF	48.6		0.795	0.0486	0.00486	0.0146
		TEQ Summaries				
		EMPC = 0, ND = 0		388	387	382
		EMPC = 0, ND = DL / 2		388	387	382
		EMPC = 0, ND = DL		388	387	382
		EMPC = 0, < J-level = 0		388	387	381
		EMPC = EMPC, ND = 0		388	387	382
		EMPC = EMPC, ND = DL / 2		388	387	382
		EMPC = EMPC, ND = DL		388	387	382
		EMPC = EMPC, < J-level = 0		388	387	382

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Checkcode: 695-857-QMR

Sample ID: 11215131-120221-S-SPS-SW-B-9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID	B5964_18721_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.4 %	QC Batch No:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:01:37

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	4,560			E	ES 2378-TCDD	88.8	
12378-PeCDD	50.1				ES 12378-PeCDD	75.4	
123478-HxCDD	2.38			J	ES 123478-HxCDD	91	
123678-HxCDD	11.3				ES 123678-HxCDD	90.5	
123789-HxCDD	5.56				ES 123789-HxCDD	90.3	
1234678-HpCDD	384				ES 1234678-HpCDD	82.9	
OCDD	5,490				ES OCDD	68.5	
2378-TCDF	15,700			E	ES 2378-TCDF	84.4	
12378-PeCDF	889				ES 12378-PeCDF	88.8	
23478-PeCDF	509				ES 23478-PeCDF	78.6	
123478-HxCDF	2,390				ES 123478-HxCDF	95.5	
123678-HxCDF	578				ES 123678-HxCDF	93.2	
234678-HxCDF	84.7				ES 234678-HxCDF	94.6	
123789-HxCDF	ND	3.19			ES 123789-HxCDF	89.6	
1234678-HpCDF	677				ES 1234678-HpCDF	94.3	
1234789-HpCDF	270				ES 1234789-HpCDF	92.8	
OCDF	2,460				ES OCDF	71	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	78.2	
Total TCDD	4,940		4,980		CS 12347-PeCDD	81.6	
Total PeCDD	63.5		78.3		CS 12346-PeCDF	85.6	
Total HxCDD	101		105		CS 123469-HxCDF	107	
Total HpCDD	772		772		CS 1234689-HpCDF	98.6	
Total TCDF	30,100		30,100				
Total PeCDF	2,120		2,130				
Total HxCDF	3,450		3,450				
Total HpCDF	1,160		1,160				
Total PCDD/Fs	**50,700**		**50,700**				
WHO-2005 TEQs							
TEQ: ND=0	6680		6680				
TEQ: ND=DL/2	6680	1.49	6680				
TEQ: ND=DL	6680	2.97	6680				

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Sample ID: 11215131-120221-S-SPS-SW-B-9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID:	B5964_18721_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.4 %	QC Batch No.:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:01:37

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[4.44]		12479/12468D	4.72		124679/124689D	44.2		1234679D	388	
1379D	1.89		12469D	[3.08]		123468D	[4.76]		1234678D	384	
1369D	(0.442)		12368D	6.36		123679/123689D	33.3				
1469D	2.48		12478D	[3.43]		123469D	2.09	J			
1247D...[4]	[6.75]		12379D	[2.01]	J	123478D	2.38	J			
1378D	12.1		12369D...[3]	2.36	J	123678D	11.3				
1268D	1.32		12346/12347D	[1.2]	J	123467D	1.78	J			
1478D	[9.19]		12378D	50.1		123789D	5.56		**Conc.**	772	
1279D	[0.501]		12367D	[3.91]					**EMPC**	772	
1234/1269D	1.86		12389D	[1.12]	J						
1236D	1.02								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	65.9										
1239D	(0.442)								OCDD	5490	
2378D	4560	E									
1278D	299										
1267D	(0.442)										
1289D	[15.3]										
Conc.	4,940		**Conc.**	63.5		**Conc.**	101				
EMPC	4,980		**EMPC**	78.3		**EMPC**	105				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	6,680	6,680
TEQ: ND=DL/2	6,680	6,680
TEQ: ND=DL	6,680	6,680

	Conc.	EMPC
Total PCDD/Fs	50,700	50,700

Checkcode: 487-472-FDF

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120221-S-SPS-SW-B-9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID:	B5964_18721_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.4 %	QC Batch No.:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:01:37

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	2.76		13468/12468F	29.6		123468F	11.3		1234678F	677	
1468F	20.4		13678F...[3]	[7.4]		124678/134678F	151		1234679F	10.4	
2468F	17.2		12368F...[3]	334		134679F	(2.83)		1234689F	203	
1346/1246F	15.8		14678F	8.82		124679F	(2.83)		1234789F	270	
1347F...[3]	118		13479F	0.87	J	124689F	81.4				
1348F	54.4		13469/12479F	(0.554)		123467F	6.14				
1248F...[3]	526		12346F	(0.554)		123478F	2390				
1268F	205		23468/12469F	12.8		123678F	578				
1467F	34.7		12347F	12.9		123479F	(2.83)				
1478F	534		12348F	57.2		123469F	(2.83)				
1369/1237F	154		12378F	889		123679F	(2.83)				
2467F	18.9		12678/12367F	230		234678F	84.7		**Conc.**	1,160	
2368F	451		12379F	(0.554)		234678/123689F	0		**EMPC**	1,160	
1238F...[5]	744		12679F	[2.22]	J	123689F	(2.83)				
1278F	7230	E	23467/12369F	8.22		123789F	(3.19)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.364)		23478F	509		123789/123489F	0				
1267F	368		23478/12489F	0		123489F	144		OCDF	2460	
2346/1249F	48.1		12489F	(0.554)							
2347/1279F	188		12349F	(0.554)							
2348F	1060	E	12389F	25.6							
2378F	15700	E									
2367/3467F	1230	E									
1269F	215										
1239F	28.3										
1289F	1180	E									
Conc.	30,100		**Conc.**	2,120		**Conc.**	3,450				
EMPC	30,100		**EMPC**	2,130		**EMPC**	3,450				

Checkcode: 487-472-FDF

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: 11215131-120221-S-SPS-SW-B-9 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5964_18721_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	QC Batch No.:	18721
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 02:01
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	4560	E	0.442	4560	4560	4560
12378-PeCDD	50.1		0.763	25	50.1	50.1
123478-HxCDD	2.38	J	1.27	0.238	0.238	0.238
123678-HxCDD	11.3		1.37	1.13	1.13	1.13
123789-HxCDD	5.56		1.11	0.556	0.556	0.556
1234678-HpCDD	384		0.983	3.84	3.84	3.84
OCDD	5490		2.17	5.49	0.549	1.65
2378-TCDF	15700	E	0.364	1570	1570	1570
12378-PeCDF	889		0.505	44.5	44.5	26.7
23478-PeCDF	509		0.611	254	254	153
123478-HxCDF	2390		2.6	239	239	239
123678-HxCDF	578		2.62	57.8	57.8	57.8
234678-HxCDF	84.7		2.97	8.47	8.47	8.47
123789-HxCDF	(3.19)		3.19	(0.319)	(0.319)	(0.319)
1234678-HpCDF	677		0.55	6.77	6.77	6.77
1234789-HpCDF	270		0.706	2.7	2.7	2.7
OCDF	2460		0.876	2.46	0.246	0.739

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TEQ Summaries			
EMPC = 0, ND = 0	6780	6800	6680
EMPC = 0, ND = DL / 2	6780	6800	6680
EMPC = 0, ND = DL	6780	6800	6680
EMPC = 0, < J-level = 0	6780	6800	6680
EMPC = EMPC, ND = 0	6780	6800	6680
EMPC = EMPC, ND = DL / 2	6780	6800	6680
EMPC = EMPC, ND = DL	6780	6800	6680
EMPC = EMPC, < J-level = 0	6780	6800	6680

Checkcode: 487-472-FDF

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Sample ID: 11215131-120221-S-SPS-SW-B-9-MS — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	Lab Sample ID	B5964_18721_DF_005MS	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.4 %	QC Batch No:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:49:11

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	4,220			E	ES 2378-TCDD	91.1	
12378-PeCDD	138				ES 12378-PeCDD	78.8	
123478-HxCDD	100				ES 123478-HxCDD	89	
123678-HxCDD	110				ES 123678-HxCDD	92	
123789-HxCDD	99.9				ES 123789-HxCDD	87.9	
1234678-HpCDD	371				ES 1234678-HpCDD	86.9	
OCDD	4,560				ES OCDD	71.6	
2378-TCDF	14,000			E	ES 2378-TCDF	87.6	
12378-PeCDF	721				ES 12378-PeCDF	85.2	
23478-PeCDF	509				ES 23478-PeCDF	84	
123478-HxCDF	2,180				ES 123478-HxCDF	91.7	
123678-HxCDF	552				ES 123678-HxCDF	91.7	
234678-HxCDF	163				ES 234678-HxCDF	91	
123789-HxCDF	199				ES 123789-HxCDF	92.8	
1234678-HpCDF	949				ES 1234678-HpCDF	95.4	
1234789-HpCDF	426				ES 1234789-HpCDF	95.5	
OCDF	2,280				ES OCDF	72	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	76.8	
Total TCDD	4,620		4,690		CS 12347-PeCDD	82.3	
Total PeCDD	196		200		CS 12346-PeCDF	85.3	
Total HxCDD	398		401		CS 123469-HxCDF	99.6	
Total HpCDD	690		690		CS 1234689-HpCDF	98.8	
Total TCDF	27,500		27,500				
Total PeCDF	2,030		2,030				
Total HxCDF	3,530		3,530				
Total HpCDF	1,580		1,580				
Total PCDD/Fs	**47,400**		**47,500**				
WHO-2005 TEQs							
TEQ: ND=0	6290		6290				
TEQ: ND=DL/2	6290	1.52	6290				
TEQ: ND=DL	6290	3.04	6290				

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Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.32 g	Lab Sample ID	B5964_18721_DF_005MSD	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.4 %	QC Batch No:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:36:39

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	3,230			E	ES 2378-TCDD	84.2	
12378-PeCDD	107				ES 12378-PeCDD	75.8	
123478-HxCDD	86.7				ES 123478-HxCDD	87.8	
123678-HxCDD	97.3				ES 123678-HxCDD	89.7	
123789-HxCDD	86.4				ES 123789-HxCDD	89.7	
1234678-HpCDD	369				ES 1234678-HpCDD	82.5	
OCDD	4,360				ES OCDD	62.9	
2378-TCDF	11,300			E	ES 2378-TCDF	75.8	
12378-PeCDF	600				ES 12378-PeCDF	78.8	
23478-PeCDF	438				ES 23478-PeCDF	74.6	
123478-HxCDF	1,590				ES 123478-HxCDF	91.2	
123678-HxCDF	417				ES 123678-HxCDF	95.2	
234678-HxCDF	138				ES 234678-HxCDF	90.6	
123789-HxCDF	170				ES 123789-HxCDF	89.2	
1234678-HpCDF	641				ES 1234678-HpCDF	93.7	
1234789-HpCDF	285				ES 1234789-HpCDF	91.9	
OCDF	2,420				ES OCDF	66.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	70.7	
Total TCDD	3,560		3,620		CS 12347-PeCDD	78	
Total PeCDD	164		170		CS 12346-PeCDF	80.6	
Total HxCDD	367		369		CS 123469-HxCDF	98.7	
Total HpCDD	715		715		CS 1234689-HpCDF	93.5	
Total TCDF	22,100		22,100				
Total PeCDF	1,760		1,760				
Total HxCDF	2,720		2,730				
Total HpCDF	1,090		1,090				
Total PCDD/Fs	**39,200**		**39,300**				
WHO-2005 TEQs							
TEQ: ND=0	4880		4880				
TEQ: ND=DL/2	4880	1.34	4880				
TEQ: ND=DL	4880	2.69	4880				

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MS/MSD Comparison

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Method 1613B

Sample ID: 11215131-120221-S-SPS-SW-B-9

Analyte	Native Conc.	MS Spike	MS Conc.	MS Rec.	MSD Spike	MSD Conc.	MSD Rec.	RPD
	(pg/g)	(pg/g)	(pg/g)	%	(pg/g)	(pg/g)	%	
2,3,7,8-TCDD	4560	19.7	4220	-1700	19.4	3230	-6870	*
1,2,3,7,8-PeCDD	50.1	98.7	138	89.2	96.9	107	59.2	40%
1,2,3,4,7,8-HxCDD	2.38	98.7	100	99.3	96.9	86.7	87	13%
1,2,3,6,7,8-HxCDD	11.3	98.7	110	100	96.9	97.3	88.8	12%
1,2,3,7,8,9-HxCDD	5.56	98.7	99.9	95.5	96.9	86.4	83.5	13%
1,2,3,4,6,7,8-HpCDD	384	98.7	371	-13.2	96.9	369	-15.4	*
OCDD	5490	197	4560	-472	194	4360	-582	*
2,3,7,8-TCDF	15700	19.7	14000	-8450	19.4	11300	-22700	*
1,2,3,7,8-PeCDF	889	98.7	721	-171	96.9	600	-299	*
2,3,4,7,8-PeCDF	509	98.7	509	0.0843	96.9	438	-73.2	*
1,2,3,4,7,8-HxCDF	2390	98.7	2180	-218	96.9	1590	-833	*
1,2,3,6,7,8-HxCDF	578	98.7	552	-25.7	96.9	417	-166	*
2,3,4,6,7,8-HxCDF	84.7	98.7	163	79.1	96.9	138	54.9	36%
1,2,3,7,8,9-HxCDF	0	98.7	199	201	96.9	170	176	13%
1,2,3,4,6,7,8-HpCDF	677	98.7	949	276	96.9	641	-36.6	*
1,2,3,4,7,8,9-HpCDF	270	98.7	426	158	96.9	285	15.7	164%
OCDF	2460	197	2280	-91.2	194	2420	-21	*

* % Recovery limits for MS and MSD: 70-130% of expected value, if native < RL
* RPD limit for MS vs. MSD recoveries: +/- 20%, if native < RL

Sample ID: 11215131-120221-S-SPS-DUP2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.17 g	Lab Sample ID	B5964_18721_DF_008	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	80.7 %	QC Batch No:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:24:11

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	65.5				ES 2378-TCDD	87.6	
12378-PeCDD	EMPC		1.26	J	ES 12378-PeCDD	79.9	
123478-HxCDD	ND	0.827			ES 123478-HxCDD	91.3	
123678-HxCDD	EMPC		1.59	J	ES 123678-HxCDD	93.6	
123789-HxCDD	EMPC		1.59	J	ES 123789-HxCDD	94.4	
1234678-HpCDD	93				ES 1234678-HpCDD	79.3	
OCDD	4,710				ES OCDD	66.1	
2378-TCDF	260				ES 2378-TCDF	81.9	
12378-PeCDF	11.7				ES 12378-PeCDF	89.2	
23478-PeCDF	9.53				ES 23478-PeCDF	85.3	
123478-HxCDF	21.6				ES 123478-HxCDF	91.9	
123678-HxCDF	5.66				ES 123678-HxCDF	101	
234678-HxCDF	EMPC		0.962	J	ES 234678-HxCDF	95.4	
123789-HxCDF	ND	0.837			ES 123789-HxCDF	91.2	
1234678-HpCDF	11.5				ES 1234678-HpCDF	98.6	
1234789-HpCDF	EMPC		2.37	J	ES 1234789-HpCDF	84	
OCDF	25.3				ES OCDF	62.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	76.5	
Total TCDD	71.9		75.3		CS 12347-PeCDD	79.7	
Total PeCDD	4.91		7.3		CS 12346-PeCDF	87.9	
Total HxCDD	44.6		48.9		CS 123469-HxCDF	99.5	
Total HpCDD	251		251		CS 1234689-HpCDF	100	
Total TCDF	500		516				
Total PeCDF	33.3		35.3				
Total HxCDF	36		38.3				
Total HpCDF	21.3		23.7				
Total PCDD/Fs	**5,700**		**5,730**				
WHO-2005 TEQs							
TEQ: ND=0	99.9		102				
TEQ: ND=DL/2	99.9	0.949	102				
TEQ: ND=DL	100	1.9	102				

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Sample ID: 11215131-120221-S-SPS-DUP2 — Method 1613B

Client Data
Name: GHD Services Inc.
Project ID: 11215131-SJRWP-PCFSE
Date Collected: 02-Dec-2021

Sample Data
Matrix: Solid
Weight/Volume: 10.17 g
% Solid: 80.7 %
Split: -

Laboratory Data
Lab Project ID: B5964
Lab Sample ID: B5964_18721_DF_008
QC Batch No.: 18721
Dilution: -

Date Received: 03-Dec-2021
Date Extracted: 13-Dec-2021
Date Analyzed: 17-Dec-2021
Time Analyzed: 4:24:11

Tetra-Dioxins	Conc. (pg/g)	Qualifiers
1368D	(0.587)	
1379D	(0.587)	
1369D	(0.587)	
1469D	[2.2]	
1247D...[4]	(0.587)	
1378D	[0.334]	J
1268D	(0.587)	
1478D	(0.587)	
1279D	(0.587)	
1234/1269D	(0.587)	
1236D	(0.587)	
1237/1238D	[0.873]	
1239D	(0.587)	
2378D	65.5	
1278D	6.47	
1267D	(0.587)	
1289D	(0.587)	
Conc.	71.9	
EMPC	75.3	

Penta-Dioxins	Conc. (pg/g)	Qualifiers
12479/12468D	1.25	J
12469D	3.66	
12368D	(0.499)	
12478D	(0.499)	
12379D	(0.499)	
12369D...[3]	[1.13]	J
12346/12347D	(0.499)	
12378D	[1.26]	J
12367D	(0.499)	
12389D	(0.499)	
Conc.	4.91	
EMPC	7.3	

Hexa-Dioxins	Conc (pg/g)	Qualifiers
124679/124689D	34.1	
123468D	[1.08]	J
123679/123689D	8.99	
123469D	1.52	J
123478D	(0.827)	
123678D	[1.59]	J
123467D	(0.783)	
123789D	[1.59]	J
Conc.	44.6	
EMPC	48.9	

Hepta-Dioxins	Conc (pg/g)	Qualifiers
1234679D	158	
1234678D	93	
Conc.	251	
EMPC	251	

Octa-Dioxin	Conc (pg/g)	Qualifiers
OCDD	4710	

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	99.9	102
TEQ: ND=DL/2	99.9	102
TEQ: ND=DL	100	102

	Conc.	EMPC
Total PCDD/Fs	5,700	5,730

Checkcode: 692-999-HBS

Report Created: 17-Dec-2021 09:59 Analyst: pw

Sample ID: 11215131-120221-S-SPS-DUP2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.17 g	Lab Sample ID:	B5964_18721_DF_008	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	80.7 %	QC Batch No.:	18721	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:24:11

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.799)		13468/12468F	[2.02]	J	123468F	1.32	J	1234678F	11.5	
1468F	(0.799)		13678F...[3]	(0.51)		124678/134678F	4.71		1234679F	(0.922)	
2468F	(0.799)		12368F...[3]	6.71		134679F	(0.757)		1234689F	9.79	
1346/1246F	(0.799)		14678F	(0.51)		124679F	(0.757)		1234789F	[2.37]	J
1347F...[3]	[2.24]		13479F	(0.51)		124689F	2.7				
1348F	1.78		13469/12479F	(0.51)		123467F	(0.757)				
1248F...[3]	10.4		12346F	(0.51)		123478F	21.6				
1268F	[3.75]		23468/12469F	0.634	J	123678F	5.66				
1467F	(0.799)		12347F	(0.51)		123479F	(0.757)				
1478F	[10.2]		12348F	1.07	J	123469F	(0.757)				
1369/1237F	3.32		12378F	11.7		123679F	(0.757)				
2467F	(0.799)		12678/12367F	3.65		234678F	[0.962]	J	**Conc.**	21.3	
2368F	13.1		12379F	(0.51)		234678/123689F	0		**EMPC**	23.7	
1238F...[5]	8.52		12679F	(0.51)		123689F	(0.757)				
1278F	123		23467/12369F	(0.51)		123789F	(0.837)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.799)		23478F	9.53		123789/123489F	0				
1267F	7.17		23478/12489F	0		123489F	[1.32]	J	OCDF	25.3	
2346/1249F	(0.799)		12489F	(0.51)							
2347/1279F	3.5		12349F	(0.51)							
2348F	20.5		12389F	(0.51)							
2378F	260										
2367/3467F	23.4										
1269F	4.89										
1239F	(0.799)										
1289F	20.7										
Conc.	500		**Conc.**	33.3		**Conc.**	36				
EMPC	516		**EMPC**	35.3		**EMPC**	38.3				

Checkcode: 692-999-HBS

Report Created: 17-Dec-2021 09:59 Analyst: pw

Sample ID: 11215131-120221-S-SPS-DUP2 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5964_18721_DF_008
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.17 g	QC Batch No.:	18721
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 04:24
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	65.5		0.587	65.5	65.5	65.5
12378-PeCDD	[1.26]	J	0.499	[0.632]	[1.26]	[1.26]
123478-HxCDD	(0.827)		0.827	(0.0827)	(0.0827)	(0.0827)
123678-HxCDD	[1.59]	J	0.776	[0.159]	[0.159]	[0.159]
123789-HxCDD	[1.59]	J	0.754	[0.159]	[0.159]	[0.159]
1234678-HpCDD	93		0.883	0.93	0.93	0.93
OCDD	4710		2.15	4.71	0.471	1.41
2378-TCDF	260		0.799	26	26	26
12378-PeCDF	11.7		0.532	0.585	0.585	0.351
23478-PeCDF	9.53		0.487	4.77	4.77	2.86
123478-HxCDF	21.6		0.756	2.16	2.16	2.16
123678-HxCDF	5.66		0.643	0.566	0.566	0.566
234678-HxCDF	[0.962]	J	0.822	[0.0962]	[0.0962]	[0.0962]
123789-HxCDF	(0.837)		0.837	(0.0837)	(0.0837)	(0.0837)
1234678-HpCDF	11.5		0.76	0.115	0.115	0.115
1234789-HpCDF	[2.37]	J	1.14	[0.0237]	[0.0237]	[0.0237]
OCDF	25.3		0.919	0.0253	0.00253	0.00758

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TEQ Summaries			
EMPC = 0, ND = 0	105	101	99.9
EMPC = 0, ND = DL / 2	105	101	99.9
EMPC = 0, ND = DL	105	101	100
EMPC = 0, < J-level = 0	105	101	99.9
EMPC = EMPC, ND = 0	106	103	102
EMPC = EMPC, ND = DL / 2	106	103	102
EMPC = EMPC, ND = DL	107	103	102
EMPC = EMPC, < J-level = 0	105	101	99.9

Checkcode: 692-999-HBS

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Sample ID: Method Blank B5964_18721 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18721_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:03:53

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.306			ES 2378-TCDD	86.9	
12378-PeCDD	ND	0.317			ES 12378-PeCDD	78.7	
123478-HxCDD	ND	0.318			ES 123478-HxCDD	89.9	
123678-HxCDD	ND	0.284			ES 123678-HxCDD	99.2	
123789-HxCDD	ND	0.279			ES 123789-HxCDD	98.3	
1234678-HpCDD	ND	0.314			ES 1234678-HpCDD	81.7	
OCDD	ND	1.2			ES OCDD	47.6	
2378-TCDF	ND	0.258			ES 2378-TCDF	75.7	
12378-PeCDF	ND	0.201			ES 12378-PeCDF	92.8	
23478-PeCDF	ND	0.23			ES 23478-PeCDF	81.6	
123478-HxCDF	ND	0.189			ES 123478-HxCDF	95	
123678-HxCDF	ND	0.173			ES 123678-HxCDF	113	
234678-HxCDF	ND	0.217			ES 234678-HxCDF	93.3	
123789-HxCDF	ND	0.259			ES 123789-HxCDF	80.7	
1234678-HpCDF	ND	0.164			ES 1234678-HpCDF	109	
1234789-HpCDF	ND	0.329			ES 1234789-HpCDF	68.5	
OCDF	ND	1.03			ES OCDF	41.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77.3	
Total TCDD	ND	0.306	ND		CS 12347-PeCDD	85.2	
Total PeCDD	ND	0.317	ND		CS 12346-PeCDF	95.6	
Total HxCDD	ND	0.292	ND		CS 123469-HxCDF	108	
Total HpCDD	ND	0.314	ND		CS 1234689-HpCDF	98.1	
Total TCDF	ND	0.258	ND				
Total PeCDF	ND	0.214	ND				
Total HxCDF	ND	0.204	ND				
Total HpCDF	ND	0.223	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.452	0.452	0.452				
TEQ: ND=DL	0.904	0.904	0.904				

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Sample ID: Method Blank B5964_18721 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18721_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:03:53

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.306)		12479/12468D	(0.317)		124679/124689D	(0.292)		1234679D	(0.314)	
1379D	(0.306)		12469D	(0.317)		123468D	(0.292)		1234678D	(0.314)	
1369D	(0.306)		12368D	(0.317)		123679/123689D	(0.292)				
1469D	(0.306)		12478D	(0.317)		123469D	(0.292)				
1247D...[4]	(0.306)		12379D	(0.317)		123478D	(0.318)				
1378D	(0.306)		12369D...[3]	(0.317)		123678D	(0.284)				
1268D	(0.306)		12346/12347D	(0.317)		123467D	(0.292)				
1478D	(0.306)		12378D	(0.317)		123789D	(0.279)		**Conc.**	0	
1279D	(0.306)		12367D	(0.317)					**EMPC**	0	
1234/1269D	(0.306)		12389D	(0.317)							
1236D	(0.306)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.306)										
1239D	(0.306)								OCDD	(1.2)	
2378D	(0.306)										
1278D	(0.306)										
1267D	(0.306)										
1289D	(0.306)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.452	0.452
TEQ: ND=DL	0.904	0.904

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 727-669-RDQ

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: Method Blank B5964_18721 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18721_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:03:53

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.258)		13468/12468F	(0.325)		123468F	(0.204)		1234678F	(0.164)	
1468F	(0.258)		13678F...[3]	(0.214)		124678/134678F	(0.204)		1234679F	(0.223)	
2468F	(0.258)		12368F...[3]	(0.214)		134679F	(0.204)		1234689F	(0.223)	
1346/1246F	(0.258)		14678F	(0.214)		124679F	(0.204)		1234789F	(0.329)	
1347F...[3]	(0.258)		13479F	(0.214)		124689F	(0.204)				
1348F	(0.258)		13469/12479F	(0.214)		123467F	(0.204)				
1248F...[3]	(0.258)		12346F	(0.214)		123478F	(0.189)				
1268F	(0.258)		23468/12469F	(0.214)		123678F	(0.173)				
1467F	(0.258)		12347F	(0.214)		123479F	(0.204)				
1478F	(0.258)		12348F	(0.214)		123469F	(0.204)				
1369/1237F	(0.258)		12378F	(0.201)		123679F	(0.204)				
2467F	(0.258)		12678/12367F	(0.214)		234678F	(0.217)		**Conc.**	0	
2368F	(0.258)		12379F	(0.214)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.258)		12679F	(0.214)		123689F	(0.204)				
1278F	(0.258)		23467/12369F	(0.214)		123789F	(0.259)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.258)		23478F	(0.23)		123789/123489F	0				
1267F	(0.258)		23478/12489F	0		123489F	(0.204)		OCDF	(1.03)	
2346/1249F	(0.258)		12489F	(0.214)							
2347/1279F	(0.258)		12349F	(0.214)							
2348F	(0.258)		12389F	(0.214)							
2378F	(0.258)										
2367/3467F	(0.258)										
1269F	(0.258)										
1239F	(0.258)										
1289F	(0.258)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 727-669-RDQ

Report Created: 17-Dec-2021 09:58 Analyst: pw

Sample ID: Method Blank B5964_18721 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18721_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18721
Date Collected:	n/a	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	16-Dec-2021 22:03
Lab Project No:	B5964	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.306)		0.306	(0.306)	(0.306)	(0.306)
12378-PeCDD	(0.317)		0.317	(0.158)	(0.317)	(0.317)
123478-HxCDD	(0.318)		0.318	(0.0318)	(0.0318)	(0.0318)
123678-HxCDD	(0.284)		0.284	(0.0284)	(0.0284)	(0.0284)
123789-HxCDD	(0.279)		0.279	(0.0279)	(0.0279)	(0.0279)
1234678-HpCDD	(0.314)		0.314	(0.00314)	(0.00314)	(0.00314)
OCDD	(1.2)		1.2	(0.0012)	(0.00012)	(0.00036)
2378-TCDF	(0.258)		0.258	(0.0258)	(0.0258)	(0.0258)
12378-PeCDF	(0.201)		0.201	(0.01)	(0.01)	(0.00602)
23478-PeCDF	(0.23)		0.23	(0.115)	(0.115)	(0.0689)
123478-HxCDF	(0.189)		0.189	(0.0189)	(0.0189)	(0.0189)
123678-HxCDF	(0.173)		0.173	(0.0173)	(0.0173)	(0.0173)
234678-HxCDF	(0.217)		0.217	(0.0217)	(0.0217)	(0.0217)
123789-HxCDF	(0.259)		0.259	(0.0259)	(0.0259)	(0.0259)
1234678-HpCDF	(0.164)		0.164	(0.00164)	(0.00164)	(0.00164)
1234789-HpCDF	(0.329)		0.329	(0.00329)	(0.00329)	(0.00329)
OCDF	(1.03)		1.03	(0.00103)	(0.000103)	(0.000308)

TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.398	0.477	0.452
EMPC = 0, ND = DL	0.797	0.953	0.904
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.398	0.477	0.452
EMPC = EMPC, ND = DL	0.797	0.953	0.904
EMPC = EMPC, < J-level = 0	0	0	0

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Tel: +1 910 794-1613; Toll-Free 866 846-8290
www.us.sgs.com

Checkcode: 727-669-RDQ

SGS North America - DF v0.99

Sample ID: 0_18721_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5964	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18721_DF	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18721	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:28:53

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	11.3				ES 2378-TCDD	86.1	
12378-PeCDD	45				ES 12378-PeCDD	78	
123478-HxCDD	50.8				ES 123478-HxCDD	94.1	
123678-HxCDD	53.7				ES 123678-HxCDD	97.7	
123789-HxCDD	48.8				ES 123789-HxCDD	96.4	
1234678-HpCDD	52.3				ES 1234678-HpCDD	75.6	
OCDD	102				ES OCDD	34.2	
2378-TCDF	11.3				ES 2378-TCDF	77.8	
12378-PeCDF	51.4				ES 12378-PeCDF	80.7	
23478-PeCDF	54.3				ES 23478-PeCDF	75.6	
123478-HxCDF	49.7				ES 123478-HxCDF	91	
123678-HxCDF	51				ES 123678-HxCDF	104	
234678-HxCDF	50.4				ES 234678-HxCDF	93.1	
123789-HxCDF	44.9				ES 123789-HxCDF	83.5	
1234678-HpCDF	48.5				ES 1234678-HpCDF	122	
1234789-HpCDF	49.4				ES 1234789-HpCDF	63.5	
OCDF	106				ES OCDF	27.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	78.6	
Total TCDD	24.7		48.1		CS 12347-PeCDD	81	
Total PeCDD	68.5		68.5		CS 12346-PeCDF	83.3	
Total HxCDD	166		166		CS 123469-HxCDF	107	
Total HpCDD	65.3		65.3		CS 1234689-HpCDF	95.9	
Total TCDF	60.6		60.6				
Total PeCDF	221		221				
Total HxCDF	315		315				
Total HpCDF	97.9		97.9				
Total PCDD/Fs	**1,230**		**1,250**				
WHO-2005 TEQs							
TEQ: ND=0	112		112				
TEQ: ND=DL/2	112	2.29	112				
TEQ: ND=DL	112	4.57	112				

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Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5964*
Requested TAT:	*10 business days*
Projected due date:	*17-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120121-S-SPS-NE-O-8	B5964_001	Solid	1	4oz Amber	01-Dec-21	13:55	0.4	2	4905 2704 1834
11215131-120121-S-SPS-NE-O-9	B5964_002	Solid	1	4oz Amber	01-Dec-21	14:25	0.4	2	4905 2704 1834
11215131-120121-S-SPS-NE-B-2	B5964_003	Solid	1	4oz Amber	01-Dec-21	14:30	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-O-7	B5964_004	Solid	1	4oz Amber	02-Dec-21	10:15	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9	B5964_005	Solid - MS/MSD	1	4oz Amber	02-Dec-21	10:20	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9H1	B5964_006	Solid - HOLD	1	4oz Amber	02-Dec-21	10:25	0.4	2	4905 2704 1834
11215131-120221-S-SPS-SW-B-9H2	B5964_007	Solid - HOLD	1	4oz Amber	02-Dec-21	10:30	0.4	2	4905 2704 1834
11215131-120221-S-SPS-DUP2	B5964_008	Solid	1	4oz Amber	02-Dec-21	n/a	0.4	2	4905 2704 1834

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* TB 12/3/2021

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B59964 1/2

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remarks
REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV
SPECIAL DELIVERABLES:
☐ DoD ☒ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

PRESERVATIVE: None
ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS
11215131-120221-S-SPS-NE-S-11	12/1/21	1330	C	S	4 oz	X					RUSH
11215131-120221-S-SPS-NE-O-8	↓	1355	↓	↓	4 oz	X					NE-O is overburden, not zero *
11215131-120221-S-SPS-NE-O-9	↓	1425	↓	↓	4 oz	X					" " *
11215131-120221-S-SPS-NE-B-2	↓	1430	↓	↓	4 oz	X					*
11215131-120221-S-SPS-SW-S-17	12/2/21	830	↓	↓	4 oz	X					RUSH
11215131-120221-S-SPS-SW-S-18	↓	855	↓	↓	4 oz	X					RUSH
11215131-120221-S-SPS-SW-S-19	↓	920	↓	↓	4 oz	X					RUSH
~~11215131-120221-S-SPS-SW-O-7~~	↓	~~1015~~	↓	↓	~~4 oz~~						error
11215131-120221-S-SPS-SW-O-7	↓	1015	↓	↓	4 oz	X					SW-O is overburden, not zero *
11215131-120221-S-SPS-SW-B-9	↓	1020	↓	↓	4 oz	X	X	X			MS/MSD *

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE:	TIME:
Stephen Sollar	12/2/21	1345	Eddie Castro	Ashley Owens	12/3/21	10:47
RELINQUISHED BY (2): Eddie Castro	DATE: 12-2-21	TIME: 1525	RECEIVED BY: [signature] 12/2/21 1525	COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT		
				CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT		
RELINQUISHED BY (3): [signature]	DATE: 12/2/21	TIME: 1525	RECEIVED BY:	CARRIER: FedEx	TEMP: °C 0.4°	
				TRACKING #: 4905 2704 1834		

*=samples in this project.

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Member of the SGS Group (SGS SA)

SGS

CHAIN OF CUSTODY

B59964 2/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS
11215131-120221-S-SPS-SW-B-9111	12/2/21	1025			4 oz	X					HOLD *
~~[illegible]~~					4 oz						error
11215131-120221-S-SPS-SW-B-9112		1030			4 oz	X					HOLD *
11215131-120221-S-SPS-DUP2		—			4 oz	X			X		*
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE:	TIME:
Stephen Sellers	12/2/21	1345	Eddie Custer	Ashley Orcano	12/3/21	10:47
RELINQUISHED BY (2): Eddie Custer	DATE: 12-2-21	TIME: 1525	RECEIVED BY: [signature] 12/2/21 1525	COOLER SEAL: ☑ INTACT ☐ BROKEN ☐ ABSENT		
				CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☑ ABSENT		
RELINQUISHED BY (3): [signature]	DATE: 12/2/21	TIME: 1525	RECEIVED BY:	CARRIER: FedEx	TEMP: °C 0.4°	
				TRACKING #: 4905 2704 1834		

*=samples in this project.

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1/1

B5964

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 02DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903 REF:
INV:
PO: DEPT:

12/3/2021
10:47
0.4°

S65C3/E934/05A2

FedEx Express

E

J191219082001uv

2 of 2

MPS# 0263 4905 2704 1834
Mstr# 4905 2704 1823 0201

FRI - 03 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US **RDU**

Part # 158146-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5964

Initiation Date: 03-Dec-21

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR

10 g DWE extraction

Sample 006 & 007 on HOLD

Sample 005 is MS/MSD

NO OPRD required with MS/MSD Sel

TB 12/3/21

Read and understood, initial and date: Prep Lab: KE 12/10/21 JRH 12/13/21 RAS 12/15/21 HRMS Lab:

Reporting Instructions

M1613B
Full Report

Sample 005 MS/MSD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: tburkamper Date: 03-Dec-2021

SGS

Methods: PCB PAH PCDD/F WHO-2 QUANTICS USV DoD PCDD/F PEST Extraction Type: SDS CLL TALEX Carbon SPE Solid Final Volume: 20 mL

Batch# 18721 Split: ~~1/2~~ ~~1/4~~ Extract Initial/Date: JRH 12/13/21 Clean-up Initial/Date: ~~BAB~~ 12/15/21 Transfer Init/Date: ~~BAB~~ 12/15/21

Lab Sample ID	Extraction Position / Solvent: TOL	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5964_18721_001	13	12.96				loosely packed dirt, brown
B5964_18721_002	14	12.16				clay-like, sticky
B5964_18721_003	15	15.10				clay-like, sticky, fuel smell
B5964_18721_004	16	12.36				clay-like, clumpy
B5964_18721_005	17	13.19				clay-like, sticky, fuel smell
B5964_18721_005MS	18	13.27		TB 12/17/21		see COS
B5964_18721_005MSD	19	13.51				see COS
B5964_18721_008	20	12.60				clay-like, clumpy
MB1_18721	11	10.00				Sodium Sulfate
OPR1_18721	12	10.00				Sodium Sulfate

~~BAB~~ 12/15/21

Supply IDs

Toluene	STL14-20
MeCHL	STL14-2
Florisil	SPLS-70
Hexane	STL14-19
Silica	SPLS-28D
S Nitrate	N/A
Base Silica	SPLS-67
HydroMatrix	N/A
Tetradecane	SPLS-28B
H_2SO_4	N/A
A Silica	SPLS-65
Sodium Sulfate	SPLS-28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	TB 12/17/21
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1430 Stop: 0900
HEX	Start: Stop:
DCM	Start: Stop:

TB 12/17/21

SGS

Methods: PCB PCDD/F QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

Solid

Batch# 18721

Inter-Department Communication Sheet

TB 12/17/21

SGS

Wt. Volume Results

Batch #: 18721

Comments:

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5964_001	0.8	4.26	3.54	79.19%	79.19%			12.63	12.96	10.26
B5964_002	0.81	4.28	3.34	72.91%	72.91%			13.72	14.16	10.32
B5964_003	0.8	3.84	2.87	68.09%	68.09%			14.69	15.1	10.28
B5964_004	0.79	4.58	3.97	83.91%	83.91%			11.92	12.36	10.37
B5964_005	0.79	3.92	3.18	76.36%	76.36%			13.1	13.19	10.07
B5964_005MS	0.79	3.92	3.18	76.36%	76.36%			13.1	13.27	10.13
B5964_005MSD	0.79	3.92	3.18	76.36%	76.36%			13.1	13.51	10.32
B5964_008	0.8	4.27	3.6	80.69%	80.69%			12.39	12.6	10.17

TB
12/17/21

% Solid Determination WorkSheet

SGS

Batch: 18721

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5964_18721_001	0.80	4.26	3.59	
B5964_18721_002	0.81	4.28	3.34	
B5964_18721_003	0.80	3.84	2.87	
B5964_18721_004	0.79	4.58	3.97	
B5964_18721_005	0.79	3.92	3.15	
B5964_18721_005MS	—	—	—	
B5964_18721_005MSD	—	—	—	
B5964_18721_008	0.80	4.27	3.60	
				4 B 12/17/21
Date/Initials: 12/10/21 KE				

12/15/21

SGS

Methods: PCB / PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Solid

Batch # 18721

Spiker Initials/Date:	JRH 12/13/21	JRH 12/13/21	JRH 12/13/21	RBB 12/15/21	RBB 12/15/21		
	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
Lab Sample ID	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5964_18721_001	—	—	KE	JRH	KE		
B5964_18721_002	—	—	KE	JRH	KE		
B5964_18721_003	—	—	KE	JRH	KE		
B5964_18721_004	—	—	KE	JRH	KE		
B5964_18721_005	—	—	KE	JRH	KE		
B5964_18721_005MS	KE	KE	KE	JRH	KE		
B5964_18721_005MSD	KE	KE	KE	JRH	KE		
B5964_18721_008	—	—	KE	JRH	KE		
MB1_18721	—	—	KE	JRH	KE		
OPR1_18721	KE	KE	KE	JRH	KE		

RBB 12/15/21

Standard Information							
Pipette ID							
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
SIL #	24-15-4	25-187-2	26-1-7	25·338·1	25·309·1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/28	6/20/20	8/2028	11/16/22	10/8/22		

RBB 12/15/21

REVIEWED
Tamara Burkamper , 12/17/2021, 2:

REVISED
Tamara Burkamper , 2/11/2022, 9:49:22 AM

SGS Environmental Services — Run Log **Project: B5964_18721_DF**

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
11	211216R12	3	CS3_211216_DF_RB ✓	1.00	SIL 25-347-1	PSW	149-837	16-Dec-2021	19:42:14
12	211216R13	54	OPR1_18721_DF	1.00	0_18721_OPR001	PSW	621-385	16-Dec-2021	20:28:53
13	211216R14	2	SBS_211216_DF_RB	1.00	SIL 20-61-1	PSW	376-236	16-Dec-2021	21:16:19
14	211216R15	53	MB1_18721_DF_SDS	10.00	Method Blank	PSW	727-669	16-Dec-2021	22:03:53
15	211216R16	55	B5964_18721_DF_001	10.26	11215131-120121-S-SPS-NE-O-8	PSW	417-132	16-Dec-2021	22:51:27
16	211216R17	56	B5964_18721_DF_002	10.32	11215131-120121-S-SPS-NE-O-9	PSW	188-791	16-Dec-2021	23:39:01
17	211216R18	57	B5964_18721_DF_003	10.28	11215131-120121-S-SPS-NE-B-2	PSW	502-032	17-Dec-2021	00:26:28
18	211216R19	58	B5964_18721_DF_004	10.37	11215131-120221-S-SPS-SW-O-7	PSW	695-857	17-Dec-2021	01:14:03
19	211216R20	59	B5964_18721_DF_005	10.07	11215131-120221-S-SPS-SW-B-9	PSW	487-472	17-Dec-2021	02:01:37
20	211216R21	60	B5964_18721_DF_005MS	10.13	11215131-120221-S-SPS-SW-B-9-MS	PSW	811-650	17-Dec-2021	02:49:11
21	211216R22	61	B5964_18721_DF_005MSD	10.32	11215131-120221-S-SPS-SW-B-9-MSD	PSW	~~885-948~~ 824-049	17-Dec-2021	03:36:39
23	211216R23	62	B5964_18721_DF_008 ✓	10.17	11215131-120221-S-SPS-DUP2	PSW	692-999	17-Dec-2021	04:24:11

REVIEWED
paul_walton , 12/17/2021, 10:10:21 AM

Lab ID: MB1_18721_DF_SDS | **Acq'd:** 16 Dec 2021 22:03 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5964_18721 | **UTP:** 17-Dec-2021 09:57:37 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 727-669-RDQ

Datafile: 211216R15 | **Report:** 17 Dec 2021 09:58 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	5851.321	0.306
12378-PeCDD	NotFnd		1.0005	-		-	-	-	1.06	-	4845.48	0.317
123478-HxCDD	NotFnd		1.0003	-		-	-	-	1.06	-	4000.683	0.318
123678-HxCDD	NotFnd		1.0033	-		-	-	-	1.08	-	4000.683	0.284
123789-HxCDD	NotFnd		1.0110	-		-	-	-	1.02	-	4000.683	0.279
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	0.97	-	4198.095	0.314
OCDD	NotFnd		1.0003	-		-	-	-	1.07	-	6424.348	1.2
2378-TCDF	NotFnd		1.0006	-		-	-	-	0.96	-	4257.042	0.258
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	4055.469	0.201
23478-PeCDF	NotFnd		1.0006	-		-	-	-	0.94	-	4055.469	0.23
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	3620.175	0.189
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.13	-	3620.175	0.173
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	3620.175	0.217
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	3620.175	0.259
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.36	-	3982.468	0.164
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.30	-	3982.468	0.329
OCDF	NotFnd		1.0002	-		-	-	-	1.03	-	5200.675	1.03

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.21	1.0237	1.0239	+0.3	3.11E+07	0.77	Y	1.03	86.9
ES 12378-PeCDD	33.56	1.2158	1.2183	+5.0	2.82E+07	1.57	Y	1.03	78.7
ES 123478-HxCDD	37.44	0.9920	0.9916	-0.9	2.15E+07	1.24	Y	0.99	89.9
ES 123678-HxCDD	37.56	0.9949	0.9948	-0.2	2.32E+07	1.31	Y	0.97	99.2
ES 123789-HxCDD	37.86	1.0026	1.0029	+0.7	2.65E+07	1.30	Y	1.12	98.3
ES 1234678-HpCDD	40.49	1.0713	1.0725	+2.9	1.94E+07	1.08	Y	0.99	81.7
ES OCDD	43.04	1.1385	1.1399	+3.6	1.78E+07	0.95	Y	0.78	47.6
ES 2378-TCDF	27.35	1.0519	1.0526	+1.1	4.04E+07	0.82	Y	1.08	75.7
ES 12378-PeCDF	32.12	1.2331	1.2362	+6.0	4.27E+07	1.56	Y	0.93	92.8
ES 23478-PeCDF	33.23	1.2754	1.2790	+7.2	3.71E+07	1.52	Y	0.92	81.6
ES 123478-HxCDF	36.45	0.9656	0.9656	0	2.61E+07	0.50	Y	1.14	95
ES 123678-HxCDF	36.59	0.9693	0.9693	0	3.53E+07	0.52	Y	1.30	113
ES 234678-HxCDF	37.26	0.9869	0.9869	0	2.69E+07	0.53	Y	1.20	93.3
ES 123789-HxCDF	38.22	1.0121	1.0124	+0.7	2.20E+07	0.50	Y	1.14	80.7
ES 1234678-HpCDF	39.60	1.0478	1.0488	+2.4	2.49E+07	0.45	Y	0.95	109
ES 1234789-HpCDF	40.94	1.0832	1.0843	+2.7	1.39E+07	0.44	Y	0.85	68.5
ES OCDF	43.22	1.1434	1.1447	+3.4	1.85E+07	0.95	Y	0.93	41.6

Lab ID: MB1_18721_DF_SDS | Acq'd: 16 Dec 2021 22:03 PSW | Wt/Vol: 10.00 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5964_18721 | UTP: 17-Dec-2021 09:57:37 PSW | J-level: 0.5 pg/g | Split: 1 | Checkcode: 727-669-RDQ

Datafile: 211216R15 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.55		-	-	-	3.47E+07	0.77	Y	-	-
JS 1234-TCDF	25.98		-	-	-	4.93E+07	0.76	Y	-	-
JS 123467-HxCDD	37.75		-	-	-	1.20E+07	1.29	Y	-	-
CS 37Cl-2378-TCDD	28.23		1.0245	1.0247	+0.3	1.40E+07	n/a	-	1.31	77.3
CS 12347-PeCDD	33.06		1.1978	1.2001	+4.6	2.64E+07	1.59	Y	0.89	85.2
CS 12346-PeCDF	31.59		1.2130	1.2159	+5.5	4.09E+07	1.55	Y	0.87	95.6
CS 123469-HxCDF	36.91		0.9775	0.9775	0	2.82E+07	0.52	Y	1.09	108
CS 1234689-HpCDF	39.99		1.0580	1.0592	+2.9	2.03E+07	0.44	Y	0.86	98.1
~~SS 37Cl-2378-TCDD~~	~~28.23~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~1.40E+07~~	~~n/a~~		~~1.26~~	~~89.4~~
~~SS 12347-PeCDD~~	~~33.06~~		~~1.1978~~	~~1.2001~~	~~+4.6~~	~~2.64E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~100~~
~~SS 12346-PeCDF~~	~~31.59~~		~~1.2130~~	~~1.2159~~	~~+5.5~~	~~4.09E+07~~	~~1.55~~	~~Y~~	~~0.93~~	~~103~~
~~SS 123469-HxCDF~~	~~36.91~~		~~0.9775~~	~~0.9775~~	~~0~~	~~2.82E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~95.1~~
~~SS 1234689-HpCDF~~	~~39.99~~		~~1.0580~~	~~1.0592~~	~~+2.9~~	~~2.03E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~89.5~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18721_DF_SDS | Acq'd: 16 Dec 2021 22:03 PSW | Wt/Vol: 10.00 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5964_18721 | UTP: 17-Dec-2021 09:57:37 PSW | J-level: 0.5 pg/g | Split: 1 | Checkcode: 727-669-RDQ

Datafile: 211216R15 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		5851.321	0.306
1379-TCDD	NotFnd		0.8851						1.34		5851.321	0.306
1369-TCDD	NotFnd		0.9002						1.34		5851.321	0.306
1469-TCDD	NotFnd		0.9275						1.34		5851.321	0.306
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		5851.321	0.306
1378-TCDD	NotFnd		0.9427						1.34		5851.321	0.306
1268-TCDD	NotFnd		0.9498						1.34		5851.321	0.306
1478-TCDD	NotFnd		0.9584						1.34		5851.321	0.306
1279-TCDD	NotFnd		0.9644						1.34		5851.321	0.306
1234/1269-TCDD	NotFnd		0.9766						1.34		5851.321	0.306
1236-TCDD	NotFnd		0.9813						1.34		5851.321	0.306
1237/1238-TCDD	NotFnd		0.9906						1.34		5851.321	0.306
1239-TCDD	NotFnd		0.9952						1.34		5851.321	0.306
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**5851.321**	**0.306**
1278-TCDD	NotFnd		1.0122						1.34		5851.321	0.306
1267-TCDD	NotFnd		1.0168						1.34		5851.321	0.306
1289-TCDD	NotFnd		1.0349						1.34		5851.321	0.306
12479/12468-PeCDD	NotFnd		0.9267						1.06		4845.48	0.317
12469-PeCDD	NotFnd		0.9425						1.06		4845.48	0.317
12368-PeCDD	NotFnd		0.9588						1.06		4845.48	0.317
12478-PeCDD	NotFnd		0.9643						1.06		4845.48	0.317
12379-PeCDD	NotFnd		0.9673						1.06		4845.48	0.317
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		4845.48	0.317
12346/12347-PeCDD	NotFnd		0.9859						1.06		4845.48	0.317
12378-PeCDD	NotFnd		**1.0005**						**1.06**		**4845.48**	**0.317**
12367-PeCDD	NotFnd		1.0032						1.06		4845.48	0.317
12389-PeCDD	NotFnd		1.0135						1.06		4845.48	0.317
124679/124689-HxCDD	NotFnd		0.9544						1.05		4000.683	0.292
123468-HxCDD	NotFnd		0.9716						1.05		4000.683	0.292
123679/123689-HxCDD	NotFnd		0.9793						1.05		4000.683	0.292
123469-HxCDD	NotFnd		0.9829						1.05		4000.683	0.292
123478-HxCDD	NotFnd		**1.0003**						1.06		**4000.683**	**0.318**
123678-HxCDD	NotFnd		**1.0033**						1.08		**4000.683**	**0.284**
123467-HxCDD	NotFnd		1.0084						1.05		4000.683	0.292
123789-HxCDD	NotFnd		**1.0110**						1.02		**4000.683**	**0.279**

Lab ID: MB1_18721_DF_SDS | Acq'd: 16 Dec 2021 22:03 PSW | Wt/Vol: 10.00 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5964_18721 | UTP: 17-Dec-2021 09:57:37 PSW | J-level: 0.5 pg/g | Split: 1 | Checkcode: 727-669-RDQ

Datafile: 211216R15 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9843						0.97		4198.095	0.314
1234678-HpCDD	**NotFnd**		**1.0003**						**0.97**		**4198.095**	**0.314**
OCDD	**NotFnd**		**1.0003**						**1.07**		**6424.348**	**1.2**
OCDD-a	NotFnd		1.0001						0.07		8709.238	26.3
1368-TCDF	NotFnd		0.8230						0.96		4257.042	0.258
1468-TCDF	NotFnd		0.8443						0.96		4257.042	0.258
2468-TCDF	NotFnd		0.8672						0.96		4257.042	0.258
1346/1246-TCDF	NotFnd		0.8802						0.96		4257.042	0.258
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		4257.042	0.258
1348-TCDF	NotFnd		0.8952						0.96		4257.042	0.258
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		4257.042	0.258
1268-TCDF	NotFnd		0.9136						0.96		4257.042	0.258
1467-TCDF	NotFnd		0.9185						0.96		4257.042	0.258
1478-TCDF	NotFnd		0.9247						0.96		4257.042	0.258
1369/1237-TCDF	NotFnd		0.9381						0.96		4257.042	0.258
2467-TCDF	NotFnd		0.9427						0.96		4257.042	0.258
2368-TCDF	NotFnd		0.9484						0.96		4257.042	0.258
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		4257.042	0.258
1278-TCDF	NotFnd		0.9682						0.96		4257.042	0.258
1349-TCDF	NotFnd		0.9725						0.96		4257.042	0.258
1267-TCDF	NotFnd		0.9782						0.96		4257.042	0.258
2346/1249-TCDF	NotFnd		0.9846						0.96		4257.042	0.258
2347/1279-TCDF	NotFnd		0.9926						0.96		4257.042	0.258
2348-TCDF	NotFnd		0.9966						0.96		4257.042	0.258
2378-TCDF	**NotFnd**		**1.0006**						**0.96**		**4257.042**	**0.258**
2367/3467-TCDF	NotFnd		1.0139						0.96		4257.042	0.258
1269-TCDF	NotFnd		1.0226						0.96		4257.042	0.258
1239-TCDF	NotFnd		1.0322						0.96		4257.042	0.258
1289-TCDF	NotFnd		1.0729						0.96		4257.042	0.258
13468/12468-PeCDF	NotFnd		0.9135						0.94		6165.96	0.325
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		4055.469	0.214
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		4055.469	0.214
14678-PeCDF	NotFnd		0.9693						0.94		4055.469	0.214
13479-PeCDF	NotFnd		0.9723						0.94		4055.469	0.214
13469/12479-PeCDF	NotFnd		0.9799						0.94		4055.469	0.214
12346-PeCDF	NotFnd		0.9842						0.94		4055.469	0.214

Lab ID: MB1_18721_DF_SDS | Acq'd: 16 Dec 2021 22:03 PSW | Wt/Vol: 10.00 g | ICAL: MM3_DF_10272021_27JUL2021

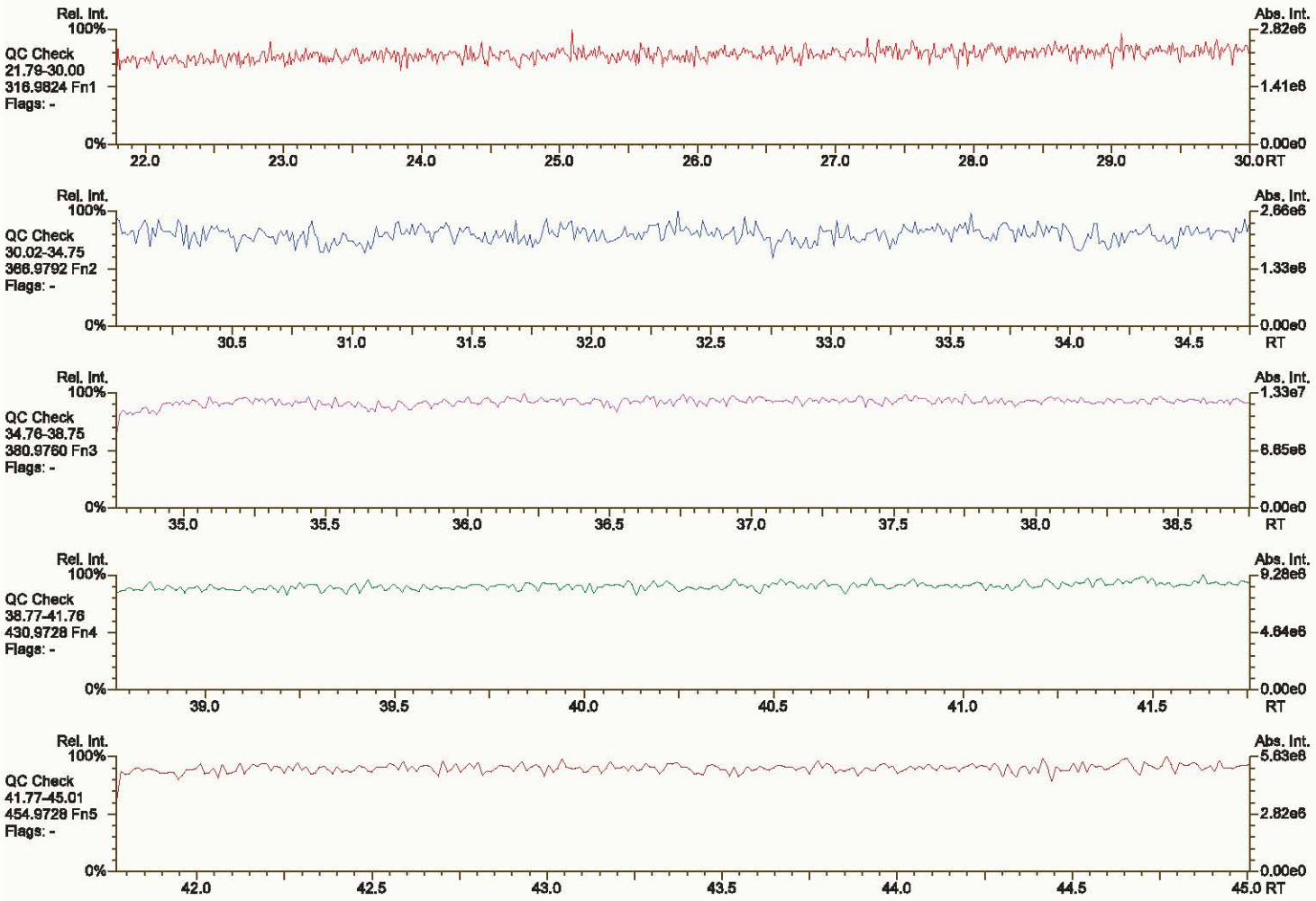
Client ID: Method Blank B5964_18721 | UTP: 17-Dec-2021 09:57:37 PSW | J-level: 0.5 pg/g | Split: 1 | Checkcode: 727-669-RDQ

Datafile: 211216R15 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		4055.469	0.214
12347-PeCDF	NotFnd		0.9893						0.94		4055.469	0.214
12348-PeCDF	NotFnd		0.9941						0.94		4055.469	0.214
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**4055.469**	**0.201**
12678/12367-PeCDF	NotFnd		1.0090						0.94		4055.469	0.214
12379-PeCDF	NotFnd		1.0143						0.94		4055.469	0.214
12679-PeCDF	NotFnd		0.9929						0.94		4055.469	0.214
23467/12369-PeCDF	NotFnd		0.9966						0.94		4055.469	0.214
23478-PeCDF	**NotFnd**		**1.0006**						**0.94**		**4055.469**	**0.23**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		4055.469	0.214
12349-PeCDF	NotFnd		1.0102						0.94		4055.469	0.214
12389-PeCDF	NotFnd		1.0325						0.94		4055.469	0.214
123468-HxCDF	NotFnd		0.9628						1.16		3620.175	0.204
124678/134678-HxCDF	NotFnd		0.9683						1.16		3620.175	0.204
134679-HxCDF	NotFnd		0.9746						1.16		3620.175	0.204
124679-HxCDF	NotFnd		0.9798						1.16		3620.175	0.204
124689-HxCDF	NotFnd		0.9859						1.16		3620.175	0.204
123467-HxCDF	NotFnd		0.9972						1.16		3620.175	0.204
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**3620.175**	**0.189**
123678-HxCDF	**NotFnd**		**1.0004**						**1.13**		**3620.175**	**0.173**
123479-HxCDF	NotFnd		1.0049						1.16		3620.175	0.204
123469-HxCDF	NotFnd		1.0088						1.16		3620.175	0.204
123679-HxCDF	NotFnd		0.9943						1.16		3620.175	0.204
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**3620.175**	**0.217**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		3620.175	0.204
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**3620.175**	**0.259**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		3620.175	0.204
1234678-HpCDF	**NotFnd**		**1.0003**						**1.36**		**3982.468**	**0.164**
1234679-HpCDF	NotFnd		1.0067						1.33		3982.468	0.223
1234689-HpCDF	NotFnd		1.0100						1.33		3982.468	0.223
1234789-HpCDF	**NotFnd**		**1.0003**						**1.30**		**3982.468**	**0.329**
OCDF	**NotFnd**		**1.0002**						**1.03**		**5200.675**	**1.03**
OCDF-a	NotFnd		1.0002						0.06		7099.804	24.2

SGS ID: MB1_18721_DF_SDS | Sample ID: Method Blank | Acq: 16-Dec-2021 22:03:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53 | User: PSW Datafile: 211216R15

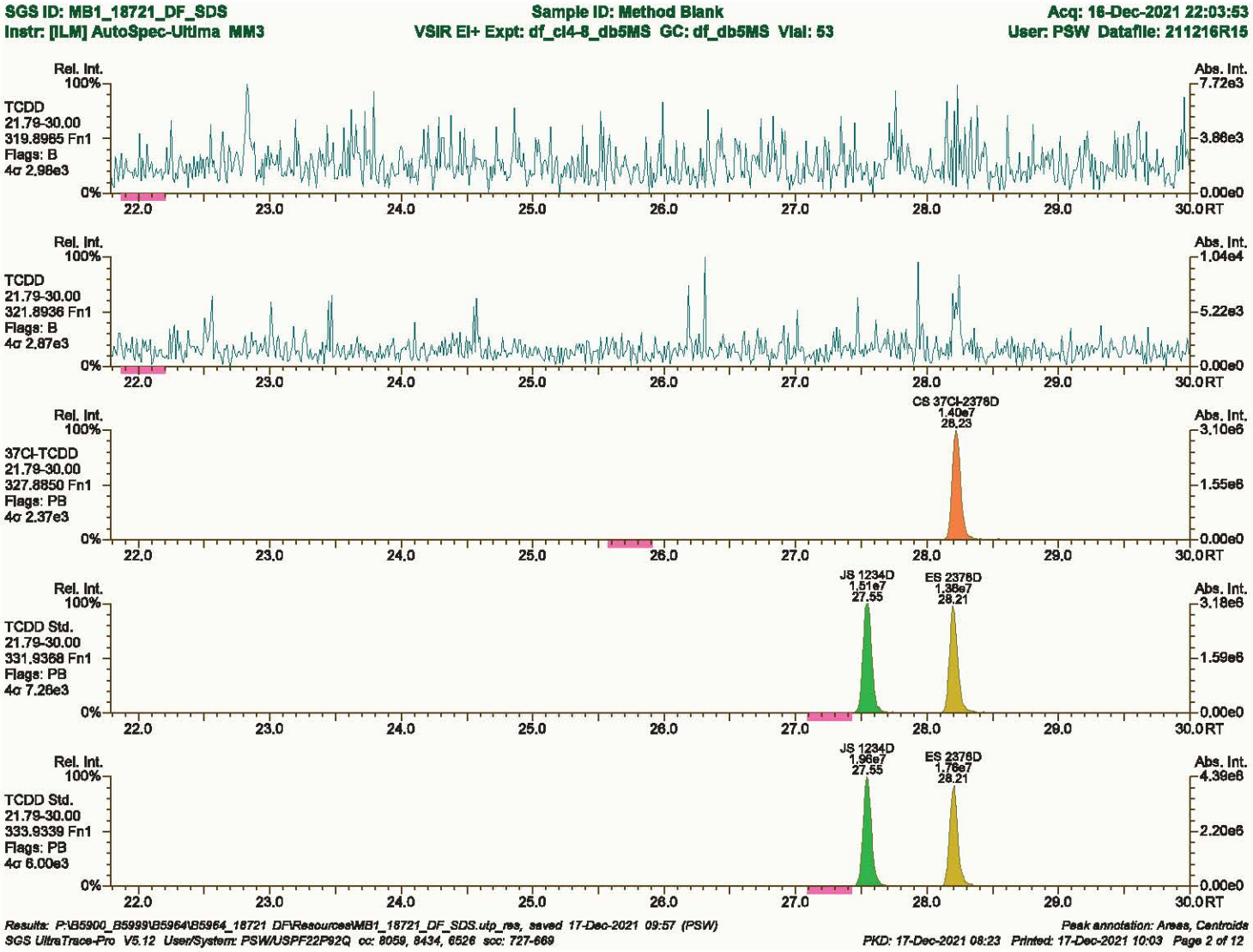


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW)

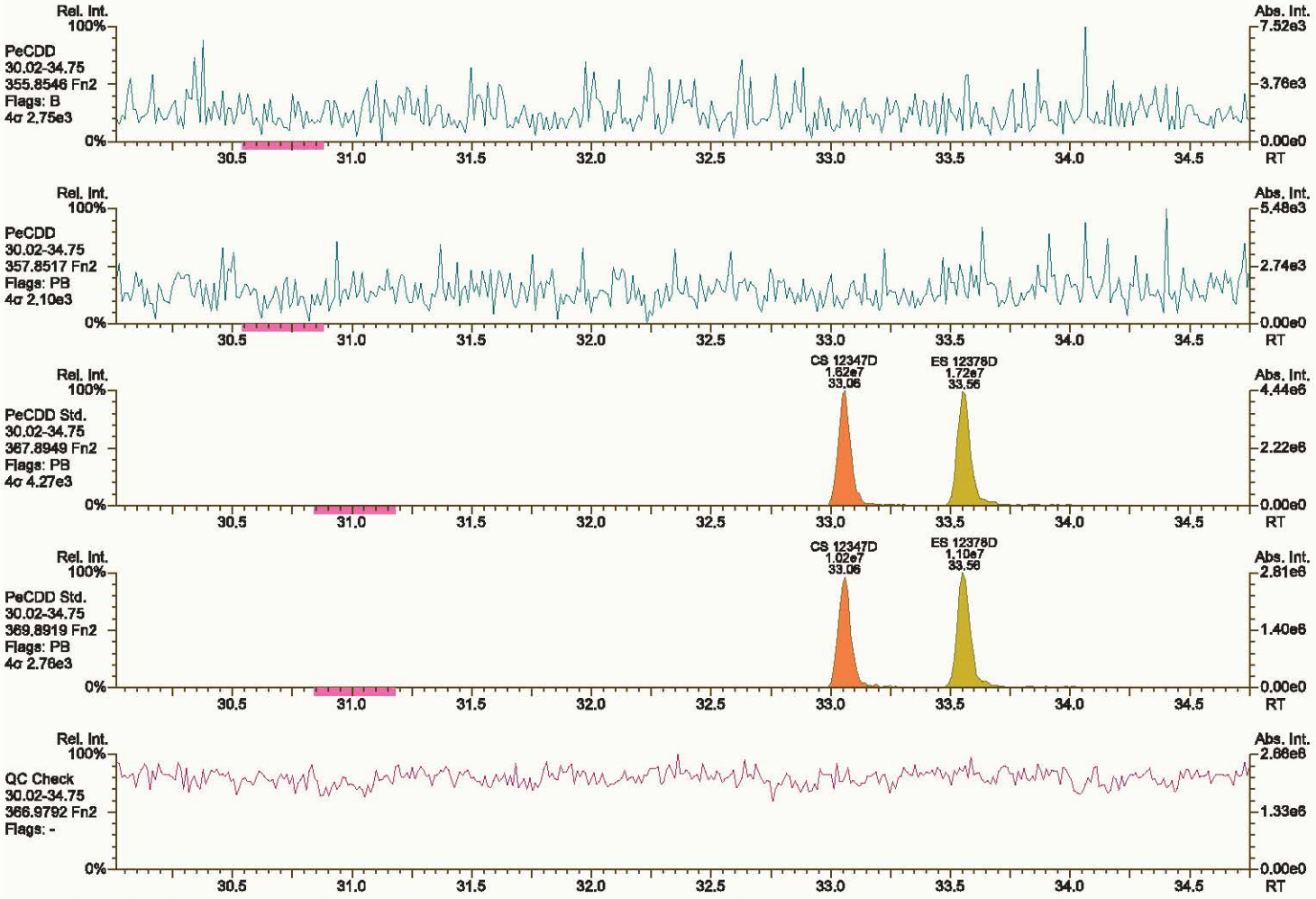
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 727-869

PKD: n/a Printed: 17-Dec-2021 10:03 Page 1 of 12


SGS ID: MB1_18721_DF_SDS
Sample ID: Method Blank
Acq: 16-Dec-2021 22:03:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53
User: PSW Datafile: 211216R15
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 2.98e3
7.72e3
3.86e3
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 2.87e3
1.04e4
5.22e3
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.37e3
CS 37Cl-2378D
1.40e7
28.23
3.10e6
1.55e6
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 7.26e3
JS 1234D
1.51e7
27.55
ES 2378D
1.35e7
28.21
3.18e6
1.59e6
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 6.00e3
JS 1234D
1.96e7
27.55
ES 2378D
1.76e7
28.21
4.39e6
2.20e6
0%
100%
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8059, 8434, 6526 scc: 727-669
PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 2 of 12

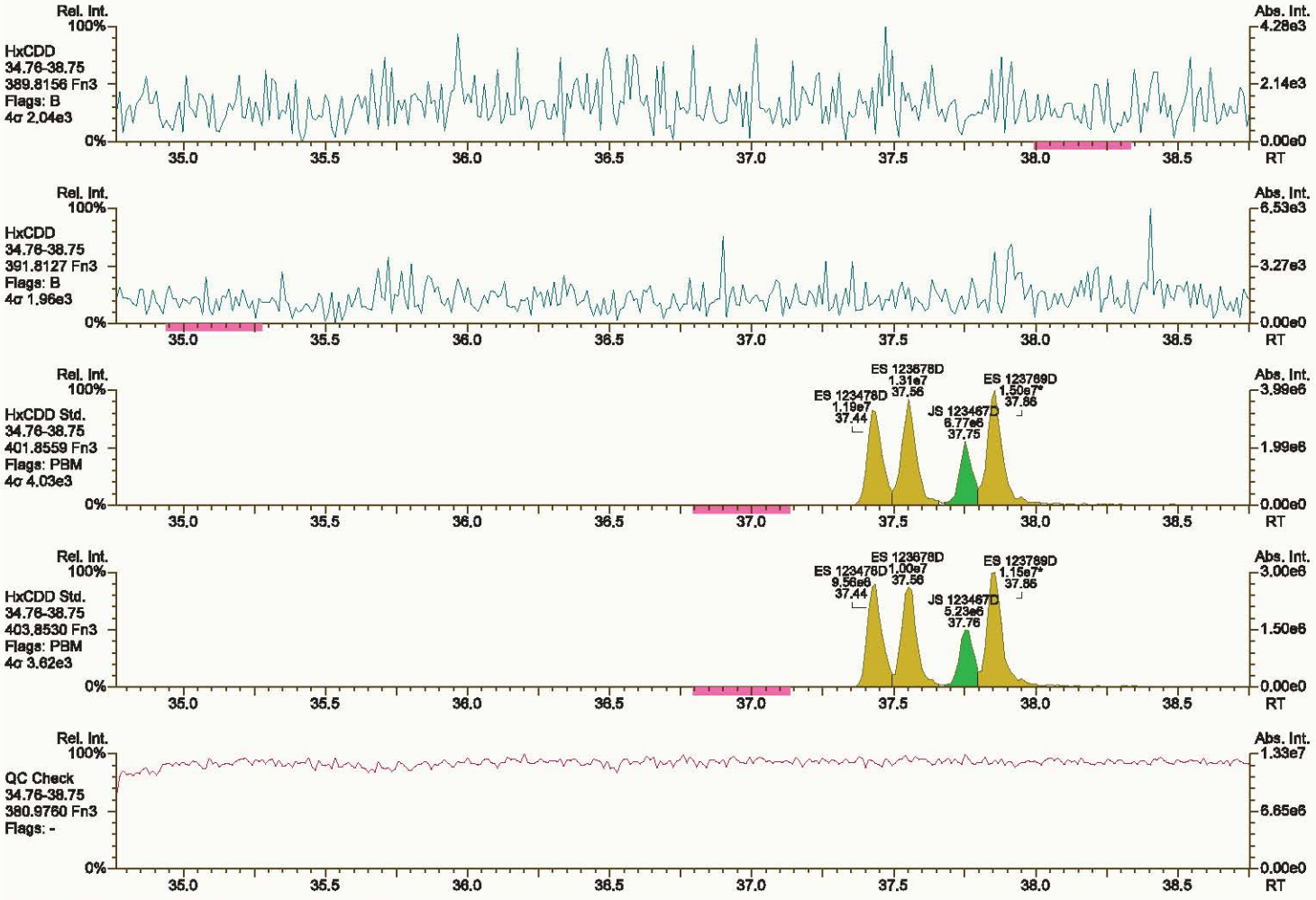
SGS ID: MB1_18721_DF_SDS | **Sample ID: Method Blank** | **Acq: 16-Dec-2021 22:03:53**
Instr: [ILM] AutoSpec-Ultima MM3 | **VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53** | **User: PSW Datafile: 211216R15**



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 8537, 7551 scc: 727-669
PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 3 of 12

SGS ID: MB1_18721_DF_SDS | Sample ID: Method Blank | Acq: 16-Dec-2021 22:03:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53 | User: PSW Datafile: 211216R15

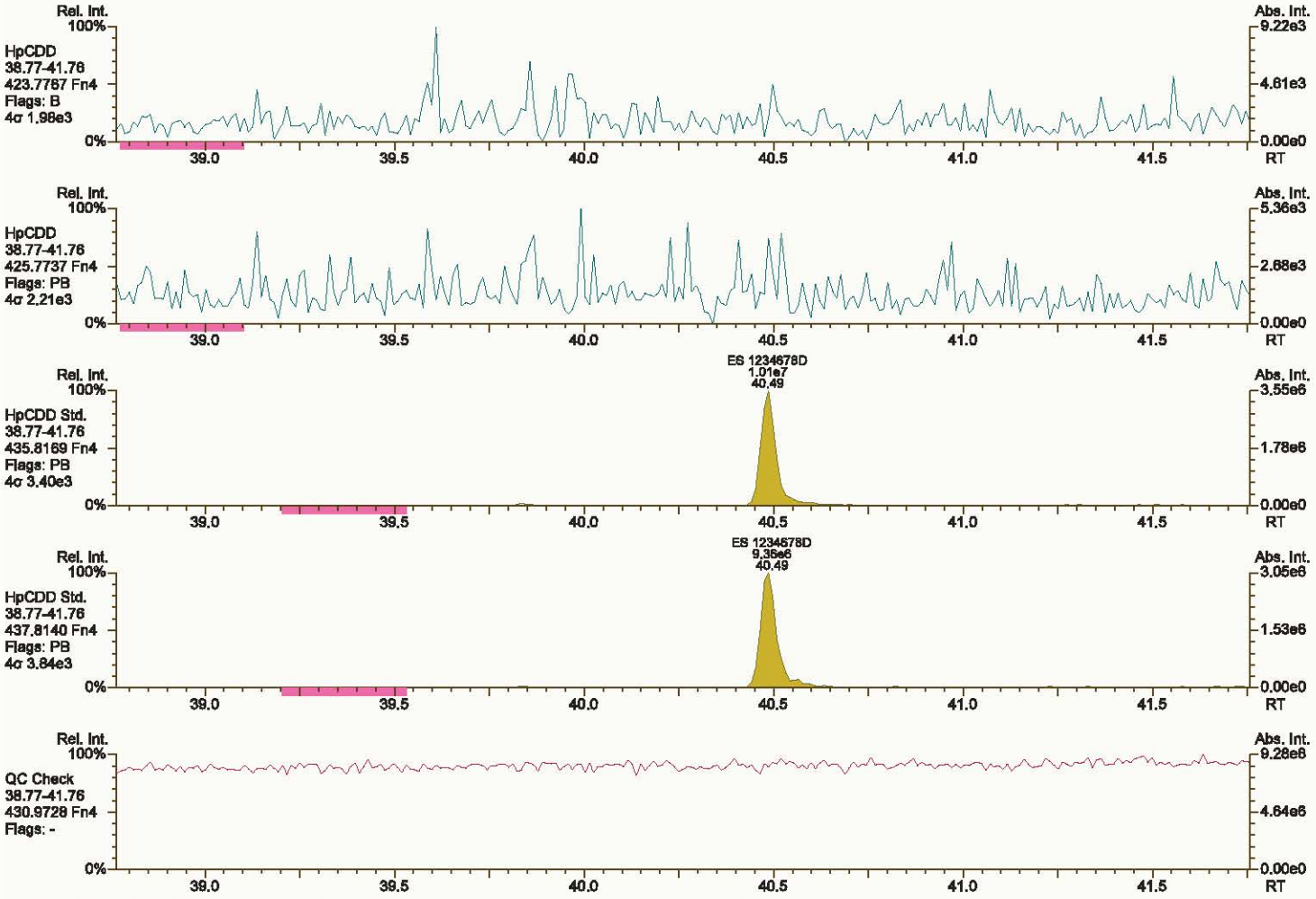


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 0829, 8609 scc: 727-669 *PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 4 of 12*

SGS ID: MB1_18721_DF_SDS | Sample ID: Method Blank | Acq: 16-Dec-2021 22:03:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53 | User: PSW Datafile: 211216R15

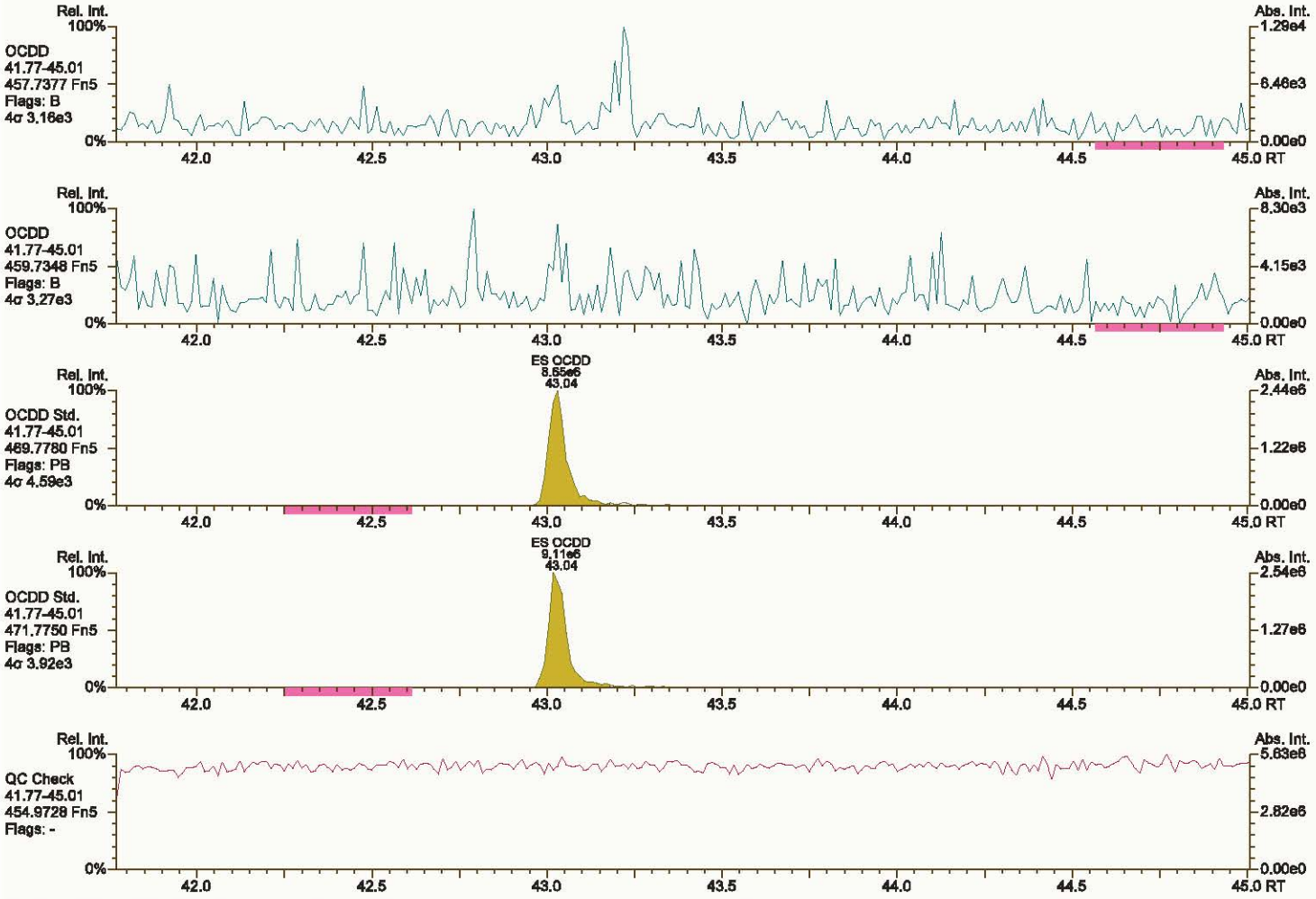


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 4033, 7920 scc: 727-669 *PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 5 of 12*

SGS ID: MB1_18721_DF_SDS | Sample ID: Method Blank | Acq: 16-Dec-2021 22:03:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53 | User: PSW Datafile: 211216R15



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW)

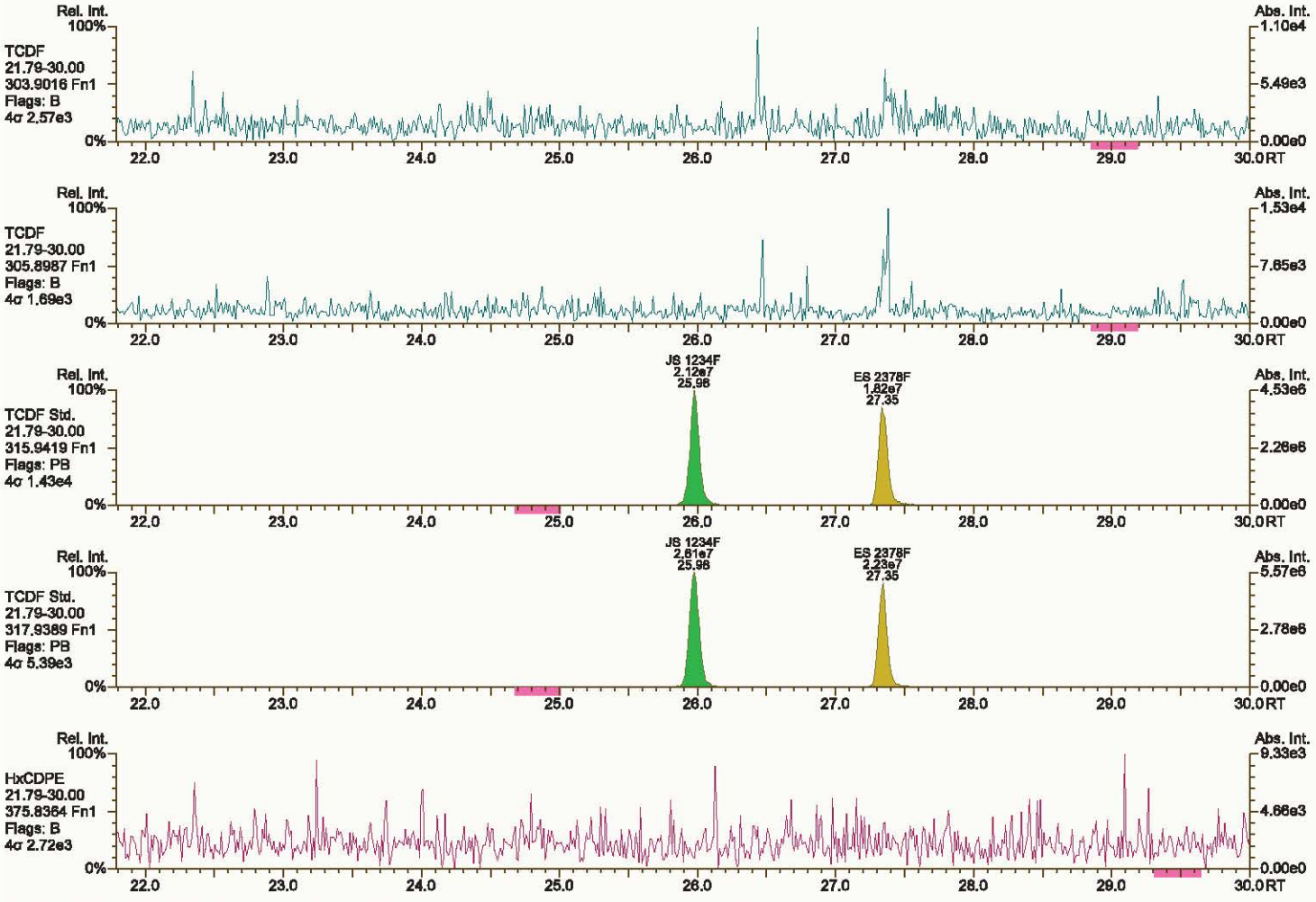
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 9805, 7966 scc: 727-669

PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 6 of 12

SGS ID: MB1_18721_DF_SDS | Sample ID: Method Blank | Acq: 16-Dec-2021 22:03:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53 | User: PSW Datafile: 211216R15



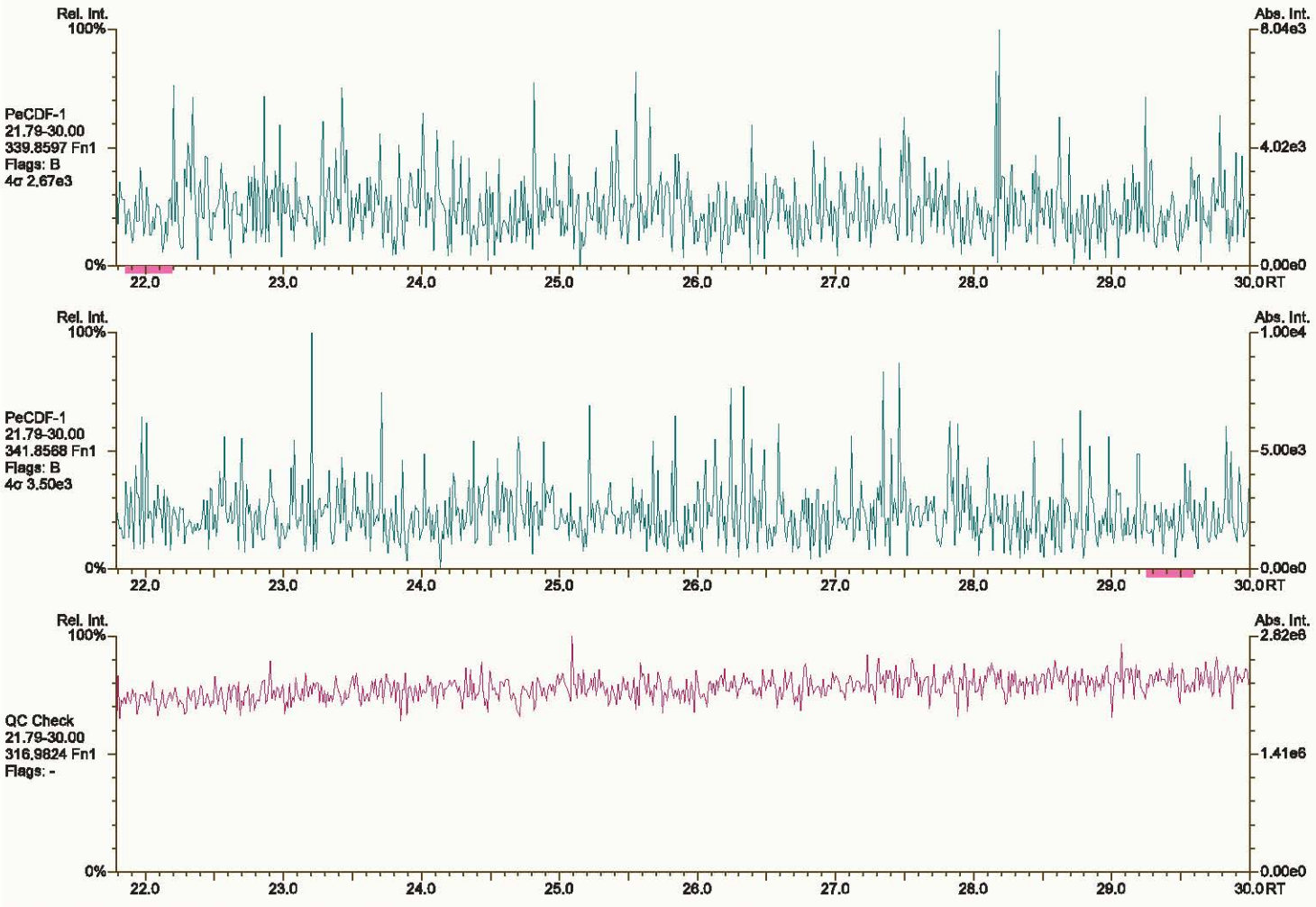
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4666, 2986, 3105 scc: 727-669 *PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 7 of 12*

SGS ID: MB1_18721_DF_SDS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53

Acq: 16-Dec-2021 22:03:53
User: PSW Datafile: 211216R15

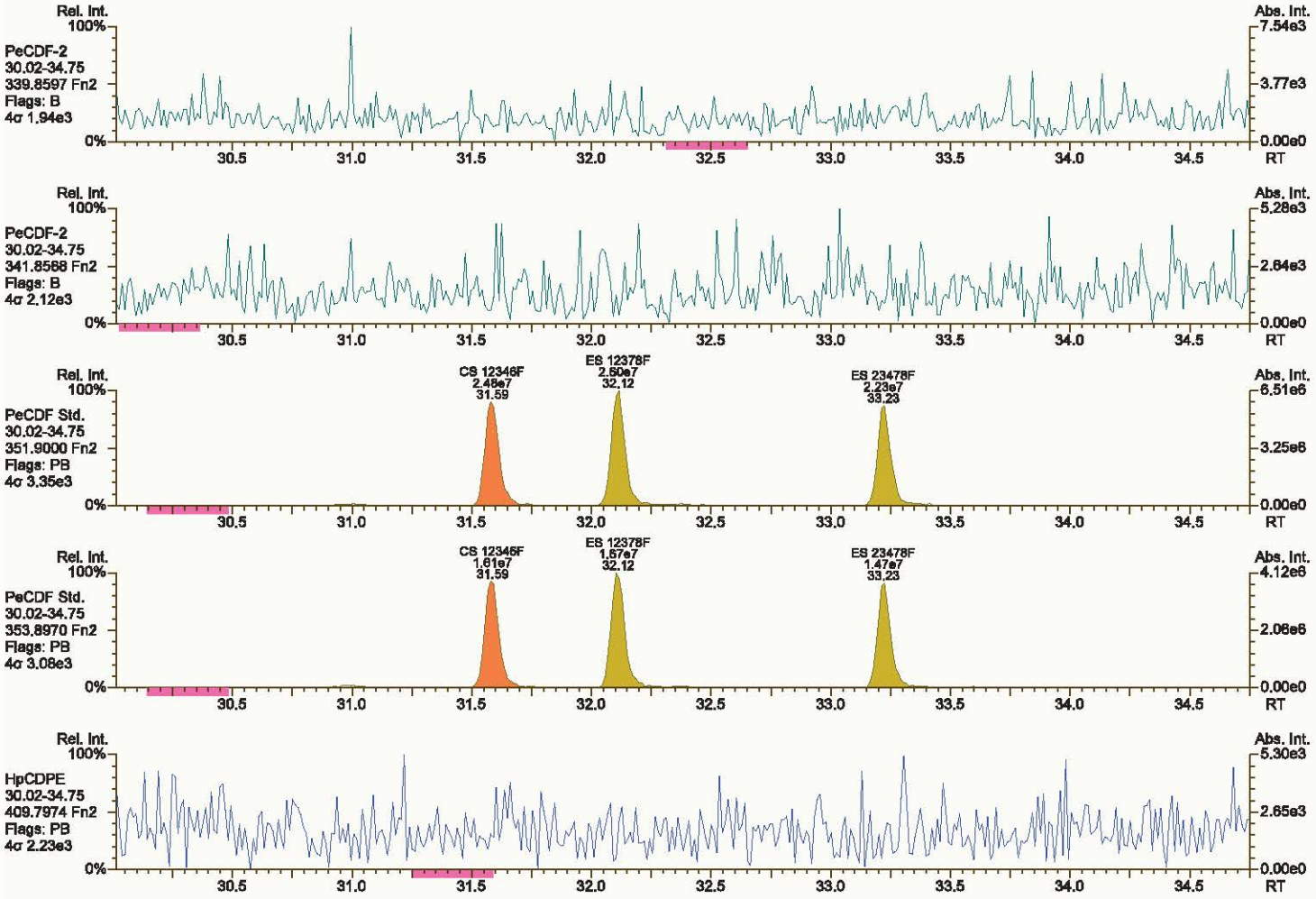


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5652 scc: 727-669
PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 8 of 12

SGS ID: MB1_18721_DF_SDS
Instr: [ILM] AutoSpec-Ultima MM3

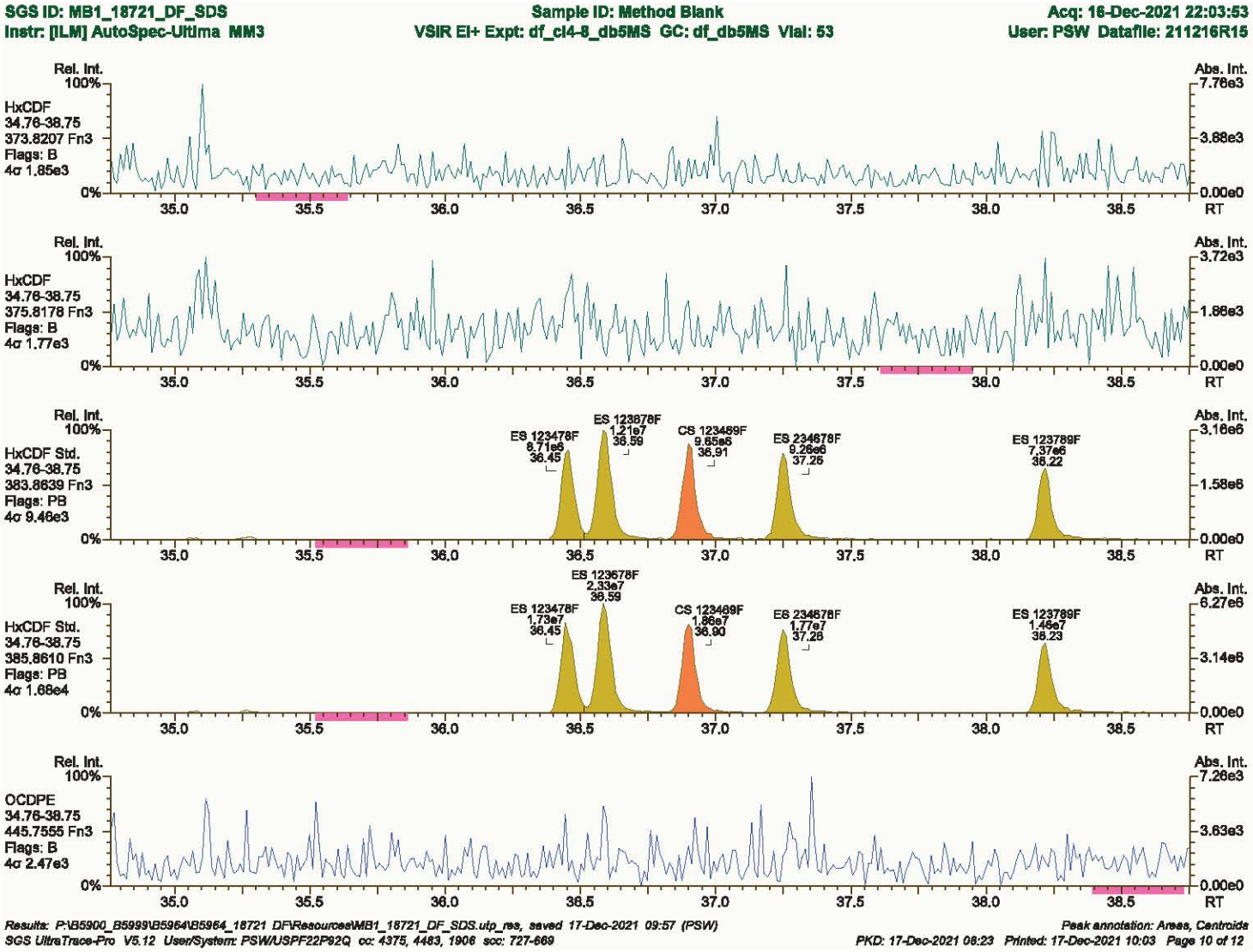
Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53

Acq: 16-Dec-2021 22:03:53
User: PSW Datafile: 211216R15



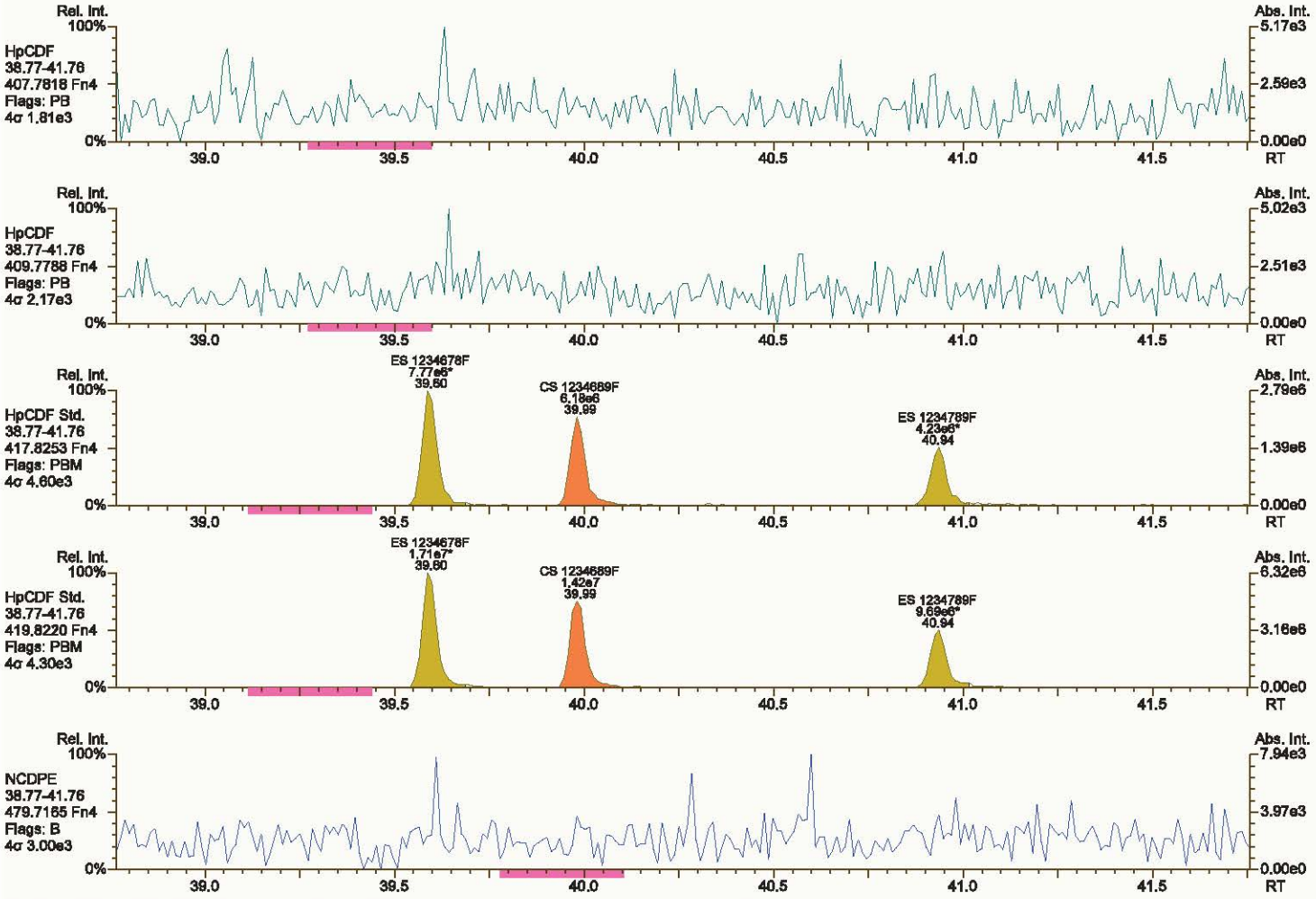
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8630, 9412, 4623 scc: 727-669
PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 9 of 12


SGS ID: MB1_18721_DF_SDS
Sample ID: Method Blank
Acq: 16-Dec-2021 22:03:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53
User: PSW Datafile: 211216R15
Rel. Int.
Abs. Int.
HxCDF
34.76-38.75
373.8207 Fn3
Flags: B
4σ 1.85e3
7.76e3
3.88e3
0.00e0
HxCDF
34.76-38.75
375.8178 Fn3
Flags: B
4σ 1.77e3
3.72e3
1.86e3
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 9.46e3
ES 123478F
6.71e6
36.45
ES 123678F
1.21e7
36.59
CS 123689F
9.65e6
36.91
ES 234678F
9.26e6
37.26
ES 123789F
7.37e6
38.22
3.16e6
1.58e6
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.68e4
ES 123478F
1.73e7
36.45
ES 123678F
2.33e7
36.59
CS 123689F
1.86e7
36.90
ES 234678F
1.77e7
37.26
ES 123789F
1.46e7
38.23
6.27e6
3.14e6
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.47e3
7.26e3
3.63e3
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

SGS ID: MB1_18721_DF_SDS | Sample ID: Method Blank | Acq: 16-Dec-2021 22:03:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53 | User: PSW Datafile: 211216R15

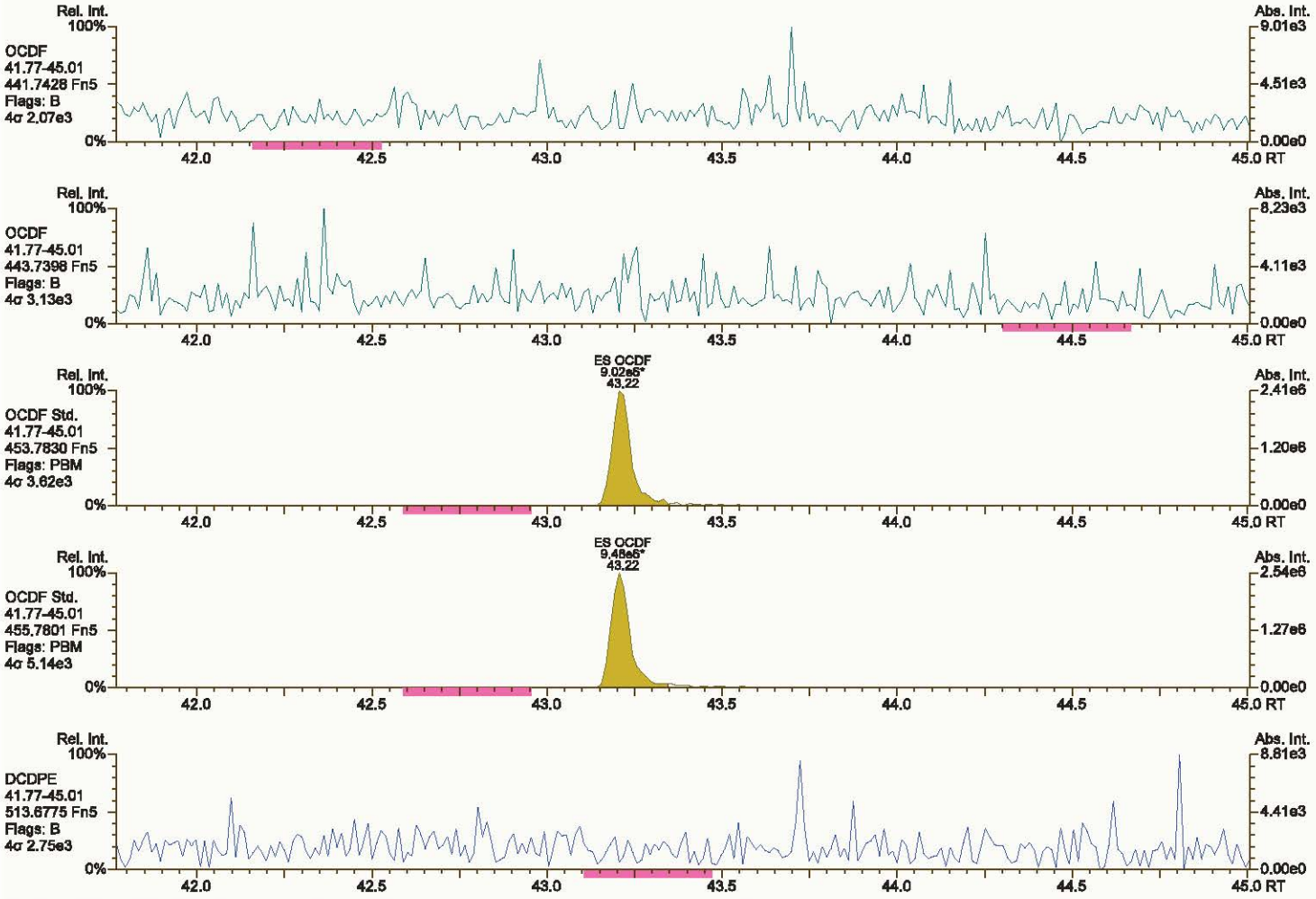


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7560, 6904, 6818 scc: 727-669 *PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 11 of 12*

SGS ID: MB1_18721_DF_SDS | Sample ID: Method Blank | Acq: 16-Dec-2021 22:03:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53 | User: PSW Datafile: 211216R15



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\MB1_18721_DF_SDS.utp_res, saved 17-Dec-2021 09:57 (PSW)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1948, 5065, 9579 scc: 727-669

PKD: 17-Dec-2021 08:23 Printed: 17-Dec-2021 10:03 Page 12 of 12

Lab ID: B6964_16721_DF_001 | Acq'd: 16 Dec 2021 22:51 PSW | Wt/Vol: 10.26 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-O-8 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.487 pg/g | Split: 1 | Checkcode: 417-132-RPL

Datafile: 211216R16 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25	J EMPC	1.0008	1.0002	-1.0	4.90E+04	1.15	N	1.34	0.277	7235.482	0.425
12378-PeCDD	33.61	J	1.0005	1.0007	+0.4	1.03E+05	1.75	Y	1.06	0.866	7099.473	0.601
123478-HxCDD	37.48	J EMPC	1.0003	1.0004	+0.2	1.60E+05	1.45	N	1.06	1.6	9879.746	0.848
123678-HxCDD	37.60		1.0033	1.0035	+0.5	6.23E+05	1.19	Y	1.08	5.81	9879.746	0.889
123789-HxCDD	37.90	EMPC	1.0110	1.0115	+1.1	3.30E+05	1.43	N	1.02	2.85	9879.746	0.828
1234678-HpCDD	40.53		1.0003	1.0003	0	3.56E+07	1.04	Y	0.97	440	5398.21	0.448
OCDD	43.07	E	1.0003	1.0002	-0.3	6.47E+08	0.89	Y	1.07	12,300	9614.686	1.47
2378-TCDF	27.40		1.0006	1.0008	+0.3	5.91E+05	0.83	Y	0.96	3.44	6329.551	0.424
12378-PeCDF	32.15	J	1.0006	1.0002	-0.8	7.24E+04	1.38	Y	0.95	0.478	5791.904	0.378
23478-PeCDF	33.28	J	1.0006	1.0008	+0.4	1.74E+05	1.78	Y	0.94	1.22	5791.904	0.392
123478-HxCDF	36.50	J EMPC	1.0004	1.0006	+0.4	2.47E+05	1.46	N	1.23	1.81	9104.451	0.587
123678-HxCDF	36.64	J EMPC	1.0004	1.0006	+0.4	1.26E+05	1.55	N	1.13	0.844	9104.451	0.549
234678-HxCDF	37.30	J	1.0005	1.0004	-0.2	2.11E+05	1.42	Y	1.15	1.58	9104.451	0.587
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	9104.451	0.657
1234678-HpCDF	39.63		1.0003	1.0003	0	4.21E+06	1.07	Y	1.36	34.5	6687.048	0.336
1234789-HpCDF	40.97	EMPC	1.0003	1.0001	-0.5	4.21E+05	0.77	N	1.30	4.12	6687.048	0.486
OCDF	43.25		1.0002	1.0003	+0.3	1.14E+07	0.91	Y	1.03	186	9525.571	1.33

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0238	+0.2	2.56E+07	0.78	Y	1.03	66.1
ES 12378-PeCDD	33.59	1.2158	1.2176	+3.6	2.19E+07	1.59	Y	1.03	56.5
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	1.84E+07	1.24	Y	0.99	73.6
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	1.93E+07	1.22	Y	0.97	78.9
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	2.22E+07	1.21	Y	1.12	78.3
ES 1234678-HpCDD	40.51	1.0713	1.0724	+2.7	1.62E+07	0.99	Y	0.99	64.9
ES OCDD	43.06	1.1385	1.1398	+3.4	1.92E+07	0.86	Y	0.78	49.2
ES 2378-TCDF	27.38	1.0519	1.0524	+0.8	3.48E+07	0.77	Y	1.08	62.6
ES 12378-PeCDF	32.14	1.2331	1.2354	+4.4	3.12E+07	1.64	Y	0.93	65.1
ES 23478-PeCDF	33.25	1.2754	1.2780	+5.2	2.95E+07	1.65	Y	0.92	62.2
ES 123478-HxCDF	36.48	0.9656	0.9655	-0.2	2.16E+07	0.57	Y	1.14	75
ES 123678-HxCDF	36.62	0.9693	0.9692	-0.2	2.58E+07	0.54	Y	1.30	79.1
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	2.27E+07	0.54	Y	1.20	74.9
ES 123789-HxCDF	38.25	1.0121	1.0123	+0.5	2.17E+07	0.55	Y	1.14	75.9
ES 1234678-HpCDF	39.62	1.0478	1.0487	+2.1	1.75E+07	0.44	Y	0.95	73.1
ES 1234789-HpCDF	40.96	1.0832	1.0843	+2.7	1.53E+07	0.44	Y	0.85	71.8
ES OCDF	43.24	1.1434	1.1446	+3.1	2.33E+07	0.88	Y	0.93	50

Lab ID: B5964_18721_DF_001 | Acq'd: 16 Dec 2021 22:51 PSW | Wt/Vol: 10.26 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-O-8 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.487 pg/g | Split: 1 | Checkcode: 417-132-RPL

Datafile: 211216R16 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.58		-	-	-	3.75E+07	0.80	Y	-	-
JS 1234-TCDF	26.02		-	-	-	5.13E+07	0.74	Y	-	-
JS 123467-HxCDD	37.78		-	-	-	1.26E+07	1.37	Y	-	-
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	1.16E+07	n/a	-	1.31	58.8
CS 12347-PeCDD	33.09		1.1978	1.1995	+3.4	1.99E+07	1.62	Y	0.89	59.4
CS 12346-PeCDF	31.61		1.2130	1.2151	+4.0	2.99E+07	1.51	Y	0.87	67.1
CS 123469-HxCDF	36.93		0.9775	0.9775	0	2.30E+07	0.53	Y	1.09	84
CS 1234689-HpCDF	40.01		1.0580	1.0591	+2.6	1.74E+07	0.44	Y	0.86	79.9
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~1.16E+07~~	~~n/a~~		~~1.26~~	~~89.5~~
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1995~~	~~+3.4~~	~~1.99E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~105~~
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2151~~	~~+4.0~~	~~2.99E+07~~	~~1.51~~	~~Y~~	~~0.93~~	~~103~~
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~2.30E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~106~~
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0591~~	~~+2.6~~	~~1.74E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~109~~

Totals	Conc	EMPC
Total TCDD	3.03	3.31
Total PeCDD	3.06	4.7
Total HxCDD	49	54.9
Total HpCDD	809	809
Total Tetra-Octa Dioxins	13100	13100
Total TCDF	7.64	11.1
Total PeCDF	8.88	10.1
Total HxCDF	26.9	32.3
Total HpCDF	136	140
Total Tetra-Octa Furans	365	379
Total Tetra-Octa Dioxins & Furans	13500	13500

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.918	1.15
Response	6.64E+04	5.94E+04

Lab ID: B6964_16721_DF_001 | Acq'd: 16 Dec 2021 22:51 PSW | Wt/Vol: 10.26 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-O-8 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.487 pg/g | Split: 1 | Checkcode: 417-132-RPL

Datafile: 211216R16 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.60		0.8726	0.8712	-2.1	1.06E+05	0.75	Y	1.34	0.598	7235.482	0.425
1379-TCDD	NotFnd		0.8851						1.34		7235.482	0.425
1369-TCDD	NotFnd		0.9002						1.34		7235.482	0.425
1469-TCDD	26.18		0.9275	0.9269	-0.9	4.30E+05	0.76	Y	1.34	2.43	7235.482	0.425
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		7235.482	0.425
1378-TCDD	NotFnd		0.9427						1.34		7235.482	0.425
1268-TCDD	NotFnd		0.9498						1.34		7235.482	0.425
1478-TCDD	NotFnd		0.9584						1.34		7235.482	0.425
1279-TCDD	NotFnd		0.9644						1.34		7235.482	0.425
1234/1269-TCDD	NotFnd		0.9766						1.34		7235.482	0.425
1236-TCDD	NotFnd		0.9813						1.34		7235.482	0.425
1237/1238-TCDD	NotFnd		0.9906						1.34		7235.482	0.425
1239-TCDD	NotFnd		0.9952						1.34		7235.482	0.425
2378-TCDD	**28.25**	J EMPC	**1.0008**	1.0002	**-1.0**	4.90E+04	1.15	N	**1.34**	**0.277**	**7235.482**	**0.425**
1278-TCDD	NotFnd		1.0122						1.34		7235.482	0.425
1267-TCDD	NotFnd		1.0168						1.34		7235.482	0.425
1289-TCDD	NotFnd		1.0349						1.34		7235.482	0.425
12479/12468-PeCDD	31.10	J	0.9267	0.9260	-1.3	2.61E+05	1.69	Y	1.06	2.19	7099.473	0.601
12469-PeCDD	31.64	J EMPC	0.9425	0.9421	-0.8	1.96E+05	1.26	N	1.06	1.65	7099.473	0.601
12368-PeCDD	NotFnd		0.9588						1.06		7099.473	0.601
12478-PeCDD	NotFnd		0.9643						1.06		7099.473	0.601
12379-PeCDD	NotFnd		0.9673						1.06		7099.473	0.601
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		7099.473	0.601
12346/12347-PeCDD	NotFnd		0.9859						1.06		7099.473	0.601
12378-PeCDD	33.61	J	**1.0005**	**1.0007**	**+0.4**	**1.03E+05**	**1.75**	Y	**1.06**	**0.866**	**7099.473**	**0.601**
12367-PeCDD	NotFnd		1.0032						1.06		7099.473	0.601
12389-PeCDD	NotFnd		1.0135						1.06		7099.473	0.601
124679/124689-HxCDD	35.77		0.9544	0.9547	+0.6	2.53E+06	1.31	Y	1.05	23.5	9879.746	0.853
123468-HxCDD	36.41		0.9716	0.9720	+0.9	2.63E+05	1.40	Y	1.05	2.45	9879.746	0.853
123679/123689-HxCDD	36.70		0.9793	0.9796	+0.7	1.73E+06	1.26	Y	1.05	16	9879.746	0.853
123469-HxCDD	36.82	J EMPC	0.9829	0.9830	+0.2	1.53E+05	1.00	N	1.05	1.42	9879.746	0.853
123478-HxCDD	37.48	J EMPC	**1.0003**	**1.0004**	**+0.2**	**1.60E+05**	**1.45**	N	1.06	**1.6**	**9879.746**	**0.848**
123678-HxCDD	37.60		**1.0033**	**1.0035**	**+0.5**	**6.23E+05**	**1.19**	Y	1.08	**5.81**	**9879.746**	**0.889**
123467-HxCDD	37.79	J	1.0084	1.0088	+0.9	1.30E+05	1.34	Y	1.05	1.2	9879.746	0.853
123789-HxCDD	37.90	EMPC	**1.0110**	**1.0115**	**+1.1**	**3.30E+05**	**1.43**	N	1.02	**2.85**	**9879.746**	**0.828**

Lab ID: B6964_16721_DF_001 | Acq'd: 16 Dec 2021 22:51 PSW | Wt/Vol: 10.26 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-O-8 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.487 pg/g | Split: 1 | Checkcode: 417-132-RPL

Datafile: 211216R16 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.88		0.9843	0.9843	0	2.98E+07	1.05	Y	0.97	369	5398.21	0.448
1234678-HpCDD	**40.53**		**1.0003**	**1.0003**	**0**	**3.56E+07**	**1.04**	**Y**	**0.97**	**440**	**5398.21**	**0.448**
OCDD	**43.07**	**E**	**1.0003**	**1.0002**	**-0.3**	**6.47E+08**	**0.89**	**Y**	**1.07**	**12,300**	**9614.686**	**1.47**
OCDD-a	43.07	E	1.0001	1.0002	+0.3	4.01E+07	2.54	Y	0.07	12,300	8943.327	22.1
1368-TCDF	NotFnd		0.8230						0.96		6329.551	0.424
1468-TCDF	NotFnd		0.8443						0.96		6329.551	0.424
2468-TCDF	23.71		0.8672	0.8658	-2.0	2.46E+05	0.79	Y	0.96	1.43	6329.551	0.424
1346/1246-TCDF	NotFnd		0.8802						0.96		6329.551	0.424
1347/1378/1247-TCDF	24.22		0.8855	0.8847	-1.2	1.68E+05	0.88	Y	0.96	0.981	6329.551	0.424
1348-TCDF	NotFnd		0.8952						0.96		6329.551	0.424
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		6329.551	0.424
1268-TCDF	NotFnd		0.9136						0.96		6329.551	0.424
1467-TCDF	NotFnd		0.9185						0.96		6329.551	0.424
1478-TCDF	25.28	J EMPC	0.9247	0.9232	-2.3	8.28E+04	0.92	N	0.96	0.482	6329.551	0.424
1369/1237-TCDF	NotFnd		0.9381						0.96		6329.551	0.424
2467-TCDF	NotFnd		0.9427						0.96		6329.551	0.424
2368-TCDF	25.98	EMPC	0.9484	0.9487	+0.5	1.48E+05	0.65	N	0.96	0.864	6329.551	0.424
1238/1234/1678/1469/1236-TCDF	26.07	J	0.9517	0.9521	+0.6	5.96E+04	0.81	Y	0.96	0.347	6329.551	0.424
1278-TCDF	26.50	EMPC	0.9682	0.9677	-0.8	9.92E+04	1.30	N	0.96	0.578	6329.551	0.424
1349-TCDF	NotFnd		0.9725						0.96		6329.551	0.424
1267-TCDF	NotFnd		0.9782						0.96		6329.551	0.424
2346/1249-TCDF	NotFnd		0.9846						0.96		6329.551	0.424
2347/1279-TCDF	27.17	J EMPC	0.9926	0.9924	-0.3	6.15E+04	1.00	N	0.96	0.359	6329.551	0.424
2348-TCDF	27.30	J EMPC	0.9966	0.9969	+0.5	4.27E+04	1.00	N	0.96	0.249	6329.551	0.424
2378-TCDF	**27.40**		**1.0006**	**1.0008**	**+0.3**	**5.91E+05**	**0.83**	**Y**	**0.96**	**3.44**	**6329.551**	**0.424**
2367/3467-TCDF	27.75		1.0139	1.0136	-0.5	2.45E+05	0.72	Y	0.96	1.43	6329.551	0.424
1269-TCDF	NotFnd		1.0226						0.96		6329.551	0.424
1239-TCDF	NotFnd		1.0322						0.96		6329.551	0.424
1289-TCDF	29.38	EMPC	1.0729	1.0732	+0.5	1.55E+05	1.55	N	0.96	0.905	6329.551	0.424
13468/12468-PeCDF	29.37		0.9135	0.9137	+0.4	5.47E+05	1.59	Y	0.94	3.73	5910.063	0.393
13678/13467/12467-PeCDF	30.90	J	0.9612	0.9614	+0.4	1.21E+05	1.68	Y	0.94	0.825	5791.904	0.385
12368/13478/12478-PeCDF	31.05		0.9661	0.9660	-0.2	3.85E+05	1.72	Y	0.94	2.63	5791.904	0.385
14678-PeCDF	31.16	J EMPC	0.9693	0.9694	+0.2	6.60E+04	1.03	N	0.94	0.45	5791.904	0.385
13479-PeCDF	NotFnd		0.9723						0.94		5791.904	0.385
13469/12479-PeCDF	NotFnd		0.9799						0.94		5791.904	0.385
12346-PeCDF	NotFnd		0.9842						0.94		5791.904	0.385

Lab ID: B6964_16721_DF_001 | Acq'd: 16 Dec 2021 22:51 PSW | Wt/Vol: 10.26 g | ICAL: MM3_DF_10272021_27JUL2021

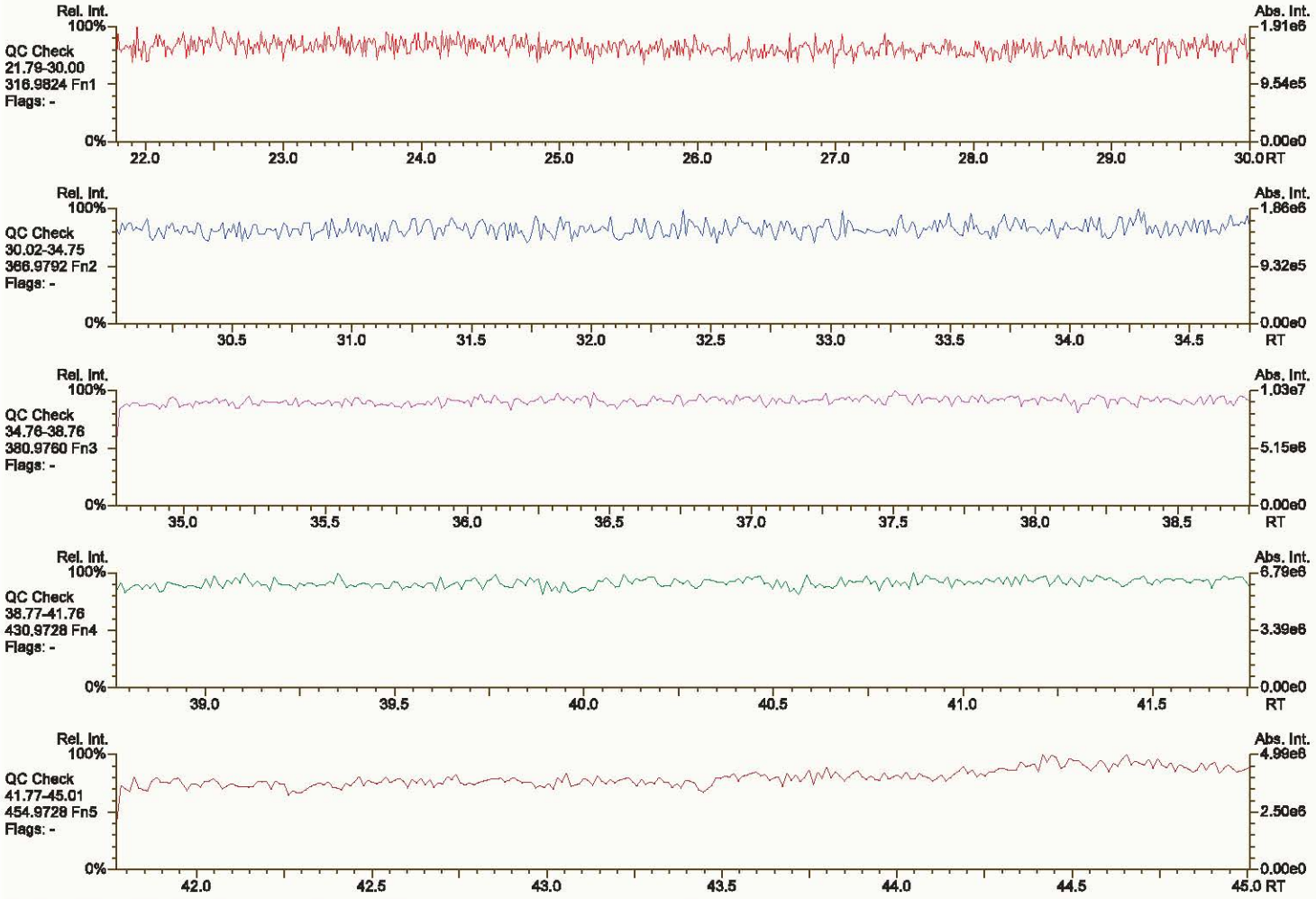
Client ID: 11215131-120121-S-SPS-NE-O-8 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.487 pg/g | Split: 1 | Checkcode: 417-132-RPL

Datafile: 211216R16 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		5791.904	0.385
12347-PeCDF	NotFnd		0.9893						0.94		5791.904	0.385
12348-PeCDF	NotFnd		0.9941						0.94		5791.904	0.385
12378-PeCDF	**32.15**	J	**1.0006**	**1.0002**	**-0.8**	**7.24E+04**	**1.38**	**Y**	**0.95**	**0.478**	**5791.904**	**0.378**
12678/12367-PeCDF	32.44	J EMPC	1.0090	1.0094	+0.8	1.17E+05	1.23	N	0.94	0.795	5791.904	0.385
12379-PeCDF	NotFnd		1.0143						0.94		5791.904	0.385
12679-PeCDF	NotFnd		0.9929						0.94		5791.904	0.385
23467/12369-PeCDF	NotFnd		0.9966						0.94		5791.904	0.385
23478-PeCDF	**33.28**	J	**1.0006**	**1.0008**	**+0.4**	**1.74E+05**	**1.78**	**Y**	**0.94**	**1.22**	**5791.904**	**0.392**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5791.904	0.385
12349-PeCDF	NotFnd		1.0102						0.94		5791.904	0.385
12389-PeCDF	NotFnd		1.0325						0.94		5791.904	0.385
123468-HxCDF	35.12	J EMPC	0.9628	0.9628	0	2.92E+05	1.01	N	1.16	2.13	9104.451	0.592
124678/134678-HxCDF	35.31		0.9683	0.9681	-0.4	1.25E+06	1.24	Y	1.16	9.13	9104.451	0.592
134679-HxCDF	NotFnd		0.9746						1.16		9104.451	0.592
124679-HxCDF	NotFnd		0.9798						1.16		9104.451	0.592
124689-HxCDF	35.96		0.9859	0.9859	0	2.22E+06	1.20	Y	1.16	16.2	9104.451	0.592
123467-HxCDF	36.38	J EMPC	0.9972	0.9972	0	8.51E+04	1.73	N	1.16	0.622	9104.451	0.592
123478-HxCDF	**36.50**	J EMPC	**1.0004**	**1.0006**	**+0.4**	**2.47E+05**	**1.46**	**N**	**1.23**	**1.81**	**9104.451**	**0.587**
123678-HxCDF	**36.64**	J EMPC	**1.0004**	**1.0006**	**+0.4**	**1.26E+05**	**1.55**	**N**	**1.13**	**0.844**	**9104.451**	**0.549**
123479-HxCDF	NotFnd		1.0049						1.16		9104.451	0.592
123469-HxCDF	NotFnd		1.0088						1.16		9104.451	0.592
123679-HxCDF	NotFnd		0.9943						1.16		9104.451	0.592
234678-HxCDF	**37.30**	J	**1.0005**	**1.0004**	**-0.2**	**2.11E+05**	**1.42**	**Y**	**1.15**	**1.58**	**9104.451**	**0.587**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		9104.451	0.592
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**9104.451**	**0.657**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		9104.451	0.592
1234678-HpCDF	**39.63**		**1.0003**	**1.0003**	**0**	**4.21E+06**	**1.07**	**Y**	**1.36**	**34.5**	**6687.048**	**0.336**
1234679-HpCDF	39.88	J	1.0067	1.0067	0	1.57E+05	1.01	Y	1.33	1.4	6687.048	0.405
1234689-HpCDF	40.02		1.0100	1.0102	+0.5	1.11E+07	1.06	Y	1.33	99.6	6687.048	0.405
1234789-HpCDF	**40.97**	**EMPC**	**1.0003**	**1.0001**	**-0.5**	**4.21E+05**	**0.77**	**N**	**1.30**	**4.12**	**6687.048**	**0.486**
OCDF	**43.25**		**1.0002**	**1.0003**	**+0.3**	**1.14E+07**	**0.91**	**Y**	**1.03**	**186**	**9525.571**	**1.33**
OCDF-a	43.24		1.0002	1.0001	-0.3	6.43E+05	2.15	Y	0.06	181	8524.089	20.6

SGS ID: B5964_18721_DF_001 | Sample ID: 11215131-120121-S-SPS-NE-O-8 | Acq: 16-Dec-2021 22:51:27

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55 | User: PSW Datafile: 211216R16

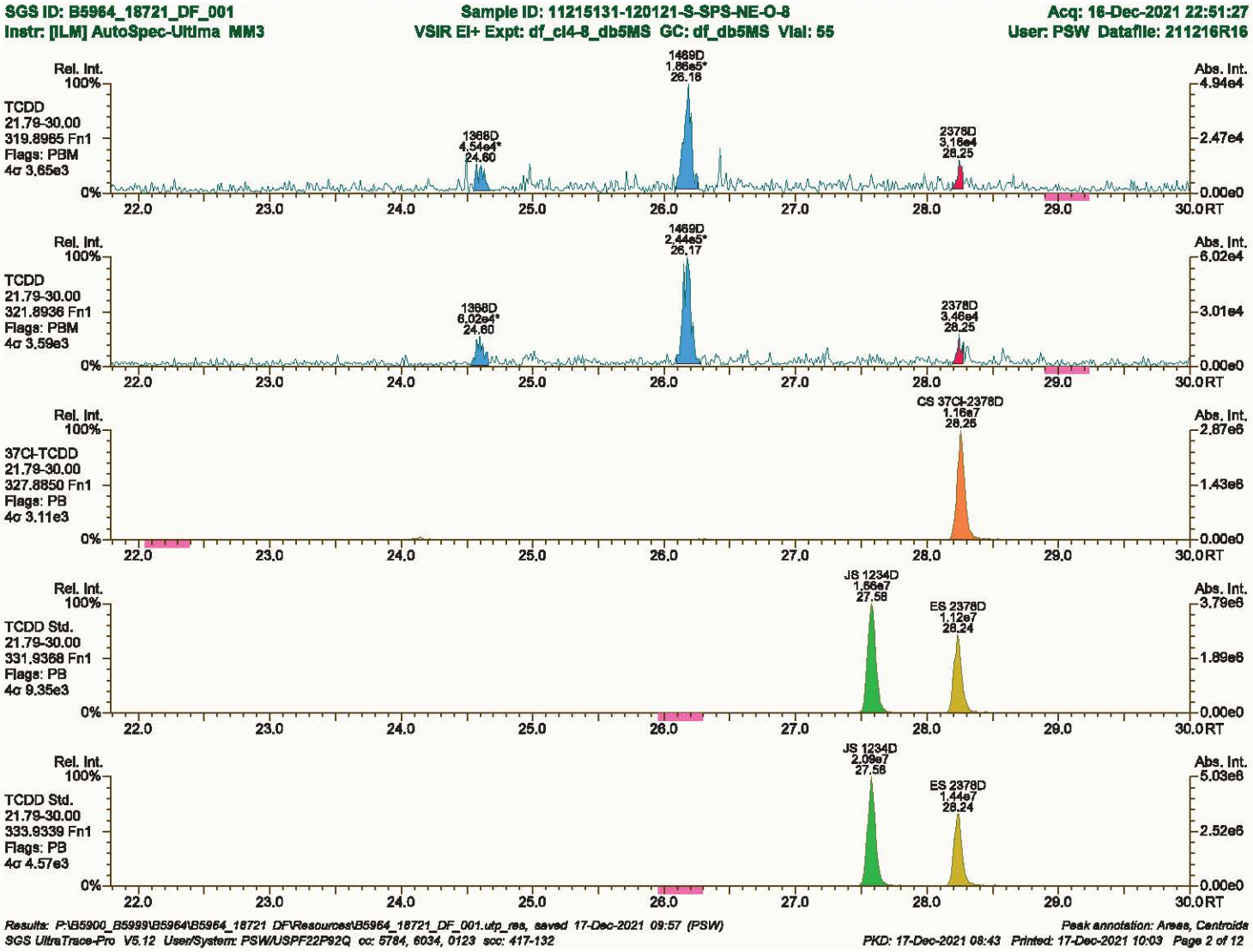


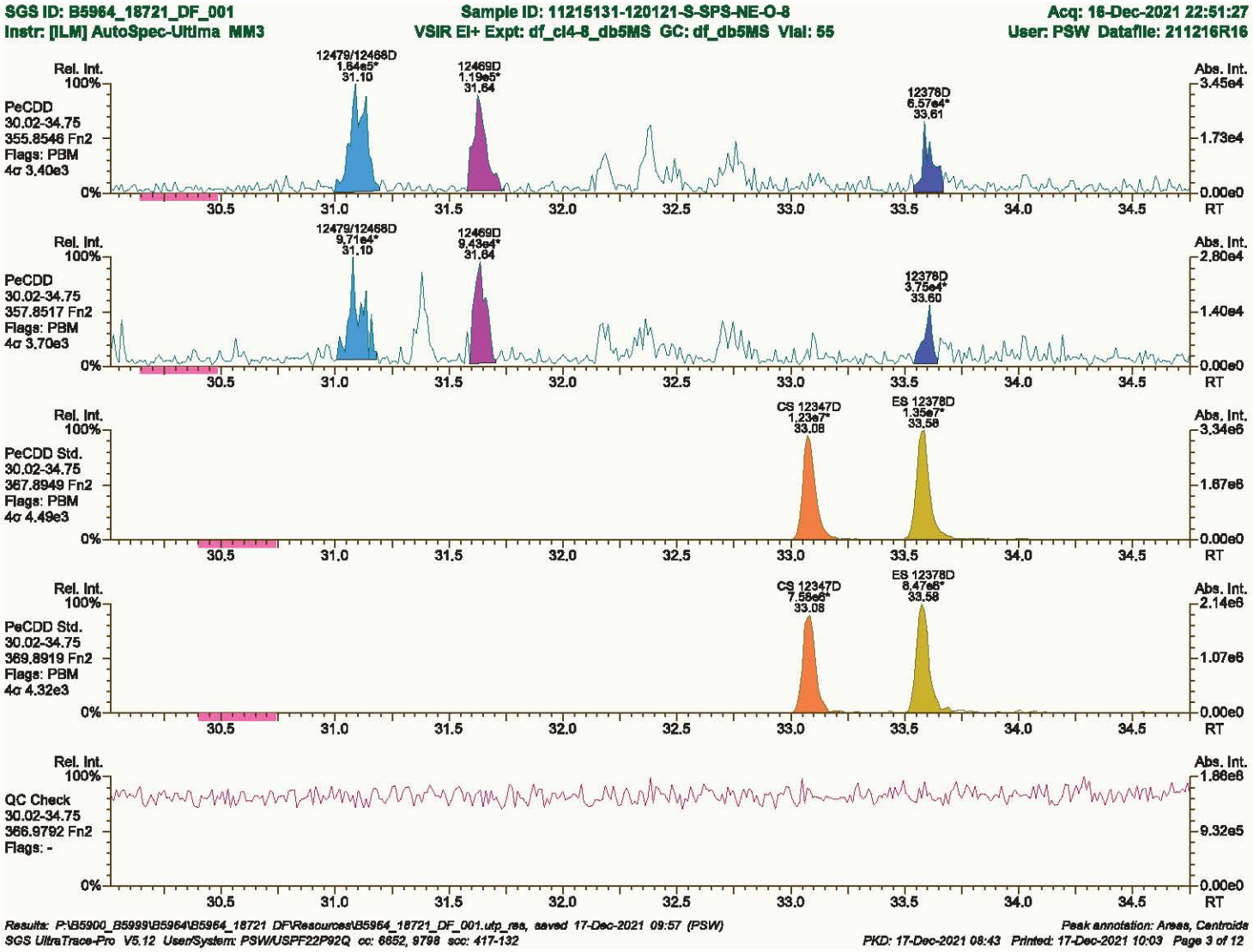
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)

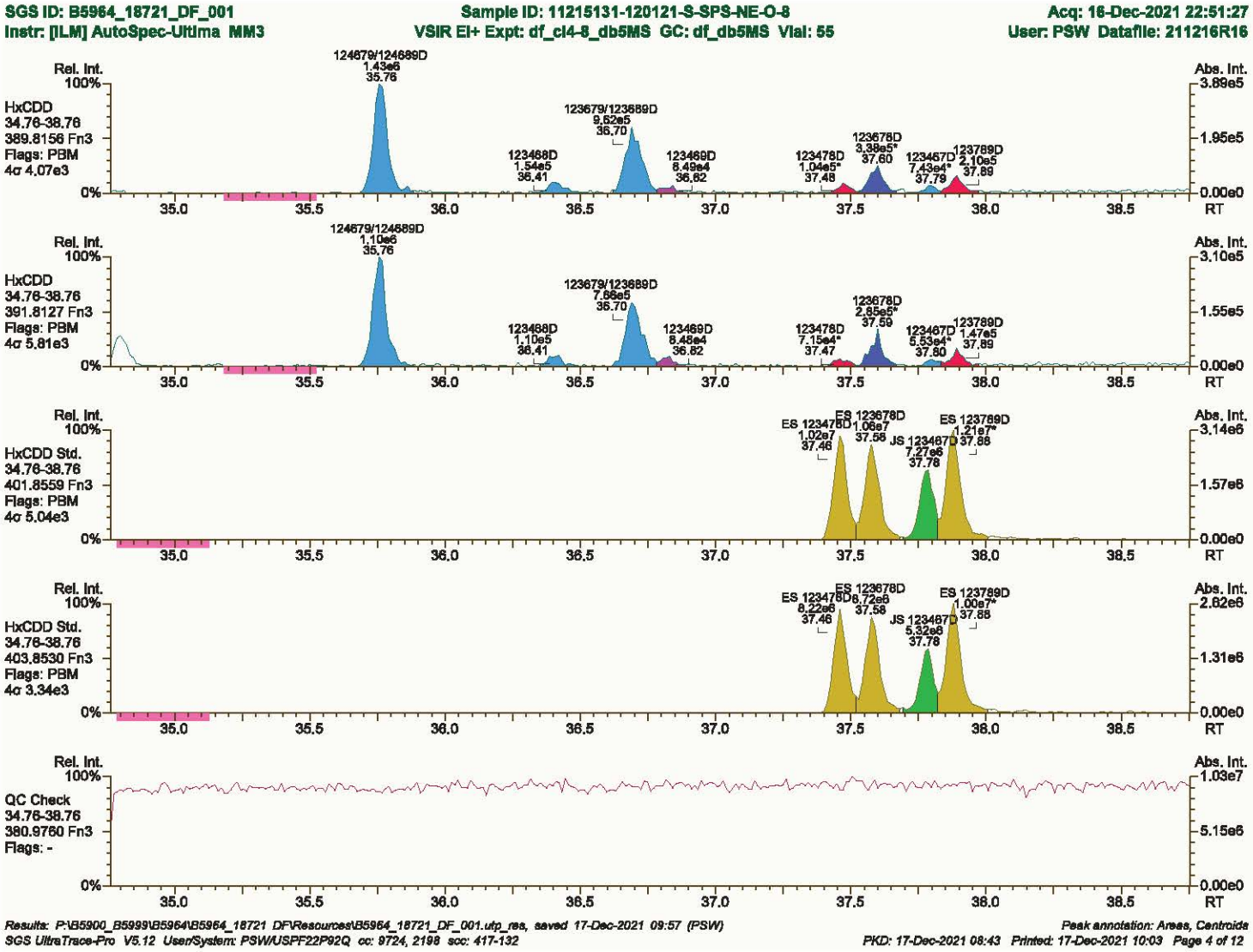
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 417-132

PKD: n/a Printed: 17-Dec-2021 10:03 Page 1 of 12


SGS ID: B5964_18721_DF_001
Sample ID: 11215131-120121-S-SPS-NE-O-8
Acq: 16-Dec-2021 22:51:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
User: PSW Datafile: 211216R16
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 3.65e3
1368D
4.54e4*
24.60
1469D
1.86e5*
26.16
2378D
3.16e4
28.25
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.59e3
1368D
6.02e4*
24.60
1469D
2.44e5*
26.17
2378D
3.46e4
28.25
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.11e3
CS 37Cl-2378D
1.16e7
28.26
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 9.35e3
JS 1234D
1.66e7
27.58
ES 2378D
1.12e7
28.24
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 4.57e3
JS 1234D
2.09e7
27.58
ES 2378D
1.44e7
28.24
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5784, 6034, 0123 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:03 Page 2 of 12

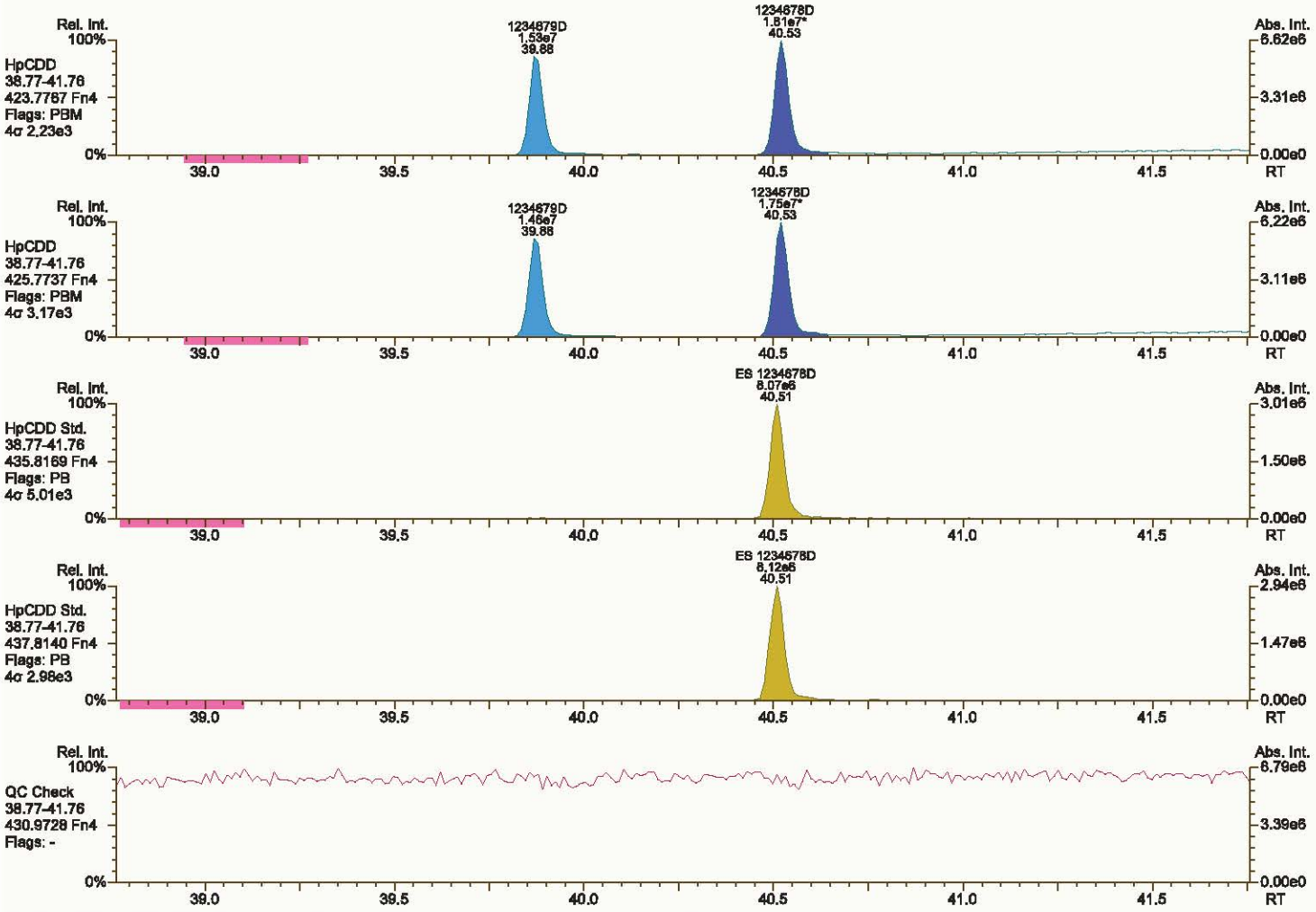

SGS ID: B5964_18721_DF_001
Sample ID: 11215131-120121-S-SPS-NE-O-8
Acq: 16-Dec-2021 22:51:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
User: PSW Datafile: 211216R16
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 3.40e3
12479/12468D
1.64e5*
31.10
12469D
1.19e5*
31.64
12378D
6.57e4*
33.61
3.45e4
1.73e4
0.00e0
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 3.70e3
12479/12468D
9.71e4*
31.10
12469D
9.43e4*
31.64
12378D
3.75e4*
33.60
2.80e4
1.40e4
0.00e0
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 4.49e3
CS 12347D
1.23e7*
33.08
ES 12378D
1.35e7*
33.58
3.34e6
1.67e6
0.00e0
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 4.32e3
CS 12347D
7.58e6*
33.08
ES 12378D
8.47e6*
33.58
2.14e6
1.07e6
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
1.86e6
9.32e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 6852, 9798 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:03 Page 3 of 12



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 9724, 2198 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:03 Page 4 of 12

SGS ID: B5964_18721_DF_001 | Sample ID: 11215131-120121-S-SPS-NE-O-8 | Acq: 16-Dec-2021 22:51:27

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55 | User: PSW Datafile: 211216R16

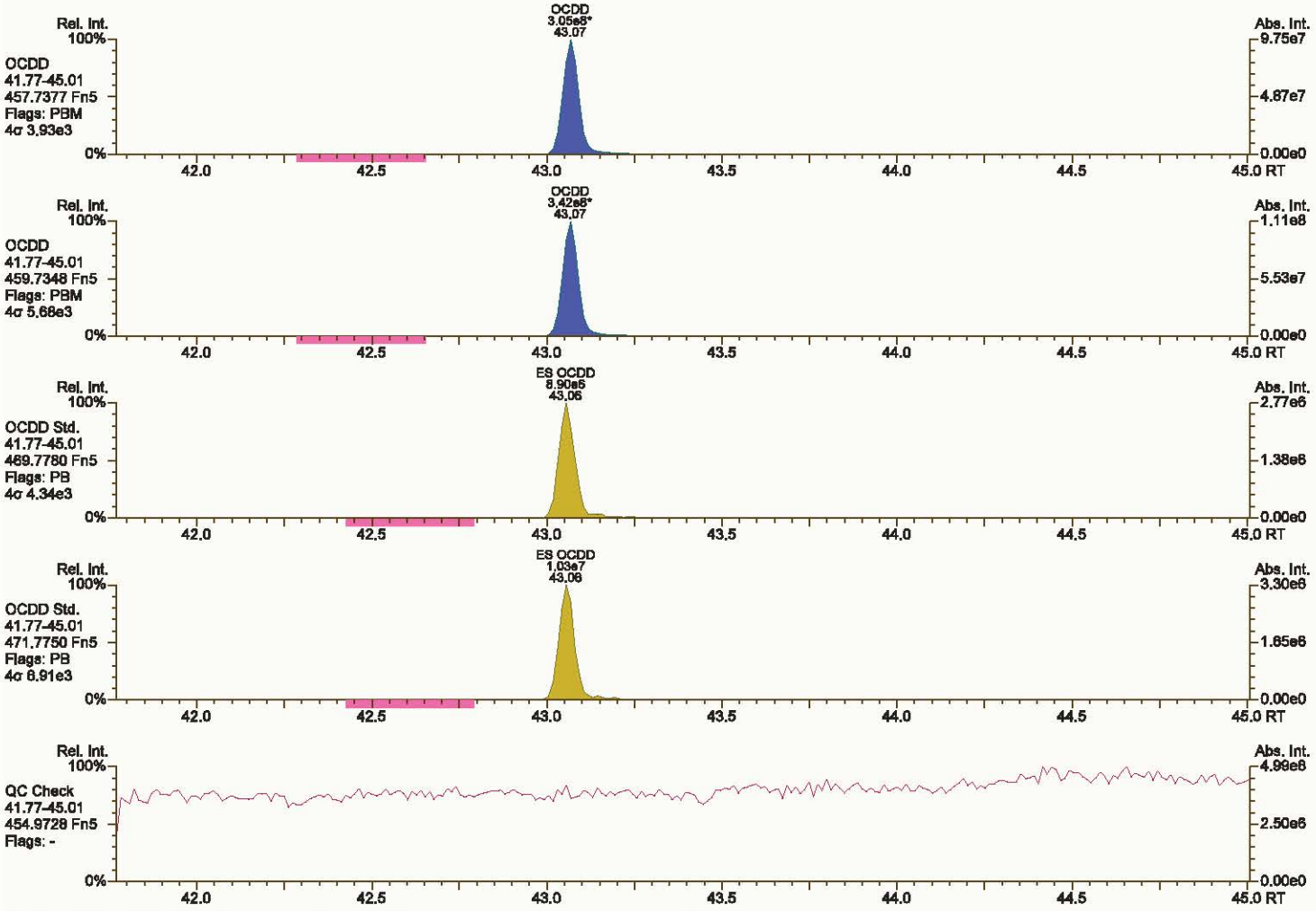


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 6107, 0793 scc: 417-132 | *PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:03 Page 5 of 12*

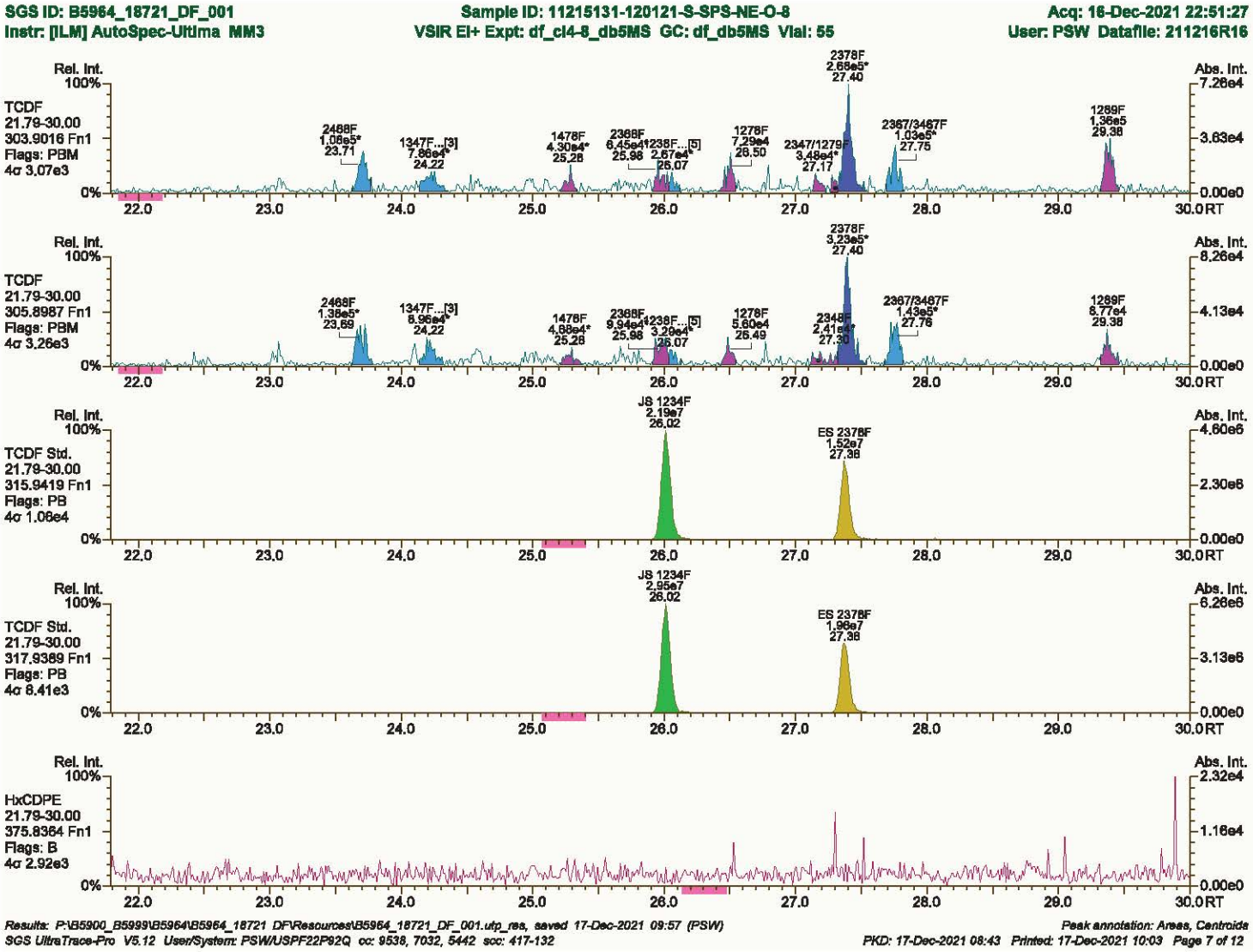
SGS ID: B5964_18721_DF_001 | Sample ID: 11215131-120121-S-SPS-NE-O-8 | Acq: 16-Dec-2021 22:51:27

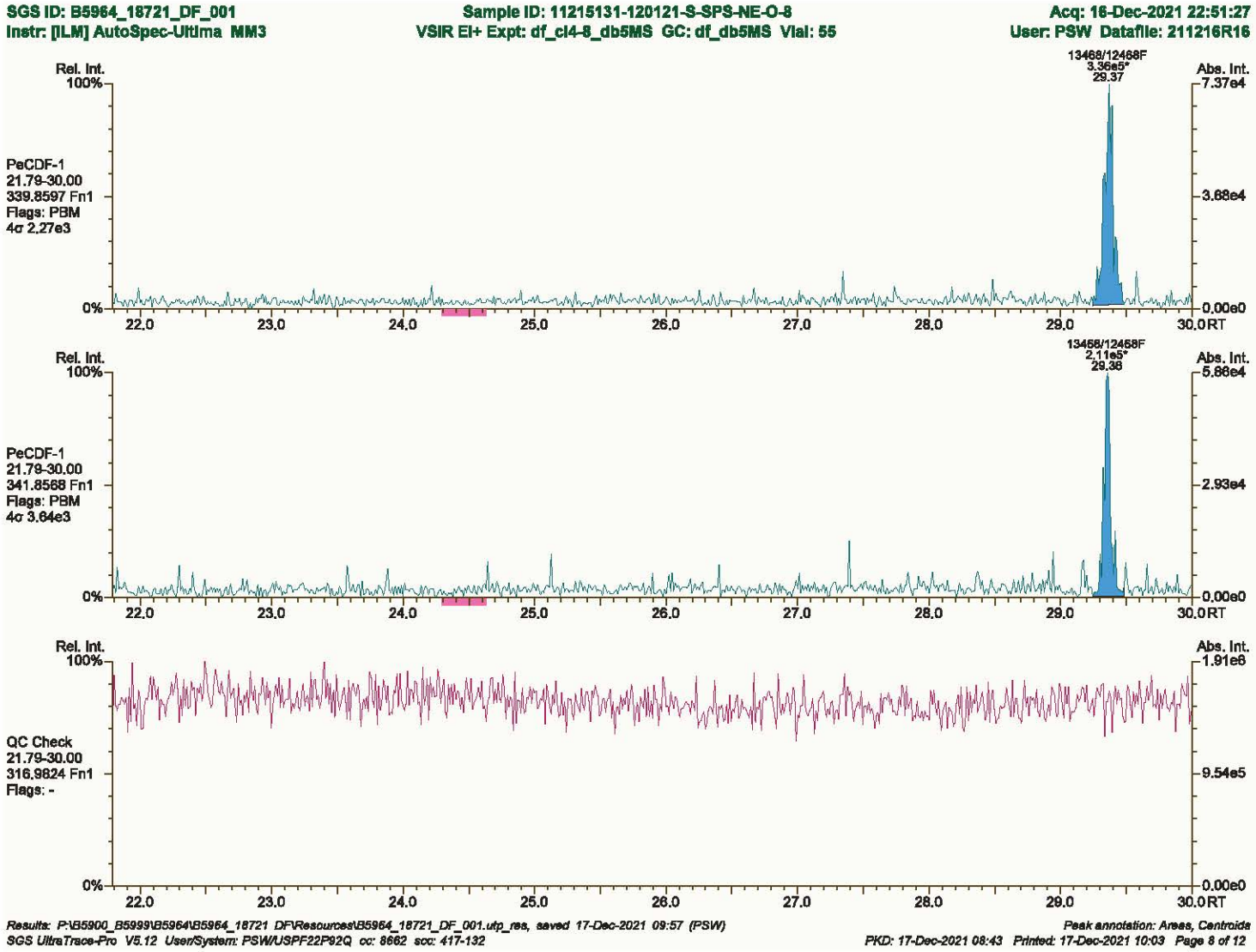
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55 | User: PSW Datafile: 211216R16

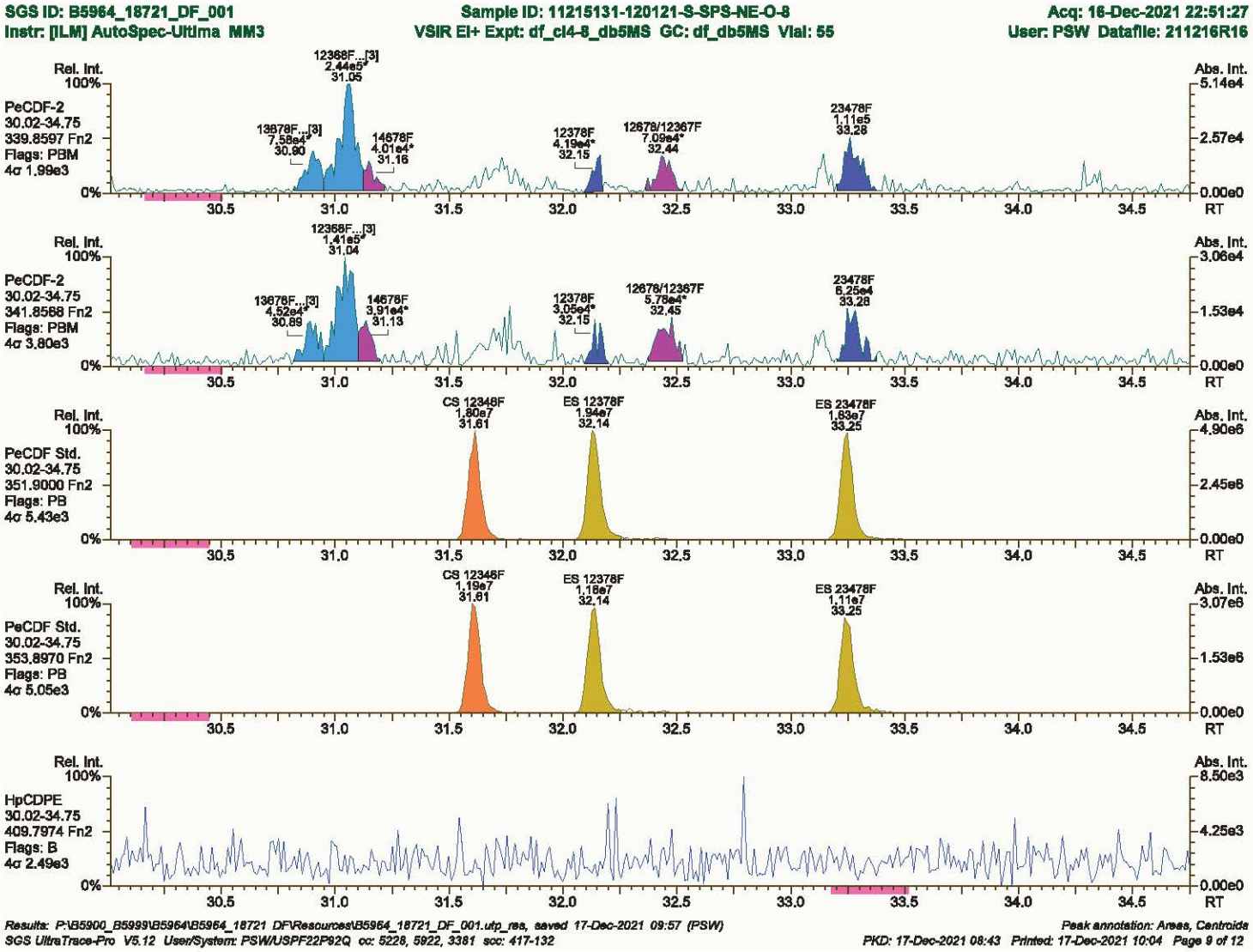


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW) | *Peak annotation: Areas, Centroids*

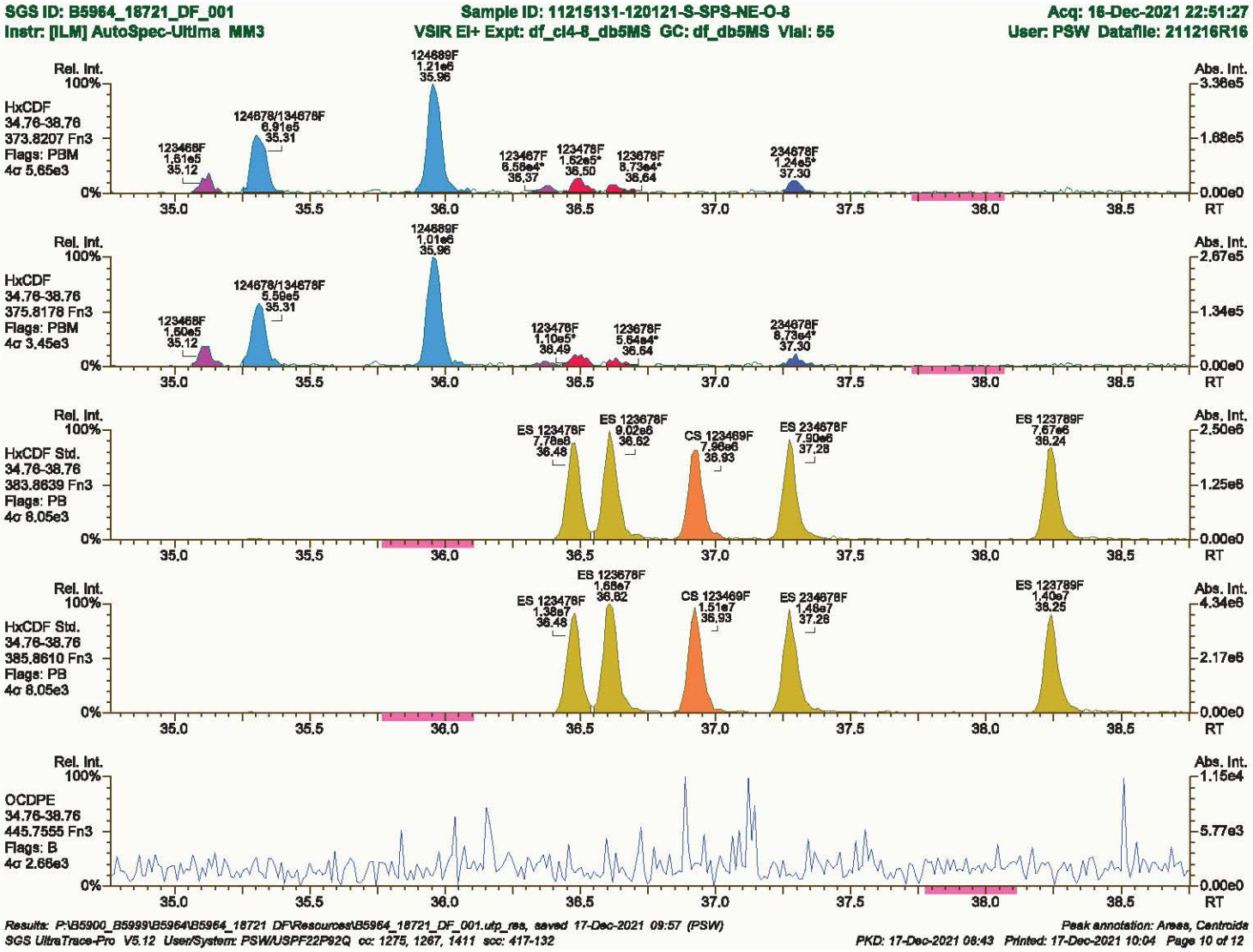
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 9026, 7105 scc: 417-132 | *PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:03 Page 6 of 12*


SGS ID: B5964_18721_DF_001
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120121-S-SPS-NE-O-8
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
Acq: 16-Dec-2021 22:51:27
User: PSW Datafile: 211216R16
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.07e3
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 3.26e3
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.06e4
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 8.41e3
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.92e3
Rel. Int.
Abs. Int.
RT
JS 1234F
ES 2378F
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9538, 7032, 5442 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:03 Page 7 of 12

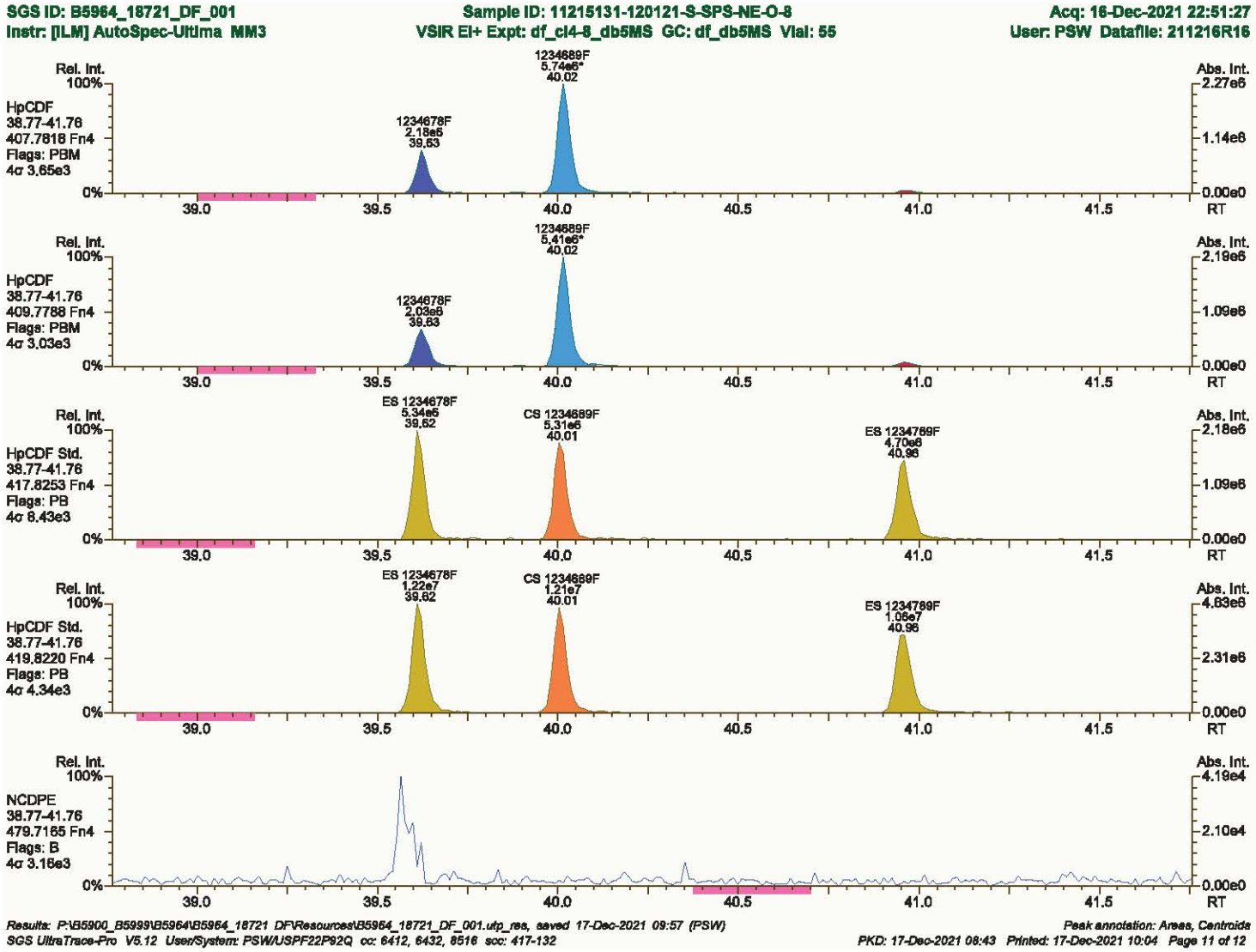

SGS ID: B5964_18721_DF_001
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120121-S-SPS-NE-O-8
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
Acq: 16-Dec-2021 22:51:27
User: PSW Datafile: 211216R16
Rel. Int.
100%
0%
Abs. Int.
7.37e4
3.68e4
0.00e0
RT
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
13468/12468F
3.36e5*
29.37
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PBM
4σ 2.27e3
13468/12468F
2.11e5*
29.36
5.86e4
2.93e4
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PBM
4σ 3.64e3
1.91e6
9.54e5
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8662 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:03 Page 8 of 12

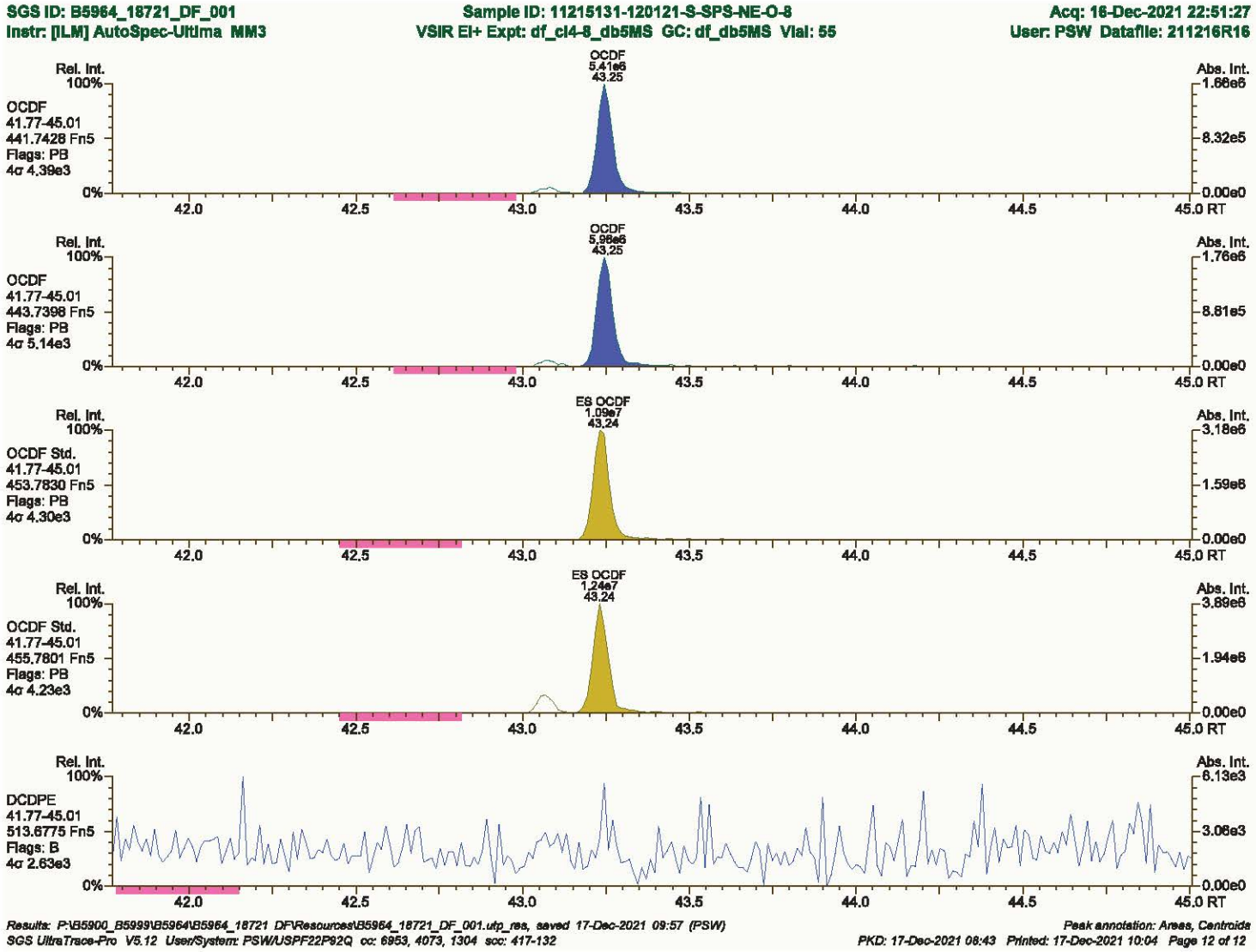


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5228, 5922, 3381 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:04 Page 9 of 12



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1275, 1267, 1411 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:04 Page 10 of 12


SGS ID: B5964_18721_DF_001
Sample ID: 11215131-120121-S-SPS-NE-O-8
Acq: 16-Dec-2021 22:51:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
User: PSW Datafile: 211216R16
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 3.65e3
1234678F
2.18e6
39.53
1234689F
5.74e6*
40.02
2.27e6
1.14e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 3.03e3
1234678F
2.03e6
39.53
1234689F
5.41e6*
40.02
2.19e6
1.09e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 8.43e3
ES 1234678F
5.34e6
39.52
CS 1234689F
5.31e6
40.01
ES 1234789F
4.70e6
40.96
2.18e6
1.09e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 4.34e3
ES 1234678F
1.22e7
39.52
CS 1234689F
1.21e7
40.01
ES 1234789F
1.05e7
40.96
4.63e6
2.31e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.16e3
4.19e4
2.10e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6412, 6432, 8516 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:04 Page 11 of 12


SGS ID: B5964_18721_DF_001
Sample ID: 11215131-120121-S-SPS-NE-O-8
Acq: 16-Dec-2021 22:51:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
User: PSW Datafile: 211216R16
Rel. Int.
Abs. Int.
OCDF
5.41e6
43.25
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 4.39e3
1.66e6
8.32e5
0.00e0
OCDF
5.96e6
43.25
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 5.14e3
1.76e6
8.81e5
0.00e0
ES OCDF
1.09e7
43.24
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.30e3
3.18e6
1.59e6
0.00e0
ES OCDF
1.24e7
43.24
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.23e3
3.89e6
1.94e6
0.00e0
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.63e3
6.13e3
3.06e3
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_001.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6953, 4073, 1304 scc: 417-132
PKD: 17-Dec-2021 08:43 Printed: 17-Dec-2021 10:04 Page 12 of 12

Lab ID: B6964_16721_DF_002 | Acq'd: 16 Dec 2021 23:39 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-O-9 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 188-791-LDD

Datafile: 211216R17 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	6128.496	0.313
12378-PeCDD	33.60	J EMPC	1.0005	1.0006	+0.2	1.37E+05	1.80	N	1.06	0.937	6133.066	0.388
123478-HxCDD	37.47		1.0003	1.0004	+0.2	3.25E+05	1.41	Y	1.06	2.79	7856.63	0.579
123678-HxCDD	37.59		1.0033	1.0036	+0.7	5.81E+05	1.19	Y	1.08	4.55	7856.63	0.582
123789-HxCDD	37.89		1.0110	1.0117	+1.6	5.91E+05	1.40	Y	1.02	4.43	7856.63	0.54
1234678-HpCDD	40.53		1.0003	1.0004	+0.2	7.12E+07	1.05	Y	0.97	722	8337.248	0.569
OCDD	43.10	E	1.0003	1.0004	+0.3	8.21E+09	0.90	Y	1.07	108,000	11925.463	1.84
2378-TCDF	27.39		1.0006	1.0006	0	5.37E+05	0.68	Y	0.96	2.52	5790.491	0.304
12378-PeCDF	32.14	J	1.0006	1.0003	-0.6	9.37E+04	1.51	Y	0.95	0.535	6141.643	0.37
23478-PeCDF	33.27	J	1.0006	1.0007	+0.2	2.14E+05	1.43	Y	0.94	1.23	6141.643	0.349
123478-HxCDF	36.49	J	1.0004	1.0004	0	2.01E+05	1.32	Y	1.23	1.22	8898.62	0.473
123678-HxCDF	36.62	J EMPC	1.0004	1.0003	-0.2	1.13E+05	1.97	N	1.13	0.61	8898.62	0.439
234678-HxCDF	37.29	J EMPC	1.0005	1.0003	-0.4	1.43E+05	1.01	N	1.15	0.882	8898.62	0.508
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	8898.62	0.533
1234678-HpCDF	39.62		1.0003	1.0003	0	2.50E+06	1.03	Y	1.36	16	6258.999	0.25
1234789-HpCDF	40.96	J EMPC	1.0003	1.0002	-0.2	1.69E+05	0.79	N	1.30	1.45	6258.999	0.362
OCDF	43.27		1.0002	1.0002	0	5.59E+06	0.90	Y	1.03	69.3	9694.243	0.981

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0237	1.0239	+0.3	3.09E+07	0.74	Y	1.03	85.2
ES 12378-PeCDD	33.58	1.2158	1.2179	+4.2	2.67E+07	1.53	Y	1.03	73.4
ES 123478-HxCDD	37.46	0.9920	0.9915	-1.1	2.13E+07	1.21	Y	0.99	84.5
ES 123678-HxCDD	37.58	0.9949	0.9947	-0.5	2.29E+07	1.33	Y	0.97	92.5
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	2.55E+07	1.31	Y	1.12	89.2
ES 1234678-HpCDD	40.51	1.0713	1.0723	+2.4	1.96E+07	1.02	Y	0.99	78
ES OCDD	43.09	1.1385	1.1406	+5.4	2.74E+07	0.91	Y	0.78	69.5
ES 2378-TCDF	27.37	1.0519	1.0525	+1.0	4.30E+07	0.81	Y	1.08	82
ES 12378-PeCDF	32.14	1.2331	1.2357	+5.0	3.59E+07	1.52	Y	0.93	79.4
ES 23478-PeCDF	33.25	1.2754	1.2784	+6.0	3.58E+07	1.57	Y	0.92	80.2
ES 123478-HxCDF	36.47	0.9656	0.9655	-0.2	2.59E+07	0.52	Y	1.14	89.1
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	3.17E+07	0.52	Y	1.30	96.3
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	2.72E+07	0.54	Y	1.20	89.2
ES 123789-HxCDF	38.24	1.0121	1.0124	+0.7	2.54E+07	0.50	Y	1.14	88.1
ES 1234678-HpCDF	39.61	1.0478	1.0487	+2.1	2.23E+07	0.44	Y	0.95	92.4
ES 1234789-HpCDF	40.96	1.0832	1.0842	+2.5	1.74E+07	0.46	Y	0.85	80.8
ES OCDF	43.26	1.1434	1.1451	+4.4	3.04E+07	0.85	Y	0.93	64.8

Lab ID: B6964_16721_DF_002 | Acq'd: 16 Dec 2021 23:39 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-O-9 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 188-791-LDD

Datafile: 211216R17 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.57		-	-	-	3.51E+07	0.78	Y	-	-
JS 1234-TCDF	26.01		-	-	-	4.84E+07	0.80	Y	-	-
JS 123467-HxCDD	37.78		-	-	-	1.27E+07	1.27	Y	-	-
CS 37Cl-2378-TCDD	28.25		1.0245	1.0247	+0.3	1.37E+07	n/a	-	1.31	74.6
CS 12347-PeCDD	33.08		1.1978	1.1998	+4.0	2.35E+07	1.53	Y	0.89	75.1
CS 12346-PeCDF	31.61		1.2130	1.2153	+4.4	3.42E+07	1.59	Y	0.87	81.5
CS 123469-HxCDF	36.92		0.9775	0.9774	-0.2	2.71E+07	0.49	Y	1.09	98.1
CS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	2.10E+07	0.46	Y	0.86	95.7
~~SS 37Cl-2378-TCDD~~	~~28.25~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~1.37E+07~~	~~n/a~~		~~1.26~~	~~80~~
~~SS 12347-PeCDD~~	~~33.08~~		~~1.1978~~	~~1.1998~~	~~+4.0~~	~~2.35E+07~~	~~1.53~~	~~Y~~	~~0.86~~	~~102~~
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2153~~	~~+4.4~~	~~3.42E+07~~	~~1.59~~	~~Y~~	~~0.93~~	~~103~~
~~SS 123469-HxCDF~~	~~36.92~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~2.71E+07~~	~~0.49~~	~~Y~~	~~0.84~~	~~102~~
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~2.10E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~103~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0.859	5.38
Total HxCDD	56.8	58.3
Total HpCDD	1570	1570
Total Tetra-Octa Dioxins	110000	110000
Total TCDF	6.64	10.8
Total PeCDF	10.3	11
Total HxCDF	15.4	18.4
Total HpCDF	57.4	58.8
Total Tetra-Octa Furans	159	168
Total Tetra-Octa Dioxins & Furans	110000	110000

Lab ID: B6964_16721_DF_002 | Acq'd: 16 Dec 2021 23:39 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-O-9 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 188-791-LDD

Datafile: 211216R17 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		6128.496	0.313
1379-TCDD	NotFnd		0.8851						1.34		6128.496	0.313
1369-TCDD	NotFnd		0.9002						1.34		6128.496	0.313
1469-TCDD	NotFnd		0.9275						1.34		6128.496	0.313
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6128.496	0.313
1378-TCDD	NotFnd		0.9427						1.34		6128.496	0.313
1268-TCDD	NotFnd		0.9498						1.34		6128.496	0.313
1478-TCDD	NotFnd		0.9584						1.34		6128.496	0.313
1279-TCDD	NotFnd		0.9644						1.34		6128.496	0.313
1234/1269-TCDD	NotFnd		0.9766						1.34		6128.496	0.313
1236-TCDD	NotFnd		0.9813						1.34		6128.496	0.313
1237/1238-TCDD	NotFnd		0.9906						1.34		6128.496	0.313
1239-TCDD	NotFnd		0.9952						1.34		6128.496	0.313
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**6128.496**	**0.313**
1278-TCDD	NotFnd		1.0122						1.34		6128.496	0.313
1267-TCDD	NotFnd		1.0168						1.34		6128.496	0.313
1289-TCDD	NotFnd		1.0349						1.34		6128.496	0.313
12479/12468-PeCDD	31.10	J EMPC	0.9267	0.9261	-1.1	1.62E+05	1.23	N	1.06	1.11	6133.066	0.388
12469-PeCDD	31.63	J EMPC	0.9425	0.9420	-0.9	1.23E+05	1.14	N	1.06	0.845	6133.066	0.388
12368-PeCDD	32.18	J EMPC	0.9588	0.9583	-1.0	8.47E+04	1.91	N	1.06	0.581	6133.066	0.388
12478-PeCDD	32.38	J EMPC	0.9643	0.9643	0	1.52E+05	1.31	N	1.06	1.04	6133.066	0.388
12379-PeCDD	NotFnd		0.9673						1.06		6133.066	0.388
12369/12467/12489-PeCDD	32.74	J	0.9750	0.9750	0	1.25E+05	1.37	Y	1.06	0.859	6133.066	0.388
12346/12347-PeCDD	NotFnd		0.9859						1.06		6133.066	0.388
12378-PeCDD	33.60	J EMPC	**1.0005**	**1.0006**	**+0.2**	**1.37E+05**	**1.80**	**N**	**1.06**	**0.937**	**6133.066**	**0.388**
12367-PeCDD	NotFnd		1.0032						1.06		6133.066	0.388
12389-PeCDD	NotFnd		1.0135						1.06		6133.066	0.388
124679/124689-HxCDD	35.76		0.9544	0.9547	+0.6	2.60E+06	1.32	Y	1.05	20.7	7856.63	0.566
123468-HxCDD	36.41		0.9716	0.9720	+0.9	4.12E+05	1.43	Y	1.05	3.27	7856.63	0.566
123679/123689-HxCDD	36.69		0.9793	0.9797	+0.9	2.40E+06	1.17	Y	1.05	19.1	7856.63	0.566
123469-HxCDD	36.82	J	0.9829	0.9831	+0.4	2.57E+05	1.26	Y	1.05	2.04	7856.63	0.566
123478-HxCDD	37.47		**1.0003**	**1.0004**	**+0.2**	**3.25E+05**	**1.41**	**Y**	1.06	**2.79**	**7856.63**	**0.579**
123678-HxCDD	37.59		**1.0033**	**1.0036**	**+0.7**	**5.81E+05**	**1.19**	**Y**	1.08	**4.55**	**7856.63**	**0.582**
123467-HxCDD	37.79	J EMPC	1.0084	1.0089	+1.1	1.82E+05	1.03	N	1.05	1.44	7856.63	0.566
123789-HxCDD	37.89		**1.0110**	**1.0117**	**+1.6**	**5.91E+05**	**1.40**	**Y**	1.02	**4.43**	**7856.63**	**0.54**

Lab ID: B6964_16721_DF_002 | Acq'd: 16 Dec 2021 23:39 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-O-9 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 188-791-LDD

Datafile: 211216R17 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	8.40E+07	1.05	Y	0.97	851	8337.248	0.569
1234678-HpCDD	**40.53**		**1.0003**	**1.0004**	**+0.2**	**7.12E+07**	**1.05**	**Y**	**0.97**	**722**	**8337.248**	**0.569**
OCDD	**43.10**	**E**	**1.0003**	**1.0004**	**+0.3**	**8.21E+09**	**0.90**	**Y**	**1.07**	**108,000**	**11925.463**	**1.84**
OCDD-a	43.10	E	1.0001	1.0003	+0.5	5.00E+08	2.51	Y	0.07	107,000	7420.019	18.5
1368-TCDF	NotFnd		0.8230						0.96		5790.491	0.304
1468-TCDF	NotFnd		0.8443						0.96		5790.491	0.304
2468-TCDF	23.69	EMPC	0.8672	0.8657	-2.1	3.70E+05	0.63	N	0.96	1.73	5790.491	0.304
1346/1246-TCDF	NotFnd		0.8802						0.96		5790.491	0.304
1347/1378/1247-TCDF	24.21		0.8855	0.8845	-1.5	2.03E+05	0.88	Y	0.96	0.951	5790.491	0.304
1348-TCDF	NotFnd		0.8952						0.96		5790.491	0.304
1248/1367/1379-TCDF	24.59		0.9000	0.8984	-2.4	1.39E+05	0.83	Y	0.96	0.653	5790.491	0.304
1268-TCDF	NotFnd		0.9136						0.96		5790.491	0.304
1467-TCDF	NotFnd		0.9185						0.96		5790.491	0.304
1478-TCDF	25.28	EMPC	0.9247	0.9236	-1.7	1.24E+05	0.97	N	0.96	0.581	5790.491	0.304
1369/1237-TCDF	NotFnd		0.9381						0.96		5790.491	0.304
2467-TCDF	NotFnd		0.9427						0.96		5790.491	0.304
2368-TCDF	25.93	EMPC	0.9484	0.9474	-1.6	1.21E+05	1.09	N	0.96	0.567	5790.491	0.304
1238/1234/1678/1469/1236-TCDF	26.01	EMPC	0.9517	0.9501	-2.5	1.26E+05	0.95	N	0.96	0.59	5790.491	0.304
1278-TCDF	26.48		0.9682	0.9675	-1.1	1.87E+05	0.73	Y	0.96	0.879	5790.491	0.304
1349-TCDF	NotFnd		0.9725						0.96		5790.491	0.304
1267-TCDF	26.75	J EMPC	0.9782	0.9773	-1.4	7.69E+04	0.51	N	0.96	0.361	5790.491	0.304
2346/1249-TCDF	NotFnd		0.9846						0.96		5790.491	0.304
2347/1279-TCDF	27.15	J	0.9926	0.9917	-1.5	6.21E+04	0.87	Y	0.96	0.292	5790.491	0.304
2348-TCDF	NotFnd		0.9966						0.96		5790.491	0.304
2378-TCDF	**27.39**		**1.0006**	**1.0006**	**0**	**5.37E+05**	**0.68**	**Y**	**0.96**	**2.52**	**5790.491**	**0.304**
2367/3467-TCDF	27.75		1.0139	1.0139	0	2.87E+05	0.81	Y	0.96	1.35	5790.491	0.304
1269-TCDF	NotFnd		1.0226						0.96		5790.491	0.304
1239-TCDF	NotFnd		1.0322						0.96		5790.491	0.304
1289-TCDF	29.37	J EMPC	1.0729	1.0728	-0.2	7.33E+04	0.95	N	0.96	0.344	5790.491	0.304
13468/12468-PeCDF	29.35		0.9135	0.9133	-0.4	7.07E+05	1.32	Y	0.94	4.05	6470.768	0.379
13678/13467/12467-PeCDF	30.89	J EMPC	0.9612	0.9614	+0.4	1.19E+05	2.22	N	0.94	0.683	6141.643	0.36
12368/13478/12478-PeCDF	31.04	J	0.9661	0.9658	-0.6	3.89E+05	1.61	Y	0.94	2.23	6141.643	0.36
14678-PeCDF	31.14	J	0.9693	0.9691	-0.4	7.75E+04	1.34	Y	0.94	0.445	6141.643	0.36
13479-PeCDF	NotFnd		0.9723						0.94		6141.643	0.36
13469/12479-PeCDF	NotFnd		0.9799						0.94		6141.643	0.36
12346-PeCDF	NotFnd		0.9842						0.94		6141.643	0.36

Lab ID: B6964_18721_DF_002 | Acq'd: 16 Dec 2021 23:39 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

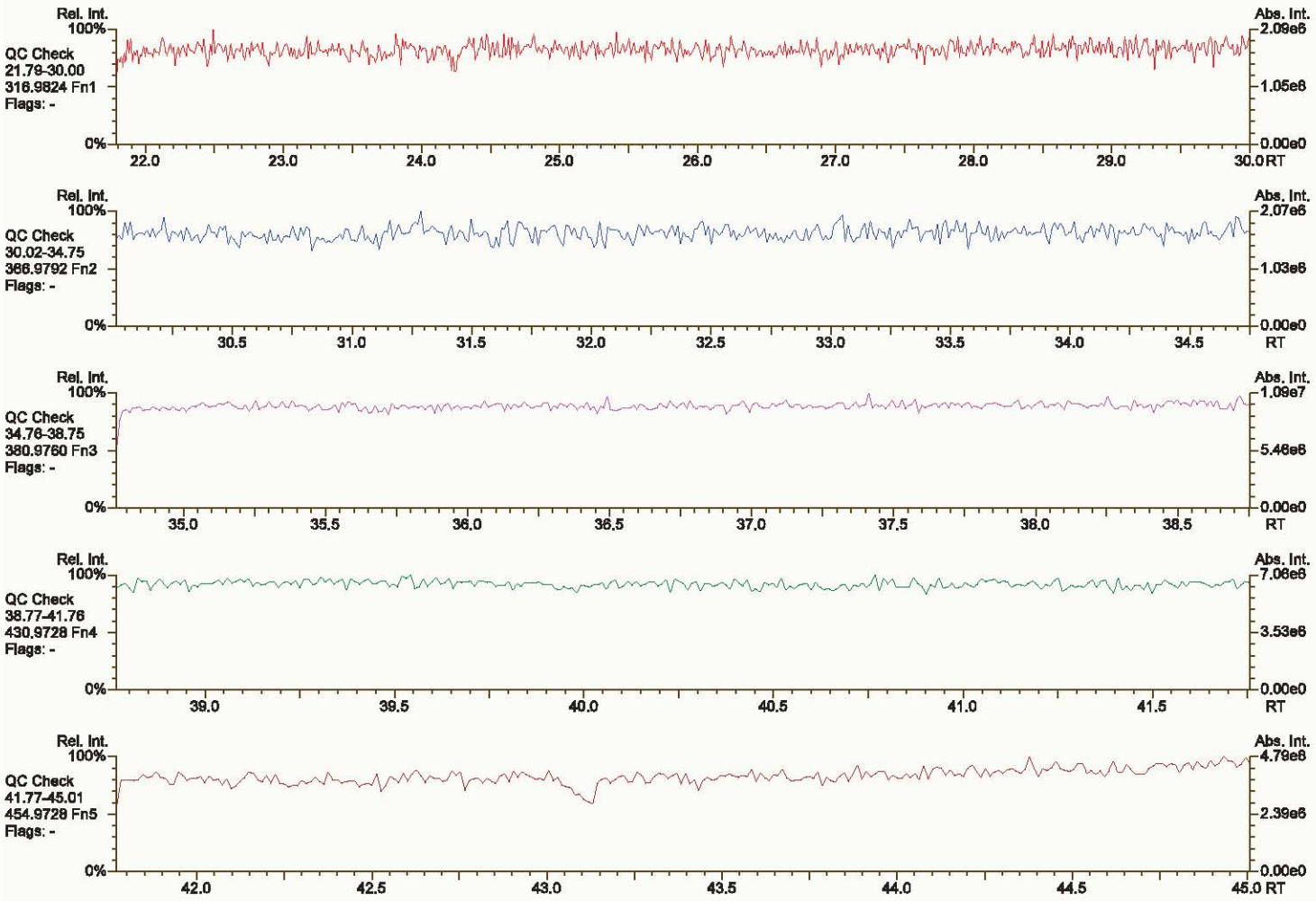
Client ID: 11215131-120121-S-SPS-NE-O-9 | UTP: 17-Dec-2021 09:57:38 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 188-791-LDD

Datafile: 211216R17 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.71	J	0.9868	0.9867	-0.2	1.20E+05	1.64	Y	0.94	0.687	6141.643	0.36
12347-PeCDF	NotFnd		0.9893						0.94		6141.643	0.36
12348-PeCDF	NotFnd		0.9941						0.94		6141.643	0.36
12378-PeCDF	**32.14**	J	**1.0006**	**1.0003**	**-0.6**	**9.37E+04**	**1.51**	**Y**	**0.95**	**0.535**	**6141.643**	**0.37**
12678/12367-PeCDF	32.43	J	1.0090	1.0092	+0.4	1.16E+05	1.51	Y	0.94	0.665	6141.643	0.36
12379-PeCDF	NotFnd		1.0143						0.94		6141.643	0.36
12679-PeCDF	NotFnd		0.9929						0.94		6141.643	0.36
23467/12369-PeCDF	33.14	J	0.9966	0.9967	+0.2	7.40E+04	1.52	Y	0.94	0.425	6141.643	0.36
23478-PeCDF	**33.27**	J	**1.0006**	**1.0007**	**+0.2**	**2.14E+05**	**1.43**	**Y**	**0.94**	**1.23**	**6141.643**	**0.349**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6141.643	0.36
12349-PeCDF	NotFnd		1.0102						0.94		6141.643	0.36
12389-PeCDF	NotFnd		1.0325						0.94		6141.643	0.36
123468-HxCDF	35.11	J EMPC	0.9628	0.9626	-0.4	2.39E+05	0.90	N	1.16	1.45	8898.62	0.485
124678/134678-HxCDF	35.31		0.9683	0.9681	-0.4	1.04E+06	1.16	Y	1.16	6.27	8898.62	0.485
134679-HxCDF	NotFnd		0.9746						1.16		8898.62	0.485
124679-HxCDF	NotFnd		0.9798						1.16		8898.62	0.485
124689-HxCDF	35.96		0.9859	0.9859	0	1.31E+06	1.16	Y	1.16	7.94	8898.62	0.485
123467-HxCDF	NotFnd		0.9972						1.16		8898.62	0.485
123478-HxCDF	**36.49**	J	**1.0004**	**1.0004**	**0**	**2.01E+05**	**1.32**	**Y**	**1.23**	**1.22**	**8898.62**	**0.473**
123678-HxCDF	**36.62**	J EMPC	**1.0004**	**1.0003**	**-0.2**	**1.13E+05**	**1.97**	**N**	**1.13**	**0.61**	**8898.62**	**0.439**
123479-HxCDF	NotFnd		1.0049						1.16		8898.62	0.485
123469-HxCDF	NotFnd		1.0088						1.16		8898.62	0.485
123679-HxCDF	NotFnd		0.9943						1.16		8898.62	0.485
234678-HxCDF	**37.29**	J EMPC	**1.0005**	**1.0003**	**-0.4**	**1.43E+05**	**1.01**	**N**	**1.15**	**0.882**	**8898.62**	**0.508**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		8898.62	0.485
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**8898.62**	**0.533**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		8898.62	0.485
1234678-HpCDF	**39.62**		**1.0003**	**1.0003**	**0**	**2.50E+06**	**1.03**	**Y**	**1.36**	**16**	**6258.999**	**0.25**
1234679-HpCDF	39.88	J	1.0067	1.0066	-0.2	1.71E+05	0.94	Y	1.33	1.26	6258.999	0.299
1234689-HpCDF	40.02		1.0100	1.0101	+0.2	5.47E+06	1.12	Y	1.33	40.2	6258.999	0.299
1234789-HpCDF	**40.96**	**J EMPC**	**1.0003**	**1.0002**	**-0.2**	**1.69E+05**	**0.79**	**N**	**1.30**	**1.45**	**6258.999**	**0.362**
OCDF	**43.27**		**1.0002**	**1.0002**	**0**	**5.59E+06**	**0.90**	**Y**	**1.03**	**69.3**	**9694.243**	**0.981**
OCDF-a	43.26		1.0002	1.0001	-0.3	4.47E+05	2.55	Y	0.06	96.1	8628.999	15.1

SGS ID: B5964_18721_DF_002 | Sample ID: 11215131-120121-S-SPS-NE-O-9 | Acq: 16-Dec-2021 23:39:01

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56 | User: PSW Datafile: 211216R17



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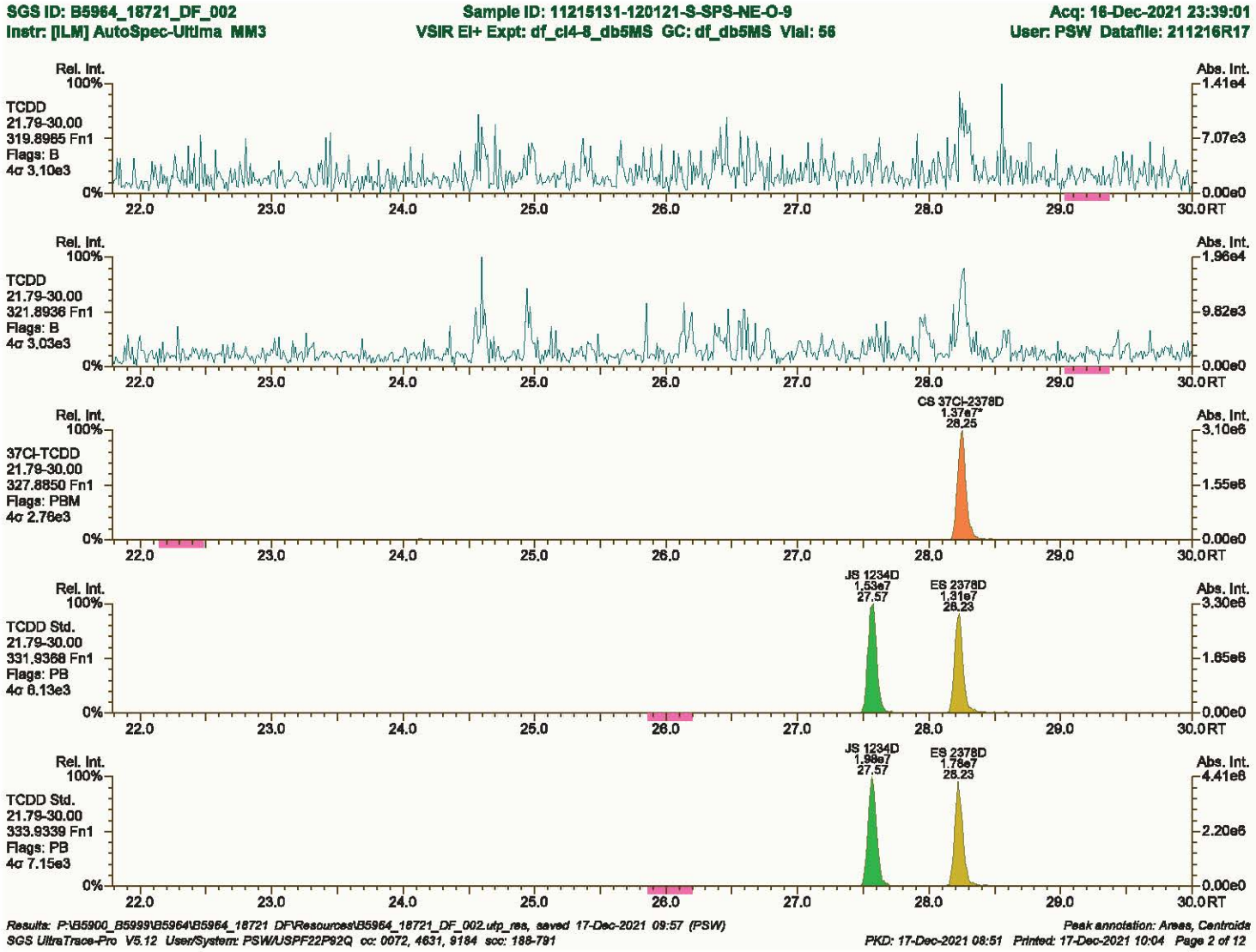
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 188-791

PKD: n/a Printed: 17-Dec-2021 10:04 Page 1 of 12


SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 3.10e3
1.41e4
7.07e3
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 3.03e3
1.96e4
9.82e3
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PBM
4σ 2.76e3
CS 37Cl-2378D
1.37e7*
28.25
3.10e6
1.55e6
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 6.13e3
JS 1234D
1.53e7
27.57
ES 2378D
1.31e7
28.23
3.30e6
1.65e6
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 7.15e3
JS 1234D
1.98e7
27.57
ES 2378D
1.76e7
28.23
4.41e6
2.20e6
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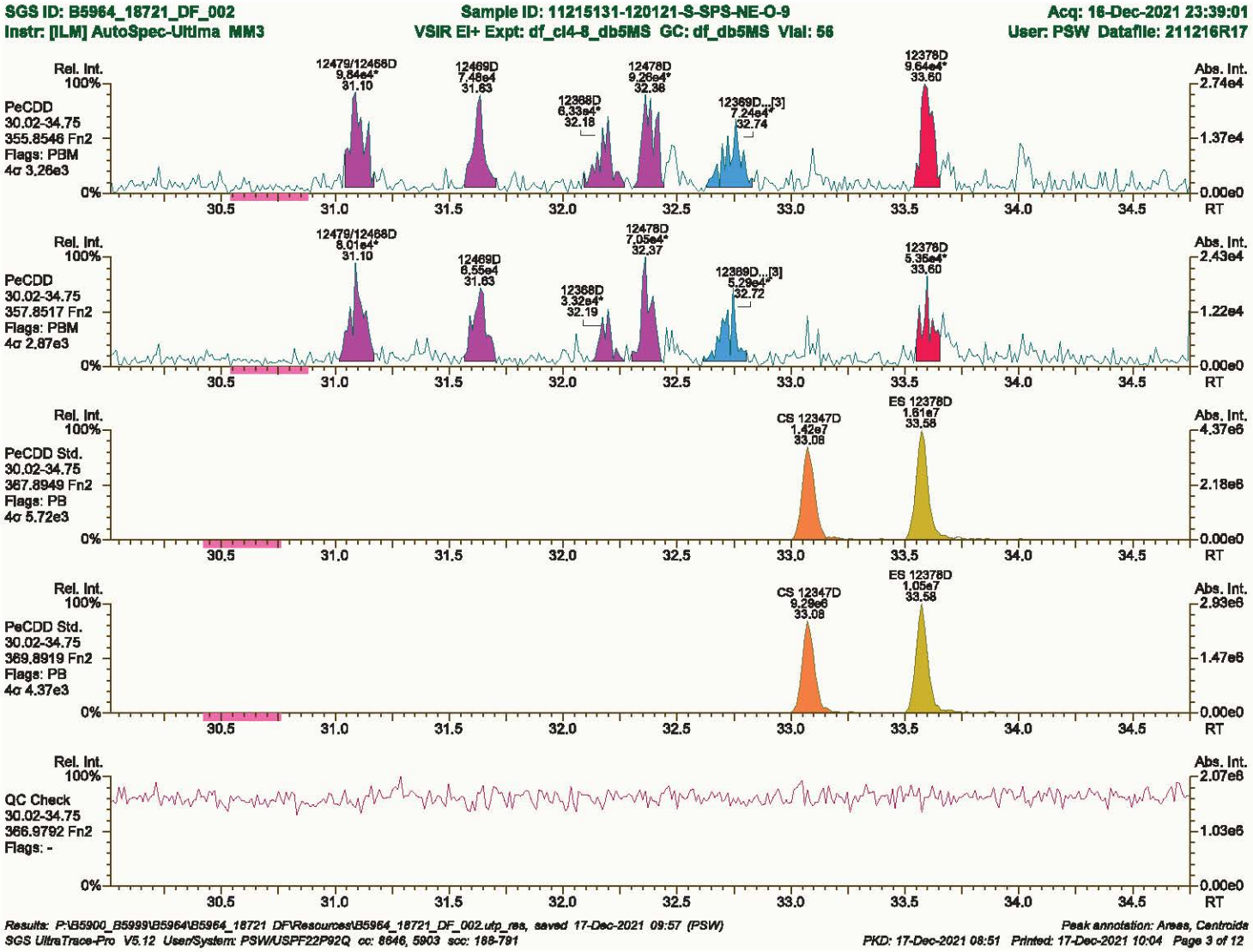
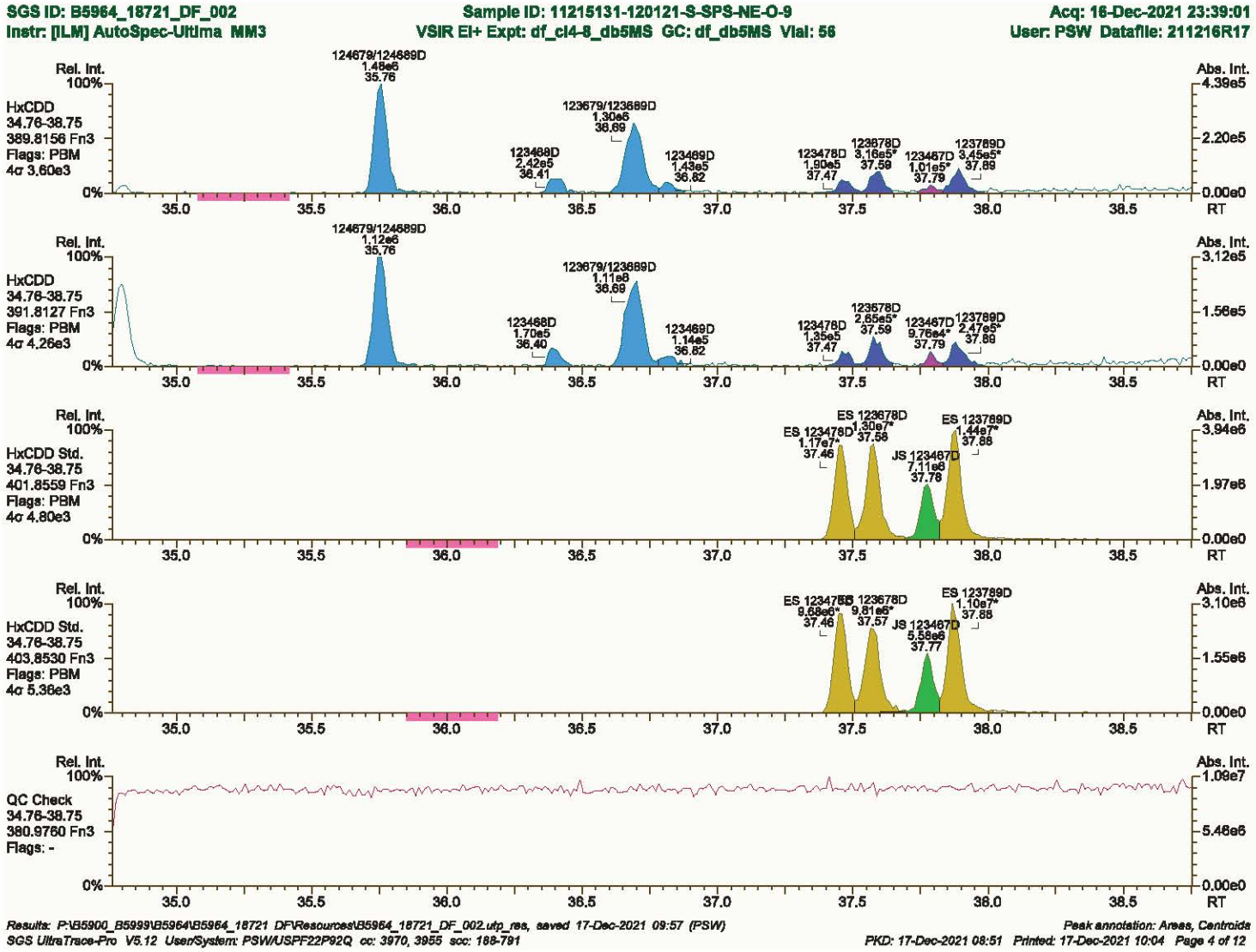
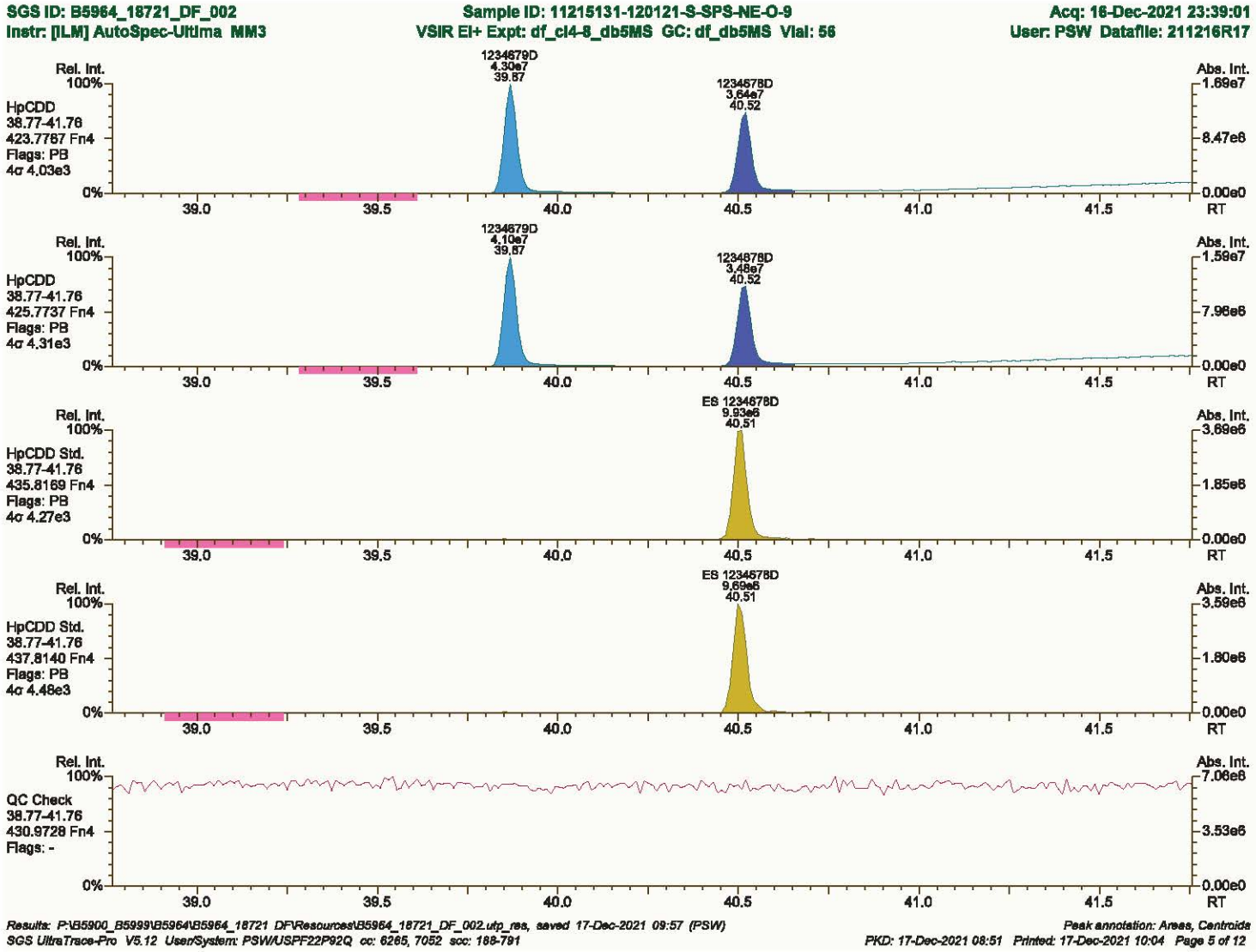
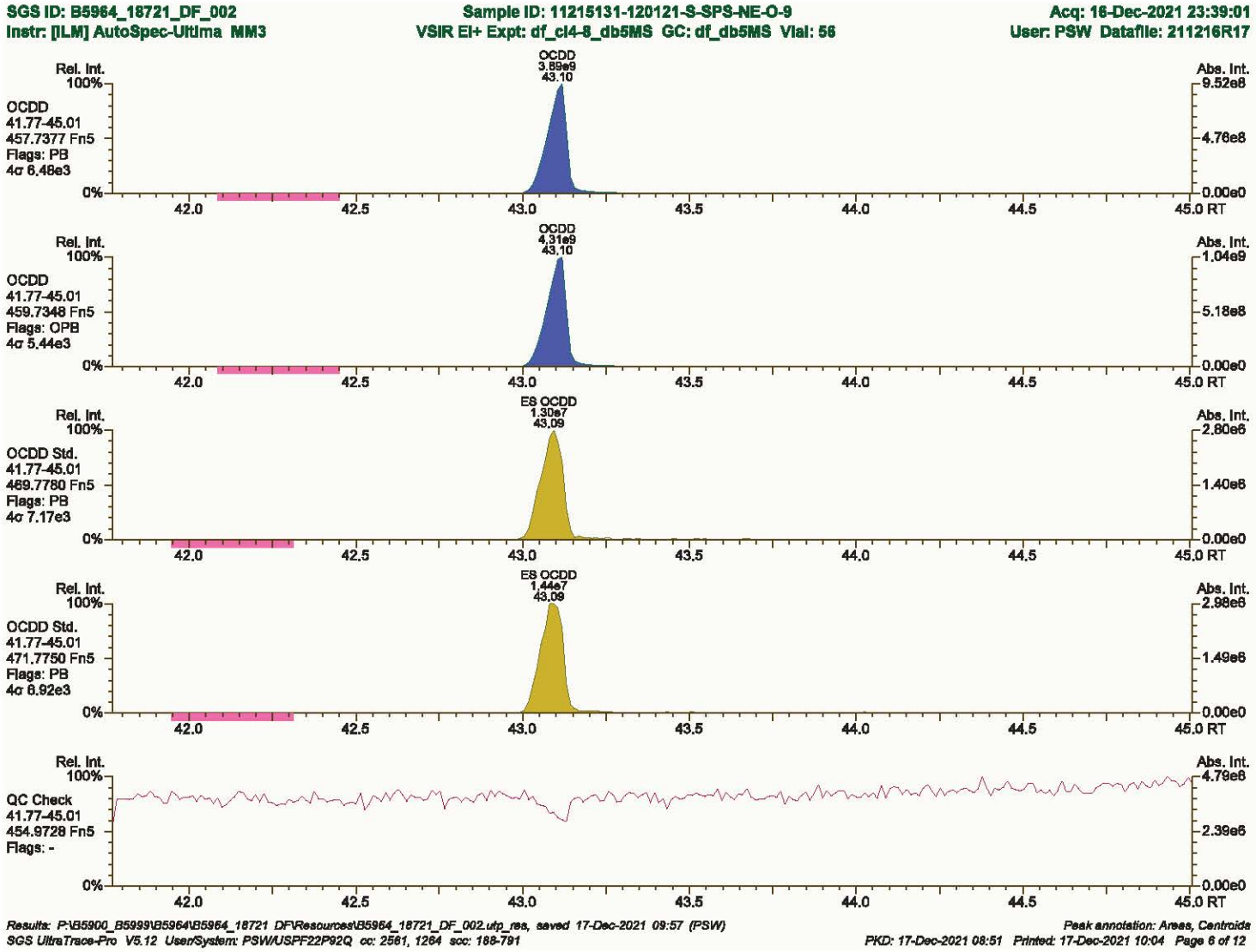
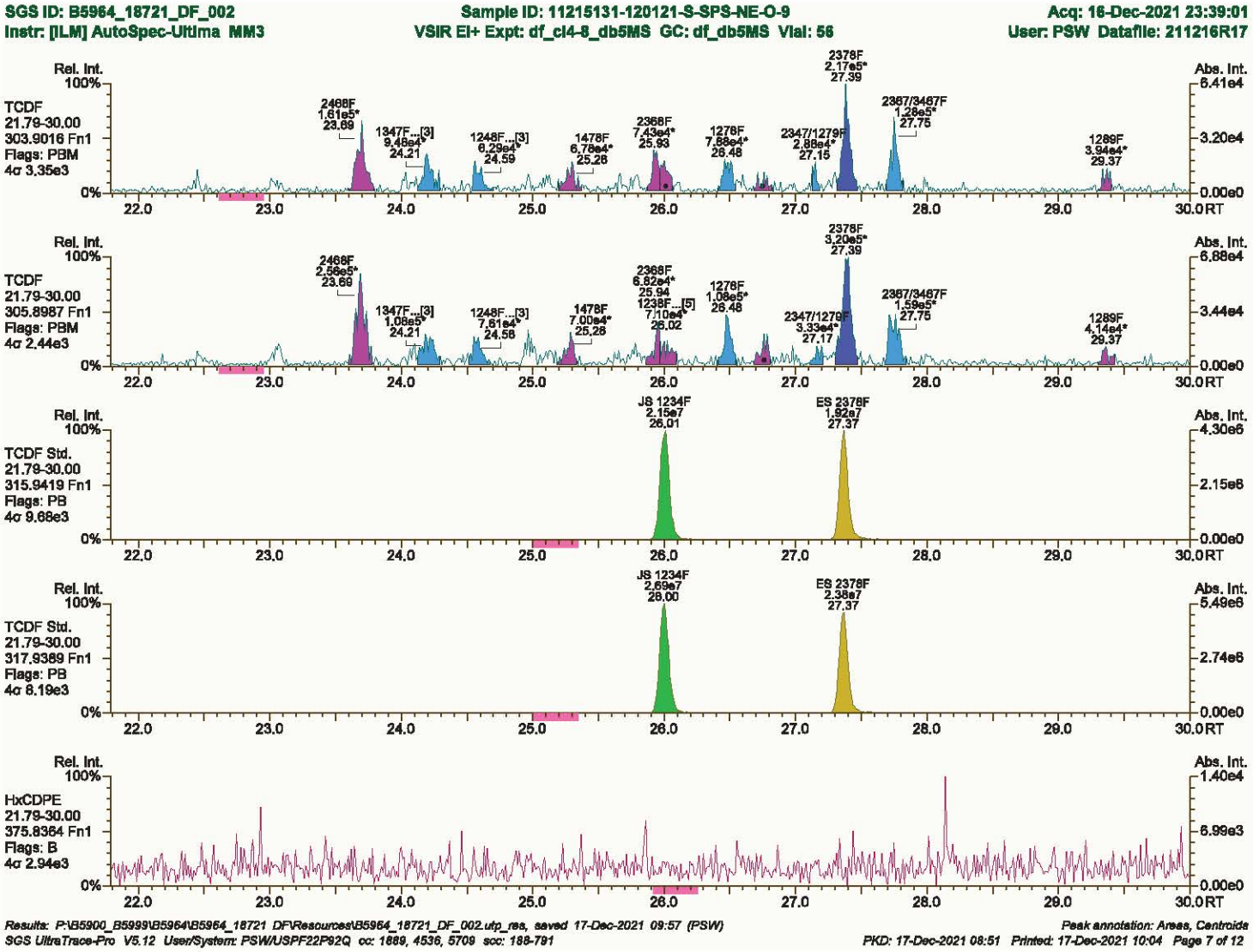
100%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0072, 4631, 9184 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 2 of 12

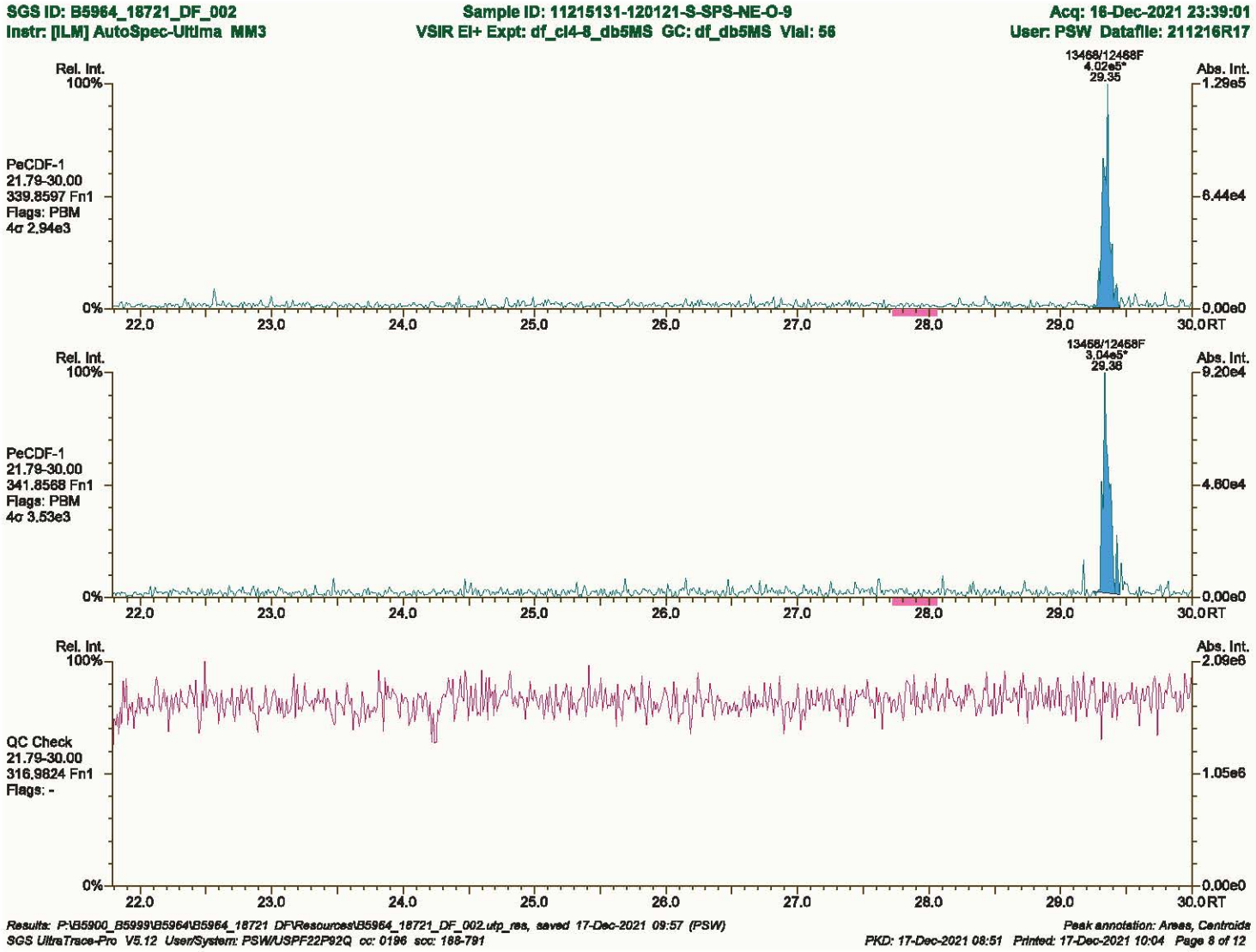

SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 3.26e3
12479/12468D 9.84e4* 31.10
12469D 7.48e4 31.63
12368D 6.33e4* 32.18
12478D 9.26e4* 32.36
12369D...[3] 7.24e4* 32.74
12378D 9.64e4* 33.60
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 2.87e3
12479/12468D 8.01e4* 31.10
12469D 6.55e4 31.63
12368D 3.32e4* 32.19
12478D 7.05e4* 32.37
12369D...[3] 5.29e4* 32.72
12378D 5.35e4* 33.60
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.72e3
CS 12347D 1.42e7 33.08
ES 12378D 1.61e7 33.58
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 4.37e3
CS 12347D 9.28e6 33.08
ES 12378D 1.05e7 33.58
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 8646, 5903 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 3 of 12

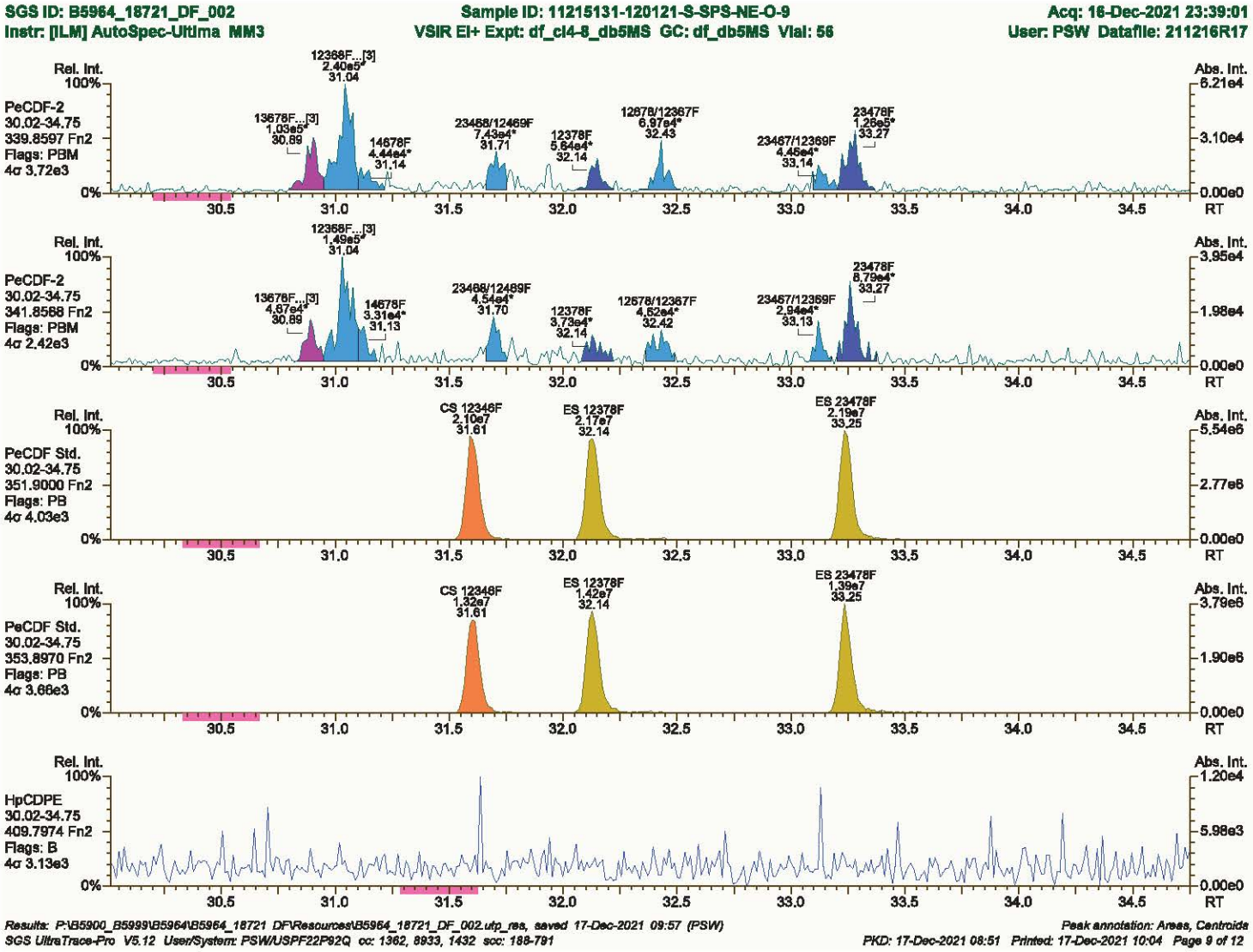

SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
Abs. Int.
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PBM
4σ 3.60e3
124679/124689D
1.48e6
35.76
123679/123689D
1.30e6
36.69
123468D
2.42e5
36.41
123469D
1.43e5
36.82
123478D
1.90e5
37.47
123678D
3.16e5*
37.59
123467D
1.01e5*
37.79
123789D
3.45e5*
37.89
4.39e5
2.20e5
0.00e0
RT
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 4.26e3
124679/124689D
1.12e6
35.76
123679/123689D
1.11e6
36.69
123468D
1.70e5
36.40
123469D
1.14e5
36.82
123478D
1.35e5
37.47
123678D
2.65e5*
37.59
123467D
9.76e4*
37.79
123789D
2.47e5*
37.89
3.12e5
1.56e5
0.00e0
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 4.80e3
ES 123678D
1.30e7*
37.58
ES 123478D
1.17e7*
37.46
ES 123789D
1.44e7*
37.88
JS 123467D
7.11e6
37.78
3.94e6
1.97e6
0.00e0
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 5.36e3
ES 123478D
9.68e6*
37.46
ES 123678D
9.81e6*
37.57
ES 123789D
1.10e7*
37.88
JS 123467D
5.58e6
37.77
3.10e6
1.55e6
0.00e0
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
1.09e7
5.46e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 3970, 3955 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 4 of 12

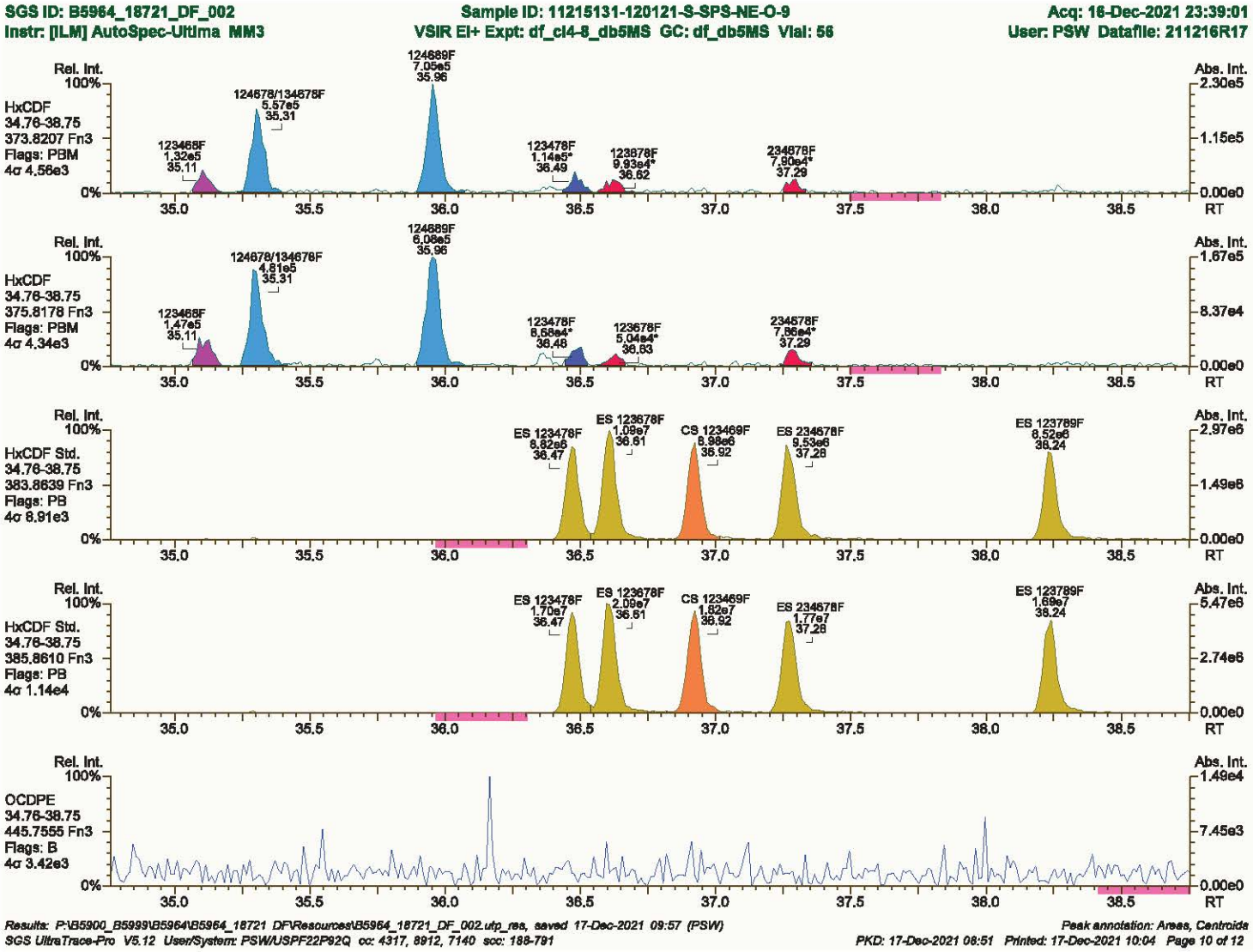

SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
Abs. Int.
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.03e3
1234679D
4.30e7
39.57
1234678D
3.64e7
40.52
1.69e7
8.47e6
0.00e0
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 4.31e3
1234679D
4.10e7
39.57
1234678D
3.48e7
40.52
1.59e7
7.96e6
0.00e0
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.27e3
ES 1234678D
9.93e6
40.51
3.69e6
1.85e6
0.00e0
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.48e3
ES 1234678D
9.69e6
40.51
3.58e6
1.80e6
0.00e0
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
7.06e6
3.53e6
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 6265, 7052 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 5 of 12

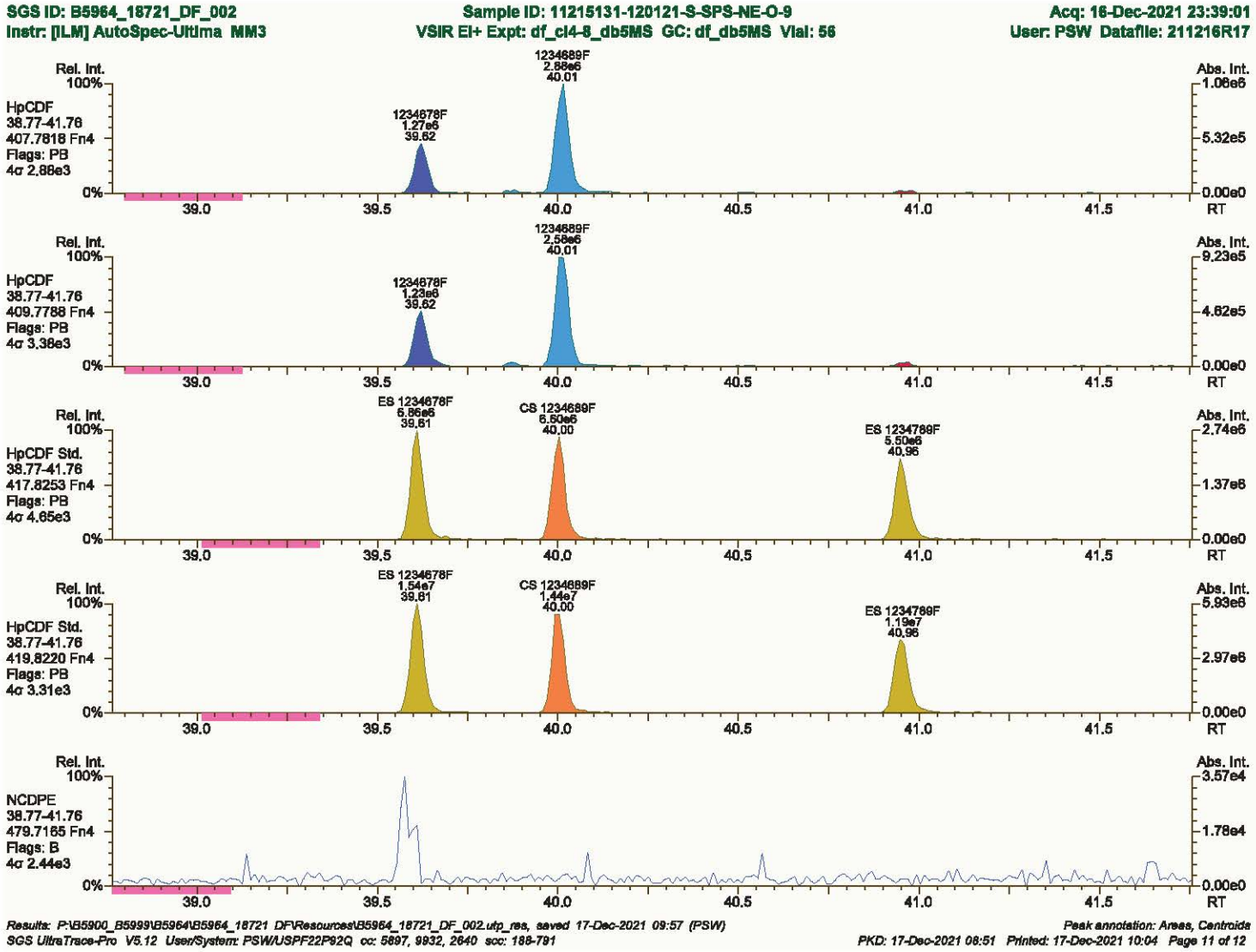

SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
Abs. Int.
OCDD
3.89e9
43.10
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 6.48e3
9.52e8
4.76e8
0.00e0
OCDD
4.31e9
43.10
OCDD
41.77-45.01
459.7348 Fn5
Flags: QPB
4σ 5.44e3
1.04e9
5.18e8
ES OCDD
1.30e7
43.09
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 7.17e3
2.80e6
1.40e6
ES OCDD
1.44e7
43.09
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 6.92e3
2.98e6
1.49e6
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
4.79e6
2.39e6
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 2561, 1264 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 6 of 12

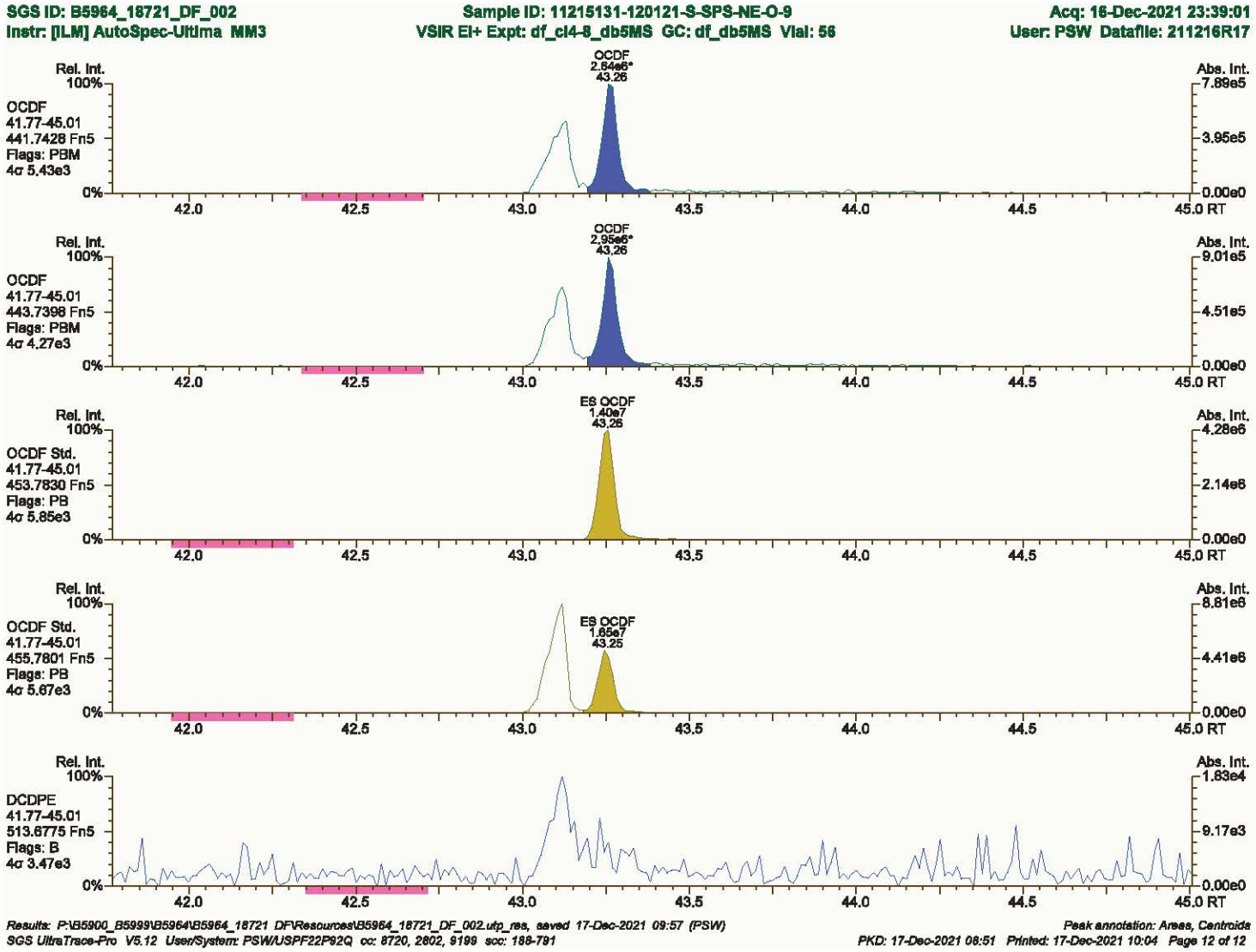

SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.35e3
2468F 1.61e5* 23.69
1347F...[3] 9.46e4* 24.21
1248F...[3] 6.29e4* 24.59
1478F 6.78e4* 25.28
2368F 7.43e4* 25.93
1278F 7.88e4* 26.48
2347/1279F 2.88e4* 27.15
2378F 2.17e5* 27.39
2367/3467F 1.28e5* 27.75
1289F 3.94e4* 29.37
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 2.44e3
2468F 2.56e5* 23.69
1347F...[3] 1.08e5* 24.21
1248F...[3] 7.61e4* 24.56
1478F 7.00e4* 25.28
2368F 6.82e4* 25.94
1238F...[5] 7.10e4* 26.02
1278F 1.08e5* 26.48
2347/1279F 3.33e4* 27.17
2378F 3.20e5* 27.39
2367/3467F 1.59e5* 27.75
1289F 4.14e4* 29.37
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 9.68e3
JS 1234F 2.15e7 26.01
ES 2378F 1.92e7 27.37
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 8.19e3
JS 1234F 2.69e7 26.00
ES 2378F 2.38e7 27.37
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.94e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1689, 4536, 5709 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 7 of 12


SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
100%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PBM
4σ 2.94e3
13468/12468F
4.02e5*
29.35
Abs. Int.
1.29e5
6.44e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PBM
4σ 3.53e3
13468/12468F
3.04e5*
29.36
Abs. Int.
9.20e4
4.60e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
2.09e6
1.05e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0196 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 8 of 12


SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.72e3
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 2.42e3
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.03e3
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 3.66e3
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.13e3
Rel. Int.
Abs. Int.
RT
CS 12346F
ES 12378F
ES 23478F
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1362, 8933, 1432 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 9 of 12


SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
Abs. Int.
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 4.56e3
123468F
1.32e5
35.11
124678/134678F
5.57e5
35.31
124689F
7.05e5
35.96
123478F
1.14e5*
36.49
123678F
9.93e4*
36.62
234678F
7.90e4*
37.29
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 4.34e3
123468F
1.47e5
35.11
124678/134678F
4.81e5
35.31
124689F
6.08e5
35.96
123478F
6.68e4*
36.48
123678F
5.04e4*
36.63
234678F
7.86e4*
37.29
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 8.91e3
ES 123478F
8.82e6
36.47
ES 123678F
1.09e7
36.61
CS 123469F
8.98e6
36.92
ES 234678F
9.53e6
37.28
ES 123789F
8.52e6
38.24
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.14e4
ES 123478F
1.70e7
36.47
ES 123678F
2.09e7
36.61
CS 123469F
1.82e7
36.92
ES 234678F
1.77e7
37.28
ES 123789F
1.69e7
38.24
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 3.42e3
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
2.30e5
1.15e5
0.00e0
1.67e5
8.37e4
2.97e6
1.49e6
5.47e6
2.74e6
1.49e4
7.45e3
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4317, 8912, 7140 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 10 of 12


SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 2.88e3
1234678F
1.27e6
39.62
1234689F
2.88e6
40.01
1.06e6
5.32e5
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.38e3
1234678F
1.23e6
39.62
1234689F
2.58e6
40.01
9.23e5
4.62e5
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 4.65e3
ES 1234678F
6.86e6
39.61
CS 1234689F
6.50e6
40.00
ES 1234789F
5.50e6
40.96
2.74e6
1.37e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 3.31e3
ES 1234678F
1.54e7
39.61
CS 1234689F
1.44e7
40.00
ES 1234789F
1.19e7
40.96
5.93e6
2.97e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.44e3
3.57e4
1.78e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


SGS ID: B5964_18721_DF_002
Sample ID: 11215131-120121-S-SPS-NE-O-9
Acq: 16-Dec-2021 23:39:01
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: PSW Datafile: 211216R17
Rel. Int.
Abs. Int.
OCDF
2.64e6*
43.26
OCDF
41.77-45.01
441.7428 Fn5
Flags: PBM
4σ 5.43e3
7.89e5
3.95e5
0.00e0
OCDF
2.95e6*
43.26
OCDF
41.77-45.01
443.7398 Fn5
Flags: PBM
4σ 4.27e3
9.01e5
4.51e5
0.00e0
ES OCDF
1.40e7
43.26
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 5.85e3
4.28e6
2.14e6
0.00e0
ES OCDF
1.65e7
43.25
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 5.67e3
8.81e6
4.41e6
0.00e0
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.47e3
1.83e4
9.17e3
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_002.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8720, 2602, 9199 scc: 188-791
PKD: 17-Dec-2021 08:51 Printed: 17-Dec-2021 10:04 Page 12 of 12

Lab ID: B6964_16721_DF_003 | Acq'd: 17 Dec 2021 00:26 PSW | Wt/Vol: 10.28 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-B-2 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.486 pg/g | Split: 1 | Checkcode: 502-032-NHC

Datafile: 211216R18 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.23		1.0008	1.0008	0	7.82E+06	0.83	Y	1.34	44.1	9600.338	0.578
12378-PeCDD	33.59	J	1.0005	1.0005	0	1.58E+05	1.59	Y	1.06	1.32	11733.625	1.04
123478-HxCDD	37.46	J	1.0003	1.0006	+0.7	1.70E+05	1.22	Y	1.06	1.65	15999.477	1.3
123678-HxCDD	37.58		1.0033	1.0036	+0.7	5.20E+05	1.31	Y	1.08	4.76	15999.477	1.32
123789-HxCDD	37.87		1.0110	1.0116	+1.4	3.42E+05	1.08	Y	1.02	2.9	15999.477	1.07
1234678-HpCDD	40.51		1.0003	1.0003	0	1.52E+07	1.07	Y	0.97	165	17120.823	1.23
OCDD	43.06		1.0003	1.0003	0	4.36E+08	0.90	Y	1.07	6,550	34198.54	4.26
2378-TCDF	27.37		1.0006	1.0008	+0.3	3.27E+07	0.78	Y	0.96	196	6636.74	0.422
12378-PeCDF	32.13	EMPC	1.0006	1.0005	-0.2	5.48E+05	1.80	N	0.95	3.65	7410.296	0.471
23478-PeCDF	33.26		1.0006	1.0008	+0.4	7.84E+05	1.47	Y	0.94	5.55	7410.296	0.471
123478-HxCDF	36.47		1.0004	1.0003	-0.2	8.38E+05	1.15	Y	1.23	5.86	11197.678	0.657
123678-HxCDF	36.61	J EMPC	1.0004	1.0004	0	3.44E+05	1.05	N	1.13	2.21	11197.678	0.604
234678-HxCDF	37.28	J	1.0005	1.0005	0	2.49E+05	1.34	Y	1.15	1.81	11197.678	0.695
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	11197.678	0.655
1234678-HpCDF	39.61		1.0003	1.0002	-0.2	1.02E+07	1.08	Y	1.36	75	7991.58	0.399
1234789-HpCDF	40.95		1.0003	1.0001	-0.5	6.39E+05	0.94	Y	1.30	5.79	7991.58	0.511
OCDF	43.24		1.0002	1.0003	+0.3	1.37E+08	0.89	Y	1.03	1,750	8246.425	0.832

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.21	1.0237	1.0240	+0.5	2.57E+07	0.76	Y	1.03	84.7
ES 12378-PeCDD	33.57	1.2158	1.2186	+5.6	2.20E+07	1.55	Y	1.03	72.6
ES 123478-HxCDD	37.44	0.9920	0.9915	-1.1	1.90E+07	1.30	Y	0.99	80.3
ES 123678-HxCDD	37.56	0.9949	0.9947	-0.5	1.96E+07	1.32	Y	0.97	84.9
ES 123789-HxCDD	37.86	1.0026	1.0026	0	2.25E+07	1.29	Y	1.12	84.5
ES 1234678-HpCDD	40.50	1.0713	1.0724	+2.7	1.84E+07	1.05	Y	0.99	78.3
ES OCDD	43.04	1.1385	1.1398	+3.4	2.42E+07	0.85	Y	0.78	65.6
ES 2378-TCDF	27.35	1.0519	1.0526	+1.1	3.39E+07	0.75	Y	1.08	77.9
ES 12378-PeCDF	32.12	1.2331	1.2362	+6.0	3.08E+07	1.58	Y	0.93	82.3
ES 23478-PeCDF	33.23	1.2754	1.2791	+7.4	2.93E+07	1.59	Y	0.92	79.1
ES 123478-HxCDF	36.46	0.9656	0.9655	-0.2	2.25E+07	0.50	Y	1.14	83
ES 123678-HxCDF	36.60	0.9693	0.9691	-0.4	2.68E+07	0.52	Y	1.30	87.1
ES 234678-HxCDF	37.26	0.9869	0.9867	-0.4	2.33E+07	0.54	Y	1.20	81.7
ES 123789-HxCDF	38.22	1.0121	1.0123	+0.5	2.25E+07	0.52	Y	1.14	83.4
ES 1234678-HpCDF	39.60	1.0478	1.0487	+2.1	1.94E+07	0.43	Y	0.95	86.2
ES 1234789-HpCDF	40.94	1.0832	1.0842	+2.5	1.65E+07	0.45	Y	0.85	82.1
ES OCDF	43.22	1.1434	1.1447	+3.4	2.97E+07	0.87	Y	0.93	67.5

Lab ID: B5964_18721_DF_003 | Acq'd: 17 Dec 2021 00:26 PSW | Wt/Vol: 10.28 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-B-2 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.486 pg/g | Split: 1 | Checkcode: 502-032-NHC

Datafile: 211216R18 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.55		-	-	-	2.93E+07	0.78	Y	-	-
JS 1234-TCDF	25.98		-	-	-	4.01E+07	0.78	Y	-	-
JS 123467-HxCDD	37.76		-	-	-	1.19E+07	1.27	Y	-	-
CS 37Cl-2378-TCDD	28.23		1.0245	1.0248	+0.5	1.13E+07	n/a	-	1.31	73.5
CS 12347-PeCDD	33.07		1.1978	1.2002	+4.8	2.01E+07	1.65	Y	0.89	76.7
CS 12346-PeCDF	31.59		1.2130	1.2159	+5.5	2.91E+07	1.61	Y	0.87	83.4
CS 123469-HxCDF	36.91		0.9775	0.9774	-0.2	2.37E+07	0.49	Y	1.09	91.4
CS 1234689-HpCDF	39.99		1.0580	1.0590	+2.4	1.89E+07	0.45	Y	0.86	92
~~SS 37Cl-2378-TCDD~~	~~28.23~~		~~1.0245~~	~~1.0240~~	~~+0.5~~	~~1.13E+07~~	~~n/a~~		~~1.26~~	~~87.3~~
~~SS 12347-PeCDD~~	~~33.07~~		~~1.1978~~	~~1.2002~~	~~+4.8~~	~~2.01E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~185~~
~~SS 12346-PeCDF~~	~~31.59~~		~~1.2130~~	~~1.2159~~	~~+5.5~~	~~2.91E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~181~~
~~SS 123469-HxCDF~~	~~36.91~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~2.37E+07~~	~~0.49~~	~~Y~~	~~0.84~~	~~185~~
~~SS 1234689-HpCDF~~	~~39.99~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~1.89E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~106~~

Totals	Conc	EMPC
Total TCDD	50.6	56.7
Total PeCDD	3.16	11.8
Total HxCDD	73.4	73.4
Total HpCDD	425	425
Total Tetra-Octa Dioxins	7100	7120
Total TCDF	384	397
Total PeCDF	31.5	37.8
Total HxCDF	36.6	38.8
Total HpCDF	135	135
Total Tetra-Octa Furans	2,330	2350
Total Tetra-Octa Dioxins & Furans	9440	9470

Lab ID: B6964_18721_DF_003 | Acq'd: 17 Dec 2021 00:26 PSW | Wt/Vol: 10.28 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-B-2 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.486 pg/g | Split: 1 | Checkcode: 502-032-NHC

Datafile: 211216R18 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.56		0.8726	0.8706	-2.9	2.47E+05	0.74	Y	1.34	1.39	9600.338	0.578
1379-TCDD	NotFnd		0.8851						1.34		9600.338	0.578
1369-TCDD	NotFnd		0.9002						1.34		9600.338	0.578
1469-TCDD	26.14		0.9275	0.9267	-1.3	8.97E+05	0.70	Y	1.34	5.06	9600.338	0.578
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		9600.338	0.578
1378-TCDD	26.55	EMPC	0.9427	0.9412	-2.4	1.00E+05	1.35	N	1.34	0.566	9600.338	0.578
1268-TCDD	NotFnd		0.9498						1.34		9600.338	0.578
1478-TCDD	NotFnd		0.9584						1.34		9600.338	0.578
1279-TCDD	NotFnd		0.9644						1.34		9600.338	0.578
1234/1269-TCDD	27.54	EMPC	0.9766	0.9762	-0.7	1.52E+05	0.98	N	1.34	0.857	9600.338	0.578
1236-TCDD	NotFnd		0.9813						1.34		9600.338	0.578
1237/1238-TCDD	27.95	EMPC	0.9906	0.9907	+0.2	2.25E+05	1.08	N	1.34	1.27	9600.338	0.578
1239-TCDD	NotFnd		0.9952						1.34		9600.338	0.578
2378-TCDD	**28.23**		**1.0008**	1.0008	**0**	7.82E+06	0.83	Y	**1.34**	**44.1**	**9600.338**	**0.578**
1278-TCDD	28.56	EMPC	1.0122	1.0123	+0.2	6.14E+05	0.92	N	1.34	3.46	9600.338	0.578
1267-TCDD	NotFnd		1.0168						1.34		9600.338	0.578
1289-TCDD	NotFnd		1.0349						1.34		9600.338	0.578
12479/12468-PeCDD	31.08	EMPC	0.9267	0.9258	-1.7	3.74E+05	1.30	N	1.06	3.12	11733.625	1.04
12469-PeCDD	31.62	EMPC	0.9425	0.9417	-1.5	4.43E+05	1.28	N	1.06	3.69	11733.625	1.04
12368-PeCDD	32.17	J EMPC	0.9588	0.9583	-1.0	1.19E+05	1.81	N	1.06	0.995	11733.625	1.04
12478-PeCDD	NotFnd		0.9643						1.06		11733.625	1.04
12379-PeCDD	32.45	J EMPC	0.9673	0.9665	-1.6	1.04E+05	1.30	N	1.06	0.863	11733.625	1.04
12369/12467/12489-PeCDD	32.71	J	0.9750	0.9745	-1.0	2.22E+05	1.68	Y	1.06	1.85	11733.625	1.04
12346/12347-PeCDD	NotFnd		0.9859						1.06		11733.625	1.04
12378-PeCDD	33.59	J	**1.0005**	**1.0005**	**0**	**1.58E+05**	**1.59**	**Y**	**1.06**	**1.32**	**11733.625**	**1.04**
12367-PeCDD	NotFnd		1.0032						1.06		11733.625	1.04
12389-PeCDD	NotFnd		1.0135						1.06		11733.625	1.04
124679/124689-HxCDD	35.74		0.9544	0.9547	+0.6	4.39E+06	1.20	Y	1.05	39.9	15999.477	1.22
123468-HxCDD	36.39		0.9716	0.9719	+0.7	3.46E+05	1.10	Y	1.05	3.14	15999.477	1.22
123679/123689-HxCDD	36.68		0.9793	0.9797	+0.9	2.13E+06	1.31	Y	1.05	19.3	15999.477	1.22
123469-HxCDD	36.80	J	0.9829	0.9830	+0.2	1.92E+05	1.40	Y	1.05	1.74	15999.477	1.22
123478-HxCDD	37.46	J	**1.0003**	**1.0006**	**+0.7**	**1.70E+05**	**1.22**	**Y**	1.06	**1.65**	**15999.477**	**1.3**
123678-HxCDD	37.58		**1.0033**	**1.0036**	**+0.7**	**5.20E+05**	**1.31**	**Y**	1.08	**4.76**	**15999.477**	**1.32**
123467-HxCDD	NotFnd		1.0084						1.05		15999.477	1.22
123789-HxCDD	37.87		**1.0110**	**1.0116**	**+1.4**	**3.42E+05**	**1.08**	**Y**	1.02	**2.9**	**15999.477**	**1.07**

Lab ID: B6964_16721_DF_003 | Acq'd: 17 Dec 2021 00:26 PSW | Wt/Vol: 10.28 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-B-2 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.486 pg/g | Split: 1 | Checkcode: 502-032-NHC

Datafile: 211216R18 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	2.40E+07	1.04	Y	0.97	260	17120.823	1.23
1234678-HpCDD	**40.51**		**1.0003**	**1.0003**	**0**	**1.52E+07**	**1.07**	**Y**	**0.97**	**165**	**17120.823**	**1.23**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**4.36E+08**	**0.90**	**Y**	**1.07**	**6,550**	**34198.54**	**4.26**
OCDD-a	43.05		1.0001	1.0002	+0.3	2.70E+07	2.50	Y	0.07	6,570	21123.448	42.6
1368-TCDF	22.41	J	0.8230	0.8196	-4.6	8.13E+04	0.78	Y	0.96	0.486	6636.74	0.422
1468-TCDF	23.01		0.8443	0.8414	-4.0	2.10E+05	0.83	Y	0.96	1.26	6636.74	0.422
2468-TCDF	23.66		0.8672	0.8652	-2.8	6.27E+05	0.83	Y	0.96	3.75	6636.74	0.422
1346/1246-TCDF	24.09	EMPC	0.8802	0.8808	+0.9	1.88E+05	0.92	N	0.96	1.13	6636.74	0.422
1347/1378/1247-TCDF	24.21		0.8855	0.8850	-0.7	5.96E+05	0.72	Y	0.96	3.56	6636.74	0.422
1348-TCDF	24.44	EMPC	0.8952	0.8936	-2.3	1.70E+05	0.99	N	0.96	1.02	6636.74	0.422
1248/1367/1379-TCDF	24.55		0.9000	0.8975	-3.7	1.83E+06	0.77	Y	0.96	10.9	6636.74	0.422
1268-TCDF	24.96		0.9136	0.9126	-1.5	7.76E+05	0.75	Y	0.96	4.64	6636.74	0.422
1467-TCDF	25.10	EMPC	0.9185	0.9177	-1.2	1.63E+05	0.57	N	0.96	0.977	6636.74	0.422
1478-TCDF	25.27		0.9247	0.9239	-1.2	1.60E+06	0.74	Y	0.96	9.58	6636.74	0.422
1369/1237-TCDF	25.63		0.9381	0.9372	-1.4	3.58E+05	0.88	Y	0.96	2.14	6636.74	0.422
2467-TCDF	25.76		0.9427	0.9420	-1.1	1.92E+05	0.79	Y	0.96	1.15	6636.74	0.422
2368-TCDF	25.93	EMPC	0.9484	0.9480	-0.6	1.24E+06	0.91	N	0.96	7.43	6636.74	0.422
1238/1234/1678/1469/1236-TCDF	26.01		0.9517	0.9509	-1.2	1.42E+06	0.70	Y	0.96	8.49	6636.74	0.422
1278-TCDF	26.47		0.9682	0.9678	-0.6	1.50E+07	0.79	Y	0.96	90	6636.74	0.422
1349-TCDF	NotFnd		0.9725						0.96		6636.74	0.422
1267-TCDF	26.74		0.9782	0.9778	-0.6	9.75E+05	0.73	Y	0.96	5.84	6636.74	0.422
2346/1249-TCDF	NotFnd		0.9846						0.96		6636.74	0.422
2347/1279-TCDF	27.14		0.9926	0.9924	-0.3	2.92E+05	0.74	Y	0.96	1.75	6636.74	0.422
2348-TCDF	27.26		0.9966	0.9968	+0.3	2.06E+06	0.83	Y	0.96	12.3	6636.74	0.422
2378-TCDF	**27.37**		**1.0006**	**1.0008**	**+0.3**	**3.27E+07**	**0.78**	**Y**	**0.96**	**196**	**6636.74**	**0.422**
2367/3467-TCDF	27.71		1.0139	1.0133	-1.0	2.99E+06	0.71	Y	0.96	17.9	6636.74	0.422
1269-TCDF	27.98	EMPC	1.0226	1.0232	+1.0	4.83E+05	0.95	N	0.96	2.89	6636.74	0.422
1239-TCDF	NotFnd		1.0322						0.96		6636.74	0.422
1289-TCDF	29.38		1.0729	1.0743	+2.5	2.37E+06	0.76	Y	0.96	14.2	6636.74	0.422
13468/12468-PeCDF	29.33		0.9135	0.9134	-0.2	1.65E+06	1.56	Y	0.94	11.3	7749.562	0.493
13678/13467/12467-PeCDF	30.87	J EMPC	0.9612	0.9613	+0.2	2.39E+05	1.87	N	0.94	1.64	7410.296	0.471
12368/13478/12478-PeCDF	31.03		0.9661	0.9661	0	1.10E+06	1.77	Y	0.94	7.57	7410.296	0.471
14678-PeCDF	31.12	J EMPC	0.9693	0.9688	-0.9	1.46E+05	1.24	N	0.94	1	7410.296	0.471
13479-PeCDF	NotFnd		0.9723						0.94		7410.296	0.471
13469/12479-PeCDF	NotFnd		0.9799						0.94		7410.296	0.471
12346-PeCDF	NotFnd		0.9842						0.94		7410.296	0.471

Lab ID: B6964_18721_DF_003 | Acq'd: 17 Dec 2021 00:26 PSW | Wt/Vol: 10.28 g | ICAL: MM3_DF_10272021_27JUL2021

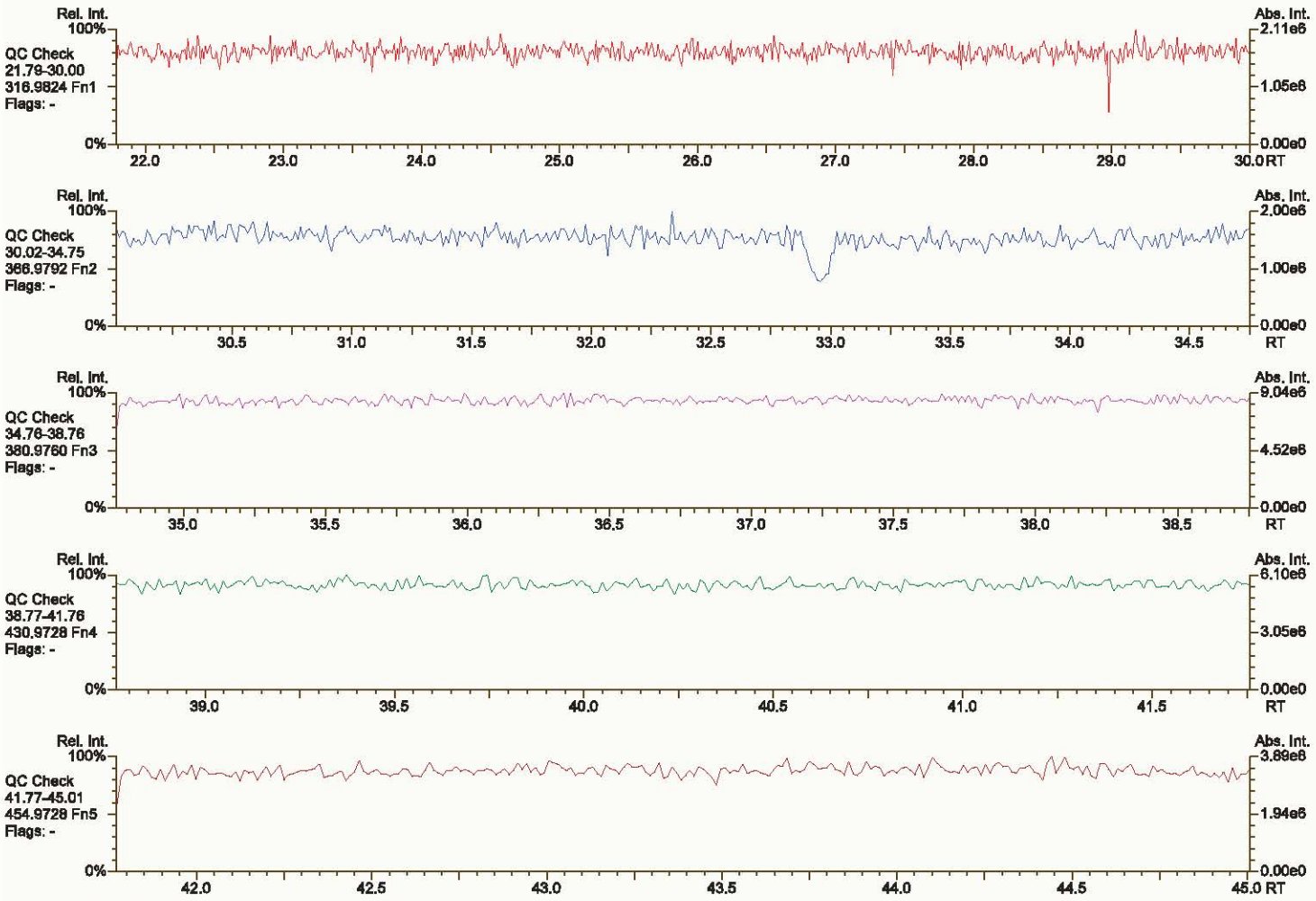
Client ID: 11215131-120121-S-SPS-NE-B-2 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.486 pg/g | Split: 1 | Checkcode: 502-032-NHC

Datafile: 211216R18 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.69	J	0.9868	0.9867	-0.2	2.75E+05	1.38	Y	0.94	1.89	7410.296	0.471
12347-PeCDF	31.76	J	0.9893	0.9890	-0.6	1.16E+05	1.51	Y	0.94	0.795	7410.296	0.471
12348-PeCDF	31.93	J	0.9941	0.9941	0	1.83E+05	1.37	Y	0.94	1.26	7410.296	0.471
12378-PeCDF	**32.13**	EMPC	**1.0006**	**1.0005**	**-0.2**	**5.48E+05**	**1.80**	**N**	**0.95**	**3.65**	**7410.296**	**0.471**
12678/12367-PeCDF	32.42		1.0090	1.0095	+1.0	3.59E+05	1.55	Y	0.94	2.46	7410.296	0.471
12379-PeCDF	NotFnd		1.0143						0.94		7410.296	0.471
12679-PeCDF	NotFnd		0.9929						0.94		7410.296	0.471
23467/12369-PeCDF	33.11	J	0.9966	0.9963	-0.6	9.45E+04	1.35	Y	0.94	0.649	7410.296	0.471
23478-PeCDF	**33.26**		**1.0006**	**1.0008**	**+0.4**	**7.84E+05**	**1.47**	**Y**	**0.94**	**5.55**	**7410.296**	**0.471**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7410.296	0.471
12349-PeCDF	NotFnd		1.0102						0.94		7410.296	0.471
12389-PeCDF	NotFnd		1.0325						0.94		7410.296	0.471
123468-HxCDF	35.10		0.9628	0.9628	0	5.28E+05	1.20	Y	1.16	3.71	11197.678	0.65
124678/134678-HxCDF	35.30		0.9683	0.9681	-0.4	1.64E+06	1.20	Y	1.16	11.5	11197.678	0.65
134679-HxCDF	NotFnd		0.9746						1.16		11197.678	0.65
124679-HxCDF	NotFnd		0.9798						1.16		11197.678	0.65
124689-HxCDF	35.94		0.9859	0.9859	0	1.65E+06	1.28	Y	1.16	11.6	11197.678	0.65
123467-HxCDF	36.36	J	0.9972	0.9972	0	1.46E+05	1.27	Y	1.16	1.03	11197.678	0.65
123478-HxCDF	**36.47**		**1.0004**	**1.0003**	**-0.2**	**8.38E+05**	**1.15**	**Y**	**1.23**	**5.86**	**11197.678**	**0.657**
123678-HxCDF	**36.61**	J EMPC	**1.0004**	**1.0004**	**0**	**3.44E+05**	**1.05**	**N**	**1.13**	**2.21**	**11197.678**	**0.604**
123479-HxCDF	NotFnd		1.0049						1.16		11197.678	0.65
123469-HxCDF	NotFnd		1.0088						1.16		11197.678	0.65
123679-HxCDF	NotFnd		0.9943						1.16		11197.678	0.65
234678-HxCDF	**37.28**	J	**1.0005**	**1.0005**	**0**	**2.49E+05**	**1.34**	**Y**	**1.15**	**1.81**	**11197.678**	**0.695**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		11197.678	0.65
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**11197.678**	**0.655**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.26	J	1.0007	1.0010	+0.7	1.54E+05	1.40	Y	1.16	1.09	11197.678	0.65
1234678-HpCDF	**39.61**		**1.0003**	**1.0002**	**-0.2**	**1.02E+07**	**1.08**	**Y**	**1.36**	**75**	**7991.58**	**0.399**
1234679-HpCDF	39.85		1.0067	1.0064	-0.7	5.35E+05	1.19	Y	1.33	4.35	7991.58	0.45
1234689-HpCDF	40.00		1.0100	1.0101	+0.2	6.07E+06	1.07	Y	1.33	49.4	7991.58	0.45
1234789-HpCDF	**40.95**		**1.0003**	**1.0001**	**-0.5**	**6.39E+05**	**0.94**	**Y**	**1.30**	**5.79**	**7991.58**	**0.511**
OCDF	**43.24**		**1.0002**	**1.0003**	**+0.3**	**1.37E+08**	**0.89**	**Y**	**1.03**	**1,750**	**8246.425**	**0.832**
OCDF-a	43.23		1.0002	1.0002	0	8.39E+06	2.49	Y	0.06	1,860	9461.923	16.5

SGS ID: B5964_18721_DF_003 | Sample ID: 11215131-120121-S-SPS-NE-B-2 | Acq: 17-Dec-2021 00:26:28

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57 | User: PSW Datafile: 211216R18



Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW)

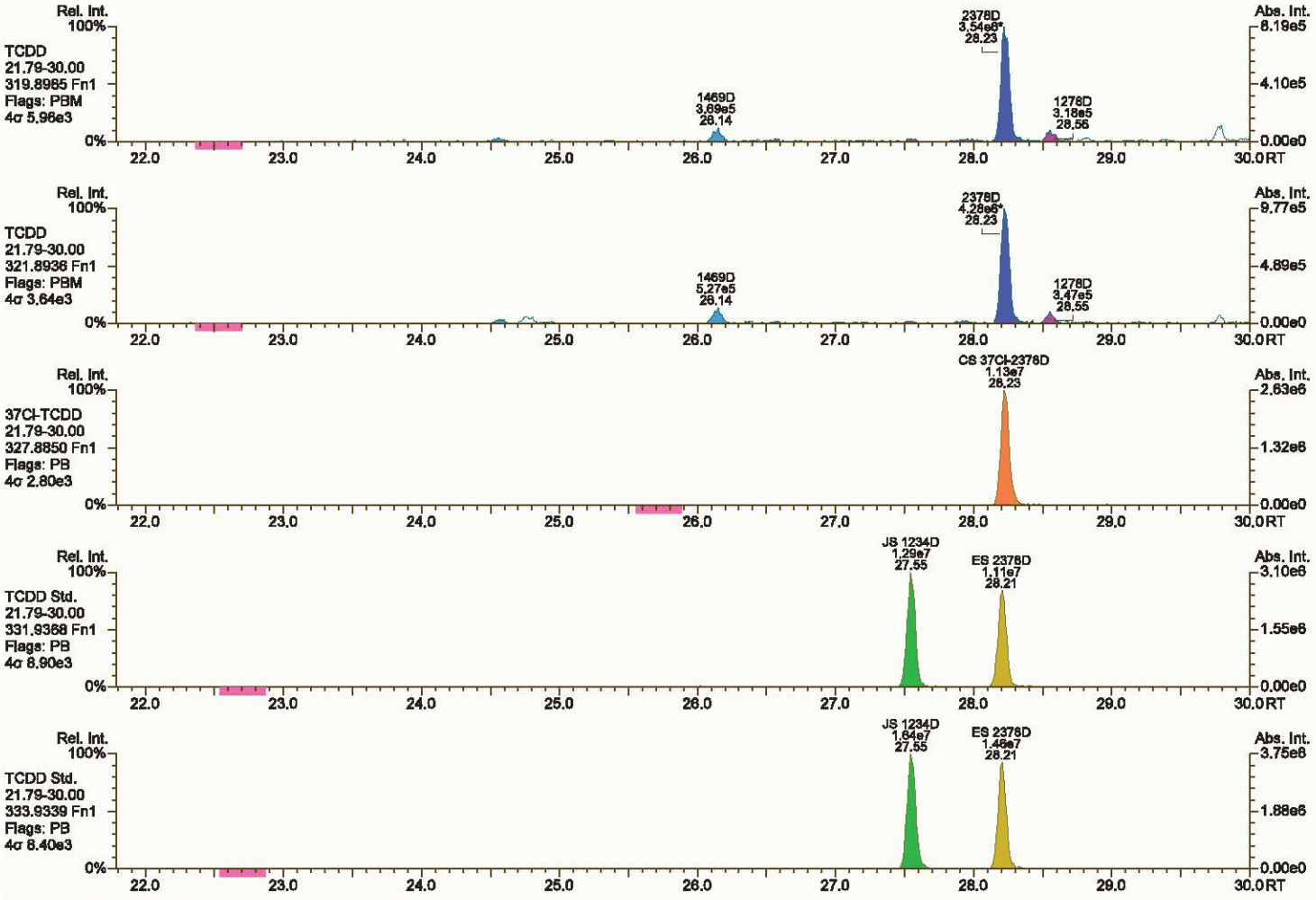
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 502-032

PKD: n/a Printed: 17-Dec-2021 10:06 Page 1 of 12

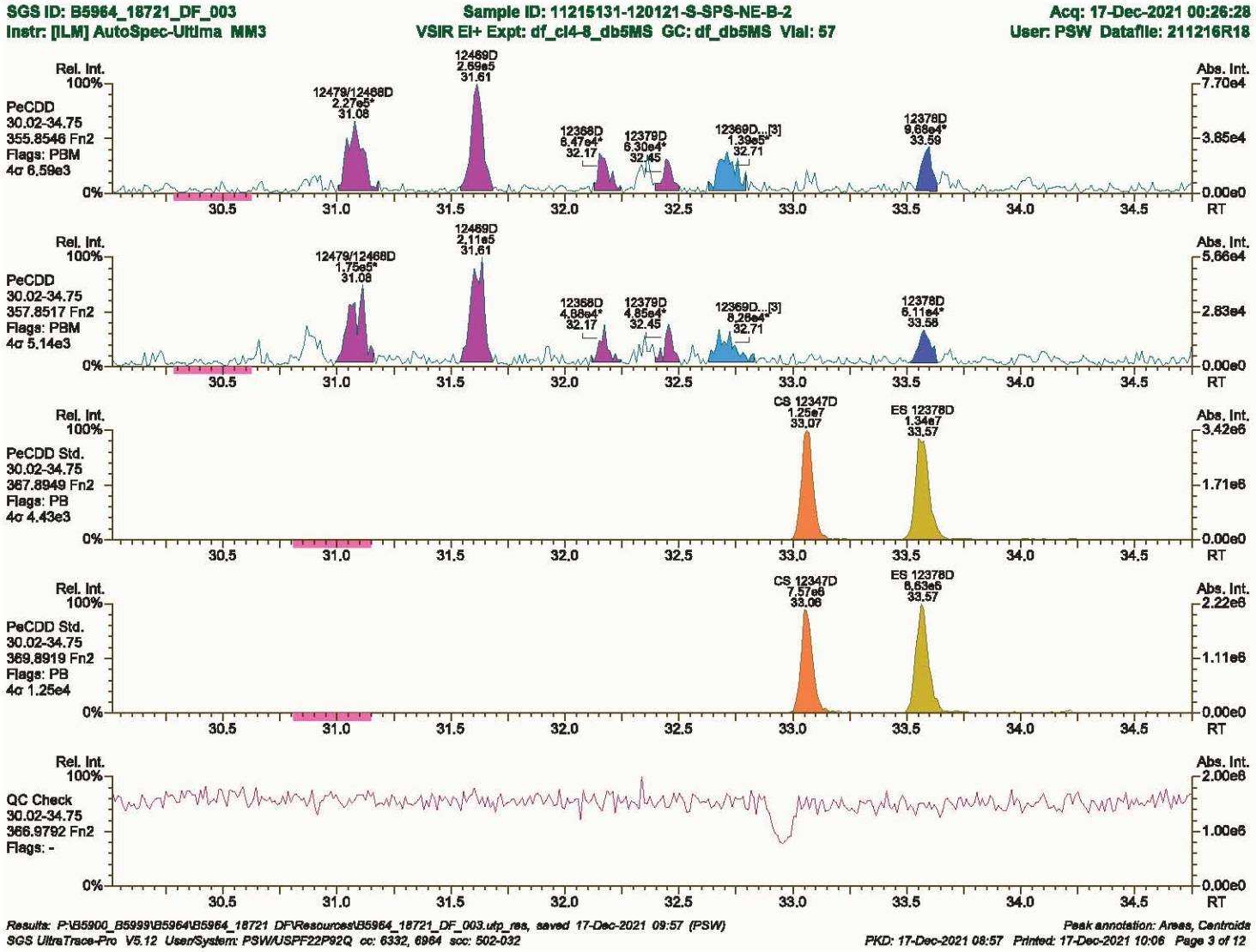
SGS ID: B5964_18721_DF_003 | Sample ID: 11215131-120121-S-SPS-NE-B-2 | Acq: 17-Dec-2021 00:26:28

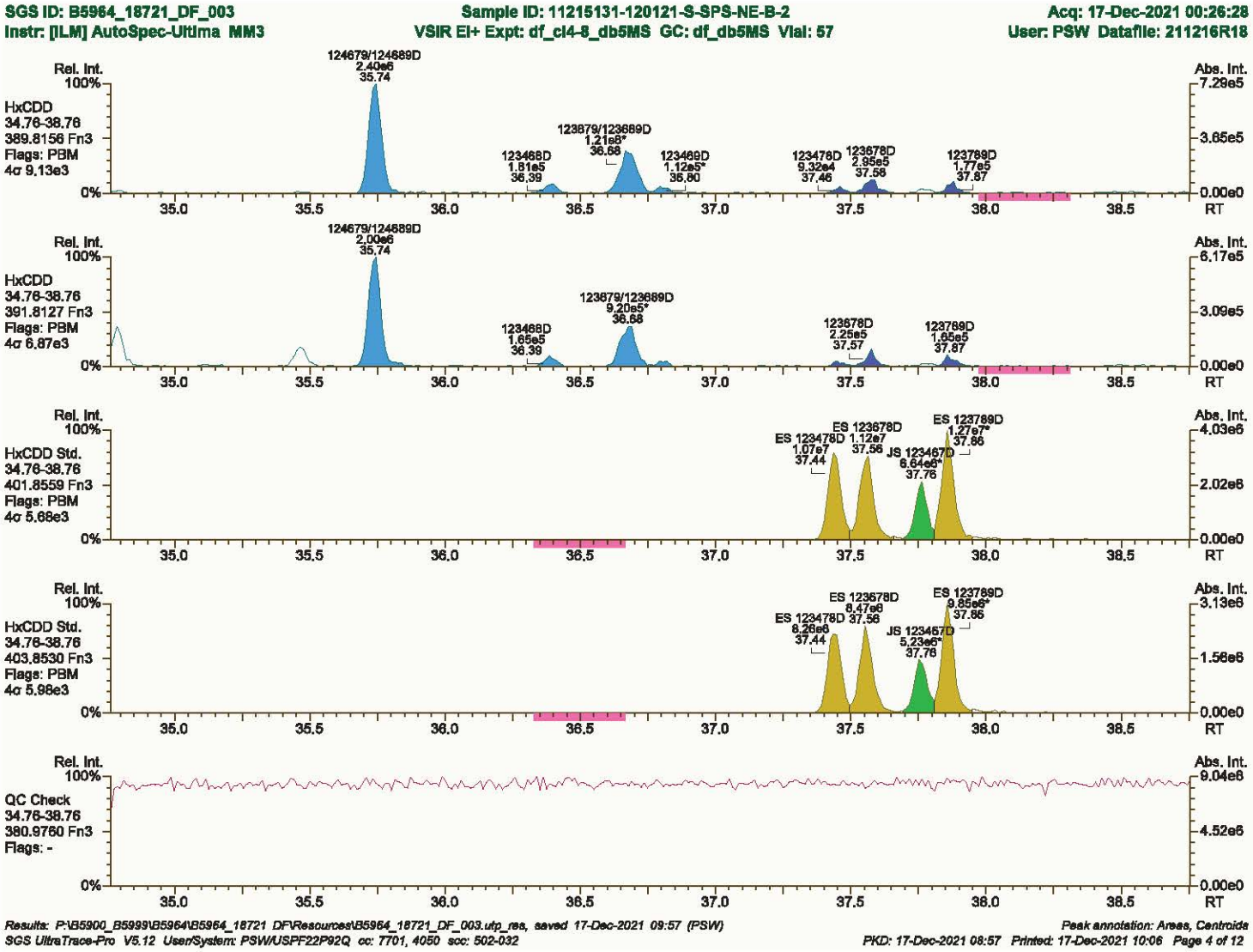
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57 | User: PSW Datafile: 211216R18



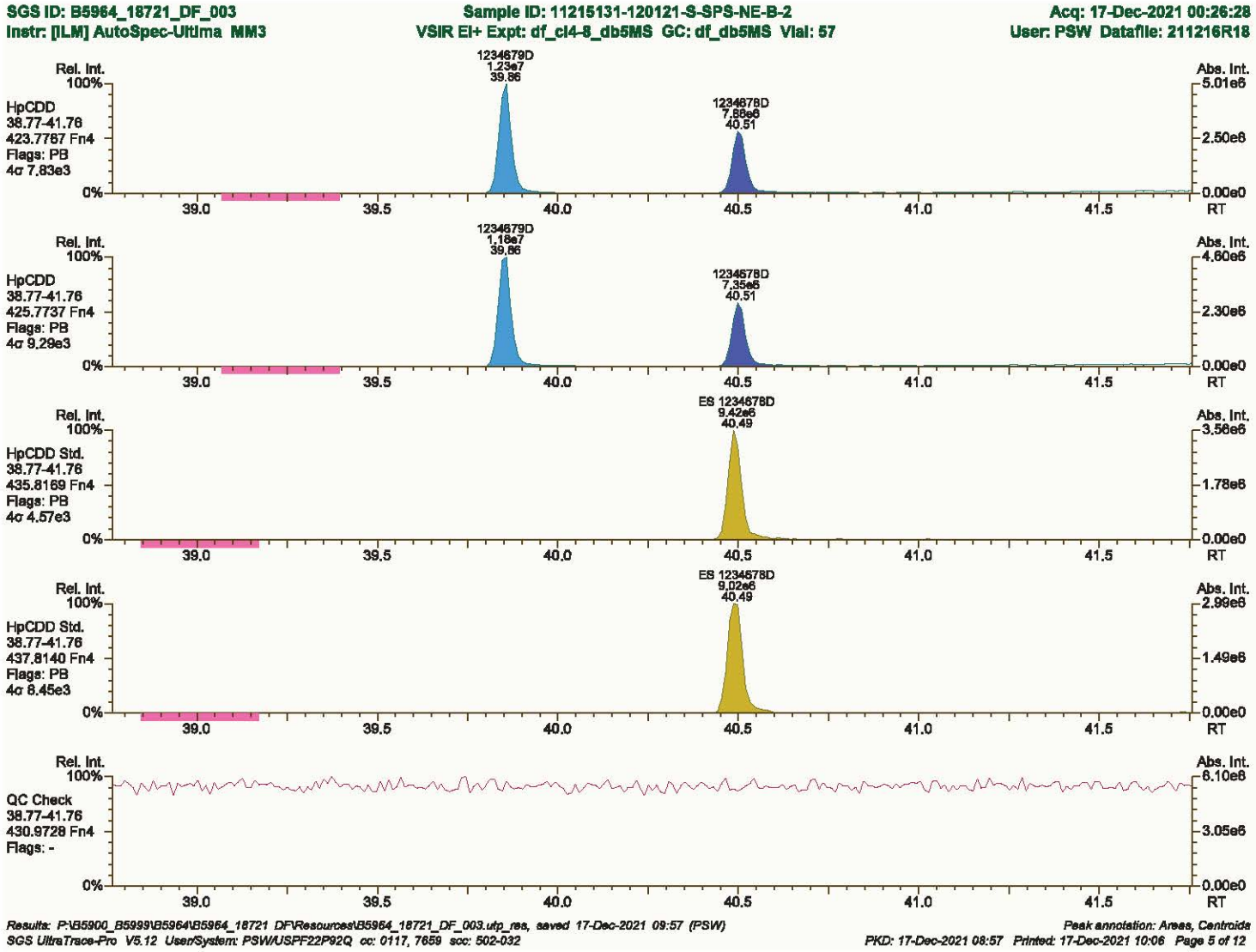
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW) *Peak annotation: Areas, Centroids*

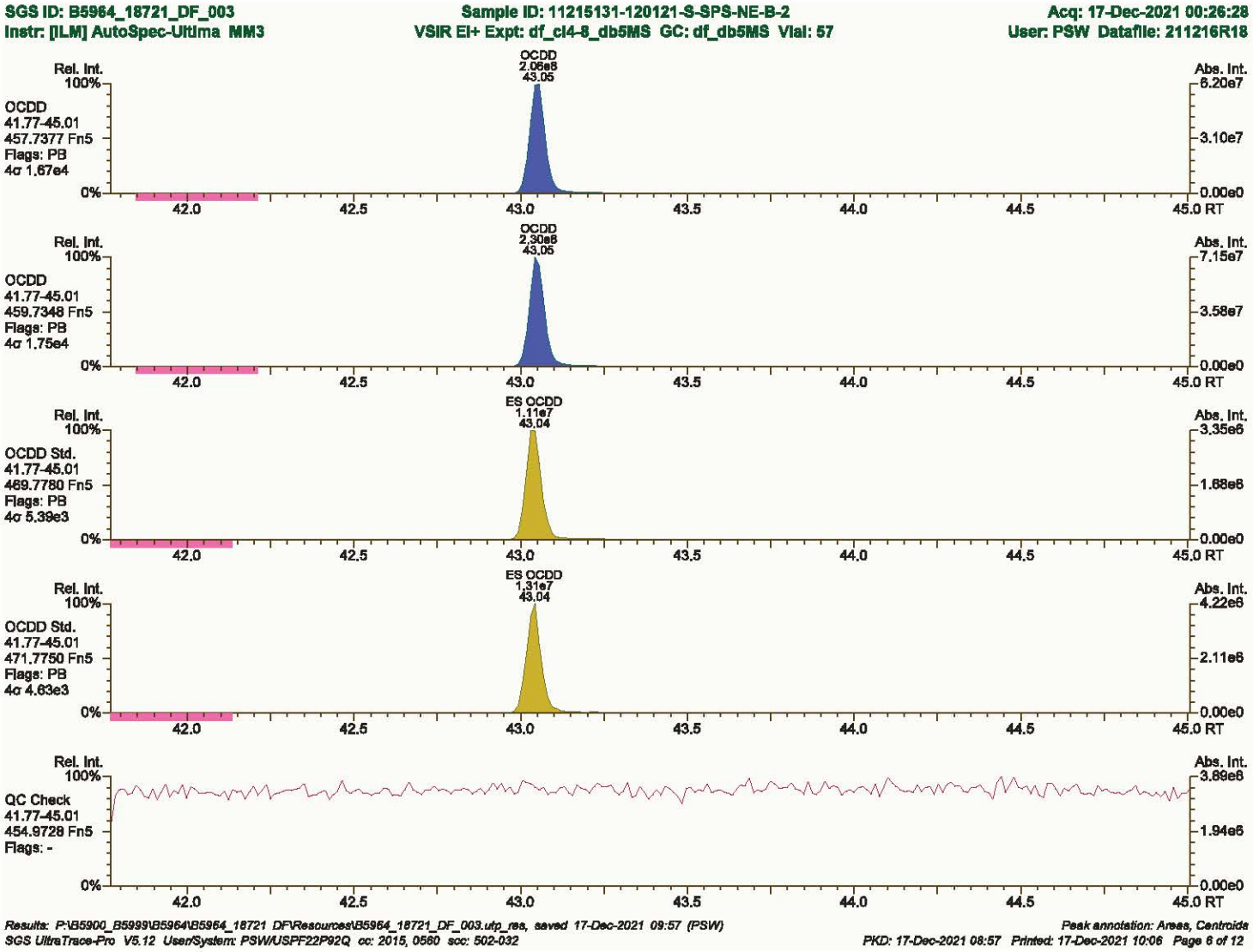
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1568, 4670, 8719 scc: 502-032 *PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 2 of 12*


SGS ID: B5964_18721_DF_003
Sample ID: 11215131-120121-S-SPS-NE-B-2
Acq: 17-Dec-2021 00:26:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: PSW Datafile: 211216R18
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 6.59e3
12479/12468D
2.27e5*
31.08
12469D
2.69e5
31.61
12368D
6.47e4*
32.17
12379D
6.30e4*
32.45
12369D...[3]
1.39e5*
32.71
12378D
9.68e4*
33.59
7.70e4
3.85e4
0.00e0
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 5.14e3
12479/12468D
1.75e5*
31.08
12469D
2.11e5
31.61
12368D
4.88e4*
32.17
12379D
4.85e4*
32.45
12369D...[3]
8.26e4*
32.71
12378D
6.11e4*
33.58
5.66e4
2.83e4
0.00e0
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.43e3
CS 12347D
1.25e7
33.07
ES 12378D
1.34e7
33.57
3.42e6
1.71e6
0.00e0
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 1.25e4
CS 12347D
7.57e6
33.06
ES 12378D
8.63e6
33.57
2.22e6
1.11e6
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
2.00e6
1.00e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 6332, 6964 scc: 502-032
PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 3 of 12



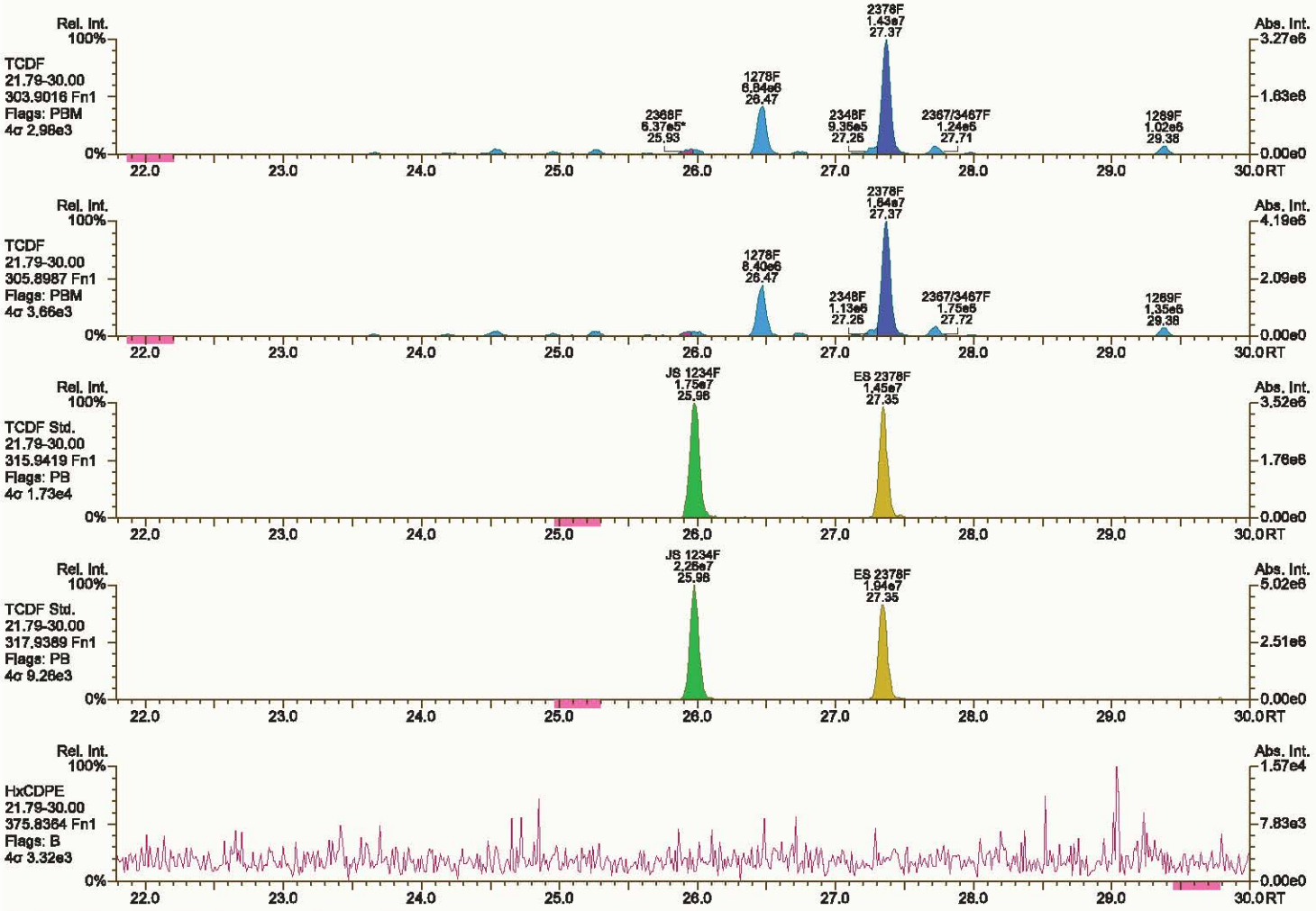
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 7701, 4050 scc: 502-032
PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 4 of 12


SGS ID: B5964_18721_DF_003
Sample ID: 11215131-120121-S-SPS-NE-B-2
Acq: 17-Dec-2021 00:26:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: PSW Datafile: 211216R18
Rel. Int.
Abs. Int.
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 7.83e3
1234679D
1.23e7
39.86
1234678D
7.88e6
40.51
5.01e6
2.50e6
0.00e0
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 9.29e3
1234679D
1.18e7
39.86
1234678D
7.35e6
40.51
4.60e6
2.30e6
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.57e3
ES 1234678D
9.42e6
40.49
3.56e6
1.78e6
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 8.45e3
ES 1234678D
9.02e6
40.49
2.99e6
1.49e6
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
6.10e6
3.05e6
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 0117, 7659 scc: 502-032
PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 5 of 12


SGS ID: B5964_18721_DF_003
Sample ID: 11215131-120121-S-SPS-NE-B-2
Acq: 17-Dec-2021 00:26:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: PSW Datafile: 211216R18
Rel. Int.
Abs. Int.
OCDD
2.06e8
43.05
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 1.67e4
6.20e7
3.10e7
0.00e0
OCDD
2.30e8
43.05
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.75e4
7.15e7
3.58e7
ES OCDD
1.11e7
43.04
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 5.39e3
3.35e6
1.68e6
ES OCDD
1.31e7
43.04
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.63e3
4.22e6
2.11e6
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
3.89e6
1.94e6
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 2015, 0560 scc: 502-032
PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 6 of 12

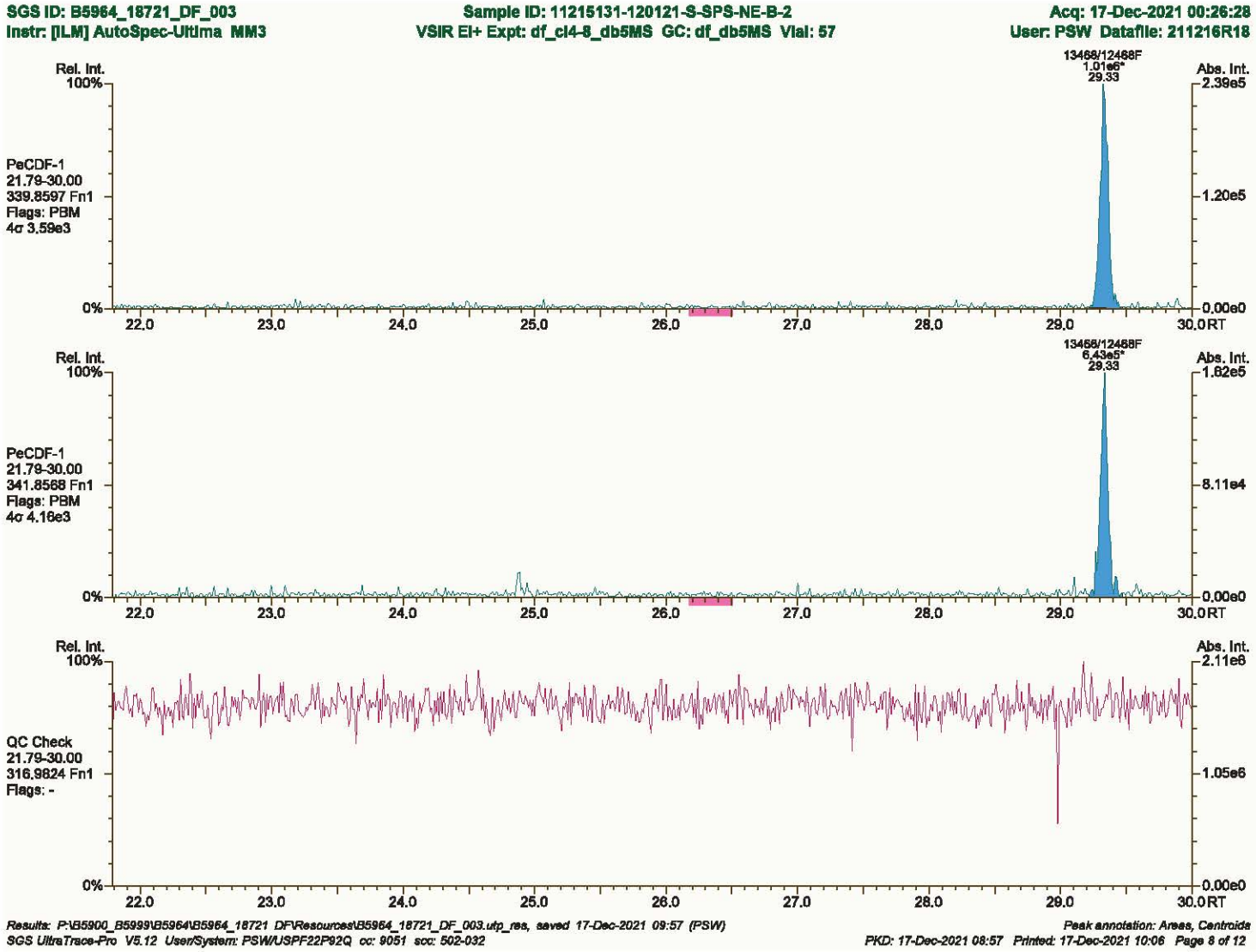
SGS ID: B5964_18721_DF_003 | Sample ID: 11215131-120121-S-SPS-NE-B-2 | Acq: 17-Dec-2021 00:26:28

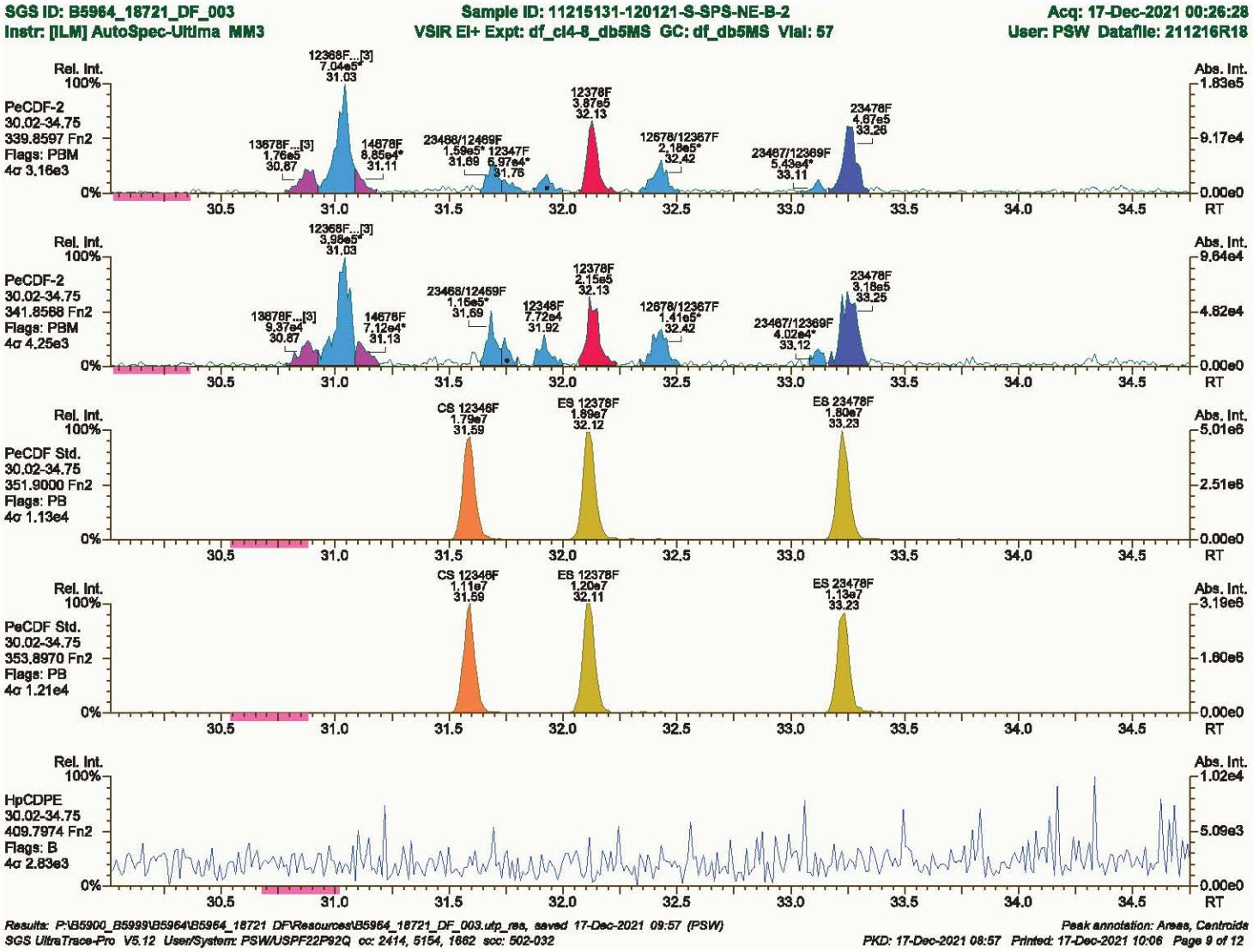
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57 | User: PSW Datafile: 211216R18

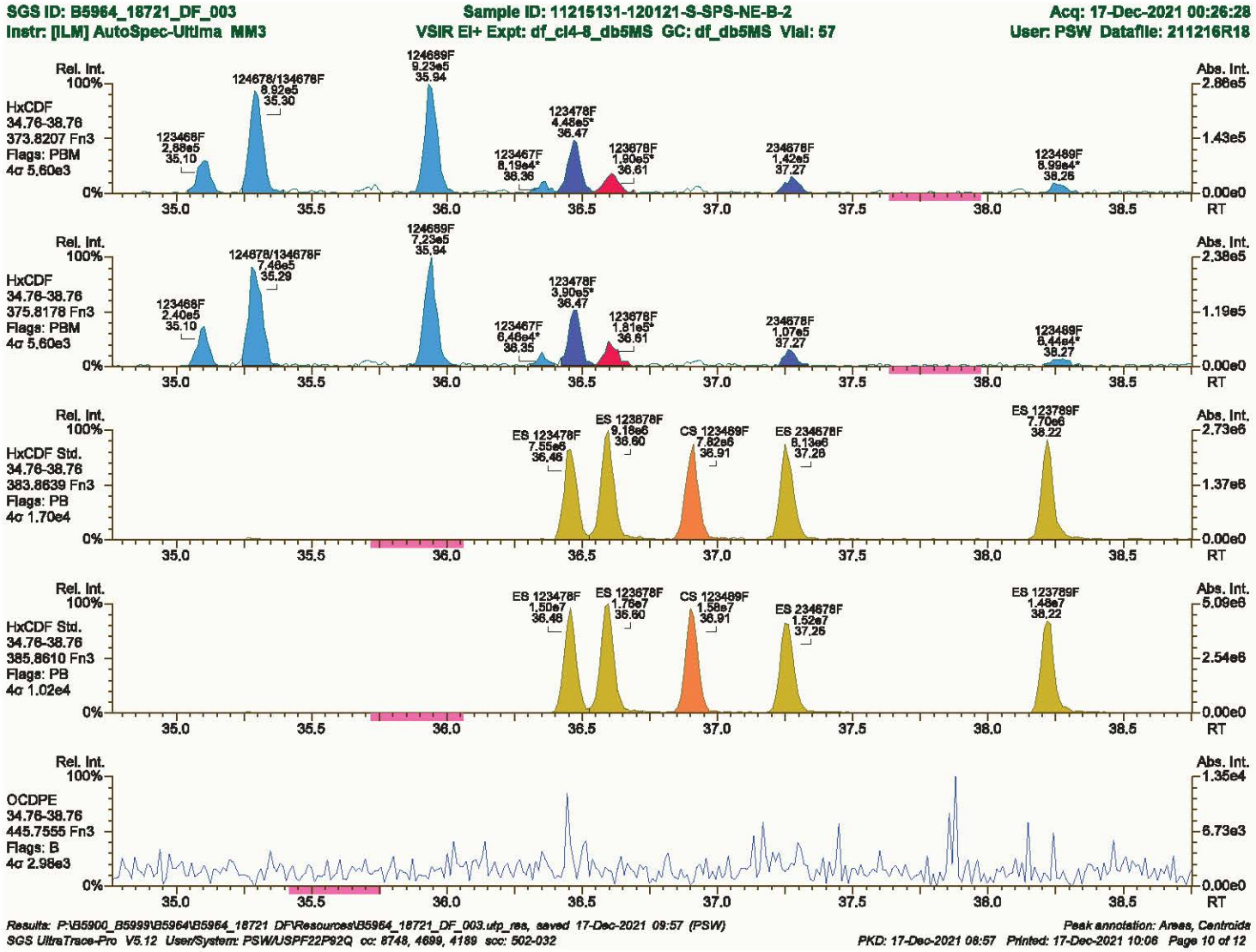


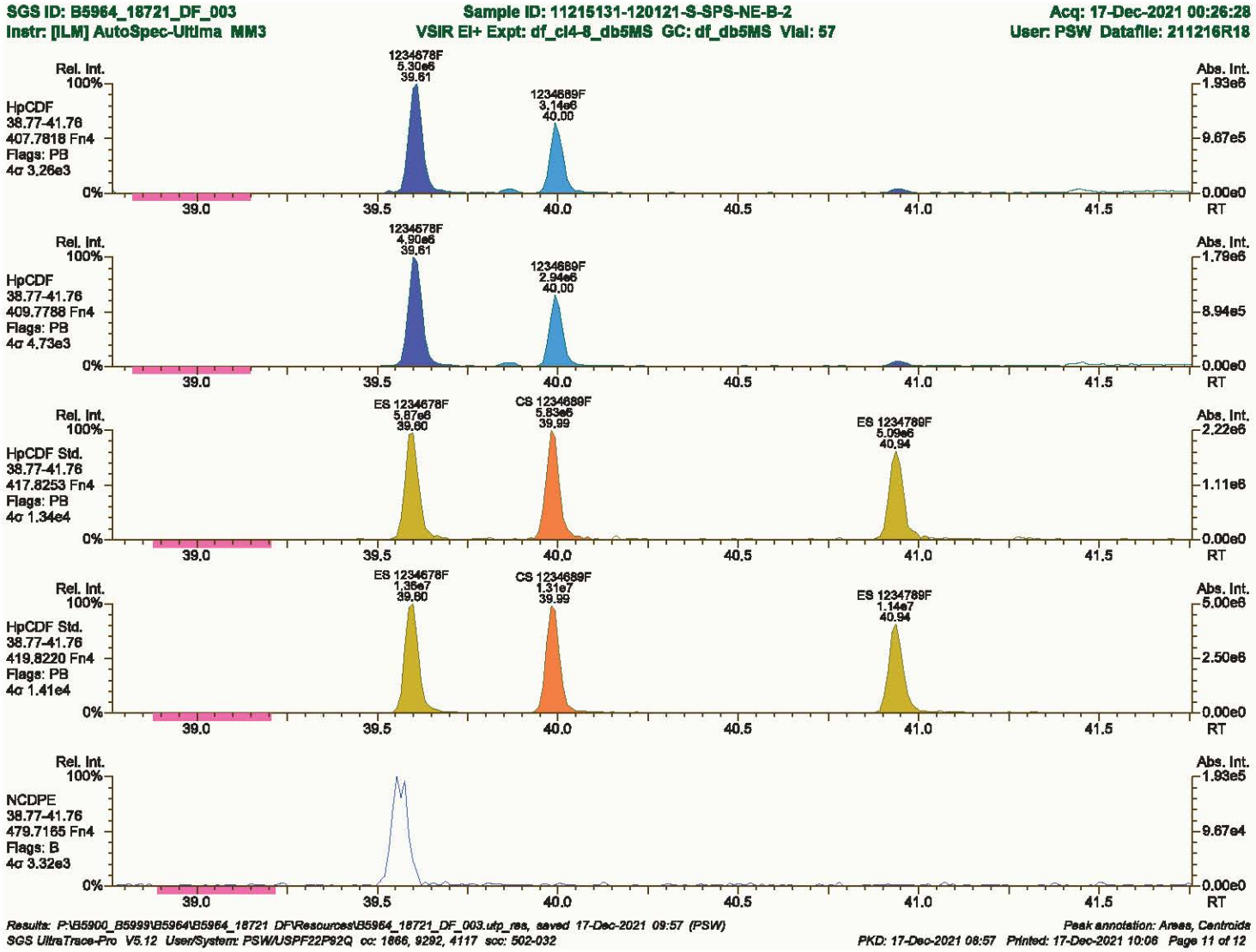
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5930, 0582, 8170 scc: 502-032 *PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 7 of 12*


SGS ID: B5964_18721_DF_003
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120121-S-SPS-NE-B-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
Acq: 17-Dec-2021 00:26:28
User: PSW Datafile: 211216R18
Rel. Int.
100%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PBM
4σ 3.59e3
13468/12468F
1.01e6*
29.33
Abs. Int.
2.39e5
1.20e5
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PBM
4σ 4.16e3
13468/12468F
6.43e5*
29.33
Abs. Int.
1.62e5
8.11e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
2.11e6
1.05e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9051 scc: 502-032
PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 8 of 12

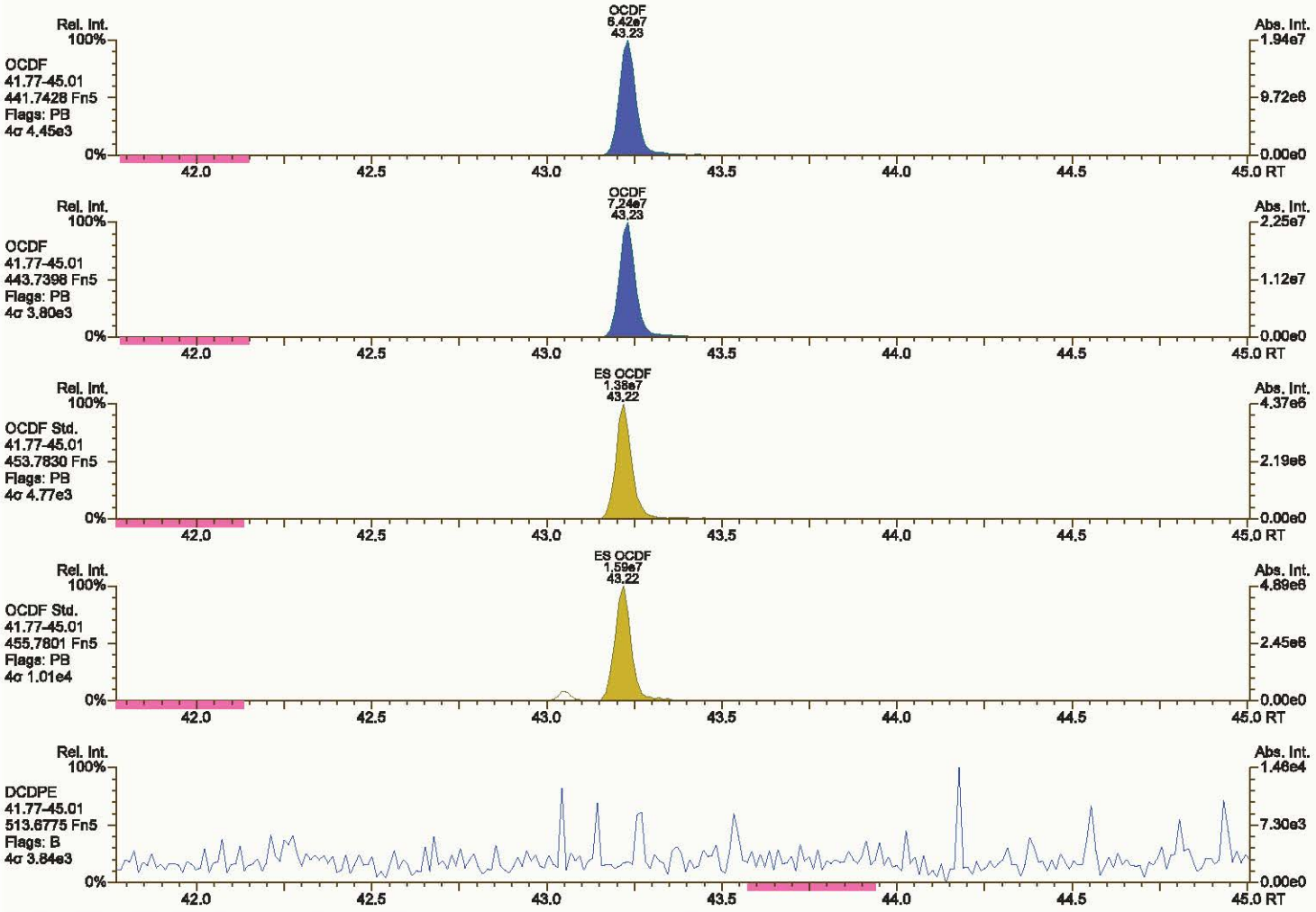

SGS ID: B5964_18721_DF_003
Sample ID: 11215131-120121-S-SPS-NE-B-2
Acq: 17-Dec-2021 00:26:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: PSW Datafile: 211216R18
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.16e3
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 4.25e3
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 1.13e4
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 1.21e4
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.83e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2414, 5154, 1862 scc: 502-032
PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 9 of 12


SGS ID: B5964_18721_DF_003
Sample ID: 11215131-120121-S-SPS-NE-B-2
Acq: 17-Dec-2021 00:26:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: PSW Datafile: 211216R18
Rel. Int.
Abs. Int.
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 5.60e3
123468F 2.88e5 35.10
124678/134678F 8.92e5 35.30
124689F 9.23e5 35.94
123467F 8.19e4* 36.36
123478F 4.48e5* 36.47
123678F 1.90e5* 36.61
234678F 1.42e5 37.27
123489F 6.99e4* 38.26
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 5.60e3
123468F 2.40e5 35.10
124678/134678F 7.46e5 35.29
124689F 7.23e5 35.94
123467F 6.46e4* 36.35
123478F 3.90e5* 36.47
123678F 1.81e5* 36.61
234678F 1.07e5 37.27
123489F 6.44e4* 38.27
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 1.70e4
ES 123478F 7.55e6 36.46
ES 123678F 9.18e6 36.60
CS 123489F 7.82e6 36.91
ES 234678F 8.13e6 37.26
ES 123789F 7.70e6 38.22
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 1.02e4
ES 123478F 1.50e7 36.46
ES 123678F 1.76e7 36.60
CS 123489F 1.56e7 36.91
ES 234678F 1.52e7 37.26
ES 123789F 1.48e7 38.22
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.98e3
0%
100%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: B5964_18721_DF_003
Sample ID: 11215131-120121-S-SPS-NE-B-2
Acq: 17-Dec-2021 00:26:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: PSW Datafile: 211216R18
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 3.26e3
1234678F
5.30e6
39.61
1234689F
3.14e6
40.00
1.93e6
9.67e5
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 4.73e3
1234678F
4.90e6
39.61
1234689F
2.94e6
40.00
1.79e6
8.94e5
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.34e4
ES 1234678F
5.87e6
39.60
CS 1234689F
5.83e6
39.99
ES 1234789F
5.09e6
40.94
2.22e6
1.11e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 1.41e4
ES 1234678F
1.35e7
39.60
CS 1234689F
1.31e7
39.99
ES 1234789F
1.14e7
40.94
5.00e6
2.50e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.32e3
1.93e5
9.67e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1666, 9292, 4117 scc: 502-032
PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 11 of 12

SGS ID: B5964_18721_DF_003 | Sample ID: 11215131-120121-S-SPS-NE-B-2 | Acq: 17-Dec-2021 00:26:28

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57 | User: PSW Datafile: 211216R18



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_003.utp_res, saved 17-Dec-2021 09:57 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8763, 9845, 4305 scc: 502-032 | *PKD: 17-Dec-2021 08:57 Printed: 17-Dec-2021 10:06 Page 12 of 12*

Lab ID: B6964_18721_DF_004 | Acq'd: 17 Dec 2021 01:14 PSW | Wt/Vol: 10.37 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-O-7 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.482 pg/g | Split: 1 | Checkcode: 695-857-QMR

Datafile: 211216R19 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.23		1.0008	1.0009	+0.2	5.00E+07	0.79	Y	1.34	264	6354.166	0.332
12378-PeCDD	33.58		1.0005	1.0005	0	4.88E+05	1.58	Y	1.06	3.8	6416.417	0.462
123478-HxCDD	37.46	J	1.0003	1.0005	+0.4	1.13E+05	1.20	Y	1.06	1.03	7507.265	0.585
123678-HxCDD	37.58	EMPC	1.0033	1.0036	+0.7	3.13E+05	1.03	N	1.08	2.85	7507.265	0.622
123789-HxCDD	37.88	J	1.0110	1.0116	+1.4	2.82E+05	1.13	Y	1.02	2.35	7507.265	0.583
1234678-HpCDD	40.52		1.0003	1.0005	+0.5	1.00E+07	1.05	Y	0.97	111	11041.633	0.88
OCDD	43.06		1.0003	1.0003	0	1.91E+08	0.90	Y	1.07	3,260	20040.102	2.89
2378-TCDF	27.37		1.0006	1.0008	+0.3	1.76E+08	0.81	Y	0.96	943	5932.455	0.347
12378-PeCDF	32.13		1.0006	1.0005	-0.2	5.83E+06	1.57	Y	0.95	34.4	5180.741	0.301
23478-PeCDF	33.25		1.0006	1.0007	+0.2	4.35E+06	1.53	Y	0.94	26.6	5180.741	0.295
123478-HxCDF	36.48		1.0004	1.0005	+0.2	8.54E+06	1.27	Y	1.23	58.3	9560.44	0.538
123678-HxCDF	36.61		1.0004	1.0004	0	2.54E+06	1.23	Y	1.13	14.9	9560.44	0.528
234678-HxCDF	37.28		1.0005	1.0004	-0.2	5.67E+05	1.28	Y	1.15	3.86	9560.44	0.552
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	9560.44	0.617
1234678-HpCDF	39.62		1.0003	1.0003	0	3.95E+06	1.04	Y	1.36	27.6	5979.719	0.297
1234789-HpCDF	40.96		1.0003	1.0001	-0.5	6.73E+05	1.02	Y	1.30	6.42	5979.719	0.416
OCDF	43.24		1.0002	1.0002	0	3.16E+06	0.80	Y	1.03	48.6	5900.462	0.795
Name	**Act RT**		**Pred. RRT**	**Act. RRT**	**ΔSecs**	**Response**	**Ra**	**OK**	**RRF**	**Rec. %**		
ES 2378-TCDD	28.21		1.0237	1.0238	+0.2	2.72E+07	0.80	Y	1.03	87.6		
ES 12378-PeCDD	33.56		1.2158	1.2182	+4.8	2.34E+07	1.66	Y	1.03	75.4		
ES 123478-HxCDD	37.44		0.9920	0.9916	-0.9	2.01E+07	1.21	Y	0.99	89.7		
ES 123678-HxCDD	37.56		0.9949	0.9948	-0.2	1.96E+07	1.29	Y	0.97	89.4		
ES 123789-HxCDD	37.87		1.0026	1.0028	+0.5	2.28E+07	1.24	Y	1.12	89.9		
ES 1234678-HpCDD	40.50		1.0713	1.0725	+2.9	1.80E+07	1.09	Y	0.99	80.3		
ES OCDD	43.05		1.1385	1.1400	+3.9	2.11E+07	0.90	Y	0.78	60.2		
ES 2378-TCDF	27.35		1.0519	1.0525	+1.0	3.75E+07	0.77	Y	1.08	82.7		
ES 12378-PeCDF	32.12		1.2331	1.2361	+5.8	3.45E+07	1.51	Y	0.93	88.5		
ES 23478-PeCDF	33.23		1.2754	1.2790	+7.2	3.36E+07	1.56	Y	0.92	87.1		
ES 123478-HxCDF	36.46		0.9656	0.9655	-0.2	2.29E+07	0.54	Y	1.14	88.8		
ES 123678-HxCDF	36.60		0.9693	0.9692	-0.2	2.90E+07	0.53	Y	1.30	99.2		
ES 234678-HxCDF	37.26		0.9869	0.9868	-0.2	2.46E+07	0.55	Y	1.20	90.8		
ES 123789-HxCDF	38.23		1.0121	1.0124	+0.7	2.24E+07	0.55	Y	1.14	87.6		
ES 1234678-HpCDF	39.60		1.0478	1.0488	+2.4	2.03E+07	0.42	Y	0.95	94.9		
ES 1234789-HpCDF	40.95		1.0832	1.0845	+3.2	1.55E+07	0.44	Y	0.85	81.5		
ES OCDF	43.23		1.1434	1.1448	+3.6	2.45E+07	0.93	Y	0.93	58.7		

Lab ID: B6964_16721_DF_004 | Acq'd: 17 Dec 2021 01:14 PSW | Wt/Vol: 10.37 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-O-7 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.482 pg/g | Split: 1 | Checkcode: 695-857-QMR

Datafile: 211216R19 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.55		-	-	-	3.00E+07	0.77	Y	-	-
JS 1234-TCDF	25.98		-	-	-	4.18E+07	0.79	Y	-	-
JS 123467-HxCDD	37.76		-	-	-	1.13E+07	1.24	Y	-	-
CS 37Cl-2378-TCDD	28.23		1.0245	1.0247	+0.3	1.16E+07	n/a	-	1.31	73.6
CS 12347-PeCDD	33.06		1.1978	1.2001	+4.6	2.06E+07	1.66	Y	0.89	77
CS 12346-PeCDF	31.59		1.2130	1.2159	+5.5	3.13E+07	1.56	Y	0.87	86.4
CS 123469-HxCDF	36.91		0.9775	0.9774	-0.2	2.34E+07	0.51	Y	1.09	95.2
CS 1234689-HpCDF	40.00		1.0580	1.0592	+2.9	1.71E+07	0.45	Y	0.86	88
~~SS 37Cl-2378-TCDD~~	~~28.23~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~1.16E+07~~	~~n/a~~		~~1.26~~	~~84.5~~
~~SS 12347-PeCDD~~	~~33.06~~		~~1.1978~~	~~1.2001~~	~~+4.6~~	~~2.06E+07~~	~~1.66~~	~~Y~~	~~0.86~~	~~102~~
~~SS 12346-PeCDF~~	~~31.59~~		~~1.2130~~	~~1.2159~~	~~+5.5~~	~~3.13E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~97.5~~
~~SS 123469-HxCDF~~	~~36.91~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~2.34E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~95.9~~
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0592~~	~~+2.9~~	~~1.71E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~92.5~~

Totals	Conc	EMPC
Total TCDD	293	295
Total PeCDD	5.8	7.22
Total HxCDD	33.8	39
Total HpCDD	283	283
Total Tetra-Octa Dioxins	3880	3890
Total TCDF	1,850	1850
Total PeCDF	90.3	103
Total HxCDF	101	101
Total HpCDF	55.6	56.4
Total Tetra-Octa Furans	2,150	2160
Total Tetra-Octa Dioxins & Furans	6030	6050

Lab ID: B6964_18721_DF_004 | Acq'd: 17 Dec 2021 01:14 PSW | Wt/Vol: 10.37 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-O-7 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.482 pg/g | Split: 1 | Checkcode: 695-857-QMR

Datafile: 211216R19 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.58	EMPC	0.8726	0.8712	-2.1	1.14E+05	0.89	N	1.34	0.604	6354.166	0.332
1379-TCDD	NotFnd		0.8851						1.34		6354.166	0.332
1369-TCDD	NotFnd		0.9002						1.34		6354.166	0.332
1469-TCDD	26.15	EMPC	0.9275	0.9270	-0.8	1.29E+05	0.57	N	1.34	0.670	6354.166	0.332
1247/1246/1248/1249-TCDD	26.38	J	0.9361	0.9353	-1.3	8.81E+04	0.76	Y	1.34	0.465	6354.166	0.332
1378-TCDD	26.58		0.9427	0.9423	-0.6	1.61E+05	0.68	Y	1.34	0.849	6354.166	0.332
1268-TCDD	NotFnd		0.9498						1.34		6354.166	0.332
1478-TCDD	27.01		0.9584	0.9576	-1.3	1.35E+05	0.76	Y	1.34	0.71	6354.166	0.332
1279-TCDD	NotFnd		0.9644						1.34		6354.166	0.332
1234/1269-TCDD	NotFnd		0.9766						1.34		6354.166	0.332
1236-TCDD	NotFnd		0.9813						1.34		6354.166	0.332
1237/1238-TCDD	27.94		0.9906	0.9905	-0.2	6.79E+05	0.69	Y	1.34	3.59	6354.166	0.332
1239-TCDD	NotFnd		0.9952						1.34		6354.166	0.332
2378-TCDD	**28.23**		**1.0008**	1.0009	**+0.2**	5.00E+07	0.79	Y	**1.34**	**264**	**6354.166**	**0.332**
1278-TCDD	28.56		1.0122	1.0124	+0.3	4.37E+06	0.80	Y	1.34	23.1	6354.166	0.332
1267-TCDD	28.69	EMPC	1.0168	1.0171	+0.5	2.50E+05	1.15	N	1.34	1.32	6354.166	0.332
1289-TCDD	NotFnd		1.0349						1.34		6354.166	0.332
12479/12468-PeCDD	31.08	J EMPC	0.9267	0.9261	-1.1	1.07E+05	1.00	N	1.06	0.835	6416.417	0.462
12469-PeCDD	31.62	J	0.9425	0.9422	-0.6	1.48E+05	1.33	Y	1.06	1.15	6416.417	0.462
12368-PeCDD	32.16	J EMPC	0.9588	0.9581	-1.4	7.53E+04	1.28	N	1.06	0.585	6416.417	0.462
12478-PeCDD	NotFnd		0.9643						1.06		6416.417	0.462
12379-PeCDD	NotFnd		0.9673						1.06		6416.417	0.462
12369/12467/12489-PeCDD	32.72	J	0.9750	0.9749	-0.2	1.09E+05	1.33	Y	1.06	0.849	6416.417	0.462
12346/12347-PeCDD	NotFnd		0.9859						1.06		6416.417	0.462
12378-PeCDD	33.58		**1.0005**	**1.0005**	**0**	**4.88E+05**	**1.58**	**Y**	**1.06**	**3.8**	**6416.417**	**0.462**
12367-PeCDD	NotFnd		1.0032						1.06		6416.417	0.462
12389-PeCDD	NotFnd		1.0135						1.06		6416.417	0.462
124679/124689-HxCDD	35.74		0.9544	0.9546	+0.4	2.07E+06	1.26	Y	1.05	18.2	7507.265	0.595
123468-HxCDD	36.39	J	0.9716	0.9718	+0.4	2.17E+05	1.36	Y	1.05	1.91	7507.265	0.595
123679/123689-HxCDD	36.68		0.9793	0.9796	+0.7	1.16E+06	1.24	Y	1.05	10.2	7507.265	0.595
123469-HxCDD	36.81	J EMPC	0.9829	0.9829	0	1.94E+05	1.50	N	1.05	1.71	7507.265	0.595
123478-HxCDD	37.46	J	**1.0003**	**1.0005**	**+0.4**	**1.13E+05**	**1.20**	**Y**	1.06	**1.03**	**7507.265**	**0.585**
123678-HxCDD	37.58	EMPC	**1.0033**	**1.0036**	**+0.7**	**3.13E+05**	**1.03**	**N**	1.08	**2.85**	**7507.265**	**0.622**
123467-HxCDD	37.78	J EMPC	1.0084	1.0090	+1.4	7.93E+04	1.53	N	1.05	0.698	7507.265	0.595
123789-HxCDD	37.88	J	**1.0110**	**1.0116**	**+1.4**	**2.82E+05**	**1.13**	**Y**	1.02	**2.35**	**7507.265**	**0.583**

Lab ID: B6964_16721_DF_004 | Acq'd: 17 Dec 2021 01:14 PSW | Wt/Vol: 10.37 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-O-7 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.482 pg/g | Split: 1 | Checkcode: 695-857-QMR

Datafile: 211216R19 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	1.57E+07	1.05	Y	0.97	173	11041.633	0.88
1234678-HpCDD	**40.52**		**1.0003**	**1.0005**	**+0.5**	**1.00E+07**	**1.05**	**Y**	**0.97**	**111**	**11041.633**	**0.88**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**1.91E+08**	**0.90**	**Y**	**1.07**	**3,260**	**20040.102**	**2.89**
OCDD-a	43.06		1.0001	1.0002	+0.3	1.17E+07	2.39	Y	0.07	3,230	12279.056	28.7
1368-TCDF	22.43	J	0.8230	0.8203	-3.6	7.82E+04	0.84	Y	0.96	0.419	5932.455	0.347
1468-TCDF	23.02		0.8443	0.8417	-3.6	2.37E+05	0.82	Y	0.96	1.27	5932.455	0.347
2468-TCDF	23.67		0.8672	0.8657	-2.1	4.04E+05	0.77	Y	0.96	2.16	5932.455	0.347
1346/1246-TCDF	24.08		0.8802	0.8804	+0.3	2.42E+05	0.71	Y	0.96	1.29	5932.455	0.347
1347/1378/1247-TCDF	24.20		0.8855	0.8849	-0.9	1.86E+06	0.72	Y	0.96	9.98	5932.455	0.347
1348-TCDF	24.43		0.8952	0.8933	-2.8	4.76E+05	0.80	Y	0.96	2.55	5932.455	0.347
1248/1367/1379-TCDF	24.54		0.9000	0.8974	-3.8	7.77E+06	0.82	Y	0.96	41.7	5932.455	0.347
1268-TCDF	24.96		0.9136	0.9125	-1.6	2.70E+06	0.77	Y	0.96	14.4	5932.455	0.347
1467-TCDF	25.09		0.9185	0.9174	-1.7	4.87E+05	0.84	Y	0.96	2.61	5932.455	0.347
1478-TCDF	25.26		0.9247	0.9238	-1.4	7.14E+06	0.79	Y	0.96	38.3	5932.455	0.347
1369/1237-TCDF	25.64		0.9381	0.9377	-0.6	2.07E+06	0.88	Y	0.96	11.1	5932.455	0.347
2467-TCDF	25.76		0.9427	0.9421	-0.9	2.80E+05	0.78	Y	0.96	1.5	5932.455	0.347
2368-TCDF	25.92		0.9484	0.9479	-0.8	5.38E+06	0.75	Y	0.96	28.8	5932.455	0.347
1238/1234/1678/1469/1236-TCDF	26.00		0.9517	0.9507	-1.6	8.94E+06	0.79	Y	0.96	47.9	5932.455	0.347
1278-TCDF	26.46		0.9682	0.9677	-0.8	8.01E+07	0.79	Y	0.96	429	5932.455	0.347
1349-TCDF	26.58		0.9725	0.9718	-1.1	1.25E+06	0.86	Y	0.96	6.68	5932.455	0.347
1267-TCDF	26.74		0.9782	0.9778	-0.6	4.69E+06	0.84	Y	0.96	25.1	5932.455	0.347
2346/1249-TCDF	26.92		0.9846	0.9842	-0.6	6.64E+05	0.82	Y	0.96	3.56	5932.455	0.347
2347/1279-TCDF	27.14		0.9926	0.9923	-0.5	2.01E+06	0.87	Y	0.96	10.8	5932.455	0.347
2348-TCDF	27.25		0.9966	0.9965	-0.2	1.27E+07	0.78	Y	0.96	68.3	5932.455	0.347
2378-TCDF	**27.37**		**1.0006**	**1.0008**	**+0.3**	**1.76E+08**	**0.81**	**Y**	**0.96**	**943**	**5932.455**	**0.347**
2367/3467-TCDF	27.72		1.0139	1.0137	-0.3	1.42E+07	0.80	Y	0.96	76.2	5932.455	0.347
1269-TCDF	27.97		1.0226	1.0229	+0.5	2.70E+06	0.77	Y	0.96	14.5	5932.455	0.347
1239-TCDF	NotFnd		1.0322						0.96		5932.455	0.347
1289-TCDF	29.38		1.0729	1.0744	+2.6	1.33E+07	0.79	Y	0.96	71	5932.455	0.347
13468/12468-PeCDF	29.33		0.9135	0.9134	-0.2	8.46E+05	1.51	Y	0.94	5.08	7058.843	0.406
13678/13467/12467-PeCDF	30.88	J	0.9612	0.9614	+0.4	2.68E+05	1.76	Y	0.94	1.61	5180.741	0.298
12368/13478/12478-PeCDF	31.04		0.9661	0.9664	+0.6	2.89E+06	1.58	Y	0.94	17.4	5180.741	0.298
14678-PeCDF	31.15	J	0.9693	0.9699	+1.1	9.59E+04	1.39	Y	0.94	0.576	5180.741	0.298
13479-PeCDF	NotFnd		0.9723						0.94		5180.741	0.298
13469/12479-PeCDF	NotFnd		0.9799						0.94		5180.741	0.298
12346-PeCDF	NotFnd		0.9842						0.94		5180.741	0.298

Lab ID: B6964_16721_DF_004 | Acq'd: 17 Dec 2021 01:14 PSW | Wt/Vol: 10.37 g | ICAL: MM3_DF_10272021_27JUL2021

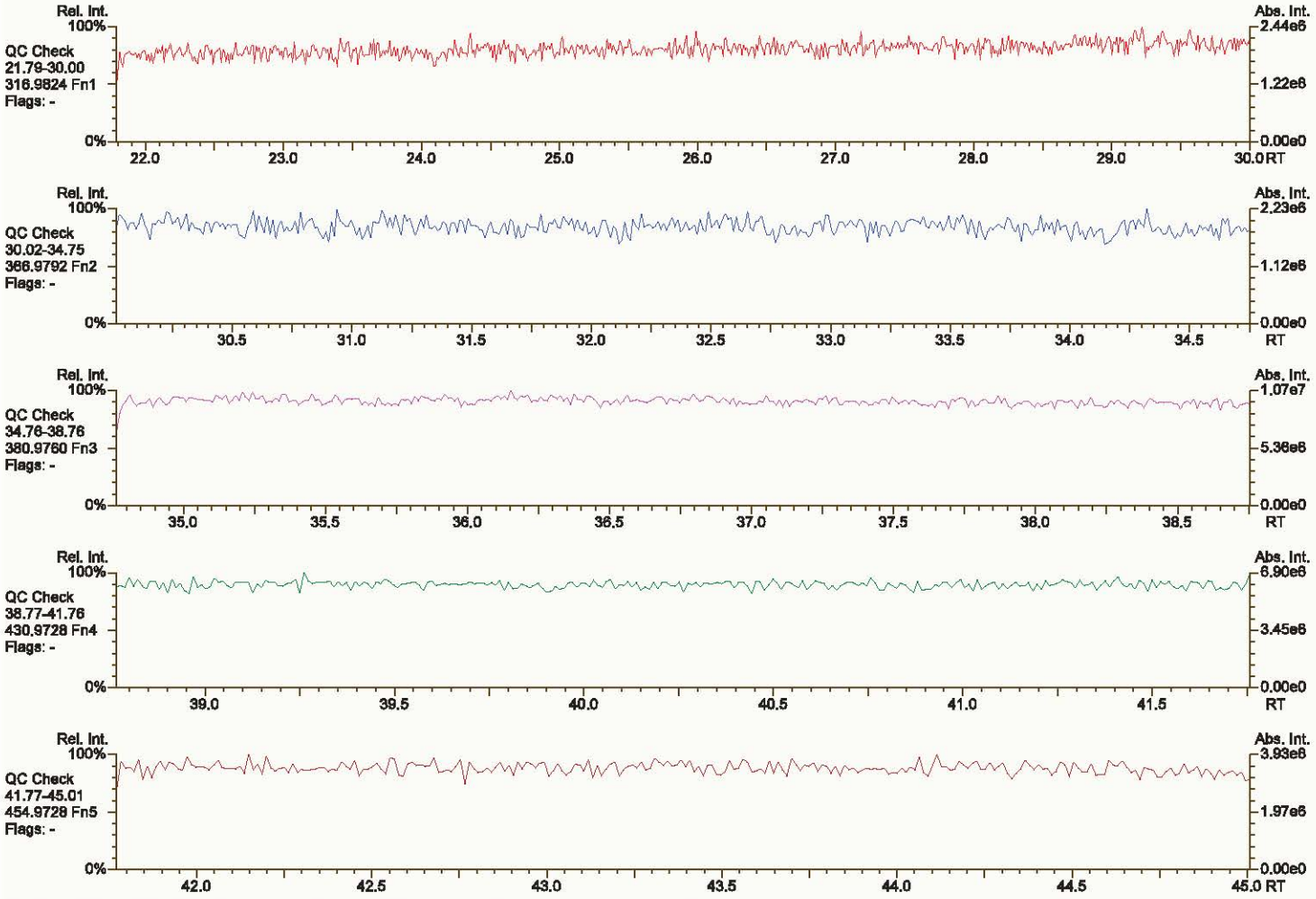
Client ID: 11215131-120221-S-SPS-SW-O-7 | UTP: 17-Dec-2021 09:57:39 PSW | J-level: 0.482 pg/g | Split: 1 | Checkcode: 695-857-QMR

Datafile: 211216R19 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.69	J	0.9868	0.9866	-0.4	2.45E+05	1.34	Y	0.94	1.47	5180.741	0.298
12347-PeCDF	31.76	J EMPC	0.9893	0.9890	-0.6	1.66E+05	1.32	N	0.94	0.997	5180.741	0.298
12348-PeCDF	31.92		0.9941	0.9940	-0.2	5.29E+05	1.60	Y	0.94	3.18	5180.741	0.298
12378-PeCDF	**32.13**		**1.0006**	**1.0005**	**-0.2**	**5.83E+06**	**1.57**	**Y**	**0.95**	**34.4**	**5180.741**	**0.301**
12678/12367-PeCDF	32.43	EMPC	1.0090	1.0097	+1.4	1.57E+06	1.81	N	0.94	9.43	5180.741	0.298
12379-PeCDF	NotFnd		1.0143						0.94		5180.741	0.298
12679-PeCDF	NotFnd		0.9929						0.94		5180.741	0.298
23467/12369-PeCDF	33.10	J EMPC	0.9966	0.9962	-0.8	1.20E+05	1.23	N	0.94	0.718	5180.741	0.298
23478-PeCDF	**33.25**		**1.0006**	**1.0007**	**+0.2**	**4.35E+06**	**1.53**	**Y**	**0.94**	**26.6**	**5180.741**	**0.295**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5180.741	0.298
12349-PeCDF	NotFnd		1.0102						0.94		5180.741	0.298
12389-PeCDF	34.32	J EMPC	1.0325	1.0327	+0.4	2.00E+05	1.88	N	0.94	1.2	5180.741	0.298
123468-HxCDF	35.10		0.9628	0.9626	-0.4	3.94E+05	1.32	Y	1.16	2.64	9560.44	0.555
124678/134678-HxCDF	35.29		0.9683	0.9681	-0.4	1.66E+06	1.23	Y	1.16	11.1	9560.44	0.555
134679-HxCDF	NotFnd		0.9746						1.16		9560.44	0.555
124679-HxCDF	NotFnd		0.9798						1.16		9560.44	0.555
124689-HxCDF	35.95		0.9859	0.9859	0	8.71E+05	1.21	Y	1.16	5.84	9560.44	0.555
123467-HxCDF	36.35	J	0.9972	0.9971	-0.2	1.24E+05	1.18	Y	1.16	0.831	9560.44	0.555
123478-HxCDF	**36.48**		**1.0004**	**1.0005**	**+0.2**	**8.54E+06**	**1.27**	**Y**	**1.23**	**58.3**	**9560.44**	**0.538**
123678-HxCDF	**36.61**		**1.0004**	**1.0004**	**0**	**2.54E+06**	**1.23**	**Y**	**1.13**	**14.9**	**9560.44**	**0.528**
123479-HxCDF	NotFnd		1.0049						1.16		9560.44	0.555
123469-HxCDF	NotFnd		1.0088						1.16		9560.44	0.555
123679-HxCDF	NotFnd		0.9943						1.16		9560.44	0.555
234678-HxCDF	**37.28**		**1.0005**	**1.0004**	**-0.2**	**5.67E+05**	**1.28**	**Y**	**1.15**	**3.86**	**9560.44**	**0.552**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		9560.44	0.555
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**9560.44**	**0.617**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.27		1.0007	1.0010	+0.7	5.79E+05	1.40	Y	1.16	3.88	9560.44	0.555
1234678-HpCDF	**39.62**		**1.0003**	**1.0003**	**0**	**3.95E+06**	**1.04**	**Y**	**1.36**	**27.6**	**5979.719**	**0.297**
1234679-HpCDF	39.87	**J EMPC**	1.0067	1.0067	0	1.05E+05	0.86	N	1.33	0.848	5979.719	0.348
1234689-HpCDF	40.00		1.0100	1.0101	+0.2	2.67E+06	1.07	Y	1.33	21.6	5979.719	0.348
1234789-HpCDF	**40.96**		**1.0003**	**1.0001**	**-0.5**	**6.73E+05**	**1.02**	**Y**	**1.30**	**6.42**	**5979.719**	**0.416**
OCDF	**43.24**		**1.0002**	**1.0002**	**0**	**3.16E+06**	**0.80**	**Y**	**1.03**	**48.6**	**5900.462**	**0.795**
OCDF-a	43.24	**EMPC**	1.0002	1.0002	0	2.17E+05	1.79	N	0.06	57.7	8081.775	18.8

SGS ID: B5964_18721_DF_004 | Sample ID: 11215131-120221-S-SPS-SW-O-7 | Acq: 17-Dec-2021 01:14:03

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58 | User: PSW Datafile: 211216R19

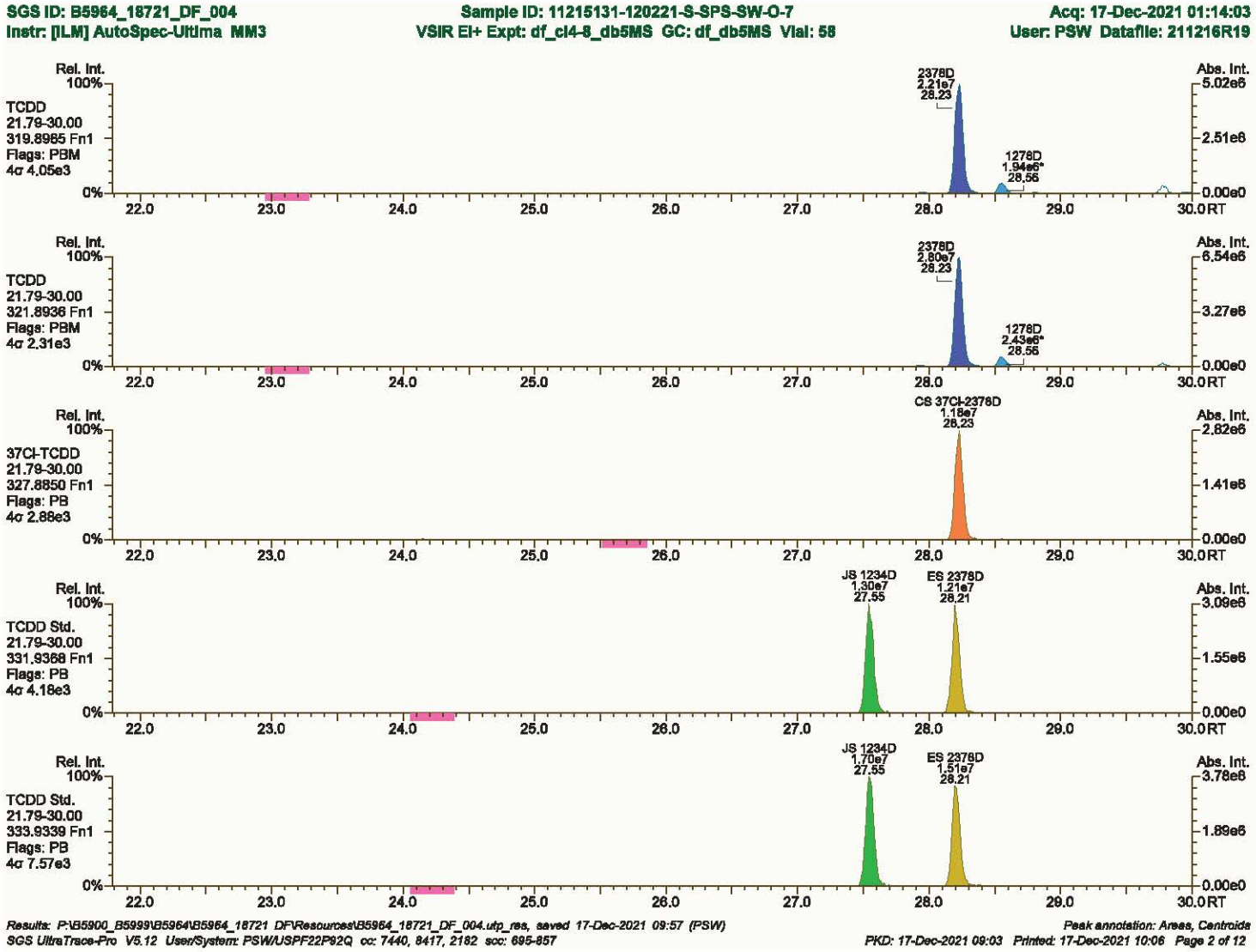


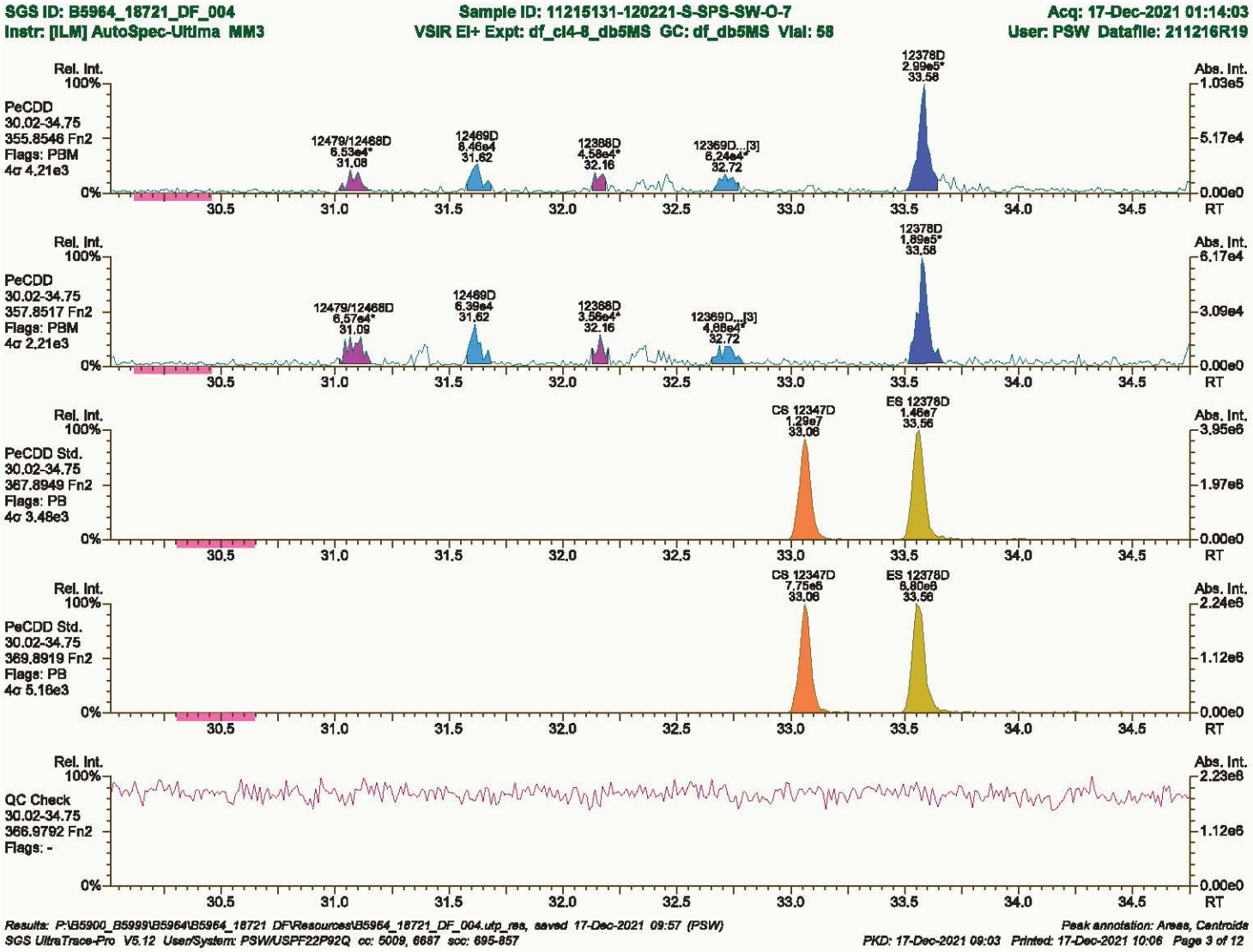
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW)

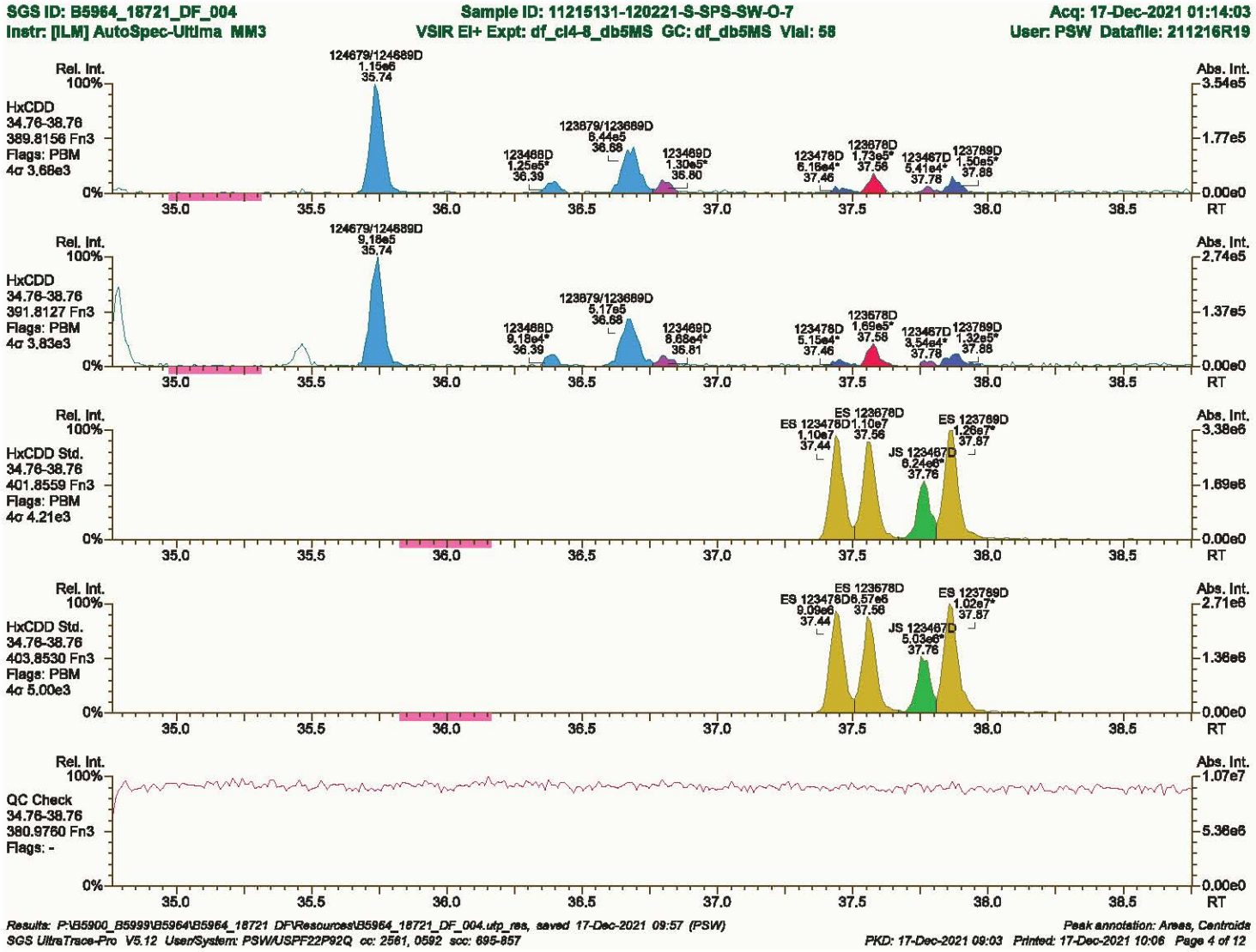
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 695-857

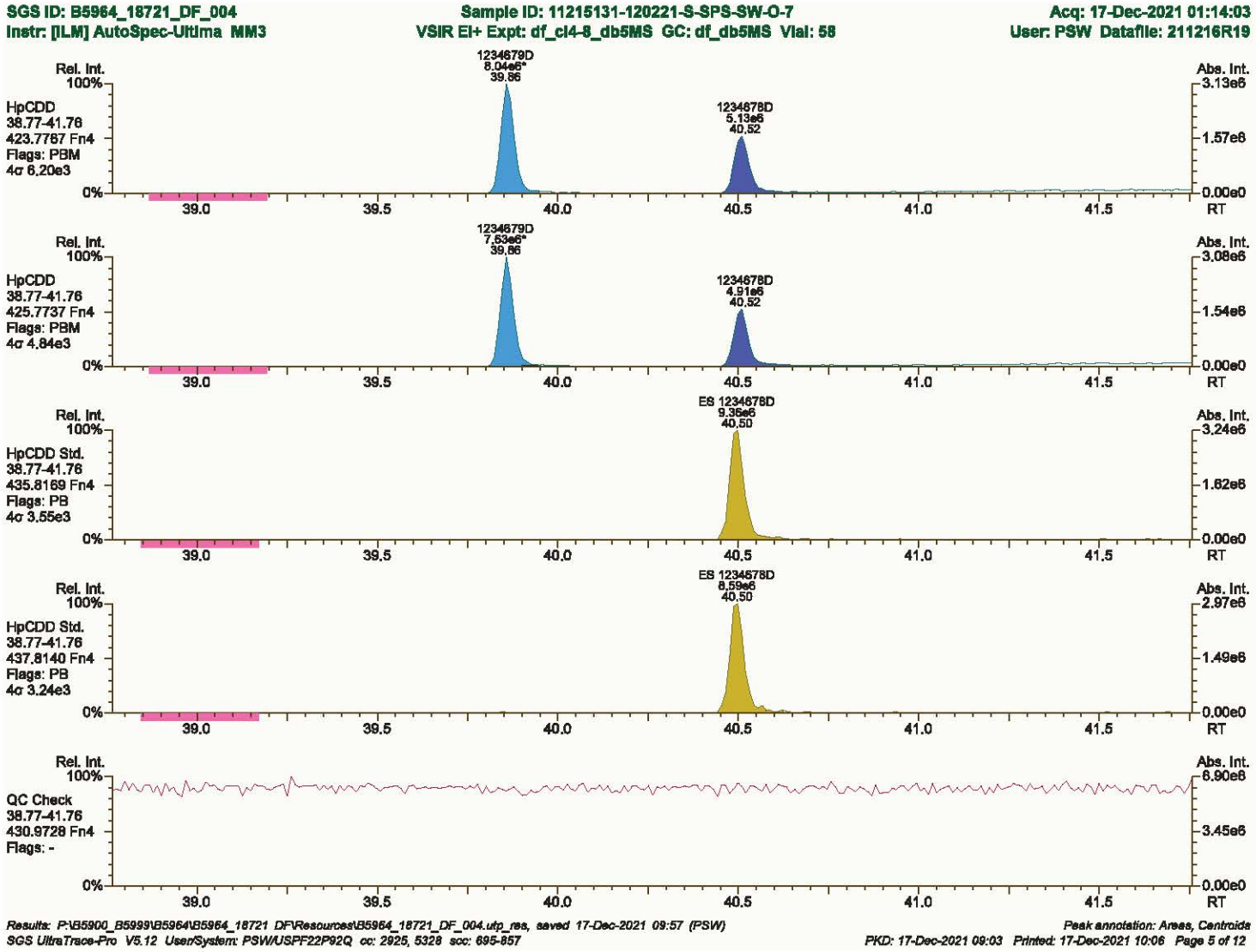
PKD: n/a Printed: 17-Dec-2021 10:06 Page 1 of 12

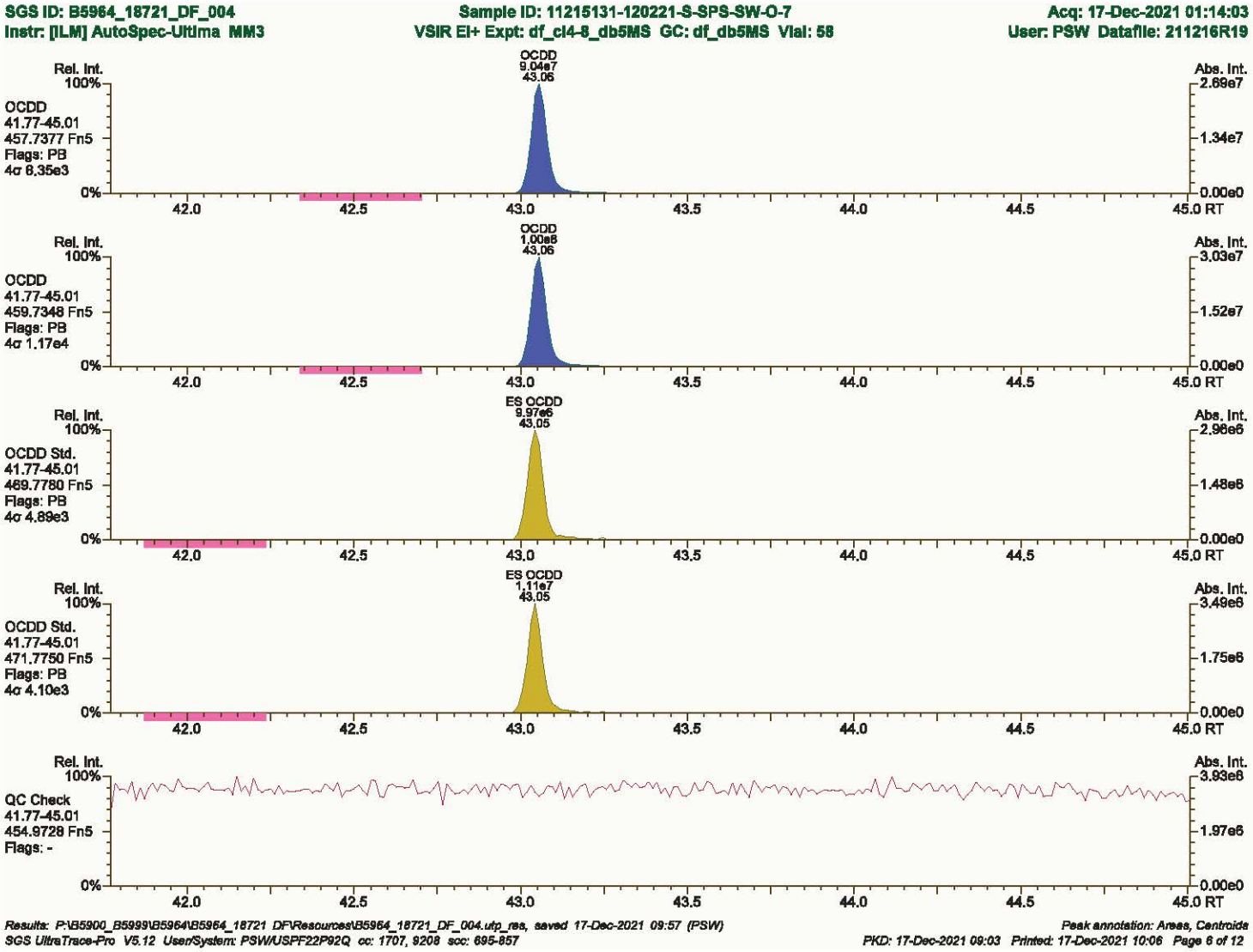

SGS ID: B5964_18721_DF_004
Sample ID: 11215131-120221-S-SPS-SW-O-7
Acq: 17-Dec-2021 01:14:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: PSW Datafile: 211216R19
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 4.05e3
2378D
2.21e7
28.23
1278D
1.94e6*
28.56
5.02e6
2.51e6
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 2.31e3
2378D
2.80e7
28.23
1278D
2.43e6*
28.56
6.54e6
3.27e6
0.00e0
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.88e3
CS 37Cl-2378D
1.18e7
28.23
2.82e6
1.41e6
0.00e0
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 4.18e3
JS 1234D
1.30e7
27.55
ES 2378D
1.21e7
28.21
3.09e6
1.55e6
0.00e0
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 7.57e3
JS 1234D
1.70e7
27.55
ES 2378D
1.51e7
28.21
3.78e6
1.89e6
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7440, 8417, 2182 scc: 695-857
PKD: 17-Dec-2021 09:03 Printed: 17-Dec-2021 10:06 Page 2 of 12


SGS ID: B5964_18721_DF_004
Sample ID: 11215131-120221-S-SPS-SW-O-7
Acq: 17-Dec-2021 01:14:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: PSW Datafile: 211216R19
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 4.21e3
12479/12468D
6.53e4*
31.08
12469D
6.46e4
31.62
12368D
4.58e4*
32.16
12369D...[3]
6.24e4*
32.72
12378D
2.99e5*
33.58
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 2.21e3
12479/12468D
6.57e4*
31.09
12469D
6.39e4
31.62
12368D
3.56e4*
32.16
12369D...[3]
4.88e4*
32.72
12378D
1.89e5*
33.58
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 3.48e3
CS 12347D
1.29e7
33.06
ES 12378D
1.46e7
33.56
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 5.16e3
CS 12347D
7.75e6
33.06
ES 12378D
8.80e6
33.56
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT



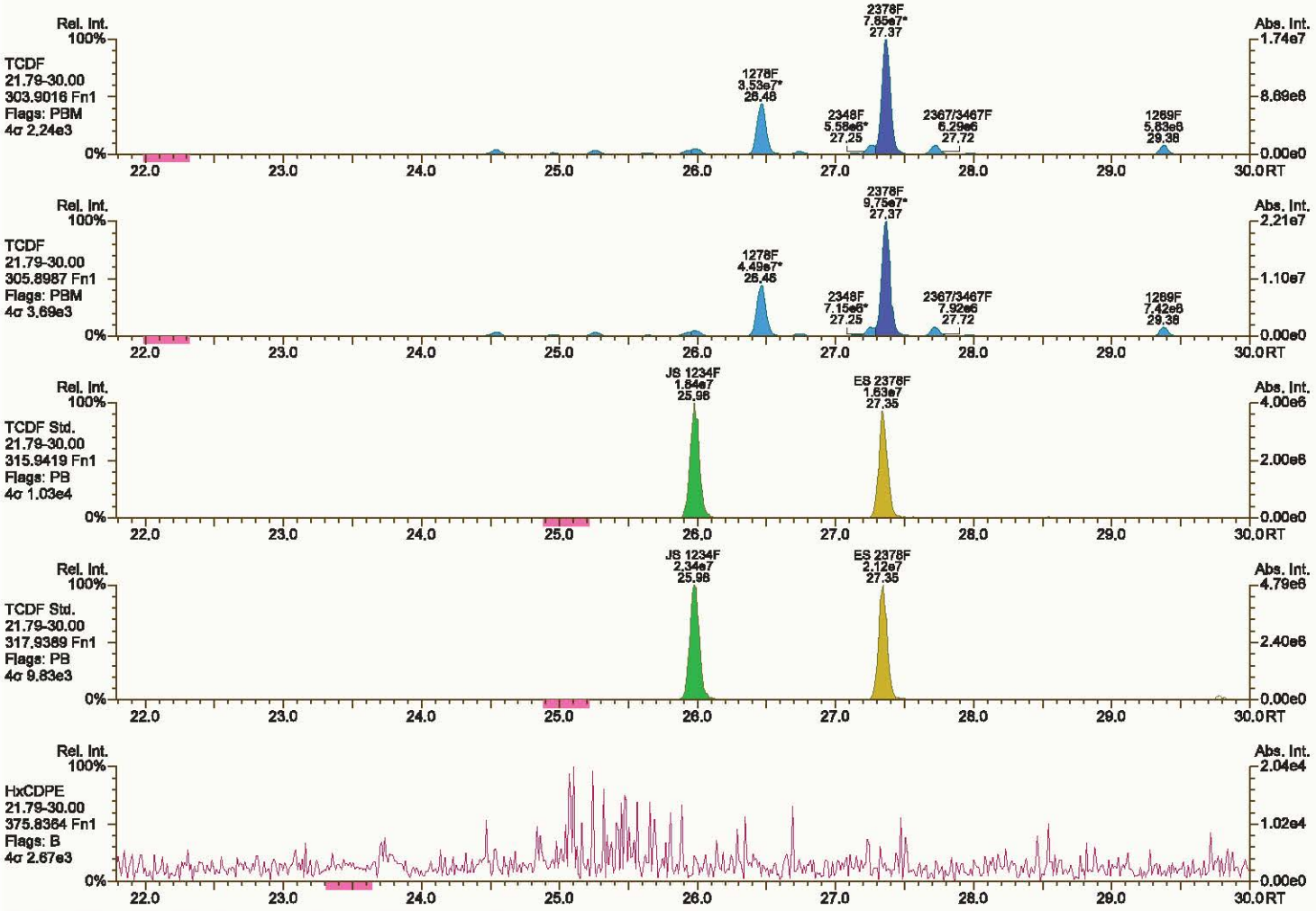
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 2561, 0592 scc: 695-857
PKD: 17-Dec-2021 09:03 Printed: 17-Dec-2021 10:06 Page 4 of 12


SGS ID: B5964_18721_DF_004
Sample ID: 11215131-120221-S-SPS-SW-O-7
Acq: 17-Dec-2021 01:14:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: PSW Datafile: 211216R19
Rel. Int.
Abs. Int.
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 6.20e3
1234679D
8.04e6*
39.86
1234678D
5.13e6
40.52
3.13e6
1.57e6
0.00e0
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 4.84e3
1234679D
7.63e6*
39.86
1234678D
4.91e6
40.52
3.08e6
1.54e6
0.00e0
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 3.55e3
ES 1234678D
9.35e6
40.50
3.24e6
1.62e6
0.00e0
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 3.24e3
ES 1234678D
8.59e6
40.50
2.97e6
1.49e6
0.00e0
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
6.90e6
3.45e6
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


SGS ID: B5964_18721_DF_004
Sample ID: 11215131-120221-S-SPS-SW-O-7
Acq: 17-Dec-2021 01:14:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: PSW Datafile: 211216R19
Rel. Int.
Abs. Int.
OCDD
9.04e7
43.06
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 8.35e3
2.69e7
1.34e7
0.00e0
OCDD
1.00e8
43.06
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.17e4
3.03e7
1.52e7
ES OCDD
9.97e6
43.05
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.89e3
2.98e6
1.48e6
ES OCDD
1.11e7
43.05
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.10e3
3.49e6
1.75e6
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
3.93e6
1.97e6
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 1707, 9208 scc: 695-857
PKD: 17-Dec-2021 09:03 Printed: 17-Dec-2021 10:06 Page 6 of 12

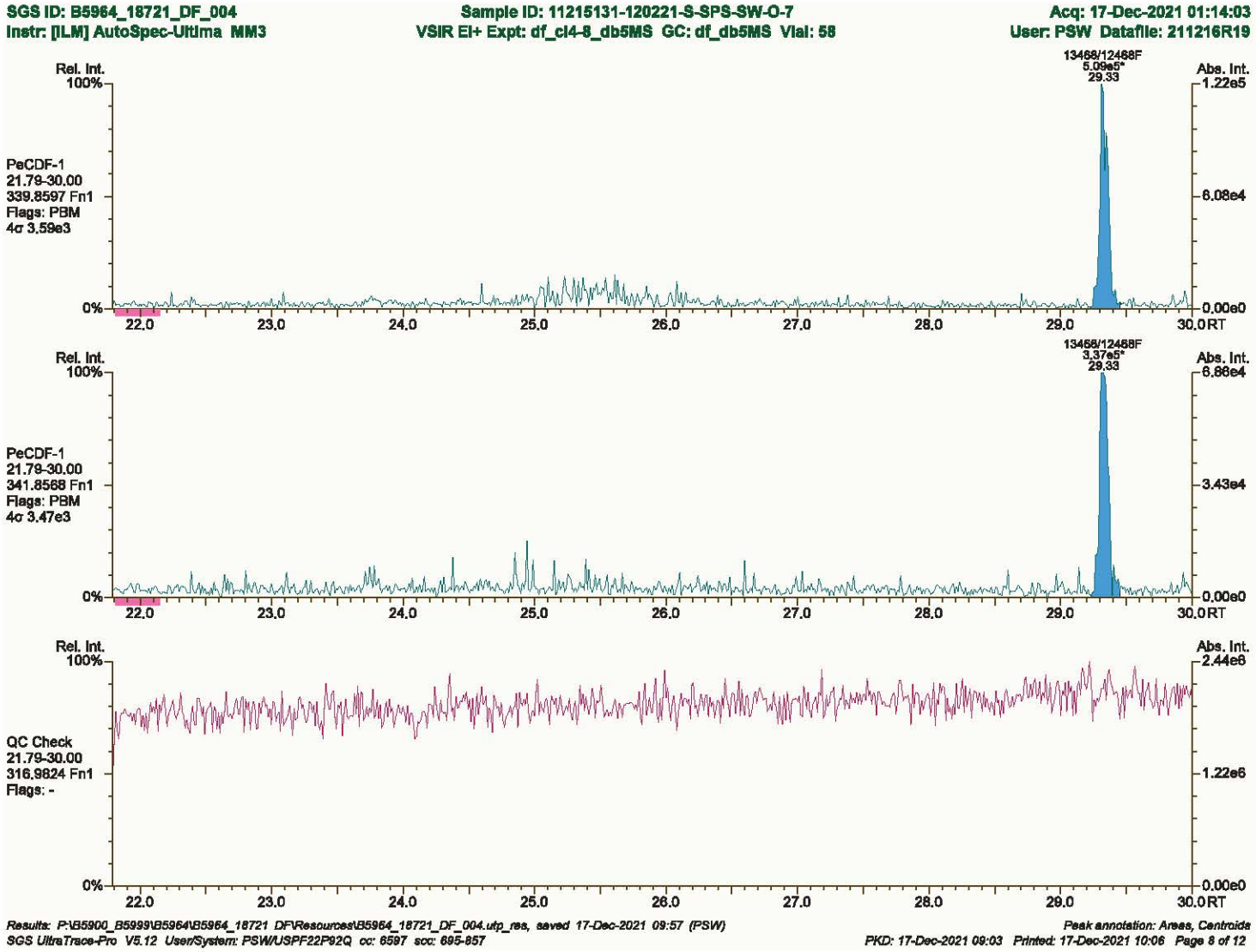
SGS ID: B5964_18721_DF_004 | Sample ID: 11215131-120221-S-SPS-SW-O-7 | Acq: 17-Dec-2021 01:14:03

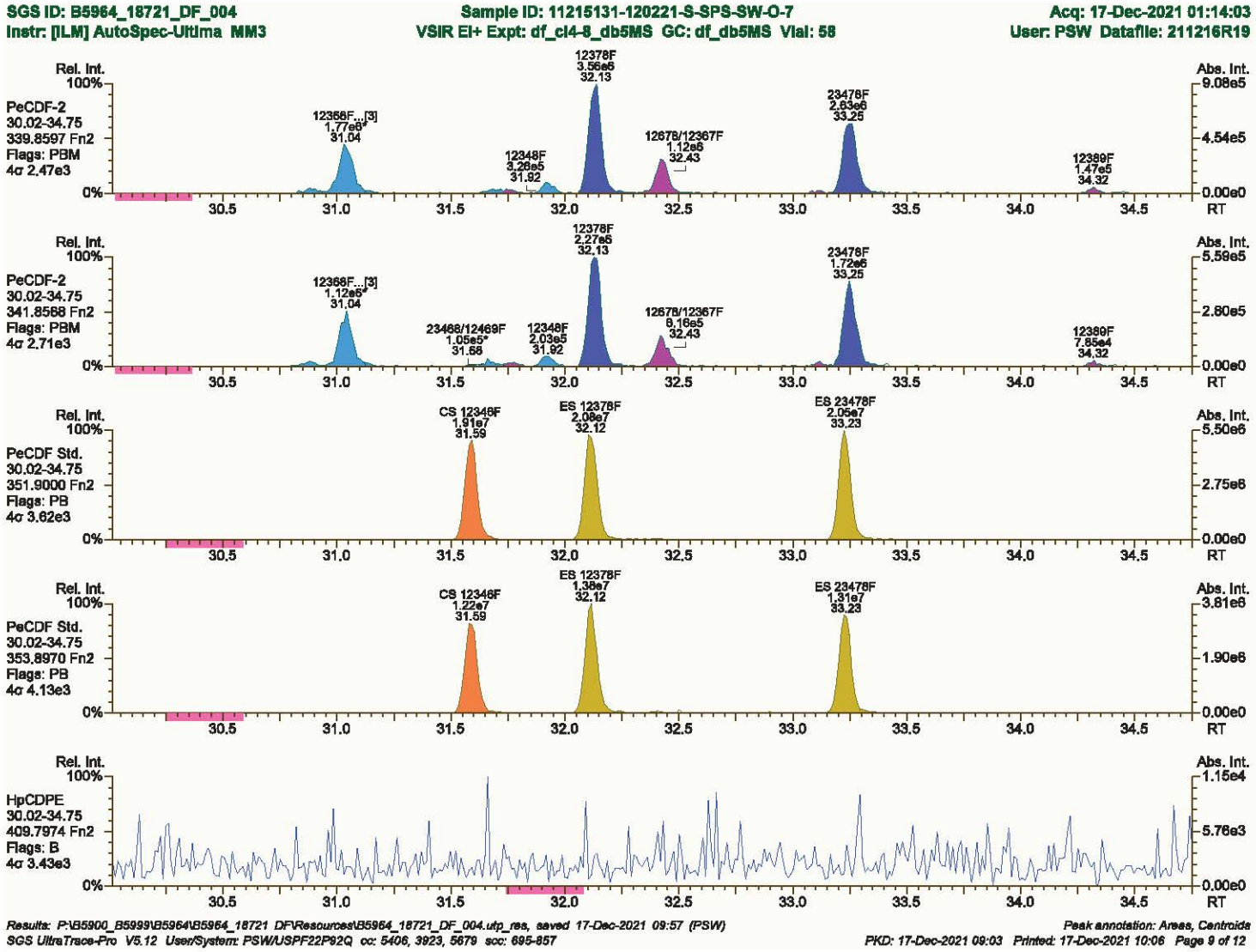
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58 | User: PSW Datafile: 211216R19



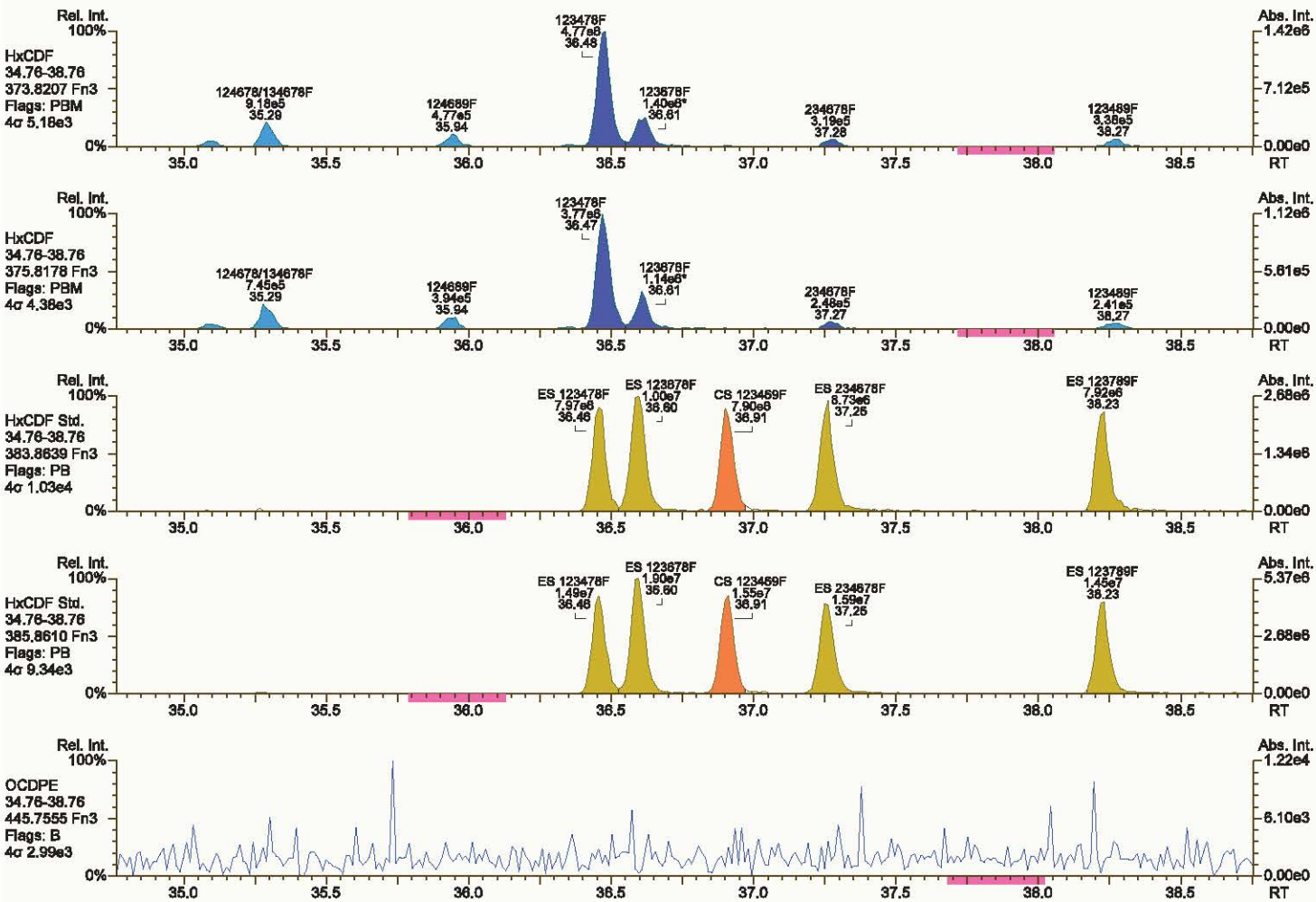
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5843, 5277, 0975 scc: 695-857 | *PKD: 17-Dec-2021 09:03 Printed: 17-Dec-2021 10:06 Page 7 of 12*

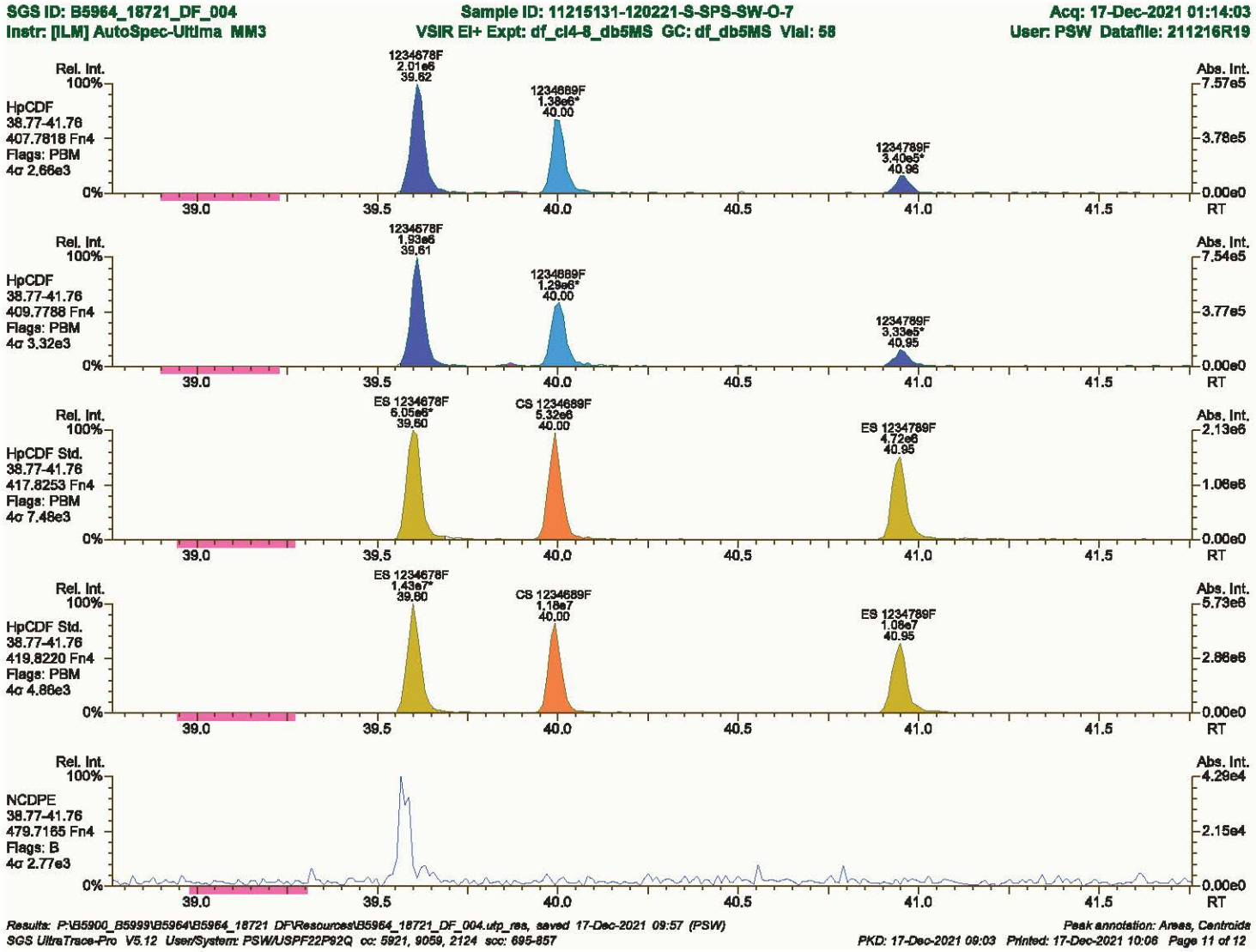

SGS ID: B5964_18721_DF_004
Sample ID: 11215131-120221-S-SPS-SW-O-7
Acq: 17-Dec-2021 01:14:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: PSW Datafile: 211216R19
Rel. Int.
100%
13468/12468F
5.09e5*
29.33
Abs. Int.
1.22e5
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PBM
4σ 3.59e3
6.08e4
0%
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
13468/12468F
3.37e5*
29.33
Abs. Int.
6.86e4
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PBM
4σ 3.47e3
3.43e4
0%
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
Abs. Int.
2.44e6
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
1.22e6
0%
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6597 scc: 695-857
PKD: 17-Dec-2021 09:03 Printed: 17-Dec-2021 10:06 Page 8 of 12


SGS ID: B5964_18721_DF_004
Sample ID: 11215131-120221-S-SPS-SW-O-7
Acq: 17-Dec-2021 01:14:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: PSW Datafile: 211216R19
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 2.47e3
12368F...[3]
1.77e6*
31.04
12348F
3.26e5
31.92
12378F
3.56e6
32.13
12678/12367F
1.12e6
32.43
23478F
2.63e6
33.25
12389F
1.47e5
34.32
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 2.71e3
12368F...[3]
1.12e6*
31.04
23468/12469F
1.05e5*
31.68
12348F
2.03e5
31.92
12378F
2.27e5
32.13
12678/12367F
8.16e5
32.43
23478F
1.72e6
33.25
12389F
7.85e4
34.32
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 3.62e3
CS 12348F
1.91e7
31.59
ES 12378F
2.08e7
32.12
ES 23478F
2.05e7
33.23
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.13e3
CS 12348F
1.22e7
31.59
ES 12378F
1.38e7
32.12
ES 23478F
1.31e7
33.23
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.43e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5406, 3923, 5679 scc: 695-857
PKD: 17-Dec-2021 09:03 Printed: 17-Dec-2021 10:06 Page 9 of 12

SGS ID: B5964_18721_DF_004 | Sample ID: 11215131-120221-S-SPS-SW-O-7 | Acq: 17-Dec-2021 01:14:03
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_ci4-8_db5MS GC: df_db5MS Vial: 58 | User: PSW Datafile: 211216R19

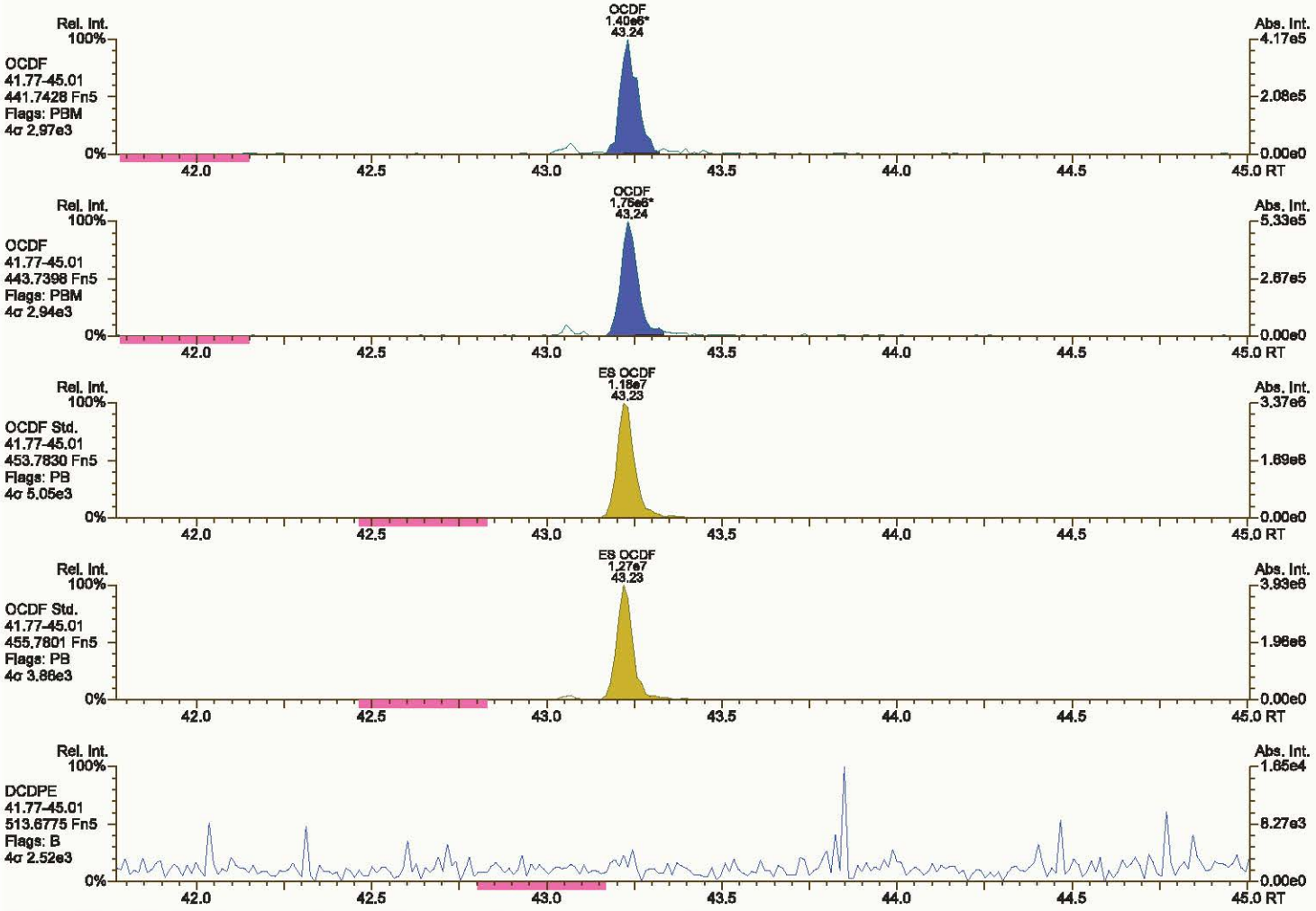


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9937, 4225, 9652 scc: 695-857 | PKD: 17-Dec-2021 09:03 Printed: 17-Dec-2021 10:06 Page 10 of 12


SGS ID: B5964_18721_DF_004
Sample ID: 11215131-120221-S-SPS-SW-O-7
Acq: 17-Dec-2021 01:14:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: PSW Datafile: 211216R19
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.66e3
1234678F
2.01e6
39.62
1234689F
1.38e6*
40.00
1234789F
3.40e5*
40.96
7.57e5
3.78e5
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 3.32e3
1234678F
1.93e6
39.61
1234689F
1.29e6*
40.00
1234789F
3.33e5*
40.95
7.54e5
3.77e5
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 7.48e3
ES 1234678F
6.05e6*
39.60
CS 1234689F
5.32e6
40.00
ES 1234789F
4.72e6
40.95
2.13e6
1.06e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 4.86e3
ES 1234678F
1.43e7*
39.60
CS 1234689F
1.18e7
40.00
ES 1234789F
1.09e7
40.95
5.73e6
2.86e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.77e3
4.29e4
2.15e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

SGS ID: B5964_18721_DF_004 | Sample ID: 11215131-120221-S-SPS-SW-O-7 | Acq: 17-Dec-2021 01:14:03

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58 | User: PSW Datafile: 211216R19



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_004.utp_res, saved 17-Dec-2021 09:57 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0517, 4007, 4273 scc: 695-857 | *PKD: 17-Dec-2021 09:03 Printed: 17-Dec-2021 10:06 Page 12 of 12*

Lab ID: B6964_16721_DF_006 | Acq'd: 17 Dec 2021 02:01 PSW | Wt/Vol: 10.07 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9 | UTP: 17-Dec-2021 09:57:40 PSW | J-level: 0.497 pg/g | Split: 1 | Checkcode: 487-472-FDF

Datafile: 211216R20 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26	E	1.0008	1.0008	0	7.37E+08	0.79	Y	1.34	4,560	6374.387	0.442
12378-PeCDD	33.60		1.0005	1.0006	+0.2	5.42E+06	1.69	Y	1.06	50.1	9564.475	0.763
123478-HxCDD	37.46	J	1.0003	1.0004	+0.2	2.36E+05	1.41	Y	1.06	2.38	15007.278	1.27
123678-HxCDD	37.58		1.0033	1.0036	+0.7	1.12E+06	1.33	Y	1.08	11.3	15007.278	1.37
123789-HxCDD	37.89		1.0110	1.0117	+1.6	5.95E+05	1.31	Y	1.02	5.56	15007.278	1.11
1234678-HpCDD	40.51		1.0003	1.0003	0	3.20E+07	1.03	Y	0.97	384	12207.766	0.983
OCDD	43.06		1.0003	1.0002	-0.3	3.24E+08	0.90	Y	1.07	5,490	16208.837	2.17
2378-TCDF	27.40	E	1.0006	1.0008	+0.3	2.54E+09	0.79	Y	0.96	15,700	5037.559	0.364
12378-PeCDF	32.16		1.0006	1.0006	0	1.28E+08	1.55	Y	0.95	889	8162.729	0.505
23478-PeCDF	33.28		1.0006	1.0008	+0.4	6.38E+07	1.58	Y	0.94	509	8162.729	0.611
123478-HxCDF	36.49		1.0004	1.0005	+0.2	3.35E+08	1.25	Y	1.23	2,390	44925.94	2.6
123678-HxCDF	36.63		1.0004	1.0005	+0.2	8.21E+07	1.25	Y	1.13	578	44925.94	2.62
234678-HxCDF	37.28		1.0005	1.0004	-0.2	1.15E+07	1.25	Y	1.15	84.7	44925.94	2.97
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	44925.94	3.19
1234678-HpCDF	39.61		1.0003	1.0003	0	8.57E+07	1.02	Y	1.36	677	10287.263	0.55
1234789-HpCDF	40.96		1.0003	1.0002	-0.2	2.86E+07	1.00	Y	1.30	270	10287.263	0.706
OCDF	43.24		1.0002	1.0003	+0.3	1.72E+08	0.89	Y	1.03	2,460	7329.029	0.876

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0237	1.0236	-0.2	2.39E+07	0.83	Y	1.03	88.8
ES 12378-PeCDD	33.58	1.2158	1.2173	+3.0	2.03E+07	1.56	Y	1.03	75.4
ES 123478-HxCDD	37.45	0.9920	0.9916	-0.9	1.87E+07	1.33	Y	0.99	91
ES 123678-HxCDD	37.57	0.9949	0.9948	-0.2	1.82E+07	1.26	Y	0.97	90.5
ES 123789-HxCDD	37.87	1.0026	1.0027	+0.2	2.09E+07	1.27	Y	1.12	90.3
ES 1234678-HpCDD	40.50	1.0713	1.0723	+2.4	1.69E+07	1.04	Y	0.99	82.9
ES OCDD	43.05	1.1385	1.1400	+3.9	2.19E+07	0.91	Y	0.78	68.5
ES 2378-TCDF	27.37	1.0519	1.0525	+1.0	3.35E+07	0.76	Y	1.08	84.4
ES 12378-PeCDF	32.14	1.2331	1.2357	+5.0	3.03E+07	1.50	Y	0.93	88.8
ES 23478-PeCDF	33.25	1.2754	1.2784	+6.0	2.65E+07	1.56	Y	0.92	78.6
ES 123478-HxCDF	36.47	0.9656	0.9657	+0.2	2.25E+07	0.53	Y	1.14	95.5
ES 123678-HxCDF	36.61	0.9693	0.9693	0	2.50E+07	0.53	Y	1.30	93.2
ES 234678-HxCDF	37.27	0.9869	0.9868	-0.2	2.34E+07	0.52	Y	1.20	94.6
ES 123789-HxCDF	38.23	1.0121	1.0122	+0.2	2.10E+07	0.53	Y	1.14	89.6
ES 1234678-HpCDF	39.60	1.0478	1.0487	+2.1	1.85E+07	0.45	Y	0.95	94.3
ES 1234789-HpCDF	40.95	1.0832	1.0843	+2.7	1.62E+07	0.44	Y	0.85	92.8
ES OCDF	43.23	1.1434	1.1447	+3.4	2.71E+07	0.91	Y	0.93	71

Lab ID: B6964_18721_DF_006 | Acq'd: 17 Dec 2021 02:01 PSW | Wt/Vol: 10.07 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9 | UTP: 17-Dec-2021 09:57:40 PSW | J-level: 0.497 pg/g | Split: 1 | Checkcode: 487-472-FDF

Datafile: 211216R20 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.58		-	-	-	2.60E+07	0.80	Y	-	-
JS 1234-TCDF	26.01		-	-	-	3.66E+07	0.79	Y	-	-
JS 123467-HxCDD	37.77		-	-	-	1.03E+07	1.24	Y	-	-
CS 37Cl-2378-TCDD	28.26		1.0245	1.0244	-0.2	1.07E+07	n/a	-	1.31	78.2
CS 12347-PeCDD	33.08		1.1978	1.1994	+3.2	1.90E+07	1.60	Y	0.89	81.6
CS 12346-PeCDF	31.61		1.2130	1.2155	+4.7	2.72E+07	1.59	Y	0.87	85.6
CS 123469-HxCDF	36.92		0.9775	0.9776	+0.2	2.41E+07	0.51	Y	1.09	107
CS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	1.76E+07	0.44	Y	0.86	98.6
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0244~~	~~-0.2~~	~~1.07E+07~~	~~n/a~~		~~1.26~~	~~80.5~~
~~SS 12347-PeCDD~~	~~33.08~~		~~1.1978~~	~~1.1994~~	~~+3.2~~	~~1.90E+07~~	~~1.60~~	~~Y~~	~~0.86~~	~~100~~
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2155~~	~~+4.7~~	~~2.72E+07~~	~~1.59~~	~~Y~~	~~0.93~~	~~96.3~~
~~SS 123469-HxCDF~~	~~36.92~~		~~0.9775~~	~~0.9776~~	~~+0.2~~	~~2.41E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~115~~
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~1.76E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~104~~

Totals	Conc	EMPC
Total TCDD	4940	4980
Total PeCDD	63.5	78.3
Total HxCDD	101	105
Total HpCDD	772	772
Total Tetra-Octa Dioxins	11400	11400
Total TCDF	30,100	30100
Total PeCDF	2,120	2130
Total HxCDF	3,450	3450
Total HpCDF	1,160	1160
Total Tetra-Octa Furans	39,300	39300
Total Tetra-Octa Dioxins & Furans	50700	50700

Lab ID: B6964_18721_DF_006 | Acq'd: 17 Dec 2021 02:01 PSW | Wt/Vol: 10.07 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9 | UTP: 17-Dec-2021 09:57:40 PSW | J-level: 0.497 pg/g | Split: 1 | Checkcode: 487-472-FDF

Datafile: 211216R20 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.60	EMPC	0.8726	0.8715	-1.6	7.18E+05	0.96	N	1.34	4.44	6374.387	0.442
1379-TCDD	24.96		0.8851	0.8840	-1.6	3.06E+05	0.78	Y	1.34	1.89	6374.387	0.442
1369-TCDD	NotFnd		0.9002						1.34		6374.387	0.442
1469-TCDD	26.17		0.9275	0.9260	-1.1	4.00E+05	0.74	Y	1.34	2.48	6374.387	0.442
1247/1246/1248/1249-TCDD	26.41	EMPC	0.9361	0.9354	-1.1	1.09E+06	1.02	N	1.34	6.75	6374.387	0.442
1378-TCDD	26.59		0.9427	0.9419	-1.3	1.96E+06	0.78	Y	1.34	12.1	6374.387	0.442
1268-TCDD	26.79		0.9498	0.9489	-1.4	2.14E+05	0.77	Y	1.34	1.32	6374.387	0.442
1478-TCDD	27.05	EMPC	0.9584	0.9582	-0.3	1.49E+06	0.91	N	1.34	9.19	6374.387	0.442
1279-TCDD	27.21	EMPC	0.9644	0.9638	-1.0	8.11E+04	0.96	N	1.34	0.501	6374.387	0.442
1234/1269-TCDD	27.57		0.9766	0.9765	-0.2	3.02E+05	0.69	Y	1.34	1.86	6374.387	0.442
1236-TCDD	27.72		0.9813	0.9819	+1.0	1.65E+05	0.82	Y	1.34	1.02	6374.387	0.442
1237/1238-TCDD	27.96		0.9906	0.9902	-0.7	1.07E+07	0.80	Y	1.34	65.9	6374.387	0.442
1239-TCDD	NotFnd		0.9952						1.34		6374.387	0.442
2378-TCDD	**28.26**	E	**1.0008**	1.0008	**0**	7.37E+08	0.79	Y	**1.34**	**4,560**	**6374.387**	**0.442**
1278-TCDD	28.59		1.0122	1.0126	+0.7	4.84E+07	0.78	Y	1.34	299	6374.387	0.442
1267-TCDD	NotFnd		1.0168						1.34		6374.387	0.442
1289-TCDD	29.19	EMPC	1.0349	1.0339	-1.8	2.47E+06	1.26	N	1.34	15.3	6374.387	0.442
12479/12468-PeCDD	31.11		0.9267	0.9264	-0.6	5.11E+05	1.51	Y	1.06	4.72	9564.475	0.763
12469-PeCDD	31.64	EMPC	0.9425	0.9424	-0.2	3.34E+05	1.19	N	1.06	3.08	9564.475	0.763
12368-PeCDD	32.19		0.9588	0.9587	-0.2	6.89E+05	1.54	Y	1.06	6.36	9564.475	0.763
12478-PeCDD	32.38	EMPC	0.9643	0.9643	0	3.72E+05	1.14	N	1.06	3.43	9564.475	0.763
12379-PeCDD	32.48	J EMPC	0.9673	0.9673	0	2.18E+05	1.82	N	1.06	2.01	9564.475	0.763
12369/12467/12489-PeCDD	32.73	J	0.9750	0.9749	-0.2	2.55E+05	1.76	Y	1.06	2.36	9564.475	0.763
12346/12347-PeCDD	33.10	J EMPC	0.9859	0.9859	0	1.30E+05	2.36	N	1.06	1.2	9564.475	0.763
12378-PeCDD	33.60		**1.0005**	**1.0006**	**+0.2**	**5.42E+06**	**1.69**	**Y**	**1.06**	**50.1**	**9564.475**	**0.763**
12367-PeCDD	33.70	EMPC	1.0032	1.0038	+1.2	4.23E+05	2.13	N	1.06	3.91	9564.475	0.763
12389-PeCDD	34.04	J EMPC	1.0135	1.0139	+0.8	1.21E+05	2.04	N	1.06	1.12	9564.475	0.763
124679/124689-HxCDD	35.76		0.9544	0.9549	+1.1	4.51E+06	1.26	Y	1.05	44.2	15007.278	1.24
123468-HxCDD	36.40	EMPC	0.9716	0.9721	+1.1	4.85E+05	1.45	N	1.05	4.76	15007.278	1.24
123679/123689-HxCDD	36.69		0.9793	0.9798	+1.1	3.39E+06	1.20	Y	1.05	33.3	15007.278	1.24
123469-HxCDD	36.82	J	0.9829	0.9833	+0.9	2.13E+05	1.35	Y	1.05	2.09	15007.278	1.24
123478-HxCDD	37.46	J	**1.0003**	**1.0004**	**+0.2**	**2.36E+05**	**1.41**	**Y**	1.06	**2.38**	**15007.278**	**1.27**
123678-HxCDD	37.58		**1.0033**	**1.0036**	**+0.7**	**1.12E+06**	**1.33**	**Y**	1.08	**11.3**	**15007.278**	**1.37**
123467-HxCDD	37.78	J	1.0084	1.0089	+1.1	1.81E+05	1.36	Y	1.05	1.78	15007.278	1.24
123789-HxCDD	37.89		**1.0110**	**1.0117**	**+1.6**	**5.95E+05**	**1.31**	**Y**	1.02	**5.56**	**15007.278**	**1.11**

Lab ID: B6964_16721_DF_006 | Acq'd: 17 Dec 2021 02:01 PSW | Wt/Vol: 10.07 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9 | UTP: 17-Dec-2021 09:57:40 PSW | J-level: 0.497 pg/g | Split: 1 | Checkcode: 487-472-FDF

Datafile: 211216R20 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	3.22E+07	1.04	Y	0.97	388	12207.766	0.983
1234678-HpCDD	**40.51**		**1.0003**	**1.0003**	**0**	**3.20E+07**	**1.03**	**Y**	**0.97**	**384**	**12207.766**	**0.983**
OCDD	**43.06**		**1.0003**	**1.0002**	**-0.3**	**3.24E+08**	**0.90**	**Y**	**1.07**	**5,490**	**16208.837**	**2.17**
OCDD-a	43.06		1.0001	1.0002	+0.3	1.94E+07	2.59	Y	0.07	5,320	10850.733	23.6
1368-TCDF	22.47		0.8230	0.8208	-3.0	4.47E+05	0.70	Y	0.96	2.76	5037.559	0.364
1468-TCDF	23.07		0.8443	0.8426	-2.4	3.30E+06	0.76	Y	0.96	20.4	5037.559	0.364
2468-TCDF	23.70		0.8672	0.8659	-1.8	2.78E+06	0.77	Y	0.96	17.2	5037.559	0.364
1346/1246-TCDF	24.13		0.8802	0.8816	+2.0	2.56E+06	0.79	Y	0.96	15.8	5037.559	0.364
1347/1378/1247-TCDF	24.26		0.8855	0.8862	+1.0	1.91E+07	0.79	Y	0.96	118	5037.559	0.364
1348-TCDF	24.49		0.8952	0.8945	-1.0	8.81E+06	0.75	Y	0.96	54.4	5037.559	0.364
1248/1367/1379-TCDF	24.59		0.9000	0.8983	-2.5	8.52E+07	0.79	Y	0.96	526	5037.559	0.364
1268-TCDF	24.99		0.9136	0.9129	-1.0	3.33E+07	0.77	Y	0.96	205	5037.559	0.364
1467-TCDF	25.12		0.9185	0.9178	-1.1	5.61E+06	0.80	Y	0.96	34.7	5037.559	0.364
1478-TCDF	25.29		0.9247	0.9241	-0.9	8.64E+07	0.78	Y	0.96	534	5037.559	0.364
1369/1237-TCDF	25.67		0.9381	0.9378	-0.5	2.49E+07	0.79	Y	0.96	154	5037.559	0.364
2467-TCDF	25.79		0.9427	0.9420	-1.1	3.06E+06	0.80	Y	0.96	18.9	5037.559	0.364
2368-TCDF	25.95		0.9484	0.9478	-0.9	7.29E+07	0.79	Y	0.96	451	5037.559	0.364
1238/1234/1678/1469/1236-TCDF	26.02		0.9517	0.9507	-1.6	1.20E+08	0.79	Y	0.96	744	5037.559	0.364
1278-TCDF	26.49	E	0.9682	0.9677	-0.8	1.17E+09	0.79	Y	0.96	7,230	5037.559	0.364
1349-TCDF	NotFnd		0.9725						0.96		5037.559	0.364
1267-TCDF	26.76		0.9782	0.9777	-0.8	5.95E+07	0.80	Y	0.96	368	5037.559	0.364
2346/1249-TCDF	26.96		0.9846	0.9849	+0.5	7.79E+06	0.81	Y	0.96	48.1	5037.559	0.364
2347/1279-TCDF	27.17		0.9926	0.9925	-0.2	3.05E+07	0.79	Y	0.96	188	5037.559	0.364
2348-TCDF	27.28	E	0.9966	0.9965	-0.2	1.72E+08	0.79	Y	0.96	1,060	5037.559	0.364
2378-TCDF	**27.40**	**E**	**1.0006**	**1.0008**	**+0.3**	**2.54E+09**	**0.79**	**Y**	**0.96**	**15,700**	**5037.559**	**0.364**
2367/3467-TCDF	27.75	E	1.0139	1.0137	-0.3	1.99E+08	0.81	Y	0.96	1,230	5037.559	0.364
1269-TCDF	28.00		1.0226	1.0228	+0.3	3.48E+07	0.79	Y	0.96	215	5037.559	0.364
1239-TCDF	28.26		1.0322	1.0323	+0.2	4.59E+06	0.77	Y	0.96	28.3	5037.559	0.364
1289-TCDF	29.42	E	1.0729	1.0747	+3.2	1.91E+08	0.80	Y	0.96	1,180	5037.559	0.364
13468/12468-PeCDF	29.37		0.9135	0.9138	+0.5	4.00E+06	1.77	Y	0.94	29.6	5912.391	0.401
13678/13467/12467-PeCDF	30.90	EMPC	0.9612	0.9616	+0.7	9.98E+05	1.78	N	0.94	7.4	8162.729	0.554
12368/13478/12478-PeCDF	31.06		0.9661	0.9666	+0.9	4.51E+07	1.58	Y	0.94	334	8162.729	0.554
14678-PeCDF	31.16		0.9693	0.9696	+0.6	1.19E+06	1.66	Y	0.94	8.82	8162.729	0.554
13479-PeCDF	31.25	J	0.9723	0.9723	0	1.17E+05	1.59	Y	0.94	0.87	8162.729	0.554
13469/12479-PeCDF	NotFnd		0.9799						0.94		8162.729	0.554
12346-PeCDF	NotFnd		0.9842						0.94		8162.729	0.554

Lab ID: B6964_18721_DF_005 | Acq'd: 17 Dec 2021 02:01 PSW | Wt/Vol: 10.07 g | ICAL: MM3_DF_10272021_27JUL2021

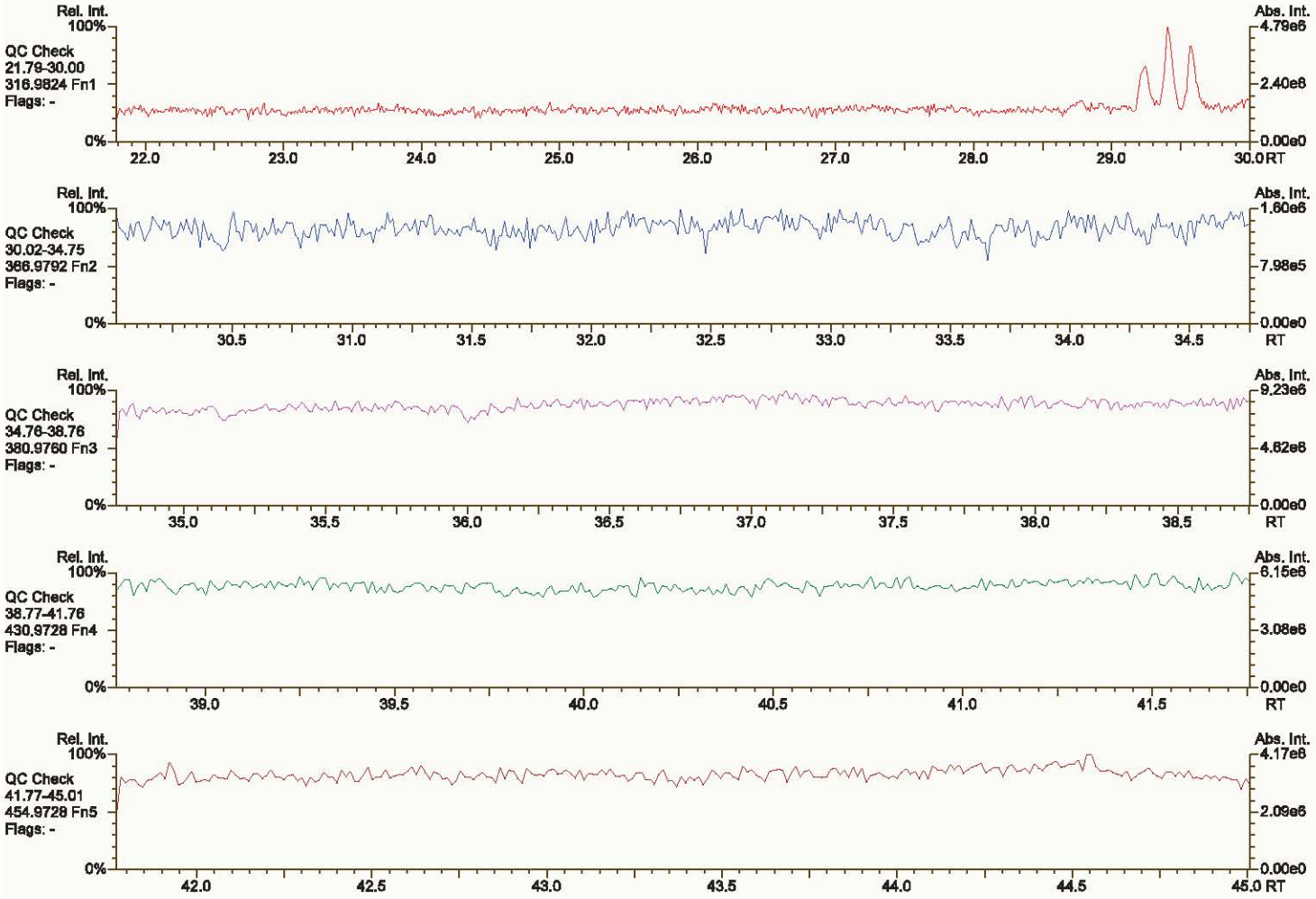
Client ID: 11215131-120221-S-SPS-SW-B-9 | UTP: 17-Dec-2021 09:57:40 PSW | J-level: 0.497 pg/g | Split: 1 | Checkcode: 487-472-FDF

Datafile: 211216R20 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.70		0.9868	0.9862	-1.1	1.73E+06	1.70	Y	0.94	12.8	8162.729	0.554
12347-PeCDF	31.78		0.9893	0.9890	-0.6	1.73E+06	1.54	Y	0.94	12.9	8162.729	0.554
12348-PeCDF	31.94		0.9941	0.9940	-0.2	7.72E+06	1.66	Y	0.94	57.2	8162.729	0.554
12378-PeCDF	**32.16**		**1.0006**	**1.0006**	**0**	**1.28E+08**	**1.55**	**Y**	**0.95**	**889**	**8162.729**	**0.505**
12678/12367-PeCDF	32.45		1.0090	1.0097	+1.4	3.11E+07	1.61	Y	0.94	230	8162.729	0.554
12379-PeCDF	NotFnd		1.0143						0.94		8162.729	0.554
12679-PeCDF	33.00	J EMPC	0.9929	0.9925	-0.8	2.99E+05	1.90	N	0.94	2.22	8162.729	0.554
23467/12369-PeCDF	33.13		0.9966	0.9963	-0.6	1.11E+06	1.65	Y	0.94	8.22	8162.729	0.554
23478-PeCDF	**33.28**		**1.0006**	**1.0008**	**+0.4**	**6.38E+07**	**1.58**	**Y**	**0.94**	**509**	**8162.729**	**0.611**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8162.729	0.554
12349-PeCDF	NotFnd		1.0102						0.94		8162.729	0.554
12389-PeCDF	34.34		1.0325	1.0327	+0.4	3.45E+06	1.55	Y	0.94	25.6	8162.729	0.554
123468-HxCDF	35.12		0.9628	0.9631	+0.6	1.53E+06	1.23	Y	1.16	11.3	44925.94	2.83
124678/134678-HxCDF	35.31		0.9683	0.9683	0	2.04E+07	1.23	Y	1.16	151	44925.94	2.83
134679-HxCDF	NotFnd		0.9746						1.16		44925.94	2.83
124679-HxCDF	NotFnd		0.9798						1.16		44925.94	2.83
124689-HxCDF	35.96		0.9859	0.9860	+0.2	1.10E+07	1.24	Y	1.16	81.4	44925.94	2.83
123467-HxCDF	36.37		0.9972	0.9972	0	8.26E+05	1.31	Y	1.16	6.14	44925.94	2.83
123478-HxCDF	**36.49**		**1.0004**	**1.0005**	**+0.2**	**3.35E+08**	**1.25**	**Y**	**1.23**	**2,390**	**44925.94**	**2.6**
123678-HxCDF	**36.63**		**1.0004**	**1.0005**	**+0.2**	**8.21E+07**	**1.25**	**Y**	**1.13**	**578**	**44925.94**	**2.62**
123479-HxCDF	NotFnd		1.0049						1.16		44925.94	2.83
123469-HxCDF	NotFnd		1.0088						1.16		44925.94	2.83
123679-HxCDF	NotFnd		0.9943						1.16		44925.94	2.83
234678-HxCDF	**37.28**		**1.0005**	**1.0004**	**-0.2**	**1.15E+07**	**1.25**	**Y**	**1.15**	**84.7**	**44925.94**	**2.97**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		44925.94	2.83
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**44925.94**	**3.19**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.27		1.0007	1.0012	+1.1	1.94E+07	1.23	Y	1.16	144	44925.94	2.83
1234678-HpCDF	**39.61**		**1.0003**	**1.0003**	**0**	**8.57E+07**	**1.02**	**Y**	**1.36**	**677**	**10287.263**	**0.55**
1234679-HpCDF	39.87		1.0067	1.0067	0	1.21E+06	1.00	Y	1.33	10.4	10287.263	0.622
1234689-HpCDF	40.01		1.0100	1.0102	+0.5	2.36E+07	1.01	Y	1.33	203	10287.263	0.622
1234789-HpCDF	**40.96**		**1.0003**	**1.0002**	**-0.2**	**2.86E+07**	**1.00**	**Y**	**1.30**	**270**	**10287.263**	**0.706**
OCDF	**43.24**		**1.0002**	**1.0003**	**+0.3**	**1.72E+08**	**0.89**	**Y**	**1.03**	**2,460**	**7329.029**	**0.876**
OCDF-a	43.24		1.0002	1.0002	0	1.05E+07	2.77	Y	0.06	2,580	7521.137	15.6

SGS ID: B5964_18721_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-B-9 | Acq: 17-Dec-2021 02:01:37

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59 | User: PSW Datafile: 211216R20



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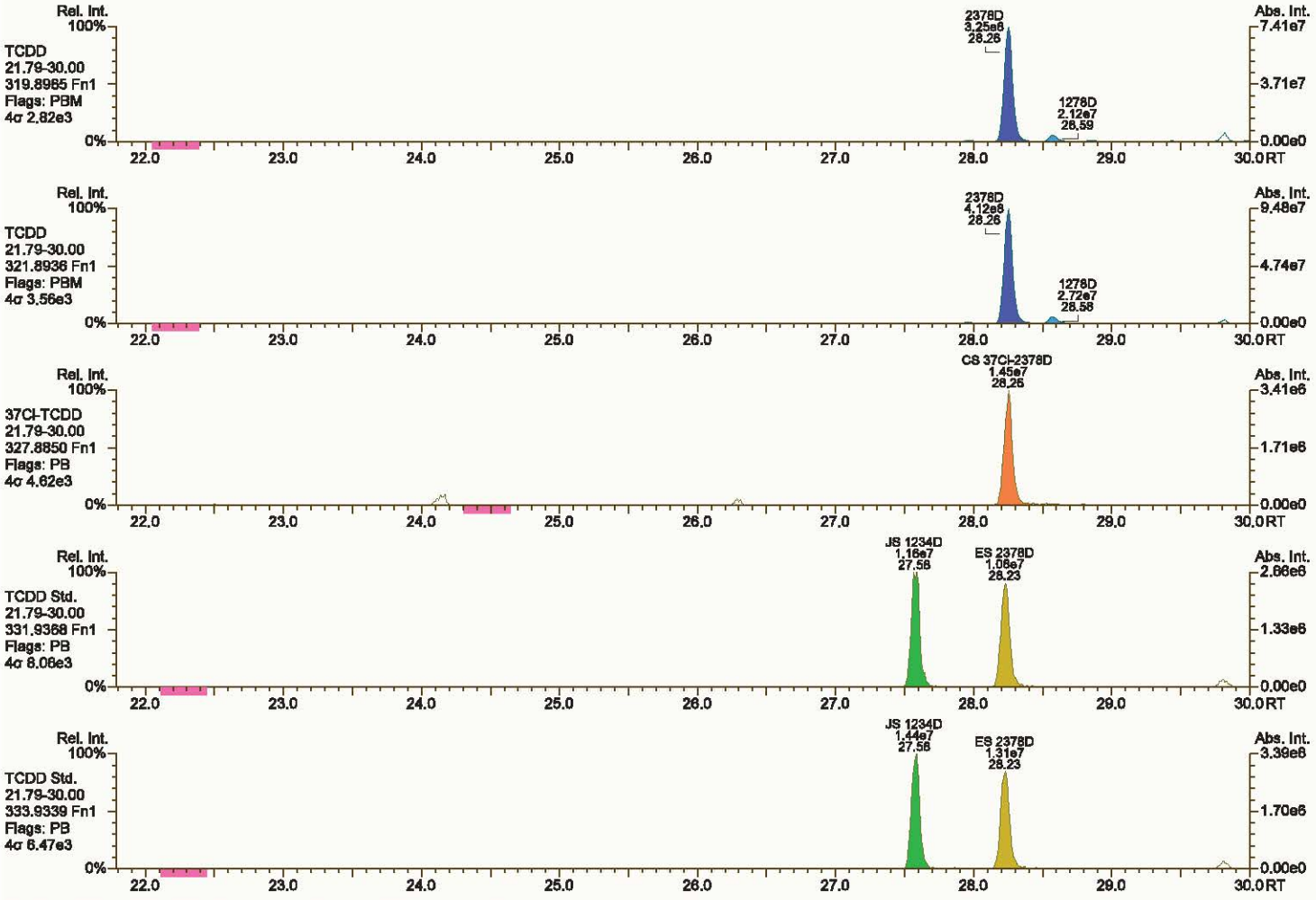
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 487-472

PKD: n/a Printed: 17-Dec-2021 10:06 Page 1 of 12

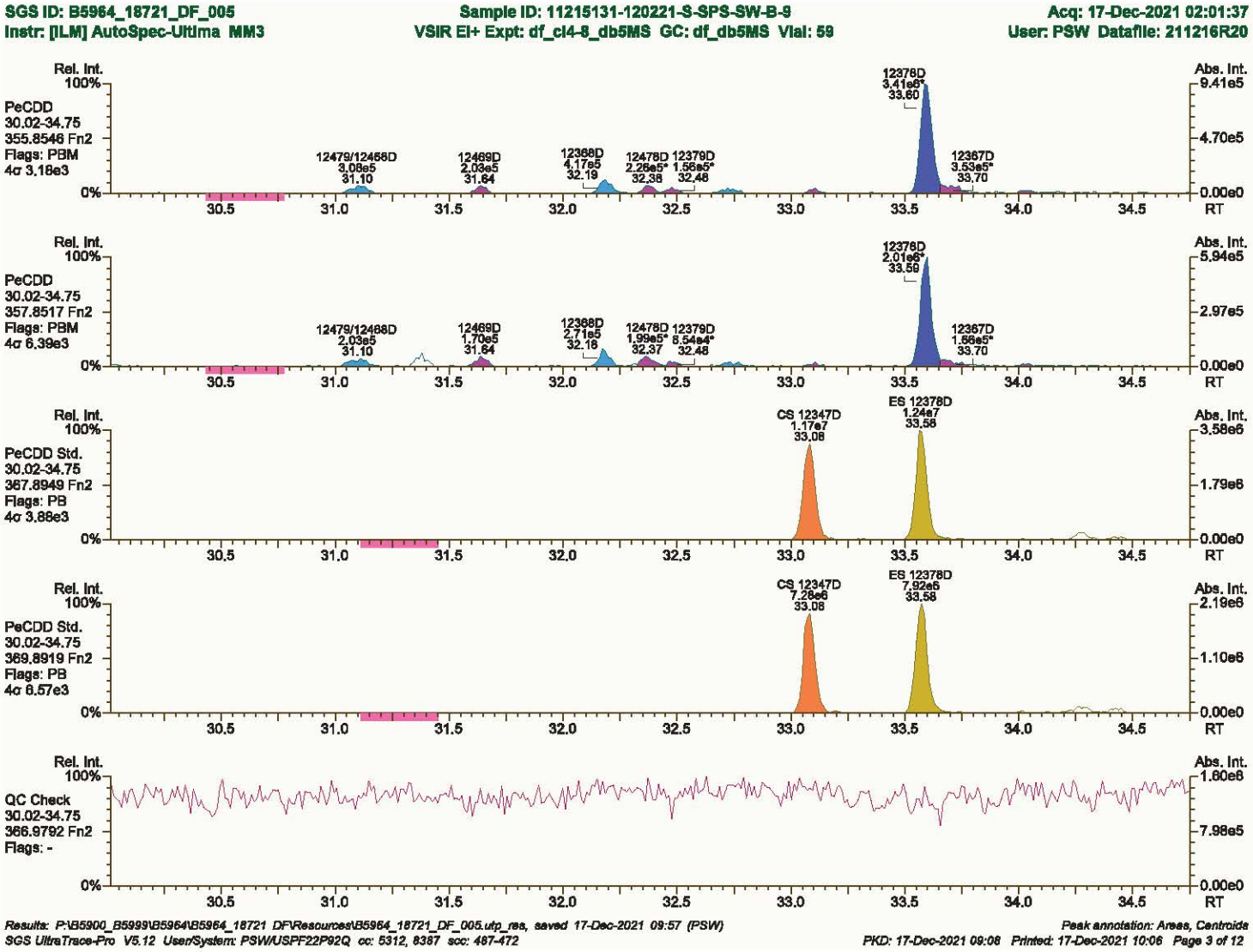
SGS ID: B5964_18721_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-B-9 | Acq: 17-Dec-2021 02:01:37

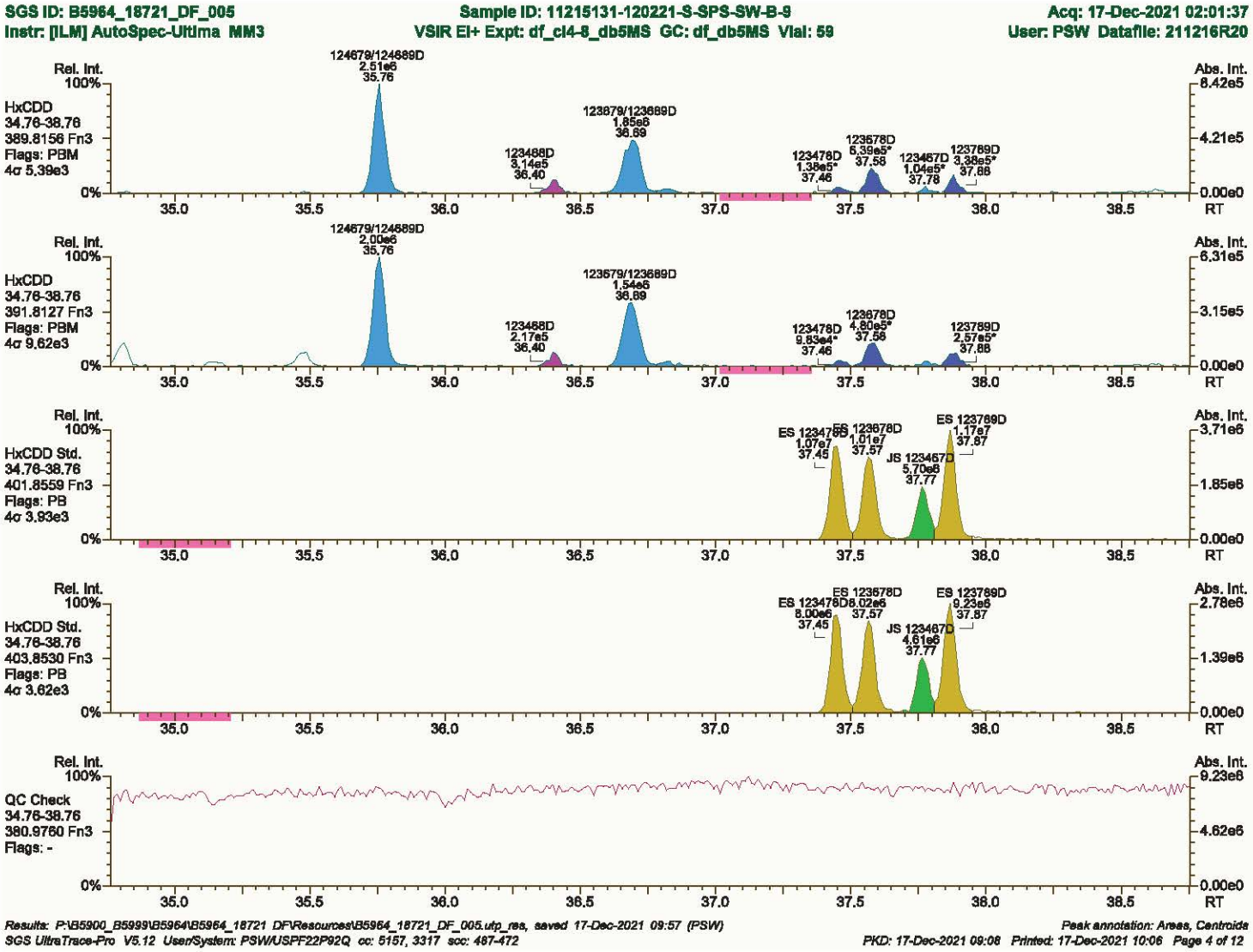
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59 | User: PSW Datafile: 211216R20



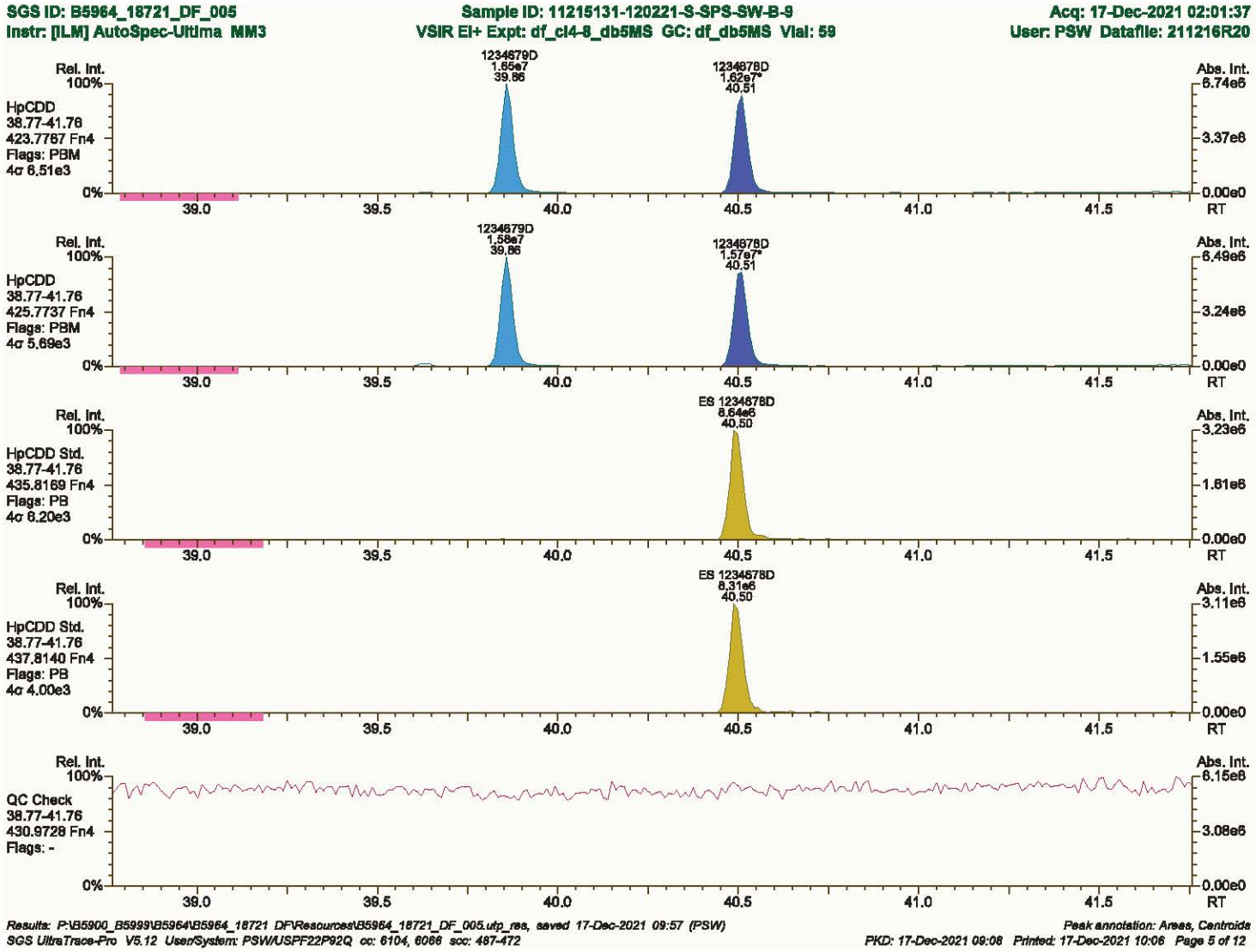
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7418, 6304, 3393 scc: 487-472 *PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 2 of 12*


SGS ID: B5964_18721_DF_005
Sample ID: 11215131-120221-S-SPS-SW-B-9
Acq: 17-Dec-2021 02:01:37
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211216R20
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 3.18e3
12479/12468D 3.08e5 31.10
12469D 2.03e5 31.64
12368D 4.17e5 32.19
12478D 2.26e5* 32.38
12379D 1.56e5* 32.48
12378D 3.41e6* 33.60
12367D 3.53e5* 33.70
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 6.39e3
12479/12468D 2.03e5 31.10
12469D 1.70e5 31.64
12368D 2.71e5 32.18
12478D 1.99e5* 32.37
12379D 8.54e4* 32.48
12378D 2.01e6* 33.59
12367D 1.66e5* 33.70
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 3.88e3
CS 12347D 1.17e7 33.08
ES 12378D 1.24e7 33.58
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 6.57e3
CS 12347D 7.26e6 33.08
ES 12378D 7.92e6 33.58
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 5312, 8387 scc: 487-472
PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 3 of 12

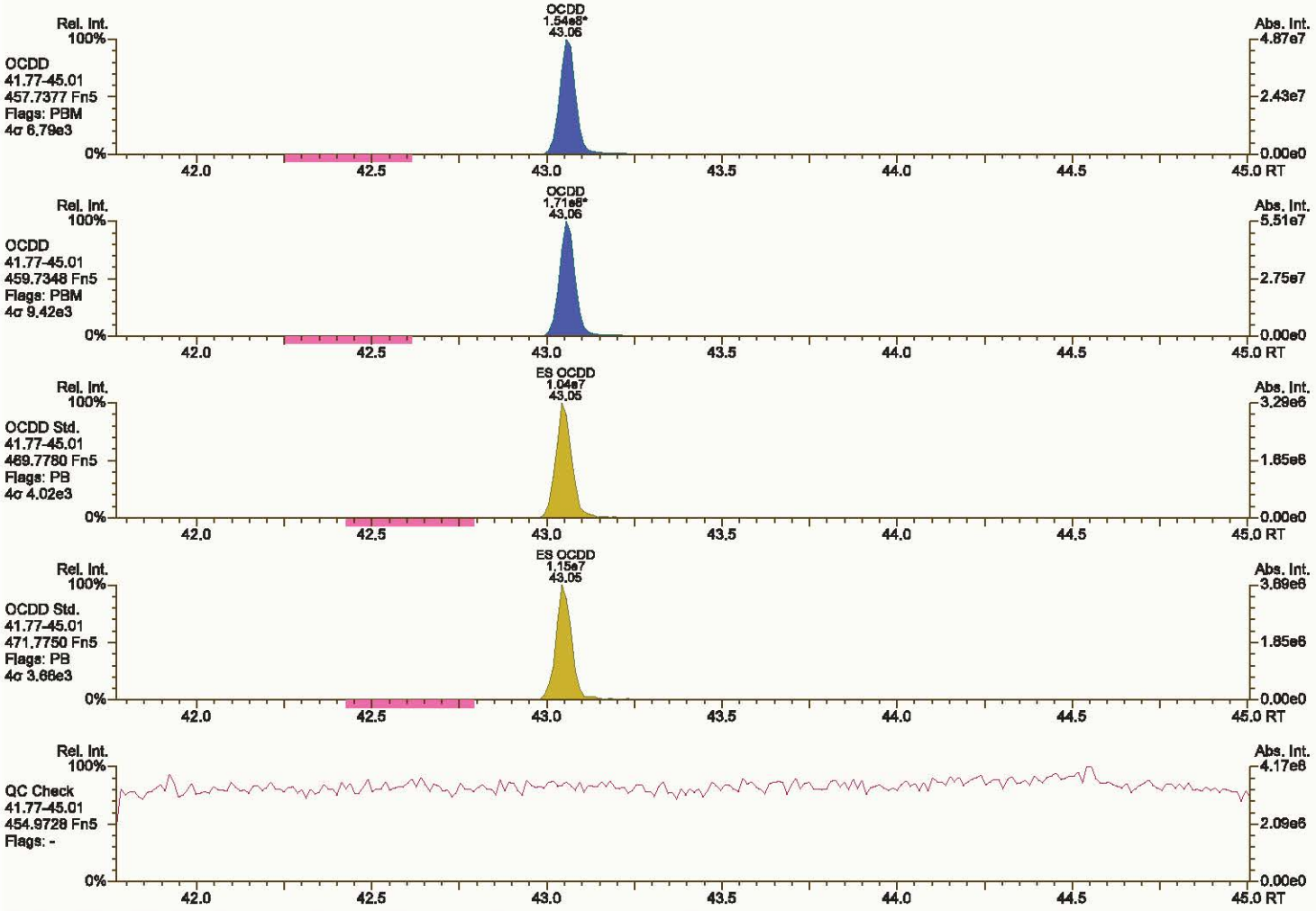


Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 5157, 3317 scc: 487-472
PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 4 of 12


SGS ID: B5964_18721_DF_005
Sample ID: 11215131-120221-S-SPS-SW-B-9
Acq: 17-Dec-2021 02:01:37
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211216R20
Rel. Int.
Abs. Int.
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 6.51e3
1234679D
1.65e7
39.86
1234678D
1.62e7*
40.51
6.74e6
3.37e6
0.00e0
RT
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 5.69e3
1234679D
1.58e7
39.86
1234678D
1.57e7*
40.51
6.49e6
3.24e6
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 6.20e3
ES 1234678D
8.64e6
40.50
3.23e6
1.61e6
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.00e3
ES 1234678D
8.31e6
40.50
3.11e6
1.55e6
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
6.15e6
3.08e6
0%
100%
39.0
39.5
40.0
40.5
41.0
41.5
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 6104, 6068 scc: 487-472
PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 5 of 12

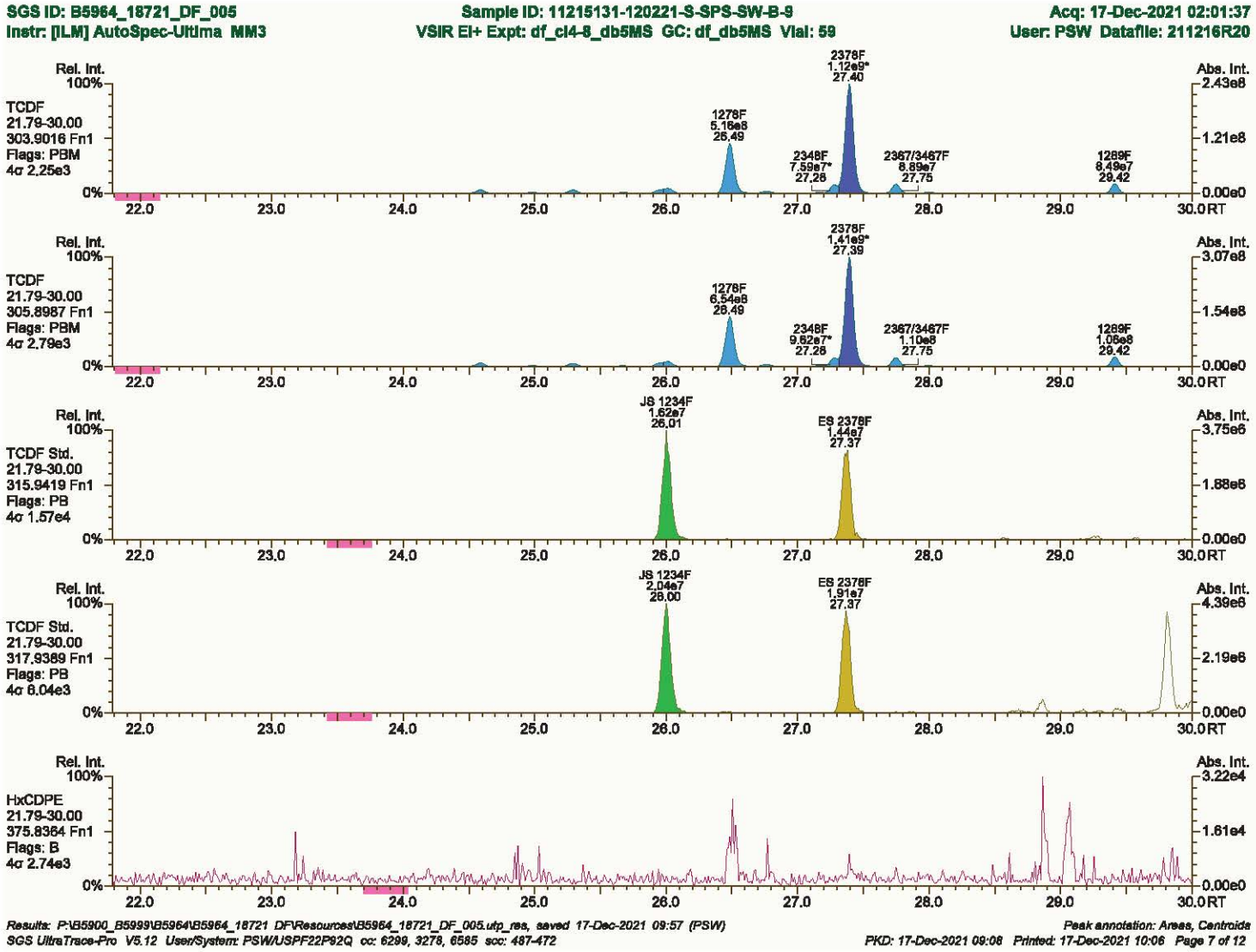
SGS ID: B5964_18721_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-B-9 | Acq: 17-Dec-2021 02:01:37

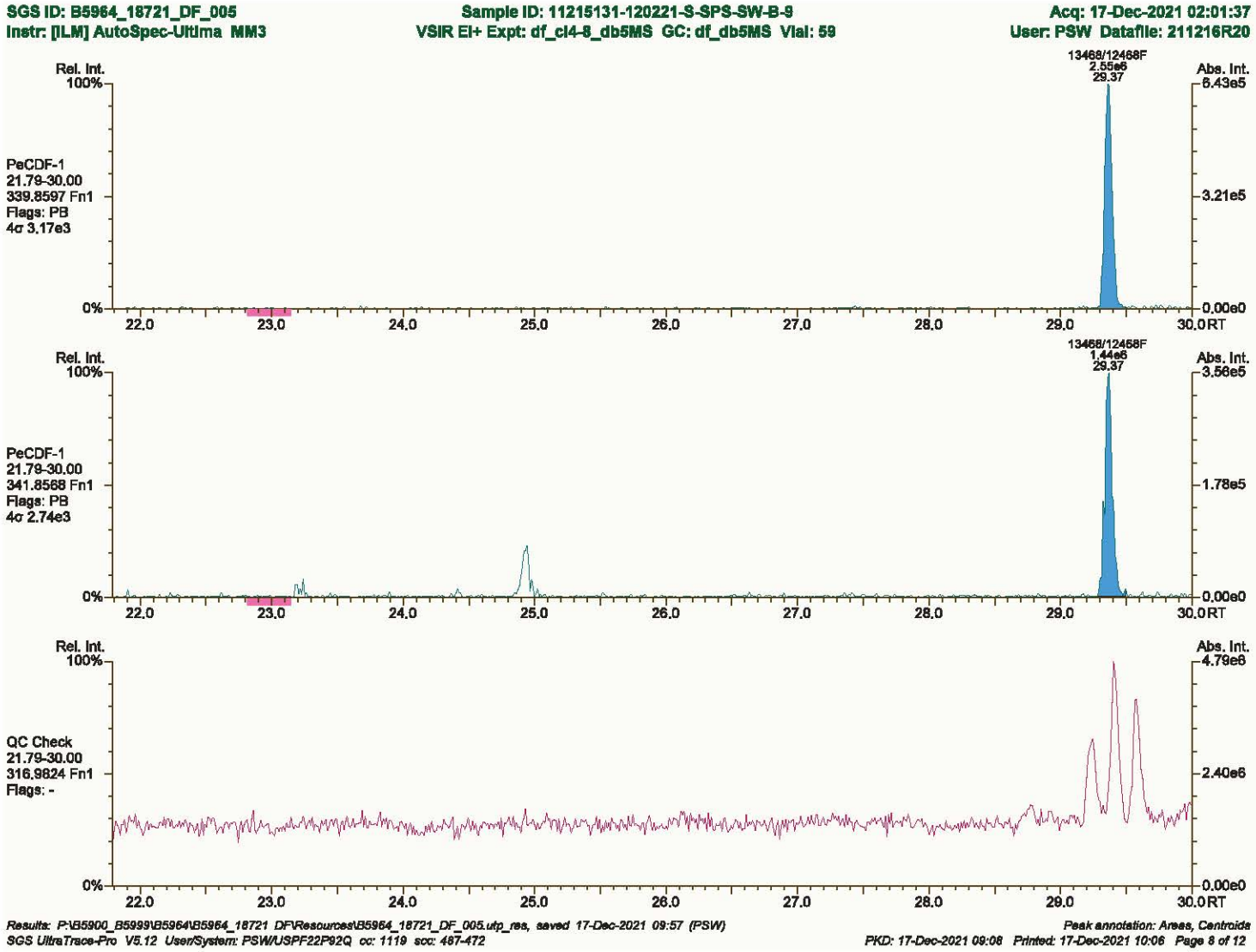
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59 | User: PSW Datafile: 211216R20

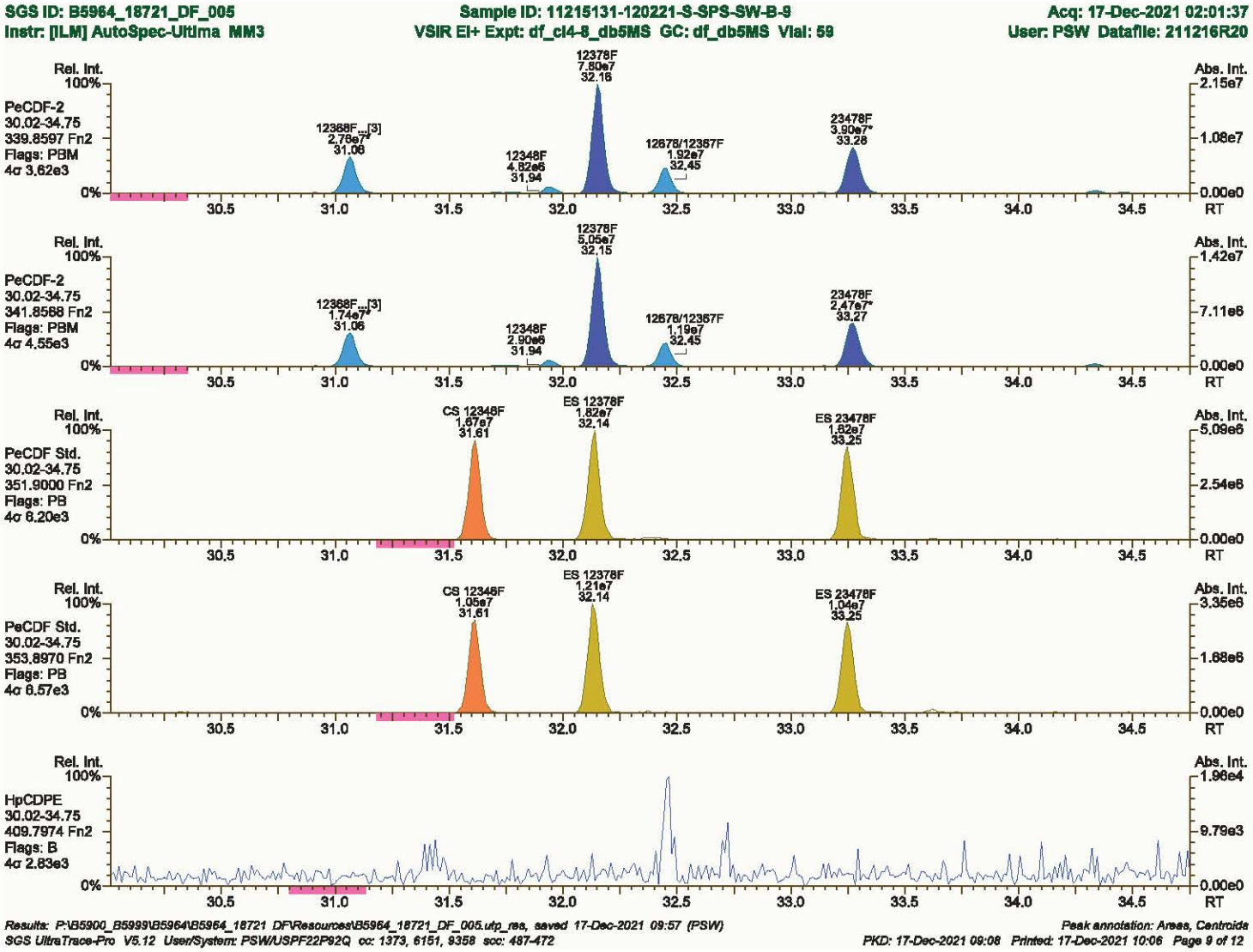


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 7519, 4047 scc: 487-472 | *PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 6 of 12*


SGS ID: B5964_18721_DF_005
Sample ID: 11215131-120221-S-SPS-SW-B-9
Acq: 17-Dec-2021 02:01:37
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211216R20
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.25e3
1278F 5.16e8 26.49
2348F 7.59e7* 27.28
2378F 1.12e9* 27.40
2367/3467F 8.89e7 27.75
1289F 8.49e7 29.42
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 2.79e3
1278F 6.54e8 26.49
2348F 9.62e7* 27.28
2378F 1.41e9* 27.39
2367/3467F 1.10e8 27.75
1289F 1.06e8 29.42
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.57e4
JS 1234F 1.62e7 26.01
ES 2378F 1.44e7 27.37
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 6.04e3
JS 1234F 2.04e7 26.00
ES 2378F 1.91e7 27.37
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.74e3
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6299, 3278, 6585 scc: 487-472
PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 7 of 12

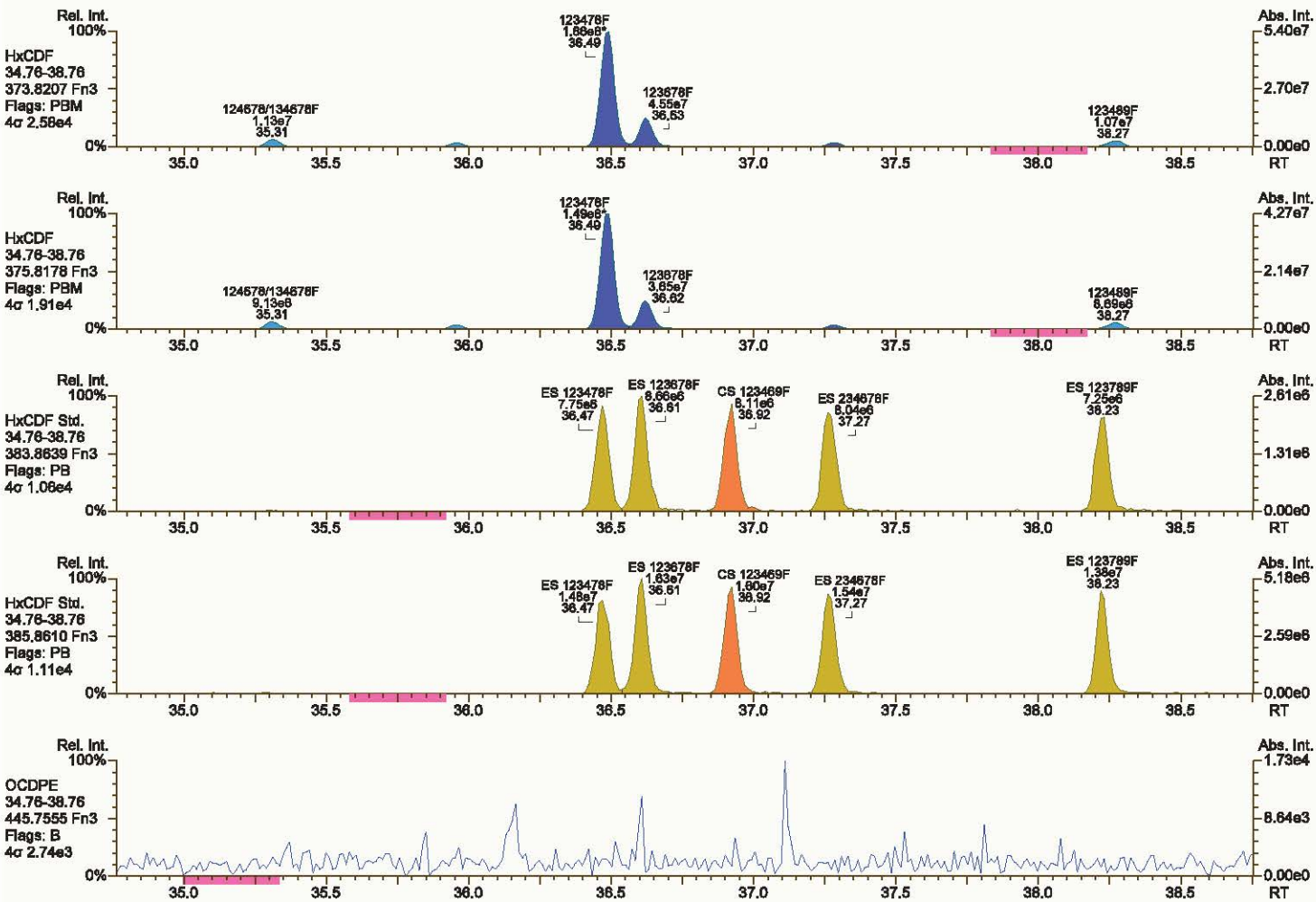

SGS ID: B5964_18721_DF_005
Sample ID: 11215131-120221-S-SPS-SW-B-9
Acq: 17-Dec-2021 02:01:37
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211216R20
Rel. Int.
100%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.17e3
13468/12468F
2.55e6
29.37
Abs. Int.
6.43e5
3.21e5
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 2.74e3
13468/12468F
1.44e6
29.37
Abs. Int.
3.56e5
1.78e5
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
4.79e6
2.40e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1119 scc: 487-472
PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 8 of 12


SGS ID: B5964_18721_DF_005
Sample ID: 11215131-120221-S-SPS-SW-B-9
Acq: 17-Dec-2021 02:01:37
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211216R20
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.62e3
12368F...[3] 2.76e7* 31.08
12348F 4.82e6 31.94
12378F 7.80e7 32.16
12678/12367F 1.92e7 32.45
23478F 3.90e7* 33.28
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 4.55e3
12368F...[3] 1.74e7* 31.06
12348F 2.90e6 31.94
12378F 5.05e7 32.15
12678/12367F 1.19e7 32.45
23478F 2.47e7* 33.27
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 6.20e3
CS 12348F 1.67e7 31.61
ES 12378F 1.82e7 32.14
ES 23478F 1.82e7 33.25
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 6.57e3
CS 12348F 1.05e7 31.61
ES 12378F 1.21e7 32.14
ES 23478F 1.04e7 33.25
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.83e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1373, 6151, 9358 scc: 487-472
PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 9 of 12

SGS ID: B5964_18721_DF_005
Instr: [ILM] AutoSpec-Ultima MM3

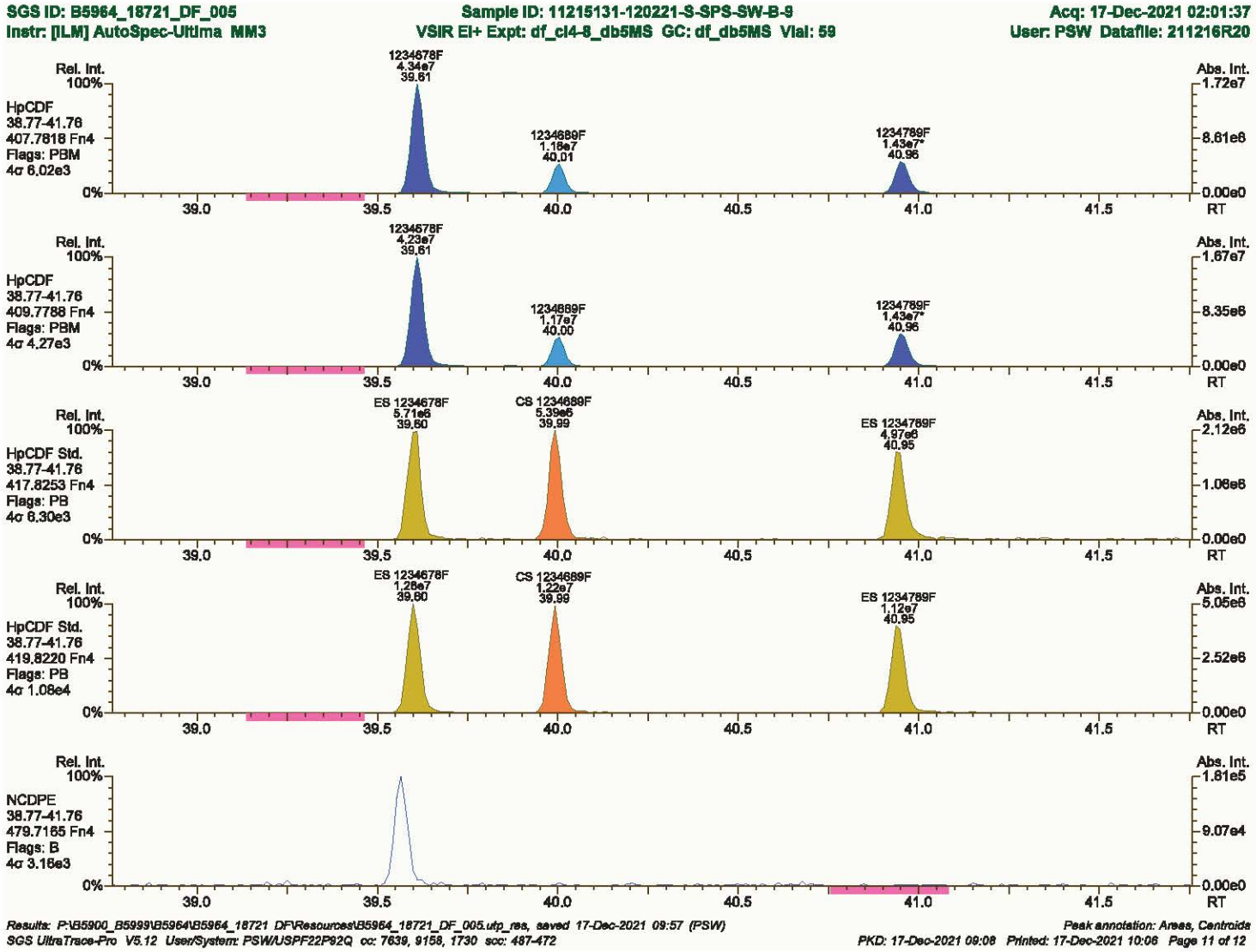
Sample ID: 11215131-120221-S-SPS-SW-B-9
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59

Acq: 17-Dec-2021 02:01:37
User: PSW Datafile: 211216R20



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6065, 2344, 9562 scc: 487-472

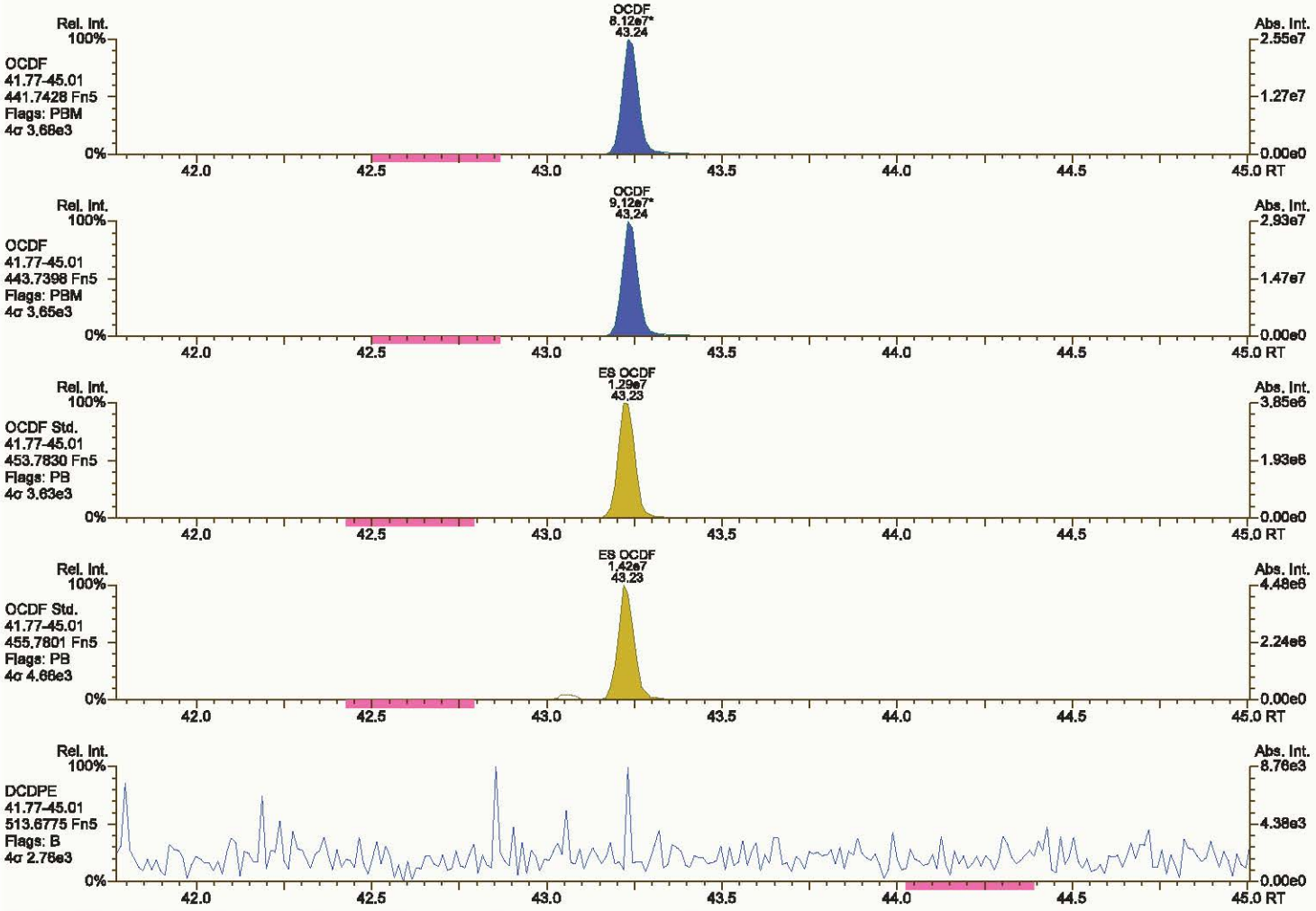
Peak annotation: Areas, Centroids
PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 10 of 12



Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7639, 9158, 1730 scc: 487-472
PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 11 of 12

SGS ID: B5964_18721_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-B-9 | Acq: 17-Dec-2021 02:01:37

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59 | User: PSW Datafile: 211216R20



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005.utp_res, saved 17-Dec-2021 09:57 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6650, 3962, 7486 scc: 487-472 | *PKD: 17-Dec-2021 09:08 Printed: 17-Dec-2021 10:06 Page 12 of 12*

Lab ID: B6964_16721_DF_005MS | Acq'd: 17 Dec 2021 02:49 PSW | Wt/Vol: 10.13 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MS | UTP: 17-Dec-2021 09:57:41 PSW | J-level: 0.494 pg/g | Split: 1 | Checkcode: 811-650-TNK

Datafile: 211216R21 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26	E	1.0008	1.0008	0	7.11E+08	0.79	Y	1.34	4,220	7649.837	0.498
12378-PeCDD	33.60		1.0005	1.0007	+0.4	1.59E+07	1.56	Y	1.06	138	8236.973	0.606
123478-HxCDD	37.46		1.0003	1.0004	+0.2	9.94E+06	1.32	Y	1.06	100	15475.935	1.27
123678-HxCDD	37.58		1.0033	1.0036	+0.7	1.13E+07	1.21	Y	1.08	110	15475.935	1.39
123789-HxCDD	37.89		1.0110	1.0117	+1.6	1.06E+07	1.29	Y	1.02	99.9	15475.935	1.09
1234678-HpCDD	40.51		1.0003	1.0003	0	3.30E+07	1.03	Y	0.97	371	8320.84	0.604
OCDD	43.05		1.0003	1.0003	0	2.87E+08	0.89	Y	1.07	4,560	13808.501	1.76
2378-TCDF	27.40	E	1.0006	1.0008	+0.3	2.37E+09	0.80	Y	0.96	14,000	10445.836	0.756
12378-PeCDF	32.16		1.0006	1.0005	-0.2	1.01E+08	1.57	Y	0.95	721	14523.845	0.956
23478-PeCDF	33.27		1.0006	1.0007	+0.2	6.86E+07	1.55	Y	0.94	509	14523.845	0.961
123478-HxCDF	36.49		1.0004	1.0004	0	2.98E+08	1.24	Y	1.23	2,180	48090.08	2.59
123678-HxCDF	36.62		1.0004	1.0005	+0.2	7.86E+07	1.25	Y	1.13	552	48090.08	2.82
234678-HxCDF	37.28		1.0005	1.0004	-0.2	2.17E+07	1.24	Y	1.15	163	48090.08	3.09
123789-HxCDF	38.26		1.0005	1.0007	+0.5	2.52E+07	1.25	Y	1.14	199	48090.08	3
1234678-HpCDF	39.62		1.0003	1.0003	0	1.24E+08	1.04	Y	1.36	949	8328.459	0.421
1234789-HpCDF	40.96		1.0003	1.0003	0	4.74E+07	1.03	Y	1.30	426	8328.459	0.504
OCDF	43.23		1.0002	1.0003	+0.3	1.65E+08	0.90	Y	1.03	2,280	8883.733	0.946

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0237	1.0234	-0.5	2.47E+07	0.77	Y	1.03	91.1
ES 12378-PeCDD	33.58	1.2158	1.2171	+2.6	2.14E+07	1.58	Y	1.03	78.8
ES 123478-HxCDD	37.45	0.9920	0.9915	-1.1	1.85E+07	1.25	Y	0.99	89
ES 123678-HxCDD	37.57	0.9949	0.9946	-0.7	1.87E+07	1.20	Y	0.97	92
ES 123789-HxCDD	37.87	1.0026	1.0027	+0.2	2.07E+07	1.33	Y	1.12	87.9
ES 1234678-HpCDD	40.50	1.0713	1.0722	+2.2	1.80E+07	1.05	Y	0.99	86.9
ES OCDD	43.04	1.1385	1.1396	+2.8	2.32E+07	0.95	Y	0.78	71.6
ES 2378-TCDF	27.38	1.0519	1.0525	+1.0	3.47E+07	0.77	Y	1.08	87.6
ES 12378-PeCDF	32.14	1.2331	1.2355	+4.6	2.91E+07	1.59	Y	0.93	85.2
ES 23478-PeCDF	33.25	1.2754	1.2783	+5.8	2.83E+07	1.55	Y	0.92	84
ES 123478-HxCDF	36.47	0.9656	0.9656	0	2.19E+07	0.54	Y	1.14	91.7
ES 123678-HxCDF	36.60	0.9693	0.9691	-0.4	2.49E+07	0.54	Y	1.30	91.7
ES 234678-HxCDF	37.27	0.9869	0.9867	-0.4	2.29E+07	0.49	Y	1.20	91
ES 123789-HxCDF	38.23	1.0121	1.0122	+0.2	2.20E+07	0.52	Y	1.14	92.8
ES 1234678-HpCDF	39.61	1.0478	1.0486	+1.9	1.89E+07	0.46	Y	0.95	95.4
ES 1234789-HpCDF	40.94	1.0832	1.0840	+2.0	1.69E+07	0.45	Y	0.85	95.5
ES OCDF	43.22	1.1434	1.1443	+2.3	2.79E+07	0.88	Y	0.93	72

Lab ID: B5964_16721_DF_005MS | Acq'd: 17 Dec 2021 02:49 PSW | Wt/Vol: 10.13 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MS | UTP: 17-Dec-2021 09:57:41 PSW | J-level: 0.494 pg/g | Split: 1 | Checkcode: 811-650-TNK

Datafile: 211216R21 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.59		-	-	-	2.63E+07	0.82	Y	-	-
JS 1234-TCDF	26.01		-	-	-	3.66E+07	0.79	Y	-	-
JS 123467-HxCDD	37.77		-	-	-	1.04E+07	1.29	Y	-	-
CS 37Cl-2378-TCDD	28.25		1.0245	1.0242	-0.5	1.06E+07	n/a	-	1.31	76.8
CS 12347-PeCDD	33.08		1.1978	1.1992	+2.8	1.93E+07	1.59	Y	0.89	82.3
CS 12346-PeCDF	31.62		1.2130	1.2154	+4.6	2.71E+07	1.54	Y	0.87	85.3
CS 123469-HxCDF	36.92		0.9775	0.9774	-0.2	2.27E+07	0.50	Y	1.09	99.6
CS 1234689-HpCDF	39.99		1.0580	1.0589	+2.2	1.78E+07	0.45	Y	0.86	98.8
~~SS 37Cl-2378-TCDD~~	~~28.25~~		~~1.0245~~	~~1.0242~~	~~-0.5~~	~~1.06E+07~~	~~n/a~~		~~1.26~~	~~84.0~~
~~SS 12347-PeCDD~~	~~33.08~~		~~1.1978~~	~~1.1992~~	~~+2.8~~	~~1.93E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~104~~
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2154~~	~~+4.6~~	~~2.71E+07~~	~~1.54~~	~~Y~~	~~0.93~~	~~100~~
~~SS 123469-HxCDF~~	~~36.92~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~2.27E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~109~~
~~SS 1234689-HpCDF~~	~~39.99~~		~~1.0580~~	~~1.0589~~	~~+2.2~~	~~1.78E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~103~~

Totals	Conc	EMPC
Total TCDD	4620	4690
Total PeCDD	196	200
Total HxCDD	398	401
Total HpCDD	690	690
Total Tetra-Octa Dioxins	10500	10500
Total TCDF	27,500	27500
Total PeCDF	2,030	2030
Total HxCDF	3,530	3530
Total HpCDF	1,580	1580
Total Tetra-Octa Furans	37,000	37000
Total Tetra-Octa Dioxins & Furans	47400	47500

Lab ID: B6964_16721_DF_005MS | Acq'd: 17 Dec 2021 02:49 PSW | Wt/Vol: 10.13 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MS | UTP: 17-Dec-2021 09:57:41 PSW | J-level: 0.494 pg/g | Split: 1 | Checkcode: 811-650-TNK

Datafile: 211216R21 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.61		0.8726	0.8717	-1.3	4.40E+06	0.72	Y	1.34	26.1	7649.837	0.498
1379-TCDD	24.96	EMPC	0.8851	0.8841	-1.5	2.42E+05	0.91	N	1.34	1.43	7649.837	0.498
1369-TCDD	25.38	J EMPC	0.9002	0.8991	-1.7	5.27E+04	1.04	N	1.34	0.313	7649.837	0.498
1469-TCDD	26.16	EMPC	0.9275	0.9267	-1.3	4.18E+05	0.92	N	1.34	2.48	7649.837	0.498
1247/1246/1248/1249-TCDD	26.41	EMPC	0.9361	0.9354	-1.1	1.16E+06	0.97	N	1.34	6.89	7649.837	0.498
1378-TCDD	26.61		0.9427	0.9427	0	1.90E+06	0.74	Y	1.34	11.3	7649.837	0.498
1268-TCDD	NotFnd		0.9498						1.34		7649.837	0.498
1478-TCDD	27.06		0.9584	0.9583	-0.2	1.51E+06	0.79	Y	1.34	8.95	7649.837	0.498
1279-TCDD	NotFnd		0.9644						1.34		7649.837	0.498
1234/1269-TCDD	27.59	EMPC	0.9766	0.9773	+1.2	2.35E+05	0.63	N	1.34	1.39	7649.837	0.498
1236-TCDD	27.73	EMPC	0.9813	0.9821	+1.3	1.49E+05	1.22	N	1.34	0.885	7649.837	0.498
1237/1238-TCDD	27.96		0.9906	0.9902	-0.7	9.92E+06	0.84	Y	1.34	58.9	7649.837	0.498
1239-TCDD	28.10		0.9952	0.9951	-0.2	2.71E+06	0.86	Y	1.34	16.1	7649.837	0.498
2378-TCDD	**28.26**	E	**1.0008**	1.0008	**0**	7.11E+08	0.79	Y	**1.34**	**4,220**	**7649.837**	**0.498**
1278-TCDD	28.58		1.0122	1.0124	+0.3	4.70E+07	0.77	Y	1.34	279	7649.837	0.498
1267-TCDD	28.72	EMPC	1.0168	1.0172	+0.7	3.57E+06	1.04	N	1.34	21.2	7649.837	0.498
1289-TCDD	29.23	EMPC	1.0349	1.0352	+0.5	6.09E+06	0.95	N	1.34	36.2	7649.837	0.498
12479/12468-PeCDD	31.11		0.9267	0.9266	-0.2	2.78E+06	1.51	Y	1.06	24.2	8236.973	0.606
12469-PeCDD	31.64		0.9425	0.9424	-0.2	3.48E+05	1.66	Y	1.06	3.03	8236.973	0.606
12368-PeCDD	32.19		0.9588	0.9586	-0.4	4.51E+05	1.53	Y	1.06	3.93	8236.973	0.606
12478-PeCDD	32.38		0.9643	0.9643	0	3.56E+05	1.60	Y	1.06	3.1	8236.973	0.606
12379-PeCDD	32.48	J EMPC	0.9673	0.9674	+0.2	1.54E+05	2.00	N	1.06	1.34	8236.973	0.606
12369/12467/12489-PeCDD	32.74	J EMPC	0.9750	0.9751	+0.2	2.18E+05	2.07	N	1.06	1.9	8236.973	0.606
12346/12347-PeCDD	33.11	J EMPC	0.9859	0.9860	+0.2	1.12E+05	2.48	N	1.06	0.976	8236.973	0.606
12378-PeCDD	33.60		**1.0005**	**1.0007**	**+0.4**	**1.59E+07**	**1.56**	**Y**	**1.06**	**138**	**8236.973**	**0.606**
12367-PeCDD	NotFnd		1.0032						1.06		8236.973	0.606
12389-PeCDD	34.03		1.0135	1.0136	+0.2	2.73E+06	1.62	Y	1.06	23.7	8236.973	0.606
124679/124689-HxCDD	35.76		0.9544	0.9548	+0.9	6.10E+06	1.27	Y	1.05	59.4	15475.935	1.25
123468-HxCDD	36.40		0.9716	0.9720	+0.9	3.89E+05	1.23	Y	1.05	3.79	15475.935	1.25
123679/123689-HxCDD	36.69		0.9793	0.9797	+0.9	2.47E+06	1.36	Y	1.05	24.1	15475.935	1.25
123469-HxCDD	36.81	J EMPC	0.9829	0.9828	-0.2	1.20E+05	1.94	N	1.05	1.17	15475.935	1.25
123478-HxCDD	37.46		**1.0003**	**1.0004**	**+0.2**	**9.94E+06**	**1.32**	**Y**	1.06	**100**	**15475.935**	**1.27**
123678-HxCDD	37.58		**1.0033**	**1.0036**	**+0.7**	**1.13E+07**	**1.21**	**Y**	1.08	**110**	**15475.935**	**1.39**
123467-HxCDD	37.77	J EMPC	1.0084	1.0085	+0.2	2.28E+05	1.54	N	1.05	2.22	15475.935	1.25
123789-HxCDD	37.89		**1.0110**	**1.0117**	**+1.6**	**1.06E+07**	**1.29**	**Y**	1.02	**99.9**	**15475.935**	**1.09**

Lab ID: B6964_16721_DF_005MS | Acq'd: 17 Dec 2021 02:49 PSW | Wt/Vol: 10.13 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MS | UTP: 17-Dec-2021 09:57:41 PSW | J-level: 0.494 pg/g | Split: 1 | Checkcode: 811-650-TNK

Datafile: 211216R21 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	2.83E+07	1.01	Y	0.97	319	8320.84	0.604
1234678-HpCDD	**40.51**		**1.0003**	**1.0003**	**0**	**3.30E+07**	**1.03**	**Y**	**0.97**	**371**	**8320.84**	**0.604**
OCDD	**43.05**		**1.0003**	**1.0003**	**0**	**2.87E+08**	**0.89**	**Y**	**1.07**	**4,560**	**13808.501**	**1.76**
OCDD-a	43.05		1.0001	1.0002	+0.3	1.73E+07	2.50	Y	0.07	4,450	10199.449	21.1
1368-TCDF	22.47		0.8230	0.8206	-3.2	5.22E+06	0.81	Y	0.96	30.9	10445.836	0.756
1468-TCDF	23.07		0.8443	0.8426	-2.4	3.15E+06	0.78	Y	0.96	18.7	10445.836	0.756
2468-TCDF	23.71		0.8672	0.8660	-1.7	3.77E+06	0.85	Y	0.96	22.3	10445.836	0.756
1346/1246-TCDF	24.15		0.8802	0.8822	+2.9	3.34E+06	0.84	Y	0.96	19.7	10445.836	0.756
1347/1378/1247-TCDF	24.27		0.8855	0.8865	+1.5	1.81E+07	0.80	Y	0.96	107	10445.836	0.756
1348-TCDF	24.48		0.8952	0.8942	-1.5	5.34E+06	0.75	Y	0.96	31.6	10445.836	0.756
1248/1367/1379-TCDF	24.59		0.9000	0.8982	-2.7	9.07E+07	0.79	Y	0.96	537	10445.836	0.756
1268-TCDF	24.99		0.9136	0.9129	-1.0	3.29E+07	0.80	Y	0.96	195	10445.836	0.756
1467-TCDF	25.13		0.9185	0.9178	-1.1	5.52E+06	0.83	Y	0.96	32.6	10445.836	0.756
1478-TCDF	25.30		0.9247	0.9240	-1.1	8.89E+07	0.79	Y	0.96	526	10445.836	0.756
1369/1237-TCDF	25.68		0.9381	0.9378	-0.5	2.49E+07	0.79	Y	0.96	147	10445.836	0.756
2467-TCDF	25.79		0.9427	0.9421	-0.9	2.43E+06	0.75	Y	0.96	14.4	10445.836	0.756
2368-TCDF	25.94		0.9484	0.9474	-1.6	5.29E+07	0.79	Y	0.96	313	10445.836	0.756
1238/1234/1678/1469/1236-TCDF	26.02		0.9517	0.9504	-2.0	1.33E+08	0.79	Y	0.96	787	10445.836	0.756
1278-TCDF	26.49	E	0.9682	0.9676	-1.0	1.12E+09	0.79	Y	0.96	6,640	10445.836	0.756
1349-TCDF	NotFnd		0.9725						0.96		10445.836	0.756
1267-TCDF	26.77		0.9782	0.9776	-1.0	5.89E+07	0.79	Y	0.96	349	10445.836	0.756
2346/1249-TCDF	26.96		0.9846	0.9847	+0.2	8.00E+06	0.79	Y	0.96	47.4	10445.836	0.756
2347/1279-TCDF	27.16		0.9926	0.9922	-0.7	2.46E+07	0.78	Y	0.96	146	10445.836	0.756
2348-TCDF	27.28	E	0.9966	0.9965	-0.2	1.91E+08	0.79	Y	0.96	1,130	10445.836	0.756
2378-TCDF	**27.40**	**E**	**1.0006**	**1.0008**	**+0.3**	**2.37E+09**	**0.80**	**Y**	**0.96**	**14,000**	**10445.836**	**0.756**
2367/3467-TCDF	27.75	E	1.0139	1.0137	-0.3	1.92E+08	0.79	Y	0.96	1,130	10445.836	0.756
1269-TCDF	28.00		1.0226	1.0228	+0.3	3.59E+07	0.79	Y	0.96	212	10445.836	0.756
1239-TCDF	28.26		1.0322	1.0322	0	4.55E+06	0.81	Y	0.96	26.9	10445.836	0.756
1289-TCDF	29.42	E	1.0729	1.0746	+3.0	1.82E+08	0.84	Y	0.96	1,080	10445.836	0.756
13468/12468-PeCDF	29.35		0.9135	0.9132	-0.5	3.30E+07	1.58	Y	0.94	241	5808.402	0.383
13678/13467/12467-PeCDF	30.91		0.9612	0.9617	+0.9	8.48E+05	1.47	Y	0.94	6.19	14523.845	0.958
12368/13478/12478-PeCDF	31.07		0.9661	0.9667	+1.1	3.53E+07	1.59	Y	0.94	258	14523.845	0.958
14678-PeCDF	NotFnd		0.9693						0.94		14523.845	0.958
13479-PeCDF	NotFnd		0.9723						0.94		14523.845	0.958
13469/12479-PeCDF	NotFnd		0.9799						0.94		14523.845	0.958
12346-PeCDF	NotFnd		0.9842						0.94		14523.845	0.958

Lab ID: B5964_18721_DF_005MS | Acq'd: 17 Dec 2021 02:49 PSW | Wt/Vol: 10.13 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MS | UTP: 17-Dec-2021 09:57:41 PSW | J-level: 0.494 pg/g | Split: 1 | Checkcode: 811-650-TNK

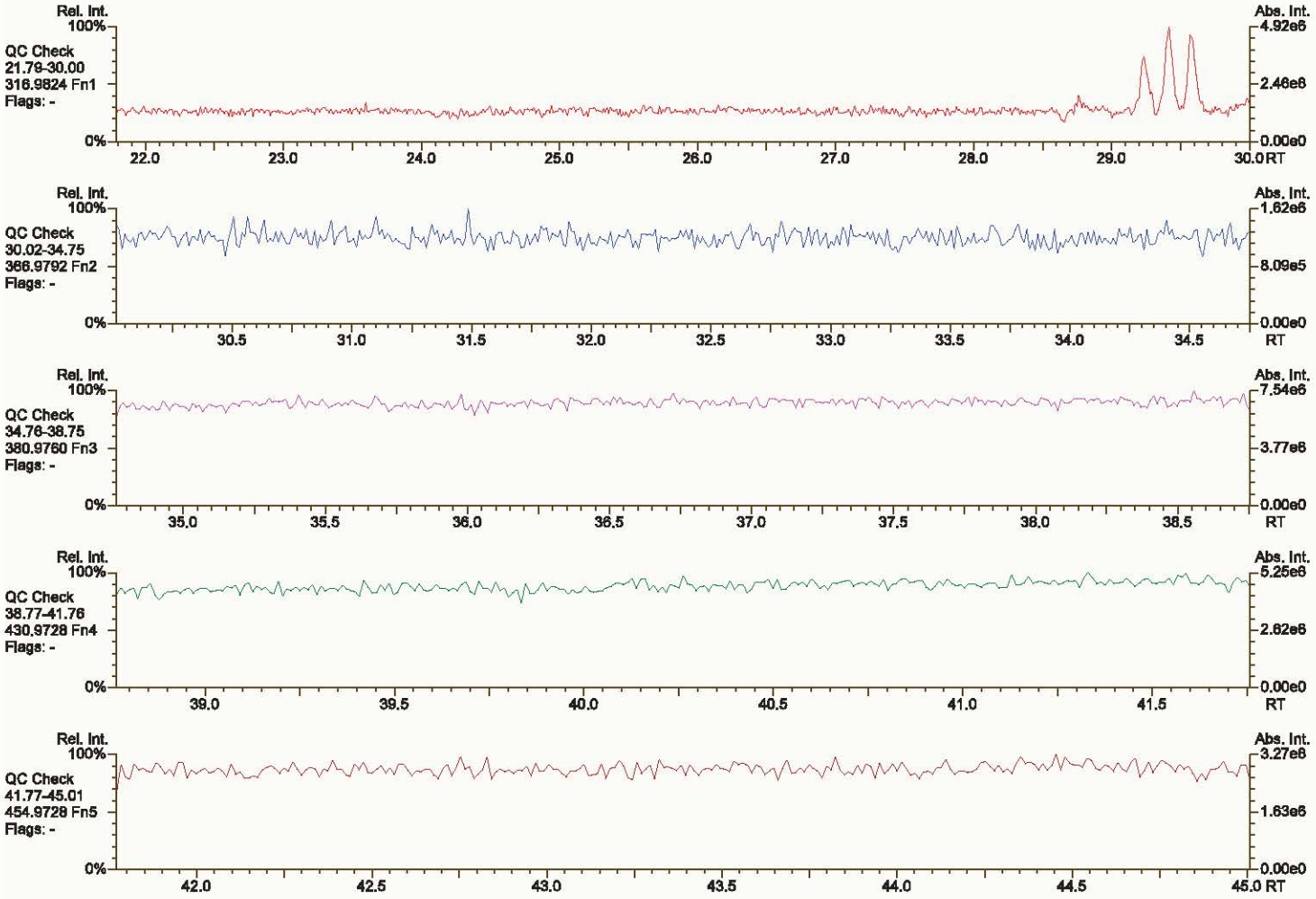
Datafile: 211216R21 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.70		0.9868	0.9863	-1.0	1.52E+06	1.50	Y	0.94	11.1	14523.845	0.958
12347-PeCDF	31.78		0.9893	0.9890	-0.6	1.65E+06	1.66	Y	0.94	12	14523.845	0.958
12348-PeCDF	31.95		0.9941	0.9940	-0.2	6.70E+06	1.48	Y	0.94	48.8	14523.845	0.958
12378-PeCDF	**32.16**		**1.0006**	**1.0005**	**-0.2**	**1.01E+08**	**1.57**	**Y**	**0.95**	**721**	**14523.845**	**0.956**
12678/12367-PeCDF	32.45		1.0090	1.0097	+1.4	2.26E+07	1.55	Y	0.94	165	14523.845	0.958
12379-PeCDF	NotFnd		1.0143						0.94		14523.845	0.958
12679-PeCDF	NotFnd		0.9929						0.94		14523.845	0.958
23467/12369-PeCDF	33.12		0.9966	0.9962	-0.8	9.90E+05	1.44	Y	0.94	7.22	14523.845	0.958
23478-PeCDF	**33.27**		**1.0006**	**1.0007**	**+0.2**	**6.86E+07**	**1.55**	**Y**	**0.94**	**509**	**14523.845**	**0.961**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	33.43		1.0055	1.0053	-0.4	8.85E+05	1.51	Y	0.94	6.45	14523.845	0.958
12349-PeCDF	NotFnd		1.0102						0.94		14523.845	0.958
12389-PeCDF	34.33		1.0325	1.0324	-0.2	6.18E+06	1.58	Y	0.94	45.1	14523.845	0.958
123468-HxCDF	35.12		0.9628	0.9629	+0.2	3.44E+07	1.27	Y	1.16	255	48090.08	2.87
124678/134678-HxCDF	35.31		0.9683	0.9682	-0.2	1.65E+07	1.25	Y	1.16	122	48090.08	2.87
134679-HxCDF	NotFnd		0.9746						1.16		48090.08	2.87
124679-HxCDF	NotFnd		0.9798						1.16		48090.08	2.87
124689-HxCDF	35.96		0.9859	0.9859	0	7.57E+06	1.23	Y	1.16	56.1	48090.08	2.87
123467-HxCDF	36.37		0.9972	0.9972	0	5.86E+05	1.35	Y	1.16	4.34	48090.08	2.87
123478-HxCDF	**36.49**		**1.0004**	**1.0004**	**0**	**2.98E+08**	**1.24**	**Y**	**1.23**	**2,180**	**48090.08**	**2.59**
123678-HxCDF	**36.62**		**1.0004**	**1.0005**	**+0.2**	**7.86E+07**	**1.25**	**Y**	**1.13**	**552**	**48090.08**	**2.82**
123479-HxCDF	NotFnd		1.0049						1.16		48090.08	2.87
123469-HxCDF	NotFnd		1.0088						1.16		48090.08	2.87
123679-HxCDF	NotFnd		0.9943						1.16		48090.08	2.87
234678-HxCDF	**37.28**		**1.0005**	**1.0004**	**-0.2**	**2.17E+07**	**1.24**	**Y**	**1.15**	**163**	**48090.08**	**3.09**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		48090.08	2.87
123789-HxCDF	**38.26**		**1.0005**	**1.0007**	**+0.5**	**2.52E+07**	**1.25**	**Y**	**1.14**	**199**	**48090.08**	**3**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		48090.08	2.87
1234678-HpCDF	**39.62**		**1.0003**	**1.0003**	**0**	**1.24E+08**	**1.04**	**Y**	**1.36**	**949**	**8328.459**	**0.421**
1234679-HpCDF	39.87		1.0067	1.0066	-0.2	1.70E+06	0.95	Y	1.33	14.1	8328.459	0.46
1234689-HpCDF	40.01		1.0100	1.0101	+0.2	2.29E+07	1.03	Y	1.33	190	8328.459	0.46
1234789-HpCDF	**40.96**		**1.0003**	**1.0003**	**0**	**4.74E+07**	**1.03**	**Y**	**1.30**	**426**	**8328.459**	**0.504**
OCDF	**43.23**		**1.0002**	**1.0003**	**+0.3**	**1.65E+08**	**0.90**	**Y**	**1.03**	**2,280**	**8883.733**	**0.946**
OCDF-a	43.23		1.0002	1.0002	0	9.73E+06	2.62	Y	0.06	2,330	7345.927	13.5

SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60

Acq: 17-Dec-2021 02:49:11
User: PSW Datafile: 211216R21



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SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 811-650

Peak annotation: Areas, Centroids
PKD: n/a Printed: 17-Dec-2021 10:06 Page 1 of 12

SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60

Acq: 17-Dec-2021 02:49:11
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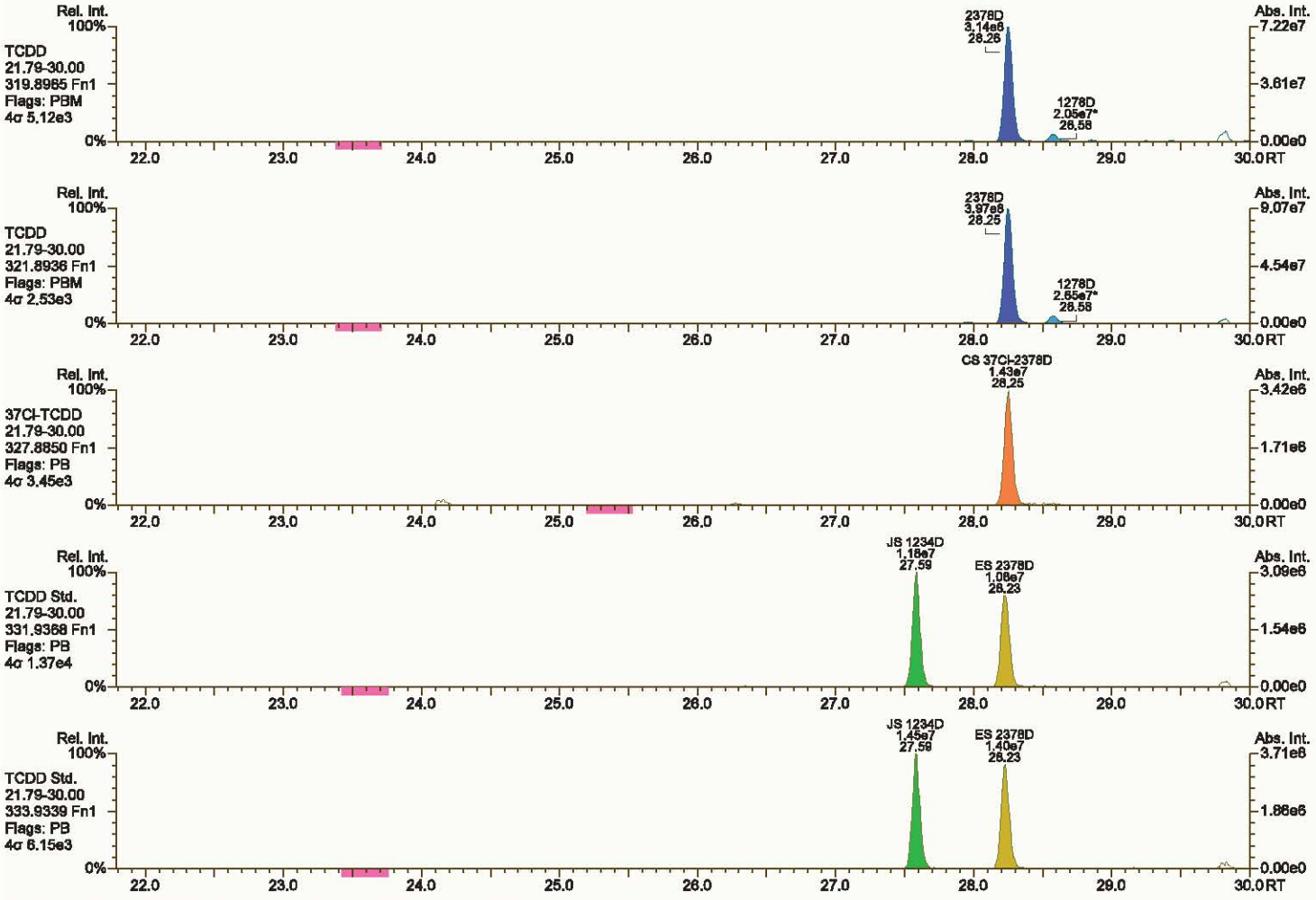

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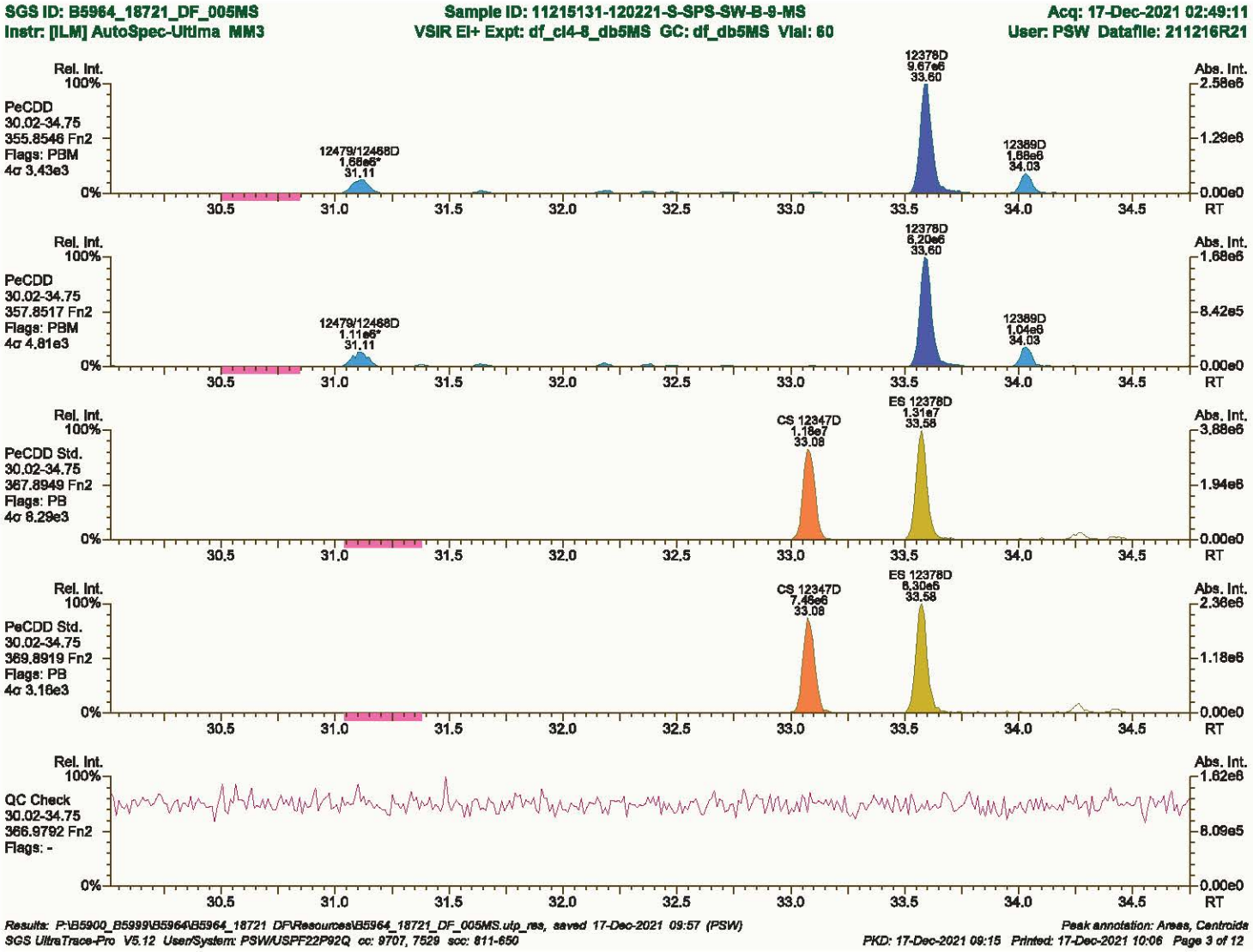
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0728, 6092, 7528 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:06 Page 2 of 12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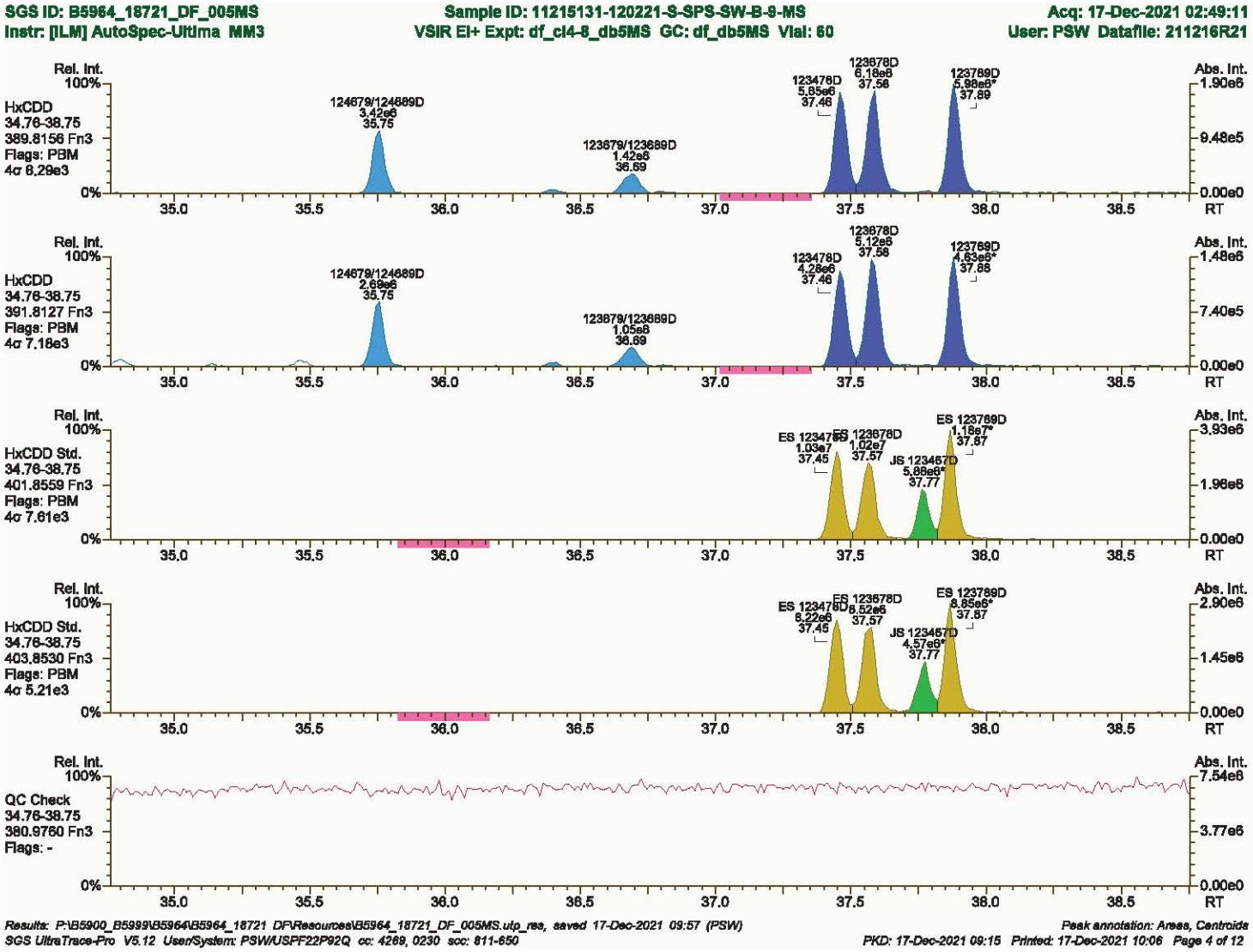
Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
Acq: 17-Dec-2021 02:49:11
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60
User: PSW Datafile: 211216R21
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 3.43e3
12378D
9.67e6
33.60
12479/12488D
1.68e6*
31.11
12389D
1.88e6
34.03
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 4.81e3
12378D
8.20e6
33.60
12479/12488D
1.11e6*
31.11
12389D
1.04e6
34.03
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 8.29e3
CS 12347D
1.18e7
33.08
ES 12378D
1.31e7
33.58
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 3.16e3
CS 12347D
7.46e6
33.08
ES 12378D
8.30e6
33.58
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT

SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60

Acq: 17-Dec-2021 02:49:11
User: PSW Datafile: 211216R21



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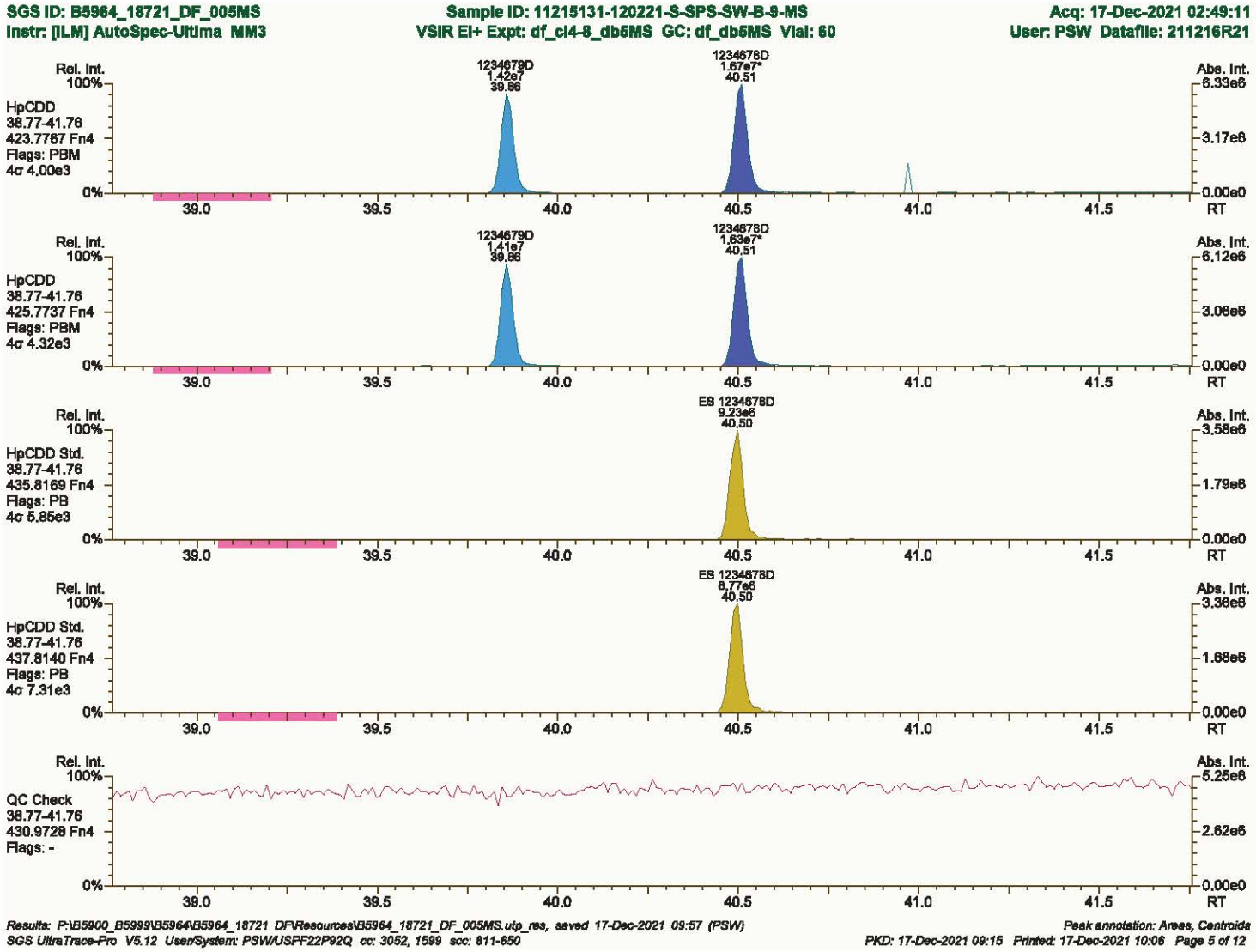
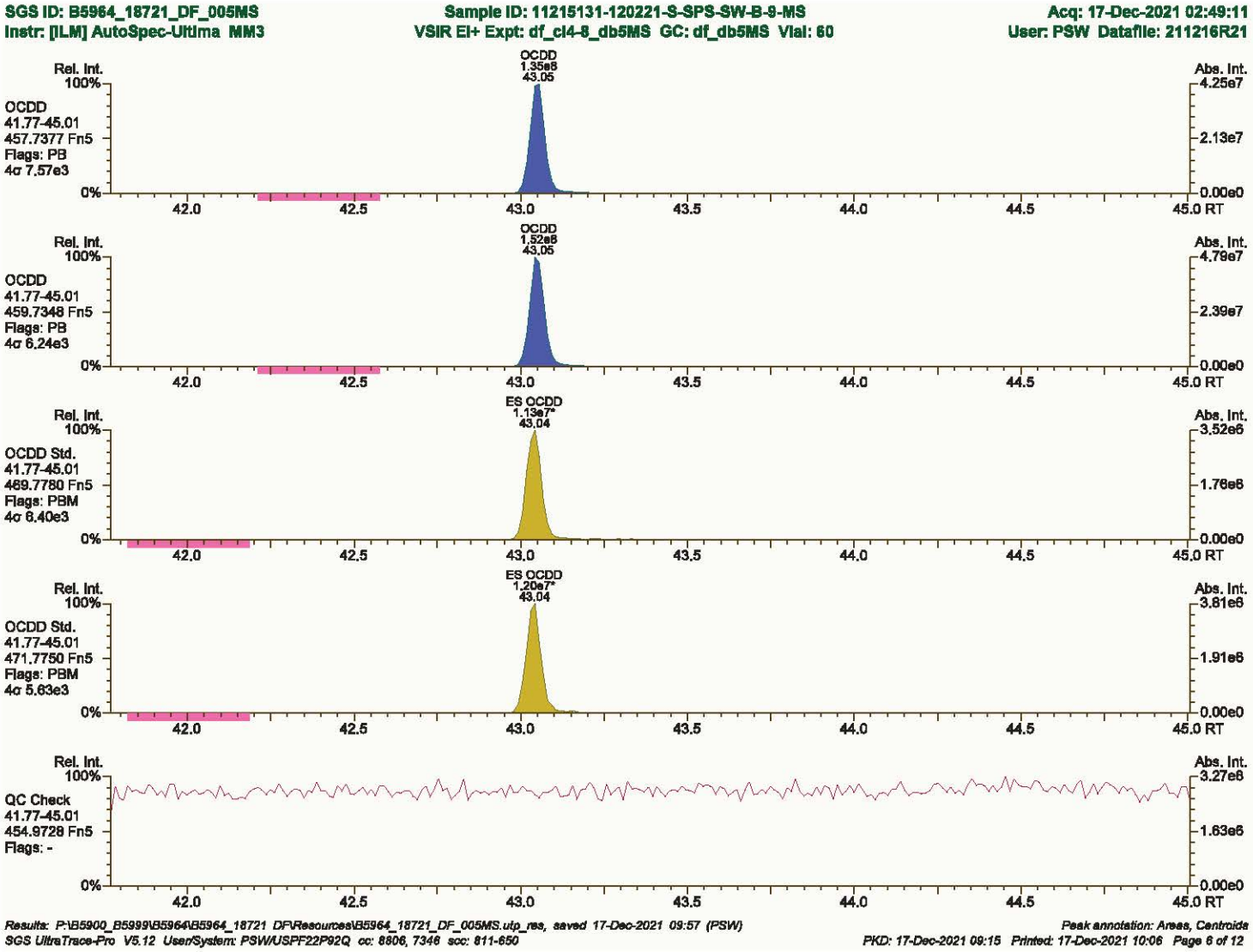
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4269, 0230 scc: 811-650

Peak annotation: Areas, Centroids
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:06 Page 4 of 12


SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60
Acq: 17-Dec-2021 02:49:11
User: PSW Datafile: 211216R21
Rel. Int.
Abs. Int.
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 4.00e3
1234679D
1.42e7
39.86
1234678D
1.67e7*
40.51
6.33e6
3.17e6
0.00e0
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 4.32e3
1234679D
1.41e7
39.86
1234678D
1.63e7*
40.51
6.12e6
3.06e6
0.00e0
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 5.85e3
ES 1234678D
9.23e6
40.50
3.58e6
1.79e6
0.00e0
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 7.31e3
ES 1234678D
8.77e6
40.50
3.36e6
1.68e6
0.00e0
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
5.25e6
2.62e6
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005MS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 3052, 1599 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:06 Page 5 of 12


SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60
Acq: 17-Dec-2021 02:49:11
User: PSW Datafile: 211216R21
OCDD
1.35e8
43.05
Rel. Int.
Abs. Int.
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 7.57e3
OCDD
1.52e8
43.05
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 6.24e3
ES OCDD
1.13e7*
43.04
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 6.40e3
ES OCDD
1.20e7*
43.04
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 5.63e3
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
RT
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SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 8806, 7346 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:06 Page 6 of 12

SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60

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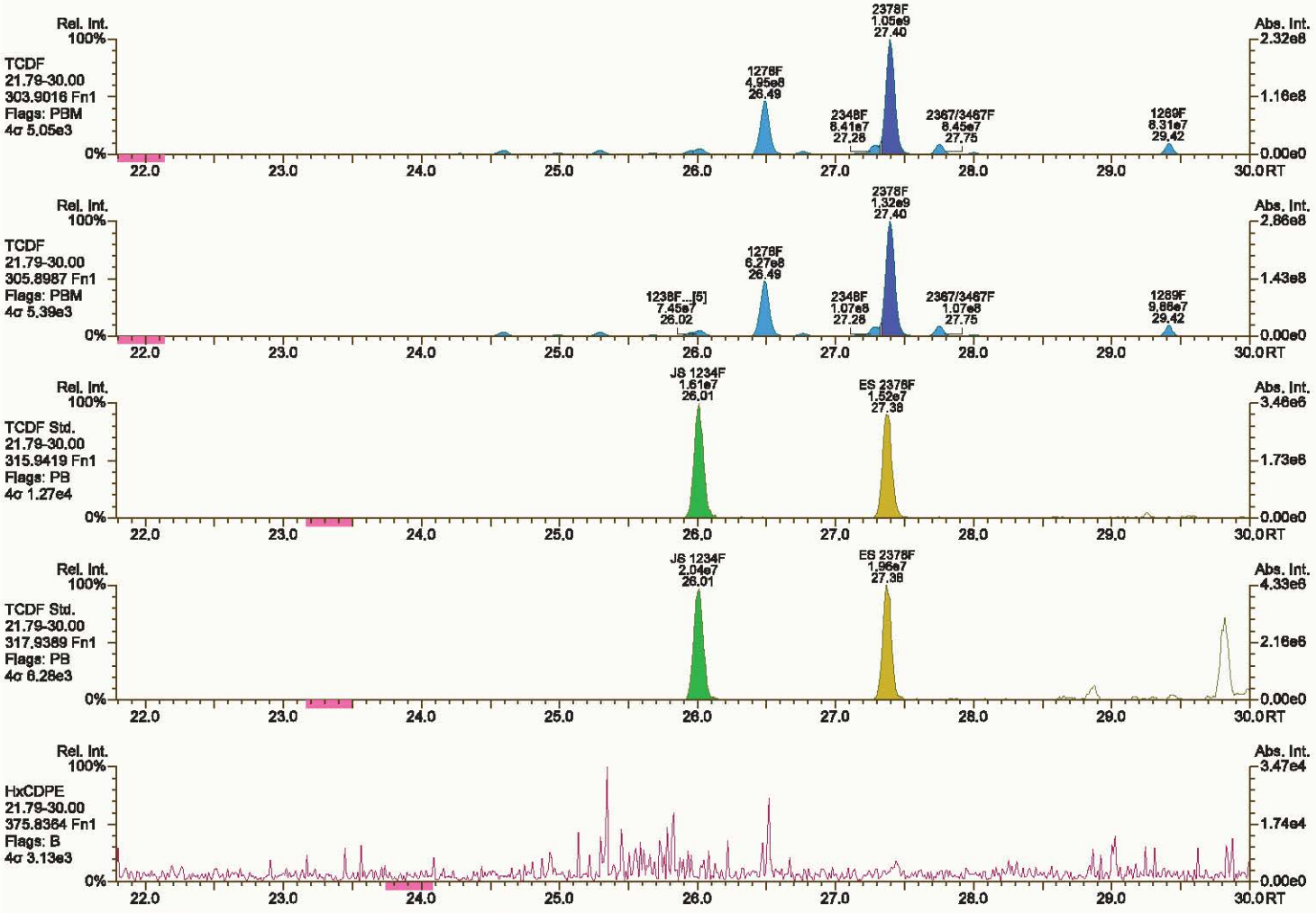

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SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9221, 2440, 3459 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:06 Page 7 of 12

SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60

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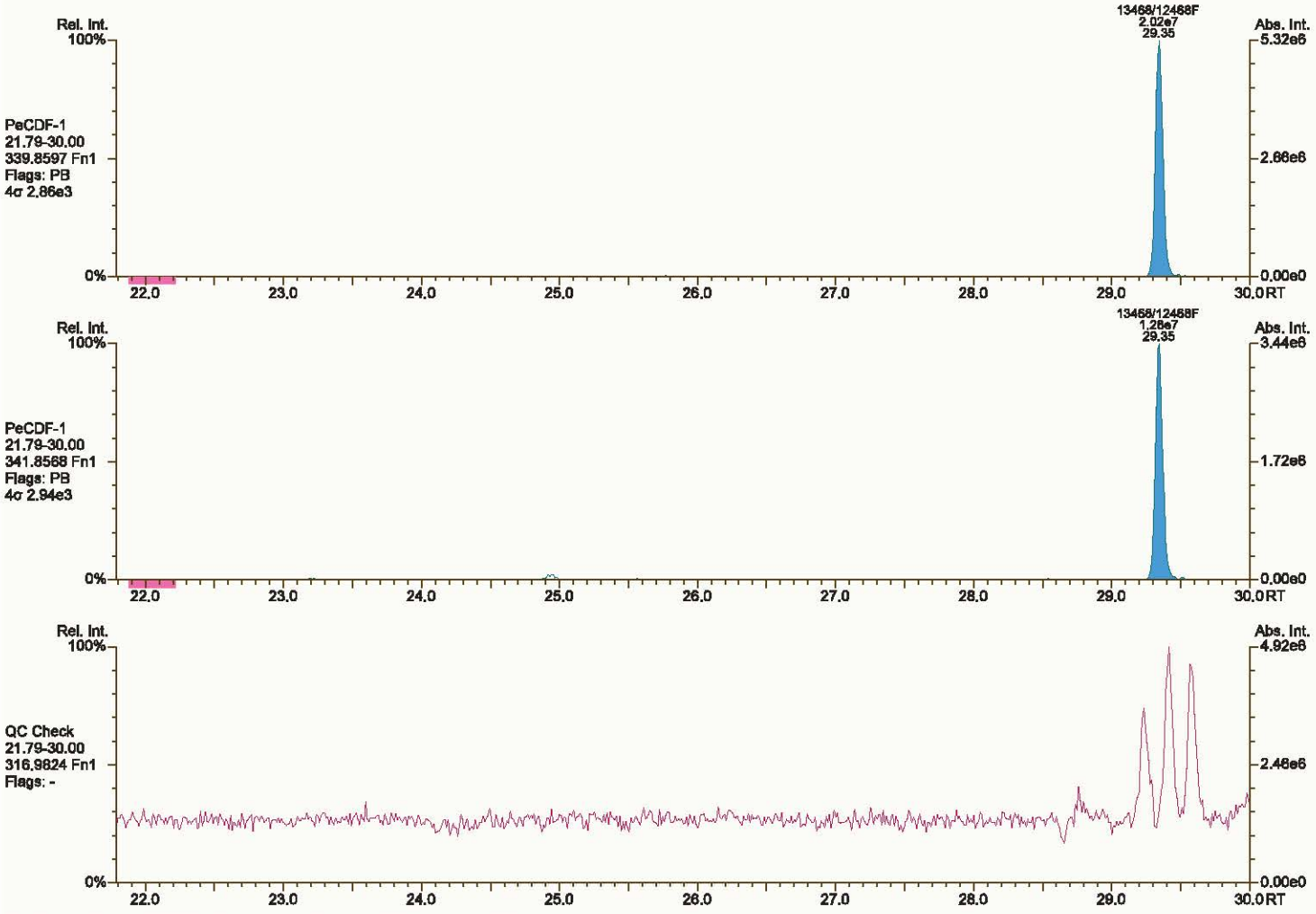
User: PSW Datafile: 211216R21



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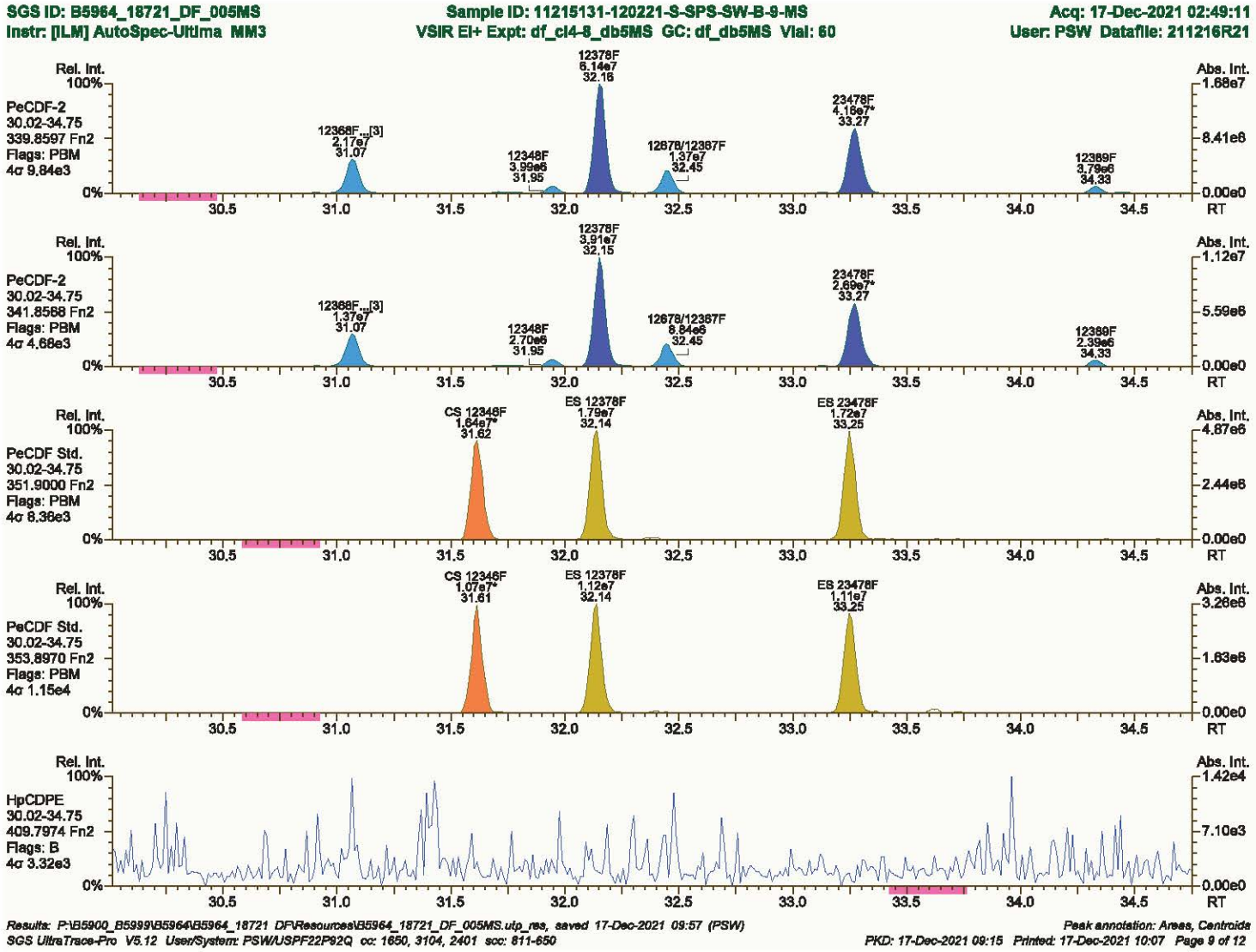
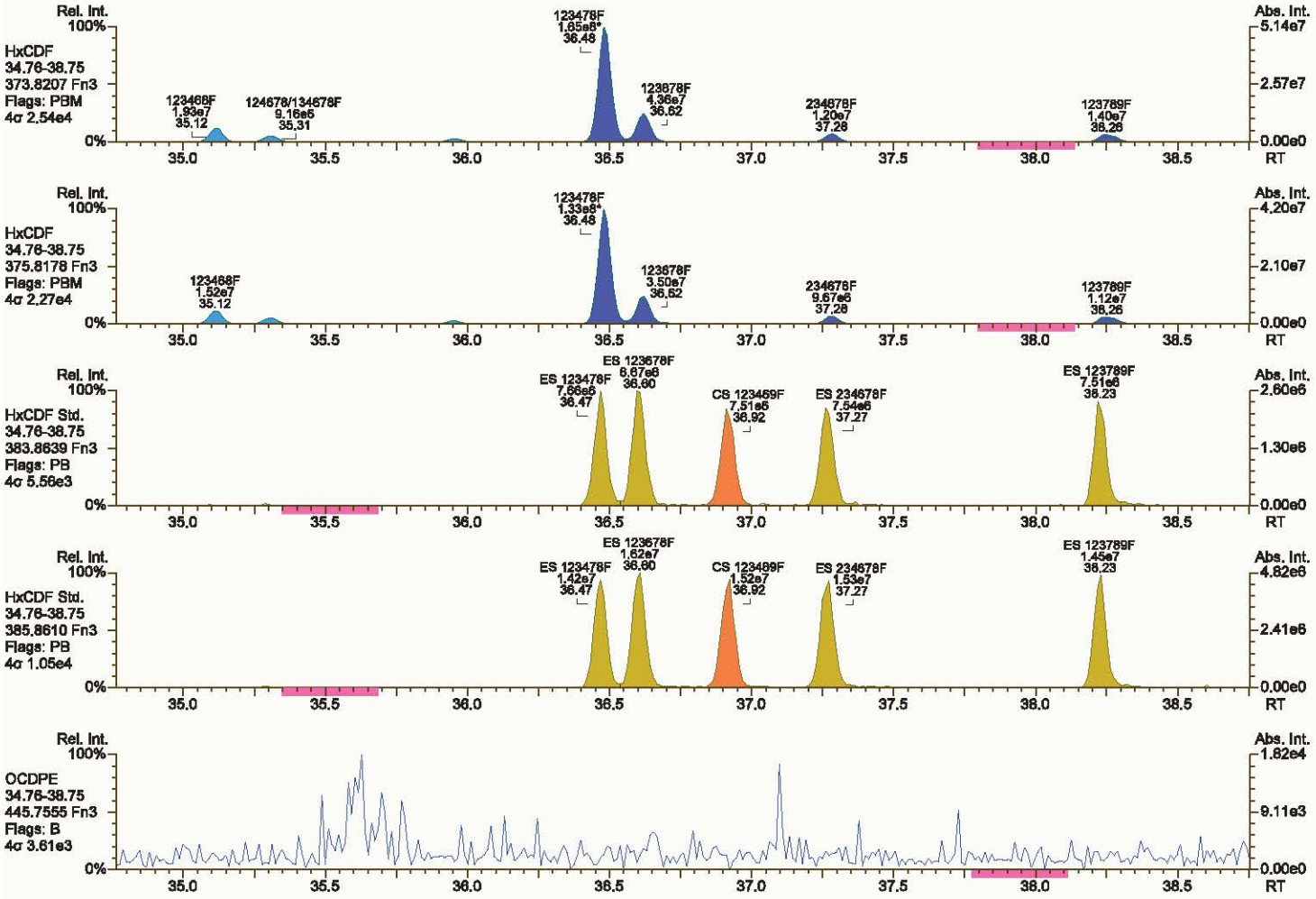
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3276 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:06 Page 8 of 12


SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60
Acq: 17-Dec-2021 02:49:11
User: PSW Datafile: 211216R21
Rel. Int.
Abs. Int.
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 9.84e3
12368F...[3] 2.17e7 31.07
12348F 3.99e6 31.95
12378F 6.14e7 32.16
12878/12387F 1.37e7 32.45
23478F 4.18e7* 33.27
12389F 3.79e6 34.33
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 4.68e3
12368F...[3] 1.37e7 31.07
12348F 2.70e6 31.95
12378F 3.91e7 32.15
12878/12387F 8.84e6 32.45
23478F 2.69e7* 33.27
12389F 2.39e6 34.33
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 8.36e3
CS 12346F 1.64e7* 31.62
ES 12378F 1.79e7 32.14
ES 23478F 1.72e7 33.25
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 1.15e4
CS 12346F 1.07e7* 31.61
ES 12378F 1.12e7 32.14
ES 23478F 1.11e7 33.25
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.32e3
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005MS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1650, 3104, 2401 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:07 Page 9 of 12

SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

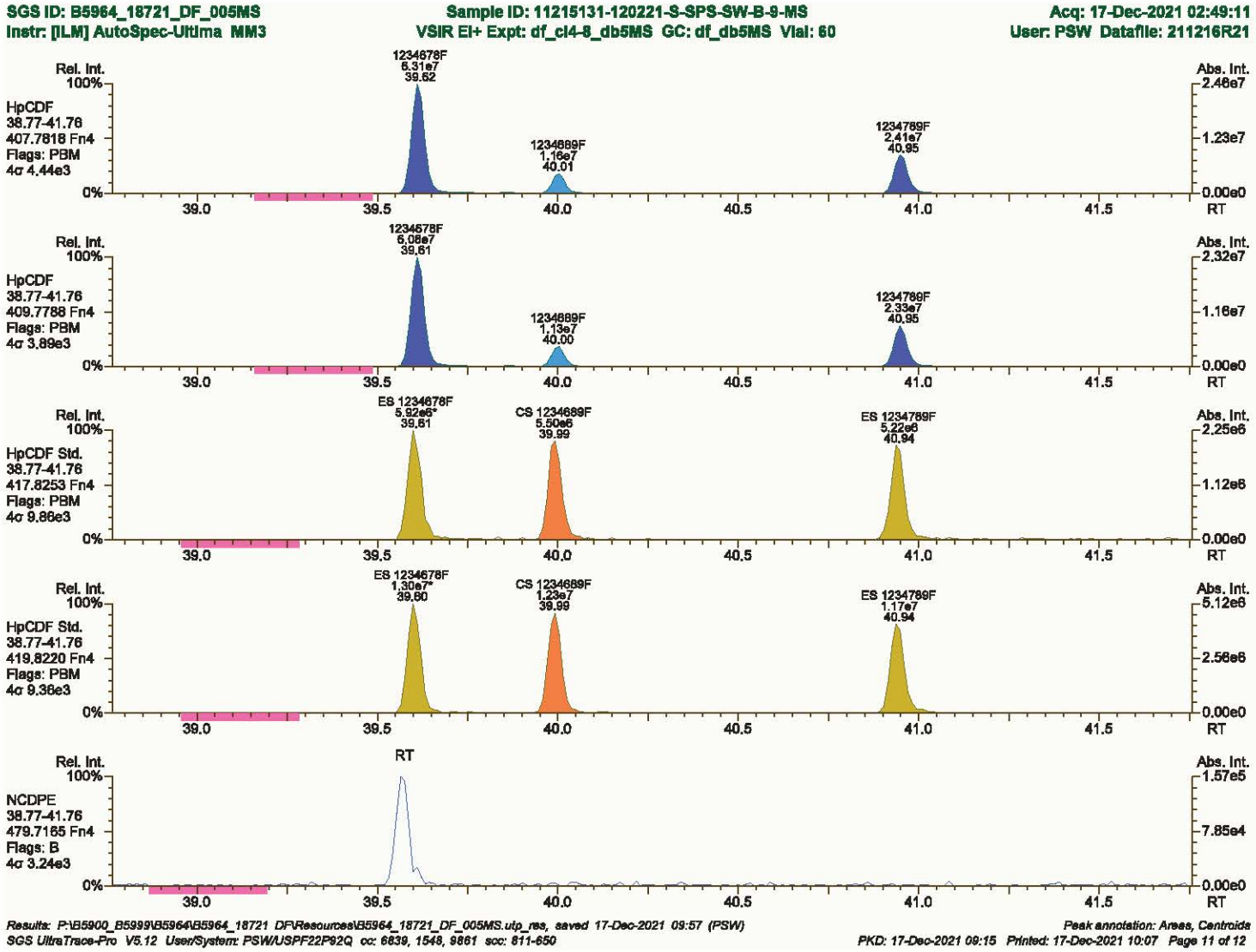
Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60

Acq: 17-Dec-2021 02:49:11
User: PSW Datafile: 211216R21

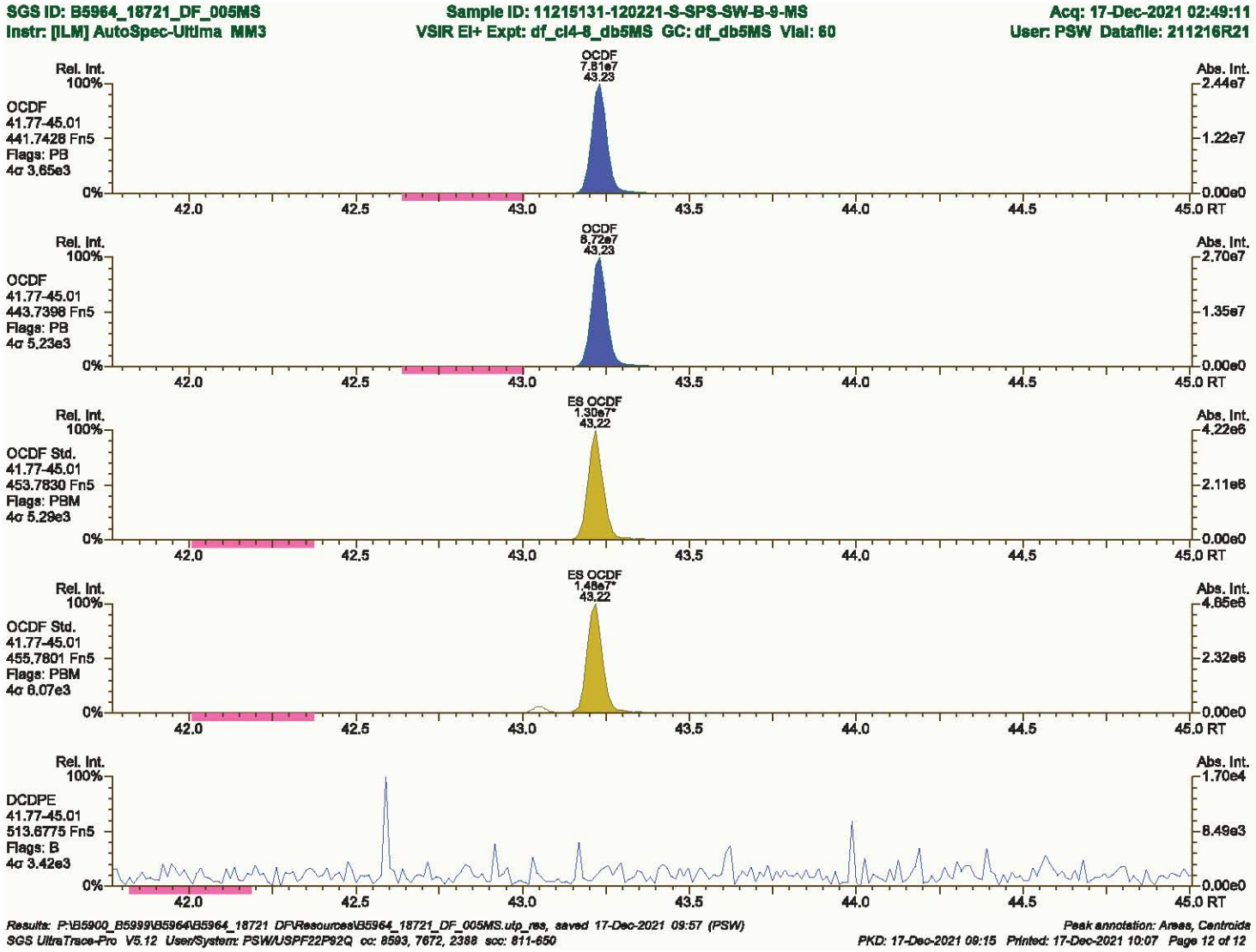


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005MS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4582, 5299, 2026 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:07 Page 10 of 12



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005MS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6839, 1548, 9861 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:07 Page 11 of 12


SGS ID: B5964_18721_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-SPS-SW-B-9-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60
Acq: 17-Dec-2021 02:49:11
User: PSW Datafile: 211216R21
Rel. Int.
Abs. Int.
OCDF
7.81e7
43.23
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.65e3
2.44e7
1.22e7
0.00e0
OCDF
8.72e7
43.23
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 5.23e3
2.70e7
1.35e7
ES OCDF
1.30e7*
43.22
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PBM
4σ 5.29e3
4.22e6
2.11e6
ES OCDF
1.45e7*
43.22
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PBM
4σ 6.07e3
4.65e6
2.32e6
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.42e3
1.70e4
8.49e3
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005MS.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8593, 7672, 2388 scc: 811-650
PKD: 17-Dec-2021 09:15 Printed: 17-Dec-2021 10:07 Page 12 of 12

REVIEWED
Tamara Burkamper , 2/11/2022, 9:48:42 AM

Lab ID: B5964_18721_DF_005MSD | **Acq'd:** 17 Dec 2021 03:36 PSW | **Wt/Vol:** 10.32 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MSD | **UTP:** 09-Feb-2022 15:47:41 PSW | **J-level:** 0.484 pg/g | **Split:** 1 | **Checkcode:** 824-049-QCL

Datafile: 211216R22 | **Report:** 09 Feb 2022 15:48 gd | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25	E	1.0008	1.0008	0	5.36E+08	0.79	Y	1.34	3,230	7918.095	0.517
12378-PeCDD	33.60		1.0005	1.0006	+0.2	1.27E+07	1.64	Y	1.06	107	6278.275	0.475
123478-HxCDD	37.47		1.0003	1.0004	+0.2	8.29E+06	1.18	Y	1.06	86.7	14297.278	1.25
123678-HxCDD	37.59		1.0033	1.0036	+0.7	9.53E+06	1.24	Y	1.08	97.3	14297.278	1.21
123789-HxCDD	37.89		1.0110	1.0117	+1.6	9.18E+06	1.23	Y	1.02	86.4	14297.278	1.12
1234678-HpCDD	40.52		1.0003	1.0003	0	3.05E+07	1.03	Y	0.97	369	9924.94	0.804
OCDD	43.06		1.0003	1.0003	0	2.36E+08	0.90	Y	1.07	4,360	13434.227	2.15
2378-TCDF	27.39	E	1.0006	1.0008	+0.3	1.83E+09	0.80	Y	0.96	11,300	9132.03	0.681
12378-PeCDF	32.15		1.0006	1.0006	0	8.59E+07	1.58	Y	0.95	600	10320.247	0.674
23478-PeCDF	33.27		1.0006	1.0007	+0.2	5.82E+07	1.57	Y	0.94	438	10320.247	0.713
123478-HxCDF	36.49		1.0004	1.0004	0	2.12E+08	1.25	Y	1.23	1,590	40326.15	2.31
123678-HxCDF	36.62		1.0004	1.0005	+0.2	6.03E+07	1.24	Y	1.13	417	40326.15	2.25
234678-HxCDF	37.29		1.0005	1.0005	0	1.79E+07	1.27	Y	1.15	138	40326.15	2.89
123789-HxCDF	38.26		1.0005	1.0008	+0.7	2.04E+07	1.24	Y	1.14	170	40326.15	2.71
1234678-HpCDF	39.62		1.0003	1.0002	-0.2	8.05E+07	1.03	Y	1.36	641	8521.328	0.437
1234789-HpCDF	40.96		1.0003	1.0003	0	2.99E+07	1.02	Y	1.30	285	8521.328	0.588
OCDF	43.25		1.0002	1.0003	+0.3	1.58E+08	0.89	Y	1.03	2,420	7861.115	0.924

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0237	1.0234	-0.5	2.40E+07	0.80	Y	1.03	84.2
ES 12378-PeCDD	33.58	1.2158	1.2174	+3.2	2.16E+07	1.63	Y	1.03	75.8
ES 123478-HxCDD	37.45	0.9920	0.9916	-0.9	1.76E+07	1.25	Y	0.99	87.8
ES 123678-HxCDD	37.57	0.9949	0.9947	-0.5	1.75E+07	1.29	Y	0.97	89.7
ES 123789-HxCDD	37.87	1.0026	1.0027	+0.2	2.03E+07	1.27	Y	1.12	89.7
ES 1234678-HpCDD	40.50	1.0713	1.0724	+2.7	1.64E+07	1.07	Y	0.99	82.5
ES OCDD	43.05	1.1385	1.1398	+3.4	1.96E+07	0.88	Y	0.78	62.9
ES 2378-TCDF	27.37	1.0519	1.0526	+1.1	3.28E+07	0.78	Y	1.08	75.8
ES 12378-PeCDF	32.14	1.2331	1.2358	+5.2	2.93E+07	1.52	Y	0.93	78.8
ES 23478-PeCDF	33.25	1.2754	1.2787	+6.6	2.75E+07	1.50	Y	0.92	74.6
ES 123478-HxCDF	36.47	0.9656	0.9656	0	2.09E+07	0.52	Y	1.14	91.2
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	2.48E+07	0.51	Y	1.30	95.2
ES 234678-HxCDF	37.27	0.9869	0.9867	-0.4	2.19E+07	0.52	Y	1.20	90.6
ES 123789-HxCDF	38.23	1.0121	1.0122	+0.2	2.04E+07	0.53	Y	1.14	89.2
ES 1234678-HpCDF	39.61	1.0478	1.0487	+2.1	1.79E+07	0.46	Y	0.95	93.7
ES 1234789-HpCDF	40.95	1.0832	1.0842	+2.5	1.56E+07	0.43	Y	0.85	91.9
ES OCDF	43.23	1.1434	1.1446	+3.1	2.47E+07	0.86	Y	0.93	66.4

Lab ID: B5964_18721_DF_005MSD | Acq'd: 17 Dec 2021 03:36 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MSD | UTP: 09-Feb-2022 15:47:41 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 824-049-QCL

Datafile: 211216R22 | Report: 09 Feb 2022 15:48 gd | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.58		-	-	-	2.75E+07	0.80	Y	-	-
JS 1234-TCDF	26.00		-	-	-	3.99E+07	0.77	Y	-	-
JS 123467-HxCDD	37.77		-	-	-	1.00E+07	1.24	Y	-	-
CS 37Cl-2378-TCDD	28.25		1.0245	1.0242	-0.5	1.02E+07	n/a	-	1.31	70.7
CS 12347-PeCDD	33.08		1.1978	1.1995	+3.4	1.91E+07	1.65	Y	0.89	78
CS 12346-PeCDF	31.61		1.2130	1.2157	+5.1	2.79E+07	1.58	Y	0.87	80.6
CS 123469-HxCDF	36.92		0.9775	0.9775	0	2.16E+07	0.50	Y	1.09	98.7
CS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	1.62E+07	0.45	Y	0.86	93.5
SS 37Cl-2378-TCDD	28.25		1.0245	1.0242	-0.5	1.02E+07	n/a	-	1.26	64.4
SS 12347-PeCDD	33.08		1.1978	1.1995	+3.4	1.91E+07	1.65	Y	0.86	103
SS 12346-PeCDF	31.61		1.2130	1.2157	+5.1	2.79E+07	1.58	Y	0.93	102
SS 123469-HxCDF	36.92		0.9775	0.9775	0	2.16E+07	0.50	Y	0.84	104
SS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	1.62E+07	0.45	Y	0.91	99.5

Totals	Conc	EMPC
Total TCDD	3560	3620
Total PeCDD	164	170
Total HxCDD	367	369
Total HpCDD	715	715
Total Tetra-Octa Dioxins	9160	9230
Total TCDF	22,100	22100
Total PeCDF	1,760	1760
Total HxCDF	2,720	2730
Total HpCDF	1,090	1090
Total Tetra-Octa Furans	30,100	30100
Total Tetra-Octa Dioxins & Furans	39200	39300

Lab ID: B6964_16721_DF_005MSD | Acq'd: 17 Dec 2021 03:36 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MSD | UTP: 09-Feb-2022 15:47:41 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 824-049-QCL

Datafile: 211216R22 | Report: 09 Feb 2022 15:48 gd | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.60		0.8726	0.8714	-1.8	3.77E+06	0.79	Y	1.34	22.7	7918.095	0.517
1379-TCDD	24.98	EMPC	0.8851	0.8848	-0.4	2.01E+05	0.58	N	1.34	1.21	7918.095	0.517
1369-TCDD	NotFnd		0.9002						1.34		7918.095	0.517
1469-TCDD	26.17	EMPC	0.9275	0.9270	-0.8	3.69E+05	1.11	N	1.34	2.22	7918.095	0.517
1247/1246/1248/1249-TCDD	26.40	EMPC	0.9361	0.9354	-1.1	8.34E+05	0.91	N	1.34	5.02	7918.095	0.517
1378-TCDD	26.59		0.9427	0.9420	-1.1	1.44E+06	0.79	Y	1.34	8.69	7918.095	0.517
1268-TCDD	NotFnd		0.9498						1.34		7918.095	0.517
1478-TCDD	27.05	EMPC	0.9584	0.9584	0	1.11E+06	0.90	N	1.34	6.66	7918.095	0.517
1279-TCDD	NotFnd		0.9644						1.34		7918.095	0.517
1234/1269-TCDD	27.57		0.9766	0.9769	+0.5	2.12E+05	0.89	Y	1.34	1.27	7918.095	0.517
1236-TCDD	27.70	EMPC	0.9813	0.9815	+0.3	9.16E+04	1.20	N	1.34	0.551	7918.095	0.517
1237/1238-TCDD	27.95		0.9906	0.9902	-0.7	7.70E+06	0.81	Y	1.34	46.3	7918.095	0.517
1239-TCDD	28.09		0.9952	0.9952	0	2.48E+06	0.85	Y	1.34	14.9	7918.095	0.517
2378-TCDD	**28.25**	E	**1.0008**	1.0008	**0**	5.36E+08	0.79	Y	**1.34**	**3,230**	**7918.095**	**0.517**
1278-TCDD	28.58		1.0122	1.0124	+0.3	3.91E+07	0.81	Y	1.34	235	7918.095	0.517
1267-TCDD	28.71	EMPC	1.0168	1.0170	+0.3	2.24E+06	1.15	N	1.34	13.5	7918.095	0.517
1289-TCDD	29.22	EMPC	1.0349	1.0353	+0.7	5.53E+06	1.00	N	1.34	33.3	7918.095	0.517
12479/12468-PeCDD	31.11		0.9267	0.9264	-0.6	2.74E+06	1.49	Y	1.06	23.2	6278.275	0.475
12469-PeCDD	31.64		0.9425	0.9424	-0.2	3.13E+05	1.65	Y	1.06	2.65	6278.275	0.475
12368-PeCDD	32.19		0.9588	0.9586	-0.4	4.52E+05	1.70	Y	1.06	3.83	6278.275	0.475
12478-PeCDD	32.38		0.9643	0.9643	0	3.09E+05	1.40	Y	1.06	2.62	6278.275	0.475
12379-PeCDD	32.48	J EMPC	0.9673	0.9672	-0.2	1.60E+05	1.92	N	1.06	1.36	6278.275	0.475
12369/12467/12489-PeCDD	32.74		0.9750	0.9750	0	3.08E+05	1.66	Y	1.06	2.62	6278.275	0.475
12346/12347-PeCDD	33.11	J EMPC	0.9859	0.9861	+0.4	8.81E+04	2.40	N	1.06	0.748	6278.275	0.475
12378-PeCDD	33.60		**1.0005**	**1.0006**	**+0.2**	**1.27E+07**	**1.64**	**Y**	**1.06**	**107**	**6278.275**	**0.475**
12367-PeCDD	33.71	EMPC	1.0032	1.0041	+1.8	4.73E+05	1.91	N	1.06	4.01	6278.275	0.475
12389-PeCDD	34.04		1.0135	1.0137	+0.4	2.56E+06	1.55	Y	1.06	21.7	6278.275	0.475
124679/124689-HxCDD	35.76		0.9544	0.9548	+0.9	6.31E+06	1.28	Y	1.05	63	14297.278	1.19
123468-HxCDD	36.40		0.9716	0.9719	+0.7	4.41E+05	1.27	Y	1.05	4.41	14297.278	1.19
123679/123689-HxCDD	36.69		0.9793	0.9797	+0.9	2.68E+06	1.27	Y	1.05	26.8	14297.278	1.19
123469-HxCDD	36.81	J EMPC	0.9829	0.9830	+0.2	1.69E+05	1.63	N	1.05	1.68	14297.278	1.19
123478-HxCDD	37.47		**1.0003**	**1.0004**	**+0.2**	**8.29E+06**	**1.18**	**Y**	1.06	**86.7**	**14297.278**	**1.25**
123678-HxCDD	37.59		**1.0033**	**1.0036**	**+0.7**	**9.53E+06**	**1.24**	**Y**	1.08	**97.3**	**14297.278**	**1.21**
123467-HxCDD	37.78		1.0084	1.0089	+1.1	2.50E+05	1.25	Y	1.05	2.5	14297.278	1.19
123789-HxCDD	37.89		**1.0110**	**1.0117**	**+1.6**	**9.18E+06**	**1.23**	**Y**	1.02	**86.4**	**14297.278**	**1.12**

Lab ID: B6964_16721_DF_005MSD | Acq'd: 17 Dec 2021 03:36 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MSD | UTP: 09-Feb-2022 15:47:41 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 824-049-QCL

Datafile: 211216R22 | Report: 09 Feb 2022 15:48 gd | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	2.86E+07	1.04	Y	0.97	346	9924.94	0.804
1234678-HpCDD	**40.52**		**1.0003**	**1.0003**	**0**	**3.05E+07**	**1.03**	**Y**	**0.97**	**369**	**9924.94**	**0.804**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**2.36E+08**	**0.90**	**Y**	**1.07**	**4,360**	**13434.227**	**2.15**
OCDD-a	43.06		1.0001	1.0002	+0.3	1.46E+07	2.46	Y	0.07	4,380	10112.126	26.2
1368-TCDF	22.46		0.8230	0.8204	-3.5	5.05E+06	0.82	Y	0.96	31.1	9132.03	0.681
1468-TCDF	23.06		0.8443	0.8424	-2.6	2.54E+06	0.81	Y	0.96	15.6	9132.03	0.681
2468-TCDF	23.70		0.8672	0.8659	-1.8	3.46E+06	0.74	Y	0.96	21.3	9132.03	0.681
1346/1246-TCDF	24.15		0.8802	0.8824	+3.2	3.36E+06	0.85	Y	0.96	20.7	9132.03	0.681
1347/1378/1247-TCDF	24.26		0.8855	0.8862	+1.0	1.30E+07	0.81	Y	0.96	80.1	9132.03	0.681
1348-TCDF	24.47		0.8952	0.8939	-1.9	4.17E+06	0.78	Y	0.96	25.7	9132.03	0.681
1248/1367/1379-TCDF	24.58		0.9000	0.8980	-2.9	6.81E+07	0.79	Y	0.96	419	9132.03	0.681
1268-TCDF	24.98		0.9136	0.9127	-1.3	2.52E+07	0.77	Y	0.96	155	9132.03	0.681
1467-TCDF	25.12		0.9185	0.9176	-1.4	4.11E+06	0.78	Y	0.96	25.3	9132.03	0.681
1478-TCDF	25.29		0.9247	0.9239	-1.2	6.56E+07	0.80	Y	0.96	404	9132.03	0.681
1369/1237-TCDF	25.67		0.9381	0.9377	-0.6	1.82E+07	0.82	Y	0.96	112	9132.03	0.681
2467-TCDF	25.78		0.9427	0.9419	-1.2	2.00E+06	0.80	Y	0.96	12.3	9132.03	0.681
2368-TCDF	25.93		0.9484	0.9472	-1.9	3.68E+07	0.79	Y	0.96	227	9132.03	0.681
1238/1234/1678/1469/1236-TCDF	26.01		0.9517	0.9502	-2.3	1.04E+08	0.80	Y	0.96	638	9132.03	0.681
1278-TCDF	26.49	E	0.9682	0.9676	-1.0	8.57E+08	0.80	Y	0.96	5,280	9132.03	0.681
1349-TCDF	NotFnd		0.9725						0.96		9132.03	0.681
1267-TCDF	26.76		0.9782	0.9777	-0.8	4.42E+07	0.78	Y	0.96	272	9132.03	0.681
2346/1249-TCDF	26.96		0.9846	0.9849	+0.5	5.47E+06	0.76	Y	0.96	33.7	9132.03	0.681
2347/1279-TCDF	27.16		0.9926	0.9922	-0.7	1.97E+07	0.76	Y	0.96	122	9132.03	0.681
2348-TCDF	27.28		0.9966	0.9967	+0.2	1.54E+08	0.79	Y	0.96	948	9132.03	0.681
2378-TCDF	**27.39**	E	**1.0006**	**1.0008**	**+0.3**	**1.83E+09**	**0.80**	**Y**	**0.96**	**11,300**	**9132.03**	**0.681**
2367/3467-TCDF	27.75		1.0139	1.0137	-0.3	1.46E+08	0.78	Y	0.96	897	9132.03	0.681
1269-TCDF	28.00		1.0226	1.0228	+0.3	2.64E+07	0.80	Y	0.96	162	9132.03	0.681
1239-TCDF	NotFnd		1.0322						0.96		9132.03	0.681
1289-TCDF	29.41		1.0729	1.0745	+2.8	1.45E+08	0.78	Y	0.96	893	9132.03	0.681
13468/12468-PeCDF	29.34		0.9135	0.9129	-1.1	3.32E+07	1.55	Y	0.94	240	8289.828	0.557
13678/13467/12467-PeCDF	30.90		0.9612	0.9616	+0.7	8.44E+05	1.43	Y	0.94	6.11	10320.247	0.693
12368/13478/12478-PeCDF	31.06		0.9661	0.9666	+0.9	2.92E+07	1.58	Y	0.94	211	10320.247	0.693
14678-PeCDF	31.15		0.9693	0.9692	-0.2	1.18E+06	1.68	Y	0.94	8.56	10320.247	0.693
13479-PeCDF	NotFnd		0.9723						0.94		10320.247	0.693
13469/12479-PeCDF	NotFnd		0.9799						0.94		10320.247	0.693
12346-PeCDF	NotFnd		0.9842						0.94		10320.247	0.693

Lab ID: B6964_16721_DF_005MSD | Acq'd: 17 Dec 2021 03:36 PSW | Wt/Vol: 10.32 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-9-MSD | UTP: 09-Feb-2022 15:47:41 PSW | J-level: 0.484 pg/g | Split: 1 | Checkcode: 824-049-QCL

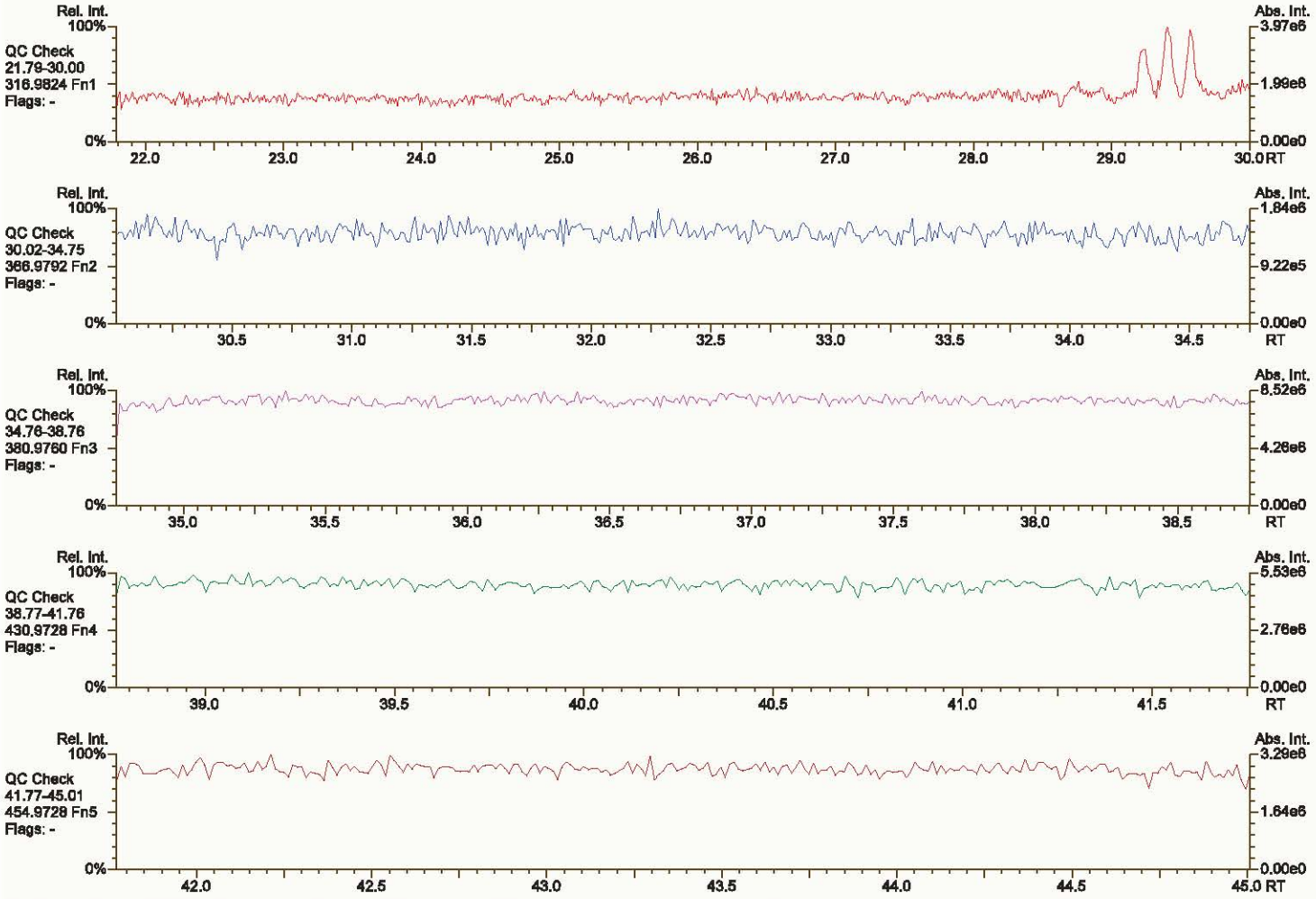
Datafile: 211216R22 | Report: 09 Feb 2022 15:48 gd | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.71		0.9868	0.9866	-0.4	1.45E+06	1.62	Y	0.94	10.5	10320.247	0.693
12347-PeCDF	31.79		0.9893	0.9892	-0.2	1.13E+06	1.71	Y	0.94	8.17	10320.247	0.693
12348-PeCDF	31.95		0.9941	0.9941	0	5.82E+06	1.56	Y	0.94	42.2	10320.247	0.693
12378-PeCDF	**32.15**		**1.0006**	**1.0006**	**0**	**8.59E+07**	**1.58**	**Y**	**0.95**	**600**	**10320.247**	**0.674**
12678/12367-PeCDF	32.45		1.0090	1.0097	+1.4	2.03E+07	1.59	Y	0.94	147	10320.247	0.693
12379-PeCDF	NotFnd		1.0143						0.94		10320.247	0.693
12679-PeCDF	33.01	J EMPC	0.9929	0.9929	0	2.05E+05	2.05	N	0.94	1.48	10320.247	0.693
23467/12369-PeCDF	33.13		0.9966	0.9964	-0.4	8.25E+05	1.58	Y	0.94	5.98	10320.247	0.693
23478-PeCDF	**33.27**		**1.0006**	**1.0007**	**+0.2**	**5.82E+07**	**1.57**	**Y**	**0.94**	**438**	**10320.247**	**0.713**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		10320.247	0.693
12349-PeCDF	NotFnd		1.0102						0.94		10320.247	0.693
12389-PeCDF	34.33		1.0325	1.0324	-0.2	5.77E+06	1.57	Y	0.94	41.8	10320.247	0.693
123468-HxCDF	35.12		0.9628	0.9629	+0.2	3.36E+07	1.26	Y	1.16	254	40326.15	2.52
124678/134678-HxCDF	35.31		0.9683	0.9682	-0.2	1.38E+07	1.27	Y	1.16	105	40326.15	2.52
134679-HxCDF	NotFnd		0.9746						1.16		40326.15	2.52
124679-HxCDF	NotFnd		0.9798						1.16		40326.15	2.52
124689-HxCDF	35.96		0.9859	0.9859	0	6.88E+06	1.24	Y	1.16	52.1	40326.15	2.52
123467-HxCDF	36.36	EMPC	0.9972	0.9970	-0.4	4.75E+05	0.99	N	1.16	3.6	40326.15	2.52
123478-HxCDF	**36.49**		**1.0004**	**1.0004**	**0**	**2.12E+08**	**1.25**	**Y**	**1.23**	**1,590**	**40326.15**	**2.31**
123678-HxCDF	**36.62**		**1.0004**	**1.0005**	**+0.2**	**6.03E+07**	**1.24**	**Y**	**1.13**	**417**	**40326.15**	**2.25**
123479-HxCDF	NotFnd		1.0049						1.16		40326.15	2.52
123469-HxCDF	NotFnd		1.0088						1.16		40326.15	2.52
123679-HxCDF	NotFnd		0.9943						1.16		40326.15	2.52
234678-HxCDF	**37.29**		**1.0005**	**1.0005**	**0**	**1.79E+07**	**1.27**	**Y**	**1.15**	**138**	**40326.15**	**2.89**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		40326.15	2.52
123789-HxCDF	**38.26**		**1.0005**	**1.0008**	**+0.7**	**2.04E+07**	**1.24**	**Y**	**1.14**	**170**	**40326.15**	**2.71**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		40326.15	2.52
1234678-HpCDF	**39.62**		**1.0003**	**1.0002**	**-0.2**	**8.05E+07**	**1.03**	**Y**	**1.36**	**641**	**8521.328**	**0.437**
1234679-HpCDF	39.88		1.0067	1.0067	0	1.19E+06	0.92	Y	1.33	10.3	8521.328	0.507
1234689-HpCDF	40.01		1.0100	1.0101	+0.2	1.76E+07	1.01	Y	1.33	153	8521.328	0.507
1234789-HpCDF	**40.96**		**1.0003**	**1.0003**	**0**	**2.99E+07**	**1.02**	**Y**	**1.30**	**285**	**8521.328**	**0.588**
OCDF	**43.25**		**1.0002**	**1.0003**	**+0.3**	**1.58E+08**	**0.89**	**Y**	**1.03**	**2,420**	**7861.115**	**0.924**
OCDF-a	43.24		1.0002	1.0002	0	9.27E+06	2.64	Y	0.06	2,450	8587.97	17.5

SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61

Acq: 17-Dec-2021 03:36:39
User: PSW Datafile: 211216R22



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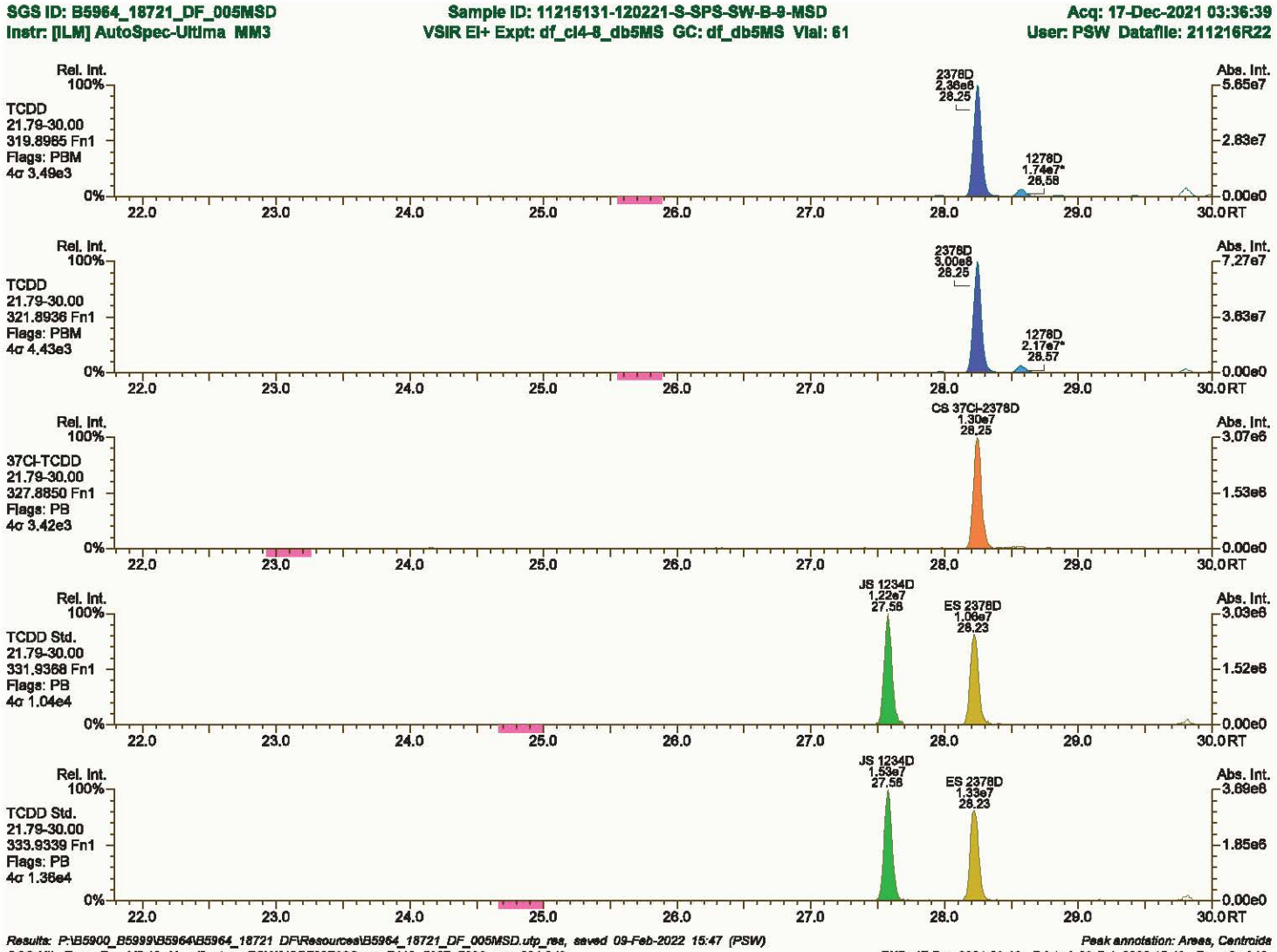
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 824-049

Peak annotation: Areas, Centroids
PKD: n/a Printed: 09-Feb-2022 15:49 Page 1 of 12

SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61

Acq: 17-Dec-2021 03:36:39
User: PSW Datafile: 211216R22



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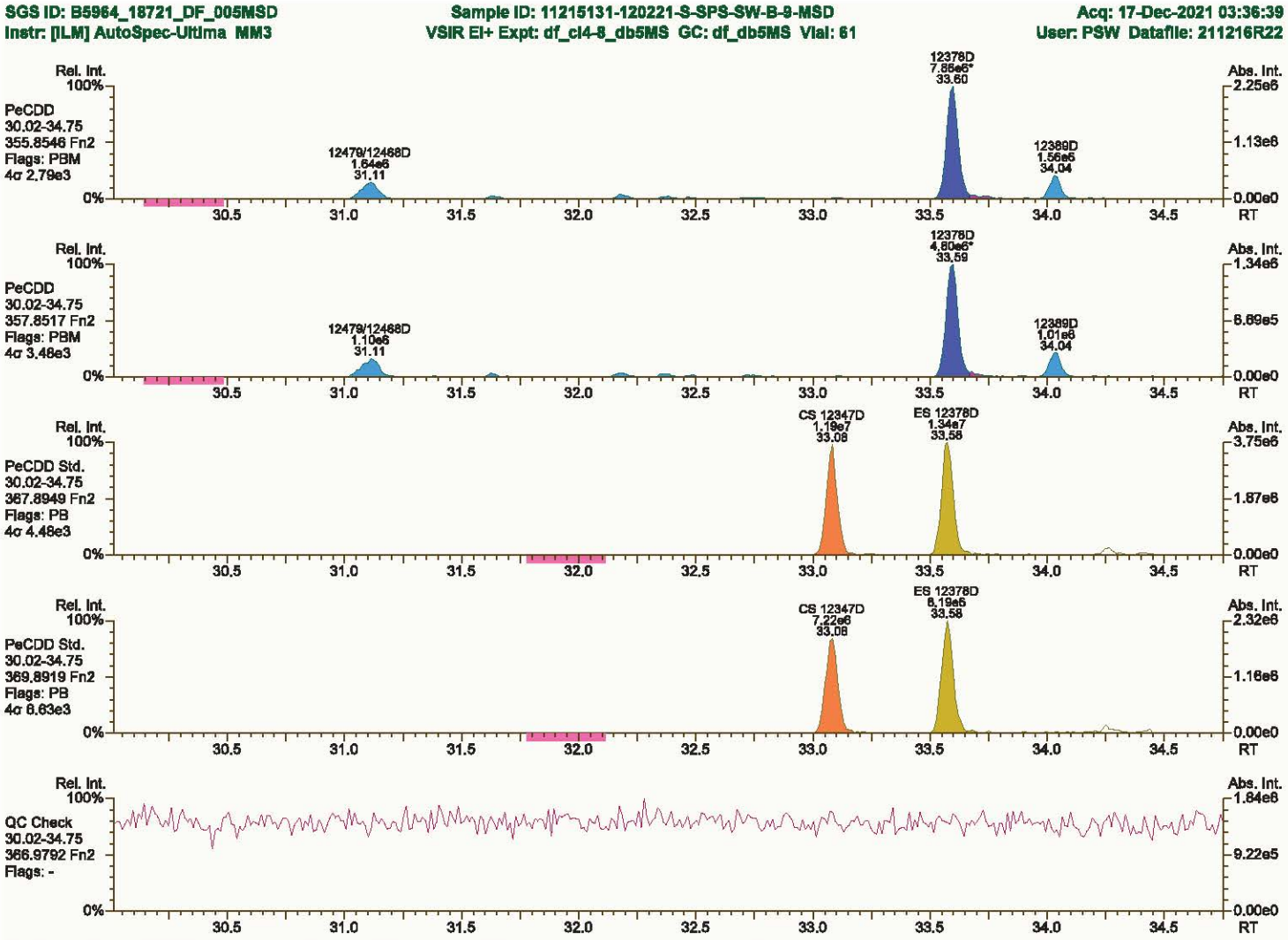
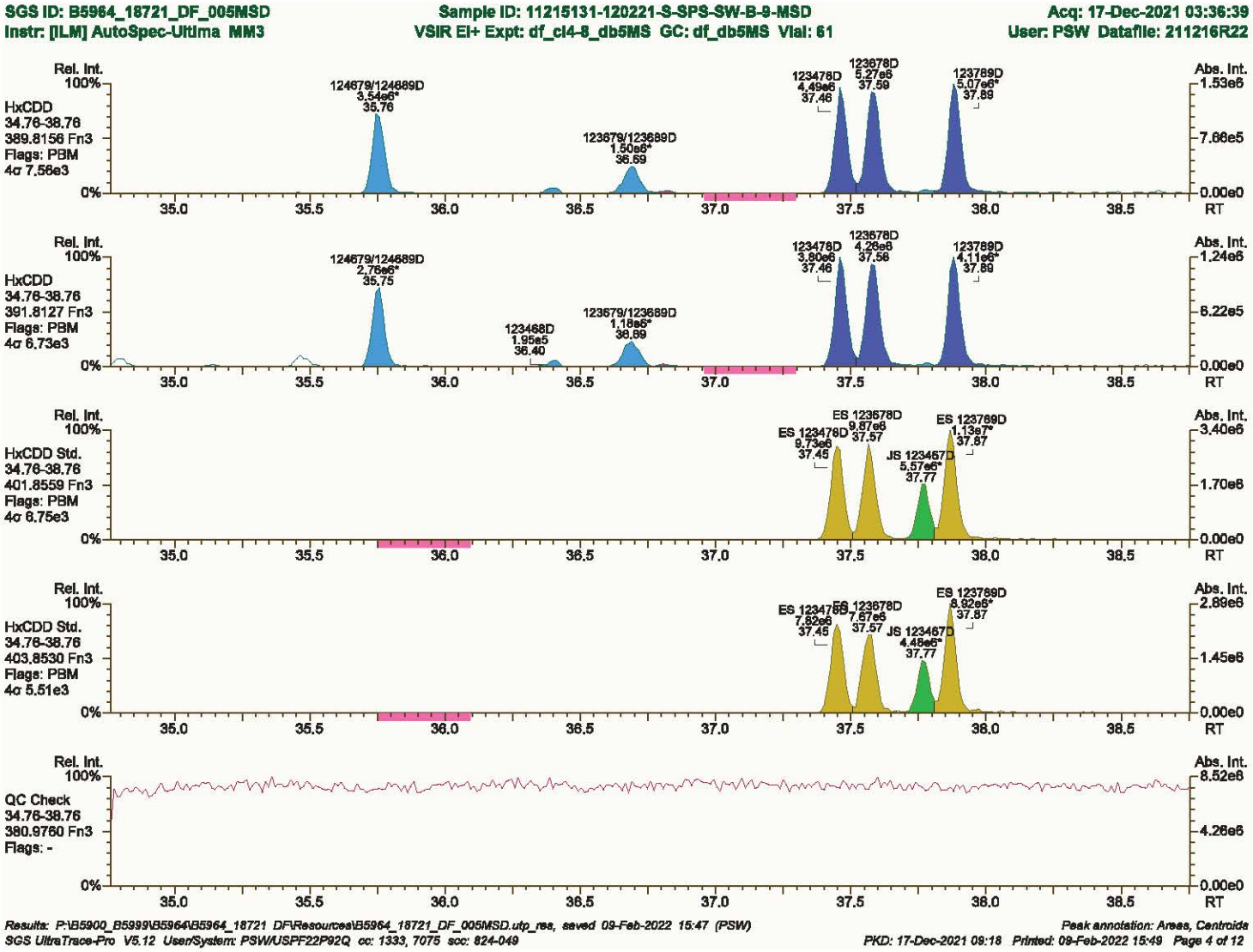
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7110, 5327, 7096 scc: 824-049

Peak annotation: Areas, Centroids
PKD: 17-Dec-2021 09:18 Printed: 09-Feb-2022 15:49 Page 2 of 12


SGS ID: B5964_18721_DF_005MSD
Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
Acq: 17-Dec-2021 03:36:39
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61
User: PSW Datafile: 211216R22
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 2.79e3
12378D
7.86e6*
33.60
12479/12468D
1.64e6
31.11
12389D
1.56e6
34.04
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 3.48e3
12378D
4.80e6*
33.59
12479/12468D
1.10e6
31.11
12389D
1.01e6
34.04
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.48e3
CS 12347D
1.19e7
33.08
ES 12378D
1.34e7
33.58
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 6.63e3
CS 12347D
7.22e6
33.08
ES 12378D
8.19e6
33.58
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT


SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61
Acq: 17-Dec-2021 03:36:39
User: PSW Datafile: 211216R22
Rel. Int.
Abs. Int.
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 7.56e3
124679/124689D
3.54e6*
35.76
123679/123689D
1.50e6*
36.69
123478D
4.49e6
37.46
123678D
5.27e6
37.59
123789D
5.07e6*
37.89
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 6.73e3
124679/124689D
2.76e6*
35.75
123468D
1.95e5
36.40
123679/123689D
1.18e6*
36.69
123478D
3.80e6
37.46
123678D
4.26e6
37.58
123789D
4.11e6*
37.89
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 6.75e3
ES 123478D
9.73e6
37.45
ES 123678D
9.87e6
37.57
JS 123467D
5.57e6*
37.77
ES 123789D
1.13e7*
37.87
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 5.51e3
ES 123478D
7.82e6
37.45
ES 123678D
7.57e6
37.57
JS 123467D
4.46e6*
37.77
ES 123789D
8.92e6*
37.87
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
1.53e6
7.66e5
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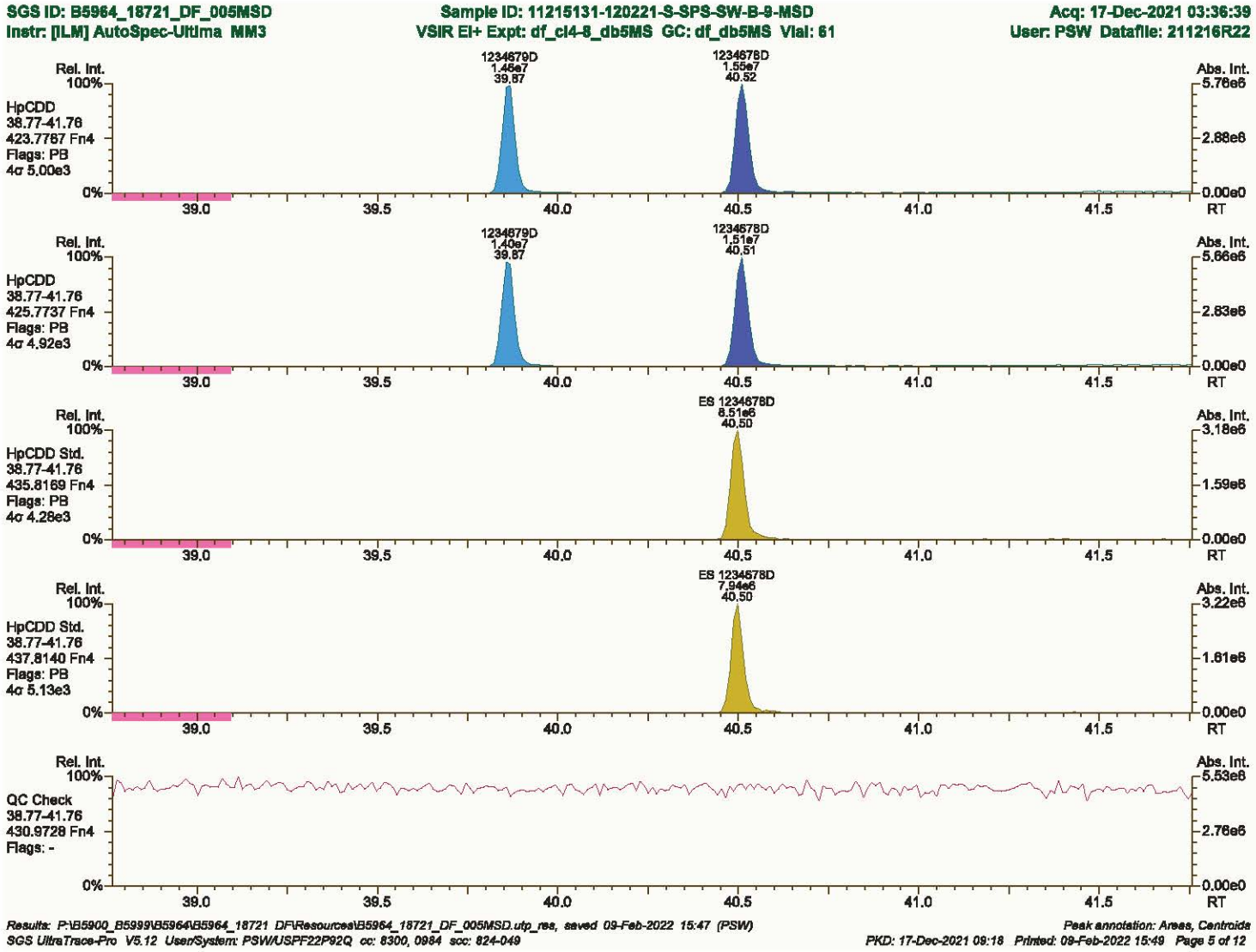
4.26e6


SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61
Acq: 17-Dec-2021 03:36:39
User: PSW Datafile: 211216R22
Rel. Int.
Abs. Int.
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 5.00e3
1234679D
1.46e7
39.87
1234678D
1.55e7
40.52
5.76e6
2.88e6
0.00e0
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 4.92e3
1234679D
1.40e7
39.87
1234678D
1.51e7
40.51
5.66e6
2.83e6
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.28e3
ES 1234678D
8.51e6
40.50
3.18e6
1.59e6
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 5.13e3
ES 1234678D
7.94e6
40.50
3.22e6
1.61e6
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
5.53e6
2.76e6
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
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Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 8300, 0984 scc: 824-049
PKD: 17-Dec-2021 09:18 Printed: 09-Feb-2022 15:49 Page 5 of 12

SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61

Acq: 17-Dec-2021 03:36:39
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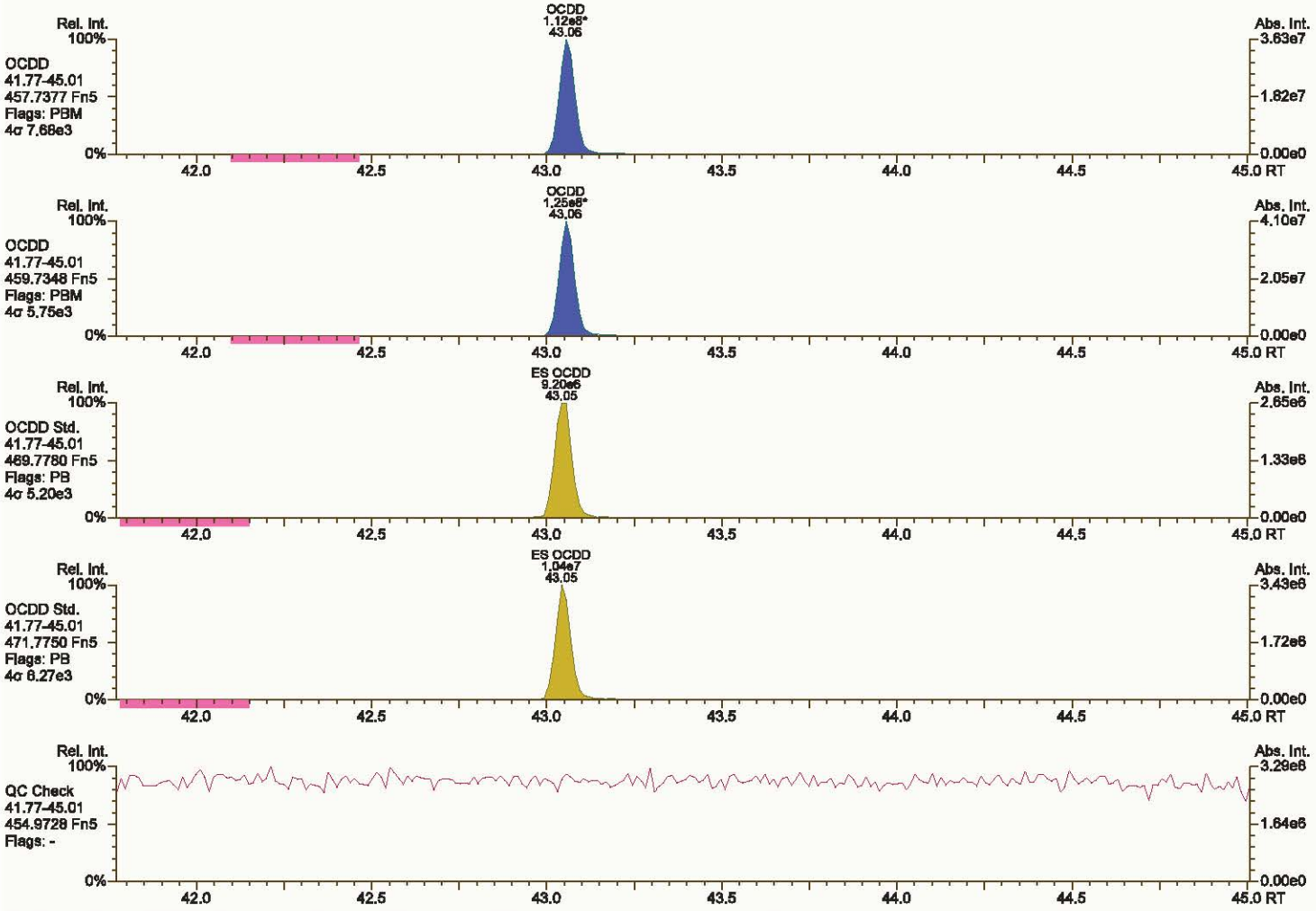

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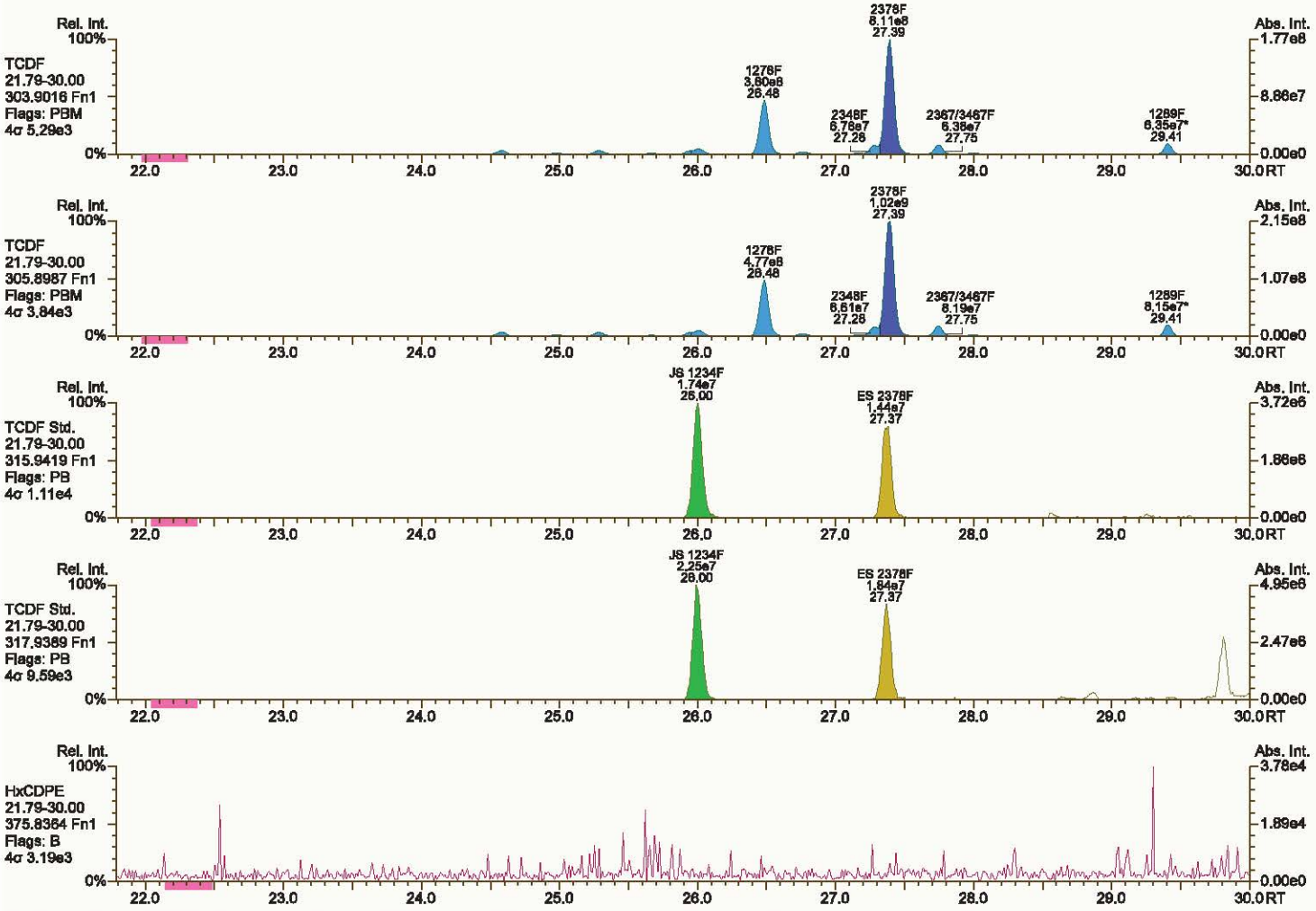
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 8561, 6082 scc: 824-049
PKD: 17-Dec-2021 09:18 Printed: 09-Feb-2022 15:49 Page 6 of 12

SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61

Acq: 17-Dec-2021 03:36:39
User: PSW Datafile: 211216R22



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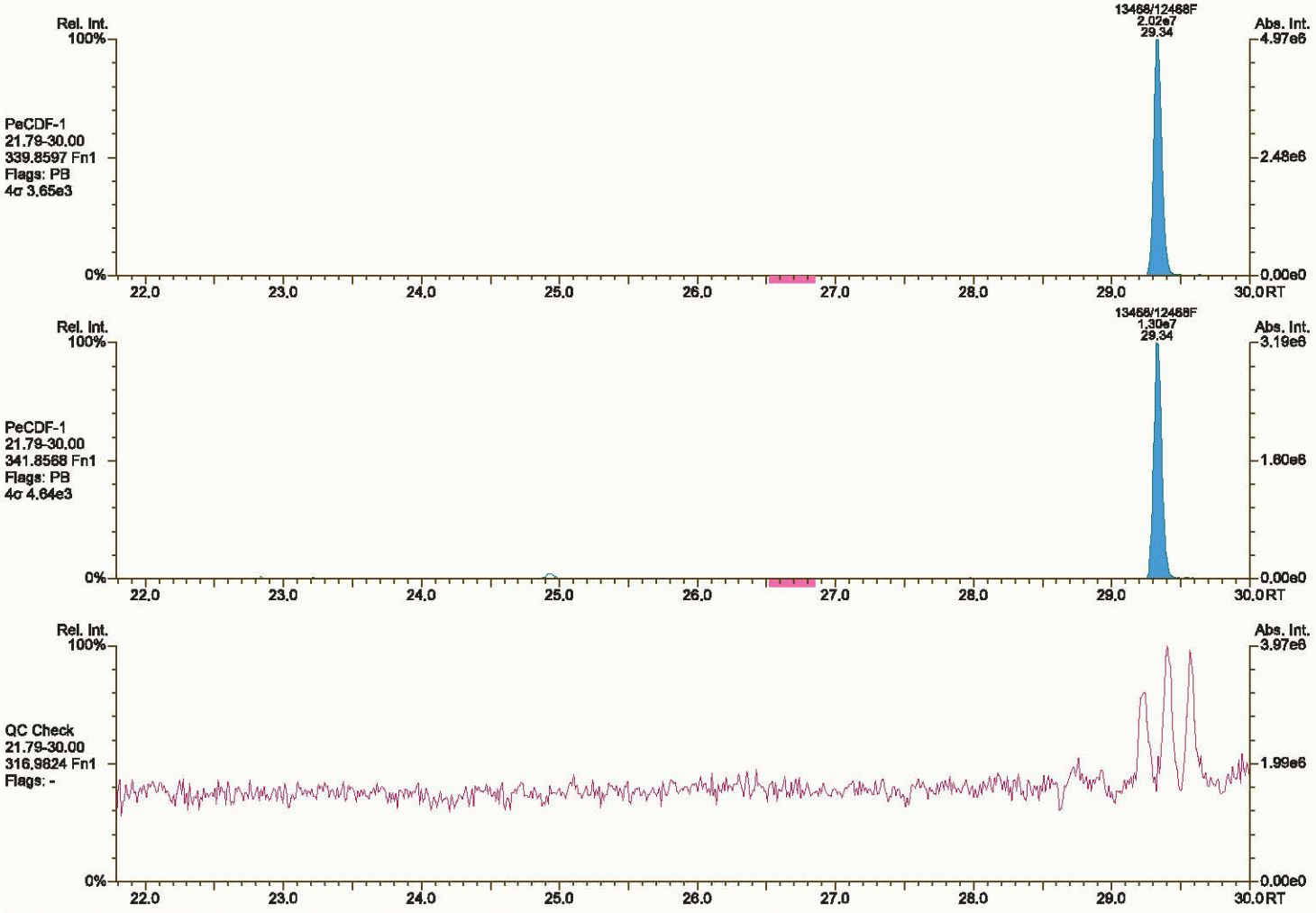
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9140, 9158, 2018 scc: 824-049
PKD: 17-Dec-2021 09:18 Printed: 09-Feb-2022 15:49 Page 7 of 12

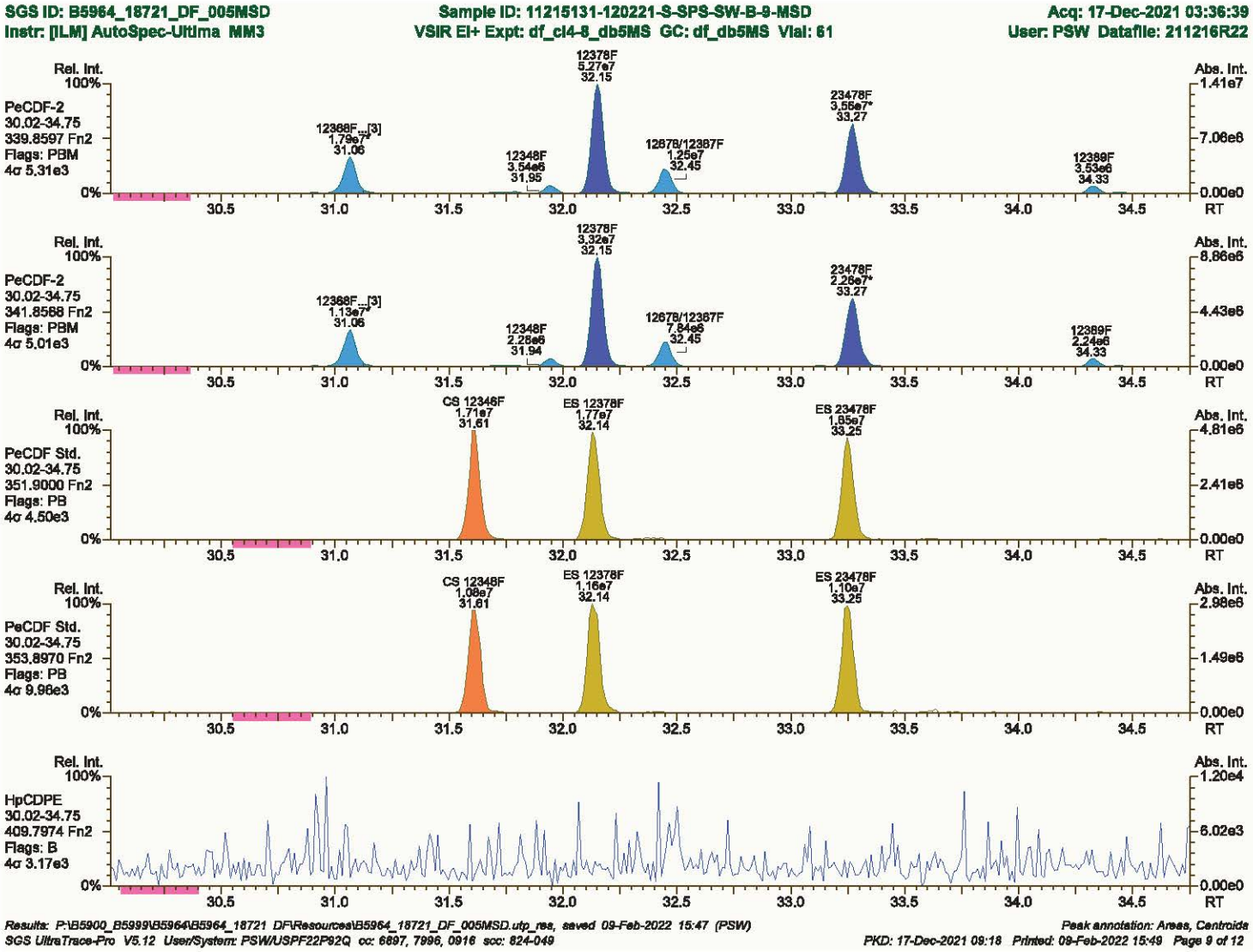
SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61

Acq: 17-Dec-2021 03:36:39
User: PSW Datafile: 211216R22



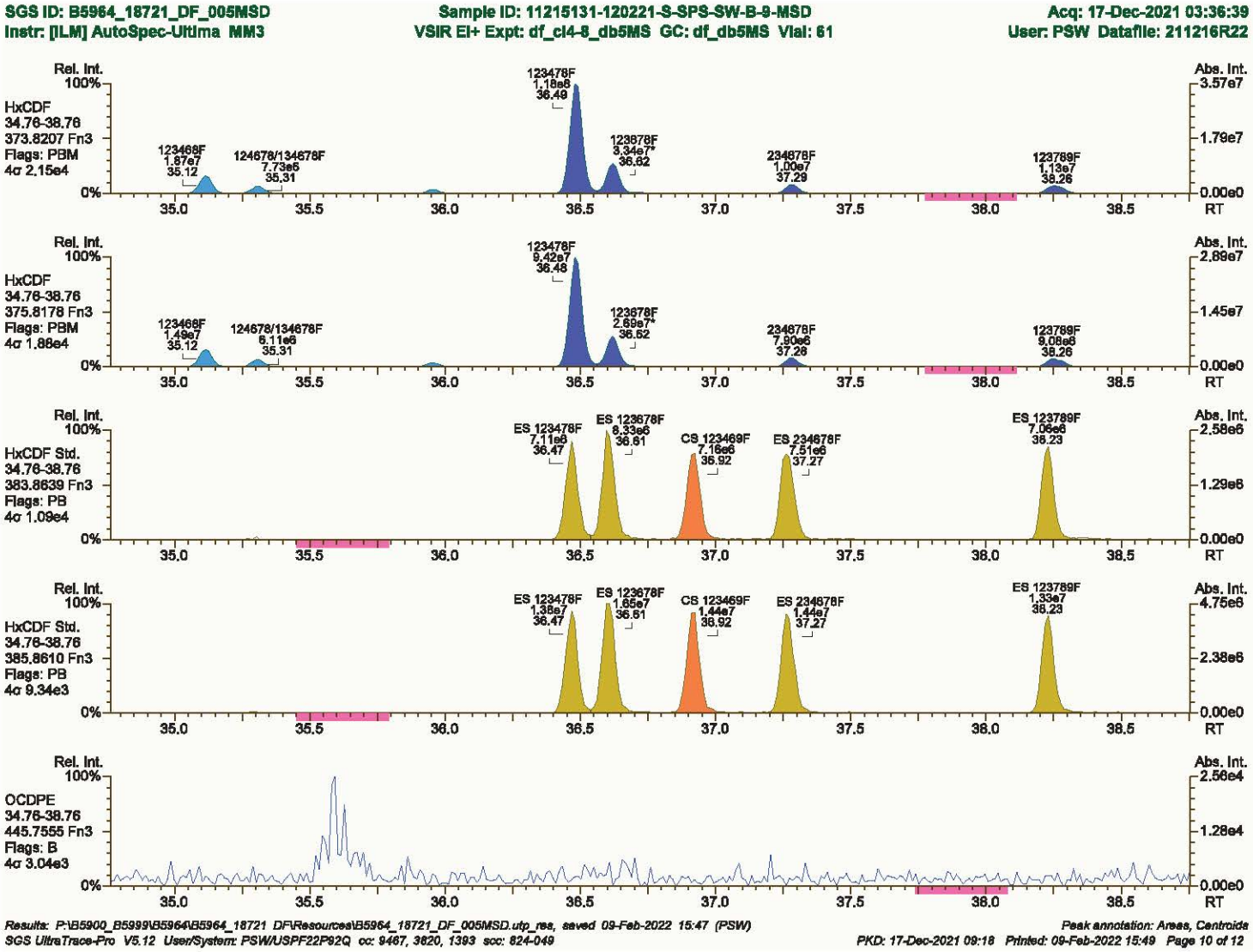
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005MSD.utp_res, saved 09-Feb-2022 15:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 5299 scc: 824-049
PKD: 17-Dec-2021 09:18 Printed: 09-Feb-2022 15:49 Page 8 of 12


SGS ID: B5964_18721_DF_005MSD
Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
Acq: 17-Dec-2021 03:36:39
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61
User: PSW Datafile: 211216R22
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 5.31e3
12368F...[3] 1.79e7* 31.06
12348F 3.54e6 31.95
12378F 5.27e7 32.15
12678/12367F 1.25e7 32.45
23478F 3.55e7* 33.27
12389F 3.53e6 34.33
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 5.01e3
12368F...[3] 1.13e7* 31.06
12348F 2.28e6 31.94
12378F 3.32e7 32.15
12678/12367F 7.84e6 32.45
23478F 2.26e7* 33.27
12389F 2.24e6 34.33
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.50e3
CS 12346F 1.71e7 31.61
ES 12378F 1.77e7 32.14
ES 23478F 1.85e7 33.25
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 9.96e3
CS 12348F 1.08e7 31.61
ES 12378F 1.16e7 32.14
ES 23478F 1.10e7 33.25
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.17e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_005MSD.utp_res, saved 09-Feb-2022 15:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6697, 7996, 0916 scc: 824-049
PKD: 17-Dec-2021 09:18 Printed: 09-Feb-2022 15:49 Page 9 of 12

SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3

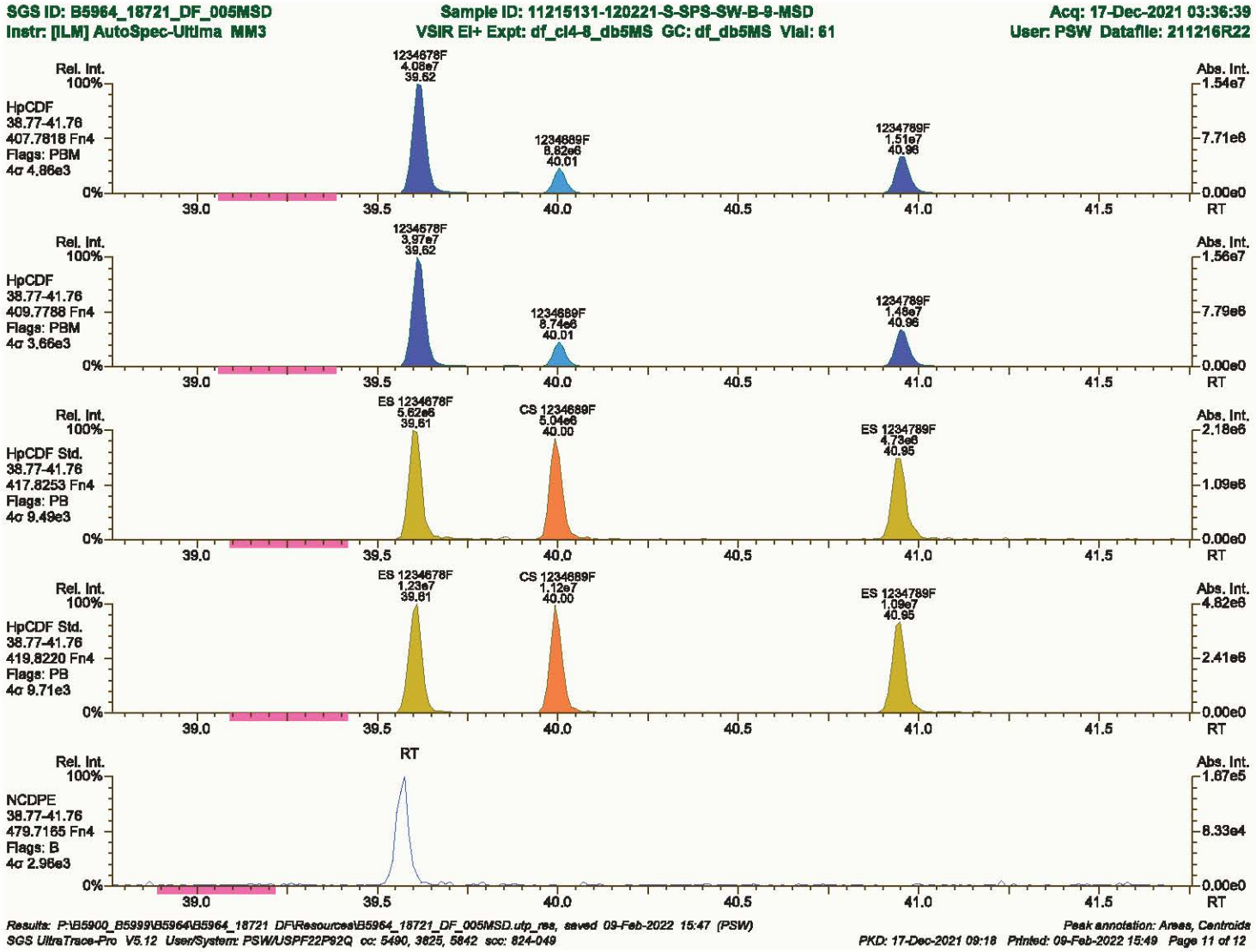
Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61

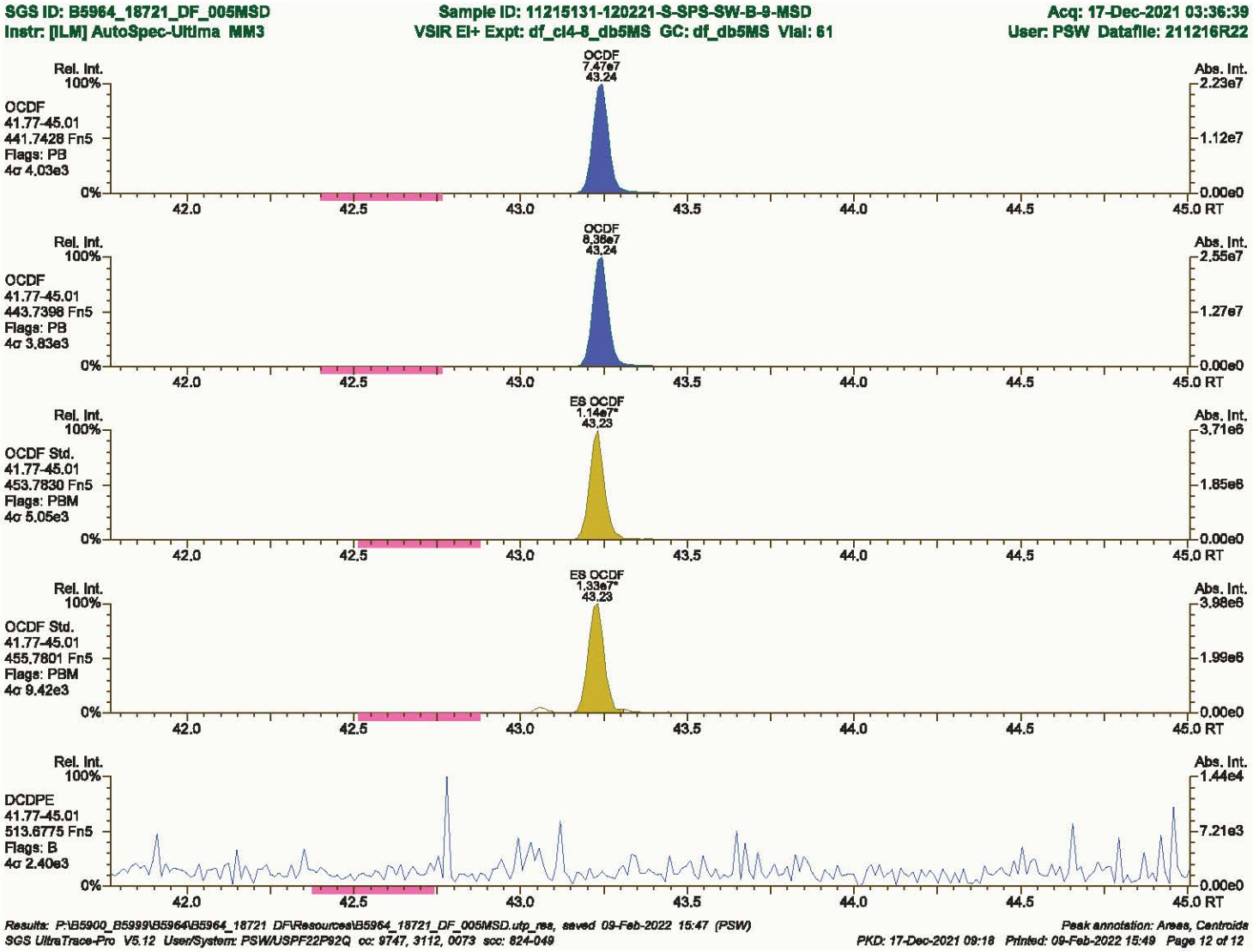
Acq: 17-Dec-2021 03:36:39
User: PSW Datafile: 211216R22



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005MSD.utp_res, saved 09-Feb-2022 15:47 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9467, 3820, 1393 scc: 824-049

Peak annotation: Areas, Centroids
PKD: 17-Dec-2021 09:18 Printed: 09-Feb-2022 15:49 Page 10 of 12


SGS ID: B5964_18721_DF_005MSD
Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
Acq: 17-Dec-2021 03:36:39
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61
User: PSW Datafile: 211216R22
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 4.86e3
1234678F
4.08e7
39.62
1234689F
8.62e6
40.01
1234789F
1.51e7
40.96
1.54e7
7.71e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 3.66e3
1234678F
3.97e7
39.62
1234689F
8.74e6
40.01
1234789F
1.46e7
40.96
1.56e7
7.79e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 9.49e3
ES 1234678F
5.62e6
39.61
CS 1234689F
5.04e6
40.00
ES 1234789F
4.73e6
40.95
2.18e6
1.09e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 9.71e3
ES 1234678F
1.23e7
39.61
CS 1234689F
1.12e7
40.00
ES 1234789F
1.09e7
40.95
4.82e6
2.41e6
0.00e0
RT
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.96e3
1.67e5
8.33e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


SGS ID: B5964_18721_DF_005MSD
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-SPS-SW-B-9-MSD
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61
Acq: 17-Dec-2021 03:36:39
User: PSW Datafile: 211216R22
Rel. Int.
Abs. Int.
OCDF
7.47e7
43.24
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 4.03e3
2.23e7
1.12e7
0.00e0
OCDF
8.38e7
43.24
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.83e3
2.55e7
1.27e7
ES OCDF
1.14e7*
43.23
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PBM
4σ 5.05e3
3.71e6
1.85e6
ES OCDF
1.33e7*
43.23
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PBM
4σ 9.42e3
3.98e6
1.99e6
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.40e3
1.44e4
7.21e3
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_005MSD.utp_res, saved 09-Feb-2022 15:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9747, 3112, 0073 scc: 824-049
PKD: 17-Dec-2021 09:18 Printed: 09-Feb-2022 15:49 Page 12 of 12

Lab ID: B6964_16721_DF_008 **Acq'd:** 17 Dec 2021 04:24 PSW **Wt/Vol:** 10.17 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-DUP2 **UTP:** 17-Dec-2021 09:57:42 PSW **J-level:** 0.492 pg/g **Split:** 1 **Checkcode:** 692-999-HBS

Datafile: 211216R23 **Report:** 17 Dec 2021 09:59 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.22		1.0008	1.0008	0	7.84E+06	0.80	Y	1.34	65.5	6685.785	0.587
12378-PeCDD	33.58	J EMPC	1.0005	1.0006	+0.2	1.09E+05	2.23	N	1.06	1.26	4453.607	0.499
123478-HxCDD	NotFnd		1.0003	-		-	-	-	1.06	-	6169.024	0.827
123678-HxCDD	37.57	J EMPC	1.0033	1.0035	+0.5	1.15E+05	1.50	N	1.08	1.59	6169.024	0.776
123789-HxCDD	37.87	J EMPC	1.0110	1.0117	+1.6	1.25E+05	1.58	N	1.02	1.59	6169.024	0.754
1234678-HpCDD	40.50		1.0003	1.0004	+0.2	5.21E+06	1.02	Y	0.97	93	7566.1	0.883
OCDD	43.05		1.0003	1.0003	0	1.89E+08	0.89	Y	1.07	4,710	10587.471	2.15
2378-TCDF	27.36		1.0006	1.0009	+0.5	3.05E+07	0.82	Y	0.96	260	8614.252	0.799
12378-PeCDF	32.13		1.0006	1.0006	0	1.27E+06	1.55	Y	0.95	11.7	5713.262	0.532
23478-PeCDF	33.24		1.0006	1.0007	+0.2	9.68E+05	1.41	Y	0.94	9.53	5713.262	0.487
123478-HxCDF	36.47		1.0004	1.0005	+0.2	2.05E+06	1.16	Y	1.23	21.6	8422.895	0.756
123678-HxCDF	36.60		1.0004	1.0002	-0.4	6.15E+05	1.27	Y	1.13	5.66	8422.895	0.643
234678-HxCDF	37.28	J EMPC	1.0005	1.0007	+0.4	9.28E+04	1.54	N	1.15	0.962	8422.895	0.822
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	8422.895	0.837
1234678-HpCDF	39.60		1.0003	1.0002	-0.2	1.07E+06	0.96	Y	1.36	11.5	10267.016	0.76
1234789-HpCDF	40.94	J EMPC	1.0003	1.0002	-0.2	1.60E+05	1.30	N	1.30	2.37	10267.016	1.14
OCDF	43.22		1.0002	1.0001	-0.3	1.10E+06	0.76	Y	1.03	25.3	5047.454	0.919

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.20	1.0237	1.0239	+0.3	1.75E+07	0.79	Y	1.03	87.6
ES 12378-PeCDD	33.56	1.2158	1.2183	+5.0	1.60E+07	1.52	Y	1.03	79.9
ES 123478-HxCDD	37.43	0.9920	0.9916	-0.9	1.31E+07	1.26	Y	0.99	91.3
ES 123678-HxCDD	37.55	0.9949	0.9947	-0.5	1.31E+07	1.23	Y	0.97	93.6
ES 123789-HxCDD	37.86	1.0026	1.0028	+0.5	1.52E+07	1.21	Y	1.12	94.4
ES 1234678-HpCDD	40.49	1.0713	1.0725	+2.9	1.13E+07	1.08	Y	0.99	79.3
ES OCDD	43.03	1.1385	1.1399	+3.6	1.48E+07	0.92	Y	0.78	66.1
ES 2378-TCDF	27.34	1.0519	1.0525	+1.0	2.40E+07	0.75	Y	1.08	81.9
ES 12378-PeCDF	32.11	1.2331	1.2360	+5.6	2.25E+07	1.62	Y	0.93	89.2
ES 23478-PeCDF	33.22	1.2754	1.2789	+7.0	2.13E+07	1.60	Y	0.92	85.3
ES 123478-HxCDF	36.45	0.9656	0.9655	-0.2	1.51E+07	0.51	Y	1.14	91.9
ES 123678-HxCDF	36.59	0.9693	0.9692	-0.2	1.89E+07	0.51	Y	1.30	101
ES 234678-HxCDF	37.25	0.9869	0.9867	-0.4	1.65E+07	0.51	Y	1.20	95.4
ES 123789-HxCDF	38.22	1.0121	1.0125	+0.9	1.49E+07	0.50	Y	1.14	91.2
ES 1234678-HpCDF	39.60	1.0478	1.0488	+2.4	1.35E+07	0.41	Y	0.95	98.6
ES 1234789-HpCDF	40.94	1.0832	1.0844	+2.9	1.02E+07	0.45	Y	0.85	84
ES OCDF	43.21	1.1434	1.1447	+3.4	1.66E+07	0.90	Y	0.93	62.6

Lab ID: B6964_18721_DF_008 | Acq'd: 17 Dec 2021 04:24 PSW | Wt/Vol: 10.17 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-DUP2 | UTP: 17-Dec-2021 09:57:42 PSW | J-level: 0.492 pg/g | Split: 1 | Checkcode: 692-999-HBS

Datafile: 211216R23 | Report: 17 Dec 2021 09:59 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.54		-	-	-	1.94E+07	0.82	Y	-	-
JS 1234-TCDF	25.98		-	-	-	2.70E+07	0.70	Y	-	-
JS 123467-HxCDD	37.75		-	-	-	7.19E+06	1.15	Y	-	-
CS 37Cl-2378-TCDD	28.22		1.0245	1.0247	+0.3	7.75E+06	n/a	-	1.31	76.5
CS 12347-PeCDD	33.06		1.1978	1.2002	+4.8	1.38E+07	1.66	Y	0.89	79.7
CS 12346-PeCDF	31.58		1.2130	1.2158	+5.3	2.06E+07	1.61	Y	0.87	87.9
CS 123469-HxCDF	36.90		0.9775	0.9775	0	1.56E+07	0.55	Y	1.09	99.5
CS 1234689-HpCDF	39.98		1.0580	1.0591	+2.6	1.24E+07	0.45	Y	0.86	100
~~SS 37Cl-2378-TCDD~~	~~28.22~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~7.75E+06~~	~~n/a~~		~~1.26~~	~~87.0~~
~~SS 12347-PeCDD~~	~~33.06~~		~~1.1978~~	~~1.2002~~	~~+4.8~~	~~1.38E+07~~	~~1.66~~	~~Y~~	~~0.86~~	~~89.6~~
~~SS 12346-PeCDF~~	~~31.58~~		~~1.2130~~	~~1.2158~~	~~+5.3~~	~~2.06E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~98.4~~
~~SS 123469-HxCDF~~	~~36.90~~		~~0.9775~~	~~0.9775~~	~~0~~	~~1.56E+07~~	~~0.55~~	~~Y~~	~~0.84~~	~~98~~
~~SS 1234689-HpCDF~~	~~39.98~~		~~1.0580~~	~~1.0591~~	~~+2.6~~	~~1.24E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~101~~

Totals	Conc	EMPC
Total TCDD	71.9	75.3
Total PeCDD	4.91	7.3
Total HxCDD	44.6	48.9
Total HpCDD	251	251
Total Tetra-Octa Dioxins	5080	5090
Total TCDF	500	516
Total PeCDF	33.3	35.3
Total HxCDF	36	38.3
Total HpCDF	21.3	23.7
Total Tetra-Octa Furans	616	639
Total Tetra-Octa Dioxins & Furans	5700	5730

Lab ID: B6964_18721_DF_008 | Acq'd: 17 Dec 2021 04:24 PSW | Wt/Vol: 10.17 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-DUP2 | UTP: 17-Dec-2021 09:57:42 PSW | J-level: 0.492 pg/g | Split: 1 | Checkcode: 692-999-HBS

Datafile: 211216R23 | Report: 17 Dec 2021 09:59 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		6685.785	0.587
1379-TCDD	NotFnd		0.8851						1.34		6685.785	0.587
1369-TCDD	NotFnd		0.9002						1.34		6685.785	0.587
1469-TCDD	26.13	EMPC	0.9275	0.9267	-1.3	2.63E+05	0.98	N	1.34	2.2	6685.785	0.587
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6685.785	0.587
1378-TCDD	26.56	J EMPC	0.9427	0.9417	-1.6	4.01E+04	1.09	N	1.34	0.334	6685.785	0.587
1268-TCDD	NotFnd		0.9498						1.34		6685.785	0.587
1478-TCDD	NotFnd		0.9584						1.34		6685.785	0.587
1279-TCDD	NotFnd		0.9644						1.34		6685.785	0.587
1234/1269-TCDD	NotFnd		0.9766						1.34		6685.785	0.587
1236-TCDD	NotFnd		0.9813						1.34		6685.785	0.587
1237/1238-TCDD	27.94	EMPC	0.9906	0.9908	+0.3	1.05E+05	0.56	N	1.34	0.873	6685.785	0.587
1239-TCDD	NotFnd		0.9952						1.34		6685.785	0.587
2378-TCDD	**28.22**		**1.0008**	1.0008	**0**	7.84E+06	0.80	Y	**1.34**	**65.5**	**6685.785**	**0.587**
1278-TCDD	28.55		1.0122	1.0125	+0.5	7.75E+05	0.82	Y	1.34	6.47	6685.785	0.587
1267-TCDD	NotFnd		1.0168						1.34		6685.785	0.587
1289-TCDD	NotFnd		1.0349						1.34		6685.785	0.587
12479/12468-PeCDD	31.06	J	0.9267	0.9257	-1.9	1.08E+05	1.47	Y	1.06	1.25	4453.607	0.499
12469-PeCDD	31.61		0.9425	0.9419	-1.1	3.15E+05	1.43	Y	1.06	3.66	4453.607	0.499
12368-PeCDD	NotFnd		0.9588						1.06		4453.607	0.499
12478-PeCDD	NotFnd		0.9643						1.06		4453.607	0.499
12379-PeCDD	NotFnd		0.9673						1.06		4453.607	0.499
12369/12467/12489-PeCDD	32.72	J EMPC	0.9750	0.9751	+0.2	9.73E+04	1.83	N	1.06	1.13	4453.607	0.499
12346/12347-PeCDD	NotFnd		0.9859						1.06		4453.607	0.499
12378-PeCDD	33.58	J EMPC	**1.0005**	**1.0006**	**+0.2**	**1.09E+05**	**2.23**	N	**1.06**	**1.26**	**4453.607**	**0.499**
12367-PeCDD	NotFnd		1.0032						1.06		4453.607	0.499
12389-PeCDD	NotFnd		1.0135						1.06		4453.607	0.499
124679/124689-HxCDD	35.73		0.9544	0.9546	+0.4	2.51E+06	1.29	Y	1.05	34.1	6169.024	0.783
123468-HxCDD	36.38	J EMPC	0.9716	0.9720	+0.9	7.93E+04	1.68	N	1.05	1.08	6169.024	0.783
123679/123689-HxCDD	36.67		0.9793	0.9796	+0.7	6.63E+05	1.20	Y	1.05	8.99	6169.024	0.783
123469-HxCDD	36.80	J	0.9829	0.9831	+0.4	1.12E+05	1.25	Y	1.05	1.52	6169.024	0.783
123478-HxCDD	NotFnd		**1.0003**						1.06		**6169.024**	**0.827**
123678-HxCDD	37.57	J EMPC	**1.0033**	**1.0035**	**+0.5**	**1.15E+05**	**1.50**	N	1.08	**1.59**	**6169.024**	**0.776**
123467-HxCDD	NotFnd		1.0084						1.05		6169.024	0.783
123789-HxCDD	37.87	J EMPC	**1.0110**	**1.0117**	**+1.6**	**1.25E+05**	**1.58**	N	1.02	**1.59**	**6169.024**	**0.754**

Lab ID: B6964_16721_DF_008 | Acq'd: 17 Dec 2021 04:24 PSW | Wt/Vol: 10.17 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-DUP2 | UTP: 17-Dec-2021 09:57:42 PSW | J-level: 0.492 pg/g | Split: 1 | Checkcode: 692-999-HBS

Datafile: 211216R23 | Report: 17 Dec 2021 09:59 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.85		0.9843	0.9843	0	8.84E+06	1.04	Y	0.97	158	7566.1	0.883
1234678-HpCDD	**40.50**		**1.0003**	**1.0004**	**+0.2**	**5.21E+06**	**1.02**	**Y**	**0.97**	**93**	**7566.1**	**0.883**
OCDD	**43.05**		**1.0003**	**1.0003**	**0**	**1.89E+08**	**0.89**	**Y**	**1.07**	**4,710**	**10587.471**	**2.15**
OCDD-a	43.04		1.0001	1.0001	0	1.08E+07	2.51	Y	0.07	4,360	9602.569	31.7
1368-TCDF	NotFnd		0.8230						0.96		8614.252	0.799
1468-TCDF	NotFnd		0.8443						0.96		8614.252	0.799
2468-TCDF	NotFnd		0.8672						0.96		8614.252	0.799
1346/1246-TCDF	NotFnd		0.8802						0.96		8614.252	0.799
1347/1378/1247-TCDF	24.18	EMPC	0.8855	0.8844	-1.6	2.63E+05	1.06	N	0.96	2.24	8614.252	0.799
1348-TCDF	24.45		0.8952	0.8943	-1.3	2.09E+05	0.76	Y	0.96	1.78	8614.252	0.799
1248/1367/1379-TCDF	24.54		0.9000	0.8975	-3.7	1.22E+06	0.82	Y	0.96	10.4	8614.252	0.799
1268-TCDF	24.95	EMPC	0.9136	0.9126	-1.5	4.40E+05	0.95	N	0.96	3.75	8614.252	0.799
1467-TCDF	NotFnd		0.9185						0.96		8614.252	0.799
1478-TCDF	25.26	EMPC	0.9247	0.9238	-1.4	1.20E+06	0.90	N	0.96	10.2	8614.252	0.799
1369/1237-TCDF	25.63		0.9381	0.9375	-0.9	3.89E+05	0.81	Y	0.96	3.32	8614.252	0.799
2467-TCDF	NotFnd		0.9427						0.96		8614.252	0.799
2368-TCDF	25.93		0.9484	0.9485	+0.2	1.54E+06	0.77	Y	0.96	13.1	8614.252	0.799
1238/1234/1678/1469/1236-TCDF	26.01		0.9517	0.9512	-0.8	1.00E+06	0.84	Y	0.96	8.52	8614.252	0.799
1278-TCDF	26.46		0.9682	0.9678	-0.6	1.44E+07	0.79	Y	0.96	123	8614.252	0.799
1349-TCDF	NotFnd		0.9725						0.96		8614.252	0.799
1267-TCDF	26.73		0.9782	0.9778	-0.6	8.41E+05	0.71	Y	0.96	7.17	8614.252	0.799
2346/1249-TCDF	NotFnd		0.9846						0.96		8614.252	0.799
2347/1279-TCDF	27.13		0.9926	0.9925	-0.2	4.11E+05	0.73	Y	0.96	3.5	8614.252	0.799
2348-TCDF	27.25		0.9966	0.9967	+0.2	2.41E+06	0.72	Y	0.96	20.5	8614.252	0.799
2378-TCDF	**27.36**		**1.0006**	**1.0009**	**+0.5**	**3.05E+07**	**0.82**	**Y**	**0.96**	**260**	**8614.252**	**0.799**
2367/3467-TCDF	27.71		1.0139	1.0137	-0.3	2.74E+06	0.82	Y	0.96	23.4	8614.252	0.799
1269-TCDF	27.96		1.0226	1.0228	+0.3	5.73E+05	0.88	Y	0.96	4.89	8614.252	0.799
1239-TCDF	NotFnd		1.0322						0.96		8614.252	0.799
1289-TCDF	29.38		1.0729	1.0745	+2.8	2.43E+06	0.77	Y	0.96	20.7	8614.252	0.799
13468/12468-PeCDF	29.32	J EMPC	0.9135	0.9133	-0.4	2.12E+05	1.19	N	0.94	2.02	6377.037	0.57
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		5713.262	0.51
12368/13478/12478-PeCDF	31.03		0.9661	0.9663	+0.4	7.04E+05	1.53	Y	0.94	6.71	5713.262	0.51
14678-PeCDF	NotFnd		0.9693						0.94		5713.262	0.51
13479-PeCDF	NotFnd		0.9723						0.94		5713.262	0.51
13469/12479-PeCDF	NotFnd		0.9799						0.94		5713.262	0.51
12346-PeCDF	NotFnd		0.9842						0.94		5713.262	0.51

Lab ID: B6964_18721_DF_008 | Acq'd: 17 Dec 2021 04:24 PSW | Wt/Vol: 10.17 g | ICAL: MM3_DF_10272021_27JUL2021

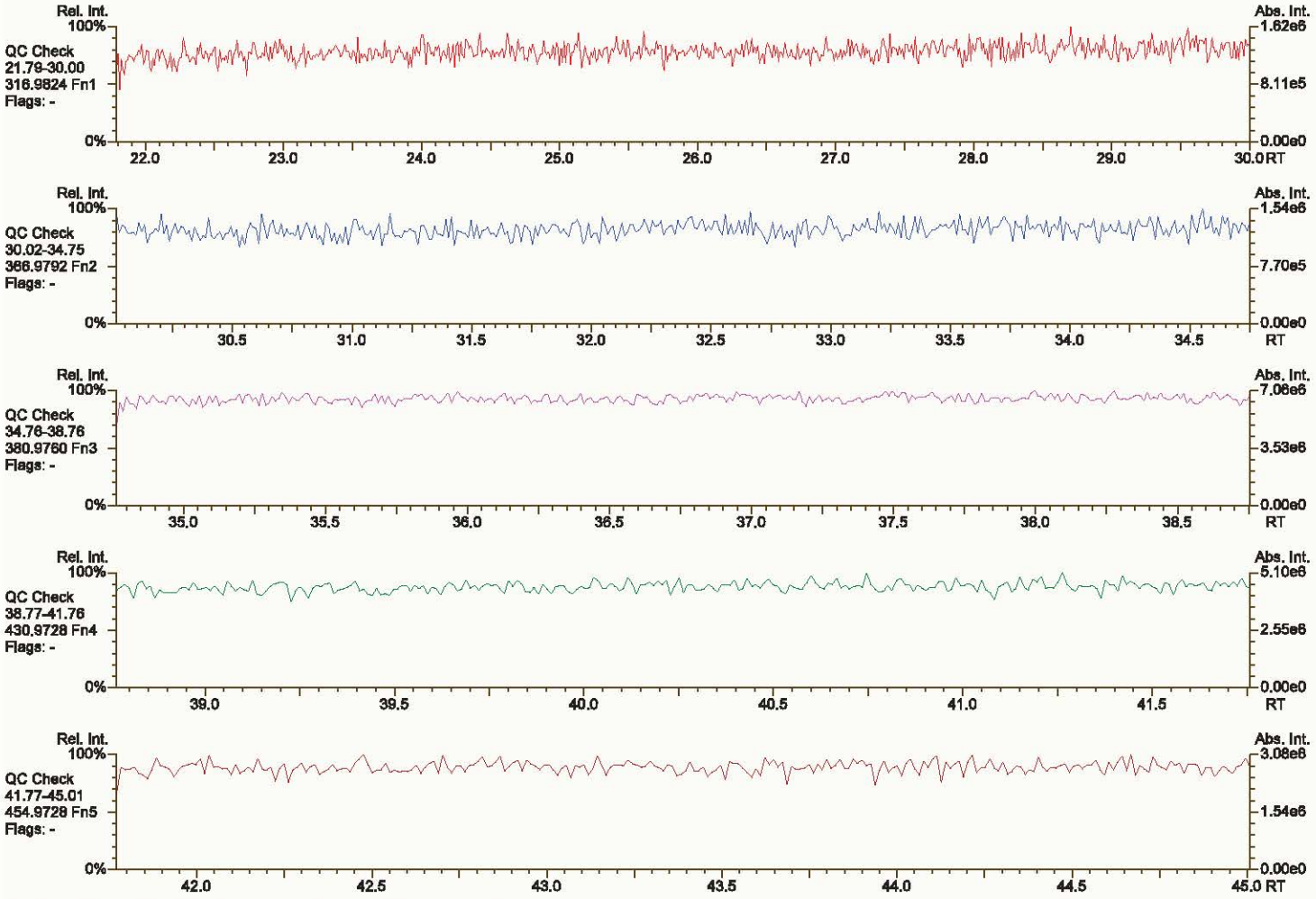
Client ID: 11215131-120221-S-SPS-DUP2 | UTP: 17-Dec-2021 09:57:42 PSW | J-level: 0.492 pg/g | Split: 1 | Checkcode: 692-999-HBS

Datafile: 211216R23 | Report: 17 Dec 2021 09:59 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.67	J	0.9868	0.9865	-0.6	6.65E+04	1.60	Y	0.94	0.634	5713.262	0.51
12347-PeCDF	NotFnd		0.9893						0.94		5713.262	0.51
12348-PeCDF	31.91	J	0.9941	0.9939	-0.4	1.12E+05	1.45	Y	0.94	1.07	5713.262	0.51
12378-PeCDF	**32.13**		**1.0006**	**1.0006**	**0**	**1.27E+06**	**1.55**	**Y**	**0.95**	**11.7**	**5713.262**	**0.532**
12678/12367-PeCDF	32.42		1.0090	1.0097	+1.4	3.83E+05	1.66	Y	0.94	3.65	5713.262	0.51
12379-PeCDF	NotFnd		1.0143						0.94		5713.262	0.51
12679-PeCDF	NotFnd		0.9929						0.94		5713.262	0.51
23467/12369-PeCDF	NotFnd		0.9966						0.94		5713.262	0.51
23478-PeCDF	**33.24**		**1.0006**	**1.0007**	**+0.2**	**9.68E+05**	**1.41**	**Y**	**0.94**	**9.53**	**5713.262**	**0.487**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5713.262	0.51
12349-PeCDF	NotFnd		1.0102						0.94		5713.262	0.51
12389-PeCDF	NotFnd		1.0325						0.94		5713.262	0.51
123468-HxCDF	35.09	J	0.9628	0.9627	-0.2	1.28E+05	1.20	Y	1.16	1.32	8422.895	0.757
124678/134678-HxCDF	35.28		0.9683	0.9680	-0.6	4.55E+05	1.21	Y	1.16	4.71	8422.895	0.757
134679-HxCDF	NotFnd		0.9746						1.16		8422.895	0.757
124679-HxCDF	NotFnd		0.9798						1.16		8422.895	0.757
124689-HxCDF	35.93		0.9859	0.9859	0	2.61E+05	1.42	Y	1.16	2.7	8422.895	0.757
123467-HxCDF	NotFnd		0.9972						1.16		8422.895	0.757
123478-HxCDF	**36.47**		**1.0004**	**1.0005**	**+0.2**	**2.05E+06**	**1.16**	**Y**	**1.23**	**21.6**	**8422.895**	**0.756**
123678-HxCDF	**36.60**		**1.0004**	**1.0002**	**-0.4**	**6.15E+05**	**1.27**	**Y**	**1.13**	**5.66**	**8422.895**	**0.643**
123479-HxCDF	NotFnd		1.0049						1.16		8422.895	0.757
123469-HxCDF	NotFnd		1.0088						1.16		8422.895	0.757
123679-HxCDF	NotFnd		0.9943						1.16		8422.895	0.757
234678-HxCDF	**37.28**	**J EMPC**	**1.0005**	**1.0007**	**+0.4**	**9.28E+04**	**1.54**	**N**	**1.15**	**0.962**	**8422.895**	**0.822**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		8422.895	0.757
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**8422.895**	**0.837**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.27	J EMPC	1.0007	1.0012	+1.1	1.28E+05	1.52	N	1.16	1.32	8422.895	0.757
1234678-HpCDF	**39.60**		**1.0003**	**1.0002**	**-0.2**	**1.07E+06**	**0.96**	**Y**	**1.36**	**11.5**	**10267.016**	**0.76**
1234679-HpCDF	NotFnd		1.0067						1.33		10267.016	0.922
1234689-HpCDF	39.99		1.0100	1.0101	+0.2	7.84E+05	1.00	Y	1.33	9.79	10267.016	0.922
1234789-HpCDF	**40.94**	**J EMPC**	**1.0003**	**1.0002**	**-0.2**	**1.60E+05**	**1.30**	**N**	**1.30**	**2.37**	**10267.016**	**1.14**
OCDF	**43.22**		**1.0002**	**1.0001**	**-0.3**	**1.10E+06**	**0.76**	**Y**	**1.03**	**25.3**	**5047.454**	**0.919**
OCDF-a	43.23	**EMPC**	1.0002	1.0003	+0.3	3.62E+04	1.06	N	0.06	14.4	6972.539	22

SGS ID: B5964_18721_DF_008 | Sample ID: 11215131-120221-S-SPS-DUP2 | Acq: 17-Dec-2021 04:24:11

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62 | User: PSW Datafile: 211216R23



Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)

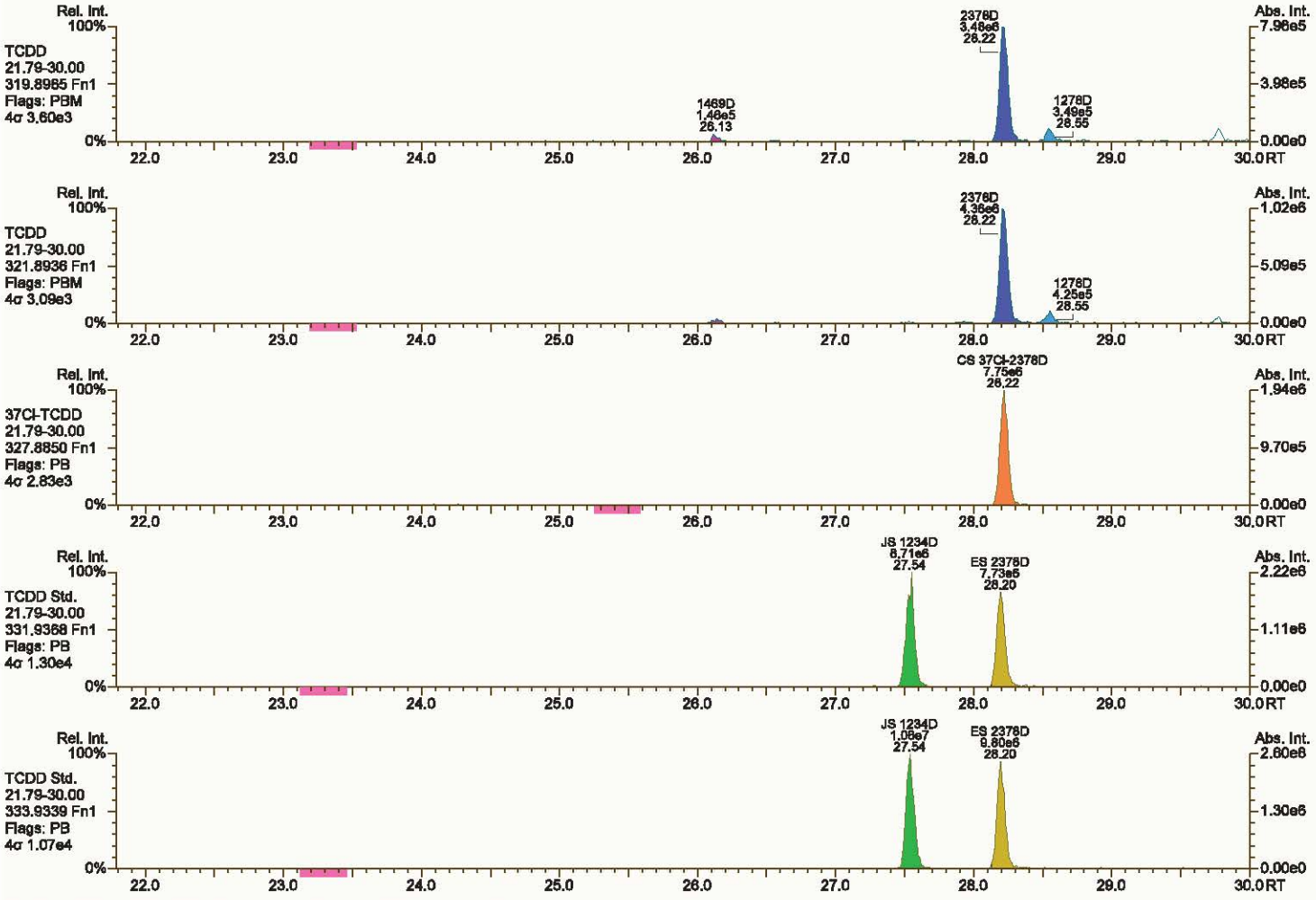
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 692-999

PKD: n/a Printed: 17-Dec-2021 10:07 Page 1 of 12

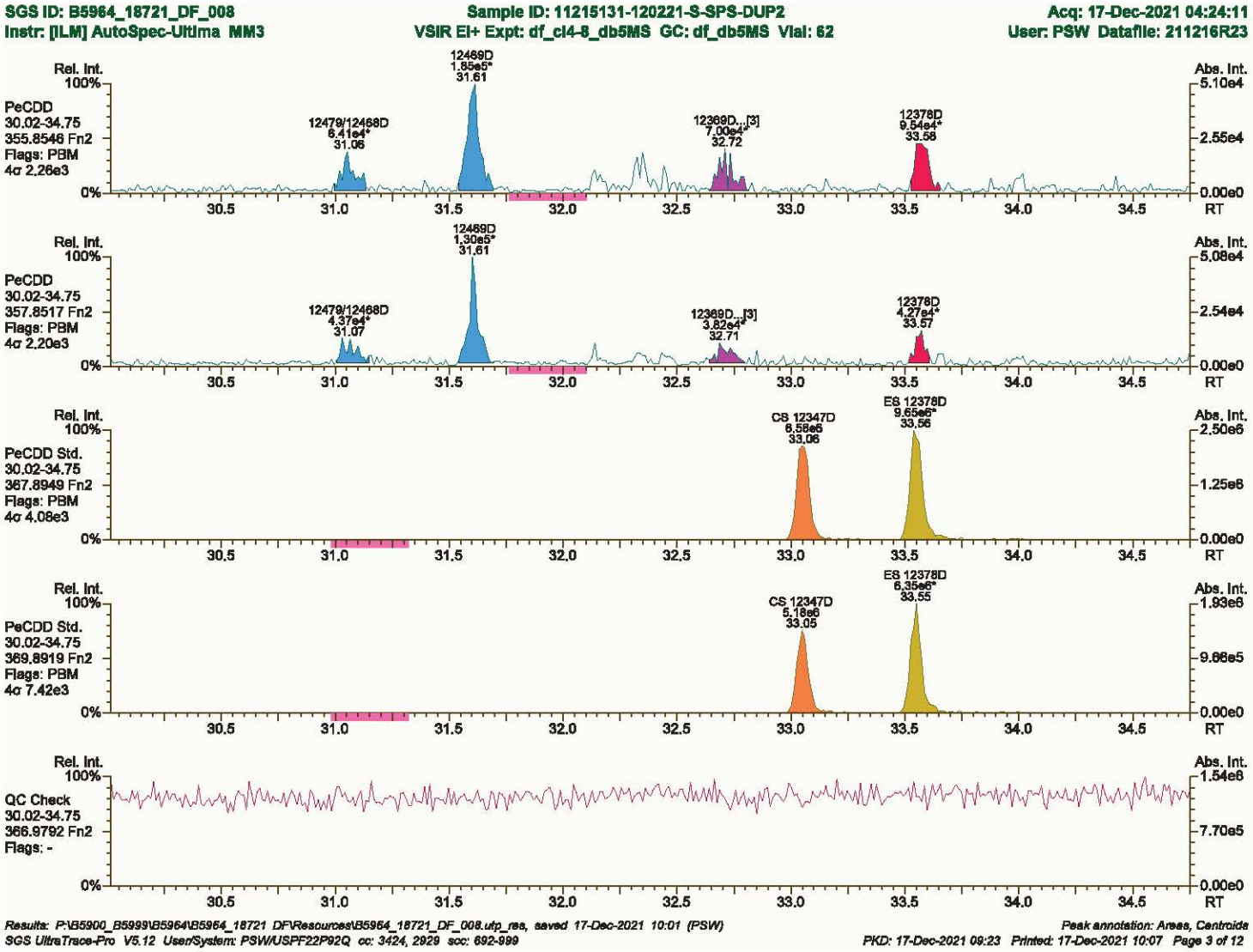
SGS ID: B5964_18721_DF_008 | Sample ID: 11215131-120221-S-SPS-DUP2 | Acq: 17-Dec-2021 04:24:11

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62 | User: PSW Datafile: 211216R23

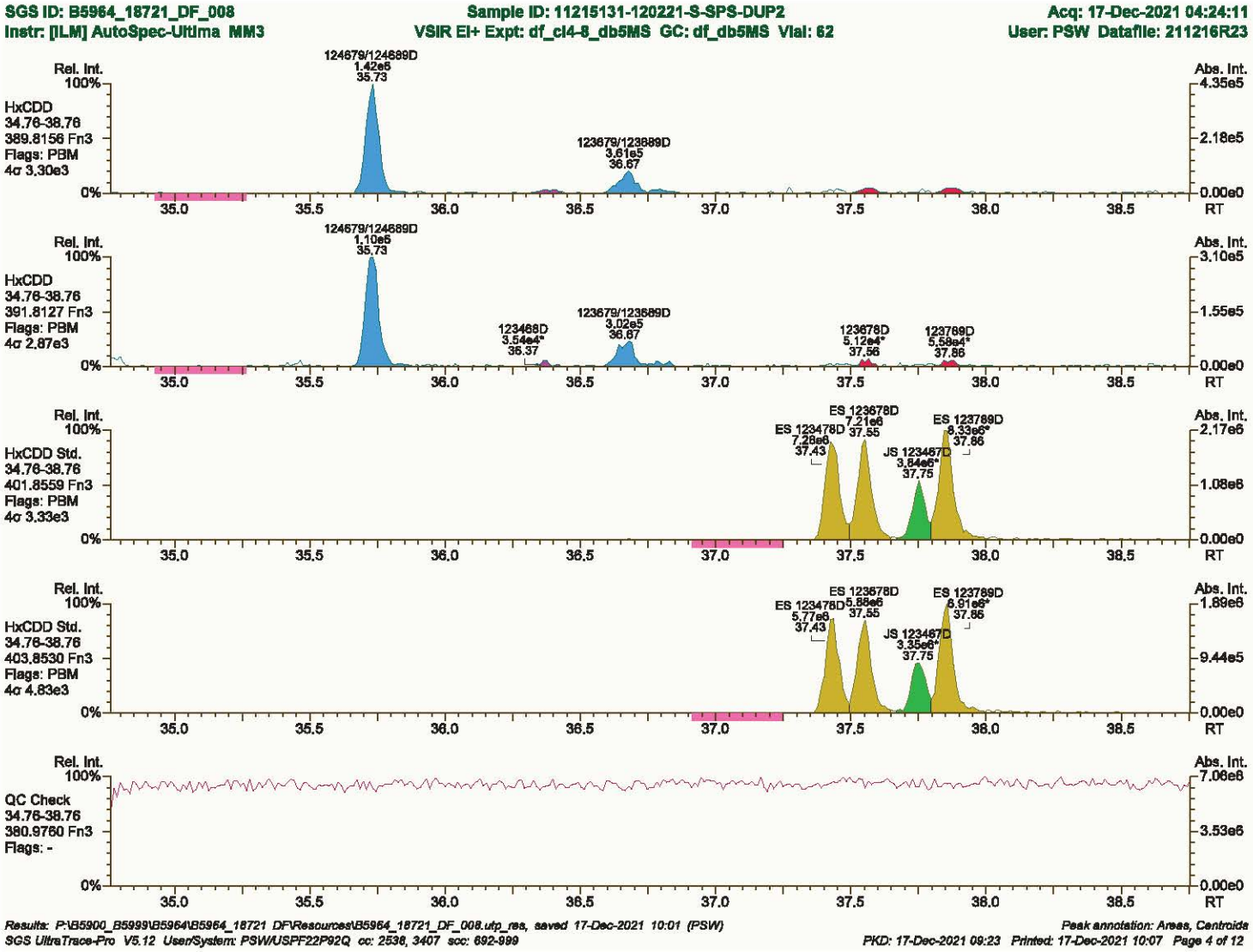


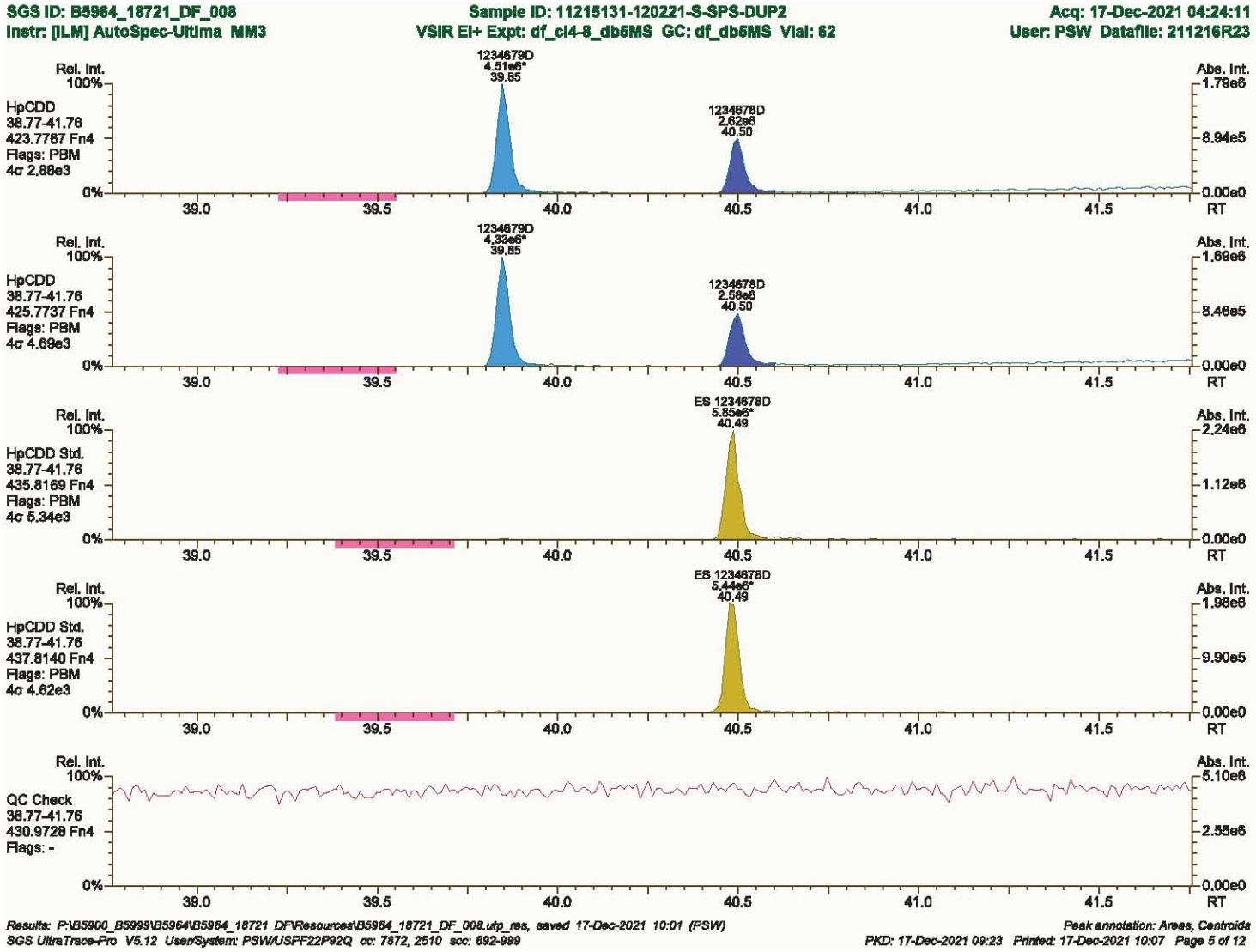
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0528, 6243, 9459 scc: 692-999 *PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 2 of 12*

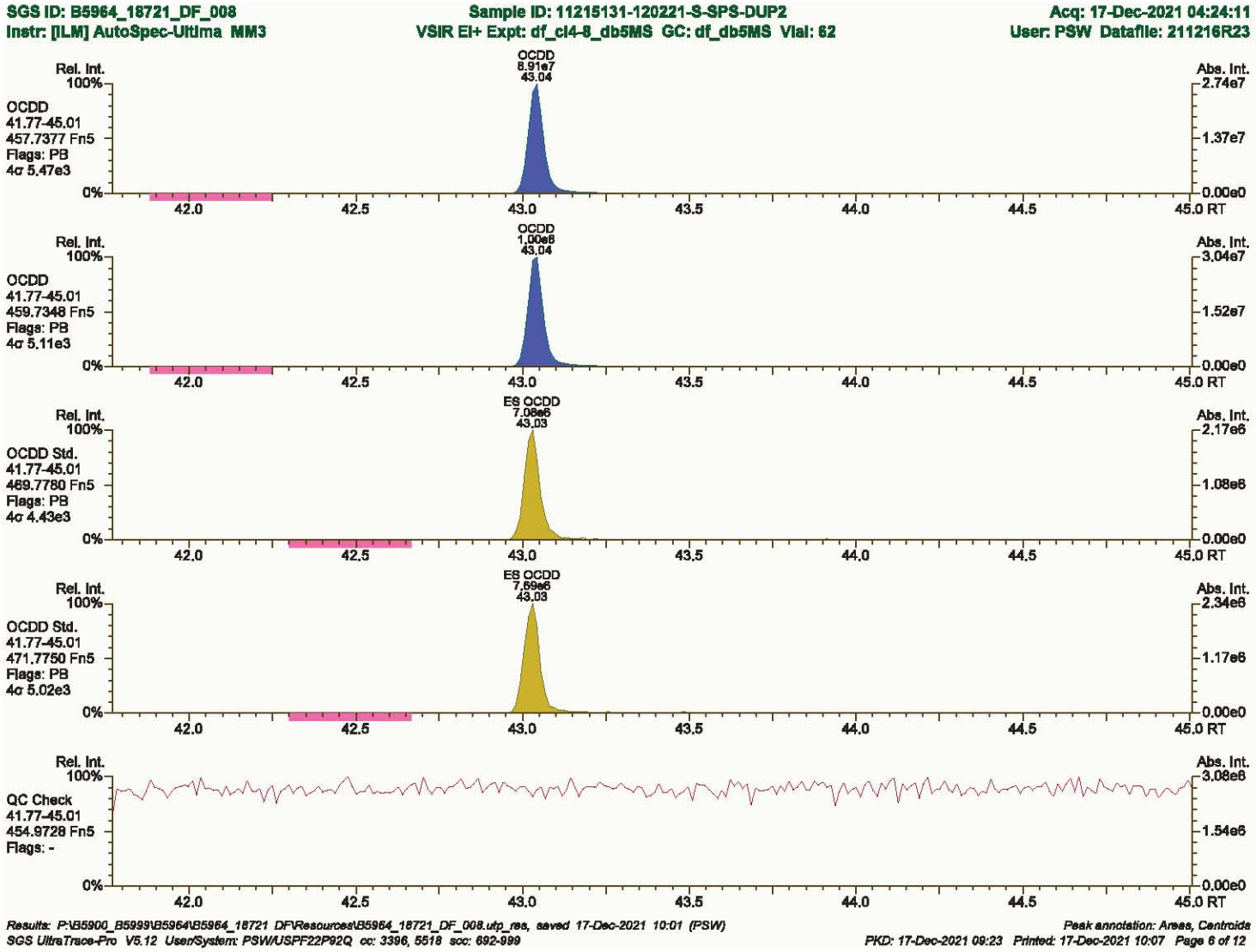


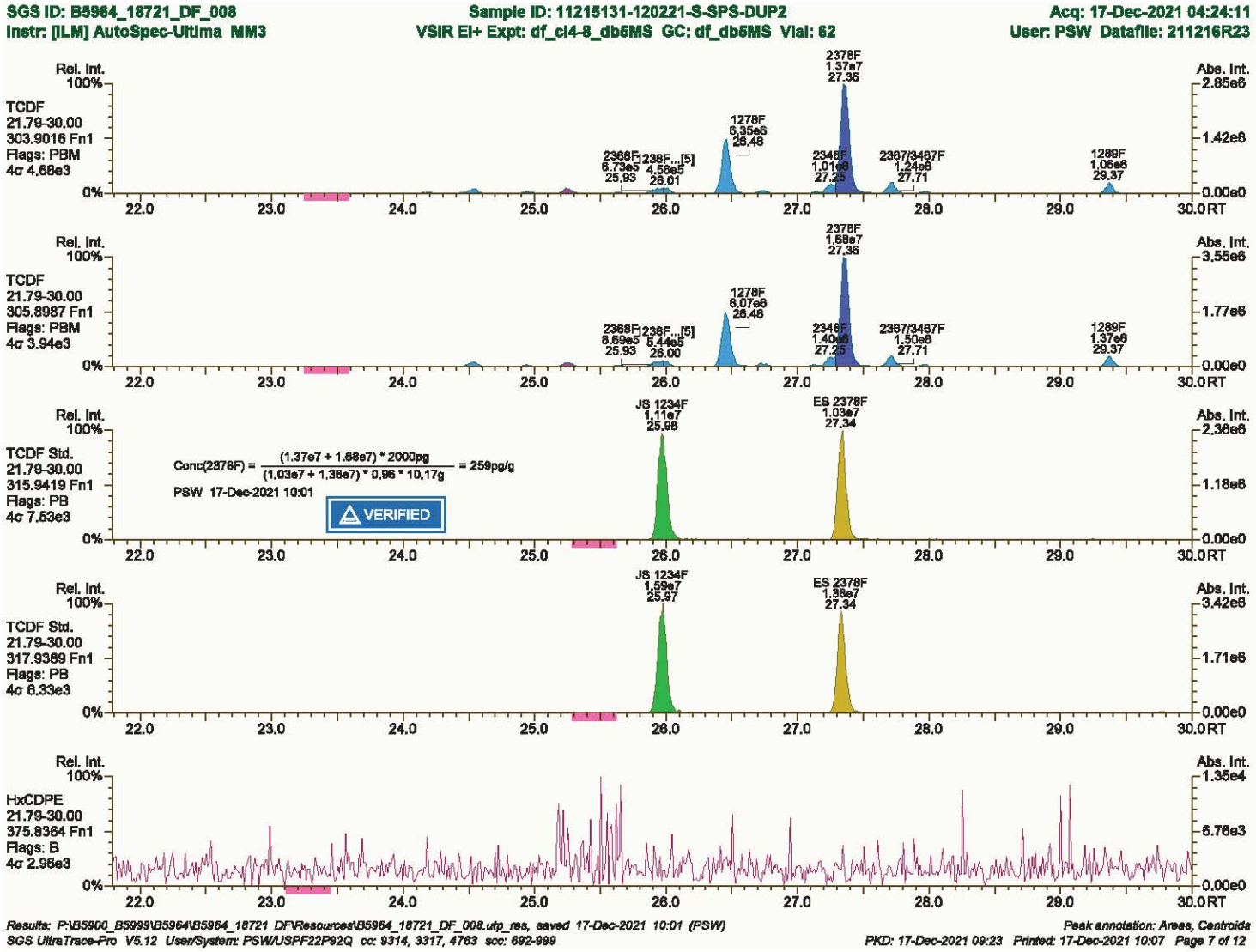
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 3424, 2929 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 3 of 12

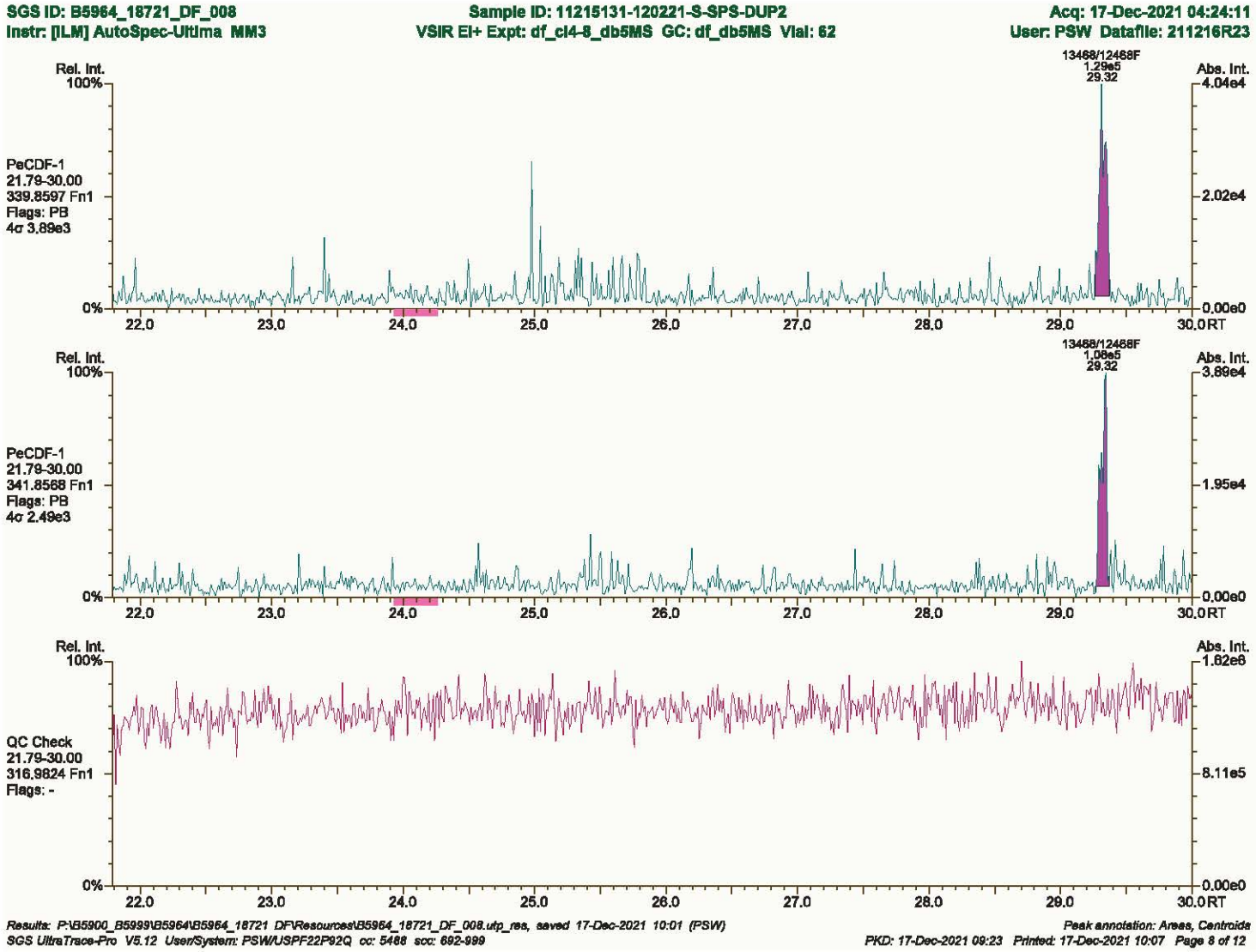

SGS ID: B5964_18721_DF_008
Sample ID: 11215131-120221-S-SPS-DUP2
Acq: 17-Dec-2021 04:24:11
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211216R23
Rel. Int.
Abs. Int.
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 3.30e3
124679/124689D
1.42e6
35.73
123679/123689D
3.61e5
36.67
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 2.87e3
124679/124689D
1.10e6
35.73
123468D
3.54e4*
36.37
123679/123689D
3.02e5
36.67
123678D
5.12e4*
37.56
123789D
5.58e4*
37.86
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 3.33e3
ES 123678D
7.21e6
37.55
ES 123478D
7.28e6
37.43
ES 123789D
8.33e6*
37.86
JS 123467D
3.84e6*
37.75
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 4.83e3
ES 123678D
5.88e6
37.55
ES 123478D
5.77e6
37.43
ES 123789D
6.91e6*
37.86
JS 123467D
3.35e6*
37.75
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
100%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
4.35e5
2.18e5
0.00e0
3.10e5
1.55e5
2.17e6
1.08e6
1.89e6
9.44e5
7.06e6
3.53e6
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 2536, 3407 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 4 of 12

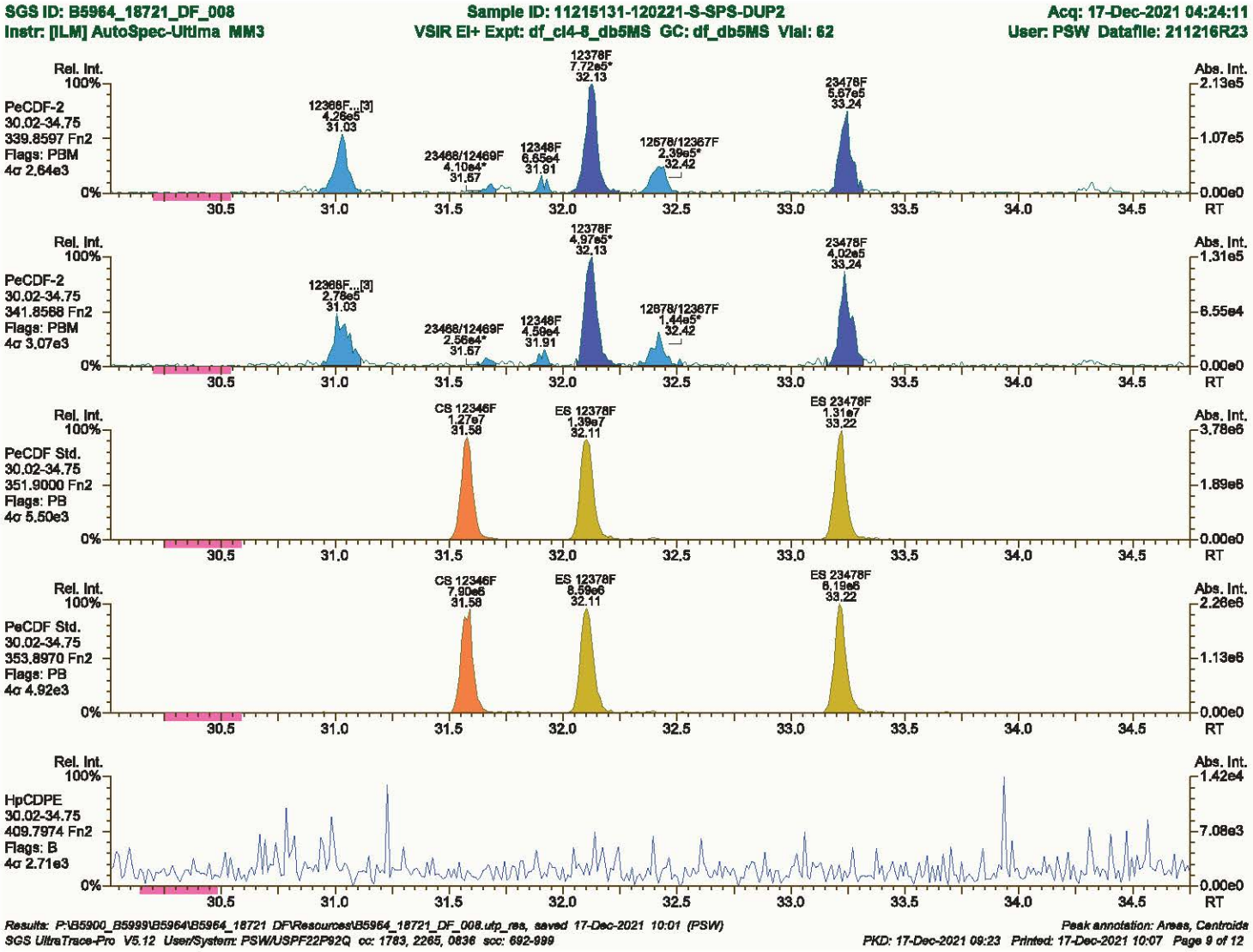


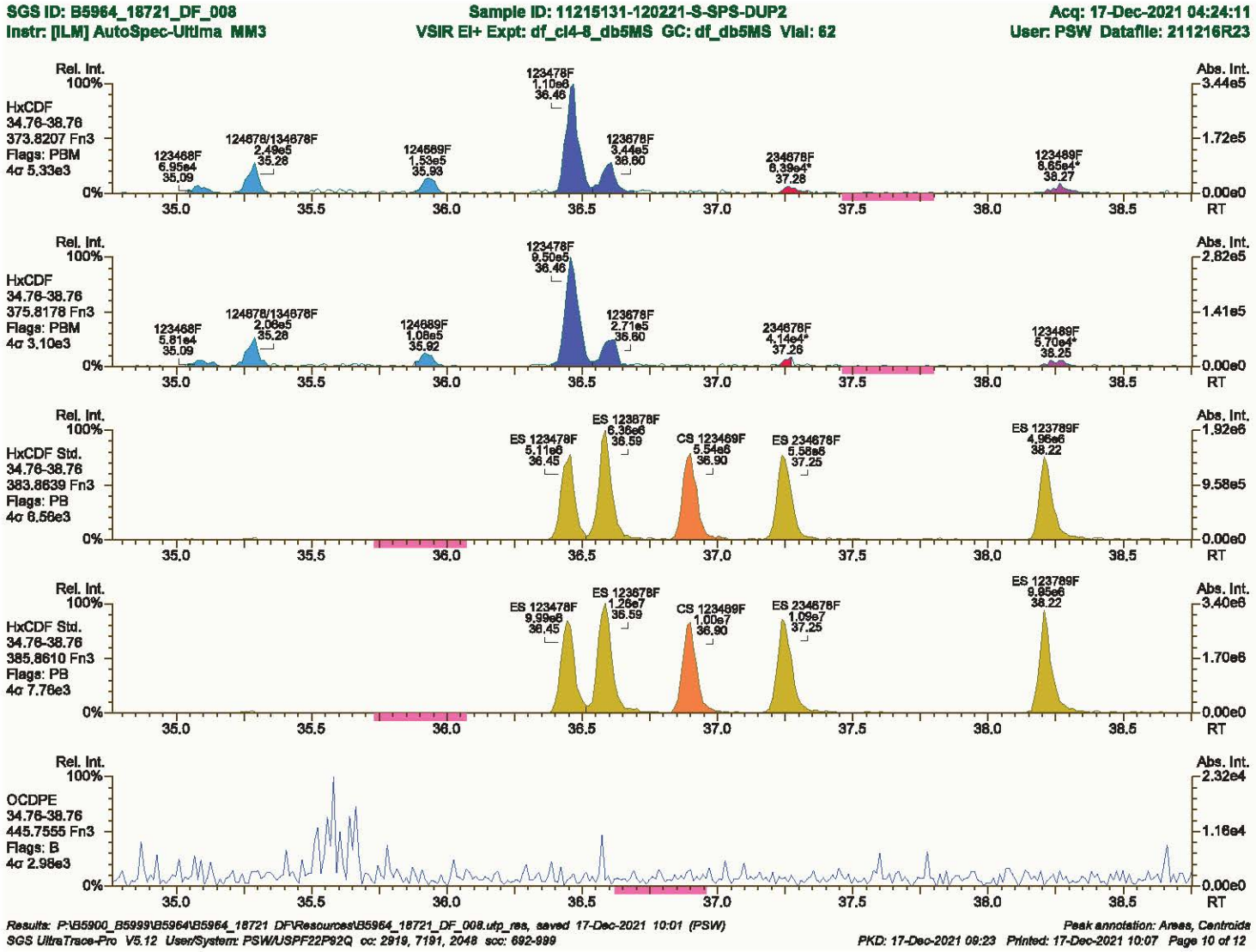
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 7872, 2510 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 5 of 12

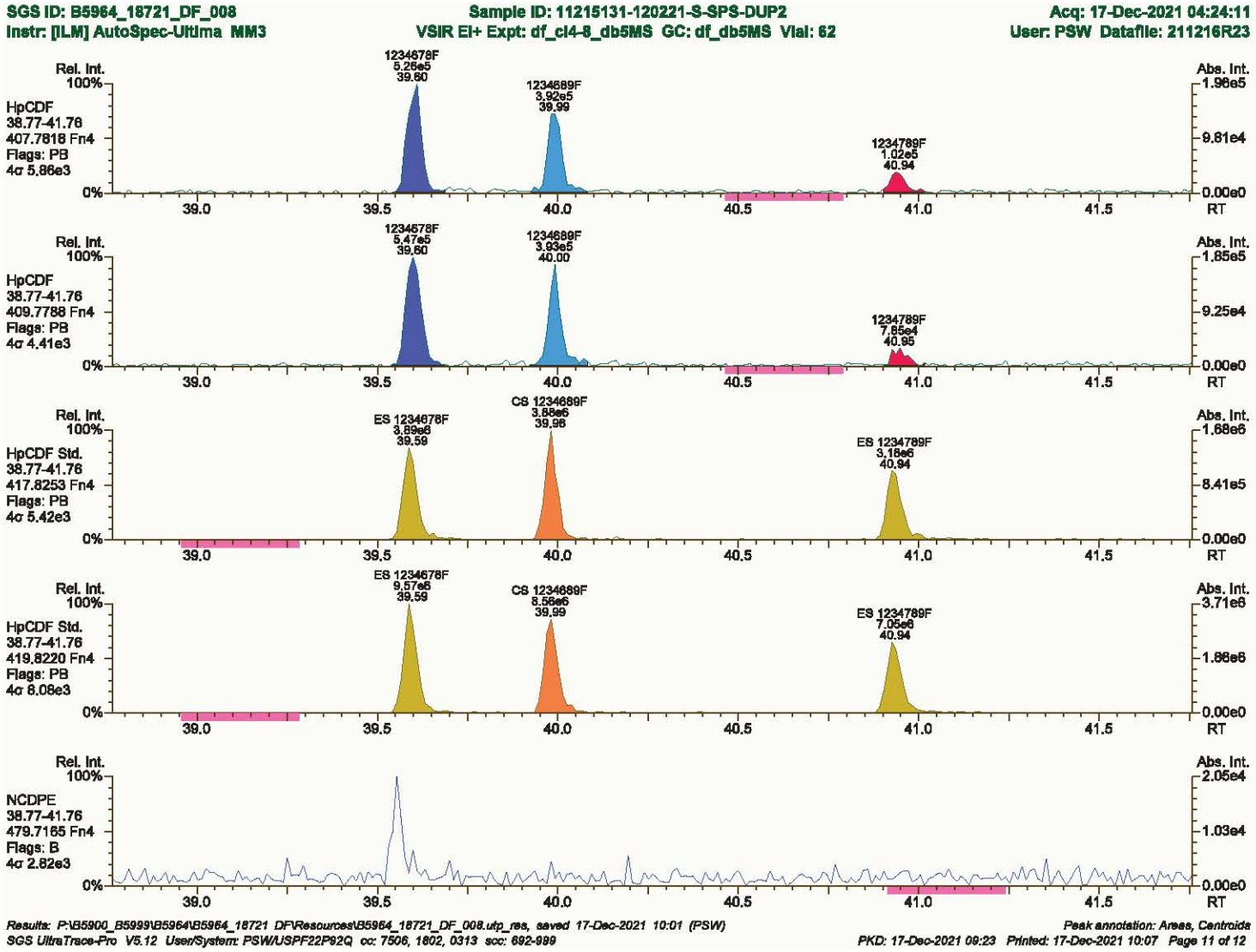

SGS ID: B5964_18721_DF_008
Sample ID: 11215131-120221-S-SPS-DUP2
Acq: 17-Dec-2021 04:24:11
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211216R23
Rel. Int.
Abs. Int.
OCDD
8.91e7
43.04
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 5.47e3
2.74e7
1.37e7
0.00e0
OCDD
1.00e8
43.04
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 5.11e3
3.04e7
1.52e7
ES OCDD
7.08e6
43.03
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.43e3
2.17e6
1.08e6
ES OCDD
7.59e6
43.03
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.02e3
2.34e6
1.17e6
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
3.08e6
1.54e6
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 3396, 5518 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 6 of 12


SGS ID: B5964_18721_DF_008
Sample ID: 11215131-120221-S-SPS-DUP2
Acq: 17-Dec-2021 04:24:11
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211216R23
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 4.68e3
2378F 1.37e7 27.36
1278F 6.35e6 26.48
2368F 6.73e5 25.93
1238F...[5] 4.58e5 26.01
2348F 1.01e6 27.25
2367/3467F 1.24e6 27.71
1289F 1.06e6 29.37
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 3.94e3
2378F 1.68e7 27.36
1278F 8.07e6 26.48
2368F 8.69e5 25.93
1238F...[5] 5.44e5 26.00
2348F 1.40e6 27.25
2367/3467F 1.50e6 27.71
1289F 1.37e6 29.37
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 7.53e3
JS 1234F 1.11e7 25.98
ES 2378F 1.03e7 27.34
Conc(2378F) = (1.37e7 + 1.68e7) * 2000pg / (1.03e7 + 1.38e7) * 0.96 * 10.17g = 259pg/g
PSW 17-Dec-2021 10:01
VERIFIED
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 6.33e3
JS 1234F 1.59e7 25.97
ES 2378F 1.36e7 27.34
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.96e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
0%
100%
2.85e6
1.42e6
0.00e0
3.55e6
1.77e6
2.36e6
1.18e6
3.42e6
1.71e6
1.35e4
6.76e3
Results: P:\B5900_B5999\B5964\B5964_18721_DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9314, 3317, 4763 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 7 of 12

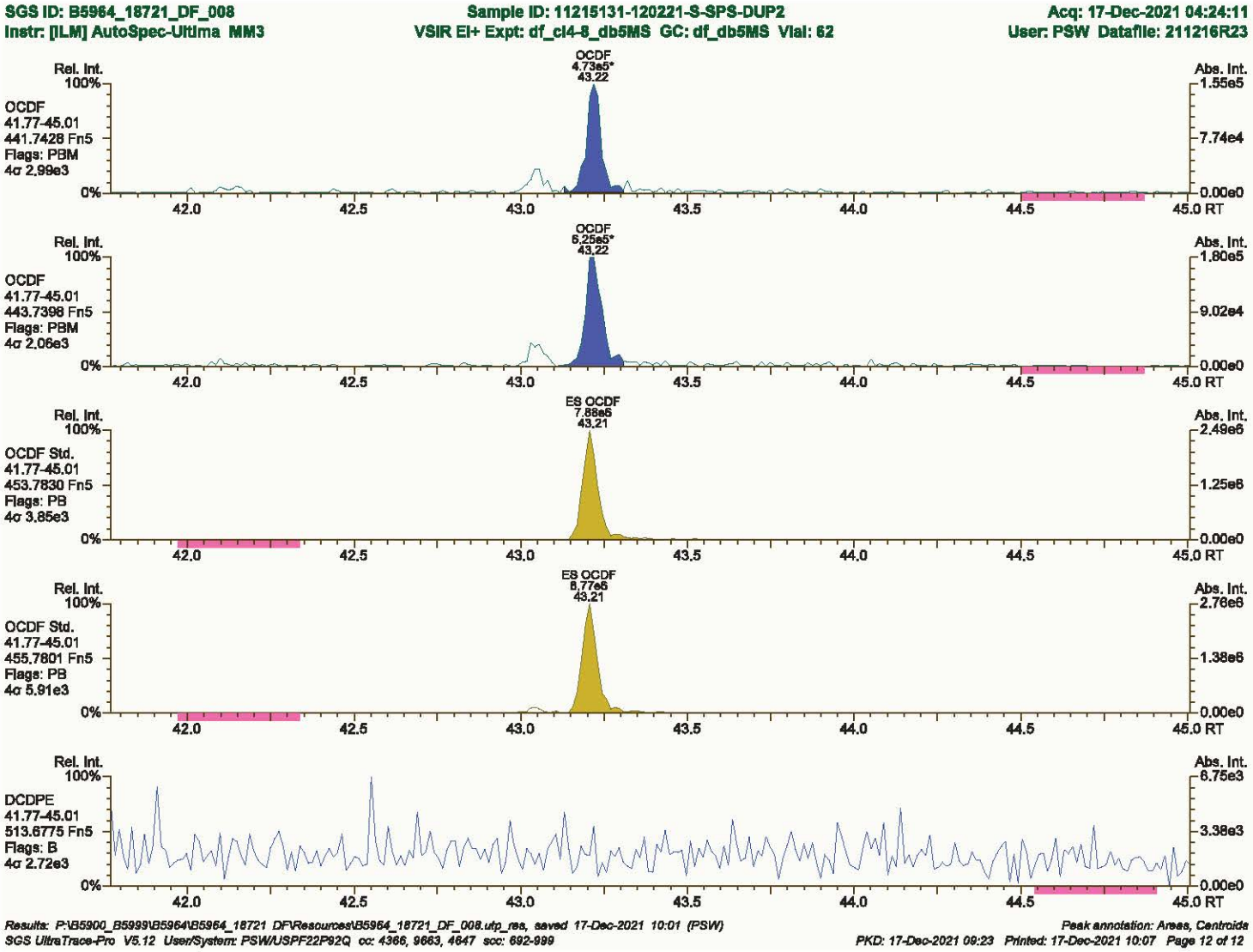

SGS ID: B5964_18721_DF_008
Sample ID: 11215131-120221-S-SPS-DUP2
Acq: 17-Dec-2021 04:24:11
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211216R23
Rel. Int.
100%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.89e3
13468/12468F
1.29e5
29.32
Abs. Int.
4.04e4
2.02e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 2.49e3
13468/12468F
1.08e5
29.32
Abs. Int.
3.89e4
1.95e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
1.62e6
8.11e5
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5466 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 8 of 12


SGS ID: B5964_18721_DF_008
Sample ID: 11215131-120221-S-SPS-DUP2
Acq: 17-Dec-2021 04:24:11
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211216R23
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 2.64e3
12366F...[3] 4.26e5 31.03
23468/12469F 4.10e4* 31.67
12348F 6.55e4 31.91
12378F 7.72e5* 32.13
12678/12367F 2.39e5* 32.42
23478F 5.67e5 33.24
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.07e3
12366F...[3] 2.78e5 31.03
23468/12469F 2.56e4* 31.67
12348F 4.59e4 31.91
12378F 4.97e5* 32.13
12678/12367F 1.44e5* 32.42
23478F 4.02e5 33.24
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 5.50e3
CS 12346F 1.27e7 31.58
ES 12378F 1.39e7 32.11
ES 23478F 1.31e7 33.22
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.92e3
CS 12346F 7.90e6 31.58
ES 12378F 8.59e6 32.11
ES 23478F 8.19e6 33.22
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.71e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1783, 2265, 0836 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 9 of 12


SGS ID: B5964_18721_DF_008
Sample ID: 11215131-120221-S-SPS-DUP2
Acq: 17-Dec-2021 04:24:11
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211216R23
Rel. Int.
Abs. Int.
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 5.33e3
123468F 6.95e4 35.09
124678/134678F 2.49e5 35.26
124689F 1.53e5 35.93
123478F 1.10e6 36.46
123678F 3.44e5 36.60
234678F 8.39e4* 37.28
123489F 8.65e4* 38.27
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 3.10e3
123468F 5.81e4 35.09
124678/134678F 2.06e5 35.26
124689F 1.08e5 35.92
123478F 9.50e5 36.46
123678F 2.71e5 36.60
234678F 4.14e4* 37.26
123489F 5.70e4* 38.25
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 6.56e3
ES 123478F 5.11e6 36.45
ES 123678F 6.36e6 36.59
CS 123469F 5.54e6 36.90
ES 234678F 5.58e6 37.25
ES 123789F 4.96e6 38.22
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 7.76e3
ES 123478F 9.99e6 36.45
ES 123678F 1.26e7 36.59
CS 123469F 1.00e7 36.90
ES 234678F 1.09e7 37.25
ES 123789F 9.85e6 38.22
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.98e3
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
3.44e5
1.72e5
0.00e0
2.82e5
1.41e5
1.92e6
9.58e5
3.40e6
1.70e6
2.32e4
1.16e4
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2919, 7191, 2048 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 10 of 12



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7506, 1602, 0313 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 11 of 12


SGS ID: B5964_18721_DF_008
Sample ID: 11215131-120221-S-SPS-DUP2
Acq: 17-Dec-2021 04:24:11
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211216R23
OCDF
4.73e5*
43.22
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PBM
4σ 2.99e3
0%
Abs. Int.
1.55e5
7.74e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.25e5*
43.22
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PBM
4σ 2.06e3
0%
Abs. Int.
1.80e5
9.02e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
7.86e6
43.21
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.85e3
0%
Abs. Int.
2.49e6
1.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.77e6
43.21
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 5.91e3
0%
Abs. Int.
2.76e6
1.38e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.72e3
0%
Abs. Int.
6.75e3
3.38e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\B5964_18721_DF_008.utp_res, saved 17-Dec-2021 10:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4366, 9663, 4647 scc: 692-999
PKD: 17-Dec-2021 09:23 Printed: 17-Dec-2021 10:07 Page 12 of 12

REVIEWED
Tamara Burkamper , 12/17/2021, 2:07:47 PM

SGS Environmental Services — Run Log **Project: B5964_18721_DF**

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
11	211216R12	3	CS3_211216_DF_RB ✓	1.00	SIL 25-347-1	PSW	149-837	16-Dec-2021	19:42:14
12	211216R13	54	OPR1_18721_DF	1.00	0_18721_OPR001	PSW	621-385	16-Dec-2021	20:28:53
13	211216R14	2	SBS_211216_DF_RB	1.00	SIL 20-61-1	PSW	376-236	16-Dec-2021	21:16:19
14	211216R15	53	MB1_18721_DF_SDS	10.00	Method Blank	PSW	727-669	16-Dec-2021	22:03:53
15	211216R16	55	B5964_18721_DF_001	10.26	11215131-120121-S-SPS-NE-O-8	PSW	417-132	16-Dec-2021	22:51:27
16	211216R17	56	B5964_18721_DF_002	10.32	11215131-120121-S-SPS-NE-O-9	PSW	188-791	16-Dec-2021	23:39:01
17	211216R18	57	B5964_18721_DF_003	10.28	11215131-120121-S-SPS-NE-B-2	PSW	502-032	17-Dec-2021	00:26:28
18	211216R19	58	B5964_18721_DF_004	10.37	11215131-120221-S-SPS-SW-O-7	PSW	695-857	17-Dec-2021	01:14:03
19	211216R20	59	B5964_18721_DF_005	10.07	11215131-120221-S-SPS-SW-B-9	PSW	487-472	17-Dec-2021	02:01:37
20	211216R21	60	B5964_18721_DF_005MS	10.13	11215131-120221-S-SPS-SW-B-9-MS	PSW	811-650	17-Dec-2021	02:49:11
21	211216R22	61	B5964_18721_DF_005MSD	10.32	11215131-120221-S-SPS-SW-B-9-MSD	PSW	885-948	17-Dec-2021	03:36:39
23	211216R23	62	B5964_18721_DF_008 ✓	10.17	11215131-120221-S-SPS-DUP2	PSW	692-999	17-Dec-2021	04:24:11

REVIEWED
paul_walton , 12/17/2021, 10:10:21 AM

Project file: not saved
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q

Printed: 17-Dec-2021 10:10

Dioxin/Furan QC Summary		Acq'd: 16 Dec 2021 19:42 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_211216_DF_RB		UTP: 17-Dec-2021 09:57:36 PSW				Checkcode: 149-837-GMM	
Sample ID: SIL 25-347-1		Report: 17 Dec 2021 09:58 pw				Datafile: 211216R12	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.23	4.24E+06	0.81	Y	1.34	1.08	-20%
12378-PeCDD	33.58	1.64E+07	1.57	Y	1.06	1.02	-3%
123478-HxCDD	37.45	1.39E+07	1.26	Y	1.06	1.02	-3%
123678-HxCDD	37.57	1.56E+07	1.26	Y	1.08	1.08	-1%
123789-HxCDD	37.87	1.53E+07	1.24	Y	1.02	0.90	-11%
1234678-HpCDD	40.50	1.29E+07	1.02	Y	0.97	0.95	-2%
OCDD	43.05	1.80E+07	0.88	Y	1.07	1.04	-3%
2378-TCDF	27.37	5.67E+06	0.79	Y	0.96	1.02	6%
12378-PeCDF	32.13	2.29E+07	1.56	Y	0.95	0.97	3%
23478-PeCDF	33.24	2.24E+07	1.51	Y	0.94	1.01	8%
123478-HxCDF	36.47	1.99E+07	1.19	Y	1.23	1.23	0%
123678-HxCDF	36.60	2.24E+07	1.28	Y	1.13	1.15	1%
234678-HxCDF	37.27	2.02E+07	1.25	Y	1.15	1.13	-2%
123789-HxCDF	38.24	1.78E+07	1.27	Y	1.14	1.13	-1%
1234678-HpCDF	39.61	1.80E+07	1.03	Y	1.36	1.29	-5%
1234789-HpCDF	40.95	1.52E+07	1.09	Y	1.30	1.26	-3%
OCDF	43.23	2.19E+07	0.89	Y	1.03	1.05	2%
ES 2378-TCDD	28.21	3.93E+07	0.82	Y	1.03	1.05	2%
ES 12378-PeCDD	33.556	3.21E+07	1.58	Y	1.03	0.86	-17%
ES 123478-HxCDD	37.435	2.71E+07	1.27	Y	0.99	0.97	-2%
ES 123678-HxCDD	37.556	2.91E+07	1.28	Y	0.97	1.04	7%
ES 123789-HxCDD	37.862	3.39E+07	1.29	Y	1.12	1.21	8%
ES 1234678-HpCDD	40.49	2.71E+07	1.05	Y	0.99	0.97	-2%
ES OCDD	43.035	3.48E+07	0.90	Y	0.78	0.62	-20%
ES 2378-TCDF	27.347	5.57E+07	0.79	Y	1.08	1.10	1%
ES 12378-PeCDF	32.111	4.71E+07	1.56	Y	0.93	0.93	-1%
ES 23478-PeCDF	33.221	4.42E+07	1.61	Y	0.92	0.87	-6%
ES 123478-HxCDF	36.449	3.24E+07	0.54	Y	1.14	1.16	1%
ES 123678-HxCDF	36.587	3.91E+07	0.54	Y	1.30	1.40	8%
ES 234678-HxCDF	37.255	3.56E+07	0.51	Y	1.20	1.27	6%
ES 123789-HxCDF	38.221	3.17E+07	0.55	Y	1.14	1.13	0%
ES 1234678-HpCDF	39.594	2.79E+07	0.43	Y	0.95	1.00	5%
ES 1234789-HpCDF	40.939	2.41E+07	0.44	Y	0.85	0.86	2%
ES OCDF	43.216	4.19E+07	0.86	Y	0.93	0.75	-19%

Dioxin/Furan QC Summary		Acq'd: 16 Dec 2021 19:42 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_211216_DF_RB		UTP: 17-Dec-2021 09:57:36 PSW				Checkcode: 149-837-GMM	
Sample ID: SIL 25-347-1		Report: 17 Dec 2021 09:58 pw				Datafile: 211216R12	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.55	3.74E+07	0.76	Y	-	-	-
JS 1234-TCDF	25.98	5.08E+07	0.75	Y	-	-	-
JS 123467-HxCDD	37.75	1.40E+07	1.33	Y	-	-	-
CS 37Cl-2378-TCDD	28.23	4.34E+06	n/a	-	1.31	1.16	-11%
CS 12347-PeCDD	33.06	2.90E+07	1.62	Y	0.89	0.78	-13%
CS 12346-PeCDF	31.58	4.38E+07	1.59	Y	0.87	0.86	-1%
CS 123469-HxCDF	36.90	3.34E+07	0.53	Y	1.09	1.19	10%
CS 1234689-HpCDF	39.99	2.45E+07	0.45	Y	0.86	0.88	1%
~~SS 37Cl-2378-TCDD~~	~~28.23~~	~~4.34E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.10~~	~~-12%~~
~~SS 12347-PeCDD~~	~~33.06~~	~~2.90E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~0.90~~	~~5%~~
~~SS 12346-PeCDF~~	~~31.58~~	~~4.38E+07~~	~~1.59~~	~~Y~~	~~0.93~~	~~0.93~~	~~0%~~
~~SS 123469-HxCDF~~	~~36.90~~	~~3.34E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~0.85~~	~~2%~~
~~SS 1234689-HpCDF~~	~~39.99~~	~~2.45E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~0.88~~	~~-4%~~
~~OCDD-a~~	~~43.04~~	~~1.87E+06~~	~~1.89~~	~~N~~	~~0.87~~	~~0.86~~	~~-7%~~
~~OCDF-a~~	~~43.22~~	~~1.39E+06~~	~~2.29~~	~~Y~~	~~0.86~~	~~0.87~~	~~12%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211216R12 Analysis Date: 16-DEC-2021 19:42:14

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	8.02	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32 - 1.78	Y	48.3	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	48.4	38 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	49.7	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	44.5	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88 - 1.20	Y	48.9	43 - 58	Y
OCDD	M+2/M+4	0.88	0.76 - 1.02	Y	96.9	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	10.6	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	51.4	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.51	1.32 - 1.78	Y	54	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.19	1.05 - 1.43	Y	49.9	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	50.7	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	49.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	49.7	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	47.5	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.09	0.88 - 1.20	Y	48.5	43 - 58	Y
OCDF	M+2/M+4	0.89	0.76 - 1.02	Y	102	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 17 Dec 2021 09:58 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

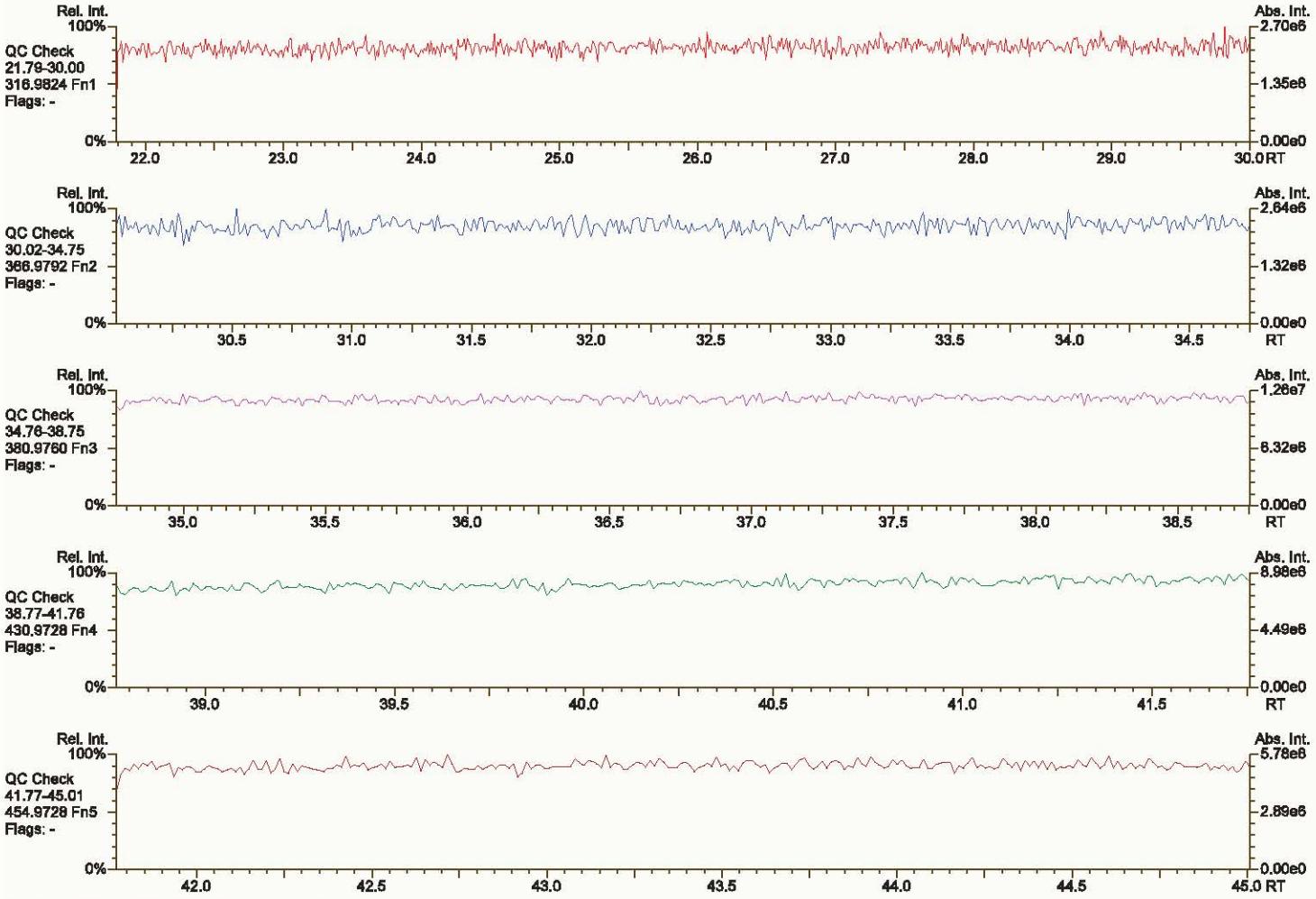
VER Data Filename: 211216R12 Analysis Date: 16-DEC-2021 19:42:14

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65 - 0.89	Y	102	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	82.9	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	97.5	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	107	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	108	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	97.9	72 - 138	Y
13C-OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	160	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	101	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	99.2	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32 - 1.78	Y	94.2	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	101	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	108	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43 - 0.59	Y	106	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.55	0.43 - 0.59	Y	99.6	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.43	0.37 - 0.51	Y	105	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37 - 0.51	Y	102	77 - 129	Y
13C-OCDF	M+2/M+4	0.86	0.76 - 1.02	Y	162	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				8.86	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.62	1.32 - 1.78	Y	86.8	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.59	1.32 - 1.78	Y	99.4	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	110	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.45	0.37 - 0.51	Y	101	70 - 130	Y

Processed: 17 Dec 2021 09:58 Analyst: pw

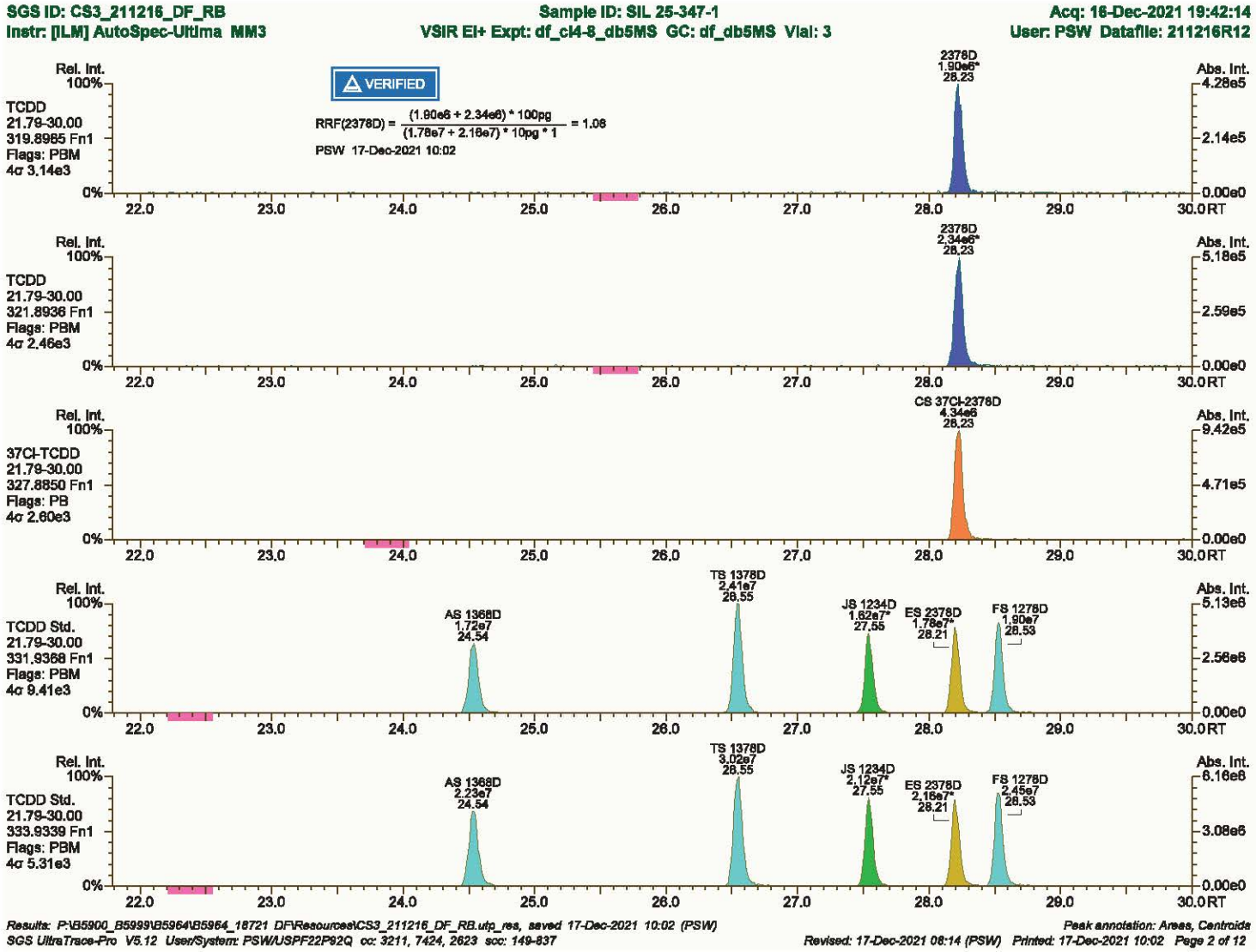
SGS ID: CS3_211216_DF_RB | Sample ID: SIL 25-347-1 | Acq: 16-Dec-2021 19:42:14

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 211216R12

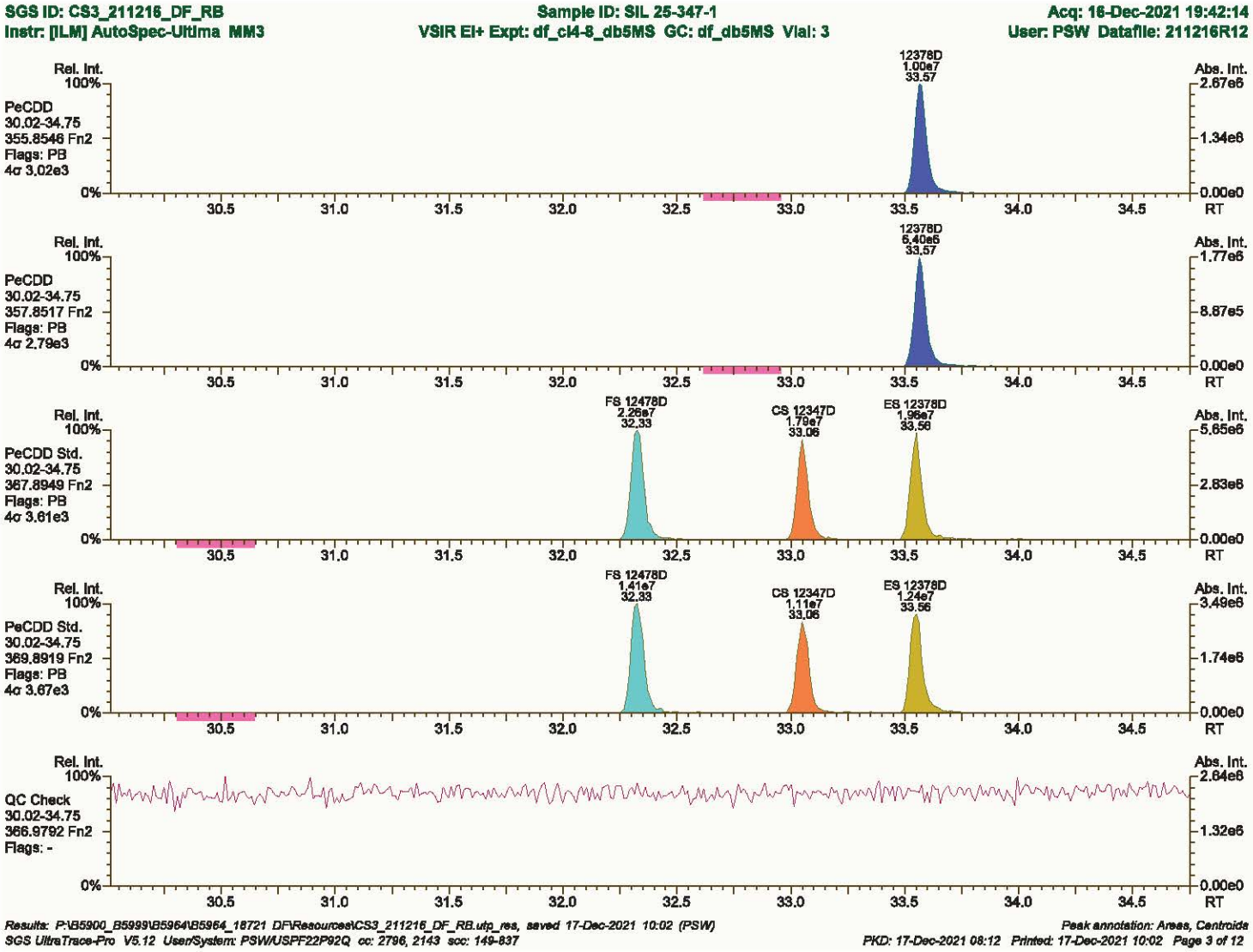


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\CS3_211216_DF_RB.utp_res, saved 17-Dec-2021 10:02 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 149-837 | *PKD: n/a Printed: 17-Dec-2021 10:02 Page 1 of 12*



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\CS3_211216_DF_RB.utp_res, saved 17-Dec-2021 10:02 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3211, 7424, 2623 scc: 149-837
Revised: 17-Dec-2021 08:14 (PSW) Printed: 17-Dec-2021 10:02 Page 2 of 12

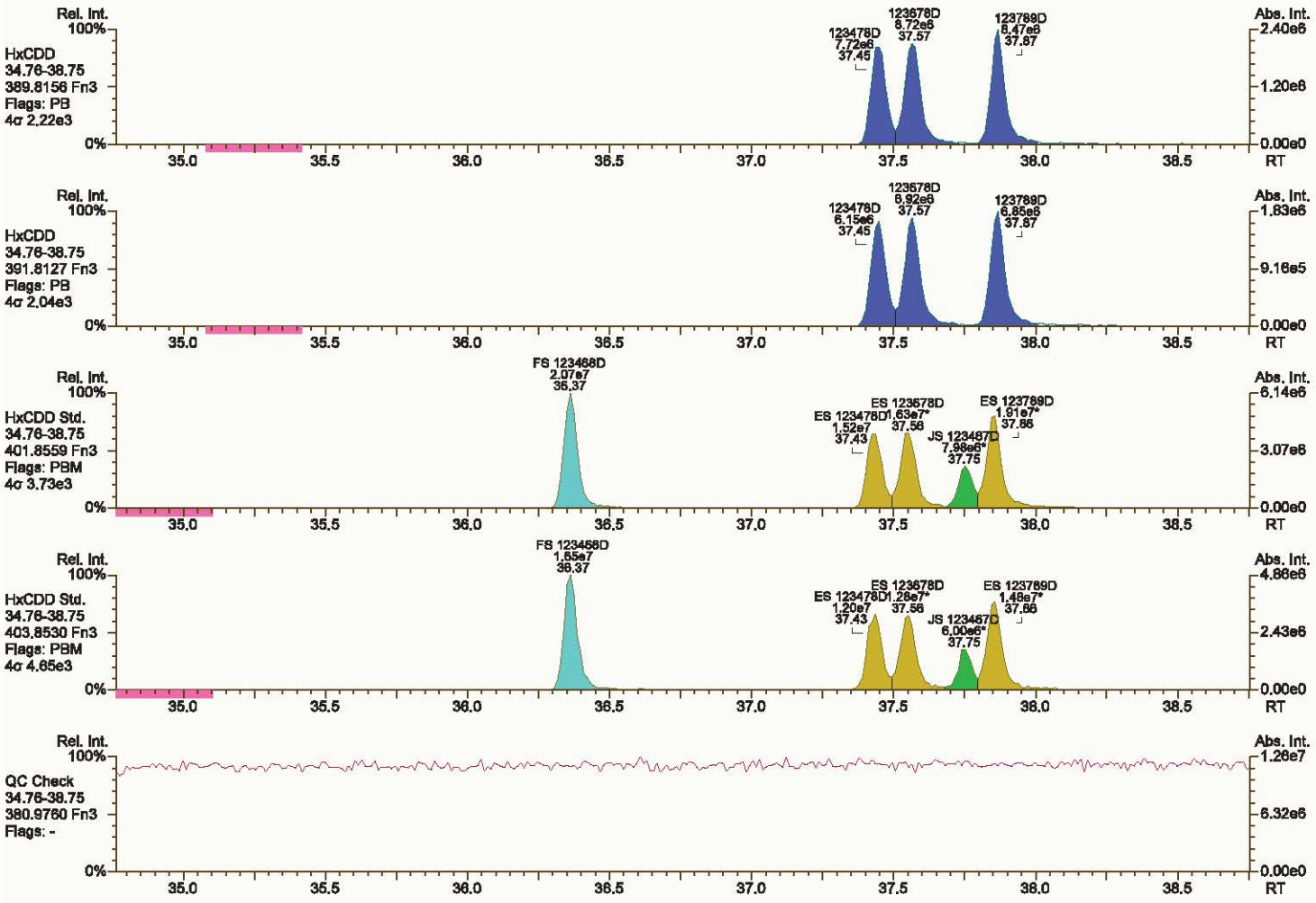


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\CS3_211216_DF_RB.utp_res, saved 17-Dec-2021 10:02 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 2796, 2143 scc: 149-837
PKD: 17-Dec-2021 08:12 Printed: 17-Dec-2021 10:02 Page 3 of 12

SGS ID: CS3_211216_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 16-Dec-2021 19:42:14
User: PSW Datafile: 211216R12



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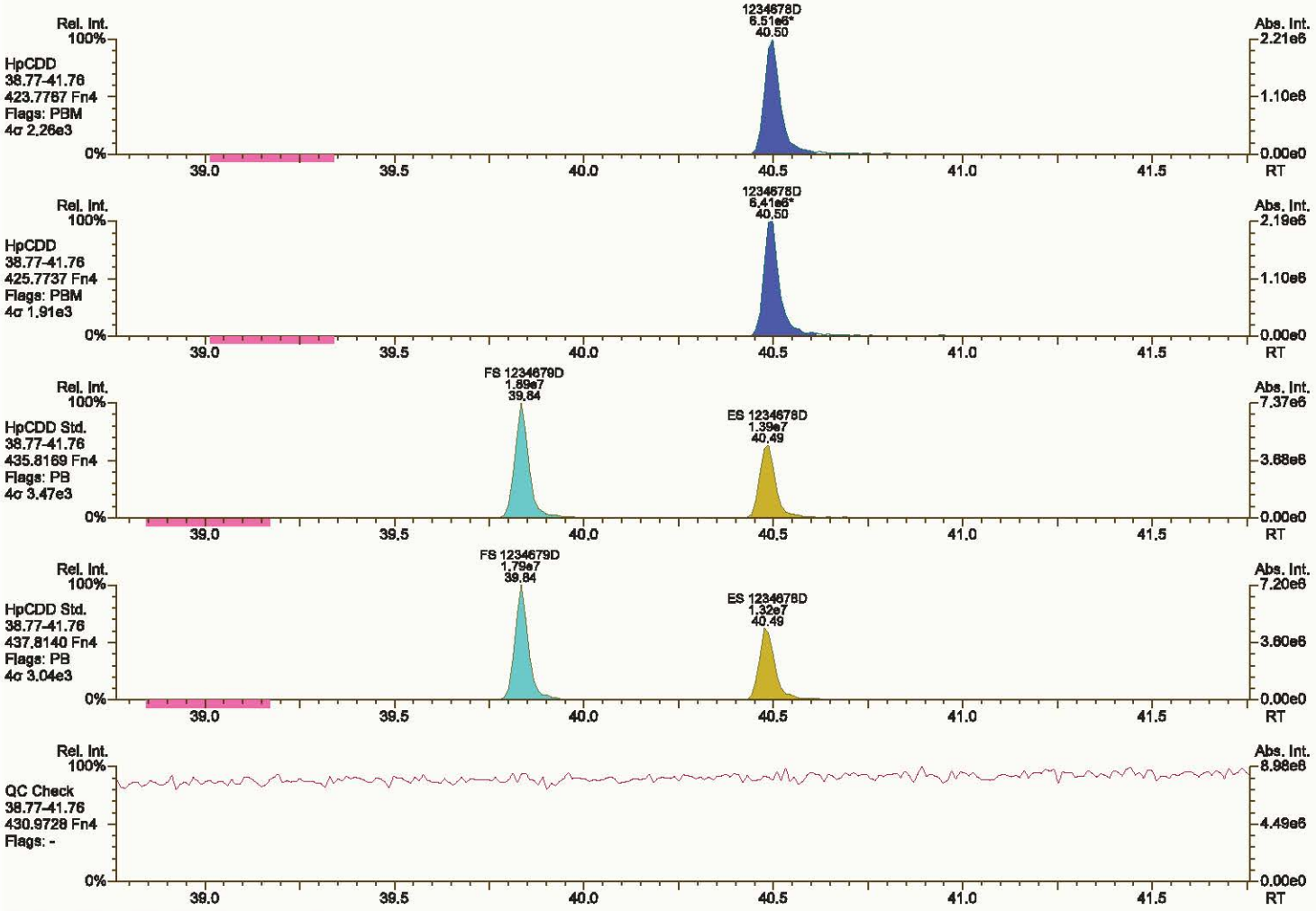
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 7503, 4036 scc: 149-837

Peak annotation: Areas, Centroids
Revised: 17-Dec-2021 08:12 (PSW) Printed: 17-Dec-2021 10:02 Page 4 of 12

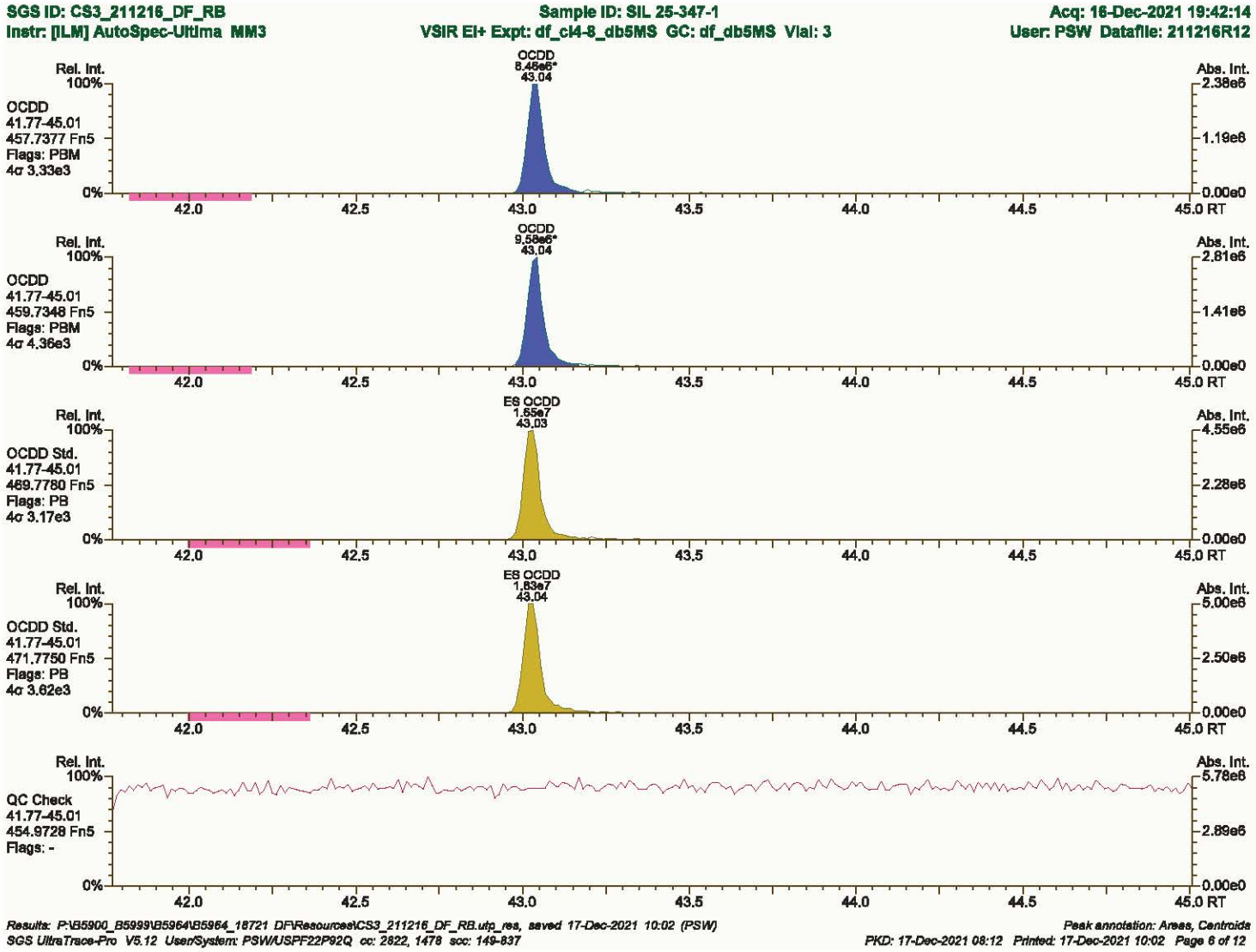
SGS ID: CS3_211216_DF_RB | Sample ID: SIL 25-347-1 | Acq: 16-Dec-2021 19:42:14

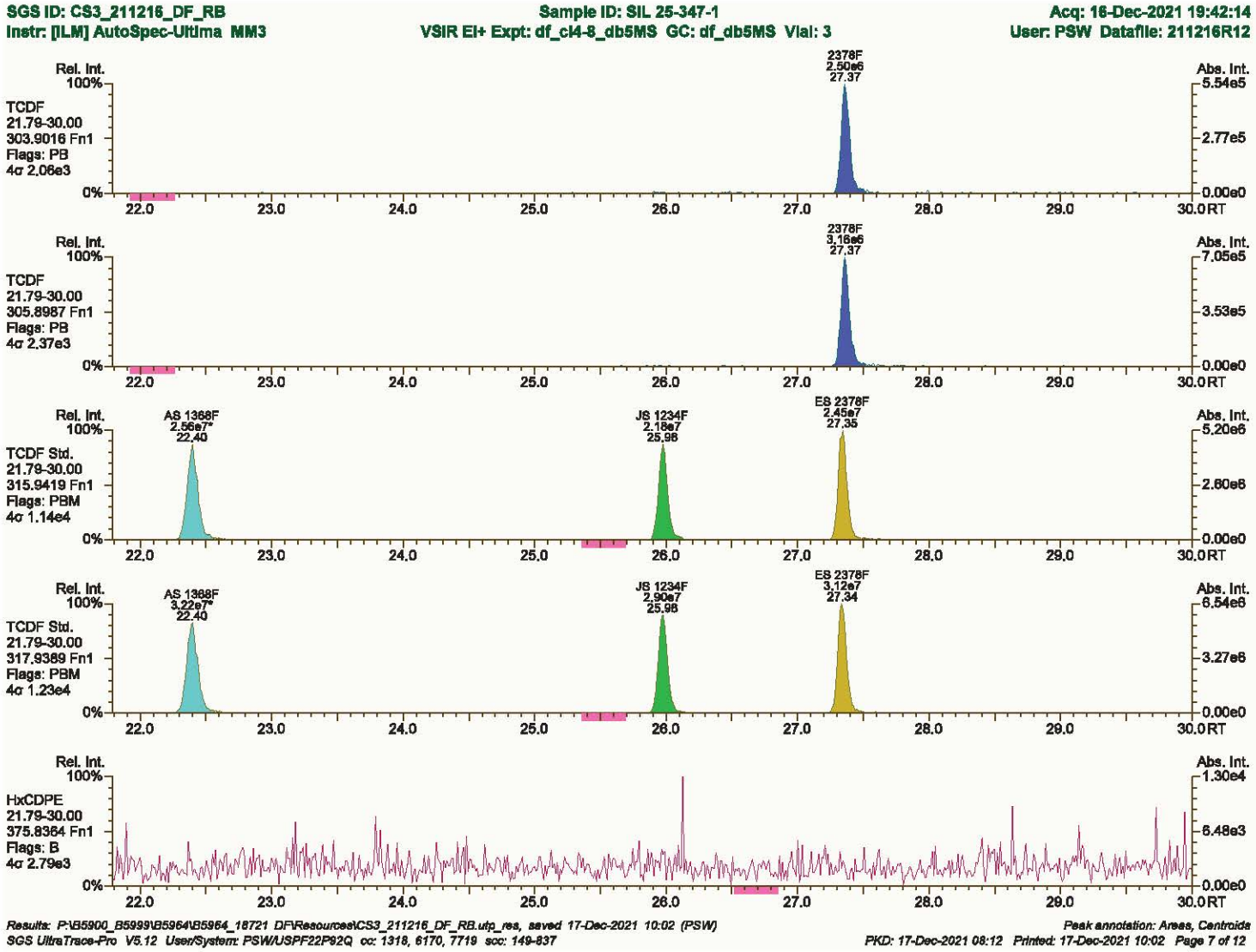
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 211216R12



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\CS3_211216_DF_RB.utp_res, saved 17-Dec-2021 10:02 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 4052, 2329 scc: 149-837 *PKD: 17-Dec-2021 08:12 Printed: 17-Dec-2021 10:02 Page 5 of 12*

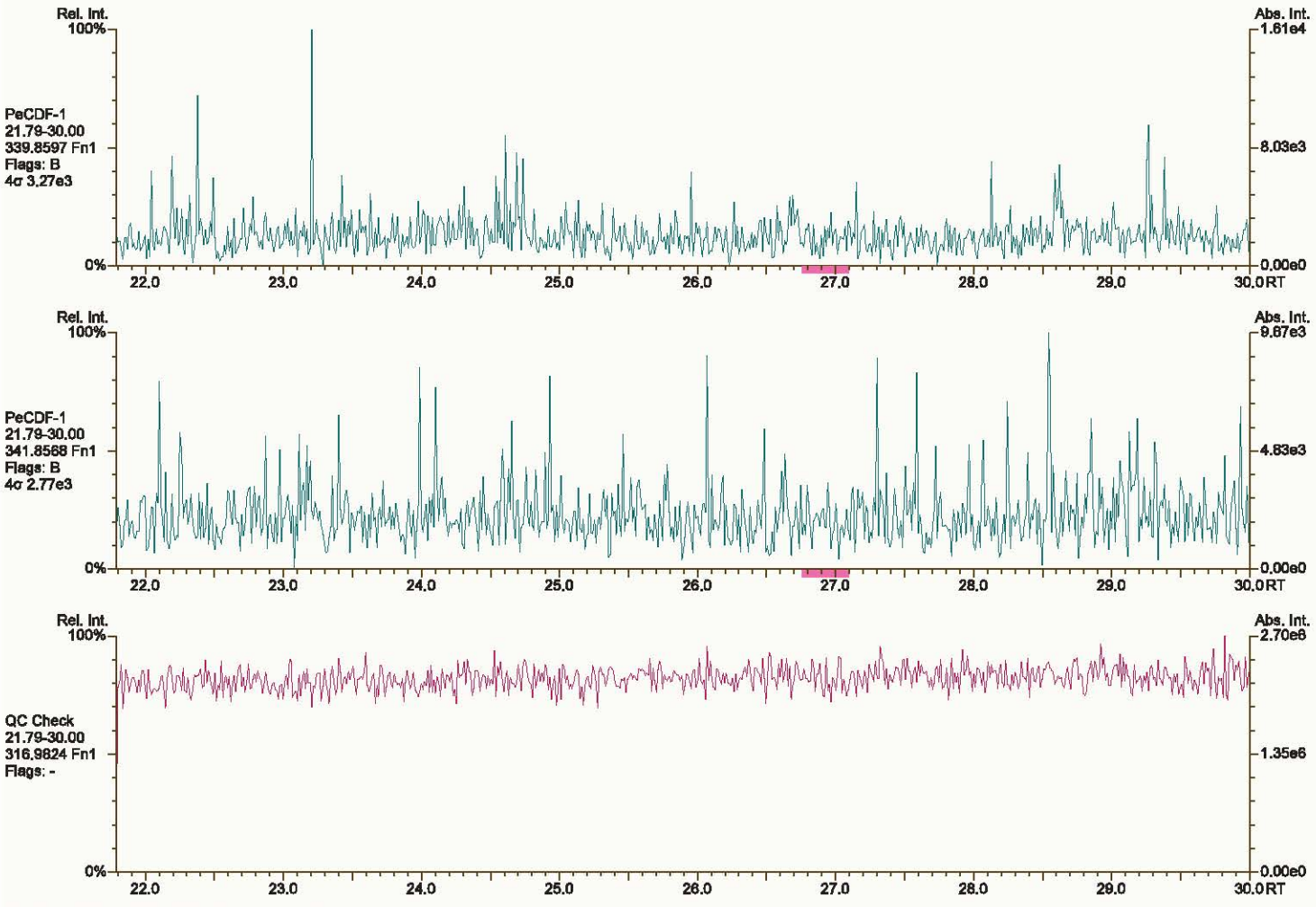

SGS ID: CS3_211216_DF_RB
Sample ID: SIL 25-347-1
Acq: 16-Dec-2021 19:42:14
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211216R12
Rel. Int.
Abs. Int.
OCDD
8.46e6*
43.04
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 3.33e3
2.38e6
1.19e6
0.00e0
OCDD
9.58e6*
43.04
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 4.36e3
2.81e6
1.41e6
0.00e0
ES OCDD
1.85e7
43.03
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 3.17e3
4.55e6
2.28e6
0.00e0
ES OCDD
1.83e7
43.04
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 3.62e3
5.00e6
2.50e6
0.00e0
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
5.78e6
2.89e6
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\CS3_211216_DF_RB.utp_res, saved 17-Dec-2021 10:02 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 2822, 1478 scc: 149-837
PKD: 17-Dec-2021 08:12 Printed: 17-Dec-2021 10:02 Page 6 of 12


SGS ID: CS3_211216_DF_RB
Sample ID: SIL 25-347-1
Acq: 16-Dec-2021 19:42:14
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211216R12
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 2.06e3
2378F
2.50e6
27.37
5.54e5
2.77e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 2.37e3
2378F
3.16e6
27.37
7.05e5
3.53e5
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 1.14e4
AS 1368F
2.56e7*
22.40
JS 1234F
2.18e7
25.98
ES 2378F
2.45e7
27.35
5.20e6
2.60e6
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.23e4
AS 1368F
3.22e7*
22.40
JS 1234F
2.90e7
25.98
ES 2378F
3.12e7
27.34
6.54e6
3.27e6
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.79e3
1.30e4
6.48e3
0%
100%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\CS3_211216_DF_RB.utp_res, saved 17-Dec-2021 10:02 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1318, 6170, 7719 scc: 149-837
PKD: 17-Dec-2021 08:12 Printed: 17-Dec-2021 10:02 Page 7 of 12

SGS ID: CS3_211216_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 16-Dec-2021 19:42:14
User: PSW Datafile: 211216R12



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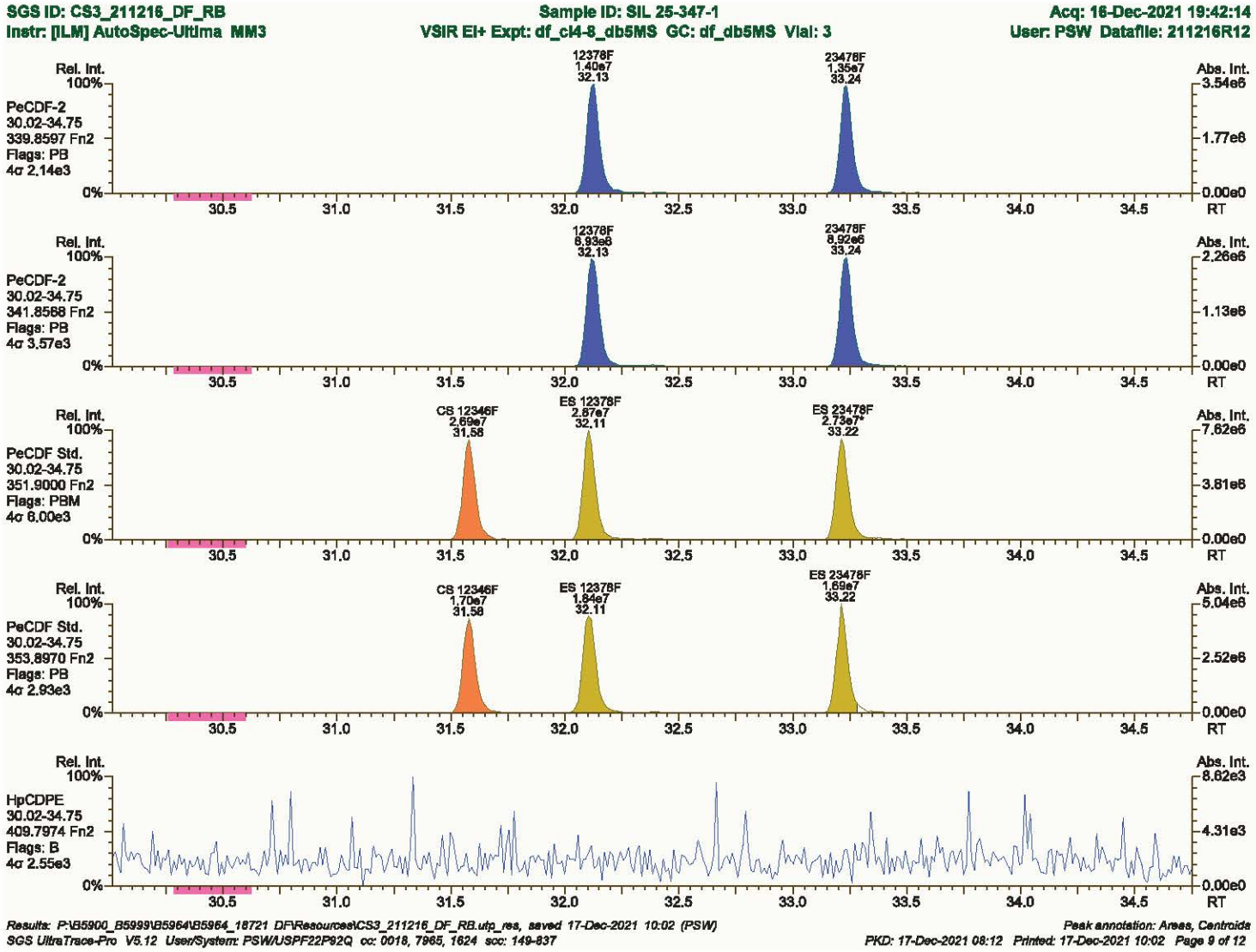
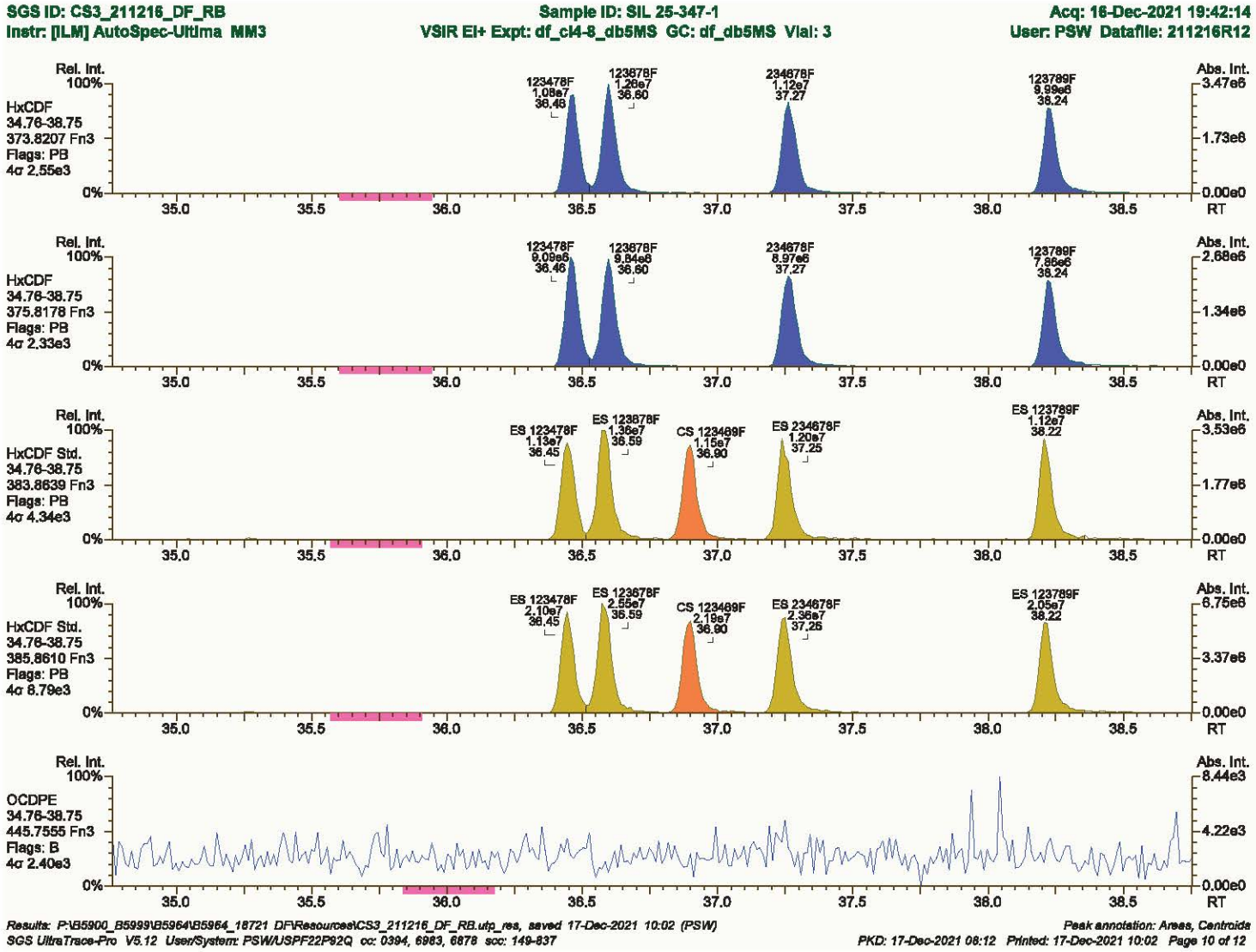
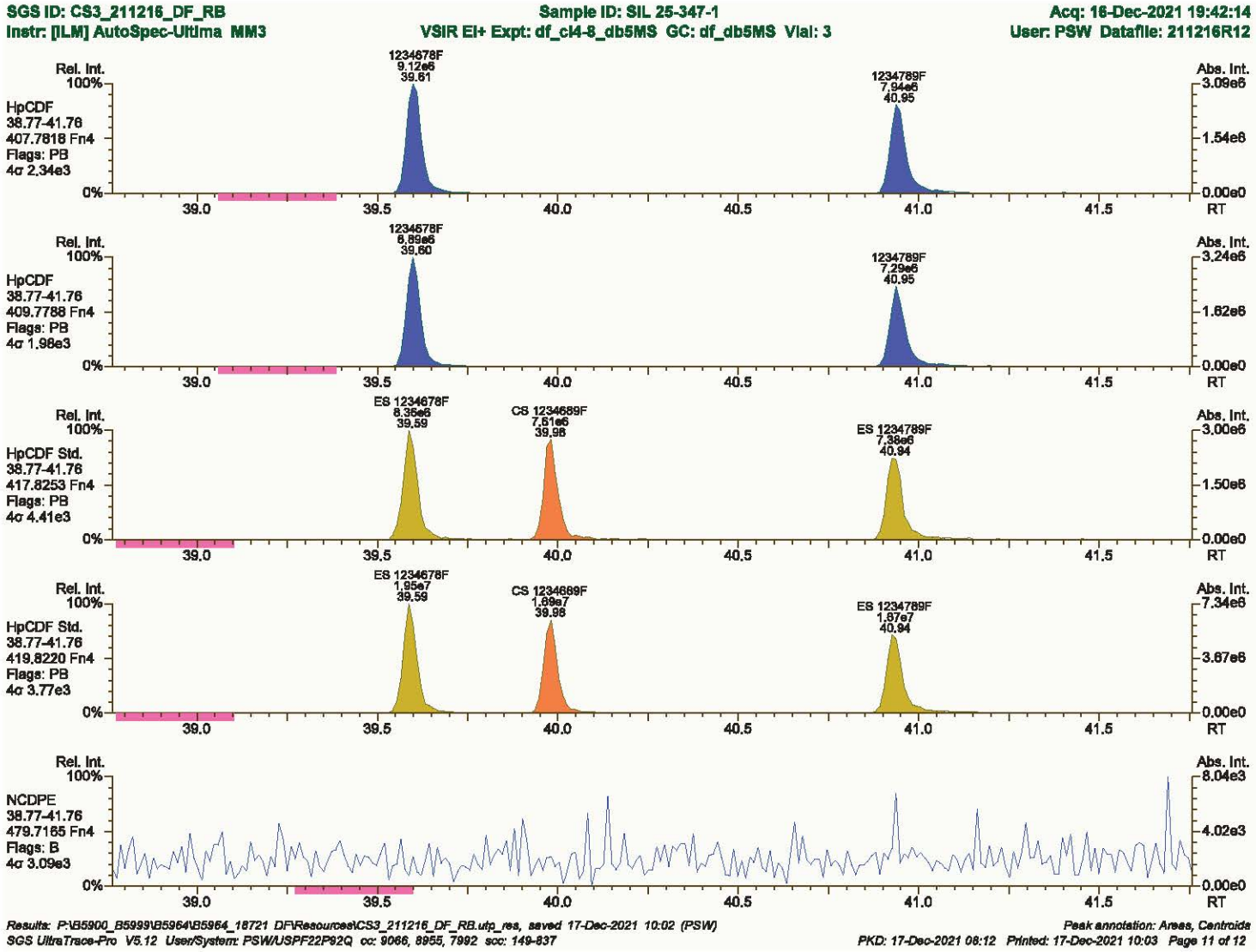
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1556 scc: 149-837
PKD: 17-Dec-2021 08:12 Printed: 17-Dec-2021 10:02 Page 8 of 12


SGS ID: CS3_211216_DF_RB
Sample ID: SIL 25-347-1
Acq: 16-Dec-2021 19:42:14
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211216R12
Rel. Int.
Abs. Int.
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 2.14e3
12378F
1.40e7
32.13
23478F
1.35e7
33.24
3.54e6
1.77e6
0.00e0
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 3.57e3
12378F
8.93e6
32.13
23478F
8.92e6
33.24
2.26e6
1.13e6
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 6.00e3
CS 12346F
2.69e7
31.58
ES 12378F
2.67e7
32.11
ES 23478F
2.73e7*
33.22
7.62e6
3.81e6
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 2.93e3
CS 12346F
1.70e7
31.58
ES 12378F
1.84e7
32.11
ES 23478F
1.69e7
33.22
5.04e6
2.52e6
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.55e3
8.62e3
4.31e3
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\CS3_211216_DF_RB.utp_res, saved 17-Dec-2021 10:02 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0018, 7965, 1624 scc: 149-837
PKD: 17-Dec-2021 08:12 Printed: 17-Dec-2021 10:02 Page 9 of 12


SGS ID: CS3_211216_DF_RB
Sample ID: SIL 25-347-1
Acq: 16-Dec-2021 19:42:14
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211216R12
Rel. Int.
Abs. Int.
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PB
4σ 2.55e3
123478F 1.08e7 36.46
123678F 1.26e7 36.60
234678F 1.12e7 37.27
123789F 9.99e6 38.24
3.47e6
1.73e6
0.00e0
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PB
4σ 2.33e3
123478F 9.09e6 36.46
123678F 9.84e6 36.60
234678F 8.97e6 37.27
123789F 7.86e6 38.24
2.68e6
1.34e6
0.00e0
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 4.34e3
ES 123478F 1.13e7 36.45
ES 123678F 1.36e7 36.59
CS 123489F 1.15e7 36.90
ES 234678F 1.20e7 37.25
ES 123789F 1.12e7 38.22
3.53e6
1.77e6
0.00e0
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 8.79e3
ES 123478F 2.10e7 36.45
ES 123678F 2.55e7 36.59
CS 123489F 2.19e7 36.90
ES 234678F 2.36e7 37.25
ES 123789F 2.05e7 38.22
6.75e6
3.37e6
0.00e0
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.40e3
8.44e3
4.22e3
0.00e0
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT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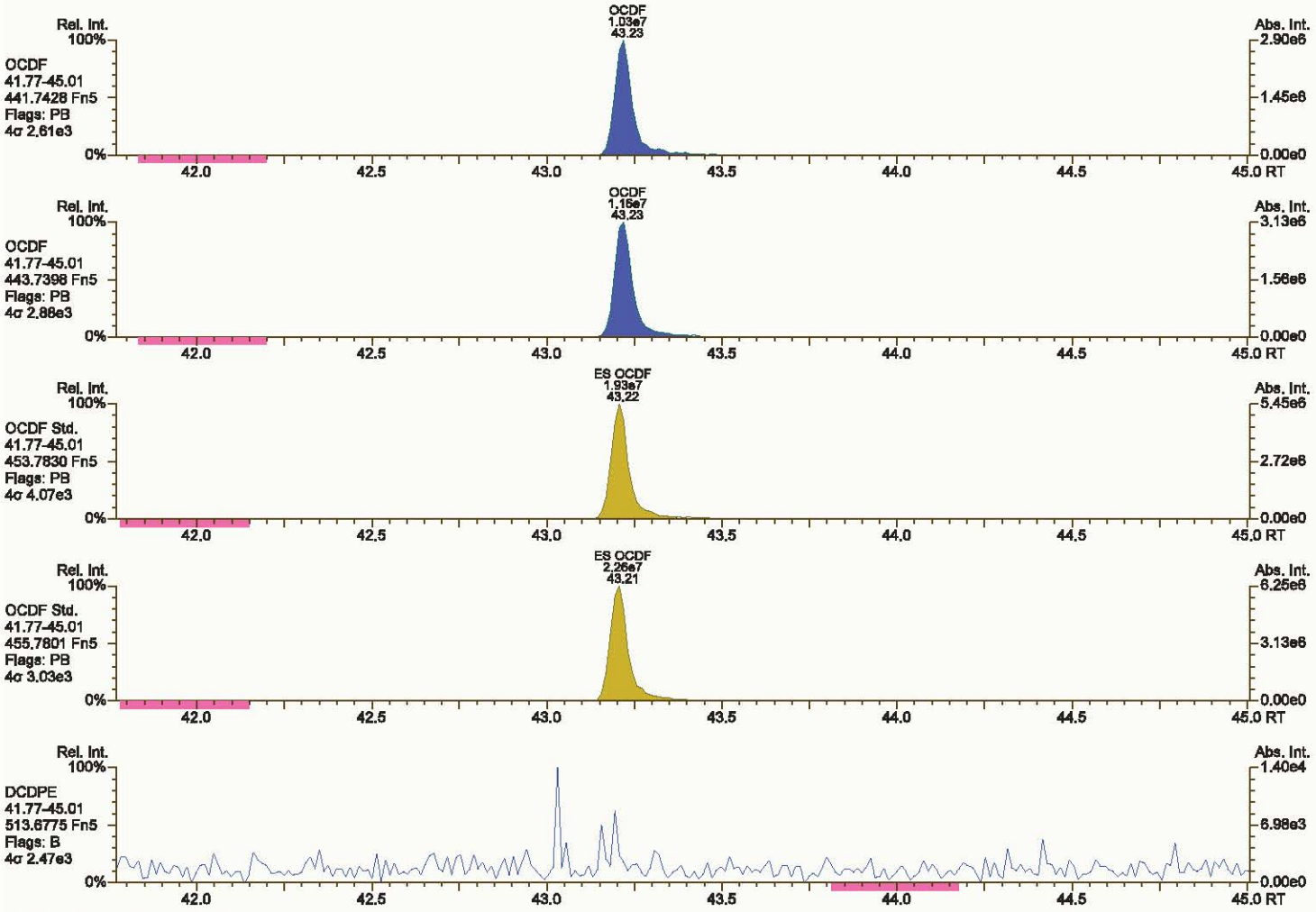
Sample ID: SIL 25-347-1
Acq: 16-Dec-2021 19:42:14
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211216R12
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 2.34e3
1234678F
9.12e6
39.61
1234789F
7.94e6
40.95
3.09e6
1.54e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 1.98e3
1234678F
6.89e6
39.60
1234789F
7.29e6
40.95
3.24e6
1.62e6
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 4.41e3
ES 1234678F
8.35e6
39.59
CS 1234689F
7.51e6
39.98
ES 1234789F
7.38e6
40.94
3.00e6
1.50e6
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 3.77e3
ES 1234678F
1.95e7
39.59
CS 1234689F
1.69e7
39.98
ES 1234789F
1.87e7
40.94
7.34e6
3.67e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.09e3
8.04e3
4.02e3
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\CS3_211216_DF_RB.utp_res, saved 17-Dec-2021 10:02 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9066, 8955, 7992 scc: 149-837
PKD: 17-Dec-2021 08:12 Printed: 17-Dec-2021 10:03 Page 11 of 12

SGS ID: CS3_211216_DF_RB | Sample ID: SIL 25-347-1 | Acq: 16-Dec-2021 19:42:14

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 211216R12



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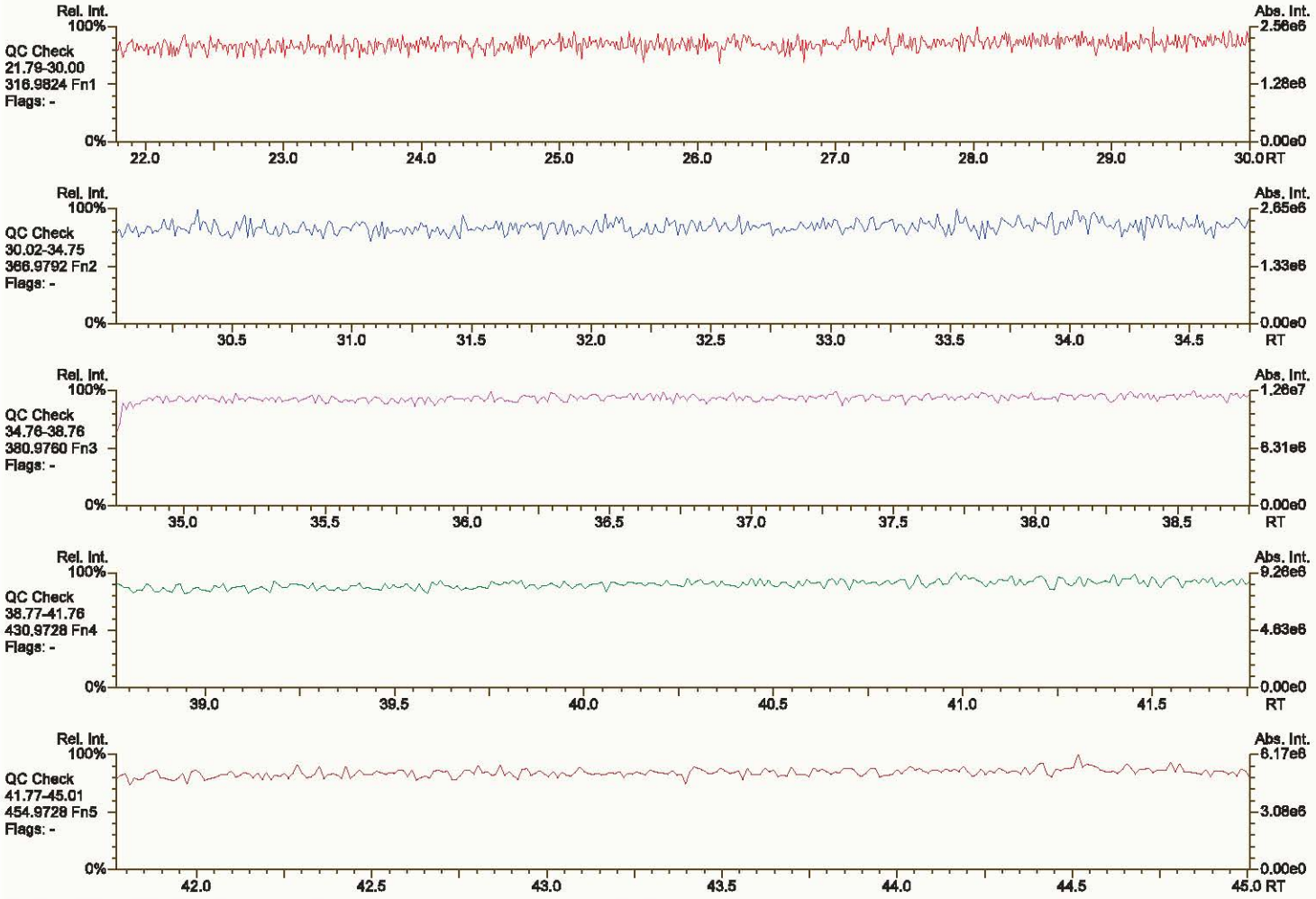
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4156, 8544, 7819 scc: 149-837 *PKD: 17-Dec-2021 08:12 Printed: 17-Dec-2021 10:03 Page 12 of 12*

SGS ID: SBS_211216_DF_RB | Sample ID: SIL 20-61-1 | Acq: 16-Dec-2021 21:16:19

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 211216R14



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\SBS_211216_DF_RB.utp_res, saved 17-Dec-2021 08:18 (PSW)

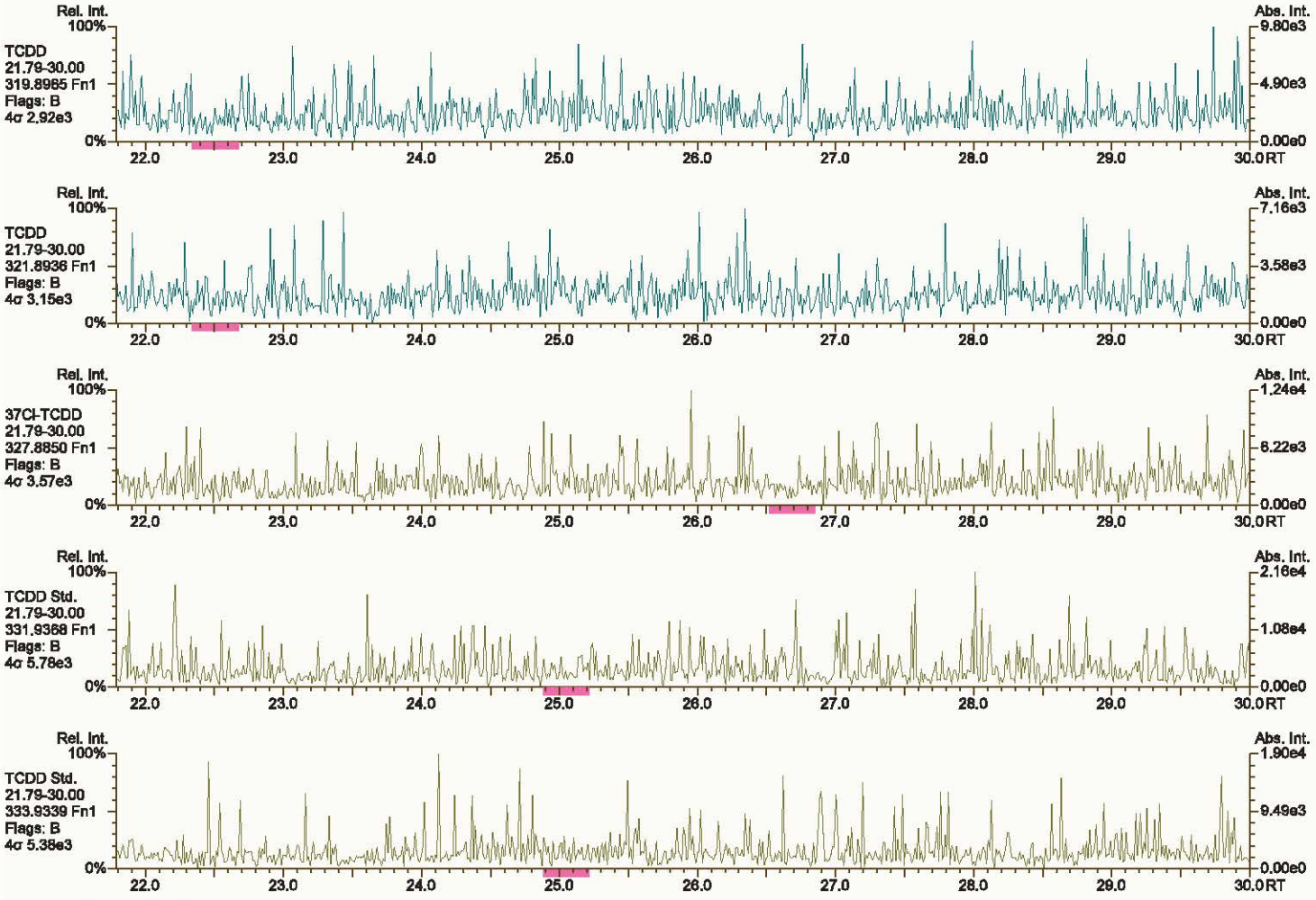
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 376-236

PKD: n/a Printed: 17-Dec-2021 10:03 Page 1 of 12

SGS ID: SBS_211216_DF_RB | Sample ID: SIL 20-61-1 | Acq: 16-Dec-2021 21:16:19

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 211216R14

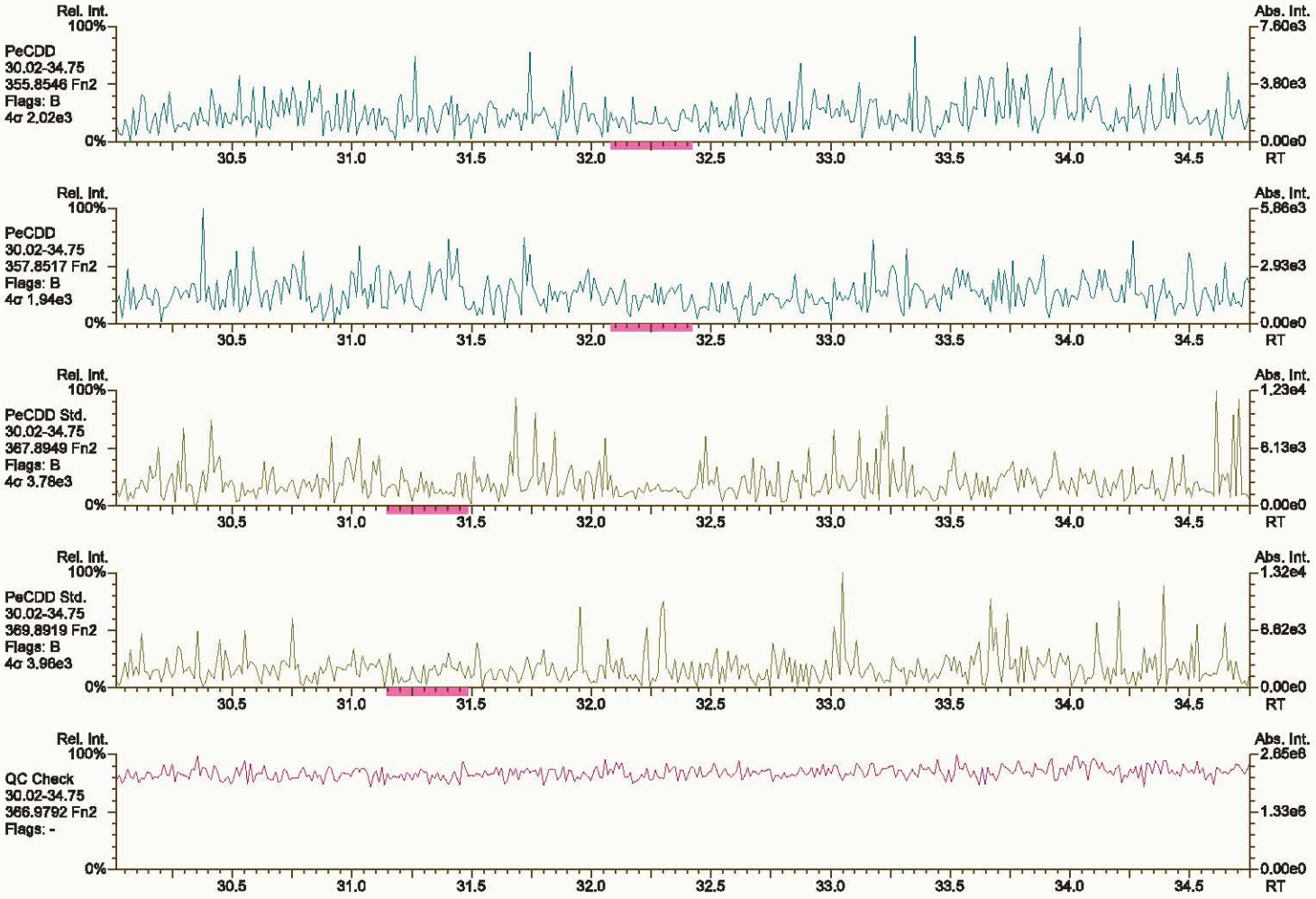


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\SBS_211216_DF_RB.utp_res, saved 17-Dec-2021 08:18 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7214, 0931, 0622 scc: 376-236 | *PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 2 of 12*

SGS ID: SBS_211216_DF_RB | Sample ID: SIL 20-61-1 | Acq: 16-Dec-2021 21:16:19

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 211216R14

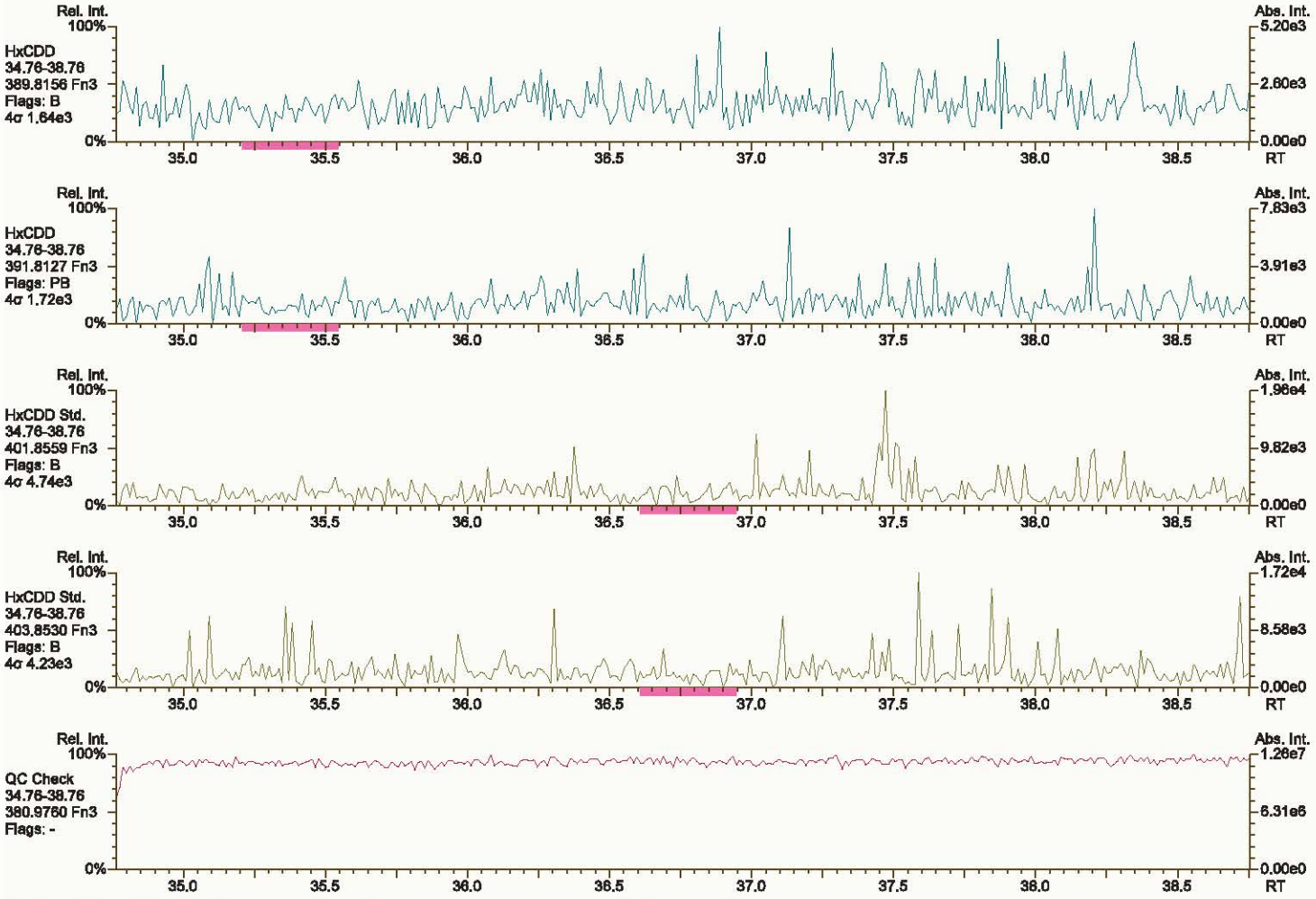


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\SBS_211216_DF_RB.utp_res, saved 17-Dec-2021 08:18 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 2886, 5668 scc: 376-236 *PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 3 of 12*

SGS ID: SBS_211216_DF_RB | Sample ID: SIL 20-61-1 | Acq: 16-Dec-2021 21:16:19

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 211216R14



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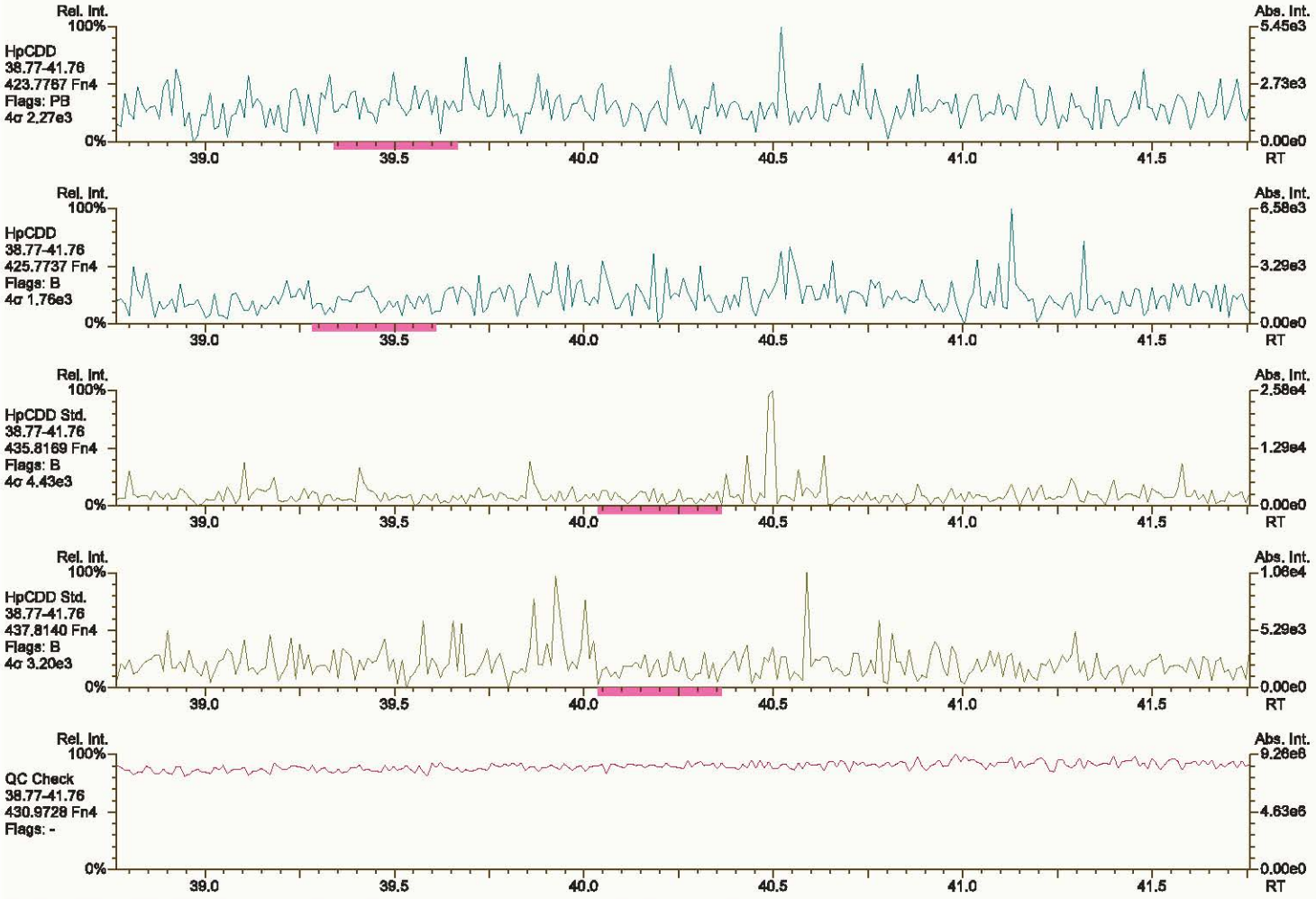
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 9687, 5619 scc: 376-236 | *PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 4 of 12*

SGS ID: SBS_211216_DF_RB | Sample ID: SIL 20-61-1 | Acq: 16-Dec-2021 21:16:19

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 211216R14



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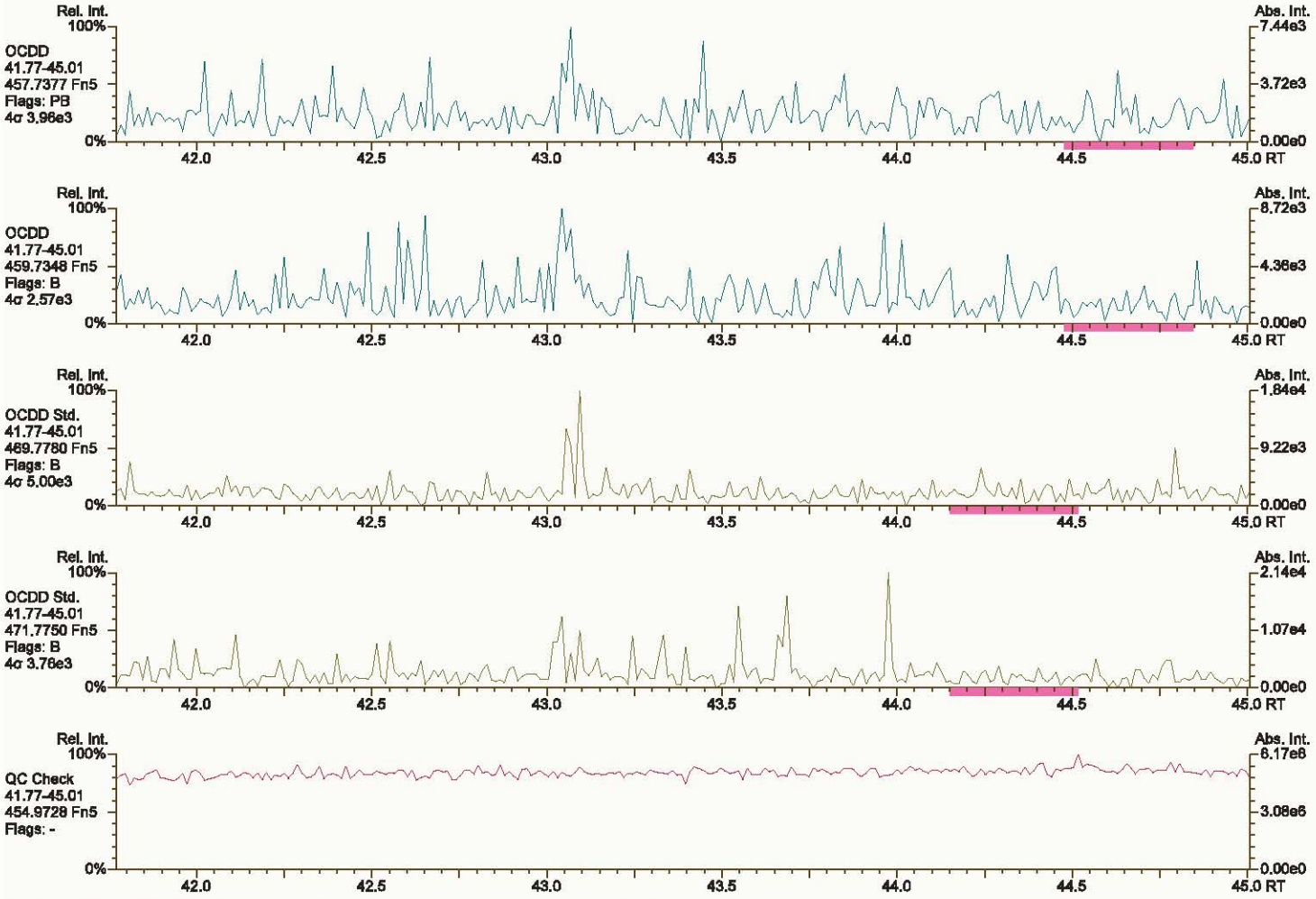
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 0972, 3453 scc: 376-236 | *PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 5 of 12*

SGS ID: SBS_211216_DF_RB | Sample ID: SIL 20-61-1 | Acq: 16-Dec-2021 21:16:19

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 211216R14

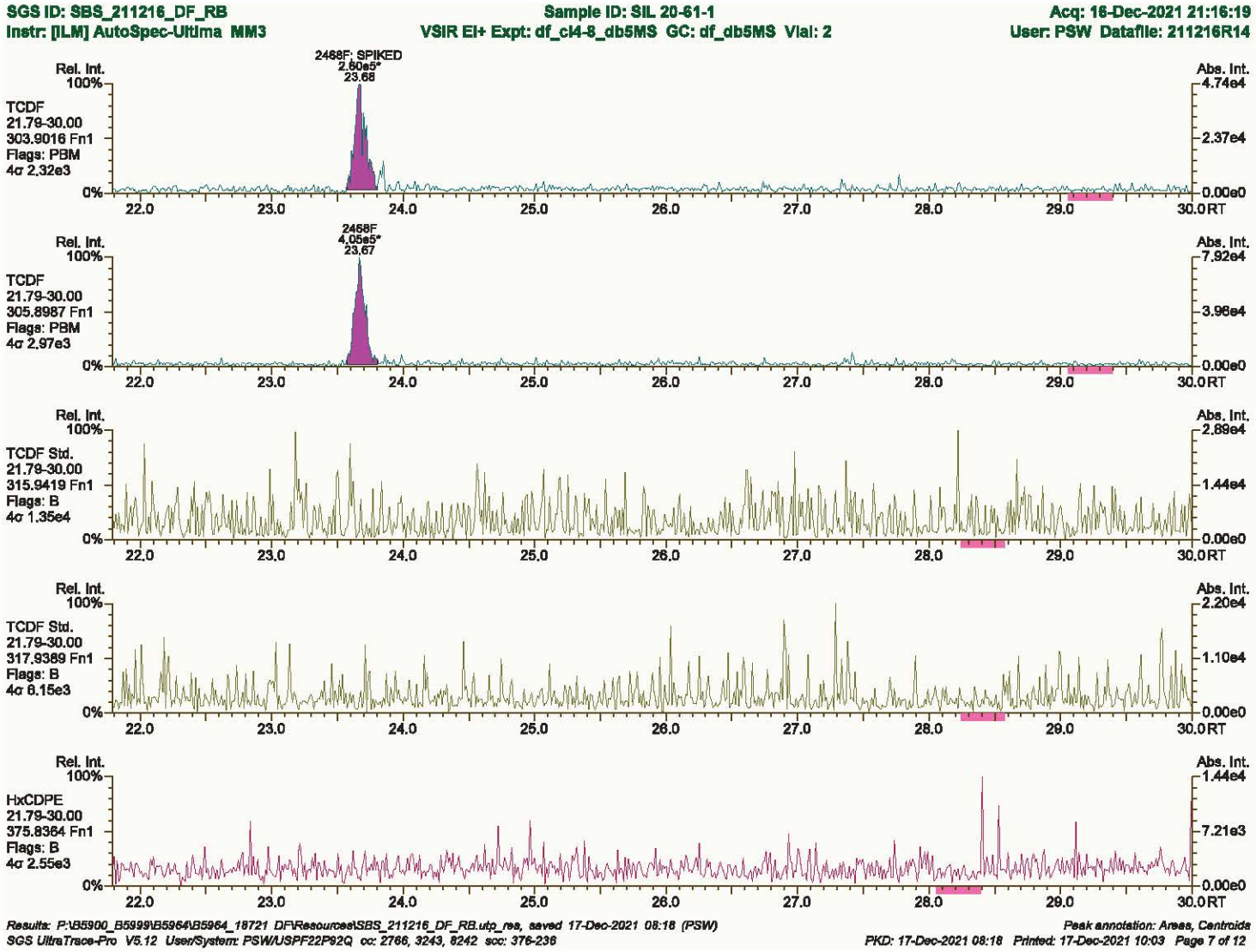


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\SBS_211216_DF_RB.utp_res, saved 17-Dec-2021 08:18 (PSW)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 9618, 3351 scc: 376-236

PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 6 of 12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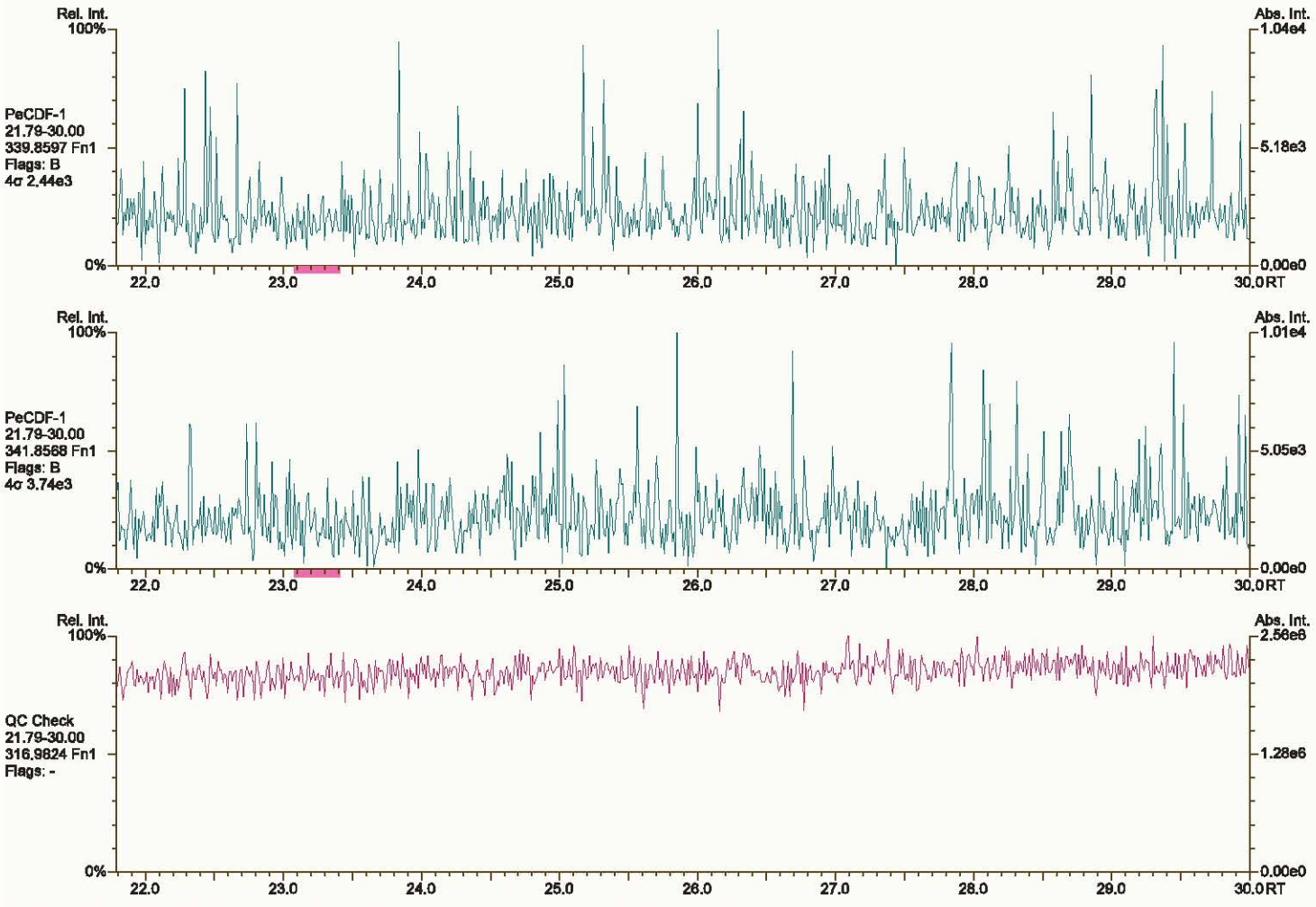
Sample ID: SIL 20-61-1
Acq: 16-Dec-2021 21:16:19
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
User: PSW Datafile: 211216R14
2468F: SPIKED
2.60e5*
23.68
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.32e3
2468F
4.05e5*
23.67
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 2.97e3
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: B
4σ 1.35e4
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: B
4σ 6.15e3
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.55e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\SBS_211216_DF_RB.utp_res, saved 17-Dec-2021 08:18 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2766, 3243, 8242 scc: 376-236
PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 7 of 12

SGS ID: SBS_211216_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 16-Dec-2021 21:16:19
User: PSW Datafile: 211216R14



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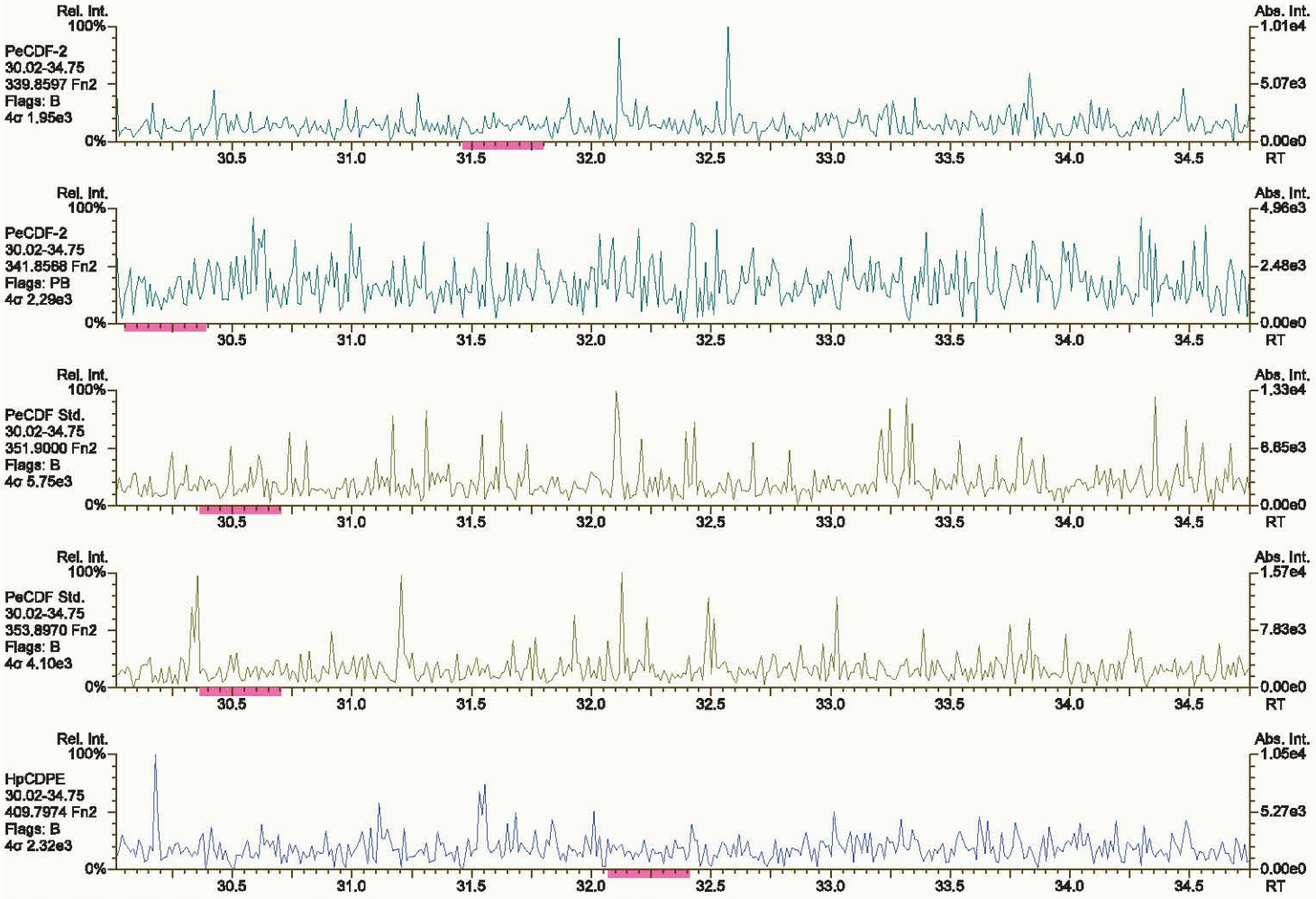
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5775 scc: 376-236
PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 8 of 12

SGS ID: SBS_211216_DF_RB | **Sample ID: SIL 20-61-1** | **Acq: 16-Dec-2021 21:16:19**

Instr: [ILM] AutoSpec-Ultima MM3 | **VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2** | **User: PSW Datafile: 211216R14**

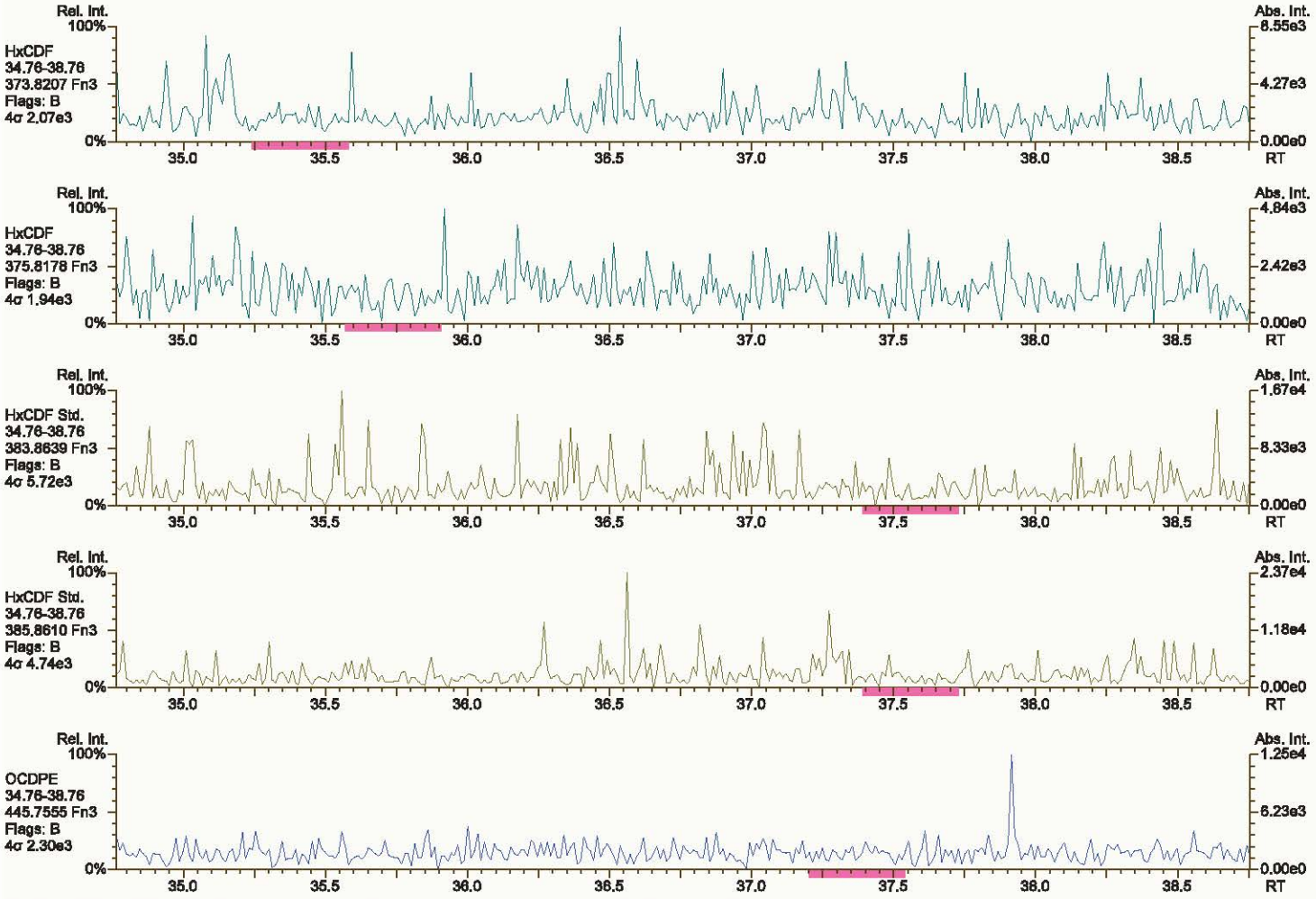


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\SBS_211216_DF_RB.utp_res, saved 17-Dec-2021 08:18 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7330, 4816, 7016 scc: 376-236 *PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 9 of 12*

SGS ID: SBS_211216_DF_RB | Sample ID: SIL 20-61-1 | Acq: 16-Dec-2021 21:16:19

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 211216R14



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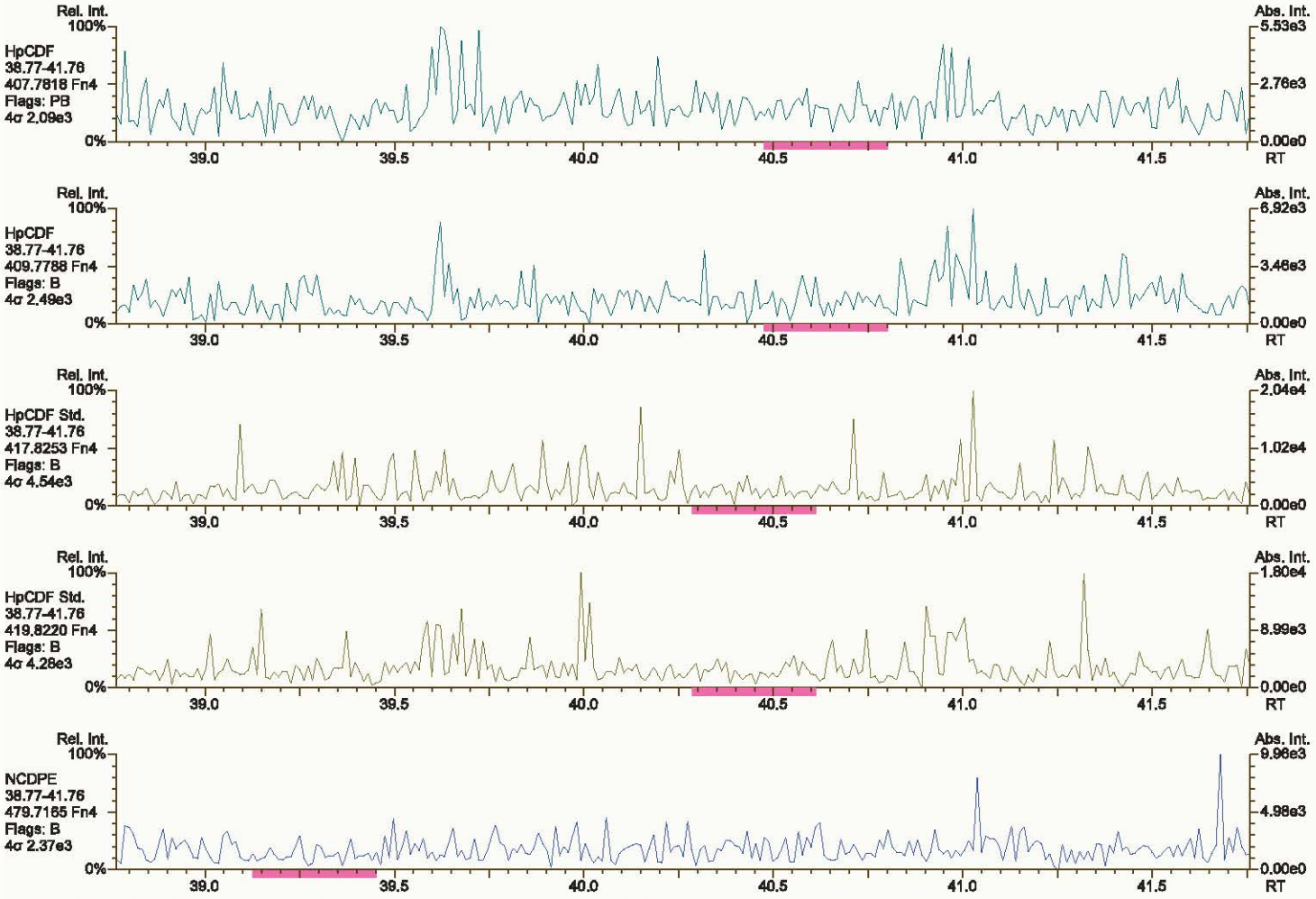
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9622, 6235, 3567 scc: 376-236 *PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 10 of 12*

SGS ID: SBS_211216_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 16-Dec-2021 21:16:19
User: PSW Datafile: 211216R14

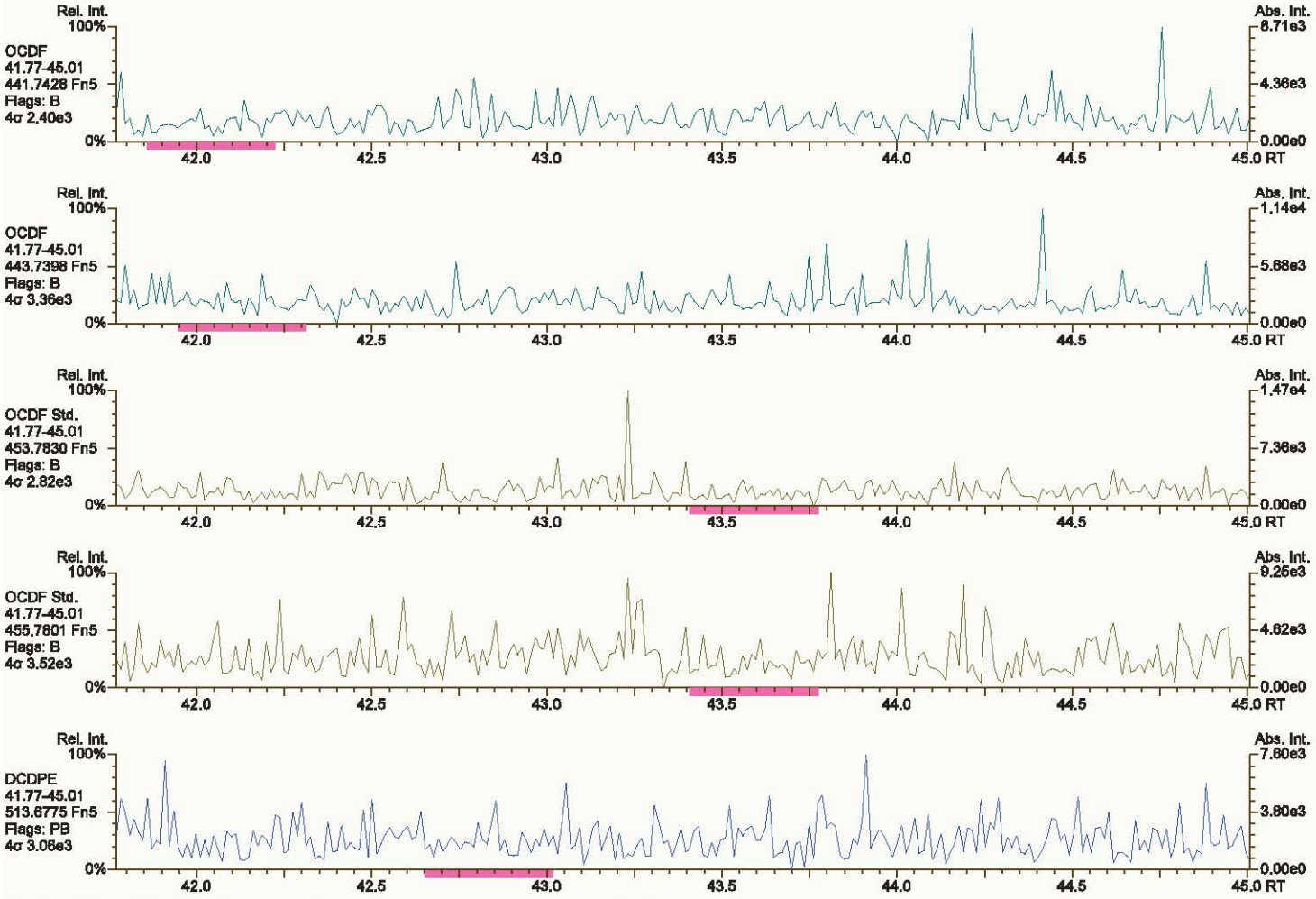


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\SBS_211216_DF_RB.utp_res, saved 17-Dec-2021 08:18 (PSW)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7486, 4575, 2344 scc: 376-236
PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 11 of 12

SGS ID: SBS_211216_DF_RB | Sample ID: SIL 20-61-1 | Acq: 16-Dec-2021 21:16:19

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 211216R14



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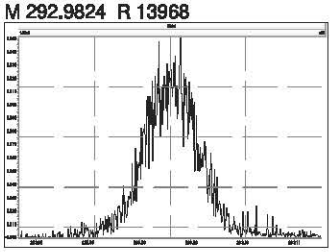
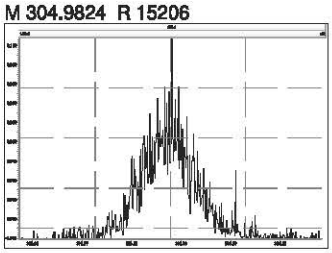
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9063, 8066, 9572 scc: 376-236 *PKD: 17-Dec-2021 08:18 Printed: 17-Dec-2021 10:03 Page 12 of 12*

Printed: Thursday, December 16, 2021 19:42:10 Eastern Standard Time

M 292.9824 R 13968



M 304.9824 R 15206



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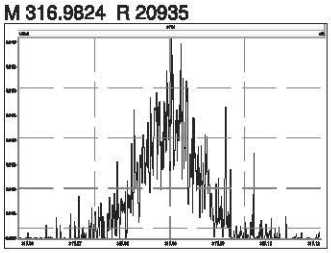
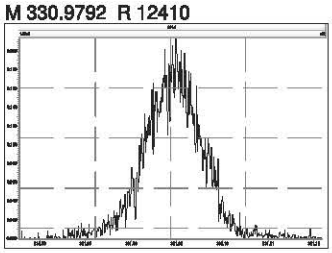
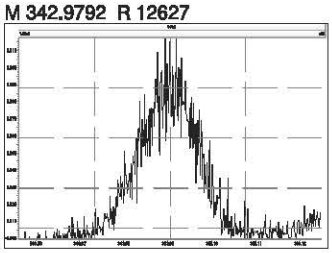


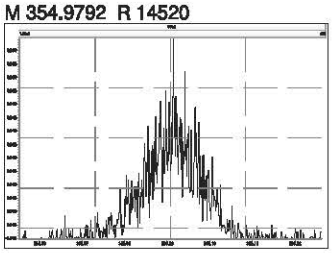
M 330.9792 R 12410



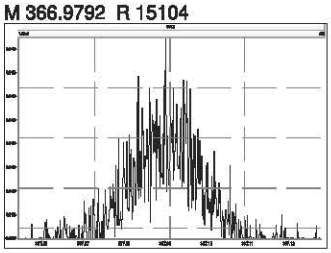
M 342.9792 R 12627



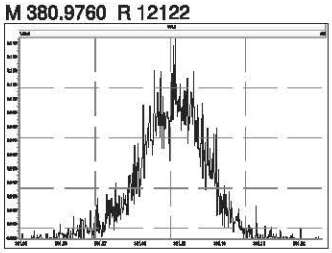
M 354.9792 R 14520



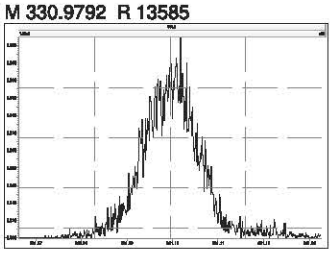
M 366.9792 R 15104



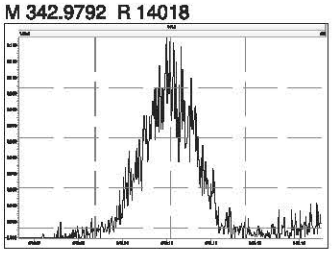
M 380.9760 R 12122



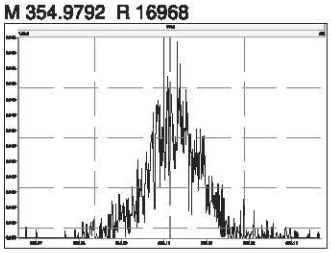
M 330.9792 R 13585



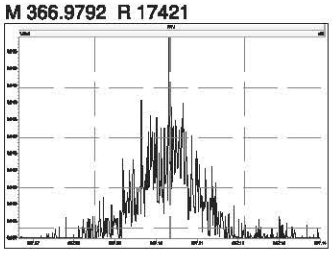
M 342.9792 R 14018



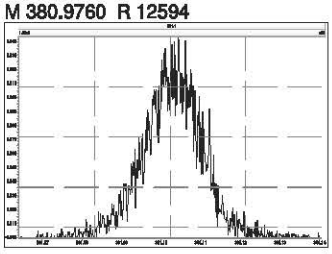
M 354.9792 R 16968



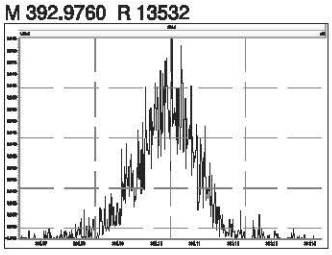
M 366.9792 R 17421



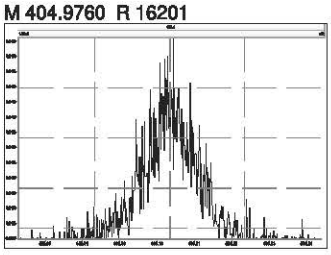
M 380.9760 R 12594



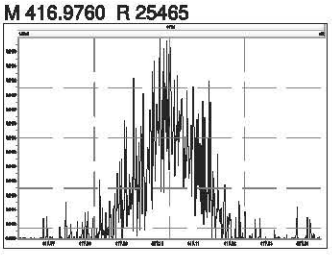
M 392.9760 R 13532



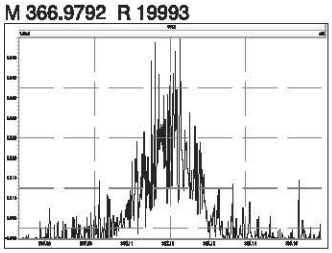
M 404.9760 R 16201



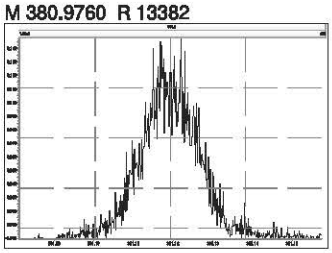
M 416.9760 R 25465



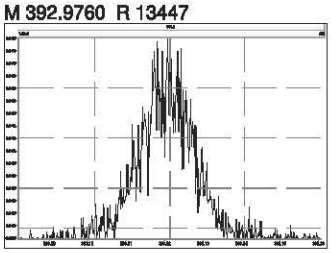
M 366.9792 R 19993



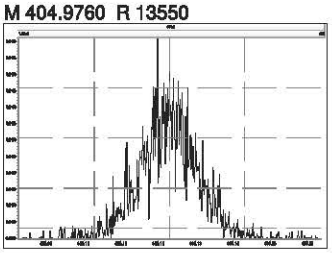
M 380.9760 R 13382



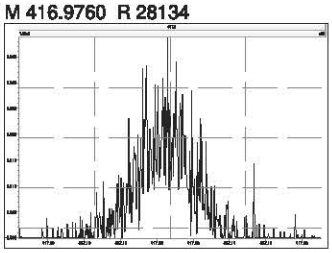
M 392.9760 R 13447



M 404.9760 R 13550



M 416.9760 R 28134



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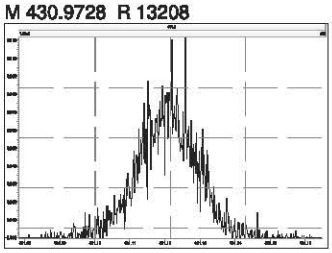

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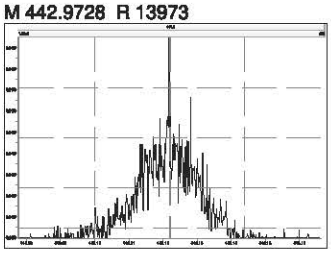

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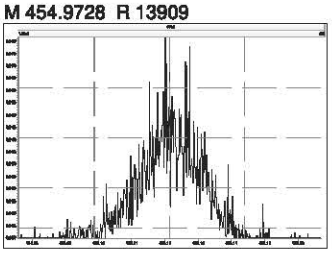

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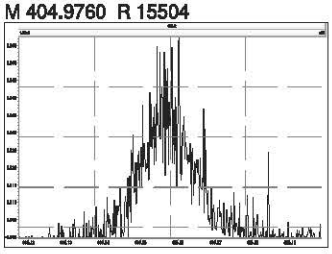

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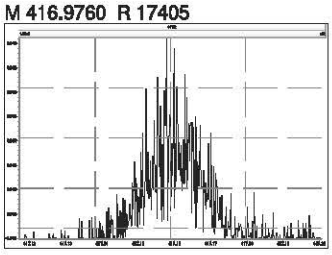

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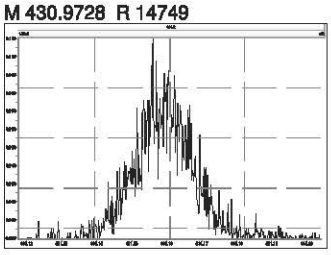

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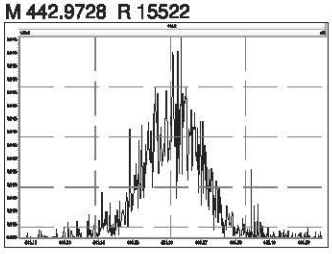

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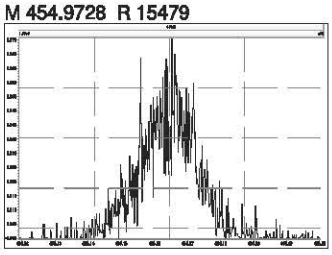

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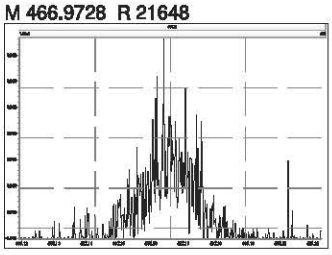

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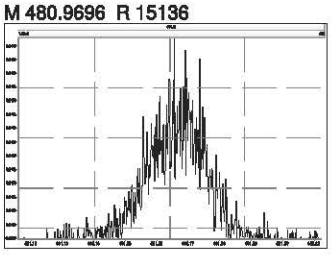

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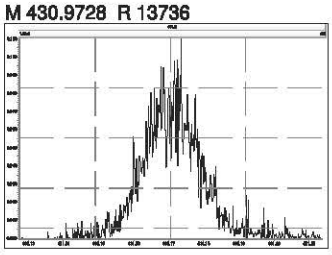

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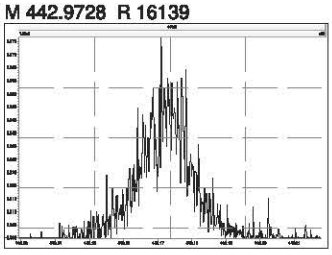

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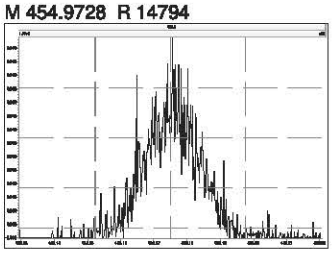

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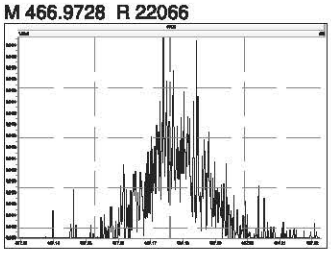

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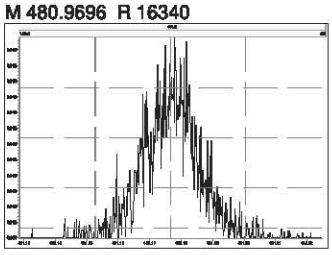

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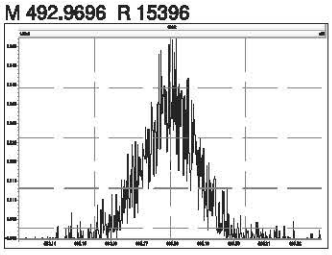

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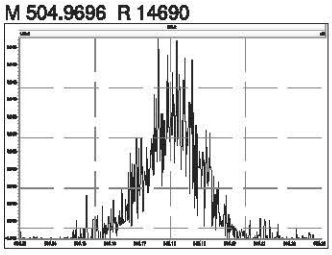

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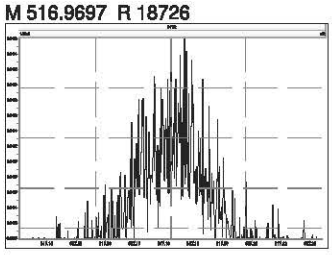

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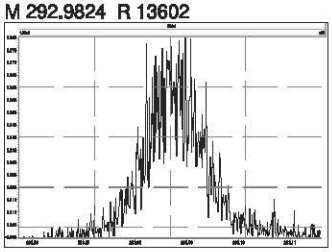

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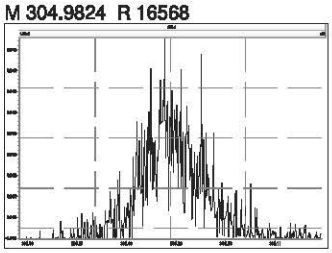

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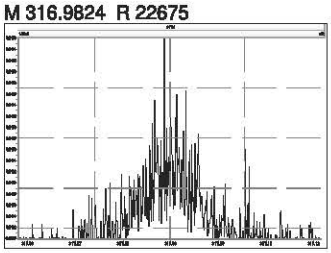

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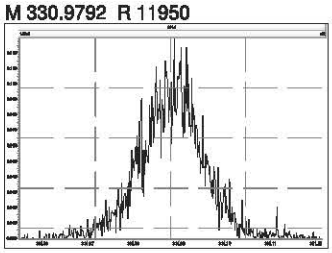

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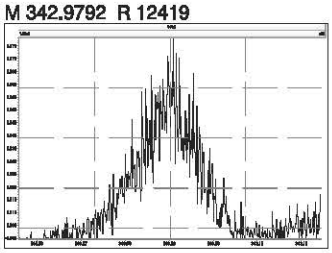

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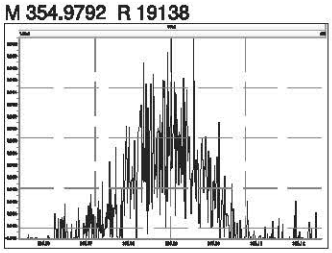

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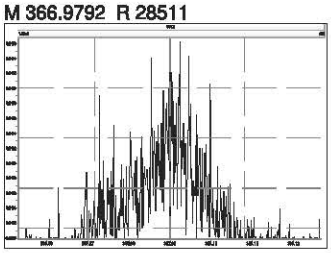

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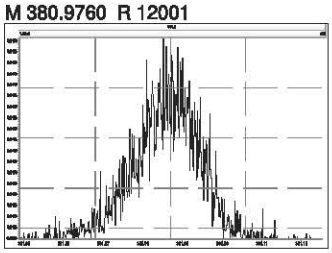

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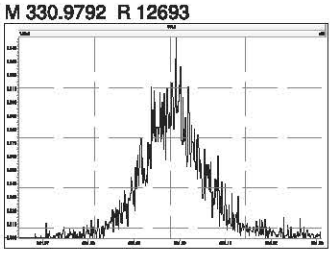

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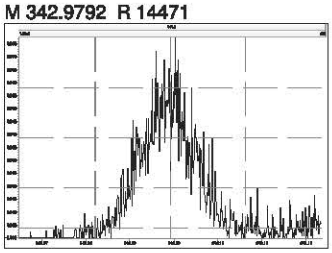

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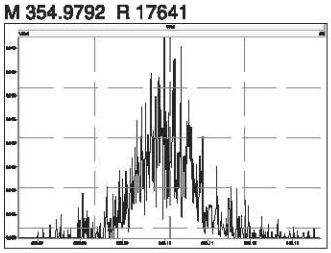

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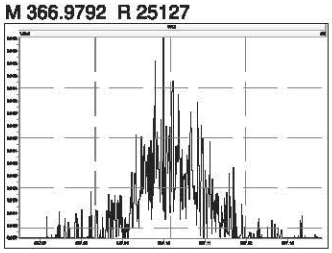

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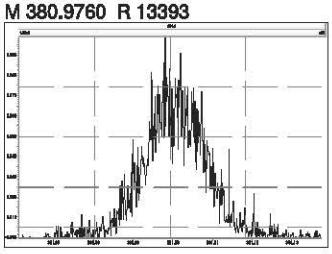

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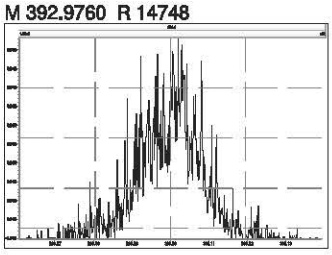

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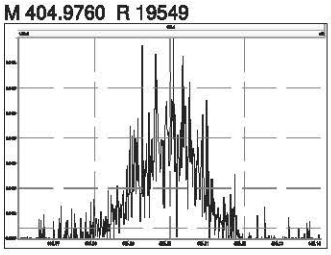

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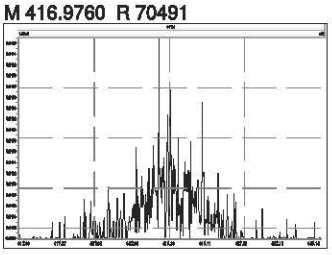

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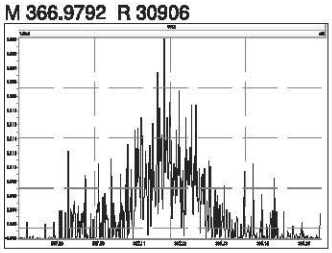

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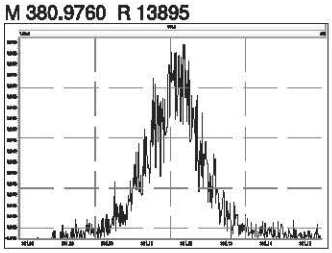

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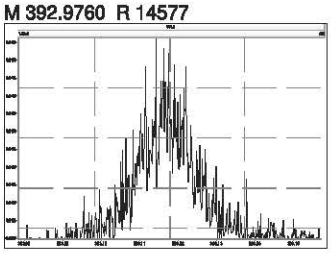

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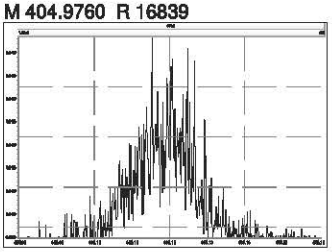

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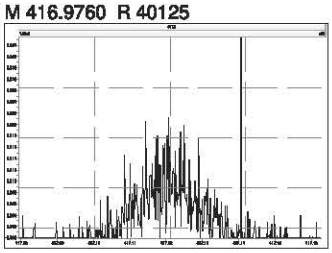

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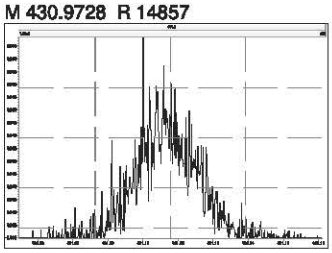

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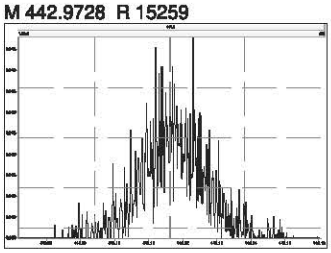

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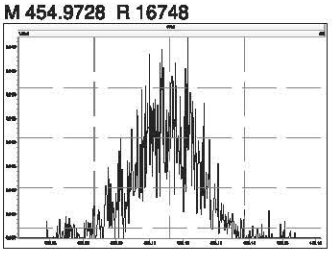

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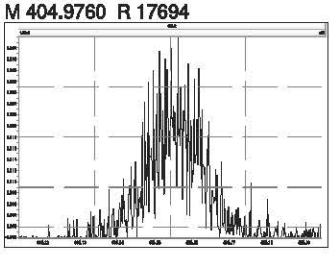

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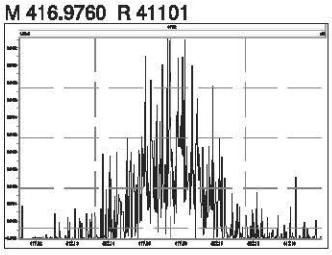

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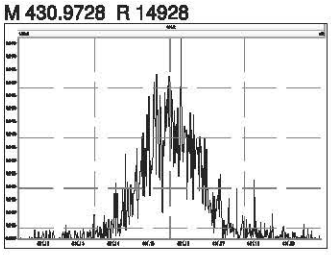

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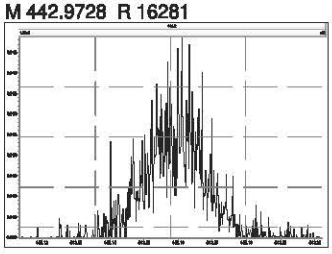

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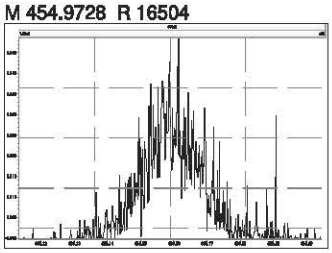

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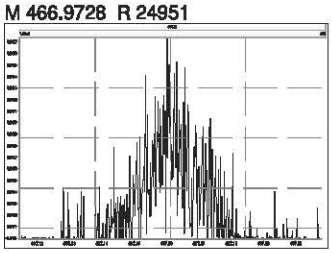

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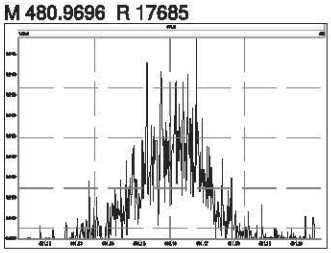

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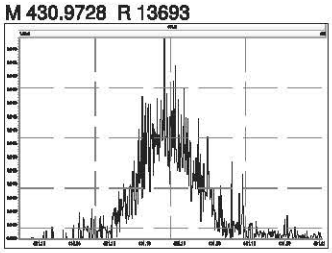

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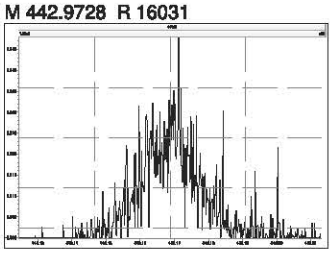

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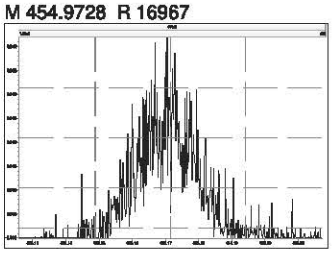

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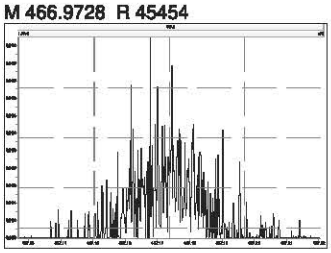
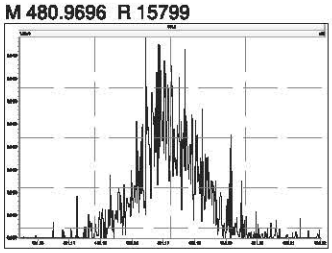
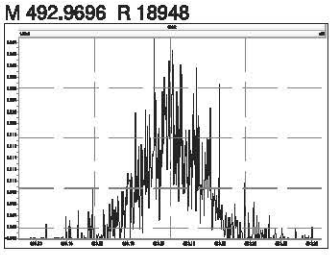


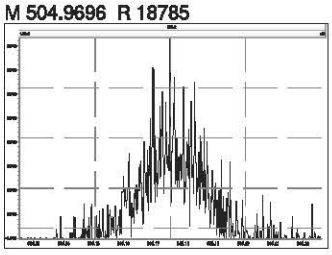
M 480.9696 R 15799



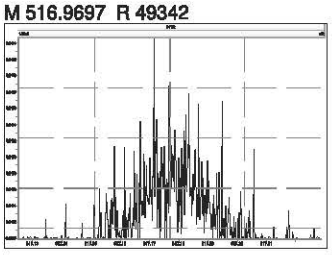
M 492.9696 R 18948



M 504.9696 R 18785



M 516.9697 R 49342



Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 0.25 pg/uL CS0	210727R03 0.5 pg/uL CS1	210727R04 2 pg/uL CS2	210727R05 10 pg/uL CS3	210727R06 40 pg/uL CS4	210727R07 200 pg/uL CS5	210727R08 500 pg/uL CS6
2378-TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
12378-PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
123478-HxCDD	1.06	3.3%	1.10	1.10	0.99	1.05	1.05	1.06	1.05
123678-HxCDD	1.08	2.9%	1.12	1.07	1.02	1.08	1.10	1.10	1.09
123789-HxCDD	1.02	4.8%	1.10	1.05	0.95	0.99	0.99	1.01	1.00
1234678-HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
OCDD	1.07	4.2%	1.15	1.04	1.01	1.07	1.08	1.06	1.08
2378-TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
12378-PeCDF	0.95	3.2%	1.00	0.94	0.90	0.94	0.95	0.93	0.96
23478-PeCDF	0.94	3.7%	0.99	0.90	0.90	0.92	0.93	0.96	0.96
123478-HxCDF	1.23	3.3%	1.32	1.23	1.19	1.22	1.24	1.24	1.22
123678-HxCDF	1.13	3.0%	1.17	1.16	1.07	1.10	1.13	1.14	1.14
234678-HxCDF	1.15	4.2%	1.23	1.19	1.08	1.14	1.13	1.15	1.15
123789-HxCDF	1.14	3.5%	1.19	1.08	1.09	1.14	1.14	1.15	1.16
1234678-HpCDF	1.36	3.6%	1.46	1.35	1.31	1.34	1.33	1.37	1.36
1234789-HpCDF	1.30	4.0%	1.34	1.20	1.26	1.34	1.30	1.35	1.33
OCDF	1.03	4.1%	1.01	1.01	0.95	1.03	1.05	1.06	1.08
ES 2378-TCDD	1.03	1.7%	1.02	1.02	1.02	1.05	1.06	1.04	1.02
ES 12378-PeCDD	1.03	3.5%	1.01	1.02	0.99	1.01	1.03	1.07	1.10
ES 123478-HxCDD	0.99	4.4%	0.97	0.93	0.99	1.00	0.98	1.03	1.07
ES 123678-HxCDD	0.97	5.2%	0.94	0.91	0.95	1.01	0.94	1.02	1.05
ES 123789-HxCDD	1.12	5.1%	1.09	1.04	1.12	1.14	1.09	1.17	1.22
ES 1234678-HpCDD	0.99	5.2%	0.95	0.92	0.98	1.02	0.97	1.05	1.06
ES OCDD	0.78	8.4%	0.73	0.71	0.74	0.77	0.75	0.85	0.89
ES 2378-TCDF	1.08	1.2%	1.06	1.08	1.07	1.09	1.09	1.08	1.10
ES 12378-PeCDF	0.93	2.7%	0.91	0.91	0.92	0.93	0.95	0.95	0.98
ES 23478-PeCDF	0.92	2.4%	0.90	0.91	0.90	0.93	0.93	0.93	0.96
ES 123478-HxCDF	1.14	5.9%	1.09	1.04	1.13	1.18	1.12	1.21	1.23
ES 123678-HxCDF	1.30	4.9%	1.24	1.21	1.27	1.35	1.27	1.36	1.37
ES 234678-HxCDF	1.20	4.9%	1.14	1.12	1.18	1.23	1.20	1.27	1.27
ES 123789-HxCDF	1.14	5.9%	1.06	1.07	1.11	1.16	1.12	1.20	1.24
ES 1234678-HpCDF	0.95	5.7%	0.90	0.88	0.92	0.98	0.94	1.00	1.03
ES 1234789-HpCDF	0.85	7.0%	0.79	0.78	0.82	0.86	0.83	0.90	0.94
ES OCDF	0.93	8.9%	0.86	0.83	0.88	0.93	0.90	1.01	1.06

Dioxin/Furan ICAL Summary			SGS North America					Processed: 27 Jul 2021 15:01	
ICAL: MM3_DF_10272021_27JUL2021									
Data Acquired: 27-Jul-2021			210727R02	210727R03	210727R04	210727R05	210727R06	210727R07	210727R08
			0.25	0.5	2	10	40	200	500
			pg/uL	pg/uL	pg/uL	pg/uL	pg/uL	pg/uL	pg/uL
Name	Mean	% RSD	CS0	CS1	CS2	CS3	CS4	CS5	CS6
CS 37Cl-2378-TCDD	1.31	2.3%	-	1.32	1.27	1.30	1.31	1.35	-
CS 12347-PeCDD	0.89	2.1%	0.89	0.91	0.88	0.87	0.93	0.88	0.89
CS 12346-PeCDF	0.87	1.7%	0.86	0.88	0.86	0.89	0.88	0.86	0.85
CS 123469-HxCDF	1.09	2.8%	1.06	1.04	1.08	1.14	1.09	1.12	1.09
CS 1234689-HpCDF	0.86	3.3%	0.86	0.84	0.86	0.92	0.86	0.86	0.84
SS 37Cl-2378-TCDD	1.26	2.3%	-	1.29	1.25	1.24	1.23	1.29	-
SS 12347-PeCDD	0.86	4.0%	0.88	0.89	0.89	0.86	0.90	0.82 ✓	0.81
SS 12346-PeCDF	0.93	3.5%	0.94	0.97	0.93	0.96	0.93	0.91	0.87
SS 123469-HxCDF	0.84	2.8%	0.86	0.86	0.85	0.84	0.86	0.82	0.80
SS 1234689-HpCDF	0.91	6.0%	0.96	0.96	0.94	0.94	0.92	0.86	0.81
AS 1368-TCDD	1.02	0.7%	1.01	1.03	1.02	1.02 ✓	1.02	1.04	1.02
AS 1368-TCDF	1.08	1.9%	1.05	1.06	1.07	1.10	1.09	1.10	1.07
~~OCDD-a~~	~~0.07~~	~~7.2%~~	~~0.06~~	~~0.08~~	~~0.07~~	~~0.07~~	~~0.07~~	~~0.06~~	~~0.07~~
~~OCDF-a~~	~~0.06~~	~~7.0%~~	~~0.05~~	~~0.06~~	~~0.05~~	~~0.06~~	~~0.06~~	~~0.06~~	~~0.06~~
Not reported from this ICAL - CL 28Jul21									
Totals									
Total TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
Total PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
Total HxCDD	1.05	3.3%	1.11	1.07	0.99	1.04	1.05	1.06	1.05
Total HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
Total TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
Total PeCDF	0.94	3.3%	1.00	0.92	0.90	0.93	0.94	0.95	0.96
Total HxCDF	1.16	3.1%	1.23	1.16	1.11	1.15	1.16	1.17	1.17
Total HpCDF	1.33	3.2%	1.40	1.28	1.28	1.34	1.32	1.36	1.34
FS 1278-TCDD	1.08	0.7%	1.08	1.08	1.09	1.08	1.08	1.08	1.10
FS 12478-PeCDD	1.09	3.7%	1.10	1.10 ✓	1.12	1.13	1.13	1.07	1.01
FS 123468-HxCDD	1.26	4.2%	1.27	1.30	1.28	1.32	1.28	1.24	1.16
FS 1234679-HpCDD	1.36	5.0%	1.41	1.37	1.38	1.42	1.38 ✓	1.30	1.23
TS 1378-TCDD	1.35	2.3%	1.36 ✓	1.38	1.36	1.31	1.30	1.35	1.37

SGS Environmental Services — Run Log **Project: MM3_DF_10272021_27JUL2021**

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	210727R01	2	SBS_210727_DF_RA	1.00	SIL 20-61-1	PSW	638-037	27-Jul-2021	08:17:39
2	210727R02	85	CS0_210727_DF_RA	1.00	SIL 25-6-3	PSW	693-472	27-Jul-2021	09:04:23
3	210727R03	86	CS1_210727_DF_RA	1.00	SIL 25-6-2	PSW	554-132	27-Jul-2021	09:54:34
4	210727R04	87	CS2_210727_DF_RA	1.00	SIL 25-6-1	PSW	377-233	27-Jul-2021	10:44:24
5	210727R05	3	CS3_210727_DF_RA	1.00	SIL 23-672-1	PSW	230-891	27-Jul-2021	11:32:33
6	210727R06	88	CS4_210727_DF_RA	1.00	SIL 25-5-4	PSW	602-590	27-Jul-2021	12:19:16
7	210727R07	89	CS5_210727_DF_RA	1.00	SIL 25-5-3	PSW	147-553	27-Jul-2021	13:09:36
8	210727R08	90	CS6_210727_DF_RA	1.00	SIL 25-5-2	PSW	783-472	27-Jul-2021	13:58:27

Alternate OCDD/OCDF - NR in this ICAL. CL 28Jul21

REVIEWED
paul_walton , 7/28/2021, 8:31:00 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:08 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan STD Association	SGS Environmental Services

Individual Native Standards

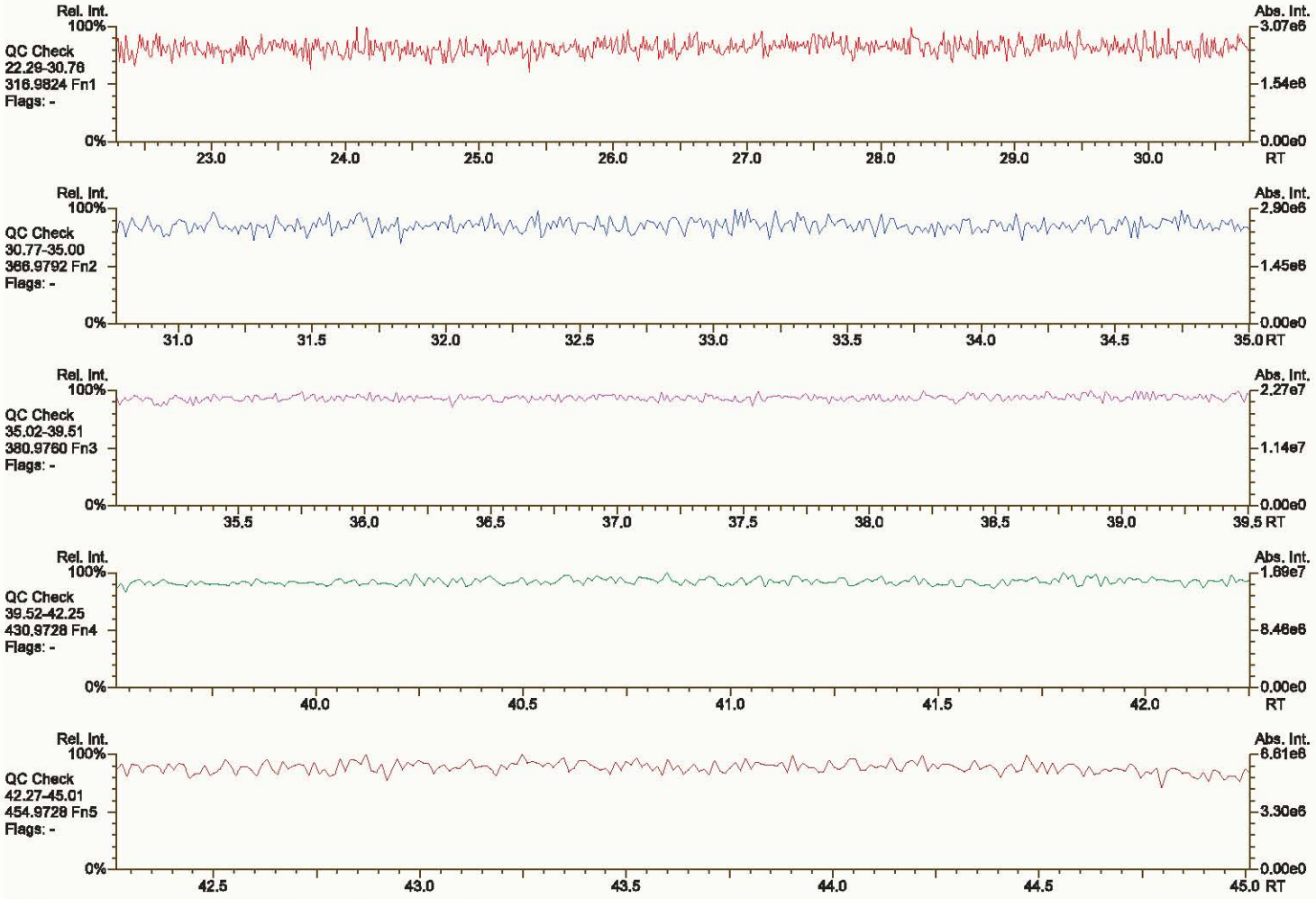
2378-TCDD	ES 2378-TCDD	**Cleanup/Sampling Standards**	
12378-PeCDD	ES 12378-PeCDD	CS 37Cl-2378-TCDD	1234 TCDD 13C12
123478-HxCDD	ES 123478-HxCDD	CS 12347-PeCDD	1234 TCDD 13C12
123678-HxCDD	ES 123678-HxCDD	CS 12346-PeCDF	1234 TCDF 13C12
123789-HxCDD	ES 123789-HxCDD	CS 123469-HxCDF	123467 HxCDD 13C12
1234678-HpCDD	ES 1234678-HpCDD	CS 1234689-HpCDF	123467 HxCDD 13C12
OCDD	ES OCDD		
2378-TCDF	ES 2378-TCDF	**Alternate Standards**	
12378-PeCDF	ES 12378-PeCDF	AS 1368-TCDD	1234 TCDD 13C12
23478-PeCDF	ES 23478-PeCDF	AS 1368-TCDF	1234 TCDF 13C12
123478-HxCDF	ES 123478-HxCDF		
123678-HxCDF	ES 123678-HxCDF	**Shipping Standards**	
234678-HxCDF	ES 234678-HxCDF	FS 1278-TCDD	ES 2378-TCDD
123789-HxCDF	ES 123789-HxCDF	FS 12478-PeCDD	ES 12378-PeCDD
1234678-HpCDF	ES 1234678-HpCDF	FS 123468-HxCDD	ES 123478-HxCDD
1234789-HpCDF	ES 1234789-HpCDF	FS 1234679-HpCDD	ES 1234678-HpCDD
OCDF	ES OCDF	TS 1378-TCDD	ES 2378-TCDD

Extraction Standards		**Injection Standards**
ES 2378-TCDD	1234 TCDD 13C12	1234 TCDD 13C12
ES 12378-PeCDD	1234 TCDD 13C12	1234 TCDF 13C12
ES 123478-HxCDD	123467 HxCDD 13C12	123467 HxCDD 13C12
ES 123678-HxCDD	123467 HxCDD 13C12	
ES 123789-HxCDD	123467 HxCDD 13C12	
ES 1234678-HpCDD	123467 HxCDD 13C12	
ES OCDD	123467 HxCDD 13C12	
ES 2378-TCDF	1234 TCDF 13C12	
ES 12378-PeCDF	1234 TCDF 13C12	
ES 23478-PeCDF	1234 TCDF 13C12	
ES 123478-HxCDF	123467 HxCDD 13C12	
ES 123678-HxCDF	123467 HxCDD 13C12	
ES 234678-HxCDF	123467 HxCDD 13C12	
ES 123789-HxCDF	123467 HxCDD 13C12	
ES 1234678-HpCDF	123467 HxCDD 13C12	
ES 1234789-HpCDF	123467 HxCDD 13C12	
ES OCDF	123467 HxCDD 13C12	

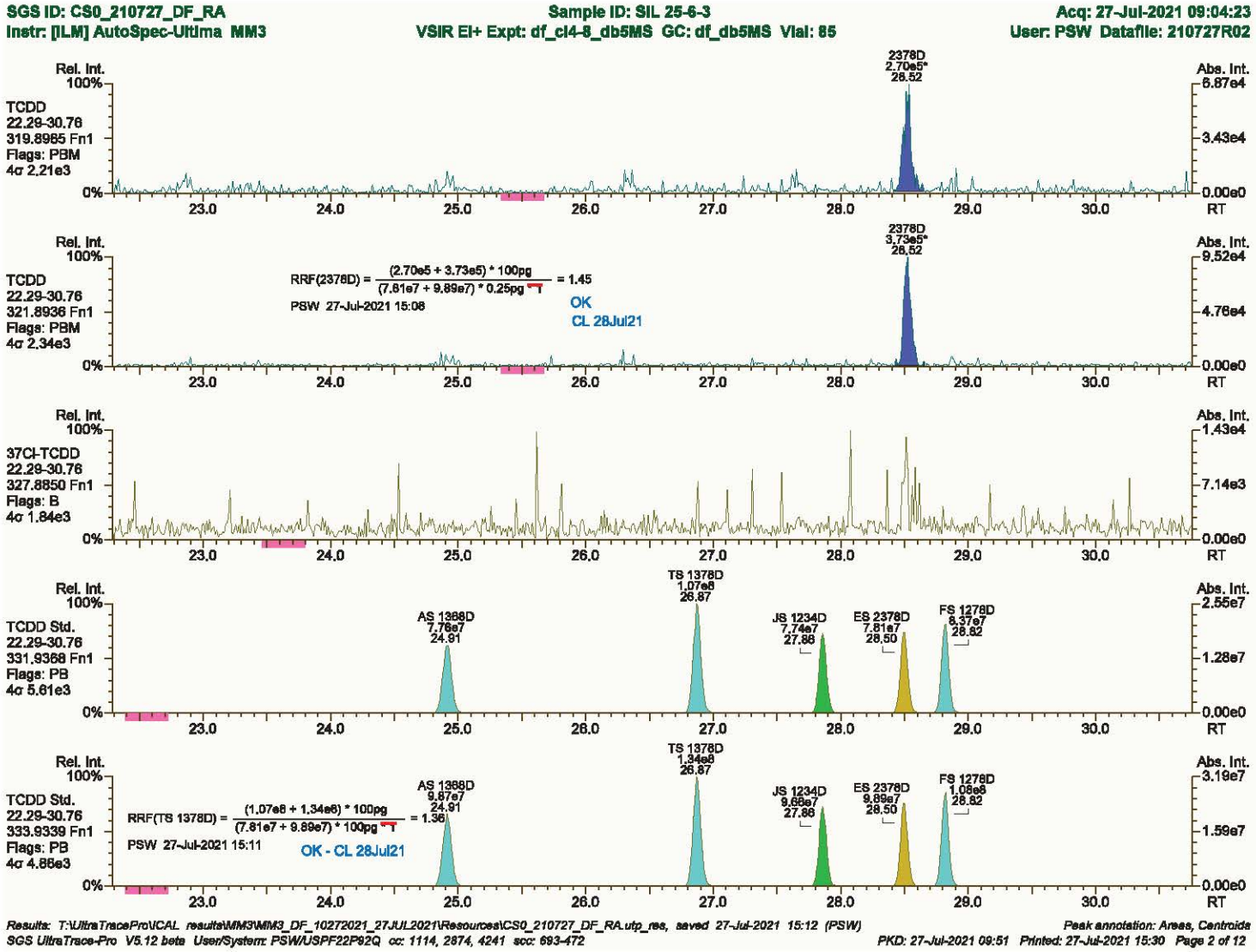
Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 09:04 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS0_210727_DF_RA		UTP: 27-Jul-2021 15:00:19 PSW				Checkcode: 693-472-SFB	
Sample ID: SIL 25-6-3		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R02	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	6.43E+05	0.73	Y	1.34	1.45	8%
12378-PeCDD	33.80	2.41E+06	1.48	Y	1.06	1.09	3%
123478-HxCDD	37.67	2.24E+06	1.35	Y	1.06	1.10	4%
123678-HxCDD	37.78	2.20E+06	1.31	Y	1.08	1.12	3%
123789-HxCDD	38.07	2.52E+06	1.21	Y	1.02	1.10	9%
1234678-HpCDD	40.66	2.08E+06	0.99	Y	0.97	1.05	7%
OCDD	43.22	3.52E+06	0.85	Y	1.07	1.15	8%
2378-TCDF	27.66	7.49E+05	0.72	Y	0.96	1.01	5%
12378-PeCDF	32.38	3.19E+06	1.44	Y	0.95	1.00	5%
23478-PeCDF	33.46	3.11E+06	1.57	Y	0.94	0.99	6%
123478-HxCDF	36.68	3.00E+06	1.23	Y	1.23	1.32	7%
123678-HxCDF	36.82	3.05E+06	1.18	Y	1.13	1.17	4%
234678-HxCDF	37.49	2.95E+06	1.17	Y	1.15	1.23	7%
123789-HxCDF	38.42	2.65E+06	1.30	Y	1.14	1.19	5%
1234678-HpCDF	39.76	2.75E+06	1.00	Y	1.36	1.46	7%
1234789-HpCDF	41.10	2.20E+06	1.11	Y	1.30	1.34	3%
OCDF	43.40	3.66E+06	0.85	Y	1.03	1.01	-1%
ES 2378-TCDD	28.50	1.77E+08	0.79	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.781	1.77E+08	1.63	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.653	1.63E+08	1.26	Y	0.99	0.97	-2%
ES 123678-HxCDD	37.766	1.57E+08	1.27	Y	0.97	0.94	-3%
ES 123789-HxCDD	38.056	1.82E+08	1.26	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.643	1.59E+08	1.05	Y	0.99	0.95	-4%
ES OCDD	43.205	2.44E+08	0.92	Y	0.78	0.73	-6%
ES 2378-TCDF	27.645	2.97E+08	0.78	Y	1.08	1.06	-2%
ES 12378-PeCDF	32.355	2.55E+08	1.55	Y	0.93	0.91	-2%
ES 23478-PeCDF	33.445	2.50E+08	1.56	Y	0.92	0.90	-3%
ES 123478-HxCDF	36.661	1.82E+08	0.53	Y	1.14	1.09	-5%
ES 123678-HxCDF	36.801	2.08E+08	0.53	Y	1.30	1.24	-4%
ES 234678-HxCDF	37.466	1.92E+08	0.53	Y	1.20	1.14	-5%
ES 123789-HxCDF	38.399	1.78E+08	0.52	Y	1.14	1.06	-7%
ES 1234678-HpCDF	39.748	1.51E+08	0.44	Y	0.95	0.90	-5%
ES 1234789-HpCDF	41.09	1.32E+08	0.45	Y	0.85	0.79	-7%
ES OCDF	43.389	2.89E+08	0.89	Y	0.93	0.86	-7%

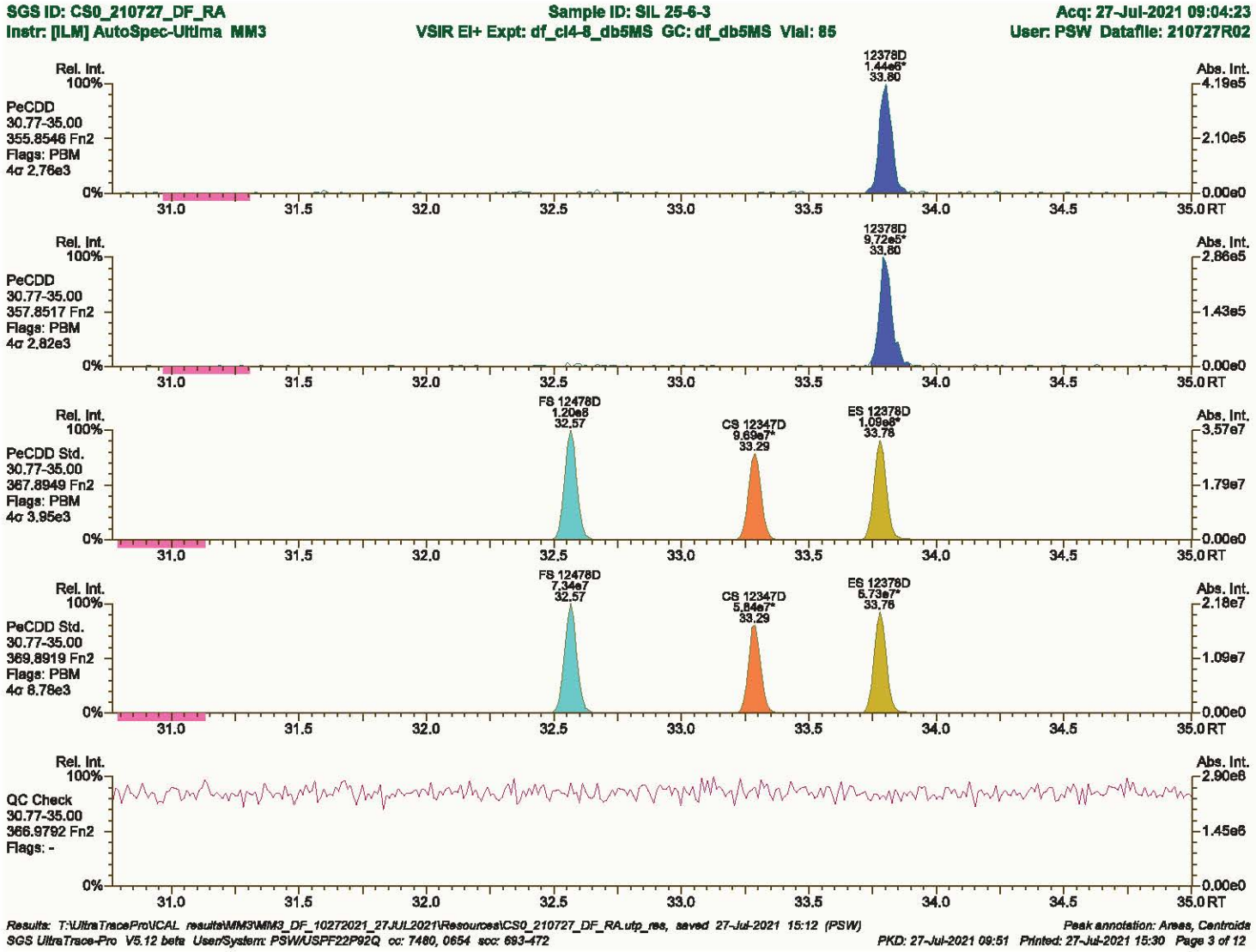
Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 09:04 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS0_210727_DF_RA		UTP: 27-Jul-2021 15:00:19 PSW				Checkcode: 693-472-SFB	
Sample ID: SIL 25-6-3		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R02	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	27.86	1.74E+08	0.80	Y	-	-	-
JS 1234-TCDF	26.33	2.80E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	8.38E+07	1.33	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.89	0.89	0%
CS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.78E+08	0.52	Y	1.09	1.06	-2%
CS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.86	0.88	2%
SS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.93	0.94	2%
SS 123469-HxCDF	37.12	1.78E+08	0.52	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.91	0.96	5%
AS 1368-TCDD	24.91	1.76E+08	0.79	Y	1.02	1.01	-1%
AS 1368-TCDF	22.86	2.95E+08	0.78	Y	1.08	1.05	-2%
FS 1278-TCDD	28.82	1.91E+08	0.78	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.94E+08	1.64	Y	1.09	1.10	0%
FS 123468-HxCDD	36.58	2.07E+08	1.26	Y	1.26	1.27	0%
FS 1234679-HpCDD	39.99	2.24E+08	1.06	Y	1.36	1.41	4%
TS 1378-TCDD	26.87	2.41E+08	0.79	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.22~~	~~1.00E+05~~	~~0.99~~	~~N~~	~~0.87~~	~~0.86~~	~~-11%~~
~~OCDF-a~~	~~43.41~~	~~1.98E+05~~	~~2.01~~	~~Y~~	~~0.86~~	~~0.85~~	~~-7%~~
Not reported from this ICAL - CL 28Jul21							

SGS ID: CS0_210727_DF_RA | Sample ID: SIL 25-6-3 | Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85 | User: PSW Datafile: 210727R02

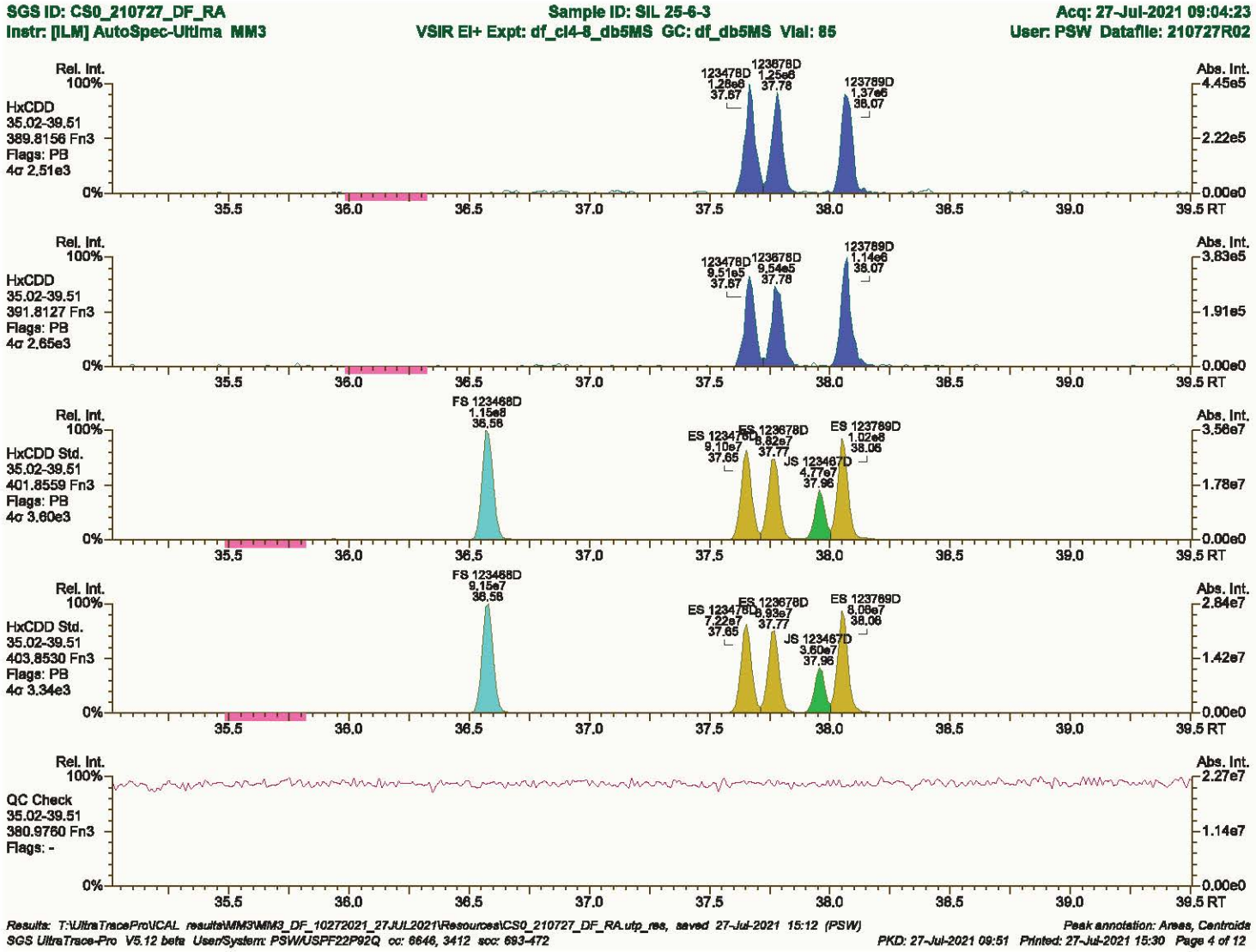


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 693-472
PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12

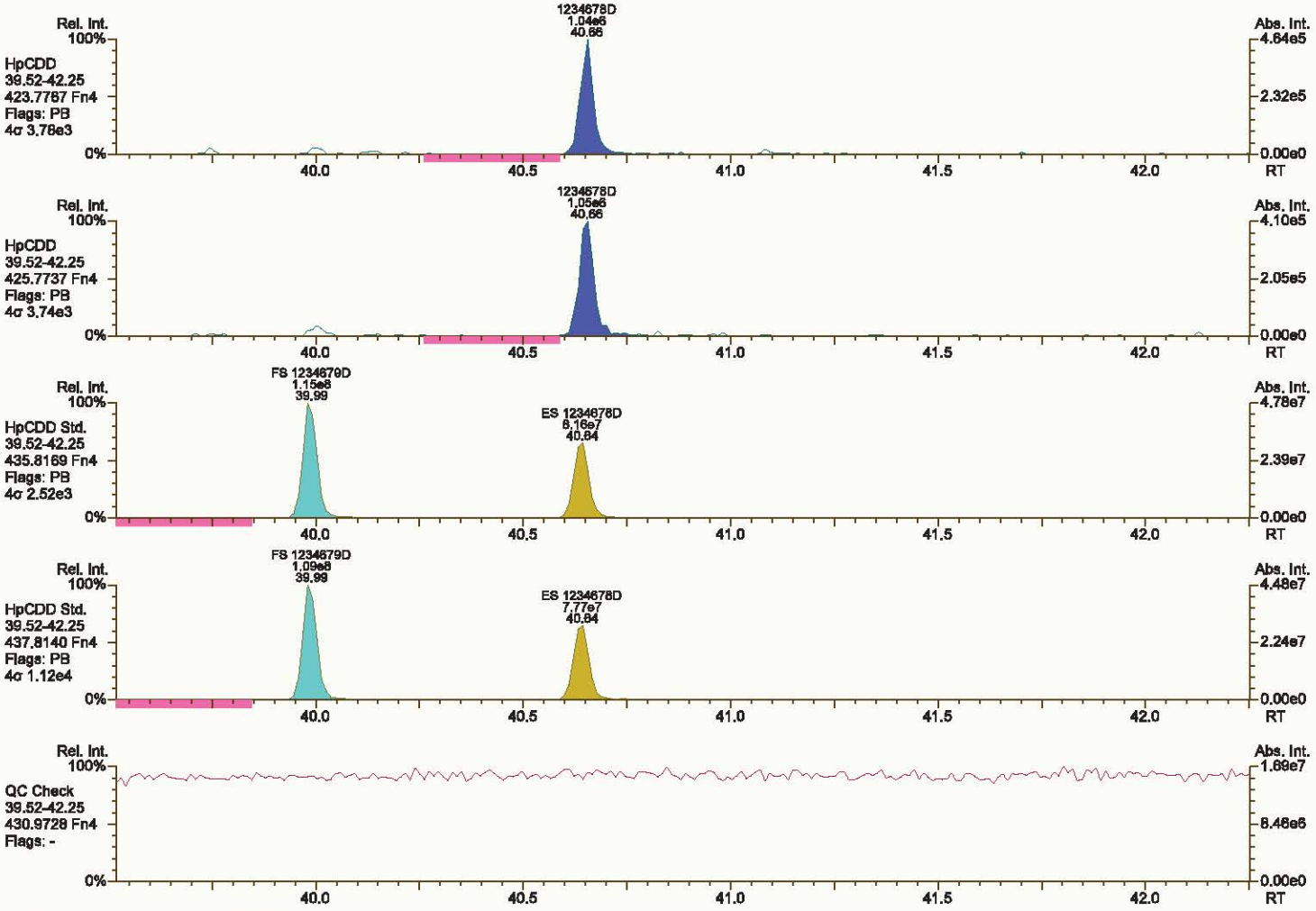

SGS ID: CS0_210727_DF_RA
Sample ID: SIL 25-6-3
Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85
User: PSW Datafile: 210727R02
Rel. Int.
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 2.21e3
2378D
2.70e5*
28.52
6.87e4
3.43e4
0.00e0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.34e3
RRF(2378D) = (2.70e5 + 3.73e5) * 100pg / (7.81e7 + 9.89e7) * 0.25pg = 1.45
PSW 27-Jul-2021 15:08
OK
CL 28Jul21
2378D
3.73e5*
28.52
9.52e4
4.76e4
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.84e3
1.43e4
7.14e3
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.61e3
AS 1368D
7.76e7
24.91
TS 1378D
1.07e8
26.87
JS 1234D
7.74e7
27.86
ES 2378D
7.81e7
28.50
FS 1278D
8.37e7
28.82
2.55e7
1.28e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.86e3
RRF(TS 1378D) = (1.07e8 + 1.34e8) * 100pg / (7.81e7 + 9.89e7) * 100pg = 1.36
PSW 27-Jul-2021 15:11
OK - CL 28Jul21
AS 1368D
9.87e7
24.91
TS 1378D
1.34e8
26.87
JS 1234D
9.66e7
27.86
ES 2378D
9.89e7
28.50
FS 1278D
1.08e8
28.82
3.19e7
1.59e7
0%
100%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1114, 2874, 4241 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 2 of 12



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 7460, 0654 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 3 of 12

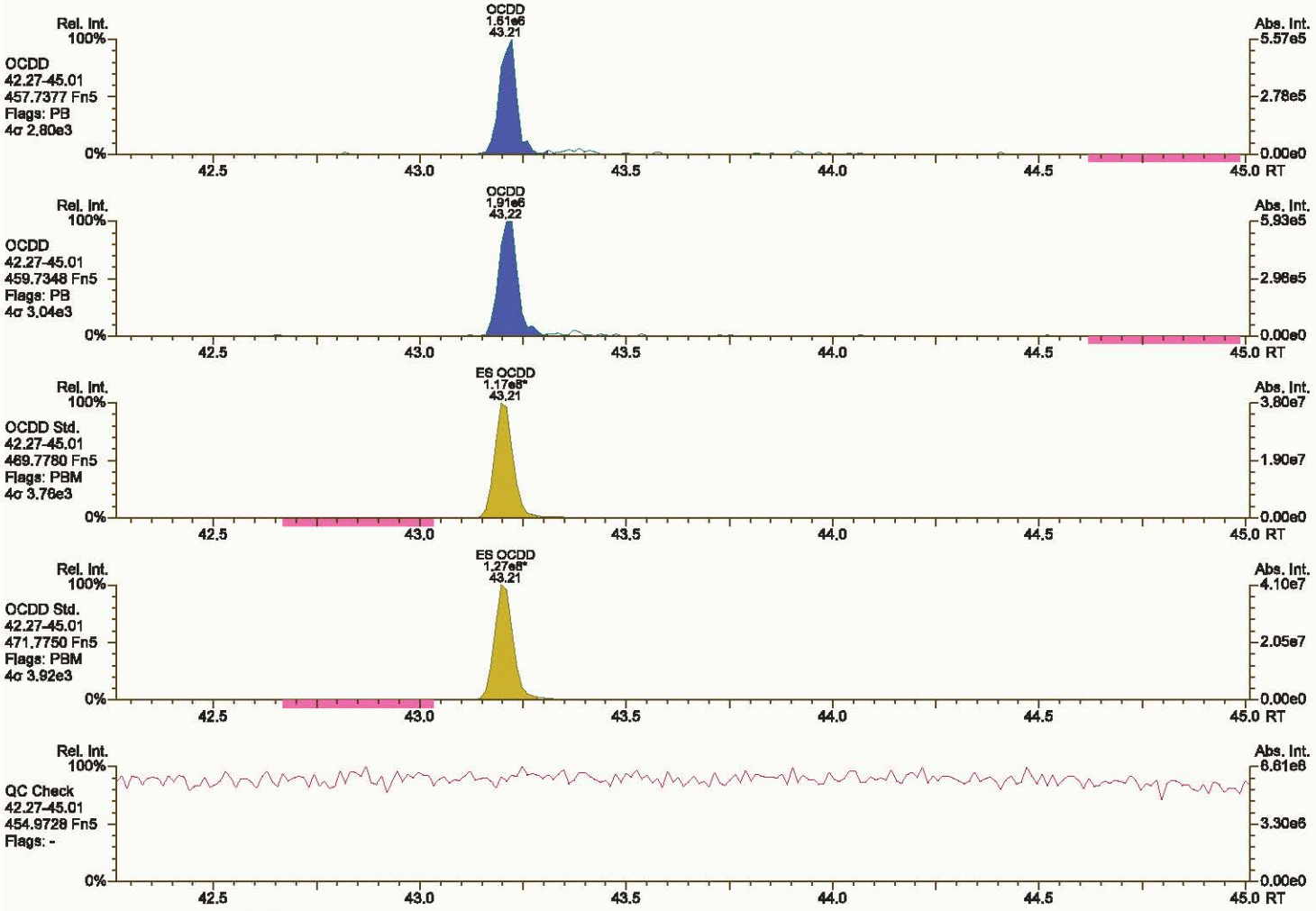

SGS ID: CS0_210727_DF_RA
Sample ID: SIL 25-6-3
Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85
User: PSW Datafile: 210727R02
Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.51e3
123478D 1.28e8 37.67
123678D 1.25e8 37.78
123789D 1.37e8 38.07
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.65e3
123478D 9.51e5 37.67
123678D 9.54e5 37.78
123789D 1.14e8 38.07
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.60e3
FS 123468D 1.15e8 36.58
ES 123478D 9.10e7 37.65
ES 123678D 8.82e7 37.77
JS 123467D 4.77e7 37.96
ES 123789D 1.02e8 38.06
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.34e3
FS 123468D 9.15e7 36.58
ES 123478D 7.22e7 37.65
ES 123678D 8.93e7 37.77
JS 123467D 3.60e7 37.96
ES 123789D 8.06e7 38.06
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

SGS ID: CS0_210727_DF_RA | Sample ID: SIL 25-6-3 | Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85 | User: PSW Datafile: 210727R02

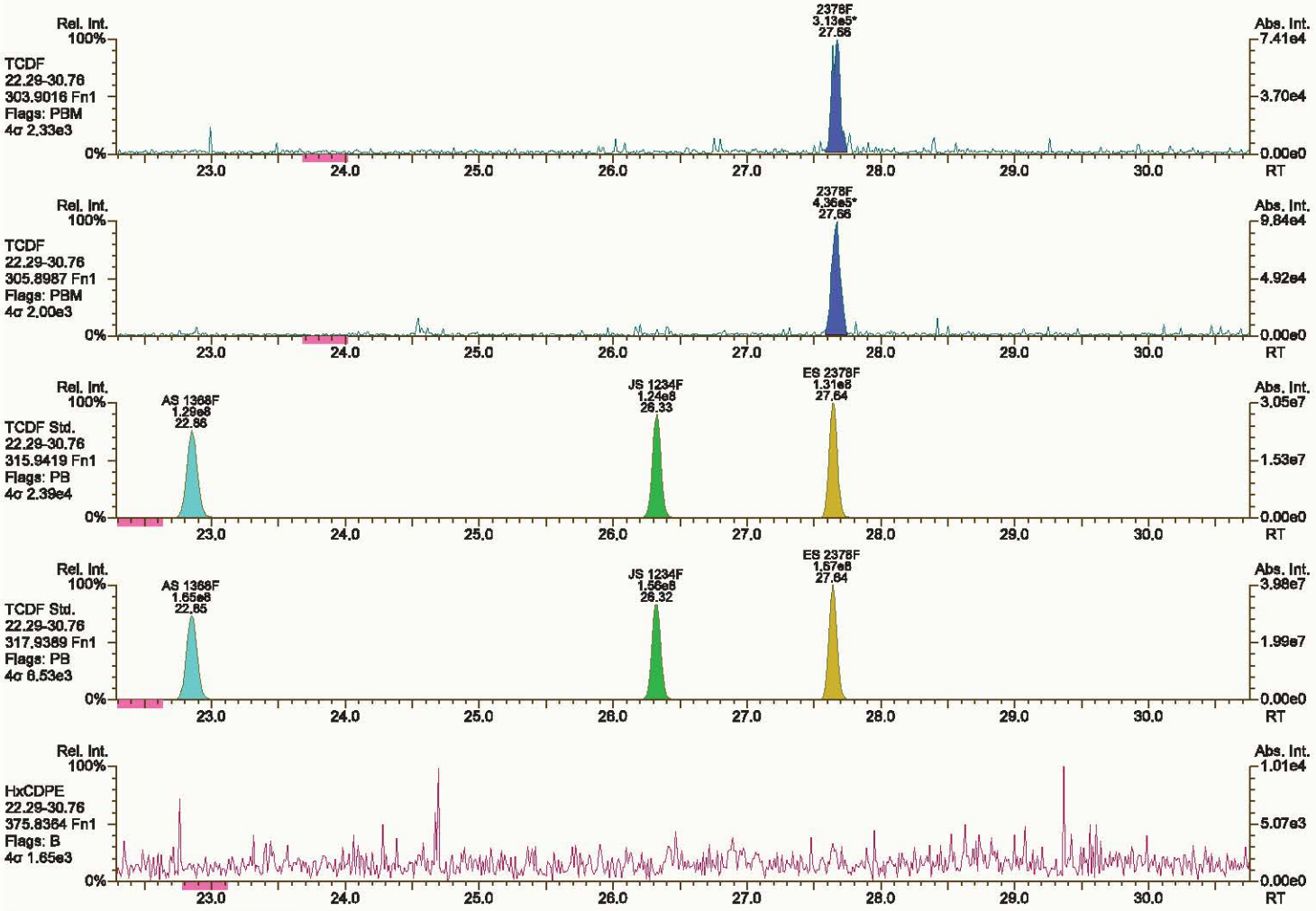


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 4179, 4607 scc: 693-472 *PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 5 of 12*

SGS ID: CS0_210727_DF_RA | Sample ID: SIL 25-6-3 | Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85 | User: PSW Datafile: 210727R02



SGS ID: CS0_210727_DF_RA | Sample ID: SIL 25-6-3 | Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85 | User: PSW Datafile: 210727R02



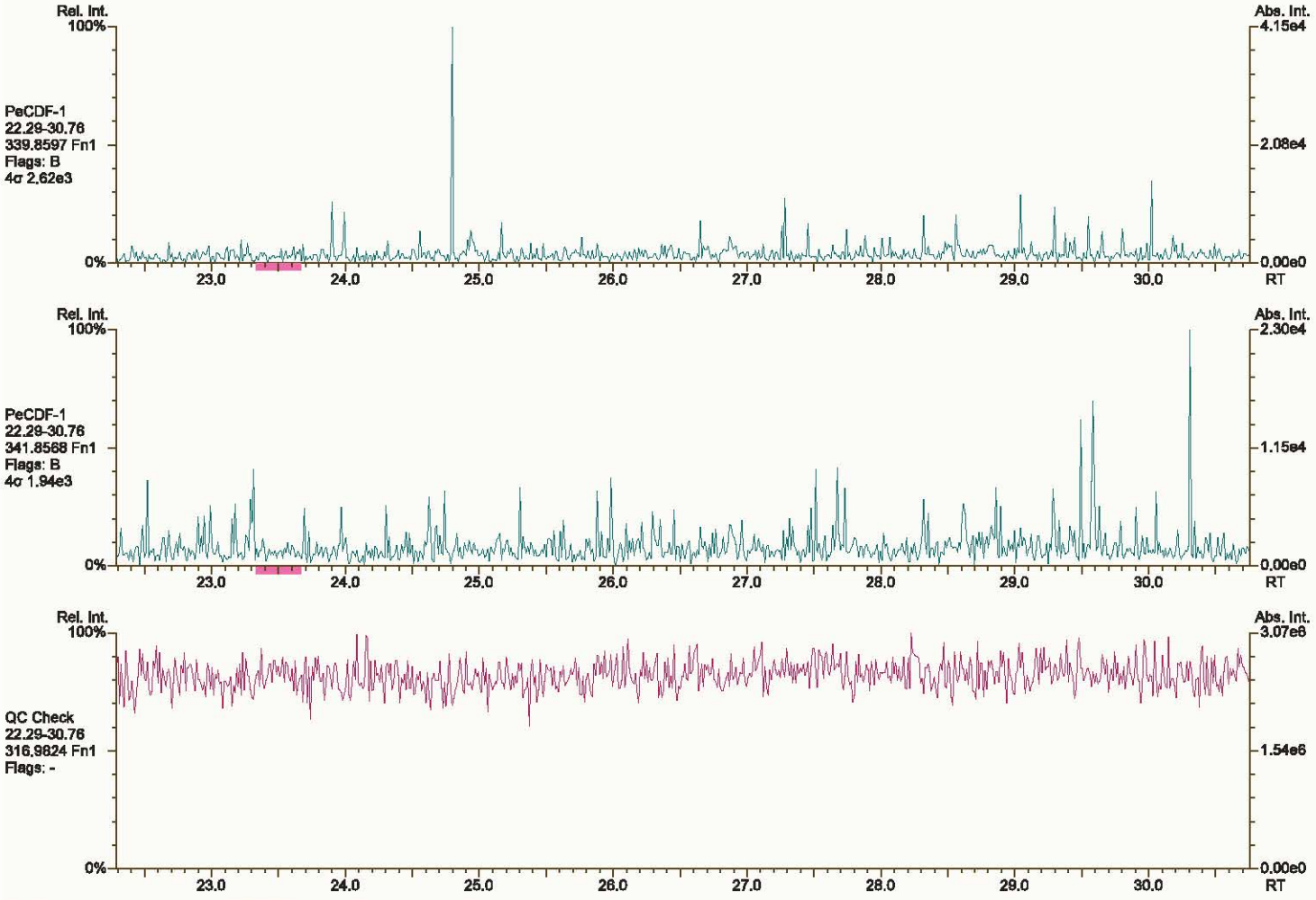
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3692, 2809, 0990 scc: 693-472 *PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 7 of 12*

SGS ID: CS0_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

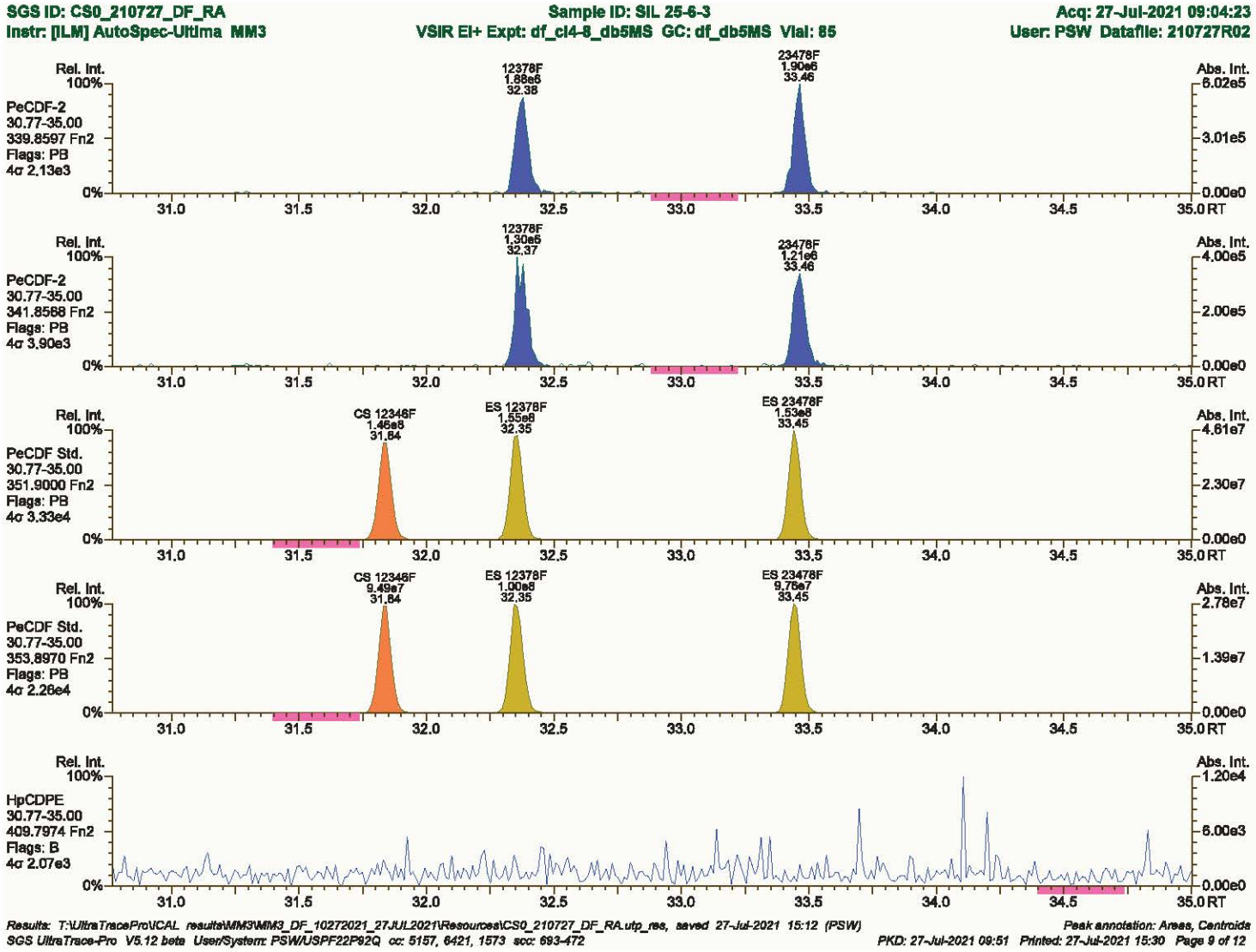
Sample ID: SIL 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85

Acq: 27-Jul-2021 09:04:23
User: PSW Datafile: 210727R02

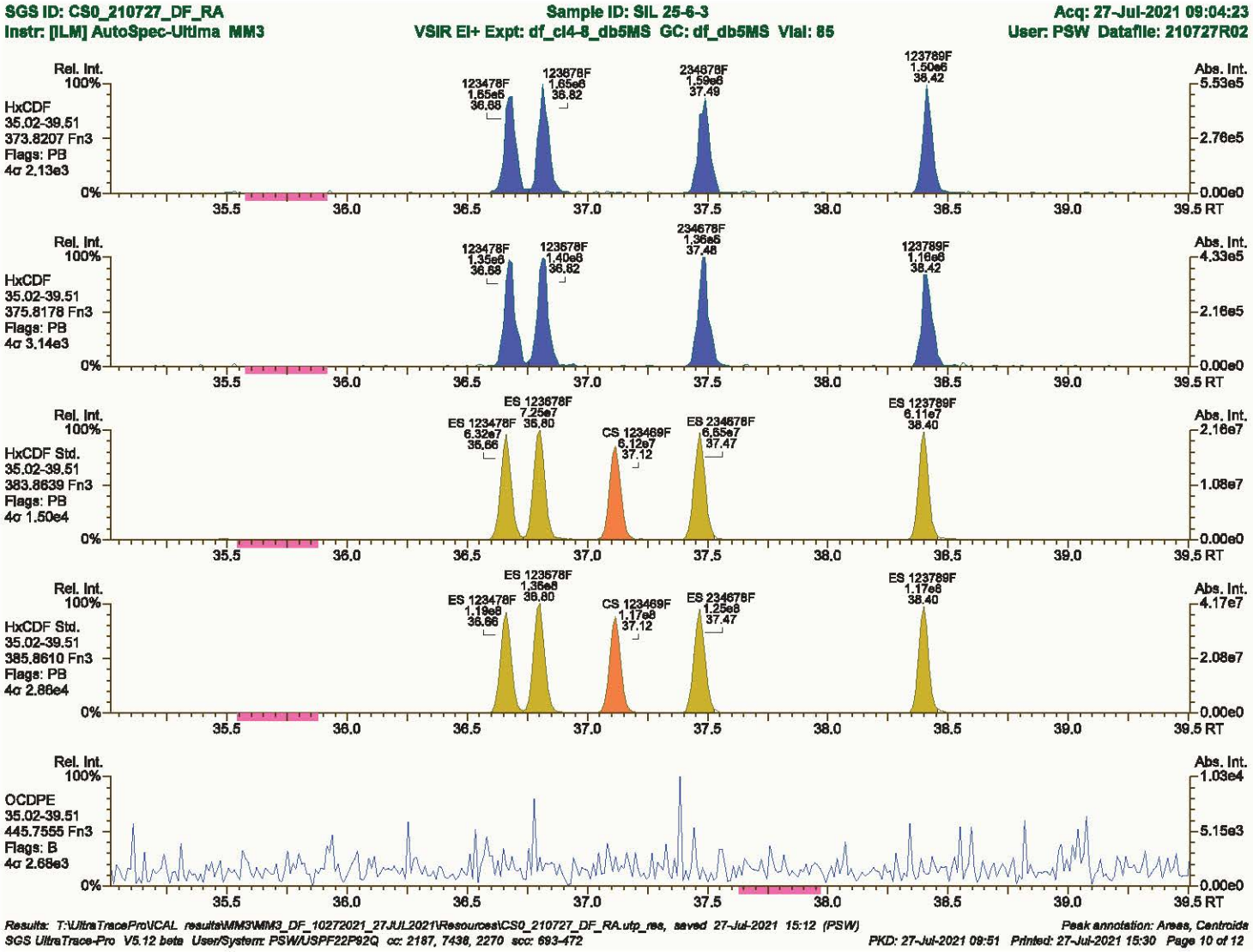


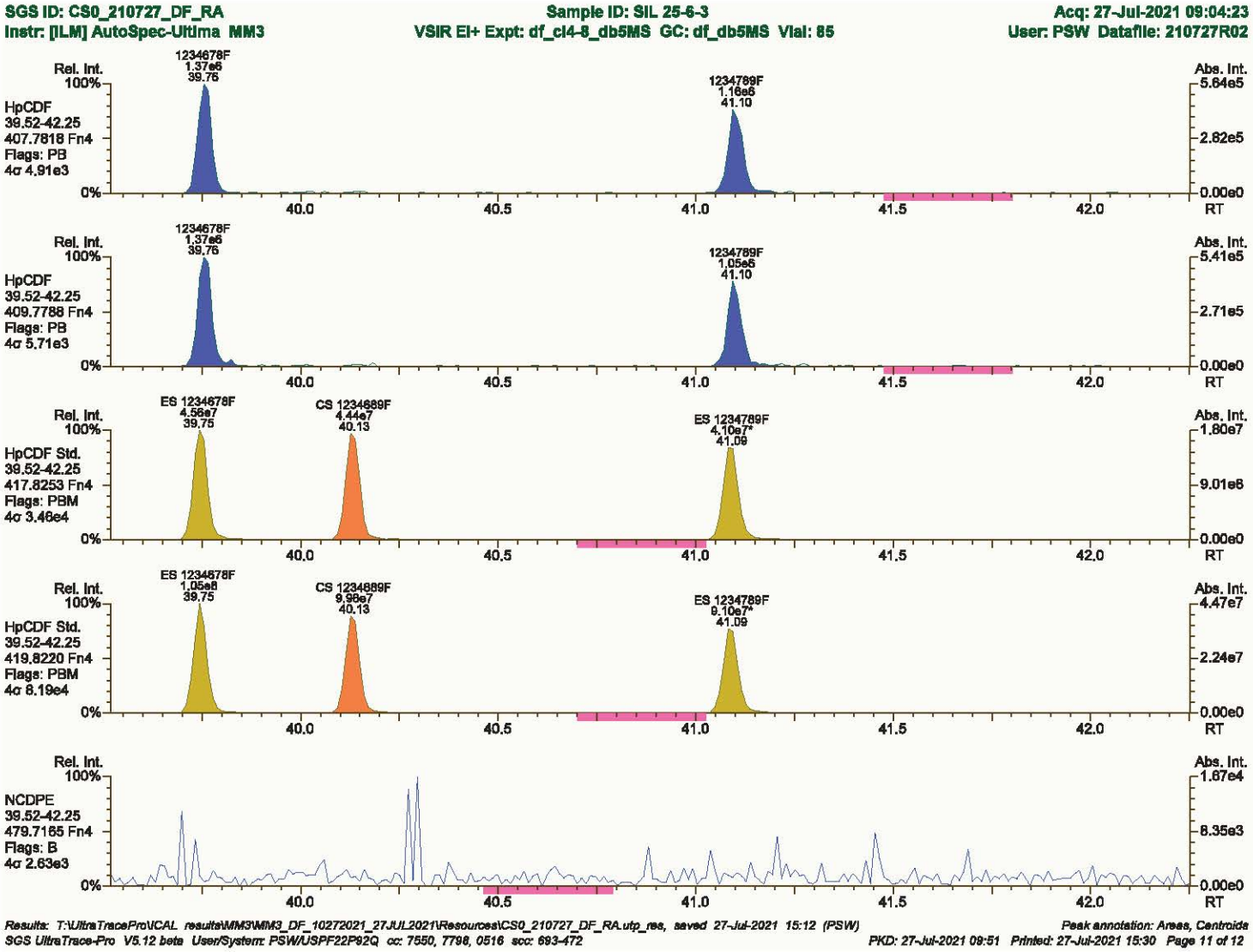
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids

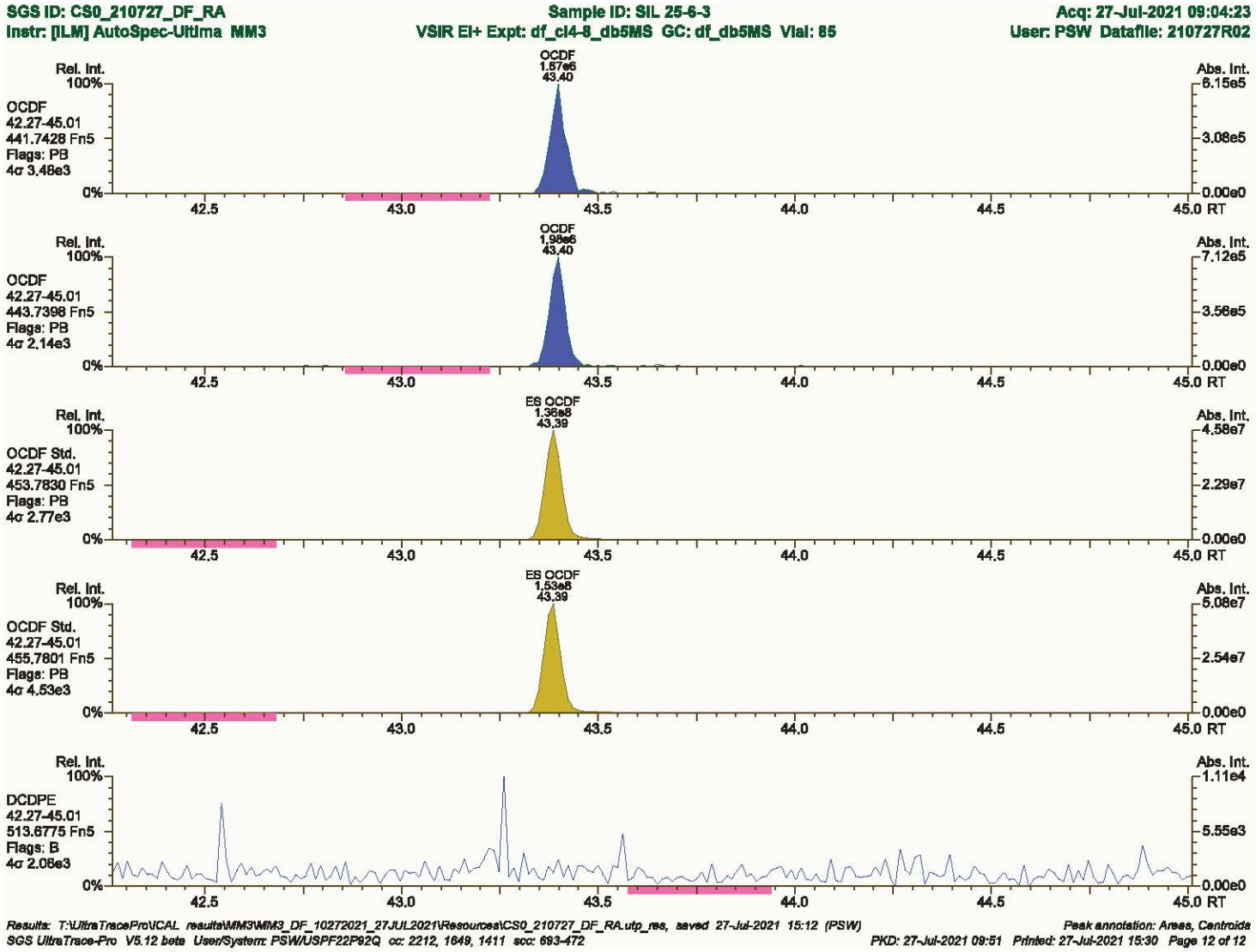
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1474 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 8 of 12



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids


SGS ID: CS0_210727_DF_RA
Sample ID: SIL 25-6-3
Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85
User: PSW Datafile: 210727R02
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.13e3
123478F 1.65e6 36.68
123678F 1.65e6 36.82
234678F 1.59e6 37.49
123789F 1.50e6 38.42
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 3.14e3
123478F 1.35e6 36.68
123678F 1.40e6 36.82
234678F 1.36e6 37.48
123789F 1.16e6 38.42
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.50e4
ES 123678F 7.25e7 36.80
ES 123478F 6.32e7 36.66
CS 123469F 6.12e7 37.12
ES 234678F 6.55e7 37.47
ES 123789F 6.11e7 38.40
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.86e4
ES 123678F 1.36e8 36.80
ES 123478F 1.19e8 36.66
CS 123469F 1.17e8 37.12
ES 234678F 1.25e8 37.47
ES 123789F 1.17e8 38.40
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.68e3
RT


SGS ID: CS0_210727_DF_RA
Sample ID: SIL 25-6-3
Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85
User: PSW Datafile: 210727R02
Rel. Int.
Abs. Int.
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e3
1234678F
1.37e6
39.76
1234789F
1.16e5
41.10
5.64e5
2.82e5
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.71e3
1.05e5
5.41e5
2.71e5
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.46e4
ES 1234678F
4.56e7
39.75
CS 1234889F
4.44e7
40.13
ES 1234789F
4.10e7*
41.09
1.80e7
9.01e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 8.19e4
1.05e8
9.96e7
9.10e7*
4.47e7
2.24e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
1.67e4
8.35e3
100%
0%
40.0
40.5
41.0
41.5
42.0
RT


SGS ID: CS0_210727_DF_RA
Sample ID: SIL 25-6-3
Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85
User: PSW Datafile: 210727R02
Rel. Int.
Abs. Int.
OCDF
1.57e6
43.40
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 3.48e3
6.15e5
3.08e5
0.00e0
OCDF
1.98e6
43.40
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.14e3
7.12e5
3.56e5
ES OCDF
1.36e8
43.39
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 2.77e3
4.58e7
2.29e7
ES OCDF
1.53e8
43.39
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.53e3
5.08e7
2.54e7
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.08e3
1.11e4
5.55e3
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2212, 1649, 1411 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 12 of 12

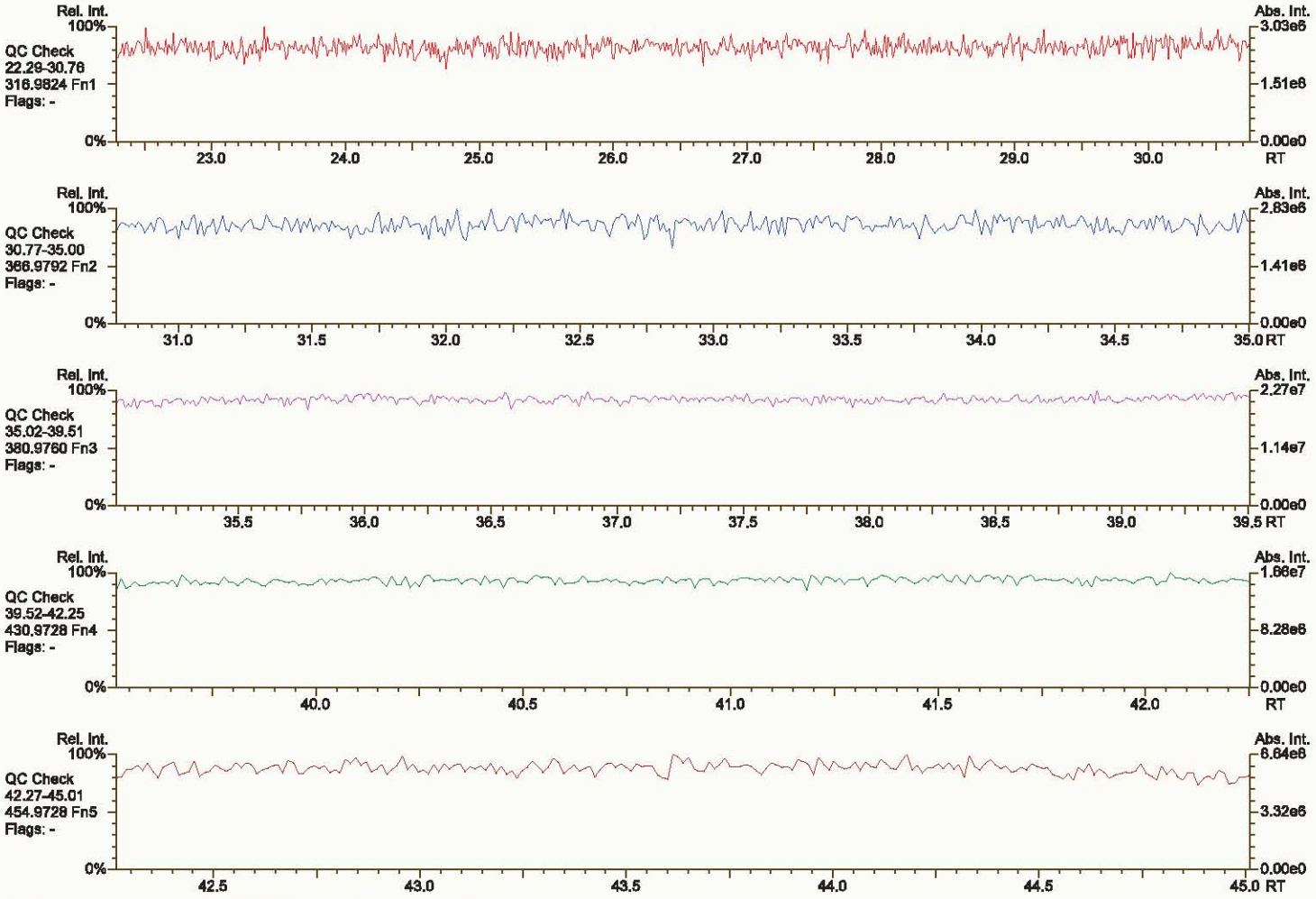
Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 09:54 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS1_210727_DF_RA		UTP: 27-Jul-2021 15:00:19 PSW				Checkcode: 554-132-FHC	
Sample ID: SIL 25-6-2		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R03	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.53	1.04E+06	0.76	Y	1.34	1.34	-1%
12378-PeCDD	33.81	4.16E+06	1.48	Y	1.06	1.07	1%
123478-HxCDD	37.68	3.92E+06	1.22	Y	1.06	1.10	4%
123678-HxCDD	37.79	3.74E+06	1.22	Y	1.08	1.07	-1%
123789-HxCDD	38.08	4.22E+06	1.33	Y	1.02	1.05	4%
1234678-HpCDD	40.66	3.34E+06	1.16	Y	0.97	0.95	-3%
OCDD	43.23	5.66E+06	0.85	Y	1.07	1.04	-3%
2378-TCDF	27.67	1.25E+06	0.72	Y	0.96	0.94	-2%
12378-PeCDF	32.38	5.24E+06	1.54	Y	0.95	0.94	0%
23478-PeCDF	33.47	5.06E+06	1.63	Y	0.94	0.90	-4%
123478-HxCDF	36.69	4.92E+06	1.14	Y	1.23	1.23	-1%
123678-HxCDF	36.83	5.41E+06	1.33	Y	1.13	1.16	3%
234678-HxCDF	37.49	5.10E+06	1.23	Y	1.15	1.19	3%
123789-HxCDF	38.42	4.41E+06	1.28	Y	1.14	1.08	-5%
1234678-HpCDF	39.76	4.59E+06	0.97	Y	1.36	1.35	0%
1234789-HpCDF	41.11	3.63E+06	1.08	Y	1.30	1.20	-7%
OCDF	43.41	6.46E+06	0.90	Y	1.03	1.01	-2%
ES 2378-TCDD	28.51	1.56E+08	0.81	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.789	1.56E+08	1.63	Y	1.03	1.02	-1%
ES 123478-HxCDD	37.66	1.43E+08	1.26	Y	0.99	0.93	-6%
ES 123678-HxCDD	37.773	1.40E+08	1.27	Y	0.97	0.91	-6%
ES 123789-HxCDD	38.062	1.60E+08	1.24	Y	1.12	1.04	-7%
ES 1234678-HpCDD	40.65	1.41E+08	1.06	Y	0.99	0.92	-8%
ES OCDD	43.215	2.18E+08	0.91	Y	0.78	0.71	-9%
ES 2378-TCDF	27.651	2.66E+08	0.77	Y	1.08	1.08	0%
ES 12378-PeCDF	32.362	2.22E+08	1.59	Y	0.93	0.91	-3%
ES 23478-PeCDF	33.454	2.24E+08	1.55	Y	0.92	0.91	-1%
ES 123478-HxCDF	36.667	1.60E+08	0.52	Y	1.14	1.04	-9%
ES 123678-HxCDF	36.807	1.86E+08	0.54	Y	1.30	1.21	-7%
ES 234678-HxCDF	37.474	1.72E+08	0.53	Y	1.20	1.12	-7%
ES 123789-HxCDF	38.407	1.64E+08	0.51	Y	1.14	1.07	-6%
ES 1234678-HpCDF	39.755	1.36E+08	0.46	Y	0.95	0.88	-7%
ES 1234789-HpCDF	41.099	1.21E+08	0.45	Y	0.85	0.78	-7%
ES OCDF	43.396	2.56E+08	0.88	Y	0.93	0.83	-10%

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 09:54 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS1_210727_DF_RA		UTP: 27-Jul-2021 15:00:19 PSW				Checkcode: 554-132-FHC	
Sample ID: SIL 25-6-2		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R03	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	27.87	1.52E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.33	2.45E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	7.69E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.31	1.32	1%
CS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.89	0.91	2%
CS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.87	0.88	1%
CS 123469-HxCDF	37.12	1.61E+08	0.52	Y	1.09	1.04	-4%
CS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.86	0.84	-2%
SS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.26	1.29	2%
SS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.86	0.89	2%
SS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.61E+08	0.52	Y	0.84	0.86	3%
SS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.91	0.96	5%
AS 1368-TCDD	24.92	1.56E+08	0.80	Y	1.02	1.03	0%
AS 1368-TCDF	22.86	2.59E+08	0.77	Y	1.08	1.06	-2%
FS 1278-TCDD	28.83	1.68E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.72E+08	1.63	Y	1.09	1.10	1%
FS 123468-HxCDD	36.59	1.86E+08	1.29	Y	1.26	1.30	3%
FS 1234679-HpCDD	39.99	1.93E+08	1.05	Y	1.36	1.37	1%
TS 1378-TCDD	26.88	2.16E+08	0.81	Y	1.35	1.38	3%
~~OCDD-a~~	~~43.23~~	~~4.10E+05~~	~~2.91~~	~~N~~	~~0.87~~	~~0.80~~	~~14%~~
~~OCDF-a~~	~~43.40~~	~~3.79E+05~~	~~1.92~~	~~N~~	~~0.86~~	~~0.86~~	~~0%~~

Not reported from this ICAL - CL 28Jul21

SGS ID: CS1_210727_DF_RA | Sample ID: SIL 25-6-2 | Acq: 27-Jul-2021 09:54:34

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86 | User: PSW Datafile: 210727R03

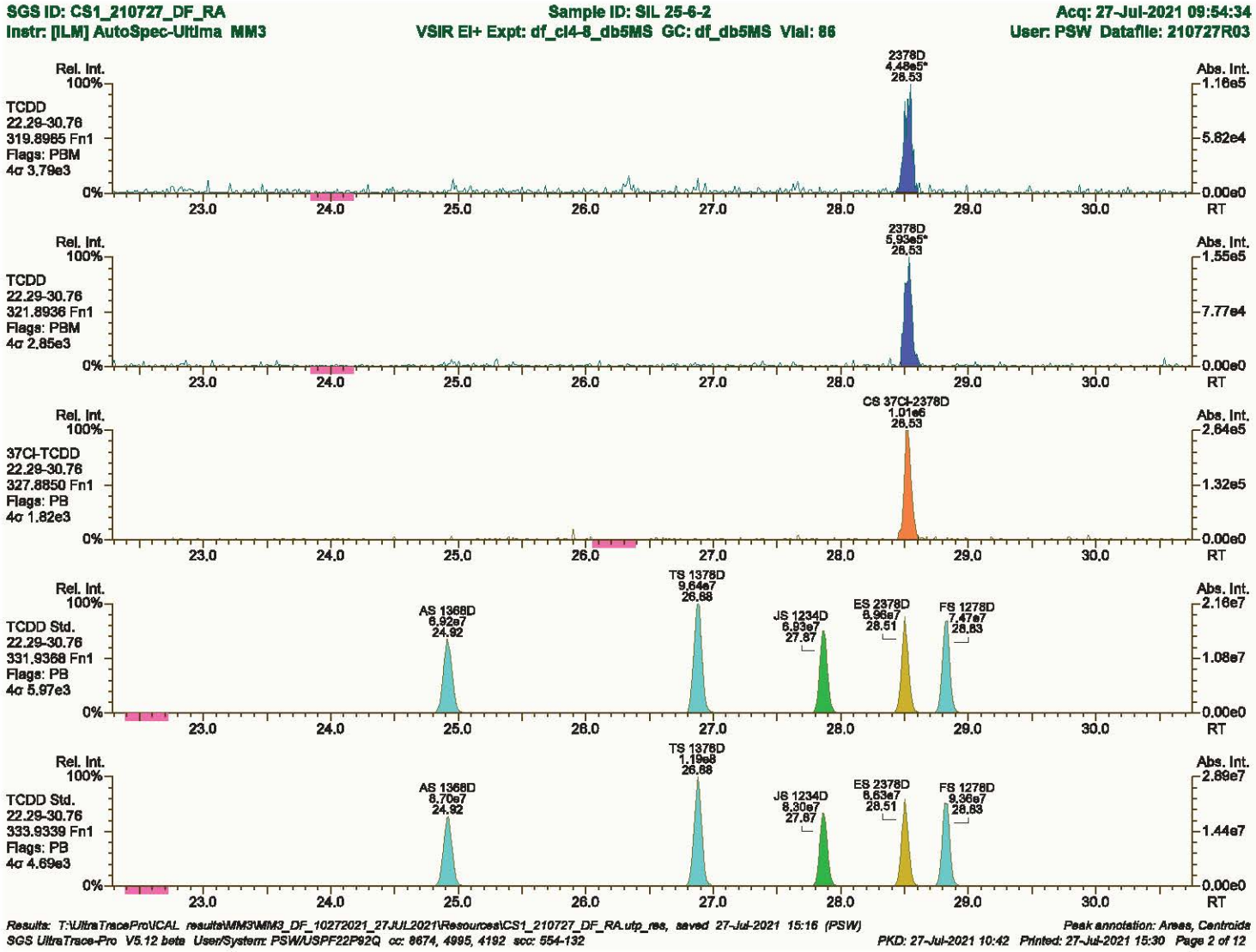


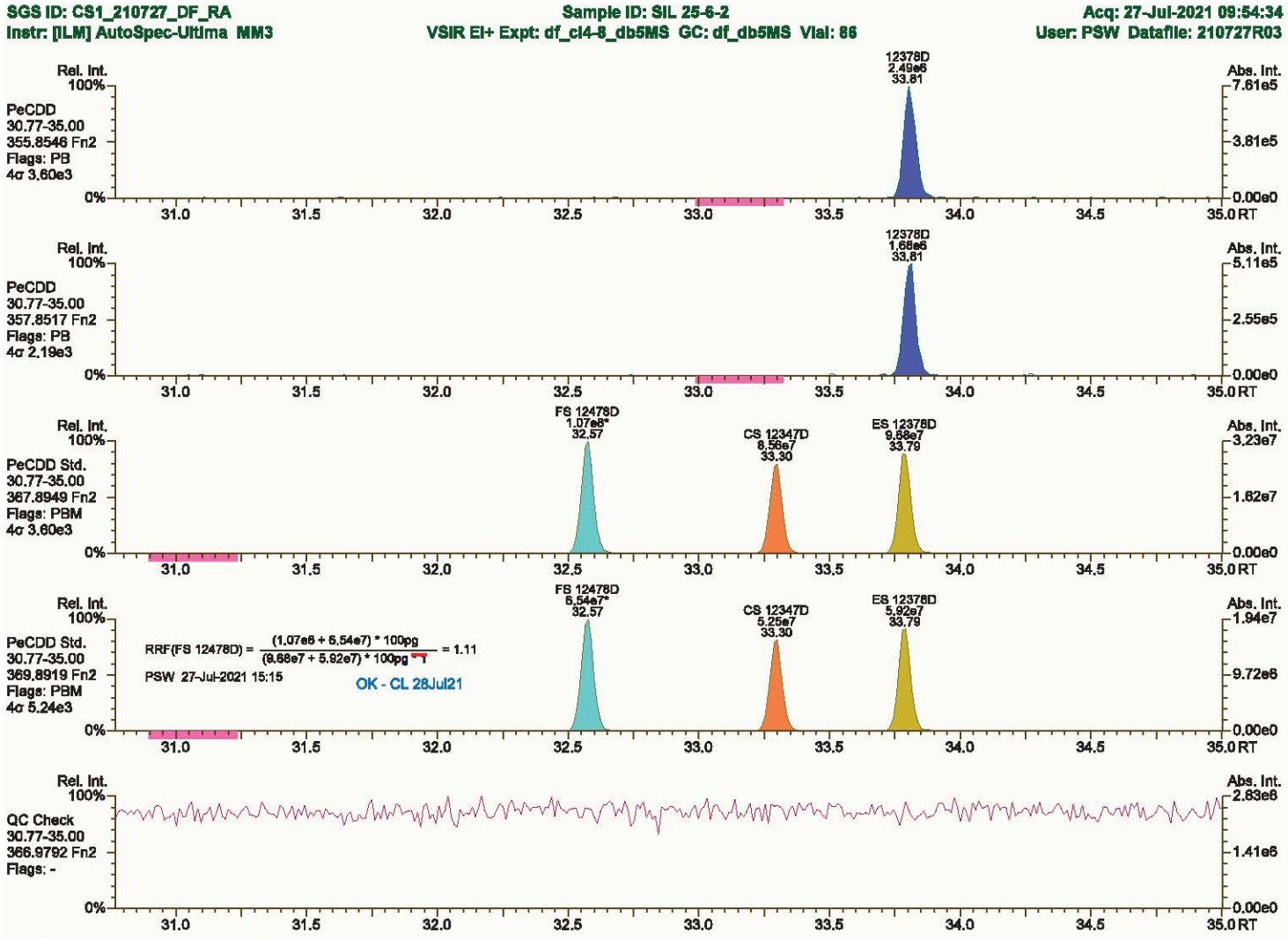
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)

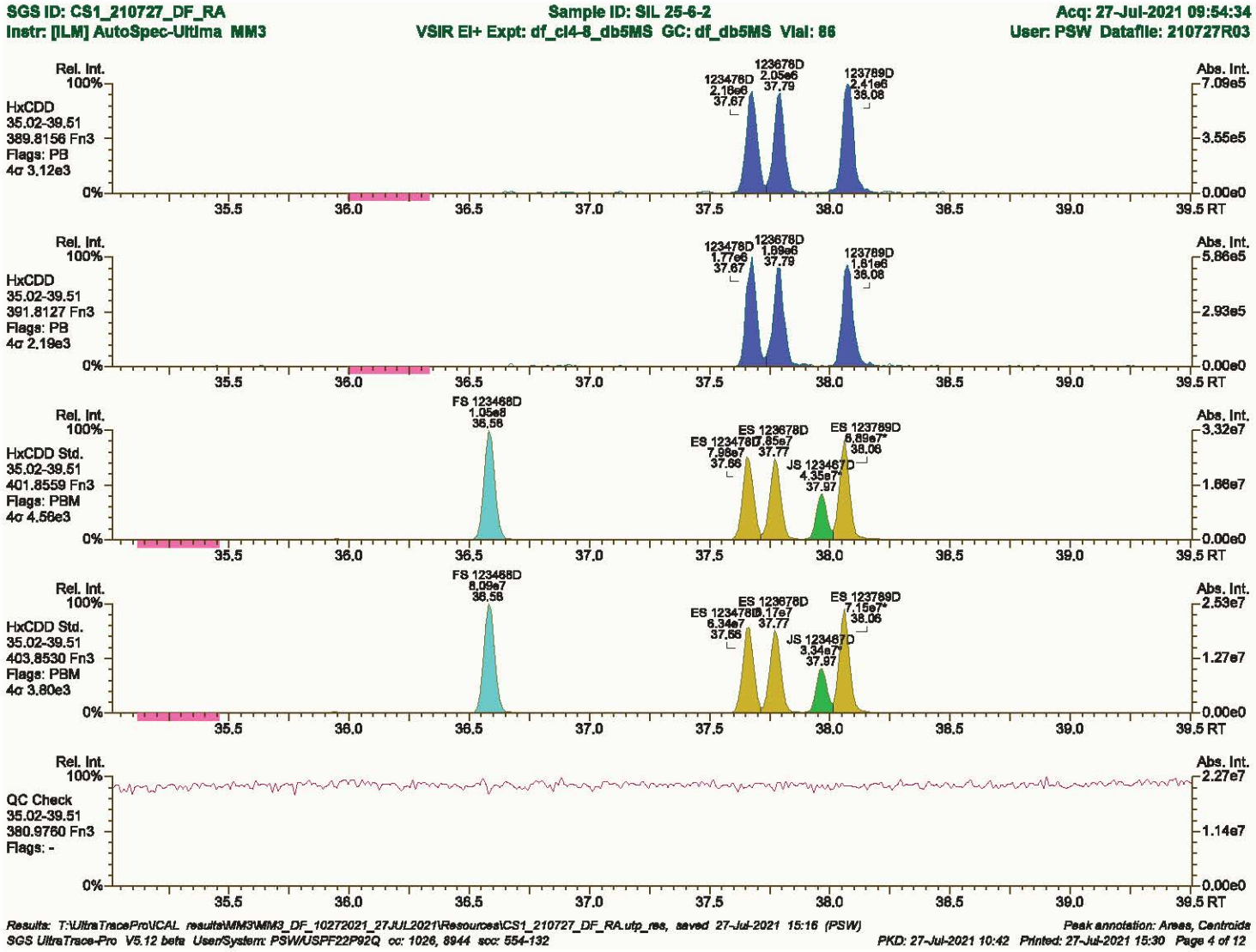
Peak annotation: Areas, Centroids

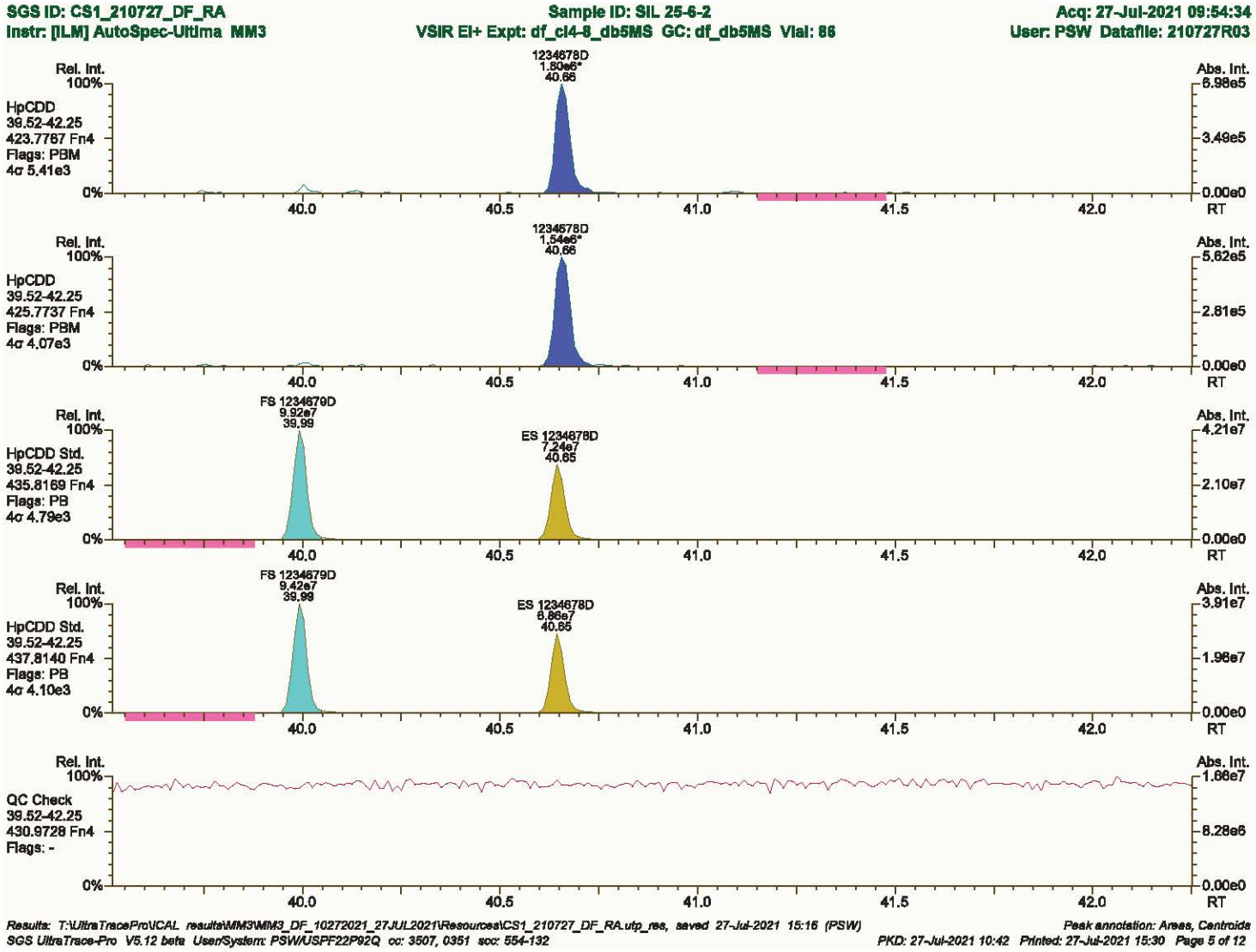
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 554-132

PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12


SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 3.79e3
2378D
4.48e5*
28.53
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.85e3
2378D
5.93e5*
28.53
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.82e3
CS 37Cl-2378D
1.01e6
28.53
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.97e3
AS 1368D
6.92e7
24.92
TS 1378D
9.64e7
26.88
JS 1234D
8.93e7
27.87
ES 2378D
8.96e7
28.51
FS 1278D
7.47e7
28.83
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.69e3
AS 1368D
8.70e7
24.92
TS 1378D
1.19e8
26.88
JS 1234D
8.30e7
27.87
ES 2378D
8.63e7
28.51
FS 1278D
9.36e7
28.83
RT

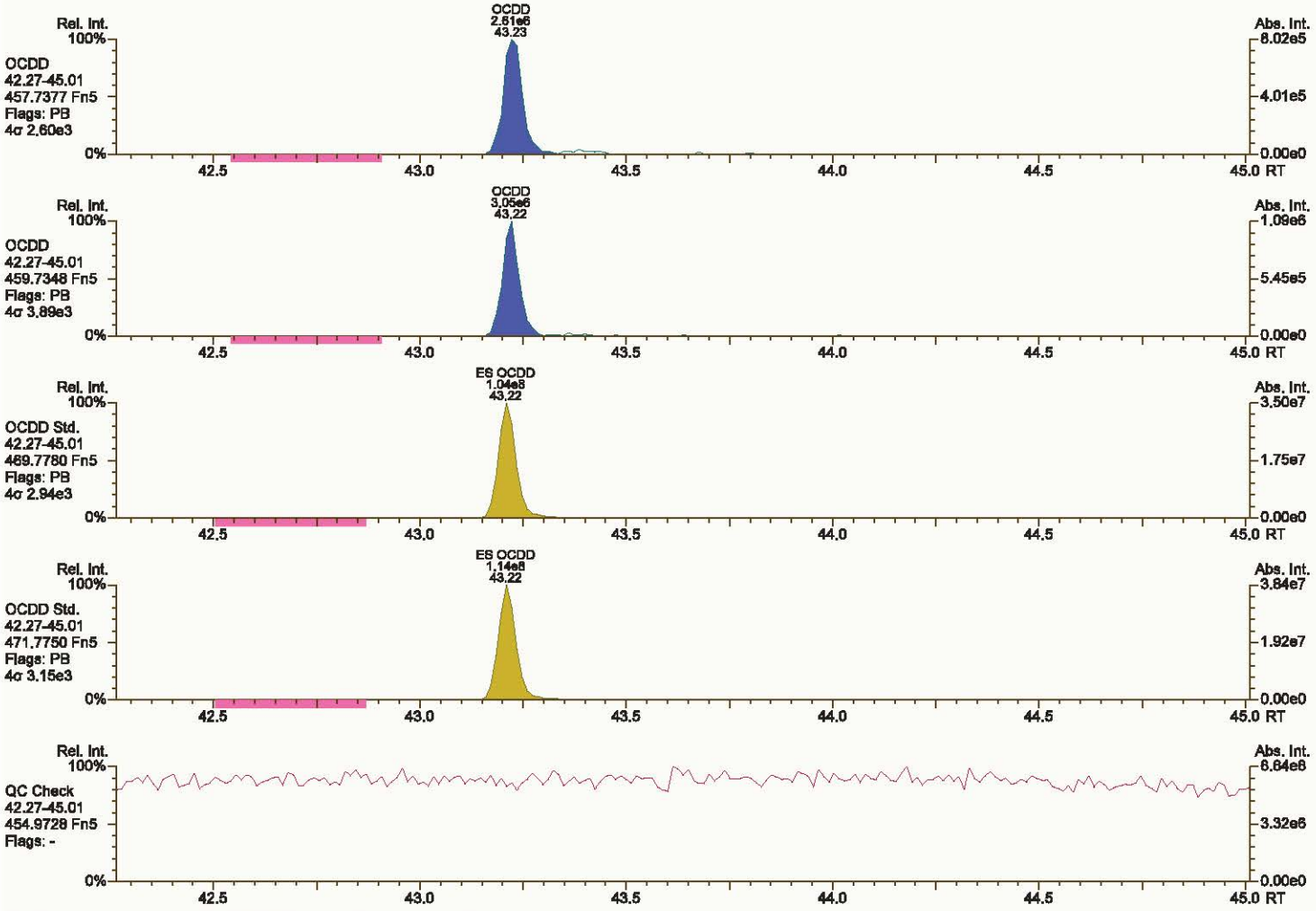

SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.60e3
12378D
2.49e6
33.81
7.61e5
3.81e5
0.00e0
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.19e3
12378D
1.66e6
33.81
5.11e5
2.55e5
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.60e3
FS 12478D
1.07e6*
32.57
CS 12347D
8.56e7
33.30
ES 12378D
9.58e7
33.79
3.23e7
1.62e7
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 5.24e3
FS 12478D
6.54e7*
32.57
CS 12347D
5.25e7
33.30
ES 12378D
5.92e7
33.79
1.94e7
9.72e6
RRF(FS 12478D) = (1.07e6 + 6.54e7) * 100pg / (9.68e7 + 5.92e7) * 100pg = 1.11
PSW 27-Jul-2021 15:15
OK - CL 28Jul21
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
2.83e6
1.41e6
0%
100%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.12e3
123678D 2.05e6 37.79
123478D 2.16e6 37.67
123789D 2.41e6 38.08
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.19e3
123678D 1.99e6 37.79
123478D 1.77e6 37.67
123789D 1.81e6 38.08
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.56e3
FS 123468D 1.05e8 36.56
ES 123678D 7.85e7 37.77
ES 123478D 7.98e7 37.66
ES 123789D 8.69e7* 38.06
JS 123467D 4.35e7* 37.97
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.80e3
FS 123468D 8.09e7 36.56
ES 123678D 9.17e7 37.77
ES 123478D 8.34e7 37.56
ES 123789D 7.15e7* 38.06
JS 123467D 3.34e7* 37.97
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
1234678D
1.80e6*
40.66
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 5.41e3
6.98e5
3.49e5
0.00e0
1234678D
1.54e6*
40.66
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 4.07e3
5.62e5
2.81e5
FS 1234679D
9.92e7
39.99
ES 1234678D
7.24e7
40.65
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 4.79e3
4.21e7
2.10e7
FS 1234679D
9.42e7
39.99
ES 1234678D
8.86e7
40.65
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.10e3
3.91e7
1.96e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.66e7
8.28e6
0%
100%
40.0
40.5
41.0
41.5
42.0
RT

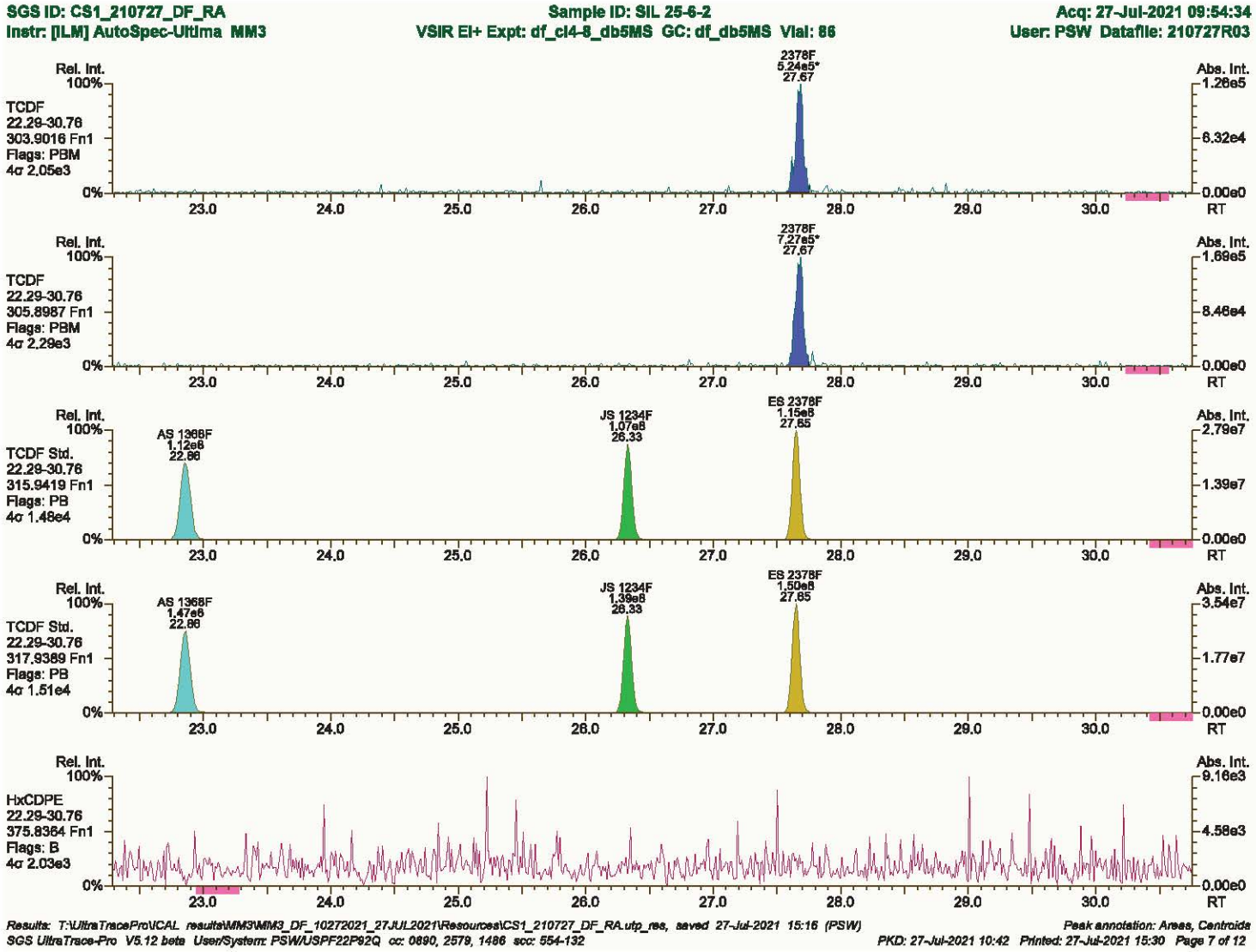
SGS ID: CS1_210727_DF_RA | Sample ID: SIL 25-6-2 | Acq: 27-Jul-2021 09:54:34

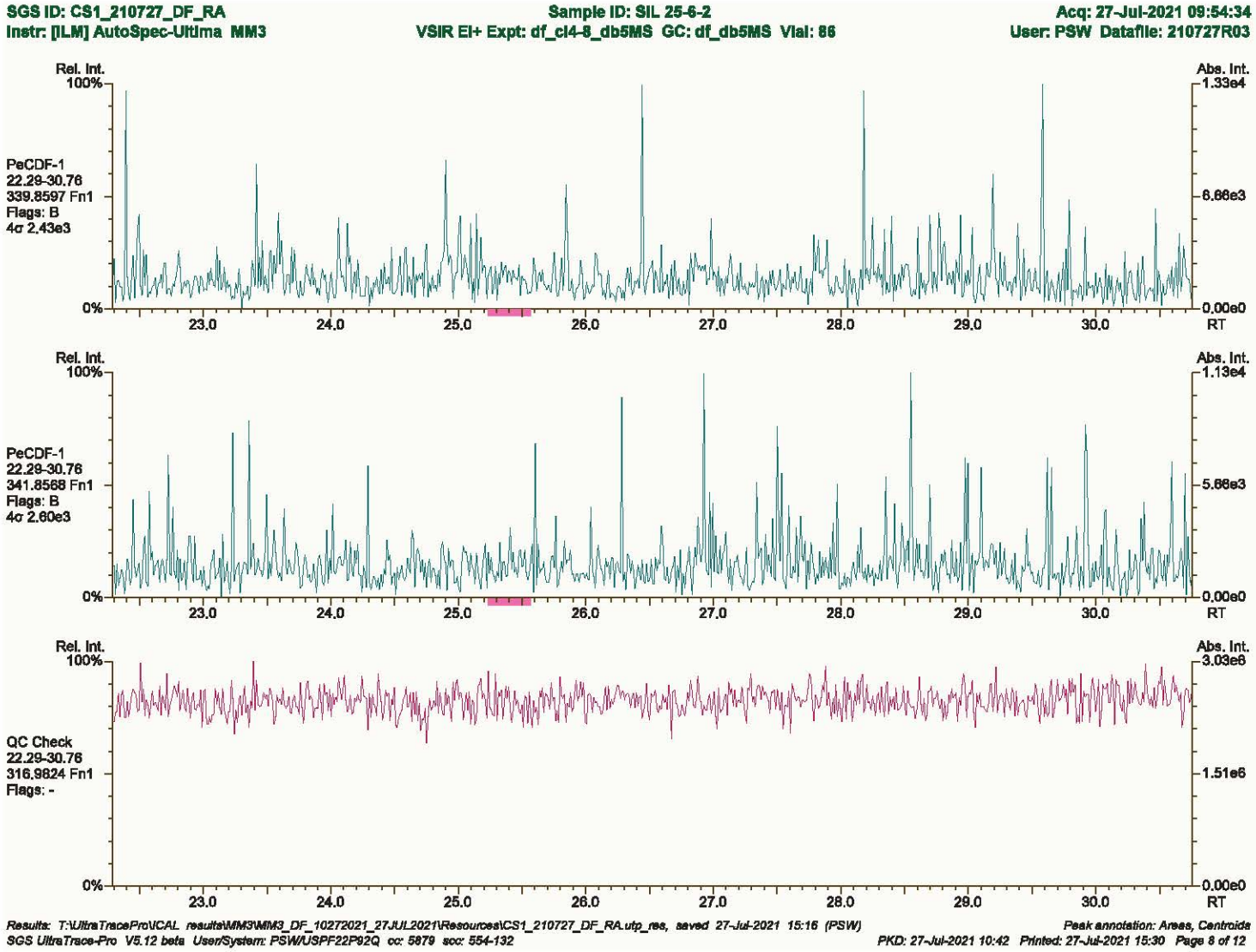
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86 | User: PSW Datafile: 210727R03

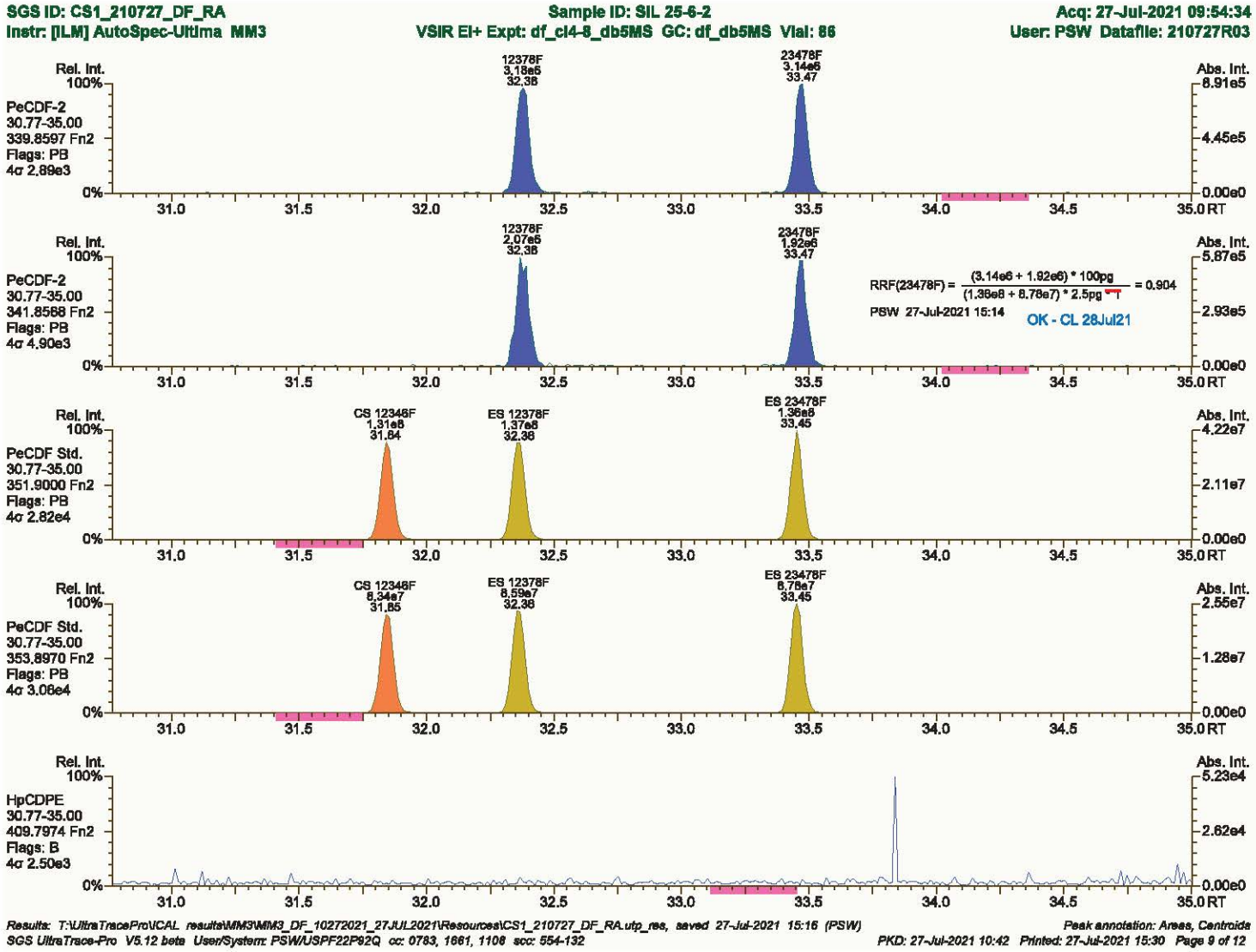


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW) *Peak annotation: Areas, Centroids*

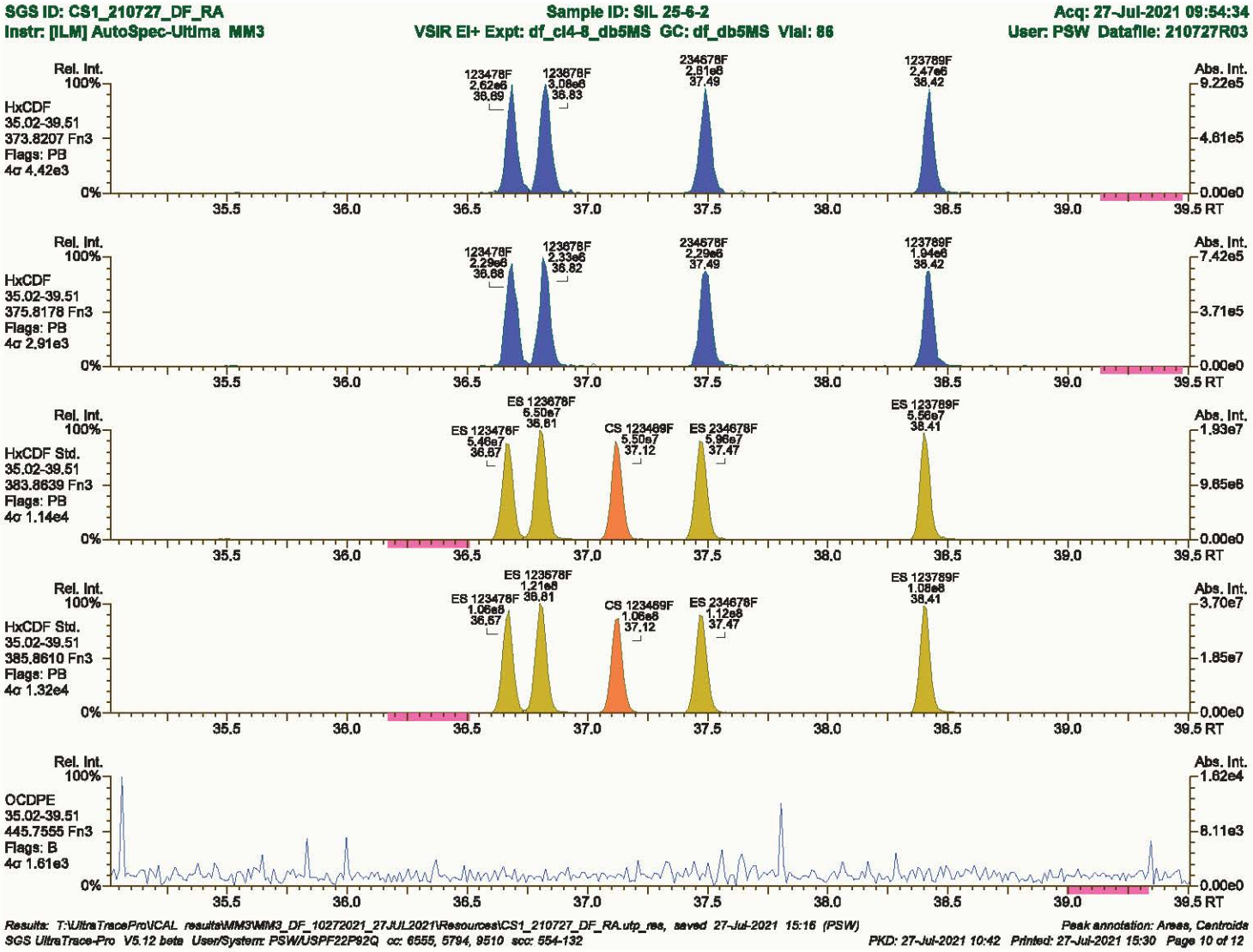
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 3442, 9341 scc: 554-132 *PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 6 of 12*

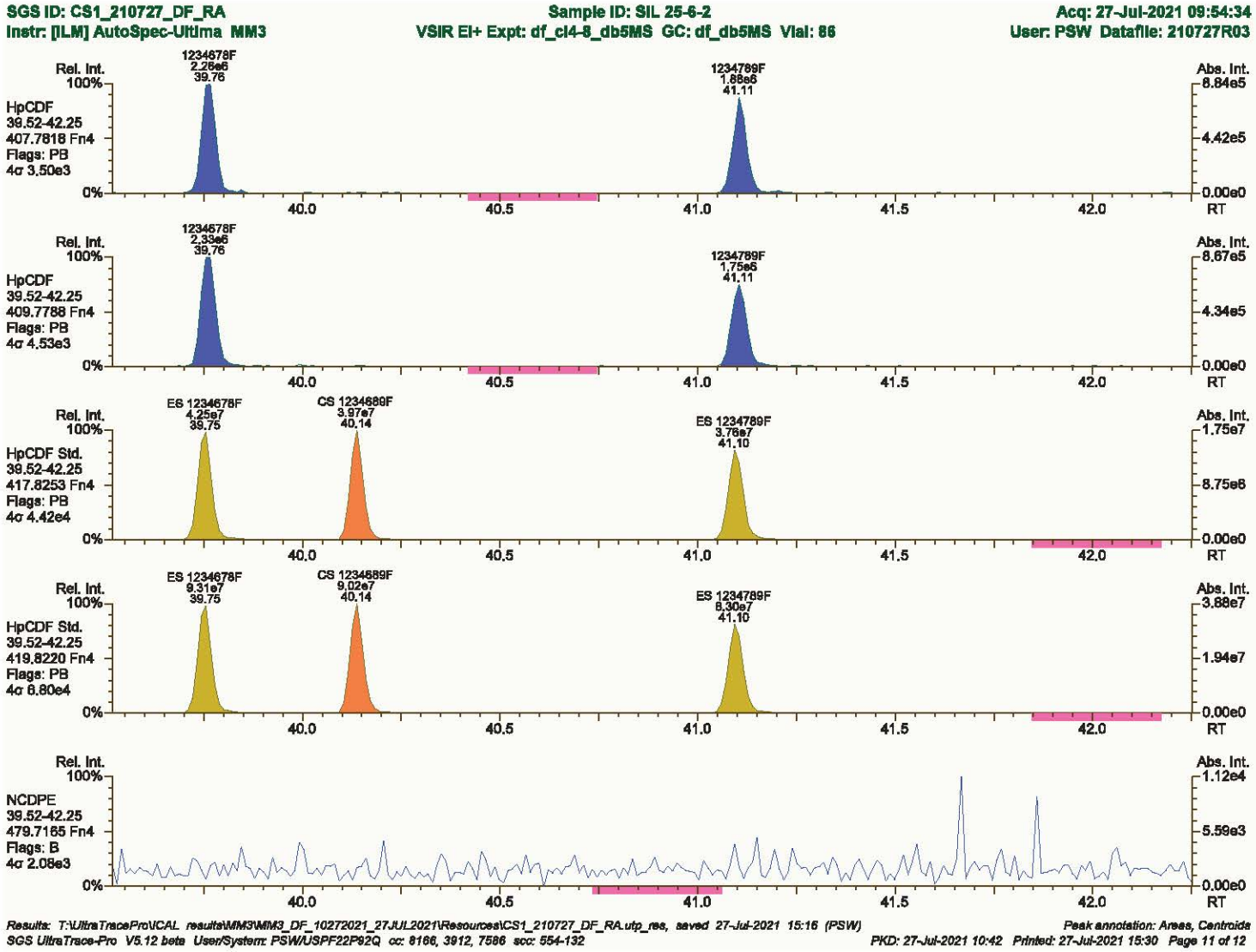

SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.05e3
2378F
5.24e5*
27.67
1.26e5
6.32e4
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.29e3
2378F
7.27e5*
27.67
1.69e5
8.46e4
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.48e4
AS 1368F
1.12e6
22.86
JS 1234F
1.07e6
26.33
ES 2378F
1.15e6
27.65
2.79e7
1.39e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.51e4
AS 1368F
1.47e6
22.86
JS 1234F
1.39e6
26.33
ES 2378F
1.50e6
27.65
3.54e7
1.77e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.03e3
9.16e3
4.58e3
0%
100%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0690, 2579, 1486 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 7 of 12

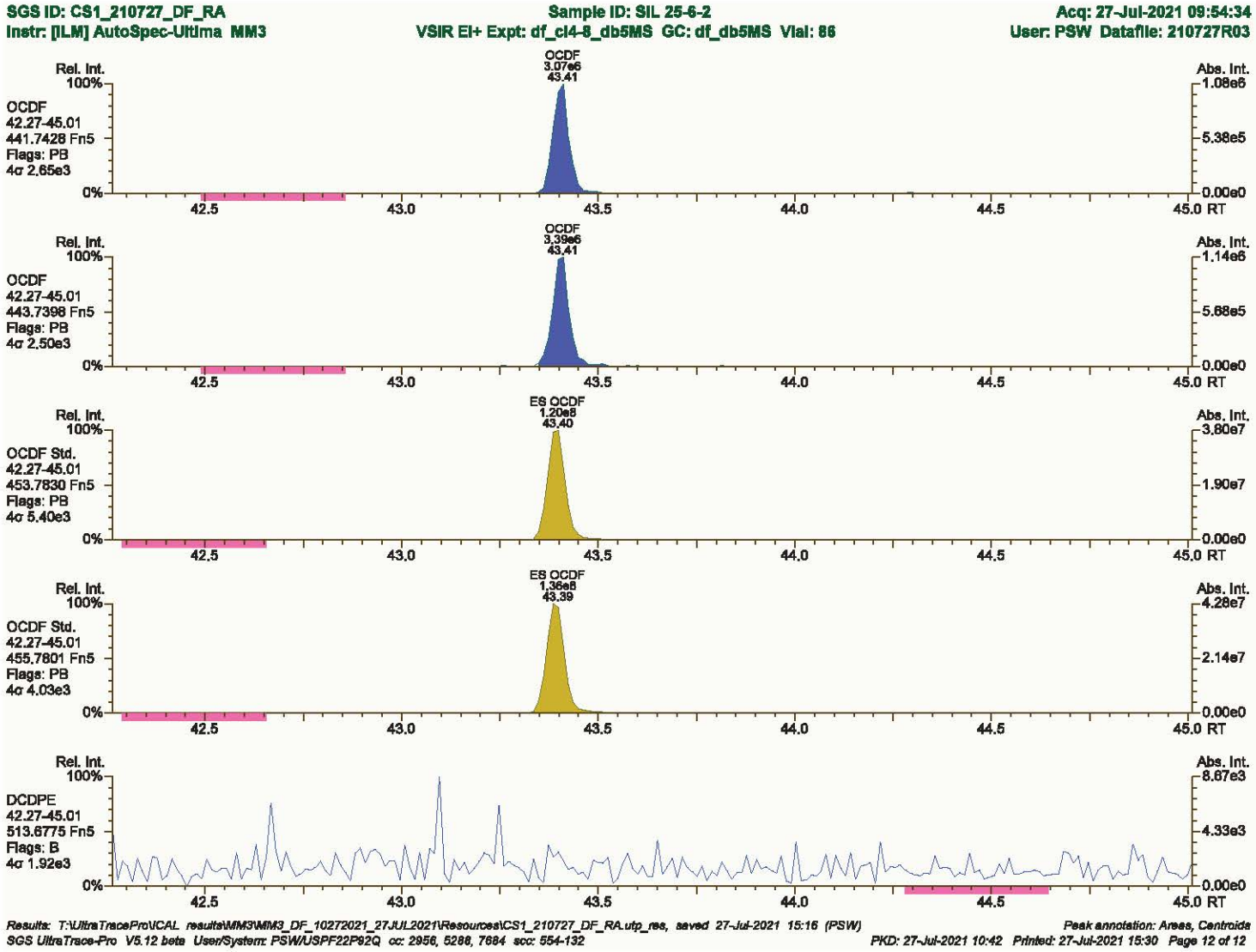

SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
RT
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.43e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.60e3
1.13e4
5.66e3
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
3.03e6
1.51e6
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5879 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 8 of 12



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0783, 1661, 1106 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 9 of 12


SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 4.42e3
123478F 2.62e6 36.69
123678F 3.09e6 36.83
234678F 2.81e6 37.49
123789F 2.47e6 38.42
9.22e5
4.61e5
0.00e0
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 2.91e3
123478F 2.29e6 36.68
123678F 2.33e6 36.82
234678F 2.29e6 37.49
123789F 1.94e6 38.42
7.42e5
3.71e5
0.00e0
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.14e4
ES 123478F 5.46e7 36.67
ES 123678F 5.50e7 36.81
CS 123489F 5.50e7 37.12
ES 234678F 5.96e7 37.47
ES 123789F 5.56e7 38.41
1.93e7
9.65e6
0.00e0
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.32e4
ES 123478F 1.06e8 36.67
ES 123678F 1.21e8 36.81
CS 123489F 1.06e8 37.12
ES 234678F 1.12e8 37.47
ES 123789F 1.08e8 38.41
3.70e7
1.85e7
0.00e0
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.61e3
1.62e4
8.11e3
0.00e0
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6555, 5794, 9510 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 10 of 12


SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 3.50e3
1234678F
2.26e6
39.76
1234789F
1.88e6
41.11
8.84e5
4.42e5
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 4.53e3
1234678F
2.33e6
39.76
1234789F
1.75e6
41.11
8.67e5
4.34e5
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 4.42e4
ES 1234678F
4.25e7
39.75
CS 1234689F
3.97e7
40.14
ES 1234789F
3.76e7
41.10
1.75e7
8.75e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 6.80e4
ES 1234678F
9.31e7
39.75
CS 1234689F
9.02e7
40.14
ES 1234789F
8.30e7
41.10
3.88e7
1.94e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.08e3
1.12e4
5.59e3
0.00e0
100%
0%
40.0
40.5
41.0
41.5
42.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8166, 3912, 7586 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 11 of 12



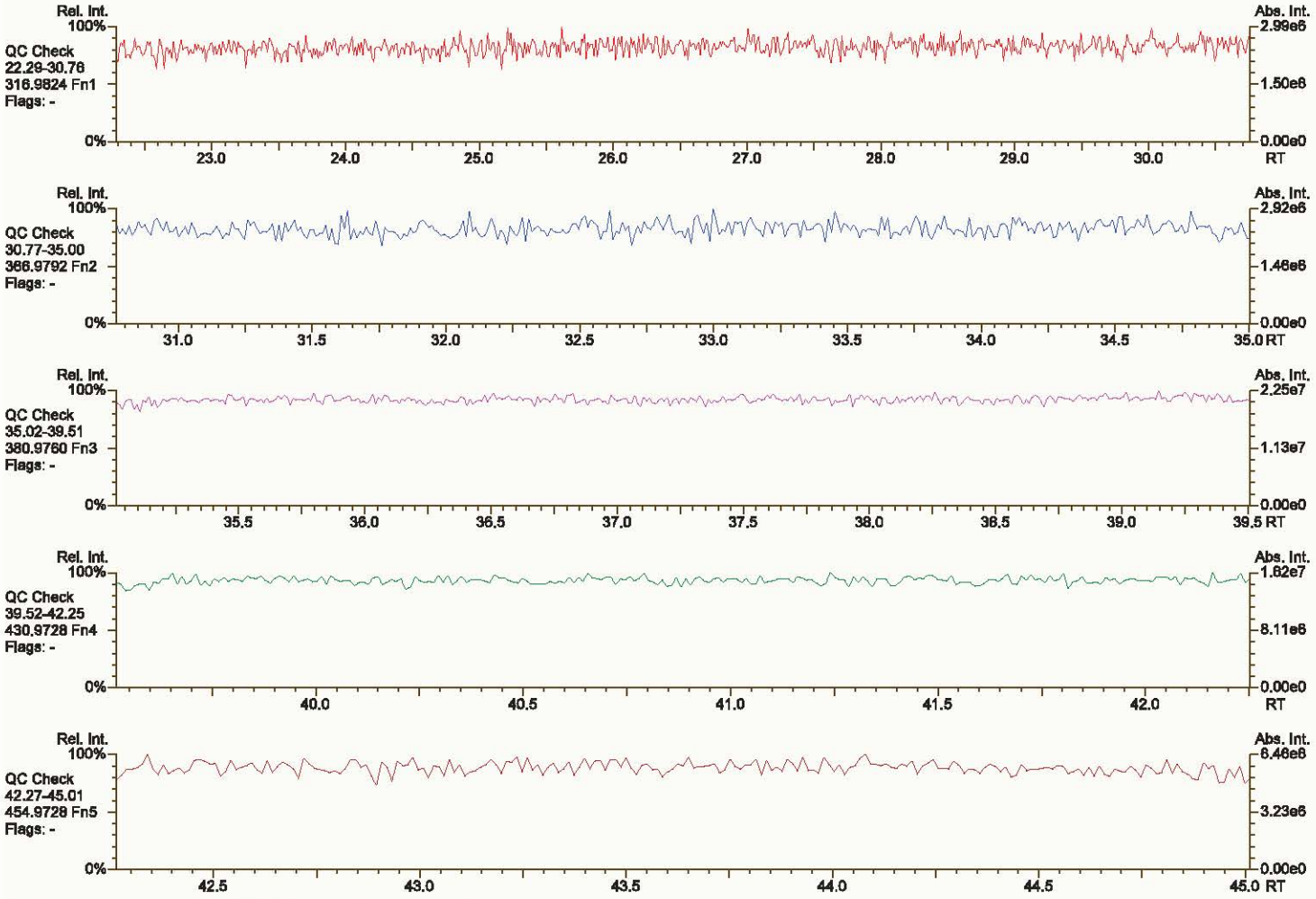
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2956, 5286, 7684 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 10:44 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS2_210727_DF_RA		UTP: 27-Jul-2021 15:00:20 PSW				Checkcode: 377-233-TNL	
Sample ID: SIL 25-6-1		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R04	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.53	4.23E+06	0.79	Y	1.34	1.26	-6%
12378-PeCDD	33.81	1.67E+07	1.63	Y	1.06	1.02	-4%
123478-HxCDD	37.68	1.53E+07	1.32	Y	1.06	0.99	-6%
123678-HxCDD	37.80	1.52E+07	1.22	Y	1.08	1.02	-5%
123789-HxCDD	38.08	1.66E+07	1.25	Y	1.02	0.95	-6%
1234678-HpCDD	40.67	1.41E+07	1.01	Y	0.97	0.92	-6%
OCDD	43.23	2.33E+07	0.88	Y	1.07	1.01	-6%
2378-TCDF	27.68	5.04E+06	0.83	Y	0.96	0.90	-6%
12378-PeCDF	32.39	2.16E+07	1.63	Y	0.95	0.90	-5%
23478-PeCDF	33.48	2.12E+07	1.52	Y	0.94	0.90	-4%
123478-HxCDF	36.69	2.09E+07	1.25	Y	1.23	1.19	-4%
123678-HxCDF	36.83	2.13E+07	1.24	Y	1.13	1.07	-5%
234678-HxCDF	37.50	1.98E+07	1.20	Y	1.15	1.08	-6%
123789-HxCDF	38.43	1.89E+07	1.24	Y	1.14	1.09	-4%
1234678-HpCDF	39.77	1.87E+07	1.01	Y	1.36	1.31	-4%
1234789-HpCDF	41.12	1.60E+07	1.02	Y	1.30	1.26	-3%
OCDF	43.41	2.61E+07	0.92	Y	1.03	0.95	-7%
ES 2378-TCDD	28.51	1.68E+08	0.80	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.794	1.63E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.667	1.54E+08	1.28	Y	0.99	0.99	-1%
ES 123678-HxCDD	37.781	1.49E+08	1.24	Y	0.97	0.95	-2%
ES 123789-HxCDD	38.07	1.75E+08	1.26	Y	1.12	1.12	0%
ES 1234678-HpCDD	40.658	1.53E+08	1.06	Y	0.99	0.98	-1%
ES OCDD	43.222	2.31E+08	0.90	Y	0.78	0.74	-5%
ES 2378-TCDF	27.656	2.80E+08	0.80	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.368	2.40E+08	1.55	Y	0.93	0.92	-2%
ES 23478-PeCDF	33.459	2.36E+08	1.59	Y	0.92	0.90	-2%
ES 123478-HxCDF	36.674	1.76E+08	0.52	Y	1.14	1.13	-1%
ES 123678-HxCDF	36.814	1.99E+08	0.52	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.481	1.84E+08	0.52	Y	1.20	1.18	-2%
ES 123789-HxCDF	38.416	1.73E+08	0.52	Y	1.14	1.11	-2%
ES 1234678-HpCDF	39.761	1.43E+08	0.44	Y	0.95	0.92	-3%
ES 1234789-HpCDF	41.105	1.28E+08	0.46	Y	0.85	0.82	-3%
ES OCDF	43.404	2.74E+08	0.87	Y	0.93	0.88	-5%

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 10:44 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS2_210727_DF_RA		UTP: 27-Jul-2021 15:00:20 PSW				Checkcode: 377-233-TNL	
Sample ID: SIL 25-6-1		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R04	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.65E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.34	2.62E+08	0.75	Y	-	-	-
JS 123467-HxCDD	37.97	7.80E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.31	1.27	-3%
CS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.13	1.69E+08	0.52	Y	1.09	1.08	-1%
CS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.86	0.89	3%
SS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.13	1.69E+08	0.52	Y	0.84	0.85	1%
SS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.92	1.68E+08	0.81	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.81E+08	0.77	Y	1.08	1.07	-1%
FS 1278-TCDD	28.83	1.83E+08	0.80	Y	1.08	1.09	0%
FS 12478-PeCDD	32.58	1.83E+08	1.61	Y	1.09	1.12	3%
FS 123468-HxCDD	36.59	1.97E+08	1.31	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	2.12E+08	1.04	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	2.27E+08	0.78	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.23~~	~~1.51E+06~~	~~2.07~~	~~N~~	~~0.87~~	~~0.87~~	~~-1%~~
~~OCDF-a~~	~~43.41~~	~~1.45E+06~~	~~3.19~~	~~N~~	~~0.86~~	~~0.85~~	~~-114%~~

Not reported from this ICAL - CL 28Jul21

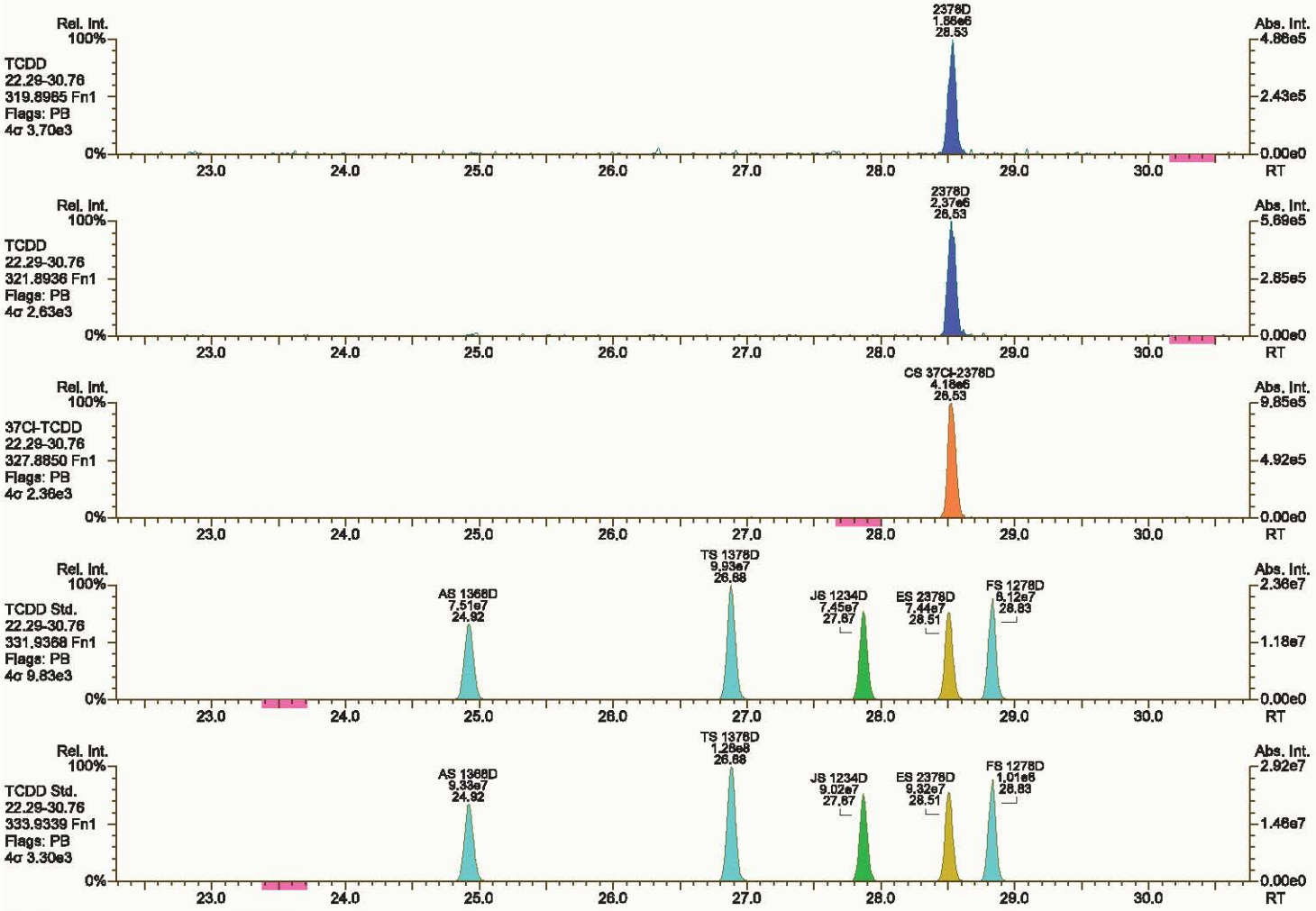
SGS ID: CS2_210727_DF_RA | Sample ID: SIL 25-6-1 | Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87 | User: PSW Datafile: 210727R04



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 377-233
PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12

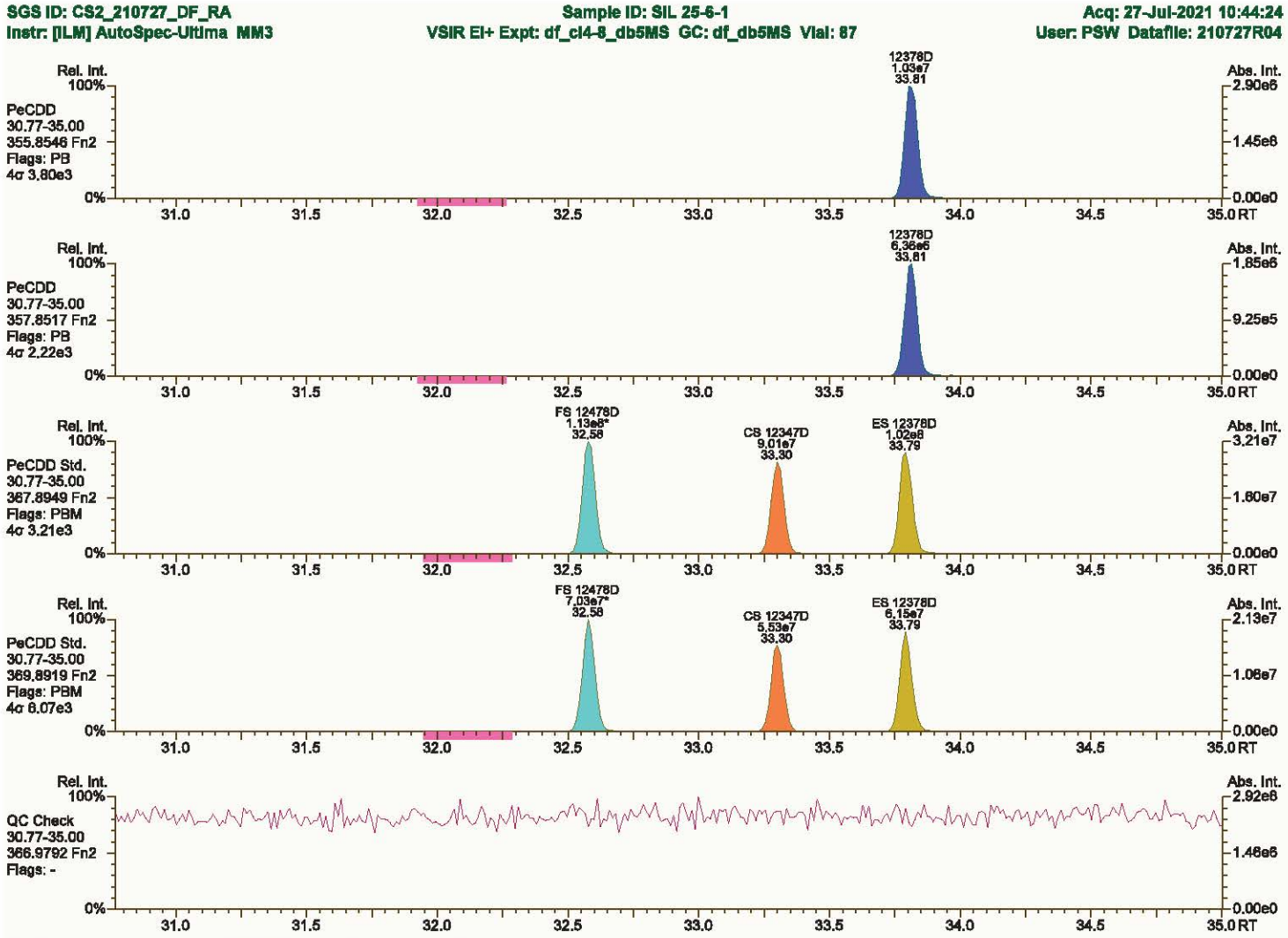
SGS ID: CS2_210727_DF_RA | Sample ID: SIL 25-6-1 | Acq: 27-Jul-2021 10:44:24

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87 | User: PSW Datafile: 210727R04

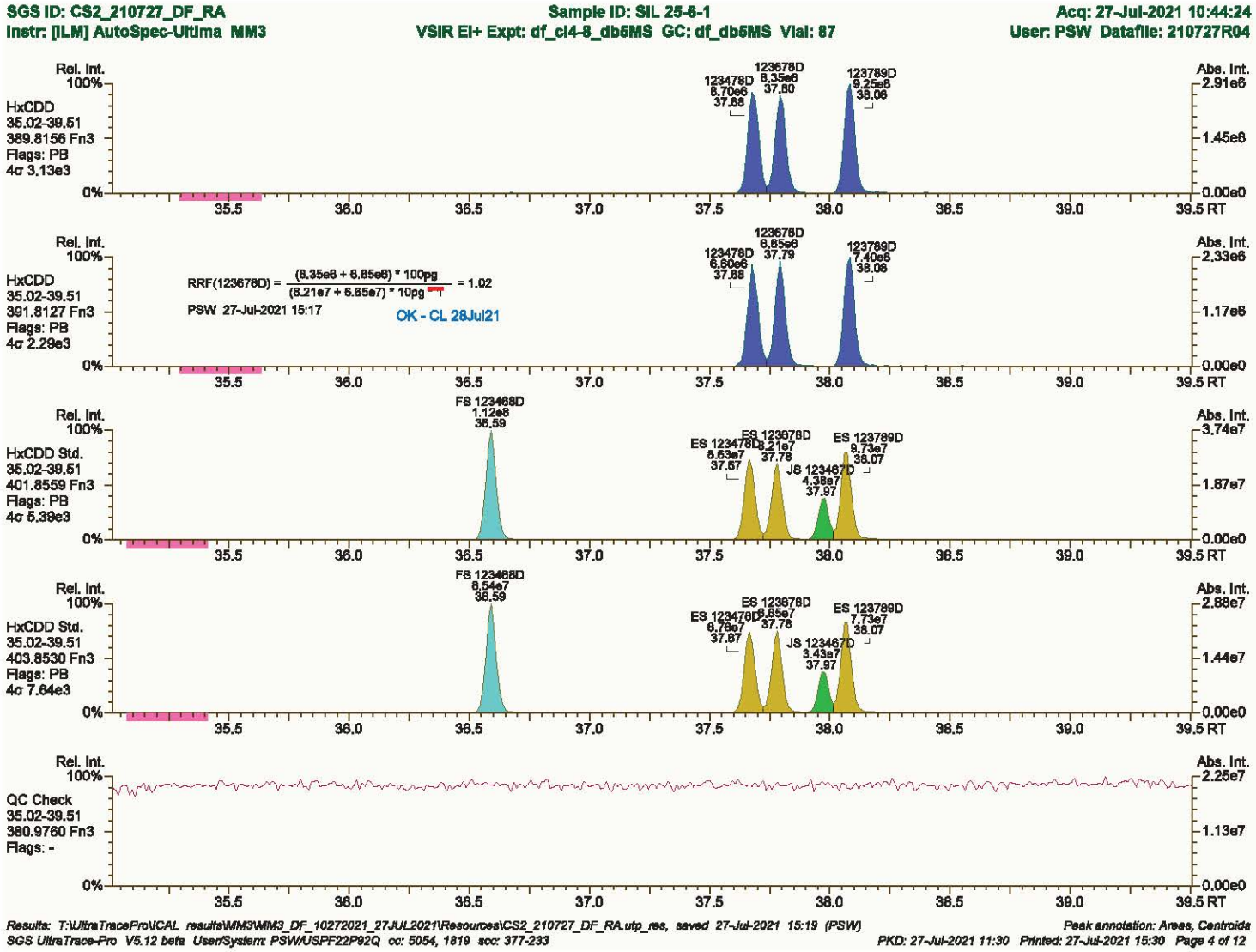


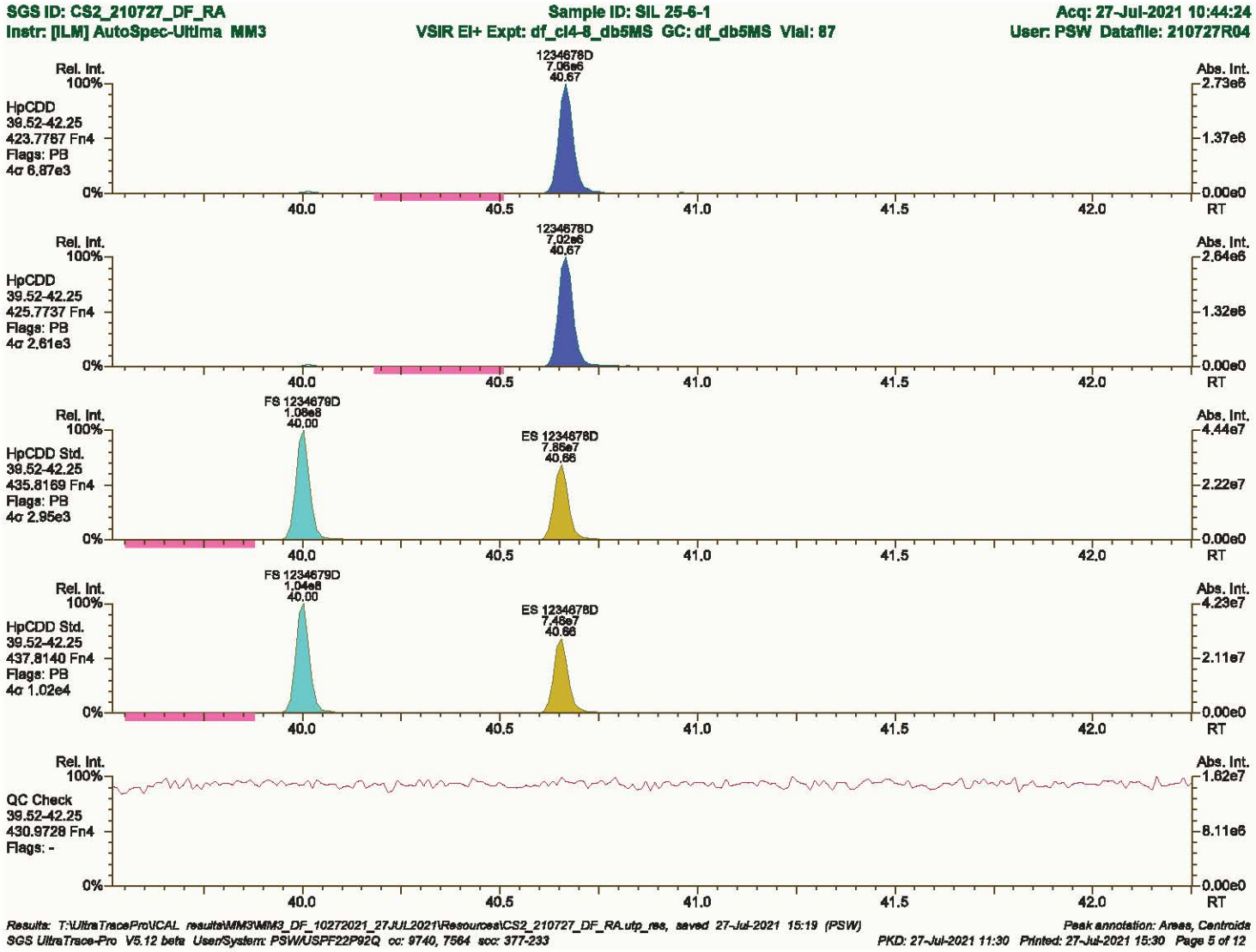
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW) *Peak annotation: Areas, Centroids*

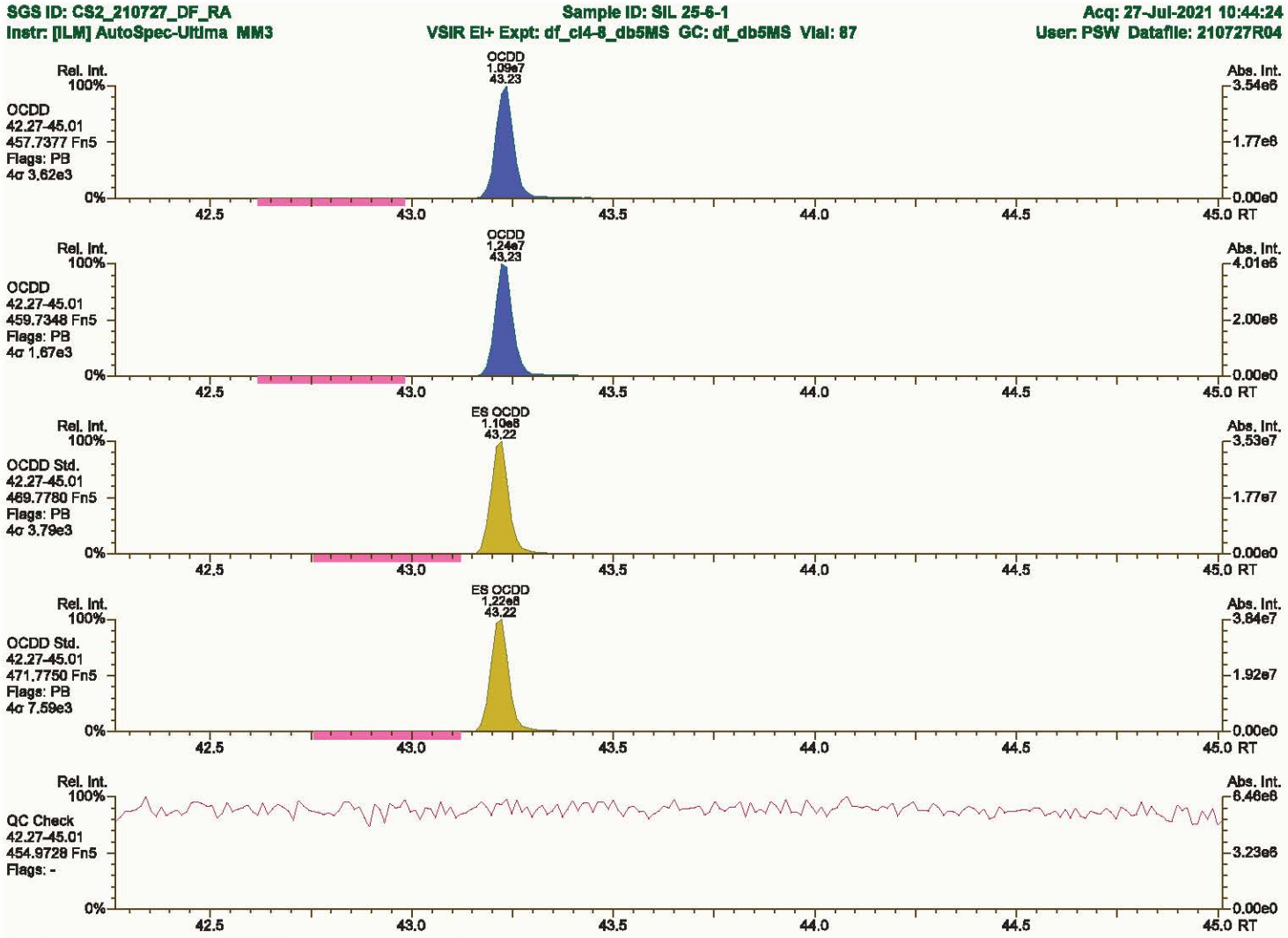
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1119, 4153, 3896 scc: 377-233 *PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 2 of 12*



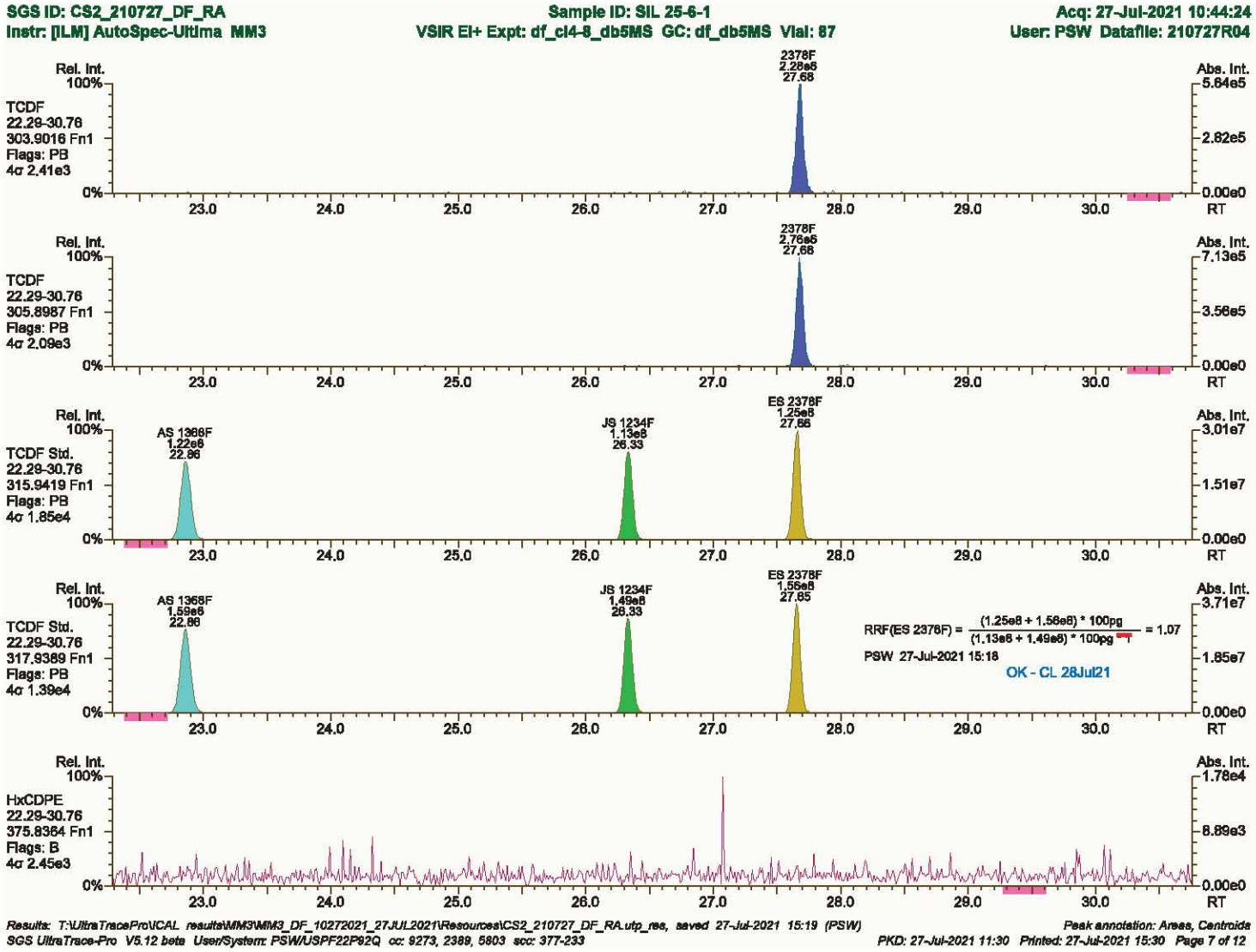
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8625, 9446 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 3 of 12


SGS ID: CS2_210727_DF_RA
Sample ID: SIL 25-6-1
Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
User: PSW Datafile: 210727R04
Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.13e3
123678D 8.35e6 37.80
123478D 8.70e6 37.68
123789D 9.25e8 38.06
2.91e6
1.45e6
0.00e0
RRF(123678D) = (8.35e6 + 6.85e6) * 100pg / (8.21e7 + 6.65e7) * 10pg = 1.02
PSW 27-Jul-2021 15:17
OK - CL 28Jul21
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.29e3
123678D 6.85e6 37.79
123478D 6.80e6 37.68
123789D 7.40e6 38.06
2.33e6
1.17e6
0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 5.39e3
FS 123468D 1.12e8 36.59
ES 123678D 8.21e7 37.78
ES 123478D 8.63e7 37.67
ES 123789D 9.73e7 38.07
JS 123467D 4.38e7 37.97
3.74e7
1.87e7
0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 7.64e3
FS 123468D 8.54e7 36.59
ES 123678D 6.65e7 37.78
ES 123478D 6.78e7 37.67
ES 123789D 7.73e7 38.07
JS 123467D 3.43e7 37.97
2.88e7
1.44e7
0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.25e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 5054, 1819 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 4 of 12


SGS ID: CS2_210727_DF_RA
Sample ID: SIL 25-6-1
Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
User: PSW Datafile: 210727R04
Rel. Int.
Abs. Int.
100%
0%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 6.87e3
1234678D
7.06e6
40.67
2.73e6
1.37e6
0.00e0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 2.61e3
1234678D
7.02e6
40.67
2.64e6
1.32e6
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.95e3
FS 1234679D
1.08e8
40.00
ES 1234678D
7.85e7
40.66
4.44e7
2.22e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.02e4
FS 1234679D
1.04e8
40.00
ES 1234678D
7.48e7
40.66
4.23e7
2.11e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.62e7
8.11e6
40.0
40.5
41.0
41.5
42.0
RT



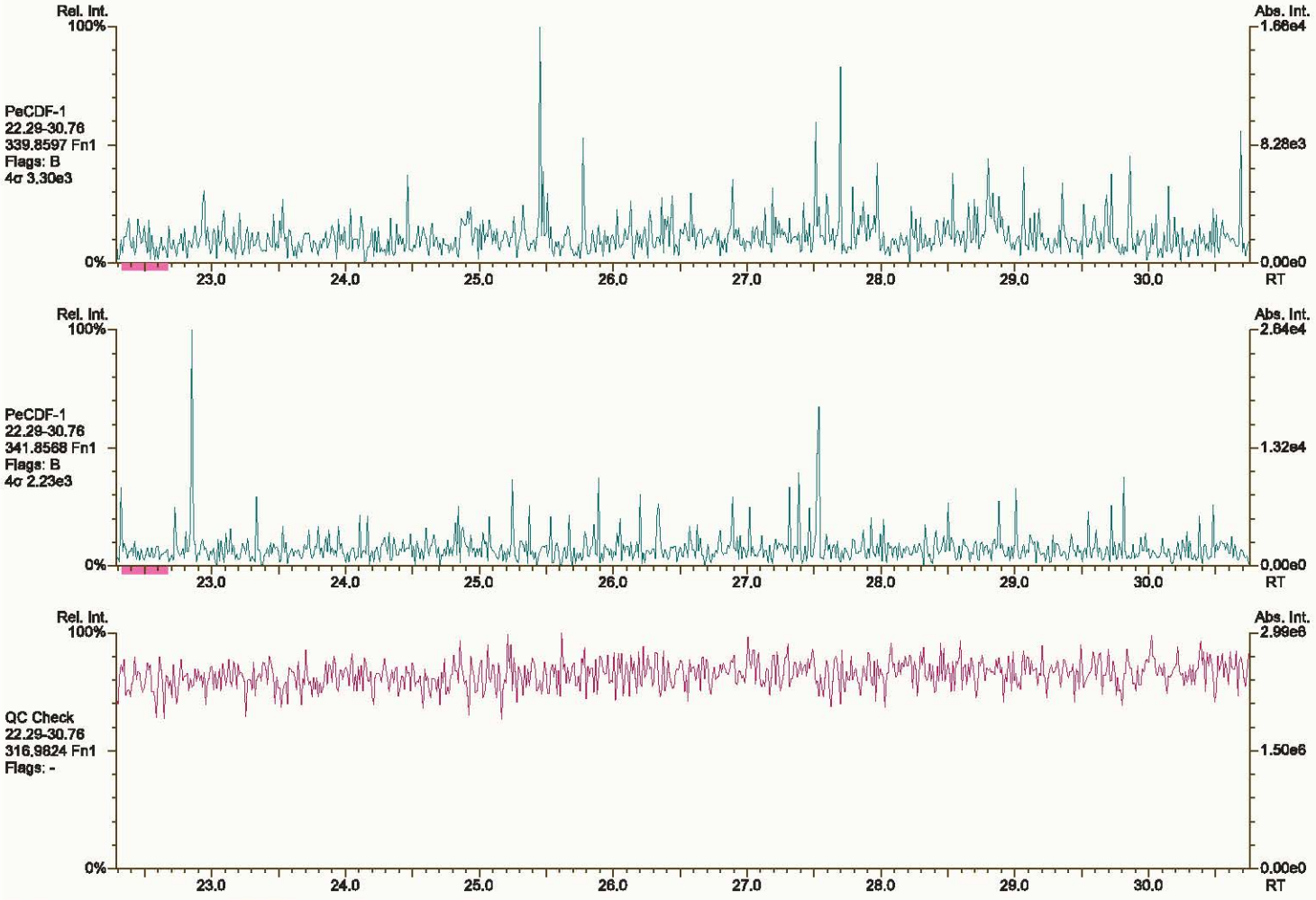
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8399, 4082 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 6 of 12


SGS ID: CS2_210727_DF_RA
Sample ID: SIL 25-6-1
Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
User: PSW Datafile: 210727R04
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.41e3
2378F
2.28e6
27.68
5.64e5
2.82e5
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.09e3
2378F
2.76e5
27.68
7.13e5
3.56e5
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.85e4
AS 1368F
1.22e6
22.86
JS 1234F
1.13e8
26.33
ES 2378F
1.25e8
27.66
3.01e7
1.51e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.39e4
AS 1368F
1.59e6
22.86
JS 1234F
1.49e8
26.33
ES 2378F
1.56e8
27.65
RRF(ES 2378F) = (1.25e8 + 1.56e8) * 100pg / (1.13e8 + 1.49e8) * 100pg = 1.07
PSW 27-Jul-2021 15:18
OK - CL 28Jul21
3.71e7
1.85e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.45e3
1.78e4
8.89e3
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87

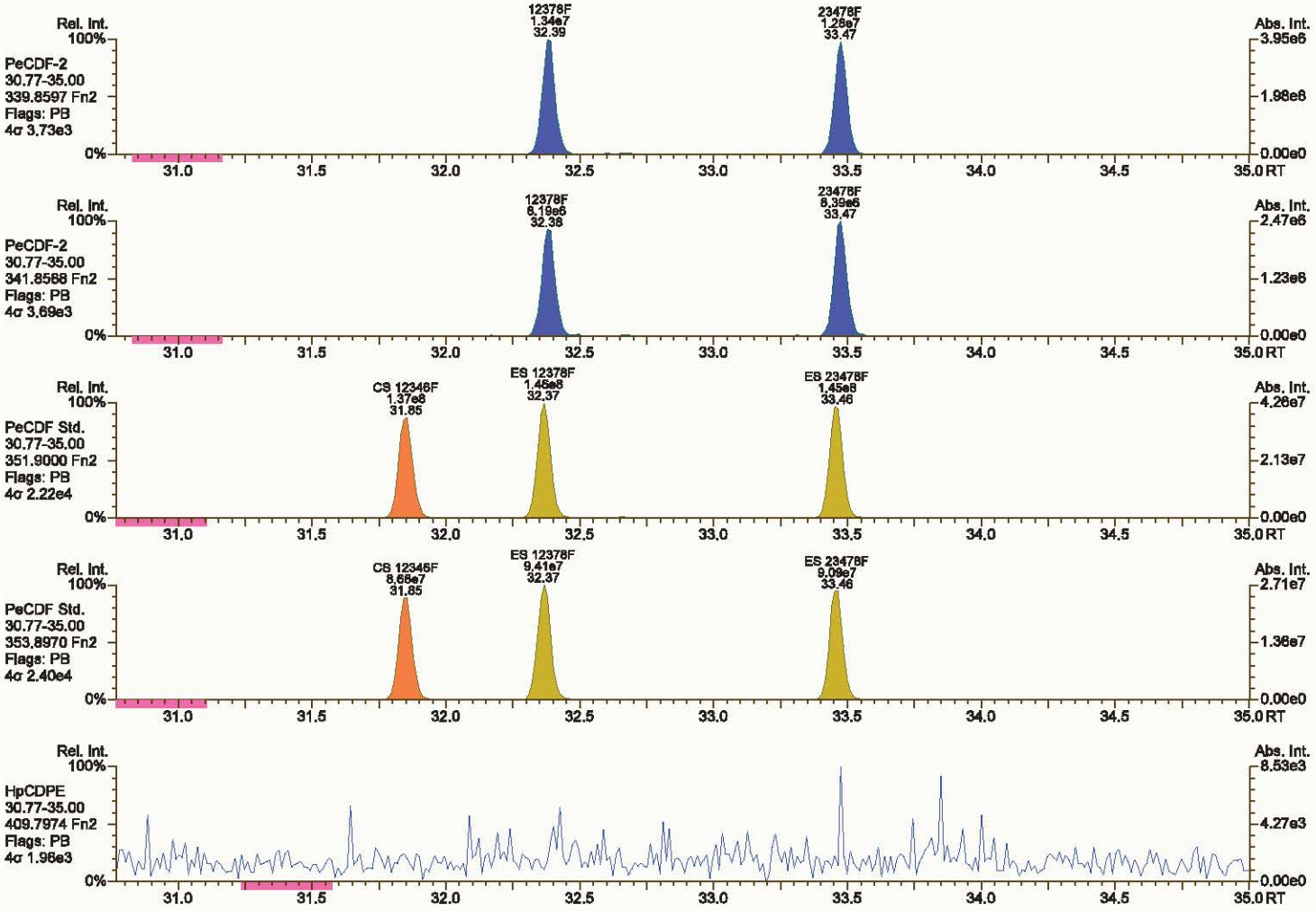
Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6697 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 8 of 12

SGS ID: CS2_210727_DF_RA | Sample ID: SIL 25-6-1 | Acq: 27-Jul-2021 10:44:24

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87 | User: PSW Datafile: 210727R04



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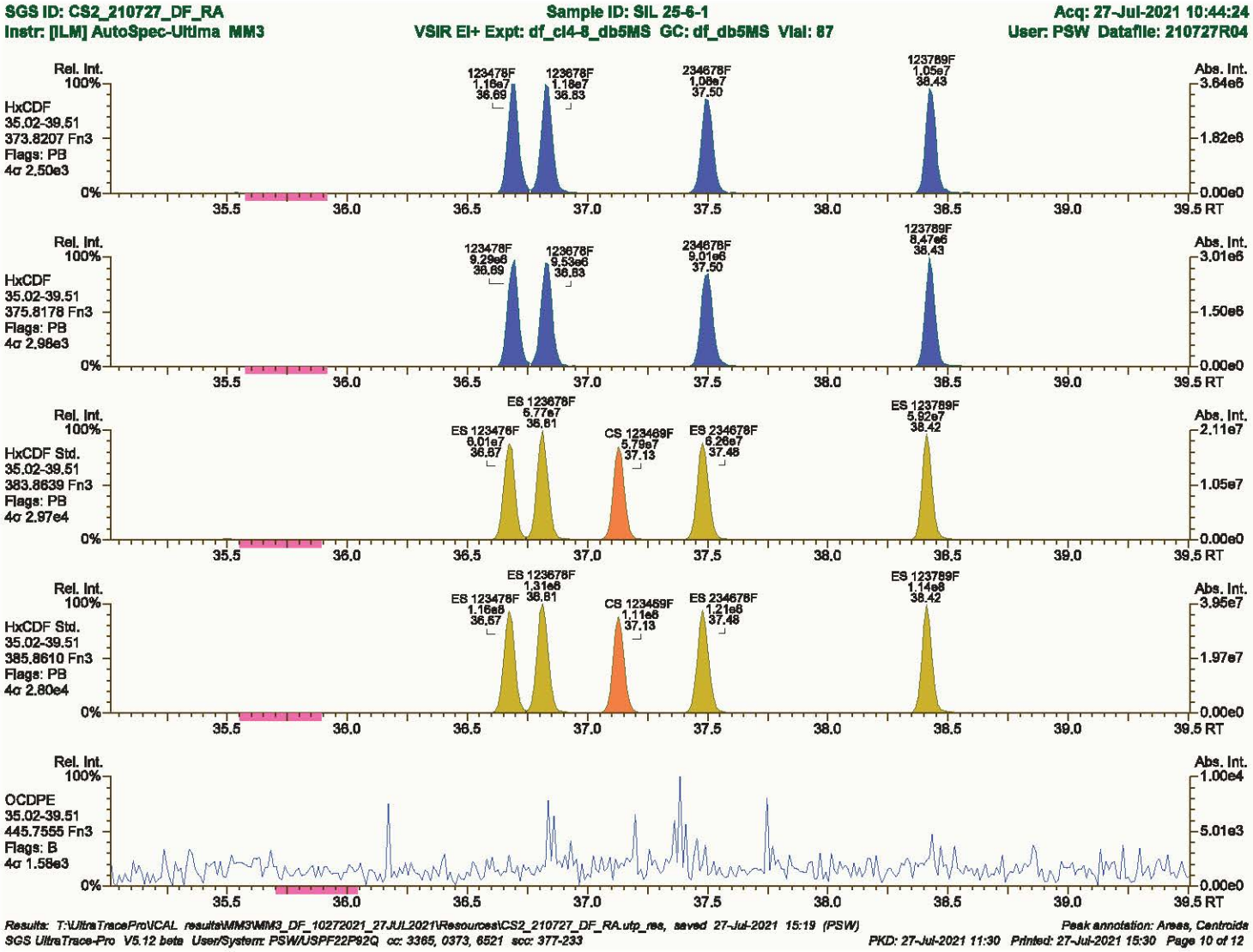
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9467, 2451, 0183 scc: 377-233 *PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 9 of 12*

SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87

Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04



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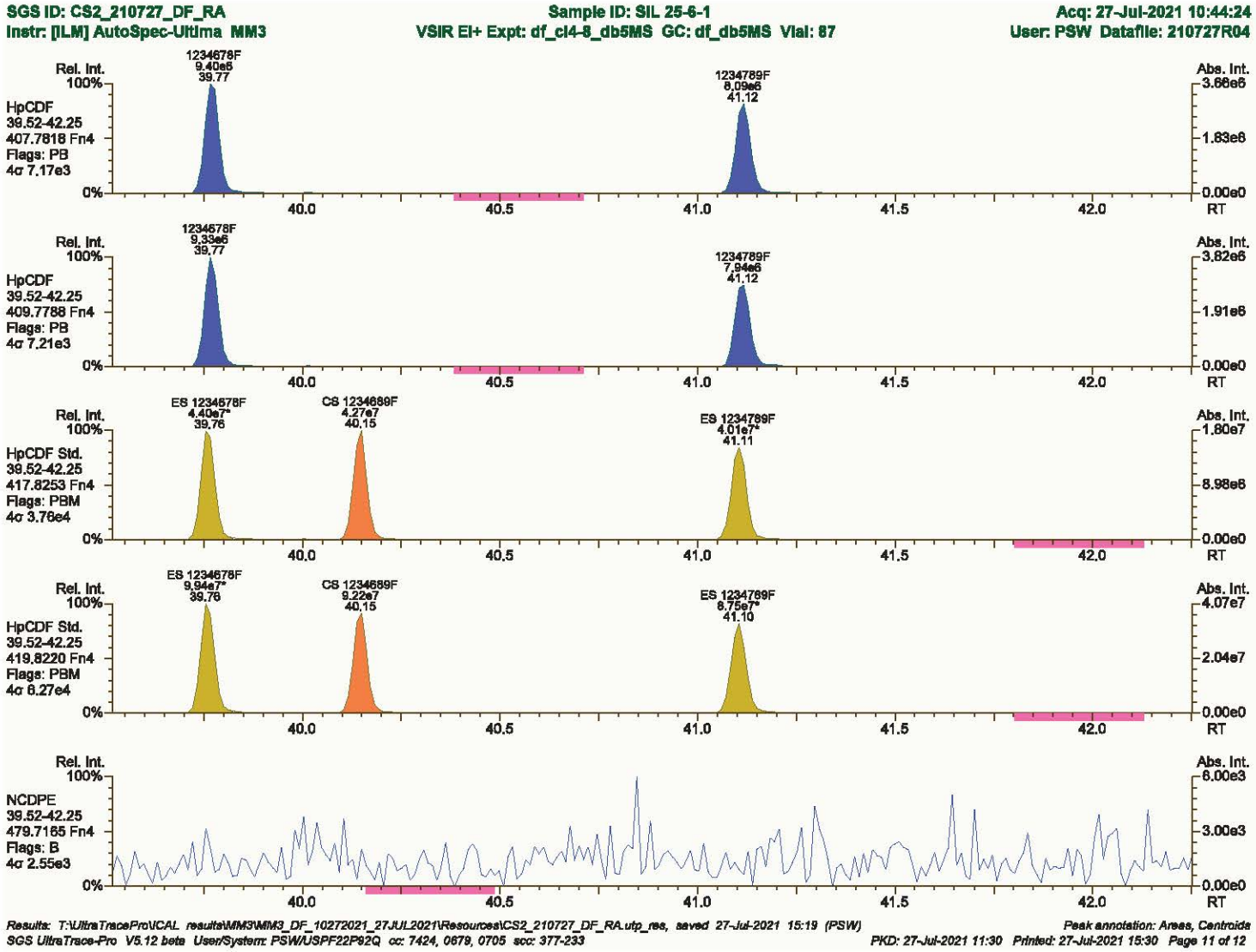
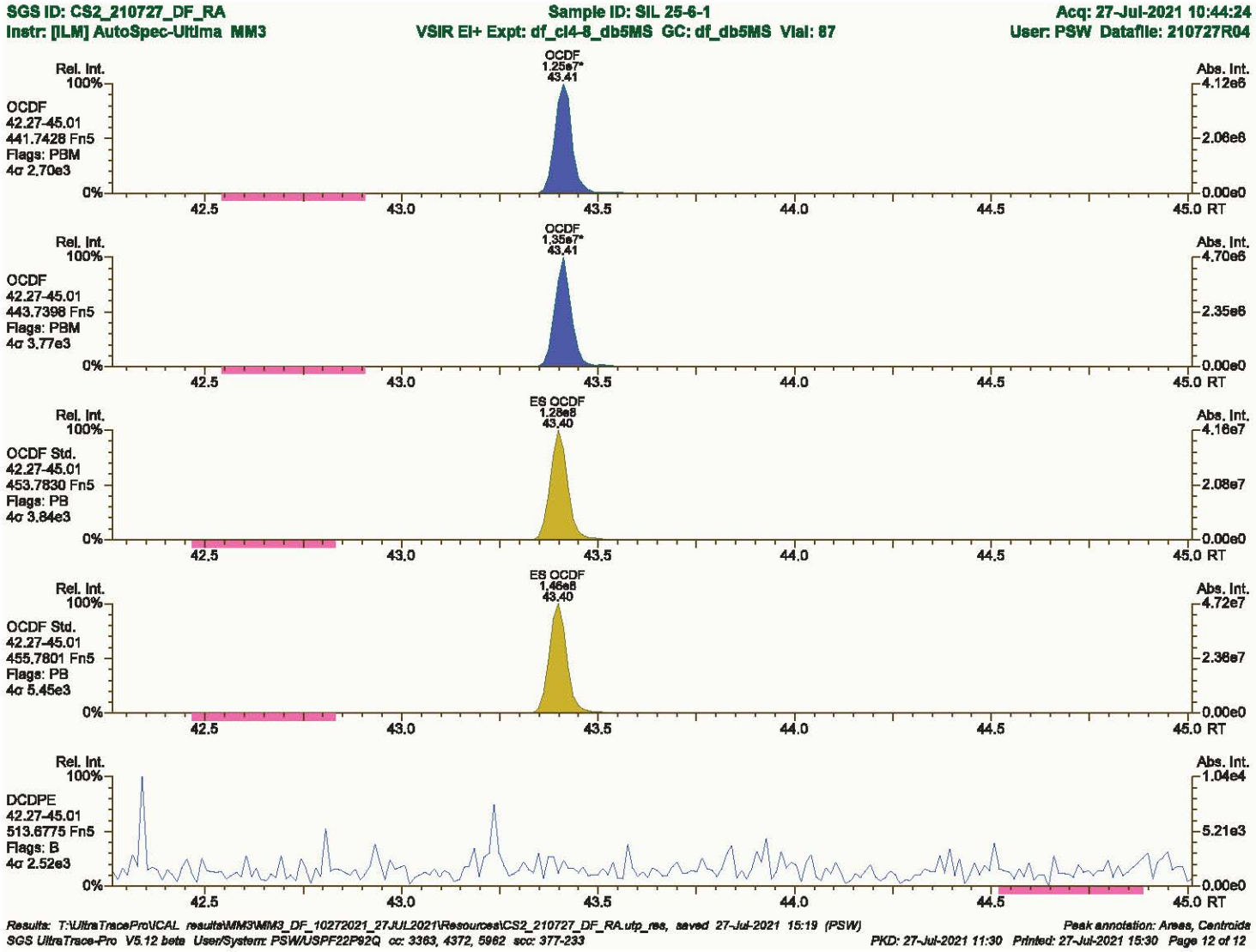
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3365, 0373, 6521 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 10 of 12


SGS ID: CS2_210727_DF_RA
Sample ID: SIL 25-6-1
Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
User: PSW Datafile: 210727R04
Rel. Int.
Abs. Int.
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 7.17e3
1234678F
9.40e6
39.77
1234789F
8.09e6
41.12
3.66e6
1.83e6
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 7.21e3
1234678F
9.33e6
39.77
1234789F
7.94e6
41.12
3.82e6
1.91e6
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.76e4
ES 1234678F
4.40e7*
39.76
CS 1234689F
4.27e7
40.15
ES 1234789F
4.01e7*
41.11
1.80e7
8.98e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 6.27e4
ES 1234678F
9.94e7*
39.76
CS 1234689F
9.22e7
40.15
ES 1234789F
8.75e7*
41.10
4.07e7
2.04e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.55e3
6.00e3
3.00e3
100%
0%
40.0
40.5
41.0
41.5
42.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7424, 0679, 0705 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 11 of 12

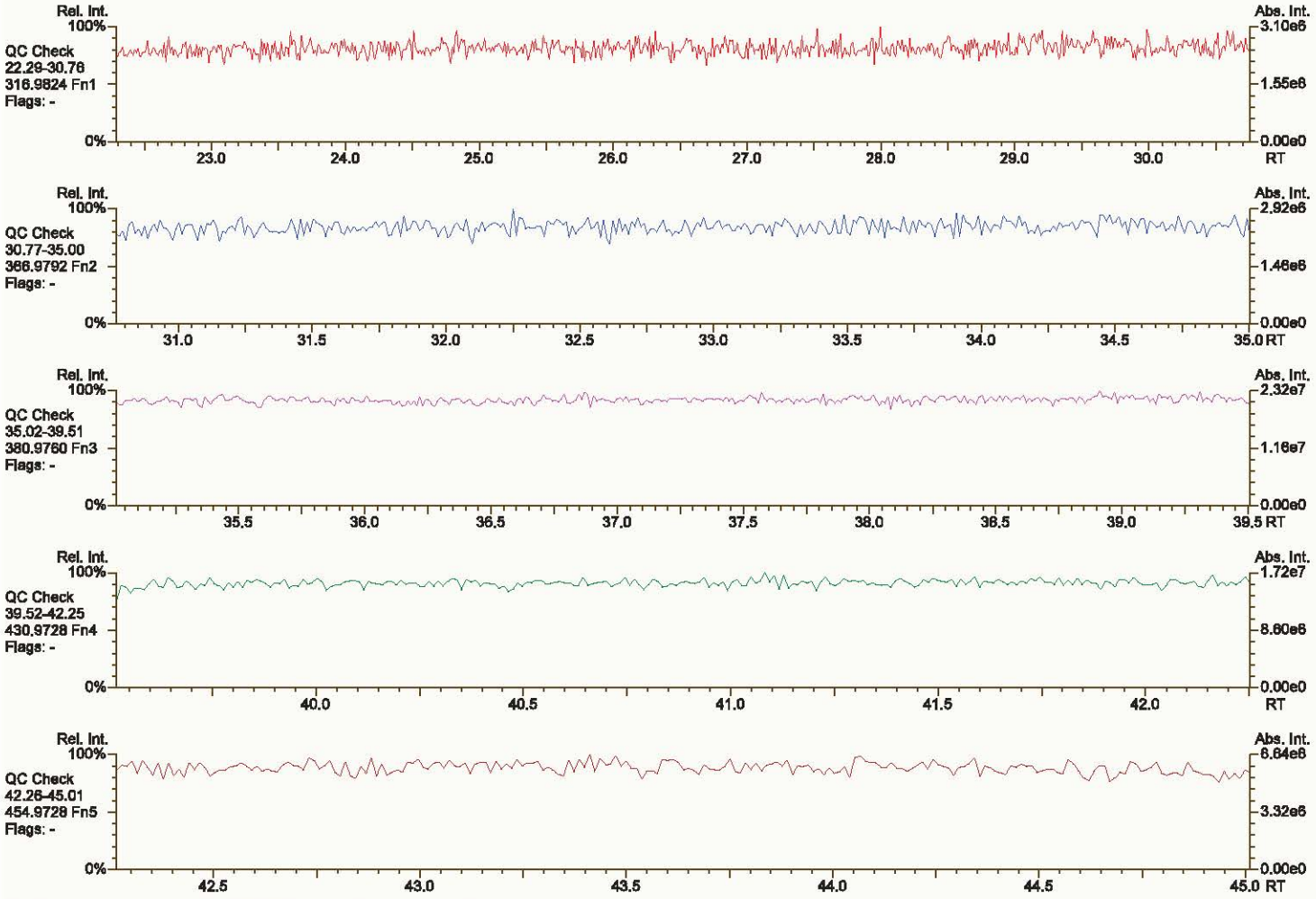

SGS ID: CS2_210727_DF_RA
Sample ID: SIL 25-6-1
Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
User: PSW Datafile: 210727R04
OCDF
1.25e7*
43.41
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PBM
4σ 2.70e3
0%
Abs. Int.
4.12e6
2.06e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.35e7*
43.41
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PBM
4σ 3.77e3
0%
Abs. Int.
4.70e6
2.35e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.28e8
43.40
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 3.84e3
0%
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.46e8
43.40
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 5.45e3
0%
Abs. Int.
4.72e7
2.36e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.52e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3363, 4372, 5962 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 11:32 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_210727_DF_RA		UTP: 27-Jul-2021 15:00:20 PSW				Checkcode: 230-891-PQT	
Sample ID: SIL 23-672-1		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.52	2.23E+07	0.80	Y	1.34	1.32	-2%
12378-PeCDD	33.80	8.56E+07	1.57	Y	1.06	1.05	-1%
123478-HxCDD	37.67	7.63E+07	1.25	Y	1.06	1.05	-1%
123678-HxCDD	37.78	7.89E+07	1.25	Y	1.08	1.08	0%
123789-HxCDD	38.07	8.22E+07	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.66	7.06E+07	1.03	Y	0.97	0.95	-2%
OCDD	43.22	1.21E+08	0.89	Y	1.07	1.07	0%
2378-TCDF	27.66	2.66E+07	0.80	Y	0.96	0.95	-1%
12378-PeCDF	32.37	1.11E+08	1.56	Y	0.95	0.94	-1%
23478-PeCDF	33.46	1.09E+08	1.56	Y	0.94	0.92	-2%
123478-HxCDF	36.68	1.05E+08	1.22	Y	1.23	1.22	-2%
123678-HxCDF	36.82	1.08E+08	1.25	Y	1.13	1.10	-2%
234678-HxCDF	37.49	1.02E+08	1.24	Y	1.15	1.14	-1%
123789-HxCDF	38.42	9.59E+07	1.23	Y	1.14	1.14	0%
1234678-HpCDF	39.76	9.62E+07	1.03	Y	1.36	1.34	-1%
1234789-HpCDF	41.10	8.35E+07	1.03	Y	1.30	1.34	3%
OCDF	43.41	1.40E+08	0.89	Y	1.03	1.03	0%
ES 2378-TCDD	28.50	1.70E+08	0.82	Y	1.03	1.05	2%
ES 12378-PeCDD	33.782	1.63E+08	1.65	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.654	1.45E+08	1.26	Y	0.99	1.00	0%
ES 123678-HxCDD	37.768	1.46E+08	1.27	Y	0.97	1.01	3%
ES 123789-HxCDD	38.057	1.66E+08	1.23	Y	1.12	1.14	1%
ES 1234678-HpCDD	40.644	1.48E+08	1.08	Y	0.99	1.02	3%
ES OCDD	43.211	2.25E+08	0.88	Y	0.78	0.77	-1%
ES 2378-TCDF	27.643	2.80E+08	0.79	Y	1.08	1.09	1%
ES 12378-PeCDF	32.354	2.37E+08	1.58	Y	0.93	0.93	-1%
ES 23478-PeCDF	33.446	2.37E+08	1.53	Y	0.92	0.93	0%
ES 123478-HxCDF	36.661	1.72E+08	0.52	Y	1.14	1.18	4%
ES 123678-HxCDF	36.801	1.96E+08	0.52	Y	1.30	1.35	4%
ES 234678-HxCDF	37.469	1.79E+08	0.54	Y	1.20	1.23	2%
ES 123789-HxCDF	38.404	1.68E+08	0.52	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.75	1.43E+08	0.45	Y	0.95	0.98	4%
ES 1234789-HpCDF	41.092	1.25E+08	0.44	Y	0.85	0.86	1%
ES OCDF	43.395	2.71E+08	0.89	Y	0.93	0.93	1%

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 11:32 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_210727_DF_RA		UTP: 27-Jul-2021 15:00:20 PSW				Checkcode: 230-891-PQT	
Sample ID: SIL 23-672-1		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R05	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.61E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.32	2.56E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.96	7.28E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.31	1.30	0%
CS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.89	0.87	-2%
CS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.87	0.89	2%
CS 123469-HxCDF	37.12	1.65E+08	0.52	Y	1.09	1.14	4%
CS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.86	0.92	7%
SS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.26	1.24	-2%
SS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.86	0.86	0%
SS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.93	0.96	3%
SS 123469-HxCDF	37.12	1.65E+08	0.52	Y	0.84	0.84	0%
SS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.91	1.64E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.85	2.82E+08	0.79	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.83E+08	0.81	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.84E+08	1.65	Y	1.09	1.13	3%
FS 123468-HxCDD	36.58	1.91E+08	1.27	Y	1.26	1.32	4%
FS 1234679-HpCDD	39.99	2.10E+08	1.06	Y	1.36	1.42	5%
TS 1378-TCDD	26.87	2.23E+08	0.80	Y	1.35	1.31	-3%
~~OCDD-a~~	~~43.22~~	~~7.32E+06~~	~~2.45~~	~~Y~~	~~0.87~~	~~0.87~~	~~-1%~~
~~OCDF-a~~	~~43.40~~	~~8.14E+06~~	~~2.47~~	~~Y~~	~~0.86~~	~~0.86~~	~~1%~~
Not reported from this ICAL - CL 28Jul21							

SGS ID: CS3_210727_DF_RA | Sample ID: SIL 23-672-1 | Acq: 27-Jul-2021 11:32:33

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 210727R05

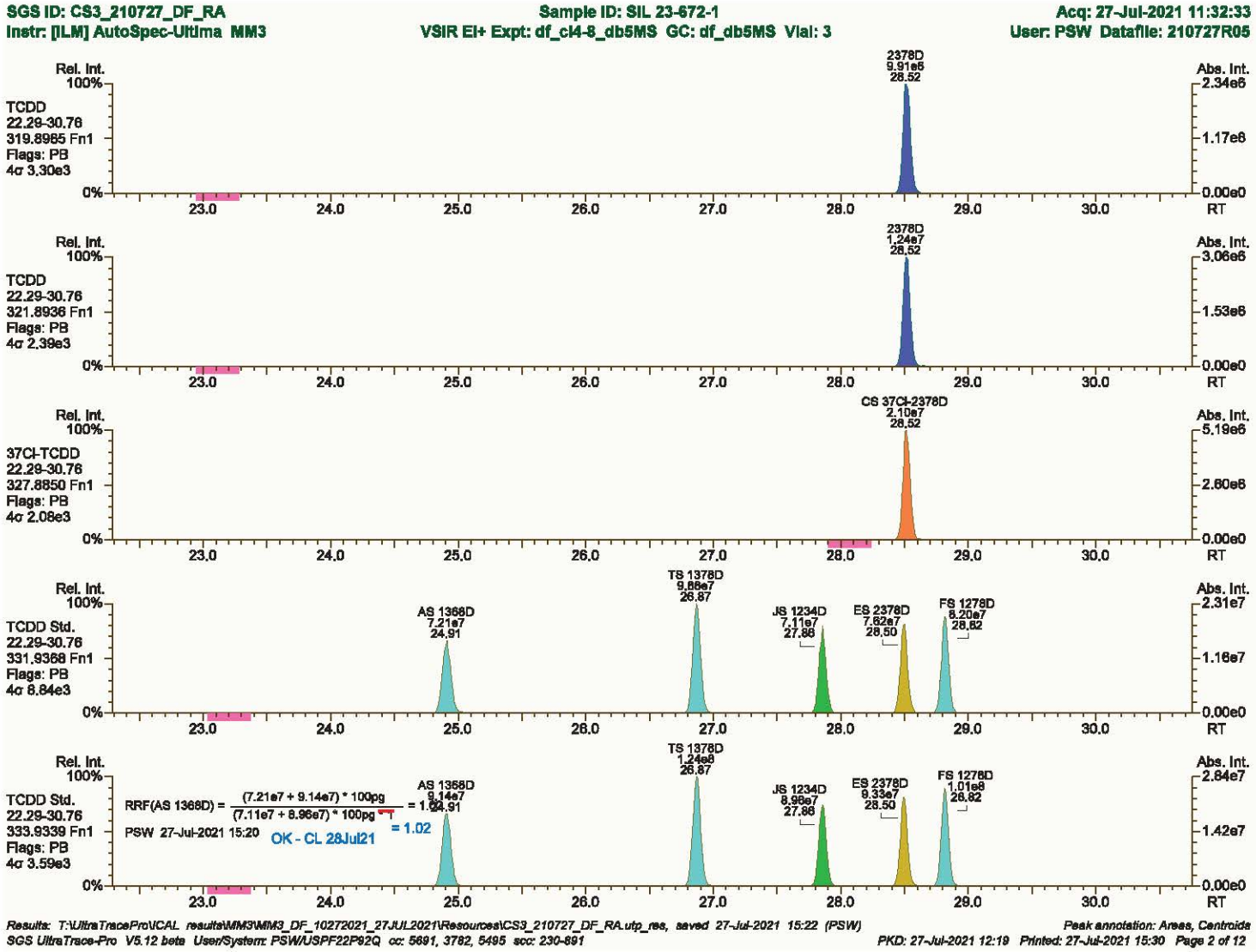


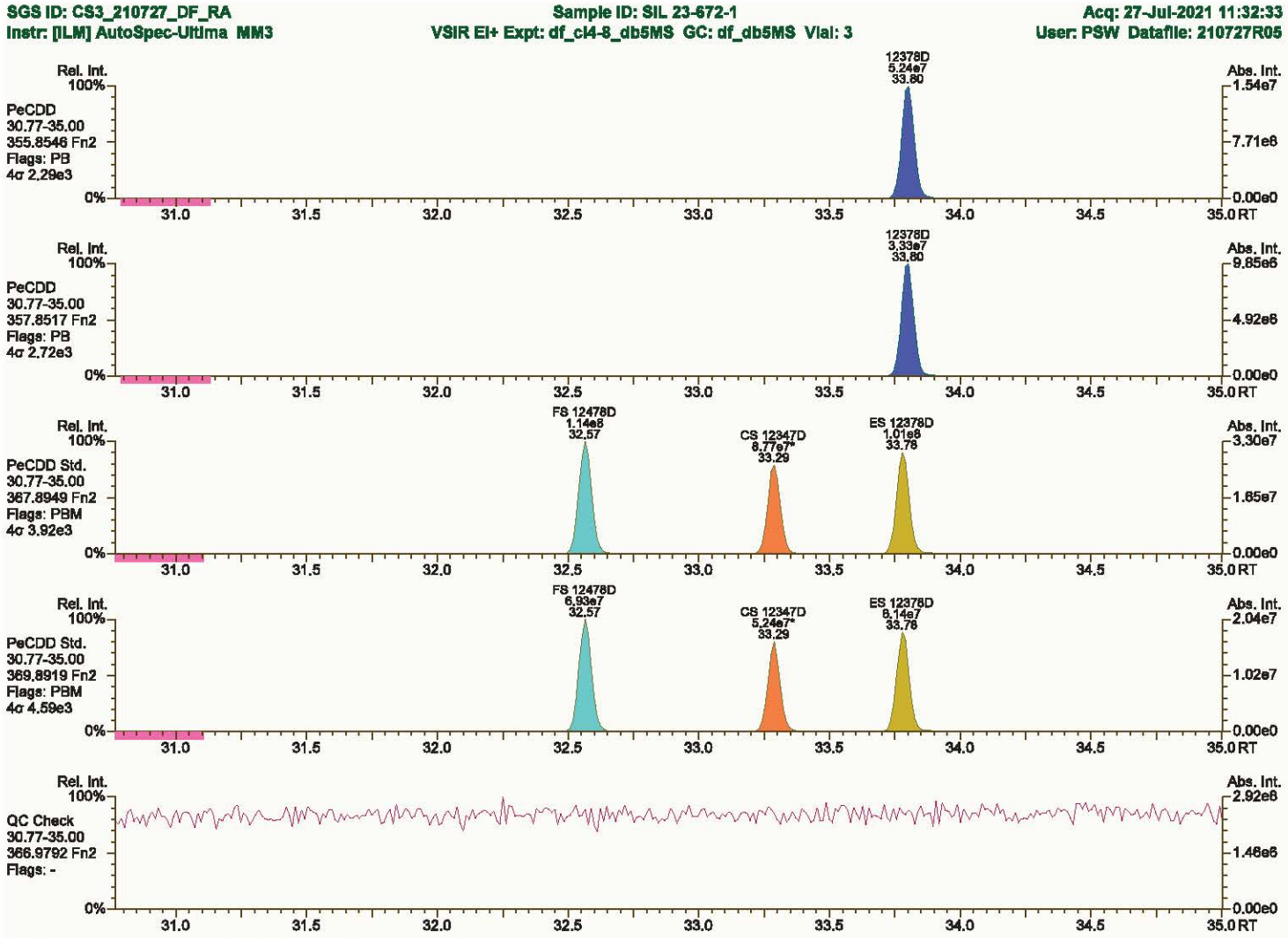
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)

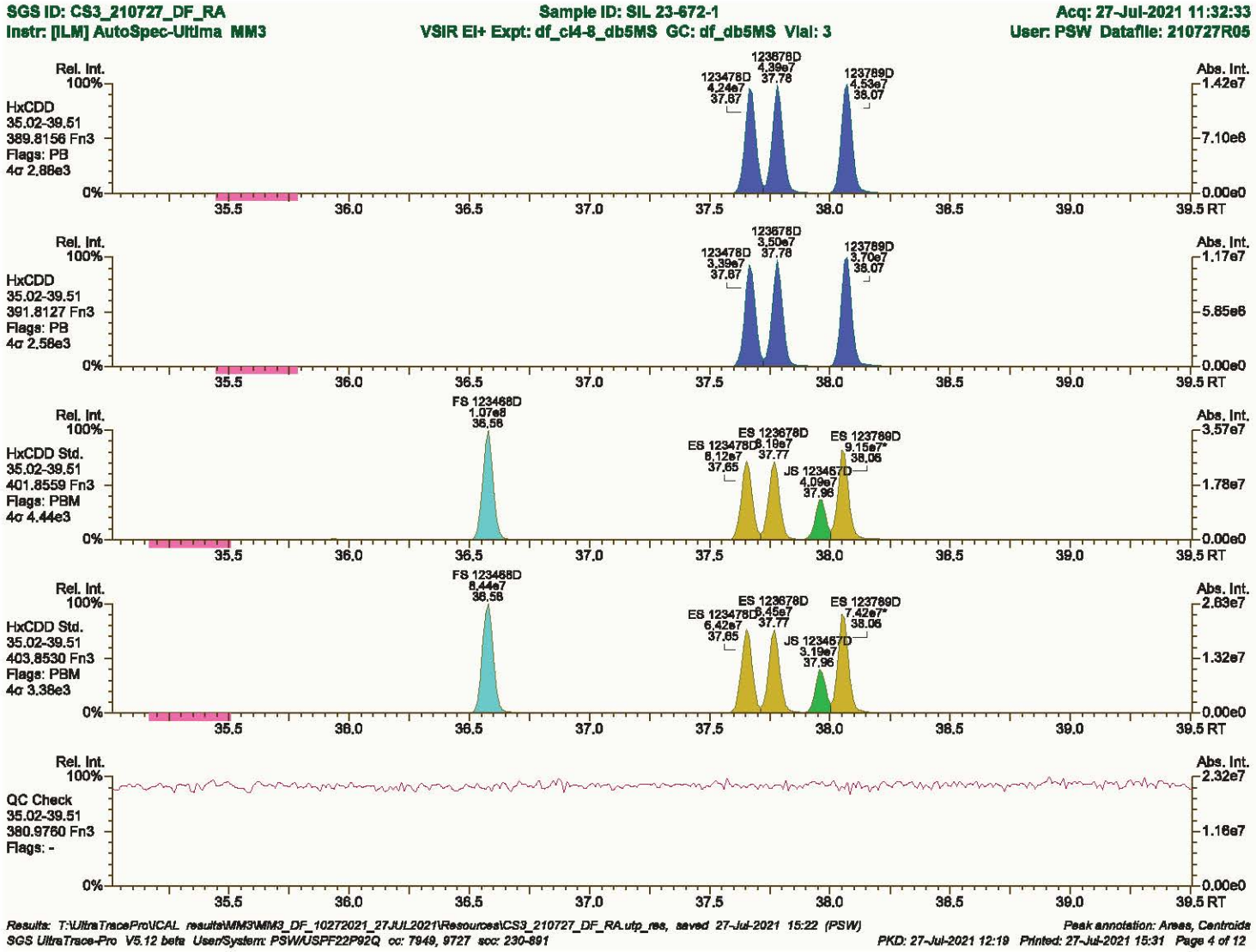
Peak annotation: Areas, Centroids

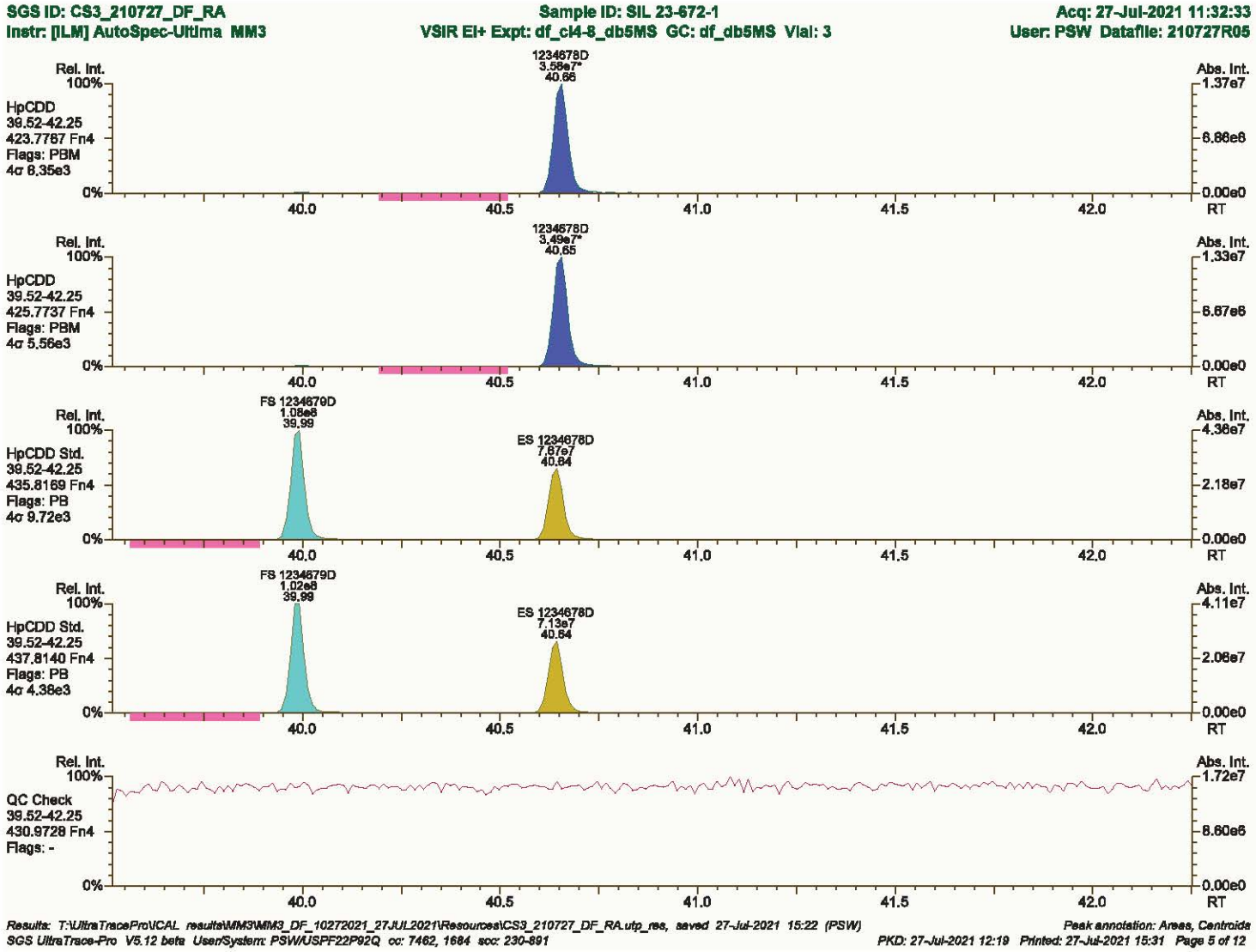
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 230-691

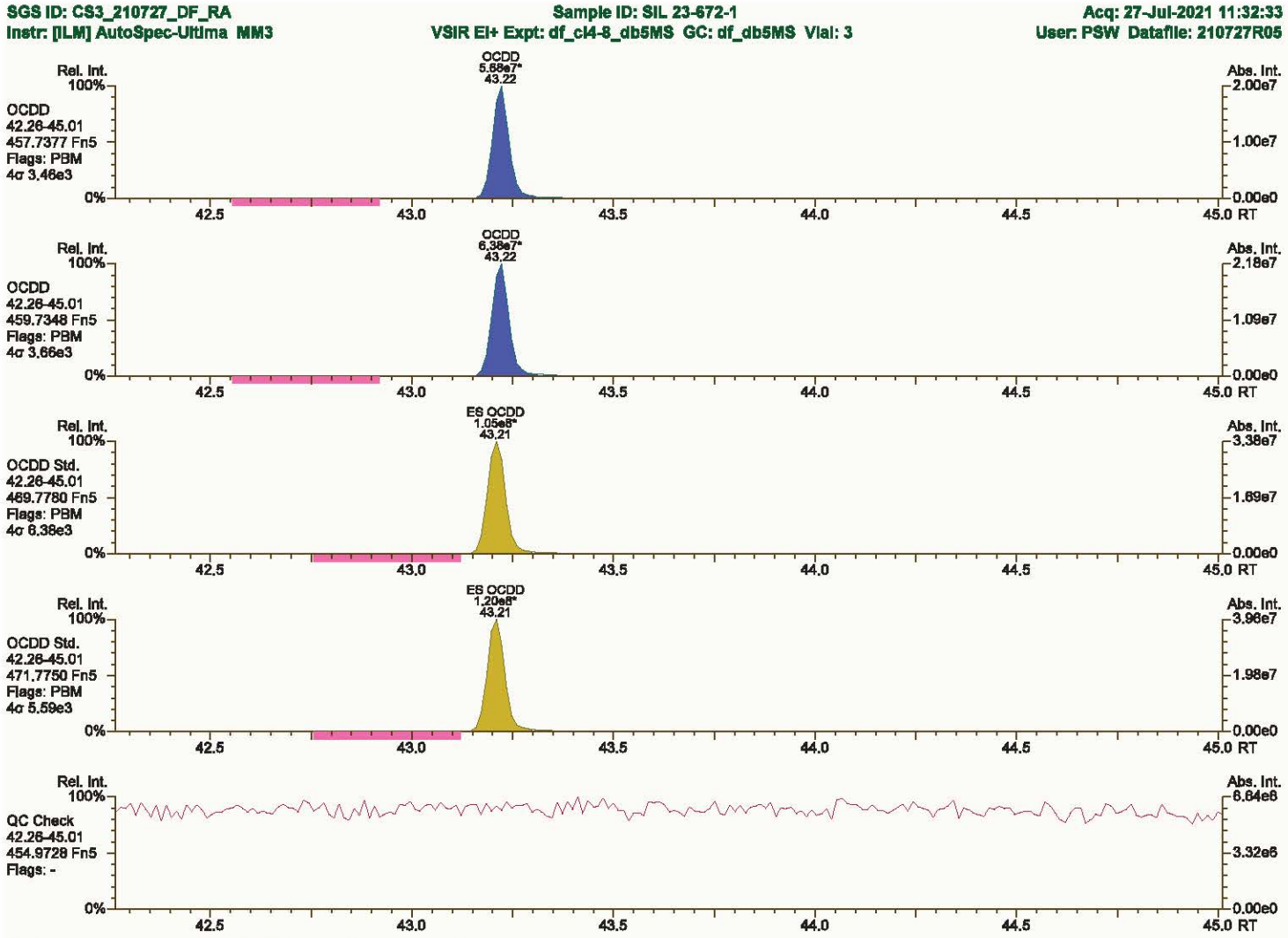
PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12

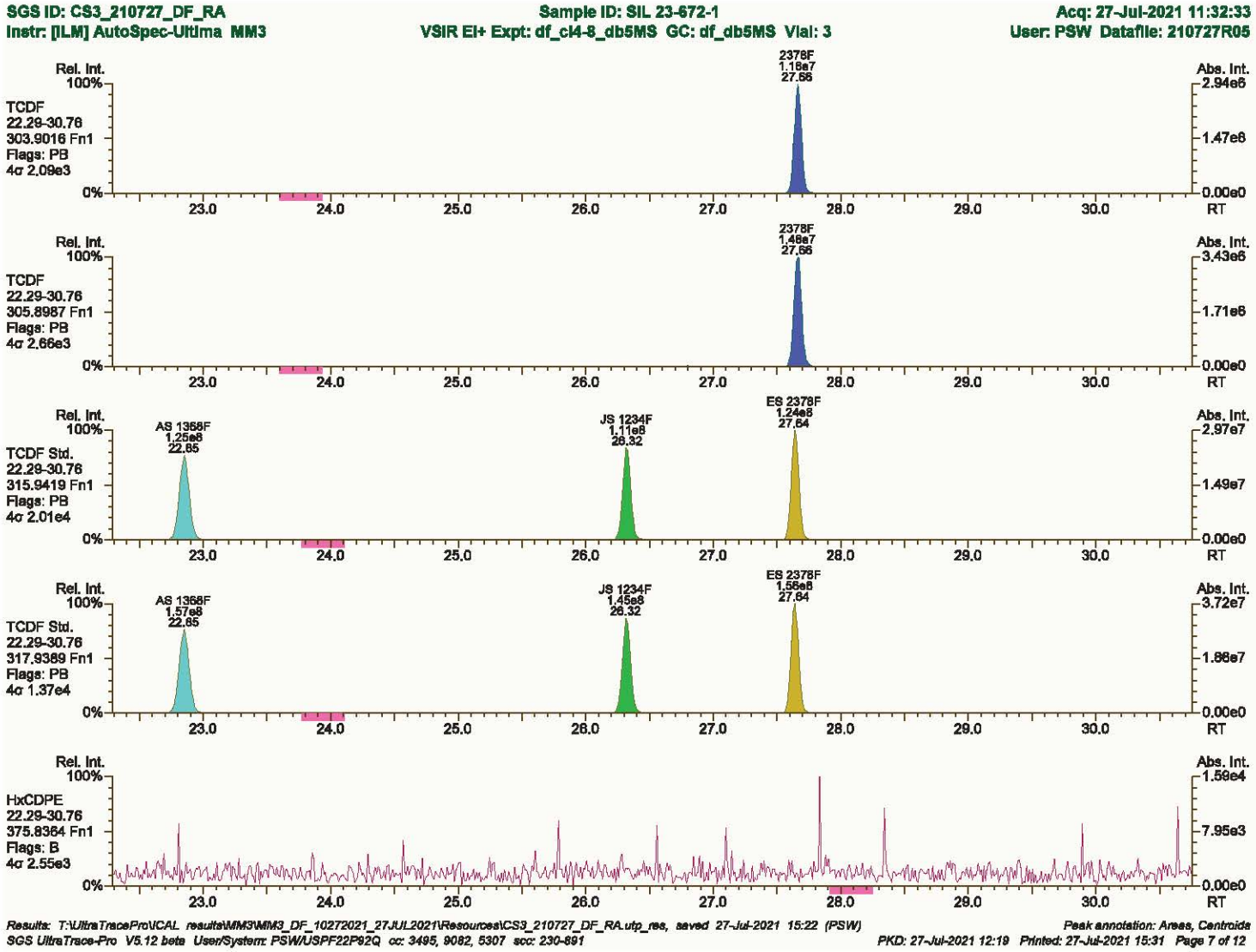

SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
Rel. Int.
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.30e3
2378D
9.91e5
28.52
2.34e6
1.17e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.39e3
2378D
1.24e7
28.52
3.06e6
1.53e6
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.08e3
CS 37Cl-2378D
2.10e7
28.52
5.19e6
2.60e6
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 8.84e3
AS 1368D
7.21e7
24.91
TS 1378D
9.88e7
26.87
JS 1234D
7.11e7
27.86
ES 2378D
7.62e7
28.50
FS 1278D
8.20e7
28.82
2.31e7
1.16e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.59e3
AS 1368D
9.14e7
24.91
TS 1378D
1.24e8
26.87
JS 1234D
8.98e7
27.86
ES 2378D
8.33e7
28.50
FS 1278D
1.01e8
28.82
2.84e7
1.42e7
RRF(AS 1368D) = (7.21e7 + 9.14e7) * 100pg / (7.11e7 + 8.98e7) * 100pg = 1.02
PSW 27-Jul-2021 15:20
OK - CL 28Jul21
0%
100%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5691, 3782, 5495 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:30 Page 2 of 12


SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
Rel. Int.
Abs. Int.
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.29e3
12378D
5.24e7
33.80
1.54e7
7.71e6
0.00e0
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.72e3
12378D
3.33e7
33.80
9.85e6
4.92e6
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.92e3
FS 12478D
1.14e8
32.57
CS 12347D
8.77e7*
33.29
ES 12378D
1.01e8
33.78
3.30e7
1.65e7
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 4.59e3
FS 12478D
6.93e7
32.57
CS 12347D
5.24e7*
33.29
ES 12378D
6.14e7
33.78
2.04e7
1.02e7
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
2.92e6
1.46e6
0%
100%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.88e3
123678D 4.39e7 37.78
123478D 4.24e7 37.67
123789D 4.53e7 38.07
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.58e3
123678D 3.50e7 37.78
123478D 3.39e7 37.67
123789D 3.70e7 38.07
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.44e3
FS 123468D 1.07e8 36.58
ES 123678D 8.19e7 37.77
ES 123478D 8.12e7 37.65
ES 123789D 9.15e7* 38.06
JS 123467D 4.09e7 37.96
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.38e3
FS 123468D 8.44e7 36.58
ES 123678D 9.45e7 37.77
ES 123478D 6.42e7 37.65
ES 123789D 7.42e7* 38.06
JS 123467D 3.19e7 37.96
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
Rel. Int.
Abs. Int.
100%
0%
HpCDD
39.52-42.25
423.7787 Fn4
Flags: PBM
4σ 8.35e3
1234678D
3.58e7*
40.66
1.37e7
6.86e6
0.00e0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 5.56e3
1234678D
3.49e7*
40.65
1.33e7
6.67e6
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 9.72e3
FS 1234679D
1.08e8
39.99
ES 1234678D
7.67e7
40.64
4.36e7
2.18e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.38e3
FS 1234679D
1.02e8
39.99
ES 1234678D
7.13e7
40.64
4.11e7
2.06e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.72e7
8.60e6
40.0
40.5
41.0
41.5
42.0
RT

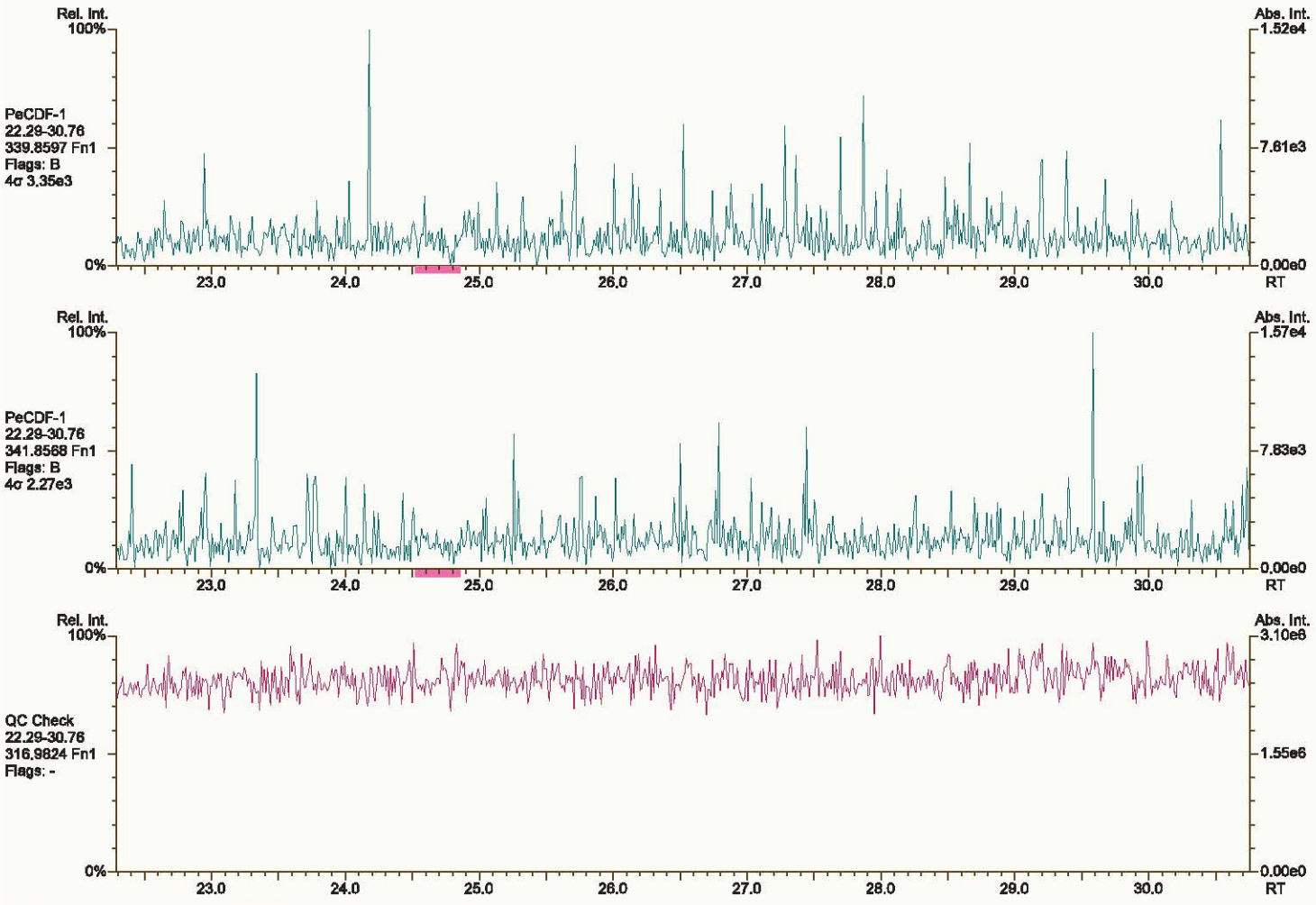

SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
OCDD
5.68e7*
43.22
Rel. Int.
Abs. Int.
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.46e3
OCDD
6.38e7*
43.22
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 3.66e3
ES OCDD
1.05e8*
43.21
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 6.38e3
ES OCDD
1.20e8*
43.21
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.59e3
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
RT


SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.09e3
2378F
1.18e7
27.66
2.94e6
1.47e6
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.66e3
2378F
1.48e7
27.66
3.43e6
1.71e6
0.00e0
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.01e4
AS 1368F
1.25e8
22.85
JS 1234F
1.11e8
26.32
ES 2378F
1.24e8
27.64
2.97e7
1.49e7
0.00e0
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.37e4
AS 1368F
1.57e8
22.85
JS 1234F
1.45e8
26.32
ES 2378F
1.56e8
27.64
3.72e7
1.86e7
0.00e0
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.55e3
1.59e4
7.95e3
0.00e0
0%
100%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

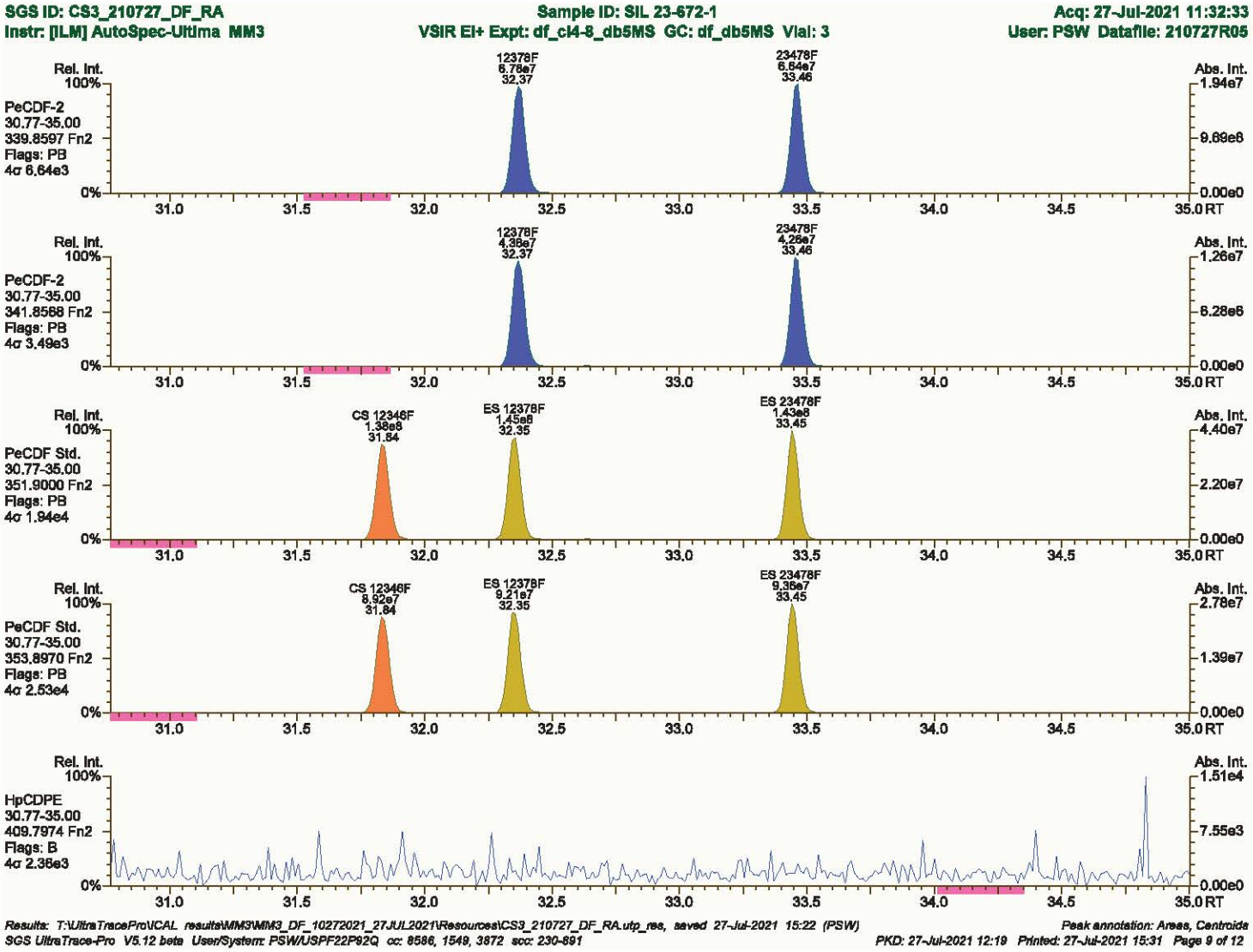
SGS ID: CS3_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

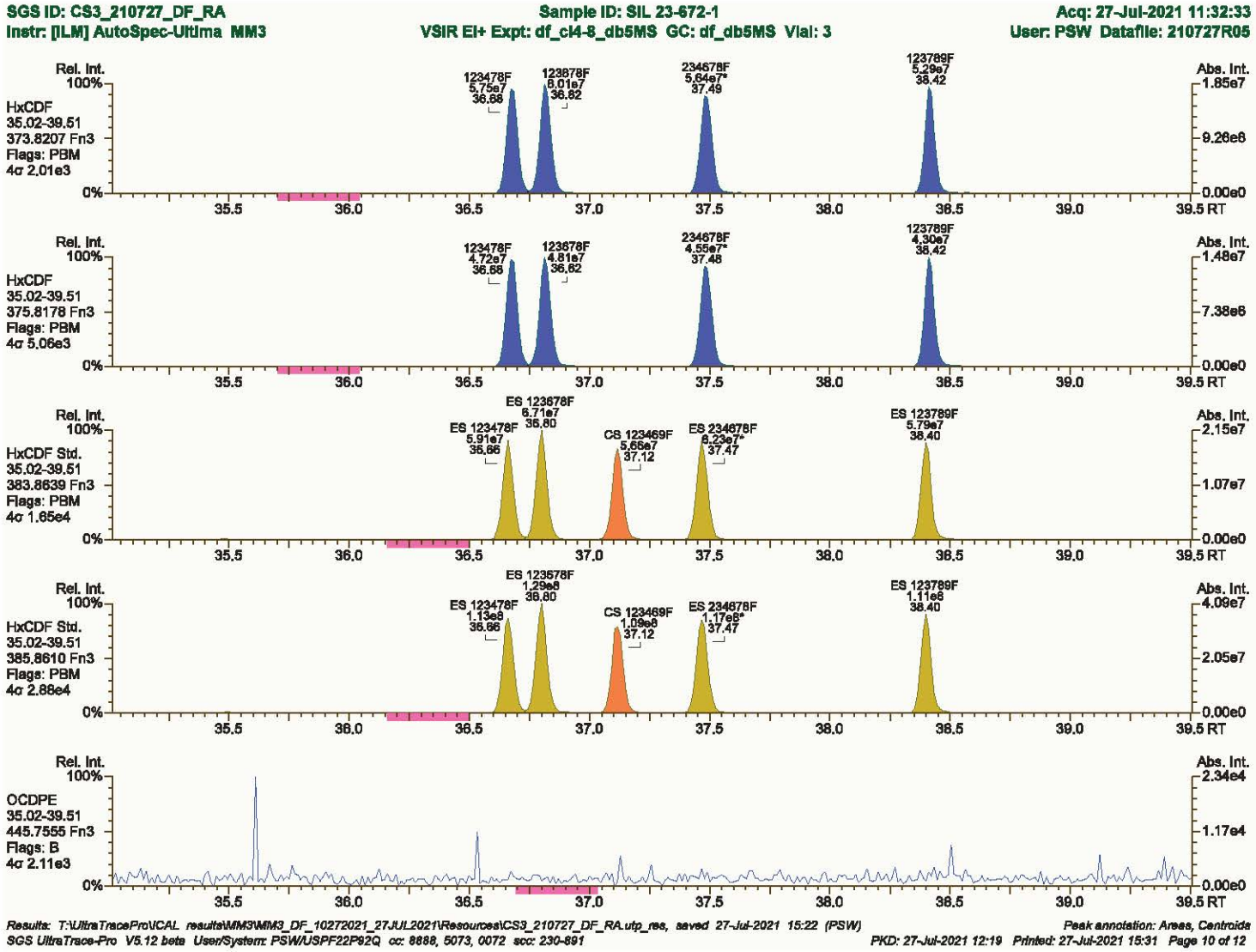
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

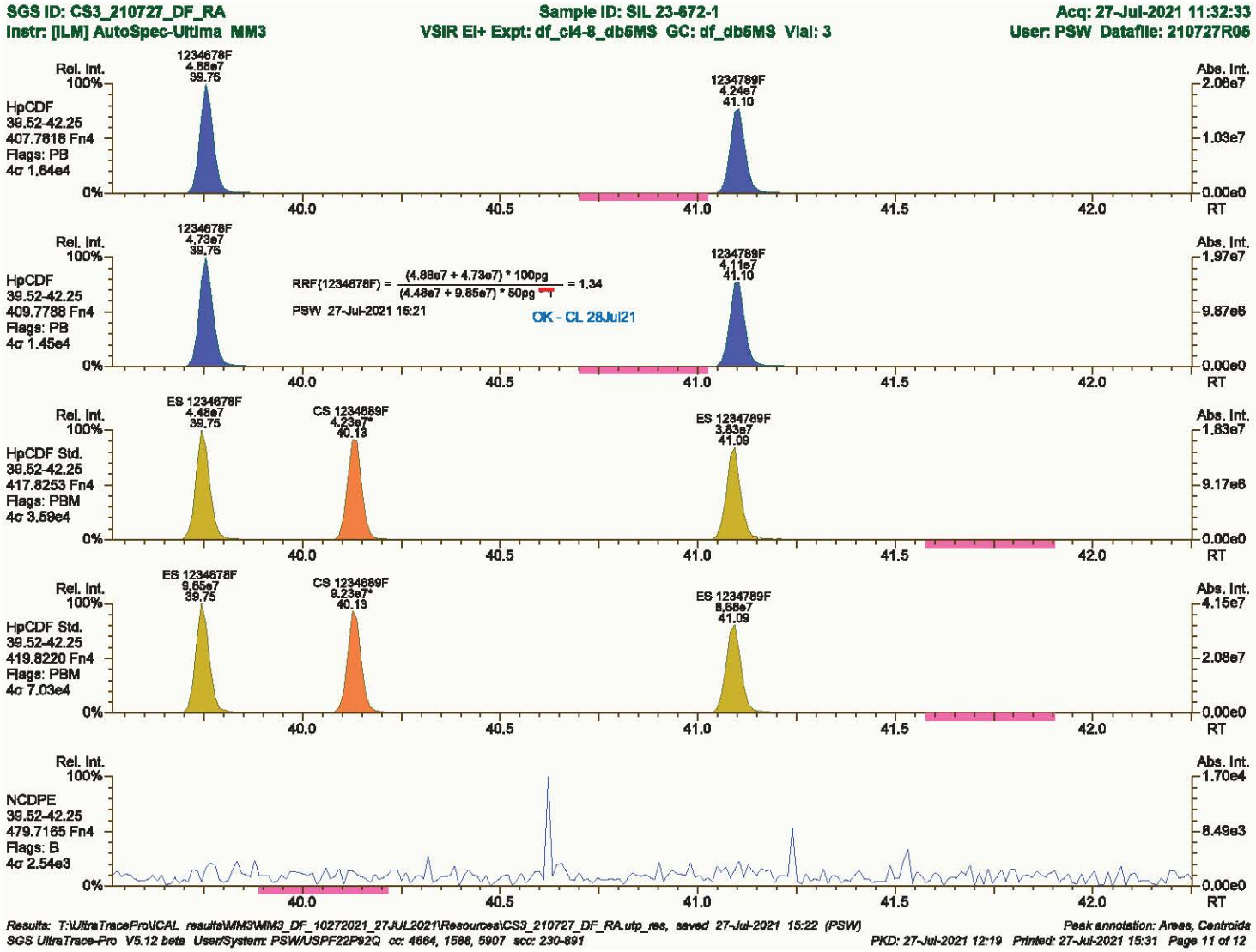
Acq: 27-Jul-2021 11:32:33
User: PSW Datafile: 210727R05

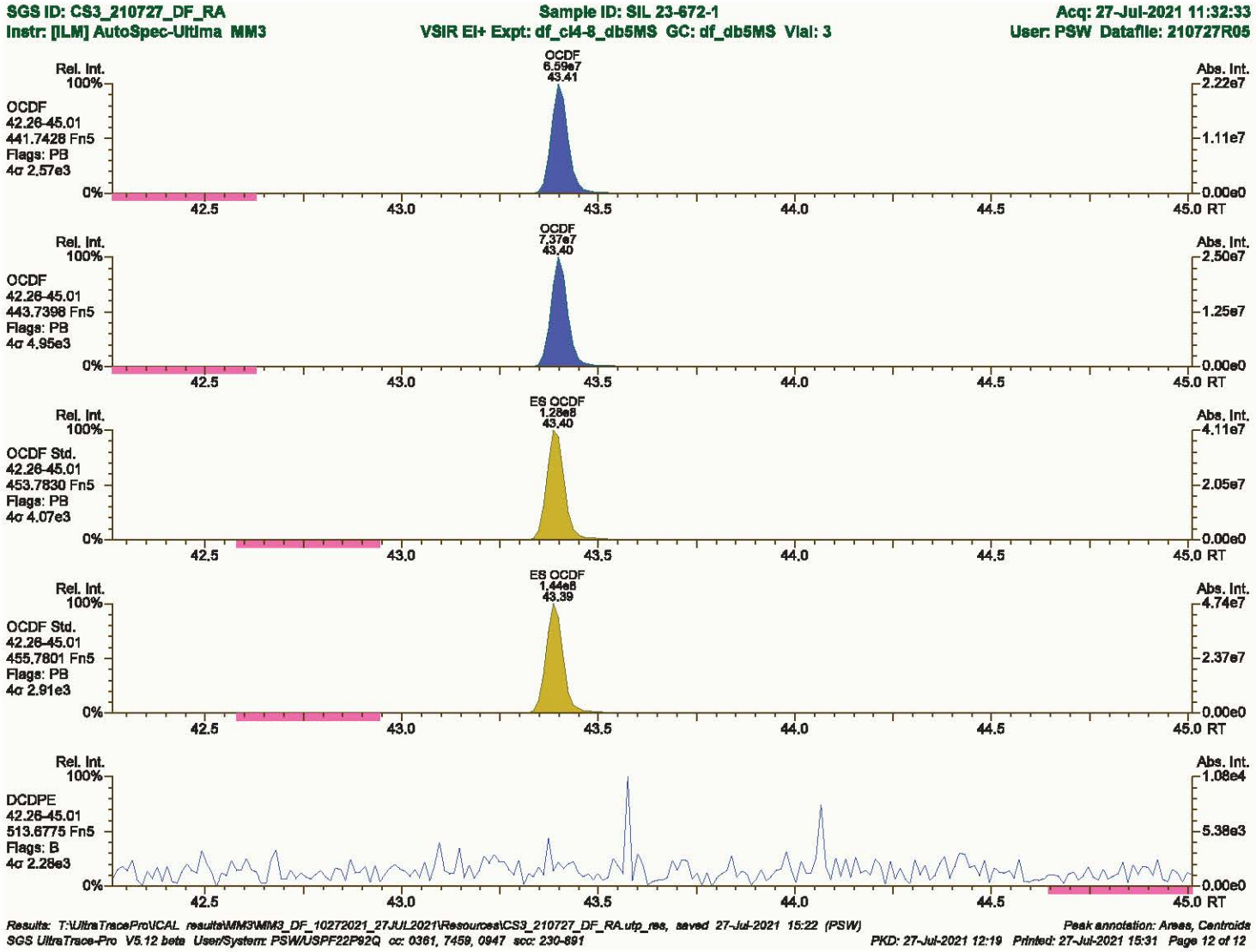


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2167 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 8 of 12


SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
Rel. Int.
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 6.64e3
12378F
6.78e7
32.37
23478F
6.64e7
33.46
1.94e7
9.69e6
0.00e0
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.49e3
12378F
4.38e7
32.37
23478F
4.26e7
33.46
1.26e7
6.28e6
0.00e0
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 1.94e4
CS 12346F
1.38e8
31.84
ES 12378F
1.45e8
32.35
ES 23478F
1.43e8
33.45
4.40e7
2.20e7
0.00e0
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.53e4
CS 12346F
8.92e7
31.84
ES 12378F
9.21e7
32.35
ES 23478F
9.36e7
33.45
2.78e7
1.39e7
0.00e0
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.36e3
1.51e4
7.55e3
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8586, 1549, 3872 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 9 of 12


SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 2.01e3
123478F 5.75e7 36.68
123678F 6.01e7 36.62
234678F 5.64e7* 37.49
123789F 5.29e7 38.42
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 5.06e3
123478F 4.72e7 36.68
123678F 4.81e7 36.62
234678F 4.55e7* 37.48
123789F 4.30e7 38.42
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 1.65e4
ES 123478F 5.91e7 36.66
ES 123678F 6.71e7 36.80
CS 123469F 5.65e7 37.12
ES 234678F 6.23e7* 37.47
ES 123789F 5.79e7 38.40
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.88e4
ES 123478F 1.13e8 36.66
ES 123678F 1.29e8 36.80
CS 123469F 1.09e8 37.12
ES 234678F 1.17e8* 37.47
ES 123789F 1.11e8 38.40
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.11e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
Rel. Int.
Abs. Int.
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.64e4
1234678F
4.88e7
39.76
1234789F
4.24e7
41.10
2.06e7
1.03e7
0.00e0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.45e4
1234678F
4.73e7
39.76
1234789F
4.11e7
41.10
RRF(1234678F) = (4.88e7 + 4.73e7) * 100pg / (4.48e7 + 9.85e7) * 50pg = 1.34
PSW 27-Jul-2021 15:21
OK - CL 28Jul21
1.97e7
9.87e6
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.59e4
ES 1234678F
4.45e7
39.75
CS 1234689F
4.23e7*
40.13
ES 1234789F
3.83e7
41.09
1.83e7
9.17e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 7.03e4
ES 1234678F
9.65e7
39.75
CS 1234689F
9.23e7*
40.13
ES 1234789F
8.68e7
41.09
4.15e7
2.08e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.54e3
1.70e4
8.49e3
100%
0%
40.0
40.5
41.0
41.5
42.0
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 4664, 1586, 5907 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 11 of 12

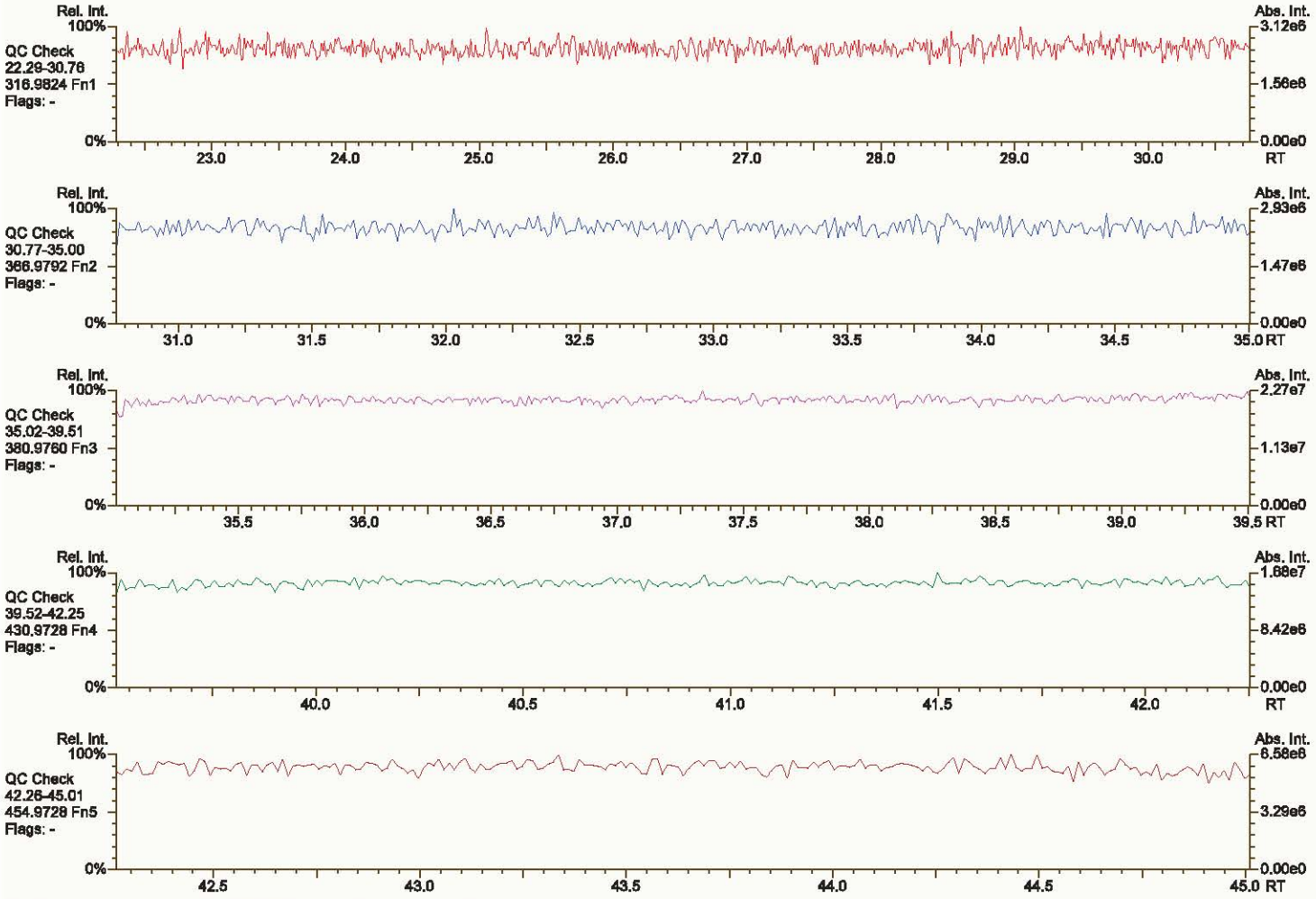

SGS ID: CS3_210727_DF_RA
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 11:32:33
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R05
OCDF
6.59e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.57e3
0%
Abs. Int.
2.22e7
1.11e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
7.37e7
43.40
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 4.95e3
0%
Abs. Int.
2.50e7
1.25e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.28e8
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 4.07e3
0%
Abs. Int.
4.11e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.44e8
43.39
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.91e3
0%
Abs. Int.
4.74e7
2.37e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.28e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0361, 7459, 0947 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 12:19 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS4_210727_DF_RA		UTP: 27-Jul-2021 15:00:21 PSW				Checkcode: 602-590-JSF	
Sample ID: SIL 25-5-4		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R06	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.53	7.77E+07	0.76	Y	1.34	1.30	-4%
12378-PeCDD	33.81	3.10E+08	1.55	Y	1.06	1.06	0%
123478-HxCDD	37.68	2.82E+08	1.23	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.84E+08	1.24	Y	1.08	1.10	2%
123789-HxCDD	38.08	2.99E+08	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.67	2.61E+08	1.03	Y	0.97	0.98	0%
OCDD	43.23	4.49E+08	0.90	Y	1.07	1.08	1%
2378-TCDF	27.67	9.59E+07	0.77	Y	0.96	0.96	0%
12378-PeCDF	32.38	4.09E+08	1.58	Y	0.95	0.95	0%
23478-PeCDF	33.47	3.96E+08	1.56	Y	0.94	0.93	-1%
123478-HxCDF	36.69	3.82E+08	1.23	Y	1.23	1.24	0%
123678-HxCDF	36.83	3.97E+08	1.25	Y	1.13	1.13	0%
234678-HxCDF	37.49	3.75E+08	1.25	Y	1.15	1.13	-2%
123789-HxCDF	38.43	3.51E+08	1.24	Y	1.14	1.14	0%
1234678-HpCDF	39.77	3.45E+08	1.03	Y	1.36	1.33	-2%
1234789-HpCDF	41.11	2.99E+08	1.04	Y	1.30	1.30	0%
OCDF	43.41	5.22E+08	0.91	Y	1.03	1.05	2%
ES 2378-TCDD	28.50	1.50E+08	0.79	Y	1.03	1.06	2%
ES 12378-PeCDD	33.789	1.46E+08	1.59	Y	1.03	1.03	0%
ES 123478-HxCDD	37.662	1.34E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.775	1.29E+08	1.28	Y	0.97	0.94	-4%
ES 123789-HxCDD	38.064	1.51E+08	1.27	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.654	1.33E+08	1.06	Y	0.99	0.97	-2%
ES OCDD	43.216	2.07E+08	0.92	Y	0.78	0.75	-3%
ES 2378-TCDF	27.649	2.49E+08	0.80	Y	1.08	1.09	1%
ES 12378-PeCDF	32.362	2.16E+08	1.57	Y	0.93	0.95	2%
ES 23478-PeCDF	33.454	2.12E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.668	1.54E+08	0.51	Y	1.14	1.12	-2%
ES 123678-HxCDF	36.808	1.75E+08	0.53	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.477	1.66E+08	0.53	Y	1.20	1.20	0%
ES 123789-HxCDF	38.409	1.54E+08	0.52	Y	1.14	1.12	-1%
ES 1234678-HpCDF	39.757	1.30E+08	0.45	Y	0.95	0.94	-1%
ES 1234789-HpCDF	41.102	1.15E+08	0.45	Y	0.85	0.83	-2%
ES OCDF	43.398	2.49E+08	0.90	Y	0.93	0.90	-2%

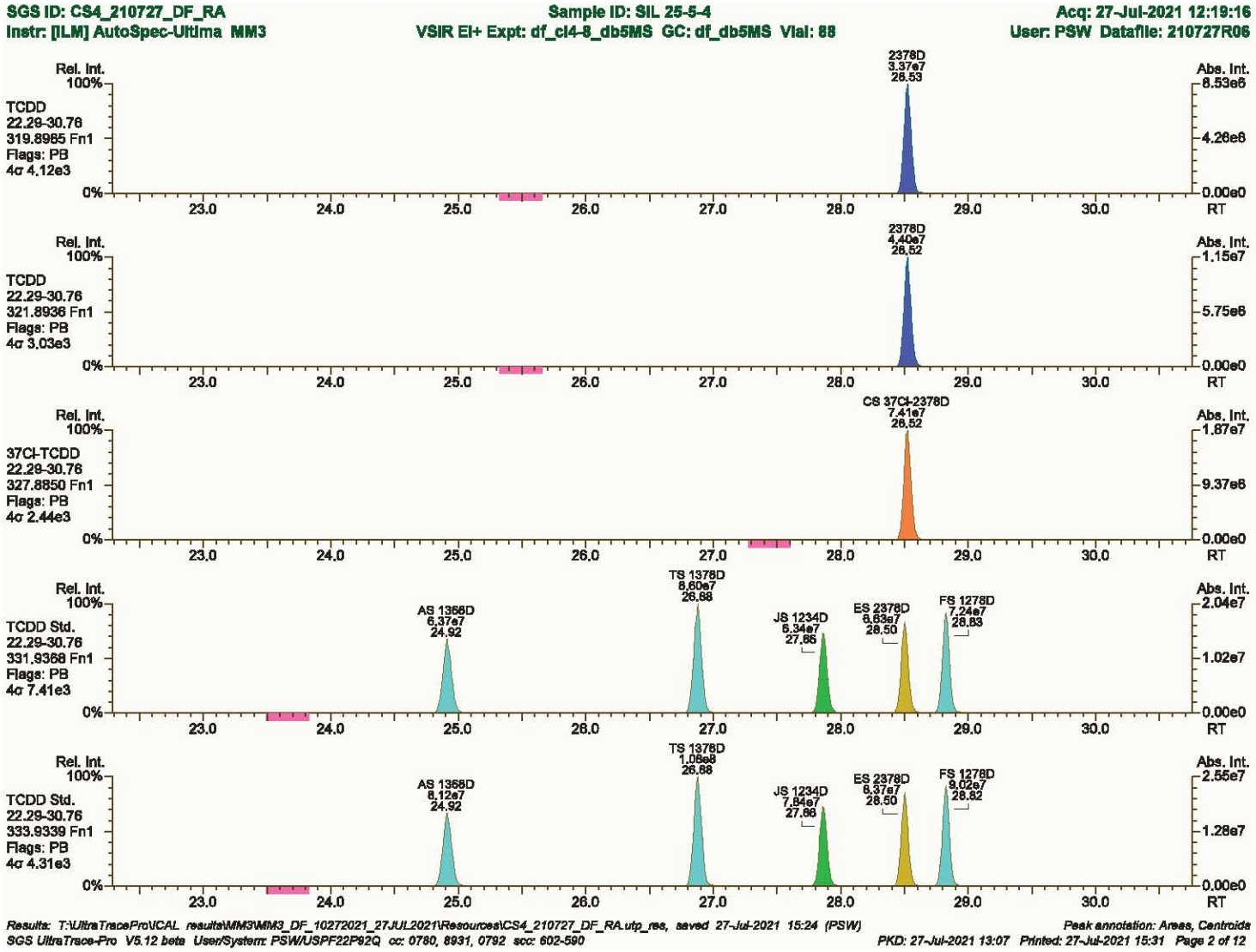
Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 12:19 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS4_210727_DF_RA		UTP: 27-Jul-2021 15:00:21 PSW				Checkcode: 602-590-JSF	
Sample ID: SIL 25-5-4		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R06	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	27.86	1.42E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	2.27E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	6.89E+07	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.31	1.31	0%
CS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.89	0.93	4%
CS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.87	0.88	2%
CS 123469-HxCDF	37.12	1.50E+08	0.54	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.26	1.23	-2%
SS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.86	0.90	4%
SS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.12	1.50E+08	0.54	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.91	0.92	1%
AS 1368-TCDD	24.92	1.45E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.49E+08	0.79	Y	1.08	1.09	1%
FS 1278-TCDD	28.83	1.63E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.64E+08	1.62	Y	1.09	1.13	3%
FS 123468-HxCDD	36.59	1.73E+08	1.29	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	1.84E+08	1.07	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	1.94E+08	0.79	Y	1.35	1.30	-4%
~~OCDD-a~~	~~43.22~~	~~2.77E+07~~	~~2.50~~	~~Y~~	~~0.87~~	~~0.87~~	~~1%~~
~~OCDF-a~~	~~43.41~~	~~3.08E+07~~	~~2.34~~	~~Y~~	~~0.86~~	~~0.86~~	~~4%~~

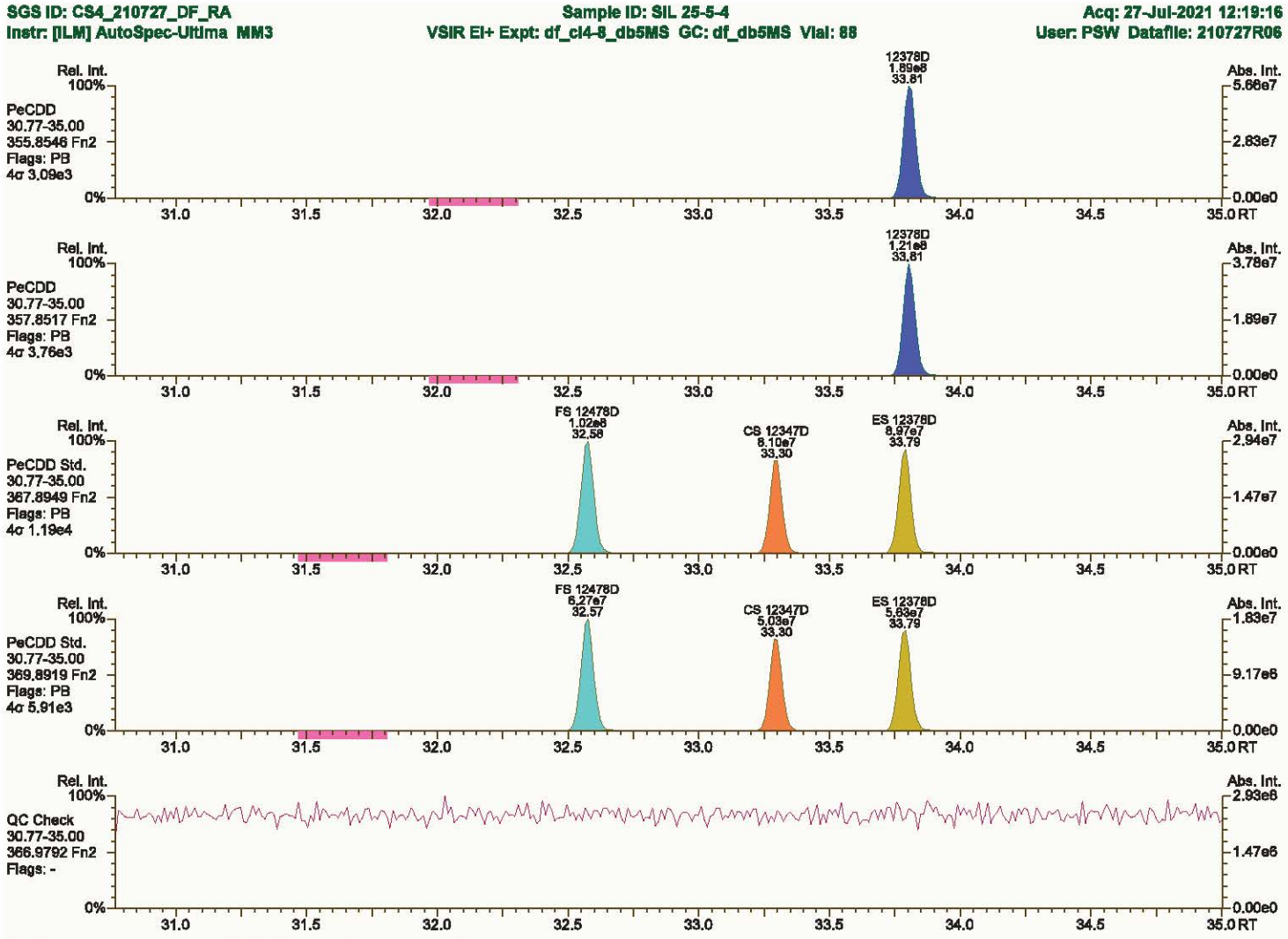
Not reported from this ICAL - CL 28Jul21

SGS ID: CS4_210727_DF_RA | Sample ID: SIL 25-5-4 | Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88 | User: PSW Datafile: 210727R06



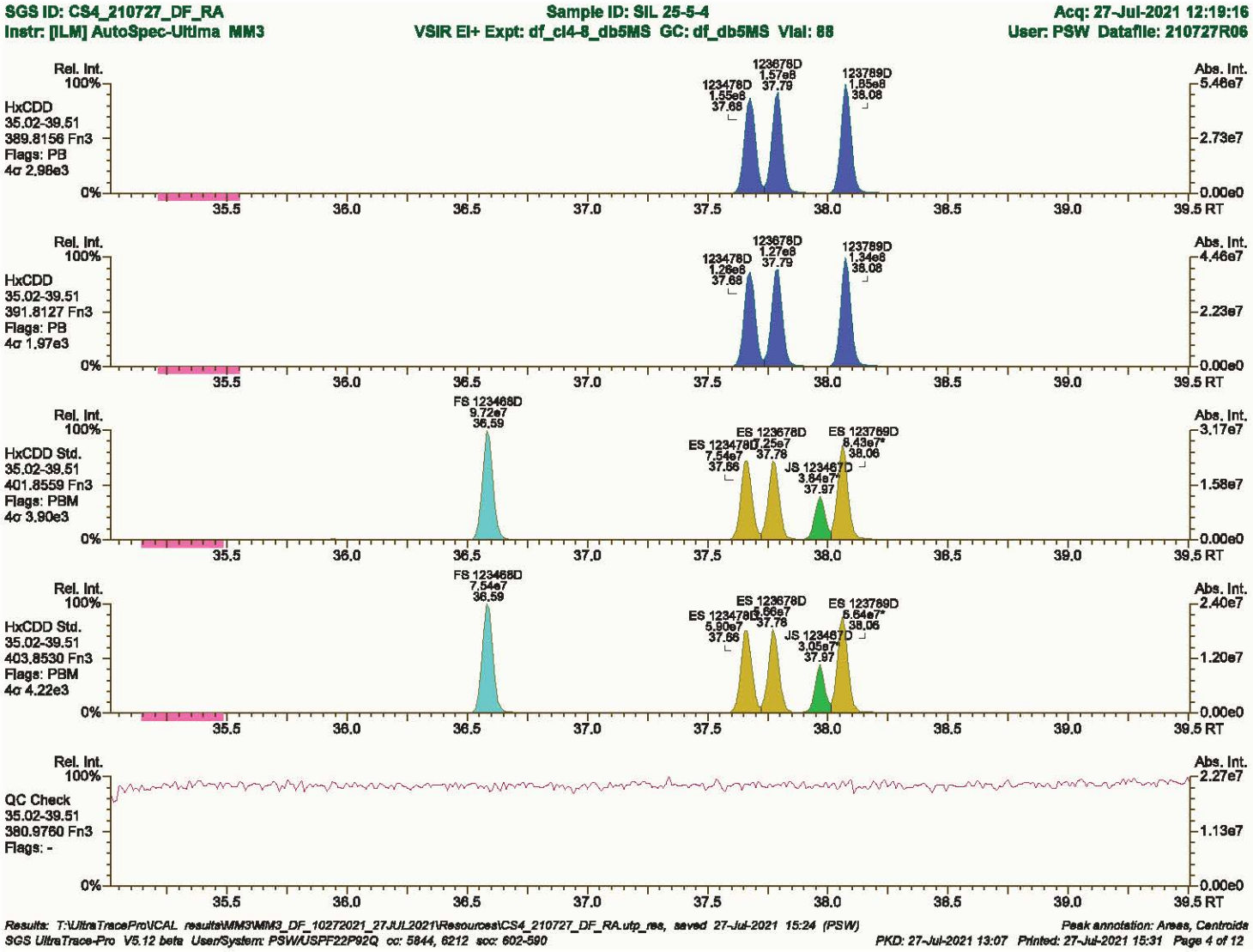
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 602-590
PKD: n/a Printed: 27-Jul-2021 15:31 Page 1 of 12

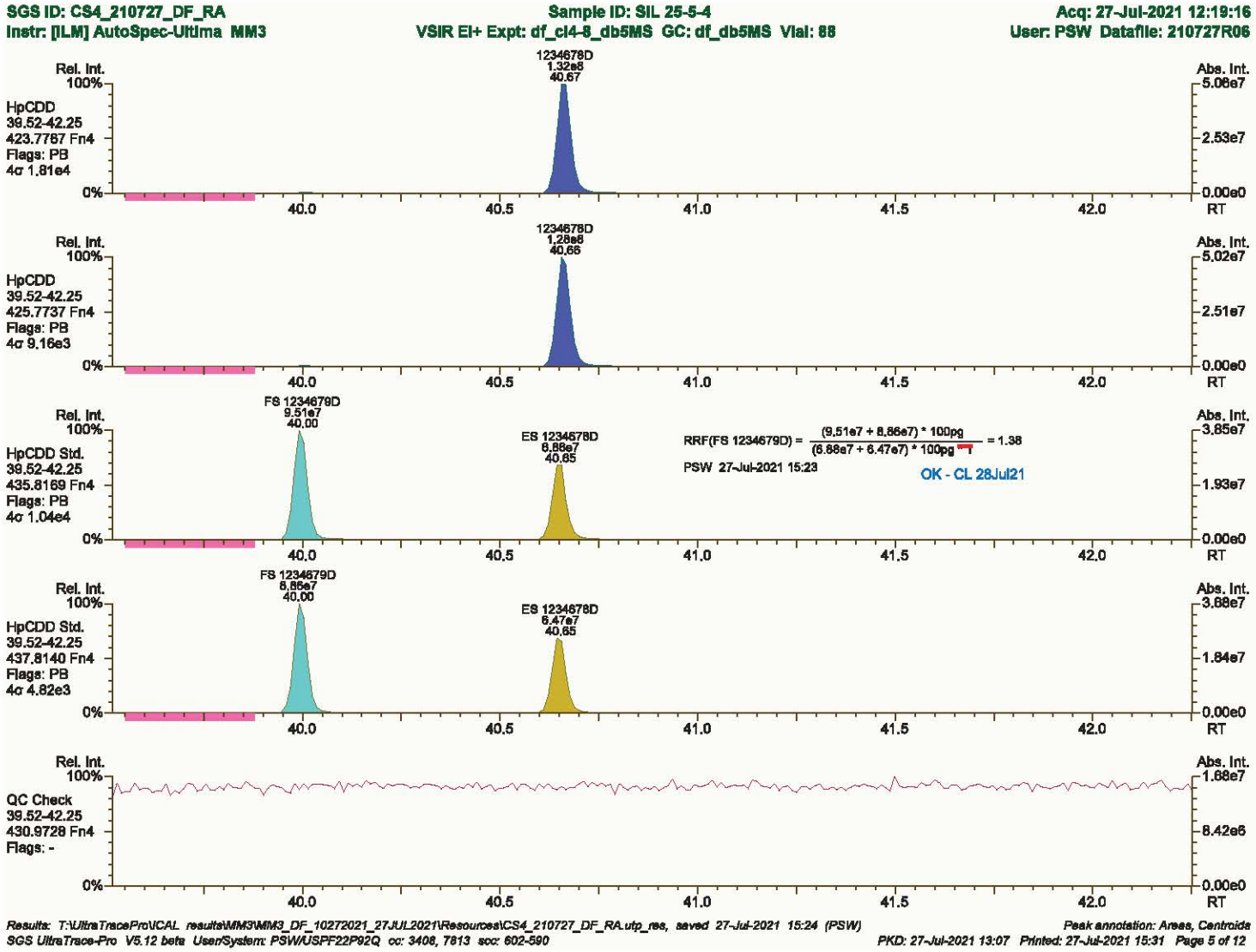

SGS ID: CS4_210727_DF_RA
Sample ID: SIL 25-5-4
Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88
User: PSW Datafile: 210727R06
Rel. Int.
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 4.12e3
2378D
3.37e7
28.53
8.53e6
4.26e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 3.03e3
2378D
4.40e7
28.52
1.15e7
5.75e6
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.44e3
CS 37Cl-2378D
7.41e7
28.52
1.87e7
9.37e6
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.41e3
AS 1368D
6.37e7
24.92
TS 1378D
8.60e7
26.88
JS 1234D
6.34e7
27.86
ES 2378D
6.63e7
28.50
FS 1278D
7.24e7
28.83
2.04e7
1.02e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.31e3
AS 1368D
8.12e7
24.92
TS 1378D
1.06e8
26.88
JS 1234D
7.84e7
27.86
ES 2378D
8.37e7
28.50
FS 1278D
9.02e7
28.82
2.55e7
1.28e7
0%
100%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0780, 8931, 0792 scc: 602-590
PKD: 27-Jul-2021 13:07 Printed: 27-Jul-2021 15:31 Page 2 of 12

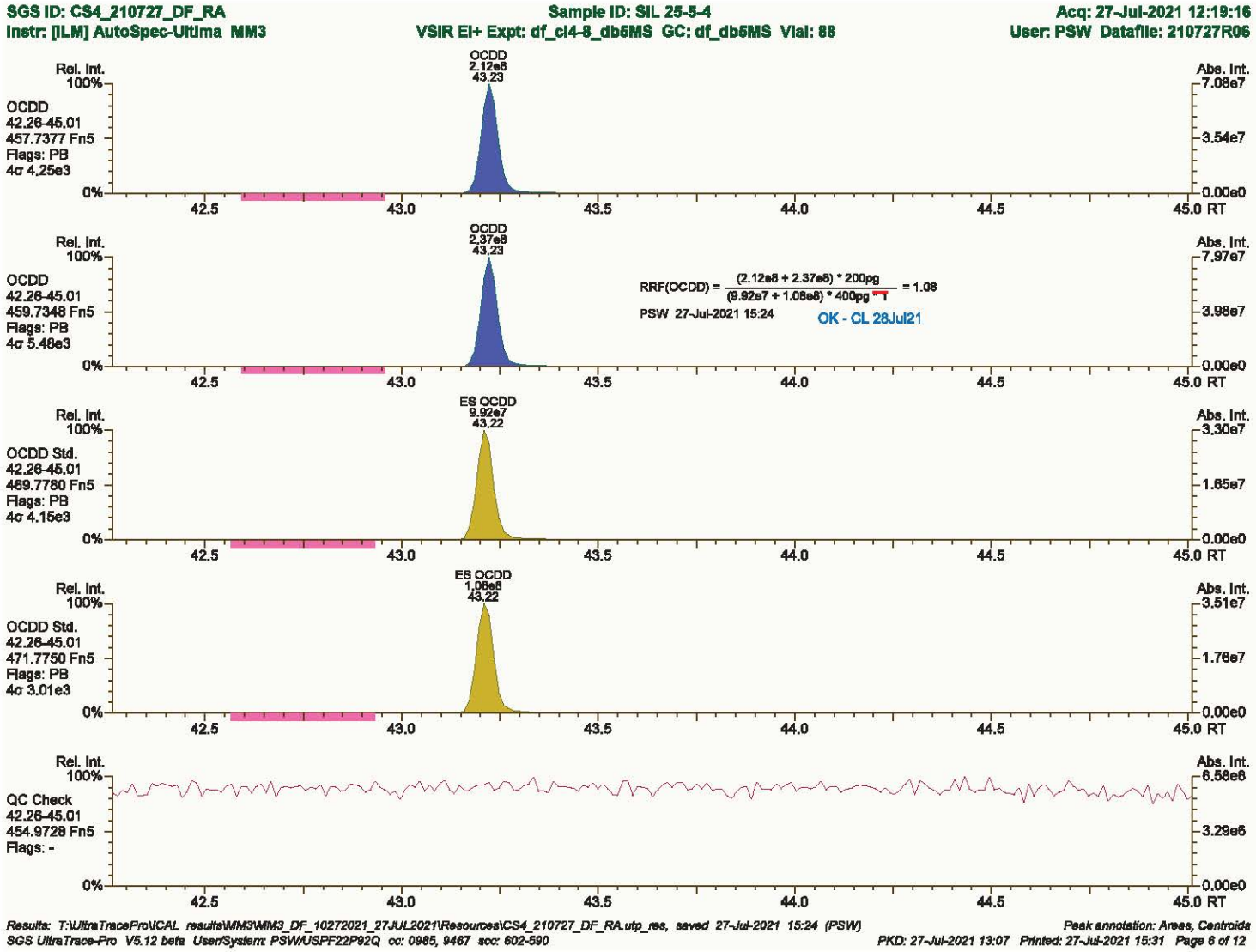


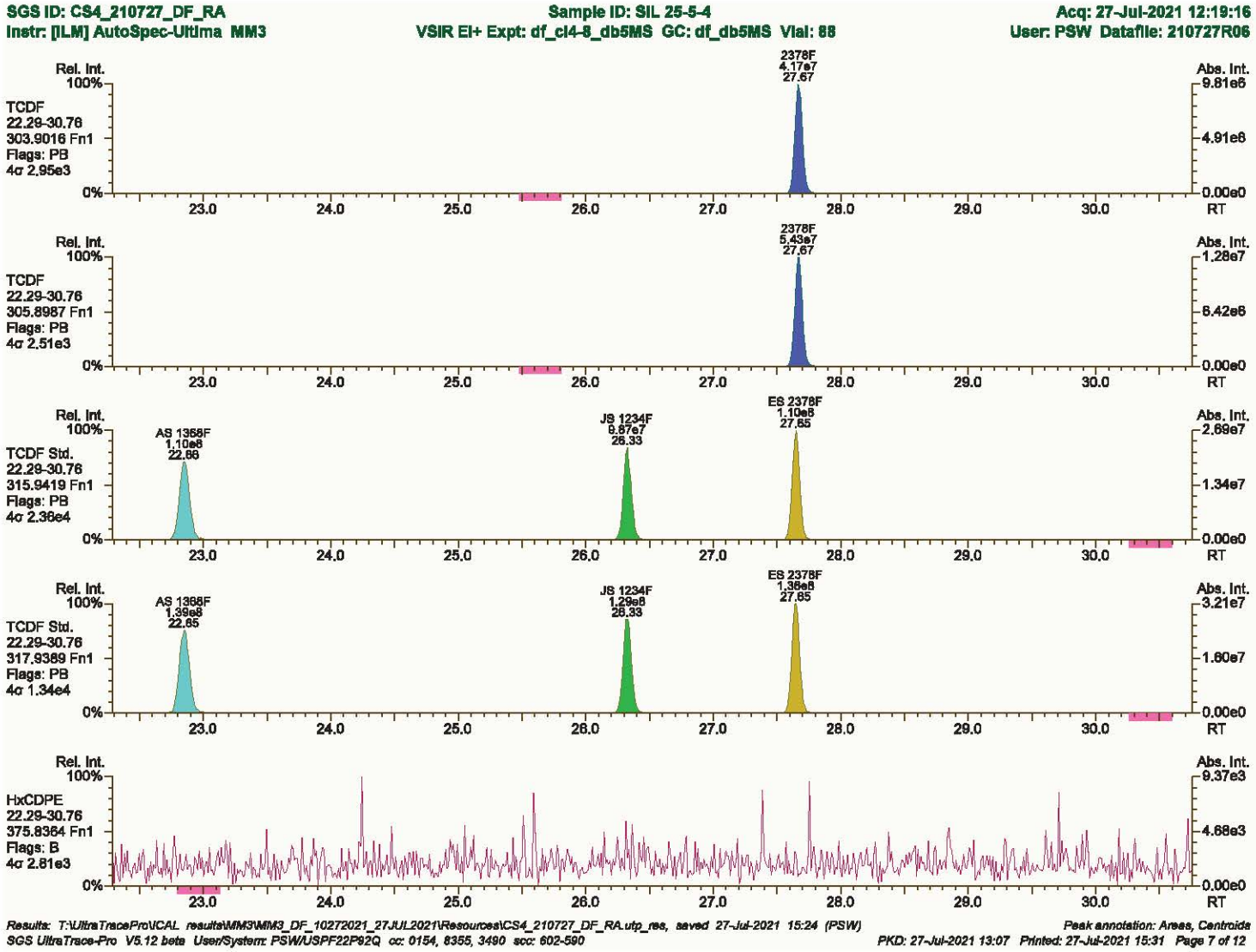
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 2723, 8440 scc: 602-590
PKD: 27-Jul-2021 13:07 Printed: 27-Jul-2021 15:31 Page 3 of 12


SGS ID: CS4_210727_DF_RA
Sample ID: SIL 25-5-4
Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88
User: PSW Datafile: 210727R06
Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.98e3
123678D 1.57e8 37.79
123478D 1.55e8 37.68
123789D 1.85e8 38.08
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.97e3
123678D 1.27e8 37.79
123478D 1.26e8 37.68
123789D 1.34e8 38.08
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.90e3
FS 123468D 9.72e7 36.59
ES 123678D 7.25e7 37.78
ES 123478D 7.54e7 37.66
ES 123789D 8.43e7* 38.06
JS 123467D 3.84e7* 37.97
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 4.22e3
FS 123468D 7.54e7 36.59
ES 123678D 5.66e7 37.78
ES 123478D 5.90e7 37.66
ES 123789D 5.64e7* 38.06
JS 123467D 3.05e7* 37.97
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


SGS ID: CS4_210727_DF_RA
Sample ID: SIL 25-5-4
Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88
User: PSW Datafile: 210727R06
Rel. Int.
Abs. Int.
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.81e4
1234678D
1.32e8
40.67
5.06e7
2.53e7
0.00e0
RT
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 9.16e3
1234678D
1.28e8
40.66
5.02e7
2.51e7
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.04e4
FS 1234679D
9.51e7
40.00
ES 1234678D
8.86e7
40.65
RRF(FS 1234679D) = (9.51e7 + 8.86e7) * 100pg / (8.86e7 + 8.47e7) * 100pg = 1.38
PSW 27-Jul-2021 15:23
OK - CL 28Jul21
3.85e7
1.93e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.82e3
FS 1234679D
8.86e7
40.00
ES 1234678D
8.47e7
40.65
3.68e7
1.84e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.68e7
8.42e6
0%
100%
40.0
40.5
41.0
41.5
42.0
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 3408, 7813 scc: 602-590
PKD: 27-Jul-2021 13:07 Printed: 27-Jul-2021 15:31 Page 5 of 12

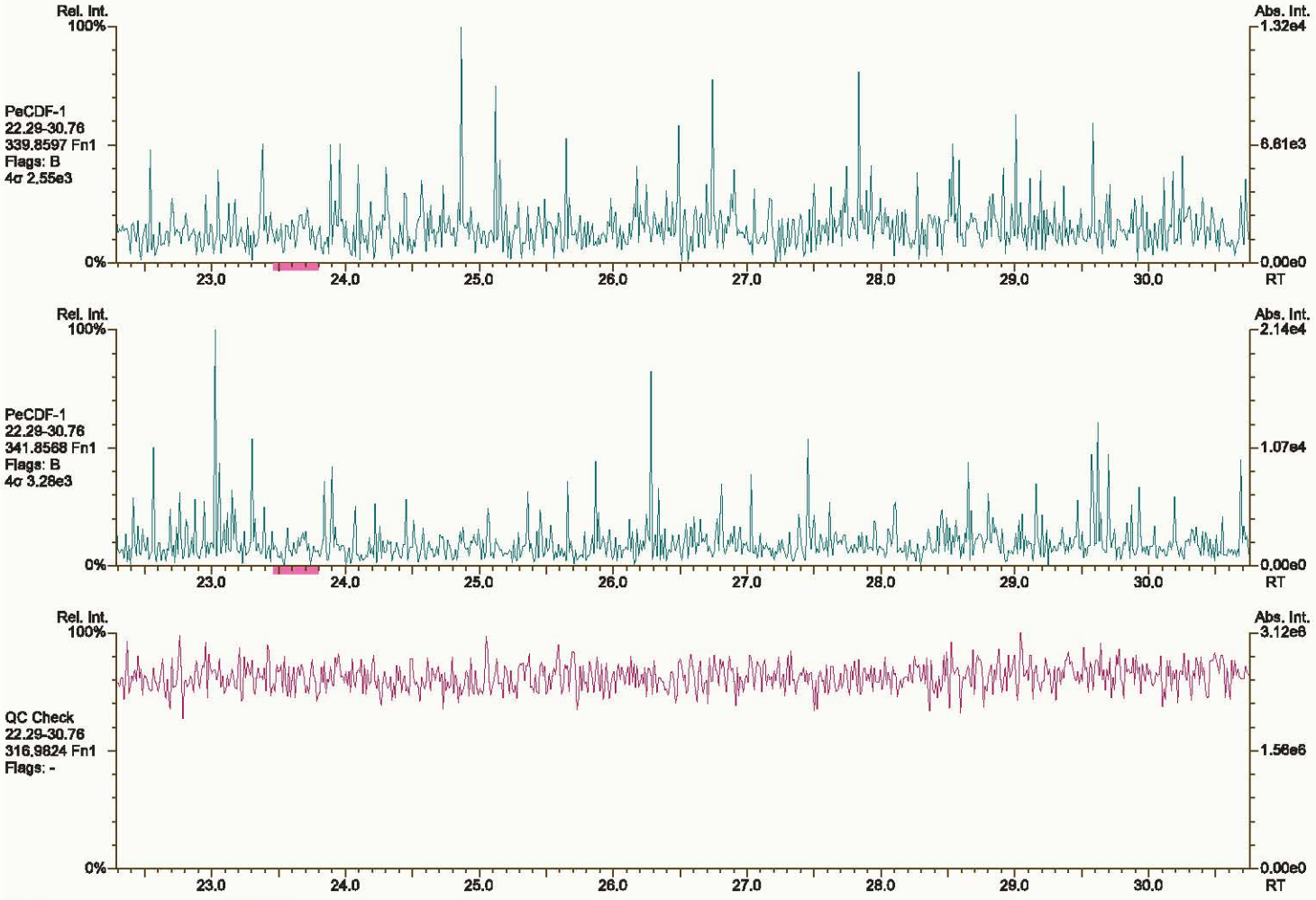

SGS ID: CS4_210727_DF_RA
Sample ID: SIL 25-5-4
Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88
User: PSW Datafile: 210727R06
Rel. Int.
Abs. Int.
OCDD
2.12e8
43.23
OCDD
42.26-45.01
457.7377 Fn5
Flags: PB
4σ 4.25e3
7.08e7
3.54e7
0.00e0
RT
OCDD
2.37e8
43.23
OCDD
42.26-45.01
459.7348 Fn5
Flags: PB
4σ 5.48e3
RRF(OCDD) = (2.12e8 + 2.37e8) * 200pg / (9.92e7 + 1.08e8) * 400pg = 1.08
PSW 27-Jul-2021 15:24
OK - CL 28Jul21
7.97e7
3.98e7
ES OCDD
9.92e7
43.22
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.15e3
3.30e7
1.65e7
ES OCDD
1.08e8
43.22
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.01e3
3.51e7
1.76e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
6.58e6
3.29e6
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0


SGS ID: CS4_210727_DF_RA
Sample ID: SIL 25-5-4
Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88
User: PSW Datafile: 210727R06
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.95e3
2378F
4.17e7
27.67
9.81e6
4.91e6
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.51e3
2378F
5.43e7
27.67
1.28e7
6.42e6
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.36e4
AS 1368F
1.10e8
22.86
JS 1234F
9.87e7
26.33
ES 2378F
1.10e8
27.65
2.69e7
1.34e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.34e4
AS 1368F
1.39e8
22.85
JS 1234F
1.29e8
26.33
ES 2378F
1.36e8
27.65
3.21e7
1.60e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.81e3
9.37e3
4.68e3
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS4_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-5-4
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88

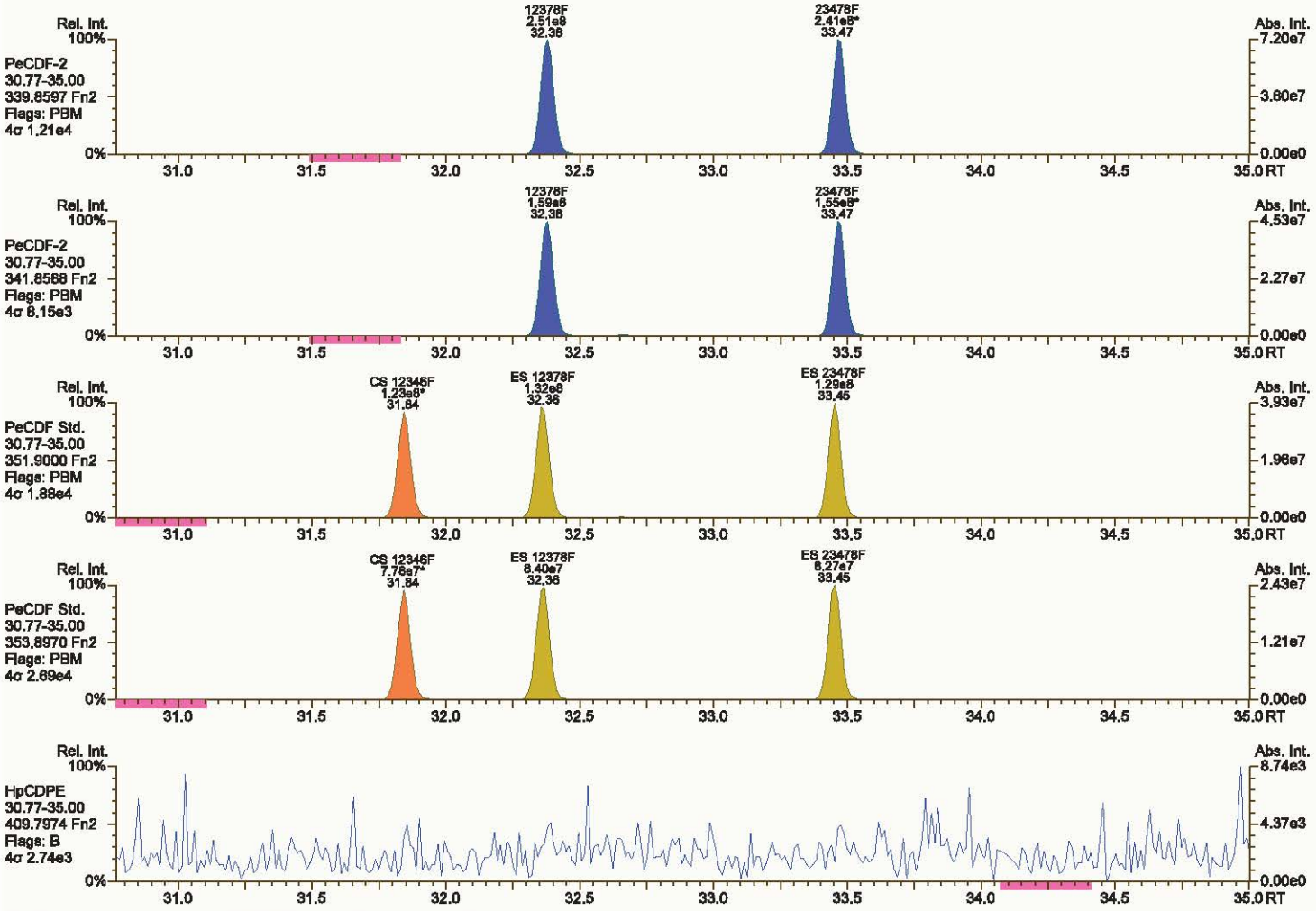
Acq: 27-Jul-2021 12:19:16
User: PSW Datafile: 210727R06



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6462 scc: 602-590
PKD: 27-Jul-2021 13:07 Printed: 27-Jul-2021 15:31 Page 8 of 12

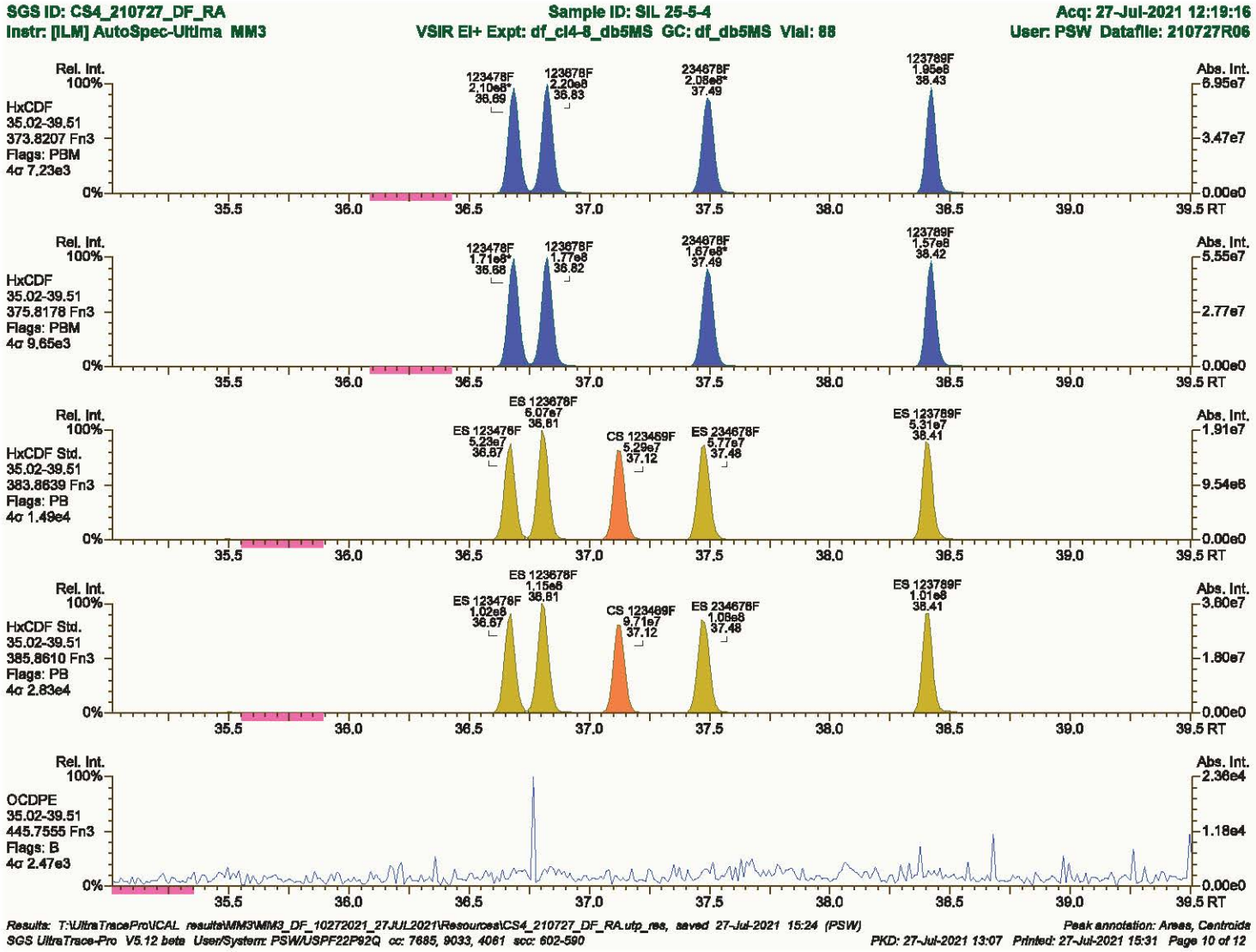
SGS ID: CS4_210727_DF_RA | Sample ID: SIL 25-5-4 | Acq: 27-Jul-2021 12:19:16

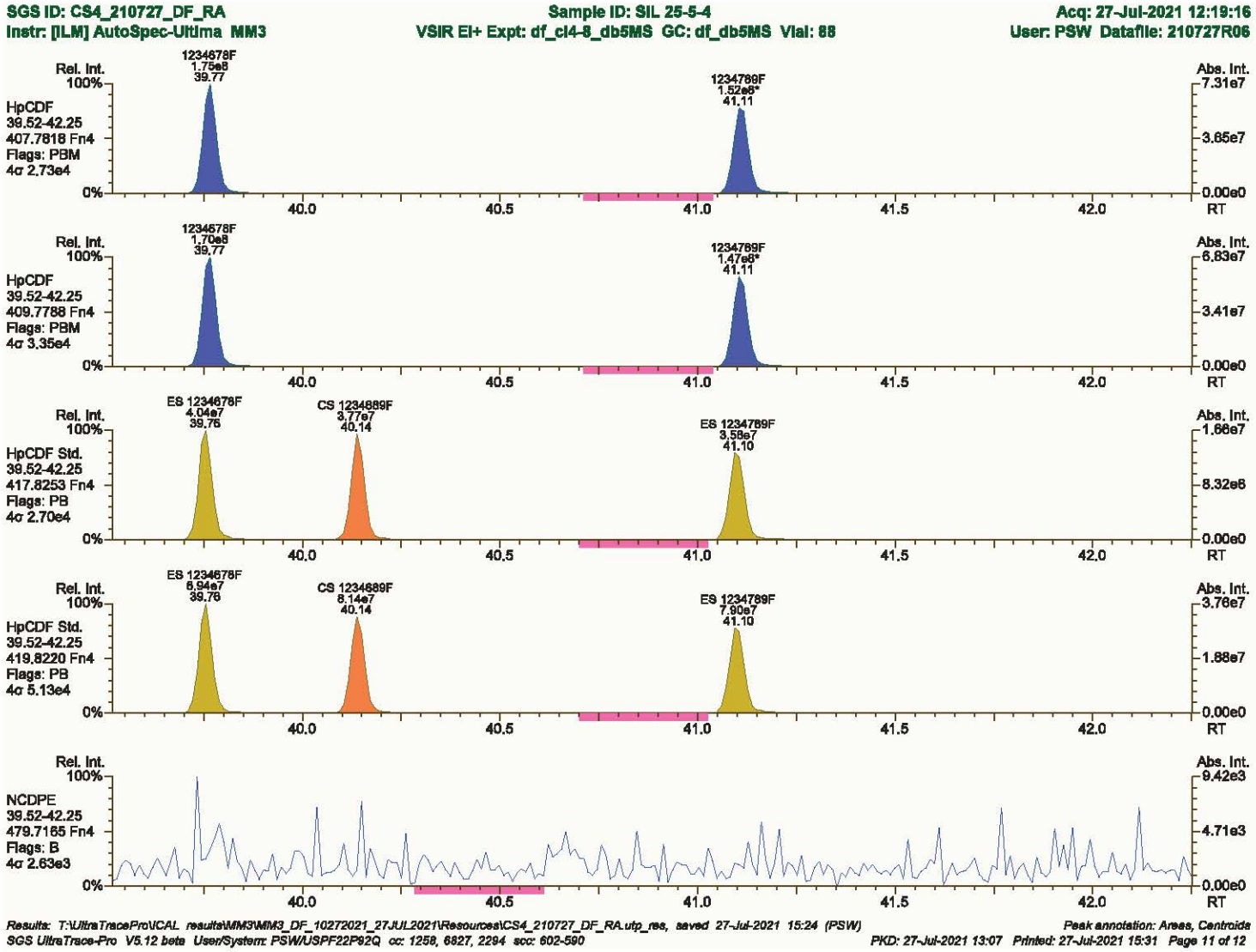
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88 | User: PSW Datafile: 210727R06

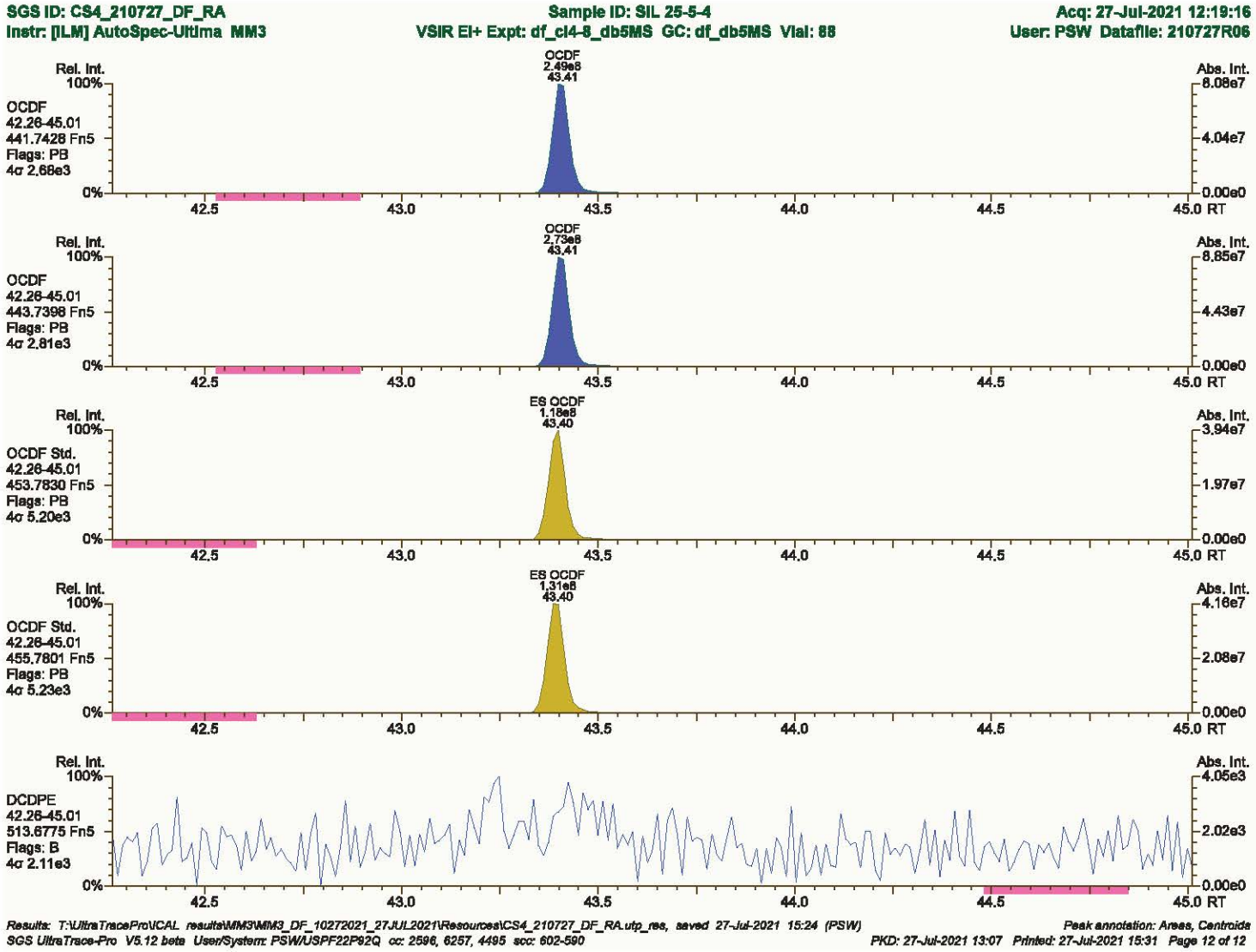


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5719, 5600, 6435 scc: 602-590 | *PKD: 27-Jul-2021 13:07 Printed: 27-Jul-2021 15:31 Page 9 of 12*


SGS ID: CS4_210727_DF_RA
Sample ID: SIL 25-5-4
Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88
User: PSW Datafile: 210727R06
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 7.23e3
123478F 2.10e8* 36.69
123678F 2.20e8 36.83
234678F 2.08e8* 37.49
123789F 1.95e8 38.43
6.95e7
3.47e7
0.00e0
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.65e3
123478F 1.71e8* 36.68
123678F 1.77e8 36.82
234678F 1.67e8* 37.49
123789F 1.57e8 38.42
5.55e7
2.77e7
0.00e0
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.49e4
ES 123678F 5.07e7 36.81
ES 123478F 5.23e7 36.67
CS 123469F 5.29e7 37.12
ES 234678F 5.77e7 37.48
ES 123789F 5.31e7 38.41
1.91e7
9.54e6
0.00e0
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.83e4
ES 123678F 1.15e8 36.81
ES 123478F 1.02e8 36.67
CS 123469F 9.71e7 37.12
ES 234678F 1.08e8 37.48
ES 123789F 1.01e8 38.41
3.60e7
1.80e7
0.00e0
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.47e3
2.36e4
1.18e4
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


SGS ID: CS4_210727_DF_RA
Sample ID: SIL 25-5-4
Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88
User: PSW Datafile: 210727R06
Rel. Int.
Abs. Int.
1234678F
1.75e8
39.77
1234789F
1.52e8*
41.11
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PBM
4σ 2.73e4
7.31e7
3.65e7
0.00e0
RT
1234678F
1.70e8
39.77
1234789F
1.47e8*
41.11
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PBM
4σ 3.35e4
6.83e7
3.41e7
ES 1234678F
4.04e7
39.76
CS 1234889F
3.77e7
40.14
ES 1234789F
3.58e7
41.10
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.70e4
1.66e7
8.32e6
ES 1234678F
6.94e7
39.76
CS 1234889F
8.14e7
40.14
ES 1234789F
7.90e7
41.10
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.13e4
3.76e7
1.88e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
9.42e3
4.71e3
100%
0%
40.0
40.5
41.0
41.5
42.0
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1258, 6827, 2294 scc: 602-590
PKD: 27-Jul-2021 13:07 Printed: 27-Jul-2021 15:31 Page 11 of 12

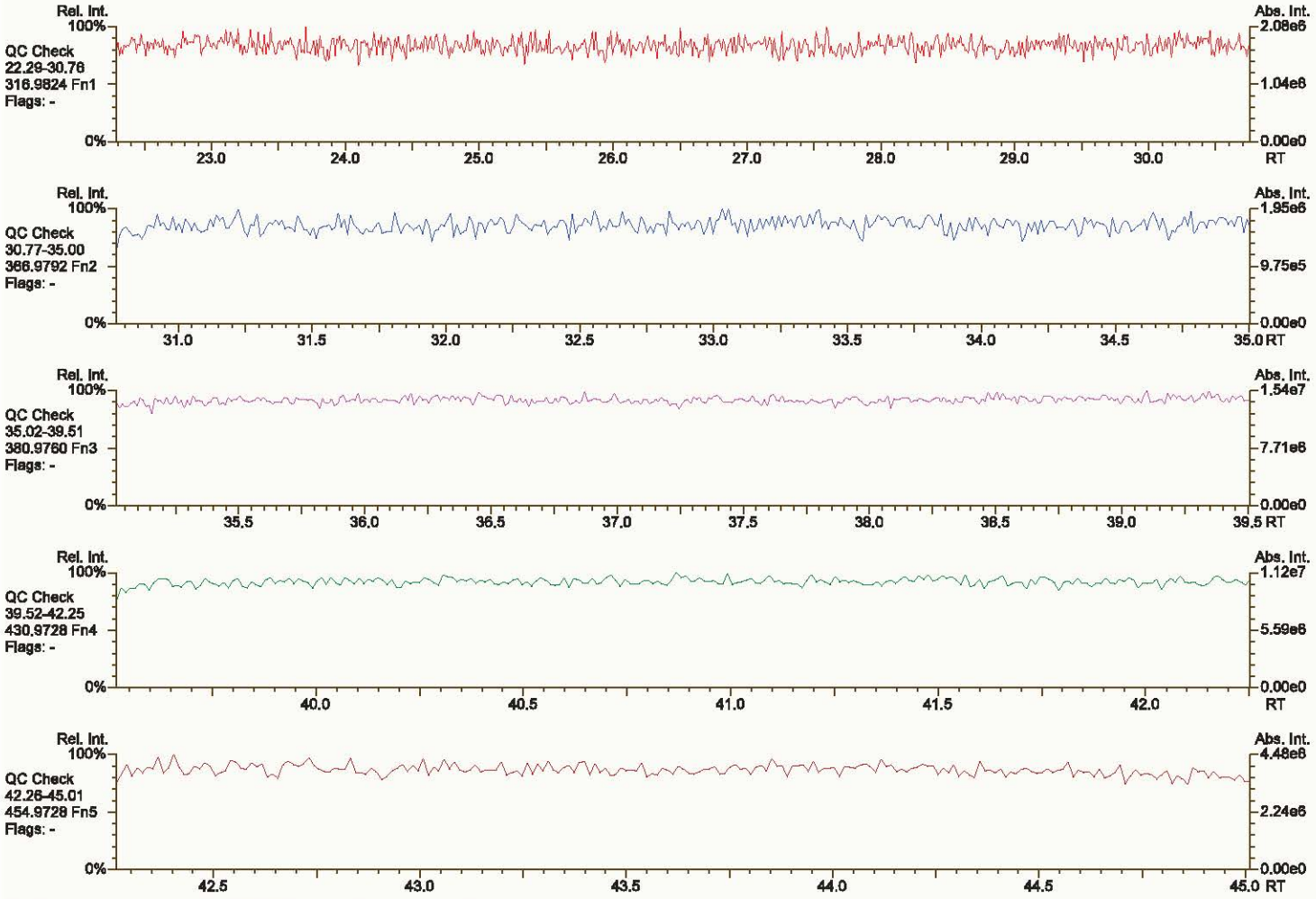

SGS ID: CS4_210727_DF_RA
Sample ID: SIL 25-5-4
Acq: 27-Jul-2021 12:19:16
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 88
User: PSW Datafile: 210727R06
Rel. Int.
Abs. Int.
OCDF
2.49e8
43.41
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.68e3
8.08e7
4.04e7
0.00e0
OCDF
2.73e8
43.41
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.81e3
8.85e7
4.43e7
ES OCDF
1.18e8
43.40
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.20e3
3.94e7
1.97e7
ES OCDF
1.31e8
43.40
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 5.23e3
4.16e7
2.08e7
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
4.05e3
2.02e3
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2596, 6257, 4495 scc: 602-590
PKD: 27-Jul-2021 13:07 Printed: 27-Jul-2021 15:31 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 13:09 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS5_210727_DF_RA		UTP: 27-Jul-2021 15:00:22 PSW				Checkcode: 147-553-CLL	
Sample ID: SIL 25-5-3		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.52	2.63E+08	0.78	Y	1.34	1.35	1%
12378-PeCDD	33.80	1.06E+09	1.56	Y	1.06	1.07	1%
123478-HxCDD	37.67	9.52E+08	1.24	Y	1.06	1.06	0%
123678-HxCDD	37.78	9.75E+08	1.25	Y	1.08	1.10	1%
123789-HxCDD	38.07	1.03E+09	1.25	Y	1.02	1.01	-1%
1234678-HpCDD	40.66	8.94E+08	1.04	Y	0.97	0.98	1%
OCDD	43.22	1.57E+09	0.88	Y	1.07	1.06	-1%
2378-TCDF	27.66	3.19E+08	0.77	Y	0.96	0.97	1%
12378-PeCDF	32.37	1.33E+09	1.51	Y	0.95	0.93	-1%
23478-PeCDF	33.46	1.36E+09	1.58	Y	0.94	0.96	3%
123478-HxCDF	36.68	1.30E+09	1.25	Y	1.23	1.24	0%
123678-HxCDF	36.82	1.35E+09	1.25	Y	1.13	1.14	1%
234678-HxCDF	37.49	1.27E+09	1.24	Y	1.15	1.15	0%
123789-HxCDF	38.42	1.20E+09	1.24	Y	1.14	1.15	2%
1234678-HpCDF	39.76	1.19E+09	1.03	Y	1.36	1.37	1%
1234789-HpCDF	41.10	1.06E+09	1.03	Y	1.30	1.35	4%
OCDF	43.40	1.87E+09	0.90	Y	1.03	1.06	3%
ES 2378-TCDD	28.49	9.72E+07	0.78	Y	1.03	1.04	1%
ES 12378-PeCDD	33.782	9.96E+07	1.62	Y	1.03	1.07	3%
ES 123478-HxCDD	37.654	8.99E+07	1.27	Y	0.99	1.03	4%
ES 123678-HxCDD	37.768	8.89E+07	1.27	Y	0.97	1.02	5%
ES 123789-HxCDD	38.058	1.02E+08	1.27	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.644	9.11E+07	1.06	Y	0.99	1.05	6%
ES OCDD	43.21	1.48E+08	0.89	Y	0.78	0.85	9%
ES 2378-TCDF	27.639	1.64E+08	0.80	Y	1.08	1.08	0%
ES 12378-PeCDF	32.354	1.43E+08	1.61	Y	0.93	0.95	1%
ES 23478-PeCDF	33.446	1.41E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.662	1.05E+08	0.52	Y	1.14	1.21	6%
ES 123678-HxCDF	36.801	1.19E+08	0.53	Y	1.30	1.36	5%
ES 234678-HxCDF	37.468	1.11E+08	0.51	Y	1.20	1.27	6%
ES 123789-HxCDF	38.402	1.04E+08	0.54	Y	1.14	1.20	5%
ES 1234678-HpCDF	39.749	8.70E+07	0.46	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.092	7.84E+07	0.46	Y	0.85	0.90	6%
ES OCDF	43.392	1.76E+08	0.89	Y	0.93	1.01	9%

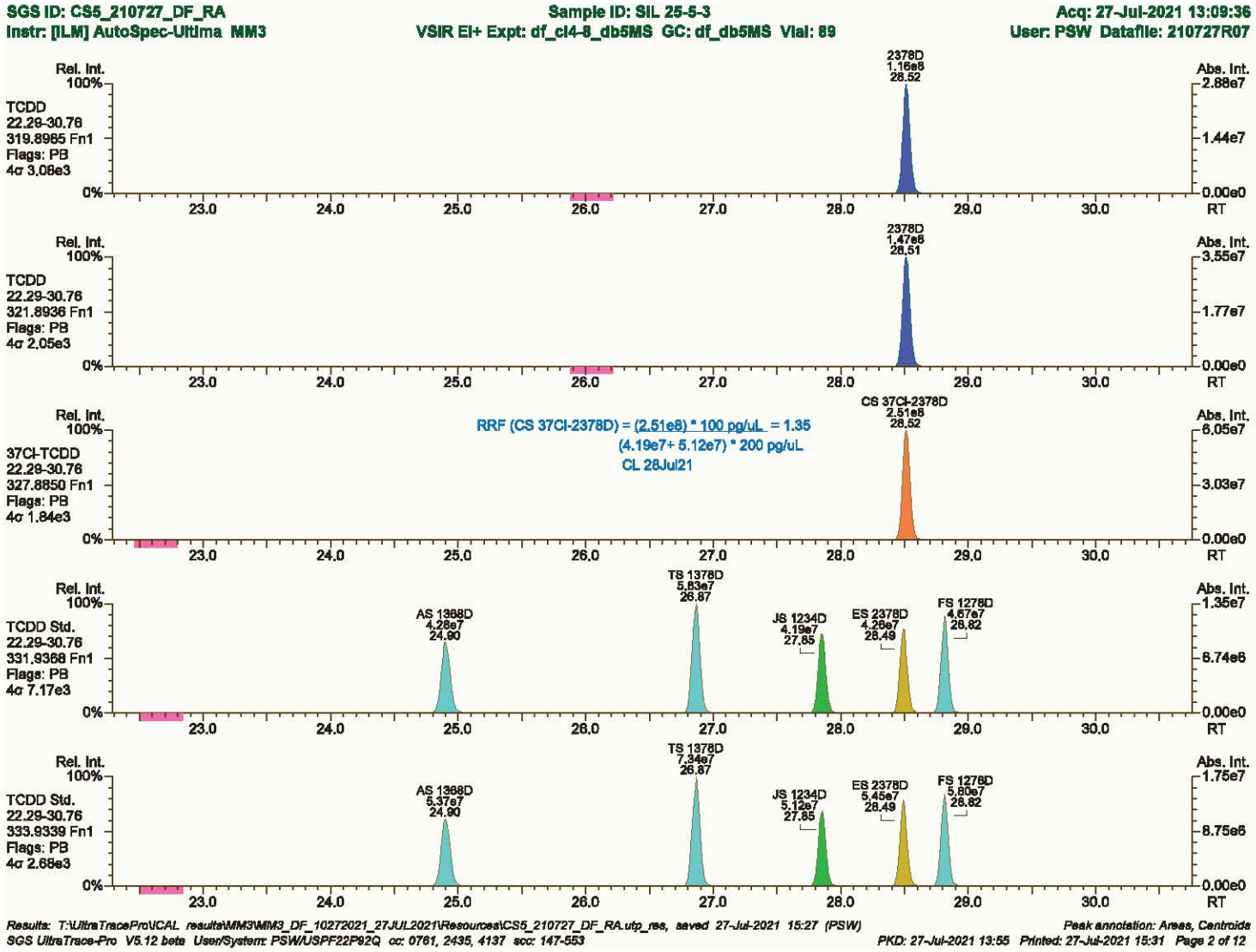
Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 13:09 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS5_210727_DF_RA		UTP: 27-Jul-2021 15:00:22 PSW				Checkcode: 147-553-CLL	
Sample ID: SIL 25-5-3		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R07	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.85	9.31E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.32	1.51E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	4.35E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.31	1.35	3%
CS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.11	9.75E+07	0.53	Y	1.09	1.12	3%
CS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.26	1.29	3%
SS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.86	0.82	-5%
SS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.93	0.91	-2%
SS 123469-HxCDF	37.11	9.75E+07	0.53	Y	0.84	0.82	-2%
SS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.91	0.86	-6%
AS 1368-TCDD	24.90	9.65E+07	0.80	Y	1.02	1.04	1%
AS 1368-TCDF	22.84	1.66E+08	0.78	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.05E+08	0.81	Y	1.08	1.08	-1%
FS 12478-PeCDD	32.57	1.07E+08	1.62	Y	1.09	1.07	-2%
FS 123468-HxCDD	36.58	1.11E+08	1.30	Y	1.26	1.24	-2%
FS 1234679-HpCDD	39.99	1.18E+08	1.06	Y	1.36	1.30	-4%
TS 1378-TCDD	26.87	1.32E+08	0.79	Y	1.35	1.35	1%
~~OCDD-a~~	~~43.22~~	~~9.57E+07~~	~~2.52~~	~~Y~~	~~0.87~~	~~0.86~~	~~-2%~~
~~OCDF-a~~	~~43.40~~	~~1.10E+09~~	~~2.51~~	~~Y~~	~~0.86~~	~~0.86~~	~~5%~~

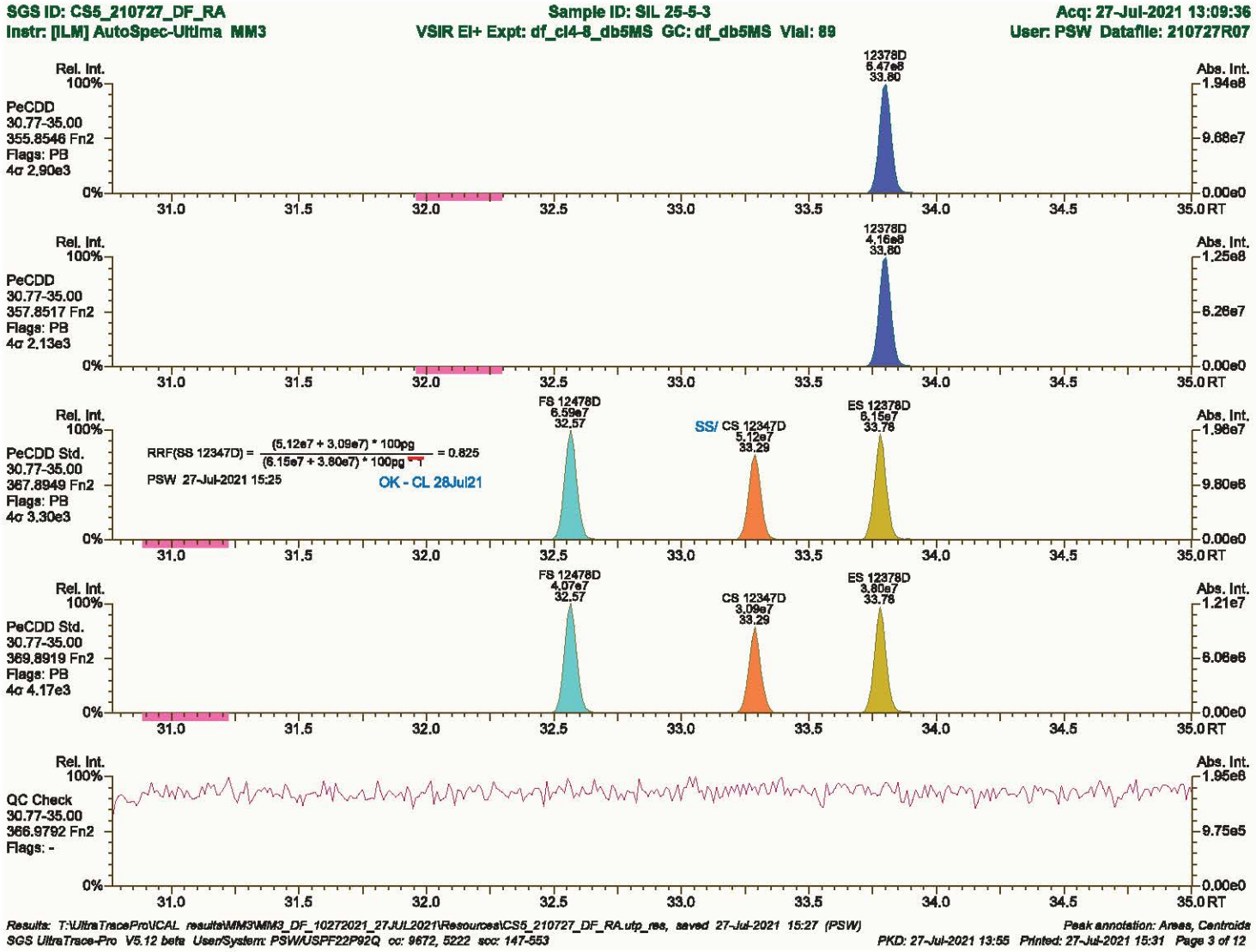
Not reported from this ICAL - CL 28Jul21

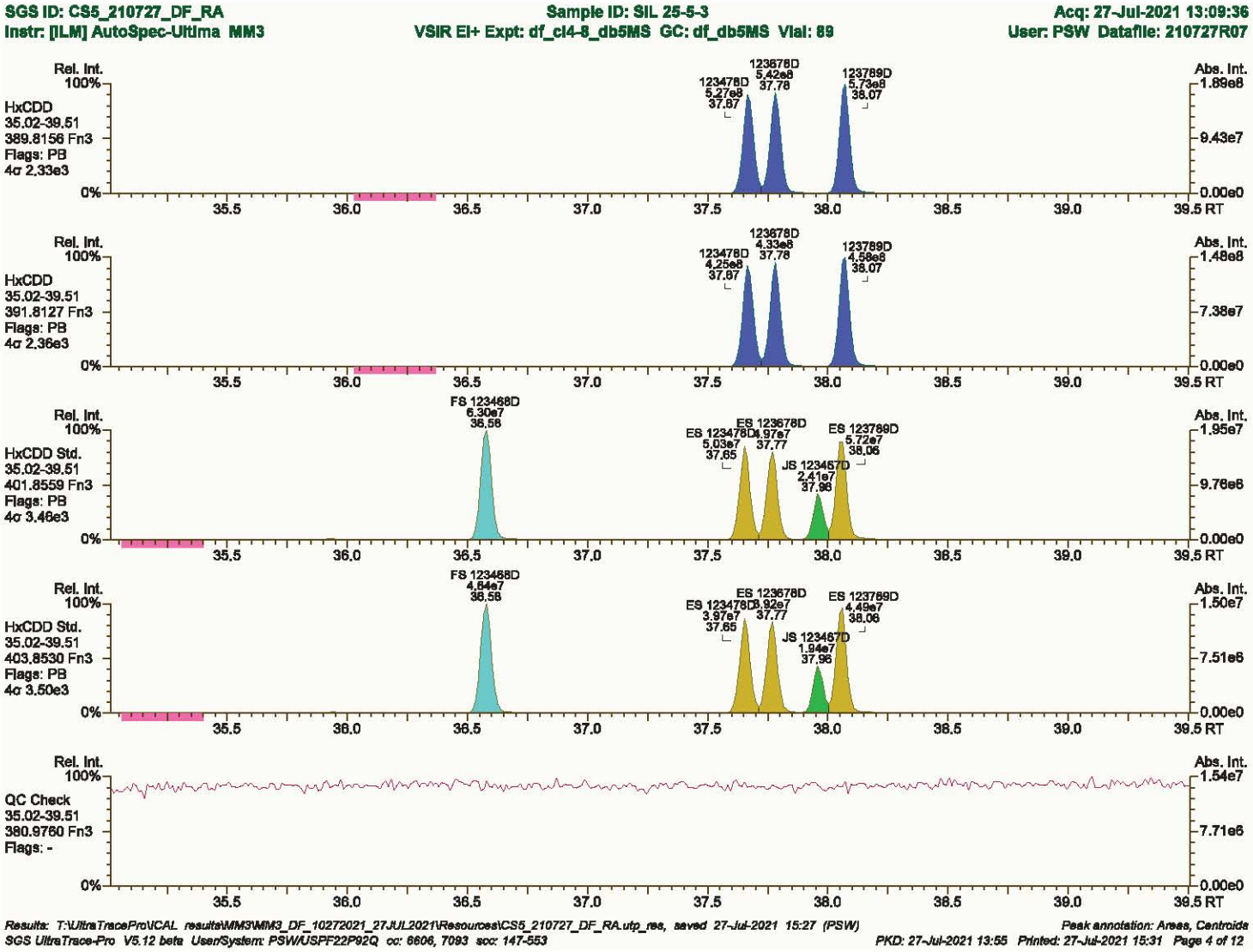
SGS ID: CS5_210727_DF_RA | Sample ID: SIL 25-5-3 | Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89 | User: PSW Datafile: 210727R07

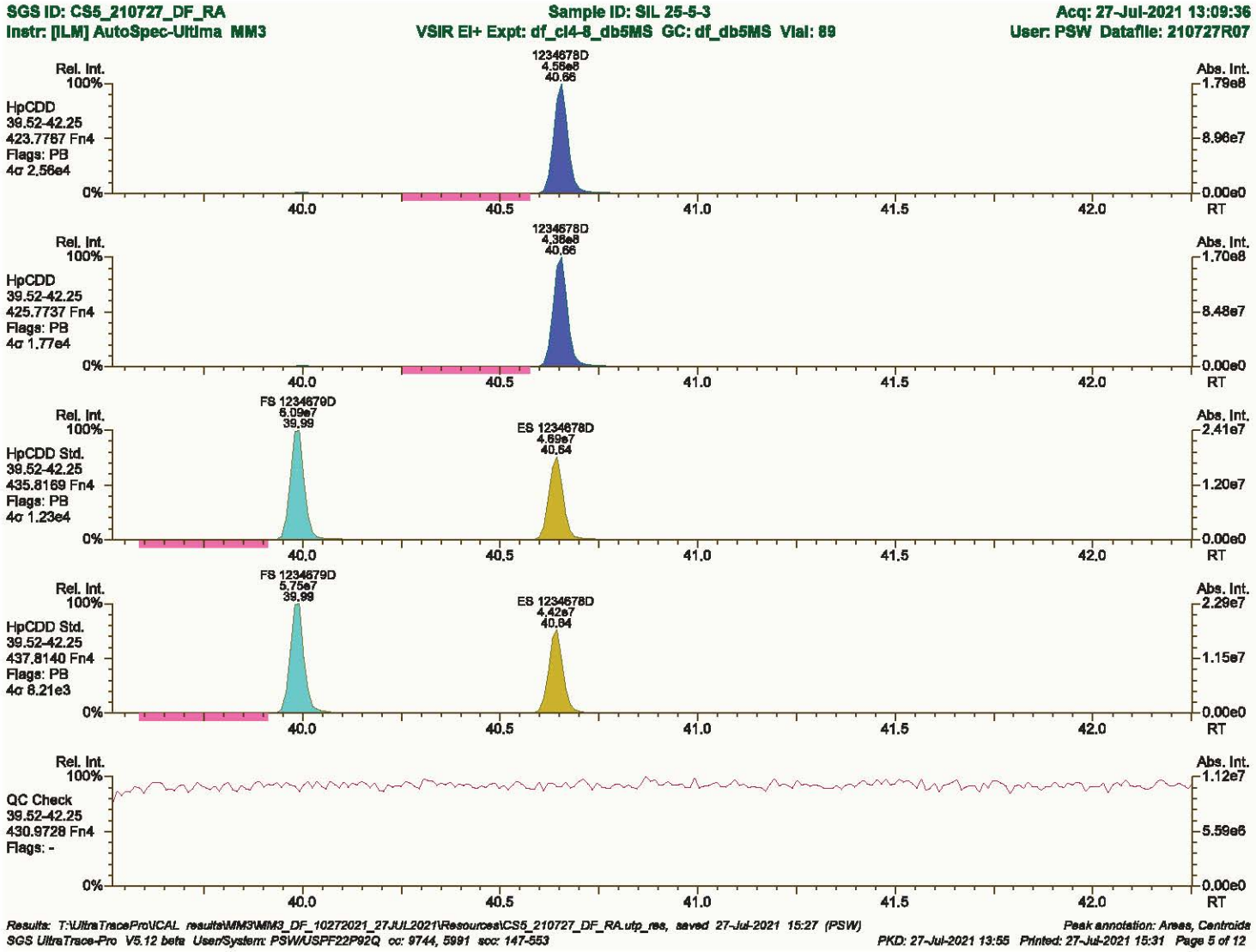


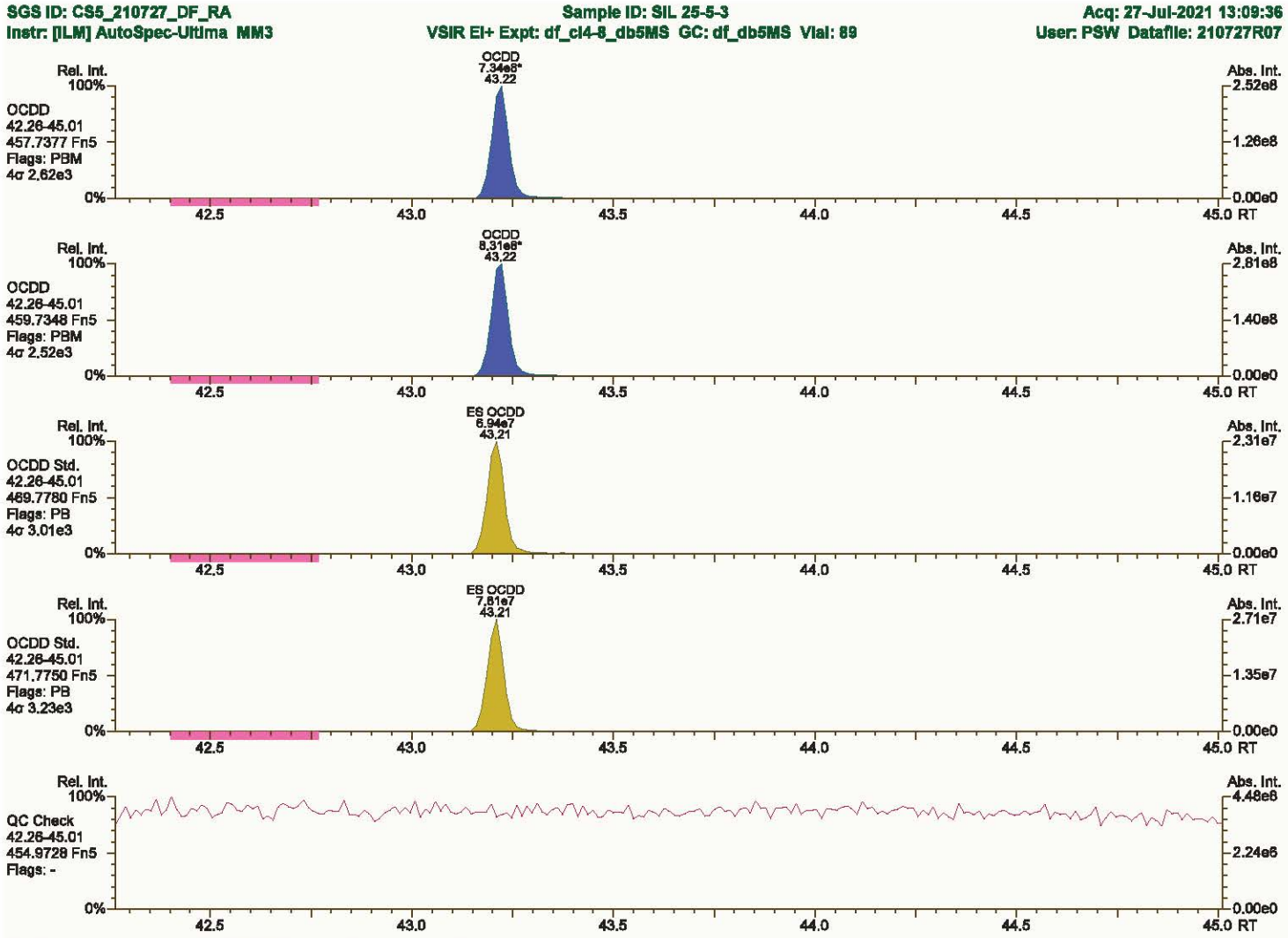
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 147-553
PKD: n/a Printed: 27-Jul-2021 15:31 Page 1 of 12

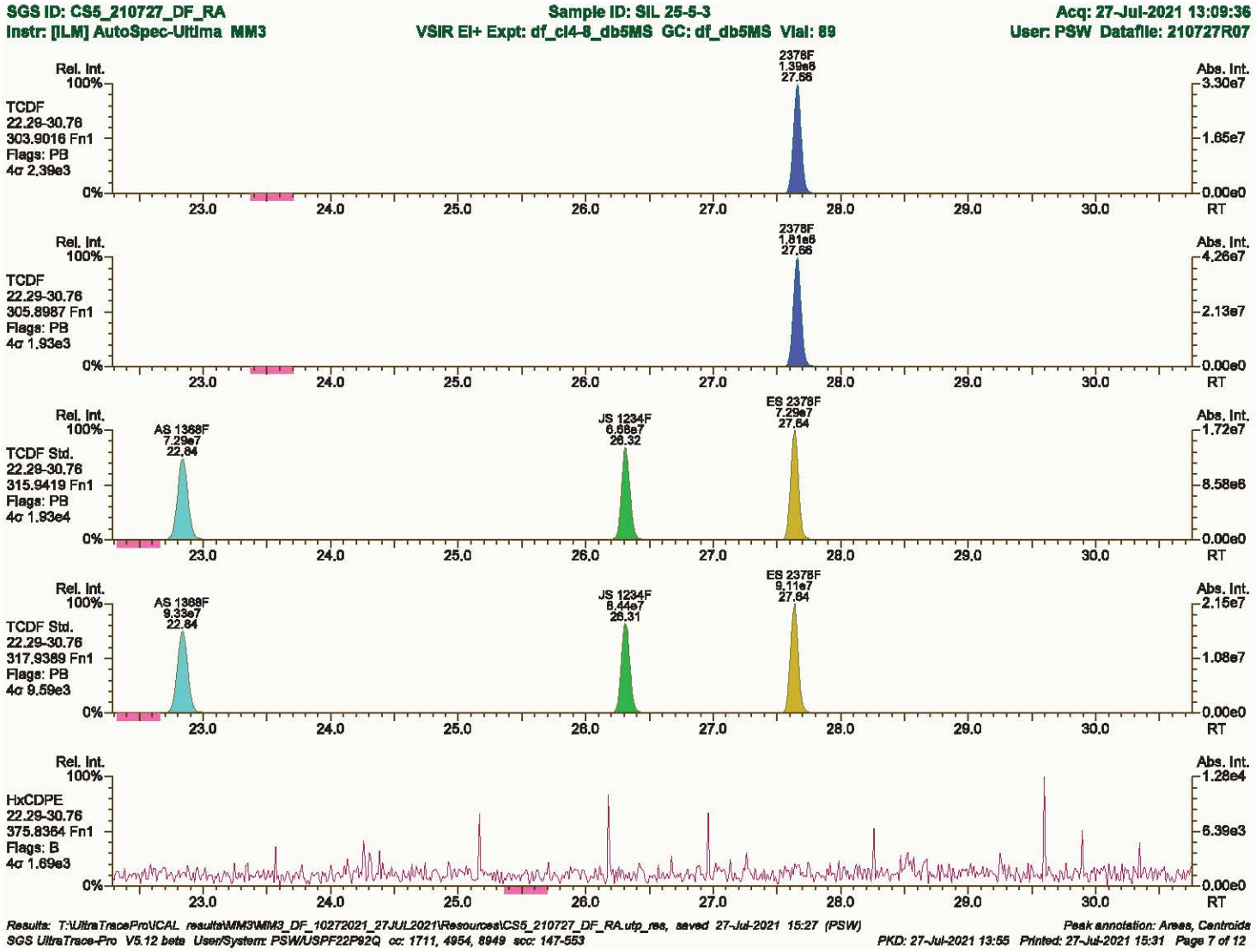

SGS ID: CS5_210727_DF_RA
Sample ID: SIL 25-5-3
Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
User: PSW Datafile: 210727R07
Rel. Int.
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.08e3
2378D
1.16e8
28.52
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.05e3
2378D
1.47e8
28.51
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.84e3
CS 37Cl-2378D
2.51e8
28.52
RRF (CS 37Cl-2378D) = (2.51e8) * 100 pg/uL = 1.35
(4.19e7+ 5.12e7) * 200 pg/uL
CL 28Jul21
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.17e3
AS 1368D
4.28e7
24.90
TS 1378D
5.83e7
26.87
JS 1234D
4.19e7
27.85
ES 2378D
4.26e7
28.49
FS 1278D
4.67e7
28.82
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.68e3
AS 1368D
5.37e7
24.90
TS 1378D
7.34e7
26.87
JS 1234D
5.12e7
27.85
ES 2378D
5.45e7
28.49
FS 1278D
5.80e7
28.82
RT


SGS ID: CS5_210727_DF_RA
Sample ID: SIL 25-5-3
Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
User: PSW Datafile: 210727R07
Rel. Int.
Abs. Int.
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.90e3
12378D
6.47e8
33.80
1.94e8
9.68e7
0.00e0
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.13e3
12378D
4.16e8
33.80
1.25e8
6.26e7
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.30e3
RRF(SS 12347D) = (5.12e7 + 3.09e7) * 100pg / (6.15e7 + 3.80e7) * 100pg = 0.825
PSW 27-Jul-2021 15:25
OK - CL 28Jul21
FS 12478D
6.59e7
32.57
SS/ CS 12347D
5.12e7
33.29
ES 12378D
6.15e7
33.78
1.96e7
9.80e6
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.17e3
FS 12478D
4.07e7
32.57
CS 12347D
3.09e7
33.29
ES 12378D
3.80e7
33.78
1.21e7
8.08e6
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
1.95e6
9.75e5
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


SGS ID: CS5_210727_DF_RA
Sample ID: SIL 25-5-3
Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
User: PSW Datafile: 210727R07
Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.33e3
123678D 5.42e8 37.78
123478D 5.27e8 37.67
123789D 5.73e8 38.07
1.89e8
9.43e7
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.36e3
123678D 4.33e8 37.78
123478D 4.25e8 37.67
123789D 4.58e8 38.07
1.48e8
7.38e7
0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.46e3
FS 123468D 6.30e7 36.56
ES 123678D 4.97e7 37.77
ES 123478D 5.03e7 37.65
ES 123789D 5.72e7 38.06
JS 123467D 2.41e7 37.96
1.95e7
9.76e6
0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.50e3
FS 123468D 4.54e7 36.56
ES 123678D 3.92e7 37.77
ES 123478D 3.97e7 37.65
ES 123789D 4.49e7 38.06
JS 123467D 1.94e7 37.96
1.50e7
7.51e6
0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.54e7
7.71e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 6606, 7093 scc: 147-553
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 4 of 12


SGS ID: CS5_210727_DF_RA
Sample ID: SIL 25-5-3
Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
User: PSW Datafile: 210727R07
Rel. Int.
Abs. Int.
1234678D
4.56e8
40.66
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.56e4
1.79e8
8.96e7
0.00e0
1234678D
4.35e8
40.66
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.77e4
1.70e8
8.48e7
FS 1234679D
6.09e7
39.99
ES 1234678D
4.69e7
40.64
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.23e4
2.41e7
1.20e7
FS 1234679D
5.75e7
39.99
ES 1234678D
4.42e7
40.64
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 8.21e3
2.29e7
1.15e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.12e7
5.59e6
100%
0%
40.0
40.5
41.0
41.5
42.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 9744, 5991 scc: 147-553
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 5 of 12

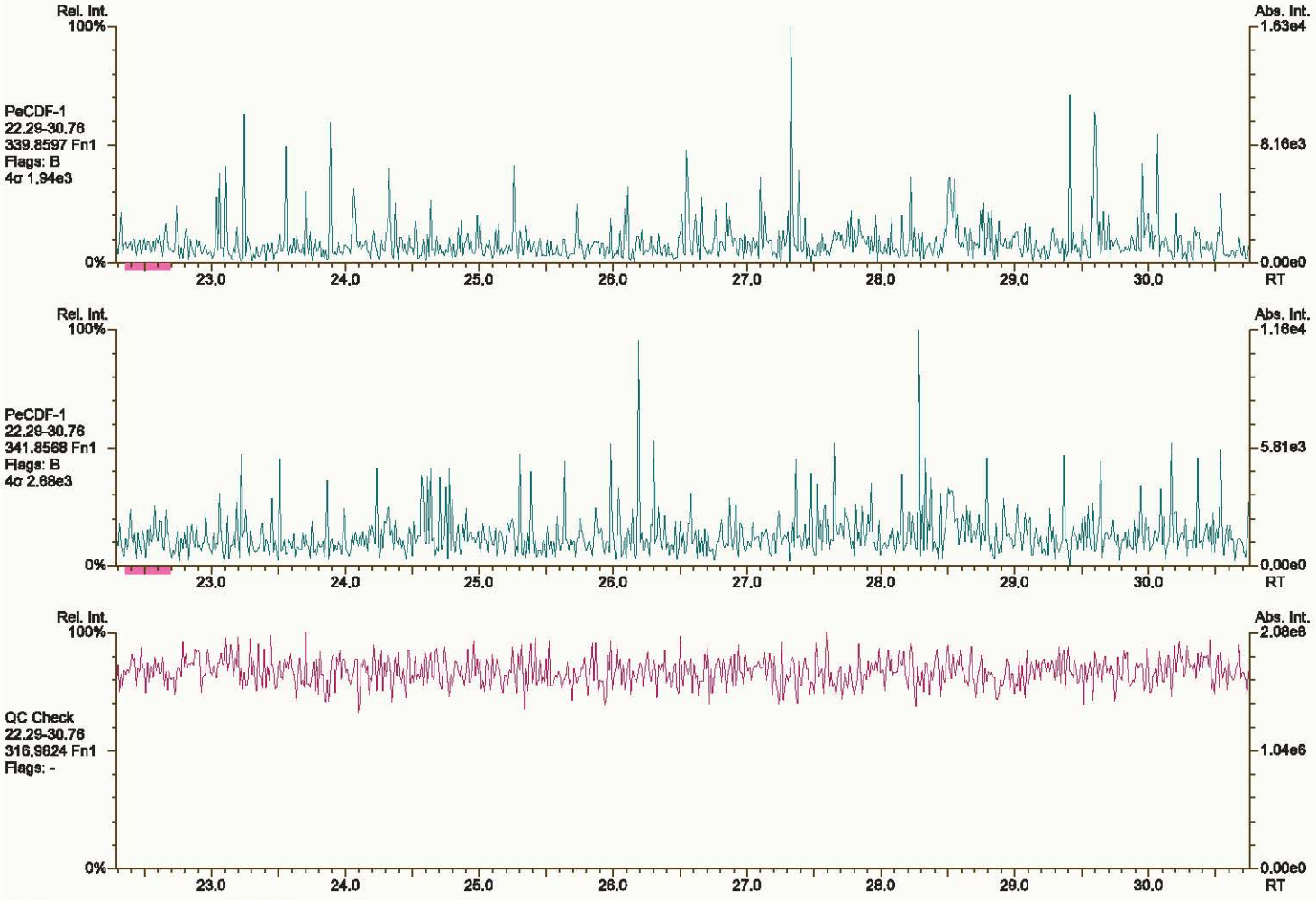

SGS ID: CS5_210727_DF_RA
Sample ID: SIL 25-5-3
Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
User: PSW Datafile: 210727R07
OCDD
7.34e8*
43.22
Rel. Int.
100%
Abs. Int.
2.52e8
1.26e8
0.00e0
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.62e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
8.31e8*
43.22
Rel. Int.
100%
Abs. Int.
2.81e8
1.40e8
0.00e0
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.94e7
43.21
Rel. Int.
100%
Abs. Int.
2.31e7
1.16e7
0.00e0
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 3.01e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.81e7
43.21
Rel. Int.
100%
Abs. Int.
2.71e7
1.35e7
0.00e0
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.23e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
Abs. Int.
4.48e6
2.24e6
0.00e0
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 2750, 5125 scc: 147-553
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 6 of 12


SGS ID: CS5_210727_DF_RA
Sample ID: SIL 25-5-3
Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
User: PSW Datafile: 210727R07
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.39e3
2378F
1.39e6
27.66
3.30e7
1.65e7
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 1.93e3
2378F
1.81e6
27.66
4.26e7
2.13e7
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.93e4
AS 1368F
7.29e7
22.84
JS 1234F
6.68e7
26.32
ES 2378F
7.29e7
27.64
1.72e7
8.58e6
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 9.59e3
AS 1368F
9.33e7
22.84
JS 1234F
8.44e7
26.31
ES 2378F
9.11e7
27.64
2.15e7
1.08e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.69e3
1.28e4
6.39e3
0%
100%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

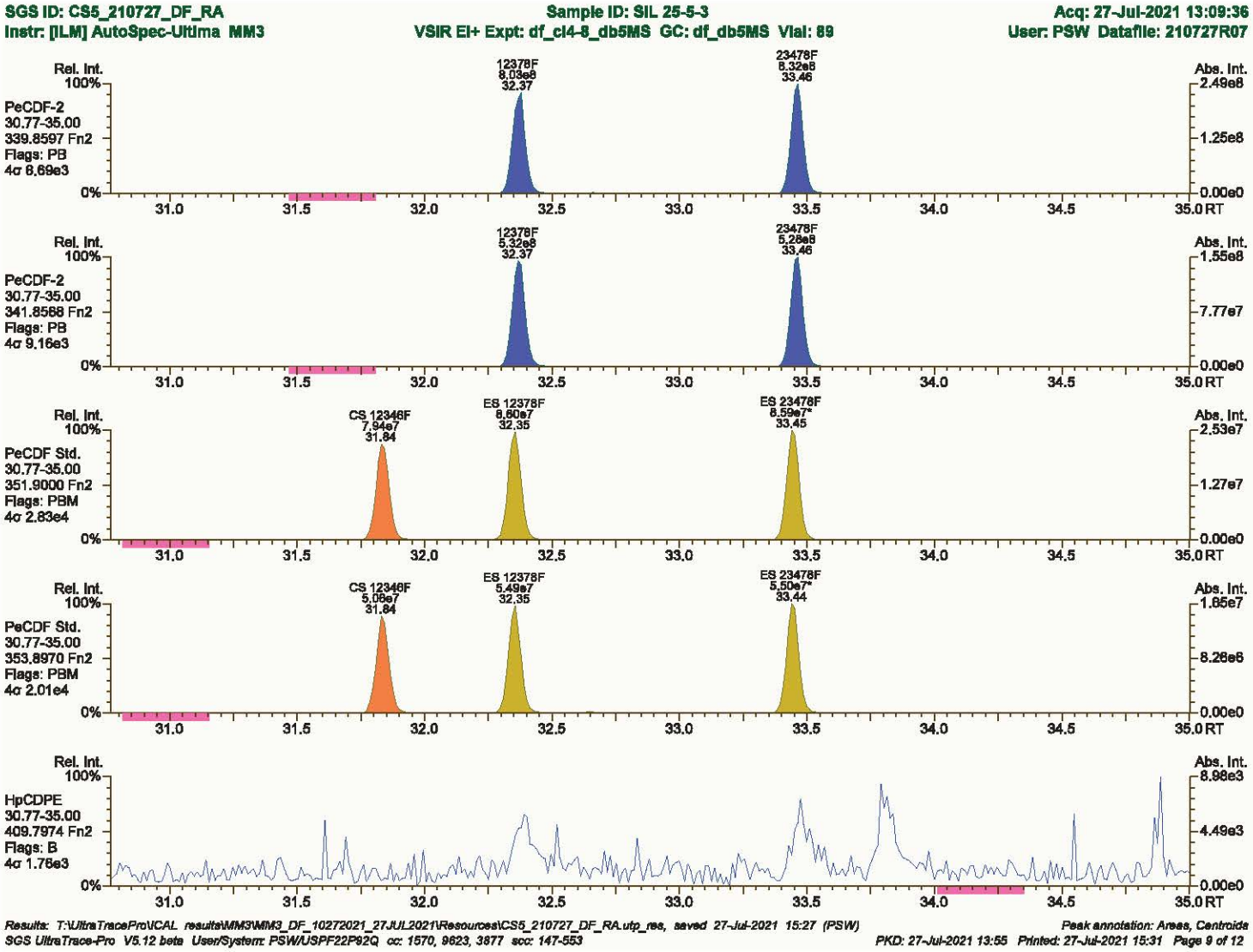
SGS ID: CS5_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

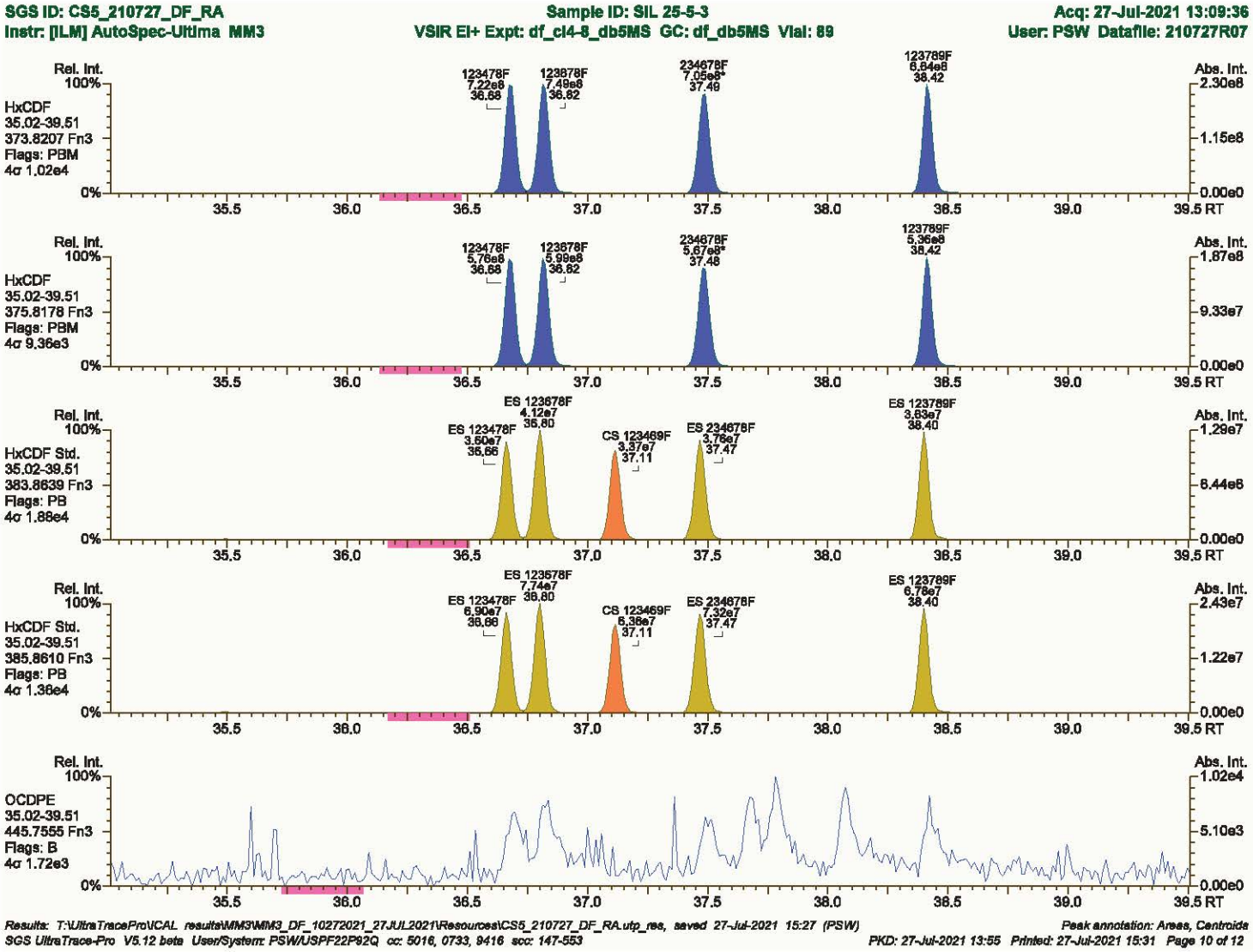
Sample ID: SIL 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89

Acq: 27-Jul-2021 13:09:36
User: PSW Datafile: 210727R07



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7511 scc: 147-553
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 8 of 12


SGS ID: CS5_210727_DF_RA
Sample ID: SIL 25-5-3
Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
User: PSW Datafile: 210727R07
Rel. Int.
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 8.69e3
12378F
8.03e8
32.37
23478F
8.32e8
33.46
2.49e8
1.25e8
0.00e0
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 9.16e3
12378F
5.32e8
32.37
23478F
5.28e8
33.46
1.55e8
7.77e7
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.83e4
CS 12346F
7.94e7
31.84
ES 12378F
8.60e7
32.35
ES 23478F
8.59e7*
33.45
2.53e7
1.27e7
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.01e4
CS 12346F
5.06e7
31.84
ES 12378F
5.49e7
32.35
ES 23478F
5.50e7*
33.44
1.65e7
8.26e6
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 1.76e3
8.98e3
4.49e3
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


SGS ID: CS5_210727_DF_RA
Sample ID: SIL 25-5-3
Acq: 27-Jul-2021 13:09:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89
User: PSW Datafile: 210727R07
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.02e4
123478F 7.22e8 36.58
123678F 7.49e8 36.62
234678F 7.05e8* 37.49
123789F 6.84e8 38.42
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.36e3
123478F 5.76e8 36.58
123678F 5.99e8 36.62
234678F 5.67e8* 37.48
123789F 5.36e8 38.42
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.88e4
ES 123678F 4.12e7 36.60
ES 123478F 3.50e7 36.66
CS 123469F 3.37e7 37.11
ES 234678F 3.76e7 37.47
ES 123789F 3.63e7 38.40
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.36e4
ES 123678F 7.74e7 36.80
ES 123478F 6.90e7 36.66
CS 123469F 6.38e7 37.11
ES 234678F 7.32e7 37.47
ES 123789F 6.78e7 38.40
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.72e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
2.30e8
1.15e8
0.00e0
1.87e8
9.33e7
1.29e7
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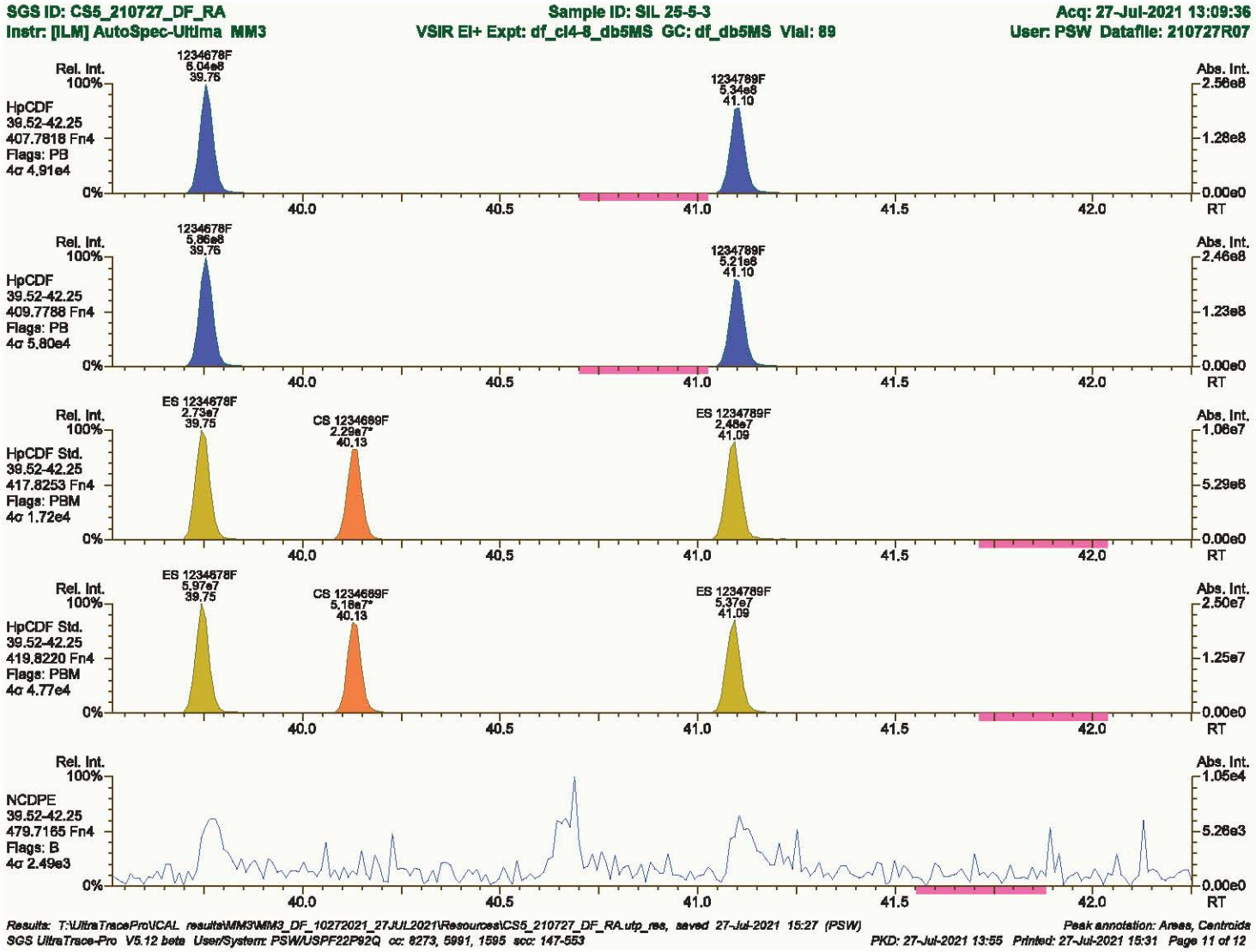
1.02e4
5.10e3



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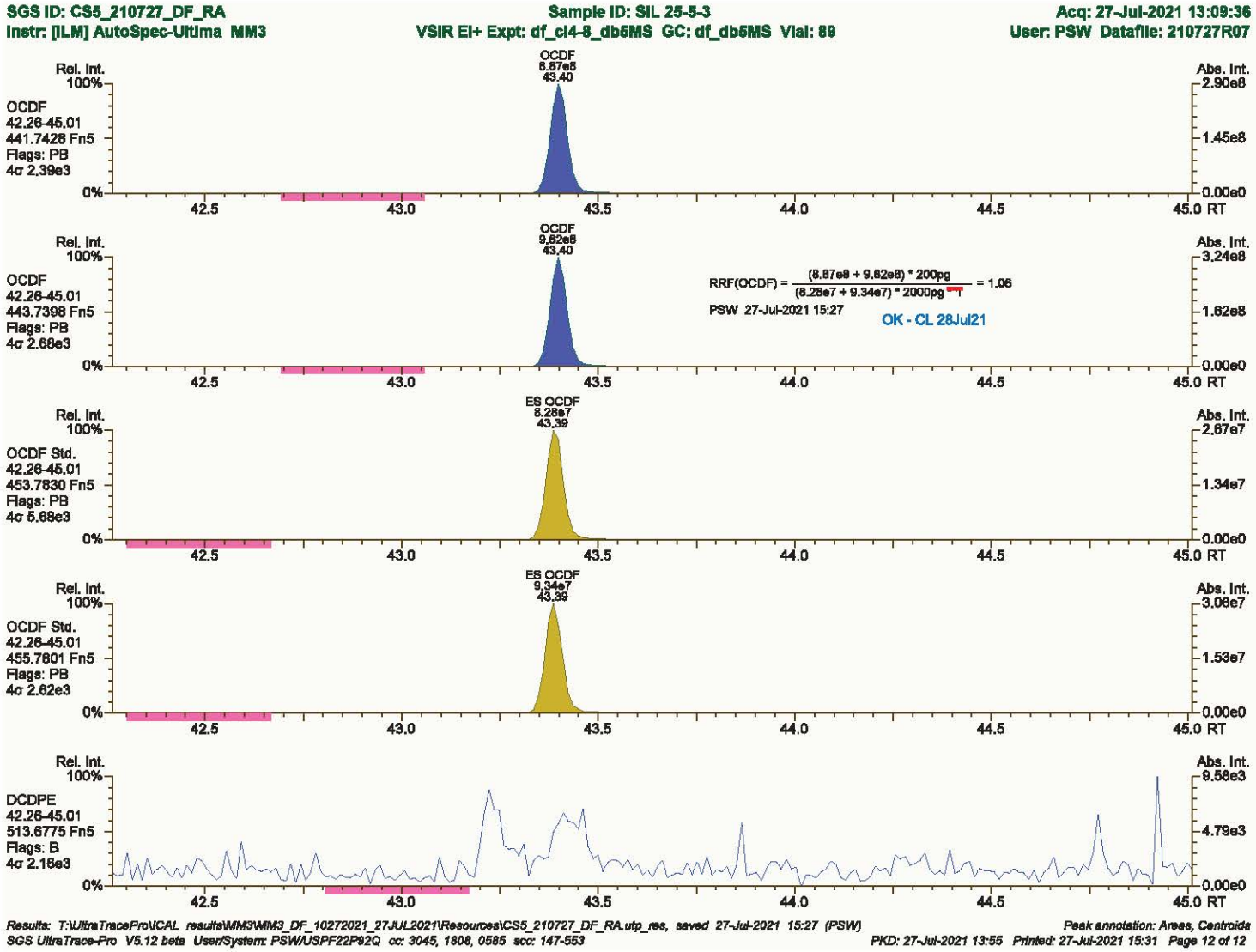
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8273, 5991, 1595 scc: 147-553
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 11 of 12



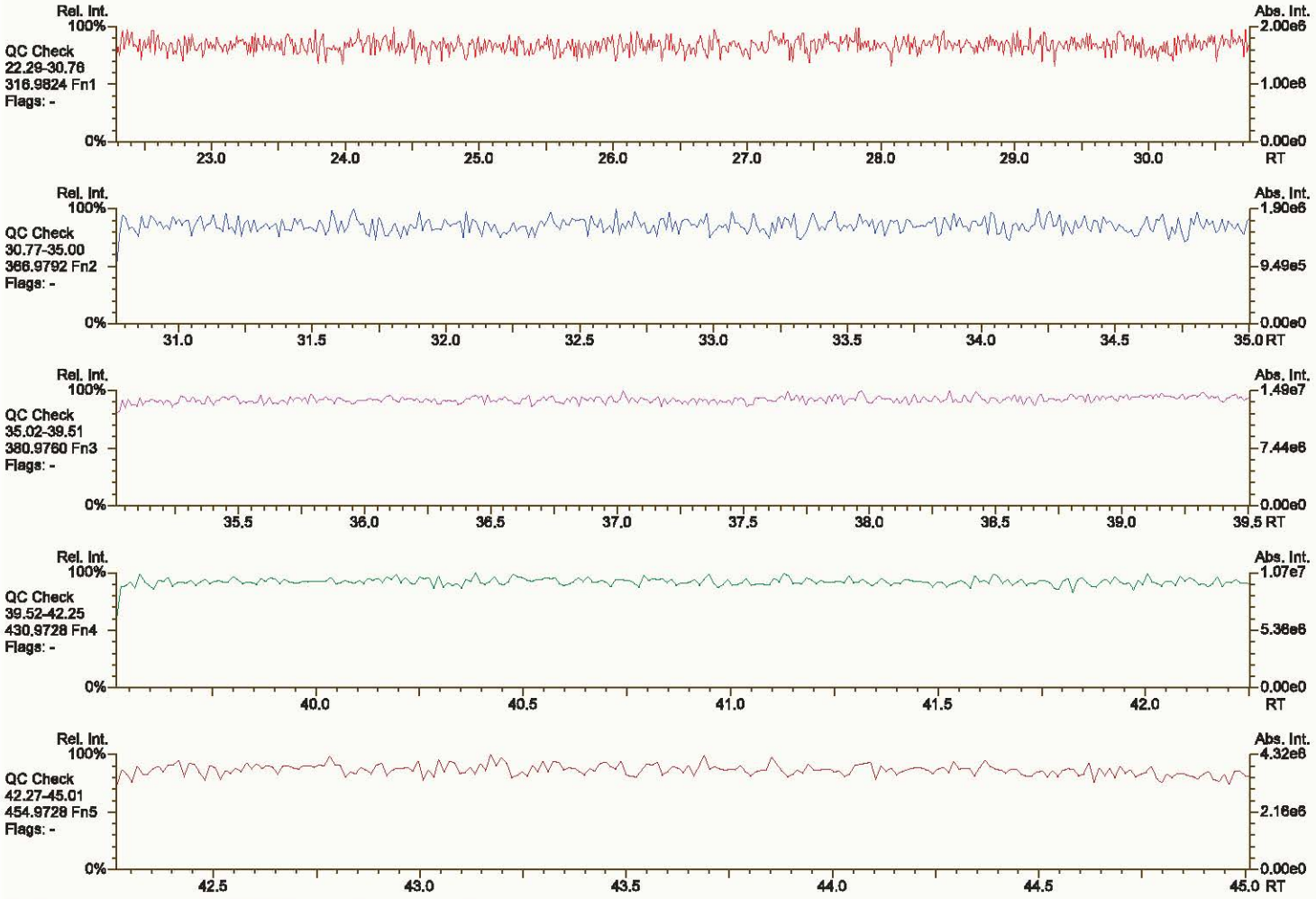
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3045, 1806, 0585 scc: 147-553
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 13:58 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS6_210727_DF_RA		UTP: 27-Jul-2021 15:00:22 PSW				Checkcode: 783-472-ZXK	
Sample ID: SIL 25-5-2		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.53	6.45E+08	0.79	Y	1.34	1.39	3%
12378-PeCDD	33.81	2.62E+09	1.57	Y	1.06	1.05	0%
123478-HxCDD	37.68	2.41E+09	1.26	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.46E+09	1.25	Y	1.08	1.09	1%
123789-HxCDD	38.08	2.63E+09	1.25	Y	1.02	1.00	-1%
1234678-HpCDD	40.66	2.28E+09	1.03	Y	0.97	1.00	2%
OCDD	43.24	4.13E+09	0.89	Y	1.07	1.08	1%
2378-TCDF	27.67	7.99E+08	0.77	Y	0.96	0.99	3%
12378-PeCDF	32.38	3.47E+09	1.57	Y	0.95	0.96	2%
23478-PeCDF	33.47	3.38E+09	1.55	Y	0.94	0.96	2%
123478-HxCDF	36.69	3.24E+09	1.24	Y	1.23	1.22	-1%
123678-HxCDF	36.83	3.36E+09	1.24	Y	1.13	1.14	0%
234678-HxCDF	37.49	3.14E+09	1.25	Y	1.15	1.15	0%
123789-HxCDF	38.43	3.10E+09	1.25	Y	1.14	1.16	2%
1234678-HpCDF	39.77	3.01E+09	1.04	Y	1.36	1.36	0%
1234789-HpCDF	41.11	2.70E+09	1.03	Y	1.30	1.33	2%
OCDF	43.42	4.91E+09	0.91	Y	1.03	1.08	5%
ES 2378-TCDD	28.50	9.29E+07	0.78	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.791	9.93E+07	1.63	Y	1.03	1.10	6%
ES 123478-HxCDD	37.663	9.19E+07	1.24	Y	0.99	1.07	7%
ES 123678-HxCDD	37.778	9.02E+07	1.27	Y	0.97	1.05	7%
ES 123789-HxCDD	38.067	1.05E+08	1.27	Y	1.12	1.22	8%
ES 1234678-HpCDD	40.65	9.14E+07	1.03	Y	0.99	1.06	7%
ES OCDD	43.227	1.53E+08	0.91	Y	0.78	0.89	14%
ES 2378-TCDF	27.65	1.62E+08	0.78	Y	1.08	1.10	2%
ES 12378-PeCDF	32.365	1.44E+08	1.56	Y	0.93	0.98	5%
ES 23478-PeCDF	33.455	1.42E+08	1.59	Y	0.92	0.96	4%
ES 123478-HxCDF	36.671	1.06E+08	0.53	Y	1.14	1.23	8%
ES 123678-HxCDF	36.81	1.18E+08	0.53	Y	1.30	1.37	6%
ES 234678-HxCDF	37.477	1.09E+08	0.52	Y	1.20	1.27	5%
ES 123789-HxCDF	38.411	1.07E+08	0.52	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.757	8.85E+07	0.45	Y	0.95	1.03	8%
ES 1234789-HpCDF	41.1	8.15E+07	0.45	Y	0.85	0.94	12%
ES OCDF	43.407	1.83E+08	0.90	Y	0.93	1.06	14%

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 13:58 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS6_210727_DF_RA		UTP: 27-Jul-2021 15:00:22 PSW				Checkcode: 783-472-ZXK	
Sample ID: SIL 25-5-2		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	27.86	9.07E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.33	1.47E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	4.31E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.89	0.89	-1%
CS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.87	0.85	-2%
CS 123469-HxCDF	37.12	9.43E+07	0.51	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.86	0.84	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.86	0.81	-6%
SS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.93	0.87	-7%
SS 123469-HxCDF	37.12	9.43E+07	0.51	Y	0.84	0.80	-5%
SS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.91	0.81	-11%
AS 1368-TCDD	24.92	9.24E+07	0.82	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	1.58E+08	0.79	Y	1.08	1.07	0%
FS 1278-TCDD	28.83	1.02E+08	0.81	Y	1.08	1.10	1%
FS 12478-PeCDD	32.58	1.01E+08	1.67	Y	1.09	1.01	-7%
FS 123468-HxCDD	36.59	1.06E+08	1.23	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.99	1.12E+08	1.07	Y	1.36	1.23	-9%
TS 1378-TCDD	26.88	1.27E+08	0.79	Y	1.35	1.37	2%
~~OCDD-a~~	~~43.23~~	~~2.53E+08~~	~~2.47~~	~~Y~~	~~0.87~~	~~0.87~~	~~0%~~
~~OCDF-a~~	~~43.42~~	~~2.93E+09~~	~~2.57~~	~~Y~~	~~0.86~~	~~0.86~~	~~0%~~

Not reported from this ICAL - CL 28Jul21

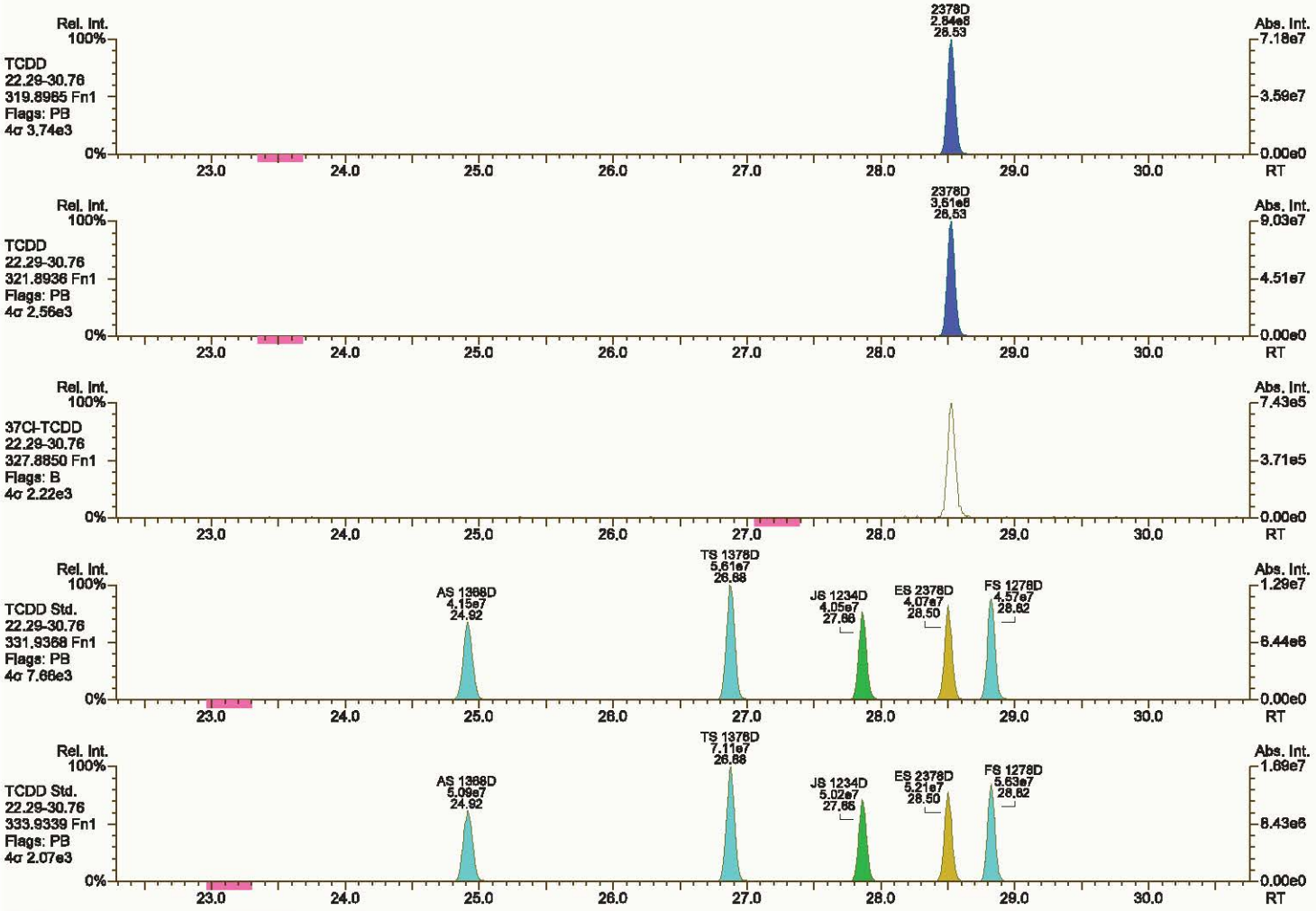
SGS ID: CS6_210727_DF_RA | Sample ID: SIL 25-5-2 | Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90 | User: PSW Datafile: 210727R08



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 783-472
PKD: n/a Printed: 27-Jul-2021 15:31 Page 1 of 12

SGS ID: CS6_210727_DF_RA | Sample ID: SIL 25-5-2 | Acq: 27-Jul-2021 13:58:27

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90 | User: PSW Datafile: 210727R08



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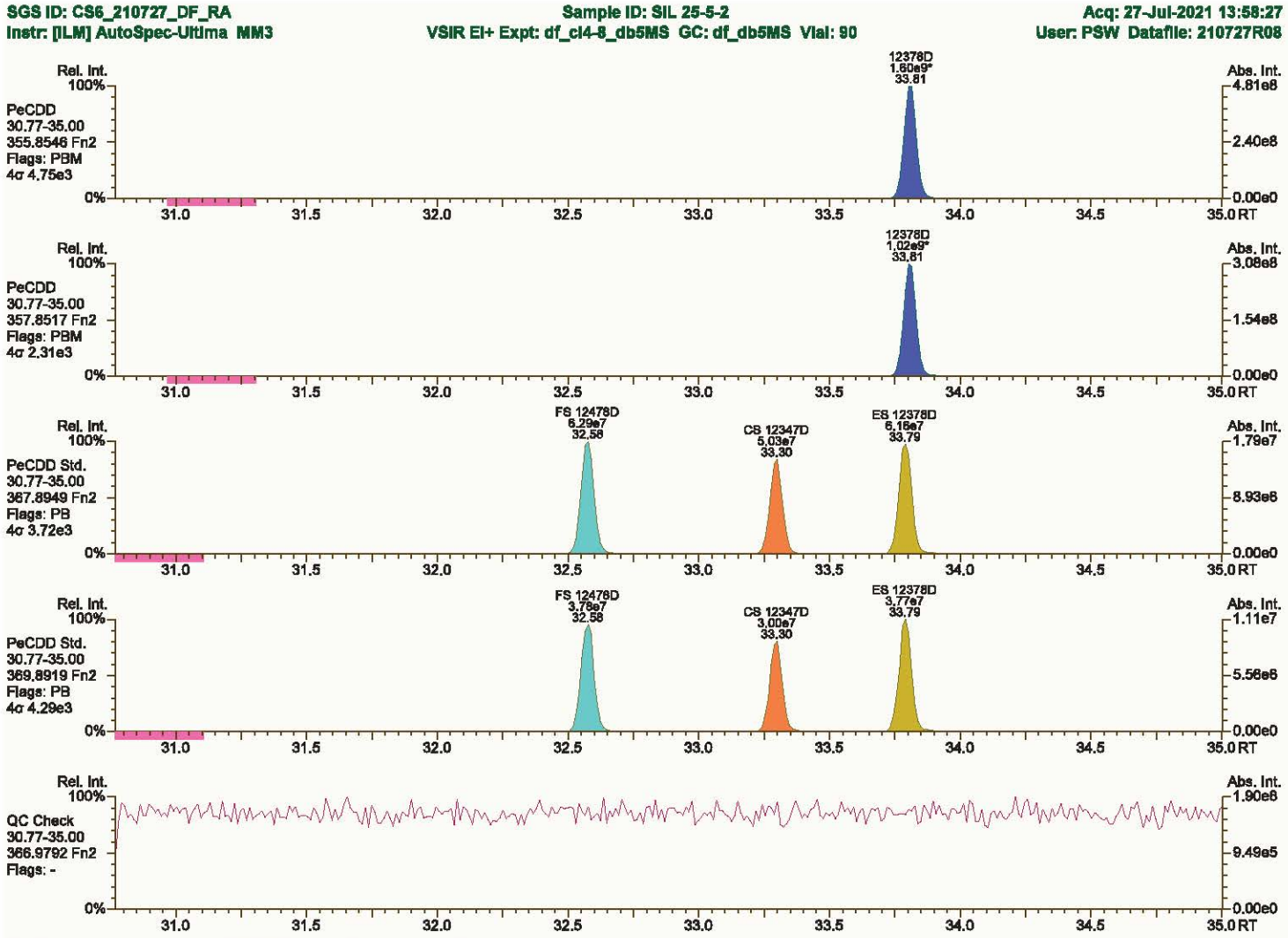
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5217, 9774, 0133 scc: 783-472 *Revised: 27-Jul-2021 14:46 (PSW) Printed: 27-Jul-2021 15:31 Page 2 of 12*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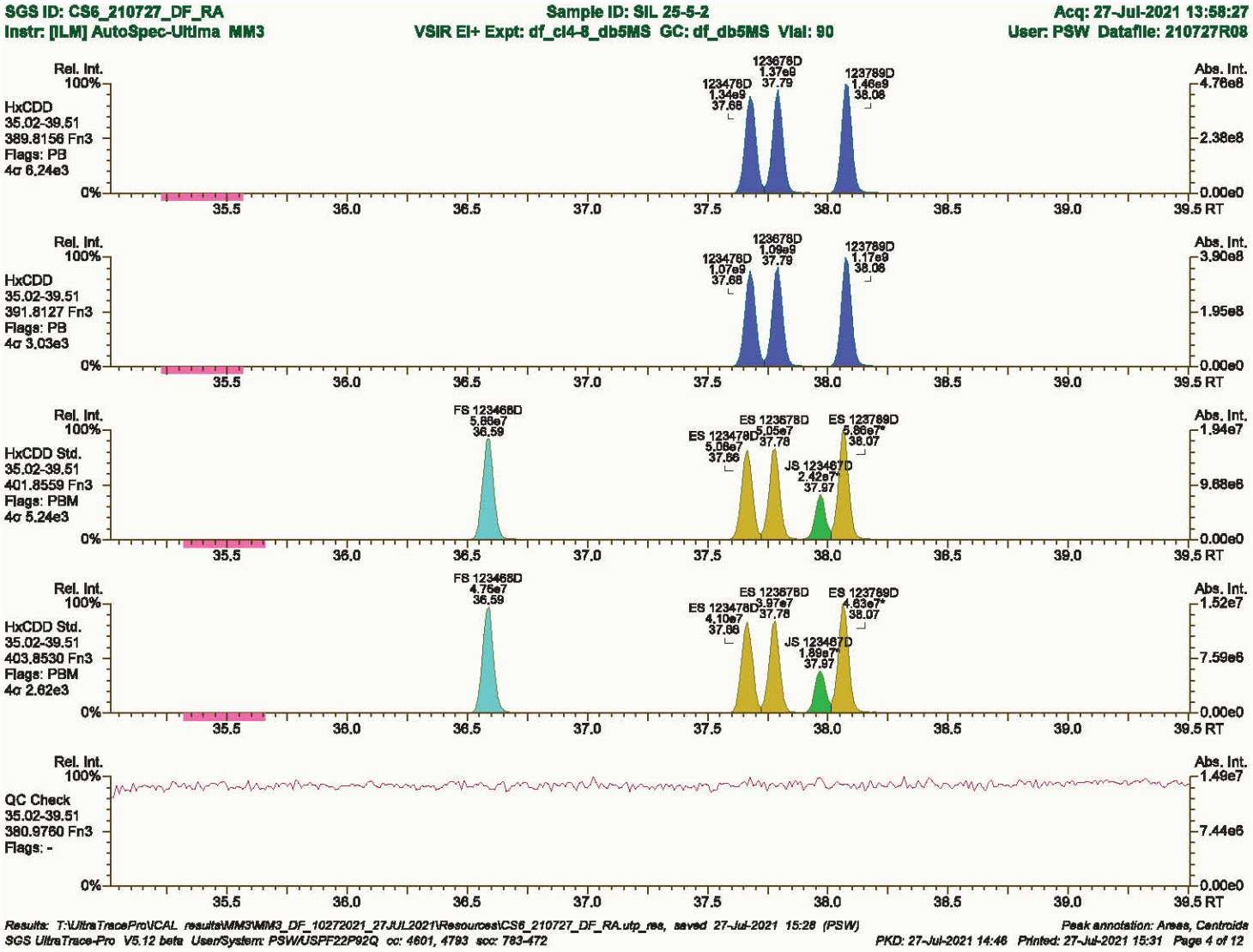
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 4.75e3
12378D
1.60e9*
33.81
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.31e3
12378D
1.02e9*
33.81
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.72e3
FS 12478D
6.29e7
32.58
CS 12347D
5.03e7
33.30
ES 12378D
6.16e7
33.79
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.29e3
FS 12478D
3.76e7
32.58
CS 12347D
3.00e7
33.30
ES 12378D
3.77e7
33.79
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
RT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Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 6.24e3
123678D 1.37e9 37.79
123478D 1.34e9 37.68
123789D 1.46e9 38.06
4.76e8
2.38e8
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 3.03e3
123678D 1.09e9 37.79
123478D 1.07e9 37.68
123789D 1.17e9 38.06
3.90e8
1.95e8
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 5.24e3
FS 123468D 5.86e7 36.59
ES 123678D 5.05e7 37.78
ES 123478D 5.08e7 37.66
ES 123789D 5.86e7* 38.07
JS 123467D 2.42e7* 37.97
1.94e7
9.68e6
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
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FS 123468D 4.76e7 36.59
ES 123678D 3.97e7 37.78
ES 123478D 4.10e7 37.66
ES 123789D 4.63e7* 38.07
JS 123467D 1.89e7* 37.97
1.52e7
7.59e6
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.49e7
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0%
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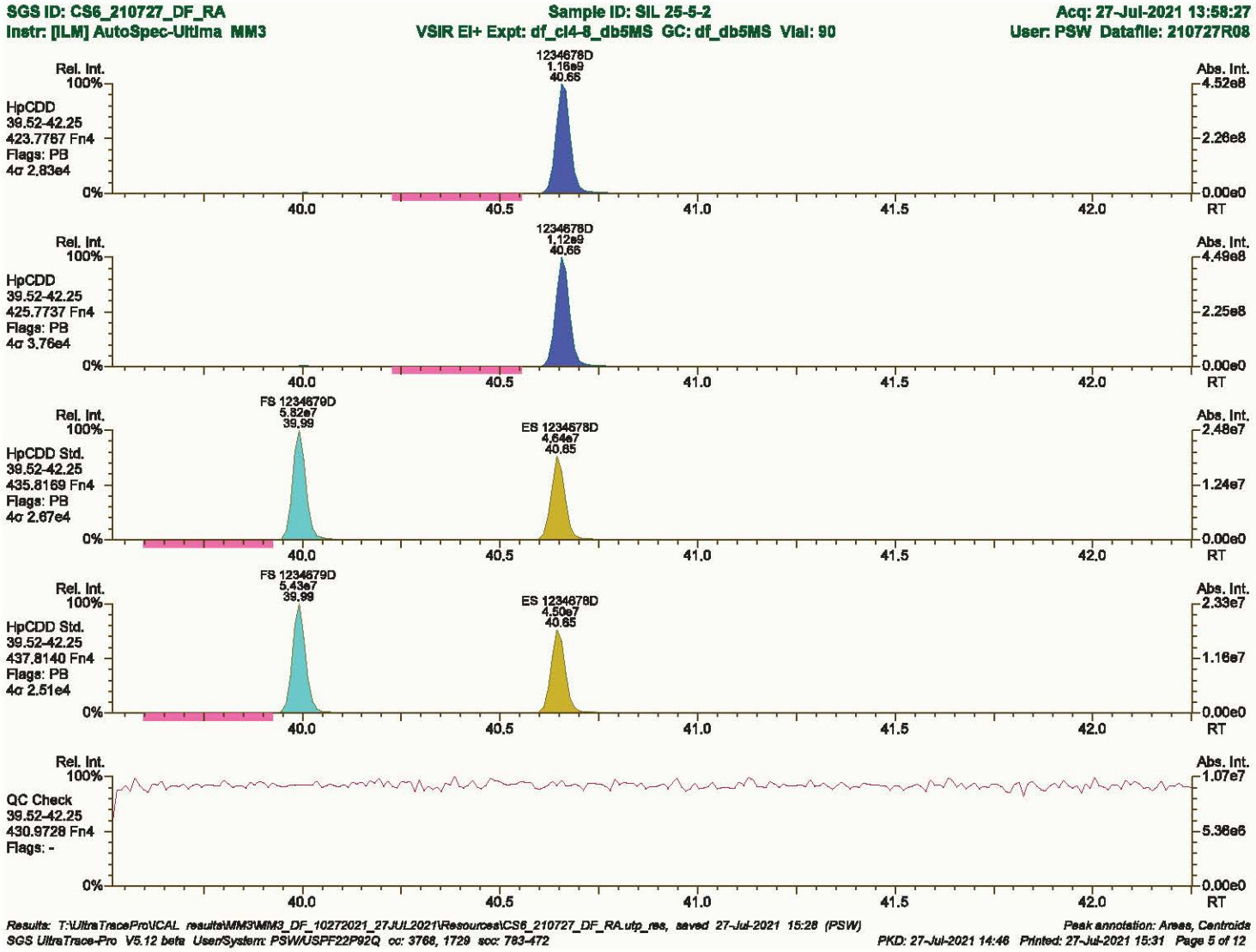
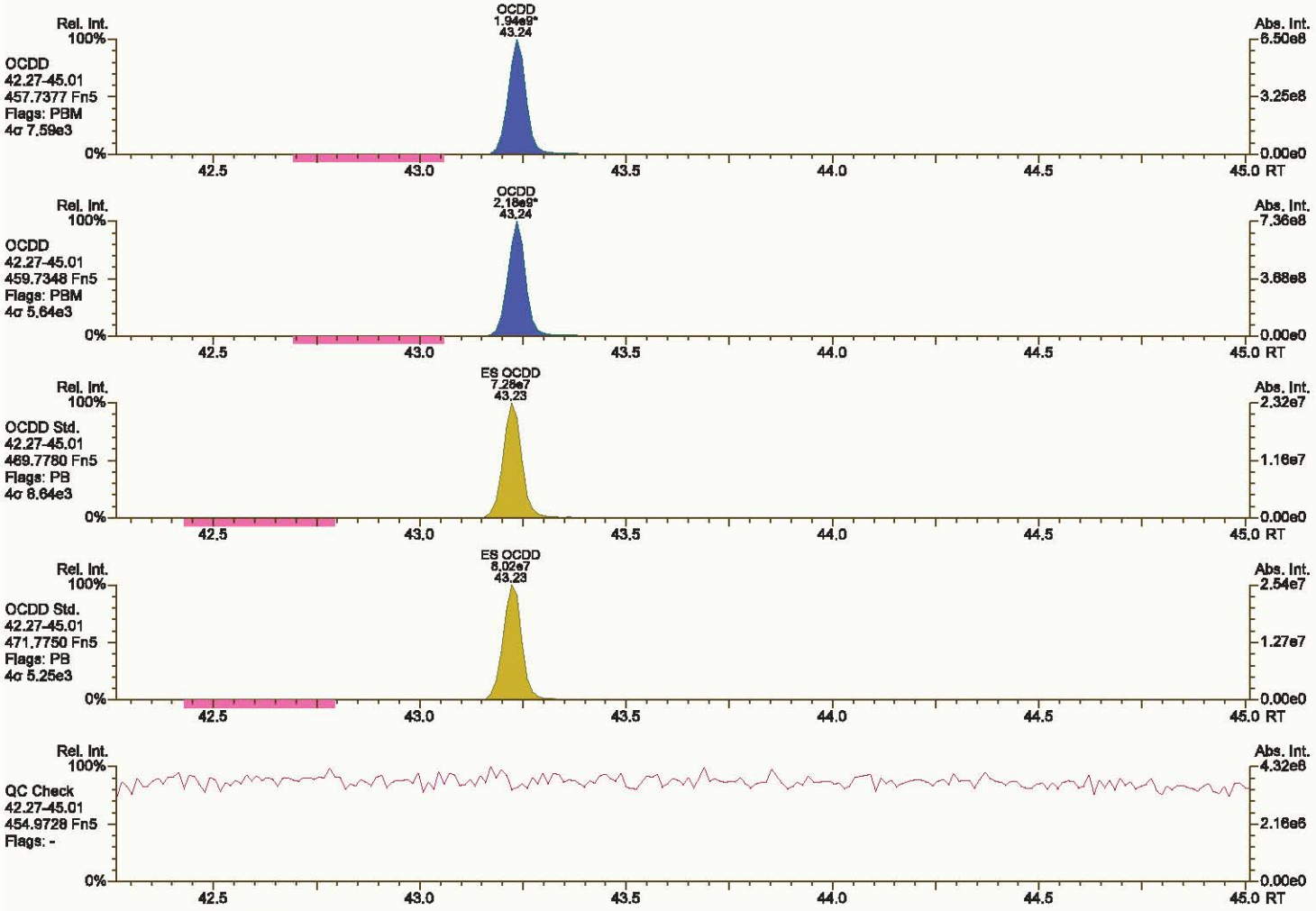
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
1234678D
1.16e9
40.65
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.83e4
4.52e8
2.26e8
0.00e0
1234678D
1.12e9
40.66
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.76e4
4.49e8
2.25e8
FS 1234679D
5.82e7
39.99
ES 1234678D
4.64e7
40.65
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.67e4
2.48e7
1.24e7
FS 1234679D
5.43e7
39.99
ES 1234678D
4.50e7
40.65
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 2.51e4
2.33e7
1.16e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.07e7
5.36e6
100%
0%
40.0
40.5
41.0
41.5
42.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 3768, 1729 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 5 of 12

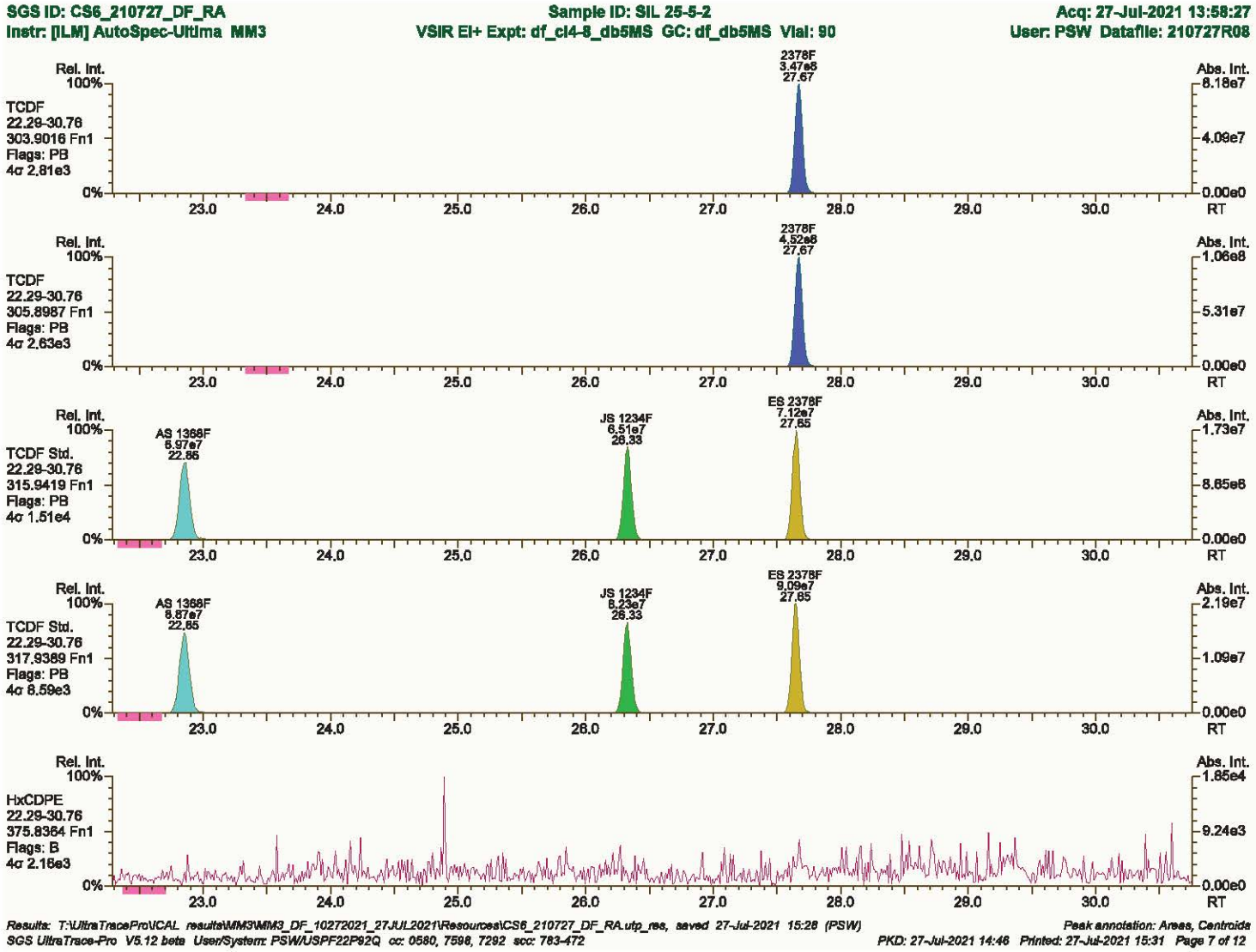
SGS ID: CS6_210727_DF_RA | Sample ID: SIL 25-5-2 | Acq: 27-Jul-2021 13:58:27

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90 | User: PSW Datafile: 210727R08



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW) *Peak annotation: Areas, Centroids*

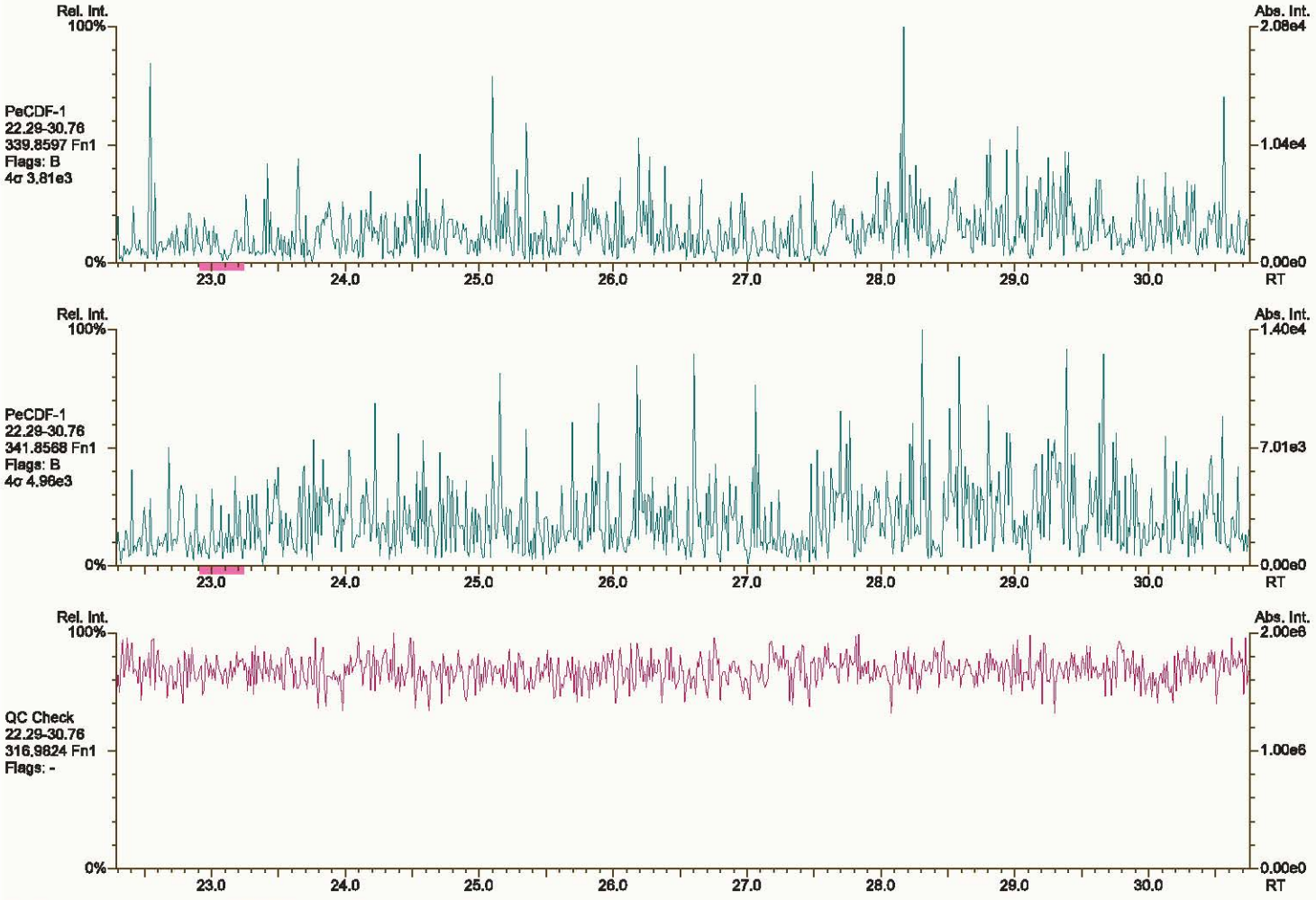
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 8670, 4502 scc: 783-472 *PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 6 of 12*


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.81e3
2378F
3.47e8
27.67
8.18e7
4.09e7
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.63e3
2378F
4.52e8
27.67
1.06e8
5.31e7
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.51e4
AS 1368F
8.97e7
22.96
JS 1234F
6.51e7
26.33
ES 2378F
7.12e7
27.65
1.73e7
8.65e6
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 8.59e3
AS 1368F
8.87e7
22.85
JS 1234F
8.23e7
26.33
ES 2378F
9.09e7
27.65
2.19e7
1.09e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.16e3
1.85e4
9.24e3
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0580, 7598, 7292 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 7 of 12

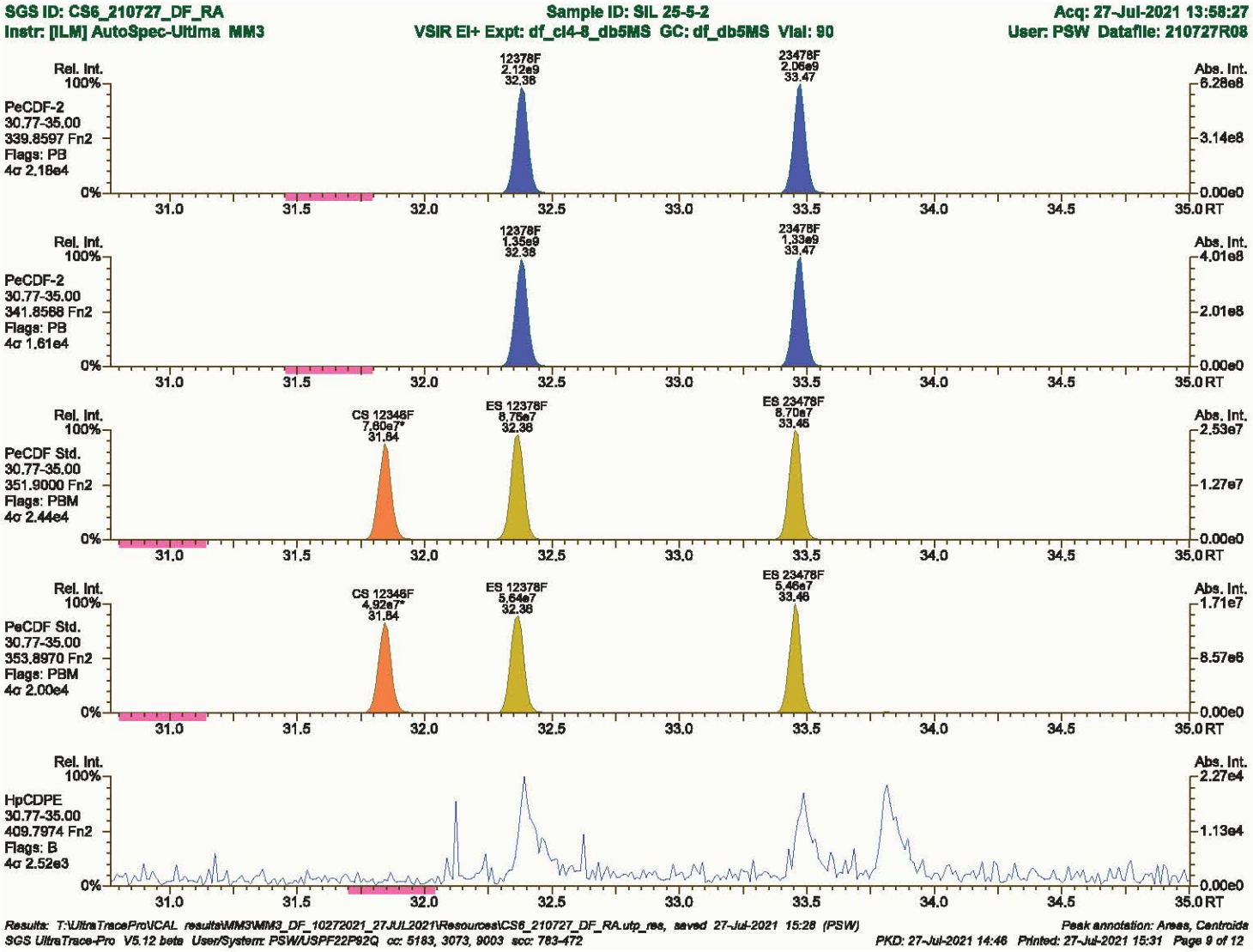
SGS ID: CS6_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

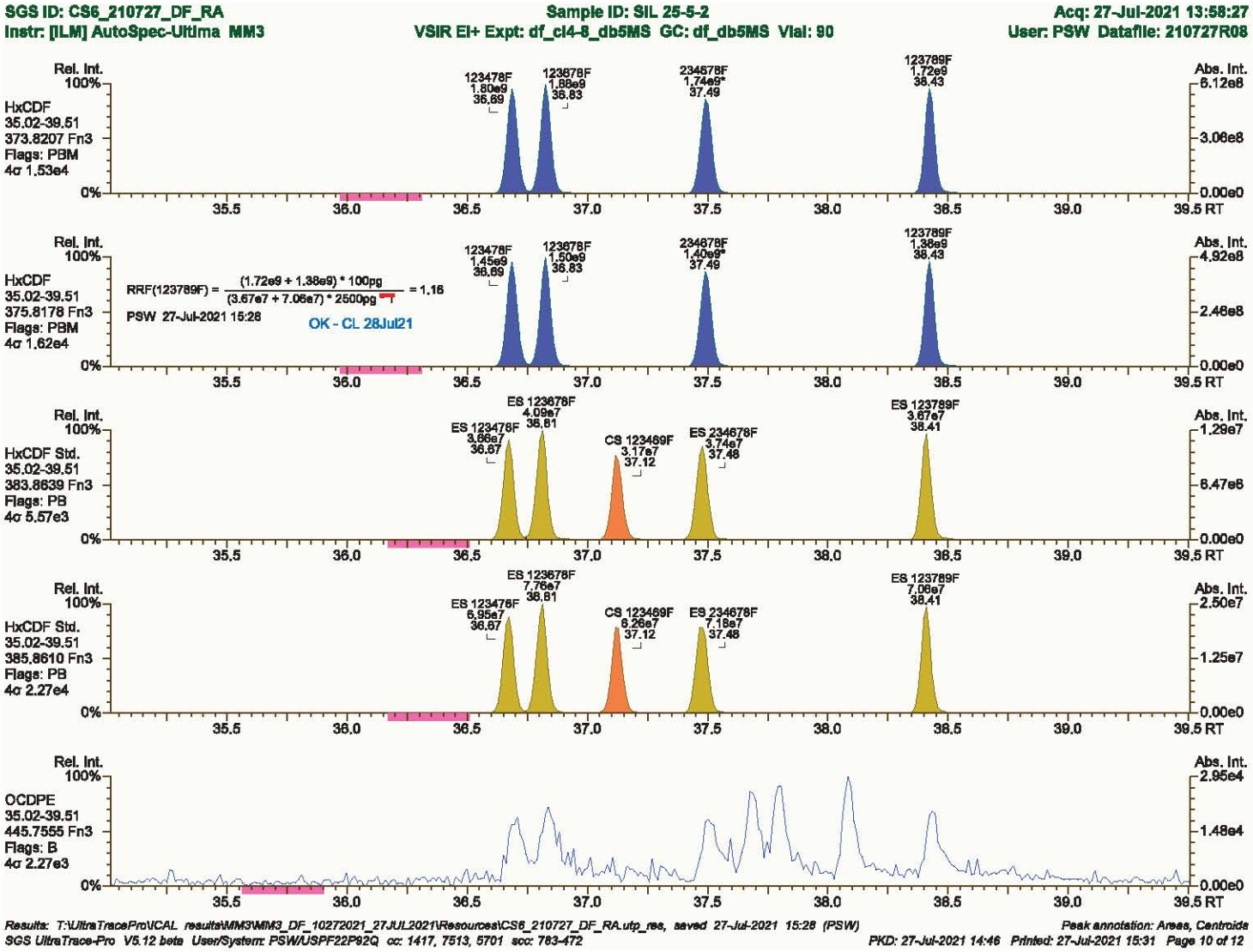
Sample ID: SIL 25-5-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90

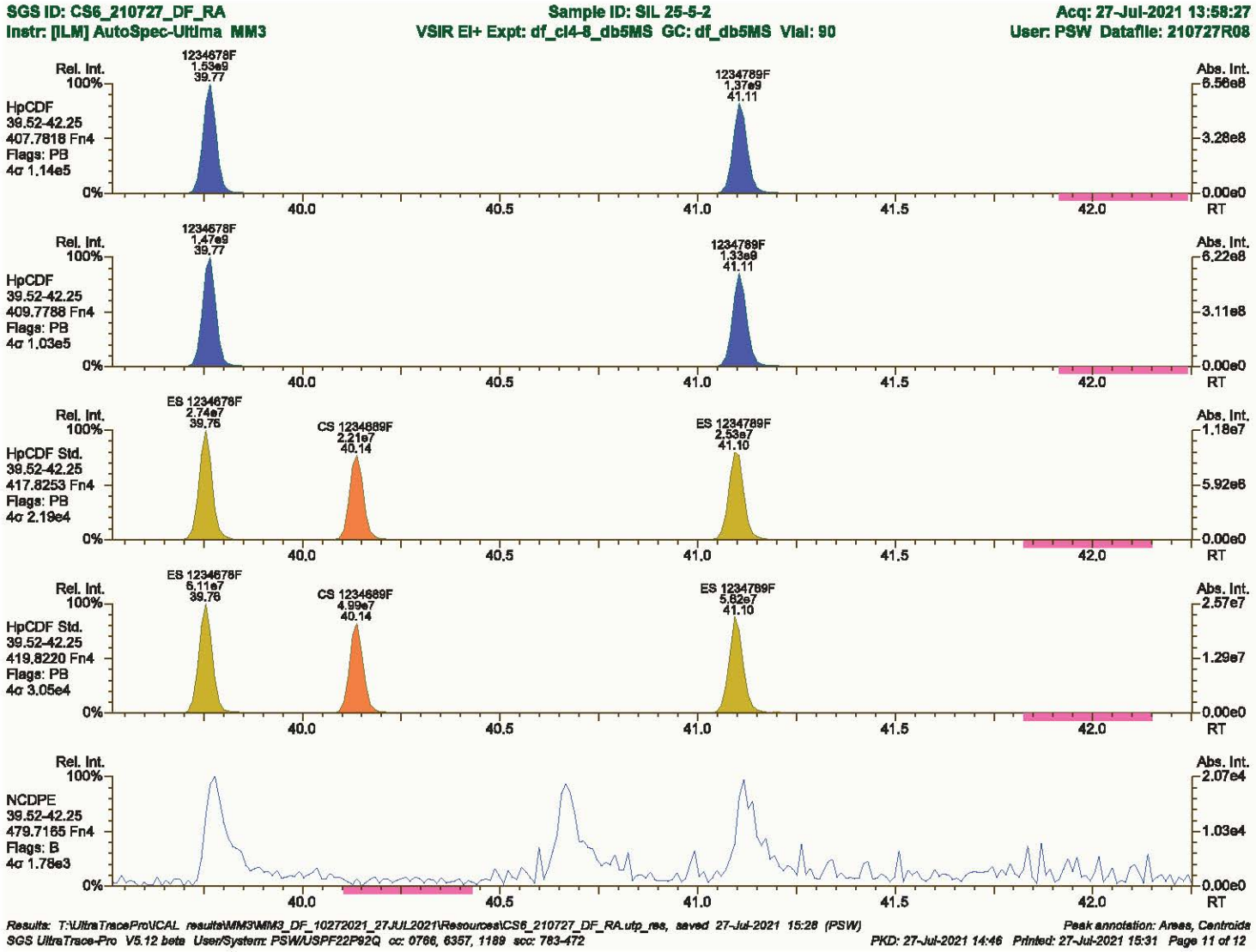
Acq: 27-Jul-2021 13:58:27
User: PSW Datafile: 210727R08

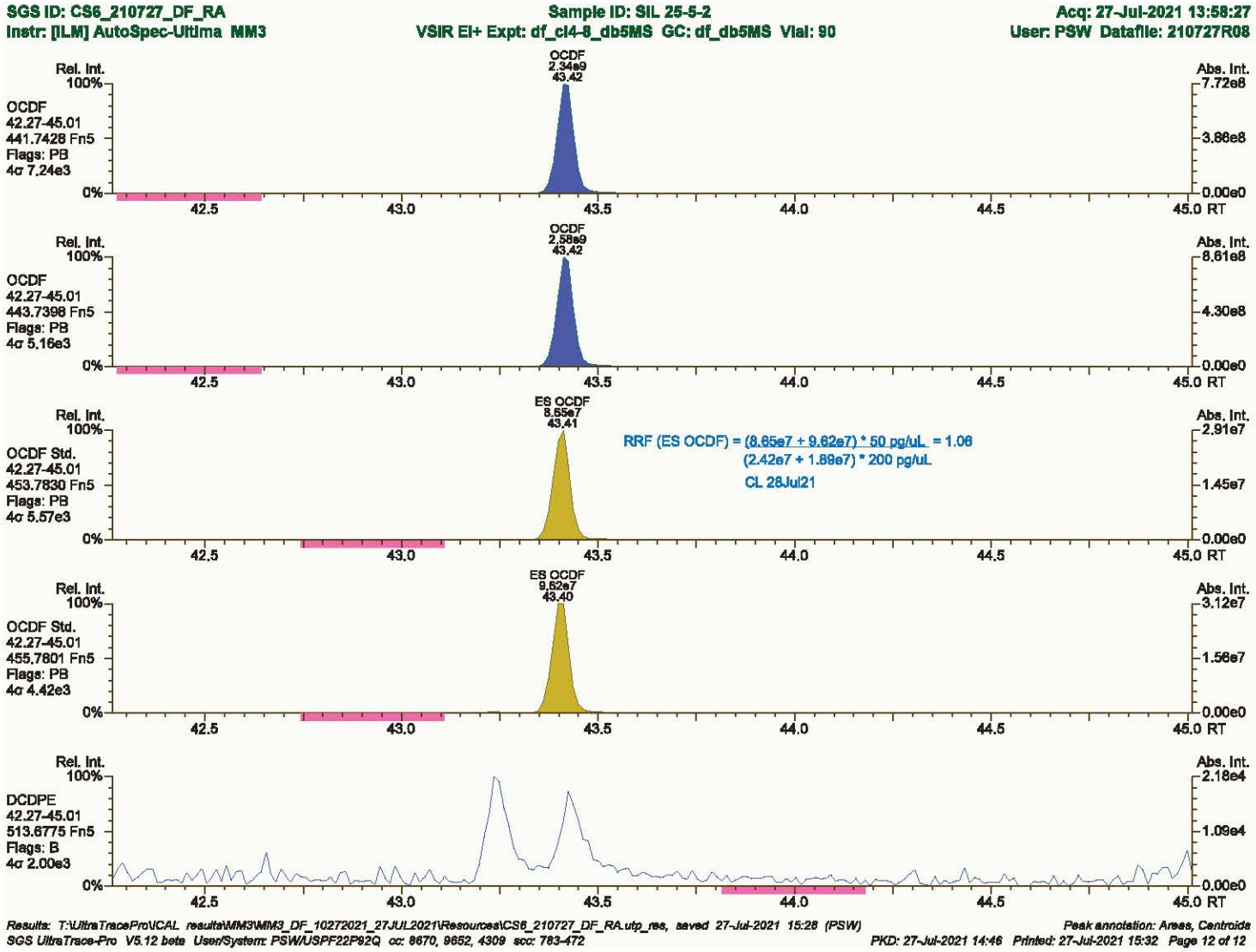


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3526 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 8 of 12


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.18e4
12378F
2.12e9
32.38
23478F
2.06e9
33.47
6.28e8
3.14e8
0.00e0
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 1.61e4
12378F
1.35e9
32.38
23478F
1.33e9
33.47
4.01e8
2.01e8
0.00e0
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.44e4
CS 12346F
7.60e7*
31.64
ES 12378F
8.75e7
32.38
ES 23478F
8.70e7
33.46
2.53e7
1.27e7
0.00e0
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.00e4
CS 12346F
4.92e7*
31.64
ES 12378F
5.64e7
32.38
ES 23478F
5.46e7
33.46
1.71e7
8.57e6
0.00e0
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.52e3
2.27e4
1.13e4
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

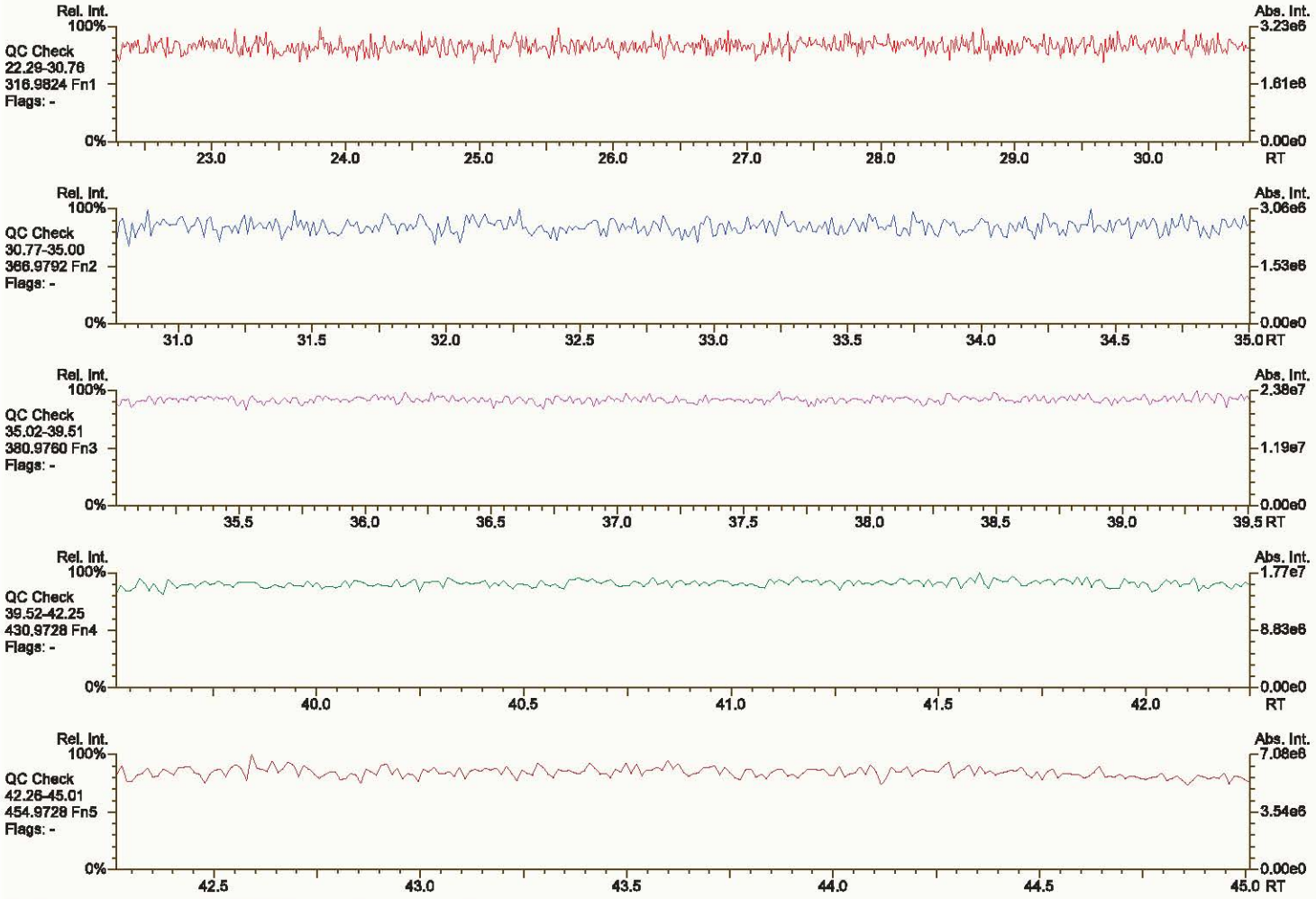

SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.53e4
123478F 1.80e9 36.69
123678F 1.89e9 36.83
234678F 1.74e9* 37.49
123789F 1.72e9 38.43
6.12e8
3.06e8
0.00e0
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 1.62e4
RRF(123789F) = (1.72e9 + 1.38e9) * 100pg / (3.67e7 + 7.06e7) * 2500pg = 1.16
PSW 27-Jul-2021 15:28
OK - CL 28Jul21
123478F 1.45e9 36.69
123678F 1.50e9 36.83
234678F 1.40e9* 37.49
123789F 1.38e9 38.43
4.92e8
2.46e8
0.00e0
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.57e3
ES 123678F 4.09e7 36.81
ES 123478F 3.66e7 36.67
CS 123469F 3.17e7 37.12
ES 234678F 3.74e7 37.48
ES 123789F 3.67e7 38.41
1.29e7
6.47e6
0.00e0
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.27e4
ES 123678F 7.76e7 36.81
ES 123476F 6.95e7 36.67
CS 123469F 6.26e7 37.12
ES 234678F 7.18e7 37.48
ES 123789F 7.06e7 38.41
2.50e7
1.25e7
0.00e0
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.27e3
2.95e4
1.48e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1417, 7513, 5701 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 10 of 12


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.14e5
1234678F
1.53e9
39.77
1234789F
1.37e9
41.11
6.56e8
3.28e8
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.03e5
1.47e9
1.33e9
6.22e8
3.11e8
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.19e4
ES 1234678F
2.74e7
CS 1234889F
2.21e7
40.14
ES 1234789F
2.53e7
41.10
1.18e7
5.92e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 3.05e4
6.11e7
4.99e7
5.82e7
2.57e7
1.29e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 1.78e3
2.07e4
1.03e4
100%
0%
40.0
40.5
41.0
41.5
42.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0766, 6357, 1189 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 11 of 12


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
OCDF
2.34e9
43.42
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 7.24e3
0%
Abs. Int.
7.72e8
3.86e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.58e9
43.42
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 5.16e3
0%
Abs. Int.
8.61e8
4.30e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.65e7
43.41
RRF (ES OCDF) = (8.65e7 + 9.62e7) * 50 pg/uL = 1.06
(2.42e7 + 1.89e7) * 200 pg/uL
CL 28Jul21
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.57e3
0%
Abs. Int.
2.91e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.62e7
43.40
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.42e3
0%
Abs. Int.
3.12e7
1.56e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.00e3
0%
Abs. Int.
2.18e4
1.09e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8670, 9652, 4309 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:32 Page 12 of 12

SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



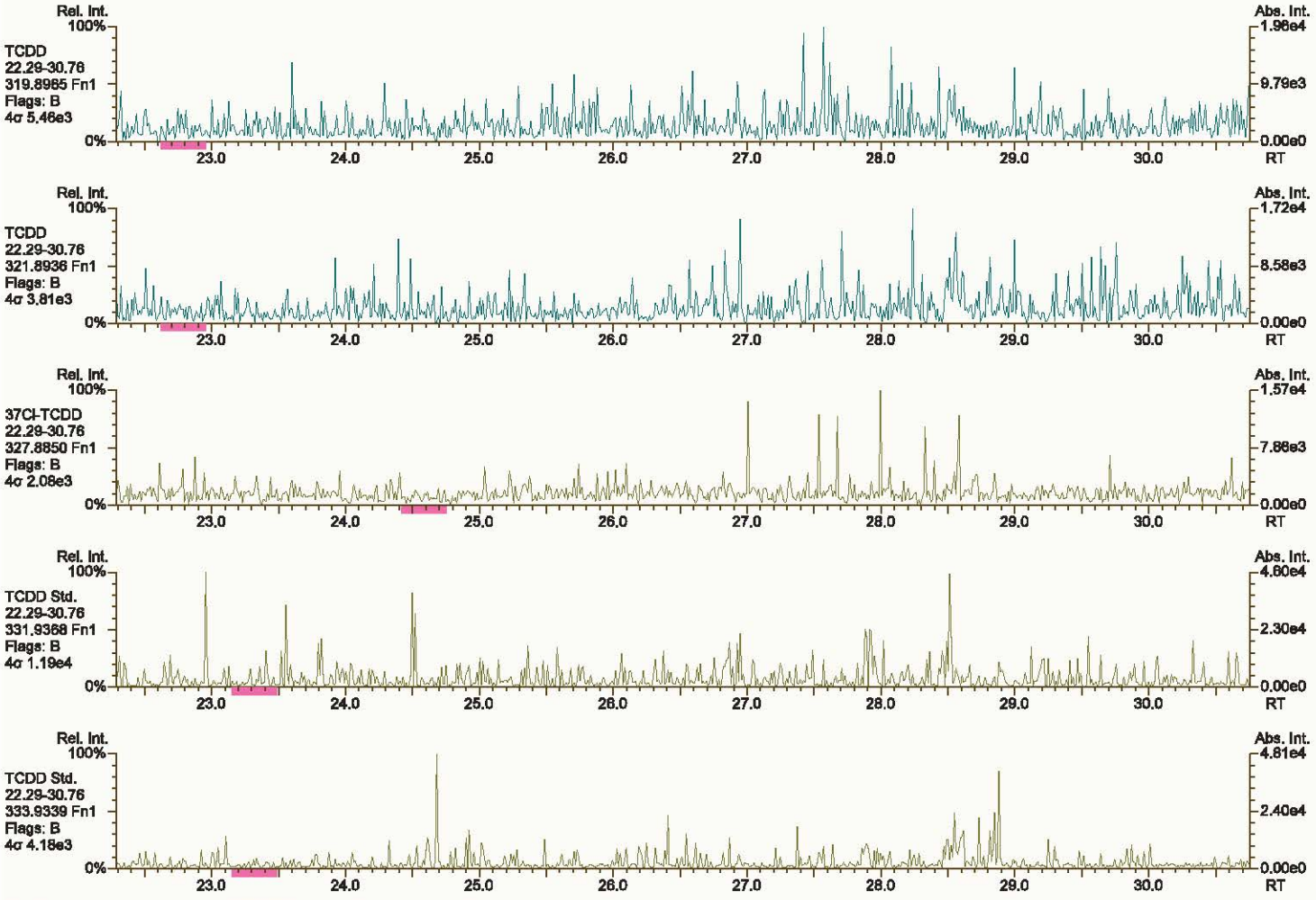
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 636-037

PKD: n/a Printed: 27-Jul-2021 15:29 Page 1 of 12

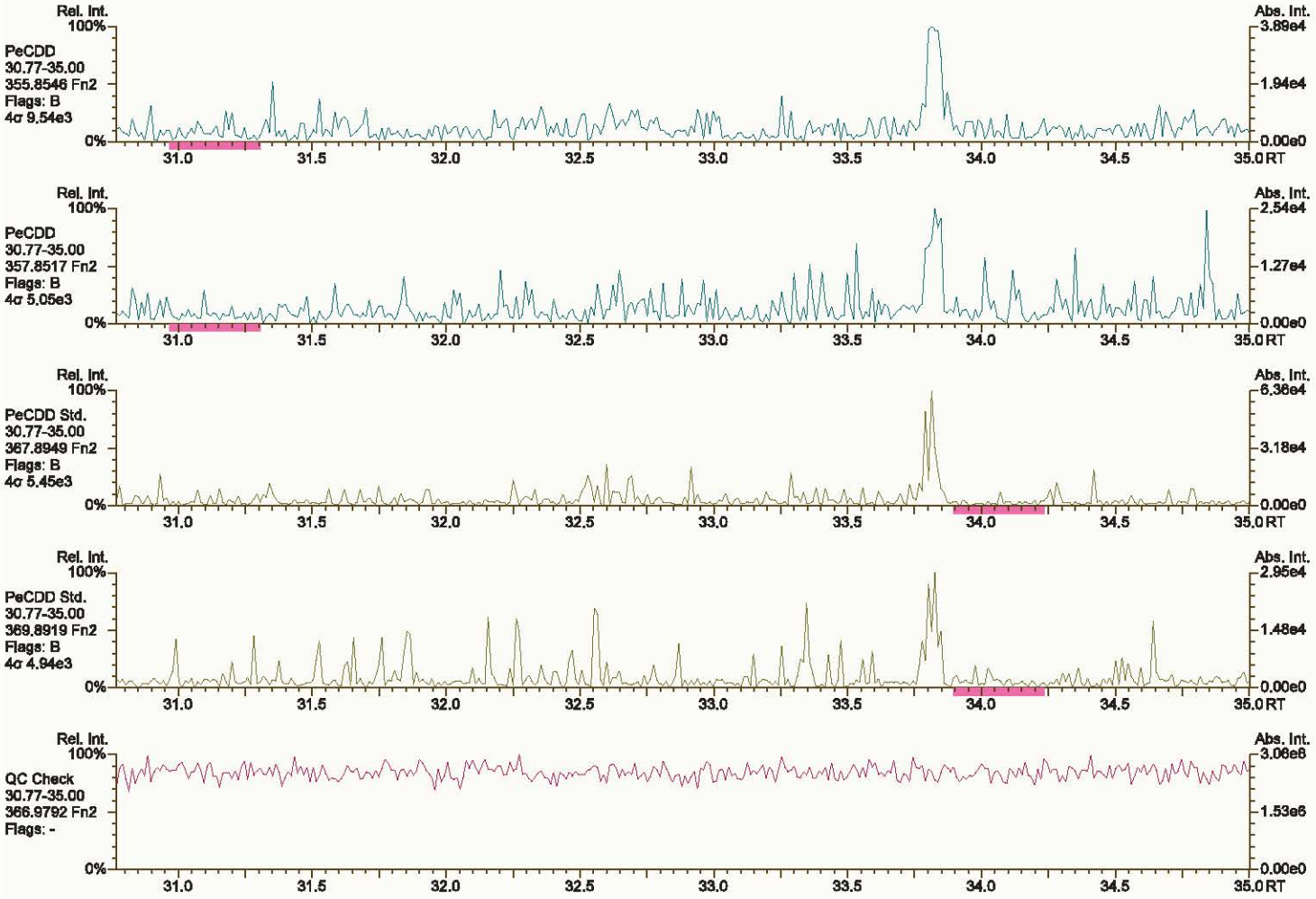
SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9391, 8236, 6585 scc: 638-037 *PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:29 Page 2 of 12*

SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



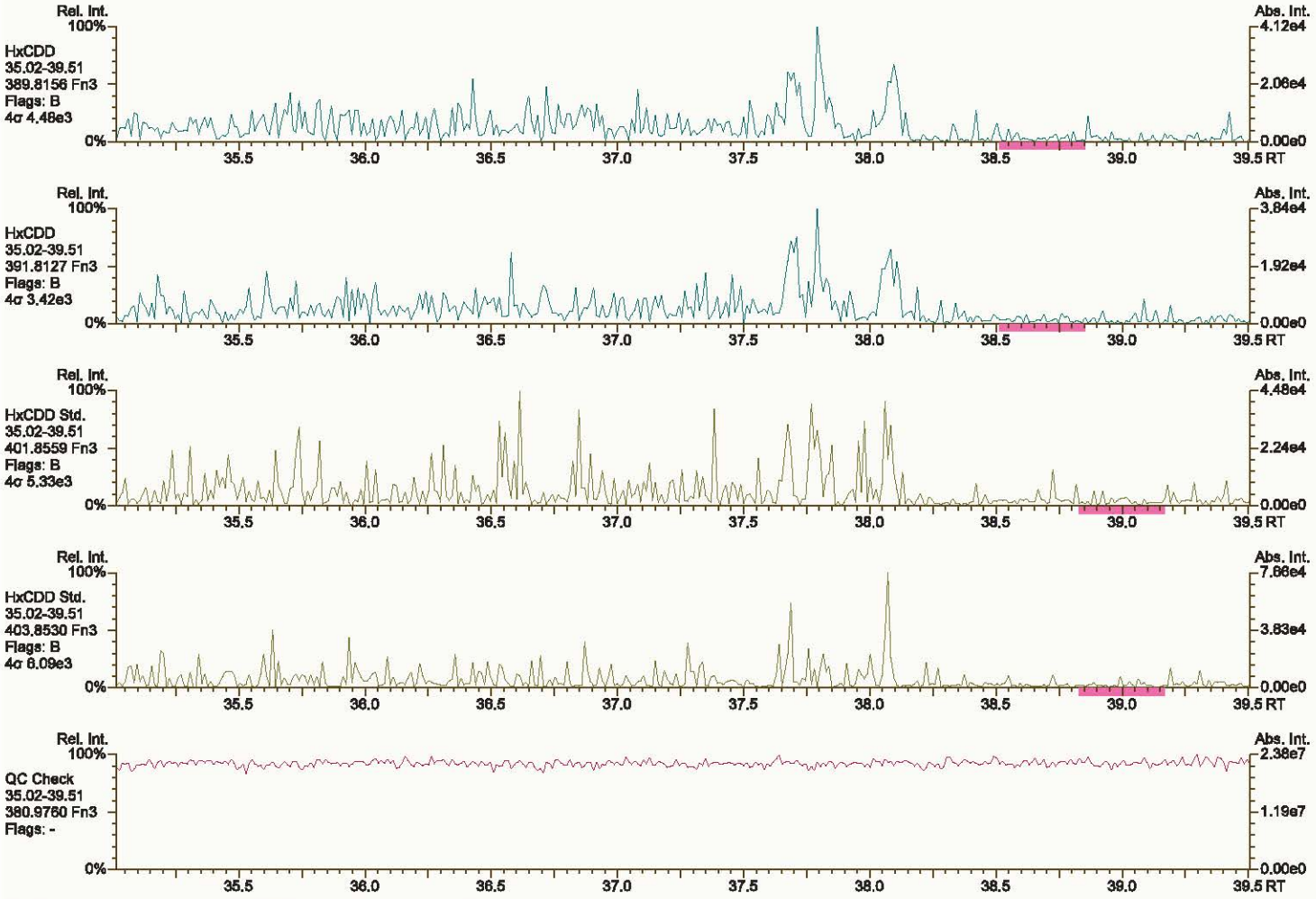
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 3030, 1130 scc: 636-037 *PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:29 Page 3 of 12*

SGS ID: SBS_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 27-Jul-2021 08:17:39
User: PSW Datafile: 210727R01



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 9897, 1490 scc: 636-037
PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:29 Page 4 of 12

SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



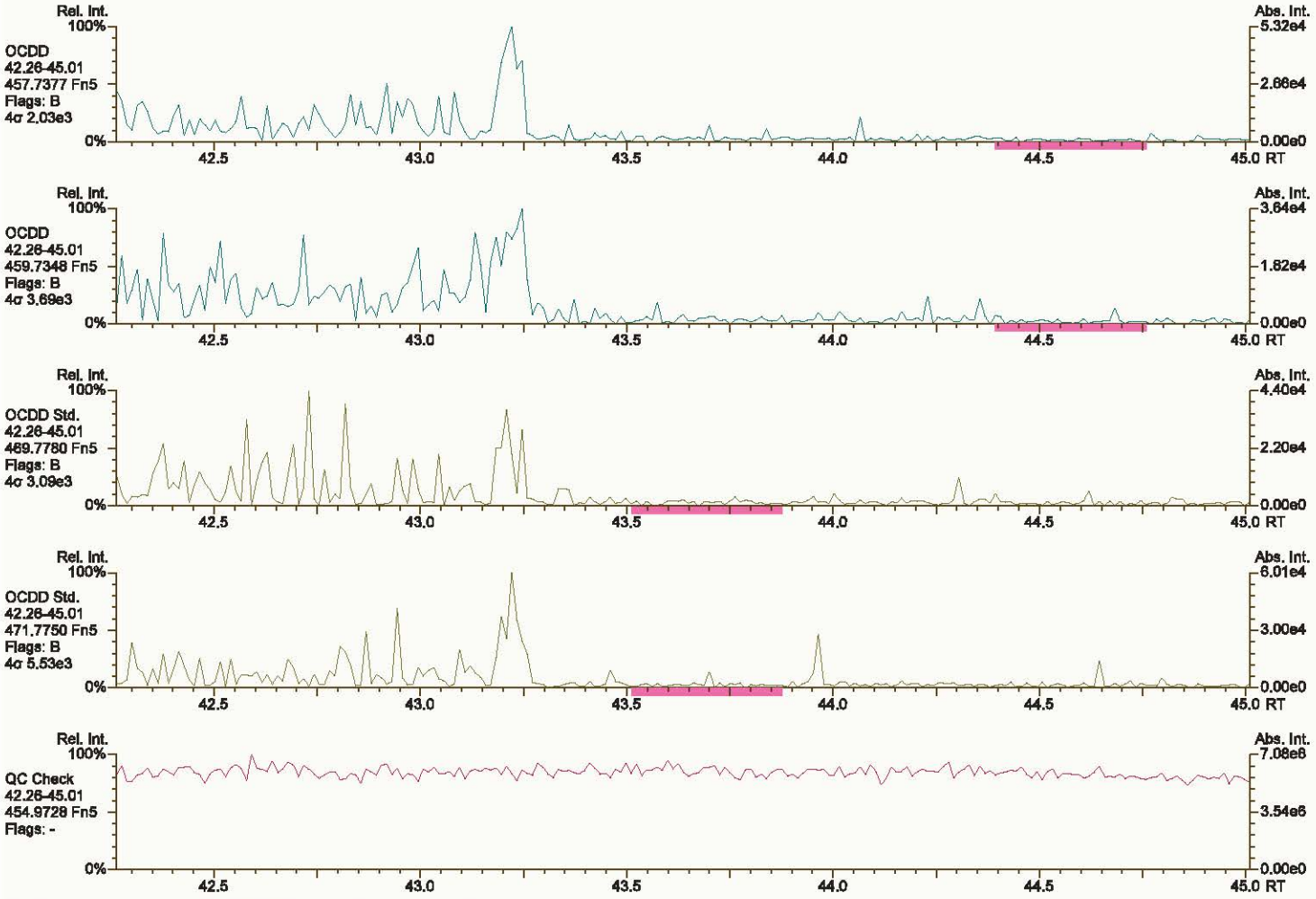
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)

Peak annotation: Areas, Centroids

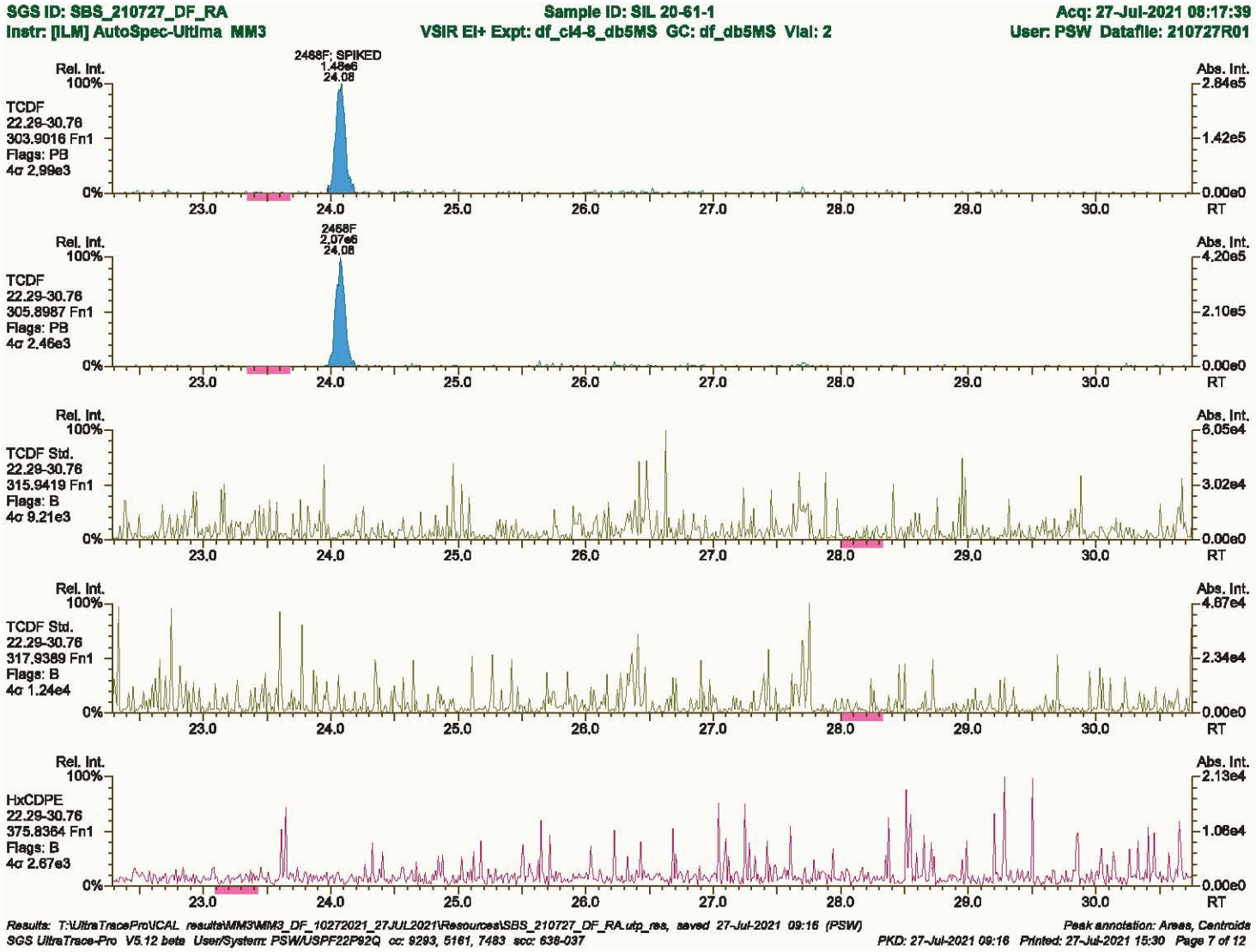
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 5736, 4168 scc: 636-037

PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:29 Page 5 of 12

SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



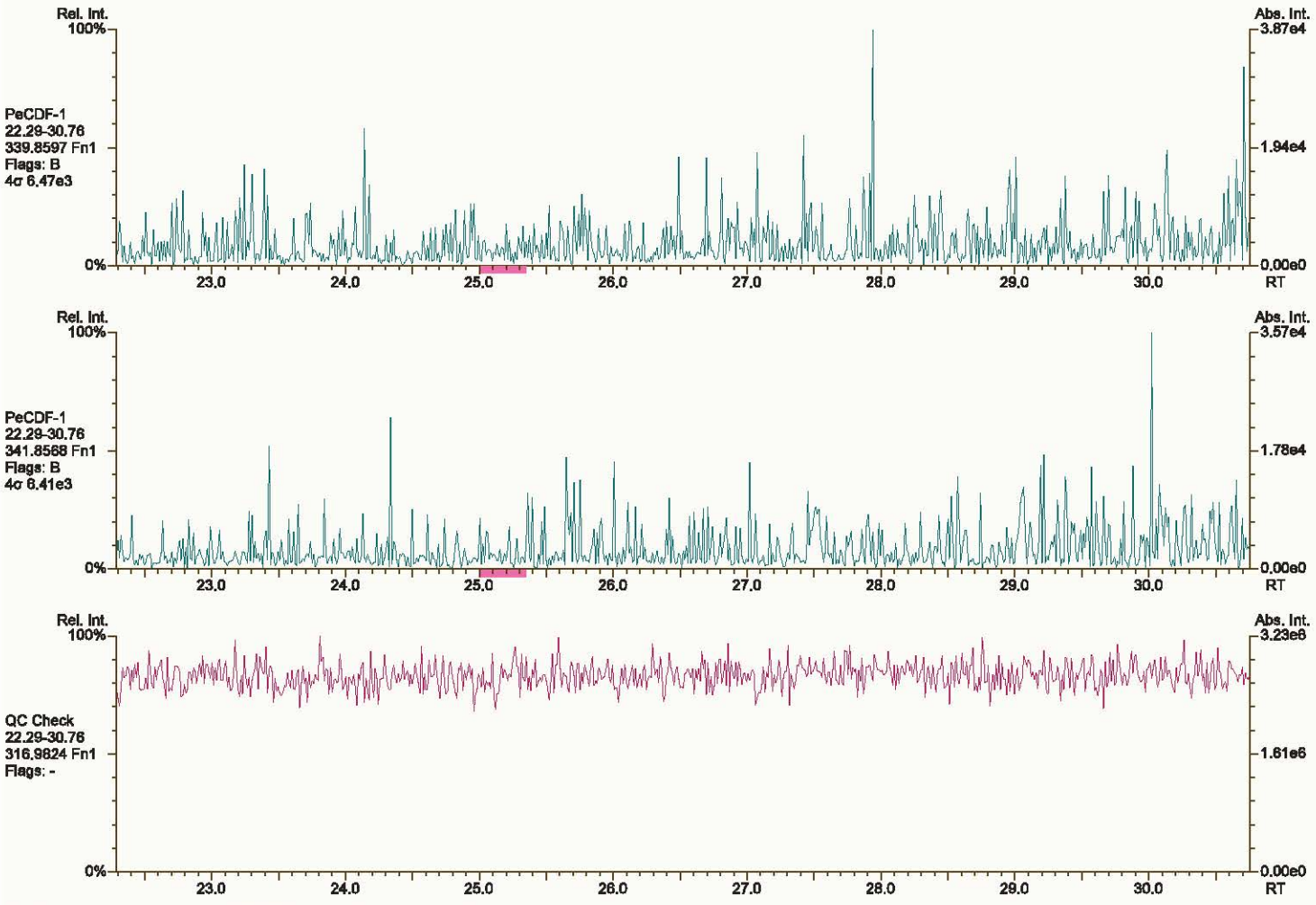
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 5349, 7327 scc: 636-037 *PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 6 of 12*


SGS ID: SBS_210727_DF_RA
Sample ID: SIL 20-61-1
Acq: 27-Jul-2021 08:17:39
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
User: PSW Datafile: 210727R01
2468F: SPIKED
1.48e6
24.08
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.99e3
2.84e5
1.42e5
0.00e0
2468F
2.07e6
24.08
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.46e3
4.20e5
2.10e5
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: B
4σ 9.21e3
6.05e4
3.02e4
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: B
4σ 1.24e4
4.67e4
2.34e4
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.67e3
2.13e4
1.06e4
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: SBS_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 27-Jul-2021 08:17:39
User: PSW Datafile: 210727R01

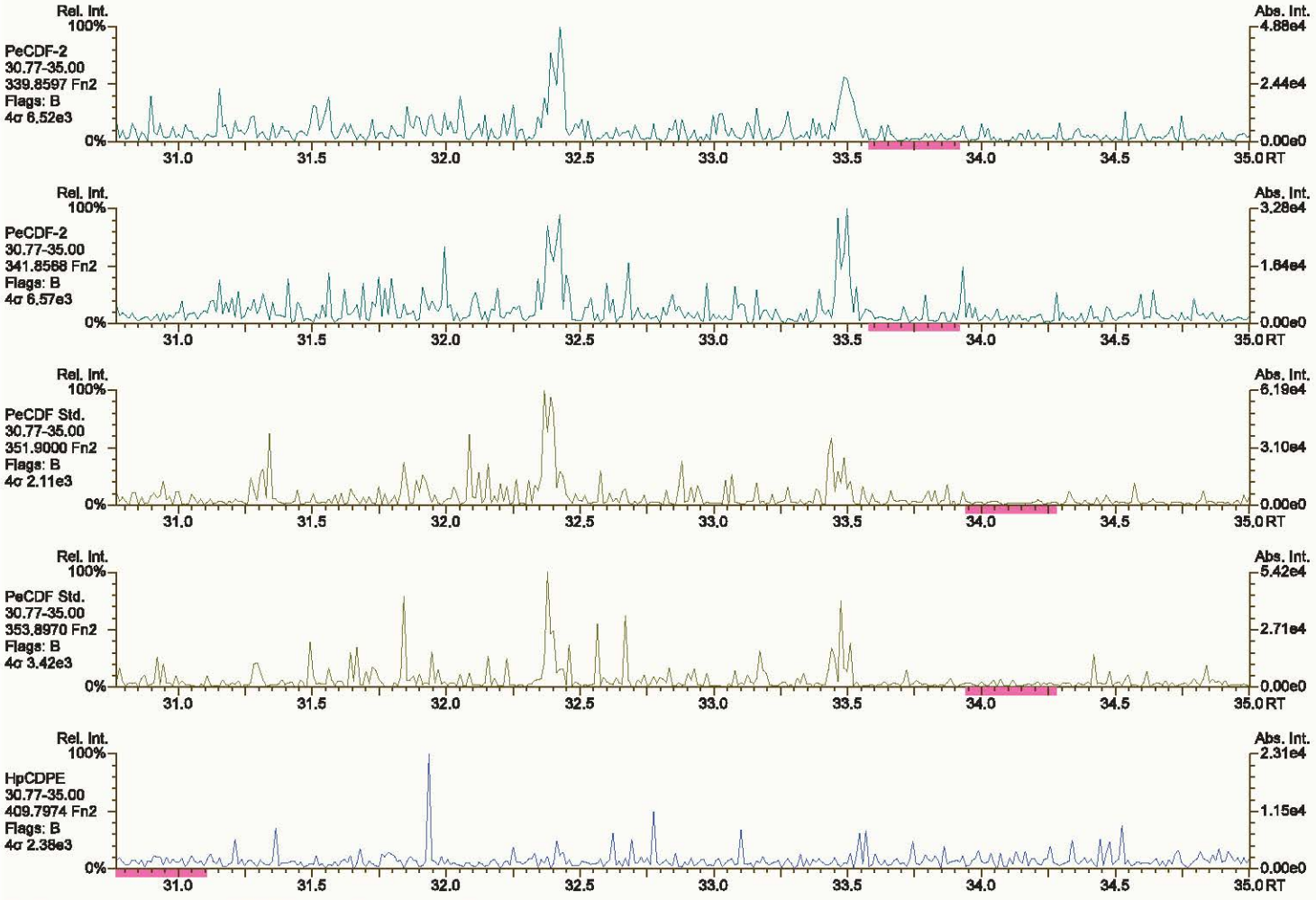


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1180 scc: 638-037
PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 8 of 12

SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



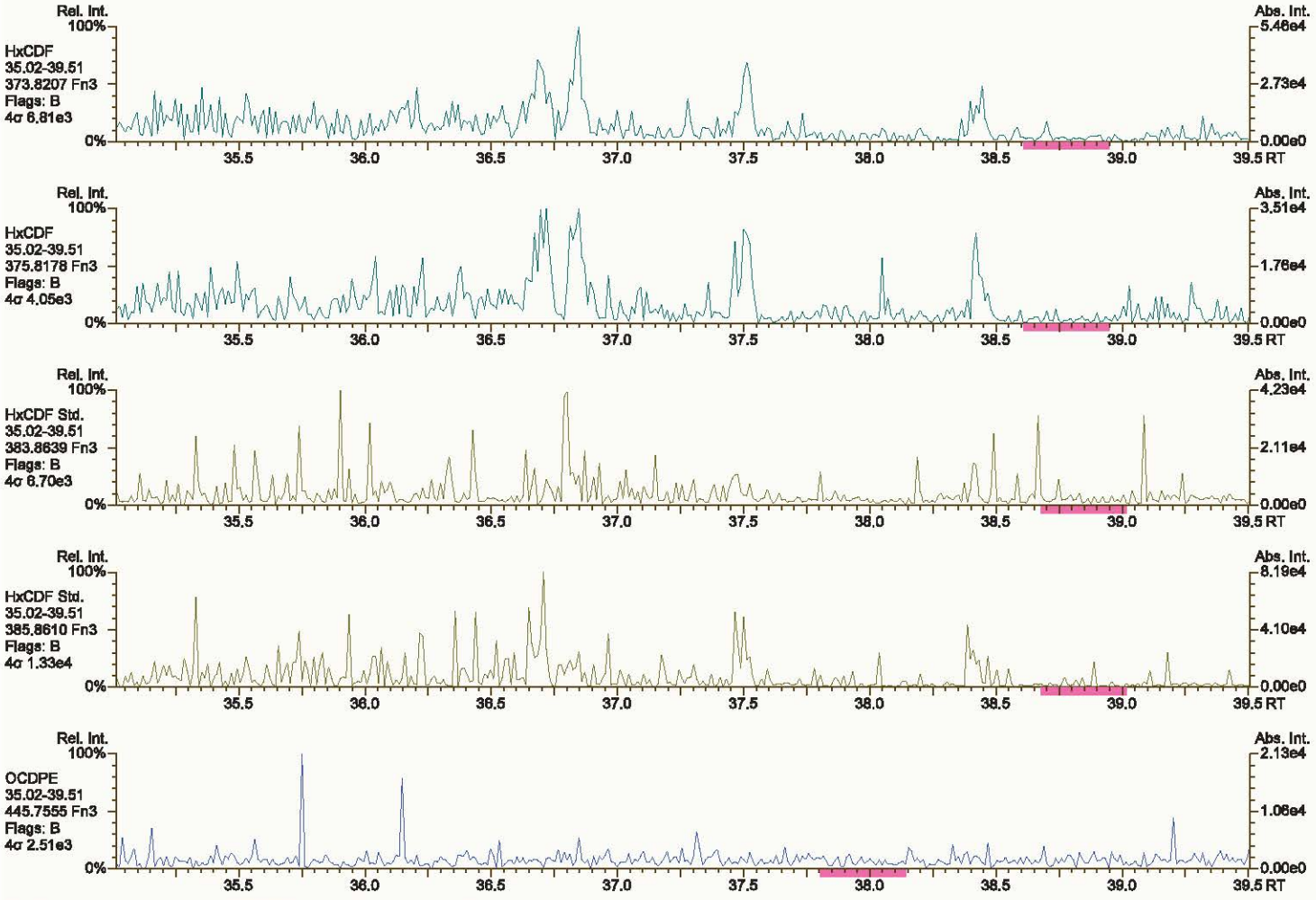
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9180, 8544, 0111 scc: 638-037 *PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 9 of 12*

SGS ID: SBS_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 27-Jul-2021 08:17:39
User: PSW Datafile: 210727R01

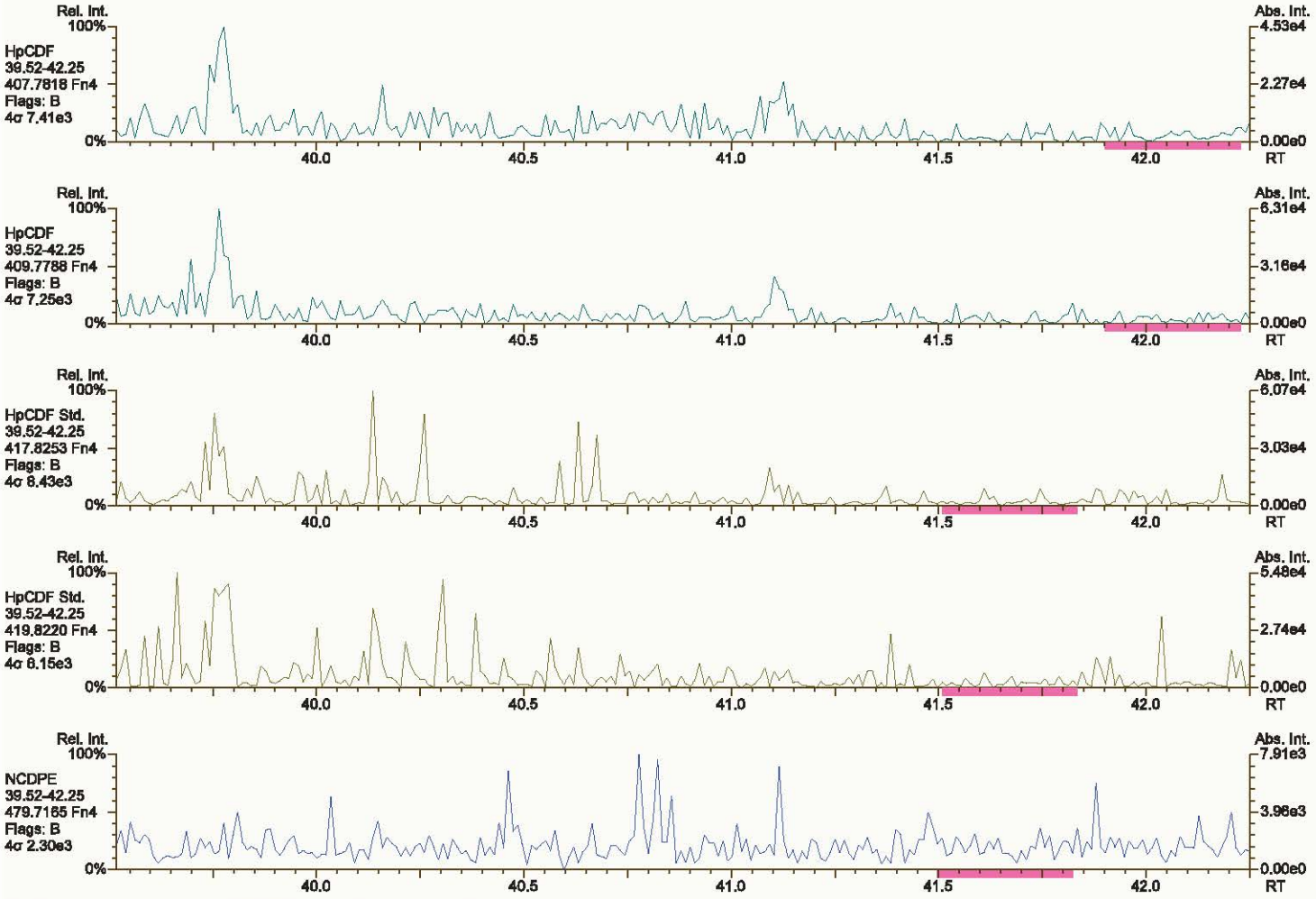


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 4607, 7936, 3004 scc: 638-037
PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 10 of 12

SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39

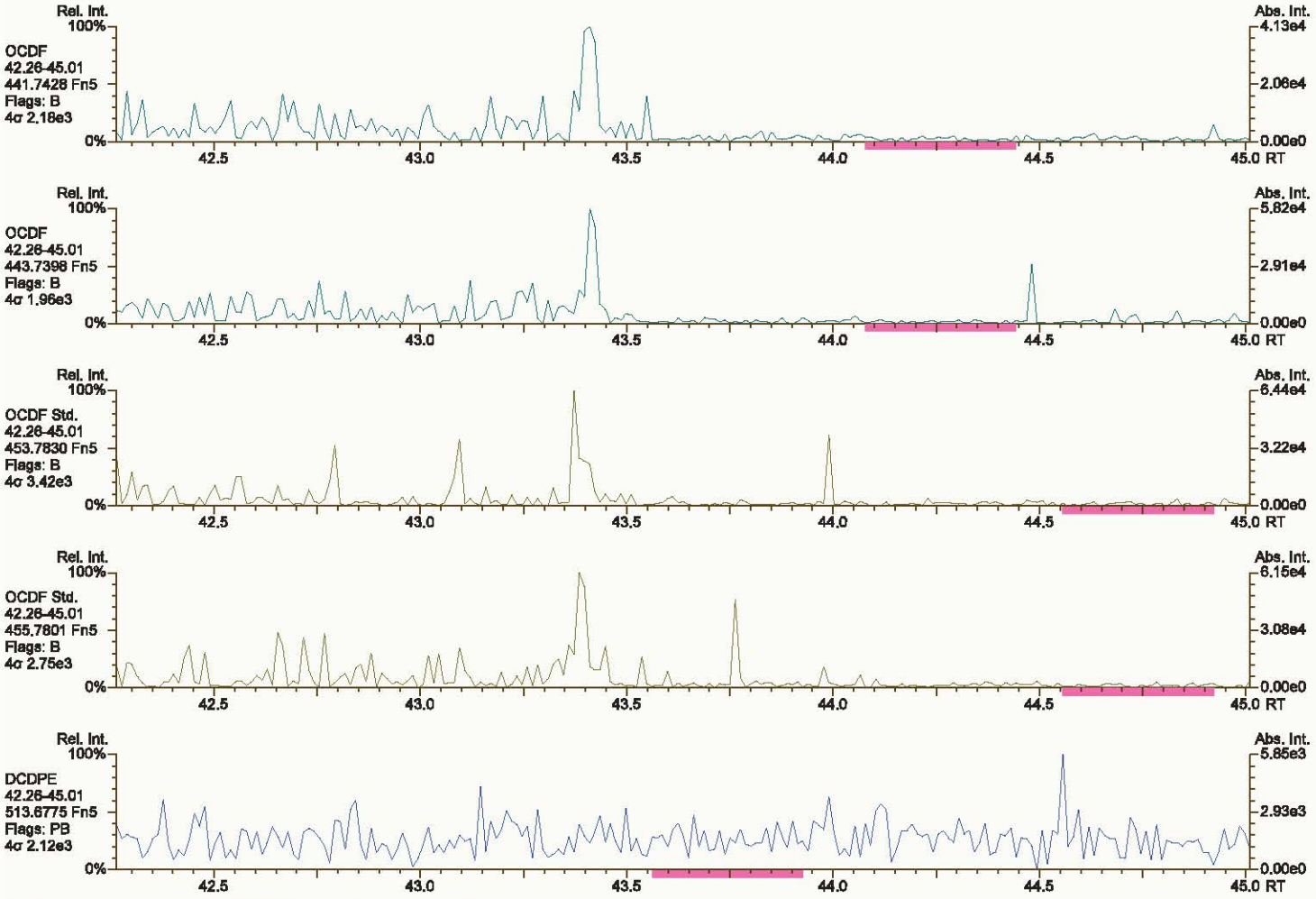
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6768, 4035, 2735 scc: 638-037 *PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 11 of 12*

SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6472, 3646, 2144 scc: 638-037 *PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 12 of 12*

SGS Environmental Services — Run Log **Project: 072721_mm3**

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
15	210727R15	3	CS3_210727_DF_RB ✓	1.00	SIL 23-672-1	PSW	320-816	27-Jul-2021	19:43:55
16	210727R16	92	CS3_210727_DF_RC	1.00	ICV SIL 24-11-9 ✓	PSW	537-883	27-Jul-2021	20:31:28

REVIEWED
paul_walton , 7/28/2021, 8:29:53 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:21 PM

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 19:43 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_210727_DF_RB		UTP: 28-Jul-2021 08:16:58 PSW				Checkcode: 320-816-PRY	
Sample ID: SIL 23-672-1		Report: 28 Jul 2021 08:18 pw				Datafile: 210727R15	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.67E+07	0.81	Y	1.34	1.35	0%
12378-PeCDD	33.81	6.38E+07	1.58	Y	1.06	1.06	0%
123478-HxCDD	37.68	5.49E+07	1.25	Y	1.06	1.06	1%
123678-HxCDD	37.79	5.63E+07	1.26	Y	1.08	1.10	2%
123789-HxCDD	38.08	5.86E+07	1.24	Y	1.02	1.00	-2%
1234678-HpCDD	40.66	4.96E+07	1.04	Y	0.97	0.98	0%
OCDD	43.23	8.27E+07	0.89	Y	1.07	1.07	0%
2378-TCDF	27.67	2.12E+07	0.80	Y	0.96	0.97	1%
12378-PeCDF	32.38	8.71E+07	1.57	Y	0.95	0.97	2%
23478-PeCDF	33.47	7.79E+07	1.46	Y	0.94	0.92	-2%
123478-HxCDF	36.69	7.88E+07	1.25	Y	1.23	1.25	2%
123678-HxCDF	36.83	8.26E+07	1.26	Y	1.13	1.13	0%
234678-HxCDF	37.49	7.73E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.43	6.95E+07	1.26	Y	1.14	1.13	0%
1234678-HpCDF	39.77	7.02E+07	1.03	Y	1.36	1.34	-2%
1234789-HpCDF	41.11	5.97E+07	1.05	Y	1.30	1.36	5%
OCDF	43.41	9.92E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.50	1.24E+08	0.80	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.788	1.20E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.661	1.03E+08	1.29	Y	0.99	0.98	-1%
ES 123678-HxCDD	37.775	1.02E+08	1.32	Y	0.97	0.97	0%
ES 123789-HxCDD	38.065	1.17E+08	1.31	Y	1.12	1.12	-1%
ES 1234678-HpCDD	40.653	1.01E+08	1.07	Y	0.99	0.96	-3%
ES OCDD	43.218	1.54E+08	0.91	Y	0.78	0.73	-6%
ES 2378-TCDF	27.65	2.18E+08	0.77	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.362	1.80E+08	1.58	Y	0.93	0.89	-5%
ES 23478-PeCDF	33.452	1.68E+08	1.62	Y	0.92	0.83	-10%
ES 123478-HxCDF	36.669	1.26E+08	0.54	Y	1.14	1.19	4%
ES 123678-HxCDF	36.809	1.47E+08	0.50	Y	1.30	1.39	7%
ES 234678-HxCDF	37.476	1.31E+08	0.52	Y	1.20	1.25	4%
ES 123789-HxCDF	38.411	1.23E+08	0.52	Y	1.14	1.17	3%
ES 1234678-HpCDF	39.758	1.05E+08	0.47	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.102	8.75E+07	0.45	Y	0.85	0.83	-2%
ES OCDF	43.399	1.88E+08	0.89	Y	0.93	0.89	-4%

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 19:43 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_210727_DF_RB		UTP: 28-Jul-2021 08:16:58 PSW				Checkcode: 320-816-PRY	
Sample ID: SIL 23-672-1		Report: 28 Jul 2021 08:18 pw				Datafile: 210727R15	
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.21E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.33	2.03E+08	0.78	Y	-	-	-
JS 123467-HxCDD	37.97	5.27E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.31	1.28	-2%
CS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.89	0.87	-3%
CS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.22E+08	0.52	Y	1.09	1.16	7%
CS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.86	0.90	4%
SS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.86	0.87	1%
SS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.22E+08	0.52	Y	0.84	0.83	-1%
SS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.91	0.90	-1%
~~OCDD-a~~	~~43.22~~	~~4.70E+06~~	~~2.62~~	~~Y~~	~~0.87~~	~~0.86~~	~~-8%~~
~~OCDF-a~~	~~43.41~~	~~5.40E+06~~	~~2.31~~	~~Y~~	~~0.86~~	~~0.86~~	~~-3%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	10	8 - 12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.1	40 - 60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	40 - 60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.9	40 - 60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	40 - 60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.1	40 - 60	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	100	80 - 120	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.1	8 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	40 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32 - 1.78	Y	49.2	40 - 60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	40 - 60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	40 - 60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.1	40 - 60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	40 - 60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	40 - 60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	52.4	40 - 60	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	80 - 120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65 - 0.89	Y	99.2	70 - 130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32 - 1.78	Y	96.1	70 - 130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	98.7	70 - 130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05 - 1.43	Y	99.8	70 - 130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05 - 1.43	Y	99.2	70 - 130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88 - 1.20	Y	97.1	70 - 130	Y
13C-OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	188	140 - 260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65 - 0.89	Y	98.9	70 - 130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	94.8	70 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32 - 1.78	Y	89.9	70 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	104	70 - 130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43 - 0.59	Y	107	70 - 130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	104	70 - 130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	103	70 - 130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	105	70 - 130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37 - 0.51	Y	98.1	70 - 130	Y
13C-OCDF	M+2/M+4	0.89	0.76 - 1.02	Y	193	140 - 260	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				9.78	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32 - 1.78	Y	97	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	99.1	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	107	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37 - 0.51	Y	104	70 - 130	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	10	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.1	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	38 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.1	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32 - 1.78	Y	49.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	52.4	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

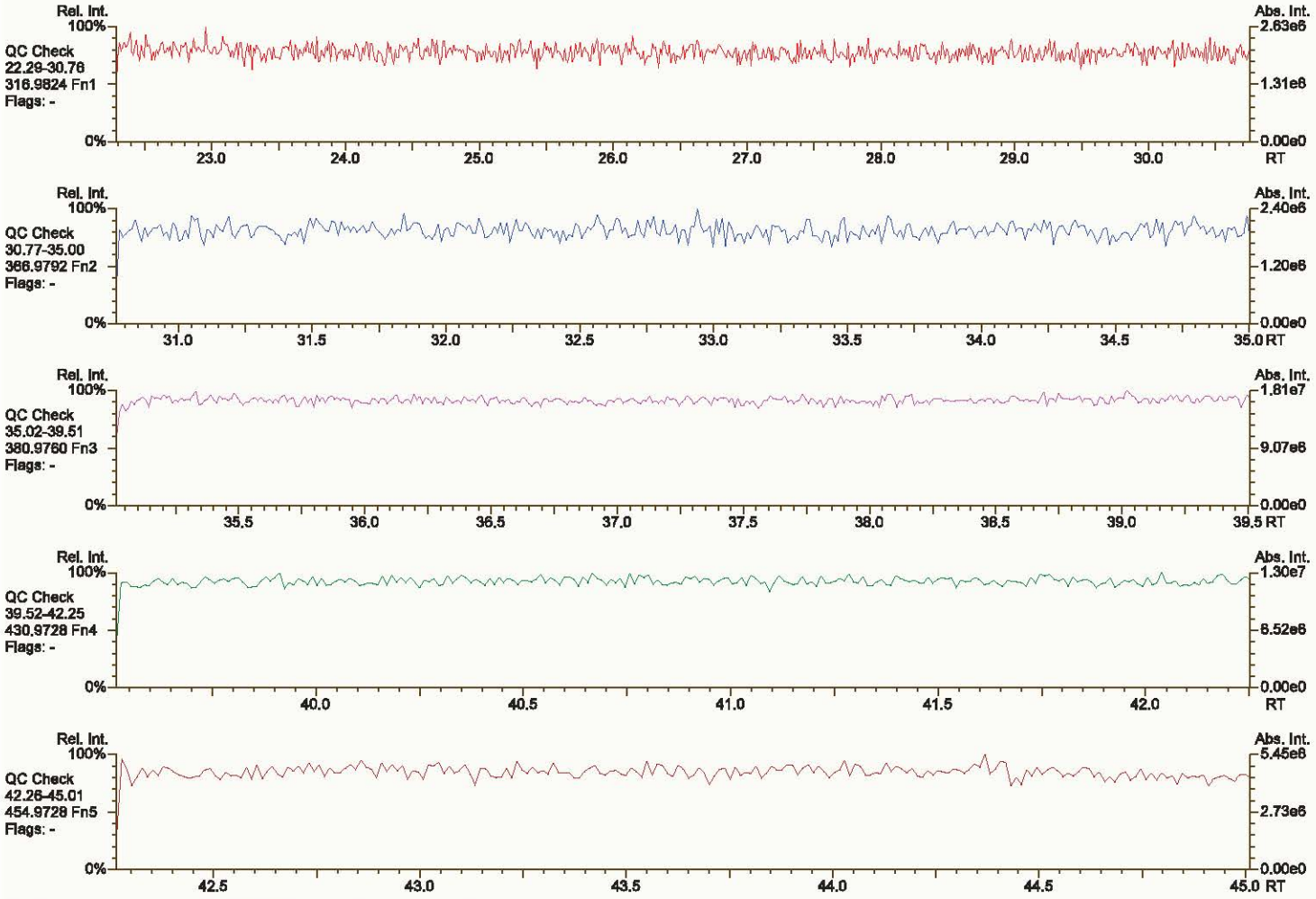
VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65 - 0.89	Y	99.2	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32 - 1.78	Y	96.1	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	98.7	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05 - 1.43	Y	99.8	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05 - 1.43	Y	99.2	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88 - 1.20	Y	97.1	72 - 138	Y
13C-OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	188	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65 - 0.89	Y	98.9	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	94.8	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32 - 1.78	Y	89.9	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43 - 0.59	Y	104	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43 - 0.59	Y	107	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	104	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	103	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37 - 0.51	Y	105	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37 - 0.51	Y	98.1	77 - 129	Y
13C-OCDF	M+2/M+4	0.89	0.76 - 1.02	Y	193	96 - 415	Y
CLEANUP STANDARDS							
37Cl-2,3,7,8-TCDD	n/a				9.78	7.9 - 12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32 - 1.78	Y	97	70 - 130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	99.1	70 - 130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	107	70 - 130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37 - 0.51	Y	104	70 - 130	Y

Processed: 28 Jul 2021 08:18 Analyst: pw

SGS ID: CS3_210727_DF_RB | Sample ID: SIL 23-672-1 | Acq: 27-Jul-2021 19:43:55

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 210727R15

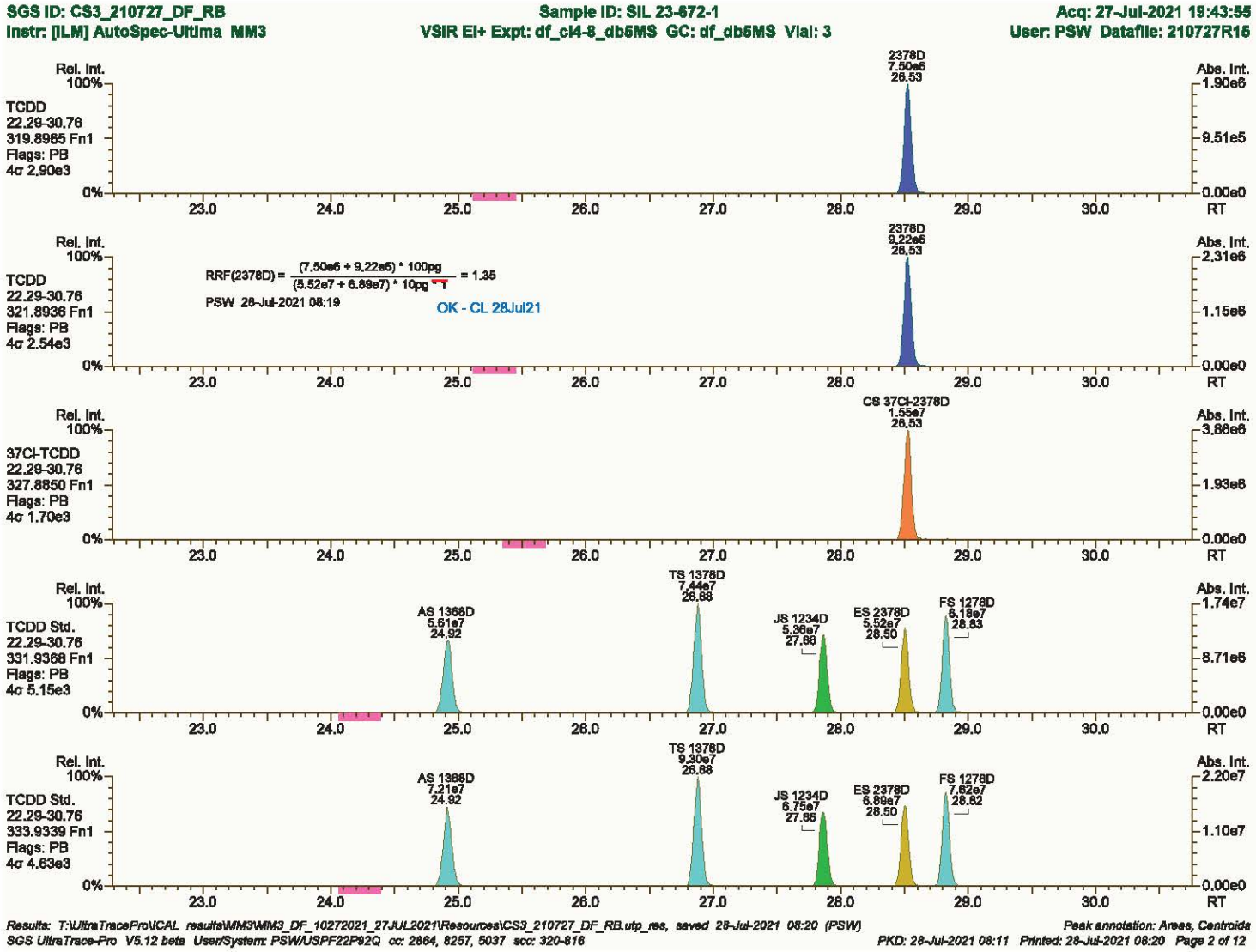


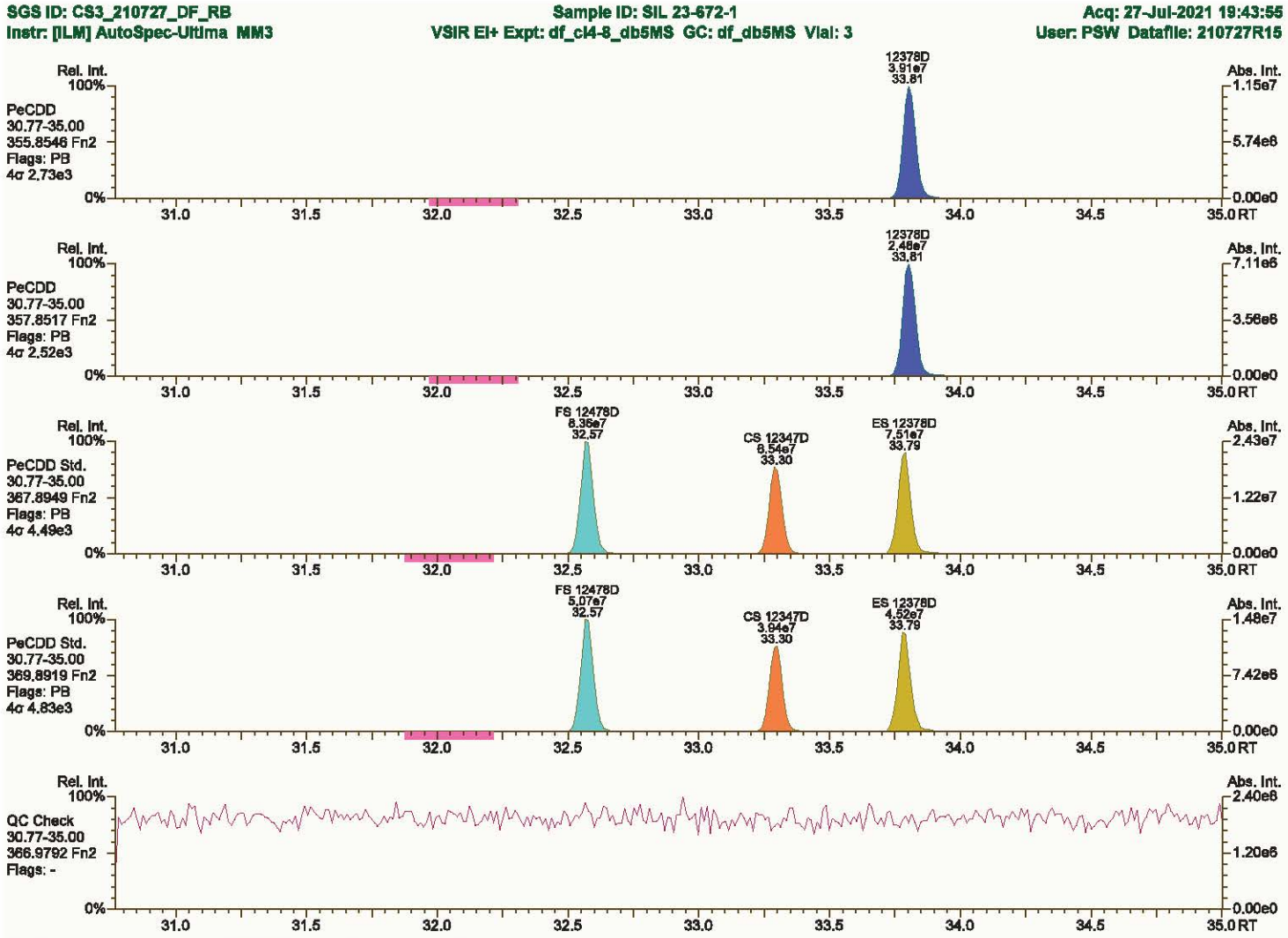
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 320-816

PKD: n/a Printed: 28-Jul-2021 08:20 Page 1 of 12

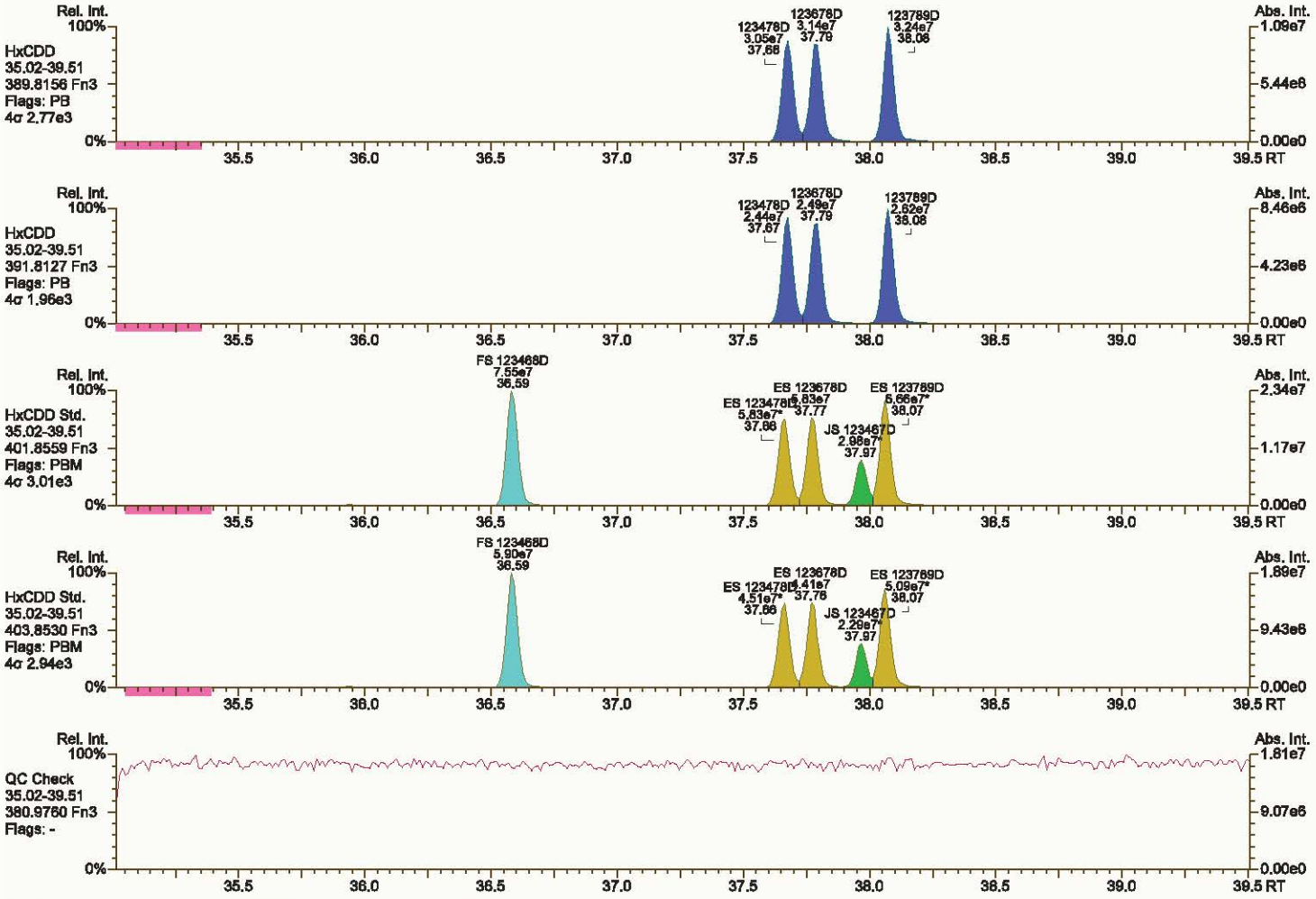

SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15
Rel. Int.
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.90e3
2378D
7.50e6
28.53
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.54e3
RRF(2378D) = (7.50e6 + 9.22e6) * 100pg / (5.52e7 + 6.89e7) * 10pg = 1.35
PSW 28-Jul-2021 08:19
OK - CL 28Jul21
2378D
9.22e6
28.53
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.70e3
CS 37Cl-2378D
1.55e7
28.53
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.15e3
AS 1368D
5.61e7
24.92
TS 1378D
7.44e7
26.88
JS 1234D
5.36e7
27.86
ES 2378D
5.52e7
28.50
FS 1278D
6.15e7
28.83
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.63e3
AS 1368D
7.21e7
24.92
TS 1378D
9.30e7
26.88
JS 1234D
6.75e7
27.86
ES 2378D
6.89e7
28.50
FS 1278D
7.62e7
28.82
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2864, 6257, 5037 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:20 Page 2 of 12



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 8137, 9363 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:20 Page 3 of 12

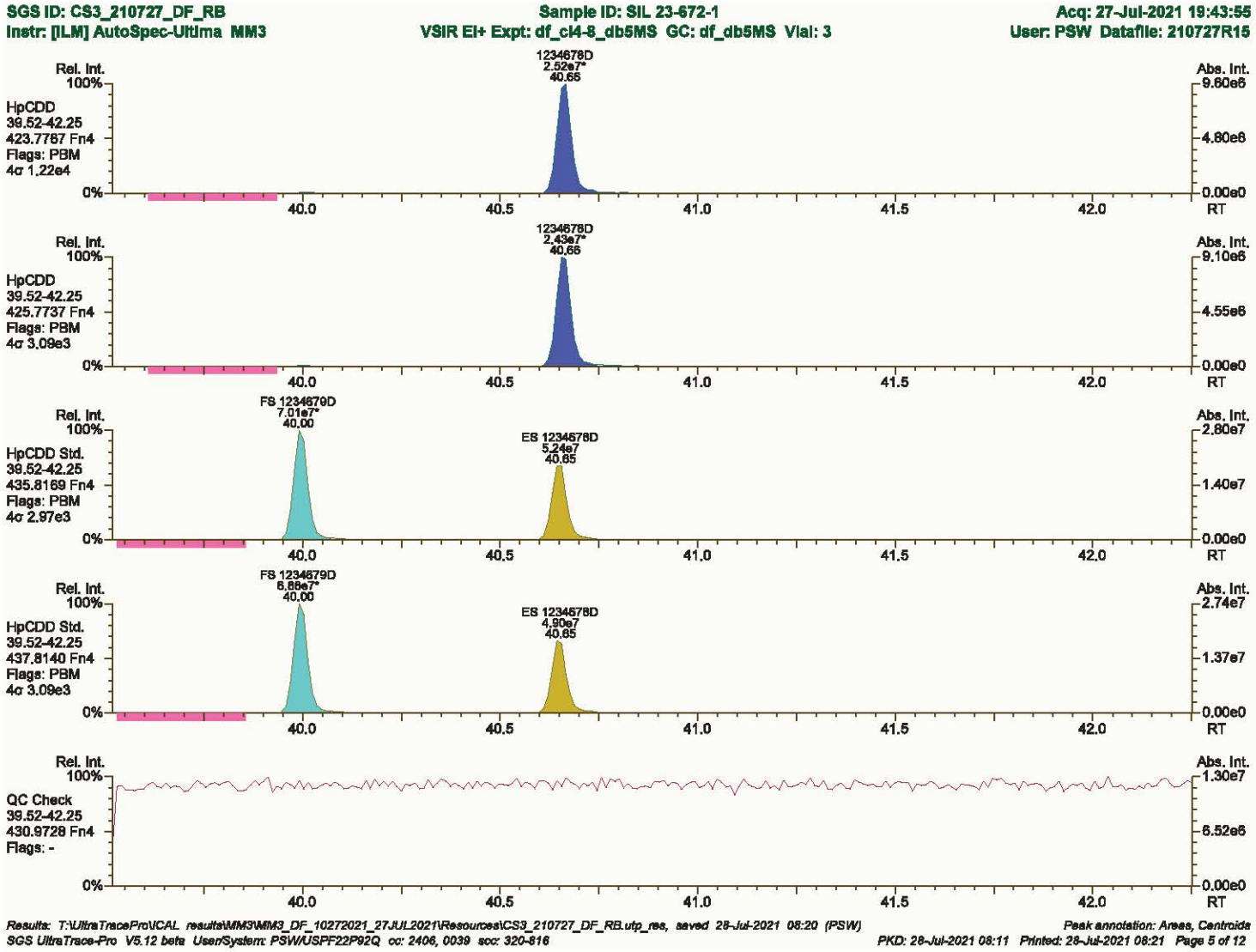
SGS ID: CS3_210727_DF_RB | Sample ID: SIL 23-672-1 | Acq: 27-Jul-2021 19:43:55

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 210727R15



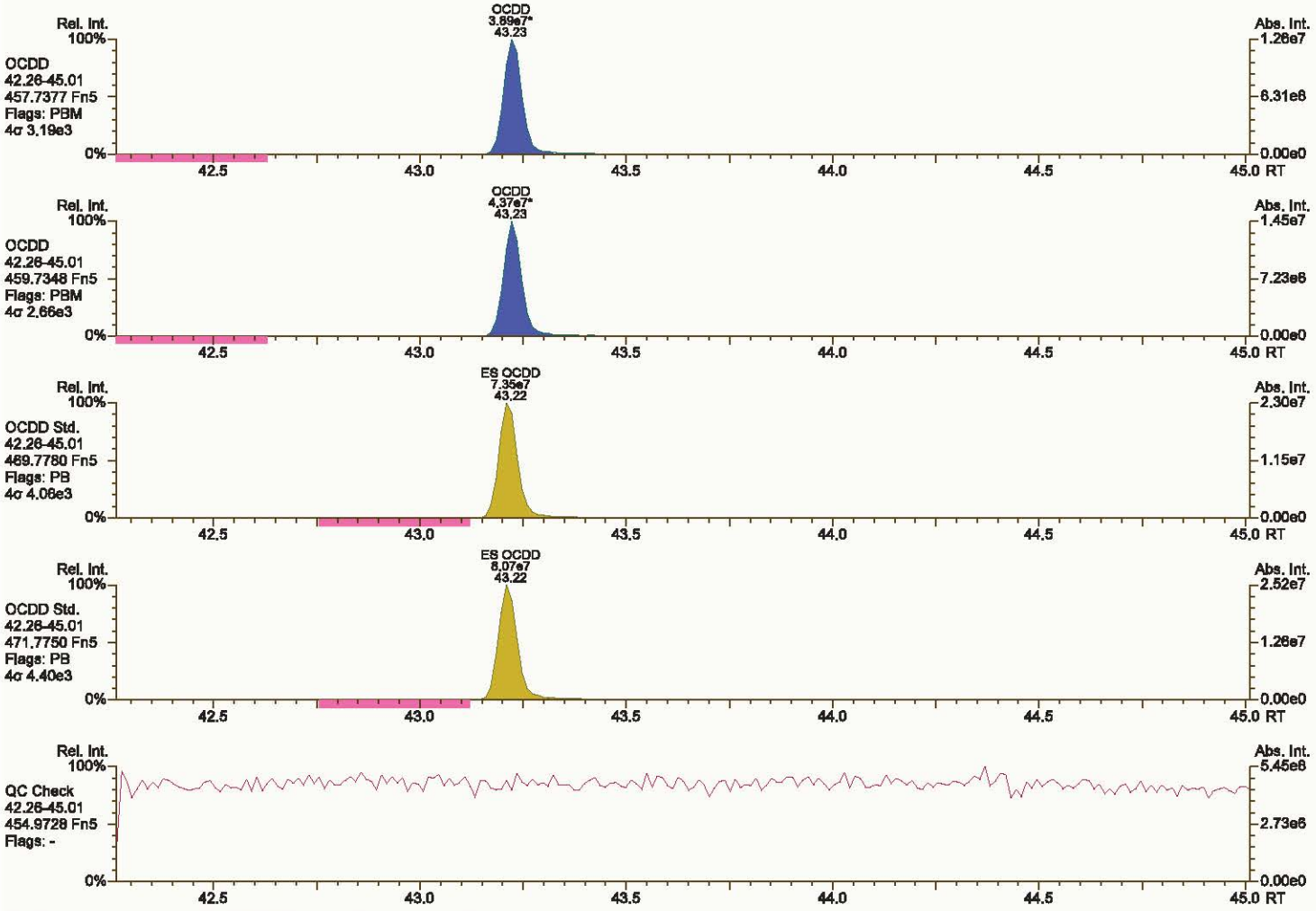
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 8290, 0307 scc: 320-816 *PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:20 Page 4 of 12*


SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15
Rel. Int.
Abs. Int.
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 1.22e4
1234678D
2.52e7*
40.65
9.60e6
4.80e6
0.00e0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 3.09e3
1234678D
2.43e7*
40.65
9.10e6
4.55e6
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 2.97e3
FS 1234679D
7.01e7*
40.00
ES 1234678D
5.24e7
40.65
2.80e7
1.40e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 3.09e3
FS 1234679D
6.86e7*
40.00
ES 1234678D
4.90e7
40.65
2.74e7
1.37e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.30e7
6.52e6
100%
0%
40.0
40.5
41.0
41.5
42.0
RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 2406, 0039 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 5 of 12

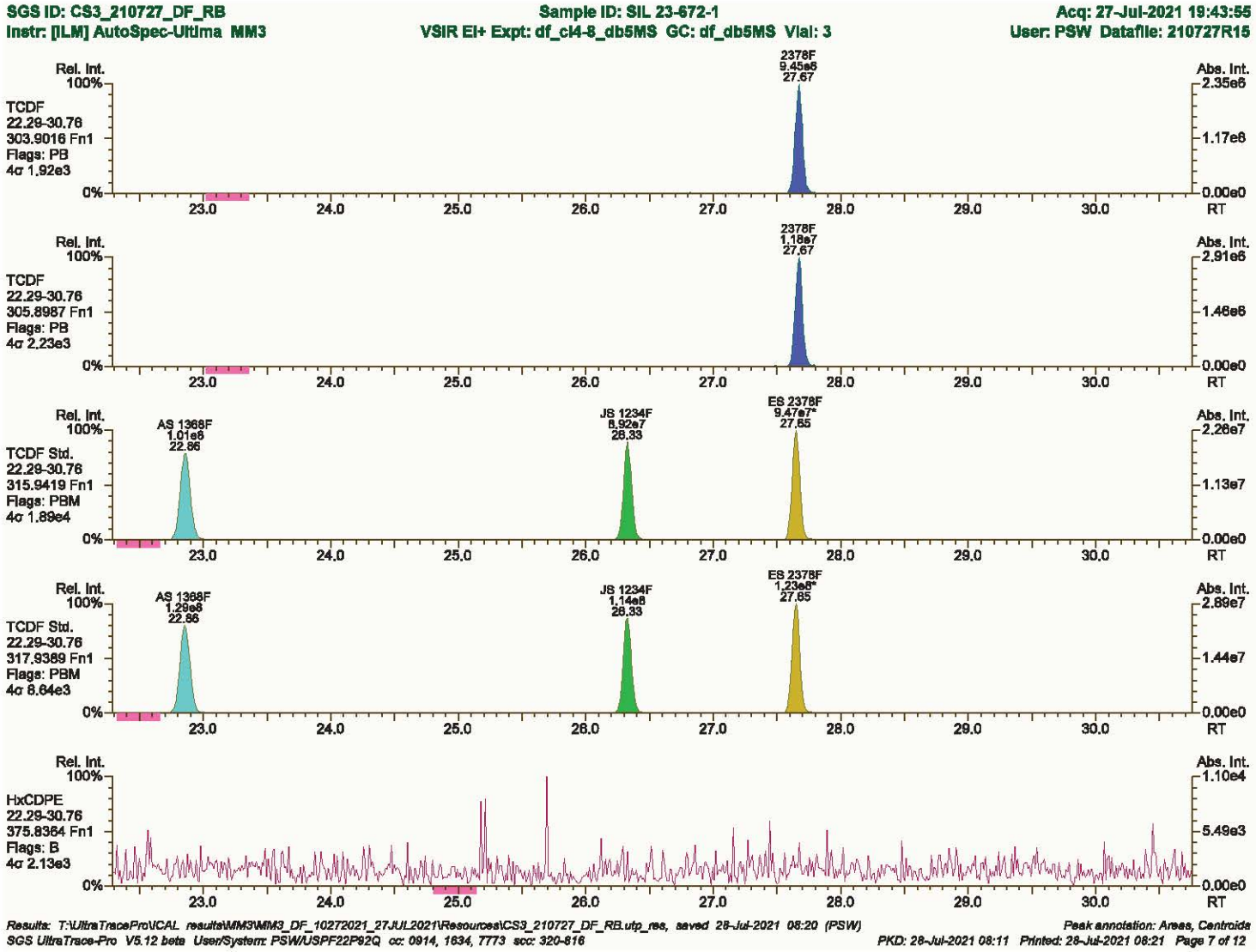
SGS ID: CS3_210727_DF_RB | Sample ID: SIL 23-672-1 | Acq: 27-Jul-2021 19:43:55

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 210727R15



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW) *Peak annotation: Areas, Centroids*

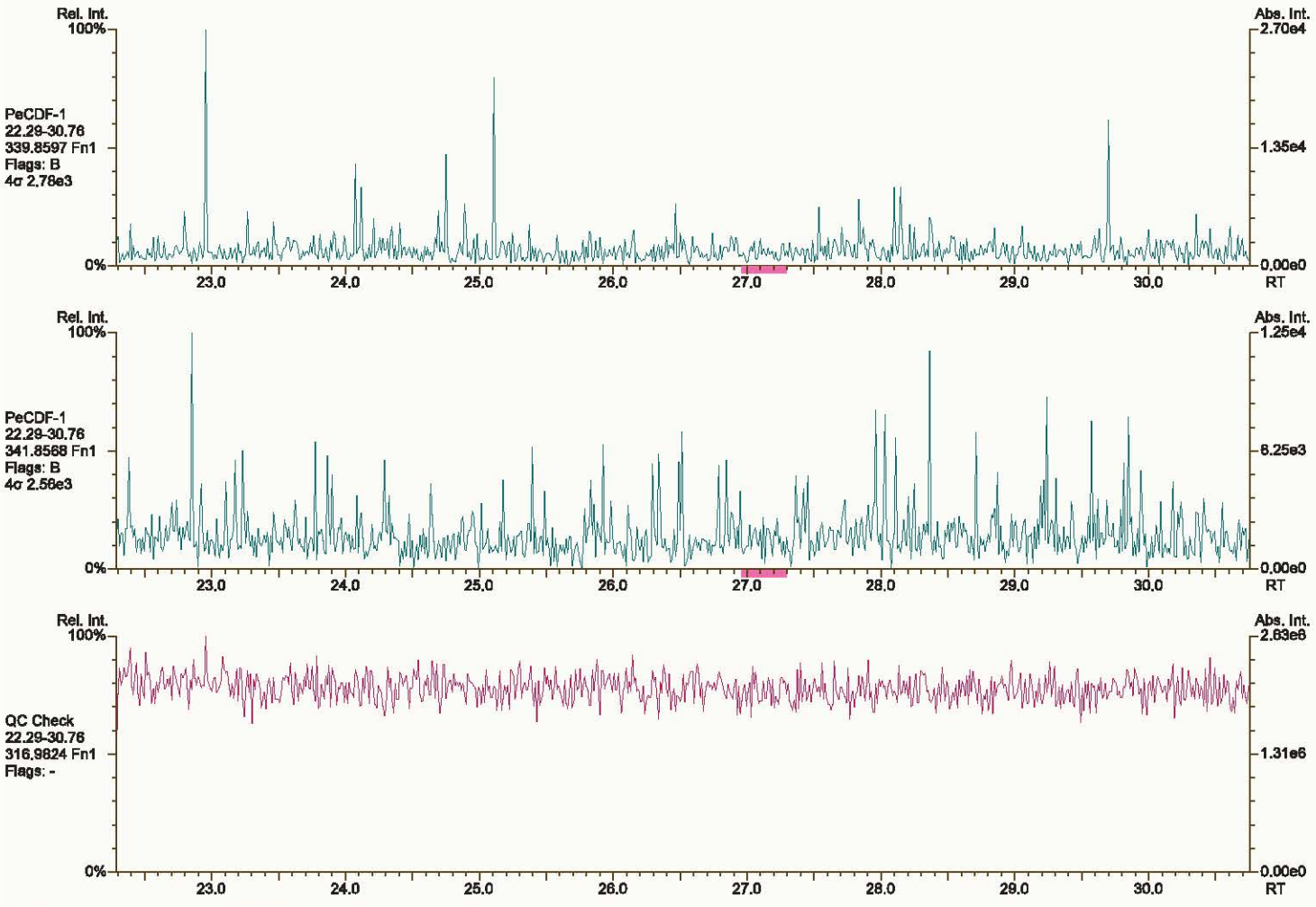
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6031, 3469 scc: 320-816 *PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 6 of 12*


SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 1.92e3
2378F
9.45e6
27.67
2.35e6
1.17e6
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.23e3
2378F
1.18e7
27.67
2.91e6
1.46e6
0.00e0
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PBM
4σ 1.89e4
AS 1368F
1.01e6
22.86
JS 1234F
8.92e7
28.33
ES 2378F
9.47e7*
27.65
2.26e7
1.13e7
0.00e0
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PBM
4σ 8.64e3
AS 1368F
1.29e6
22.86
JS 1234F
1.14e8
28.33
ES 2378F
1.23e8*
27.65
2.89e7
1.44e7
0.00e0
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.13e3
1.10e4
5.49e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS3_210727_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

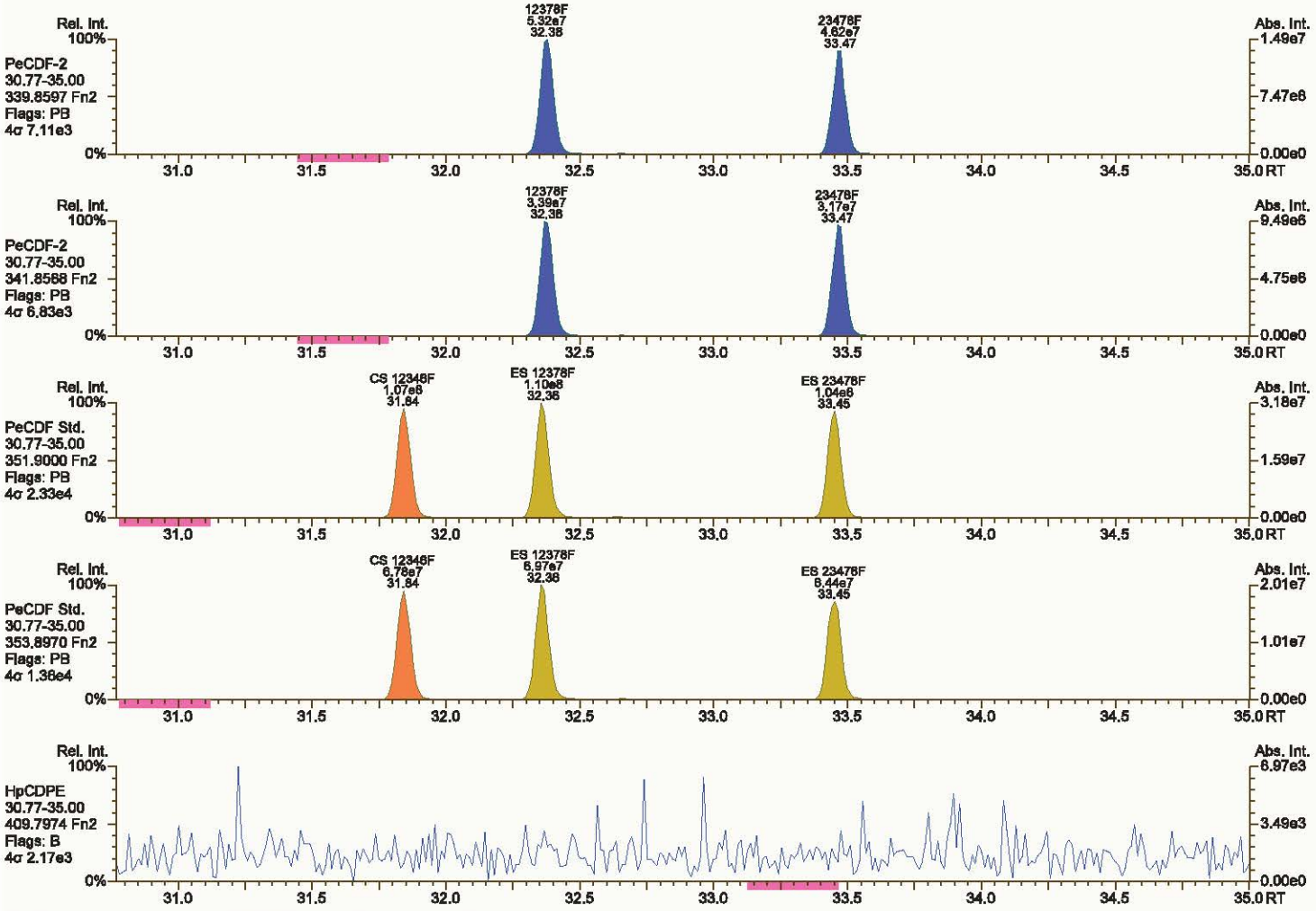
Acq: 27-Jul-2021 19:43:55
User: PSW Datafile: 210727R15



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5181 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 8 of 12

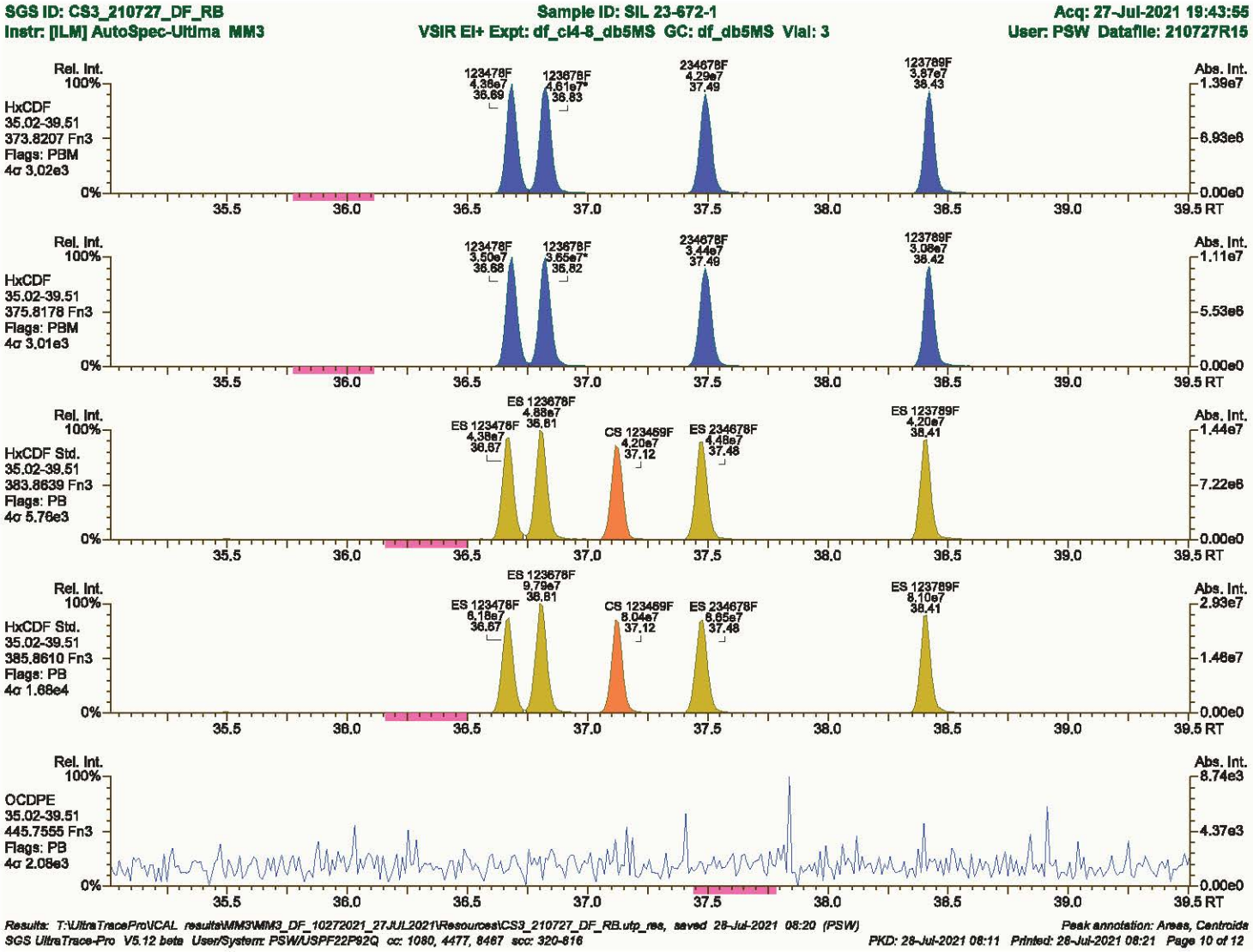
SGS ID: CS3_210727_DF_RB | Sample ID: SIL 23-672-1 | Acq: 27-Jul-2021 19:43:55

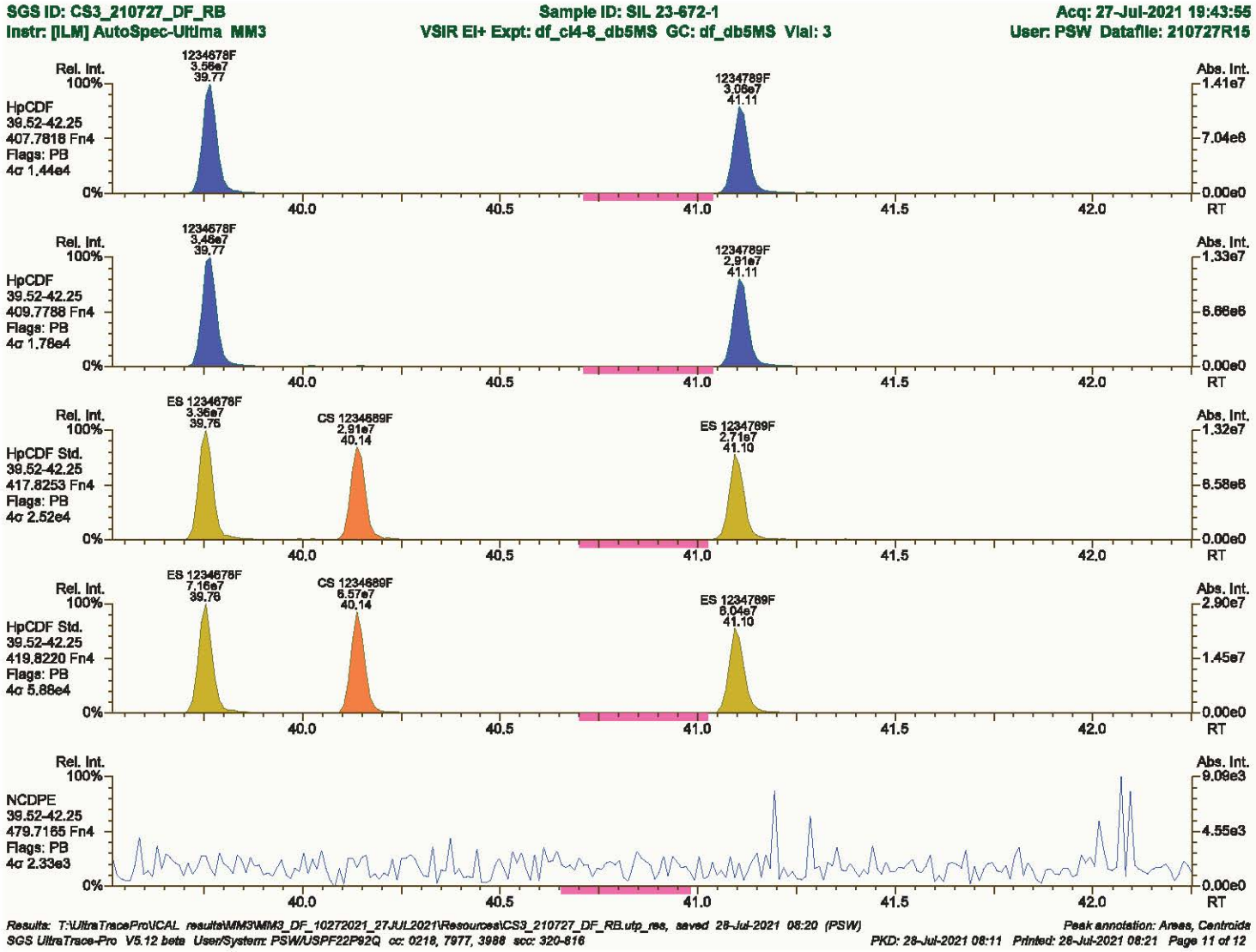
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 210727R15

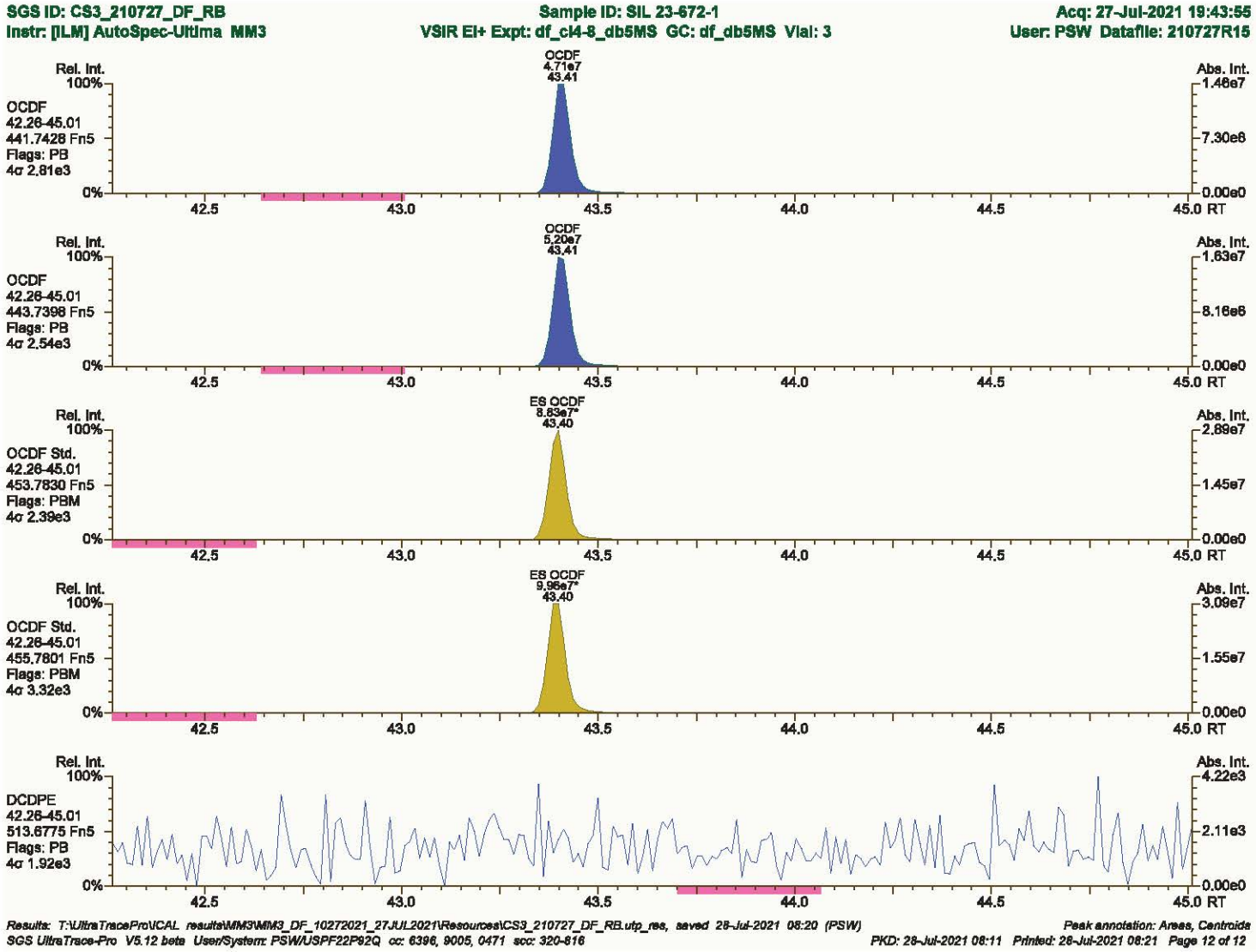


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1037, 5263, 2332 scc: 320-816 | *PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 9 of 12*


SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 3.02e3
123478F 4.36e7 36.69
123678F 4.61e7* 36.83
234678F 4.29e7 37.49
123789F 3.87e7 38.43
1.39e7
6.93e6
0.00e0
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 3.01e3
123478F 3.50e7 36.68
123678F 3.65e7* 36.82
234678F 3.44e7 37.49
123789F 3.08e7 38.42
1.11e7
5.53e6
0.00e0
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.76e3
ES 123678F 4.88e7 36.81
ES 123478F 4.38e7 36.67
CS 123469F 4.20e7 37.12
ES 234678F 4.48e7 37.48
ES 123789F 4.20e7 38.41
1.44e7
7.22e6
0.00e0
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.68e4
ES 123678F 9.79e7 36.81
ES 123478F 6.18e7 36.67
CS 123469F 8.04e7 37.12
ES 234678F 6.85e7 37.48
ES 123789F 8.10e7 38.41
2.93e7
1.48e7
0.00e0
OCDPE
35.02-39.51
445.7555 Fn3
Flags: PB
4σ 2.08e3
8.74e3
4.37e3
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1080, 4477, 8467 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 10 of 12


SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15
Rel. Int.
Abs. Int.
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.44e4
1234678F
3.56e7
39.77
1234789F
3.06e7
41.11
1.41e7
7.04e6
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.78e4
1234678F
3.48e7
39.77
1234789F
2.91e7
41.11
1.33e7
6.66e6
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.52e4
ES 1234678F
3.36e7
39.76
CS 1234689F
2.91e7
40.14
ES 1234789F
2.71e7
41.10
1.32e7
6.58e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.88e4
ES 1234678F
7.16e7
39.78
CS 1234689F
6.57e7
40.14
ES 1234789F
6.04e7
41.10
2.90e7
1.45e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.33e3
9.09e3
4.55e3
0%
100%
40.0
40.5
41.0
41.5
42.0
RT
0.00e0


SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15
OCDF
4.71e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.81e3
0%
Abs. Int.
1.46e7
7.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.20e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.54e3
0%
Abs. Int.
1.63e7
8.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.83e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PBM
4σ 2.39e3
0%
Abs. Int.
2.89e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.96e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PBM
4σ 3.32e3
0%
Abs. Int.
3.09e7
1.55e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 1.92e3
0%
Abs. Int.
4.22e3
2.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6396, 9005, 0471 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 20:31 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_210727_DF_RC		UTP: 28-Jul-2021 08:16:59 PSW				Checkcode: 537-883-PJZ	
Sample ID: ICV SIL 24-11-9		Report: 28 Jul 2021 08:18 pw				Datafile: 210727R16	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.53	2.48E+07	0.79	Y	1.34	1.22	-9%
12378-PeCDD	33.81	9.55E+07	1.55	Y	1.06	0.98	-8%
123478-HxCDD	37.68	8.89E+07	1.25	Y	1.06	1.04	-1%
123678-HxCDD	37.80	9.70E+07	1.25	Y	1.08	1.14	5%
123789-HxCDD	38.09	9.52E+07	1.24	Y	1.02	0.95	-7%
1234678-HpCDD	40.67	8.40E+07	1.03	Y	0.97	0.99	1%
OCDD	43.24	1.45E+08	0.90	Y	1.07	1.07	0%
2378-TCDF	27.68	3.32E+07	0.79	Y	0.96	0.95	-1%
12378-PeCDF	32.38	1.28E+08	1.52	Y	0.95	0.87	-8%
23478-PeCDF	33.48	1.47E+08	1.58	Y	0.94	1.00	6%
123478-HxCDF	36.69	1.27E+08	1.27	Y	1.23	1.25	1%
123678-HxCDF	36.83	1.34E+08	1.26	Y	1.13	1.11	-2%
234678-HxCDF	37.50	1.26E+08	1.24	Y	1.15	1.17	1%
123789-HxCDF	38.43	1.13E+08	1.25	Y	1.14	1.10	-3%
1234678-HpCDF	39.77	1.18E+08	1.02	Y	1.36	1.34	-2%
1234789-HpCDF	41.12	9.93E+07	1.03	Y	1.30	1.29	-1%
OCDF	43.42	1.67E+08	0.90	Y	1.03	1.02	-1%
ES 2378-TCDD	28.51	2.04E+08	0.81	Y	1.03	0.96	-7%
ES 12378-PeCDD	33.795	1.95E+08	1.65	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.667	1.70E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.781	1.70E+08	1.29	Y	0.97	0.97	0%
ES 123789-HxCDD	38.071	2.01E+08	1.25	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.656	1.70E+08	1.05	Y	0.99	0.97	-2%
ES OCDD	43.225	2.69E+08	0.90	Y	0.78	0.77	-1%
ES 2378-TCDF	27.654	3.51E+08	0.77	Y	1.08	0.99	-9%
ES 12378-PeCDF	32.366	2.97E+08	1.58	Y	0.93	0.84	-10%
ES 23478-PeCDF	33.459	2.95E+08	1.56	Y	0.92	0.84	-9%
ES 123478-HxCDF	36.673	2.04E+08	0.52	Y	1.14	1.17	2%
ES 123678-HxCDF	36.814	2.41E+08	0.53	Y	1.30	1.38	7%
ES 234678-HxCDF	37.481	2.17E+08	0.52	Y	1.20	1.24	3%
ES 123789-HxCDF	38.414	2.06E+08	0.52	Y	1.14	1.18	4%
ES 1234678-HpCDF	39.764	1.76E+08	0.46	Y	0.95	1.01	6%
ES 1234789-HpCDF	41.106	1.54E+08	0.45	Y	0.85	0.88	4%
ES OCDF	43.408	3.28E+08	0.88	Y	0.93	0.94	2%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	2.13E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	3.53E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	8.73E+07	1.21	Y	-	-	-
~~OCDD-a~~	~~43.23~~	~~9.07E+06~~	~~2.21~~	~~Y~~	~~0.07~~	~~0.07~~	~~2%~~
~~OCDF-a~~	~~43.42~~	~~9.95E+06~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~2%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	9.05	8 - 12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.2	40 - 60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.4	40 - 60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	52.7	40 - 60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	46.7	40 - 60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	50.7	40 - 60	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	100	80 - 120	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.87	8 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	45.8	40 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	53.1	40 - 60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.5	40 - 60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.2	40 - 60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.6	40 - 60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.4	40 - 60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	49.2	40 - 60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.7	40 - 60	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.5	80 - 120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	92.9	70 - 130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32 - 1.78	Y	88.8	70 - 130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	98.1	70 - 130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	100	70 - 130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	102	70 - 130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	98.2	70 - 130	Y
13C-OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	198	140 - 260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65 - 0.89	Y	91.5	70 - 130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	89.8	70 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	90.5	70 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	102	70 - 130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	107	70 - 130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	103	70 - 130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	104	70 - 130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	106	70 - 130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37 - 0.51	Y	104	70 - 130	Y
13C-OCDF	M+2/M+4	0.88	0.76 - 1.02	Y	203	140 - 260	Y
CLEANUP STANDARDS n/a - CL 28Jul21							
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~				~~0~~	~~7.0 - 12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32 - 1.78~~	~~N~~	~~0~~	~~70 - 130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32 - 1.78~~	~~N~~	~~0~~	~~70 - 130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43 - 0.59~~	~~N~~	~~0~~	~~70 - 130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37 - 0.51~~	~~N~~	~~0~~	~~70 - 130~~	~~N~~

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	9.05	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.4	38 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	52.7	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	46.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	50.7	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.87	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	45.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	53.1	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.5	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.2	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.4	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	49.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.7	43 - 58	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.5	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

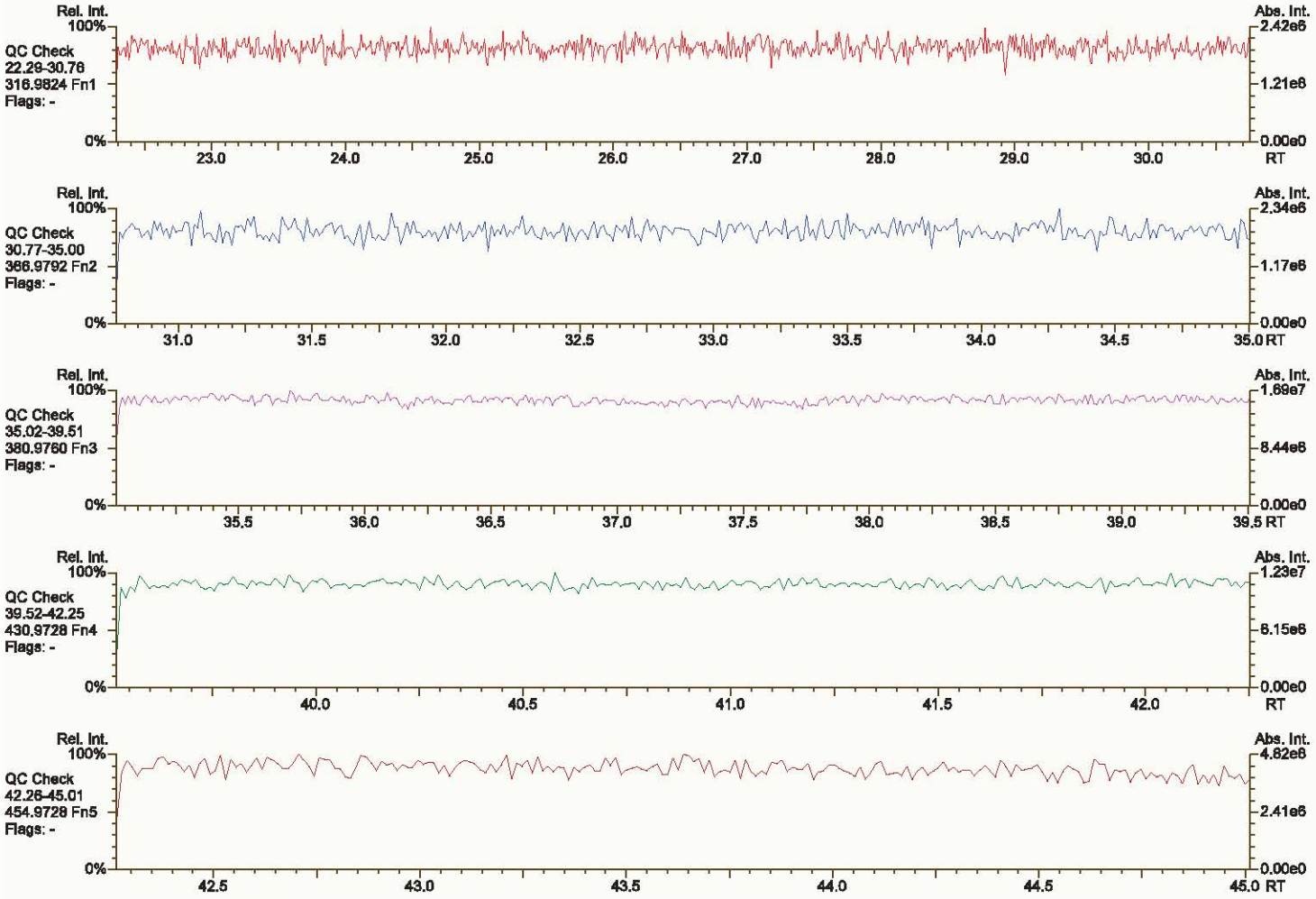
VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	92.9	82 - 121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32 - 1.78	Y	88.8	62 - 160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	98.1	85 - 117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	100	85 - 118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	102	85 - 118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	98.2	72 - 138	Y
13C-OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	198	96 - 415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65 - 0.89	Y	91.5	71 - 140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	89.8	76 - 130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	90.5	77 - 130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	102	76 - 131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43 - 0.59	Y	107	70 - 143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	103	73 - 137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43 - 0.59	Y	104	74 - 135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37 - 0.51	Y	106	78 - 129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37 - 0.51	Y	104	77 - 129	Y
13C-OCDF	M+2/M+4	0.88	0.76 - 1.02	Y	203	96 - 415	Y
CLEANUP STANDARDS	n/a - CL 28Jul21						
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~				~~0~~	~~7.9 - 12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32 - 1.78~~	~~N~~	~~0~~	~~70 - 130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32 - 1.78~~	~~N~~	~~0~~	~~70 - 130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43 - 0.59~~	~~N~~	~~0~~	~~70 - 130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37 - 0.51~~	~~N~~	~~0~~	~~70 - 130~~	~~N~~

Processed: 28 Jul 2021 08:18 Analyst: pw

SGS ID: CS3_210727_DF_RC | Sample ID: ICV SIL 24-11-9 | Acq: 27-Jul-2021 20:31:28

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92 | User: PSW Datafile: 210727R16



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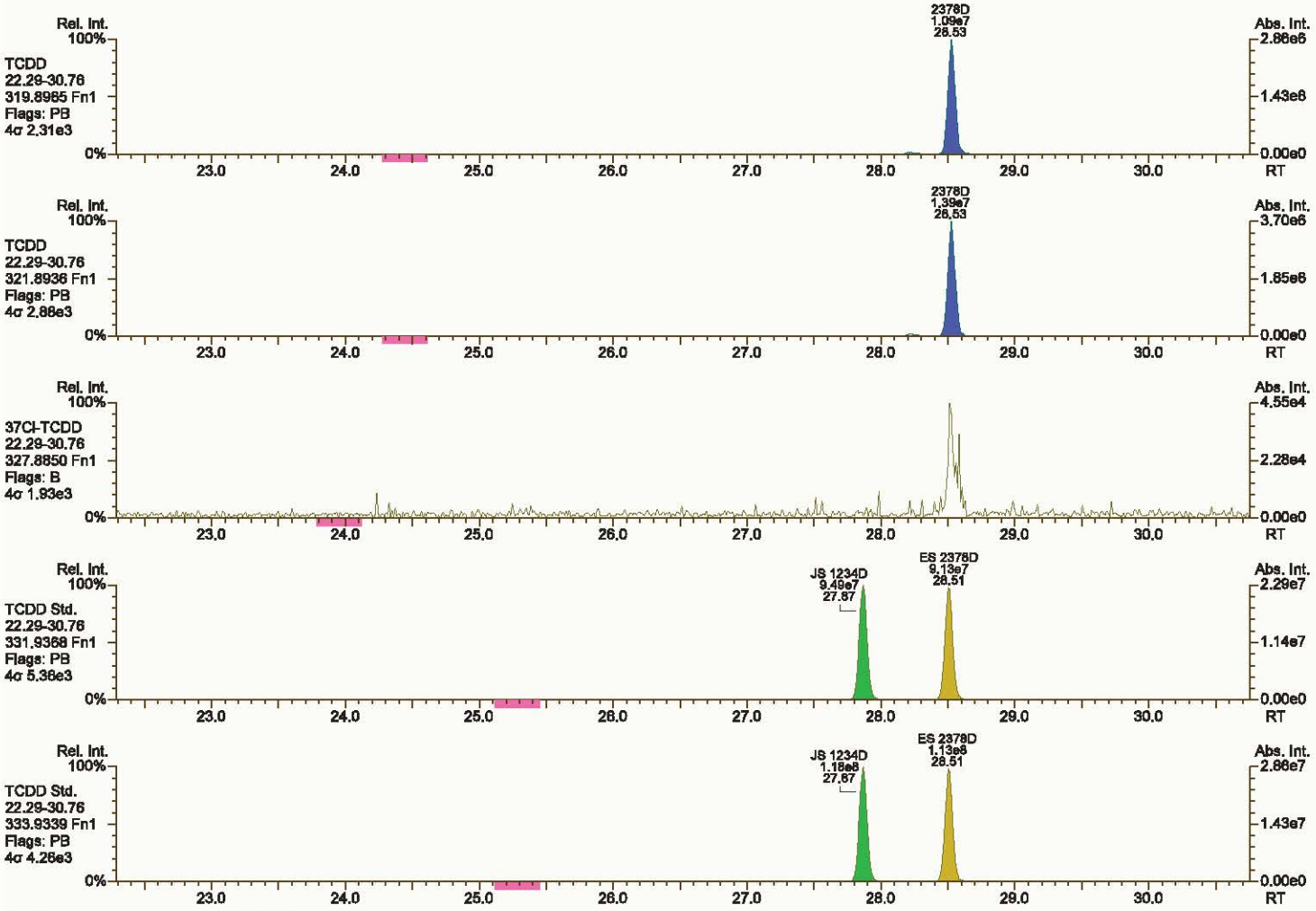
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 537-883

PKD: n/a Printed: 28-Jul-2021 08:21 Page 1 of 12

SGS ID: CS3_210727_DF_RC | Sample ID: ICV SIL 24-11-9 | Acq: 27-Jul-2021 20:31:28

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92 | User: PSW Datafile: 210727R16



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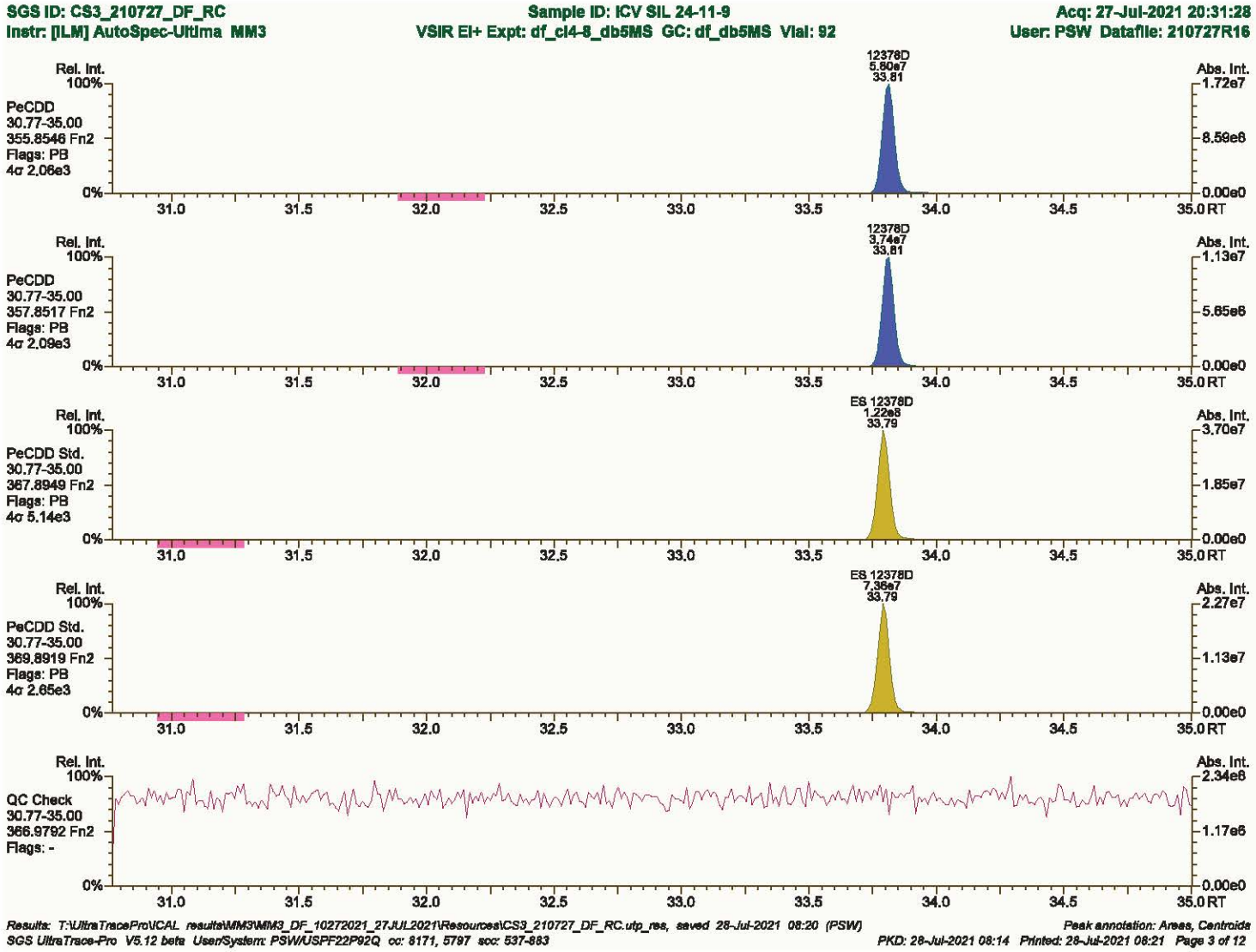
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8228, 3606, 8845 scc: 537-883 *PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 2 of 12*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Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
Rel. Int.
Abs. Int.
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.06e3
12378D
5.60e7
33.81
1.72e7
8.59e6
0.00e0
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.09e3
12378D
3.74e7
33.81
1.13e7
5.65e6
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 5.14e3
ES 12378D
1.22e8
33.79
3.70e7
1.85e7
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 2.65e3
ES 12378D
7.35e7
33.79
2.27e7
1.13e7
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
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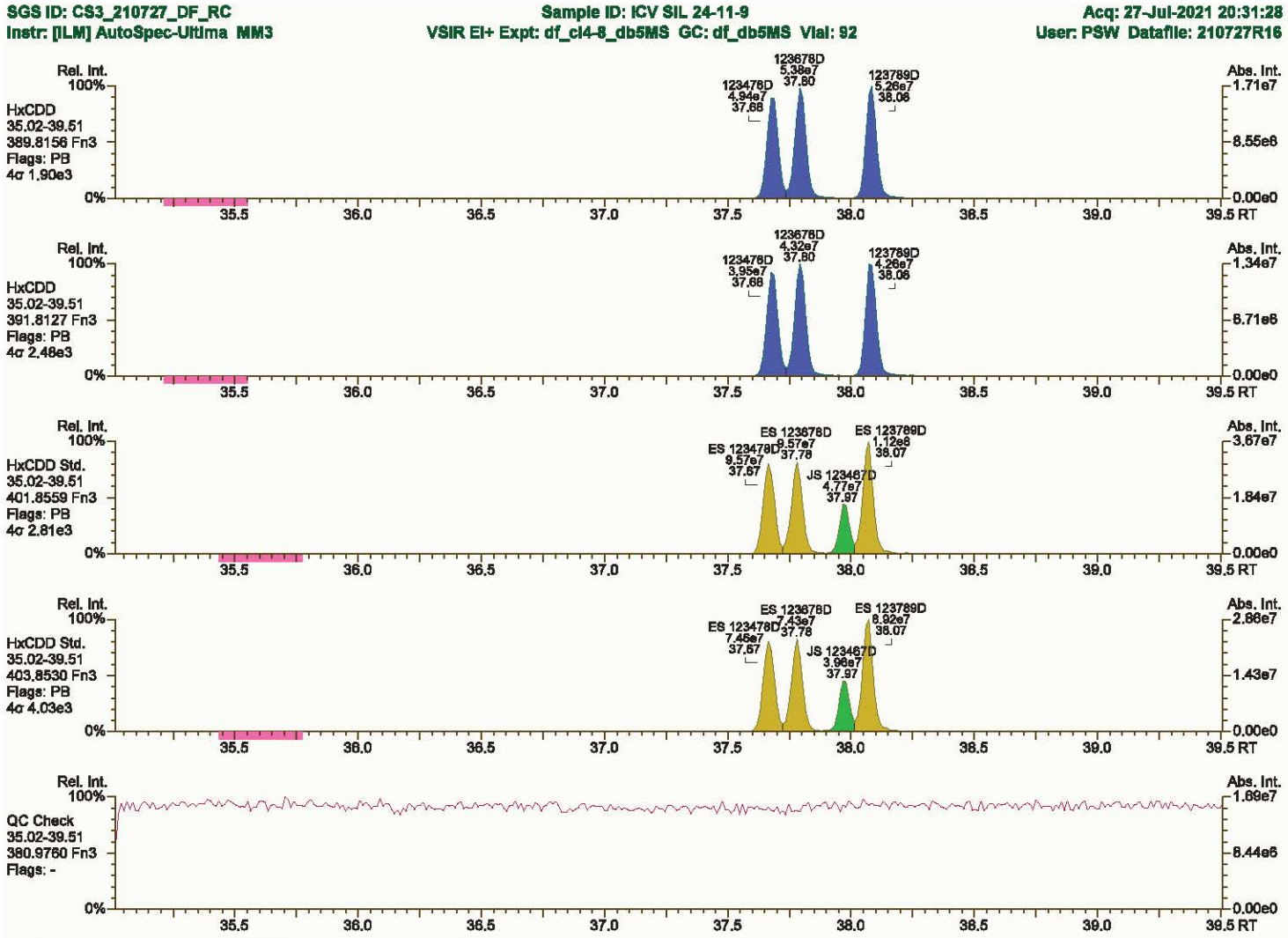
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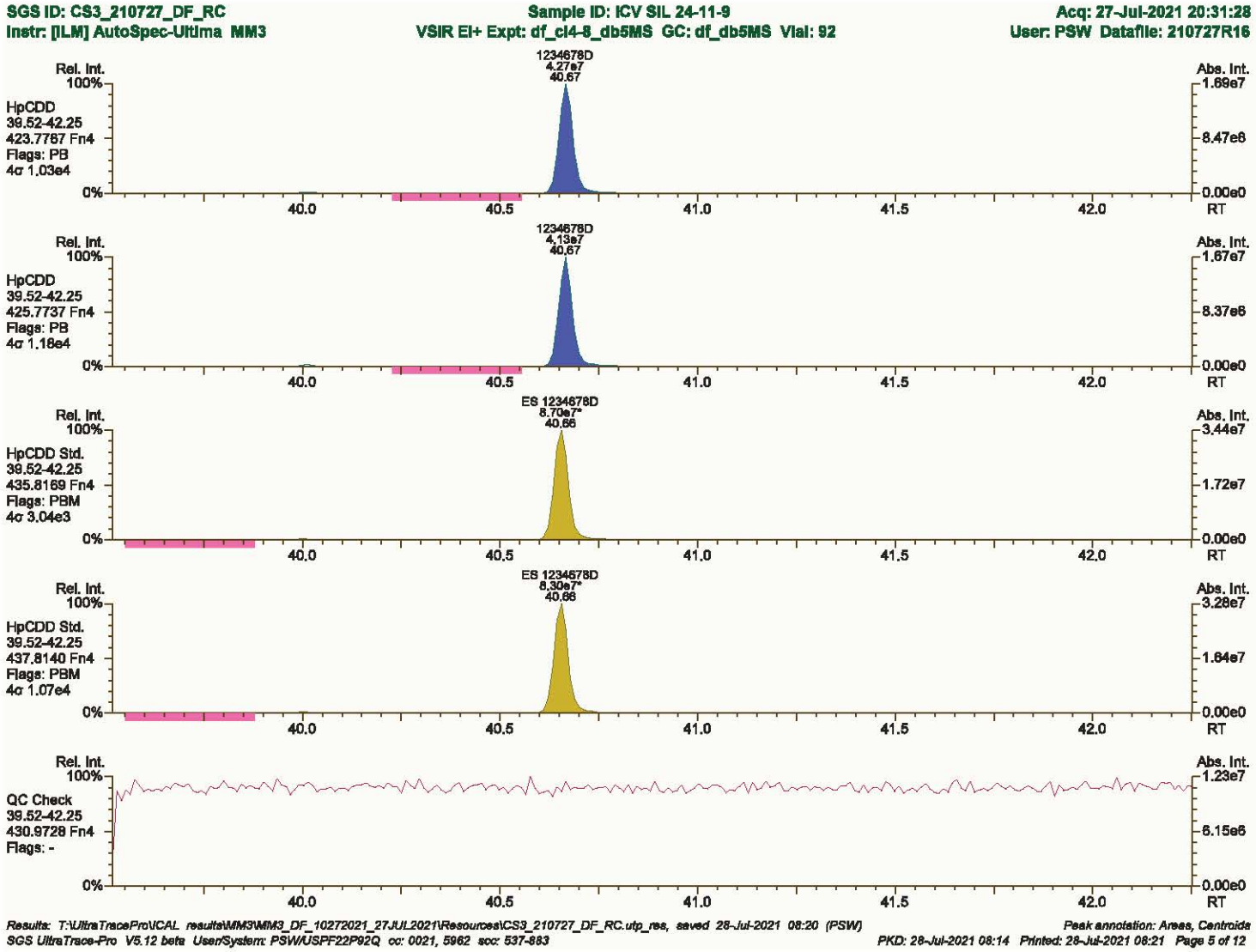
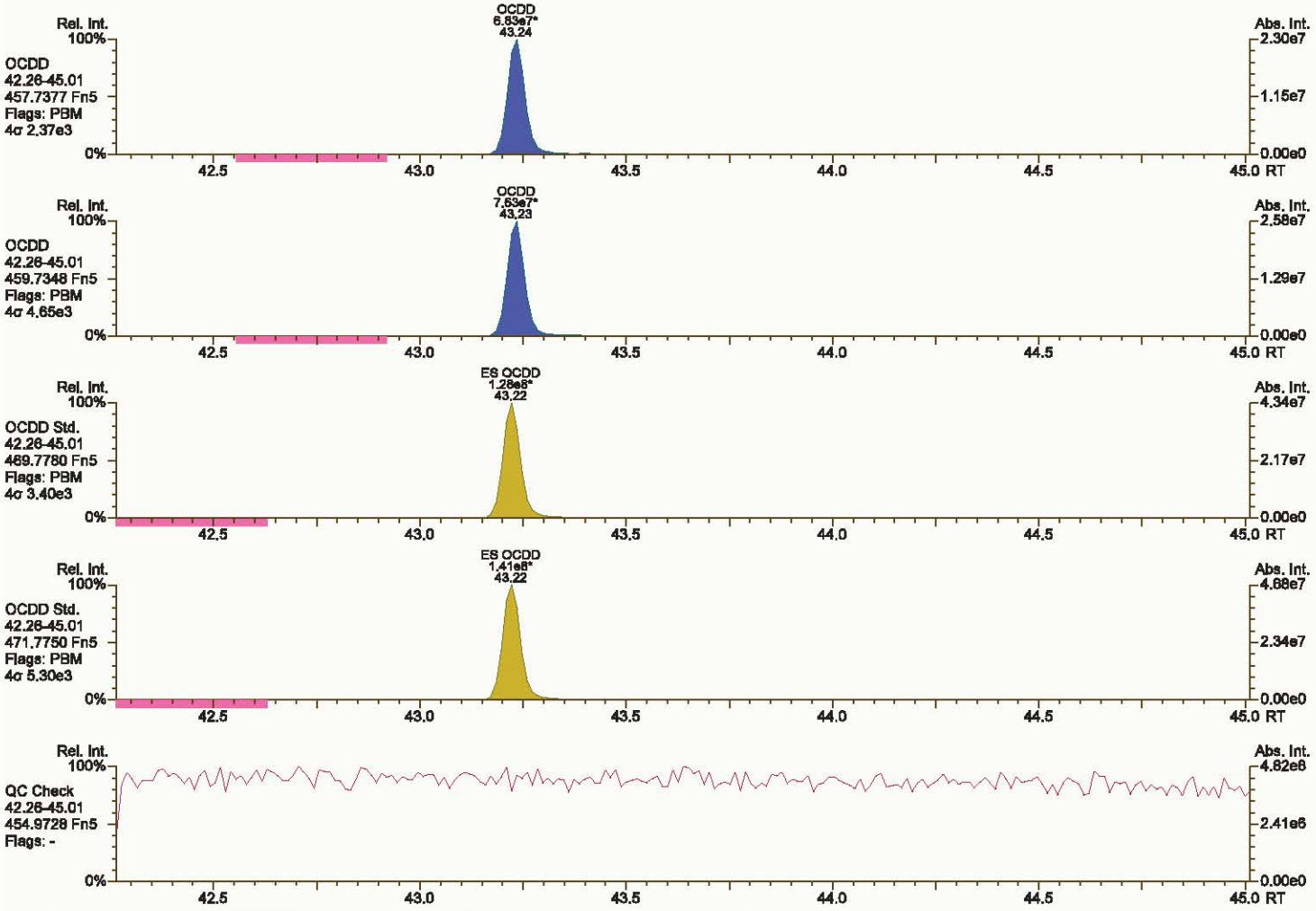
Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 1.90e3
123678D 5.38e7 37.80
123478D 4.94e7 37.68
123789D 5.26e7 38.06
1.71e7
8.55e6
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.48e3
123678D 4.32e7 37.80
123478D 3.95e7 37.68
123789D 4.26e7 38.06
1.34e7
6.71e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 2.81e3
ES 123678D 9.57e7 37.78
ES 123478D 9.57e7 37.67
ES 123789D 1.12e8 38.07
JS 123467D 4.77e7 37.97
3.67e7
1.84e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 4.03e3
ES 123678D 7.43e7 37.78
ES 123478D 7.45e7 37.67
ES 123789D 8.92e7 38.07
JS 123467D 3.96e7 37.97
2.86e7
1.43e7
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.69e7
8.44e6
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 1539, 7390 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 4 of 12


SGS ID: CS3_210727_DF_RC
Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
Rel. Int.
Abs. Int.
100%
0%
1234678D
4.27e7
40.67
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.03e4
1.69e7
8.47e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
1234678D
4.13e7
40.67
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.18e4
1.67e7
8.37e6
ES 1234678D
8.70e7*
40.66
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 3.04e3
3.44e7
1.72e7
ES 1234678D
8.30e7*
40.66
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 1.07e4
3.28e7
1.64e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.23e7
6.15e6

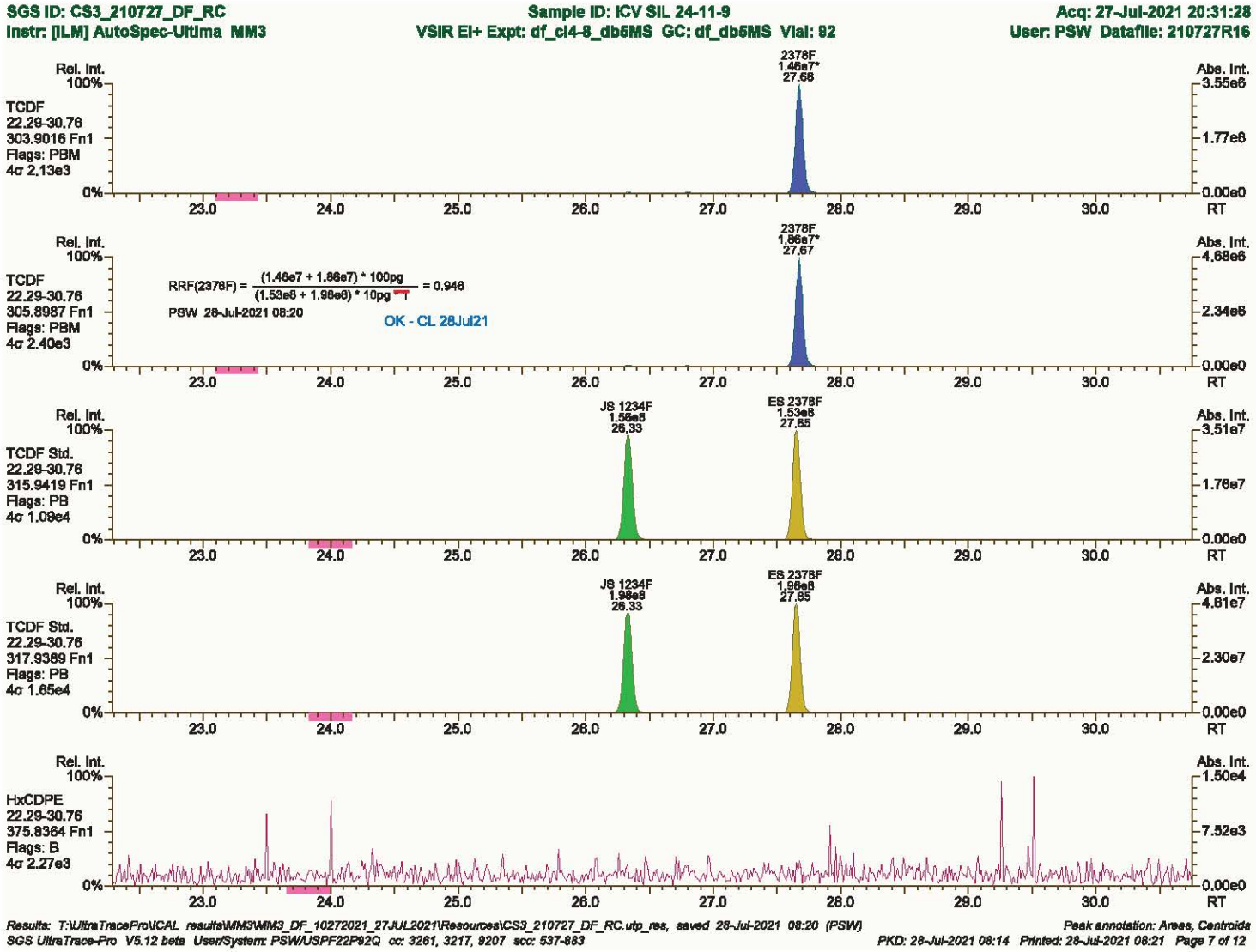
SGS ID: CS3_210727_DF_RC | Sample ID: ICV SIL 24-11-9 | Acq: 27-Jul-2021 20:31:28

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92 | User: PSW Datafile: 210727R16



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW) *Peak annotation: Areas, Centroids*

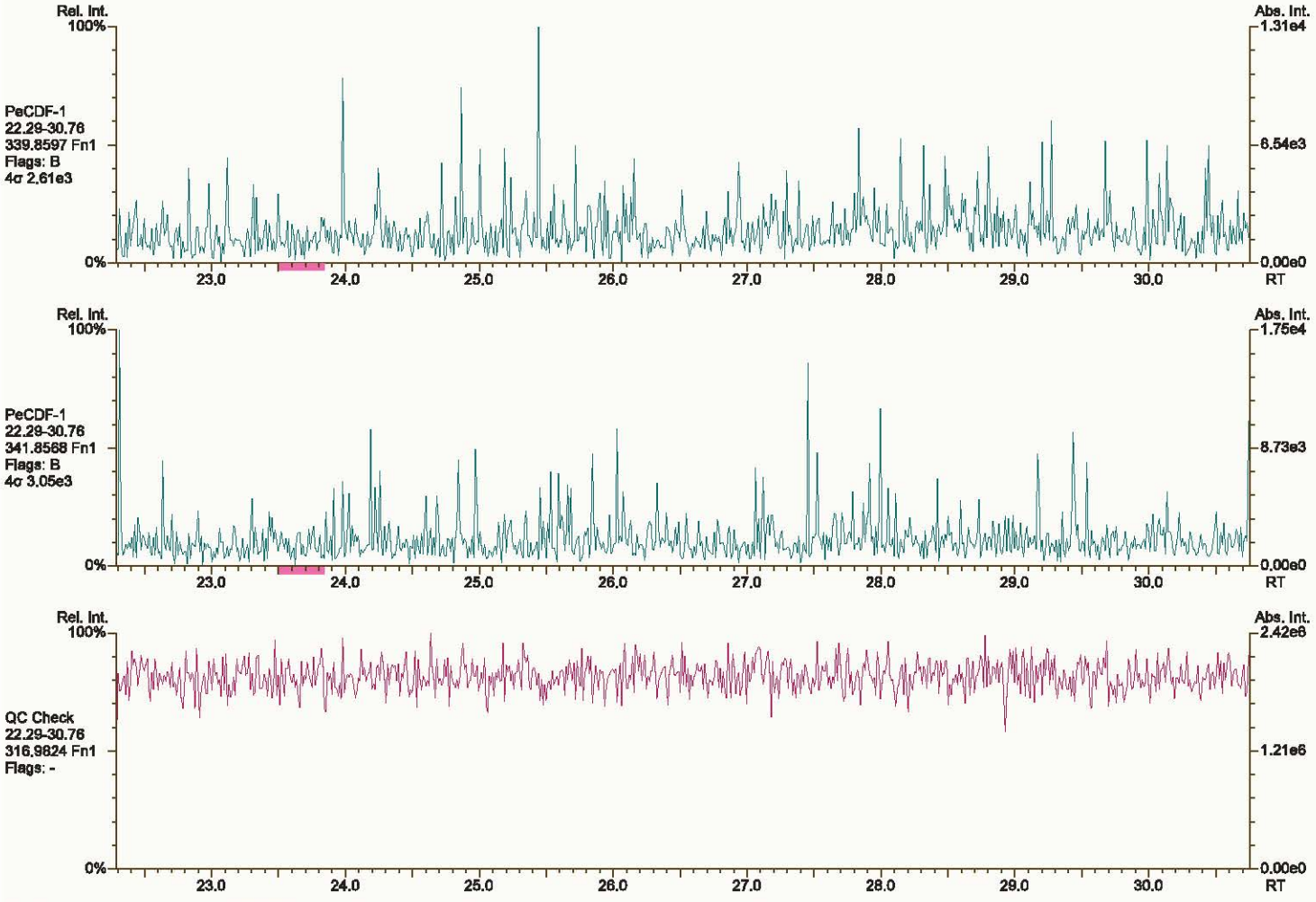
SGS UltraTrace-Pro V5.12 beta UserSystem: PSW/USPF22P92Q cc: 9712, 6963 scc: 537-883 *PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 6 of 12*


SGS ID: CS3_210727_DF_RC
Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.13e3
2378F
1.46e7*
27.68
3.55e6
1.77e6
0.00e0
RT
RRF(2378F) = (1.46e7 + 1.86e7) * 100pg / (1.53e8 + 1.98e8) * 10pg = 0.946
PSW 28-Jul-2021 08:20
OK - CL 28Jul21
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.40e3
2378F
1.86e7*
27.67
4.68e6
2.34e6
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.09e4
JS 1234F
1.56e8
26.33
ES 2378F
1.53e8
27.65
3.51e7
1.76e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.65e4
JS 1234F
1.98e8
26.33
ES 2378F
1.96e8
27.65
4.61e7
2.30e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.27e3
1.50e4
7.52e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3261, 3217, 9207 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 7 of 12

SGS ID: CS3_210727_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: ICV SIL 24-11-9
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92

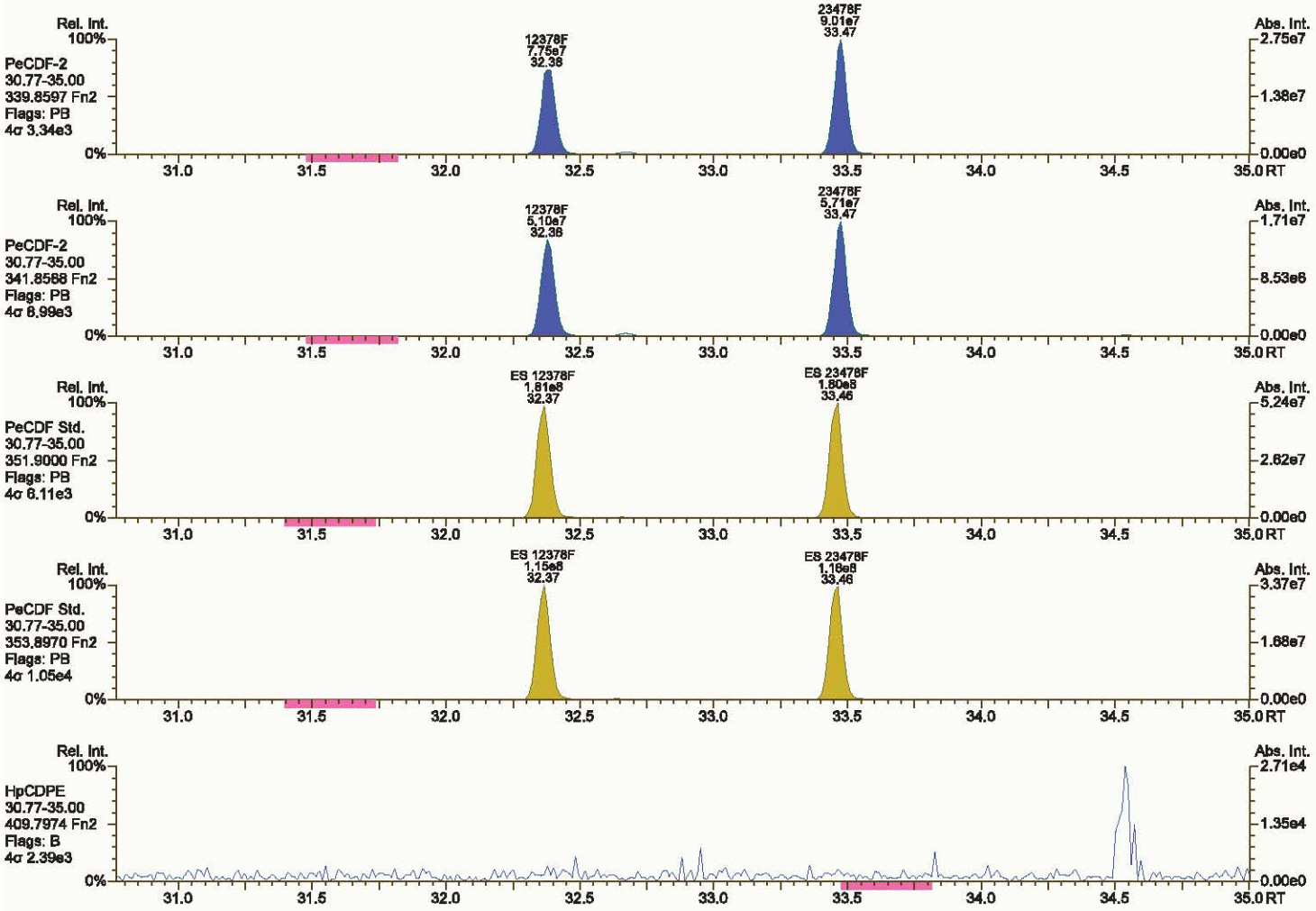
Acq: 27-Jul-2021 20:31:28
User: PSW Datafile: 210727R16



Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6216 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 8 of 12

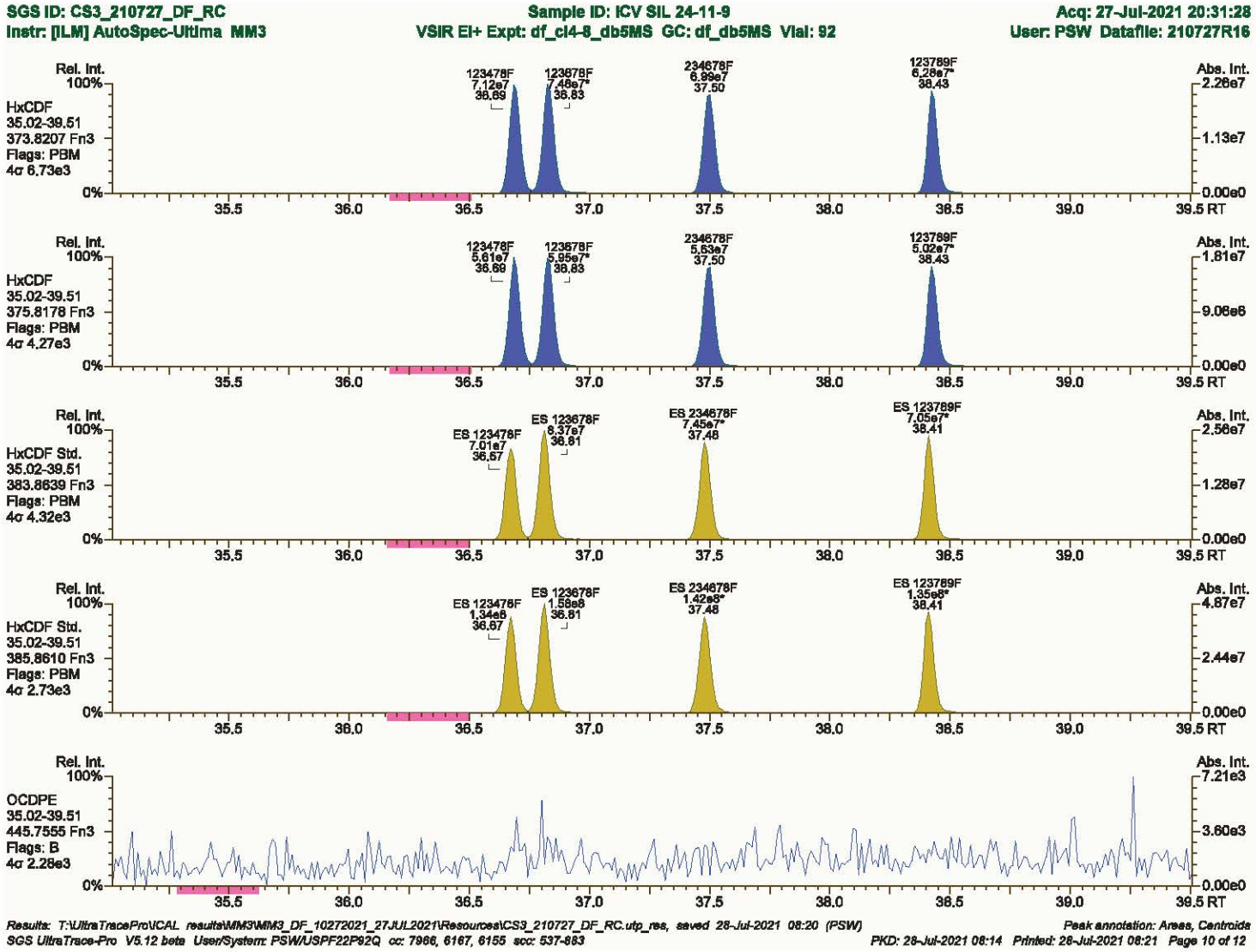
SGS ID: CS3_210727_DF_RC | Sample ID: ICV SIL 24-11-9 | Acq: 27-Jul-2021 20:31:28

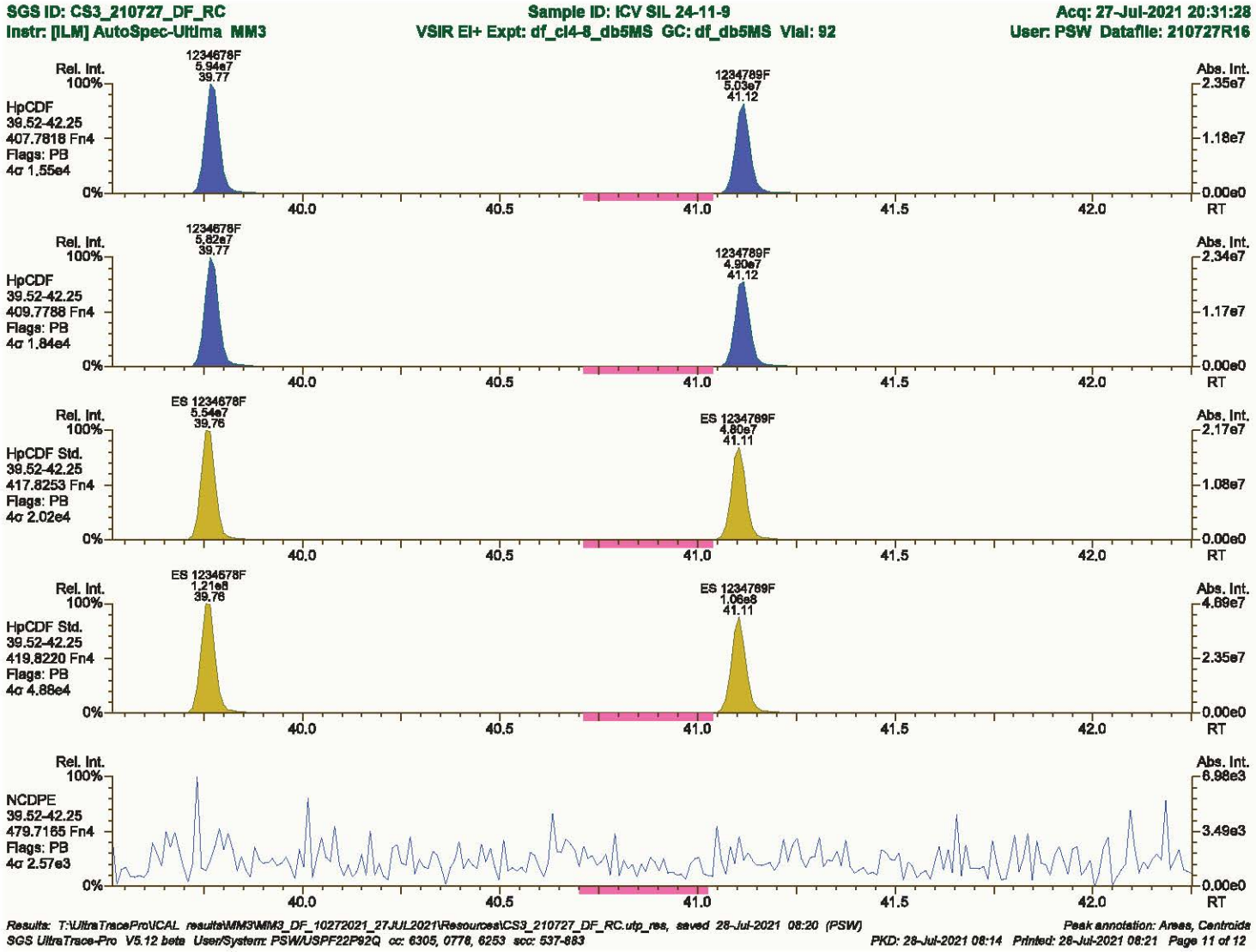
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92 | User: PSW Datafile: 210727R16

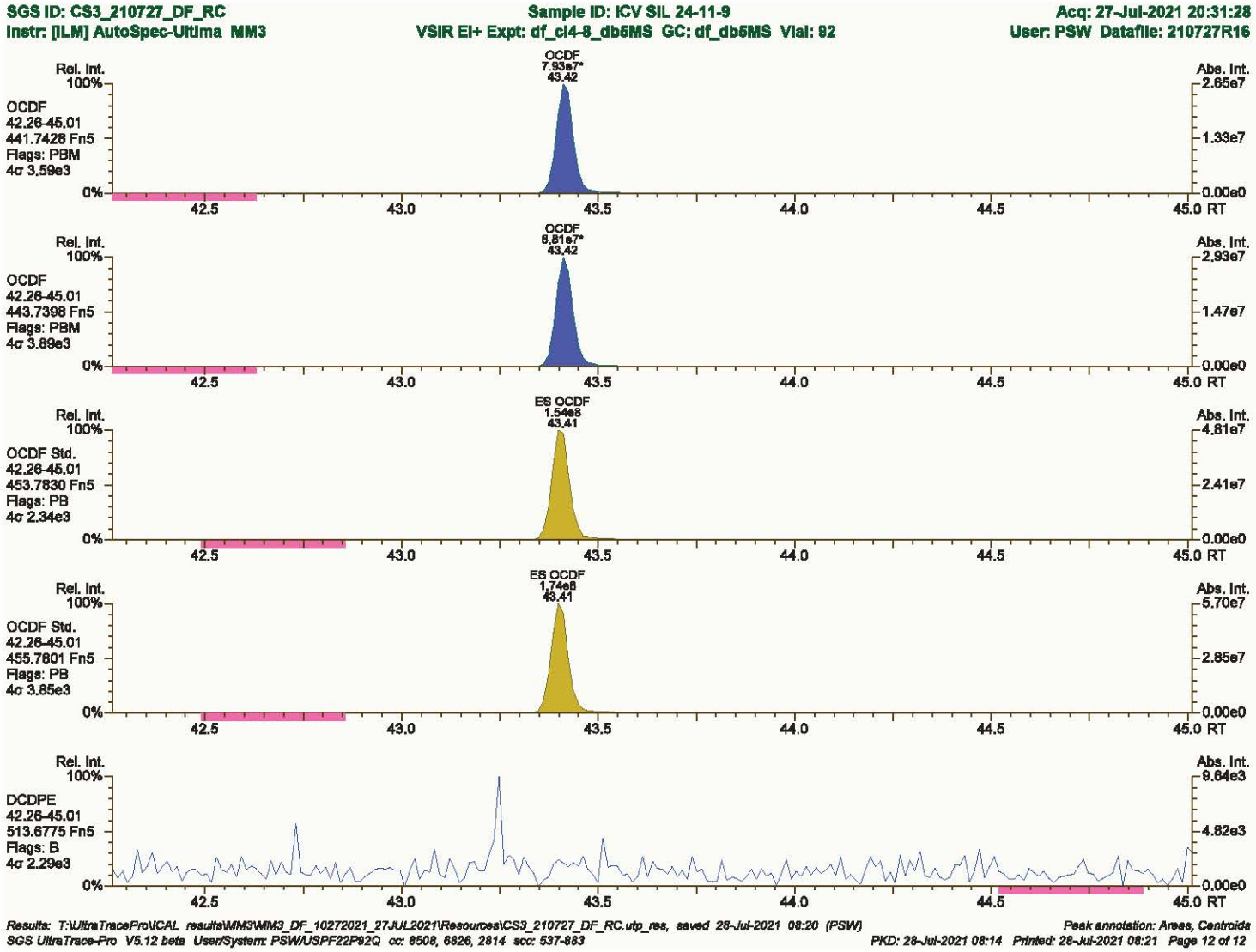


Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5316, 2043, 4878 scc: 537-883 *PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 9 of 12*


SGS ID: CS3_210727_DF_RC
Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 6.73e3
123478F 7.12e7 36.69
123678F 7.48e7* 36.83
234678F 6.99e7 37.50
123789F 6.28e7* 38.43
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 4.27e3
123478F 5.61e7 36.69
123678F 5.95e7* 36.83
234678F 5.63e7 37.50
123789F 5.02e7* 38.43
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 4.32e3
ES 123478F 7.01e7 36.67
ES 123678F 8.37e7 36.81
ES 234678F 7.45e7* 37.48
ES 123789F 7.05e7* 38.41
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.73e3
ES 123478F 1.34e8 36.67
ES 123678F 1.58e8 36.81
ES 234678F 1.42e8* 37.48
ES 123789F 1.35e8* 38.41
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.28e3
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

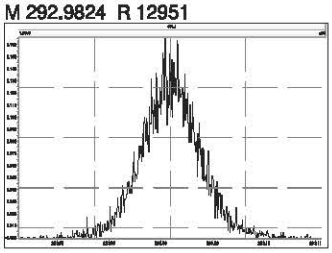

SGS ID: CS3_210727_DF_RC
Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
Rel. Int.
Abs. Int.
1234678F
5.94e7
39.77
1234789F
5.03e7
41.12
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.55e4
2.35e7
1.18e7
0.00e0
RT
1234678F
5.82e7
39.77
1234789F
4.90e7
41.12
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.84e4
2.34e7
1.17e7
ES 1234678F
5.54e7
39.76
ES 1234789F
4.80e7
41.11
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.02e4
2.17e7
1.08e7
ES 1234678F
1.21e8
39.76
ES 1234789F
1.06e8
41.11
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 4.88e4
4.69e7
2.35e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.57e3
6.98e3
3.49e3
100%
0%
40.0
40.5
41.0
41.5
42.0
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6305, 0776, 6253 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 11 of 12


SGS ID: CS3_210727_DF_RC
Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
OCDF
7.93e7*
43.42
Rel. Int.
100%
Abs. Int.
2.65e7
1.33e7
0.00e0
OCDF
42.26-45.01
441.7428 Fn5
Flags: PBM
4σ 3.59e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.81e7*
43.42
Rel. Int.
100%
Abs. Int.
2.93e7
1.47e7
0.00e0
OCDF
42.26-45.01
443.7398 Fn5
Flags: PBM
4σ 3.89e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.54e8
43.41
Rel. Int.
100%
Abs. Int.
4.81e7
2.41e7
0.00e0
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 2.34e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.74e8
43.41
Rel. Int.
100%
Abs. Int.
5.70e7
2.85e7
0.00e0
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 3.85e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
Abs. Int.
9.64e3
4.82e3
0.00e0
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.29e3
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\CAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8508, 6826, 2814 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 12 of 12

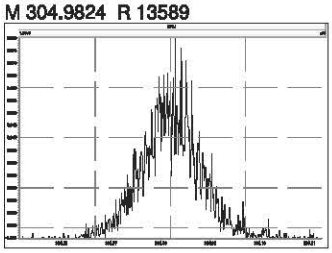
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:15:38 Eastern Daylight Time

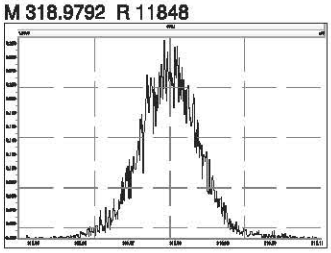
M 292.9824 R 12951



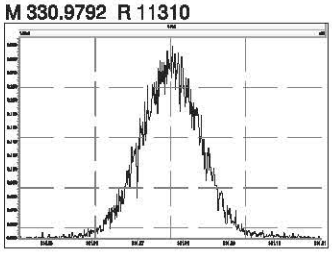
M 304.9824 R 13589



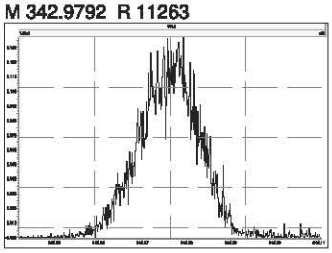
M 318.9792 R 11848



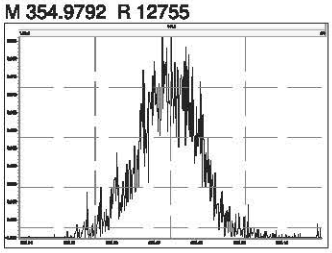
M 330.9792 R 11310



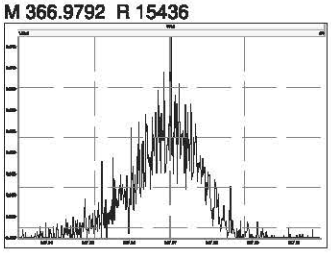
M 342.9792 R 11263



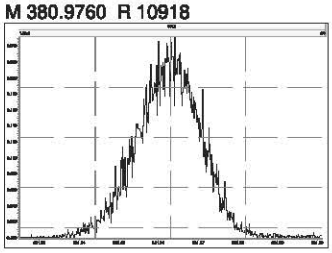
M 354.9792 R 12755



M 366.9792 R 15436



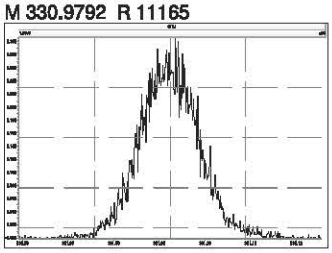
M 380.9760 R 10918



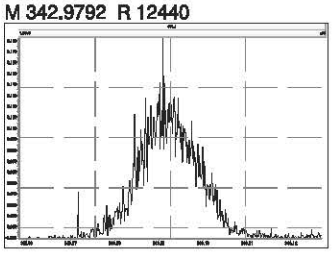
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:03 Eastern Daylight Time

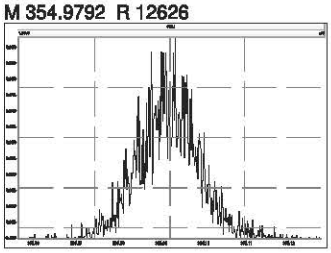
M 330.9792 R 11165



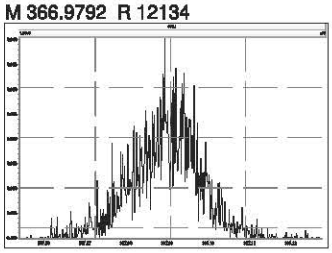
M 342.9792 R 12440



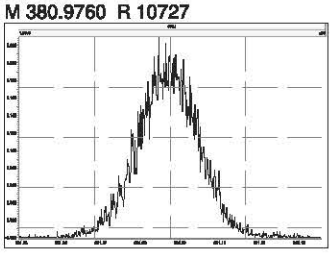
M 354.9792 R 12626



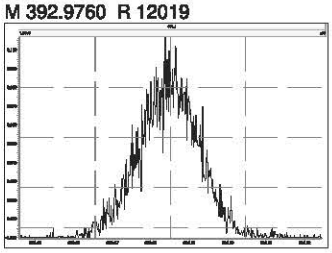
M 366.9792 R 12134



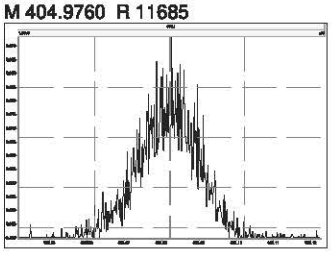
M 380.9760 R 10727



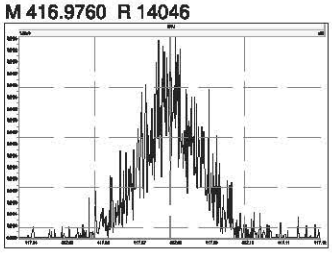
M 392.9760 R 12019



M 404.9760 R 11685



M 416.9760 R 14046



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

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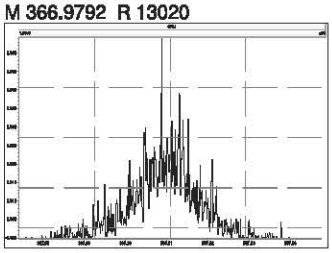
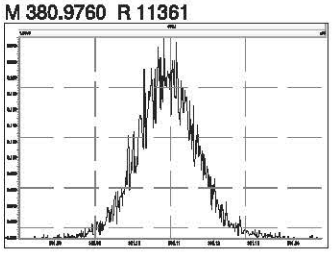
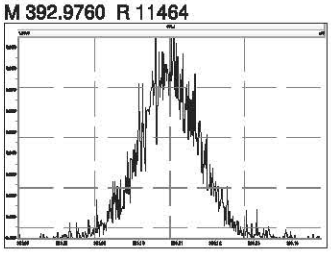
M 366.9792 R 13020



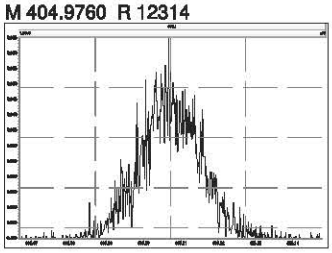
M 380.9760 R 11361



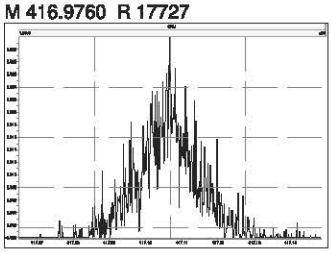
M 392.9760 R 11464



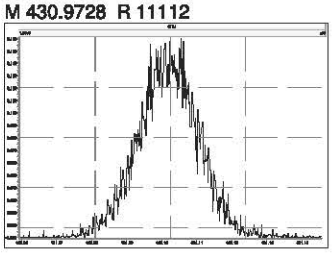
M 404.9760 R 12314



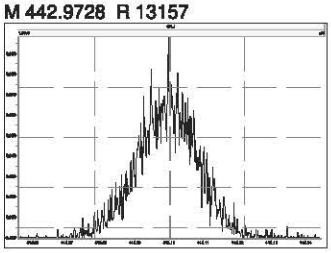
M 416.9760 R 17727



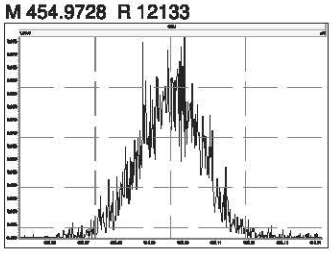
M 430.9728 R 11112



M 442.9728 R 13157



M 454.9728 R 12133



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

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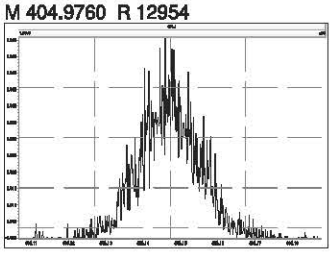
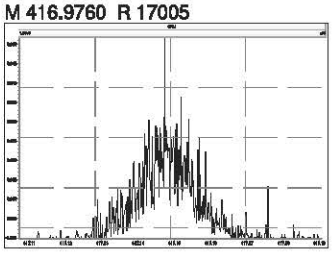
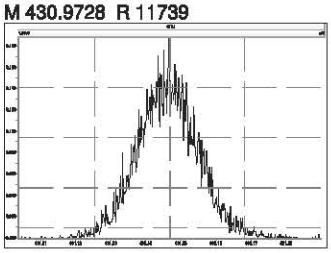
M 404.9760 R 12954



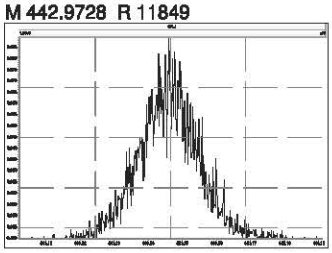
M 416.9760 R 17005



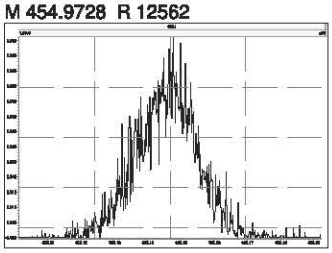
M 430.9728 R 11739



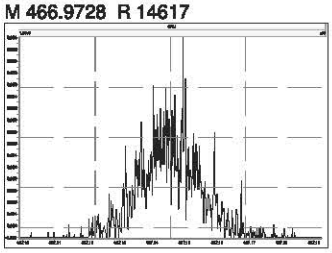
M 442.9728 R 11849



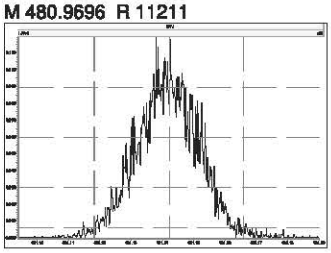
M 454.9728 R 12562



M 466.9728 R 14617



M 480.9696 R 11211



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

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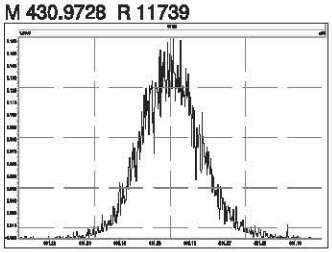
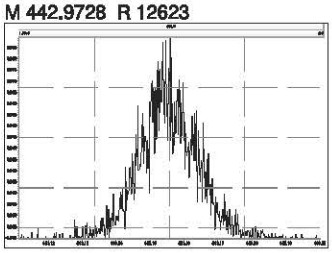
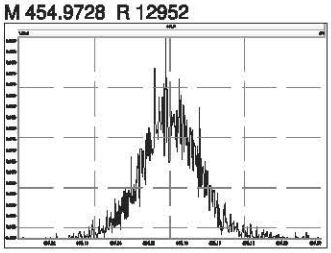
M 430.9728 R 11739



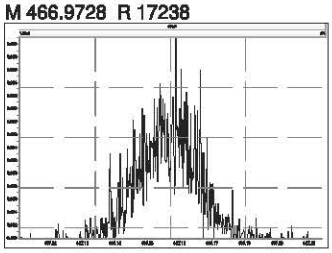
M 442.9728 R 12623



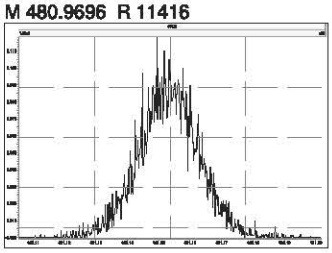
M 454.9728 R 12952



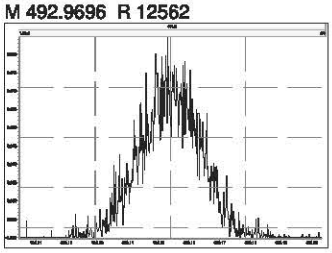
M 466.9728 R 17238



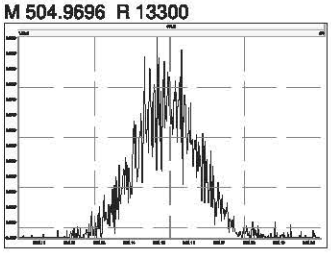
M 480.9696 R 11416



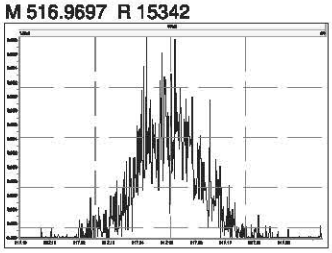
M 492.9696 R 12562



M 504.9696 R 13300



M 516.9697 R 15342



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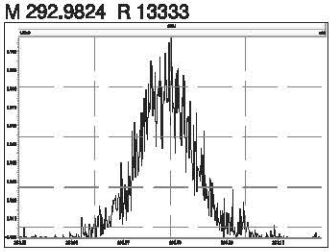
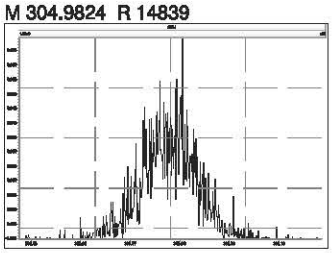
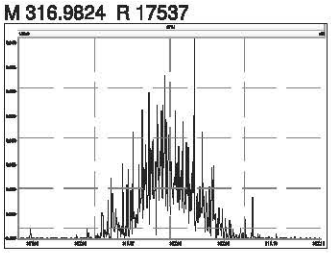
M 292.9824 R 13333



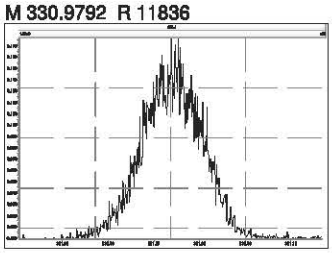
M 304.9824 R 14839



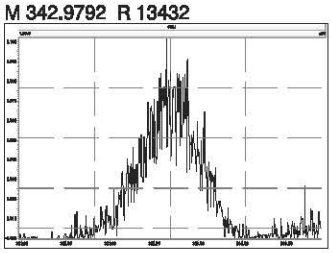
M 316.9824 R 17537



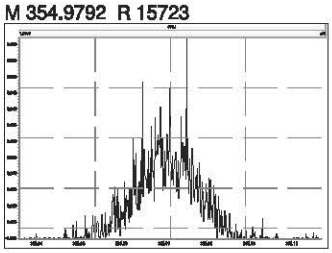
M 330.9792 R 11836



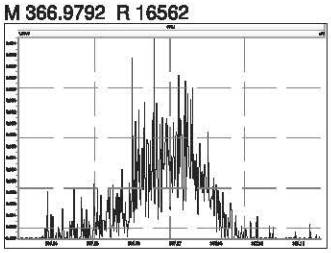
M 342.9792 R 13432



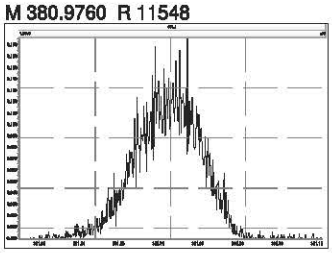
M 354.9792 R 15723



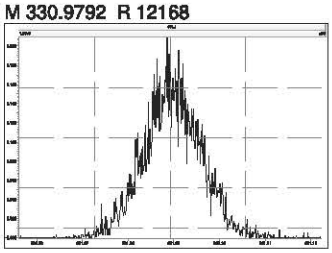
M 366.9792 R 16562



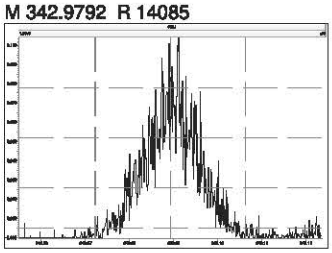
M 380.9760 R 11548



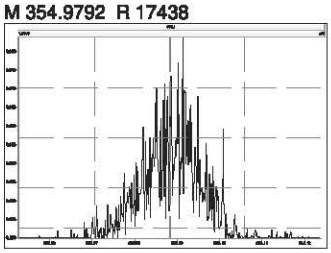
M 330.9792 R 12168



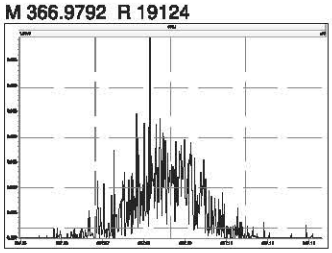
M 342.9792 R 14085



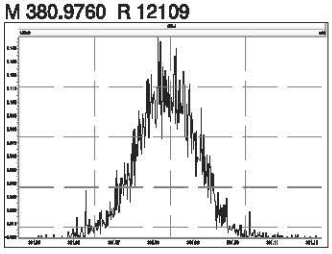
M 354.9792 R 17438



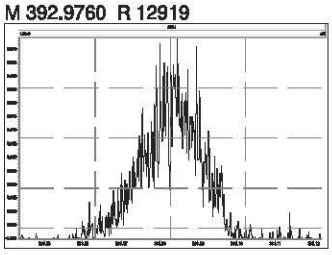
M 366.9792 R 19124



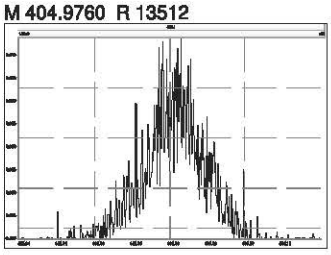
M 380.9760 R 12109



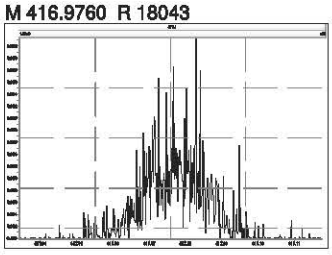
M 392.9760 R 12919



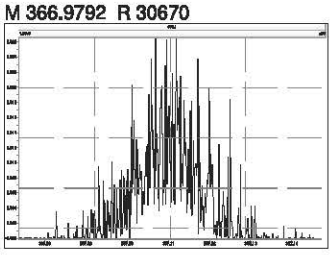
M 404.9760 R 13512



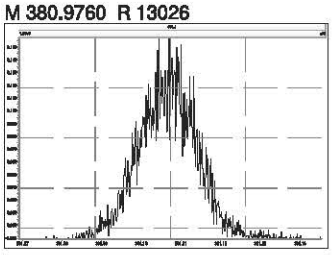
M 416.9760 R 18043



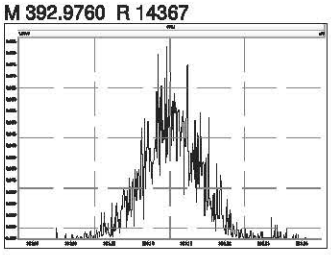
M 366.9792 R 30670



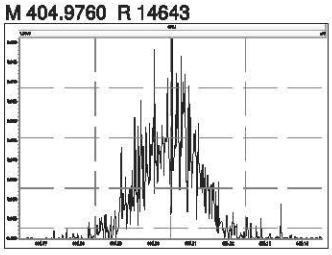
M 380.9760 R 13026



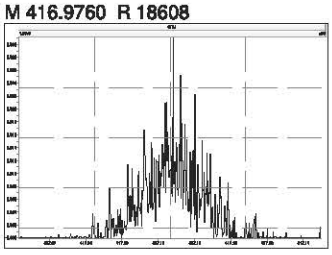
M 392.9760 R 14367



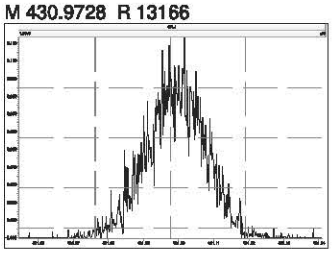
M 404.9760 R 14643



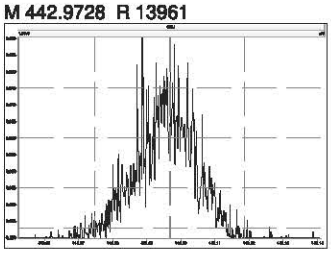
M 416.9760 R 18608



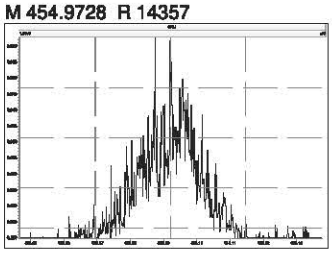
M 430.9728 R 13166



M 442.9728 R 13961



M 454.9728 R 14357



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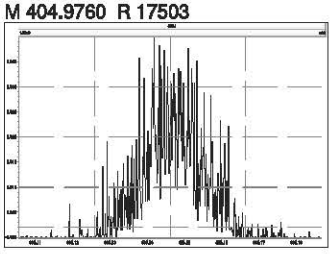
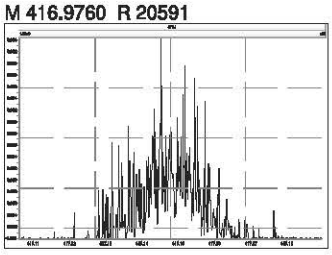
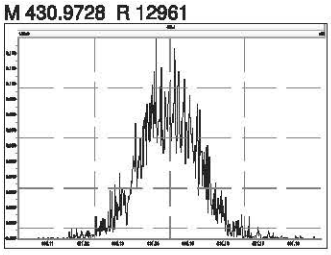
M 404.9760 R 17503



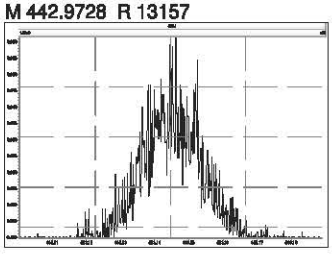
M 416.9760 R 20591



M 430.9728 R 12961



M 442.9728 R 13157



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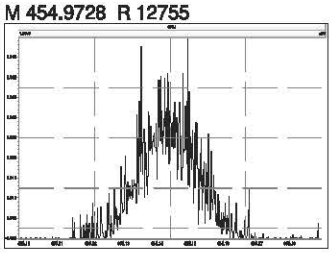

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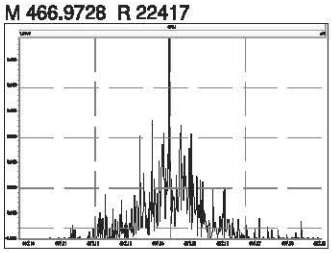

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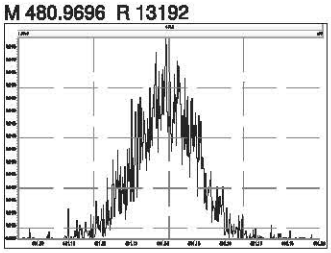

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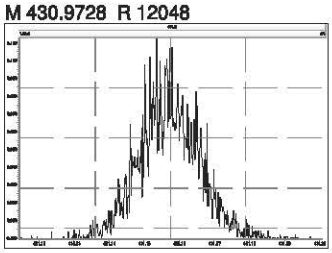

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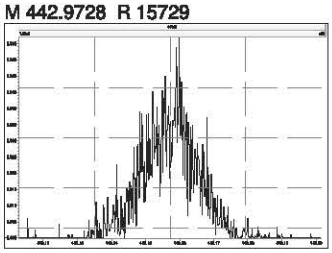

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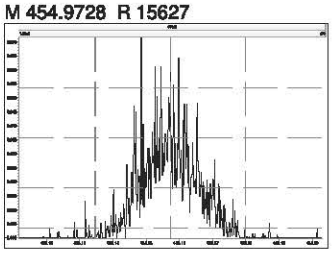

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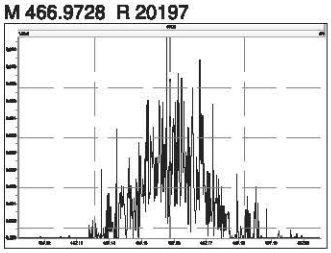

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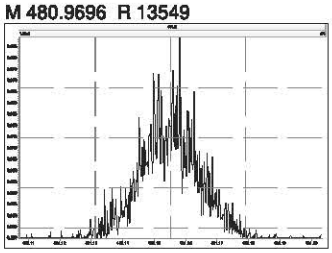

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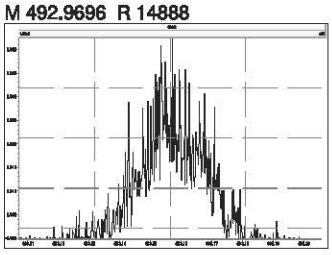

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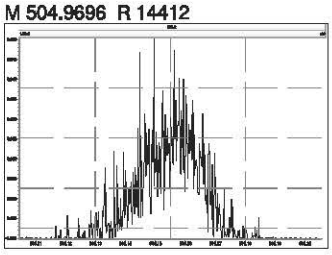

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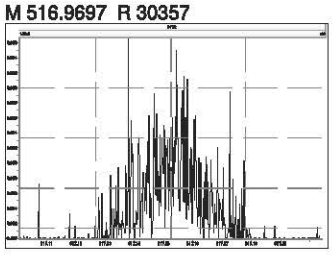

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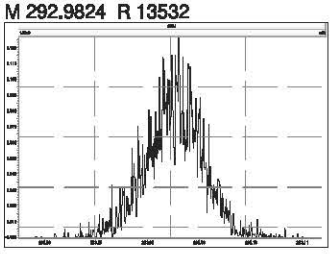

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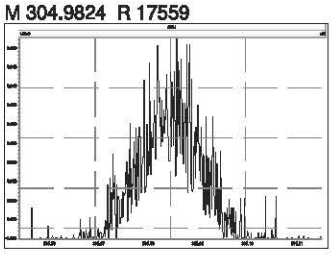

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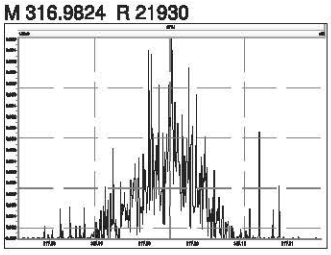

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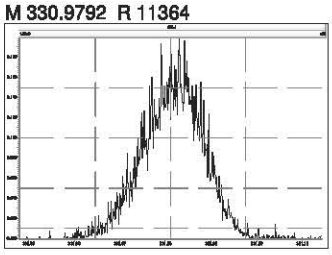

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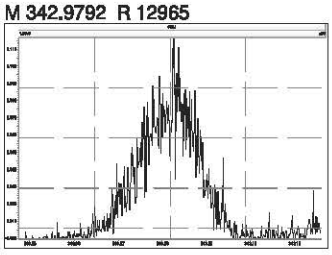

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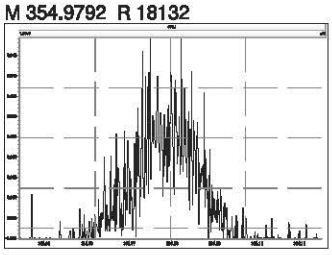

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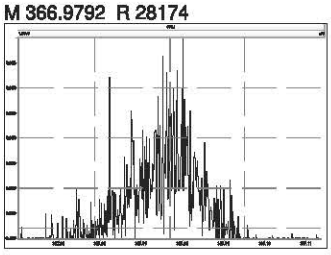

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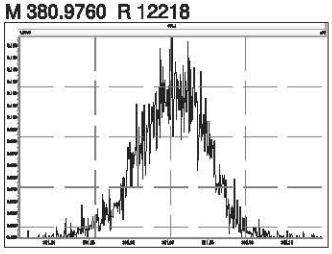

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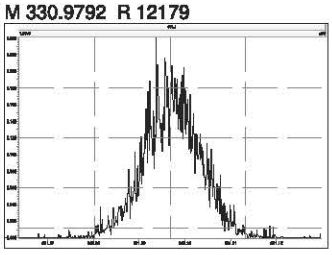

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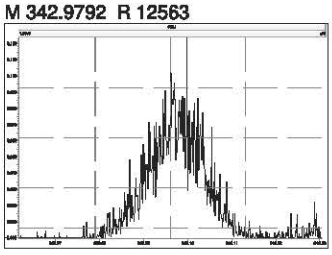

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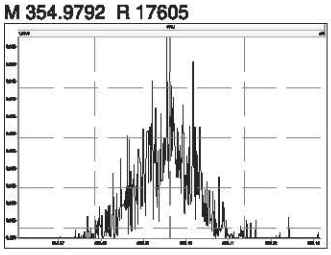

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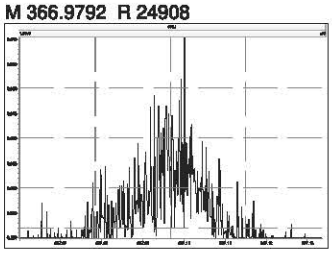

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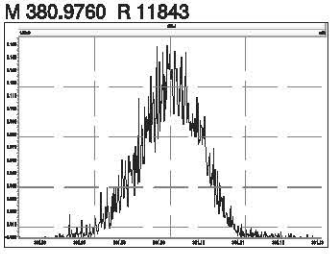

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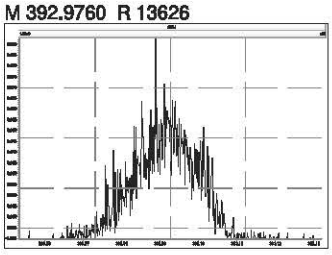

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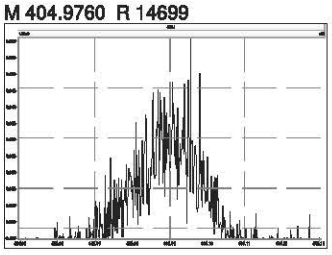

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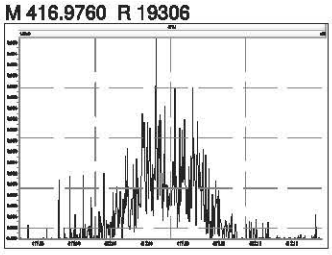

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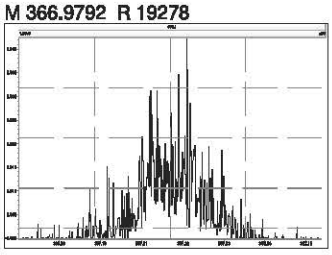

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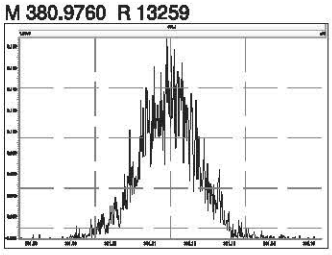

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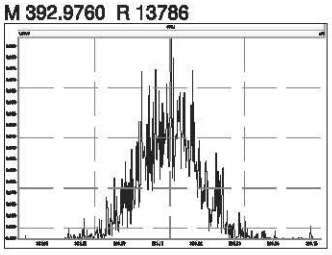

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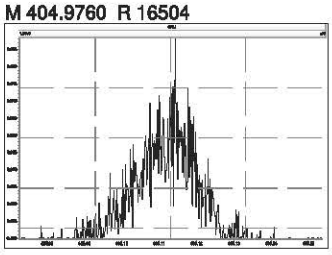

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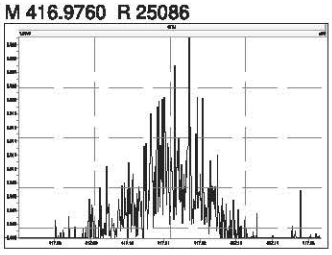

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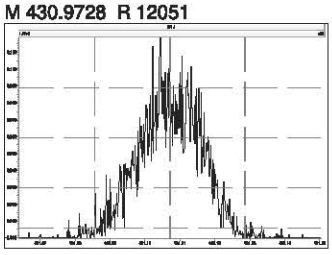

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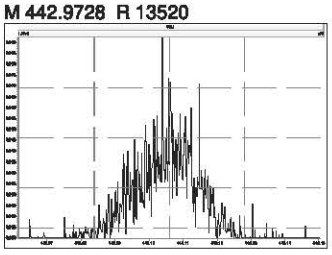

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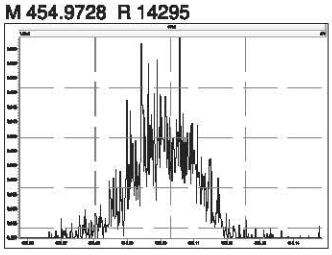

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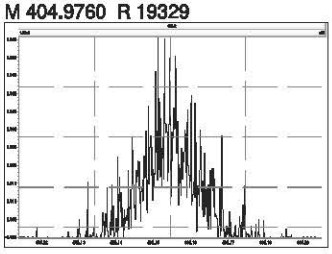

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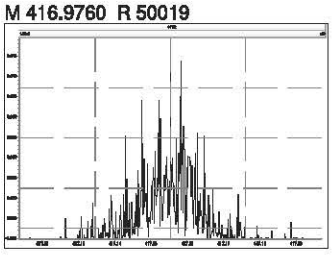

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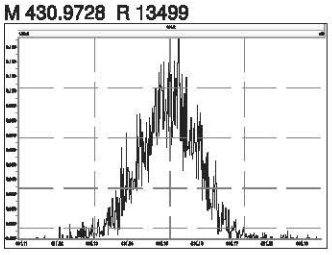

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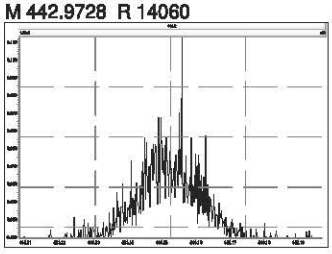

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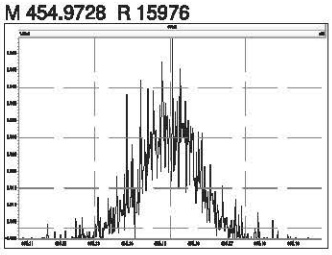

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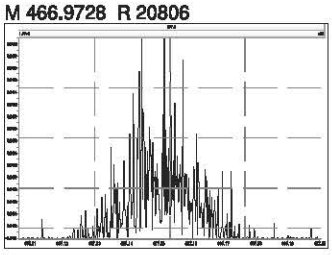

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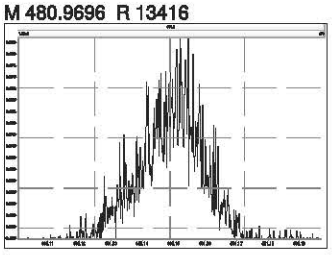

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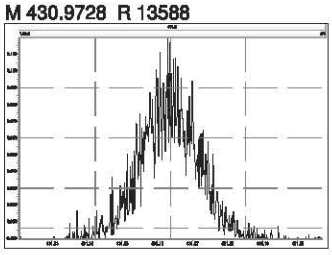

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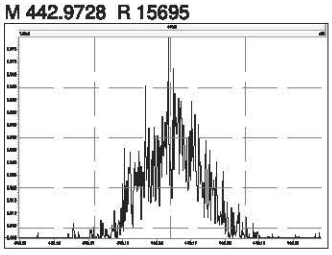

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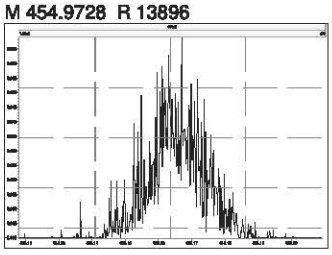

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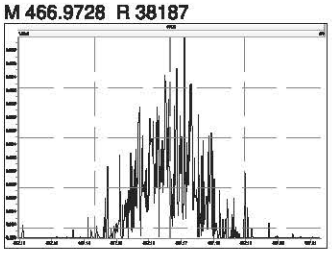

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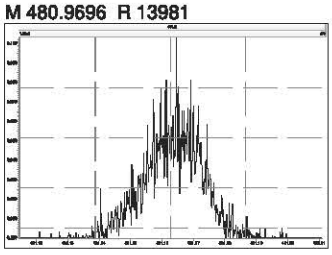

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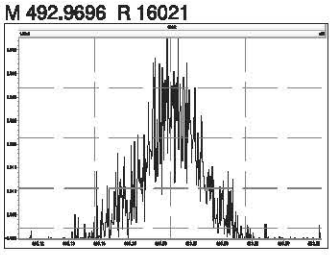

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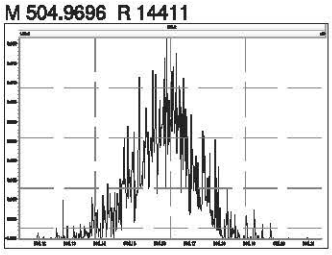

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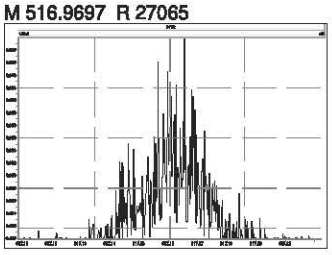

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REVIEWED
Tamara Burkamper , 12/17/2021, 2:10:26 PM

Acq'd: 16 Dec 2021 20:28 PSW

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Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

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12378-PeCDD	33.60		1.0005	1.0004	-0.2	1.63E+07	1.60	Y	1.06	45	80116.05	2.19
123478-HxCDD	37.47		1.0003	1.0004	+0.2	1.61E+07	1.26	Y	1.06	50.8	23095.419	0.623
123678-HxCDD	37.59		1.0033	1.0036	+0.7	1.77E+07	1.28	Y	1.08	53.7	23095.419	0.593
123789-HxCDD	37.90		1.0110	1.0117	+1.6	1.73E+07	1.25	Y	1.02	48.8	23095.419	0.621
1234678-HpCDD	40.52		1.0003	1.0003	0	1.23E+07	1.09	Y	0.97	52.3	7443.01	0.207
OCDD	43.06		1.0003	1.0002	-0.3	9.32E+06	0.87	Y	1.07	102	9470.705	0.818
2378-TCDF	27.40		1.0006	1.0008	+0.3	5.87E+06	0.79	Y	0.96	11.3	31706.57	0.767
12378-PeCDF	32.16		1.0006	1.0006	0	2.35E+07	1.62	Y	0.95	51.4	22020.344	0.462
23478-PeCDF	33.27		1.0006	1.0005	-0.2	2.28E+07	1.58	Y	0.94	54.3	22020.344	0.484
123478-HxCDF	36.49		1.0004	1.0005	+0.2	2.05E+07	1.27	Y	1.23	49.7	24879.72	0.481
123678-HxCDF	36.63		1.0004	1.0005	+0.2	2.50E+07	1.27	Y	1.13	51	24879.72	0.425
234678-HxCDF	37.29		1.0005	1.0005	0	2.09E+07	1.24	Y	1.15	50.4	24879.72	0.561
123789-HxCDF	38.25		1.0005	1.0003	-0.5	1.55E+07	1.24	Y	1.14	44.9	24879.72	0.661
1234678-HpCDF	39.62		1.0003	1.0002	-0.2	2.46E+07	1.06	Y	1.36	48.5	16266.627	0.23
1234789-HpCDF	40.96		1.0003	1.0003	0	1.11E+07	1.06	Y	1.30	49.4	16266.627	0.563
OCDF	43.24		1.0002	1.0002	0	8.96E+06	0.90	Y	1.03	106	6592.658	0.593

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0238	+0.2	3.78E+07	0.79	Y	1.03	86.1
ES 12378-PeCDD	33.59	1.2158	1.2175	+3.4	3.42E+07	1.55	Y	1.03	78
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	3.01E+07	1.33	Y	0.99	94.1
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	3.06E+07	1.21	Y	0.97	97.7
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	3.48E+07	1.26	Y	1.12	96.4
ES 1234678-HpCDD	40.50	1.0713	1.0722	+2.2	2.41E+07	1.10	Y	0.99	75.6
ES OCDD	43.05	1.1385	1.1395	+2.6	1.71E+07	0.90	Y	0.78	34.2
ES 2378-TCDF	27.38	1.0519	1.0526	+1.1	5.40E+07	0.88	Y	1.08	77.8
ES 12378-PeCDF	32.14	1.2331	1.2357	+5.0	4.83E+07	1.57	Y	0.93	80.7
ES 23478-PeCDF	33.25	1.2754	1.2783	+5.8	4.47E+07	1.59	Y	0.92	75.6
ES 123478-HxCDF	36.47	0.9656	0.9655	-0.2	3.34E+07	0.54	Y	1.14	91
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	4.33E+07	0.52	Y	1.30	104
ES 234678-HxCDF	37.27	0.9869	0.9867	-0.4	3.60E+07	0.54	Y	1.20	93.1
ES 123789-HxCDF	38.24	1.0121	1.0123	+0.5	3.05E+07	0.56	Y	1.14	83.5
ES 1234678-HpCDF	39.61	1.0478	1.0487	+2.1	3.73E+07	0.48	Y	0.95	122
ES 1234789-HpCDF	40.95	1.0832	1.0841	+2.2	1.73E+07	0.45	Y	0.85	63.5
ES OCDF	43.23	1.1434	1.1443	+2.3	1.64E+07	0.89	Y	0.93	27.6

Lab ID: OPR1_18721_DF | Acq'd: 16 Dec 2021 20:28 PSW | Wt/Vol: 1 uL | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 0_18721_OPR001 | UTP: 17-Dec-2021 09:57:36 PSW | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 621-385-DYX

Datafile: 211216R13 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.59		-	-	-	4.25E+07	0.80	Y	-	-
JS 1234-TCDF	26.01		-	-	-	6.41E+07	0.85	Y	-	-
JS 123467-HxCDD	37.78		-	-	-	1.61E+07	1.36	Y	-	-
CS 37Cl-2378-TCDD	28.27		1.0245	1.0247	+0.3	1.75E+07	n/a	-	1.31	78.6
CS 12347-PeCDD	33.09		1.1978	1.1994	+3.2	3.07E+07	1.57	Y	0.89	81
CS 12346-PeCDF	31.62		1.2130	1.2155	+4.7	4.63E+07	1.60	Y	0.87	83.3
CS 123469-HxCDF	36.92		0.9775	0.9774	-0.2	3.76E+07	0.56	Y	1.09	107
CS 1234689-HpCDF	40.00		1.0580	1.0588	+1.9	2.66E+07	0.48	Y	0.86	95.9
~~SS 37Cl-2378-TCDD~~	~~28.27~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~1.75E+07~~	~~n/a~~		~~1.26~~	~~91.0~~
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1994~~	~~+3.2~~	~~3.07E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~104~~
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2155~~	~~+4.7~~	~~4.63E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~103~~
~~SS 123469-HxCDF~~	~~36.92~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~3.76E+07~~	~~0.56~~	~~Y~~	~~0.84~~	~~103~~
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0588~~	~~+1.9~~	~~2.66E+07~~	~~0.48~~	~~Y~~	~~0.91~~	~~78.2~~

Totals	Conc	EMPC
Total TCDD	24.7	48.1
Total PeCDD	68.5	68.5
Total HxCDD	166	166
Total HpCDD	65.3	65.3
Total Tetra-Octa Dioxins	427	450
Total TCDF	60.6	60.6
Total PeCDF	221	221
Total HxCDF	315	315
Total HpCDF	97.9	97.9
Total Tetra-Octa Furans	801	801
Total Tetra-Octa Dioxins & Furans	1230	1250

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.868	0.87
Response	5.76E+06	5.75E+06

Lab ID: OPR1_18721_DF | Acq'd: 16 Dec 2021 20:28 PSW | Wt/Vol: 1 uL | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 0_18721_OPR001 | UTP: 17-Dec-2021 09:57:36 PSW | J-level: 0.25 pg/uL Split: 1 | Checkcode: 621-385-DYX

Datafile: 211216R13 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.59		0.8726	0.8708	-2.7	6.81E+06	0.85	Y	1.34	13.4	78708	1.74
1379-TCDD	NotFnd		0.8851						1.34		78708	1.74
1369-TCDD	NotFnd		0.9002						1.34		78708	1.74
1469-TCDD	NotFnd		0.9275						1.34		78708	1.74
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		78708	1.74
1378-TCDD	NotFnd		0.9427						1.34		78708	1.74
1268-TCDD	NotFnd		0.9498						1.34		78708	1.74
1478-TCDD	NotFnd		0.9584						1.34		78708	1.74
1279-TCDD	NotFnd		0.9644						1.34		78708	1.74
1234/1269-TCDD	NotFnd		0.9766						1.34		78708	1.74
1236-TCDD	NotFnd		0.9813						1.34		78708	1.74
1237/1238-TCDD	NotFnd		0.9906						1.34		78708	1.74
1239-TCDD	28.10	EMPC	0.9952	0.9949	-0.5	4.85E+06	0.91	N	1.34	9.55	78708	1.74
2378-TCDD	**28.27**		**1.0008**	1.0008	**0**	5.75E+06	0.87	Y	**1.34**	**11.3**	**78708**	**1.74**
1278-TCDD	NotFnd		1.0122						1.34		78708	1.74
1267-TCDD	NotFnd		1.0168						1.34		78708	1.74
1289-TCDD	29.23	EMPC	1.0349	1.0349	0	7.03E+06	0.93	N	1.34	13.8	78708	1.74
12479/12468-PeCDD	31.11		0.9267	0.9262	-0.9	3.89E+06	1.76	Y	1.06	10.7	80116.05	2.19
12469-PeCDD	NotFnd		0.9425						1.06		80116.05	2.19
12368-PeCDD	NotFnd		0.9588						1.06		80116.05	2.19
12478-PeCDD	NotFnd		0.9643						1.06		80116.05	2.19
12379-PeCDD	NotFnd		0.9673						1.06		80116.05	2.19
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		80116.05	2.19
12346/12347-PeCDD	NotFnd		0.9859						1.06		80116.05	2.19
12378-PeCDD	33.60		**1.0005**	**1.0004**	**-0.2**	**1.63E+07**	**1.60**	**Y**	**1.06**	**45**	**80116.05**	**2.19**
12367-PeCDD	NotFnd		1.0032						1.06		80116.05	2.19
12389-PeCDD	34.04		1.0135	1.0134	-0.2	4.62E+06	1.68	Y	1.06	12.7	80116.05	2.19
124679/124689-HxCDD	35.76		0.9544	0.9547	+0.6	4.32E+06	1.22	Y	1.05	12.9	23095.419	0.611
123468-HxCDD	NotFnd		0.9716						1.05		23095.419	0.611
123679/123689-HxCDD	NotFnd		0.9793						1.05		23095.419	0.611
123469-HxCDD	NotFnd		0.9829						1.05		23095.419	0.611
123478-HxCDD	37.47		**1.0003**	**1.0004**	**+0.2**	**1.61E+07**	**1.26**	**Y**	1.06	**50.8**	**23095.419**	**0.623**
123678-HxCDD	37.59		**1.0033**	**1.0036**	**+0.7**	**1.77E+07**	**1.28**	**Y**	1.08	**53.7**	**23095.419**	**0.593**
123467-HxCDD	NotFnd		1.0084						1.05		23095.419	0.611
123789-HxCDD	37.90		**1.0110**	**1.0117**	**+1.6**	**1.73E+07**	**1.25**	**Y**	1.02	**48.8**	**23095.419**	**0.621**

Lab ID: OPR1_18721_DF | Acq'd: 16 Dec 2021 20:28 PSW | Wt/Vol: 1 uL | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 0_18721_OPR001 | UTP: 17-Dec-2021 09:57:36 PSW | J-level: 0.25 pg/uL Split: 1 | Checkcode: 621-385-DYX

Datafile: 211216R13 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	3.04E+06	1.07	Y	0.97	13	7443.01	0.207
1234678-HpCDD	**40.52**		**1.0003**	**1.0003**	**0**	**1.23E+07**	**1.09**	**Y**	**0.97**	**52.3**	**7443.01**	**0.207**
OCDD	**43.06**		**1.0003**	**1.0002**	**-0.3**	**9.32E+06**	**0.87**	**Y**	**1.07**	**102**	**9470.705**	**0.818**
OCDD-a	43.05	EMPC	1.0001	1.0001	0	5.09E+05	1.89	N	0.07	90.3	9067.566	12.7
1368-TCDF	22.48		0.8230	0.8209	-2.8	7.88E+06	0.77	Y	0.96	15.2	31706.57	0.767
1468-TCDF	NotFnd		0.8443						0.96		31706.57	0.767
2468-TCDF	23.71		0.8672	0.8658	-2.0	1.79E+06	0.81	Y	0.96	3.44	31706.57	0.767
1346/1246-TCDF	NotFnd		0.8802						0.96		31706.57	0.767
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		31706.57	0.767
1348-TCDF	NotFnd		0.8952						0.96		31706.57	0.767
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		31706.57	0.767
1268-TCDF	NotFnd		0.9136						0.96		31706.57	0.767
1467-TCDF	NotFnd		0.9185						0.96		31706.57	0.767
1478-TCDF	NotFnd		0.9247						0.96		31706.57	0.767
1369/1237-TCDF	NotFnd		0.9381						0.96		31706.57	0.767
2467-TCDF	NotFnd		0.9427						0.96		31706.57	0.767
2368-TCDF	NotFnd		0.9484						0.96		31706.57	0.767
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		31706.57	0.767
1278-TCDF	NotFnd		0.9682						0.96		31706.57	0.767
1349-TCDF	NotFnd		0.9725						0.96		31706.57	0.767
1267-TCDF	NotFnd		0.9782						0.96		31706.57	0.767
2346/1249-TCDF	NotFnd		0.9846						0.96		31706.57	0.767
2347/1279-TCDF	NotFnd		0.9926						0.96		31706.57	0.767
2348-TCDF	27.29		0.9966	0.9966	0	7.98E+06	0.80	Y	0.96	15.4	31706.57	0.767
2378-TCDF	**27.40**		**1.0006**	**1.0008**	**+0.3**	**5.87E+06**	**0.79**	**Y**	**0.96**	**11.3**	**31706.57**	**0.767**
2367/3467-TCDF	NotFnd		1.0139						0.96		31706.57	0.767
1269-TCDF	NotFnd		1.0226						0.96		31706.57	0.767
1239-TCDF	NotFnd		1.0322						0.96		31706.57	0.767
1289-TCDF	29.41		1.0729	1.0740	+1.9	7.93E+06	0.78	Y	0.96	15.3	31706.57	0.767
13468/12468-PeCDF	29.33		0.9135	0.9125	-1.8	4.59E+07	1.56	Y	0.94	105	9698.53	0.208
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		22020.344	0.473
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		22020.344	0.473
14678-PeCDF	NotFnd		0.9693						0.94		22020.344	0.473
13479-PeCDF	NotFnd		0.9723						0.94		22020.344	0.473
13469/12479-PeCDF	NotFnd		0.9799						0.94		22020.344	0.473
12346-PeCDF	NotFnd		0.9842						0.94		22020.344	0.473

Lab ID: OPR1_18721_DF | Acq'd: 16 Dec 2021 20:28 PSW | Wt/Vol: 1 uL | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 0_18721_OPR001 | UTP: 17-Dec-2021 09:57:36 PSW | J-level: 0.25 pg/uL Split: 1 | Checkcode: 621-385-DYX

Datafile: 211216R13 | Report: 17 Dec 2021 09:58 pw | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		22020.344	0.473
12347-PeCDF	NotFnd		0.9893						0.94		22020.344	0.473
12348-PeCDF	NotFnd		0.9941						0.94		22020.344	0.473
12378-PeCDF	**32.16**		**1.0006**	**1.0006**	**0**	**2.35E+07**	**1.62**	**Y**	**0.95**	**51.4**	**22020.344**	**0.462**
12678/12367-PeCDF	NotFnd		1.0090						0.94		22020.344	0.473
12379-PeCDF	NotFnd		1.0143						0.94		22020.344	0.473
12679-PeCDF	NotFnd		0.9929						0.94		22020.344	0.473
23467/12369-PeCDF	NotFnd		0.9966						0.94		22020.344	0.473
23478-PeCDF	**33.27**		**1.0006**	**1.0005**	**-0.2**	**2.28E+07**	**1.58**	**Y**	**0.94**	**54.3**	**22020.344**	**0.484**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		22020.344	0.473
12349-PeCDF	NotFnd		1.0102						0.94		22020.344	0.473
12389-PeCDF	34.34		1.0325	1.0328	+0.6	4.74E+06	1.48	Y	0.94	10.8	22020.344	0.473
123468-HxCDF	35.12		0.9628	0.9629	+0.2	4.95E+07	1.27	Y	1.16	119	24879.72	0.521
124678/134678-HxCDF	NotFnd		0.9683						1.16		24879.72	0.521
134679-HxCDF	NotFnd		0.9746						1.16		24879.72	0.521
124679-HxCDF	NotFnd		0.9798						1.16		24879.72	0.521
124689-HxCDF	NotFnd		0.9859						1.16		24879.72	0.521
123467-HxCDF	NotFnd		0.9972						1.16		24879.72	0.521
123478-HxCDF	**36.49**		**1.0004**	**1.0005**	**+0.2**	**2.05E+07**	**1.27**	**Y**	**1.23**	**49.7**	**24879.72**	**0.481**
123678-HxCDF	**36.63**		**1.0004**	**1.0005**	**+0.2**	**2.50E+07**	**1.27**	**Y**	**1.13**	**51**	**24879.72**	**0.425**
123479-HxCDF	NotFnd		1.0049						1.16		24879.72	0.521
123469-HxCDF	NotFnd		1.0088						1.16		24879.72	0.521
123679-HxCDF	NotFnd		0.9943						1.16		24879.72	0.521
234678-HxCDF	**37.29**		**1.0005**	**1.0005**	**0**	**2.09E+07**	**1.24**	**Y**	**1.15**	**50.4**	**24879.72**	**0.561**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		24879.72	0.521
123789-HxCDF	**38.25**		**1.0005**	**1.0003**	**-0.5**	**1.55E+07**	**1.24**	**Y**	**1.14**	**44.9**	**24879.72**	**0.661**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		24879.72	0.521
1234678-HpCDF	**39.62**		**1.0003**	**1.0002**	**-0.2**	**2.46E+07**	**1.06**	**Y**	**1.36**	**48.5**	**16266.627**	**0.23**
1234679-HpCDF	NotFnd		1.0067						1.33		16266.627	0.335
1234689-HpCDF	NotFnd		1.0100						1.33		16266.627	0.335
1234789-HpCDF	**40.96**		**1.0003**	**1.0003**	**0**	**1.11E+07**	**1.06**	**Y**	**1.30**	**49.4**	**16266.627**	**0.563**
OCDF	**43.24**		**1.0002**	**1.0002**	**0**	**8.96E+06**	**0.90**	**Y**	**1.03**	**106**	**6592.658**	**0.593**
OCDF-a	43.23		1.0002	1.0001	-0.3	5.26E+05	2.13	Y	0.06	108	7444.873	11.6

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211216R13	Analysis Date:	16-DEC-2021 20:28:53
Lab ID:	OPR1_18721_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11.3	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	45	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	50.8	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	53.7	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	48.8	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	52.3	35	-	70	Y
OCDD	100	102	78	-	144	Y
2,3,7,8-TCDF	10	11.3	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	51.4	40	-	67	Y
2,3,4,7,8-PeCDF	50	54.3	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	49.7	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	51	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	50.4	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	44.9	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	48.5	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	49.4	39	-	69	Y
OCDF	100	106	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613, 10/94

Processed: 17 Dec 2021 09:58 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211216R13	Analysis Date:	16-DEC-2021 20:28:53
Lab ID:	OPR1_18721_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	86.1	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	78	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	94.1	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	97.7	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	96.4	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	75.6	26	-	166	Y
13C-OCDD	200	68.3	26	-	397	Y
13C-2,3,7,8-TCDF	100	77.8	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	80.7	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	75.6	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	91	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	104	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	93.1	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	83.5	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	122	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	63.5	20	-	186	Y
13C-OCDF	200	55.2	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	31.4	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 8, Method 1613. 10/94

Processed: 17 Dec 2021 09:58 Analyst: pw

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211216R13	Analysis Date:	16-DEC-2021 20:28:53
Lab ID:	OPR1_18721_DF		

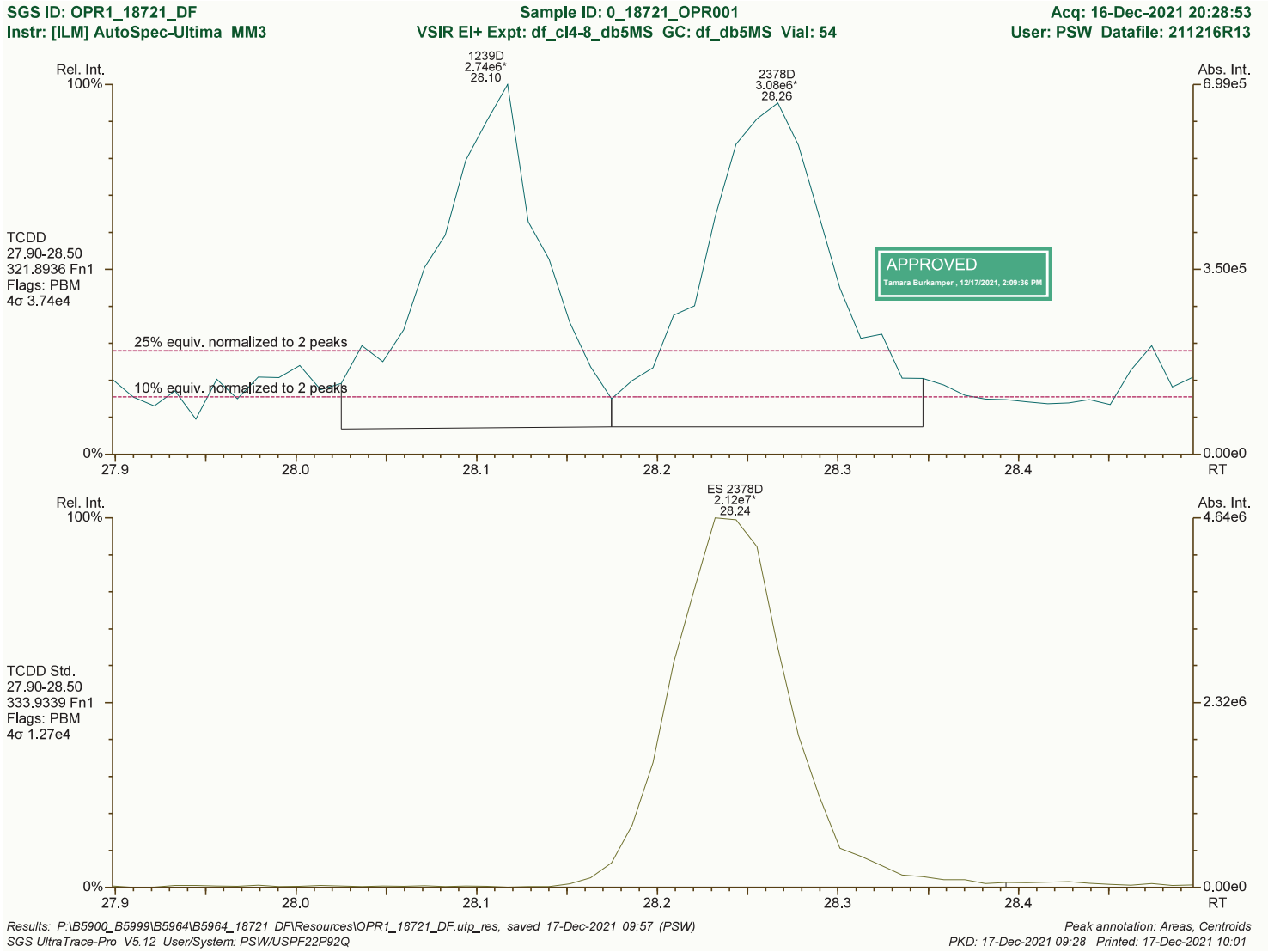
Window Defining Standards Results

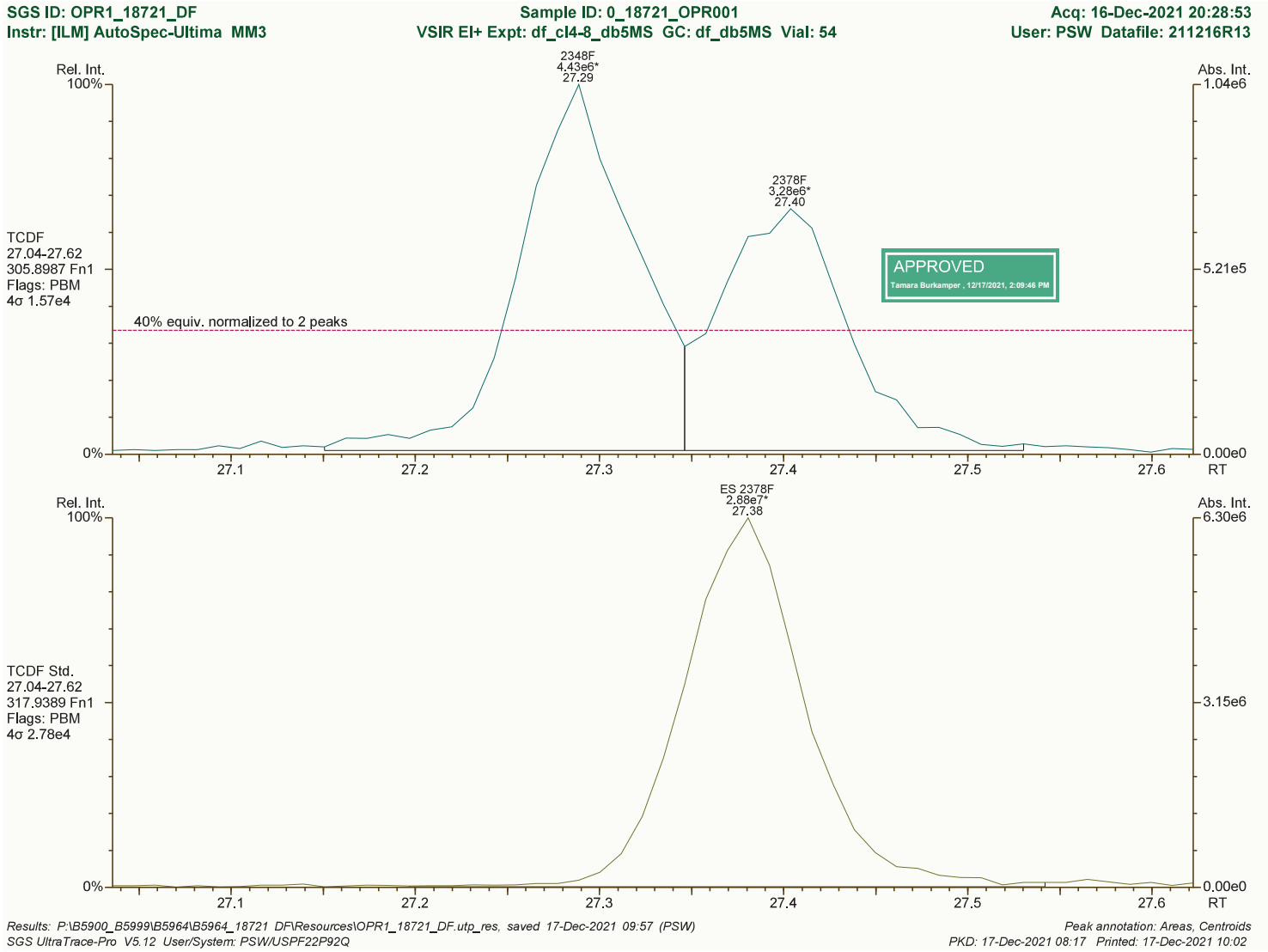
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.59	1289-TCDD	29.23
12479/12468-PeCDD	31.11	12389-PeCDD	34.04
124679/124689-HxCDD	35.76	123789-HxCDD	37.90
1234679-HpCDD	39.87	1234678-HpCDD	40.52
1368-TCDF	22.48	1289-TCDF	29.41
13468/12468-PeCDF	29.33	12389-PeCDF	34.34
123468-HxCDF	35.12	123789-HxCDF	38.25
1234678-HpCDF	39.62	1234789-HpCDF	40.96

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.10	2378-TCDD	28.27
2348-TCDF	27.29	2378-TCDF	27.40

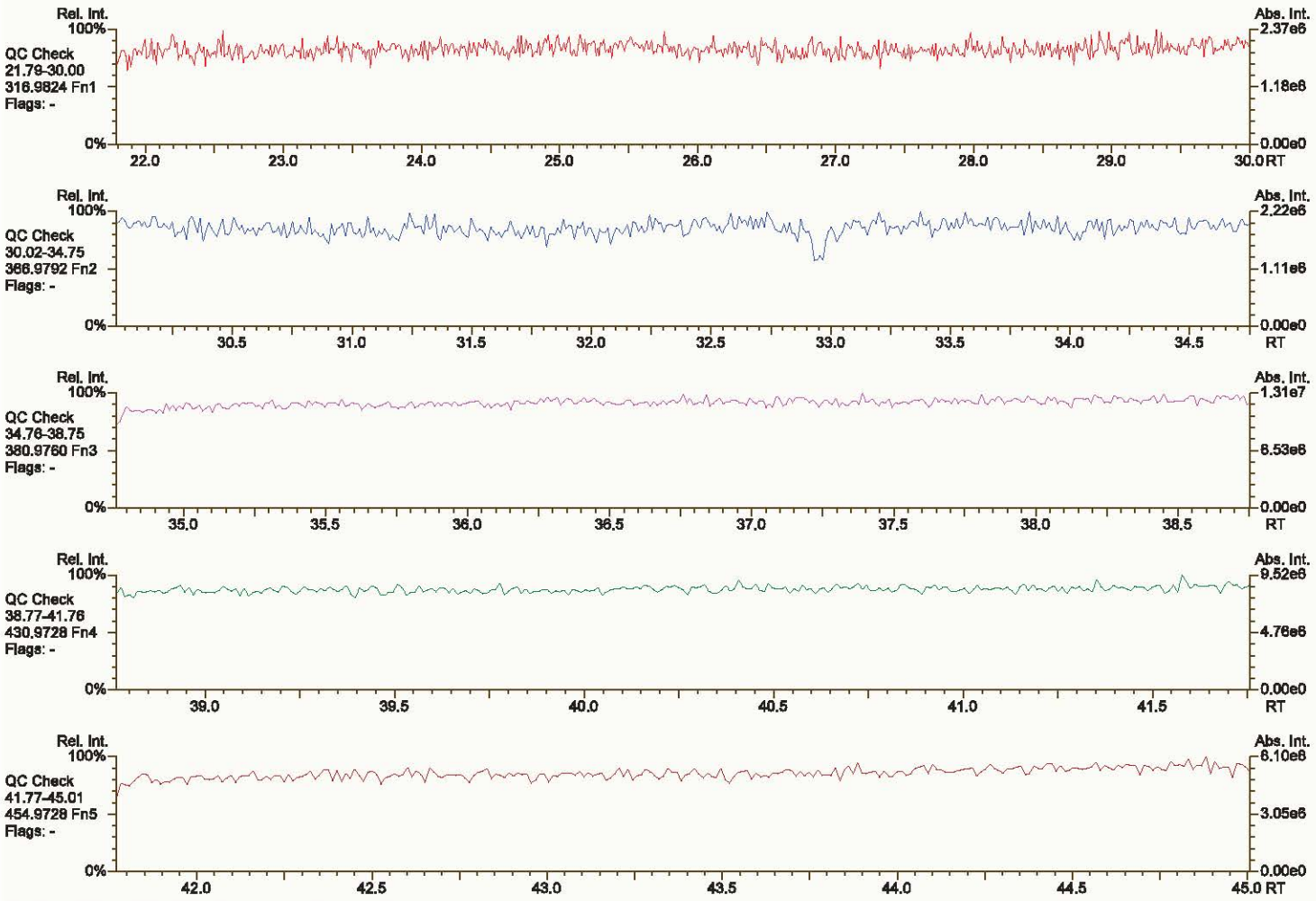
Processed: 17 Dec 2021 09:58 Analyst: pw


SGS ID: OPR1_18721_DF
Sample ID: 0_18721_OPR001
Acq: 16-Dec-2021 20:28:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
User: PSW Datafile: 211216R13
Rel. Int.
100%
1239D
2.74e6*
28.10
2378D
3.08e6*
28.26
Abs. Int.
6.99e5
TCDD
27.90-28.50
321.8936 Fn1
Flags: PBM
4σ 3.74e4
APPROVED
Tamara Burkamper , 12/17/2021, 2:09:36 PM
3.50e5
25% equiv. normalized to 2 peaks
10% equiv. normalized to 2 peaks
0%
0.00e0
27.9
28.0
28.1
28.2
28.3
28.4
RT
Rel. Int.
100%
ES 2378D
2.12e7*
28.24
Abs. Int.
4.64e6
TCDD Std.
27.90-28.50
333.9339 Fn1
Flags: PBM
4σ 1.27e4
2.32e6
0%
0.00e0
27.9
28.0
28.1
28.2
28.3
28.4
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 17-Dec-2021 09:28 Printed: 17-Dec-2021 10:01


SGS ID: OPR1_18721_DF
Sample ID: 0_18721_OPR001
Acq: 16-Dec-2021 20:28:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
User: PSW Datafile: 211216R13
Rel. Int.
100%
2348F
4.43e6*
27.29
2378F
3.28e6*
27.40
Abs. Int.
1.04e6
TCDF
27.04-27.62
305.8987 Fn1
Flags: PBM
4σ 1.57e4
APPROVED
Tamara Burkamper , 12/17/2021, 2:09:46 PM
40% equiv. normalized to 2 peaks
5.21e5
0%
0.00e0
27.1
27.2
27.3
27.4
27.5
27.6
RT
Rel. Int.
100%
ES 2378F
2.88e7*
27.38
Abs. Int.
6.30e6
TCDF Std.
27.04-27.62
317.9389 Fn1
Flags: PBM
4σ 2.78e4
3.15e6
0%
0.00e0
27.1
27.2
27.3
27.4
27.5
27.6
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:02

SGS ID: OPR1_18721_DF | Sample ID: 0_18721_OPR001 | Acq: 16-Dec-2021 20:28:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54 | User: PSW Datafile: 211216R13

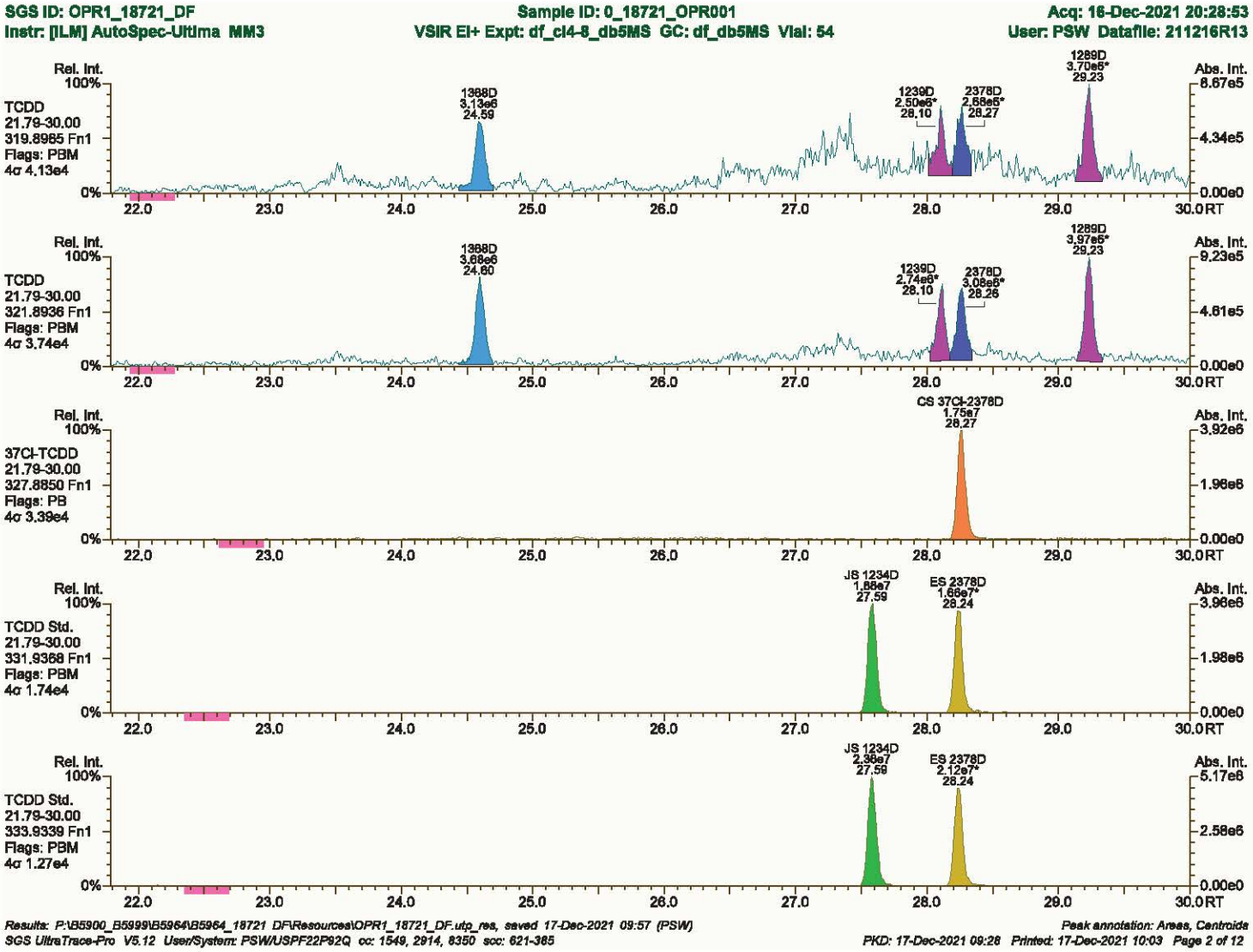


Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 621-385

PKD: n/a Printed: 17-Dec-2021 10:03 Page 1 of 12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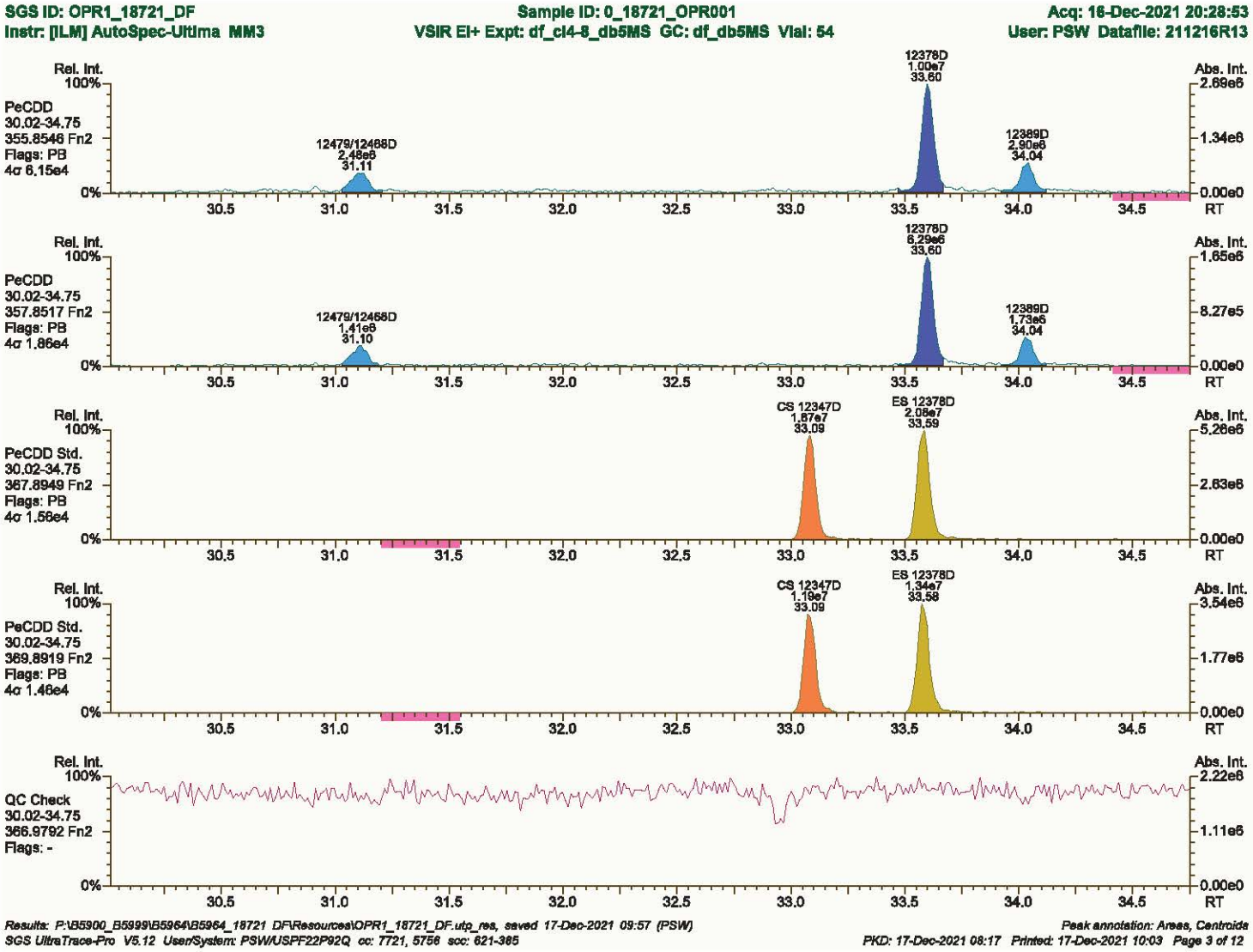
Sample ID: 0_18721_OPR001
Acq: 16-Dec-2021 20:28:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
User: PSW Datafile: 211216R13
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 4.13e4
1368D
3.13e6
24.59
1239D
2.50e6*
28.10
2378D
2.68e5*
28.27
1289D
3.70e5*
29.23
8.67e5
4.34e5
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.74e4
1368D
3.68e6
24.60
1239D
2.74e6*
28.10
2378D
3.08e5*
28.26
1289D
3.97e5*
29.23
9.23e5
4.61e5
0.00e0
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.39e4
CS 37Cl-2378D
1.75e7
28.27
3.92e6
1.96e6
0.00e0
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PBM
4σ 1.74e4
JS 1234D
1.88e7
27.59
ES 2378D
1.66e7*
28.24
3.96e6
1.98e6
0.00e0
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PBM
4σ 1.27e4
JS 1234D
2.36e7
27.59
ES 2378D
2.12e7*
28.24
5.17e6
2.58e6
0.00e0
0%
100%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1549, 2914, 8350 scc: 621-365
PKD: 17-Dec-2021 09:28 Printed: 17-Dec-2021 10:03 Page 2 of 12



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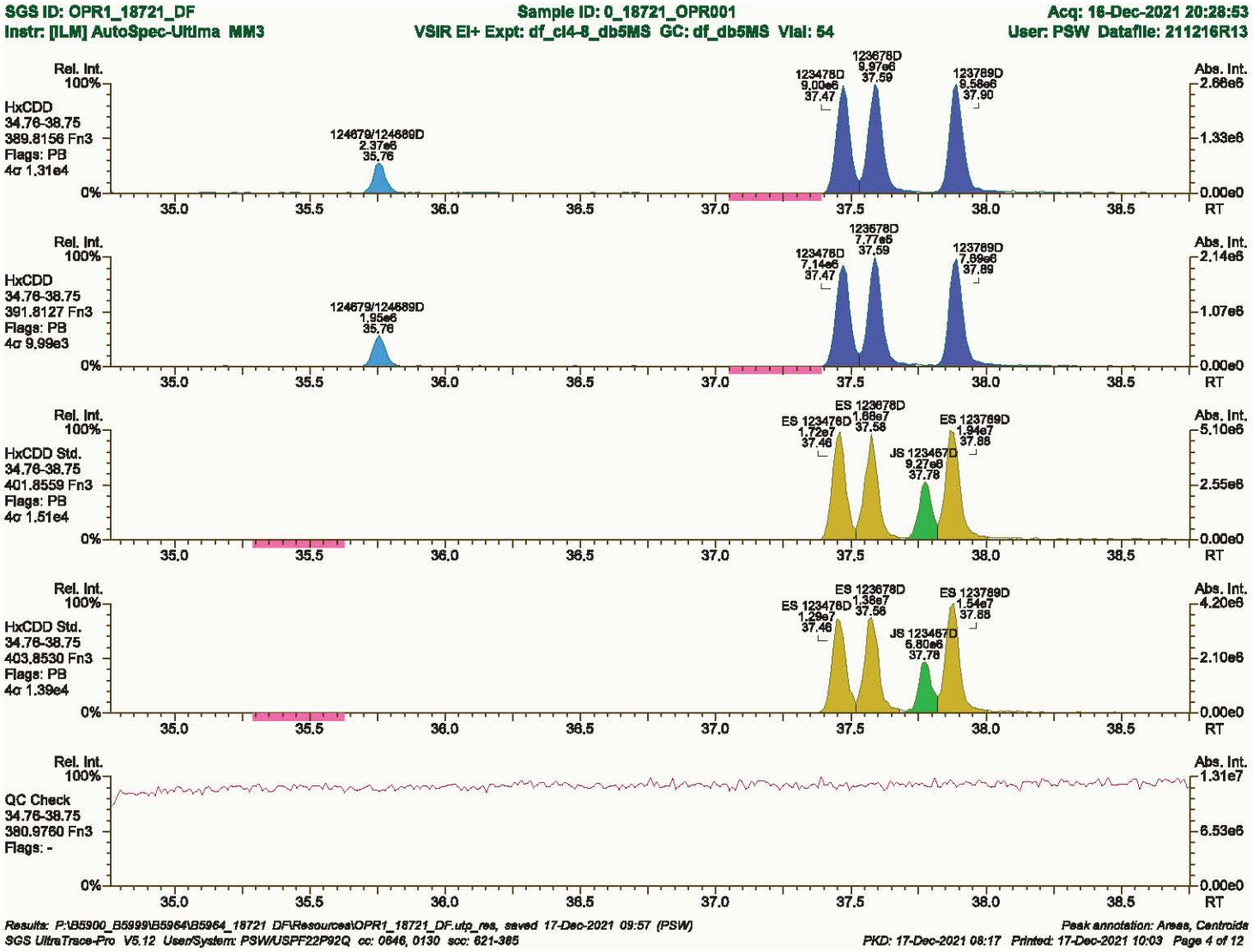
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 7721, 5756 scc: 621-365
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 3 of 12



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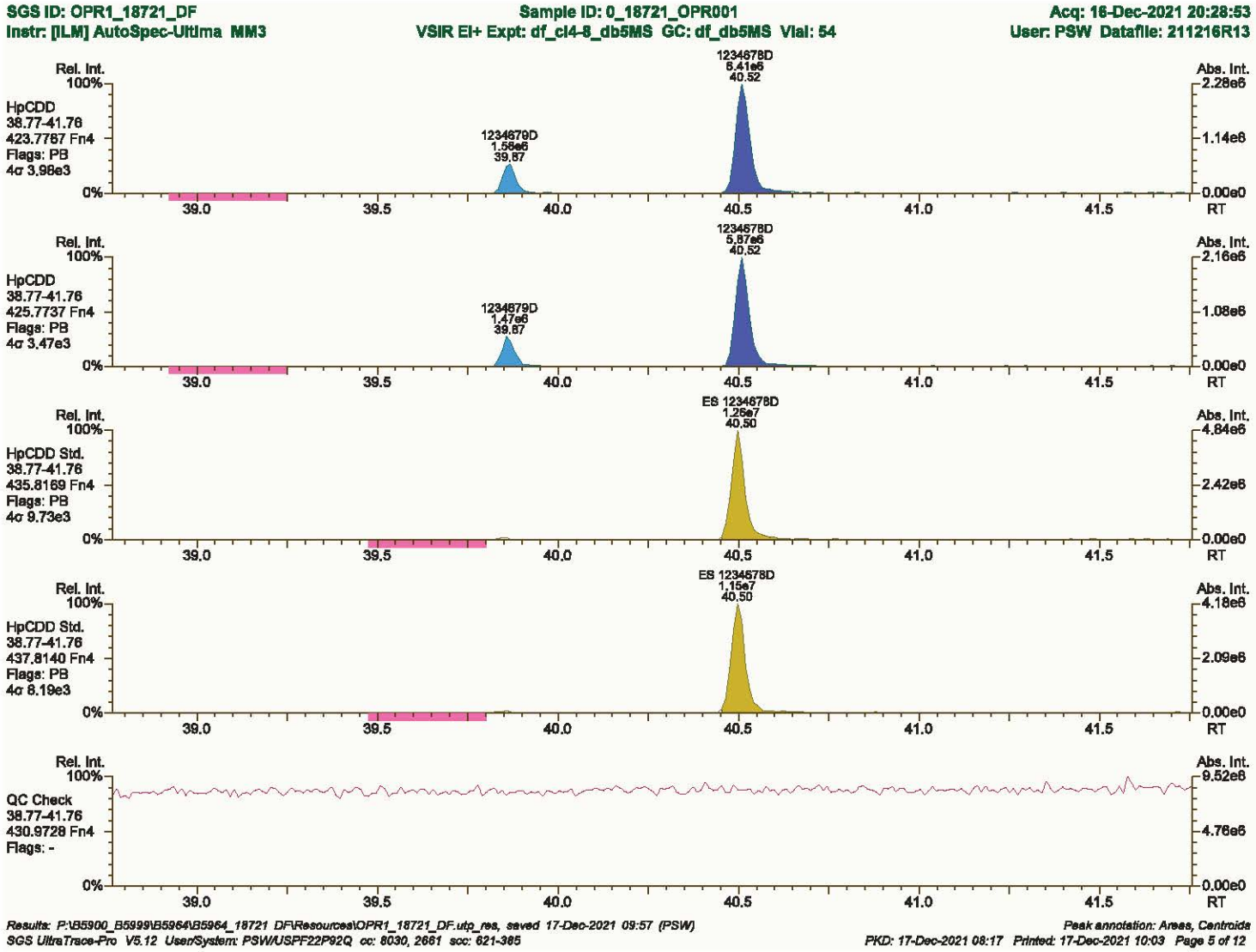
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 0646, 0130 scc: 621-365
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 4 of 12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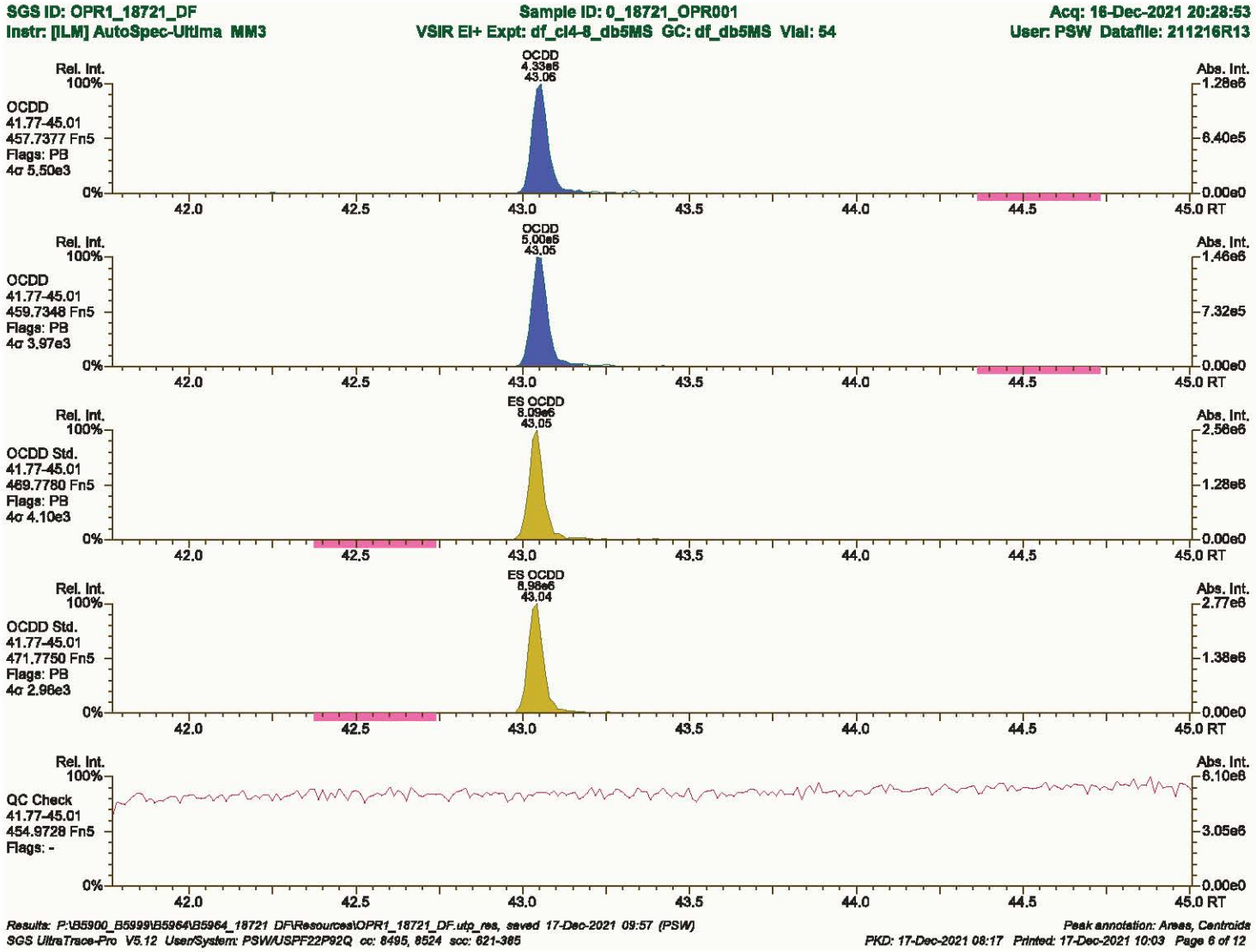
Sample ID: 0_18721_OPR001
Acq: 16-Dec-2021 20:28:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
User: PSW Datafile: 211216R13
Rel. Int.
Abs. Int.
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 3.98e3
1234678D
5.41e6
40.52
1234679D
1.58e6
39.87
2.28e6
1.14e6
0.00e0
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.47e3
1234678D
5.87e6
40.52
1234679D
1.47e6
39.87
2.16e6
1.08e6
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 9.73e3
ES 1234678D
1.26e7
40.50
4.84e6
2.42e6
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 8.19e3
ES 1234678D
1.15e7
40.50
4.18e6
2.09e6
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
9.52e6
4.76e6
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 8030, 2661 scc: 621-365
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 5 of 12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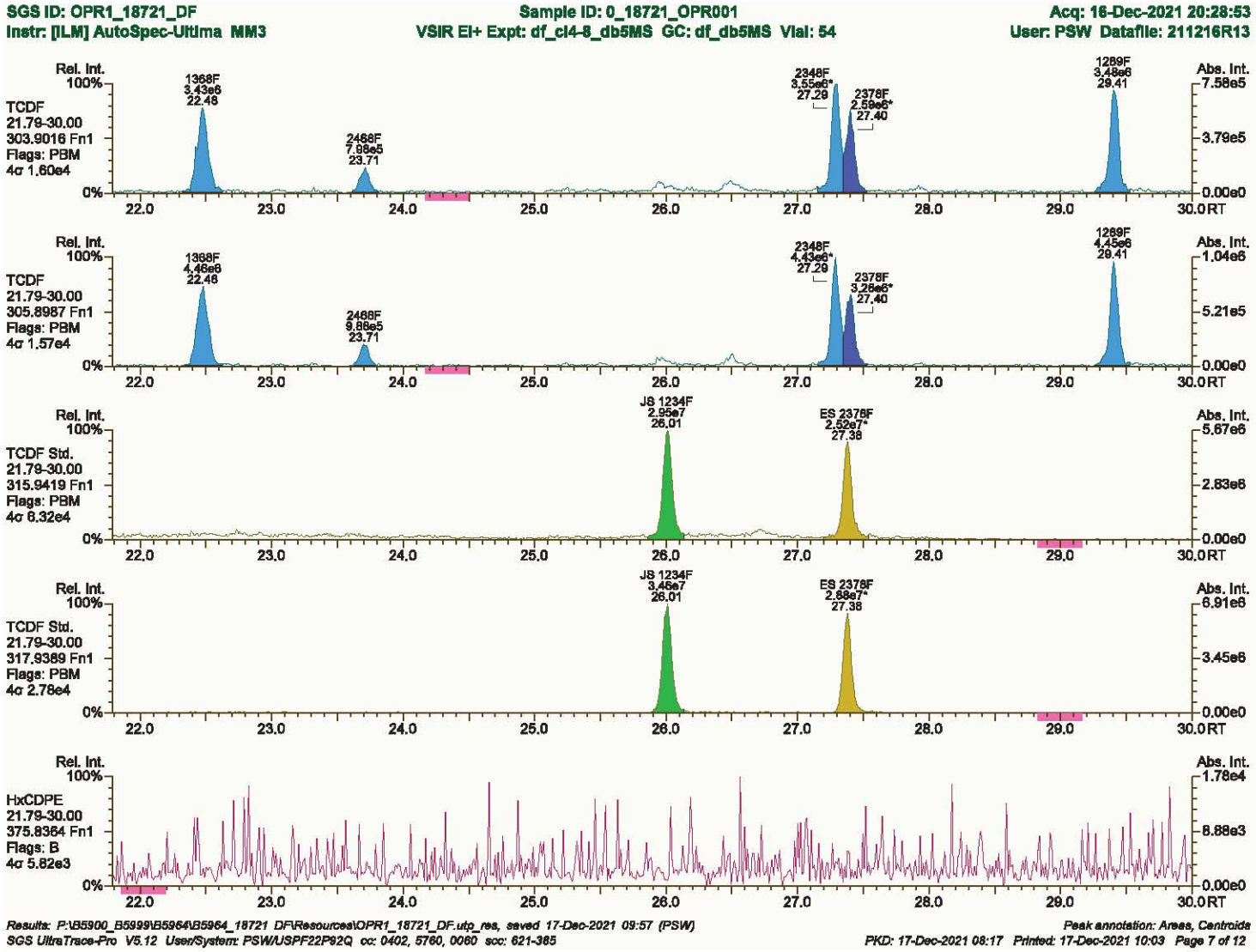
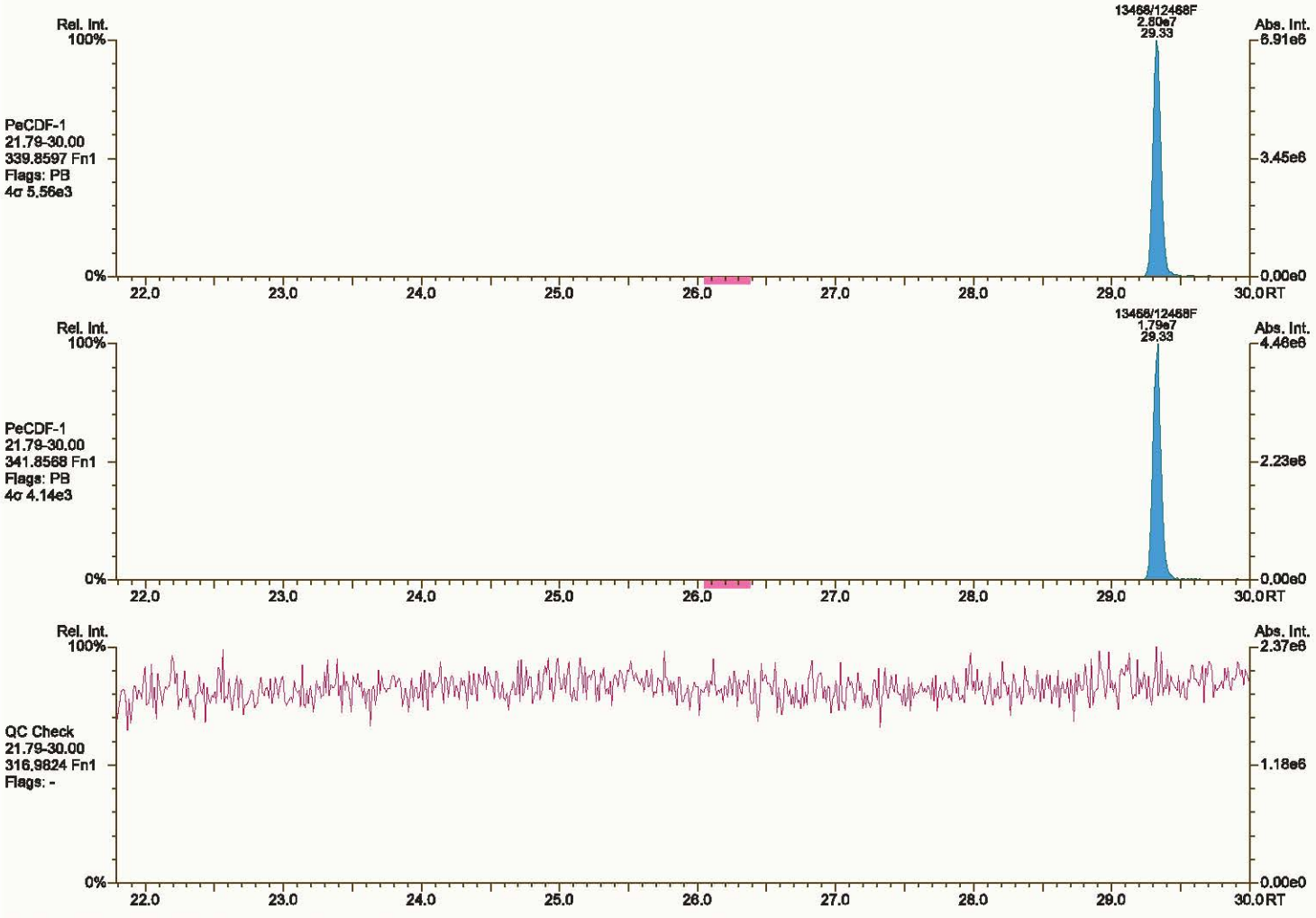
Sample ID: 0_18721_OPR001
Acq: 16-Dec-2021 20:28:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
User: PSW Datafile: 211216R13
Rel. Int.
Abs. Int.
OCDD
4.33e6
43.06
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 5.50e3
1.28e6
6.40e5
0.00e0
OCDD
5.00e6
43.05
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 3.97e3
1.46e6
7.32e5
ES OCDD
8.09e6
43.05
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.10e3
2.56e6
1.28e6
ES OCDD
8.98e6
43.04
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 2.96e3
2.77e6
1.38e6
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
6.10e6
3.05e6
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 UserSystem: PSW/USPF22P92Q cc: 8495, 8524 scc: 621-385
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 6 of 12


SGS ID: OPR1_18721_DF
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 0_18721_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
Acq: 16-Dec-2021 20:28:53
User: PSW Datafile: 211216R13
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 1.60e4
1368F
3.43e6
22.48
2468F
7.88e5
23.71
2348F
3.55e6*
27.29
2378F
2.59e6*
27.40
1289F
3.48e6
29.41
7.58e5
3.79e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 1.57e4
1368F
4.46e6
22.48
2468F
9.86e5
23.71
2348F
4.43e6*
27.29
2378F
3.28e6*
27.40
1289F
4.45e6
29.41
1.04e6
5.21e5
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 6.32e4
JS 1234F
2.95e7
26.01
ES 2378F
2.52e7*
27.38
5.67e6
2.83e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 2.78e4
JS 1234F
3.45e7
26.01
ES 2378F
2.68e7*
27.38
6.91e6
3.45e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 5.82e3
1.78e4
8.88e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0402, 5760, 0060 scc: 621-365
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 7 of 12

SGS ID: OPR1_18721_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18721_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54

Acq: 16-Dec-2021 20:28:53
User: PSW Datafile: 211216R13



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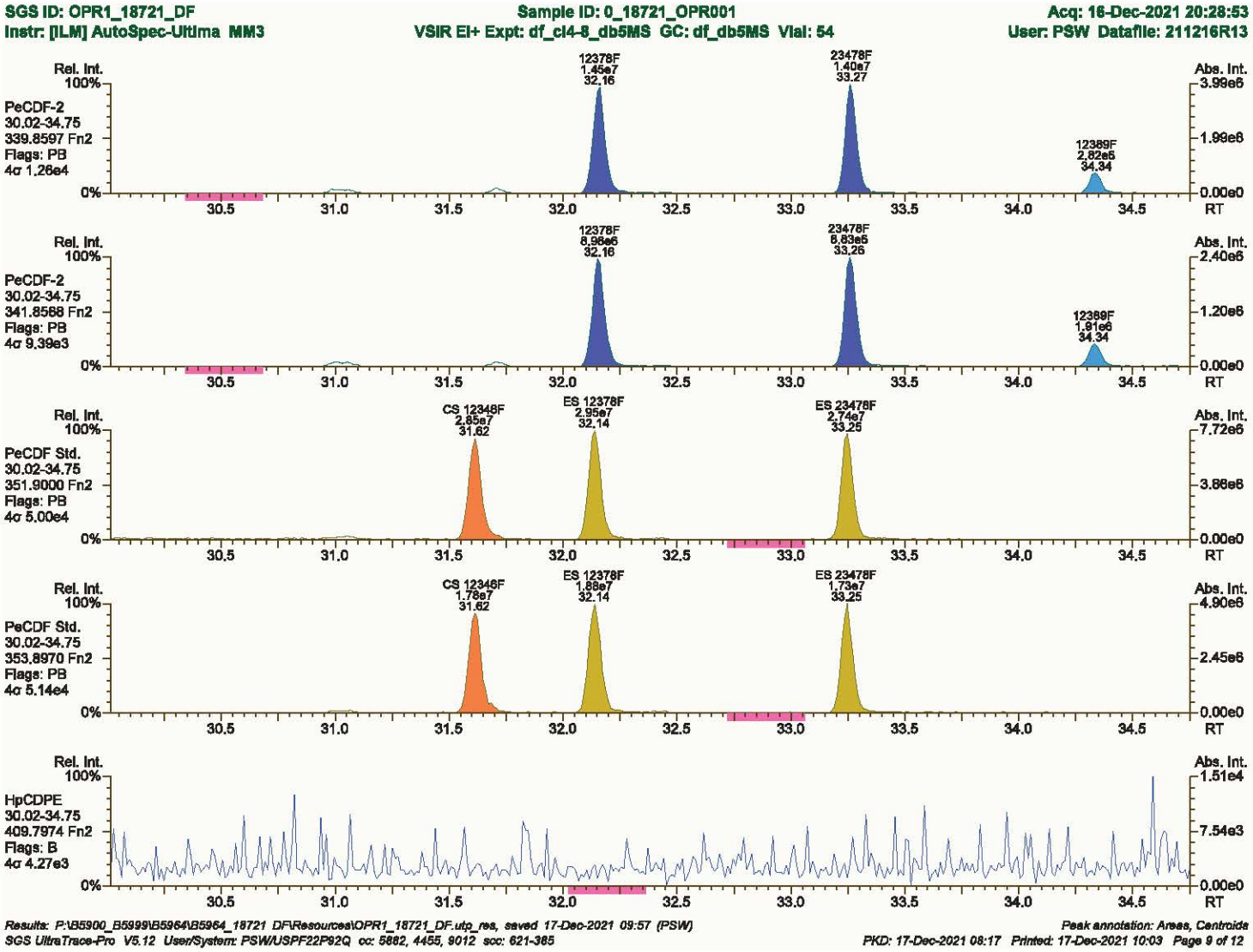
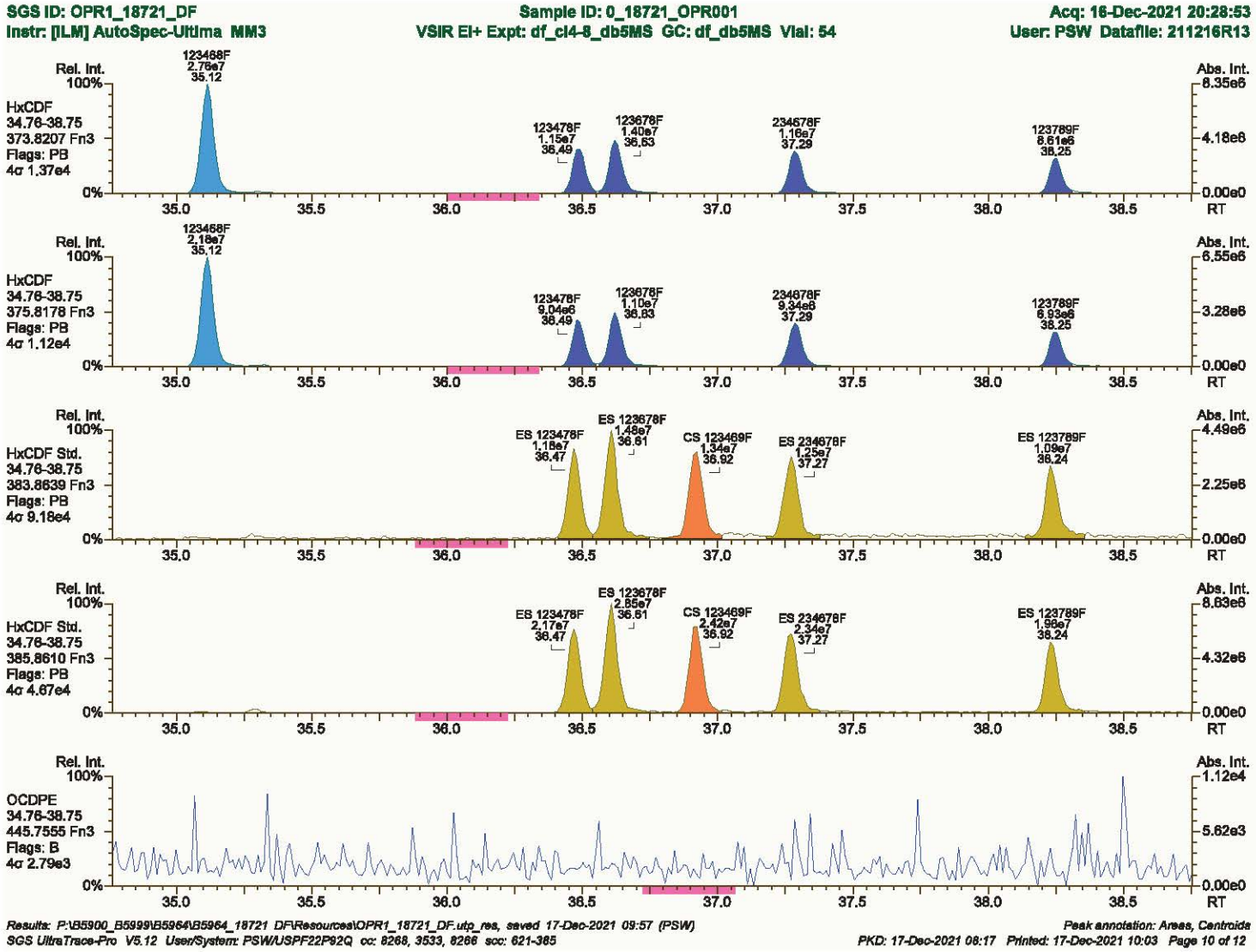
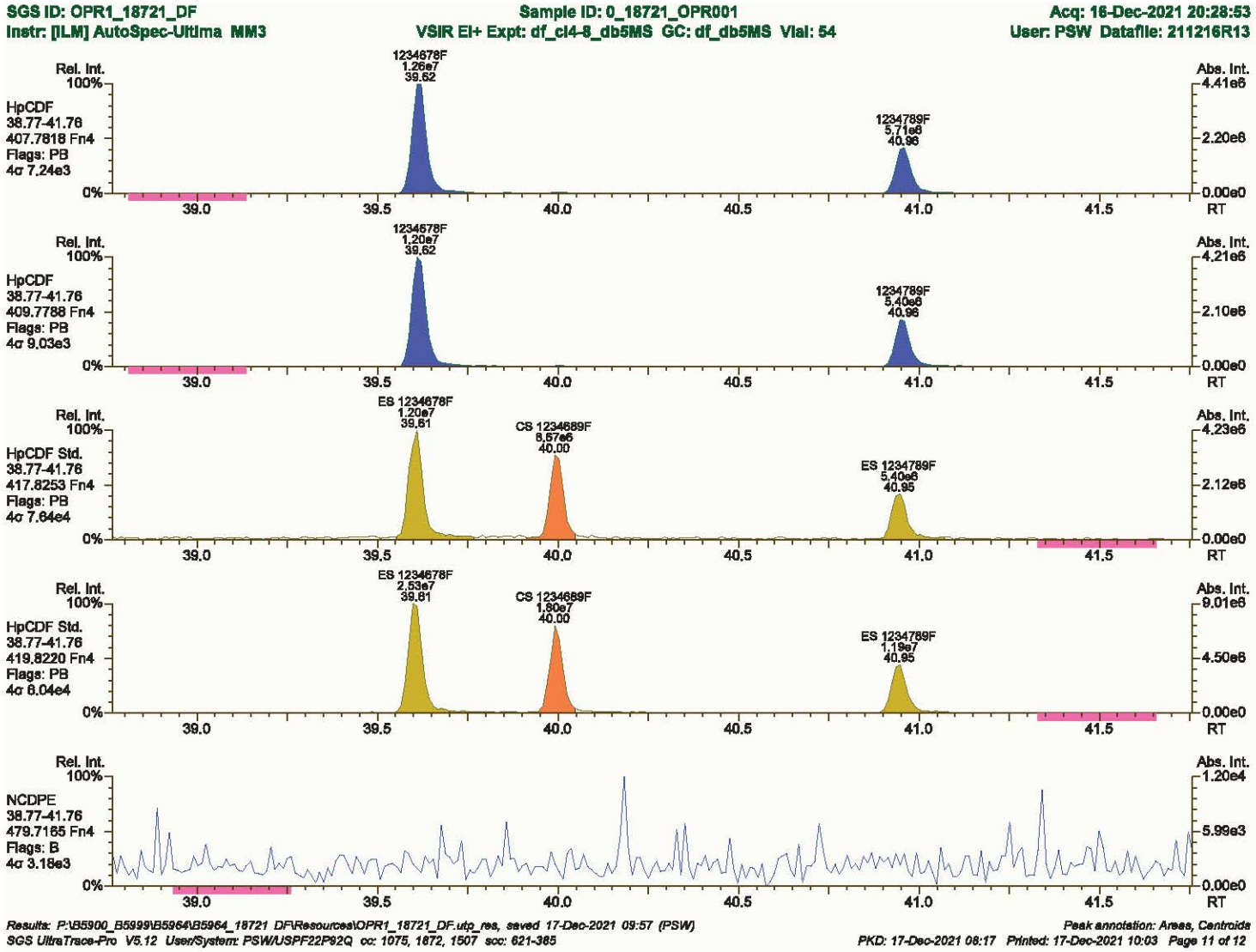
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0978 scc: 621-385
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 8 of 12

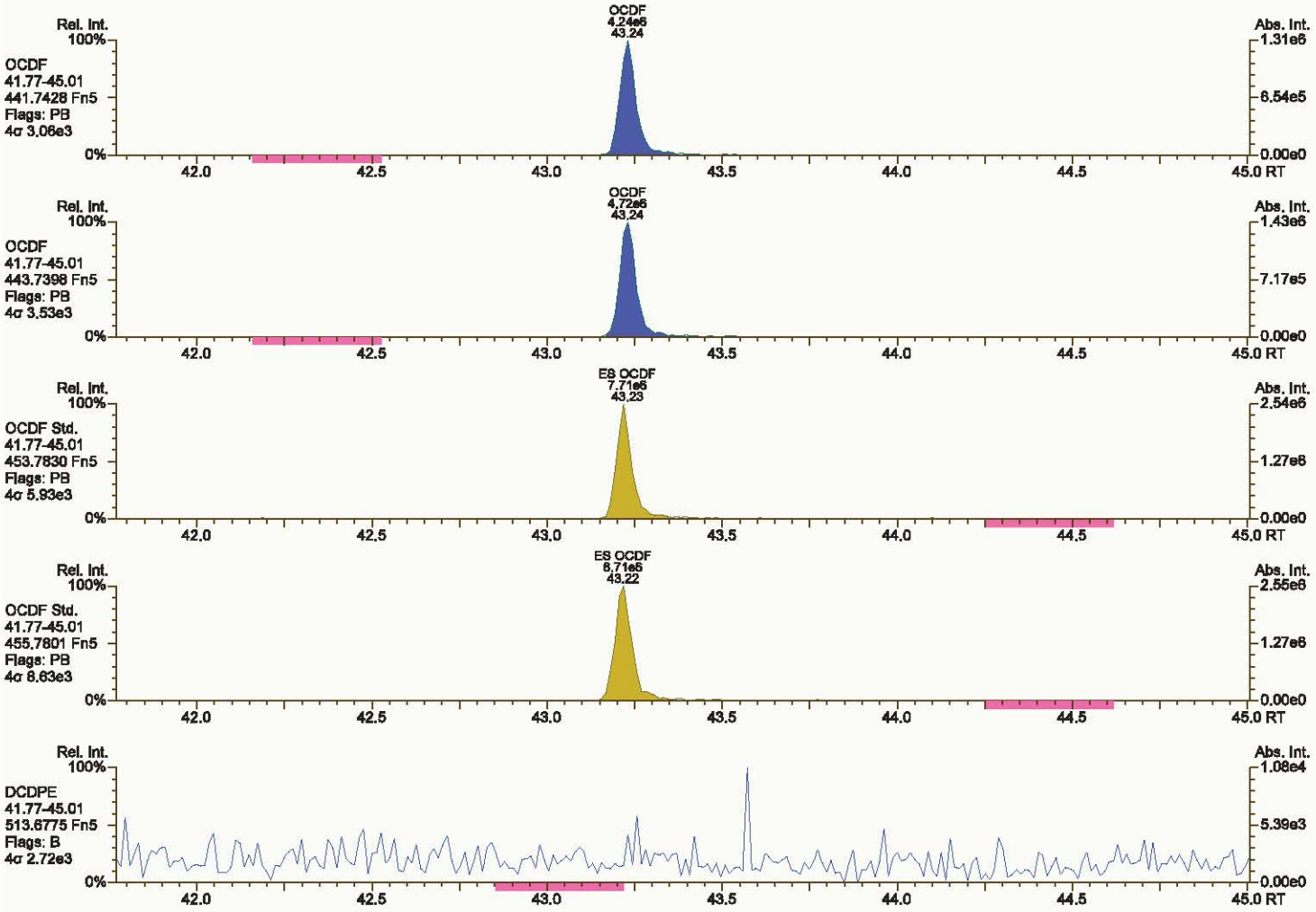

SGS ID: OPR1_18721_DF
Sample ID: 0_18721_OPR001
Acq: 16-Dec-2021 20:28:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
User: PSW Datafile: 211216R13
Rel. Int.
Abs. Int.
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 1.26e4
12378F
1.45e7
32.16
23478F
1.40e7
33.27
12389F
2.82e5
34.34
3.99e6
1.99e6
0.00e0
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 9.39e3
12378F
8.98e6
32.16
23478F
8.83e5
33.26
12389F
1.91e6
34.34
2.40e6
1.20e6
0.00e0
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 5.00e4
CS 12348F
2.85e7
31.62
ES 12378F
2.95e7
32.14
ES 23478F
2.74e7
33.25
7.72e6
3.86e6
0.00e0
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 5.14e4
CS 12348F
1.78e7
31.62
ES 12378F
1.88e7
32.14
ES 23478F
1.73e7
33.25
4.90e6
2.45e6
0.00e0
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 4.27e3
1.51e4
7.54e3
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5882, 4455, 9012 scc: 621-365
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 9 of 12


SGS ID: OPR1_18721_DF
Sample ID: 0_18721_OPR001
Acq: 16-Dec-2021 20:28:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
User: PSW Datafile: 211216R13
Rel. Int.
Abs. Int.
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PB
4σ 1.37e4
123468F 2.76e7 35.12
123478F 1.15e7 36.49
123678F 1.40e7 36.63
234678F 1.16e7 37.29
123789F 8.61e6 38.25
8.35e6
4.18e6
0.00e0
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PB
4σ 1.12e4
123468F 2.18e7 35.12
123478F 9.04e6 36.49
123678F 1.10e7 36.63
234678F 9.34e6 37.29
123789F 6.93e6 38.25
6.55e6
3.28e6
0.00e0
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 9.18e4
ES 123478F 1.18e7 36.47
ES 123678F 1.48e7 36.61
CS 123489F 1.34e7 36.92
ES 234678F 1.25e7 37.27
ES 123789F 1.09e7 38.24
4.49e6
2.25e6
0.00e0
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 4.67e4
ES 123478F 2.17e7 36.47
ES 123678F 2.55e7 36.61
CS 123489F 2.42e7 36.92
ES 234678F 2.34e7 37.27
ES 123789F 1.96e7 38.24
8.63e6
4.32e6
0.00e0
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.79e3
1.12e4
5.62e3
0.00e0
0%
100%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: OPR1_18721_DF
Sample ID: 0_18721_OPR001
Acq: 16-Dec-2021 20:28:53
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54
User: PSW Datafile: 211216R13
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 7.24e3
1234678F
1.26e7
39.62
1234789F
5.71e6
40.96
4.41e6
2.20e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 9.03e3
1234678F
1.20e7
39.62
1234789F
5.40e6
40.96
4.21e6
2.10e6
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 7.64e4
ES 1234678F
1.20e7
39.61
CS 1234689F
8.57e6
40.00
ES 1234789F
5.40e6
40.95
4.23e6
2.12e6
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 8.04e4
ES 1234678F
2.53e7
39.61
CS 1234689F
1.80e7
40.00
ES 1234789F
1.19e7
40.95
9.01e6
4.50e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.18e3
1.20e4
5.99e3
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1075, 1872, 1507 scc: 621-365
PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 11 of 12

SGS ID: OPR1_18721_DF | Sample ID: 0_18721_OPR001 | Acq: 16-Dec-2021 20:28:53

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54 | User: PSW Datafile: 211216R13



Results: P:\B5900_B5999\B5964\B5964_18721 DF\Resources\OPR1_18721_DF.utp_res, saved 17-Dec-2021 09:57 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9783, 6404, 4988 scc: 621-365 | *PKD: 17-Dec-2021 08:17 Printed: 17-Dec-2021 10:03 Page 12 of 12*



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-113021-S-SPS-NE-S-7 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	5.04 g	Lab Sample ID	B5965_18715_DF_001-R1	Date Extracted:	06-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	75.0 %	QC Batch No:	18715	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:01:59

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.31			ES 2378-TCDD	93.6	
12378-PeCDD	ND	1.4			ES 12378-PeCDD	78	
123478-HxCDD	3.63			J	ES 123478-HxCDD	97.2	
123678-HxCDD	14.9				ES 123678-HxCDD	103	
123789-HxCDD	EMPC		6.45		ES 123789-HxCDD	98	
1234678-HpCDD	669				ES 1234678-HpCDD	80.3	
OCDD	6,740				ES OCDD	54.8	
2378-TCDF	5.36				ES 2378-TCDF	87.4	
12378-PeCDF	1.58			J	ES 12378-PeCDF	88.3	
23478-PeCDF	3.51			J	ES 23478-PeCDF	89	
123478-HxCDF	EMPC		4.42	J	ES 123478-HxCDF	101	
123678-HxCDF	3.31			J	ES 123678-HxCDF	107	
234678-HxCDF	3.83			J	ES 234678-HxCDF	107	
123789-HxCDF	ND	1.31			ES 123789-HxCDF	105	
1234678-HpCDF	82.4				ES 1234678-HpCDF	98.7	
1234789-HpCDF	EMPC		5.06		ES 1234789-HpCDF	90.1	
OCDF	203				ES OCDF	63.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	83.3	
Total TCDD	ND	1.31	ND		CS 12347-PeCDD	91.9	
Total PeCDD	7.17		14.9		CS 12346-PeCDF	93.9	
Total HxCDD	136		142		CS 123469-HxCDF	115	
Total HpCDD	1,410		1,410		CS 1234689-HpCDF	107	
Total TCDF	13.1		24.1				
Total PeCDF	20.2		33.9				
Total HxCDF	72.1		76.5				
Total HpCDF	238		243				
Total PCDD/Fs	**8,840**		**8,890**				
WHO-2005 TEQs							
TEQ: ND=0	13.8		14.9				
TEQ: ND=DL/2	15.2	2.14	16.4				
TEQ: ND=DL	16.6	4.29	17.8				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: 11215131-113021-S-SPS-NE-S-7 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	5.04 g	Lab Sample ID:	B5965_18715_DF_001-R1	Date Extracted:	06-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	75.0 %	QC Batch No.:	18715	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:01:59

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(1.31)		12479/12468D	4.96		124679/124689D	41.3		1234679D	741	
1379D	(1.31)		12469D	2.2	J	123468D	8.6		1234678D	669	
1369D	(1.31)		12368D	[1.41]	J	123679/123689D	55.7				
1469D	(1.31)		12478D	[2.18]	J	123469D	7.36				
1247D...[4]	(1.31)		12379D	[1.47]	J	123478D	3.63	J			
1378D	(1.31)		12369D...[3]	[2.65]	J	123678D	14.9				
1268D	(1.31)		12346/12347D	(1.4)		123467D	4	J			
1478D	(1.31)		12378D	(1.4)		123789D	[6.45]		**Conc.**	1,410	
1279D	(1.31)		12367D	(1.4)					**EMPC**	1,410	
1234/1269D	(1.31)		12389D	(1.4)							
1236D	(1.31)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	(1.31)									**(pg/g)**	
1239D	(1.31)								OCDD	6740	
2378D	(1.31)										
1278D	(1.31)										
1267D	(1.31)										
1289D	(1.31)										
Conc.	0		**Conc.**	7.17		**Conc.**	136				
EMPC	0		**EMPC**	14.9		**EMPC**	142				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	13.8	14.9
TEQ: ND=DL/2	15.2	16.4
TEQ: ND=DL	16.6	17.8

	Conc.	EMPC
Total PCDD/Fs	8,840	8,890

Checkcode: 142-458-CHC

Report Created: 08-Dec-2021 14:02 Analyst: pw

Sample ID: 11215131-113021-S-SPS-NE-S-7 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	5.04 g	Lab Sample ID:	B5965_18715_DF_001-R1	Date Extracted:	06-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	75.0 %	QC Batch No.:	18715	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:01:59

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[1.01]		13468/12468F	[9.42]		123468F	7.01		1234678F	82.4	
1468F	(1.17)		13678F...[3]	3.33	J	124678/134678F	23.5		1234679F	3.74	J
2468F	2.28		12368F...[3]	8.38		134679F	(1.38)		1234689F	151	
1346/1246F	(1.17)		14678F	(1.25)		124679F	(1.38)		1234789F	[5.06]	
1347F...[3]	[2.58]		13479F	(1.25)		124689F	31.9				
1348F	(1.17)		13469/12479F	(1.25)		123467F	2.52	J			
1248F...[3]	1.73		12346F	(1.25)		123478F	[4.42]	J			
1268F	[1.59]		23468/12469F	[2.03]	J	123678F	3.31	J			
1467F	(1.17)		12347F	[0.42]	J	123479F	(1.38)				
1478F	[1.3]		12348F	(1.25)		123469F	(1.38)				
1369/1237F	(1.17)		12378F	1.58	J	123679F	(1.38)				
2467F	(1.17)		12678/12367F	3.39	J	234678F	3.83	J	**Conc.**	238	
2368F	(1.17)		12379F	(1.25)		234678/123689F	0		**EMPC**	243	
1238F...[5]	(1.17)		12679F	(1.25)		123689F	(1.38)				
1278F	[2.22]		23467/12369F	[1.84]	J	123789F	(1.31)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(1.17)		23478F	3.51	J	123789/123489F	0				
1267F	(1.17)		23478/12489F	0		123489F	(1.38)		OCDF	203	
2346/1249F	(1.17)		12489F	(1.25)							
2347/1279F	(1.17)		12349F	(1.25)							
2348F	(1.17)		12389F	(1.25)							
2378F	5.36										
2367/3467F	3.76										
1269F	(1.17)										
1239F	(1.17)										
1289F	[2.29]										
Conc.	13.1		**Conc.**	20.2		**Conc.**	72.1				
EMPC	24.1		**EMPC**	33.9		**EMPC**	76.5				

Checkcode: 142-458-CHC

Report Created: 08-Dec-2021 14:02 Analyst: pw

Sample ID: 11215131-113021-S-SPS-NE-S-7 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18715_DF_001-R1
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	5.04 g	QC Batch No.:	18715
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 13:01
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(1.31)		1.31	(1.31)	(1.31)	(1.31)
12378-PeCDD	(1.4)		1.4	(0.7)	(1.4)	(1.4)
123478-HxCDD	3.63	J	1.58	0.363	0.363	0.363
123678-HxCDD	14.9		1.55	1.49	1.49	1.49
123789-HxCDD	[6.45]		1.48	[0.645]	[0.645]	[0.645]
1234678-HpCDD	669		1.41	6.69	6.69	6.69
OCDD	6740		4.43	6.74	0.674	2.02
2378-TCDF	5.36		1.17	0.536	0.536	0.536
12378-PeCDF	1.58	J	1.26	0.0791	0.0791	0.0475
23478-PeCDF	3.51	J	1.24	1.75	1.75	1.05
123478-HxCDF	[4.42]	J	1.43	[0.442]	[0.442]	[0.442]
123678-HxCDF	3.31	J	1.35	0.331	0.331	0.331
234678-HxCDF	3.83	J	1.44	0.383	0.383	0.383
123789-HxCDF	(1.31)		1.31	(0.131)	(0.131)	(0.131)
1234678-HpCDF	82.4		1.12	0.824	0.824	0.824
1234789-HpCDF	[5.06]		1.66	[0.0506]	[0.0506]	[0.0506]
OCDF	203		3.06	0.203	0.0203	0.0609

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TEQ Summaries			
EMPC = 0, ND = 0	19.4	13.1	13.8
EMPC = 0, ND = DL / 2	20.5	14.6	15.2
EMPC = 0, ND = DL	21.5	16	16.6
EMPC = 0, < J-level = 0	16.5	10.2	11.6
EMPC = EMPC, ND = 0	20.5	14.3	14.9
EMPC = EMPC, ND = DL / 2	21.6	15.7	16.4
EMPC = EMPC, ND = DL	22.7	17.1	17.8
EMPC = EMPC, < J-level = 0	17.2	10.9	12.3

Checkcode: 142-458-CHC

SGS North America - DF v0.99

Sample ID: 11215131-113021-S-SPS-NE-S-6 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.67 g	Lab Sample ID	B5965_18711_DF_002	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	68.3 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:24:44

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		1.79		ES 2378-TCDD	65.2	
12378-PeCDD	1.69				ES 12378-PeCDD	56.4	
123478-HxCDD	EMPC		3.04		ES 123478-HxCDD	65.2	
123678-HxCDD	12.5				ES 123678-HxCDD	71.5	
123789-HxCDD	EMPC		5.59		ES 123789-HxCDD	66	
1234678-HpCDD	510				ES 1234678-HpCDD	61.4	
OCDD	9,210			E	ES OCDD	47.3	
2378-TCDF	10.4				ES 2378-TCDF	63.4	
12378-PeCDF	2.15				ES 12378-PeCDF	68.8	
23478-PeCDF	3.92				ES 23478-PeCDF	63.2	
123478-HxCDF	4.69				ES 123478-HxCDF	76.3	
123678-HxCDF	5.6				ES 123678-HxCDF	81.5	
234678-HxCDF	6.31				ES 234678-HxCDF	75.1	
123789-HxCDF	1.46			J	ES 123789-HxCDF	71.6	
1234678-HpCDF	60.8				ES 1234678-HpCDF	73.7	
1234789-HpCDF	5.16				ES 1234789-HpCDF	70.5	
OCDF	124				ES OCDF	49.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	66.1	
Total TCDD	2.62		6.99		CS 12347-PeCDD	65	
Total PeCDD	11.5		19.8		CS 12346-PeCDF	75.8	
Total HxCDD	107		118		CS 123469-HxCDF	92.6	
Total HpCDD	1,050		1,050		CS 1234689-HpCDF	90	
Total TCDF	45		59.1				
Total PeCDF	33		44.6				
Total HxCDF	72.9		78.4				
Total HpCDF	183		183				
Total PCDD/Fs	**10,800**		**10,900**	E			
WHO-2005 TEQs							
TEQ: ND=0	15.6		18.2				
TEQ: ND=DL/2	15.6	1.07	18.2				
TEQ: ND=DL	15.6	2.14	18.2				

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Sample ID: 11215131-113021-S-SPS-NE-S-6 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.67 g	Lab Sample ID:	B5965_18711_DF_002	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	68.3 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:24:44

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.62		12479/12468D	6.25		124679/124689D	36.8		1234679D	541	
1379D	[2.02]		12469D	[1.2]	J	123468D	9.11		1234678D	510	
1369D	(0.554)		12368D	3.57		123679/123689D	45.4				
1469D	(0.554)		12478D	[2]		123469D	3.21				
1247D...[4]	[0.554]		12379D	[1.96]		123478D	[3.04]				
1378D	(0.554)		12369D...[3]	[2.2]		123678D	12.5				
1268D	(0.554)		12346/12347D	[0.88]	J	123467D	[2.76]				
1478D	(0.554)		12378D	1.69		123789D	[5.59]		**Conc.**	1,050	
1279D	(0.554)		12367D	(0.733)					**EMPC**	1,050	
1234/1269D	(0.554)		12389D	(0.733)							
1236D	(0.554)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	(0.554)									**(pg/g)**	
1239D	(0.554)								OCDD	9210	E
2378D	[1.79]										
1278D	(0.554)										
1267D	(0.554)										
1289D	(0.554)										
Conc.	2.62		**Conc.**	11.5		**Conc.**	107				
EMPC	6.99		**EMPC**	19.8		**EMPC**	118				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	15.6	18.2
TEQ: ND=DL/2	15.6	18.2
TEQ: ND=DL	15.6	18.2

	Conc.	EMPC
Total PCDD/Fs	10,800	10,900

Checkcode: 885-934-PDY

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-113021-S-SPS-NE-S-6 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.67 g	Lab Sample ID:	B5965_18711_DF_002	Date Extracted: 03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	68.3 %	QC Batch No.:	18711	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 1:24:44

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.21		13468/12468F	[8.64]		123468F	[5.46]		1234678F	60.8	
1468F	1.35		13678F...[3]	4.47		124678/134678F	23.2		1234679F	3.42	
2468F	[2.2]		12368F...[3]	8.87		134679F	(0.86)		1234689F	114	
1346/1246F	1.83		14678F	1.84		124679F	(0.86)		1234789F	5.16	
1347F...[3]	4.47		13479F	(0.523)		124689F	28.1				
1348F	[0.951]		13469/12479F	[0.831]	J	123467F	3.54				
1248F...[3]	[3.71]		12346F	[0.922]	J	123478F	4.69				
1268F	1.82		23468/12469F	3.05		123678F	5.6				
1467F	1.59		12347F	1.36	J	123479F	(0.86)				
1478F	[2.28]		12348F	[1.2]	J	123469F	(0.86)				
1369/1237F	1.06		12378F	2.15		123679F	(0.86)				
2467F	1.88		12678/12367F	4.38		234678F	6.31		**Conc.**	183	
2368F	3.95		12379F	(0.523)		234678/123689F	0		**EMPC**	183	
1238F...[5]	3.25		12679F	(0.523)		123689F	(0.86)				
1278F	5.43		23467/12369F	2.97		123789F	1.46	J	**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.586)		23478F	3.92		123789/123489F	0				
1267F	[1.52]		23478/12489F	0		123489F	(0.86)		OCDF	124	
2346/1249F	[1.37]		12489F	(0.523)							
2347/1279F	1.56		12349F	(0.523)							
2348F	[1.28]		12389F	(0.523)							
2378F	10.4										
2367/3467F	5.25										
1269F	(0.586)										
1239F	(0.586)										
1289F	[0.743]										
Conc.	45		**Conc.**	33		**Conc.**	72.9				
EMPC	59.1		**EMPC**	44.6		**EMPC**	78.4				

Checkcode: 885-934-PDY

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-113021-S-SPS-NE-S-6 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.67 g	QC Batch No.:	18711
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 01:24
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	[1.79]		0.554	[1.79]	[1.79]	[1.79]
12378-PeCDD	1.69		0.733	0.847	1.69	1.69
123478-HxCDD	[3.04]		0.893	[0.304]	[0.304]	[0.304]
123678-HxCDD	12.5		0.867	1.25	1.25	1.25
123789-HxCDD	[5.59]		0.817	[0.559]	[0.559]	[0.559]
1234678-HpCDD	510		0.788	5.1	5.1	5.1
OCDD	9210	E	1.42	9.21	0.921	2.76
2378-TCDF	10.4		0.586	1.04	1.04	1.04
12378-PeCDF	2.15		0.521	0.107	0.107	0.0644
23478-PeCDF	3.92		0.526	1.96	1.96	1.18
123478-HxCDF	4.69		0.804	0.469	0.469	0.469
123678-HxCDF	5.6		0.754	0.56	0.56	0.56
234678-HxCDF	6.31		0.956	0.631	0.631	0.631
123789-HxCDF	1.46	J	0.959	0.146	0.146	0.146
1234678-HpCDF	60.8		0.416	0.608	0.608	0.608
1234789-HpCDF	5.16		0.548	0.0516	0.0516	0.0516
OCDF	124		1.05	0.124	0.0124	0.0371

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TEQ Summaries			
EMPC = 0, ND = 0	22.1	14.5	15.6
EMPC = 0, ND = DL / 2	22.1	14.5	15.6
EMPC = 0, ND = DL	22.1	14.5	15.6
EMPC = 0, < J-level = 0	21.9	14.4	15.4
EMPC = EMPC, ND = 0	24.8	17.2	18.2
EMPC = EMPC, ND = DL / 2	24.8	17.2	18.2
EMPC = EMPC, ND = DL	24.8	17.2	18.2
EMPC = EMPC, < J-level = 0	24.6	17.1	18.1

Checkcode: 885-934-PDY

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Sample ID: 11215131-120121-S-SPS-NE-S-12 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.69 g	Lab Sample ID	B5965_18711_DF_003	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	70.8 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:12:18

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	10.1				ES 2378-TCDD	73.2	
12378-PeCDD	EMPC		1.59	J	ES 12378-PeCDD	63.2	
123478-HxCDD	EMPC		2.1		ES 123478-HxCDD	81.3	
123678-HxCDD	9.96				ES 123678-HxCDD	84.1	
123789-HxCDD	EMPC		4.95		ES 123789-HxCDD	78	
1234678-HpCDD	477				ES 1234678-HpCDD	70.3	
OCDD	4,820				ES OCDD	52.3	
2378-TCDF	45.5				ES 2378-TCDF	70.5	
12378-PeCDF	4.24				ES 12378-PeCDF	70.7	
23478-PeCDF	7.09				ES 23478-PeCDF	73.1	
123478-HxCDF	5.54				ES 123478-HxCDF	85.9	
123678-HxCDF	4.88				ES 123678-HxCDF	93.8	
234678-HxCDF	6.31				ES 234678-HxCDF	86.4	
123789-HxCDF	ND	0.863			ES 123789-HxCDF	84.1	
1234678-HpCDF	62				ES 1234678-HpCDF	84.9	
1234789-HpCDF	EMPC		4.13		ES 1234789-HpCDF	76.1	
OCDF	402				ES OCDF	55.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	67.3	
Total TCDD	15.7		19.1		CS 12347-PeCDD	69.8	
Total PeCDD	13.1		21.8		CS 12346-PeCDF	77.1	
Total HxCDD	74.4		91.9		CS 123469-HxCDF	101	
Total HpCDD	891		891		CS 1234689-HpCDF	93.8	
Total TCDF	161		169				
Total PeCDF	70.2		75.2				
Total HxCDF	76.7		76.7				
Total HpCDF	144		151				
Total PCDD/Fs	**6,670**		**6,720**				
WHO-2005 TEQs							
TEQ: ND=0	26.5		28.9				
TEQ: ND=DL/2	26.6	1.17	28.9				
TEQ: ND=DL	26.6	2.35	29				

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Sample ID: 11215131-120121-S-SPS-NE-S-12 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.69 g	Lab Sample ID:	B5965_18711_DF_003	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	70.8 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:12:18

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	3.62		12479/12468D	6.57		124679/124689D	27.1		1234679D	414	
1379D	1.97		12469D	[1.94]		123468D	[5.85]		1234678D	477	
1369D	(0.74)		12368D	3.75		123679/123689D	37.3				
1469D	(0.74)		12478D	[1.9]		123469D	[2.16]				
1247D...[4]	(0.74)		12379D	[2.01]		123478D	[2.1]				
1378D	[0.829]		12369D...[3]	2.78		123678D	9.96				
1268D	(0.74)		12346/12347D	[1.23]	J	123467D	[2.45]				
1478D	(0.74)		12378D	[1.59]	J	123789D	[4.95]		**Conc.**	891	
1279D	(0.74)		12367D	(0.611)					**EMPC**	891	
1234/1269D	(0.74)		12389D	(0.611)							
1236D	(0.74)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[1.4]										
1239D	(0.74)								OCDD	4820	
2378D	10.1										
1278D	[1.15]										
1267D	(0.74)										
1289D	(0.74)										
Conc.	15.7		**Conc.**	13.1		**Conc.**	74.4				
EMPC	19.1		**EMPC**	21.8		**EMPC**	91.9				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	26.5	28.9
TEQ: ND=DL/2	26.6	28.9
TEQ: ND=DL	26.6	29

	Conc.	EMPC
Total PCDD/Fs	6,670	6,720

Checkcode: 814-529-ZTY

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-S-12 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.69 g	Lab Sample ID:	B5965_18711_DF_003	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	70.8 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:12:18

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	2.43		13468/12468F	16.1		123468F	7.41		1234678F	62	
1468F	2.66		13678F...[3]	7.49		124678/134678F	24.6		1234679F	[2.96]	
2468F	7.3		12368F...[3]	15.9		134679F	0.749	J	1234689F	81.7	
1346/1246F	[1.62]		14678F	[2.16]		124679F	0.896	J	1234789F	[4.13]	
1347F...[3]	11.4		13479F	[0.488]	J	124689F	22.3				
1348F	2.05		13469/12479F	[0.928]	J	123467F	4.04				
1248F...[3]	8.39		12346F	[1.41]	J	123478F	5.54				
1268F	5.28		23468/12469F	5.02		123678F	4.88				
1467F	2.36		12347F	2.6		123479F	(0.93)				
1478F	5.34		12348F	2.2		123469F	(0.93)				
1369/1237F	3.22		12378F	4.24		123679F	(0.93)				
2467F	3.89		12678/12367F	6.03		234678F	6.31		**Conc.**	144	
2368F	7.04		12379F	(0.529)		234678/123689F	0		**EMPC**	151	
1238F...[5]	7.21		12679F	(0.529)		123689F	(0.93)				
1278F	23.4		23467/12369F	3.62		123789F	(0.863)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	1.16		23478F	7.09		123789/123489F	0			**(pg/g)**	
1267F	4		23478/12489F	0		123489F	(0.93)		OCDF	402	
2346/1249F	[2.52]		12489F	(0.529)							
2347/1279F	3.32		12349F	(0.529)							
2348F	4.57		12389F	(0.529)							
2378F	45.5										
2367/3467F	10.3										
1269F	[0.917]										
1239F	(0.534)										
1289F	[3.67]										
Conc.	161		**Conc.**	70.2		**Conc.**	76.7				
EMPC	169		**EMPC**	75.2		**EMPC**	76.7				

Checkcode: 814-529-ZTY

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-S-12 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.69 g	QC Batch No.:	18711
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 02:12
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	10.1		0.74	10.1	10.1	10.1
12378-PeCDD	[1.59]	J	0.611	[0.795]	[1.59]	[1.59]
123478-HxCDD	[2.1]		1.31	[0.21]	[0.21]	[0.21]
123678-HxCDD	9.96		1.21	0.996	0.996	0.996
123789-HxCDD	[4.95]		1.22	[0.495]	[0.495]	[0.495]
1234678-HpCDD	477		0.902	4.77	4.77	4.77
OCDD	4820		1.89	4.82	0.482	1.45
2378-TCDF	45.5		0.534	4.55	4.55	4.55
12378-PeCDF	4.24		0.524	0.212	0.212	0.127
23478-PeCDF	7.09		0.534	3.55	3.55	2.13
123478-HxCDF	5.54		0.943	0.554	0.554	0.554
123678-HxCDF	4.88		0.848	0.488	0.488	0.488
234678-HxCDF	6.31		1.08	0.631	0.631	0.631
123789-HxCDF	(0.863)		0.863	(0.0863)	(0.0863)	(0.0863)
1234678-HpCDF	62		0.406	0.62	0.62	0.62
1234789-HpCDF	[4.13]		0.746	[0.0413]	[0.0413]	[0.0413]
OCDF	402		1.72	0.402	0.0402	0.121

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TEQ Summaries			
EMPC = 0, ND = 0	31.7	27	26.5
EMPC = 0, ND = DL / 2	31.7	27	26.6
EMPC = 0, ND = DL	31.8	27.1	26.6
EMPC = 0, < J-level = 0	31.7	27	26.5
EMPC = EMPC, ND = 0	33.2	29.3	28.9
EMPC = EMPC, ND = DL / 2	33.3	29.4	28.9
EMPC = EMPC, ND = DL	33.3	29.4	29
EMPC = EMPC, < J-level = 0	32.4	27.7	27.3

Checkcode: 814-529-ZTY

Sample ID: 11215131-120121-S-SPS-NE-S-14 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.66 g	Lab Sample ID	B5965_18711_DF_004	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	71.9 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:59:50

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	5.46				ES 2378-TCDD	70.2	
12378-PeCDD	ND	0.619			ES 12378-PeCDD	63.1	
123478-HxCDD	ND	0.792			ES 123478-HxCDD	77.6	
123678-HxCDD	2.44				ES 123678-HxCDD	80.8	
123789-HxCDD	EMPC		2.37		ES 123789-HxCDD	78.2	
1234678-HpCDD	152				ES 1234678-HpCDD	66.1	
OCDD	5,020				ES OCDD	47.4	
2378-TCDF	22.1				ES 2378-TCDF	62.3	
12378-PeCDF	EMPC		1.79	J	ES 12378-PeCDF	66.6	
23478-PeCDF	EMPC		1.92		ES 23478-PeCDF	67.7	
123478-HxCDF	3.42				ES 123478-HxCDF	84.9	
123678-HxCDF	1.18			J	ES 123678-HxCDF	88.4	
234678-HxCDF	EMPC		0.783	J	ES 234678-HxCDF	81.3	
123789-HxCDF	ND	0.611			ES 123789-HxCDF	76.2	
1234678-HpCDF	EMPC		7.39		ES 1234678-HpCDF	79.2	
1234789-HpCDF	0.979			J	ES 1234789-HpCDF	72.9	
OCDF	29.4				ES OCDF	48.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	69	
Total TCDD	8.19		9.4		CS 12347-PeCDD	74.4	
Total PeCDD	ND	0.619	ND		CS 12346-PeCDF	75.7	
Total HxCDD	28.6		31		CS 123469-HxCDF	96	
Total HpCDD	321		321		CS 1234689-HpCDF	94.7	
Total TCDF	41.9		54.5				
Total PeCDF	10.4		15.4				
Total HxCDF	13.7		14.5				
Total HpCDF	13.4		20.8				
Total PCDD/Fs	**5,480**		**5,510**				
WHO-2005 TEQs							
TEQ: ND=0	11.4		12.4				
TEQ: ND=DL/2	11.8	0.995	12.8				
TEQ: ND=DL	12.2	1.99	13.2				

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Sample ID: 11215131-120121-S-SPS-NE-S-14 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.66 g	Lab Sample ID:	B5965_18711_DF_004	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	71.9 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:59:50

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.17		12479/12468D	(0.619)		124679/124689D	13.3		1234679D	169	
1379D	[1.21]		12469D	(0.619)		123468D	1.45	J	1234678D	152	
1369D	(0.627)		12368D	(0.619)		123679/123689D	11.4				
1469D	0.564		12478D	(0.619)		123469D	(0.857)				
1247D...[4]	(0.627)		12379D	(0.619)		123478D	(0.792)				
1378D	(0.627)		12369D...[3]	(0.619)		123678D	2.44				
1268D	(0.627)		12346/12347D	(0.619)		123467D	(0.857)				
1478D	(0.627)		12378D	(0.619)		123789D	[2.37]		**Conc.**	321	
1279D	(0.627)		12367D	(0.619)					**EMPC**	321	
1234/1269D	(0.627)		12389D	(0.619)							
1236D	(0.627)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.627)										
1239D	(0.627)								OCDD	5020	
2378D	5.46										
1278D	(0.627)										
1267D	(0.627)										
1289D	(0.627)										
Conc.	8.19		**Conc.**	0		**Conc.**	28.6				
EMPC	9.4		**EMPC**	0		**EMPC**	31				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	11.4	12.4
TEQ: ND=DL/2	11.8	12.8
TEQ: ND=DL	12.2	13.2

	Conc.	EMPC
Total PCDD/Fs	5,480	5,510

Checkcode: 909-917-KRF

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-S-14 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.66 g	Lab Sample ID:	B5965_18711_DF_004	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	71.9 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:59:50

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.638)		13468/12468F	3.82		123468F	1.18	J	1234678F	[7.39]	
1468F	(0.638)		13678F...[3]	1.1	J	124678/134678F	4.57		1234679F	(0.501)	
2468F	[1.05]		12368F...[3]	4.3		134679F	(0.545)		1234689F	12.4	
1346/1246F	(0.638)		14678F	(0.581)		124679F	(0.545)		1234789F	0.979	J
1347F...[3]	1.92		13479F	(0.581)		124689F	3.4				
1348F	(0.638)		13469/12479F	(0.581)		123467F	(0.545)				
1248F...[3]	[2.38]		12346F	(0.581)		123478F	3.42				
1268F	[1.03]		23468/12469F	1.2	J	123678F	1.18	J			
1467F	[0.633]		12347F	(0.581)		123479F	(0.545)				
1478F	2.42		12348F	(0.581)		123469F	(0.545)				
1369/1237F	0.504		12378F	[1.79]	J	123679F	(0.545)				
2467F	[0.586]		12678/12367F	[1.29]	J	234678F	[0.783]	J	**Conc.**	13.4	
2368F	[1.87]		12379F	(0.581)		234678/123689F	0		**EMPC**	20.8	
1238F...[5]	[2.07]		12679F	(0.581)		123689F	(0.545)				
1278F	9.63		23467/12369F	(0.581)		123789F	(0.611)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.638)		23478F	[1.92]		123789/123489F	0			**(pg/g)**	
1267F	1.14		23478/12489F	0		123489F	(0.545)		OCDF	29.4	
2346/1249F	(0.638)		12489F	(0.581)							
2347/1279F	0.595		12349F	(0.581)							
2348F	[1.51]		12389F	(0.581)							
2378F	22.1										
2367/3467F	3.61										
1269F	(0.638)										
1239F	(0.638)										
1289F	[1.48]										
Conc.	41.9		**Conc.**	10.4		**Conc.**	13.7				
EMPC	54.5		**EMPC**	15.4		**EMPC**	14.5				

Checkcode: 909-917-KRF

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-S-14 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	13.66 g	QC Batch No.:	18711
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 02:59
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	5.46		0.627	5.46	5.46	5.46
12378-PeCDD	(0.619)		0.619	(0.31)	(0.619)	(0.619)
123478-HxCDD	(0.792)		0.792	(0.0792)	(0.0792)	(0.0792)
123678-HxCDD	2.44		0.922	0.244	0.244	0.244
123789-HxCDD	[2.37]		0.857	[0.237]	[0.237]	[0.237]
1234678-HpCDD	152		0.871	1.52	1.52	1.52
OCDD	5020		2.4	5.02	0.502	1.51
2378-TCDF	22.1		0.638	2.21	2.21	2.21
12378-PeCDF	[1.79]	J	0.615	[0.0895]	[0.0895]	[0.0537]
23478-PeCDF	[1.92]		0.548	[0.959]	[0.959]	[0.575]
123478-HxCDF	3.42		0.505	0.342	0.342	0.342
123678-HxCDF	1.18	J	0.498	0.118	0.118	0.118
234678-HxCDF	[0.783]	J	0.586	[0.0783]	[0.0783]	[0.0783]
123789-HxCDF	(0.611)		0.611	(0.0611)	(0.0611)	(0.0611)
1234678-HpCDF	[7.39]		0.427	[0.0739]	[0.0739]	[0.0739]
1234789-HpCDF	0.979	J	0.593	0.00979	0.00979	0.00979
OCDF	29.4		1.52	0.0294	0.00294	0.00882

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TEQ Summaries			
EMPC = 0, ND = 0	15	10.4	11.4
EMPC = 0, ND = DL / 2	15.2	10.8	11.8
EMPC = 0, ND = DL	15.4	11.2	12.2
EMPC = 0, < J-level = 0	14.8	10.3	11.3
EMPC = EMPC, ND = 0	16.4	11.8	12.4
EMPC = EMPC, ND = DL / 2	16.6	12.2	12.8
EMPC = EMPC, ND = DL	16.8	12.6	13.2
EMPC = EMPC, < J-level = 0	16.1	11.6	12.2

Checkcode: 909-917-KRF

Sample ID: 11215131-120121-S-SPS-NE-S-13 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.01 g	Lab Sample ID	B5965_18711_DF_005	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	73.0 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:47:24

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	136				ES 2378-TCDD	72.8	
12378-PeCDD	4.75				ES 12378-PeCDD	62.7	
123478-HxCDD	6.24				ES 123478-HxCDD	73.1	
123678-HxCDD	32.6				ES 123678-HxCDD	76.6	
123789-HxCDD	14.5				ES 123789-HxCDD	69.8	
1234678-HpCDD	1,730				ES 1234678-HpCDD	57	
OCDD	38,100			E	ES OCDD	36.8	
2378-TCDF	525				ES 2378-TCDF	69.8	
12378-PeCDF	17.7				ES 12378-PeCDF	72.4	
23478-PeCDF	22.8				ES 23478-PeCDF	67.1	
123478-HxCDF	28				ES 123478-HxCDF	81.4	
123678-HxCDF	14.9				ES 123678-HxCDF	81.7	
234678-HxCDF	14				ES 234678-HxCDF	66.9	
123789-HxCDF	ND	1.53			ES 123789-HxCDF	69	
1234678-HpCDF	410				ES 1234678-HpCDF	67.9	
1234789-HpCDF	28.1				ES 1234789-HpCDF	64	
OCDF	4,340				ES OCDF	40.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	71.8	
Total TCDD	175		182		CS 12347-PeCDD	74.4	
Total PeCDD	45.8		54.7		CS 12346-PeCDF	80.8	
Total HxCDD	257		257		CS 123469-HxCDF	95.5	
Total HpCDD	3,680		3,680		CS 1234689-HpCDF	87.3	
Total TCDF	1,120		1,140				
Total PeCDF	166		167				
Total HxCDF	359		362				
Total HpCDF	1,480		1,480				
Total PCDD/Fs	**49,700**		**49,800**	E			
WHO-2005 TEQs							
TEQ: ND=0	246		246				
TEQ: ND=DL/2	246	1.19	246				
TEQ: ND=DL	246	2.38	246				

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Sample ID: 11215131-120121-S-SPS-NE-S-13 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.01 g	Lab Sample ID:	B5965_18711_DF_005	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	73.0 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:47:24

Tetra-Dioxins	Conc. (pg/g)	Qualifiers
1368D	12	
1379D	5.3	
1369D	[1.14]	
1469D	[1.11]	
1247D...[4]	2.89	
1378D	2.29	
1268D	[0.683]	
1478D	0.755	
1279D	[0.821]	
1234/1269D	[1.12]	
1236D	(0.404)	
1237/1238D	3.01	
1239D	(0.404)	
2378D	136	
1278D	13.1	
1267D	[1.21]	
1289D	[1.08]	
Conc.	175	
EMPC	182	

Penta-Dioxins	Conc. (pg/g)	Qualifiers
12479/12468D	19	
12469D	[3.65]	
12368D	8.27	
12478D	3.8	
12379D	4.81	
12369D...[3]	[5.3]	
12346/12347D	2.29	
12378D	4.75	
12367D	1.29	J
12389D	1.59	
Conc.	45.8	
EMPC	54.7	

Hexa-Dioxins	Conc (pg/g)	Qualifiers
124679/124689D	71.7	
123468D	22.3	
123679/123689D	95	
123469D	7.89	
123478D	6.24	
123678D	32.6	
123467D	6.48	
123789D	14.5	
Conc.	257	
EMPC	257	

Hepta-Dioxins	Conc (pg/g)	Qualifiers
1234679D	1950	
1234678D	1730	
Conc.	3,680	
EMPC	3,680	

Octa-Dioxin	Conc (pg/g)	Qualifiers
OCDD	38100	E

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	246	246
TEQ: ND=DL/2	246	246
TEQ: ND=DL	246	246

	Conc.	EMPC
Total PCDD/Fs	49,700	49,800

Checkcode: 038-759-VLG

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-S-13 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.01 g	Lab Sample ID:	B5965_18711_DF_005	Date Extracted: 03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	73.0 %	QC Batch No.:	18711	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 3:47:24

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[2.63]		13468/12468F	35.7		123468F	27.5		1234678F	410	
1468F	[4.01]		13678F...[3]	12.1		124678/134678F	91.8		1234679F	16	
2468F	8.7		12368F...[3]	31.4		134679F	(1.46)		1234689F	1030	
1346/1246F	7.02		14678F	3.97		124679F	[2.77]		1234789F	28.1	
1347F...[3]	16.2		13479F	0.937	J	124689F	169				
1348F	3.49		13469/12479F	1.43	J	123467F	7.63				
1248F...[3]	34.5		12346F	3.3		123478F	28				
1268F	14.9		23468/12469F	9.31		123678F	14.9				
1467F	5.14		12347F	3.67		123479F	(1.46)				
1478F	26.7		12348F	4.95		123469F	1.91				
1369/1237F	8.12		12378F	17.7		123679F	(1.46)				
2467F	4.87		12678/12367F	12.9		234678F	14		**Conc.**	1,480	
2368F	21.4		12379F	(0.56)		234678/123689F	0		**EMPC**	1,480	
1238F...[5]	34.4		12679F	(0.56)		123689F	(1.46)				
1278F	248		23467/12369F	5.29		123789F	(1.53)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	[4.27]		23478F	22.8		123789/123489F	0				
1267F	18.1		23478/12489F	0		123489F	3.94		OCDF	4340	
2346/1249F	6.46		12489F	(0.56)							
2347/1279F	8.07		12349F	0.727	J						
2348F	34.2		12389F	[1.04]	J						
2378F	525										
2367/3467F	51.8										
1269F	9.14										
1239F	(0.404)										
1289F	38.6										
Conc.	1,120		**Conc.**	166		**Conc.**	359				
EMPC	1,140		**EMPC**	167		**EMPC**	362				

Checkcode: 038-759-VLG

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-SPS-NE-S-13 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.01 g	QC Batch No.:	18711
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 03:47
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	136		0.404	136	136	136
12378-PeCDD	4.75		0.77	2.38	4.75	4.75
123478-HxCDD	6.24		1.26	0.624	0.624	0.624
123678-HxCDD	32.6		1.14	3.26	3.26	3.26
123789-HxCDD	14.5		1.25	1.45	1.45	1.45
1234678-HpCDD	1730		1.03	17.3	17.3	17.3
OCDD	38100	E	2.14	38.1	3.81	11.4
2378-TCDF	525		0.404	52.5	52.5	52.5
12378-PeCDF	17.7		0.549	0.887	0.887	0.532
23478-PeCDF	22.8		0.571	11.4	11.4	6.83
123478-HxCDF	28		1.35	2.8	2.8	2.8
123678-HxCDF	14.9		1.36	1.49	1.49	1.49
234678-HxCDF	14		1.67	1.4	1.4	1.4
123789-HxCDF	(1.53)		1.53	(0.153)	(0.153)	(0.153)
1234678-HpCDF	410		0.364	4.1	4.1	4.1
1234789-HpCDF	28.1		0.577	0.281	0.281	0.281
OCDF	4340		0.932	4.34	0.434	1.3

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TEQ Summaries			
EMPC = 0, ND = 0	278	242	246
EMPC = 0, ND = DL / 2	278	242	246
EMPC = 0, ND = DL	278	242	246
EMPC = 0, < J-level = 0	278	242	246
EMPC = EMPC, ND = 0	278	242	246
EMPC = EMPC, ND = DL / 2	278	242	246
EMPC = EMPC, ND = DL	278	242	246
EMPC = EMPC, < J-level = 0	278	242	246

Checkcode: 038-759-VLG

Sample ID: 11215131-113021-S-JC-NE-S-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.46 g	Lab Sample ID	B5965_18711_DF_006-RJ	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	74.5 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:49:32

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		1.21		ES 2378-TCDD	69.7	
12378-PeCDD	EMPC		1.29	J	ES 12378-PeCDD	58.8	
123478-HxCDD	2.85				ES 123478-HxCDD	78.2	
123678-HxCDD	11.7				ES 123678-HxCDD	83.4	
123789-HxCDD	6.71				ES 123789-HxCDD	79.3	
1234678-HpCDD	517				ES 1234678-HpCDD	73.5	
OCDD	5,670				ES OCDD	57.8	
2378-TCDF	5.24				ES 2378-TCDF	67.3	
12378-PeCDF	1.35			J	ES 12378-PeCDF	69.3	
23478-PeCDF	3.2				ES 23478-PeCDF	67	
123478-HxCDF	2.76				ES 123478-HxCDF	87.7	
123678-HxCDF	1.91				ES 123678-HxCDF	92.7	
234678-HxCDF	3.28				ES 234678-HxCDF	88	
123789-HxCDF	ND	0.692			ES 123789-HxCDF	86.8	
1234678-HpCDF	55.3				ES 1234678-HpCDF	86.5	
1234789-HpCDF	3.77				ES 1234789-HpCDF	83	
OCDF	165				ES OCDF	61.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	61.9	
Total TCDD	ND		3.81		CS 12347-PeCDD	62.6	
Total PeCDD	7.26		11.9		CS 12346-PeCDF	67.9	
Total HxCDD	113		115		CS 123469-HxCDF	96.1	
Total HpCDD	1,120		1,120		CS 1234689-HpCDF	93.6	
Total TCDF	29.7		36.1				
Total PeCDF	22.4		32.4				
Total HxCDF	62.5		62.5				
Total HpCDF	178		180				
Total PCDD/Fs	**7,370**		**7,400**				
WHO-2005 TEQs							
TEQ: ND=0	12		14.5				
TEQ: ND=DL/2	12	0.755	14.5				
TEQ: ND=DL	12	1.51	14.5				

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Sample ID: 11215131-113021-S-JC-NE-S-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.46 g	Lab Sample ID:	B5965_18711_DF_006-RJ	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	74.5 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:49:32

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[1]		12479/12468D	3.42		124679/124689D	39		1234679D	601	
1379D	[0.756]		12469D	[1.33]	J	123468D	5.36		1234678D	517	
1369D	(0.393)		12368D	0.985	J	123679/123689D	43.4				
1469D	(0.393)		12478D	[1.99]		123469D	3.97				
1247D...[4]	(0.393)		12379D	1	J	123478D	2.85				
1378D	[0.843]		12369D...[3]	1.13	J	123678D	11.7				
1268D	(0.393)		12346/12347D	0.728	J	123467D	[1.71]				
1478D	(0.393)		12378D	[1.29]	J	123789D	6.71		**Conc.**	1,120	
1279D	(0.393)		12367D	(0.48)					**EMPC**	1,120	
1234/1269D	(0.393)		12389D	(0.48)							
1236D	(0.393)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.393)										
1239D	(0.393)								OCDD	5670	
2378D	[1.21]										
1278D	(0.393)										
1267D	(0.393)										
1289D	(0.393)										
Conc.	0		**Conc.**	7.26		**Conc.**	113				
EMPC	3.81		**EMPC**	11.9		**EMPC**	115				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	12	14.5
TEQ: ND=DL/2	12	14.5
TEQ: ND=DL	12	14.5

	Conc.	EMPC
Total PCDD/Fs	7,370	7,400

Checkcode: 545-953-LKG

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-S-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.46 g	Lab Sample ID:	B5965_18711_DF_006-RJ	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	74.5 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	13:49:32

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.446		13468/12468F	10.8		123468F	6.15		1234678F	55.3	
1468F	0.877		13678F...[3]	2.34		124678/134678F	22.1		1234679F	[1.42]	J
2468F	2.26		12368F...[3]	[6.5]		134679F	(0.668)		1234689F	119	
1346/1246F	0.893		14678F	[0.804]	J	124679F	(0.668)		1234789F	3.77	
1347F...[3]	2.78		13479F	(0.308)		124689F	25				
1348F	0.537		13469/12479F	(0.308)		123467F	1.38	J			
1248F...[3]	1.87		12346F	0.475	J	123478F	2.76				
1268F	1.28		23468/12469F	1.98		123678F	1.91				
1467F	[0.896]		12347F	[0.847]	J	123479F	(0.668)				
1478F	2.01		12348F	[0.761]	J	123469F	(0.668)				
1369/1237F	[0.356]		12378F	1.35	J	123679F	(0.668)				
2467F	0.897		12678/12367F	2.3		234678F	3.28		**Conc.**	178	
2368F	2.62		12379F	(0.308)		234678/123689F	0		**EMPC**	180	
1238F...[5]	[2.56]		12679F	(0.308)		123689F	(0.668)				
1278F	2.44		23467/12369F	[1.04]	J	123789F	(0.692)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.414)		23478F	3.2		123789/123489F	0			**(pg/g)**	
1267F	[1]		23478/12489F	0		123489F	(0.668)		OCDF	165	
2346/1249F	[0.541]		12489F	(0.308)							
2347/1279F	1.03		12349F	(0.308)							
2348F	1.1		12389F	(0.308)							
2378F	5.24										
2367/3467F	3.41										
1269F	(0.414)										
1239F	(0.414)										
1289F	[1.09]										
Conc.	29.7		**Conc.**	22.4		**Conc.**	62.5				
EMPC	36.1		**EMPC**	32.4		**EMPC**	62.5				

Checkcode: 545-953-LKG

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-S-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_006-RJ
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.46 g	QC Batch No.:	18711
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 13:49
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	[1.21]		0.393	[1.21]	[1.21]	[1.21]
12378-PeCDD	[1.29]	J	0.48	[0.646]	[1.29]	[1.29]
123478-HxCDD	2.85		0.709	0.285	0.285	0.285
123678-HxCDD	11.7		0.72	1.17	1.17	1.17
123789-HxCDD	6.71		0.706	0.671	0.671	0.671
1234678-HpCDD	517		0.511	5.17	5.17	5.17
OCDD	5670		1.16	5.67	0.567	1.7
2378-TCDF	5.24		0.414	0.524	0.524	0.524
12378-PeCDF	1.35	J	0.319	0.0676	0.0676	0.0406
23478-PeCDF	3.2		0.297	1.6	1.6	0.96
123478-HxCDF	2.76		0.608	0.276	0.276	0.276
123678-HxCDF	1.91		0.611	0.191	0.191	0.191
234678-HxCDF	3.28		0.773	0.328	0.328	0.328
123789-HxCDF	(0.692)		0.692	(0.0692)	(0.0692)	(0.0692)
1234678-HpCDF	55.3		0.366	0.553	0.553	0.553
1234789-HpCDF	3.77		0.49	0.0377	0.0377	0.0377
OCDF	165		0.855	0.165	0.0165	0.0496

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TEQ Summaries			
EMPC = 0, ND = 0	16.7	11.5	12
EMPC = 0, ND = DL / 2	16.8	11.5	12
EMPC = 0, ND = DL	16.8	11.5	12
EMPC = 0, < J-level = 0	16.7	11.4	11.9
EMPC = EMPC, ND = 0	18.6	14	14.5
EMPC = EMPC, ND = DL / 2	18.6	14	14.5
EMPC = EMPC, ND = DL	18.6	14	14.5
EMPC = EMPC, < J-level = 0	17.9	12.6	13.1

Checkcode: 545-953-LKG

Sample ID: 11215131-113021-S-JC-NE-S-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.69 g	Lab Sample ID	B5965_18711_DF_007	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	74.5 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	5:22:32

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	166				ES 2378-TCDD	70.5	
12378-PeCDD	3.15				ES 12378-PeCDD	61.5	
123478-HxCDD	EMPC		1.98		ES 123478-HxCDD	73.9	
123678-HxCDD	8.82				ES 123678-HxCDD	77.3	
123789-HxCDD	4.92				ES 123789-HxCDD	75	
1234678-HpCDD	295				ES 1234678-HpCDD	67.7	
OCDD	3,840				ES OCDD	61.4	
2378-TCDF	636			E	ES 2378-TCDF	66.3	
12378-PeCDF	17.7				ES 12378-PeCDF	67.6	
23478-PeCDF	18.3				ES 23478-PeCDF	66.7	
123478-HxCDF	25.9				ES 123478-HxCDF	80.1	
123678-HxCDF	8.1				ES 123678-HxCDF	82.4	
234678-HxCDF	4.95				ES 234678-HxCDF	79.4	
123789-HxCDF	ND	0.738			ES 123789-HxCDF	80.8	
1234678-HpCDF	84.7				ES 1234678-HpCDF	81.6	
1234789-HpCDF	11.1				ES 1234789-HpCDF	78.9	
OCDF	2,690				ES OCDF	67.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	66.7	
Total TCDD	190		194		CS 12347-PeCDD	66.6	
Total PeCDD	16.2		19.8		CS 12346-PeCDF	71.8	
Total HxCDD	93.1		96.5		CS 123469-HxCDF	92.2	
Total HpCDD	638		638		CS 1234689-HpCDF	97	
Total TCDF	1,200		1,200	E			
Total PeCDF	77.5		95.1				
Total HxCDF	102		102				
Total HpCDF	203		203				
Total PCDD/Fs	**9,050**		**9,080**	E			
WHO-2005 TEQs							
TEQ: ND=0	250		250				
TEQ: ND=DL/2	250	1	250				
TEQ: ND=DL	250	2.01	250				

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Sample ID: 11215131-113021-S-JC-NE-S-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.69 g	Lab Sample ID:	B5965_18711_DF_007	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	74.5 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	5:22:32

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.88		12479/12468D	5.1		124679/124689D	41.4		1234679D	344	
1379D	(0.471)		12469D	3.05		123468D	5.43		1234678D	295	
1369D	[0.392]		12368D	2.58		123679/123689D	31				
1469D	2.53		12478D	[1.55]		123469D	[1.47]	J			
1247D...[4]	[1.18]		12379D	1.53		123478D	[1.98]				
1378D	[0.984]		12369D...[3]	[2.02]		123678D	8.82				
1268D	(0.471)		12346/12347D	0.8	J	123467D	1.5	J			
1478D	[0.398]		12378D	3.15		123789D	4.92		**Conc.**	638	
1279D	(0.471)		12367D	(0.632)					**EMPC**	638	
1234/1269D	[0.983]		12389D	(0.632)							
1236D	(0.471)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	2.7										
1239D	(0.471)								OCDD	3840	
2378D	166										
1278D	15.6										
1267D	(0.471)										
1289D	(0.471)										
Conc.	190		**Conc.**	16.2		**Conc.**	93.1				
EMPC	194		**EMPC**	19.8		**EMPC**	96.5				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	250	250
TEQ: ND=DL/2	250	250
TEQ: ND=DL	250	250

	Conc.	EMPC
Total PCDD/Fs	9,050	9,080

Checkcode: 727-243-HBQ

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-S-2 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.69 g	Lab Sample ID:	B5965_18711_DF_007	Date Extracted: 03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	74.5 %	QC Batch No.:	18711	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 5:22:32

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.937		13468/12468F	[16.5]		123468F	6.78		1234678F	84.7	
1468F	[2.46]		13678F...[3]	3.2		124678/134678F	24.3		1234679F	7.29	
2468F	5.59		12368F...[3]	17.9		134679F	(0.771)		1234689F	100	
1346/1246F	(0.509)		14678F	1.73		124679F	1.31	J	1234789F	11.1	
1347F...[3]	10.4		13479F	(0.547)		124689F	24.4				
1348F	2.51		13469/12479F	(0.547)		123467F	2.02				
1248F...[3]	28.7		12346F	(0.547)		123478F	25.9				
1268F	12.7		23468/12469F	4.09		123678F	8.1				
1467F	[2.25]		12347F	1.7		123479F	(0.771)				
1478F	27.1		12348F	3.26		123469F	1.31	J			
1369/1237F	6.6		12378F	17.7		123679F	(0.771)				
2467F	2.02		12678/12367F	8.04		234678F	4.95		**Conc.**	203	
2368F	24.6		12379F	(0.547)		234678/123689F	0		**EMPC**	203	
1238F...[5]	23.1		12679F	(0.547)		123689F	(0.771)				
1278F	253		23467/12369F	1.59		123789F	(0.738)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.509)		23478F	18.3		123789/123489F	0				
1267F	15.2		23478/12489F	0		123489F	2.6		OCDF	2690	
2346/1249F	(0.509)		12489F	(0.547)							
2347/1279F	6.06		12349F	(0.547)							
2348F	41.5		12389F	[1.01]	J						
2378F	636	E									
2367/3467F	52.5										
1269F	10.2										
1239F	(0.509)										
1289F	39.5										
Conc.	1,200		**Conc.**	77.5		**Conc.**	102				
EMPC	1,200		**EMPC**	95.1		**EMPC**	102				

Checkcode: 727-243-HBQ

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-S-2 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_007
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.69 g	QC Batch No.:	18711
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 05:22
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	166		0.471	166	166	166
12378-PeCDD	3.15		0.632	1.58	3.15	3.15
123478-HxCDD	[1.98]		1.16	[0.198]	[0.198]	[0.198]
123678-HxCDD	8.82		1.21	0.882	0.882	0.882
123789-HxCDD	4.92		1.08	0.492	0.492	0.492
1234678-HpCDD	295		0.841	2.95	2.95	2.95
OCDD	3840		1.81	3.84	0.384	1.15
2378-TCDF	636	E	0.509	63.6	63.6	63.6
12378-PeCDF	17.7		0.533	0.886	0.886	0.532
23478-PeCDF	18.3		0.562	9.14	9.14	5.48
123478-HxCDF	25.9		0.739	2.59	2.59	2.59
123678-HxCDF	8.1		0.79	0.81	0.81	0.81
234678-HxCDF	4.95		0.818	0.495	0.495	0.495
123789-HxCDF	(0.738)		0.738	(0.0738)	(0.0738)	(0.0738)
1234678-HpCDF	84.7		0.311	0.847	0.847	0.847
1234789-HpCDF	11.1		0.424	0.111	0.111	0.111
OCDF	2690		0.835	2.69	0.269	0.807

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TEQ Summaries			
EMPC = 0, ND = 0	257	253	250
EMPC = 0, ND = DL / 2	257	253	250
EMPC = 0, ND = DL	257	253	250
EMPC = 0, < J-level = 0	257	253	250
EMPC = EMPC, ND = 0	257	253	250
EMPC = EMPC, ND = DL / 2	257	253	250
EMPC = EMPC, ND = DL	257	253	250
EMPC = EMPC, < J-level = 0	257	253	250

Checkcode: 727-243-HBQ

Sample ID: 11215131-113021-S-JC-NE-S-3 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.65 g	Lab Sample ID	B5965_18711_DF_008	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	63.5 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:10:06

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	425				ES 2378-TCDD	67.4	
12378-PeCDD	7.95				ES 12378-PeCDD	61	
123478-HxCDD	EMPC		5.48		ES 123478-HxCDD	64.5	
123678-HxCDD	23.9				ES 123678-HxCDD	67.5	
123789-HxCDD	13.1				ES 123789-HxCDD	64.8	
1234678-HpCDD	663				ES 1234678-HpCDD	63.1	
OCDD	9,310			E	ES OCDD	55.9	
2378-TCDF	1,620			E	ES 2378-TCDF	63.9	
12378-PeCDF	44.5				ES 12378-PeCDF	64.6	
23478-PeCDF	48.2				ES 23478-PeCDF	65.5	
123478-HxCDF	65.5				ES 123478-HxCDF	69.6	
123678-HxCDF	20				ES 123678-HxCDF	74.8	
234678-HxCDF	15.8				ES 234678-HxCDF	69.8	
123789-HxCDF	ND	1.36			ES 123789-HxCDF	68.8	
1234678-HpCDF	486				ES 1234678-HpCDF	71.4	
1234789-HpCDF	31.9				ES 1234789-HpCDF	73.5	
OCDF	8,940			E	ES OCDF	61.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	63.5	
Total TCDD	482		501		CS 12347-PeCDD	70.7	
Total PeCDD	58.3		58.3		CS 12346-PeCDF	70.4	
Total HxCDD	265		270		CS 123469-HxCDF	80.9	
Total HpCDD	1,370		1,370		CS 1234689-HpCDF	84.8	
Total TCDF	2,960		2,960	E			
Total PeCDF	266		279				
Total HxCDF	339		340				
Total HpCDF	998		998				
Total PCDD/Fs	**25,000**		**25,000**	E			
WHO-2005 TEQs							
TEQ: ND=0	642		642				
TEQ: ND=DL/2	642	1.27	642				
TEQ: ND=DL	642	2.55	642				

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Sample ID: 11215131-113021-S-JC-NE-S-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.65 g	Lab Sample ID:	B5965_18711_DF_008	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	63.5 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:10:06

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	7.43		12479/12468D	17.5		124679/124689D	120		1234679D	710	
1379D	[2.32]		12469D	6.01		123468D	15.7		1234678D	663	
1369D	[1.09]		12368D	7.02		123679/123689D	83.1				
1469D	4.03		12478D	4.58		123469D	4.58				
1247D...[4]	[2.26]		12379D	3.46		123478D	[5.48]				
1378D	2.56		12369D...[3]	7.31		123678D	23.9				
1268D	[0.594]		12346/12347D	1.31	J	123467D	4.22				
1478D	[1.28]		12378D	7.95		123789D	13.1		**Conc.**	1,370	
1279D	0.983		12367D	1.61	J				**EMPC**	1,370	
1234/1269D	[1.37]		12389D	1.52	J						
1236D	(0.478)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	[6.67]									**(pg/g)**	
1239D	(0.478)								OCDD	9310	E
2378D	425										
1278D	42										
1267D	(0.478)										
1289D	[3]										
Conc.	482		**Conc.**	58.3		**Conc.**	265				
EMPC	501		**EMPC**	58.3		**EMPC**	270				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	642	642
TEQ: ND=DL/2	642	642
TEQ: ND=DL	642	642

	Conc.	EMPC
Total PCDD/Fs	25,000	25,000

Checkcode: 501-649-XTP

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-S-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.65 g	Lab Sample ID:	B5965_18711_DF_008	Date Extracted:	03-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	63.5 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:10:06

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	2.65		13468/12468F	63.2		123468F	22.3		1234678F	486	
1468F	7.79		13678F...[3]	8.82		124678/134678F	80.5		1234679F	21.9	
2468F	19		12368F...[3]	51.9		134679F	4.05		1234689F	459	
1346/1246F	2.87		14678F	4.07		124679F	12.9		1234789F	31.9	
1347F...[3]	27		13479F	1.63	J	124689F	102				
1348F	4.17		13469/12479F	4.84		123467F	4.78				
1248F...[3]	78.5		12346F	[1.41]	J	123478F	65.5				
1268F	34.6		23468/12469F	12.2		123678F	20				
1467F	6.68		12347F	3.81		123479F	(1.4)				
1478F	72		12348F	[9.07]		123469F	3.11				
1369/1237F	21.4		12378F	44.5		123679F	[0.987]	J			
2467F	4.03		12678/12367F	19.6		234678F	15.8		**Conc.**	998	
2368F	66.7		12379F	(0.656)		234678/123689F	0		**EMPC**	998	
1238F...[5]	52.5		12679F	[0.6]	J	123689F	(1.4)				
1278F	535		23467/12369F	3.21		123789F	(1.36)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.436)		23478F	48.2		123789/123489F	0				
1267F	34.6		23478/12489F	0		123489F	7.56		OCDF	8940	E
2346/1249F	6.04		12489F	(0.656)							
2347/1279F	16		12349F	(0.656)							
2348F	101		12389F	[2.27]							
2378F	1620	E									
2367/3467F	139										
1269F	23.1										
1239F	(0.436)										
1289F	89.9										
Conc.	2,960		**Conc.**	266		**Conc.**	339				
EMPC	2,960		**EMPC**	279		**EMPC**	340				

Checkcode: 501-649-XTP

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-S-3 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_008
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.65 g	QC Batch No.:	18711
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 06:10
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	425		0.478	425	425	425
12378-PeCDD	7.95		0.583	3.98	7.95	7.95
123478-HxCDD	[5.48]		2.1	[0.548]	[0.548]	[0.548]
123678-HxCDD	23.9		2.06	2.39	2.39	2.39
123789-HxCDD	13.1		1.91	1.31	1.31	1.31
1234678-HpCDD	663		3.13	6.63	6.63	6.63
OCDD	9310	E	1.86	9.31	0.931	2.79
2378-TCDF	1620	E	0.436	162	162	162
12378-PeCDF	44.5		0.614	2.22	2.22	1.33
23478-PeCDF	48.2		0.699	24.1	24.1	14.5
123478-HxCDF	65.5		1.41	6.55	6.55	6.55
123678-HxCDF	20		1.32	2	2	2
234678-HxCDF	15.8		1.53	1.58	1.58	1.58
123789-HxCDF	(1.36)		1.36	(0.136)	(0.136)	(0.136)
1234678-HpCDF	486		0.398	4.86	4.86	4.86
1234789-HpCDF	31.9		0.546	0.319	0.319	0.319
OCDF	8940	E	0.907	8.94	0.894	2.68

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TEQ Summaries			
EMPC = 0, ND = 0	661	649	642
EMPC = 0, ND = DL / 2	661	649	642
EMPC = 0, ND = DL	661	649	642
EMPC = 0, < J-level = 0	661	649	642
EMPC = EMPC, ND = 0	662	649	642
EMPC = EMPC, ND = DL / 2	662	649	642
EMPC = EMPC, ND = DL	662	649	642
EMPC = EMPC, < J-level = 0	662	649	642

Checkcode: 501-649-XTP

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Sample ID: 11215131-120121-S-JC-NE-S-4 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	17.28 g	Lab Sample ID	B5965_18711_DF_009	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	71.7 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:57:38

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	151				ES 2378-TCDD	75.7	
12378-PeCDD	3.93				ES 12378-PeCDD	65.7	
123478-HxCDD	4.1				ES 123478-HxCDD	73.7	
123678-HxCDD	16.3				ES 123678-HxCDD	79.1	
123789-HxCDD	8.34				ES 123789-HxCDD	73.4	
1234678-HpCDD	561				ES 1234678-HpCDD	65.9	
OCDD	6,360			E	ES OCDD	58.9	
2378-TCDF	589			E	ES 2378-TCDF	71.6	
12378-PeCDF	16.9				ES 12378-PeCDF	72.6	
23478-PeCDF	19.2				ES 23478-PeCDF	70.6	
123478-HxCDF	25.1				ES 123478-HxCDF	81	
123678-HxCDF	9.01				ES 123678-HxCDF	82.8	
234678-HxCDF	6.6				ES 234678-HxCDF	82.3	
123789-HxCDF	ND	1.23			ES 123789-HxCDF	78.4	
1234678-HpCDF	135				ES 1234678-HpCDF	77.4	
1234789-HpCDF	14.8				ES 1234789-HpCDF	74.9	
OCDF	3,010				ES OCDF	63.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	66	
Total TCDD	172		176		CS 12347-PeCDD	72.7	
Total PeCDD	17.9		26.4		CS 12346-PeCDF	75.6	
Total HxCDD	150		150		CS 123469-HxCDF	88.4	
Total HpCDD	1,320		1,320		CS 1234689-HpCDF	83.5	
Total TCDF	1,170		1,190	E			
Total PeCDF	81.9		113				
Total HxCDF	147		150				
Total HpCDF	347		347				
Total PCDD/Fs	**12,800**		**12,800**	E			
WHO-2005 TEQs							
TEQ: ND=0	237		237				
TEQ: ND=DL/2	237	1.21	237				
TEQ: ND=DL	237	2.41	237				

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Sample ID: 11215131-120121-S-JC-NE-S-4 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	17.28 g	Lab Sample ID:	B5965_18711_DF_009	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	71.7 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:57:38

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[3.03]		12479/12468D	7.06		124679/124689D	53		1234679D	758	
1379D	(0.527)		12469D	[3.45]		123468D	10.4		1234678D	561	
1369D	(0.527)		12368D	[2.76]		123679/123689D	51.4				
1469D	1.2		12478D	[2.26]		123469D	4.09				
1247D...[4]	1.35		12379D	1.6		123478D	4.1				
1378D	[1.21]		12369D...[3]	3.22		123678D	16.3				
1268D	(0.527)		12346/12347D	1.29	J	123467D	2.52				
1478D	(0.527)		12378D	3.93		123789D	8.34		**Conc.**	1,320	
1279D	(0.527)		12367D	0.841	J				**EMPC**	1,320	
1234/1269D	0.754		12389D	(0.688)							
1236D	(0.527)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	2.6										
1239D	(0.527)								OCDD	6360	E
2378D	151										
1278D	15.2										
1267D	(0.527)										
1289D	(0.527)										
Conc.	172		**Conc.**	17.9		**Conc.**	150				
EMPC	176		**EMPC**	26.4		**EMPC**	150				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	237	237
TEQ: ND=DL/2	237	237
TEQ: ND=DL	237	237

	Conc.	EMPC
Total PCDD/Fs	12,800	12,800

Checkcode: 441-781-KDK

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-S-4 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	17.28 g	Lab Sample ID:	B5965_18711_DF_009	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	71.7 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:57:38

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[1.02]		13468/12468F	[25.5]		123468F	11.7		1234678F	135	
1468F	3.28		13678F...[3]	4.6		124678/134678F	43.6		1234679F	7.16	
2468F	9.46		12368F...[3]	21.9		134679F	(1.2)		1234689F	191	
1346/1246F	2.08		14678F	1.89		124679F	[1.36]	J	1234789F	14.8	
1347F...[3]	9.91		13479F	(0.574)		124689F	45.6				
1348F	1.65		13469/12479F	1.59		123467F	2.62				
1248F...[3]	32.4		12346F	(0.574)		123478F	25.1				
1268F	13.6		23468/12469F	[4.29]		123678F	9.01				
1467F	2.52		12347F	[1.35]	J	123479F	(1.2)				
1478F	27.7		12348F	3.35		123469F	[1.5]				
1369/1237F	[6.3]		12378F	16.9		123679F	(1.2)				
2467F	2.09		12678/12367F	9.7		234678F	6.6		**Conc.**	347	
2368F	19.9		12379F	(0.574)		234678/123689F	0		**EMPC**	347	
1238F...[5]	28.8		12679F	(0.574)		123689F	(1.2)				
1278F	277		23467/12369F	1.53		123789F	(1.23)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.517)		23478F	19.2		123789/123489F	0				
1267F	16.5		23478/12489F	0		123489F	2.63		OCDF	3010	
2346/1249F	(0.517)		12489F	(0.574)							
2347/1279F	5.54		12349F	(0.574)							
2348F	39		12389F	1.27	J						
2378F	589	E									
2367/3467F	50.1										
1269F	[9.27]										
1239F	(0.517)										
1289F	41.3										
Conc.	1,170		**Conc.**	81.9		**Conc.**	147				
EMPC	1,190		**EMPC**	113		**EMPC**	150				

Checkcode: 441-781-KDK

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-S-4 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_009
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	17.28 g	QC Batch No.:	18711
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 06:57
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	151		0.527	151	151	151
12378-PeCDD	3.93		0.688	1.97	3.93	3.93
123478-HxCDD	4.1		1.59	0.41	0.41	0.41
123678-HxCDD	16.3		1.46	1.63	1.63	1.63
123789-HxCDD	8.34		1.52	0.834	0.834	0.834
1234678-HpCDD	561		1.03	5.61	5.61	5.61
OCDD	6360	E	2.21	6.36	0.636	1.91
2378-TCDF	589	E	0.517	58.9	58.9	58.9
12378-PeCDF	16.9		0.583	0.844	0.844	0.506
23478-PeCDF	19.2		0.563	9.59	9.59	5.76
123478-HxCDF	25.1		1.19	2.51	2.51	2.51
123678-HxCDF	9.01		1.16	0.901	0.901	0.901
234678-HxCDF	6.6		1.22	0.66	0.66	0.66
123789-HxCDF	(1.23)		1.23	(0.123)	(0.123)	(0.123)
1234678-HpCDF	135		0.499	1.35	1.35	1.35
1234789-HpCDF	14.8		0.623	0.148	0.148	0.148
OCDF	3010		1.75	3.01	0.301	0.903

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TEQ Summaries			
EMPC = 0, ND = 0	245	239	237
EMPC = 0, ND = DL / 2	246	239	237
EMPC = 0, ND = DL	246	239	237
EMPC = 0, < J-level = 0	245	239	237
EMPC = EMPC, ND = 0	245	239	237
EMPC = EMPC, ND = DL / 2	246	239	237
EMPC = EMPC, ND = DL	246	239	237
EMPC = EMPC, < J-level = 0	245	239	237

Checkcode: 441-781-KDK

Sample ID: 11215131-120121-S-JC-NE-S-5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.28 g	Lab Sample ID	B5965_18711_DF_010	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	80.2 %	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	7:45:17

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		0.979		ES 2378-TCDD	71.1	
12378-PeCDD	ND	0.492			ES 12378-PeCDD	67.8	
123478-HxCDD	1.09			J	ES 123478-HxCDD	72.1	
123678-HxCDD	4.5				ES 123678-HxCDD	75.2	
123789-HxCDD	EMPC		2.41		ES 123789-HxCDD	77.2	
1234678-HpCDD	164				ES 1234678-HpCDD	67	
OCDD	4,850				ES OCDD	55.6	
2378-TCDF	3.71				ES 2378-TCDF	67.5	
12378-PeCDF	ND	0.471			ES 12378-PeCDF	72.6	
23478-PeCDF	EMPC		0.787	J	ES 23478-PeCDF	71.1	
123478-HxCDF	0.982			J	ES 123478-HxCDF	81.3	
123678-HxCDF	0.846			J	ES 123678-HxCDF	86.5	
234678-HxCDF	0.869			J	ES 234678-HxCDF	78.5	
123789-HxCDF	ND	0.525			ES 123789-HxCDF	76.3	
1234678-HpCDF	13.2				ES 1234678-HpCDF	84.6	
1234789-HpCDF	1.32			J	ES 1234789-HpCDF	72.2	
OCDF	49				ES OCDF	55.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	67.2	
Total TCDD	3.77		4.75		CS 12347-PeCDD	75.2	
Total PeCDD	5.4		6.82		CS 12346-PeCDF	79.8	
Total HxCDD	57		61.6		CS 123469-HxCDF	92.2	
Total HpCDD	392		392		CS 1234689-HpCDF	87.1	
Total TCDF	5.98		9.3				
Total PeCDF	6.07		6.86				
Total HxCDF	15.6		15.6				
Total HpCDF	45.5		45.9				
Total PCDD/Fs	**5,430**		**5,440**				
WHO-2005 TEQs							
TEQ: ND=0	4.45		5.91				
TEQ: ND=DL/2	4.73	0.752	6.19				
TEQ: ND=DL	5.01	1.5	6.47				

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Sample ID: 11215131-120121-S-JC-NE-S-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.28 g	Lab Sample ID:	B5965_18711_DF_010	Date Extracted:	03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	80.2 %	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	7:45:17

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.311		12479/12468D	2.13		124679/124689D	31.2		1234679D	228	
1379D	(0.399)		12469D	2.71		123468D	2.12		1234678D	164	
1369D	(0.399)		12368D	0.564	J	123679/123689D	18				
1469D	3.46		12478D	(0.492)		123469D	[1.08]	J			
1247D...[4]	(0.399)		12379D	(0.492)		123478D	1.09	J			
1378D	(0.399)		12369D...[3]	[1.42]	J	123678D	4.5				
1268D	(0.399)		12346/12347D	(0.492)		123467D	[1.1]	J			
1478D	(0.399)		12378D	(0.492)		123789D	[2.41]		**Conc.**	392	
1279D	(0.399)		12367D	(0.492)					**EMPC**	392	
1234/1269D	(0.399)		12389D	(0.492)							
1236D	(0.399)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.399)										
1239D	(0.399)								OCDD	4850	
2378D	[0.979]										
1278D	(0.399)										
1267D	(0.399)										
1289D	(0.399)										
Conc.	3.77		**Conc.**	5.4		**Conc.**	57				
EMPC	4.75		**EMPC**	6.82		**EMPC**	61.6				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	4.45	5.91
TEQ: ND=DL/2	4.73	6.19
TEQ: ND=DL	5.01	6.47

	Conc.	EMPC
Total PCDD/Fs	5,430	5,440

Checkcode: 756-512-RNK

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-S-5 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.28 g	Lab Sample ID:	B5965_18711_DF_010	Date Extracted: 03-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	80.2 %	QC Batch No.:	18711	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 7:45:17

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.469)		13468/12468F	2.78		123468F	1.3	J	1234678F	13.2	
1468F	(0.469)		13678F...[3]	0.747	J	124678/134678F	5.47		1234679F	[0.365]	J
2468F	0.919		12368F...[3]	2.54		134679F	(0.471)		1234689F	31	
1346/1246F	(0.469)		14678F	(0.472)		124679F	(0.471)		1234789F	1.32	J
1347F...[3]	0.645		13479F	(0.472)		124689F	6.14				
1348F	(0.469)		13469/12479F	(0.472)		123467F	(0.471)				
1248F...[3]	0.713		12346F	(0.472)		123478F	0.982	J			
1268F	(0.469)		23468/12469F	(0.472)		123678F	0.846	J			
1467F	(0.469)		12347F	(0.472)		123479F	(0.471)				
1478F	(0.469)		12348F	(0.472)		123469F	(0.471)				
1369/1237F	(0.469)		12378F	(0.471)		123679F	(0.471)				
2467F	(0.469)		12678/12367F	(0.472)		234678F	0.869	J	**Conc.**	45.5	
2368F	[0.781]		12379F	(0.472)		234678/123689F	0		**EMPC**	45.9	
1238F...[5]	(0.469)		12679F	(0.472)		123689F	(0.471)				
1278F	[1.56]		23467/12369F	(0.472)		123789F	(0.525)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.469)		23478F	[0.787]	J	123789/123489F	0				
1267F	(0.469)		23478/12489F	0		123489F	(0.471)		OCDF	49	
2346/1249F	(0.469)		12489F	(0.472)							
2347/1279F	(0.469)		12349F	(0.472)							
2348F	(0.469)		12389F	(0.472)							
2378F	3.71										
2367/3467F	[0.967]										
1269F	(0.469)										
1239F	(0.469)										
1289F	(0.469)										
Conc.	5.98		**Conc.**	6.07		**Conc.**	15.6				
EMPC	9.3		**EMPC**	6.86		**EMPC**	15.6				

Checkcode: 756-512-RNK

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-S-5 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5965_18711_DF_010
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.28 g	QC Batch No.:	18711
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 07:45
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	[0.979]		0.399	[0.979]	[0.979]	[0.979]
12378-PeCDD	(0.492)		0.492	(0.246)	(0.492)	(0.492)
123478-HxCDD	1.09	J	0.709	0.109	0.109	0.109
123678-HxCDD	4.5		0.701	0.45	0.45	0.45
123789-HxCDD	[2.41]		0.622	[0.241]	[0.241]	[0.241]
1234678-HpCDD	164		0.771	1.64	1.64	1.64
OCDD	4850		2.47	4.85	0.485	1.45
2378-TCDF	3.71		0.469	0.371	0.371	0.371
12378-PeCDF	(0.471)		0.471	(0.0236)	(0.0236)	(0.0141)
23478-PeCDF	[0.787]	J	0.472	[0.394]	[0.394]	[0.236]
123478-HxCDF	0.982	J	0.463	0.0982	0.0982	0.0982
123678-HxCDF	0.846	J	0.457	0.0846	0.0846	0.0846
234678-HxCDF	0.869	J	0.449	0.0869	0.0869	0.0869
123789-HxCDF	(0.525)		0.525	(0.0525)	(0.0525)	(0.0525)
1234678-HpCDF	13.2		0.343	0.132	0.132	0.132
1234789-HpCDF	1.32	J	0.566	0.0132	0.0132	0.0132
OCDF	49		1.36	0.049	0.0049	0.0147

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TEQ Summaries			
EMPC = 0, ND = 0	7.88	3.47	4.45
EMPC = 0, ND = DL / 2	8.04	3.76	4.73
EMPC = 0, ND = DL	8.2	4.04	5.01
EMPC = 0, < J-level = 0	7.49	3.08	4.06
EMPC = EMPC, ND = 0	9.5	5.09	5.91
EMPC = EMPC, ND = DL / 2	9.66	5.37	6.19
EMPC = EMPC, ND = DL	9.82	5.66	6.47
EMPC = EMPC, < J-level = 0	8.71	4.3	5.28

Checkcode: 756-512-RNK

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Sample ID: Method Blank B5965_18711 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18711_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:37:10

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.08			ES 2378-TCDD	52.4	
12378-PeCDD	ND	0.991			ES 12378-PeCDD	47.9	
123478-HxCDD	ND	0.945			ES 123478-HxCDD	56.7	
123678-HxCDD	ND	0.912			ES 123678-HxCDD	58.9	
123789-HxCDD	ND	0.951			ES 123789-HxCDD	56.1	
1234678-HpCDD	ND	1.26			ES 1234678-HpCDD	48	
OCDD	ND	2.56			ES OCDD	29.7	
2378-TCDF	ND	1.01			ES 2378-TCDF	45.6	
12378-PeCDF	ND	0.842			ES 12378-PeCDF	54.5	
23478-PeCDF	ND	0.888			ES 23478-PeCDF	52	
123478-HxCDF	ND	0.694			ES 123478-HxCDF	63.1	
123678-HxCDF	ND	0.659			ES 123678-HxCDF	71.3	
234678-HxCDF	ND	0.779			ES 234678-HxCDF	64.5	
123789-HxCDF	ND	0.85			ES 123789-HxCDF	53.2	
1234678-HpCDF	ND	0.591			ES 1234678-HpCDF	71.8	
1234789-HpCDF	ND	1.17			ES 1234789-HpCDF	47.2	
OCDF	ND	3.83			ES OCDF	26.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	84.2	
Total TCDD	ND	1.08	ND		CS 12347-PeCDD	91.9	
Total PeCDD	ND	0.991	ND		CS 12346-PeCDF	97.9	
Total HxCDD	ND	0.935	ND		CS 123469-HxCDF	127	
Total HpCDD	ND	1.26	ND		CS 1234689-HpCDF	114	
Total TCDF	ND	1.01	ND				
Total PeCDF	ND	0.865	ND				
Total HxCDF	ND	0.735	ND				
Total HpCDF	ND	0.803	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	1.53	1.53	1.53				
TEQ: ND=DL	3.07	3.07	3.07				

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Sample ID: Method Blank B5965_18711 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18711_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:37:10

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(1.08)		12479/12468D	(0.991)		124679/124689D	(0.935)		1234679D	(1.26)	
1379D	(1.08)		12469D	(0.991)		123468D	(0.935)		1234678D	(1.26)	
1369D	(1.08)		12368D	(0.991)		123679/123689D	(0.935)				
1469D	(1.08)		12478D	(0.991)		123469D	(0.935)				
1247D...[4]	(1.08)		12379D	(0.991)		123478D	(0.945)				
1378D	(1.08)		12369D...[3]	(0.991)		123678D	(0.912)				
1268D	(1.08)		12346/12347D	(0.991)		123467D	(0.935)				
1478D	(1.08)		12378D	(0.991)		123789D	(0.951)		**Conc.**	0	
1279D	(1.08)		12367D	(0.991)					**EMPC**	0	
1234/1269D	(1.08)		12389D	(0.991)							
1236D	(1.08)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(1.08)										
1239D	(1.08)								OCDD	(2.56)	
2378D	(1.08)										
1278D	(1.08)										
1267D	(1.08)										
1289D	(1.08)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	1.53	1.53
TEQ: ND=DL	3.07	3.07

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 237-974-JJY

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: Method Blank B5965_18711 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18711_DF_SDS	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18711	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:37:10

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(1.01)		13468/12468F	(1.11)		123468F	(0.735)		1234678F	(0.591)	
1468F	(1.01)		13678F...[3]	(0.865)		124678/134678F	(0.735)		1234679F	(0.803)	
2468F	(1.01)		12368F...[3]	(0.865)		134679F	(0.735)		1234689F	(0.803)	
1346/1246F	(1.01)		14678F	(0.865)		124679F	(0.735)		1234789F	(1.17)	
1347F...[3]	(1.01)		13479F	(0.865)		124689F	(0.735)				
1348F	(1.01)		13469/12479F	(0.865)		123467F	(0.735)				
1248F...[3]	(1.01)		12346F	(0.865)		123478F	(0.694)				
1268F	(1.01)		23468/12469F	(0.865)		123678F	(0.659)				
1467F	(1.01)		12347F	(0.865)		123479F	(0.735)				
1478F	(1.01)		12348F	(0.865)		123469F	(0.735)				
1369/1237F	(1.01)		12378F	(0.842)		123679F	(0.735)				
2467F	(1.01)		12678/12367F	(0.865)		234678F	(0.779)		**Conc.**	0	
2368F	(1.01)		12379F	(0.865)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(1.01)		12679F	(0.865)		123689F	(0.735)				
1278F	(1.01)		23467/12369F	(0.865)		123789F	(0.85)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(1.01)		23478F	(0.888)		123789/123489F	0				
1267F	(1.01)		23478/12489F	0		123489F	(0.735)		OCDF	(3.83)	
2346/1249F	(1.01)		12489F	(0.865)							
2347/1279F	(1.01)		12349F	(0.865)							
2348F	(1.01)		12389F	(0.865)							
2378F	(1.01)										
2367/3467F	(1.01)										
1269F	(1.01)										
1239F	(1.01)										
1289F	(1.01)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 237-974-JJY

Report Created: 08-Dec-2021 14:50 Analyst: pw

Sample ID: Method Blank B5965_18711 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18711_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18711
Date Collected:	n/a	Split:	-	Date Extracted:	03-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	08-Dec-2021 00:37
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(1.08)		1.08	(1.08)	(1.08)	(1.08)
12378-PeCDD	(0.991)		0.991	(0.495)	(0.991)	(0.991)
123478-HxCDD	(0.945)		0.945	(0.0945)	(0.0945)	(0.0945)
123678-HxCDD	(0.912)		0.912	(0.0912)	(0.0912)	(0.0912)
123789-HxCDD	(0.951)		0.951	(0.0951)	(0.0951)	(0.0951)
1234678-HpCDD	(1.26)		1.26	(0.0126)	(0.0126)	(0.0126)
OCDD	(2.56)		2.56	(0.00256)	(0.000256)	(0.000769)
2378-TCDF	(1.01)		1.01	(0.101)	(0.101)	(0.101)
12378-PeCDF	(0.842)		0.842	(0.0421)	(0.0421)	(0.0253)
23478-PeCDF	(0.888)		0.888	(0.444)	(0.444)	(0.267)
123478-HxCDF	(0.694)		0.694	(0.0694)	(0.0694)	(0.0694)
123678-HxCDF	(0.659)		0.659	(0.0659)	(0.0659)	(0.0659)
234678-HxCDF	(0.779)		0.779	(0.0779)	(0.0779)	(0.0779)
123789-HxCDF	(0.85)		0.85	(0.085)	(0.085)	(0.085)
1234678-HpCDF	(0.591)		0.591	(0.00591)	(0.00591)	(0.00591)
1234789-HpCDF	(1.17)		1.17	(0.0117)	(0.0117)	(0.0117)
OCDF	(3.83)		3.83	(0.00383)	(0.000383)	(0.00115)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	1.39	1.63	1.53
EMPC = 0, ND = DL	2.77	3.26	3.07
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	1.39	1.63	1.53
EMPC = EMPC, ND = DL	2.77	3.26	3.07
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 237-974-JJY

Sample ID: Method Blank B5965_18715 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18715_DF_SDS	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18715	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	12:14:27

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.542			ES 2378-TCDD	89	
12378-PeCDD	ND	0.637			ES 12378-PeCDD	67	
123478-HxCDD	ND	0.753			ES 123478-HxCDD	90	
123678-HxCDD	ND	0.786			ES 123678-HxCDD	95	
123789-HxCDD	ND	0.65			ES 123789-HxCDD	91.4	
1234678-HpCDD	ND	0.671			ES 1234678-HpCDD	85.9	
OCDD	ND	2.03			ES OCDD	55.4	
2378-TCDF	ND	0.413			ES 2378-TCDF	81	
12378-PeCDF	ND	0.498			ES 12378-PeCDF	78	
23478-PeCDF	ND	0.487			ES 23478-PeCDF	73.4	
123478-HxCDF	ND	0.56			ES 123478-HxCDF	98.8	
123678-HxCDF	ND	0.514			ES 123678-HxCDF	114	
234678-HxCDF	ND	0.617			ES 234678-HxCDF	98.6	
123789-HxCDF	ND	0.698			ES 123789-HxCDF	82.6	
1234678-HpCDF	ND	0.375			ES 1234678-HpCDF	115	
1234789-HpCDF	ND	0.734			ES 1234789-HpCDF	77.4	
OCDF	ND	1.47			ES OCDF	52.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	85.2	
Total TCDD	ND	0.542	ND		CS 12347-PeCDD	85.4	
Total PeCDD	ND	0.637	ND		CS 12346-PeCDF	84.5	
Total HxCDD	ND	0.727	ND		CS 123469-HxCDF	120	
Total HpCDD	ND	0.671	ND		CS 1234689-HpCDF	113	
Total TCDF	ND	0.413	ND				
Total PeCDF	ND	0.493	ND				
Total HxCDF	ND	0.586	ND				
Total HpCDF	ND	0.509	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.929	0.929	0.929				
TEQ: ND=DL	1.86	1.86	1.86				

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Sample ID: Method Blank B5965_18715 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18715_DF_SDS	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18715	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	12:14:27

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.542)		12479/12468D	(0.637)		124679/124689D	(0.727)		1234679D	(0.671)	
1379D	(0.542)		12469D	(0.637)		123468D	(0.727)		1234678D	(0.671)	
1369D	(0.542)		12368D	(0.637)		123679/123689D	(0.727)				
1469D	(0.542)		12478D	(0.637)		123469D	(0.727)				
1247D...[4]	(0.542)		12379D	(0.637)		123478D	(0.753)				
1378D	(0.542)		12369D...[3]	(0.637)		123678D	(0.786)				
1268D	(0.542)		12346/12347D	(0.637)		123467D	(0.727)				
1478D	(0.542)		12378D	(0.637)		123789D	(0.65)		**Conc.**	0	
1279D	(0.542)		12367D	(0.637)					**EMPC**	0	
1234/1269D	(0.542)		12389D	(0.637)							
1236D	(0.542)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.542)										
1239D	(0.542)								OCDD	(2.03)	
2378D	(0.542)										
1278D	(0.542)										
1267D	(0.542)										
1289D	(0.542)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.929	0.929
TEQ: ND=DL	1.86	1.86

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 576-965-QQF

Report Created: 08-Dec-2021 14:02 Analyst: pw

Sample ID: Method Blank B5965_18715 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18715_DF_SDS	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18715	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	12:14:27

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.413)		13468/12468F	(0.606)		123468F	(0.586)		1234678F	(0.375)	
1468F	(0.413)		13678F...[3]	(0.493)		124678/134678F	(0.586)		1234679F	(0.509)	
2468F	(0.413)		12368F...[3]	(0.493)		134679F	(0.586)		1234689F	(0.509)	
1346/1246F	(0.413)		14678F	(0.493)		124679F	(0.586)		1234789F	(0.734)	
1347F...[3]	(0.413)		13479F	(0.493)		124689F	(0.586)				
1348F	(0.413)		13469/12479F	(0.493)		123467F	(0.586)				
1248F...[3]	(0.413)		12346F	(0.493)		123478F	(0.56)				
1268F	(0.413)		23468/12469F	(0.493)		123678F	(0.514)				
1467F	(0.413)		12347F	(0.493)		123479F	(0.586)				
1478F	(0.413)		12348F	(0.493)		123469F	(0.586)				
1369/1237F	(0.413)		12378F	(0.498)		123679F	(0.586)				
2467F	(0.413)		12678/12367F	(0.493)		234678F	(0.617)		**Conc.**	0	
2368F	(0.413)		12379F	(0.493)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.413)		12679F	(0.493)		123689F	(0.586)				
1278F	(0.413)		23467/12369F	(0.493)		123789F	(0.698)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.413)		23478F	(0.487)		123789/123489F	0				
1267F	(0.413)		23478/12489F	0		123489F	(0.586)		OCDF	(1.47)	
2346/1249F	(0.413)		12489F	(0.493)							
2347/1279F	(0.413)		12349F	(0.493)							
2348F	(0.413)		12389F	(0.493)							
2378F	(0.413)										
2367/3467F	(0.413)										
1269F	(0.413)										
1239F	(0.413)										
1289F	(0.413)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 576-965-QQF

Report Created: 08-Dec-2021 14:02 Analyst: pw

Sample ID: Method Blank B5965_18715 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18715_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18715
Date Collected:	n/a	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	08-Dec-2021 12:14
Lab Project No:	B5965	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.542)		0.542	(0.542)	(0.542)	(0.542)
12378-PeCDD	(0.637)		0.637	(0.318)	(0.637)	(0.637)
123478-HxCDD	(0.753)		0.753	(0.0753)	(0.0753)	(0.0753)
123678-HxCDD	(0.786)		0.786	(0.0786)	(0.0786)	(0.0786)
123789-HxCDD	(0.65)		0.65	(0.065)	(0.065)	(0.065)
1234678-HpCDD	(0.671)		0.671	(0.00671)	(0.00671)	(0.00671)
OCDD	(2.03)		2.03	(0.00203)	(0.000203)	(0.000609)
2378-TCDF	(0.413)		0.413	(0.0413)	(0.0413)	(0.0413)
12378-PeCDF	(0.498)		0.498	(0.0249)	(0.0249)	(0.015)
23478-PeCDF	(0.487)		0.487	(0.243)	(0.243)	(0.146)
123478-HxCDF	(0.56)		0.56	(0.056)	(0.056)	(0.056)
123678-HxCDF	(0.514)		0.514	(0.0514)	(0.0514)	(0.0514)
234678-HxCDF	(0.617)		0.617	(0.0617)	(0.0617)	(0.0617)
123789-HxCDF	(0.698)		0.698	(0.0698)	(0.0698)	(0.0698)
1234678-HpCDF	(0.375)		0.375	(0.00375)	(0.00375)	(0.00375)
1234789-HpCDF	(0.734)		0.734	(0.00734)	(0.00734)	(0.00734)
OCDF	(1.47)		1.47	(0.00147)	(0.000147)	(0.000442)

TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.824	0.982	0.929
EMPC = 0, ND = DL	1.65	1.96	1.86
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.824	0.982	0.929
EMPC = EMPC, ND = DL	1.65	1.96	1.86
EMPC = EMPC, < J-level = 0	0	0	0

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Checkcode: 576-965-QQF

Sample ID: 0_18711_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18711_DF	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18711	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:14:25

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	10.2				ES 2378-TCDD	88.2	
12378-PeCDD	48.4				ES 12378-PeCDD	85	
123478-HxCDD	53.7				ES 123478-HxCDD	96.4	
123678-HxCDD	58.6				ES 123678-HxCDD	97	
123789-HxCDD	51.8				ES 123789-HxCDD	99.5	
1234678-HpCDD	55				ES 1234678-HpCDD	94	
OCDD	112				ES OCDD	67.5	
2378-TCDF	12.5				ES 2378-TCDF	81.6	
12378-PeCDF	57.3				ES 12378-PeCDF	95.8	
23478-PeCDF	60.2				ES 23478-PeCDF	91.2	
123478-HxCDF	56.7				ES 123478-HxCDF	103	
123678-HxCDF	57.5				ES 123678-HxCDF	120	
234678-HxCDF	56.6				ES 234678-HxCDF	107	
123789-HxCDF	55.1				ES 123789-HxCDF	94.2	
1234678-HpCDF	55.9				ES 1234678-HpCDF	120	
1234789-HpCDF	54.5				ES 1234789-HpCDF	90.2	
OCDF	110				ES OCDF	64.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	86.1	
Total TCDD	44.3		44.3		CS 12347-PeCDD	94.8	
Total PeCDD	73.4		73.4		CS 12346-PeCDF	103	
Total HxCDD	179		179		CS 123469-HxCDF	122	
Total HpCDD	67.2		67.2		CS 1234689-HpCDF	122	
Total TCDF	66.7		66.7				
Total PeCDF	222		222				
Total HxCDF	360		360				
Total HpCDF	110		110				
Total PCDD/Fs	**1,350**		**1,350**				
WHO-2005 TEQs							
TEQ: ND=0	120		120				
TEQ: ND=DL/2	120	0.564	120				
TEQ: ND=DL	120	1.13	120				

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Sample ID: 0_18711_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18711_DF	Date Extracted:	03-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18711	Date Analyzed:	07-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:01:58

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	9.56				ES 2378-TCDD	91.2	
12378-PeCDD	45.4				ES 12378-PeCDD	85.4	
123478-HxCDD	54.5				ES 123478-HxCDD	99.3	
123678-HxCDD	56.8				ES 123678-HxCDD	106	
123789-HxCDD	51.9				ES 123789-HxCDD	104	
1234678-HpCDD	56.3				ES 1234678-HpCDD	94.4	
OCDD	107				ES OCDD	71.1	
2378-TCDF	12.5				ES 2378-TCDF	81.2	
12378-PeCDF	55.6				ES 12378-PeCDF	95.9	
23478-PeCDF	60.4				ES 23478-PeCDF	90.4	
123478-HxCDF	55.4				ES 123478-HxCDF	113	
123678-HxCDF	55.7				ES 123678-HxCDF	127	
234678-HxCDF	54.1				ES 234678-HxCDF	114	
123789-HxCDF	51.5				ES 123789-HxCDF	103	
1234678-HpCDF	55.5				ES 1234678-HpCDF	119	
1234789-HpCDF	55.4				ES 1234789-HpCDF	96.9	
OCDF	111				ES OCDF	71.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	81.7	
Total TCDD	42.2		42.2		CS 12347-PeCDD	94.3	
Total PeCDD	68.5		68.5		CS 12346-PeCDF	104	
Total HxCDD	178		178		CS 123469-HxCDF	129	
Total HpCDD	69.1		69.1		CS 1234689-HpCDF	127	
Total TCDF	69.2		69.2				
Total PeCDF	218		218				
Total HxCDF	347		347				
Total HpCDF	111		111				
Total PCDD/Fs	**1,320**		**1,320**				
WHO-2005 TEQs							
TEQ: ND=0	116		116				
TEQ: ND=DL/2	116	0.552	116				
TEQ: ND=DL	116	1.1	116				

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Sample DUP

Method 1613B

Sample ID: 0_18711_OPR001

Analyte	OPR1_18711_DF pg/uL	OPR2_18711_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	10.2	9.56	6.1%
1,2,3,7,8-PeCDD	48.4	45.4	6.3%
1,2,3,4,7,8-HxCDD	53.7	54.5	1.6%
1,2,3,6,7,8-HxCDD	58.6	56.8	3.1%
1,2,3,7,8,9-HxCDD	51.8	51.9	0.3%
1,2,3,4,6,7,8-HpCDD	55	56.3	2.3%
OCDD	112	107	5.2%
2,3,7,8-TCDF	12.5	12.5	0.1%
1,2,3,7,8-PeCDF	57.3	55.6	3.1%
2,3,4,7,8-PeCDF	60.2	60.4	0.5%
1,2,3,4,7,8-HxCDF	56.7	55.4	2.3%
1,2,3,6,7,8-HxCDF	57.5	55.7	3.3%
2,3,4,6,7,8-HxCDF	56.6	54.1	4.7%
1,2,3,7,8,9-HxCDF	55.1	51.5	6.7%
1,2,3,4,6,7,8-HpCDF	55.9	55.5	0.6%
1,2,3,4,7,8,9-HpCDF	54.5	55.4	1.6%
OCDF	110	111	1.4%
Totals			
Total TCDD	44.3	42.2	4.8%
Total PeCDD	73.4	68.5	6.9%
Total HxCDD	179	178	0.6%
Total HpCDD	67.2	69.1	2.7%
Total TCDF	66.7	69.2	3.8%
Total PeCDF	222	218	2.1%
Total HxCDF	360	347	3.8%
Total HpCDF	110	111	0.4%

Sample ID: 0_18715_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18715_DF	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18715	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	9:52:37

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	8.85				ES 2378-TCDD	96.4	
12378-PeCDD	46.1				ES 12378-PeCDD	92.7	
123478-HxCDD	51.6				ES 123478-HxCDD	96.1	
123678-HxCDD	52.7				ES 123678-HxCDD	103	
123789-HxCDD	48.5				ES 123789-HxCDD	96.7	
1234678-HpCDD	55.4				ES 1234678-HpCDD	80.6	
OCDD	111				ES OCDD	56.5	
2378-TCDF	12.5				ES 2378-TCDF	80.4	
12378-PeCDF	56.6				ES 12378-PeCDF	92.6	
23478-PeCDF	57.4				ES 23478-PeCDF	92.5	
123478-HxCDF	55.4				ES 123478-HxCDF	97.1	
123678-HxCDF	52.9				ES 123678-HxCDF	112	
234678-HxCDF	53.8				ES 234678-HxCDF	99	
123789-HxCDF	50.4				ES 123789-HxCDF	86.9	
1234678-HpCDF	53.5				ES 1234678-HpCDF	115	
1234789-HpCDF	53				ES 1234789-HpCDF	73.3	
OCDF	115				ES OCDF	48.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	90.2	
Total TCDD	47.6		47.6		CS 12347-PeCDD	104	
Total PeCDD	69.6		69.6		CS 12346-PeCDF	97.1	
Total HxCDD	168		168		CS 123469-HxCDF	109	
Total HpCDD	70.2		70.2		CS 1234689-HpCDF	102	
Total TCDF	77.5		77.5				
Total PeCDF	242		242				
Total HxCDF	356		356				
Total HpCDF	107		107				
Total PCDD/Fs	**1,360**		**1,360**				
WHO-2005 TEQs							
TEQ: ND=0	113		113				
TEQ: ND=DL/2	113	0.64	113				
TEQ: ND=DL	113	1.28	113				

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Sample ID: 0_18715_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5965	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18715_DF	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18715	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	10:39:20

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	9.19				ES 2378-TCDD	93.5	
12378-PeCDD	47.8				ES 12378-PeCDD	84.9	
123478-HxCDD	53.4				ES 123478-HxCDD	102	
123678-HxCDD	55.9				ES 123678-HxCDD	103	
123789-HxCDD	51.7				ES 123789-HxCDD	102	
1234678-HpCDD	54.9				ES 1234678-HpCDD	87.2	
OCDD	106				ES OCDD	62.1	
2378-TCDF	12				ES 2378-TCDF	86.3	
12378-PeCDF	56				ES 12378-PeCDF	88.3	
23478-PeCDF	60.1				ES 23478-PeCDF	84.8	
123478-HxCDF	53.5				ES 123478-HxCDF	102	
123678-HxCDF	53				ES 123678-HxCDF	118	
234678-HxCDF	53.7				ES 234678-HxCDF	110	
123789-HxCDF	50.6				ES 123789-HxCDF	96.3	
1234678-HpCDF	53				ES 1234678-HpCDF	127	
1234789-HpCDF	58				ES 1234789-HpCDF	76.8	
OCDF	110				ES OCDF	53.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	88.6	
Total TCDD	42.2		42.2		CS 12347-PeCDD	90.1	
Total PeCDD	67.5		67.5		CS 12346-PeCDF	88.7	
Total HxCDD	174		174		CS 123469-HxCDF	124	
Total HpCDD	69.2		69.2		CS 1234689-HpCDF	115	
Total TCDF	65.4		65.4				
Total PeCDF	241		241				
Total HxCDF	335		335				
Total HpCDF	111		111				
Total PCDD/Fs	**1,320**		**1,320**				
WHO-2005 TEQs							
TEQ: ND=0	117		117				
TEQ: ND=DL/2	117	0.488	117				
TEQ: ND=DL	117	0.976	117				

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Sample DUP

Method 1613B

Sample ID: 0_18715_OPR001

Analyte	OPR1_18715_DF pg/uL	OPR2_18715_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	8.85	9.19	3.8%
1,2,3,7,8-PeCDD	46.1	47.8	3.7%
1,2,3,4,7,8-HxCDD	51.6	53.4	3.3%
1,2,3,6,7,8-HxCDD	52.7	55.9	5.7%
1,2,3,7,8,9-HxCDD	48.5	51.7	6.3%
1,2,3,4,6,7,8-HpCDD	55.4	54.9	0.9%
OCDD	111	106	4.6%
2,3,7,8-TCDF	12.5	12	3.8%
1,2,3,7,8-PeCDF	56.6	56	1.0%
2,3,4,7,8-PeCDF	57.4	60.1	4.6%
1,2,3,4,7,8-HxCDF	55.4	53.5	3.5%
1,2,3,6,7,8-HxCDF	52.9	53	0.2%
2,3,4,6,7,8-HxCDF	53.8	53.7	0.1%
1,2,3,7,8,9-HxCDF	50.4	50.6	0.4%
1,2,3,4,6,7,8-HpCDF	53.5	53	1.1%
1,2,3,4,7,8,9-HpCDF	53	58	9.0%
OCDF	115	110	4.5%
Totals			
Total TCDD	47.6	42.2	11.9%
Total PeCDD	69.6	67.5	3.1%
Total HxCDD	168	174	3.8%
Total HpCDD	70.2	69.2	1.4%
Total TCDF	77.5	65.4	16.9%
Total PeCDF	242	241	0.4%
Total HxCDF	356	335	6.1%
Total HpCDF	107	111	4.1%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5965*
Requested TAT:	*3 business days*
Projected due date:	*8-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-113021-S-SPS-NE-S-7	B5965_001	Solid	1	4oz Amber	30-Nov-21	13:40	1.2	1	4905 2704 1753
11215131-113021-S-SPS-NE-S-6	B5965_002	Solid	1	4oz Amber	30-Nov-21	13:50	1.2	1	4905 2704 1753
11215131-120121-S-SPS-NE-S-12	B5965_003	Solid	1	4oz Amber	01-Dec-21	09:15	1.2	1	4905 2704 1753
11215131-120121-S-SPS-NE-S-14	B5965_004	Solid	1	4oz Amber	01-Dec-21	09:40	1.2	1	4905 2704 1753
11215131-120121-S-SPS-NE-S-13	B5965_005	Solid	1	4oz Amber	01-Dec-21	10:45	1.2	1	4905 2704 1753
11215131-113021-S-JC-NE-S-1	B5965_006	Solid	1	4oz Amber	30-Nov-21	13:50	0.4	2	4905 2704 1764
11215131-113021-S-JC-NE-S-2	B5965_007	Solid	1	4oz Amber	30-Nov-21	14:10	0.4	2	4905 2704 1764
11215131-113021-S-JC-NE-S-3	B5965_008	Solid	1	4oz Amber	30-Nov-21	15:30	0.4	2	4905 2704 1764
11215131-120121-S-JC-NE-S-4	B5965_009	Solid	1	4oz Amber	01-Dec-21	09:10	0.4	2	4905 2704 1764
11215131-120121-S-JC-NE-S-5	B5965_010	Solid	1	4oz Amber	01-Dec-21	09:20	0.4	2	4905 2704 1764

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Amanda Hamilton *Logged in by: Ashley Owens* *QC'ed by:* TB 12/3/2021

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B59165 1/2

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remar
REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV
SPECIAL DELIVERABLES:
☐ DoD ■ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-371 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-113021-S-SPS-NE-S-7	11/30/21	1340	C	S	4 oz		X					RUSH *
11215131-113021-S-SPS-NE-S-6		1350	C		4 oz		X					RUSH *
11215131-113021-S-SPS-NE-0-5		1410	C		4 oz		X					
11215131-113021-S-SPS-NE-0-4		1545	C		4 oz		X					
11215131-120121-S-SPS-NE-S-12	12/1/21	915	C		4 oz		X					RUSH *
11215131-120121-S-SPS-NE-S-14		940	C		4 oz		X					RUSH *
11215131-120121-S-SPS-NE-S-13		1045	C		4 oz		X					RUSH *
					4 oz							
					4 oz							
					4 oz							

COLLECTED/RELINQUISHED BY (1):	DATE: 12/1/21	TIME: 1530	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE: 12/3/21 TIME: 10:47
RELINQUISHED BY (2):	DATE: 12/2/21	TIME: 1608	RECEIVED BY:	COOLER SEAL: ☑ INTACT ☐ BROKEN ☐ ABSENT	
RELINQUISHED BY (3):	DATE: 12/2/21	TIME: 1654	RECEIVED BY:	CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☑ ABSENT	
				CARRIER: FedEx TEMP: °C 1.2°	
				TRACKING #: 4905 2704 1753	

* = Samples in this project.

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Member of the SGS Group (SGS SA)

SGS CHAIN OF CUSTODY

B59165 2/2

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV
SPECIAL DELIVERABLES:
☐ DoD ■ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-113021-S-JC-NE-0-1	11-30-21	1340	C	S	4 oz		X					
11215131-113021-S-JC-NE-S-1	1	1350			4 oz		X					RUSH *
11215131-113021-S-JC-NE-S-2		1410			4 oz		X					RUSH *
11215131-113021-S-JC-NE-0-2		1520			4 oz		X					
11215131-113021-S-JC-NE-S-3	↓	1530			4 oz		X					RUSH *
11215131-120121-S-JC-NE-S-4	12-1-21	0910			4 oz		X					RUSH *
11215131-120121-S-JC-NE-S-5		0920			4 oz		X					RUSH *
11215131-120121-S-JC-NE-0-3	↓	0930	↓	↓	4 oz		X					
					4 oz		X					
					4 oz							

BN

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Breanna Nordt	12-1-21	1530	
RELINQUISHED BY (2):	DATE:	TIME:	RECEIVED BY:
	12-1-21	1605	
RELINQUISHED BY (3):	DATE:	TIME:	RECEIVED BY:
	12/1/21	1608	FedEx

RECEIVED BY LABORATORY:	DATE:	TIME:
	12/3/21	10:47
COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT		
CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT		
CARRIER: FedEx	TEMP °C: 0.4°	
TRACKING #: 4905 2704 1704		

*=Samples in this project.

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Member of the SGS Group (SGS SA)

B59965 1/1

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 01DEC21
ACTWGT: 40.00 LB MAN
CAD: 0317565/CAFE3313

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/3/2021
10:47
1.2° (T.B.)

565C2/ADE5/05A2

FedEx Express

J191219082001UV

1 of 2

TRK# 0201 4905 2704 1753
MASTER

THU - 02 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Part # 156148-434 MTW EXP 07/22

TB
12/3/21

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 01DEC21
ACTWGT: 40.00 LB MAN
CAD: 0317565/CAFE3313

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/3/2021
10:47
0.4° (T.B.)

565C2/ADE5/05A2

FedEx Express

J191219082001UV

2 of 2

MPS# 0263 ~~4905~~ 2704 1764
Mstr# 4905 2704 1753
0201

THU - 02 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Part # 156148-434 MTW EXP 07/22

TB
12/3/21

SGS

Project Initiation Form

Project Number: B5965

Initiation Date: 03-Dec-21

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 3 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Read and understood, initial and date: Prep Lab: KE RPB 12/3/21 12/3/21 HRMS Lab:

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: tburkamper Date: 03-Dec-2021

SGS

Methods: PCB PAH | (PCDD/F) WHO-2 | QUANTICS USV | DoDPCDD/F PEST

Extraction Type: (SDS) CLL | TALEX Carbon SPE

Solid

Final Volume: 20µL

Batch# 18711 | Split: ~~1/2~~ ~~1/4~~ | Extract Initial/Date: [illegible] 12/3/21 | Clean-up Initial/Date: [illegible] 12/6/21 | Transfer Init/Date: [illegible] 12/6/21

Lab Sample ID	Extraction Position Solvent: TOL	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5965_18711_001	16	20.83				Clay like
B5965_18711_002	17	22.96				From mud & sand
B5965_18711_003	18	22.15				Clay like ; fuel smell
B5965_18711_004	19	19.05				Clay some rocks
B5965_18711_005	20	21.94				Dark moist fuel smell
B5965_18711_006	21	20.75				moist clay like small rocks
B5965_18711_007	22	22.40				Dark moist fuel smell
B5965_18711_008	23	23.06				see 007
B5965_18711_009	24	24.12				see 007
B5965_18711_010	25	20.30				Gray clay like
MB1_18711	13	10.00				Sodium Sulfate
OPR1_18711	14	10.00				Sodium Sulfate
OPR2_18711	15	10.00				Sodium Sulfate

TB 12/8/2021

Supply IDs

Toluene	STL14.16
MeCHL	STL14.2
Florisil	SGS.66
Hexane	STL14.19
Silica	SGS.28D
S Nitrate	N/A
Base Silica	SGS.63
HydroMatrix	N/A
Tetradecane	SGS.28B
H_2SO_4	N/A
A Silica	SGS.65
Sodium Sulfate	SGS.26C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	
GPC Date/Initial:	TB 12/8/2021
Bond-Elute Date/Initial:	

RB 12/6/21

Cycle Time

TOL	Start:	1600
	Stop:	0915
HEX	Start:	
	Stop:	
DCM	Start:	TB 12/8/2021
	Stop:	

SGS

Methods: PCB PAH | (PCDD/F) WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18711

Inter-Department Communication Sheet

B5965-001 to be reextracted at a lesser wt. Extract would not flow through clean up column. - JAH 12/6/21

TB
12/8/2021

SGS

Wt. Volume Results

Batch #: 18711

Comments:

QK 12/8/21

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5965_002	0.8	4.17	3.1	68.25%	68.25%			14.65	22.96	15.67
B5965_003	0.8	5.12	3.86	70.83%	70.83%			14.12	22.15	15.69
B5965_004	0.8	4.07	3.15	71.87%	71.87%			13.91	19	13.66
B5965_005	0.8	4.5	3.5	72.97%	72.97%			13.7	21.94	16.01
B5965_006	0.81	5.36	4.2	74.51%	74.51%			13.42	20.75	15.46
B5965_007	0.81	4.46	3.53	74.52%	74.52%			13.42	22.4	16.69
B5965_008	0.8	4.5	3.15	63.51%	63.51%			15.74	23.06	14.65
B5965_009	0.81	5.29	4.02	71.65%	71.65%			13.96	24.12	17.28
B5965_010	0.81	5.81	4.82	80.20%	80.20%			12.47	20.3	16.28

TB
12/8/2021

% Solid Determination WorkSheet

SGS

Batch: 18711

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5965_18711_001	0.81	3.93	3.15	10g DWE - 13.33g
B5965_18711_002	0.80	4.17	3.10	
B5965_18711_003	0.80	5.12	3.86	
B5965_18711_004	0.80	4.07	3.15	
B5965_18711_005	0.80	4.50	3.50	
B5965_18711_006	0.81	5.36	4.20	
B5965_18711_007	0.81	4.46	3.53	
B5965_18711_008	0.80	4.50	3.15	
B5965_18711_009	0.81	5.29	4.02	
B5965_18711_010	0.81	5.81	4.82	

RBS
12/6/21

Date/Initials: KE 12/6/21

SGS

Methods: PCB / PAH | PCDD/F / WHO-2 | QUANTICS / USV | DoD PCDD/F / PEST | Solid

Batch # 18711

Spiker Initials/Date: 12/3/21 | 12/3/21 | 12/3/21 | 12/6/21 | 12/6/21

Lab Sample ID	D/F Ax-A Amount: 20µL Observer Initials	D/F Ax-B Amount: 20µL Observer Initials	D/F ES Amount: 20µL Observer Initials	D/F CS Amount: 20µL Observer Initials	D/F JS Amount: 20µL Observer Initials	Amount: Observer Initials	Amount: Observer Initials
B5965_18711_001	—	—	KE		KE		
B5965_18711_002	—	—	KE		KE		
B5965_18711_003	—	—	KE		KE		
B5965_18711_004	—	—	KE		KE		
B5965_18711_005	—	—	KE		KE		
B5965_18711_006	—	—	KE		KE		
B5965_18711_007	—	—	KE		KE		
B5965_18711_008	—	—	KE		KE		
B5965_18711_009	—	—	KE		KE		
B5965_18711_010	—	—	KE		KE		
MB1_18711	—	—	KE		KE		
OPR1_18711	KE	KE	KE		KE		
OPR2_18711	KE	KE	KE		KE		

12/6/21

Standard Information

	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
Pipette ID							
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
SIL#	24-15-4	25-187-2	26-1-7	25-273-1	25-309-1		
Concentration	100pg/µL	100pg/µL	100pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/28	6/22/22	8/2028	9/8/22	10/8/22		

12/6/21

SGS

Methods: PCB / PAH; (PCDD/F) WHO-2; QUANTICS USV; DoD PCDD/F PEST; Extraction Type: (SDS) CLL; TALEX Carbon SPE

Solid

Final Volume: 20µL

Batch# 18715 | Split: ~~1/2~~ 1/4 | Extract Initial/Date: ~~RE 12/3/21~~ 12/6/21 | Clean-up Initial/Date: ~~RB3 12/7/21~~ | Transfer Init/Date: ~~RB3 12/7/21~~

Lab Sample ID	Extraction Position (Solvent: TOL)	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5965_18715_001-R1	46	6.72				gray/tan, clay-like
MB1_18715	43	10.00				sodium sulfate
OPR1_18715	44	10.00				sodium sulfate
OPR2_18715	45	10.00				sodium sulfate

TB 12/8/2021

~~RB3~~ 12/8/21

Supply IDs

~~RB3 12/6/21~~

Toluene ~~SRL14-16~~ SRL14-20

MeCHL SRL14-2

Florisil ~~SRL5-66~~

Hexane SRL4-19

Silica SRL5-280

S Nitrate N/A

Base Silica SRL5-63

HydroMatrix N/A

Tetradecane SRL5-268

H_2SO_4 N/A

A Silica SRL5-65

SodiumSulfate SRL5-286

Additional Cleanup

Acid Partition Date/Initial:

Mini-Acid Date/Initial:

Carbon Column Date/Initial: TB 12/8/2021

GPC Date/Initial:

Bond-Elute Date/Initial:

Cycle Time

TOL: Start: 1615 Stop: 0900

HEX: Start: Stop:

DCM: Start: Stop:

TB 12/8/2021

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18715

Inter-Department Communication Sheet

TB
12/8/2021

SGS

Wt. Volume Results

Batch#: 18715

Comments:

AK 12/8/21

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5965_001-R1	0.81	3.93	3.15	75.00%	75.00%			13.33	6.72	5.04

TB
12/8/2021

SGS Methods: PCB / PAH; PCDD/F / WHO-2; QUANTICS / USV; DoD PCDD/F / PEST; Solid

Batch # 18715

Lab Sample ID	Spiker Initials/Date: JRH 12/6/21	JRH 12/6/21	JRH 12/6/21	RB 12/7/21	RB 12/7/21		
	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
	Amount: 20µL	Amount: 20mL	Amount: 20mL	Amount: 20µL	Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5965_18715_001-R1	—	—	KE	KE	KE		
MB1_18715	—	—	KE	KE	KE		
OPR1_18715	KE	KE	KE	KE	KE		
OPR2_18715	KE	KE	KE	KE	KE		

RB 12/8/21

Standard Information

Pipette ID							
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
SIL #	24-15-4	25-187-2	26-1-7	25.273.1	25.309.1		
Concentration	100pg/µL	50pg/mL	100pg/mL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/28	6/22/22	8/2028	9/8/22	10/8/22		

RB 12/8/21

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
14	211207R14	3	CS3_211207_DF_RF	1.00	SIL 25-347-1	PSW	536-204	07-Dec-2021	21:27:48
15	211207R15	14	OPR1_18711_DF	1.00	0_18711_OPR001	PSW	875-358	07-Dec-2021	22:14:25
16	211207R16	15	OPR2_18711_DF	1.00	0_18711_OPR002	PSW	589-645	07-Dec-2021	23:01:58
17	211207R17	2	SBS_211207_DF_RB	1.00	SIL 20-61-1	PSW	226-765	07-Dec-2021	23:49:37
18	211207R18	13	MB1_18711_DF_SDS	10.00	Method Blank	PSW	237-974	08-Dec-2021	00:37:10
19	211207R19	16	B5965_18711_DF_002 ✓	15.67	11215131-113021-S-SPS-NE-S-6	PSW	885-934	08-Dec-2021	01:24:44
20	211207R20	17	B5965_18711_DF_003	15.69	11215131-120121-S-SPS-NE-S-12	PSW	814-529	08-Dec-2021	02:12:18
21	211207R21	18	B5965_18711_DF_004	13.66	11215131-120121-S-SPS-NE-S-14	PSW	909-917	08-Dec-2021	02:59:50
22	211207R22	19	B5965_18711_DF_005	16.01	11215131-120121-S-SPS-NE-S-13	PSW	038-759	08-Dec-2021	03:47:24
24	211207R24	21	B5965_18711_DF_007	16.69	11215131-113021-S-JC-NE-S-2	PSW	727-243	08-Dec-2021	05:22:32
25	211207R25	22	B5965_18711_DF_008	14.65	11215131-113021-S-JC-NE-S-3	PSW	501-649	08-Dec-2021	06:10:06
26	211207R26	23	B5965_18711_DF_009	17.28	11215131-120121-S-JC-NE-S-4	PSW	441-781	08-Dec-2021	06:57:38
27	211207R27	24	B5965_18711_DF_010	16.28	11215131-120121-S-JC-NE-S-5	PSW	756-512	08-Dec-2021	07:45:17
28	211207R28	3	CS3_211207_DF_RG ✓	1.00	SIL 25-347-1	PSW	423-971	08-Dec-2021	08:57:07
30	211207R30	28	OPR2_18715_DF	1.00	0_18715_OPR002 CPSM only	PSW	418-331	08-Dec-2021	10:39:20
31	211207R31	2	SBS_211208_DF_RC	1.00	SIL 20-61-1	PSW	250-642	08-Dec-2021	11:26:53
32	211207R34	20	B5965_18711_DF_006-RJ	15.46	11215131-113021-S-JC-NE-S-1	PSW	545-953	08-Dec-2021	13:49:32

REVIEWED
paul_walton , 12/8/2021, 3:05:49 PM

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Amber_Kornegay , 12/8/2021, 4:27:55 PM

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
28	211207R28	3	CS3_211207_DF_RG ✓	1.00	SIL 25-347-1	PSW	423-971	08-Dec-2021	08:57:07
29	211207R29	27	OPR1_18715_DF	1.00	0_18715_OPR001	PSW	807-647	08-Dec-2021	09:52:37
30	211207R30	28	OPR2_18715_DF	1.00	0_18715_OPR002	PSW	418-331	08-Dec-2021	10:39:20
31	211207R31	2	SBS_211208_DF_RC	1.00	SIL 20-61-1	PSW	250-642	08-Dec-2021	11:26:53
32	211207R32	26	MB1_18715_DF_SDS	10.00	Method Blank	PSW	576-965	08-Dec-2021	12:14:27
33	211207R33	29	B5965_18715_DF_001-R1 ✓	5.04	11215131-113021-S-SPS-NE-S-7	PSW	142-458	08-Dec-2021	13:01:59

REVIEWED
paul_walton , 12/8/2021, 2:13:35 PM

REVIEWED
Amber_Kornegay , 12/8/2021, 4:50:46 PM

Lab ID: MB1_18711_DF_SDS | **Acq'd:** 08 Dec 2021 00:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5965_18711 | **UTP:** 08-Dec-2021 14:49:03 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 237-974-JJY

Datafile: 211207R18 | **Report:** 08 Dec 2021 14:50 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	7352.168	1.08
12378-PeCDD	NotFnd		1.0004	-		-	-	-	1.06	-	5635.619	0.991
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.06	-	4698.407	0.945
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.08	-	4698.407	0.912
123789-HxCDD	NotFnd		1.0111	-		-	-	-	1.02	-	4698.407	0.951
1234678-HpCDD	NotFnd		1.0004	-		-	-	-	0.97	-	5379.33	1.26
OCDD	NotFnd		1.0003	-		-	-	-	1.07	-	5476.424	2.56
2378-TCDF	NotFnd		1.0007	-		-	-	-	0.96	-	6385.102	1.01
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	6650.504	0.842
23478-PeCDF	NotFnd		1.0005	-		-	-	-	0.94	-	6650.504	0.888
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	5235.064	0.694
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.13	-	5235.064	0.659
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	5235.064	0.779
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	5235.064	0.85
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.36	-	5587.544	0.591
1234789-HpCDF	NotFnd		1.0004	-		-	-	-	1.30	-	5587.544	1.17
OCDF	NotFnd		1.0002	-		-	-	-	1.03	-	7625.66	3.83

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58	1.0233	1.0232	-0.2	1.01E+07	0.76	Y	1.03	52.4
ES 12378-PeCDD	33.85	1.2118	1.2121	+0.6	9.22E+06	1.54	Y	1.03	47.9
ES 123478-HxCDD	37.71	0.9921	0.9921	0	7.49E+06	1.20	Y	0.99	56.7
ES 123678-HxCDD	37.83	0.9951	0.9951	0	7.61E+06	1.12	Y	0.97	58.9
ES 123789-HxCDD	38.11	1.0027	1.0026	-0.2	8.38E+06	1.29	Y	1.12	56.1
ES 1234678-HpCDD	40.68	1.0702	1.0701	-0.2	6.32E+06	0.99	Y	0.99	48
ES OCDD	43.24	1.1377	1.1376	-0.3	6.13E+06	0.93	Y	0.78	29.7
ES 2378-TCDF	27.74	1.0505	1.0507	+0.3	1.44E+07	0.78	Y	1.08	45.6
ES 12378-PeCDF	32.43	1.2278	1.2284	+1.2	1.48E+07	1.74	Y	0.93	54.5
ES 23478-PeCDF	33.52	1.2691	1.2699	+1.6	1.39E+07	1.48	Y	0.92	52
ES 123478-HxCDF	36.72	0.9660	0.9660	0	9.57E+06	0.51	Y	1.14	63.1
ES 123678-HxCDF	36.86	0.9698	0.9697	-0.2	1.23E+07	0.54	Y	1.30	71.3
ES 234678-HxCDF	37.54	0.9875	0.9874	-0.2	1.03E+07	0.51	Y	1.20	64.5
ES 123789-HxCDF	38.46	1.0121	1.0118	-0.7	8.03E+06	0.49	Y	1.14	53.2
ES 1234678-HpCDF	39.78	1.0468	1.0466	-0.5	9.06E+06	0.43	Y	0.95	71.8
ES 1234789-HpCDF	41.14	1.0822	1.0821	-0.2	5.31E+06	0.43	Y	0.85	47.2
ES OCDF	43.44	1.1426	1.1427	+0.3	6.55E+06	0.90	Y	0.93	26.6

Lab ID: MB1_18711_DF_SDS | **Acq'd:** 08 Dec 2021 00:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5965_18711 | **UTP:** 08-Dec-2021 14:49:03 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 237-974-JJY

Datafile: 211207R18 | **Report:** 08 Dec 2021 14:50 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.93		-	-	-	1.86E+07	0.75	Y	-	-
JS 1234-TCDF	26.40		-	-	-	2.91E+07	0.83	Y	-	-
JS 123467-HxCDD	38.01		-	-	-	6.64E+06	1.33	Y	-	-
CS 37Cl-2378-TCDD	28.60		1.0241	1.0241	0	8.21E+06	n/a	-	1.31	84.2
CS 12347-PeCDD	33.36		1.1940	1.1944	+0.8	1.53E+07	1.62	Y	0.89	91.9
CS 12346-PeCDF	31.91		1.2080	1.2086	+1.1	2.47E+07	1.53	Y	0.87	97.9
CS 123469-HxCDF	37.18		0.9781	0.9780	-0.2	1.83E+07	0.55	Y	1.09	127
CS 1234689-HpCDF	40.17		1.0569	1.0568	-0.2	1.31E+07	0.44	Y	0.86	114
~~SS 37Cl-2378-TCDD~~	~~28.60~~		~~1.0241~~	~~1.0241~~	~~0~~	~~8.21E+06~~	~~n/a~~		~~1.26~~	~~162~~
~~SS 12347-PeCDD~~	~~33.36~~	~~V~~	~~1.1940~~	~~1.1944~~	~~+0.8~~	~~1.53E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~191~~
~~SS 12346-PeCDF~~	~~31.91~~	~~V~~	~~1.2080~~	~~1.2086~~	~~+1.1~~	~~2.47E+07~~	~~1.53~~	~~Y~~	~~0.93~~	~~180~~
~~SS 123469-HxCDF~~	~~37.18~~	~~V~~	~~0.9781~~	~~0.9780~~	~~-0.2~~	~~1.83E+07~~	~~0.55~~	~~Y~~	~~0.84~~	~~177~~
~~SS 1234689-HpCDF~~	~~40.17~~	~~V~~	~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.31E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~158~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18711_DF_SDS | **Acq'd:** 08 Dec 2021 00:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5965_18711 | **UTP:** 08-Dec-2021 14:49:03 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 237-974-JJY

Datafile: 211207R18 | **Report:** 08 Dec 2021 14:50 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8758						1.34		7352.168	1.08
1379-TCDD	NotFnd		0.8878						1.34		7352.168	1.08
1369-TCDD	NotFnd		0.9025						1.34		7352.168	1.08
1469-TCDD	NotFnd		0.9291						1.34		7352.168	1.08
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		7352.168	1.08
1378-TCDD	NotFnd		0.9440						1.34		7352.168	1.08
1268-TCDD	NotFnd		0.9505						1.34		7352.168	1.08
1478-TCDD	NotFnd		0.9591						1.34		7352.168	1.08
1279-TCDD	NotFnd		0.9650						1.34		7352.168	1.08
1234/1269-TCDD	NotFnd		0.9771						1.34		7352.168	1.08
1236-TCDD	NotFnd		0.9821						1.34		7352.168	1.08
1237/1238-TCDD	NotFnd		0.9907						1.34		7352.168	1.08
1239-TCDD	NotFnd		0.9953						1.34		7352.168	1.08
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**7352.168**	**1.08**
1278-TCDD	NotFnd		1.0118						1.34		7352.168	1.08
1267-TCDD	NotFnd		1.0162						1.34		7352.168	1.08
1289-TCDD	NotFnd		1.0340						1.34		7352.168	1.08
12479/12468-PeCDD	NotFnd		0.9274						1.06		5635.619	0.991
12469-PeCDD	NotFnd		0.9430						1.06		5635.619	0.991
12368-PeCDD	NotFnd		0.9591						1.06		5635.619	0.991
12478-PeCDD	NotFnd		0.9645						1.06		5635.619	0.991
12379-PeCDD	NotFnd		0.9676						1.06		5635.619	0.991
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		5635.619	0.991
12346/12347-PeCDD	NotFnd		0.9860						1.06		5635.619	0.991
12378-PeCDD	NotFnd		**1.0004**						**1.06**		**5635.619**	**0.991**
12367-PeCDD	NotFnd		1.0034						1.06		5635.619	0.991
12389-PeCDD	NotFnd		1.0133						1.06		5635.619	0.991
124679/124689-HxCDD	NotFnd		0.9546						1.05		4698.407	0.935
123468-HxCDD	NotFnd		0.9718						1.05		4698.407	0.935
123679/123689-HxCDD	NotFnd		0.9795						1.05		4698.407	0.935
123469-HxCDD	NotFnd		0.9832						1.05		4698.407	0.935
123478-HxCDD	NotFnd		**1.0004**						1.06		**4698.407**	**0.945**
123678-HxCDD	NotFnd		**1.0034**						1.08		**4698.407**	**0.912**
123467-HxCDD	NotFnd		1.0083						1.05		4698.407	0.935
123789-HxCDD	NotFnd		**1.0111**						1.02		**4698.407**	**0.951**

Lab ID: MB1_18711_DF_SDS | **Acq'd:** 08 Dec 2021 00:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5965_18711 | **UTP:** 08-Dec-2021 14:49:03 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 237-974-JJY

Datafile: 211207R18 | **Report:** 08 Dec 2021 14:50 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

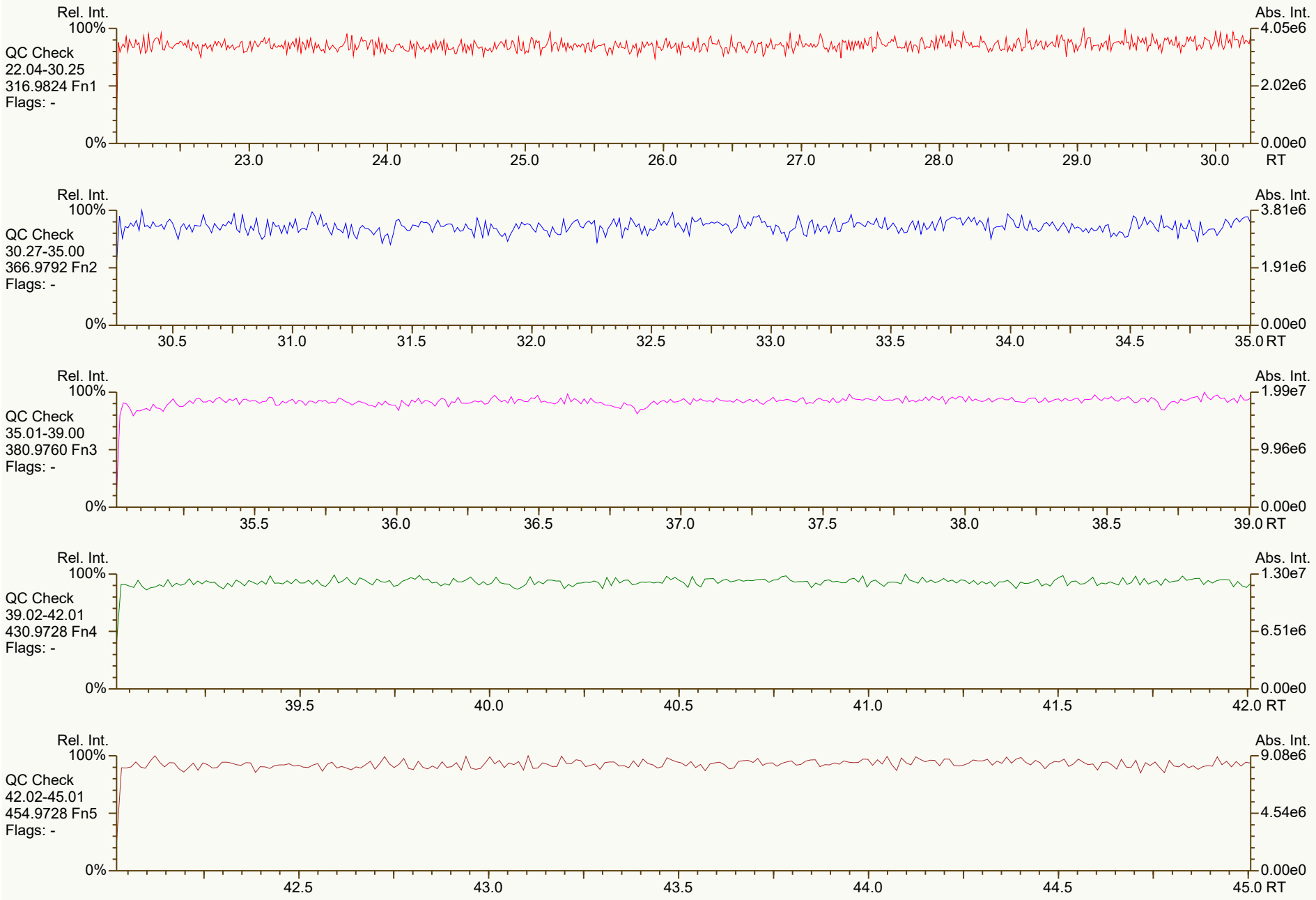
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9843						0.97		5379.33	1.26
1234678-HpCDD	**NotFnd**		**1.0004**						**0.97**		**5379.33**	**1.26**
OCDD	**NotFnd**		**1.0003**						**1.07**		**5476.424**	**2.56**
OCDD-a	NotFnd		1.0001						0.07		11448.202	86.8
1368-TCDF	NotFnd		0.8284						0.96		6385.102	1.01
1468-TCDF	NotFnd		0.8487						0.96		6385.102	1.01
2468-TCDF	NotFnd		0.8709						0.96		6385.102	1.01
1346/1246-TCDF	NotFnd		0.8828						0.96		6385.102	1.01
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		6385.102	1.01
1348-TCDF	NotFnd		0.8980						0.96		6385.102	1.01
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		6385.102	1.01
1268-TCDF	NotFnd		0.9159						0.96		6385.102	1.01
1467-TCDF	NotFnd		0.9206						0.96		6385.102	1.01
1478-TCDF	NotFnd		0.9266						0.96		6385.102	1.01
1369/1237-TCDF	NotFnd		0.9396						0.96		6385.102	1.01
2467-TCDF	NotFnd		0.9440						0.96		6385.102	1.01
2368-TCDF	NotFnd		0.9496						0.96		6385.102	1.01
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		6385.102	1.01
1278-TCDF	NotFnd		0.9689						0.96		6385.102	1.01
1349-TCDF	NotFnd		0.9732						0.96		6385.102	1.01
1267-TCDF	NotFnd		0.9786						0.96		6385.102	1.01
2346/1249-TCDF	NotFnd		0.9849						0.96		6385.102	1.01
2347/1279-TCDF	NotFnd		0.9927						0.96		6385.102	1.01
2348-TCDF	NotFnd		0.9967						0.96		6385.102	1.01
2378-TCDF	**NotFnd**		**1.0007**						**0.96**		**6385.102**	**1.01**
2367/3467-TCDF	NotFnd		1.0136						0.96		6385.102	1.01
1269-TCDF	NotFnd		1.0223						0.96		6385.102	1.01
1239-TCDF	NotFnd		1.0313						0.96		6385.102	1.01
1289-TCDF	NotFnd		1.0711						0.96		6385.102	1.01
13468/12468-PeCDF	NotFnd		0.9147						0.94		8545.955	1.11
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		6650.504	0.865
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		6650.504	0.865
14678-PeCDF	NotFnd		0.9695						0.94		6650.504	0.865
13479-PeCDF	NotFnd		0.9727						0.94		6650.504	0.865
13469/12479-PeCDF	NotFnd		0.9799						0.94		6650.504	0.865
12346-PeCDF	NotFnd		0.9839						0.94		6650.504	0.865

Lab ID: MB1_18711_DF_SDS | **Acq'd:** 08 Dec 2021 00:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5965_18711 | **UTP:** 08-Dec-2021 14:49:03 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 237-974-JJY

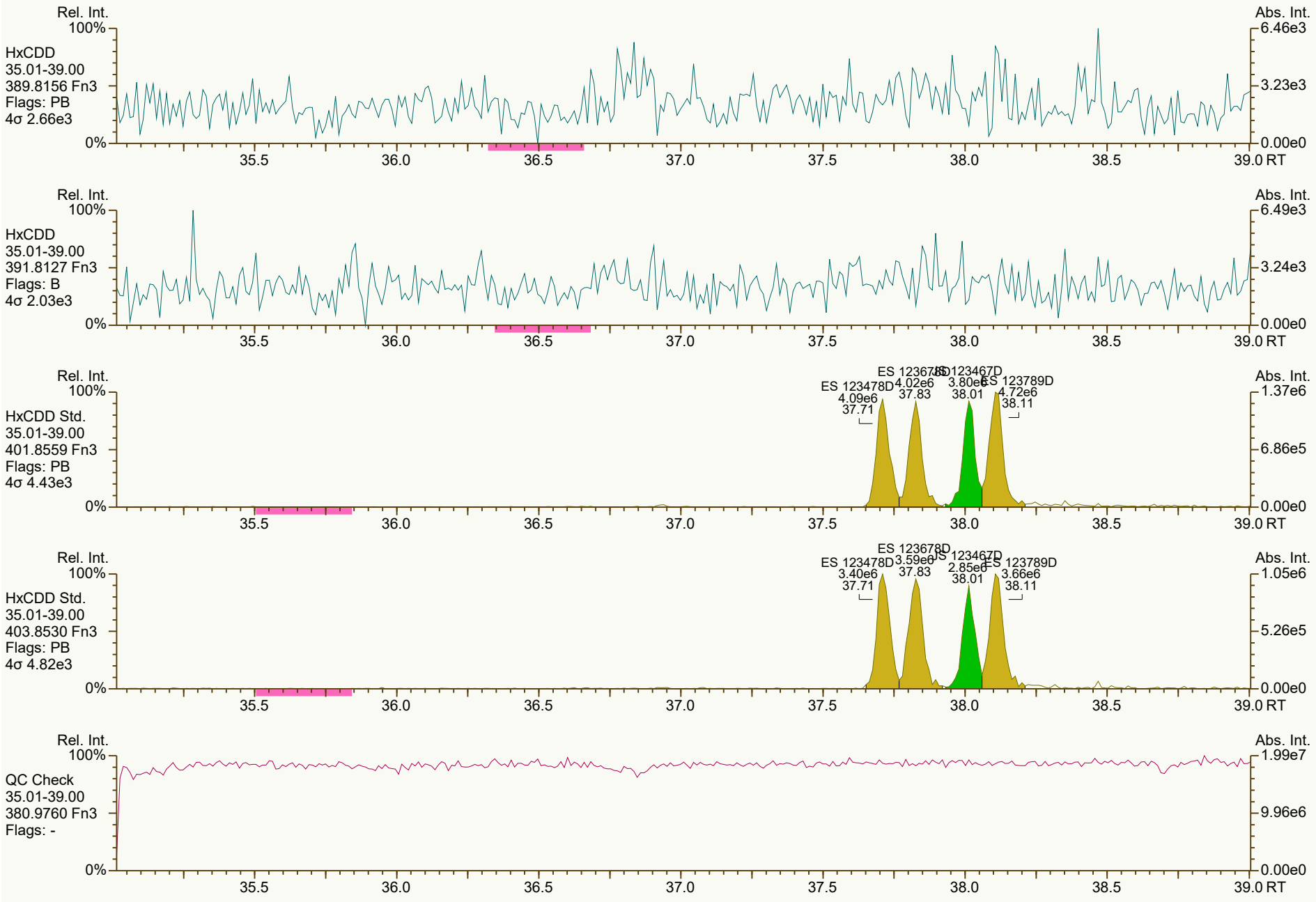
Datafile: 211207R18 | **Report:** 08 Dec 2021 14:50 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		6650.504	0.865
12347-PeCDF	NotFnd		0.9892						0.94		6650.504	0.865
12348-PeCDF	NotFnd		0.9940						0.94		6650.504	0.865
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**6650.504**	**0.842**
12678/12367-PeCDF	NotFnd		1.0088						0.94		6650.504	0.865
12379-PeCDF	NotFnd		1.0142						0.94		6650.504	0.865
12679-PeCDF	NotFnd		0.9931						0.94		6650.504	0.865
23467/12369-PeCDF	NotFnd		0.9966						0.94		6650.504	0.865
23478-PeCDF	**NotFnd**		**1.0005**						**0.94**		**6650.504**	**0.888**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6650.504	0.865
12349-PeCDF	NotFnd		1.0100						0.94		6650.504	0.865
12389-PeCDF	NotFnd		1.0323						0.94		6650.504	0.865
123468-HxCDF	NotFnd		0.9631						1.16		5235.064	0.735
124678/134678-HxCDF	NotFnd		0.9686						1.16		5235.064	0.735
134679-HxCDF	NotFnd		0.9747						1.16		5235.064	0.735
124679-HxCDF	NotFnd		0.9800						1.16		5235.064	0.735
124689-HxCDF	NotFnd		0.9859						1.16		5235.064	0.735
123467-HxCDF	NotFnd		0.9972						1.16		5235.064	0.735
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**5235.064**	**0.694**
123678-HxCDF	**NotFnd**		**1.0005**						**1.13**		**5235.064**	**0.659**
123479-HxCDF	NotFnd		1.0048						1.16		5235.064	0.735
123469-HxCDF	NotFnd		1.0089						1.16		5235.064	0.735
123679-HxCDF	NotFnd		0.9943						1.16		5235.064	0.735
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**5235.064**	**0.779**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		5235.064	0.735
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**5235.064**	**0.85**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		5235.064	0.735
1234678-HpCDF	**NotFnd**		**1.0003**						**1.36**		**5587.544**	**0.591**
1234679-HpCDF	NotFnd		1.0065						1.33		5587.544	0.803
1234689-HpCDF	NotFnd		1.0097						1.33		5587.544	0.803
1234789-HpCDF	**NotFnd**		**1.0004**						**1.30**		**5587.544**	**1.17**
OCDF	**NotFnd**		**1.0002**						**1.03**		**7625.66**	**3.83**
OCDF-a	NotFnd		1.0001						0.06		8136.755	70.6


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.05e6
2.02e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.81e6
1.91e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.99e7
9.96e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.51e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.08e6
4.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 4.34e3
0%
Abs. Int.
1.60e4
7.99e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 3.02e3
0%
Abs. Int.
9.90e3
4.95e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.89e3
0%
CS 37Cl-2378D
8.21e6
28.60
Abs. Int.
2.04e6
1.02e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.09e4
0%
JS 1234D
7.99e6
27.93
ES 2378D
4.35e6
28.58
Abs. Int.
1.79e6
8.94e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 5.95e3
0%
JS 1234D
1.06e7
27.93
ES 2378D
5.72e6
28.58
Abs. Int.
2.42e6
1.21e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 2.82e3
0%
Abs. Int.
5.98e3
2.99e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 2.82e3
0%
Abs. Int.
6.12e3
3.06e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 6.86e3
0%
CS 12347D
9.44e6
33.36
ES 12378D
5.60e6
33.85
Abs. Int.
2.48e6
1.24e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 4.63e3
0%
CS 12347D
5.82e6
33.36
ES 12378D
3.63e6
33.85
Abs. Int.
1.54e6
7.69e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.81e6
1.91e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 2.66e3
0%
Abs. Int.
6.46e3
3.23e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: B
4σ 2.03e3
0%
Abs. Int.
6.49e3
3.24e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PB
4σ 4.43e3
0%
ES 123678D
4.09e6
37.71
ES 123478D
4.02e6
37.83
ES 123467D
3.80e6
38.01
ES 123789D
4.72e6
38.11
Abs. Int.
1.37e6
6.86e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PB
4σ 4.82e3
0%
ES 123678D
3.40e6
37.71
ES 123478D
3.59e6
37.83
ES 123467D
2.85e6
38.01
ES 123789D
3.66e6
38.11
Abs. Int.
1.05e6
5.26e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.99e7
9.96e6
0.00e0
35.5
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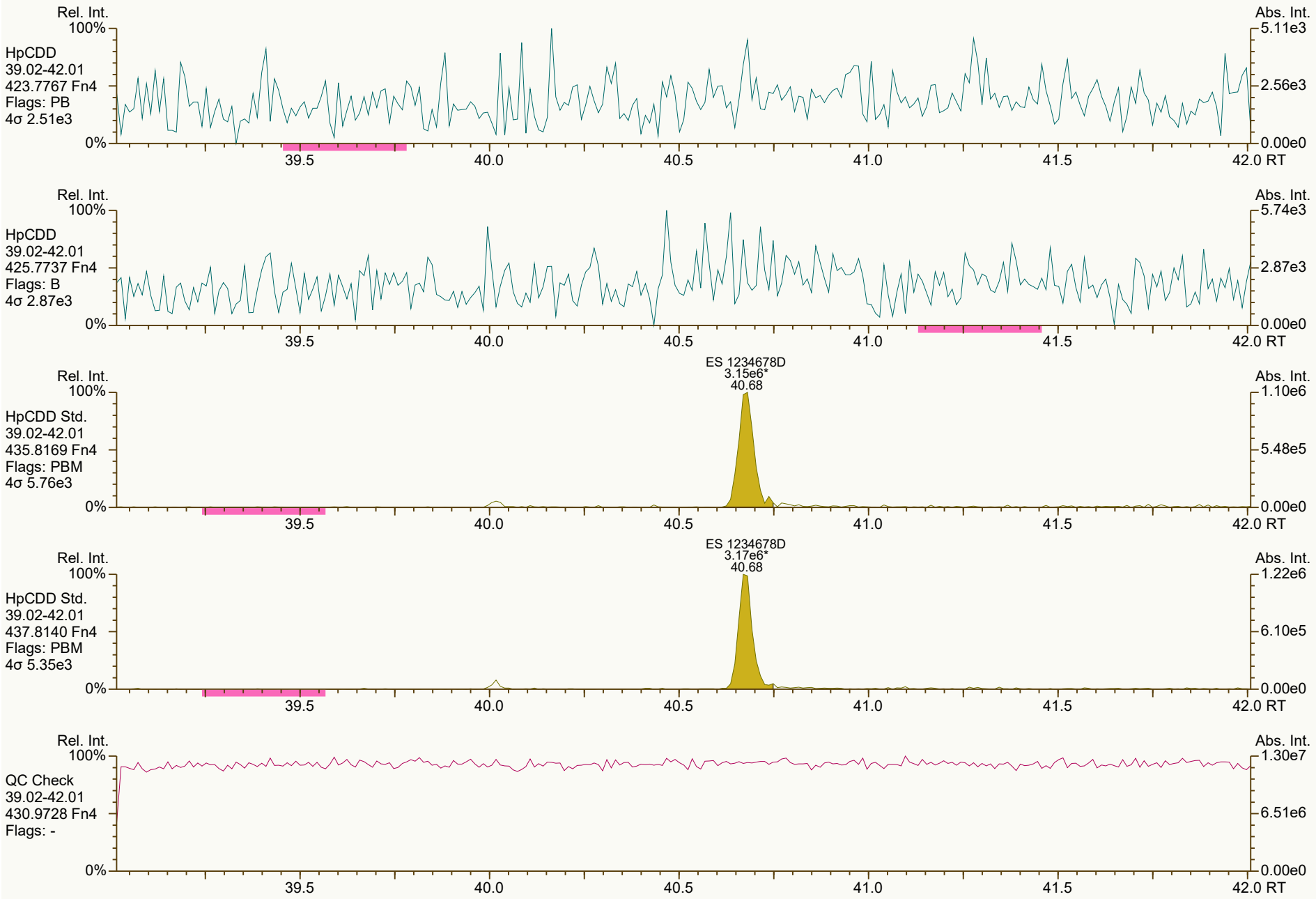
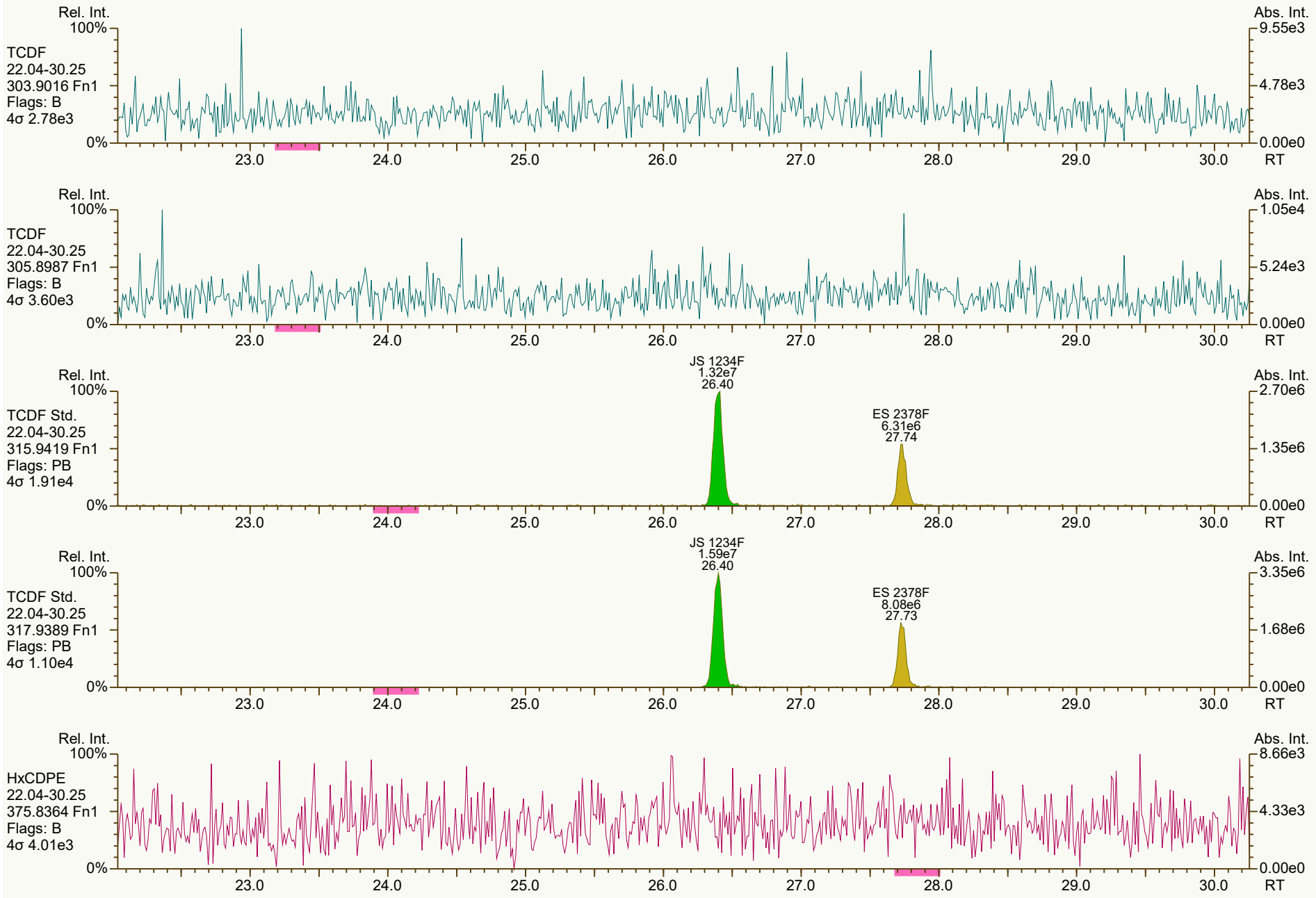
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 2.51e3
0%
Abs. Int.
5.11e3
2.56e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: B
4σ 2.87e3
0%
Abs. Int.
5.74e3
2.87e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
ES 1234678D
3.15e6*
40.68
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 5.76e3
0%
Abs. Int.
1.10e6
5.48e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
ES 1234678D
3.17e6*
40.68
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 5.35e3
0%
Abs. Int.
1.22e6
6.10e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.51e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT

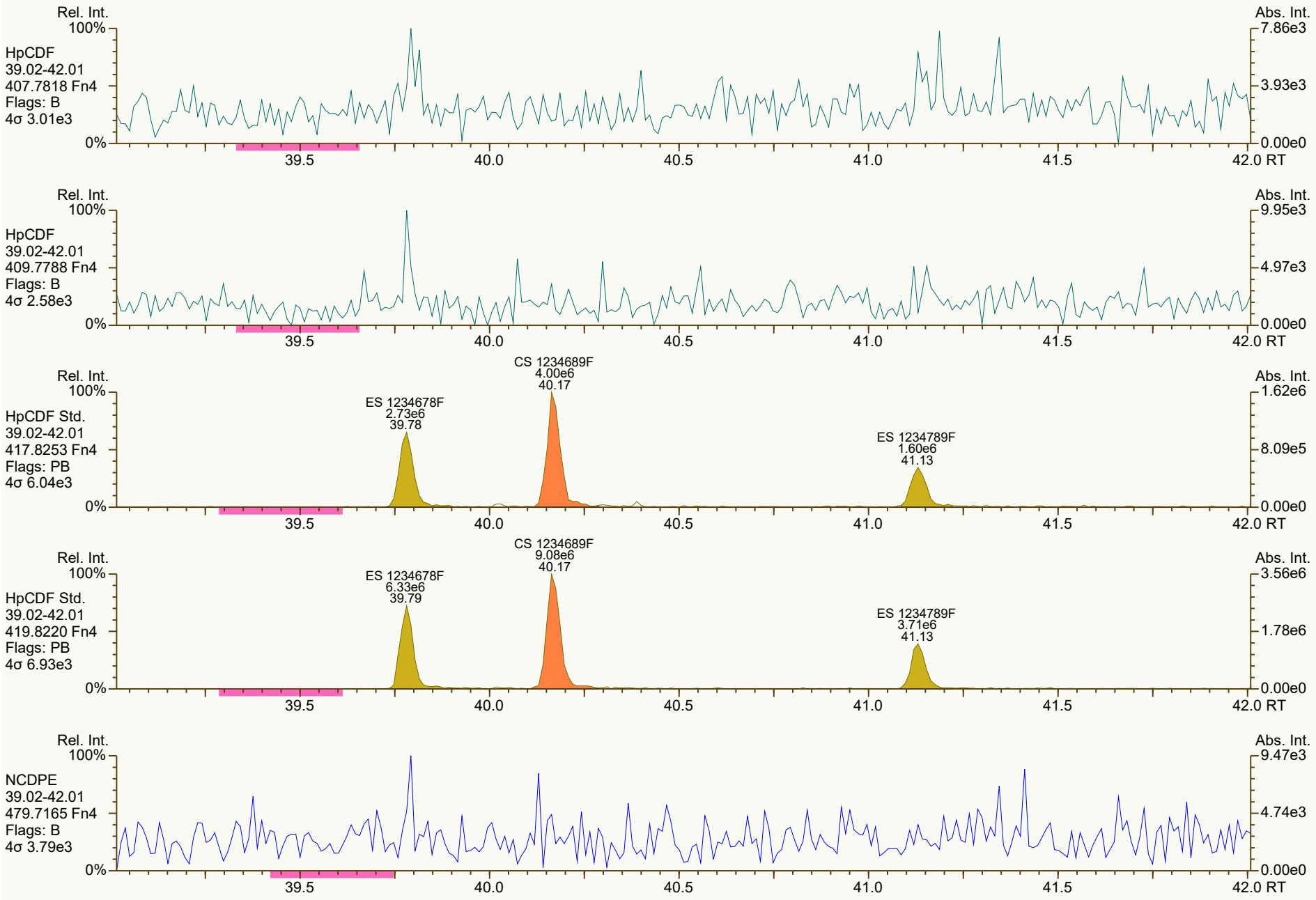

Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: B
4σ 2.97e3
0%
Abs. Int.
8.19e3
4.10e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: B
4σ 2.51e3
0%
Abs. Int.
1.19e4
5.95e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 5.52e3
0%
ES OCDD
2.95e6*
43.24
Abs. Int.
9.65e5
4.83e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 5.66e3
0%
ES OCDD
3.18e6*
43.24
Abs. Int.
9.60e5
4.80e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.08e6
4.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

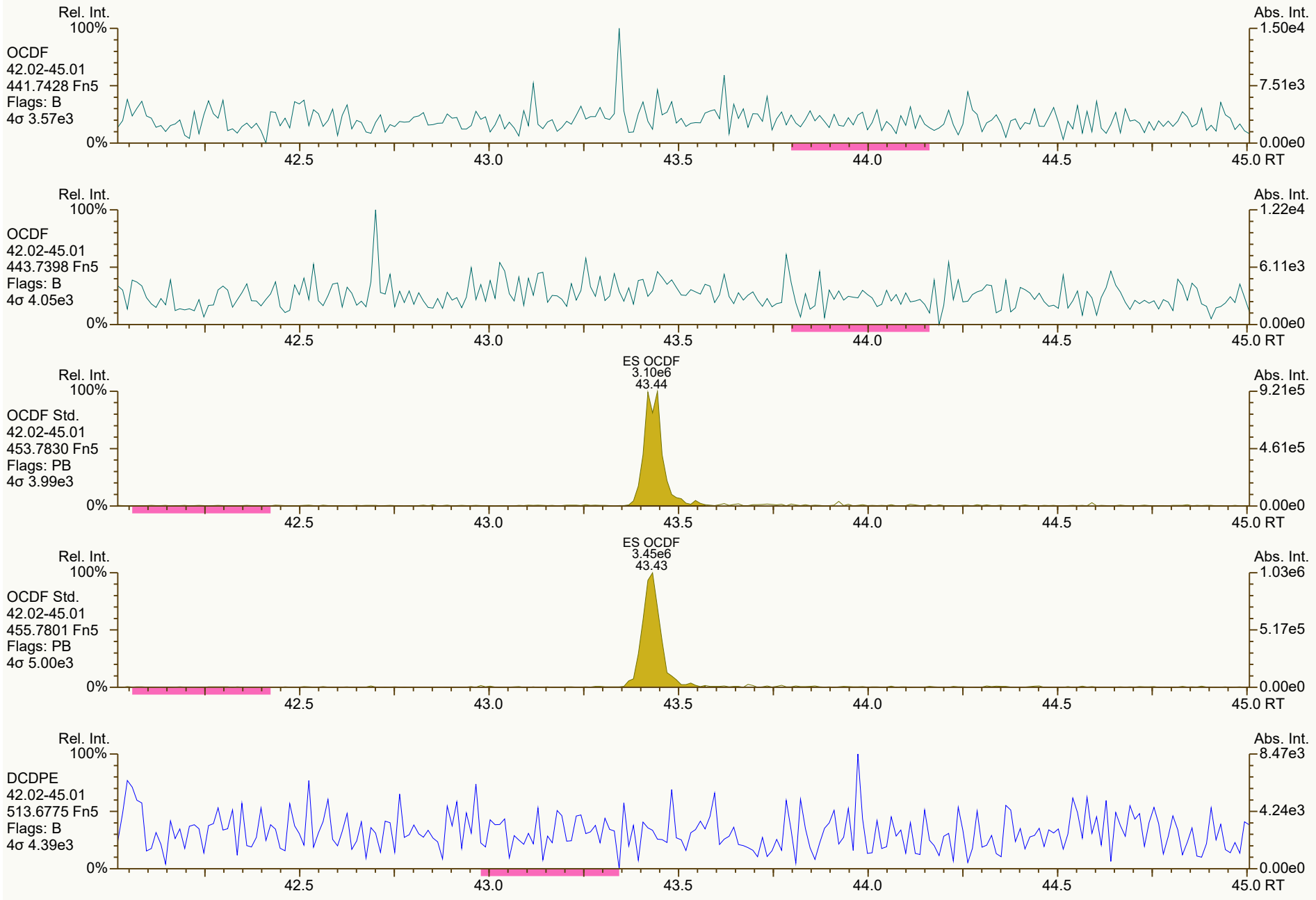

Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: B
4σ 2.78e3
0%
Abs. Int.
9.55e3
4.78e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.04-30.25
305.8987 Fn1
Flags: B
4σ 3.60e3
0%
Abs. Int.
1.05e4
5.24e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.91e4
0%
JS 1234F
1.32e7
26.40
ES 2378F
6.31e6
27.74
Abs. Int.
2.70e6
1.35e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.10e4
0%
JS 1234F
1.59e7
26.40
ES 2378F
8.08e6
27.73
Abs. Int.
3.35e6
1.68e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.01e3
0%
Abs. Int.
8.66e3
4.33e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.05e4
5.27e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 4.14e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.06e4
1.03e4
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 4.40e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.05e6
2.02e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: B
4σ 3.02e3
0%
Abs. Int.
8.32e3
4.16e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: B
4σ 3.63e3
0%
Abs. Int.
7.24e3
3.62e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 7.29e3
0%
CS 12346F
1.50e7
31.91
ES 12378F
9.40e6
32.43
ES 23478F
8.33e6
33.52
Abs. Int.
3.82e6
1.91e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 4.56e3
0%
CS 12346F
9.76e6
31.90
ES 12378F
5.40e6
32.43
ES 23478F
5.61e6
33.53
Abs. Int.
2.57e6
1.28e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.52e3
0%
Abs. Int.
2.14e4
1.07e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: B
4σ 2.92e3
0%
Abs. Int.
6.80e3
3.40e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: B
4σ 2.32e3
0%
Abs. Int.
6.39e3
3.20e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 1.32e4
0%
ES 123478F
3.23e6
36.72
ES 123678F
4.29e6
36.86
CS 123469F
6.47e6
37.18
ES 234678F
3.49e6
37.54
ES 123789F
2.65e6
38.46
Abs. Int.
1.89e6
9.43e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 1.25e4
0%
ES 123478F
6.34e6
36.72
ES 123678F
8.00e6
36.86
CS 123469F
1.19e7
37.18
ES 234678F
6.81e6
37.53
ES 123789F
5.37e6
38.46
Abs. Int.
3.51e6
1.75e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 4.14e3
0%
Abs. Int.
8.14e3
4.07e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: B
4σ 3.01e3
0%
Abs. Int.
7.86e3
3.93e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: B
4σ 2.58e3
0%
Abs. Int.
9.95e3
4.97e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 6.04e3
0%
ES 1234678F
2.73e6
39.78
CS 1234689F
4.00e6
40.17
ES 1234789F
1.60e6
41.13
Abs. Int.
1.62e6
8.09e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 6.93e3
0%
ES 1234678F
6.33e6
39.79
CS 1234689F
9.08e6
40.17
ES 1234789F
3.71e6
41.13
Abs. Int.
3.56e6
1.78e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.79e3
0%
Abs. Int.
9.47e3
4.74e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: B
4σ 3.57e3
0%
Abs. Int.
1.50e4
7.51e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: B
4σ 4.05e3
0%
Abs. Int.
1.22e4
6.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 3.99e3
0%
ES OCDF
3.10e6
43.44
Abs. Int.
9.21e5
4.61e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 5.00e3
0%
ES OCDF
3.45e6
43.43
Abs. Int.
1.03e6
5.17e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.39e3
0%
Abs. Int.
8.47e3
4.24e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: MB1_18715_DF_SDS **Acq'd:** 08 Dec 2021 12:14 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5965_18715 **UTP:** 08-Dec-2021 14:01:37 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 576-965-QQF

Datafile: 211207R32 **Report:** 08 Dec 2021 14:02 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	8428.245	0.542
12378-PeCDD	NotFnd		1.0004	-		-	-	-	1.06	-	5950.558	0.637
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.06	-	6935.834	0.753
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.08	-	6935.834	0.786
123789-HxCDD	NotFnd		1.0111	-		-	-	-	1.02	-	6935.834	0.65
1234678-HpCDD	NotFnd		1.0004	-		-	-	-	0.97	-	7100.15	0.671
OCDD	NotFnd		1.0003	-		-	-	-	1.07	-	9276.945	2.03
2378-TCDF	NotFnd		1.0007	-		-	-	-	0.96	-	6208.147	0.413
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	6705.267	0.498
23478-PeCDF	NotFnd		1.0005	-		-	-	-	0.94	-	6705.267	0.487
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	7335.362	0.56
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.13	-	7335.362	0.514
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	7335.362	0.617
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	7335.362	0.698
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.36	-	6932.279	0.375
1234789-HpCDF	NotFnd		1.0004	-		-	-	-	1.30	-	6932.279	0.734
OCDF	NotFnd		1.0002	-		-	-	-	1.03	-	6939.506	1.47

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0232	-0.2	2.33E+07	0.78	Y	1.03	89
ES 12378-PeCDD	33.86	1.2118	1.2121	+0.6	1.75E+07	1.65	Y	1.03	67
ES 123478-HxCDD	37.72	0.9921	0.9920	-0.2	1.40E+07	1.32	Y	0.99	90
ES 123678-HxCDD	37.84	0.9951	0.9951	0	1.44E+07	1.26	Y	0.97	95
ES 123789-HxCDD	38.12	1.0027	1.0025	-0.5	1.60E+07	1.30	Y	1.12	91.4
ES 1234678-HpCDD	40.69	1.0702	1.0701	-0.2	1.33E+07	1.08	Y	0.99	85.9
ES OCDD	43.27	1.1377	1.1378	+0.3	1.34E+07	0.96	Y	0.78	55.4
ES 2378-TCDF	27.74	1.0505	1.0506	+0.2	3.44E+07	0.80	Y	1.08	81
ES 12378-PeCDF	32.44	1.2278	1.2283	+1.0	2.85E+07	1.62	Y	0.93	78
ES 23478-PeCDF	33.54	1.2691	1.2699	+1.6	2.65E+07	1.51	Y	0.92	73.4
ES 123478-HxCDF	36.73	0.9660	0.9660	0	1.76E+07	0.52	Y	1.14	98.8
ES 123678-HxCDF	36.87	0.9698	0.9697	-0.2	2.31E+07	0.52	Y	1.30	114
ES 234678-HxCDF	37.55	0.9875	0.9873	-0.5	1.85E+07	0.54	Y	1.20	98.6
ES 123789-HxCDF	38.47	1.0121	1.0117	-0.9	1.47E+07	0.52	Y	1.14	82.6
ES 1234678-HpCDF	39.80	1.0468	1.0465	-0.7	1.70E+07	0.42	Y	0.95	115
ES 1234789-HpCDF	41.14	1.0822	1.0820	-0.5	1.02E+07	0.45	Y	0.85	77.4
ES OCDF	43.45	1.1426	1.1426	0	1.51E+07	0.92	Y	0.93	52.1

Lab ID: MB1_18715_DF_SDS | **Acq'd:** 08 Dec 2021 12:14 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5965_18715 | **UTP:** 08-Dec-2021 14:01:37 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 576-965-QQF

Datafile: 211207R32 | **Report:** 08 Dec 2021 14:02 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.94		-	-	-	2.53E+07	0.79	Y	-	-
JS 1234-TCDF	26.41		-	-	-	3.91E+07	0.78	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	7.80E+06	1.33	Y	-	-
CS 37Cl-2378-TCDD	28.61		1.0241	1.0240	-0.2	1.13E+07	n/a	-	1.31	85.2
CS 12347-PeCDD	33.37		1.1940	1.1945	+1.0	1.93E+07	1.64	Y	0.89	85.4
CS 12346-PeCDF	31.92		1.2080	1.2085	+1.0	2.87E+07	1.55	Y	0.87	84.5
CS 123469-HxCDF	37.19		0.9781	0.9780	-0.2	2.05E+07	0.51	Y	1.09	120
CS 1234689-HpCDF	40.18		1.0569	1.0567	-0.5	1.52E+07	0.43	Y	0.86	113
~~SS 37Cl-2378-TCDD~~	~~28.61~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~1.13E+07~~	~~n/a~~		~~1.26~~	~~96.2~~
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1945~~	~~+1.0~~	~~1.93E+07~~	~~1.64~~	~~Y~~	~~0.86~~	~~127~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2085~~	~~+1.0~~	~~2.87E+07~~	~~1.55~~	~~Y~~	~~0.93~~	~~100~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9780~~	~~-0.2~~	~~2.05E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~105~~
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0567~~	~~-0.5~~	~~1.52E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~97.8~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18715_DF_SDS **Acq'd: 08 Dec 2021 12:14 PSW** **Wt/Vol: 10.00 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: Method Blank B5965_18715 **UTP: 08-Dec-2021 14:01:37 PSW** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 576-965-QQF**

Datafile: 211207R32 **Report: 08 Dec 2021 14:02 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8758						1.34		8428.245	0.542
1379-TCDD	NotFnd		0.8878						1.34		8428.245	0.542
1369-TCDD	NotFnd		0.9025						1.34		8428.245	0.542
1469-TCDD	NotFnd		0.9291						1.34		8428.245	0.542
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8428.245	0.542
1378-TCDD	NotFnd		0.9440						1.34		8428.245	0.542
1268-TCDD	NotFnd		0.9505						1.34		8428.245	0.542
1478-TCDD	NotFnd		0.9591						1.34		8428.245	0.542
1279-TCDD	NotFnd		0.9650						1.34		8428.245	0.542
1234/1269-TCDD	NotFnd		0.9771						1.34		8428.245	0.542
1236-TCDD	NotFnd		0.9821						1.34		8428.245	0.542
1237/1238-TCDD	NotFnd		0.9907						1.34		8428.245	0.542
1239-TCDD	NotFnd		0.9953						1.34		8428.245	0.542
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**8428.245**	**0.542**
1278-TCDD	NotFnd		1.0118						1.34		8428.245	0.542
1267-TCDD	NotFnd		1.0162						1.34		8428.245	0.542
1289-TCDD	NotFnd		1.0340						1.34		8428.245	0.542
12479/12468-PeCDD	NotFnd		0.9274						1.06		5950.558	0.637
12469-PeCDD	NotFnd		0.9430						1.06		5950.558	0.637
12368-PeCDD	NotFnd		0.9591						1.06		5950.558	0.637
12478-PeCDD	NotFnd		0.9645						1.06		5950.558	0.637
12379-PeCDD	NotFnd		0.9676						1.06		5950.558	0.637
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		5950.558	0.637
12346/12347-PeCDD	NotFnd		0.9860						1.06		5950.558	0.637
12378-PeCDD	NotFnd		**1.0004**						**1.06**		**5950.558**	**0.637**
12367-PeCDD	NotFnd		1.0034						1.06		5950.558	0.637
12389-PeCDD	NotFnd		1.0133						1.06		5950.558	0.637
124679/124689-HxCDD	NotFnd		0.9546						1.05		6935.834	0.727
123468-HxCDD	NotFnd		0.9718						1.05		6935.834	0.727
123679/123689-HxCDD	NotFnd		0.9795						1.05		6935.834	0.727
123469-HxCDD	NotFnd		0.9832						1.05		6935.834	0.727
123478-HxCDD	NotFnd		**1.0004**						1.06		**6935.834**	**0.753**
123678-HxCDD	NotFnd		**1.0034**						1.08		**6935.834**	**0.786**
123467-HxCDD	NotFnd		1.0083						1.05		6935.834	0.727
123789-HxCDD	NotFnd		**1.0111**						1.02		**6935.834**	**0.65**

Lab ID: MB1_18715_DF_SDS | **Acq'd:** 08 Dec 2021 12:14 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5965_18715 | **UTP:** 08-Dec-2021 14:01:37 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 576-965-QQF

Datafile: 211207R32 | **Report:** 08 Dec 2021 14:02 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

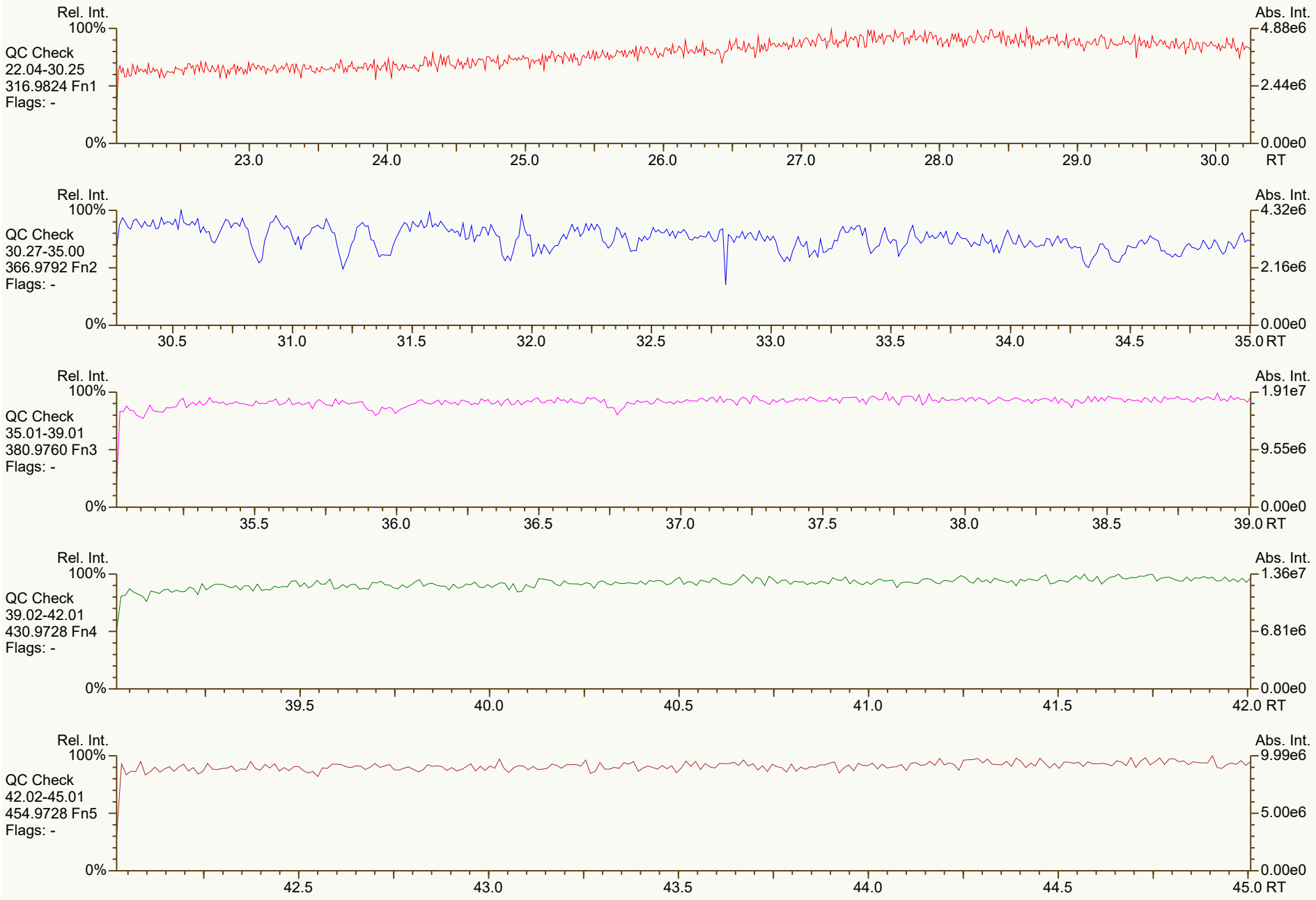
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9843						0.97		7100.15	0.671
1234678-HpCDD	**NotFnd**		**1.0004**						**0.97**		**7100.15**	**0.671**
OCDD	**NotFnd**		**1.0003**						**1.07**		**9276.945**	**2.03**
OCDD-a	NotFnd		1.0001						0.07		10965.311	38.9
1368-TCDF	NotFnd		0.8284						0.96		6208.147	0.413
1468-TCDF	NotFnd		0.8487						0.96		6208.147	0.413
2468-TCDF	NotFnd		0.8709						0.96		6208.147	0.413
1346/1246-TCDF	NotFnd		0.8828						0.96		6208.147	0.413
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		6208.147	0.413
1348-TCDF	NotFnd		0.8980						0.96		6208.147	0.413
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		6208.147	0.413
1268-TCDF	NotFnd		0.9159						0.96		6208.147	0.413
1467-TCDF	NotFnd		0.9206						0.96		6208.147	0.413
1478-TCDF	NotFnd		0.9266						0.96		6208.147	0.413
1369/1237-TCDF	NotFnd		0.9396						0.96		6208.147	0.413
2467-TCDF	NotFnd		0.9440						0.96		6208.147	0.413
2368-TCDF	NotFnd		0.9496						0.96		6208.147	0.413
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		6208.147	0.413
1278-TCDF	NotFnd		0.9689						0.96		6208.147	0.413
1349-TCDF	NotFnd		0.9732						0.96		6208.147	0.413
1267-TCDF	NotFnd		0.9786						0.96		6208.147	0.413
2346/1249-TCDF	NotFnd		0.9849						0.96		6208.147	0.413
2347/1279-TCDF	NotFnd		0.9927						0.96		6208.147	0.413
2348-TCDF	NotFnd		0.9967						0.96		6208.147	0.413
2378-TCDF	**NotFnd**		**1.0007**						**0.96**		**6208.147**	**0.413**
2367/3467-TCDF	NotFnd		1.0136						0.96		6208.147	0.413
1269-TCDF	NotFnd		1.0223						0.96		6208.147	0.413
1239-TCDF	NotFnd		1.0313						0.96		6208.147	0.413
1289-TCDF	NotFnd		1.0711						0.96		6208.147	0.413
13468/12468-PeCDF	NotFnd		0.9147						0.94		8240.76	0.606
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		6705.267	0.493
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		6705.267	0.493
14678-PeCDF	NotFnd		0.9695						0.94		6705.267	0.493
13479-PeCDF	NotFnd		0.9727						0.94		6705.267	0.493
13469/12479-PeCDF	NotFnd		0.9799						0.94		6705.267	0.493
12346-PeCDF	NotFnd		0.9839						0.94		6705.267	0.493

Lab ID: MB1_18715_DF_SDS | **Acq'd:** 08 Dec 2021 12:14 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

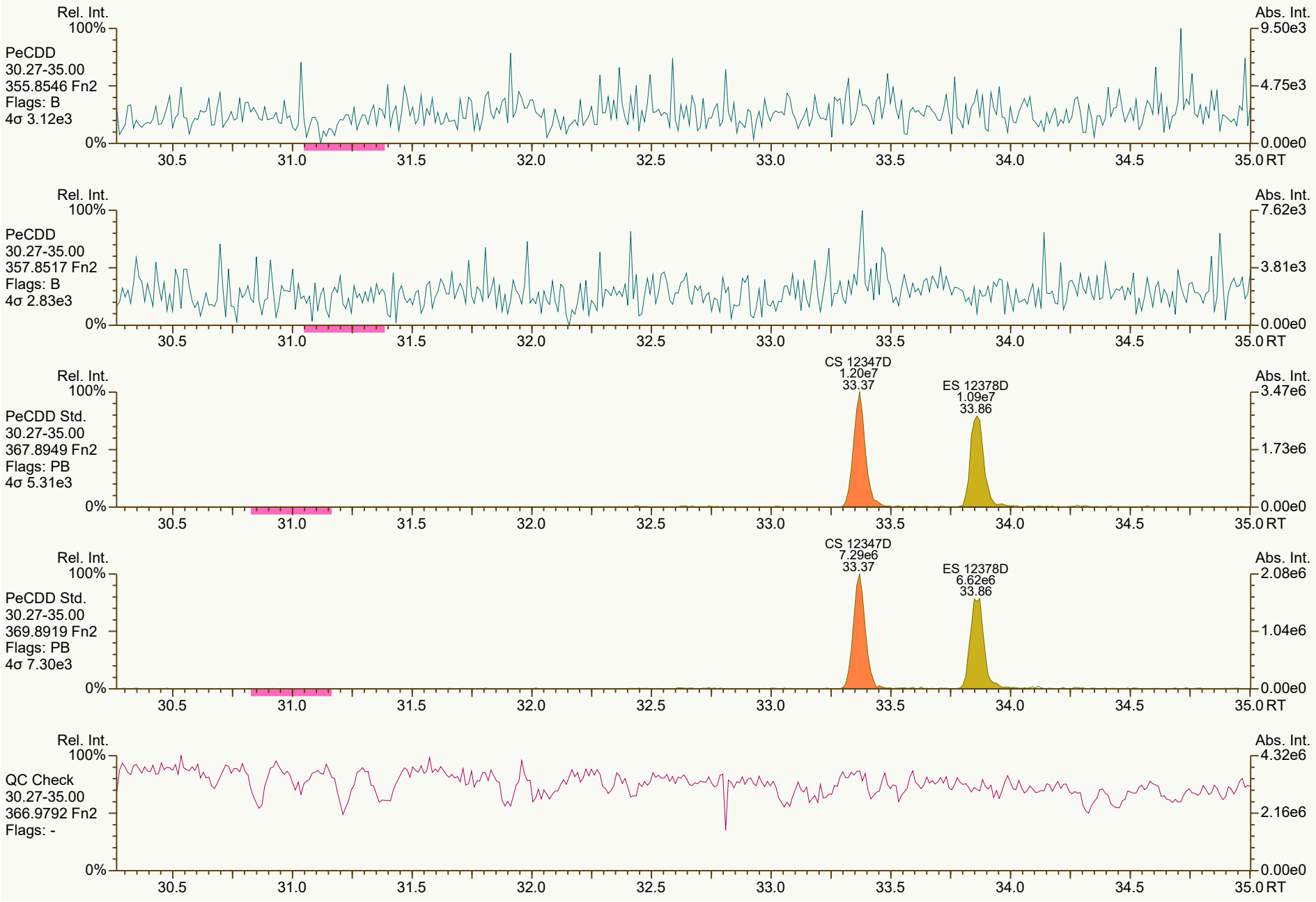
Client ID: Method Blank B5965_18715 | **UTP:** 08-Dec-2021 14:01:37 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 576-965-QQF

Datafile: 211207R32 | **Report:** 08 Dec 2021 14:02 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		6705.267	0.493
12347-PeCDF	NotFnd		0.9892						0.94		6705.267	0.493
12348-PeCDF	NotFnd		0.9940						0.94		6705.267	0.493
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**6705.267**	**0.498**
12678/12367-PeCDF	NotFnd		1.0088						0.94		6705.267	0.493
12379-PeCDF	NotFnd		1.0142						0.94		6705.267	0.493
12679-PeCDF	NotFnd		0.9931						0.94		6705.267	0.493
23467/12369-PeCDF	NotFnd		0.9966						0.94		6705.267	0.493
23478-PeCDF	**NotFnd**		**1.0005**						**0.94**		**6705.267**	**0.487**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6705.267	0.493
12349-PeCDF	NotFnd		1.0100						0.94		6705.267	0.493
12389-PeCDF	NotFnd		1.0323						0.94		6705.267	0.493
123468-HxCDF	NotFnd		0.9631						1.16		7335.362	0.586
124678/134678-HxCDF	NotFnd		0.9686						1.16		7335.362	0.586
134679-HxCDF	NotFnd		0.9747						1.16		7335.362	0.586
124679-HxCDF	NotFnd		0.9800						1.16		7335.362	0.586
124689-HxCDF	NotFnd		0.9859						1.16		7335.362	0.586
123467-HxCDF	NotFnd		0.9972						1.16		7335.362	0.586
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**7335.362**	**0.56**
123678-HxCDF	**NotFnd**		**1.0005**						**1.13**		**7335.362**	**0.514**
123479-HxCDF	NotFnd		1.0048						1.16		7335.362	0.586
123469-HxCDF	NotFnd		1.0089						1.16		7335.362	0.586
123679-HxCDF	NotFnd		0.9943						1.16		7335.362	0.586
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**7335.362**	**0.617**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		7335.362	0.586
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**7335.362**	**0.698**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		7335.362	0.586
1234678-HpCDF	**NotFnd**		**1.0003**						**1.36**		**6932.279**	**0.375**
1234679-HpCDF	NotFnd		1.0065						1.33		6932.279	0.509
1234689-HpCDF	NotFnd		1.0097						1.33		6932.279	0.509
1234789-HpCDF	**NotFnd**		**1.0004**						**1.30**		**6932.279**	**0.734**
OCDF	**NotFnd**		**1.0002**						**1.03**		**6939.506**	**1.47**
OCDF-a	NotFnd		1.0001						0.06		10978.852	40.3


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.88e6
2.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.91e7
9.55e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.36e7
6.81e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.99e6
5.00e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

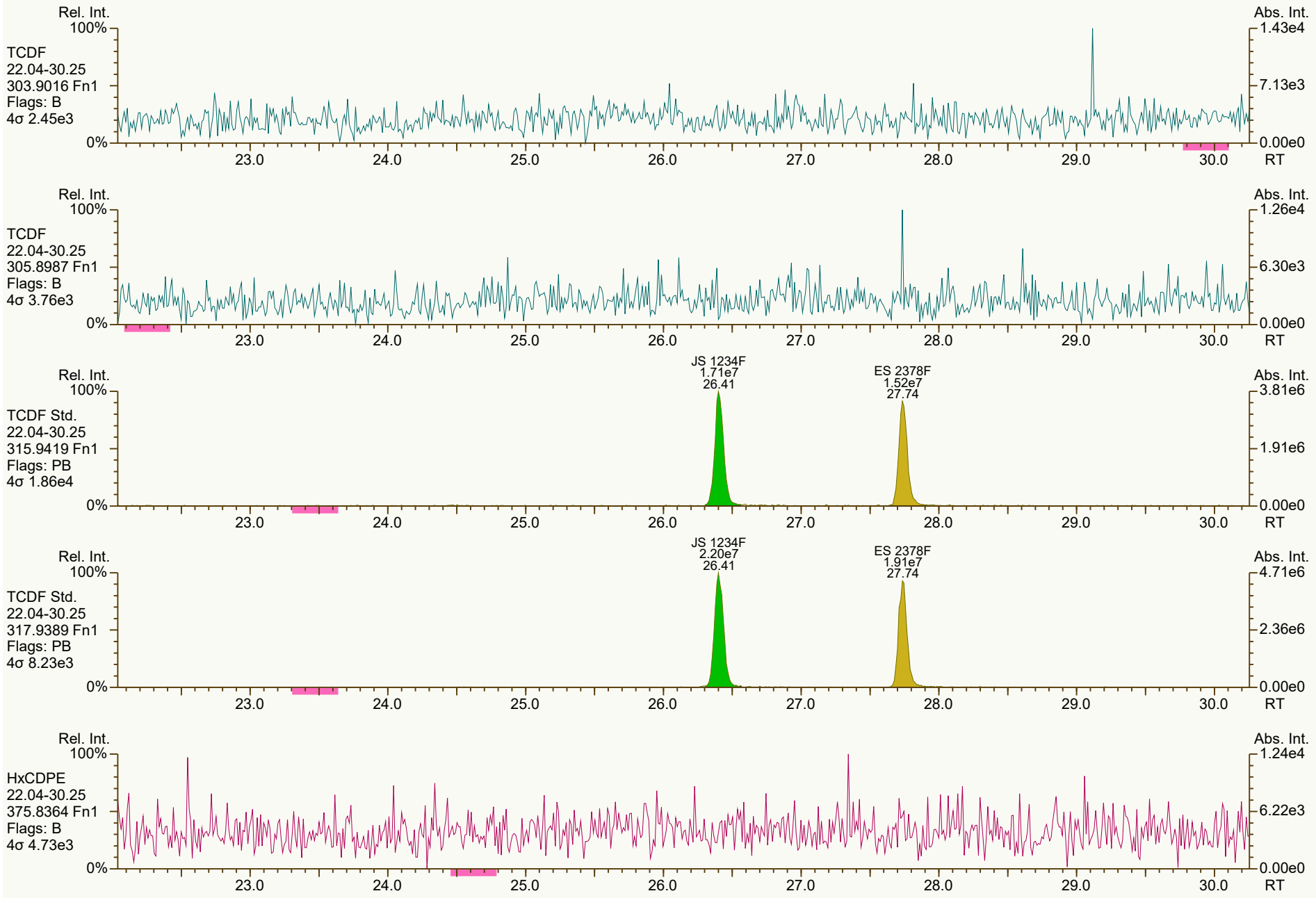

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 4.31e3
0%
Abs. Int.
1.22e4
6.09e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 4.12e3
0%
Abs. Int.
1.54e4
7.70e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.81e3
0%
CS 37Cl-2378D
1.13e7
28.61
Abs. Int.
2.59e6
1.30e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.49e4
0%
JS 1234D
1.12e7
27.94
ES 2378D
1.02e7
28.59
Abs. Int.
2.63e6
1.31e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 5.37e3
0%
JS 1234D
1.41e7
27.94
ES 2378D
1.31e7
28.59
Abs. Int.
3.31e6
1.66e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

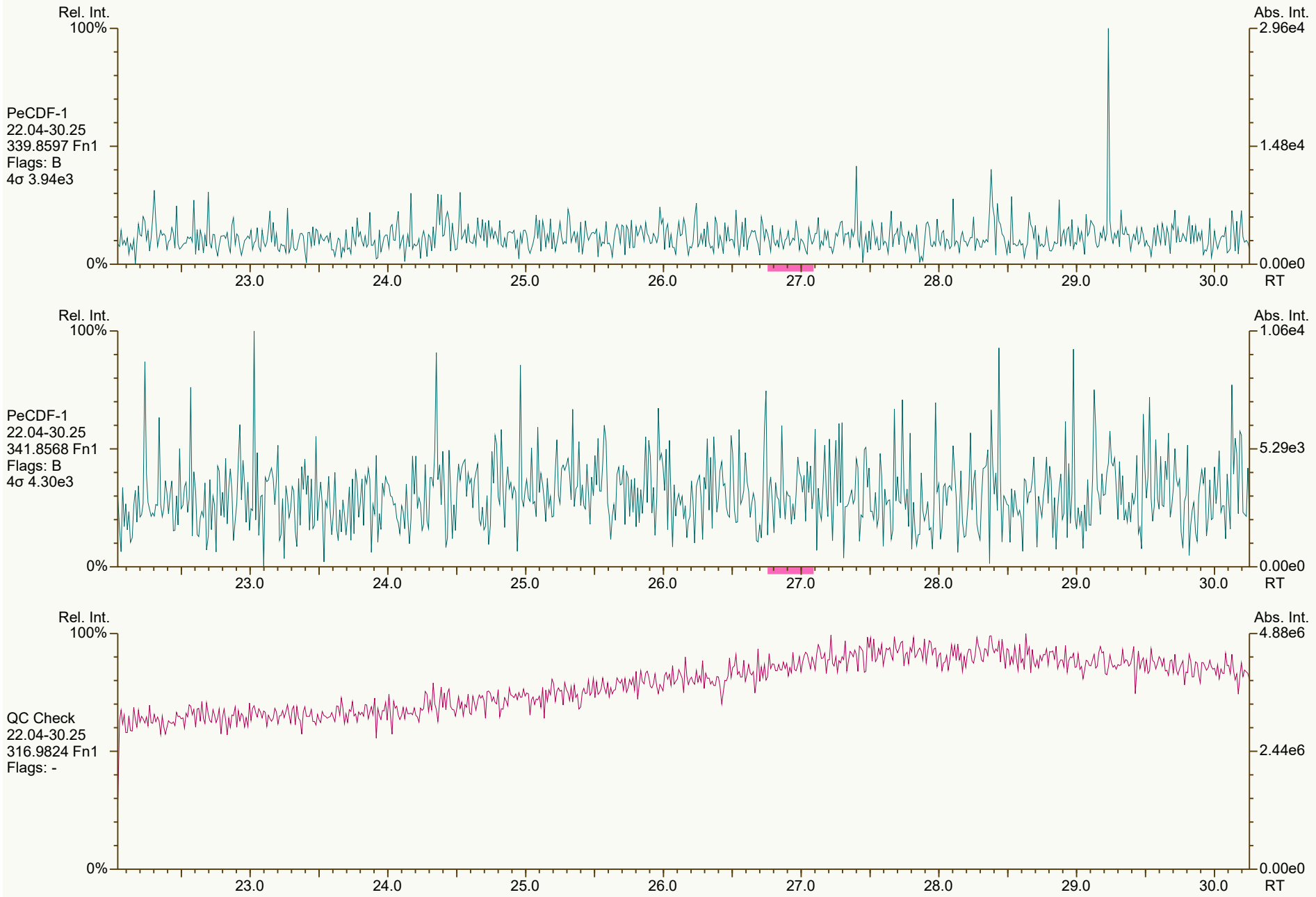

Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 3.12e3
0%
Abs. Int.
9.50e3
4.75e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: B
4σ 2.83e3
0%
Abs. Int.
7.62e3
3.81e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 5.31e3
0%
CS 12347D
1.20e7
33.37
ES 12378D
1.09e7
33.86
Abs. Int.
3.47e6
1.73e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 7.30e3
0%
CS 12347D
7.29e6
33.37
ES 12378D
6.62e6
33.86
Abs. Int.
2.08e6
1.04e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

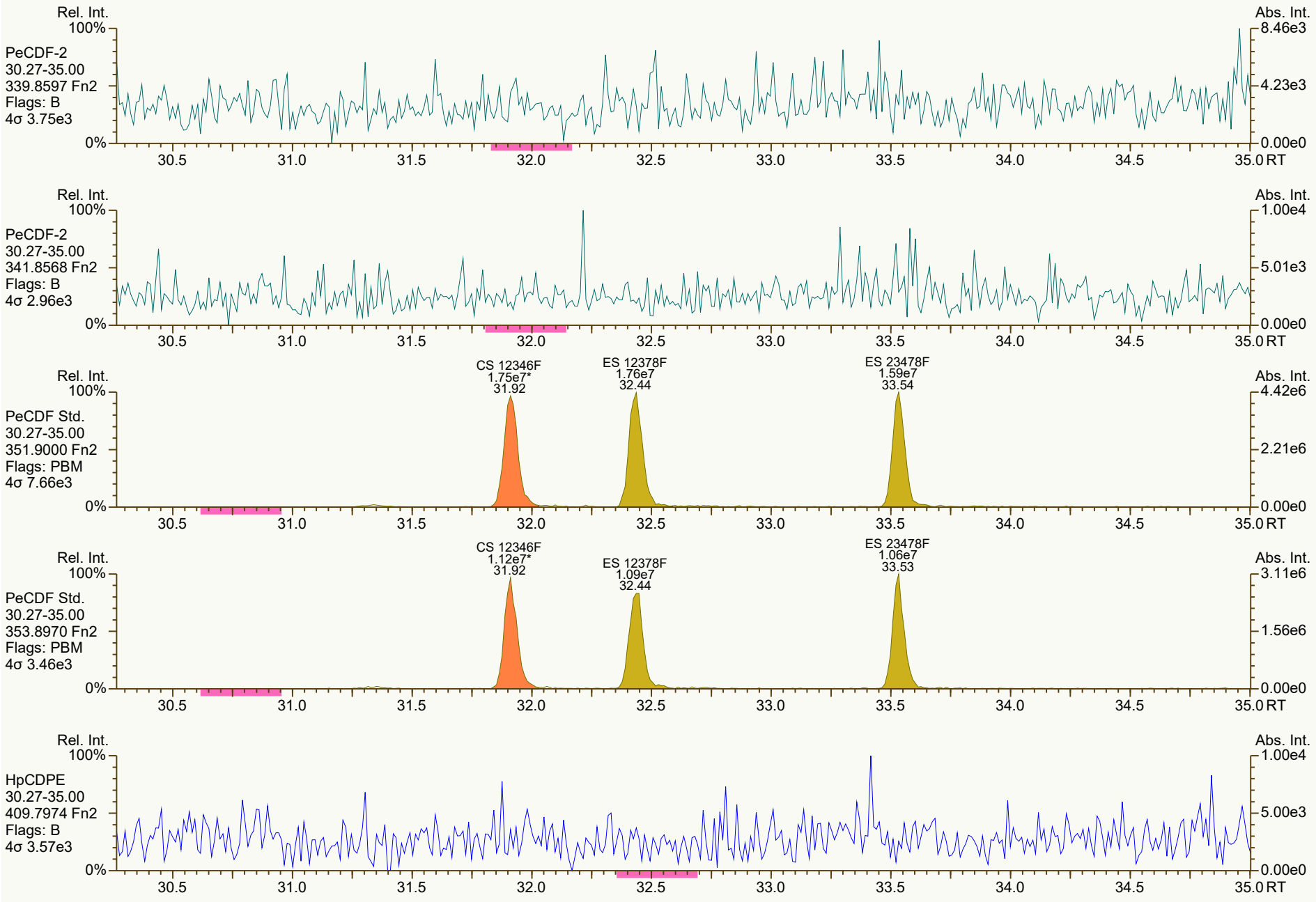

Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: B
4σ 2.67e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PB
4σ 4.26e3
0%
Abs. Int.
5.62e3
2.81e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PBM
4σ 5.73e3
0%
ES 123478D
7.94e6
37.72
ES 123678D
8.05e6
37.84
JS 123467D
4.45e6*
38.03
ES 123789D
9.07e6*
38.12
Abs. Int.
2.97e6
1.49e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PBM
4σ 5.35e3
0%
ES 123478D
6.04e6
37.72
ES 123678D
6.38e6
37.84
JS 123467D
3.36e6*
38.02
ES 123789D
6.97e6*
38.12
Abs. Int.
2.12e6
1.06e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.91e7
9.55e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

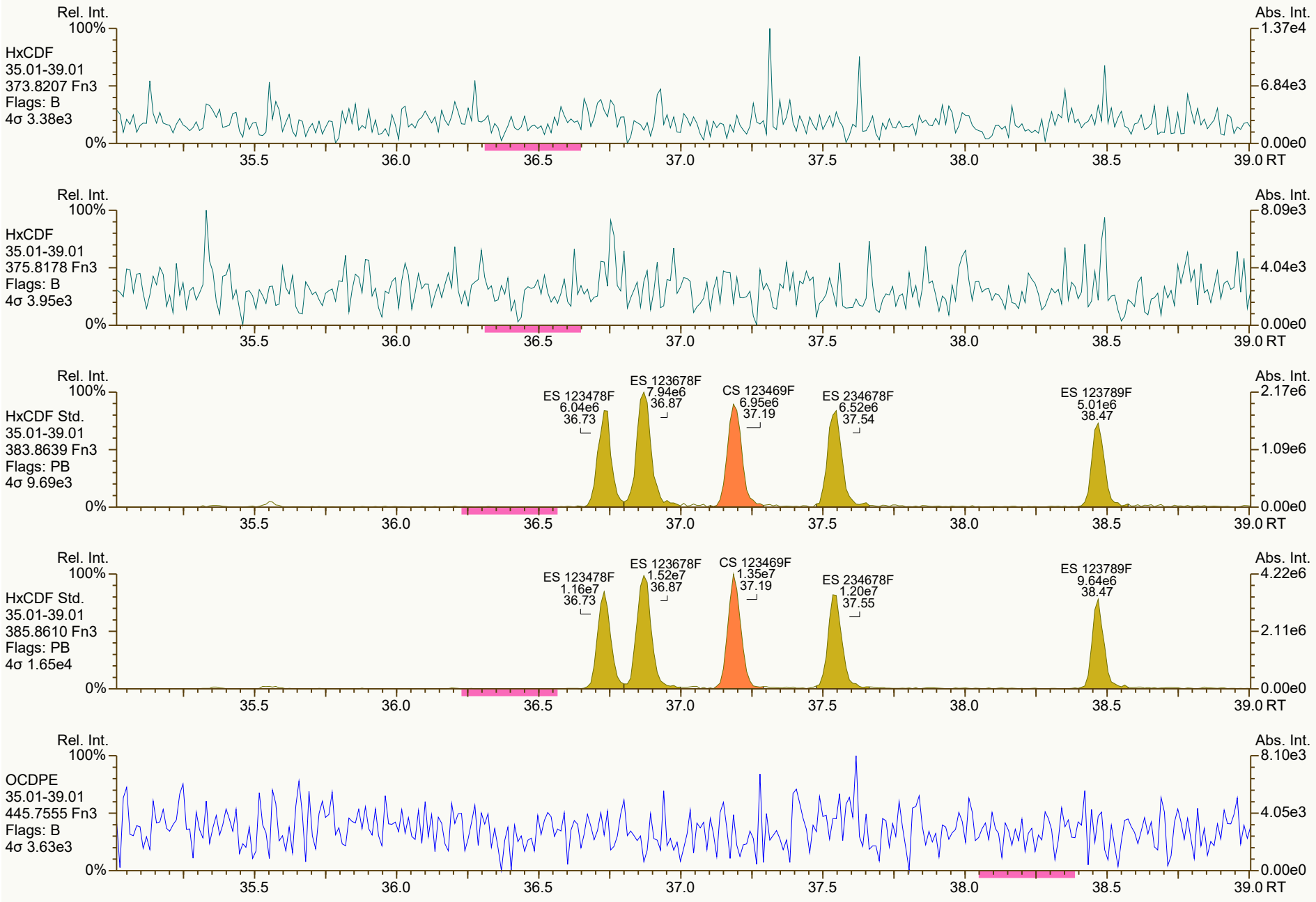

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: B
4σ 4.17e3
0%
Abs. Int.
8.77e3
4.38e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 2.93e3
0%
Abs. Int.
7.36e3
3.68e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
ES 1234678D
6.91e6*
40.69
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 5.22e3
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
ES 1234678D
6.39e6*
40.69
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 6.14e3
0%
Abs. Int.
2.35e6
1.17e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.36e7
6.81e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: B
4σ 5.24e3
0%
Abs. Int.
2.74e4
1.37e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: B
4σ 4.04e3
0%
Abs. Int.
1.16e4
5.78e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.58e6*
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 4.39e3
0%
Abs. Int.
2.10e6
1.05e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.85e6*
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 7.91e3
0%
Abs. Int.
2.13e6
1.07e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.99e6
5.00e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: B
4σ 2.45e3
0%
Abs. Int.
1.43e4
7.13e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.04-30.25
305.8987 Fn1
Flags: B
4σ 3.76e3
0%
Abs. Int.
1.26e4
6.30e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.86e4
0%
JS 1234F
1.71e7
26.41
ES 2378F
1.52e7
27.74
Abs. Int.
3.81e6
1.91e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 8.23e3
0%
JS 1234F
2.20e7
26.41
ES 2378F
1.91e7
27.74
Abs. Int.
4.71e6
2.36e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.73e3
0%
Abs. Int.
1.24e4
6.22e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.96e4
1.48e4
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 3.94e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.06e4
5.29e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 4.30e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.88e6
2.44e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: B
4σ 3.75e3
0%
Abs. Int.
8.46e3
4.23e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: B
4σ 2.96e3
0%
Abs. Int.
1.00e4
5.01e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 7.66e3
0%
CS 12346F
1.75e7*
31.92
ES 12378F
1.76e7
32.44
ES 23478F
1.59e7
33.54
Abs. Int.
4.42e6
2.21e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 3.46e3
0%
CS 12346F
1.12e7*
31.92
ES 12378F
1.09e7
32.44
ES 23478F
1.06e7
33.53
Abs. Int.
3.11e6
1.56e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.57e3
0%
Abs. Int.
1.00e4
5.00e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: B
4σ 3.38e3
0%
Abs. Int.
1.37e4
6.84e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.01
375.8178 Fn3
Flags: B
4σ 3.95e3
0%
Abs. Int.
8.09e3
4.04e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 9.69e3
0%
ES 123478F
6.04e6
36.73
ES 123678F
7.94e6
36.87
CS 123469F
6.95e6
37.19
ES 234678F
6.52e6
37.54
ES 123789F
5.01e6
38.47
Abs. Int.
2.17e6
1.09e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 1.65e4
0%
ES 123478F
1.16e7
36.73
ES 123678F
1.52e7
36.87
CS 123469F
1.35e7
37.19
ES 234678F
1.20e7
37.55
ES 123789F
9.64e6
38.47
Abs. Int.
4.22e6
2.11e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.63e3
0%
Abs. Int.
8.10e3
4.05e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: B
4σ 3.57e3
0%
Abs. Int.
1.29e4
6.43e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: B
4σ 3.36e3
0%
Abs. Int.
1.16e4
5.78e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 5.42e3
0%
ES 1234678F
5.02e6
39.80
CS 1234689F
4.59e6
40.18
ES 1234789F
3.18e6*
41.14
Abs. Int.
2.01e6
1.00e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 5.67e3
0%
ES 1234678F
1.20e7
39.79
CS 1234689F
1.06e7
40.18
ES 1234789F
7.05e6*
41.14
Abs. Int.
4.91e6
2.45e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.55e3
0%
Abs. Int.
8.04e3
4.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT

SGS ID: MB1_18715_DF_SDS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26

Acq: 08-Dec-2021 12:14:27
User: PSW Datafile: 211207R32



Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\MB1_18715_DF_SDS.utp_res, saved 08-Dec-2021 14:01 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1990, 8706, 0268 scc: 576-965

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 13:05 Printed: 08-Dec-2021 14:08 Page 12 of 12

Lab ID: B5965_18715_DF_001-R1 **Acq'd:** 08 Dec 2021 13:01 PSW **Wt/Vol:** 5.04 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-S-7 **UTP:** 08-Dec-2021 14:01:37 PSW **J-level:** 0.992 pg/g **Split:** 1 **Checkcode:** 142-458-CHC

Datafile: 211207R33 **Report:** 08 Dec 2021 14:04 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	8867.141	1.31
12378-PeCDD	NotFnd		1.0004	-		-	-	-	1.06	-	7220.716	1.4
123478-HxCDD	37.73	J	1.0004	1.0003	-0.2	1.47E+05	1.15	Y	1.06	3.63	7880.122	1.58
123678-HxCDD	37.85		1.0034	1.0034	0	6.44E+05	1.36	Y	1.08	14.9	7880.122	1.55
123789-HxCDD	38.13	EMPC	1.0111	1.0109	-0.5	2.87E+05	1.04	N	1.02	6.45	7880.122	1.48
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	2.06E+07	1.06	Y	0.97	669	6459.139	1.41
OCDD	43.28		1.0003	1.0002	-0.3	1.22E+08	0.89	Y	1.07	6,740	10449.602	4.43
2378-TCDF	27.76		1.0007	1.0008	+0.2	3.67E+05	0.70	Y	0.96	5.36	7461.76	1.17
12378-PeCDF	32.44	J	1.0006	1.0005	-0.2	9.29E+04	1.57	Y	0.95	1.58	8066.079	1.26
23478-PeCDF	33.55	J	1.0005	1.0007	+0.4	2.03E+05	1.74	Y	0.94	3.51	8066.079	1.24
123478-HxCDF	36.74	J EMPC	1.0004	1.0005	+0.2	2.51E+05	1.58	N	1.23	4.42	9313.629	1.43
123678-HxCDF	36.89	J	1.0005	1.0005	0	2.07E+05	1.14	Y	1.13	3.31	9313.629	1.35
234678-HxCDF	37.56	J	1.0005	1.0006	+0.2	2.26E+05	1.10	Y	1.15	3.83	9313.629	1.44
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	9313.629	1.31
1234678-HpCDF	39.80		1.0003	1.0002	-0.2	4.18E+06	0.99	Y	1.36	82.4	9069.045	1.12
1234789-HpCDF	41.16	EMPC	1.0004	1.0004	0	2.00E+05	1.38	N	1.30	5.06	9069.045	1.66
OCDF	43.46		1.0002	1.0003	+0.3	4.86E+06	0.95	Y	1.03	203	8334.974	3.06

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58		1.0233	1.0232	-0.2	2.05E+07	0.79	Y	1.03	93.6
ES 12378-PeCDD	33.86		1.2118	1.2120	+0.4	1.70E+07	1.57	Y	1.03	78
ES 123478-HxCDD	37.72		0.9921	0.9921	0	1.53E+07	1.26	Y	0.99	97.2
ES 123678-HxCDD	37.84		0.9951	0.9952	+0.2	1.59E+07	1.31	Y	0.97	103
ES 123789-HxCDD	38.12		1.0027	1.0026	-0.2	1.74E+07	1.25	Y	1.12	98
ES 1234678-HpCDD	40.69		1.0702	1.0701	-0.2	1.26E+07	1.11	Y	0.99	80.3
ES OCDD	43.27		1.1377	1.1380	+0.8	1.34E+07	0.88	Y	0.78	54.8
ES 2378-TCDF	27.74		1.0505	1.0505	0	2.83E+07	0.78	Y	1.08	87.4
ES 12378-PeCDF	32.43		1.2278	1.2283	+1.0	2.46E+07	1.52	Y	0.93	88.3
ES 23478-PeCDF	33.53		1.2691	1.2699	+1.6	2.45E+07	1.51	Y	0.92	89
ES 123478-HxCDF	36.73		0.9660	0.9660	0	1.83E+07	0.53	Y	1.14	101
ES 123678-HxCDF	36.87		0.9698	0.9697	-0.2	2.19E+07	0.52	Y	1.30	107
ES 234678-HxCDF	37.54		0.9875	0.9874	-0.2	2.03E+07	0.52	Y	1.20	107
ES 123789-HxCDF	38.47		1.0121	1.0118	-0.7	1.88E+07	0.52	Y	1.14	105
ES 1234678-HpCDF	39.79		1.0468	1.0466	-0.5	1.48E+07	0.47	Y	0.95	98.7
ES 1234789-HpCDF	41.14		1.0822	1.0822	0	1.20E+07	0.46	Y	0.85	90.1
ES OCDF	43.45		1.1426	1.1429	+0.8	1.85E+07	0.92	Y	0.93	63.3

Lab ID: B5965_18715_DF_001-R1 **Acq'd:** 08 Dec 2021 13:01 PSW **Wt/Vol:** 5.04 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-S-7 **UTP:** 08-Dec-2021 14:01:37 PSW **J-level:** 0.992 pg/g **Split:** 1 **Checkcode:** 142-458-CHC

Datafile: 211207R33 **Report:** 08 Dec 2021 14:04 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.93		-	-	-	2.11E+07	0.80	Y	-	-
JS 1234-TCDF	26.40		-	-	-	2.99E+07	0.76	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	7.89E+06	1.19	Y	-	-
CS 37Cl-2378-TCDD	28.60		1.0241	1.0240	-0.2	9.22E+06	n/a	-	1.31	83.3
CS 12347-PeCDD	33.36		1.1940	1.1942	+0.4	1.73E+07	1.63	Y	0.89	91.9
CS 12346-PeCDF	31.91		1.2080	1.2085	+1.0	2.43E+07	1.61	Y	0.87	93.9
CS 123469-HxCDF	37.19		0.9781	0.9781	0	1.98E+07	0.52	Y	1.09	115
CS 1234689-HpCDF	40.18		1.0569	1.0568	-0.2	1.45E+07	0.45	Y	0.86	107
~~SS 37Cl-2378-TCDD~~	~~28.60~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~9.22E+06~~	~~n/a~~		~~1.26~~	~~89.5~~
~~SS 12347-PeCDD~~	~~33.36~~		~~1.1940~~	~~1.1942~~	~~+0.4~~	~~1.73E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~110~~
~~SS 12346-PeCDF~~	~~31.91~~		~~1.2080~~	~~1.2085~~	~~+1.0~~	~~2.43E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~106~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.98E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~107~~
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.45E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~108~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	7.17	14.9
Total HxCDD	136	142
Total HpCDD	1410	1410
Total Tetra-Octa Dioxins	8300	8310
Total TCDF	13.1	24.1
Total PeCDF	20.2	33.9
Total HxCDF	72.1	76.5
Total HpCDF	238	243
Total Tetra-Octa Furans	546	580
Total Tetra-Octa Dioxins & Furans	8840	8890

Lab ID: B5965_18715_DF_001-R1 **Acq'd: 08 Dec 2021 13:01 PSW** **Wt/Vol: 5.04 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-SPS-NE-S-7 **UTP: 08-Dec-2021 14:01:37 PSW** **J-level: 0.992 pg/g** **Split: 1** **Checkcode: 142-458-CHC**

Datafile: 211207R33 **Report: 08 Dec 2021 14:04 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8758						1.34		8867.141	1.31
1379-TCDD	NotFnd		0.8878						1.34		8867.141	1.31
1369-TCDD	NotFnd		0.9025						1.34		8867.141	1.31
1469-TCDD	NotFnd		0.9291						1.34		8867.141	1.31
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8867.141	1.31
1378-TCDD	NotFnd		0.9440						1.34		8867.141	1.31
1268-TCDD	NotFnd		0.9505						1.34		8867.141	1.31
1478-TCDD	NotFnd		0.9591						1.34		8867.141	1.31
1279-TCDD	NotFnd		0.9650						1.34		8867.141	1.31
1234/1269-TCDD	NotFnd		0.9771						1.34		8867.141	1.31
1236-TCDD	NotFnd		0.9821						1.34		8867.141	1.31
1237/1238-TCDD	NotFnd		0.9907						1.34		8867.141	1.31
1239-TCDD	NotFnd		0.9953						1.34		8867.141	1.31
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**8867.141**	**1.31**
1278-TCDD	NotFnd		1.0118						1.34		8867.141	1.31
1267-TCDD	NotFnd		1.0162						1.34		8867.141	1.31
1289-TCDD	NotFnd		1.0340						1.34		8867.141	1.31
12479/12468-PeCDD	31.40		0.9274	0.9274	0	2.26E+05	1.44	Y	1.06	4.96	7220.716	1.4
12469-PeCDD	31.92	J	0.9430	0.9429	-0.2	1.00E+05	1.35	Y	1.06	2.2	7220.716	1.4
12368-PeCDD	32.47	J EMPC	0.9591	0.9591	0	6.44E+04	2.41	N	1.06	1.41	7220.716	1.4
12478-PeCDD	32.67	J EMPC	0.9645	0.9649	+0.8	9.94E+04	1.11	N	1.06	2.18	7220.716	1.4
12379-PeCDD	32.76	J EMPC	0.9676	0.9677	+0.2	6.71E+04	1.92	N	1.06	1.47	7220.716	1.4
12369/12467/12489-PeCDD	33.02	J EMPC	0.9751	0.9751	0	1.20E+05	1.94	N	1.06	2.65	7220.716	1.4
12346/12347-PeCDD	NotFnd		0.9860						1.06		7220.716	1.4
12378-PeCDD	NotFnd		**1.0004**						**1.06**		**7220.716**	**1.4**
12367-PeCDD	NotFnd		1.0034						1.06		7220.716	1.4
12389-PeCDD	NotFnd		1.0133						1.06		7220.716	1.4
124679/124689-HxCDD	36.01		0.9546	0.9547	+0.2	1.77E+06	1.23	Y	1.05	41.3	7880.122	1.53
123468-HxCDD	36.66		0.9718	0.9718	0	3.68E+05	1.40	Y	1.05	8.6	7880.122	1.53
123679/123689-HxCDD	36.95		0.9795	0.9796	+0.2	2.39E+06	1.22	Y	1.05	55.7	7880.122	1.53
123469-HxCDD	37.07		0.9832	0.9828	-0.9	3.15E+05	1.28	Y	1.05	7.36	7880.122	1.53
123478-HxCDD	37.73	J	**1.0004**	**1.0003**	**-0.2**	**1.47E+05**	**1.15**	**Y**	1.06	**3.63**	**7880.122**	**1.58**
123678-HxCDD	37.85		**1.0034**	**1.0034**	**0**	**6.44E+05**	**1.36**	**Y**	1.08	**14.9**	**7880.122**	**1.55**
123467-HxCDD	38.03	J	1.0083	1.0083	0	1.71E+05	1.13	Y	1.05	4	7880.122	1.53
123789-HxCDD	38.13	EMPC	**1.0111**	**1.0109**	**-0.5**	**2.87E+05**	**1.04**	**N**	1.02	**6.45**	**7880.122**	**1.48**

Lab ID: B5965_18715_DF_001-R1 | **Acq'd: 08 Dec 2021 13:01 PSW** | **Wt/Vol: 5.04 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-SPS-NE-S-7 | **UTP: 08-Dec-2021 14:01:37 PSW** | **J-level: 0.992 pg/g** | **Split: 1** | **Checkcode: 142-458-CHC**

Datafile: 211207R33 | **Report: 08 Dec 2021 14:04 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

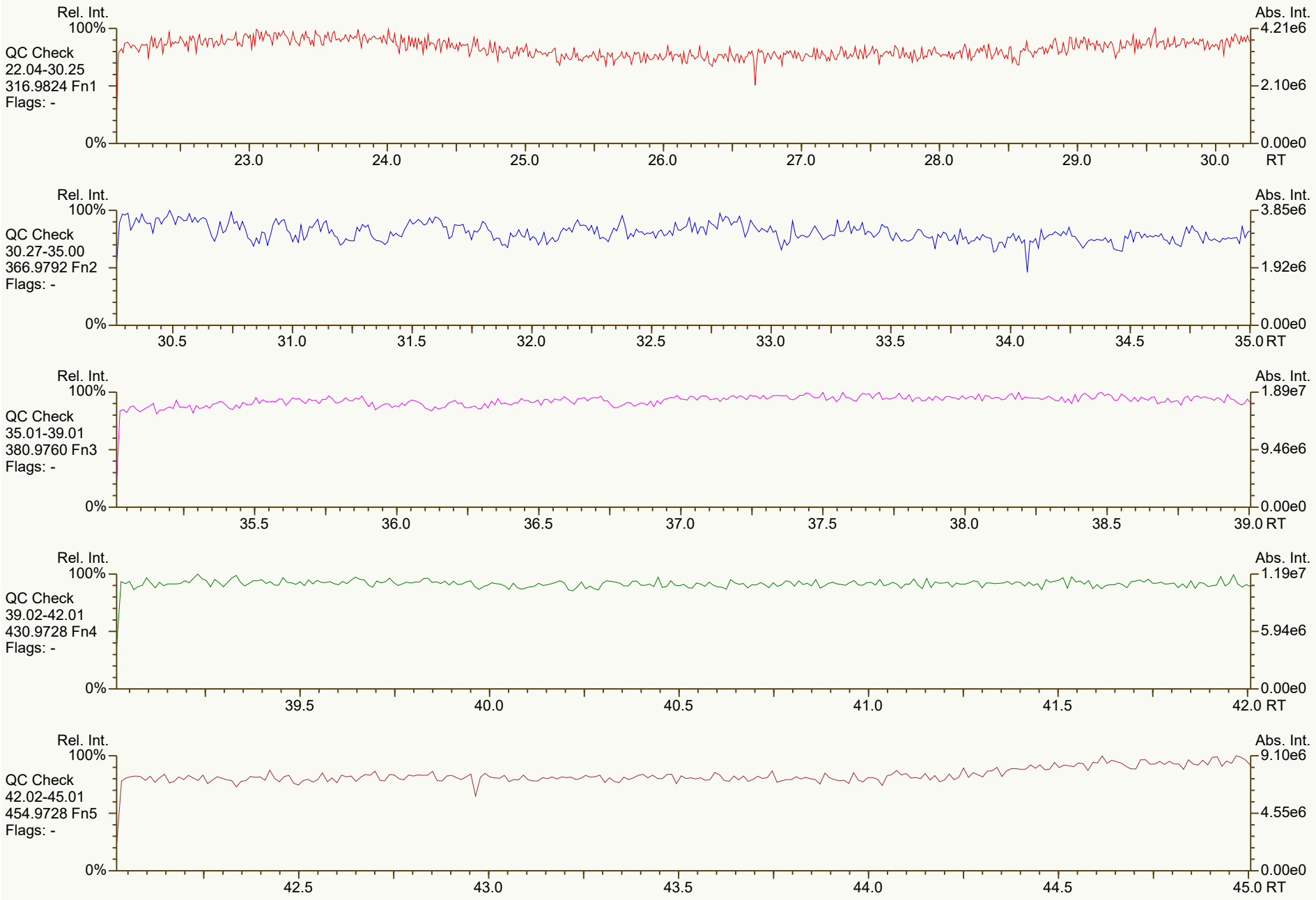
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9843	0.9842	-0.2	2.28E+07	1.07	Y	0.97	741	6459.139	1.41
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**2.06E+07**	**1.06**	**Y**	**0.97**	**669**	**6459.139**	**1.41**
OCDD	**43.28**		**1.0003**	**1.0002**	**-0.3**	**1.22E+08**	**0.89**	**Y**	**1.07**	**6,740**	**10449.602**	**4.43**
OCDD-a	43.27		1.0001	1.0002	+0.3	7.42E+06	2.19	Y	0.07	6,640	13797.558	94.7
1368-TCDF	22.96	EMPC	0.8284	0.8279	-0.7	6.93E+04	1.13	N	0.96	1.01	7461.76	1.17
1468-TCDF	NotFnd		0.8487						0.96		7461.76	1.17
2468-TCDF	24.15		0.8709	0.8705	-0.6	1.56E+05	0.67	Y	0.96	2.28	7461.76	1.17
1346/1246-TCDF	NotFnd		0.8828						0.96		7461.76	1.17
1347/1378/1247-TCDF	24.65	EMPC	0.8886	0.8886	0	1.76E+05	0.89	N	0.96	2.58	7461.76	1.17
1348-TCDF	NotFnd		0.8980						0.96		7461.76	1.17
1248/1367/1379-TCDF	25.00		0.9027	0.9014	-2.0	1.18E+05	0.86	Y	0.96	1.73	7461.76	1.17
1268-TCDF	25.41	EMPC	0.9159	0.9163	+0.6	1.09E+05	0.57	N	0.96	1.59	7461.76	1.17
1467-TCDF	NotFnd		0.9206						0.96		7461.76	1.17
1478-TCDF	25.69	EMPC	0.9266	0.9263	-0.5	8.91E+04	0.90	N	0.96	1.3	7461.76	1.17
1369/1237-TCDF	NotFnd		0.9396						0.96		7461.76	1.17
2467-TCDF	NotFnd		0.9440						0.96		7461.76	1.17
2368-TCDF	NotFnd		0.9496						0.96		7461.76	1.17
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		7461.76	1.17
1278-TCDF	26.88	EMPC	0.9689	0.9692	+0.5	1.52E+05	1.18	N	0.96	2.22	7461.76	1.17
1349-TCDF	NotFnd		0.9732						0.96		7461.76	1.17
1267-TCDF	NotFnd		0.9786						0.96		7461.76	1.17
2346/1249-TCDF	NotFnd		0.9849						0.96		7461.76	1.17
2347/1279-TCDF	NotFnd		0.9927						0.96		7461.76	1.17
2348-TCDF	NotFnd		0.9967						0.96		7461.76	1.17
2378-TCDF	**27.76**		**1.0007**	**1.0008**	**+0.2**	**3.67E+05**	**0.70**	**Y**	**0.96**	**5.36**	**7461.76**	**1.17**
2367/3467-TCDF	28.11		1.0136	1.0135	-0.2	2.57E+05	0.83	Y	0.96	3.76	7461.76	1.17
1269-TCDF	NotFnd		1.0223						0.96		7461.76	1.17
1239-TCDF	NotFnd		1.0313						0.96		7461.76	1.17
1289-TCDF	29.70	EMPC	1.0711	1.0708	-0.5	1.57E+05	1.60	N	0.96	2.29	7461.76	1.17
13468/12468-PeCDF	29.68	EMPC	0.9147	0.9152	+0.9	5.50E+05	1.99	N	0.94	9.42	8023.142	1.24
13678/13467/12467-PeCDF	31.20	J	0.9616	0.9621	+0.9	1.95E+05	1.54	Y	0.94	3.33	8066.079	1.25
12368/13478/12478-PeCDF	31.35		0.9663	0.9668	+0.9	4.89E+05	1.43	Y	0.94	8.38	8066.079	1.25
14678-PeCDF	NotFnd		0.9695						0.94		8066.079	1.25
13479-PeCDF	NotFnd		0.9727						0.94		8066.079	1.25
13469/12479-PeCDF	NotFnd		0.9799						0.94		8066.079	1.25
12346-PeCDF	NotFnd		0.9839						0.94		8066.079	1.25

Lab ID: B5965_18715_DF_001-R1 **Acq'd: 08 Dec 2021 13:01 PSW** **Wt/Vol: 5.04 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-SPS-NE-S-7 **UTP: 08-Dec-2021 14:01:37 PSW** **J-level: 0.992 pg/g** **Split: 1** **Checkcode: 142-458-CHC**

Datafile: 211207R33 **Report: 08 Dec 2021 14:04 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.00	J EMPC	0.9864	0.9868	+0.8	1.19E+05	2.47	N	0.94	2.03	8066.079	1.25
12347-PeCDF	32.08	J EMPC	0.9892	0.9893	+0.2	2.45E+04	2.23	N	0.94	0.42	8066.079	1.25
12348-PeCDF	NotFnd		0.9940						0.94		8066.079	1.25
12378-PeCDF	**32.44**	J	**1.0006**	**1.0005**	**-0.2**	**9.29E+04**	**1.57**	**Y**	**0.95**	**1.58**	**8066.079**	**1.26**
12678/12367-PeCDF	32.73	J	1.0088	1.0093	+1.0	1.98E+05	1.65	Y	0.94	3.39	8066.079	1.25
12379-PeCDF	NotFnd		1.0142						0.94		8066.079	1.25
12679-PeCDF	NotFnd		0.9931						0.94		8066.079	1.25
23467/12369-PeCDF	33.41	J EMPC	0.9966	0.9966	0	1.07E+05	1.82	N	0.94	1.84	8066.079	1.25
23478-PeCDF	**33.55**	J	**1.0005**	**1.0007**	**+0.4**	**2.03E+05**	**1.74**	**Y**	**0.94**	**3.51**	**8066.079**	**1.24**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8066.079	1.25
12349-PeCDF	NotFnd		1.0100						0.94		8066.079	1.25
12389-PeCDF	NotFnd		1.0323						0.94		8066.079	1.25
123468-HxCDF	35.38		0.9631	0.9633	+0.4	4.07E+05	1.28	Y	1.16	7.01	9313.629	1.38
124678/134678-HxCDF	35.57		0.9686	0.9686	0	1.36E+06	1.13	Y	1.16	23.5	9313.629	1.38
134679-HxCDF	NotFnd		0.9747						1.16		9313.629	1.38
124679-HxCDF	NotFnd		0.9800						1.16		9313.629	1.38
124689-HxCDF	36.21		0.9859	0.9860	+0.2	1.86E+06	1.19	Y	1.16	31.9	9313.629	1.38
123467-HxCDF	36.62	J	0.9972	0.9972	0	1.46E+05	1.31	Y	1.16	2.52	9313.629	1.38
123478-HxCDF	**36.74**	J EMPC	**1.0004**	**1.0005**	**+0.2**	**2.51E+05**	**1.58**	**N**	**1.23**	**4.42**	**9313.629**	**1.43**
123678-HxCDF	**36.89**	J	**1.0005**	**1.0005**	**0**	**2.07E+05**	**1.14**	**Y**	**1.13**	**3.31**	**9313.629**	**1.35**
123479-HxCDF	NotFnd		1.0048						1.16		9313.629	1.38
123469-HxCDF	NotFnd		1.0089						1.16		9313.629	1.38
123679-HxCDF	NotFnd		0.9943						1.16		9313.629	1.38
234678-HxCDF	**37.56**	J	**1.0005**	**1.0006**	**+0.2**	**2.26E+05**	**1.10**	**Y**	**1.15**	**3.83**	**9313.629**	**1.44**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		9313.629	1.38
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**9313.629**	**1.31**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		9313.629	1.38
1234678-HpCDF	**39.80**		**1.0003**	**1.0002**	**-0.2**	**4.18E+06**	**0.99**	**Y**	**1.36**	**82.4**	**9069.045**	**1.12**
1234679-HpCDF	40.04	**J**	1.0065	1.0063	-0.5	1.68E+05	1.00	Y	1.33	3.74	9069.045	1.36
1234689-HpCDF	40.19		1.0097	1.0100	+0.7	6.81E+06	1.02	Y	1.33	151	9069.045	1.36
1234789-HpCDF	**41.16**	**EMPC**	**1.0004**	**1.0004**	**0**	**2.00E+05**	**1.38**	**N**	**1.30**	**5.06**	**9069.045**	**1.66**
OCDF	**43.46**		**1.0002**	**1.0003**	**+0.3**	**4.86E+06**	**0.95**	**Y**	**1.03**	**203**	**8334.974**	**3.06**
OCDF-a	NotFnd		1.0001						0.06		10176.328	64.6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316.9824 Fn1
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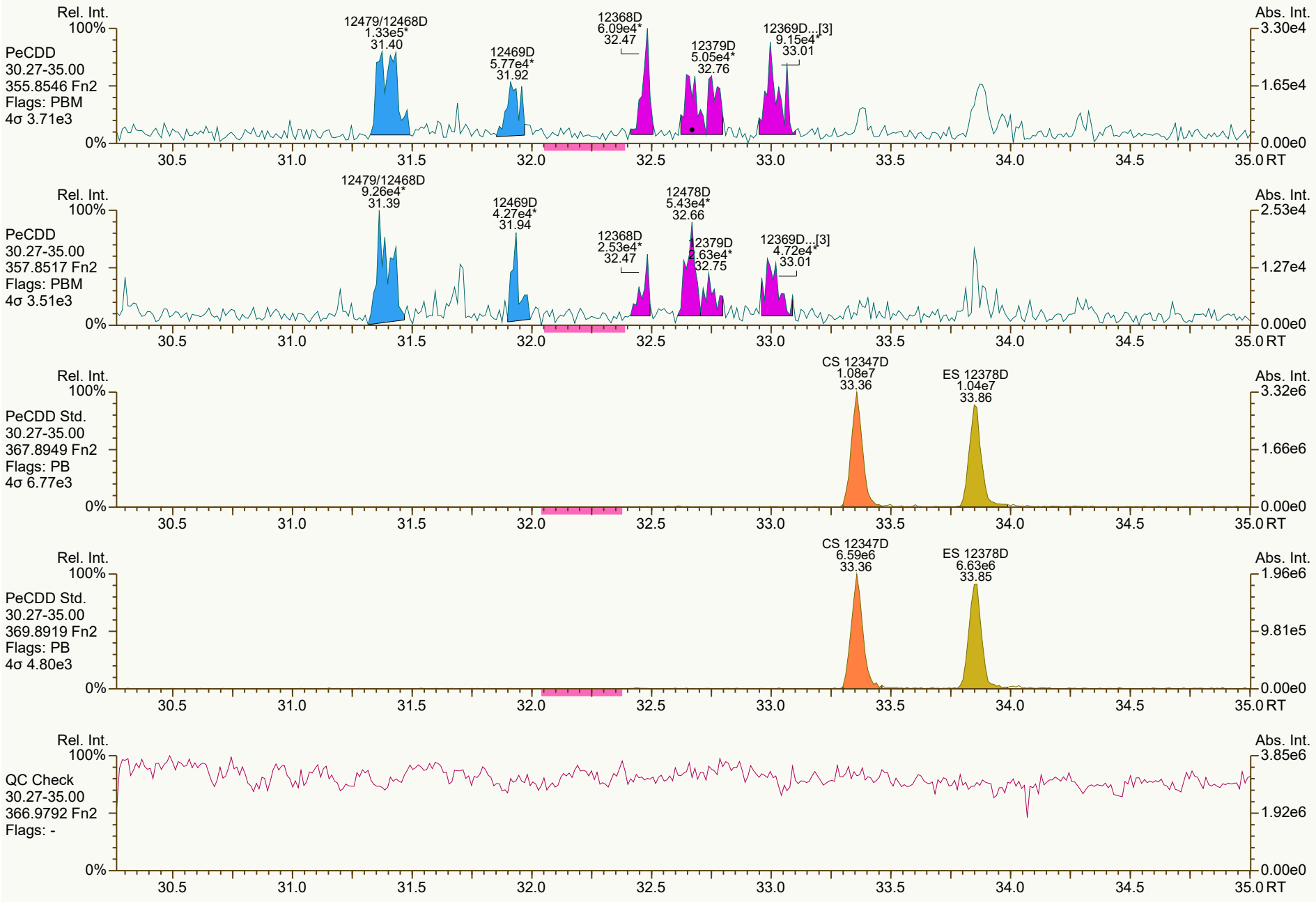
4.21e6
2.10e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.85e6
1.92e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.89e7
9.46e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.19e7
5.94e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.10e6
4.55e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 4.64e3
0%
Abs. Int.
1.69e4
8.46e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 4.23e3
0%
Abs. Int.
2.34e4
1.17e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.43e3
0%
CS 37Cl-2378D
9.22e6
28.60
Abs. Int.
2.17e6
1.09e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 8.85e3
0%
JS 1234D
9.42e6
27.93
ES 2378D
9.04e6
28.58
Abs. Int.
2.24e6
1.12e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 9.62e3
0%
JS 1234D
1.17e7
27.93
ES 2378D
1.14e7
28.58
Abs. Int.
2.88e6
1.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 3.71e3
12479/12468D
1.33e5*
31.40
12469D
5.77e4*
31.92
12368D
6.09e4*
32.47
12379D
5.05e4*
32.76
12369D...[3]
9.15e4*
33.01
Abs. Int.
3.30e4
1.65e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 3.51e3
12479/12468D
9.26e4*
31.39
12469D
4.27e4*
31.94
12368D
2.53e4*
32.47
12478D
5.43e4*
32.66
12379D
2.63e4*
32.75
12369D...[3]
4.72e4*
33.01
Abs. Int.
2.53e4
1.27e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 6.77e3
CS 12347D
1.08e7
33.36
ES 12378D
1.04e7
33.86
Abs. Int.
3.32e6
1.66e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 4.80e3
CS 12347D
6.59e6
33.36
ES 12378D
6.63e6
33.85
Abs. Int.
1.96e6
9.81e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
Abs. Int.
3.85e6
1.92e6
0.00e0
0%
30.5
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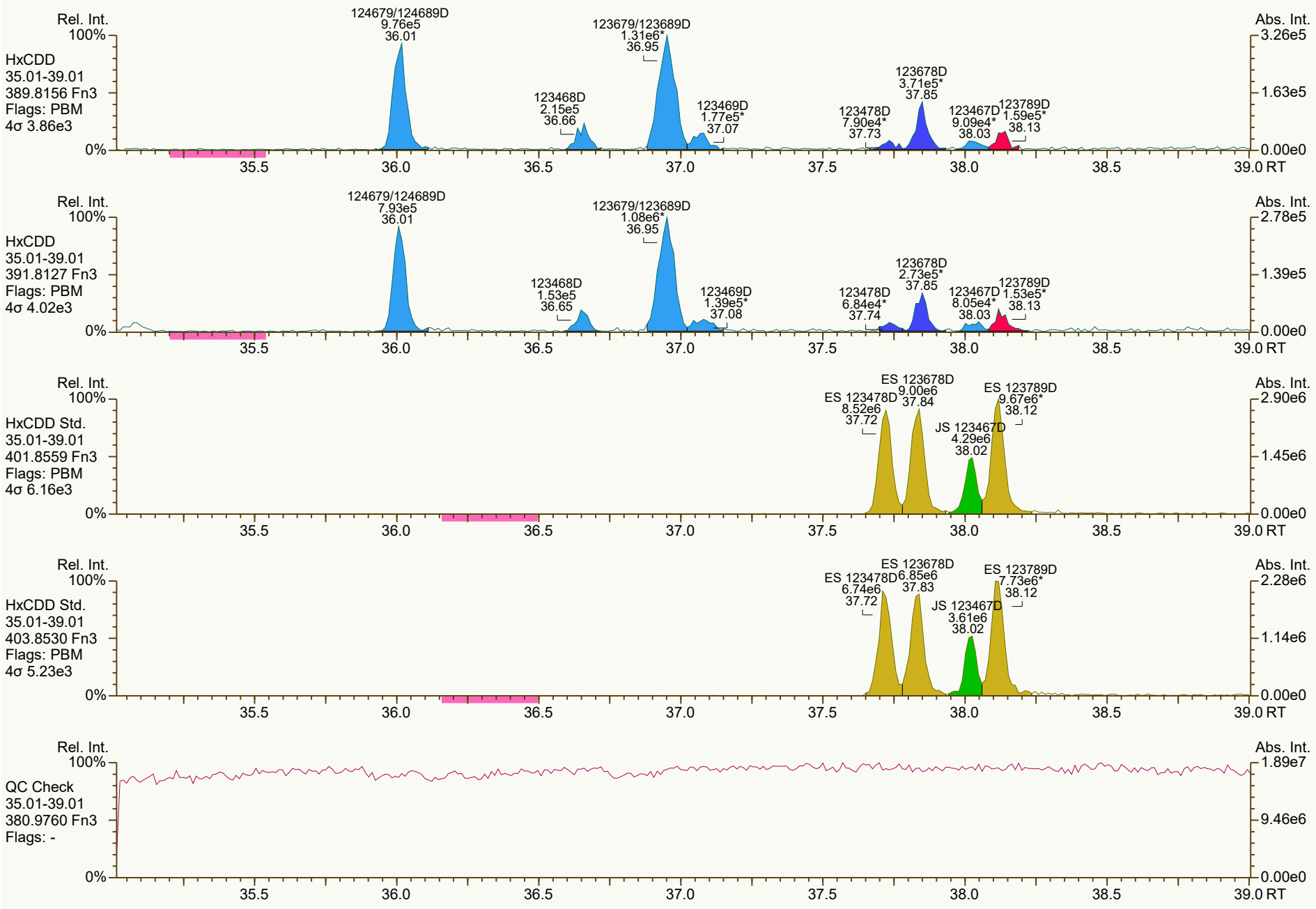
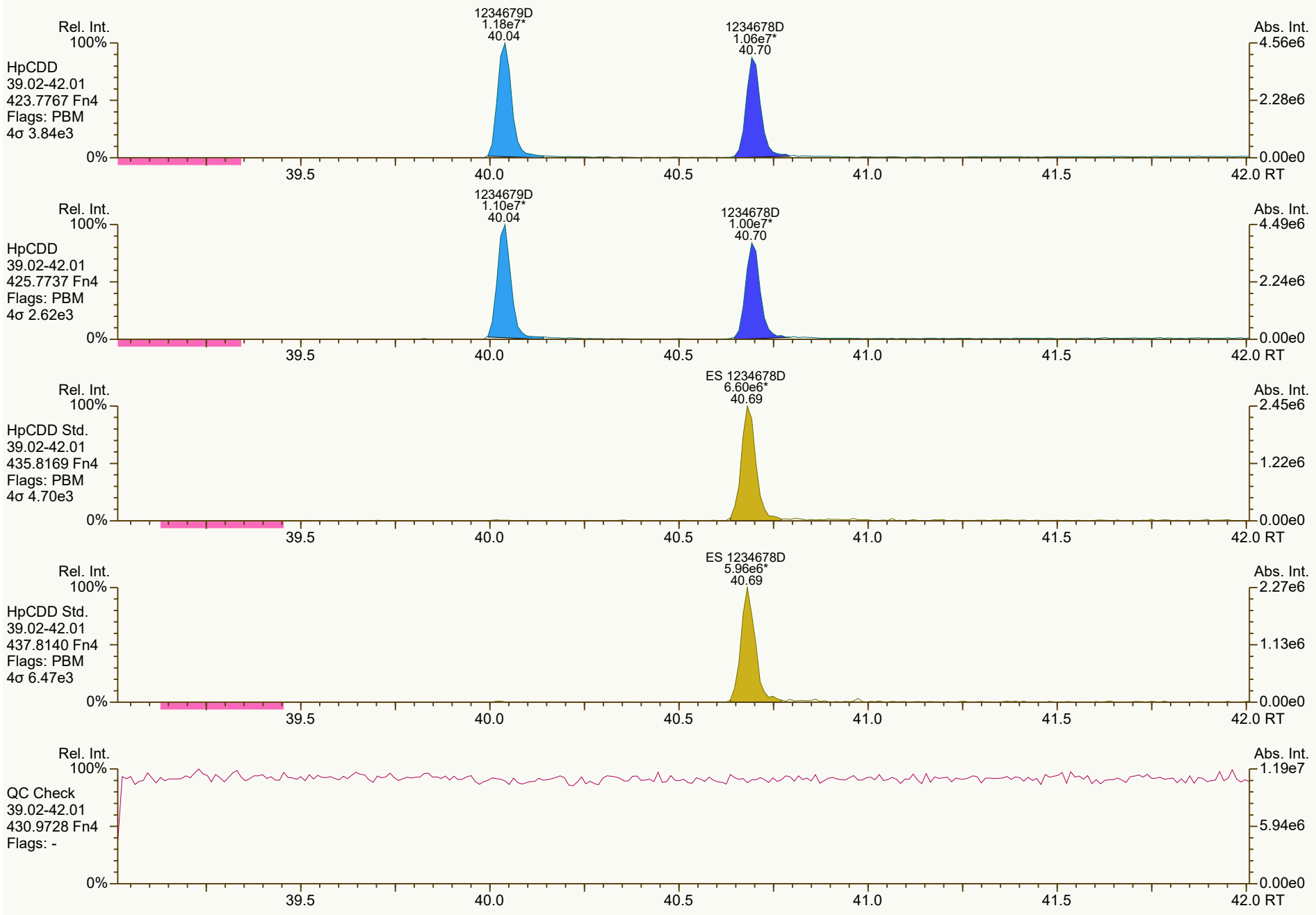
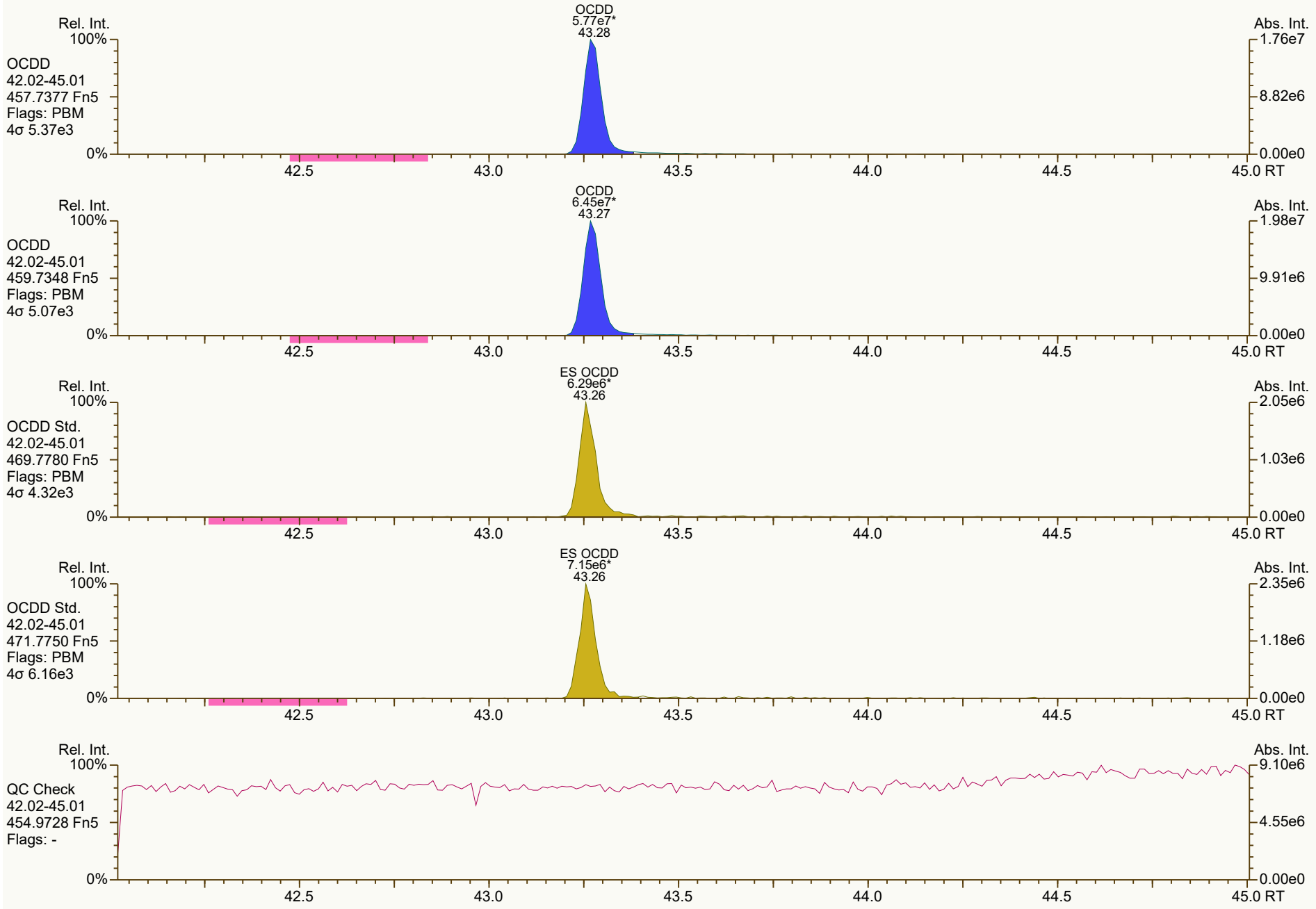
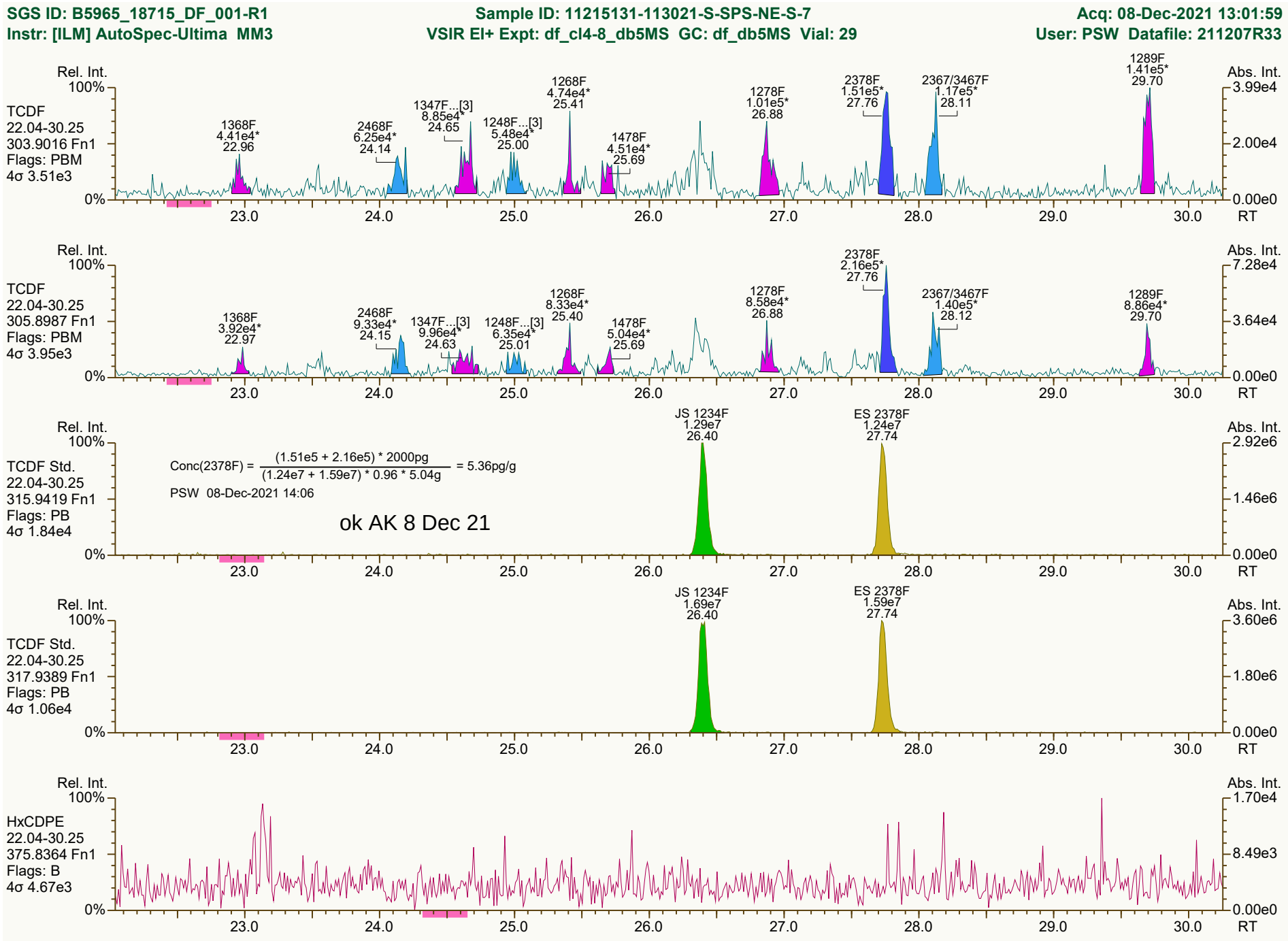
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: PBM
4σ 3.86e3
0%
124679/124689D
9.76e5
36.01
123679/123689D
1.31e6*
36.95
123468D
2.15e5
36.66
123469D
1.77e5*
37.07
123678D
3.71e5*
37.85
123478D
7.90e4*
37.73
123467D
9.09e4*
38.03
123789D
1.59e5*
38.13
Abs. Int.
3.26e5
1.63e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PBM
4σ 4.02e3
0%
124679/124689D
7.93e5
36.01
123679/123689D
1.08e6*
36.95
123468D
1.53e5
36.65
123469D
1.39e5*
37.08
123678D
2.73e5*
37.85
123478D
6.84e4*
37.74
123467D
8.05e4*
38.03
123789D
1.53e5*
38.13
Abs. Int.
2.78e5
1.39e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PBM
4σ 6.16e3
0%
ES 123678D
9.00e6
37.84
ES 123478D
8.52e6
37.72
ES 123789D
9.67e6*
38.12
JS 123467D
4.29e6
38.02
Abs. Int.
2.90e6
1.45e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PBM
4σ 5.23e3
0%
ES 123678D
6.85e6
37.83
ES 123478D
6.74e6
37.72
ES 123789D
7.73e6*
38.12
JS 123467D
3.61e6
38.02
Abs. Int.
2.28e6
1.14e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.89e7
9.46e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 3.84e3
1234679D
1.18e7*
40.04
1234678D
1.06e7*
40.70
Abs. Int.
4.56e6
2.28e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 2.62e3
1234679D
1.10e7*
40.04
1234678D
1.00e7*
40.70
Abs. Int.
4.49e6
2.24e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 4.70e3
ES 1234678D
6.60e6*
40.69
Abs. Int.
2.45e6
1.22e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 6.47e3
ES 1234678D
5.96e6*
40.69
Abs. Int.
2.27e6
1.13e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.19e7
5.94e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 5.37e3
0%
OCDD
5.77e7*
43.28
Abs. Int.
1.76e7
8.82e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 5.07e3
0%
OCDD
6.45e7*
43.27
Abs. Int.
1.98e7
9.91e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 4.32e3
0%
ES OCDD
6.29e6*
43.26
Abs. Int.
2.05e6
1.03e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 6.16e3
0%
ES OCDD
7.15e6*
43.26
Abs. Int.
2.35e6
1.18e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.10e6
4.55e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5965_18715_DF_001-R1
Sample ID: 11215131-113021-S-SPS-NE-S-7
Acq: 08-Dec-2021 13:01:59
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211207R33
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.51e3
1368F 4.41e4* 22.96
2468F 6.25e4* 24.14
1347F...[3] 8.85e4* 24.65
1248F...[3] 5.48e4* 25.00
1268F 4.74e4* 25.41
1478F 4.51e4* 25.69
1278F 1.01e5* 26.88
2378F 1.51e5* 27.76
2367/3467F 1.17e5* 28.11
1289F 1.41e5* 29.70
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.95e3
1368F 3.92e4* 22.97
2468F 9.33e4* 24.15
1347F...[3] 9.96e4* 24.63
1248F...[3] 6.35e4* 25.01
1268F 8.33e4* 25.40
1478F 5.04e4* 25.69
1278F 8.58e4* 26.88
2378F 2.16e5* 27.76
2367/3467F 1.40e5* 28.12
1289F 8.86e4* 29.70
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.84e4
Conc(2378F) = (1.51e5 + 2.16e5) * 2000pg / (1.24e7 + 1.59e7) * 0.96 * 5.04g = 5.36pg/g
PSW 08-Dec-2021 14:06
ok AK 8 Dec 21
JS 1234F 1.29e7 26.40
ES 2378F 1.24e7 27.74
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.06e4
JS 1234F 1.69e7 26.40
ES 2378F 1.59e7 27.74
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.67e3
RT
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\B5965_18715_DF_001-R1.utp_res, saved 08-Dec-2021 14:06 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6132, 9561, 5326 scc: 142-458
PKD: 08-Dec-2021 13:59 Printed: 08-Dec-2021 14:09 Page 7 of 12

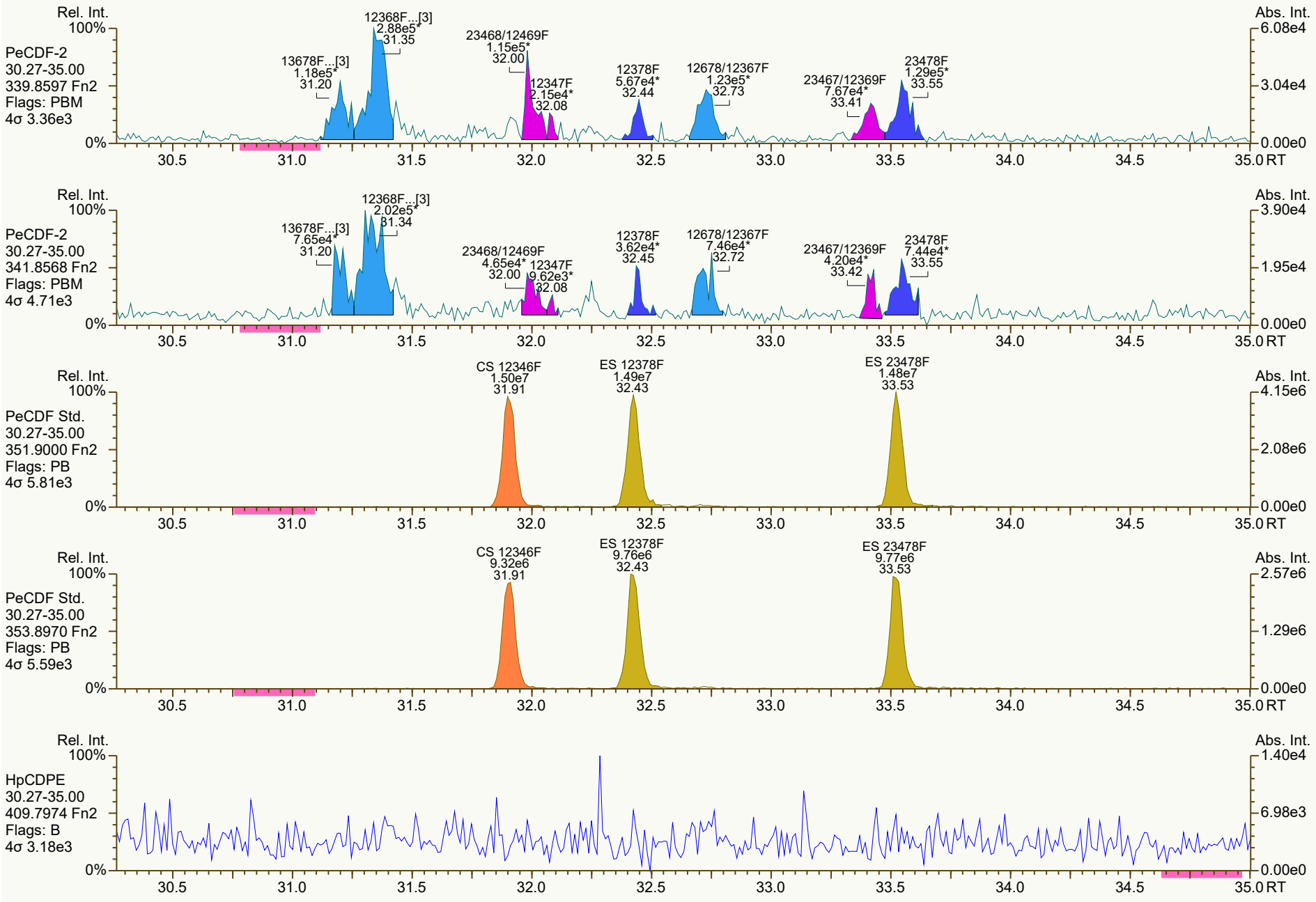
SGS ID: B5965_18715_DF_001-R1 | Sample ID: 11215131-113021-S-SPS-NE-S-7 | Acq: 08-Dec-2021 13:01:59

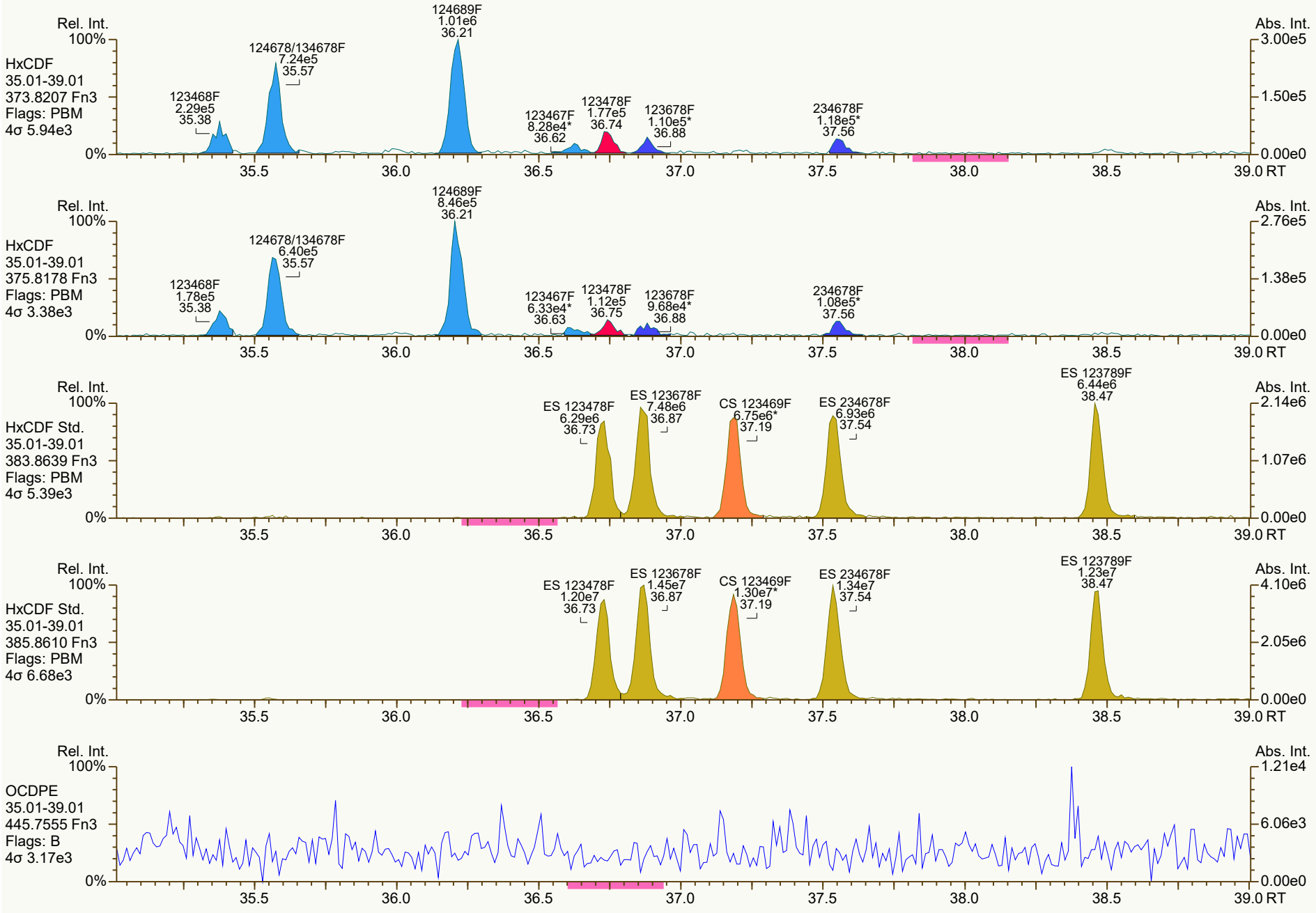
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: PSW Datafile: 211207R33

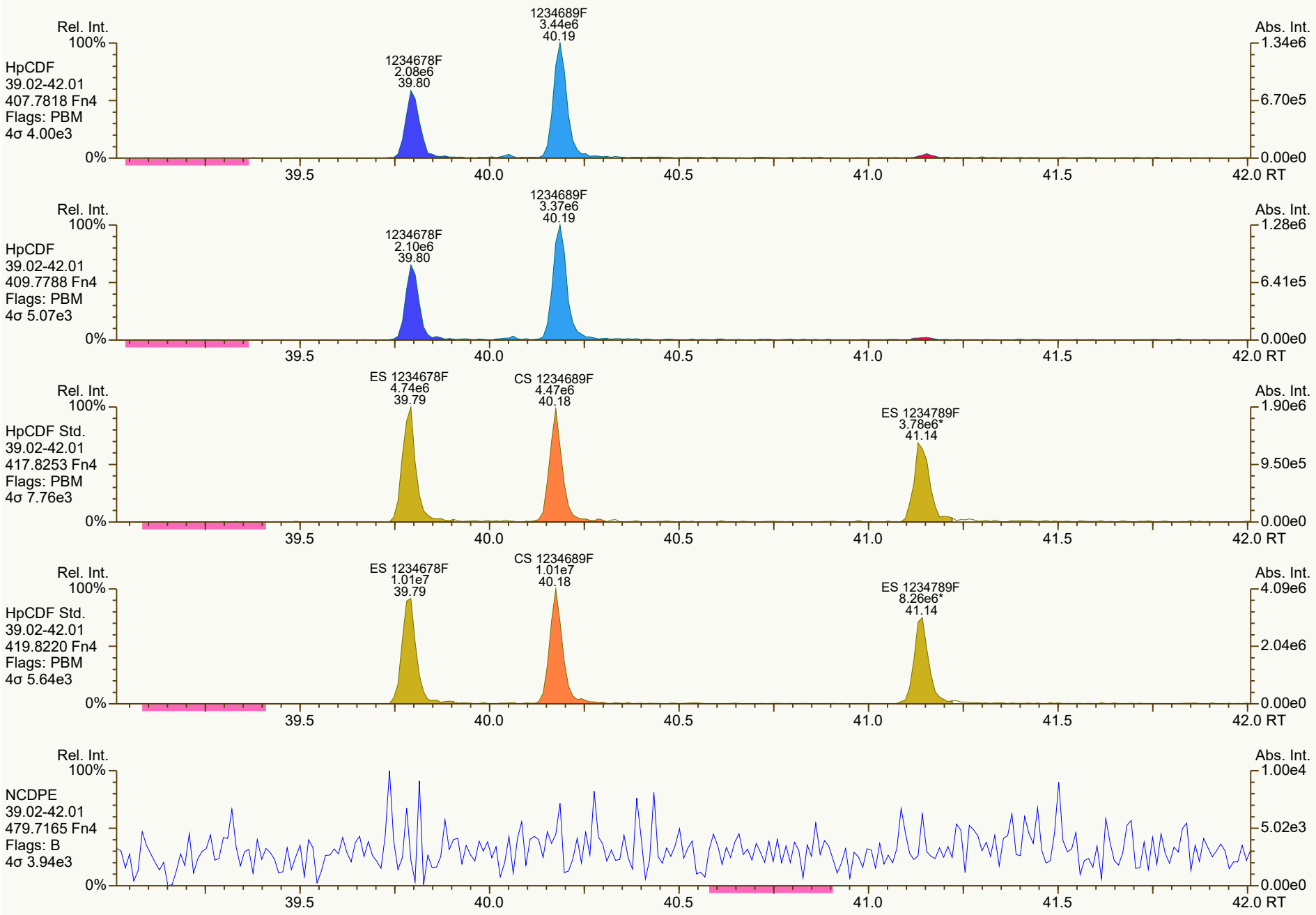


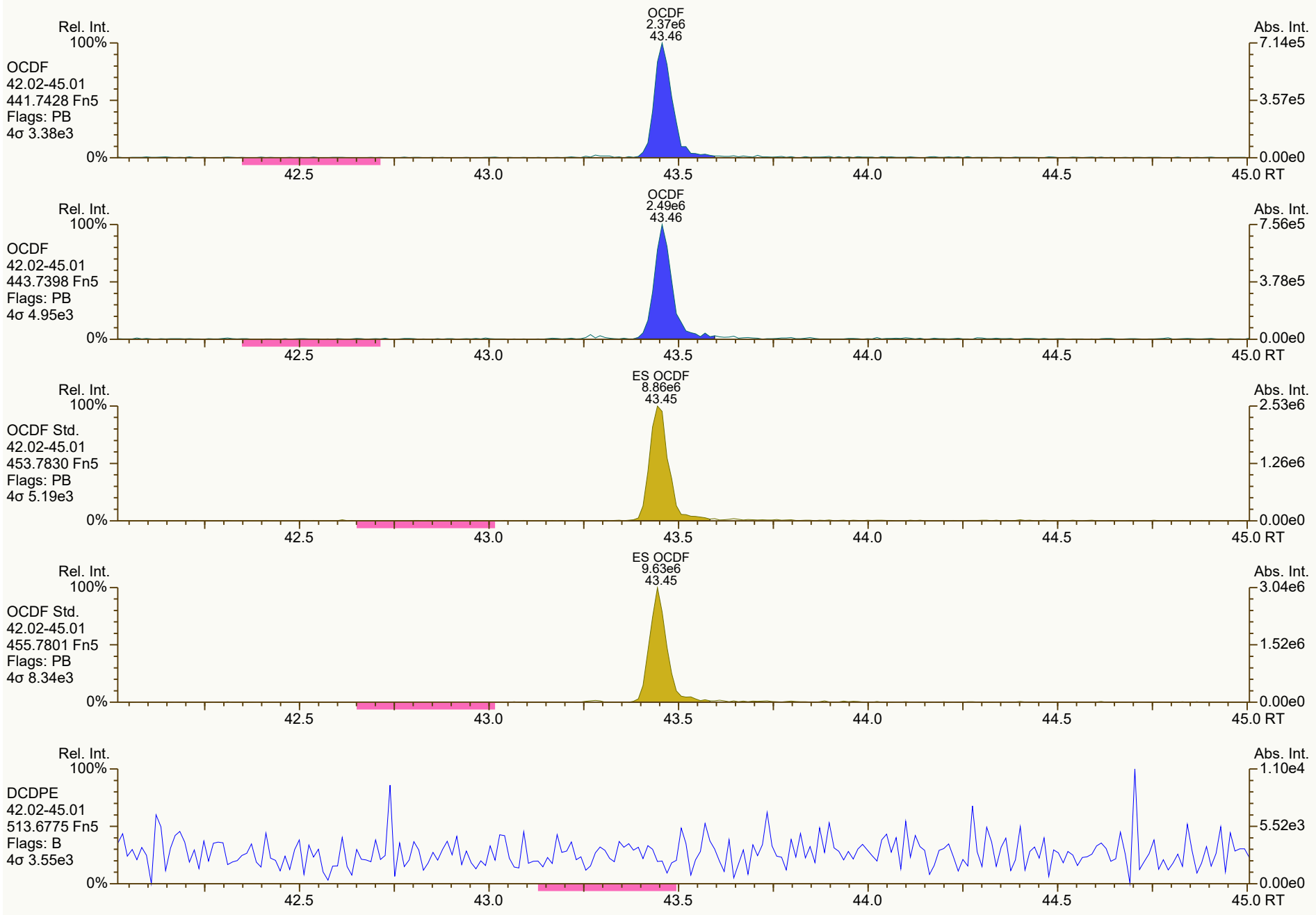
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\B5965_18715_DF_001-R1.utp_res, saved 08-Dec-2021 14:06 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6299 scc: 142-458 *PKD: 08-Dec-2021 13:59 Printed: 08-Dec-2021 14:09 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 3.36e3
0%
12368F...[3] 2.88e5* 31.35
13678F...[3] 1.18e5* 31.20
23468/12469F 1.15e5* 32.00
12347F 2.15e4* 32.08
12378F 5.67e4* 32.44
12678/12367F 1.23e5* 32.73
23467/12369F 7.67e4* 33.41
23478F 1.29e5* 33.55
Abs. Int.
6.08e4
3.04e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 4.71e3
0%
12368F...[3] 2.02e5* 31.34
13678F...[3] 7.65e4* 31.20
23468/12469F 4.65e4* 32.00
12347F 9.62e3* 32.08
12378F 3.62e4* 32.45
12678/12367F 7.46e4* 32.72
23467/12369F 4.20e4* 33.42
23478F 7.44e4* 33.55
Abs. Int.
3.90e4
1.95e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 5.81e3
0%
CS 12346F 1.50e7 31.91
ES 12378F 1.49e7 32.43
ES 23478F 1.48e7 33.53
Abs. Int.
4.15e6
2.08e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 5.59e3
0%
CS 12346F 9.32e6 31.91
ES 12378F 9.76e6 32.43
ES 23478F 9.77e6 33.53
Abs. Int.
2.57e6
1.29e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.18e3
0%
Abs. Int.
1.40e4
6.98e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 5.94e3
123468F
2.29e5
35.38
124678/134678F
7.24e5
35.57
124689F
1.01e6
36.21
123467F
8.28e4*
36.62
123478F
1.77e5
36.74
123678F
1.10e5*
36.88
234678F
1.18e5*
37.56
0%
Abs. Int.
3.00e5
1.50e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 3.38e3
123468F
1.78e5
35.38
124678/134678F
6.40e5
35.57
124689F
8.46e5
36.21
123467F
6.33e4*
36.63
123478F
1.12e5
36.75
123678F
9.68e4*
36.88
234678F
1.08e5*
37.56
0%
Abs. Int.
2.76e5
1.38e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PBM
4σ 5.39e3
ES 123478F
6.29e6
36.73
ES 123678F
7.48e6
36.87
CS 123469F
6.75e6*
37.19
ES 234678F
6.93e6
37.54
ES 123789F
6.44e6
38.47
0%
Abs. Int.
2.14e6
1.07e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PBM
4σ 6.68e3
ES 123478F
1.20e7
36.73
ES 123678F
1.45e7
36.87
CS 123469F
1.30e7*
37.19
ES 234678F
1.34e7
37.54
ES 123789F
1.23e7
38.47
0%
Abs. Int.
4.10e6
2.05e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.17e3
0%
Abs. Int.
1.21e4
6.06e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 4.00e3
0%
1234678F
2.08e6
39.80
1234689F
3.44e6
40.19
Abs. Int.
1.34e6
6.70e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 5.07e3
0%
1234678F
2.10e6
39.80
1234689F
3.37e6
40.19
Abs. Int.
1.28e6
6.41e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 7.76e3
0%
ES 1234678F
4.74e6
39.79
CS 1234689F
4.47e6
40.18
ES 1234789F
3.78e6*
41.14
Abs. Int.
1.90e6
9.50e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 5.64e3
0%
ES 1234678F
1.01e7
39.79
CS 1234689F
1.01e7
40.18
ES 1234789F
8.26e6*
41.14
Abs. Int.
4.09e6
2.04e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.94e3
0%
Abs. Int.
1.00e4
5.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 3.38e3
0%
OCDF
2.37e6
43.46
Abs. Int.
7.14e5
3.57e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 4.95e3
0%
OCDF
2.49e6
43.46
Abs. Int.
7.56e5
3.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 5.19e3
0%
ES OCDF
8.86e6
43.45
Abs. Int.
2.53e6
1.26e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 8.34e3
0%
ES OCDF
9.63e6
43.45
Abs. Int.
3.04e6
1.52e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.55e3
0%
Abs. Int.
1.10e4
5.52e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5965_18711_DF_002 **Acq'd:** 08 Dec 2021 01:24 PSW **Wt/Vol:** 15.67 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-S-6 **UTP:** 08-Dec-2021 14:49:03 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 885-934-PDY

Datafile: 211207R19 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.61	EMPC	1.0008	1.0006	-0.3	2.62E+05	1.13	N	1.34	1.79	7442.86	0.554
12378-PeCDD	33.89		1.0004	1.0006	+0.4	1.69E+05	1.62	Y	1.06	1.69	8394.17	0.733
123478-HxCDD	37.74	EMPC	1.0004	1.0003	-0.2	2.33E+05	0.93	N	1.06	3.04	8373.24	0.893
123678-HxCDD	37.85		1.0034	1.0034	0	1.05E+06	1.16	Y	1.08	12.5	8373.24	0.867
123789-HxCDD	38.13	EMPC	1.0111	1.0109	-0.5	4.72E+05	1.61	N	1.02	5.59	8373.24	0.817
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	3.38E+07	1.05	Y	0.97	510	7652.541	0.788
OCDD	43.28	E	1.0003	1.0003	0	4.05E+08	0.89	Y	1.07	9,210	8403.475	1.42
2378-TCDF	27.77		1.0007	1.0007	0	1.59E+06	0.72	Y	0.96	10.4	8090.774	0.586
12378-PeCDF	32.46		1.0006	1.0005	-0.2	3.02E+05	1.75	Y	0.95	2.15	7682.335	0.521
23478-PeCDF	33.56		1.0005	1.0006	+0.2	4.99E+05	1.78	Y	0.94	3.92	7682.335	0.526
123478-HxCDF	36.75		1.0004	1.0005	+0.2	5.65E+05	1.19	Y	1.23	4.69	12092.559	0.804
123678-HxCDF	36.89		1.0005	1.0004	-0.2	7.48E+05	1.30	Y	1.13	5.6	12092.559	0.754
234678-HxCDF	37.56		1.0005	1.0004	-0.2	7.33E+05	1.12	Y	1.15	6.31	12092.559	0.956
123789-HxCDF	38.50	J	1.0005	1.0007	+0.5	1.51E+05	1.31	Y	1.14	1.46	12092.559	0.959
1234678-HpCDF	39.80		1.0003	1.0002	-0.2	6.47E+06	1.03	Y	1.36	60.8	7287.188	0.416
1234789-HpCDF	41.15		1.0004	1.0001	-0.7	4.48E+05	1.15	Y	1.30	5.16	7287.188	0.548
OCDF	43.46		1.0002	1.0002	0	6.55E+06	0.87	Y	1.03	124	7086.397	1.05

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0232	-0.2	1.39E+07	0.81	Y	1.03	65.2
ES 12378-PeCDD	33.87	1.2118	1.2120	+0.4	1.20E+07	1.57	Y	1.03	56.4
ES 123478-HxCDD	37.72	0.9921	0.9921	0	9.26E+06	1.13	Y	0.99	65.2
ES 123678-HxCDD	37.84	0.9951	0.9951	0	9.93E+06	1.20	Y	0.97	71.5
ES 123789-HxCDD	38.12	1.0027	1.0025	-0.5	1.06E+07	1.26	Y	1.12	66
ES 1234678-HpCDD	40.69	1.0702	1.0701	-0.2	8.68E+06	1.03	Y	0.99	61.4
ES OCDD	43.26	1.1377	1.1378	+0.3	1.05E+07	0.83	Y	0.78	47.3
ES 2378-TCDF	27.75	1.0505	1.0505	0	2.04E+07	0.78	Y	1.08	63.4
ES 12378-PeCDF	32.44	1.2278	1.2281	+0.6	1.90E+07	1.60	Y	0.93	68.8
ES 23478-PeCDF	33.54	1.2691	1.2697	+1.2	1.73E+07	1.62	Y	0.92	63.2
ES 123478-HxCDF	36.73	0.9660	0.9660	0	1.24E+07	0.50	Y	1.14	76.3
ES 123678-HxCDF	36.87	0.9698	0.9697	-0.2	1.51E+07	0.58	Y	1.30	81.5
ES 234678-HxCDF	37.54	0.9875	0.9873	-0.5	1.29E+07	0.51	Y	1.20	75.1
ES 123789-HxCDF	38.47	1.0121	1.0118	-0.7	1.16E+07	0.54	Y	1.14	71.6
ES 1234678-HpCDF	39.79	1.0468	1.0465	-0.7	9.99E+06	0.46	Y	0.95	73.7
ES 1234789-HpCDF	41.15	1.0822	1.0821	-0.2	8.52E+06	0.43	Y	0.85	70.5
ES OCDF	43.45	1.1426	1.1427	+0.3	1.32E+07	0.84	Y	0.93	49.9

Lab ID: B5965_18711_DF_002 **Acq'd:** 08 Dec 2021 01:24 PSW **Wt/Vol:** 15.67 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-S-6 **UTP:** 08-Dec-2021 14:49:03 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 885-934-PDY

Datafile: 211207R19 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.94		-	-	-	2.05E+07	0.83	Y	-	-
JS 1234-TCDF	26.41		-	-	-	2.96E+07	0.80	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	7.14E+06	1.22	Y	-	-
CS 37Cl-2378-TCDD	28.61		1.0241	1.0239	-0.3	7.11E+06	n/a	-	1.31	66.1
CS 12347-PeCDD	33.37		1.1940	1.1942	+0.4	1.19E+07	1.53	Y	0.89	65
CS 12346-PeCDF	31.92		1.2080	1.2083	+0.6	1.95E+07	1.61	Y	0.87	75.8
CS 123469-HxCDF	37.19		0.9781	0.9781	0	1.44E+07	0.50	Y	1.09	92.6
CS 1234689-HpCDF	40.19		1.0569	1.0568	-0.2	1.11E+07	0.45	Y	0.86	90
~~SS 37Cl-2378-TCDD~~	~~28.61~~		~~1.0241~~	~~1.0239~~	~~-0.3~~	~~7.11E+06~~	~~n/a~~		~~1.26~~	~~102~~
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1942~~	~~+0.4~~	~~1.19E+07~~	~~1.53~~	~~Y~~	~~0.86~~	~~115~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2083~~	~~+0.6~~	~~1.95E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~110~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.44E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~114~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.11E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~122~~

Totals	Conc	EMPC
Total TCDD	2.62	6.99
Total PeCDD	11.5	19.8
Total HxCDD	107	118
Total HpCDD	1050	1050
Total Tetra-Octa Dioxins	10400	10400
Total TCDF	45	59.1
Total PeCDF	33	44.6
Total HxCDF	72.9	78.4
Total HpCDF	183	183
Total Tetra-Octa Furans	458	489
Total Tetra-Octa Dioxins & Furans	10800	10900

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	1.102	1.13
Response	3.20E+05	3.16E+05

Lab ID: B5965_18711_DF_002 **Acq'd: 08 Dec 2021 01:24 PSW** **Wt/Vol: 15.67 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-SPS-NE-S-6 **UTP: 08-Dec-2021 14:49:03 PSW** **J-level: 0.319 pg/g** **Split: 1** **Checkcode: 885-934-PDY**

Datafile: 211207R19 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8754	-0.6	3.83E+05	0.76	Y	1.34	2.62	7442.86	0.554
1379-TCDD	25.39	EMPC	0.8878	0.8880	+0.3	2.95E+05	0.96	N	1.34	2.02	7442.86	0.554
1369-TCDD	NotFnd		0.9025						1.34		7442.86	0.554
1469-TCDD	NotFnd		0.9291						1.34		7442.86	0.554
1247/1246/1248/1249-TCDD	26.79	EMPC	0.9374	0.9370	-0.6	8.09E+04	1.40	N	1.34	0.554	7442.86	0.554
1378-TCDD	NotFnd		0.9440						1.34		7442.86	0.554
1268-TCDD	NotFnd		0.9505						1.34		7442.86	0.554
1478-TCDD	NotFnd		0.9591						1.34		7442.86	0.554
1279-TCDD	NotFnd		0.9650						1.34		7442.86	0.554
1234/1269-TCDD	NotFnd		0.9771						1.34		7442.86	0.554
1236-TCDD	NotFnd		0.9821						1.34		7442.86	0.554
1237/1238-TCDD	NotFnd		0.9907						1.34		7442.86	0.554
1239-TCDD	NotFnd		0.9953						1.34		7442.86	0.554
2378-TCDD	**28.61**	EMPC	**1.0008**	1.0006	**-0.3**	2.62E+05	1.13	N	**1.34**	**1.79**	**7442.86**	**0.554**
1278-TCDD	NotFnd		1.0118						1.34		7442.86	0.554
1267-TCDD	NotFnd		1.0162						1.34		7442.86	0.554
1289-TCDD	NotFnd		1.0340						1.34		7442.86	0.554
12479/12468-PeCDD	31.41		0.9274	0.9273	-0.2	6.22E+05	1.64	Y	1.06	6.25	8394.17	0.733
12469-PeCDD	31.93	J EMPC	0.9430	0.9429	-0.2	1.20E+05	0.63	N	1.06	1.2	8394.17	0.733
12368-PeCDD	32.49		0.9591	0.9594	+0.6	3.55E+05	1.50	Y	1.06	3.57	8394.17	0.733
12478-PeCDD	32.67	EMPC	0.9645	0.9647	+0.4	1.99E+05	1.27	N	1.06	2	8394.17	0.733
12379-PeCDD	32.77	EMPC	0.9676	0.9677	+0.2	1.95E+05	1.81	N	1.06	1.96	8394.17	0.733
12369/12467/12489-PeCDD	33.03	EMPC	0.9751	0.9754	+0.6	2.19E+05	1.90	N	1.06	2.2	8394.17	0.733
12346/12347-PeCDD	33.39	J EMPC	0.9860	0.9860	0	8.76E+04	1.01	N	1.06	0.88	8394.17	0.733
12378-PeCDD	33.89		**1.0004**	**1.0006**	**+0.4**	**1.69E+05**	**1.62**	**Y**	**1.06**	**1.69**	**8394.17**	**0.733**
12367-PeCDD	NotFnd		1.0034						1.06		8394.17	0.733
12389-PeCDD	NotFnd		1.0133						1.06		8394.17	0.733
124679/124689-HxCDD	36.02		0.9546	0.9547	+0.2	3.01E+06	1.25	Y	1.05	36.8	8373.24	0.857
123468-HxCDD	36.66		0.9718	0.9718	0	7.45E+05	1.30	Y	1.05	9.11	8373.24	0.857
123679/123689-HxCDD	36.95		0.9795	0.9795	0	3.71E+06	1.30	Y	1.05	45.4	8373.24	0.857
123469-HxCDD	37.09		0.9832	0.9833	+0.2	2.63E+05	1.07	Y	1.05	3.21	8373.24	0.857
123478-HxCDD	37.74	EMPC	**1.0004**	**1.0003**	**-0.2**	**2.33E+05**	**0.93**	**N**	1.06	**3.04**	**8373.24**	**0.893**
123678-HxCDD	37.85		**1.0034**	**1.0034**	**0**	**1.05E+06**	**1.16**	**Y**	1.08	**12.5**	**8373.24**	**0.867**
123467-HxCDD	38.04	EMPC	1.0083	1.0083	0	2.26E+05	1.44	N	1.05	2.76	8373.24	0.857
123789-HxCDD	38.13	EMPC	**1.0111**	**1.0109**	**-0.5**	**4.72E+05**	**1.61**	**N**	1.02	**5.59**	**8373.24**	**0.817**

Lab ID: B5965_18711_DF_002 **Acq'd:** 08 Dec 2021 01:24 PSW **Wt/Vol:** 15.67 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-S-6 **UTP:** 08-Dec-2021 14:49:03 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 885-934-PDY

Datafile: 211207R19 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

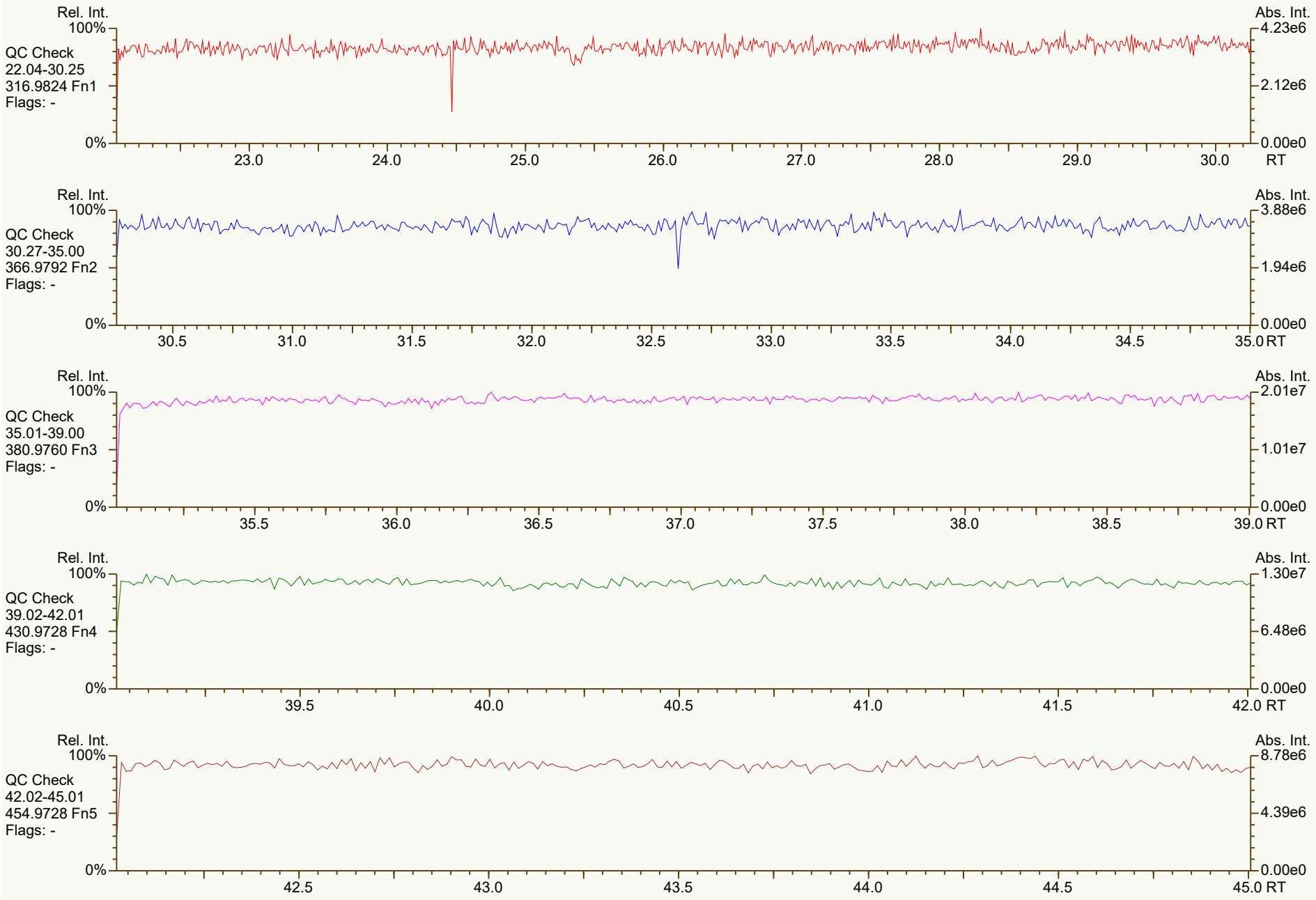
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	3.59E+07	1.03	Y	0.97	541	7652.541	0.788
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**3.38E+07**	**1.05**	**Y**	**0.97**	**510**	**7652.541**	**0.788**
OCDD	**43.28**	**E**	**1.0003**	**1.0003**	**0**	**4.05E+08**	**0.89**	**Y**	**1.07**	**9,210**	**8403.475**	**1.42**
OCDD-a	43.27	E	1.0001	1.0002	+0.3	2.39E+07	2.53	Y	0.07	8,790	10237.392	28
1368-TCDF	22.97		0.8284	0.8277	-1.0	1.86E+05	0.71	Y	0.96	1.21	8090.774	0.586
1468-TCDF	23.55		0.8487	0.8486	-0.1	2.07E+05	0.69	Y	0.96	1.35	8090.774	0.586
2468-TCDF	24.15	EMPC	0.8709	0.8701	-1.2	3.36E+05	0.93	N	0.96	2.2	8090.774	0.586
1346/1246-TCDF	24.53		0.8828	0.8839	+1.6	2.81E+05	0.80	Y	0.96	1.83	8090.774	0.586
1347/1378/1247-TCDF	24.66		0.8886	0.8887	+0.1	6.84E+05	0.83	Y	0.96	4.47	8090.774	0.586
1348-TCDF	24.91	EMPC	0.8980	0.8978	-0.3	1.46E+05	0.63	N	0.96	0.951	8090.774	0.586
1248/1367/1379-TCDF	25.03	EMPC	0.9027	0.9018	-1.4	5.68E+05	0.89	N	0.96	3.71	8090.774	0.586
1268-TCDF	25.42		0.9159	0.9159	0	2.79E+05	0.82	Y	0.96	1.82	8090.774	0.586
1467-TCDF	25.54		0.9206	0.9204	-0.3	2.43E+05	0.68	Y	0.96	1.59	8090.774	0.586
1478-TCDF	25.72	EMPC	0.9266	0.9268	+0.3	3.49E+05	0.98	N	0.96	2.28	8090.774	0.586
1369/1237-TCDF	26.08		0.9396	0.9398	+0.3	1.62E+05	0.77	Y	0.96	1.06	8090.774	0.586
2467-TCDF	26.19		0.9440	0.9439	-0.2	2.88E+05	0.86	Y	0.96	1.88	8090.774	0.586
2368-TCDF	26.36		0.9496	0.9500	+0.6	6.05E+05	0.72	Y	0.96	3.95	8090.774	0.586
1238/1234/1678/1469/1236-TCDF	26.46		0.9530	0.9535	+0.8	4.97E+05	0.88	Y	0.96	3.25	8090.774	0.586
1278-TCDF	26.88		0.9689	0.9688	-0.2	8.31E+05	0.70	Y	0.96	5.43	8090.774	0.586
1349-TCDF	NotFnd		0.9732						0.96		8090.774	0.586
1267-TCDF	27.16	EMPC	0.9786	0.9786	0	2.33E+05	1.07	N	0.96	1.52	8090.774	0.586
2346/1249-TCDF	27.33	EMPC	0.9849	0.9850	+0.2	2.09E+05	0.98	N	0.96	1.37	8090.774	0.586
2347/1279-TCDF	27.55		0.9927	0.9926	-0.2	2.39E+05	0.84	Y	0.96	1.56	8090.774	0.586
2348-TCDF	27.65	EMPC	0.9967	0.9963	-0.7	1.96E+05	0.56	N	0.96	1.28	8090.774	0.586
2378-TCDF	**27.77**		**1.0007**	**1.0007**	**0**	**1.59E+06**	**0.72**	**Y**	**0.96**	**10.4**	**8090.774**	**0.586**
2367/3467-TCDF	28.12		1.0136	1.0134	-0.3	8.04E+05	0.75	Y	0.96	5.25	8090.774	0.586
1269-TCDF	NotFnd		1.0223						0.96		8090.774	0.586
1239-TCDF	NotFnd		1.0313						0.96		8090.774	0.586
1289-TCDF	29.74	EMPC	1.0711	1.0717	+1.1	1.14E+05	0.96	N	0.96	0.743	8090.774	0.586
13468/12468-PeCDF	29.68	EMPC	0.9147	0.9151	+0.7	1.16E+06	1.80	N	0.94	8.64	8147.262	0.555
13678/13467/12467-PeCDF	31.21		0.9616	0.9620	+0.7	5.99E+05	1.74	Y	0.94	4.47	7682.335	0.523
12368/13478/12478-PeCDF	31.35		0.9663	0.9665	+0.4	1.19E+06	1.59	Y	0.94	8.87	7682.335	0.523
14678-PeCDF	31.45		0.9695	0.9696	+0.2	2.47E+05	1.51	Y	0.94	1.84	7682.335	0.523
13479-PeCDF	NotFnd		0.9727						0.94		7682.335	0.523
13469/12479-PeCDF	31.77	J EMPC	0.9799	0.9795	-0.8	1.11E+05	2.20	N	0.94	0.831	7682.335	0.523
12346-PeCDF	31.94	J EMPC	0.9839	0.9845	+1.1	1.24E+05	1.91	N	0.94	0.922	7682.335	0.523

Lab ID: B5965_18711_DF_002 **Acq'd: 08 Dec 2021 01:24 PSW** **Wt/Vol: 15.67 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-SPS-NE-S-6 **UTP: 08-Dec-2021 14:49:03 PSW** **J-level: 0.319 pg/g** **Split: 1** **Checkcode: 885-934-PDY**

Datafile: 211207R19 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.02		0.9864	0.9870	+1.2	4.08E+05	1.77	Y	0.94	3.05	7682.335	0.523
12347-PeCDF	32.10	J	0.9892	0.9895	+0.6	1.82E+05	1.59	Y	0.94	1.36	7682.335	0.523
12348-PeCDF	32.25	J EMPC	0.9940	0.9941	+0.2	1.61E+05	1.29	N	0.94	1.2	7682.335	0.523
12378-PeCDF	**32.46**		**1.0006**	**1.0005**	**-0.2**	**3.02E+05**	**1.75**	**Y**	**0.95**	**2.15**	**7682.335**	**0.521**
12678/12367-PeCDF	32.74		1.0088	1.0094	+1.2	5.87E+05	1.51	Y	0.94	4.38	7682.335	0.523
12379-PeCDF	NotFnd		1.0142						0.94		7682.335	0.523
12679-PeCDF	NotFnd		0.9931						0.94		7682.335	0.523
23467/12369-PeCDF	33.42		0.9966	0.9966	0	3.99E+05	1.47	Y	0.94	2.97	7682.335	0.523
23478-PeCDF	**33.56**		**1.0005**	**1.0006**	**+0.2**	**4.99E+05**	**1.78**	**Y**	**0.94**	**3.92**	**7682.335**	**0.526**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7682.335	0.523
12349-PeCDF	NotFnd		1.0100						0.94		7682.335	0.523
12389-PeCDF	NotFnd		1.0323						0.94		7682.335	0.523
123468-HxCDF	35.38	EMPC	0.9631	0.9633	+0.4	6.47E+05	1.02	N	1.16	5.46	12092.559	0.86
124678/134678-HxCDF	35.57		0.9686	0.9685	-0.2	2.76E+06	1.25	Y	1.16	23.2	12092.559	0.86
134679-HxCDF	NotFnd		0.9747						1.16		12092.559	0.86
124679-HxCDF	NotFnd		0.9800						1.16		12092.559	0.86
124689-HxCDF	36.22		0.9859	0.9860	+0.2	3.33E+06	1.24	Y	1.16	28.1	12092.559	0.86
123467-HxCDF	36.63		0.9972	0.9972	0	4.19E+05	1.24	Y	1.16	3.54	12092.559	0.86
123478-HxCDF	**36.75**		**1.0004**	**1.0005**	**+0.2**	**5.65E+05**	**1.19**	**Y**	**1.23**	**4.69**	**12092.559**	**0.804**
123678-HxCDF	**36.89**		**1.0005**	**1.0004**	**-0.2**	**7.48E+05**	**1.30**	**Y**	**1.13**	**5.6**	**12092.559**	**0.754**
123479-HxCDF	NotFnd		1.0048						1.16		12092.559	0.86
123469-HxCDF	NotFnd		1.0089						1.16		12092.559	0.86
123679-HxCDF	NotFnd		0.9943						1.16		12092.559	0.86
234678-HxCDF	**37.56**		**1.0005**	**1.0004**	**-0.2**	**7.33E+05**	**1.12**	**Y**	**1.15**	**6.31**	**12092.559**	**0.956**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		12092.559	0.86
123789-HxCDF	**38.50**	J	**1.0005**	**1.0007**	**+0.5**	**1.51E+05**	**1.31**	**Y**	**1.14**	**1.46**	**12092.559**	**0.959**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		12092.559	0.86
1234678-HpCDF	**39.80**		**1.0003**	**1.0002**	**-0.2**	**6.47E+06**	**1.03**	**Y**	**1.36**	**60.8**	**7287.188**	**0.416**
1234679-HpCDF	40.06		1.0065	1.0066	+0.2	3.30E+05	0.98	Y	1.33	3.42	7287.188	0.476
1234689-HpCDF	40.20		1.0097	1.0101	+1.0	1.10E+07	1.09	Y	1.33	114	7287.188	0.476
1234789-HpCDF	**41.15**		**1.0004**	**1.0001**	**-0.7**	**4.48E+05**	**1.15**	**Y**	**1.30**	**5.16**	**7287.188**	**0.548**
OCDF	**43.46**		**1.0002**	**1.0002**	**0**	**6.55E+06**	**0.87**	**Y**	**1.03**	**124**	**7086.397**	**1.05**
OCDF-a	43.45		1.0001	1.0000	-0.3	2.94E+05	2.54	Y	0.06	95.9	9919.374	25.3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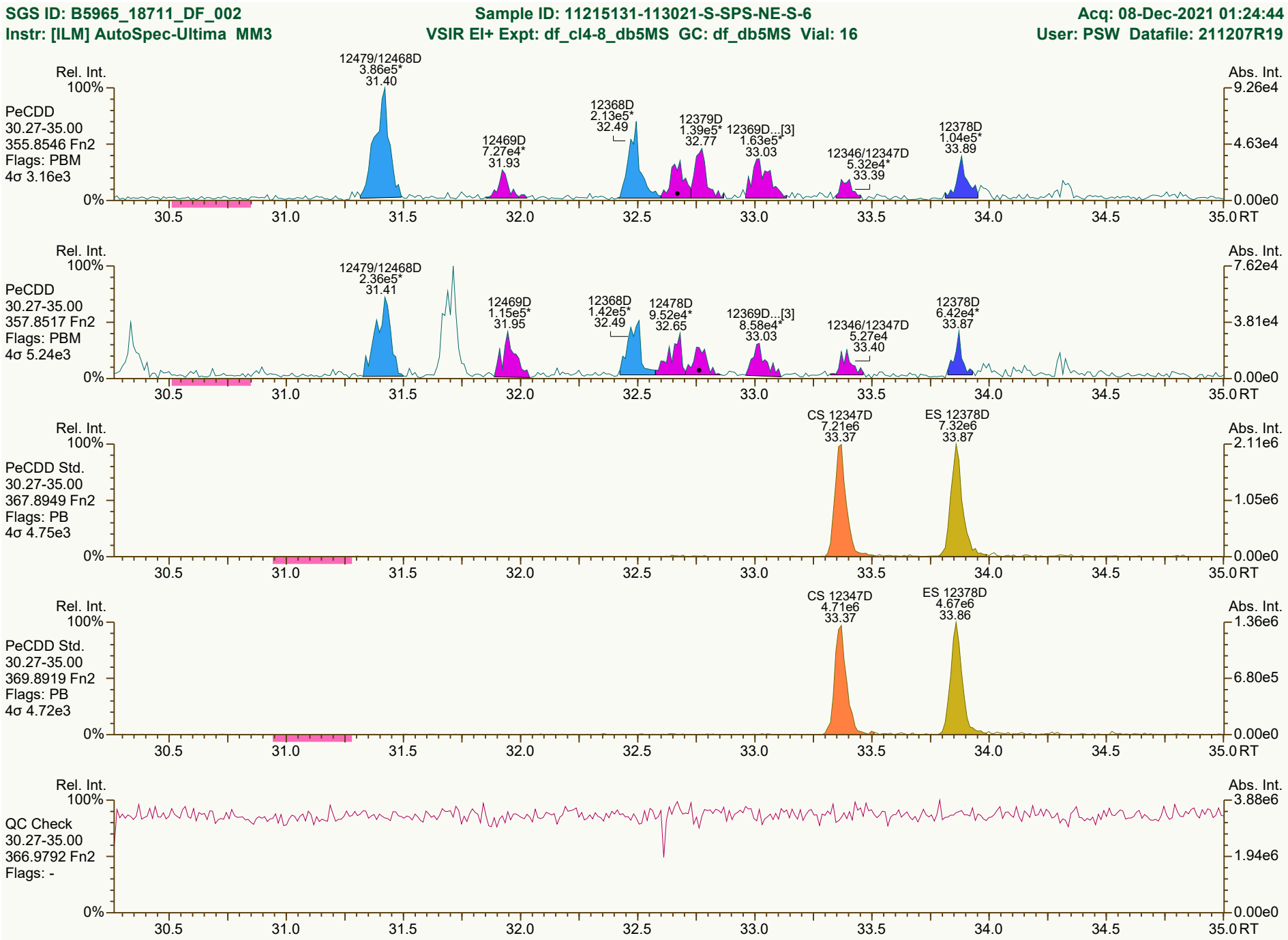
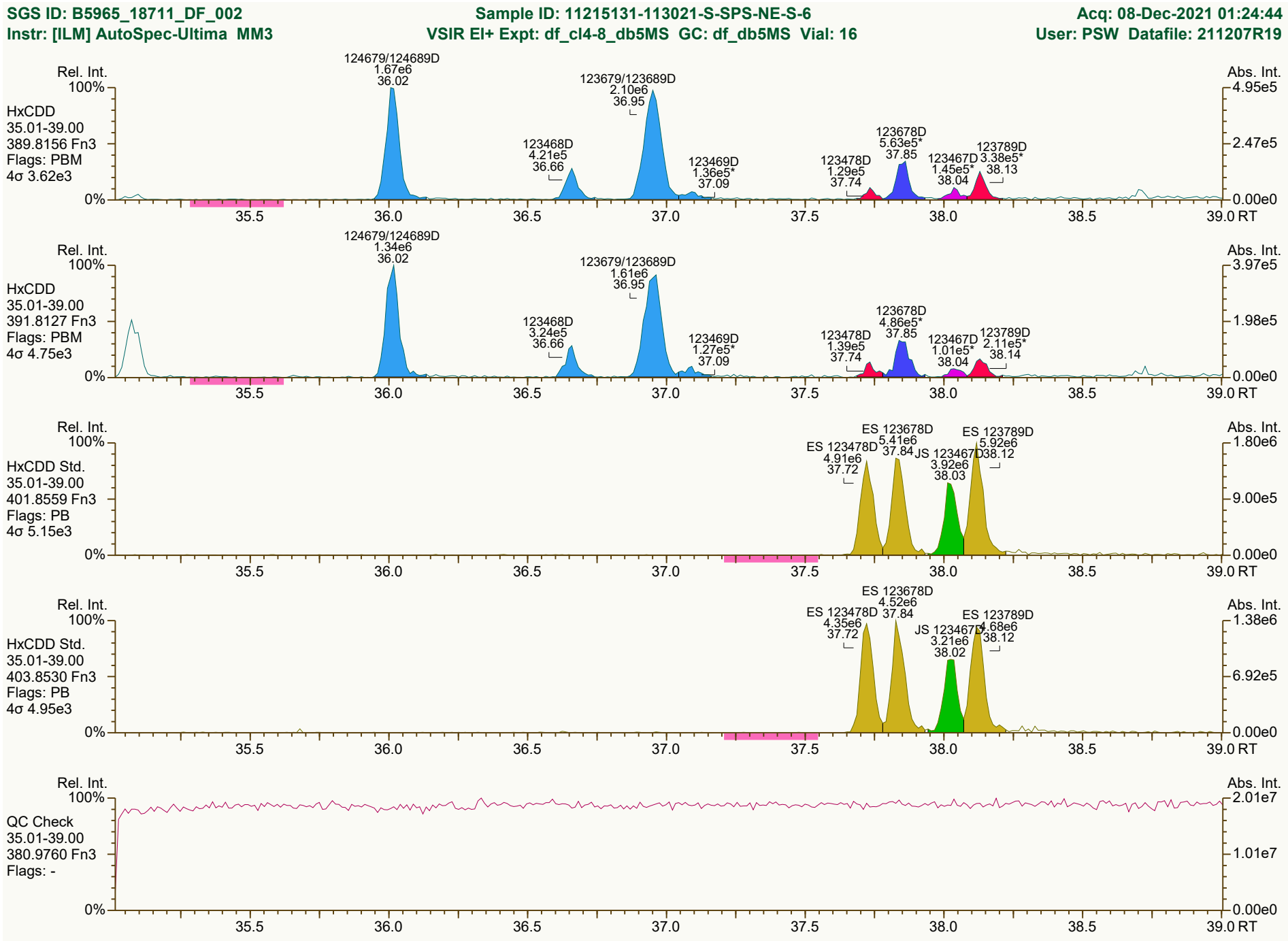
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.88e6
1.94e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.01e7
1.01e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.78e6
4.39e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

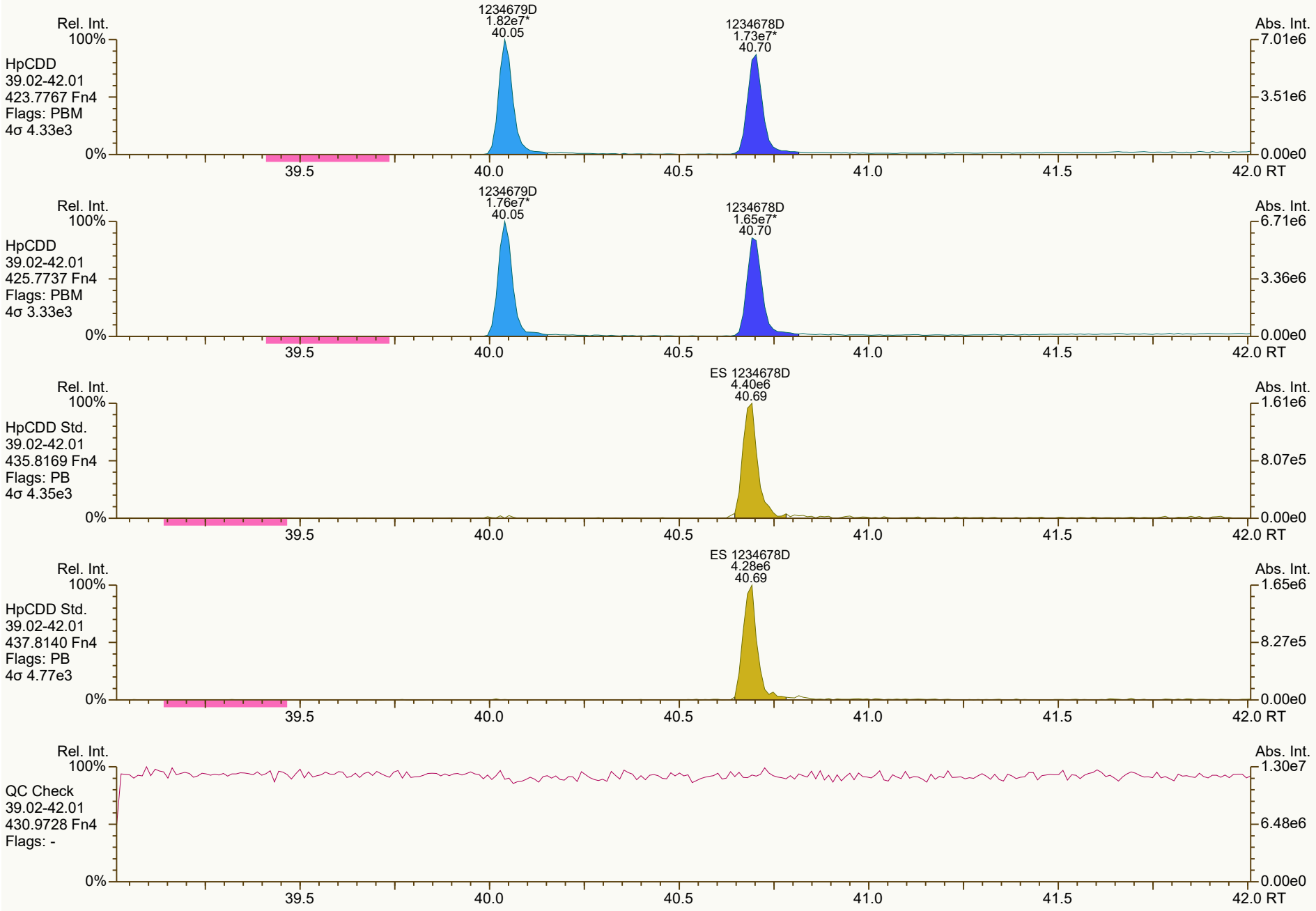

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 4.94e3
0%
1368D
1.66e5*
25.03
1379D
1.60e5*
25.39
1247D...[4]
6.42e4*
26.79
2378D
1.68e5*
28.61
Abs. Int.
6.05e4
3.02e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 2.51e3
0%
1368D
2.18e5*
25.03
1379D
1.67e5*
25.39
1247D...[4]
4.57e4*
26.79
2378D
1.52e5*
28.61
Abs. Int.
4.65e4
2.33e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PBM
4σ 4.36e3
0%
CS 37Cl-2378D
7.11e6*
28.61
Abs. Int.
1.74e6
8.71e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 8.10e3
0%
JS 1234D
9.29e6
27.94
ES 2378D
6.22e6
28.59
Abs. Int.
1.98e6
9.90e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 7.18e3
0%
JS 1234D
1.13e7
27.94
ES 2378D
7.64e6
28.59
Abs. Int.
2.59e6
1.29e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

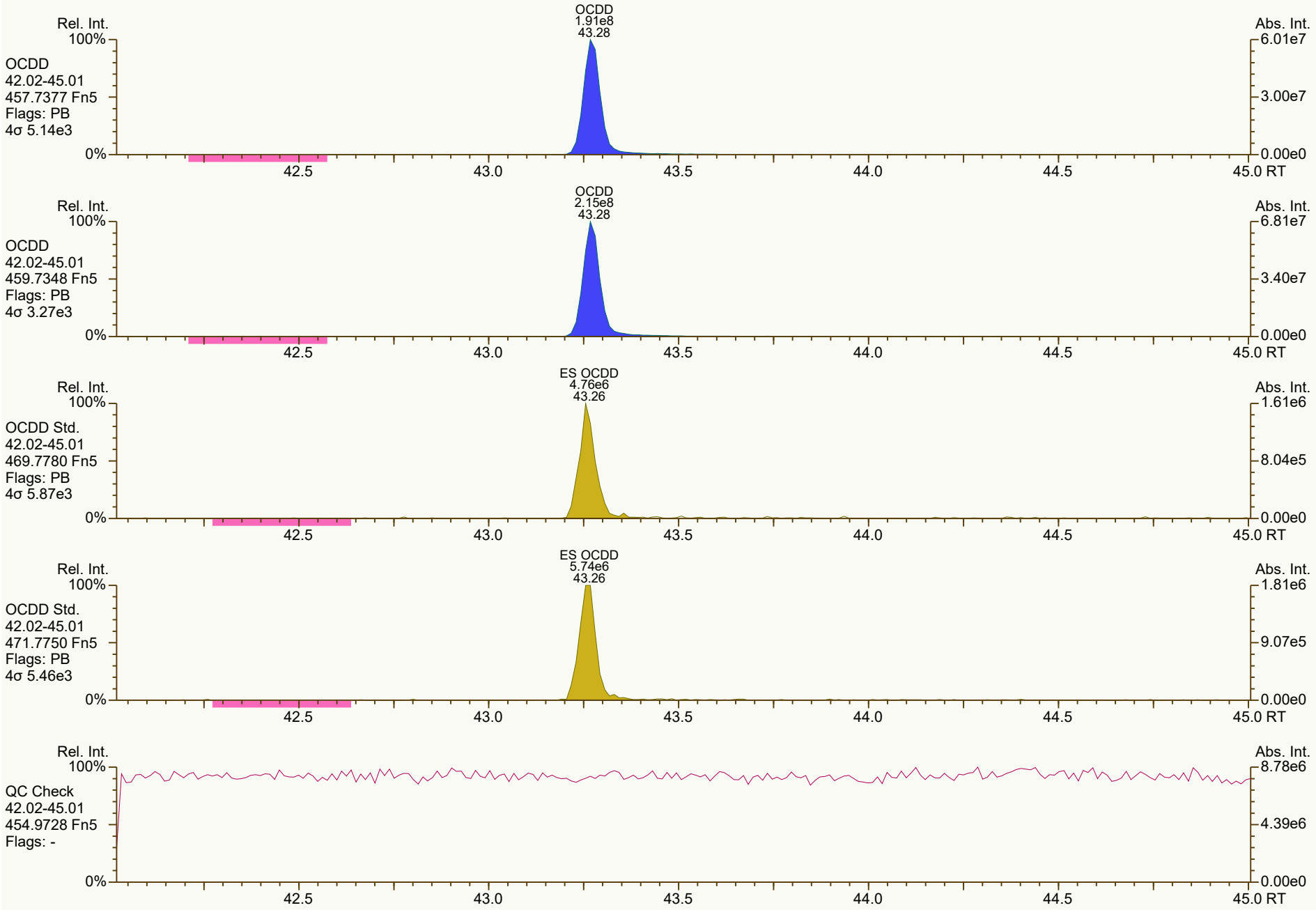


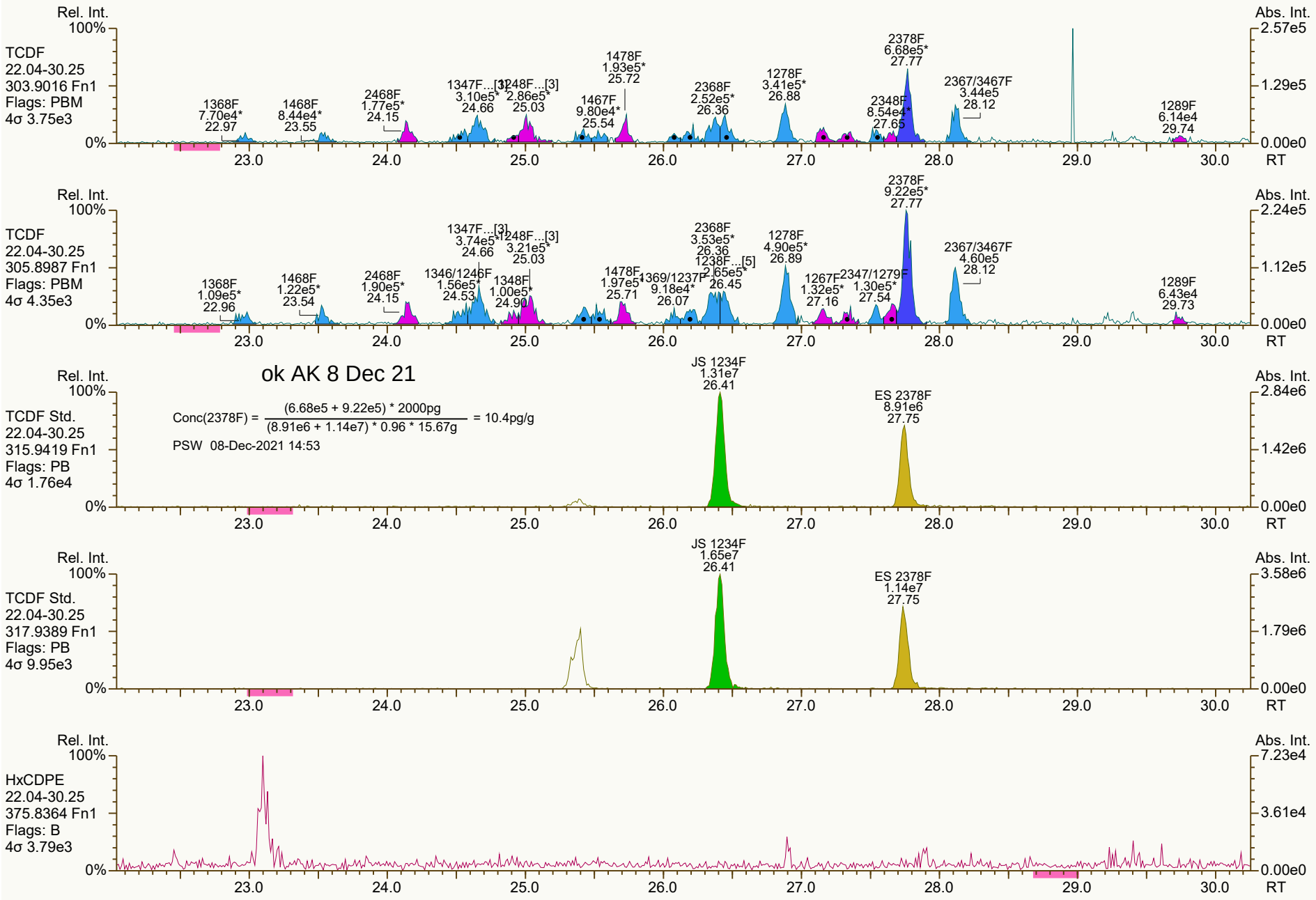
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_002.utp_res, saved 08-Dec-2021 14:53 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8495, 1965 scc: 885-934
PKD: 08-Dec-2021 08:48 Printed: 08-Dec-2021 14:55 Page 3 of 12

SGS ID: B5965_18711_DF_002 Sample ID: 11215131-113021-S-SPS-NE-S-6 Acq: 08-Dec-2021 01:24:44
Instr: [ILM] AutoSpec-Ultima MM3 VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 16 User: PSW Datafile: 211207R19

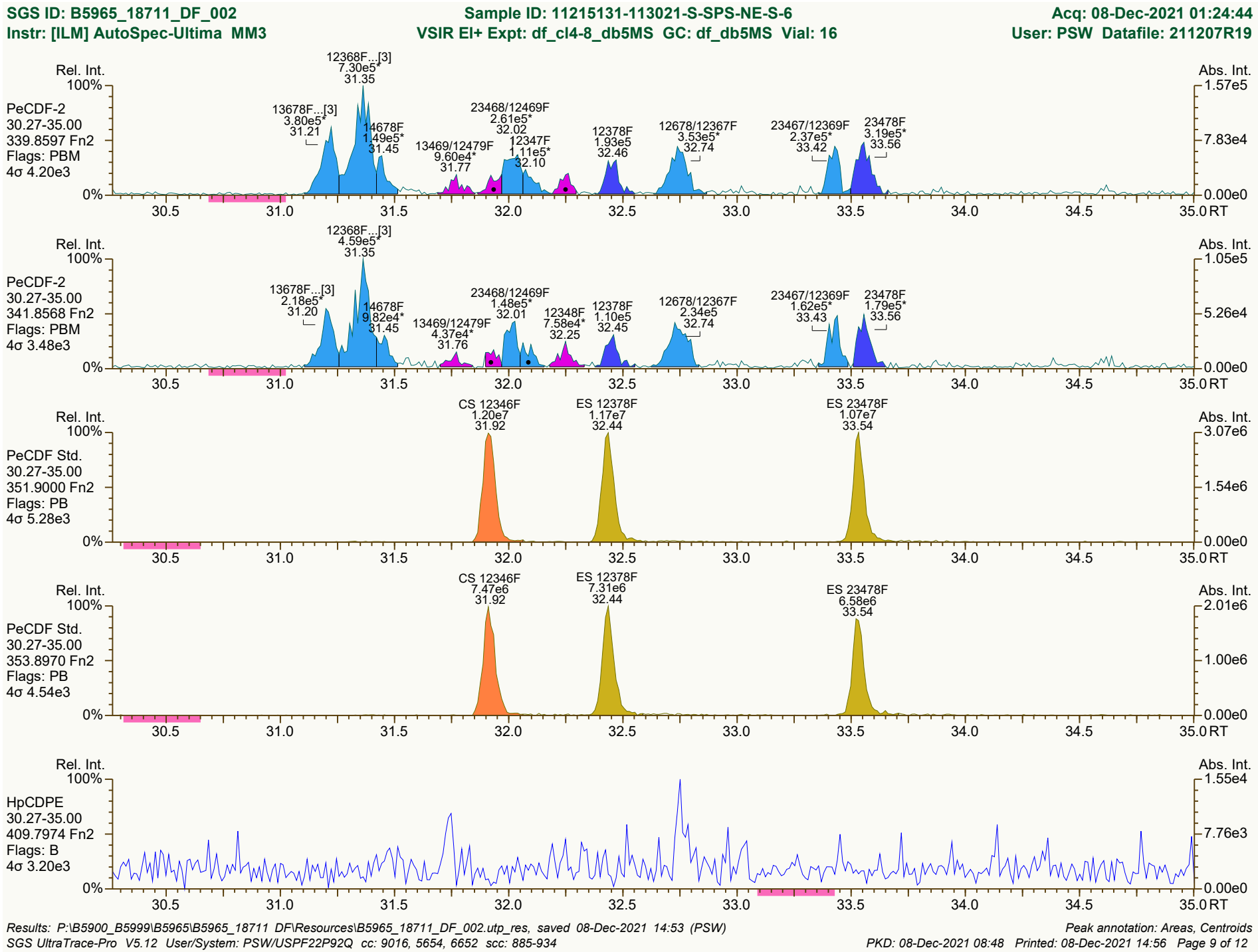


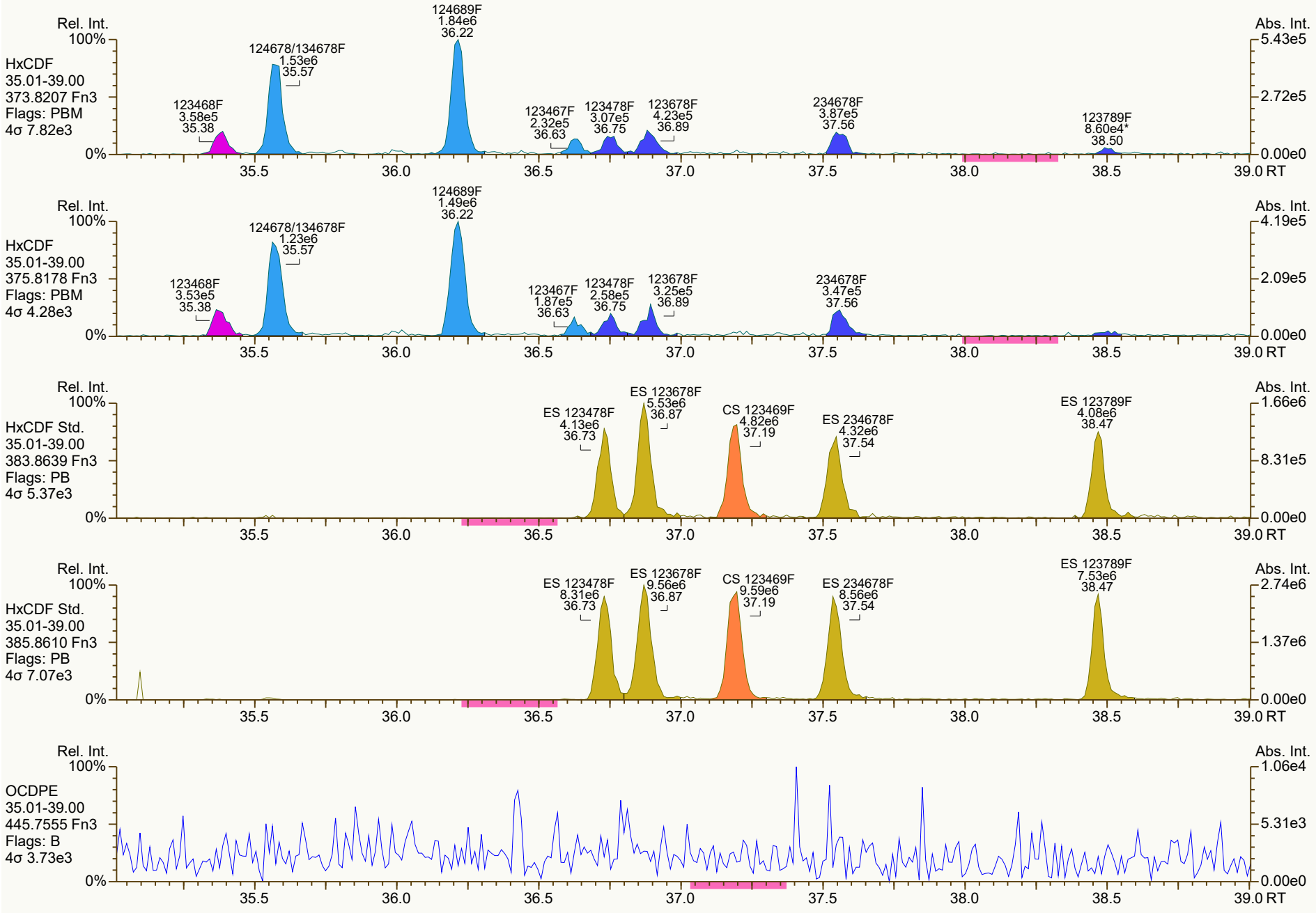

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 4.33e3
1234679D
1.82e7*
40.05
1234678D
1.73e7*
40.70
Abs. Int.
7.01e6
3.51e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 3.33e3
1234679D
1.76e7*
40.05
1234678D
1.65e7*
40.70
Abs. Int.
6.71e6
3.36e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 4.35e3
ES 1234678D
4.40e6
40.69
Abs. Int.
1.61e6
8.07e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 4.77e3
ES 1234678D
4.28e6
40.69
Abs. Int.
1.65e6
8.27e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.30e7
6.48e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

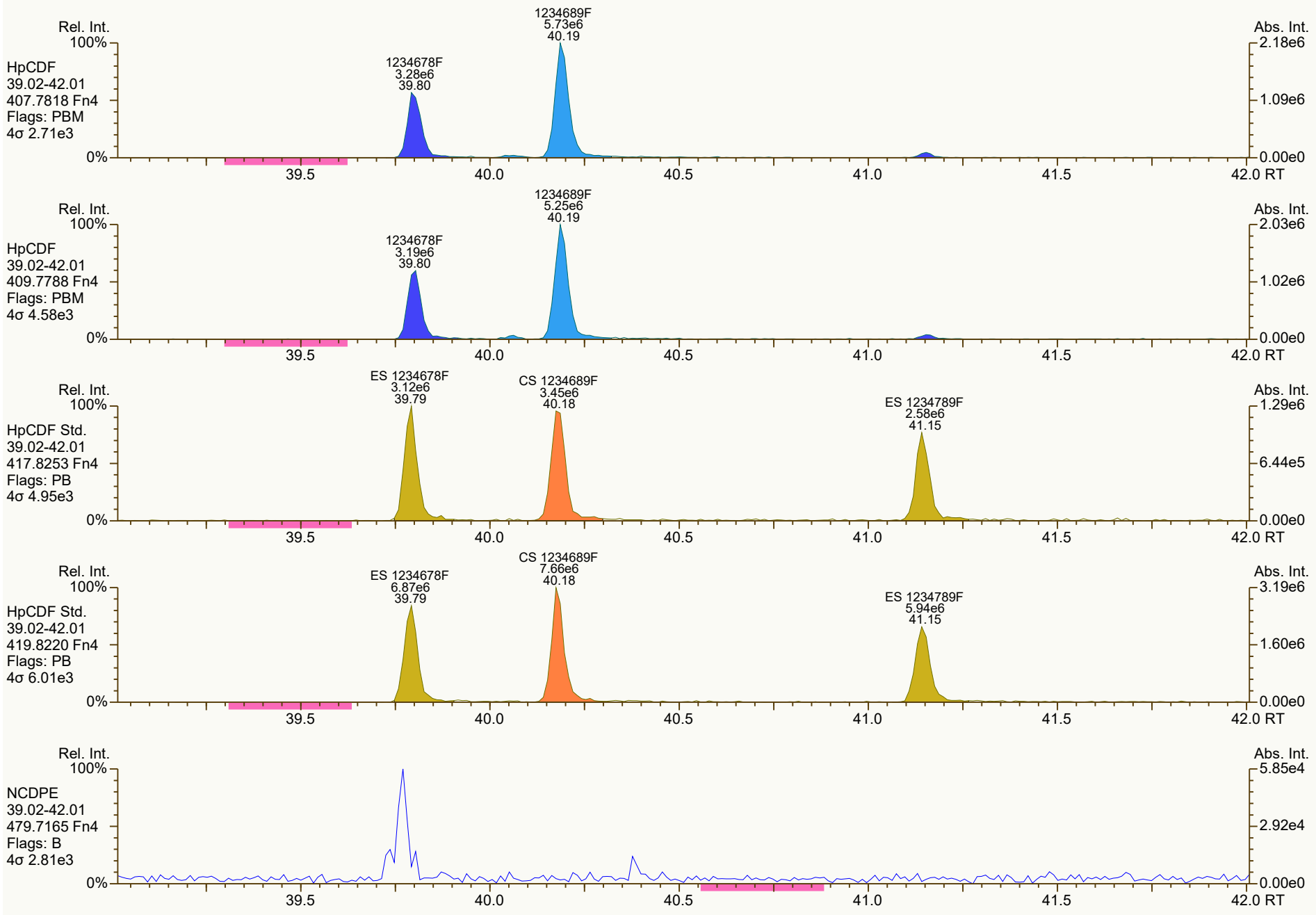

OCDD
1.91e8
43.28
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 5.14e3
0%
Abs. Int.
6.01e7
3.00e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.15e8
43.28
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 3.27e3
0%
Abs. Int.
6.81e7
3.40e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
4.76e6
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 5.87e3
0%
Abs. Int.
1.61e6
8.04e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
5.74e6
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 5.46e3
0%
Abs. Int.
1.81e6
9.07e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.78e6
4.39e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.75e3
1368F 7.70e4* 22.97
1468F 8.44e4* 23.55
2468F 1.77e5* 24.15
1347F...[3] 3.10e5* 24.66
1348F...[3] 2.86e5* 25.03
1467F 9.80e4* 25.54
1478F 1.93e5* 25.72
2368F 2.52e5* 26.36
1278F 3.41e5* 26.88
2348F 8.54e4* 27.65
2378F 6.68e5* 27.77
2367/3467F 3.44e5 28.12
1289F 6.14e4 29.74
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 4.35e3
1368F 1.09e5* 22.96
1468F 1.22e5* 23.54
2468F 1.90e5* 24.15
1346/1246F 1.56e5* 24.53
1347F...[3] 3.74e5* 24.66
1348F 1.00e5* 24.90
1348F...[3] 3.21e5* 25.03
1478F 1.97e5* 25.71
1369/1237F 9.18e4* 26.07
2368F 3.53e5* 26.36
1238F...[5] 2.65e5* 26.45
1278F 4.90e5* 26.89
1267F 1.32e5* 27.16
2347/1279F 1.30e5* 27.54
2378F 9.22e5* 27.77
2367/3467F 4.60e5 28.12
1289F 6.43e4 29.73
ok AK 8 Dec 21
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.76e4
Conc(2378F) = (6.68e5 + 9.22e5) * 2000pg / (8.91e6 + 1.14e7) * 0.96 * 15.67g = 10.4pg/g
PSW 08-Dec-2021 14:53
JS 1234F 1.31e7 26.41
ES 2378F 8.91e6 27.75
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 9.95e3
JS 1234F 1.65e7 26.41
ES 2378F 1.14e7 27.75
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.79e3
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
2.57e5
1.29e5
0.00e0
2.24e5
1.12e5
2.84e6
1.42e6
3.58e6
1.79e6
7.23e4
3.61e4

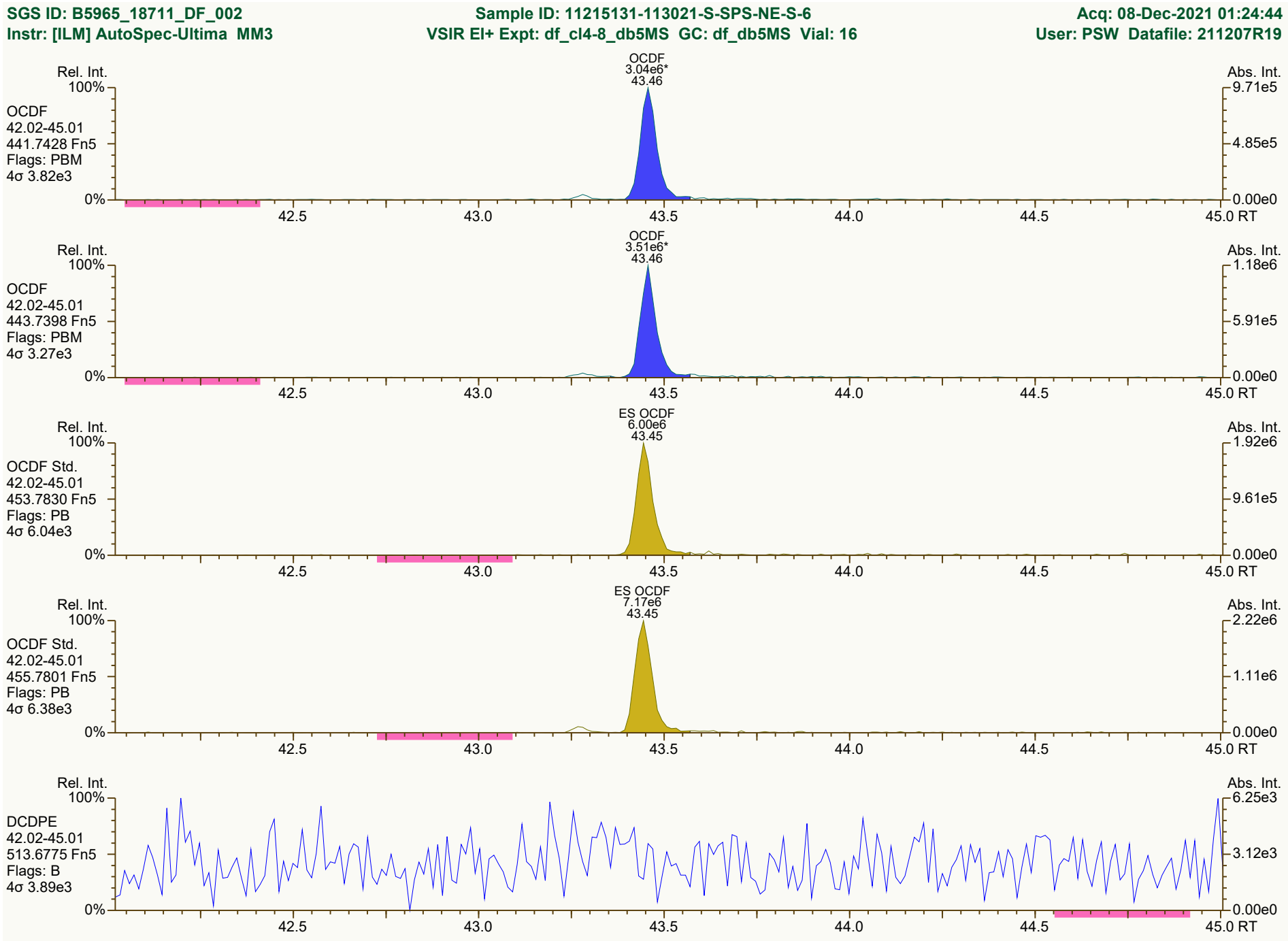

13468/12468F
8.18e5
29.68
Rel. Int.
100%
Abs. Int.
1.85e5
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 4.23e3
9.24e4
0%
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
13468/12468F
4.54e5
29.69
Rel. Int.
100%
Abs. Int.
1.26e5
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 3.92e3
6.32e4
0%
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
Abs. Int.
4.23e6
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
2.12e6
0%
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


SGS ID: B5965_18711_DF_002
Sample ID: 11215131-113021-S-SPS-NE-S-6
Acq: 08-Dec-2021 01:24:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 16
User: PSW Datafile: 211207R19
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 4.20e3
12368F...[3] 7.30e5* 31.35
13678F...[3] 3.80e5* 31.21
14678F 1.49e5* 31.45
13469/12479F 9.60e4* 31.77
23468/12469F 2.61e5* 32.02
12347F 1.11e5* 32.10
12378F 1.93e5 32.46
12678/12367F 3.53e5* 32.74
23467/12369F 2.37e5* 33.42
23478F 3.19e5* 33.56
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.48e3
12368F...[3] 4.59e5* 31.35
13678F...[3] 2.18e5* 31.20
14678F 9.82e4* 31.45
13469/12479F 4.37e4* 31.76
23468/12469F 1.48e5* 32.01
12348F 7.58e4* 32.25
12378F 1.10e5 32.45
12678/12367F 2.34e5 32.74
23467/12369F 1.62e5* 33.43
23478F 1.79e5* 33.56
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 5.28e3
CS 12346F 1.20e7 31.92
ES 12378F 1.17e7 32.44
ES 23478F 1.07e7 33.54
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 4.54e3
CS 12346F 7.47e6 31.92
ES 12378F 7.31e6 32.44
ES 23478F 6.58e6 33.54
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.20e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_002.utp_res, saved 08-Dec-2021 14:53 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9016, 5654, 6652 scc: 885-934
PKD: 08-Dec-2021 08:48 Printed: 08-Dec-2021 14:56 Page 9 of 12


Rel. Int.
Abs. Int.
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 7.82e3
123468F 3.58e5 35.38
124678/134678F 1.53e6 35.57
124689F 1.84e6 36.22
123467F 2.32e5 36.63
123478F 3.07e5 36.75
123678F 4.23e5 36.89
234678F 3.87e5 37.56
123789F 8.60e4* 38.50
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 4.28e3
123468F 3.53e5 35.38
124678/134678F 1.23e6 35.57
124689F 1.49e6 36.22
123467F 1.87e5 36.63
123478F 2.58e5 36.75
123678F 3.25e5 36.89
234678F 3.47e5 37.56
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 5.37e3
ES 123478F 4.13e6 36.73
ES 123678F 5.53e6 36.87
CS 123469F 4.82e6 37.19
ES 234678F 4.32e6 37.54
ES 123789F 4.08e6 38.47
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 7.07e3
ES 123478F 8.31e6 36.73
ES 123678F 9.56e6 36.87
CS 123469F 9.59e6 37.19
ES 234678F 8.56e6 37.54
ES 123789F 7.53e6 38.47
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.73e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
5.43e5
2.72e5
0.00e0
4.19e5
2.09e5
1.66e6
8.31e5
2.74e6
1.37e6
1.06e4
5.31e3


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 2.71e3
1234678F
3.28e6
39.80
1234689F
5.73e6
40.19
Abs. Int.
2.18e6
1.09e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 4.58e3
1234678F
3.19e6
39.80
1234689F
5.25e6
40.19
Abs. Int.
2.03e6
1.02e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 4.95e3
ES 1234678F
3.12e6
39.79
CS 1234689F
3.45e6
40.18
ES 1234789F
2.58e6
41.15
Abs. Int.
1.29e6
6.44e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 6.01e3
ES 1234678F
6.87e6
39.79
CS 1234689F
7.66e6
40.18
ES 1234789F
5.94e6
41.15
Abs. Int.
3.19e6
1.60e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 2.81e3
Abs. Int.
5.85e4
2.92e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

SGS ID: B5965_18711_DF_002 | Sample ID: 11215131-113021-S-SPS-NE-S-6 | Acq: 08-Dec-2021 01:24:44
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 16 | User: PSW Datafile: 211207R19



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_002.utp_res, saved 08-Dec-2021 14:53 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4974, 8003, 1124 scc: 885-934 | *PKD: 08-Dec-2021 08:48 Printed: 08-Dec-2021 14:56 Page 12 of 12*

Lab ID: B5965_18711_DF_003 **Acq'd:** 08 Dec 2021 02:12 PSW **Wt/Vol:** 15.69 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-S-12 **UTP:** 08-Dec-2021 14:49:04 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 814-529-ZTY

Datafile: 211207R20 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62		1.0008	1.0007	-0.2	1.37E+06	0.79	Y	1.34	10.1	9025.204	0.74
12378-PeCDD	33.88	J EMPC	1.0004	1.0004	0	1.47E+05	1.23	N	1.06	1.59	6574.223	0.611
123478-HxCDD	37.74	EMPC	1.0004	1.0003	-0.2	1.61E+05	1.52	N	1.06	2.1	11916.918	1.31
123678-HxCDD	37.86		1.0034	1.0033	-0.2	7.90E+05	1.30	Y	1.08	9.96	11916.918	1.21
123789-HxCDD	38.14	EMPC	1.0111	1.0109	-0.5	3.95E+05	1.49	N	1.02	4.95	11916.918	1.22
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	2.90E+07	1.05	Y	0.97	477	7989.322	0.902
OCDD	43.28		1.0003	1.0003	0	1.88E+08	0.88	Y	1.07	4,820	9283.557	1.89
2378-TCDF	27.78		1.0007	1.0008	+0.2	6.31E+06	0.77	Y	0.96	45.5	6848.629	0.534
12378-PeCDF	32.46		1.0006	1.0005	-0.2	5.00E+05	1.55	Y	0.95	4.24	7066.536	0.524
23478-PeCDF	33.56		1.0005	1.0007	+0.4	8.50E+05	1.59	Y	0.94	7.09	7066.536	0.534
123478-HxCDF	36.75		1.0004	1.0004	0	6.01E+05	1.33	Y	1.23	5.54	12263.828	0.943
123678-HxCDF	36.90		1.0005	1.0004	-0.2	6.01E+05	1.33	Y	1.13	4.88	12263.828	0.848
234678-HxCDF	37.57		1.0005	1.0004	-0.2	6.76E+05	1.13	Y	1.15	6.31	12263.828	1.08
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	12263.828	0.863
1234678-HpCDF	39.81		1.0003	1.0003	0	6.09E+06	1.07	Y	1.36	62	7613.192	0.406
1234789-HpCDF	41.17	EMPC	1.0004	1.0003	-0.2	3.10E+05	1.22	N	1.30	4.13	7613.192	0.746
OCDF	43.46		1.0002	1.0003	+0.3	1.89E+07	0.87	Y	1.03	402	9218.806	1.72

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.60	1.0233	1.0233	0	1.29E+07	0.76	Y	1.03	73.2
ES 12378-PeCDD	33.87	1.2118	1.2118	0	1.11E+07	1.61	Y	1.03	63.2
ES 123478-HxCDD	37.73	0.9921	0.9921	0	9.23E+06	1.26	Y	0.99	81.3
ES 123678-HxCDD	37.85	0.9951	0.9952	+0.2	9.35E+06	1.22	Y	0.97	84.1
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	1.00E+07	1.30	Y	1.12	78
ES 1234678-HpCDD	40.70	1.0702	1.0701	-0.2	7.95E+06	1.03	Y	0.99	70.3
ES OCDD	43.27	1.1377	1.1377	0	9.28E+06	0.87	Y	0.78	52.3
ES 2378-TCDF	27.75	1.0505	1.0505	0	1.84E+07	0.80	Y	1.08	70.5
ES 12378-PeCDF	32.45	1.2278	1.2281	+0.6	1.59E+07	1.62	Y	0.93	70.7
ES 23478-PeCDF	33.54	1.2691	1.2696	+1.0	1.63E+07	1.57	Y	0.92	73.1
ES 123478-HxCDF	36.74	0.9660	0.9661	+0.2	1.12E+07	0.53	Y	1.14	85.9
ES 123678-HxCDF	36.88	0.9698	0.9698	0	1.39E+07	0.53	Y	1.30	93.8
ES 234678-HxCDF	37.55	0.9875	0.9874	-0.2	1.18E+07	0.57	Y	1.20	86.4
ES 123789-HxCDF	38.48	1.0121	1.0117	-0.9	1.09E+07	0.53	Y	1.14	84.1
ES 1234678-HpCDF	39.80	1.0468	1.0466	-0.5	9.21E+06	0.45	Y	0.95	84.9
ES 1234789-HpCDF	41.15	1.0822	1.0821	-0.2	7.36E+06	0.44	Y	0.85	76.1
ES OCDF	43.45	1.1426	1.1426	0	1.17E+07	0.88	Y	0.93	55.2

Lab ID: B5965_18711_DF_003 **Acq'd:** 08 Dec 2021 02:12 PSW **Wt/Vol:** 15.69 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-S-12 **UTP:** 08-Dec-2021 14:49:04 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 814-529-ZTY

Datafile: 211207R20 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.95		-	-	-	1.70E+07	0.82	Y	-	-
JS 1234-TCDF	26.42		-	-	-	2.41E+07	0.71	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	5.71E+06	1.33	Y	-	-
CS 37Cl-2378-TCDD	28.62		1.0241	1.0240	-0.2	6.01E+06	n/a	-	1.31	67.3
CS 12347-PeCDD	33.38		1.1940	1.1941	+0.2	1.06E+07	1.60	Y	0.89	69.8
CS 12346-PeCDF	31.92		1.2080	1.2084	+0.8	1.61E+07	1.66	Y	0.87	77.1
CS 123469-HxCDF	37.20		0.9781	0.9781	0	1.26E+07	0.49	Y	1.09	101
CS 1234689-HpCDF	40.19		1.0569	1.0568	-0.2	9.26E+06	0.46	Y	0.86	93.8
~~SS 37Cl-2378-TCDD~~	~~28.62~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~6.01E+06~~	~~n/a~~		~~1.26~~	~~92.5~~
~~SS 12347-PeCDD~~	~~33.38~~		~~1.1940~~	~~1.1941~~	~~+0.2~~	~~1.06E+07~~	~~1.60~~	~~Y~~	~~0.86~~	~~110~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2084~~	~~+0.8~~	~~1.61E+07~~	~~1.66~~	~~Y~~	~~0.93~~	~~109~~
~~SS 123469-HxCDF~~	~~37.20~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.26E+07~~	~~0.49~~	~~Y~~	~~0.84~~	~~108~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~9.26E+06~~	~~0.46~~	~~Y~~	~~0.91~~	~~110~~

Totals	Conc	EMPC
Total TCDD	15.7	19.1
Total PeCDD	13.1	21.8
Total HxCDD	74.4	91.9
Total HpCDD	891	891
Total Tetra-Octa Dioxins	5820	5850
Total TCDF	161	169
Total PeCDF	70.2	75.2
Total HxCDF	76.7	76.7
Total HpCDF	144	151
Total Tetra-Octa Furans	854	874
Total Tetra-Octa Dioxins & Furans	6670	6720

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.788	0.79
Response	1.38E+06	1.37E+06

Lab ID: B5965_18711_DF_003 | **Acq'd: 08 Dec 2021 02:12 PSW** | **Wt/Vol: 15.69 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-SPS-NE-S-12 | **UTP: 08-Dec-2021 14:49:04 PSW** | **J-level: 0.319 pg/g** | **Split: 1** | **Checkcode: 814-529-ZTY**

Datafile: 211207R20 | **Report: 08 Dec 2021 14:50 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8751	-1.1	4.93E+05	0.75	Y	1.34	3.62	9025.204	0.74
1379-TCDD	25.38		0.8878	0.8875	-0.5	2.67E+05	0.68	Y	1.34	1.97	9025.204	0.74
1369-TCDD	NotFnd		0.9025						1.34		9025.204	0.74
1469-TCDD	NotFnd		0.9291						1.34		9025.204	0.74
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		9025.204	0.74
1378-TCDD	26.99	EMPC	0.9440	0.9438	-0.3	1.13E+05	0.64	N	1.34	0.829	9025.204	0.74
1268-TCDD	NotFnd		0.9505						1.34		9025.204	0.74
1478-TCDD	NotFnd		0.9591						1.34		9025.204	0.74
1279-TCDD	NotFnd		0.9650						1.34		9025.204	0.74
1234/1269-TCDD	NotFnd		0.9771						1.34		9025.204	0.74
1236-TCDD	NotFnd		0.9821						1.34		9025.204	0.74
1237/1238-TCDD	28.32	EMPC	0.9907	0.9903	-0.7	1.90E+05	0.91	N	1.34	1.4	9025.204	0.74
1239-TCDD	NotFnd		0.9953						1.34		9025.204	0.74
2378-TCDD	**28.62**		**1.0008**	1.0007	**-0.2**	1.37E+06	0.79	Y	**1.34**	**10.1**	**9025.204**	**0.74**
1278-TCDD	28.93	EMPC	1.0118	1.0116	-0.3	1.57E+05	0.98	N	1.34	1.15	9025.204	0.74
1267-TCDD	NotFnd		1.0162						1.34		9025.204	0.74
1289-TCDD	NotFnd		1.0340						1.34		9025.204	0.74
12479/12468-PeCDD	31.41		0.9274	0.9273	-0.2	6.09E+05	1.55	Y	1.06	6.57	6574.223	0.611
12469-PeCDD	31.94	EMPC	0.9430	0.9430	0	1.80E+05	0.92	N	1.06	1.94	6574.223	0.611
12368-PeCDD	32.49		0.9591	0.9592	+0.2	3.48E+05	1.54	Y	1.06	3.75	6574.223	0.611
12478-PeCDD	32.68	EMPC	0.9645	0.9648	+0.6	1.76E+05	1.24	N	1.06	1.9	6574.223	0.611
12379-PeCDD	32.78	EMPC	0.9676	0.9677	+0.2	1.86E+05	1.84	N	1.06	2.01	6574.223	0.611
12369/12467/12489-PeCDD	33.03		0.9751	0.9752	+0.2	2.57E+05	1.60	Y	1.06	2.78	6574.223	0.611
12346/12347-PeCDD	33.40	J EMPC	0.9860	0.9860	0	1.14E+05	2.00	N	1.06	1.23	6574.223	0.611
12378-PeCDD	33.88	J EMPC	**1.0004**	**1.0004**	**0**	**1.47E+05**	**1.23**	**N**	**1.06**	**1.59**	**6574.223**	**0.611**
12367-PeCDD	NotFnd		1.0034						1.06		6574.223	0.611
12389-PeCDD	NotFnd		1.0133						1.06		6574.223	0.611
124679/124689-HxCDD	36.02		0.9546	0.9547	+0.2	2.13E+06	1.38	Y	1.05	27.1	11916.918	1.24
123468-HxCDD	36.66	EMPC	0.9718	0.9717	-0.2	4.59E+05	1.54	N	1.05	5.85	11916.918	1.24
123679/123689-HxCDD	36.96		0.9795	0.9796	+0.2	2.93E+06	1.23	Y	1.05	37.3	11916.918	1.24
123469-HxCDD	37.09	EMPC	0.9832	0.9830	-0.4	1.70E+05	1.51	N	1.05	2.16	11916.918	1.24
123478-HxCDD	37.74	EMPC	**1.0004**	**1.0003**	**-0.2**	**1.61E+05**	**1.52**	**N**	1.06	**2.1**	**11916.918**	**1.31**
123678-HxCDD	37.86		**1.0034**	**1.0033**	**-0.2**	**7.90E+05**	**1.30**	**Y**	1.08	**9.96**	**11916.918**	**1.21**
123467-HxCDD	38.05	EMPC	1.0083	1.0083	0	1.93E+05	1.59	N	1.05	2.45	11916.918	1.24
123789-HxCDD	38.14	EMPC	**1.0111**	**1.0109**	**-0.5**	**3.95E+05**	**1.49**	**N**	1.02	**4.95**	**11916.918**	**1.22**

Lab ID: B5965_18711_DF_003 **Acq'd:** 08 Dec 2021 02:12 PSW **Wt/Vol:** 15.69 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-S-12 **UTP:** 08-Dec-2021 14:49:04 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 814-529-ZTY

Datafile: 211207R20 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

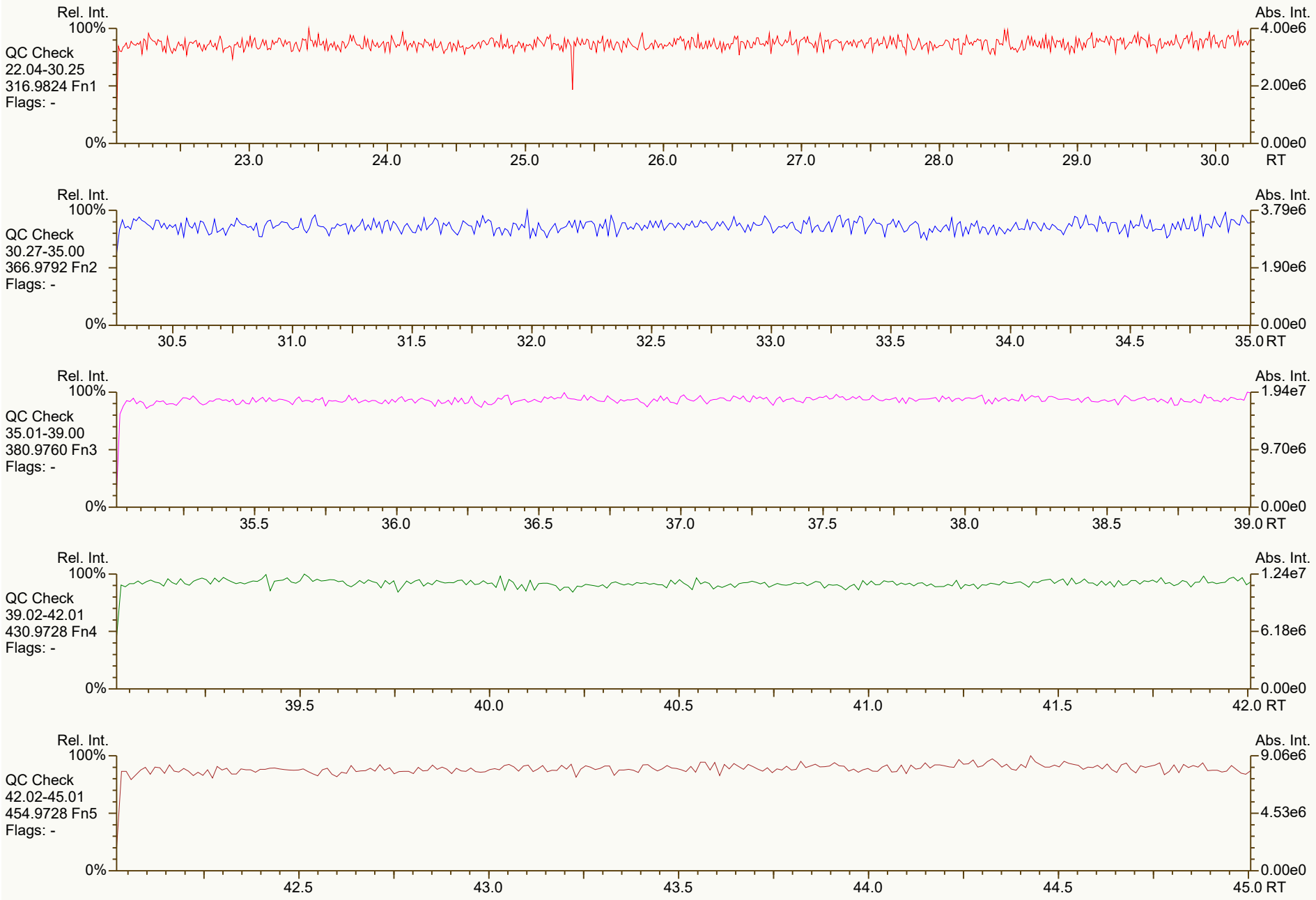
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	2.52E+07	1.04	Y	0.97	414	7989.322	0.902
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**2.90E+07**	**1.05**	**Y**	**0.97**	**477**	**7989.322**	**0.902**
OCDD	**43.28**		**1.0003**	**1.0003**	**0**	**1.88E+08**	**0.88**	**Y**	**1.07**	**4,820**	**9283.557**	**1.89**
OCDD-a	43.28		1.0001	1.0002	+0.3	1.09E+07	2.50	Y	0.07	4,510	9540.522	31.5
1368-TCDF	22.96		0.8284	0.8272	-1.7	3.38E+05	0.75	Y	0.96	2.43	6848.629	0.534
1468-TCDF	23.54		0.8487	0.8482	-0.7	3.70E+05	0.74	Y	0.96	2.66	6848.629	0.534
2468-TCDF	24.15		0.8709	0.8703	-0.9	1.01E+06	0.83	Y	0.96	7.3	6848.629	0.534
1346/1246-TCDF	24.49	EMPC	0.8828	0.8825	-0.4	2.24E+05	0.65	N	0.96	1.62	6848.629	0.534
1347/1378/1247-TCDF	24.66		0.8886	0.8884	-0.3	1.58E+06	0.80	Y	0.96	11.4	6848.629	0.534
1348-TCDF	24.91		0.8980	0.8975	-0.7	2.84E+05	0.78	Y	0.96	2.05	6848.629	0.534
1248/1367/1379-TCDF	25.02		0.9027	0.9016	-1.7	1.16E+06	0.84	Y	0.96	8.39	6848.629	0.534
1268-TCDF	25.41		0.9159	0.9155	-0.6	7.33E+05	0.80	Y	0.96	5.28	6848.629	0.534
1467-TCDF	25.54		0.9206	0.9202	-0.6	3.27E+05	0.88	Y	0.96	2.36	6848.629	0.534
1478-TCDF	25.71		0.9266	0.9264	-0.3	7.41E+05	0.87	Y	0.96	5.34	6848.629	0.534
1369/1237-TCDF	26.08		0.9396	0.9396	0	4.46E+05	0.88	Y	0.96	3.22	6848.629	0.534
2467-TCDF	26.20		0.9440	0.9440	0	5.40E+05	0.80	Y	0.96	3.89	6848.629	0.534
2368-TCDF	26.35		0.9496	0.9495	-0.2	9.77E+05	0.74	Y	0.96	7.04	6848.629	0.534
1238/1234/1678/1469/1236-TCDF	26.44		0.9530	0.9528	-0.3	1.00E+06	0.83	Y	0.96	7.21	6848.629	0.534
1278-TCDF	26.89		0.9689	0.9688	-0.2	3.25E+06	0.75	Y	0.96	23.4	6848.629	0.534
1349-TCDF	27.00		0.9732	0.9729	-0.5	1.61E+05	0.73	Y	0.96	1.16	6848.629	0.534
1267-TCDF	27.16		0.9786	0.9786	0	5.55E+05	0.79	Y	0.96	4	6848.629	0.534
2346/1249-TCDF	27.34	EMPC	0.9849	0.9850	+0.2	3.50E+05	0.65	N	0.96	2.52	6848.629	0.534
2347/1279-TCDF	27.55		0.9927	0.9927	0	4.60E+05	0.86	Y	0.96	3.32	6848.629	0.534
2348-TCDF	27.66		0.9967	0.9966	-0.2	6.34E+05	0.72	Y	0.96	4.57	6848.629	0.534
2378-TCDF	**27.78**		**1.0007**	**1.0008**	**+0.2**	**6.31E+06**	**0.77**	**Y**	**0.96**	**45.5**	**6848.629**	**0.534**
2367/3467-TCDF	28.13		1.0136	1.0134	-0.3	1.43E+06	0.76	Y	0.96	10.3	6848.629	0.534
1269-TCDF	28.36	EMPC	1.0223	1.0218	-0.9	1.27E+05	0.55	N	0.96	0.917	6848.629	0.534
1239-TCDF	NotFnd		1.0313						0.96		6848.629	0.534
1289-TCDF	29.74	EMPC	1.0711	1.0714	+0.5	5.10E+05	1.00	N	0.96	3.67	6848.629	0.534
13468/12468-PeCDF	29.69		0.9147	0.9151	+0.7	1.91E+06	1.68	Y	0.94	16.1	8616.738	0.645
13678/13467/12467-PeCDF	31.21		0.9616	0.9620	+0.7	8.91E+05	1.53	Y	0.94	7.49	7066.536	0.529
12368/13478/12478-PeCDF	31.36		0.9663	0.9667	+0.8	1.89E+06	1.64	Y	0.94	15.9	7066.536	0.529
14678-PeCDF	31.46	EMPC	0.9695	0.9696	+0.2	2.56E+05	0.99	N	0.94	2.16	7066.536	0.529
13479-PeCDF	31.56	J EMPC	0.9727	0.9728	+0.2	5.80E+04	0.97	N	0.94	0.488	7066.536	0.529
13469/12479-PeCDF	31.78	J EMPC	0.9799	0.9796	-0.6	1.10E+05	1.27	N	0.94	0.928	7066.536	0.529
12346-PeCDF	31.94	J EMPC	0.9839	0.9844	+1.0	1.68E+05	2.00	N	0.94	1.41	7066.536	0.529

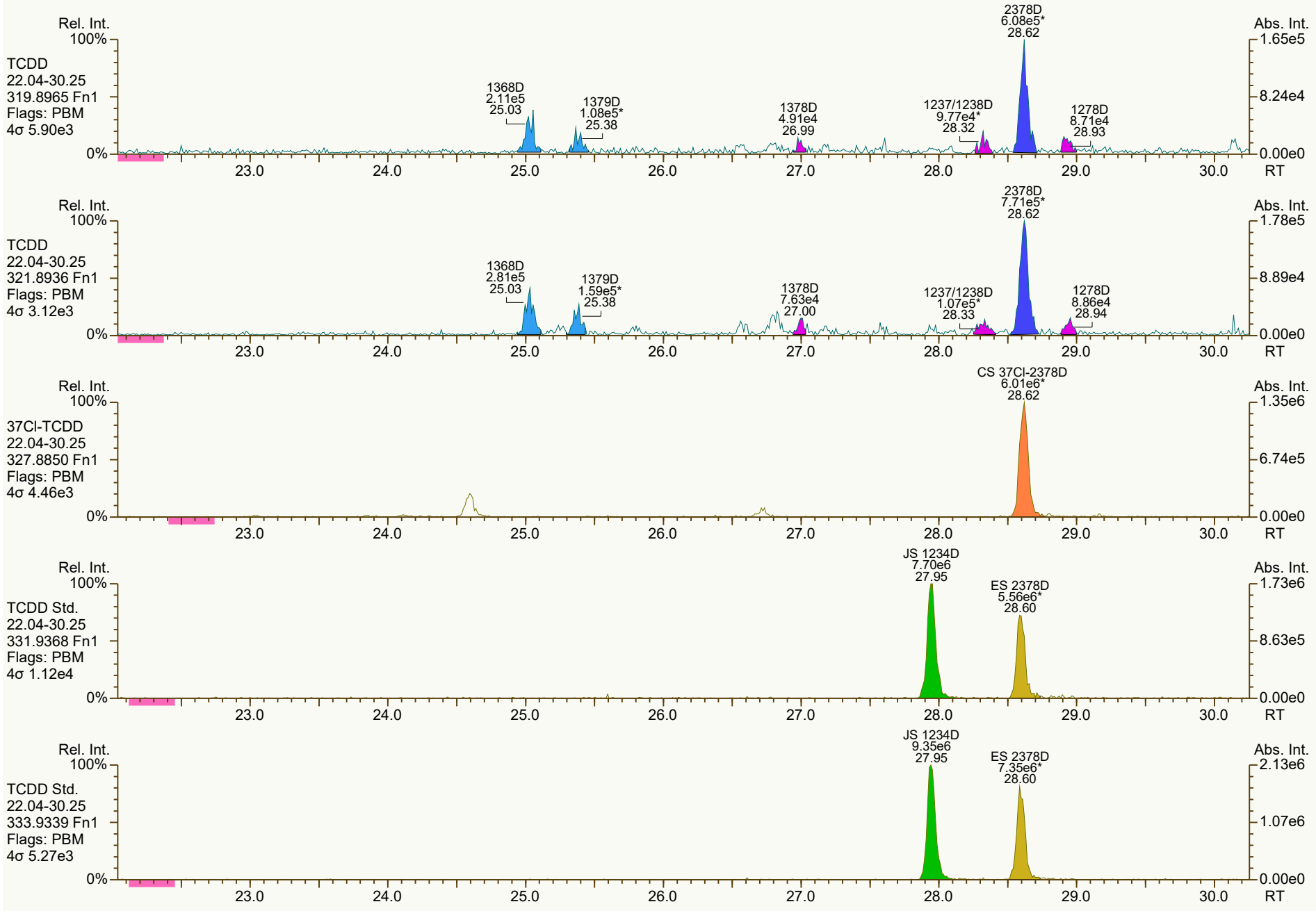
Lab ID: B5965_18711_DF_003 | **Acq'd: 08 Dec 2021 02:12 PSW** | **Wt/Vol: 15.69 g** | **ICAL: MM3_DF_10272021_27JUL2021**

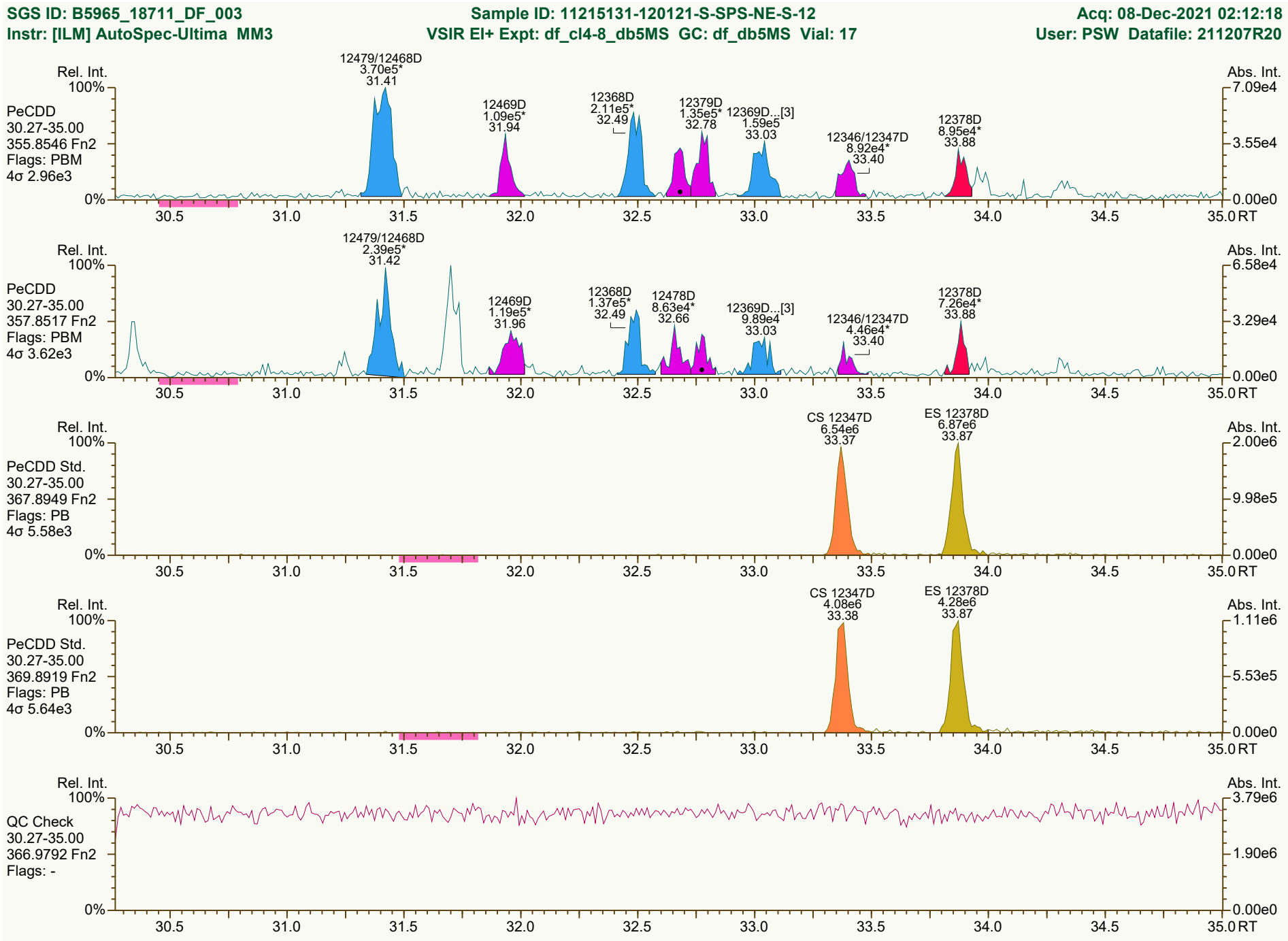
Client ID: 11215131-120121-S-SPS-NE-S-12 | **UTP: 08-Dec-2021 14:49:04 PSW** | **J-level: 0.319 pg/g** | **Split: 1** | **Checkcode: 814-529-ZTY**

Datafile: 211207R20 | **Report: 08 Dec 2021 14:50 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

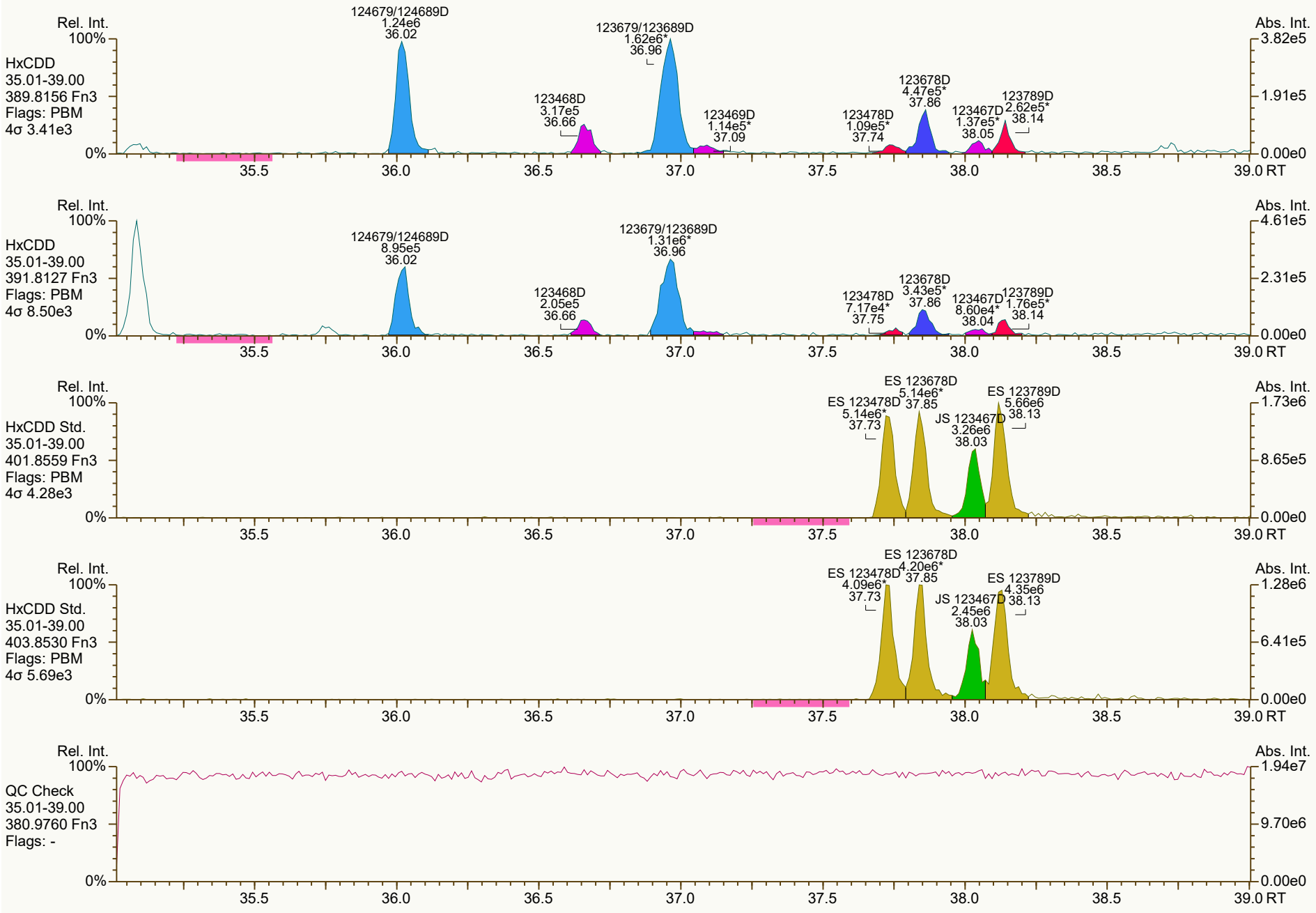
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.01		0.9864	0.9867	+0.6	5.97E+05	1.48	Y	0.94	5.02	7066.536	0.529
12347-PeCDF	32.09		0.9892	0.9891	-0.2	3.09E+05	1.76	Y	0.94	2.6	7066.536	0.529
12348-PeCDF	32.26		0.9940	0.9942	+0.4	2.61E+05	1.36	Y	0.94	2.2	7066.536	0.529
12378-PeCDF	**32.46**		**1.0006**	**1.0005**	**-0.2**	**5.00E+05**	**1.55**	**Y**	**0.95**	**4.24**	**7066.536**	**0.524**
12678/12367-PeCDF	32.74		1.0088	1.0091	+0.6	7.17E+05	1.74	Y	0.94	6.03	7066.536	0.529
12379-PeCDF	NotFnd		1.0142						0.94		7066.536	0.529
12679-PeCDF	NotFnd		0.9931						0.94		7066.536	0.529
23467/12369-PeCDF	33.43		0.9966	0.9966	0	4.31E+05	1.65	Y	0.94	3.62	7066.536	0.529
23478-PeCDF	**33.56**		**1.0005**	**1.0007**	**+0.4**	**8.50E+05**	**1.59**	**Y**	**0.94**	**7.09**	**7066.536**	**0.534**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7066.536	0.529
12349-PeCDF	NotFnd		1.0100						0.94		7066.536	0.529
12389-PeCDF	NotFnd		1.0323						0.94		7066.536	0.529
123468-HxCDF	35.39		0.9631	0.9633	+0.4	8.09E+05	1.23	Y	1.16	7.41	12263.828	0.93
124678/134678-HxCDF	35.58		0.9686	0.9685	-0.2	2.68E+06	1.28	Y	1.16	24.6	12263.828	0.93
134679-HxCDF	35.82	J	0.9747	0.9749	+0.4	8.18E+04	1.34	Y	1.16	0.749	12263.828	0.93
124679-HxCDF	36.01	J	0.9800	0.9801	+0.2	9.78E+04	1.07	Y	1.16	0.896	12263.828	0.93
124689-HxCDF	36.22		0.9859	0.9860	+0.2	2.43E+06	1.20	Y	1.16	22.3	12263.828	0.93
123467-HxCDF	36.64		0.9972	0.9973	+0.2	4.41E+05	1.25	Y	1.16	4.04	12263.828	0.93
123478-HxCDF	**36.75**		**1.0004**	**1.0004**	**0**	**6.01E+05**	**1.33**	**Y**	**1.23**	**5.54**	**12263.828**	**0.943**
123678-HxCDF	**36.90**		**1.0005**	**1.0004**	**-0.2**	**6.01E+05**	**1.33**	**Y**	**1.13**	**4.88**	**12263.828**	**0.848**
123479-HxCDF	NotFnd		1.0048						1.16		12263.828	0.93
123469-HxCDF	NotFnd		1.0089						1.16		12263.828	0.93
123679-HxCDF	NotFnd		0.9943						1.16		12263.828	0.93
234678-HxCDF	**37.57**		**1.0005**	**1.0004**	**-0.2**	**6.76E+05**	**1.13**	**Y**	**1.15**	**6.31**	**12263.828**	**1.08**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		12263.828	0.93
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**12263.828**	**0.863**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		12263.828	0.93
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**6.09E+06**	**1.07**	**Y**	**1.36**	**62**	**7613.192**	**0.406**
1234679-HpCDF	40.06	**EMPC**	1.0065	1.0066	+0.2	2.55E+05	1.28	N	1.33	2.96	7613.192	0.554
1234689-HpCDF	40.20		1.0097	1.0100	+0.7	7.06E+06	1.03	Y	1.33	81.7	7613.192	0.554
1234789-HpCDF	**41.17**	**EMPC**	**1.0004**	**1.0003**	**-0.2**	**3.10E+05**	**1.22**	**N**	**1.30**	**4.13**	**7613.192**	**0.746**
OCDF	**43.46**		**1.0002**	**1.0003**	**+0.3**	**1.89E+07**	**0.87**	**Y**	**1.03**	**402**	**9218.806**	**1.72**
OCDF-a	43.46		1.0001	1.0003	+0.5	1.26E+06	2.60	Y	0.06	463	11163.485	36

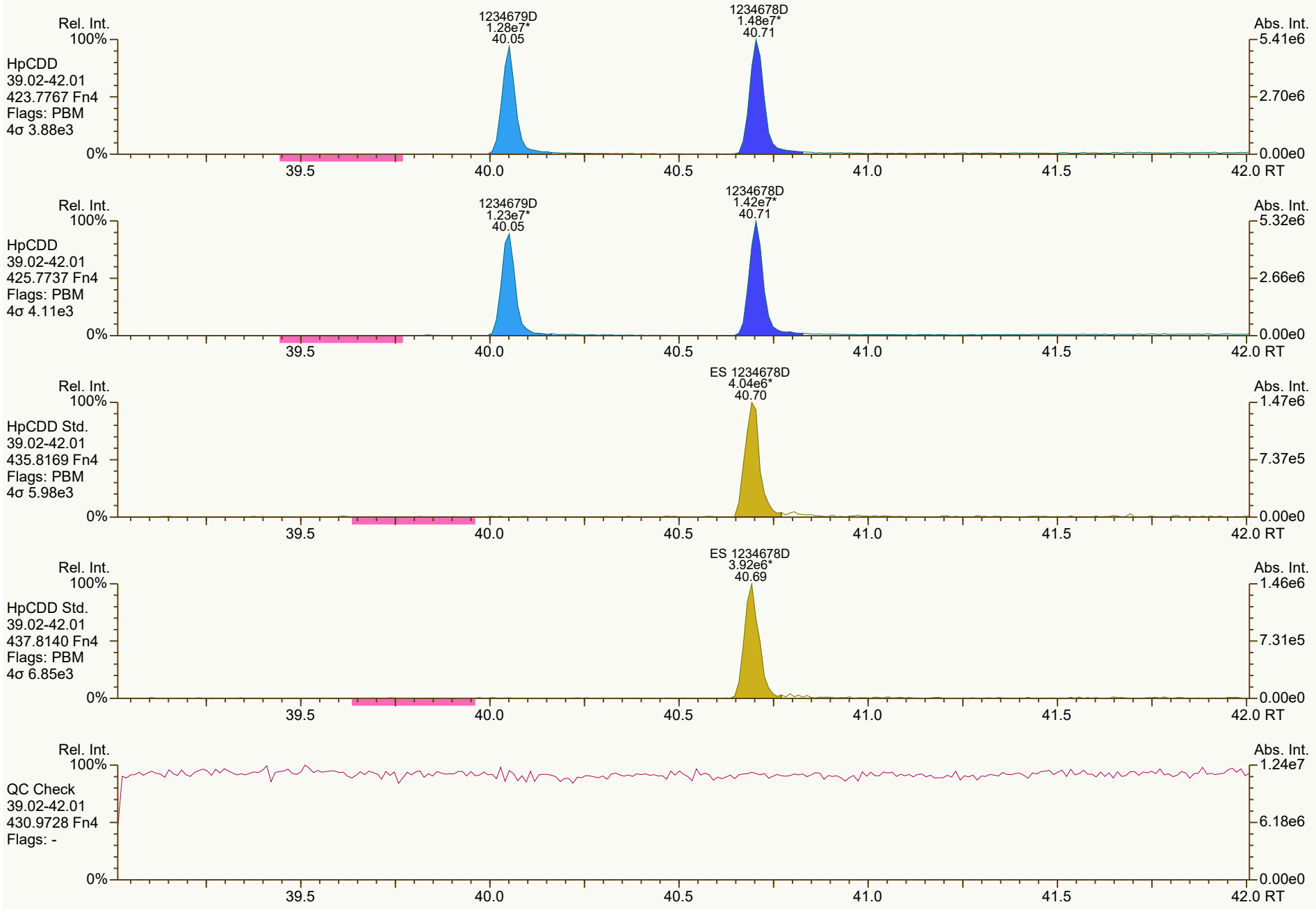

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.00e6
2.00e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.79e6
1.90e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.94e7
9.70e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.24e7
6.18e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.06e6
4.53e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT

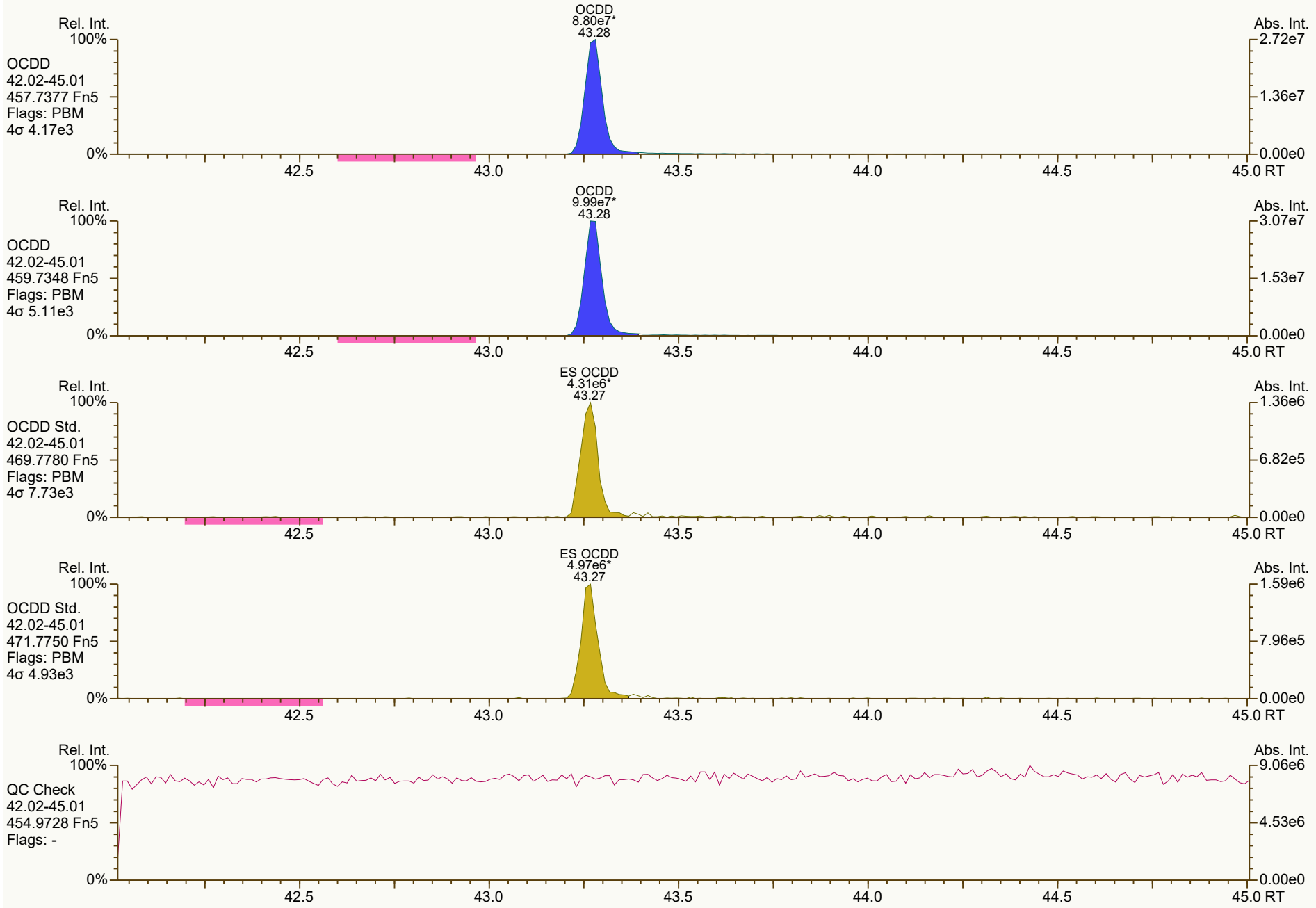

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 5.90e3
0%
1368D
2.11e5
25.03
1379D
1.08e5*
25.38
1378D
4.91e4
26.99
1237/1238D
9.77e4*
28.32
2378D
6.08e5*
28.62
1278D
8.71e4
28.93
Abs. Int.
1.65e5
8.24e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 3.12e3
0%
1368D
2.81e5
25.03
1379D
1.59e5*
25.38
1378D
7.63e4
27.00
1237/1238D
1.07e5*
28.33
2378D
7.71e5*
28.62
1278D
8.86e4
28.94
Abs. Int.
1.78e5
8.89e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PBM
4σ 4.46e3
0%
CS 37Cl-2378D
6.01e6*
28.62
Abs. Int.
1.35e6
6.74e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PBM
4σ 1.12e4
0%
JS 1234D
7.70e6
27.95
ES 2378D
5.56e6*
28.60
Abs. Int.
1.73e6
8.63e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PBM
4σ 5.27e3
0%
JS 1234D
9.35e6
27.95
ES 2378D
7.35e6*
28.60
Abs. Int.
2.13e6
1.07e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_003.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5755, 4115 scc: 814-529
PKD: 08-Dec-2021 09:03 Printed: 08-Dec-2021 14:56 Page 3 of 12

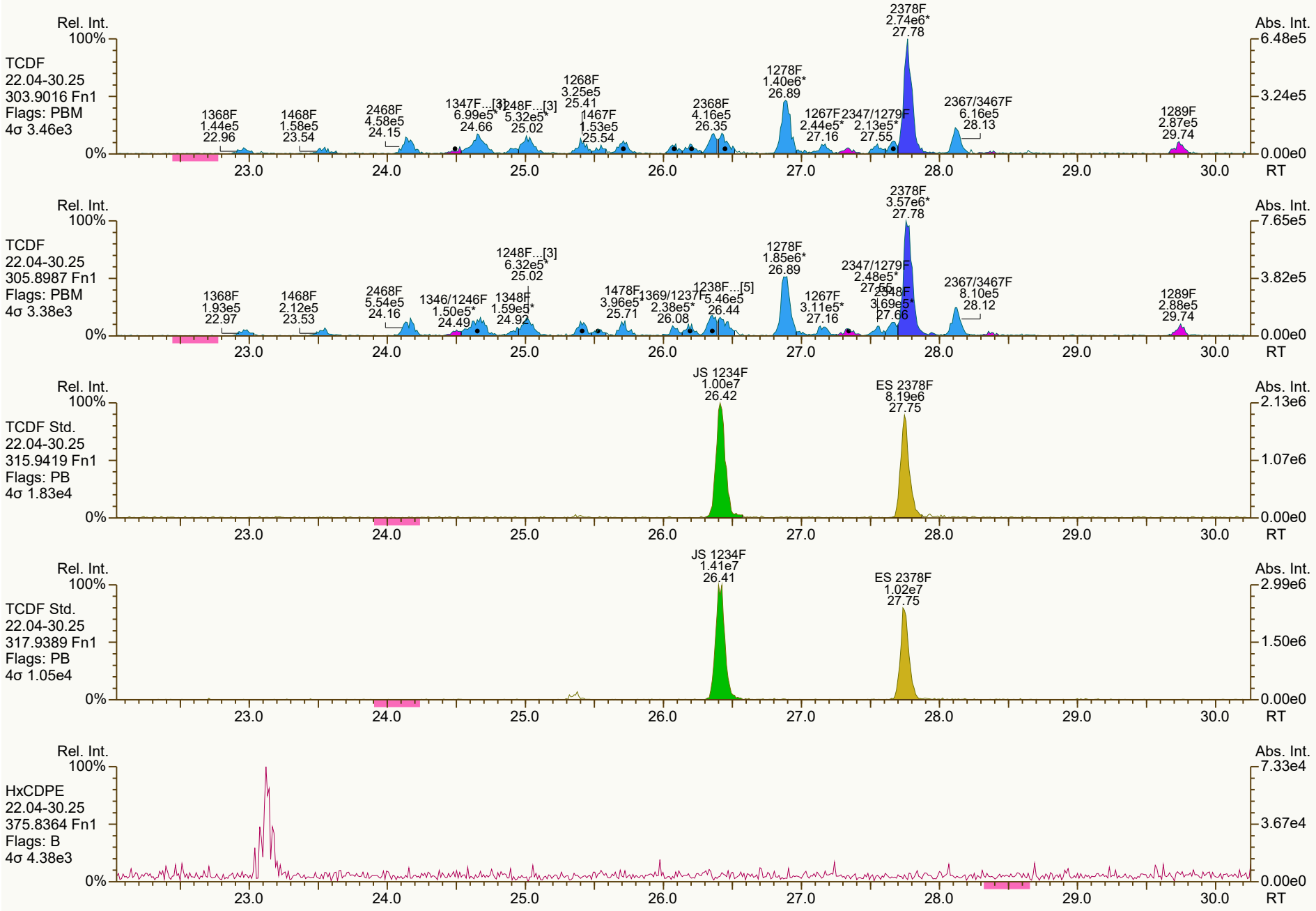

Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PBM
4σ 3.41e3
0%
124679/124689D
1.24e6
36.02
123679/123689D
1.62e6*
36.96
123468D
3.17e5
36.66
123469D
1.14e5*
37.09
123478D
1.09e5*
37.74
123678D
4.47e5*
37.86
123467D
1.37e5*
38.05
123789D
2.62e5*
38.14
Abs. Int.
3.82e5
1.91e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PBM
4σ 8.50e3
0%
124679/124689D
8.95e5
36.02
123679/123689D
1.31e6*
36.96
123468D
2.05e5
36.66
123478D
7.17e4*
37.75
123678D
3.43e5*
37.86
123467D
8.60e4*
38.04
123789D
1.76e5*
38.14
Abs. Int.
4.61e5
2.31e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 4.28e3
0%
ES 123678D
5.14e6*
37.85
ES 123478D
5.14e6*
37.73
ES 123789D
5.66e6
38.13
JS 123467D
3.26e6
38.03
Abs. Int.
1.73e6
8.65e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 5.69e3
0%
ES 123678D
4.20e6*
37.85
ES 123478D
4.09e6*
37.73
ES 123789D
4.35e6
38.13
JS 123467D
2.45e6
38.03
Abs. Int.
1.28e6
6.41e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.94e7
9.70e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 3.88e3
1234679D
1.28e7*
40.05
1234678D
1.48e7*
40.71
Abs. Int.
5.41e6
2.70e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 4.11e3
1234679D
1.23e7*
40.05
1234678D
1.42e7*
40.71
Abs. Int.
5.32e6
2.66e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 5.98e3
ES 1234678D
4.04e6*
40.70
Abs. Int.
1.47e6
7.37e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 6.85e3
ES 1234678D
3.92e6*
40.69
Abs. Int.
1.46e6
7.31e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.24e7
6.18e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
8.80e7*
43.28
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 4.17e3
0%
Abs. Int.
2.72e7
1.36e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
9.99e7*
43.28
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 5.11e3
0%
Abs. Int.
3.07e7
1.53e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
4.31e6*
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 7.73e3
0%
Abs. Int.
1.36e6
6.82e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
4.97e6*
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 4.93e3
0%
Abs. Int.
1.59e6
7.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.06e6
4.53e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: B5965_18711_DF_003 | Sample ID: 11215131-120121-S-SPS-NE-S-12 | Acq: 08-Dec-2021 02:12:18

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 17 | User: PSW Datafile: 211207R20



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_003.utp_res, saved 08-Dec-2021 14:49 (PSW) *Peak annotation: Areas, Centroids*

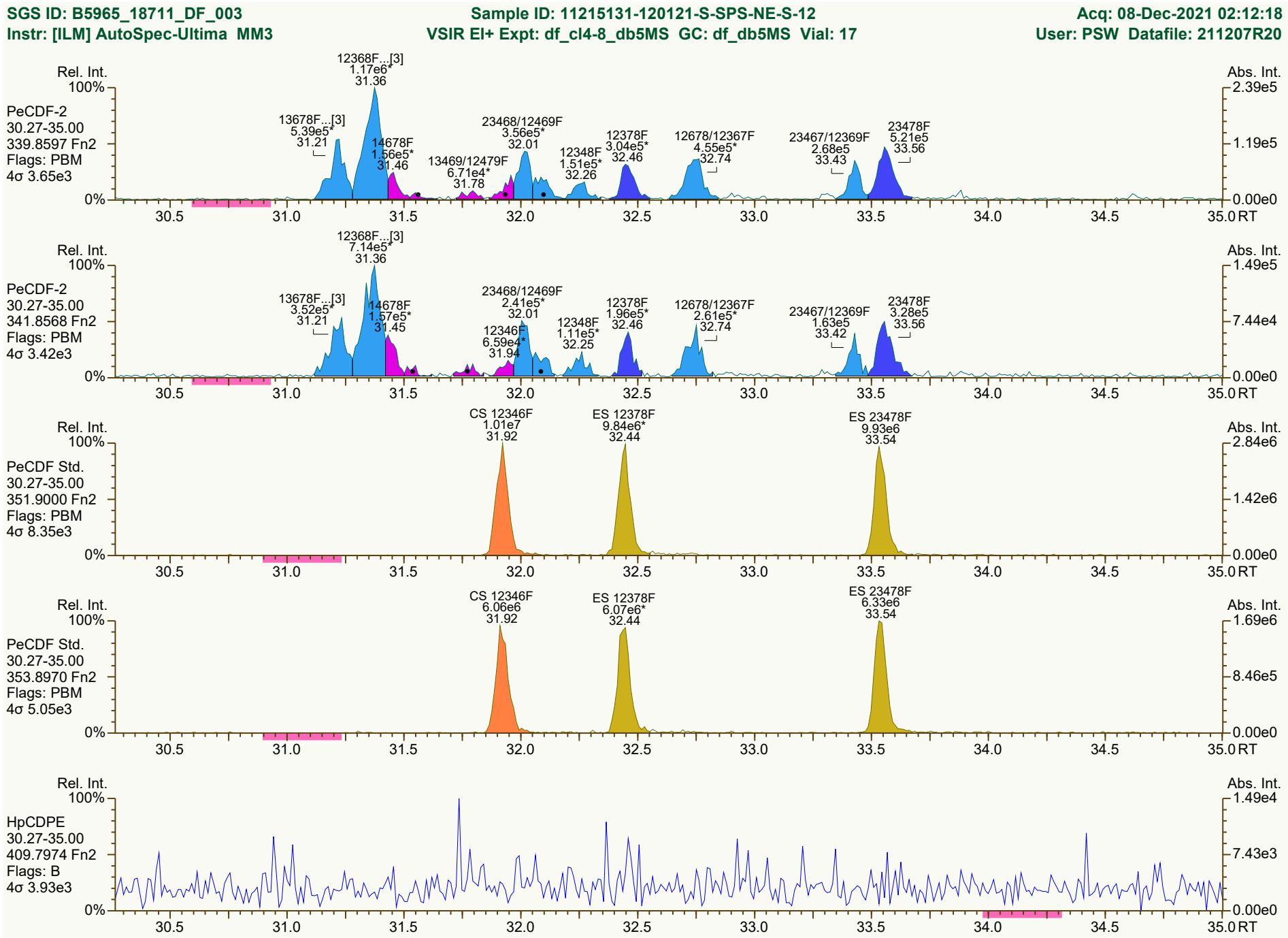
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3549, 9654, 6687 scc: 814-529 *PKD: 08-Dec-2021 09:03 Printed: 08-Dec-2021 14:56 Page 7 of 12*

SGS ID: B5965_18711_DF_003 | Sample ID: 11215131-120121-S-SPS-NE-S-12 | Acq: 08-Dec-2021 02:12:18
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 17 | User: PSW Datafile: 211207R20

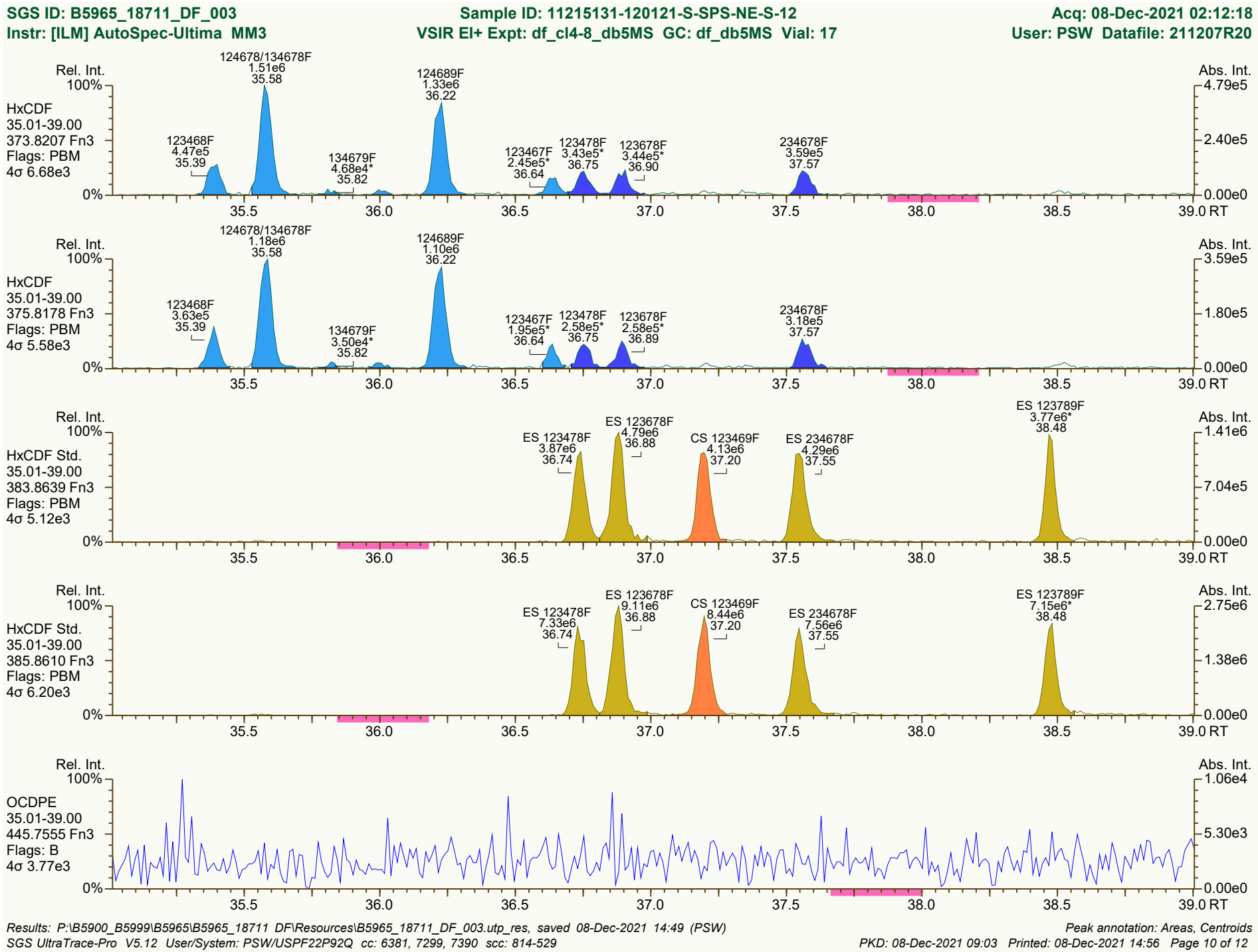


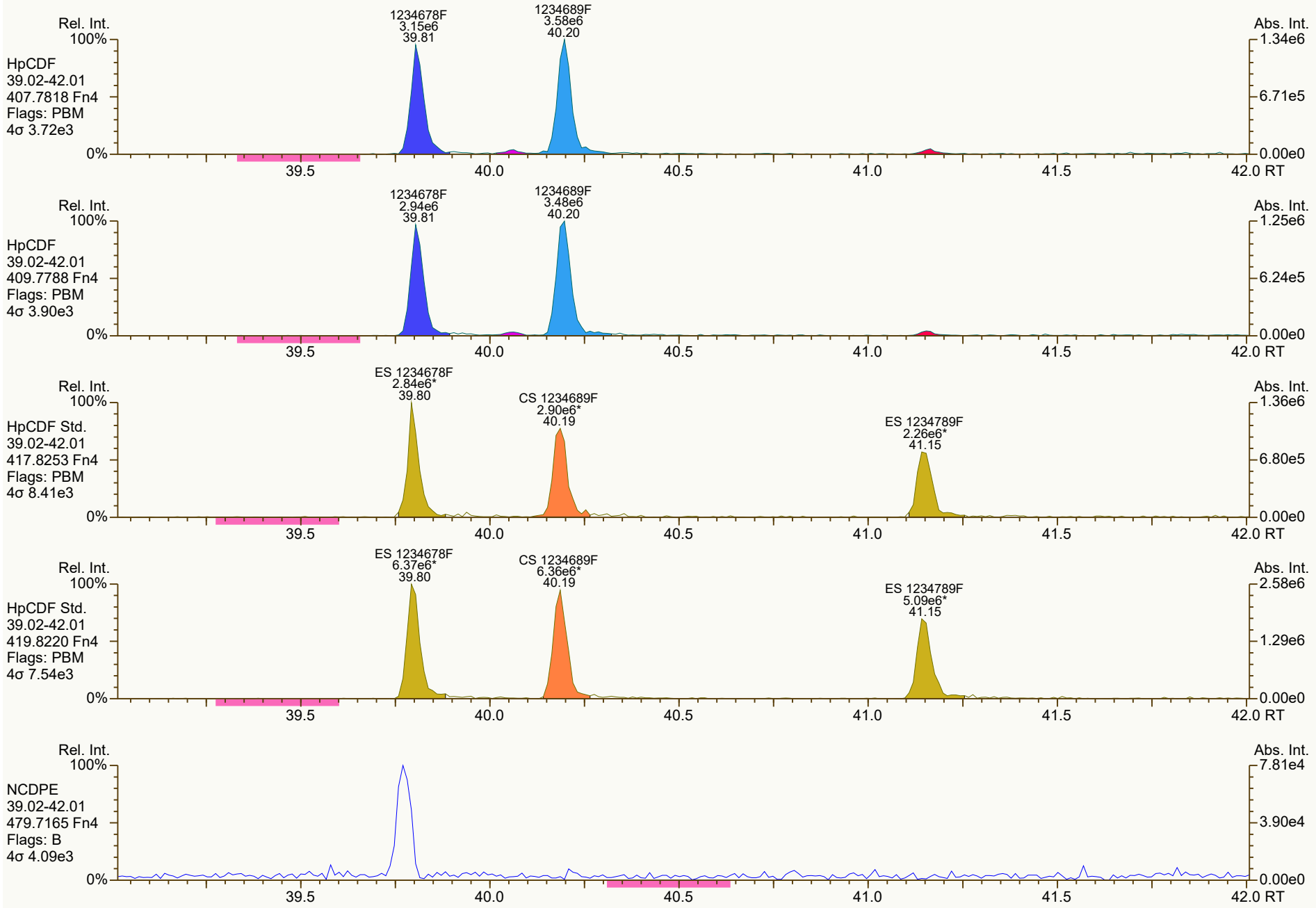
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_003.utp_res, saved 08-Dec-2021 14:49 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1039 scc: 814-529 *PKD: 08-Dec-2021 09:03 Printed: 08-Dec-2021 14:56 Page 8 of 12*

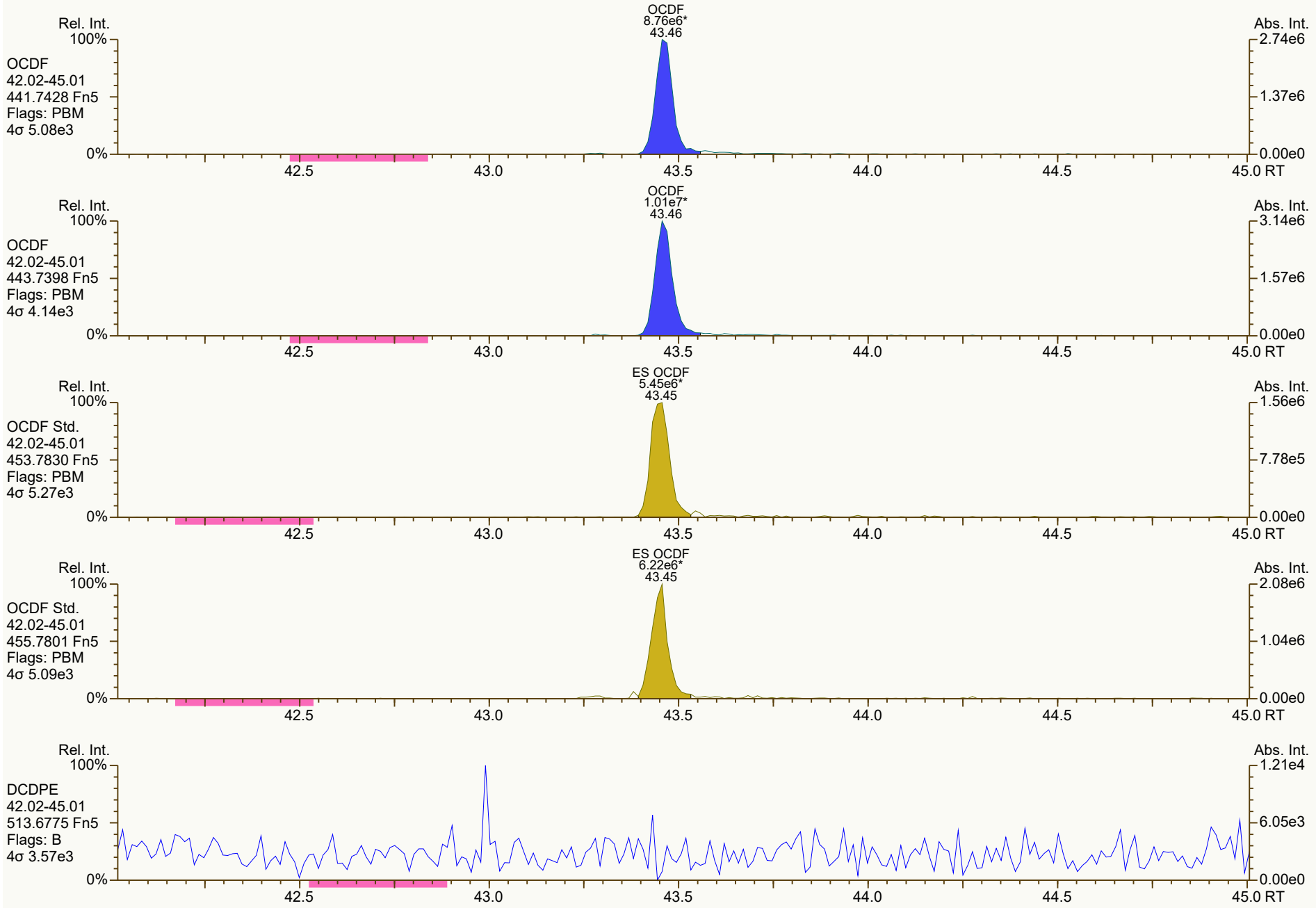
SGS ID: B5965_18711_DF_003 | Sample ID: 11215131-120121-S-SPS-NE-S-12 | Acq: 08-Dec-2021 02:12:18
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 17 | User: PSW Datafile: 211207R20



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_003.utp_res, saved 08-Dec-2021 14:49 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1577, 7664, 2635 scc: 814-529 | PKD: 08-Dec-2021 09:03 Printed: 08-Dec-2021 14:56 Page 9 of 12


SGS ID: B5965_18711_DF_003
Sample ID: 11215131-120121-S-SPS-NE-S-12
Acq: 08-Dec-2021 02:12:18
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 17
User: PSW Datafile: 211207R20
Rel. Int.
Abs. Int.
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 6.68e3
124678/134678F
1.51e6
35.58
124689F
1.33e6
36.22
123468F
4.47e5
35.39
134679F
4.68e4*
35.82
123467F
2.45e5*
36.64
123478F
3.43e5*
36.75
123678F
3.44e5*
36.90
234678F
3.59e5
37.57
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 5.58e3
124678/134678F
1.18e6
35.58
124689F
1.10e6
36.22
123468F
3.63e5
35.39
134679F
3.50e4*
35.82
123467F
1.95e5*
36.64
123478F
2.58e5*
36.75
123678F
2.58e5*
36.89
234678F
3.18e5
37.57
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PBM
4σ 5.12e3
ES 123478F
3.87e6
36.74
ES 123678F
4.79e6
36.88
CS 123469F
4.13e6
37.20
ES 234678F
4.29e6
37.55
ES 123789F
3.77e6*
38.48
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PBM
4σ 6.20e3
ES 123478F
7.33e6
36.74
ES 123678F
9.11e6
36.88
CS 123469F
8.44e6
37.20
ES 234678F
7.56e6
37.55
ES 123789F
7.15e6*
38.48
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.77e3
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_003.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6381, 7299, 7390 scc: 814-529
PKD: 08-Dec-2021 09:03 Printed: 08-Dec-2021 14:56 Page 10 of 12


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 3.72e3
1234678F
3.15e6
39.81
1234689F
3.58e6
40.20
Abs. Int.
1.34e6
6.71e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 3.90e3
1234678F
2.94e6
39.81
1234689F
3.48e6
40.20
Abs. Int.
1.25e6
6.24e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 8.41e3
ES 1234678F
2.84e6*
39.80
CS 1234689F
2.90e6*
40.19
ES 1234789F
2.26e6*
41.15
Abs. Int.
1.36e6
6.80e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 7.54e3
ES 1234678F
6.37e6*
39.80
CS 1234689F
6.36e6*
40.19
ES 1234789F
5.09e6*
41.15
Abs. Int.
2.58e6
1.29e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.09e3
Abs. Int.
7.81e4
3.90e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDF
8.76e6*
43.46
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 5.08e3
0%
Abs. Int.
2.74e6
1.37e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.01e7*
43.46
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 4.14e3
0%
Abs. Int.
3.14e6
1.57e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
5.45e6*
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 5.27e3
0%
Abs. Int.
1.56e6
7.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
6.22e6*
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 5.09e3
0%
Abs. Int.
2.08e6
1.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.57e3
0%
Abs. Int.
1.21e4
6.05e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5965_18711_DF_004 **Acq'd:** 08 Dec 2021 02:59 PSW **Wt/Vol:** 13.66 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-S-14 **UTP:** 08-Dec-2021 14:49:04 PSW **J-level:** 0.366 pg/g **Split:** 1 **Checkcode:** 909-917-KRF

Datafile: 211207R21 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.60		1.0008	1.0007	-0.2	7.20E+05	0.82	Y	1.34	5.46	8301.828	0.627
12378-PeCDD	NotFnd		1.0004	-		-	-	-	1.06	-	6509.732	0.619
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.06	-	8415.589	0.792
123678-HxCDD	37.85		1.0034	1.0034	0	2.04E+05	1.30	Y	1.08	2.44	8415.589	0.922
123789-HxCDD	38.14	EMPC	1.0111	1.0110	-0.2	2.08E+05	1.03	N	1.02	2.37	8415.589	0.857
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	9.54E+06	1.07	Y	0.97	152	8098.606	0.871
OCDD	43.27		1.0003	1.0003	0	1.94E+08	0.90	Y	1.07	5,020	11294.246	2.4
2378-TCDF	27.76		1.0007	1.0007	0	3.01E+06	0.80	Y	0.96	22.1	7996.519	0.638
12378-PeCDF	32.45	J EMPC	1.0006	1.0005	-0.2	2.21E+05	1.16	N	0.95	1.79	7752.335	0.615
23478-PeCDF	33.55	EMPC	1.0005	1.0006	+0.2	2.36E+05	1.82	N	0.94	1.92	7752.335	0.548
123478-HxCDF	36.74		1.0004	1.0004	0	4.02E+05	1.33	Y	1.23	3.42	7231.466	0.505
123678-HxCDF	36.88	J	1.0005	1.0004	-0.2	1.51E+05	1.10	Y	1.13	1.18	7231.466	0.498
234678-HxCDF	37.56	J EMPC	1.0005	1.0005	0	8.65E+04	1.45	N	1.15	0.783	7231.466	0.586
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	7231.466	0.611
1234678-HpCDF	39.80	EMPC	1.0003	1.0002	-0.2	7.42E+05	1.22	N	1.36	7.39	7307.11	0.427
1234789-HpCDF	41.15	J	1.0004	1.0003	-0.2	7.72E+04	1.12	Y	1.30	0.979	7307.11	0.593
OCDF	43.45		1.0002	1.0002	0	1.33E+06	0.91	Y	1.03	29.4	8686.009	1.52

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58		1.0233	1.0233	0	1.44E+07	0.80	Y	1.03	70.2
ES 12378-PeCDD	33.86		1.2118	1.2121	+0.6	1.29E+07	1.66	Y	1.03	63.1
ES 123478-HxCDD	37.72		0.9921	0.9922	+0.2	1.11E+07	1.32	Y	0.99	77.6
ES 123678-HxCDD	37.83		0.9951	0.9952	+0.2	1.13E+07	1.17	Y	0.97	80.8
ES 123789-HxCDD	38.12		1.0027	1.0026	-0.2	1.26E+07	1.35	Y	1.12	78.2
ES 1234678-HpCDD	40.68		1.0702	1.0702	0	9.42E+06	1.15	Y	0.99	66.1
ES OCDD	43.25		1.1377	1.1377	0	1.06E+07	0.81	Y	0.78	47.4
ES 2378-TCDF	27.74		1.0505	1.0507	+0.3	2.07E+07	0.80	Y	1.08	62.3
ES 12378-PeCDF	32.43		1.2278	1.2283	+1.0	1.91E+07	1.72	Y	0.93	66.6
ES 23478-PeCDF	33.53		1.2691	1.2699	+1.6	1.92E+07	1.66	Y	0.92	67.7
ES 123478-HxCDF	36.73		0.9660	0.9660	0	1.40E+07	0.53	Y	1.14	84.9
ES 123678-HxCDF	36.87		0.9698	0.9697	-0.2	1.65E+07	0.54	Y	1.30	88.4
ES 234678-HxCDF	37.54		0.9875	0.9874	-0.2	1.41E+07	0.53	Y	1.20	81.3
ES 123789-HxCDF	38.47		1.0121	1.0118	-0.7	1.25E+07	0.51	Y	1.14	76.2
ES 1234678-HpCDF	39.79		1.0468	1.0466	-0.5	1.08E+07	0.45	Y	0.95	79.2
ES 1234789-HpCDF	41.14		1.0822	1.0821	-0.2	8.88E+06	0.43	Y	0.85	72.9
ES OCDF	43.44		1.1426	1.1427	+0.3	1.29E+07	0.90	Y	0.93	48.4

Lab ID: B5965_18711_DF_004 **Acq'd:** 08 Dec 2021 02:59 PSW **Wt/Vol:** 13.66 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-S-14 **UTP:** 08-Dec-2021 14:49:04 PSW **J-level:** 0.366 pg/g **Split:** 1 **Checkcode:** 909-917-KRF

Datafile: 211207R21 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.93		-	-	-	1.98E+07	0.84	Y	-	-
JS 1234-TCDF	26.40		-	-	-	3.07E+07	0.81	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	7.19E+06	1.34	Y	-	-
CS 37Cl-2378-TCDD	28.61		1.0241	1.0241	0	7.15E+06	n/a	-	1.31	69
CS 12347-PeCDD	33.36		1.1940	1.1944	+0.8	1.31E+07	1.55	Y	0.89	74.4
CS 12346-PeCDF	31.91		1.2080	1.2086	+1.1	2.02E+07	1.62	Y	0.87	75.7
CS 123469-HxCDF	37.19		0.9781	0.9781	0	1.51E+07	0.54	Y	1.09	96
CS 1234689-HpCDF	40.18		1.0569	1.0568	-0.2	1.18E+07	0.45	Y	0.86	94.7
~~SS 37Cl-2378-TCDD~~	~~28.61~~		~~1.0241~~	~~1.0241~~	~~0~~	~~7.15E+06~~	~~n/a~~		~~1.26~~	~~98.7~~
~~SS 12347-PeCDD~~	~~33.36~~		~~1.1940~~	~~1.1944~~	~~+0.8~~	~~1.31E+07~~	~~1.55~~	~~Y~~	~~0.86~~	~~110~~
~~SS 12346-PeCDF~~	~~31.91~~		~~1.2080~~	~~1.2086~~	~~+1.1~~	~~2.02E+07~~	~~1.62~~	~~Y~~	~~0.93~~	~~114~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.51E+07~~	~~0.54~~	~~Y~~	~~0.84~~	~~109~~
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.18E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~119~~

Totals	Conc	EMPC
Total TCDD	8.19	9.4
Total PeCDD	0	0
Total HxCDD	28.6	31
Total HpCDD	321	321
Total Tetra-Octa Dioxins	5380	5380
Total TCDF	41.9	54.5
Total PeCDF	10.4	15.4
Total HxCDF	13.7	14.5
Total HpCDF	13.4	20.8
Total Tetra-Octa Furans	109	135
Total Tetra-Octa Dioxins & Furans	5480	5510

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.81	0.82
Response	7.25E+05	7.20E+05

Lab ID: B5965_18711_DF_004 **Acq'd: 08 Dec 2021 02:59 PSW** **Wt/Vol: 13.66 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-SPS-NE-S-14 **UTP: 08-Dec-2021 14:49:04 PSW** **J-level: 0.366 pg/g** **Split: 1** **Checkcode: 909-917-KRF**

Datafile: 211207R21 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8755	-0.5	2.86E+05	0.82	Y	1.34	2.17	8301.828	0.627
1379-TCDD	25.37	EMPC	0.8878	0.8875	-0.5	1.60E+05	0.90	N	1.34	1.21	8301.828	0.627
1369-TCDD	NotFnd		0.9025						1.34		8301.828	0.627
1469-TCDD	26.54		0.9291	0.9285	-1.0	7.44E+04	0.77	Y	1.34	0.564	8301.828	0.627
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8301.828	0.627
1378-TCDD	NotFnd		0.9440						1.34		8301.828	0.627
1268-TCDD	NotFnd		0.9505						1.34		8301.828	0.627
1478-TCDD	NotFnd		0.9591						1.34		8301.828	0.627
1279-TCDD	NotFnd		0.9650						1.34		8301.828	0.627
1234/1269-TCDD	NotFnd		0.9771						1.34		8301.828	0.627
1236-TCDD	NotFnd		0.9821						1.34		8301.828	0.627
1237/1238-TCDD	NotFnd		0.9907						1.34		8301.828	0.627
1239-TCDD	NotFnd		0.9953						1.34		8301.828	0.627
2378-TCDD	**28.60**		**1.0008**	1.0007	**-0.2**	7.20E+05	0.82	Y	**1.34**	**5.46**	**8301.828**	**0.627**
1278-TCDD	NotFnd		1.0118						1.34		8301.828	0.627
1267-TCDD	NotFnd		1.0162						1.34		8301.828	0.627
1289-TCDD	NotFnd		1.0340						1.34		8301.828	0.627
12479/12468-PeCDD	NotFnd		0.9274						1.06		6509.732	0.619
12469-PeCDD	NotFnd		0.9430						1.06		6509.732	0.619
12368-PeCDD	NotFnd		0.9591						1.06		6509.732	0.619
12478-PeCDD	NotFnd		0.9645						1.06		6509.732	0.619
12379-PeCDD	NotFnd		0.9676						1.06		6509.732	0.619
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		6509.732	0.619
12346/12347-PeCDD	NotFnd		0.9860						1.06		6509.732	0.619
12378-PeCDD	NotFnd		**1.0004**						**1.06**		**6509.732**	**0.619**
12367-PeCDD	NotFnd		1.0034						1.06		6509.732	0.619
12389-PeCDD	NotFnd		1.0133						1.06		6509.732	0.619
124679/124689-HxCDD	36.01		0.9546	0.9547	+0.2	1.12E+06	1.27	Y	1.05	13.3	8415.589	0.857
123468-HxCDD	36.65	J	0.9718	0.9717	-0.2	1.22E+05	1.32	Y	1.05	1.45	8415.589	0.857
123679/123689-HxCDD	36.95		0.9795	0.9795	0	9.57E+05	1.37	Y	1.05	11.4	8415.589	0.857
123469-HxCDD	NotFnd		0.9832						1.05		8415.589	0.857
123478-HxCDD	NotFnd		**1.0004**						1.06		**8415.589**	**0.792**
123678-HxCDD	37.85		**1.0034**	**1.0034**	**0**	**2.04E+05**	**1.30**	**Y**	1.08	**2.44**	**8415.589**	**0.922**
123467-HxCDD	NotFnd		1.0083						1.05		8415.589	0.857
123789-HxCDD	38.14	EMPC	**1.0111**	**1.0110**	**-0.2**	**2.08E+05**	**1.03**	**N**	1.02	**2.37**	**8415.589**	**0.857**

Lab ID: B5965_18711_DF_004 | **Acq'd: 08 Dec 2021 02:59 PSW** | **Wt/Vol: 13.66 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-SPS-NE-S-14 | **UTP: 08-Dec-2021 14:49:04 PSW** | **J-level: 0.366 pg/g** | **Split: 1** | **Checkcode: 909-917-KRF**

Datafile: 211207R21 | **Report: 08 Dec 2021 14:50 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9843	0.9842	-0.2	1.06E+07	1.09	Y	0.97	169	8098.606	0.871
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**9.54E+06**	**1.07**	**Y**	**0.97**	**152**	**8098.606**	**0.871**
OCDD	**43.27**		**1.0003**	**1.0003**	**0**	**1.94E+08**	**0.90**	**Y**	**1.07**	**5,020**	**11294.246**	**2.4**
OCDD-a	43.26		1.0001	1.0002	+0.3	1.14E+07	2.29	Y	0.07	4,780	12038.938	41.4
1368-TCDF	NotFnd		0.8284						0.96		7996.519	0.638
1468-TCDF	NotFnd		0.8487						0.96		7996.519	0.638
2468-TCDF	24.14	EMPC	0.8709	0.8701	-1.2	1.43E+05	1.02	N	0.96	1.05	7996.519	0.638
1346/1246-TCDF	NotFnd		0.8828						0.96		7996.519	0.638
1347/1378/1247-TCDF	24.67		0.8886	0.8893	+1.0	2.60E+05	0.85	Y	0.96	1.92	7996.519	0.638
1348-TCDF	NotFnd		0.8980						0.96		7996.519	0.638
1248/1367/1379-TCDF	25.00	EMPC	0.9027	0.9013	-2.1	3.23E+05	1.06	N	0.96	2.38	7996.519	0.638
1268-TCDF	25.40	EMPC	0.9159	0.9157	-0.3	1.41E+05	0.89	N	0.96	1.03	7996.519	0.638
1467-TCDF	25.54	EMPC	0.9206	0.9206	0	8.60E+04	0.60	N	0.96	0.633	7996.519	0.638
1478-TCDF	25.70		0.9266	0.9265	-0.2	3.28E+05	0.76	Y	0.96	2.42	7996.519	0.638
1369/1237-TCDF	26.08		0.9396	0.9401	+0.8	6.86E+04	0.74	Y	0.96	0.504	7996.519	0.638
2467-TCDF	26.19	EMPC	0.9440	0.9441	+0.2	7.96E+04	0.61	N	0.96	0.586	7996.519	0.638
2368-TCDF	26.34	EMPC	0.9496	0.9496	0	2.54E+05	0.59	N	0.96	1.87	7996.519	0.638
1238/1234/1678/1469/1236-TCDF	26.43	EMPC	0.9530	0.9529	-0.2	2.82E+05	0.65	N	0.96	2.07	7996.519	0.638
1278-TCDF	26.88		0.9689	0.9689	0	1.31E+06	0.79	Y	0.96	9.63	7996.519	0.638
1349-TCDF	NotFnd		0.9732						0.96		7996.519	0.638
1267-TCDF	27.14		0.9786	0.9785	-0.2	1.55E+05	0.81	Y	0.96	1.14	7996.519	0.638
2346/1249-TCDF	NotFnd		0.9849						0.96		7996.519	0.638
2347/1279-TCDF	27.54		0.9927	0.9926	-0.2	8.09E+04	0.81	Y	0.96	0.595	7996.519	0.638
2348-TCDF	27.63	EMPC	0.9967	0.9962	-0.8	2.05E+05	0.65	N	0.96	1.51	7996.519	0.638
2378-TCDF	**27.76**		**1.0007**	**1.0007**	**0**	**3.01E+06**	**0.80**	**Y**	**0.96**	**22.1**	**7996.519**	**0.638**
2367/3467-TCDF	28.11		1.0136	1.0133	-0.5	4.91E+05	0.80	Y	0.96	3.61	7996.519	0.638
1269-TCDF	NotFnd		1.0223						0.96		7996.519	0.638
1239-TCDF	NotFnd		1.0313						0.96		7996.519	0.638
1289-TCDF	29.73	EMPC	1.0711	1.0715	+0.7	2.01E+05	1.03	N	0.96	1.48	7996.519	0.638
13468/12468-PeCDF	29.67		0.9147	0.9150	+0.5	4.70E+05	1.64	Y	0.94	3.82	9289.972	0.697
13678/13467/12467-PeCDF	31.20	J	0.9616	0.9621	+0.9	1.36E+05	1.36	Y	0.94	1.1	7752.335	0.581
12368/13478/12478-PeCDF	31.35		0.9663	0.9667	+0.8	5.29E+05	1.42	Y	0.94	4.3	7752.335	0.581
14678-PeCDF	NotFnd		0.9695						0.94		7752.335	0.581
13479-PeCDF	NotFnd		0.9727						0.94		7752.335	0.581
13469/12479-PeCDF	NotFnd		0.9799						0.94		7752.335	0.581
12346-PeCDF	NotFnd		0.9839						0.94		7752.335	0.581

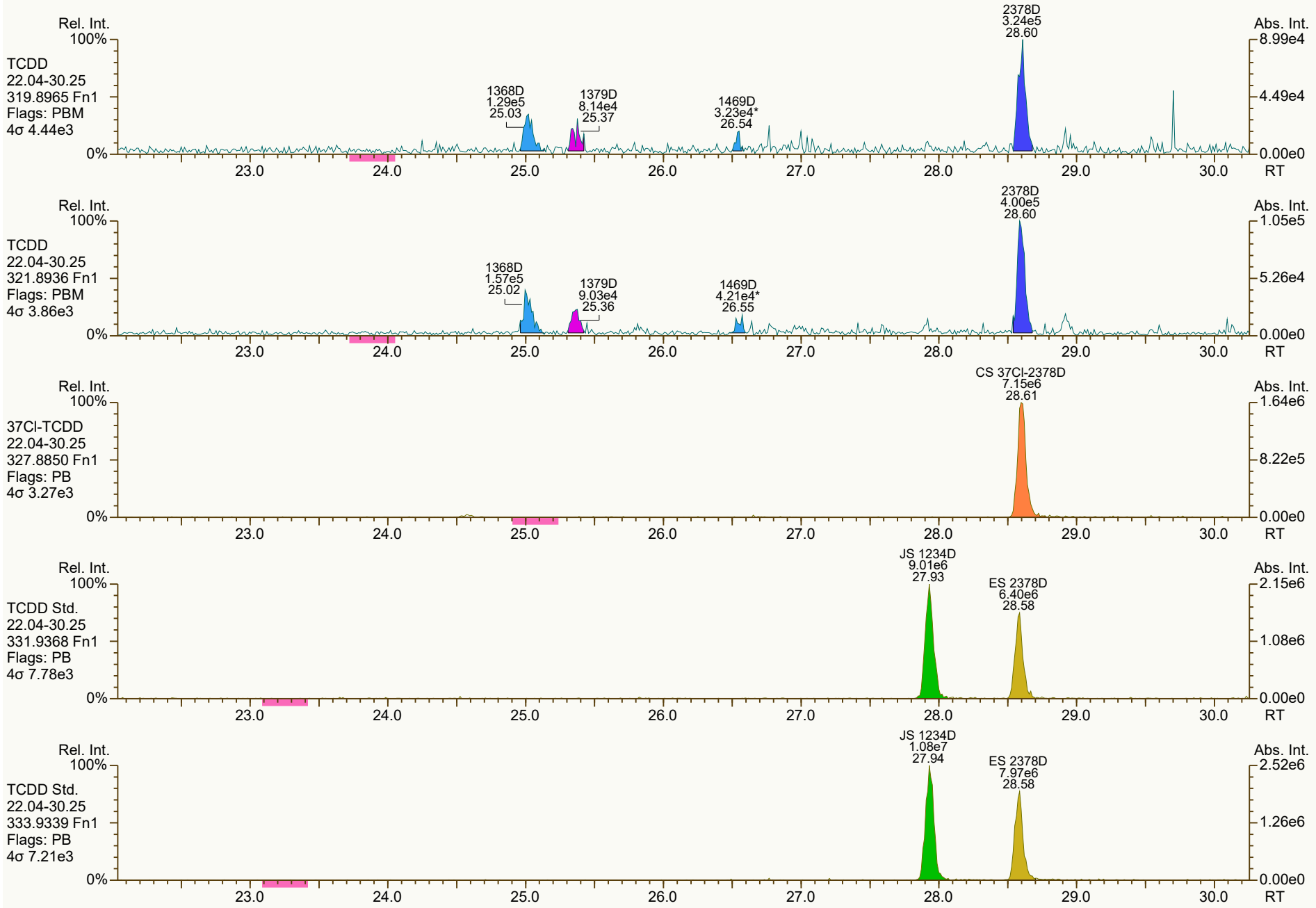
Lab ID: B5965_18711_DF_004 **Acq'd: 08 Dec 2021 02:59 PSW** **Wt/Vol: 13.66 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-SPS-NE-S-14 **UTP: 08-Dec-2021 14:49:04 PSW** **J-level: 0.366 pg/g** **Split: 1** **Checkcode: 909-917-KRF**

Datafile: 211207R21 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

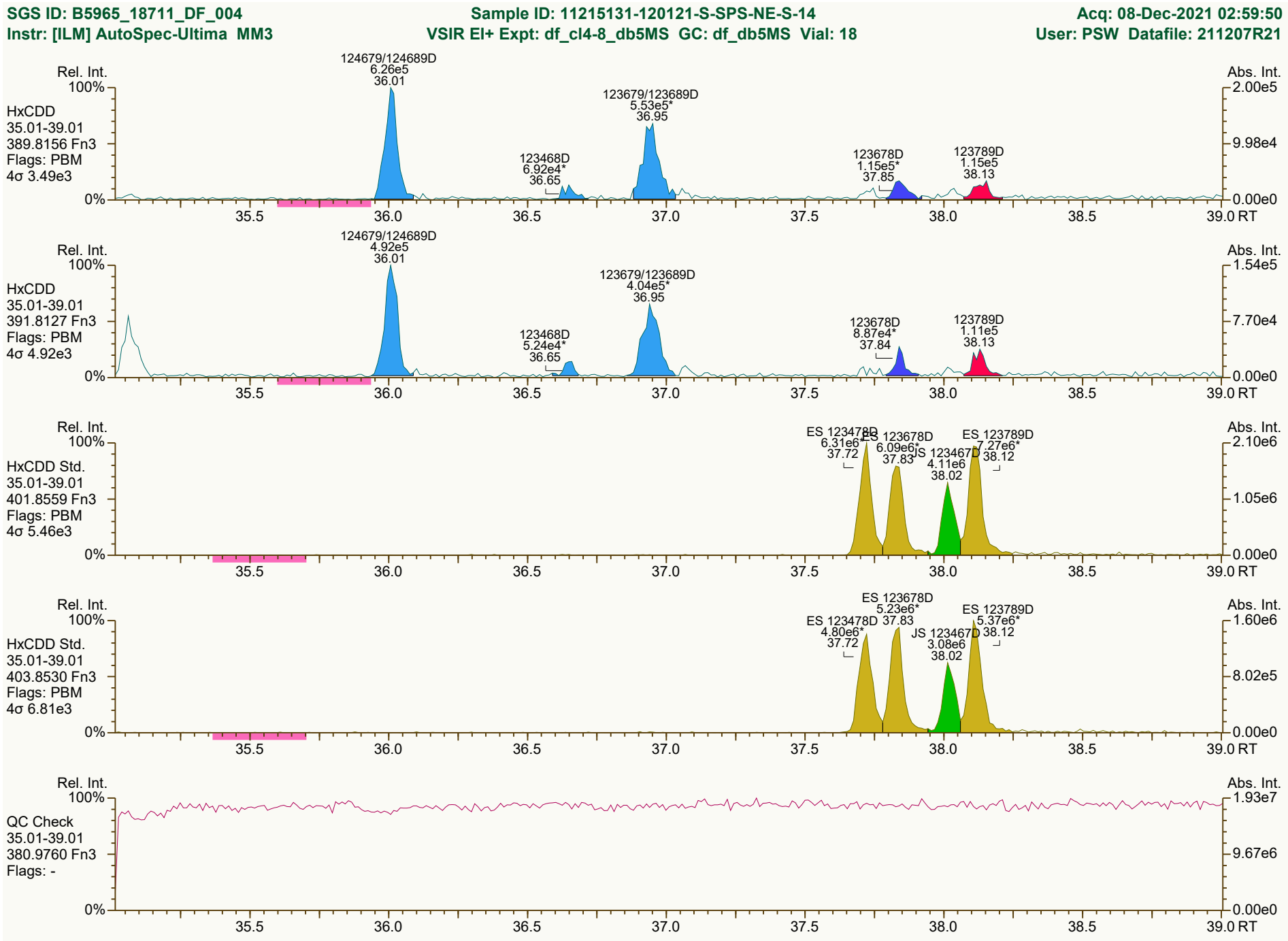
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.01	J	0.9864	0.9870	+1.2	1.47E+05	1.74	Y	0.94	1.2	7752.335	0.581
12347-PeCDF	NotFnd		0.9892						0.94		7752.335	0.581
12348-PeCDF	NotFnd		0.9940						0.94		7752.335	0.581
12378-PeCDF	**32.45**	J EMPC	**1.0006**	**1.0005**	**-0.2**	**2.21E+05**	**1.16**	**N**	**0.95**	**1.79**	**7752.335**	**0.615**
12678/12367-PeCDF	32.73	J EMPC	1.0088	1.0092	+0.8	1.59E+05	1.17	N	0.94	1.29	7752.335	0.581
12379-PeCDF	NotFnd		1.0142						0.94		7752.335	0.581
12679-PeCDF	NotFnd		0.9931						0.94		7752.335	0.581
23467/12369-PeCDF	NotFnd		0.9966						0.94		7752.335	0.581
23478-PeCDF	**33.55**	EMPC	**1.0005**	**1.0006**	**+0.2**	**2.36E+05**	**1.82**	**N**	**0.94**	**1.92**	**7752.335**	**0.548**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7752.335	0.581
12349-PeCDF	NotFnd		1.0100						0.94		7752.335	0.581
12389-PeCDF	NotFnd		1.0323						0.94		7752.335	0.581
123468-HxCDF	35.37	J	0.9631	0.9631	0	1.33E+05	1.24	Y	1.16	1.18	7231.466	0.545
124678/134678-HxCDF	35.57		0.9686	0.9685	-0.2	5.17E+05	1.25	Y	1.16	4.57	7231.466	0.545
134679-HxCDF	NotFnd		0.9747						1.16		7231.466	0.545
124679-HxCDF	NotFnd		0.9800						1.16		7231.466	0.545
124689-HxCDF	36.21		0.9859	0.9860	+0.2	3.85E+05	1.14	Y	1.16	3.4	7231.466	0.545
123467-HxCDF	NotFnd		0.9972						1.16		7231.466	0.545
123478-HxCDF	**36.74**		**1.0004**	**1.0004**	**0**	**4.02E+05**	**1.33**	**Y**	**1.23**	**3.42**	**7231.466**	**0.505**
123678-HxCDF	**36.88**	J	**1.0005**	**1.0004**	**-0.2**	**1.51E+05**	**1.10**	**Y**	**1.13**	**1.18**	**7231.466**	**0.498**
123479-HxCDF	NotFnd		1.0048						1.16		7231.466	0.545
123469-HxCDF	NotFnd		1.0089						1.16		7231.466	0.545
123679-HxCDF	NotFnd		0.9943						1.16		7231.466	0.545
234678-HxCDF	**37.56**	J EMPC	**1.0005**	**1.0005**	**0**	**8.65E+04**	**1.45**	**N**	**1.15**	**0.783**	**7231.466**	**0.586**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		7231.466	0.545
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**7231.466**	**0.611**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		7231.466	0.545
1234678-HpCDF	**39.80**	**EMPC**	**1.0003**	**1.0002**	**-0.2**	**7.42E+05**	**1.22**	**N**	**1.36**	**7.39**	**7307.11**	**0.427**
1234679-HpCDF	NotFnd		1.0065						1.33		7307.11	0.501
1234689-HpCDF	40.19		1.0097	1.0100	+0.7	1.11E+06	1.05	Y	1.33	12.4	7307.11	0.501
1234789-HpCDF	**41.15**	**J**	**1.0004**	**1.0003**	**-0.2**	**7.72E+04**	**1.12**	**Y**	**1.30**	**0.979**	**7307.11**	**0.593**
OCDF	**43.45**		**1.0002**	**1.0002**	**0**	**1.33E+06**	**0.91**	**Y**	**1.03**	**29.4**	**8686.009**	**1.52**
OCDF-a	43.45	**EMPC**	1.0001	1.0002	+0.3	2.70E+04	0.36	N	0.06	10.3	11320.615	34.2


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.10e6
2.05e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.69e6
1.84e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.93e7
9.67e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.24e7
6.19e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.77e6
4.38e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 4.44e3
0%
1368D
1.29e5
25.03
1379D
8.14e4
25.37
1469D
3.23e4*
26.54
2378D
3.24e5
28.60
Abs. Int.
8.99e4
4.49e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 3.86e3
0%
1368D
1.57e5
25.02
1379D
9.03e4
25.36
1469D
4.21e4*
26.55
2378D
4.00e5
28.60
Abs. Int.
1.05e5
5.26e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.27e3
0%
CS 37Cl-2378D
7.15e6
28.61
Abs. Int.
1.64e6
8.22e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 7.78e3
0%
JS 1234D
9.01e6
27.93
ES 2378D
6.40e6
28.58
Abs. Int.
2.15e6
1.08e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 7.21e3
0%
JS 1234D
1.08e7
27.94
ES 2378D
7.97e6
28.58
Abs. Int.
2.52e6
1.26e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

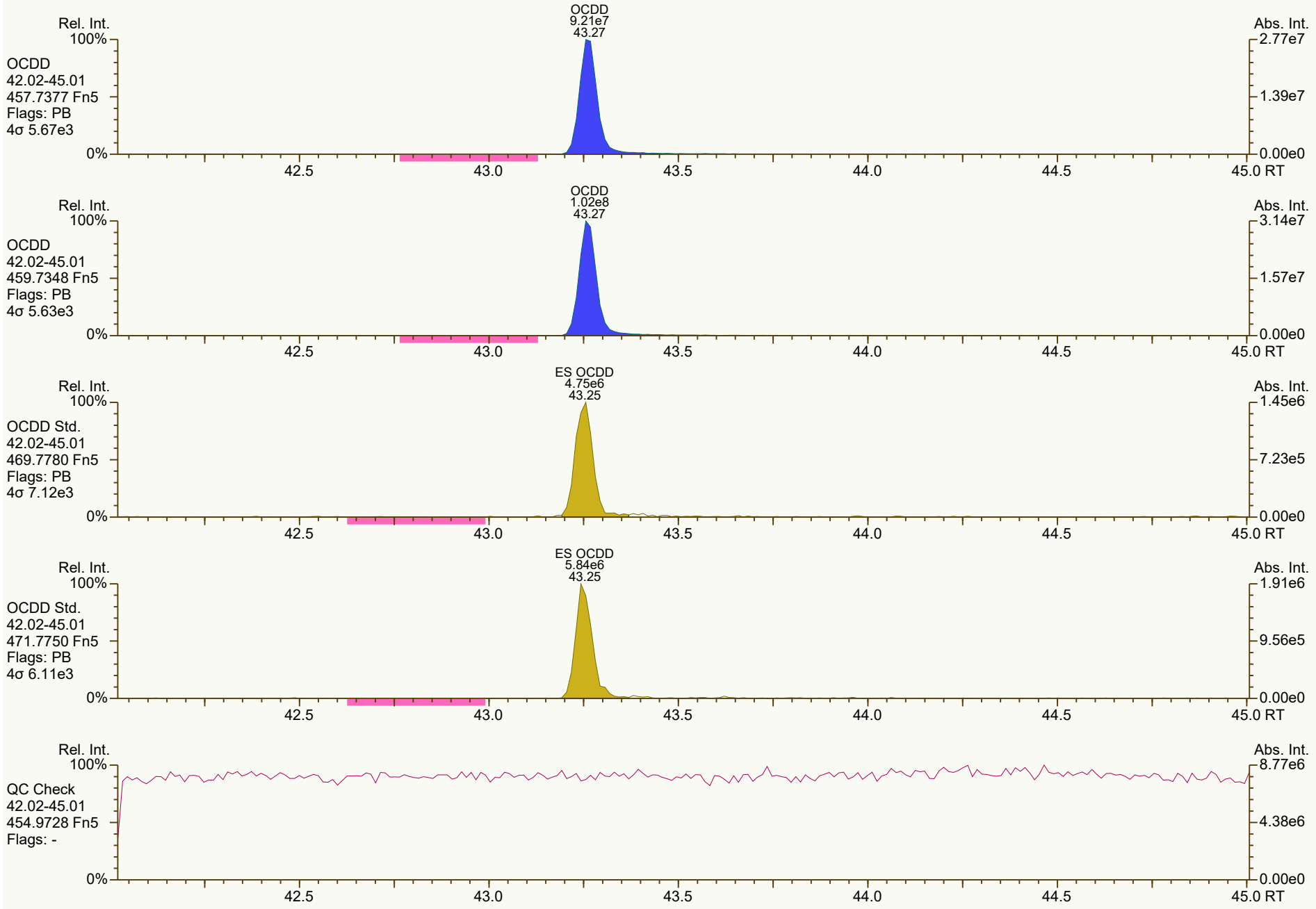

Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 3.87e3
0%
Abs. Int.
2.64e4
1.32e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: B
4σ 2.64e3
0%
Abs. Int.
2.09e4
1.04e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 5.79e3
0%
CS 12347D
7.99e6
33.36
ES 12378D
8.06e6
33.86
Abs. Int.
2.27e6
1.13e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 6.35e3
0%
CS 12347D
5.15e6
33.36
ES 12378D
4.86e6
33.86
Abs. Int.
1.39e6
6.94e5
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.69e6
1.84e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT

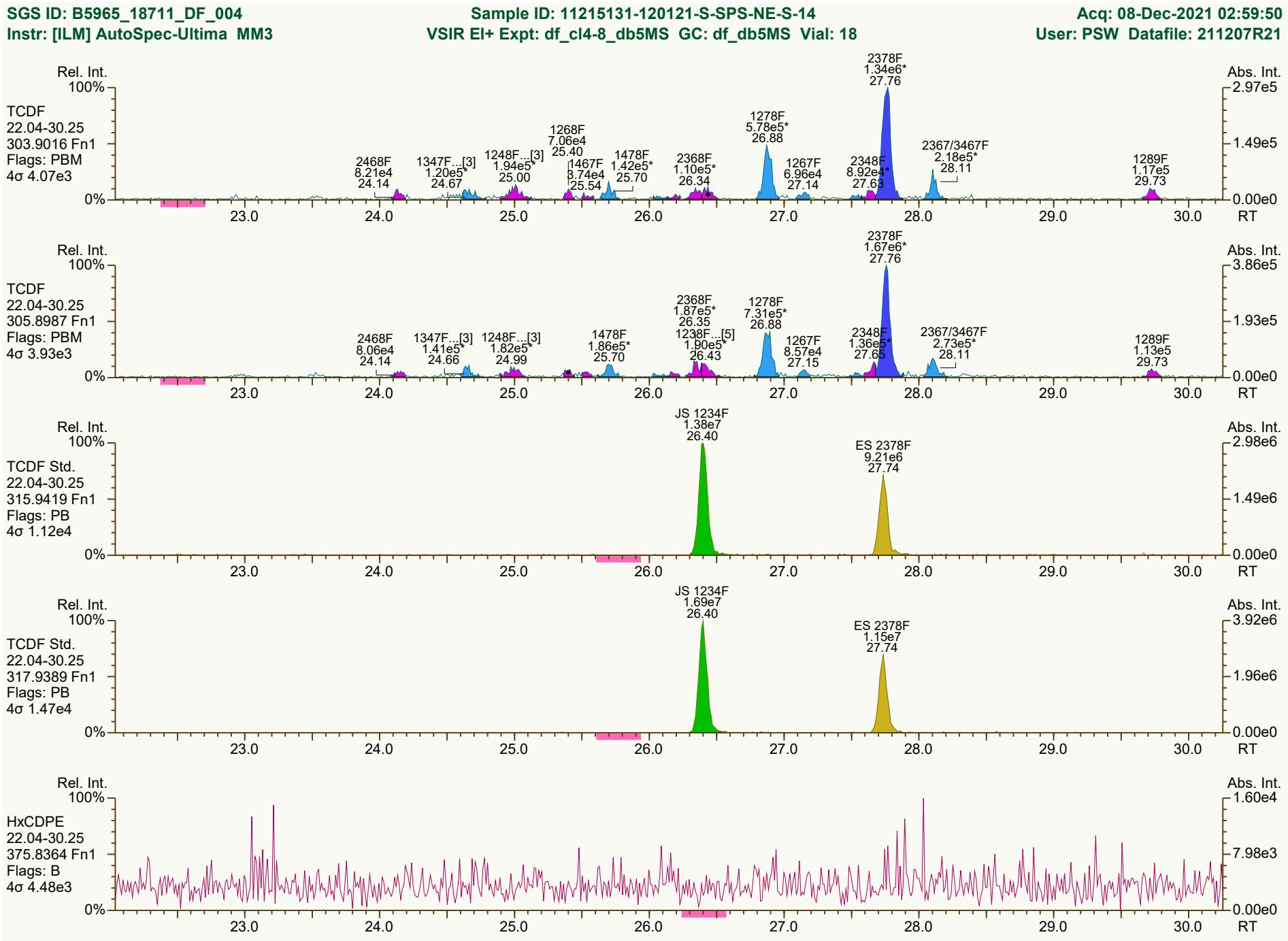
SGS ID: B5965_18711_DF_004 | Sample ID: 11215131-120121-S-SPS-NE-S-14 | Acq: 08-Dec-2021 02:59:50
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18 | User: PSW Datafile: 211207R21



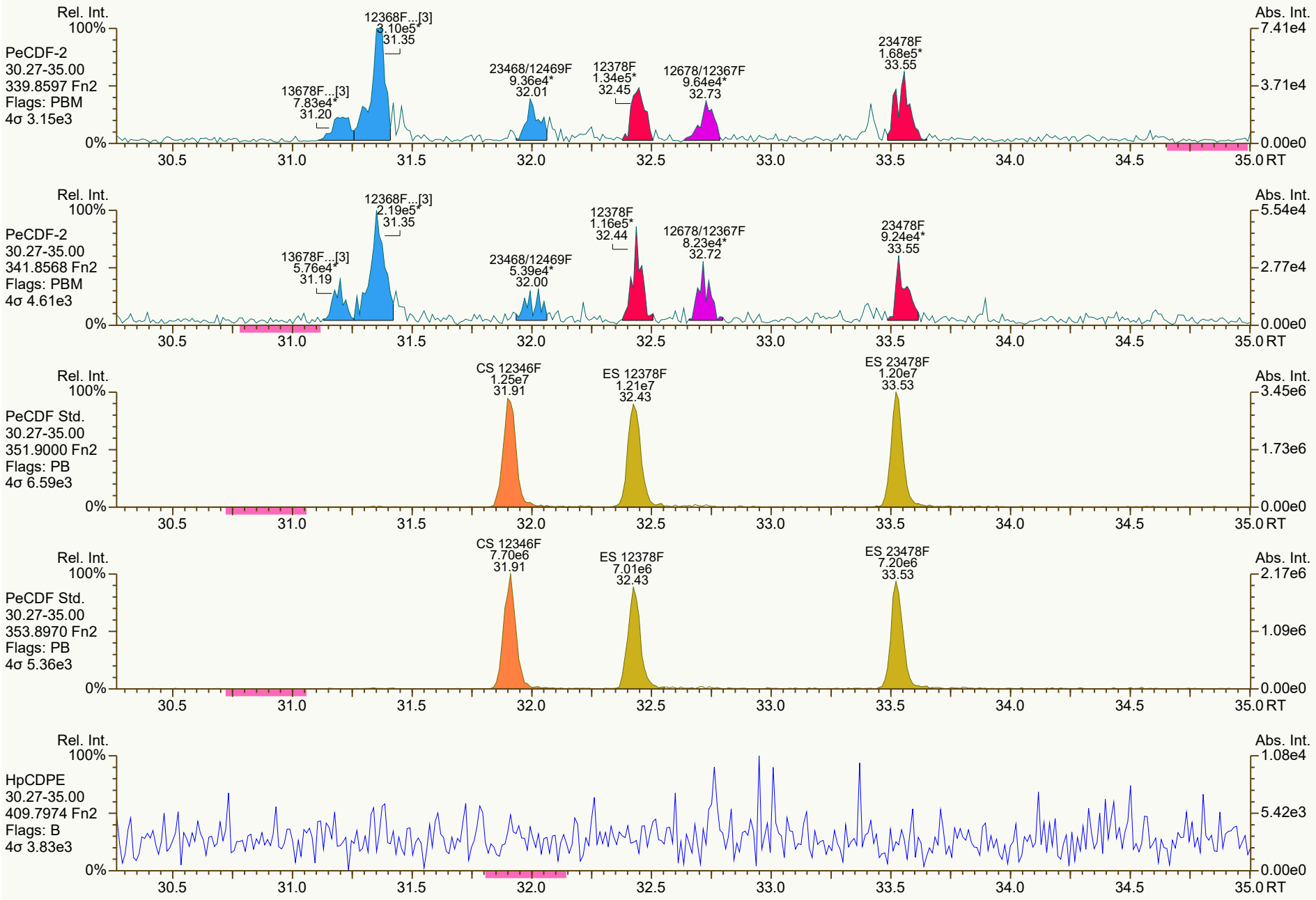
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_004.utp_res, saved 08-Dec-2021 14:49 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4734, 5762 scc: 909-917 | PKD: 08-Dec-2021 09:10 Printed: 08-Dec-2021 14:56 Page 4 of 12

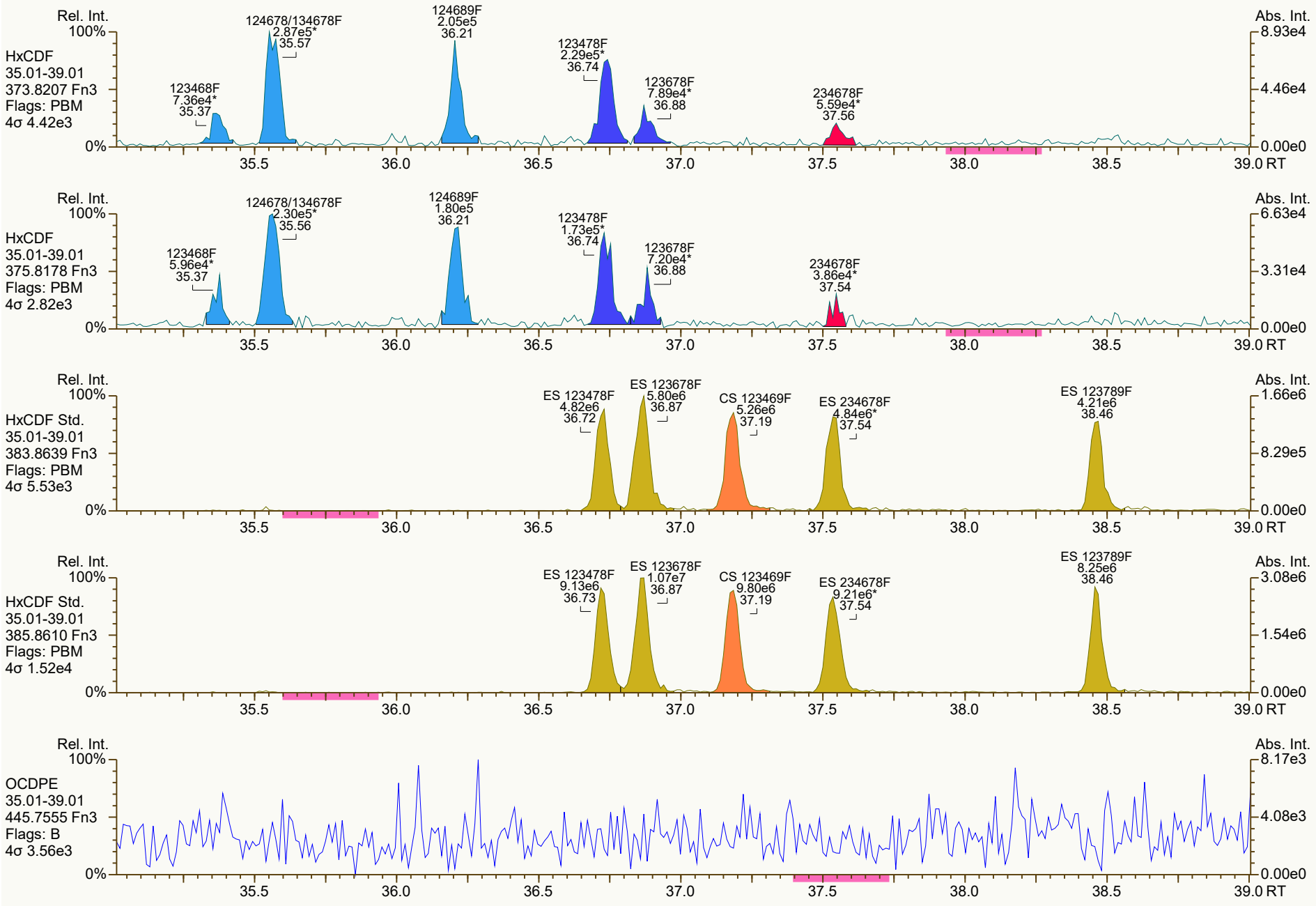

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 3.60e3
1234679D
5.52e6*
40.04
1234678D
4.93e6*
40.70
Abs. Int.
2.02e6
1.01e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 4.50e3
1234679D
5.06e6*
40.04
1234678D
4.62e6*
40.70
Abs. Int.
1.87e6
9.37e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 5.83e3
ES 1234678D
5.03e6
40.68
Abs. Int.
1.87e6
9.34e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.75e3
ES 1234678D
4.39e6
40.69
Abs. Int.
1.72e6
8.58e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.24e7
6.19e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

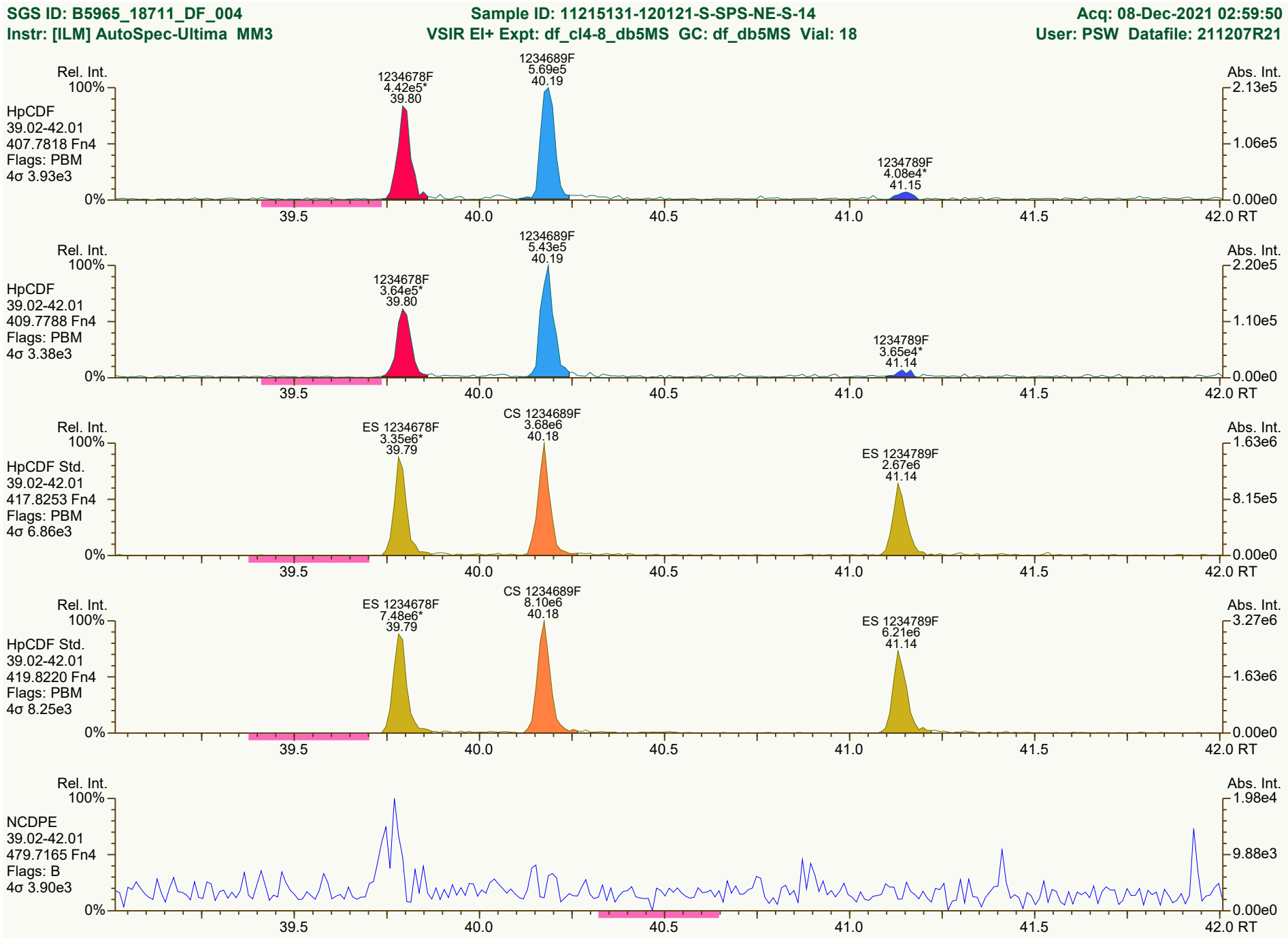

Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 5.67e3
0%
OCDD
9.21e7
43.27
Abs. Int.
2.77e7
1.39e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 5.63e3
0%
OCDD
1.02e8
43.27
Abs. Int.
3.14e7
1.57e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 7.12e3
0%
ES OCDD
4.75e6
43.25
Abs. Int.
1.45e6
7.23e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 6.11e3
0%
ES OCDD
5.84e6
43.25
Abs. Int.
1.91e6
9.56e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.77e6
4.38e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5965_18711_DF_004
Sample ID: 11215131-120121-S-SPS-NE-S-14
Acq: 08-Dec-2021 02:59:50
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18
User: PSW Datafile: 211207R21
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 4.07e3
2468F 8.21e4 24.14
1347F...[3] 1.20e5* 24.67
1248F...[3] 1.94e5* 25.00
1268F 7.06e4 25.40
1467F 3.74e4 25.54
1478F 1.42e5* 25.70
2368F 1.10e5* 26.34
1278F 5.78e5* 26.88
1267F 6.96e4 27.14
2378F 1.34e6* 27.76
2348F 8.92e4* 27.63
2367/3467F 2.18e5* 28.11
1289F 1.17e5 29.73
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.93e3
2468F 8.06e4 24.14
1347F...[3] 1.41e5* 24.66
1248F...[3] 1.82e5* 24.99
1478F 1.86e5* 25.70
2368F 1.87e5* 26.35
1238F...[5] 1.90e5* 26.43
1278F 7.31e5* 26.88
1267F 8.57e4 27.15
2378F 1.67e6* 27.76
2348F 1.36e5* 27.65
2367/3467F 2.73e5* 28.11
1289F 1.13e5 29.73
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.12e4
JS 1234F 1.38e7 26.40
ES 2378F 9.21e6 27.74
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.47e4
JS 1234F 1.69e7 26.40
ES 2378F 1.15e7 27.74
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.48e3
RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_004.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8058, 7467, 2893 scc: 909-917
PKD: 08-Dec-2021 09:10 Printed: 08-Dec-2021 14:56 Page 7 of 12

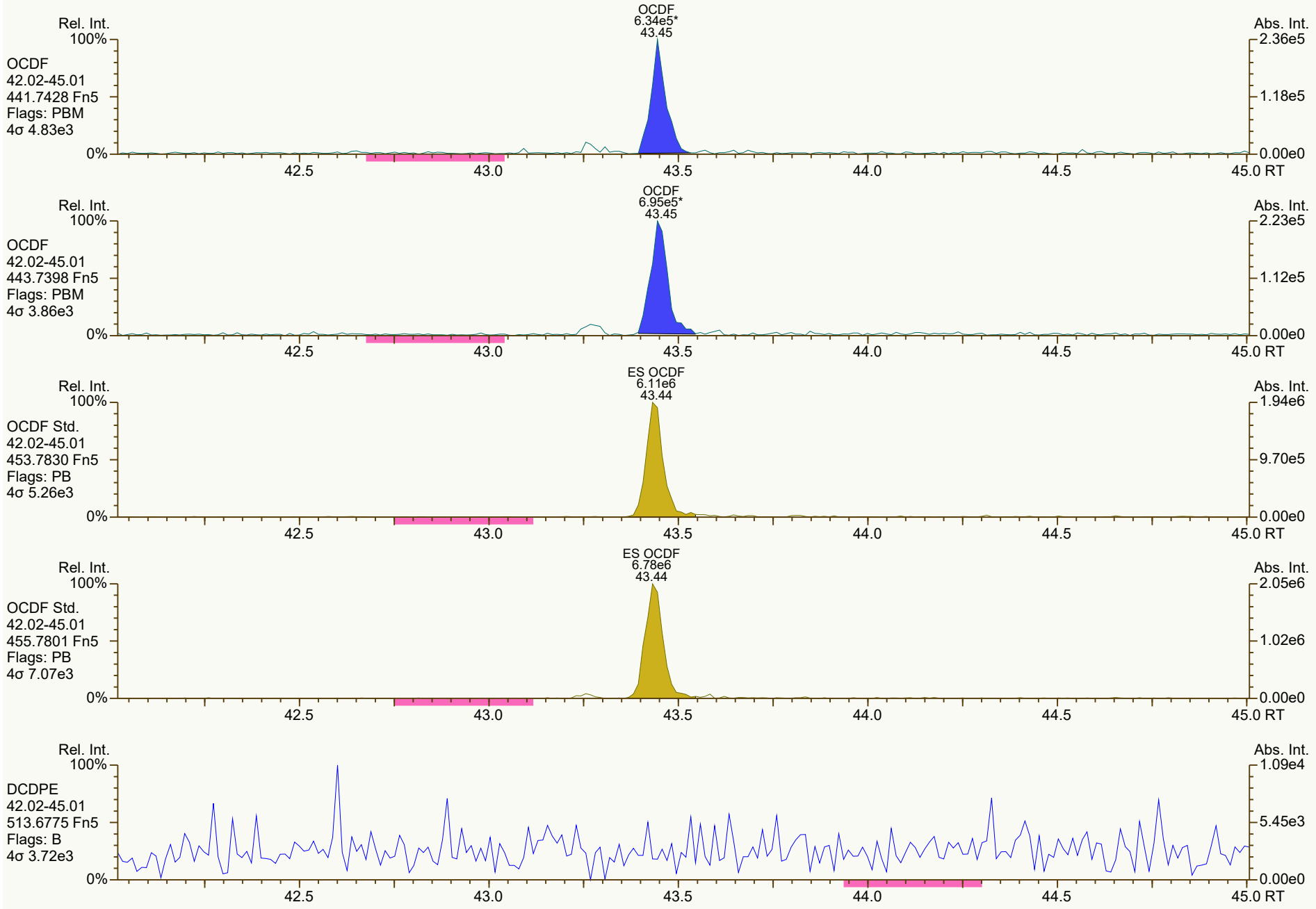

Rel. Int.
100%
0%
Abs. Int.
7.79e4
3.89e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
13468/12468F
2.92e5
29.67
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 4.92e3
13468/12468F
1.78e5
29.68
7.10e4
3.55e4
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 4.37e3
4.10e6
2.05e6
QC Check
22.04-30.25
316.9824 Fn1
Flags: -


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12368F...[3]
3.10e5*
31.35
13678F...[3]
7.83e4*
31.20
23468/12469F
9.36e4*
32.01
12378F
1.34e5*
32.45
12678/12367F
9.64e4*
32.73
23478F
1.68e5*
33.55
Abs. Int.
7.41e4
3.71e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 4.61e3
0%
12368F...[3]
2.19e5*
31.35
13678F...[3]
5.76e4*
31.19
23468/12469F
5.39e4*
32.00
12378F
1.16e5*
32.44
12678/12367F
8.23e4*
32.72
23478F
9.24e4*
33.55
Abs. Int.
5.54e4
2.77e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 6.59e3
0%
CS 12346F
1.25e7
31.91
ES 12378F
1.21e7
32.43
ES 23478F
1.20e7
33.53
Abs. Int.
3.45e6
1.73e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 5.36e3
0%
CS 12346F
7.70e6
31.91
ES 12378F
7.01e6
32.43
ES 23478F
7.20e6
33.53
Abs. Int.
2.17e6
1.09e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.83e3
0%
Abs. Int.
1.08e4
5.42e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 4.42e3
123468F 7.36e4* 35.37
124678/134678F 2.87e5* 35.57
124689F 2.05e5 36.21
123478F 2.29e5* 36.74
123678F 7.89e4* 36.88
234678F 5.59e4* 37.56
Abs. Int.
8.93e4
4.46e4
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 2.82e3
123468F 5.96e4* 35.37
124678/134678F 2.30e5* 35.56
124689F 1.80e5 36.21
123478F 1.73e5* 36.74
123678F 7.20e4* 36.88
234678F 3.86e4* 37.54
Abs. Int.
6.63e4
3.31e4
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PBM
4σ 5.53e3
ES 123478F 4.82e6 36.72
ES 123678F 5.80e6 36.87
CS 123469F 5.26e6 37.19
ES 234678F 4.84e6* 37.54
ES 123789F 4.21e6 38.46
Abs. Int.
1.66e6
8.29e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PBM
4σ 1.52e4
ES 123478F 9.13e6 36.73
ES 123678F 1.07e7 36.87
CS 123469F 9.80e6 37.19
ES 234678F 9.21e6* 37.54
ES 123789F 8.25e6 38.46
Abs. Int.
3.08e6
1.54e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.56e3
Abs. Int.
8.17e3
4.08e3
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_004.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7036, 9644, 2555 scc: 909-917
PKD: 08-Dec-2021 09:10 Printed: 08-Dec-2021 14:56 Page 11 of 12


OCDF
6.34e5*
43.45
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 4.83e3
0%
Abs. Int.
2.36e5
1.18e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.95e5*
43.45
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 3.86e3
2.23e5
1.12e5
ES OCDF
6.11e6
43.44
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 5.26e3
1.94e6
9.70e5
ES OCDF
6.78e6
43.44
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 7.07e3
2.05e6
1.02e6
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.72e3
1.09e4
5.45e3

Lab ID: B5965_18711_DF_005 **Acq'd:** 08 Dec 2021 03:47 PSW **Wt/Vol:** 16.01 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-S-13 **UTP:** 08-Dec-2021 14:49:05 PSW **J-level:** 0.312 pg/g **Split:** 1 **Checkcode:** 038-759-VLG

Datafile: 211207R22 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62		1.0008	1.0008	0	2.79E+07	0.82	Y	1.34	136	8907.47	0.404
12378-PeCDD	33.88		1.0004	1.0005	+0.2	6.61E+05	1.58	Y	1.06	4.75	11110.563	0.77
123478-HxCDD	37.74		1.0004	1.0003	-0.2	7.02E+05	1.36	Y	1.06	6.24	16703.061	1.26
123678-HxCDD	37.86		1.0034	1.0034	0	3.85E+06	1.24	Y	1.08	32.6	16703.061	1.14
123789-HxCDD	38.14		1.0111	1.0110	-0.2	1.69E+06	1.37	Y	1.02	14.5	16703.061	1.25
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	1.40E+08	1.05	Y	0.97	1,730	11411.413	1.03
OCDD	43.29	E	1.0003	1.0003	0	1.71E+09	0.90	Y	1.07	38,100	10719.64	2.14
2378-TCDF	27.78		1.0007	1.0008	+0.2	1.11E+08	0.80	Y	0.96	525	7849.142	0.404
12378-PeCDF	32.46		1.0006	1.0005	-0.2	3.29E+06	1.60	Y	0.95	17.7	10775.857	0.549
23478-PeCDF	33.56		1.0005	1.0008	+0.6	3.84E+06	1.56	Y	0.94	22.8	10775.857	0.571
123478-HxCDF	36.75		1.0004	1.0005	+0.2	4.70E+06	1.21	Y	1.23	28	26613.15	1.35
123678-HxCDF	36.89		1.0005	1.0004	-0.2	2.62E+06	1.26	Y	1.13	14.9	26613.15	1.36
234678-HxCDF	37.57		1.0005	1.0004	-0.2	1.90E+06	1.10	Y	1.15	14	26613.15	1.67
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	26613.15	1.53
1234678-HpCDF	39.81		1.0003	1.0003	0	5.27E+07	1.04	Y	1.36	410	8127.222	0.364
1234789-HpCDF	41.15		1.0004	1.0001	-0.7	2.90E+06	1.02	Y	1.30	28.1	8127.222	0.577
OCDF	43.48		1.0002	1.0003	+0.3	2.46E+08	0.89	Y	1.03	4,340	6646.669	0.932

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.60	1.0233	1.0232	-0.2	1.91E+07	0.80	Y	1.03	72.8
ES 12378-PeCDD	33.87	1.2118	1.2117	-0.2	1.64E+07	1.54	Y	1.03	62.7
ES 123478-HxCDD	37.73	0.9921	0.9922	+0.2	1.33E+07	1.35	Y	0.99	73.1
ES 123678-HxCDD	37.84	0.9951	0.9952	+0.2	1.36E+07	1.19	Y	0.97	76.6
ES 123789-HxCDD	38.13	1.0027	1.0027	0	1.44E+07	1.34	Y	1.12	69.8
ES 1234678-HpCDD	40.70	1.0702	1.0702	0	1.03E+07	1.16	Y	0.99	57
ES OCDD	43.28	1.1377	1.1381	+1.0	1.05E+07	0.96	Y	0.78	36.8
ES 2378-TCDF	27.75	1.0505	1.0505	0	2.74E+07	0.81	Y	1.08	69.8
ES 12378-PeCDF	32.44	1.2278	1.2279	+0.2	2.45E+07	1.58	Y	0.93	72.4
ES 23478-PeCDF	33.54	1.2691	1.2694	+0.6	2.24E+07	1.64	Y	0.92	67.1
ES 123478-HxCDF	36.74	0.9660	0.9661	+0.2	1.70E+07	0.56	Y	1.14	81.4
ES 123678-HxCDF	36.88	0.9698	0.9698	0	1.94E+07	0.51	Y	1.30	81.7
ES 234678-HxCDF	37.55	0.9875	0.9875	0	1.47E+07	0.56	Y	1.20	66.9
ES 123789-HxCDF	38.47	1.0121	1.0118	-0.7	1.44E+07	0.52	Y	1.14	69
ES 1234678-HpCDF	39.80	1.0468	1.0466	-0.5	1.18E+07	0.42	Y	0.95	67.9
ES 1234789-HpCDF	41.15	1.0822	1.0822	0	9.92E+06	0.49	Y	0.85	64
ES OCDF	43.46	1.1426	1.1430	+1.0	1.38E+07	0.94	Y	0.93	40.7

Lab ID: B5965_18711_DF_005 **Acq'd:** 08 Dec 2021 03:47 PSW **Wt/Vol:** 16.01 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-S-13 **UTP:** 08-Dec-2021 14:49:05 PSW **J-level:** 0.312 pg/g **Split:** 1 **Checkcode:** 038-759-VLG

Datafile: 211207R22 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.95		-	-	-	2.53E+07	0.81	Y	-	-
JS 1234-TCDF	26.42		-	-	-	3.62E+07	0.76	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	9.16E+06	1.27	Y	-	-
CS 37Cl-2378-TCDD	28.62		1.0241	1.0240	-0.2	9.51E+06	n/a	-	1.31	71.8
CS 12347-PeCDD	33.37		1.1940	1.1940	0	1.68E+07	1.69	Y	0.89	74.4
CS 12346-PeCDF	31.92		1.2080	1.2082	+0.4	2.54E+07	1.56	Y	0.87	80.8
CS 123469-HxCDF	37.20		0.9781	0.9782	+0.2	1.91E+07	0.50	Y	1.09	95.5
CS 1234689-HpCDF	40.19		1.0569	1.0569	0	1.38E+07	0.44	Y	0.86	87.3
~~SS 37Cl-2378-TCDD~~	~~28.62~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~9.51E+06~~	~~n/a~~		~~1.26~~	~~99~~
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1940~~	~~0~~	~~1.60E+07~~	~~1.69~~	~~Y~~	~~0.86~~	~~119~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2082~~	~~+0.4~~	~~2.54E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~112~~
~~SS 123469-HxCDF~~	~~37.20~~		~~0.9781~~	~~0.9782~~	~~+0.2~~	~~1.91E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~117~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0569~~	~~0~~	~~1.38E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~128~~

Totals	Conc	EMPC
Total TCDD	175	182
Total PeCDD	45.8	54.7
Total HxCDD	257	257
Total HpCDD	3680	3680
Total Tetra-Octa Dioxins	42300	42300
Total TCDF	1,120	1140
Total PeCDF	166	167
Total HxCDF	359	362
Total HpCDF	1,480	1480
Total Tetra-Octa Furans	7,470	7480
Total Tetra-Octa Dioxins & Furans	49700	49800

Lab ID: B5965_18711_DF_005 **Acq'd:** 08 Dec 2021 03:47 PSW **Wt/Vol:** 16.01 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-SPS-NE-S-13 **UTP:** 08-Dec-2021 14:49:05 PSW **J-level:** 0.312 pg/g **Split:** 1 **Checkcode:** 038-759-VLG

Datafile: 211207R22 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8758	0.8756	-0.3	2.46E+06	0.80	Y	1.34	12	8907.47	0.404
1379-TCDD	25.39		0.8878	0.8876	-0.3	1.09E+06	0.75	Y	1.34	5.3	8907.47	0.404
1369-TCDD	25.81	EMPC	0.9025	0.9023	-0.3	2.34E+05	0.95	N	1.34	1.14	8907.47	0.404
1469-TCDD	26.57	EMPC	0.9291	0.9290	-0.2	2.29E+05	1.06	N	1.34	1.11	8907.47	0.404
1247/1246/1248/1249-TCDD	26.81		0.9374	0.9375	+0.2	5.93E+05	0.72	Y	1.34	2.89	8907.47	0.404
1378-TCDD	26.99		0.9440	0.9438	-0.3	4.69E+05	0.66	Y	1.34	2.29	8907.47	0.404
1268-TCDD	27.19	EMPC	0.9505	0.9506	+0.2	1.40E+05	1.02	N	1.34	0.683	8907.47	0.404
1478-TCDD	27.43		0.9591	0.9591	0	1.55E+05	0.80	Y	1.34	0.755	8907.47	0.404
1279-TCDD	27.60	EMPC	0.9650	0.9652	+0.3	1.68E+05	1.03	N	1.34	0.821	8907.47	0.404
1234/1269-TCDD	27.96	EMPC	0.9771	0.9775	+0.7	2.30E+05	0.65	N	1.34	1.12	8907.47	0.404
1236-TCDD	NotFnd		0.9821						1.34		8907.47	0.404
1237/1238-TCDD	28.33		0.9907	0.9905	-0.3	6.17E+05	0.80	Y	1.34	3.01	8907.47	0.404
1239-TCDD	NotFnd		0.9953						1.34		8907.47	0.404
2378-TCDD	**28.62**		**1.0008**	1.0008	**0**	2.79E+07	0.82	Y	**1.34**	**136**	**8907.47**	**0.404**
1278-TCDD	28.94		1.0118	1.0119	+0.2	2.69E+06	0.75	Y	1.34	13.1	8907.47	0.404
1267-TCDD	29.08	EMPC	1.0162	1.0167	+0.9	2.49E+05	1.15	N	1.34	1.21	8907.47	0.404
1289-TCDD	29.56	EMPC	1.0340	1.0335	-0.9	2.22E+05	1.23	N	1.34	1.08	8907.47	0.404
12479/12468-PeCDD	31.41		0.9274	0.9275	+0.2	2.64E+06	1.46	Y	1.06	19	11110.563	0.77
12469-PeCDD	31.94	EMPC	0.9430	0.9432	+0.4	5.08E+05	1.29	N	1.06	3.65	11110.563	0.77
12368-PeCDD	32.49		0.9591	0.9592	+0.2	1.15E+06	1.57	Y	1.06	8.27	11110.563	0.77
12478-PeCDD	32.67		0.9645	0.9646	+0.2	5.28E+05	1.44	Y	1.06	3.8	11110.563	0.77
12379-PeCDD	32.77		0.9676	0.9676	0	6.70E+05	1.40	Y	1.06	4.81	11110.563	0.77
12369/12467/12489-PeCDD	33.03	EMPC	0.9751	0.9753	+0.4	7.37E+05	1.88	N	1.06	5.3	11110.563	0.77
12346/12347-PeCDD	33.40		0.9860	0.9862	+0.4	3.19E+05	1.46	Y	1.06	2.29	11110.563	0.77
12378-PeCDD	33.88		**1.0004**	**1.0005**	**+0.2**	**6.61E+05**	**1.58**	**Y**	**1.06**	**4.75**	**11110.563**	**0.77**
12367-PeCDD	33.98	J	1.0034	1.0032	-0.4	1.80E+05	1.77	Y	1.06	1.29	11110.563	0.77
12389-PeCDD	34.32		1.0133	1.0133	0	2.21E+05	1.38	Y	1.06	1.59	11110.563	0.77
124679/124689-HxCDD	36.02		0.9546	0.9548	+0.4	8.31E+06	1.26	Y	1.05	71.7	16703.061	1.22
123468-HxCDD	36.66		0.9718	0.9718	0	2.58E+06	1.28	Y	1.05	22.3	16703.061	1.22
123679/123689-HxCDD	36.96		0.9795	0.9796	+0.2	1.10E+07	1.28	Y	1.05	95	16703.061	1.22
123469-HxCDD	37.09		0.9832	0.9832	0	9.14E+05	1.24	Y	1.05	7.89	16703.061	1.22
123478-HxCDD	37.74		**1.0004**	**1.0003**	**-0.2**	**7.02E+05**	**1.36**	**Y**	1.06	**6.24**	**16703.061**	**1.26**
123678-HxCDD	37.86		**1.0034**	**1.0034**	**0**	**3.85E+06**	**1.24**	**Y**	1.08	**32.6**	**16703.061**	**1.14**
123467-HxCDD	38.04		1.0083	1.0082	-0.2	7.51E+05	1.40	Y	1.05	6.48	16703.061	1.22
123789-HxCDD	38.14		**1.0111**	**1.0110**	**-0.2**	**1.69E+06**	**1.37**	**Y**	1.02	**14.5**	**16703.061**	**1.25**

Lab ID: B5965_18711_DF_005 | **Acq'd: 08 Dec 2021 03:47 PSW** | **Wt/Vol: 16.01 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-SPS-NE-S-13 | **UTP: 08-Dec-2021 14:49:05 PSW** | **J-level: 0.312 pg/g** | **Split: 1** | **Checkcode: 038-759-VLG**

Datafile: 211207R22 | **Report: 08 Dec 2021 14:50 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

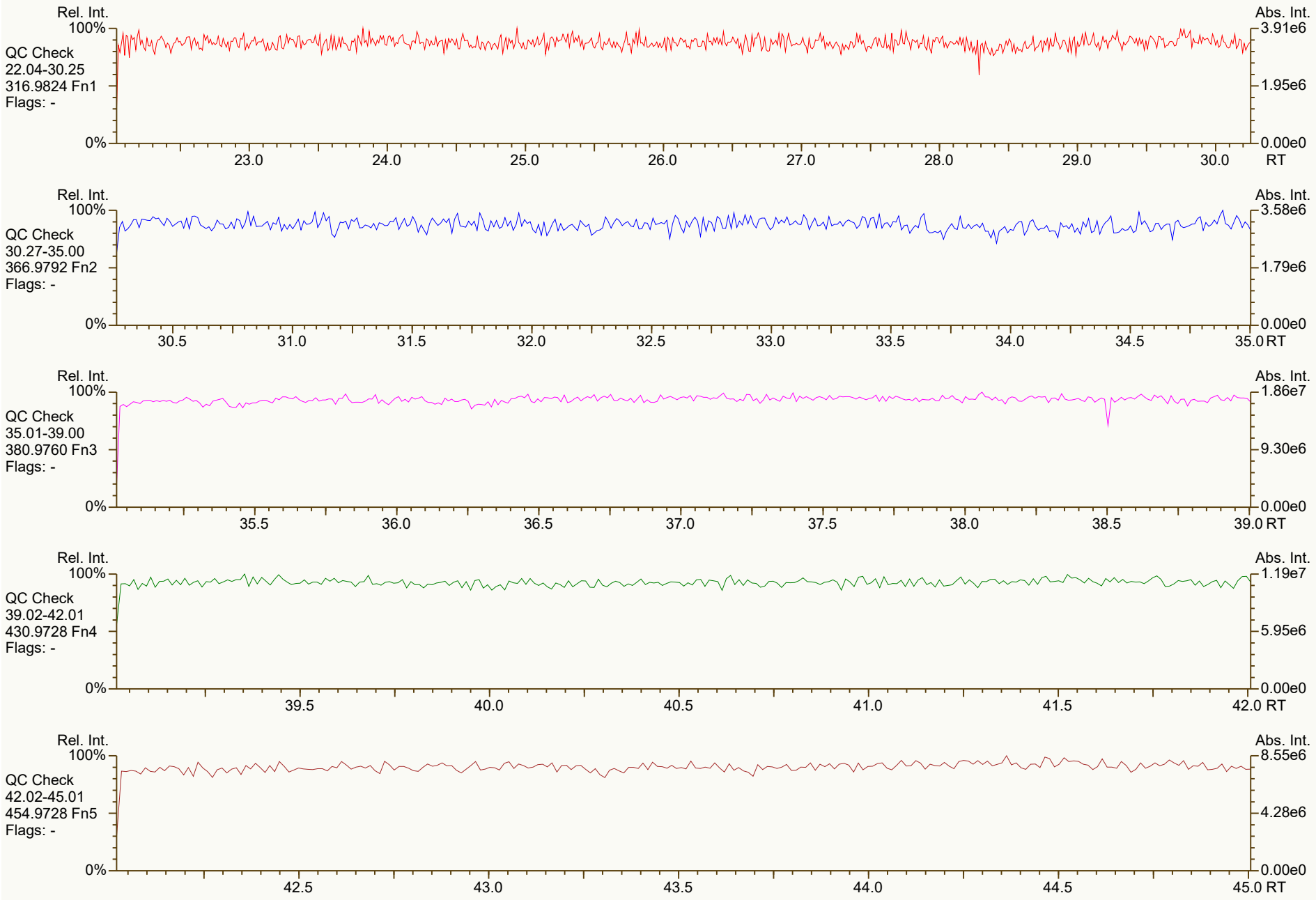
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	1.57E+08	1.04	Y	0.97	1,950	11411.413	1.03
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**1.40E+08**	**1.05**	**Y**	**0.97**	**1,730**	**11411.413**	**1.03**
OCDD	**43.29**	**E**	**1.0003**	**1.0003**	**0**	**1.71E+09**	**0.90**	**Y**	**1.07**	**38,100**	**10719.64**	**2.14**
OCDD-a	43.29	E	1.0001	1.0002	+0.3	1.04E+08	2.46	Y	0.07	37,500	12200.211	39.5
1368-TCDF	22.99	EMPC	0.8284	0.8282	-0.3	5.54E+05	0.65	N	0.96	2.63	7849.142	0.404
1468-TCDF	23.55	EMPC	0.8487	0.8484	-0.4	8.46E+05	0.56	N	0.96	4.01	7849.142	0.404
2468-TCDF	24.16		0.8709	0.8706	-0.4	1.83E+06	0.87	Y	0.96	8.7	7849.142	0.404
1346/1246-TCDF	24.54		0.8828	0.8843	+2.2	1.48E+06	0.76	Y	0.96	7.02	7849.142	0.404
1347/1378/1247-TCDF	24.68		0.8886	0.8893	+1.0	3.42E+06	0.77	Y	0.96	16.2	7849.142	0.404
1348-TCDF	24.91		0.8980	0.8975	-0.7	7.36E+05	0.83	Y	0.96	3.49	7849.142	0.404
1248/1367/1379-TCDF	25.02		0.9027	0.9015	-1.8	7.27E+06	0.81	Y	0.96	34.5	7849.142	0.404
1268-TCDF	25.42		0.9159	0.9159	0	3.13E+06	0.81	Y	0.96	14.9	7849.142	0.404
1467-TCDF	25.55		0.9206	0.9205	-0.2	1.08E+06	0.84	Y	0.96	5.14	7849.142	0.404
1478-TCDF	25.72		0.9266	0.9266	0	5.63E+06	0.78	Y	0.96	26.7	7849.142	0.404
1369/1237-TCDF	26.09		0.9396	0.9401	+0.8	1.71E+06	0.81	Y	0.96	8.12	7849.142	0.404
2467-TCDF	26.20		0.9440	0.9442	+0.3	1.03E+06	0.71	Y	0.96	4.87	7849.142	0.404
2368-TCDF	26.36		0.9496	0.9496	0	4.52E+06	0.75	Y	0.96	21.4	7849.142	0.404
1238/1234/1678/1469/1236-TCDF	26.44		0.9530	0.9527	-0.5	7.26E+06	0.85	Y	0.96	34.4	7849.142	0.404
1278-TCDF	26.89		0.9689	0.9690	+0.2	5.23E+07	0.78	Y	0.96	248	7849.142	0.404
1349-TCDF	27.02	EMPC	0.9732	0.9736	+0.6	8.99E+05	0.94	N	0.96	4.27	7849.142	0.404
1267-TCDF	27.16		0.9786	0.9786	0	3.81E+06	0.82	Y	0.96	18.1	7849.142	0.404
2346/1249-TCDF	27.34		0.9849	0.9852	+0.5	1.36E+06	0.81	Y	0.96	6.46	7849.142	0.404
2347/1279-TCDF	27.55		0.9927	0.9926	-0.2	1.70E+06	0.74	Y	0.96	8.07	7849.142	0.404
2348-TCDF	27.66		0.9967	0.9966	-0.2	7.20E+06	0.77	Y	0.96	34.2	7849.142	0.404
2378-TCDF	**27.78**		**1.0007**	**1.0008**	**+0.2**	**1.11E+08**	**0.80**	**Y**	**0.96**	**525**	**7849.142**	**0.404**
2367/3467-TCDF	28.12		1.0136	1.0133	-0.5	1.09E+07	0.79	Y	0.96	51.8	7849.142	0.404
1269-TCDF	28.37		1.0223	1.0223	0	1.93E+06	0.74	Y	0.96	9.14	7849.142	0.404
1239-TCDF	NotFnd		1.0313						0.96		7849.142	0.404
1289-TCDF	29.76		1.0711	1.0721	+1.8	8.13E+06	0.84	Y	0.96	38.6	7849.142	0.404
13468/12468-PeCDF	29.69		0.9147	0.9153	+1.1	6.33E+06	1.55	Y	0.94	35.7	8128.213	0.422
13678/13467/12467-PeCDF	31.21		0.9616	0.9621	+0.9	2.14E+06	1.54	Y	0.94	12.1	10775.857	0.56
12368/13478/12478-PeCDF	31.36		0.9663	0.9668	+0.9	5.55E+06	1.54	Y	0.94	31.4	10775.857	0.56
14678-PeCDF	31.46		0.9695	0.9696	+0.2	7.04E+05	1.44	Y	0.94	3.97	10775.857	0.56
13479-PeCDF	31.56	J	0.9727	0.9727	0	1.66E+05	1.39	Y	0.94	0.937	10775.857	0.56
13469/12479-PeCDF	31.78	J	0.9799	0.9797	-0.4	2.54E+05	1.45	Y	0.94	1.43	10775.857	0.56
12346-PeCDF	31.93		0.9839	0.9841	+0.4	5.85E+05	1.43	Y	0.94	3.3	10775.857	0.56

Lab ID: B5965_18711_DF_005 **Acq'd: 08 Dec 2021 03:47 PSW** **Wt/Vol: 16.01 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-SPS-NE-S-13 **UTP: 08-Dec-2021 14:49:05 PSW** **J-level: 0.312 pg/g** **Split: 1** **Checkcode: 038-759-VLG**

Datafile: 211207R22 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.01		0.9864	0.9868	+0.8	1.65E+06	1.60	Y	0.94	9.31	10775.857	0.56
12347-PeCDF	32.10		0.9892	0.9893	+0.2	6.50E+05	1.63	Y	0.94	3.67	10775.857	0.56
12348-PeCDF	32.25		0.9940	0.9941	+0.2	8.77E+05	1.58	Y	0.94	4.95	10775.857	0.56
12378-PeCDF	**32.46**		**1.0006**	**1.0005**	**-0.2**	**3.29E+06**	**1.60**	**Y**	**0.95**	**17.7**	**10775.857**	**0.549**
12678/12367-PeCDF	32.74		1.0088	1.0092	+0.8	2.29E+06	1.63	Y	0.94	12.9	10775.857	0.56
12379-PeCDF	NotFnd		1.0142						0.94		10775.857	0.56
12679-PeCDF	NotFnd		0.9931						0.94		10775.857	0.56
23467/12369-PeCDF	33.42		0.9966	0.9966	0	9.36E+05	1.45	Y	0.94	5.29	10775.857	0.56
23478-PeCDF	**33.56**		**1.0005**	**1.0008**	**+0.6**	**3.84E+06**	**1.56**	**Y**	**0.94**	**22.8**	**10775.857**	**0.571**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		10775.857	0.56
12349-PeCDF	33.88	J	1.0100	1.0101	+0.2	1.29E+05	1.60	Y	0.94	0.727	10775.857	0.56
12389-PeCDF	34.62	J EMPC	1.0323	1.0322	-0.2	1.85E+05	1.80	N	0.94	1.04	10775.857	0.56
123468-HxCDF	35.39		0.9631	0.9633	+0.4	4.19E+06	1.26	Y	1.16	27.5	26613.15	1.46
124678/134678-HxCDF	35.58		0.9686	0.9686	0	1.40E+07	1.25	Y	1.16	91.8	26613.15	1.46
134679-HxCDF	NotFnd		0.9747						1.16		26613.15	1.46
124679-HxCDF	36.00	EMPC	0.9800	0.9801	+0.2	4.23E+05	1.03	N	1.16	2.77	26613.15	1.46
124689-HxCDF	36.22		0.9859	0.9861	+0.4	2.58E+07	1.25	Y	1.16	169	26613.15	1.46
123467-HxCDF	36.64		0.9972	0.9973	+0.2	1.16E+06	1.20	Y	1.16	7.63	26613.15	1.46
123478-HxCDF	**36.75**		**1.0004**	**1.0005**	**+0.2**	**4.70E+06**	**1.21**	**Y**	**1.23**	**28**	**26613.15**	**1.35**
123678-HxCDF	**36.89**		**1.0005**	**1.0004**	**-0.2**	**2.62E+06**	**1.26**	**Y**	**1.13**	**14.9**	**26613.15**	**1.36**
123479-HxCDF	NotFnd		1.0048						1.16		26613.15	1.46
123469-HxCDF	37.21		1.0089	1.0090	+0.2	2.91E+05	1.23	Y	1.16	1.91	26613.15	1.46
123679-HxCDF	NotFnd		0.9943						1.16		26613.15	1.46
234678-HxCDF	**37.57**		**1.0005**	**1.0004**	**-0.2**	**1.90E+06**	**1.10**	**Y**	**1.15**	**14**	**26613.15**	**1.67**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		26613.15	1.46
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**26613.15**	**1.53**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.51		1.0004	1.0009	+1.2	6.00E+05	1.08	Y	1.16	3.94	26613.15	1.46
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**5.27E+07**	**1.04**	**Y**	**1.36**	**410**	**8127.222**	**0.364**
1234679-HpCDF	40.06		1.0065	1.0066	+0.2	1.85E+06	1.04	Y	1.33	16	8127.222	0.46
1234689-HpCDF	40.20		1.0097	1.0100	+0.7	1.19E+08	1.04	Y	1.33	1,030	8127.222	0.46
1234789-HpCDF	**41.15**		**1.0004**	**1.0001**	**-0.7**	**2.90E+06**	**1.02**	**Y**	**1.30**	**28.1**	**8127.222**	**0.577**
OCDF	**43.48**		**1.0002**	**1.0003**	**+0.3**	**2.46E+08**	**0.89**	**Y**	**1.03**	**4,340**	**6646.669**	**0.932**
OCDF-a	43.47	**EMPC**	1.0001	1.0002	+0.3	1.30E+07	2.89	N	0.06	3,980	10359.083	25.1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QC Check
22.04-30.25
316.9824 Fn1
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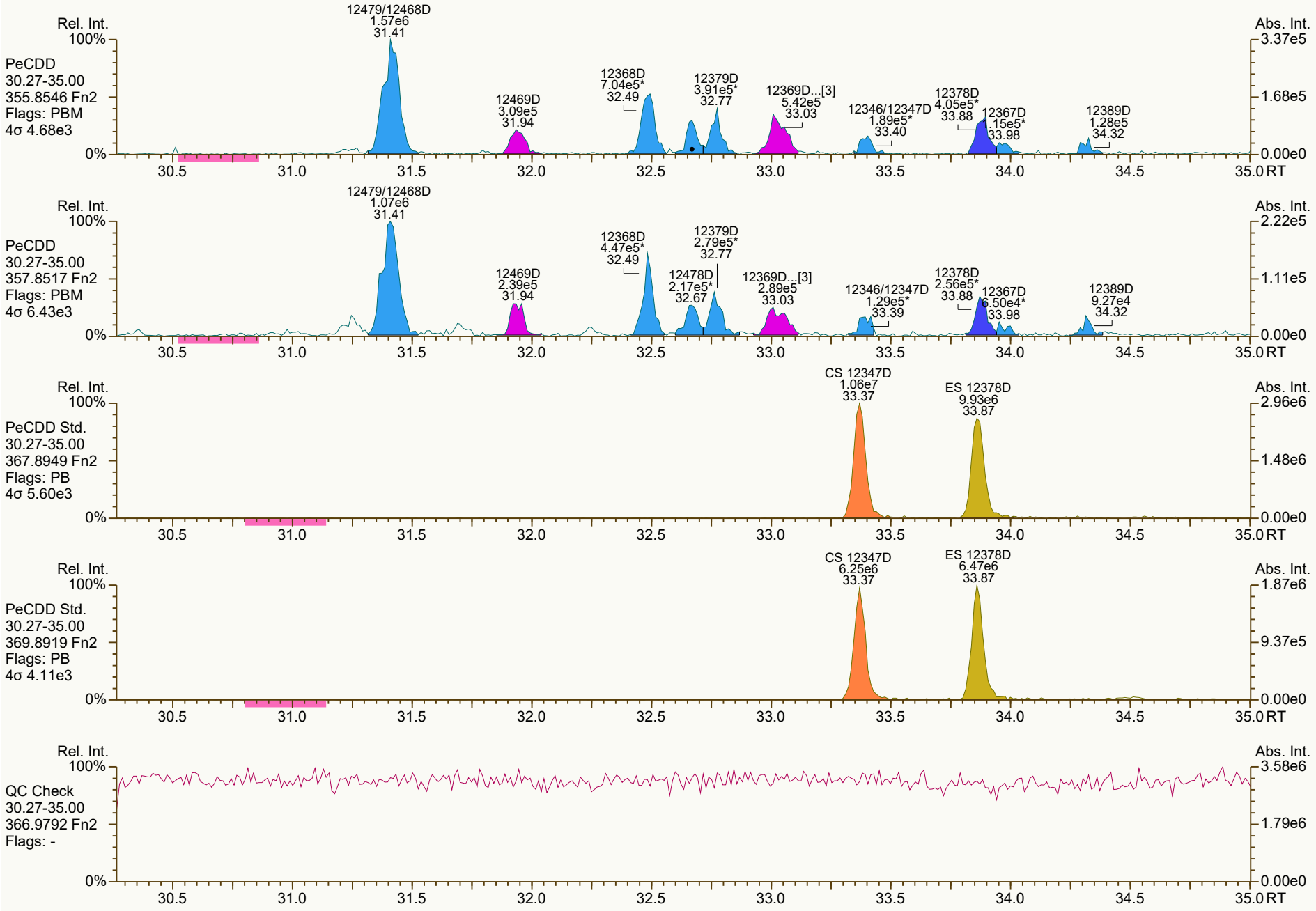
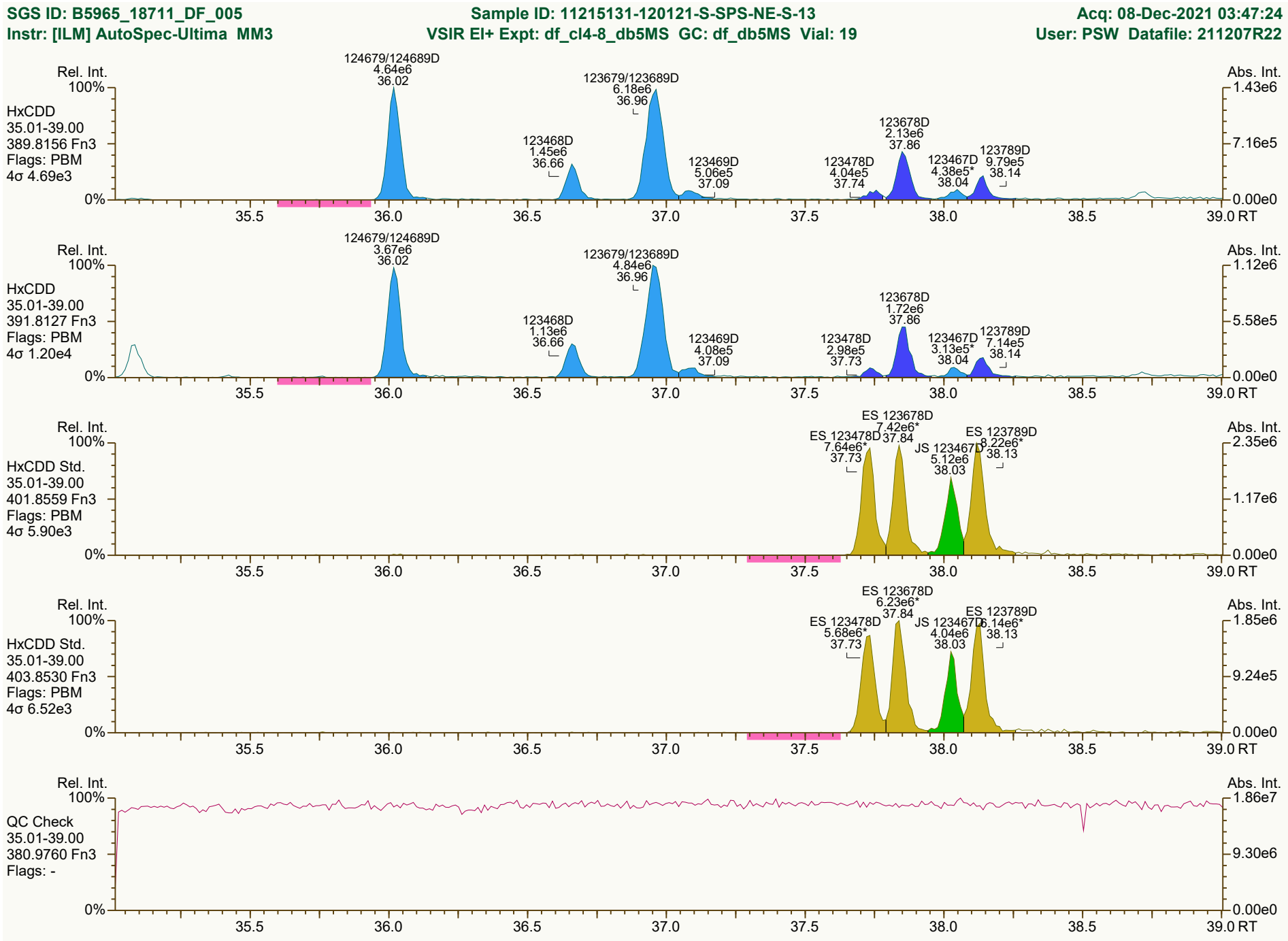
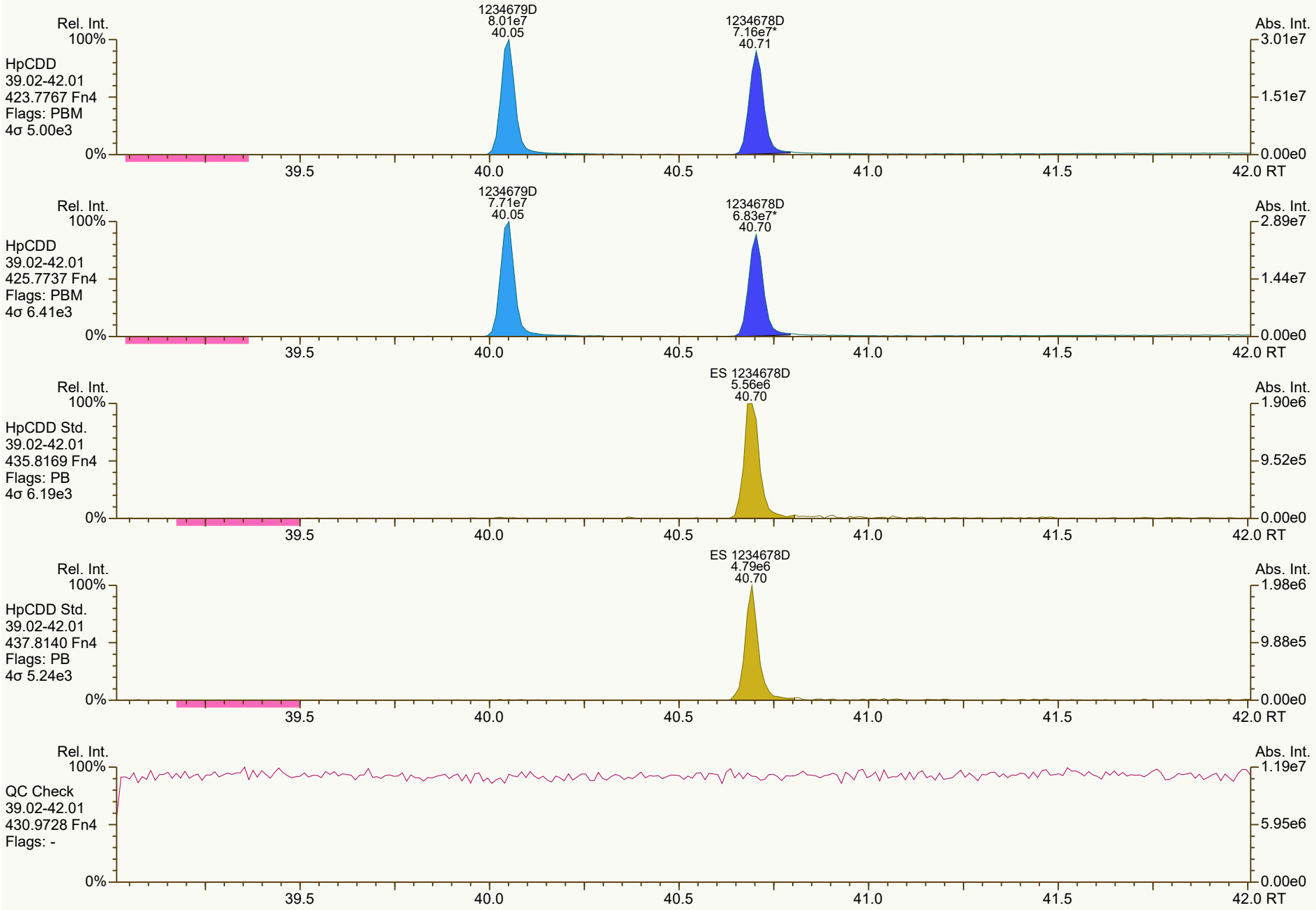
Abs. Int.
3.91e6
1.95e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.58e6
1.79e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.86e7
9.30e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.19e7
5.95e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.55e6
4.28e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT

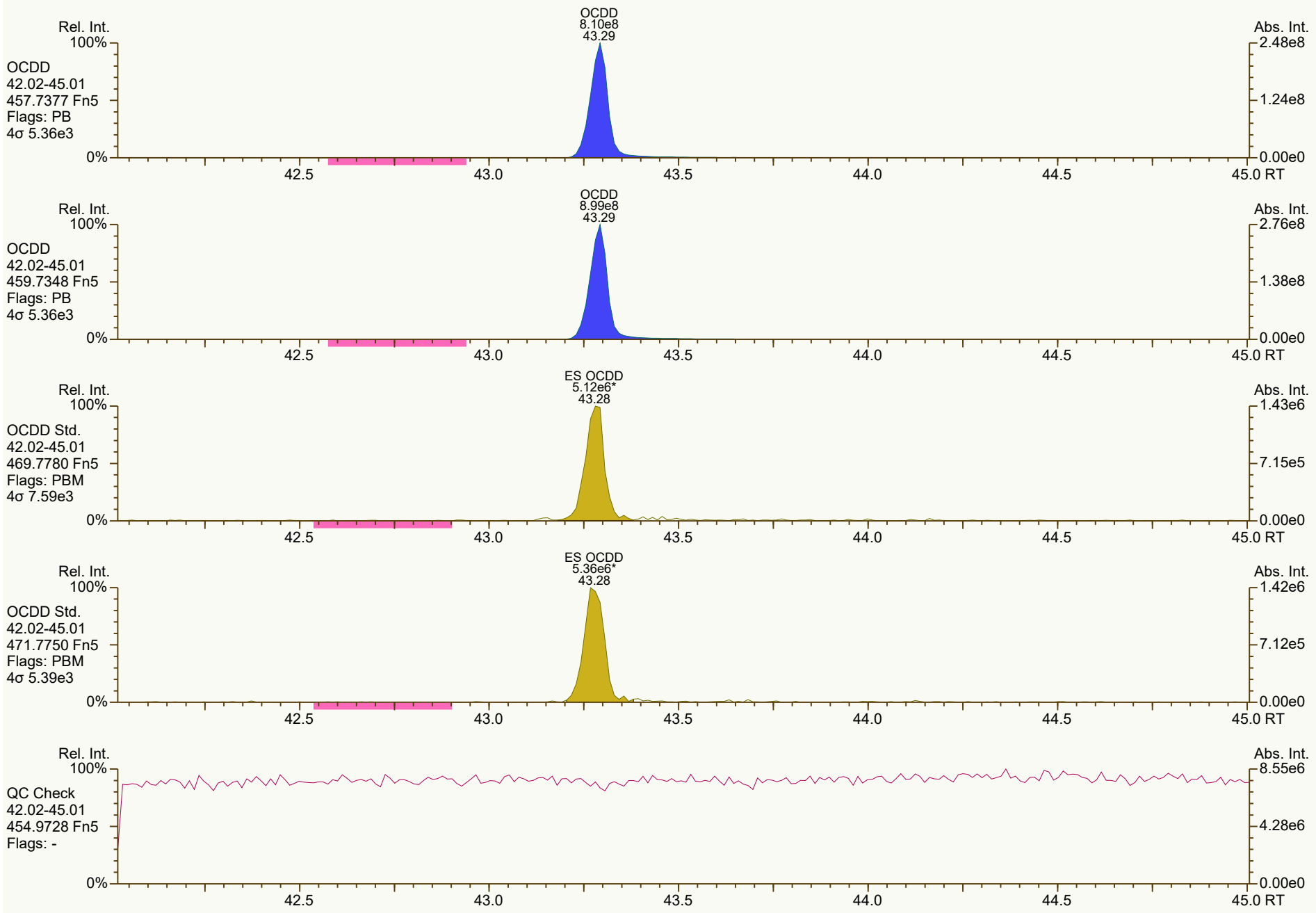

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 5.38e3
0%
2378D
1.26e7
28.62
1368D
1.10e6
25.04
1278D
1.16e6*
28.94
Abs. Int.
3.08e6
1.54e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 3.53e3
0%
2378D
1.53e7
28.62
1368D
1.36e6
25.04
1278D
1.54e6*
28.94
Abs. Int.
3.69e6
1.85e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.89e3
0%
CS 37Cl-2378D
9.66e6
28.62
Abs. Int.
2.26e6
1.13e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.04e4
0%
JS 1234D
1.13e7
27.95
ES 2378D
8.46e6
28.60
Abs. Int.
2.88e6
1.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 6.59e3
0%
JS 1234D
1.40e7
27.95
ES 2378D
1.06e7
28.60
Abs. Int.
3.22e6
1.61e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 4.68e3
0%
12479/12468D
1.57e6
31.41
12469D
3.09e5
31.94
12368D
7.04e5*
32.49
12379D
3.91e5*
32.77
12369D...[3]
5.42e5
33.03
12346/12347D
1.89e5*
33.40
12378D
4.05e5*
33.88
12367D
1.15e5*
33.98
12389D
1.28e5
34.32
Abs. Int.
3.37e5
1.68e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 6.43e3
0%
12479/12468D
1.07e6
31.41
12469D
2.39e5
31.94
12368D
4.47e5*
32.49
12379D
2.79e5*
32.77
12478D
2.17e5*
32.67
12369D...[3]
2.89e5
33.03
12346/12347D
1.29e5*
33.39
12378D
2.56e5*
33.88
12367D
6.50e4*
33.98
12389D
9.27e4
34.32
Abs. Int.
2.22e5
1.11e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 5.60e3
0%
CS 12347D
1.06e7
33.37
ES 12378D
9.93e6
33.87
Abs. Int.
2.96e6
1.48e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 4.11e3
0%
CS 12347D
6.25e6
33.37
ES 12378D
6.47e6
33.87
Abs. Int.
1.87e6
9.37e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.58e6
1.79e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

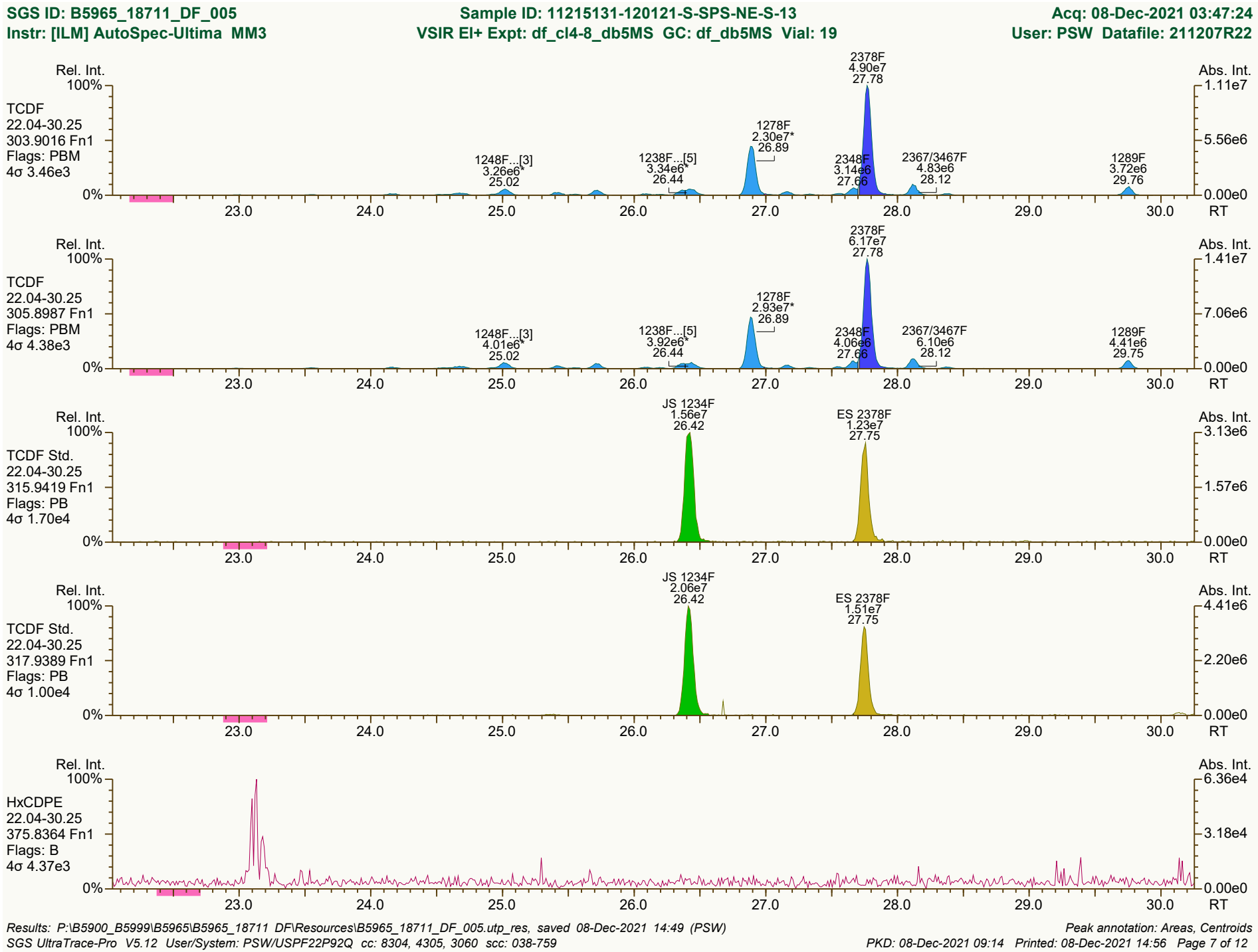


Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_005.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8725, 0774 scc: 038-759
PKD: 08-Dec-2021 09:14 Printed: 08-Dec-2021 14:56 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 5.00e3
0%
1234679D
8.01e7
40.05
1234678D
7.16e7*
40.71
Abs. Int.
3.01e7
1.51e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 6.41e3
0%
1234679D
7.71e7
40.05
1234678D
6.83e7*
40.70
Abs. Int.
2.89e7
1.44e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.19e3
0%
ES 1234678D
5.56e6
40.70
Abs. Int.
1.90e6
9.52e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.24e3
0%
ES 1234678D
4.79e6
40.70
Abs. Int.
1.98e6
9.88e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.19e7
5.95e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT

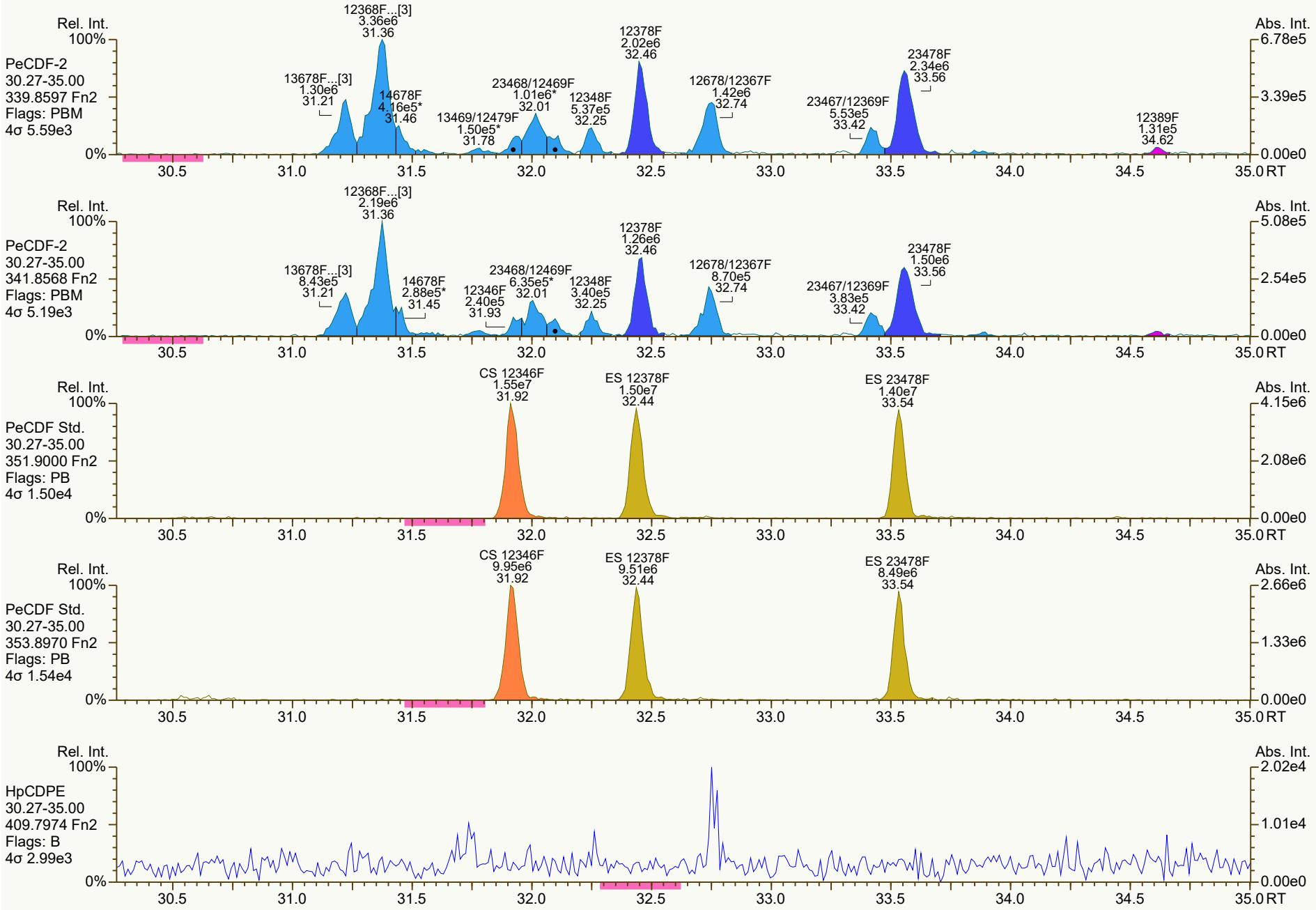

OCDD
8.10e8
43.29
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 5.36e3
0%
Abs. Int.
2.48e8
1.24e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
8.99e8
43.29
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 5.36e3
2.76e8
1.38e8
ES OCDD
5.12e6*
43.28
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 7.59e3
1.43e6
7.15e5
ES OCDD
5.36e6*
43.28
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 5.39e3
1.42e6
7.12e5
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
8.55e6
4.28e6

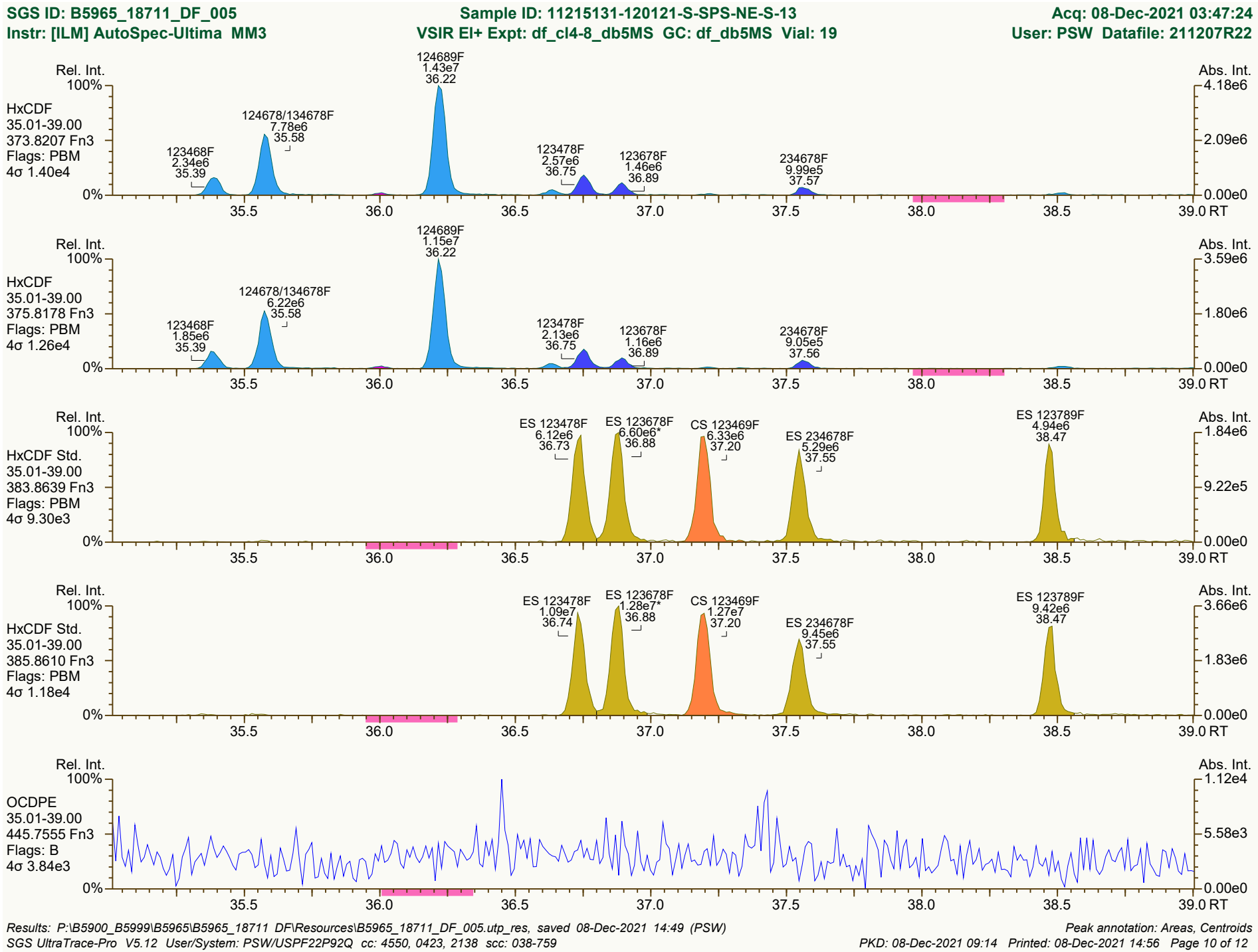
SGS ID: B5965_18711_DF_005 | Sample ID: 11215131-120121-S-SPS-NE-S-13 | Acq: 08-Dec-2021 03:47:24
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19 | User: PSW Datafile: 211207R22

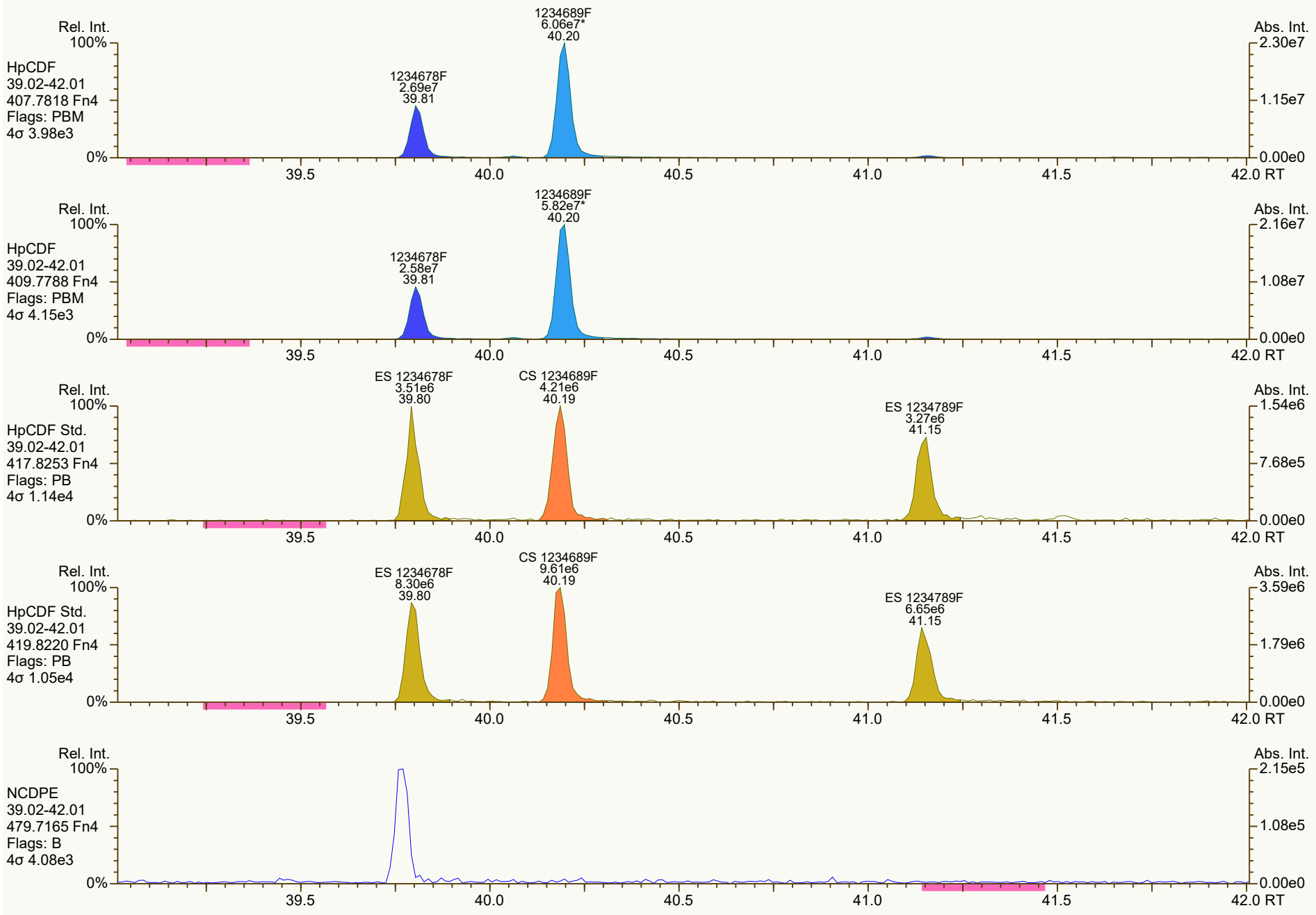


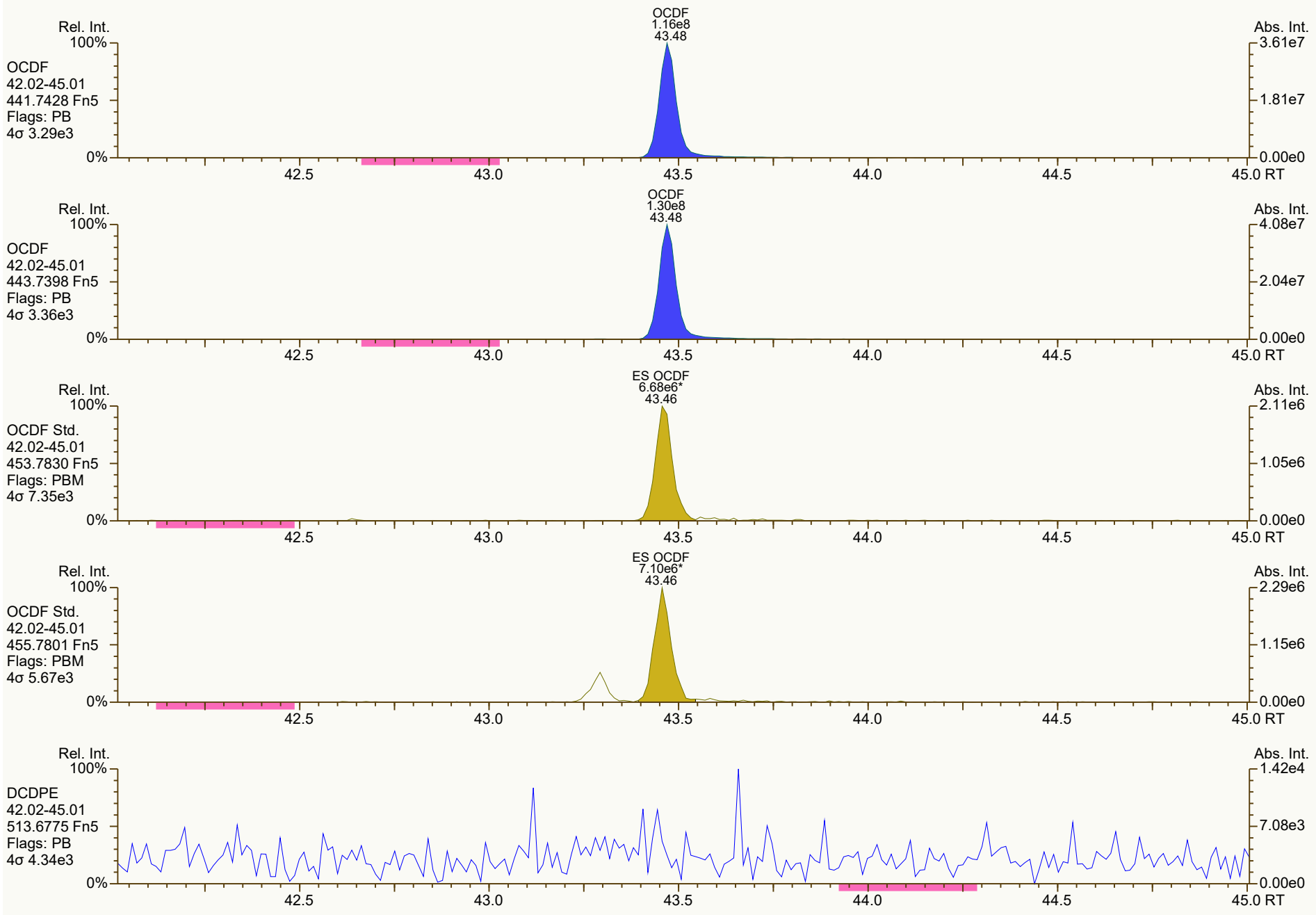
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_005.utp_res, saved 08-Dec-2021 14:49 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8304, 4305, 3060 scc: 038-759 | PKD: 08-Dec-2021 09:14 Printed: 08-Dec-2021 14:56 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 3.67e3
13468/12468F
3.85e6
29.69
Abs. Int.
9.57e5
4.78e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 4.46e3
13468/12468F
2.48e6
29.69
Abs. Int.
6.22e5
3.11e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
Abs. Int.
3.91e6
1.95e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 5.59e3
12368F...[3] 3.36e6 31.36
13678F...[3] 1.30e6 31.21
14678F 4.16e5* 31.46
13469/12479F 1.50e5* 31.78
23468/12469F 1.01e6* 32.01
12348F 5.37e5 32.25
12378F 2.02e6 32.46
12678/12367F 1.42e6 32.74
23467/12369F 5.53e5 33.42
23478F 2.34e6 33.56
12389F 1.31e5 34.62
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 5.19e3
12368F...[3] 2.19e6 31.36
13678F...[3] 8.43e5 31.21
14678F 2.88e5* 31.45
12346F 2.40e5 31.93
23468/12469F 6.35e5* 32.01
12348F 3.40e5 32.25
12378F 1.26e6 32.46
12678/12367F 8.70e5 32.74
23467/12369F 3.83e5 33.42
23478F 1.50e6 33.56
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 1.50e4
CS 12346F 1.55e7 31.92
ES 12378F 1.50e7 32.44
ES 23478F 1.40e7 33.54
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 1.54e4
CS 12346F 9.95e6 31.92
ES 12378F 9.51e6 32.44
ES 23478F 8.49e6 33.54
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 2.99e3
Rel. Int.
Abs. Int.
RT


SGS ID: B5965_18711_DF_005
Sample ID: 11215131-120121-S-SPS-NE-S-13
Acq: 08-Dec-2021 03:47:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19
User: PSW Datafile: 211207R22
Rel. Int.
Abs. Int.
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 1.40e4
123468F
2.34e6
35.39
124678/134678F
7.78e6
35.58
124689F
1.43e7
36.22
123478F
2.57e6
36.75
123678F
1.46e6
36.89
234678F
9.99e5
37.57
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 1.26e4
123468F
1.85e6
35.39
124678/134678F
6.22e6
35.58
124689F
1.15e7
36.22
123478F
2.13e6
36.75
123678F
1.16e6
36.89
234678F
9.05e5
37.56
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PBM
4σ 9.30e3
ES 123478F
6.12e6
36.73
ES 123678F
6.60e6*
36.88
CS 123469F
6.33e6
37.20
ES 234678F
5.29e6
37.55
ES 123789F
4.94e6
38.47
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PBM
4σ 1.18e4
ES 123478F
1.09e7
36.74
ES 123678F
1.28e7*
36.88
CS 123469F
1.27e7
37.20
ES 234678F
9.45e6
37.55
ES 123789F
9.42e6
38.47
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.84e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
4.18e6
2.09e6
0.00e0
3.59e6
1.80e6
1.84e6
9.22e5
3.66e6
1.83e6
1.12e4
5.58e3
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_005.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4550, 0423, 2138 scc: 038-759
PKD: 08-Dec-2021 09:14 Printed: 08-Dec-2021 14:56 Page 10 of 12


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 3.98e3
1234678F
2.69e7
39.81
1234689F
6.06e7*
40.20
Abs. Int.
2.30e7
1.15e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 4.15e3
1234678F
2.58e7
39.81
1234689F
5.82e7*
40.20
Abs. Int.
2.16e7
1.08e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 1.14e4
ES 1234678F
3.51e6
39.80
CS 1234689F
4.21e6
40.19
ES 1234789F
3.27e6
41.15
Abs. Int.
1.54e6
7.68e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 1.05e4
ES 1234678F
8.30e6
39.80
CS 1234689F
9.61e6
40.19
ES 1234789F
6.65e6
41.15
Abs. Int.
3.59e6
1.79e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.08e3
Abs. Int.
2.15e5
1.08e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDF
1.16e8
43.48
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 3.29e3
0%
Abs. Int.
3.61e7
1.81e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.30e8
43.48
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 3.36e3
0%
Abs. Int.
4.08e7
2.04e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
6.68e6*
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 7.35e3
0%
Abs. Int.
2.11e6
1.05e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
7.10e6*
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 5.67e3
0%
Abs. Int.
2.29e6
1.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: PB
4σ 4.34e3
0%
Abs. Int.
1.42e4
7.08e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5965_18711_DF_006-RJ | **Acq'd:** 08 Dec 2021 13:49 PSW | **Wt/Vol:** 15.46 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-1 | **UTP:** 08-Dec-2021 14:49:09 PSW | **J-level:** 0.323 pg/g | **Split:** 1 | **Checkcode:** 545-953-LKG

Datafile: 211207R34 | **Report:** 08 Dec 2021 14:50 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62	EMPC	1.0008	1.0010	+0.3	2.79E+05	0.65	N	1.34	1.21	8767.473	0.393
12378-PeCDD	33.88	J EMPC	1.0004	1.0005	+0.2	1.98E+05	1.14	N	1.06	1.29	7878.806	0.48
123478-HxCDD	37.74		1.0004	1.0003	-0.2	3.50E+05	1.42	Y	1.06	2.85	10837.598	0.709
123678-HxCDD	37.85		1.0034	1.0033	-0.2	1.54E+06	1.41	Y	1.08	11.7	10837.598	0.72
123789-HxCDD	38.14		1.0111	1.0110	-0.2	9.07E+05	1.33	Y	1.02	6.71	10837.598	0.706
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	5.47E+07	1.06	Y	0.97	517	8258.623	0.511
OCDD	43.29		1.0003	1.0003	0	4.07E+08	0.89	Y	1.07	5,670	10534.215	1.16
2378-TCDF	27.77		1.0007	1.0007	0	1.18E+06	0.79	Y	0.96	5.24	8311.146	0.414
12378-PeCDF	32.45	J	1.0006	1.0005	-0.2	2.66E+05	1.58	Y	0.95	1.35	6644.326	0.319
23478-PeCDF	33.56		1.0005	1.0008	+0.6	5.97E+05	1.46	Y	0.94	3.2	6644.326	0.297
123478-HxCDF	36.75		1.0004	1.0005	+0.2	5.09E+05	1.12	Y	1.23	2.76	14464.4	0.608
123678-HxCDF	36.89		1.0005	1.0004	-0.2	3.88E+05	1.31	Y	1.13	1.91	14464.4	0.611
234678-HxCDF	37.57		1.0005	1.0004	-0.2	5.97E+05	1.33	Y	1.15	3.28	14464.4	0.773
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	14464.4	0.692
1234678-HpCDF	39.81		1.0003	1.0003	0	9.22E+06	1.04	Y	1.36	55.3	9517.356	0.366
1234789-HpCDF	41.17		1.0004	1.0003	-0.2	5.14E+05	0.93	Y	1.30	3.77	9517.356	0.49
OCDF	43.47		1.0002	1.0003	+0.3	1.45E+07	0.89	Y	1.03	165	8782.858	0.855

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0232	-0.2	2.22E+07	0.79	Y	1.03	69.7
ES 12378-PeCDD	33.86	1.2118	1.2119	+0.2	1.87E+07	1.64	Y	1.03	58.8
ES 123478-HxCDD	37.73	0.9921	0.9921	0	1.50E+07	1.30	Y	0.99	78.2
ES 123678-HxCDD	37.84	0.9951	0.9951	0	1.57E+07	1.31	Y	0.97	83.4
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	1.72E+07	1.29	Y	1.12	79.3
ES 1234678-HpCDD	40.70	1.0702	1.0702	0	1.41E+07	1.15	Y	0.99	73.5
ES OCDD	43.28	1.1377	1.1380	+0.8	1.73E+07	0.86	Y	0.78	57.8
ES 2378-TCDF	27.75	1.0505	1.0504	-0.2	3.04E+07	0.80	Y	1.08	67.3
ES 12378-PeCDF	32.43	1.2278	1.2279	+0.2	2.69E+07	1.59	Y	0.93	69.3
ES 23478-PeCDF	33.53	1.2691	1.2695	+0.8	2.57E+07	1.58	Y	0.92	67
ES 123478-HxCDF	36.73	0.9660	0.9660	0	1.93E+07	0.51	Y	1.14	87.7
ES 123678-HxCDF	36.87	0.9698	0.9697	-0.2	2.32E+07	0.53	Y	1.30	92.7
ES 234678-HxCDF	37.55	0.9875	0.9874	-0.2	2.04E+07	0.53	Y	1.20	88
ES 123789-HxCDF	38.48	1.0121	1.0118	-0.7	1.90E+07	0.48	Y	1.14	86.8
ES 1234678-HpCDF	39.80	1.0468	1.0466	-0.5	1.59E+07	0.42	Y	0.95	86.5
ES 1234789-HpCDF	41.15	1.0822	1.0822	0	1.36E+07	0.47	Y	0.85	83
ES OCDF	43.46	1.1426	1.1429	+0.8	2.21E+07	0.88	Y	0.93	61.9

Lab ID: B5965_18711_DF_006-RJ | **Acq'd:** 08 Dec 2021 13:49 PSW | **Wt/Vol:** 15.46 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-1 | **UTP:** 08-Dec-2021 14:49:09 PSW | **J-level:** 0.323 pg/g | **Split:** 1 | **Checkcode:** 545-953-LKG

Datafile: 211207R34 | **Report:** 08 Dec 2021 14:50 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.94		-	-	-	3.08E+07	0.79	Y	-	-
JS 1234-TCDF	26.41		-	-	-	4.16E+07	0.81	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	9.65E+06	1.44	N	-	-
CS 37Cl-2378-TCDD	28.61		1.0241	1.0240	-0.2	9.98E+06	n/a	-	1.31	61.9
CS 12347-PeCDD	33.37		1.1940	1.1942	+0.4	1.72E+07	1.61	Y	0.89	62.6
CS 12346-PeCDF	31.92		1.2080	1.2083	+0.6	2.45E+07	1.52	Y	0.87	67.9
CS 123469-HxCDF	37.19		0.9781	0.9780	-0.2	2.02E+07	0.54	Y	1.09	96.1
CS 1234689-HpCDF	40.19		1.0569	1.0569	0	1.56E+07	0.49	Y	0.86	93.6
~~SS 37Cl-2378-TCDD~~	~~28.61~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~9.98E+06~~	~~n/a~~		~~1.26~~	~~89.3~~
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1942~~	~~+0.4~~	~~1.72E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~106~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2083~~	~~+0.6~~	~~2.45E+07~~	~~1.52~~	~~Y~~	~~0.93~~	~~98~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9780~~	~~-0.2~~	~~2.02E+07~~	~~0.54~~	~~Y~~	~~0.84~~	~~104~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0569~~	~~0~~	~~1.56E+07~~	~~0.49~~	~~Y~~	~~0.91~~	~~108~~

Totals	Conc	EMPC
Total TCDD	0	3.81
Total PeCDD	7.26	11.9
Total HxCDD	113	115
Total HpCDD	1120	1120
Total Tetra-Octa Dioxins	6910	6920
Total TCDF	29.7	36.1
Total PeCDF	22.4	32.4
Total HxCDF	62.5	62.5
Total HpCDF	178	180
Total Tetra-Octa Furans	459	476
Total Tetra-Octa Dioxins & Furans	7370	7400

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.627	0.65
Response	3.15E+05	3.09E+05

Lab ID: B5965_18711_DF_006-RJ **Acq'd: 08 Dec 2021 13:49 PSW** **Wt/Vol: 15.46 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-JC-NE-S-1 **UTP: 08-Dec-2021 14:49:09 PSW** **J-level: 0.323 pg/g** **Split: 1** **Checkcode: 545-953-LKG**

Datafile: 211207R34 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03	EMPC	0.8758	0.8755	-0.5	2.31E+05	0.99	N	1.34	1	8767.473	0.393
1379-TCDD	25.37	EMPC	0.8878	0.8873	-0.8	1.74E+05	0.60	N	1.34	0.756	8767.473	0.393
1369-TCDD	NotFnd		0.9025						1.34		8767.473	0.393
1469-TCDD	NotFnd		0.9291						1.34		8767.473	0.393
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8767.473	0.393
1378-TCDD	26.99	EMPC	0.9440	0.9439	-0.2	1.94E+05	0.56	N	1.34	0.843	8767.473	0.393
1268-TCDD	NotFnd		0.9505						1.34		8767.473	0.393
1478-TCDD	NotFnd		0.9591						1.34		8767.473	0.393
1279-TCDD	NotFnd		0.9650						1.34		8767.473	0.393
1234/1269-TCDD	NotFnd		0.9771						1.34		8767.473	0.393
1236-TCDD	NotFnd		0.9821						1.34		8767.473	0.393
1237/1238-TCDD	NotFnd		0.9907						1.34		8767.473	0.393
1239-TCDD	NotFnd		0.9953						1.34		8767.473	0.393
2378-TCDD	**28.62**	EMPC	**1.0008**	1.0010	**+0.3**	2.79E+05	0.65	N	**1.34**	**1.21**	**8767.473**	**0.393**
1278-TCDD	NotFnd		1.0118						1.34		8767.473	0.393
1267-TCDD	NotFnd		1.0162						1.34		8767.473	0.393
1289-TCDD	NotFnd		1.0340						1.34		8767.473	0.393
12479/12468-PeCDD	31.40		0.9274	0.9274	0	5.24E+05	1.42	Y	1.06	3.42	7878.806	0.48
12469-PeCDD	31.93	J EMPC	0.9430	0.9431	+0.2	2.04E+05	0.78	N	1.06	1.33	7878.806	0.48
12368-PeCDD	32.48	J	0.9591	0.9591	0	1.51E+05	1.39	Y	1.06	0.985	7878.806	0.48
12478-PeCDD	32.67	EMPC	0.9645	0.9647	+0.4	3.05E+05	1.17	N	1.06	1.99	7878.806	0.48
12379-PeCDD	32.77	J	0.9676	0.9677	+0.2	1.53E+05	1.47	Y	1.06	1	7878.806	0.48
12369/12467/12489-PeCDD	33.03	J	0.9751	0.9754	+0.6	1.73E+05	1.77	Y	1.06	1.13	7878.806	0.48
12346/12347-PeCDD	33.39	J	0.9860	0.9860	0	1.11E+05	1.59	Y	1.06	0.728	7878.806	0.48
12378-PeCDD	33.88	J EMPC	**1.0004**	**1.0005**	**+0.2**	**1.98E+05**	**1.14**	**N**	**1.06**	**1.29**	**7878.806**	**0.48**
12367-PeCDD	NotFnd		1.0034						1.06		7878.806	0.48
12389-PeCDD	NotFnd		1.0133						1.06		7878.806	0.48
124679/124689-HxCDD	36.02		0.9546	0.9547	+0.2	5.06E+06	1.25	Y	1.05	39	10837.598	0.711
123468-HxCDD	36.66		0.9718	0.9717	-0.2	6.95E+05	1.36	Y	1.05	5.36	10837.598	0.711
123679/123689-HxCDD	36.96		0.9795	0.9796	+0.2	5.62E+06	1.19	Y	1.05	43.4	10837.598	0.711
123469-HxCDD	37.09		0.9832	0.9832	0	5.15E+05	1.29	Y	1.05	3.97	10837.598	0.711
123478-HxCDD	37.74		**1.0004**	**1.0003**	**-0.2**	**3.50E+05**	**1.42**	**Y**	1.06	**2.85**	**10837.598**	**0.709**
123678-HxCDD	37.85		**1.0034**	**1.0033**	**-0.2**	**1.54E+06**	**1.41**	**Y**	1.08	**11.7**	**10837.598**	**0.72**
123467-HxCDD	38.04	EMPC	1.0083	1.0083	0	2.21E+05	1.60	N	1.05	1.71	10837.598	0.711
123789-HxCDD	38.14		**1.0111**	**1.0110**	**-0.2**	**9.07E+05**	**1.33**	**Y**	1.02	**6.71**	**10837.598**	**0.706**

Lab ID: B5965_18711_DF_006-RJ | **Acq'd:** 08 Dec 2021 13:49 PSW | **Wt/Vol:** 15.46 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-1 | **UTP:** 08-Dec-2021 14:49:09 PSW | **J-level:** 0.323 pg/g | **Split:** 1 | **Checkcode:** 545-953-LKG

Datafile: 211207R34 | **Report:** 08 Dec 2021 14:50 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

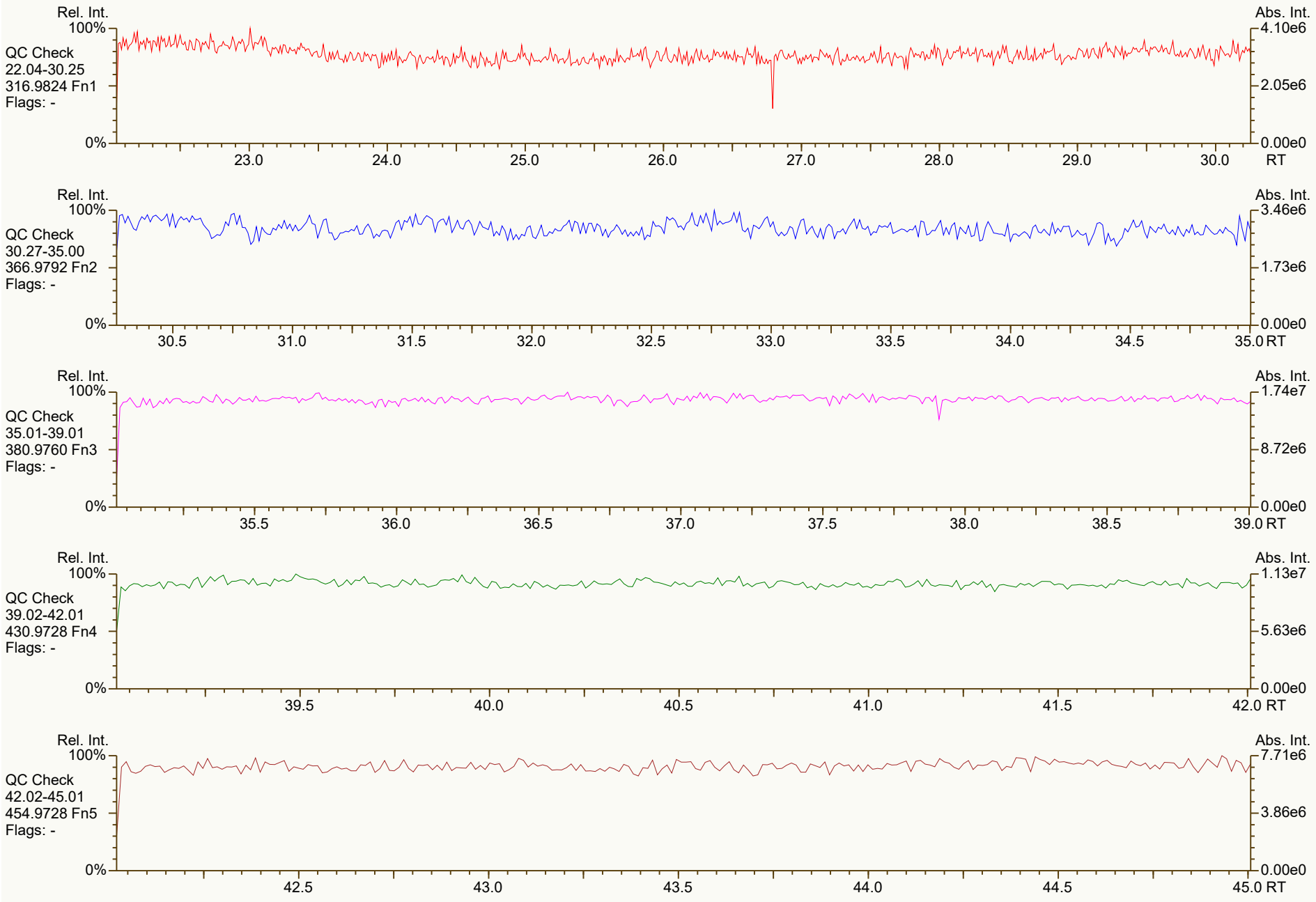
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.06		0.9843	0.9842	-0.2	6.36E+07	1.06	Y	0.97	601	8258.623	0.511
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**5.47E+07**	**1.06**	**Y**	**0.97**	**517**	**8258.623**	**0.511**
OCDD	**43.29**		**1.0003**	**1.0003**	**0**	**4.07E+08**	**0.89**	**Y**	**1.07**	**5,670**	**10534.215**	**1.16**
OCDD-a	43.28		1.0001	1.0002	+0.3	2.42E+07	2.51	Y	0.07	5,480	11918.873	21.3
1368-TCDF	22.97		0.8284	0.8279	-0.7	1.00E+05	0.79	Y	0.96	0.446	8311.146	0.414
1468-TCDF	23.55		0.8487	0.8486	-0.1	1.98E+05	0.71	Y	0.96	0.877	8311.146	0.414
2468-TCDF	24.16		0.8709	0.8707	-0.3	5.10E+05	0.83	Y	0.96	2.26	8311.146	0.414
1346/1246-TCDF	24.53		0.8828	0.8841	+1.9	2.01E+05	0.66	Y	0.96	0.893	8311.146	0.414
1347/1378/1247-TCDF	24.67		0.8886	0.8890	+0.6	6.26E+05	0.88	Y	0.96	2.78	8311.146	0.414
1348-TCDF	24.91		0.8980	0.8978	-0.3	1.21E+05	0.72	Y	0.96	0.537	8311.146	0.414
1248/1367/1379-TCDF	25.02		0.9027	0.9018	-1.4	4.22E+05	0.73	Y	0.96	1.87	8311.146	0.414
1268-TCDF	25.41		0.9159	0.9157	-0.3	2.88E+05	0.68	Y	0.96	1.28	8311.146	0.414
1467-TCDF	25.54	EMPC	0.9206	0.9204	-0.3	2.02E+05	1.12	N	0.96	0.896	8311.146	0.414
1478-TCDF	25.71		0.9266	0.9267	+0.2	4.53E+05	0.77	Y	0.96	2.01	8311.146	0.414
1369/1237-TCDF	26.06	EMPC	0.9396	0.9392	-0.6	8.02E+04	0.46	N	0.96	0.356	8311.146	0.414
2467-TCDF	26.20		0.9440	0.9441	+0.2	2.02E+05	0.84	Y	0.96	0.897	8311.146	0.414
2368-TCDF	26.36		0.9496	0.9499	+0.5	5.90E+05	0.68	Y	0.96	2.62	8311.146	0.414
1238/1234/1678/1469/1236-TCDF	26.44	EMPC	0.9530	0.9530	0	5.78E+05	0.89	N	0.96	2.56	8311.146	0.414
1278-TCDF	26.89		0.9689	0.9690	+0.2	5.49E+05	0.76	Y	0.96	2.44	8311.146	0.414
1349-TCDF	NotFnd		0.9732						0.96		8311.146	0.414
1267-TCDF	27.15	EMPC	0.9786	0.9786	0	2.26E+05	0.62	N	0.96	1	8311.146	0.414
2346/1249-TCDF	27.35	EMPC	0.9849	0.9856	+1.1	1.22E+05	0.55	N	0.96	0.541	8311.146	0.414
2347/1279-TCDF	27.55		0.9927	0.9928	+0.2	2.31E+05	0.83	Y	0.96	1.03	8311.146	0.414
2348-TCDF	27.65		0.9967	0.9966	-0.2	2.49E+05	0.76	Y	0.96	1.1	8311.146	0.414
2378-TCDF	**27.77**		**1.0007**	**1.0007**	**0**	**1.18E+06**	**0.79**	**Y**	**0.96**	**5.24**	**8311.146**	**0.414**
2367/3467-TCDF	28.12		1.0136	1.0135	-0.2	7.68E+05	0.79	Y	0.96	3.41	8311.146	0.414
1269-TCDF	NotFnd		1.0223						0.96		8311.146	0.414
1239-TCDF	NotFnd		1.0313						0.96		8311.146	0.414
1289-TCDF	29.71	EMPC	1.0711	1.0708	-0.5	2.46E+05	1.38	N	0.96	1.09	8311.146	0.414
13468/12468-PeCDF	29.69		0.9147	0.9152	+0.9	2.07E+06	1.68	Y	0.94	10.8	7960.895	0.369
13678/13467/12467-PeCDF	31.21		0.9616	0.9621	+0.9	4.50E+05	1.55	Y	0.94	2.34	6644.326	0.308
12368/13478/12478-PeCDF	31.36	EMPC	0.9663	0.9667	+0.8	1.25E+06	1.81	N	0.94	6.5	6644.326	0.308
14678-PeCDF	31.46	J EMPC	0.9695	0.9700	+0.9	1.54E+05	0.87	N	0.94	0.804	6644.326	0.308
13479-PeCDF	NotFnd		0.9727						0.94		6644.326	0.308
13469/12479-PeCDF	NotFnd		0.9799						0.94		6644.326	0.308
12346-PeCDF	31.92	J	0.9839	0.9840	+0.2	9.10E+04	1.45	Y	0.94	0.475	6644.326	0.308

Lab ID: B5965_18711_DF_006-RJ **Acq'd: 08 Dec 2021 13:49 PSW** **Wt/Vol: 15.46 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-JC-NE-S-1 **UTP: 08-Dec-2021 14:49:09 PSW** **J-level: 0.323 pg/g** **Split: 1** **Checkcode: 545-953-LKG**

Datafile: 211207R34 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.01		0.9864	0.9868	+0.8	3.81E+05	1.72	Y	0.94	1.98	6644.326	0.308
12347-PeCDF	32.09	J EMPC	0.9892	0.9893	+0.2	1.62E+05	1.92	N	0.94	0.847	6644.326	0.308
12348-PeCDF	32.24	J EMPC	0.9940	0.9939	-0.2	1.46E+05	1.18	N	0.94	0.761	6644.326	0.308
12378-PeCDF	**32.45**	J	**1.0006**	**1.0005**	**-0.2**	**2.66E+05**	**1.58**	**Y**	**0.95**	**1.35**	**6644.326**	**0.319**
12678/12367-PeCDF	32.74		1.0088	1.0093	+1.0	4.41E+05	1.39	Y	0.94	2.3	6644.326	0.308
12379-PeCDF	NotFnd		1.0142						0.94		6644.326	0.308
12679-PeCDF	NotFnd		0.9931						0.94		6644.326	0.308
23467/12369-PeCDF	33.42	J EMPC	0.9966	0.9967	+0.2	2.00E+05	2.03	N	0.94	1.04	6644.326	0.308
23478-PeCDF	**33.56**		**1.0005**	**1.0008**	**+0.6**	**5.97E+05**	**1.46**	**Y**	**0.94**	**3.2**	**6644.326**	**0.297**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6644.326	0.308
12349-PeCDF	NotFnd		1.0100						0.94		6644.326	0.308
12389-PeCDF	NotFnd		1.0323						0.94		6644.326	0.308
123468-HxCDF	35.38		0.9631	0.9631	0	1.13E+06	1.39	Y	1.16	6.15	14464.4	0.668
124678/134678-HxCDF	35.58		0.9686	0.9685	-0.2	4.06E+06	1.23	Y	1.16	22.1	14464.4	0.668
134679-HxCDF	NotFnd		0.9747						1.16		14464.4	0.668
124679-HxCDF	NotFnd		0.9800						1.16		14464.4	0.668
124689-HxCDF	36.22		0.9859	0.9860	+0.2	4.60E+06	1.27	Y	1.16	25	14464.4	0.668
123467-HxCDF	36.63	J	0.9972	0.9973	+0.2	2.54E+05	1.09	Y	1.16	1.38	14464.4	0.668
123478-HxCDF	**36.75**		**1.0004**	**1.0005**	**+0.2**	**5.09E+05**	**1.12**	**Y**	**1.23**	**2.76**	**14464.4**	**0.608**
123678-HxCDF	**36.89**		**1.0005**	**1.0004**	**-0.2**	**3.88E+05**	**1.31**	**Y**	**1.13**	**1.91**	**14464.4**	**0.611**
123479-HxCDF	NotFnd		1.0048						1.16		14464.4	0.668
123469-HxCDF	NotFnd		1.0089						1.16		14464.4	0.668
123679-HxCDF	NotFnd		0.9943						1.16		14464.4	0.668
234678-HxCDF	**37.57**		**1.0005**	**1.0004**	**-0.2**	**5.97E+05**	**1.33**	**Y**	**1.15**	**3.28**	**14464.4**	**0.773**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		14464.4	0.668
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**14464.4**	**0.692**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		14464.4	0.668
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**9.22E+06**	**1.04**	**Y**	**1.36**	**55.3**	**9517.356**	**0.366**
1234679-HpCDF	40.06	**J EMPC**	1.0065	1.0065	0	2.15E+05	1.30	N	1.33	1.42	9517.356	0.423
1234689-HpCDF	40.20		1.0097	1.0100	+0.7	1.81E+07	1.05	Y	1.33	119	9517.356	0.423
1234789-HpCDF	**41.17**		**1.0004**	**1.0003**	**-0.2**	**5.14E+05**	**0.93**	**Y**	**1.30**	**3.77**	**9517.356**	**0.49**
OCDF	**43.47**		**1.0002**	**1.0003**	**+0.3**	**1.45E+07**	**0.89**	**Y**	**1.03**	**165**	**8782.858**	**0.855**
OCDF-a	43.47		1.0001	1.0002	+0.3	8.32E+05	2.59	Y	0.06	164	9731.07	16.4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100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Abs. Int.
4.10e6
2.05e6
0.00e0
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
3.46e6
1.73e6
0.00e0
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
1.74e7
8.72e6
0.00e0
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
1.13e7
5.63e6
0.00e0
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
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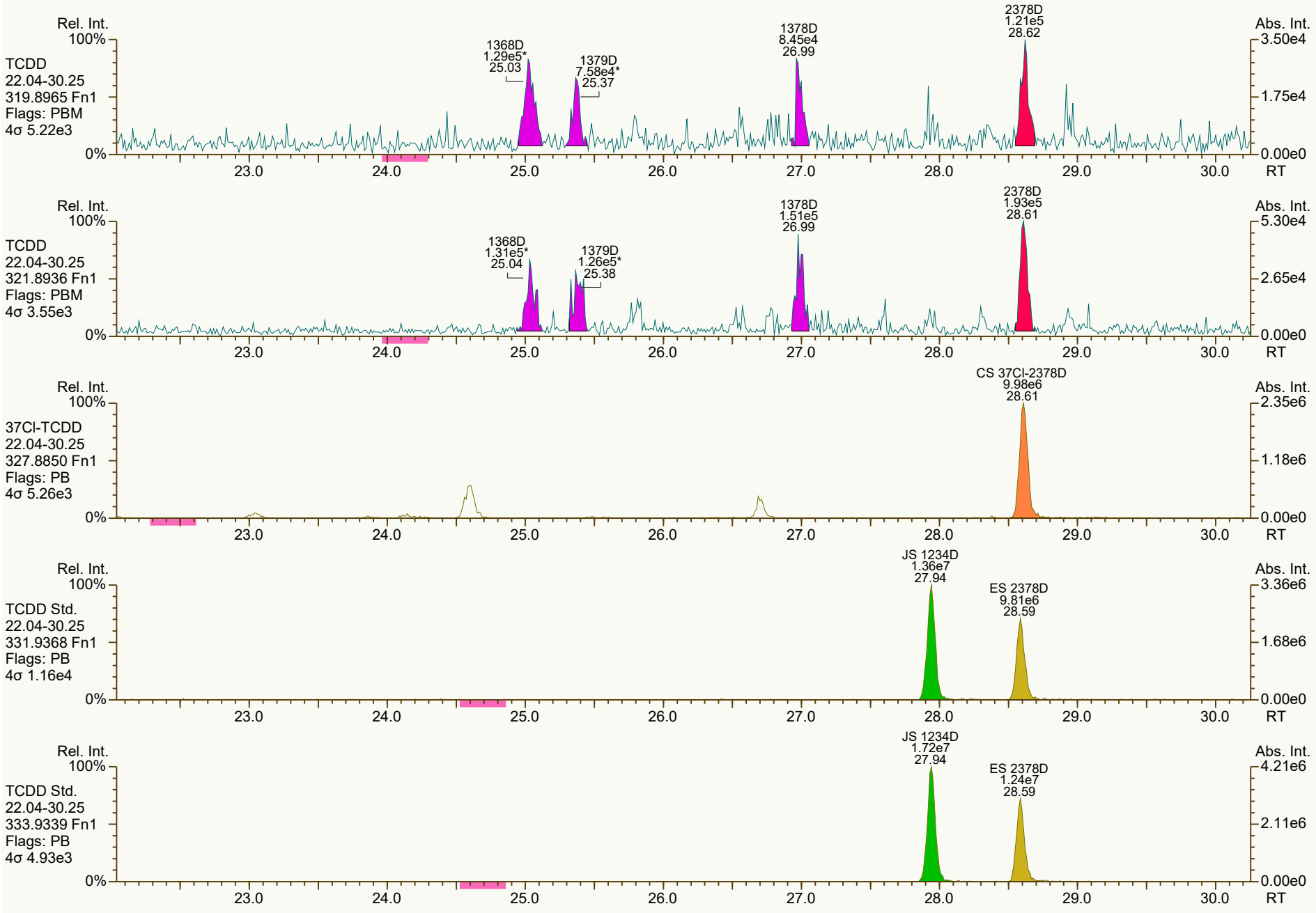
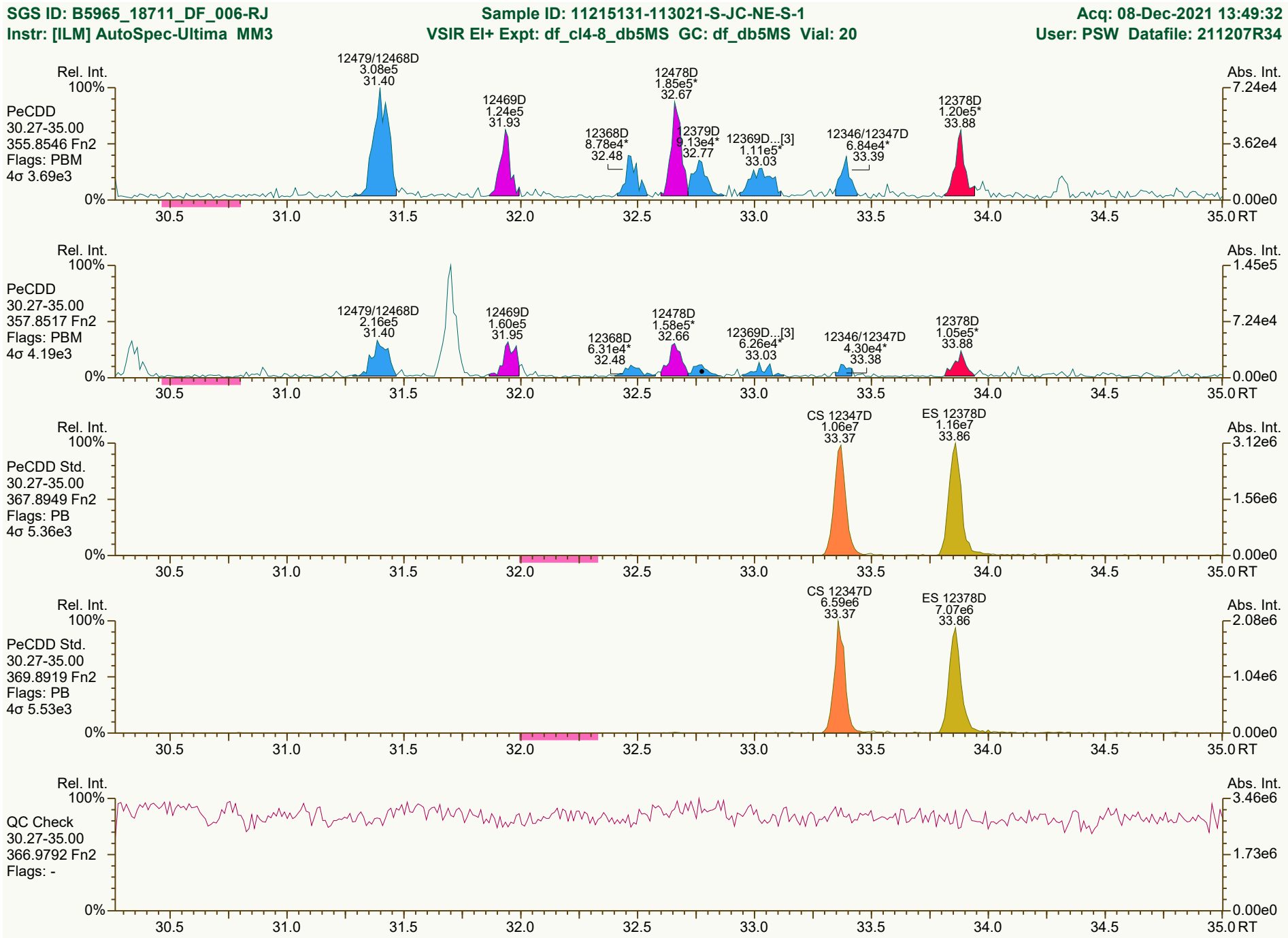
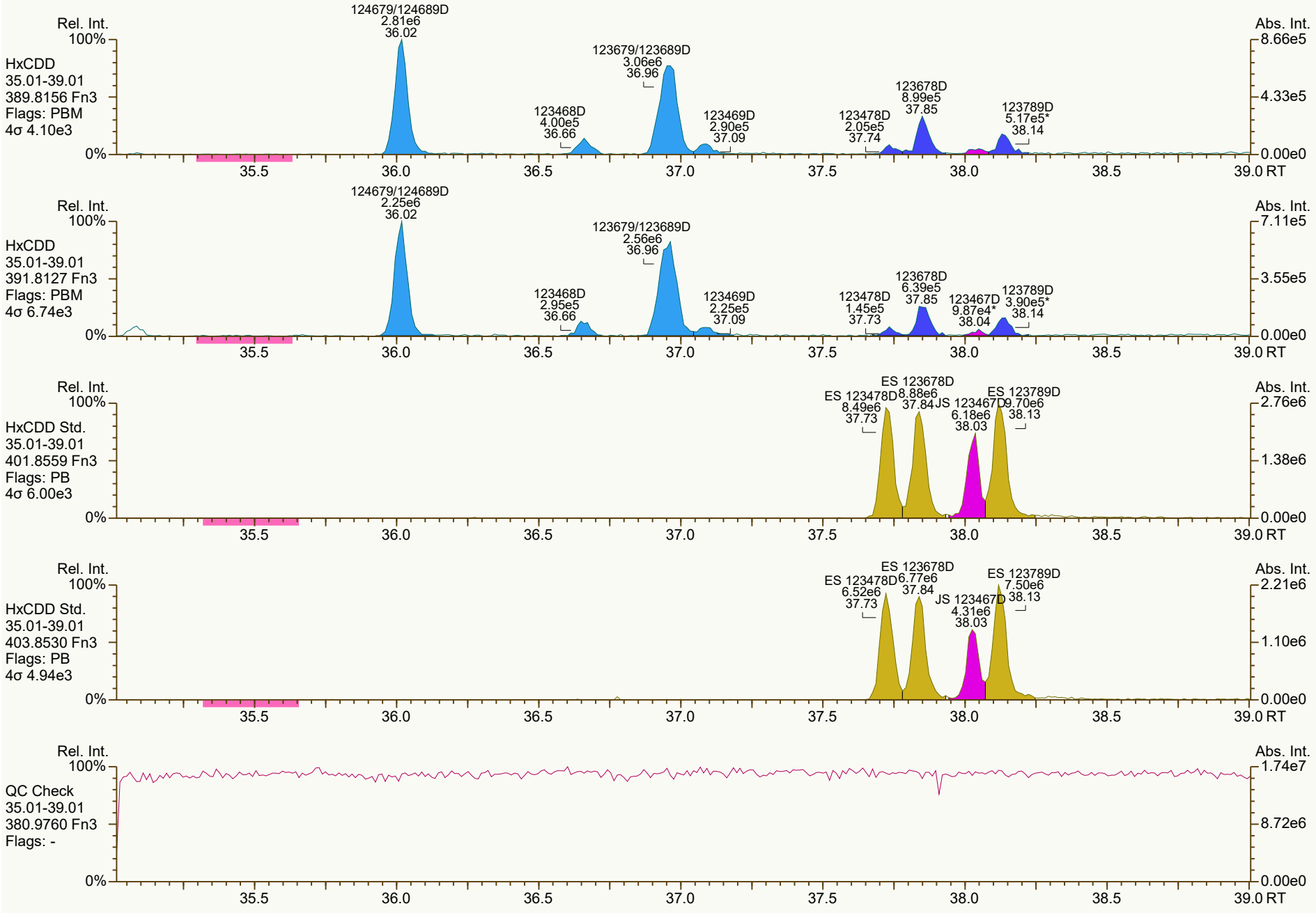
3.86e6
0.00e0

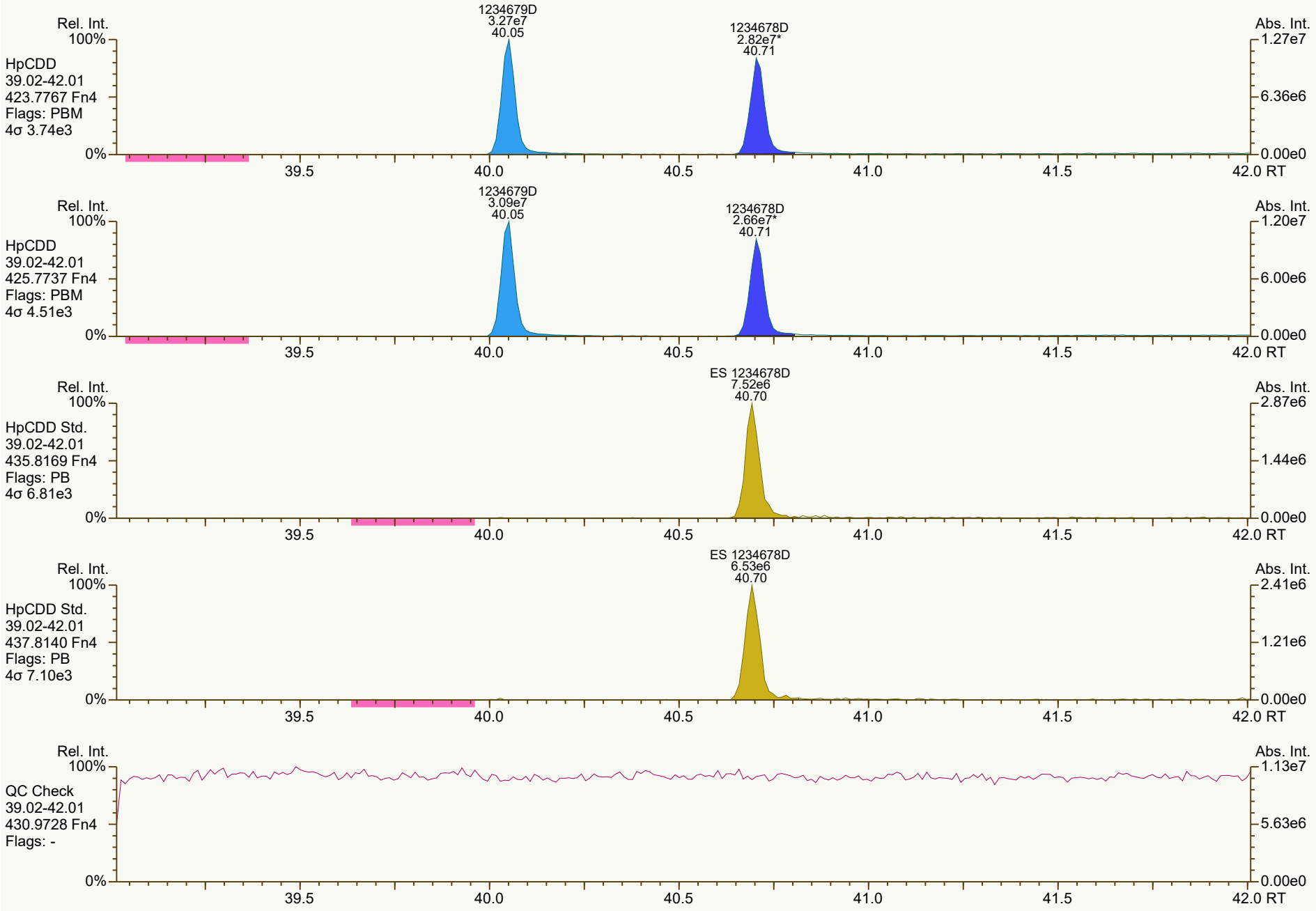

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 5.22e3
1368D
1.29e5*
25.03
1379D
7.58e4*
25.37
1378D
8.45e4
26.99
2378D
1.21e5
28.62
Abs. Int.
3.50e4
1.75e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 3.55e3
1368D
1.31e5*
25.04
1379D
1.26e5*
25.38
1378D
1.51e5
26.99
2378D
1.93e5
28.61
Abs. Int.
5.30e4
2.65e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 5.26e3
CS 37Cl-2378D
9.98e6
28.61
Abs. Int.
2.35e6
1.18e6
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.16e4
JS 1234D
1.36e7
27.94
ES 2378D
9.81e6
28.59
Abs. Int.
3.36e6
1.68e6
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 4.93e3
JS 1234D
1.72e7
27.94
ES 2378D
1.24e7
28.59
Abs. Int.
4.21e6
2.11e6
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

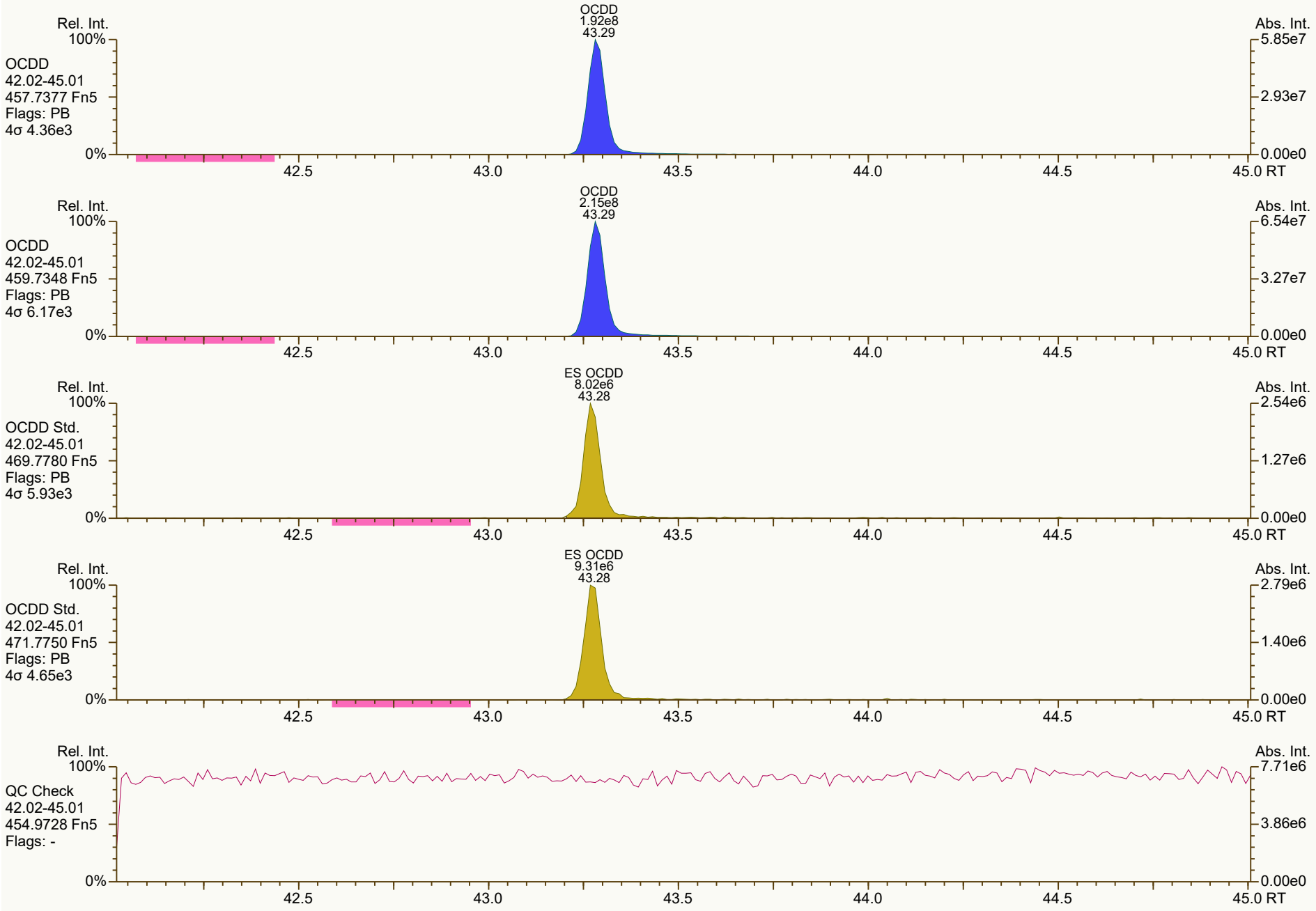


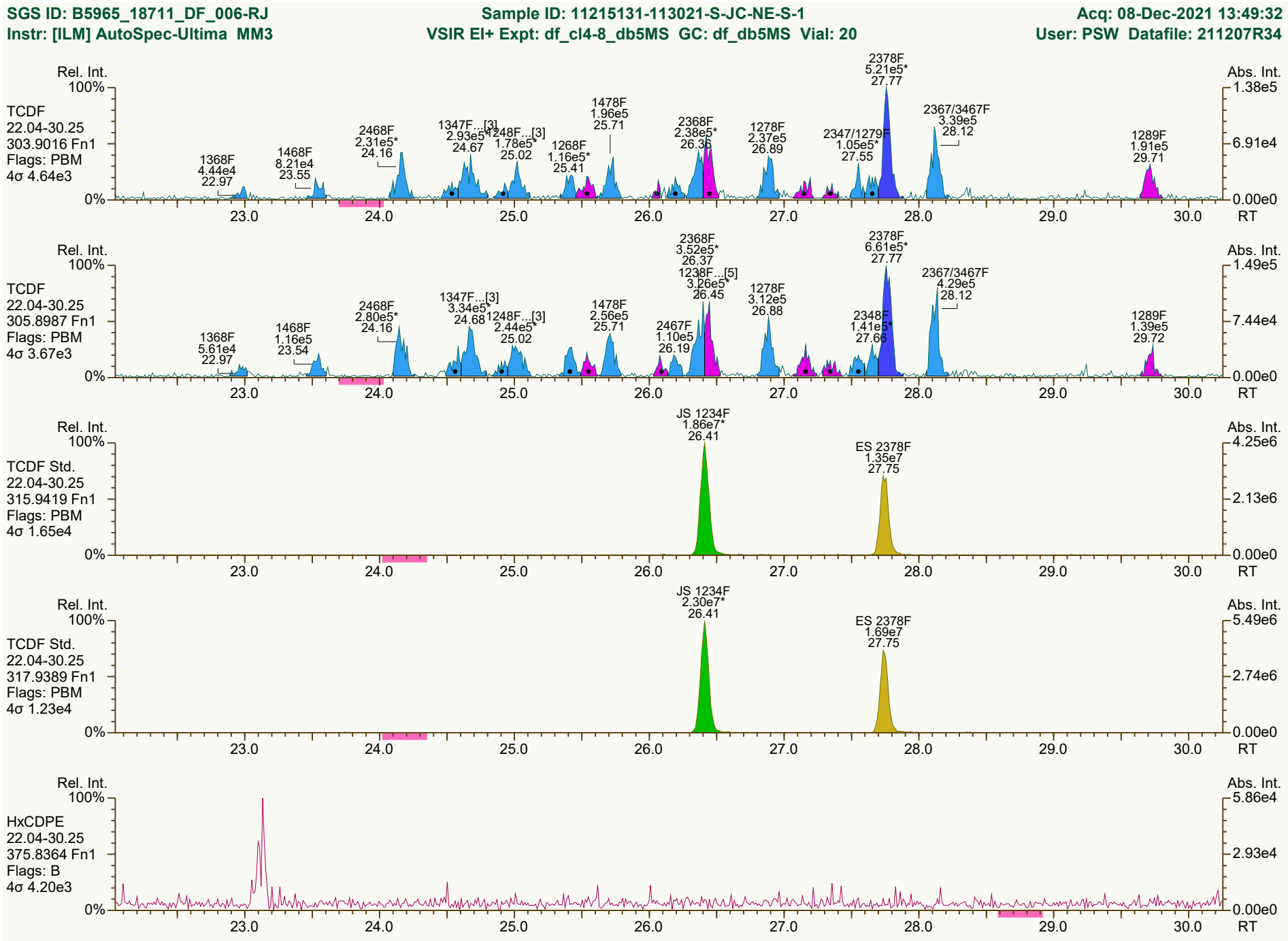
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_006-RJ.utp_res, saved 08-Dec-2021 14:49 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1233, 9558 scc: 545-953 *PKD: 08-Dec-2021 14:41 Printed: 08-Dec-2021 14:58 Page 3 of 12*


Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: PBM
4σ 4.10e3
124679/124689D
2.81e6
36.02
123679/123689D
3.06e6
36.96
123468D
4.00e5
36.66
123469D
2.90e5
37.09
123478D
2.05e5
37.74
123678D
8.99e5
37.85
123789D
5.17e5*
38.14
Abs. Int.
8.66e5
4.33e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PBM
4σ 6.74e3
124679/124689D
2.25e6
36.02
123679/123689D
2.56e6
36.96
123468D
2.95e5
36.66
123469D
2.25e5
37.09
123478D
1.45e5
37.73
123678D
6.39e5
37.85
123467D
9.87e4*
38.04
123789D
3.90e5*
38.14
Abs. Int.
7.11e5
3.55e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PB
4σ 6.00e3
ES 123678D
8.88e6
37.84
ES 123478D
8.49e6
37.73
JS 123467D
6.18e6
38.03
ES 123789D
9.70e6
38.13
Abs. Int.
2.76e6
1.38e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PB
4σ 4.94e3
ES 123678D
6.77e6
37.84
ES 123478D
6.52e6
37.73
JS 123467D
4.31e6
38.03
ES 123789D
7.50e6
38.13
Abs. Int.
2.21e6
1.10e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
Abs. Int.
1.74e7
8.72e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 3.74e3
0%
1234679D
3.27e7
40.05
1234678D
2.82e7*
40.71
Abs. Int.
1.27e7
6.36e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 4.51e3
0%
1234679D
3.09e7
40.05
1234678D
2.66e7*
40.71
Abs. Int.
1.20e7
6.00e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.81e3
0%
ES 1234678D
7.52e6
40.70
Abs. Int.
2.87e6
1.44e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 7.10e3
0%
ES 1234678D
6.53e6
40.70
Abs. Int.
2.41e6
1.21e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.13e7
5.63e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 4.36e3
0%
OCDD
1.92e8
43.29
Abs. Int.
5.85e7
2.93e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 6.17e3
0%
OCDD
2.15e8
43.29
Abs. Int.
6.54e7
3.27e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 5.93e3
0%
ES OCDD
8.02e6
43.28
Abs. Int.
2.54e6
1.27e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 4.65e3
0%
ES OCDD
9.31e6
43.28
Abs. Int.
2.79e6
1.40e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.71e6
3.86e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5965_18711_DF_006-RJ
Sample ID: 11215131-113021-S-JC-NE-S-1
Acq: 08-Dec-2021 13:49:32
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 20
User: PSW Datafile: 211207R34
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 4.64e3
1368F 4.44e4 22.97
1468F 8.21e4 23.55
2468F 2.31e5* 24.16
1347F...[3] 2.93e5* 24.67
1248F...[3] 1.78e5* 25.02
1268F 1.16e5* 25.41
1478F 1.96e5 25.71
2368F 2.38e5* 26.36
1278F 2.37e5 26.89
2347/1279F 1.05e5* 27.55
2378F 5.21e5* 27.77
2367/3467F 3.39e5 28.12
1289F 1.91e5 29.71
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.67e3
1368F 5.61e4 22.97
1468F 1.16e5 23.54
2468F 2.80e5* 24.16
1347F...[3] 3.34e5* 24.68
1248F...[3] 2.44e5* 25.02
1478F 2.56e5 25.71
2467F 1.10e5 26.19
2368F 3.52e5* 26.37
1238F...[5] 3.26e5* 26.45
1278F 3.12e5 26.88
2348F 1.41e5* 27.66
2378F 6.61e5* 27.77
2367/3467F 4.29e5 28.12
1289F 1.39e5 29.72
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PBM
4σ 1.65e4
JS 1234F 1.86e7* 26.41
ES 2378F 1.35e7 27.75
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PBM
4σ 1.23e4
JS 1234F 2.30e7* 26.41
ES 2378F 1.69e7 27.75
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.20e3
Rel. Int.
Abs. Int.
100%
0%
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
1.38e5
6.91e4
0.00e0
1.49e5
7.44e4
4.25e6
2.13e6
5.49e6
2.74e6
5.86e4
2.93e4

SGS ID: B5965_18711_DF_006-RJ
Instr: [ILM] AutoSpec-Ultima MM3

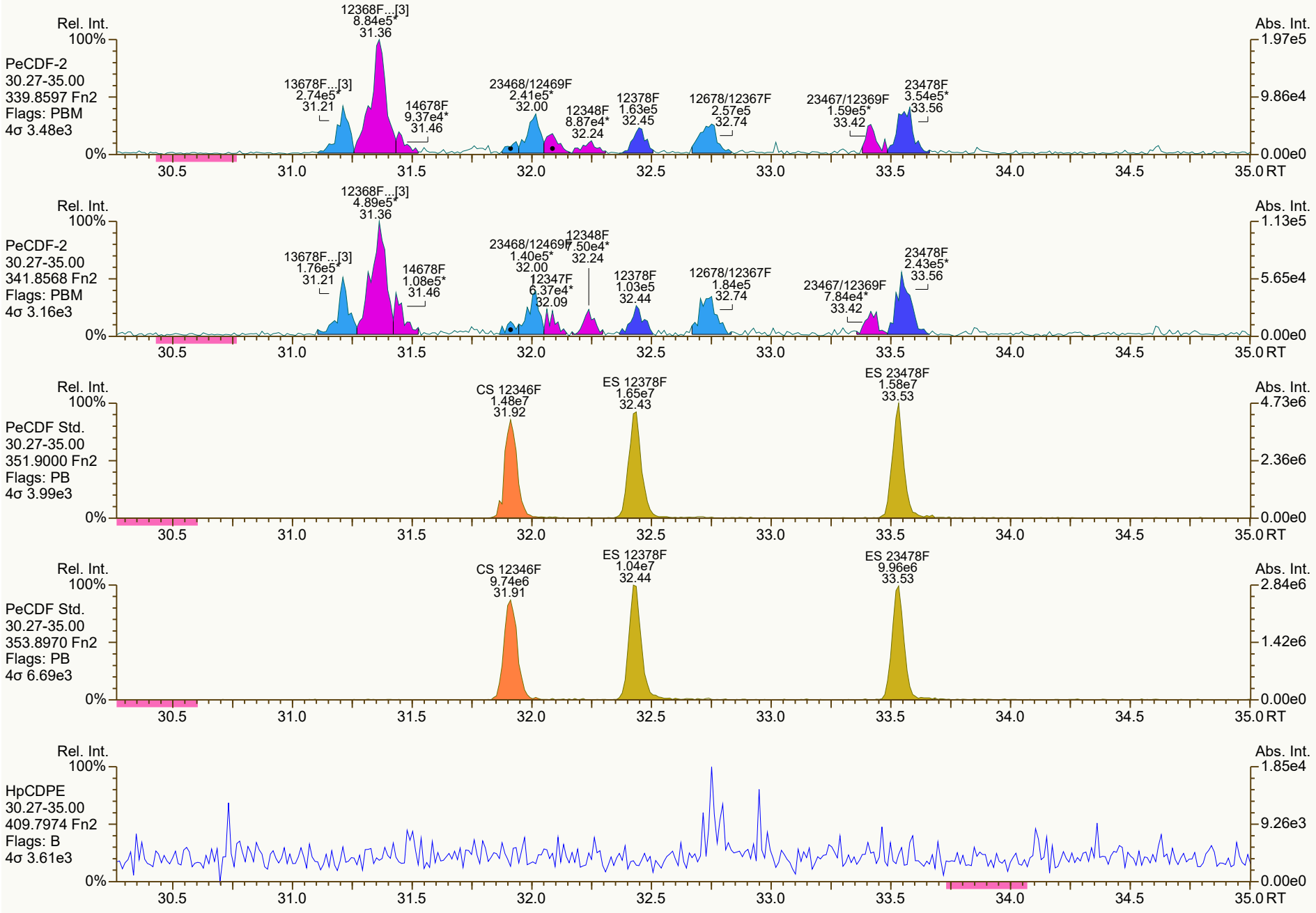
Sample ID: 11215131-113021-S-JC-NE-S-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 20

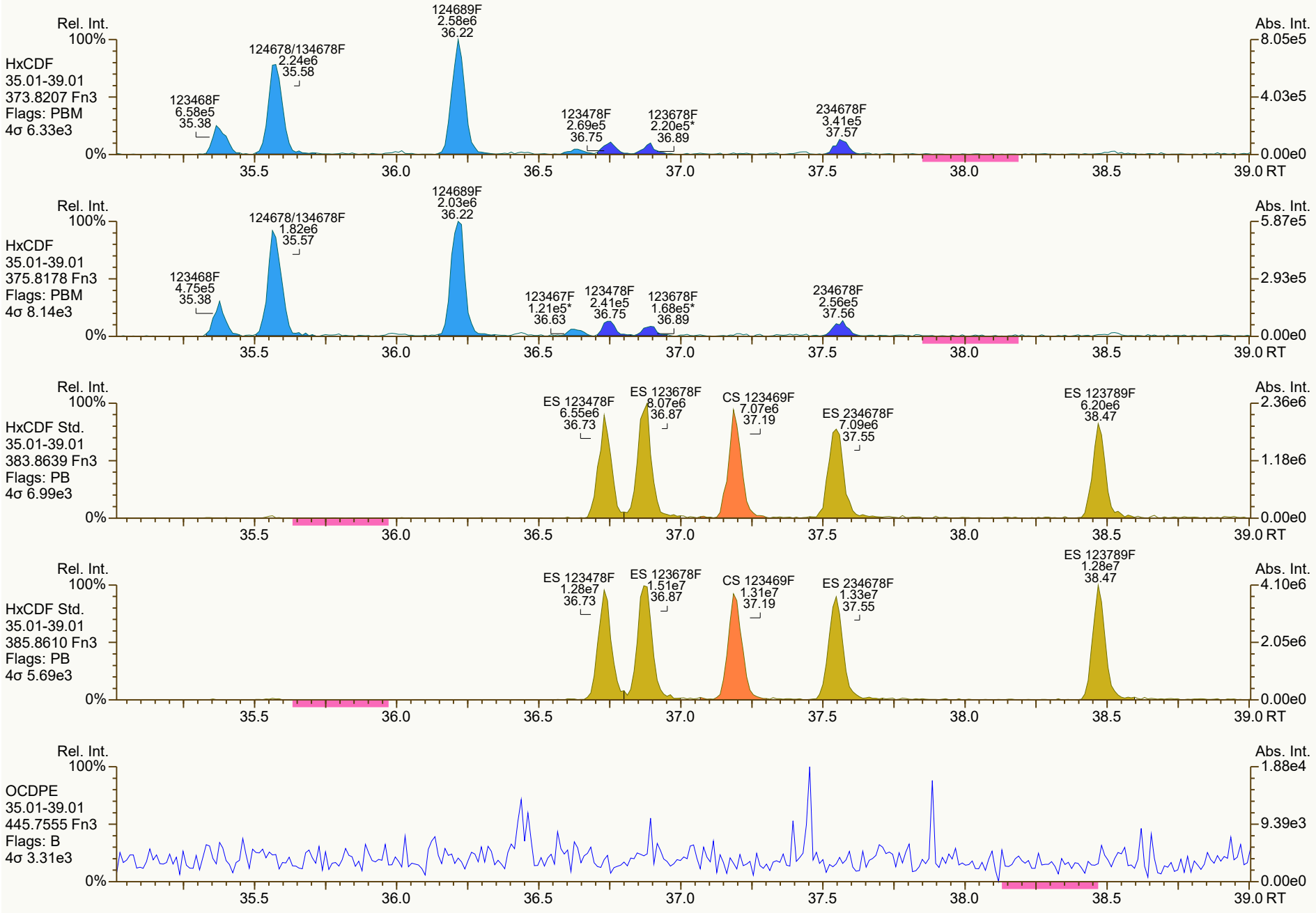
Acq: 08-Dec-2021 13:49:32
User: PSW Datafile: 211207R34

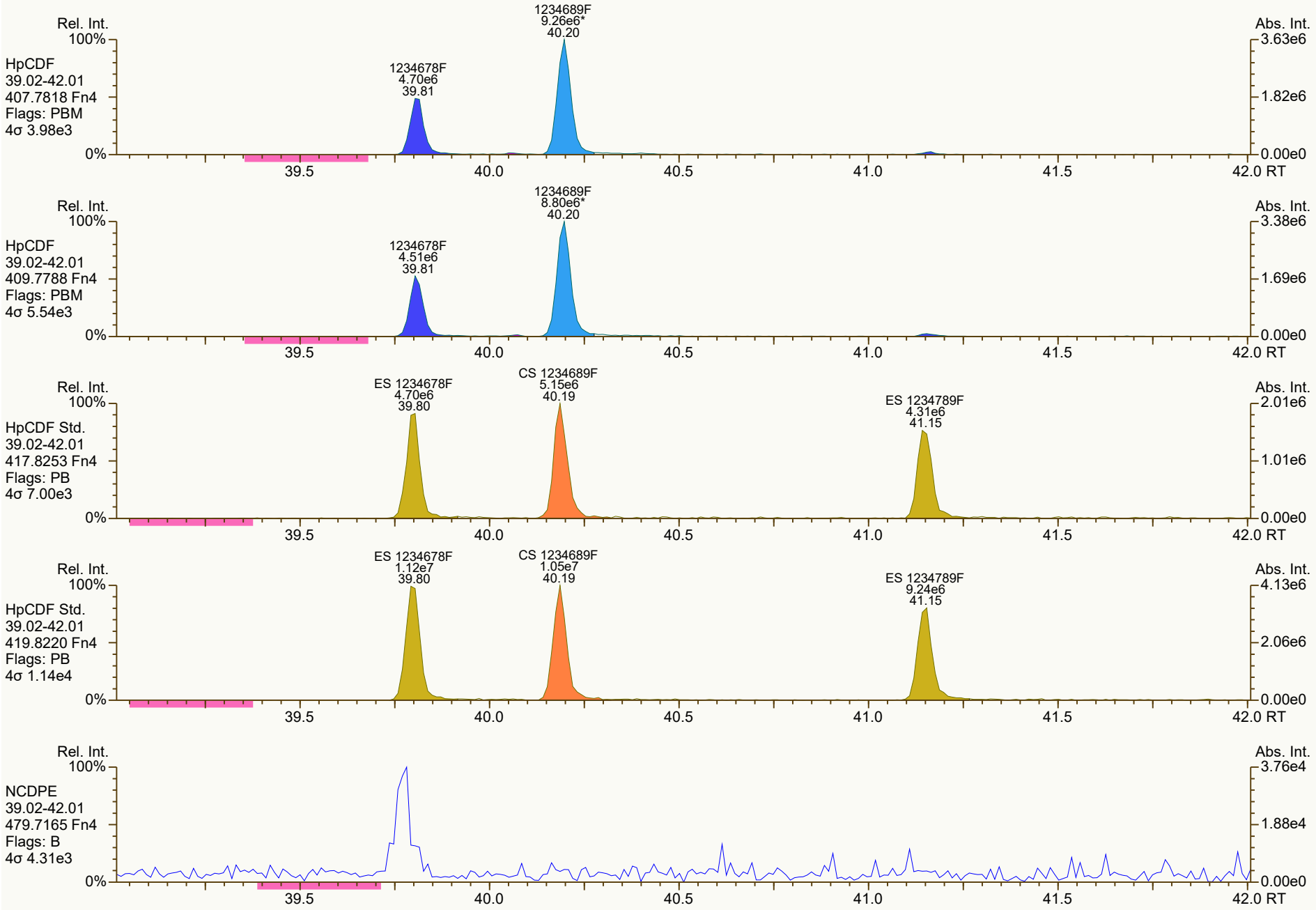


Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_006-RJ.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5826 scc: 545-953
PKD: 08-Dec-2021 14:41 Printed: 08-Dec-2021 14:59 Page 8 of 12


Rel. Int.
Abs. Int.
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 3.48e3
12368F...[3] 8.84e5* 31.36
13678F...[3] 2.74e5* 31.21
14678F 9.37e4* 31.46
23468/12469F 2.41e5* 32.00
12348F 8.87e4* 32.24
12378F 1.63e5 32.45
12678/12367F 2.57e5 32.74
23467/12369F 1.59e5* 33.42
23478F 3.54e5* 33.56
1.97e5
9.86e4
0.00e0
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.16e3
12368F...[3] 4.89e5* 31.36
13678F...[3] 1.76e5* 31.21
14678F 1.08e5* 31.46
23468/12469F 1.40e5* 32.00
12348F 7.50e4* 32.24
12347F 6.37e4* 32.09
12378F 1.03e5 32.44
12678/12367F 1.84e5 32.74
23467/12369F 7.84e4* 33.42
23478F 2.43e5* 33.56
1.13e5
5.65e4
0.00e0
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 3.99e3
CS 12346F 1.48e7 31.92
ES 12378F 1.65e7 32.43
ES 23478F 1.58e7 33.53
4.73e6
2.36e6
0.00e0
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 6.69e3
CS 12346F 9.74e6 31.91
ES 12378F 1.04e7 32.44
ES 23478F 9.96e6 33.53
2.84e6
1.42e6
0.00e0
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.61e3
1.85e4
9.26e3
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 6.33e3
123468F 6.58e5 35.38
124678/134678F 2.24e6 35.58
124689F 2.58e6 36.22
123478F 2.69e5 36.75
123678F 2.20e5* 36.89
234678F 3.41e5 37.57
Abs. Int.
8.05e5
4.03e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 8.14e3
123468F 4.75e5 35.38
124678/134678F 1.82e6 35.57
124689F 2.03e6 36.22
123467F 1.21e5* 36.63
123478F 2.41e5 36.75
123678F 1.68e5* 36.89
234678F 2.56e5 37.56
5.87e5
2.93e5
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 6.99e3
ES 123478F 6.55e6 36.73
ES 123678F 8.07e6 36.87
CS 123469F 7.07e6 37.19
ES 234678F 7.09e6 37.55
ES 123789F 6.20e6 38.47
2.36e6
1.18e6
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 5.69e3
ES 123478F 1.28e7 36.73
ES 123678F 1.51e7 36.87
CS 123469F 1.31e7 37.19
ES 234678F 1.33e7 37.55
ES 123789F 1.28e7 38.47
4.10e6
2.05e6
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.31e3
1.88e4
9.39e3


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 3.98e3
1234678F
4.70e6
39.81
1234689F
9.26e6*
40.20
Abs. Int.
3.63e6
1.82e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 5.54e3
1234678F
4.51e6
39.81
1234689F
8.80e6*
40.20
Abs. Int.
3.38e6
1.69e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 7.00e3
ES 1234678F
4.70e6
39.80
CS 1234689F
5.15e6
40.19
ES 1234789F
4.31e6
41.15
Abs. Int.
2.01e6
1.01e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 1.14e4
ES 1234678F
1.12e7
39.80
CS 1234689F
1.05e7
40.19
ES 1234789F
9.24e6
41.15
Abs. Int.
4.13e6
2.06e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.31e3
Abs. Int.
3.76e4
1.88e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 4.29e3
0%
OCDF
6.84e6*
43.47
Abs. Int.
2.11e6
1.05e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 4.49e3
0%
OCDF
7.67e6*
43.47
Abs. Int.
2.37e6
1.19e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 9.53e3
0%
ES OCDF
1.03e7*
43.46
Abs. Int.
3.02e6
1.51e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 6.30e3
0%
ES OCDF
1.18e7*
43.46
Abs. Int.
3.76e6
1.88e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.03e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5965_18711_DF_007 **Acq'd:** 08 Dec 2021 05:22 PSW **Wt/Vol:** 16.69 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-2 **UTP:** 08-Dec-2021 14:49:05 PSW **J-level:** 0.3 pg/g **Split:** 1 **Checkcode:** 727-243-HBQ

Datafile: 211207R24 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62		1.0008	1.0007	-0.2	3.20E+07	0.80	Y	1.34	166	8377.415	0.471
12378-PeCDD	33.88		1.0004	1.0005	+0.2	4.18E+05	1.53	Y	1.06	3.15	8771.454	0.632
123478-HxCDD	37.75	EMPC	1.0004	1.0005	+0.2	2.20E+05	1.00	N	1.06	1.98	16920.976	1.16
123678-HxCDD	37.86		1.0034	1.0035	+0.2	1.03E+06	1.15	Y	1.08	8.82	16920.976	1.21
123789-HxCDD	38.14		1.0111	1.0108	-0.7	6.04E+05	1.41	Y	1.02	4.92	16920.976	1.08
1234678-HpCDD	40.71		1.0004	1.0004	0	2.76E+07	1.05	Y	0.97	295	11298.66	0.841
OCDD	43.29		1.0003	1.0002	-0.3	2.81E+08	0.89	Y	1.07	3,840	15005.2	1.81
2378-TCDF	27.77	E	1.0007	1.0007	0	1.23E+08	0.80	Y	0.96	636	8676.082	0.509
12378-PeCDF	32.46		1.0006	1.0006	0	2.98E+06	1.38	Y	0.95	17.7	9587.657	0.533
23478-PeCDF	33.56		1.0005	1.0008	+0.6	2.97E+06	1.53	Y	0.94	18.3	9587.657	0.562
123478-HxCDF	36.75		1.0004	1.0005	+0.2	4.20E+06	1.27	Y	1.23	25.9	15200.214	0.739
123678-HxCDF	36.89		1.0005	1.0003	-0.4	1.40E+06	1.21	Y	1.13	8.1	15200.214	0.79
234678-HxCDF	37.57		1.0005	1.0005	0	7.80E+05	1.39	Y	1.15	4.95	15200.214	0.818
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	15200.214	0.738
1234678-HpCDF	39.81		1.0003	1.0003	0	1.28E+07	1.03	Y	1.36	84.7	7912.733	0.311
1234789-HpCDF	41.16		1.0004	1.0002	-0.5	1.38E+06	1.05	Y	1.30	11.1	7912.733	0.424
OCDF	43.47		1.0002	1.0002	0	2.48E+08	0.90	Y	1.03	2,690	9776.271	0.835

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.60	1.0233	1.0233	0	1.72E+07	0.76	Y	1.03	70.5
ES 12378-PeCDD	33.86	1.2118	1.2117	-0.2	1.50E+07	1.53	Y	1.03	61.5
ES 123478-HxCDD	37.73	0.9921	0.9921	0	1.26E+07	1.27	Y	0.99	73.9
ES 123678-HxCDD	37.84	0.9951	0.9951	0	1.29E+07	1.37	Y	0.97	77.3
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	1.45E+07	1.25	Y	1.12	75
ES 1234678-HpCDD	40.69	1.0702	1.0701	-0.2	1.15E+07	0.98	Y	0.99	67.7
ES OCDD	43.28	1.1377	1.1380	+0.8	1.64E+07	0.88	Y	0.78	61.4
ES 2378-TCDF	27.75	1.0505	1.0506	+0.2	2.42E+07	0.83	Y	1.08	66.3
ES 12378-PeCDF	32.44	1.2278	1.2280	+0.4	2.13E+07	1.61	Y	0.93	67.6
ES 23478-PeCDF	33.54	1.2691	1.2696	+1.0	2.07E+07	1.54	Y	0.92	66.7
ES 123478-HxCDF	36.73	0.9660	0.9660	0	1.57E+07	0.52	Y	1.14	80.1
ES 123678-HxCDF	36.88	0.9698	0.9697	-0.2	1.84E+07	0.52	Y	1.30	82.4
ES 234678-HxCDF	37.55	0.9875	0.9873	-0.5	1.64E+07	0.51	Y	1.20	79.4
ES 123789-HxCDF	38.47	1.0121	1.0117	-0.9	1.58E+07	0.51	Y	1.14	80.8
ES 1234678-HpCDF	39.80	1.0468	1.0465	-0.7	1.33E+07	0.42	Y	0.95	81.6
ES 1234789-HpCDF	41.15	1.0822	1.0820	-0.5	1.15E+07	0.48	Y	0.85	78.9
ES OCDF	43.46	1.1426	1.1429	+0.8	2.15E+07	0.92	Y	0.93	67.7

Lab ID: B5965_18711_DF_007 **Acq'd:** 08 Dec 2021 05:22 PSW **Wt/Vol:** 16.69 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-2 **UTP:** 08-Dec-2021 14:49:05 PSW **J-level:** 0.3 pg/g **Split:** 1 **Checkcode:** 727-243-HBQ

Datafile: 211207R24 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.95		-	-	-	2.36E+07	0.81	Y	-	-
JS 1234-TCDF	26.42		-	-	-	3.37E+07	0.77	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	8.59E+06	1.28	Y	-	-
CS 37Cl-2378-TCDD	28.62		1.0241	1.0239	-0.3	8.23E+06	n/a	-	1.31	66.7
CS 12347-PeCDD	33.37		1.1940	1.1941	+0.2	1.40E+07	1.66	Y	0.89	66.6
CS 12346-PeCDF	31.92		1.2080	1.2083	+0.6	2.10E+07	1.63	Y	0.87	71.8
CS 123469-HxCDF	37.20		0.9781	0.9781	0	1.73E+07	0.51	Y	1.09	92.2
CS 1234689-HpCDF	40.19		1.0569	1.0568	-0.2	1.44E+07	0.41	Y	0.86	97
~~SS 37Cl-2378-TCDD~~	~~28.62~~		~~1.0241~~	~~1.0239~~	~~-0.3~~	~~8.23E+06~~	~~n/a~~		~~1.26~~	~~95.1~~
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1941~~	~~+0.2~~	~~1.40E+07~~	~~1.66~~	~~Y~~	~~0.86~~	~~100~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2083~~	~~+0.6~~	~~2.10E+07~~	~~1.63~~	~~Y~~	~~0.93~~	~~106~~
~~SS 123469-HxCDF~~	~~37.20~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.73E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~112~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.44E+07~~	~~0.41~~	~~Y~~	~~0.91~~	~~118~~

Totals	Conc	EMPC
Total TCDD	190	194
Total PeCDD	16.2	19.8
Total HxCDD	93.1	96.5
Total HpCDD	638	638
Total Tetra-Octa Dioxins	4780	4790
Total TCDF	1,200	1200
Total PeCDF	77.5	95.1
Total HxCDF	102	102
Total HpCDF	203	203
Total Tetra-Octa Furans	4,270	4290
Total Tetra-Octa Dioxins & Furans	9050	9080

Lab ID: B5965_18711_DF_007 | **Acq'd: 08 Dec 2021 05:22 PSW** | **Wt/Vol: 16.69 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-JC-NE-S-2 | **UTP: 08-Dec-2021 14:49:05 PSW** | **J-level: 0.3 pg/g** | **Split: 1** | **Checkcode: 727-243-HBQ**

Datafile: 211207R24 | **Report: 08 Dec 2021 14:50 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8753	-0.8	5.56E+05	0.69	Y	1.34	2.88	8377.415	0.471
1379-TCDD	NotFnd		0.8878						1.34		8377.415	0.471
1369-TCDD	25.80	EMPC	0.9025	0.9022	-0.5	7.55E+04	1.24	N	1.34	0.392	8377.415	0.471
1469-TCDD	26.57		0.9291	0.9290	-0.2	4.88E+05	0.82	Y	1.34	2.53	8377.415	0.471
1247/1246/1248/1249-TCDD	26.79	EMPC	0.9374	0.9368	-1.0	2.27E+05	0.98	N	1.34	1.18	8377.415	0.471
1378-TCDD	26.99	EMPC	0.9440	0.9439	-0.2	1.90E+05	0.89	N	1.34	0.984	8377.415	0.471
1268-TCDD	NotFnd		0.9505						1.34		8377.415	0.471
1478-TCDD	27.42	EMPC	0.9591	0.9587	-0.7	7.66E+04	1.31	N	1.34	0.398	8377.415	0.471
1279-TCDD	NotFnd		0.9650						1.34		8377.415	0.471
1234/1269-TCDD	27.94	EMPC	0.9771	0.9768	-0.5	1.89E+05	0.92	N	1.34	0.983	8377.415	0.471
1236-TCDD	NotFnd		0.9821						1.34		8377.415	0.471
1237/1238-TCDD	28.33		0.9907	0.9905	-0.3	5.21E+05	0.76	Y	1.34	2.7	8377.415	0.471
1239-TCDD	NotFnd		0.9953						1.34		8377.415	0.471
2378-TCDD	**28.62**		**1.0008**	1.0007	**-0.2**	3.20E+07	0.80	Y	**1.34**	**166**	**8377.415**	**0.471**
1278-TCDD	28.94		1.0118	1.0120	+0.3	3.00E+06	0.80	Y	1.34	15.6	8377.415	0.471
1267-TCDD	NotFnd		1.0162						1.34		8377.415	0.471
1289-TCDD	NotFnd		1.0340						1.34		8377.415	0.471
12479/12468-PeCDD	31.41		0.9274	0.9274	0	6.76E+05	1.35	Y	1.06	5.1	8771.454	0.632
12469-PeCDD	31.94		0.9430	0.9431	+0.2	4.04E+05	1.53	Y	1.06	3.05	8771.454	0.632
12368-PeCDD	32.49		0.9591	0.9593	+0.4	3.43E+05	1.37	Y	1.06	2.58	8771.454	0.632
12478-PeCDD	32.67	EMPC	0.9645	0.9647	+0.4	2.05E+05	1.31	N	1.06	1.55	8771.454	0.632
12379-PeCDD	32.77		0.9676	0.9676	0	2.02E+05	1.51	Y	1.06	1.53	8771.454	0.632
12369/12467/12489-PeCDD	33.02	EMPC	0.9751	0.9752	+0.2	2.68E+05	1.25	N	1.06	2.02	8771.454	0.632
12346/12347-PeCDD	33.39	J	0.9860	0.9859	-0.2	1.06E+05	1.72	Y	1.06	0.8	8771.454	0.632
12378-PeCDD	33.88		**1.0004**	**1.0005**	**+0.2**	**4.18E+05**	**1.53**	**Y**	**1.06**	**3.15**	**8771.454**	**0.632**
12367-PeCDD	NotFnd		1.0034						1.06		8771.454	0.632
12389-PeCDD	NotFnd		1.0133						1.06		8771.454	0.632
124679/124689-HxCDD	36.02		0.9546	0.9548	+0.4	4.85E+06	1.23	Y	1.05	41.4	16920.976	1.15
123468-HxCDD	36.66		0.9718	0.9718	0	6.36E+05	1.29	Y	1.05	5.43	16920.976	1.15
123679/123689-HxCDD	36.96		0.9795	0.9796	+0.2	3.63E+06	1.26	Y	1.05	31	16920.976	1.15
123469-HxCDD	37.09	J EMPC	0.9832	0.9831	-0.2	1.72E+05	1.54	N	1.05	1.47	16920.976	1.15
123478-HxCDD	37.75	EMPC	**1.0004**	**1.0005**	**+0.2**	**2.20E+05**	**1.00**	**N**	1.06	**1.98**	**16920.976**	**1.16**
123678-HxCDD	37.86		**1.0034**	**1.0035**	**+0.2**	**1.03E+06**	**1.15**	**Y**	1.08	**8.82**	**16920.976**	**1.21**
123467-HxCDD	38.04	J	1.0083	1.0083	0	1.75E+05	1.40	Y	1.05	1.5	16920.976	1.15
123789-HxCDD	38.14		**1.0111**	**1.0108**	**-0.7**	**6.04E+05**	**1.41**	**Y**	1.02	**4.92**	**16920.976**	**1.08**

Lab ID: B5965_18711_DF_007 **Acq'd:** 08 Dec 2021 05:22 PSW **Wt/Vol:** 16.69 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-2 **UTP:** 08-Dec-2021 14:49:05 PSW **J-level:** 0.3 pg/g **Split:** 1 **Checkcode:** 727-243-HBQ

Datafile: 211207R24 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

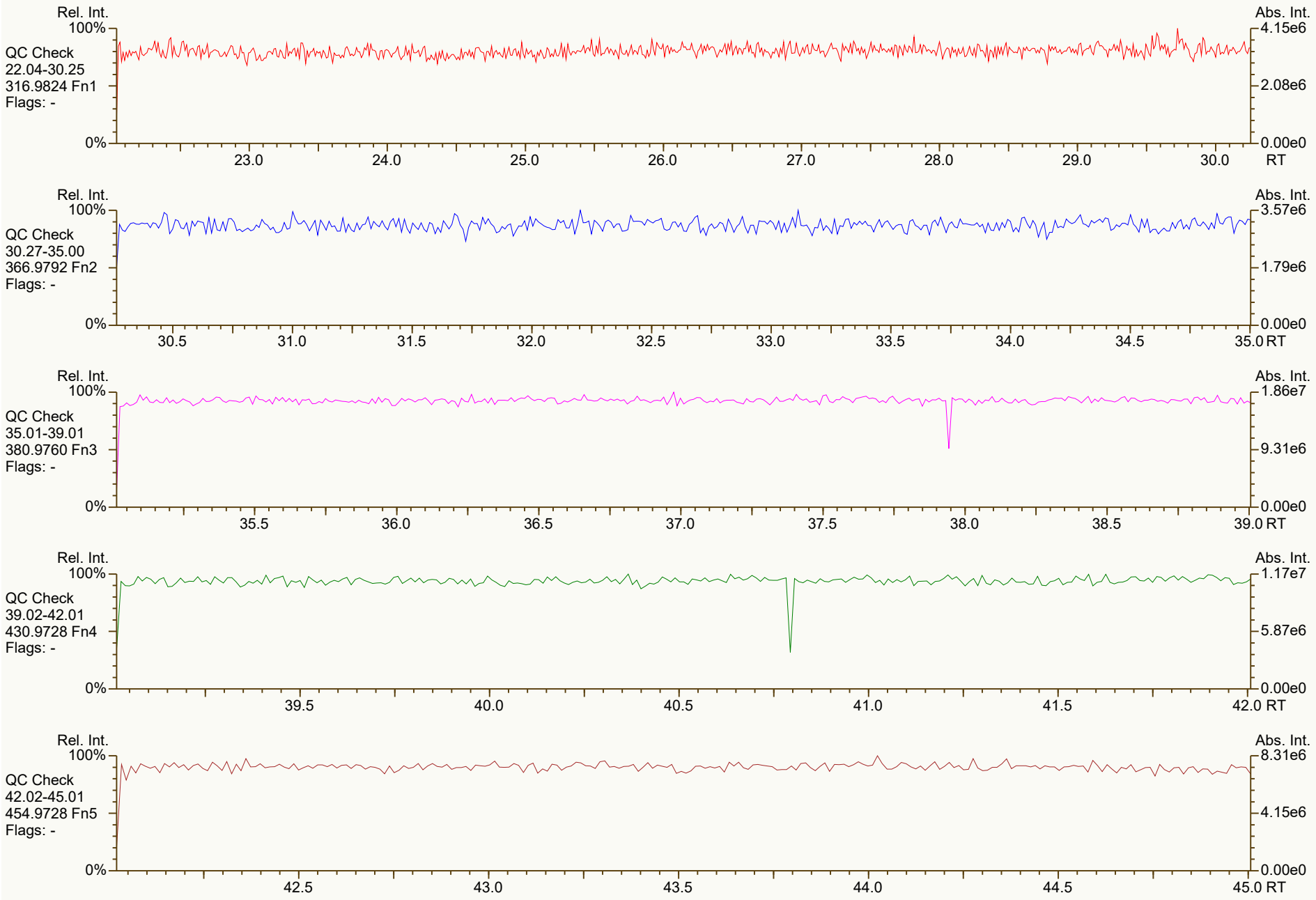
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	3.22E+07	1.05	Y	0.97	344	11298.66	0.841
1234678-HpCDD	**40.71**		**1.0004**	**1.0004**	**0**	**2.76E+07**	**1.05**	**Y**	**0.97**	**295**	**11298.66**	**0.841**
OCDD	**43.29**		**1.0003**	**1.0002**	**-0.3**	**2.81E+08**	**0.89**	**Y**	**1.07**	**3,840**	**15005.2**	**1.81**
OCDD-a	43.28		1.0001	1.0001	0	1.69E+07	2.78	Y	0.07	3,740	13157.447	25.8
1368-TCDF	22.98		0.8284	0.8280	-0.6	1.82E+05	0.72	Y	0.96	0.937	8676.082	0.509
1468-TCDF	23.54	EMPC	0.8487	0.8484	-0.4	4.78E+05	0.65	N	0.96	2.46	8676.082	0.509
2468-TCDF	24.16		0.8709	0.8705	-0.6	1.08E+06	0.74	Y	0.96	5.59	8676.082	0.509
1346/1246-TCDF	NotFnd		0.8828						0.96		8676.082	0.509
1347/1378/1247-TCDF	24.66		0.8886	0.8887	+0.1	2.01E+06	0.78	Y	0.96	10.4	8676.082	0.509
1348-TCDF	24.91		0.8980	0.8976	-0.6	4.88E+05	0.82	Y	0.96	2.51	8676.082	0.509
1248/1367/1379-TCDF	25.01		0.9027	0.9012	-2.3	5.57E+06	0.79	Y	0.96	28.7	8676.082	0.509
1268-TCDF	25.42		0.9159	0.9159	0	2.46E+06	0.78	Y	0.96	12.7	8676.082	0.509
1467-TCDF	25.55	EMPC	0.9206	0.9205	-0.2	4.36E+05	0.96	N	0.96	2.25	8676.082	0.509
1478-TCDF	25.71		0.9266	0.9265	-0.2	5.27E+06	0.75	Y	0.96	27.1	8676.082	0.509
1369/1237-TCDF	26.08		0.9396	0.9398	+0.3	1.28E+06	0.72	Y	0.96	6.6	8676.082	0.509
2467-TCDF	26.19		0.9440	0.9438	-0.3	3.93E+05	0.78	Y	0.96	2.02	8676.082	0.509
2368-TCDF	26.36		0.9496	0.9498	+0.3	4.77E+06	0.78	Y	0.96	24.6	8676.082	0.509
1238/1234/1678/1469/1236-TCDF	26.44		0.9530	0.9527	-0.5	4.48E+06	0.78	Y	0.96	23.1	8676.082	0.509
1278-TCDF	26.89		0.9689	0.9689	0	4.91E+07	0.79	Y	0.96	253	8676.082	0.509
1349-TCDF	NotFnd		0.9732						0.96		8676.082	0.509
1267-TCDF	27.16		0.9786	0.9785	-0.2	2.95E+06	0.82	Y	0.96	15.2	8676.082	0.509
2346/1249-TCDF	NotFnd		0.9849						0.96		8676.082	0.509
2347/1279-TCDF	27.54		0.9927	0.9923	-0.7	1.18E+06	0.71	Y	0.96	6.06	8676.082	0.509
2348-TCDF	27.66		0.9967	0.9967	0	8.06E+06	0.79	Y	0.96	41.5	8676.082	0.509
2378-TCDF	**27.77**	E	**1.0007**	**1.0007**	**0**	**1.23E+08**	**0.80**	**Y**	**0.96**	**636**	**8676.082**	**0.509**
2367/3467-TCDF	28.12		1.0136	1.0132	-0.7	1.02E+07	0.80	Y	0.96	52.5	8676.082	0.509
1269-TCDF	28.38		1.0223	1.0225	+0.3	1.97E+06	0.77	Y	0.96	10.2	8676.082	0.509
1239-TCDF	NotFnd		1.0313						0.96		8676.082	0.509
1289-TCDF	29.75		1.0711	1.0720	+1.6	7.66E+06	0.78	Y	0.96	39.5	8676.082	0.509
13468/12468-PeCDF	29.69	EMPC	0.9147	0.9154	+1.2	2.73E+06	1.79	N	0.94	16.5	8346.731	0.477
13678/13467/12467-PeCDF	31.21		0.9616	0.9622	+1.1	5.29E+05	1.48	Y	0.94	3.2	9587.657	0.547
12368/13478/12478-PeCDF	31.37		0.9663	0.9669	+1.1	2.96E+06	1.46	Y	0.94	17.9	9587.657	0.547
14678-PeCDF	31.46		0.9695	0.9697	+0.4	2.86E+05	1.62	Y	0.94	1.73	9587.657	0.547
13479-PeCDF	NotFnd		0.9727						0.94		9587.657	0.547
13469/12479-PeCDF	NotFnd		0.9799						0.94		9587.657	0.547
12346-PeCDF	NotFnd		0.9839						0.94		9587.657	0.547

Lab ID: B5965_18711_DF_007 | **Acq'd: 08 Dec 2021 05:22 PSW** | **Wt/Vol: 16.69 g** | **ICAL: MM3_DF_10272021_27JUL2021**

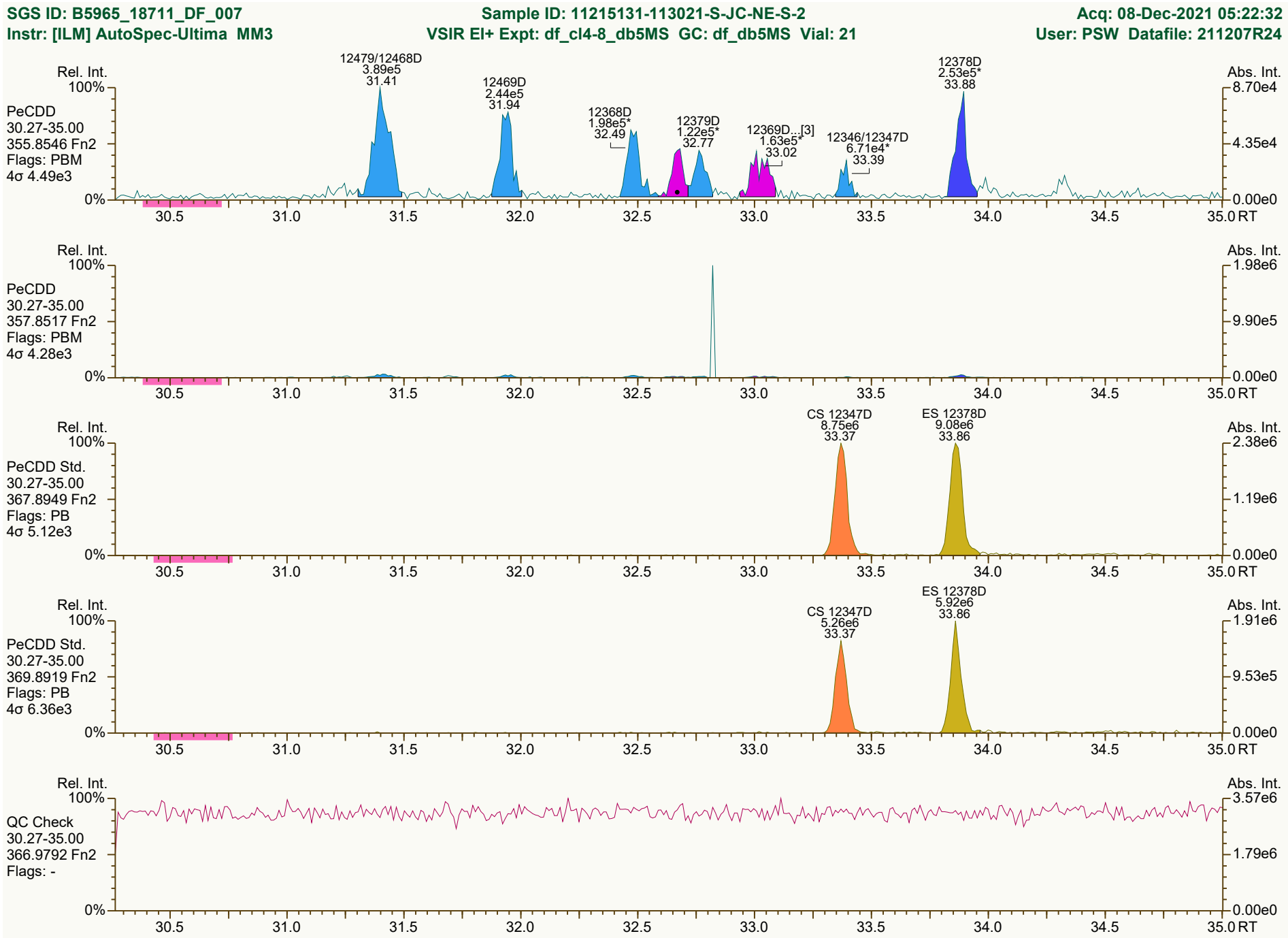
Client ID: 11215131-113021-S-JC-NE-S-2 | **UTP: 08-Dec-2021 14:49:05 PSW** | **J-level: 0.3 pg/g** | **Split: 1** | **Checkcode: 727-243-HBQ**

Datafile: 211207R24 | **Report: 08 Dec 2021 14:50 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

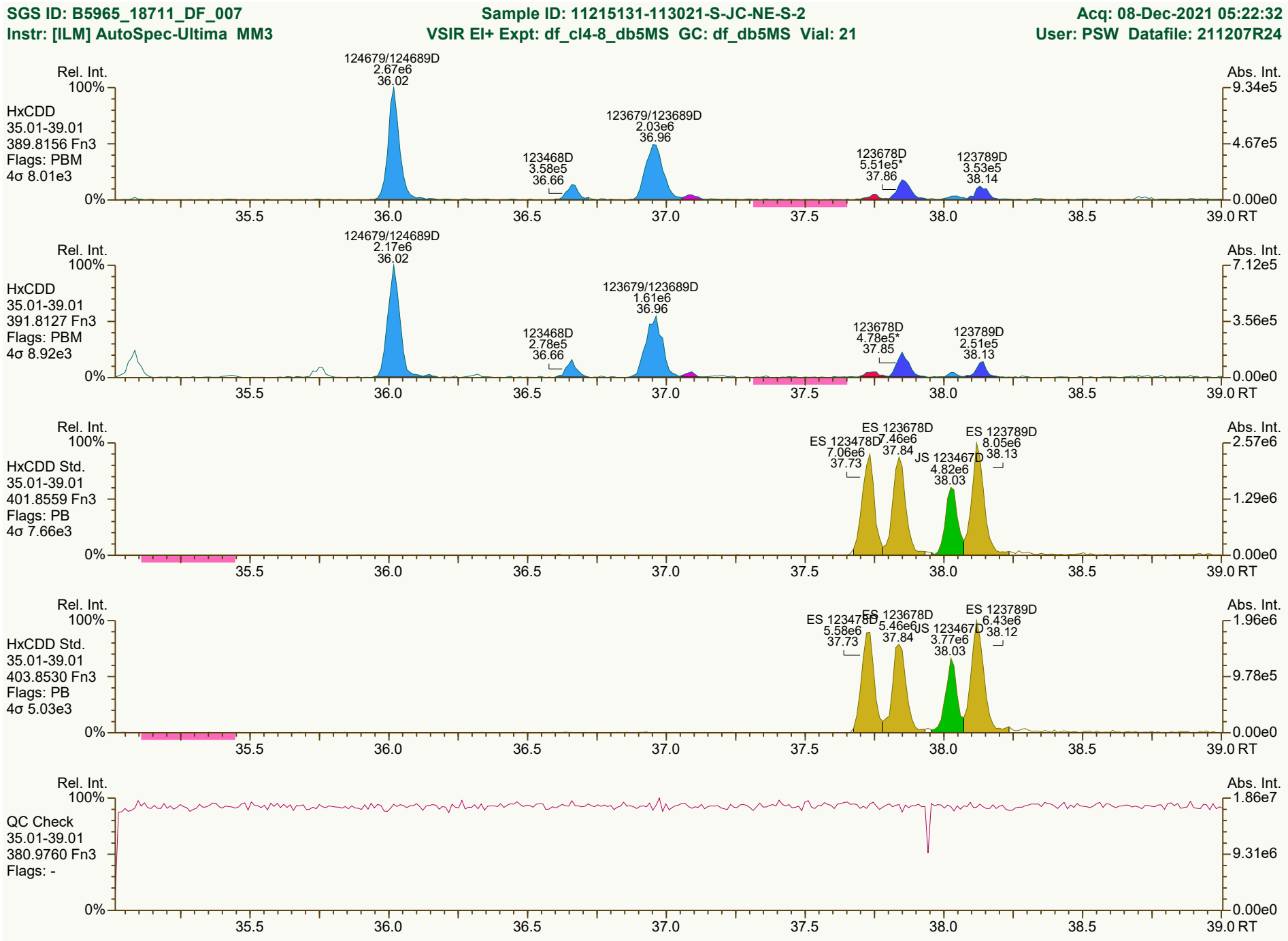
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.01		0.9864	0.9869	+1.0	6.76E+05	1.72	Y	0.94	4.09	9587.657	0.547
12347-PeCDF	32.08		0.9892	0.9891	-0.2	2.81E+05	1.34	Y	0.94	1.7	9587.657	0.547
12348-PeCDF	32.25		0.9940	0.9941	+0.2	5.39E+05	1.69	Y	0.94	3.26	9587.657	0.547
12378-PeCDF	**32.46**		**1.0006**	**1.0006**	**0**	**2.98E+06**	**1.38**	**Y**	**0.95**	**17.7**	**9587.657**	**0.533**
12678/12367-PeCDF	32.75		1.0088	1.0095	+1.4	1.33E+06	1.72	Y	0.94	8.04	9587.657	0.547
12379-PeCDF	NotFnd		1.0142						0.94		9587.657	0.547
12679-PeCDF	NotFnd		0.9931						0.94		9587.657	0.547
23467/12369-PeCDF	33.42		0.9966	0.9966	0	2.63E+05	1.53	Y	0.94	1.59	9587.657	0.547
23478-PeCDF	**33.56**		**1.0005**	**1.0008**	**+0.6**	**2.97E+06**	**1.53**	**Y**	**0.94**	**18.3**	**9587.657**	**0.562**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		9587.657	0.547
12349-PeCDF	NotFnd		1.0100						0.94		9587.657	0.547
12389-PeCDF	34.62	J EMPC	1.0323	1.0323	0	1.68E+05	1.93	N	0.94	1.01	9587.657	0.547
123468-HxCDF	35.39		0.9631	0.9633	+0.4	1.09E+06	1.29	Y	1.16	6.78	15200.214	0.771
124678/134678-HxCDF	35.58		0.9686	0.9685	-0.2	3.90E+06	1.27	Y	1.16	24.3	15200.214	0.771
134679-HxCDF	NotFnd		0.9747						1.16		15200.214	0.771
124679-HxCDF	36.01	J	0.9800	0.9803	+0.6	2.11E+05	1.21	Y	1.16	1.31	15200.214	0.771
124689-HxCDF	36.22		0.9859	0.9861	+0.4	3.93E+06	1.25	Y	1.16	24.4	15200.214	0.771
123467-HxCDF	36.63		0.9972	0.9972	0	3.24E+05	1.31	Y	1.16	2.02	15200.214	0.771
123478-HxCDF	**36.75**		**1.0004**	**1.0005**	**+0.2**	**4.20E+06**	**1.27**	**Y**	**1.23**	**25.9**	**15200.214**	**0.739**
123678-HxCDF	**36.89**		**1.0005**	**1.0003**	**-0.4**	**1.40E+06**	**1.21**	**Y**	**1.13**	**8.1**	**15200.214**	**0.79**
123479-HxCDF	NotFnd		1.0048						1.16		15200.214	0.771
123469-HxCDF	37.21	J	1.0089	1.0091	+0.4	2.11E+05	1.24	Y	1.16	1.31	15200.214	0.771
123679-HxCDF	NotFnd		0.9943						1.16		15200.214	0.771
234678-HxCDF	**37.57**		**1.0005**	**1.0005**	**0**	**7.80E+05**	**1.39**	**Y**	**1.15**	**4.95**	**15200.214**	**0.818**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		15200.214	0.771
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**15200.214**	**0.738**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.52		1.0004	1.0011	+1.6	4.19E+05	1.17	Y	1.16	2.6	15200.214	0.771
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**1.28E+07**	**1.03**	**Y**	**1.36**	**84.7**	**7912.733**	**0.311**
1234679-HpCDF	40.06		1.0065	1.0065	0	1.00E+06	0.95	Y	1.33	7.29	7912.733	0.363
1234689-HpCDF	40.20		1.0097	1.0101	+1.0	1.38E+07	1.02	Y	1.33	100	7912.733	0.363
1234789-HpCDF	**41.16**		**1.0004**	**1.0002**	**-0.5**	**1.38E+06**	**1.05**	**Y**	**1.30**	**11.1**	**7912.733**	**0.424**
OCDF	**43.47**		**1.0002**	**1.0002**	**0**	**2.48E+08**	**0.90**	**Y**	**1.03**	**2,690**	**9776.271**	**0.835**
OCDF-a	43.47		1.0001	1.0001	0	1.49E+07	2.48	Y	0.06	2,800	9936.396	14.7


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Abs. Int.
4.15e6
2.08e6
0.00e0
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
3.57e6
1.79e6
0.00e0
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
1.86e7
9.31e6
0.00e0
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
1.17e7
5.87e6
0.00e0
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
8.31e6
4.15e6
0.00e0

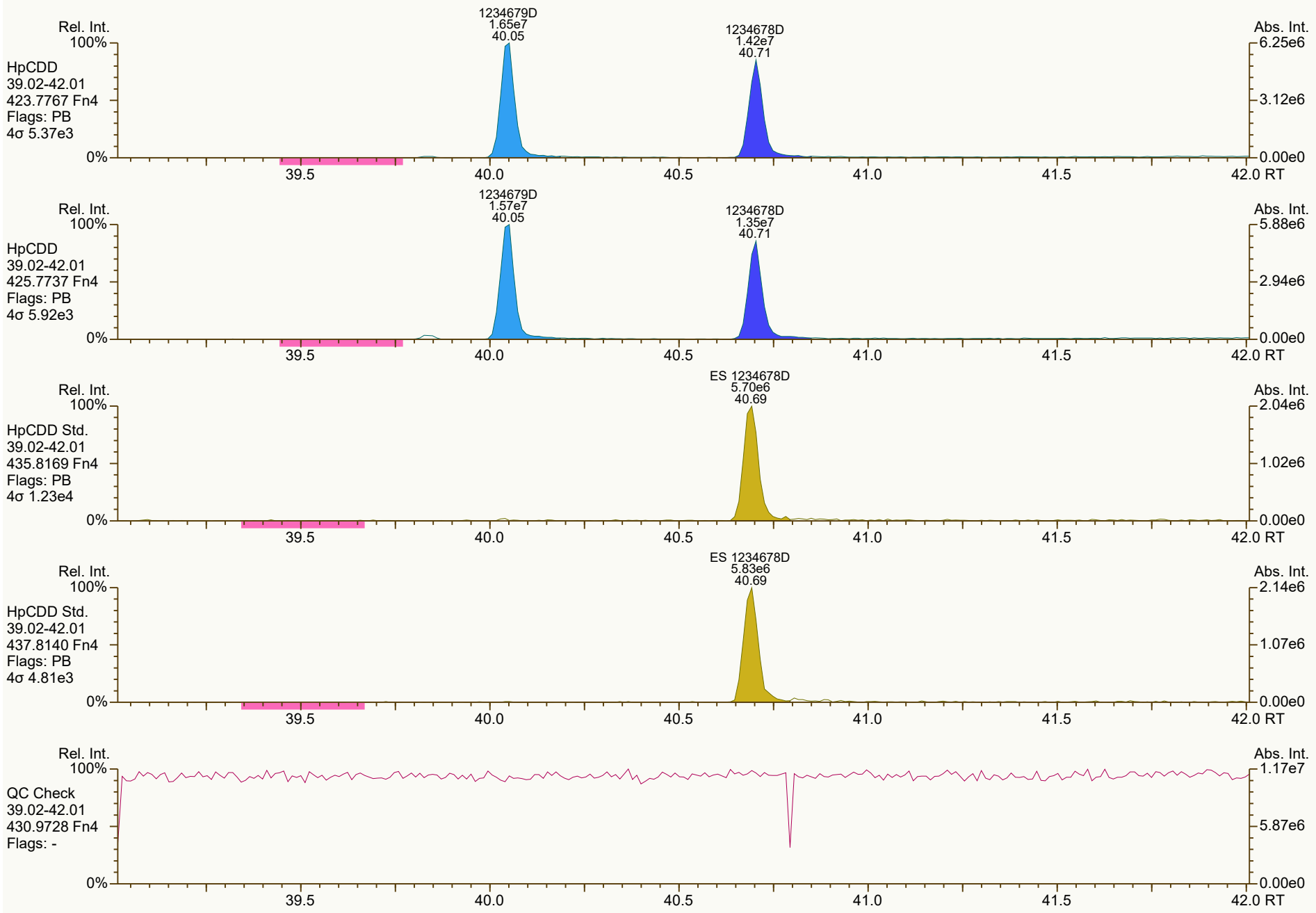

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 4.37e3
0%
2378D
1.43e7
28.62
1278D
1.33e6
28.94
Abs. Int.
3.51e6
1.76e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 4.01e3
0%
2378D
1.77e7
28.62
1278D
1.67e6
28.94
Abs. Int.
4.31e6
2.15e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.12e3
0%
CS 37Cl-2378D
8.40e6
28.62
Abs. Int.
2.19e6
1.10e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.17e4
0%
JS 1234D
1.05e7
27.95
ES 2378D
7.41e6
28.60
Abs. Int.
2.62e6
1.31e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 7.49e3
0%
JS 1234D
1.30e7
27.95
ES 2378D
9.77e6
28.60
Abs. Int.
3.04e6
1.52e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

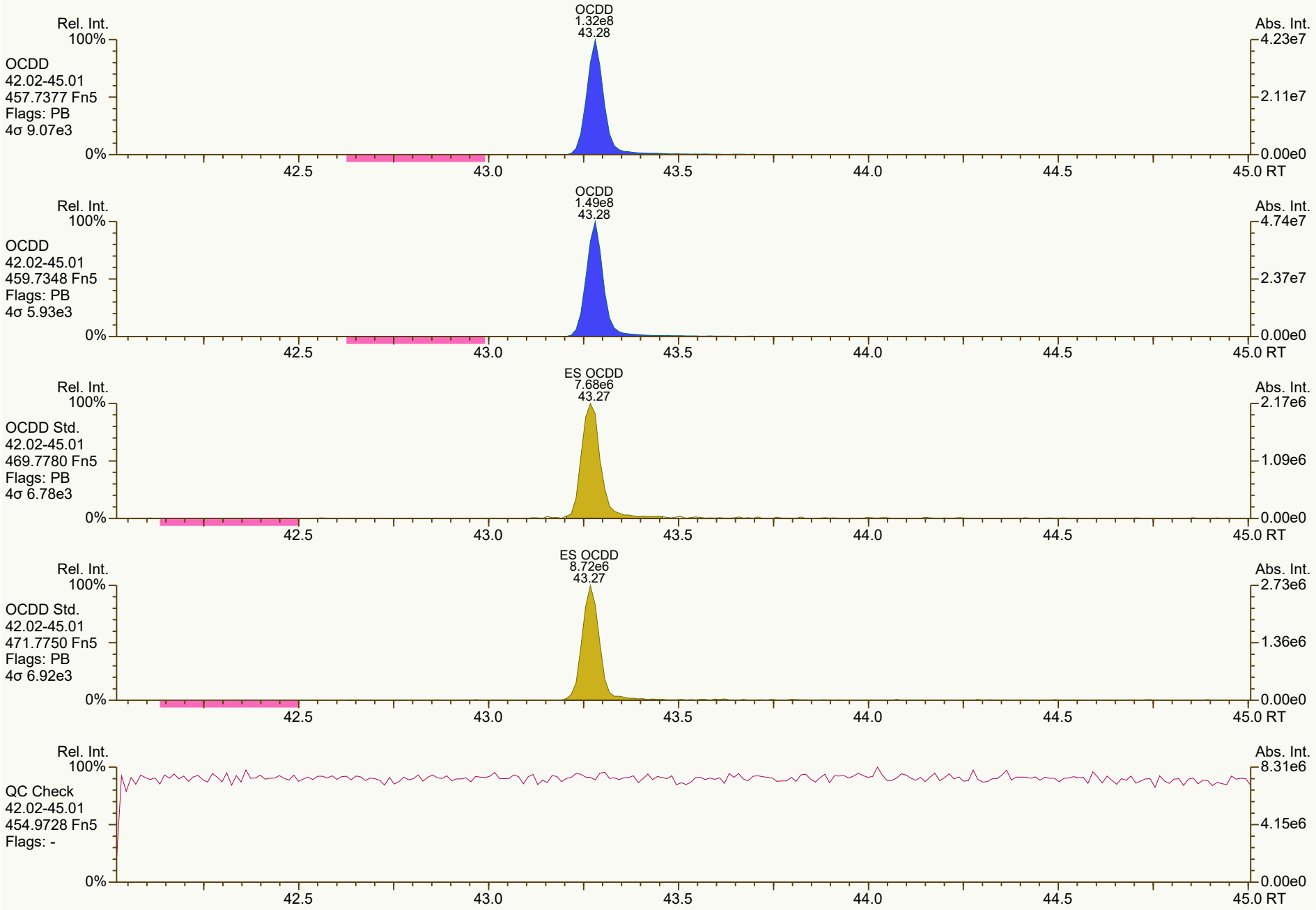

SGS ID: B5965_18711_DF_007
Sample ID: 11215131-113021-S-JC-NE-S-2
Acq: 08-Dec-2021 05:22:32
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21
User: PSW Datafile: 211207R24
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 4.49e3
12479/12468D
3.89e5
31.41
12469D
2.44e5
31.94
12368D
1.98e5*
32.49
12379D
1.22e5*
32.77
12369D...[3]
1.63e5*
33.02
12346/12347D
6.71e4*
33.39
12378D
2.53e5*
33.88
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 4.28e3
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 5.12e3
CS 12347D
8.75e6
33.37
ES 12378D
9.08e6
33.86
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 6.36e3
CS 12347D
5.26e6
33.37
ES 12378D
5.92e6
33.86
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_007.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1466, 3093 scc: 727-243
PKD: 08-Dec-2021 09:24 Printed: 08-Dec-2021 14:57 Page 3 of 12

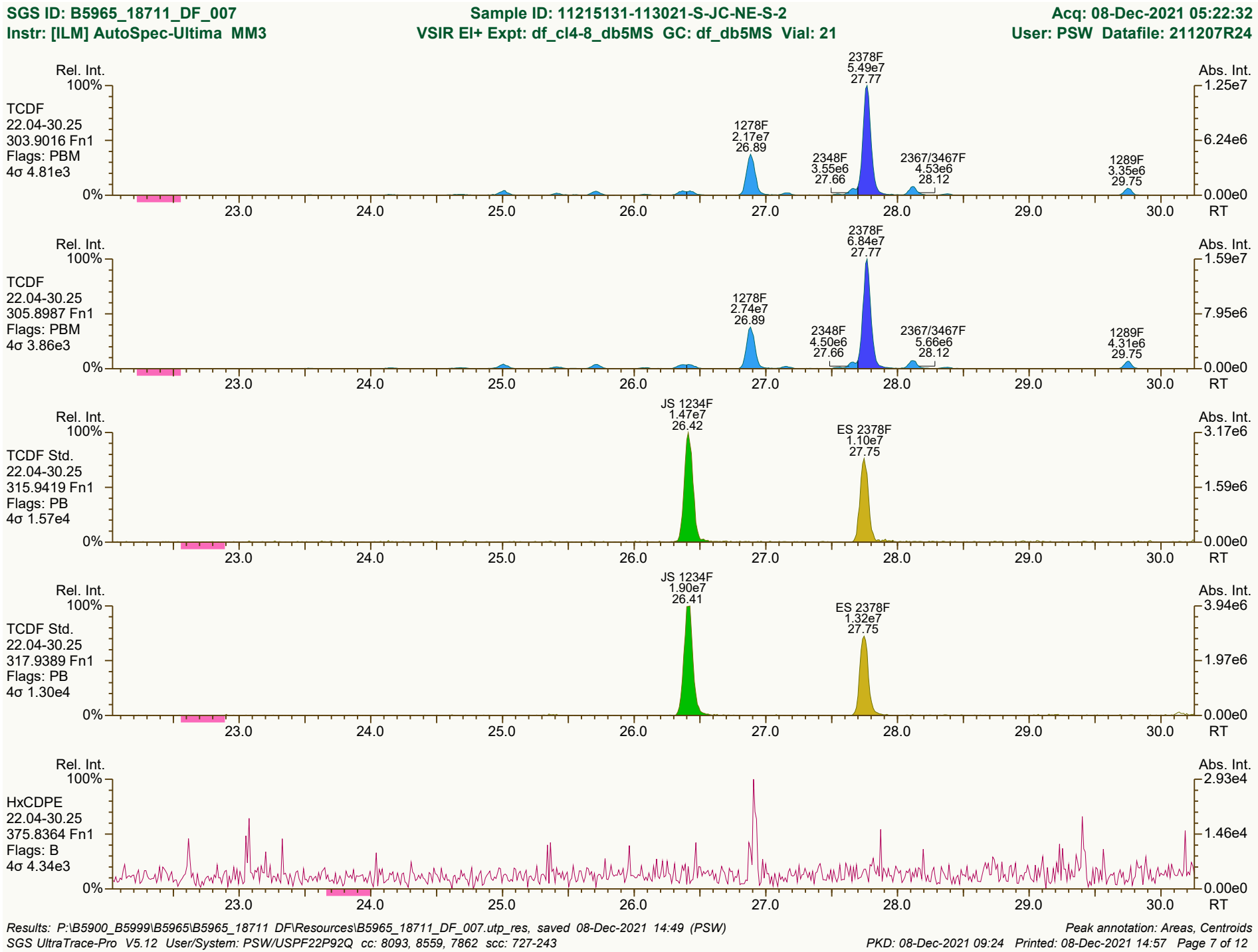
SGS ID: B5965_18711_DF_007 | Sample ID: 11215131-113021-S-JC-NE-S-2 | Acq: 08-Dec-2021 05:22:32
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21 | User: PSW Datafile: 211207R24



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_007.utp_res, saved 08-Dec-2021 14:49 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3554, 4115 scc: 727-243 | PKD: 08-Dec-2021 09:24 Printed: 08-Dec-2021 14:57 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 5.37e3
1234679D
1.65e7
40.05
1234678D
1.42e7
40.71
Abs. Int.
6.25e6
3.12e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 5.92e3
1234679D
1.57e7
40.05
1234678D
1.35e7
40.71
Abs. Int.
5.88e6
2.94e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 1.23e4
ES 1234678D
5.70e6
40.69
Abs. Int.
2.04e6
1.02e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 4.81e3
ES 1234678D
5.83e6
40.69
Abs. Int.
2.14e6
1.07e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.17e7
5.87e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
1.32e8
43.28
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 9.07e3
0%
Abs. Int.
4.23e7
2.11e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.49e8
43.28
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 5.93e3
0%
Abs. Int.
4.74e7
2.37e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.68e6
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 6.78e3
0%
Abs. Int.
2.17e6
1.09e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.72e6
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 6.92e3
0%
Abs. Int.
2.73e6
1.36e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.31e6
4.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

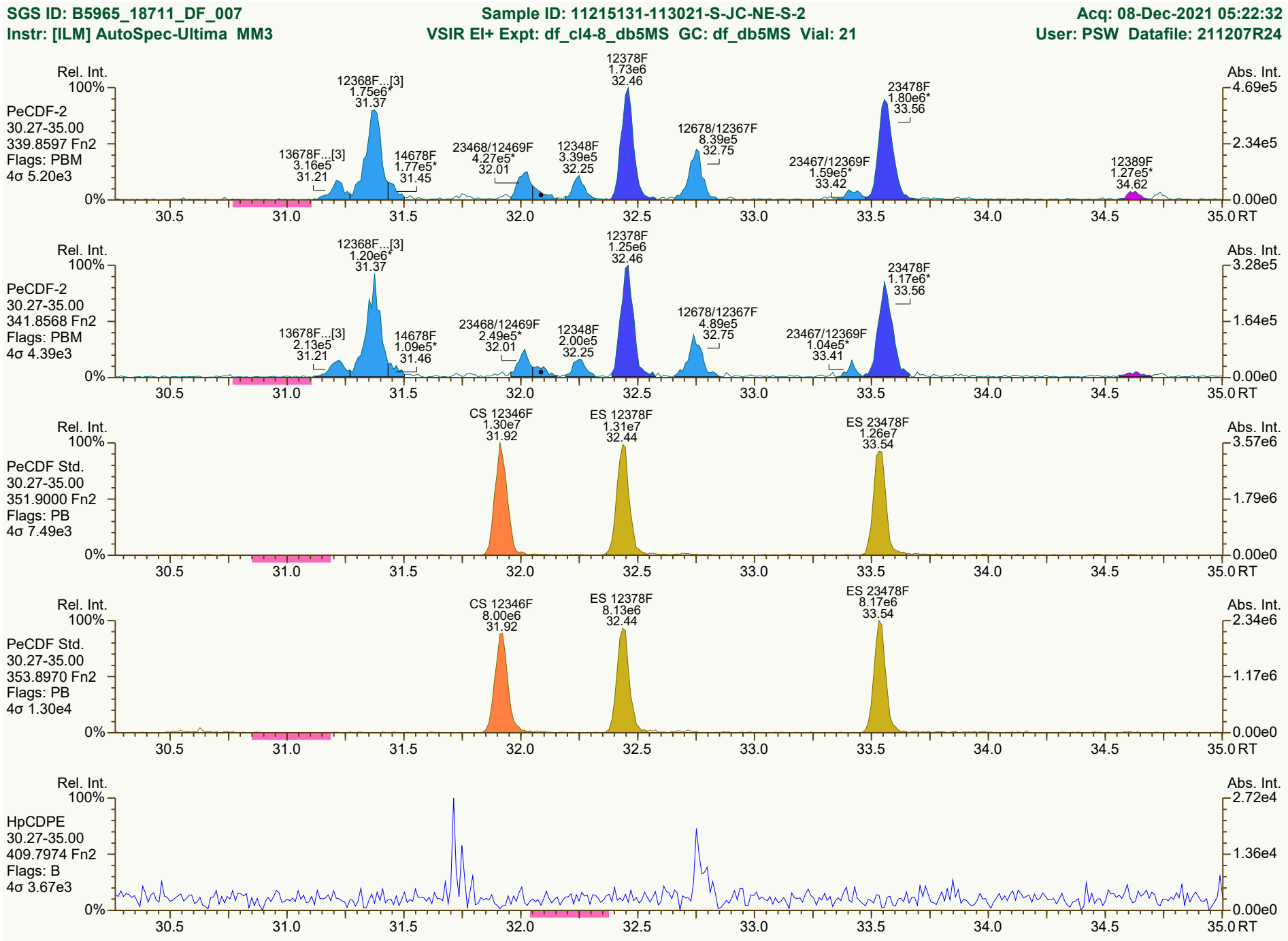


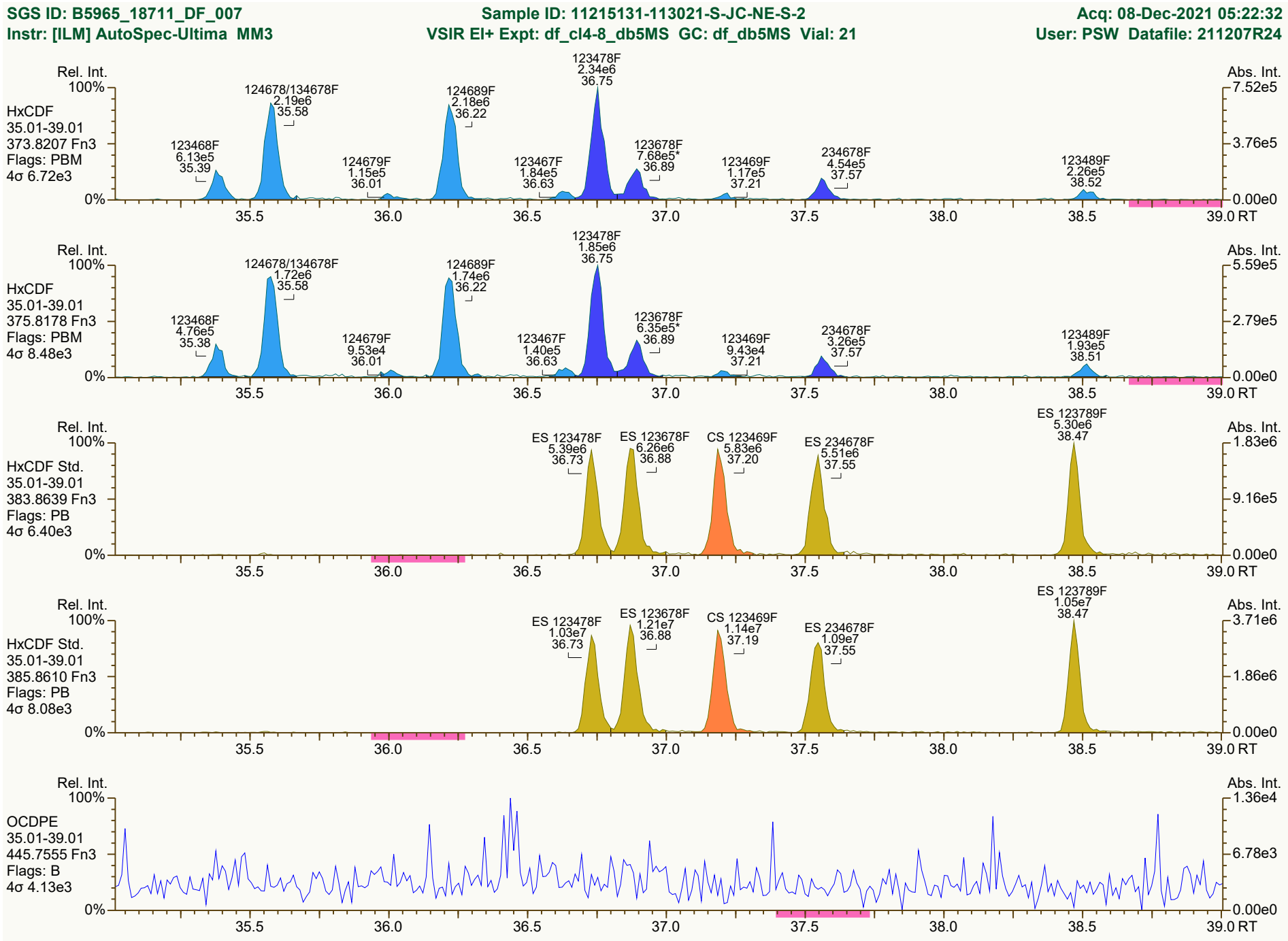
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_007.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8093, 8559, 7862 scc: 727-243
PKD: 08-Dec-2021 09:24 Printed: 08-Dec-2021 14:57 Page 7 of 12

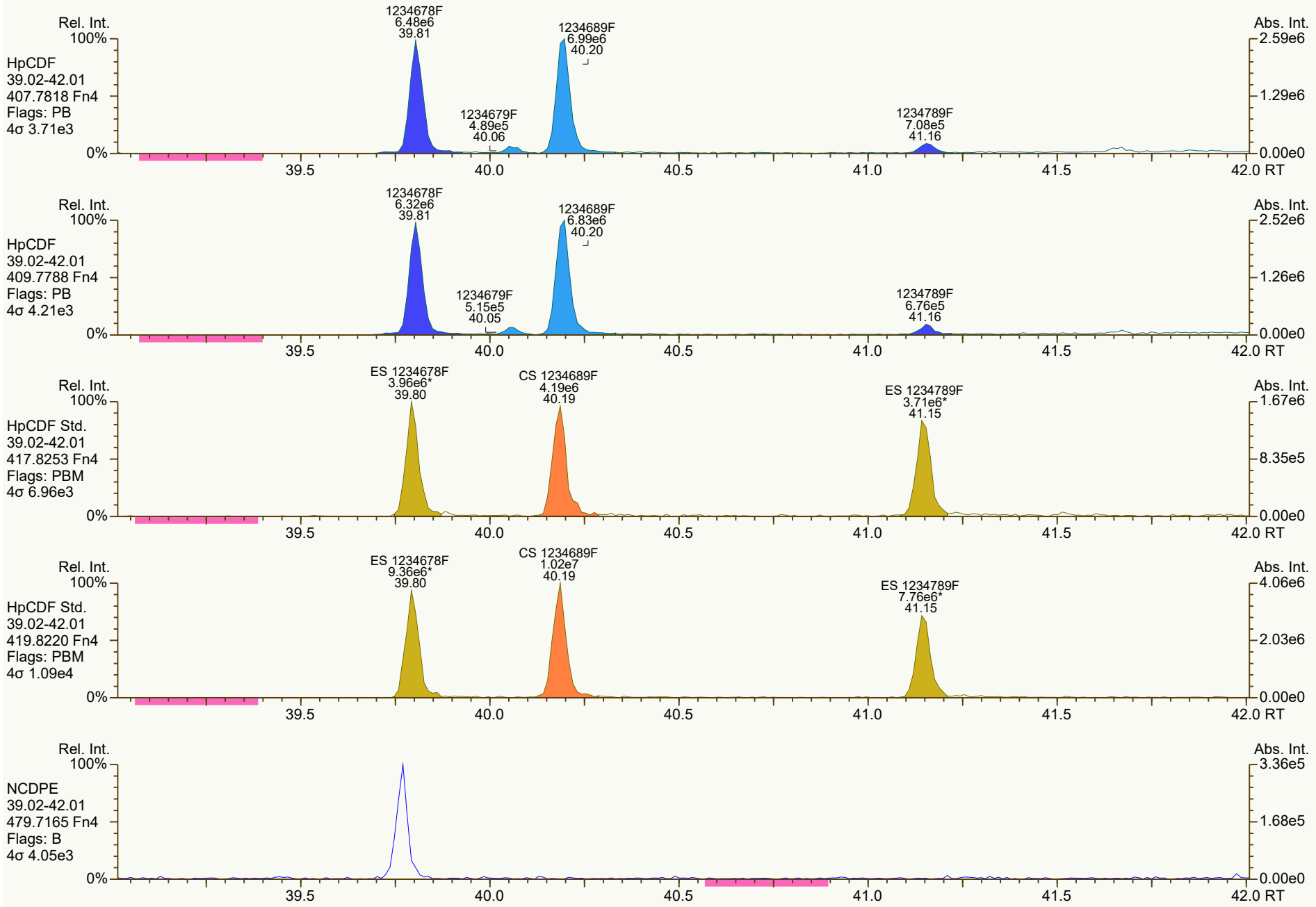
SGS ID: B5965_18711_DF_007 | Sample ID: 11215131-113021-S-JC-NE-S-2 | Acq: 08-Dec-2021 05:22:32
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21 | User: PSW Datafile: 211207R24



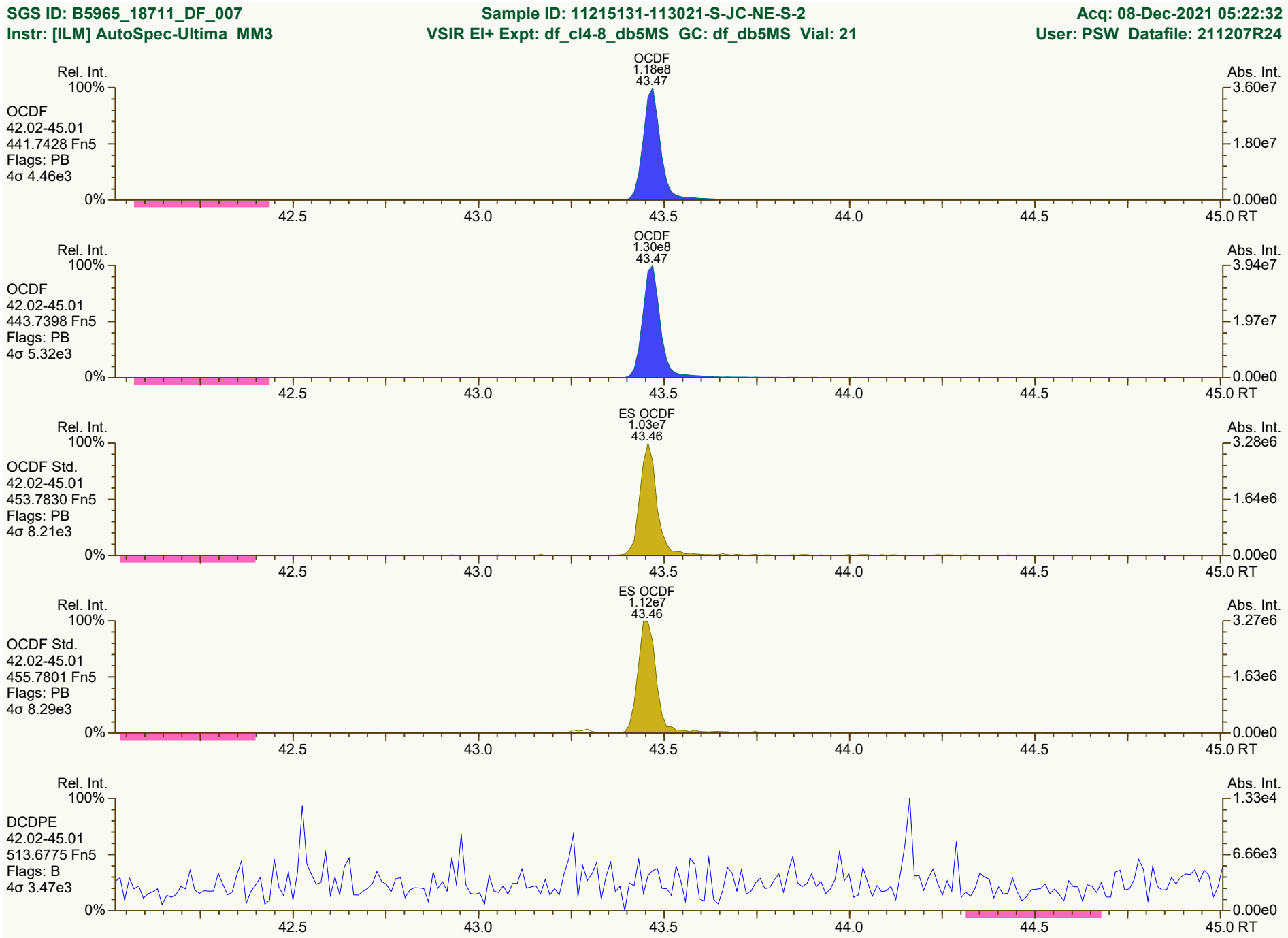
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_007.utp_res, saved 08-Dec-2021 14:49 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2779 scc: 727-243 *PKD: 08-Dec-2021 09:24 Printed: 08-Dec-2021 14:57 Page 8 of 12*


SGS ID: B5965_18711_DF_007
Sample ID: 11215131-113021-S-JC-NE-S-2
Acq: 08-Dec-2021 05:22:32
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21
User: PSW Datafile: 211207R24
Rel. Int.
Abs. Int.
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 5.20e3
12368F...[3] 1.75e6* 31.37
13678F...[3] 3.16e5 31.21
14678F 1.77e5* 31.45
23468/12469F 4.27e5* 32.01
12348F 3.39e5 32.25
12378F 1.73e6 32.46
12678/12367F 8.39e5 32.75
23467/12369F 1.59e5* 33.42
23478F 1.80e6* 33.56
12389F 1.27e5* 34.62
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 4.39e3
12368F...[3] 1.20e6* 31.37
13678F...[3] 2.13e5 31.21
14678F 1.09e5* 31.46
23468/12469F 2.49e5* 32.01
12348F 2.00e5 32.25
12378F 1.25e6 32.46
12678/12367F 4.89e5 32.75
23467/12369F 1.04e5* 33.41
23478F 1.17e6* 33.56
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 7.49e3
CS 12346F 1.30e7 31.92
ES 12378F 1.31e7 32.44
ES 23478F 1.26e7 33.54
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 1.30e4
CS 12346F 8.00e6 31.92
ES 12378F 8.13e6 32.44
ES 23478F 8.17e6 33.54
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.67e3
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
4.69e5
2.34e5
0.00e0
3.28e5
1.64e5
3.57e6
1.79e6
2.34e6
1.17e6
2.72e4
1.36e4
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_007.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0613, 1915, 9027 scc: 727-243
PKD: 08-Dec-2021 09:24 Printed: 08-Dec-2021 14:57 Page 9 of 12


SGS ID: B5965_18711_DF_007
Sample ID: 11215131-113021-S-JC-NE-S-2
Acq: 08-Dec-2021 05:22:32
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21
User: PSW Datafile: 211207R24
Rel. Int.
Abs. Int.
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 6.72e3
123468F 6.13e5 35.39
124678/134678F 2.19e6 35.58
124679F 1.15e5 36.01
124689F 2.18e6 36.22
123467F 1.84e5 36.63
123478F 2.34e6 36.75
123678F 7.68e5* 36.89
123469F 1.17e5 37.21
234678F 4.54e5 37.57
123489F 2.26e5 38.52
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 8.48e3
123468F 4.76e5 35.38
124678/134678F 1.72e6 35.58
124679F 9.53e4 36.01
124689F 1.74e6 36.22
123467F 1.40e5 36.63
123478F 1.85e6 36.75
123678F 6.35e5* 36.89
123469F 9.43e4 37.21
234678F 3.26e5 37.57
123489F 1.93e5 38.51
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 6.40e3
ES 123478F 5.39e6 36.73
ES 123678F 6.26e6 36.88
CS 123469F 5.83e6 37.20
ES 234678F 5.51e6 37.55
ES 123789F 5.30e6 38.47
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 8.08e3
ES 123478F 1.03e7 36.73
ES 123678F 1.21e7 36.88
CS 123469F 1.14e7 37.19
ES 234678F 1.09e7 37.55
ES 123789F 1.05e7 38.47
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 4.13e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
7.52e5
3.76e5
0.00e0
5.59e5
2.79e5
1.83e6
9.16e5
3.71e6
1.86e6
1.36e4
6.78e3
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_007.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3751, 4355, 6775 scc: 727-243
PKD: 08-Dec-2021 09:24 Printed: 08-Dec-2021 14:57 Page 10 of 12


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 3.71e3
1234678F
6.48e6
39.81
1234679F
4.89e5
40.06
1234689F
6.99e6
40.20
1234789F
7.08e5
41.16
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
2.59e6
1.29e6
0.00e0
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 4.21e3
1234678F
6.32e6
39.81
1234679F
5.15e5
40.05
1234689F
6.83e6
40.20
1234789F
6.76e5
41.16
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
2.52e6
1.26e6
0.00e0
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 6.96e3
ES 1234678F
3.96e6*
39.80
CS 1234689F
4.19e6
40.19
ES 1234789F
3.71e6*
41.15
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
1.67e6
8.35e5
0.00e0
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 1.09e4
ES 1234678F
9.36e6*
39.80
CS 1234689F
1.02e7
40.19
ES 1234789F
7.76e6*
41.15
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
4.06e6
2.03e6
0.00e0
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.05e3
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
3.36e5
1.68e5
0.00e0

SGS ID: B5965_18711_DF_007 | Sample ID: 11215131-113021-S-JC-NE-S-2 | Acq: 08-Dec-2021 05:22:32
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21 | User: PSW Datafile: 211207R24



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_007.utp_res, saved 08-Dec-2021 14:49 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1106, 4052, 3987 scc: 727-243 | *PKD: 08-Dec-2021 09:24 Printed: 08-Dec-2021 14:57 Page 12 of 12*

Lab ID: B5965_18711_DF_008 **Acq'd:** 08 Dec 2021 06:10 PSW **Wt/Vol:** 14.65 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-3 **UTP:** 08-Dec-2021 14:49:06 PSW **J-level:** 0.341 pg/g **Split:** 1 **Checkcode:** 501-649-XTP

Datafile: 211207R25 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.63		1.0008	1.0008	0	8.05E+07	0.79	Y	1.34	425	10557.86	0.478
12378-PeCDD	33.89		1.0004	1.0005	+0.2	1.07E+06	1.59	Y	1.06	7.95	8319.195	0.583
123478-HxCDD	37.75	EMPC	1.0004	1.0004	0	6.15E+05	1.04	N	1.06	5.48	27430.72	2.1
123678-HxCDD	37.86		1.0034	1.0033	-0.2	2.82E+06	1.26	Y	1.08	23.9	27430.72	2.06
123789-HxCDD	38.14		1.0111	1.0108	-0.7	1.60E+06	1.23	Y	1.02	13.1	27430.72	1.91
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	6.69E+07	1.03	Y	0.97	663	48487.58	3.13
OCDD	43.29	E	1.0003	1.0003	0	7.17E+08	0.90	Y	1.07	9,310	17039.375	1.86
2378-TCDF	27.78	E	1.0007	1.0008	+0.2	3.16E+08	0.79	Y	0.96	1,620	8038.172	0.436
12378-PeCDF	32.47		1.0006	1.0005	-0.2	7.46E+06	1.64	Y	0.95	44.5	12716.406	0.614
23478-PeCDF	33.57		1.0005	1.0008	+0.6	8.04E+06	1.49	Y	0.94	48.2	12716.406	0.699
123478-HxCDF	36.76		1.0004	1.0005	+0.2	1.07E+07	1.29	Y	1.23	65.5	27055.22	1.41
123678-HxCDF	36.90		1.0005	1.0004	-0.2	3.64E+06	1.27	Y	1.13	20	27055.22	1.32
234678-HxCDF	37.57		1.0005	1.0004	-0.2	2.53E+06	1.35	Y	1.15	15.8	27055.22	1.53
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	27055.22	1.36
1234678-HpCDF	39.82		1.0003	1.0003	0	7.43E+07	1.06	Y	1.36	486	9630.553	0.398
1234789-HpCDF	41.17		1.0004	1.0003	-0.2	4.27E+06	1.01	Y	1.30	31.9	9630.553	0.546
OCDF	43.48	E	1.0002	1.0002	0	8.66E+08	0.89	Y	1.03	8,940	10939.125	0.907

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.61	1.0233	1.0232	-0.2	1.92E+07	0.81	Y	1.03	67.4
ES 12378-PeCDD	33.87	1.2118	1.2116	-0.4	1.74E+07	1.50	Y	1.03	61
ES 123478-HxCDD	37.74	0.9921	0.9921	0	1.45E+07	1.24	Y	0.99	64.5
ES 123678-HxCDD	37.85	0.9951	0.9951	0	1.49E+07	1.29	Y	0.97	67.5
ES 123789-HxCDD	38.14	1.0027	1.0026	-0.2	1.65E+07	1.22	Y	1.12	64.8
ES 1234678-HpCDD	40.70	1.0702	1.0701	-0.2	1.41E+07	1.00	Y	0.99	63.1
ES OCDD	43.28	1.1377	1.1379	+0.5	1.97E+07	1.01	Y	0.78	55.9
ES 2378-TCDF	27.76	1.0505	1.0505	0	2.78E+07	0.84	Y	1.08	63.9
ES 12378-PeCDF	32.45	1.2278	1.2280	+0.4	2.42E+07	1.50	Y	0.93	64.6
ES 23478-PeCDF	33.55	1.2691	1.2695	+0.8	2.43E+07	1.62	Y	0.92	65.5
ES 123478-HxCDF	36.74	0.9660	0.9660	0	1.80E+07	0.50	Y	1.14	69.6
ES 123678-HxCDF	36.88	0.9698	0.9697	-0.2	2.20E+07	0.50	Y	1.30	74.8
ES 234678-HxCDF	37.56	0.9875	0.9874	-0.2	1.90E+07	0.56	Y	1.20	69.8
ES 123789-HxCDF	38.48	1.0121	1.0118	-0.7	1.77E+07	0.51	Y	1.14	68.8
ES 1234678-HpCDF	39.81	1.0468	1.0466	-0.5	1.53E+07	0.45	Y	0.95	71.4
ES 1234789-HpCDF	41.15	1.0822	1.0820	-0.5	1.41E+07	0.47	Y	0.85	73.5
ES OCDF	43.47	1.1426	1.1429	+0.8	2.58E+07	0.88	Y	0.93	61.5

Lab ID: B5965_18711_DF_008 **Acq'd:** 08 Dec 2021 06:10 PSW **Wt/Vol:** 14.65 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-3 **UTP:** 08-Dec-2021 14:49:06 PSW **J-level:** 0.341 pg/g **Split:** 1 **Checkcode:** 501-649-XTP

Datafile: 211207R25 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.96		-	-	-	2.76E+07	0.79	Y	-	-
JS 1234-TCDF	26.43		-	-	-	4.01E+07	0.80	Y	-	-
JS 123467-HxCDD	38.04		-	-	-	1.13E+07	1.19	Y	-	-
CS 37Cl-2378-TCDD	28.63		1.0241	1.0240	-0.2	9.18E+06	n/a	-	1.31	63.5
CS 12347-PeCDD	33.38		1.1940	1.1939	-0.2	1.74E+07	1.60	Y	0.89	70.7
CS 12346-PeCDF	31.93		1.2080	1.2083	+0.6	2.45E+07	1.56	Y	0.87	70.4
CS 123469-HxCDF	37.20		0.9781	0.9781	0	1.99E+07	0.56	Y	1.09	80.9
CS 1234689-HpCDF	40.19		1.0569	1.0567	-0.5	1.66E+07	0.46	Y	0.86	84.8
~~SS 37Cl-2378-TCDD~~	~~28.63~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~9.18E+06~~	~~n/a~~		~~1.26~~	~~94.7~~
~~SS 12347-PeCDD~~	~~33.38~~		~~1.1940~~	~~1.1939~~	~~-0.2~~	~~1.74E+07~~	~~1.60~~	~~Y~~	~~0.86~~	~~116~~
~~SS 12346-PeCDF~~	~~31.93~~		~~1.2080~~	~~1.2083~~	~~+0.6~~	~~2.45E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~109~~
~~SS 123469-HxCDF~~	~~37.20~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.99E+07~~	~~0.56~~	~~Y~~	~~0.84~~	~~108~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0567~~	~~-0.5~~	~~1.66E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~118~~

Totals	Conc	EMPC
Total TCDD	482	501
Total PeCDD	58.3	58.3
Total HxCDD	265	270
Total HpCDD	1370	1370
Total Tetra-Octa Dioxins	11500	11500
Total TCDF	2,960	2960
Total PeCDF	266	279
Total HxCDF	339	340
Total HpCDF	998	998
Total Tetra-Octa Furans	13,500	13500
Total Tetra-Octa Dioxins & Furans	25000	25000

Lab ID: B5965_18711_DF_008 **Acq'd: 08 Dec 2021 06:10 PSW** **Wt/Vol: 14.65 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-JC-NE-S-3 **UTP: 08-Dec-2021 14:49:06 PSW** **J-level: 0.341 pg/g** **Split: 1** **Checkcode: 501-649-XTP**

Datafile: 211207R25 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.05		0.8758	0.8756	-0.3	1.41E+06	0.86	Y	1.34	7.43	10557.86	0.478
1379-TCDD	25.40	EMPC	0.8878	0.8879	+0.2	4.40E+05	0.65	N	1.34	2.32	10557.86	0.478
1369-TCDD	25.83	EMPC	0.9025	0.9027	+0.3	2.07E+05	0.93	N	1.34	1.09	10557.86	0.478
1469-TCDD	26.58		0.9291	0.9291	0	7.64E+05	0.75	Y	1.34	4.03	10557.86	0.478
1247/1246/1248/1249-TCDD	26.80	EMPC	0.9374	0.9370	-0.6	4.29E+05	0.63	N	1.34	2.26	10557.86	0.478
1378-TCDD	27.00		0.9440	0.9440	0	4.85E+05	0.75	Y	1.34	2.56	10557.86	0.478
1268-TCDD	27.19	EMPC	0.9505	0.9504	-0.2	1.12E+05	0.89	N	1.34	0.594	10557.86	0.478
1478-TCDD	27.43	EMPC	0.9591	0.9588	-0.5	2.42E+05	0.94	N	1.34	1.28	10557.86	0.478
1279-TCDD	27.62		0.9650	0.9653	+0.5	1.86E+05	0.67	Y	1.34	0.983	10557.86	0.478
1234/1269-TCDD	27.95	EMPC	0.9771	0.9770	-0.2	2.60E+05	1.04	N	1.34	1.37	10557.86	0.478
1236-TCDD	NotFnd		0.9821						1.34		10557.86	0.478
1237/1238-TCDD	28.34	EMPC	0.9907	0.9907	0	1.26E+06	0.97	N	1.34	6.67	10557.86	0.478
1239-TCDD	NotFnd		0.9953						1.34		10557.86	0.478
2378-TCDD	**28.63**		**1.0008**	1.0008	**0**	8.05E+07	0.79	Y	**1.34**	**425**	**10557.86**	**0.478**
1278-TCDD	28.95		1.0118	1.0121	+0.5	7.96E+06	0.84	Y	1.34	42	10557.86	0.478
1267-TCDD	NotFnd		1.0162						1.34		10557.86	0.478
1289-TCDD	29.57	EMPC	1.0340	1.0336	-0.7	5.68E+05	1.20	N	1.34	3	10557.86	0.478
12479/12468-PeCDD	31.42		0.9274	0.9276	+0.4	2.37E+06	1.46	Y	1.06	17.5	8319.195	0.583
12469-PeCDD	31.95		0.9430	0.9432	+0.4	8.12E+05	1.56	Y	1.06	6.01	8319.195	0.583
12368-PeCDD	32.50		0.9591	0.9594	+0.6	9.48E+05	1.39	Y	1.06	7.02	8319.195	0.583
12478-PeCDD	32.69		0.9645	0.9650	+1.0	6.19E+05	1.63	Y	1.06	4.58	8319.195	0.583
12379-PeCDD	32.78		0.9676	0.9677	+0.2	4.68E+05	1.40	Y	1.06	3.46	8319.195	0.583
12369/12467/12489-PeCDD	33.04		0.9751	0.9754	+0.6	9.88E+05	1.37	Y	1.06	7.31	8319.195	0.583
12346/12347-PeCDD	33.40	J	0.9860	0.9860	0	1.77E+05	1.52	Y	1.06	1.31	8319.195	0.583
12378-PeCDD	33.89		**1.0004**	**1.0005**	**+0.2**	**1.07E+06**	**1.59**	**Y**	**1.06**	**7.95**	**8319.195**	**0.583**
12367-PeCDD	34.00	J	1.0034	1.0036	+0.4	2.18E+05	1.42	Y	1.06	1.61	8319.195	0.583
12389-PeCDD	34.33	J	1.0133	1.0135	+0.4	2.05E+05	1.53	Y	1.06	1.52	8319.195	0.583
124679/124689-HxCDD	36.03		0.9546	0.9547	+0.2	1.41E+07	1.25	Y	1.05	120	27430.72	2.02
123468-HxCDD	36.67		0.9718	0.9718	0	1.85E+06	1.23	Y	1.05	15.7	27430.72	2.02
123679/123689-HxCDD	36.96		0.9795	0.9795	0	9.78E+06	1.20	Y	1.05	83.1	27430.72	2.02
123469-HxCDD	37.10		0.9832	0.9831	-0.2	5.39E+05	1.32	Y	1.05	4.58	27430.72	2.02
123478-HxCDD	37.75	EMPC	**1.0004**	**1.0004**	**0**	**6.15E+05**	**1.04**	**N**	1.06	**5.48**	**27430.72**	**2.1**
123678-HxCDD	37.86		**1.0034**	**1.0033**	**-0.2**	**2.82E+06**	**1.26**	**Y**	1.08	**23.9**	**27430.72**	**2.06**
123467-HxCDD	38.05		1.0083	1.0082	-0.2	4.97E+05	1.31	Y	1.05	4.22	27430.72	2.02
123789-HxCDD	38.14		**1.0111**	**1.0108**	**-0.7**	**1.60E+06**	**1.23**	**Y**	1.02	**13.1**	**27430.72**	**1.91**

Lab ID: B5965_18711_DF_008 **Acq'd:** 08 Dec 2021 06:10 PSW **Wt/Vol:** 14.65 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-3 **UTP:** 08-Dec-2021 14:49:06 PSW **J-level:** 0.341 pg/g **Split:** 1 **Checkcode:** 501-649-XTP

Datafile: 211207R25 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

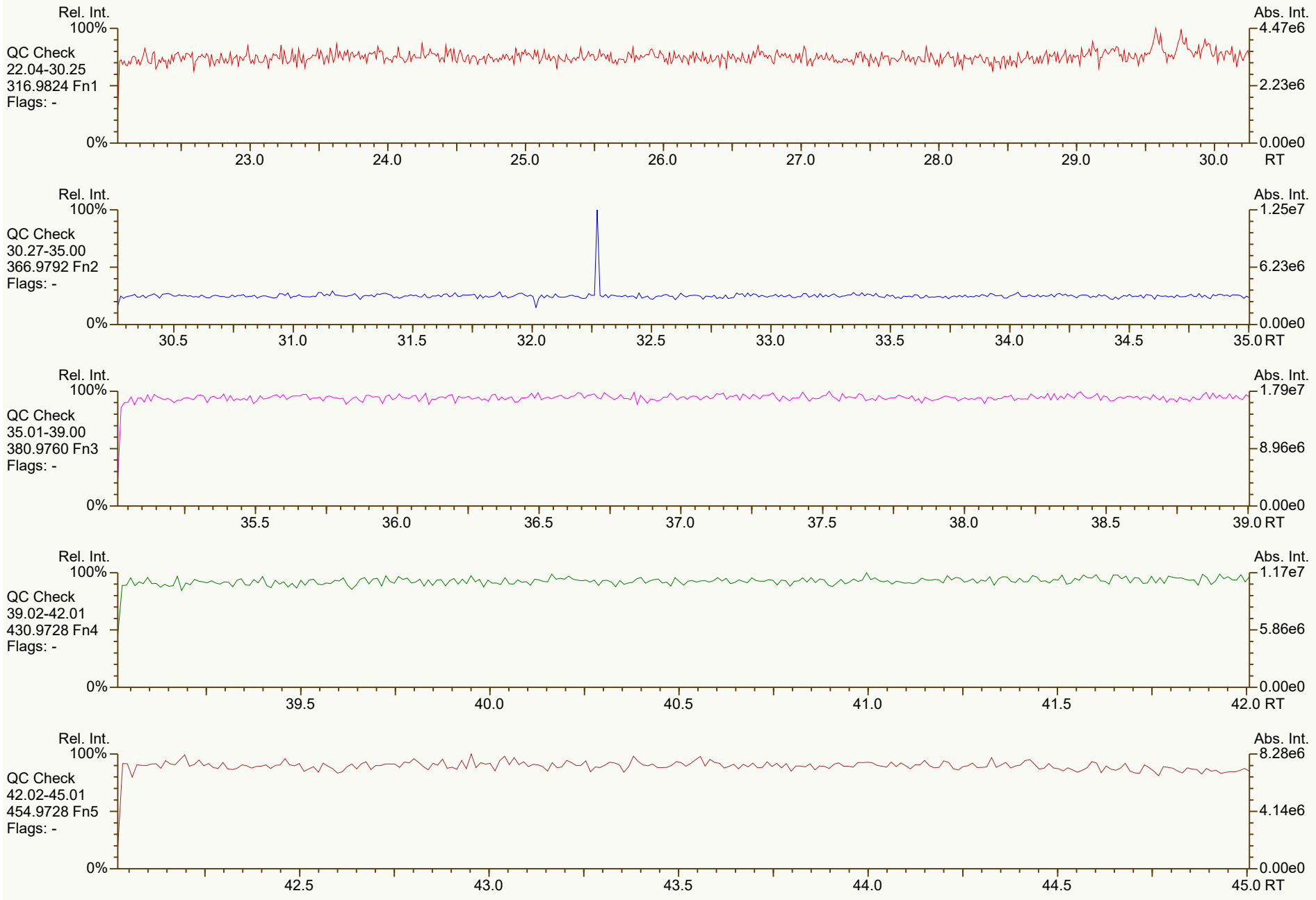
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.06		0.9843	0.9841	-0.5	7.16E+07	1.04	Y	0.97	710	48487.58	3.13
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**6.69E+07**	**1.03**	**Y**	**0.97**	**663**	**48487.58**	**3.13**
OCDD	**43.29**	**E**	**1.0003**	**1.0003**	**0**	**7.17E+08**	**0.90**	**Y**	**1.07**	**9,310**	**17039.375**	**1.86**
OCDD-a	43.29	**E**	1.0001	1.0001	0	4.23E+07	2.53	Y	0.07	8,890	15451.186	27.4
1368-TCDF	22.98		0.8284	0.8278	-0.8	5.19E+05	0.77	Y	0.96	2.65	8038.172	0.436
1468-TCDF	23.56		0.8487	0.8486	-0.1	1.52E+06	0.87	Y	0.96	7.79	8038.172	0.436
2468-TCDF	24.17		0.8709	0.8708	-0.1	3.71E+06	0.76	Y	0.96	19	8038.172	0.436
1346/1246-TCDF	24.54		0.8828	0.8841	+1.9	5.62E+05	0.85	Y	0.96	2.87	8038.172	0.436
1347/1378/1247-TCDF	24.69		0.8886	0.8893	+1.0	5.27E+06	0.76	Y	0.96	27	8038.172	0.436
1348-TCDF	24.92		0.8980	0.8975	-0.7	8.16E+05	0.84	Y	0.96	4.17	8038.172	0.436
1248/1367/1379-TCDF	25.03		0.9027	0.9015	-1.8	1.54E+07	0.81	Y	0.96	78.5	8038.172	0.436
1268-TCDF	25.43		0.9159	0.9159	0	6.77E+06	0.78	Y	0.96	34.6	8038.172	0.436
1467-TCDF	25.56		0.9206	0.9207	+0.2	1.31E+06	0.69	Y	0.96	6.68	8038.172	0.436
1478-TCDF	25.73		0.9266	0.9267	+0.2	1.41E+07	0.79	Y	0.96	72	8038.172	0.436
1369/1237-TCDF	26.10		0.9396	0.9401	+0.8	4.19E+06	0.84	Y	0.96	21.4	8038.172	0.436
2467-TCDF	26.22		0.9440	0.9443	+0.5	7.88E+05	0.68	Y	0.96	4.03	8038.172	0.436
2368-TCDF	26.37		0.9496	0.9498	+0.3	1.30E+07	0.79	Y	0.96	66.7	8038.172	0.436
1238/1234/1678/1469/1236-TCDF	26.45		0.9530	0.9528	-0.3	1.03E+07	0.81	Y	0.96	52.5	8038.172	0.436
1278-TCDF	26.90		0.9689	0.9690	+0.2	1.05E+08	0.80	Y	0.96	535	8038.172	0.436
1349-TCDF	NotFnd		0.9732						0.96		8038.172	0.436
1267-TCDF	27.17		0.9786	0.9786	0	6.77E+06	0.86	Y	0.96	34.6	8038.172	0.436
2346/1249-TCDF	27.36		0.9849	0.9855	+1.0	1.18E+06	0.79	Y	0.96	6.04	8038.172	0.436
2347/1279-TCDF	27.55		0.9927	0.9925	-0.3	3.13E+06	0.80	Y	0.96	16	8038.172	0.436
2348-TCDF	27.67		0.9967	0.9968	+0.2	1.98E+07	0.76	Y	0.96	101	8038.172	0.436
2378-TCDF	**27.78**	E	**1.0007**	**1.0008**	**+0.2**	**3.16E+08**	**0.79**	**Y**	**0.96**	**1,620**	**8038.172**	**0.436**
2367/3467-TCDF	28.13		1.0136	1.0132	-0.7	2.72E+07	0.78	Y	0.96	139	8038.172	0.436
1269-TCDF	28.39		1.0223	1.0225	+0.3	4.51E+06	0.77	Y	0.96	23.1	8038.172	0.436
1239-TCDF	NotFnd		1.0313						0.96		8038.172	0.436
1289-TCDF	29.76		1.0711	1.0720	+1.6	1.76E+07	0.81	Y	0.96	89.9	8038.172	0.436
13468/12468-PeCDF	29.70		0.9147	0.9154	+1.2	1.06E+07	1.62	Y	0.94	63.2	7750.417	0.4
13678/13467/12467-PeCDF	31.22		0.9616	0.9622	+1.1	1.48E+06	1.56	Y	0.94	8.82	12716.406	0.656
12368/13478/12478-PeCDF	31.38		0.9663	0.9669	+1.1	8.68E+06	1.62	Y	0.94	51.9	12716.406	0.656
14678-PeCDF	31.47		0.9695	0.9697	+0.4	6.81E+05	1.40	Y	0.94	4.07	12716.406	0.656
13479-PeCDF	31.57	J	0.9727	0.9728	+0.2	2.74E+05	1.37	Y	0.94	1.63	12716.406	0.656
13469/12479-PeCDF	31.80		0.9799	0.9800	+0.2	8.11E+05	1.65	Y	0.94	4.84	12716.406	0.656
12346-PeCDF	31.94	J EMPC	0.9839	0.9843	+0.8	2.36E+05	1.29	N	0.94	1.41	12716.406	0.656

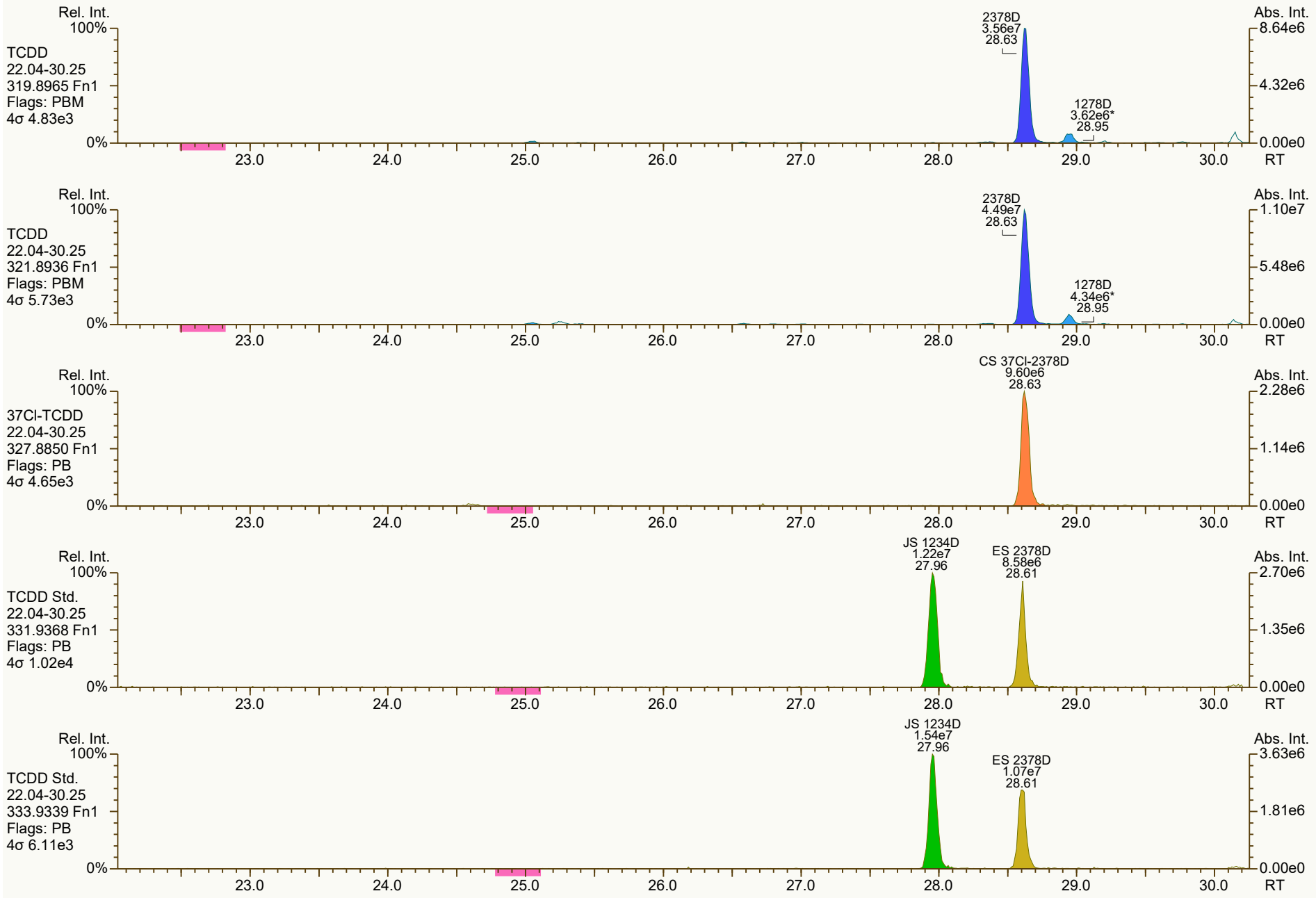
Lab ID: B5965_18711_DF_008 **Acq'd:** 08 Dec 2021 06:10 PSW **Wt/Vol:** 14.65 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-S-3 **UTP:** 08-Dec-2021 14:49:06 PSW **J-level:** 0.341 pg/g **Split:** 1 **Checkcode:** 501-649-XTP

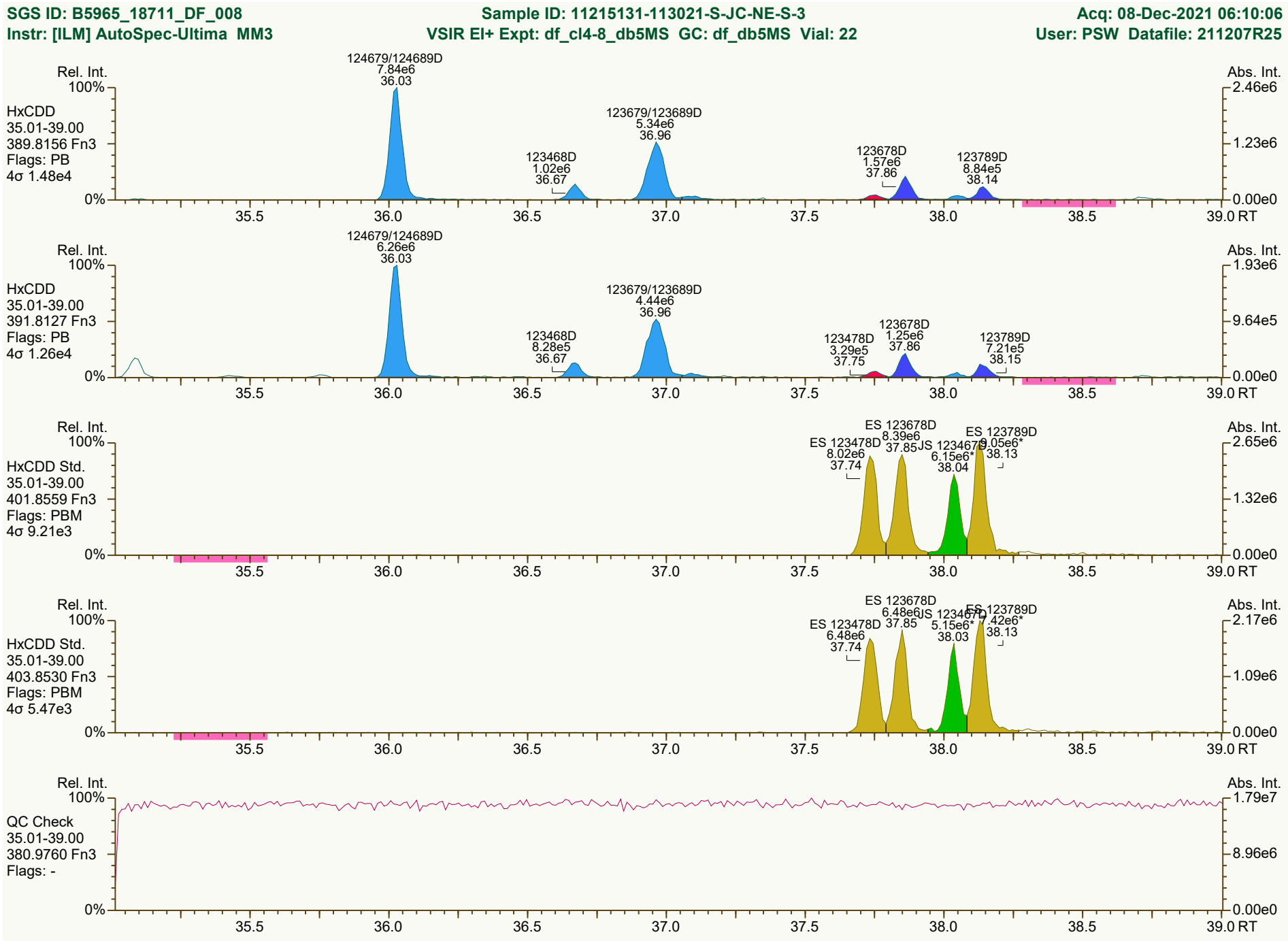
Datafile: 211207R25 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

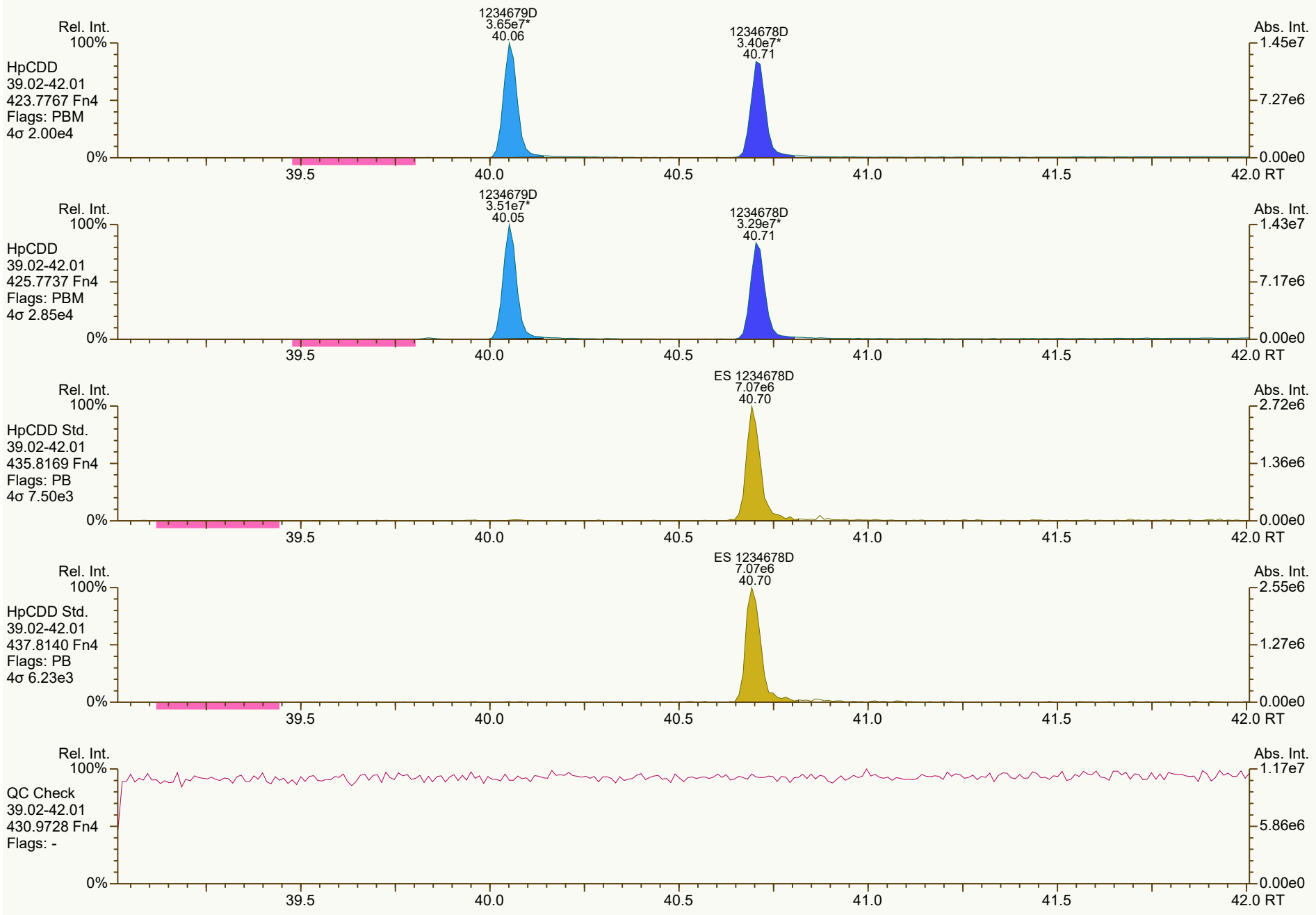
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.03		0.9864	0.9869	+1.0	2.05E+06	1.51	Y	0.94	12.2	12716.406	0.656
12347-PeCDF	32.11		0.9892	0.9894	+0.4	6.37E+05	1.40	Y	0.94	3.81	12716.406	0.656
12348-PeCDF	32.25	EMPC	0.9940	0.9939	-0.2	1.52E+06	4.25	N	0.94	9.07	12716.406	0.656
12378-PeCDF	**32.47**		**1.0006**	**1.0005**	**-0.2**	**7.46E+06**	**1.64**	**Y**	**0.95**	**44.5**	**12716.406**	**0.614**
12678/12367-PeCDF	32.76		1.0088	1.0096	+1.6	3.28E+06	1.58	Y	0.94	19.6	12716.406	0.656
12379-PeCDF	NotFnd		1.0142						0.94		12716.406	0.656
12679-PeCDF	33.31	J EMPC	0.9931	0.9930	-0.2	1.00E+05	1.32	N	0.94	0.6	12716.406	0.656
23467/12369-PeCDF	33.43		0.9966	0.9965	-0.2	5.37E+05	1.48	Y	0.94	3.21	12716.406	0.656
23478-PeCDF	**33.57**		**1.0005**	**1.0008**	**+0.6**	**8.04E+06**	**1.49**	**Y**	**0.94**	**48.2**	**12716.406**	**0.699**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		12716.406	0.656
12349-PeCDF	NotFnd		1.0100						0.94		12716.406	0.656
12389-PeCDF	34.63	EMPC	1.0323	1.0323	0	3.80E+05	1.29	N	0.94	2.27	12716.406	0.656
123468-HxCDF	35.39		0.9631	0.9632	+0.2	3.64E+06	1.30	Y	1.16	22.3	27055.22	1.4
124678/134678-HxCDF	35.59		0.9686	0.9686	0	1.31E+07	1.28	Y	1.16	80.5	27055.22	1.4
134679-HxCDF	35.82		0.9747	0.9749	+0.4	6.61E+05	1.33	Y	1.16	4.05	27055.22	1.4
124679-HxCDF	36.01		0.9800	0.9800	0	2.11E+06	1.29	Y	1.16	12.9	27055.22	1.4
124689-HxCDF	36.23		0.9859	0.9860	+0.2	1.67E+07	1.29	Y	1.16	102	27055.22	1.4
123467-HxCDF	36.64		0.9972	0.9972	0	7.80E+05	1.33	Y	1.16	4.78	27055.22	1.4
123478-HxCDF	**36.76**		**1.0004**	**1.0005**	**+0.2**	**1.07E+07**	**1.29**	**Y**	**1.23**	**65.5**	**27055.22**	**1.41**
123678-HxCDF	**36.90**		**1.0005**	**1.0004**	**-0.2**	**3.64E+06**	**1.27**	**Y**	**1.13**	**20**	**27055.22**	**1.32**
123479-HxCDF	NotFnd		1.0048						1.16		27055.22	1.4
123469-HxCDF	37.21		1.0089	1.0089	0	5.08E+05	1.20	Y	1.16	3.11	27055.22	1.4
123679-HxCDF	37.35	J EMPC	0.9943	0.9944	+0.2	1.61E+05	0.71	N	1.16	0.987	27055.22	1.4
234678-HxCDF	**37.57**		**1.0005**	**1.0004**	**-0.2**	**2.53E+06**	**1.35**	**Y**	**1.15**	**15.8**	**27055.22**	**1.53**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		27055.22	1.4
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**27055.22**	**1.36**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.52		1.0004	1.0010	+1.4	1.23E+06	1.23	Y	1.16	7.56	27055.22	1.4
1234678-HpCDF	**39.82**		**1.0003**	**1.0003**	**0**	**7.43E+07**	**1.06**	**Y**	**1.36**	**486**	**9630.553**	**0.398**
1234679-HpCDF	40.06		1.0065	1.0065	0	3.14E+06	1.00	Y	1.33	21.9	9630.553	0.467
1234689-HpCDF	40.21		1.0097	1.0101	+1.0	6.58E+07	1.03	Y	1.33	459	9630.553	0.467
1234789-HpCDF	**41.17**		**1.0004**	**1.0003**	**-0.2**	**4.27E+06**	**1.01**	**Y**	**1.30**	**31.9**	**9630.553**	**0.546**
OCDF	**43.48**	**E**	**1.0002**	**1.0002**	**0**	**8.66E+08**	**0.89**	**Y**	**1.03**	**8,940**	**10939.125**	**0.907**
OCDF-a	43.48	**E**	1.0001	1.0002	+0.3	5.29E+07	2.48	Y	0.06	9,460	12918.942	18.5

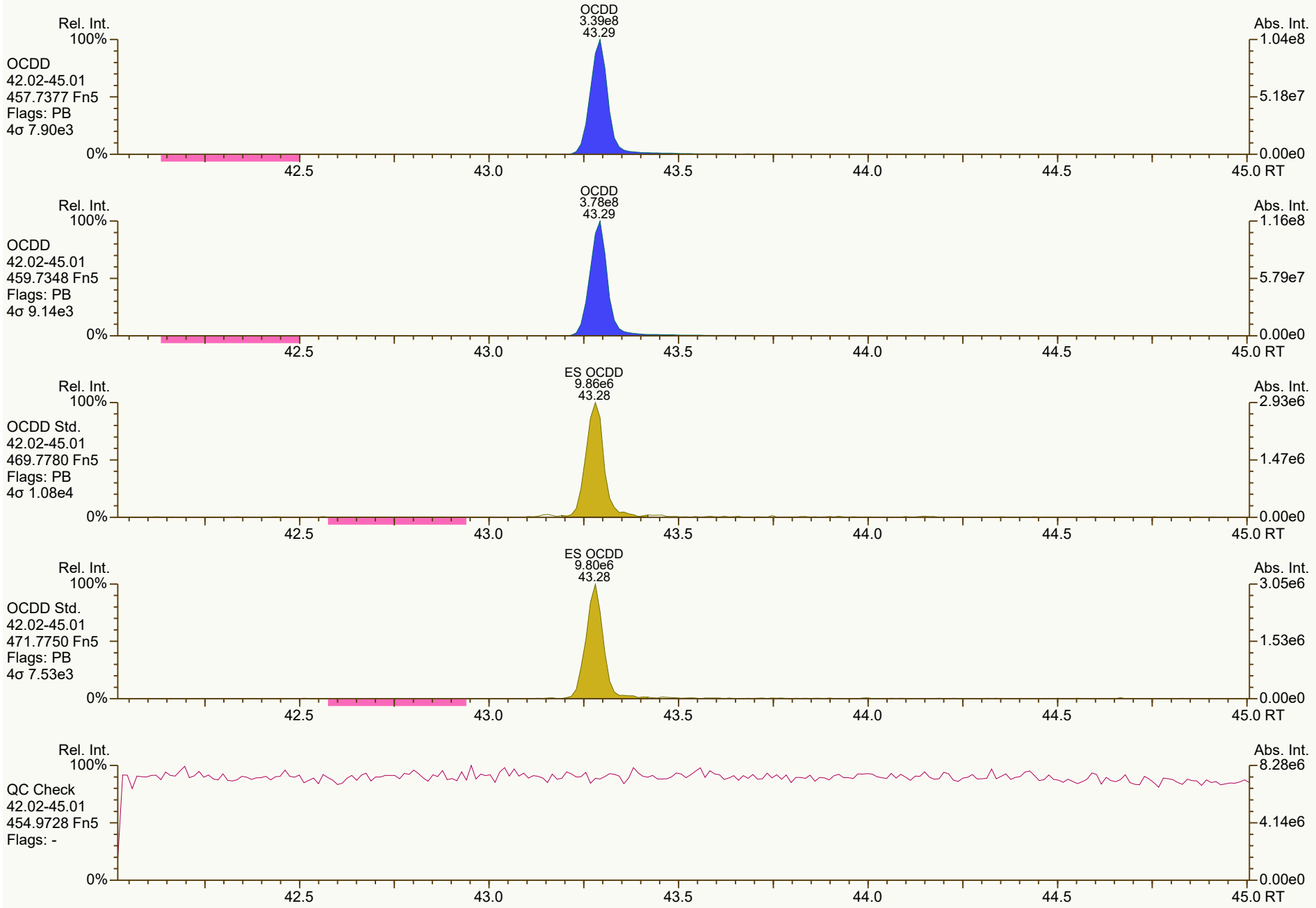

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.47e6
2.23e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.25e7
6.23e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.79e7
8.96e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.17e7
5.86e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.28e6
4.14e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 4.83e3
0%
2378D
3.56e7
28.63
1278D
3.62e6*
28.95
Abs. Int.
8.64e6
4.32e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 5.73e3
0%
2378D
4.49e7
28.63
1278D
4.34e6*
28.95
Abs. Int.
1.10e7
5.48e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.65e3
0%
CS 37Cl-2378D
9.60e6
28.63
Abs. Int.
2.28e6
1.14e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.02e4
0%
JS 1234D
1.22e7
27.96
ES 2378D
8.58e6
28.61
Abs. Int.
2.70e6
1.35e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 6.11e3
0%
JS 1234D
1.54e7
27.96
ES 2378D
1.07e7
28.61
Abs. Int.
3.63e6
1.81e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 4.14e3
12479/12468D
1.40e6
31.42
12469D
4.94e5
31.95
12368D
5.52e5
32.50
12478D
3.84e5
32.69
12378D
6.59e5
33.89
0%
Abs. Int.
2.38e6
1.19e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 4.18e3
12479/12468D
9.63e5
31.42
12469D
3.17e5
31.95
12368D
3.96e5
32.50
12478D
2.36e5
32.68
12369D...[3]
4.17e5
33.04
12346/12347D
7.04e4
33.40
12378D
4.15e5
33.89
12367D
9.00e4*
34.00
12389D
8.10e4*
34.34
0%
Abs. Int.
1.88e5
9.41e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 6.13e3
CS 12347D
1.07e7
33.38
ES 12378D
1.04e7
33.87
0%
Abs. Int.
3.41e6
1.70e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 6.43e3
CS 12347D
6.71e6
33.38
ES 12378D
6.96e6
33.87
0%
Abs. Int.
2.11e6
1.05e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.25e7
6.23e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT

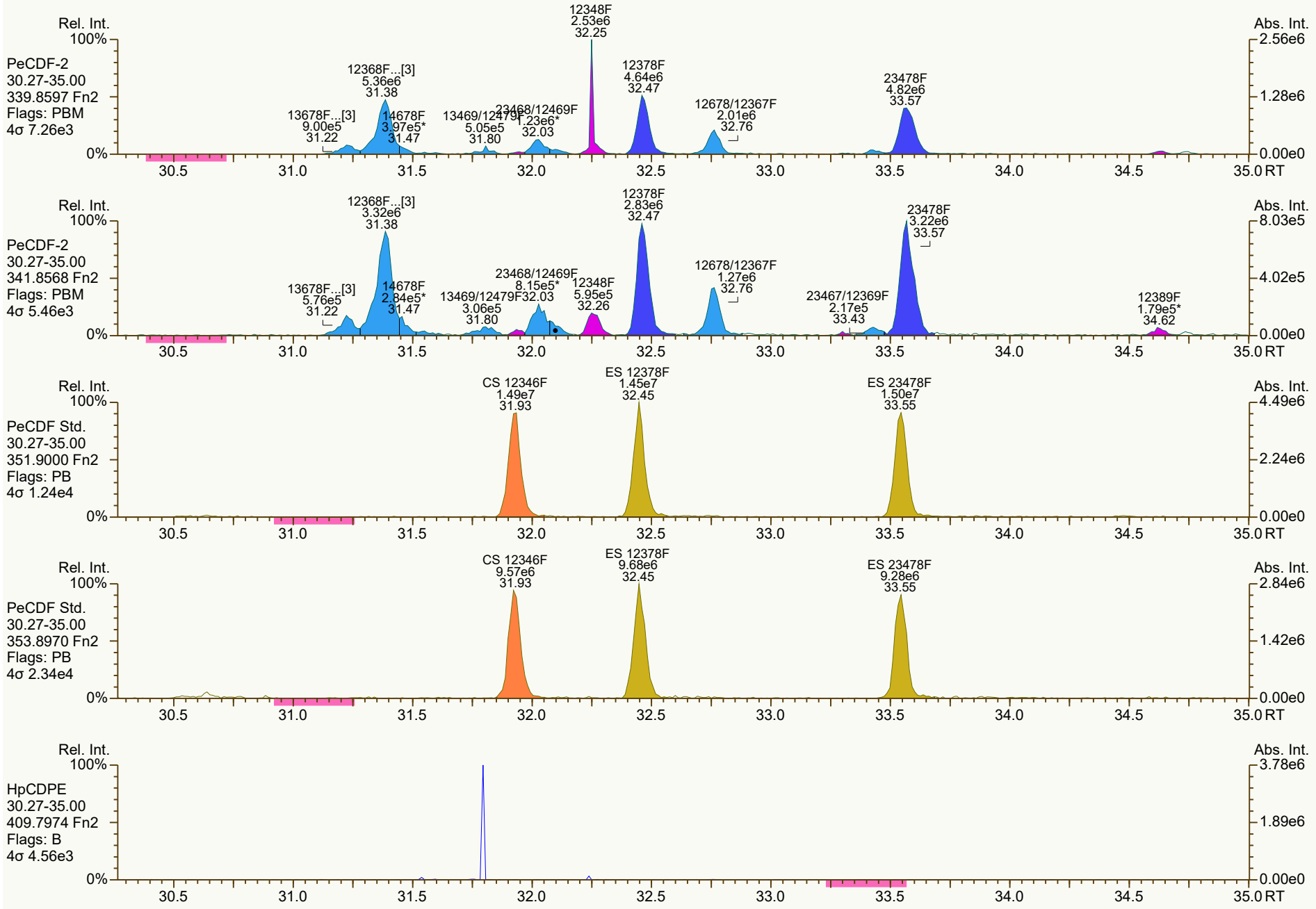

SGS ID: B5965_18711_DF_008
Sample ID: 11215131-113021-S-JC-NE-S-3
Acq: 08-Dec-2021 06:10:06
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22
User: PSW Datafile: 211207R25
Rel. Int.
Abs. Int.
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 1.48e4
124679/124689D
7.84e6
36.03
123679/123689D
5.34e6
36.96
123468D
1.02e6
36.67
123678D
1.57e6
37.86
123789D
8.84e5
38.14
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 1.26e4
124679/124689D
6.26e6
36.03
123679/123689D
4.44e6
36.96
123468D
8.28e5
36.67
123478D
3.29e5
37.75
123678D
1.25e6
37.86
123789D
7.21e5
38.15
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 9.21e3
ES 123678D
8.39e6
37.85
ES 123478D
8.02e6
37.74
JS 123678D
6.15e6*
38.04
ES 123789D
9.05e6*
38.13
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 5.47e3
ES 123678D
6.48e6
37.85
ES 123478D
6.48e6
37.74
JS 123678D
5.15e6*
38.03
ES 123789D
7.42e6*
38.13
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
RT

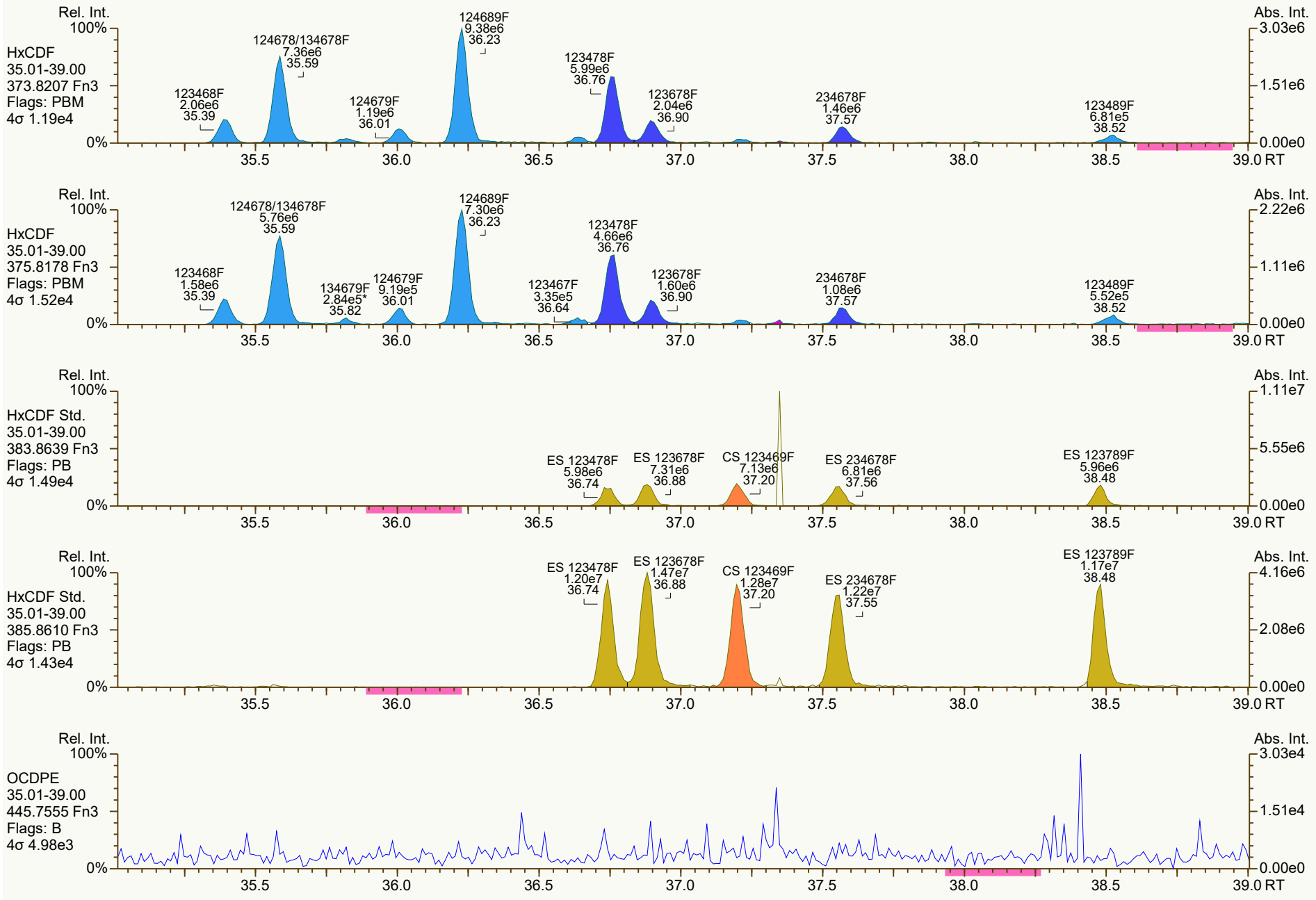

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 2.00e4
1234679D
3.65e7*
40.06
1234678D
3.40e7*
40.71
Abs. Int.
1.45e7
7.27e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 2.85e4
1234679D
3.51e7*
40.05
1234678D
3.29e7*
40.71
Abs. Int.
1.43e7
7.17e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 7.50e3
ES 1234678D
7.07e6
40.70
Abs. Int.
2.72e6
1.36e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 6.23e3
ES 1234678D
7.07e6
40.70
Abs. Int.
2.55e6
1.27e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.17e7
5.86e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

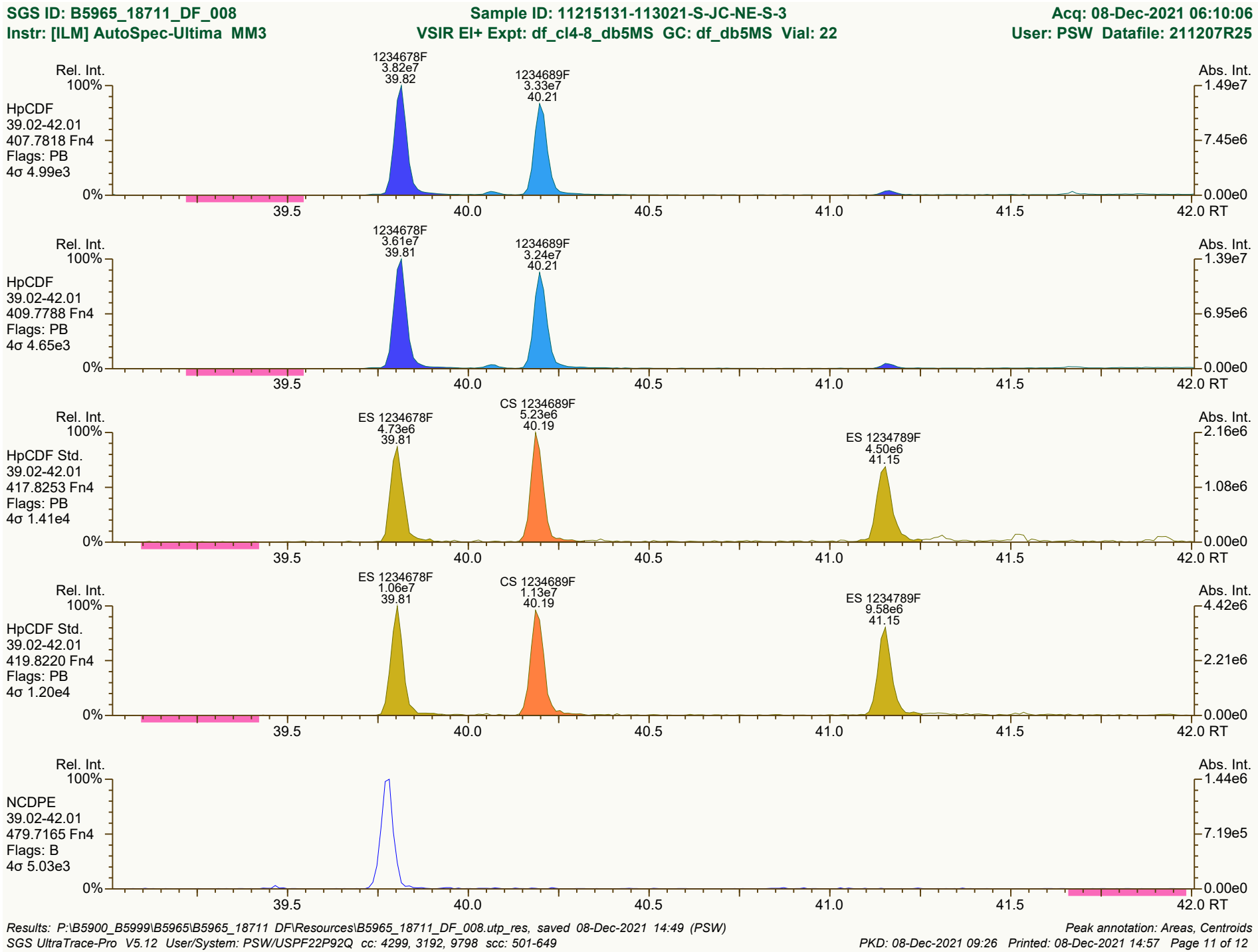

OCDD
3.39e8
43.29
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 7.90e3
0%
Abs. Int.
1.04e8
5.18e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.78e8
43.29
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 9.14e3
0%
Abs. Int.
1.16e8
5.79e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
9.86e6
43.28
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 1.08e4
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
9.80e6
43.28
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 7.53e3
0%
Abs. Int.
3.05e6
1.53e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.28e6
4.14e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

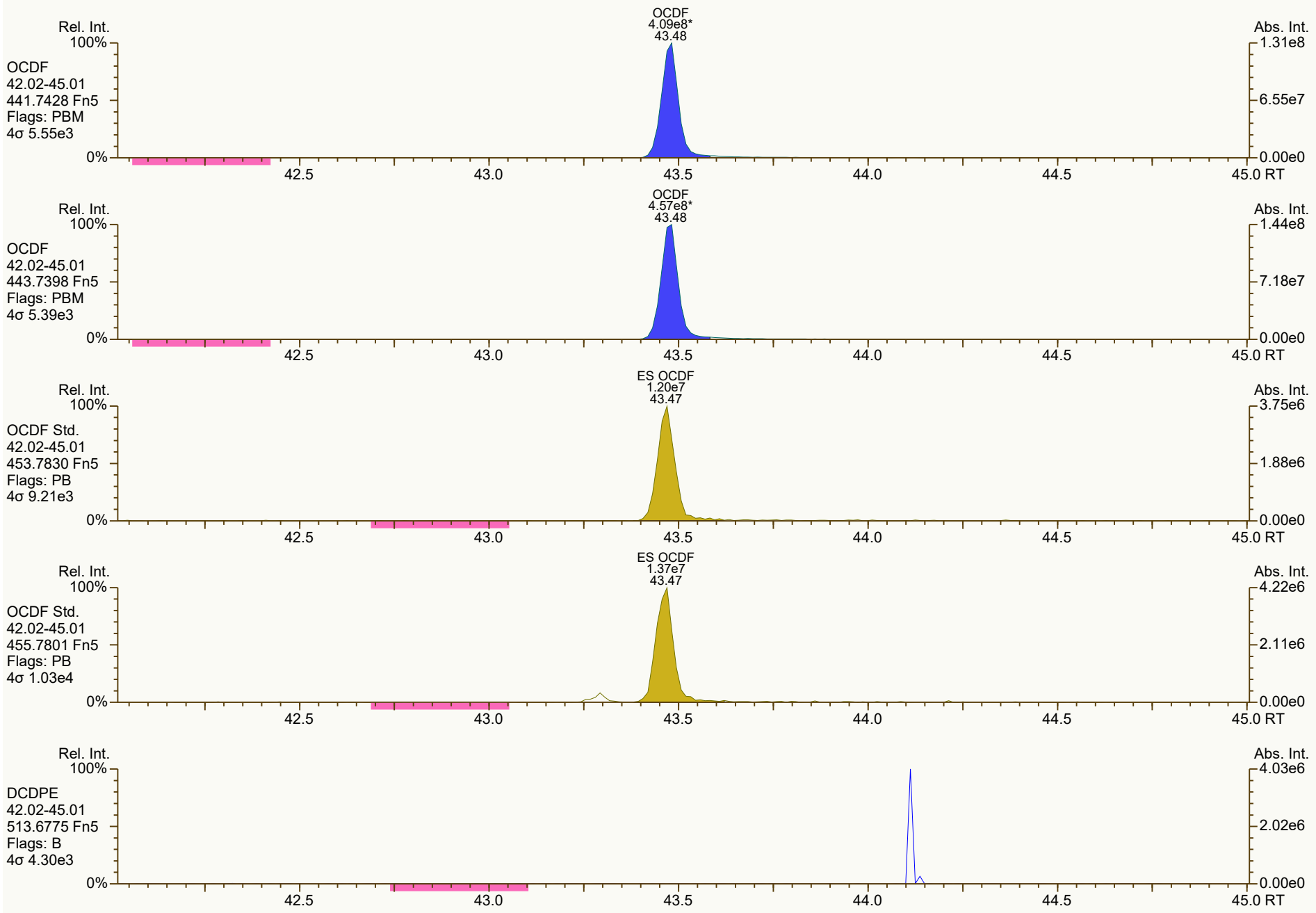

Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 4.01e3
0%
2378F
1.40e8
27.78
1278F
4.65e7
26.90
2348F
8.59e6
27.67
2367/3467F
1.19e7
28.13
1289F
7.86e6
29.76
Abs. Int.
3.19e7
1.59e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 4.02e3
0%
2378F
1.77e8
27.78
1278F
5.82e7
26.90
2348F
1.13e7
27.67
2367/3467F
1.53e7
28.13
1289F
9.72e6
29.76
Abs. Int.
4.00e7
2.00e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 2.43e4
0%
JS 1234F
1.78e7
26.43
ES 2378F
1.26e7
27.76
Abs. Int.
4.03e6
2.02e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 9.12e3
0%
JS 1234F
2.23e7
26.42
ES 2378F
1.52e7
27.76
Abs. Int.
5.03e6
2.52e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.17e3
0%
Abs. Int.
2.34e4
1.17e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


13468/12468F
6.54e6
29.70
Rel. Int.
100%
0%
Abs. Int.
1.68e6
8.42e5
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 4.71e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
13468/12468F
4.03e6
29.70
Rel. Int.
100%
0%
Abs. Int.
1.07e6
5.35e5
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 3.05e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.47e6
2.23e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 7.26e3
12348F 2.53e6 32.25
12368F...[3] 5.36e6 31.38
12378F 4.64e6 32.47
23478F 4.82e6 33.57
12678/12367F 2.01e6 32.76
13678F...[3] 9.00e5 31.22
14678F 3.97e5* 31.47
13469/12479F 5.05e5 31.80
23468/12469F 1.23e6* 32.03
Abs. Int.
2.56e6
1.28e6
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 5.46e3
12368F...[3] 3.32e6 31.38
12378F 2.83e6 32.47
23478F 3.22e6 33.57
12678/12367F 1.27e6 32.76
13678F...[3] 5.76e5 31.22
14678F 2.84e5* 31.47
23468/12469F 8.15e5* 32.03
13469/12479F 3.06e5 31.80
12348F 5.95e5 32.26
23467/12369F 2.17e5 33.43
12389F 1.79e5* 34.62
Abs. Int.
8.03e5
4.02e5
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 1.24e4
CS 12346F 1.49e7 31.93
ES 12378F 1.45e7 32.45
ES 23478F 1.50e7 33.55
Abs. Int.
4.49e6
2.24e6
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 2.34e4
CS 12346F 9.57e6 31.93
ES 12378F 9.68e6 32.45
ES 23478F 9.28e6 33.55
Abs. Int.
2.84e6
1.42e6
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.56e3
Abs. Int.
3.78e6
1.89e6
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 1.19e4
123468F 2.06e6 35.39
124678/134678F 7.36e6 35.59
124679F 1.19e6 36.01
124689F 9.38e6 36.23
123478F 5.99e6 36.76
123678F 2.04e6 36.90
234678F 1.46e6 37.57
123489F 6.81e5 38.52
Abs. Int.
3.03e6
1.51e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 1.52e4
123468F 1.58e6 35.39
124678/134678F 5.76e6 35.59
134679F 2.84e5* 35.82
124679F 9.19e5 36.01
124689F 7.30e6 36.23
123467F 3.35e5 36.64
123478F 4.66e6 36.76
123678F 1.60e6 36.90
234678F 1.08e6 37.57
123489F 5.52e5 38.52
Abs. Int.
2.22e6
1.11e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 1.49e4
ES 123478F 5.98e6 36.74
ES 123678F 7.31e6 36.88
CS 123469F 7.13e6 37.20
ES 234678F 6.81e6 37.56
ES 123789F 5.96e6 38.48
Abs. Int.
1.11e7
5.55e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 1.43e4
ES 123478F 1.20e7 36.74
ES 123678F 1.47e7 36.88
CS 123469F 1.28e7 37.20
ES 234678F 1.22e7 37.55
ES 123789F 1.17e7 38.48
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 4.98e3
Abs. Int.
3.03e4
1.51e4
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT


SGS ID: B5965_18711_DF_008
Sample ID: 11215131-113021-S-JC-NE-S-3
Acq: 08-Dec-2021 06:10:06
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22
User: PSW Datafile: 211207R25
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 4.99e3
1234678F
3.82e7
39.82
1234689F
3.33e7
40.21
1.49e7
7.45e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 4.65e3
1234678F
3.61e7
39.81
1234689F
3.24e7
40.21
1.39e7
6.95e6
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 1.41e4
ES 1234678F
4.73e6
39.81
CS 1234689F
5.23e6
40.19
ES 1234789F
4.50e6
41.15
2.16e6
1.08e6
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 1.20e4
ES 1234678F
1.06e7
39.81
CS 1234689F
1.13e7
40.19
ES 1234789F
9.58e6
41.15
4.42e6
2.21e6
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 5.03e3
1.44e6
7.19e5
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_008.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4299, 3192, 9798 scc: 501-649
PKD: 08-Dec-2021 09:26 Printed: 08-Dec-2021 14:57 Page 11 of 12


OCDF
4.09e8*
43.48
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 5.55e3
0%
Abs. Int.
1.31e8
6.55e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.57e8*
43.48
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 5.39e3
0%
Abs. Int.
1.44e8
7.18e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.20e7
43.47
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 9.21e3
0%
Abs. Int.
3.75e6
1.88e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.37e7
43.47
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 1.03e4
0%
Abs. Int.
4.22e6
2.11e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.30e3
0%
Abs. Int.
4.03e6
2.02e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5965_18711_DF_009 **Acq'd:** 08 Dec 2021 06:57 PSW **Wt/Vol:** 17.28 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-S-4 **UTP:** 08-Dec-2021 14:49:06 PSW **J-level:** 0.289 pg/g **Split:** 1 **Checkcode:** 441-781-KDK

Datafile: 211207R26 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.66		1.0008	1.0007	-0.2	3.08E+07	0.80	Y	1.34	151	11372.184	0.527
12378-PeCDD	33.91		1.0004	1.0007	+0.6	5.50E+05	1.37	Y	1.06	3.93	10682.71	0.688
123478-HxCDD	37.77		1.0004	1.0005	+0.2	4.75E+05	1.32	Y	1.06	4.1	22564.95	1.59
123678-HxCDD	37.88		1.0034	1.0034	0	2.04E+06	1.34	Y	1.08	16.3	22564.95	1.46
123789-HxCDD	38.16		1.0111	1.0109	-0.5	1.05E+06	1.27	Y	1.02	8.34	22564.95	1.52
1234678-HpCDD	40.73		1.0004	1.0003	-0.2	5.35E+07	1.05	Y	0.97	561	14587.496	1.03
OCDD	43.31	E	1.0003	1.0003	0	4.66E+08	0.90	Y	1.07	6,360	19415.991	2.21
2378-TCDF	27.82	E	1.0007	1.0008	+0.2	1.23E+08	0.79	Y	0.96	589	9601.215	0.517
12378-PeCDF	32.49		1.0006	1.0005	-0.2	3.04E+06	1.52	Y	0.95	16.9	10965.42	0.583
23478-PeCDF	33.59		1.0005	1.0009	+0.8	3.30E+06	1.48	Y	0.94	19.2	10965.42	0.563
123478-HxCDF	36.78		1.0004	1.0004	0	4.30E+06	1.22	Y	1.23	25.1	23632.16	1.19
123678-HxCDF	36.92		1.0005	1.0004	-0.2	1.64E+06	1.17	Y	1.13	9.01	23632.16	1.16
234678-HxCDF	37.59		1.0005	1.0005	0	1.12E+06	1.18	Y	1.15	6.6	23632.16	1.22
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	23632.16	1.23
1234678-HpCDF	39.83		1.0003	1.0003	0	2.01E+07	1.04	Y	1.36	135	11406.227	0.499
1234789-HpCDF	41.18		1.0004	1.0002	-0.5	1.83E+06	1.10	Y	1.30	14.8	11406.227	0.623
OCDF	43.50		1.0002	1.0003	+0.3	2.71E+08	0.90	Y	1.03	3,010	18724.539	1.75

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.64	1.0233	1.0231	-0.3	1.76E+07	0.83	Y	1.03	75.7
ES 12378-PeCDD	33.89	1.2118	1.2106	-2.4	1.53E+07	1.60	Y	1.03	65.7
ES 123478-HxCDD	37.75	0.9921	0.9921	0	1.27E+07	1.26	Y	0.99	73.7
ES 123678-HxCDD	37.87	0.9951	0.9951	0	1.33E+07	1.35	Y	0.97	79.1
ES 123789-HxCDD	38.15	1.0027	1.0025	-0.5	1.43E+07	1.27	Y	1.12	73.4
ES 1234678-HpCDD	40.72	1.0702	1.0700	-0.5	1.13E+07	1.05	Y	0.99	65.9
ES OCDD	43.30	1.1377	1.1379	+0.5	1.58E+07	0.91	Y	0.78	58.9
ES 2378-TCDF	27.80	1.0505	1.0500	-0.8	2.52E+07	0.83	Y	1.08	71.6
ES 12378-PeCDF	32.47	1.2278	1.2267	-2.1	2.20E+07	1.63	Y	0.93	72.6
ES 23478-PeCDF	33.56	1.2691	1.2678	-2.6	2.12E+07	1.62	Y	0.92	70.6
ES 123478-HxCDF	36.76	0.9660	0.9661	+0.2	1.60E+07	0.51	Y	1.14	81
ES 123678-HxCDF	36.90	0.9698	0.9697	-0.2	1.86E+07	0.53	Y	1.30	82.8
ES 234678-HxCDF	37.57	0.9875	0.9875	0	1.71E+07	0.53	Y	1.20	82.3
ES 123789-HxCDF	38.50	1.0121	1.0117	-0.9	1.54E+07	0.54	Y	1.14	78.4
ES 1234678-HpCDF	39.82	1.0468	1.0465	-0.7	1.27E+07	0.45	Y	0.95	77.4
ES 1234789-HpCDF	41.17	1.0822	1.0820	-0.5	1.10E+07	0.45	Y	0.85	74.9
ES OCDF	43.48	1.1426	1.1428	+0.5	2.03E+07	0.90	Y	0.93	63.4

Lab ID: B5965_18711_DF_009 **Acq'd:** 08 Dec 2021 06:57 PSW **Wt/Vol:** 17.28 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-S-4 **UTP:** 08-Dec-2021 14:49:06 PSW **J-level:** 0.289 pg/g **Split:** 1 **Checkcode:** 441-781-KDK

Datafile: 211207R26 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.99		-	-	-	2.25E+07	0.82	Y	-	-
JS 1234-TCDF	26.47		-	-	-	3.25E+07	0.78	Y	-	-
JS 123467-HxCDD	38.05		-	-	-	8.66E+06	1.33	Y	-	-
CS 37Cl-2378-TCDD	28.66		1.0241	1.0238	-0.5	7.77E+06	n/a	-	1.31	66
CS 12347-PeCDD	33.40		1.1940	1.1931	-1.8	1.46E+07	1.66	Y	0.89	72.7
CS 12346-PeCDF	31.95		1.2080	1.2070	-1.9	2.13E+07	1.56	Y	0.87	75.6
CS 123469-HxCDF	37.22		0.9781	0.9782	+0.2	1.67E+07	0.52	Y	1.09	88.4
CS 1234689-HpCDF	40.21		1.0569	1.0567	-0.5	1.25E+07	0.46	Y	0.86	83.5
~~SS 37Cl-2378-TCDD~~	~~28.66~~		~~1.0241~~	~~1.0238~~	~~-0.5~~	~~7.77E+06~~	~~n/a~~		~~1.26~~	~~87.6~~
~~SS 12347-PeCDD~~	~~33.40~~		~~1.1940~~	~~1.1931~~	~~-1.8~~	~~1.46E+07~~	~~1.66~~	~~Y~~	~~0.86~~	~~111~~
~~SS 12346-PeCDF~~	~~31.95~~		~~1.2080~~	~~1.2070~~	~~-1.9~~	~~2.13E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~104~~
~~SS 123469-HxCDF~~	~~37.22~~		~~0.9781~~	~~0.9782~~	~~+0.2~~	~~1.67E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~107~~
~~SS 1234689-HpCDF~~	~~40.21~~		~~1.0569~~	~~1.0567~~	~~-0.5~~	~~1.25E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~108~~

Totals	Conc	EMPC
Total TCDD	172	176
Total PeCDD	17.9	26.4
Total HxCDD	150	150
Total HpCDD	1320	1320
Total Tetra-Octa Dioxins	8020	8040
Total TCDF	1,170	1190
Total PeCDF	81.9	113
Total HxCDF	147	150
Total HpCDF	347	347
Total Tetra-Octa Furans	4,760	4810
Total Tetra-Octa Dioxins & Furans	12800	12800

Lab ID: B5965_18711_DF_009 **Acq'd: 08 Dec 2021 06:57 PSW** **Wt/Vol: 17.28 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-S-4 **UTP: 08-Dec-2021 14:49:06 PSW** **J-level: 0.289 pg/g** **Split: 1** **Checkcode: 441-781-KDK**

Datafile: 211207R26 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.10	EMPC	0.8758	0.8765	+1.1	6.19E+05	0.90	N	1.34	3.03	11372.184	0.527
1379-TCDD	NotFnd		0.8878						1.34		11372.184	0.527
1369-TCDD	NotFnd		0.9025						1.34		11372.184	0.527
1469-TCDD	26.61		0.9291	0.9293	+0.3	2.44E+05	0.83	Y	1.34	1.2	11372.184	0.527
1247/1246/1248/1249-TCDD	26.86		0.9374	0.9379	+0.8	2.75E+05	0.76	Y	1.34	1.35	11372.184	0.527
1378-TCDD	27.05	EMPC	0.9440	0.9445	+0.8	2.47E+05	0.64	N	1.34	1.21	11372.184	0.527
1268-TCDD	NotFnd		0.9505						1.34		11372.184	0.527
1478-TCDD	NotFnd		0.9591						1.34		11372.184	0.527
1279-TCDD	NotFnd		0.9650						1.34		11372.184	0.527
1234/1269-TCDD	27.99		0.9771	0.9772	+0.2	1.54E+05	0.76	Y	1.34	0.754	11372.184	0.527
1236-TCDD	NotFnd		0.9821						1.34		11372.184	0.527
1237/1238-TCDD	28.37		0.9907	0.9906	-0.2	5.32E+05	0.75	Y	1.34	2.6	11372.184	0.527
1239-TCDD	NotFnd		0.9953						1.34		11372.184	0.527
2378-TCDD	**28.66**		**1.0008**	1.0007	**-0.2**	3.08E+07	0.80	Y	**1.34**	**151**	**11372.184**	**0.527**
1278-TCDD	28.99		1.0118	1.0121	+0.5	3.11E+06	0.81	Y	1.34	15.2	11372.184	0.527
1267-TCDD	NotFnd		1.0162						1.34		11372.184	0.527
1289-TCDD	NotFnd		1.0340						1.34		11372.184	0.527
12479/12468-PeCDD	31.44		0.9274	0.9278	+0.8	9.86E+05	1.46	Y	1.06	7.06	10682.71	0.688
12469-PeCDD	31.97	EMPC	0.9430	0.9435	+1.0	4.82E+05	0.86	N	1.06	3.45	10682.71	0.688
12368-PeCDD	32.52	EMPC	0.9591	0.9596	+1.0	3.86E+05	1.17	N	1.06	2.76	10682.71	0.688
12478-PeCDD	32.71	EMPC	0.9645	0.9651	+1.2	3.16E+05	1.05	N	1.06	2.26	10682.71	0.688
12379-PeCDD	32.81		0.9676	0.9680	+0.8	2.24E+05	1.54	Y	1.06	1.6	10682.71	0.688
12369/12467/12489-PeCDD	33.06		0.9751	0.9755	+0.8	4.51E+05	1.44	Y	1.06	3.22	10682.71	0.688
12346/12347-PeCDD	33.42	J	0.9860	0.9862	+0.4	1.80E+05	1.69	Y	1.06	1.29	10682.71	0.688
12378-PeCDD	33.91		**1.0004**	**1.0007**	**+0.6**	**5.50E+05**	**1.37**	**Y**	**1.06**	**3.93**	**10682.71**	**0.688**
12367-PeCDD	34.01	J	1.0034	1.0035	+0.2	1.17E+05	1.53	Y	1.06	0.841	10682.71	0.688
12389-PeCDD	NotFnd		1.0133						1.06		10682.71	0.688
124679/124689-HxCDD	36.05		0.9546	0.9548	+0.4	6.47E+06	1.23	Y	1.05	53	22564.95	1.52
123468-HxCDD	36.69		0.9718	0.9718	0	1.27E+06	1.36	Y	1.05	10.4	22564.95	1.52
123679/123689-HxCDD	36.98		0.9795	0.9796	+0.2	6.27E+06	1.19	Y	1.05	51.4	22564.95	1.52
123469-HxCDD	37.11		0.9832	0.9830	-0.4	4.99E+05	1.28	Y	1.05	4.09	22564.95	1.52
123478-HxCDD	37.77		**1.0004**	**1.0005**	**+0.2**	**4.75E+05**	**1.32**	**Y**	1.06	**4.1**	**22564.95**	**1.59**
123678-HxCDD	37.88		**1.0034**	**1.0034**	**0**	**2.04E+06**	**1.34**	**Y**	1.08	**16.3**	**22564.95**	**1.46**
123467-HxCDD	38.06		1.0083	1.0082	-0.2	3.07E+05	1.17	Y	1.05	2.52	22564.95	1.52
123789-HxCDD	38.16		**1.0111**	**1.0109**	**-0.5**	**1.05E+06**	**1.27**	**Y**	1.02	**8.34**	**22564.95**	**1.52**

Lab ID: B5965_18711_DF_009 **Acq'd:** 08 Dec 2021 06:57 PSW **Wt/Vol:** 17.28 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-S-4 **UTP:** 08-Dec-2021 14:49:06 PSW **J-level:** 0.289 pg/g **Split:** 1 **Checkcode:** 441-781-KDK

Datafile: 211207R26 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

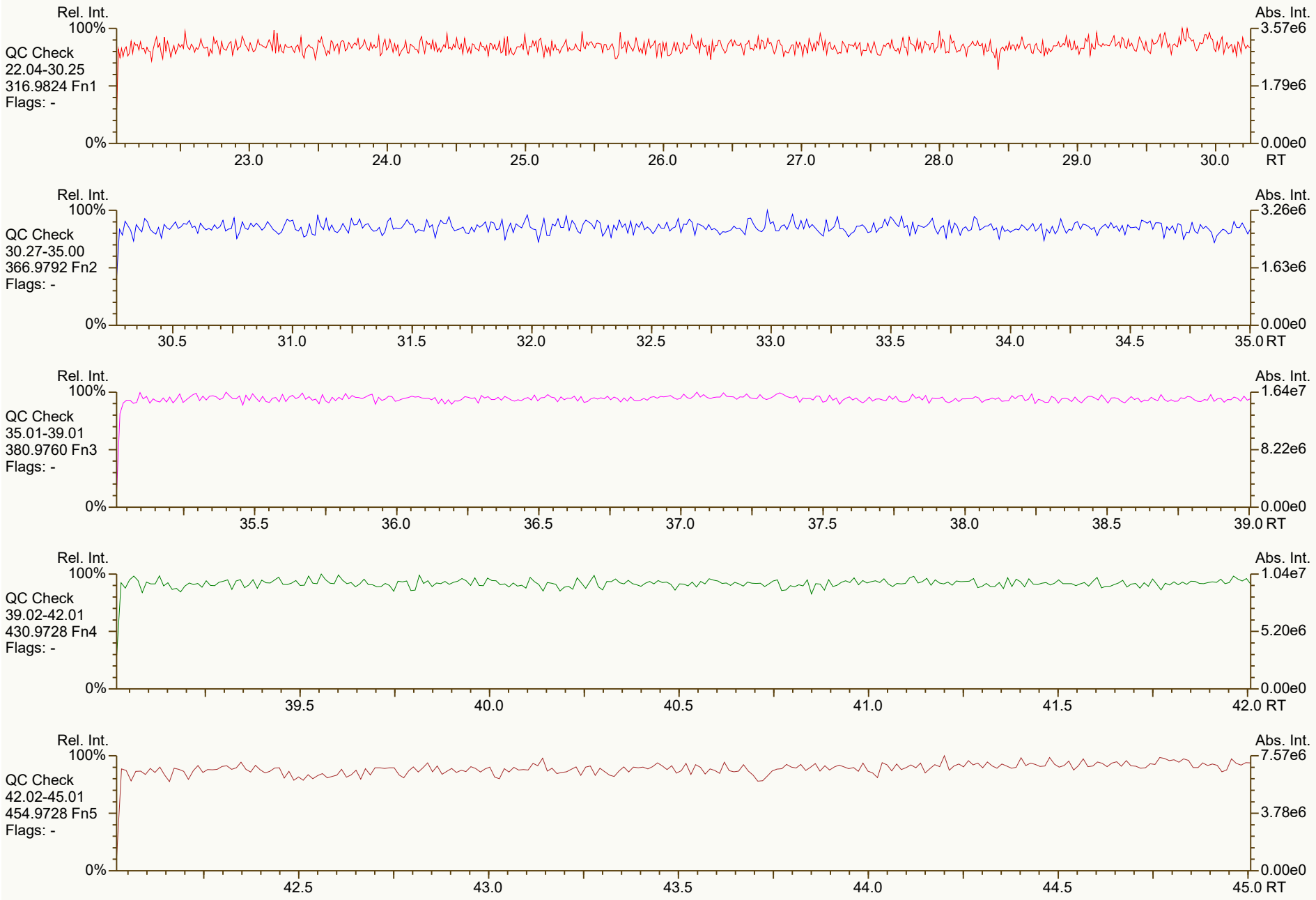
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.07		0.9843	0.9842	-0.2	7.22E+07	1.05	Y	0.97	758	14587.496	1.03
1234678-HpCDD	**40.73**		**1.0004**	**1.0003**	**-0.2**	**5.35E+07**	**1.05**	**Y**	**0.97**	**561**	**14587.496**	**1.03**
OCDD	**43.31**	**E**	**1.0003**	**1.0003**	**0**	**4.66E+08**	**0.90**	**Y**	**1.07**	**6,360**	**19415.991**	**2.21**
OCDD-a	43.31	E	1.0001	1.0002	+0.3	2.84E+07	2.49	Y	0.07	6,290	11871.726	21.9
1368-TCDF	23.06	EMPC	0.8284	0.8296	+1.7	2.14E+05	0.63	N	0.96	1.02	9601.215	0.517
1468-TCDF	23.62		0.8487	0.8498	+1.6	6.88E+05	0.71	Y	0.96	3.28	9601.215	0.517
2468-TCDF	24.24		0.8709	0.8719	+1.5	1.98E+06	0.79	Y	0.96	9.46	9601.215	0.517
1346/1246-TCDF	24.61		0.8828	0.8854	+3.8	4.36E+05	0.77	Y	0.96	2.08	9601.215	0.517
1347/1378/1247-TCDF	24.75		0.8886	0.8903	+2.5	2.07E+06	0.80	Y	0.96	9.91	9601.215	0.517
1348-TCDF	24.96		0.8980	0.8979	-0.1	3.45E+05	0.78	Y	0.96	1.65	9601.215	0.517
1248/1367/1379-TCDF	25.08		0.9027	0.9022	-0.8	6.78E+06	0.79	Y	0.96	32.4	9601.215	0.517
1268-TCDF	25.48		0.9159	0.9166	+1.1	2.86E+06	0.81	Y	0.96	13.6	9601.215	0.517
1467-TCDF	25.61		0.9206	0.9214	+1.2	5.28E+05	0.88	Y	0.96	2.52	9601.215	0.517
1478-TCDF	25.77		0.9266	0.9272	+0.9	5.80E+06	0.82	Y	0.96	27.7	9601.215	0.517
1369/1237-TCDF	26.15	EMPC	0.9396	0.9407	+1.7	1.32E+06	0.90	N	0.96	6.3	9601.215	0.517
2467-TCDF	26.25		0.9440	0.9444	+0.6	4.38E+05	0.81	Y	0.96	2.09	9601.215	0.517
2368-TCDF	26.40		0.9496	0.9499	+0.5	4.16E+06	0.79	Y	0.96	19.9	9601.215	0.517
1238/1234/1678/1469/1236-TCDF	26.48		0.9530	0.9527	-0.5	6.04E+06	0.84	Y	0.96	28.8	9601.215	0.517
1278-TCDF	26.94		0.9689	0.9692	+0.5	5.80E+07	0.80	Y	0.96	277	9601.215	0.517
1349-TCDF	NotFnd		0.9732						0.96		9601.215	0.517
1267-TCDF	27.21		0.9786	0.9788	+0.3	3.46E+06	0.82	Y	0.96	16.5	9601.215	0.517
2346/1249-TCDF	NotFnd		0.9849						0.96		9601.215	0.517
2347/1279-TCDF	27.58		0.9927	0.9924	-0.5	1.16E+06	0.82	Y	0.96	5.54	9601.215	0.517
2348-TCDF	27.71		0.9967	0.9968	+0.2	8.17E+06	0.82	Y	0.96	39	9601.215	0.517
2378-TCDF	**27.82**	E	**1.0007**	**1.0008**	**+0.2**	**1.23E+08**	**0.79**	**Y**	**0.96**	**589**	**9601.215**	**0.517**
2367/3467-TCDF	28.16		1.0136	1.0131	-0.8	1.05E+07	0.82	Y	0.96	50.1	9601.215	0.517
1269-TCDF	28.41	EMPC	1.0223	1.0221	-0.3	1.94E+06	0.89	N	0.96	9.27	9601.215	0.517
1239-TCDF	NotFnd		1.0313						0.96		9601.215	0.517
1289-TCDF	29.79		1.0711	1.0717	+1.1	8.65E+06	0.74	Y	0.96	41.3	9601.215	0.517
13468/12468-PeCDF	29.73	EMPC	0.9147	0.9157	+1.8	4.49E+06	1.22	N	0.94	25.5	9207.994	0.482
13678/13467/12467-PeCDF	31.26		0.9616	0.9626	+1.9	8.09E+05	1.61	Y	0.94	4.6	10965.42	0.574
12368/13478/12478-PeCDF	31.41		0.9663	0.9672	+1.7	3.85E+06	1.51	Y	0.94	21.9	10965.42	0.574
14678-PeCDF	31.49		0.9695	0.9696	+0.2	3.32E+05	1.57	Y	0.94	1.89	10965.42	0.574
13479-PeCDF	NotFnd		0.9727						0.94		10965.42	0.574
13469/12479-PeCDF	31.79		0.9799	0.9791	-1.5	2.79E+05	1.69	Y	0.94	1.59	10965.42	0.574
12346-PeCDF	NotFnd		0.9839						0.94		10965.42	0.574

Lab ID: B5965_18711_DF_009 **Acq'd:** 08 Dec 2021 06:57 PSW **Wt/Vol:** 17.28 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-S-4 **UTP:** 08-Dec-2021 14:49:06 PSW **J-level:** 0.289 pg/g **Split:** 1 **Checkcode:** 441-781-KDK

Datafile: 211207R26 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.05	EMPC	0.9864	0.9870	+1.2	7.56E+05	2.07	N	0.94	4.29	10965.42	0.574
12347-PeCDF	32.14	J EMPC	0.9892	0.9897	+1.0	2.38E+05	0.84	N	0.94	1.35	10965.42	0.574
12348-PeCDF	32.28		0.9940	0.9942	+0.4	5.89E+05	1.66	Y	0.94	3.35	10965.42	0.574
12378-PeCDF	**32.49**		**1.0006**	**1.0005**	**-0.2**	**3.04E+06**	**1.52**	**Y**	**0.95**	**16.9**	**10965.42**	**0.583**
12678/12367-PeCDF	32.78		1.0088	1.0094	+1.2	1.71E+06	1.64	Y	0.94	9.7	10965.42	0.574
12379-PeCDF	NotFnd		1.0142						0.94		10965.42	0.574
12679-PeCDF	NotFnd		0.9931						0.94		10965.42	0.574
23467/12369-PeCDF	33.45		0.9966	0.9967	+0.2	2.69E+05	1.56	Y	0.94	1.53	10965.42	0.574
23478-PeCDF	**33.59**		**1.0005**	**1.0009**	**+0.8**	**3.30E+06**	**1.48**	**Y**	**0.94**	**19.2**	**10965.42**	**0.563**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		10965.42	0.574
12349-PeCDF	NotFnd		1.0100						0.94		10965.42	0.574
12389-PeCDF	34.64	J	1.0323	1.0321	-0.4	2.23E+05	1.47	Y	0.94	1.27	10965.42	0.574
123468-HxCDF	35.41		0.9631	0.9632	+0.2	1.98E+06	1.28	Y	1.16	11.7	23632.16	1.2
124678/134678-HxCDF	35.60		0.9686	0.9685	-0.2	7.35E+06	1.29	Y	1.16	43.6	23632.16	1.2
134679-HxCDF	NotFnd		0.9747						1.16		23632.16	1.2
124679-HxCDF	36.03	J EMPC	0.9800	0.9802	+0.4	2.29E+05	0.99	N	1.16	1.36	23632.16	1.2
124689-HxCDF	36.25		0.9859	0.9860	+0.2	7.69E+06	1.24	Y	1.16	45.6	23632.16	1.2
123467-HxCDF	36.66		0.9972	0.9972	0	4.43E+05	1.10	Y	1.16	2.62	23632.16	1.2
123478-HxCDF	**36.78**		**1.0004**	**1.0004**	**0**	**4.30E+06**	**1.22**	**Y**	**1.23**	**25.1**	**23632.16**	**1.19**
123678-HxCDF	**36.92**		**1.0005**	**1.0004**	**-0.2**	**1.64E+06**	**1.17**	**Y**	**1.13**	**9.01**	**23632.16**	**1.16**
123479-HxCDF	NotFnd		1.0048						1.16		23632.16	1.2
123469-HxCDF	37.24	EMPC	1.0089	1.0091	+0.4	2.52E+05	1.05	N	1.16	1.5	23632.16	1.2
123679-HxCDF	NotFnd		0.9943						1.16		23632.16	1.2
234678-HxCDF	**37.59**		**1.0005**	**1.0005**	**0**	**1.12E+06**	**1.18**	**Y**	**1.15**	**6.6**	**23632.16**	**1.22**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		23632.16	1.2
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**23632.16**	**1.23**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.54		1.0004	1.0010	+1.4	4.43E+05	1.28	Y	1.16	2.63	23632.16	1.2
1234678-HpCDF	**39.83**		**1.0003**	**1.0003**	**0**	**2.01E+07**	**1.04**	**Y**	**1.36**	**135**	**11406.227**	**0.499**
1234679-HpCDF	40.08		1.0065	1.0065	0	9.75E+05	1.10	Y	1.33	7.16	11406.227	0.556
1234689-HpCDF	40.22		1.0097	1.0101	+1.0	2.60E+07	1.02	Y	1.33	191	11406.227	0.556
1234789-HpCDF	**41.18**		**1.0004**	**1.0002**	**-0.5**	**1.83E+06**	**1.10**	**Y**	**1.30**	**14.8**	**11406.227**	**0.623**
OCDF	**43.50**		**1.0002**	**1.0003**	**+0.3**	**2.71E+08**	**0.90**	**Y**	**1.03**	**3,010**	**18724.539**	**1.75**
OCDF-a	43.49		1.0001	1.0002	+0.3	1.65E+07	2.27	Y	0.06	3,170	14212.401	23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25.0
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29.0
30.0
RT
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100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
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1.63e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
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0.00e0
35.5
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36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
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5.20e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
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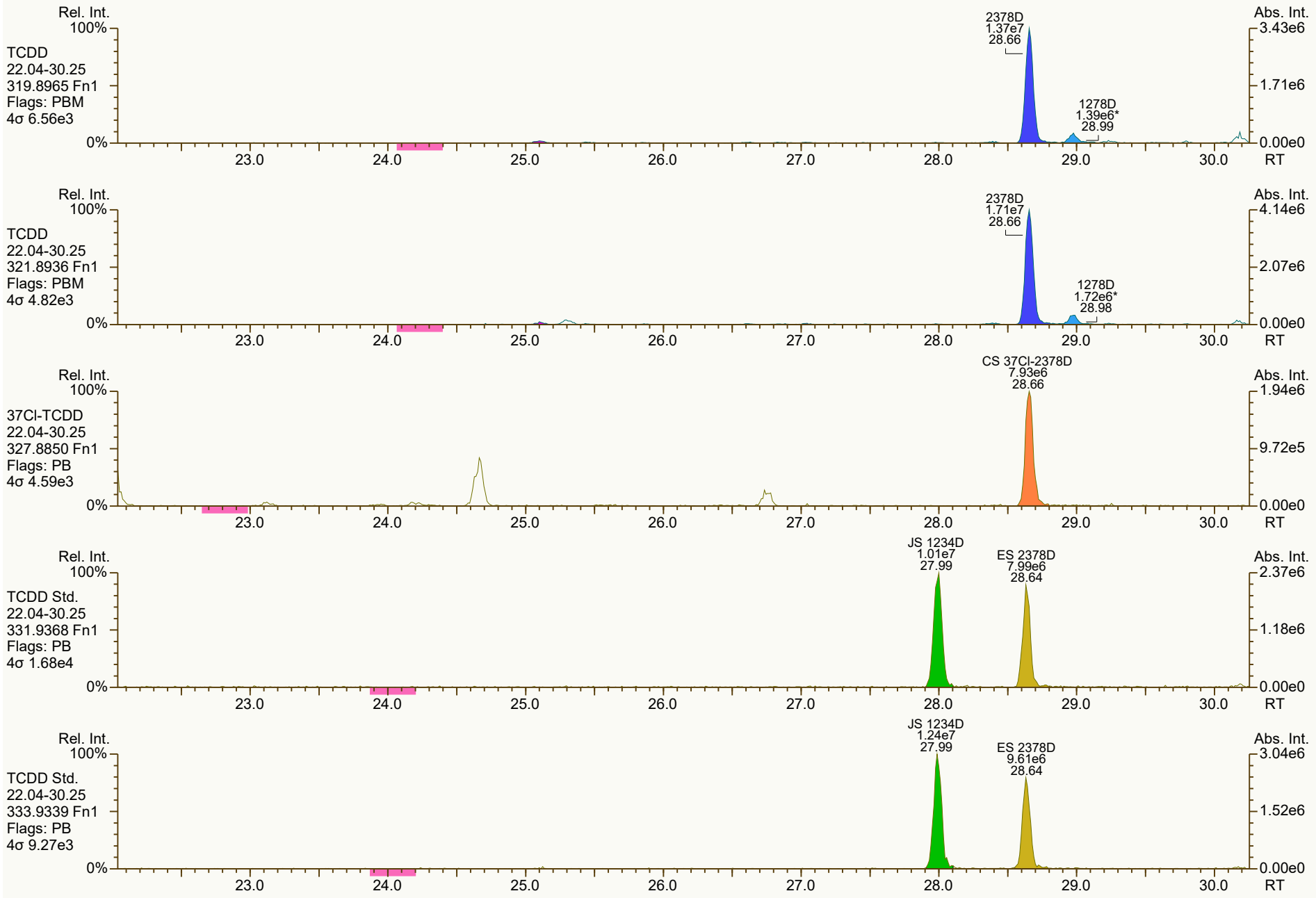
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0%
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28.66
1278D
1.39e6*
28.99
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3.43e6
1.71e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 4.82e3
0%
2378D
1.71e7
28.66
1278D
1.72e6*
28.98
Abs. Int.
4.14e6
2.07e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.59e3
0%
CS 37Cl-2378D
7.93e6
28.66
Abs. Int.
1.94e6
9.72e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.68e4
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JS 1234D
1.01e7
27.99
ES 2378D
7.99e6
28.64
Abs. Int.
2.37e6
1.18e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 9.27e3
0%
JS 1234D
1.24e7
27.99
ES 2378D
9.61e6
28.64
Abs. Int.
3.04e6
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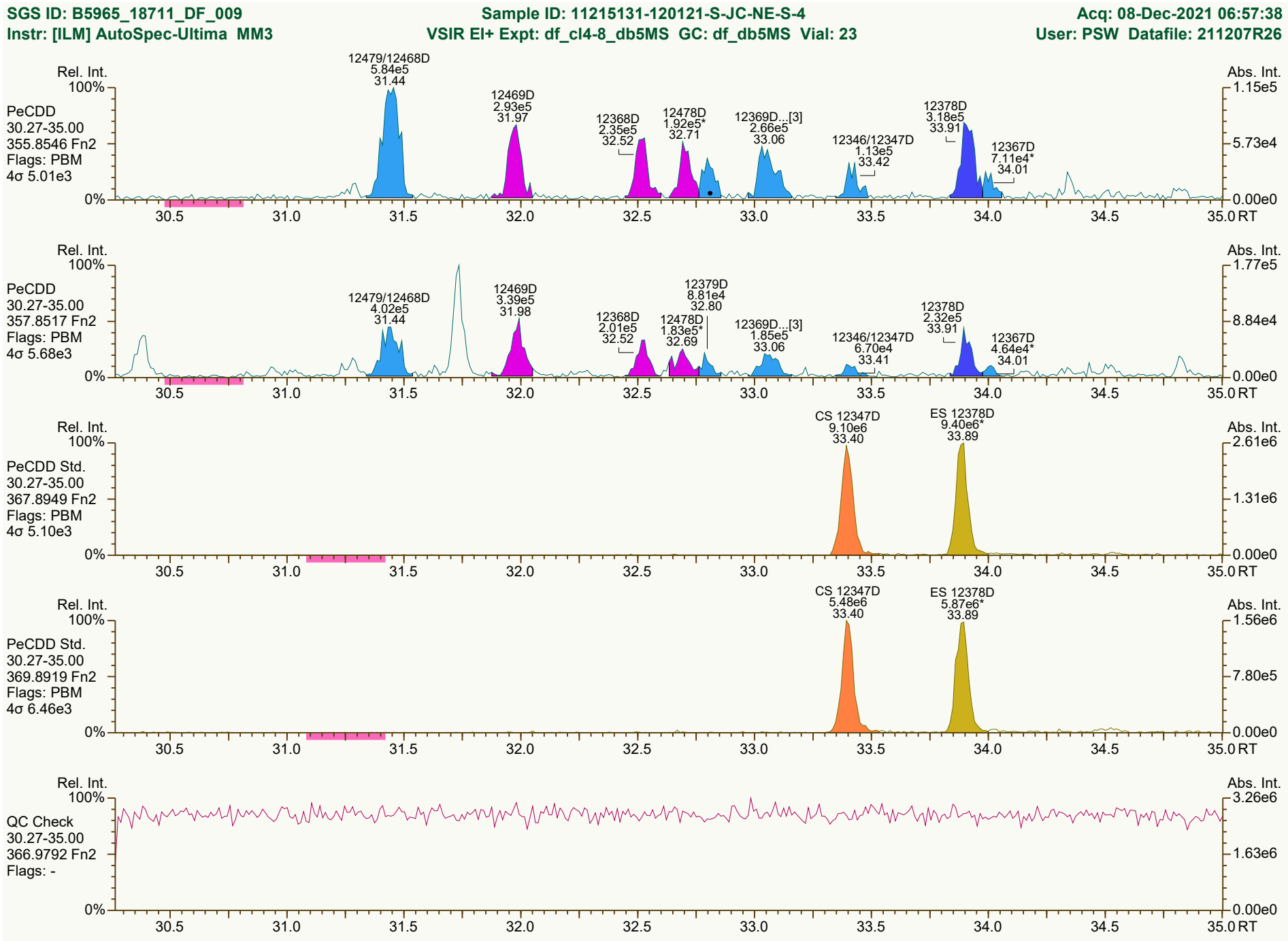
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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 23
User: PSW Datafile: 211207R26
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
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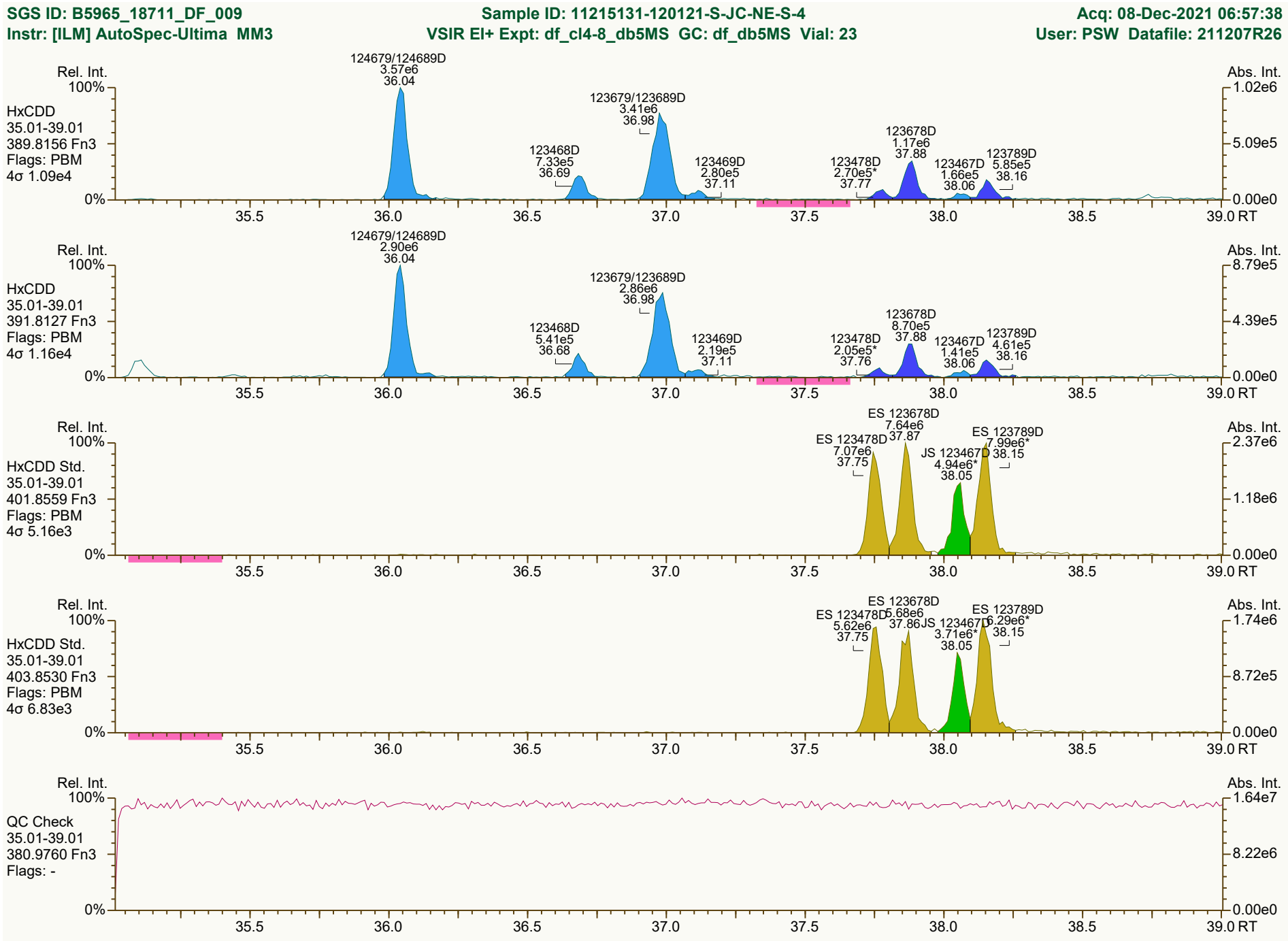
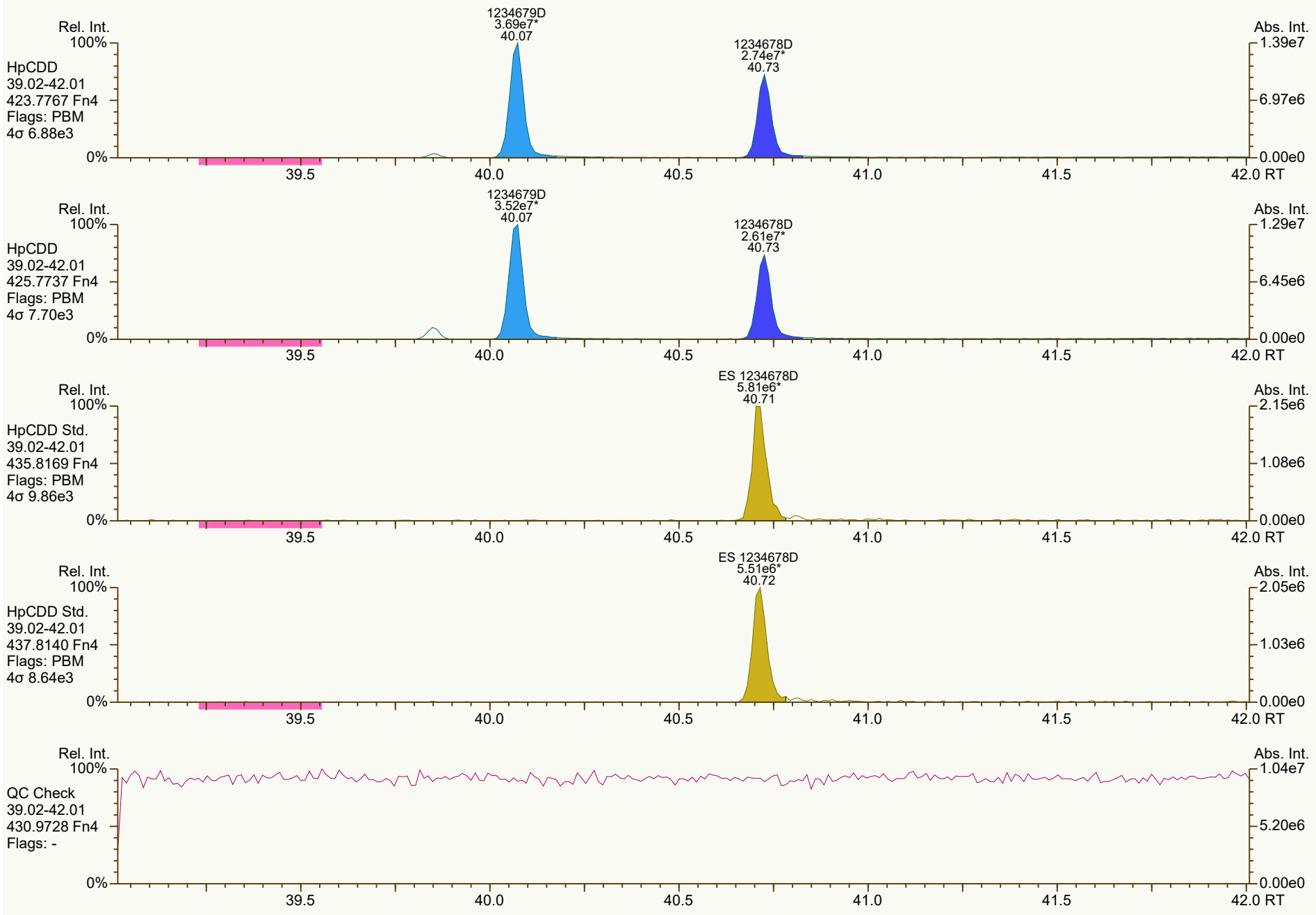
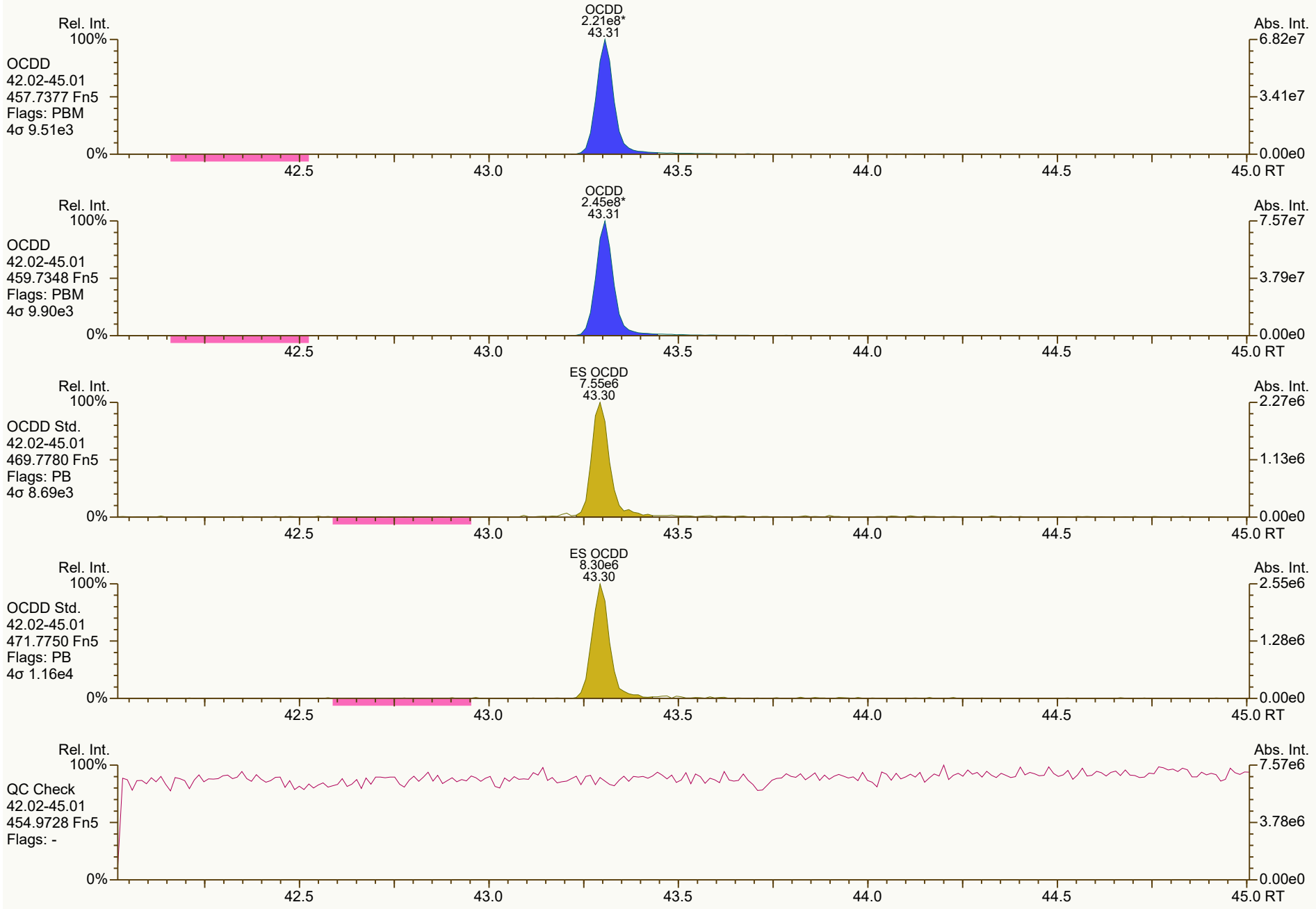
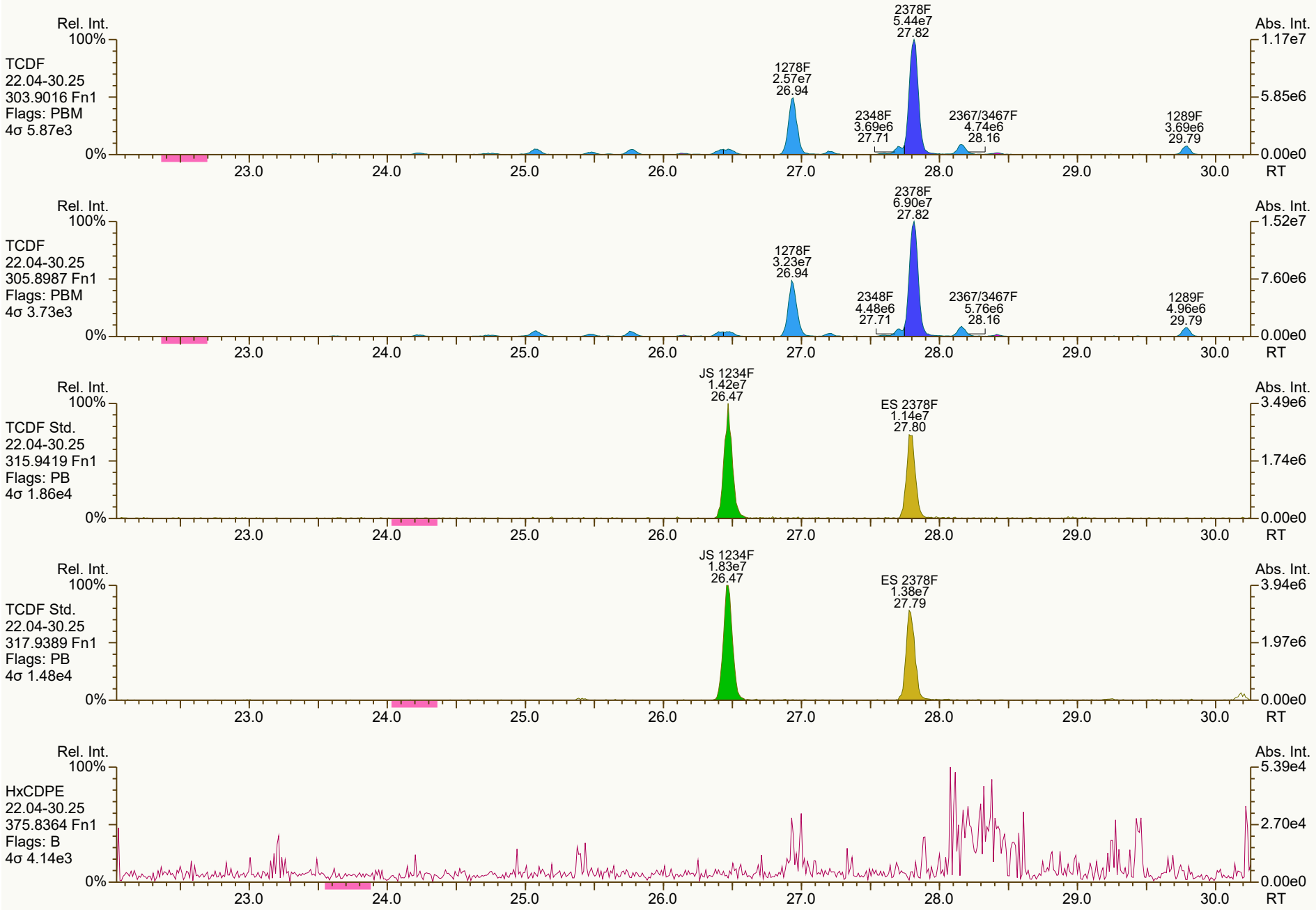
12479/12468D 5.84e5 31.44
12469D 2.93e5 31.97
12368D 2.35e5 32.52
12478D 1.92e5* 32.71
12369D...[3] 2.66e5 33.06
12346/12347D 1.13e5 33.42
12378D 3.18e5 33.91
12367D 7.11e4* 34.01
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 5.68e3
12479/12468D 4.02e5 31.44
12469D 3.39e5 31.98
12368D 2.01e5 32.52
12379D 8.81e4 32.80
12478D 1.83e5* 32.69
12369D...[3] 1.85e5 33.06
12346/12347D 6.70e4 33.41
12378D 2.32e5 33.91
12367D 4.64e4* 34.01
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PBM
4σ 5.10e3
CS 12347D 9.10e6 33.40
ES 12378D 9.40e6* 33.89
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PBM
4σ 6.46e3
CS 12347D 5.48e6 33.40
ES 12378D 5.87e6* 33.89
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_009.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9121, 9613 scc: 441-781
PKD: 08-Dec-2021 09:29 Printed: 08-Dec-2021 14:57 Page 3 of 12


SGS ID: B5965_18711_DF_009
Sample ID: 11215131-120121-S-JC-NE-S-4
Acq: 08-Dec-2021 06:57:38
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 23
User: PSW Datafile: 211207R26
Rel. Int.
Abs. Int.
HxCDD
35.01-39.01
389.8156 Fn3
Flags: PBM
4σ 1.09e4
124679/124689D
3.57e6
36.04
123679/123689D
3.41e6
36.98
123468D
7.33e5
36.69
123469D
2.80e5
37.11
123478D
2.70e5*
37.77
123678D
1.17e6
37.88
123467D
1.66e5
38.06
123789D
5.85e5
38.16
1.02e6
5.09e5
0.00e0
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PBM
4σ 1.16e4
124679/124689D
2.90e6
36.04
123679/123689D
2.86e6
36.98
123468D
5.41e5
36.68
123469D
2.19e5
37.11
123478D
2.05e5*
37.76
123678D
8.70e5
37.88
123467D
1.41e5
38.06
123789D
4.61e5
38.16
8.79e5
4.39e5
0.00e0
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PBM
4σ 5.16e3
ES 123678D
7.64e6
37.87
ES 123478D
7.07e6
37.75
JS 123467D
4.94e6*
38.05
ES 123789D
7.99e6*
38.15
2.37e6
1.18e6
0.00e0
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PBM
4σ 6.83e3
ES 123678D
5.68e6
37.86
ES 123478D
5.62e6
37.75
JS 123467D
3.71e6*
38.05
ES 123789D
6.29e6*
38.15
1.74e6
8.72e5
0.00e0
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
1.64e7
8.22e6
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_009.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0431, 3983 scc: 441-781
PKD: 08-Dec-2021 09:29 Printed: 08-Dec-2021 14:57 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 6.88e3
1234679D
3.69e7*
40.07
1234678D
2.74e7*
40.73
Abs. Int.
1.39e7
6.97e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 7.70e3
1234679D
3.52e7*
40.07
1234678D
2.61e7*
40.73
Abs. Int.
1.29e7
6.45e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 9.86e3
ES 1234678D
5.81e6*
40.71
Abs. Int.
2.15e6
1.08e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 8.64e3
ES 1234678D
5.51e6*
40.72
Abs. Int.
2.05e6
1.03e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.04e7
5.20e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
2.21e8*
43.31
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 9.51e3
0%
Abs. Int.
6.82e7
3.41e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.45e8*
43.31
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 9.90e3
7.57e7
3.79e7
ES OCDD
7.55e6
43.30
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 8.69e3
2.27e6
1.13e6
ES OCDD
8.30e6
43.30
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 1.16e4
2.55e6
1.28e6
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
7.57e6
3.78e6


Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 5.87e3
0%
2378F
5.44e7
27.82
1278F
2.57e7
26.94
2348F
3.69e6
27.71
2367/3467F
4.74e6
28.16
1289F
3.69e6
29.79
Abs. Int.
1.17e7
5.85e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.73e3
0%
2378F
6.90e7
27.82
1278F
3.23e7
26.94
2348F
4.48e6
27.71
2367/3467F
5.76e6
28.16
1289F
4.96e6
29.79
Abs. Int.
1.52e7
7.60e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.86e4
0%
JS 1234F
1.42e7
26.47
ES 2378F
1.14e7
27.80
Abs. Int.
3.49e6
1.74e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.48e4
0%
JS 1234F
1.83e7
26.47
ES 2378F
1.38e7
27.79
Abs. Int.
3.94e6
1.97e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.14e3
0%
Abs. Int.
5.39e4
2.70e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: B5965_18711_DF_009 | Sample ID: 11215131-120121-S-JC-NE-S-4 | Acq: 08-Dec-2021 06:57:38

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 23 | User: PSW Datafile: 211207R26

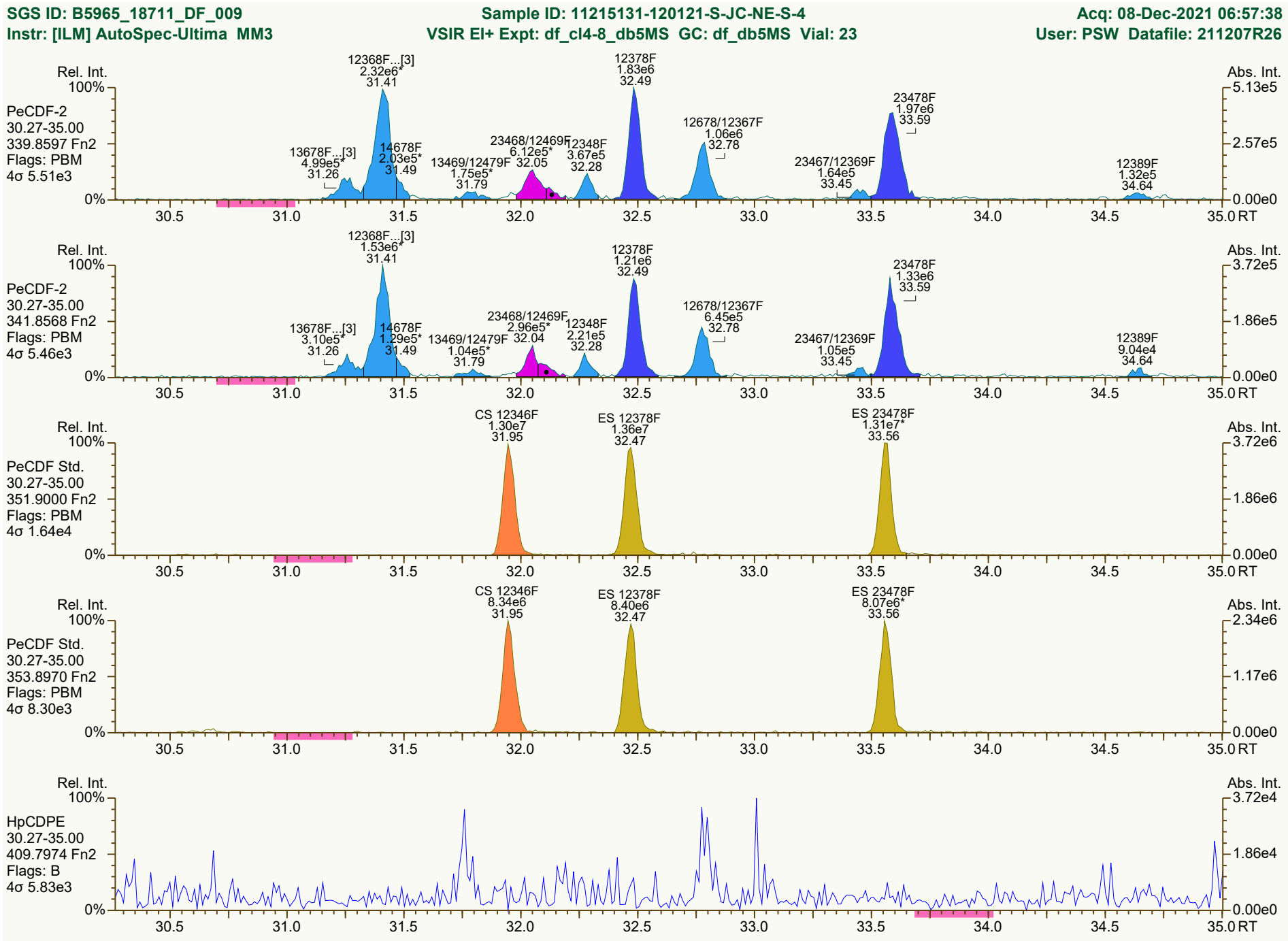


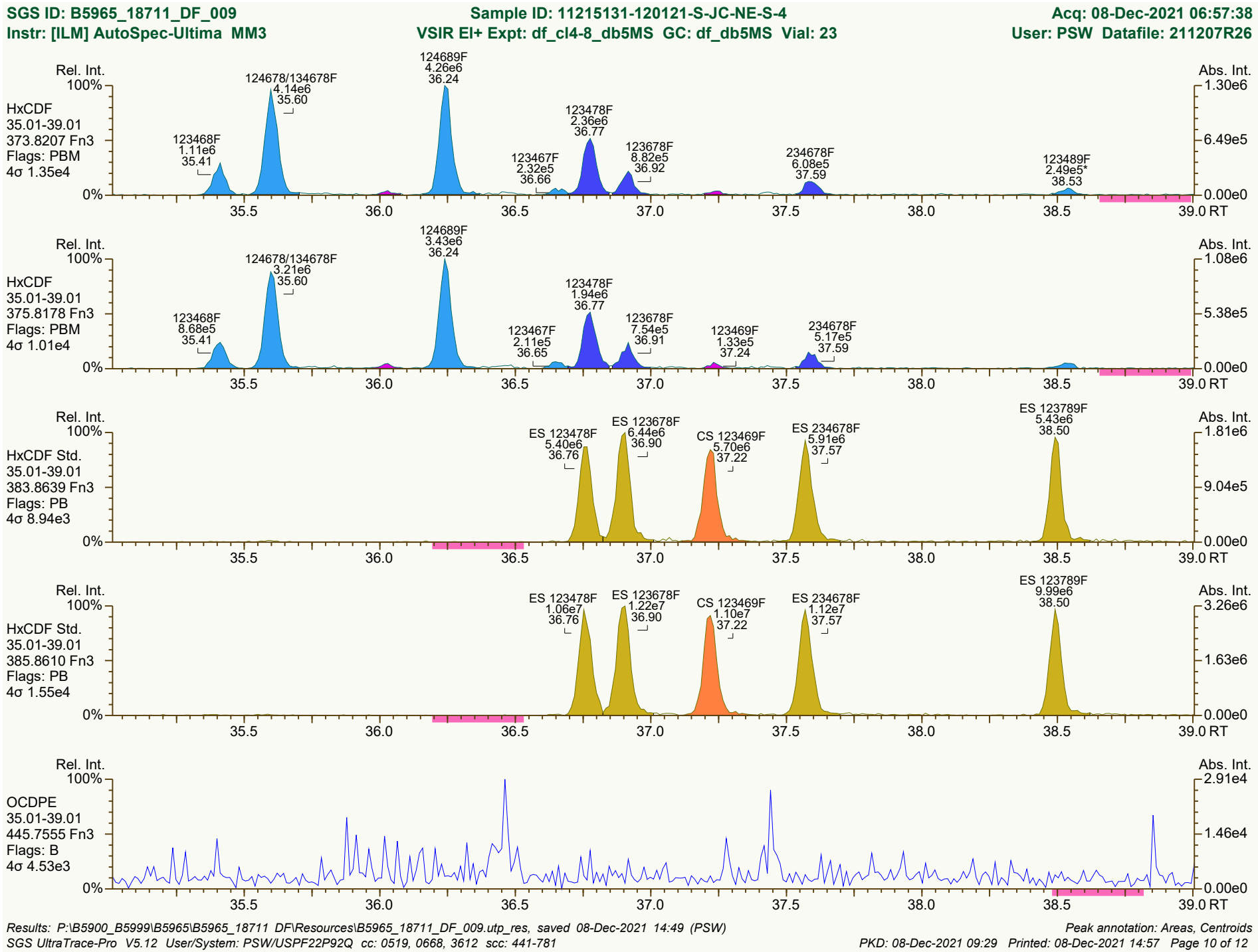
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_009.utp_res, saved 08-Dec-2021 14:49 (PSW)

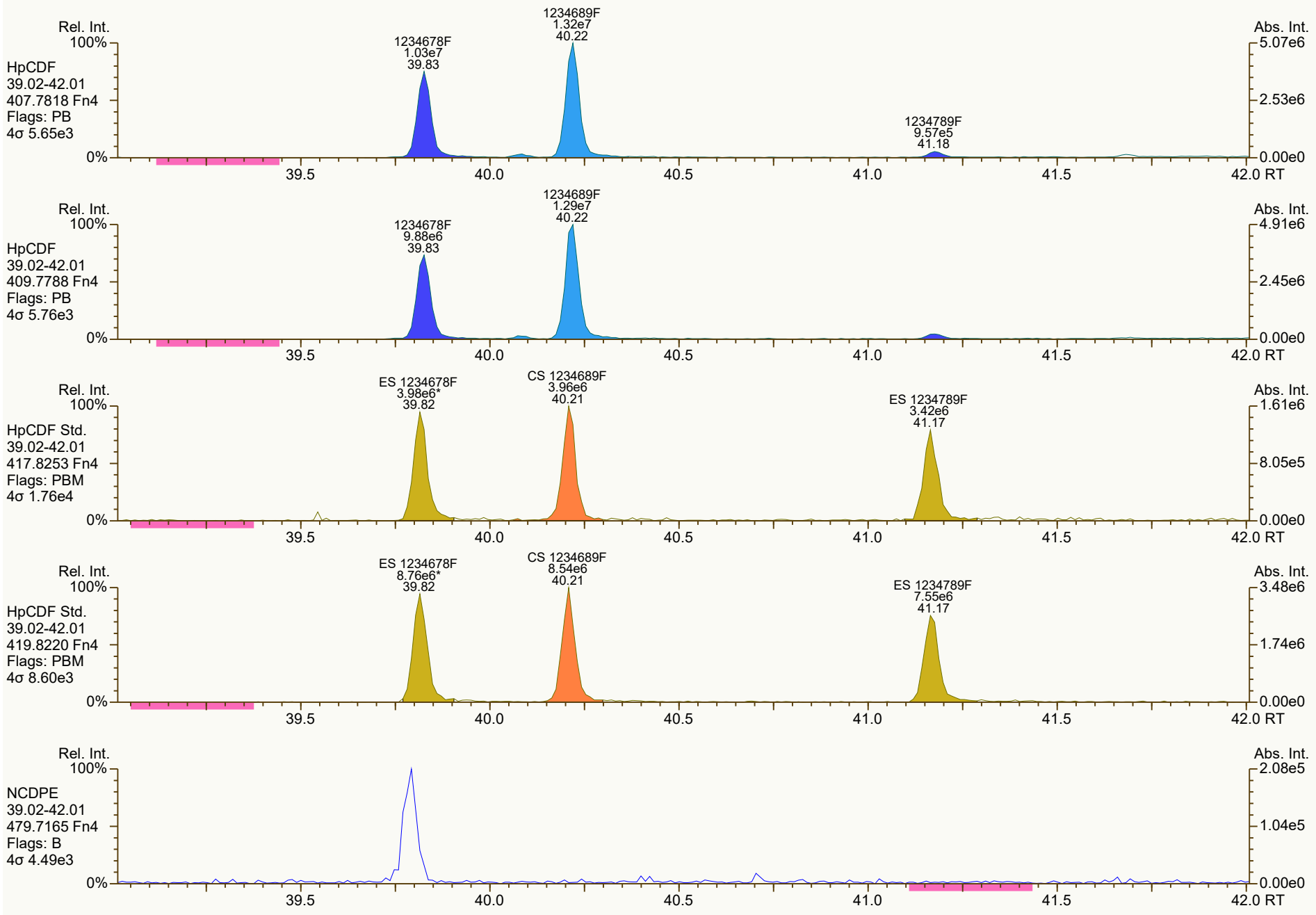
Peak annotation: Areas, Centroids

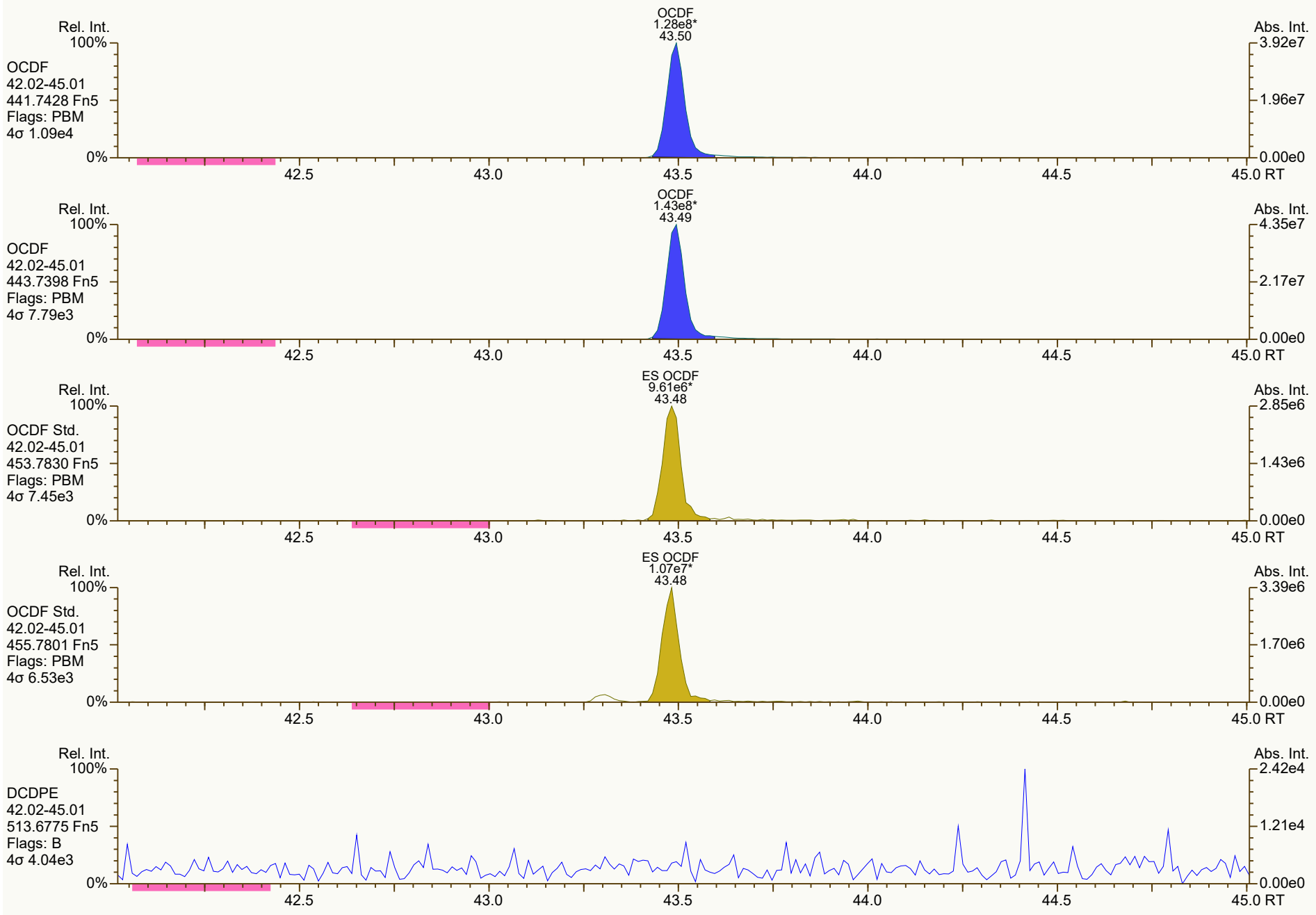
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1084 scc: 441-781

PKD: 08-Dec-2021 09:29 Printed: 08-Dec-2021 14:57 Page 8 of 12


SGS ID: B5965_18711_DF_009
Sample ID: 11215131-120121-S-JC-NE-S-4
Acq: 08-Dec-2021 06:57:38
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 23
User: PSW Datafile: 211207R26
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 5.51e3
12368F...[3] 2.32e6* 31.41
13678F...[3] 4.99e5* 31.26
14678F 2.03e5* 31.49
13469/12479F 1.75e5* 31.79
23468/12469F 6.12e5* 32.05
12348F 3.67e5 32.28
12378F 1.83e6 32.49
12678/12367F 1.06e6 32.78
23467/12369F 1.64e5 33.45
23478F 1.97e6 33.59
12389F 1.32e5 34.64
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 5.46e3
12368F...[3] 1.53e6* 31.41
13678F...[3] 3.10e5* 31.26
14678F 1.29e5* 31.49
13469/12479F 1.04e5* 31.79
23468/12469F 2.96e5* 32.04
12348F 2.21e5 32.28
12378F 1.21e6 32.49
12678/12367F 6.45e5 32.78
23467/12369F 1.05e5 33.45
23478F 1.33e6 33.59
12389F 9.04e4 34.64
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 1.64e4
CS 12346F 1.30e7 31.95
ES 12378F 1.36e7 32.47
ES 23478F 1.31e7* 33.56
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 8.30e3
CS 12346F 8.34e6 31.95
ES 12378F 8.40e6 32.47
ES 23478F 8.07e6* 33.56
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 5.83e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_009.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9163, 4077, 9382 scc: 441-781
PKD: 08-Dec-2021 09:29 Printed: 08-Dec-2021 14:57 Page 9 of 12


SGS ID: B5965_18711_DF_009
Sample ID: 11215131-120121-S-JC-NE-S-4
Acq: 08-Dec-2021 06:57:38
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 23
User: PSW Datafile: 211207R26
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 1.35e4
123468F 1.11e6 35.41
124678/134678F 4.14e6 35.60
124689F 4.26e6 36.24
123467F 2.32e5 36.66
123478F 2.36e6 36.77
123678F 8.82e5 36.92
234678F 6.08e5 37.59
123489F 2.49e5* 38.53
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 1.01e4
123468F 8.68e5 35.41
124678/134678F 3.21e6 35.60
124689F 3.43e6 36.24
123467F 2.11e5 36.65
123478F 1.94e6 36.77
123678F 7.54e5 36.91
123469F 1.33e5 37.24
234678F 5.17e5 37.59
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 8.94e3
ES 123478F 5.40e6 36.76
ES 123678F 6.44e6 36.90
CS 123469F 5.70e6 37.22
ES 234678F 5.91e6 37.57
ES 123789F 5.43e6 38.50
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 1.55e4
ES 123478F 1.06e7 36.76
ES 123678F 1.22e7 36.90
CS 123469F 1.10e7 37.22
ES 234678F 1.12e7 37.57
ES 123789F 9.99e6 38.50
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 4.53e3
Rel. Int.
Abs. Int.
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
1.30e6
6.49e5
0.00e0
1.08e6
5.38e5
1.81e6
9.04e5
3.26e6
1.63e6
2.91e4
1.46e4
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_009.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0519, 0668, 3612 scc: 441-781
PKD: 08-Dec-2021 09:29 Printed: 08-Dec-2021 14:57 Page 10 of 12


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 5.65e3
1234678F
1.03e7
39.83
1234689F
1.32e7
40.22
1234789F
9.57e5
41.18
Abs. Int.
5.07e6
2.53e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 5.76e3
1234678F
9.88e6
39.83
1234689F
1.29e7
40.22
Abs. Int.
4.91e6
2.45e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 1.76e4
ES 1234678F
3.98e6*
39.82
CS 1234689F
3.96e6
40.21
ES 1234789F
3.42e6
41.17
Abs. Int.
1.61e6
8.05e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 8.60e3
ES 1234678F
8.76e6*
39.82
CS 1234689F
8.54e6
40.21
ES 1234789F
7.55e6
41.17
Abs. Int.
3.48e6
1.74e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.49e3
Abs. Int.
2.08e5
1.04e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDF
1.28e8*
43.50
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 1.09e4
0%
Abs. Int.
3.92e7
1.96e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.43e8*
43.49
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 7.79e3
0%
Abs. Int.
4.35e7
2.17e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.61e6*
43.48
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 7.45e3
0%
Abs. Int.
2.85e6
1.43e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.07e7*
43.48
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 6.53e3
0%
Abs. Int.
3.39e6
1.70e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.04e3
0%
Abs. Int.
2.42e4
1.21e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5965_18711_DF_010 **Acq'd:** 08 Dec 2021 07:45 PSW **Wt/Vol:** 16.28 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-S-5 **UTP:** 08-Dec-2021 14:49:07 PSW **J-level:** 0.307 pg/g **Split:** 1 **Checkcode:** 756-512-RNK

Datafile: 211207R27 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62	EMPC	1.0008	1.0010	+0.3	1.75E+05	1.15	N	1.34	0.979	7299.228	0.399
12378-PeCDD	NotFnd		1.0004	-		-	-	-	1.06	-	7387.127	0.492
123478-HxCDD	37.73	J	1.0004	1.0001	-0.7	1.16E+05	1.29	Y	1.06	1.09	9136.97	0.709
123678-HxCDD	37.86		1.0034	1.0034	0	4.99E+05	1.30	Y	1.08	4.5	9136.97	0.701
123789-HxCDD	38.14	EMPC	1.0111	1.0109	-0.5	2.97E+05	1.51	N	1.02	2.41	9136.97	0.622
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	1.48E+07	1.06	Y	0.97	164	9975.695	0.771
OCDD	43.29		1.0003	1.0003	0	3.14E+08	0.90	Y	1.07	4,850	20965.803	2.47
2378-TCDF	27.77		1.0007	1.0008	+0.2	6.90E+05	0.82	Y	0.96	3.71	7523.016	0.469
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	8710.97	0.471
23478-PeCDF	33.57	J EMPC	1.0005	1.0011	+1.2	1.28E+05	1.21	N	0.94	0.787	8710.97	0.472
123478-HxCDF	36.75	J	1.0004	1.0004	0	1.57E+05	1.21	Y	1.23	0.982	8966.102	0.463
123678-HxCDF	36.89	J	1.0005	1.0004	-0.2	1.50E+05	1.33	Y	1.13	0.846	8966.102	0.457
234678-HxCDF	37.57	J	1.0005	1.0005	0	1.32E+05	1.29	Y	1.15	0.869	8966.102	0.449
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	8966.102	0.525
1234678-HpCDF	39.81		1.0003	1.0002	-0.2	2.02E+06	1.01	Y	1.36	13.2	7404.583	0.343
1234789-HpCDF	41.16	J	1.0004	1.0001	-0.7	1.47E+05	0.90	Y	1.30	1.32	7404.583	0.566
OCDF	43.47		1.0002	1.0003	+0.3	3.60E+06	0.92	Y	1.03	49	11787.732	1.36

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0232	-0.2	1.63E+07	0.79	Y	1.03	71.1
ES 12378-PeCDD	33.87	1.2118	1.2119	+0.2	1.56E+07	1.65	Y	1.03	67.8
ES 123478-HxCDD	37.73	0.9921	0.9920	-0.2	1.23E+07	1.26	Y	0.99	72.1
ES 123678-HxCDD	37.84	0.9951	0.9950	-0.2	1.26E+07	1.32	Y	0.97	75.2
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	1.49E+07	1.31	Y	1.12	77.2
ES 1234678-HpCDD	40.70	1.0702	1.0702	0	1.14E+07	1.12	Y	0.99	67
ES OCDD	43.27	1.1377	1.1379	+0.5	1.49E+07	0.95	Y	0.78	55.6
ES 2378-TCDF	27.75	1.0505	1.0506	+0.2	2.38E+07	0.79	Y	1.08	67.5
ES 12378-PeCDF	32.44	1.2278	1.2282	+0.8	2.20E+07	1.65	Y	0.93	72.6
ES 23478-PeCDF	33.54	1.2691	1.2698	+1.4	2.13E+07	1.59	Y	0.92	71.1
ES 123478-HxCDF	36.74	0.9660	0.9660	0	1.60E+07	0.50	Y	1.14	81.3
ES 123678-HxCDF	36.88	0.9698	0.9697	-0.2	1.93E+07	0.51	Y	1.30	86.5
ES 234678-HxCDF	37.55	0.9875	0.9873	-0.5	1.62E+07	0.53	Y	1.20	78.5
ES 123789-HxCDF	38.48	1.0121	1.0118	-0.7	1.49E+07	0.50	Y	1.14	76.3
ES 1234678-HpCDF	39.80	1.0468	1.0467	-0.2	1.38E+07	0.43	Y	0.95	84.6
ES 1234789-HpCDF	41.15	1.0822	1.0822	0	1.05E+07	0.44	Y	0.85	72.2
ES OCDF	43.46	1.1426	1.1428	+0.5	1.76E+07	0.90	Y	0.93	55.2

Lab ID: B5965_18711_DF_010 **Acq'd:** 08 Dec 2021 07:45 PSW **Wt/Vol:** 16.28 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-S-5 **UTP:** 08-Dec-2021 14:49:07 PSW **J-level:** 0.307 pg/g **Split:** 1 **Checkcode:** 756-512-RNK

Datafile: 211207R27 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.94		-	-	-	2.22E+07	0.82	Y	-	-
JS 1234-TCDF	26.41		-	-	-	3.25E+07	0.76	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	8.59E+06	1.29	Y	-	-
CS 37Cl-2378-TCDD	28.61		1.0241	1.0240	-0.2	7.83E+06	n/a	-	1.31	67.2
CS 12347-PeCDD	33.37		1.1940	1.1942	+0.4	1.49E+07	1.59	Y	0.89	75.2
CS 12346-PeCDF	31.92		1.2080	1.2085	+1.0	2.25E+07	1.55	Y	0.87	79.8
CS 123469-HxCDF	37.19		0.9781	0.9781	0	1.73E+07	0.56	Y	1.09	92.2
CS 1234689-HpCDF	40.19		1.0569	1.0568	-0.2	1.29E+07	0.46	Y	0.86	87.1
~~SS 37Cl-2378-TCDD~~	~~28.61~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~7.83E+06~~	~~n/a~~		~~1.26~~	~~95.1~~
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1942~~	~~+0.4~~	~~1.49E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~111~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2085~~	~~+1.0~~	~~2.25E+07~~	~~1.55~~	~~Y~~	~~0.93~~	~~110~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.73E+07~~	~~0.56~~	~~Y~~	~~0.84~~	~~107~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.29E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~103~~

Totals	Conc	EMPC
Total TCDD	3.77	4.75
Total PeCDD	5.4	6.82
Total HxCDD	57	61.6
Total HpCDD	392	392
Total Tetra-Octa Dioxins	5310	5310
Total TCDF	5.98	9.3
Total PeCDF	6.07	6.86
Total HxCDF	15.6	15.6
Total HpCDF	45.5	45.9
Total Tetra-Octa Furans	122	127
Total Tetra-Octa Dioxins & Furans	5430	5440

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	1.101	1.15
Response	2.18E+05	2.13E+05

Lab ID: B5965_18711_DF_010 **Acq'd: 08 Dec 2021 07:45 PSW** **Wt/Vol: 16.28 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-S-5 **UTP: 08-Dec-2021 14:49:07 PSW** **J-level: 0.307 pg/g** **Split: 1** **Checkcode: 756-512-RNK**

Datafile: 211207R27 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8755	-0.5	5.55E+04	0.87	Y	1.34	0.311	7299.228	0.399
1379-TCDD	NotFnd		0.8878						1.34		7299.228	0.399
1369-TCDD	NotFnd		0.9025						1.34		7299.228	0.399
1469-TCDD	26.57		0.9291	0.9292	+0.2	6.18E+05	0.70	Y	1.34	3.46	7299.228	0.399
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		7299.228	0.399
1378-TCDD	NotFnd		0.9440						1.34		7299.228	0.399
1268-TCDD	NotFnd		0.9505						1.34		7299.228	0.399
1478-TCDD	NotFnd		0.9591						1.34		7299.228	0.399
1279-TCDD	NotFnd		0.9650						1.34		7299.228	0.399
1234/1269-TCDD	NotFnd		0.9771						1.34		7299.228	0.399
1236-TCDD	NotFnd		0.9821						1.34		7299.228	0.399
1237/1238-TCDD	NotFnd		0.9907						1.34		7299.228	0.399
1239-TCDD	NotFnd		0.9953						1.34		7299.228	0.399
2378-TCDD	**28.62**	EMPC	**1.0008**	1.0010	**+0.3**	1.75E+05	1.15	N	**1.34**	**0.979**	**7299.228**	**0.399**
1278-TCDD	NotFnd		1.0118						1.34		7299.228	0.399
1267-TCDD	NotFnd		1.0162						1.34		7299.228	0.399
1289-TCDD	NotFnd		1.0340						1.34		7299.228	0.399
12479/12468-PeCDD	31.41		0.9274	0.9274	0	2.86E+05	1.32	Y	1.06	2.13	7387.127	0.492
12469-PeCDD	31.94		0.9430	0.9433	+0.6	3.65E+05	1.64	Y	1.06	2.71	7387.127	0.492
12368-PeCDD	32.48	J	0.9591	0.9589	-0.4	7.59E+04	1.66	Y	1.06	0.564	7387.127	0.492
12478-PeCDD	NotFnd		0.9645						1.06		7387.127	0.492
12379-PeCDD	NotFnd		0.9676						1.06		7387.127	0.492
12369/12467/12489-PeCDD	33.03	J EMPC	0.9751	0.9752	+0.2	1.91E+05	1.24	N	1.06	1.42	7387.127	0.492
12346/12347-PeCDD	NotFnd		0.9860						1.06		7387.127	0.492
12378-PeCDD	NotFnd		**1.0004**						**1.06**		**7387.127**	**0.492**
12367-PeCDD	NotFnd		1.0034						1.06		7387.127	0.492
12389-PeCDD	NotFnd		1.0133						1.06		7387.127	0.492
124679/124689-HxCDD	36.02		0.9546	0.9548	+0.4	3.55E+06	1.36	Y	1.05	31.2	9136.97	0.673
123468-HxCDD	36.66		0.9718	0.9718	0	2.41E+05	1.33	Y	1.05	2.12	9136.97	0.673
123679/123689-HxCDD	36.96		0.9795	0.9796	+0.2	2.05E+06	1.27	Y	1.05	18	9136.97	0.673
123469-HxCDD	37.08	J EMPC	0.9832	0.9828	-0.9	1.22E+05	1.81	N	1.05	1.08	9136.97	0.673
123478-HxCDD	37.73	J	**1.0004**	**1.0001**	**-0.7**	**1.16E+05**	**1.29**	**Y**	1.06	**1.09**	**9136.97**	**0.709**
123678-HxCDD	37.86		**1.0034**	**1.0034**	**0**	**4.99E+05**	**1.30**	**Y**	1.08	**4.5**	**9136.97**	**0.701**
123467-HxCDD	38.04	J EMPC	1.0083	1.0084	+0.2	1.25E+05	1.01	N	1.05	1.1	9136.97	0.673
123789-HxCDD	38.14	EMPC	**1.0111**	**1.0109**	**-0.5**	**2.97E+05**	**1.51**	**N**	1.02	**2.41**	**9136.97**	**0.622**

Lab ID: B5965_18711_DF_010 **Acq'd:** 08 Dec 2021 07:45 PSW **Wt/Vol:** 16.28 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-S-5 **UTP:** 08-Dec-2021 14:49:07 PSW **J-level:** 0.307 pg/g **Split:** 1 **Checkcode:** 756-512-RNK

Datafile: 211207R27 **Report:** 08 Dec 2021 14:50 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

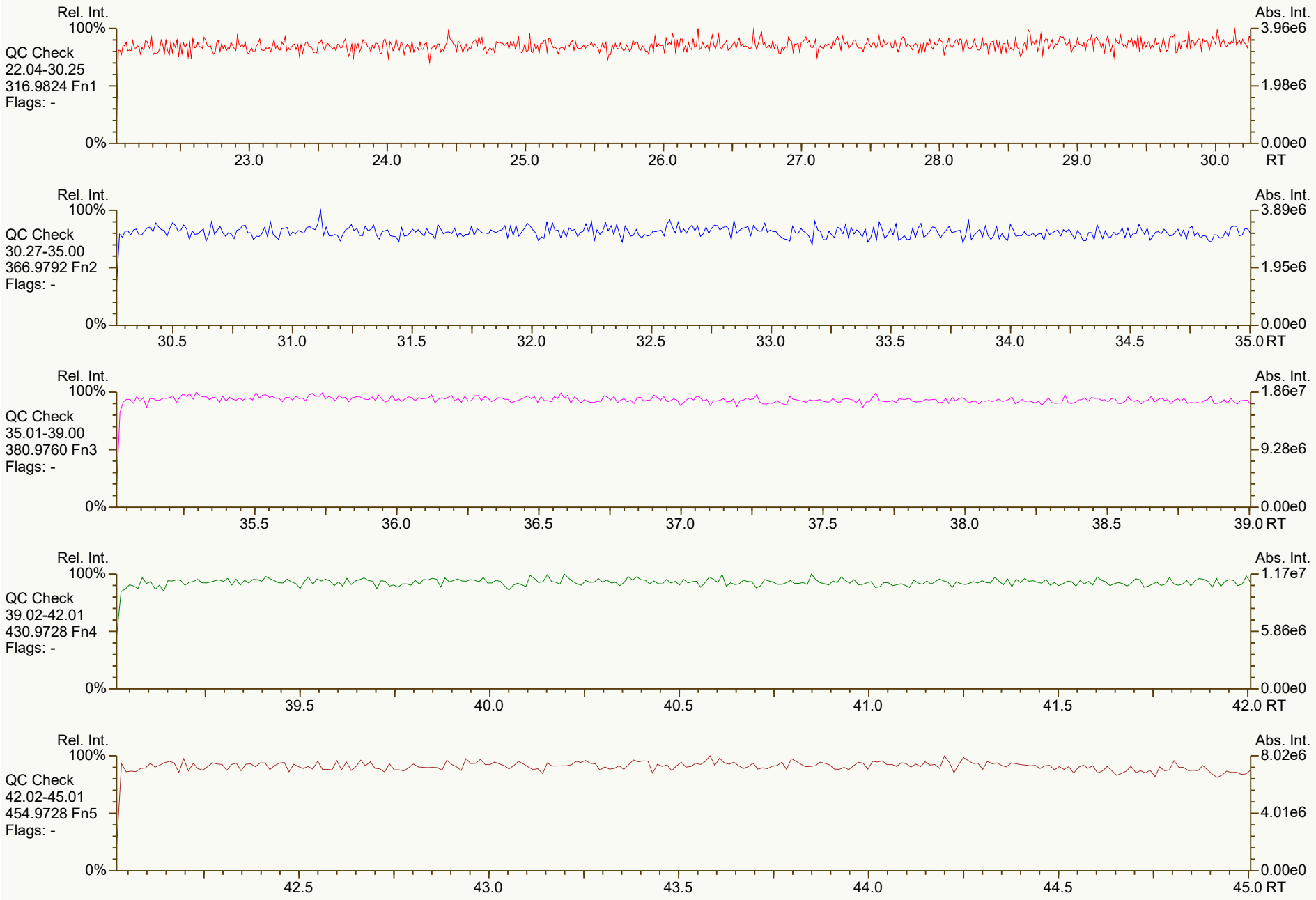
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	2.07E+07	1.04	Y	0.97	228	9975.695	0.771
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**1.48E+07**	**1.06**	**Y**	**0.97**	**164**	**9975.695**	**0.771**
OCDD	**43.29**		**1.0003**	**1.0003**	**0**	**3.14E+08**	**0.90**	**Y**	**1.07**	**4,850**	**20965.803**	**2.47**
OCDD-a	43.28		1.0001	1.0002	+0.3	1.90E+07	2.68	Y	0.07	4,750	11889.477	22.7
1368-TCDF	NotFnd		0.8284						0.96		7523.016	0.469
1468-TCDF	NotFnd		0.8487						0.96		7523.016	0.469
2468-TCDF	24.15		0.8709	0.8704	-0.7	1.71E+05	0.72	Y	0.96	0.919	7523.016	0.469
1346/1246-TCDF	NotFnd		0.8828						0.96		7523.016	0.469
1347/1378/1247-TCDF	24.68		0.8886	0.8894	+1.2	1.20E+05	0.71	Y	0.96	0.645	7523.016	0.469
1348-TCDF	NotFnd		0.8980						0.96		7523.016	0.469
1248/1367/1379-TCDF	25.01		0.9027	0.9014	-2.0	1.33E+05	0.83	Y	0.96	0.713	7523.016	0.469
1268-TCDF	NotFnd		0.9159						0.96		7523.016	0.469
1467-TCDF	NotFnd		0.9206						0.96		7523.016	0.469
1478-TCDF	NotFnd		0.9266						0.96		7523.016	0.469
1369/1237-TCDF	NotFnd		0.9396						0.96		7523.016	0.469
2467-TCDF	NotFnd		0.9440						0.96		7523.016	0.469
2368-TCDF	26.34	EMPC	0.9496	0.9494	-0.3	1.45E+05	0.97	N	0.96	0.781	7523.016	0.469
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		7523.016	0.469
1278-TCDF	26.89	EMPC	0.9689	0.9689	0	2.91E+05	1.00	N	0.96	1.56	7523.016	0.469
1349-TCDF	NotFnd		0.9732						0.96		7523.016	0.469
1267-TCDF	NotFnd		0.9786						0.96		7523.016	0.469
2346/1249-TCDF	NotFnd		0.9849						0.96		7523.016	0.469
2347/1279-TCDF	NotFnd		0.9927						0.96		7523.016	0.469
2348-TCDF	NotFnd		0.9967						0.96		7523.016	0.469
2378-TCDF	**27.77**		**1.0007**	**1.0008**	**+0.2**	**6.90E+05**	**0.82**	**Y**	**0.96**	**3.71**	**7523.016**	**0.469**
2367/3467-TCDF	28.12	EMPC	1.0136	1.0132	-0.7	1.80E+05	1.00	N	0.96	0.967	7523.016	0.469
1269-TCDF	NotFnd		1.0223						0.96		7523.016	0.469
1239-TCDF	NotFnd		1.0313						0.96		7523.016	0.469
1289-TCDF	NotFnd		1.0711						0.96		7523.016	0.469
13468/12468-PeCDF	29.69		0.9147	0.9151	+0.7	4.62E+05	1.58	Y	0.94	2.78	8194.829	0.444
13678/13467/12467-PeCDF	31.21	J	0.9616	0.9622	+1.1	1.24E+05	1.66	Y	0.94	0.747	8710.97	0.472
12368/13478/12478-PeCDF	31.37		0.9663	0.9669	+1.1	4.23E+05	1.34	Y	0.94	2.54	8710.97	0.472
14678-PeCDF	NotFnd		0.9695						0.94		8710.97	0.472
13479-PeCDF	NotFnd		0.9727						0.94		8710.97	0.472
13469/12479-PeCDF	NotFnd		0.9799						0.94		8710.97	0.472
12346-PeCDF	NotFnd		0.9839						0.94		8710.97	0.472

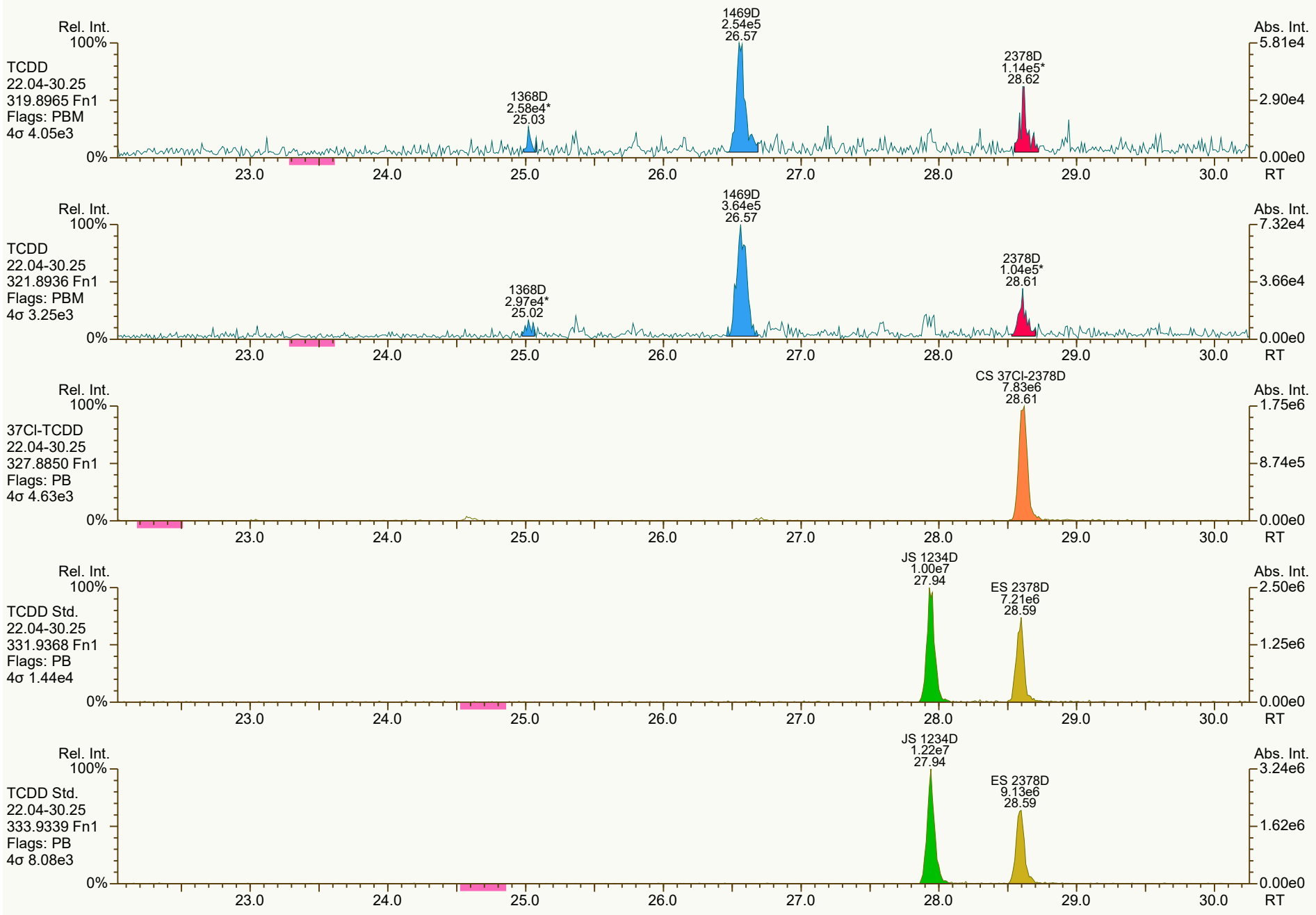
Lab ID: B5965_18711_DF_010 **Acq'd: 08 Dec 2021 07:45 PSW** **Wt/Vol: 16.28 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-S-5 **UTP: 08-Dec-2021 14:49:07 PSW** **J-level: 0.307 pg/g** **Split: 1** **Checkcode: 756-512-RNK**

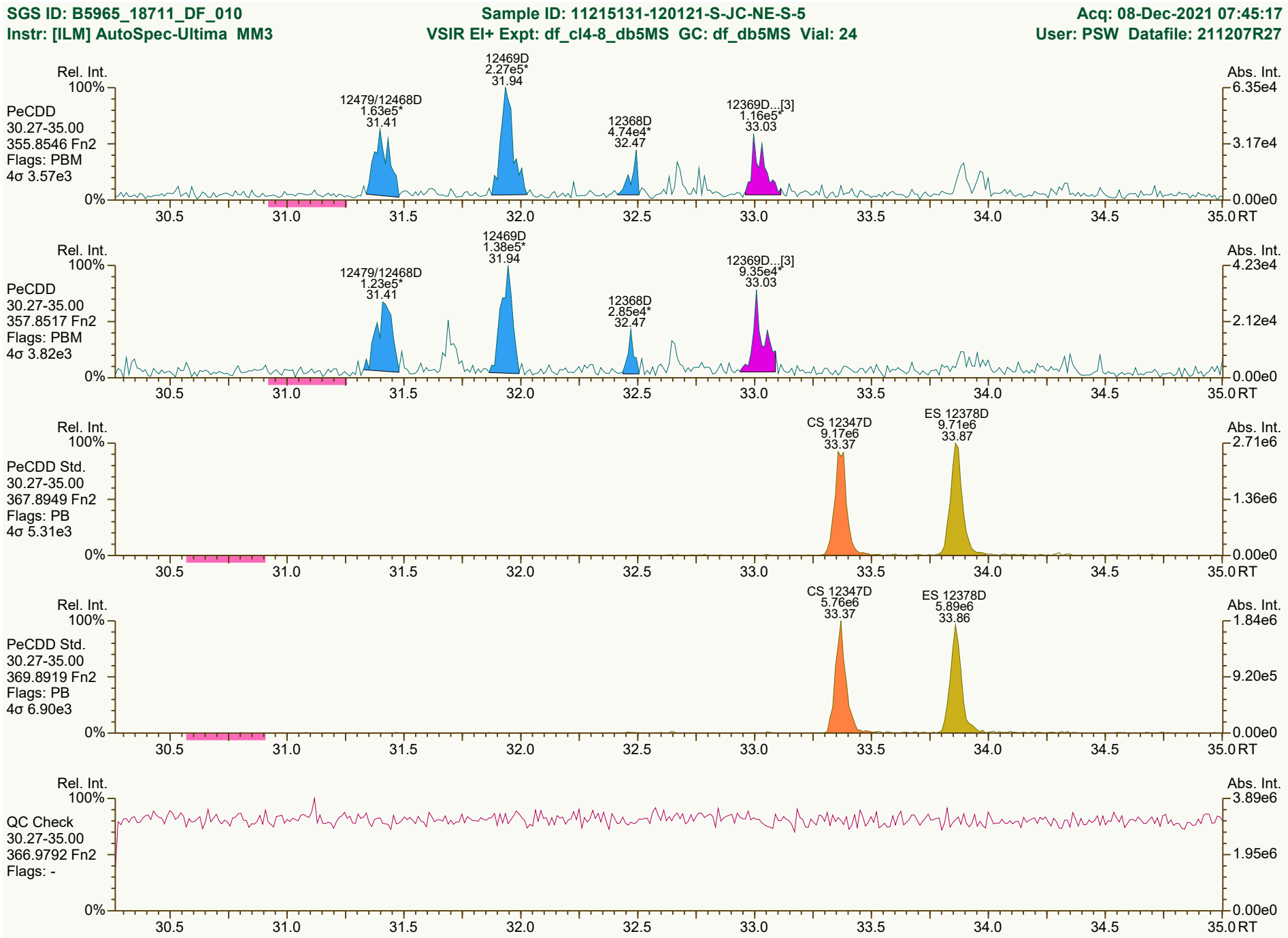
Datafile: 211207R27 **Report: 08 Dec 2021 14:50 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		8710.97	0.472
12347-PeCDF	NotFnd		0.9892						0.94		8710.97	0.472
12348-PeCDF	NotFnd		0.9940						0.94		8710.97	0.472
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**8710.97**	**0.471**
12678/12367-PeCDF	NotFnd		1.0088						0.94		8710.97	0.472
12379-PeCDF	NotFnd		1.0142						0.94		8710.97	0.472
12679-PeCDF	NotFnd		0.9931						0.94		8710.97	0.472
23467/12369-PeCDF	NotFnd		0.9966						0.94		8710.97	0.472
23478-PeCDF	**33.57**	J EMPC	**1.0005**	**1.0011**	**+1.2**	**1.28E+05**	**1.21**	**N**	**0.94**	**0.787**	**8710.97**	**0.472**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8710.97	0.472
12349-PeCDF	NotFnd		1.0100						0.94		8710.97	0.472
12389-PeCDF	NotFnd		1.0323						0.94		8710.97	0.472
123468-HxCDF	35.38	J	0.9631	0.9631	0	2.04E+05	1.23	Y	1.16	1.3	8966.102	0.471
124678/134678-HxCDF	35.58		0.9686	0.9684	-0.4	8.59E+05	1.23	Y	1.16	5.47	8966.102	0.471
134679-HxCDF	NotFnd		0.9747						1.16		8966.102	0.471
124679-HxCDF	NotFnd		0.9800						1.16		8966.102	0.471
124689-HxCDF	36.22		0.9859	0.9860	+0.2	9.64E+05	1.17	Y	1.16	6.14	8966.102	0.471
123467-HxCDF	NotFnd		0.9972						1.16		8966.102	0.471
123478-HxCDF	**36.75**	J	**1.0004**	**1.0004**	**0**	**1.57E+05**	**1.21**	**Y**	**1.23**	**0.982**	**8966.102**	**0.463**
123678-HxCDF	**36.89**	J	**1.0005**	**1.0004**	**-0.2**	**1.50E+05**	**1.33**	**Y**	**1.13**	**0.846**	**8966.102**	**0.457**
123479-HxCDF	NotFnd		1.0048						1.16		8966.102	0.471
123469-HxCDF	NotFnd		1.0089						1.16		8966.102	0.471
123679-HxCDF	NotFnd		0.9943						1.16		8966.102	0.471
234678-HxCDF	**37.57**	J	**1.0005**	**1.0005**	**0**	**1.32E+05**	**1.29**	**Y**	**1.15**	**0.869**	**8966.102**	**0.449**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		8966.102	0.471
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**8966.102**	**0.525**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		8966.102	0.471
1234678-HpCDF	**39.81**		**1.0003**	**1.0002**	**-0.2**	**2.02E+06**	**1.01**	**Y**	**1.36**	**13.2**	**7404.583**	**0.343**
1234679-HpCDF	40.07	**J EMPC**	1.0065	1.0067	+0.5	4.81E+04	0.55	N	1.33	0.365	7404.583	0.438
1234689-HpCDF	40.20		1.0097	1.0100	+0.7	4.09E+06	0.98	Y	1.33	31	7404.583	0.438
1234789-HpCDF	**41.16**	**J**	**1.0004**	**1.0001**	**-0.7**	**1.47E+05**	**0.90**	**Y**	**1.30**	**1.32**	**7404.583**	**0.566**
OCDF	**43.47**		**1.0002**	**1.0003**	**+0.3**	**3.60E+06**	**0.92**	**Y**	**1.03**	**49**	**11787.732**	**1.36**
OCDF-a	43.47		1.0001	1.0002	+0.3	2.07E+05	2.31	Y	0.06	49	13577.102	27.1

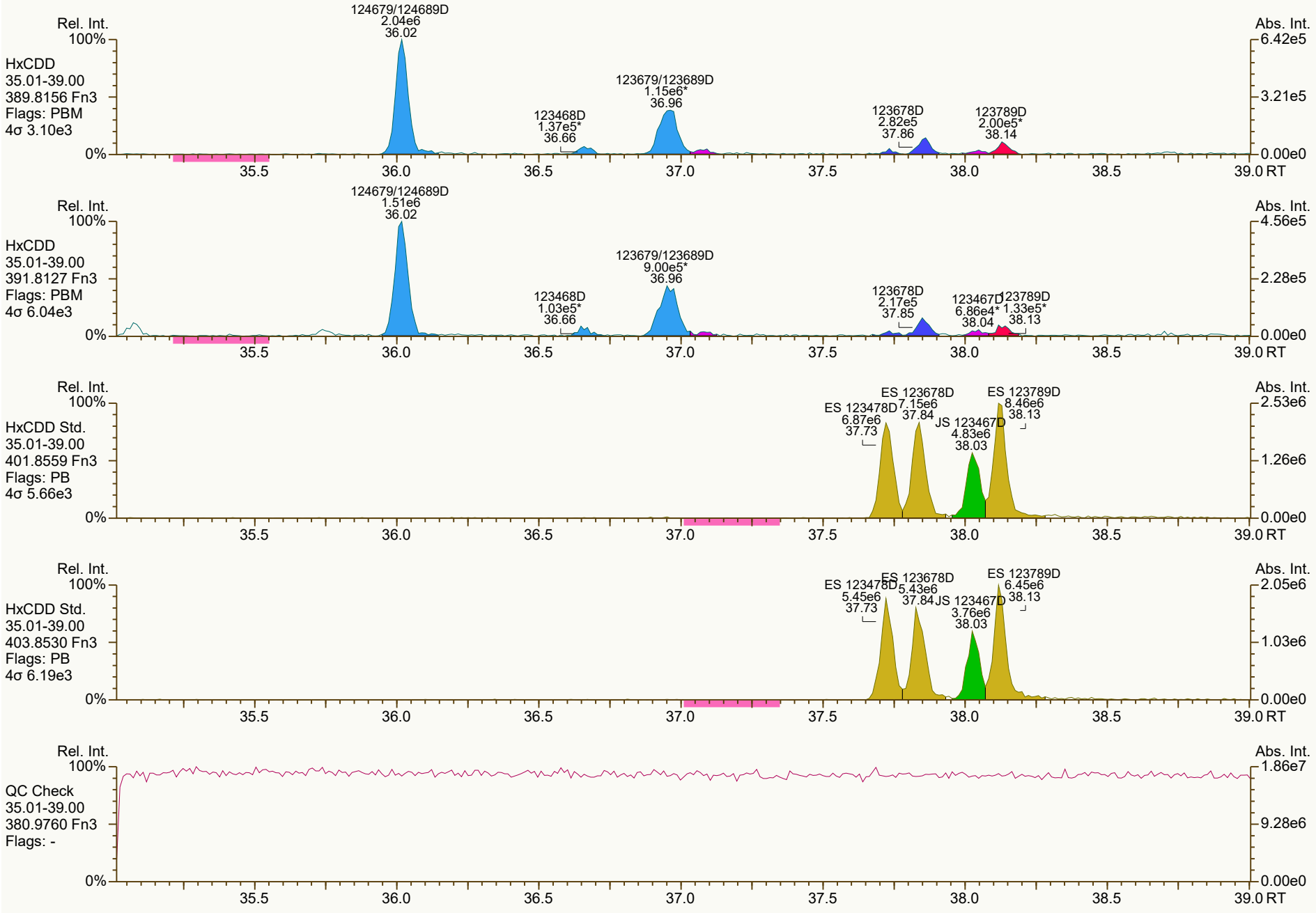

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.96e6
1.98e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.89e6
1.95e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.86e7
9.28e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.17e7
5.86e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.02e6
4.01e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

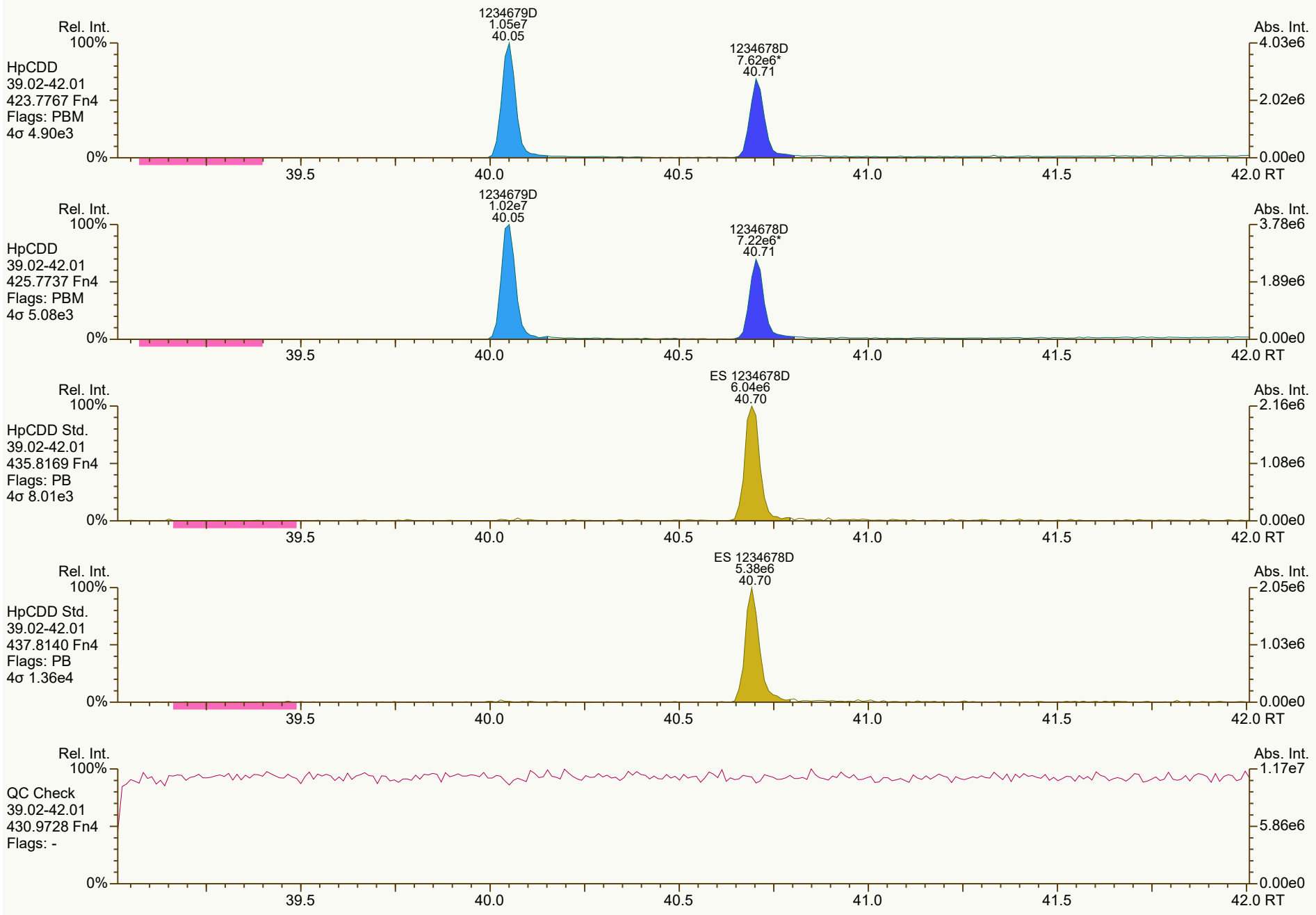

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 4.05e3
1368D
2.58e4*
25.03
1469D
2.54e5
26.57
2378D
1.14e5*
28.62
Abs. Int.
5.81e4
2.90e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 3.25e3
1368D
2.97e4*
25.02
1469D
3.64e5
26.57
2378D
1.04e5*
28.61
Abs. Int.
7.32e4
3.66e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.63e3
CS 37Cl-2378D
7.83e6
28.61
Abs. Int.
1.75e6
8.74e5
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.44e4
JS 1234D
1.00e7
27.94
ES 2378D
7.21e6
28.59
Abs. Int.
2.50e6
1.25e6
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 8.08e3
JS 1234D
1.22e7
27.94
ES 2378D
9.13e6
28.59
Abs. Int.
3.24e6
1.62e6
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

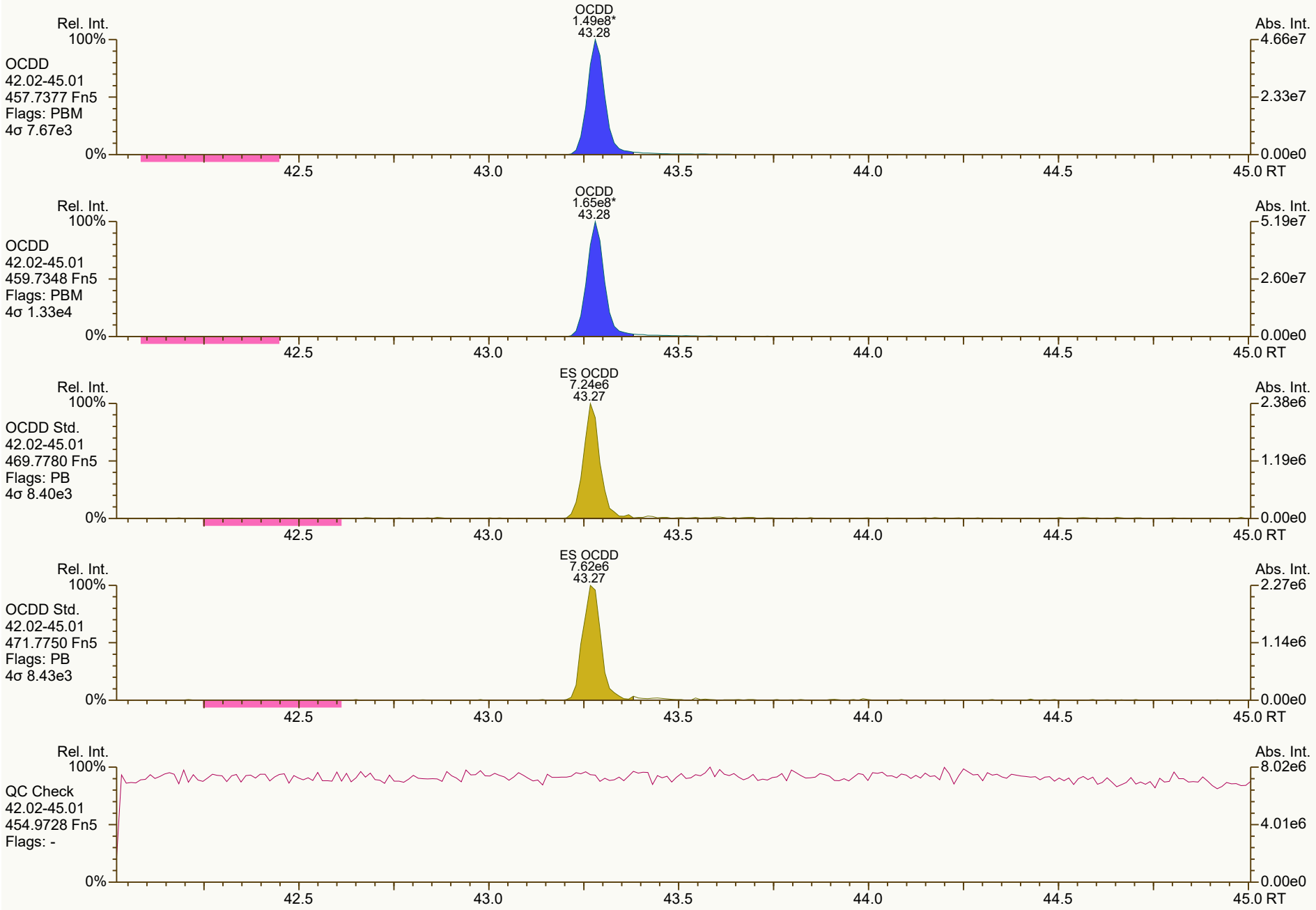
SGS ID: B5965_18711_DF_010 | Sample ID: 11215131-120121-S-JC-NE-S-5 | Acq: 08-Dec-2021 07:45:17
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24 | User: PSW Datafile: 211207R27

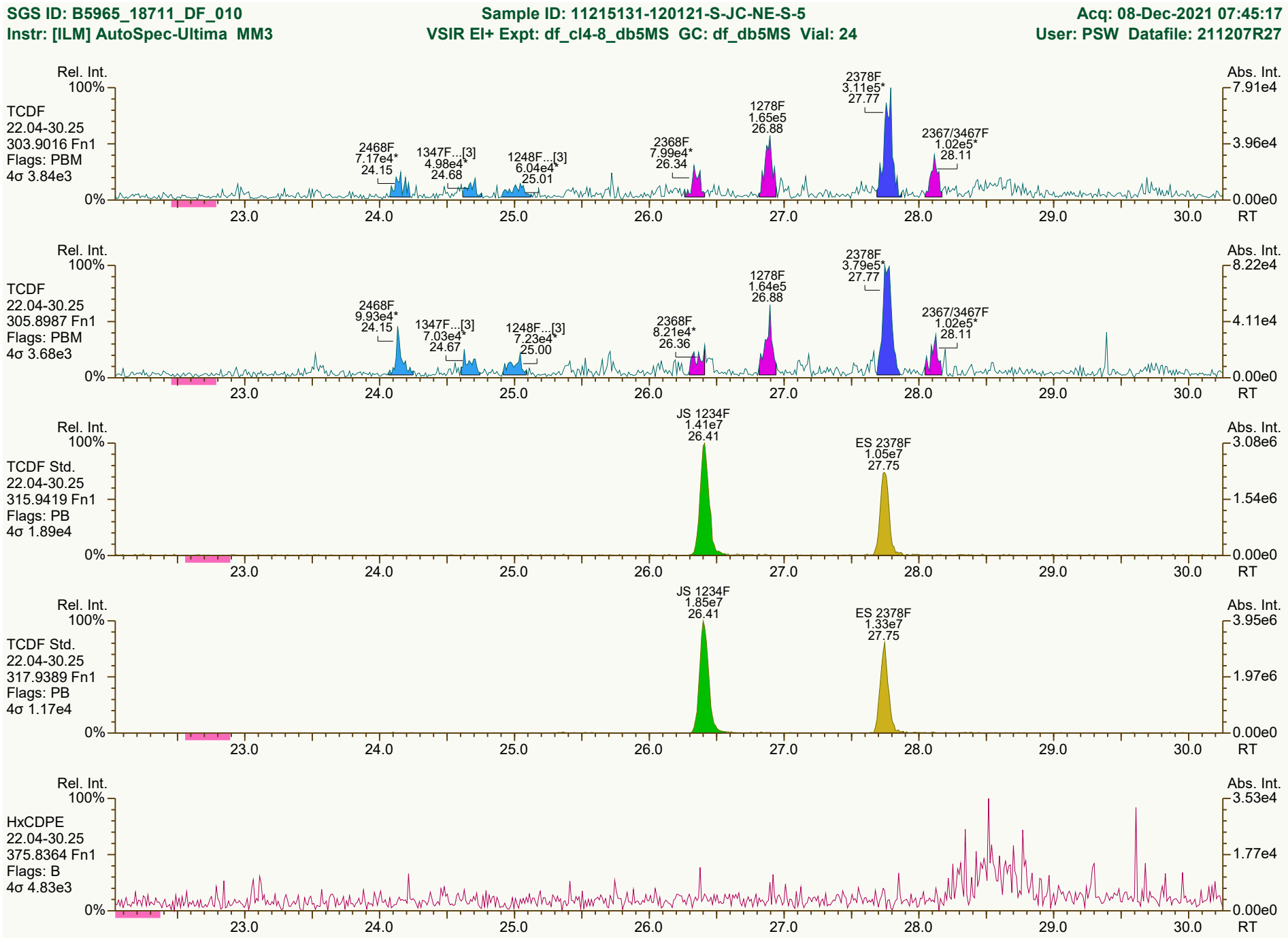


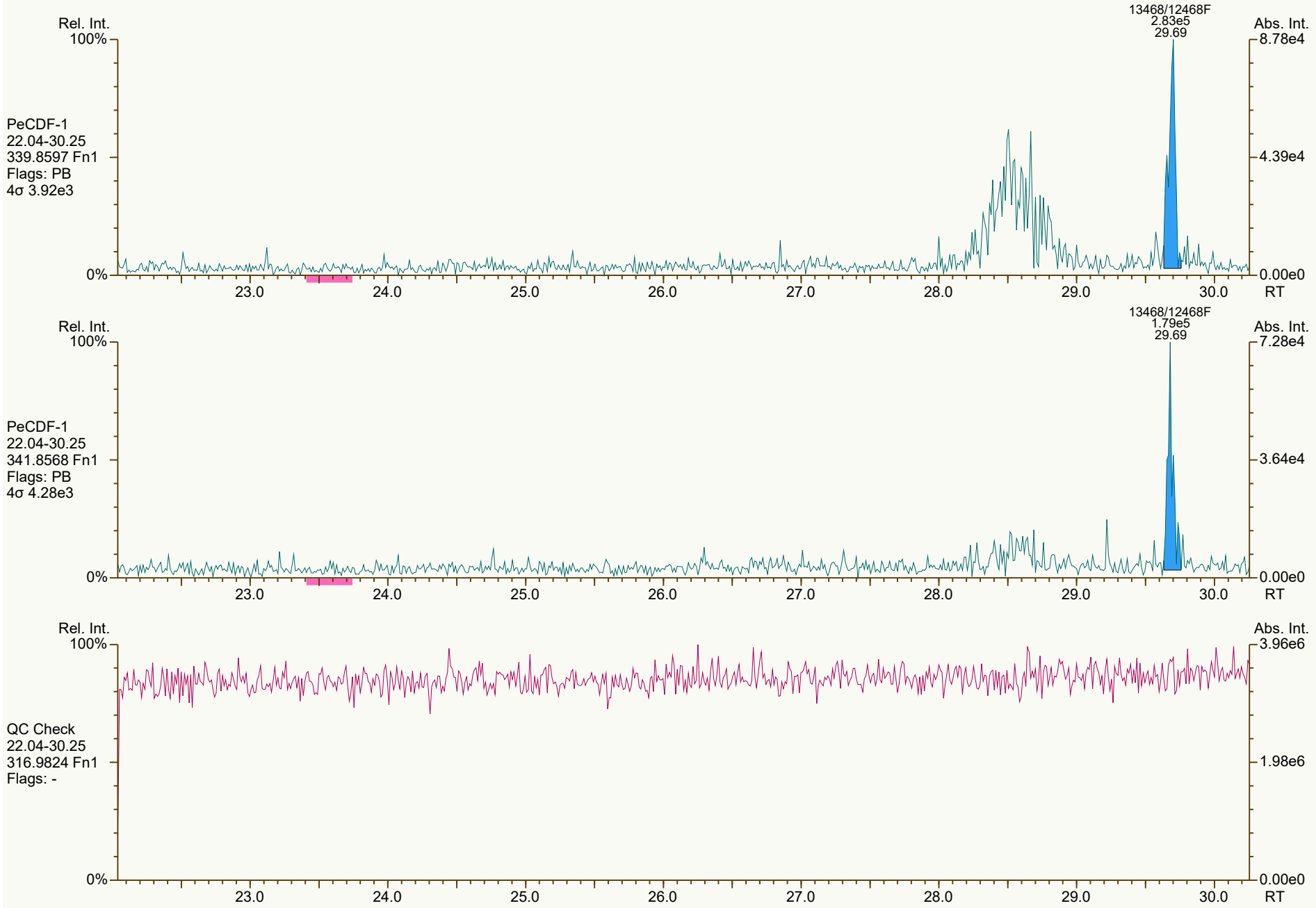
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_010.utp_res, saved 08-Dec-2021 14:49 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8853, 6274 scc: 756-512 | PKD: 08-Dec-2021 09:42 Printed: 08-Dec-2021 14:57 Page 3 of 12

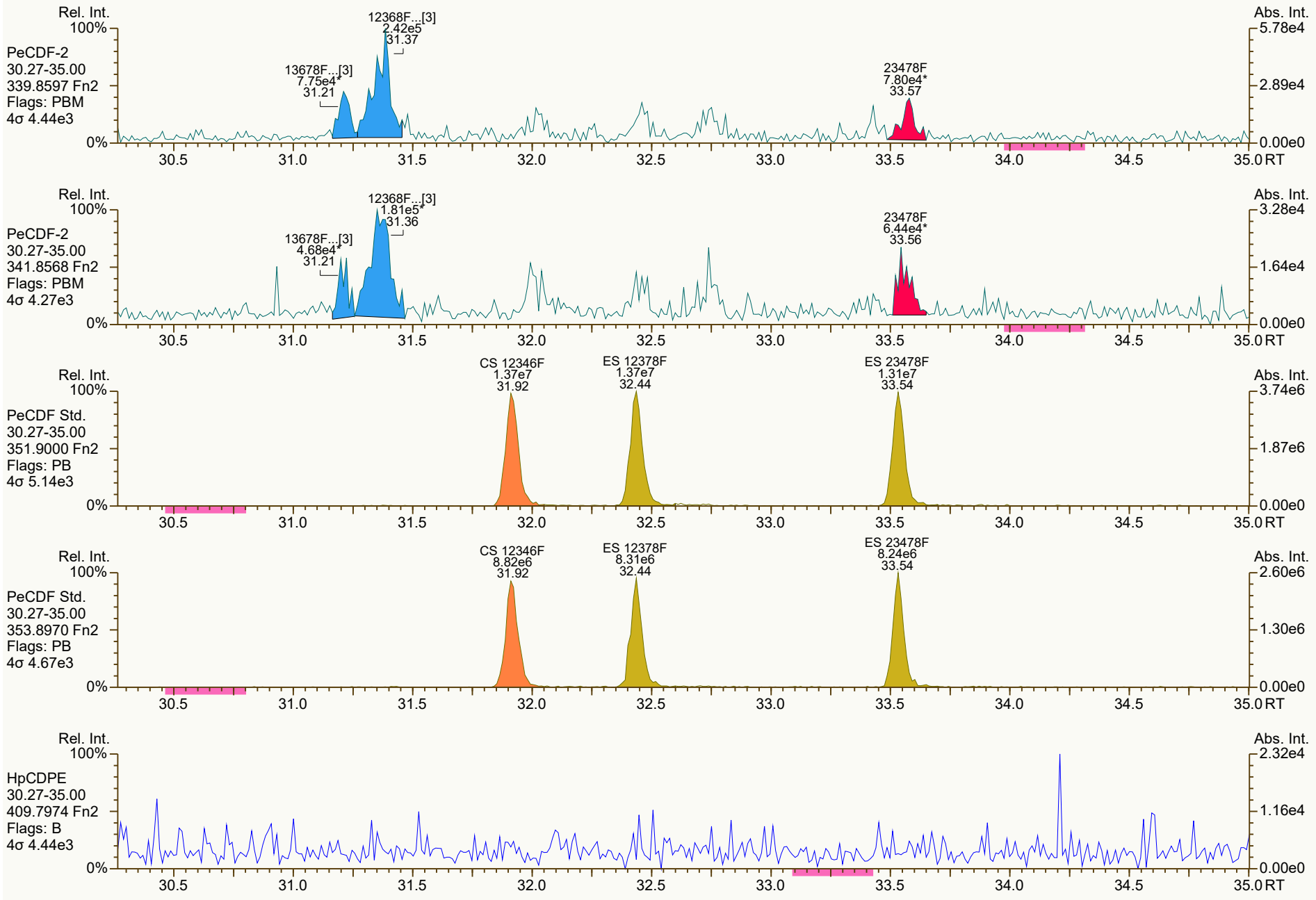

Rel. Int.
Abs. Int.
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PBM
4σ 3.10e3
124679/124689D
2.04e6
36.02
123468D
1.37e5*
36.66
123679/123689D
1.15e6*
36.96
123678D
2.82e5
37.86
123789D
2.00e5*
38.14
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PBM
4σ 6.04e3
124679/124689D
1.51e6
36.02
123468D
1.03e5*
36.66
123679/123689D
9.00e5*
36.96
123678D
2.17e5
37.85
123467D
6.86e4*
38.04
123789D
1.33e5*
38.13
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PB
4σ 5.66e3
ES 123478D
6.87e6
37.73
ES 123678D
7.15e6
37.84
JS 123467D
4.83e6
38.03
ES 123789D
8.46e6
38.13
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PB
4σ 6.19e3
ES 123478D
5.45e6
37.73
ES 123678D
5.43e6
37.84
JS 123467D
3.76e6
38.03
ES 123789D
6.45e6
38.13
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
6.42e5
3.21e5
0.00e0
4.56e5
2.28e5
2.53e6
1.26e6
2.05e6
1.03e6
1.86e7
9.28e6

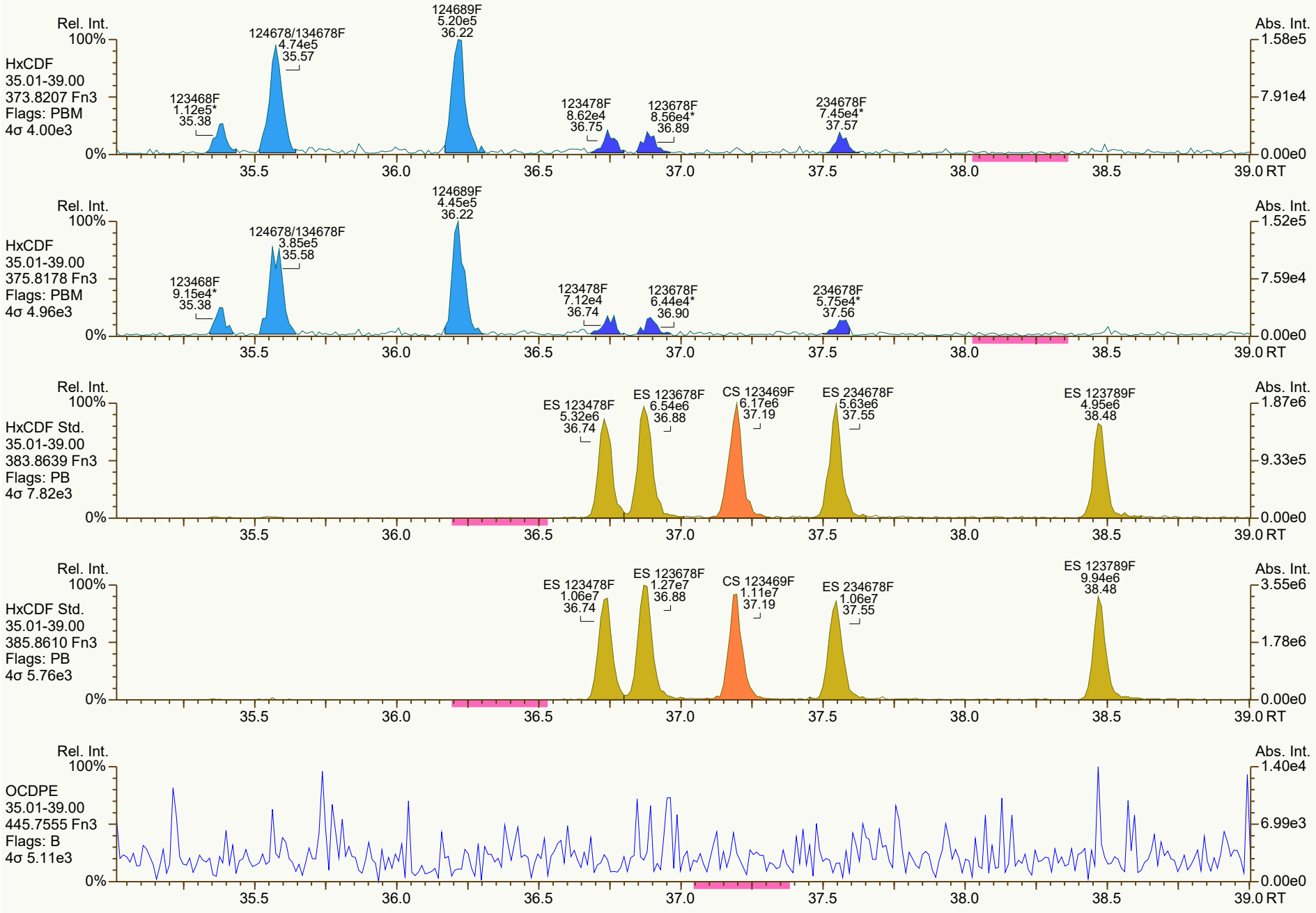

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 4.90e3
1234679D
1.05e7
40.05
1234678D
7.62e6*
40.71
Abs. Int.
4.03e6
2.02e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 5.08e3
1234679D
1.02e7
40.05
1234678D
7.22e6*
40.71
Abs. Int.
3.78e6
1.89e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 8.01e3
ES 1234678D
6.04e6
40.70
Abs. Int.
2.16e6
1.08e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 1.36e4
ES 1234678D
5.38e6
40.70
Abs. Int.
2.05e6
1.03e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.17e7
5.86e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
1.49e8*
43.28
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 7.67e3
0%
Abs. Int.
4.66e7
2.33e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.65e8*
43.28
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 1.33e4
5.19e7
2.60e7
ES OCDD
7.24e6
43.27
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 8.40e3
2.38e6
1.19e6
ES OCDD
7.62e6
43.27
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 8.43e3
2.27e6
1.14e6
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
8.02e6
4.01e6

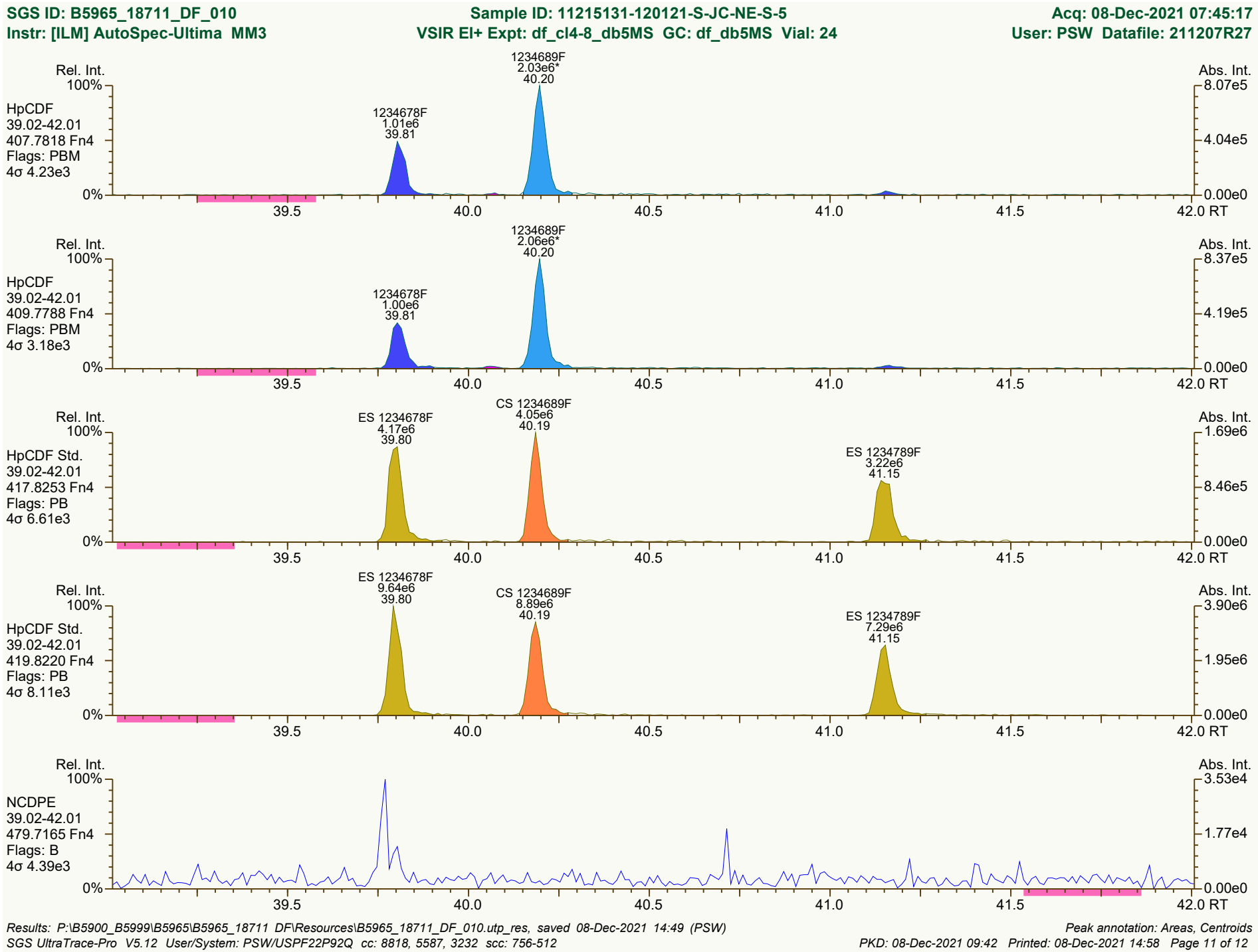

SGS ID: B5965_18711_DF_010
Sample ID: 11215131-120121-S-JC-NE-S-5
Acq: 08-Dec-2021 07:45:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24
User: PSW Datafile: 211207R27
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.84e3
2468F 7.17e4* 24.15
1347F...[3] 4.98e4* 24.68
1248F...[3] 6.04e4* 25.01
2368F 7.99e4* 26.34
1278F 1.65e5 26.88
2378F 3.11e5* 27.77
2367/3467F 1.02e5* 28.11
7.91e4
3.96e4
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.68e3
2468F 9.93e4* 24.15
1347F...[3] 7.03e4* 24.67
1248F...[3] 7.23e4* 25.00
2368F 8.21e4* 26.36
1278F 1.64e5 26.88
2378F 3.79e5* 27.77
2367/3467F 1.02e5* 28.11
8.22e4
4.11e4
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.89e4
JS 1234F 1.41e7 26.41
ES 2378F 1.05e7 27.75
3.08e6
1.54e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.17e4
JS 1234F 1.85e7 26.41
ES 2378F 1.33e7 27.75
3.95e6
1.97e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.83e3
3.53e4
1.77e4
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_010.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9049, 5508, 1061 scc: 756-512
PKD: 08-Dec-2021 09:42 Printed: 08-Dec-2021 14:57 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
8.78e4
4.39e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
13468/12468F
2.83e5
29.69
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 3.92e3
13468/12468F
1.79e5
29.69
7.28e4
3.64e4
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 4.28e3
3.96e6
1.98e6
QC Check
22.04-30.25
316.9824 Fn1
Flags: -

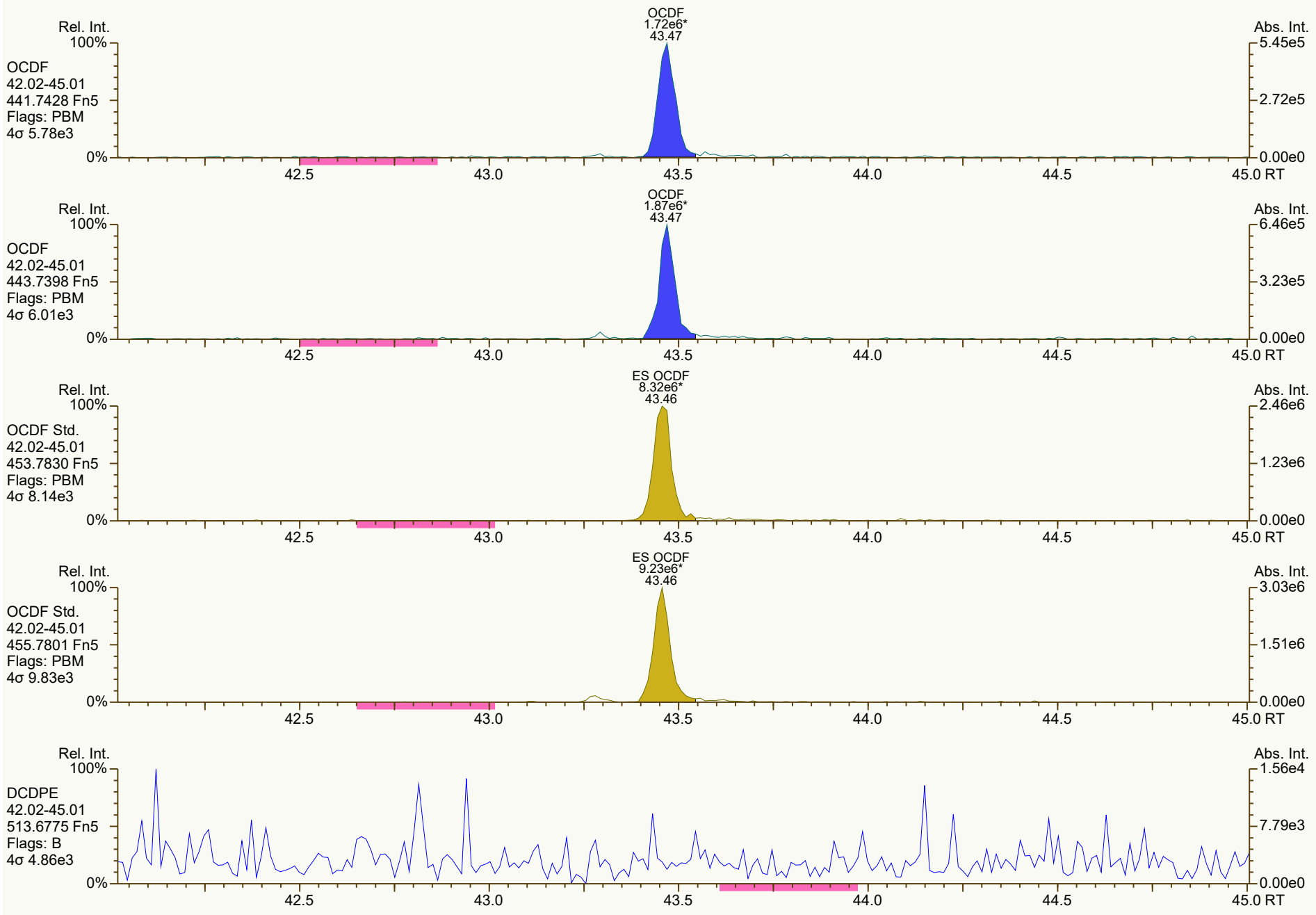

Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 4.44e3
0%
12368F...[3]
2.42e5
31.37
13678F...[3]
7.75e4*
31.21
23478F
7.80e4*
33.57
Abs. Int.
5.78e4
2.89e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 4.27e3
0%
12368F...[3]
1.81e5*
31.36
13678F...[3]
4.68e4*
31.21
23478F
6.44e4*
33.56
Abs. Int.
3.28e4
1.64e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 5.14e3
0%
CS 12346F
1.37e7
31.92
ES 12378F
1.37e7
32.44
ES 23478F
1.31e7
33.54
Abs. Int.
3.74e6
1.87e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 4.67e3
0%
CS 12346F
8.82e6
31.92
ES 12378F
8.31e6
32.44
ES 23478F
8.24e6
33.54
Abs. Int.
2.60e6
1.30e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.44e3
0%
Abs. Int.
2.32e4
1.16e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 4.00e3
0%
123468F
1.12e5*
35.38
124678/134678F
4.74e5
35.57
124689F
5.20e5
36.22
123478F
8.62e4
36.75
123678F
8.56e4*
36.89
234678F
7.45e4*
37.57
Abs. Int.
1.58e5
7.91e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 4.96e3
0%
123468F
9.15e4*
35.38
124678/134678F
3.85e5
35.58
124689F
4.45e5
36.22
123478F
7.12e4
36.74
123678F
6.44e4*
36.90
234678F
5.75e4*
37.56
Abs. Int.
1.52e5
7.59e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 7.82e3
0%
ES 123478F
5.32e6
36.74
ES 123678F
6.54e6
36.88
CS 123469F
6.17e6
37.19
ES 234678F
5.63e6
37.55
ES 123789F
4.95e6
38.48
Abs. Int.
1.87e6
9.33e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 5.76e3
0%
ES 123478F
1.06e7
36.74
ES 123678F
1.27e7
36.88
CS 123469F
1.11e7
37.19
ES 234678F
1.06e7
37.55
ES 123789F
9.94e6
38.48
Abs. Int.
3.55e6
1.78e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 5.11e3
0%
Abs. Int.
1.40e4
6.99e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

SGS ID: B5965_18711_DF_010 | Sample ID: 11215131-120121-S-JC-NE-S-5 | Acq: 08-Dec-2021 07:45:17
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24 | User: PSW Datafile: 211207R27



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\B5965_18711_DF_010.utp_res, saved 08-Dec-2021 14:49 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8818, 5587, 3232 scc: 756-512 | PKD: 08-Dec-2021 09:42 Printed: 08-Dec-2021 14:58 Page 11 of 12


OCDF
1.72e6*
43.47
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 5.78e3
0%
Abs. Int.
5.45e5
2.72e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.87e6*
43.47
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 6.01e3
6.46e5
3.23e5
ES OCDF
8.32e6*
43.46
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 8.14e3
2.46e6
1.23e6
ES OCDF
9.23e6*
43.46
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 9.83e3
3.03e6
1.51e6
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.86e3
1.56e4
7.79e3

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
14	211207R14	3	CS3_211207_DF_RF	1.00	SIL 25-347-1	PSW	536-204	07-Dec-2021	21:27:48
15	211207R15	14	OPR1_18711_DF	1.00	0_18711_OPR001	PSW	875-358	07-Dec-2021	22:14:25
16	211207R16	15	OPR2_18711_DF	1.00	0_18711_OPR002	PSW	589-645	07-Dec-2021	23:01:58
17	211207R17	2	SBS_211207_DF_RB	1.00	SIL 20-61-1	PSW	226-765	07-Dec-2021	23:49:37
18	211207R18	13	MB1_18711_DF_SDS	10.00	Method Blank	PSW	237-974	08-Dec-2021	00:37:10
19	211207R19	16	B5965_18711_DF_002 ✓	15.67	11215131-113021-S-SPS-NE-S-6	PSW	885-934	08-Dec-2021	01:24:44
20	211207R20	17	B5965_18711_DF_003	15.69	11215131-120121-S-SPS-NE-S-12	PSW	814-529	08-Dec-2021	02:12:18
21	211207R21	18	B5965_18711_DF_004	13.66	11215131-120121-S-SPS-NE-S-14	PSW	909-917	08-Dec-2021	02:59:50
22	211207R22	19	B5965_18711_DF_005	16.01	11215131-120121-S-SPS-NE-S-13	PSW	038-759	08-Dec-2021	03:47:24
24	211207R24	21	B5965_18711_DF_007	16.69	11215131-113021-S-JC-NE-S-2	PSW	727-243	08-Dec-2021	05:22:32
25	211207R25	22	B5965_18711_DF_008	14.65	11215131-113021-S-JC-NE-S-3	PSW	501-649	08-Dec-2021	06:10:06
26	211207R26	23	B5965_18711_DF_009	17.28	11215131-120121-S-JC-NE-S-4	PSW	441-781	08-Dec-2021	06:57:38
27	211207R27	24	B5965_18711_DF_010	16.28	11215131-120121-S-JC-NE-S-5	PSW	756-512	08-Dec-2021	07:45:17
28	211207R28	3	CS3_211207_DF_RG ✓	1.00	SIL 25-347-1	PSW	423-971	08-Dec-2021	08:57:07
30	211207R30	28	OPR2_18715_DF	1.00	0_18715_OPR002 CPSM only	PSW	418-331	08-Dec-2021	10:39:20
31	211207R31	2	SBS_211208_DF_RC	1.00	SIL 20-61-1	PSW	250-642	08-Dec-2021	11:26:53
32	211207R34	20	B5965_18711_DF_006-RJ	15.46	11215131-113021-S-JC-NE-S-1	PSW	545-953	08-Dec-2021	13:49:32

REVIEWED
paul_walton , 12/8/2021, 3:05:49 PM

REVIEWED
Amber_Kornegay , 12/8/2021, 3:51:22 PM

Dioxin/Furan QC Summary	Acq'd: 07 Dec 2021 21:27 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211207_DF_RF	UTP: 08-Dec-2021 14:49:01 PSW	Checkcode: 536-204-YPX
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 14:49 pw	Datafile: 211207R14

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.61	2.12E+06	0.76	Y	1.34	1.10	-19%
12378-PeCDD	33.88	9.21E+06	1.54	Y	1.06	0.98	-8%
123478-HxCDD	37.74	8.32E+06	1.25	Y	1.06	1.05	-1%
123678-HxCDD	37.85	9.05E+06	1.29	Y	1.08	1.16	8%
123789-HxCDD	38.14	9.20E+06	1.31	Y	1.02	0.99	-2%
1234678-HpCDD	40.70	7.94E+06	1.10	Y	0.97	1.02	4%
OCDD	43.27	1.10E+07	0.92	Y	1.07	1.10	3%
2378-TCDF	27.77	2.94E+06	0.88	Y	0.96	1.01	6%
12378-PeCDF	32.45	1.33E+07	1.64	Y	0.95	1.01	7%
23478-PeCDF	33.55	1.39E+07	1.54	Y	0.94	1.08	15%
123478-HxCDF	36.74	1.28E+07	1.24	Y	1.23	1.24	1%
123678-HxCDF	36.89	1.39E+07	1.26	Y	1.13	1.19	6%
234678-HxCDF	37.56	1.29E+07	1.26	Y	1.15	1.17	2%
123789-HxCDF	38.48	1.10E+07	1.25	Y	1.14	1.10	-3%
1234678-HpCDF	39.80	1.20E+07	1.08	Y	1.36	1.35	-1%
1234789-HpCDF	41.16	9.35E+06	1.03	Y	1.30	1.34	3%
OCDF	43.46	1.30E+07	0.91	Y	1.03	1.02	0%
ES 2378-TCDD	28.59	1.93E+07	0.82	Y	1.03	0.95	-8%
ES 12378-PeCDD	33.858	1.89E+07	1.52	Y	1.03	0.93	-10%
ES 123478-HxCDD	37.72	1.59E+07	1.24	Y	0.99	1.01	1%
ES 123678-HxCDD	37.835	1.56E+07	1.23	Y	0.97	0.99	1%
ES 123789-HxCDD	38.121	1.85E+07	1.31	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.688	1.56E+07	1.02	Y	0.99	0.99	0%
ES OCDD	43.256	1.99E+07	0.89	Y	0.78	0.63	-19%
ES 2378-TCDF	27.748	2.89E+07	0.82	Y	1.08	0.96	-11%
ES 12378-PeCDF	32.432	2.63E+07	1.52	Y	0.93	0.88	-6%
ES 23478-PeCDF	33.529	2.57E+07	1.53	Y	0.92	0.86	-7%
ES 123478-HxCDF	36.727	2.06E+07	0.51	Y	1.14	1.31	14%
ES 123678-HxCDF	36.869	2.33E+07	0.53	Y	1.30	1.48	14%
ES 234678-HxCDF	37.541	2.21E+07	0.54	Y	1.20	1.40	17%
ES 123789-HxCDF	38.47	1.99E+07	0.54	Y	1.14	1.26	11%
ES 1234678-HpCDF	39.793	1.77E+07	0.47	Y	0.95	1.12	18%
ES 1234789-HpCDF	41.142	1.39E+07	0.42	Y	0.85	0.88	4%
ES OCDF	43.446	2.55E+07	0.91	Y	0.93	0.81	-13%

Dioxin/Furan QC Summary	Acq'd: 07 Dec 2021 21:27 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211207_DF_RF	UTP: 08-Dec-2021 14:49:01 PSW	Checkcode: 536-204-YPX
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 14:49 pw	Datafile: 211207R14

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.94	2.03E+07	0.83	Y	-	-	-
JS 1234-TCDF	26.41	3.01E+07	0.80	Y	-	-	-
JS 123467-HxCDD	38.02	7.88E+06	1.38	Y	-	-	-
CS 37Cl-2378-TCDD	28.61	2.28E+06	n/a	-	1.31	1.12	-14%
CS 12347-PeCDD	33.36	1.69E+07	1.65	Y	0.89	0.83	-7%
CS 12346-PeCDF	31.91	2.64E+07	1.63	Y	0.87	0.88	1%
CS 123469-HxCDF	37.18	2.22E+07	0.52	Y	1.09	1.41	29%
CS 1234689-HpCDF	40.18	1.75E+07	0.43	Y	0.86	1.11	28%
~~SS 37Cl-2378-TCDD~~	~~28.61~~	~~2.28E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.18~~	~~-7%~~
~~SS 12347-PeCDD~~	~~33.36~~	~~1.69E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~0.89~~	~~4%~~
~~SS 12346-PeCDF~~	~~31.91~~	~~2.64E+07~~	~~1.63~~	~~Y~~	~~0.93~~	~~1.00~~	~~8%~~
~~SS 123469-HxCDF~~	~~37.18~~	~~2.22E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~0.95~~	~~13%~~
~~SS 1234689-HpCDF~~	~~40.18~~	~~1.75E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~0.99~~	~~8%~~
~~OCDD-a~~	~~43.26~~	~~5.84E+05~~	~~2.37~~	~~Y~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.45~~	~~6.02E+05~~	~~3.78~~	~~N~~	~~0.06~~	~~0.05~~	~~-20%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211207R14 Analysis Date: 07-DEC-2021 21:27:48

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.76	0.65 - 0.89	Y	8.15	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32 - 1.78	Y	46.1	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.7	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	53.8	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05 - 1.43	Y	49	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.10	0.88 - 1.20	Y	52.2	43 - 58	Y
OCDD	M+2/M+4	0.92	0.76 - 1.02	Y	103	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.88	0.65 - 0.89	Y	10.6	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.64	1.32 - 1.78	Y	53.4	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32 - 1.78	Y	57.4	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.4	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	52.8	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	50.8	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.6	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.08	0.88 - 1.20	Y	49.7	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	51.6	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	99.5	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 08 Dec 2021 14:49 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

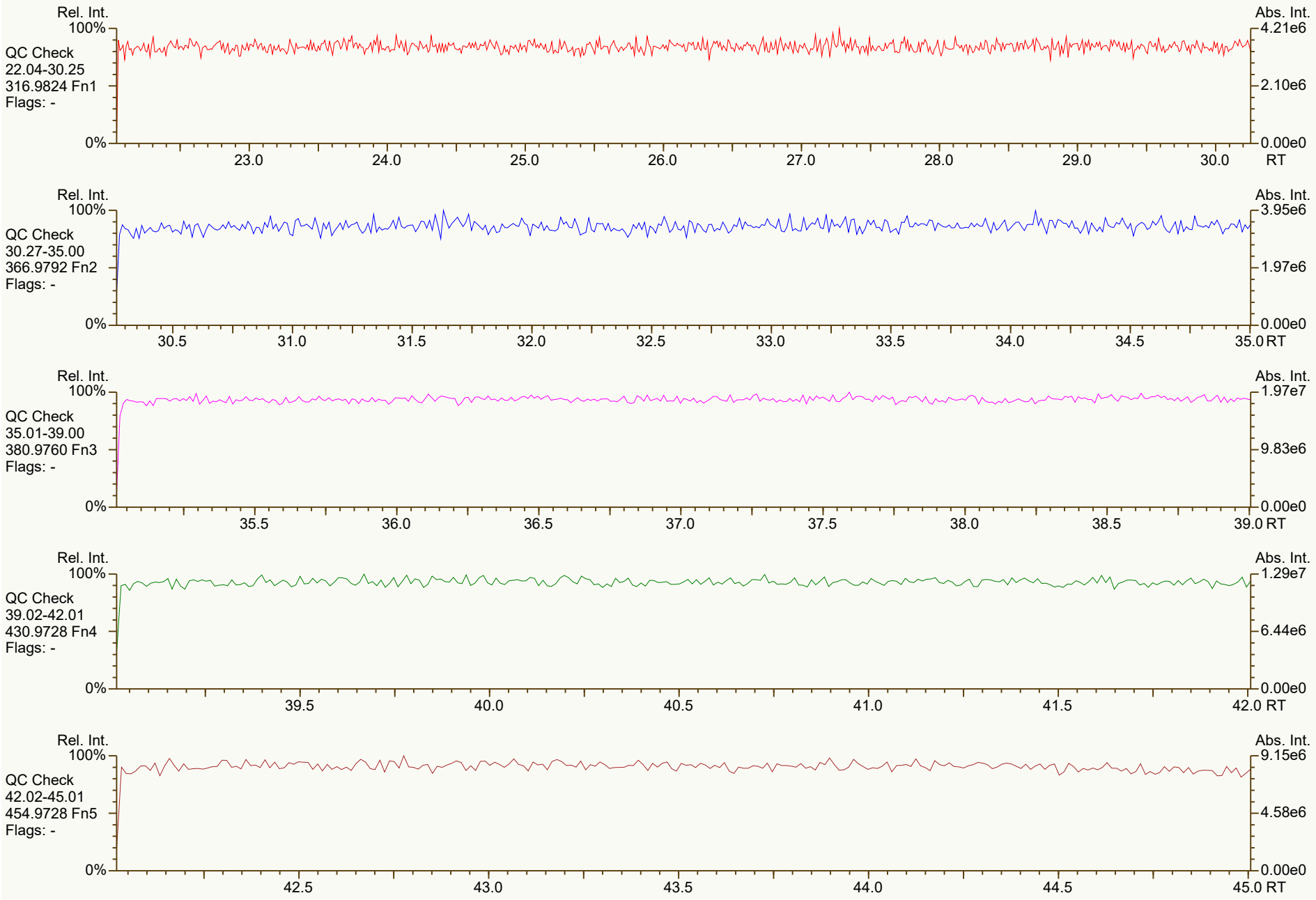
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211207R14 Analysis Date: 07-DEC-2021 21:27:48

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65	-	0.89	Y	92	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.52	1.32	-	1.78	Y	89.6	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	101	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05	-	1.43	Y	101	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	104	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88	-	1.20	Y	99.9	72	-	138	Y
13C-OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	163	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.82	0.65	-	0.89	Y	88.8	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	93.9	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.53	1.32	-	1.78	Y	92.8	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	114	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	114	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	117	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	111	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	118	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.42	0.37	-	0.51	Y	104	77	-	129	Y
13C-OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	175	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						8.55	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	92.9	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.63	1.32	-	1.78	Y	101	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	129	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.43	0.37	-	0.51	Y	128	70	-	130	Y

Processed: 08 Dec 2021 14:49 Analyst: pw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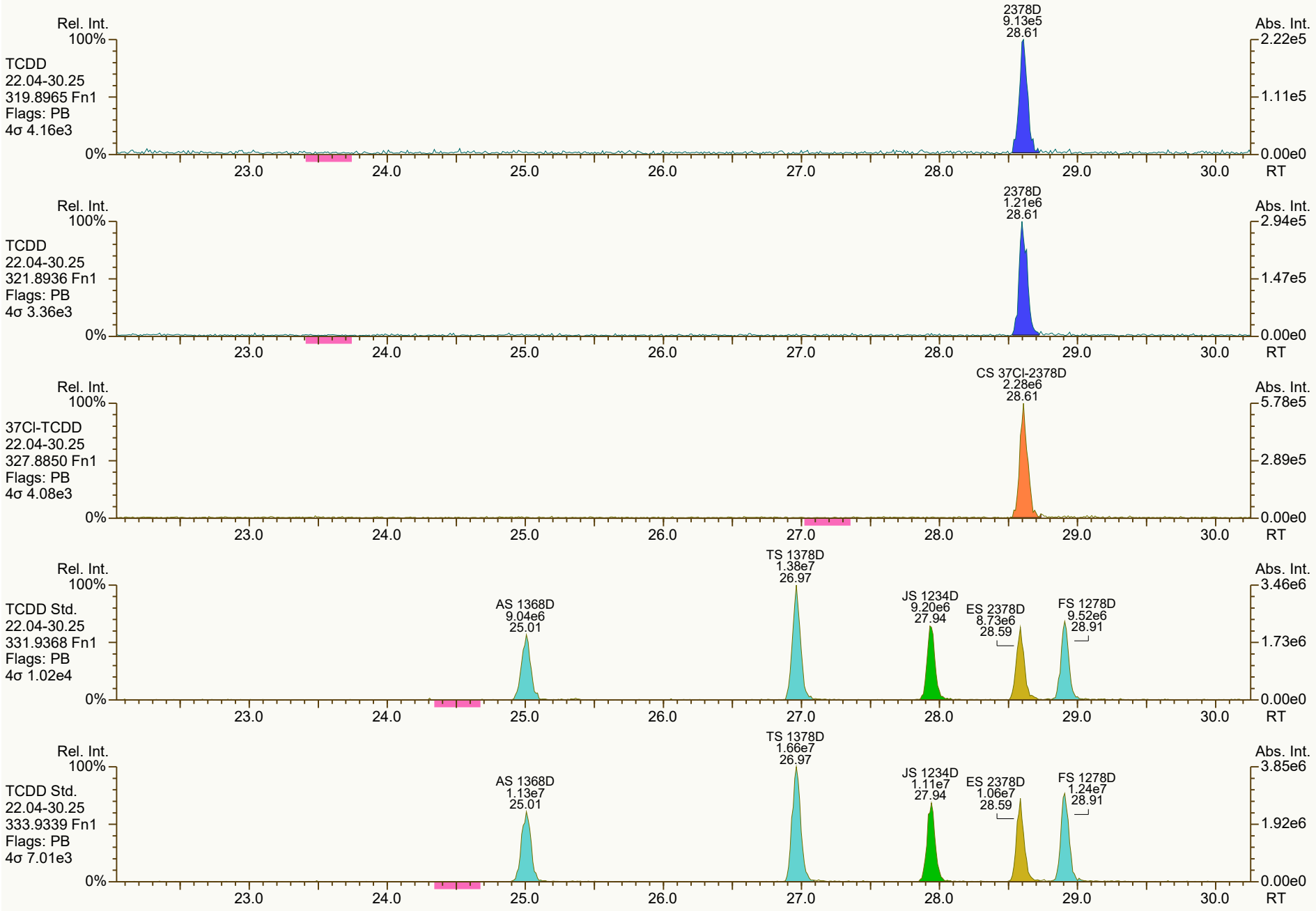
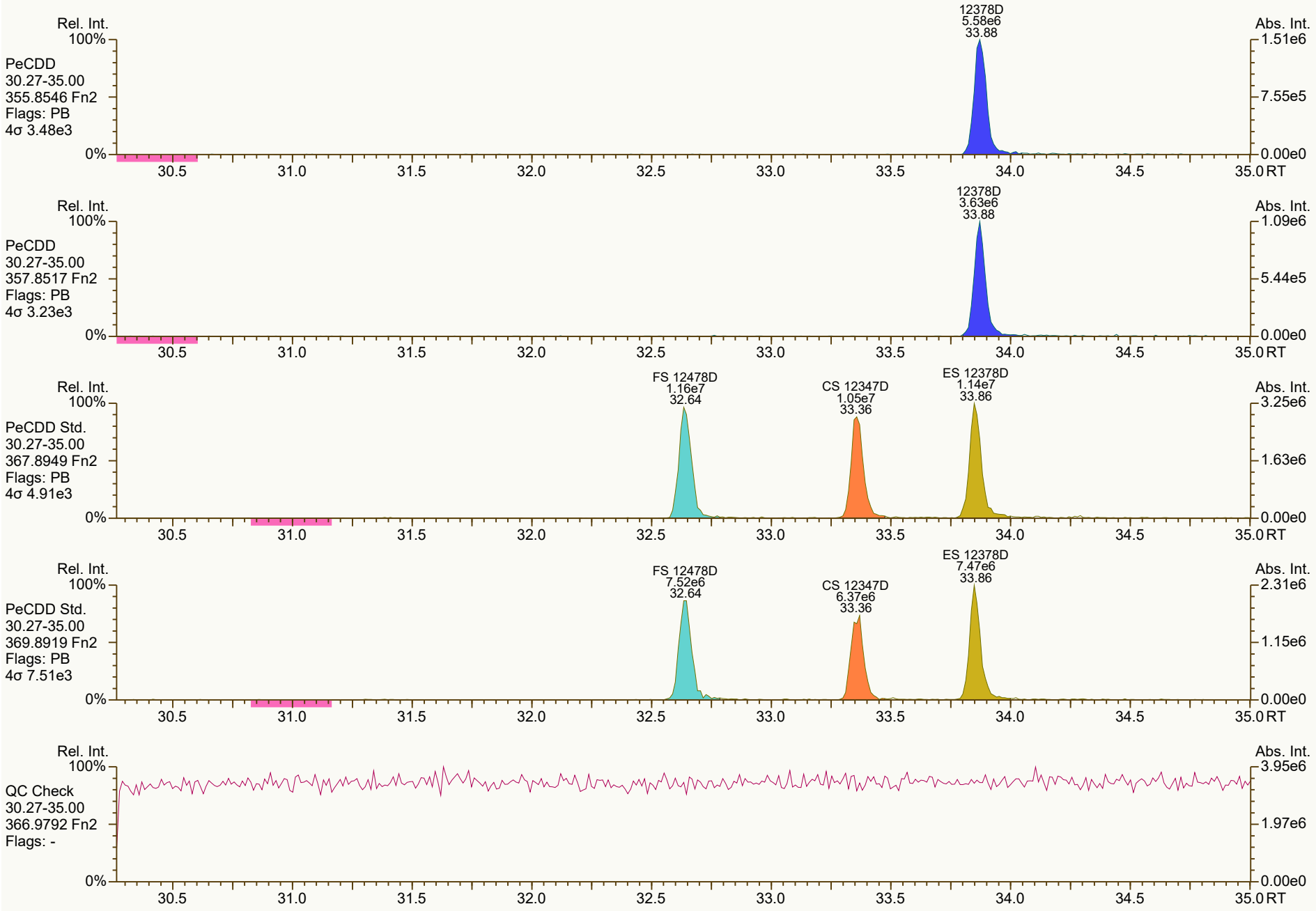
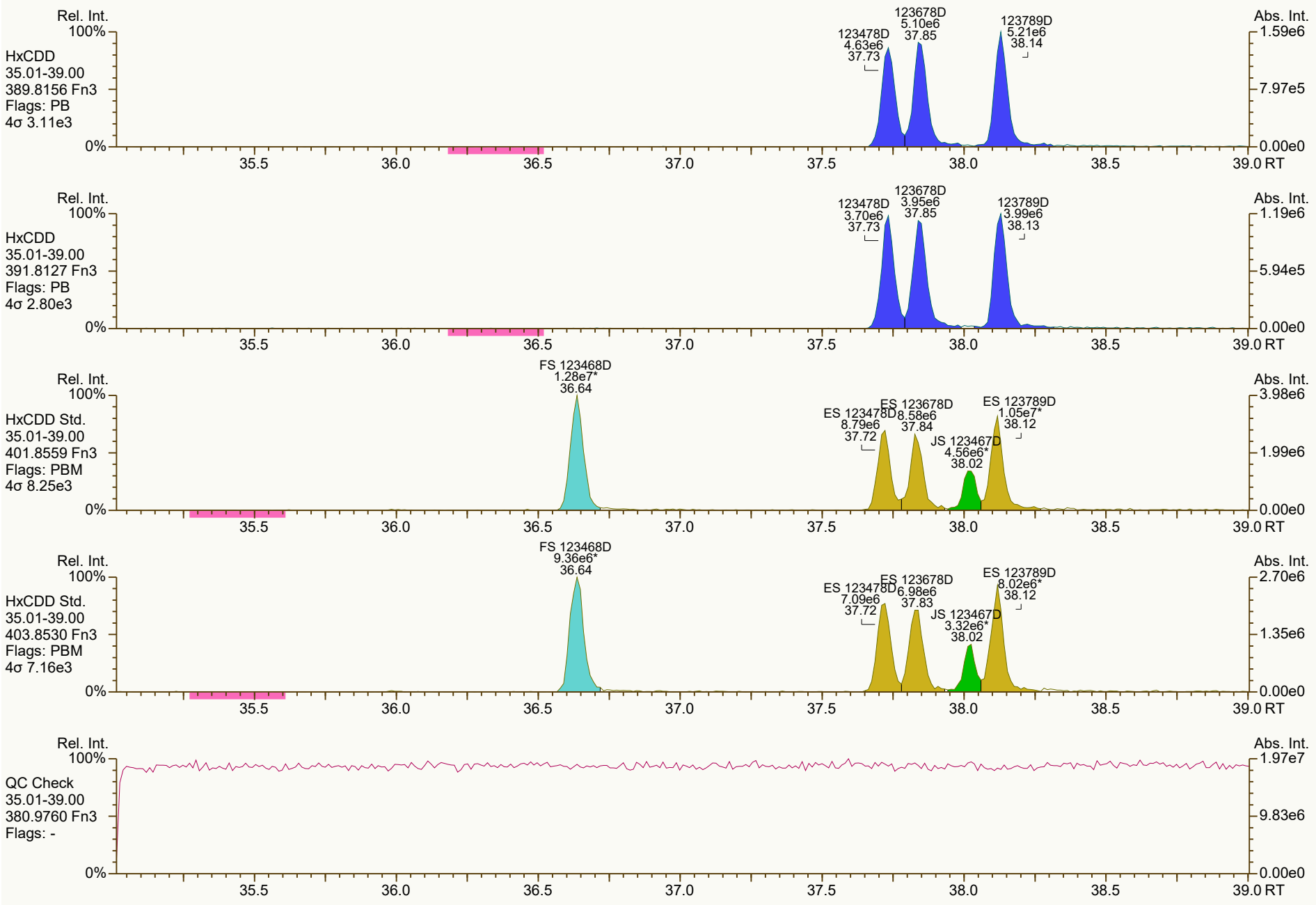
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.21e6
2.10e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.95e6
1.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.97e7
9.83e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.29e7
6.44e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.15e6
4.58e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PB
4σ 4.16e3
0%
2378D
9.13e5
28.61
Abs. Int.
2.22e5
1.11e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PB
4σ 3.36e3
0%
2378D
1.21e6
28.61
Abs. Int.
2.94e5
1.47e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.08e3
0%
CS 37Cl-2378D
2.28e6
28.61
Abs. Int.
5.78e5
2.89e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.02e4
0%
AS 1368D
9.04e6
25.01
TS 1378D
1.38e7
26.97
JS 1234D
9.20e6
27.94
ES 2378D
8.73e6
28.59
FS 1278D
9.52e6
28.91
Abs. Int.
3.46e6
1.73e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 7.01e3
0%
AS 1368D
1.13e7
25.01
TS 1378D
1.66e7
26.97
JS 1234D
1.11e7
27.94
ES 2378D
1.06e7
28.59
FS 1278D
1.24e7
28.91
Abs. Int.
3.85e6
1.92e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PB
4σ 3.48e3
0%
12378D
5.58e6
33.88
Abs. Int.
1.51e6
7.55e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 3.23e3
0%
12378D
3.63e6
33.88
Abs. Int.
1.09e6
5.44e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 4.91e3
0%
FS 12478D
1.16e7
32.64
CS 12347D
1.05e7
33.36
ES 12378D
1.14e7
33.86
Abs. Int.
3.25e6
1.63e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 7.51e3
0%
FS 12478D
7.52e6
32.64
CS 12347D
6.37e6
33.36
ES 12378D
7.47e6
33.86
Abs. Int.
2.31e6
1.15e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.95e6
1.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

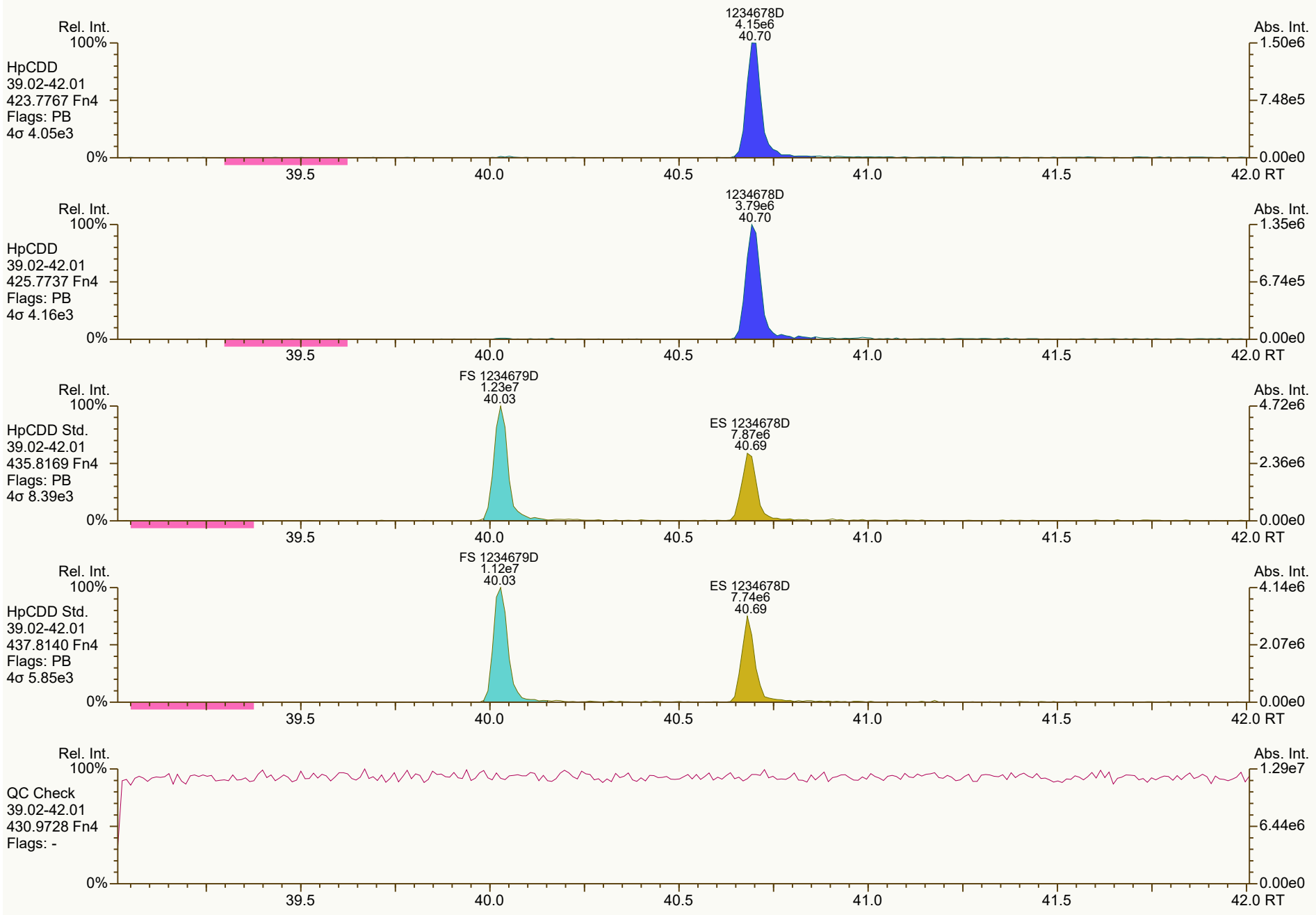
SGS ID: CS3_211207_DF_RF | Sample ID: SIL 25-347-1 | Acq: 07-Dec-2021 21:27:48

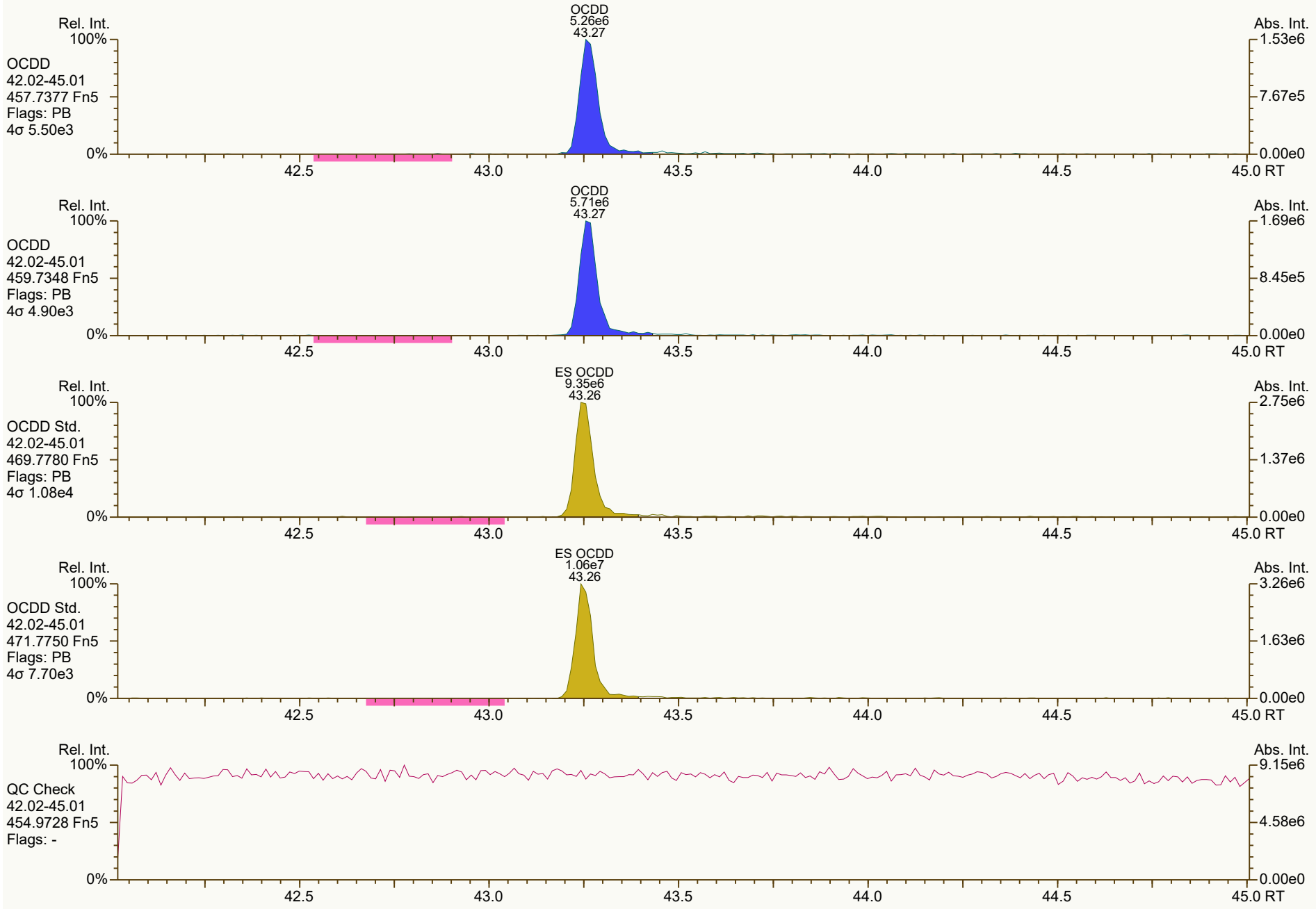
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 211207R14



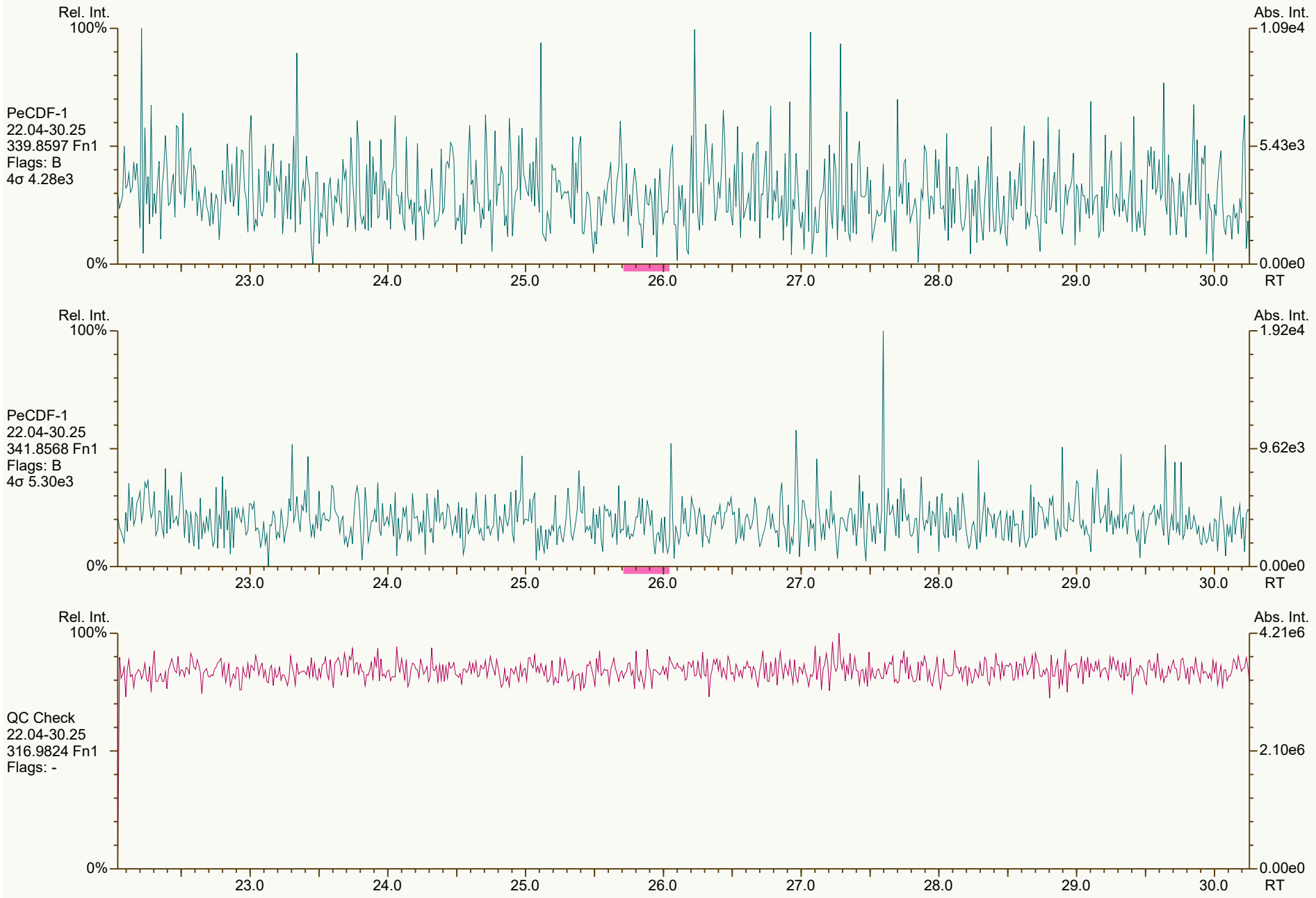
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\CS3_211207_DF_RF.utp_res, saved 08-Dec-2021 14:49 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9057, 8496 scc: 536-204 | *PKD: 08-Dec-2021 08:14 Printed: 08-Dec-2021 14:54 Page 4 of 12*

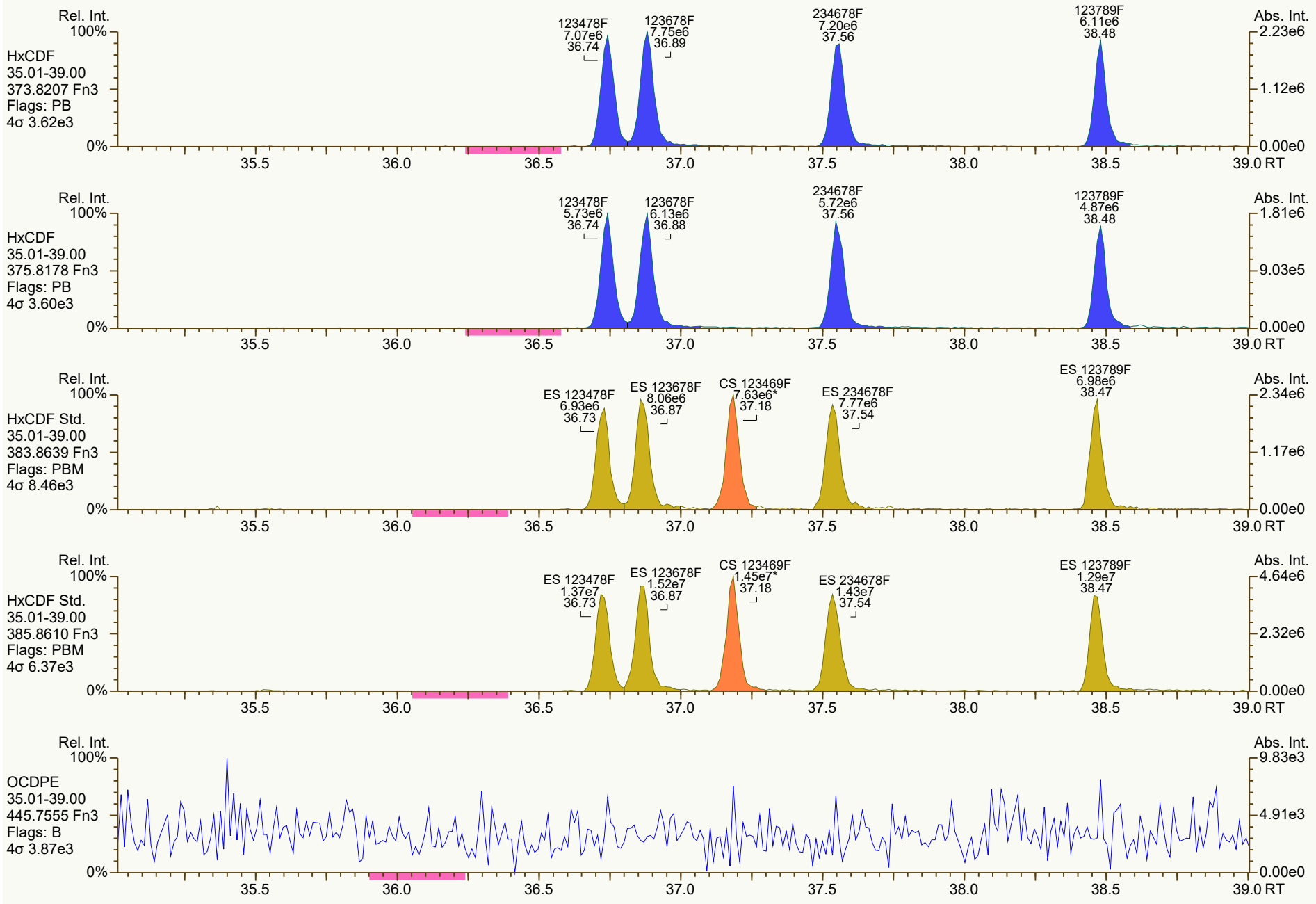

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 4.05e3
1234678D
4.15e6
40.70
Abs. Int.
1.50e6
7.48e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 4.16e3
1234678D
3.79e6
40.70
Abs. Int.
1.35e6
6.74e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 8.39e3
FS 1234679D
1.23e7
40.03
ES 1234678D
7.87e6
40.69
Abs. Int.
4.72e6
2.36e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.85e3
FS 1234679D
1.12e7
40.03
ES 1234678D
7.74e6
40.69
Abs. Int.
4.14e6
2.07e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.29e7
6.44e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

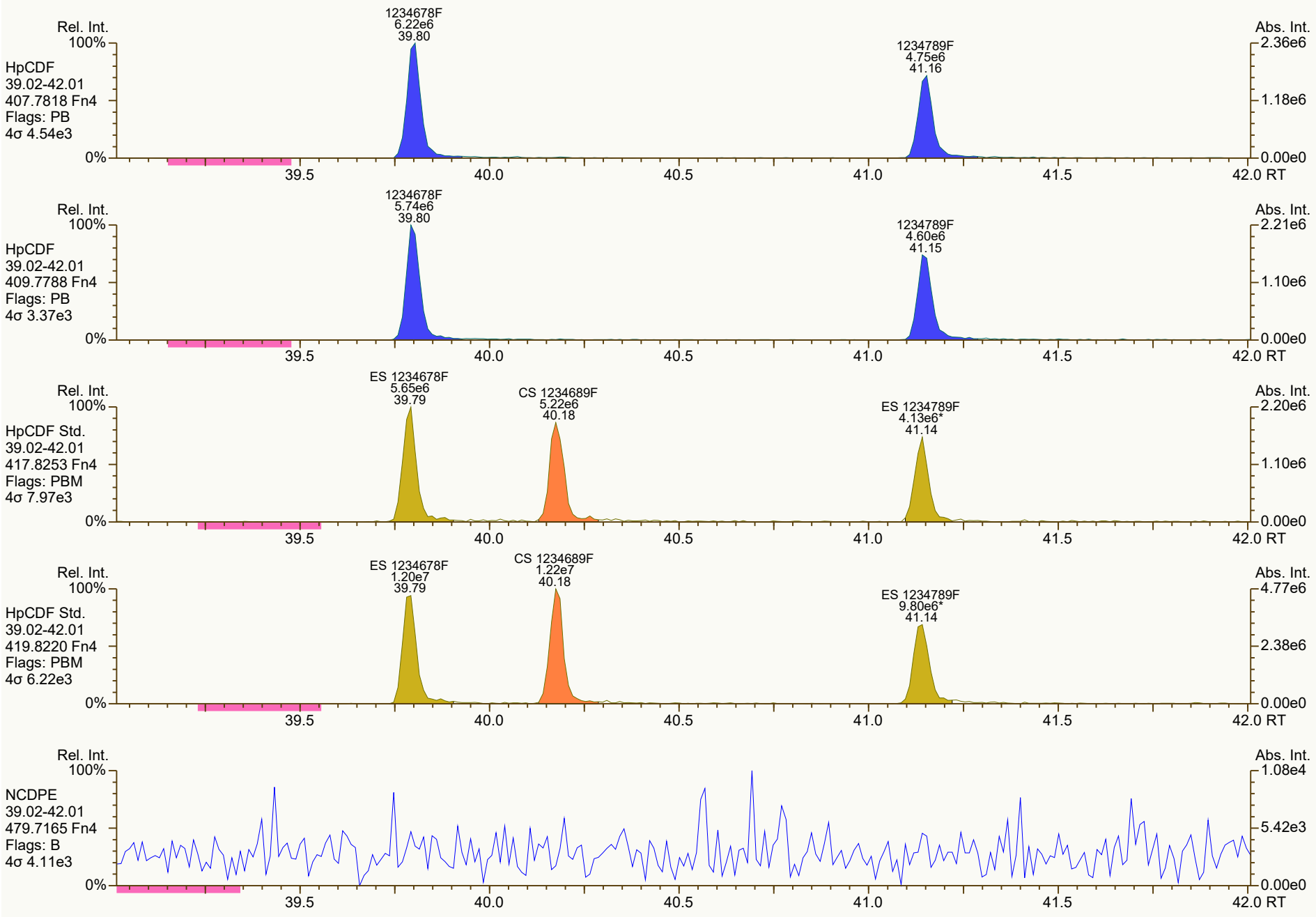

Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 5.50e3
0%
OCDD
5.26e6
43.27
Abs. Int.
1.53e6
7.67e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 4.90e3
0%
OCDD
5.71e6
43.27
Abs. Int.
1.69e6
8.45e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 1.08e4
0%
ES OCDD
9.35e6
43.26
Abs. Int.
2.75e6
1.37e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 7.70e3
0%
ES OCDD
1.06e7
43.26
Abs. Int.
3.26e6
1.63e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.15e6
4.58e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.61e3
0%
2378F
1.38e6*
27.77
Abs. Int.
3.57e5
1.78e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.29e3
0%
2378F
1.56e6*
27.77
Abs. Int.
3.97e5
1.99e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.69e4
0%
AS 1368F
1.41e7
22.95
JS 1234F
1.34e7
26.41
ES 2378F
1.30e7
27.75
Abs. Int.
2.83e6
1.41e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.27e4
0%
AS 1368F
1.81e7
22.95
JS 1234F
1.67e7
26.41
ES 2378F
1.59e7
27.75
Abs. Int.
3.67e6
1.84e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 5.04e3
0%
Abs. Int.
2.01e4
1.01e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

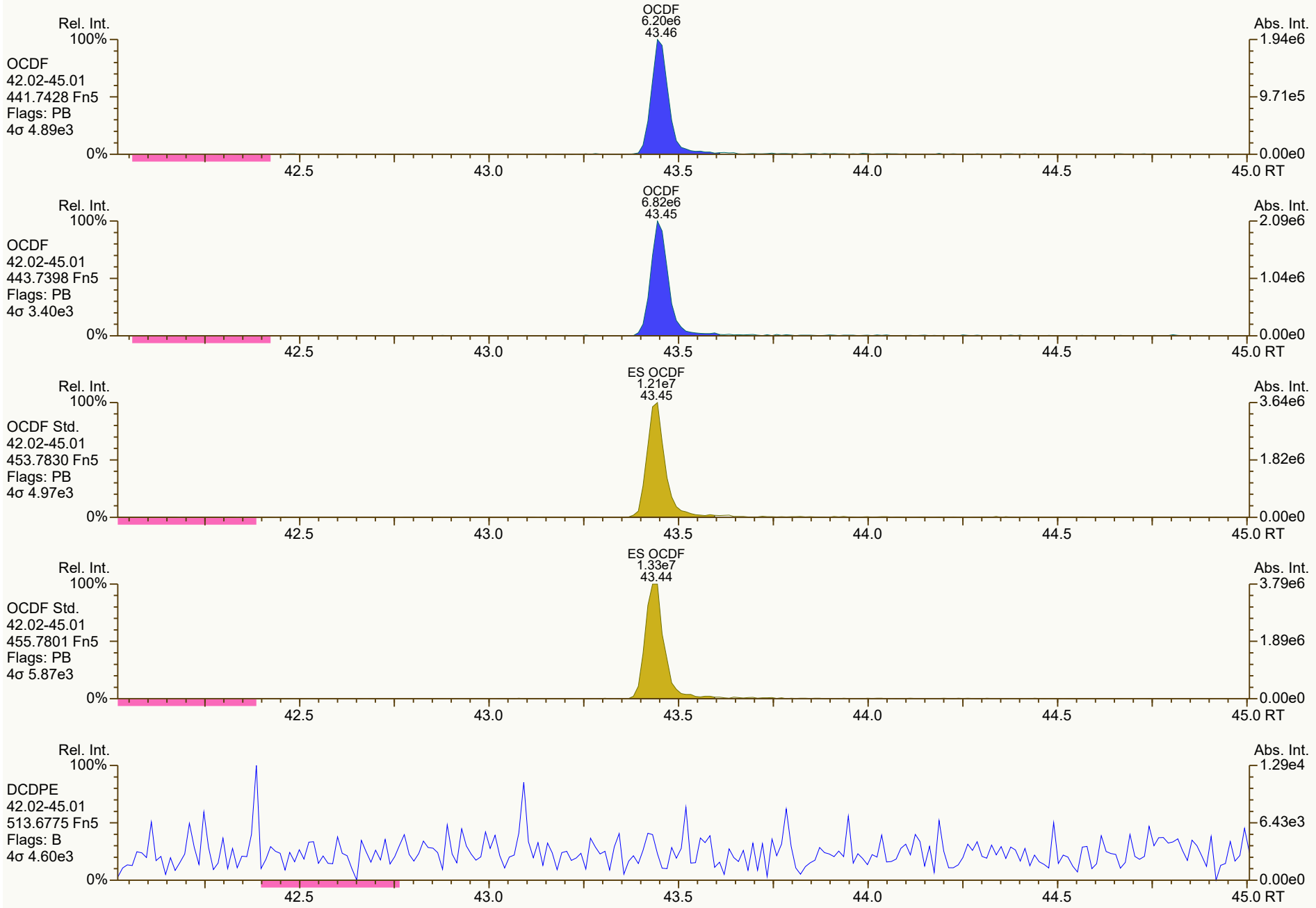

Rel. Int.
100%
0%
Abs. Int.
1.09e4
5.43e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 4.28e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.92e4
9.62e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 5.30e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.21e6
2.10e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 4.07e3
0%
12378F
8.27e6
32.45
23478F
8.40e6
33.55
Abs. Int.
2.35e6
1.18e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 3.26e3
0%
12378F
5.05e6
32.45
23478F
5.46e6
33.54
Abs. Int.
1.58e6
7.88e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 6.79e3
0%
CS 12346F
1.63e7
31.91
ES 12378F
1.59e7
32.43
ES 23478F
1.56e7
33.53
Abs. Int.
4.72e6
2.36e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 5.84e3
0%
CS 12346F
1.01e7
31.91
ES 12378F
1.04e7
32.43
ES 23478F
1.02e7
33.53
Abs. Int.
2.93e6
1.47e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.16e3
0%
Abs. Int.
1.01e4
5.06e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PB
4σ 3.62e3
0%
123478F
7.07e6
36.74
123678F
7.75e6
36.89
234678F
7.20e6
37.56
123789F
6.11e6
38.48
Abs. Int.
2.23e6
1.12e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PB
4σ 3.60e3
0%
123478F
5.73e6
36.74
123678F
6.13e6
36.88
234678F
5.72e6
37.56
123789F
4.87e6
38.48
Abs. Int.
1.81e6
9.03e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PBM
4σ 8.46e3
0%
ES 123478F
6.93e6
36.73
ES 123678F
8.06e6
36.87
CS 123469F
7.63e6*
37.18
ES 234678F
7.77e6
37.54
ES 123789F
6.98e6
38.47
Abs. Int.
2.34e6
1.17e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PBM
4σ 6.37e3
0%
ES 123478F
1.37e7
36.73
ES 123678F
1.52e7
36.87
CS 123469F
1.45e7*
37.18
ES 234678F
1.43e7
37.54
ES 123789F
1.29e7
38.47
Abs. Int.
4.64e6
2.32e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.87e3
0%
Abs. Int.
9.83e3
4.91e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\CS3_211207_DF_RF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8561, 0892, 4059 scc: 536-204
PKD: 08-Dec-2021 08:14 Printed: 08-Dec-2021 14:54 Page 11 of 12


OCDF
6.20e6
43.46
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 4.89e3
0%
Abs. Int.
1.94e6
9.71e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.82e6
43.45
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 3.40e3
0%
Abs. Int.
2.09e6
1.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.21e7
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 4.97e3
0%
Abs. Int.
3.64e6
1.82e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.33e7
43.44
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 5.87e3
0%
Abs. Int.
3.79e6
1.89e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.60e3
0%
Abs. Int.
1.29e4
6.43e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 08 Dec 2021 08:57 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211207_DF_RG	UTP: 08-Dec-2021 14:49:08 PSW	Checkcode: 423-971-VQY
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 14:49 pw	Datafile: 211207R28

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.60	3.06E+06	0.80	Y	1.34	1.08	-20%
12378-PeCDD	33.87	1.30E+07	1.55	Y	1.06	0.99	-7%
123478-HxCDD	37.73	1.13E+07	1.31	Y	1.06	1.02	-3%
123678-HxCDD	37.85	1.26E+07	1.28	Y	1.08	1.12	4%
123789-HxCDD	38.13	1.27E+07	1.26	Y	1.02	1.00	-1%
1234678-HpCDD	40.70	1.02E+07	1.05	Y	0.97	1.00	3%
OCDD	43.27	1.53E+07	0.87	Y	1.07	1.13	5%
2378-TCDF	27.76	4.13E+06	0.78	Y	0.96	0.98	2%
12378-PeCDF	32.44	1.93E+07	1.59	Y	0.95	1.04	10%
23478-PeCDF	33.54	1.86E+07	1.57	Y	0.94	0.98	4%
123478-HxCDF	36.74	1.68E+07	1.27	Y	1.23	1.22	-1%
123678-HxCDF	36.88	1.80E+07	1.26	Y	1.13	1.10	-3%
234678-HxCDF	37.56	1.66E+07	1.29	Y	1.15	1.13	-2%
123789-HxCDF	38.48	1.43E+07	1.29	Y	1.14	1.12	-1%
1234678-HpCDF	39.80	1.56E+07	1.05	Y	1.36	1.41	3%
1234789-HpCDF	41.15	1.21E+07	1.04	Y	1.30	1.41	8%
OCDF	43.46	1.71E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.58	2.83E+07	0.77	Y	1.03	0.99	-4%
ES 12378-PeCDD	33.849	2.64E+07	1.53	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.714	2.22E+07	1.30	Y	0.99	1.01	1%
ES 123678-HxCDD	37.828	2.24E+07	1.23	Y	0.97	1.01	4%
ES 123789-HxCDD	38.117	2.54E+07	1.27	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.689	2.03E+07	1.06	Y	0.99	0.92	-7%
ES OCDD	43.261	2.71E+07	0.92	Y	0.78	0.61	-21%
ES 2378-TCDF	27.735	4.23E+07	0.78	Y	1.08	1.01	-7%
ES 12378-PeCDF	32.422	3.69E+07	1.54	Y	0.93	0.88	-6%
ES 23478-PeCDF	33.52	3.80E+07	1.58	Y	0.92	0.91	-2%
ES 123478-HxCDF	36.721	2.77E+07	0.51	Y	1.14	1.25	10%
ES 123678-HxCDF	36.861	3.28E+07	0.50	Y	1.30	1.48	14%
ES 234678-HxCDF	37.533	2.92E+07	0.52	Y	1.20	1.32	10%
ES 123789-HxCDF	38.464	2.56E+07	0.50	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.789	2.22E+07	0.46	Y	0.95	1.00	6%
ES 1234789-HpCDF	41.14	1.72E+07	0.43	Y	0.85	0.78	-8%
ES OCDF	43.448	3.23E+07	0.88	Y	0.93	0.73	-21%

Dioxin/Furan QC Summary	Acq'd: 08 Dec 2021 08:57 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211207_DF_RG	UTP: 08-Dec-2021 14:49:08 PSW	Checkcode: 423-971-VQY
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 14:49 pw	Datafile: 211207R28

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.93	2.86E+07	0.79	Y	-	-	-
JS 1234-TCDF	26.40	4.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	38.02	1.11E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	28.60	3.45E+06	n/a	-	1.31	1.21	-8%
CS 12347-PeCDD	33.35	2.41E+07	1.69	Y	0.89	0.85	-5%
CS 12346-PeCDF	31.90	3.67E+07	1.58	Y	0.87	0.87	1%
CS 123469-HxCDF	37.18	2.90E+07	0.51	Y	1.09	1.31	20%
CS 1234689-HpCDF	40.18	2.23E+07	0.44	Y	0.86	1.01	17%
~~SS 37Cl-2378-TCDD~~	~~28.60~~	~~3.45E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.22~~	~~-3%~~
~~SS 12347-PeCDD~~	~~33.35~~	~~2.41E+07~~	~~1.69~~	~~Y~~	~~0.86~~	~~0.92~~	~~6%~~
~~SS 12346-PeCDF~~	~~31.90~~	~~3.67E+07~~	~~1.58~~	~~Y~~	~~0.93~~	~~0.99~~	~~7%~~
~~SS 123469-HxCDF~~	~~37.18~~	~~2.90E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~0.89~~	~~5%~~
~~SS 1234689-HpCDF~~	~~40.18~~	~~2.23E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~1.01~~	~~10%~~
~~OCDD-a~~	~~43.27~~	~~7.92E+05~~	~~1.77~~	~~N~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.46~~	~~8.93E+05~~	~~3.26~~	~~N~~	~~0.06~~	~~0.06~~	~~-7%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211207R28 Analysis Date: 08-DEC-2021 08:57:07

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.80	0.65 - 0.89	Y	8.04	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.5	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.31	1.05 - 1.43	Y	48.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	51.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	49.3	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	51.5	43 - 58	Y
OCDD	M+2/M+4	0.87	0.76 - 1.02	Y	105	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.78	0.65 - 0.89	Y	10.2	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32 - 1.78	Y	55.1	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	52.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	49.3	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	48.6	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.29	1.05 - 1.43	Y	49.2	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.29	1.05 - 1.43	Y	49.3	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	51.7	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	54.2	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 08 Dec 2021 14:49 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

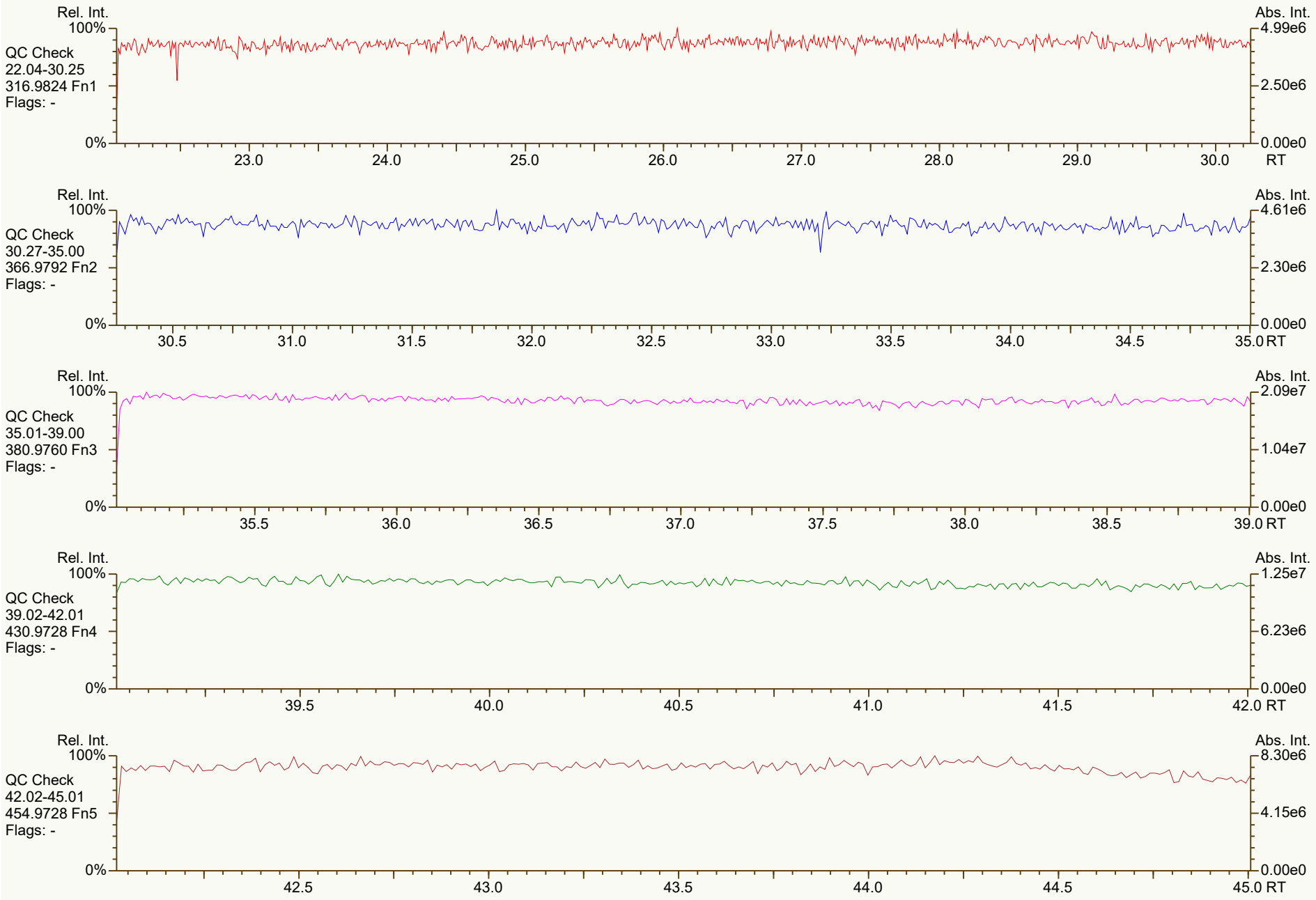
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211207R28 Analysis Date: 08-DEC-2021 08:57:07

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.77	0.65	-	0.89	Y	96	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32	-	1.78	Y	89.4	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05	-	1.43	Y	101	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05	-	1.43	Y	104	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	92.8	72	-	138	Y
13C-OCDD	M+2/M+4	0.92	0.76	-	1.02	Y	158	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65	-	0.89	Y	93.1	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32	-	1.78	Y	94.3	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	98.1	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	110	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	114	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	110	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	102	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.43	0.37	-	0.51	Y	92	77	-	129	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	158	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.23	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.69	1.32	-	1.78	Y	94.8	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	101	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	120	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	117	70	-	130	Y

Processed: 08 Dec 2021 14:49 Analyst: pw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316.9824 Fn1
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2.50e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.61e6
2.30e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.09e7
1.04e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.25e7
6.23e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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4.15e6
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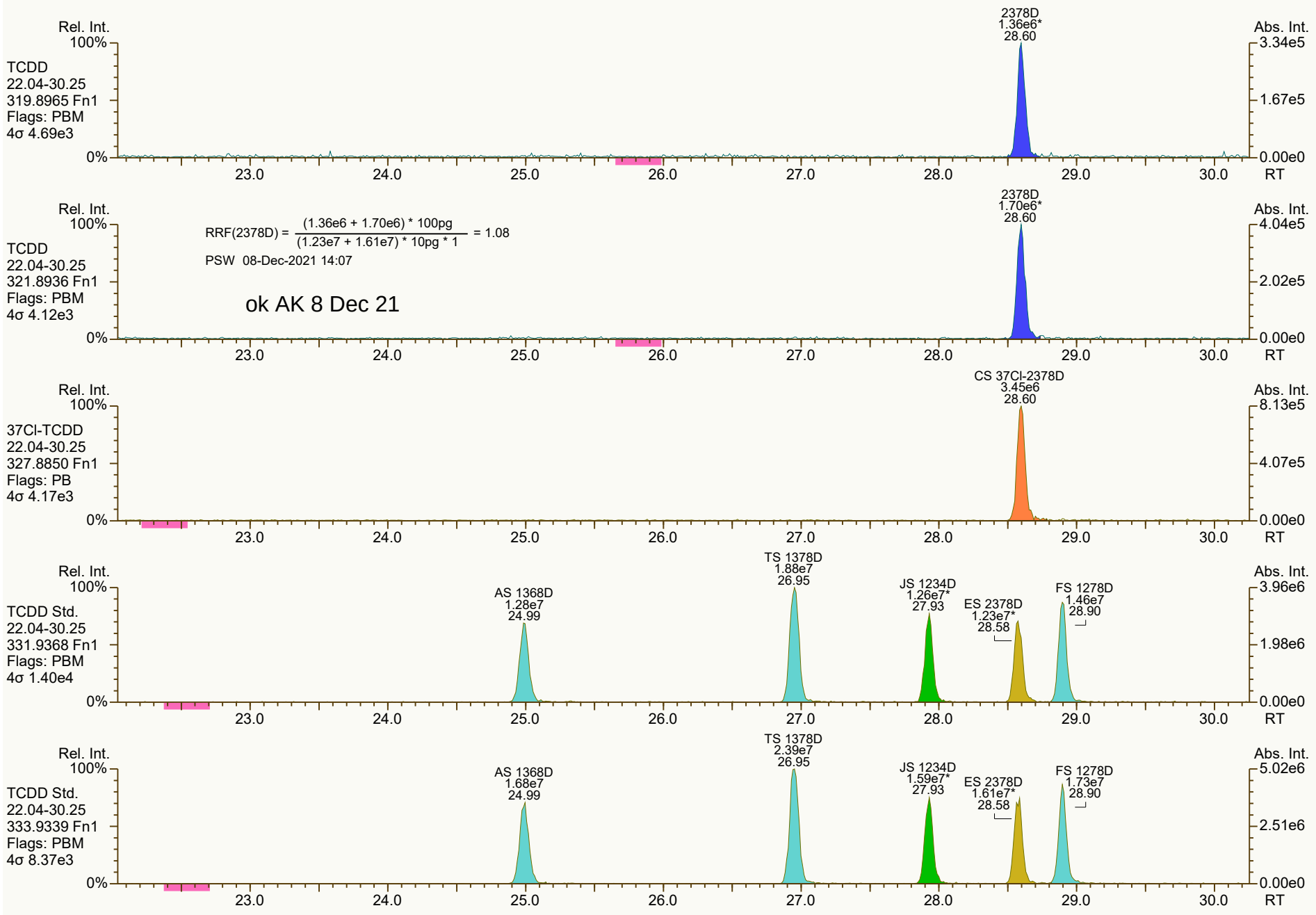
43.5
44.0
44.5
45.0
RT


Rel. Int.
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22.04-30.25
319.8965 Fn1
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4σ 4.69e3
0%
2378D
1.36e6*
28.60
Abs. Int.
3.34e5
1.67e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 4.12e3
0%
RRF(2378D) = (1.36e6 + 1.70e6) * 100pg / (1.23e7 + 1.61e7) * 10pg * 1 = 1.08
PSW 08-Dec-2021 14:07
ok AK 8 Dec 21
2378D
1.70e6*
28.60
Abs. Int.
4.04e5
2.02e5
0.00e0
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.17e3
0%
CS 37Cl-2378D
3.45e6
28.60
Abs. Int.
8.13e5
4.07e5
0.00e0
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PBM
4σ 1.40e4
0%
AS 1368D
1.28e7
24.99
TS 1378D
1.88e7
26.95
JS 1234D
1.26e7*
27.93
ES 2378D
1.23e7*
28.58
FS 1278D
1.46e7
28.90
Abs. Int.
3.96e6
1.98e6
0.00e0
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PBM
4σ 8.37e3
0%
AS 1368D
1.68e7
24.99
TS 1378D
2.39e7
26.95
JS 1234D
1.59e7*
27.93
ES 2378D
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28.58
FS 1278D
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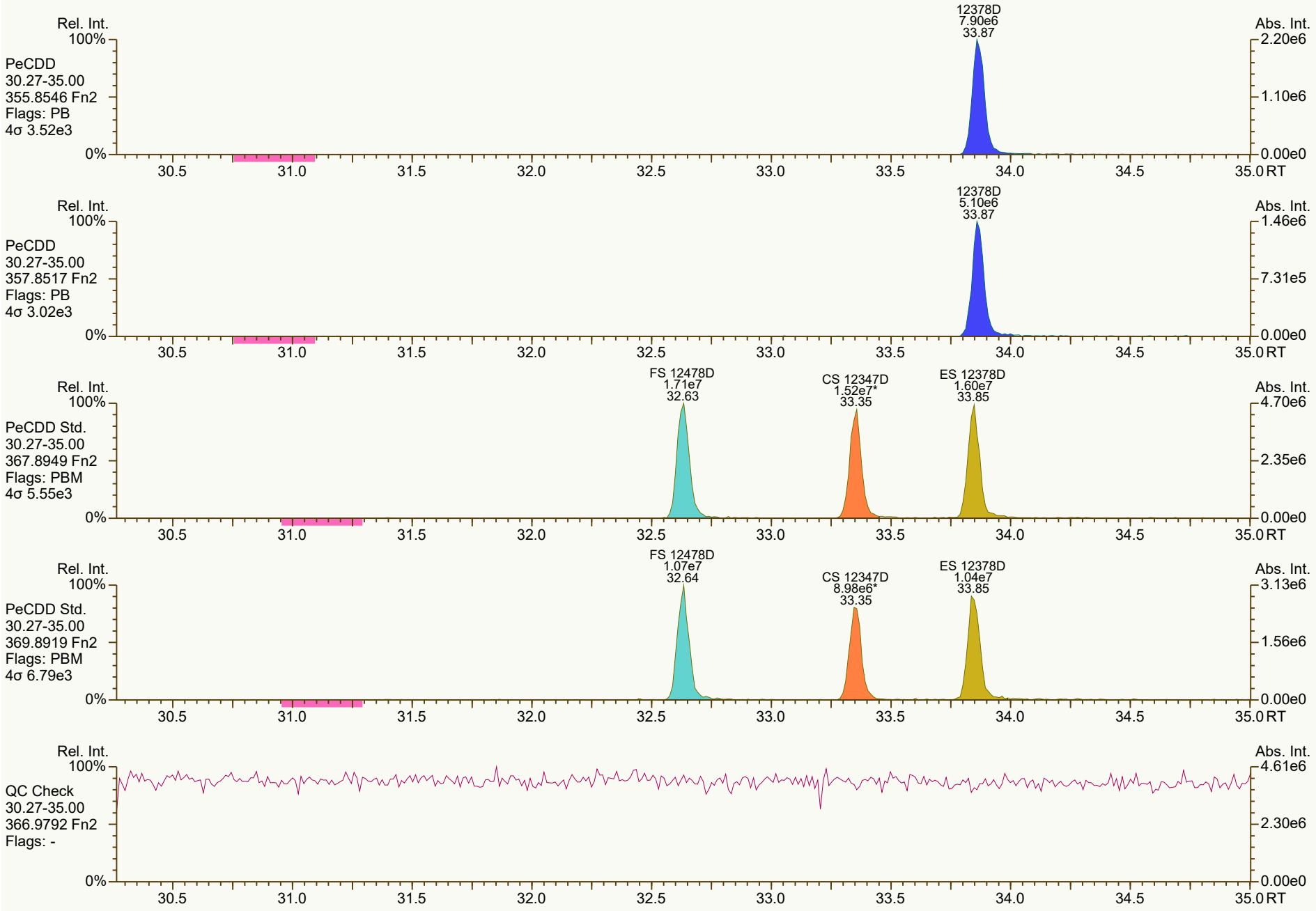
2.51e6
0.00e0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355.8546 Fn2
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4σ 3.52e3
0%
12378D
7.90e6
33.87
Abs. Int.
2.20e6
1.10e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 3.02e3
0%
12378D
5.10e6
33.87
Abs. Int.
1.46e6
7.31e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PBM
4σ 5.55e3
0%
FS 12478D
1.71e7
32.63
CS 12347D
1.52e7*
33.35
ES 12378D
1.60e7
33.85
Abs. Int.
4.70e6
2.35e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PBM
4σ 6.79e3
0%
FS 12478D
1.07e7
32.64
CS 12347D
8.98e6*
33.35
ES 12378D
1.04e7
33.85
Abs. Int.
3.13e6
1.56e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.61e6
2.30e6
0.00e0
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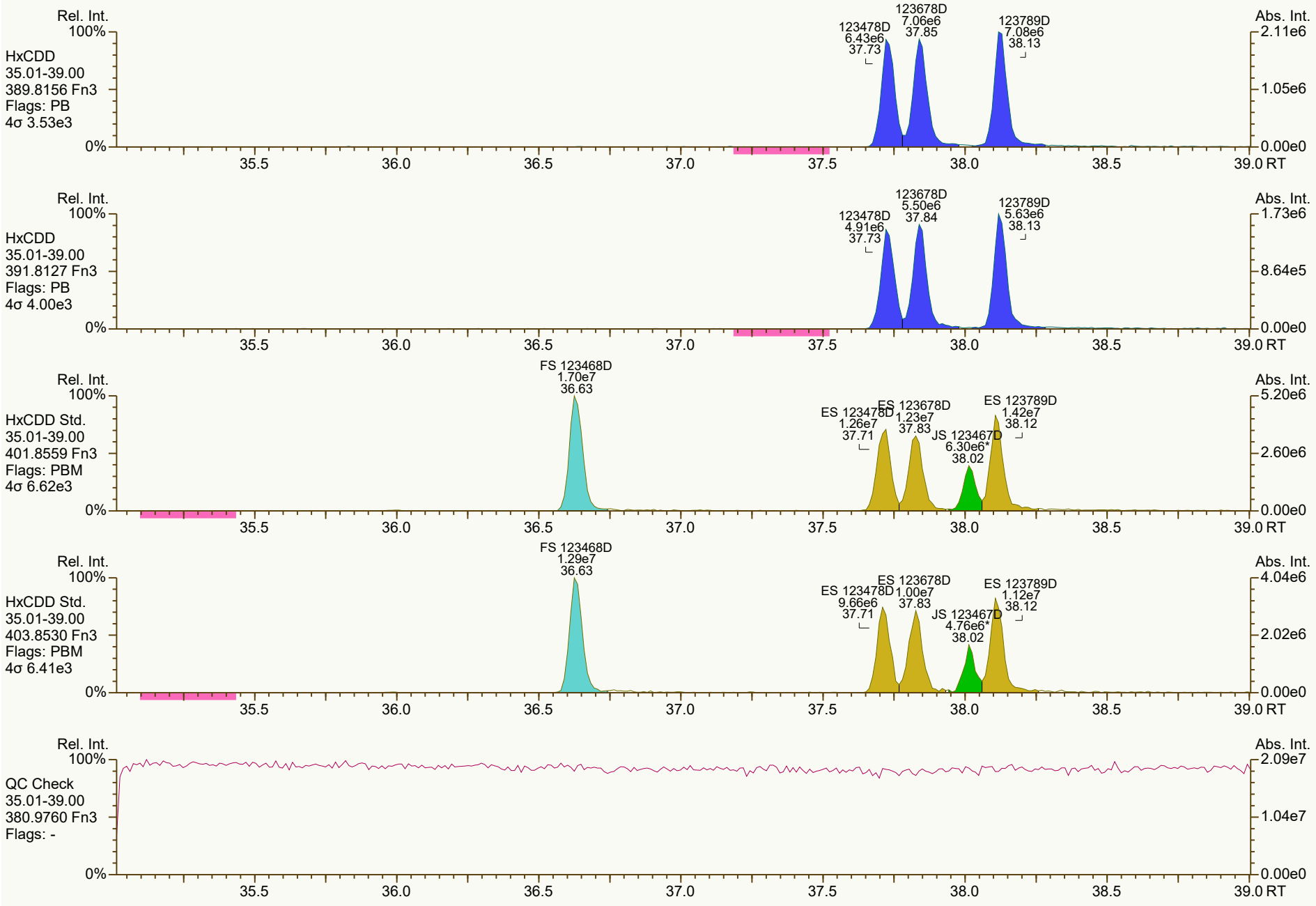
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT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HxCDD
35.01-39.00
389.8156 Fn3
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4σ 3.53e3
0%
123478D
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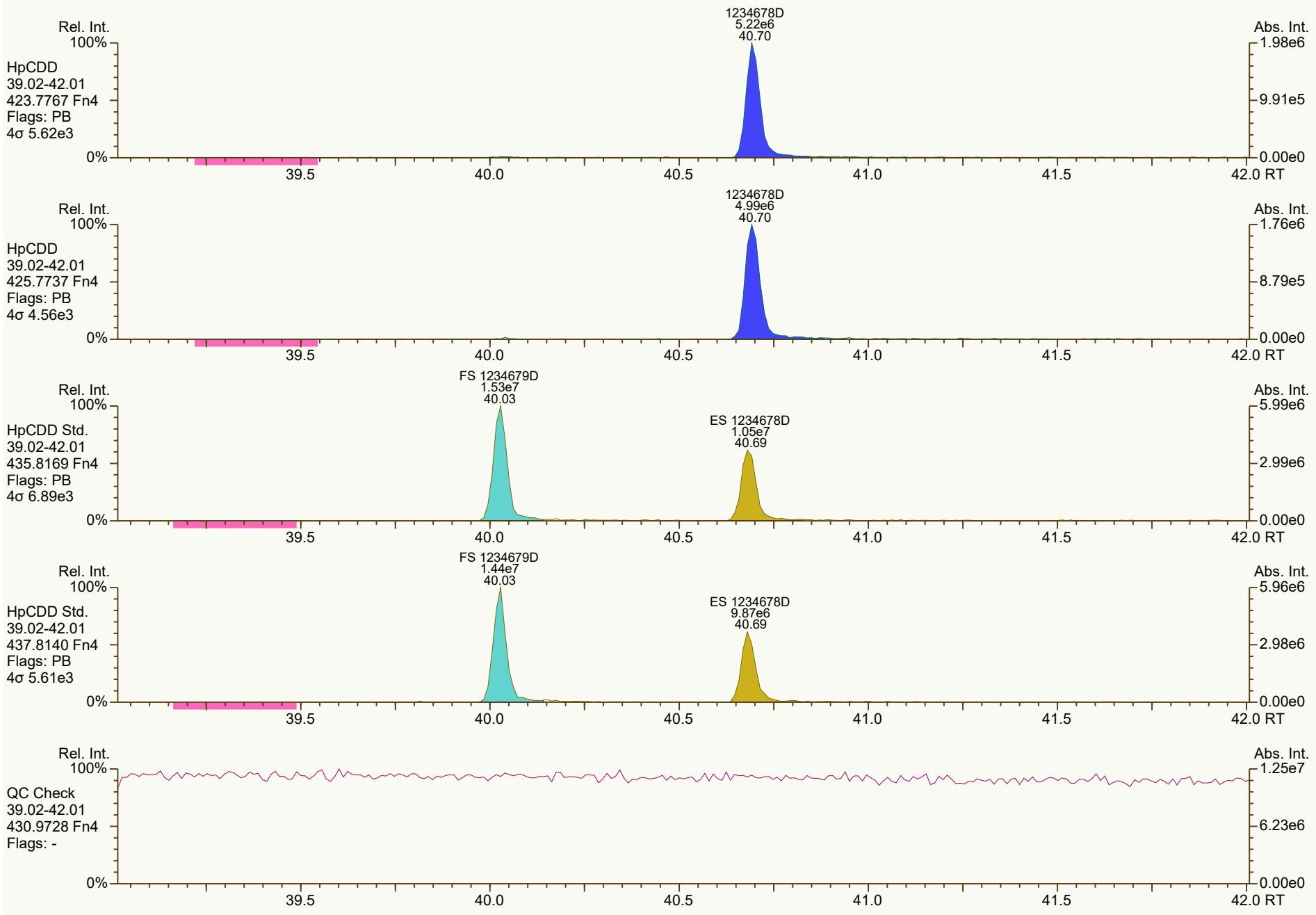
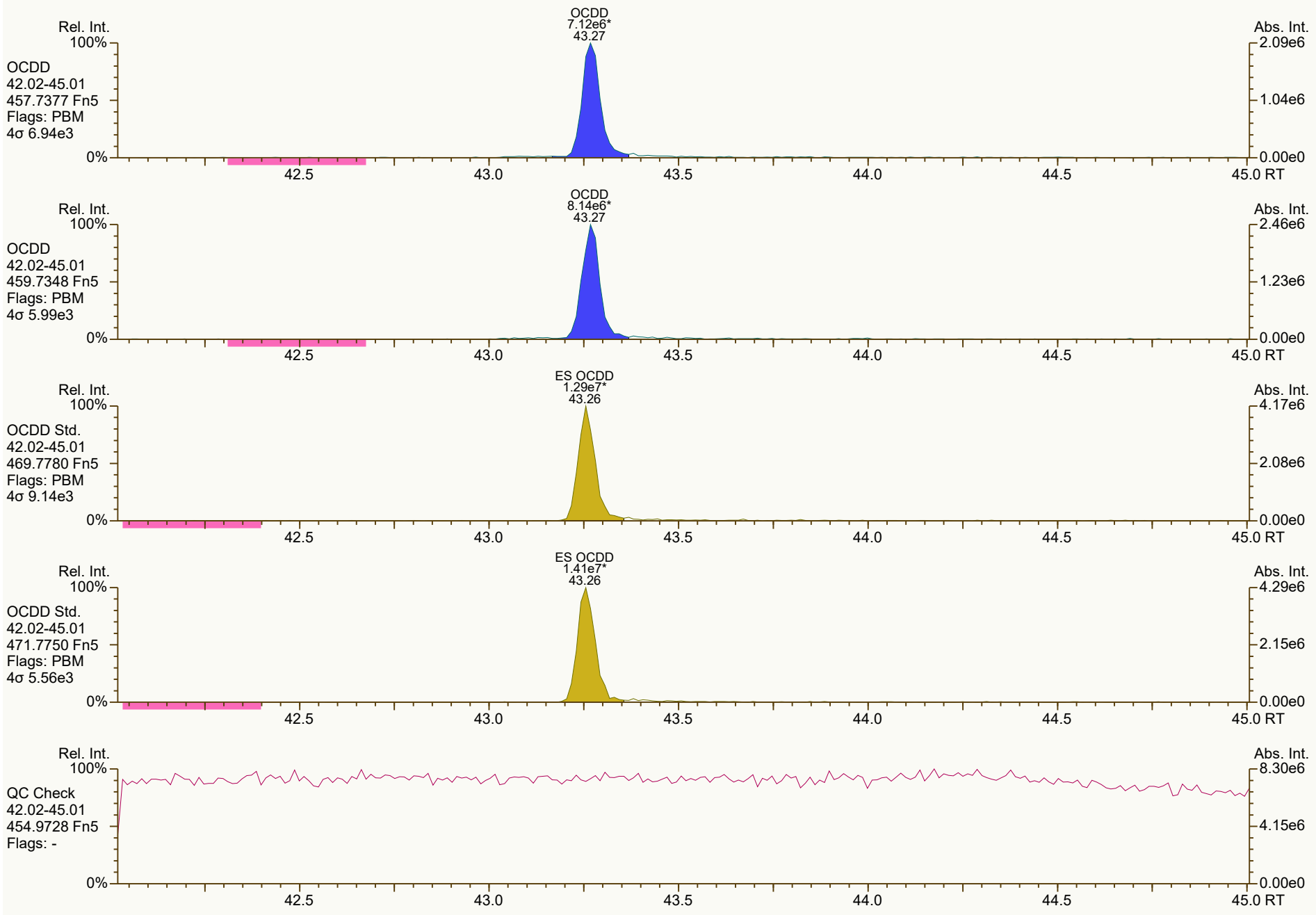
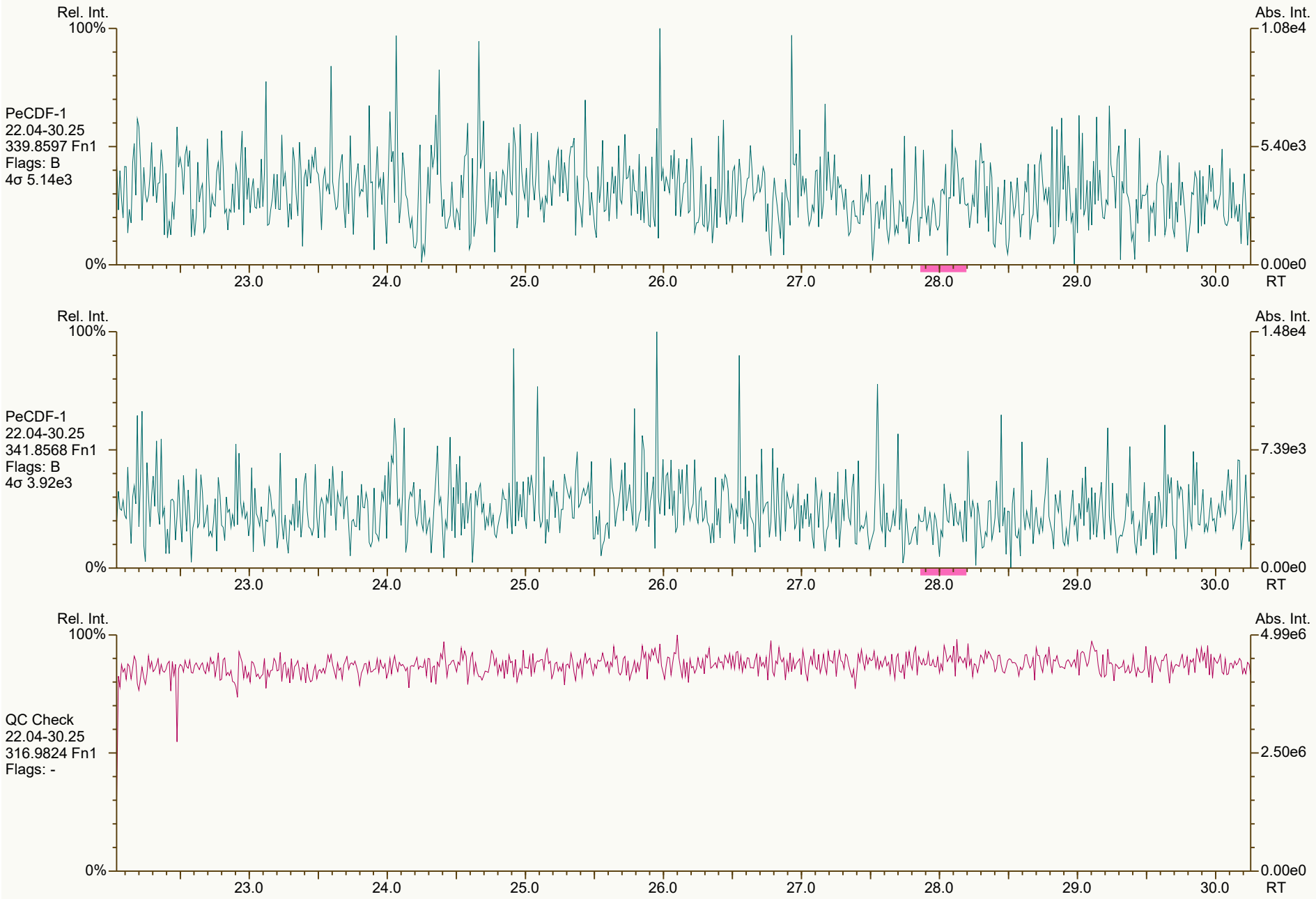
37.73
123678D
7.06e6
37.85
123789D
7.08e6
38.13
Abs. Int.
2.11e6
1.05e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 4.00e3
0%
123478D
4.91e6
37.73
123678D
5.50e6
37.84
123789D
5.63e6
38.13
Abs. Int.
1.73e6
8.64e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 6.62e3
0%
FS 123468D
1.70e7
36.63
ES 123478D
1.26e7
37.71
ES 123678D
1.23e7
37.83
JS 123467D
6.30e6*
38.02
ES 123789D
1.42e7
38.12
Abs. Int.
5.20e6
2.60e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 6.41e3
0%
FS 123468D
1.29e7
36.63
ES 123478D
9.66e6
37.71
ES 123678D
1.00e7
37.83
JS 123467D
4.76e6*
38.02
ES 123789D
1.12e7
38.12
Abs. Int.
4.04e6
2.02e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.09e7
1.04e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

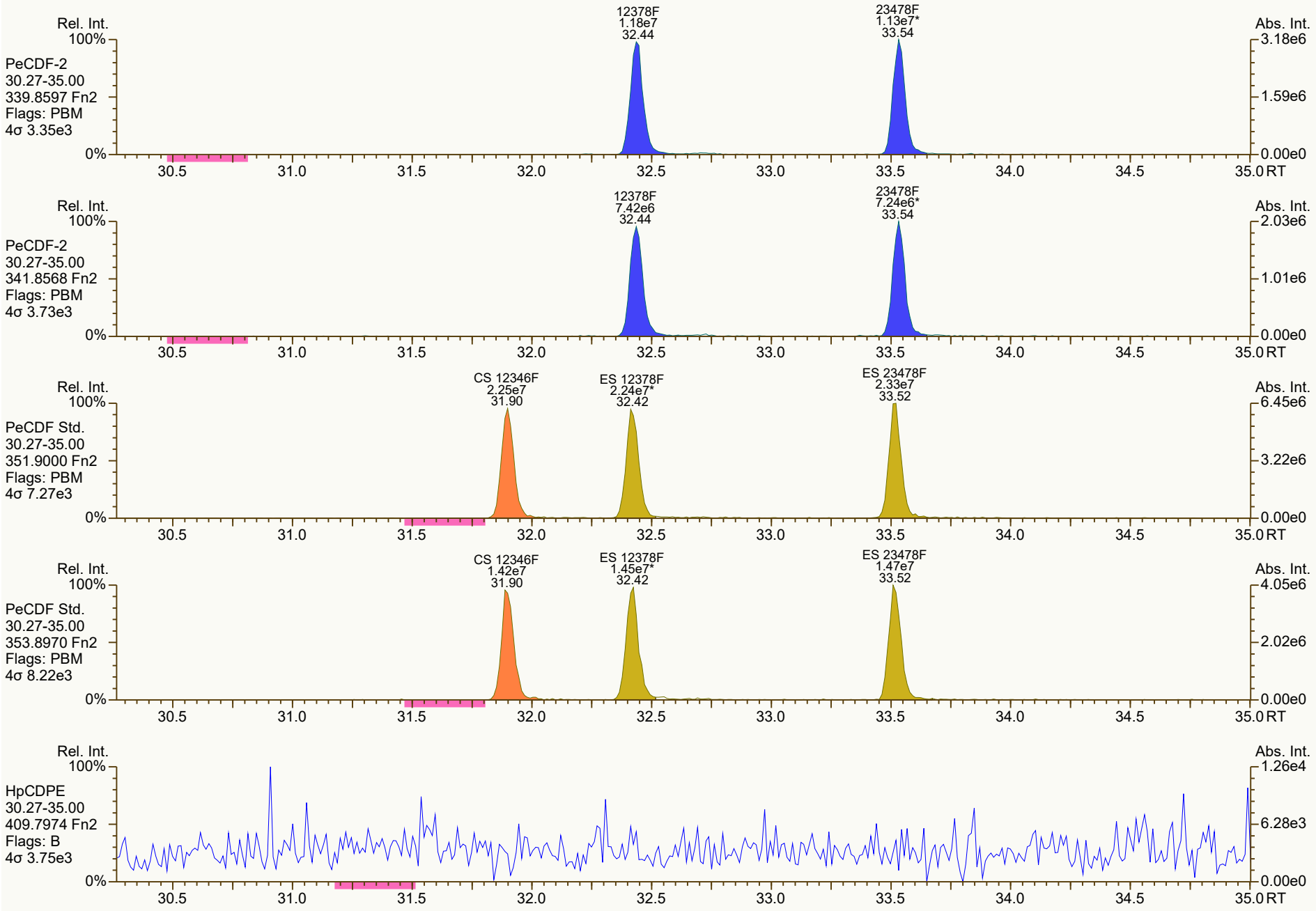

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 5.62e3
0%
1234678D
5.22e6
40.70
Abs. Int.
1.98e6
9.91e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 4.56e3
0%
1234678D
4.99e6
40.70
Abs. Int.
1.76e6
8.79e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.89e3
0%
FS 1234679D
1.53e7
40.03
ES 1234678D
1.05e7
40.69
Abs. Int.
5.99e6
2.99e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.61e3
0%
FS 1234679D
1.44e7
40.03
ES 1234678D
9.87e6
40.69
Abs. Int.
5.96e6
2.98e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.25e7
6.23e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT

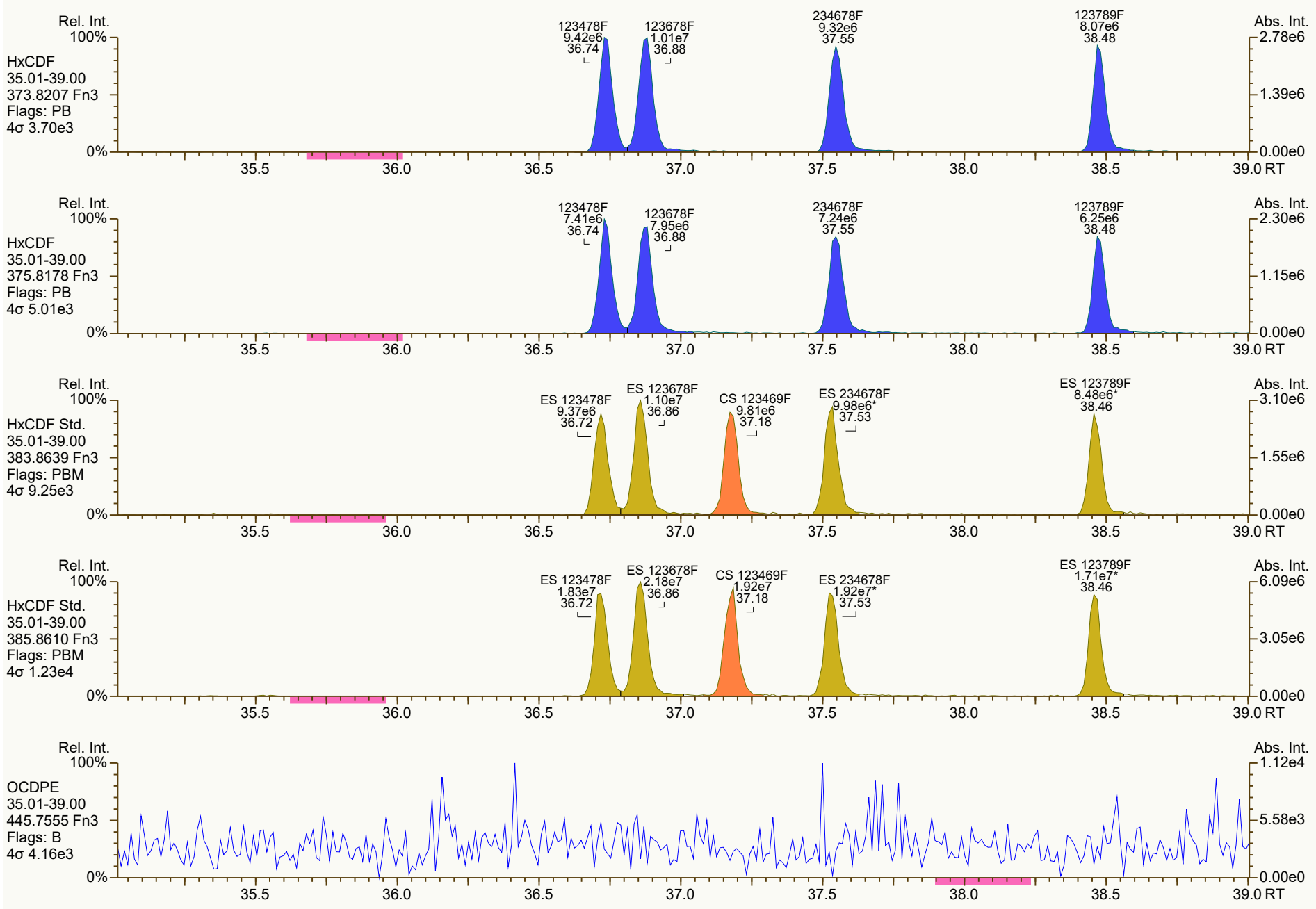

OCDD
7.12e6*
43.27
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 6.94e3
0%
Abs. Int.
2.09e6
1.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
8.14e6*
43.27
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 5.99e3
0%
Abs. Int.
2.46e6
1.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.29e7*
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 9.14e3
0%
Abs. Int.
4.17e6
2.08e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.41e7*
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 5.56e3
0%
Abs. Int.
4.29e6
2.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.30e6
4.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

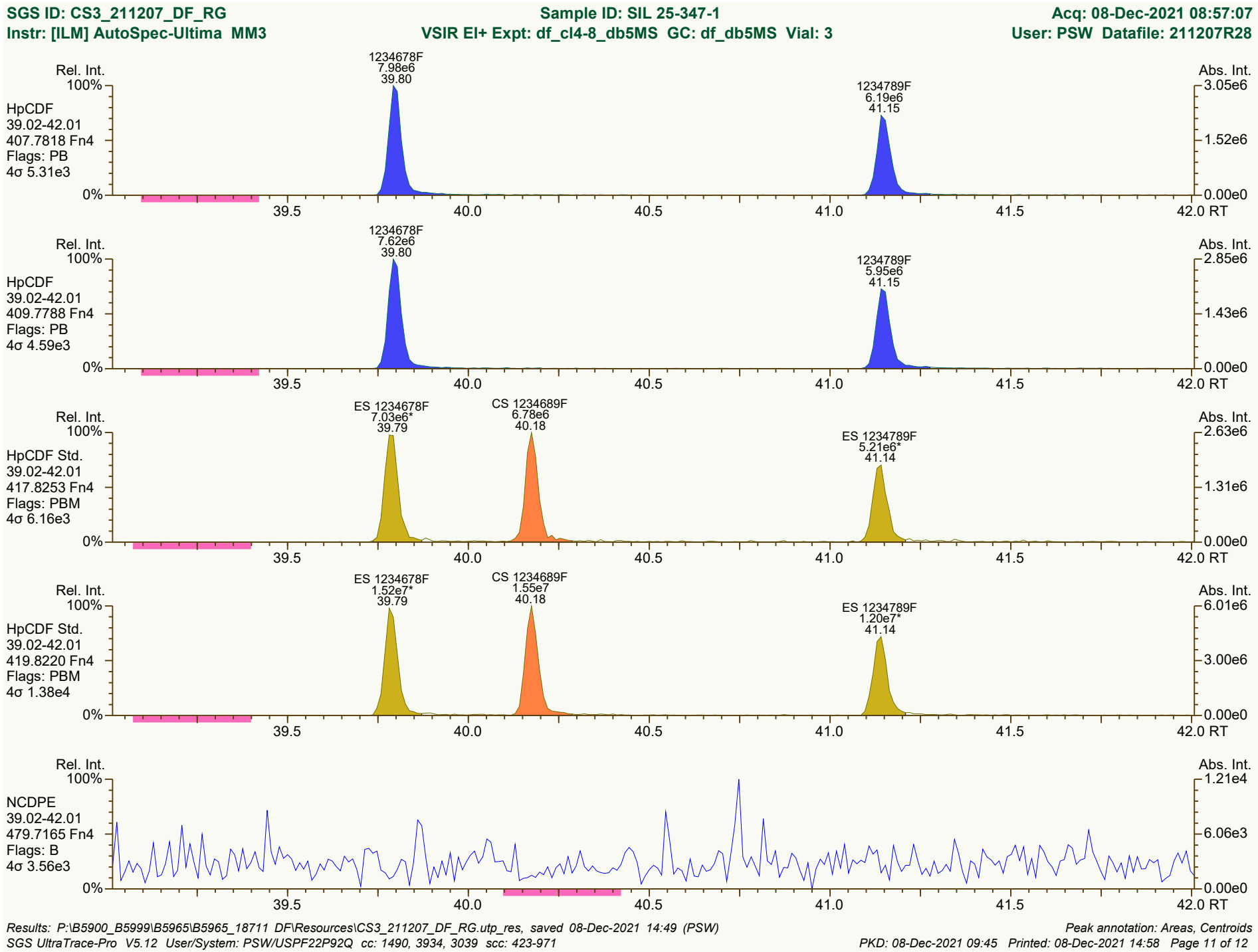


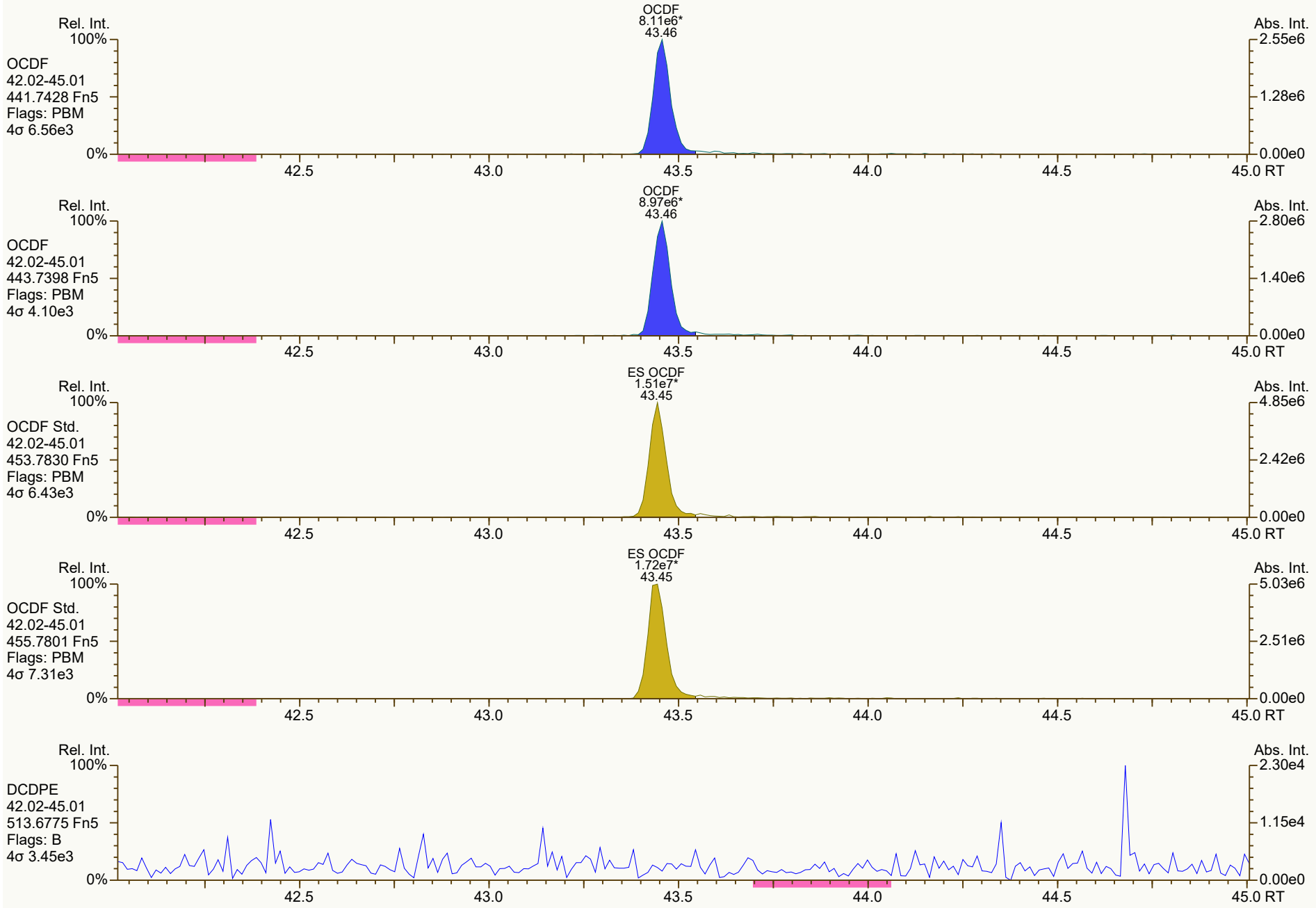
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\CS3_211207_DF_RG.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6798, 1080, 9760 scc: 423-971
PKD: 08-Dec-2021 09:45 Printed: 08-Dec-2021 14:58 Page 7 of 12

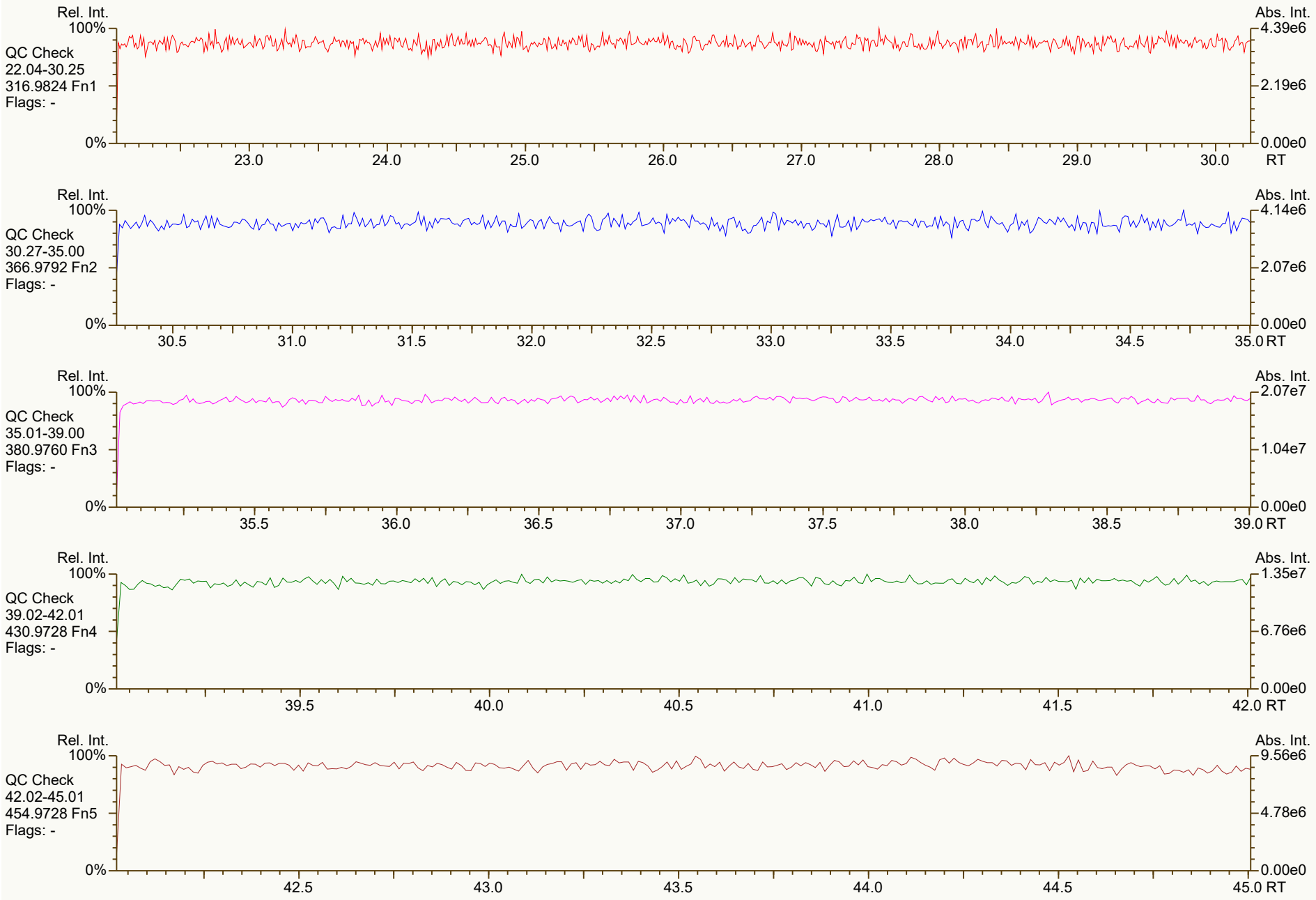

Rel. Int.
100%
0%
Abs. Int.
1.08e4
5.40e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 5.14e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.48e4
7.39e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 3.92e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.99e6
2.50e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 3.35e3
0%
12378F
1.18e7
32.44
23478F
1.13e7*
33.54
Abs. Int.
3.18e6
1.59e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.73e3
0%
12378F
7.42e6
32.44
23478F
7.24e6*
33.54
Abs. Int.
2.03e6
1.01e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 7.27e3
0%
CS 12346F
2.25e7
31.90
ES 12378F
2.24e7*
32.42
ES 23478F
2.33e7
33.52
Abs. Int.
6.45e6
3.22e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 8.22e3
0%
CS 12346F
1.42e7
31.90
ES 12378F
1.45e7*
32.42
ES 23478F
1.47e7
33.52
Abs. Int.
4.05e6
2.02e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.75e3
0%
Abs. Int.
1.26e4
6.28e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PB
4σ 3.70e3
123478F
9.42e6
36.74
123678F
1.01e7
36.88
234678F
9.32e6
37.55
123789F
8.07e6
38.48
Abs. Int.
2.78e6
1.39e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PB
4σ 5.01e3
123478F
7.41e6
36.74
123678F
7.95e6
36.88
234678F
7.24e6
37.55
123789F
6.25e6
38.48
Abs. Int.
2.30e6
1.15e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PBM
4σ 9.25e3
ES 123478F
9.37e6
36.72
ES 123678F
1.10e7
36.86
CS 123469F
9.81e6
37.18
ES 234678F
9.98e6*
37.53
ES 123789F
8.48e6*
38.46
Abs. Int.
3.10e6
1.55e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PBM
4σ 1.23e4
ES 123478F
1.83e7
36.72
ES 123678F
2.18e7
36.86
CS 123469F
1.92e7
37.18
ES 234678F
1.92e7*
37.53
ES 123789F
1.71e7*
38.46
Abs. Int.
6.09e6
3.05e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 4.16e3
Abs. Int.
1.12e4
5.58e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

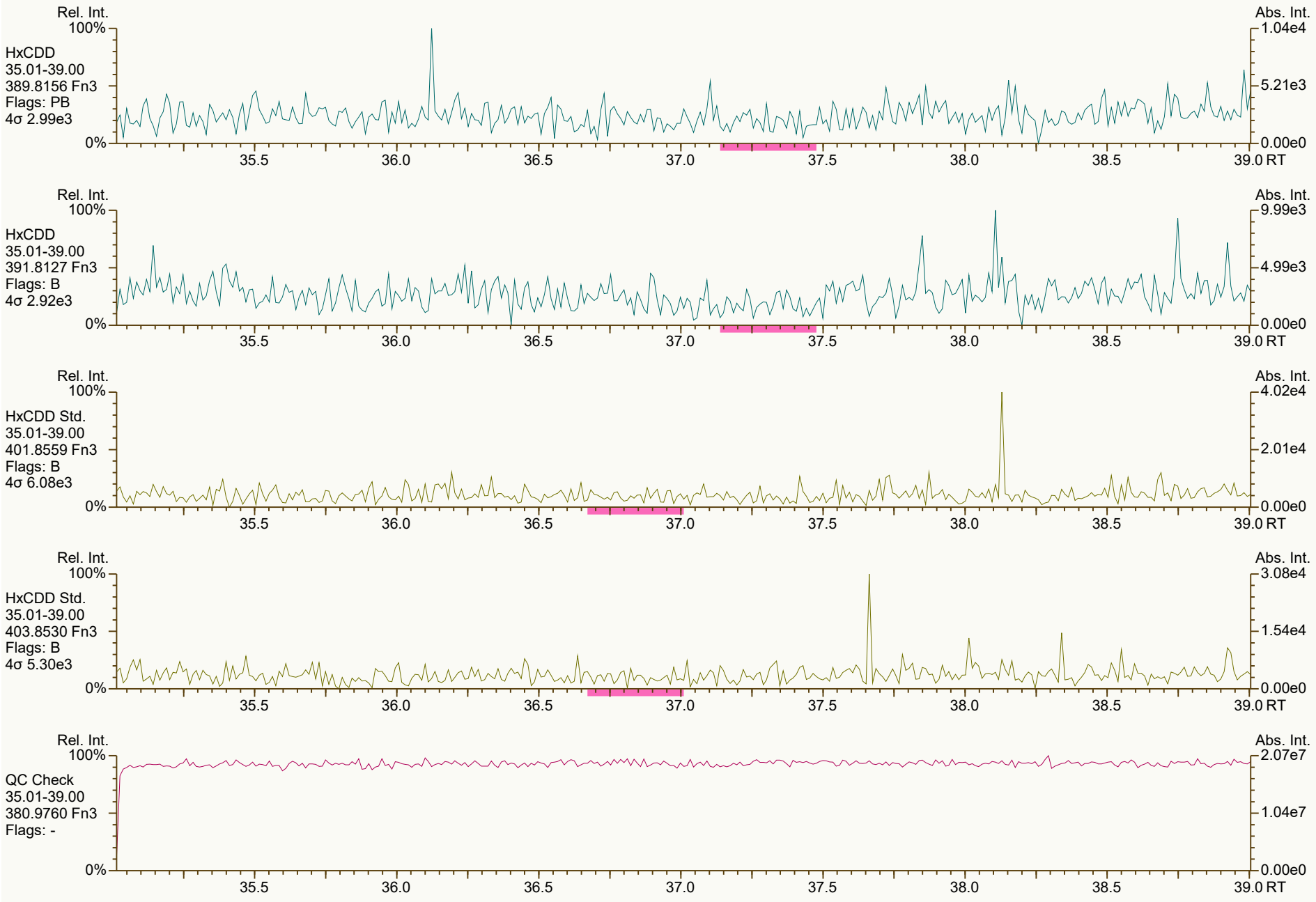

SGS ID: CS3_211207_DF_RG
Sample ID: SIL 25-347-1
Acq: 08-Dec-2021 08:57:07
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211207R28
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 5.31e3
1234678F
7.98e6
39.80
1234789F
6.19e6
41.15
3.05e6
1.52e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 4.59e3
1234678F
7.62e6
39.80
1234789F
5.95e6
41.15
2.85e6
1.43e6
0.00e0
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 6.16e3
ES 1234678F
7.03e6*
39.79
CS 1234689F
6.78e6
40.18
ES 1234789F
5.21e6*
41.14
2.63e6
1.31e6
0.00e0
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 1.38e4
ES 1234678F
1.52e7*
39.79
CS 1234689F
1.55e7
40.18
ES 1234789F
1.20e7*
41.14
6.01e6
3.00e6
0.00e0
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.56e3
1.21e4
6.06e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\CS3_211207_DF_RG.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1490, 3934, 3039 scc: 423-971
PKD: 08-Dec-2021 09:45 Printed: 08-Dec-2021 14:58 Page 11 of 12


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 6.56e3
0%
OCDF
8.11e6*
43.46
Abs. Int.
2.55e6
1.28e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 4.10e3
0%
OCDF
8.97e6*
43.46
Abs. Int.
2.80e6
1.40e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 6.43e3
0%
ES OCDF
1.51e7*
43.45
Abs. Int.
4.85e6
2.42e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 7.31e3
0%
ES OCDF
1.72e7*
43.45
Abs. Int.
5.03e6
2.51e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.45e3
0%
Abs. Int.
2.30e4
1.15e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.39e6
2.19e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.14e6
2.07e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.07e7
1.04e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.35e7
6.76e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.56e6
4.78e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 5.02e3
0%
Abs. Int.
2.09e4
1.04e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 3.72e3
0%
Abs. Int.
4.32e4
2.16e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: B
4σ 3.49e3
0%
Abs. Int.
1.68e4
8.39e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: B
4σ 9.30e3
0%
Abs. Int.
2.28e4
1.14e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: B
4σ 5.07e3
0%
Abs. Int.
3.08e4
1.54e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 3.33e3
0%
Abs. Int.
7.72e3
3.86e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: B
4σ 3.08e3
0%
Abs. Int.
5.59e3
2.80e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: B
4σ 6.95e3
0%
Abs. Int.
2.38e4
1.19e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: B
4σ 7.12e3
0%
Abs. Int.
4.56e4
2.28e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.14e6
2.07e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

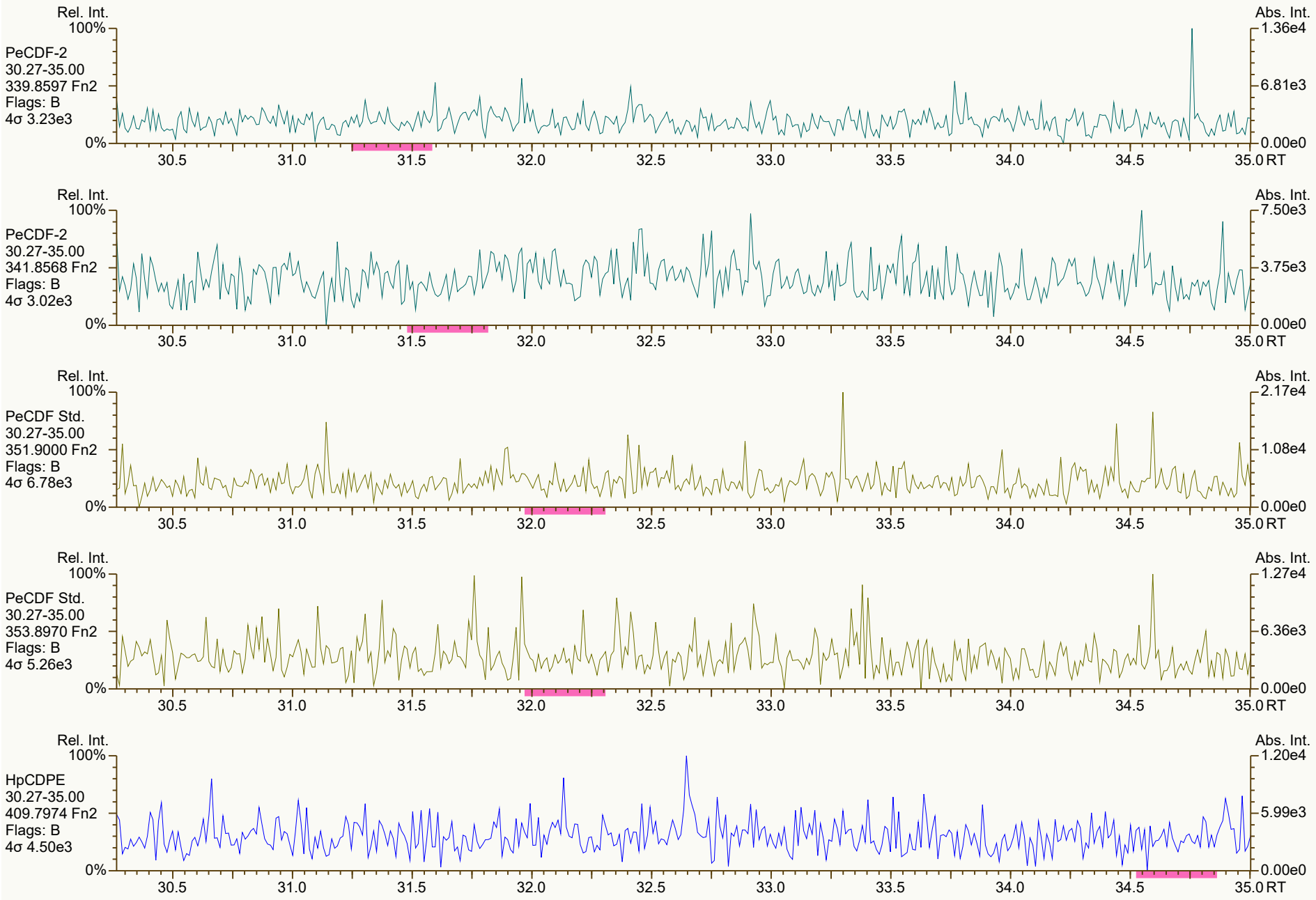

Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 2.99e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: B
4σ 2.92e3
0%
Abs. Int.
9.99e3
4.99e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: B
4σ 6.08e3
0%
Abs. Int.
4.02e4
2.01e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: B
4σ 5.30e3
0%
Abs. Int.
3.08e4
1.54e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.07e7
1.04e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

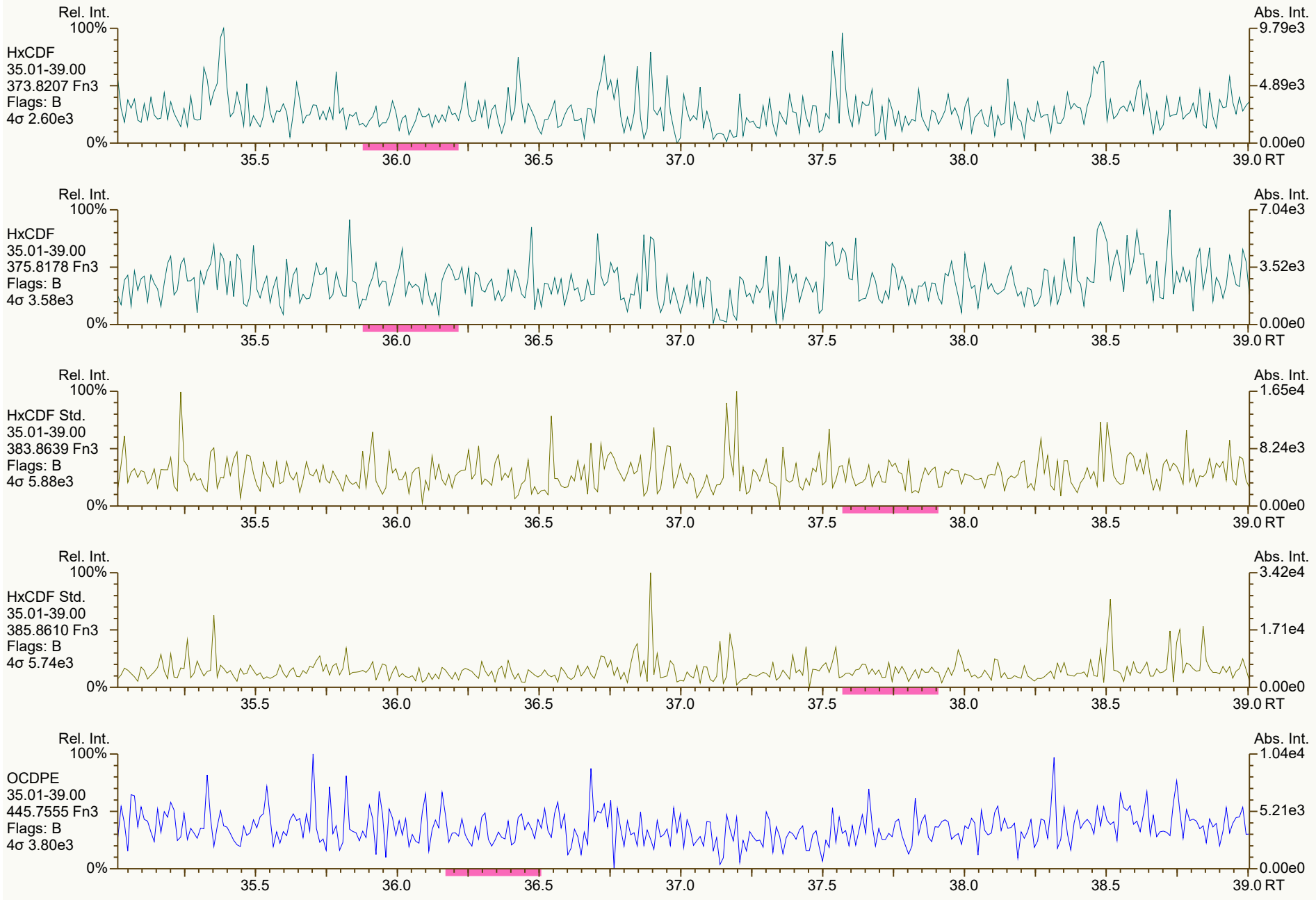

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: B
4σ 2.99e3
0%
Abs. Int.
8.75e3
4.37e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: B
4σ 2.91e3
0%
Abs. Int.
9.83e3
4.91e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: B
4σ 5.81e3
0%
Abs. Int.
1.37e4
6.85e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: B
4σ 4.89e3
0%
Abs. Int.
2.12e4
1.06e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.35e7
6.76e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: B
4σ 3.85e3
0%
Abs. Int.
7.78e3
3.89e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: B
4σ 3.57e3
0%
Abs. Int.
1.05e4
5.24e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: B
4σ 5.27e3
0%
Abs. Int.
3.68e4
1.84e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: B
4σ 5.75e3
0%
Abs. Int.
2.86e4
1.43e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.56e6
4.78e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


2468F; SPIKED
2.05e5*
24.17
Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.47e3
0%
Abs. Int.
4.63e4
2.31e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
2468F
2.88e5*
24.17
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.89e3
5.42e4
2.71e4
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: B
4σ 1.76e4
6.44e4
3.22e4
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: B
4σ 9.52e3
3.55e4
1.77e4
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.43e3
9.81e3
4.90e3

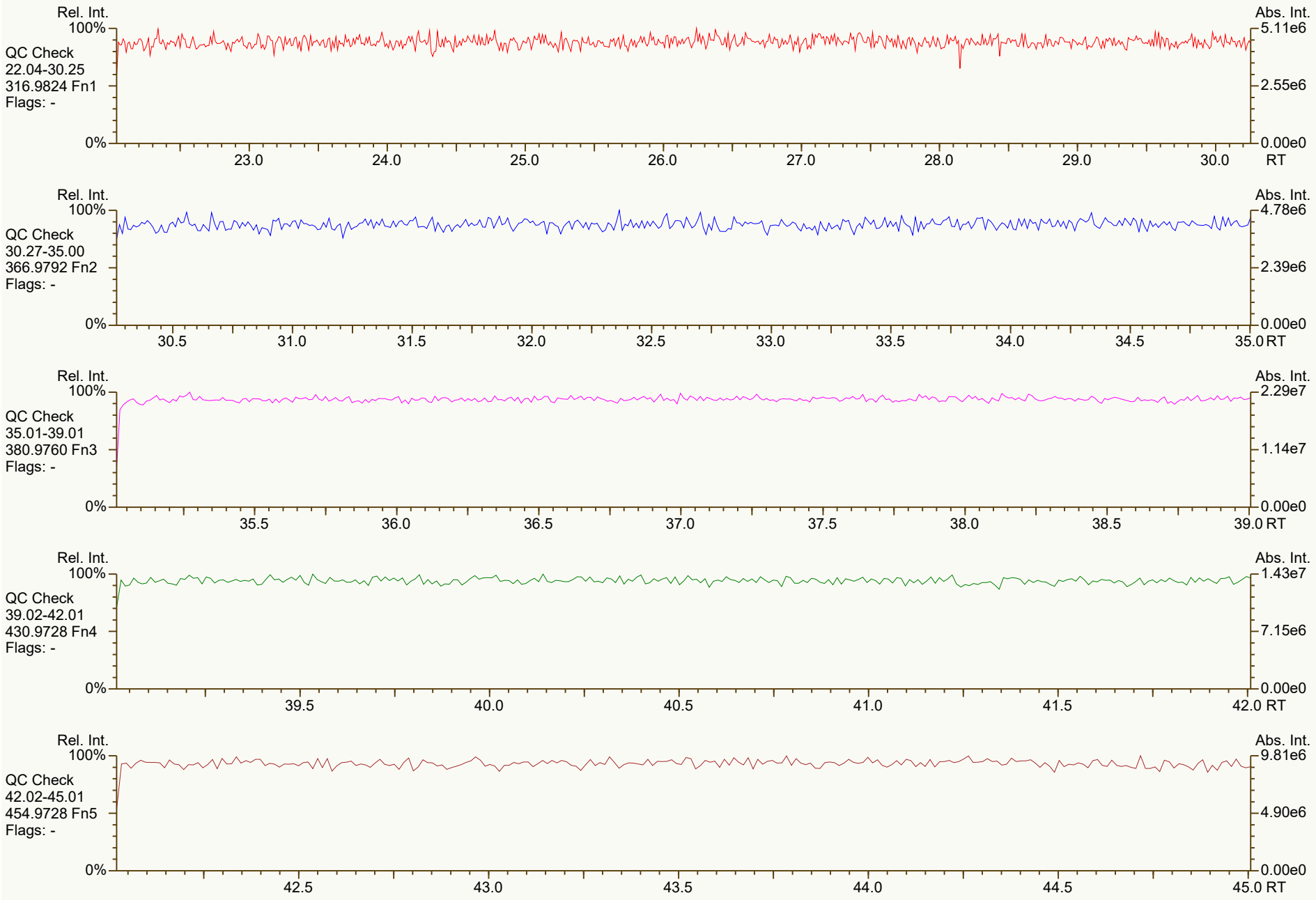

Rel. Int.
100%
0%
Abs. Int.
1.03e4
5.16e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 4.02e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.00e4
9.98e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 4.80e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.39e6
2.19e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: B
4σ 3.23e3
0%
Abs. Int.
1.36e4
6.81e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: B
4σ 3.02e3
0%
Abs. Int.
7.50e3
3.75e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: B
4σ 6.78e3
0%
Abs. Int.
2.17e4
1.08e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: B
4σ 5.26e3
0%
Abs. Int.
1.27e4
6.36e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.50e3
0%
Abs. Int.
1.20e4
5.99e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: B
4σ 2.60e3
0%
Abs. Int.
9.79e3
4.89e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: B
4σ 3.58e3
0%
Abs. Int.
7.04e3
3.52e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: B
4σ 5.88e3
0%
Abs. Int.
1.65e4
8.24e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: B
4σ 5.74e3
0%
Abs. Int.
3.42e4
1.71e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.80e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: B
4σ 3.54e3
0%
Abs. Int.
1.54e4
7.68e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: B
4σ 3.22e3
0%
Abs. Int.
9.50e3
4.75e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: B
4σ 5.68e3
0%
Abs. Int.
1.76e4
8.81e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: B
4σ 7.30e3
0%
Abs. Int.
4.44e4
2.22e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.05e4
5.24e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: B
4σ 3.10e3
0%
Abs. Int.
7.75e3
3.88e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: B
4σ 4.07e3
0%
Abs. Int.
1.72e4
8.59e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: B
4σ 5.22e3
0%
Abs. Int.
2.45e4
1.22e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: B
4σ 6.74e3
0%
Abs. Int.
4.16e4
2.08e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.25e3
0%
Abs. Int.
8.20e3
4.10e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.11e6
2.55e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.43e7
7.15e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.81e6
4.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 3.84e3
0%
Abs. Int.
1.03e4
5.16e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 3.54e3
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: B
4σ 3.32e3
0%
Abs. Int.
1.21e4
6.03e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: B
4σ 1.09e4
0%
Abs. Int.
3.24e4
1.62e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: B
4σ 6.52e3
0%
Abs. Int.
2.64e4
1.32e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 3.96e3
0%
Abs. Int.
1.08e4
5.41e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: B
4σ 2.74e3
0%
Abs. Int.
7.44e3
3.72e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: B
4σ 5.12e3
0%
Abs. Int.
2.12e4
1.06e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: B
4σ 5.81e3
0%
Abs. Int.
1.70e4
8.51e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

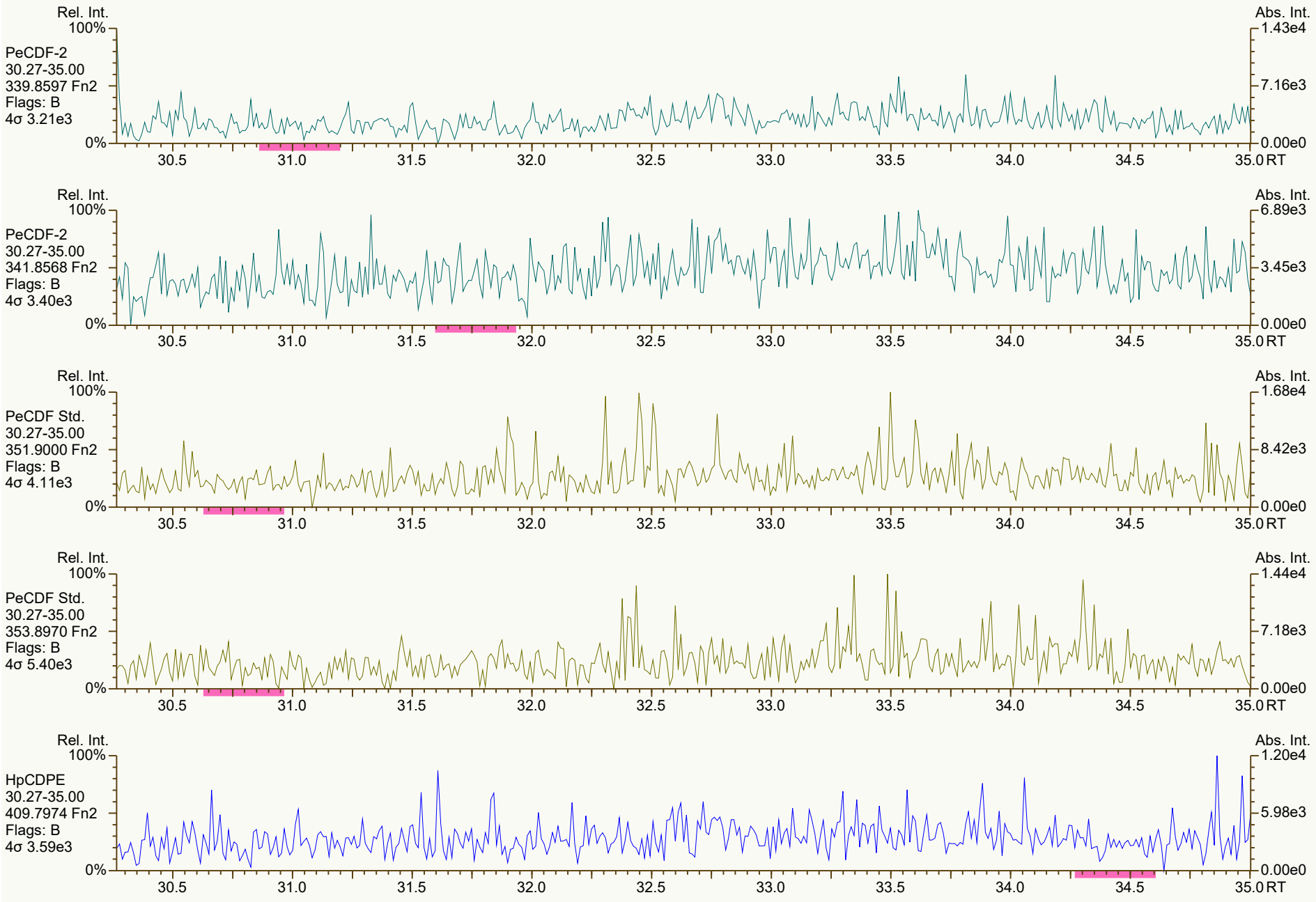

Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: B
4σ 3.15e3
0%
Abs. Int.
8.30e3
4.15e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PB
4σ 3.53e3
0%
Abs. Int.
8.39e3
4.20e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: B
4σ 5.58e3
0%
Abs. Int.
2.51e4
1.25e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: B
4σ 4.95e3
0%
Abs. Int.
1.59e4
7.97e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

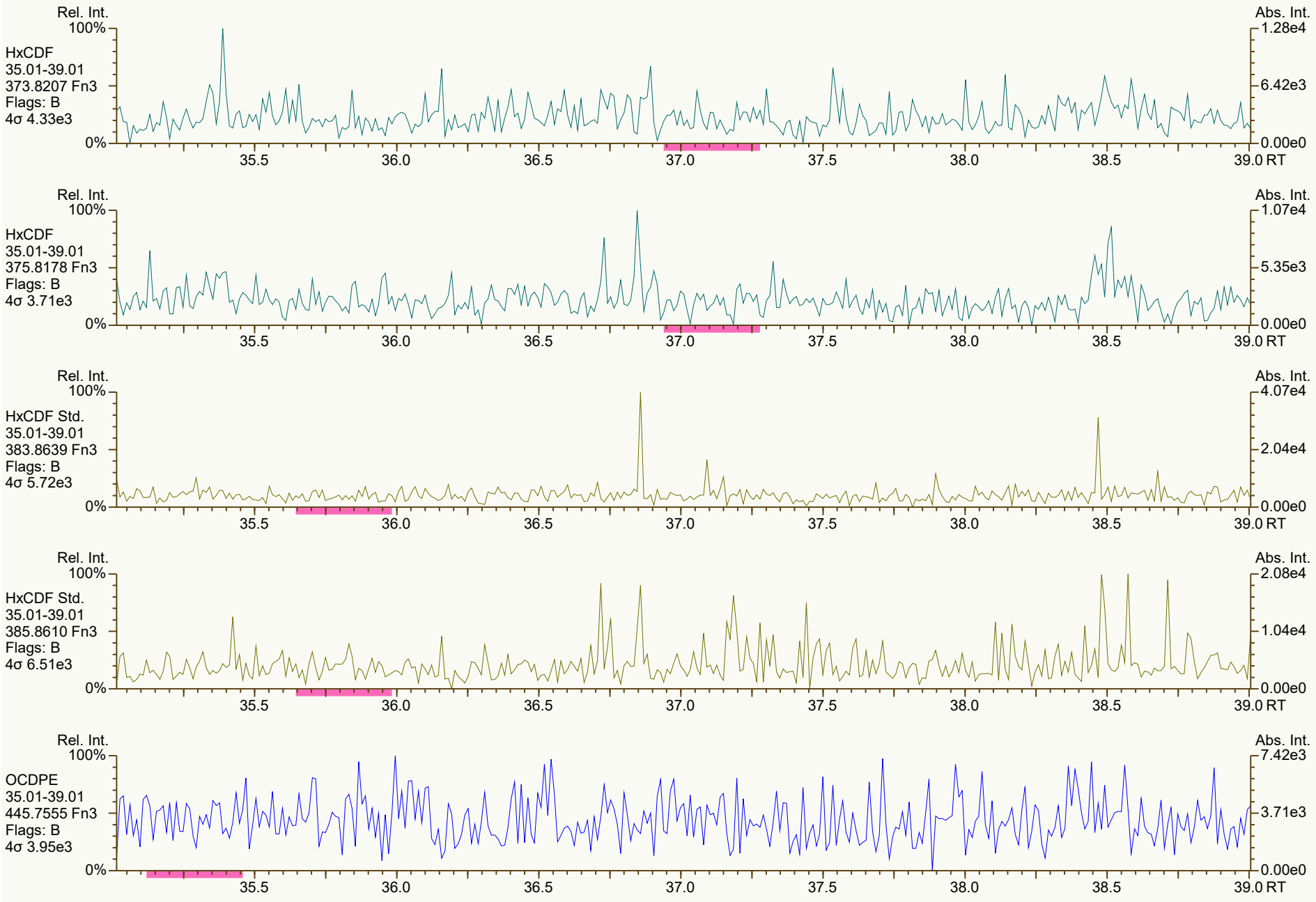

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: B
4σ 3.22e3
0%
Abs. Int.
1.30e4
6.50e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: B
4σ 3.50e3
0%
Abs. Int.
9.48e3
4.74e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: B
4σ 6.52e3
0%
Abs. Int.
1.51e4
7.55e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: B
4σ 4.96e3
0%
Abs. Int.
1.40e4
7.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.43e7
7.15e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: B
4σ 5.93e3
0%
Abs. Int.
3.88e4
1.94e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: B
4σ 4.64e3
0%
Abs. Int.
2.51e4
1.26e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: B
4σ 3.90e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: B
4σ 4.67e3
0%
Abs. Int.
1.10e4
5.48e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.81e6
4.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


2468F; SPIKED
2.83e5
24.15
Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: PB
4σ 3.61e3
0%
Abs. Int.
7.49e4
3.74e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
2468F
3.44e5
24.16
TCDF
22.04-30.25
305.8987 Fn1
Flags: PB
4σ 3.69e3
8.10e4
4.05e4
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: B
4σ 2.13e4
3.94e4
1.97e4
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: B
4σ 9.96e3
3.36e4
1.68e4
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.59e3
1.15e4
5.75e3


Rel. Int.
100%
0%
Abs. Int.
8.99e3
4.49e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 4.48e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.77e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 4.07e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
5.11e6
2.55e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: B
4σ 3.21e3
0%
Abs. Int.
1.43e4
7.16e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: B
4σ 3.40e3
0%
Abs. Int.
6.89e3
3.45e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: B
4σ 4.11e3
0%
Abs. Int.
1.68e4
8.42e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: B
4σ 5.40e3
0%
Abs. Int.
1.44e4
7.18e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.59e3
0%
Abs. Int.
1.20e4
5.98e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: B
4σ 4.33e3
0%
Abs. Int.
1.28e4
6.42e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.01
375.8178 Fn3
Flags: B
4σ 3.71e3
0%
Abs. Int.
1.07e4
5.35e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: B
4σ 5.72e3
0%
Abs. Int.
4.07e4
2.04e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: B
4σ 6.51e3
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.95e3
0%
Abs. Int.
7.42e3
3.71e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: B
4σ 5.03e3
0%
Abs. Int.
2.23e4
1.11e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: B
4σ 4.38e3
0%
Abs. Int.
1.47e4
7.37e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: B
4σ 7.11e3
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: B
4σ 5.43e3
0%
Abs. Int.
2.43e4
1.22e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.31e3
0%
Abs. Int.
6.82e3
3.41e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: B
4σ 4.38e3
0%
Abs. Int.
1.45e4
7.26e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: B
4σ 3.38e3
0%
Abs. Int.
1.09e4
5.47e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: B
4σ 6.24e3
0%
Abs. Int.
1.45e4
7.27e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: B
4σ 4.84e3
0%
Abs. Int.
1.71e4
8.57e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.16e3
0%
Abs. Int.
8.47e3
4.24e3
0.00e0
42.5
43.0
43.5
44.0
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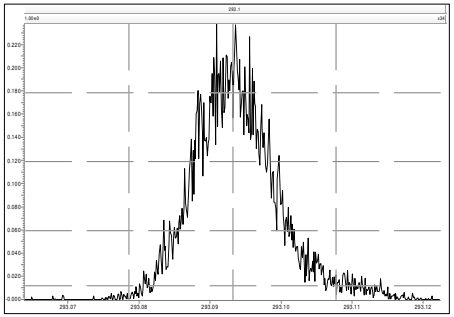
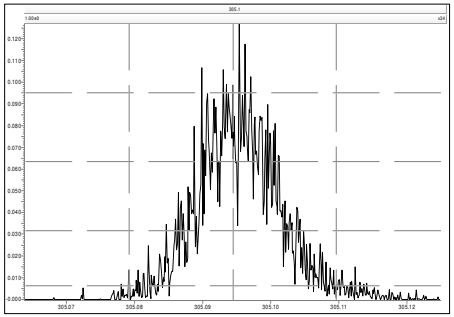
45.0 RT

Printed: Tuesday, December 07, 2021 21:27:44 Eastern Standard Time

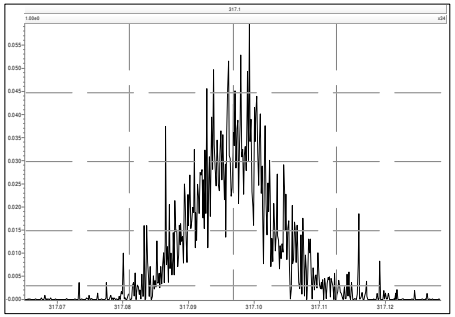
M 292.9824 R 11798



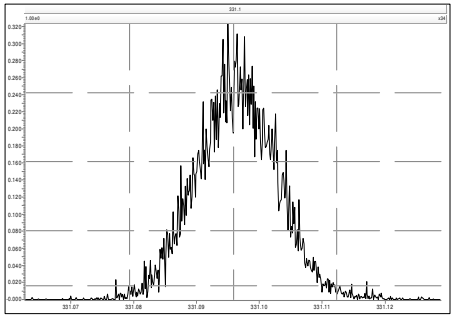
M 304.9824 R 12801



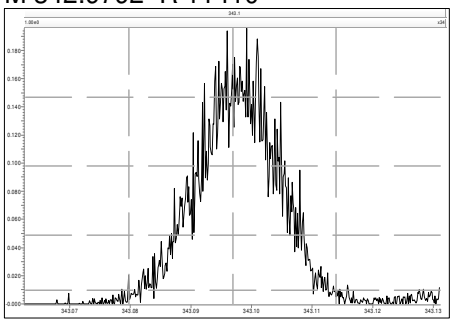
M 316.9824 R 14443



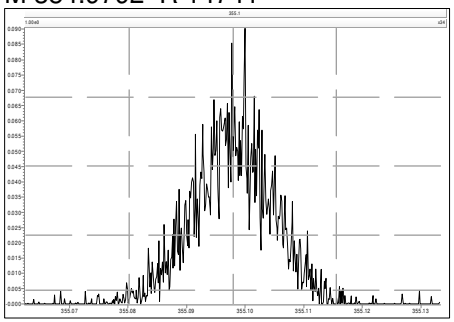
M 330.9792 R 11933



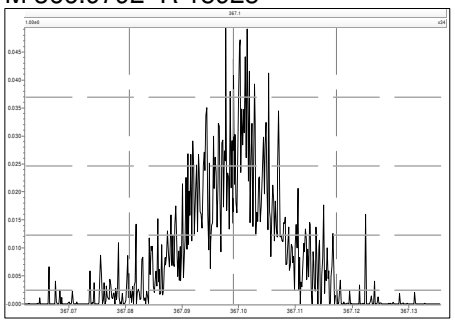
M 342.9792 R 11410



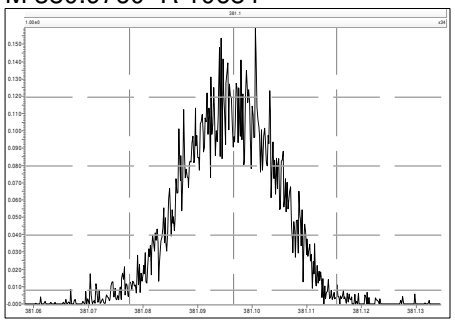
M 354.9792 R 14741



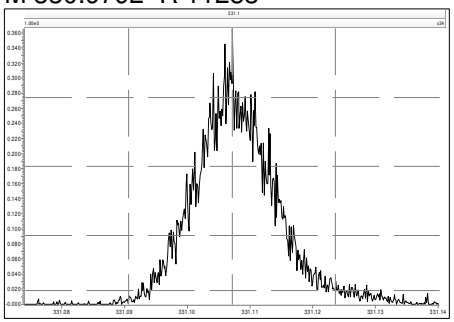
M 366.9792 R 15925



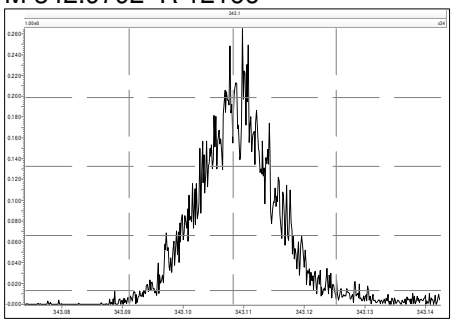
M 380.9760 R 10684



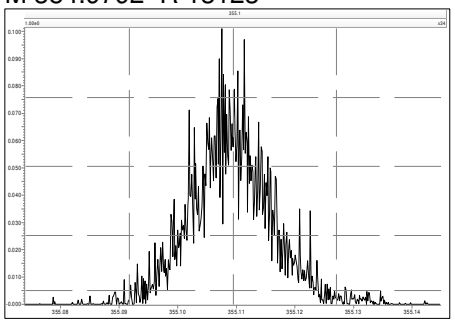
M 330.9792 R 11283



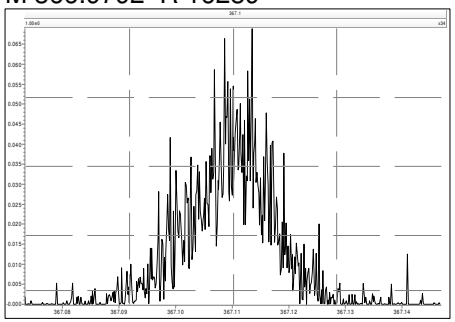
M 342.9792 R 12166



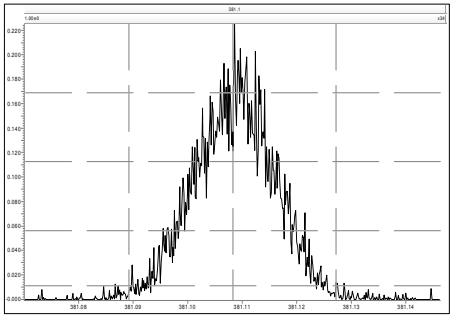
M 354.9792 R 13123



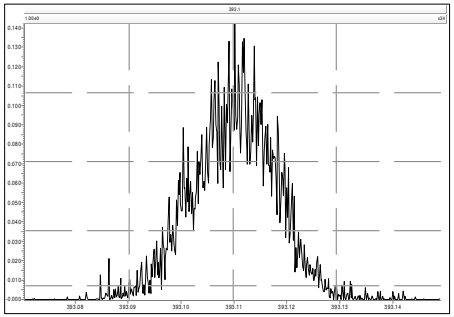
M 366.9792 R 16289



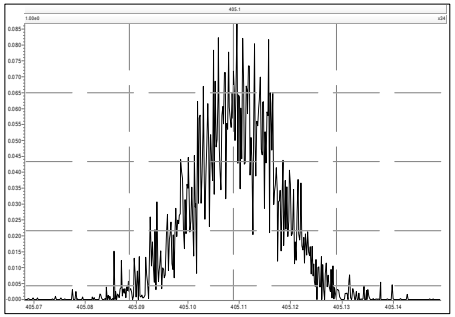
M 380.9760 R 12177



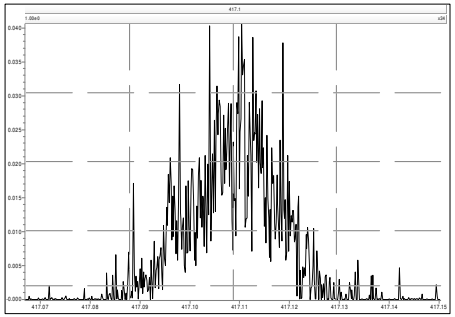
M 392.9760 R 12106



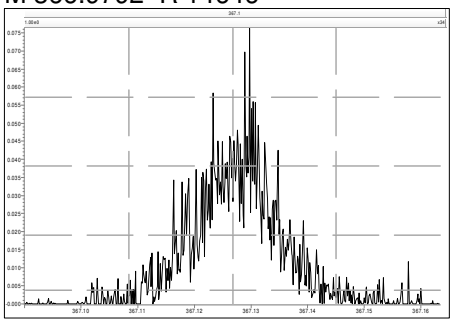
M 404.9760 R 11848



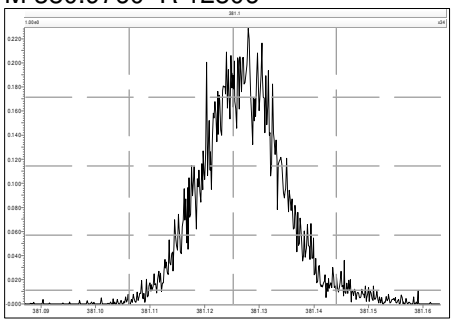
M 416.9760 R 15237



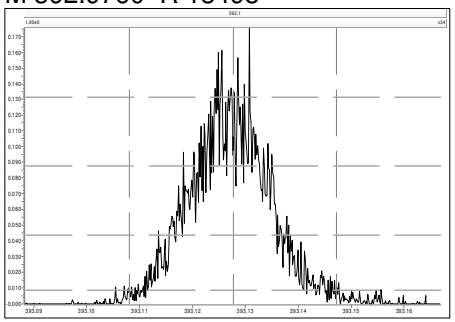
M 366.9792 R 14646



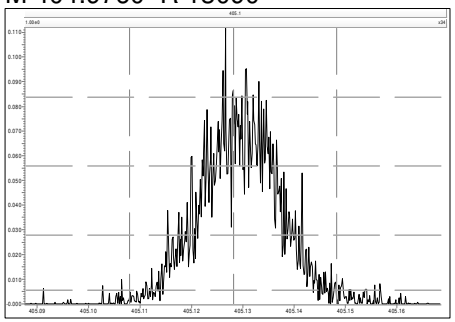
M 380.9760 R 12806



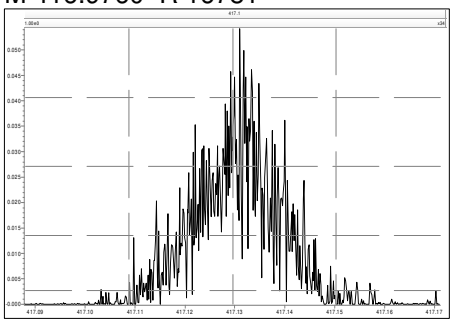
M 392.9760 R 13498



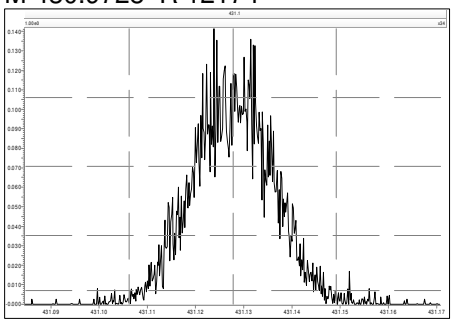
M 404.9760 R 13090



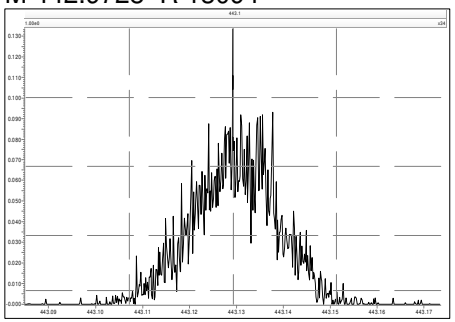
M 416.9760 R 16781



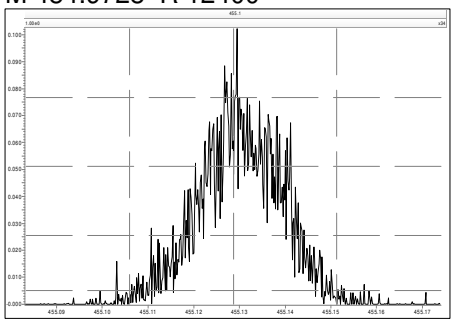
M 430.9728 R 12174



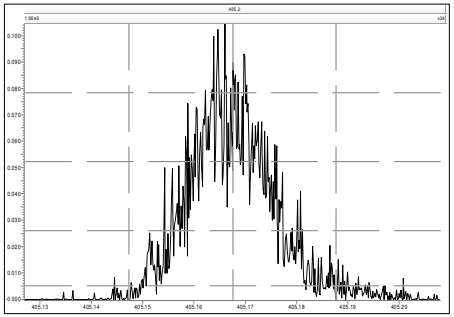
M 442.9728 R 13094



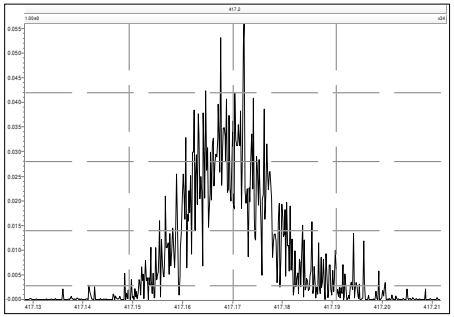
M 454.9728 R 12400



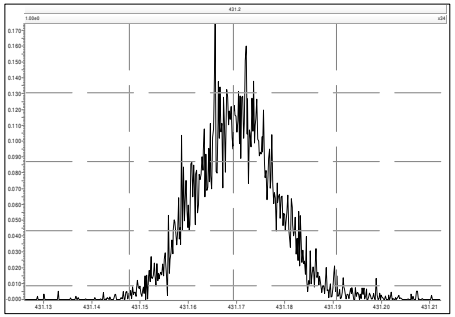
M 404.9760 R 13158



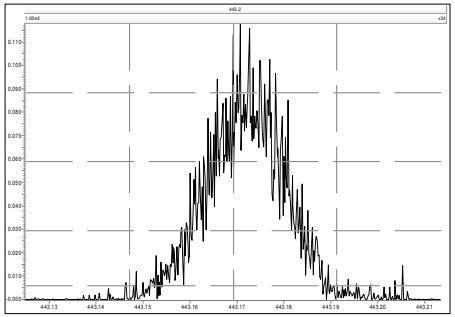
M 416.9760 R 16146



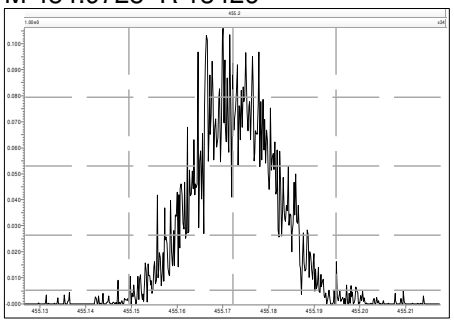
M 430.9728 R 13597



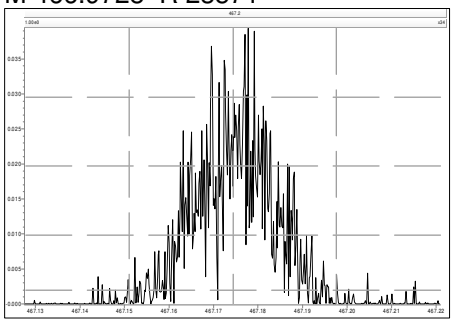
M 442.9728 R 12537



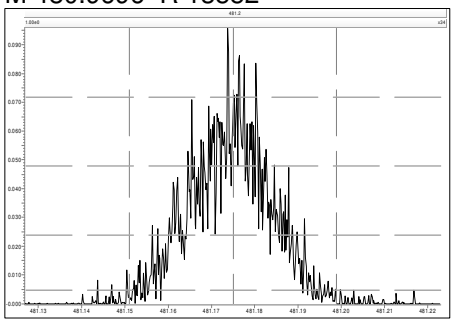
M 454.9728 R 13426



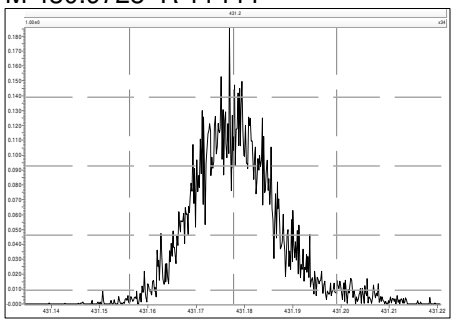
M 466.9728 R 23571



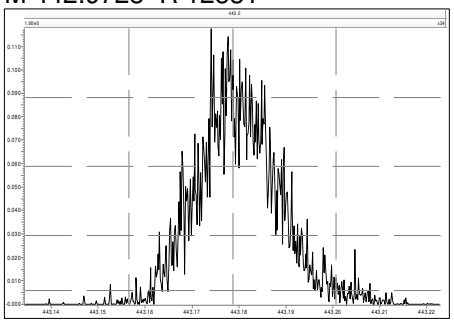
M 480.9696 R 13552



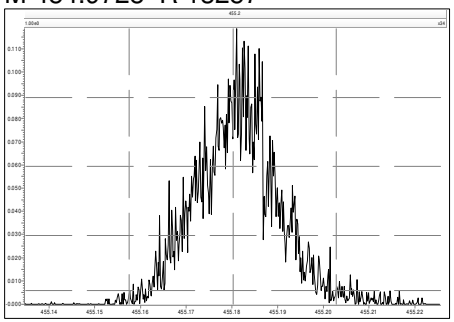
M 430.9728 R 11444



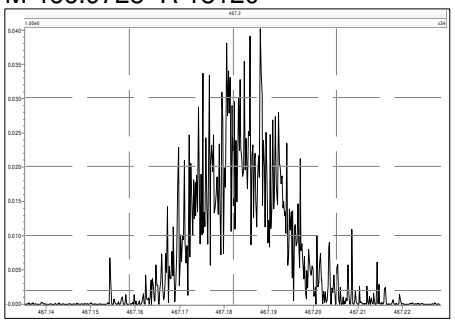
M 442.9728 R 12531



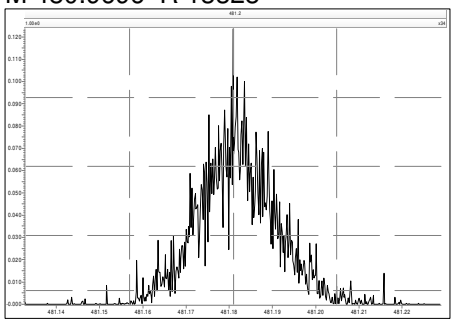
M 454.9728 R 13257



M 466.9728 R 18120



M 480.9696 R 13328



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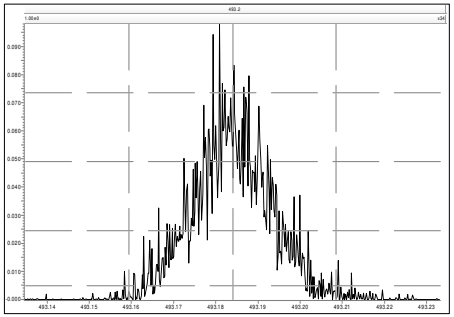
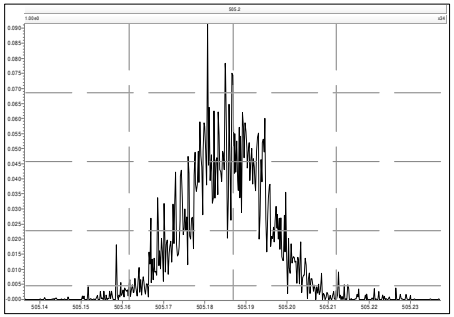
M 492.9696 R 13664



M 504.9696 R 13734



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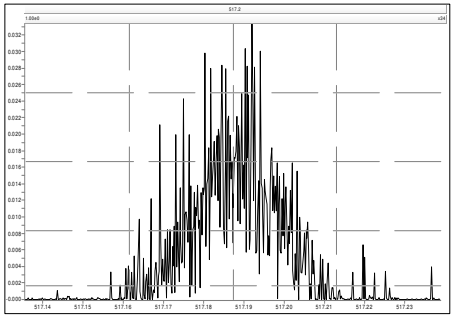

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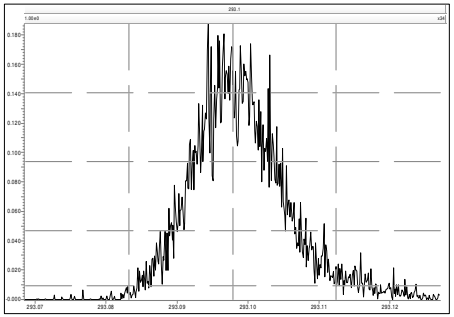

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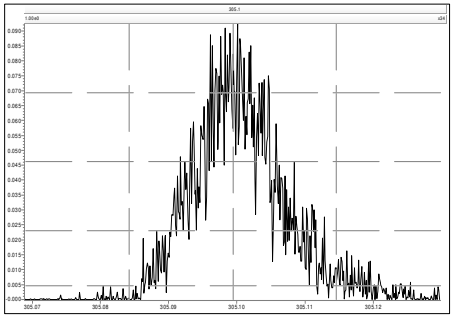
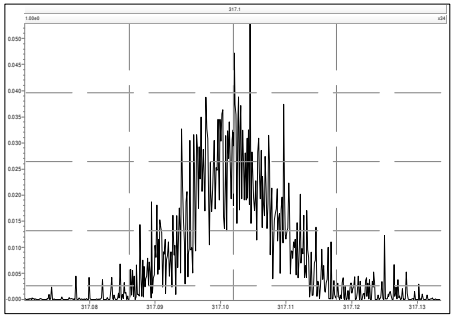
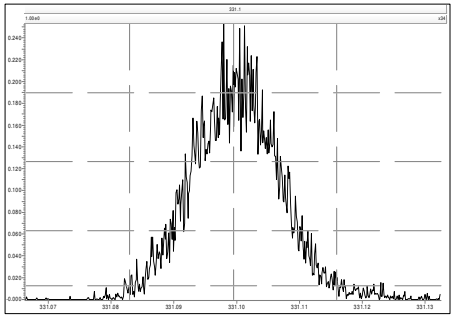


M 316.9824 R 15122



M 330.9792 R 11657



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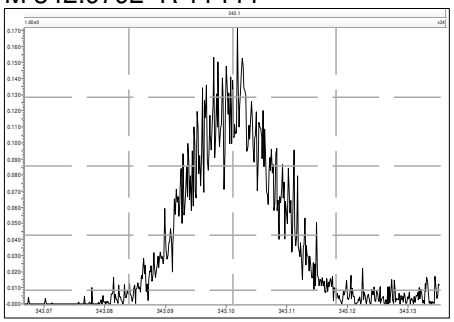
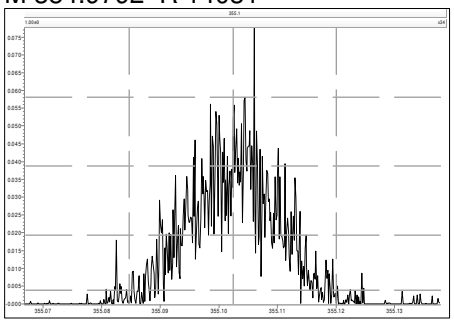


M 354.9792 R 14031



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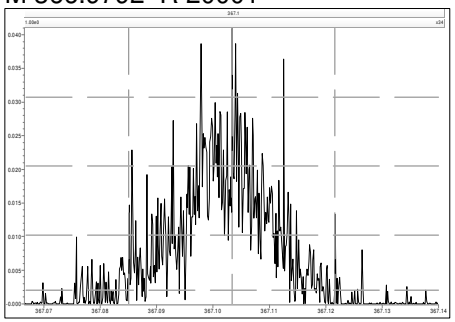
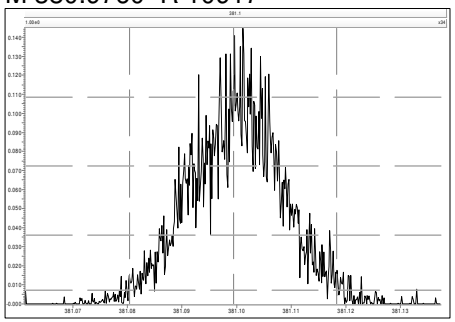
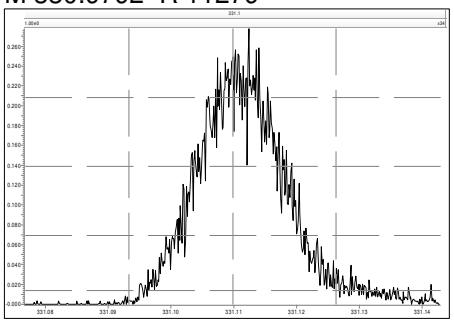


M 380.9760 R 10917



M 330.9792 R 11279



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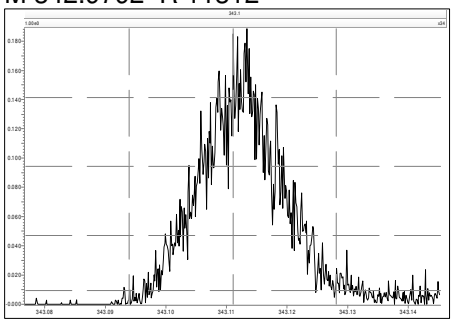
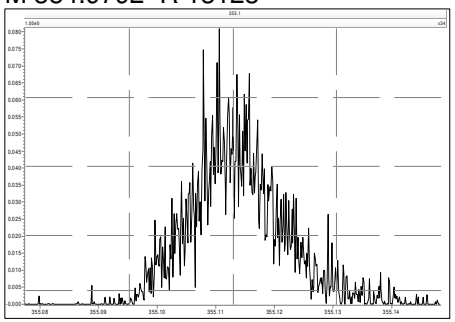


M 354.9792 R 13123



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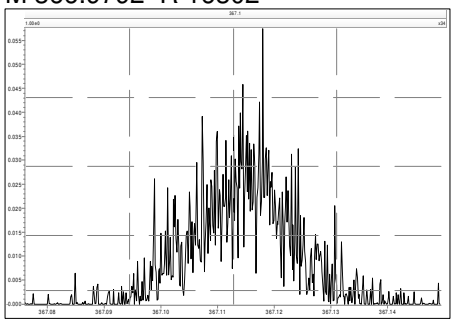
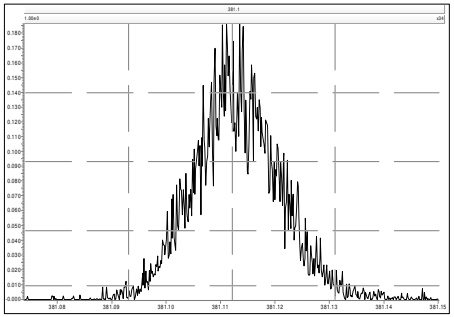
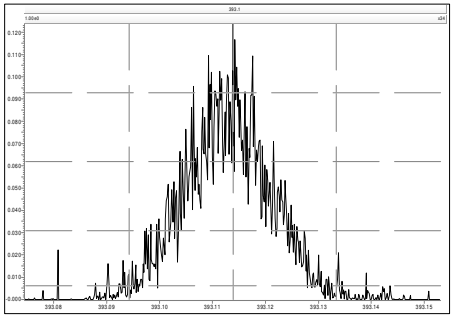


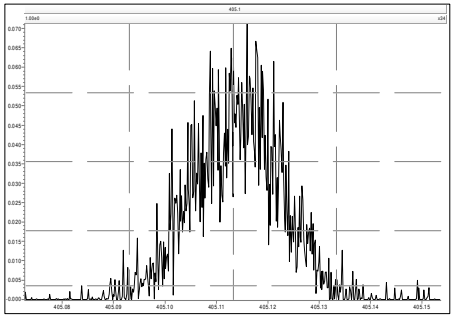
M 380.9760 R 10927



M 392.9760 R 11662



M 404.9760 R 13497



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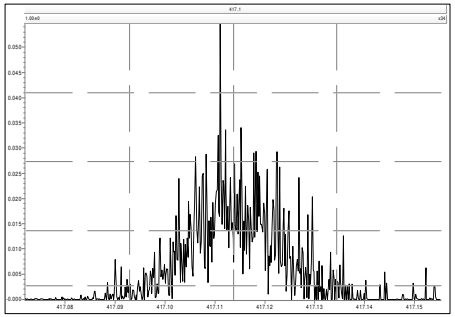

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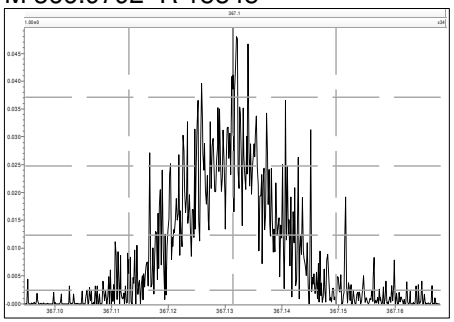

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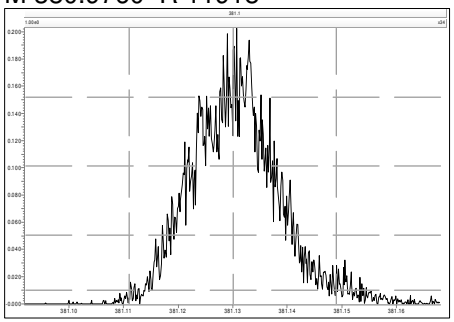

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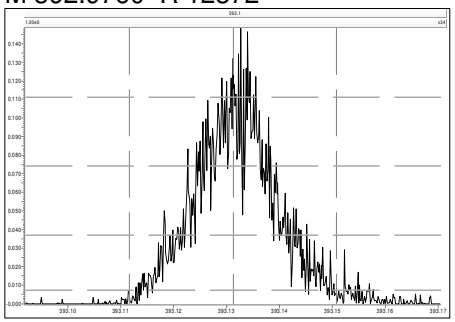

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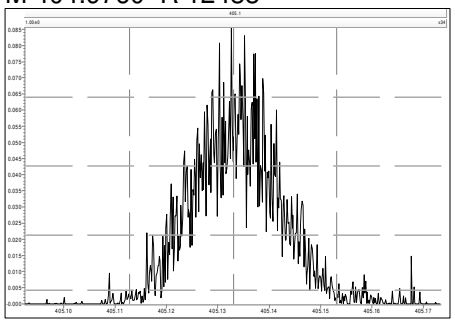

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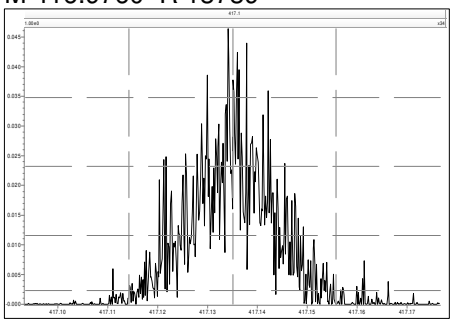
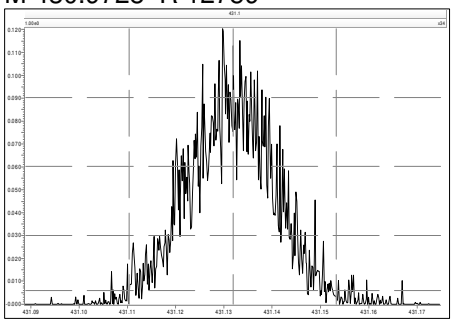


M 430.9728 R 12759



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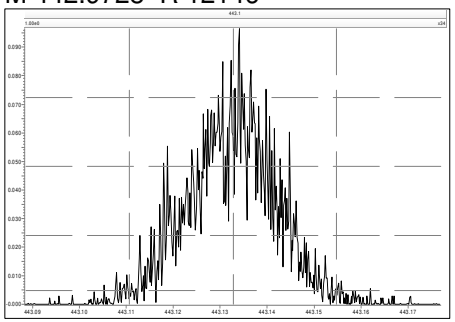

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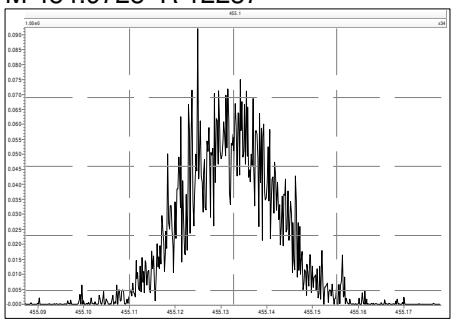
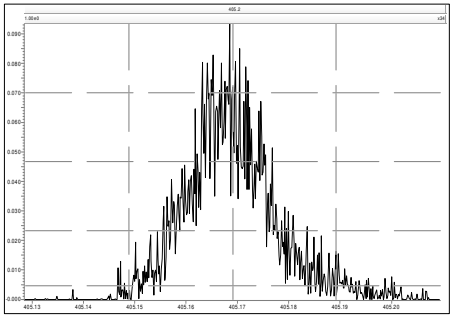
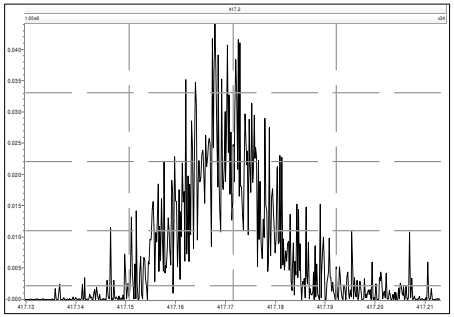


M 404.9760 R 13662



M 416.9760 R 15013



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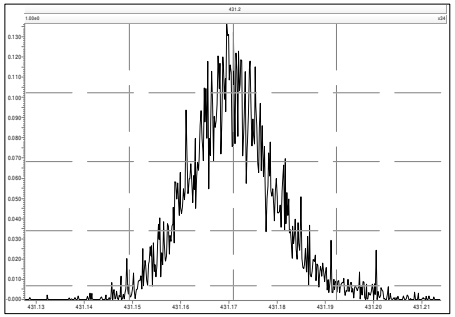

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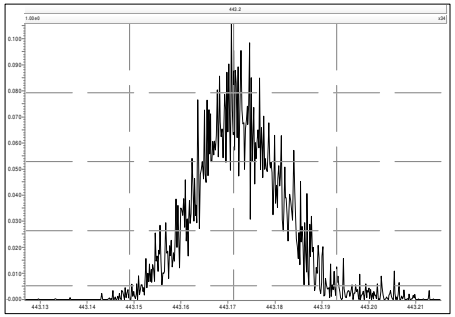

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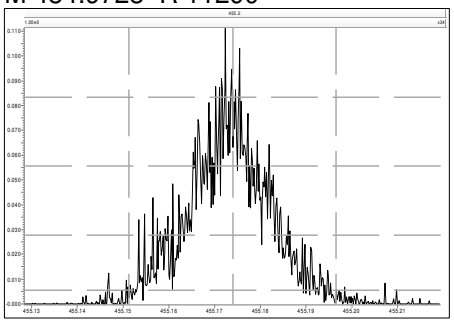

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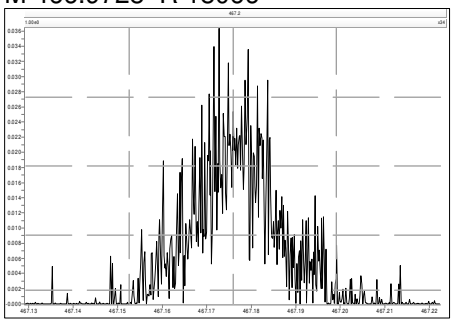

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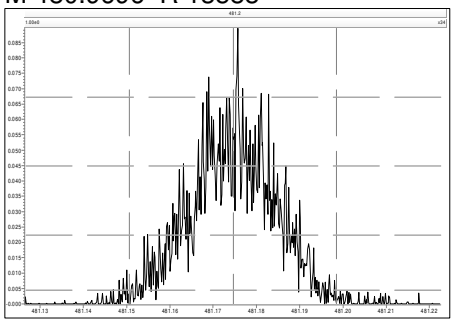

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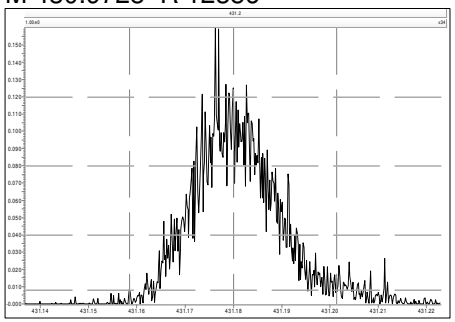

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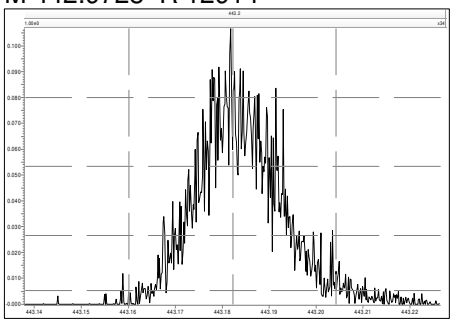

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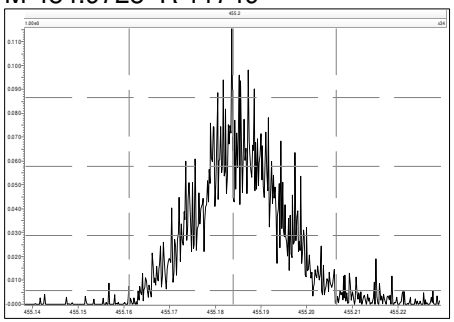

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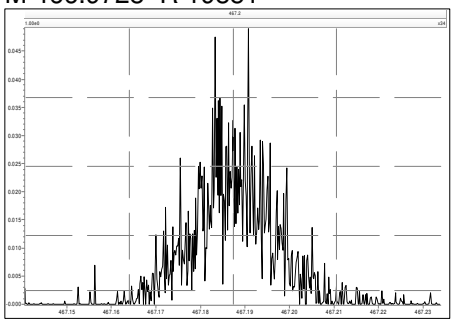

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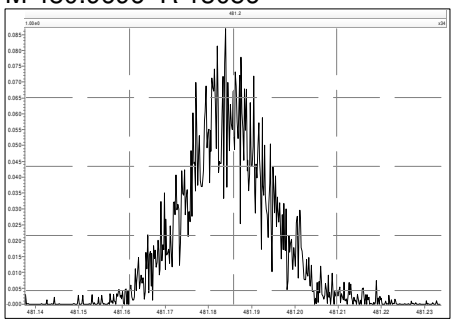

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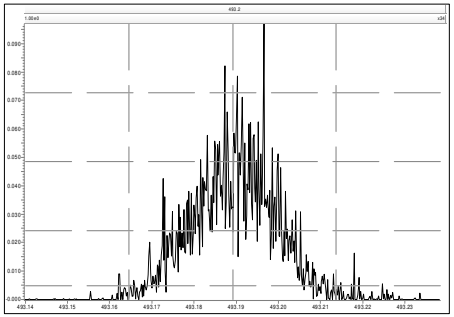

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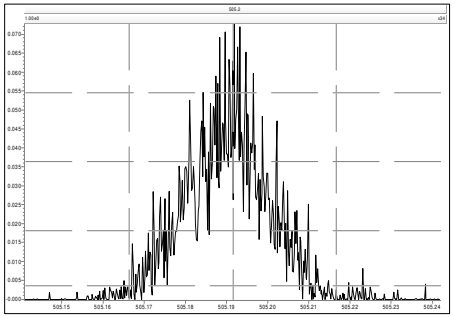

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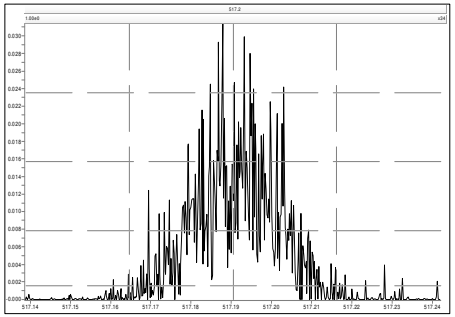

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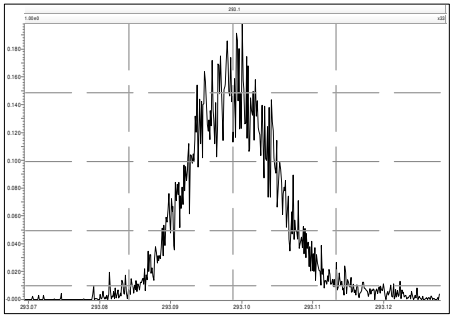
M 292.9824 R 11090



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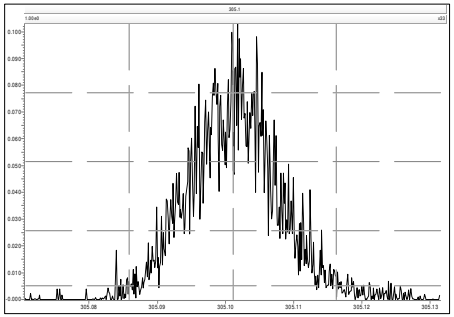
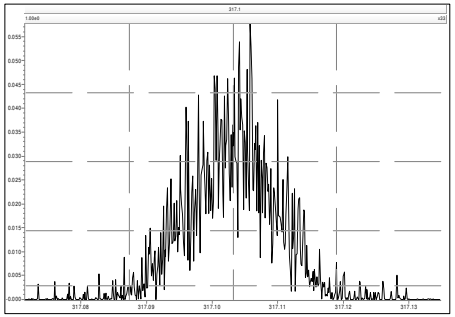
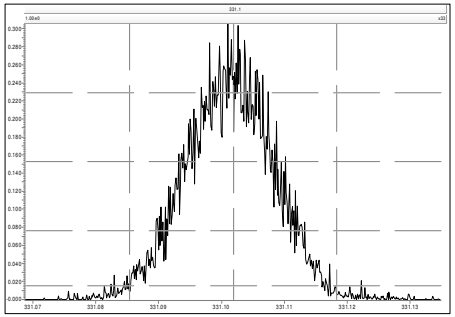


M 316.9824 R 14192



M 330.9792 R 11245



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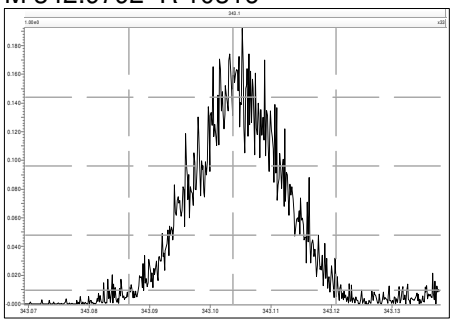
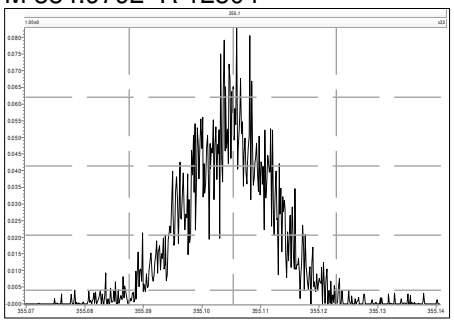


M 354.9792 R 12504



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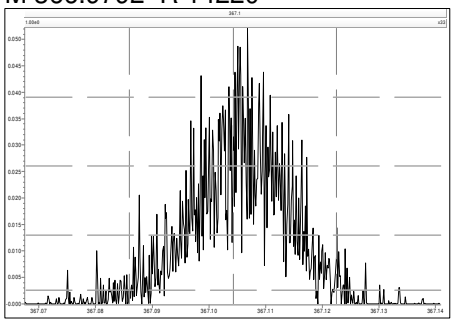
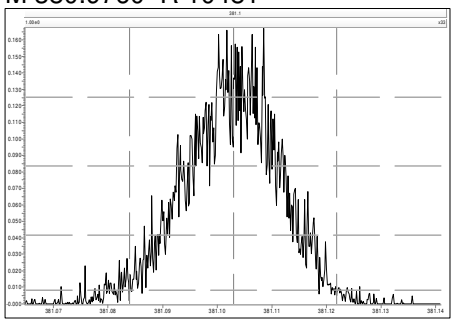
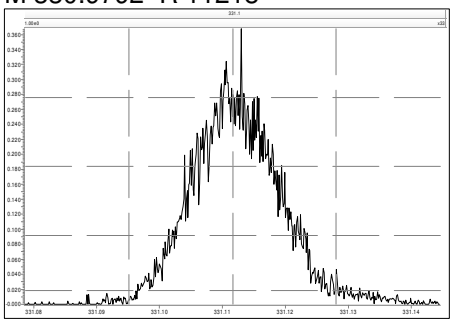


M 380.9760 R 10481



M 330.9792 R 11218



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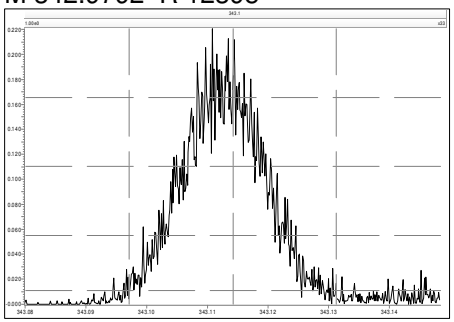
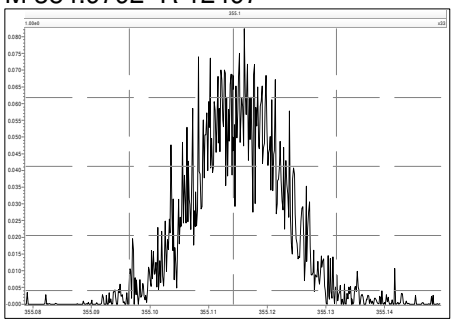


M 354.9792 R 12497



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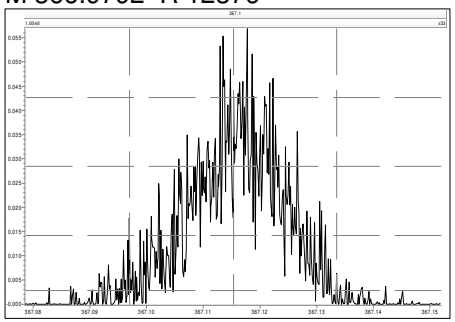
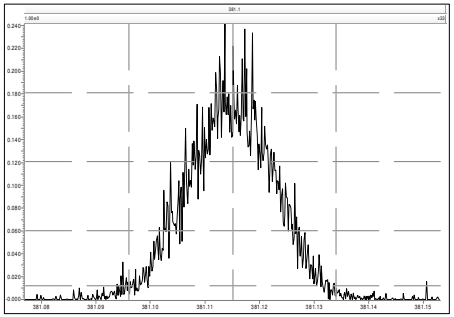


M 380.9760 R 11111



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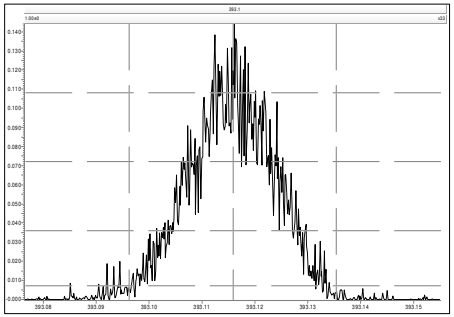

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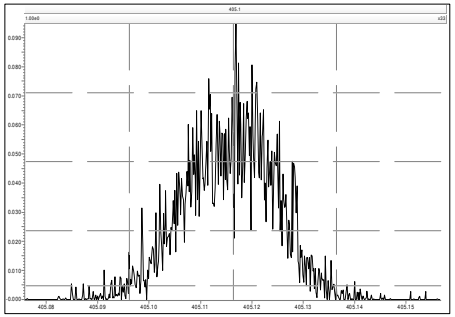

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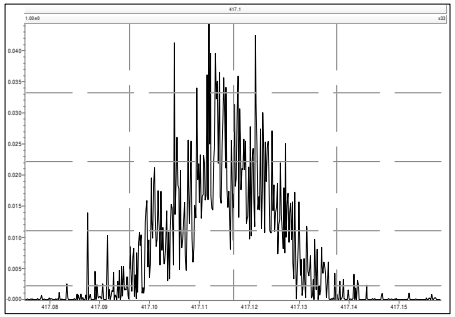

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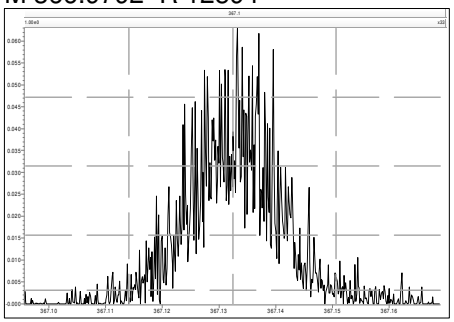

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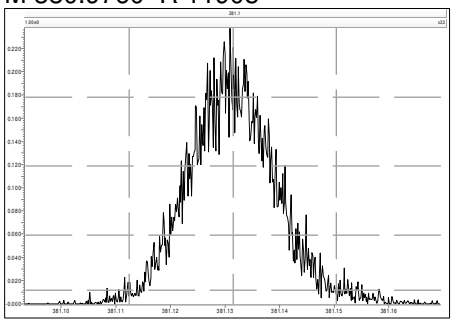

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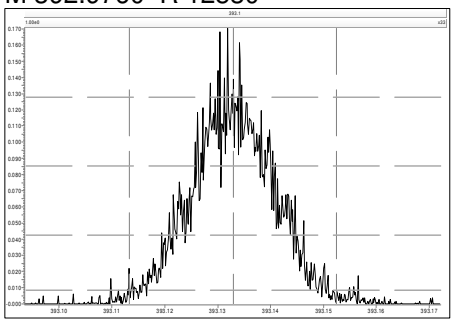

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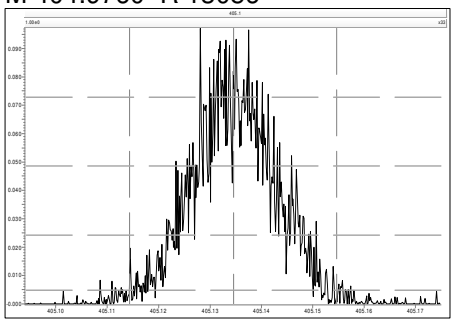

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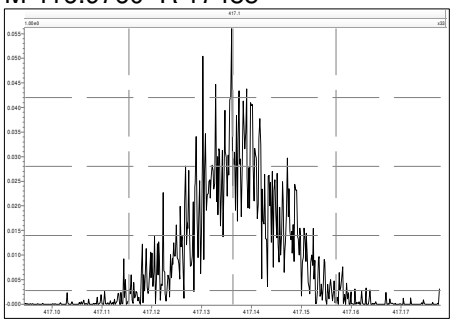

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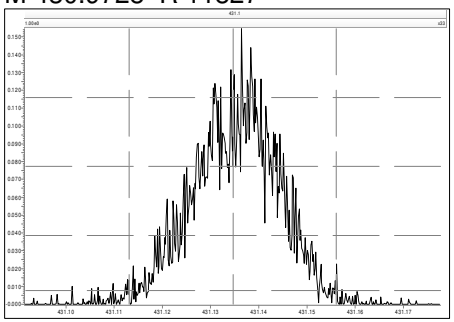

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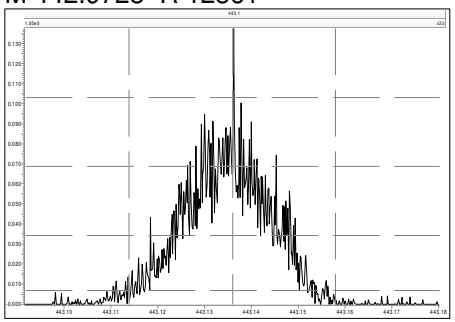

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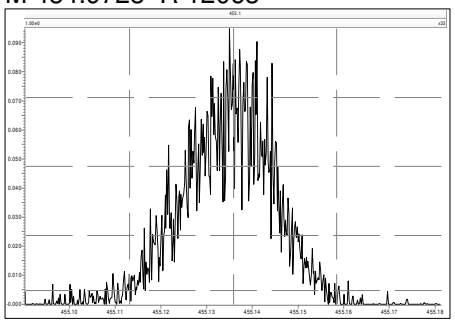

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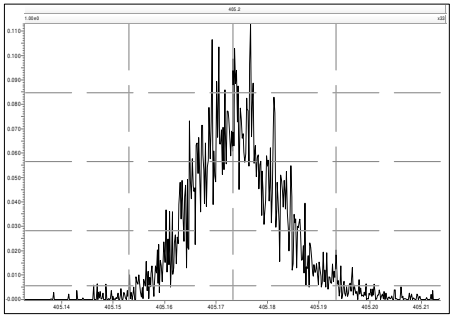

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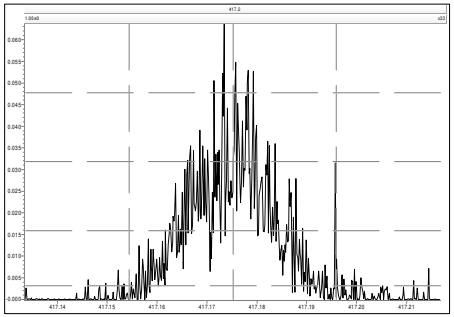

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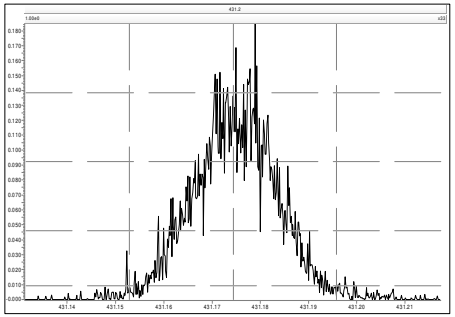

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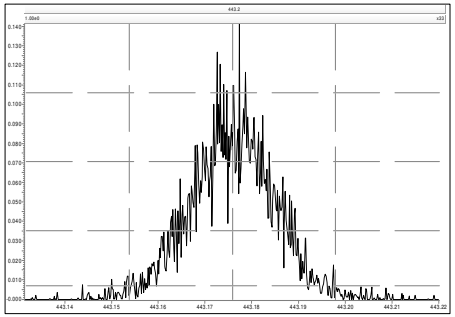

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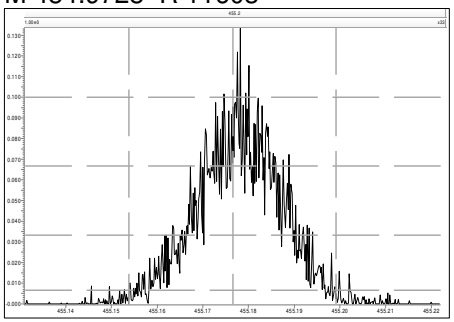

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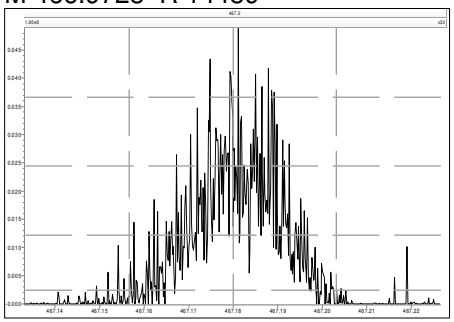

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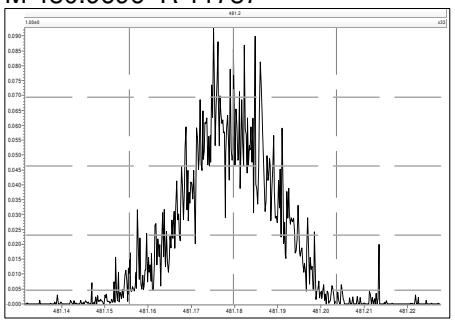

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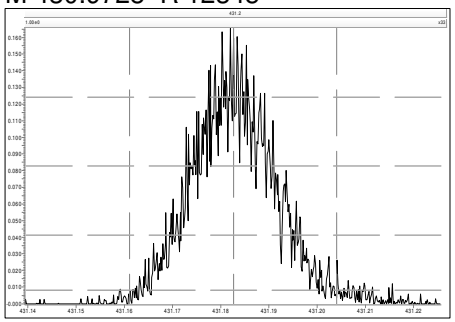

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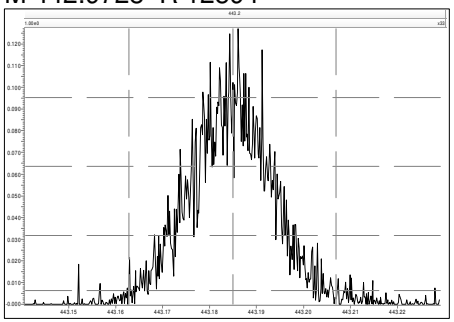

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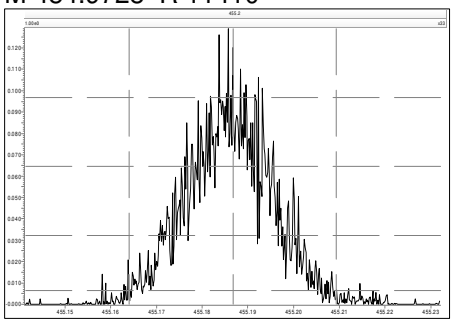

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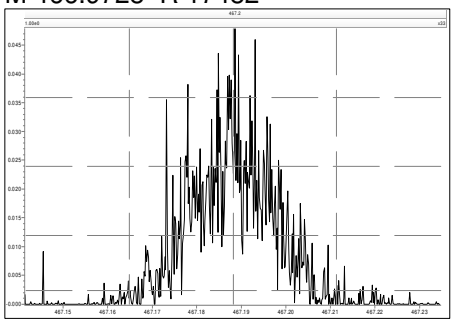

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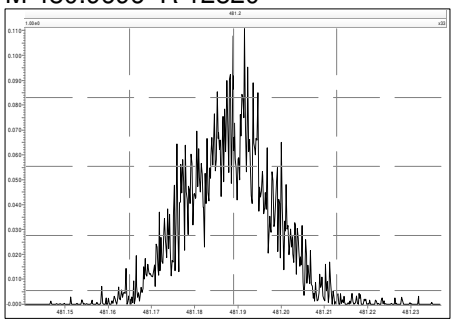

Printed: Wednesday, December 08, 2021 14:45:13 Eastern Standard Time

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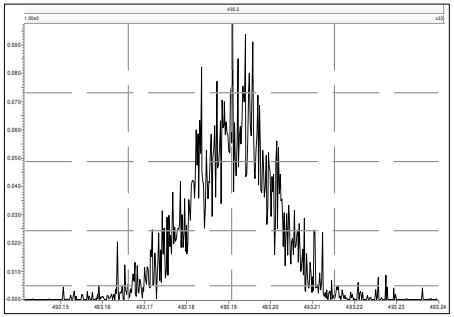

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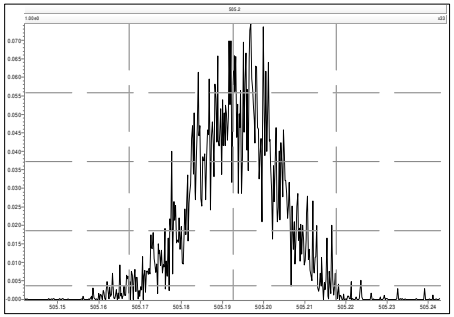

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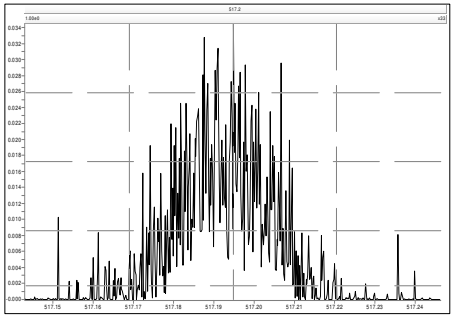


Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
28	211207R28	3	CS3_211207_DF_RG ✓	1.00	SIL 25-347-1	PSW	423-971	08-Dec-2021	08:57:07
29	211207R29	27	OPR1_18715_DF	1.00	0_18715_OPR001	PSW	807-647	08-Dec-2021	09:52:37
30	211207R30	28	OPR2_18715_DF	1.00	0_18715_OPR002	PSW	418-331	08-Dec-2021	10:39:20
31	211207R31	2	SBS_211208_DF_RC	1.00	SIL 20-61-1	PSW	250-642	08-Dec-2021	11:26:53
32	211207R32	26	MB1_18715_DF_SDS	10.00	Method Blank	PSW	576-965	08-Dec-2021	12:14:27
33	211207R33	29	B5965_18715_DF_001-R1 ✓	5.04	11215131-113021-S-SPS-NE-S-7	PSW	142-458	08-Dec-2021	13:01:59

REVIEWED
Amber_Kornegay , 12/8/2021, 4:38:45 PM

REVIEWED
paul_walton , 12/8/2021, 2:13:35 PM

Dioxin/Furan QC Summary	Acq'd: 08 Dec 2021 08:57 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211207_DF_RG	UTP: 08-Dec-2021 14:01:35 PSW	Checkcode: 423-971-VQY
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 14:02 pw	Datafile: 211207R28

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.60	3.06E+06	0.80	Y	1.34	1.08	-20%
12378-PeCDD	33.87	1.30E+07	1.55	Y	1.06	0.99	-7%
123478-HxCDD	37.73	1.13E+07	1.31	Y	1.06	1.02	-3%
123678-HxCDD	37.85	1.26E+07	1.28	Y	1.08	1.12	4%
123789-HxCDD	38.13	1.27E+07	1.26	Y	1.02	1.00	-1%
1234678-HpCDD	40.70	1.02E+07	1.05	Y	0.97	1.00	3%
OCDD	43.27	1.53E+07	0.87	Y	1.07	1.13	5%
2378-TCDF	27.76	4.13E+06	0.78	Y	0.96	0.98	2%
12378-PeCDF	32.44	1.93E+07	1.59	Y	0.95	1.04	10%
23478-PeCDF	33.54	1.86E+07	1.57	Y	0.94	0.98	4%
123478-HxCDF	36.74	1.68E+07	1.27	Y	1.23	1.22	-1%
123678-HxCDF	36.88	1.80E+07	1.26	Y	1.13	1.10	-3%
234678-HxCDF	37.56	1.66E+07	1.29	Y	1.15	1.13	-2%
123789-HxCDF	38.48	1.43E+07	1.29	Y	1.14	1.12	-1%
1234678-HpCDF	39.80	1.56E+07	1.05	Y	1.36	1.41	3%
1234789-HpCDF	41.15	1.21E+07	1.04	Y	1.30	1.41	8%
OCDF	43.46	1.71E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.58	2.83E+07	0.77	Y	1.03	0.99	-4%
ES 12378-PeCDD	33.849	2.64E+07	1.53	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.714	2.22E+07	1.30	Y	0.99	1.01	1%
ES 123678-HxCDD	37.828	2.24E+07	1.23	Y	0.97	1.01	4%
ES 123789-HxCDD	38.117	2.54E+07	1.27	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.689	2.03E+07	1.06	Y	0.99	0.92	-7%
ES OCDD	43.261	2.71E+07	0.92	Y	0.78	0.61	-21%
ES 2378-TCDF	27.735	4.23E+07	0.78	Y	1.08	1.01	-7%
ES 12378-PeCDF	32.422	3.69E+07	1.54	Y	0.93	0.88	-6%
ES 23478-PeCDF	33.52	3.80E+07	1.58	Y	0.92	0.91	-2%
ES 123478-HxCDF	36.721	2.77E+07	0.51	Y	1.14	1.25	10%
ES 123678-HxCDF	36.861	3.28E+07	0.50	Y	1.30	1.48	14%
ES 234678-HxCDF	37.533	2.92E+07	0.52	Y	1.20	1.32	10%
ES 123789-HxCDF	38.464	2.56E+07	0.50	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.789	2.22E+07	0.46	Y	0.95	1.00	6%
ES 1234789-HpCDF	41.14	1.72E+07	0.43	Y	0.85	0.78	-8%
ES OCDF	43.448	3.23E+07	0.88	Y	0.93	0.73	-21%

Dioxin/Furan QC Summary	Acq'd: 08 Dec 2021 08:57 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211207_DF_RG	UTP: 08-Dec-2021 14:01:35 PSW	Checkcode: 423-971-VQY
Sample ID: SIL 25-347-1	Report: 08 Dec 2021 14:02 pw	Datafile: 211207R28

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.93	2.86E+07	0.79	Y	-	-	-
JS 1234-TCDF	26.40	4.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	38.02	1.11E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	28.60	3.45E+06	n/a	-	1.31	1.21	-8%
CS 12347-PeCDD	33.35	2.41E+07	1.69	Y	0.89	0.85	-5%
CS 12346-PeCDF	31.90	3.67E+07	1.58	Y	0.87	0.87	1%
CS 123469-HxCDF	37.18	2.90E+07	0.51	Y	1.09	1.31	20%
CS 1234689-HpCDF	40.18	2.23E+07	0.44	Y	0.86	1.01	17%
~~SS 37Cl-2378-TCDD~~	~~28.60~~	~~3.45E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.22~~	~~-3%~~
~~SS 12347-PeCDD~~	~~33.35~~	~~2.41E+07~~	~~1.69~~	~~Y~~	~~0.86~~	~~0.92~~	~~6%~~
~~SS 12346-PeCDF~~	~~31.90~~	~~3.67E+07~~	~~1.58~~	~~Y~~	~~0.93~~	~~0.99~~	~~7%~~
~~SS 123469-HxCDF~~	~~37.18~~	~~2.90E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~0.89~~	~~5%~~
~~SS 1234689-HpCDF~~	~~40.18~~	~~2.23E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~1.01~~	~~10%~~
~~OCDD-a~~	~~43.27~~	~~7.92E+05~~	~~1.77~~	~~N~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.46~~	~~8.93E+05~~	~~3.26~~	~~N~~	~~0.06~~	~~0.06~~	~~-7%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211207R28 Analysis Date: 08-DEC-2021 08:57:07

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.80	0.65 - 0.89	Y	8.04	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.5	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.31	1.05 - 1.43	Y	48.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	51.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	49.3	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	51.5	43 - 58	Y
OCDD	M+2/M+4	0.87	0.76 - 1.02	Y	105	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.78	0.65 - 0.89	Y	10.2	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32 - 1.78	Y	55.1	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	52.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	49.3	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	48.6	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.29	1.05 - 1.43	Y	49.2	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.29	1.05 - 1.43	Y	49.3	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	51.7	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	54.2	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 08 Dec 2021 14:02 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

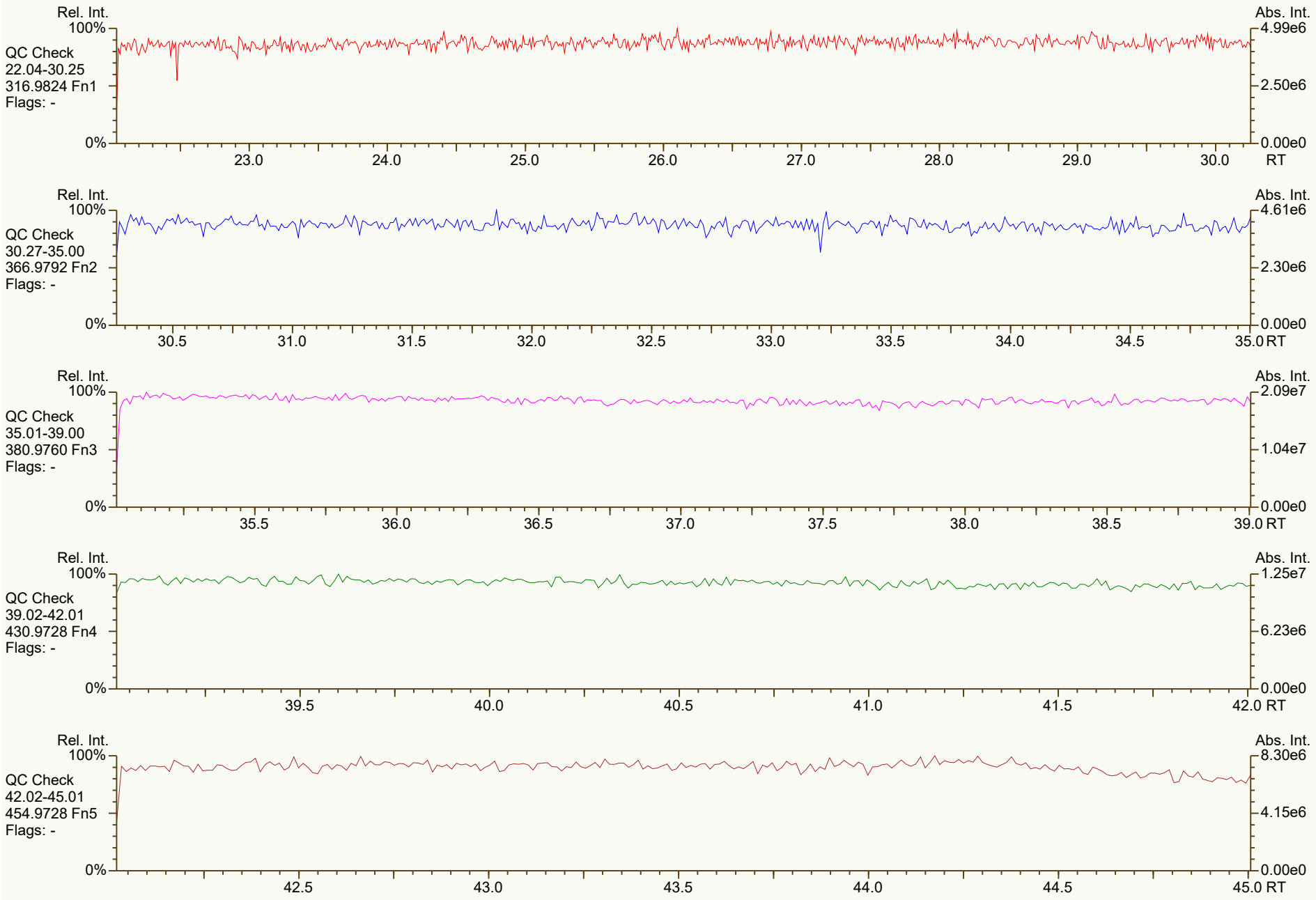
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

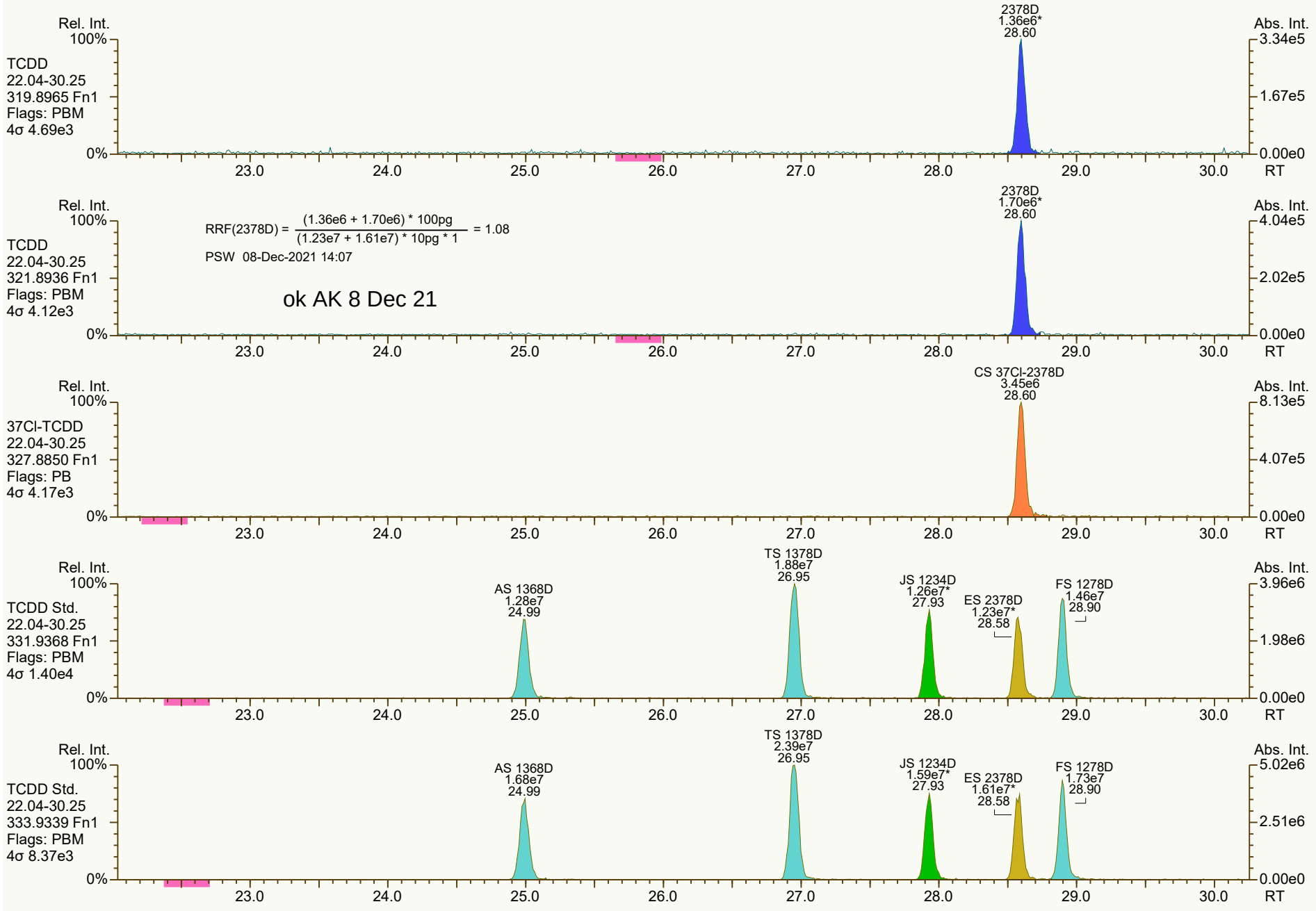
Instrument ID: MM3 GC Column ID: ZB-5ms

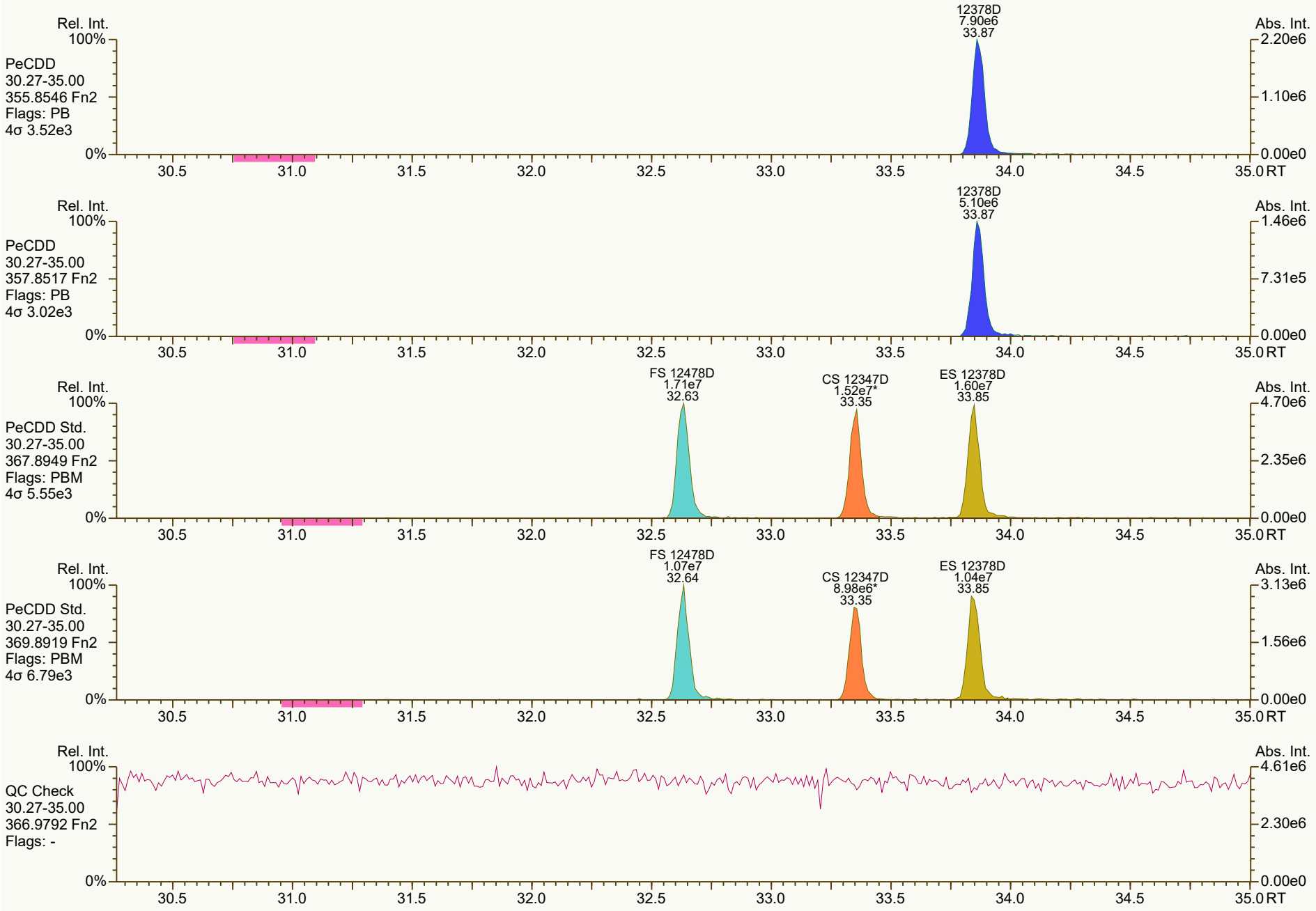
VER Data Filename: 211207R28 Analysis Date: 08-DEC-2021 08:57:07

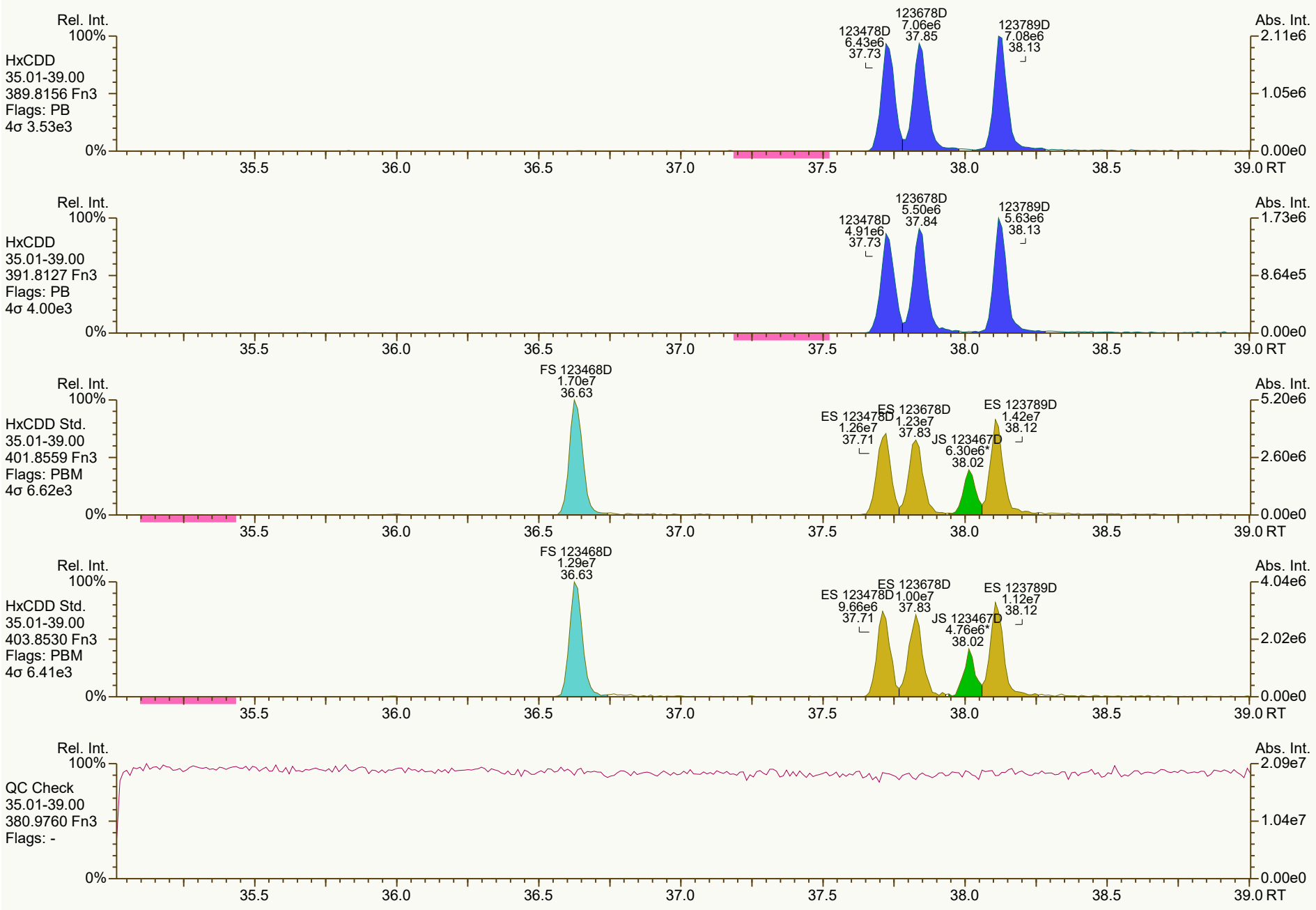
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.77	0.65	-	0.89	Y	96	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32	-	1.78	Y	89.4	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05	-	1.43	Y	101	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05	-	1.43	Y	104	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	92.8	72	-	138	Y
13C-OCDD	M+2/M+4	0.92	0.76	-	1.02	Y	158	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65	-	0.89	Y	93.1	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32	-	1.78	Y	94.3	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	98.1	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	110	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	114	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	110	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	102	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.43	0.37	-	0.51	Y	92	77	-	129	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	158	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.23	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.69	1.32	-	1.78	Y	94.8	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	101	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	120	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	117	70	-	130	Y

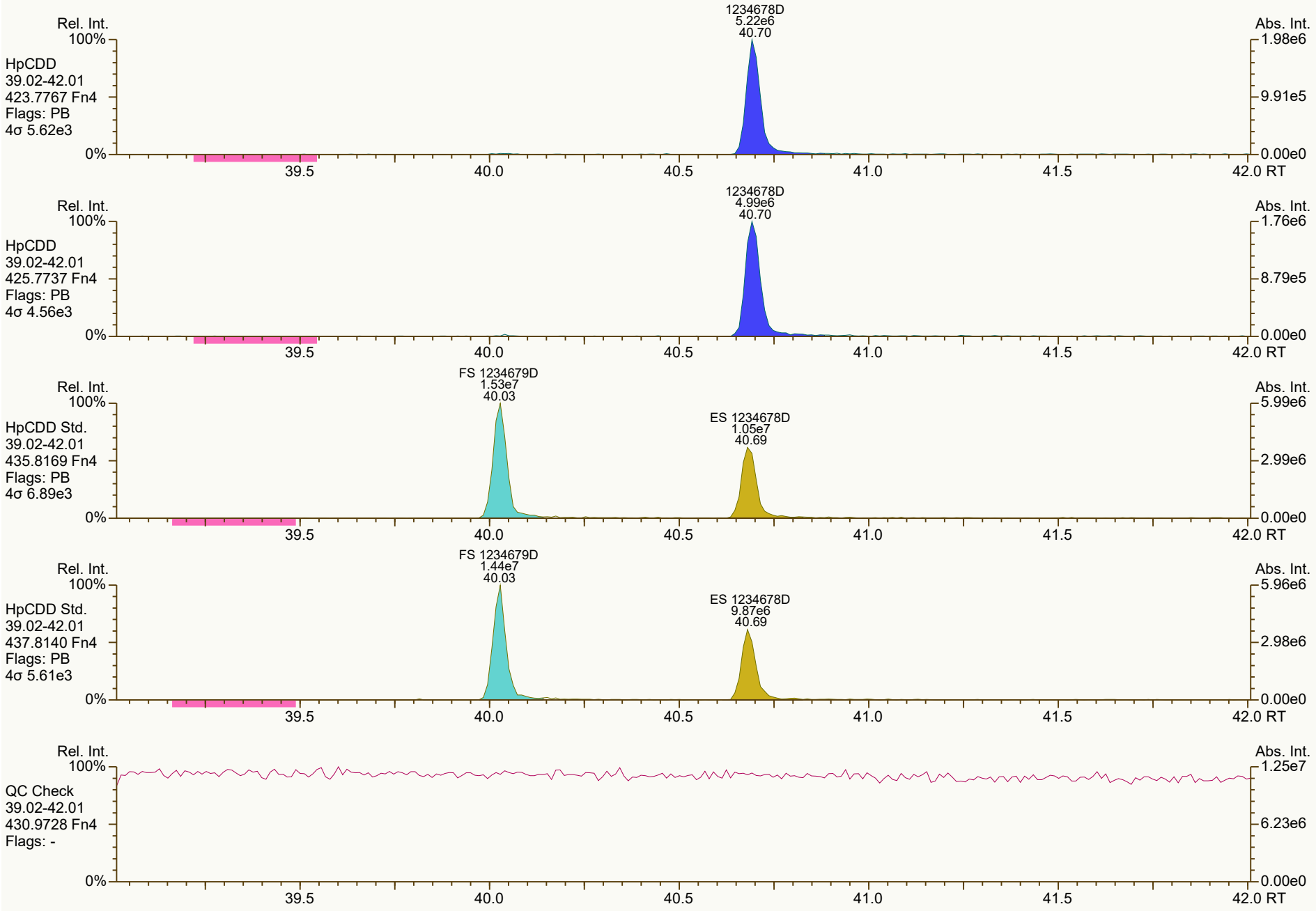
Processed: 08 Dec 2021 14:02 Analyst: pw

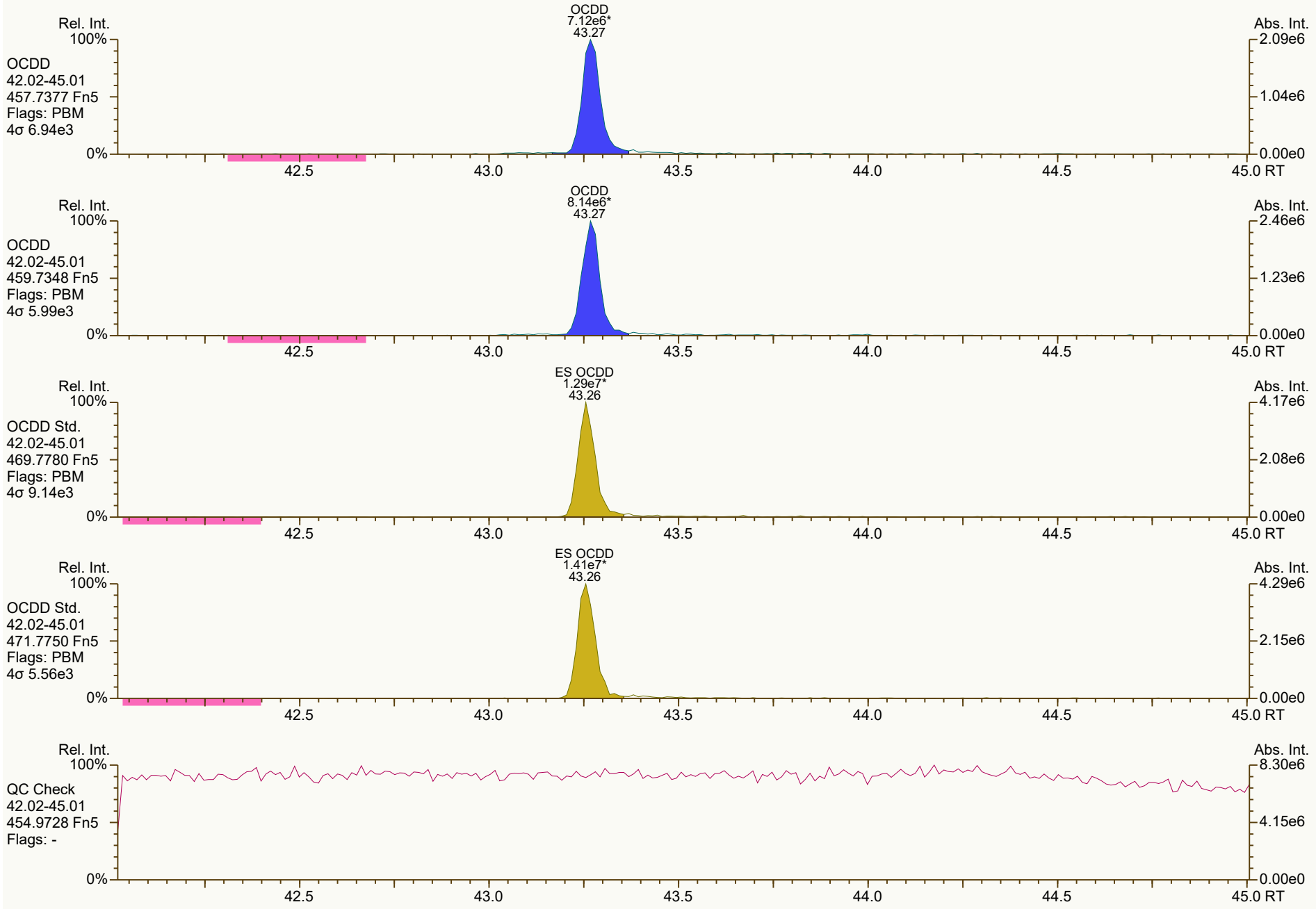

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.99e6
2.50e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.61e6
2.30e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.09e7
1.04e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.25e7
6.23e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.30e6
4.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 4.69e3
0%
2378D
1.36e6*
28.60
Abs. Int.
3.34e5
1.67e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 4.12e3
0%
RRF(2378D) = (1.36e6 + 1.70e6) * 100pg / (1.23e7 + 1.61e7) * 10pg * 1 = 1.08
PSW 08-Dec-2021 14:07
ok AK 8 Dec 21
2378D
1.70e6*
28.60
Abs. Int.
4.04e5
2.02e5
0.00e0
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.17e3
0%
CS 37Cl-2378D
3.45e6
28.60
Abs. Int.
8.13e5
4.07e5
0.00e0
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PBM
4σ 1.40e4
0%
AS 1368D
1.28e7
24.99
TS 1378D
1.88e7
26.95
JS 1234D
1.26e7*
27.93
ES 2378D
1.23e7*
28.58
FS 1278D
1.46e7
28.90
Abs. Int.
3.96e6
1.98e6
0.00e0
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PBM
4σ 8.37e3
0%
AS 1368D
1.68e7
24.99
TS 1378D
2.39e7
26.95
JS 1234D
1.59e7*
27.93
ES 2378D
1.61e7*
28.58
FS 1278D
1.73e7
28.90
Abs. Int.
5.02e6
2.51e6
0.00e0


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PB
4σ 3.52e3
0%
12378D
7.90e6
33.87
Abs. Int.
2.20e6
1.10e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 3.02e3
0%
12378D
5.10e6
33.87
Abs. Int.
1.46e6
7.31e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PBM
4σ 5.55e3
0%
FS 12478D
1.71e7
32.63
CS 12347D
1.52e7*
33.35
ES 12378D
1.60e7
33.85
Abs. Int.
4.70e6
2.35e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PBM
4σ 6.79e3
0%
FS 12478D
1.07e7
32.64
CS 12347D
8.98e6*
33.35
ES 12378D
1.04e7
33.85
Abs. Int.
3.13e6
1.56e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.61e6
2.30e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

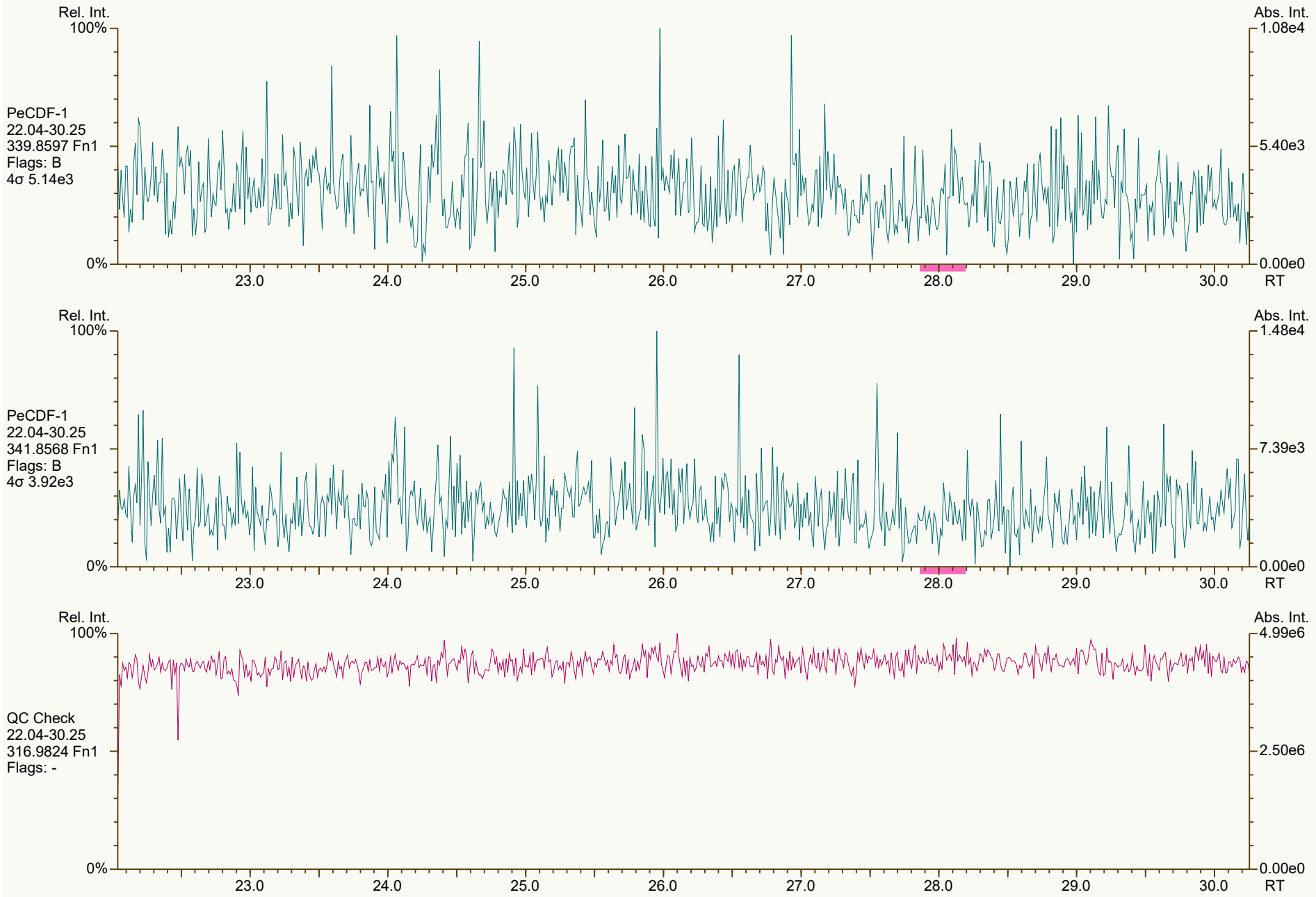

Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 3.53e3
0%
123478D
6.43e6
37.73
123678D
7.06e6
37.85
123789D
7.08e6
38.13
Abs. Int.
2.11e6
1.05e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 4.00e3
0%
123478D
4.91e6
37.73
123678D
5.50e6
37.84
123789D
5.63e6
38.13
Abs. Int.
1.73e6
8.64e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 6.62e3
0%
FS 123468D
1.70e7
36.63
ES 123478D
1.26e7
37.71
ES 123678D
1.23e7
37.83
JS 123467D
6.30e6*
38.02
ES 123789D
1.42e7
38.12
Abs. Int.
5.20e6
2.60e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 6.41e3
0%
FS 123468D
1.29e7
36.63
ES 123478D
9.66e6
37.71
ES 123678D
1.00e7
37.83
JS 123467D
4.76e6*
38.02
ES 123789D
1.12e7
38.12
Abs. Int.
4.04e6
2.02e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.09e7
1.04e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

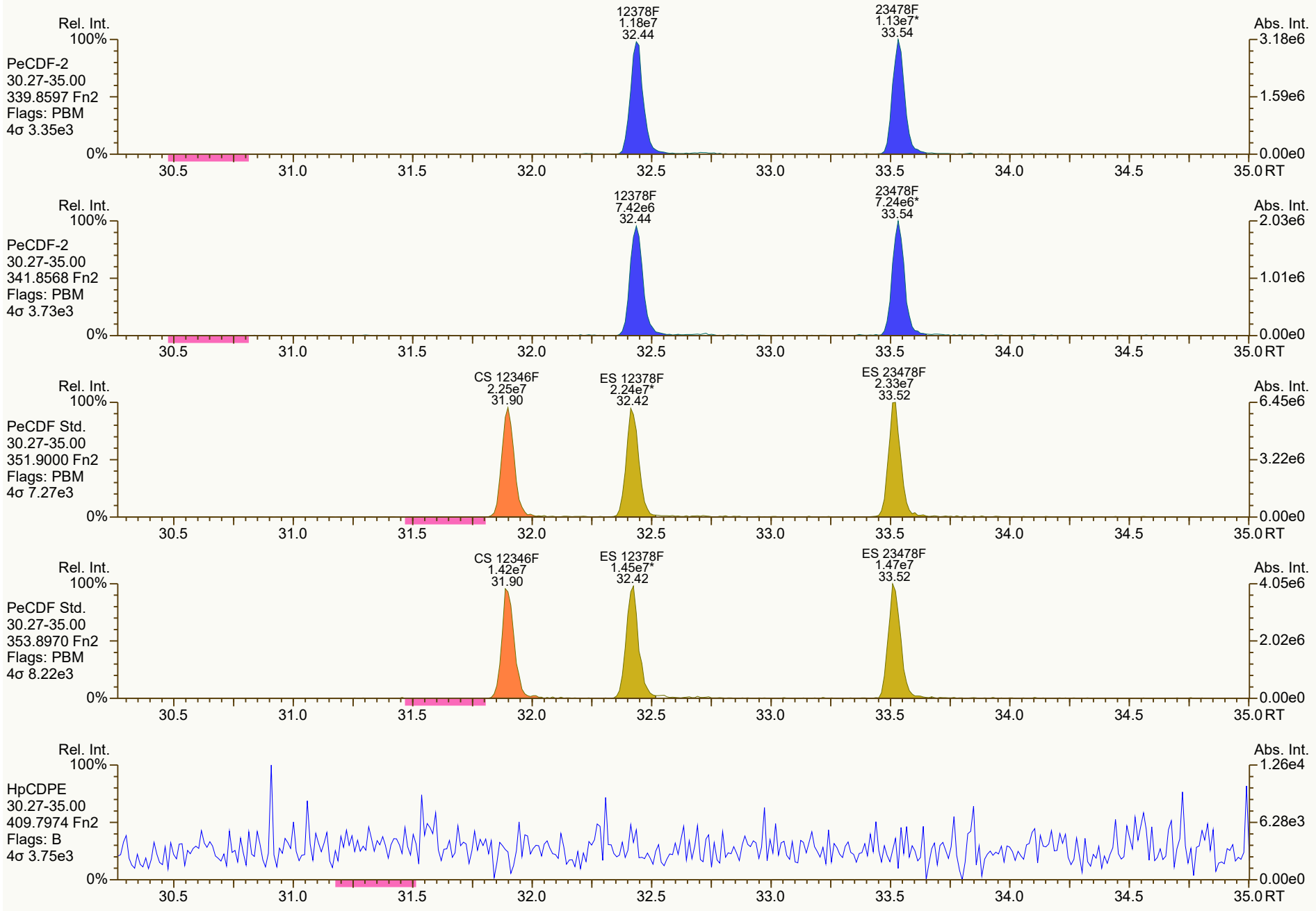

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 5.62e3
1234678D
5.22e6
40.70
Abs. Int.
1.98e6
9.91e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 4.56e3
1234678D
4.99e6
40.70
Abs. Int.
1.76e6
8.79e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.89e3
FS 1234679D
1.53e7
40.03
ES 1234678D
1.05e7
40.69
Abs. Int.
5.99e6
2.99e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.61e3
FS 1234679D
1.44e7
40.03
ES 1234678D
9.87e6
40.69
Abs. Int.
5.96e6
2.98e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.25e7
6.23e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

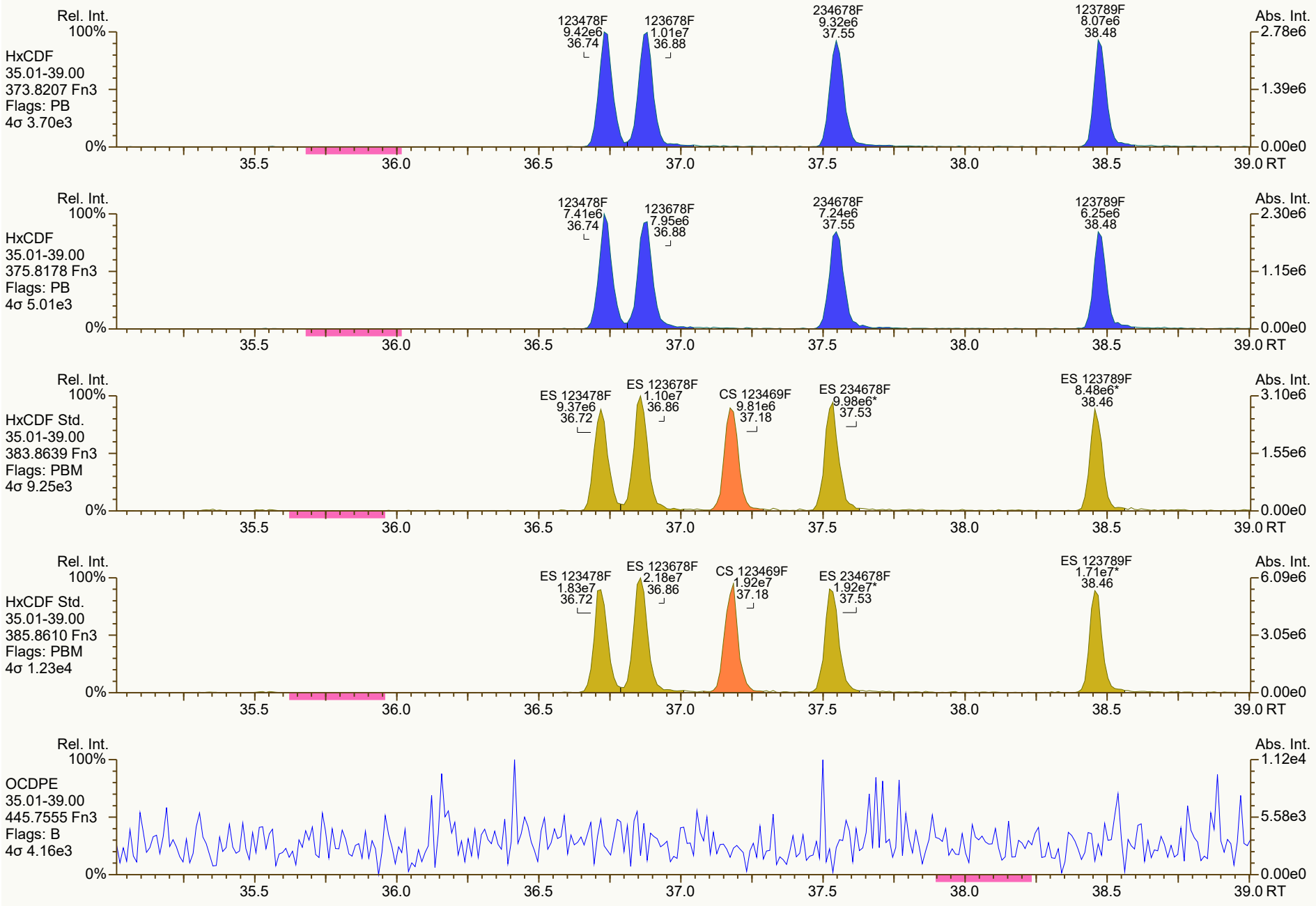

OCDD
7.12e6*
43.27
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 6.94e3
0%
Abs. Int.
2.09e6
1.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
8.14e6*
43.27
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 5.99e3
0%
Abs. Int.
2.46e6
1.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.29e7*
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 9.14e3
0%
Abs. Int.
4.17e6
2.08e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.41e7*
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 5.56e3
0%
Abs. Int.
4.29e6
2.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.30e6
4.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

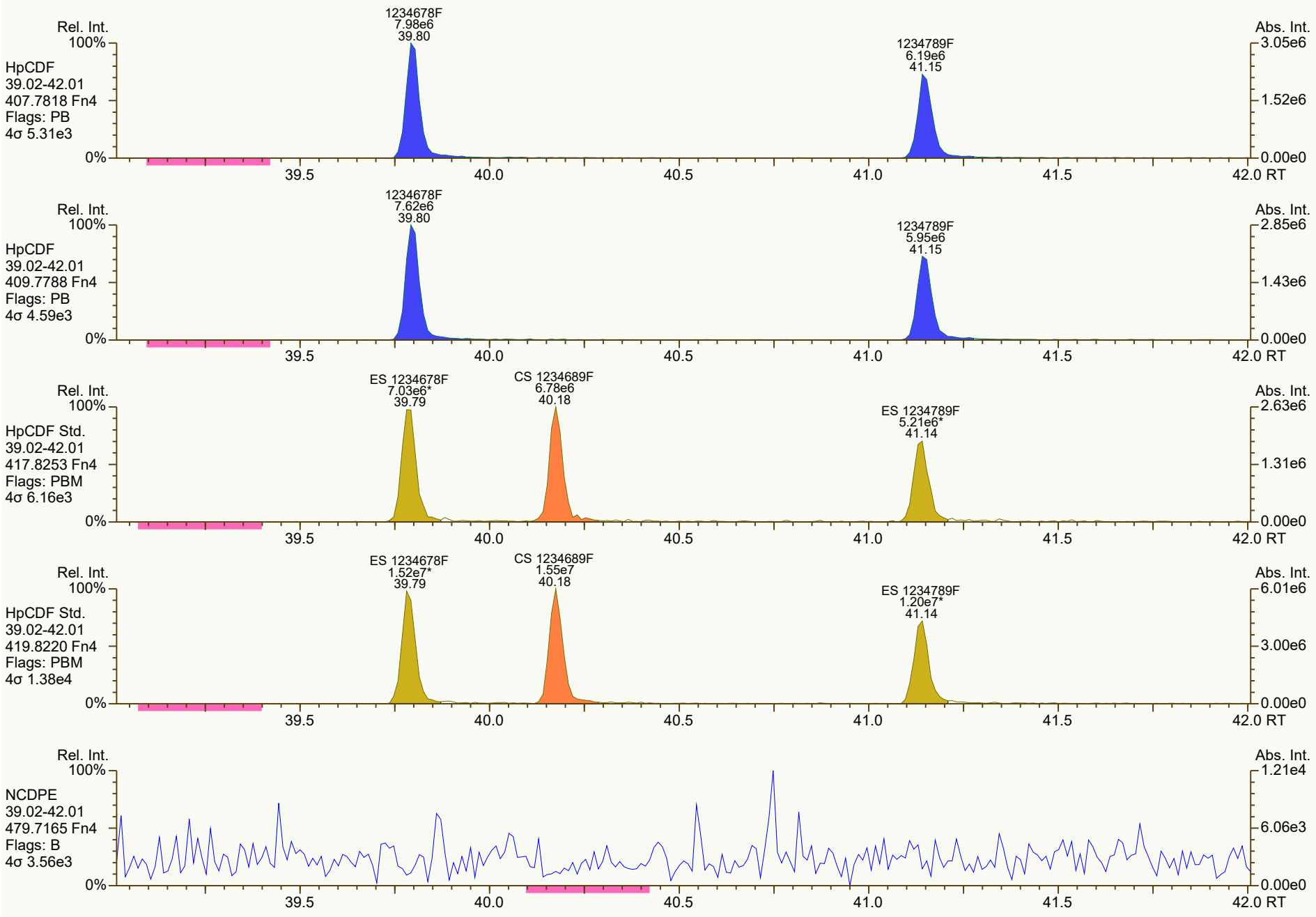
SGS ID: CS3_211207_DF_RG
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
Acq: 08-Dec-2021 08:57:07
User: PSW Datafile: 211207R28

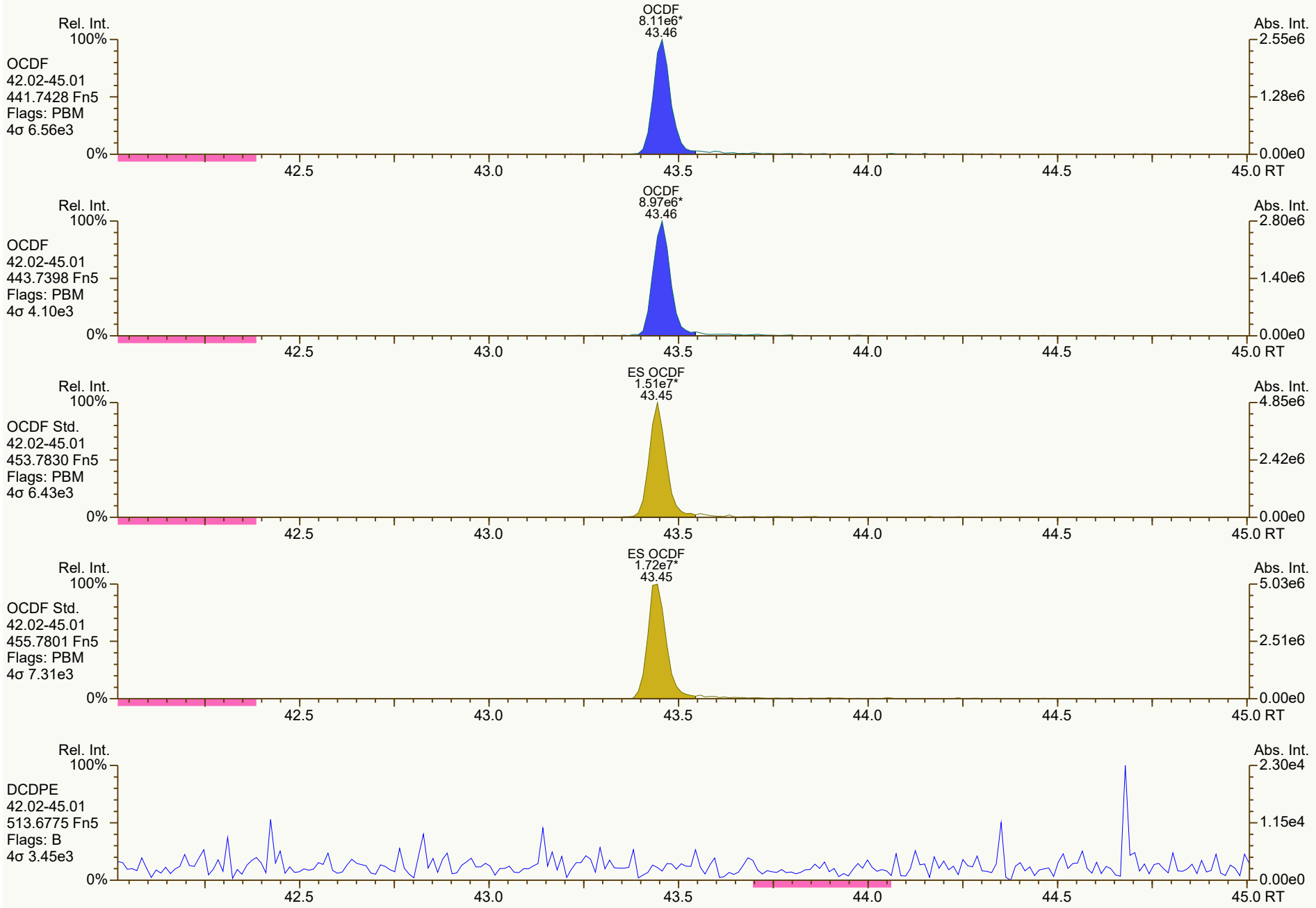


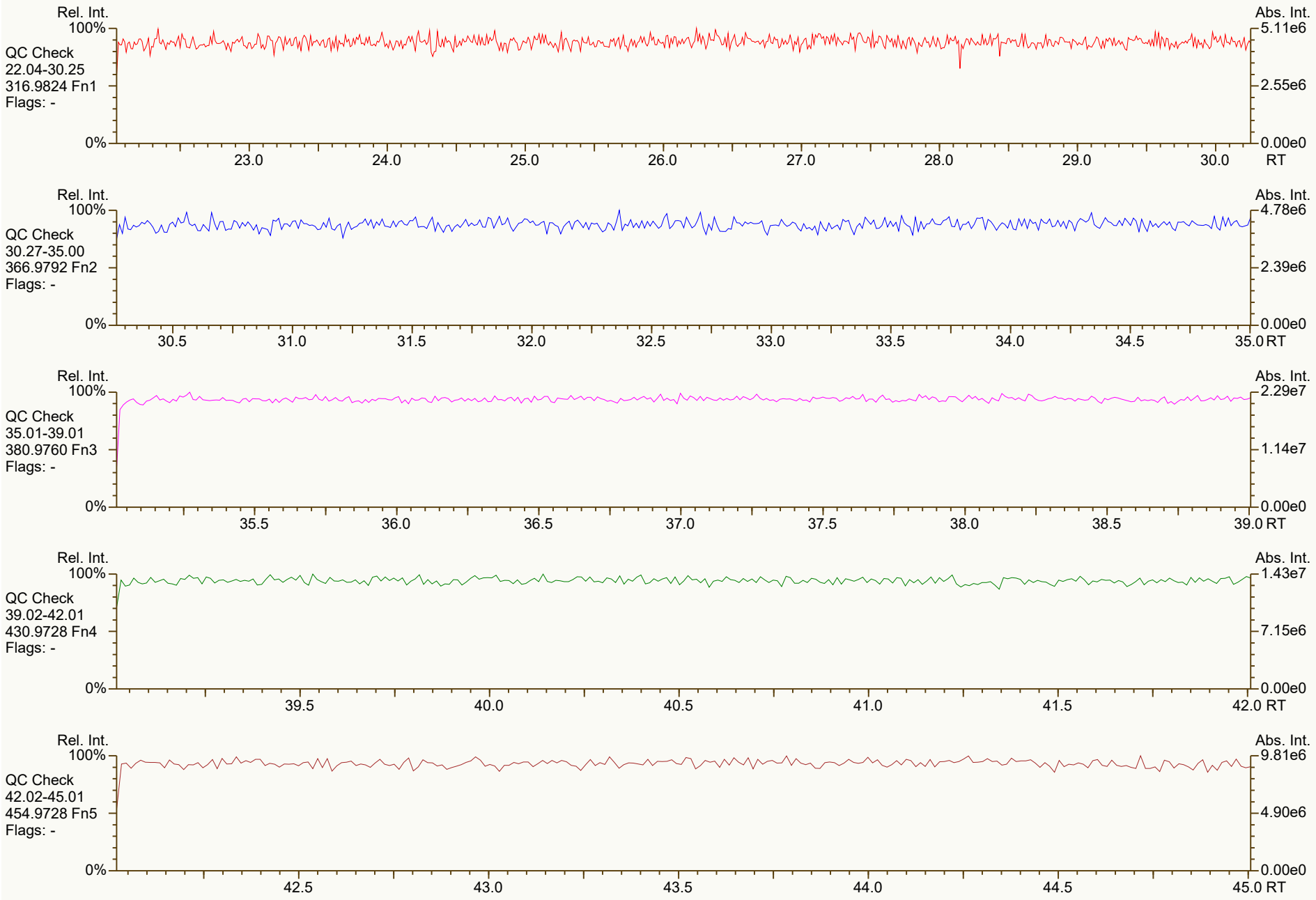

Rel. Int.
100%
0%
Abs. Int.
1.08e4
5.40e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 5.14e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.48e4
7.39e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 3.92e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.99e6
2.50e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 3.35e3
0%
12378F
1.18e7
32.44
23478F
1.13e7*
33.54
Abs. Int.
3.18e6
1.59e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.73e3
0%
12378F
7.42e6
32.44
23478F
7.24e6*
33.54
Abs. Int.
2.03e6
1.01e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 7.27e3
0%
CS 12346F
2.25e7
31.90
ES 12378F
2.24e7*
32.42
ES 23478F
2.33e7
33.52
Abs. Int.
6.45e6
3.22e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 8.22e3
0%
CS 12346F
1.42e7
31.90
ES 12378F
1.45e7*
32.42
ES 23478F
1.47e7
33.52
Abs. Int.
4.05e6
2.02e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.75e3
0%
Abs. Int.
1.26e4
6.28e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PB
4σ 3.70e3
123478F
9.42e6
36.74
123678F
1.01e7
36.88
234678F
9.32e6
37.55
123789F
8.07e6
38.48
Abs. Int.
2.78e6
1.39e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PB
4σ 5.01e3
123478F
7.41e6
36.74
123678F
7.95e6
36.88
234678F
7.24e6
37.55
123789F
6.25e6
38.48
Abs. Int.
2.30e6
1.15e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PBM
4σ 9.25e3
ES 123478F
9.37e6
36.72
ES 123678F
1.10e7
36.86
CS 123469F
9.81e6
37.18
ES 234678F
9.98e6*
37.53
ES 123789F
8.48e6*
38.46
Abs. Int.
3.10e6
1.55e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PBM
4σ 1.23e4
ES 123478F
1.83e7
36.72
ES 123678F
2.18e7
36.86
CS 123469F
1.92e7
37.18
ES 234678F
1.92e7*
37.53
ES 123789F
1.71e7*
38.46
Abs. Int.
6.09e6
3.05e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 4.16e3
Abs. Int.
1.12e4
5.58e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 5.31e3
1234678F
7.98e6
39.80
1234789F
6.19e6
41.15
Abs. Int.
3.05e6
1.52e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 4.59e3
1234678F
7.62e6
39.80
1234789F
5.95e6
41.15
Abs. Int.
2.85e6
1.43e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 6.16e3
ES 1234678F
7.03e6*
39.79
CS 1234689F
6.78e6
40.18
ES 1234789F
5.21e6*
41.14
Abs. Int.
2.63e6
1.31e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 1.38e4
ES 1234678F
1.52e7*
39.79
CS 1234689F
1.55e7
40.18
ES 1234789F
1.20e7*
41.14
Abs. Int.
6.01e6
3.00e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.56e3
Abs. Int.
1.21e4
6.06e3
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDF
8.11e6*
43.46
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 6.56e3
0%
Abs. Int.
2.55e6
1.28e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
8.97e6*
43.46
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 4.10e3
0%
Abs. Int.
2.80e6
1.40e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.51e7*
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 6.43e3
0%
Abs. Int.
4.85e6
2.42e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.72e7*
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 7.31e3
0%
Abs. Int.
5.03e6
2.51e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.45e3
0%
Abs. Int.
2.30e4
1.15e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.11e6
2.55e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.43e7
7.15e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.81e6
4.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 3.84e3
0%
Abs. Int.
1.03e4
5.16e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 3.54e3
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: B
4σ 3.32e3
0%
Abs. Int.
1.21e4
6.03e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: B
4σ 1.09e4
0%
Abs. Int.
3.24e4
1.62e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: B
4σ 6.52e3
0%
Abs. Int.
2.64e4
1.32e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 3.96e3
0%
Abs. Int.
1.08e4
5.41e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: B
4σ 2.74e3
0%
Abs. Int.
7.44e3
3.72e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: B
4σ 5.12e3
0%
Abs. Int.
2.12e4
1.06e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: B
4σ 5.81e3
0%
Abs. Int.
1.70e4
8.51e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: B
4σ 3.15e3
0%
Abs. Int.
8.30e3
4.15e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PB
4σ 3.53e3
0%
Abs. Int.
8.39e3
4.20e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: B
4σ 5.58e3
0%
Abs. Int.
2.51e4
1.25e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: B
4σ 4.95e3
0%
Abs. Int.
1.59e4
7.97e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

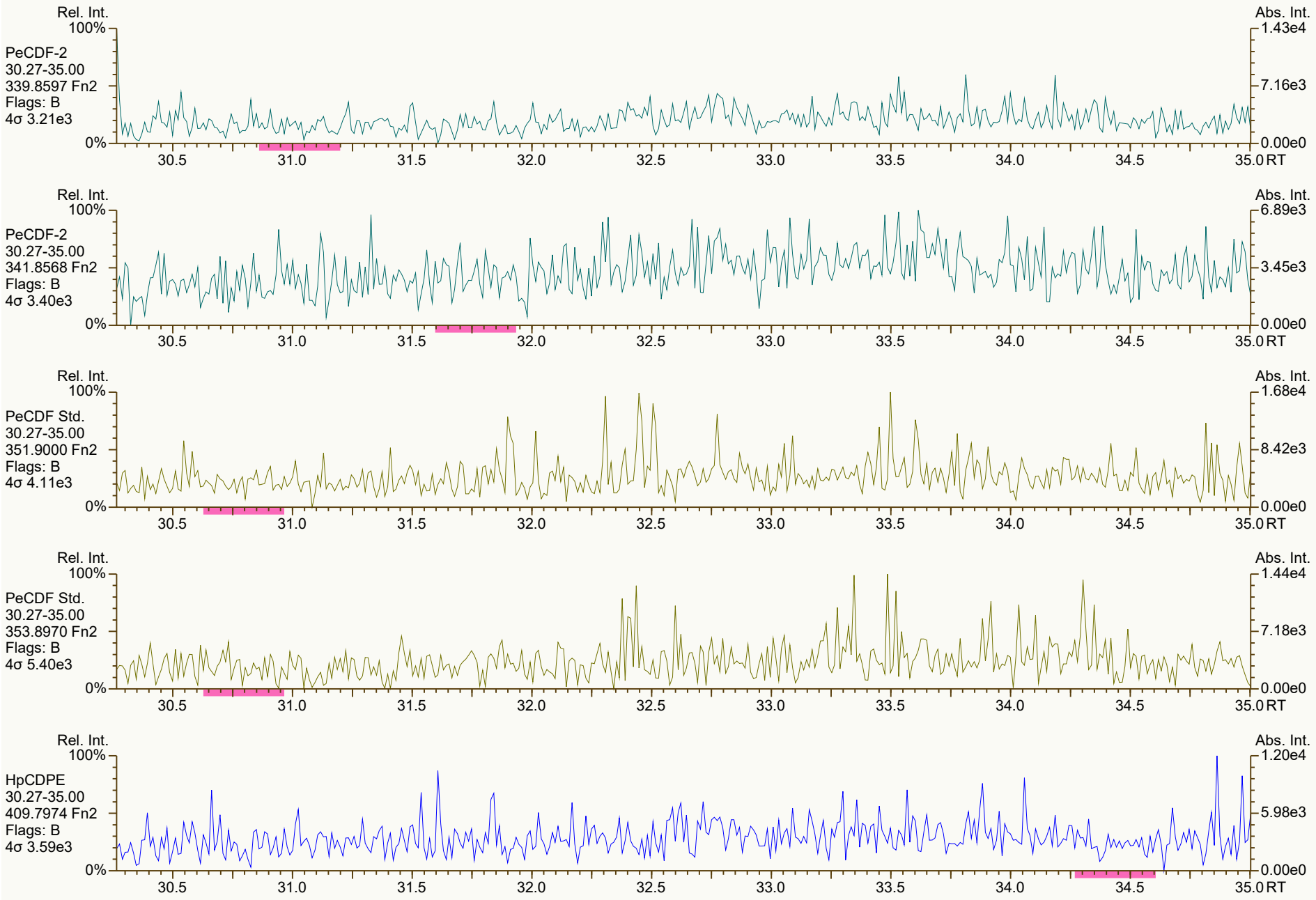

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: B
4σ 3.22e3
0%
Abs. Int.
1.30e4
6.50e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: B
4σ 3.50e3
0%
Abs. Int.
9.48e3
4.74e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: B
4σ 6.52e3
0%
Abs. Int.
1.51e4
7.55e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: B
4σ 4.96e3
0%
Abs. Int.
1.40e4
7.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.43e7
7.15e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT

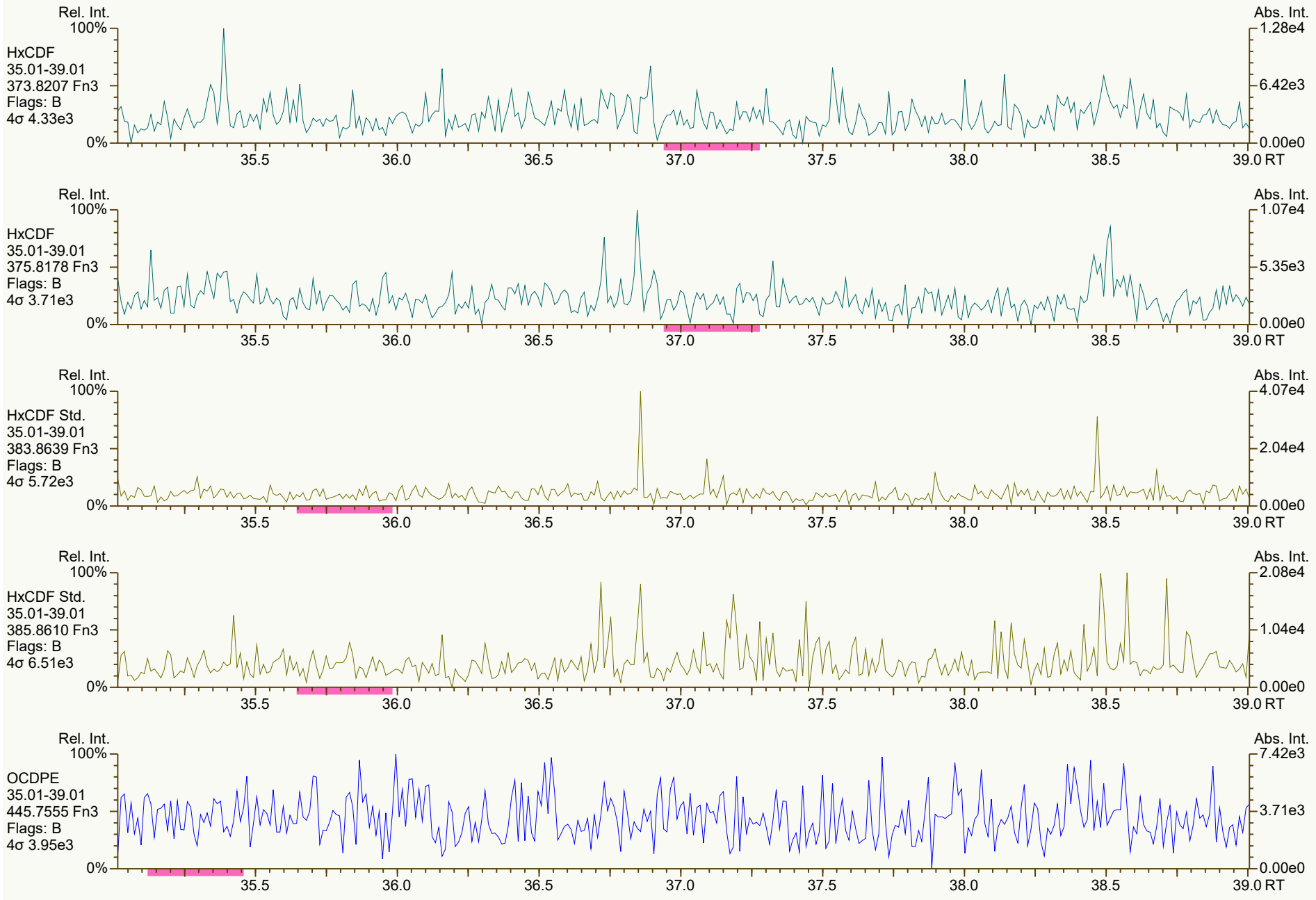

Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: B
4σ 5.93e3
0%
Abs. Int.
3.88e4
1.94e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: B
4σ 4.64e3
0%
Abs. Int.
2.51e4
1.26e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: B
4σ 3.90e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: B
4σ 4.67e3
0%
Abs. Int.
1.10e4
5.48e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.81e6
4.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_211208_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
Acq: 08-Dec-2021 11:26:53
User: PSW Datafile: 211207R31




Rel. Int.
100%
0%
Abs. Int.
8.99e3
4.49e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 4.48e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.77e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 4.07e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
5.11e6
2.55e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: B
4σ 3.21e3
0%
Abs. Int.
1.43e4
7.16e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: B
4σ 3.40e3
0%
Abs. Int.
6.89e3
3.45e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: B
4σ 4.11e3
0%
Abs. Int.
1.68e4
8.42e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: B
4σ 5.40e3
0%
Abs. Int.
1.44e4
7.18e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.59e3
0%
Abs. Int.
1.20e4
5.98e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: B
4σ 4.33e3
0%
Abs. Int.
1.28e4
6.42e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.01
375.8178 Fn3
Flags: B
4σ 3.71e3
0%
Abs. Int.
1.07e4
5.35e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: B
4σ 5.72e3
0%
Abs. Int.
4.07e4
2.04e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: B
4σ 6.51e3
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.95e3
0%
Abs. Int.
7.42e3
3.71e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: B
4σ 5.03e3
0%
Abs. Int.
2.23e4
1.11e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: B
4σ 4.38e3
0%
Abs. Int.
1.47e4
7.37e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: B
4σ 7.11e3
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: B
4σ 5.43e3
0%
Abs. Int.
2.43e4
1.22e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.31e3
0%
Abs. Int.
6.82e3
3.41e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: B
4σ 4.38e3
0%
Abs. Int.
1.45e4
7.26e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: B
4σ 3.38e3
0%
Abs. Int.
1.09e4
5.47e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: B
4σ 6.24e3
0%
Abs. Int.
1.45e4
7.27e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: B
4σ 4.84e3
0%
Abs. Int.
1.71e4
8.57e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.16e3
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Abs. Int.
8.47e3
4.24e3
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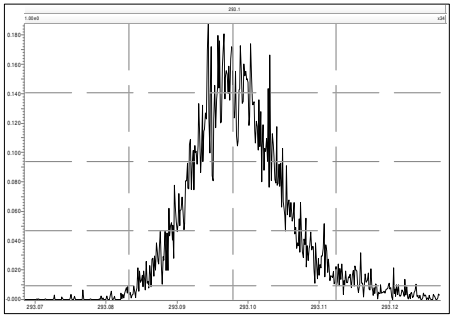

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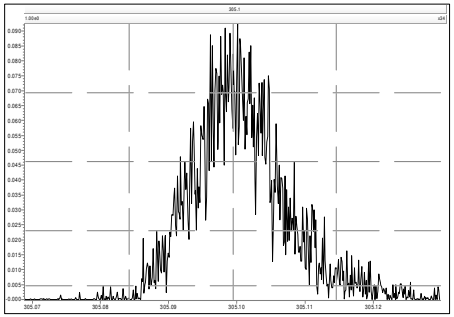

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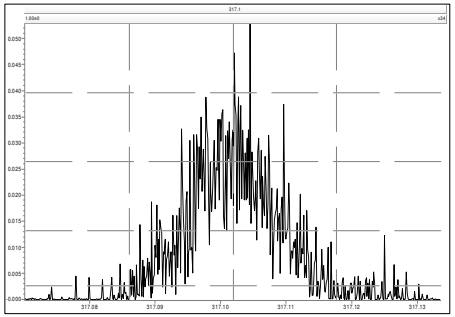

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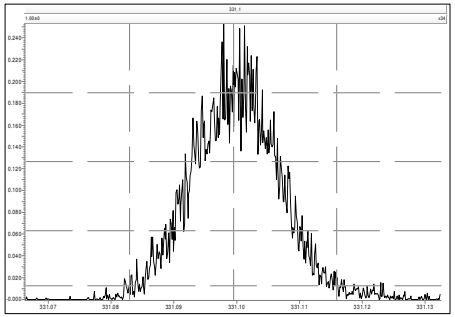

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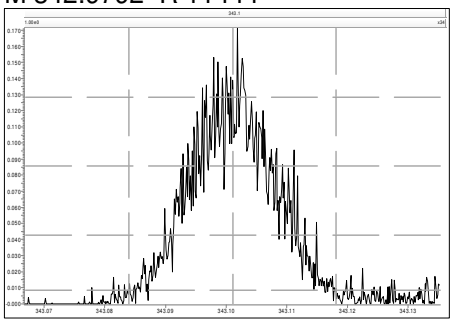
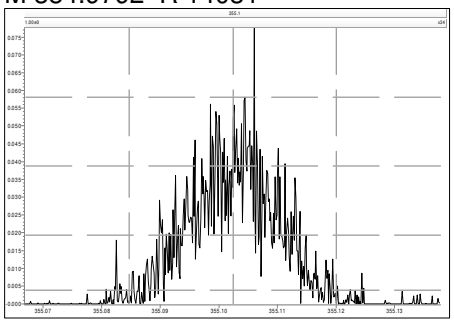


M 354.9792 R 14031



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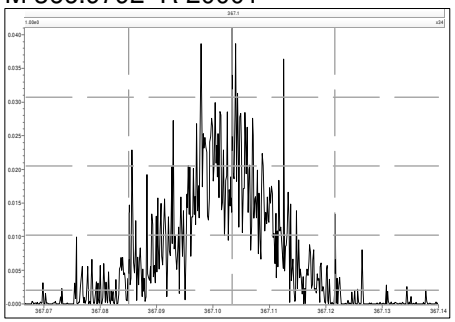
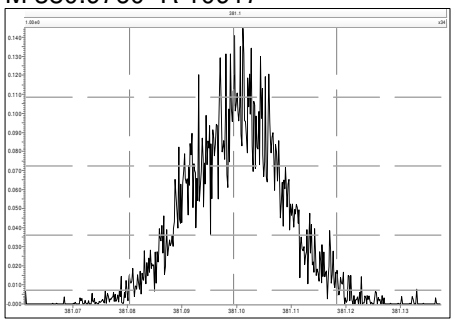


M 380.9760 R 10917



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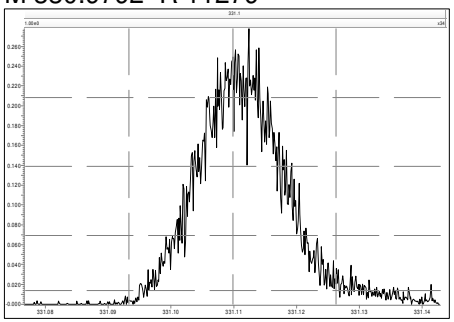

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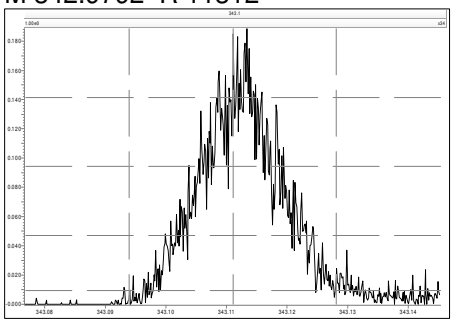

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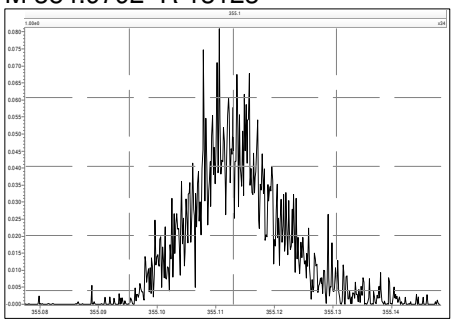

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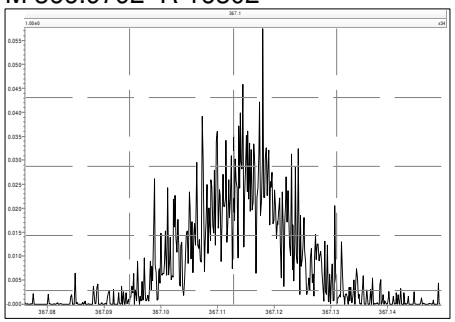

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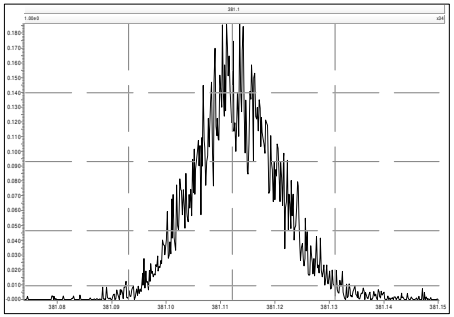
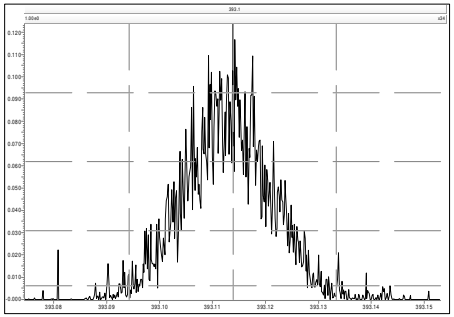


M 392.9760 R 11662



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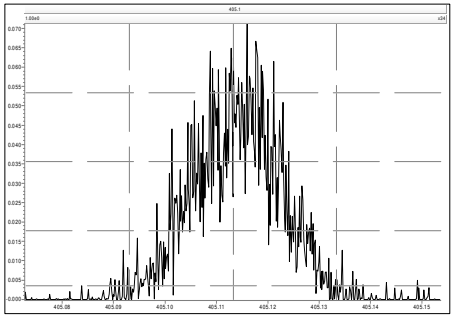

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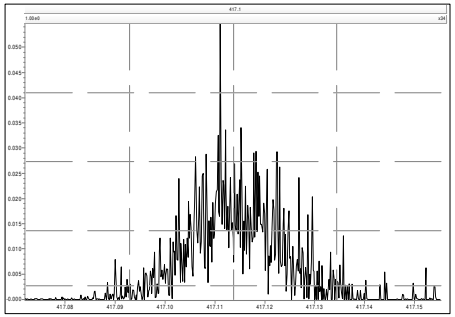

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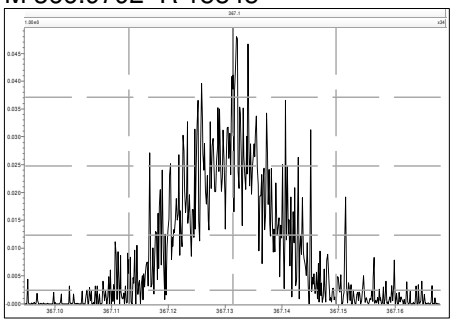

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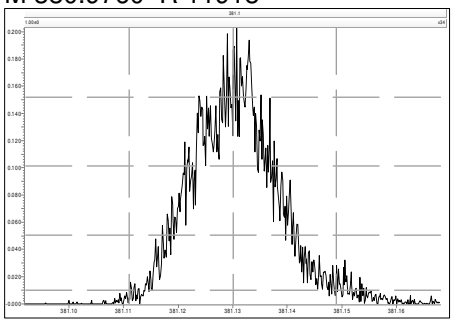

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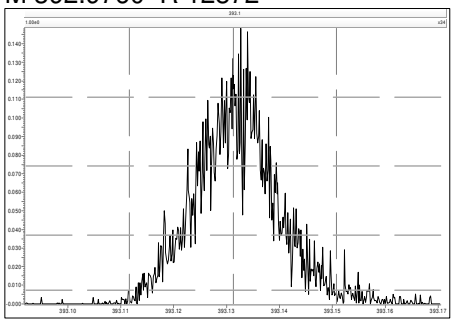

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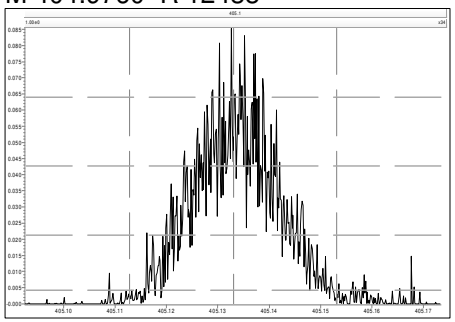

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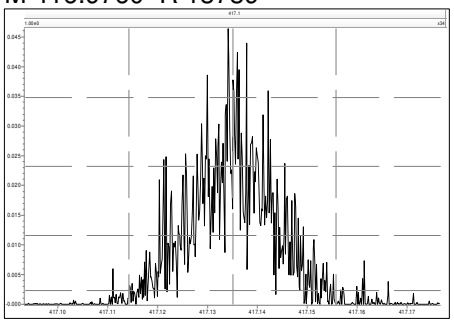

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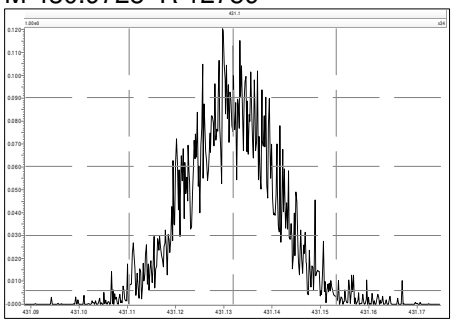
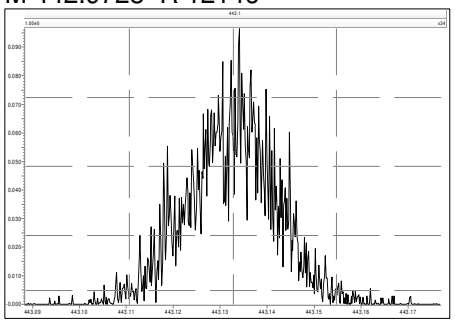


M 442.9728 R 12146



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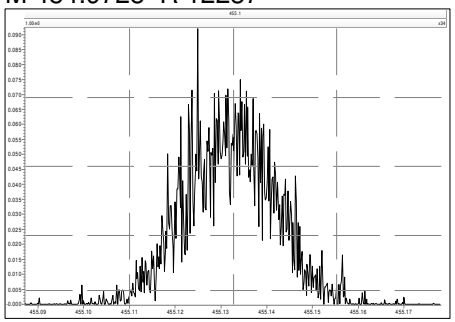

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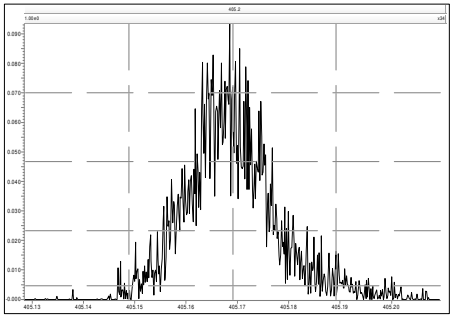

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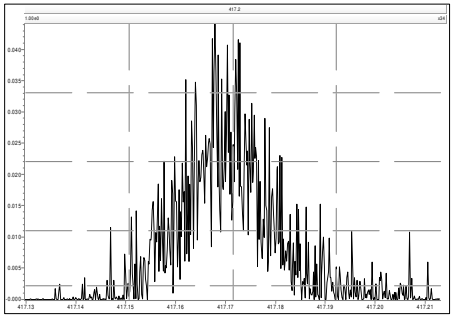
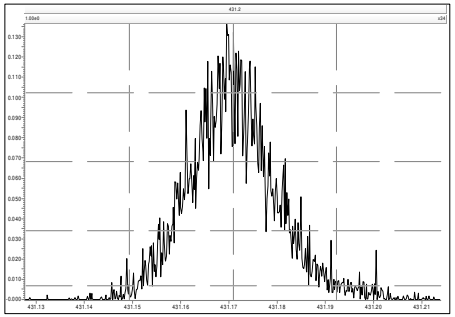


M 430.9728 R 11611



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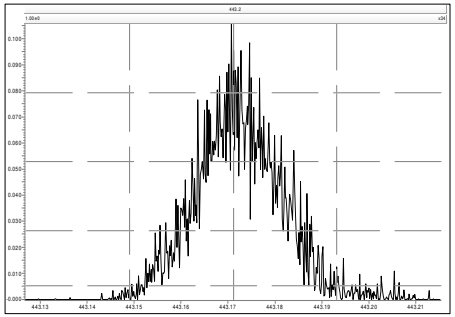

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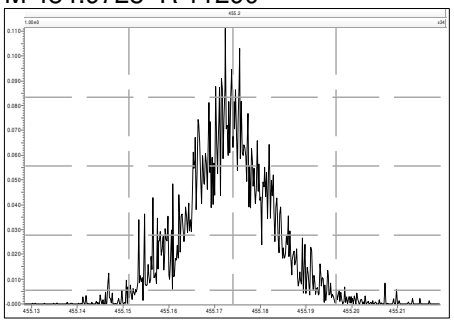

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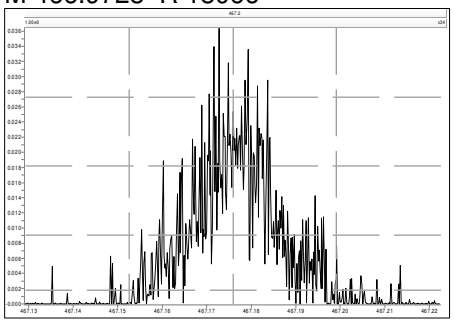

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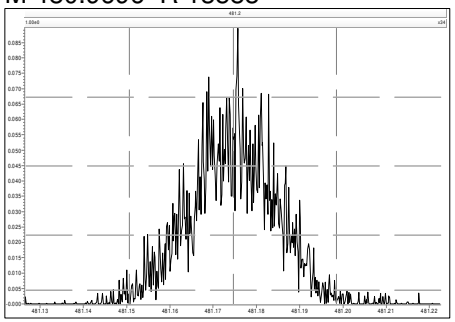

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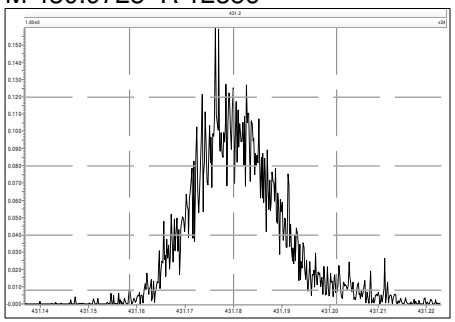
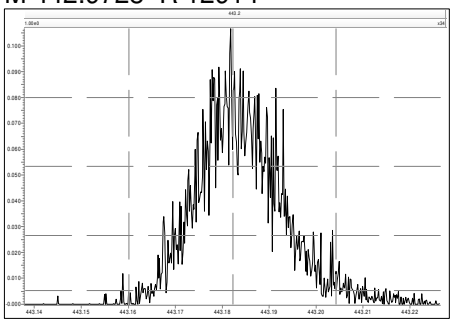


M 442.9728 R 12914



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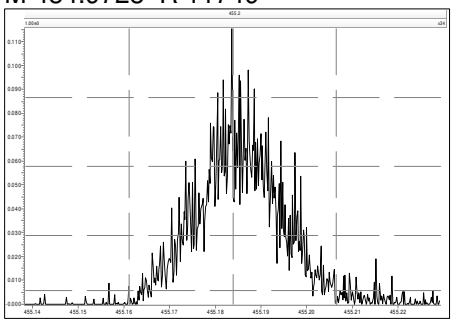

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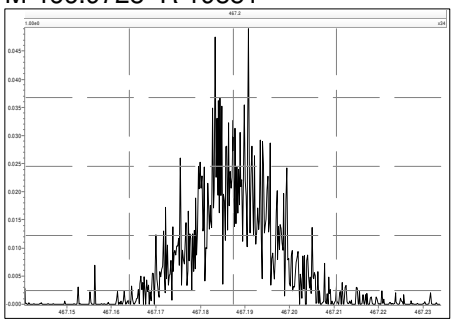

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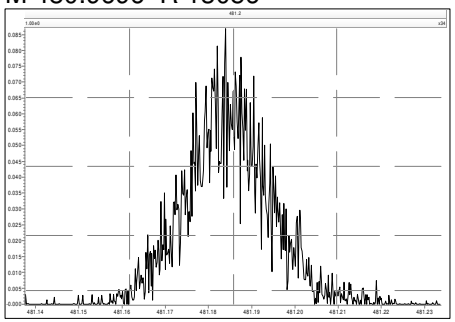

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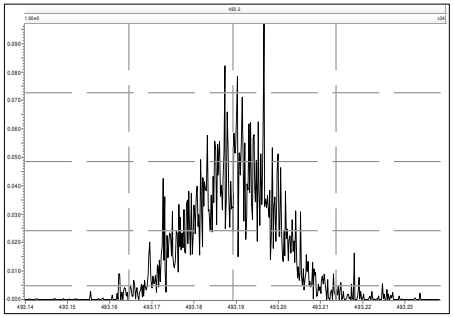

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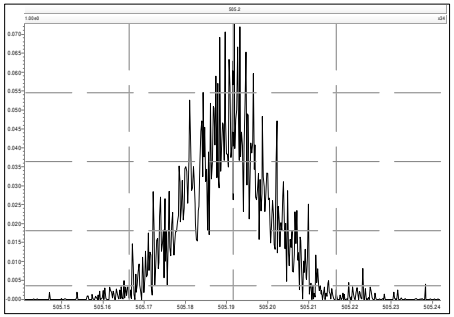

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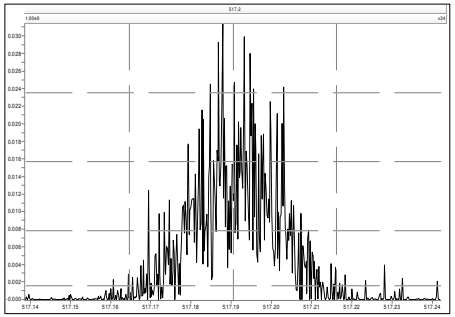

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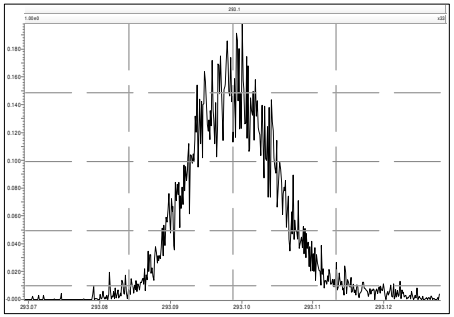
M 292.9824 R 11090



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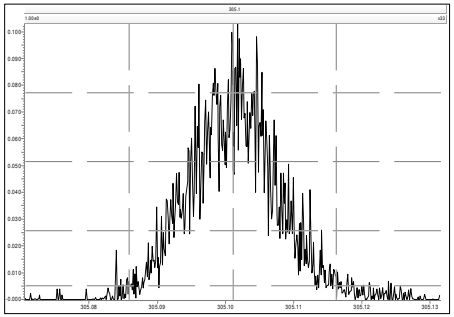

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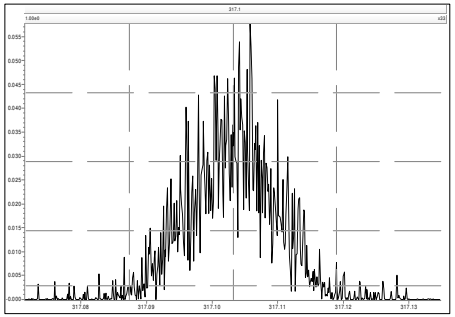
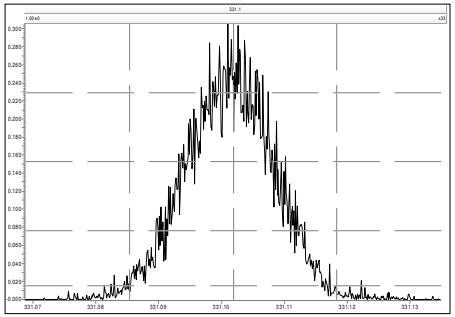


M 330.9792 R 11245



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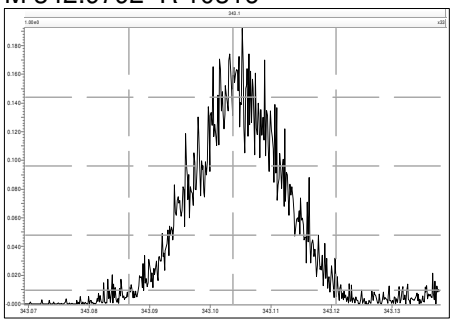

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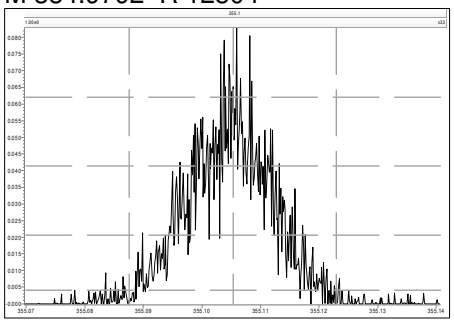

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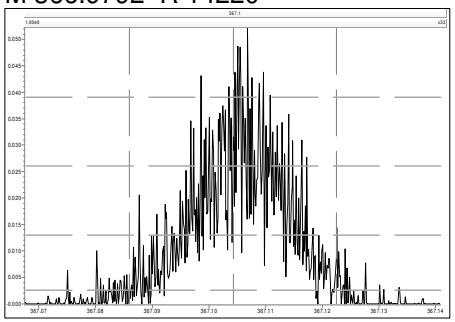

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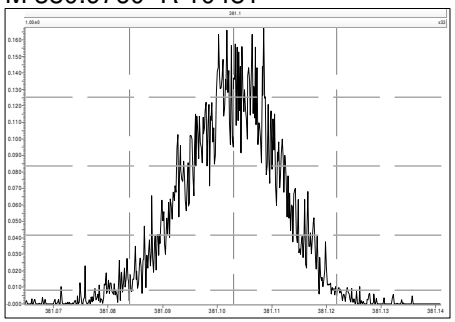

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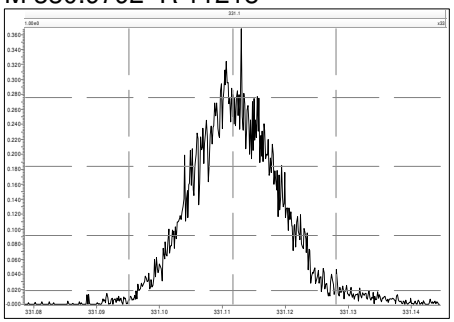

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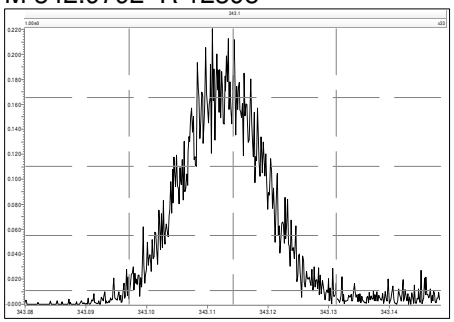

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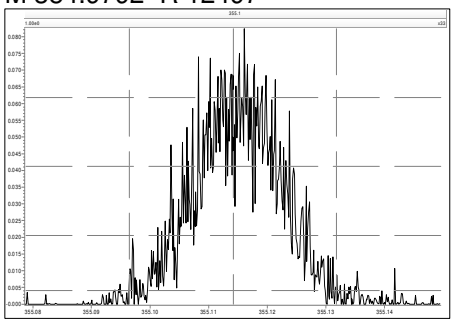

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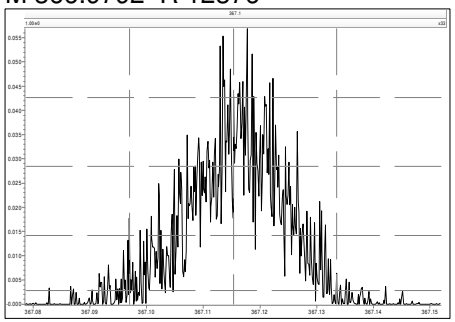
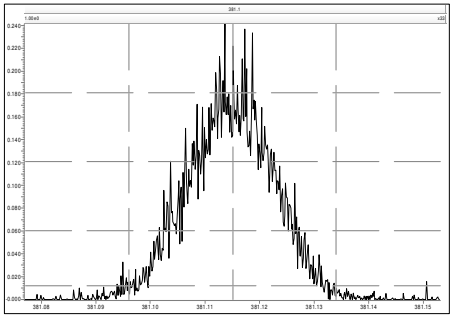
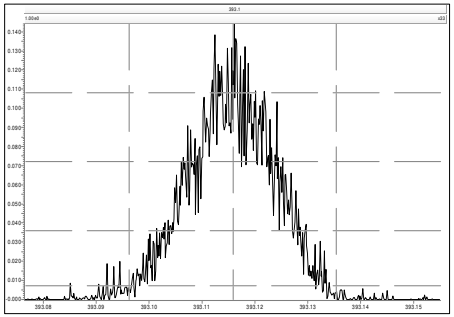


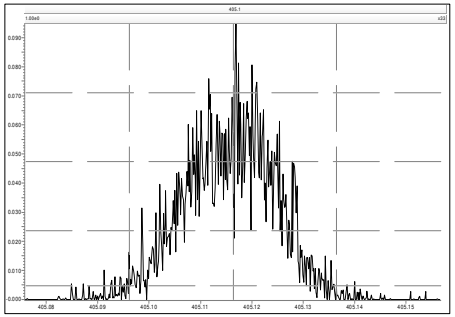
M 380.9760 R 11111



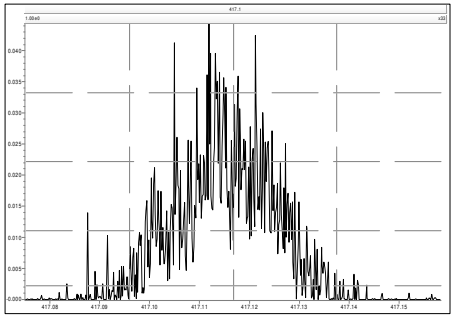
M 392.9760 R 11536



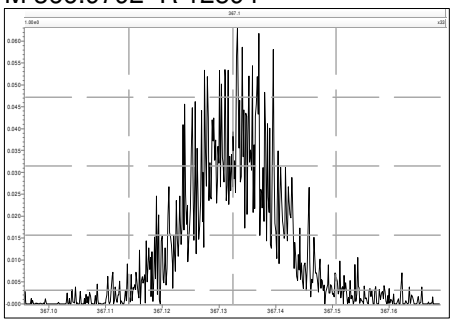
M 404.9760 R 12164



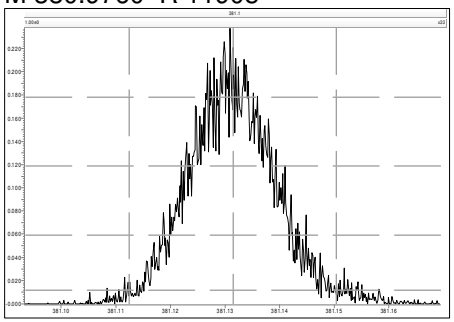
M 416.9760 R 17818



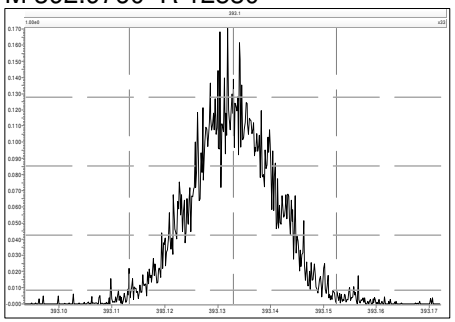
M 366.9792 R 12594



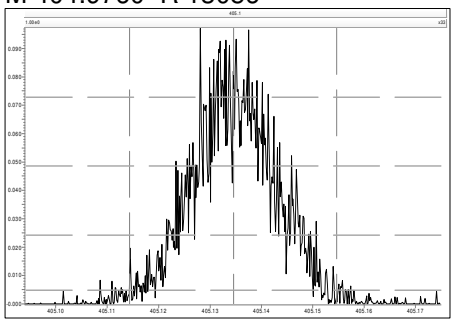
M 380.9760 R 11905



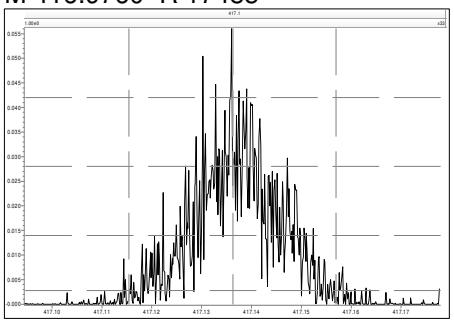
M 392.9760 R 12530



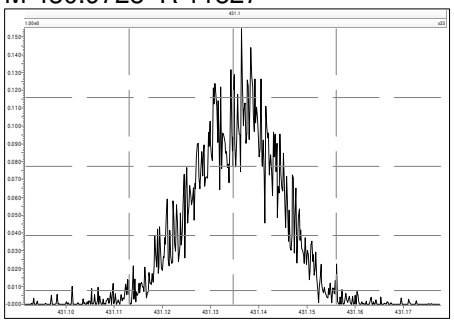
M 404.9760 R 13056



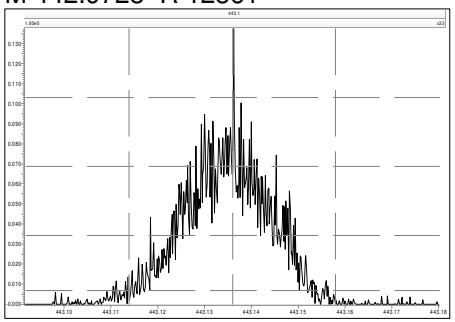
M 416.9760 R 17485



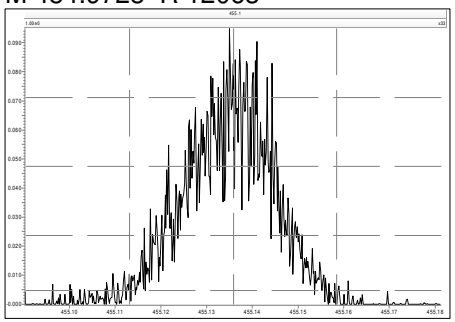
M 430.9728 R 11827



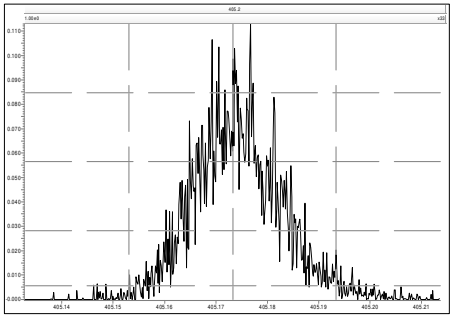
M 442.9728 R 12561



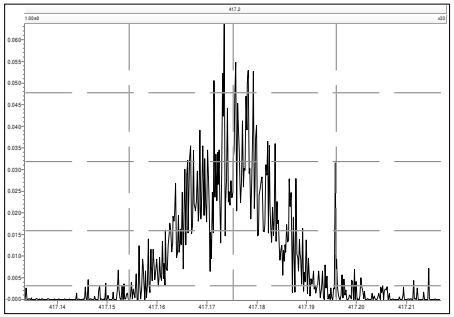
M 454.9728 R 12063



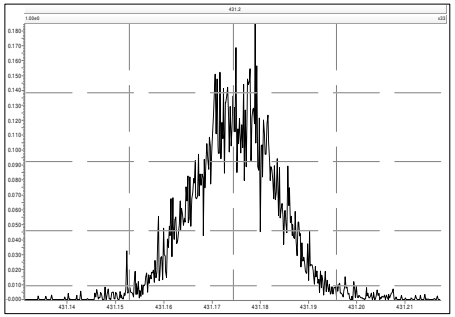
M 404.9760 R 11521



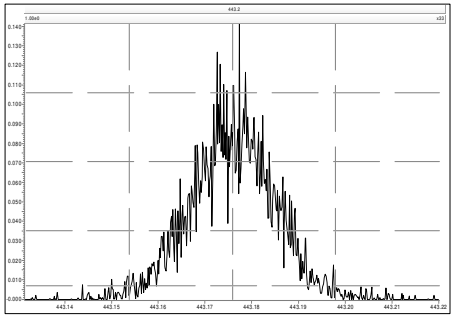
M 416.9760 R 13360



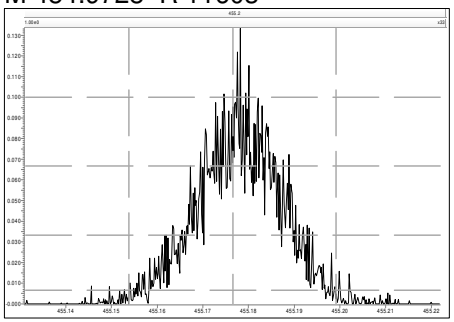
M 430.9728 R 11723



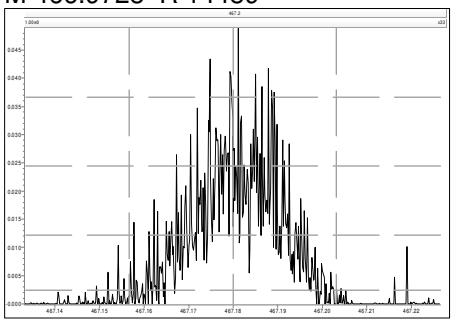
M 442.9728 R 11792



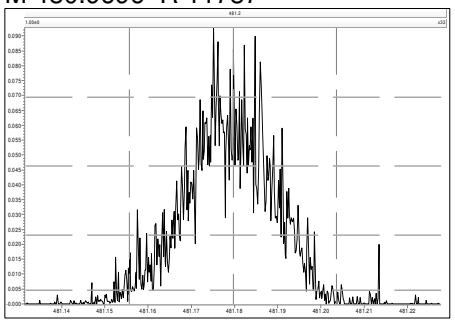
M 454.9728 R 11603



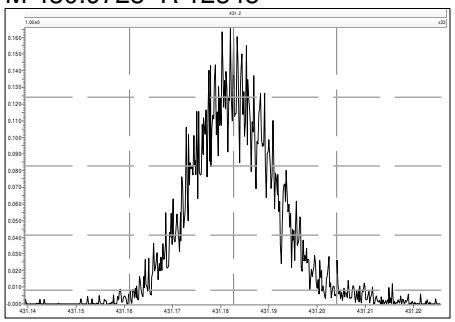
M 466.9728 R 14489



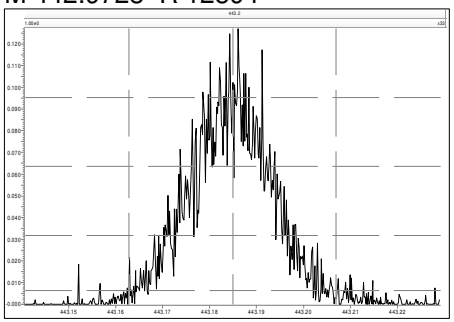
M 480.9696 R 11737



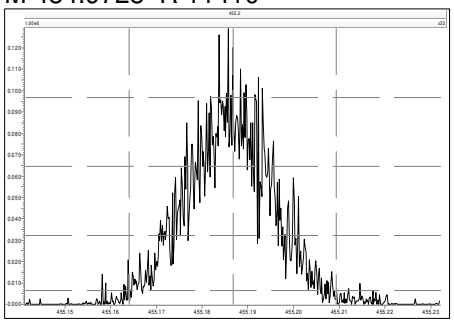
M 430.9728 R 12345



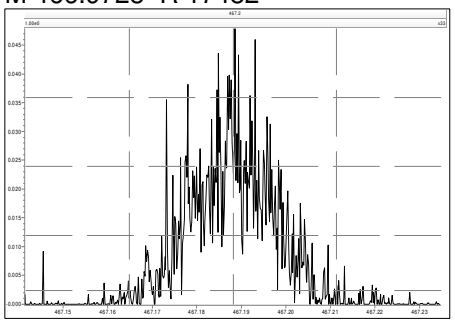
M 442.9728 R 12594



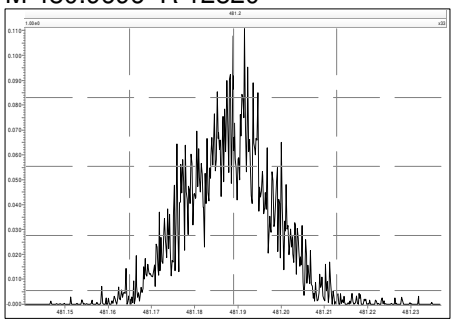
M 454.9728 R 11410



M 466.9728 R 17482

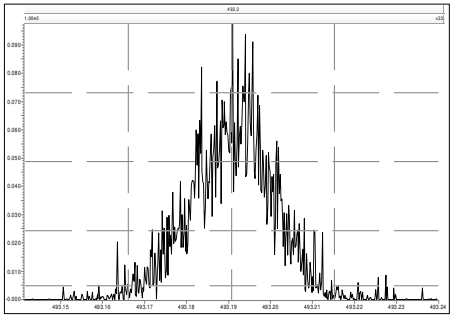


M 480.9696 R 12820

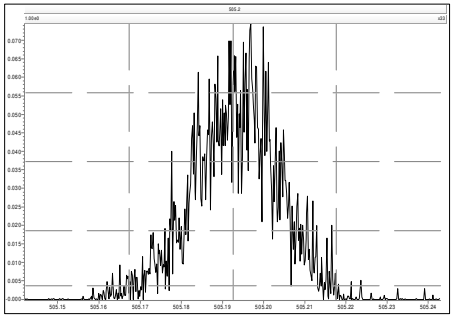


Printed: Wednesday, December 08, 2021 14:45:13 Eastern Standard Time

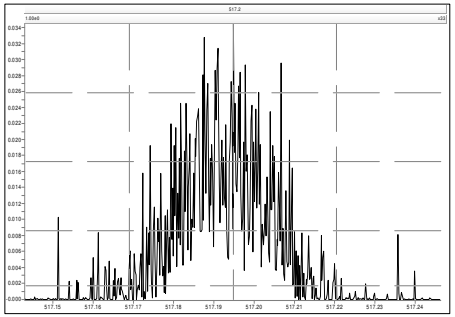
M 492.9696 R 11818



M 504.9696 R 13201



M 516.9697 R 17830



Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 0.25 pg/uL CS0	210727R03 0.5 pg/uL CS1	210727R04 2 pg/uL CS2	210727R05 10 pg/uL CS3	210727R06 40 pg/uL CS4	210727R07 200 pg/uL CS5	210727R08 500 pg/uL CS6
2378-TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
12378-PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
123478-HxCDD	1.06	3.3%	1.10	1.10	0.99	1.05	1.05	1.06	1.05
123678-HxCDD	1.08	2.9%	1.12	1.07	1.02	1.08	1.10	1.10	1.09
123789-HxCDD	1.02	4.8%	1.10	1.05	0.95	0.99	0.99	1.01	1.00
1234678-HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
OCDD	1.07	4.2%	1.15	1.04	1.01	1.07	1.08	1.06	1.08
2378-TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
12378-PeCDF	0.95	3.2%	1.00	0.94	0.90	0.94	0.95	0.93	0.96
23478-PeCDF	0.94	3.7%	0.99	0.90	0.90	0.92	0.93	0.96	0.96
123478-HxCDF	1.23	3.3%	1.32	1.23	1.19	1.22	1.24	1.24	1.22
123678-HxCDF	1.13	3.0%	1.17	1.16	1.07	1.10	1.13	1.14	1.14
234678-HxCDF	1.15	4.2%	1.23	1.19	1.08	1.14	1.13	1.15	1.15
123789-HxCDF	1.14	3.5%	1.19	1.08	1.09	1.14	1.14	1.15	1.16
1234678-HpCDF	1.36	3.6%	1.46	1.35	1.31	1.34	1.33	1.37	1.36
1234789-HpCDF	1.30	4.0%	1.34	1.20	1.26	1.34	1.30	1.35	1.33
OCDF	1.03	4.1%	1.01	1.01	0.95	1.03	1.05	1.06	1.08
ES 2378-TCDD	1.03	1.7%	1.02	1.02	1.02	1.05	1.06	1.04	1.02
ES 12378-PeCDD	1.03	3.5%	1.01	1.02	0.99	1.01	1.03	1.07	1.10
ES 123478-HxCDD	0.99	4.4%	0.97	0.93	0.99	1.00	0.98	1.03	1.07
ES 123678-HxCDD	0.97	5.2%	0.94	0.91	0.95	1.01	0.94	1.02	1.05
ES 123789-HxCDD	1.12	5.1%	1.09	1.04	1.12	1.14	1.09	1.17	1.22
ES 1234678-HpCDD	0.99	5.2%	0.95	0.92	0.98	1.02	0.97	1.05	1.06
ES OCDD	0.78	8.4%	0.73	0.71	0.74	0.77	0.75	0.85	0.89
ES 2378-TCDF	1.08	1.2%	1.06	1.08	1.07	1.09	1.09	1.08	1.10
ES 12378-PeCDF	0.93	2.7%	0.91	0.91	0.92	0.93	0.95	0.95	0.98
ES 23478-PeCDF	0.92	2.4%	0.90	0.91	0.90	0.93	0.93	0.93	0.96
ES 123478-HxCDF	1.14	5.9%	1.09	1.04	1.13	1.18	1.12	1.21	1.23
ES 123678-HxCDF	1.30	4.9%	1.24	1.21	1.27	1.35	1.27	1.36	1.37
ES 234678-HxCDF	1.20	4.9%	1.14	1.12	1.18	1.23	1.20	1.27	1.27
ES 123789-HxCDF	1.14	5.9%	1.06	1.07	1.11	1.16	1.12	1.20	1.24
ES 1234678-HpCDF	0.95	5.7%	0.90	0.88	0.92	0.98	0.94	1.00	1.03
ES 1234789-HpCDF	0.85	7.0%	0.79	0.78	0.82	0.86	0.83	0.90	0.94
ES OCDF	0.93	8.9%	0.86	0.83	0.88	0.93	0.90	1.01	1.06

APPROVED
Carla_Lyon , 7/28/2021, 12:24:59 PM

Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 **0.25 pg/uL CS0**	210727R03 **0.5 pg/uL CS1**	210727R04 **2 pg/uL CS2**	210727R05 **10 pg/uL CS3**	210727R06 **40 pg/uL CS4**	210727R07 **200 pg/uL CS5**	210727R08 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.31	2.3%	-	1.32	1.27	1.30	1.31	1.35	-
CS 12347-PeCDD	0.89	2.1%	0.89	0.91	0.88	0.87	0.93	0.88	0.89
CS 12346-PeCDF	0.87	1.7%	0.86	0.88	0.86	0.89	0.88	0.86	0.85
CS 123469-HxCDF	1.09	2.8%	1.06	1.04	1.08	1.14	1.09	1.12	1.09
CS 1234689-HpCDF	0.86	3.3%	0.86	0.84	0.86	0.92	0.86	0.86	0.84
SS 37Cl-2378-TCDD	1.26	2.3%	-	1.29	1.25	1.24	1.23	1.29	-
SS 12347-PeCDD	0.86	4.0%	0.88	0.89	0.89	0.86	0.90	0.82 ✓	0.81
SS 12346-PeCDF	0.93	3.5%	0.94	0.97	0.93	0.96	0.93	0.91	0.87
SS 123469-HxCDF	0.84	2.8%	0.86	0.86	0.85	0.84	0.86	0.82	0.80
SS 1234689-HpCDF	0.91	6.0%	0.96	0.96	0.94	0.94	0.92	0.86	0.81
AS 1368-TCDD	1.02	0.7%	1.01	1.03	1.02	1.02 ✓	1.02	1.04	1.02
AS 1368-TCDF	1.08	1.9%	1.05	1.06	1.07	1.10	1.09	1.10	1.07
~~OCDD-a~~	~~0.07~~	~~7.2%~~	~~0.06~~	~~0.08~~	~~0.07~~	~~0.07~~	~~0.07~~	~~0.06~~	~~0.07~~
~~OCDF-a~~	~~0.06~~	~~7.0%~~	~~0.05~~	~~0.06~~	~~0.05~~	~~0.06~~	~~0.06~~	~~0.06~~	~~0.06~~
Not reported from this ICAL - CL 28Jul21									
Totals									
Total TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
Total PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
Total HxCDD	1.05	3.3%	1.11	1.07	0.99	1.04	1.05	1.06	1.05
Total HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
Total TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
Total PeCDF	0.94	3.3%	1.00	0.92	0.90	0.93	0.94	0.95	0.96
Total HxCDF	1.16	3.1%	1.23	1.16	1.11	1.15	1.16	1.17	1.17
Total HpCDF	1.33	3.2%	1.40	1.28	1.28	1.34	1.32	1.36	1.34
FS 1278-TCDD	1.08	0.7%	1.08	1.08	1.09	1.08	1.08	1.08	1.10
FS 12478-PeCDD	1.09	3.7%	1.10	1.10 ✓	1.12	1.13	1.13	1.07	1.01
FS 123468-HxCDD	1.26	4.2%	1.27	1.30	1.28	1.32	1.28	1.24	1.16
FS 1234679-HpCDD	1.36	5.0%	1.41	1.37	1.38	1.42	1.38 ✓	1.30	1.23
TS 1378-TCDD	1.35	2.3%	1.36 ✓	1.38	1.36	1.31	1.30	1.35	1.37

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	210727R01	2	SBS_210727_DF_RA	1.00	SIL 20-61-1	PSW	638-037	27-Jul-2021	08:17:39
2	210727R02	85	CS0_210727_DF_RA	1.00	SIL 25-6-3	PSW	693-472	27-Jul-2021	09:04:23
3	210727R03	86	CS1_210727_DF_RA	1.00	SIL 25-6-2	PSW	554-132	27-Jul-2021	09:54:34
4	210727R04	87	CS2_210727_DF_RA	1.00	SIL 25-6-1	PSW	377-233	27-Jul-2021	10:44:24
5	210727R05	3	CS3_210727_DF_RA	1.00	SIL 23-672-1	PSW	230-891	27-Jul-2021	11:32:33
6	210727R06	88	CS4_210727_DF_RA	1.00	SIL 25-5-4	PSW	602-590	27-Jul-2021	12:19:16
7	210727R07	89	CS5_210727_DF_RA	1.00	SIL 25-5-3	PSW	147-553	27-Jul-2021	13:09:36
8	210727R08	90	CS6_210727_DF_RA	1.00	SIL 25-5-2	PSW	783-472	27-Jul-2021	13:58:27

Alternate OCDD/OCDF - NR in this ICAL. CL 28Jul21

REVIEWED
paul_walton , 7/28/2021, 8:31:00 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:08 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan STD Association	SGS Environmental Services

Individual Native Standards

2378-TCDD	ES 2378-TCDD
12378-PeCDD	ES 12378-PeCDD
123478-HxCDD	ES 123478-HxCDD
123678-HxCDD	ES 123678-HxCDD
123789-HxCDD	ES 123789-HxCDD
1234678-HpCDD	ES 1234678-HpCDD
OCDD	ES OCDD
2378-TCDF	ES 2378-TCDF
12378-PeCDF	ES 12378-PeCDF
23478-PeCDF	ES 23478-PeCDF
123478-HxCDF	ES 123478-HxCDF
123678-HxCDF	ES 123678-HxCDF
234678-HxCDF	ES 234678-HxCDF
123789-HxCDF	ES 123789-HxCDF
1234678-HpCDF	ES 1234678-HpCDF
1234789-HpCDF	ES 1234789-HpCDF
OCDF	ES OCDF

Cleanup/Sampling Standards

CS 37Cl-2378-TCDD	1234 TCDD 13C12
CS 12347-PeCDD	1234 TCDD 13C12
CS 12346-PeCDF	1234 TCDF 13C12
CS 123469-HxCDF	123467 HxCDD 13C12
CS 1234689-HpCDF	123467 HxCDD 13C12

Alternate Standards

AS 1368-TCDD	1234 TCDD 13C12
AS 1368-TCDF	1234 TCDF 13C12

Shipping Standards

FS 1278-TCDD	ES 2378-TCDD
FS 12478-PeCDD	ES 12378-PeCDD
FS 123468-HxCDD	ES 123478-HxCDD
FS 1234679-HpCDD	ES 1234678-HpCDD
TS 1378-TCDD	ES 2378-TCDD

Extraction Standards

ES 2378-TCDD	1234 TCDD 13C12
ES 12378-PeCDD	1234 TCDD 13C12
ES 123478-HxCDD	123467 HxCDD 13C12
ES 123678-HxCDD	123467 HxCDD 13C12
ES 123789-HxCDD	123467 HxCDD 13C12
ES 1234678-HpCDD	123467 HxCDD 13C12
ES OCDD	123467 HxCDD 13C12
ES 2378-TCDF	1234 TCDF 13C12
ES 12378-PeCDF	1234 TCDF 13C12
ES 23478-PeCDF	1234 TCDF 13C12
ES 123478-HxCDF	123467 HxCDD 13C12
ES 123678-HxCDF	123467 HxCDD 13C12
ES 234678-HxCDF	123467 HxCDD 13C12
ES 123789-HxCDF	123467 HxCDD 13C12
ES 1234678-HpCDF	123467 HxCDD 13C12
ES 1234789-HpCDF	123467 HxCDD 13C12
ES OCDF	123467 HxCDD 13C12

Injection Standards

1234 TCDD 13C12
1234 TCDF 13C12
123467 HxCDD 13C12

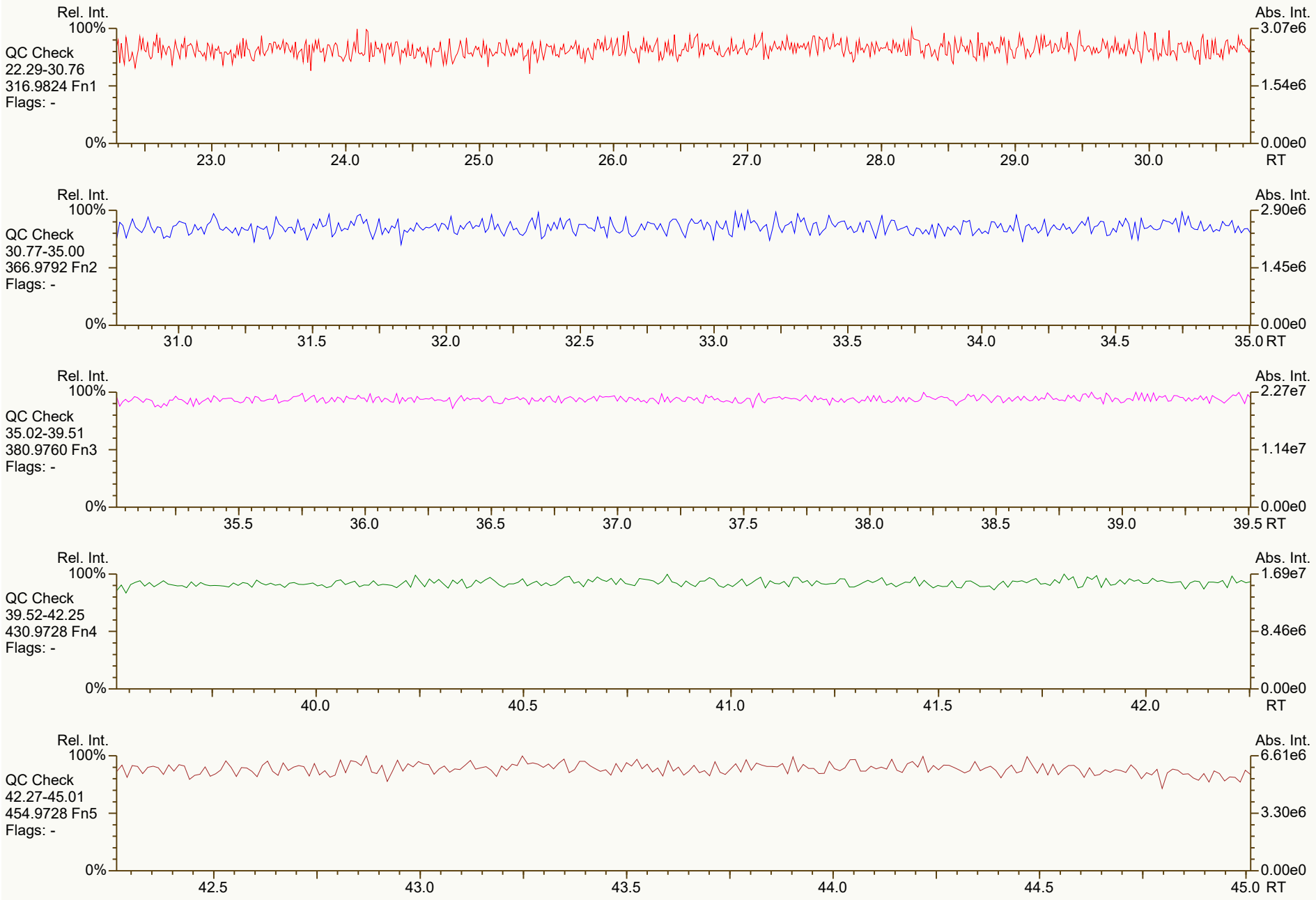
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	6.43E+05	0.73	Y	1.34	1.45	8%
12378-PeCDD	33.80	2.41E+06	1.48	Y	1.06	1.09	3%
123478-HxCDD	37.67	2.24E+06	1.35	Y	1.06	1.10	4%
123678-HxCDD	37.78	2.20E+06	1.31	Y	1.08	1.12	3%
123789-HxCDD	38.07	2.52E+06	1.21	Y	1.02	1.10	9%
1234678-HpCDD	40.66	2.08E+06	0.99	Y	0.97	1.05	7%
OCDD	43.22	3.52E+06	0.85	Y	1.07	1.15	8%
2378-TCDF	27.66	7.49E+05	0.72	Y	0.96	1.01	5%
12378-PeCDF	32.38	3.19E+06	1.44	Y	0.95	1.00	5%
23478-PeCDF	33.46	3.11E+06	1.57	Y	0.94	0.99	6%
123478-HxCDF	36.68	3.00E+06	1.23	Y	1.23	1.32	7%
123678-HxCDF	36.82	3.05E+06	1.18	Y	1.13	1.17	4%
234678-HxCDF	37.49	2.95E+06	1.17	Y	1.15	1.23	7%
123789-HxCDF	38.42	2.65E+06	1.30	Y	1.14	1.19	5%
1234678-HpCDF	39.76	2.75E+06	1.00	Y	1.36	1.46	7%
1234789-HpCDF	41.10	2.20E+06	1.11	Y	1.30	1.34	3%
OCDF	43.40	3.66E+06	0.85	Y	1.03	1.01	-1%
ES 2378-TCDD	28.50	1.77E+08	0.79	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.781	1.77E+08	1.63	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.653	1.63E+08	1.26	Y	0.99	0.97	-2%
ES 123678-HxCDD	37.766	1.57E+08	1.27	Y	0.97	0.94	-3%
ES 123789-HxCDD	38.056	1.82E+08	1.26	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.643	1.59E+08	1.05	Y	0.99	0.95	-4%
ES OCDD	43.205	2.44E+08	0.92	Y	0.78	0.73	-6%
ES 2378-TCDF	27.645	2.97E+08	0.78	Y	1.08	1.06	-2%
ES 12378-PeCDF	32.355	2.55E+08	1.55	Y	0.93	0.91	-2%
ES 23478-PeCDF	33.445	2.50E+08	1.56	Y	0.92	0.90	-3%
ES 123478-HxCDF	36.661	1.82E+08	0.53	Y	1.14	1.09	-5%
ES 123678-HxCDF	36.801	2.08E+08	0.53	Y	1.30	1.24	-4%
ES 234678-HxCDF	37.466	1.92E+08	0.53	Y	1.20	1.14	-5%
ES 123789-HxCDF	38.399	1.78E+08	0.52	Y	1.14	1.06	-7%
ES 1234678-HpCDF	39.748	1.51E+08	0.44	Y	0.95	0.90	-5%
ES 1234789-HpCDF	41.09	1.32E+08	0.45	Y	0.85	0.79	-7%
ES OCDF	43.389	2.89E+08	0.89	Y	0.93	0.86	-7%

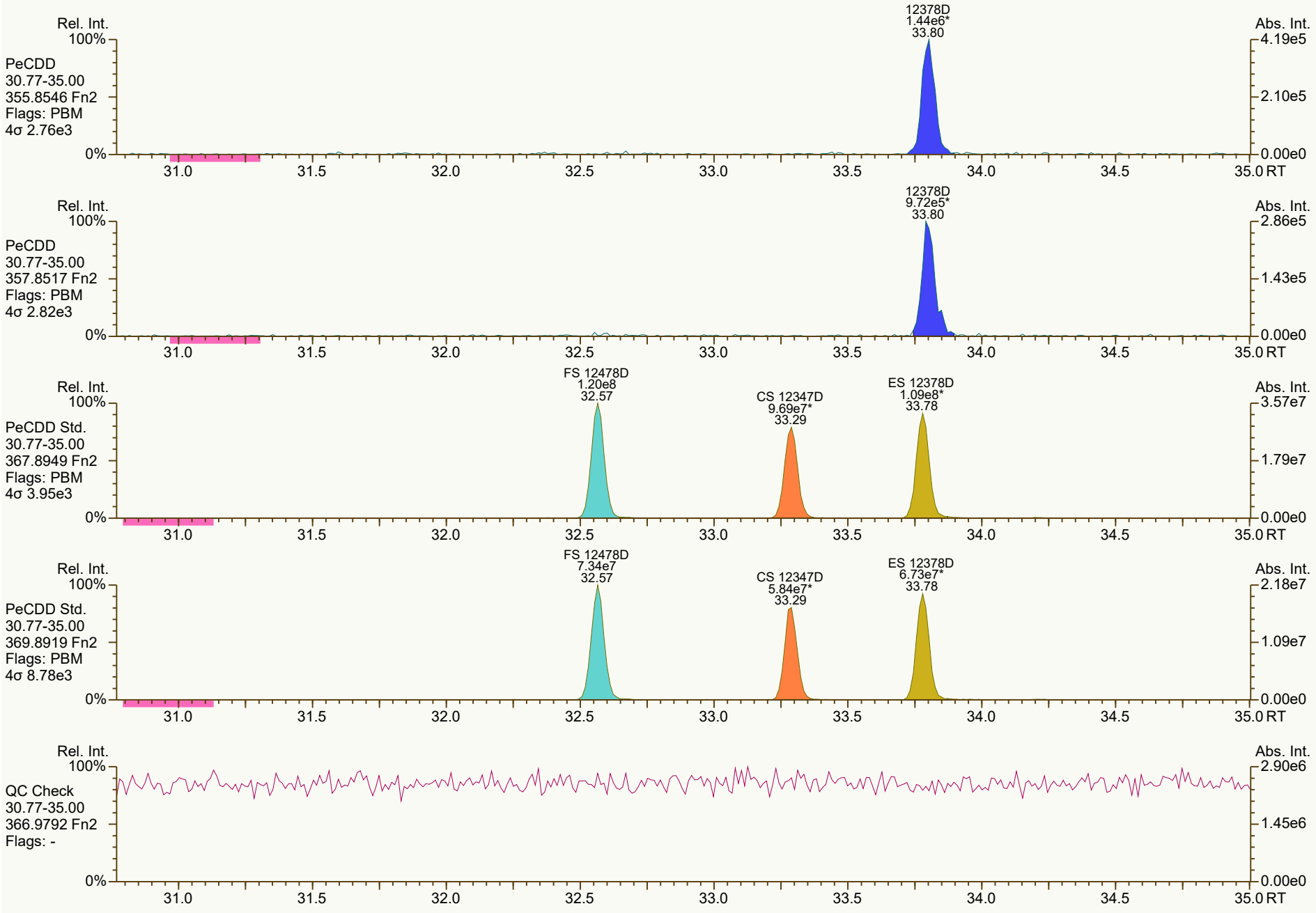
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

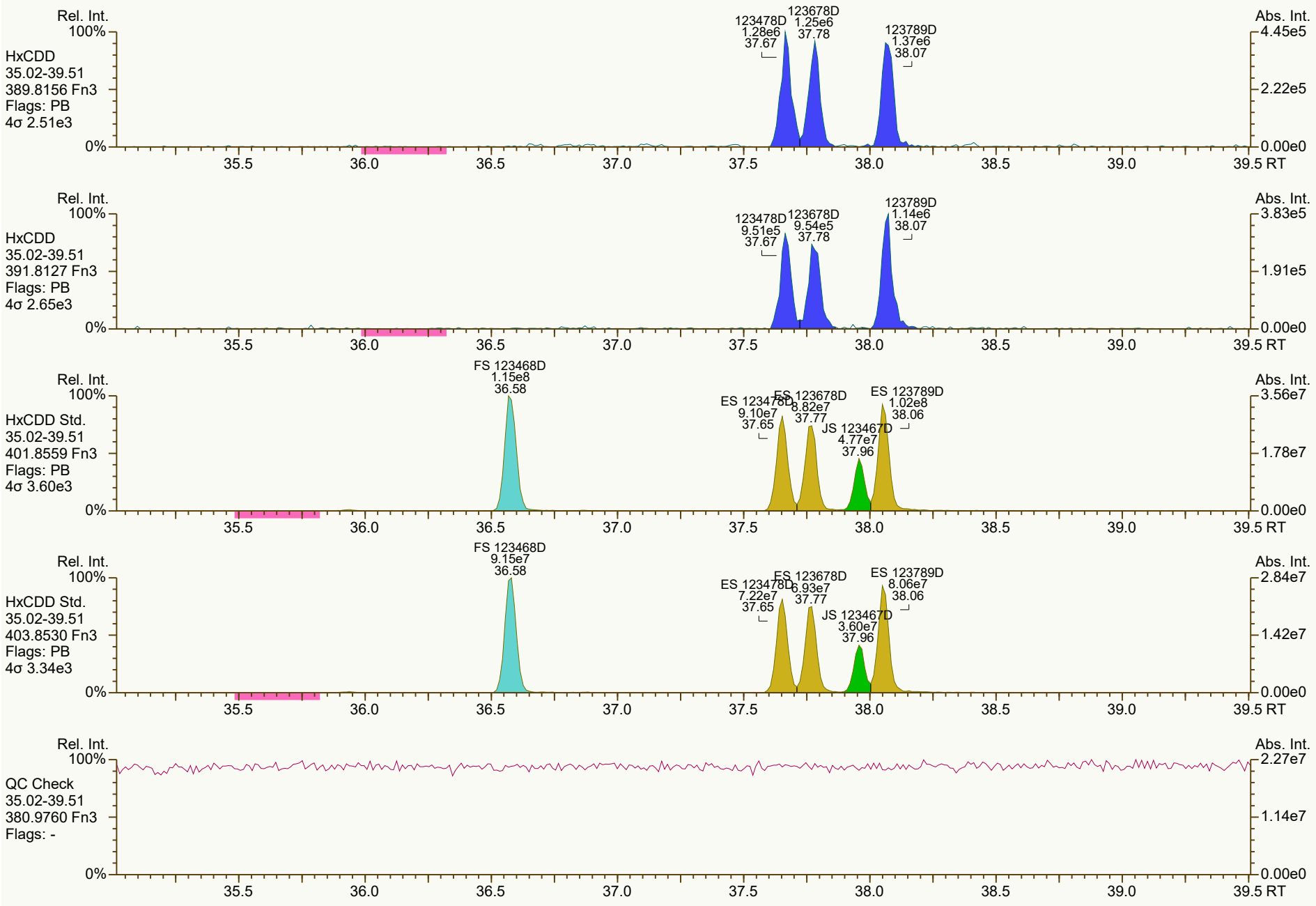
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.74E+08	0.80	Y	-	-	-
JS 1234-TCDF	26.33	2.80E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	8.38E+07	1.33	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.89	0.89	0%
CS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.78E+08	0.52	Y	1.09	1.06	-2%
CS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.86	0.88	2%
SS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.93	0.94	2%
SS 123469-HxCDF	37.12	1.78E+08	0.52	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.91	0.96	5%
AS 1368-TCDD	24.91	1.76E+08	0.79	Y	1.02	1.01	-1%
AS 1368-TCDF	22.86	2.95E+08	0.78	Y	1.08	1.05	-2%
FS 1278-TCDD	28.82	1.91E+08	0.78	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.94E+08	1.64	Y	1.09	1.10	0%
FS 123468-HxCDD	36.58	2.07E+08	1.26	Y	1.26	1.27	0%
FS 1234679-HpCDD	39.99	2.24E+08	1.06	Y	1.36	1.41	4%
TS 1378-TCDD	26.87	2.41E+08	0.79	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.22~~	~~1.80E+05~~	~~0.99~~	~~N~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.41~~	~~1.98E+05~~	~~2.81~~	~~Y~~	~~0.06~~	~~0.05~~	~~-7%~~

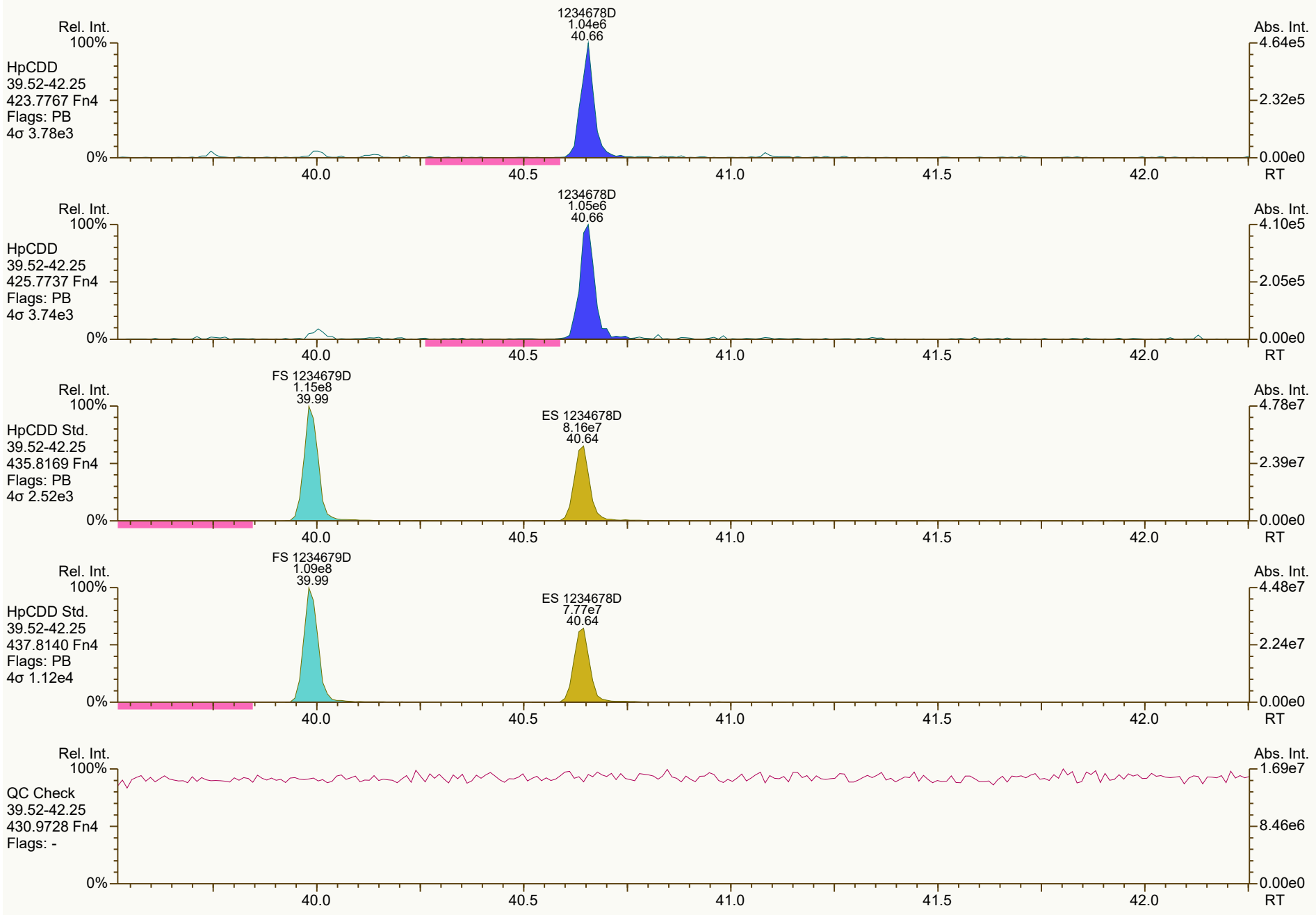
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.07e6
1.54e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.69e7
8.46e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 2.21e3
0%
2378D
2.70e5*
28.52
Abs. Int.
6.87e4
3.43e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.34e3
RRF(2378D) = (2.70e5 + 3.73e5) * 100pg / (7.81e7 + 9.89e7) * 0.25pg = 1.45
PSW 27-Jul-2021 15:08
OK
CL 28Jul21
2378D
3.73e5*
28.52
9.52e4
4.76e4
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.84e3
1.43e4
7.14e3
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.61e3
AS 1368D
7.76e7
24.91
TS 1378D
1.07e8
26.87
JS 1234D
7.74e7
27.86
ES 2378D
7.81e7
28.50
FS 1278D
8.37e7
28.82
2.55e7
1.28e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.86e3
RRF(TS 1378D) = (1.07e8 + 1.34e8) * 100pg / (7.81e7 + 9.89e7) * 100pg = 1.36
PSW 27-Jul-2021 15:11
OK - CL 28Jul21
AS 1368D
9.87e7
24.91
TS 1378D
1.34e8
26.87
JS 1234D
9.66e7
27.86
ES 2378D
9.89e7
28.50
FS 1278D
1.08e8
28.82
3.19e7
1.59e7


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 2.76e3
0%
12378D
1.44e6*
33.80
Abs. Int.
4.19e5
2.10e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.82e3
0%
12378D
9.72e5*
33.80
Abs. Int.
2.86e5
1.43e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.95e3
0%
FS 12478D
1.20e8
32.57
CS 12347D
9.69e7*
33.29
ES 12378D
1.09e8*
33.78
Abs. Int.
3.57e7
1.79e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 8.78e3
0%
FS 12478D
7.34e7
32.57
CS 12347D
5.84e7*
33.29
ES 12378D
6.73e7*
33.78
Abs. Int.
2.18e7
1.09e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.51e3
123478D
1.28e6
37.67
123678D
1.25e6
37.78
123789D
1.37e6
38.07
Abs. Int.
4.45e5
2.22e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.65e3
123478D
9.51e5
37.67
123678D
9.54e5
37.78
123789D
1.14e6
38.07
Abs. Int.
3.83e5
1.91e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.60e3
FS 123468D
1.15e8
36.58
ES 123478D
9.10e7
37.65
ES 123678D
8.82e7
37.77
JS 123467D
4.77e7
37.96
ES 123789D
1.02e8
38.06
Abs. Int.
3.56e7
1.78e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.34e3
FS 123468D
9.15e7
36.58
ES 123478D
7.22e7
37.65
ES 123678D
6.93e7
37.77
JS 123467D
3.60e7
37.96
ES 123789D
8.06e7
38.06
Abs. Int.
2.84e7
1.42e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

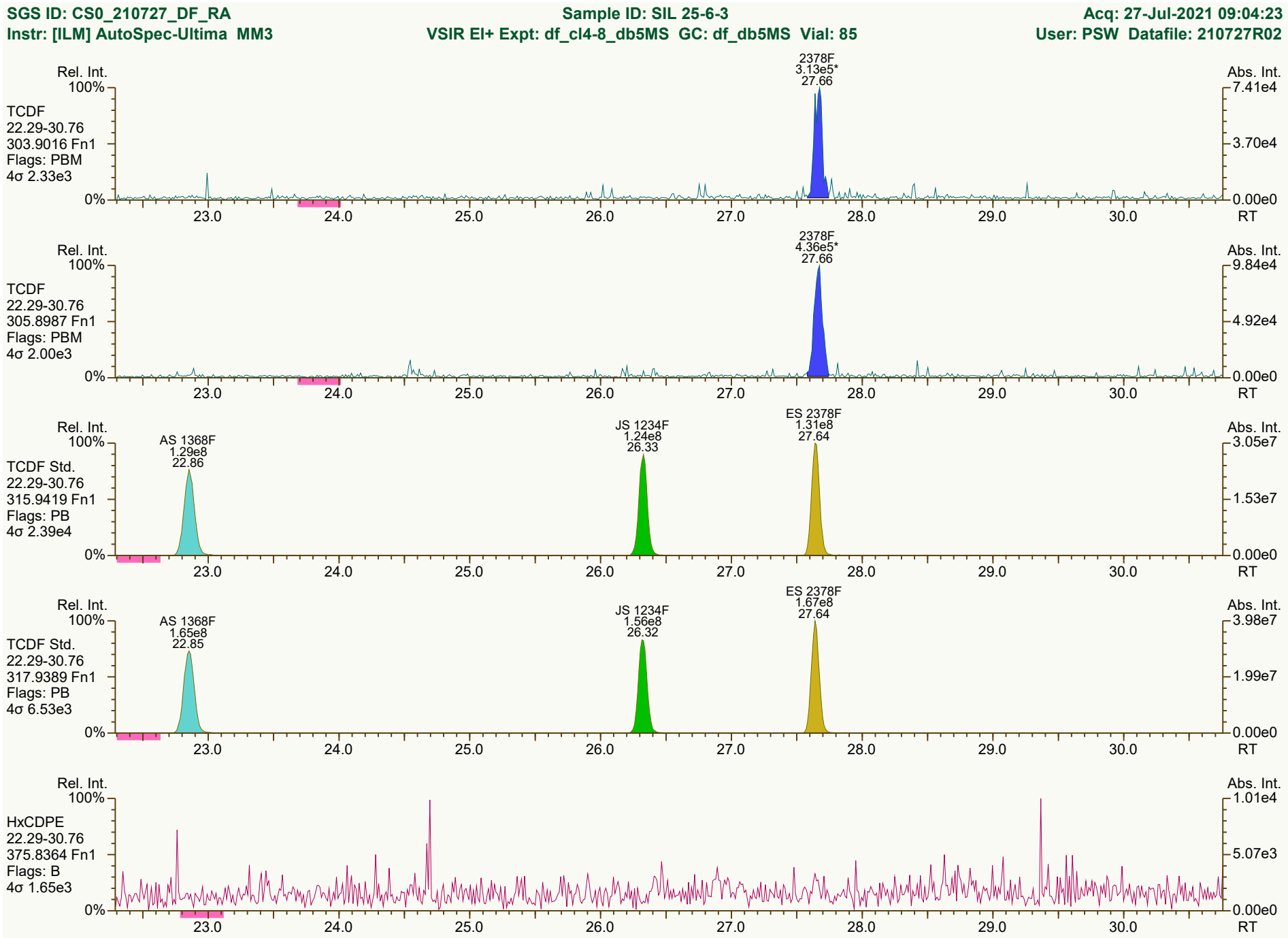

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 3.78e3
1234678D
1.04e6
40.66
Abs. Int.
4.64e5
2.32e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.74e3
1234678D
1.05e6
40.66
Abs. Int.
4.10e5
2.05e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.52e3
FS 1234679D
1.15e8
39.99
ES 1234678D
8.16e7
40.64
Abs. Int.
4.78e7
2.39e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.12e4
FS 1234679D
1.09e8
39.99
ES 1234678D
7.77e7
40.64
Abs. Int.
4.48e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.69e7
8.46e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDD
1.61e6
43.21
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.80e3
0%
Abs. Int.
5.57e5
2.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
5.93e5
2.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.17e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PBM
4σ 3.76e3
0%
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.27e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PBM
4σ 3.92e3
0%
Abs. Int.
4.10e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: CS0_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85

Acq: 27-Jul-2021 09:04:23
User: PSW Datafile: 210727R02



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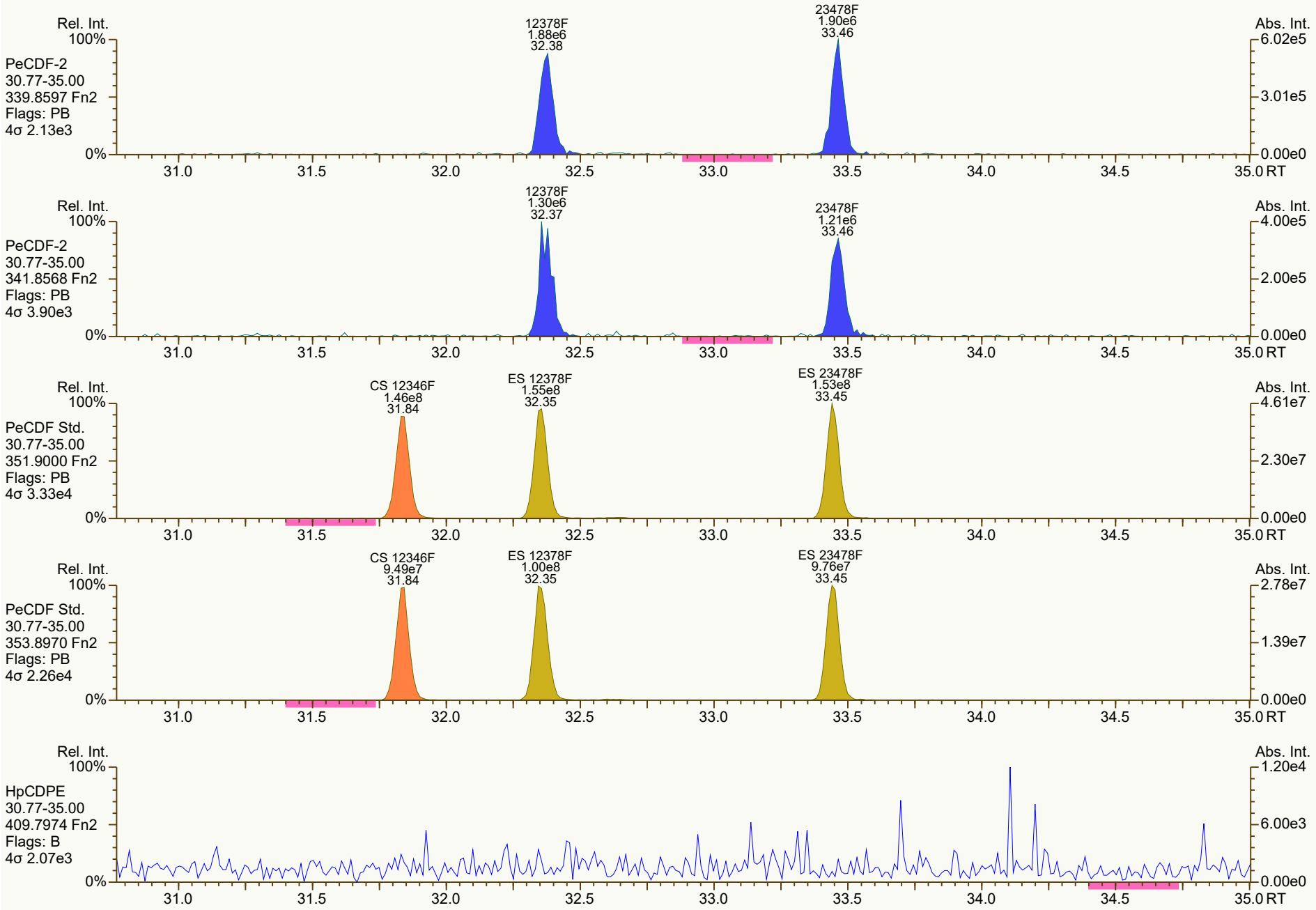
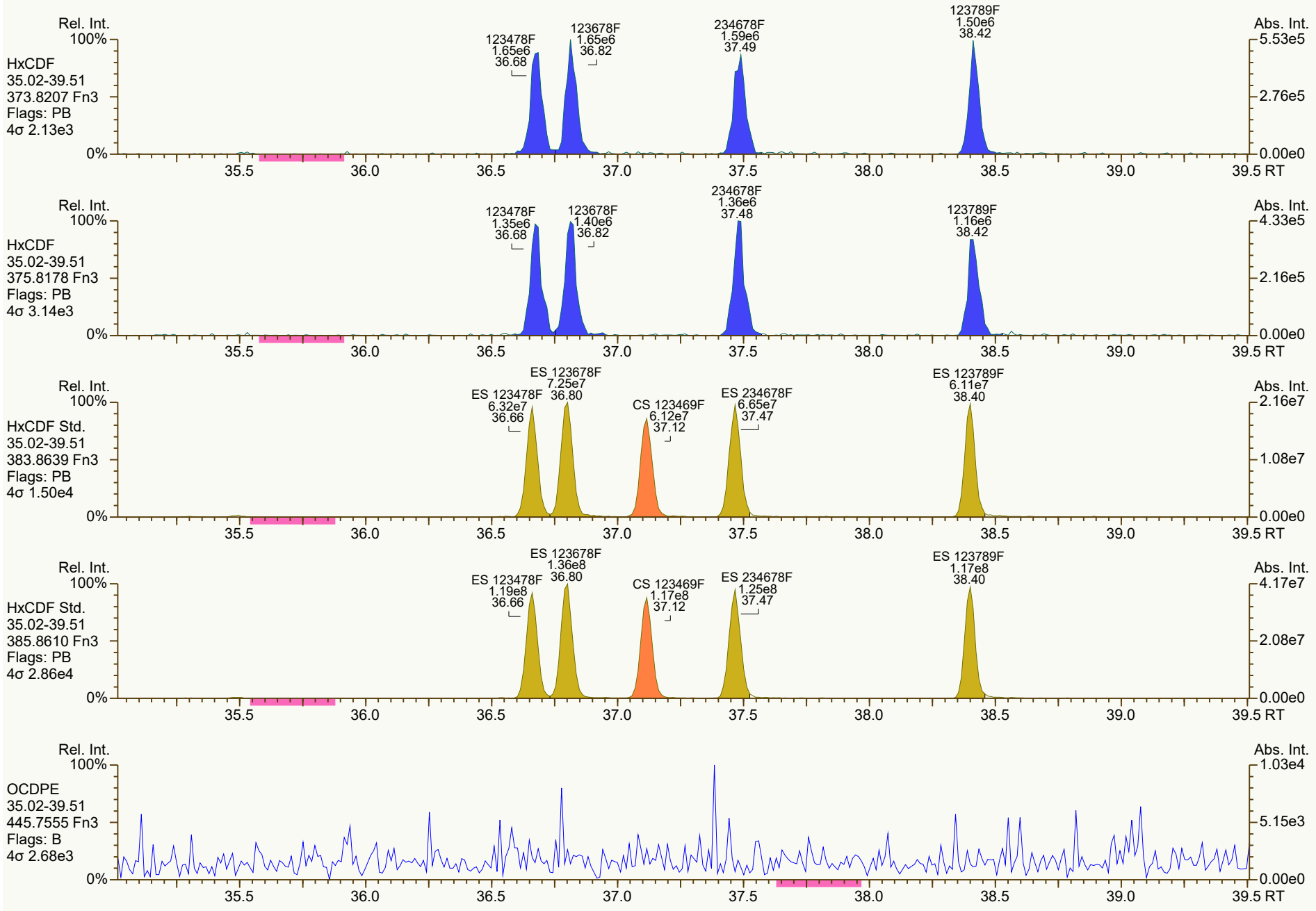
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3692, 2809, 0990 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 7 of 12

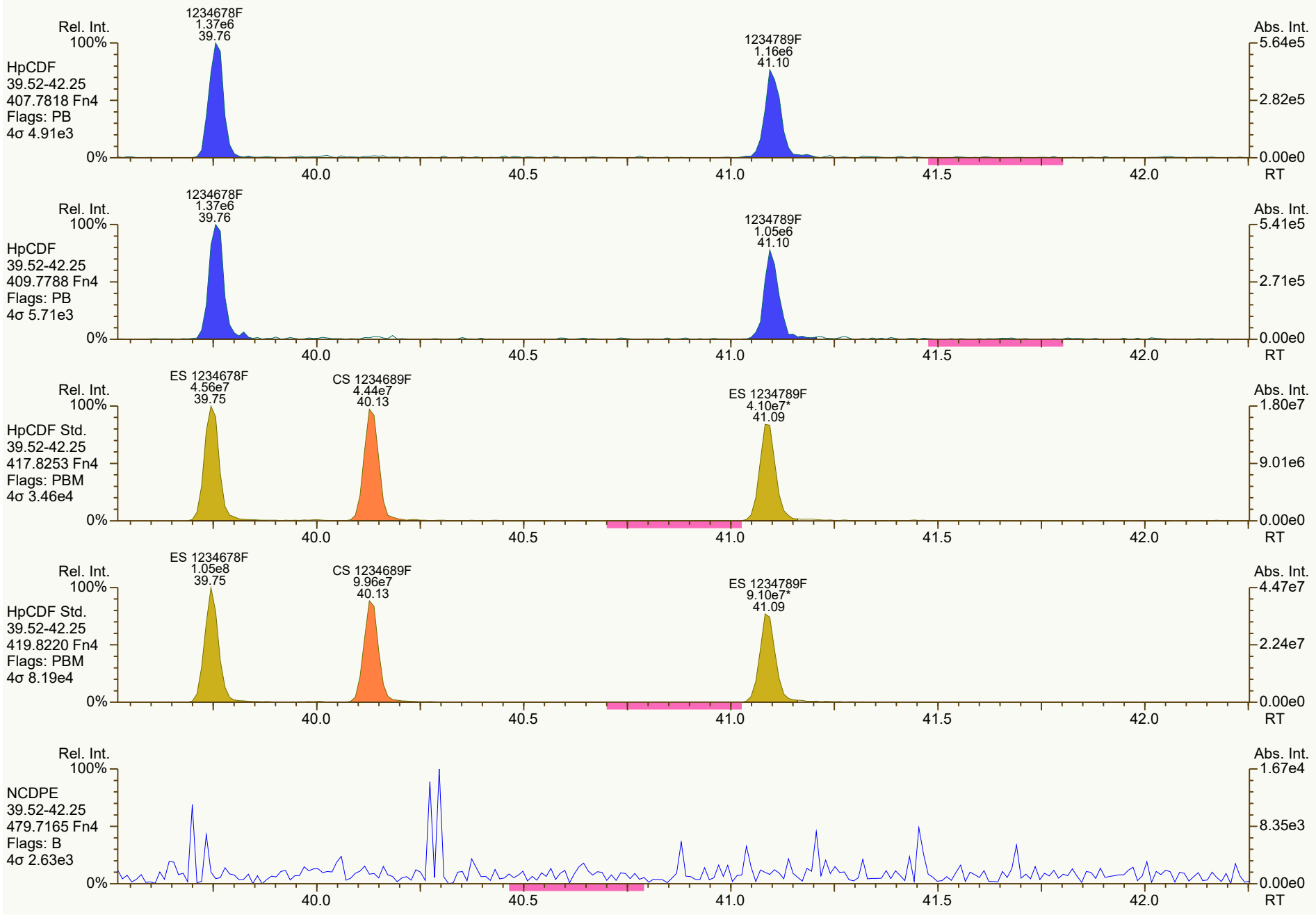
SGS ID: CS0_210727_DF_RA | Sample ID: SIL 25-6-3 | Acq: 27-Jul-2021 09:04:23
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85 | User: PSW Datafile: 210727R02



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1474 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.13e3
0%
12378F
1.88e6
32.38
23478F
1.90e6
33.46
Abs. Int.
6.02e5
3.01e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.90e3
0%
12378F
1.30e6
32.37
23478F
1.21e6
33.46
Abs. Int.
4.00e5
2.00e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 3.33e4
0%
CS 12346F
1.46e8
31.84
ES 12378F
1.55e8
32.35
ES 23478F
1.53e8
33.45
Abs. Int.
4.61e7
2.30e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.26e4
0%
CS 12346F
9.49e7
31.84
ES 12378F
1.00e8
32.35
ES 23478F
9.76e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
1.20e4
6.00e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

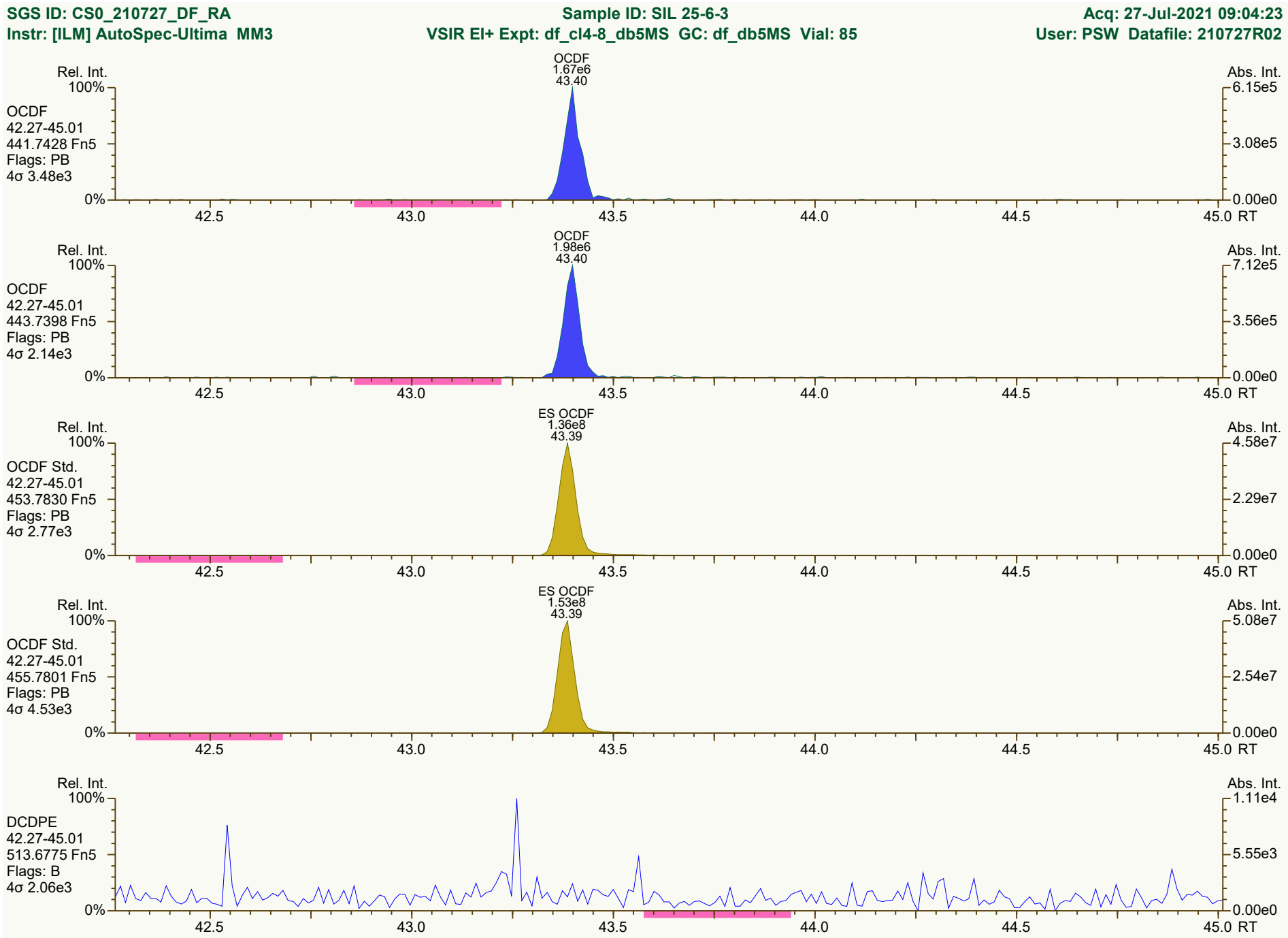

Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.13e3
0%
123478F 1.65e6 36.68
123678F 1.65e6 36.82
234678F 1.59e6 37.49
123789F 1.50e6 38.42
Abs. Int.
5.53e5
2.76e5
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 3.14e3
0%
123478F 1.35e6 36.68
123678F 1.40e6 36.82
234678F 1.36e6 37.48
123789F 1.16e6 38.42
Abs. Int.
4.33e5
2.16e5
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.50e4
0%
ES 123478F 6.32e7 36.66
ES 123678F 7.25e7 36.80
CS 123469F 6.12e7 37.12
ES 234678F 6.65e7 37.47
ES 123789F 6.11e7 38.40
Abs. Int.
2.16e7
1.08e7
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.86e4
0%
ES 123478F 1.19e8 36.66
ES 123678F 1.36e8 36.80
CS 123469F 1.17e8 37.12
ES 234678F 1.25e8 37.47
ES 123789F 1.17e8 38.40
Abs. Int.
4.17e7
2.08e7
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.68e3
0%
Abs. Int.
1.03e4
5.15e3
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e3
1234678F
1.37e6
39.76
1234789F
1.16e6
41.10
Abs. Int.
5.64e5
2.82e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.71e3
1234678F
1.37e6
39.76
1234789F
1.05e6
41.10
5.41e5
2.71e5
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.46e4
ES 1234678F
4.56e7
39.75
CS 1234689F
4.44e7
40.13
ES 1234789F
4.10e7*
41.09
1.80e7
9.01e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 8.19e4
ES 1234678F
1.05e8
39.75
CS 1234689F
9.96e7
40.13
ES 1234789F
9.10e7*
41.09
4.47e7
2.24e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
1.67e4
8.35e3

SGS ID: CS0_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85

Acq: 27-Jul-2021 09:04:23
User: PSW Datafile: 210727R02



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2212, 1649, 1411 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 12 of 12

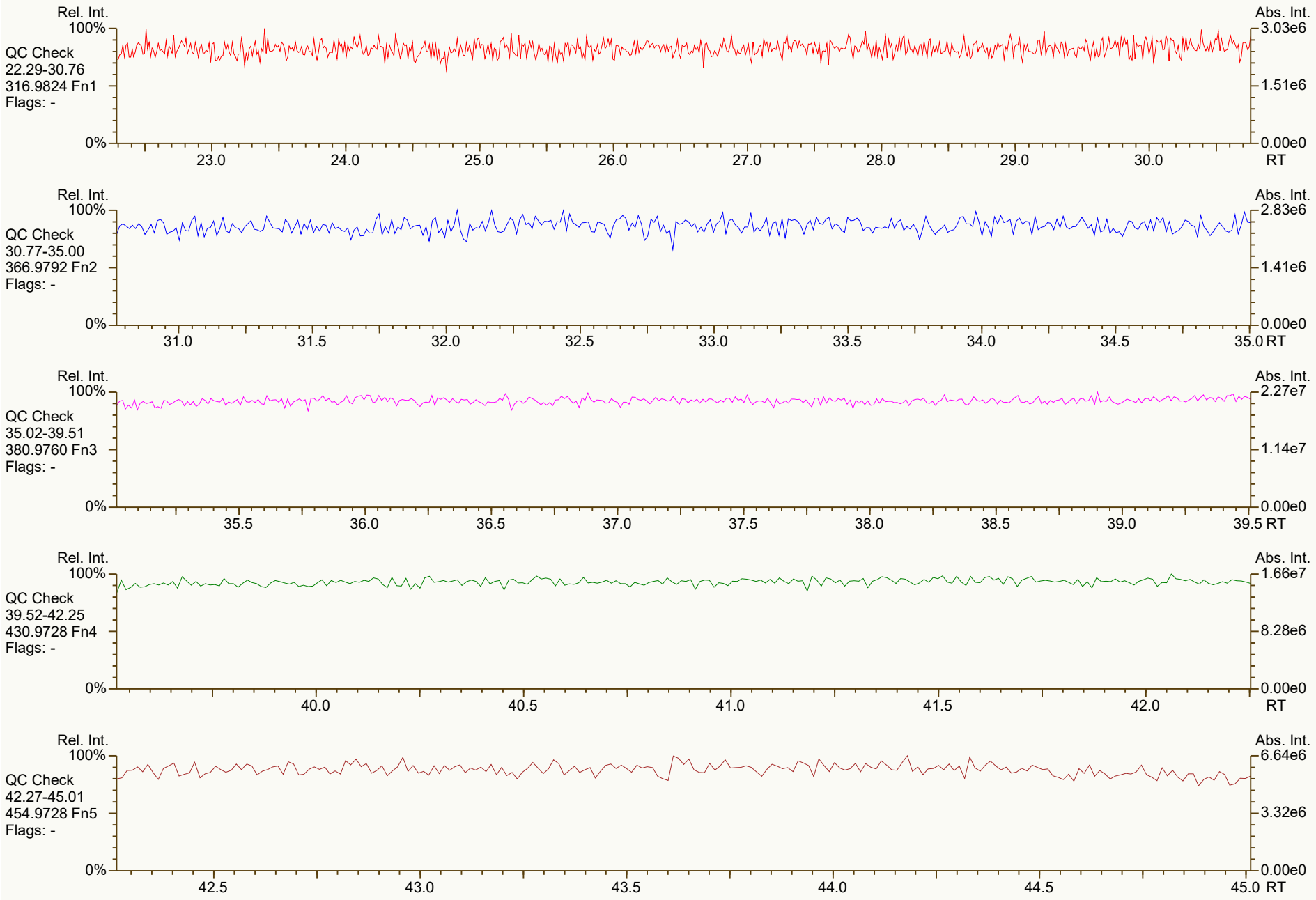
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

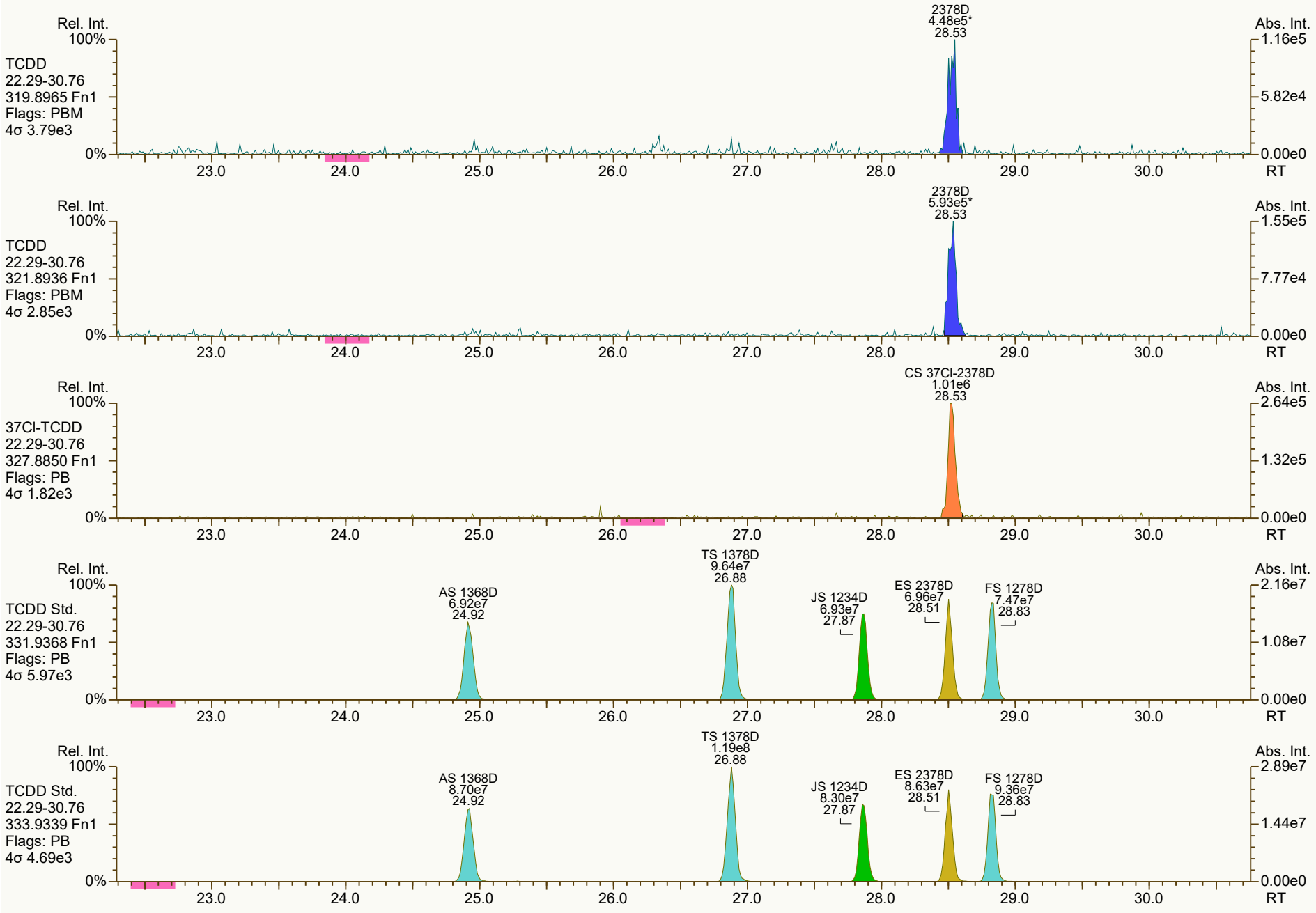
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.04E+06	0.76	Y	1.34	1.34	-1%
12378-PeCDD	33.81	4.16E+06	1.48	Y	1.06	1.07	1%
123478-HxCDD	37.68	3.92E+06	1.22	Y	1.06	1.10	4%
123678-HxCDD	37.79	3.74E+06	1.22	Y	1.08	1.07	-1%
123789-HxCDD	38.08	4.22E+06	1.33	Y	1.02	1.05	4%
1234678-HpCDD	40.66	3.34E+06	1.16	Y	0.97	0.95	-3%
OCDD	43.23	5.66E+06	0.85	Y	1.07	1.04	-3%
2378-TCDF	27.67	1.25E+06	0.72	Y	0.96	0.94	-2%
12378-PeCDF	32.38	5.24E+06	1.54	Y	0.95	0.94	0%
23478-PeCDF	33.47	5.06E+06	1.63	Y	0.94	0.90	-4%
123478-HxCDF	36.69	4.92E+06	1.14	Y	1.23	1.23	-1%
123678-HxCDF	36.83	5.41E+06	1.33	Y	1.13	1.16	3%
234678-HxCDF	37.49	5.10E+06	1.23	Y	1.15	1.19	3%
123789-HxCDF	38.42	4.41E+06	1.28	Y	1.14	1.08	-5%
1234678-HpCDF	39.76	4.59E+06	0.97	Y	1.36	1.35	0%
1234789-HpCDF	41.11	3.63E+06	1.08	Y	1.30	1.20	-7%
OCDF	43.41	6.46E+06	0.90	Y	1.03	1.01	-2%
ES 2378-TCDD	28.51	1.56E+08	0.81	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.789	1.56E+08	1.63	Y	1.03	1.02	-1%
ES 123478-HxCDD	37.66	1.43E+08	1.26	Y	0.99	0.93	-6%
ES 123678-HxCDD	37.773	1.40E+08	1.27	Y	0.97	0.91	-6%
ES 123789-HxCDD	38.062	1.60E+08	1.24	Y	1.12	1.04	-7%
ES 1234678-HpCDD	40.65	1.41E+08	1.06	Y	0.99	0.92	-8%
ES OCDD	43.215	2.18E+08	0.91	Y	0.78	0.71	-9%
ES 2378-TCDF	27.651	2.66E+08	0.77	Y	1.08	1.08	0%
ES 12378-PeCDF	32.362	2.22E+08	1.59	Y	0.93	0.91	-3%
ES 23478-PeCDF	33.454	2.24E+08	1.55	Y	0.92	0.91	-1%
ES 123478-HxCDF	36.667	1.60E+08	0.52	Y	1.14	1.04	-9%
ES 123678-HxCDF	36.807	1.86E+08	0.54	Y	1.30	1.21	-7%
ES 234678-HxCDF	37.474	1.72E+08	0.53	Y	1.20	1.12	-7%
ES 123789-HxCDF	38.407	1.64E+08	0.51	Y	1.14	1.07	-6%
ES 1234678-HpCDF	39.755	1.36E+08	0.46	Y	0.95	0.88	-7%
ES 1234789-HpCDF	41.099	1.21E+08	0.45	Y	0.85	0.78	-7%
ES OCDF	43.396	2.56E+08	0.88	Y	0.93	0.83	-10%

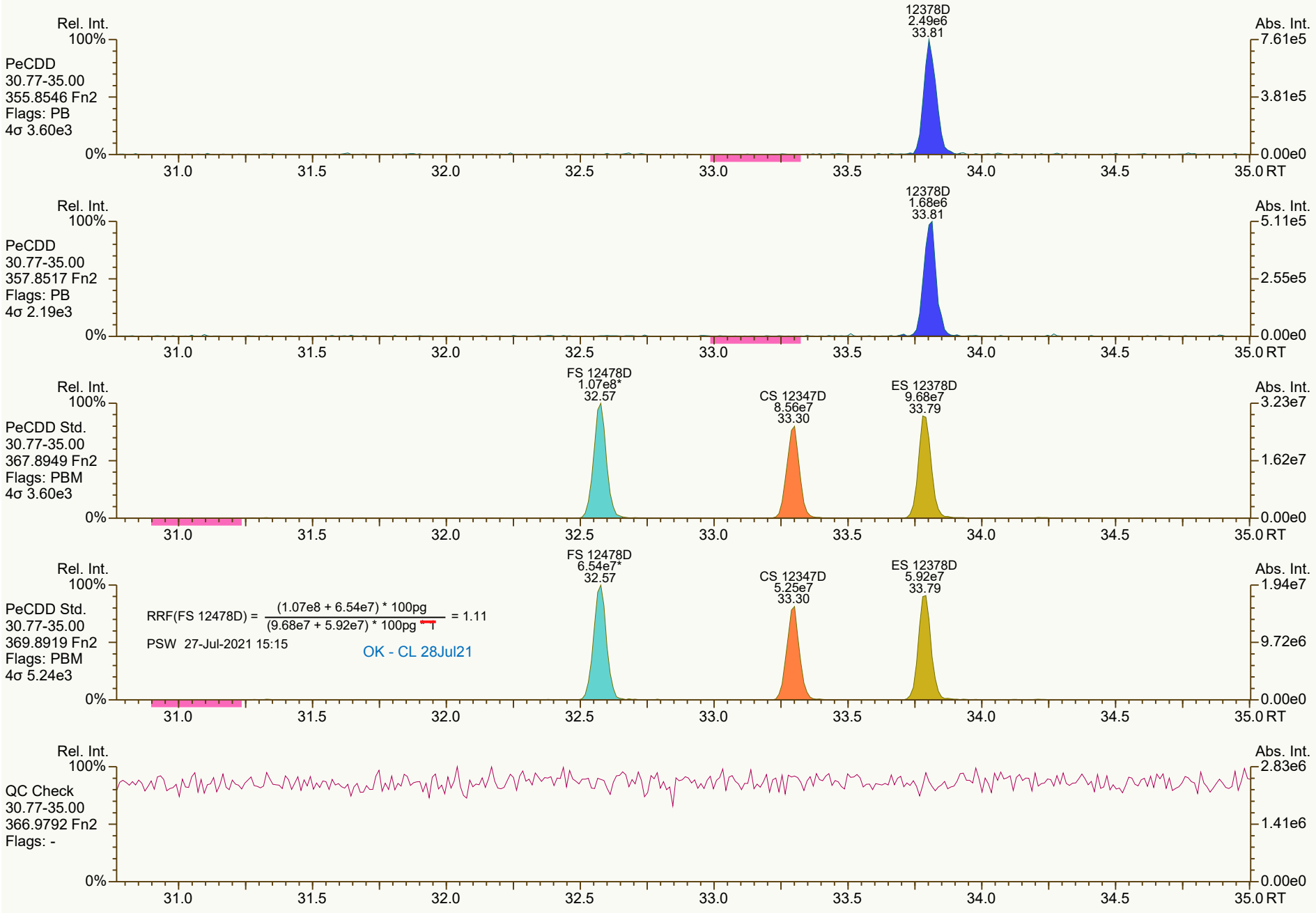
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

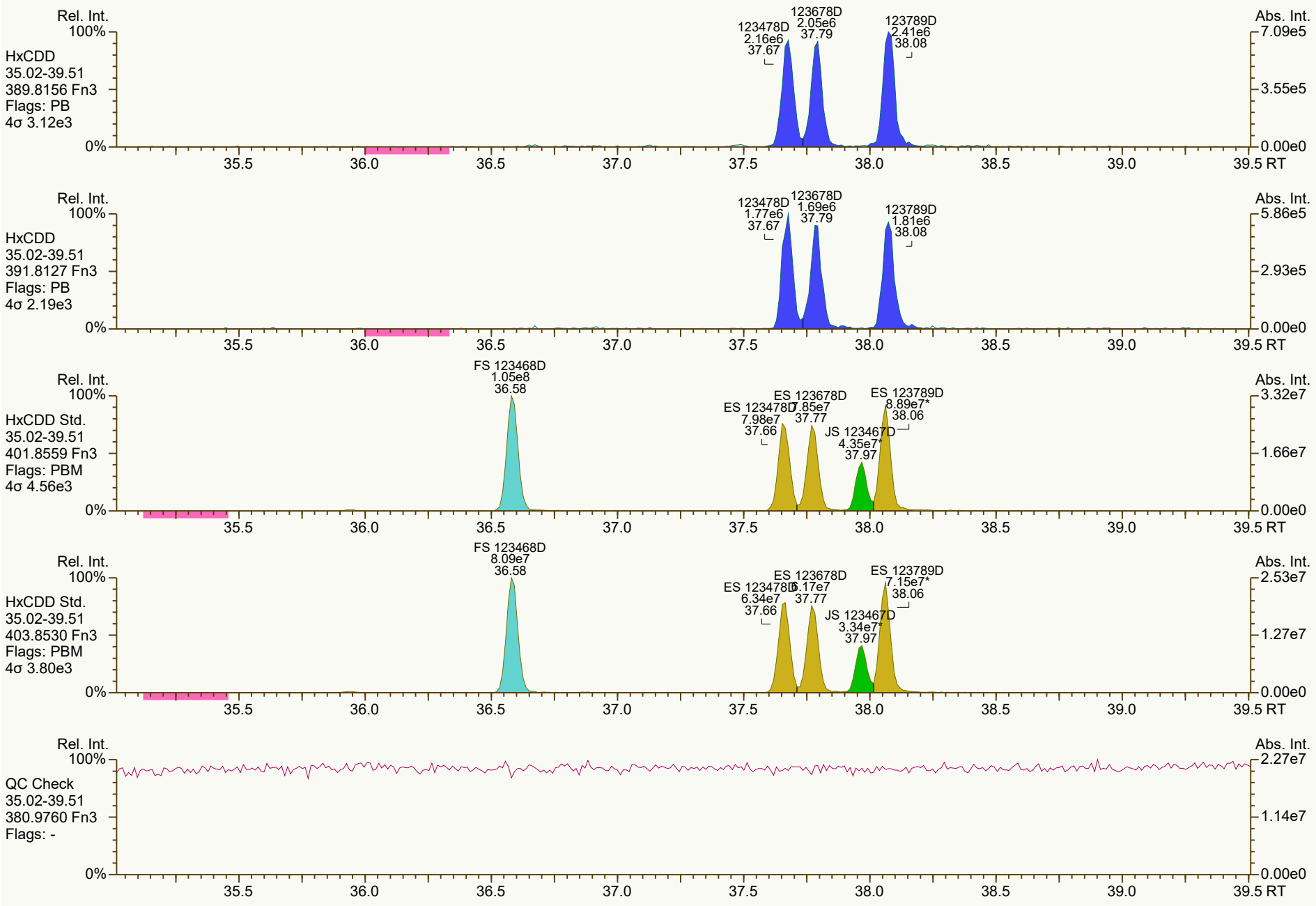
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.52E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.33	2.45E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	7.69E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.31	1.32	1%
CS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.89	0.91	2%
CS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.87	0.88	1%
CS 123469-HxCDF	37.12	1.61E+08	0.52	Y	1.09	1.04	-4%
CS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.86	0.84	-2%
SS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.26	1.29	2%
SS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.86	0.89	2%
SS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.61E+08	0.52	Y	0.84	0.86	3%
SS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.91	0.96	5%
AS 1368-TCDD	24.92	1.56E+08	0.80	Y	1.02	1.03	0%
AS 1368-TCDF	22.86	2.59E+08	0.77	Y	1.08	1.06	-2%
FS 1278-TCDD	28.83	1.68E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.72E+08	1.63	Y	1.09	1.10	1%
FS 123468-HxCDD	36.59	1.86E+08	1.29	Y	1.26	1.30	3%
FS 1234679-HpCDD	39.99	1.93E+08	1.05	Y	1.36	1.37	1%
TS 1378-TCDD	26.88	2.16E+08	0.81	Y	1.35	1.38	3%
~~OCDD-a~~	~~43.23~~	~~4.10E+05~~	~~2.91~~	~~N~~	~~0.07~~	~~0.08~~	~~14%~~
~~OCDF-a~~	~~43.40~~	~~3.79E+05~~	~~1.92~~	~~N~~	~~0.06~~	~~0.06~~	~~0%~~

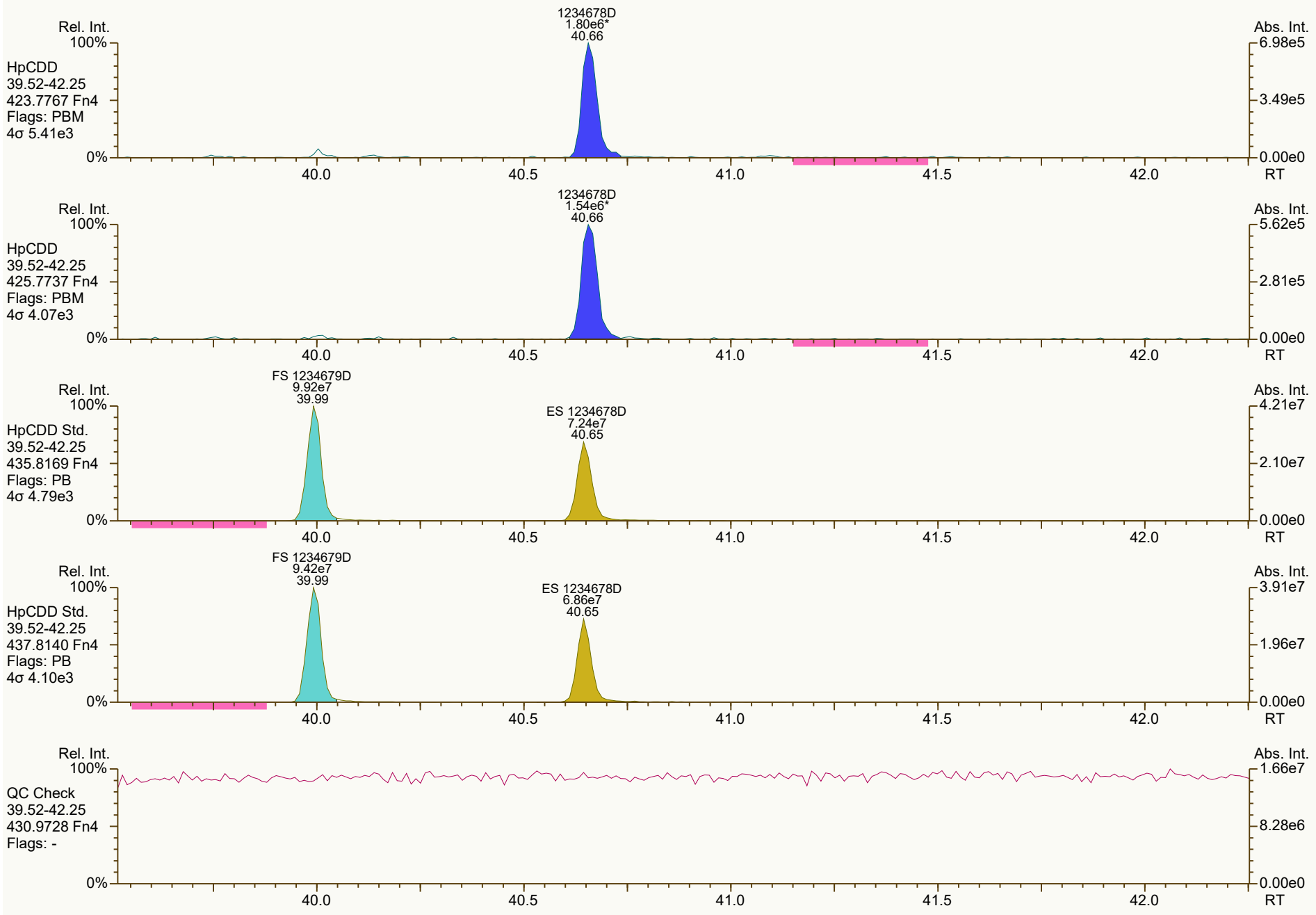
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

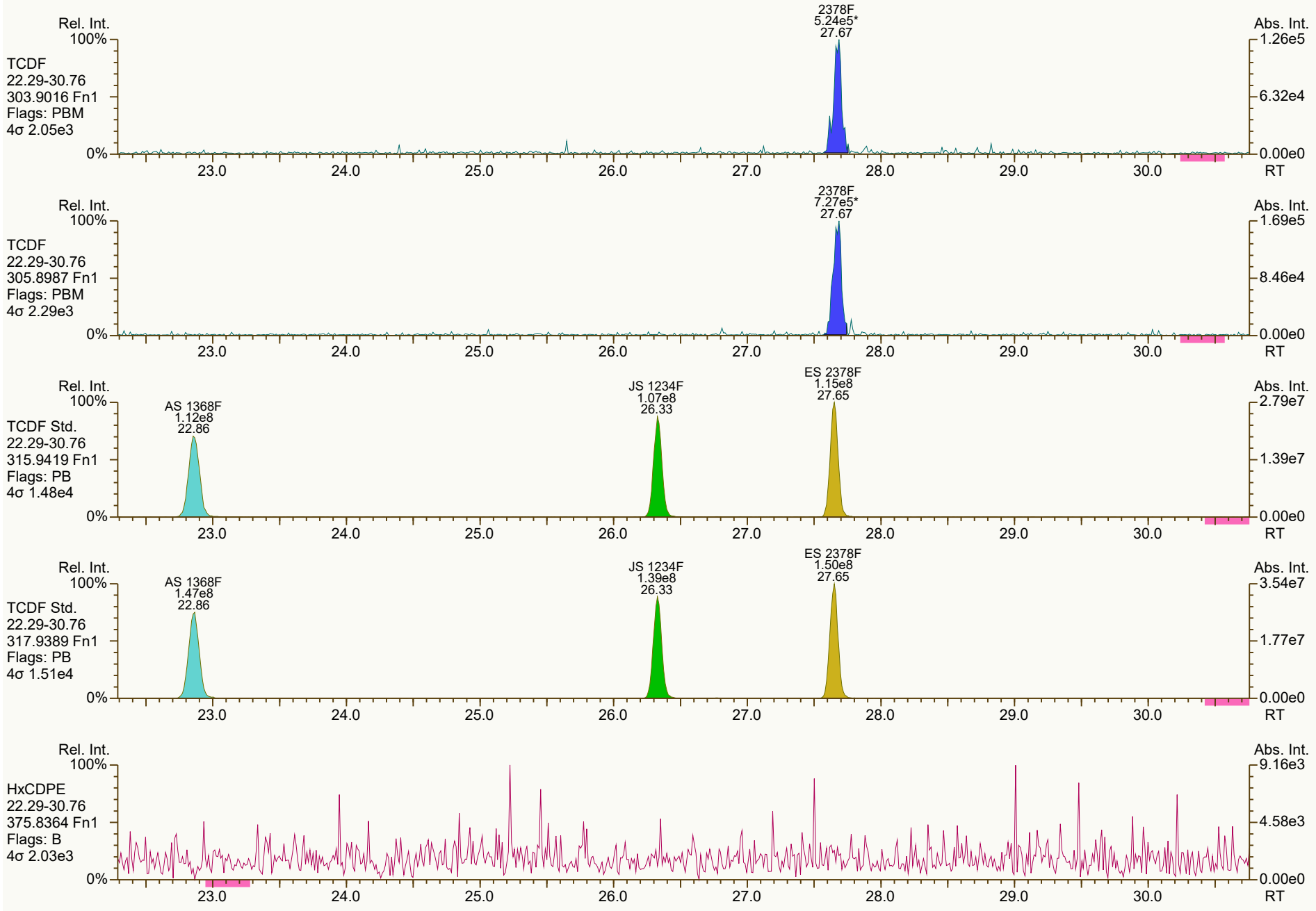

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 3.79e3
0%
2378D
4.48e5*
28.53
Abs. Int.
1.16e5
5.82e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.85e3
0%
2378D
5.93e5*
28.53
Abs. Int.
1.55e5
7.77e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.82e3
0%
CS 37Cl-2378D
1.01e6
28.53
Abs. Int.
2.64e5
1.32e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.97e3
0%
AS 1368D
6.92e7
24.92
TS 1378D
9.64e7
26.88
JS 1234D
6.93e7
27.87
ES 2378D
6.96e7
28.51
FS 1278D
7.47e7
28.83
Abs. Int.
2.16e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.69e3
0%
AS 1368D
8.70e7
24.92
TS 1378D
1.19e8
26.88
JS 1234D
8.30e7
27.87
ES 2378D
8.63e7
28.51
FS 1278D
9.36e7
28.83
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.60e3
0%
12378D
2.49e6
33.81
Abs. Int.
7.61e5
3.81e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.19e3
0%
12378D
1.68e6
33.81
Abs. Int.
5.11e5
2.55e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.60e3
0%
FS 12478D
1.07e8*
32.57
CS 12347D
8.56e7
33.30
ES 12378D
9.68e7
33.79
Abs. Int.
3.23e7
1.62e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 5.24e3
0%
RRF(FS 12478D) = (1.07e8 + 6.54e7) * 100pg / (9.68e7 + 5.92e7) * 100pg * 1 = 1.11
PSW 27-Jul-2021 15:15
OK - CL 28Jul21
FS 12478D
6.54e7*
32.57
CS 12347D
5.25e7
33.30
ES 12378D
5.92e7
33.79
Abs. Int.
1.94e7
9.72e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

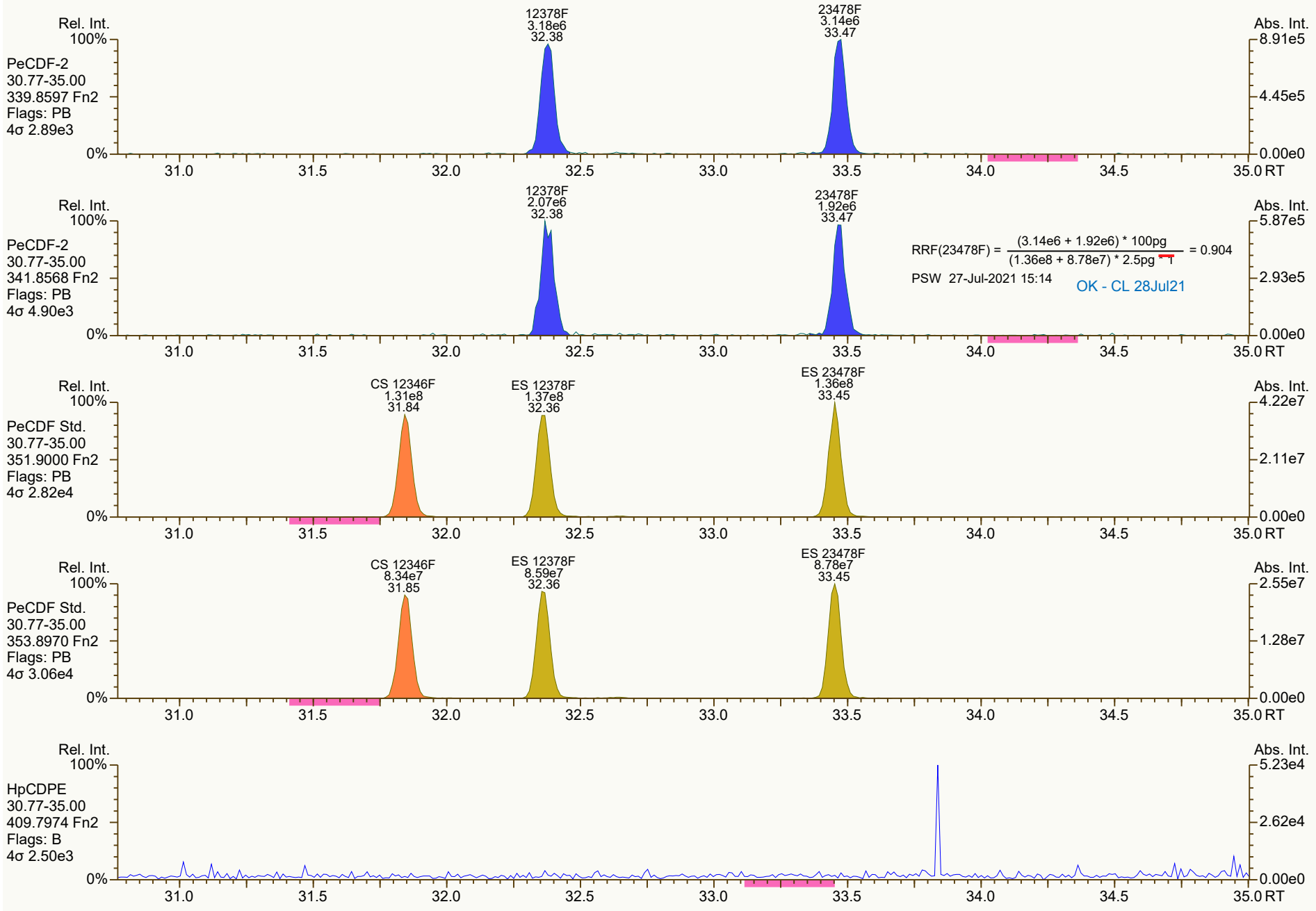

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.12e3
123478D
2.16e6
37.67
123678D
2.05e6
37.79
123789D
2.41e6
38.08
Abs. Int.
7.09e5
3.55e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.19e3
123478D
1.77e6
37.67
123678D
1.69e6
37.79
123789D
1.81e6
38.08
Abs. Int.
5.86e5
2.93e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.56e3
FS 123468D
1.05e8
36.58
ES 123478D
7.98e7
37.66
ES 123678D
7.85e7
37.77
JS 123467D
4.35e7*
37.97
ES 123789D
8.89e7*
38.06
Abs. Int.
3.32e7
1.66e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.80e3
FS 123468D
8.09e7
36.58
ES 123478D
6.34e7
37.66
ES 123678D
6.17e7
37.77
JS 123467D
3.34e7*
37.97
ES 123789D
7.15e7*
38.06
Abs. Int.
2.53e7
1.27e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 5.41e3
0%
1234678D
1.80e6*
40.66
Abs. Int.
6.98e5
3.49e5
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 4.07e3
0%
1234678D
1.54e6*
40.66
Abs. Int.
5.62e5
2.81e5
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 4.79e3
0%
FS 1234679D
9.92e7
39.99
ES 1234678D
7.24e7
40.65
Abs. Int.
4.21e7
2.10e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.10e3
0%
FS 1234679D
9.42e7
39.99
ES 1234678D
6.86e7
40.65
Abs. Int.
3.91e7
1.96e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


OCDD
2.61e6
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.60e3
0%
Abs. Int.
8.02e5
4.01e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.05e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.89e3
0%
Abs. Int.
1.09e6
5.45e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.04e8
43.22
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 2.94e3
0%
Abs. Int.
3.50e7
1.75e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.14e8
43.22
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 3.15e3
0%
Abs. Int.
3.84e7
1.92e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.05e3
2378F
5.24e5*
27.67
Abs. Int.
1.26e5
6.32e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.29e3
2378F
7.27e5*
27.67
Abs. Int.
1.69e5
8.46e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.48e4
AS 1368F
1.12e8
22.86
JS 1234F
1.07e8
26.33
ES 2378F
1.15e8
27.65
Abs. Int.
2.79e7
1.39e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.51e4
AS 1368F
1.47e8
22.86
JS 1234F
1.39e8
26.33
ES 2378F
1.50e8
27.65
Abs. Int.
3.54e7
1.77e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.03e3
Abs. Int.
9.16e3
4.58e3
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

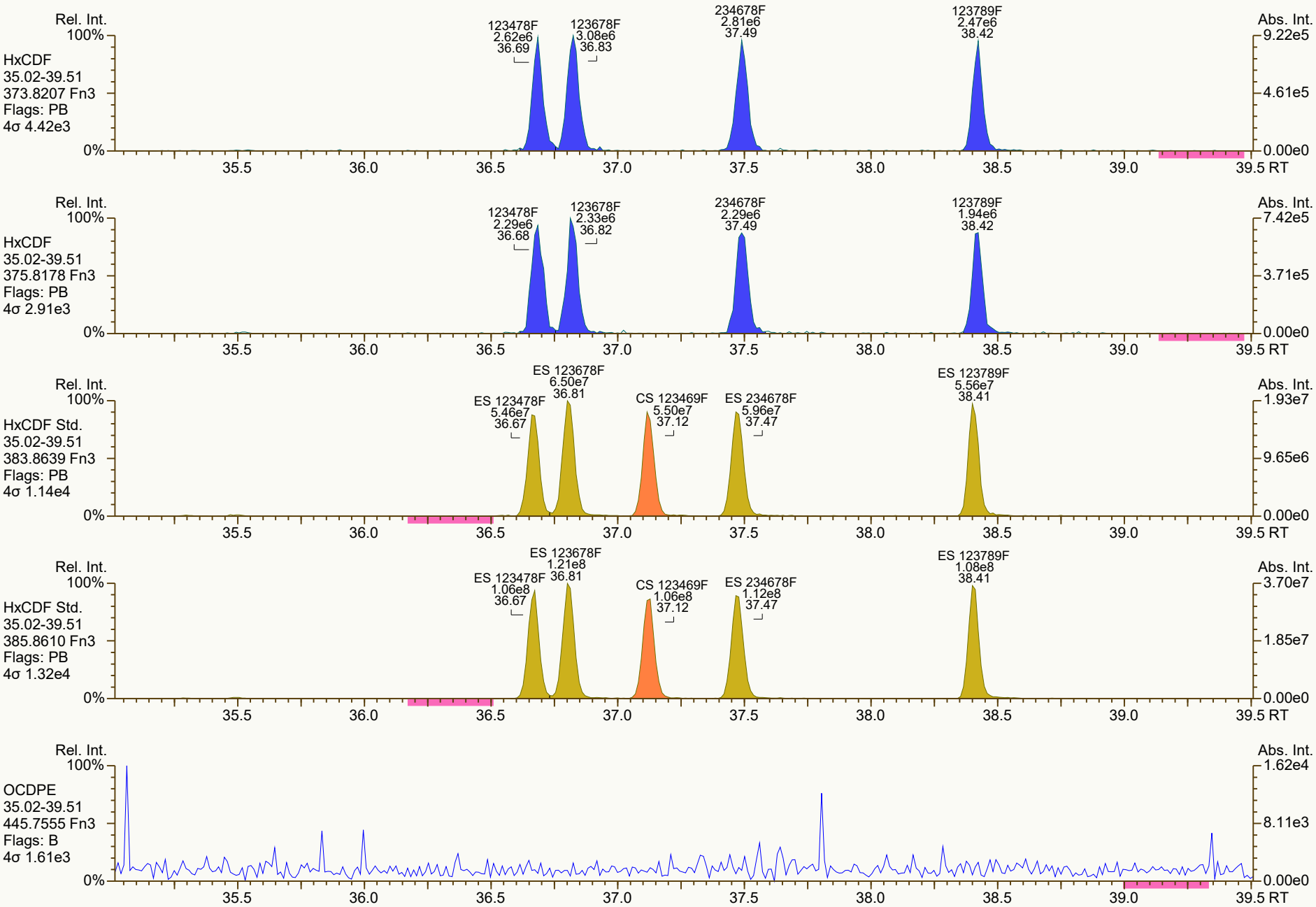

Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.43e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.60e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.89e3
0%
12378F
3.18e6
32.38
23478F
3.14e6
33.47
Abs. Int.
8.91e5
4.45e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 4.90e3
0%
12378F
2.07e6
32.38
23478F
1.92e6
33.47
RRF(23478F) = (3.14e6 + 1.92e6) * 100pg / (1.36e8 + 8.78e7) * 2.5pg * T = 0.904
PSW 27-Jul-2021 15:14
OK - CL 28Jul21
Abs. Int.
5.87e5
2.93e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.82e4
0%
CS 12346F
1.31e8
31.84
ES 12378F
1.37e8
32.36
ES 23478F
1.36e8
33.45
Abs. Int.
4.22e7
2.11e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 3.06e4
0%
CS 12346F
8.34e7
31.85
ES 12378F
8.59e7
32.36
ES 23478F
8.78e7
33.45
Abs. Int.
2.55e7
1.28e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.50e3
0%
Abs. Int.
5.23e4
2.62e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03

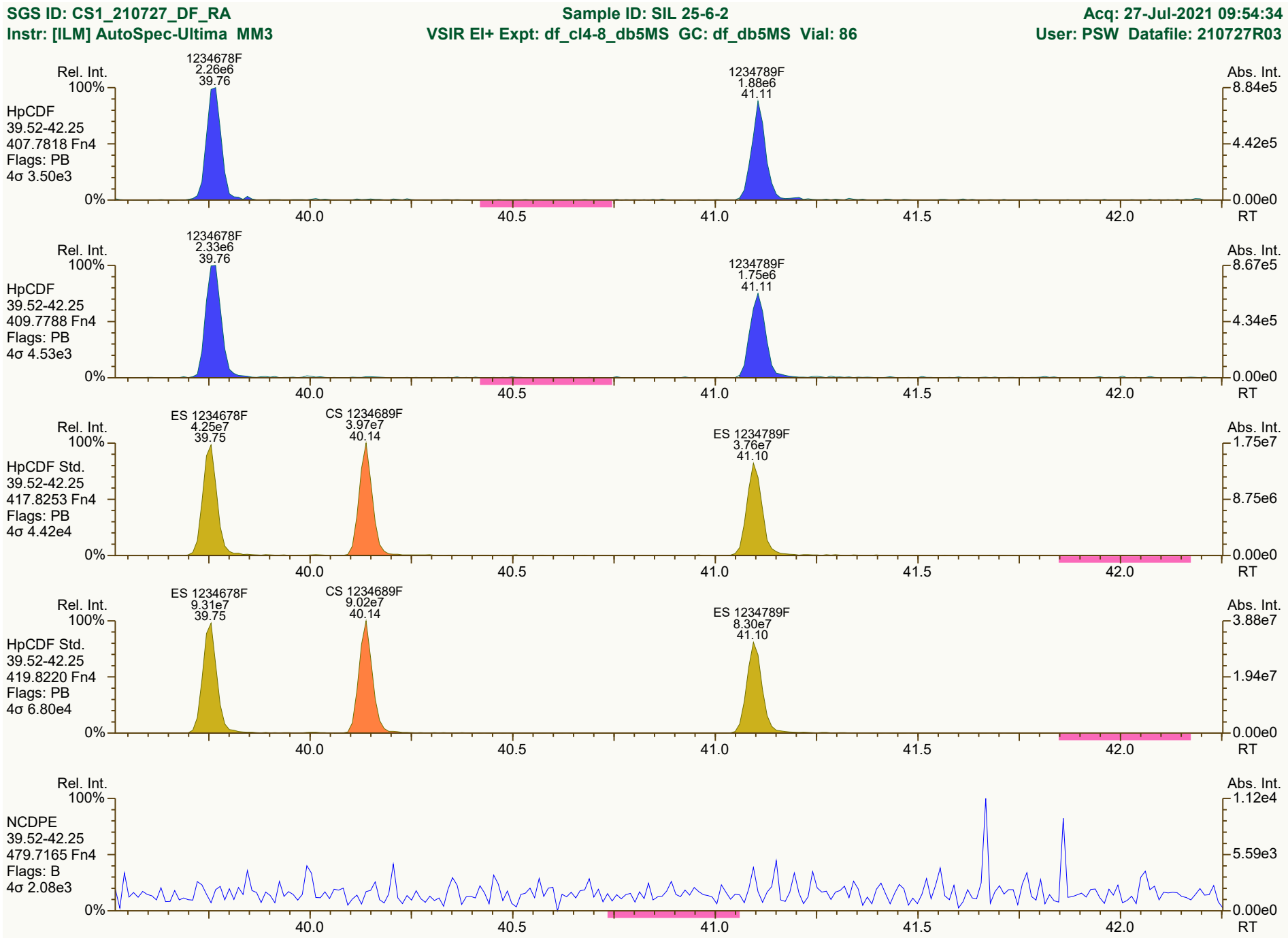


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6555, 5794, 9510 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 10 of 12

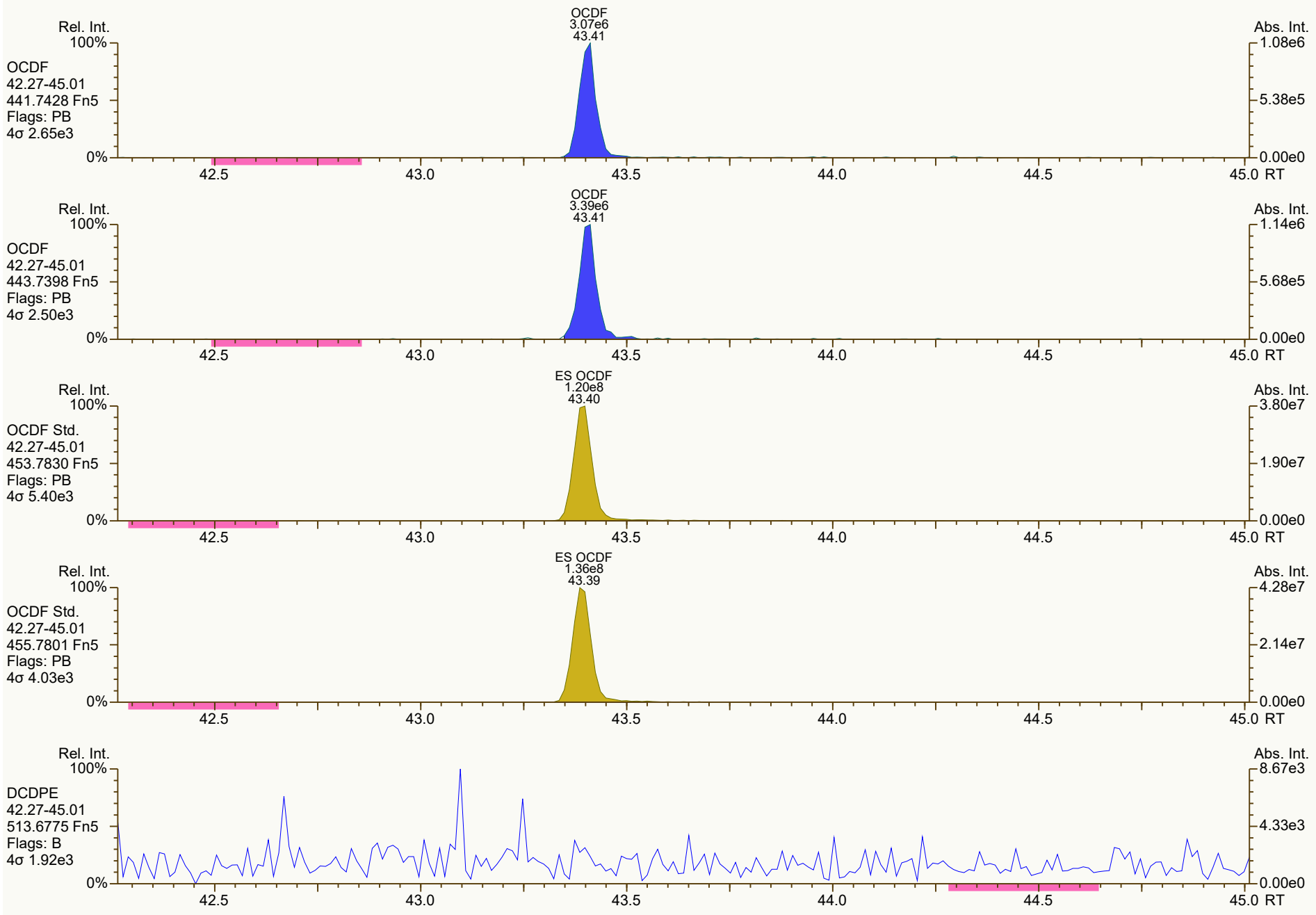
SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8166, 3912, 7586 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 11 of 12


OCDF
3.07e6
43.41
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 2.65e3
0%
Abs. Int.
1.08e6
5.38e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.39e6
43.41
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.50e3
0%
Abs. Int.
1.14e6
5.68e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.20e8
43.40
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.40e3
0%
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.36e8
43.39
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.03e3
0%
Abs. Int.
4.28e7
2.14e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.67e3
4.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

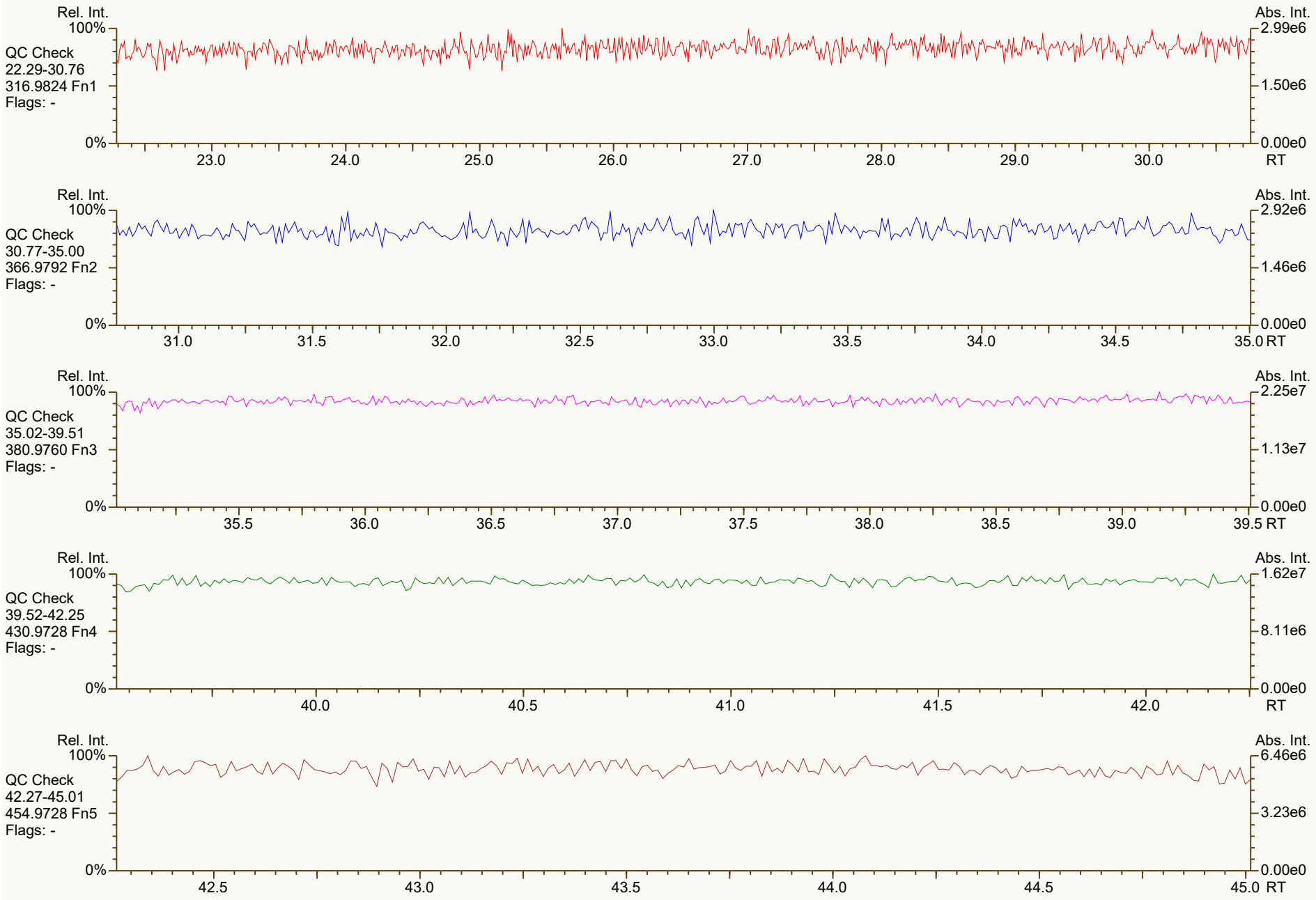
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

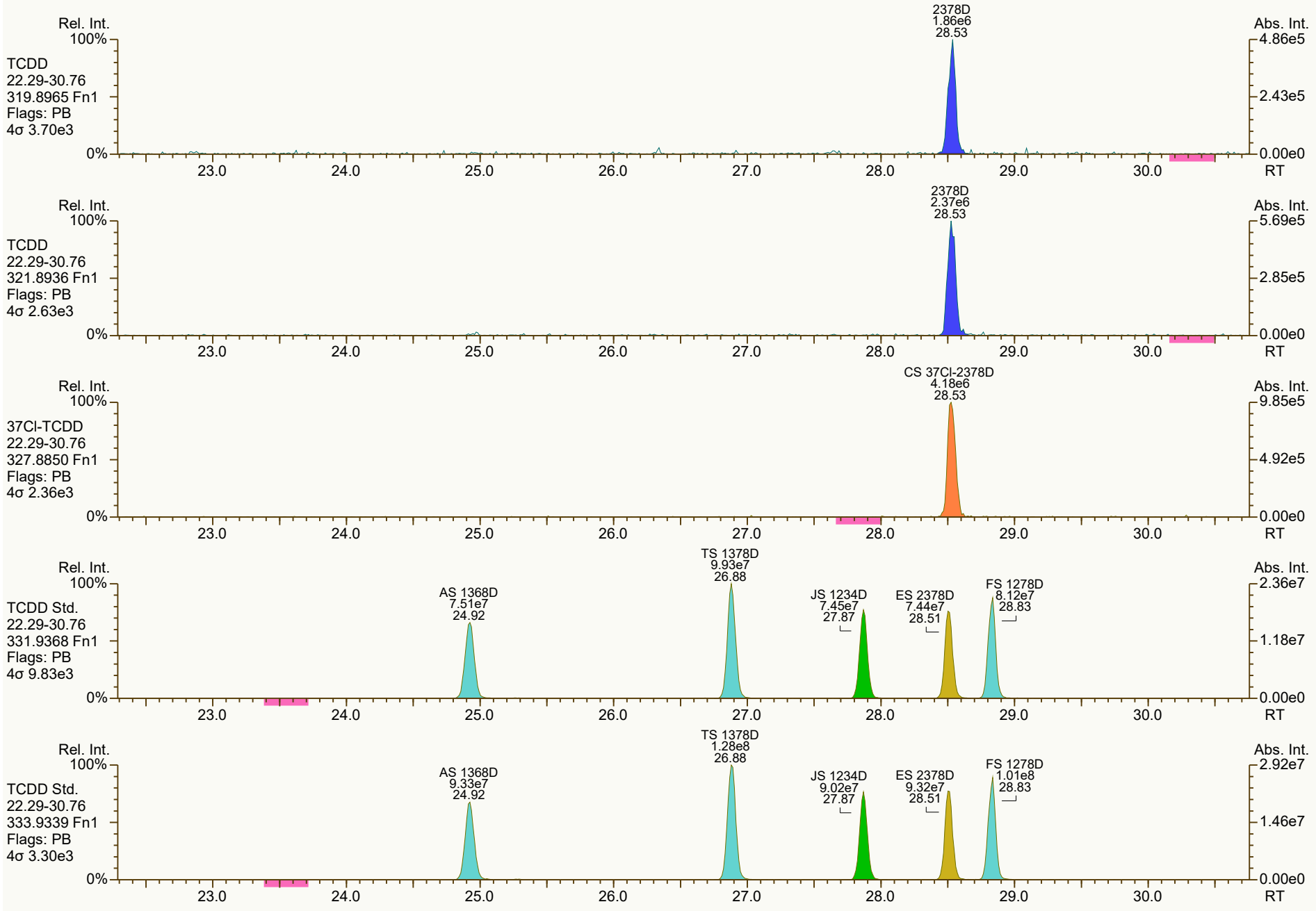
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	4.23E+06	0.79	Y	1.34	1.26	-6%
12378-PeCDD	33.81	1.67E+07	1.63	Y	1.06	1.02	-4%
123478-HxCDD	37.68	1.53E+07	1.32	Y	1.06	0.99	-6%
123678-HxCDD	37.80	1.52E+07	1.22	Y	1.08	1.02	-5%
123789-HxCDD	38.08	1.66E+07	1.25	Y	1.02	0.95	-6%
1234678-HpCDD	40.67	1.41E+07	1.01	Y	0.97	0.92	-6%
OCDD	43.23	2.33E+07	0.88	Y	1.07	1.01	-6%
2378-TCDF	27.68	5.04E+06	0.83	Y	0.96	0.90	-6%
12378-PeCDF	32.39	2.16E+07	1.63	Y	0.95	0.90	-5%
23478-PeCDF	33.48	2.12E+07	1.52	Y	0.94	0.90	-4%
123478-HxCDF	36.69	2.09E+07	1.25	Y	1.23	1.19	-4%
123678-HxCDF	36.83	2.13E+07	1.24	Y	1.13	1.07	-5%
234678-HxCDF	37.50	1.98E+07	1.20	Y	1.15	1.08	-6%
123789-HxCDF	38.43	1.89E+07	1.24	Y	1.14	1.09	-4%
1234678-HpCDF	39.77	1.87E+07	1.01	Y	1.36	1.31	-4%
1234789-HpCDF	41.12	1.60E+07	1.02	Y	1.30	1.26	-3%
OCDF	43.41	2.61E+07	0.92	Y	1.03	0.95	-7%
ES 2378-TCDD	28.51	1.68E+08	0.80	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.794	1.63E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.667	1.54E+08	1.28	Y	0.99	0.99	-1%
ES 123678-HxCDD	37.781	1.49E+08	1.24	Y	0.97	0.95	-2%
ES 123789-HxCDD	38.07	1.75E+08	1.26	Y	1.12	1.12	0%
ES 1234678-HpCDD	40.658	1.53E+08	1.06	Y	0.99	0.98	-1%
ES OCDD	43.222	2.31E+08	0.90	Y	0.78	0.74	-5%
ES 2378-TCDF	27.656	2.80E+08	0.80	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.368	2.40E+08	1.55	Y	0.93	0.92	-2%
ES 23478-PeCDF	33.459	2.36E+08	1.59	Y	0.92	0.90	-2%
ES 123478-HxCDF	36.674	1.76E+08	0.52	Y	1.14	1.13	-1%
ES 123678-HxCDF	36.814	1.99E+08	0.52	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.481	1.84E+08	0.52	Y	1.20	1.18	-2%
ES 123789-HxCDF	38.416	1.73E+08	0.52	Y	1.14	1.11	-2%
ES 1234678-HpCDF	39.761	1.43E+08	0.44	Y	0.95	0.92	-3%
ES 1234789-HpCDF	41.105	1.28E+08	0.46	Y	0.85	0.82	-3%
ES OCDF	43.404	2.74E+08	0.87	Y	0.93	0.88	-5%

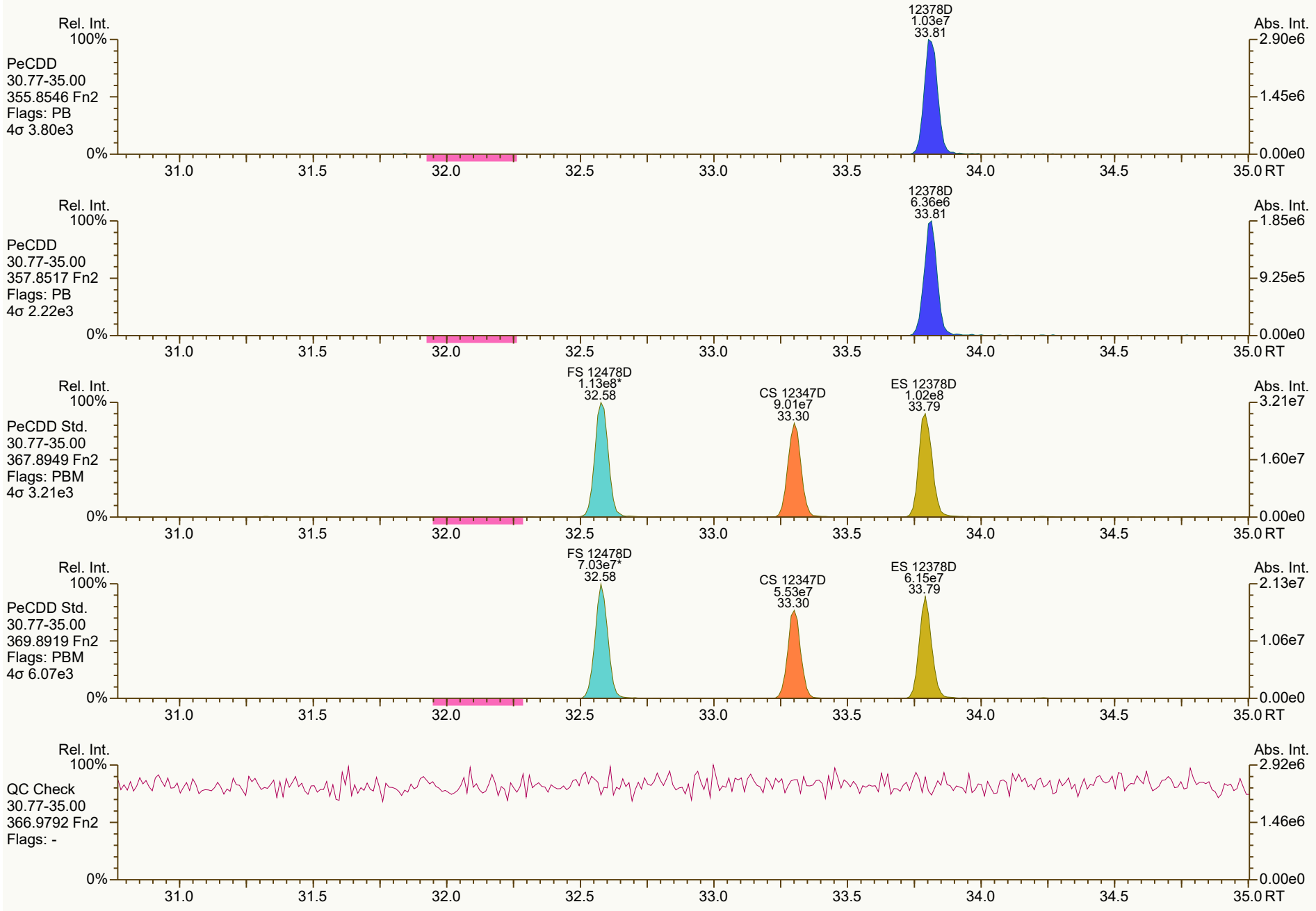
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

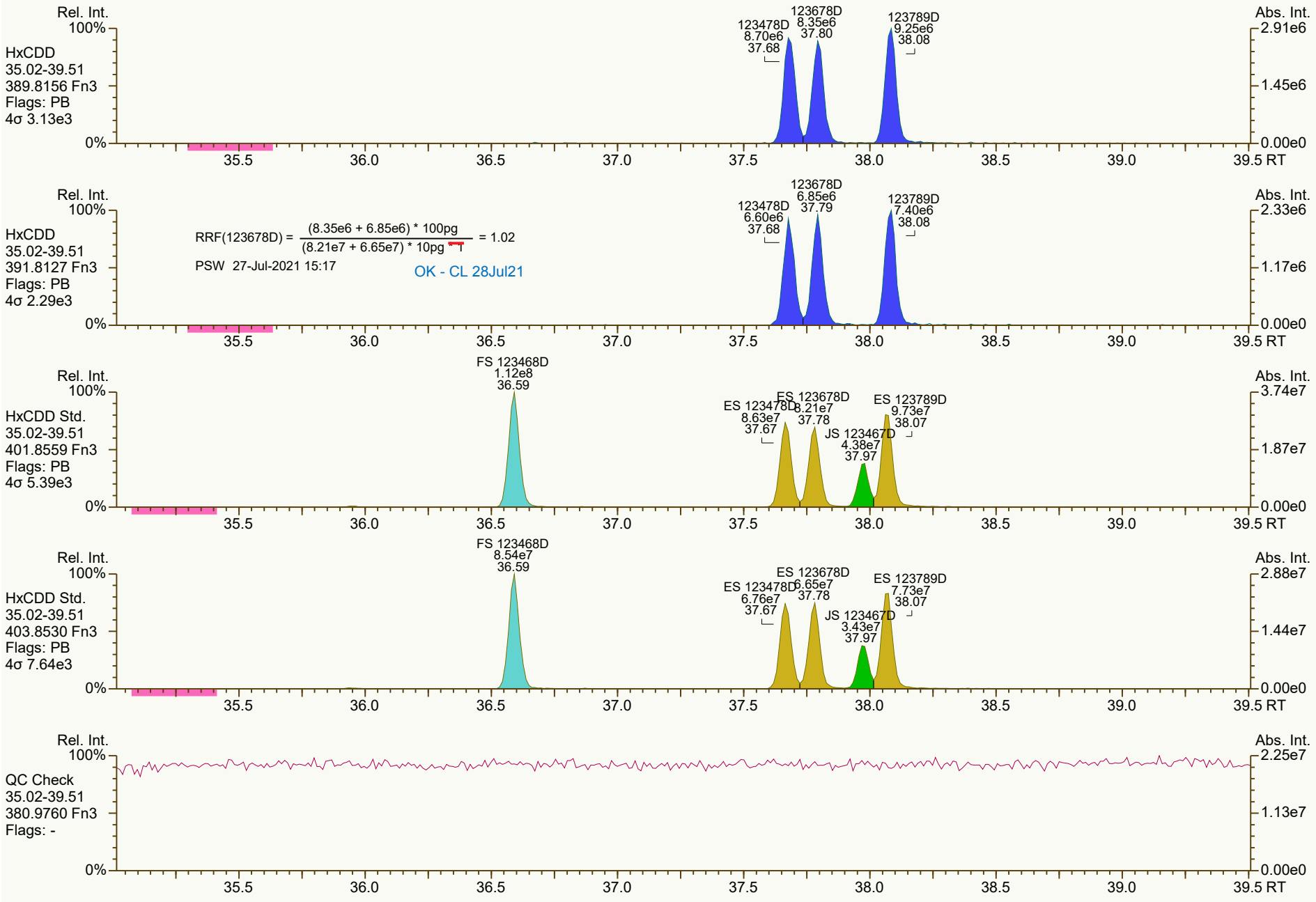
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.65E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.34	2.62E+08	0.75	Y	-	-	-
JS 123467-HxCDD	37.97	7.80E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.31	1.27	-3%
CS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.13	1.69E+08	0.52	Y	1.09	1.08	-1%
CS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.86	0.89	3%
SS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.13	1.69E+08	0.52	Y	0.84	0.85	1%
SS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.92	1.68E+08	0.81	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.81E+08	0.77	Y	1.08	1.07	-1%
FS 1278-TCDD	28.83	1.83E+08	0.80	Y	1.08	1.09	0%
FS 12478-PeCDD	32.58	1.83E+08	1.61	Y	1.09	1.12	3%
FS 123468-HxCDD	36.59	1.97E+08	1.31	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	2.12E+08	1.04	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	2.27E+08	0.78	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.23~~	~~1.51E+06~~	~~2.07~~	~~N~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.41~~	~~1.45E+06~~	~~3.13~~	~~N~~	~~0.06~~	~~0.05~~	~~-11%~~

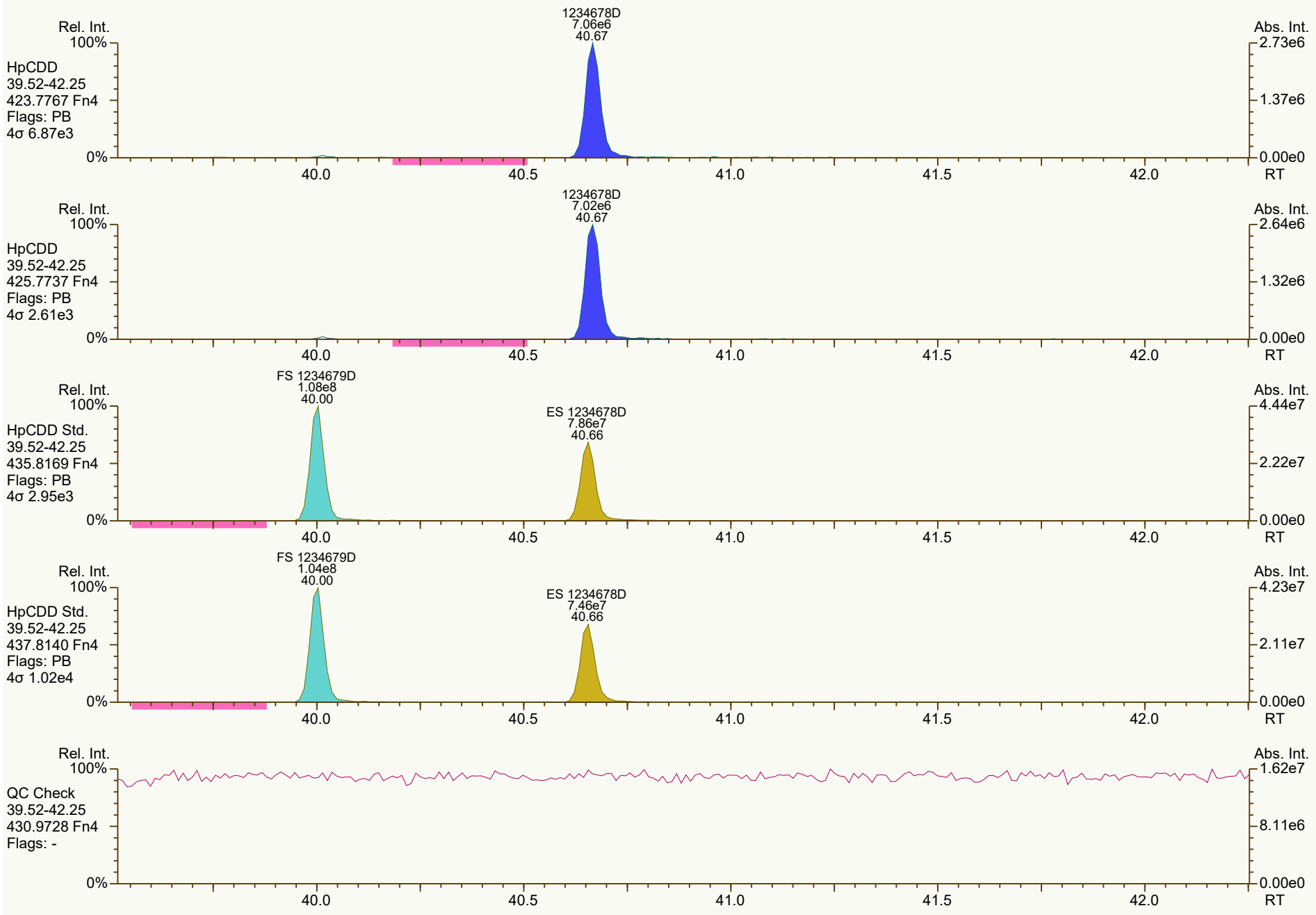
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.99e6
1.50e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.46e6
3.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

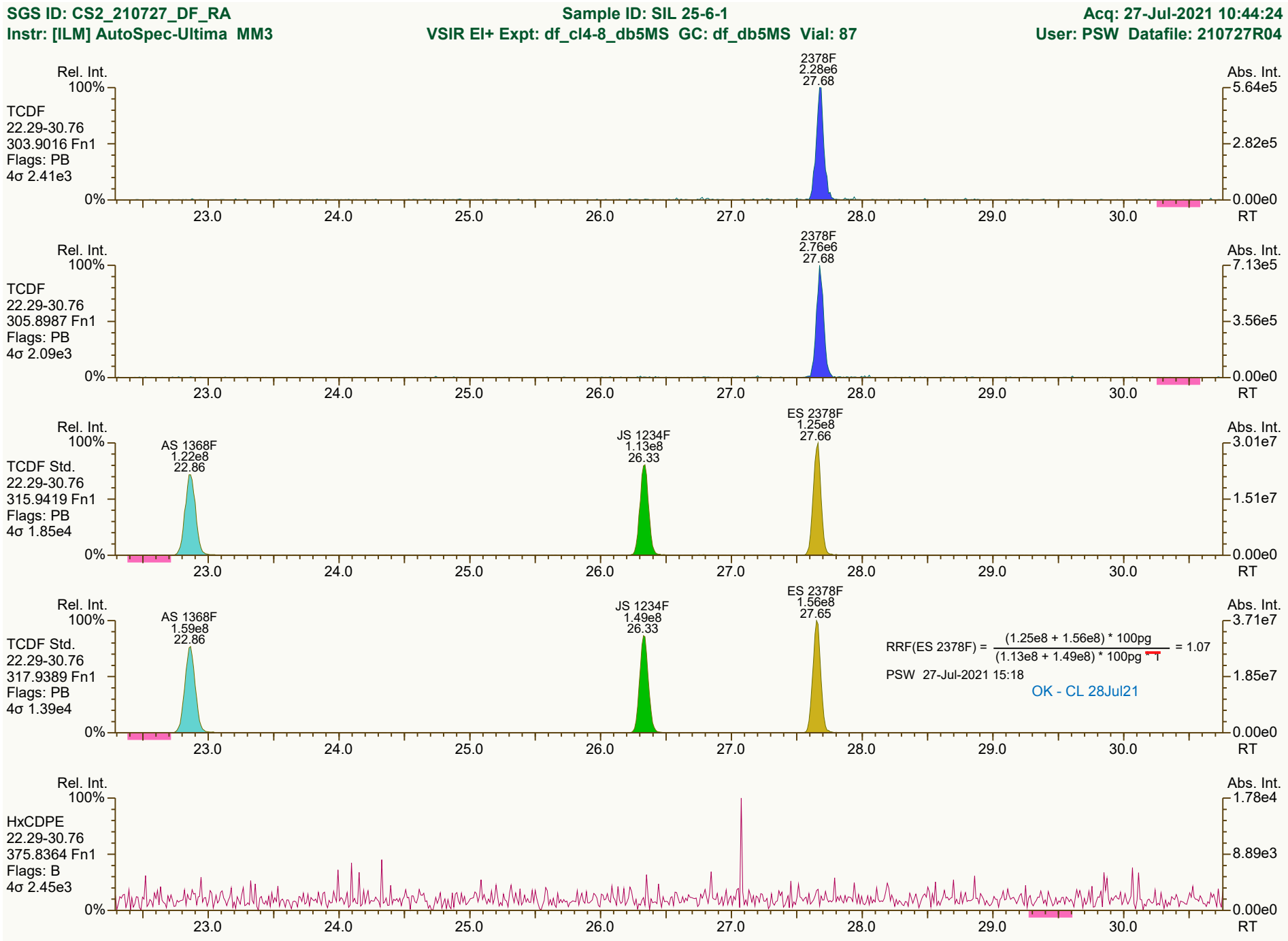

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.70e3
0%
2378D
1.86e6
28.53
Abs. Int.
4.86e5
2.43e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.63e3
0%
2378D
2.37e6
28.53
Abs. Int.
5.69e5
2.85e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.36e3
0%
CS 37Cl-2378D
4.18e6
28.53
Abs. Int.
9.85e5
4.92e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 9.83e3
0%
AS 1368D
7.51e7
24.92
TS 1378D
9.93e7
26.88
JS 1234D
7.45e7
27.87
ES 2378D
7.44e7
28.51
FS 1278D
8.12e7
28.83
Abs. Int.
2.36e7
1.18e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.30e3
0%
AS 1368D
9.33e7
24.92
TS 1378D
1.28e8
26.88
JS 1234D
9.02e7
27.87
ES 2378D
9.32e7
28.51
FS 1278D
1.01e8
28.83
Abs. Int.
2.92e7
1.46e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.80e3
0%
12378D
1.03e7
33.81
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.22e3
0%
12378D
6.36e6
33.81
Abs. Int.
1.85e6
9.25e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.21e3
0%
FS 12478D
1.13e8*
32.58
CS 12347D
9.01e7
33.30
ES 12378D
1.02e8
33.79
Abs. Int.
3.21e7
1.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 6.07e3
0%
FS 12478D
7.03e7*
32.58
CS 12347D
5.53e7
33.30
ES 12378D
6.15e7
33.79
Abs. Int.
2.13e7
1.06e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

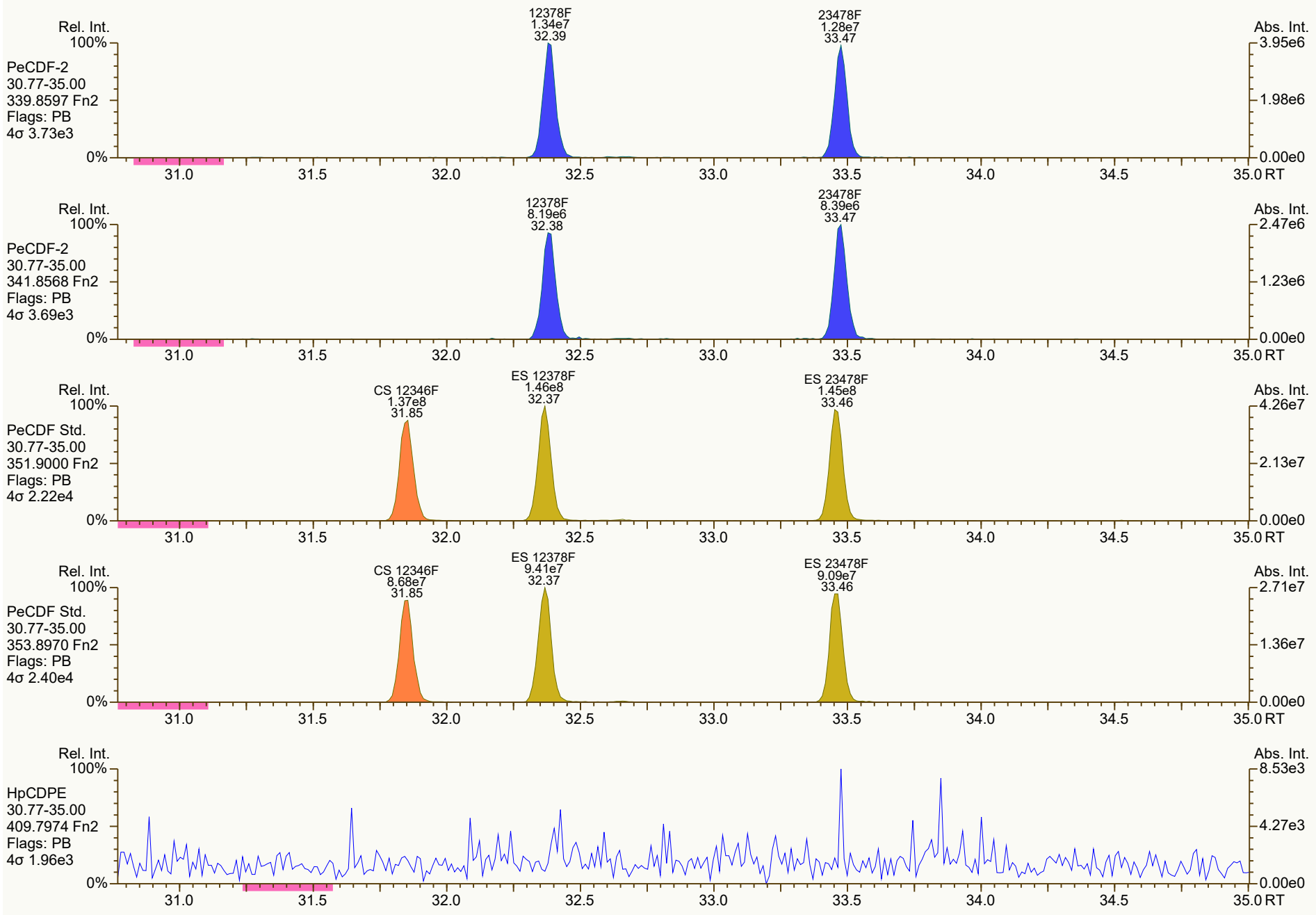

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.13e3
123478D 8.70e6 37.68
123678D 8.35e6 37.80
123789D 9.25e6 38.08
Abs. Int.
2.91e6
1.45e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.29e3
RRF(123678D) = (8.35e6 + 6.85e6) * 100pg / (8.21e7 + 6.65e7) * 10pg = 1.02
PSW 27-Jul-2021 15:17
OK - CL 28Jul21
123478D 6.60e6 37.68
123678D 6.85e6 37.79
123789D 7.40e6 38.08
2.33e6
1.17e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 5.39e3
FS 123468D 1.12e8 36.59
ES 123478D 8.63e7 37.67
ES 123678D 8.21e7 37.78
JS 123467D 4.38e7 37.97
ES 123789D 9.73e7 38.07
3.74e7
1.87e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 7.64e3
FS 123468D 8.54e7 36.59
ES 123478D 6.76e7 37.67
ES 123678D 6.65e7 37.78
JS 123467D 3.43e7 37.97
ES 123789D 7.73e7 38.07
2.88e7
1.44e7
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.25e7
1.13e7


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 6.87e3
0%
1234678D
7.06e6
40.67
Abs. Int.
2.73e6
1.37e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 2.61e3
0%
1234678D
7.02e6
40.67
Abs. Int.
2.64e6
1.32e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.95e3
0%
FS 1234679D
1.08e8
40.00
ES 1234678D
7.86e7
40.66
Abs. Int.
4.44e7
2.22e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.02e4
0%
FS 1234679D
1.04e8
40.00
ES 1234678D
7.46e7
40.66
Abs. Int.
4.23e7
2.11e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


OCDD
1.09e7
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 3.62e3
0%
Abs. Int.
3.54e6
1.77e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.24e7
43.23
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 1.67e3
4.01e6
2.00e6
ES OCDD
1.10e8
43.22
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 3.79e3
3.53e7
1.77e7
ES OCDD
1.22e8
43.22
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 7.59e3
3.84e7
1.92e7
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
6.46e6
3.23e6


SGS ID: CS2_210727_DF_RA
Sample ID: SIL 25-6-1
Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
User: PSW Datafile: 210727R04
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.41e3
2378F
2.28e6
27.68
5.64e5
2.82e5
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.09e3
2378F
2.76e6
27.68
7.13e5
3.56e5
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.85e4
AS 1368F
1.22e8
22.86
JS 1234F
1.13e8
26.33
ES 2378F
1.25e8
27.66
3.01e7
1.51e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.39e4
AS 1368F
1.59e8
22.86
JS 1234F
1.49e8
26.33
ES 2378F
1.56e8
27.65
RRF(ES 2378F) = (1.25e8 + 1.56e8) * 100pg / (1.13e8 + 1.49e8) * 100pg * 1 = 1.07
PSW 27-Jul-2021 15:18
OK - CL 28Jul21
3.71e7
1.85e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.45e3
1.78e4
8.89e3
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9273, 2389, 5803 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 7 of 12

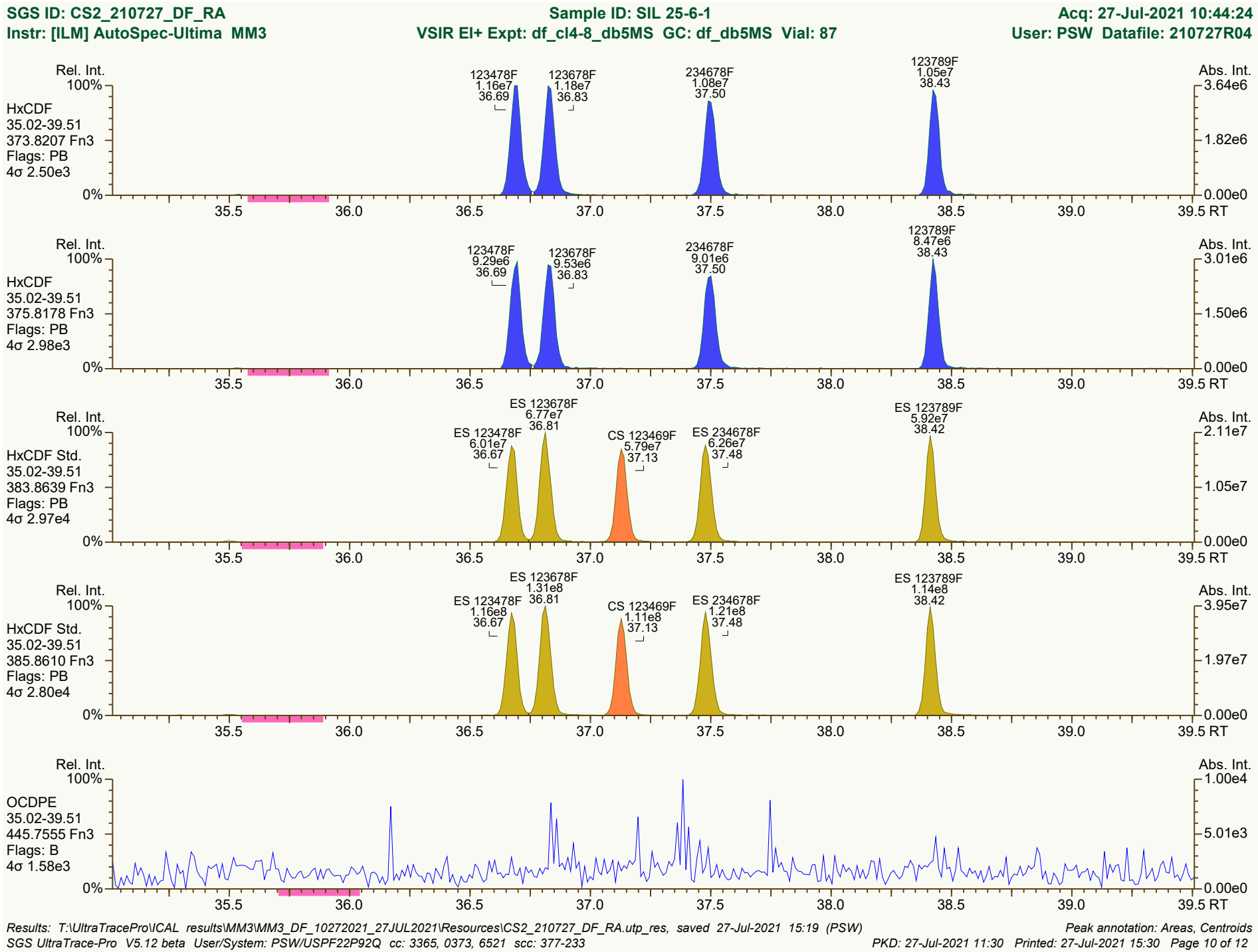

Rel. Int.
100%
0%
Abs. Int.
1.66e4
8.28e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.30e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.23e3
2.64e4
1.32e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.99e6
1.50e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 3.73e3
0%
12378F
1.34e7
32.39
23478F
1.28e7
33.47
Abs. Int.
3.95e6
1.98e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.69e3
0%
12378F
8.19e6
32.38
23478F
8.39e6
33.47
Abs. Int.
2.47e6
1.23e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.22e4
0%
CS 12346F
1.37e8
31.85
ES 12378F
1.46e8
32.37
ES 23478F
1.45e8
33.46
Abs. Int.
4.26e7
2.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.40e4
0%
CS 12346F
8.68e7
31.85
ES 12378F
9.41e7
32.37
ES 23478F
9.09e7
33.46
Abs. Int.
2.71e7
1.36e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: PB
4σ 1.96e3
0%
Abs. Int.
8.53e3
4.27e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

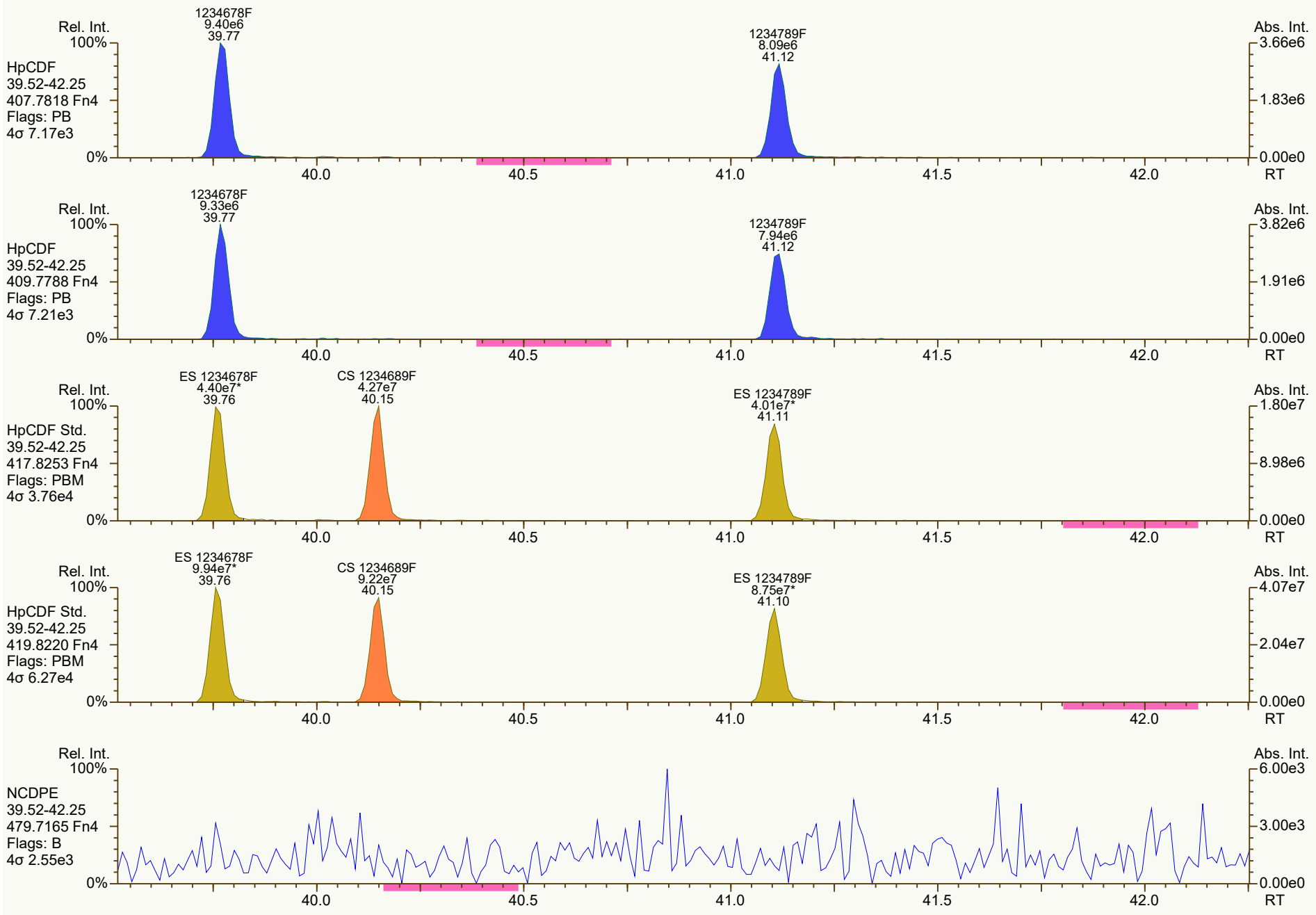
SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

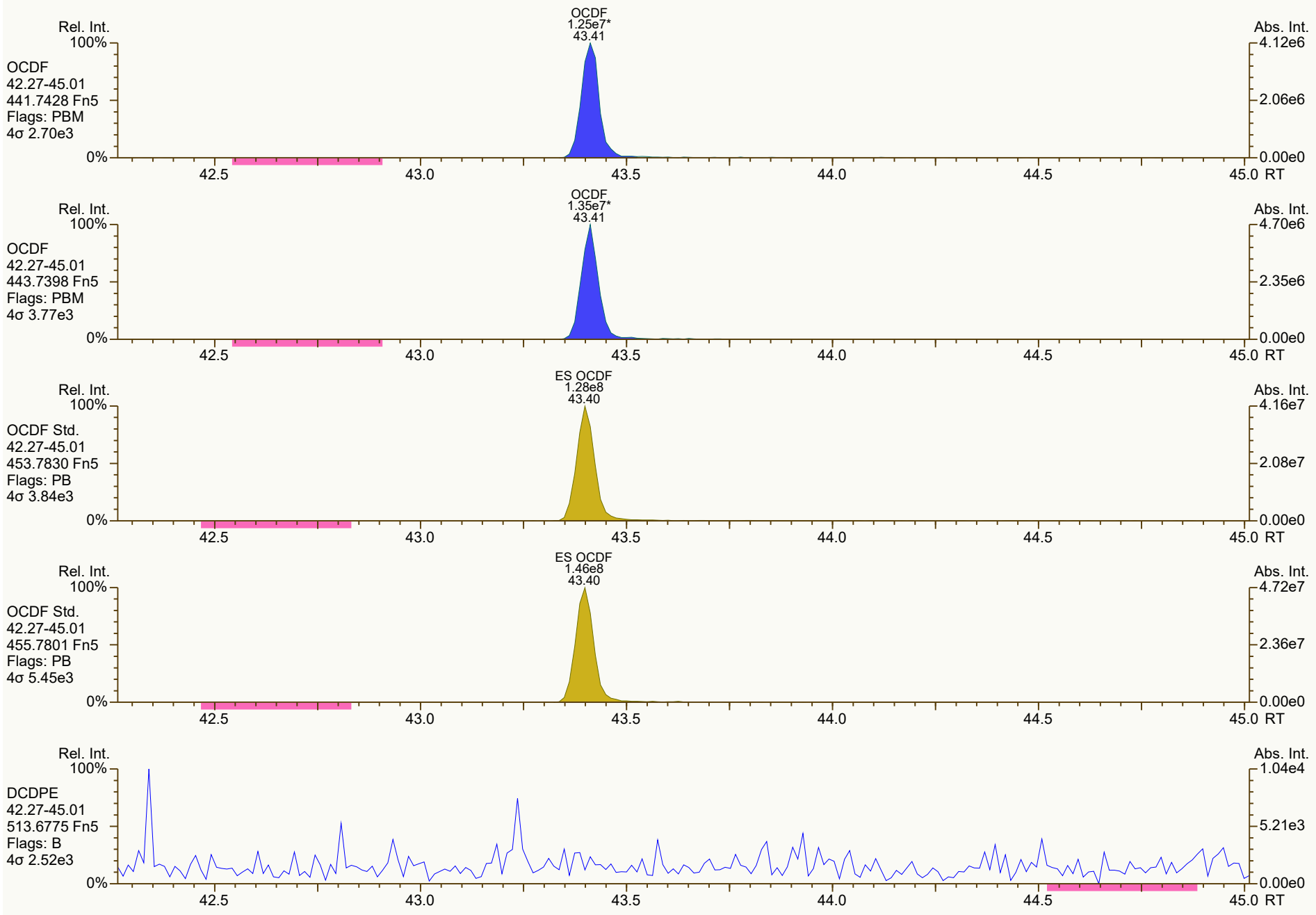
Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87

Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3365, 0373, 6521 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 7.17e3
1234678F
9.40e6
39.77
1234789F
8.09e6
41.12
Abs. Int.
3.66e6
1.83e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 7.21e3
1234678F
9.33e6
39.77
1234789F
7.94e6
41.12
Abs. Int.
3.82e6
1.91e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.76e4
ES 1234678F
4.40e7*
39.76
CS 1234689F
4.27e7
40.15
ES 1234789F
4.01e7*
41.11
Abs. Int.
1.80e7
8.98e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 6.27e4
ES 1234678F
9.94e7*
39.76
CS 1234689F
9.22e7
40.15
ES 1234789F
8.75e7*
41.10
Abs. Int.
4.07e7
2.04e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.55e3
Abs. Int.
6.00e3
3.00e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PBM
4σ 2.70e3
0%
OCDF
1.25e7*
43.41
Abs. Int.
4.12e6
2.06e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PBM
4σ 3.77e3
0%
OCDF
1.35e7*
43.41
Abs. Int.
4.70e6
2.35e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 3.84e3
0%
ES OCDF
1.28e8
43.40
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 5.45e3
0%
ES OCDF
1.46e8
43.40
Abs. Int.
4.72e7
2.36e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.52e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

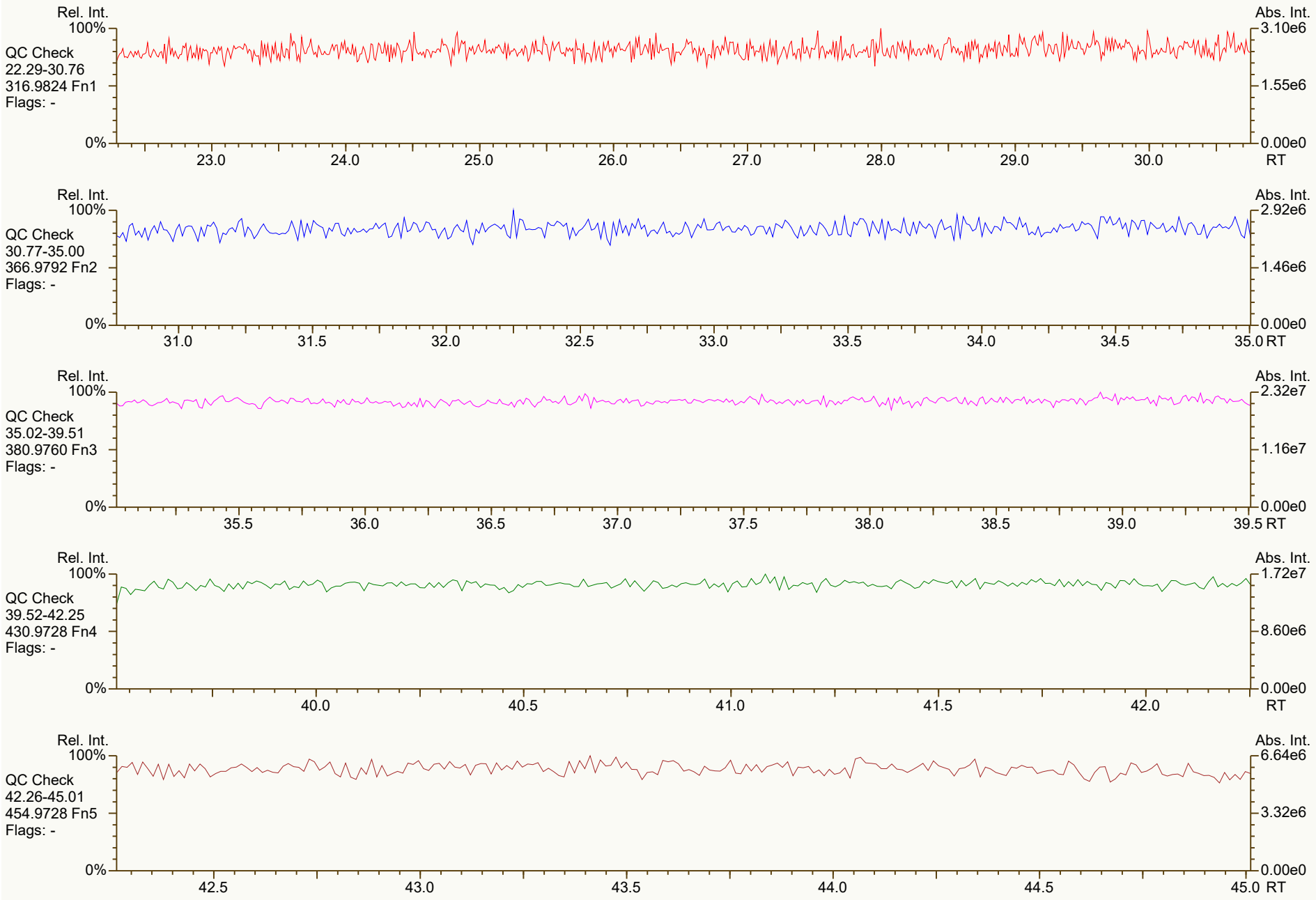
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

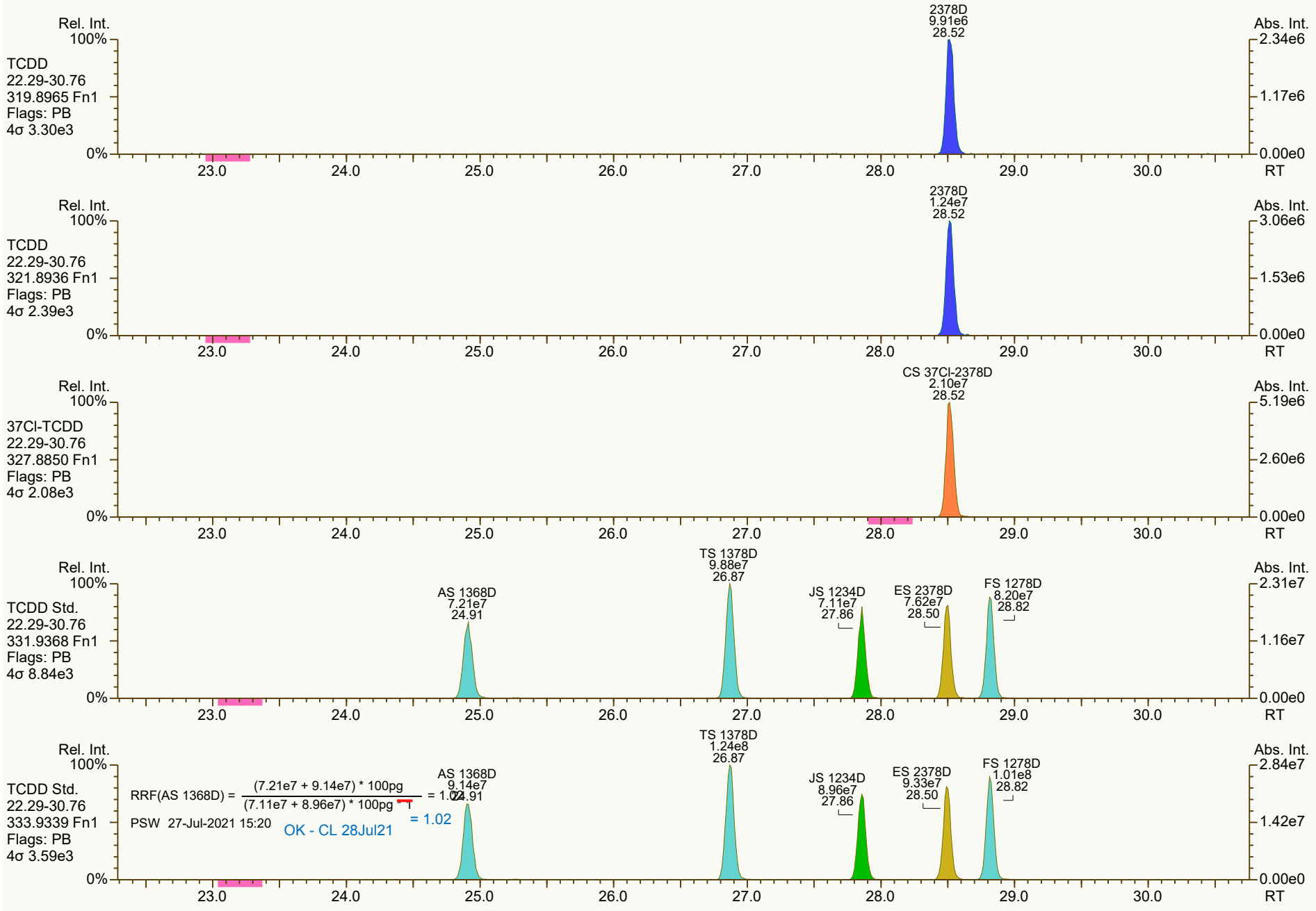
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.23E+07	0.80	Y	1.34	1.32	-2%
12378-PeCDD	33.80	8.56E+07	1.57	Y	1.06	1.05	-1%
123478-HxCDD	37.67	7.63E+07	1.25	Y	1.06	1.05	-1%
123678-HxCDD	37.78	7.89E+07	1.25	Y	1.08	1.08	0%
123789-HxCDD	38.07	8.22E+07	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.66	7.06E+07	1.03	Y	0.97	0.95	-2%
OCDD	43.22	1.21E+08	0.89	Y	1.07	1.07	0%
2378-TCDF	27.66	2.66E+07	0.80	Y	0.96	0.95	-1%
12378-PeCDF	32.37	1.11E+08	1.56	Y	0.95	0.94	-1%
23478-PeCDF	33.46	1.09E+08	1.56	Y	0.94	0.92	-2%
123478-HxCDF	36.68	1.05E+08	1.22	Y	1.23	1.22	-2%
123678-HxCDF	36.82	1.08E+08	1.25	Y	1.13	1.10	-2%
234678-HxCDF	37.49	1.02E+08	1.24	Y	1.15	1.14	-1%
123789-HxCDF	38.42	9.59E+07	1.23	Y	1.14	1.14	0%
1234678-HpCDF	39.76	9.62E+07	1.03	Y	1.36	1.34	-1%
1234789-HpCDF	41.10	8.35E+07	1.03	Y	1.30	1.34	3%
OCDF	43.41	1.40E+08	0.89	Y	1.03	1.03	0%
ES 2378-TCDD	28.50	1.70E+08	0.82	Y	1.03	1.05	2%
ES 12378-PeCDD	33.782	1.63E+08	1.65	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.654	1.45E+08	1.26	Y	0.99	1.00	0%
ES 123678-HxCDD	37.768	1.46E+08	1.27	Y	0.97	1.01	3%
ES 123789-HxCDD	38.057	1.66E+08	1.23	Y	1.12	1.14	1%
ES 1234678-HpCDD	40.644	1.48E+08	1.08	Y	0.99	1.02	3%
ES OCDD	43.211	2.25E+08	0.88	Y	0.78	0.77	-1%
ES 2378-TCDF	27.643	2.80E+08	0.79	Y	1.08	1.09	1%
ES 12378-PeCDF	32.354	2.37E+08	1.58	Y	0.93	0.93	-1%
ES 23478-PeCDF	33.446	2.37E+08	1.53	Y	0.92	0.93	0%
ES 123478-HxCDF	36.661	1.72E+08	0.52	Y	1.14	1.18	4%
ES 123678-HxCDF	36.801	1.96E+08	0.52	Y	1.30	1.35	4%
ES 234678-HxCDF	37.469	1.79E+08	0.54	Y	1.20	1.23	2%
ES 123789-HxCDF	38.404	1.68E+08	0.52	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.75	1.43E+08	0.45	Y	0.95	0.98	4%
ES 1234789-HpCDF	41.092	1.25E+08	0.44	Y	0.85	0.86	1%
ES OCDF	43.395	2.71E+08	0.89	Y	0.93	0.93	1%

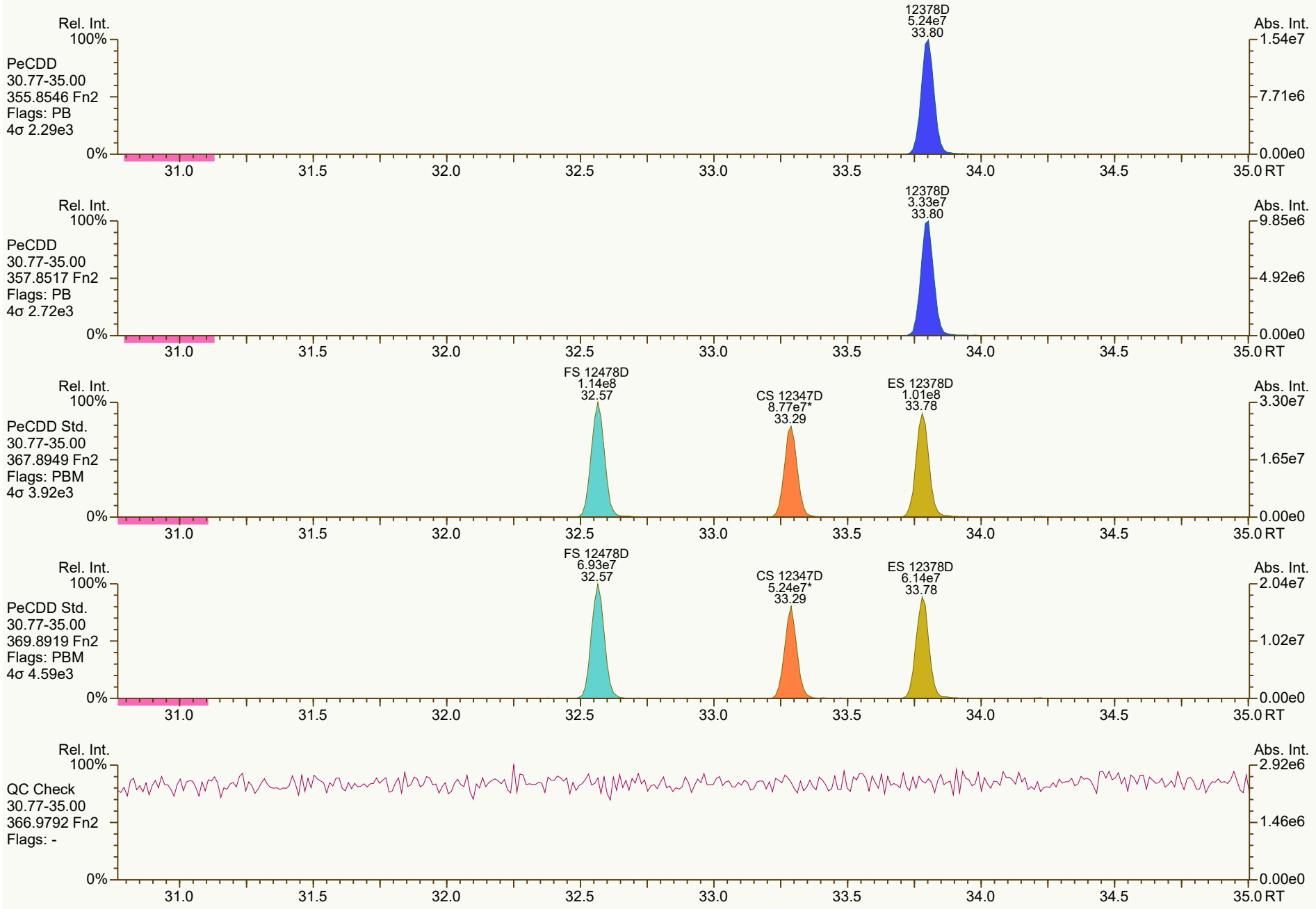
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

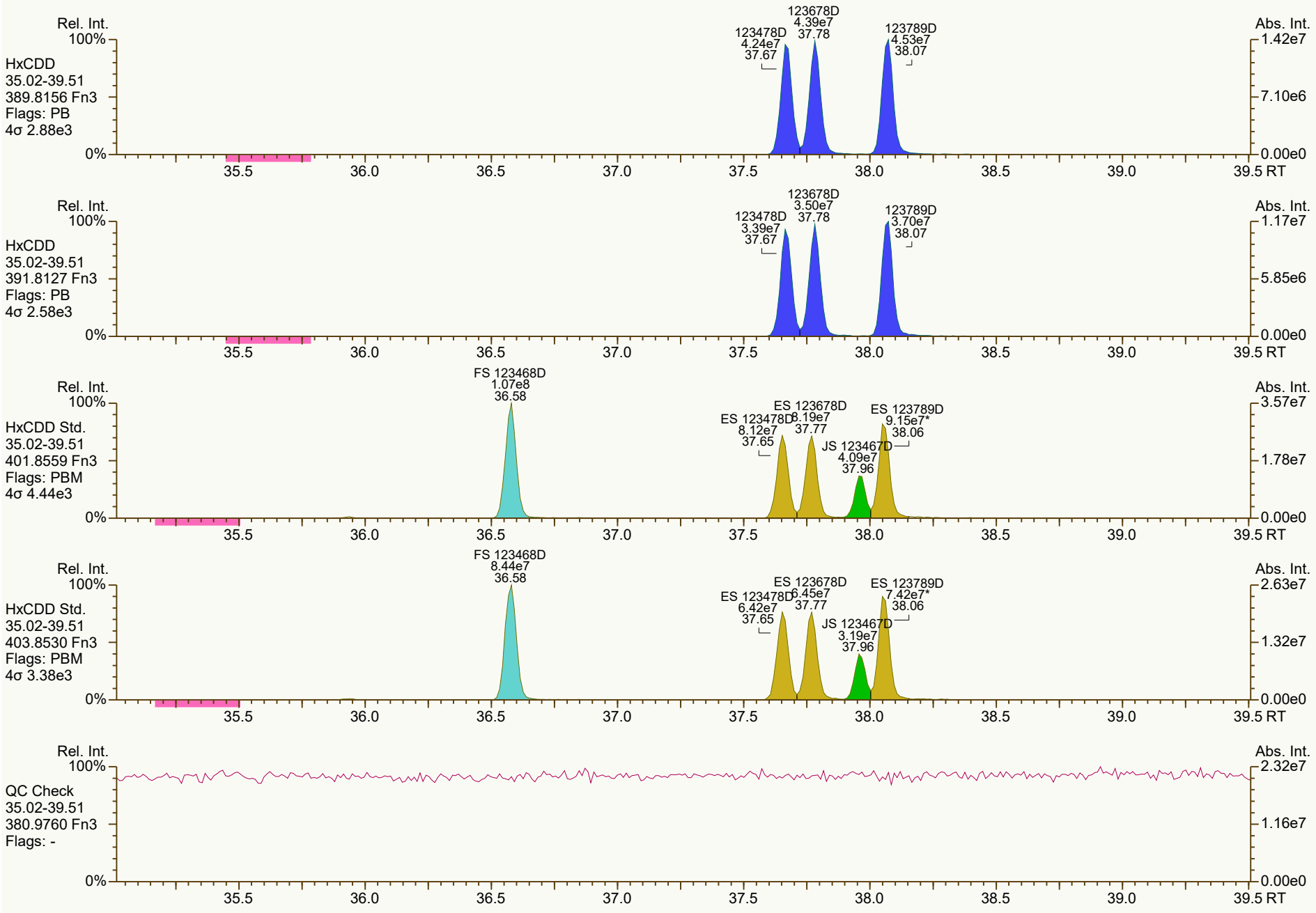
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.61E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.32	2.56E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.96	7.28E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.31	1.30	0%
CS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.89	0.87	-2%
CS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.87	0.89	2%
CS 123469-HxCDF	37.12	1.65E+08	0.52	Y	1.09	1.14	4%
CS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.86	0.92	7%
SS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.26	1.24	-2%
SS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.86	0.86	0%
SS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.93	0.96	3%
SS 123469-HxCDF	37.12	1.65E+08	0.52	Y	0.84	0.84	0%
SS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.91	1.64E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.85	2.82E+08	0.79	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.83E+08	0.81	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.84E+08	1.65	Y	1.09	1.13	3%
FS 123468-HxCDD	36.58	1.91E+08	1.27	Y	1.26	1.32	4%
FS 1234679-HpCDD	39.99	2.10E+08	1.06	Y	1.36	1.42	5%
TS 1378-TCDD	26.87	2.23E+08	0.80	Y	1.35	1.31	-3%
~~OCDD-a~~	~~43.22~~	~~7.32E+06~~	~~2.45~~	~~Y~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.40~~	~~8.14E+06~~	~~2.47~~	~~Y~~	~~0.06~~	~~0.06~~	~~1%~~

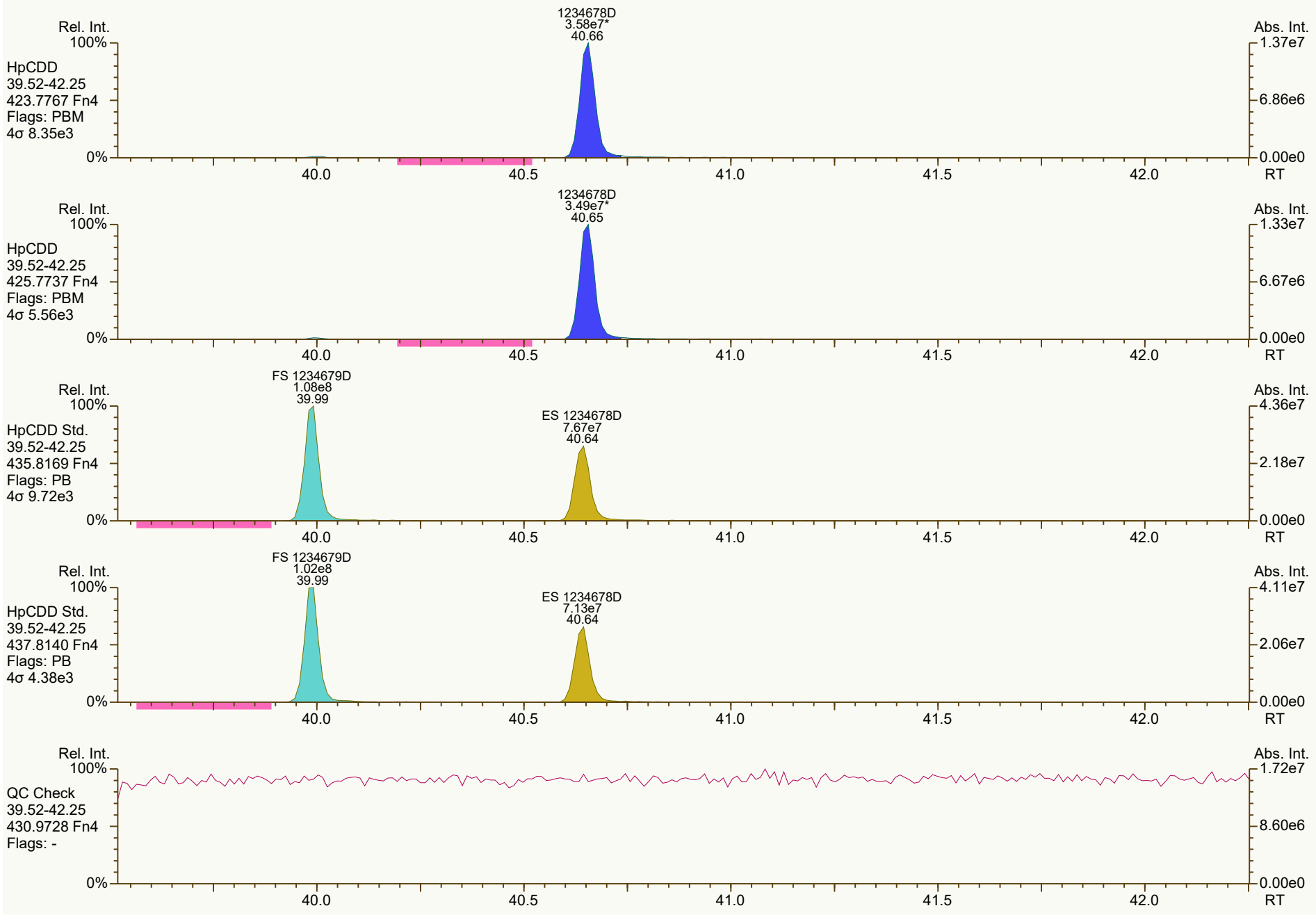
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
RT
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
2.92e6
1.46e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.32e7
1.16e7
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.72e7
8.60e6
40.0
40.5
41.0
41.5
42.0
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
6.64e6
3.32e6
42.5
43.0
43.5
44.0
44.5
45.0

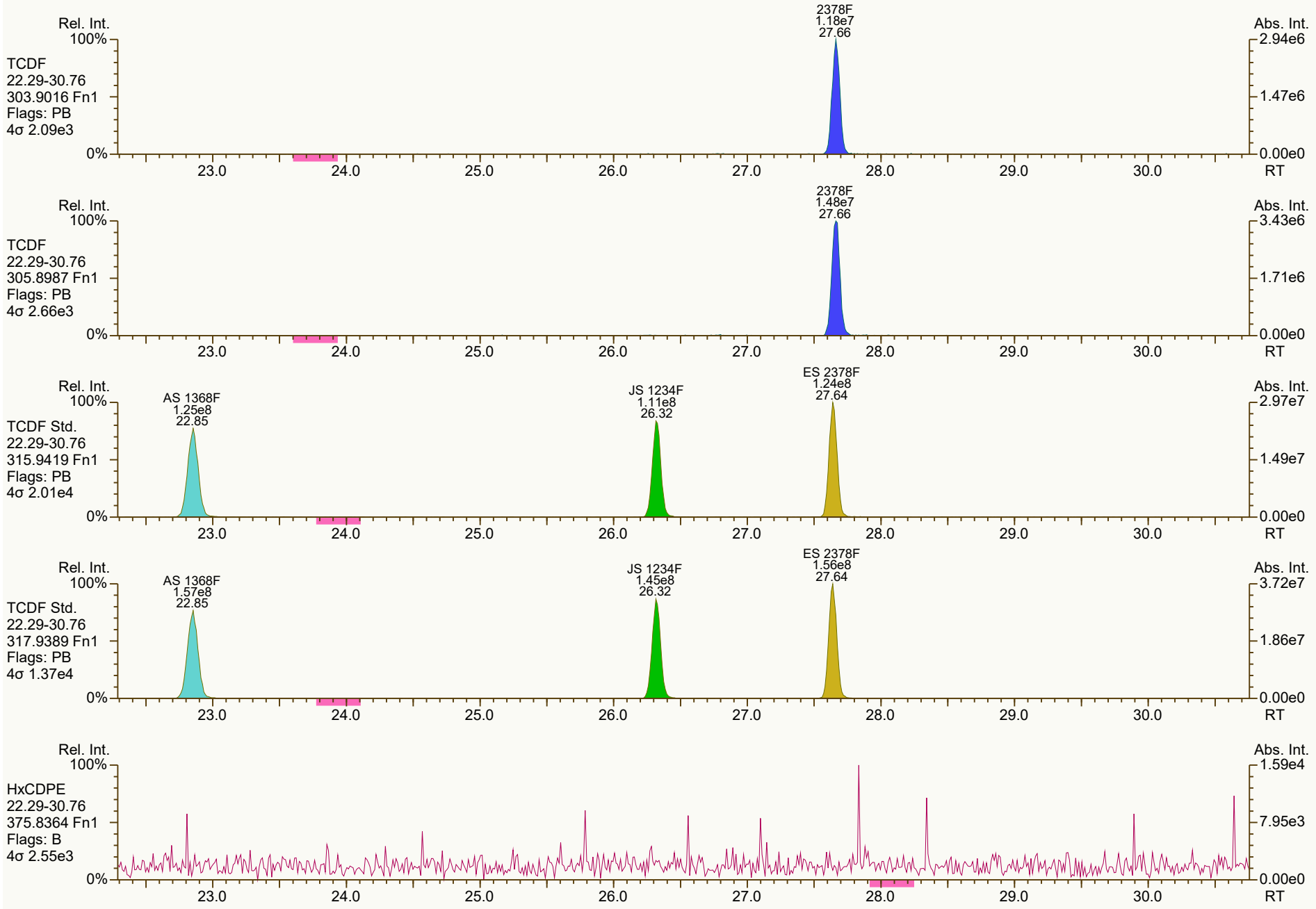

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.30e3
0%
2378D
9.91e6
28.52
Abs. Int.
2.34e6
1.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.39e3
0%
2378D
1.24e7
28.52
Abs. Int.
3.06e6
1.53e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.08e3
0%
CS 37Cl-2378D
2.10e7
28.52
Abs. Int.
5.19e6
2.60e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 8.84e3
0%
AS 1368D
7.21e7
24.91
TS 1378D
9.88e7
26.87
JS 1234D
7.11e7
27.86
ES 2378D
7.62e7
28.50
FS 1278D
8.20e7
28.82
Abs. Int.
2.31e7
1.16e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.59e3
0%
RRF(AS 1368D) = (7.21e7 + 9.14e7) * 100pg / (7.11e7 + 8.96e7) * 100pg = 1.02
PSW 27-Jul-2021 15:20
OK - CL 28Jul21
= 1.02
AS 1368D
9.14e7
24.91
TS 1378D
1.24e8
26.87
JS 1234D
8.96e7
27.86
ES 2378D
9.33e7
28.50
FS 1278D
1.01e8
28.82
Abs. Int.
2.84e7
1.42e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.29e3
0%
12378D
5.24e7
33.80
Abs. Int.
1.54e7
7.71e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.72e3
0%
12378D
3.33e7
33.80
Abs. Int.
9.85e6
4.92e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.92e3
0%
FS 12478D
1.14e8
32.57
CS 12347D
8.77e7*
33.29
ES 12378D
1.01e8
33.78
Abs. Int.
3.30e7
1.65e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 4.59e3
0%
FS 12478D
6.93e7
32.57
CS 12347D
5.24e7*
33.29
ES 12378D
6.14e7
33.78
Abs. Int.
2.04e7
1.02e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

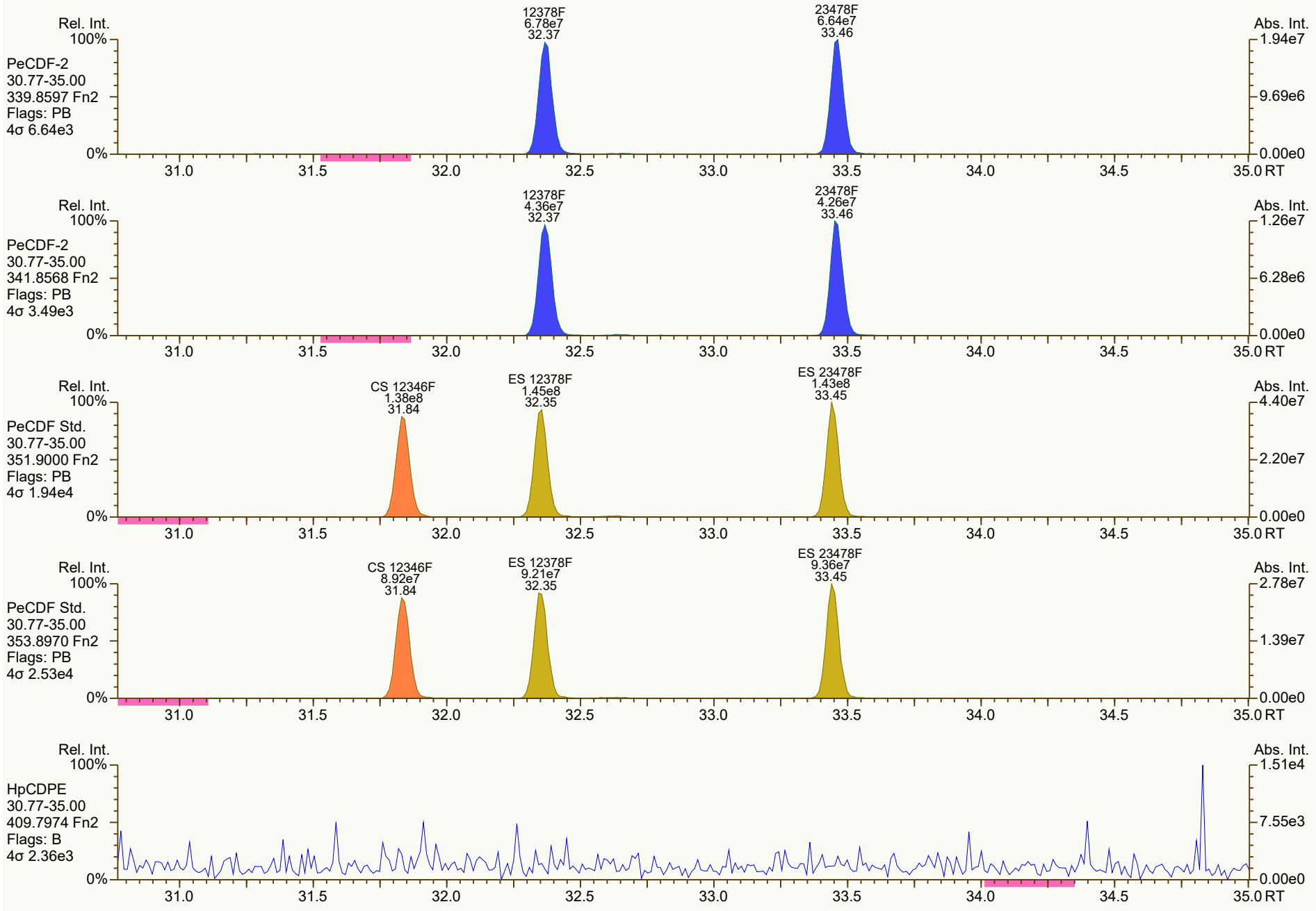

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.88e3
123678D
4.39e7
37.78
123478D
4.24e7
37.67
123789D
4.53e7
38.07
Abs. Int.
1.42e7
7.10e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.58e3
123678D
3.50e7
37.78
123478D
3.39e7
37.67
123789D
3.70e7
38.07
Abs. Int.
1.17e7
5.85e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.44e3
FS 123468D
1.07e8
36.58
ES 123678D
8.19e7
37.77
ES 123478D
8.12e7
37.65
ES 123789D
9.15e7*
38.06
JS 123467D
4.09e7
37.96
Abs. Int.
3.57e7
1.78e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.38e3
FS 123468D
8.44e7
36.58
ES 123678D
6.45e7
37.77
ES 123478D
6.42e7
37.65
ES 123789D
7.42e7*
38.06
JS 123467D
3.19e7
37.96
Abs. Int.
2.63e7
1.32e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.32e7
1.16e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 8.35e3
0%
1234678D
3.58e7*
40.66
Abs. Int.
1.37e7
6.86e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 5.56e3
1234678D
3.49e7*
40.65
1.33e7
6.67e6
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 9.72e3
FS 1234679D
1.08e8
39.99
ES 1234678D
7.67e7
40.64
4.36e7
2.18e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.38e3
FS 1234679D
1.02e8
39.99
ES 1234678D
7.13e7
40.64
4.11e7
2.06e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.72e7
8.60e6


OCDD
5.68e7*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.46e3
0%
Abs. Int.
2.00e7
1.00e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.38e7*
43.22
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 3.66e3
Abs. Int.
2.18e7
1.09e7
ES OCDD
1.05e8*
43.21
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 6.38e3
Abs. Int.
3.38e7
1.69e7
ES OCDD
1.20e8*
43.21
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.59e3
Abs. Int.
3.96e7
1.98e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
Abs. Int.
6.64e6
3.32e6


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.09e3
0%
2378F
1.18e7
27.66
Abs. Int.
2.94e6
1.47e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.66e3
0%
2378F
1.48e7
27.66
Abs. Int.
3.43e6
1.71e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.01e4
0%
AS 1368F
1.25e8
22.85
JS 1234F
1.11e8
26.32
ES 2378F
1.24e8
27.64
Abs. Int.
2.97e7
1.49e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.37e4
0%
AS 1368F
1.57e8
22.85
JS 1234F
1.45e8
26.32
ES 2378F
1.56e8
27.64
Abs. Int.
3.72e7
1.86e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.55e3
0%
Abs. Int.
1.59e4
7.95e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

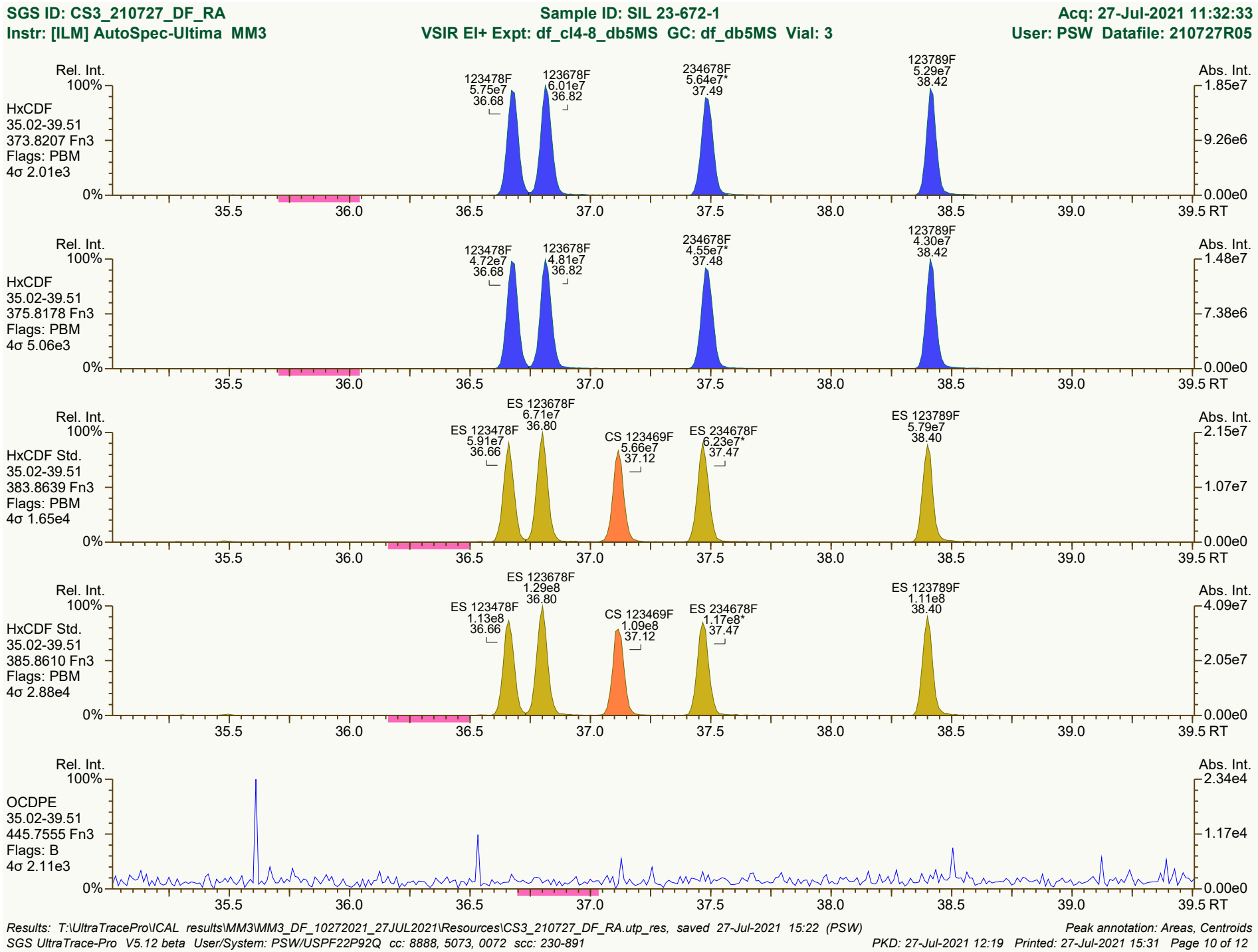

Rel. Int.
100%
0%
Abs. Int.
1.52e4
7.61e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.35e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.57e4
7.83e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.27e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 6.64e3
0%
12378F
6.78e7
32.37
23478F
6.64e7
33.46
Abs. Int.
1.94e7
9.69e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.49e3
0%
12378F
4.36e7
32.37
23478F
4.26e7
33.46
Abs. Int.
1.26e7
6.28e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 1.94e4
0%
CS 12346F
1.38e8
31.84
ES 12378F
1.45e8
32.35
ES 23478F
1.43e8
33.45
Abs. Int.
4.40e7
2.20e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.53e4
0%
CS 12346F
8.92e7
31.84
ES 12378F
9.21e7
32.35
ES 23478F
9.36e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.36e3
0%
Abs. Int.
1.51e4
7.55e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

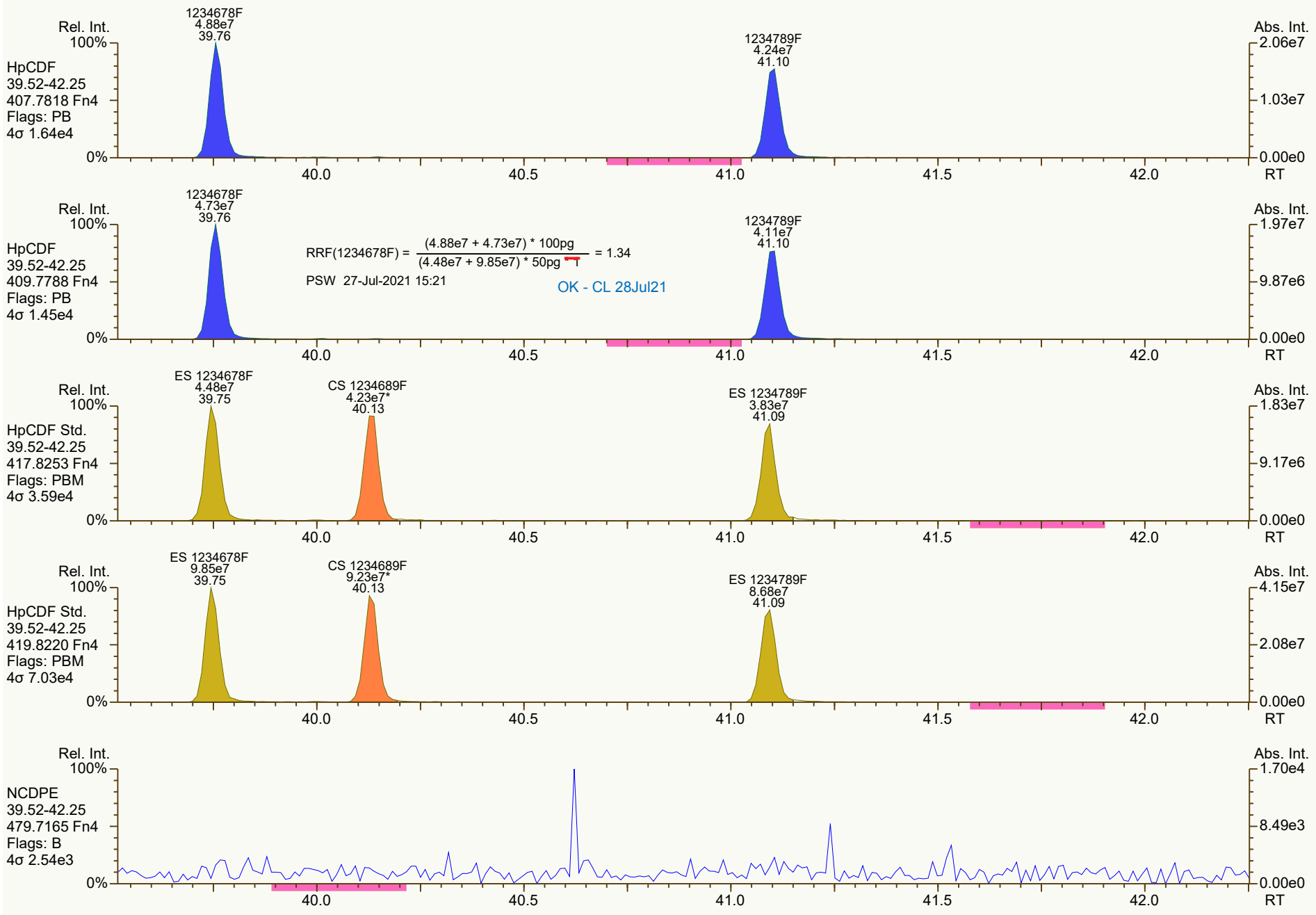
SGS ID: CS3_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

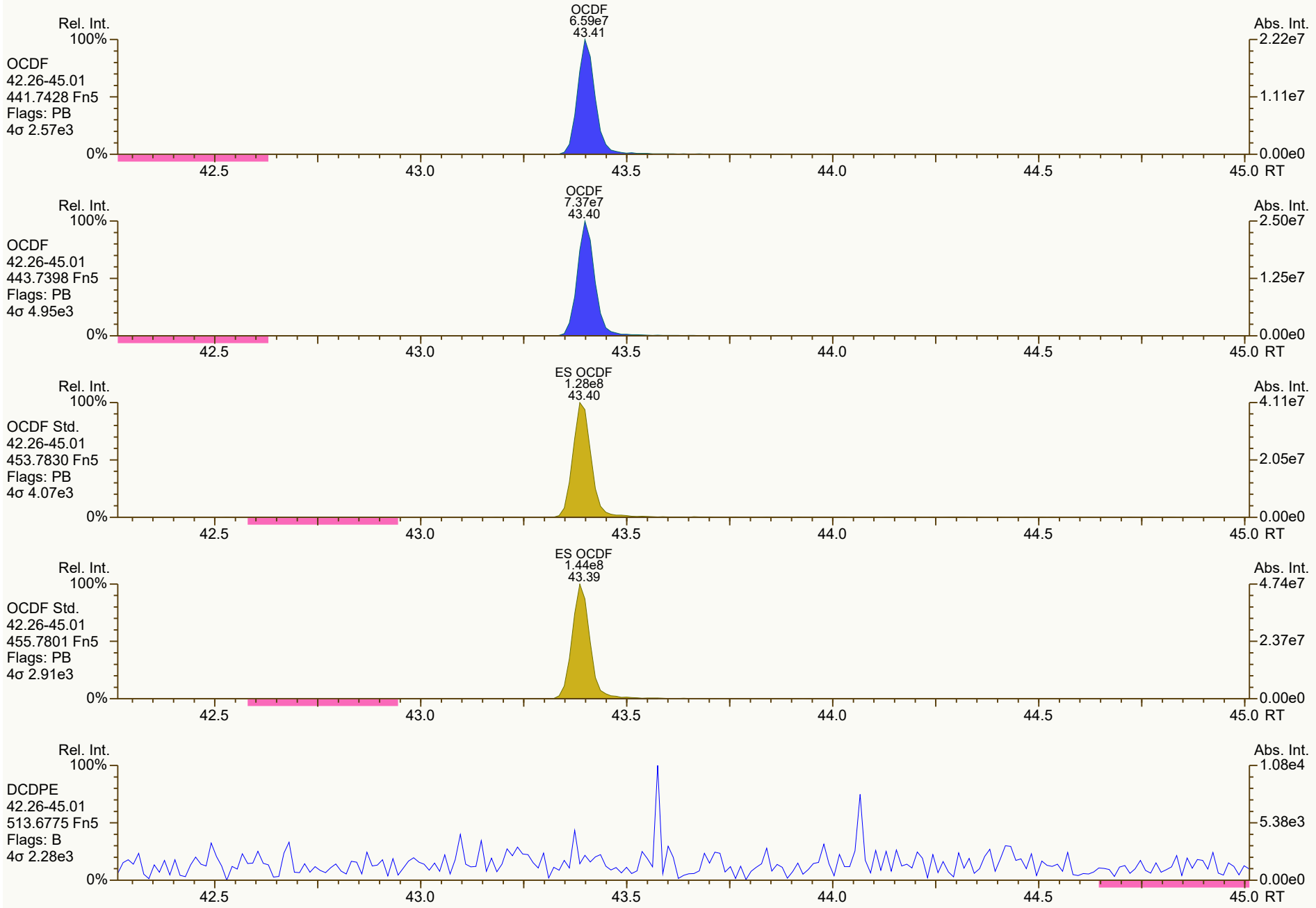
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 27-Jul-2021 11:32:33
User: PSW Datafile: 210727R05



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8888, 5073, 0072 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 10 of 12


Rel. Int.
100%
0%
Abs. Int.
RT
40.0
40.5
41.0
41.5
42.0
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.64e4
1234678F
4.88e7
39.76
1234789F
4.24e7
41.10
2.06e7
1.03e7
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.45e4
1234678F
4.73e7
39.76
1234789F
4.11e7
41.10
RRF(1234678F) = (4.88e7 + 4.73e7) * 100pg / (4.48e7 + 9.85e7) * 50pg = 1.34
PSW 27-Jul-2021 15:21
OK - CL 28Jul21
1.97e7
9.87e6
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.59e4
ES 1234678F
4.48e7
39.75
CS 1234689F
4.23e7*
40.13
ES 1234789F
3.83e7
41.09
1.83e7
9.17e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 7.03e4
ES 1234678F
9.85e7
39.75
CS 1234689F
9.23e7*
40.13
ES 1234789F
8.68e7
41.09
4.15e7
2.08e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.54e3
1.70e4
8.49e3
0.00e0


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.57e3
0%
OCDF
6.59e7
43.41
Abs. Int.
2.22e7
1.11e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 4.95e3
0%
OCDF
7.37e7
43.40
Abs. Int.
2.50e7
1.25e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 4.07e3
0%
ES OCDF
1.28e8
43.40
Abs. Int.
4.11e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.91e3
0%
ES OCDF
1.44e8
43.39
Abs. Int.
4.74e7
2.37e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.28e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

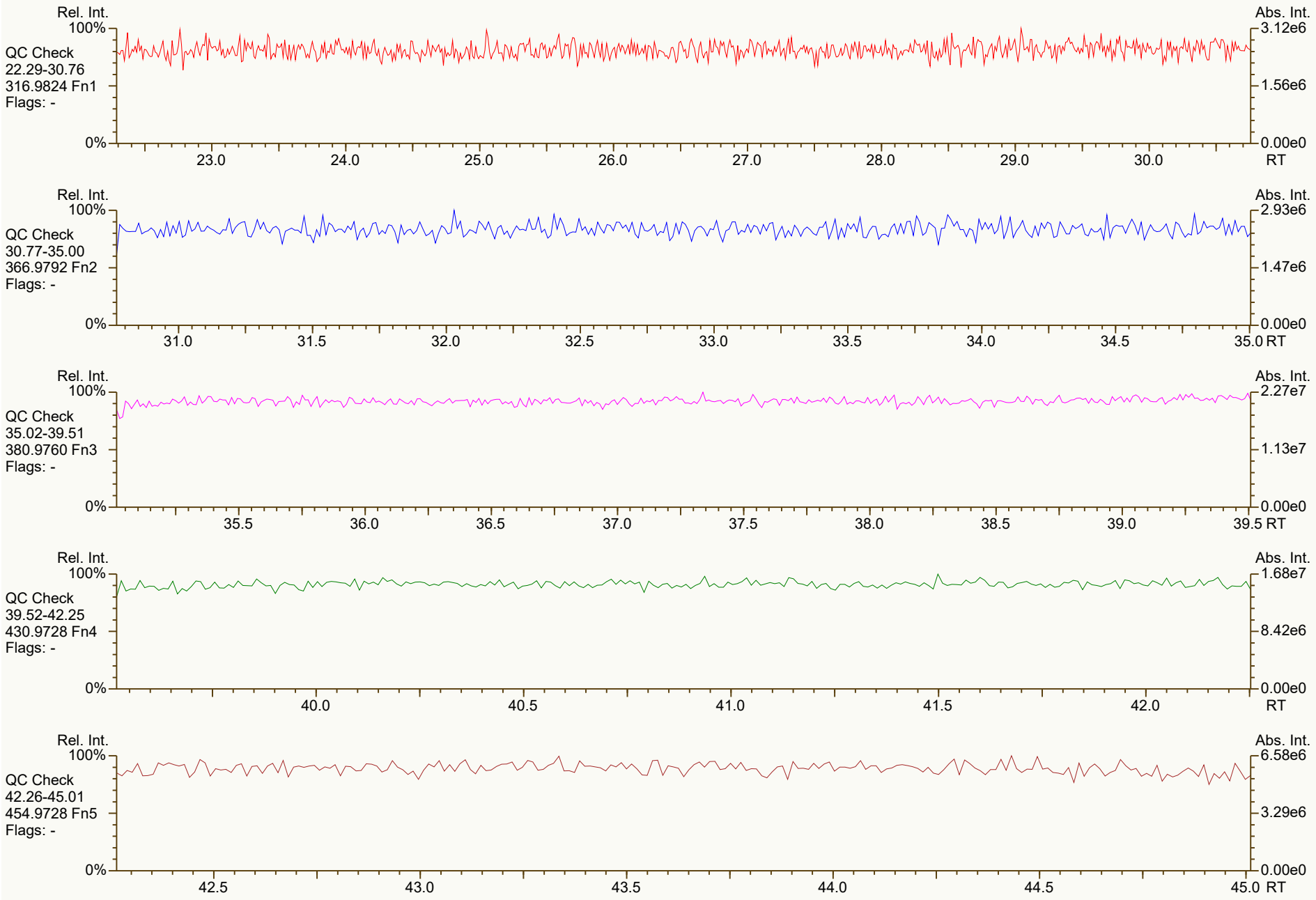
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	7.77E+07	0.76	Y	1.34	1.30	-4%
12378-PeCDD	33.81	3.10E+08	1.55	Y	1.06	1.06	0%
123478-HxCDD	37.68	2.82E+08	1.23	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.84E+08	1.24	Y	1.08	1.10	2%
123789-HxCDD	38.08	2.99E+08	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.67	2.61E+08	1.03	Y	0.97	0.98	0%
OCDD	43.23	4.49E+08	0.90	Y	1.07	1.08	1%
2378-TCDF	27.67	9.59E+07	0.77	Y	0.96	0.96	0%
12378-PeCDF	32.38	4.09E+08	1.58	Y	0.95	0.95	0%
23478-PeCDF	33.47	3.96E+08	1.56	Y	0.94	0.93	-1%
123478-HxCDF	36.69	3.82E+08	1.23	Y	1.23	1.24	0%
123678-HxCDF	36.83	3.97E+08	1.25	Y	1.13	1.13	0%
234678-HxCDF	37.49	3.75E+08	1.25	Y	1.15	1.13	-2%
123789-HxCDF	38.43	3.51E+08	1.24	Y	1.14	1.14	0%
1234678-HpCDF	39.77	3.45E+08	1.03	Y	1.36	1.33	-2%
1234789-HpCDF	41.11	2.99E+08	1.04	Y	1.30	1.30	0%
OCDF	43.41	5.22E+08	0.91	Y	1.03	1.05	2%
ES 2378-TCDD	28.50	1.50E+08	0.79	Y	1.03	1.06	2%
ES 12378-PeCDD	33.789	1.46E+08	1.59	Y	1.03	1.03	0%
ES 123478-HxCDD	37.662	1.34E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.775	1.29E+08	1.28	Y	0.97	0.94	-4%
ES 123789-HxCDD	38.064	1.51E+08	1.27	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.654	1.33E+08	1.06	Y	0.99	0.97	-2%
ES OCDD	43.216	2.07E+08	0.92	Y	0.78	0.75	-3%
ES 2378-TCDF	27.649	2.49E+08	0.80	Y	1.08	1.09	1%
ES 12378-PeCDF	32.362	2.16E+08	1.57	Y	0.93	0.95	2%
ES 23478-PeCDF	33.454	2.12E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.668	1.54E+08	0.51	Y	1.14	1.12	-2%
ES 123678-HxCDF	36.808	1.75E+08	0.53	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.477	1.66E+08	0.53	Y	1.20	1.20	0%
ES 123789-HxCDF	38.409	1.54E+08	0.52	Y	1.14	1.12	-1%
ES 1234678-HpCDF	39.757	1.30E+08	0.45	Y	0.95	0.94	-1%
ES 1234789-HpCDF	41.102	1.15E+08	0.45	Y	0.85	0.83	-2%
ES OCDF	43.398	2.49E+08	0.90	Y	0.93	0.90	-2%

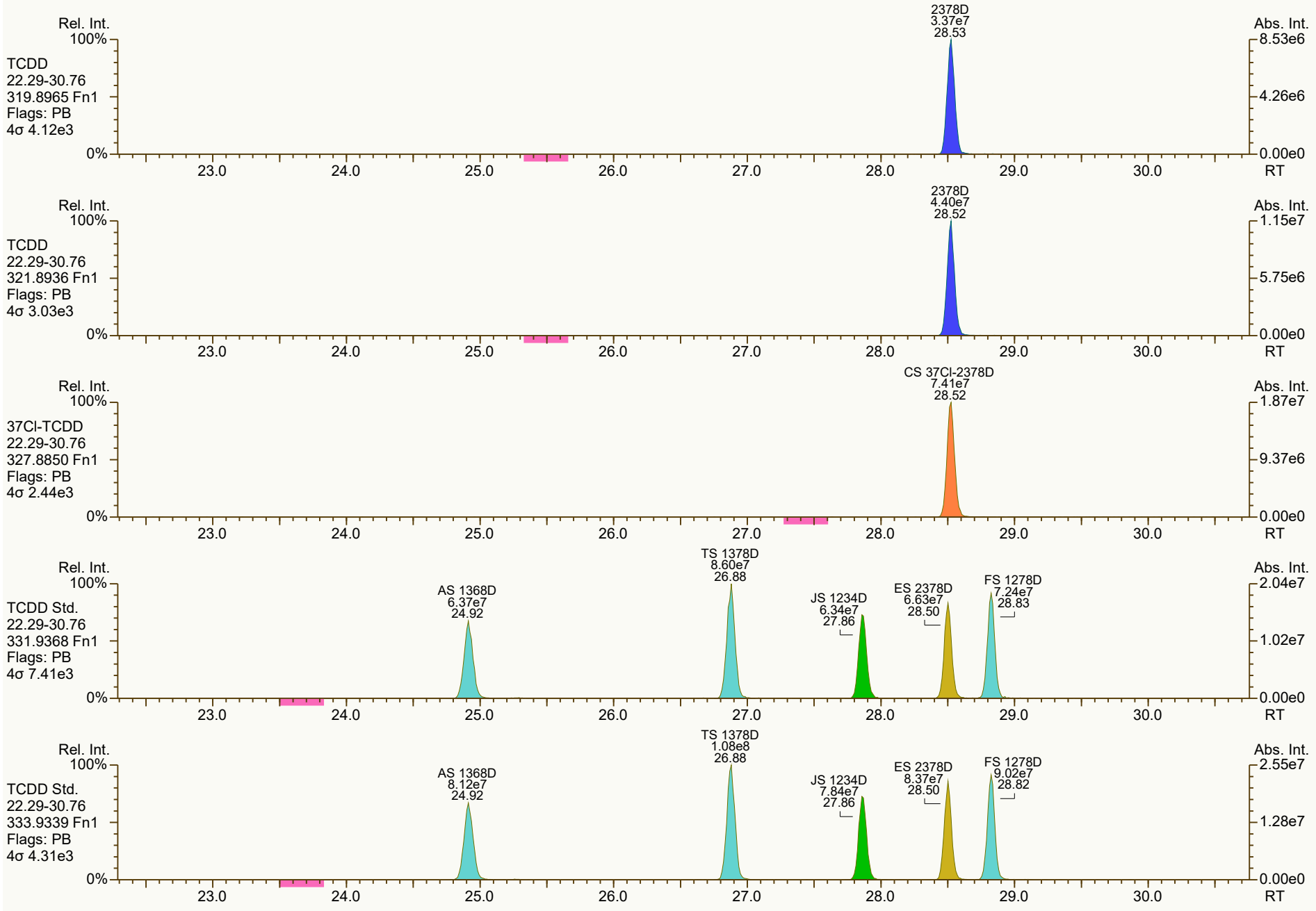
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

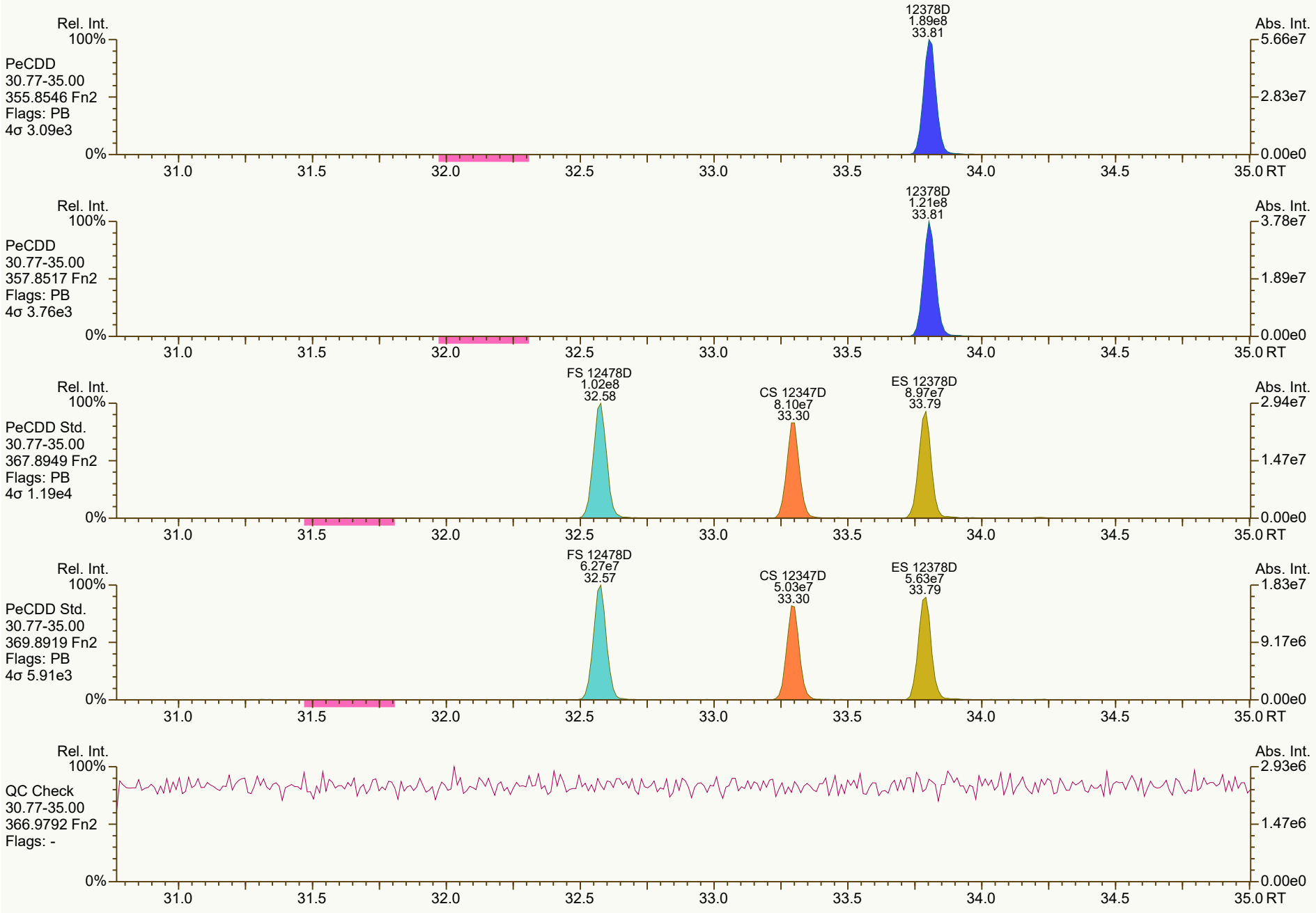
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.42E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	2.27E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	6.89E+07	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.31	1.31	0%
CS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.89	0.93	4%
CS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.87	0.88	2%
CS 123469-HxCDF	37.12	1.50E+08	0.54	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.26	1.23	-2%
SS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.86	0.90	4%
SS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.12	1.50E+08	0.54	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.91	0.92	1%
AS 1368-TCDD	24.92	1.45E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.49E+08	0.79	Y	1.08	1.09	1%
FS 1278-TCDD	28.83	1.63E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.64E+08	1.62	Y	1.09	1.13	3%
FS 123468-HxCDD	36.59	1.73E+08	1.29	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	1.84E+08	1.07	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	1.94E+08	0.79	Y	1.35	1.30	-4%
~~OCDD-a~~	~~43.22~~	~~2.77E+07~~	~~2.50~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~
~~OCDF-a~~	~~43.41~~	~~3.08E+07~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~4%~~

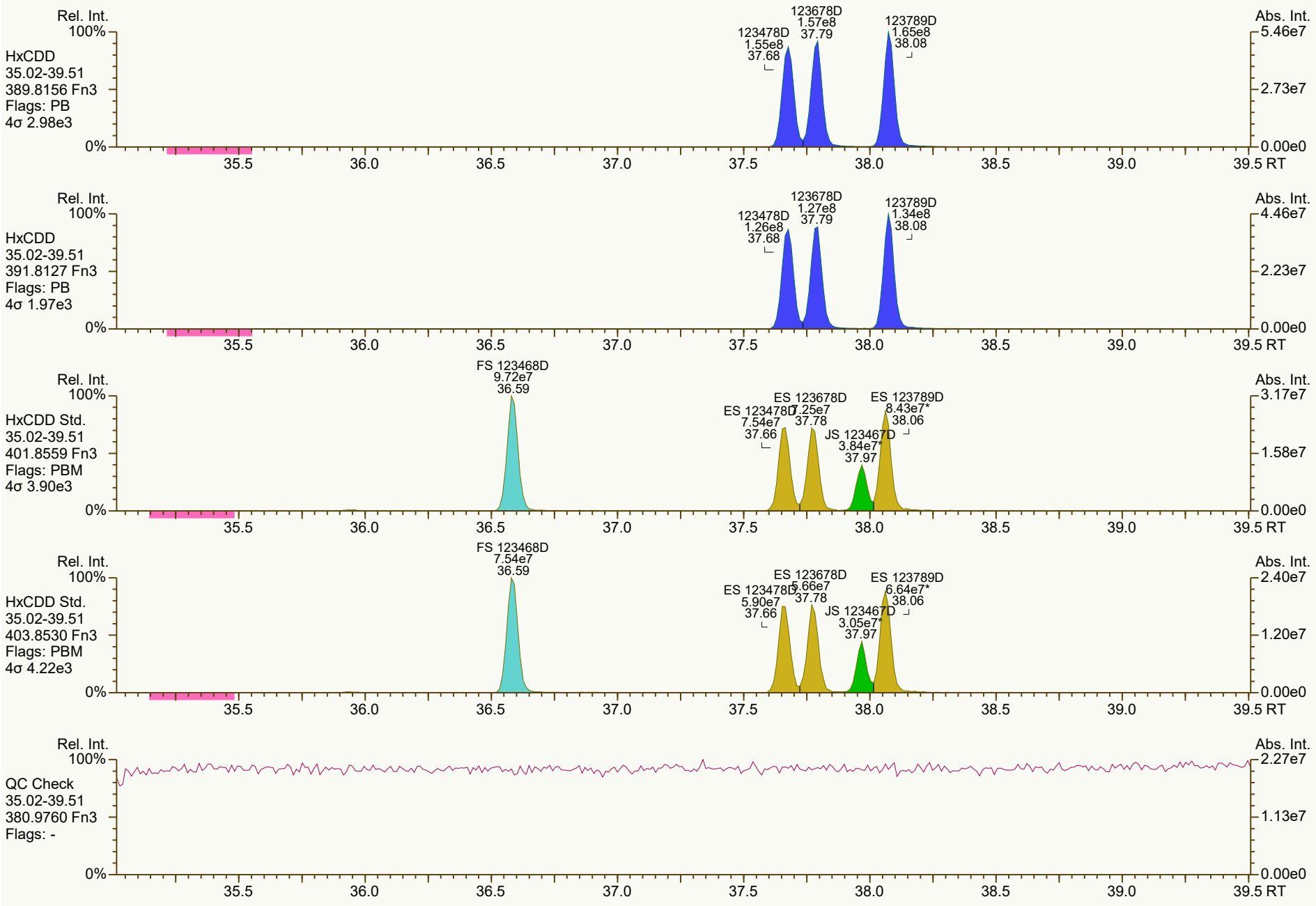
Not reported from this ICAL - CL 28Jul21

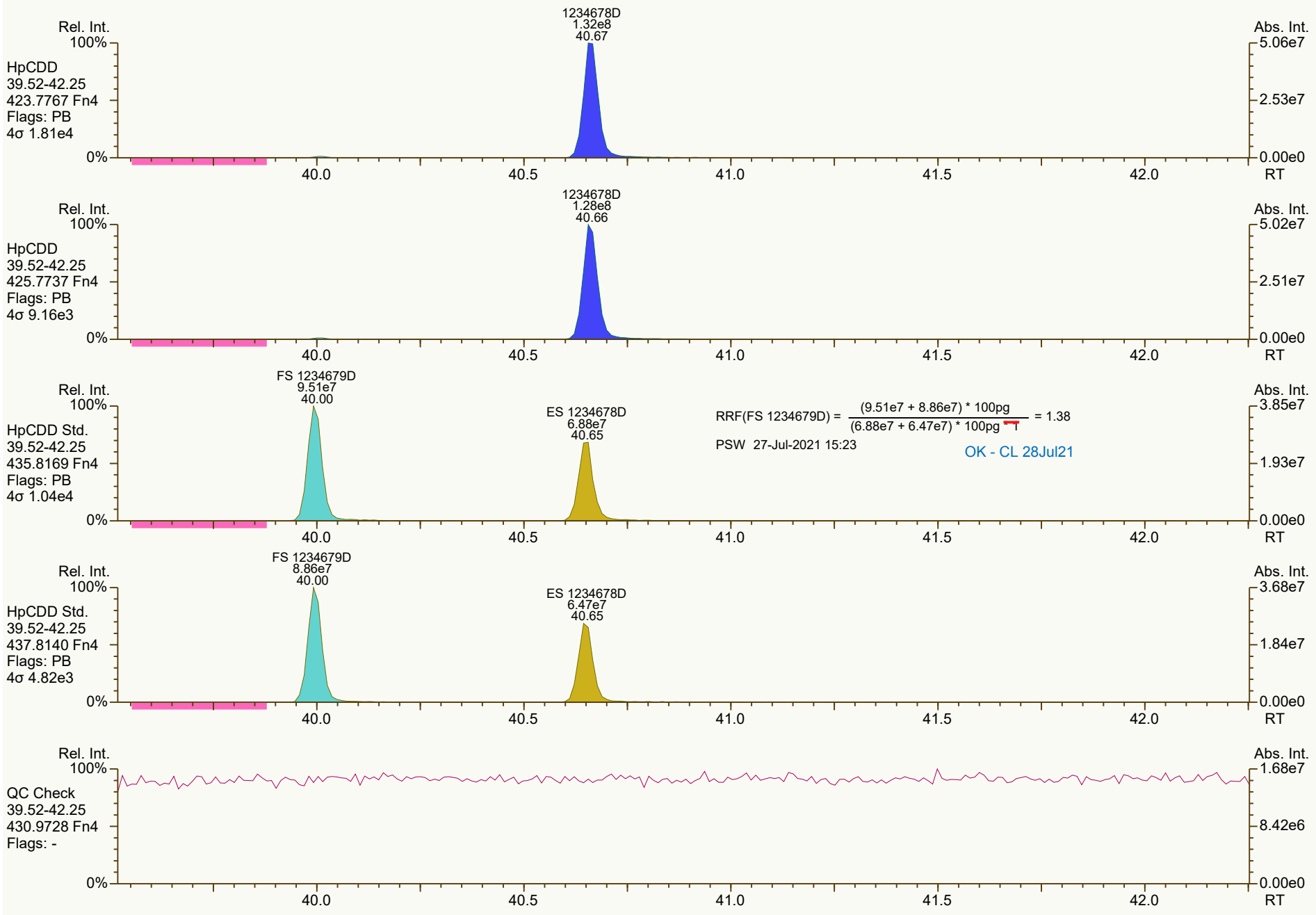


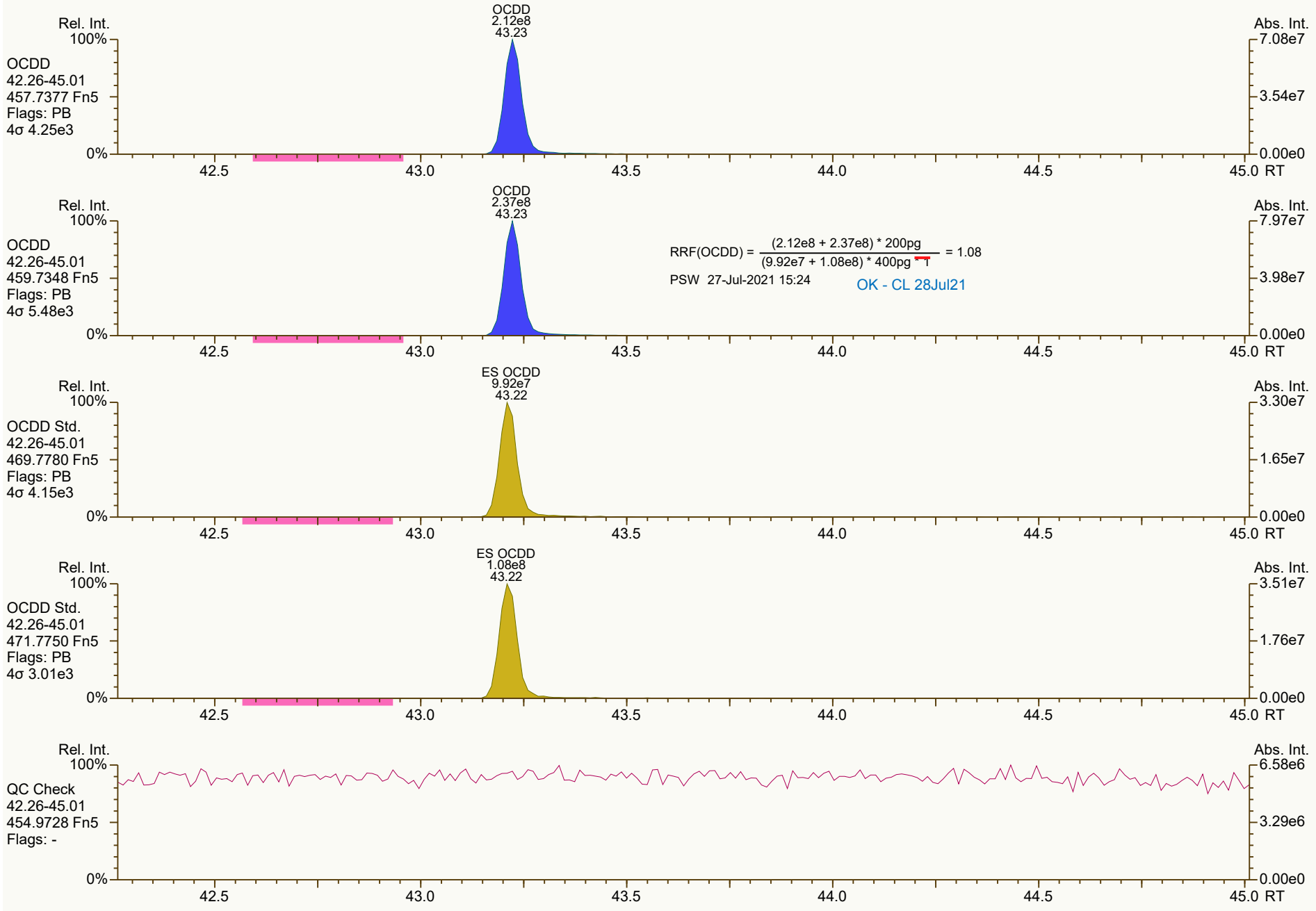
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS4_210727_DF_RA.utp_res, saved 27-Jul-2021 15:24 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 602-590
PKD: n/a Printed: 27-Jul-2021 15:31 Page 1 of 12

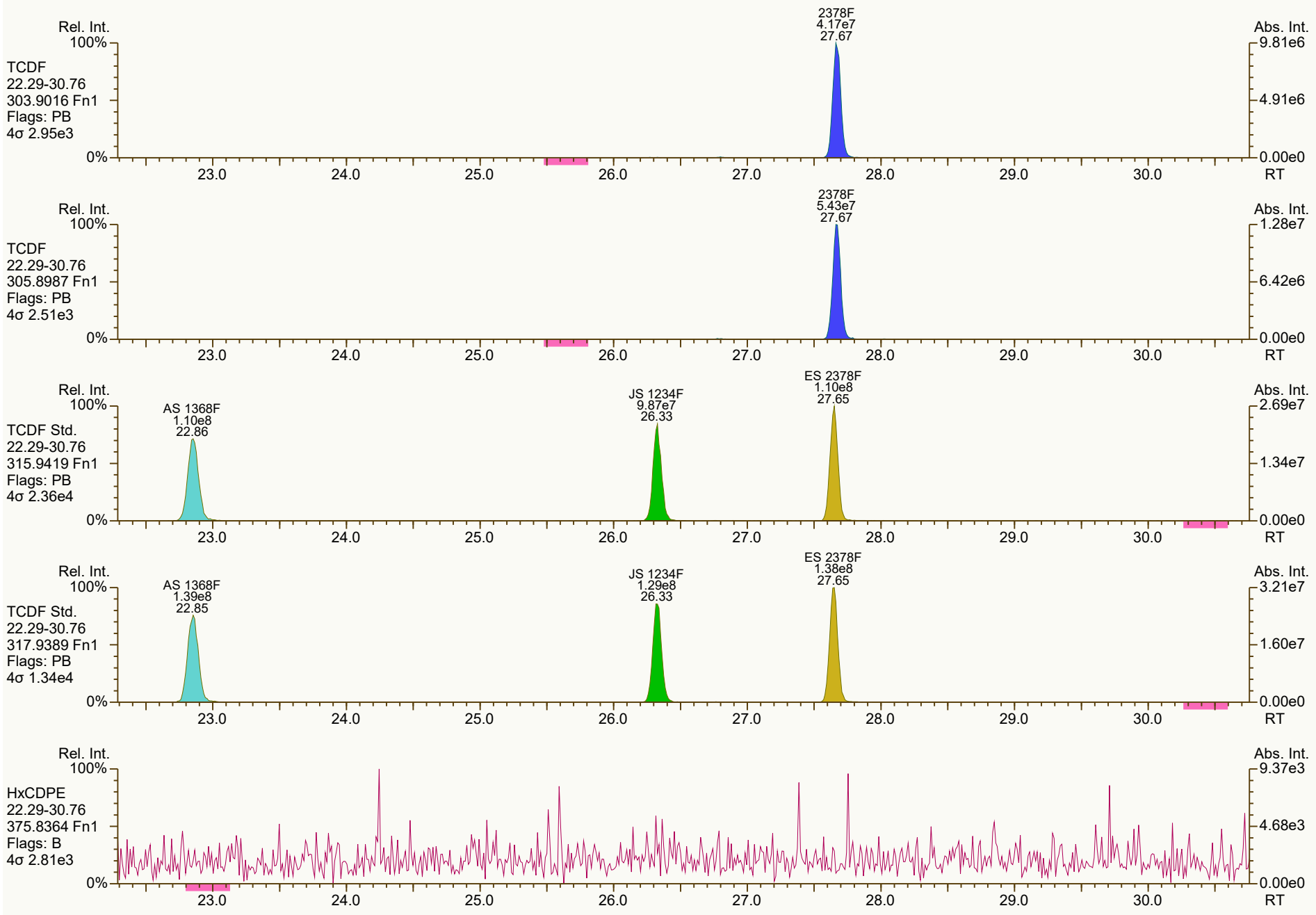

Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 4.12e3
2378D
3.37e7
28.53
8.53e6
4.26e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 3.03e3
2378D
4.40e7
28.52
1.15e7
5.75e6
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.44e3
CS 37Cl-2378D
7.41e7
28.52
1.87e7
9.37e6
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.41e3
AS 1368D
6.37e7
24.92
TS 1378D
8.60e7
26.88
JS 1234D
6.34e7
27.86
ES 2378D
6.63e7
28.50
FS 1278D
7.24e7
28.83
2.04e7
1.02e7
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.31e3
AS 1368D
8.12e7
24.92
TS 1378D
1.08e8
26.88
JS 1234D
7.84e7
27.86
ES 2378D
8.37e7
28.50
FS 1278D
9.02e7
28.82
2.55e7
1.28e7
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.09e3
0%
12378D
1.89e8
33.81
Abs. Int.
5.66e7
2.83e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 3.76e3
0%
12378D
1.21e8
33.81
Abs. Int.
3.78e7
1.89e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 1.19e4
0%
FS 12478D
1.02e8
32.58
CS 12347D
8.10e7
33.30
ES 12378D
8.97e7
33.79
Abs. Int.
2.94e7
1.47e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 5.91e3
0%
FS 12478D
6.27e7
32.57
CS 12347D
5.03e7
33.30
ES 12378D
5.63e7
33.79
Abs. Int.
1.83e7
9.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

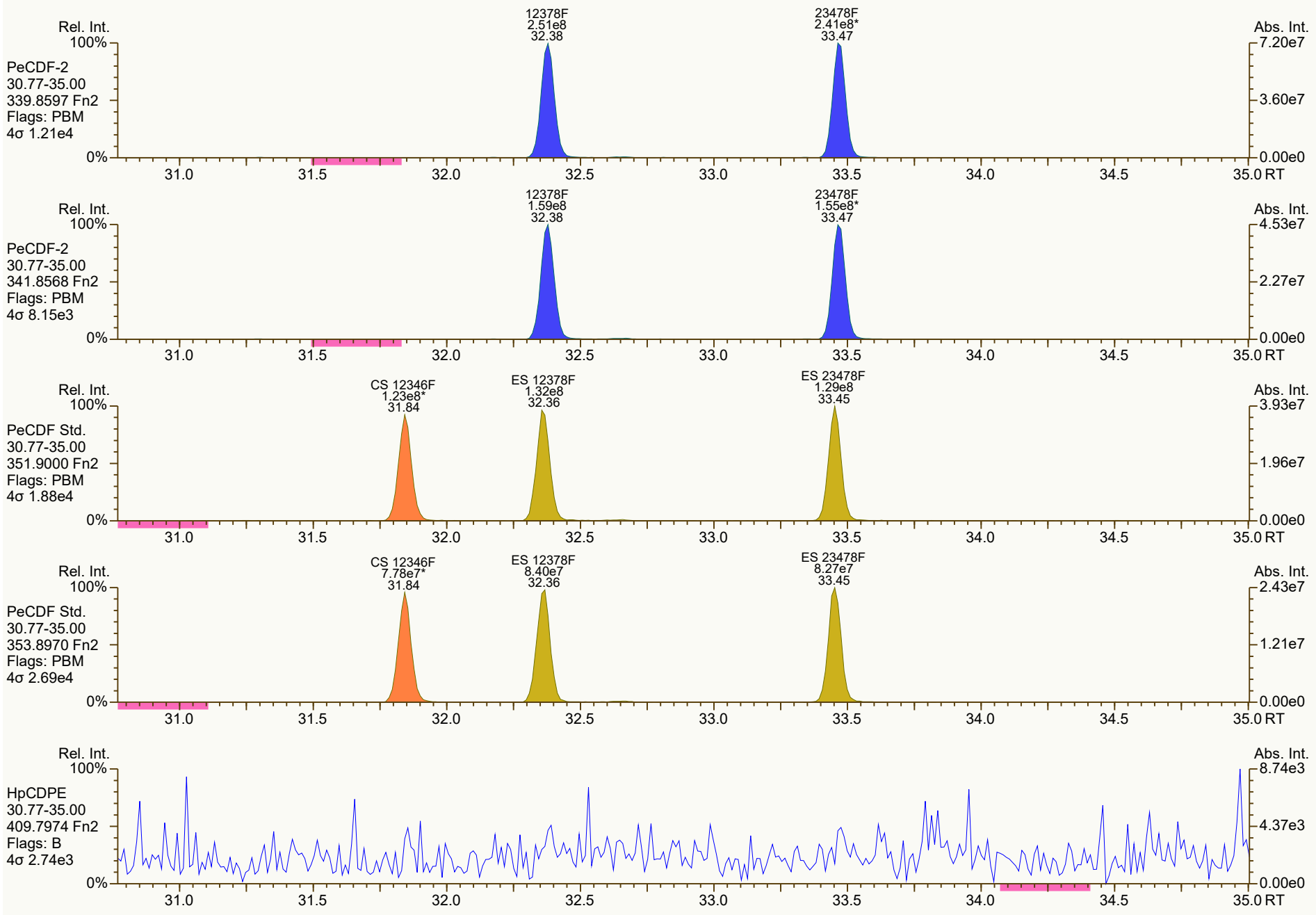

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.98e3
123678D
1.57e8
37.79
123478D
1.55e8
37.68
123789D
1.65e8
38.08
Abs. Int.
5.46e7
2.73e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.97e3
123678D
1.27e8
37.79
123478D
1.26e8
37.68
123789D
1.34e8
38.08
Abs. Int.
4.46e7
2.23e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.90e3
FS 123468D
9.72e7
36.59
ES 123678D
7.25e7
37.78
ES 123478D
7.54e7
37.66
ES 123789D
8.43e7*
38.06
JS 123467D
3.84e7*
37.97
Abs. Int.
3.17e7
1.58e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 4.22e3
FS 123468D
7.54e7
36.59
ES 123678D
5.66e7
37.78
ES 123478D
5.90e7
37.66
ES 123789D
6.64e7*
38.06
JS 123467D
3.05e7*
37.97
Abs. Int.
2.40e7
1.20e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.13e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

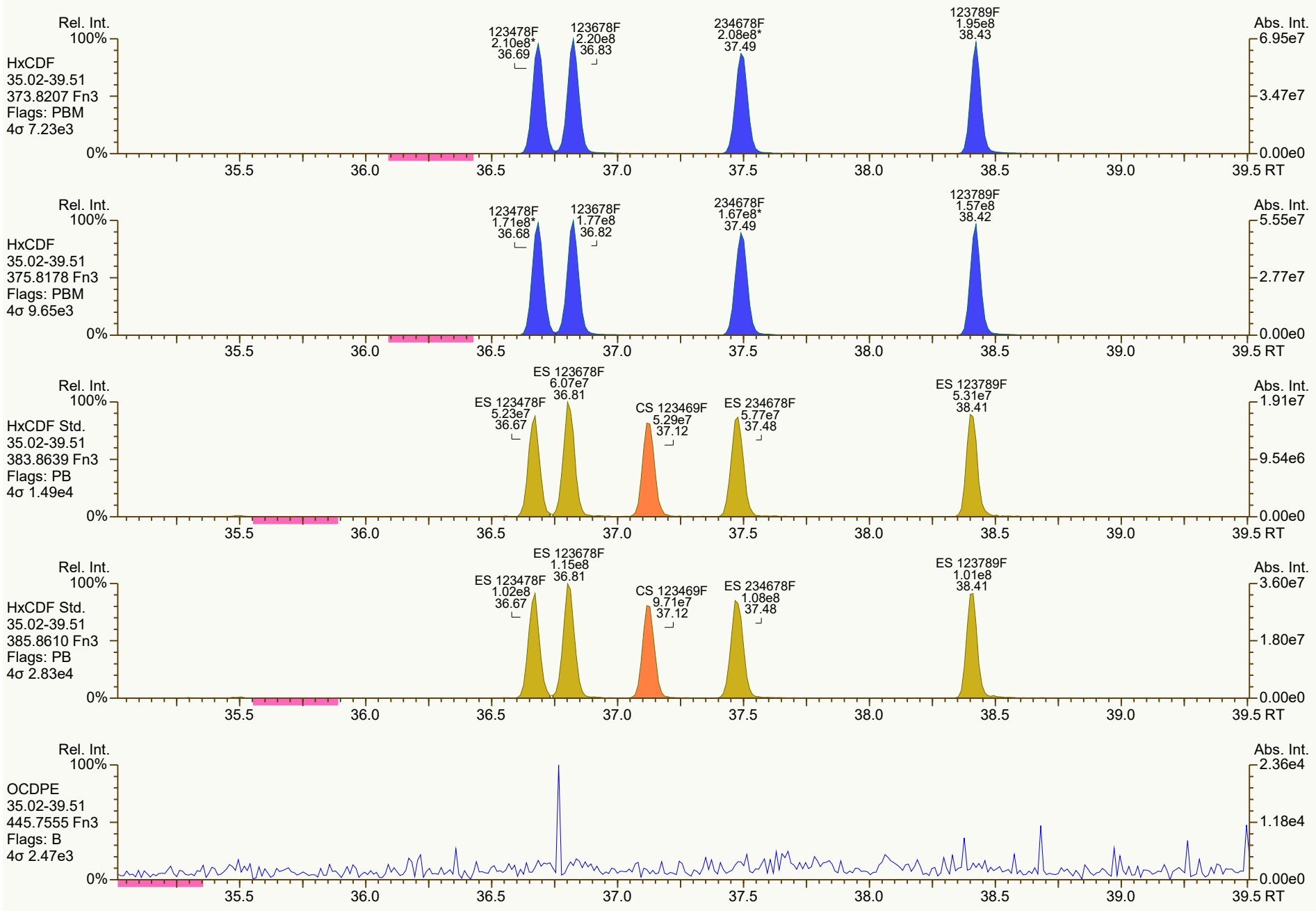

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.81e4
1234678D
1.32e8
40.67
Abs. Int.
5.06e7
2.53e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 9.16e3
1234678D
1.28e8
40.66
5.02e7
2.51e7
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.04e4
FS 1234679D
9.51e7
40.00
ES 1234678D
6.88e7
40.65
3.85e7
1.93e7
RRF(FS 1234679D) = (9.51e7 + 8.86e7) * 100pg / (6.88e7 + 6.47e7) * 100pg = 1.38
PSW 27-Jul-2021 15:23
OK - CL 28Jul21
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.82e3
FS 1234679D
8.86e7
40.00
ES 1234678D
6.47e7
40.65
3.68e7
1.84e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.68e7
8.42e6

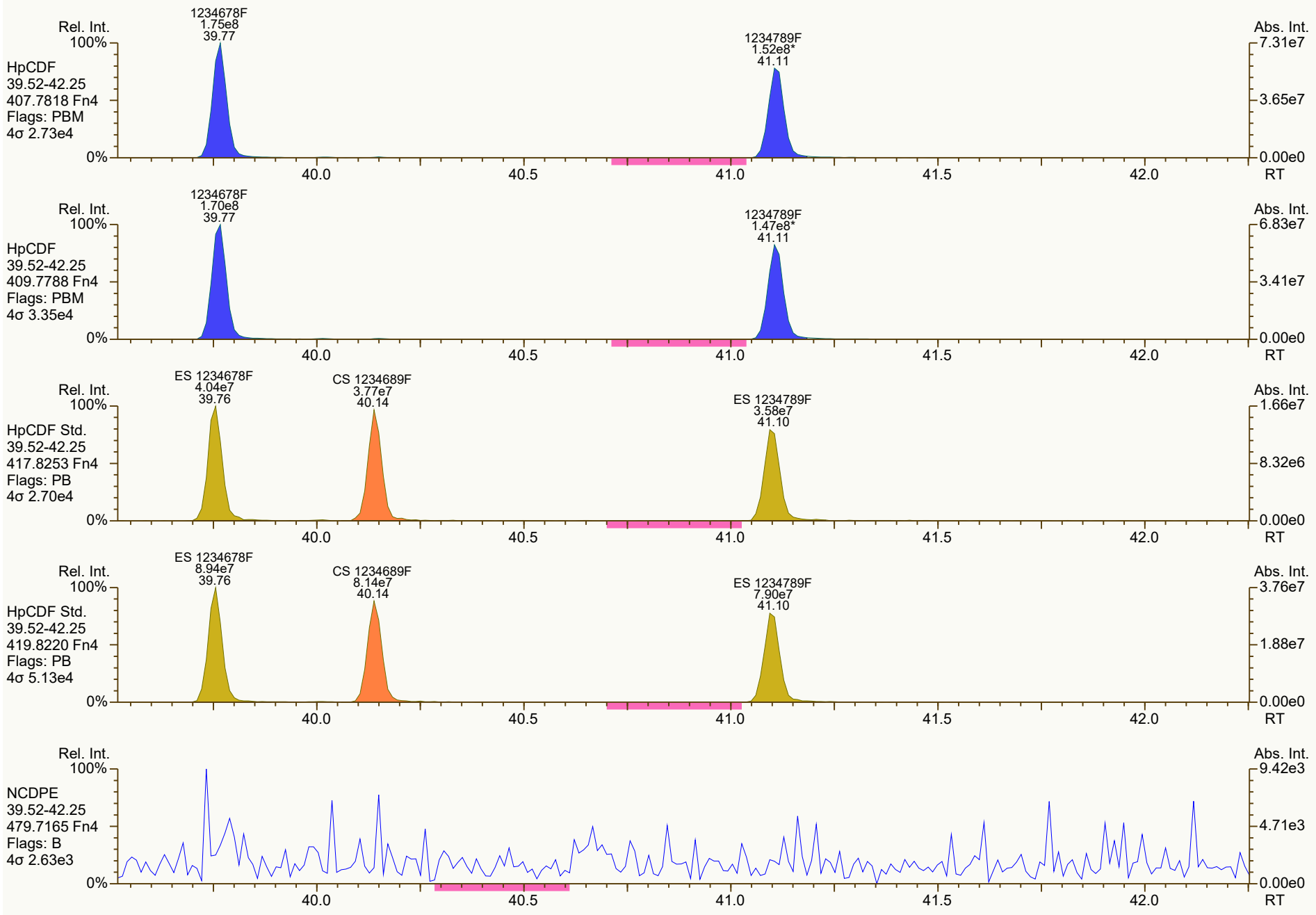

OCDD
2.12e8
43.23
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PB
4σ 4.25e3
0%
Abs. Int.
7.08e7
3.54e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.37e8
43.23
OCDD
42.26-45.01
459.7348 Fn5
Flags: PB
4σ 5.48e3
7.97e7
3.98e7
RRF(OCDD) = (2.12e8 + 2.37e8) * 200pg / (9.92e7 + 1.08e8) * 400pg = 1.08
PSW 27-Jul-2021 15:24
OK - CL 28Jul21
ES OCDD
9.92e7
43.22
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.15e3
3.30e7
1.65e7
ES OCDD
1.08e8
43.22
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.01e3
3.51e7
1.76e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
6.58e6
3.29e6


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.95e3
0%
2378F
4.17e7
27.67
Abs. Int.
9.81e6
4.91e6
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.51e3
0%
2378F
5.43e7
27.67
Abs. Int.
1.28e7
6.42e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.36e4
0%
AS 1368F
1.10e8
22.86
JS 1234F
9.87e7
26.33
ES 2378F
1.10e8
27.65
Abs. Int.
2.69e7
1.34e7
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.34e4
0%
AS 1368F
1.39e8
22.85
JS 1234F
1.29e8
26.33
ES 2378F
1.38e8
27.65
Abs. Int.
3.21e7
1.60e7
0.00e0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.81e3
0%
Abs. Int.
9.37e3
4.68e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.32e4
6.61e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.55e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.14e4
1.07e4
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.28e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PBM
4σ 1.21e4
0%
12378F
2.51e8
32.38
23478F
2.41e8*
33.47
Abs. Int.
7.20e7
3.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PBM
4σ 8.15e3
0%
12378F
1.59e8
32.38
23478F
1.55e8*
33.47
Abs. Int.
4.53e7
2.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 1.88e4
0%
CS 12346F
1.23e8*
31.84
ES 12378F
1.32e8
32.36
ES 23478F
1.29e8
33.45
Abs. Int.
3.93e7
1.96e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.69e4
0%
CS 12346F
7.78e7*
31.84
ES 12378F
8.40e7
32.36
ES 23478F
8.27e7
33.45
Abs. Int.
2.43e7
1.21e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.74e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 7.23e3
123478F
2.10e8*
36.69
123678F
2.20e8
36.83
234678F
2.08e8*
37.49
123789F
1.95e8
38.43
Abs. Int.
6.95e7
3.47e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.65e3
123478F
1.71e8*
36.68
123678F
1.77e8
36.82
234678F
1.67e8*
37.49
123789F
1.57e8
38.42
Abs. Int.
5.55e7
2.77e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.49e4
ES 123478F
5.23e7
36.67
ES 123678F
6.07e7
36.81
CS 123469F
5.29e7
37.12
ES 234678F
5.77e7
37.48
ES 123789F
5.31e7
38.41
Abs. Int.
1.91e7
9.54e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.83e4
ES 123478F
1.02e8
36.67
ES 123678F
1.15e8
36.81
CS 123469F
9.71e7
37.12
ES 234678F
1.08e8
37.48
ES 123789F
1.01e8
38.41
Abs. Int.
3.60e7
1.80e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.47e3
Abs. Int.
2.36e4
1.18e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PBM
4σ 2.73e4
1234678F
1.75e8
39.77
1234789F
1.52e8*
41.11
Abs. Int.
7.31e7
3.65e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PBM
4σ 3.35e4
1234678F
1.70e8
39.77
1234789F
1.47e8*
41.11
6.83e7
3.41e7
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.70e4
ES 1234678F
4.04e7
39.76
CS 1234689F
3.77e7
40.14
ES 1234789F
3.58e7
41.10
1.66e7
8.32e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.13e4
ES 1234678F
8.94e7
39.76
CS 1234689F
8.14e7
40.14
ES 1234789F
7.90e7
41.10
3.76e7
1.88e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
9.42e3
4.71e3


OCDF
2.49e8
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.68e3
0%
Abs. Int.
8.08e7
4.04e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.73e8
43.41
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.81e3
8.85e7
4.43e7
ES OCDF
1.18e8
43.40
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.20e3
3.94e7
1.97e7
ES OCDF
1.31e8
43.40
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 5.23e3
4.16e7
2.08e7
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
4.05e3
2.02e3

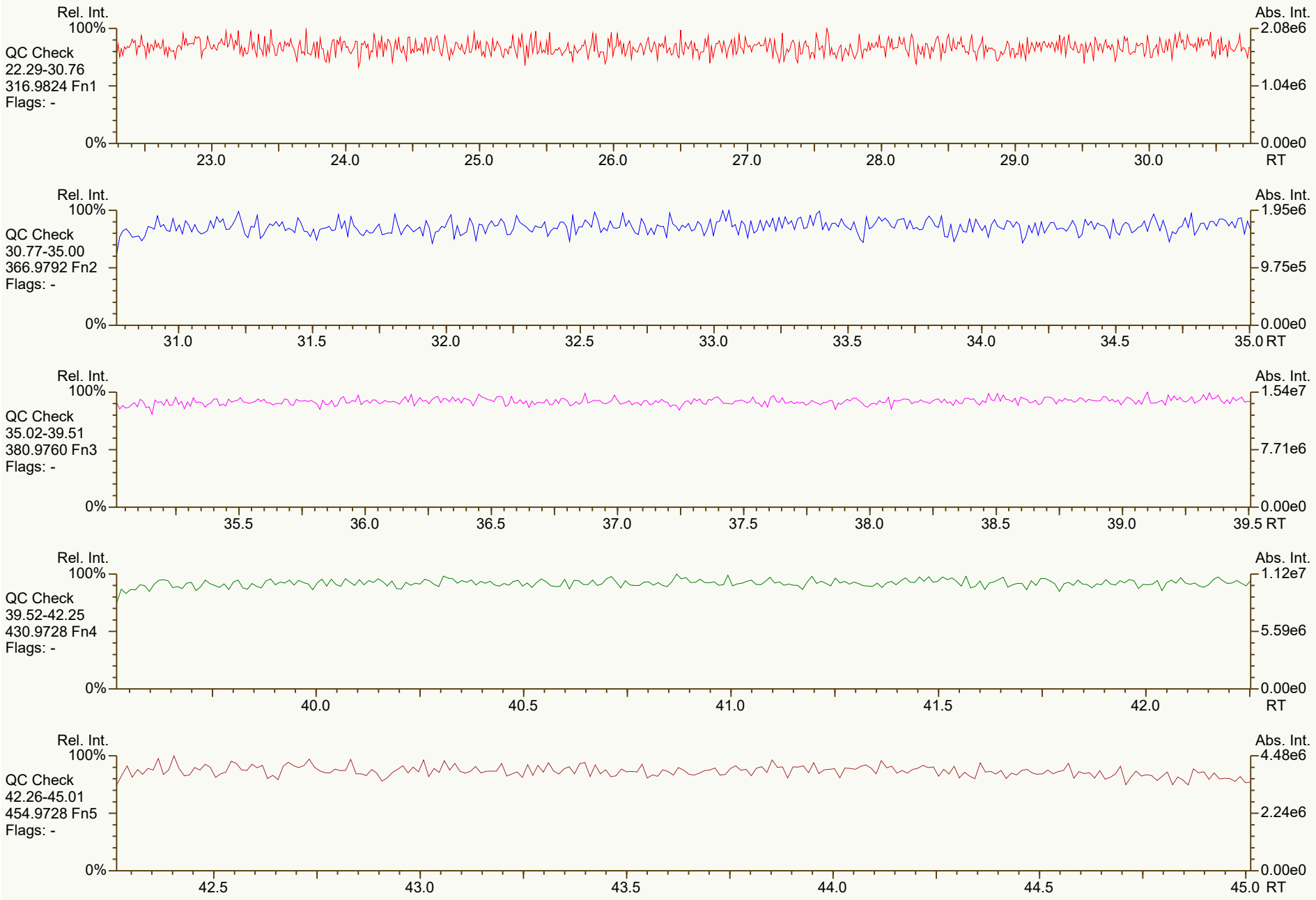
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

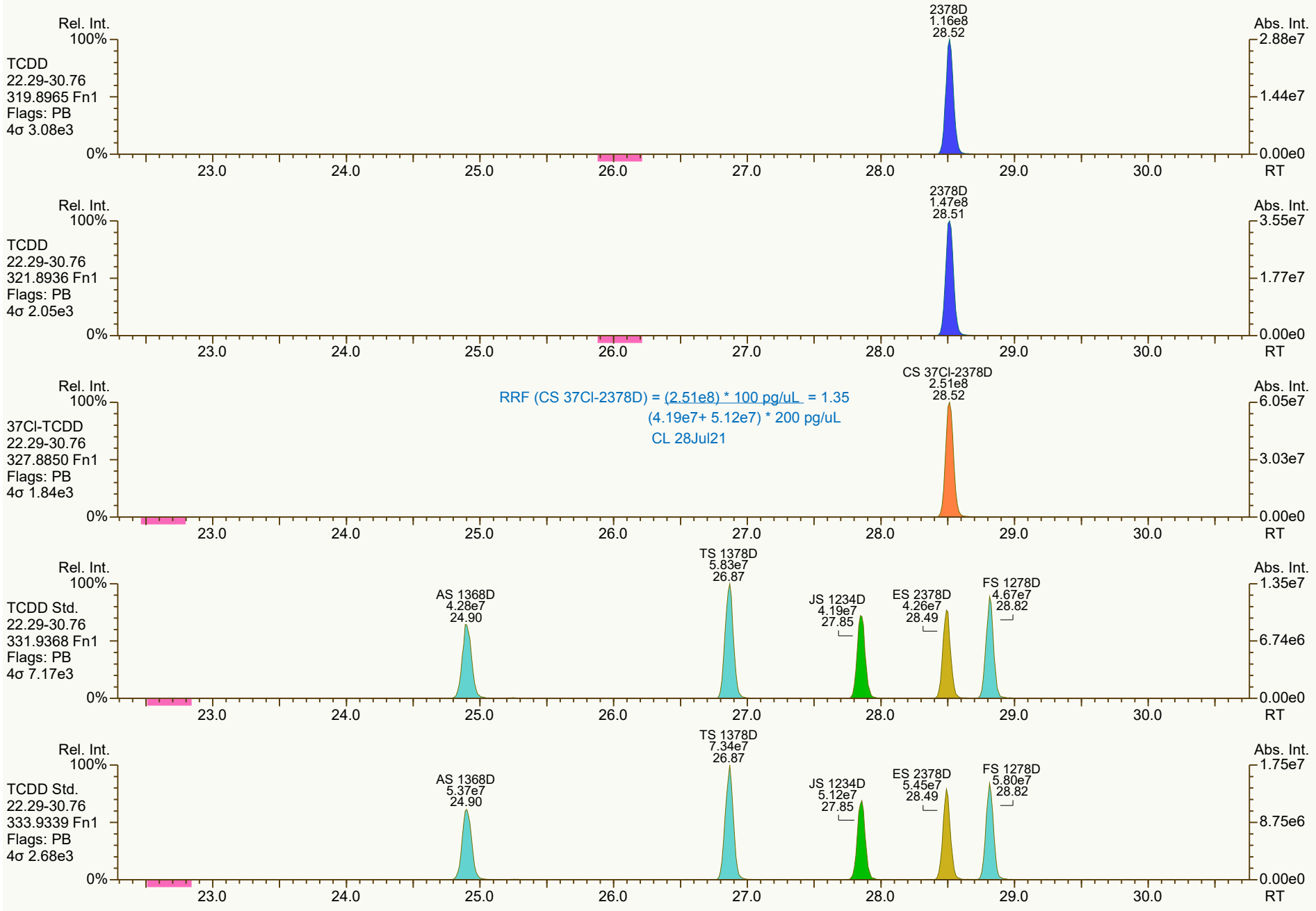
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.63E+08	0.78	Y	1.34	1.35	1%
12378-PeCDD	33.80	1.06E+09	1.56	Y	1.06	1.07	1%
123478-HxCDD	37.67	9.52E+08	1.24	Y	1.06	1.06	0%
123678-HxCDD	37.78	9.75E+08	1.25	Y	1.08	1.10	1%
123789-HxCDD	38.07	1.03E+09	1.25	Y	1.02	1.01	-1%
1234678-HpCDD	40.66	8.94E+08	1.04	Y	0.97	0.98	1%
OCDD	43.22	1.57E+09	0.88	Y	1.07	1.06	-1%
2378-TCDF	27.66	3.19E+08	0.77	Y	0.96	0.97	1%
12378-PeCDF	32.37	1.33E+09	1.51	Y	0.95	0.93	-1%
23478-PeCDF	33.46	1.36E+09	1.58	Y	0.94	0.96	3%
123478-HxCDF	36.68	1.30E+09	1.25	Y	1.23	1.24	0%
123678-HxCDF	36.82	1.35E+09	1.25	Y	1.13	1.14	1%
234678-HxCDF	37.49	1.27E+09	1.24	Y	1.15	1.15	0%
123789-HxCDF	38.42	1.20E+09	1.24	Y	1.14	1.15	2%
1234678-HpCDF	39.76	1.19E+09	1.03	Y	1.36	1.37	1%
1234789-HpCDF	41.10	1.06E+09	1.03	Y	1.30	1.35	4%
OCDF	43.40	1.87E+09	0.90	Y	1.03	1.06	3%
ES 2378-TCDD	28.49	9.72E+07	0.78	Y	1.03	1.04	1%
ES 12378-PeCDD	33.782	9.96E+07	1.62	Y	1.03	1.07	3%
ES 123478-HxCDD	37.654	8.99E+07	1.27	Y	0.99	1.03	4%
ES 123678-HxCDD	37.768	8.89E+07	1.27	Y	0.97	1.02	5%
ES 123789-HxCDD	38.058	1.02E+08	1.27	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.644	9.11E+07	1.06	Y	0.99	1.05	6%
ES OCDD	43.21	1.48E+08	0.89	Y	0.78	0.85	9%
ES 2378-TCDF	27.639	1.64E+08	0.80	Y	1.08	1.08	0%
ES 12378-PeCDF	32.354	1.43E+08	1.61	Y	0.93	0.95	1%
ES 23478-PeCDF	33.446	1.41E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.662	1.05E+08	0.52	Y	1.14	1.21	6%
ES 123678-HxCDF	36.801	1.19E+08	0.53	Y	1.30	1.36	5%
ES 234678-HxCDF	37.468	1.11E+08	0.51	Y	1.20	1.27	6%
ES 123789-HxCDF	38.402	1.04E+08	0.54	Y	1.14	1.20	5%
ES 1234678-HpCDF	39.749	8.70E+07	0.46	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.092	7.84E+07	0.46	Y	0.85	0.90	6%
ES OCDF	43.392	1.76E+08	0.89	Y	0.93	1.01	9%

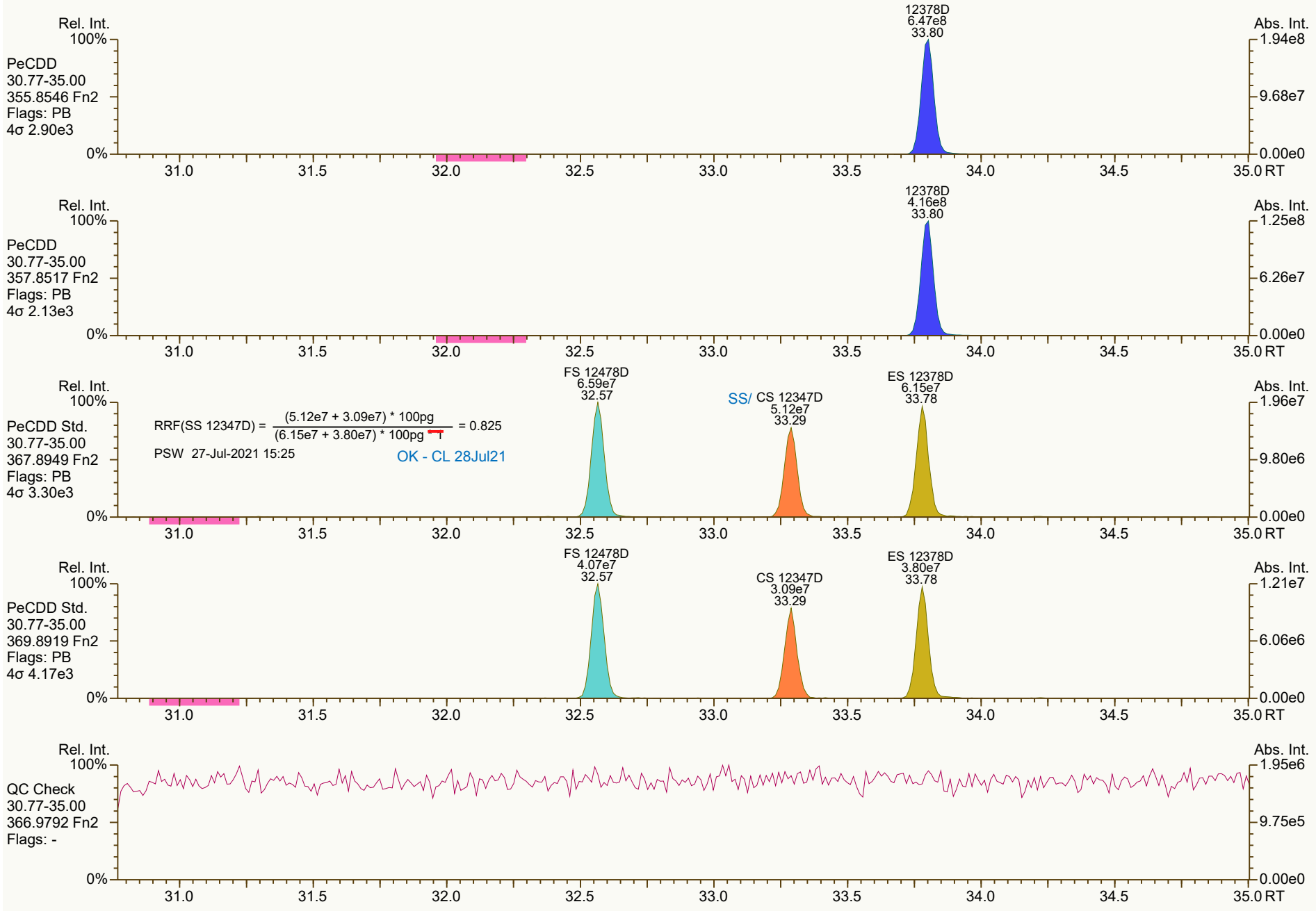
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

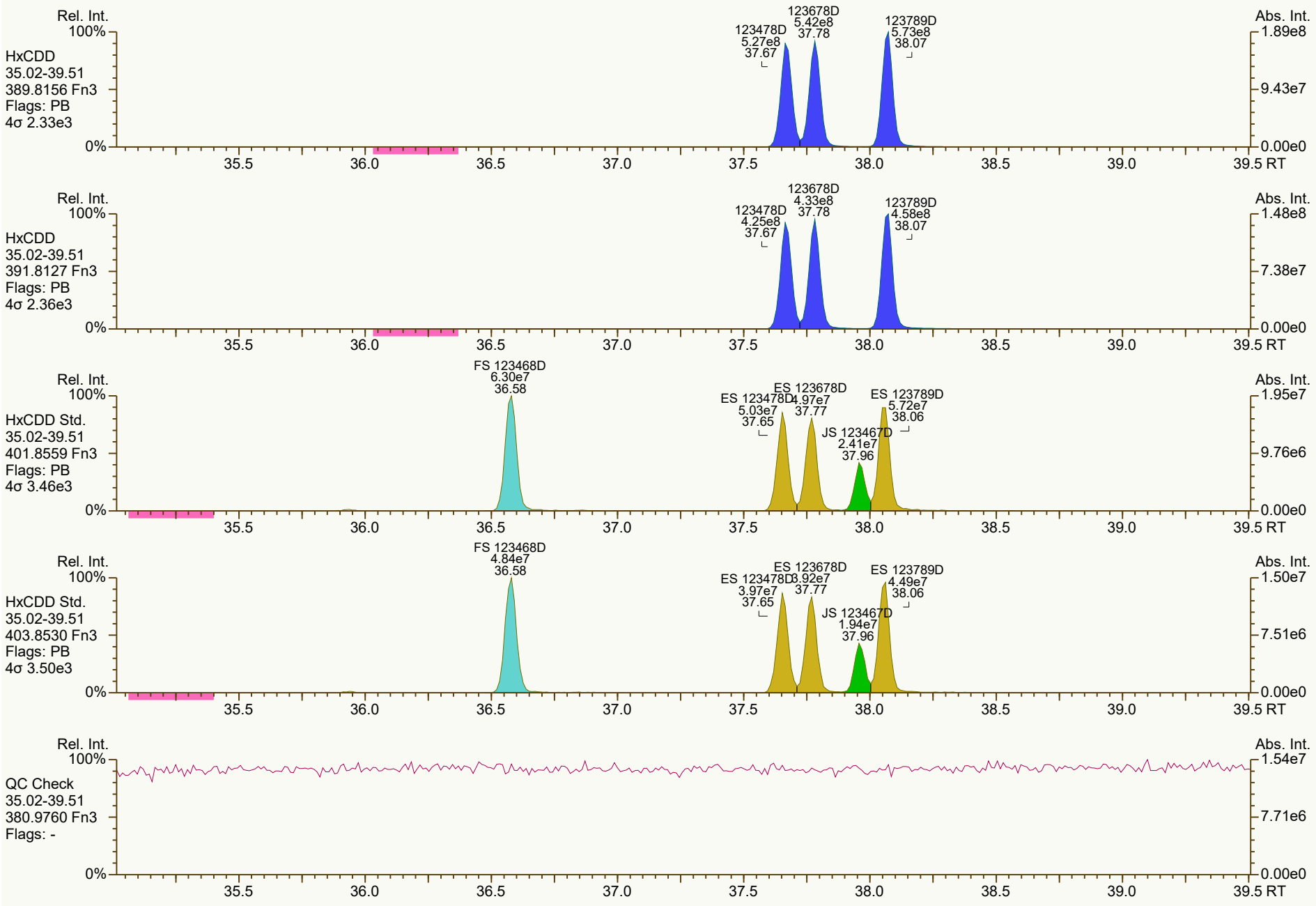
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.85	9.31E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.32	1.51E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	4.35E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.31	1.35	3%
CS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.11	9.75E+07	0.53	Y	1.09	1.12	3%
CS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.26	1.29	3%
SS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.86	0.82	-5%
SS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.93	0.91	-2%
SS 123469-HxCDF	37.11	9.75E+07	0.53	Y	0.84	0.82	-2%
SS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.91	0.86	-6%
AS 1368-TCDD	24.90	9.65E+07	0.80	Y	1.02	1.04	1%
AS 1368-TCDF	22.84	1.66E+08	0.78	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.05E+08	0.81	Y	1.08	1.08	-1%
FS 12478-PeCDD	32.57	1.07E+08	1.62	Y	1.09	1.07	-2%
FS 123468-HxCDD	36.58	1.11E+08	1.30	Y	1.26	1.24	-2%
FS 1234679-HpCDD	39.99	1.18E+08	1.06	Y	1.36	1.30	-4%
TS 1378-TCDD	26.87	1.32E+08	0.79	Y	1.35	1.35	1%
~~OCDD-a~~	~~43.22~~	~~9.57E+07~~	~~2.52~~	~~Y~~	~~0.07~~	~~0.06~~	~~-2%~~
~~OCDF-a~~	~~43.40~~	~~1.10E+08~~	~~2.51~~	~~Y~~	~~0.06~~	~~0.06~~	~~5%~~

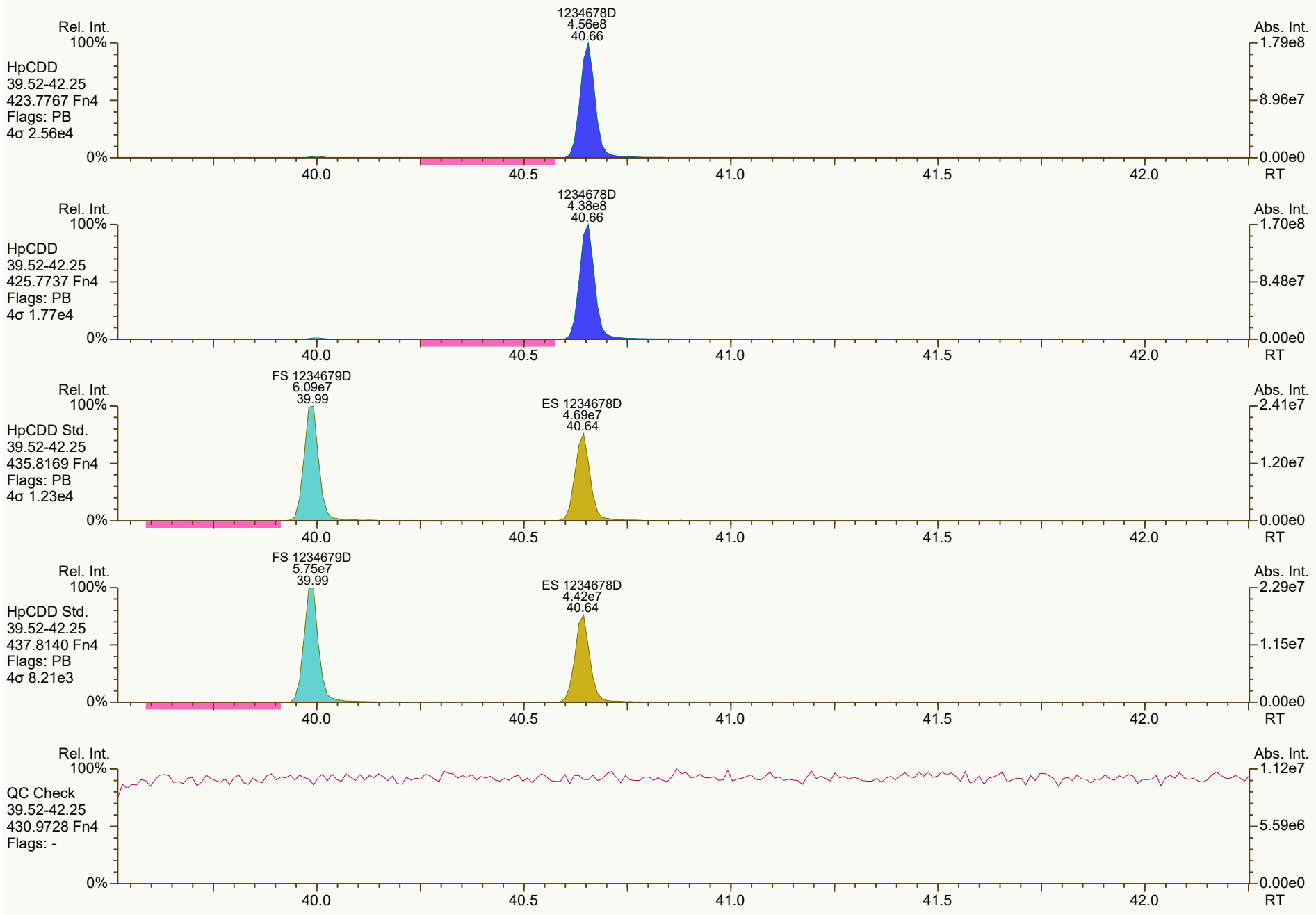
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.08e6
1.04e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.54e7
7.71e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.12e7
5.59e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.08e3
2378D
1.16e8
28.52
2.88e7
1.44e7
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.05e3
2378D
1.47e8
28.51
3.55e7
1.77e7
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.84e3
RRF (CS 37Cl-2378D) = (2.51e8) * 100 pg/uL = 1.35
(4.19e7+ 5.12e7) * 200 pg/uL
CL 28Jul21
CS 37Cl-2378D
2.51e8
28.52
6.05e7
3.03e7
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.17e3
AS 1368D
4.28e7
24.90
TS 1378D
5.83e7
26.87
JS 1234D
4.19e7
27.85
ES 2378D
4.26e7
28.49
FS 1278D
4.67e7
28.82
1.35e7
6.74e6
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.68e3
AS 1368D
5.37e7
24.90
TS 1378D
7.34e7
26.87
JS 1234D
5.12e7
27.85
ES 2378D
5.45e7
28.49
FS 1278D
5.80e7
28.82
1.75e7
8.75e6
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.90e3
0%
12378D
6.47e8
33.80
Abs. Int.
1.94e8
9.68e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.13e3
0%
12378D
4.16e8
33.80
Abs. Int.
1.25e8
6.26e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.30e3
0%
RRF(SS 12347D) = (5.12e7 + 3.09e7) * 100pg / (6.15e7 + 3.80e7) * 100pg = 0.825
PSW 27-Jul-2021 15:25
OK - CL 28Jul21
FS 12478D
6.59e7
32.57
SS/ CS 12347D
5.12e7
33.29
ES 12378D
6.15e7
33.78
Abs. Int.
1.96e7
9.80e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.17e3
0%
FS 12478D
4.07e7
32.57
CS 12347D
3.09e7
33.29
ES 12378D
3.80e7
33.78
Abs. Int.
1.21e7
6.06e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.33e3
123478D
5.27e8
37.67
123678D
5.42e8
37.78
123789D
5.73e8
38.07
Abs. Int.
1.89e8
9.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.36e3
123478D
4.25e8
37.67
123678D
4.33e8
37.78
123789D
4.58e8
38.07
Abs. Int.
1.48e8
7.38e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.46e3
FS 123468D
6.30e7
36.58
ES 123478D
5.03e7
37.65
ES 123678D
4.97e7
37.77
JS 123467D
2.41e7
37.96
ES 123789D
5.72e7
38.06
Abs. Int.
1.95e7
9.76e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.50e3
FS 123468D
4.84e7
36.58
ES 123478D
3.97e7
37.65
ES 123678D
3.92e7
37.77
JS 123467D
1.94e7
37.96
ES 123789D
4.49e7
38.06
Abs. Int.
1.50e7
7.51e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.54e7
7.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

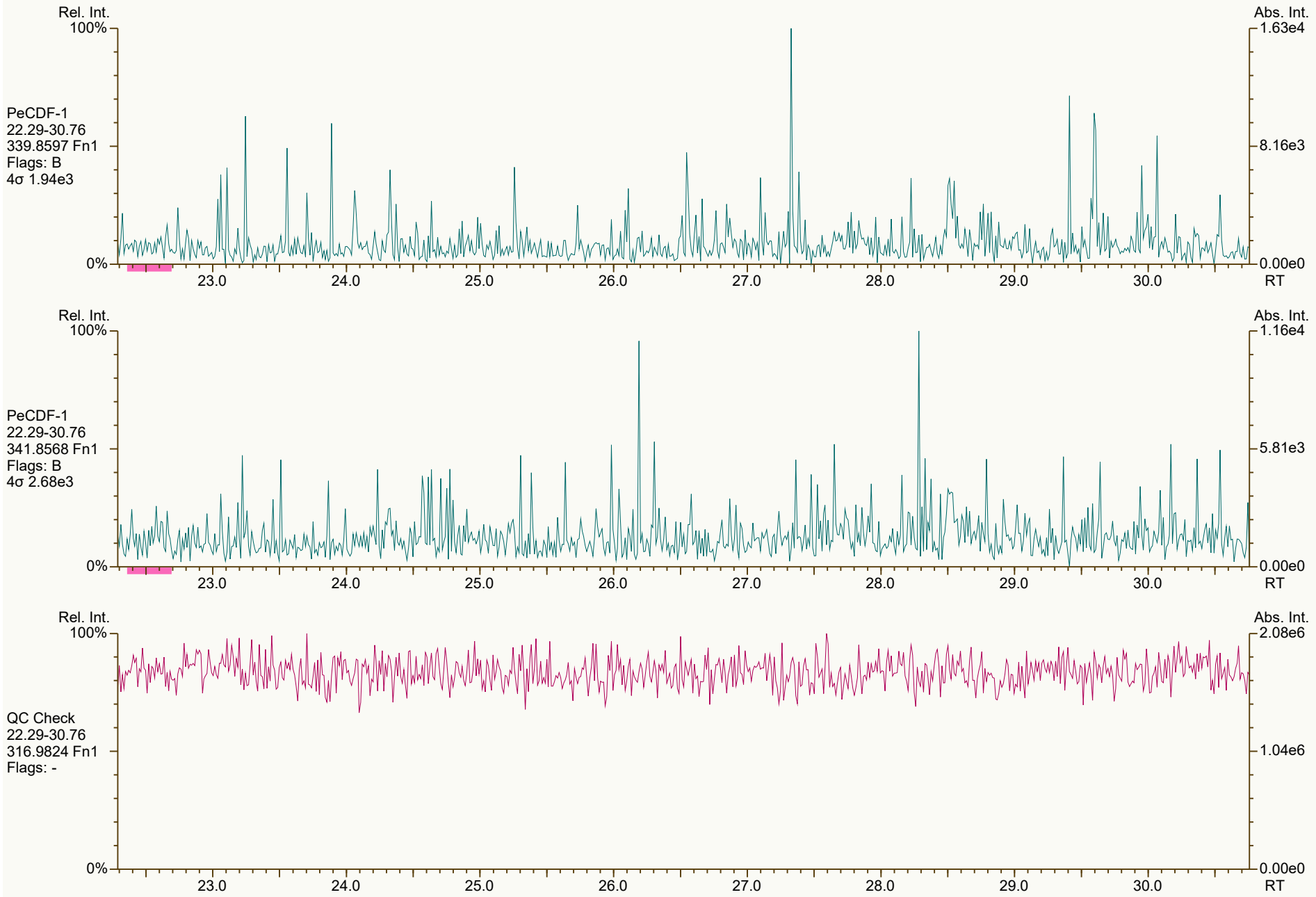

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.56e4
1234678D
4.56e8
40.66
Abs. Int.
1.79e8
8.96e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.77e4
1234678D
4.38e8
40.66
Abs. Int.
1.70e8
8.48e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.23e4
FS 1234679D
6.09e7
39.99
ES 1234678D
4.69e7
40.64
Abs. Int.
2.41e7
1.20e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 8.21e3
FS 1234679D
5.75e7
39.99
ES 1234678D
4.42e7
40.64
Abs. Int.
2.29e7
1.15e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.12e7
5.59e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDD
7.34e8*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
2.52e8
1.26e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
8.31e8*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
Abs. Int.
2.81e8
1.40e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.94e7
43.21
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 3.01e3
0%
Abs. Int.
2.31e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.81e7
43.21
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.23e3
0%
Abs. Int.
2.71e7
1.35e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.39e3
0%
2378F
1.39e8
27.66
Abs. Int.
3.30e7
1.65e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 1.93e3
0%
2378F
1.81e8
27.66
Abs. Int.
4.26e7
2.13e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.93e4
0%
AS 1368F
7.29e7
22.84
JS 1234F
6.68e7
26.32
ES 2378F
7.29e7
27.64
Abs. Int.
1.72e7
8.58e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 9.59e3
0%
AS 1368F
9.33e7
22.84
JS 1234F
8.44e7
26.31
ES 2378F
9.11e7
27.64
Abs. Int.
2.15e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.69e3
0%
Abs. Int.
1.28e4
6.39e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS5_210727_DF_RA | Sample ID: SIL 25-5-3 | Acq: 27-Jul-2021 13:09:36

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89 | User: PSW Datafile: 210727R07

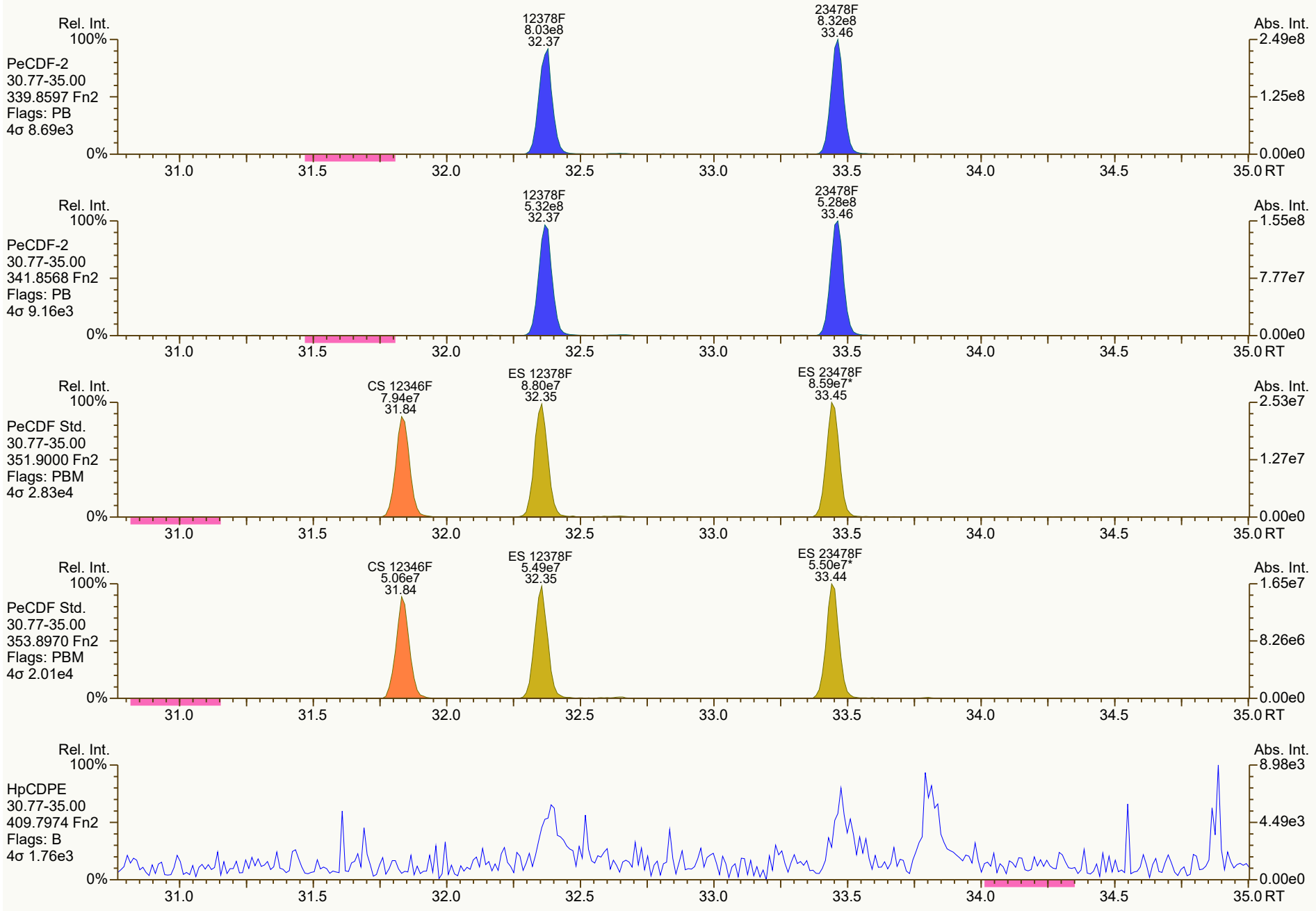


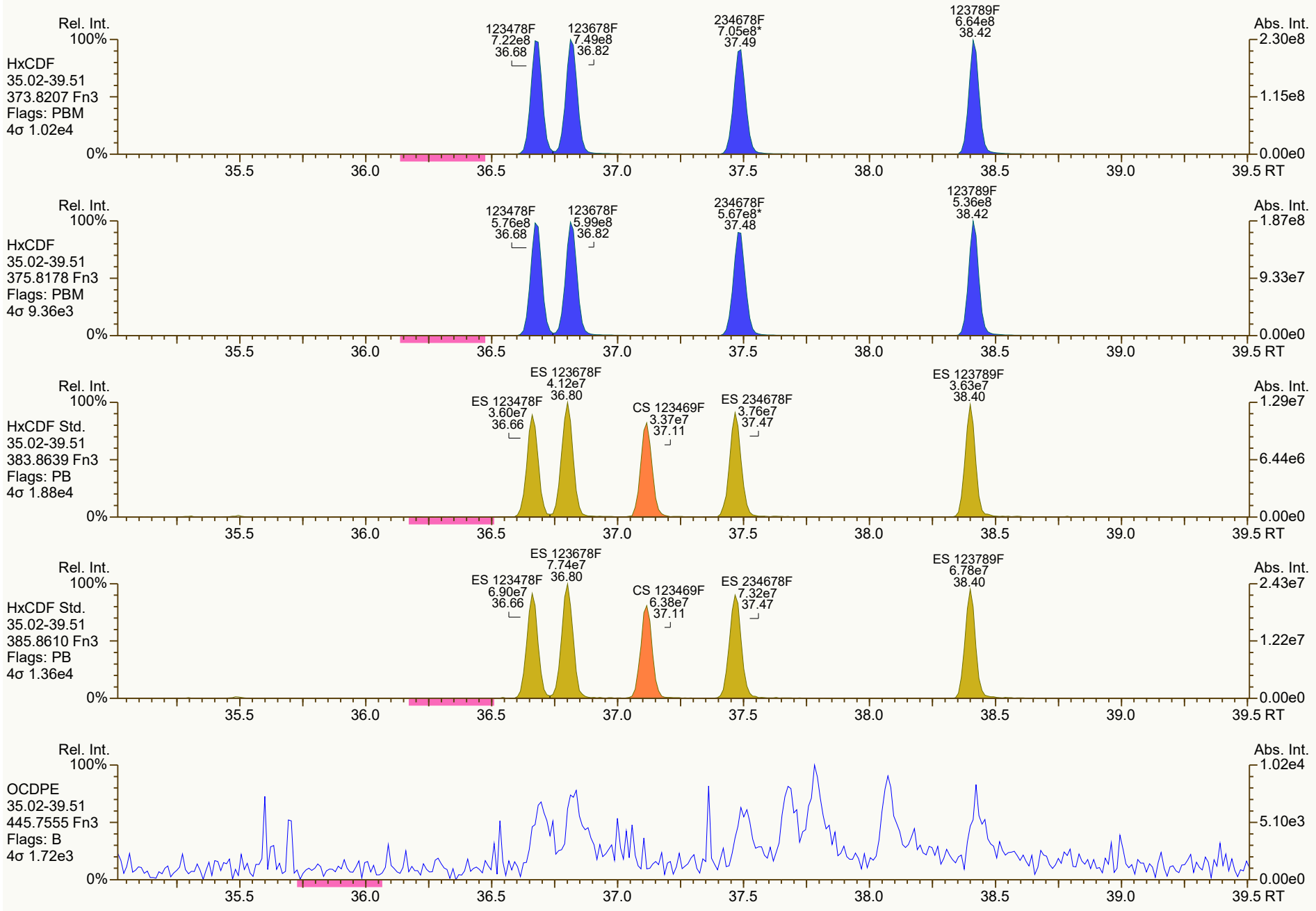
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)

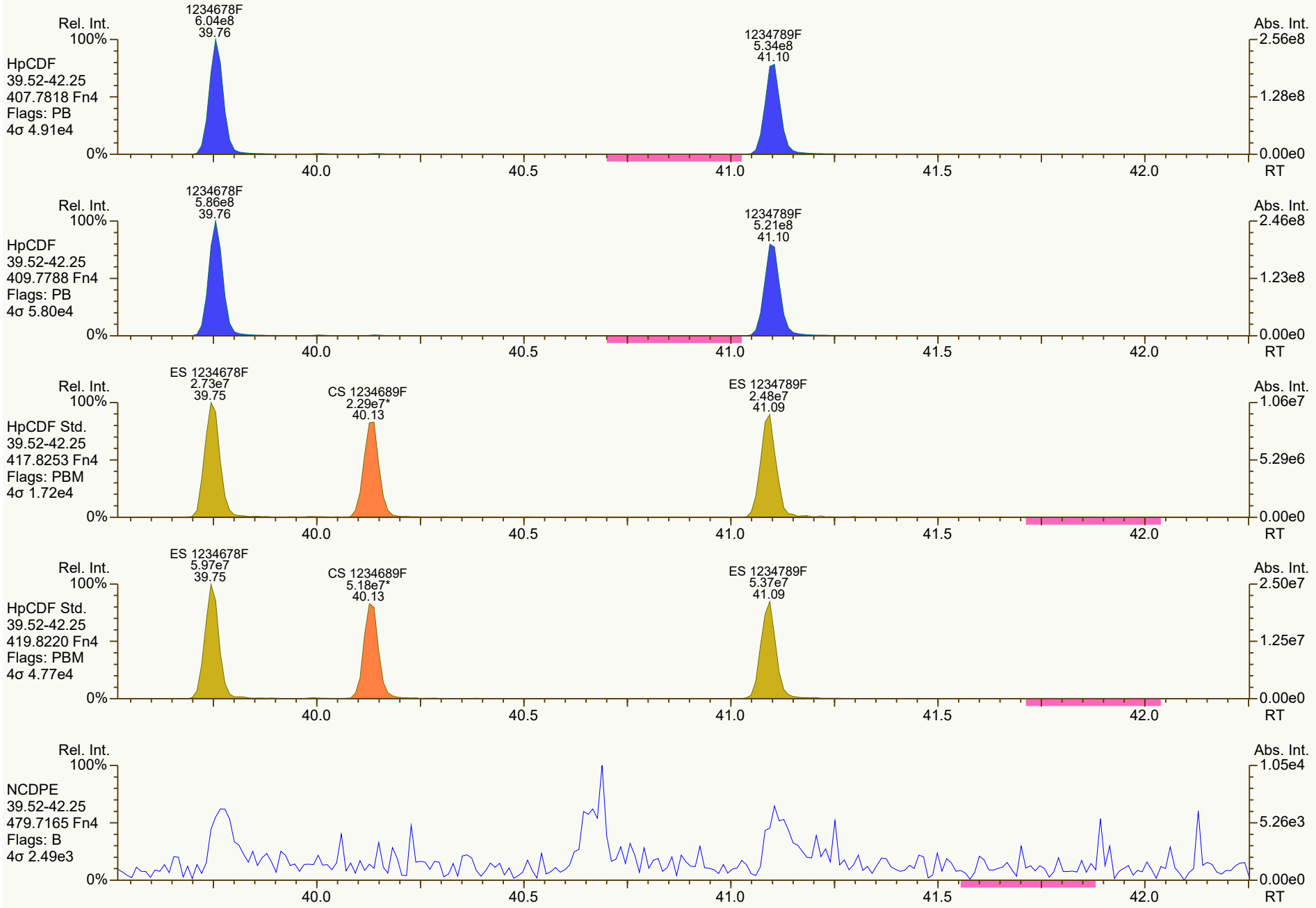
Peak annotation: Areas, Centroids

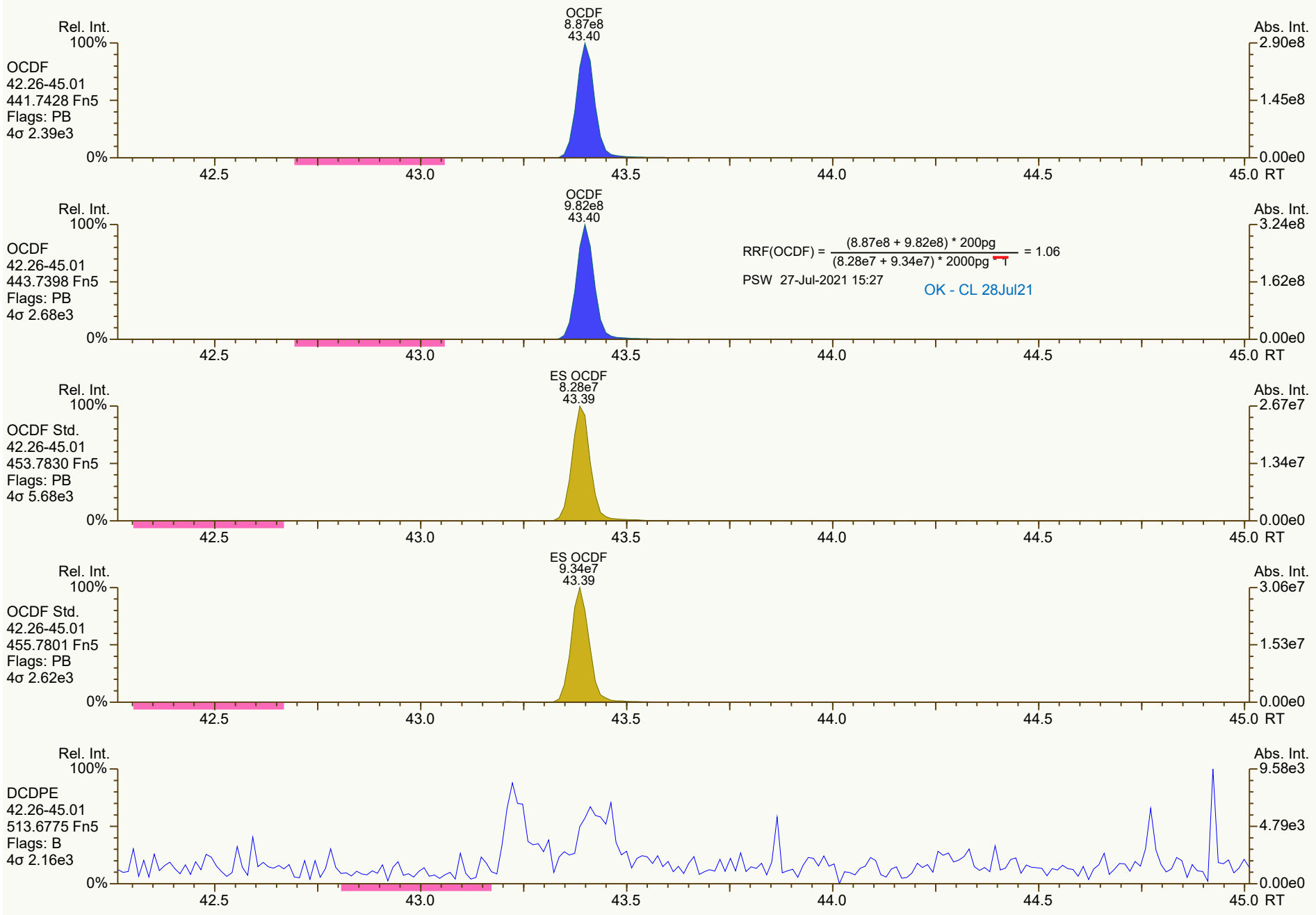
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7511 scc: 147-553

PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 8.69e3
0%
12378F
8.03e8
32.37
23478F
8.32e8
33.46
Abs. Int.
2.49e8
1.25e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 9.16e3
0%
12378F
5.32e8
32.37
23478F
5.28e8
33.46
Abs. Int.
1.55e8
7.77e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.83e4
0%
CS 12346F
7.94e7
31.84
ES 12378F
8.80e7
32.35
ES 23478F
8.59e7*
33.45
Abs. Int.
2.53e7
1.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.01e4
0%
CS 12346F
5.06e7
31.84
ES 12378F
5.49e7
32.35
ES 23478F
5.50e7*
33.44
Abs. Int.
1.65e7
8.26e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 1.76e3
0%
Abs. Int.
8.98e3
4.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.02e4
123478F
7.22e8
36.68
123678F
7.49e8
36.82
234678F
7.05e8*
37.49
123789F
6.64e8
38.42
Abs. Int.
2.30e8
1.15e8
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.36e3
123478F
5.76e8
36.68
123678F
5.99e8
36.82
234678F
5.67e8*
37.48
123789F
5.36e8
38.42
Abs. Int.
1.87e8
9.33e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.88e4
ES 123678F
4.12e7
36.80
ES 123478F
3.60e7
36.66
CS 123469F
3.37e7
37.11
ES 234678F
3.76e7
37.47
ES 123789F
3.63e7
38.40
Abs. Int.
1.29e7
6.44e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.36e4
ES 123678F
7.74e7
36.80
ES 123478F
6.90e7
36.66
CS 123469F
6.38e7
37.11
ES 234678F
7.32e7
37.47
ES 123789F
6.78e7
38.40
Abs. Int.
2.43e7
1.22e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.72e3
Abs. Int.
1.02e4
5.10e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e4
1234678F
6.04e8
39.76
1234789F
5.34e8
41.10
Abs. Int.
2.56e8
1.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.80e4
1234678F
5.86e8
39.76
1234789F
5.21e8
41.10
Abs. Int.
2.46e8
1.23e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 1.72e4
ES 1234678F
2.73e7
39.75
CS 1234689F
2.29e7*
40.13
ES 1234789F
2.48e7
41.09
Abs. Int.
1.06e7
5.29e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 4.77e4
ES 1234678F
5.97e7
39.75
CS 1234689F
5.18e7*
40.13
ES 1234789F
5.37e7
41.09
Abs. Int.
2.50e7
1.25e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.49e3
Abs. Int.
1.05e4
5.26e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.39e3
0%
OCDF
8.87e8
43.40
Abs. Int.
2.90e8
1.45e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.68e3
0%
OCDF
9.82e8
43.40
RRF(OCDF) = (8.87e8 + 9.82e8) * 200pg / (8.28e7 + 9.34e7) * 2000pg = 1.06
PSW 27-Jul-2021 15:27
OK - CL 28Jul21
Abs. Int.
3.24e8
1.62e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.68e3
0%
ES OCDF
8.28e7
43.39
Abs. Int.
2.67e7
1.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.62e3
0%
ES OCDF
9.34e7
43.39
Abs. Int.
3.06e7
1.53e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.16e3
0%
Abs. Int.
9.58e3
4.79e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

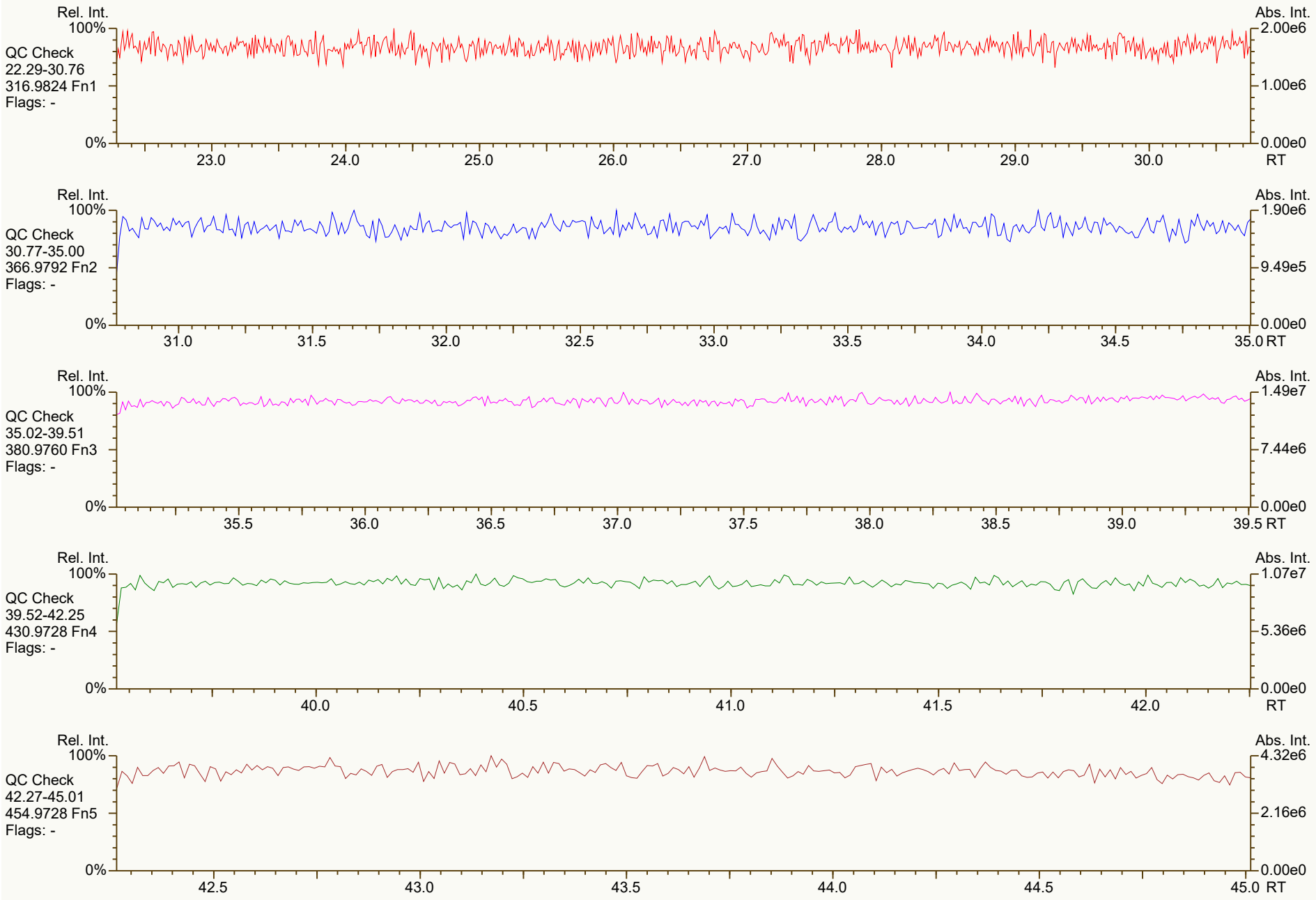
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

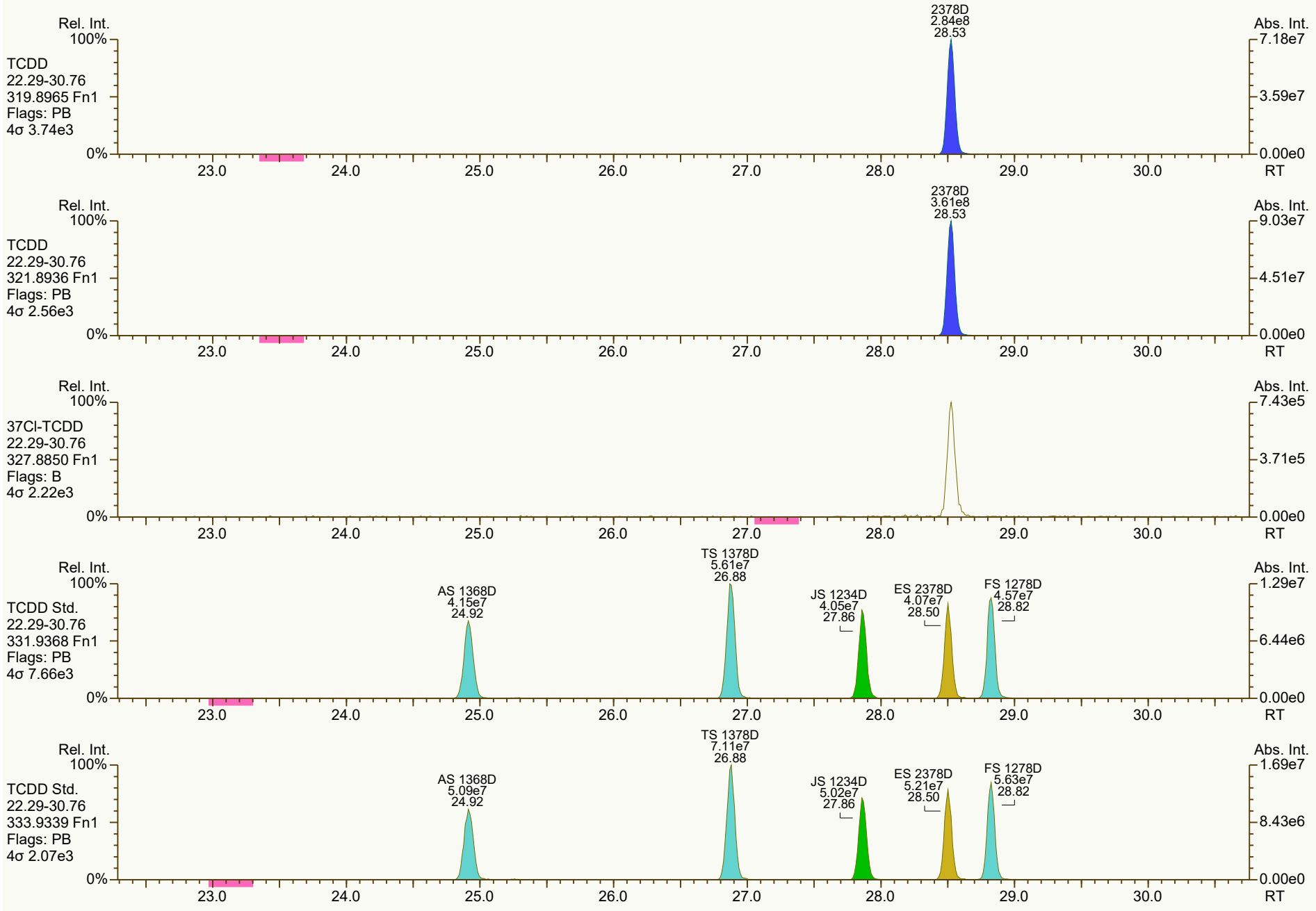
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	6.45E+08	0.79	Y	1.34	1.39	3%
12378-PeCDD	33.81	2.62E+09	1.57	Y	1.06	1.05	0%
123478-HxCDD	37.68	2.41E+09	1.26	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.46E+09	1.25	Y	1.08	1.09	1%
123789-HxCDD	38.08	2.63E+09	1.25	Y	1.02	1.00	-1%
1234678-HpCDD	40.66	2.28E+09	1.03	Y	0.97	1.00	2%
OCDD	43.24	4.13E+09	0.89	Y	1.07	1.08	1%
2378-TCDF	27.67	7.99E+08	0.77	Y	0.96	0.99	3%
12378-PeCDF	32.38	3.47E+09	1.57	Y	0.95	0.96	2%
23478-PeCDF	33.47	3.38E+09	1.55	Y	0.94	0.96	2%
123478-HxCDF	36.69	3.24E+09	1.24	Y	1.23	1.22	-1%
123678-HxCDF	36.83	3.36E+09	1.24	Y	1.13	1.14	0%
234678-HxCDF	37.49	3.14E+09	1.25	Y	1.15	1.15	0%
123789-HxCDF	38.43	3.10E+09	1.25	Y	1.14	1.16	2%
1234678-HpCDF	39.77	3.01E+09	1.04	Y	1.36	1.36	0%
1234789-HpCDF	41.11	2.70E+09	1.03	Y	1.30	1.33	2%
OCDF	43.42	4.91E+09	0.91	Y	1.03	1.08	5%
ES 2378-TCDD	28.50	9.29E+07	0.78	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.791	9.93E+07	1.63	Y	1.03	1.10	6%
ES 123478-HxCDD	37.663	9.19E+07	1.24	Y	0.99	1.07	7%
ES 123678-HxCDD	37.778	9.02E+07	1.27	Y	0.97	1.05	7%
ES 123789-HxCDD	38.067	1.05E+08	1.27	Y	1.12	1.22	8%
ES 1234678-HpCDD	40.65	9.14E+07	1.03	Y	0.99	1.06	7%
ES OCDD	43.227	1.53E+08	0.91	Y	0.78	0.89	14%
ES 2378-TCDF	27.65	1.62E+08	0.78	Y	1.08	1.10	2%
ES 12378-PeCDF	32.365	1.44E+08	1.56	Y	0.93	0.98	5%
ES 23478-PeCDF	33.455	1.42E+08	1.59	Y	0.92	0.96	4%
ES 123478-HxCDF	36.671	1.06E+08	0.53	Y	1.14	1.23	8%
ES 123678-HxCDF	36.81	1.18E+08	0.53	Y	1.30	1.37	6%
ES 234678-HxCDF	37.477	1.09E+08	0.52	Y	1.20	1.27	5%
ES 123789-HxCDF	38.411	1.07E+08	0.52	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.757	8.85E+07	0.45	Y	0.95	1.03	8%
ES 1234789-HpCDF	41.1	8.15E+07	0.45	Y	0.85	0.94	12%
ES OCDF	43.407	1.83E+08	0.90	Y	0.93	1.06	14%

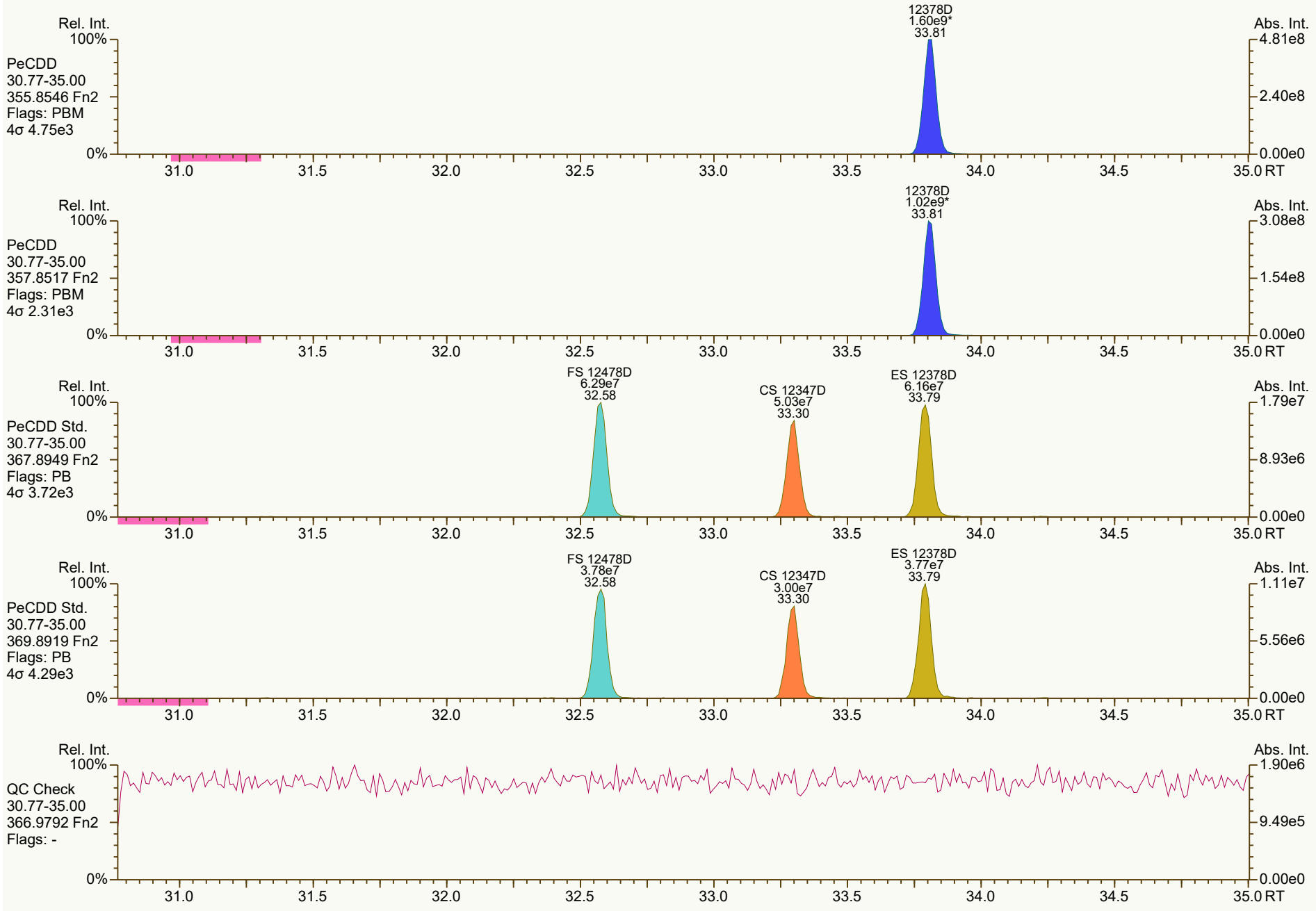
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

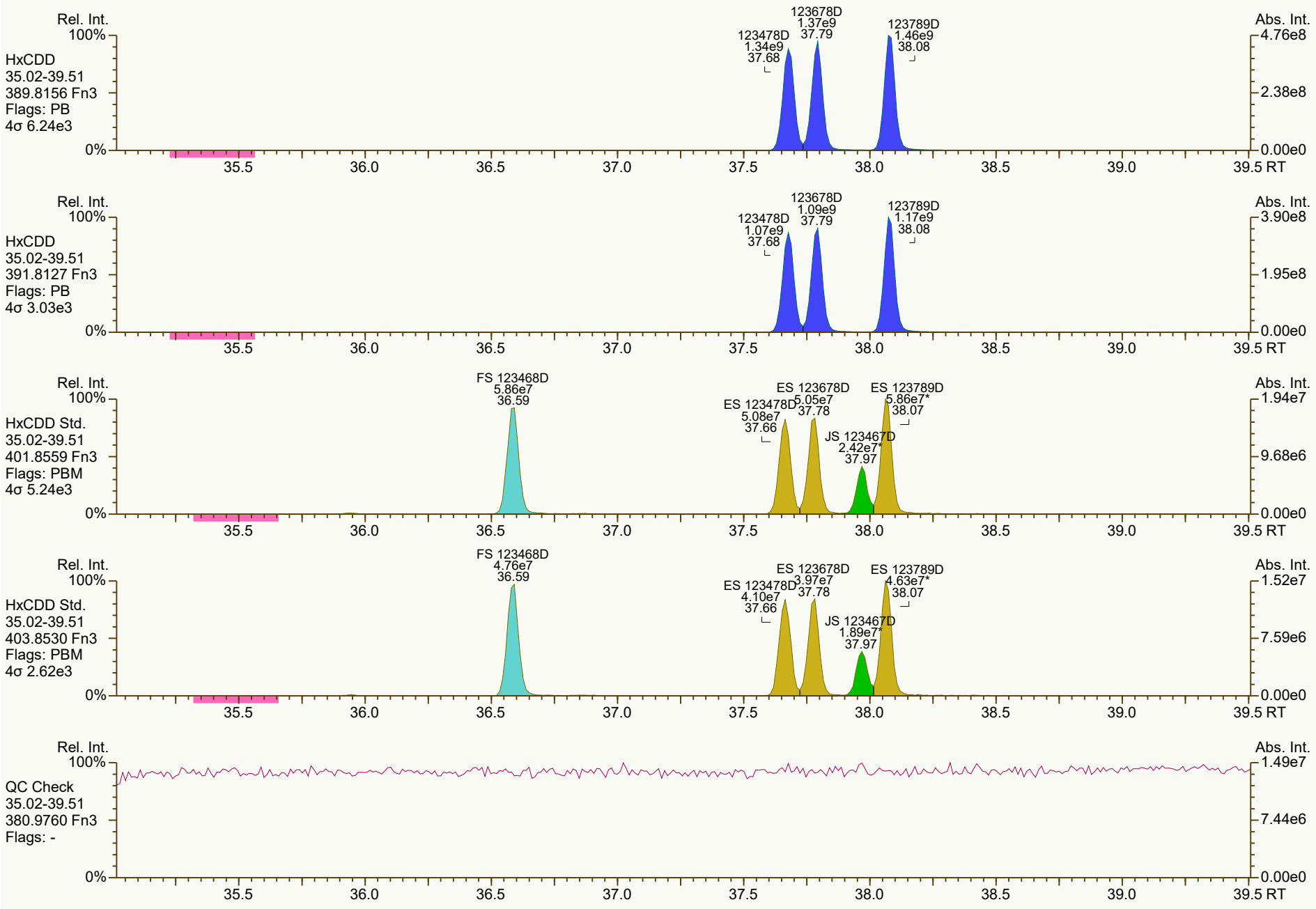
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	9.07E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.33	1.47E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	4.31E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.89	0.89	-1%
CS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.87	0.85	-2%
CS 123469-HxCDF	37.12	9.43E+07	0.51	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.86	0.84	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.86	0.81	-6%
SS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.93	0.87	-7%
SS 123469-HxCDF	37.12	9.43E+07	0.51	Y	0.84	0.80	-5%
SS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.91	0.81	-11%
AS 1368-TCDD	24.92	9.24E+07	0.82	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	1.58E+08	0.79	Y	1.08	1.07	0%
FS 1278-TCDD	28.83	1.02E+08	0.81	Y	1.08	1.10	1%
FS 12478-PeCDD	32.58	1.01E+08	1.67	Y	1.09	1.01	-7%
FS 123468-HxCDD	36.59	1.06E+08	1.23	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.99	1.12E+08	1.07	Y	1.36	1.23	-9%
TS 1378-TCDD	26.88	1.27E+08	0.79	Y	1.35	1.37	2%
~~OCDD-a~~	~~43.23~~	~~2.53E+08~~	~~2.47~~	~~Y~~	~~0.07~~	~~0.07~~	~~0%~~
~~OCDF-a~~	~~43.42~~	~~2.93E+08~~	~~2.57~~	~~Y~~	~~0.06~~	~~0.06~~	~~8%~~

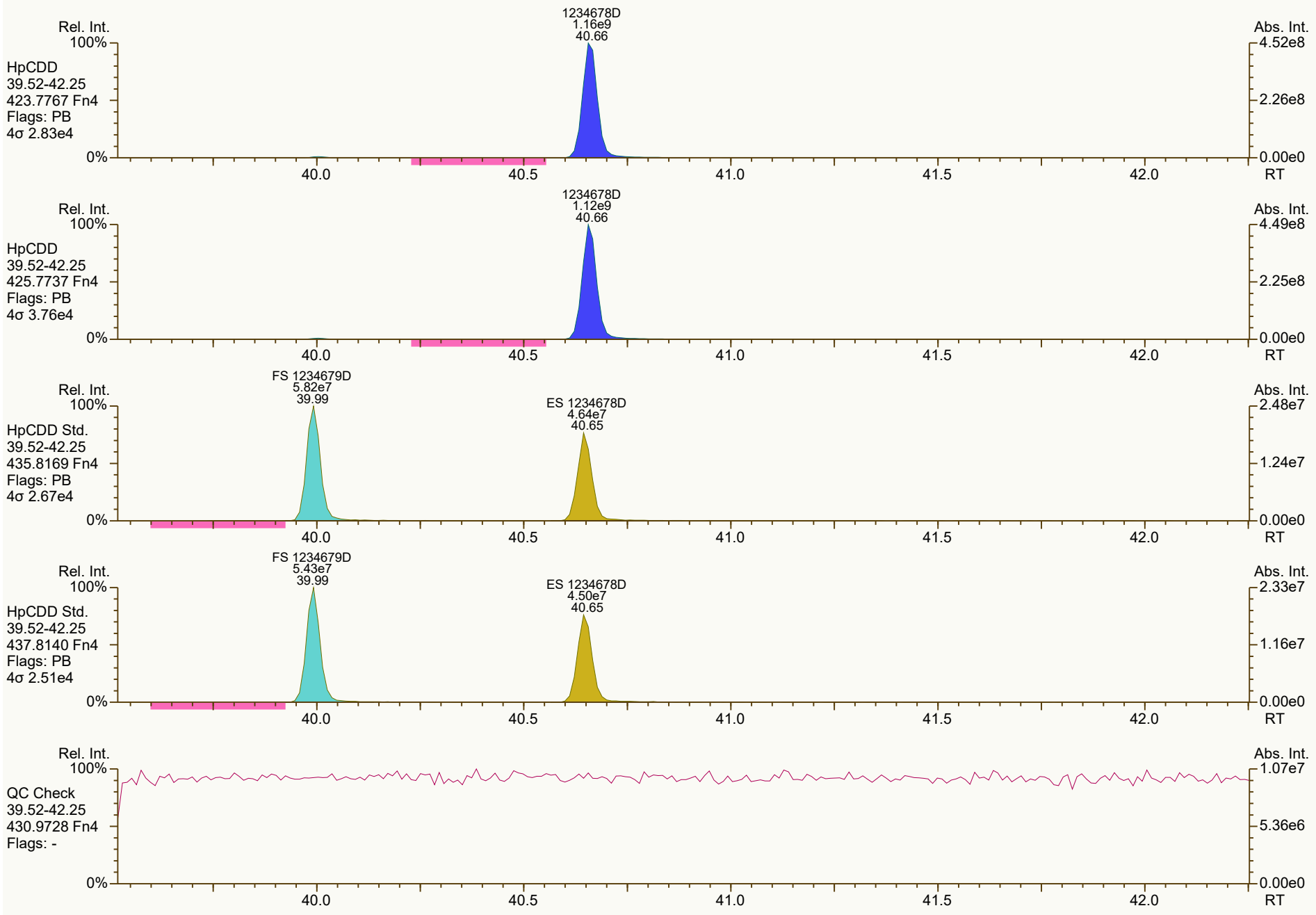
Not reported from this ICAL - CL 28Jul21

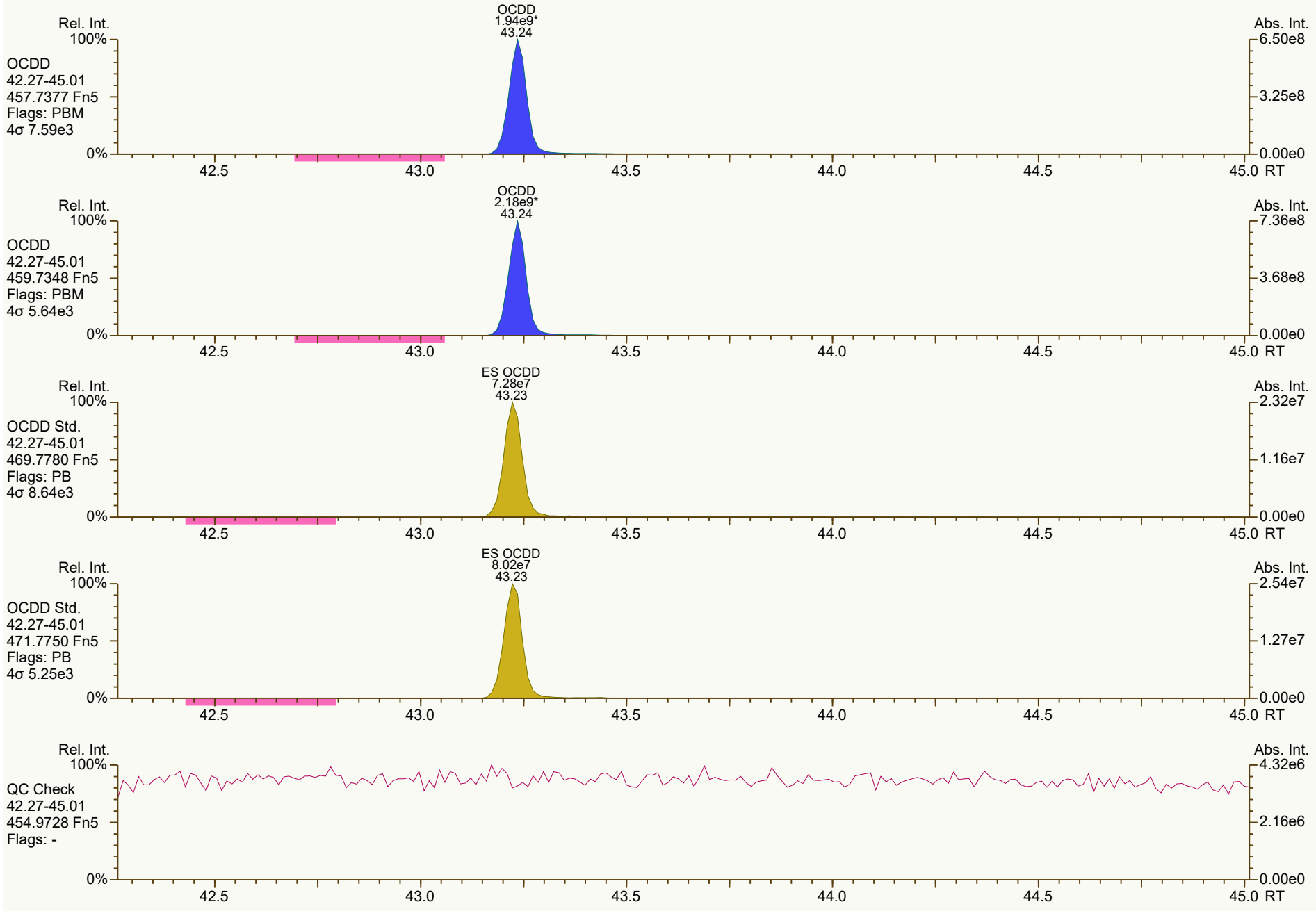

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.00e6
1.00e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.49e7
7.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.74e3
0%
2378D
2.84e8
28.53
Abs. Int.
7.18e7
3.59e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.56e3
0%
2378D
3.61e8
28.53
Abs. Int.
9.03e7
4.51e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.22e3
0%
Abs. Int.
7.43e5
3.71e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.66e3
0%
AS 1368D
4.15e7
24.92
TS 1378D
5.61e7
26.88
JS 1234D
4.05e7
27.86
ES 2378D
4.07e7
28.50
FS 1278D
4.57e7
28.82
Abs. Int.
1.29e7
6.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.07e3
0%
AS 1368D
5.09e7
24.92
TS 1378D
7.11e7
26.88
JS 1234D
5.02e7
27.86
ES 2378D
5.21e7
28.50
FS 1278D
5.63e7
28.82
Abs. Int.
1.69e7
8.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 4.75e3
0%
12378D
1.60e9*
33.81
Abs. Int.
4.81e8
2.40e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.31e3
0%
12378D
1.02e9*
33.81
Abs. Int.
3.08e8
1.54e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.72e3
0%
FS 12478D
6.29e7
32.58
CS 12347D
5.03e7
33.30
ES 12378D
6.16e7
33.79
Abs. Int.
1.79e7
8.93e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.29e3
0%
FS 12478D
3.78e7
32.58
CS 12347D
3.00e7
33.30
ES 12378D
3.77e7
33.79
Abs. Int.
1.11e7
5.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 6.24e3
0%
123678D
1.37e9
37.79
123478D
1.34e9
37.68
123789D
1.46e9
38.08
Abs. Int.
4.76e8
2.38e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 3.03e3
0%
123678D
1.09e9
37.79
123478D
1.07e9
37.68
123789D
1.17e9
38.08
Abs. Int.
3.90e8
1.95e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 5.24e3
0%
FS 123468D
5.86e7
36.59
ES 123678D
5.05e7
37.78
ES 123478D
5.08e7
37.66
ES 123789D
5.86e7*
38.07
JS 123467D
2.42e7*
37.97
Abs. Int.
1.94e7
9.68e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.62e3
0%
FS 123468D
4.76e7
36.59
ES 123678D
3.97e7
37.78
ES 123478D
4.10e7
37.66
ES 123789D
4.63e7*
38.07
JS 123467D
1.89e7*
37.97
Abs. Int.
1.52e7
7.59e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.49e7
7.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.83e4
0%
1234678D
1.16e9
40.66
Abs. Int.
4.52e8
2.26e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.76e4
0%
1234678D
1.12e9
40.66
Abs. Int.
4.49e8
2.25e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.67e4
0%
FS 1234679D
5.82e7
39.99
ES 1234678D
4.64e7
40.65
Abs. Int.
2.48e7
1.24e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 2.51e4
0%
FS 1234679D
5.43e7
39.99
ES 1234678D
4.50e7
40.65
Abs. Int.
2.33e7
1.16e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0


OCDD
1.94e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PBM
4σ 7.59e3
0%
Abs. Int.
6.50e8
3.25e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.18e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PBM
4σ 5.64e3
0%
Abs. Int.
7.36e8
3.68e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.28e7
43.23
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 8.64e3
0%
Abs. Int.
2.32e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.02e7
43.23
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 5.25e3
0%
Abs. Int.
2.54e7
1.27e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

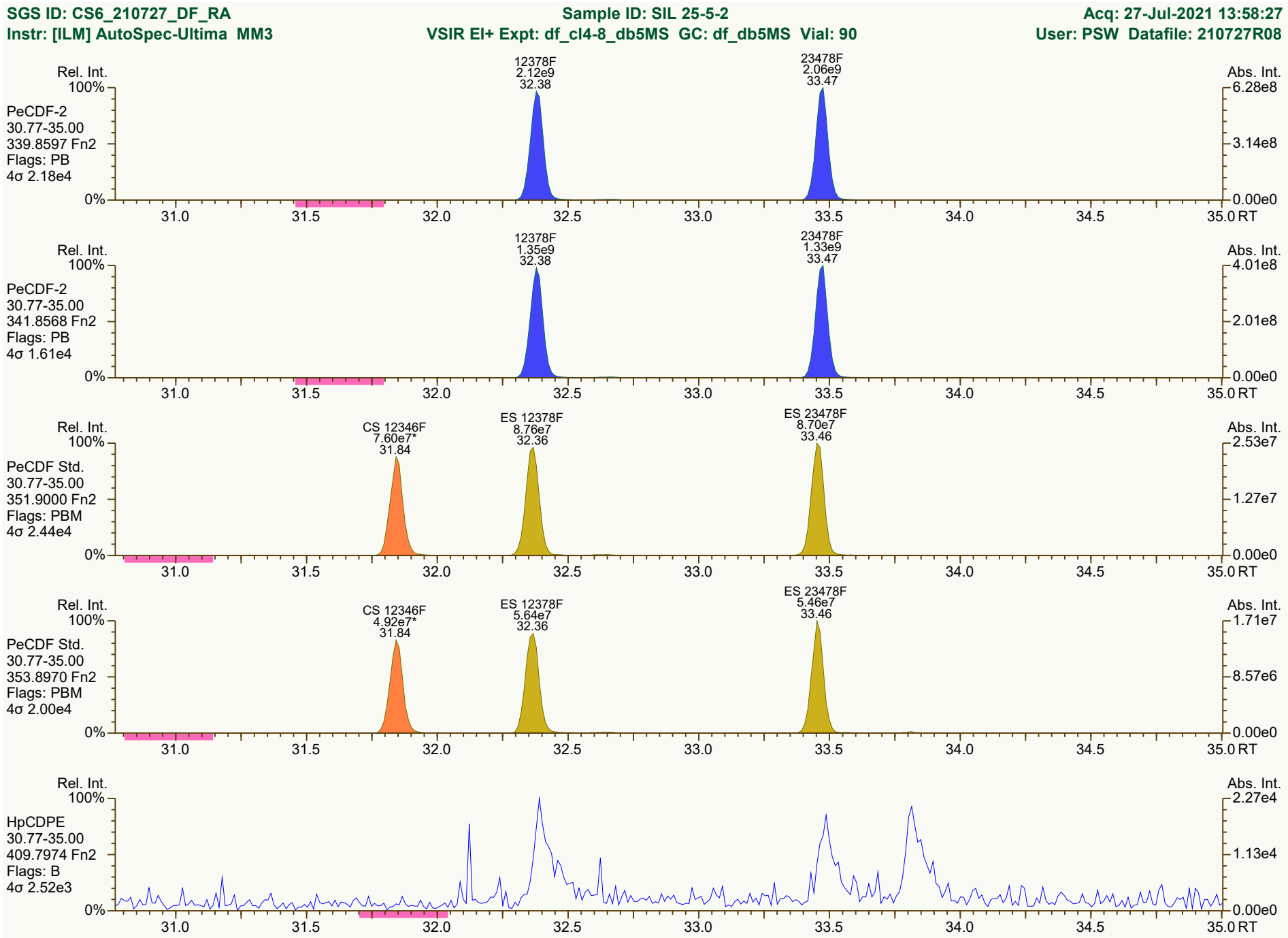

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.81e3
0%
2378F
3.47e8
27.67
Abs. Int.
8.18e7
4.09e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.63e3
0%
2378F
4.52e8
27.67
Abs. Int.
1.06e8
5.31e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
6.97e7
22.86
JS 1234F
6.51e7
26.33
ES 2378F
7.12e7
27.65
Abs. Int.
1.73e7
8.65e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 8.59e3
0%
AS 1368F
8.87e7
22.85
JS 1234F
8.23e7
26.33
ES 2378F
9.09e7
27.65
Abs. Int.
2.19e7
1.09e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.16e3
0%
Abs. Int.
1.85e4
9.24e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.81e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 4.96e3
1.40e4
7.01e3
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.00e6
1.00e6

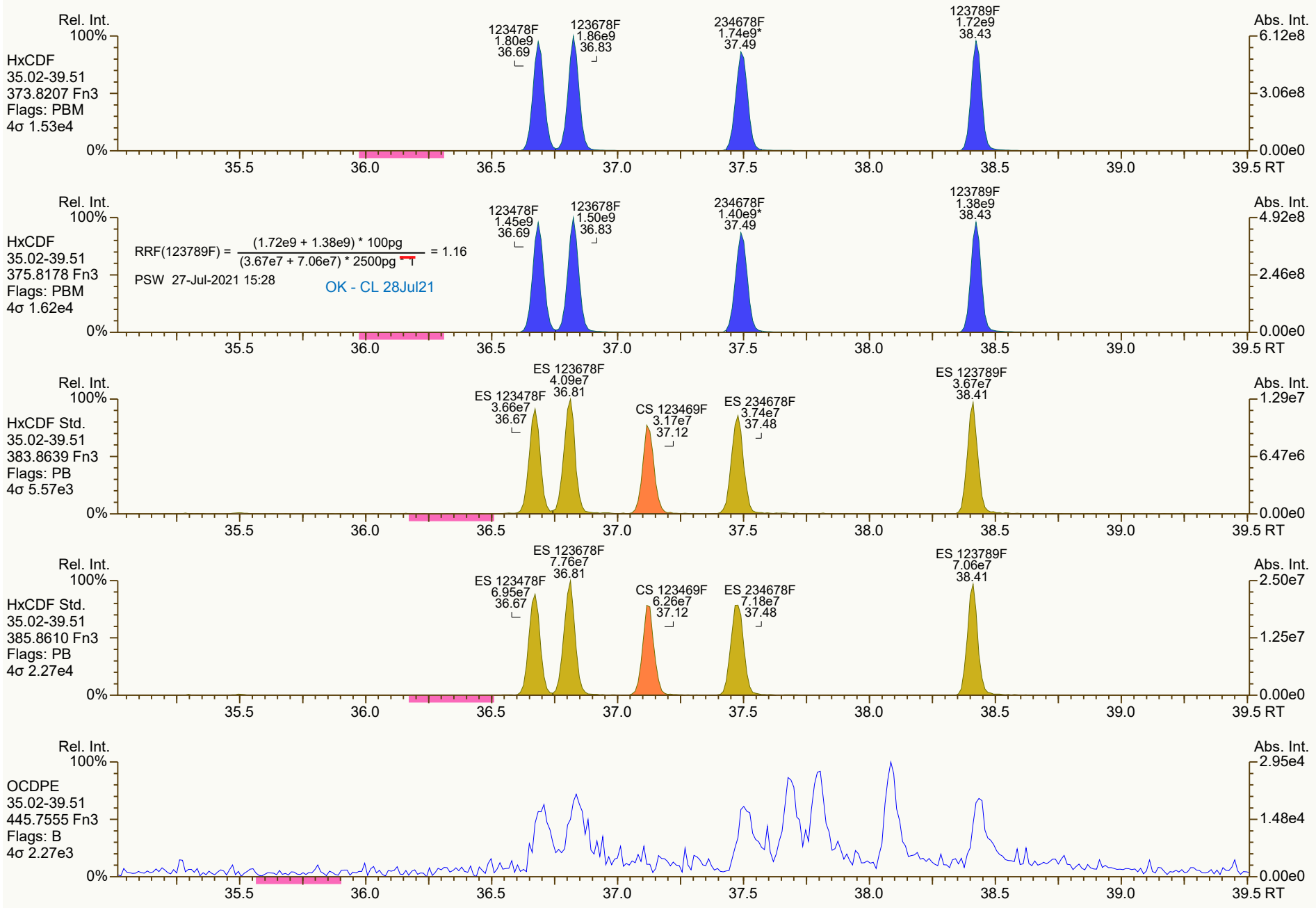
SGS ID: CS6_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

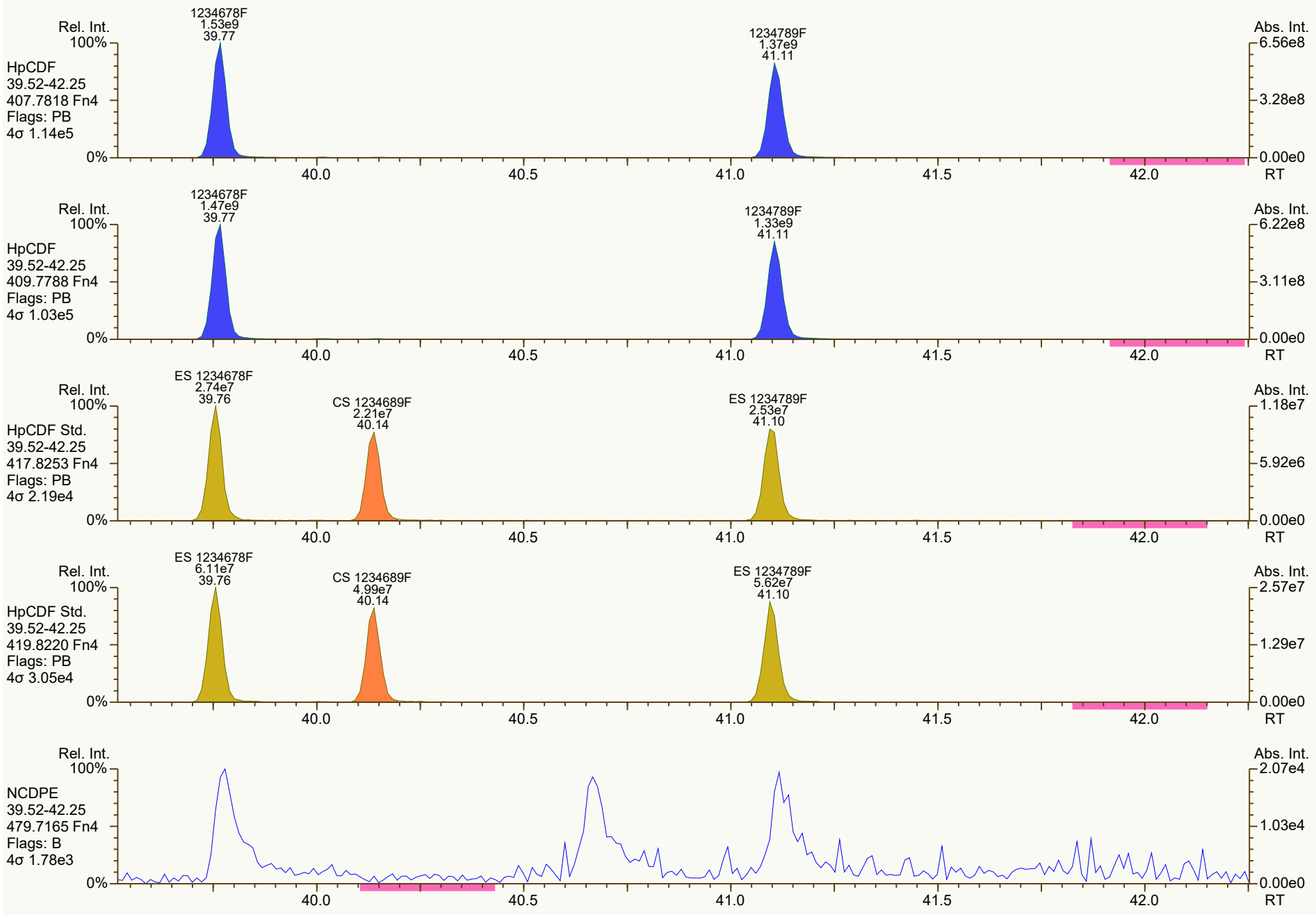
Sample ID: SIL 25-5-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90

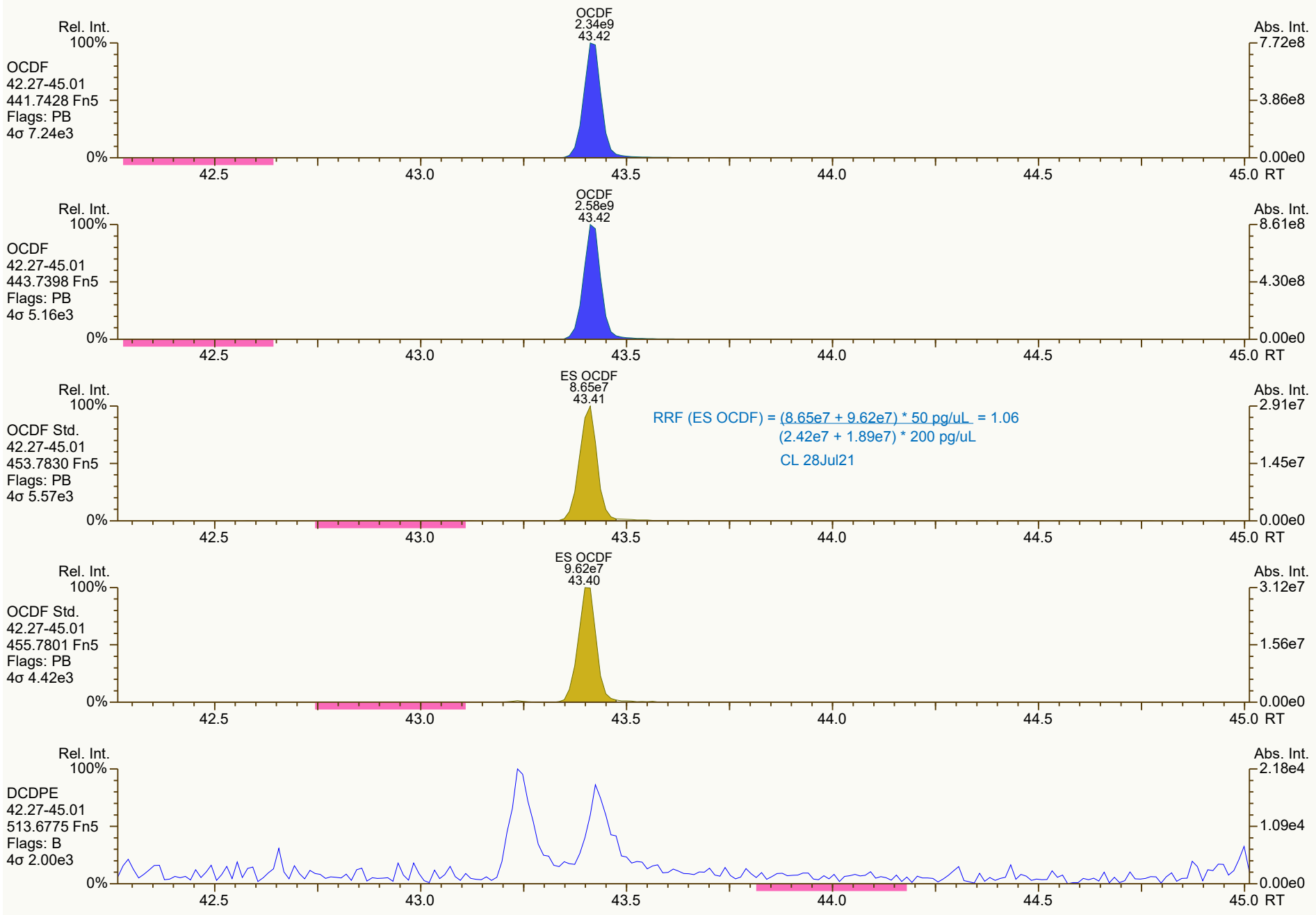
Acq: 27-Jul-2021 13:58:27
User: PSW Datafile: 210727R08



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5183, 3073, 9003 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.53e4
0%
123478F
1.80e9
36.69
123678F
1.86e9
36.83
234678F
1.74e9*
37.49
123789F
1.72e9
38.43
Abs. Int.
6.12e8
3.06e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 1.62e4
RRF(123789F) = (1.72e9 + 1.38e9) * 100pg / (3.67e7 + 7.06e7) * 2500pg = 1.16
PSW 27-Jul-2021 15:28
OK - CL 28Jul21
123478F
1.45e9
36.69
123678F
1.50e9
36.83
234678F
1.40e9*
37.49
123789F
1.38e9
38.43
4.92e8
2.46e8
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.57e3
ES 123478F
3.66e7
36.67
ES 123678F
4.09e7
36.81
CS 123469F
3.17e7
37.12
ES 234678F
3.74e7
37.48
ES 123789F
3.67e7
38.41
1.29e7
6.47e6
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.27e4
ES 123478F
6.95e7
36.67
ES 123678F
7.76e7
36.81
CS 123469F
6.26e7
37.12
ES 234678F
7.18e7
37.48
ES 123789F
7.06e7
38.41
2.50e7
1.25e7
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.27e3
2.95e4
1.48e4

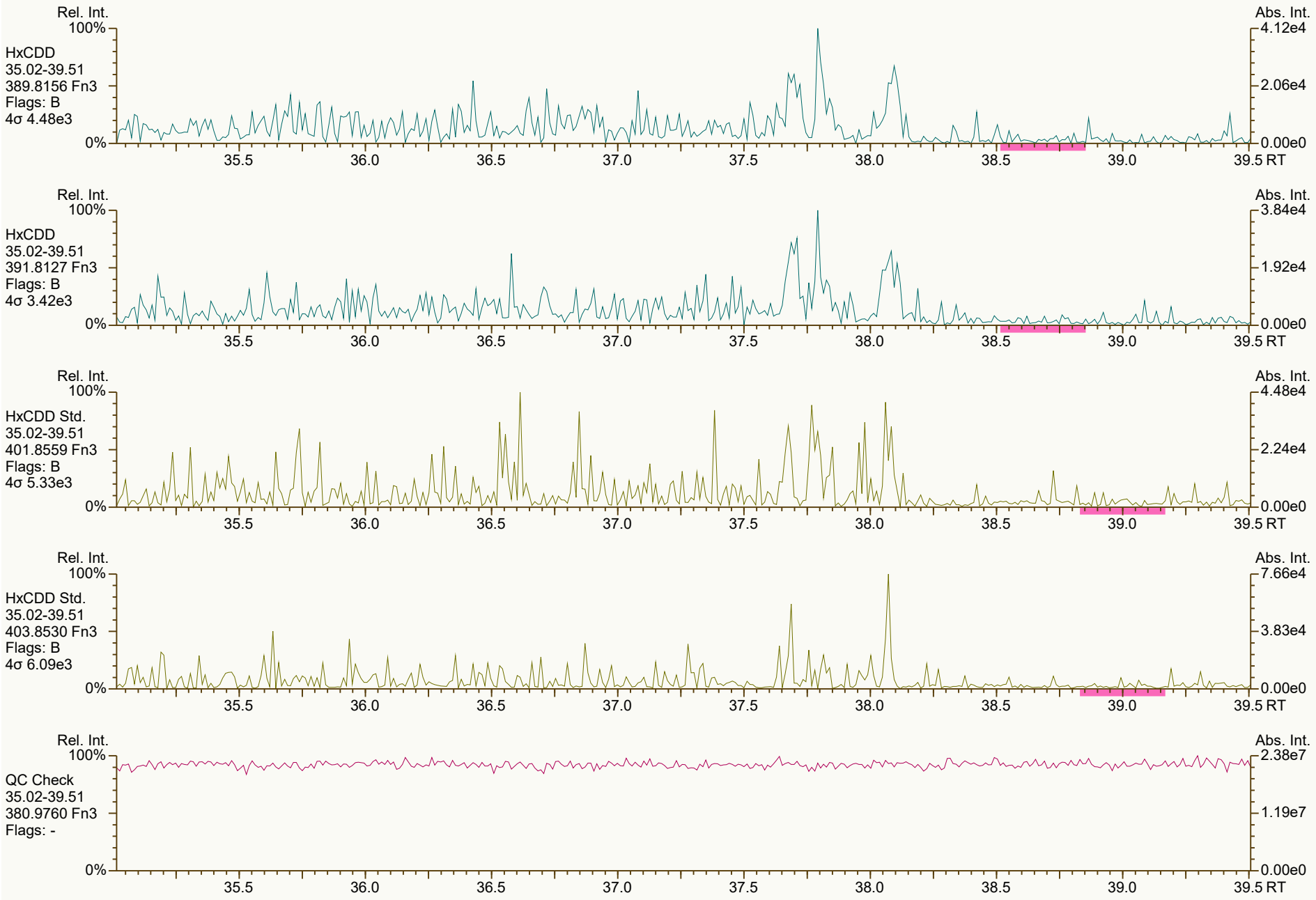

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.14e5
1234678F
1.53e9
39.77
1234789F
1.37e9
41.11
Abs. Int.
6.56e8
3.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.03e5
1234678F
1.47e9
39.77
1234789F
1.33e9
41.11
Abs. Int.
6.22e8
3.11e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.19e4
ES 1234678F
2.74e7
39.76
CS 1234689F
2.21e7
40.14
ES 1234789F
2.53e7
41.10
Abs. Int.
1.18e7
5.92e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 3.05e4
ES 1234678F
6.11e7
39.76
CS 1234689F
4.99e7
40.14
ES 1234789F
5.62e7
41.10
Abs. Int.
2.57e7
1.29e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 1.78e3
Abs. Int.
2.07e4
1.03e4
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDF
2.34e9
43.42
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 7.24e3
0%
Abs. Int.
7.72e8
3.86e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.58e9
43.42
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 5.16e3
8.61e8
4.30e8
ES OCDF
8.65e7
43.41
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.57e3
RRF (ES OCDF) = (8.65e7 + 9.62e7) * 50 pg/uL = 1.06
(2.42e7 + 1.89e7) * 200 pg/uL
CL 28Jul21
2.91e7
1.45e7
ES OCDF
9.62e7
43.40
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.42e3
3.12e7
1.56e7
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.00e3
2.18e4
1.09e4

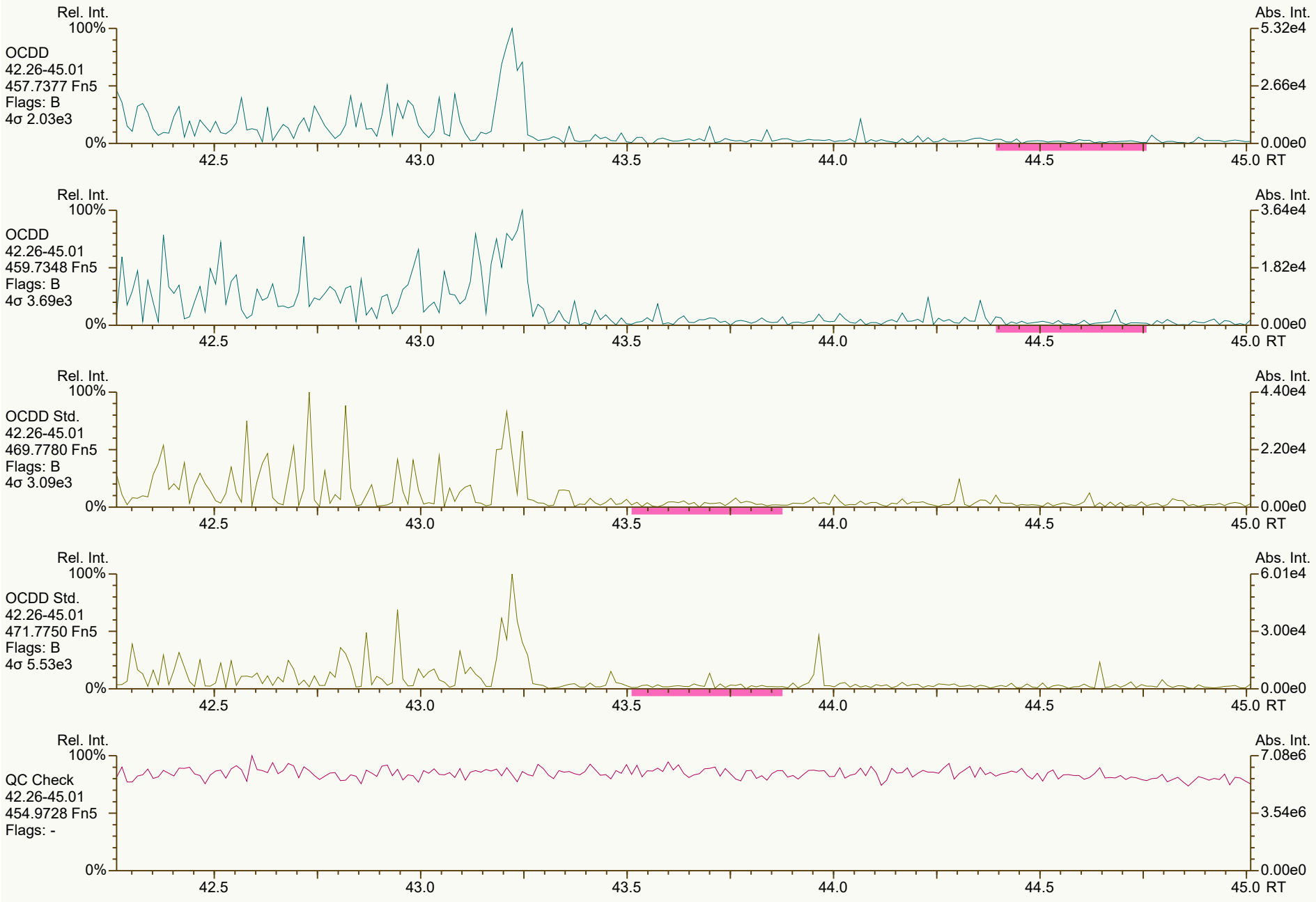

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: B
4σ 5.46e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: B
4σ 3.81e3
0%
Abs. Int.
1.72e4
8.58e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.57e4
7.86e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: B
4σ 1.19e4
0%
Abs. Int.
4.60e4
2.30e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: B
4σ 4.18e3
0%
Abs. Int.
4.81e4
2.40e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: B
4σ 9.54e3
0%
Abs. Int.
3.89e4
1.94e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: B
4σ 5.05e3
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: B
4σ 5.45e3
0%
Abs. Int.
6.36e4
3.18e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: B
4σ 4.94e3
0%
Abs. Int.
2.95e4
1.48e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: B
4σ 4.48e3
0%
Abs. Int.
4.12e4
2.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: B
4σ 3.42e3
0%
Abs. Int.
3.84e4
1.92e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: B
4σ 5.33e3
0%
Abs. Int.
4.48e4
2.24e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: B
4σ 6.09e3
0%
Abs. Int.
7.66e4
3.83e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: B
4σ 8.10e3
0%
Abs. Int.
5.65e4
2.82e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: B
4σ 9.20e3
0%
Abs. Int.
3.29e4
1.64e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: B
4σ 7.86e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: B
4σ 3.02e3
0%
Abs. Int.
6.85e4
3.43e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT

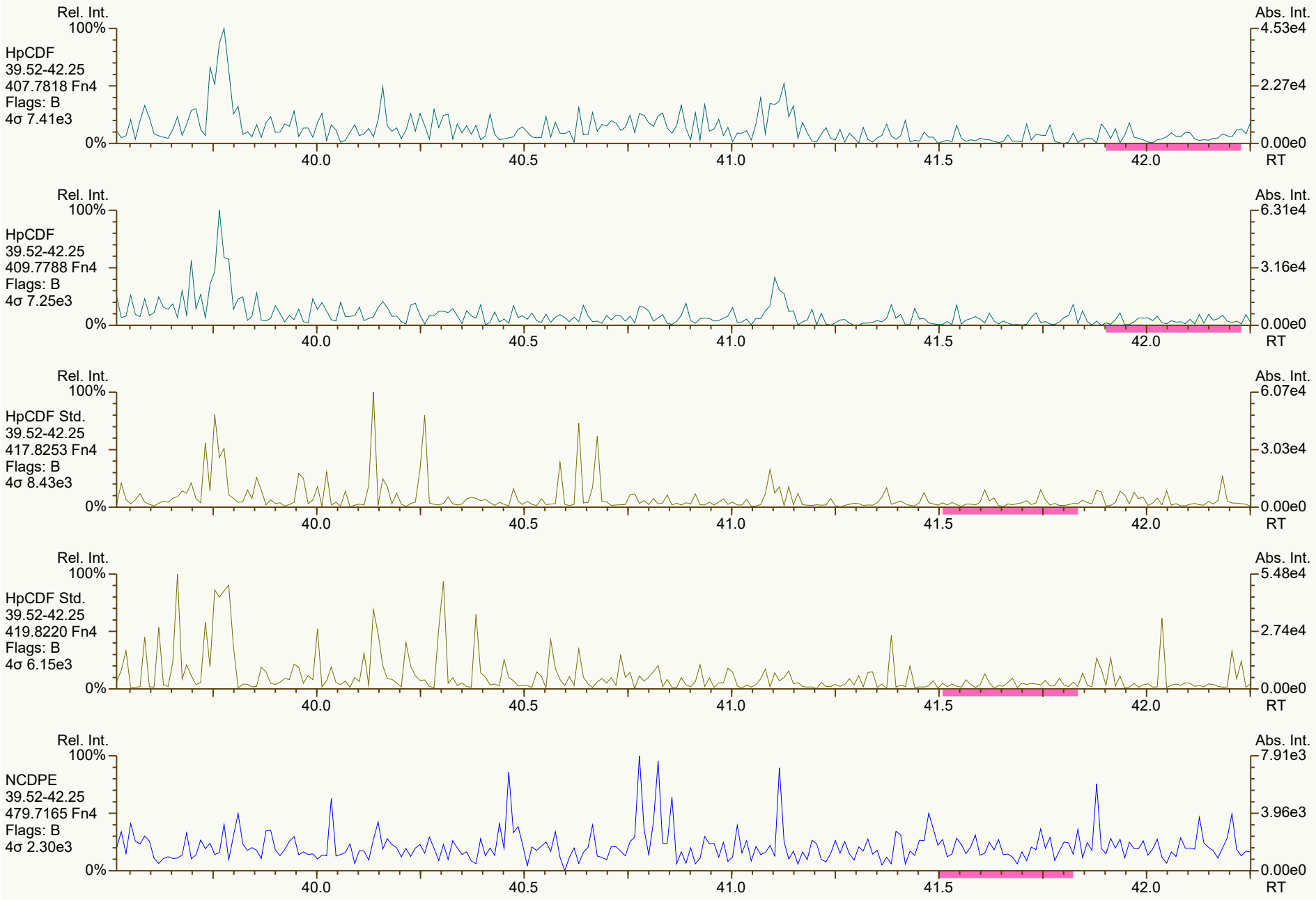

Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: B
4σ 2.03e3
0%
Abs. Int.
5.32e4
2.66e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: B
4σ 3.69e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: B
4σ 3.09e3
0%
Abs. Int.
4.40e4
2.20e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: B
4σ 5.53e3
0%
Abs. Int.
6.01e4
3.00e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


2468F; SPIKED
1.48e6
24.08
Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.99e3
0%
Abs. Int.
2.84e5
1.42e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
2468F
2.07e6
24.08
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.46e3
4.20e5
2.10e5
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: B
4σ 9.21e3
6.05e4
3.02e4
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: B
4σ 1.24e4
4.67e4
2.34e4
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.67e3
2.13e4
1.06e4


Rel. Int.
100%
0%
Abs. Int.
3.87e4
1.94e4
0.00e0
RT
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 6.47e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
0%
Abs. Int.
3.57e4
1.78e4
0.00e0
RT
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 6.41e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
RT
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: B
4σ 6.52e3
0%
Abs. Int.
4.88e4
2.44e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: B
4σ 6.57e3
0%
Abs. Int.
3.28e4
1.64e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: B
4σ 2.11e3
0%
Abs. Int.
6.19e4
3.10e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: B
4σ 3.42e3
0%
Abs. Int.
5.42e4
2.71e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: B
4σ 6.81e3
0%
Abs. Int.
5.46e4
2.73e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: B
4σ 4.05e3
0%
Abs. Int.
3.51e4
1.76e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: B
4σ 6.70e3
0%
Abs. Int.
4.23e4
2.11e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: B
4σ 1.33e4
0%
Abs. Int.
8.19e4
4.10e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.51e3
0%
Abs. Int.
2.13e4
1.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: B
4σ 7.41e3
0%
Abs. Int.
4.53e4
2.27e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: B
4σ 7.25e3
0%
Abs. Int.
6.31e4
3.16e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: B
4σ 8.43e3
0%
Abs. Int.
6.07e4
3.03e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: B
4σ 6.15e3
0%
Abs. Int.
5.48e4
2.74e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.30e3
0%
Abs. Int.
7.91e3
3.96e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: B
4σ 2.18e3
0%
Abs. Int.
4.13e4
2.06e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: B
4σ 1.96e3
0%
Abs. Int.
5.82e4
2.91e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: B
4σ 3.42e3
0%
Abs. Int.
6.44e4
3.22e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: B
4σ 2.75e3
0%
Abs. Int.
6.15e4
3.08e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 2.12e3
0%
Abs. Int.
5.85e3
2.93e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
15	210727R15	3	CS3_210727_DF_RB ✓	1.00	SIL 23-672-1	PSW	320-816	27-Jul-2021	19:43:55
16	210727R16	92	CS3_210727_DF_RC	1.00	ICV SIL 24-11-9 ✓	PSW	537-883	27-Jul-2021	20:31:28

REVIEWED
paul_walton , 7/28/2021, 8:29:53 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:21 PM

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.67E+07	0.81	Y	1.34	1.35	0%
12378-PeCDD	33.81	6.38E+07	1.58	Y	1.06	1.06	0%
123478-HxCDD	37.68	5.49E+07	1.25	Y	1.06	1.06	1%
123678-HxCDD	37.79	5.63E+07	1.26	Y	1.08	1.10	2%
123789-HxCDD	38.08	5.86E+07	1.24	Y	1.02	1.00	-2%
1234678-HpCDD	40.66	4.96E+07	1.04	Y	0.97	0.98	0%
OCDD	43.23	8.27E+07	0.89	Y	1.07	1.07	0%
2378-TCDF	27.67	2.12E+07	0.80	Y	0.96	0.97	1%
12378-PeCDF	32.38	8.71E+07	1.57	Y	0.95	0.97	2%
23478-PeCDF	33.47	7.79E+07	1.46	Y	0.94	0.92	-2%
123478-HxCDF	36.69	7.88E+07	1.25	Y	1.23	1.25	2%
123678-HxCDF	36.83	8.26E+07	1.26	Y	1.13	1.13	0%
234678-HxCDF	37.49	7.73E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.43	6.95E+07	1.26	Y	1.14	1.13	0%
1234678-HpCDF	39.77	7.02E+07	1.03	Y	1.36	1.34	-2%
1234789-HpCDF	41.11	5.97E+07	1.05	Y	1.30	1.36	5%
OCDF	43.41	9.92E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.50	1.24E+08	0.80	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.788	1.20E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.661	1.03E+08	1.29	Y	0.99	0.98	-1%
ES 123678-HxCDD	37.775	1.02E+08	1.32	Y	0.97	0.97	0%
ES 123789-HxCDD	38.065	1.17E+08	1.31	Y	1.12	1.12	-1%
ES 1234678-HpCDD	40.653	1.01E+08	1.07	Y	0.99	0.96	-3%
ES OCDD	43.218	1.54E+08	0.91	Y	0.78	0.73	-6%
ES 2378-TCDF	27.65	2.18E+08	0.77	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.362	1.80E+08	1.58	Y	0.93	0.89	-5%
ES 23478-PeCDF	33.452	1.68E+08	1.62	Y	0.92	0.83	-10%
ES 123478-HxCDF	36.669	1.26E+08	0.54	Y	1.14	1.19	4%
ES 123678-HxCDF	36.809	1.47E+08	0.50	Y	1.30	1.39	7%
ES 234678-HxCDF	37.476	1.31E+08	0.52	Y	1.20	1.25	4%
ES 123789-HxCDF	38.411	1.23E+08	0.52	Y	1.14	1.17	3%
ES 1234678-HpCDF	39.758	1.05E+08	0.47	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.102	8.75E+07	0.45	Y	0.85	0.83	-2%
ES OCDF	43.399	1.88E+08	0.89	Y	0.93	0.89	-4%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.21E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.33	2.03E+08	0.78	Y	-	-	-
JS 123467-HxCDD	37.97	5.27E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.31	1.28	-2%
CS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.89	0.87	-3%
CS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.22E+08	0.52	Y	1.09	1.16	7%
CS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.86	0.90	4%
SS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.86	0.87	1%
SS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.22E+08	0.52	Y	0.84	0.83	-1%
SS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.91	0.90	-1%
~~OCDD-a~~	~~43.22~~	~~4.70E+06~~	~~2.62~~	~~Y~~	~~0.07~~	~~0.06~~	~~-8%~~
~~OCDF-a~~	~~43.41~~	~~5.40E+06~~	~~2.31~~	~~Y~~	~~0.06~~	~~0.06~~	~~-3%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	10	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	50.1	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	50.3	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	50.9	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	49.1	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88	-	1.20	Y	50.1	40	-	60	Y
OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	10.1	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	51.2	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32	-	1.78	Y	49.2	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	50.8	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	51.1	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.1	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88	-	1.20	Y	52.4	40	-	60	Y
OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	103	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	70	-	130	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	70	-	130	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	140	-	260	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	10	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.1	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.1	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32 - 1.78	Y	49.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	52.4	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

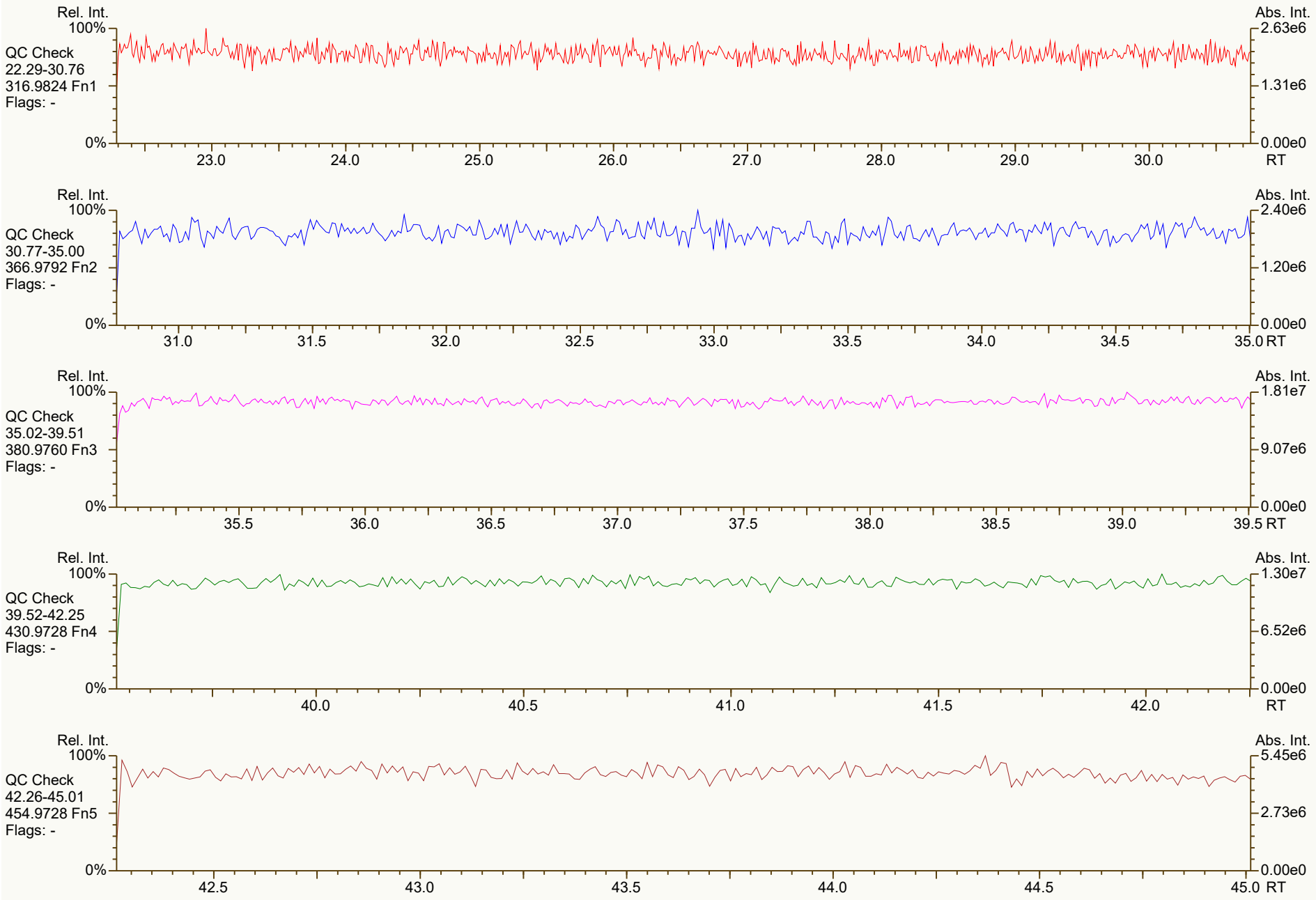
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	72	-	138	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	77	-	129	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:18 Analyst: pw


Rel. Int.
100%
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
RT
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
2.40e6
1.20e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.81e7
9.07e6
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.30e7
6.52e6
40.0
40.5
41.0
41.5
42.0
QC Check
42.26-45.01
454.9728 Fn5
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2.73e6
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43.0
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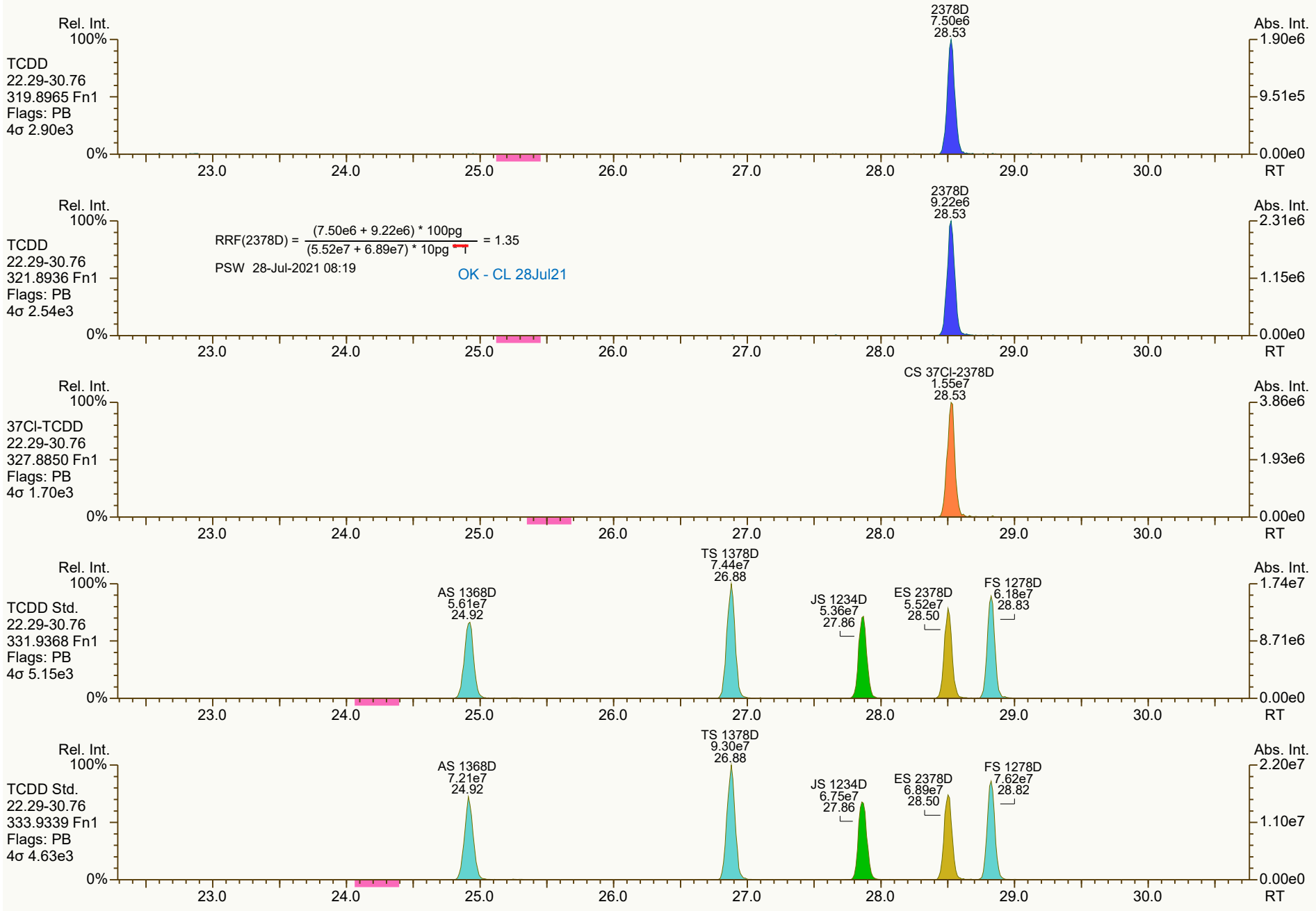
44.0
44.5
45.0


Rel. Int.
100%
0%
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.90e3
2378D
7.50e6
28.53
1.90e6
9.51e5
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.54e3
RRF(2378D) = (7.50e6 + 9.22e6) * 100pg / (5.52e7 + 6.89e7) * 10pg = 1.35
PSW 28-Jul-2021 08:19
OK - CL 28Jul21
2378D
9.22e6
28.53
2.31e6
1.15e6
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.70e3
CS 37Cl-2378D
1.55e7
28.53
3.86e6
1.93e6
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.15e3
AS 1368D
5.61e7
24.92
TS 1378D
7.44e7
26.88
JS 1234D
5.36e7
27.86
ES 2378D
5.52e7
28.50
FS 1278D
6.18e7
28.83
1.74e7
8.71e6
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.63e3
AS 1368D
7.21e7
24.92
TS 1378D
9.30e7
26.88
JS 1234D
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ES 2378D
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FS 1278D
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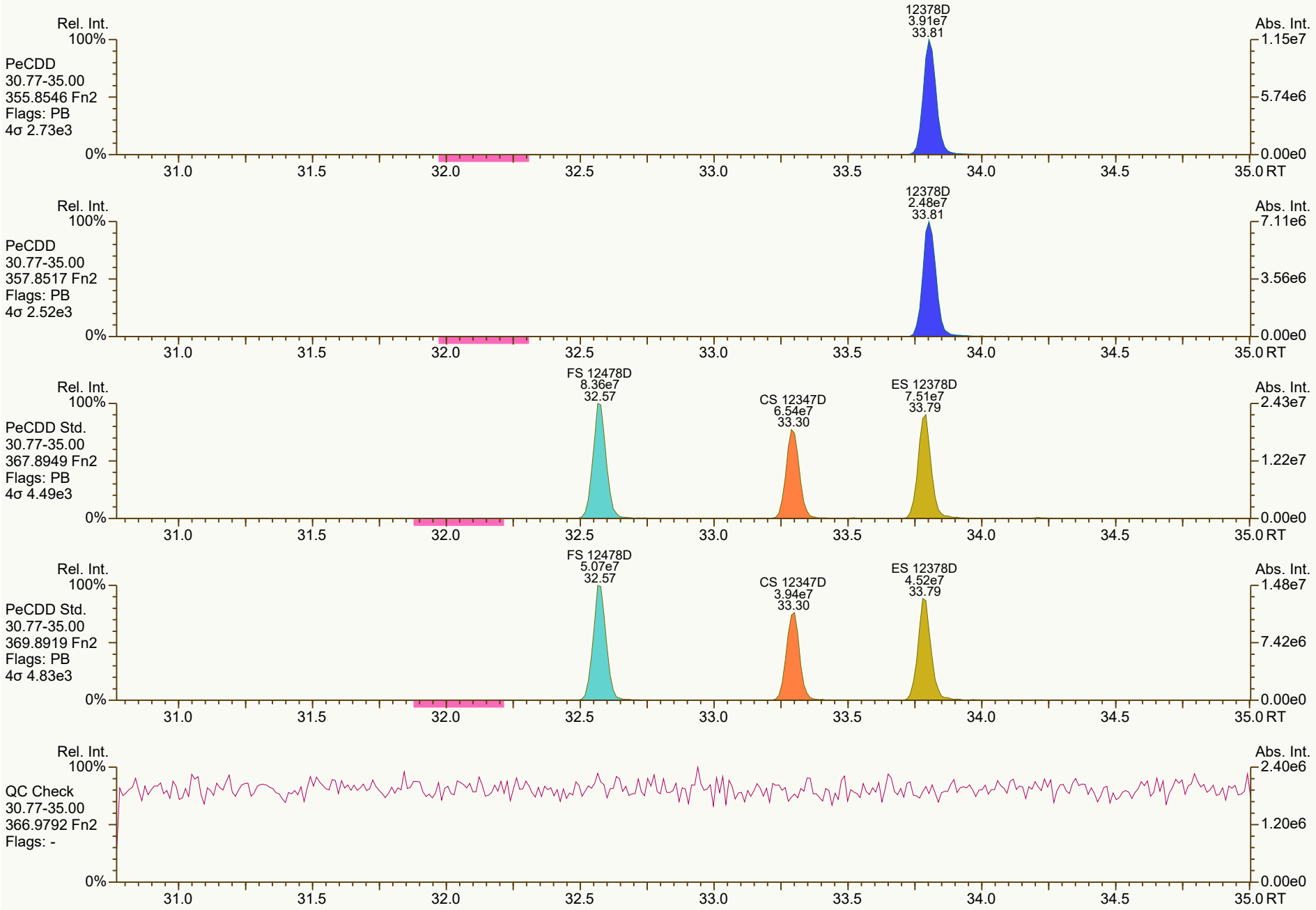
28.82
2.20e7
1.10e7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PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.73e3
0%
12378D
3.91e7
33.81
Abs. Int.
1.15e7
5.74e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.52e3
0%
12378D
2.48e7
33.81
Abs. Int.
7.11e6
3.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 4.49e3
0%
FS 12478D
8.36e7
32.57
CS 12347D
6.54e7
33.30
ES 12378D
7.51e7
33.79
Abs. Int.
2.43e7
1.22e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
5.07e7
32.57
CS 12347D
3.94e7
33.30
ES 12378D
4.52e7
33.79
Abs. Int.
1.48e7
7.42e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.40e6
1.20e6
0.00e0
31.0
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32.0
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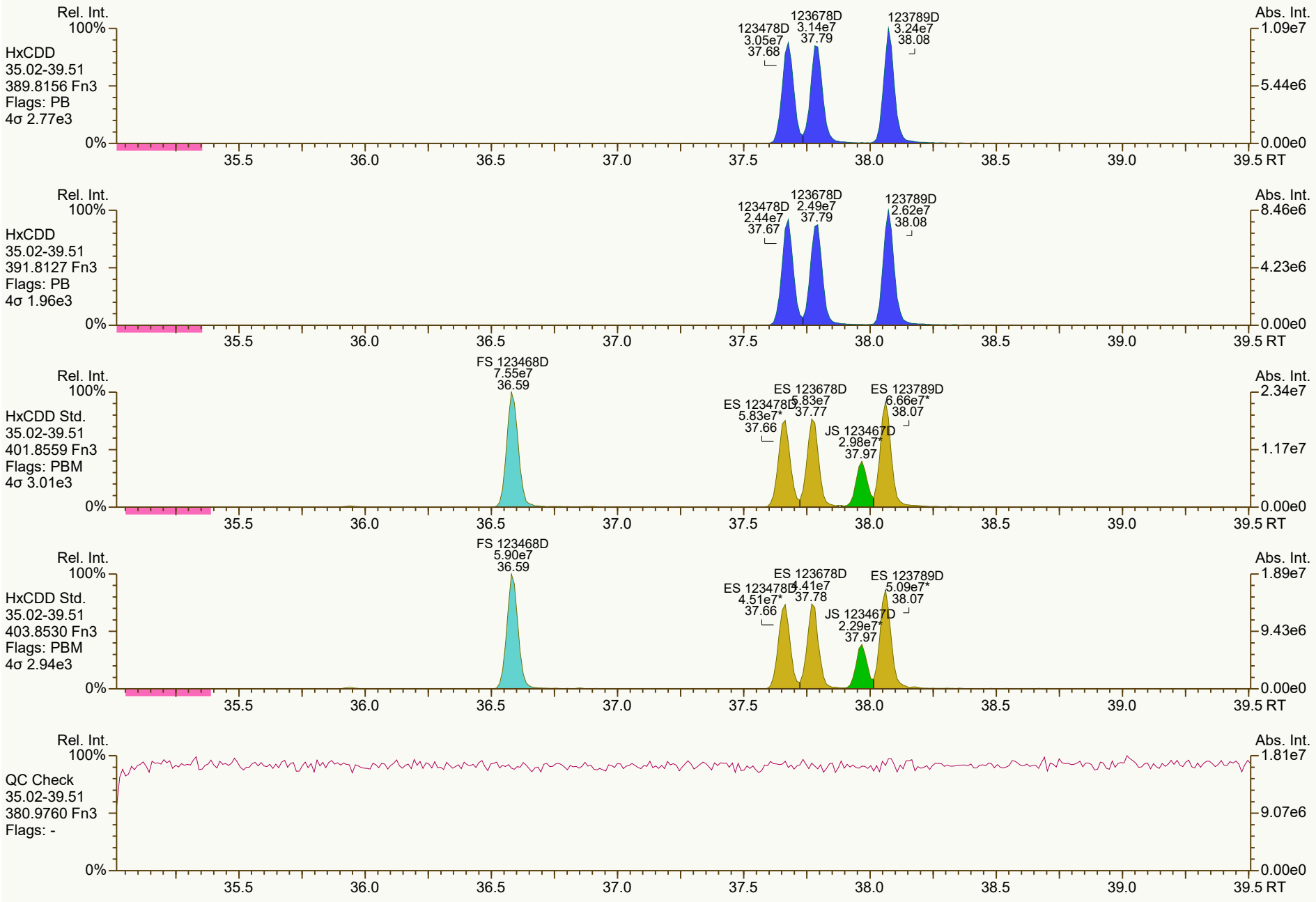
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.77e3
123478D 3.05e7 37.68
123678D 3.14e7 37.79
123789D 3.24e7 38.08
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.96e3
123478D 2.44e7 37.67
123678D 2.49e7 37.79
123789D 2.62e7 38.08
8.46e6
4.23e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.01e3
FS 123468D 7.55e7 36.59
ES 123478D 5.83e7* 37.66
ES 123678D 5.83e7 37.77
JS 123467D 2.98e7* 37.97
ES 123789D 6.66e7* 38.07
2.34e7
1.17e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.94e3
FS 123468D 5.90e7 36.59
ES 123478D 4.51e7* 37.66
ES 123678D 4.41e7 37.78
JS 123467D 2.29e7* 37.97
ES 123789D 5.09e7* 38.07
1.89e7
9.43e6
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
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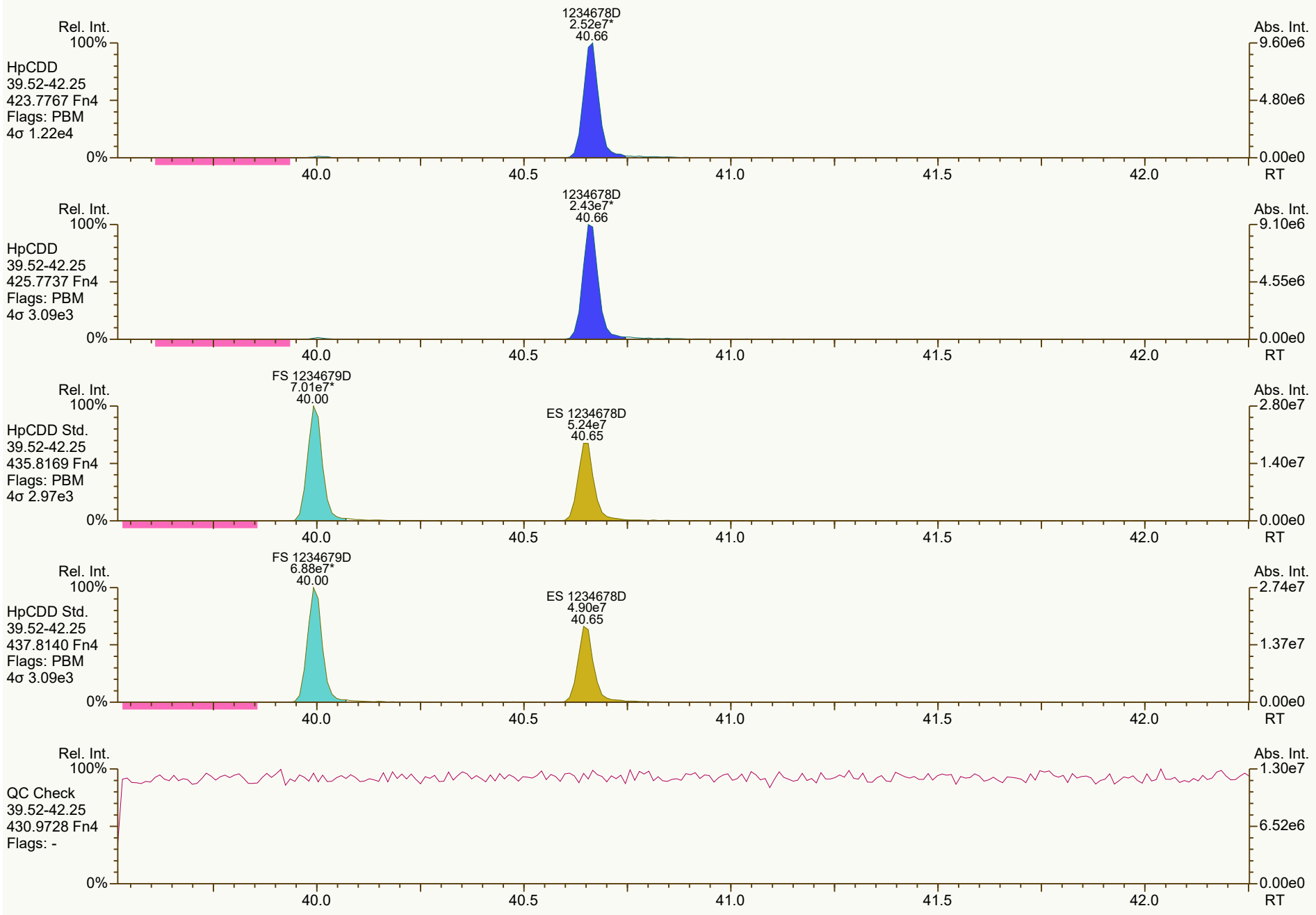
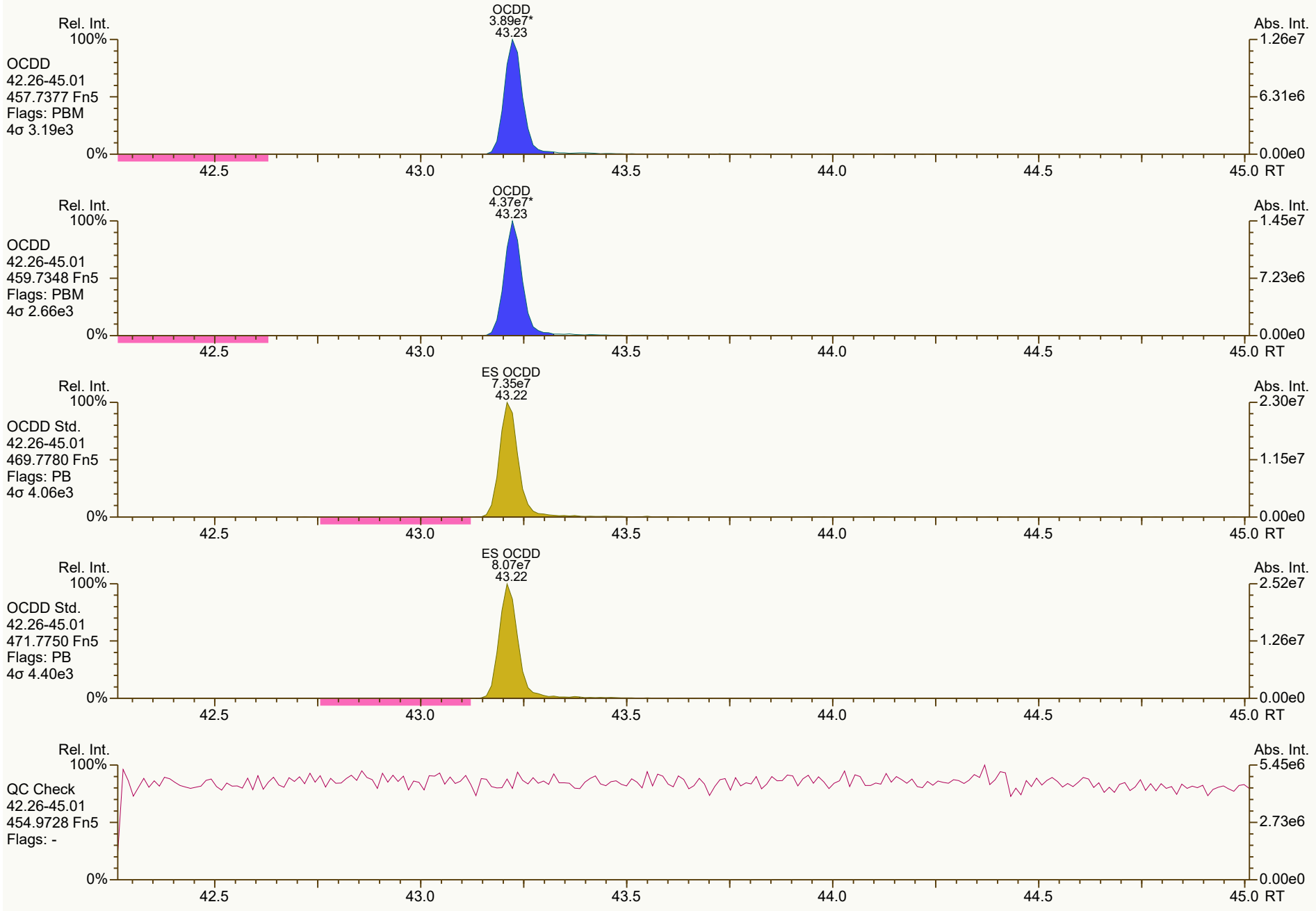
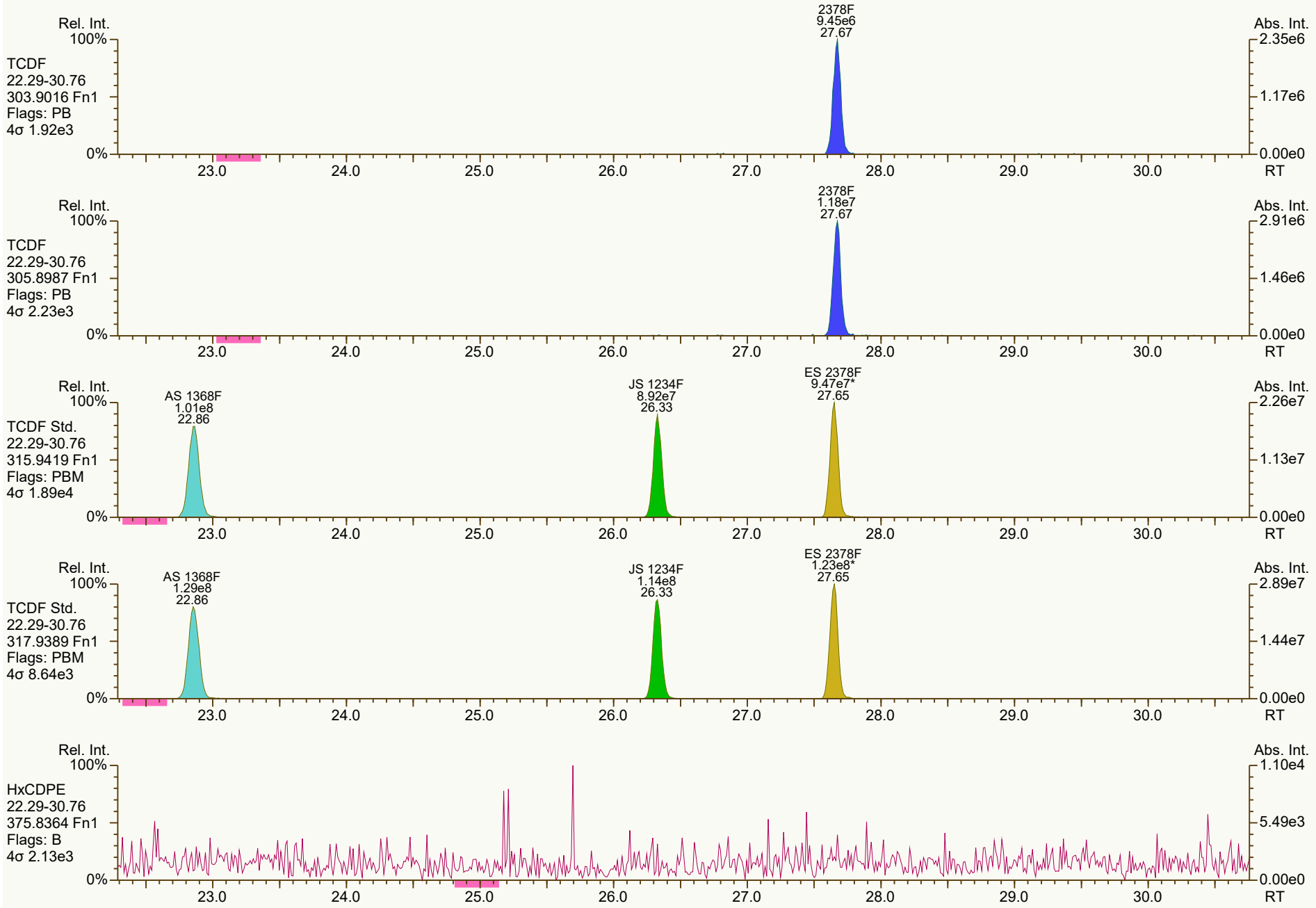
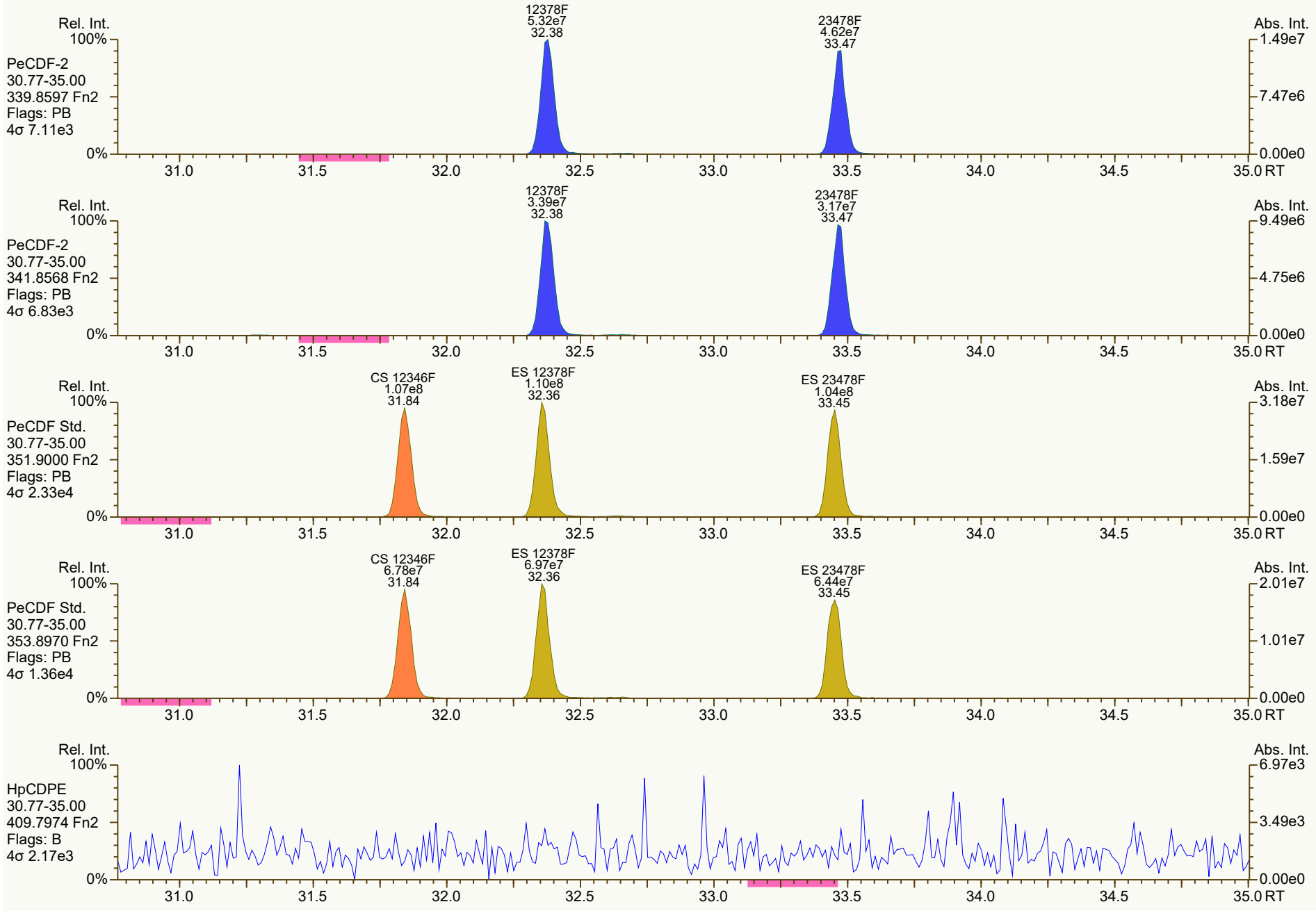
9.07e6

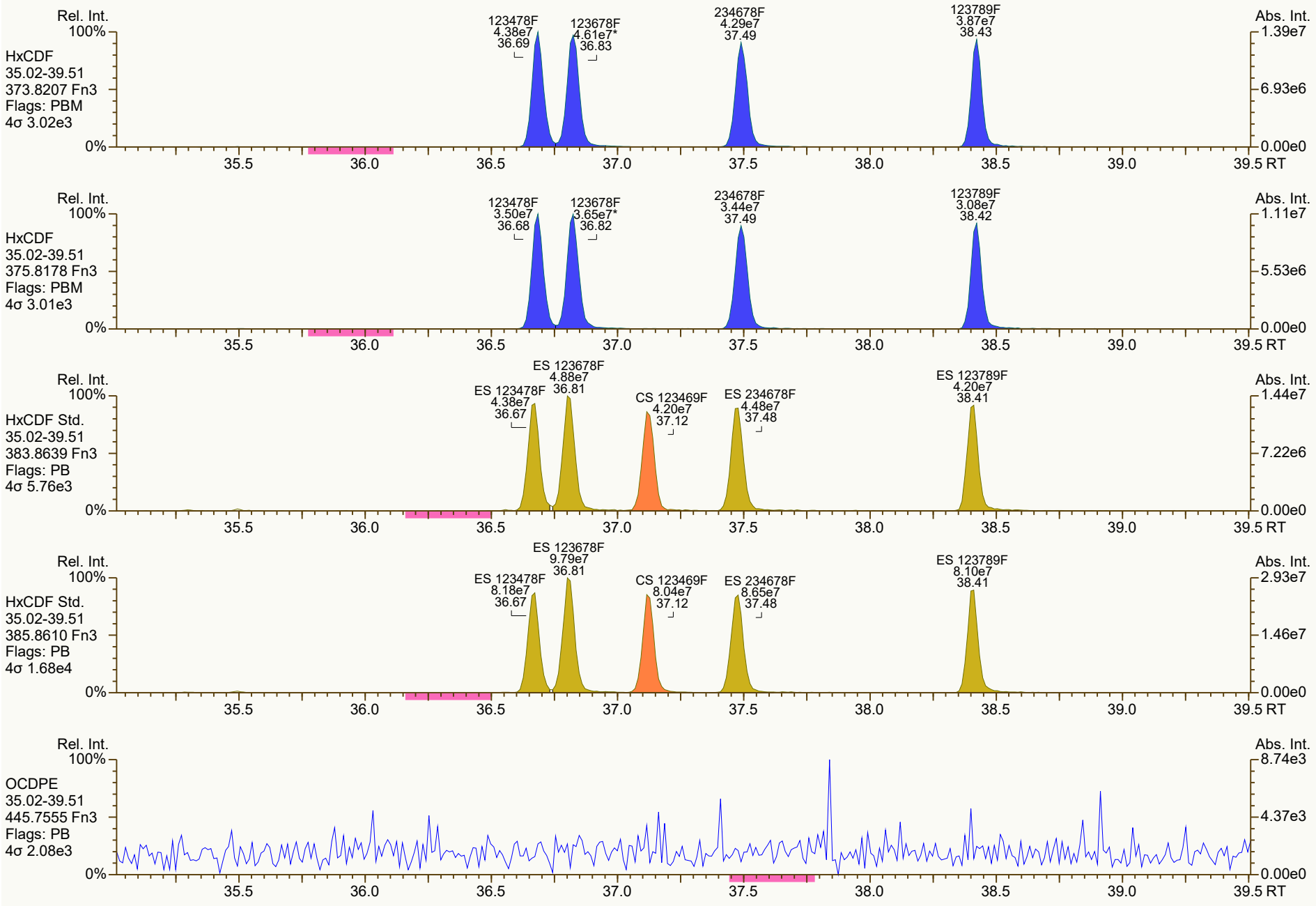

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 1.22e4
0%
1234678D
2.52e7*
40.66
Abs. Int.
9.60e6
4.80e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 3.09e3
0%
1234678D
2.43e7*
40.66
Abs. Int.
9.10e6
4.55e6
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 2.97e3
0%
FS 1234679D
7.01e7*
40.00
ES 1234678D
5.24e7
40.65
Abs. Int.
2.80e7
1.40e7
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 3.09e3
0%
FS 1234679D
6.88e7*
40.00
ES 1234678D
4.90e7
40.65
Abs. Int.
2.74e7
1.37e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.52e6
0.00e0
RT

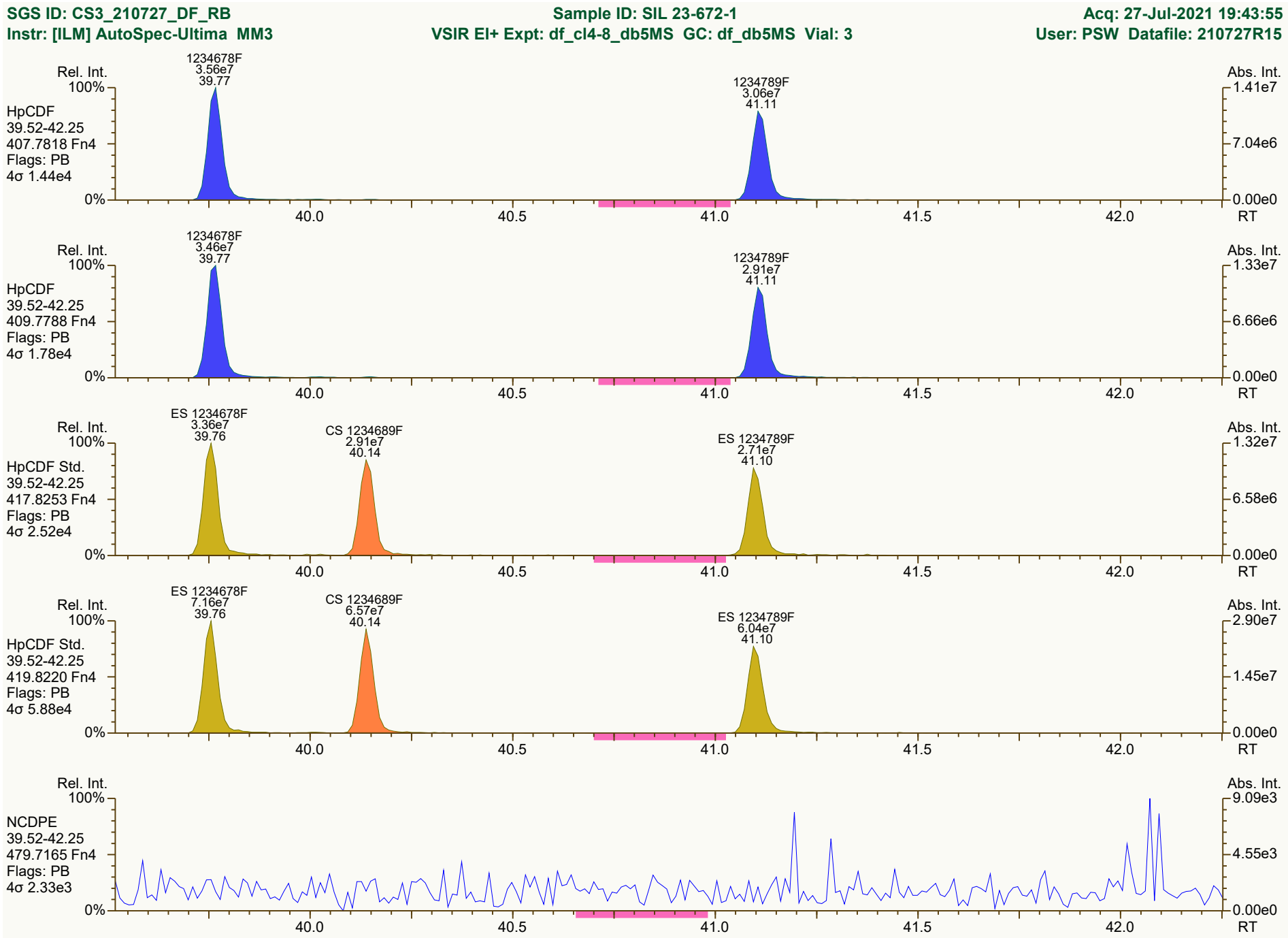

OCDD
3.89e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.19e3
0%
Abs. Int.
1.26e7
6.31e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.37e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.66e3
0%
Abs. Int.
1.45e7
7.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.35e7
43.22
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.06e3
0%
Abs. Int.
2.30e7
1.15e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.07e7
43.22
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 4.40e3
0%
Abs. Int.
2.52e7
1.26e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
5.45e6
2.73e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

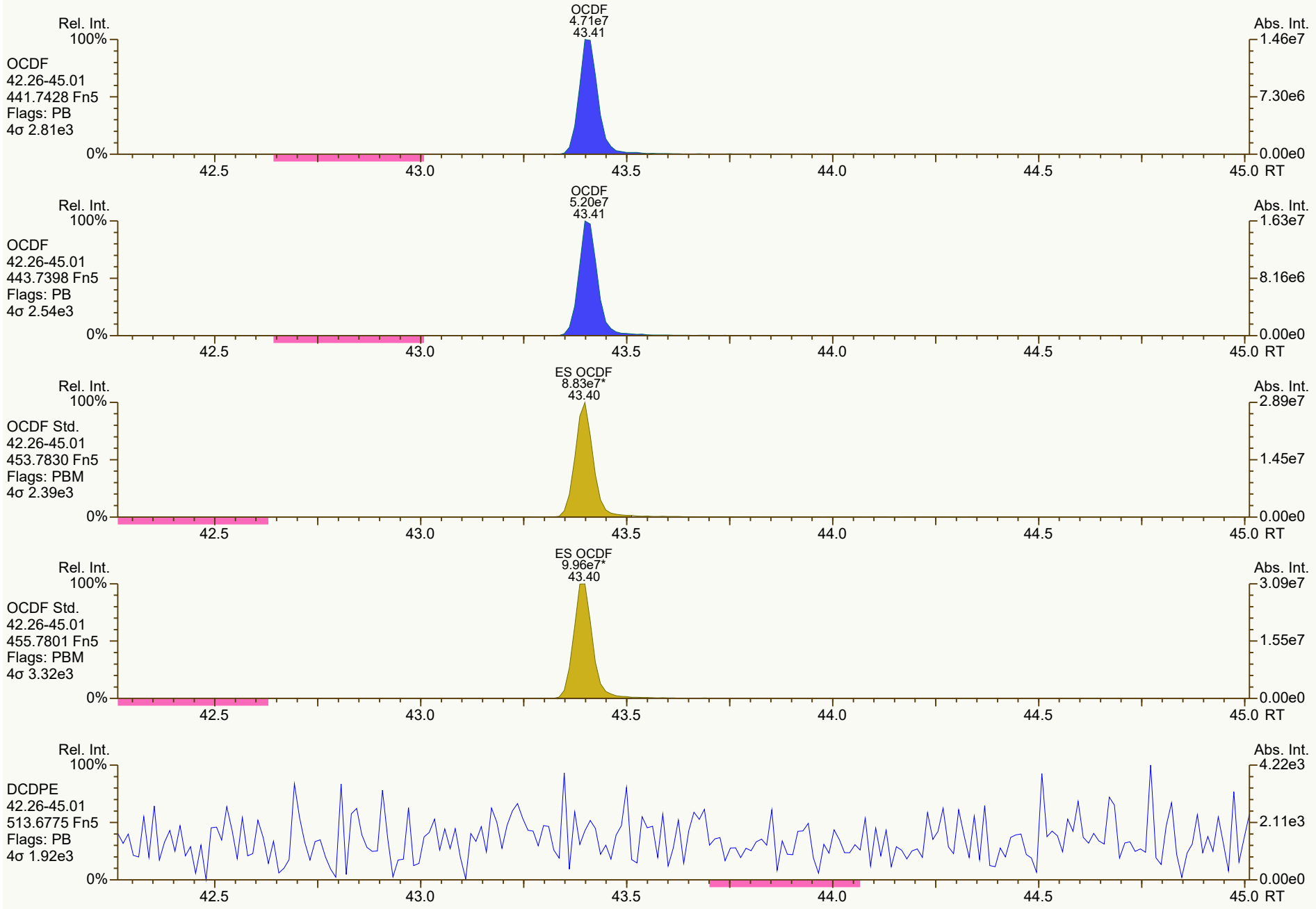

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 1.92e3
0%
2378F
9.45e6
27.67
Abs. Int.
2.35e6
1.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.23e3
0%
2378F
1.18e7
27.67
Abs. Int.
2.91e6
1.46e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PBM
4σ 1.89e4
0%
AS 1368F
1.01e8
22.86
JS 1234F
8.92e7
26.33
ES 2378F
9.47e7*
27.65
Abs. Int.
2.26e7
1.13e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PBM
4σ 8.64e3
0%
AS 1368F
1.29e8
22.86
JS 1234F
1.14e8
26.33
ES 2378F
1.23e8*
27.65
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.13e3
0%
Abs. Int.
1.10e4
5.49e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.70e4
1.35e4
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.78e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.25e4
6.25e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.56e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 7.11e3
0%
12378F
5.32e7
32.38
23478F
4.62e7
33.47
Abs. Int.
1.49e7
7.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 6.83e3
0%
12378F
3.39e7
32.38
23478F
3.17e7
33.47
Abs. Int.
9.49e6
4.75e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.33e4
0%
CS 12346F
1.07e8
31.84
ES 12378F
1.10e8
32.36
ES 23478F
1.04e8
33.45
Abs. Int.
3.18e7
1.59e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 1.36e4
0%
CS 12346F
6.78e7
31.84
ES 12378F
6.97e7
32.36
ES 23478F
6.44e7
33.45
Abs. Int.
2.01e7
1.01e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.17e3
0%
Abs. Int.
6.97e3
3.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 3.02e3
0%
123478F
4.38e7
36.69
123678F
4.61e7*
36.83
234678F
4.29e7
37.49
123789F
3.87e7
38.43
Abs. Int.
1.39e7
6.93e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 3.01e3
0%
123478F
3.50e7
36.68
123678F
3.65e7*
36.82
234678F
3.44e7
37.49
123789F
3.08e7
38.42
Abs. Int.
1.11e7
5.53e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.76e3
0%
ES 123478F
4.38e7
36.67
ES 123678F
4.88e7
36.81
CS 123469F
4.20e7
37.12
ES 234678F
4.48e7
37.48
ES 123789F
4.20e7
38.41
Abs. Int.
1.44e7
7.22e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.68e4
0%
ES 123478F
8.18e7
36.67
ES 123678F
9.79e7
36.81
CS 123469F
8.04e7
37.12
ES 234678F
8.65e7
37.48
ES 123789F
8.10e7
38.41
Abs. Int.
2.93e7
1.46e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: PB
4σ 2.08e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15
Rel. Int.
Abs. Int.
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.44e4
1234678F
3.56e7
39.77
1234789F
3.06e7
41.11
1.41e7
7.04e6
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.78e4
1234678F
3.46e7
39.77
1234789F
2.91e7
41.11
1.33e7
6.66e6
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.52e4
ES 1234678F
3.36e7
39.76
CS 1234689F
2.91e7
40.14
ES 1234789F
2.71e7
41.10
1.32e7
6.58e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.88e4
ES 1234678F
7.16e7
39.76
CS 1234689F
6.57e7
40.14
ES 1234789F
6.04e7
41.10
2.90e7
1.45e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.33e3
9.09e3
4.55e3
0.00e0
100%
0%
40.0
40.5
41.0
41.5
42.0
RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0218, 7977, 3988 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 11 of 12


OCDF
4.71e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.81e3
0%
Abs. Int.
1.46e7
7.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.20e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.54e3
0%
Abs. Int.
1.63e7
8.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.83e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PBM
4σ 2.39e3
0%
Abs. Int.
2.89e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.96e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PBM
4σ 3.32e3
0%
Abs. Int.
3.09e7
1.55e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 1.92e3
0%
Abs. Int.
4.22e3
2.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	2.48E+07	0.79	Y	1.34	1.22	-9%
12378-PeCDD	33.81	9.55E+07	1.55	Y	1.06	0.98	-8%
123478-HxCDD	37.68	8.89E+07	1.25	Y	1.06	1.04	-1%
123678-HxCDD	37.80	9.70E+07	1.25	Y	1.08	1.14	5%
123789-HxCDD	38.09	9.52E+07	1.24	Y	1.02	0.95	-7%
1234678-HpCDD	40.67	8.40E+07	1.03	Y	0.97	0.99	1%
OCDD	43.24	1.45E+08	0.90	Y	1.07	1.07	0%
2378-TCDF	27.68	3.32E+07	0.79	Y	0.96	0.95	-1%
12378-PeCDF	32.38	1.28E+08	1.52	Y	0.95	0.87	-8%
23478-PeCDF	33.48	1.47E+08	1.58	Y	0.94	1.00	6%
123478-HxCDF	36.69	1.27E+08	1.27	Y	1.23	1.25	1%
123678-HxCDF	36.83	1.34E+08	1.26	Y	1.13	1.11	-2%
234678-HxCDF	37.50	1.26E+08	1.24	Y	1.15	1.17	1%
123789-HxCDF	38.43	1.13E+08	1.25	Y	1.14	1.10	-3%
1234678-HpCDF	39.77	1.18E+08	1.02	Y	1.36	1.34	-2%
1234789-HpCDF	41.12	9.93E+07	1.03	Y	1.30	1.29	-1%
OCDF	43.42	1.67E+08	0.90	Y	1.03	1.02	-1%
ES 2378-TCDD	28.51	2.04E+08	0.81	Y	1.03	0.96	-7%
ES 12378-PeCDD	33.795	1.95E+08	1.65	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.667	1.70E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.781	1.70E+08	1.29	Y	0.97	0.97	0%
ES 123789-HxCDD	38.071	2.01E+08	1.25	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.656	1.70E+08	1.05	Y	0.99	0.97	-2%
ES OCDD	43.225	2.69E+08	0.90	Y	0.78	0.77	-1%
ES 2378-TCDF	27.654	3.51E+08	0.77	Y	1.08	0.99	-9%
ES 12378-PeCDF	32.366	2.97E+08	1.58	Y	0.93	0.84	-10%
ES 23478-PeCDF	33.459	2.95E+08	1.56	Y	0.92	0.84	-9%
ES 123478-HxCDF	36.673	2.04E+08	0.52	Y	1.14	1.17	2%
ES 123678-HxCDF	36.814	2.41E+08	0.53	Y	1.30	1.38	7%
ES 234678-HxCDF	37.481	2.17E+08	0.52	Y	1.20	1.24	3%
ES 123789-HxCDF	38.414	2.06E+08	0.52	Y	1.14	1.18	4%
ES 1234678-HpCDF	39.764	1.76E+08	0.46	Y	0.95	1.01	6%
ES 1234789-HpCDF	41.106	1.54E+08	0.45	Y	0.85	0.88	4%
ES OCDF	43.408	3.28E+08	0.88	Y	0.93	0.94	2%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	2.13E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	3.53E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	8.73E+07	1.21	Y	-	-	-
~~OCDD-a~~	~~43.23~~	~~9.07E+06~~	~~2.21~~	~~Y~~	~~0.07~~	~~0.07~~	~~2%~~
~~OCDF-a~~	~~43.42~~	~~9.95E+06~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~2%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	9.05	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	46.2	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	49.4	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	52.7	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	46.7	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88	-	1.20	Y	50.7	40	-	60	Y
OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65	-	0.89	Y	9.87	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	45.8	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	53.1	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05	-	1.43	Y	50.5	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.2	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05	-	1.43	Y	50.6	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	48.4	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88	-	1.20	Y	49.2	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.7	40	-	60	Y
OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	99.5	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	70	-	130	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	70	-	130	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	140	-	260	Y
CLEANUP STANDARDS n/a - CL 28Jul21											
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	9.05	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	52.7	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	46.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	50.7	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.87	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	45.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	53.1	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.5	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.2	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.4	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	49.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.7	43 - 58	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.5	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

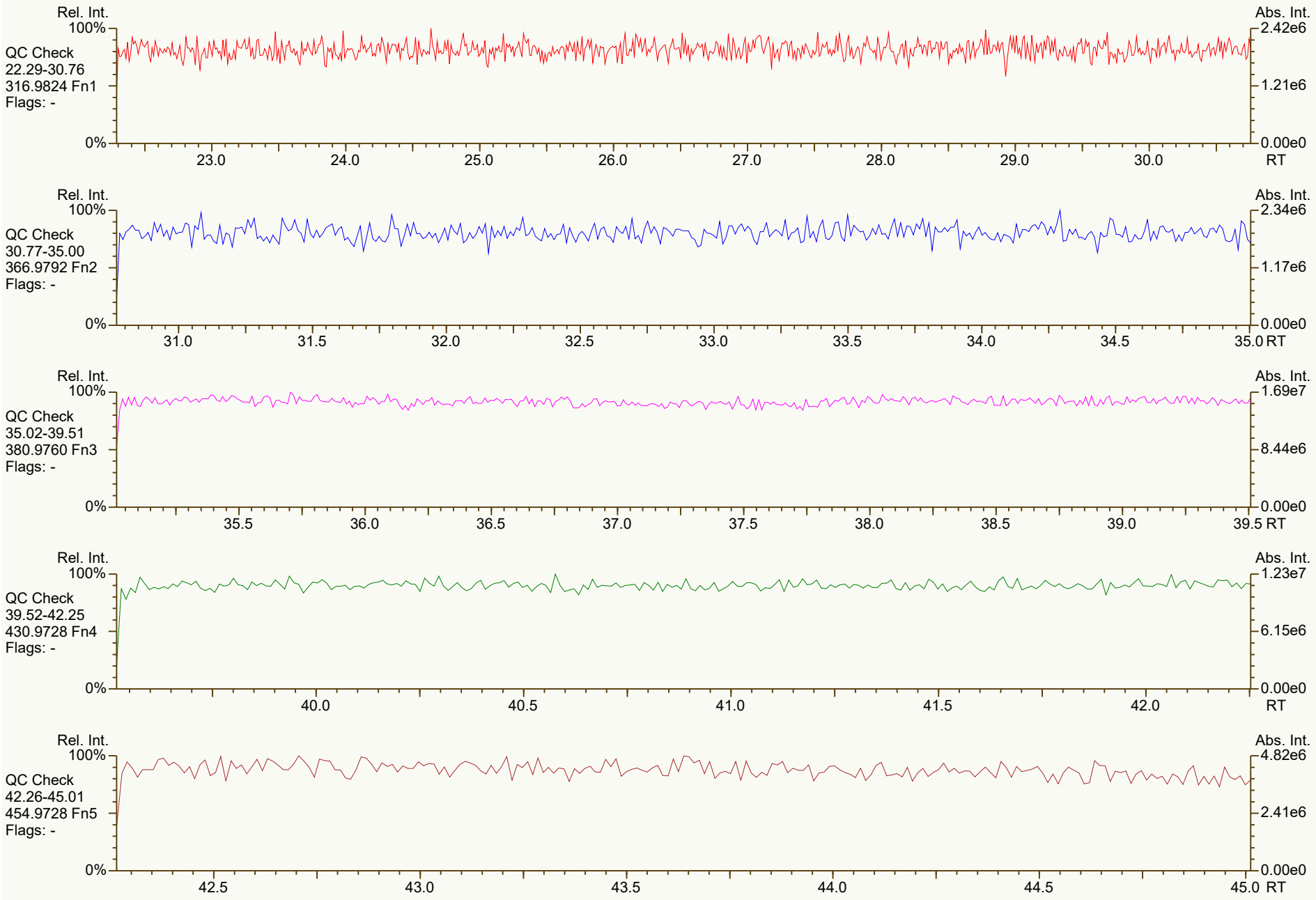
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	77	-	129	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	96	-	415	Y
CLEANUP STANDARDS	n/a - CL 28Jul21										
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:18 Analyst: pw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24.0
25.0
26.0
27.0
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29.0
30.0
RT
Rel. Int.
100%
QC Check
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31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
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8.44e6
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37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
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40.5
41.0
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42.0
RT
Rel. Int.
100%
QC Check
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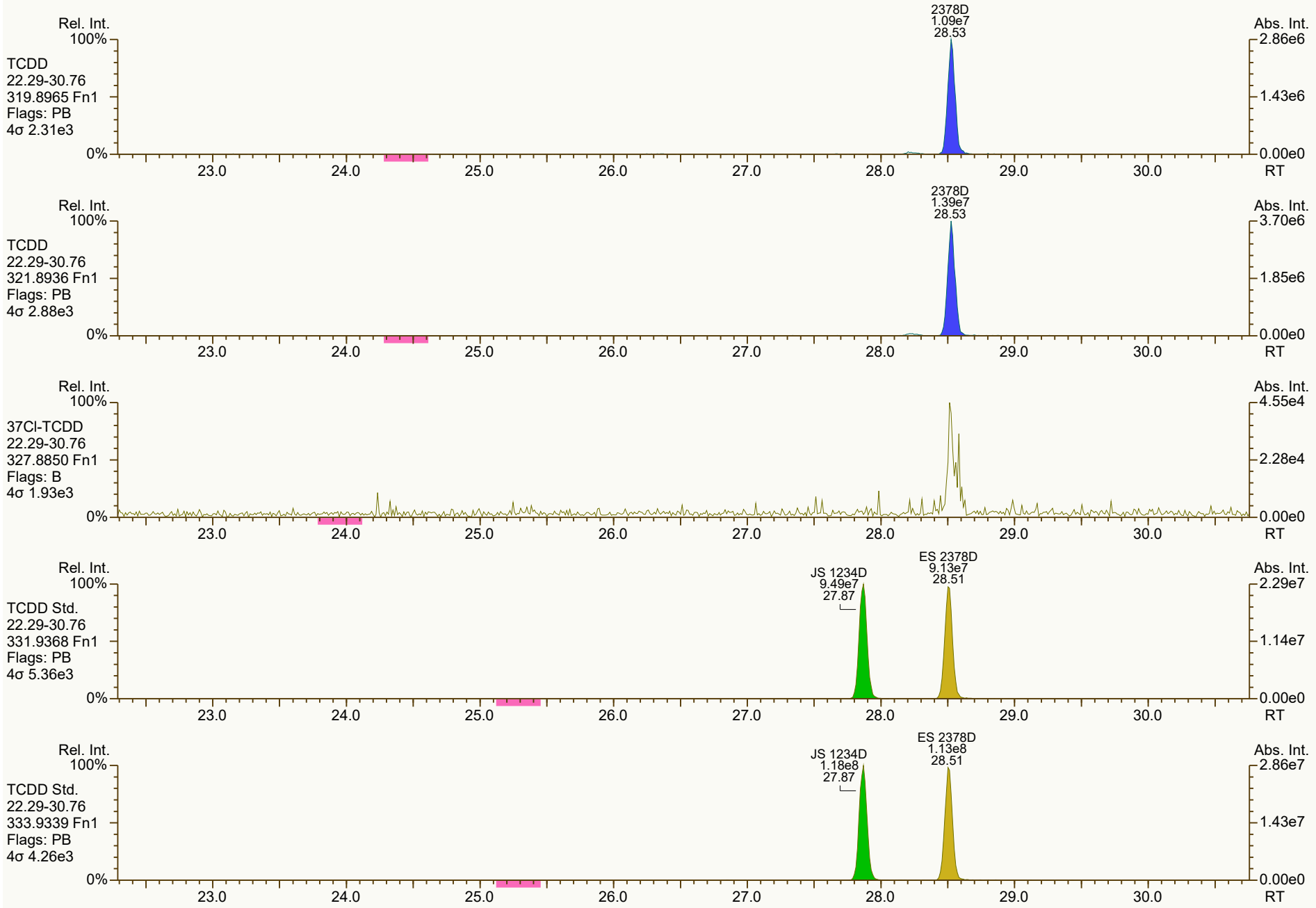
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28.53
Abs. Int.
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1.43e6
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25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
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Flags: PB
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0%
2378D
1.39e7
28.53
Abs. Int.
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1.85e6
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24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
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327.8850 Fn1
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24.0
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26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.36e3
0%
JS 1234D
9.49e7
27.87
ES 2378D
9.13e7
28.51
Abs. Int.
2.29e7
1.14e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.26e3
0%
JS 1234D
1.18e8
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ES 2378D
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28.0
29.0
30.0
RT

SGS ID: CS3_210727_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: ICV SIL 24-11-9
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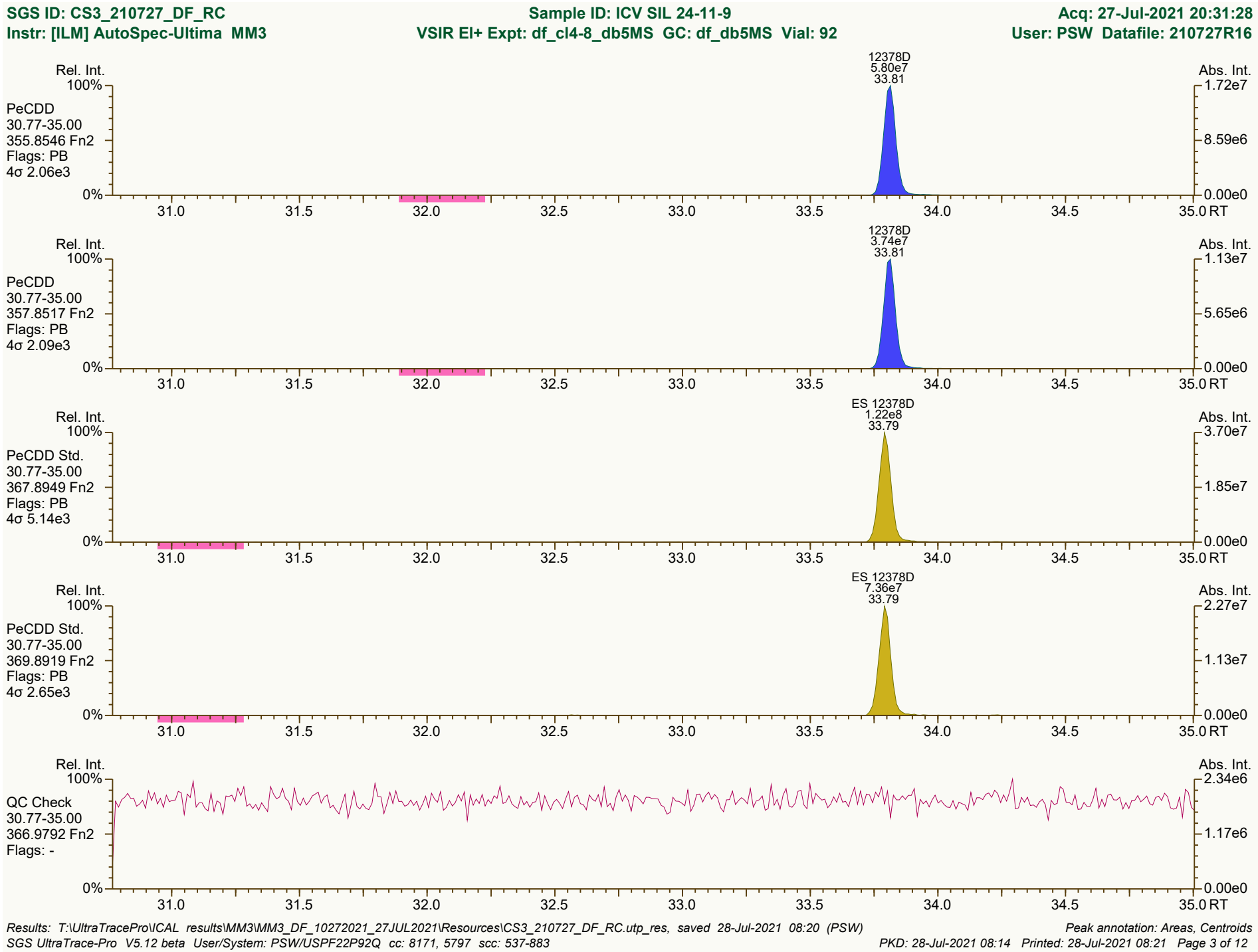

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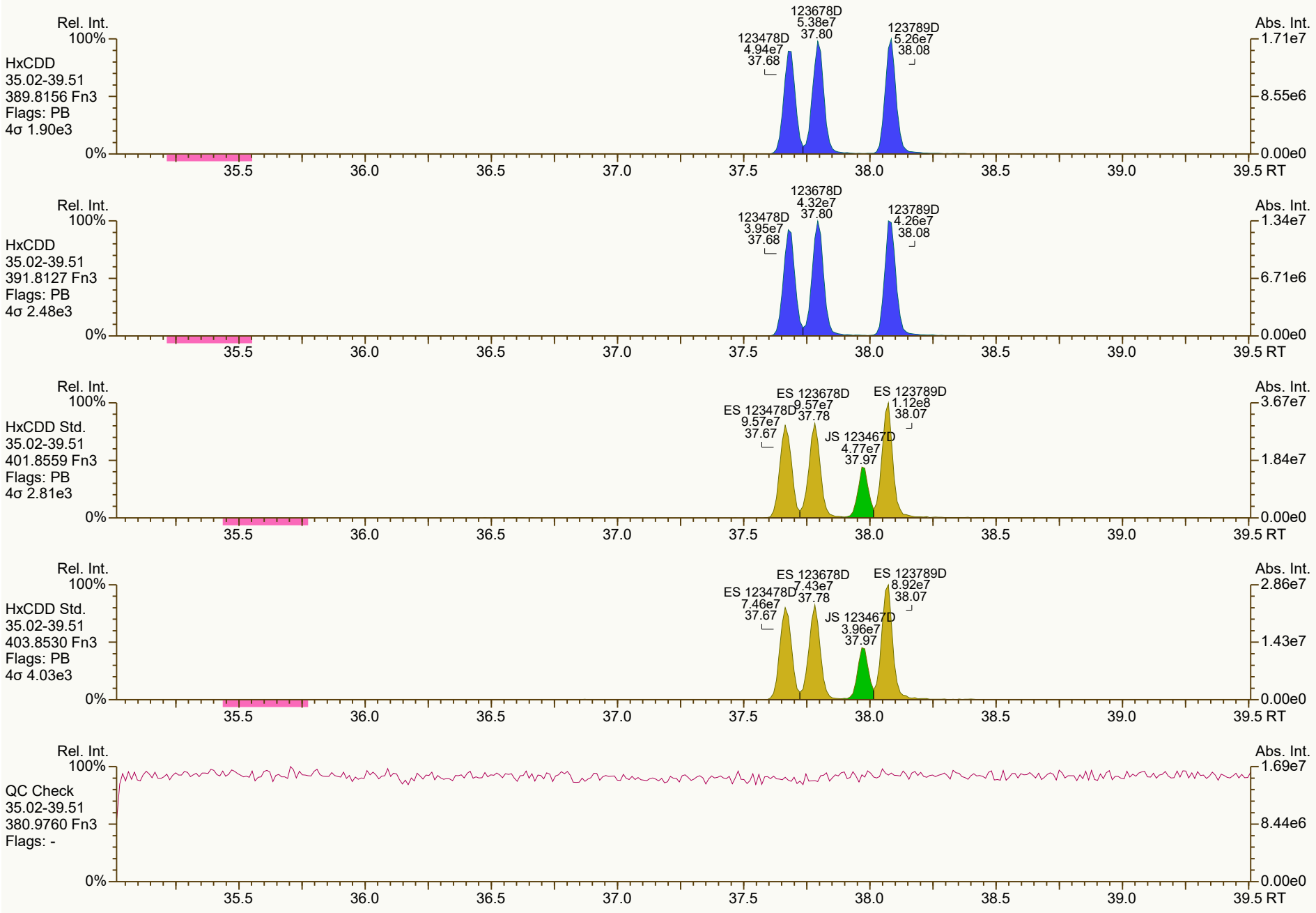
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123478D
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37.68
123789D
5.26e7
38.08
Abs. Int.
1.71e7
8.55e6
0.00e0
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35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.48e3
123678D
4.32e7
37.80
123478D
3.95e7
37.68
123789D
4.26e7
38.08
Abs. Int.
1.34e7
6.71e6
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0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 2.81e3
ES 123678D
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ES 123478D
9.57e7
37.67
ES 123789D
1.12e8
38.07
JS 123467D
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3.67e7
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35.5
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36.5
37.0
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38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
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Abs. Int.
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35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
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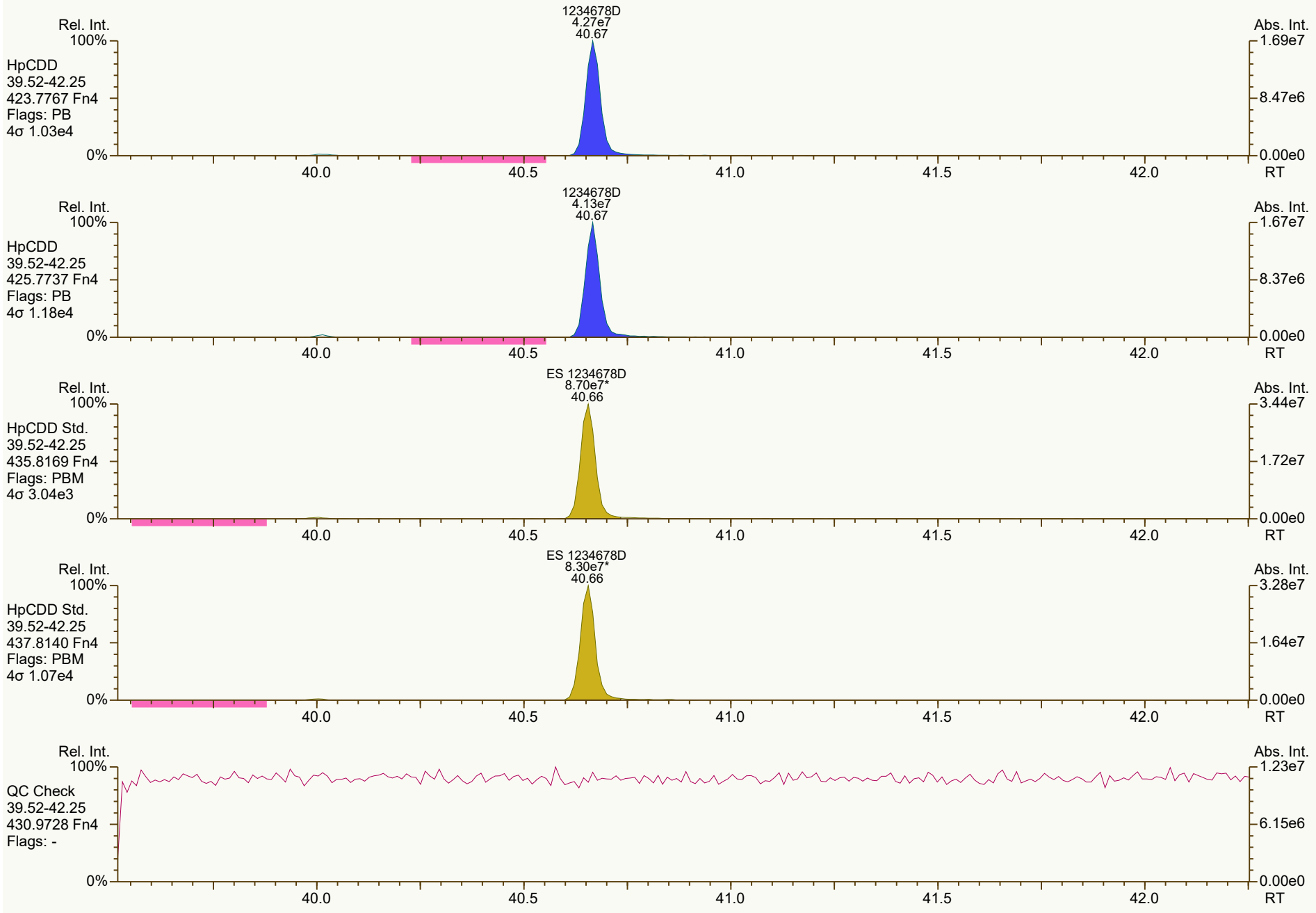
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RT
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40.5
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4.13e7
40.67
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HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
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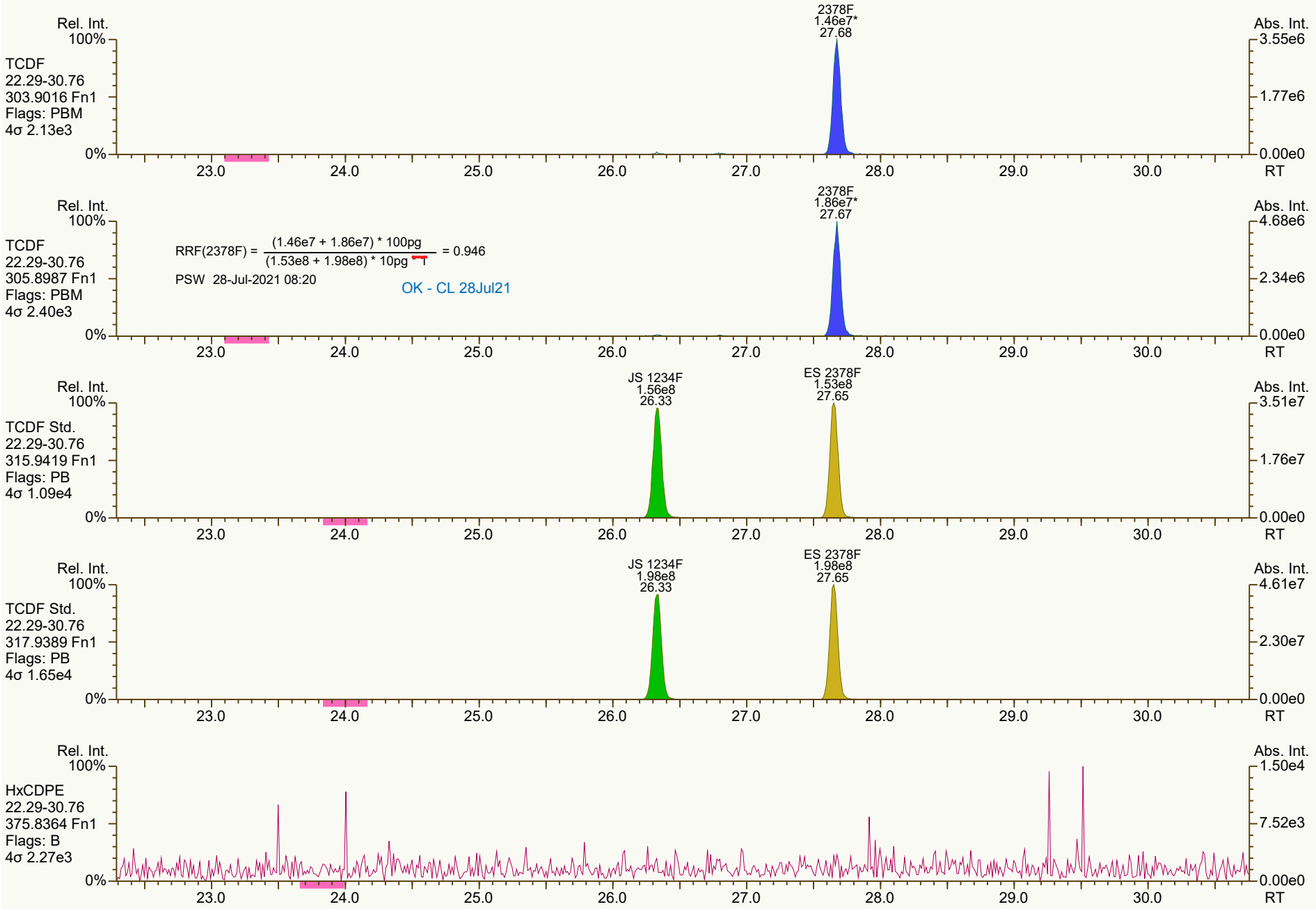
40.66
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 1.07e4
3.28e7
1.64e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.23e7
6.15e6


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.37e3
0%
OCDD
6.83e7*
43.24
Abs. Int.
2.30e7
1.15e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 4.65e3
0%
OCDD
7.63e7*
43.23
Abs. Int.
2.58e7
1.29e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 3.40e3
0%
ES OCDD
1.28e8*
43.22
Abs. Int.
4.34e7
2.17e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.30e3
0%
ES OCDD
1.41e8*
43.22
Abs. Int.
4.68e7
2.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.82e6
2.41e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

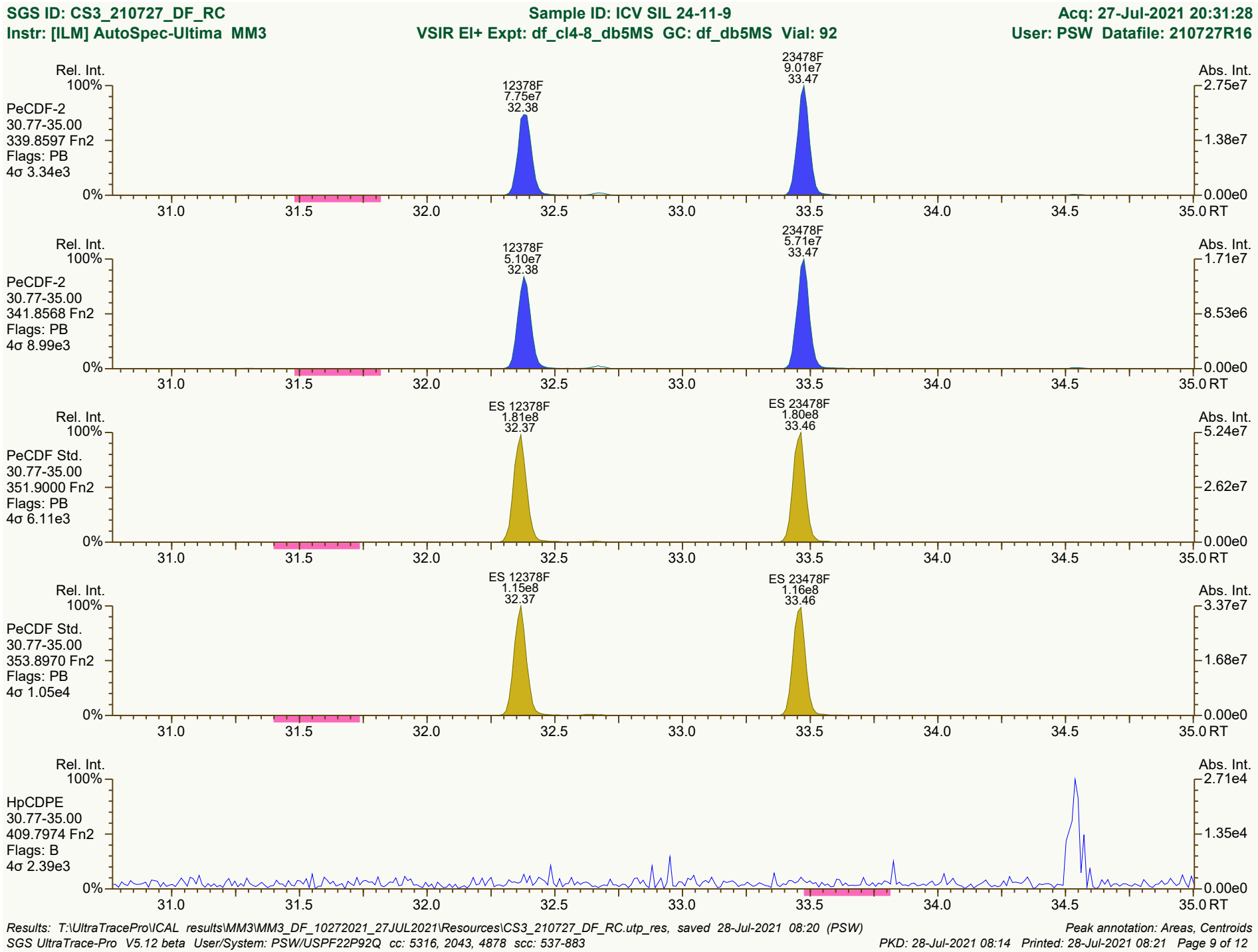

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.13e3
0%
2378F
1.46e7*
27.68
Abs. Int.
3.55e6
1.77e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.40e3
0%
RRF(2378F) = (1.46e7 + 1.86e7) * 100pg / (1.53e8 + 1.98e8) * 10pg * 1 = 0.946
PSW 28-Jul-2021 08:20
OK - CL 28Jul21
2378F
1.86e7*
27.67
Abs. Int.
4.68e6
2.34e6
0.00e0
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.09e4
0%
JS 1234F
1.56e8
26.33
ES 2378F
1.53e8
27.65
Abs. Int.
3.51e7
1.76e7
0.00e0
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.65e4
0%
JS 1234F
1.98e8
26.33
ES 2378F
1.98e8
27.65
Abs. Int.
4.61e7
2.30e7
0.00e0
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.27e3
0%
Abs. Int.
1.50e4
7.52e3
0.00e0


Rel. Int.
100%
0%
Abs. Int.
1.31e4
6.54e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.61e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.73e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.05e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.42e6
1.21e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

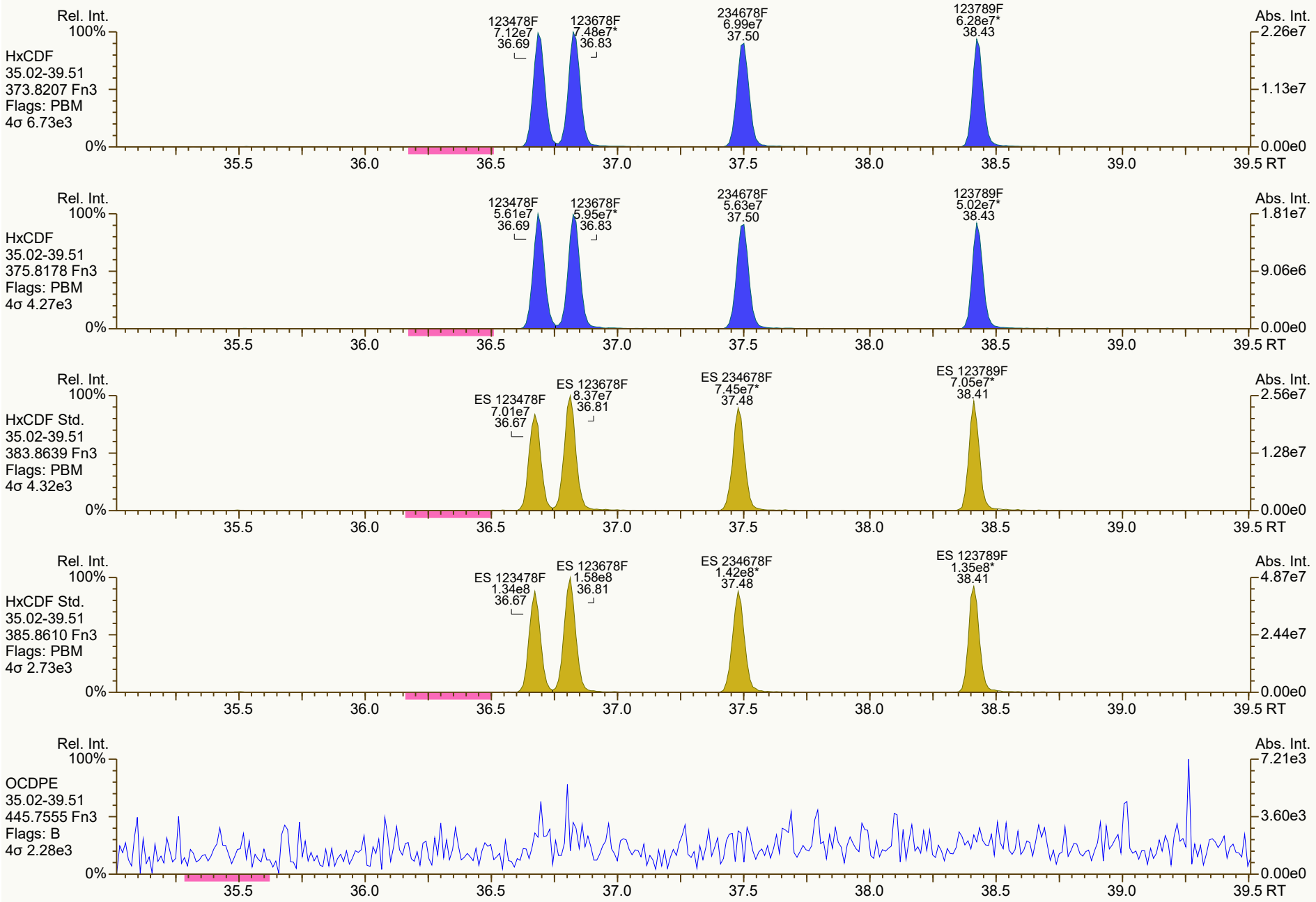
SGS ID: CS3_210727_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

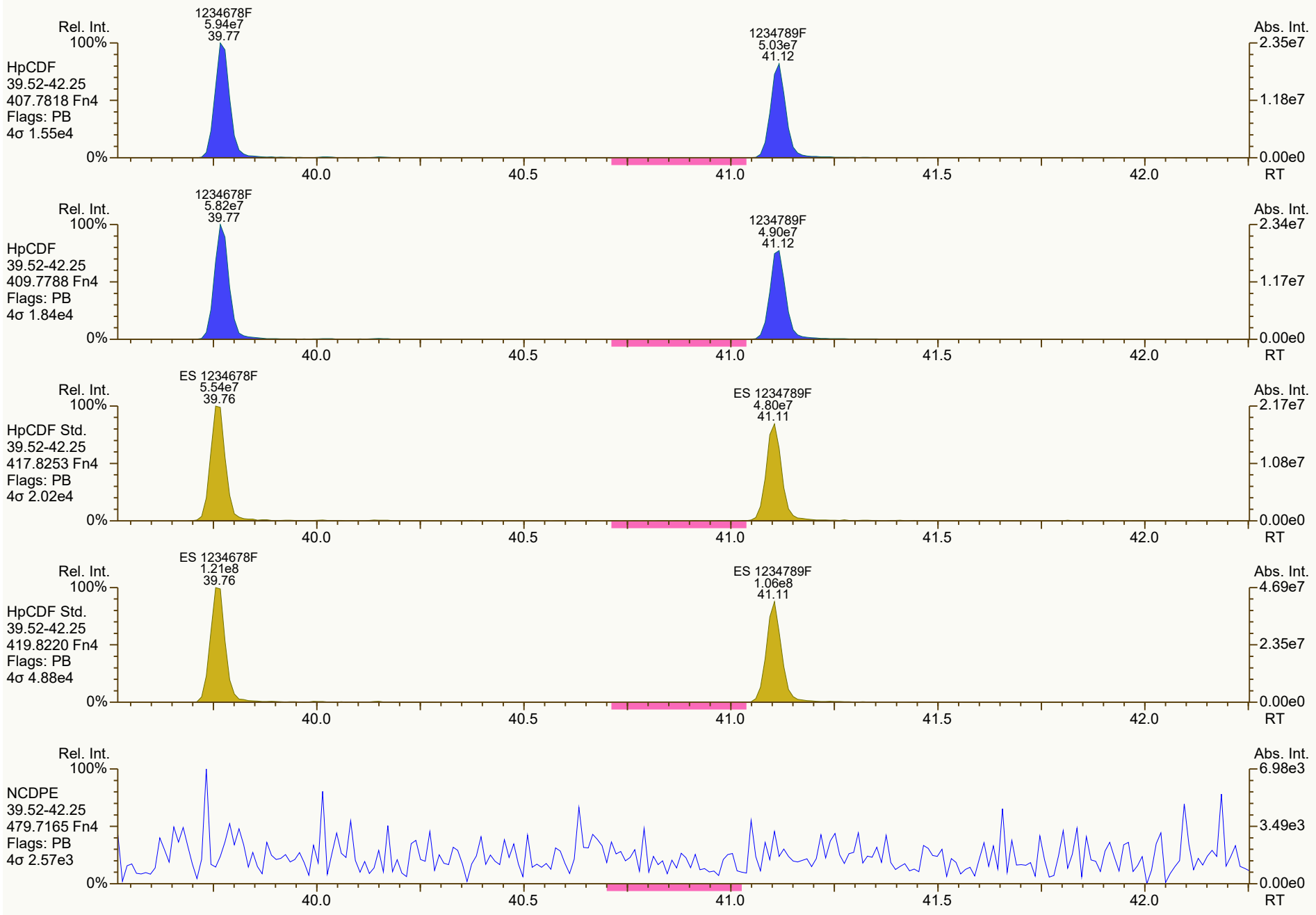
Sample ID: ICV SIL 24-11-9
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92

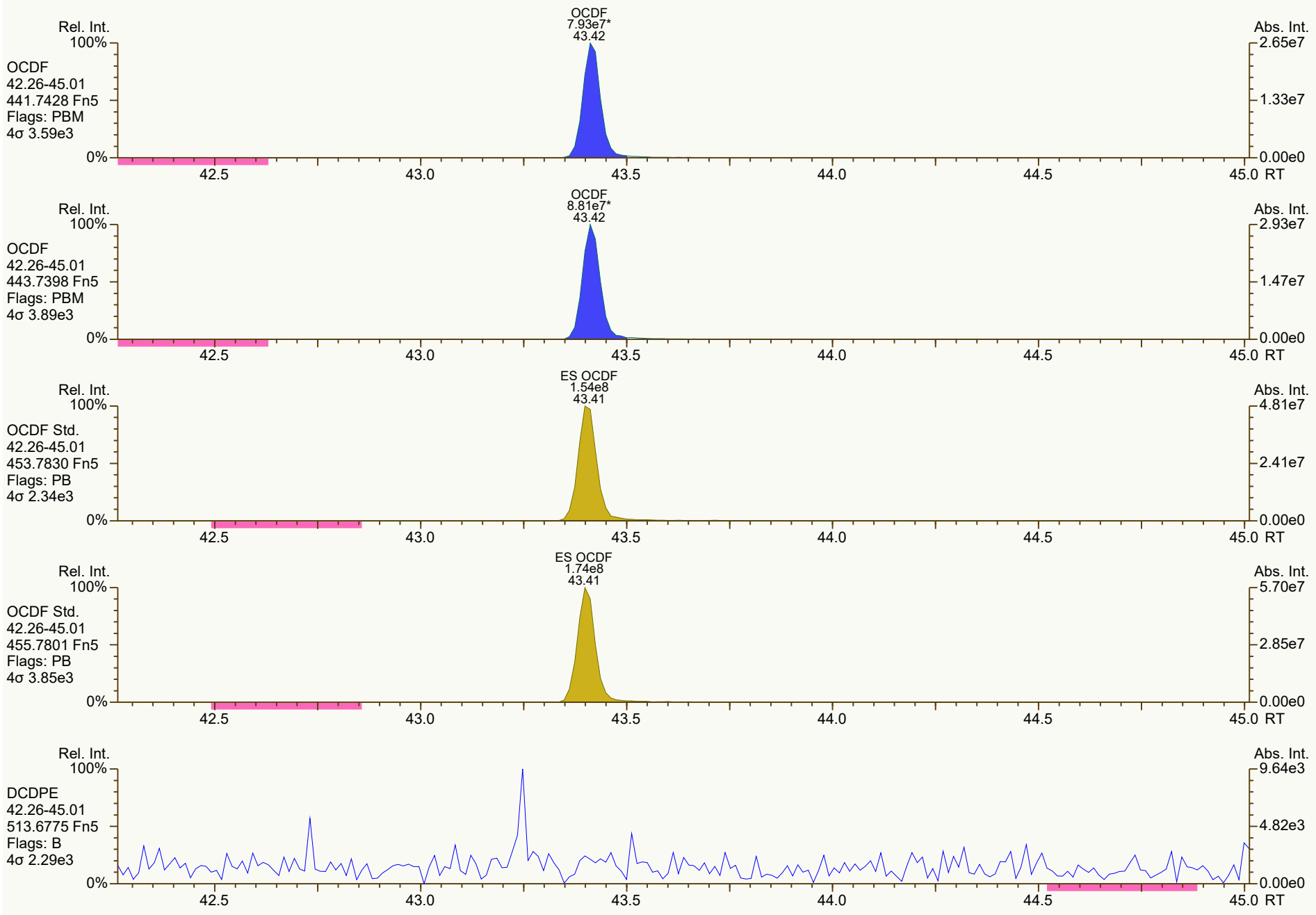
Acq: 27-Jul-2021 20:31:28
User: PSW Datafile: 210727R16



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5316, 2043, 4878 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 6.73e3
0%
123478F
7.12e7
36.69
123678F
7.48e7*
36.83
234678F
6.99e7
37.50
123789F
6.28e7*
38.43
Abs. Int.
2.26e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 4.27e3
0%
123478F
5.61e7
36.69
123678F
5.95e7*
36.83
234678F
5.63e7
37.50
123789F
5.02e7*
38.43
Abs. Int.
1.81e7
9.06e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 4.32e3
0%
ES 123478F
7.01e7
36.67
ES 123678F
8.37e7
36.81
ES 234678F
7.45e7*
37.48
ES 123789F
7.05e7*
38.41
Abs. Int.
2.56e7
1.28e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.73e3
0%
ES 123478F
1.34e8
36.67
ES 123678F
1.58e8
36.81
ES 234678F
1.42e8*
37.48
ES 123789F
1.35e8*
38.41
Abs. Int.
4.87e7
2.44e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.28e3
0%
Abs. Int.
7.21e3
3.60e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

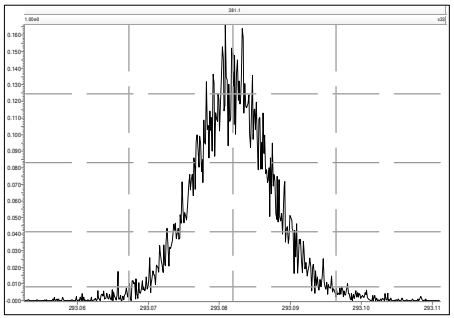

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.55e4
0%
1234678F
5.94e7
39.77
1234789F
5.03e7
41.12
Abs. Int.
2.35e7
1.18e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.84e4
0%
1234678F
5.82e7
39.77
1234789F
4.90e7
41.12
Abs. Int.
2.34e7
1.17e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.02e4
0%
ES 1234678F
5.54e7
39.76
ES 1234789F
4.80e7
41.11
Abs. Int.
2.17e7
1.08e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 4.88e4
0%
ES 1234678F
1.21e8
39.76
ES 1234789F
1.06e8
41.11
Abs. Int.
4.69e7
2.35e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.57e3
0%
Abs. Int.
6.98e3
3.49e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


OCDF
7.93e7*
43.42
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PBM
4σ 3.59e3
0%
Abs. Int.
2.65e7
1.33e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
8.81e7*
43.42
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PBM
4σ 3.89e3
0%
Abs. Int.
2.93e7
1.47e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.54e8
43.41
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 2.34e3
0%
Abs. Int.
4.81e7
2.41e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.74e8
43.41
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 3.85e3
0%
Abs. Int.
5.70e7
2.85e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.29e3
0%
Abs. Int.
9.64e3
4.82e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

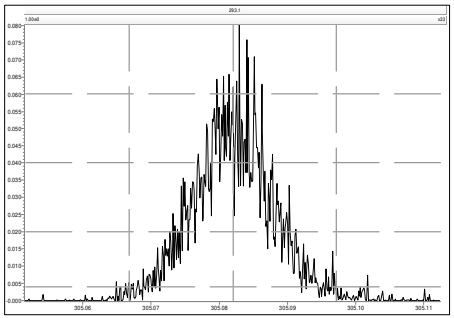
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:15:38 Eastern Daylight Time

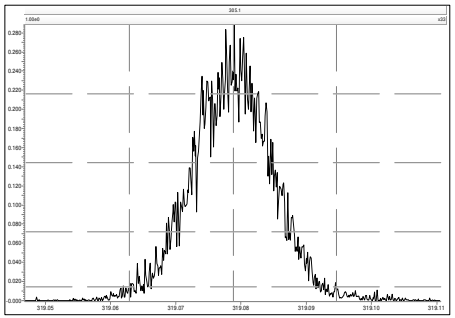
M 292.9824 R 12951



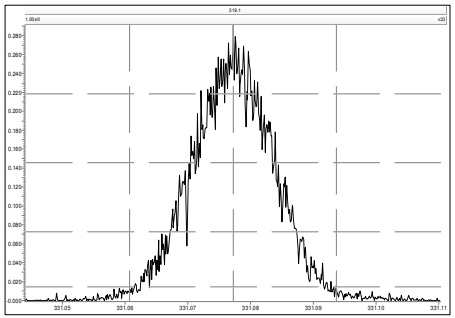
M 304.9824 R 13589



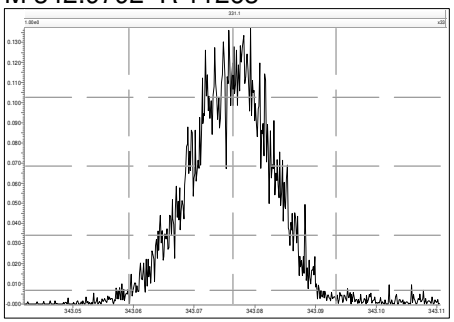
M 318.9792 R 11848



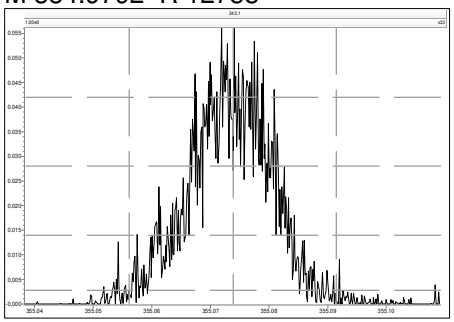
M 330.9792 R 11310



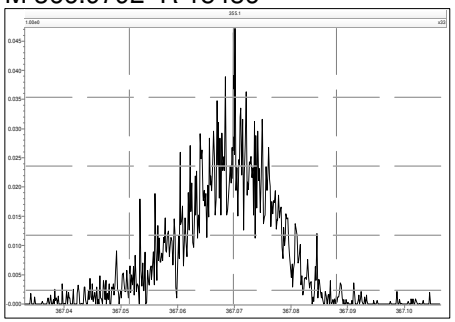
M 342.9792 R 11263



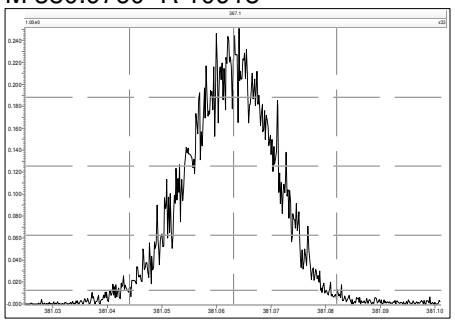
M 354.9792 R 12755



M 366.9792 R 15436



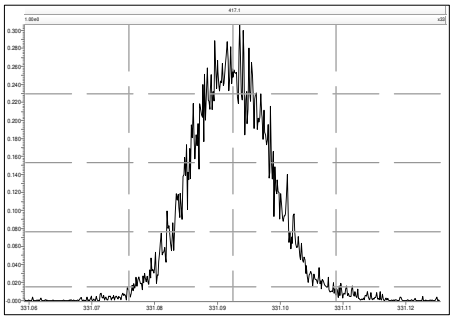
M 380.9760 R 10918



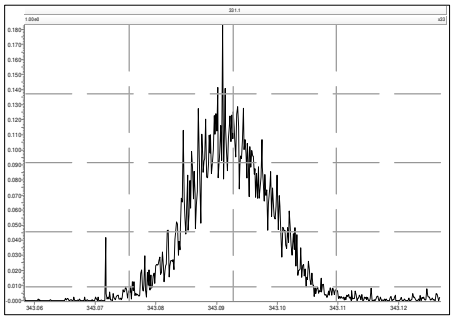
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:03 Eastern Daylight Time

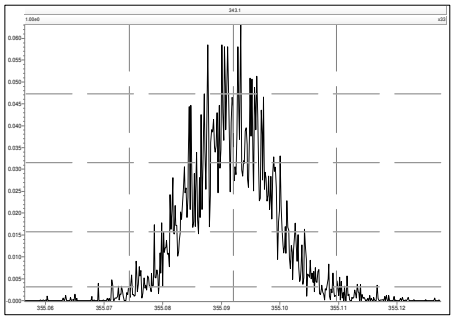
M 330.9792 R 11165



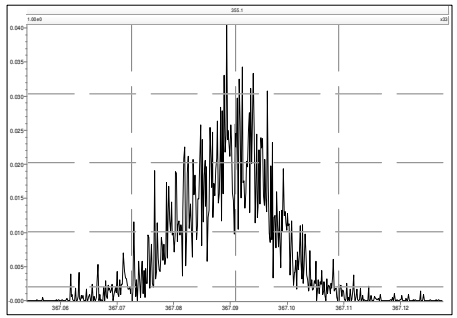
M 342.9792 R 12440



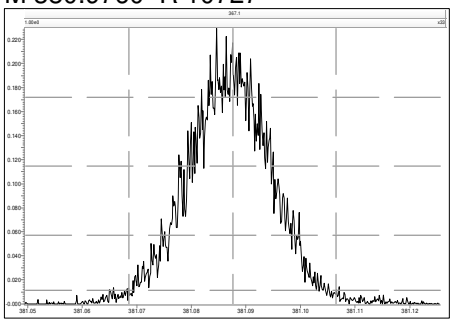
M 354.9792 R 12626



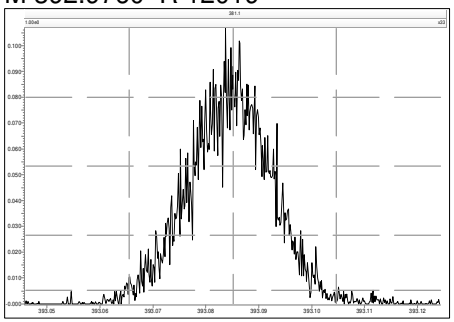
M 366.9792 R 12134



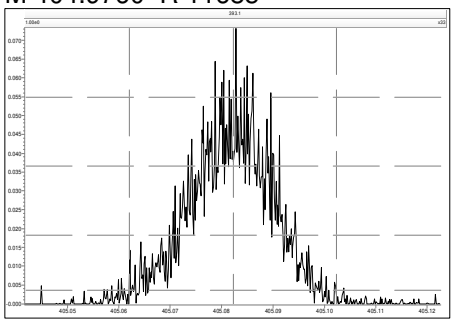
M 380.9760 R 10727



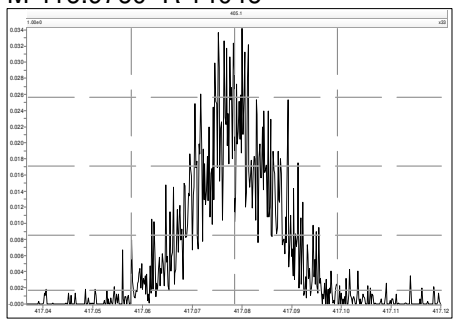
M 392.9760 R 12019



M 404.9760 R 11685



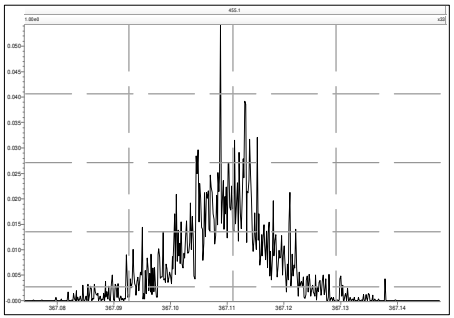
M 416.9760 R 14046



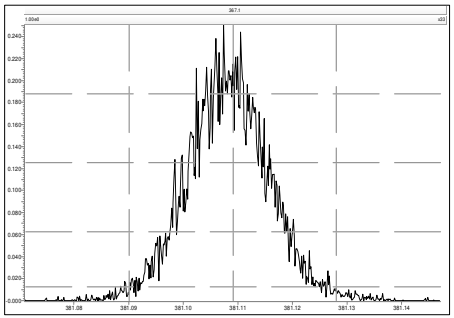
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:24 Eastern Daylight Time

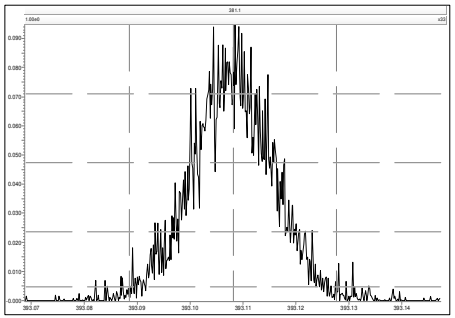
M 366.9792 R 13020



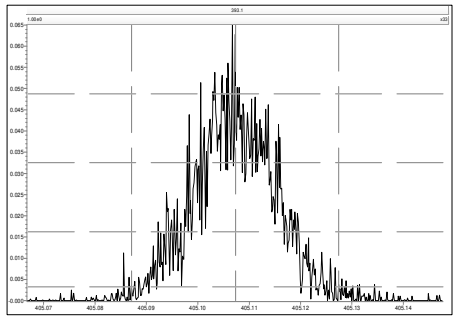
M 380.9760 R 11361



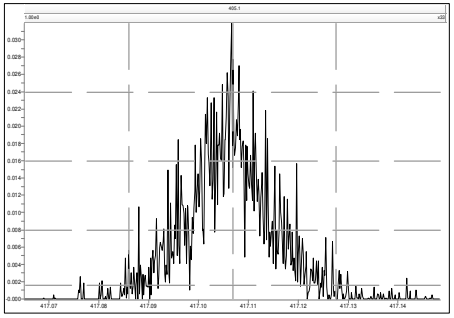
M 392.9760 R 11464



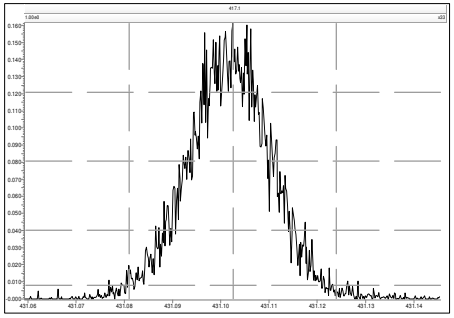
M 404.9760 R 12314



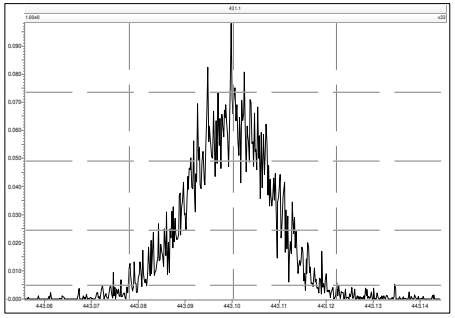
M 416.9760 R 17727



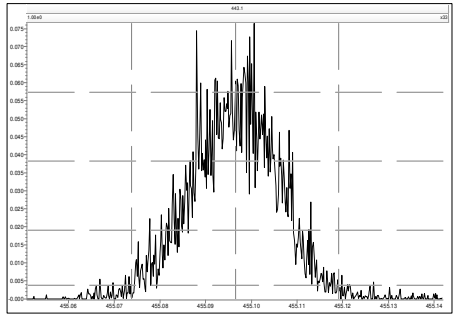
M 430.9728 R 11112



M 442.9728 R 13157



M 454.9728 R 12133



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

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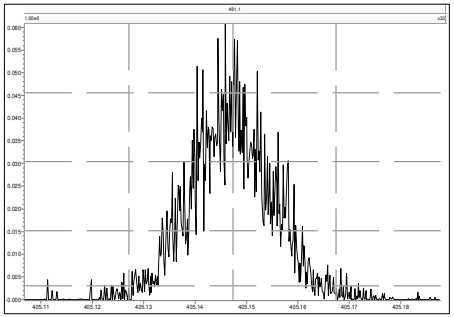
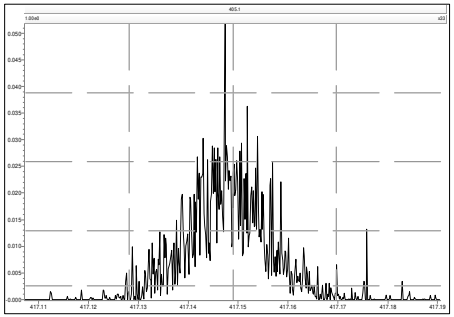
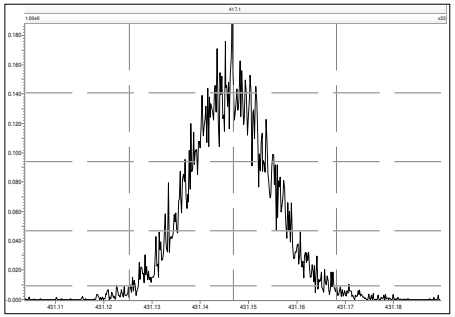
M 404.9760 R 12954



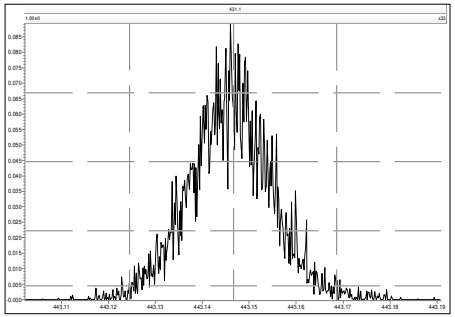
M 416.9760 R 17005



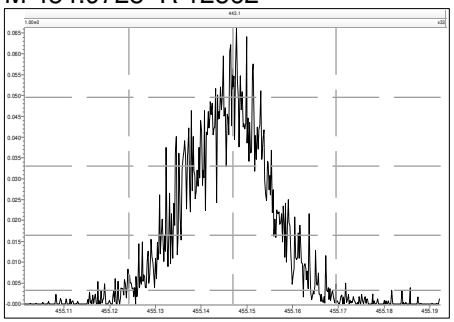
M 430.9728 R 11739



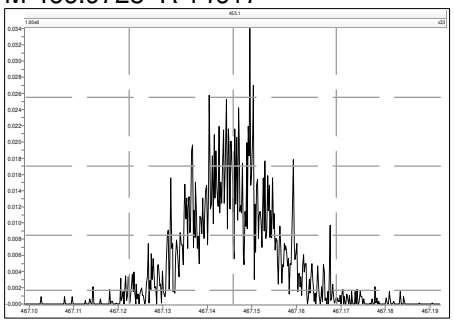
M 442.9728 R 11849



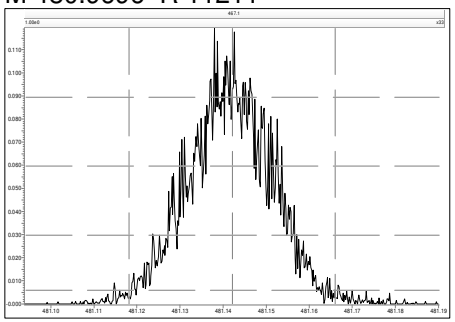
M 454.9728 R 12562



M 466.9728 R 14617



M 480.9696 R 11211



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

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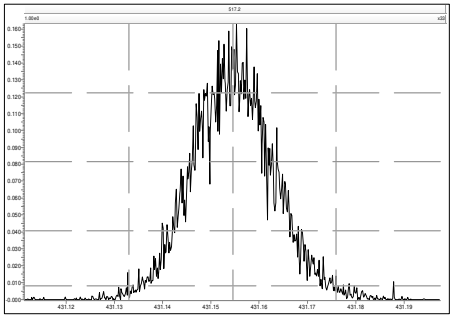
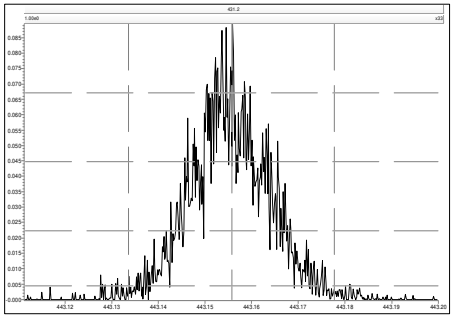
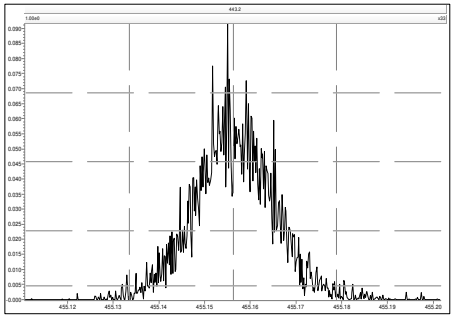
M 430.9728 R 11739



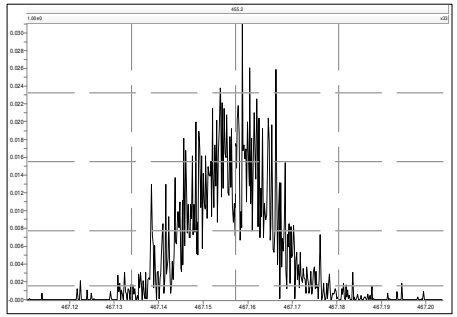
M 442.9728 R 12623



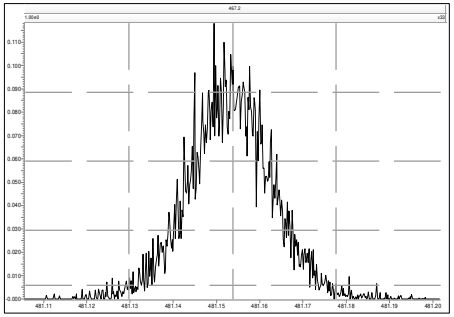
M 454.9728 R 12952



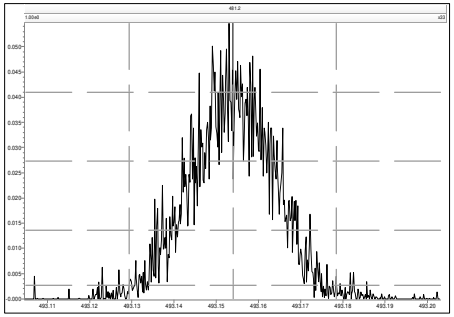
M 466.9728 R 17238



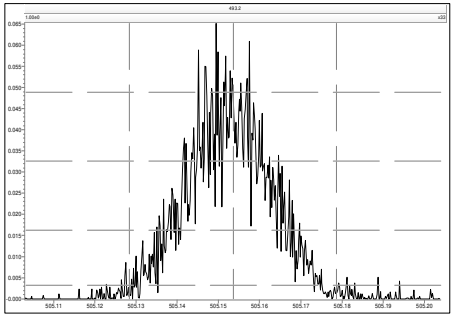
M 480.9696 R 11416



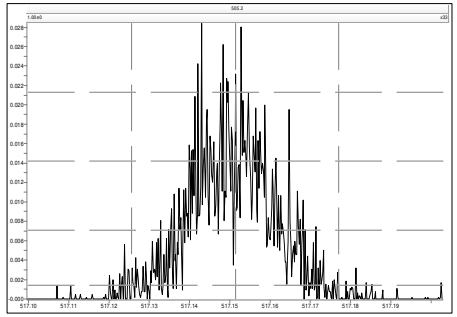
M 492.9696 R 12562



M 504.9696 R 13300



M 516.9697 R 15342



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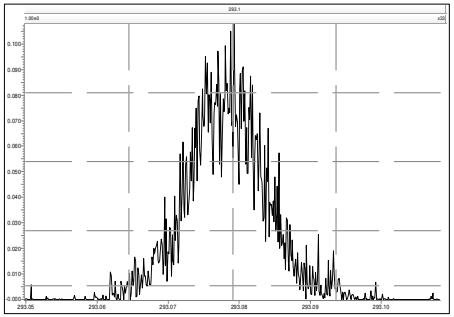
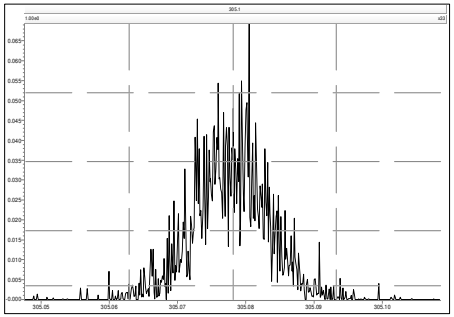
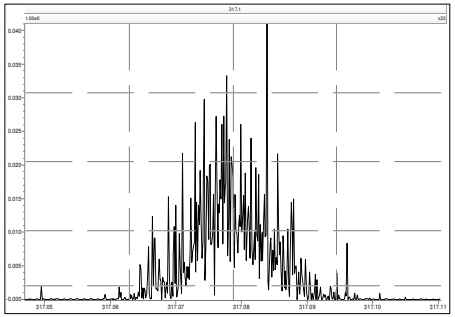
M 292.9824 R 13333



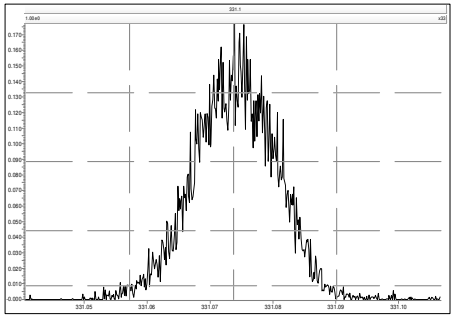
M 304.9824 R 14839



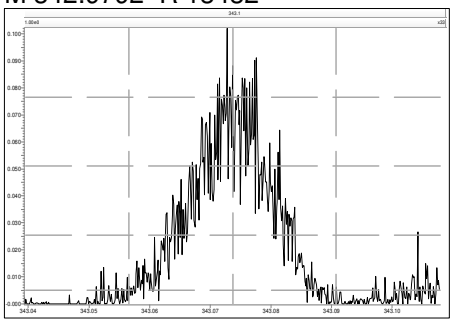
M 316.9824 R 17537



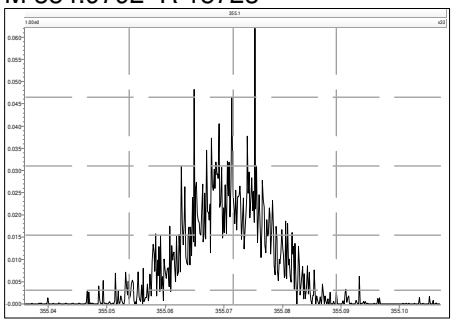
M 330.9792 R 11836



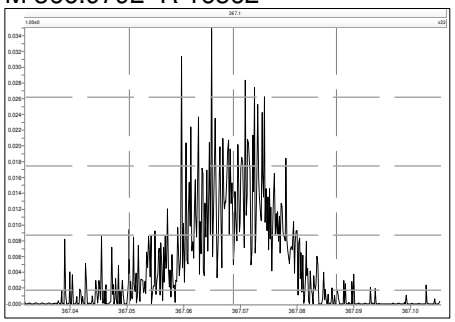
M 342.9792 R 13432



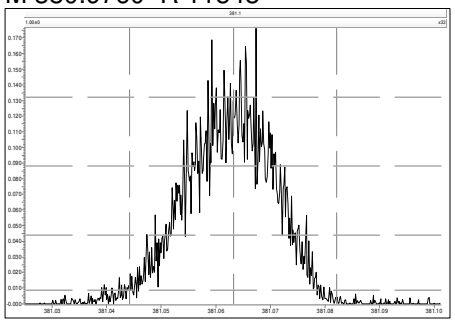
M 354.9792 R 15723



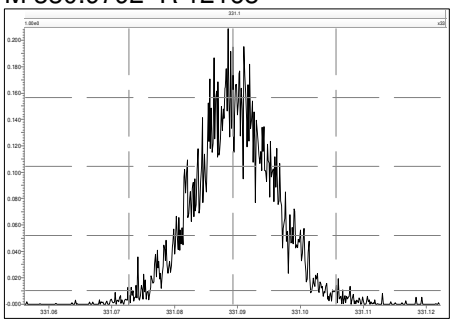
M 366.9792 R 16562



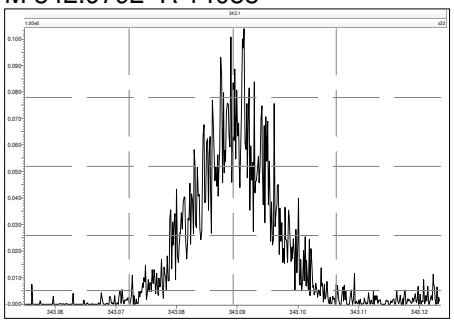
M 380.9760 R 11548



M 330.9792 R 12168



M 342.9792 R 14085



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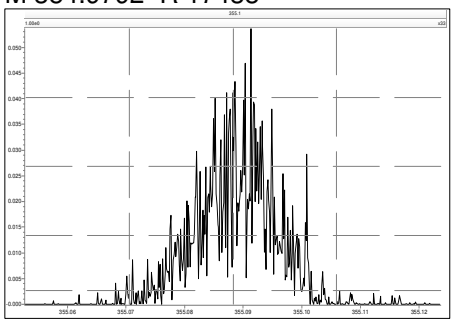
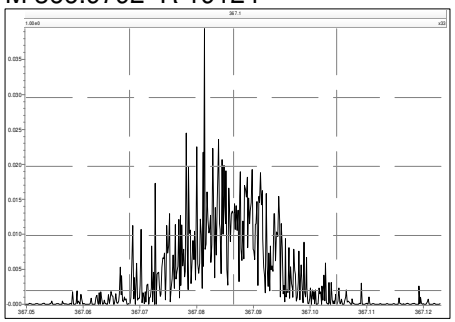
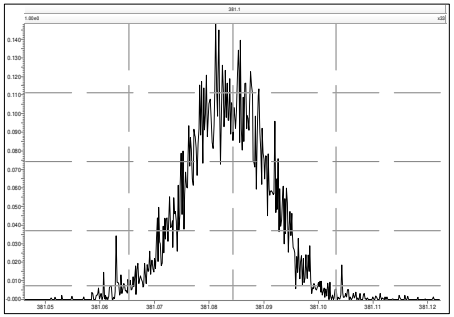


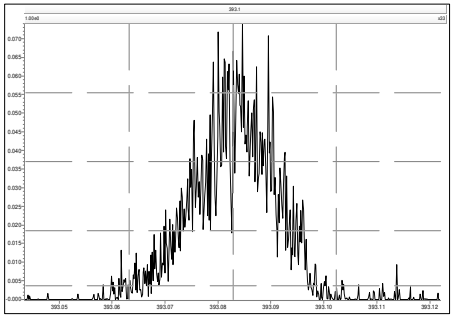
M 366.9792 R 19124



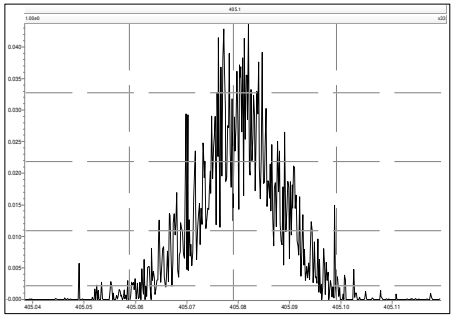
M 380.9760 R 12109



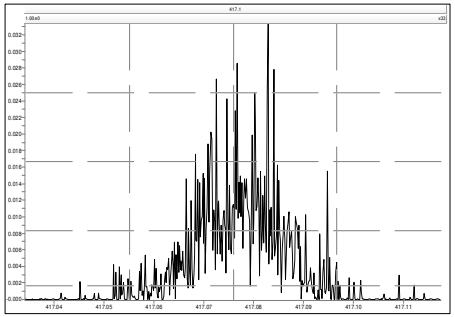
M 392.9760 R 12919



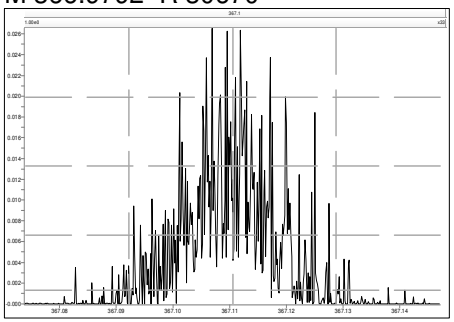
M 404.9760 R 13512



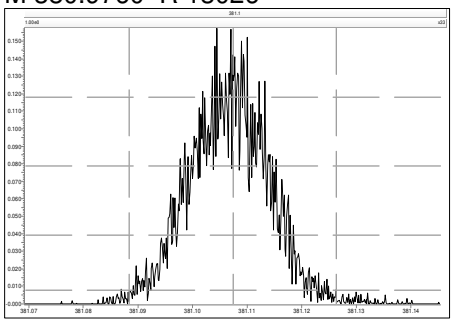
M 416.9760 R 18043



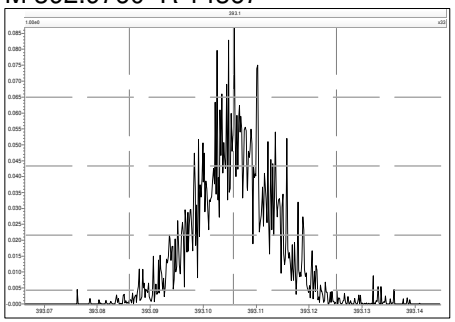
M 366.9792 R 30670



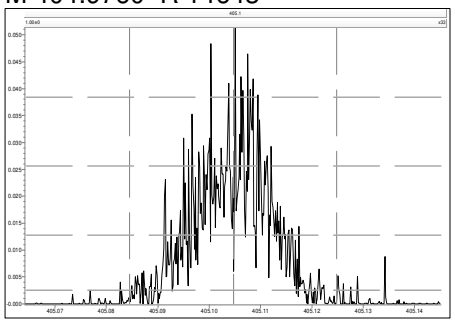
M 380.9760 R 13026



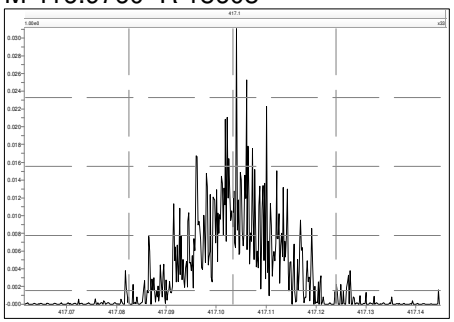
M 392.9760 R 14367



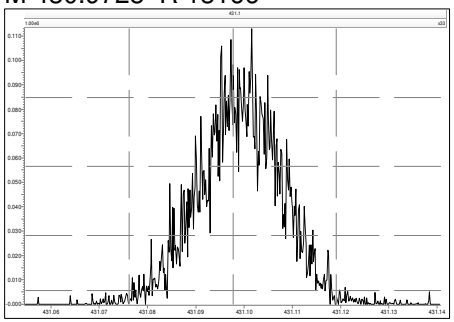
M 404.9760 R 14643



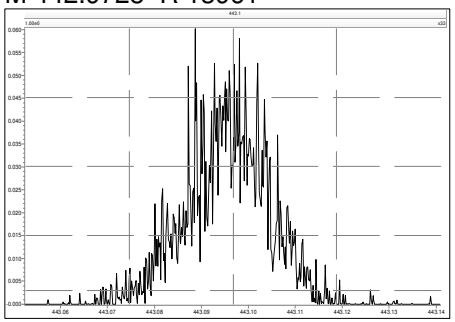
M 416.9760 R 18608



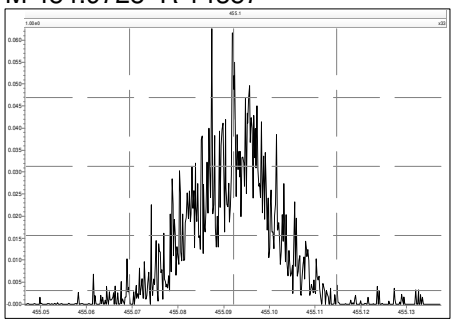
M 430.9728 R 13166



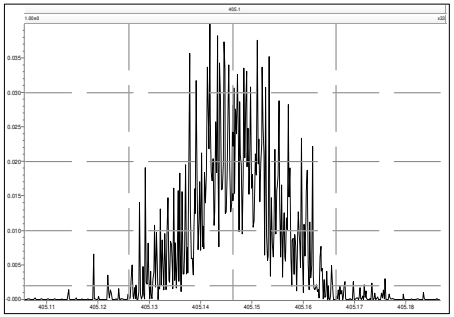
M 442.9728 R 13961



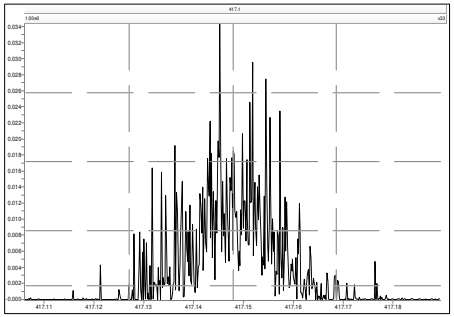
M 454.9728 R 14357



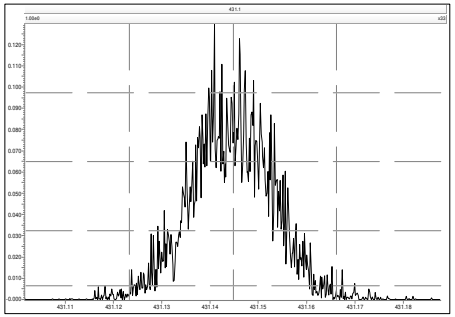
M 404.9760 R 17503



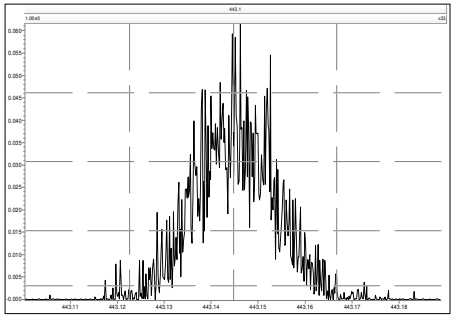
M 416.9760 R 20591



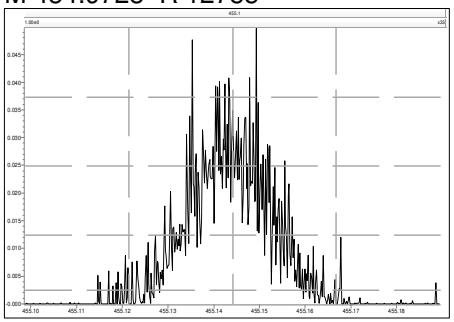
M 430.9728 R 12961



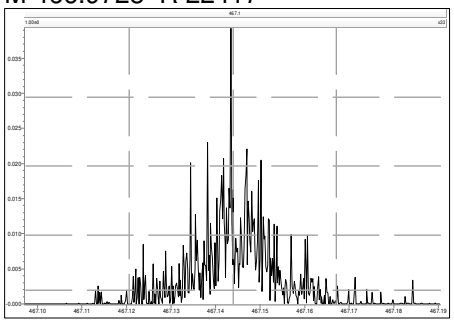
M 442.9728 R 13157



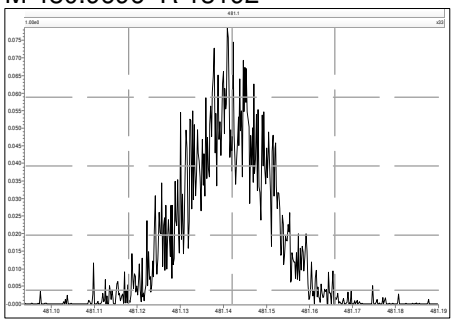
M 454.9728 R 12755



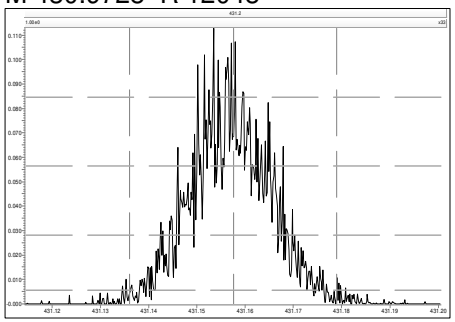
M 466.9728 R 22417



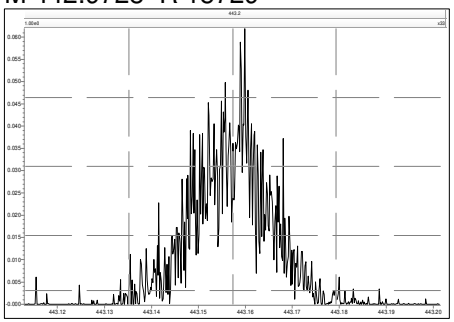
M 480.9696 R 13192



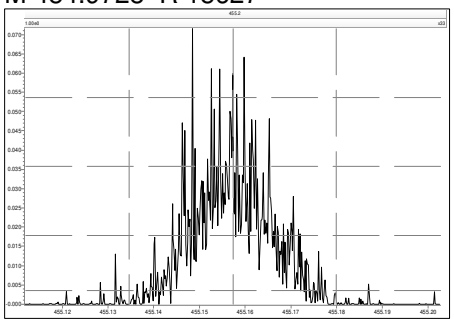
M 430.9728 R 12048



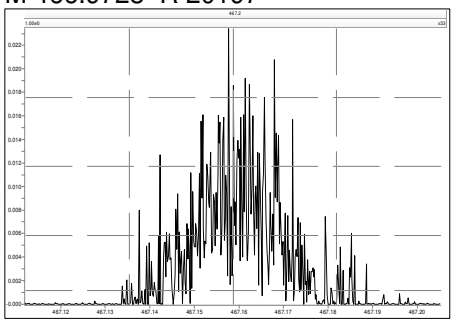
M 442.9728 R 15729



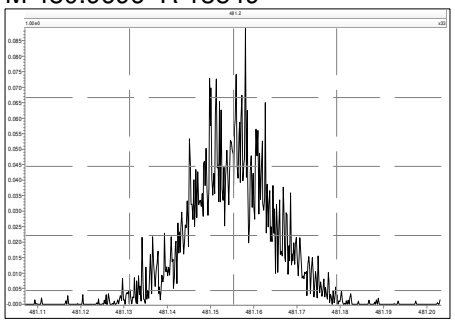
M 454.9728 R 15627



M 466.9728 R 20197



M 480.9696 R 13549



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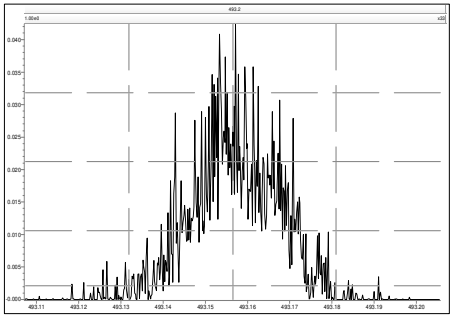

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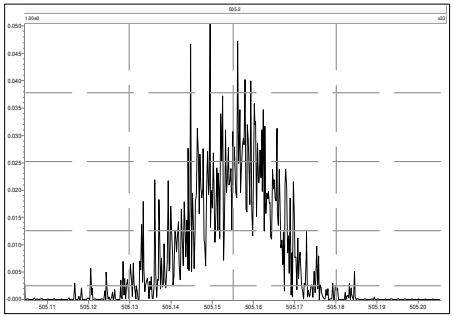

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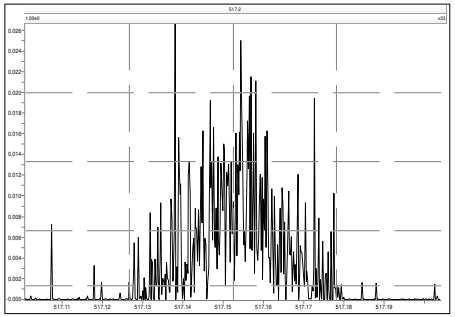

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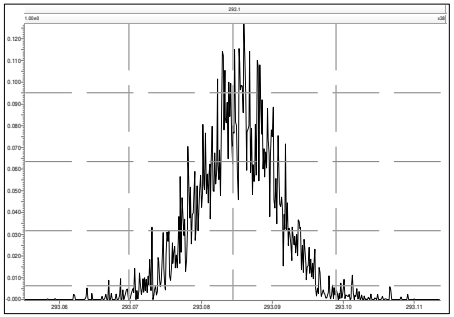

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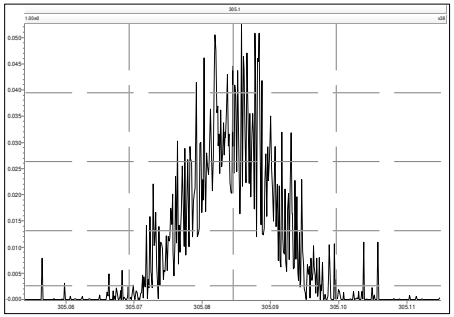

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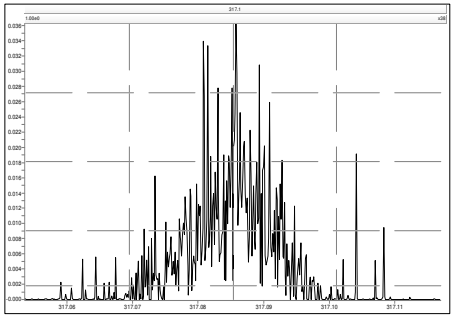

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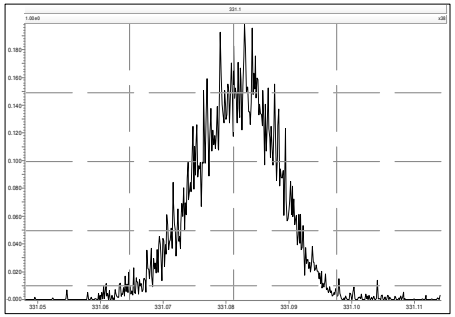

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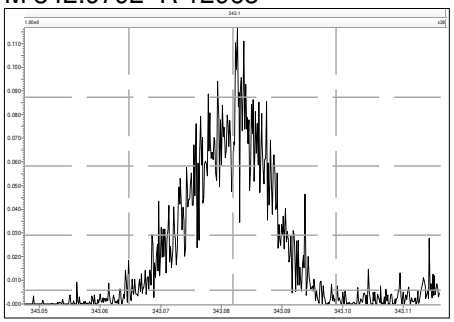

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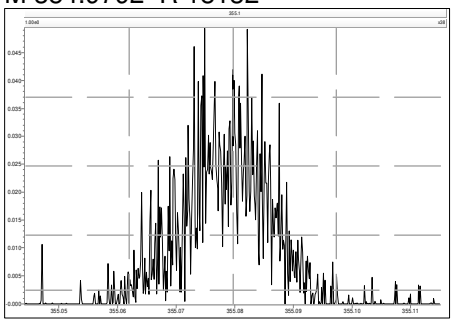

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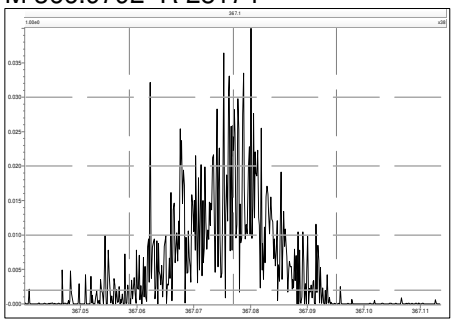

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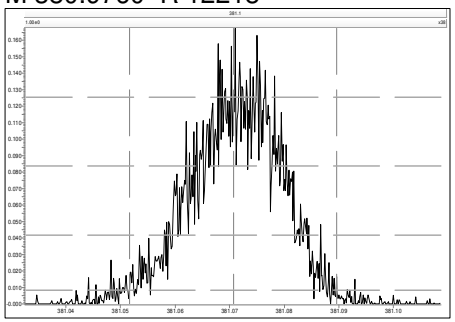

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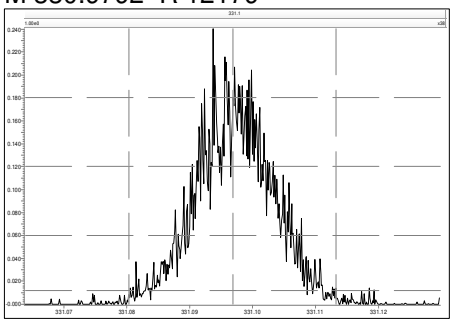

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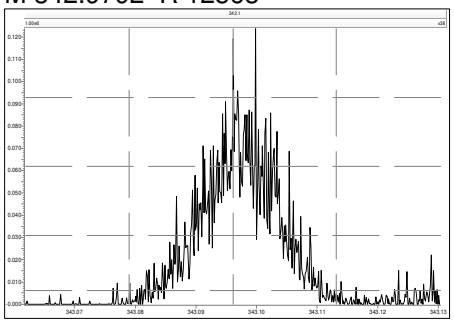

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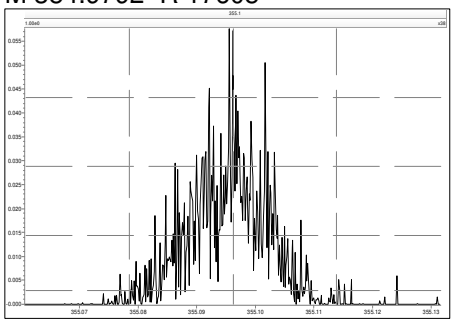

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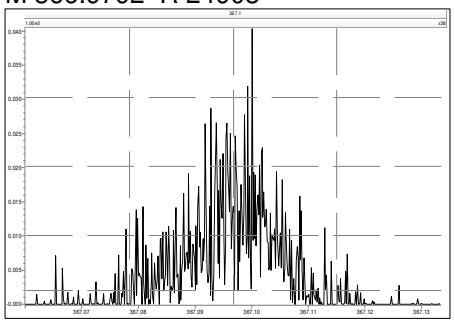

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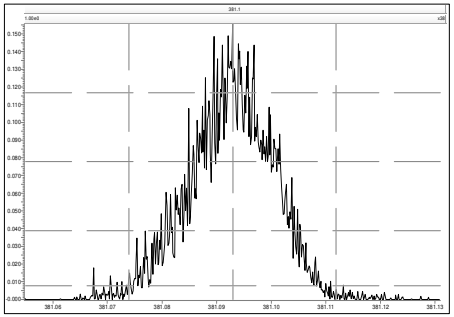

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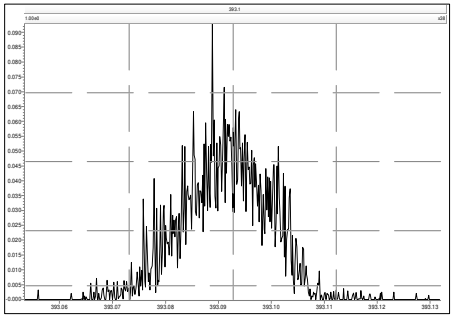

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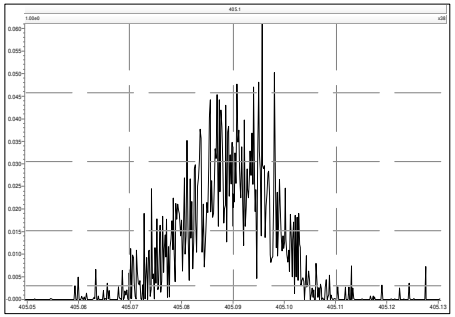

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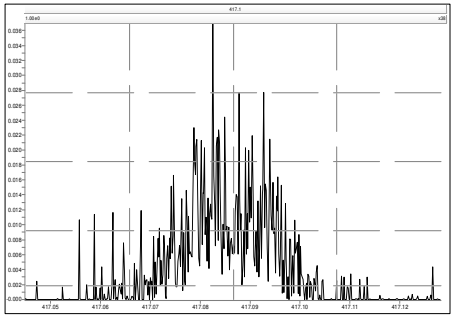

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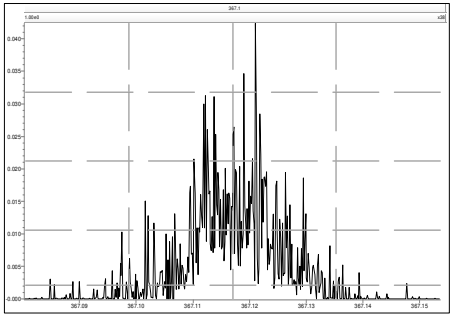

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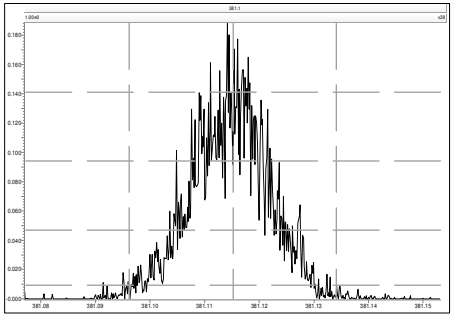

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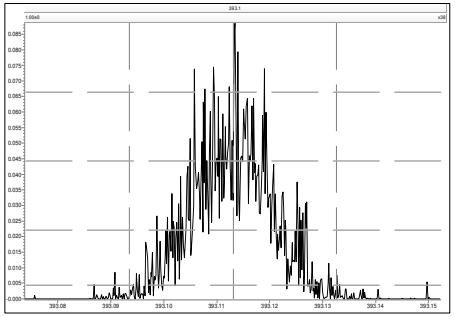

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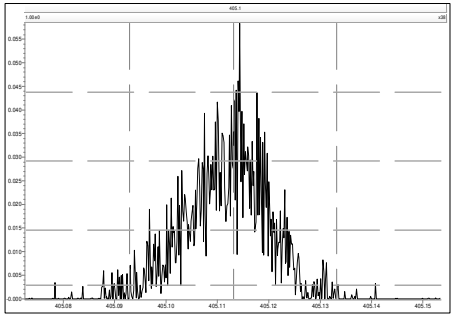

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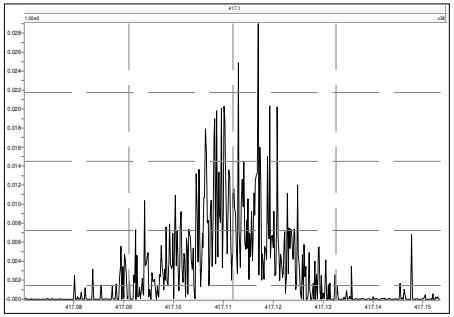

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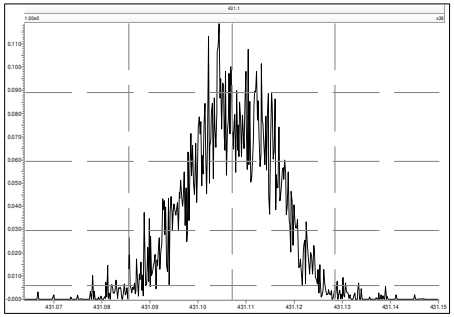

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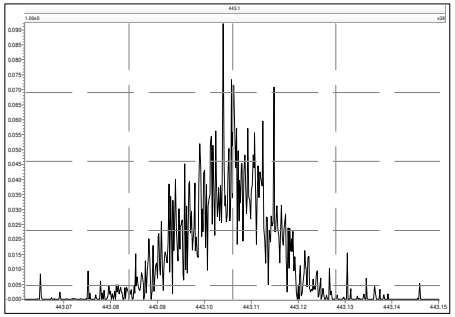

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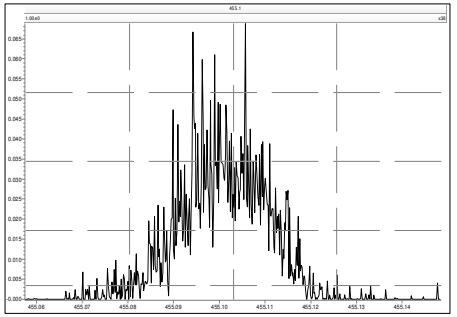

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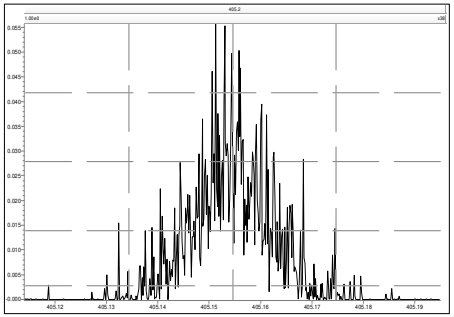

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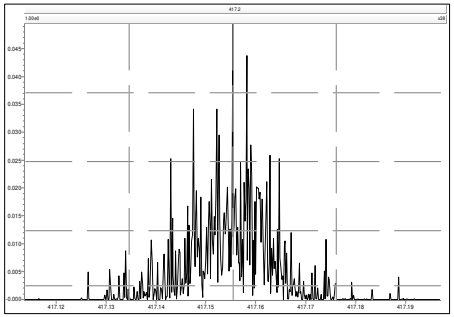

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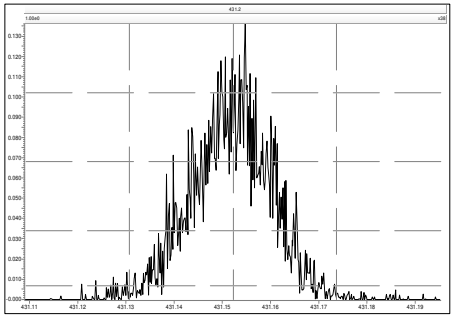

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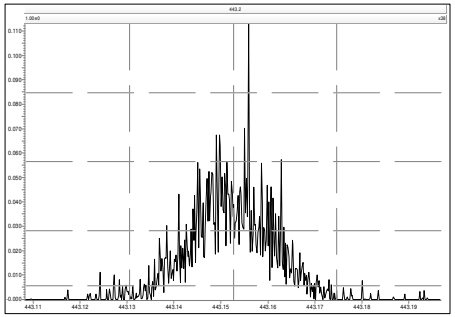

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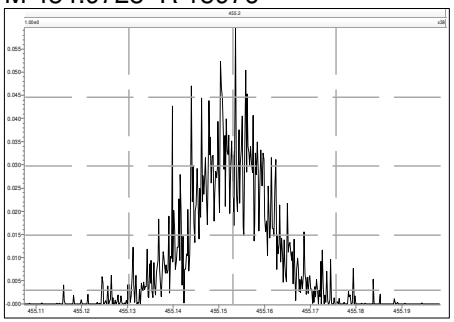

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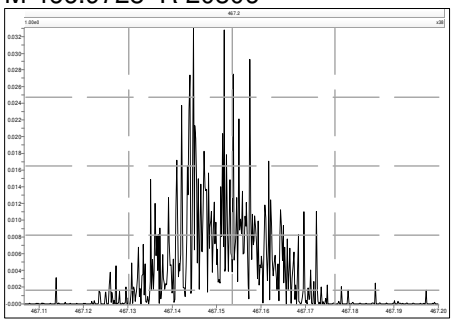

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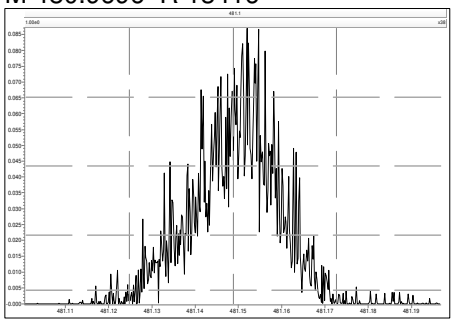

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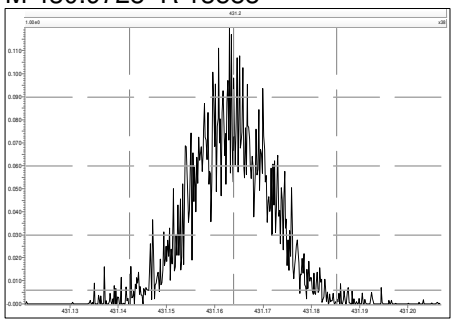

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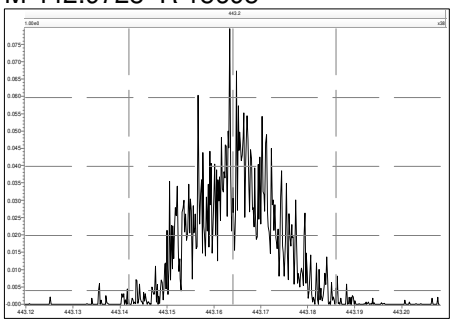

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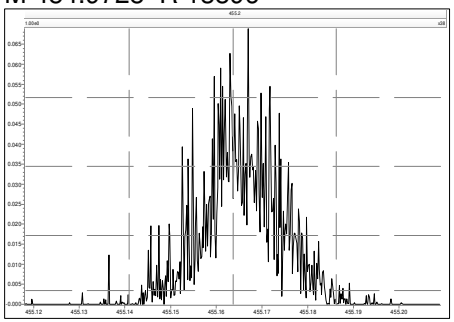

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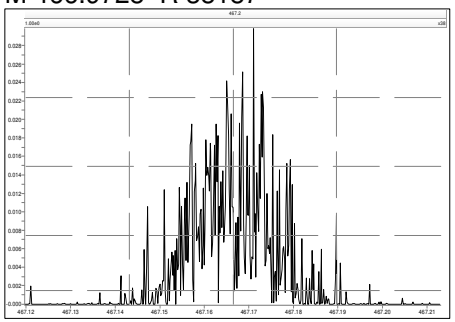

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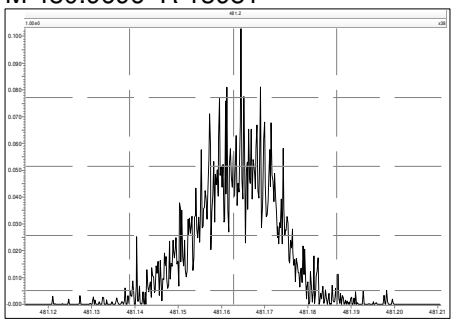

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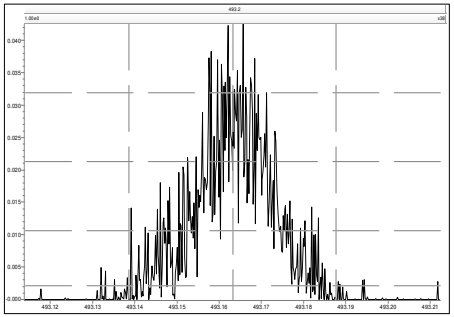

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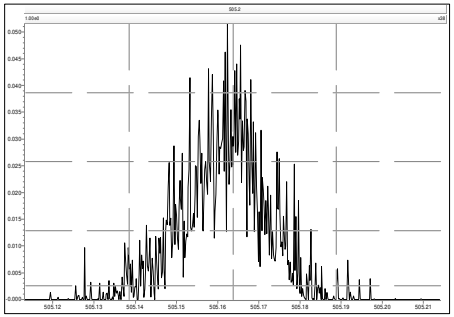

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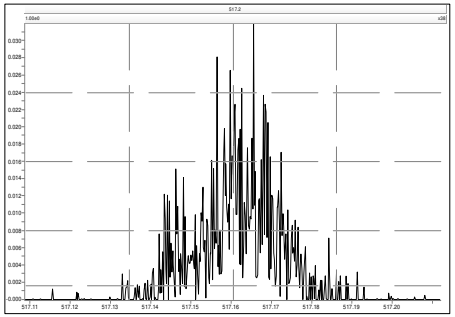

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Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.61		1.0008	1.0007	-0.2	2.76E+06	0.83	Y	1.34	10.2	10948.282	0.436
12378-PeCDD	33.88		1.0004	1.0005	+0.2	1.00E+07	1.52	Y	1.06	48.4	6334.161	0.269
123478-HxCDD	37.74		1.0004	1.0004	0	9.36E+06	1.33	Y	1.06	53.7	6620.572	0.278
123678-HxCDD	37.85		1.0034	1.0034	0	1.03E+07	1.24	Y	1.08	58.6	6620.572	0.316
123789-HxCDD	38.14		1.0111	1.0110	-0.2	1.01E+07	1.24	Y	1.02	51.8	6620.572	0.306
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	8.61E+06	1.02	Y	0.97	55	6648.654	0.297
OCDD	43.27		1.0003	1.0003	0	1.09E+07	0.88	Y	1.07	112	7616.176	0.627
2378-TCDF	27.78		1.0007	1.0008	+0.2	3.68E+06	0.72	Y	0.96	12.5	8857.513	0.317
12378-PeCDF	32.46		1.0006	1.0005	-0.2	1.68E+07	1.53	Y	0.95	57.3	10931.57	0.375
23478-PeCDF	33.55		1.0005	1.0005	0	1.65E+07	1.59	Y	0.94	60.2	10931.57	0.357
123478-HxCDF	36.75		1.0004	1.0004	0	1.42E+07	1.26	Y	1.23	56.7	13097.776	0.398
123678-HxCDF	36.89		1.0005	1.0005	0	1.74E+07	1.25	Y	1.13	57.5	13097.776	0.38
234678-HxCDF	37.56		1.0005	1.0005	0	1.44E+07	1.29	Y	1.15	56.6	13097.776	0.491
123789-HxCDF	38.49		1.0005	1.0004	-0.2	1.15E+07	1.30	Y	1.14	55.1	13097.776	0.499
1234678-HpCDF	39.81		1.0003	1.0003	0	1.50E+07	1.07	Y	1.36	55.9	6220.059	0.153
1234789-HpCDF	41.16		1.0004	1.0002	-0.5	9.33E+06	1.01	Y	1.30	54.5	6220.059	0.247
OCDF	43.46		1.0002	1.0002	0	1.16E+07	0.86	Y	1.03	110	8383.983	0.616

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0231	-0.3	2.02E+07	0.82	Y	1.03	88.2
ES 12378-PeCDD	33.86	1.2118	1.2116	-0.4	1.95E+07	1.55	Y	1.03	85
ES 123478-HxCDD	37.72	0.9921	0.9922	+0.2	1.65E+07	1.37	Y	0.99	96.4
ES 123678-HxCDD	37.84	0.9951	0.9952	+0.2	1.63E+07	1.30	Y	0.97	97
ES 123789-HxCDD	38.12	1.0027	1.0026	-0.2	1.93E+07	1.28	Y	1.12	99.5
ES 1234678-HpCDD	40.69	1.0702	1.0703	+0.2	1.61E+07	1.12	Y	0.99	94
ES OCDD	43.26	1.1377	1.1378	+0.3	1.81E+07	0.85	Y	0.78	67.5
ES 2378-TCDF	27.76	1.0505	1.0504	-0.2	3.07E+07	0.77	Y	1.08	81.6
ES 12378-PeCDF	32.44	1.2278	1.2276	-0.4	3.10E+07	1.62	Y	0.93	95.8
ES 23478-PeCDF	33.54	1.2691	1.2691	0	2.92E+07	1.56	Y	0.92	91.2
ES 123478-HxCDF	36.73	0.9660	0.9661	+0.2	2.03E+07	0.50	Y	1.14	103
ES 123678-HxCDF	36.87	0.9698	0.9698	0	2.68E+07	0.54	Y	1.30	120
ES 234678-HxCDF	37.54	0.9875	0.9874	-0.2	2.21E+07	0.53	Y	1.20	107
ES 123789-HxCDF	38.48	1.0121	1.0119	-0.5	1.84E+07	0.51	Y	1.14	94.2
ES 1234678-HpCDF	39.80	1.0468	1.0467	-0.2	1.97E+07	0.48	Y	0.95	120
ES 1234789-HpCDF	41.15	1.0822	1.0823	+0.2	1.32E+07	0.48	Y	0.85	90.2
ES OCDF	43.45	1.1426	1.1428	+0.5	2.06E+07	0.89	Y	0.93	64.8

Lab ID: OPR1_18711_DF | **Acq'd:** 07 Dec 2021 22:14 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18711_OPR001 | **UTP:** 08-Dec-2021 14:49:01 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 875-358-RRY

Datafile: 211207R15 | **Report:** 08 Dec 2021 14:49 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.95		-	-	-	2.22E+07	0.82	Y	-	-
JS 1234-TCDF	26.42		-	-	-	3.47E+07	0.79	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	8.61E+06	1.36	Y	-	-
CS 37Cl-2378-TCDD	28.62		1.0241	1.0239	-0.3	1.00E+07	n/a	-	1.31	86.1
CS 12347-PeCDD	33.37		1.1940	1.1938	-0.4	1.88E+07	1.69	Y	0.89	94.8
CS 12346-PeCDF	31.92		1.2080	1.2079	-0.2	3.09E+07	1.54	Y	0.87	103
CS 123469-HxCDF	37.19		0.9781	0.9781	0	2.29E+07	0.55	Y	1.09	122
CS 1234689-HpCDF	40.19		1.0569	1.0569	0	1.82E+07	0.48	Y	0.86	122
~~SS 37Cl-2378-TCDD~~	~~28.62~~		~~1.0241~~	~~1.0239~~	~~-0.3~~	~~1.00E+07~~	~~n/a~~		~~1.26~~	~~98.2~~
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1938~~	~~-0.4~~	~~1.88E+07~~	~~1.69~~	~~Y~~	~~0.86~~	~~111~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2079~~	~~-0.2~~	~~3.09E+07~~	~~1.54~~	~~Y~~	~~0.93~~	~~107~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~2.29E+07~~	~~0.55~~	~~Y~~	~~0.84~~	~~102~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0569~~	~~0~~	~~1.82E+07~~	~~0.48~~	~~Y~~	~~0.91~~	~~101~~

Totals	Conc	EMPC
Total TCDD	44.3	44.3
Total PeCDD	73.4	73.4
Total HxCDD	179	179
Total HpCDD	67.2	67.2
Total Tetra-Octa Dioxins	476	476
Total TCDF	66.7	66.7
Total PeCDF	222	222
Total HxCDF	360	360
Total HpCDF	110	110
Total Tetra-Octa Furans	870	870
Total Tetra-Octa Dioxins & Furans	1350	1350

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.824	0.83
Response	2.77E+06	2.76E+06

Lab ID: OPR1_18711_DF | **Acq'd: 07 Dec 2021 22:14 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18711_OPR001 | **UTP: 08-Dec-2021 14:49:01 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 875-358-RRY**

Datafile: 211207R15 | **Report: 08 Dec 2021 14:49 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8758	0.8758	0	3.44E+06	0.79	Y	1.34	12.7	10948.282	0.436
1379-TCDD	NotFnd		0.8878						1.34		10948.282	0.436
1369-TCDD	NotFnd		0.9025						1.34		10948.282	0.436
1469-TCDD	NotFnd		0.9291						1.34		10948.282	0.436
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		10948.282	0.436
1378-TCDD	NotFnd		0.9440						1.34		10948.282	0.436
1268-TCDD	NotFnd		0.9505						1.34		10948.282	0.436
1478-TCDD	NotFnd		0.9591						1.34		10948.282	0.436
1279-TCDD	NotFnd		0.9650						1.34		10948.282	0.436
1234/1269-TCDD	NotFnd		0.9771						1.34		10948.282	0.436
1236-TCDD	NotFnd		0.9821						1.34		10948.282	0.436
1237/1238-TCDD	NotFnd		0.9907						1.34		10948.282	0.436
1239-TCDD	28.46		0.9953	0.9953	0	2.36E+06	0.81	Y	1.34	8.67	10948.282	0.436
2378-TCDD	**28.61**		**1.0008**	1.0007	**-0.2**	2.76E+06	0.83	Y	**1.34**	**10.2**	**10948.282**	**0.436**
1278-TCDD	NotFnd		1.0118						1.34		10948.282	0.436
1267-TCDD	NotFnd		1.0162						1.34		10948.282	0.436
1289-TCDD	29.57		1.0340	1.0342	+0.4	3.49E+06	0.80	Y	1.34	12.8	10948.282	0.436
12479/12468-PeCDD	31.41		0.9274	0.9276	+0.4	2.45E+06	1.49	Y	1.06	11.8	6334.161	0.269
12469-PeCDD	NotFnd		0.9430						1.06		6334.161	0.269
12368-PeCDD	NotFnd		0.9591						1.06		6334.161	0.269
12478-PeCDD	NotFnd		0.9645						1.06		6334.161	0.269
12379-PeCDD	NotFnd		0.9676						1.06		6334.161	0.269
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		6334.161	0.269
12346/12347-PeCDD	NotFnd		0.9860						1.06		6334.161	0.269
12378-PeCDD	33.88		**1.0004**	**1.0005**	**+0.2**	**1.00E+07**	**1.52**	**Y**	**1.06**	**48.4**	**6334.161**	**0.269**
12367-PeCDD	NotFnd		1.0034						1.06		6334.161	0.269
12389-PeCDD	34.32		1.0133	1.0134	+0.2	2.71E+06	1.57	Y	1.06	13.1	6334.161	0.269
124679/124689-HxCDD	36.01		0.9546	0.9546	0	2.69E+06	1.36	Y	1.05	14.7	6620.572	0.299
123468-HxCDD	NotFnd		0.9718						1.05		6620.572	0.299
123679/123689-HxCDD	NotFnd		0.9795						1.05		6620.572	0.299
123469-HxCDD	NotFnd		0.9832						1.05		6620.572	0.299
123478-HxCDD	37.74		**1.0004**	**1.0004**	**0**	**9.36E+06**	**1.33**	**Y**	1.06	**53.7**	**6620.572**	**0.278**
123678-HxCDD	37.85		**1.0034**	**1.0034**	**0**	**1.03E+07**	**1.24**	**Y**	1.08	**58.6**	**6620.572**	**0.316**
123467-HxCDD	NotFnd		1.0083						1.05		6620.572	0.299
123789-HxCDD	38.14		**1.0111**	**1.0110**	**-0.2**	**1.01E+07**	**1.24**	**Y**	1.02	**51.8**	**6620.572**	**0.306**

Lab ID: OPR1_18711_DF **Acq'd: 07 Dec 2021 22:14 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18711_OPR001 **UTP: 08-Dec-2021 14:49:01 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 875-358-RRY**

Datafile: 211207R15 **Report: 08 Dec 2021 14:49 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9841	-0.5	1.92E+06	0.97	Y	0.97	12.2	6648.654	0.297
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**8.61E+06**	**1.02**	**Y**	**0.97**	**55**	**6648.654**	**0.297**
OCDD	**43.27**		**1.0003**	**1.0003**	**0**	**1.09E+07**	**0.88**	**Y**	**1.07**	**112**	**7616.176**	**0.627**
OCDD-a	43.26		1.0001	1.0001	0	7.21E+05	2.42	Y	0.07	121	11792.814	15.7
1368-TCDF	23.00		0.8284	0.8285	+0.1	4.74E+06	0.85	Y	0.96	16.1	8857.513	0.317
1468-TCDF	NotFnd		0.8487						0.96		8857.513	0.317
2468-TCDF	24.17		0.8709	0.8708	-0.1	1.30E+06	0.76	Y	0.96	4.41	8857.513	0.317
1346/1246-TCDF	NotFnd		0.8828						0.96		8857.513	0.317
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		8857.513	0.317
1348-TCDF	NotFnd		0.8980						0.96		8857.513	0.317
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		8857.513	0.317
1268-TCDF	NotFnd		0.9159						0.96		8857.513	0.317
1467-TCDF	NotFnd		0.9206						0.96		8857.513	0.317
1478-TCDF	NotFnd		0.9266						0.96		8857.513	0.317
1369/1237-TCDF	NotFnd		0.9396						0.96		8857.513	0.317
2467-TCDF	NotFnd		0.9440						0.96		8857.513	0.317
2368-TCDF	NotFnd		0.9496						0.96		8857.513	0.317
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		8857.513	0.317
1278-TCDF	NotFnd		0.9689						0.96		8857.513	0.317
1349-TCDF	NotFnd		0.9732						0.96		8857.513	0.317
1267-TCDF	NotFnd		0.9786						0.96		8857.513	0.317
2346/1249-TCDF	NotFnd		0.9849						0.96		8857.513	0.317
2347/1279-TCDF	NotFnd		0.9927						0.96		8857.513	0.317
2348-TCDF	27.67		0.9967	0.9967	0	4.57E+06	0.82	Y	0.96	15.5	8857.513	0.317
2378-TCDF	**27.78**		**1.0007**	**1.0008**	**+0.2**	**3.68E+06**	**0.72**	**Y**	**0.96**	**12.5**	**8857.513**	**0.317**
2367/3467-TCDF	NotFnd		1.0136						0.96		8857.513	0.317
1269-TCDF	NotFnd		1.0223						0.96		8857.513	0.317
1239-TCDF	NotFnd		1.0313						0.96		8857.513	0.317
1289-TCDF	29.75		1.0711	1.0718	+1.2	5.36E+06	0.76	Y	0.96	18.2	8857.513	0.317
13468/12468-PeCDF	29.66		0.9147	0.9143	-0.7	2.65E+07	1.55	Y	0.94	93.5	8958.122	0.3
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		10931.57	0.366
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		10931.57	0.366
14678-PeCDF	NotFnd		0.9695						0.94		10931.57	0.366
13479-PeCDF	NotFnd		0.9727						0.94		10931.57	0.366
13469/12479-PeCDF	NotFnd		0.9799						0.94		10931.57	0.366
12346-PeCDF	NotFnd		0.9839						0.94		10931.57	0.366

Lab ID: OPR1_18711_DF | **Acq'd: 07 Dec 2021 22:14 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18711_OPR001 | **UTP: 08-Dec-2021 14:49:01 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 875-358-RRY**

Datafile: 211207R15 | **Report: 08 Dec 2021 14:49 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		10931.57	0.366
12347-PeCDF	NotFnd		0.9892						0.94		10931.57	0.366
12348-PeCDF	NotFnd		0.9940						0.94		10931.57	0.366
12378-PeCDF	**32.46**		**1.0006**	**1.0005**	**-0.2**	**1.68E+07**	**1.53**	**Y**	**0.95**	**57.3**	**10931.57**	**0.375**
12678/12367-PeCDF	NotFnd		1.0088						0.94		10931.57	0.366
12379-PeCDF	NotFnd		1.0142						0.94		10931.57	0.366
12679-PeCDF	NotFnd		0.9931						0.94		10931.57	0.366
23467/12369-PeCDF	NotFnd		0.9966						0.94		10931.57	0.366
23478-PeCDF	**33.55**		**1.0005**	**1.0005**	**0**	**1.65E+07**	**1.59**	**Y**	**0.94**	**60.2**	**10931.57**	**0.357**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		10931.57	0.366
12349-PeCDF	NotFnd		1.0100						0.94		10931.57	0.366
12389-PeCDF	34.62		1.0323	1.0322	-0.2	3.26E+06	1.51	Y	0.94	11.5	10931.57	0.366
123468-HxCDF	35.38		0.9631	0.9632	+0.2	3.41E+07	1.26	Y	1.16	134	13097.776	0.436
124678/134678-HxCDF	NotFnd		0.9686						1.16		13097.776	0.436
134679-HxCDF	NotFnd		0.9747						1.16		13097.776	0.436
124679-HxCDF	NotFnd		0.9800						1.16		13097.776	0.436
124689-HxCDF	NotFnd		0.9859						1.16		13097.776	0.436
123467-HxCDF	NotFnd		0.9972						1.16		13097.776	0.436
123478-HxCDF	**36.75**		**1.0004**	**1.0004**	**0**	**1.42E+07**	**1.26**	**Y**	**1.23**	**56.7**	**13097.776**	**0.398**
123678-HxCDF	**36.89**		**1.0005**	**1.0005**	**0**	**1.74E+07**	**1.25**	**Y**	**1.13**	**57.5**	**13097.776**	**0.38**
123479-HxCDF	NotFnd		1.0048						1.16		13097.776	0.436
123469-HxCDF	NotFnd		1.0089						1.16		13097.776	0.436
123679-HxCDF	NotFnd		0.9943						1.16		13097.776	0.436
234678-HxCDF	**37.56**		**1.0005**	**1.0005**	**0**	**1.44E+07**	**1.29**	**Y**	**1.15**	**56.6**	**13097.776**	**0.491**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		13097.776	0.436
123789-HxCDF	**38.49**		**1.0005**	**1.0004**	**-0.2**	**1.15E+07**	**1.30**	**Y**	**1.14**	**55.1**	**13097.776**	**0.499**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		13097.776	0.436
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**1.50E+07**	**1.07**	**Y**	**1.36**	**55.9**	**6220.059**	**0.153**
1234679-HpCDF	NotFnd		1.0065						1.33		6220.059	0.191
1234689-HpCDF	NotFnd		1.0097						1.33		6220.059	0.191
1234789-HpCDF	**41.16**		**1.0004**	**1.0002**	**-0.5**	**9.33E+06**	**1.01**	**Y**	**1.30**	**54.5**	**6220.059**	**0.247**
OCDF	**43.46**		**1.0002**	**1.0002**	**0**	**1.16E+07**	**0.86**	**Y**	**1.03**	**110**	**8383.983**	**0.616**
OCDF-a	43.45		1.0001	1.0001	0	6.64E+05	2.68	Y	0.06	108	10080.372	12.8

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211207R15	Analysis Date:	07-DEC-2021 22:14:25
Lab ID:	OPR1_18711_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	10.2	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	48.4	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	58.6	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.8	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	55	35	-	70	Y
OCDD	100	112	78	-	144	Y
2,3,7,8-TCDF	10	12.5	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	57.3	40	-	67	Y
2,3,4,7,8-PeCDF	50	60.2	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	56.7	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	57.5	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	56.6	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	55.1	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	55.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	54.5	39	-	69	Y
OCDF	100	110	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Dec 2021 14:49 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211207R15	Analysis Date:	07-DEC-2021 22:14:25
Lab ID:	OPR1_18711_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	88.2	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	85	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	96.4	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	97	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	99.5	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	94	26	-	166	Y
13C-OCDD	200	135	26	-	397	Y
13C-2,3,7,8-TCDF	100	81.6	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	95.8	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	91.2	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	103	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	120	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	107	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	94.2	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	120	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	90.2	20	-	186	Y
13C-OCDF	200	130	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	34.5	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 08 Dec 2021 14:49 Analyst: pw

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211207R15	Analysis Date:	07-DEC-2021 22:14:25
Lab ID:	OPR1_18711_DF		

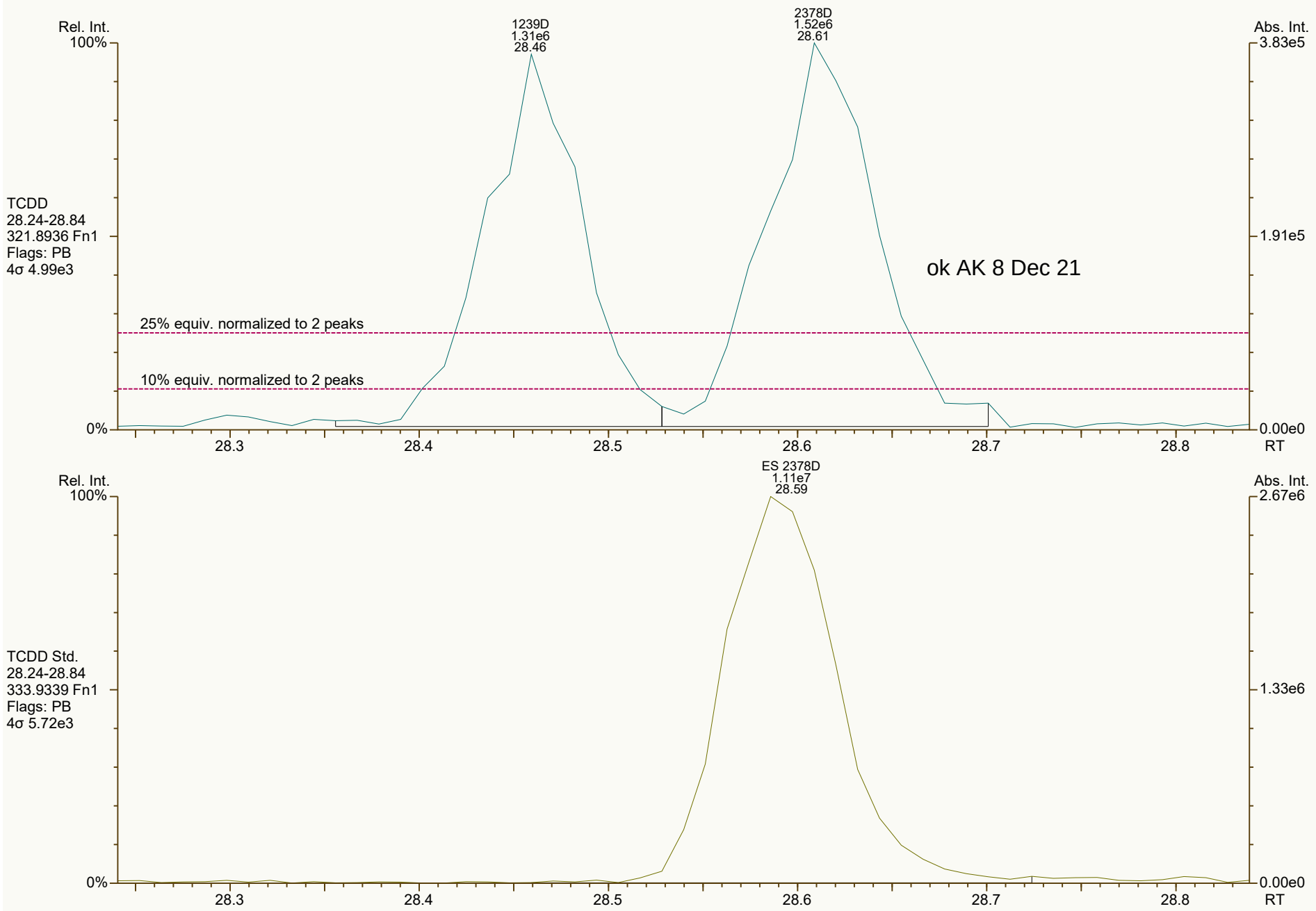
Window Defining Standards Results

First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.04	1289-TCDD	29.57
12479/12468-PeCDD	31.41	12389-PeCDD	34.32
124679/124689-HxCDD	36.01	123789-HxCDD	38.14
1234679-HpCDD	40.05	1234678-HpCDD	40.71
1368-TCDF	23.00	1289-TCDF	29.75
13468/12468-PeCDF	29.66	12389-PeCDF	34.62
123468-HxCDF	35.38	123789-HxCDF	38.49
1234678-HpCDF	39.81	1234789-HpCDF	41.16

Isomer Specificity Test Standard Results

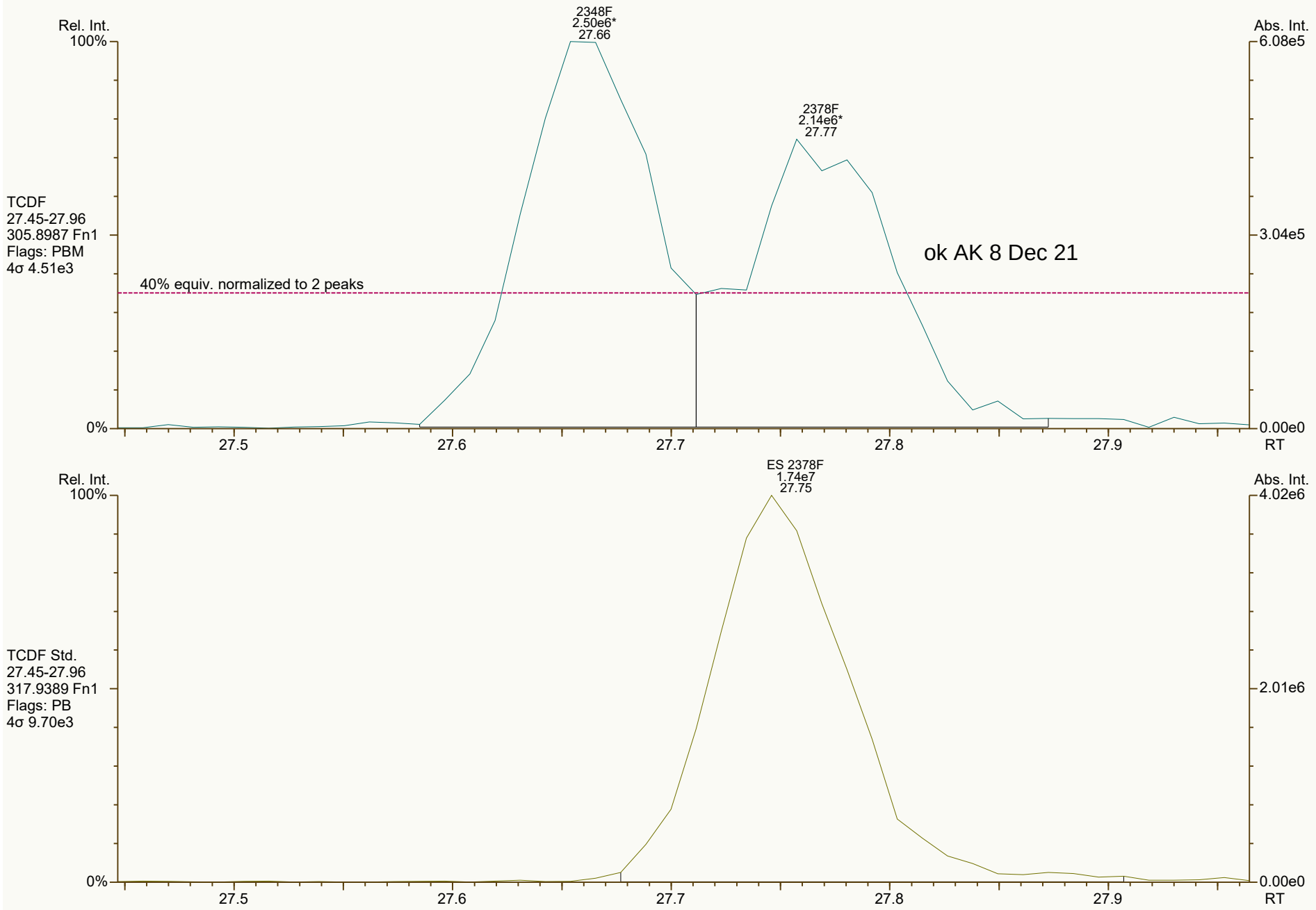
Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.46	2378-TCDD	28.61
2348-TCDF	27.67	2378-TCDF	27.78

Processed: 08 Dec 2021 14:49 Analyst: pw

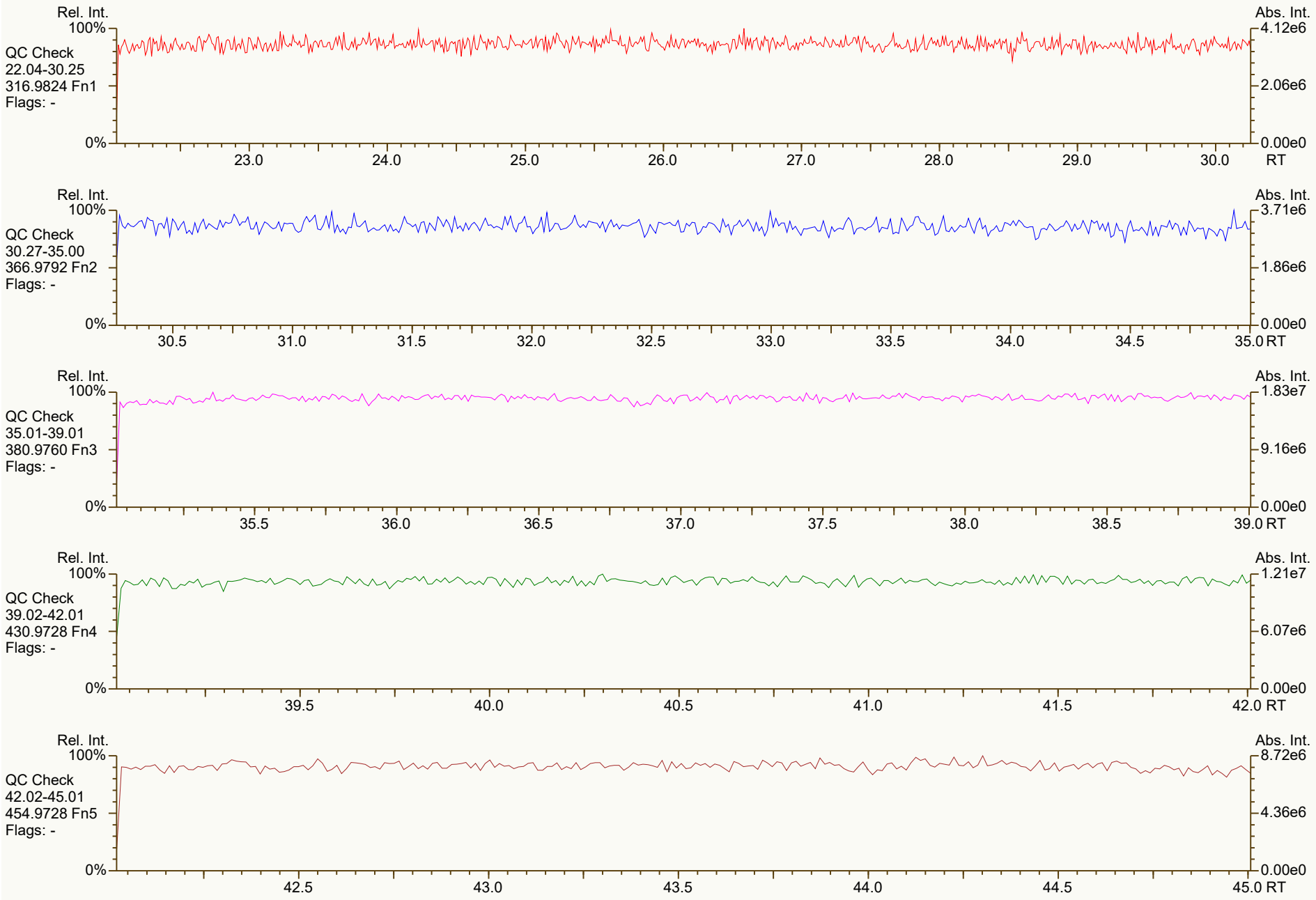


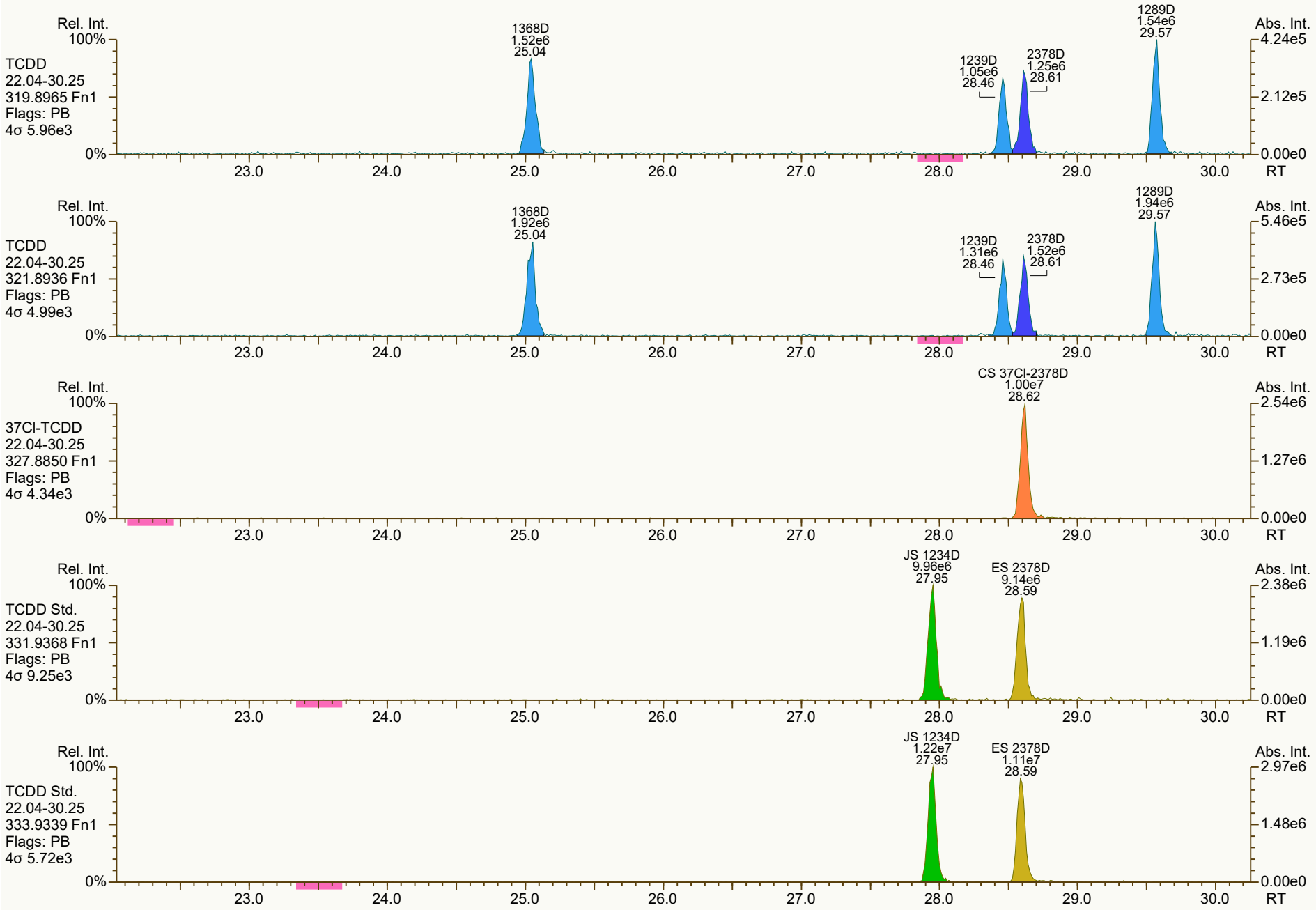
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 08-Dec-2021 08:16 Printed: 08-Dec-2021 14:54

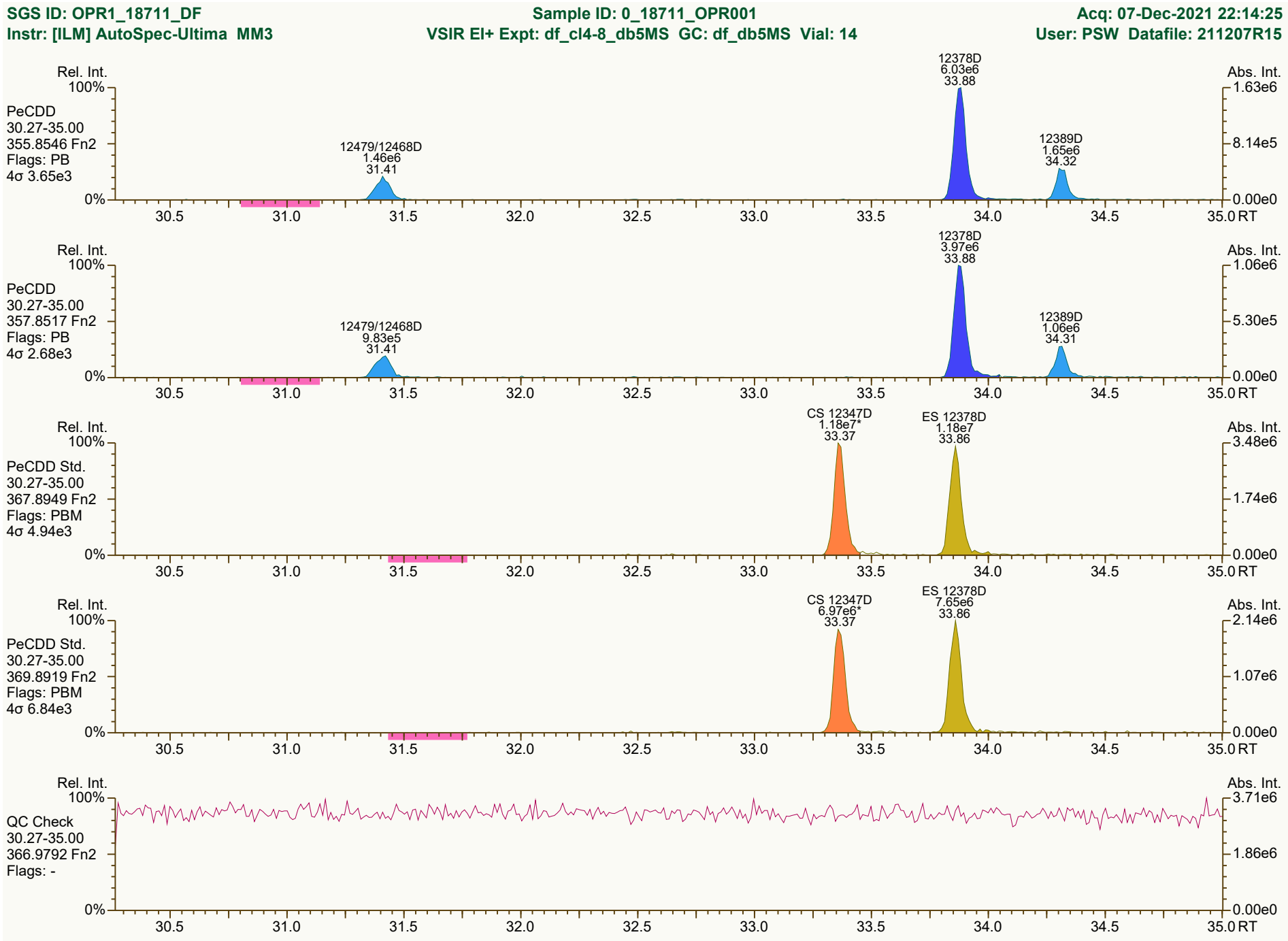
SGS ID: OPR1_18711_DF
Sample ID: 0_18711_OPR001
Acq: 07-Dec-2021 22:14:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14
User: PSW Datafile: 211207R15

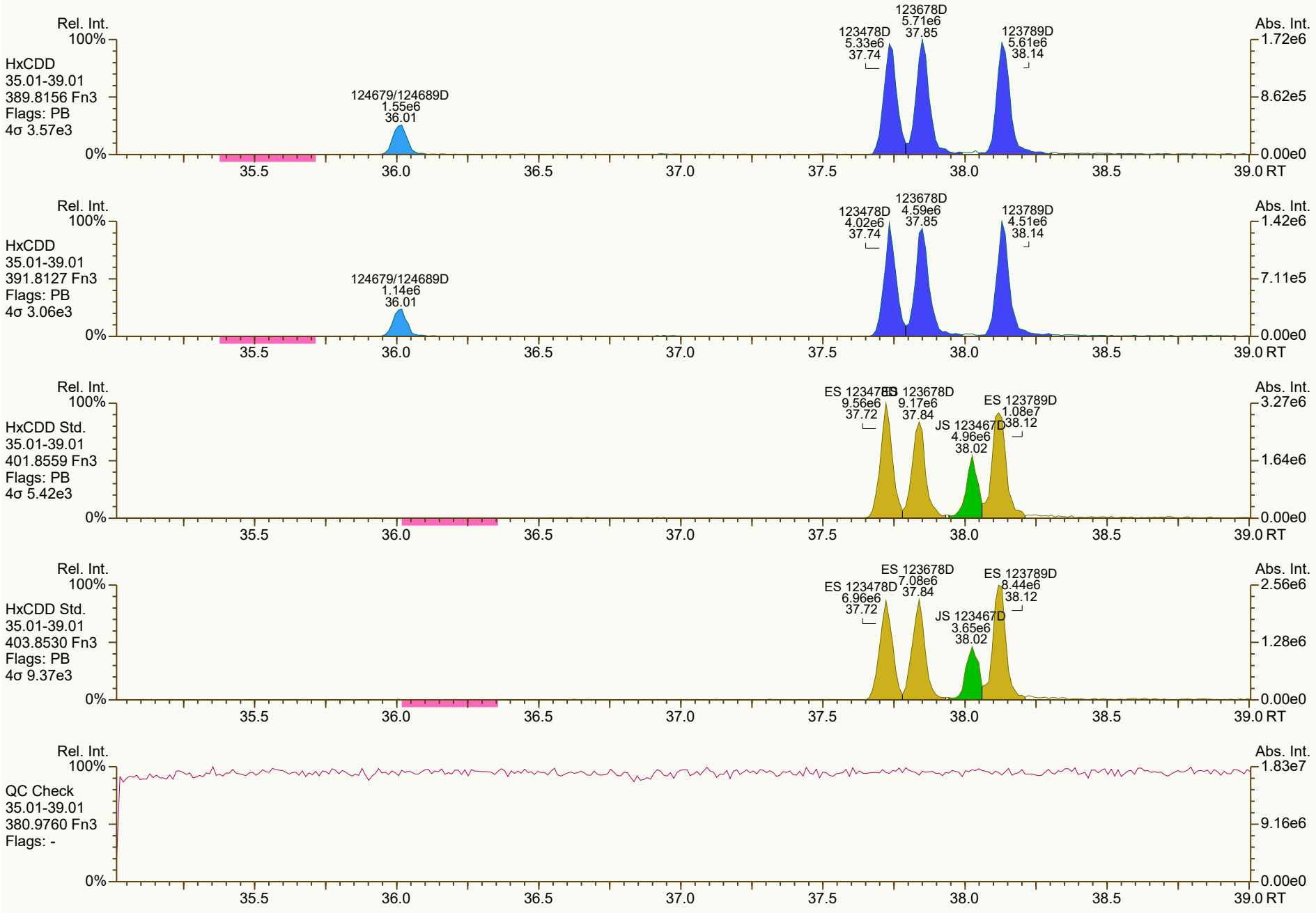


Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
Revised: 08-Dec-2021 08:17 (PSW) Printed: 08-Dec-2021 14:54

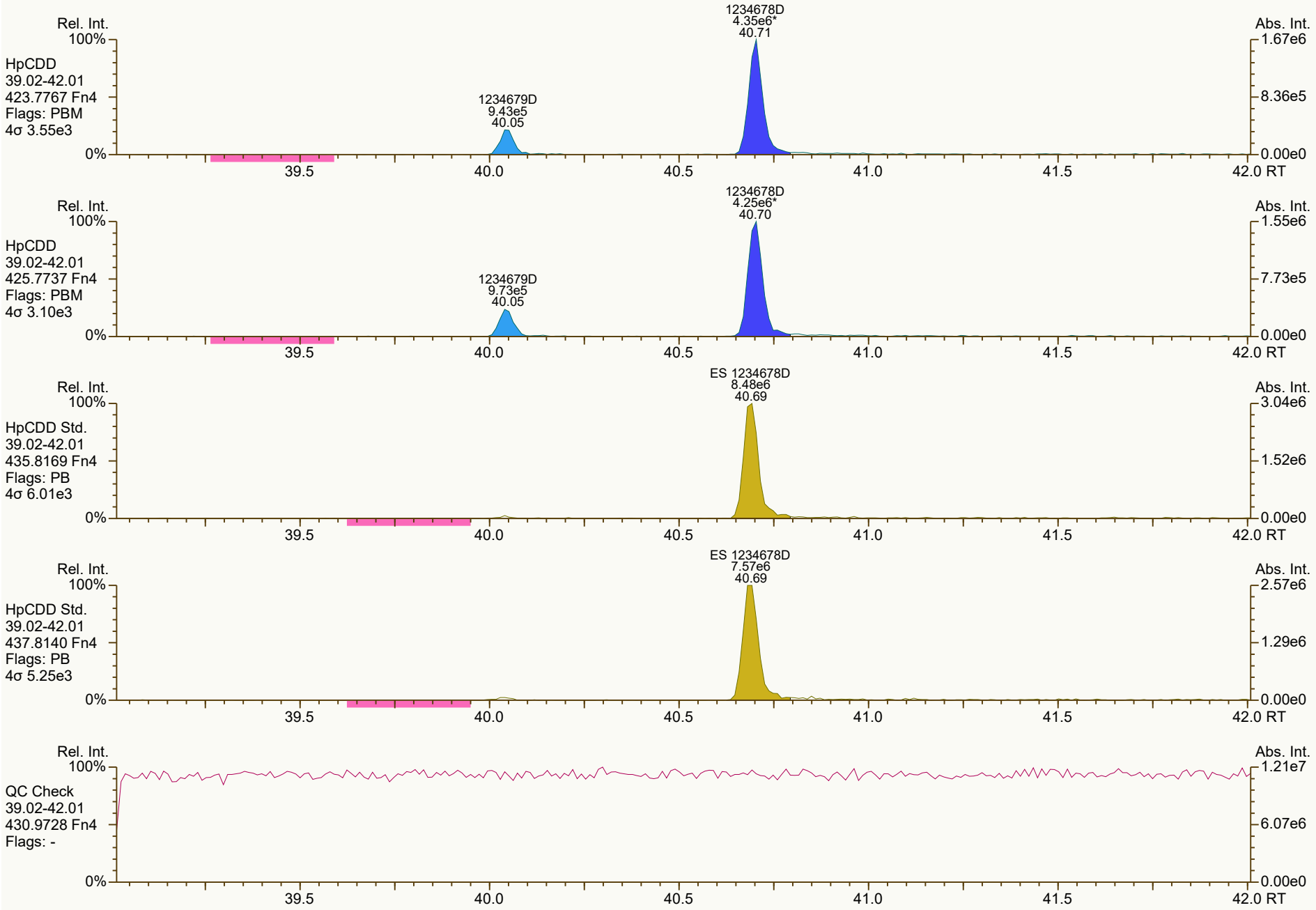

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.12e6
2.06e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.71e6
1.86e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.83e7
9.16e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.21e7
6.07e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.72e6
4.36e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

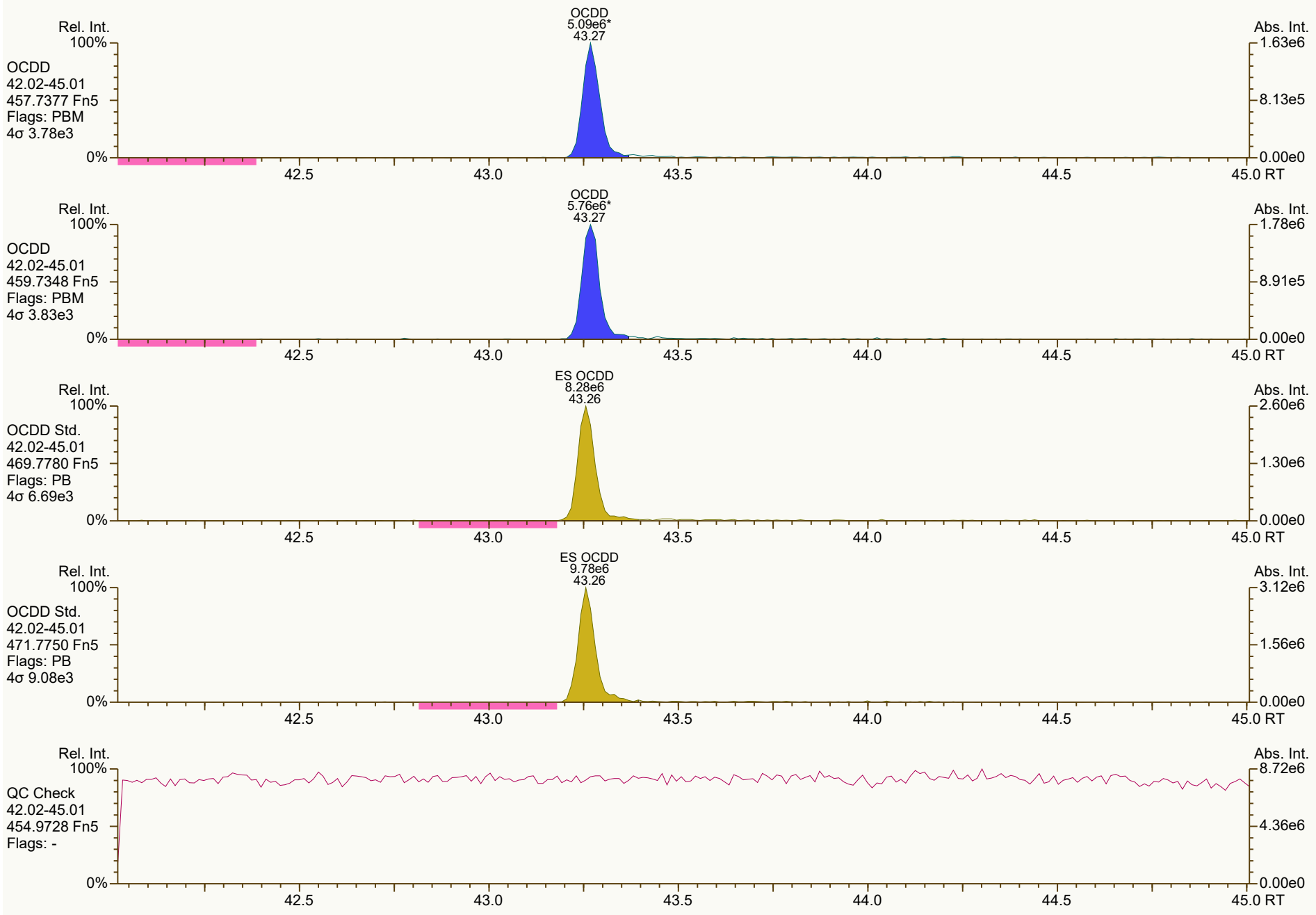

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PB
4σ 5.96e3
0%
1368D
1.52e6
25.04
1239D
1.05e6
28.46
2378D
1.25e6
28.61
1289D
1.54e6
29.57
Abs. Int.
4.24e5
2.12e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PB
4σ 4.99e3
0%
1368D
1.92e6
25.04
1239D
1.31e6
28.46
2378D
1.52e6
28.61
1289D
1.94e6
29.57
Abs. Int.
5.46e5
2.73e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.34e3
0%
CS 37Cl-2378D
1.00e7
28.62
Abs. Int.
2.54e6
1.27e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 9.25e3
0%
JS 1234D
9.96e6
27.95
ES 2378D
9.14e6
28.59
Abs. Int.
2.38e6
1.19e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 5.72e3
0%
JS 1234D
1.22e7
27.95
ES 2378D
1.11e7
28.59
Abs. Int.
2.97e6
1.48e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

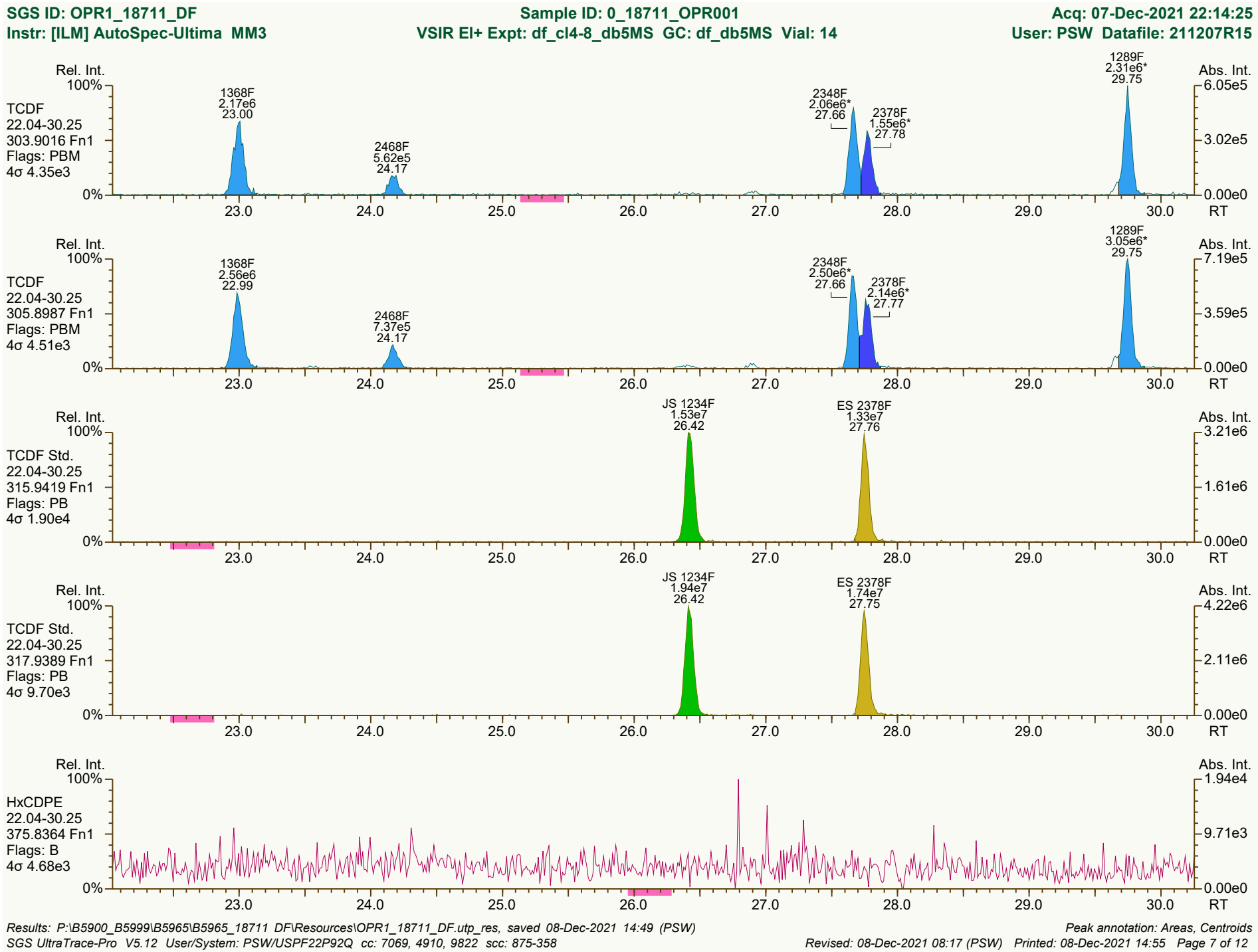

SGS ID: OPR1_18711_DF
Sample ID: 0_18711_OPR001
Acq: 07-Dec-2021 22:14:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14
User: PSW Datafile: 211207R15
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PB
4σ 3.65e3
12479/12468D
1.46e6
31.41
12378D
6.03e6
33.88
12389D
1.65e6
34.32
1.63e6
8.14e5
0.00e0
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 2.68e3
12479/12468D
9.83e5
31.41
12378D
3.97e6
33.88
12389D
1.06e6
34.31
1.06e6
5.30e5
0.00e0
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PBM
4σ 4.94e3
CS 12347D
1.18e7*
33.37
ES 12378D
1.18e7
33.86
3.48e6
1.74e6
0.00e0
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PBM
4σ 6.84e3
CS 12347D
6.97e6*
33.37
ES 12378D
7.65e6
33.86
2.14e6
1.07e6
0.00e0
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
3.71e6
1.86e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8102, 5378 scc: 875-358
PKD: 08-Dec-2021 08:16 Printed: 08-Dec-2021 14:54 Page 3 of 12



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7302, 3428 scc: 875-358
PKD: 08-Dec-2021 08:16 Printed: 08-Dec-2021 14:54 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 3.55e3
1234678D
4.35e6*
40.71
1234679D
9.43e5
40.05
Abs. Int.
1.67e6
8.36e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 3.10e3
1234678D
4.25e6*
40.70
1234679D
9.73e5
40.05
Abs. Int.
1.55e6
7.73e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.01e3
ES 1234678D
8.48e6
40.69
Abs. Int.
3.04e6
1.52e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.25e3
ES 1234678D
7.57e6
40.69
Abs. Int.
2.57e6
1.29e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.21e7
6.07e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
5.09e6*
43.27
Rel. Int.
Abs. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 3.78e3
1.63e6
8.13e5
0.00e0
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.76e6*
43.27
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 3.83e3
1.78e6
8.91e5
ES OCDD
8.28e6
43.26
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 6.69e3
2.60e6
1.30e6
ES OCDD
9.78e6
43.26
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 9.08e3
3.12e6
1.56e6
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
8.72e6
4.36e6


SGS ID: OPR1_18711_DF
Sample ID: 0_18711_OPR001
Acq: 07-Dec-2021 22:14:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14
User: PSW Datafile: 211207R15
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 4.35e3
1368F
2.17e6
23.00
2468F
5.62e5
24.17
2348F
2.06e6*
27.66
2378F
1.55e6*
27.78
1289F
2.31e6*
29.75
6.05e5
3.02e5
0.00e0
RT
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 4.51e3
1368F
2.56e6
22.99
2468F
7.37e5
24.17
2348F
2.50e6*
27.66
2378F
2.14e6*
27.77
1289F
3.05e6*
29.75
7.19e5
3.59e5
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.90e4
JS 1234F
1.53e7
26.42
ES 2378F
1.33e7
27.76
3.21e6
1.61e6
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 9.70e3
JS 1234F
1.94e7
26.42
ES 2378F
1.74e7
27.75
4.22e6
2.11e6
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.68e3
1.94e4
9.71e3
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7069, 4910, 9822 scc: 875-358
Revised: 08-Dec-2021 08:17 (PSW) Printed: 08-Dec-2021 14:55 Page 7 of 12

SGS ID: OPR1_18711_DF
Sample ID: 0_18711_OPR001
Acq: 07-Dec-2021 22:14:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14
User: PSW Datafile: 211207R15

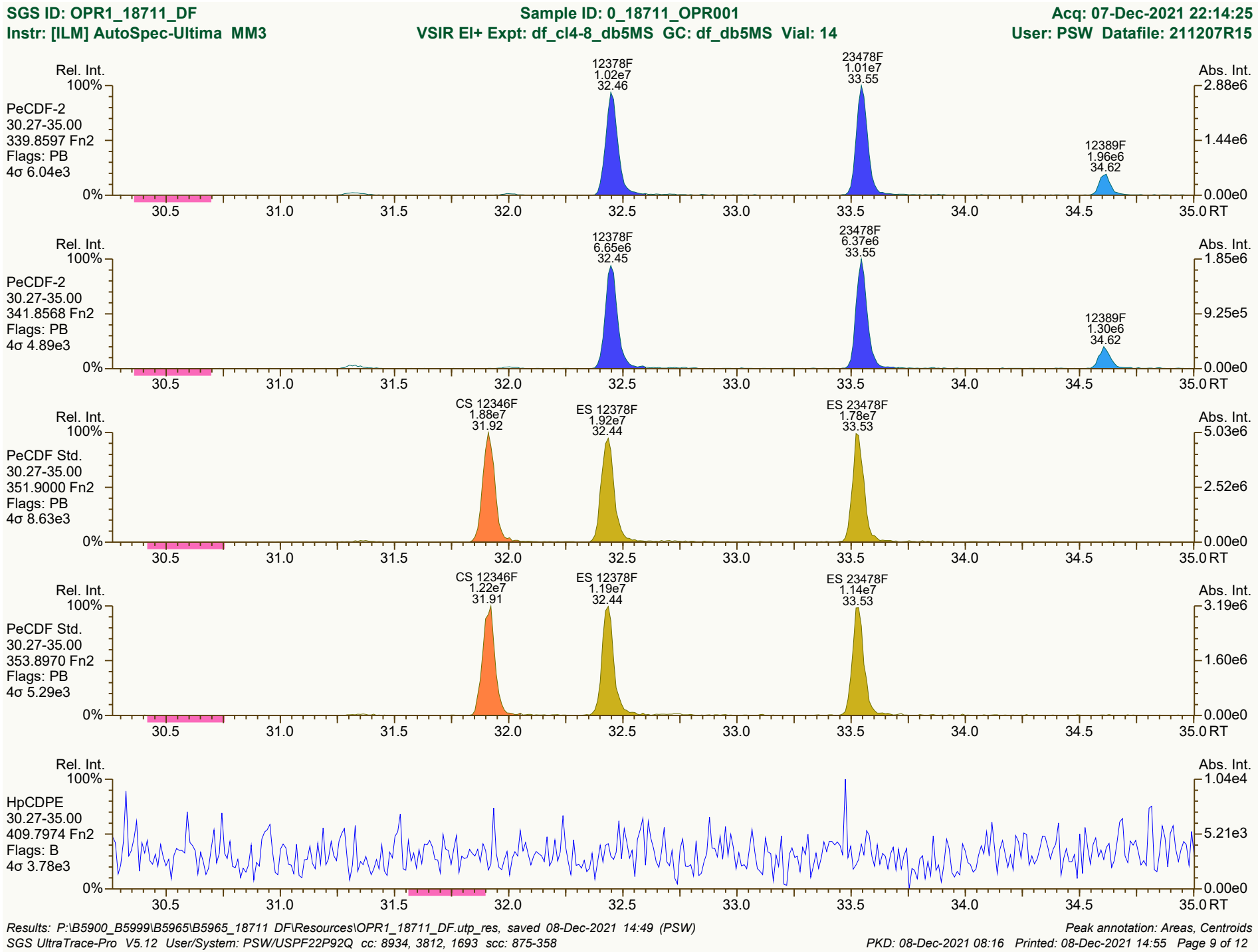


Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9238 scc: 875-358
PKD: 08-Dec-2021 08:16 Printed: 08-Dec-2021 14:55 Page 8 of 12

SGS ID: OPR1_18711_DF
Instr: [ILM] AutoSpec-Ultima MM3

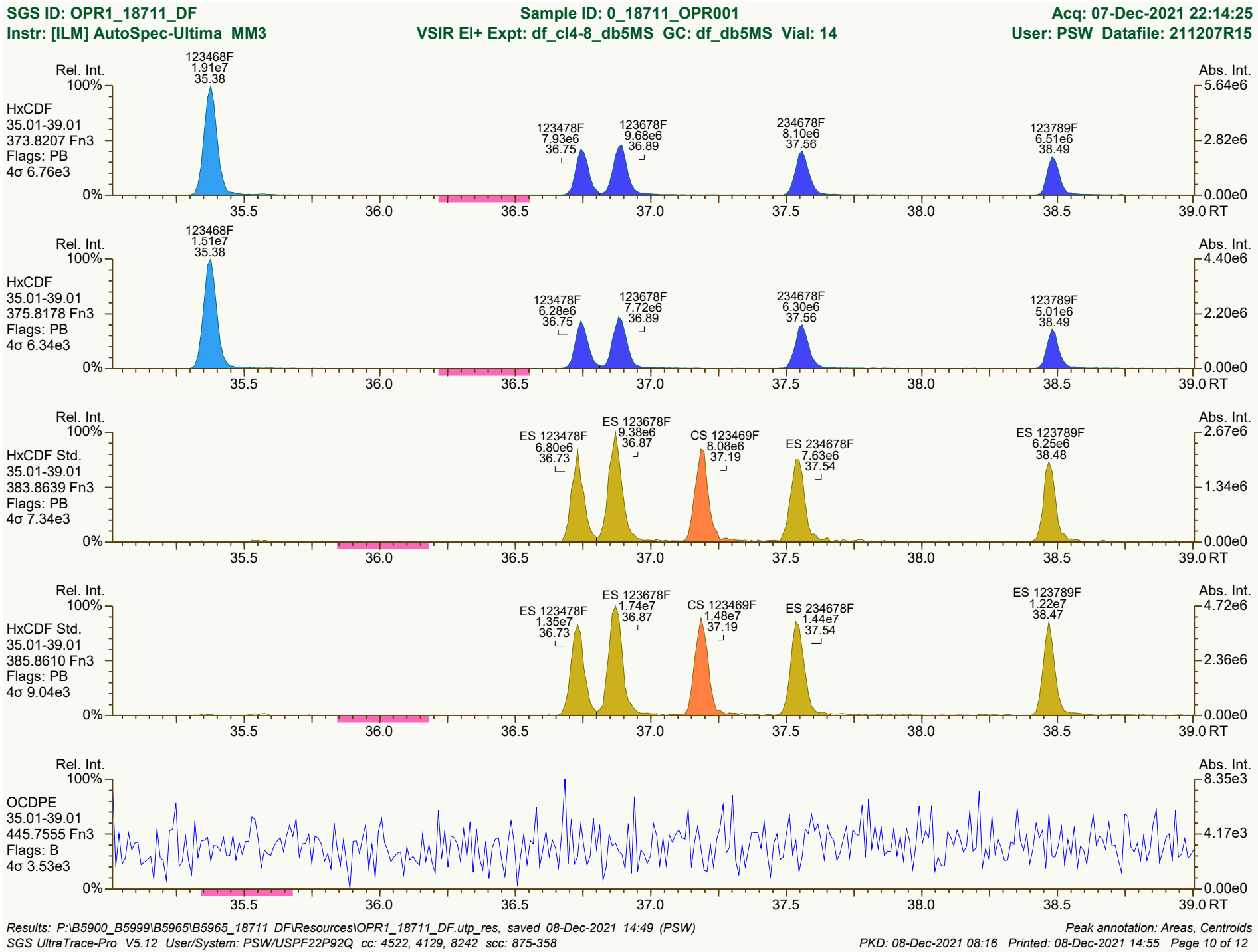
Sample ID: 0_18711_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14

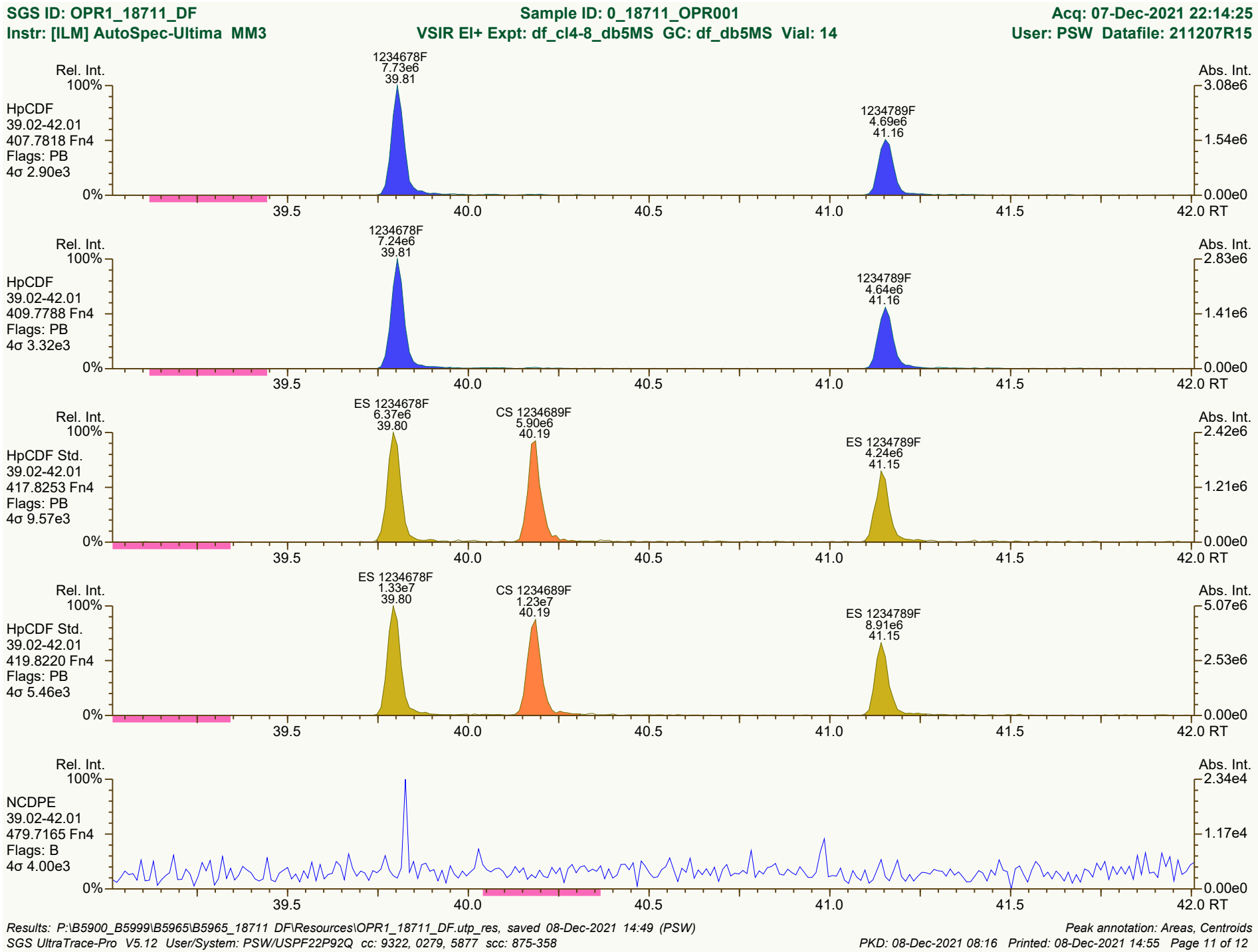
Acq: 07-Dec-2021 22:14:25
User: PSW Datafile: 211207R15



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8934, 3812, 1693 scc: 875-358

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 08:16 Printed: 08-Dec-2021 14:55 Page 9 of 12

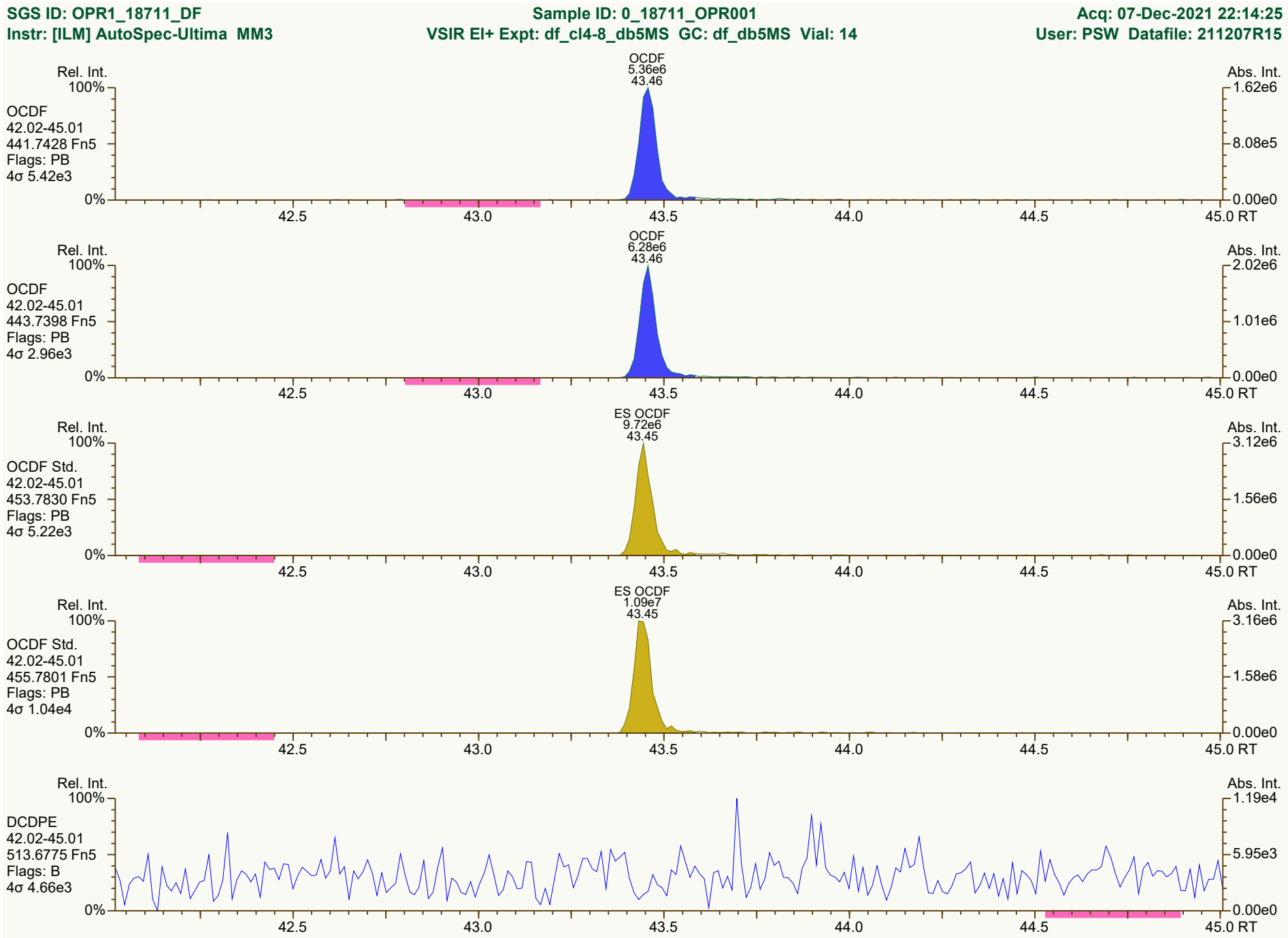

SGS ID: OPR1_18711_DF
Sample ID: 0_18711_OPR001
Acq: 07-Dec-2021 22:14:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14
User: PSW Datafile: 211207R15
Rel. Int.
Abs. Int.
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PB
4σ 6.76e3
123468F
1.91e7
35.38
123478F
7.93e6
36.75
123678F
9.68e6
36.89
234678F
8.10e6
37.56
123789F
6.51e6
38.49
5.64e6
2.82e6
0.00e0
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PB
4σ 6.34e3
123468F
1.51e7
35.38
123478F
6.28e6
36.75
123678F
7.72e6
36.89
234678F
6.30e6
37.56
123789F
5.01e6
38.49
4.40e6
2.20e6
0.00e0
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 7.34e3
ES 123478F
6.80e6
36.73
ES 123678F
9.38e6
36.87
CS 123469F
8.08e6
37.19
ES 234678F
7.63e6
37.54
ES 123789F
6.25e6
38.48
2.67e6
1.34e6
0.00e0
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 9.04e3
ES 123478F
1.35e7
36.73
ES 123678F
1.74e7
36.87
CS 123469F
1.48e7
37.19
ES 234678F
1.44e7
37.54
ES 123789F
1.22e7
38.47
4.72e6
2.36e6
0.00e0
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.53e3
8.35e3
4.17e3
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4522, 4129, 8242 scc: 875-358
PKD: 08-Dec-2021 08:16 Printed: 08-Dec-2021 14:55 Page 10 of 12


SGS ID: OPR1_18711_DF
Sample ID: 0_18711_OPR001
Acq: 07-Dec-2021 22:14:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14
User: PSW Datafile: 211207R15
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 2.90e3
1234678F
7.73e6
39.81
1234789F
4.69e6
41.16
3.08e6
1.54e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 3.32e3
1234678F
7.24e6
39.81
1234789F
4.64e6
41.16
2.83e6
1.41e6
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 9.57e3
ES 1234678F
6.37e6
39.80
CS 1234689F
5.90e6
40.19
ES 1234789F
4.24e6
41.15
2.42e6
1.21e6
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 5.46e3
ES 1234678F
1.33e7
39.80
CS 1234689F
1.23e7
40.19
ES 1234789F
8.91e6
41.15
5.07e6
2.53e6
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.00e3
2.34e4
1.17e4
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9322, 0279, 5877 scc: 875-358
PKD: 08-Dec-2021 08:16 Printed: 08-Dec-2021 14:55 Page 11 of 12

SGS ID: OPR1_18711_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18711_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 14

Acq: 07-Dec-2021 22:14:25
User: PSW Datafile: 211207R15



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR1_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2368, 8391, 0063 scc: 875-358

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 08:16 Printed: 08-Dec-2021 14:55 Page 12 of 12

Lab ID: OPR2_18711_DF **Acq'd: 07 Dec 2021 23:01 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18711_OPR002 **UTP: 08-Dec-2021 14:49:02 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 589-645-TXN**

Datafile: 211207R16 **Report: 08 Dec 2021 14:49 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.60		1.0008	1.0007	-0.2	2.89E+06	0.72	Y	1.34	9.56	10693.684	0.346
12378-PeCDD	33.87		1.0004	1.0005	+0.2	1.02E+07	1.61	Y	1.06	45.4	7237.77	0.292
123478-HxCDD	37.73		1.0004	1.0004	0	9.97E+06	1.29	Y	1.06	54.5	6916.535	0.299
123678-HxCDD	37.84		1.0034	1.0034	0	1.11E+07	1.27	Y	1.08	56.8	6916.535	0.306
123789-HxCDD	38.12		1.0111	1.0109	-0.5	1.08E+07	1.28	Y	1.02	51.9	6916.535	0.265
1234678-HpCDD	40.69		1.0004	1.0003	-0.2	9.00E+06	1.02	Y	0.97	56.3	7578.378	0.306
OCDD	43.26		1.0003	1.0003	0	1.11E+07	0.90	Y	1.07	107	8523.173	0.661
2378-TCDF	27.76		1.0007	1.0007	0	3.93E+06	0.88	Y	0.96	12.5	8574.494	0.3
12378-PeCDF	32.44		1.0006	1.0005	-0.2	1.75E+07	1.58	Y	0.95	55.6	13746.614	0.421
23478-PeCDF	33.54		1.0005	1.0005	0	1.76E+07	1.57	Y	0.94	60.4	13746.614	0.404
123478-HxCDF	36.74		1.0004	1.0005	+0.2	1.54E+07	1.25	Y	1.23	55.4	16883.853	0.456
123678-HxCDF	36.88		1.0005	1.0005	0	1.81E+07	1.27	Y	1.13	55.7	16883.853	0.5
234678-HxCDF	37.55		1.0005	1.0006	+0.2	1.49E+07	1.25	Y	1.15	54.1	16883.853	0.566
123789-HxCDF	38.48		1.0005	1.0004	-0.2	1.20E+07	1.23	Y	1.14	51.5	16883.853	0.546
1234678-HpCDF	39.80		1.0003	1.0003	0	1.50E+07	1.06	Y	1.36	55.5	7844.032	0.188
1234789-HpCDF	41.15		1.0004	1.0003	-0.2	1.04E+07	1.07	Y	1.30	55.4	7844.032	0.268
OCDF	43.45		1.0002	1.0002	0	1.32E+07	0.90	Y	1.03	111	9884.804	0.675

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58	1.0233	1.0232	-0.2	2.25E+07	0.83	Y	1.03	91.2
ES 12378-PeCDD	33.85	1.2118	1.2118	0	2.11E+07	1.51	Y	1.03	85.4
ES 123478-HxCDD	37.71	0.9921	0.9921	0	1.73E+07	1.25	Y	0.99	99.3
ES 123678-HxCDD	37.83	0.9951	0.9951	0	1.81E+07	1.33	Y	0.97	106
ES 123789-HxCDD	38.11	1.0027	1.0026	-0.2	2.05E+07	1.24	Y	1.12	104
ES 1234678-HpCDD	40.68	1.0702	1.0703	+0.2	1.64E+07	1.08	Y	0.99	94.4
ES OCDD	43.25	1.1377	1.1377	0	1.94E+07	0.91	Y	0.78	71.1
ES 2378-TCDF	27.74	1.0505	1.0505	0	3.27E+07	0.79	Y	1.08	81.2
ES 12378-PeCDF	32.43	1.2278	1.2279	+0.2	3.32E+07	1.59	Y	0.93	95.9
ES 23478-PeCDF	33.52	1.2691	1.2694	+0.6	3.10E+07	1.62	Y	0.92	90.4
ES 123478-HxCDF	36.72	0.9660	0.9660	0	2.25E+07	0.53	Y	1.14	113
ES 123678-HxCDF	36.86	0.9698	0.9697	-0.2	2.88E+07	0.52	Y	1.30	127
ES 234678-HxCDF	37.53	0.9875	0.9874	-0.2	2.40E+07	0.57	Y	1.20	114
ES 123789-HxCDF	38.46	1.0121	1.0119	-0.5	2.06E+07	0.53	Y	1.14	103
ES 1234678-HpCDF	39.78	1.0468	1.0466	-0.5	1.98E+07	0.47	Y	0.95	119
ES 1234789-HpCDF	41.14	1.0822	1.0823	+0.2	1.44E+07	0.48	Y	0.85	96.9
ES OCDF	43.44	1.1426	1.1427	+0.3	2.31E+07	0.91	Y	0.93	71.1

Lab ID: OPR2_18711_DF | **Acq'd:** 07 Dec 2021 23:01 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18711_OPR002 | **UTP:** 08-Dec-2021 14:49:02 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 589-645-TXN

Datafile: 211207R16 | **Report:** 08 Dec 2021 14:49 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.93		-	-	-	2.39E+07	0.76	Y	-	-
JS 1234-TCDF	26.41		-	-	-	3.71E+07	0.80	Y	-	-
JS 123467-HxCDD	38.01		-	-	-	8.77E+06	1.32	Y	-	-
CS 37Cl-2378-TCDD	28.60		1.0241	1.0239	-0.3	1.02E+07	n/a	-	1.31	81.7
CS 12347-PeCDD	33.35		1.1940	1.1940	0	2.01E+07	1.57	Y	0.89	94.3
CS 12346-PeCDF	31.90		1.2080	1.2081	+0.2	3.34E+07	1.57	Y	0.87	104
CS 123469-HxCDF	37.18		0.9781	0.9781	0	2.47E+07	0.52	Y	1.09	129
CS 1234689-HpCDF	40.17		1.0569	1.0569	0	1.92E+07	0.44	Y	0.86	127
~~SS 37Cl-2378-TCDD~~	~~28.60~~		~~1.0241~~	~~1.0239~~	~~-0.3~~	~~1.02E+07~~	~~n/a~~		~~1.26~~	~~90.1~~
~~SS 12347-PeCDD~~	~~33.35~~		~~1.1940~~	~~1.1940~~	~~0~~	~~2.01E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~110~~
~~SS 12346-PeCDF~~	~~31.90~~		~~1.2080~~	~~1.2081~~	~~+0.2~~	~~3.34E+07~~	~~1.57~~	~~Y~~	~~0.93~~	~~100~~
~~SS 123469-HxCDF~~	~~37.18~~		~~0.9781~~	~~0.9781~~	~~0~~	~~2.47E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~102~~
~~SS 1234689-HpCDF~~	~~40.17~~		~~1.0569~~	~~1.0569~~	~~0~~	~~1.92E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~106~~

Totals	Conc	EMPC
Total TCDD	42.2	42.2
Total PeCDD	68.5	68.5
Total HxCDD	178	178
Total HpCDD	69.1	69.1
Total Tetra-Octa Dioxins	464	464
Total TCDF	69.2	69.2
Total PeCDF	218	218
Total HxCDF	347	347
Total HpCDF	111	111
Total Tetra-Octa Furans	856	856
Total Tetra-Octa Dioxins & Furans	1320	1320

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.715	0.72
Response	2.90E+06	2.89E+06

Lab ID: OPR2_18711_DF **Acq'd: 07 Dec 2021 23:01 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18711_OPR002 **UTP: 08-Dec-2021 14:49:02 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 589-645-TXN**

Datafile: 211207R16 **Report: 08 Dec 2021 14:49 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8757	-0.2	3.76E+06	0.77	Y	1.34	12.4	10693.684	0.346
1379-TCDD	NotFnd		0.8878						1.34		10693.684	0.346
1369-TCDD	NotFnd		0.9025						1.34		10693.684	0.346
1469-TCDD	NotFnd		0.9291						1.34		10693.684	0.346
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		10693.684	0.346
1378-TCDD	NotFnd		0.9440						1.34		10693.684	0.346
1268-TCDD	NotFnd		0.9505						1.34		10693.684	0.346
1478-TCDD	NotFnd		0.9591						1.34		10693.684	0.346
1279-TCDD	NotFnd		0.9650						1.34		10693.684	0.346
1234/1269-TCDD	NotFnd		0.9771						1.34		10693.684	0.346
1236-TCDD	NotFnd		0.9821						1.34		10693.684	0.346
1237/1238-TCDD	NotFnd		0.9907						1.34		10693.684	0.346
1239-TCDD	28.45		0.9953	0.9953	0	2.61E+06	0.76	Y	1.34	8.64	10693.684	0.346
2378-TCDD	**28.60**		**1.0008**	1.0007	**-0.2**	2.89E+06	0.72	Y	**1.34**	**9.56**	**10693.684**	**0.346**
1278-TCDD	NotFnd		1.0118						1.34		10693.684	0.346
1267-TCDD	NotFnd		1.0162						1.34		10693.684	0.346
1289-TCDD	29.56		1.0340	1.0341	+0.2	3.52E+06	0.88	Y	1.34	11.6	10693.684	0.346
12479/12468-PeCDD	31.40		0.9274	0.9275	+0.2	2.53E+06	1.57	Y	1.06	11.3	7237.77	0.292
12469-PeCDD	NotFnd		0.9430						1.06		7237.77	0.292
12368-PeCDD	NotFnd		0.9591						1.06		7237.77	0.292
12478-PeCDD	NotFnd		0.9645						1.06		7237.77	0.292
12379-PeCDD	NotFnd		0.9676						1.06		7237.77	0.292
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		7237.77	0.292
12346/12347-PeCDD	NotFnd		0.9860						1.06		7237.77	0.292
12378-PeCDD	33.87		**1.0004**	**1.0005**	**+0.2**	**1.02E+07**	**1.61**	**Y**	**1.06**	**45.4**	**7237.77**	**0.292**
12367-PeCDD	NotFnd		1.0034						1.06		7237.77	0.292
12389-PeCDD	34.30		1.0133	1.0134	+0.2	2.62E+06	1.71	Y	1.06	11.7	7237.77	0.292
124679/124689-HxCDD	36.00		0.9546	0.9547	+0.2	2.85E+06	1.25	Y	1.05	14.5	6916.535	0.289
123468-HxCDD	NotFnd		0.9718						1.05		6916.535	0.289
123679/123689-HxCDD	NotFnd		0.9795						1.05		6916.535	0.289
123469-HxCDD	NotFnd		0.9832						1.05		6916.535	0.289
123478-HxCDD	37.73		**1.0004**	**1.0004**	**0**	**9.97E+06**	**1.29**	**Y**	1.06	**54.5**	**6916.535**	**0.299**
123678-HxCDD	37.84		**1.0034**	**1.0034**	**0**	**1.11E+07**	**1.27**	**Y**	1.08	**56.8**	**6916.535**	**0.306**
123467-HxCDD	NotFnd		1.0083						1.05		6916.535	0.289
123789-HxCDD	38.12		**1.0111**	**1.0109**	**-0.5**	**1.08E+07**	**1.28**	**Y**	1.02	**51.9**	**6916.535**	**0.265**

Lab ID: OPR2_18711_DF | **Acq'd: 07 Dec 2021 23:01 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18711_OPR002 | **UTP: 08-Dec-2021 14:49:02 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 589-645-TXN**

Datafile: 211207R16 | **Report: 08 Dec 2021 14:49 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.03		0.9843	0.9841	-0.5	2.05E+06	1.10	Y	0.97	12.8	7578.378	0.306
1234678-HpCDD	**40.69**		**1.0004**	**1.0003**	**-0.2**	**9.00E+06**	**1.02**	**Y**	**0.97**	**56.3**	**7578.378**	**0.306**
OCDD	**43.26**		**1.0003**	**1.0003**	**0**	**1.11E+07**	**0.90**	**Y**	**1.07**	**107**	**8523.173**	**0.661**
OCDD-a	43.25	**EMPC**	1.0001	1.0002	+0.3	6.40E+05	2.07	N	0.07	100	12381.648	15.6
1368-TCDF	22.98		0.8284	0.8284	0	5.20E+06	0.79	Y	0.96	16.6	8574.494	0.3
1468-TCDF	NotFnd		0.8487						0.96		8574.494	0.3
2468-TCDF	24.16		0.8709	0.8708	-0.1	1.30E+06	0.83	Y	0.96	4.14	8574.494	0.3
1346/1246-TCDF	NotFnd		0.8828						0.96		8574.494	0.3
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		8574.494	0.3
1348-TCDF	NotFnd		0.8980						0.96		8574.494	0.3
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		8574.494	0.3
1268-TCDF	NotFnd		0.9159						0.96		8574.494	0.3
1467-TCDF	NotFnd		0.9206						0.96		8574.494	0.3
1478-TCDF	NotFnd		0.9266						0.96		8574.494	0.3
1369/1237-TCDF	NotFnd		0.9396						0.96		8574.494	0.3
2467-TCDF	NotFnd		0.9440						0.96		8574.494	0.3
2368-TCDF	NotFnd		0.9496						0.96		8574.494	0.3
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		8574.494	0.3
1278-TCDF	NotFnd		0.9689						0.96		8574.494	0.3
1349-TCDF	NotFnd		0.9732						0.96		8574.494	0.3
1267-TCDF	NotFnd		0.9786						0.96		8574.494	0.3
2346/1249-TCDF	NotFnd		0.9849						0.96		8574.494	0.3
2347/1279-TCDF	NotFnd		0.9927						0.96		8574.494	0.3
2348-TCDF	27.65		0.9967	0.9968	+0.2	5.14E+06	0.81	Y	0.96	16.4	8574.494	0.3
2378-TCDF	**27.76**		**1.0007**	**1.0007**	**0**	**3.93E+06**	**0.88**	**Y**	**0.96**	**12.5**	**8574.494**	**0.3**
2367/3467-TCDF	NotFnd		1.0136						0.96		8574.494	0.3
1269-TCDF	NotFnd		1.0223						0.96		8574.494	0.3
1239-TCDF	NotFnd		1.0313						0.96		8574.494	0.3
1289-TCDF	29.73		1.0711	1.0717	+1.1	6.16E+06	0.83	Y	0.96	19.6	8574.494	0.3
13468/12468-PeCDF	29.65		0.9147	0.9143	-0.7	2.76E+07	1.55	Y	0.94	91.1	8757.289	0.263
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		13746.614	0.413
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		13746.614	0.413
14678-PeCDF	NotFnd		0.9695						0.94		13746.614	0.413
13479-PeCDF	NotFnd		0.9727						0.94		13746.614	0.413
13469/12479-PeCDF	NotFnd		0.9799						0.94		13746.614	0.413
12346-PeCDF	NotFnd		0.9839						0.94		13746.614	0.413

Lab ID: OPR2_18711_DF **Acq'd: 07 Dec 2021 23:01 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18711_OPR002 **UTP: 08-Dec-2021 14:49:02 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 589-645-TXN**

Datafile: 211207R16 **Report: 08 Dec 2021 14:49 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		13746.614	0.413
12347-PeCDF	NotFnd		0.9892						0.94		13746.614	0.413
12348-PeCDF	NotFnd		0.9940						0.94		13746.614	0.413
12378-PeCDF	**32.44**		**1.0006**	**1.0005**	**-0.2**	**1.75E+07**	**1.58**	**Y**	**0.95**	**55.6**	**13746.614**	**0.421**
12678/12367-PeCDF	NotFnd		1.0088						0.94		13746.614	0.413
12379-PeCDF	NotFnd		1.0142						0.94		13746.614	0.413
12679-PeCDF	NotFnd		0.9931						0.94		13746.614	0.413
23467/12369-PeCDF	NotFnd		0.9966						0.94		13746.614	0.413
23478-PeCDF	**33.54**		**1.0005**	**1.0005**	**0**	**1.76E+07**	**1.57**	**Y**	**0.94**	**60.4**	**13746.614**	**0.404**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		13746.614	0.413
12349-PeCDF	NotFnd		1.0100						0.94		13746.614	0.413
12389-PeCDF	34.60		1.0323	1.0323	0	3.29E+06	1.51	Y	0.94	10.9	13746.614	0.413
123468-HxCDF	35.37		0.9631	0.9632	+0.2	3.63E+07	1.25	Y	1.16	130	16883.853	0.514
124678/134678-HxCDF	NotFnd		0.9686						1.16		16883.853	0.514
134679-HxCDF	NotFnd		0.9747						1.16		16883.853	0.514
124679-HxCDF	NotFnd		0.9800						1.16		16883.853	0.514
124689-HxCDF	NotFnd		0.9859						1.16		16883.853	0.514
123467-HxCDF	NotFnd		0.9972						1.16		16883.853	0.514
123478-HxCDF	**36.74**		**1.0004**	**1.0005**	**+0.2**	**1.54E+07**	**1.25**	**Y**	**1.23**	**55.4**	**16883.853**	**0.456**
123678-HxCDF	**36.88**		**1.0005**	**1.0005**	**0**	**1.81E+07**	**1.27**	**Y**	**1.13**	**55.7**	**16883.853**	**0.5**
123479-HxCDF	NotFnd		1.0048						1.16		16883.853	0.514
123469-HxCDF	NotFnd		1.0089						1.16		16883.853	0.514
123679-HxCDF	NotFnd		0.9943						1.16		16883.853	0.514
234678-HxCDF	**37.55**		**1.0005**	**1.0006**	**+0.2**	**1.49E+07**	**1.25**	**Y**	**1.15**	**54.1**	**16883.853**	**0.566**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		16883.853	0.514
123789-HxCDF	**38.48**		**1.0005**	**1.0004**	**-0.2**	**1.20E+07**	**1.23**	**Y**	**1.14**	**51.5**	**16883.853**	**0.546**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		16883.853	0.514
1234678-HpCDF	**39.80**		**1.0003**	**1.0003**	**0**	**1.50E+07**	**1.06**	**Y**	**1.36**	**55.5**	**7844.032**	**0.188**
1234679-HpCDF	NotFnd		1.0065						1.33		7844.032	0.222
1234689-HpCDF	NotFnd		1.0097						1.33		7844.032	0.222
1234789-HpCDF	**41.15**		**1.0004**	**1.0003**	**-0.2**	**1.04E+07**	**1.07**	**Y**	**1.30**	**55.4**	**7844.032**	**0.268**
OCDF	**43.45**		**1.0002**	**1.0002**	**0**	**1.32E+07**	**0.90**	**Y**	**1.03**	**111**	**9884.804**	**0.675**
OCDF-a	43.44	**EMPC**	1.0001	1.0001	0	6.34E+05	2.02	N	0.06	92.7	13366.731	15.8

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211207R16	Analysis Date:	07-DEC-2021 23:01:58
Lab ID:	OPR2_18711_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.56	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	45.4	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	54.5	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	56.8	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.9	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.3	35	-	70	Y
OCDD	100	107	78	-	144	Y
2,3,7,8-TCDF	10	12.5	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	55.6	40	-	67	Y
2,3,4,7,8-PeCDF	50	60.4	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	55.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	55.7	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	54.1	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	51.5	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	55.5	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	55.4	39	-	69	Y
OCDF	100	111	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Dec 2021 14:49 Analyst: pw

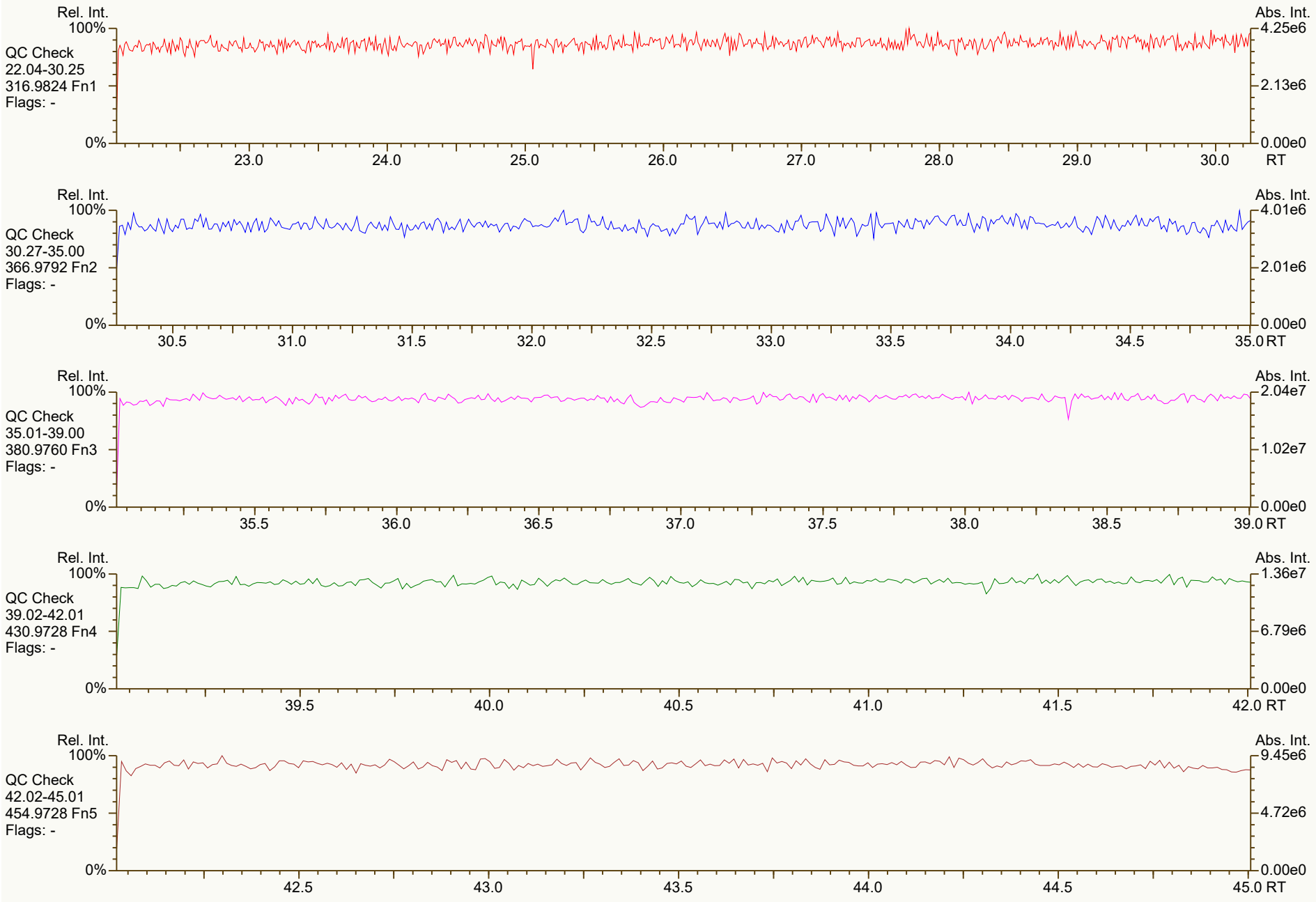
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211207R16	Analysis Date:	07-DEC-2021 23:01:58
Lab ID:	OPR2_18711_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	91.2	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	85.4	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	99.3	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	106	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	104	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	94.4	26	-	166	Y
13C-OCDD	200	142	26	-	397	Y
13C-2,3,7,8-TCDF	100	81.2	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	95.9	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	90.4	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	113	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	127	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	114	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	103	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	119	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	96.9	20	-	186	Y
13C-OCDF	200	142	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	32.7	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 08 Dec 2021 14:49 Analyst: pw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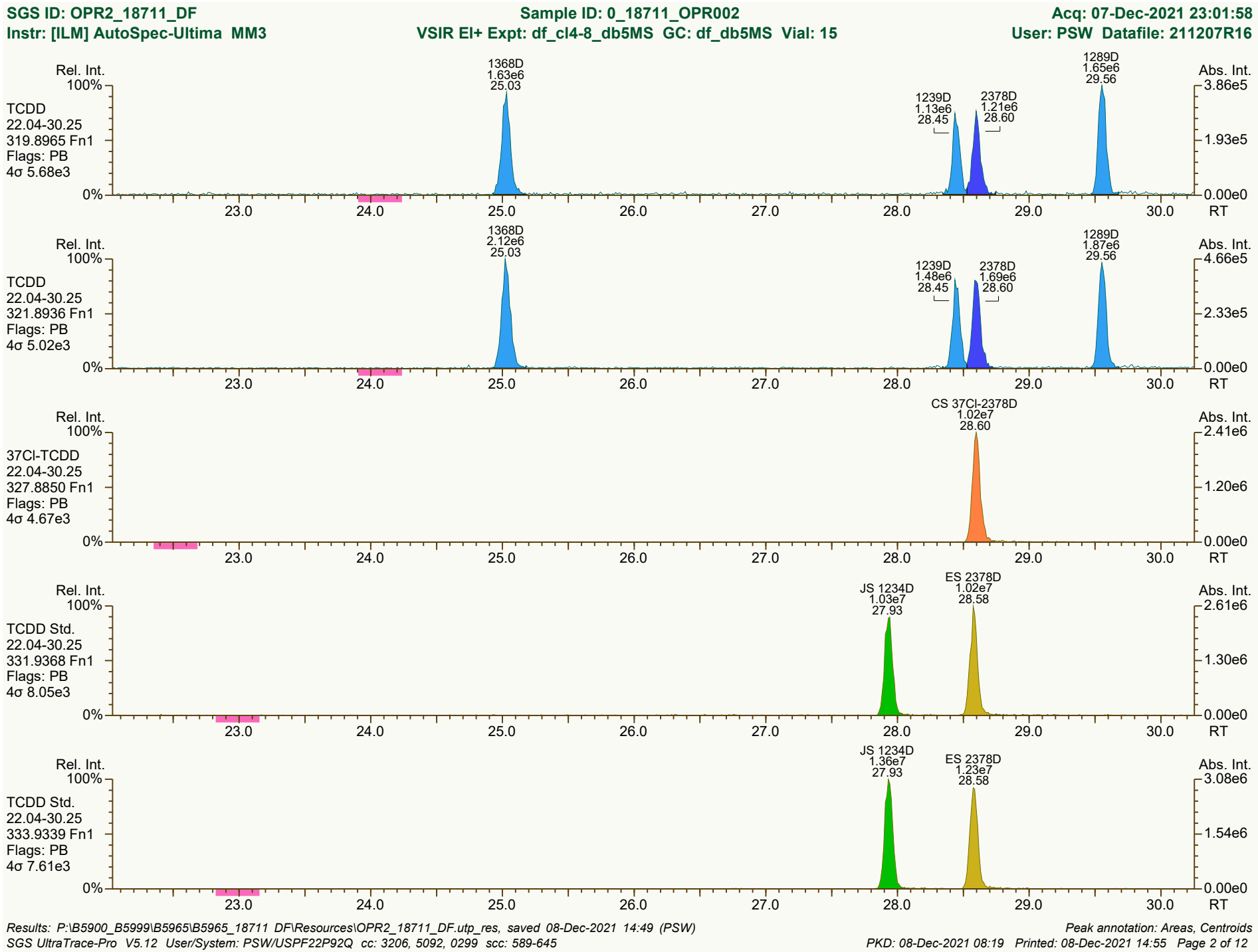
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.25e6
2.13e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.01e6
2.01e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.04e7
1.02e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.36e7
6.79e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.45e6
4.72e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: OPR2_18711_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18711_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15

Acq: 07-Dec-2021 23:01:58
User: PSW Datafile: 211207R16



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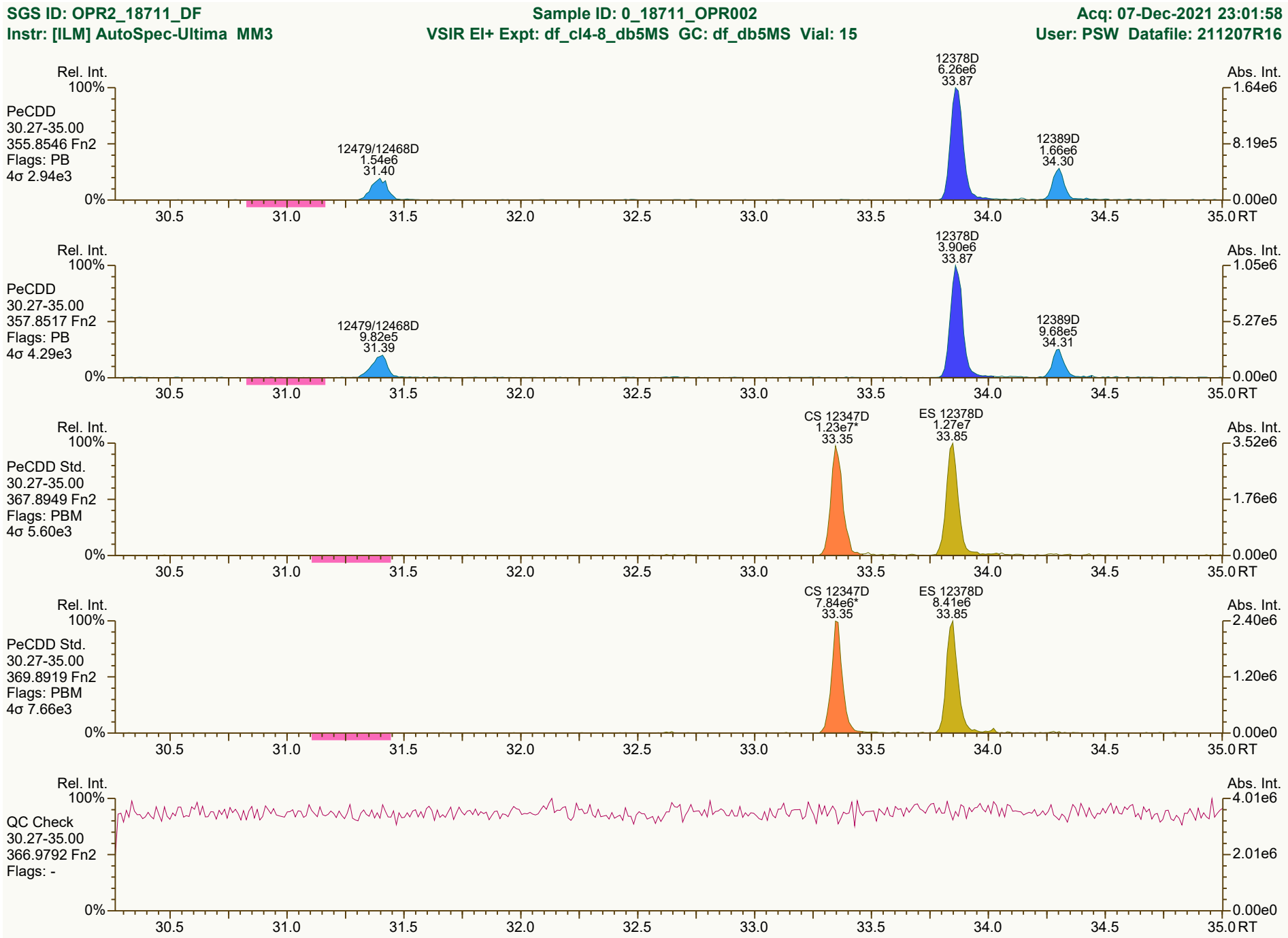
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3206, 5092, 0299 scc: 589-645

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 08:19 Printed: 08-Dec-2021 14:55 Page 2 of 12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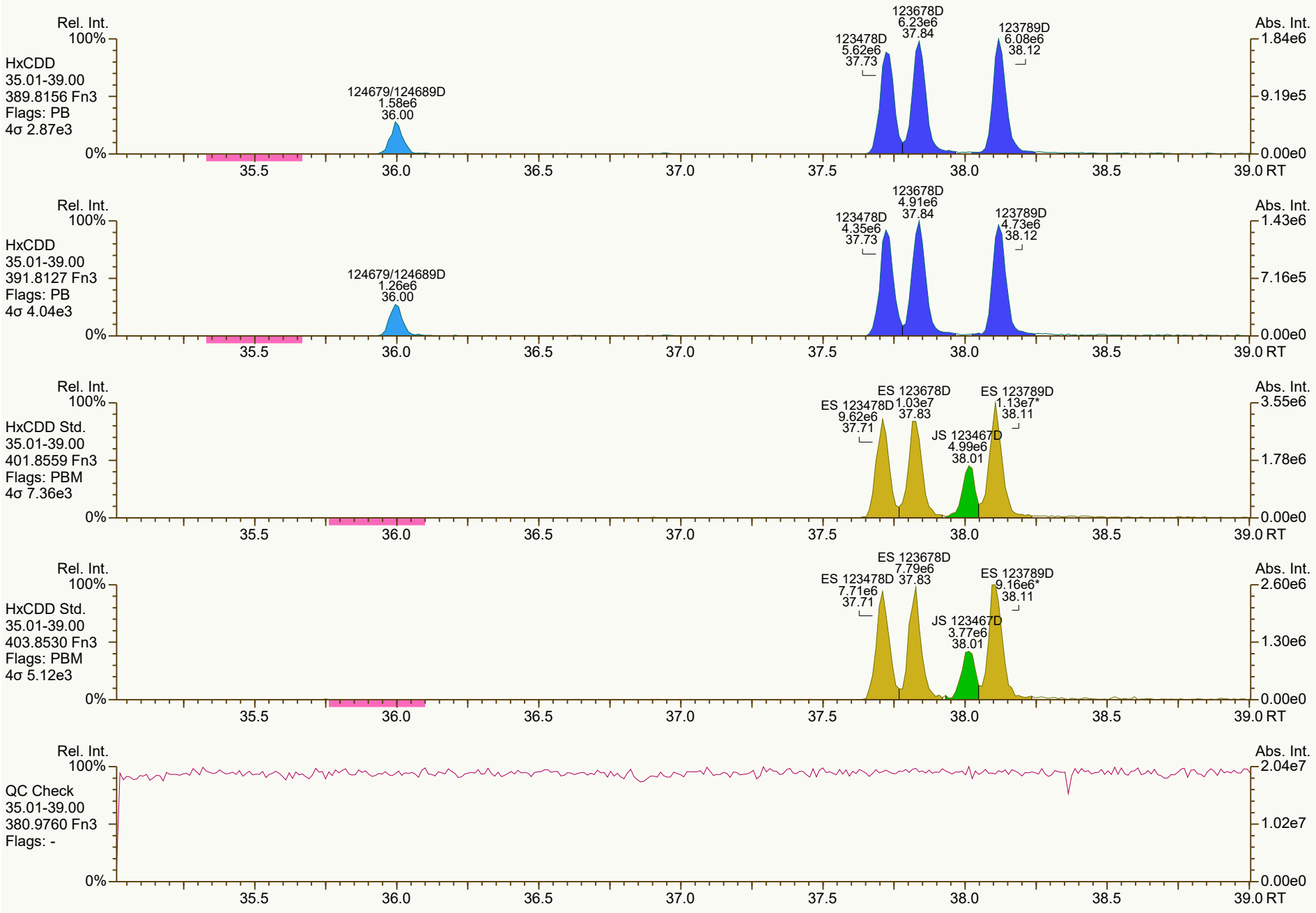
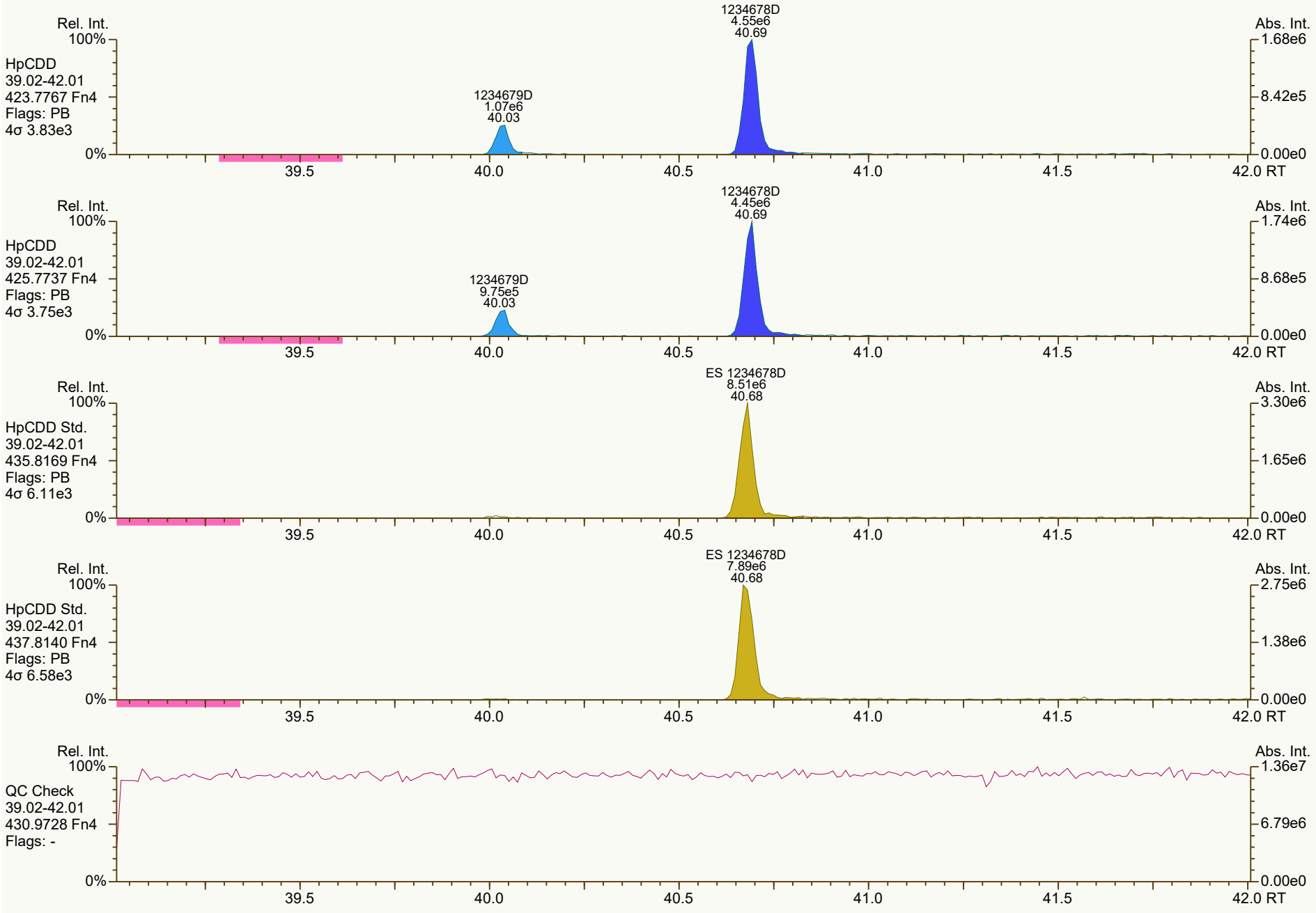
Sample ID: 0_18711_OPR002
Acq: 07-Dec-2021 23:01:58
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15
User: PSW Datafile: 211207R16
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PB
4σ 2.94e3
12479/12468D
1.54e6
31.40
12378D
6.26e6
33.87
12389D
1.66e6
34.30
1.64e6
8.19e5
0.00e0
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 4.29e3
12479/12468D
9.82e5
31.39
12378D
3.90e6
33.87
12389D
9.68e5
34.31
1.05e6
5.27e5
0.00e0
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PBM
4σ 5.60e3
CS 12347D
1.23e7*
33.35
ES 12378D
1.27e7
33.85
3.52e6
1.76e6
0.00e0
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PBM
4σ 7.66e3
CS 12347D
7.84e6*
33.35
ES 12378D
8.41e6
33.85
2.40e6
1.20e6
0.00e0
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
4.01e6
2.01e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8539, 5462 scc: 589-645
PKD: 08-Dec-2021 08:19 Printed: 08-Dec-2021 14:55 Page 3 of 12

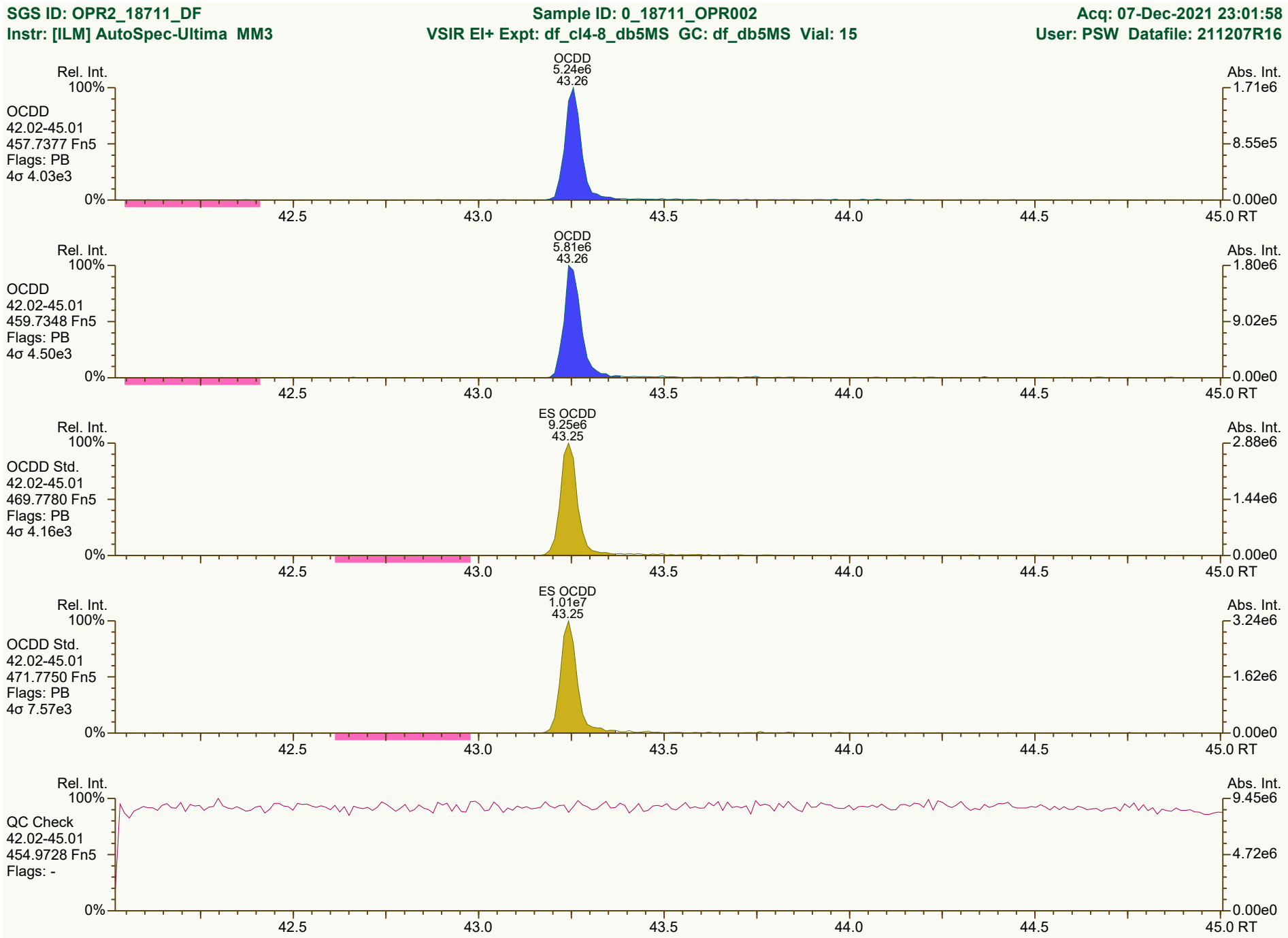

Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 2.87e3
124679/124689D
1.58e6
36.00
123478D
5.62e6
37.73
123678D
6.23e6
37.84
123789D
6.08e6
38.12
Abs. Int.
1.84e6
9.19e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 4.04e3
124679/124689D
1.26e6
36.00
123478D
4.35e6
37.73
123678D
4.91e6
37.84
123789D
4.73e6
38.12
Abs. Int.
1.43e6
7.16e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 7.36e3
ES 123478D
9.62e6
37.71
ES 123678D
1.03e7
37.83
JS 123467D
4.99e6
38.01
ES 123789D
1.13e7*
38.11
Abs. Int.
3.55e6
1.78e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 5.12e3
ES 123478D
7.71e6
37.71
ES 123678D
7.79e6
37.83
JS 123467D
3.77e6
38.01
ES 123789D
9.16e6*
38.11
Abs. Int.
2.60e6
1.30e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
Abs. Int.
2.04e7
1.02e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 3.83e3
1234678D
4.55e6
40.69
1234679D
1.07e6
40.03
Abs. Int.
1.68e6
8.42e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 3.75e3
1234678D
4.45e6
40.69
1234679D
9.75e5
40.03
Abs. Int.
1.74e6
8.68e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.11e3
ES 1234678D
8.51e6
40.68
Abs. Int.
3.30e6
1.65e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 6.58e3
ES 1234678D
7.89e6
40.68
Abs. Int.
2.75e6
1.38e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.79e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

SGS ID: OPR2_18711_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18711_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15

Acq: 07-Dec-2021 23:01:58
User: PSW Datafile: 211207R16



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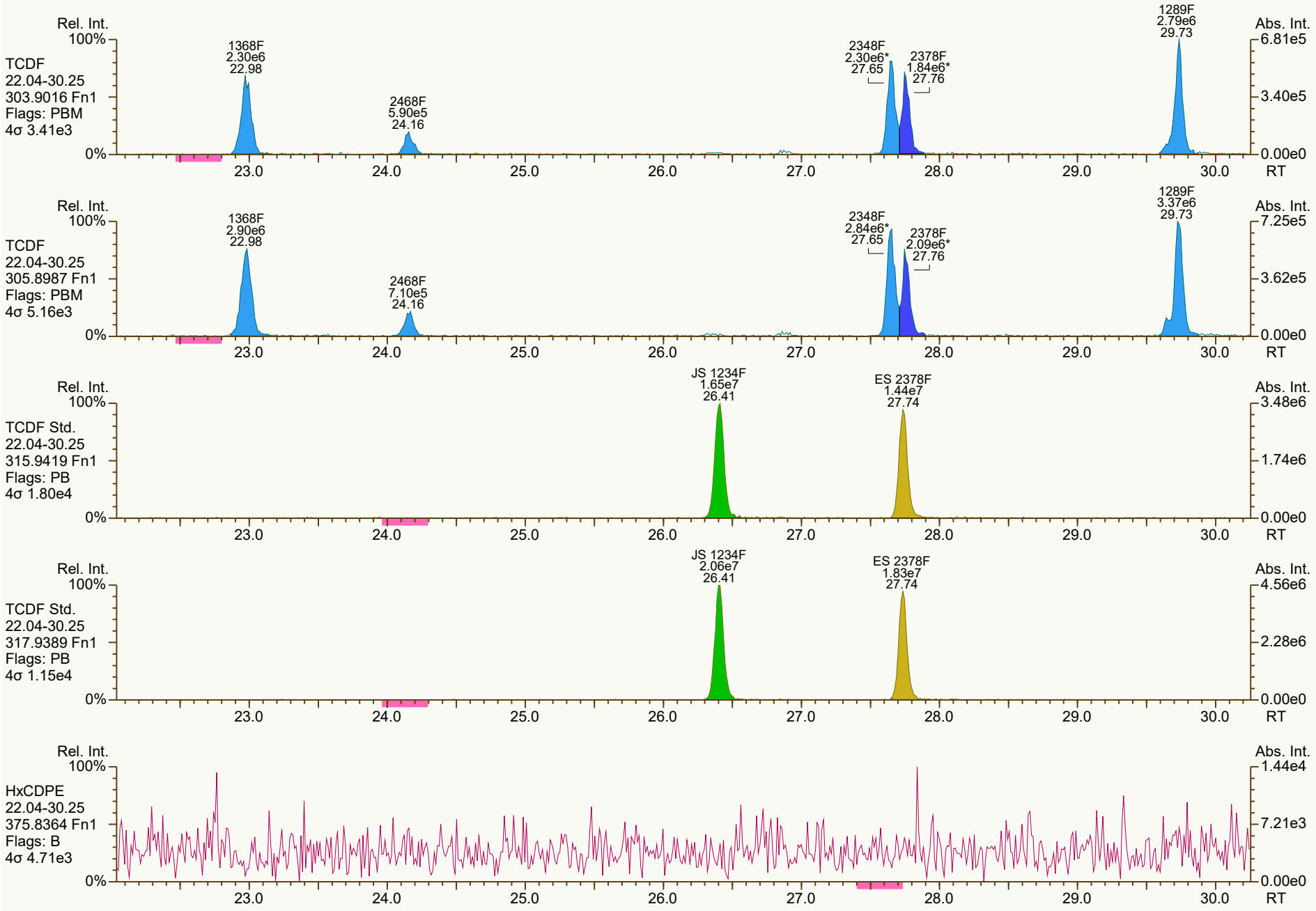
Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 08:19 Printed: 08-Dec-2021 14:55 Page 6 of 12

SGS ID: OPR2_18711_DF | Sample ID: 0_18711_OPR002 | Acq: 07-Dec-2021 23:01:58

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15 | User: PSW Datafile: 211207R16



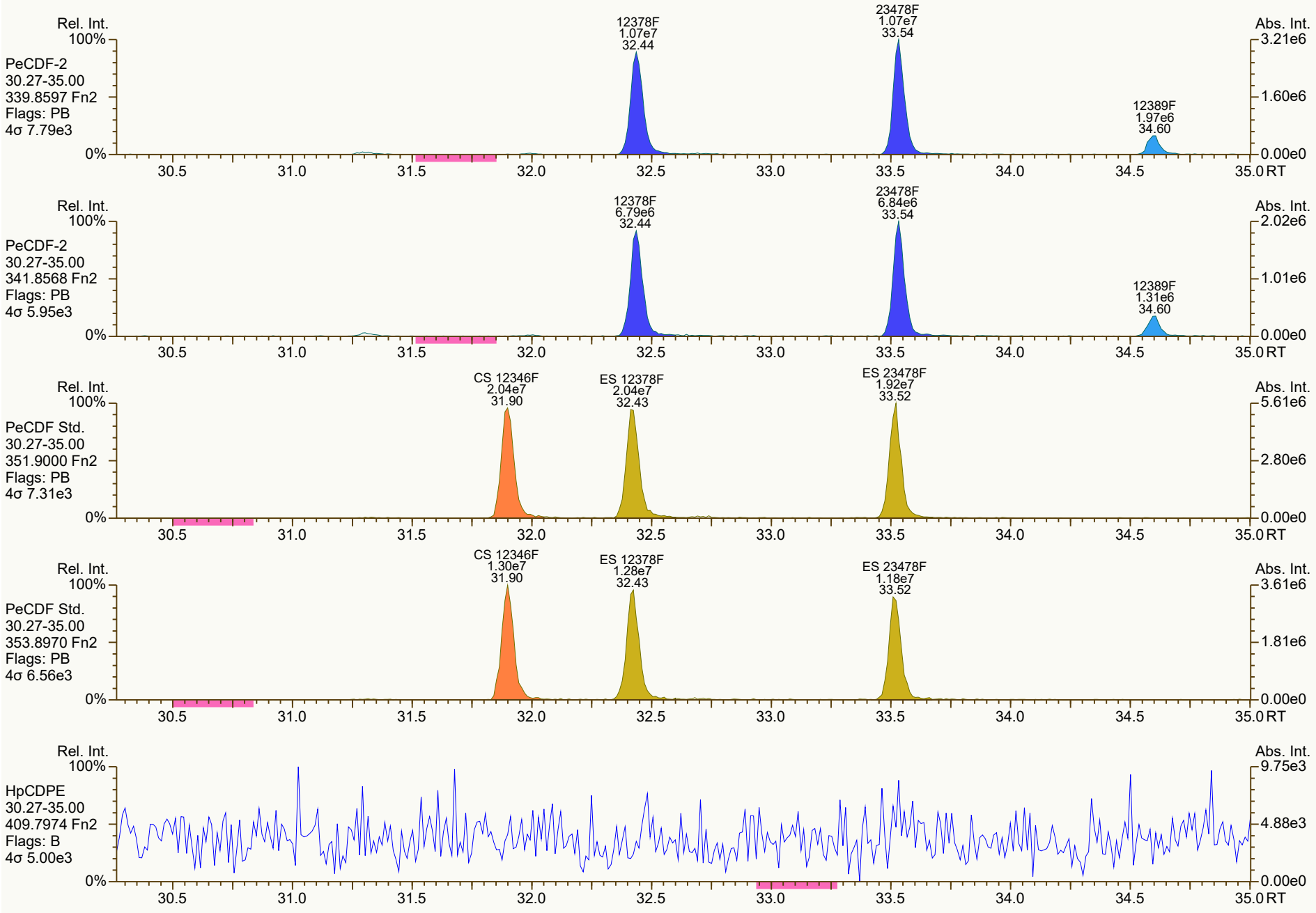
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5172, 1940, 0768 scc: 589-645 | *PKD: 08-Dec-2021 08:19 Printed: 08-Dec-2021 14:55 Page 7 of 12*

SGS ID: OPR2_18711_DF
Sample ID: 0_18711_OPR002
Acq: 07-Dec-2021 23:01:58
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15
User: PSW Datafile: 211207R16



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8457 scc: 589-645
PKD: 08-Dec-2021 08:19 Printed: 08-Dec-2021 14:55 Page 8 of 12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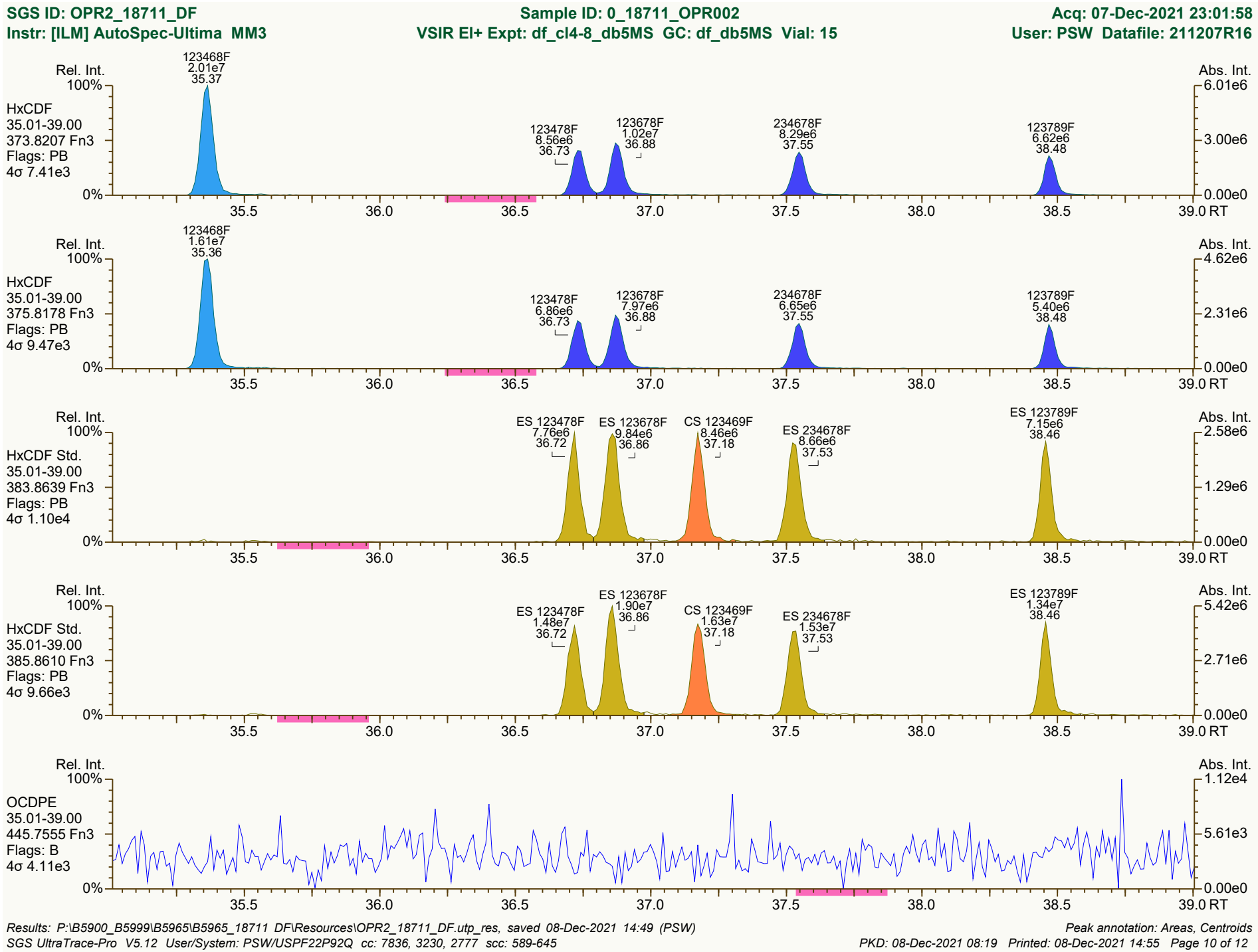
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 7.79e3
0%
12378F
1.07e7
32.44
23478F
1.07e7
33.54
12389F
1.97e6
34.60
Abs. Int.
3.21e6
1.60e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 5.95e3
0%
12378F
6.79e6
32.44
23478F
6.84e6
33.54
12389F
1.31e6
34.60
Abs. Int.
2.02e6
1.01e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 7.31e3
0%
CS 12346F
2.04e7
31.90
ES 12378F
2.04e7
32.43
ES 23478F
1.92e7
33.52
Abs. Int.
5.61e6
2.80e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 6.56e3
0%
CS 12346F
1.30e7
31.90
ES 12378F
1.28e7
32.43
ES 23478F
1.18e7
33.52
Abs. Int.
3.61e6
1.81e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 5.00e3
0%
Abs. Int.
9.75e3
4.88e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

SGS ID: OPR2_18711_DF
Instr: [ILM] AutoSpec-Ultima MM3

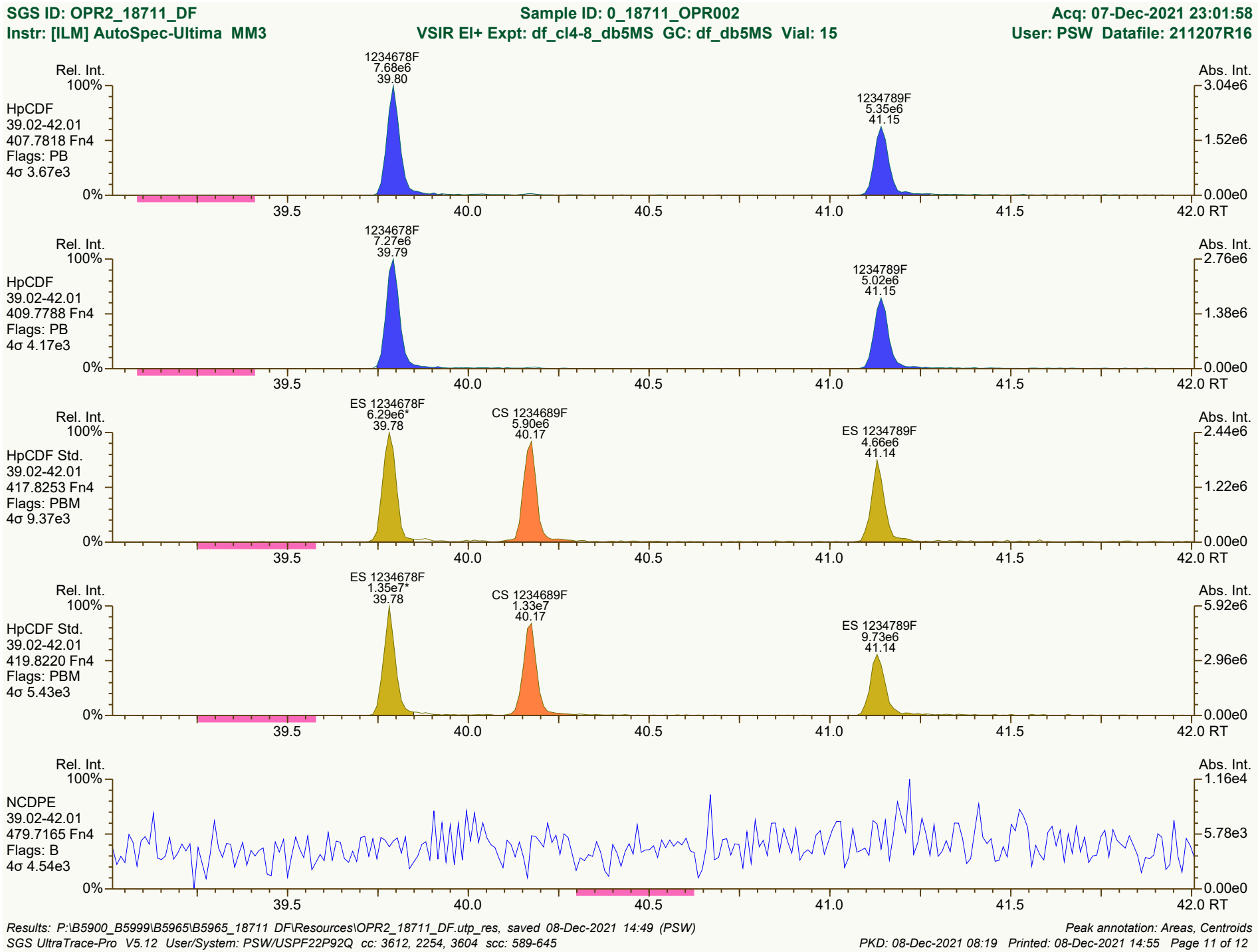
Sample ID: 0_18711_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15

Acq: 07-Dec-2021 23:01:58
User: PSW Datafile: 211207R16



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7836, 3230, 2777 scc: 589-645

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 08:19 Printed: 08-Dec-2021 14:55 Page 10 of 12


SGS ID: OPR2_18711_DF
Sample ID: 0_18711_OPR002
Acq: 07-Dec-2021 23:01:58
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 15
User: PSW Datafile: 211207R16
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 3.67e3
1234678F
7.68e6
39.80
1234789F
5.35e6
41.15
3.04e6
1.52e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 4.17e3
1234678F
7.27e6
39.79
1234789F
5.02e6
41.15
2.76e6
1.38e6
0.00e0
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 9.37e3
ES 1234678F
6.29e6*
39.78
CS 1234689F
5.90e6
40.17
ES 1234789F
4.66e6
41.14
2.44e6
1.22e6
0.00e0
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 5.43e3
ES 1234678F
1.35e7*
39.78
CS 1234689F
1.33e7
40.17
ES 1234789F
9.73e6
41.14
5.92e6
2.96e6
0.00e0
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.54e3
1.16e4
5.78e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18711_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3612, 2254, 3604 scc: 589-645
PKD: 08-Dec-2021 08:19 Printed: 08-Dec-2021 14:55 Page 11 of 12


OCDF
6.26e6
43.45
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 5.54e3
0%
Abs. Int.
1.96e6
9.79e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.93e6
43.44
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 4.35e3
0%
Abs. Int.
2.27e6
1.14e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.10e7
43.44
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 6.04e3
0%
Abs. Int.
3.40e6
1.70e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.21e7
43.43
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 5.00e3
0%
Abs. Int.
3.73e6
1.86e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.51e3
0%
Abs. Int.
9.09e3
4.54e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

CPSM only

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211207R30	Analysis Date:	08-DEC-2021 10:39:20
Lab ID:	OPR2_18715_DF		

Window Defining Standards Results

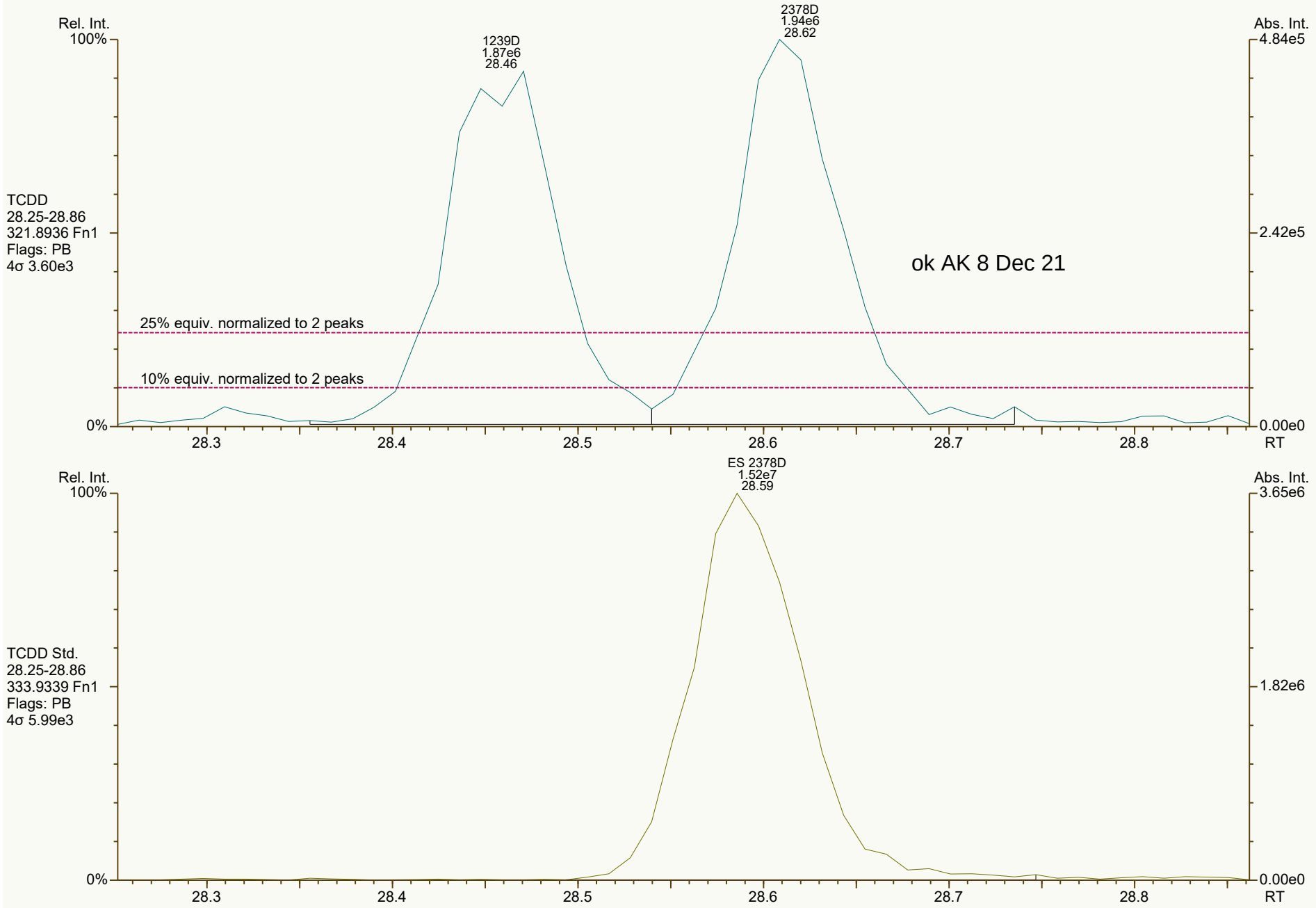
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.04	1289-TCDD	29.57
12479/12468-PeCDD	31.41	12389-PeCDD	34.33
124679/124689-HxCDD	36.03	123789-HxCDD	38.15
1234679-HpCDD	40.05	1234678-HpCDD	40.71
1368-TCDF	22.99	1289-TCDF	29.75
13468/12468-PeCDF	29.66	12389-PeCDF	34.62
123468-HxCDF	35.39	123789-HxCDF	38.49
1234678-HpCDF	39.81	1234789-HpCDF	41.17

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.46	2378-TCDD	28.62
2348-TCDF	27.66	2378-TCDF	27.77

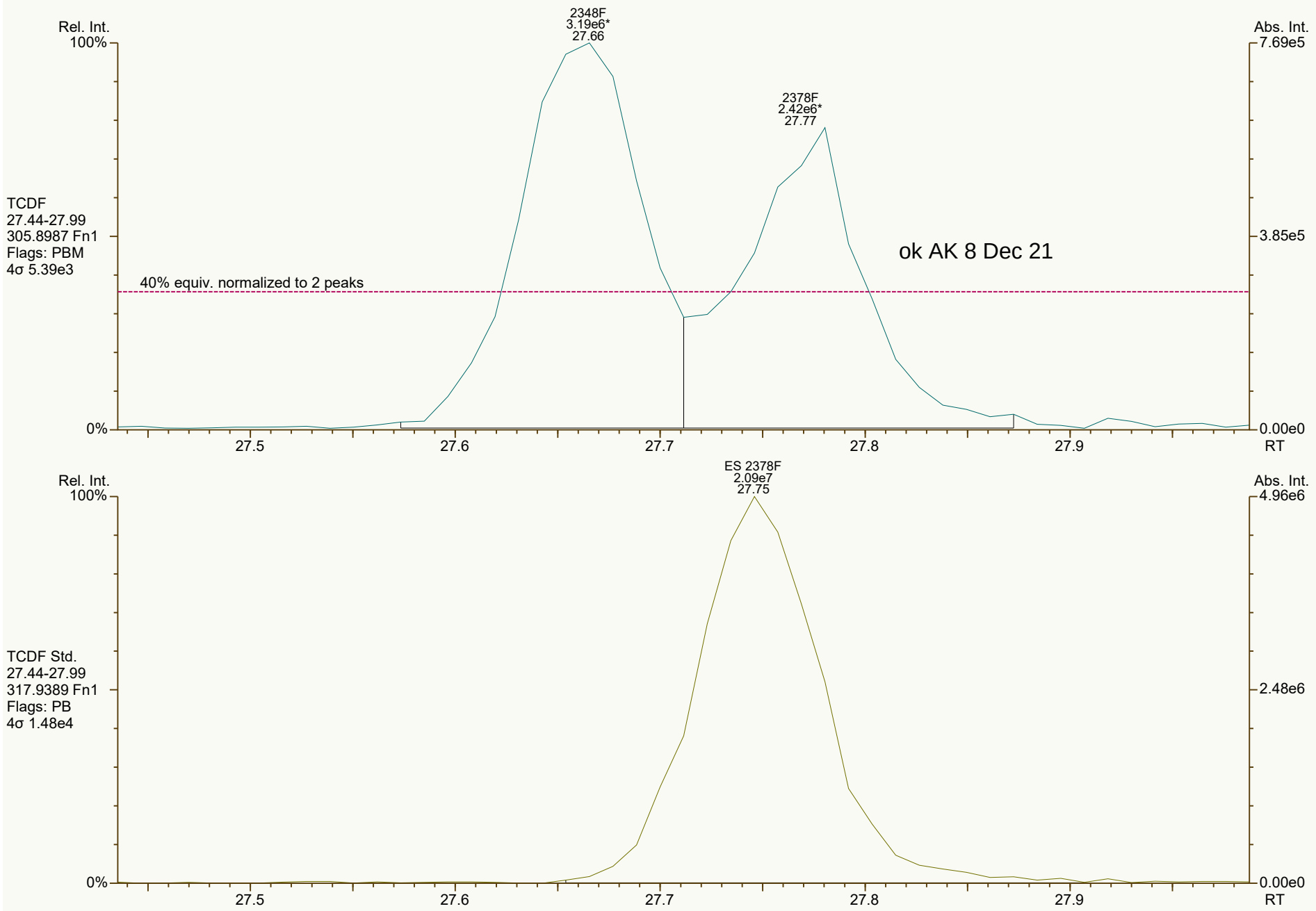
Processed: 08 Dec 2021 14:50 Analyst: pw

SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30

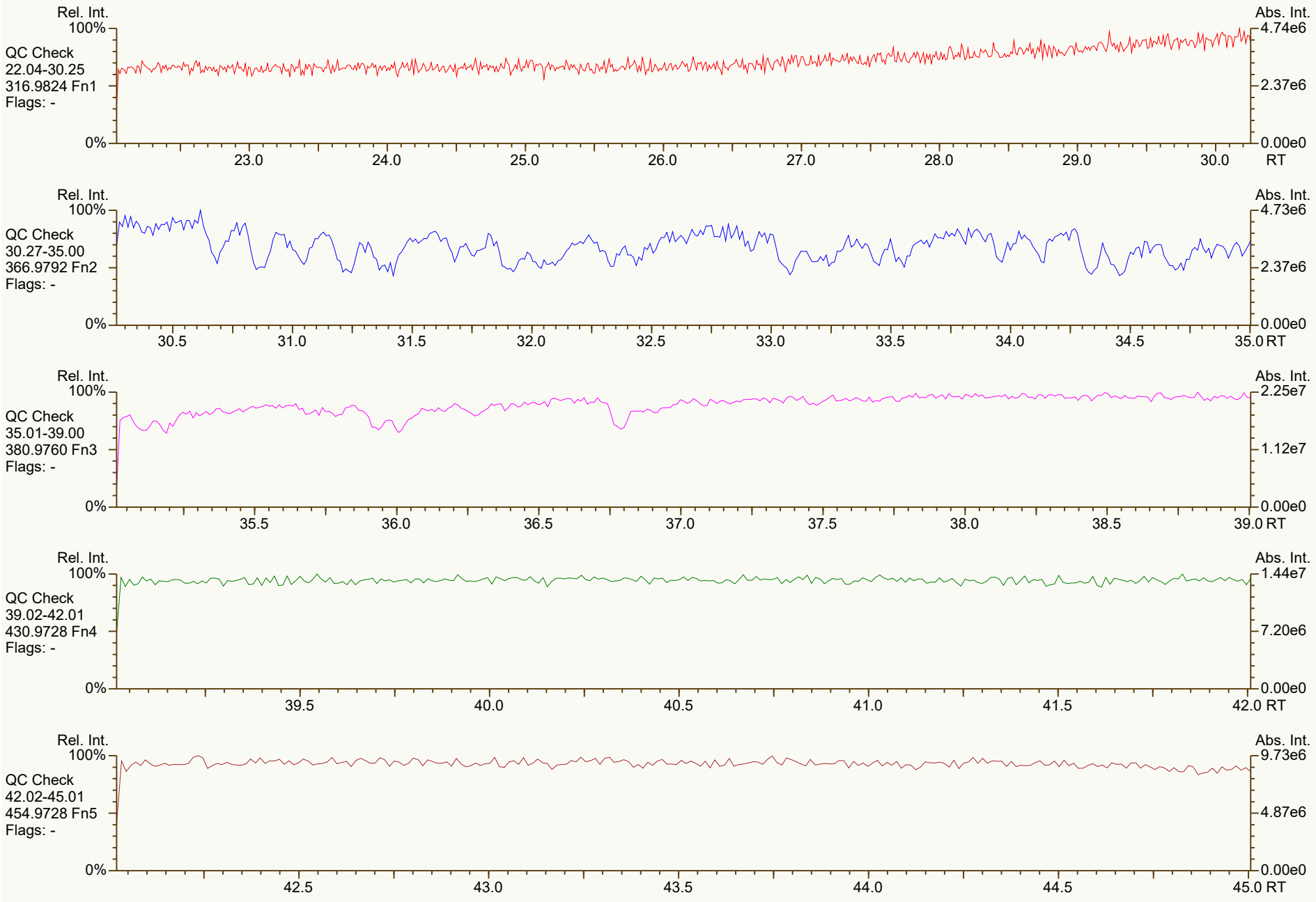


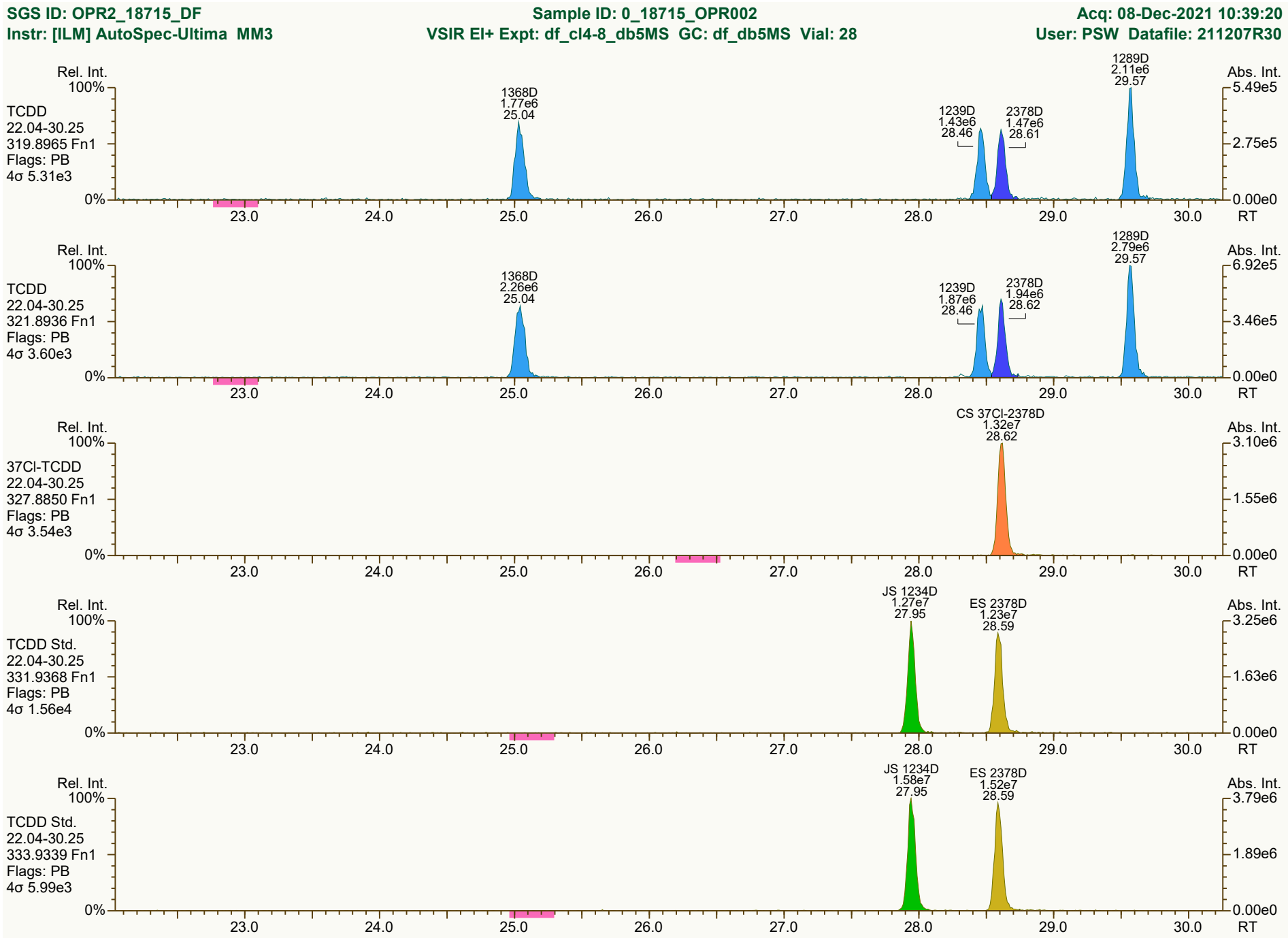
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:54

SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30

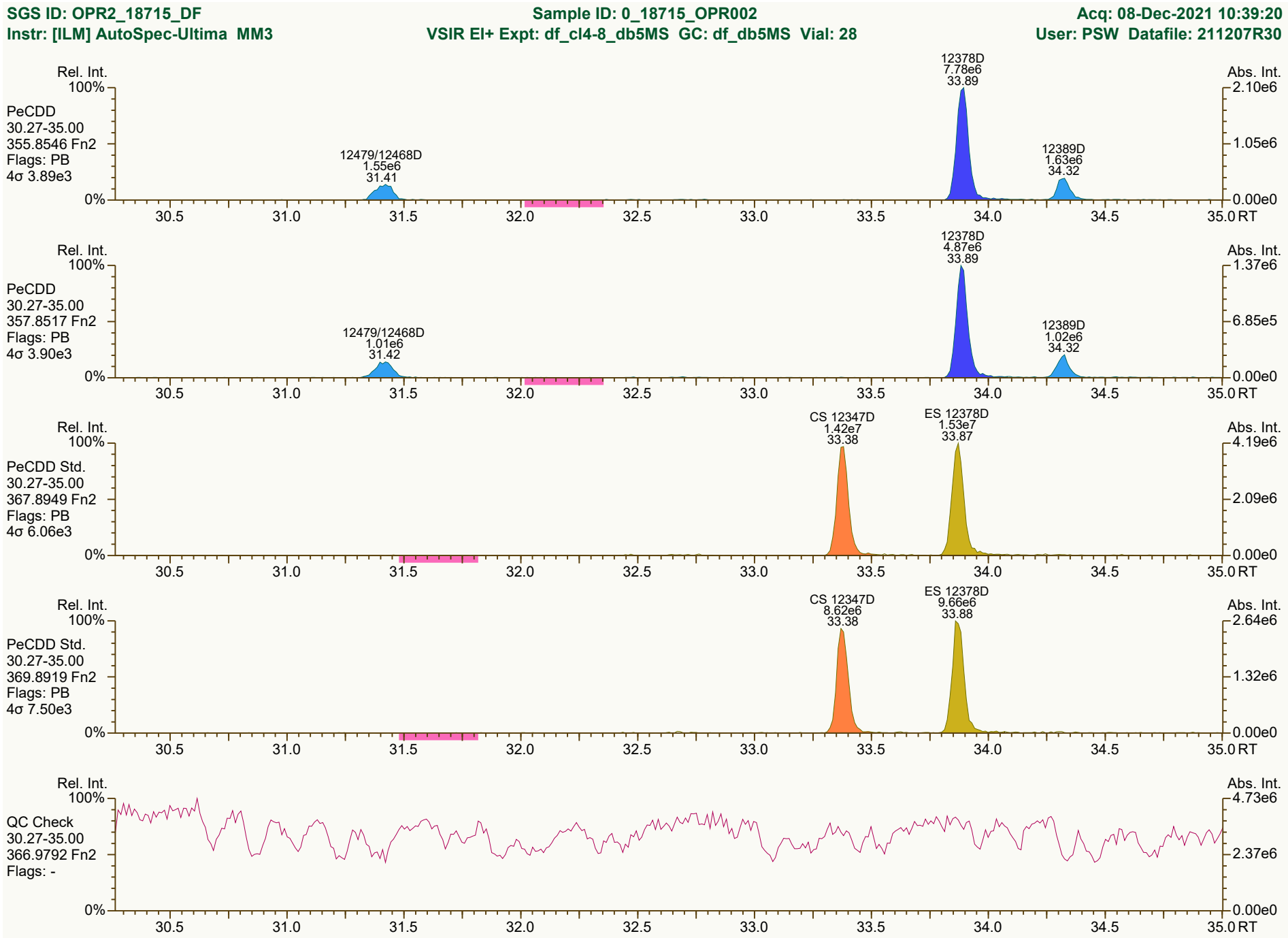


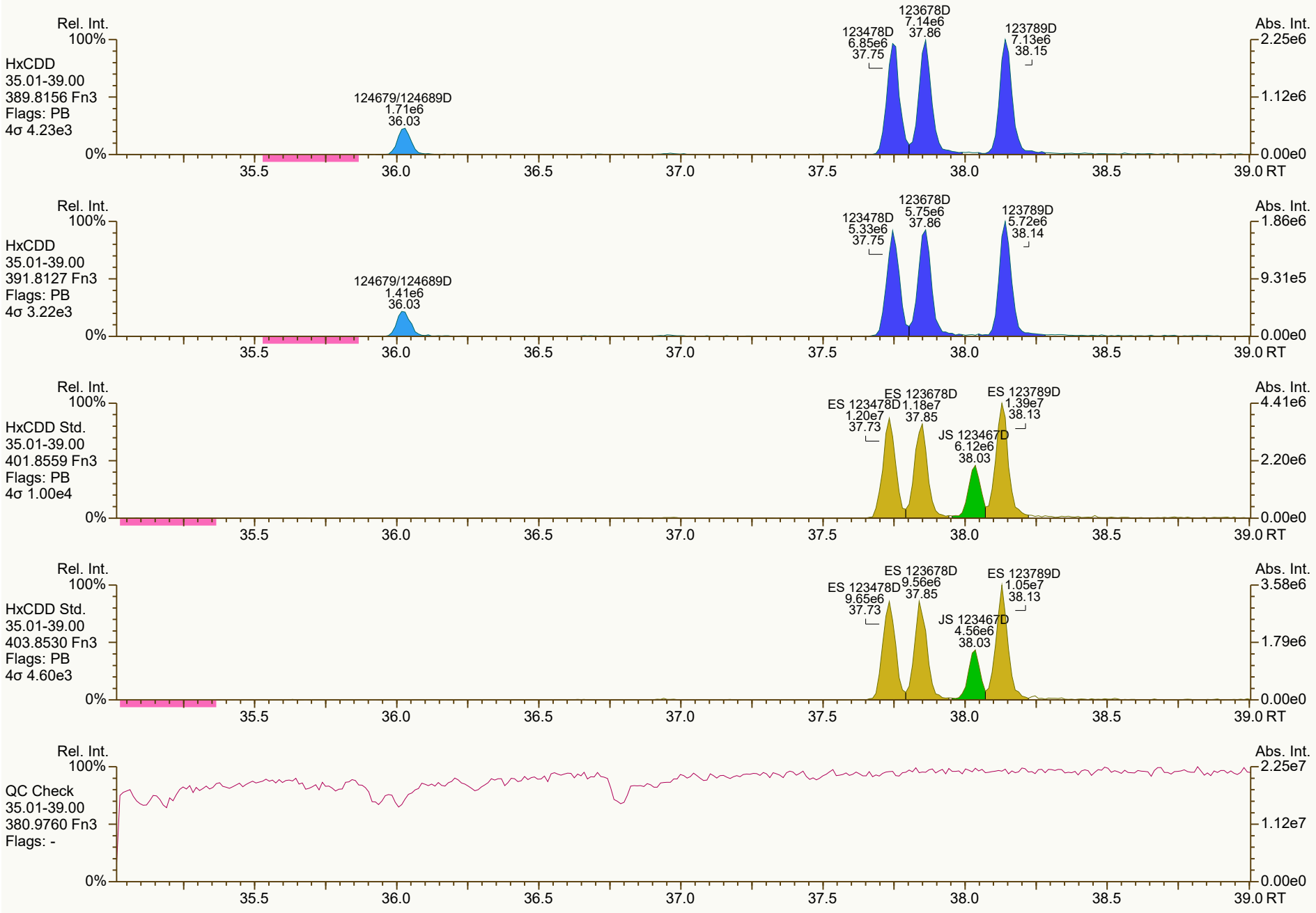
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:54

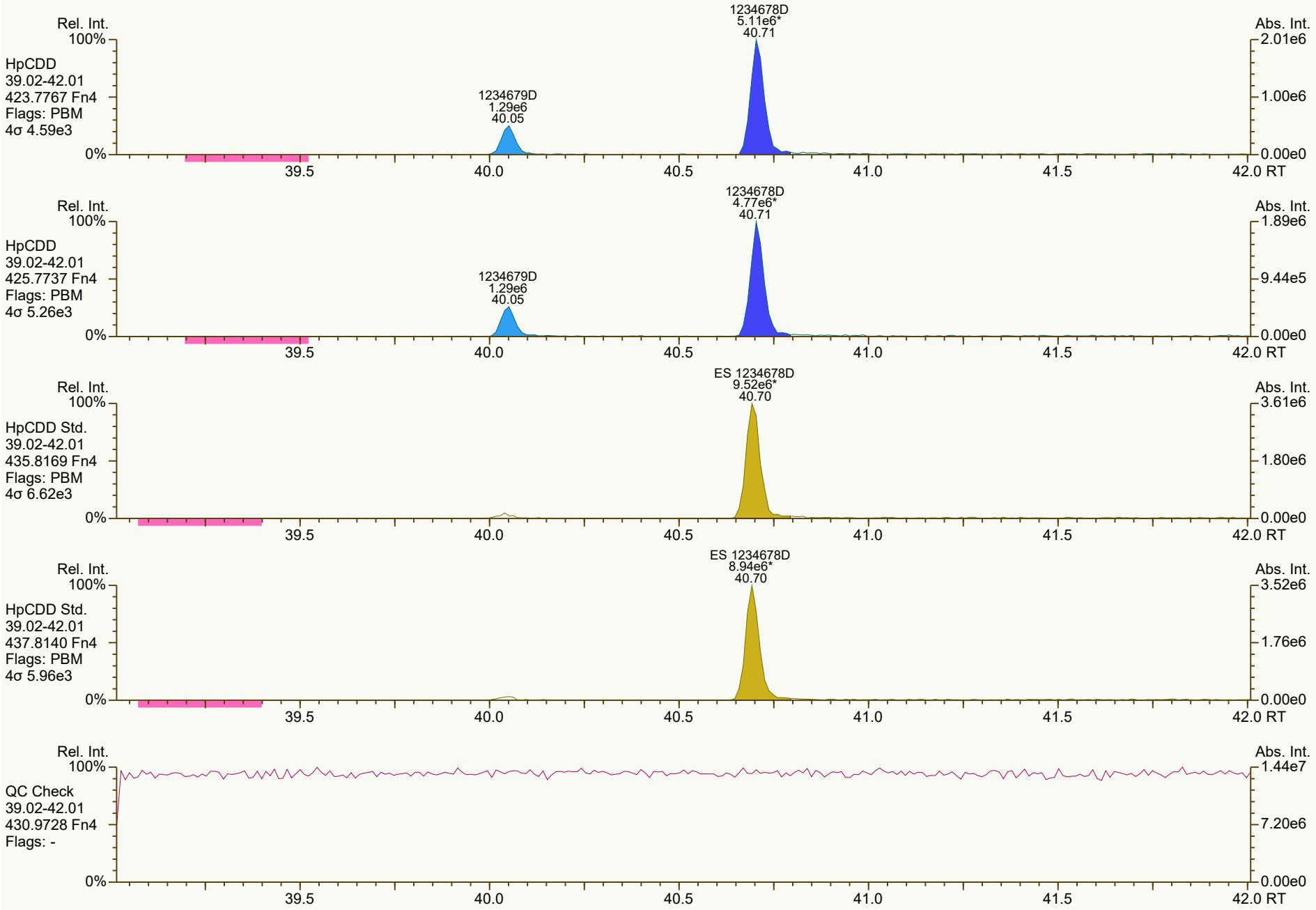

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.74e6
2.37e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.73e6
2.37e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.12e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.73e6
4.87e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

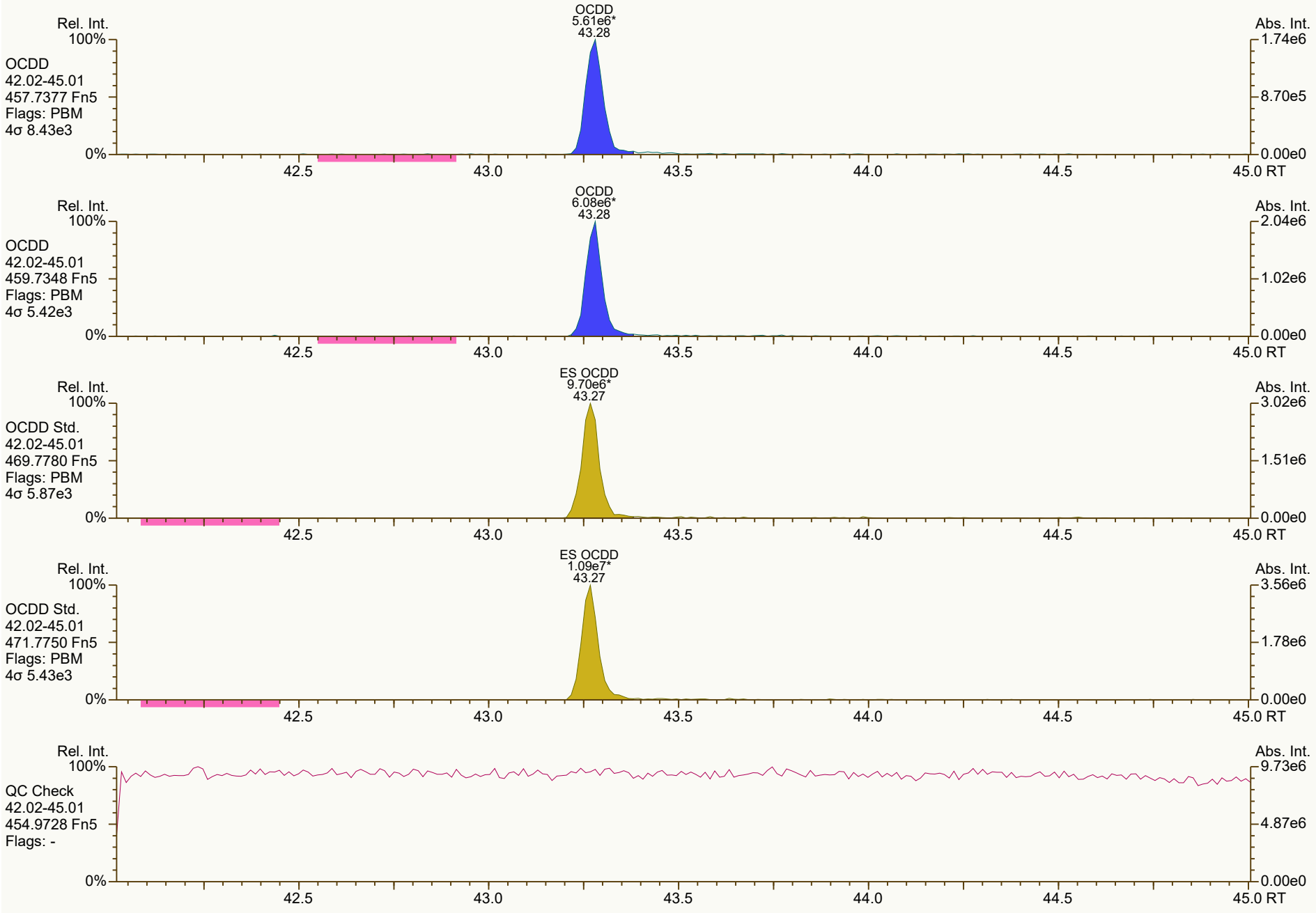


Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7904, 4484, 2009 scc: 418-331
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:58 Page 2 of 12


SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PB
4σ 3.89e3
12479/12468D
1.55e6
31.41
12378D
7.78e6
33.89
12389D
1.63e6
34.32
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 3.90e3
12479/12468D
1.01e6
31.42
12378D
4.87e6
33.89
12389D
1.02e6
34.32
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 6.06e3
CS 12347D
1.42e7
33.38
ES 12378D
1.53e7
33.87
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 7.50e3
CS 12347D
8.62e6
33.38
ES 12378D
9.66e6
33.88
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1012, 2484 scc: 418-331
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:58 Page 3 of 12

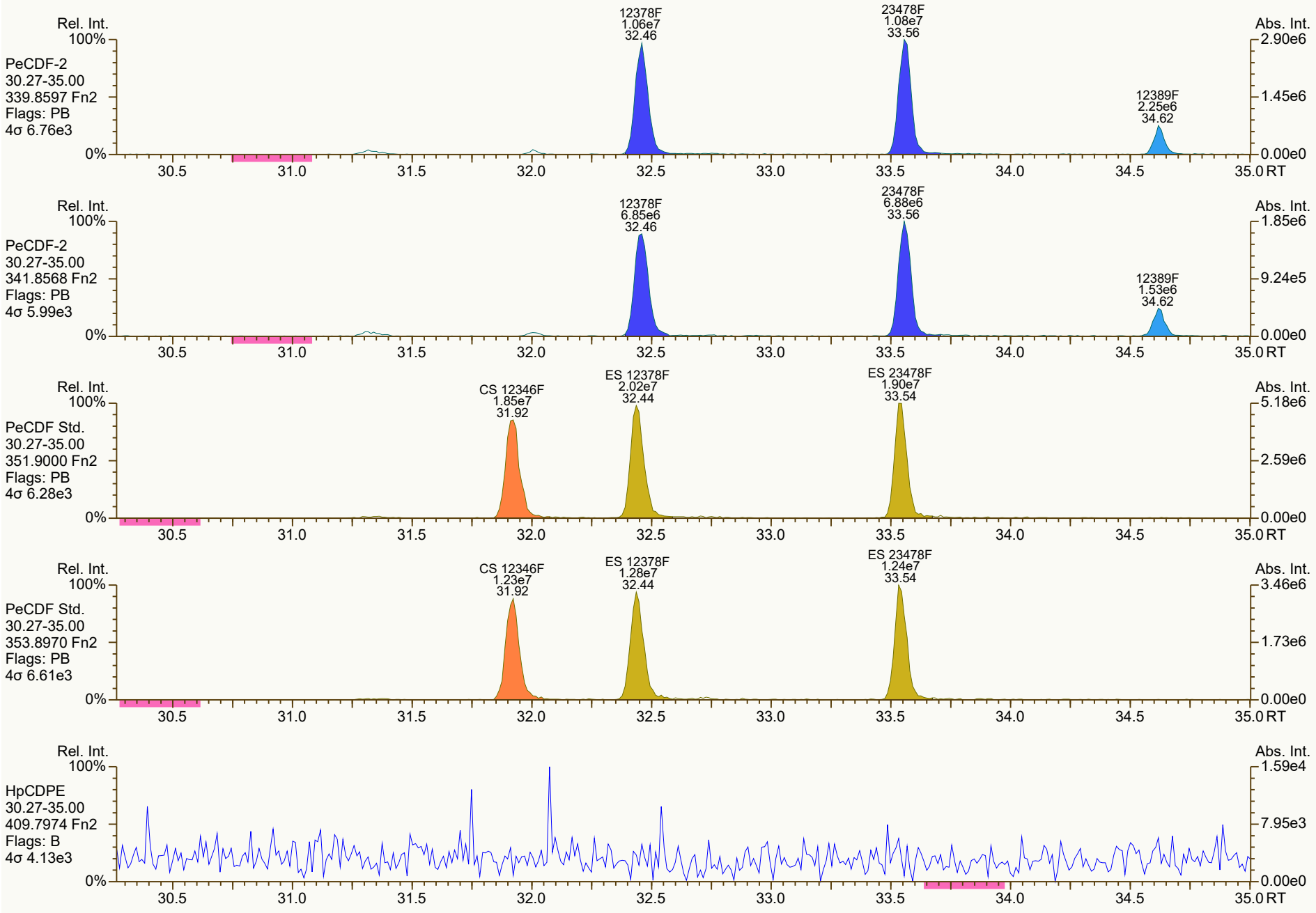

Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 4.23e3
0%
124679/124689D
1.71e6
36.03
123478D
6.85e6
37.75
123678D
7.14e6
37.86
123789D
7.13e6
38.15
Abs. Int.
2.25e6
1.12e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 3.22e3
0%
124679/124689D
1.41e6
36.03
123478D
5.33e6
37.75
123678D
5.75e6
37.86
123789D
5.72e6
38.14
Abs. Int.
1.86e6
9.31e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PB
4σ 1.00e4
0%
ES 123478D
1.20e7
37.73
ES 123678D
1.18e7
37.85
JS 123467D
6.12e6
38.03
ES 123789D
1.39e7
38.13
Abs. Int.
4.41e6
2.20e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PB
4σ 4.60e3
0%
ES 123478D
9.65e6
37.73
ES 123678D
9.56e6
37.85
JS 123467D
4.56e6
38.03
ES 123789D
1.05e7
38.13
Abs. Int.
3.58e6
1.79e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.12e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 4.59e3
1234678D
5.11e6*
40.71
1234679D
1.29e6
40.05
Abs. Int.
2.01e6
1.00e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 5.26e3
1234678D
4.77e6*
40.71
1234679D
1.29e6
40.05
Abs. Int.
1.89e6
9.44e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 6.62e3
ES 1234678D
9.52e6*
40.70
Abs. Int.
3.61e6
1.80e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 5.96e3
ES 1234678D
8.94e6*
40.70
Abs. Int.
3.52e6
1.76e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.44e7
7.20e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
5.61e6*
43.28
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 8.43e3
0%
Abs. Int.
1.74e6
8.70e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.08e6*
43.28
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 5.42e3
0%
Abs. Int.
2.04e6
1.02e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
9.70e6*
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 5.87e3
0%
Abs. Int.
3.02e6
1.51e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.09e7*
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 5.43e3
0%
Abs. Int.
3.56e6
1.78e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.73e6
4.87e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.63e3
1368F 2.47e6 22.99
2468F 5.94e5 24.17
2348F 2.43e6* 27.66
2378F 1.91e6* 27.77
1289F 2.92e6* 29.75
6.55e5
3.28e5
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 5.39e3
1368F 3.11e6 22.99
2468F 8.16e5 24.17
2348F 3.19e6* 27.66
2378F 2.42e6* 27.77
1289F 3.66e6* 29.75
8.49e5
4.25e5
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.26e4
JS 1234F 1.80e7 26.42
ES 2378F 1.65e7 27.75
3.79e6
1.89e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.48e4
JS 1234F 2.21e7 26.42
ES 2378F 2.09e7 27.75
4.96e6
2.48e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.20e3
1.47e4
7.35e3
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

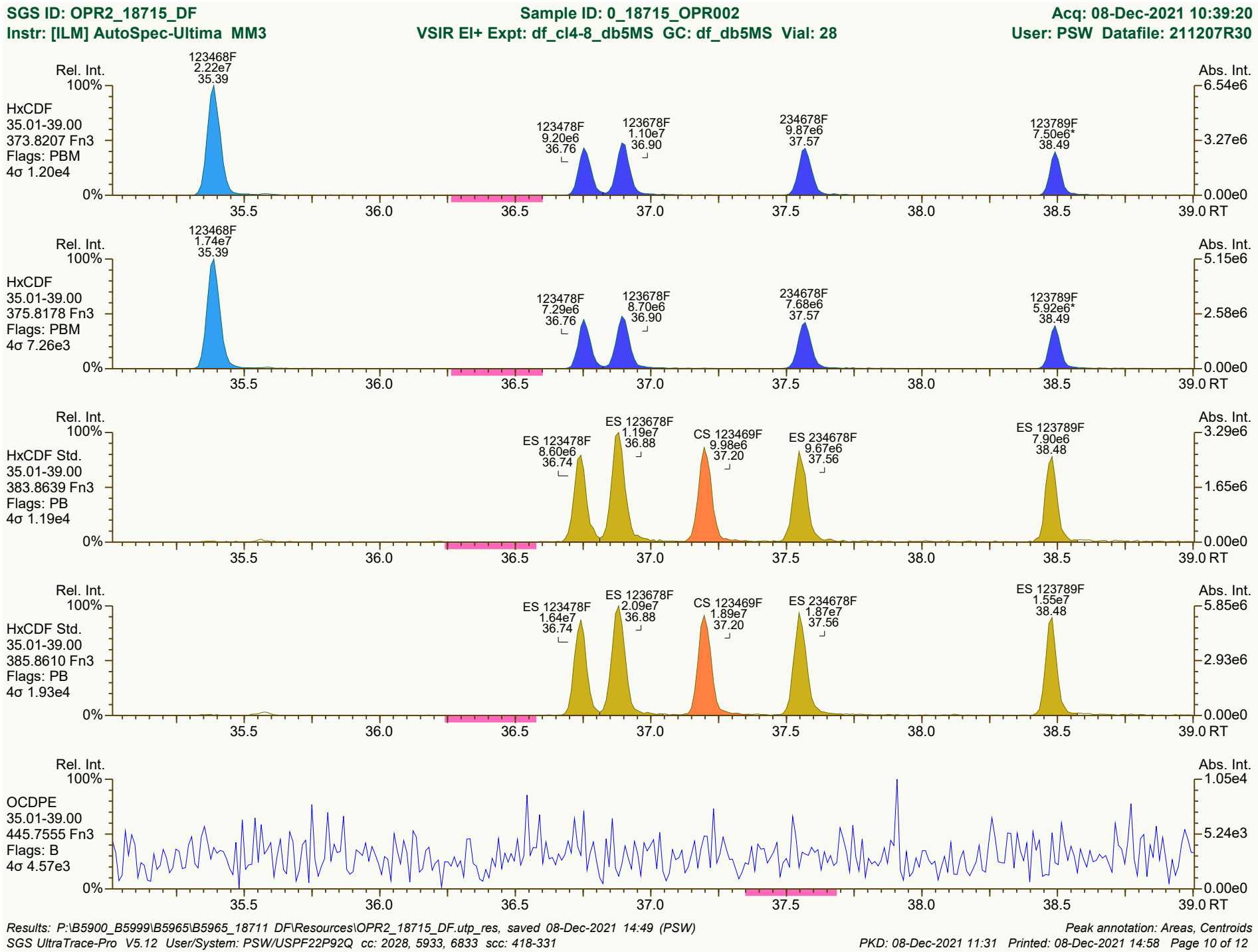

Rel. Int.
100%
0%
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 4.26e3
13468/12468F
2.13e7
29.66
Abs. Int.
5.16e6
2.58e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 4.29e3
13468/12468F
1.29e7
29.66
Abs. Int.
3.36e6
1.68e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
Abs. Int.
4.74e6
2.37e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 6.76e3
0%
12378F
1.06e7
32.46
23478F
1.08e7
33.56
12389F
2.25e6
34.62
Abs. Int.
2.90e6
1.45e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 5.99e3
0%
12378F
6.85e6
32.46
23478F
6.88e6
33.56
12389F
1.53e6
34.62
Abs. Int.
1.85e6
9.24e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 6.28e3
0%
CS 12346F
1.85e7
31.92
ES 12378F
2.02e7
32.44
ES 23478F
1.90e7
33.54
Abs. Int.
5.18e6
2.59e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 6.61e3
0%
CS 12346F
1.23e7
31.92
ES 12378F
1.28e7
32.44
ES 23478F
1.24e7
33.54
Abs. Int.
3.46e6
1.73e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.13e3
0%
Abs. Int.
1.59e4
7.95e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

SGS ID: OPR2_18715_DF
Instr: [ILM] AutoSpec-Ultima MM3

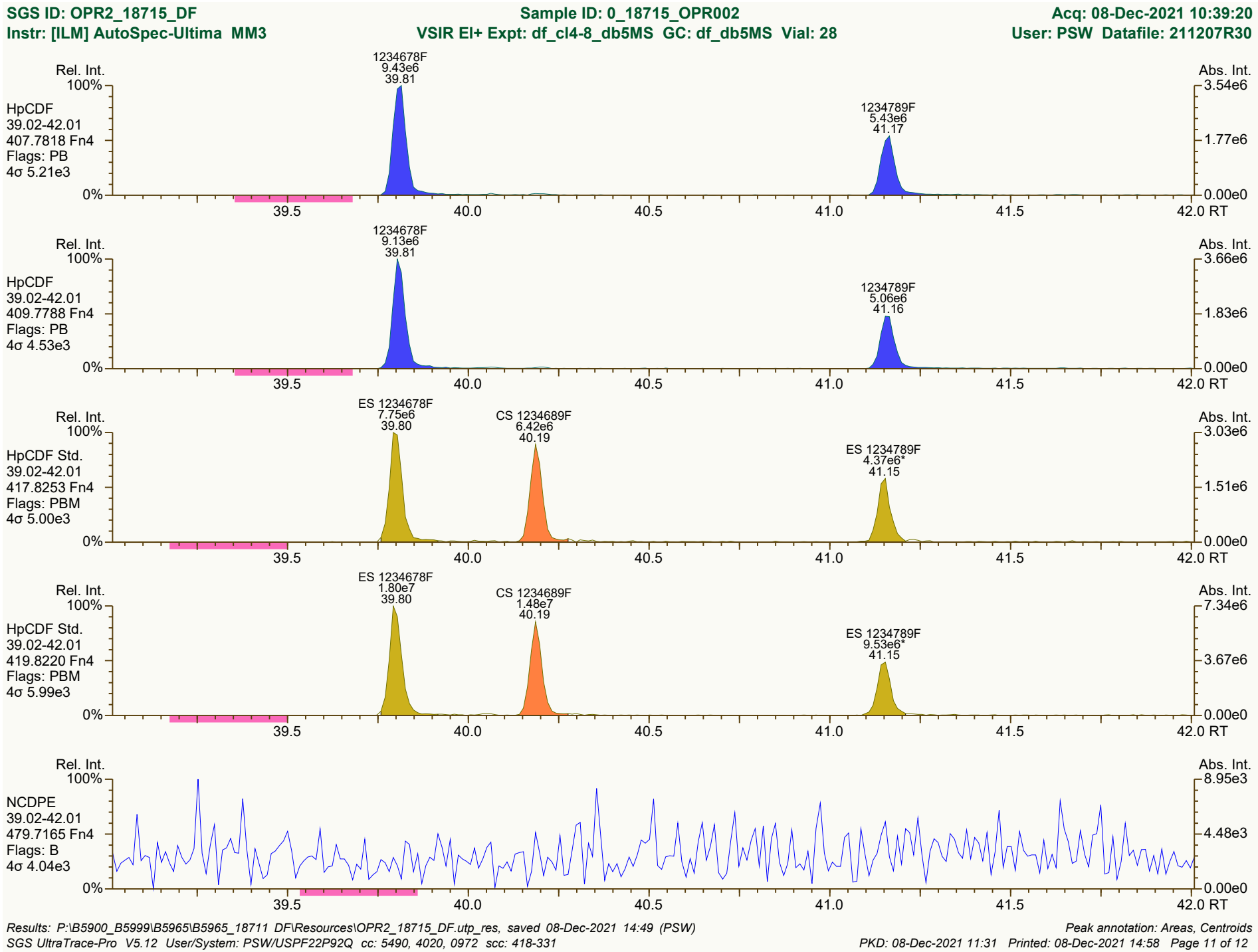
Sample ID: 0_18715_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28

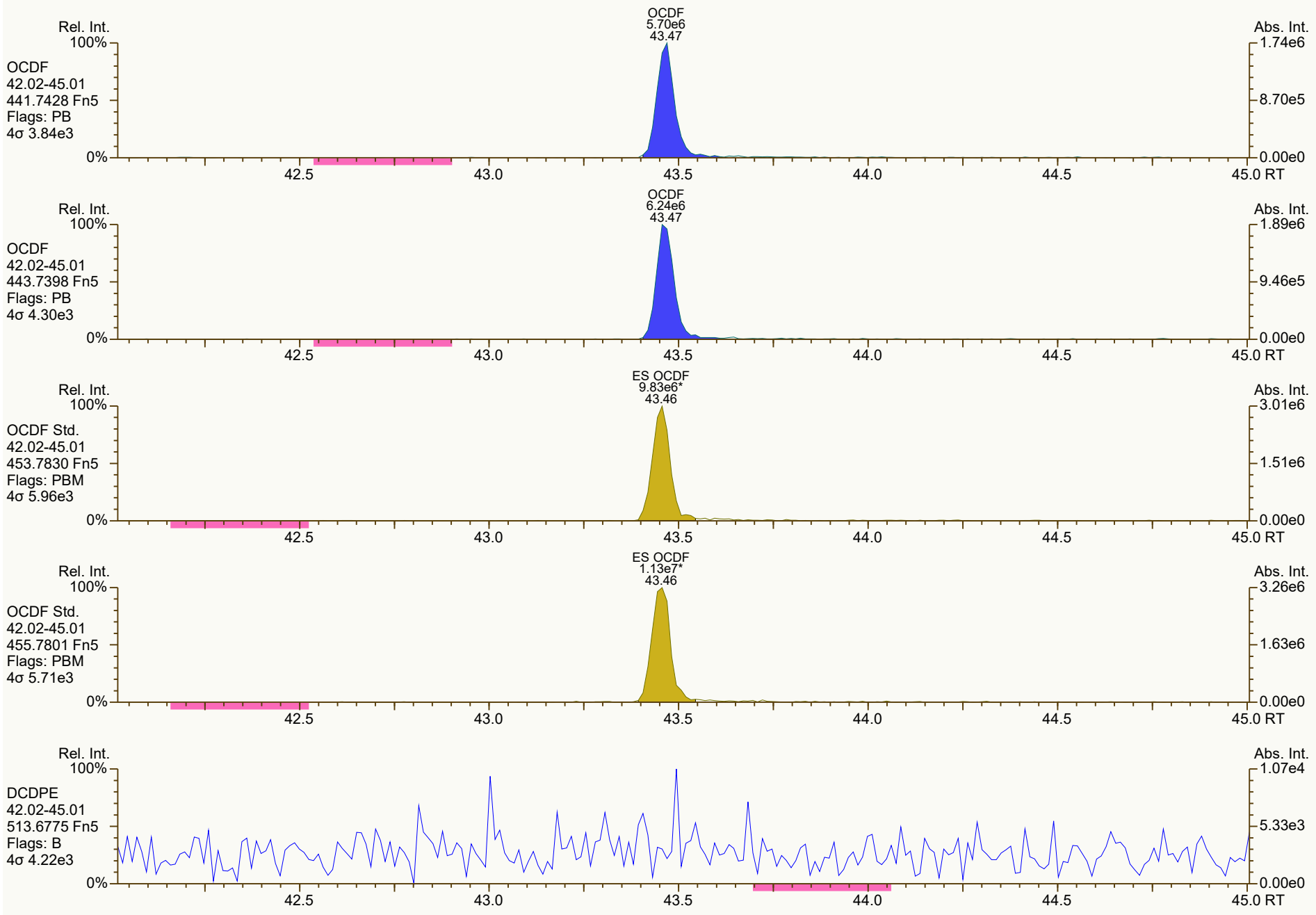
Acq: 08-Dec-2021 10:39:20
User: PSW Datafile: 211207R30



Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2028, 5933, 6833 scc: 418-331

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:58 Page 10 of 12


SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 5.21e3
1234678F
9.43e6
39.81
1234789F
5.43e6
41.17
3.54e6
1.77e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 4.53e3
1234678F
9.13e6
39.81
1234789F
5.06e6
41.16
3.66e6
1.83e6
0.00e0
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 5.00e3
ES 1234678F
7.75e6
39.80
CS 1234689F
6.42e6
40.19
ES 1234789F
4.37e6*
41.15
3.03e6
1.51e6
0.00e0
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 5.99e3
ES 1234678F
1.80e7
39.80
CS 1234689F
1.48e7
40.19
ES 1234789F
9.53e6*
41.15
7.34e6
3.67e6
0.00e0
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.04e3
8.95e3
4.48e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5965\B5965_18711 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:49 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5490, 4020, 0972 scc: 418-331
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:58 Page 11 of 12


OCDF
5.70e6
43.47
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 3.84e3
0%
Abs. Int.
1.74e6
8.70e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.24e6
43.47
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 4.30e3
0%
Abs. Int.
1.89e6
9.46e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.83e6*
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 5.96e3
0%
Abs. Int.
3.01e6
1.51e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.13e7*
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 5.71e3
0%
Abs. Int.
3.26e6
1.63e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.22e3
0%
Abs. Int.
1.07e4
5.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

REVIEWED
Amber_Kornegay , 12/8/2021, 4:45:57 PM

Lab ID: OPR1_18715_DF | **Acq'd:** 08 Dec 2021 09:52 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18715_OPR001 | **UTP:** 08-Dec-2021 14:01:35 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 807-647-HPH

Datafile: 211207R29 | **Report:** 08 Dec 2021 14:02 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.61		1.0008	1.0007	-0.2	2.21E+06	0.74	Y	1.34	8.85	8752.392	0.361
12378-PeCDD	33.88		1.0004	1.0005	+0.2	8.74E+06	1.50	Y	1.06	46.1	6516.936	0.277
123478-HxCDD	37.74		1.0004	1.0004	0	8.32E+06	1.21	Y	1.06	51.6	6518.798	0.324
123678-HxCDD	37.86		1.0034	1.0035	+0.2	9.12E+06	1.23	Y	1.08	52.7	6518.798	0.316
123789-HxCDD	38.14		1.0111	1.0109	-0.5	8.54E+06	1.25	Y	1.02	48.5	6518.798	0.298
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	6.88E+06	1.02	Y	0.97	55.4	8080.299	0.473
OCDD	43.28		1.0003	1.0002	-0.3	8.31E+06	0.90	Y	1.07	111	10928.657	1.2
2378-TCDF	27.77		1.0007	1.0007	0	3.06E+06	0.83	Y	0.96	12.5	8049.295	0.354
12378-PeCDF	32.46		1.0006	1.0005	-0.2	1.35E+07	1.54	Y	0.95	56.6	11725.589	0.487
23478-PeCDF	33.56		1.0005	1.0005	0	1.35E+07	1.63	Y	0.94	57.4	11725.589	0.443
123478-HxCDF	36.75		1.0004	1.0005	+0.2	1.21E+07	1.28	Y	1.23	55.4	22557.737	0.841
123678-HxCDF	36.89		1.0005	1.0005	0	1.39E+07	1.28	Y	1.13	52.9	22557.737	0.803
234678-HxCDF	37.57		1.0005	1.0004	-0.2	1.18E+07	1.25	Y	1.15	53.8	22557.737	0.89
123789-HxCDF	38.49		1.0005	1.0004	-0.2	9.01E+06	1.25	Y	1.14	50.4	22557.737	0.988
1234678-HpCDF	39.81		1.0003	1.0003	0	1.27E+07	1.07	Y	1.36	53.5	10751.784	0.288
1234789-HpCDF	41.16		1.0004	1.0003	-0.2	6.83E+06	1.08	Y	1.30	53	10751.784	0.585
OCDF	43.47		1.0002	1.0002	0	8.43E+06	0.84	Y	1.03	115	8970.384	1.02

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0232	-0.2	1.86E+07	0.76	Y	1.03	96.4
ES 12378-PeCDD	33.87	1.2118	1.2120	+0.4	1.79E+07	1.63	Y	1.03	92.7
ES 123478-HxCDD	37.73	0.9921	0.9921	0	1.53E+07	1.23	Y	0.99	96.1
ES 123678-HxCDD	37.84	0.9951	0.9951	0	1.60E+07	1.25	Y	0.97	103
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	1.73E+07	1.32	Y	1.12	96.7
ES 1234678-HpCDD	40.70	1.0702	1.0702	0	1.28E+07	1.06	Y	0.99	80.6
ES OCDD	43.27	1.1377	1.1380	+0.8	1.40E+07	0.94	Y	0.78	56.5
ES 2378-TCDF	27.75	1.0505	1.0506	+0.2	2.55E+07	0.75	Y	1.08	80.4
ES 12378-PeCDF	32.44	1.2278	1.2284	+1.2	2.53E+07	1.64	Y	0.93	92.6
ES 23478-PeCDF	33.54	1.2691	1.2699	+1.6	2.50E+07	1.57	Y	0.92	92.5
ES 123478-HxCDF	36.74	0.9660	0.9660	0	1.77E+07	0.51	Y	1.14	97.1
ES 123678-HxCDF	36.88	0.9698	0.9698	0	2.32E+07	0.55	Y	1.30	112
ES 234678-HxCDF	37.55	0.9875	0.9874	-0.2	1.90E+07	0.57	Y	1.20	99
ES 123789-HxCDF	38.48	1.0121	1.0118	-0.7	1.58E+07	0.49	Y	1.14	86.9
ES 1234678-HpCDF	39.80	1.0468	1.0466	-0.5	1.74E+07	0.47	Y	0.95	115
ES 1234789-HpCDF	41.15	1.0822	1.0822	0	9.91E+06	0.47	Y	0.85	73.3
ES OCDF	43.46	1.1426	1.1428	+0.5	1.43E+07	0.94	Y	0.93	48.3

Lab ID: OPR1_18715_DF | **Acq'd:** 08 Dec 2021 09:52 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18715_OPR001 | **UTP:** 08-Dec-2021 14:01:35 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 807-647-HPH

Datafile: 211207R29 | **Report:** 08 Dec 2021 14:02 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.94		-	-	-	1.87E+07	0.78	Y	-	-
JS 1234-TCDF	26.41		-	-	-	2.93E+07	0.77	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	7.98E+06	1.34	Y	-	-
CS 37Cl-2378-TCDD	28.61		1.0241	1.0240	-0.2	8.83E+06	n/a	-	1.31	90.2
CS 12347-PeCDD	33.37		1.1940	1.1943	+0.6	1.73E+07	1.58	Y	0.89	104
CS 12346-PeCDF	31.92		1.2080	1.2087	+1.3	2.47E+07	1.60	Y	0.87	97.1
CS 123469-HxCDF	37.19		0.9781	0.9781	0	1.90E+07	0.52	Y	1.09	109
CS 1234689-HpCDF	40.19		1.0569	1.0569	0	1.41E+07	0.46	Y	0.86	102
~~SS 37Cl-2378-TCDD~~	~~28.61~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~8.83E+06~~	~~n/a~~		~~1.26~~	~~94.1~~
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1943~~	~~+0.6~~	~~1.73E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~112~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2087~~	~~+1.3~~	~~2.47E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~105~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.90E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~97.6~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0569~~	~~0~~	~~1.41E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~89.1~~

Totals	Conc	EMPC
Total TCDD	47.6	47.6
Total PeCDD	69.6	69.6
Total HxCDD	168	168
Total HpCDD	70.2	70.2
Total Tetra-Octa Dioxins	466	466
Total TCDF	77.5	77.5
Total PeCDF	242	242
Total HxCDF	356	356
Total HpCDF	107	107
Total Tetra-Octa Furans	898	898
Total Tetra-Octa Dioxins & Furans	1360	1360

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.733	0.74
Response	2.22E+06	2.21E+06

Lab ID: OPR1_18715_DF **Acq'd: 08 Dec 2021 09:52 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18715_OPR001 **UTP: 08-Dec-2021 14:01:35 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 807-647-HPH**

Datafile: 211207R29 **Report: 08 Dec 2021 14:02 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8754	-0.6	3.81E+06	0.80	Y	1.34	15.2	8752.392	0.361
1379-TCDD	NotFnd		0.8878						1.34		8752.392	0.361
1369-TCDD	NotFnd		0.9025						1.34		8752.392	0.361
1469-TCDD	NotFnd		0.9291						1.34		8752.392	0.361
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8752.392	0.361
1378-TCDD	NotFnd		0.9440						1.34		8752.392	0.361
1268-TCDD	NotFnd		0.9505						1.34		8752.392	0.361
1478-TCDD	NotFnd		0.9591						1.34		8752.392	0.361
1279-TCDD	NotFnd		0.9650						1.34		8752.392	0.361
1234/1269-TCDD	NotFnd		0.9771						1.34		8752.392	0.361
1236-TCDD	NotFnd		0.9821						1.34		8752.392	0.361
1237/1238-TCDD	NotFnd		0.9907						1.34		8752.392	0.361
1239-TCDD	28.46		0.9953	0.9952	-0.2	2.27E+06	0.85	Y	1.34	9.05	8752.392	0.361
2378-TCDD	**28.61**		**1.0008**	1.0007	**-0.2**	2.21E+06	0.74	Y	**1.34**	**8.85**	**8752.392**	**0.361**
1278-TCDD	NotFnd		1.0118						1.34		8752.392	0.361
1267-TCDD	NotFnd		1.0162						1.34		8752.392	0.361
1289-TCDD	29.57		1.0340	1.0342	+0.4	3.61E+06	0.80	Y	1.34	14.4	8752.392	0.361
12479/12468-PeCDD	31.41		0.9274	0.9276	+0.4	2.12E+06	1.60	Y	1.06	11.2	6516.936	0.277
12469-PeCDD	NotFnd		0.9430						1.06		6516.936	0.277
12368-PeCDD	NotFnd		0.9591						1.06		6516.936	0.277
12478-PeCDD	NotFnd		0.9645						1.06		6516.936	0.277
12379-PeCDD	NotFnd		0.9676						1.06		6516.936	0.277
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		6516.936	0.277
12346/12347-PeCDD	NotFnd		0.9860						1.06		6516.936	0.277
12378-PeCDD	33.88		**1.0004**	**1.0005**	**+0.2**	**8.74E+06**	**1.50**	**Y**	**1.06**	**46.1**	**6516.936**	**0.277**
12367-PeCDD	NotFnd		1.0034						1.06		6516.936	0.277
12389-PeCDD	34.32		1.0133	1.0134	+0.2	2.36E+06	1.54	Y	1.06	12.4	6516.936	0.277
124679/124689-HxCDD	36.02		0.9546	0.9548	+0.4	2.51E+06	1.20	Y	1.05	14.8	6518.798	0.312
123468-HxCDD	NotFnd		0.9718						1.05		6518.798	0.312
123679/123689-HxCDD	NotFnd		0.9795						1.05		6518.798	0.312
123469-HxCDD	NotFnd		0.9832						1.05		6518.798	0.312
123478-HxCDD	37.74		**1.0004**	**1.0004**	**0**	**8.32E+06**	**1.21**	**Y**	1.06	**51.6**	**6518.798**	**0.324**
123678-HxCDD	37.86		**1.0034**	**1.0035**	**+0.2**	**9.12E+06**	**1.23**	**Y**	1.08	**52.7**	**6518.798**	**0.316**
123467-HxCDD	NotFnd		1.0083						1.05		6518.798	0.312
123789-HxCDD	38.14		**1.0111**	**1.0109**	**-0.5**	**8.54E+06**	**1.25**	**Y**	1.02	**48.5**	**6518.798**	**0.298**

Lab ID: OPR1_18715_DF | **Acq'd: 08 Dec 2021 09:52 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18715_OPR001 | **UTP: 08-Dec-2021 14:01:35 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 807-647-HPH**

Datafile: 211207R29 | **Report: 08 Dec 2021 14:02 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	1.84E+06	0.98	Y	0.97	14.8	8080.299	0.473
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**6.88E+06**	**1.02**	**Y**	**0.97**	**55.4**	**8080.299**	**0.473**
OCDD	**43.28**		**1.0003**	**1.0002**	**-0.3**	**8.31E+06**	**0.90**	**Y**	**1.07**	**111**	**10928.657**	**1.2**
OCDD-a	43.27		1.0001	0.9999	-0.5	2.11E+05	2.40	Y	0.07	45.6	9059.155	16.1
1368-TCDF	22.97		0.8284	0.8279	-0.7	4.90E+06	0.81	Y	0.96	20	8049.295	0.354
1468-TCDF	NotFnd		0.8487						0.96		8049.295	0.354
2468-TCDF	24.15		0.8709	0.8706	-0.4	1.30E+06	0.76	Y	0.96	5.29	8049.295	0.354
1346/1246-TCDF	NotFnd		0.8828						0.96		8049.295	0.354
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		8049.295	0.354
1348-TCDF	NotFnd		0.8980						0.96		8049.295	0.354
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		8049.295	0.354
1268-TCDF	NotFnd		0.9159						0.96		8049.295	0.354
1467-TCDF	NotFnd		0.9206						0.96		8049.295	0.354
1478-TCDF	NotFnd		0.9266						0.96		8049.295	0.354
1369/1237-TCDF	NotFnd		0.9396						0.96		8049.295	0.354
2467-TCDF	NotFnd		0.9440						0.96		8049.295	0.354
2368-TCDF	NotFnd		0.9496						0.96		8049.295	0.354
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		8049.295	0.354
1278-TCDF	NotFnd		0.9689						0.96		8049.295	0.354
1349-TCDF	NotFnd		0.9732						0.96		8049.295	0.354
1267-TCDF	NotFnd		0.9786						0.96		8049.295	0.354
2346/1249-TCDF	NotFnd		0.9849						0.96		8049.295	0.354
2347/1279-TCDF	NotFnd		0.9927						0.96		8049.295	0.354
2348-TCDF	27.66		0.9967	0.9968	+0.2	4.30E+06	0.75	Y	0.96	17.5	8049.295	0.354
2378-TCDF	**27.77**		**1.0007**	**1.0007**	**0**	**3.06E+06**	**0.83**	**Y**	**0.96**	**12.5**	**8049.295**	**0.354**
2367/3467-TCDF	NotFnd		1.0136						0.96		8049.295	0.354
1269-TCDF	NotFnd		1.0223						0.96		8049.295	0.354
1239-TCDF	NotFnd		1.0313						0.96		8049.295	0.354
1289-TCDF	29.74		1.0711	1.0719	+1.4	5.43E+06	0.77	Y	0.96	22.2	8049.295	0.354
13468/12468-PeCDF	29.66		0.9147	0.9142	-0.9	2.76E+07	1.56	Y	0.94	117	9509.815	0.377
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		11725.589	0.465
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		11725.589	0.465
14678-PeCDF	NotFnd		0.9695						0.94		11725.589	0.465
13479-PeCDF	NotFnd		0.9727						0.94		11725.589	0.465
13469/12479-PeCDF	NotFnd		0.9799						0.94		11725.589	0.465
12346-PeCDF	NotFnd		0.9839						0.94		11725.589	0.465

Lab ID: OPR1_18715_DF | **Acq'd: 08 Dec 2021 09:52 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18715_OPR001 | **UTP: 08-Dec-2021 14:01:35 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 807-647-HPH**

Datafile: 211207R29 | **Report: 08 Dec 2021 14:02 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		11725.589	0.465
12347-PeCDF	NotFnd		0.9892						0.94		11725.589	0.465
12348-PeCDF	NotFnd		0.9940						0.94		11725.589	0.465
12378-PeCDF	**32.46**		**1.0006**	**1.0005**	**-0.2**	**1.35E+07**	**1.54**	**Y**	**0.95**	**56.6**	**11725.589**	**0.487**
12678/12367-PeCDF	NotFnd		1.0088						0.94		11725.589	0.465
12379-PeCDF	NotFnd		1.0142						0.94		11725.589	0.465
12679-PeCDF	NotFnd		0.9931						0.94		11725.589	0.465
23467/12369-PeCDF	NotFnd		0.9966						0.94		11725.589	0.465
23478-PeCDF	**33.56**		**1.0005**	**1.0005**	**0**	**1.35E+07**	**1.63**	**Y**	**0.94**	**57.4**	**11725.589**	**0.443**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		11725.589	0.465
12349-PeCDF	NotFnd		1.0100						0.94		11725.589	0.465
12389-PeCDF	34.62		1.0323	1.0323	0	2.80E+06	1.57	Y	0.94	11.8	11725.589	0.465
123468-HxCDF	35.38		0.9631	0.9632	+0.2	3.16E+07	1.24	Y	1.16	144	22557.737	0.87
124678/134678-HxCDF	NotFnd		0.9686						1.16		22557.737	0.87
134679-HxCDF	NotFnd		0.9747						1.16		22557.737	0.87
124679-HxCDF	NotFnd		0.9800						1.16		22557.737	0.87
124689-HxCDF	NotFnd		0.9859						1.16		22557.737	0.87
123467-HxCDF	NotFnd		0.9972						1.16		22557.737	0.87
123478-HxCDF	**36.75**		**1.0004**	**1.0005**	**+0.2**	**1.21E+07**	**1.28**	**Y**	**1.23**	**55.4**	**22557.737**	**0.841**
123678-HxCDF	**36.89**		**1.0005**	**1.0005**	**0**	**1.39E+07**	**1.28**	**Y**	**1.13**	**52.9**	**22557.737**	**0.803**
123479-HxCDF	NotFnd		1.0048						1.16		22557.737	0.87
123469-HxCDF	NotFnd		1.0089						1.16		22557.737	0.87
123679-HxCDF	NotFnd		0.9943						1.16		22557.737	0.87
234678-HxCDF	**37.57**		**1.0005**	**1.0004**	**-0.2**	**1.18E+07**	**1.25**	**Y**	**1.15**	**53.8**	**22557.737**	**0.89**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		22557.737	0.87
123789-HxCDF	**38.49**		**1.0005**	**1.0004**	**-0.2**	**9.01E+06**	**1.25**	**Y**	**1.14**	**50.4**	**22557.737**	**0.988**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		22557.737	0.87
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**1.27E+07**	**1.07**	**Y**	**1.36**	**53.5**	**10751.784**	**0.288**
1234679-HpCDF	NotFnd		1.0065						1.33		10751.784	0.395
1234689-HpCDF	NotFnd		1.0097						1.33		10751.784	0.395
1234789-HpCDF	**41.16**		**1.0004**	**1.0003**	**-0.2**	**6.83E+06**	**1.08**	**Y**	**1.30**	**53**	**10751.784**	**0.585**
OCDF	**43.47**		**1.0002**	**1.0002**	**0**	**8.43E+06**	**0.84**	**Y**	**1.03**	**115**	**8970.384**	**1.02**
OCDF-a	43.46		1.0001	1.0001	0	5.37E+05	2.63	Y	0.06	127	9312.986	18.3

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211207R29	Analysis Date:	08-DEC-2021 09:52:37
Lab ID:	OPR1_18715_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	8.85	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	46.1	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	51.6	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	52.7	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	48.5	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	55.4	35	-	70	Y
OCDD	100	111	78	-	144	Y
2,3,7,8-TCDF	10	12.5	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	56.6	40	-	67	Y
2,3,4,7,8-PeCDF	50	57.4	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	55.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	52.9	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	53.8	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	50.4	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	53.5	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	53	39	-	69	Y
OCDF	100	115	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Dec 2021 14:02 Analyst: pw

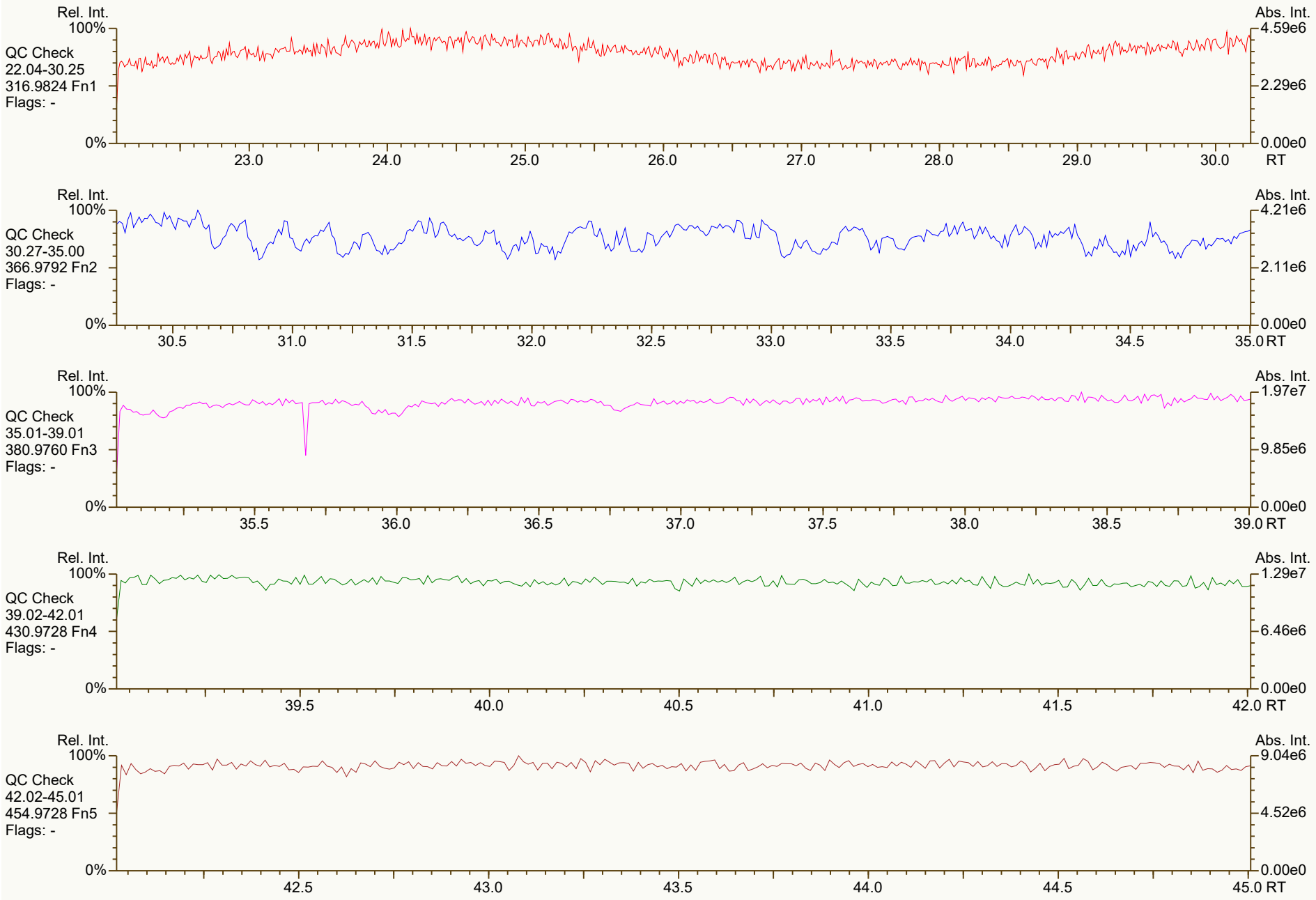
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211207R29	Analysis Date:	08-DEC-2021 09:52:37
Lab ID:	OPR1_18715_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	96.4	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	92.7	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	96.1	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	103	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	96.7	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	80.6	26	-	166	Y
13C-OCDD	200	113	26	-	397	Y
13C-2,3,7,8-TCDF	100	80.4	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	92.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	92.5	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	97.1	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	112	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	99	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	86.9	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	115	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	73.3	20	-	186	Y
13C-OCDF	200	96.7	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	36.1	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 08 Dec 2021 14:02 Analyst: pw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316.9824 Fn1
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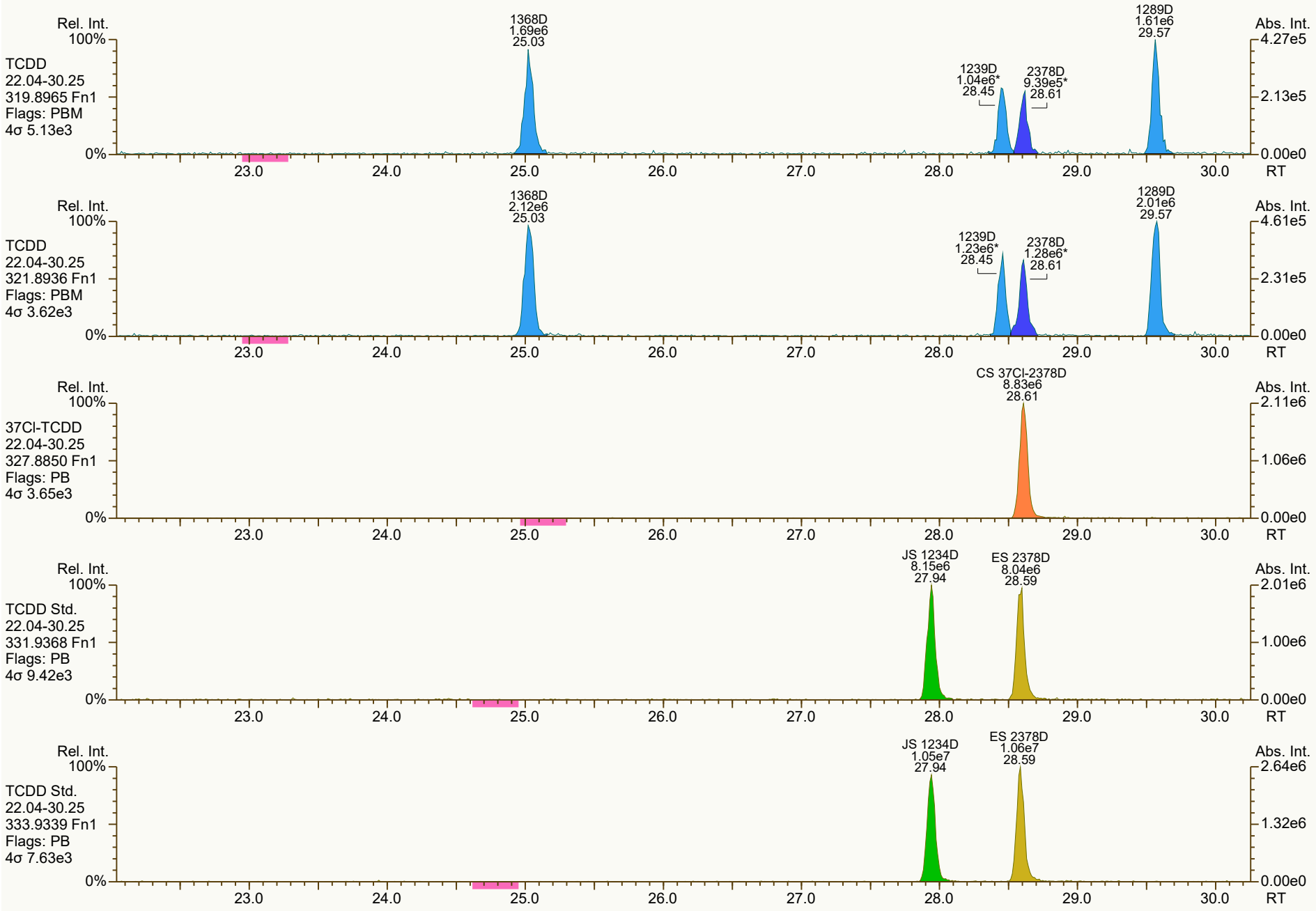
2.29e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.21e6
2.11e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.97e7
9.85e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.29e7
6.46e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.04e6
4.52e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT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100%
TCDD
22.04-30.25
319.8965 Fn1
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0%
1368D
1.69e6
25.03
1239D
1.04e6*
28.45
2378D
9.39e5*
28.61
1289D
1.61e6
29.57
Abs. Int.
4.27e5
2.13e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 3.62e3
0%
1368D
2.12e6
25.03
1239D
1.23e6*
28.45
2378D
1.28e6*
28.61
1289D
2.01e6
29.57
Abs. Int.
4.61e5
2.31e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.65e3
0%
CS 37Cl-2378D
8.83e6
28.61
Abs. Int.
2.11e6
1.06e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 9.42e3
0%
JS 1234D
8.15e6
27.94
ES 2378D
8.04e6
28.59
Abs. Int.
2.01e6
1.00e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 7.63e3
0%
JS 1234D
1.05e7
27.94
ES 2378D
1.06e7
28.59
Abs. Int.
2.64e6
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23.0
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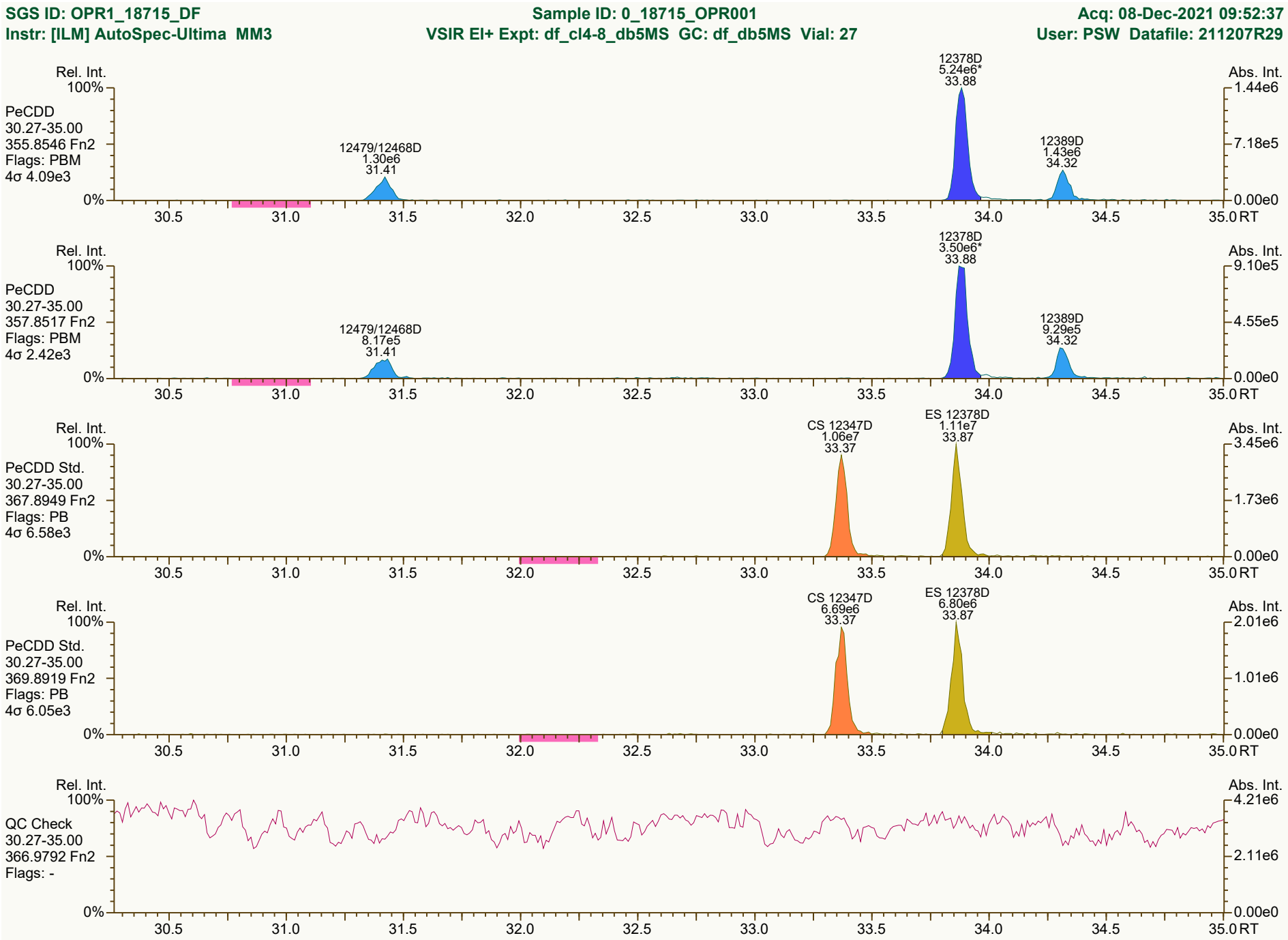
26.0
27.0
28.0
29.0
30.0
RT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Sample ID: 0_18715_OPR001
Acq: 08-Dec-2021 09:52:37
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: PSW Datafile: 211207R29
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
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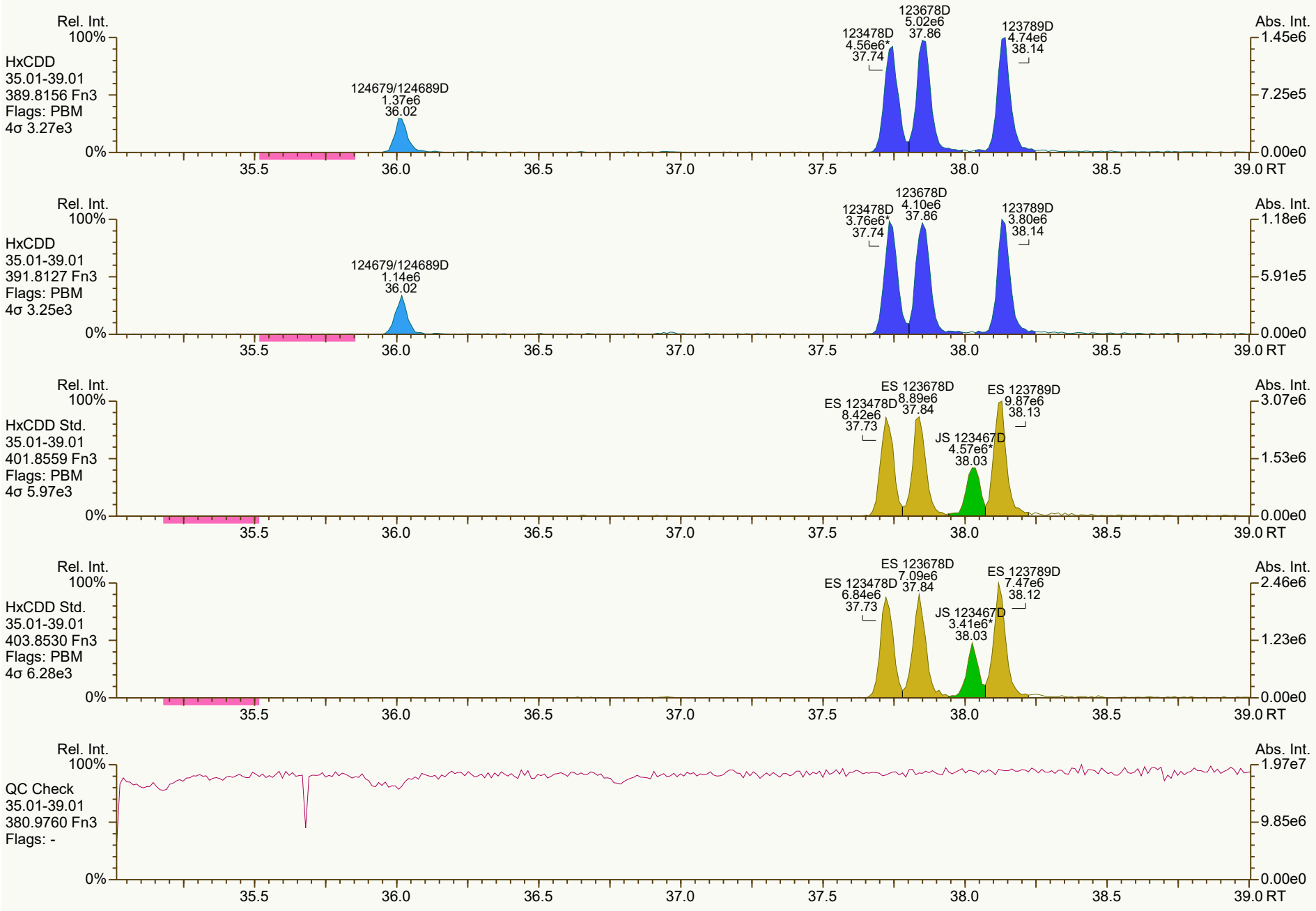
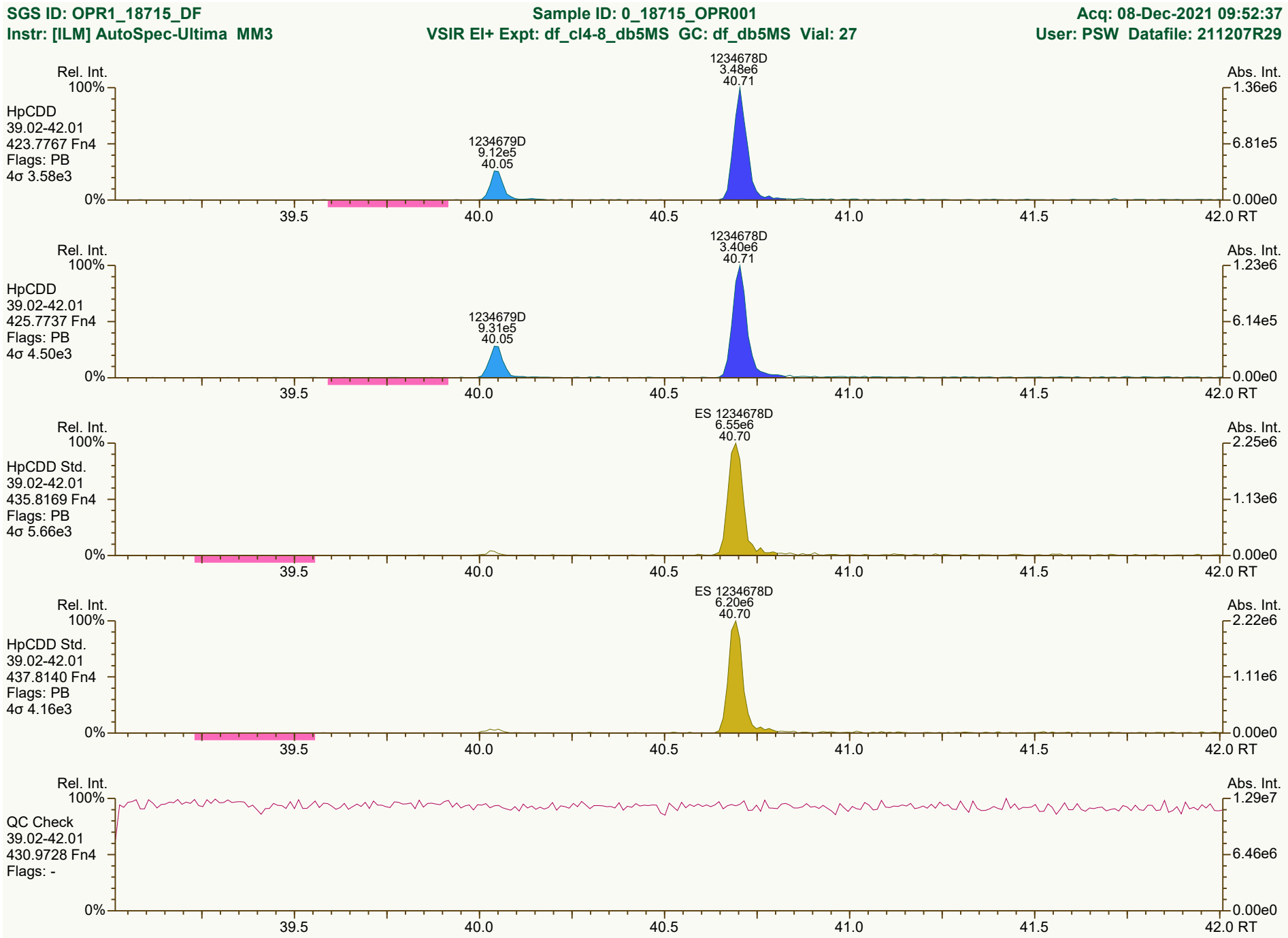
4σ 4.09e3
12479/12468D
1.30e6
31.41
12378D
5.24e6*
33.88
12389D
1.43e6
34.32
1.44e6
7.18e5
0.00e0
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 2.42e3
12479/12468D
8.17e5
31.41
12378D
3.50e6*
33.88
12389D
9.29e5
34.32
9.10e5
4.55e5
0.00e0
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 6.58e3
CS 12347D
1.06e7
33.37
ES 12378D
1.11e7
33.87
3.45e6
1.73e6
0.00e0
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 6.05e3
CS 12347D
6.69e6
33.37
ES 12378D
6.80e6
33.87
2.01e6
1.01e6
0.00e0
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
4.21e6
2.11e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR1_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9776, 9474 scc: 807-647
PKD: 08-Dec-2021 10:45 Printed: 08-Dec-2021 14:08 Page 3 of 12


Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: PBM
4σ 3.27e3
0%
124679/124689D
1.37e6
36.02
123478D
4.56e6*
37.74
123678D
5.02e6
37.86
123789D
4.74e6
38.14
Abs. Int.
1.45e6
7.25e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PBM
4σ 3.25e3
0%
124679/124689D
1.14e6
36.02
123478D
3.76e6*
37.74
123678D
4.10e6
37.86
123789D
3.80e6
38.14
Abs. Int.
1.18e6
5.91e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PBM
4σ 5.97e3
0%
ES 123478D
8.42e6
37.73
ES 123678D
8.89e6
37.84
JS 123467D
4.57e6*
38.03
ES 123789D
9.87e6
38.13
Abs. Int.
3.07e6
1.53e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PBM
4σ 6.28e3
0%
ES 123478D
6.84e6
37.73
ES 123678D
7.09e6
37.84
JS 123467D
3.41e6*
38.03
ES 123789D
7.47e6
38.12
Abs. Int.
2.46e6
1.23e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.97e7
9.85e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

SGS ID: OPR1_18715_DF
Instr: [ILM] AutoSpec-Ultima MM3

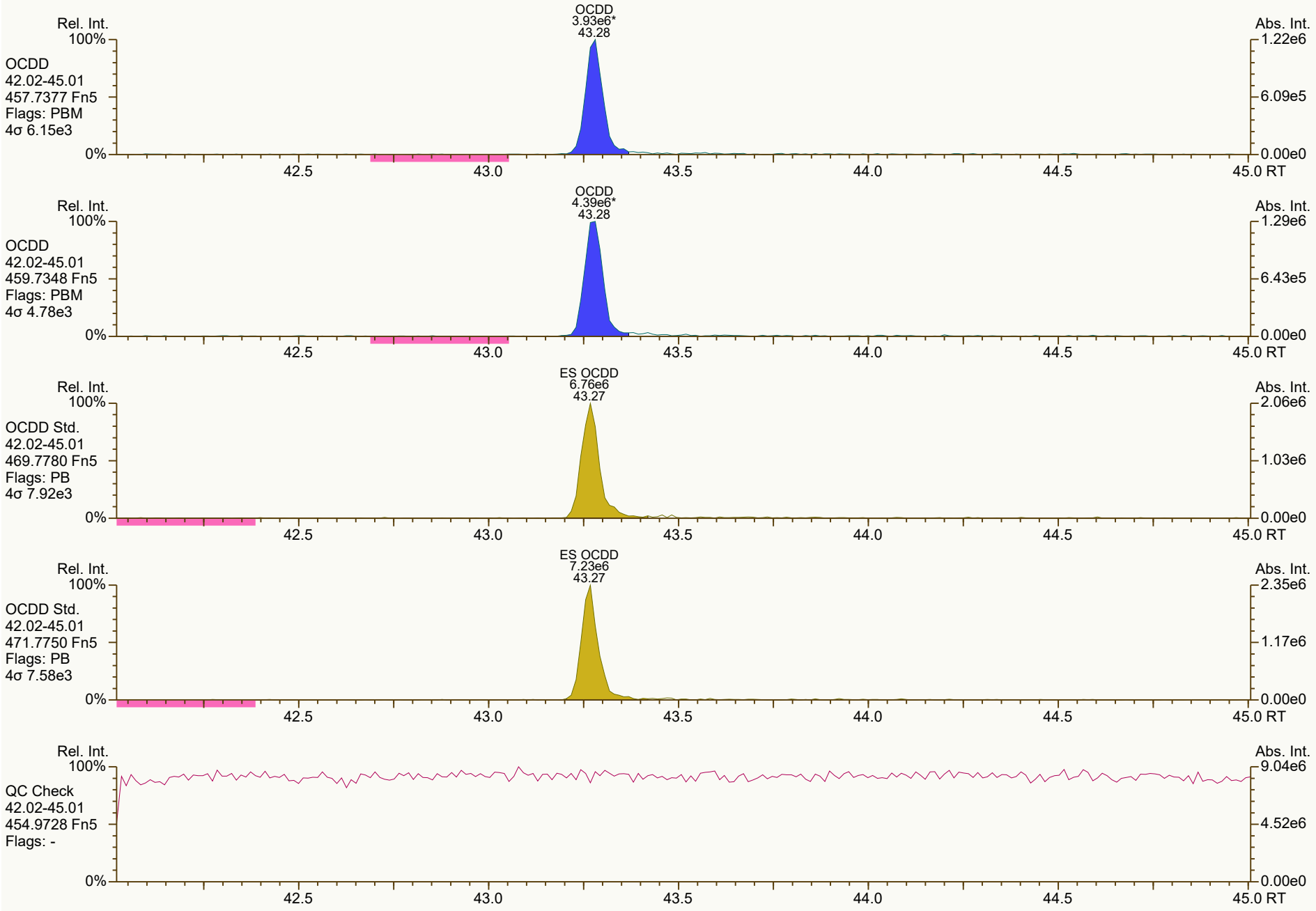
Sample ID: 0_18715_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27

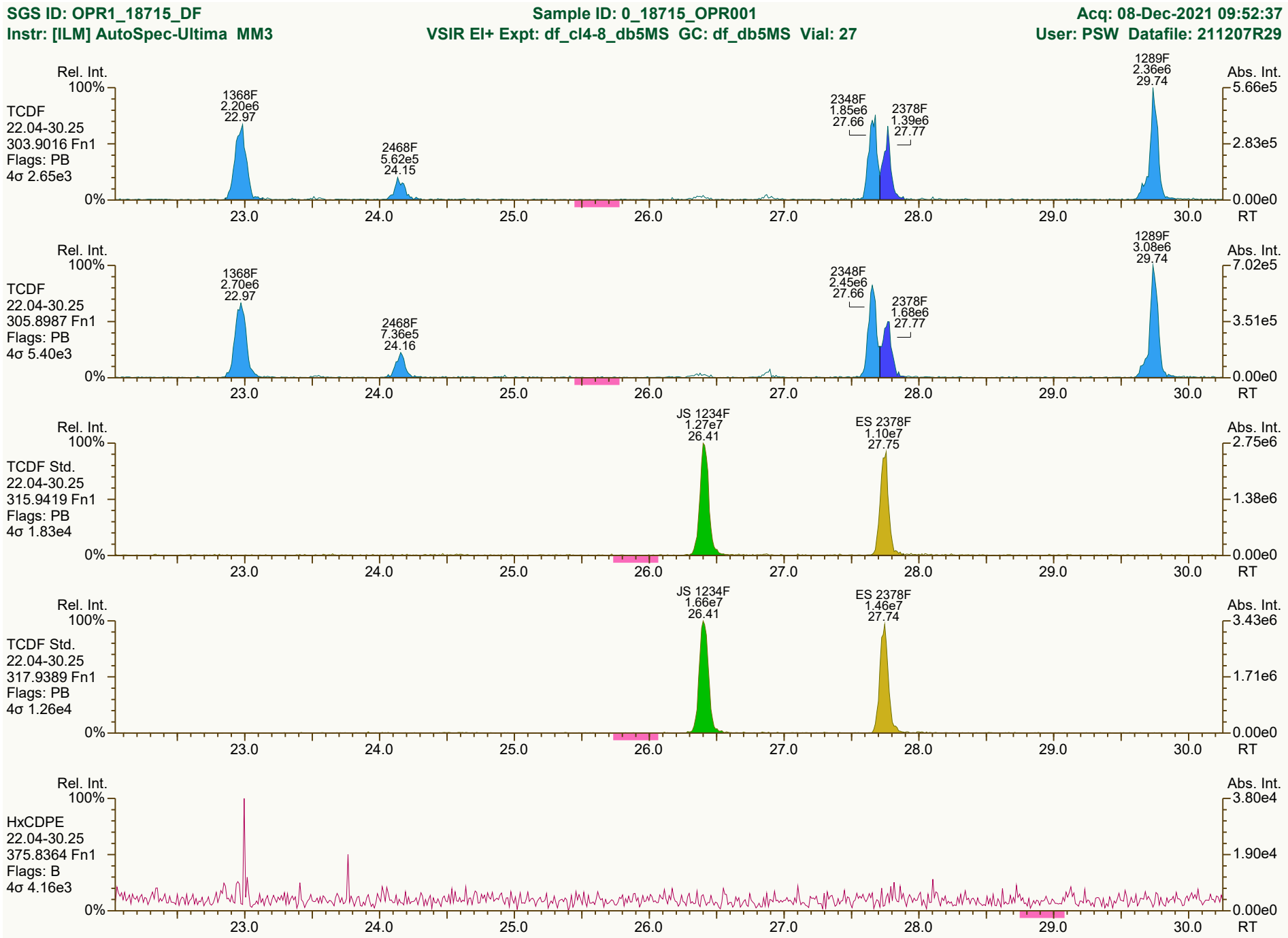
Acq: 08-Dec-2021 09:52:37
User: PSW Datafile: 211207R29



Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR1_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7859, 1318 scc: 807-647

Peak annotation: Areas, Centroids
PKD: 08-Dec-2021 10:45 Printed: 08-Dec-2021 14:08 Page 5 of 12


OCDD
3.93e6*
43.28
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 6.15e3
0%
Abs. Int.
1.22e6
6.09e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.39e6*
43.28
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 4.78e3
0%
Abs. Int.
1.29e6
6.43e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.76e6
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 7.92e3
0%
Abs. Int.
2.06e6
1.03e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.23e6
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 7.58e3
0%
Abs. Int.
2.35e6
1.17e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.04e6
4.52e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

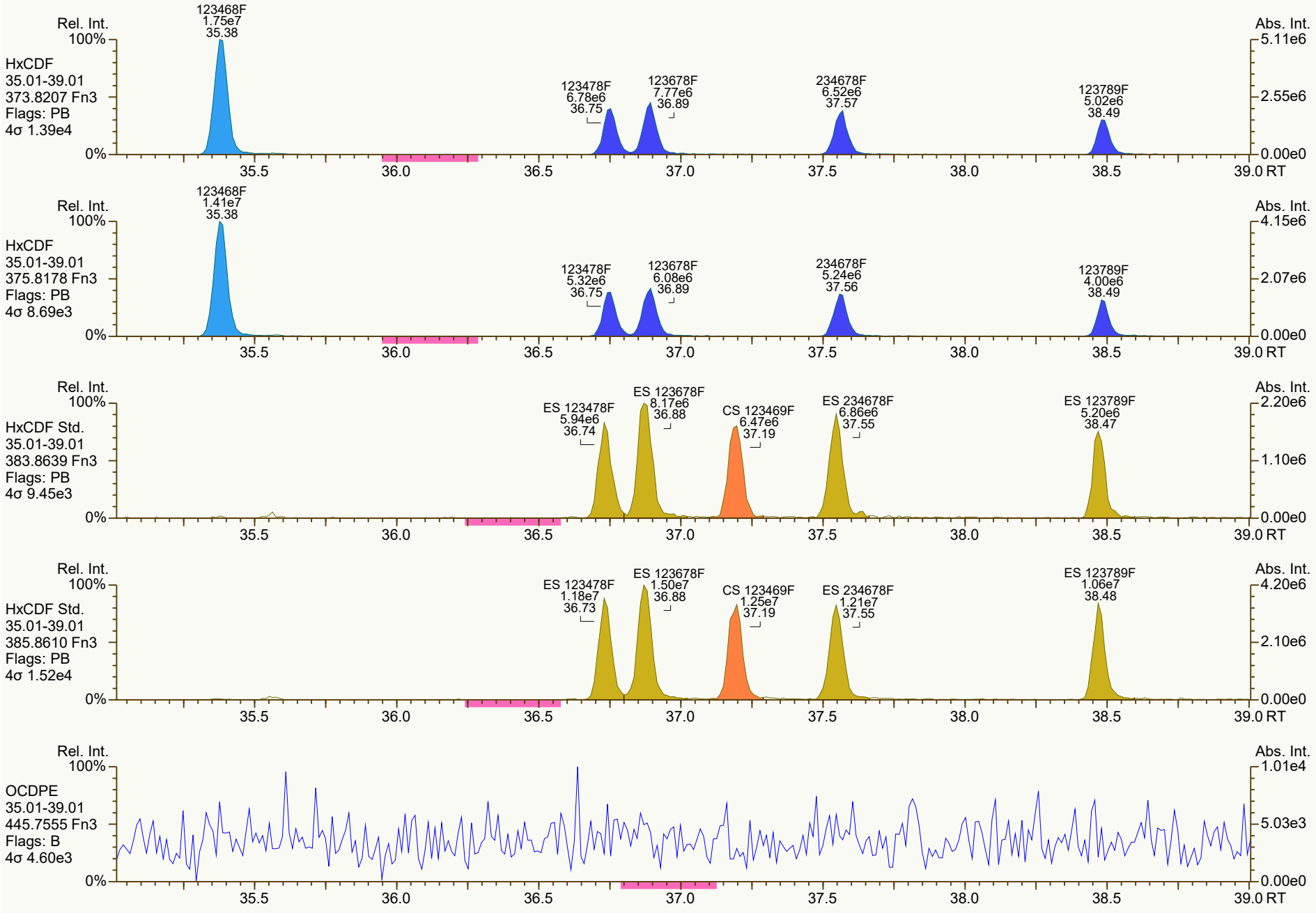

SGS ID: OPR1_18715_DF
Sample ID: 0_18715_OPR001
Acq: 08-Dec-2021 09:52:37
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: PSW Datafile: 211207R29
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PB
4σ 2.65e3
1368F 2.20e6 22.97
2468F 5.62e5 24.15
2348F 1.85e6 27.66
2378F 1.39e6 27.77
1289F 2.36e6 29.74
5.66e5
2.83e5
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PB
4σ 5.40e3
1368F 2.70e6 22.97
2468F 7.36e5 24.16
2348F 2.45e6 27.66
2378F 1.68e6 27.77
1289F 3.08e6 29.74
7.02e5
3.51e5
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.83e4
JS 1234F 1.27e7 26.41
ES 2378F 1.10e7 27.75
2.75e6
1.38e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.26e4
JS 1234F 1.66e7 26.41
ES 2378F 1.46e7 27.74
3.43e6
1.71e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.16e3
3.80e4
1.90e4
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR1_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7247, 4232, 8530 scc: 807-647
PKD: 08-Dec-2021 10:45 Printed: 08-Dec-2021 14:08 Page 7 of 12

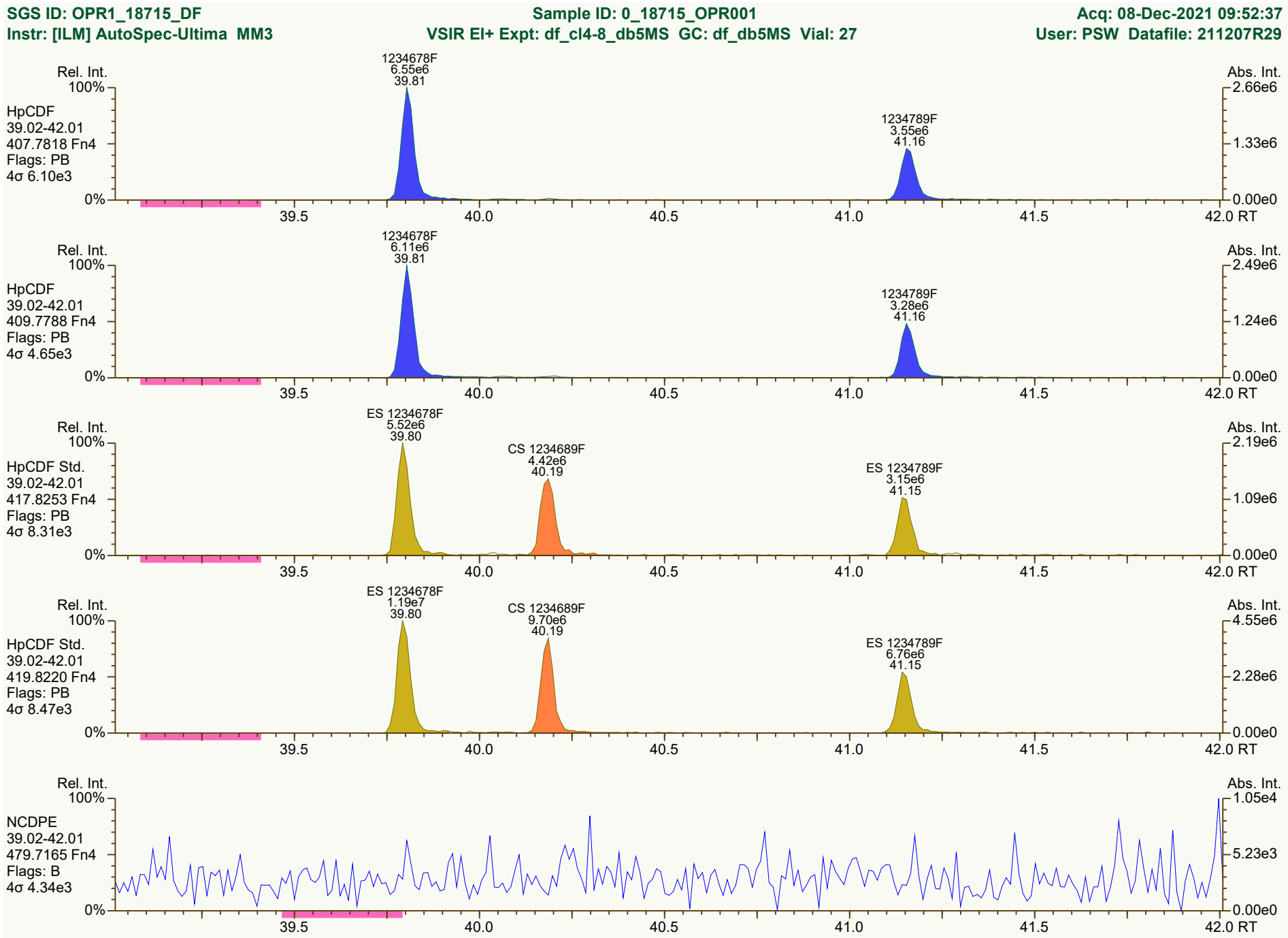
SGS ID: OPR1_18715_DF
Sample ID: 0_18715_OPR001
Acq: 08-Dec-2021 09:52:37
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: PSW Datafile: 211207R29



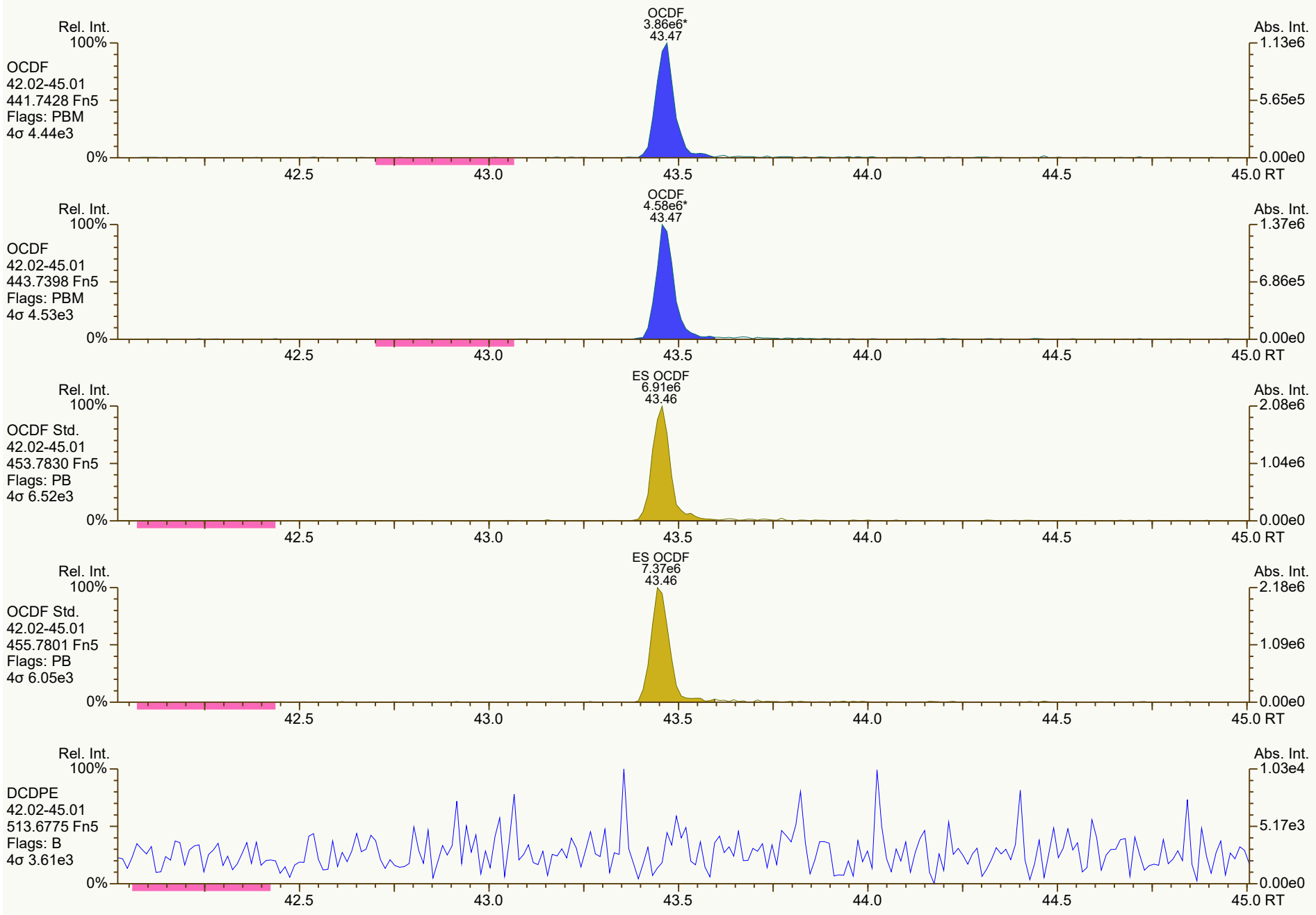
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR1_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5922 scc: 807-647
PKD: 08-Dec-2021 10:45 Printed: 08-Dec-2021 14:08 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 5.67e3
0%
12378F
8.20e6
32.46
23478F
8.34e6
33.56
12389F
1.71e6
34.62
Abs. Int.
2.19e6
1.10e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 6.05e3
0%
12378F
5.34e6
32.46
23478F
5.13e6
33.56
12389F
1.09e6
34.62
Abs. Int.
1.43e6
7.17e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 4.39e3
0%
CS 12346F
1.52e7
31.92
ES 12378F
1.57e7
32.44
ES 23478F
1.53e7
33.54
Abs. Int.
4.31e6
2.15e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 6.20e3
0%
CS 12346F
9.48e6
31.92
ES 12378F
9.58e6
32.44
ES 23478F
9.73e6
33.54
Abs. Int.
2.64e6
1.32e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.44e3
0%
Abs. Int.
9.47e3
4.74e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PB
4σ 1.39e4
123468F 1.75e7 35.38
123478F 6.78e6 36.75
123678F 7.77e6 36.89
234678F 6.52e6 37.57
123789F 5.02e6 38.49
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PB
4σ 8.69e3
123468F 1.41e7 35.38
123478F 5.32e6 36.75
123678F 6.08e6 36.89
234678F 5.24e6 37.56
123789F 4.00e6 38.49
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 9.45e3
ES 123478F 5.94e6 36.74
ES 123678F 8.17e6 36.88
CS 123469F 6.47e6 37.19
ES 234678F 6.86e6 37.55
ES 123789F 5.20e6 38.47
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 1.52e4
ES 123478F 1.18e7 36.73
ES 123678F 1.50e7 36.88
CS 123469F 1.25e7 37.19
ES 234678F 1.21e7 37.55
ES 123789F 1.06e7 38.48
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 4.60e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT



Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR1_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9255, 0911, 6861 scc: 807-647
PKD: 08-Dec-2021 10:45 Printed: 08-Dec-2021 14:08 Page 11 of 12


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 4.44e3
0%
OCDF
3.86e6*
43.47
Abs. Int.
1.13e6
5.65e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 4.53e3
0%
OCDF
4.58e6*
43.47
Abs. Int.
1.37e6
6.86e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 6.52e3
0%
ES OCDF
6.91e6
43.46
Abs. Int.
2.08e6
1.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 6.05e3
0%
ES OCDF
7.37e6
43.46
Abs. Int.
2.18e6
1.09e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.61e3
0%
Abs. Int.
1.03e4
5.17e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: OPR2_18715_DF **Acq'd: 08 Dec 2021 10:39 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18715_OPR002 **UTP: 08-Dec-2021 14:01:36 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 418-331-HRM**

Datafile: 211207R30 **Report: 08 Dec 2021 14:02 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62		1.0008	1.0007	-0.2	3.40E+06	0.76	Y	1.34	9.19	8910.44	0.256
12378-PeCDD	33.89		1.0004	1.0006	+0.4	1.26E+07	1.60	Y	1.06	47.8	7788.874	0.269
123478-HxCDD	37.75		1.0004	1.0004	0	1.22E+07	1.28	Y	1.06	53.4	7445.085	0.255
123678-HxCDD	37.86		1.0034	1.0034	0	1.29E+07	1.24	Y	1.08	55.9	7445.085	0.264
123789-HxCDD	38.15		1.0111	1.0110	-0.2	1.28E+07	1.25	Y	1.02	51.7	7445.085	0.237
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	9.88E+06	1.07	Y	0.97	54.9	9847.984	0.362
OCDD	43.28		1.0003	1.0003	0	1.17E+07	0.92	Y	1.07	106	13851.633	1.01
2378-TCDF	27.77		1.0007	1.0006	-0.2	4.33E+06	0.79	Y	0.96	12	9026.985	0.277
12378-PeCDF	32.46		1.0006	1.0005	-0.2	1.75E+07	1.56	Y	0.95	56	12748.696	0.406
23478-PeCDF	33.56		1.0005	1.0005	0	1.77E+07	1.57	Y	0.94	60.1	12748.696	0.397
123478-HxCDF	36.76		1.0004	1.0005	+0.2	1.65E+07	1.26	Y	1.23	53.5	19266.46	0.516
123678-HxCDF	36.90		1.0005	1.0004	-0.2	1.97E+07	1.26	Y	1.13	53	19266.46	0.47
234678-HxCDF	37.57		1.0005	1.0005	0	1.76E+07	1.29	Y	1.15	53.7	19266.46	0.524
123789-HxCDF	38.49		1.0005	1.0004	-0.2	1.34E+07	1.27	Y	1.14	50.6	19266.46	0.56
1234678-HpCDF	39.81		1.0003	1.0003	0	1.86E+07	1.03	Y	1.36	53	9742.011	0.178
1234789-HpCDF	41.17		1.0004	1.0004	0	1.05E+07	1.07	Y	1.30	58	9742.011	0.335
OCDF	43.47		1.0002	1.0003	+0.3	1.19E+07	0.91	Y	1.03	110	8141.145	0.612

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0232	-0.2	2.75E+07	0.81	Y	1.03	93.5
ES 12378-PeCDD	33.88	1.2118	1.2121	+0.6	2.50E+07	1.58	Y	1.03	84.9
ES 123478-HxCDD	37.73	0.9921	0.9922	+0.2	2.16E+07	1.24	Y	0.99	102
ES 123678-HxCDD	37.85	0.9951	0.9951	0	2.13E+07	1.23	Y	0.97	103
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	2.45E+07	1.32	Y	1.12	102
ES 1234678-HpCDD	40.70	1.0702	1.0701	-0.2	1.85E+07	1.07	Y	0.99	87.2
ES OCDD	43.27	1.1377	1.1377	0	2.06E+07	0.89	Y	0.78	62.1
ES 2378-TCDF	27.75	1.0505	1.0504	-0.2	3.74E+07	0.79	Y	1.08	86.3
ES 12378-PeCDF	32.44	1.2278	1.2280	+0.4	3.30E+07	1.58	Y	0.93	88.3
ES 23478-PeCDF	33.54	1.2691	1.2697	+1.2	3.13E+07	1.53	Y	0.92	84.8
ES 123478-HxCDF	36.74	0.9660	0.9661	+0.2	2.50E+07	0.53	Y	1.14	102
ES 123678-HxCDF	36.88	0.9698	0.9698	0	3.28E+07	0.57	Y	1.30	118
ES 234678-HxCDF	37.56	0.9875	0.9875	0	2.84E+07	0.52	Y	1.20	110
ES 123789-HxCDF	38.48	1.0121	1.0118	-0.7	2.34E+07	0.51	Y	1.14	96.3
ES 1234678-HpCDF	39.80	1.0468	1.0466	-0.5	2.58E+07	0.43	Y	0.95	127
ES 1234789-HpCDF	41.15	1.0822	1.0820	-0.5	1.39E+07	0.46	Y	0.85	76.8
ES OCDF	43.46	1.1426	1.1426	0	2.12E+07	0.87	Y	0.93	53.5

Lab ID: OPR2_18715_DF | Acq'd: 08 Dec 2021 10:39 PSW | Wt/Vol: 1 uL | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 0_18715_OPR002 | UTP: 08-Dec-2021 14:01:36 PSW | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 418-331-HRM

Datafile: 211207R30 | Report: 08 Dec 2021 14:02 pw | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.95		-	-	-	2.84E+07	0.80	Y	-	-
JS 1234-TCDF	26.42		-	-	-	4.00E+07	0.81	Y	-	-
JS 123467-HxCDD	38.03		-	-	-	1.07E+07	1.34	Y	-	-
CS 37Cl-2378-TCDD	28.62		1.0241	1.0240	-0.2	1.32E+07	n/a	-	1.31	88.6
CS 12347-PeCDD	33.38		1.1940	1.1944	+0.8	2.29E+07	1.65	Y	0.89	90.1
CS 12346-PeCDF	31.92		1.2080	1.2083	+0.6	3.08E+07	1.51	Y	0.87	88.7
CS 123469-HxCDF	37.20		0.9781	0.9782	+0.2	2.89E+07	0.53	Y	1.09	124
CS 1234689-HpCDF	40.19		1.0569	1.0567	-0.5	2.12E+07	0.44	Y	0.86	115
~~SS 37Cl-2378-TCDD~~	~~28.62~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~1.32E+07~~	~~n/a~~		~~1.26~~	~~95.2~~
~~SS 12347-PeCDD~~	~~33.38~~		~~1.1940~~	~~1.1944~~	~~+0.8~~	~~2.29E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~106~~
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2083~~	~~+0.6~~	~~3.08E+07~~	~~1.51~~	~~Y~~	~~0.93~~	~~100~~
~~SS 123469-HxCDF~~	~~37.20~~		~~0.9781~~	~~0.9782~~	~~+0.2~~	~~2.89E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~105~~
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0567~~	~~-0.5~~	~~2.12E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~90.1~~

Totals	Conc	EMPC
Total TCDD	42.2	42.2
Total PeCDD	67.5	67.5
Total HxCDD	174	174
Total HpCDD	69.2	69.2
Total Tetra-Octa Dioxins	459	459
Total TCDF	65.4	65.4
Total PeCDF	241	241
Total HxCDF	335	335
Total HpCDF	111	111
Total Tetra-Octa Furans	863	863
Total Tetra-Octa Dioxins & Furans	1320	1320

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.759	0.76
Response	3.41E+06	3.40E+06

Lab ID: OPR2_18715_DF **Acq'd: 08 Dec 2021 10:39 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18715_OPR002 **UTP: 08-Dec-2021 14:01:36 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 418-331-HRM**

Datafile: 211207R30 **Report: 08 Dec 2021 14:02 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8758	0.8758	0	4.03E+06	0.78	Y	1.34	10.9	8910.44	0.256
1379-TCDD	NotFnd		0.8878						1.34		8910.44	0.256
1369-TCDD	NotFnd		0.9025						1.34		8910.44	0.256
1469-TCDD	NotFnd		0.9291						1.34		8910.44	0.256
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8910.44	0.256
1378-TCDD	NotFnd		0.9440						1.34		8910.44	0.256
1268-TCDD	NotFnd		0.9505						1.34		8910.44	0.256
1478-TCDD	NotFnd		0.9591						1.34		8910.44	0.256
1279-TCDD	NotFnd		0.9650						1.34		8910.44	0.256
1234/1269-TCDD	NotFnd		0.9771						1.34		8910.44	0.256
1236-TCDD	NotFnd		0.9821						1.34		8910.44	0.256
1237/1238-TCDD	NotFnd		0.9907						1.34		8910.44	0.256
1239-TCDD	28.46		0.9953	0.9953	0	3.29E+06	0.76	Y	1.34	8.91	8910.44	0.256
2378-TCDD	**28.62**		**1.0008**	1.0007	**-0.2**	3.40E+06	0.76	Y	**1.34**	**9.19**	**8910.44**	**0.256**
1278-TCDD	NotFnd		1.0118						1.34		8910.44	0.256
1267-TCDD	NotFnd		1.0162						1.34		8910.44	0.256
1289-TCDD	29.57		1.0340	1.0342	+0.4	4.89E+06	0.76	Y	1.34	13.2	8910.44	0.256
12479/12468-PeCDD	31.41		0.9274	0.9274	0	2.57E+06	1.54	Y	1.06	9.7	7788.874	0.269
12469-PeCDD	NotFnd		0.9430						1.06		7788.874	0.269
12368-PeCDD	NotFnd		0.9591						1.06		7788.874	0.269
12478-PeCDD	NotFnd		0.9645						1.06		7788.874	0.269
12379-PeCDD	NotFnd		0.9676						1.06		7788.874	0.269
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		7788.874	0.269
12346/12347-PeCDD	NotFnd		0.9860						1.06		7788.874	0.269
12378-PeCDD	33.89		**1.0004**	**1.0006**	**+0.4**	**1.26E+07**	**1.60**	**Y**	**1.06**	**47.8**	**7788.874**	**0.269**
12367-PeCDD	NotFnd		1.0034						1.06		7788.874	0.269
12389-PeCDD	34.33		1.0133	1.0133	0	2.65E+06	1.60	Y	1.06	10	7788.874	0.269
124679/124689-HxCDD	36.03		0.9546	0.9548	+0.4	3.12E+06	1.21	Y	1.05	13.2	7445.085	0.251
123468-HxCDD	NotFnd		0.9718						1.05		7445.085	0.251
123679/123689-HxCDD	NotFnd		0.9795						1.05		7445.085	0.251
123469-HxCDD	NotFnd		0.9832						1.05		7445.085	0.251
123478-HxCDD	37.75		**1.0004**	**1.0004**	**0**	**1.22E+07**	**1.28**	**Y**	1.06	**53.4**	**7445.085**	**0.255**
123678-HxCDD	37.86		**1.0034**	**1.0034**	**0**	**1.29E+07**	**1.24**	**Y**	1.08	**55.9**	**7445.085**	**0.264**
123467-HxCDD	NotFnd		1.0083						1.05		7445.085	0.251
123789-HxCDD	38.15		**1.0111**	**1.0110**	**-0.2**	**1.28E+07**	**1.25**	**Y**	1.02	**51.7**	**7445.085**	**0.237**

Lab ID: OPR2_18715_DF | **Acq'd: 08 Dec 2021 10:39 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18715_OPR002 | **UTP: 08-Dec-2021 14:01:36 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 418-331-HRM**

Datafile: 211207R30 | **Report: 08 Dec 2021 14:02 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9841	-0.5	2.58E+06	1.00	Y	0.97	14.3	9847.984	0.362
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**9.88E+06**	**1.07**	**Y**	**0.97**	**54.9**	**9847.984**	**0.362**
OCDD	**43.28**		**1.0003**	**1.0003**	**0**	**1.17E+07**	**0.92**	**Y**	**1.07**	**106**	**13851.633**	**1.01**
OCDD-a	43.28		1.0001	1.0001	0	6.91E+05	2.33	Y	0.07	102	12902.85	15.2
1368-TCDF	22.99		0.8284	0.8286	+0.3	5.59E+06	0.80	Y	0.96	15.5	9026.985	0.277
1468-TCDF	NotFnd		0.8487						0.96		9026.985	0.277
2468-TCDF	24.17		0.8709	0.8709	0	1.41E+06	0.73	Y	0.96	3.92	9026.985	0.277
1346/1246-TCDF	NotFnd		0.8828						0.96		9026.985	0.277
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		9026.985	0.277
1348-TCDF	NotFnd		0.8980						0.96		9026.985	0.277
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		9026.985	0.277
1268-TCDF	NotFnd		0.9159						0.96		9026.985	0.277
1467-TCDF	NotFnd		0.9206						0.96		9026.985	0.277
1478-TCDF	NotFnd		0.9266						0.96		9026.985	0.277
1369/1237-TCDF	NotFnd		0.9396						0.96		9026.985	0.277
2467-TCDF	NotFnd		0.9440						0.96		9026.985	0.277
2368-TCDF	NotFnd		0.9496						0.96		9026.985	0.277
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		9026.985	0.277
1278-TCDF	NotFnd		0.9689						0.96		9026.985	0.277
1349-TCDF	NotFnd		0.9732						0.96		9026.985	0.277
1267-TCDF	NotFnd		0.9786						0.96		9026.985	0.277
2346/1249-TCDF	NotFnd		0.9849						0.96		9026.985	0.277
2347/1279-TCDF	NotFnd		0.9927						0.96		9026.985	0.277
2348-TCDF	27.66		0.9967	0.9967	0	5.62E+06	0.76	Y	0.96	15.6	9026.985	0.277
2378-TCDF	**27.77**		**1.0007**	**1.0006**	**-0.2**	**4.33E+06**	**0.79**	**Y**	**0.96**	**12**	**9026.985**	**0.277**
2367/3467-TCDF	NotFnd		1.0136						0.96		9026.985	0.277
1269-TCDF	NotFnd		1.0223						0.96		9026.985	0.277
1239-TCDF	NotFnd		1.0313						0.96		9026.985	0.277
1289-TCDF	29.75		1.0711	1.0721	+1.8	6.57E+06	0.80	Y	0.96	18.3	9026.985	0.277
13468/12468-PeCDF	29.66		0.9147	0.9142	-0.9	3.42E+07	1.65	Y	0.94	113	8542.547	0.269
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		12748.696	0.402
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		12748.696	0.402
14678-PeCDF	NotFnd		0.9695						0.94		12748.696	0.402
13479-PeCDF	NotFnd		0.9727						0.94		12748.696	0.402
13469/12479-PeCDF	NotFnd		0.9799						0.94		12748.696	0.402
12346-PeCDF	NotFnd		0.9839						0.94		12748.696	0.402

Lab ID: OPR2_18715_DF | **Acq'd: 08 Dec 2021 10:39 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18715_OPR002 | **UTP: 08-Dec-2021 14:01:36 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 418-331-HRM**

Datafile: 211207R30 | **Report: 08 Dec 2021 14:02 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		12748.696	0.402
12347-PeCDF	NotFnd		0.9892						0.94		12748.696	0.402
12348-PeCDF	NotFnd		0.9940						0.94		12748.696	0.402
12378-PeCDF	**32.46**		**1.0006**	**1.0005**	**-0.2**	**1.75E+07**	**1.56**	**Y**	**0.95**	**56**	**12748.696**	**0.406**
12678/12367-PeCDF	NotFnd		1.0088						0.94		12748.696	0.402
12379-PeCDF	NotFnd		1.0142						0.94		12748.696	0.402
12679-PeCDF	NotFnd		0.9931						0.94		12748.696	0.402
23467/12369-PeCDF	NotFnd		0.9966						0.94		12748.696	0.402
23478-PeCDF	**33.56**		**1.0005**	**1.0005**	**0**	**1.77E+07**	**1.57**	**Y**	**0.94**	**60.1**	**12748.696**	**0.397**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		12748.696	0.402
12349-PeCDF	NotFnd		1.0100						0.94		12748.696	0.402
12389-PeCDF	34.62		1.0323	1.0322	-0.2	3.78E+06	1.47	Y	0.94	12.5	12748.696	0.402
123468-HxCDF	35.39		0.9631	0.9632	+0.2	3.96E+07	1.28	Y	1.16	124	19266.46	0.513
124678/134678-HxCDF	NotFnd		0.9686						1.16		19266.46	0.513
134679-HxCDF	NotFnd		0.9747						1.16		19266.46	0.513
124679-HxCDF	NotFnd		0.9800						1.16		19266.46	0.513
124689-HxCDF	NotFnd		0.9859						1.16		19266.46	0.513
123467-HxCDF	NotFnd		0.9972						1.16		19266.46	0.513
123478-HxCDF	**36.76**		**1.0004**	**1.0005**	**+0.2**	**1.65E+07**	**1.26**	**Y**	**1.23**	**53.5**	**19266.46**	**0.516**
123678-HxCDF	**36.90**		**1.0005**	**1.0004**	**-0.2**	**1.97E+07**	**1.26**	**Y**	**1.13**	**53**	**19266.46**	**0.47**
123479-HxCDF	NotFnd		1.0048						1.16		19266.46	0.513
123469-HxCDF	NotFnd		1.0089						1.16		19266.46	0.513
123679-HxCDF	NotFnd		0.9943						1.16		19266.46	0.513
234678-HxCDF	**37.57**		**1.0005**	**1.0005**	**0**	**1.76E+07**	**1.29**	**Y**	**1.15**	**53.7**	**19266.46**	**0.524**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		19266.46	0.513
123789-HxCDF	**38.49**		**1.0005**	**1.0004**	**-0.2**	**1.34E+07**	**1.27**	**Y**	**1.14**	**50.6**	**19266.46**	**0.56**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		19266.46	0.513
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**1.86E+07**	**1.03**	**Y**	**1.36**	**53**	**9742.011**	**0.178**
1234679-HpCDF	NotFnd		1.0065						1.33		9742.011	0.233
1234689-HpCDF	NotFnd		1.0097						1.33		9742.011	0.233
1234789-HpCDF	**41.17**		**1.0004**	**1.0004**	**0**	**1.05E+07**	**1.07**	**Y**	**1.30**	**58**	**9742.011**	**0.335**
OCDF	**43.47**		**1.0002**	**1.0003**	**+0.3**	**1.19E+07**	**0.91**	**Y**	**1.03**	**110**	**8141.145**	**0.612**
OCDF-a	43.47	**EMPC**	1.0001	1.0002	+0.3	5.67E+05	1.89	N	0.06	90.4	10968.138	14.3

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211207R30	Analysis Date:	08-DEC-2021 10:39:20
Lab ID:	OPR2_18715_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.19	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	47.8	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.4	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	55.9	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.7	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	54.9	35	-	70	Y
OCDD	100	106	78	-	144	Y
2,3,7,8-TCDF	10	12	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	56	40	-	67	Y
2,3,4,7,8-PeCDF	50	60.1	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	53.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	53.7	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	50.6	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	53	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	58	39	-	69	Y
OCDF	100	110	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Dec 2021 14:02 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211207R30	Analysis Date:	08-DEC-2021 10:39:20
Lab ID:	OPR2_18715_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	93.5	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	84.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	102	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	103	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	102	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	87.2	26	-	166	Y
13C-OCDD	200	124	26	-	397	Y
13C-2,3,7,8-TCDF	100	86.3	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	88.3	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	84.8	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	102	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	118	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	110	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	96.3	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	127	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	76.8	20	-	186	Y
13C-OCDF	200	107	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	35.4	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 08 Dec 2021 14:02 Analyst: pw

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211207R30	Analysis Date:	08-DEC-2021 10:39:20
Lab ID:	OPR2_18715_DF		

Window Defining Standards Results

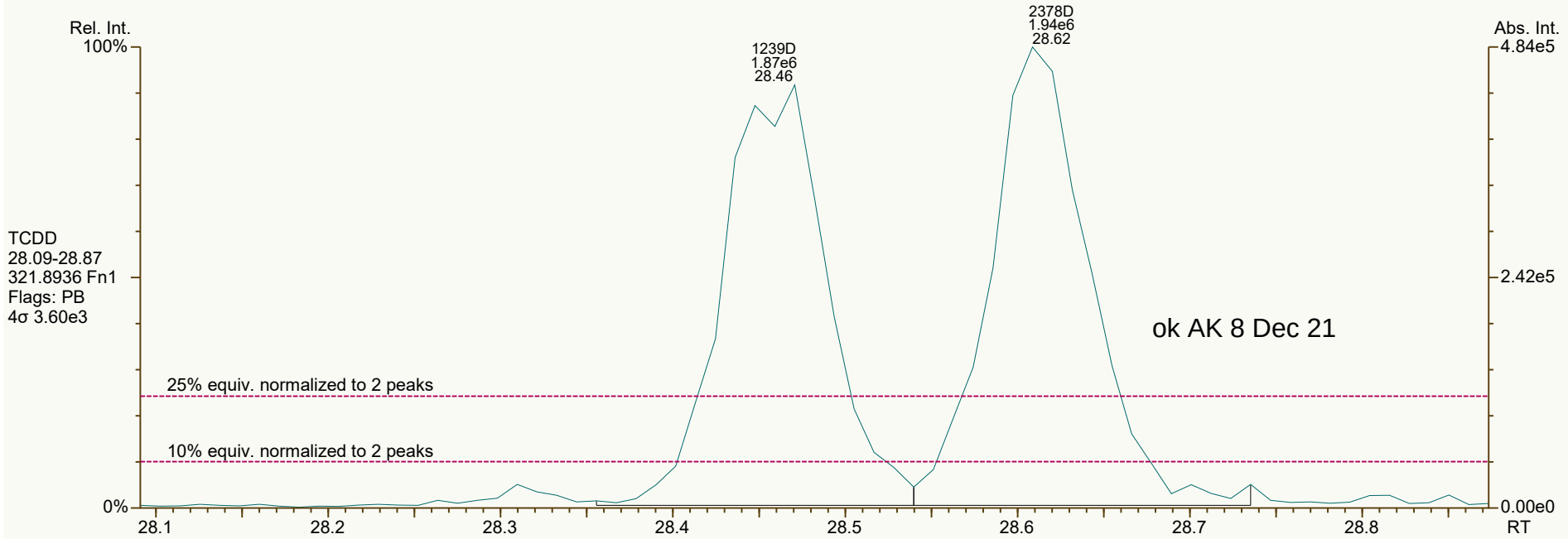
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.04	1289-TCDD	29.57
12479/12468-PeCDD	31.41	12389-PeCDD	34.33
124679/124689-HxCDD	36.03	123789-HxCDD	38.15
1234679-HpCDD	40.05	1234678-HpCDD	40.71
1368-TCDF	22.99	1289-TCDF	29.75
13468/12468-PeCDF	29.66	12389-PeCDF	34.62
123468-HxCDF	35.39	123789-HxCDF	38.49
1234678-HpCDF	39.81	1234789-HpCDF	41.17

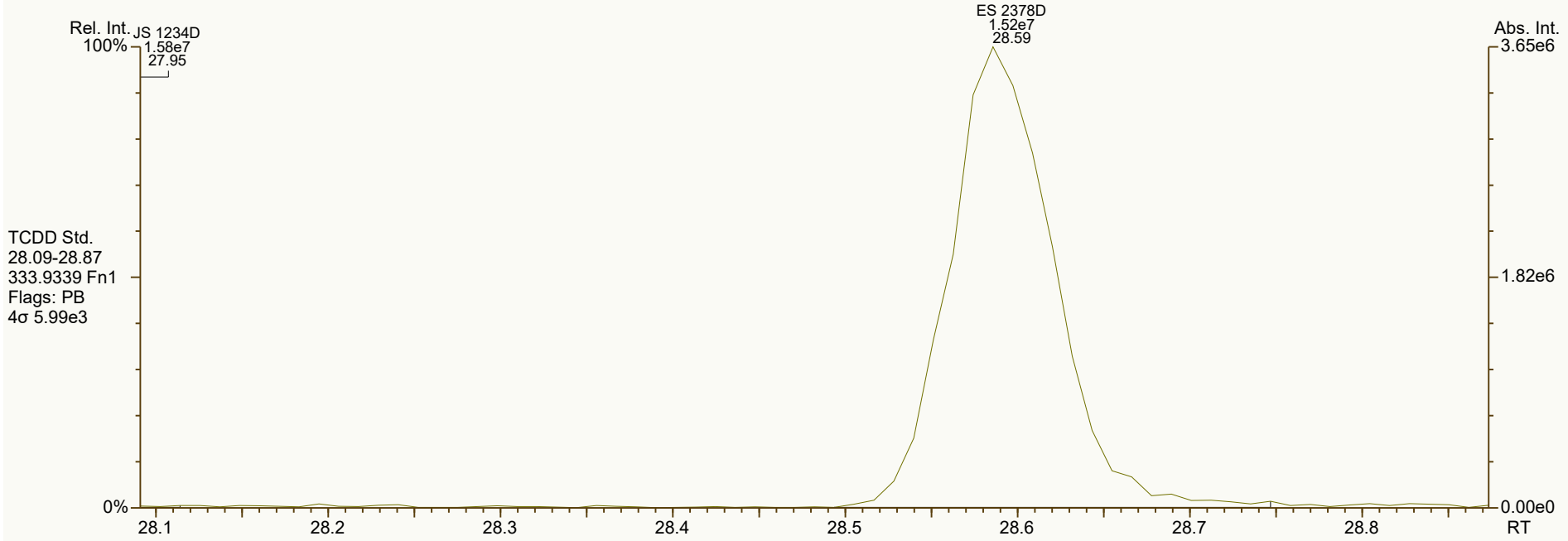
Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.46	2378-TCDD	28.62
2348-TCDF	27.66	2378-TCDF	27.77

Processed: 08 Dec 2021 14:02 Analyst: pw

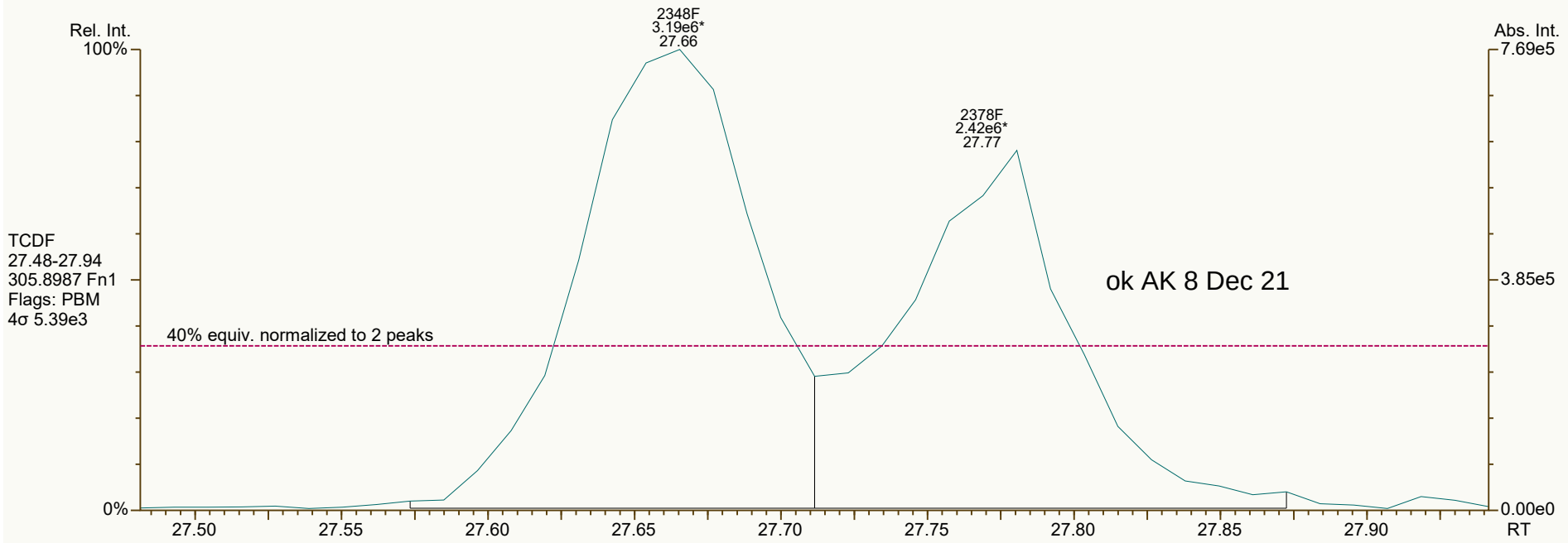
SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30

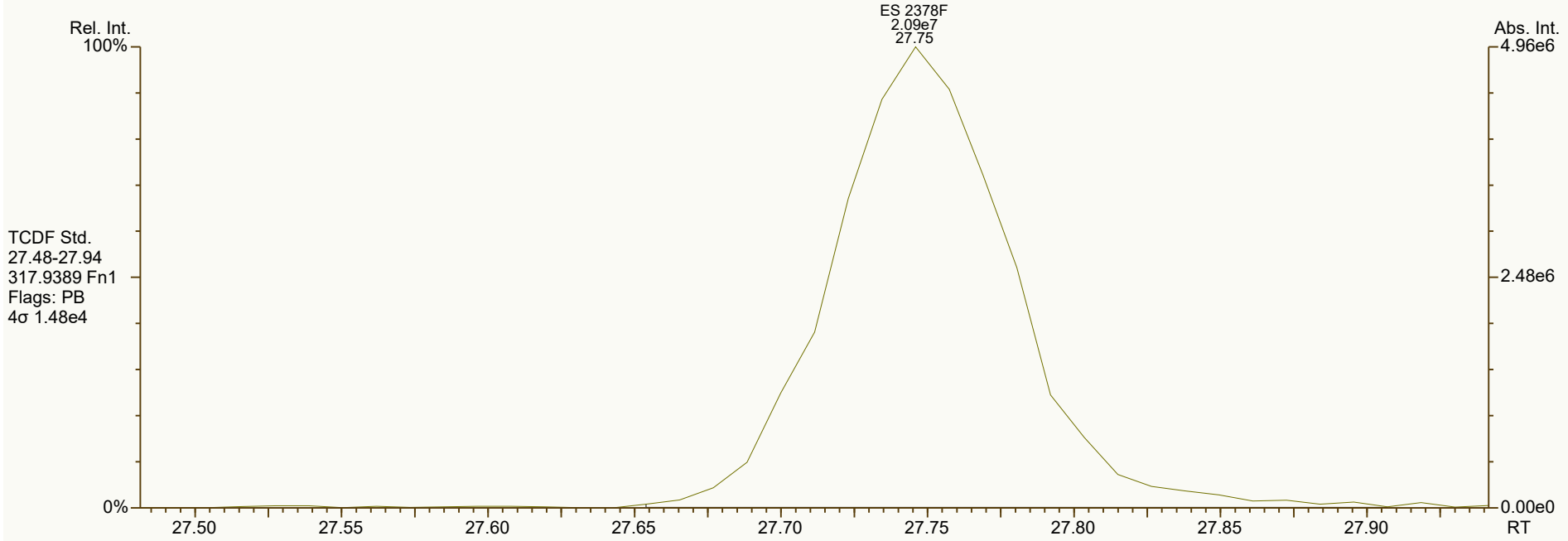




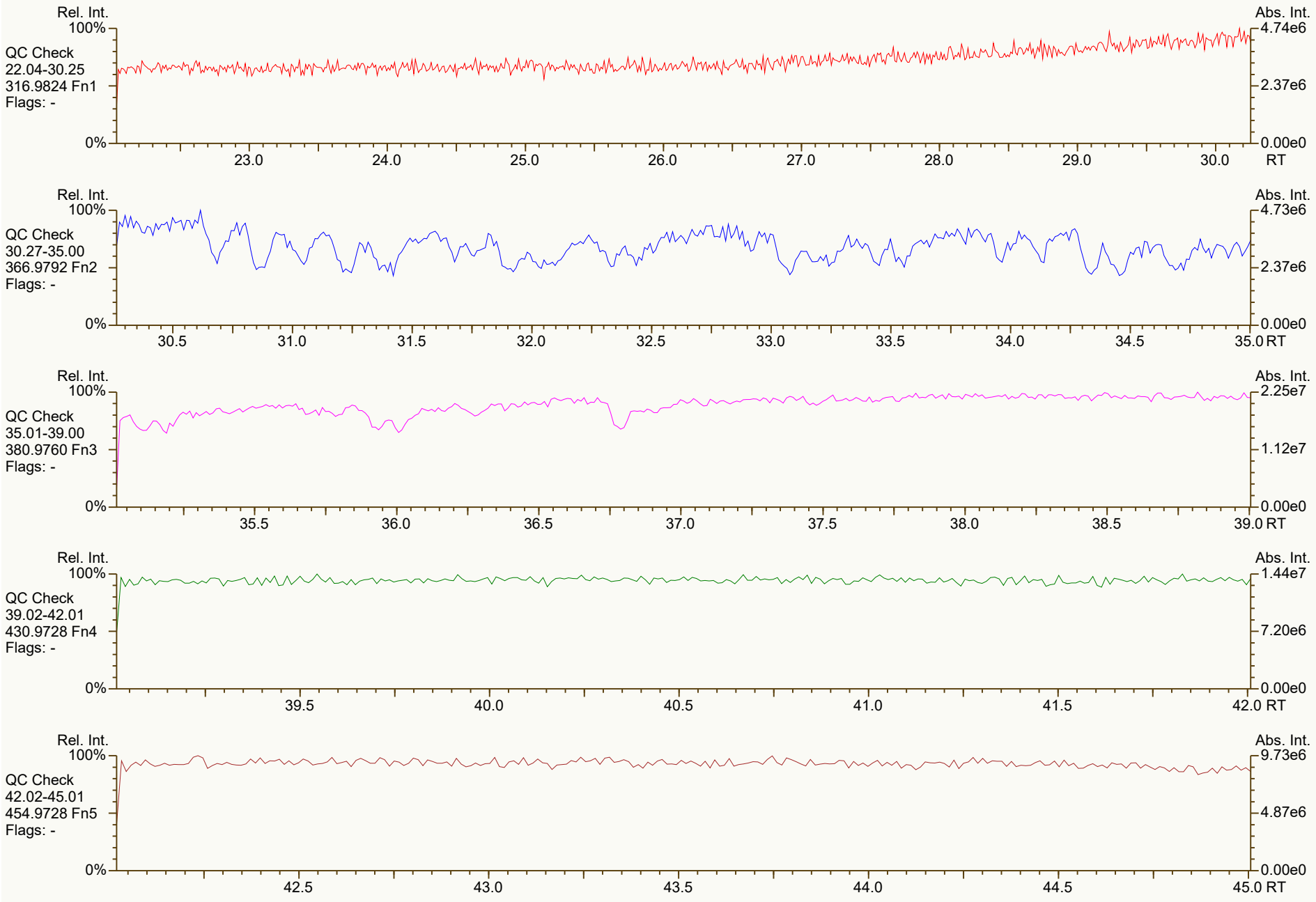
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:06

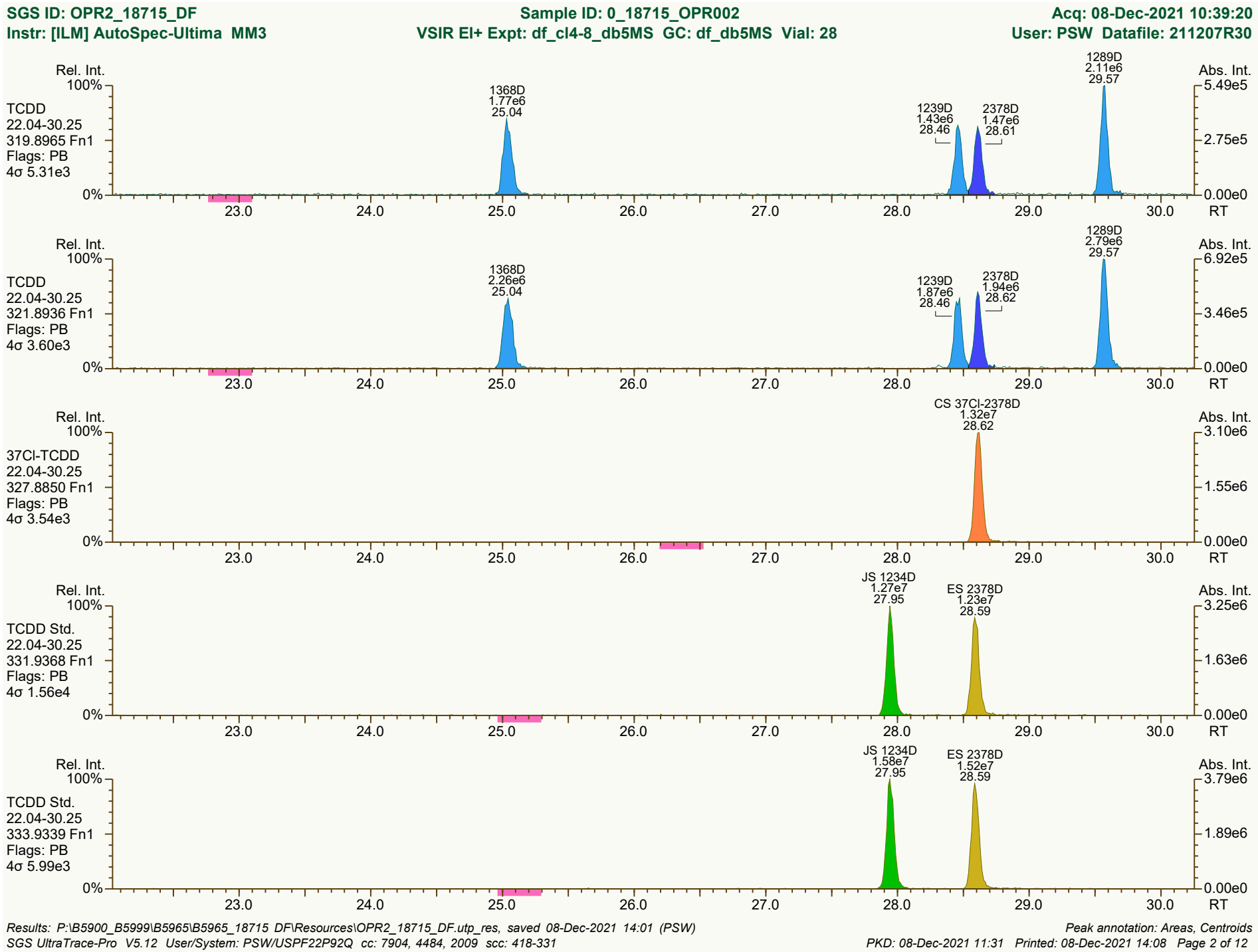
SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30

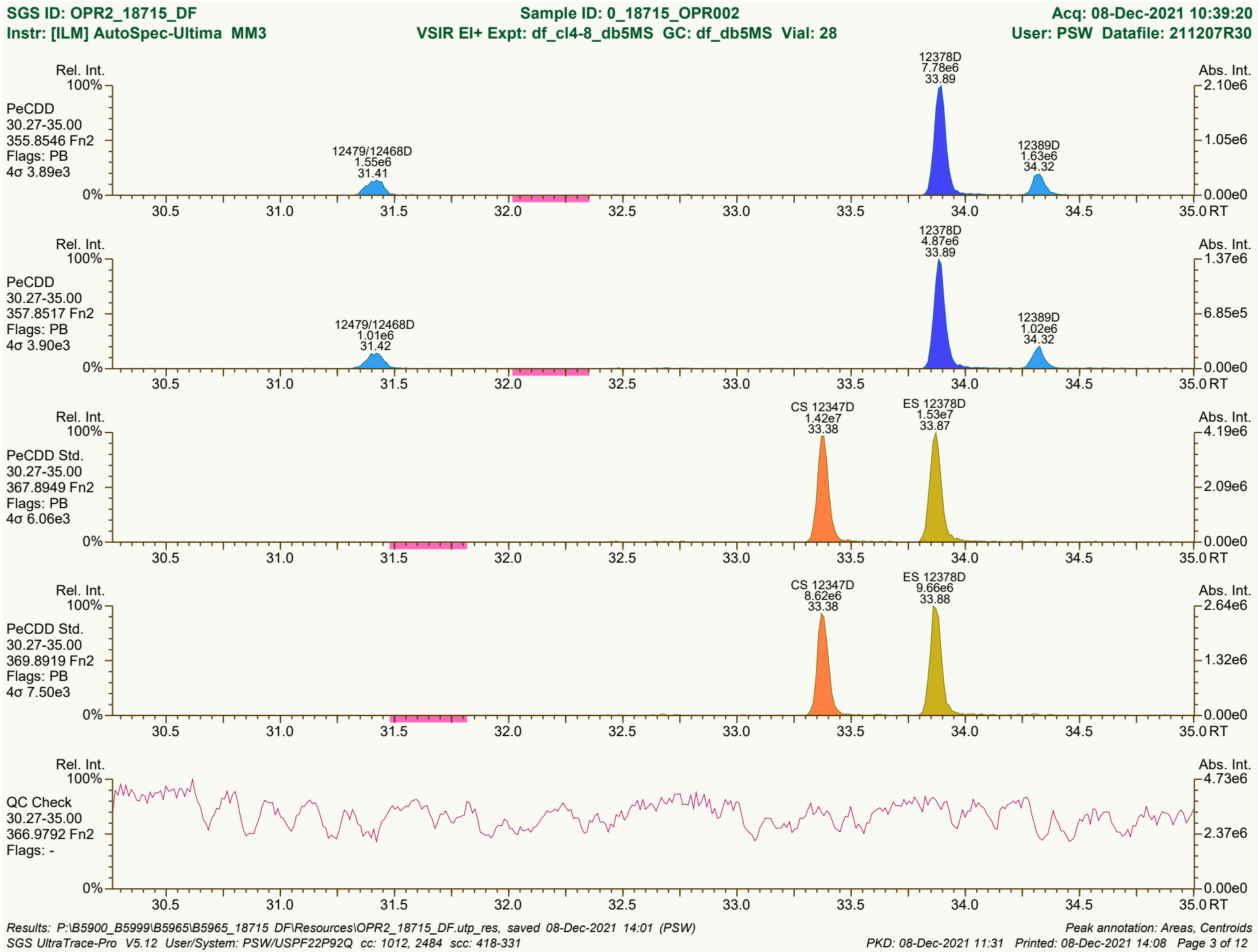


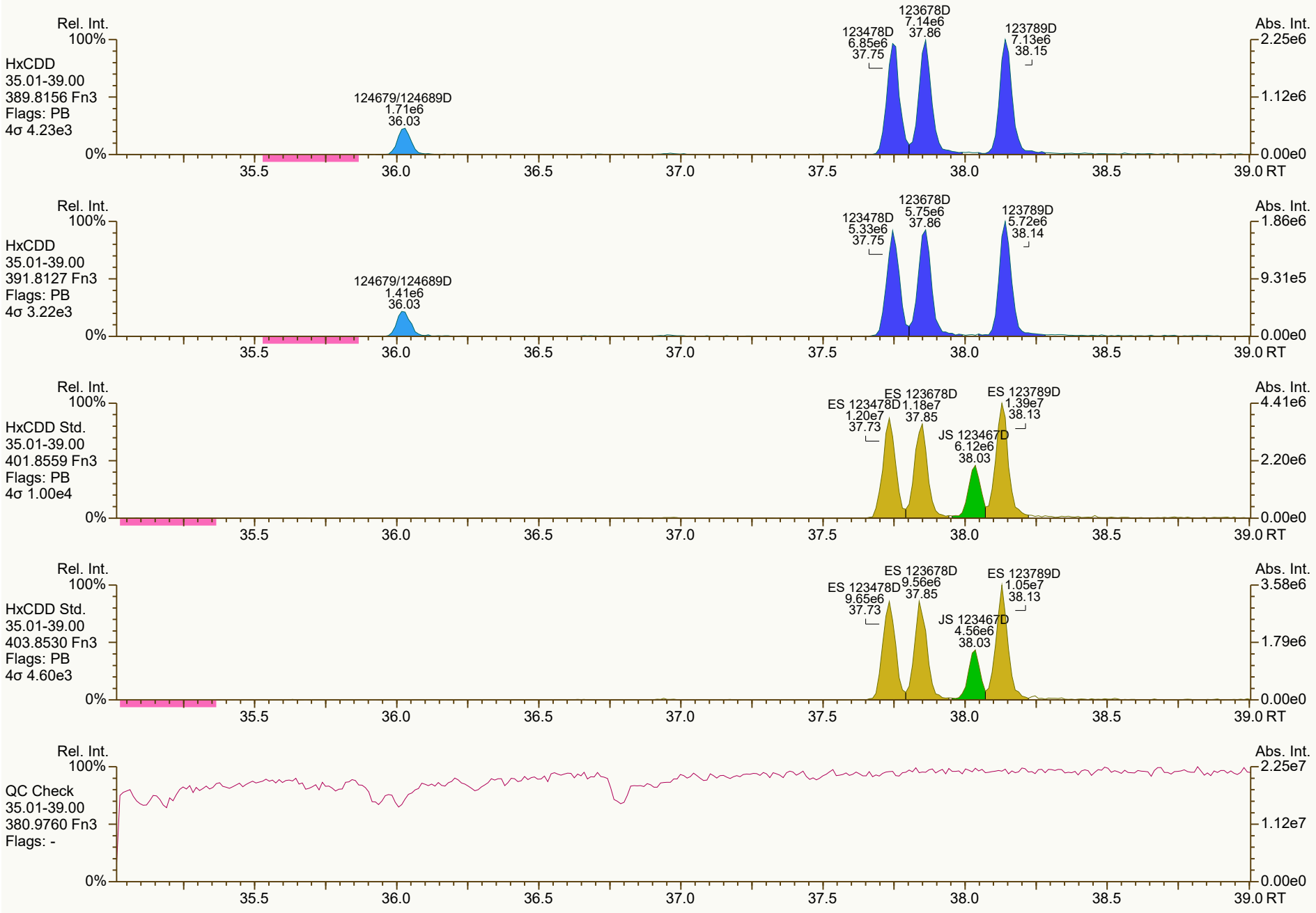


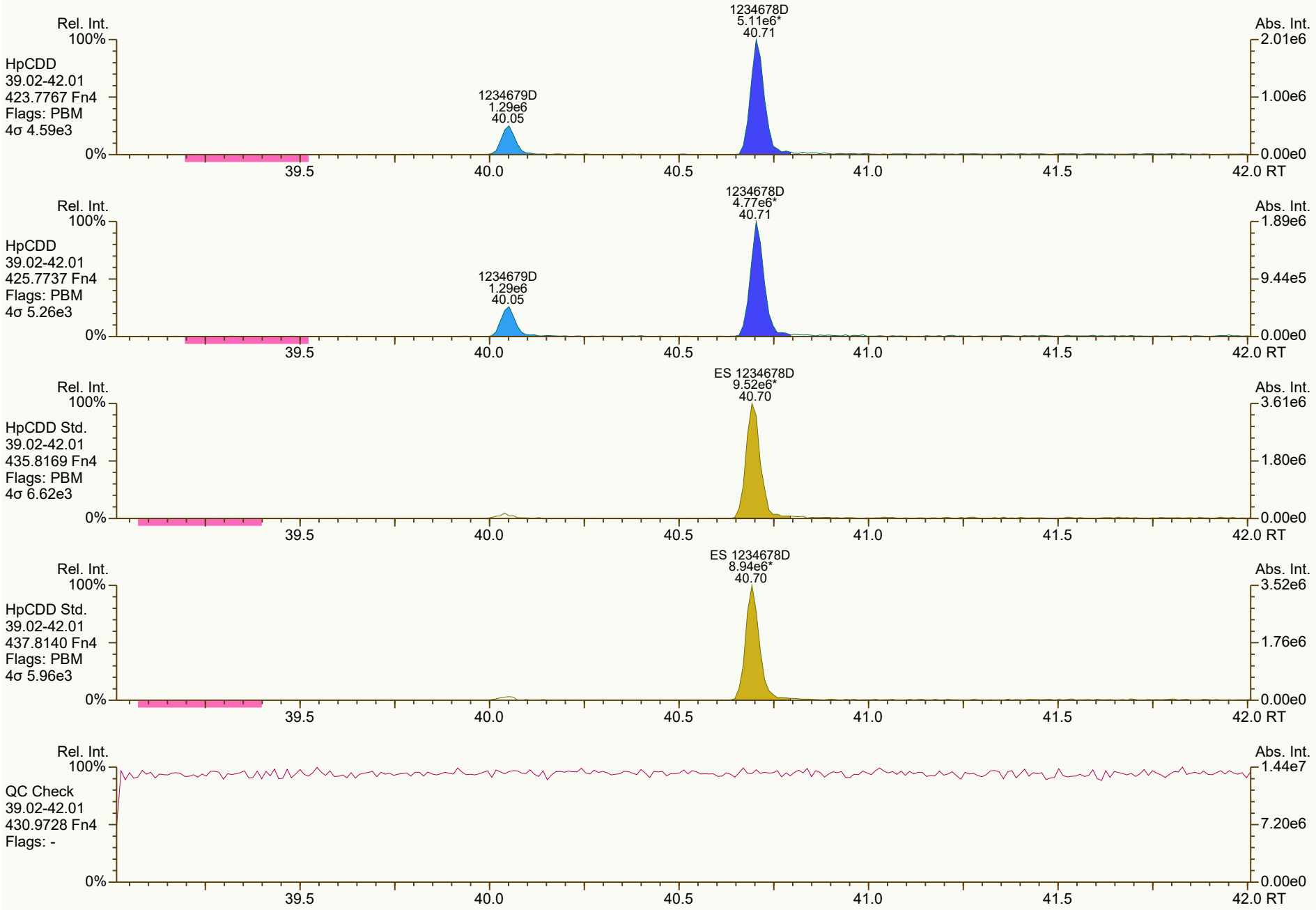
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:06

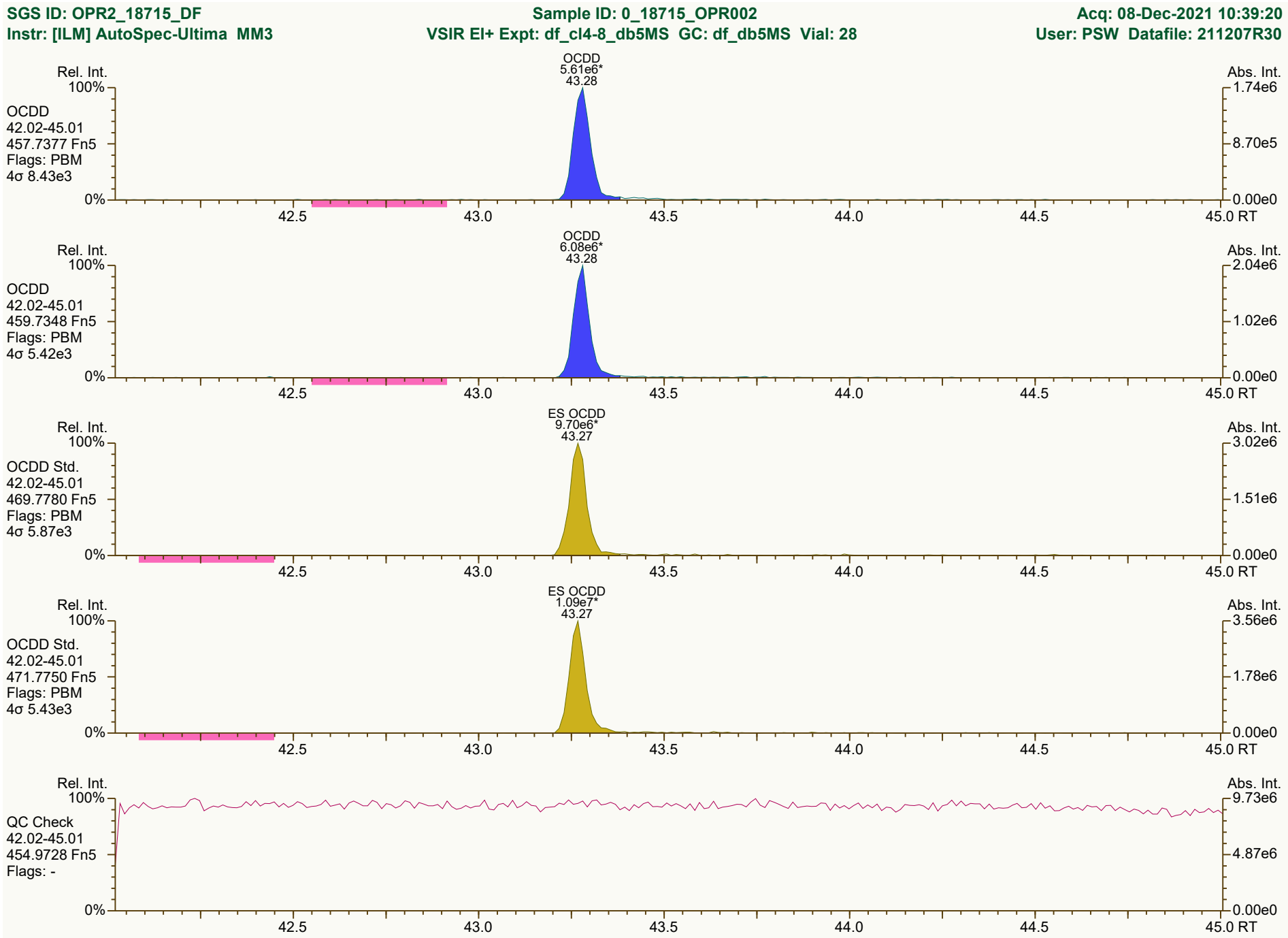

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.74e6
2.37e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.73e6
2.37e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.12e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.73e6
4.87e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30
Rel. Int.
Abs. Int.
TCDD
22.04-30.25
319.8965 Fn1
Flags: PB
4σ 5.31e3
1368D 1.77e6 25.04
1239D 1.43e6 28.46
2378D 1.47e6 28.61
1289D 2.11e6 29.57
5.49e5
2.75e5
0.00e0
TCDD
22.04-30.25
321.8936 Fn1
Flags: PB
4σ 3.60e3
1368D 2.26e6 25.04
1239D 1.87e6 28.46
2378D 1.94e6 28.62
1289D 2.79e6 29.57
6.92e5
3.46e5
0.00e0
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.54e3
CS 37Cl-2378D 1.32e7 28.62
3.10e6
1.55e6
0.00e0
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.56e4
JS 1234D 1.27e7 27.95
ES 2378D 1.23e7 28.59
3.25e6
1.63e6
0.00e0
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 5.99e3
JS 1234D 1.58e7 27.95
ES 2378D 1.52e7 28.59
3.79e6
1.89e6
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7904, 4484, 2009 scc: 418-331
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:08 Page 2 of 12


SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PB
4σ 3.89e3
12479/12468D
1.55e6
31.41
12378D
7.78e6
33.89
12389D
1.63e6
34.32
2.10e6
1.05e6
0.00e0
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 3.90e3
12479/12468D
1.01e6
31.42
12378D
4.87e6
33.89
12389D
1.02e6
34.32
1.37e6
6.85e5
0.00e0
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 6.06e3
CS 12347D
1.42e7
33.38
ES 12378D
1.53e7
33.87
4.19e6
2.09e6
0.00e0
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 7.50e3
CS 12347D
8.62e6
33.38
ES 12378D
9.66e6
33.88
2.64e6
1.32e6
0.00e0
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
4.73e6
2.37e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1012, 2484 scc: 418-331
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:08 Page 3 of 12

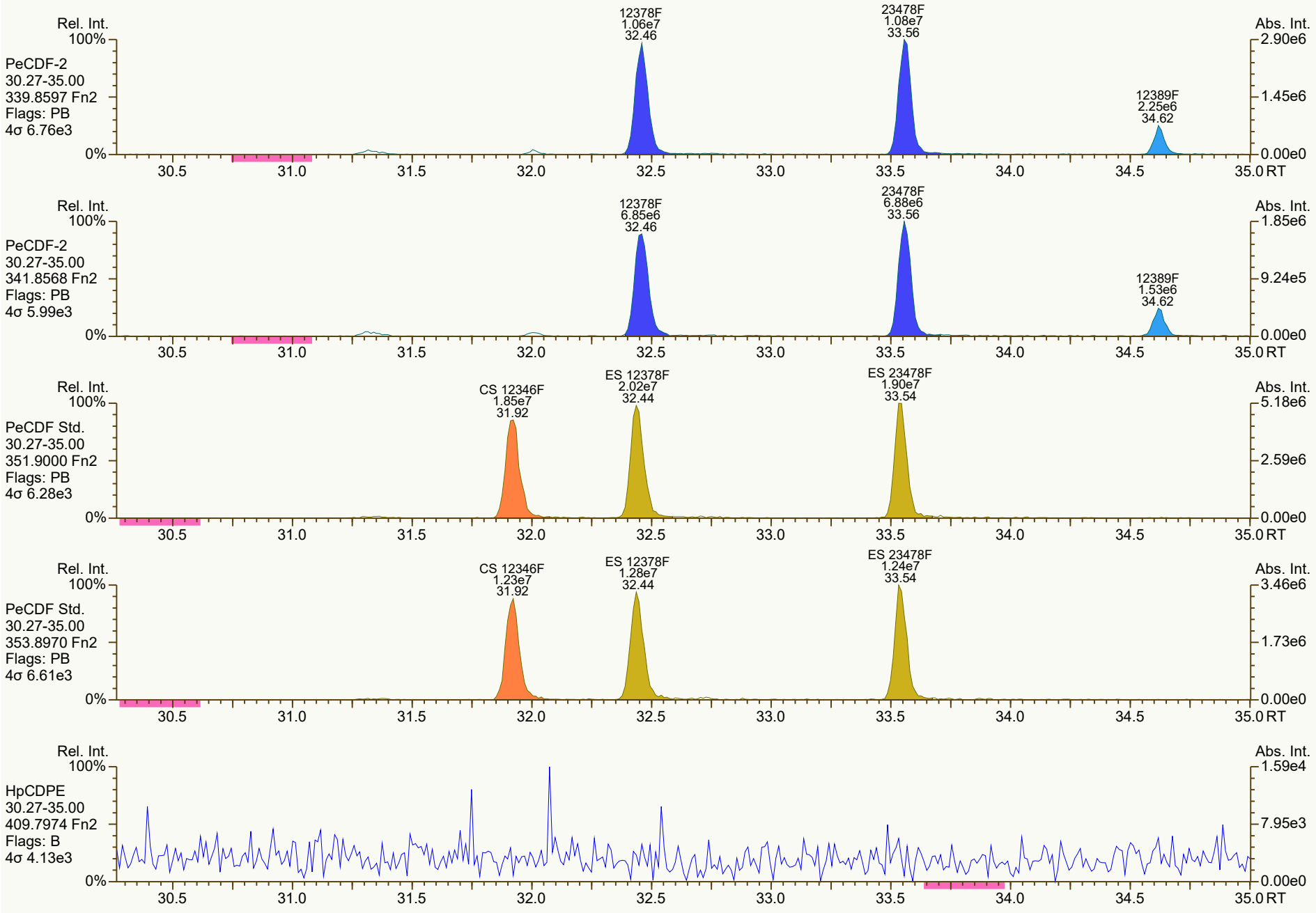

Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 4.23e3
0%
124679/124689D
1.71e6
36.03
123478D
6.85e6
37.75
123678D
7.14e6
37.86
123789D
7.13e6
38.15
Abs. Int.
2.25e6
1.12e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 3.22e3
0%
124679/124689D
1.41e6
36.03
123478D
5.33e6
37.75
123678D
5.75e6
37.86
123789D
5.72e6
38.14
Abs. Int.
1.86e6
9.31e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PB
4σ 1.00e4
0%
ES 123478D
1.20e7
37.73
ES 123678D
1.18e7
37.85
JS 123467D
6.12e6
38.03
ES 123789D
1.39e7
38.13
Abs. Int.
4.41e6
2.20e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PB
4σ 4.60e3
0%
ES 123478D
9.65e6
37.73
ES 123678D
9.56e6
37.85
JS 123467D
4.56e6
38.03
ES 123789D
1.05e7
38.13
Abs. Int.
3.58e6
1.79e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.12e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

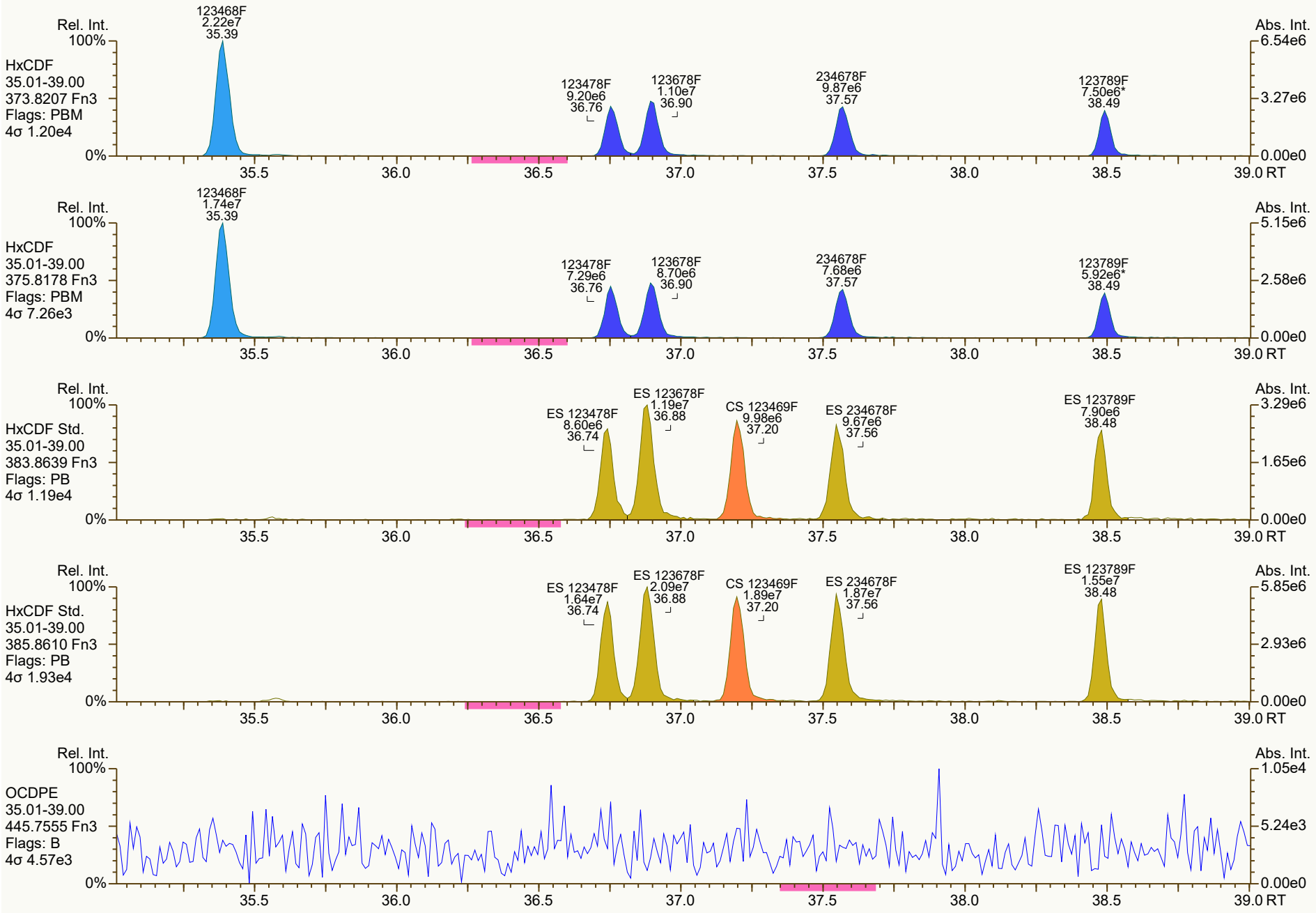

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 4.59e3
1234678D
5.11e6*
40.71
1234679D
1.29e6
40.05
Abs. Int.
2.01e6
1.00e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 5.26e3
1234678D
4.77e6*
40.71
1234679D
1.29e6
40.05
Abs. Int.
1.89e6
9.44e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 6.62e3
ES 1234678D
9.52e6*
40.70
Abs. Int.
3.61e6
1.80e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 5.96e3
ES 1234678D
8.94e6*
40.70
Abs. Int.
3.52e6
1.76e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.44e7
7.20e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

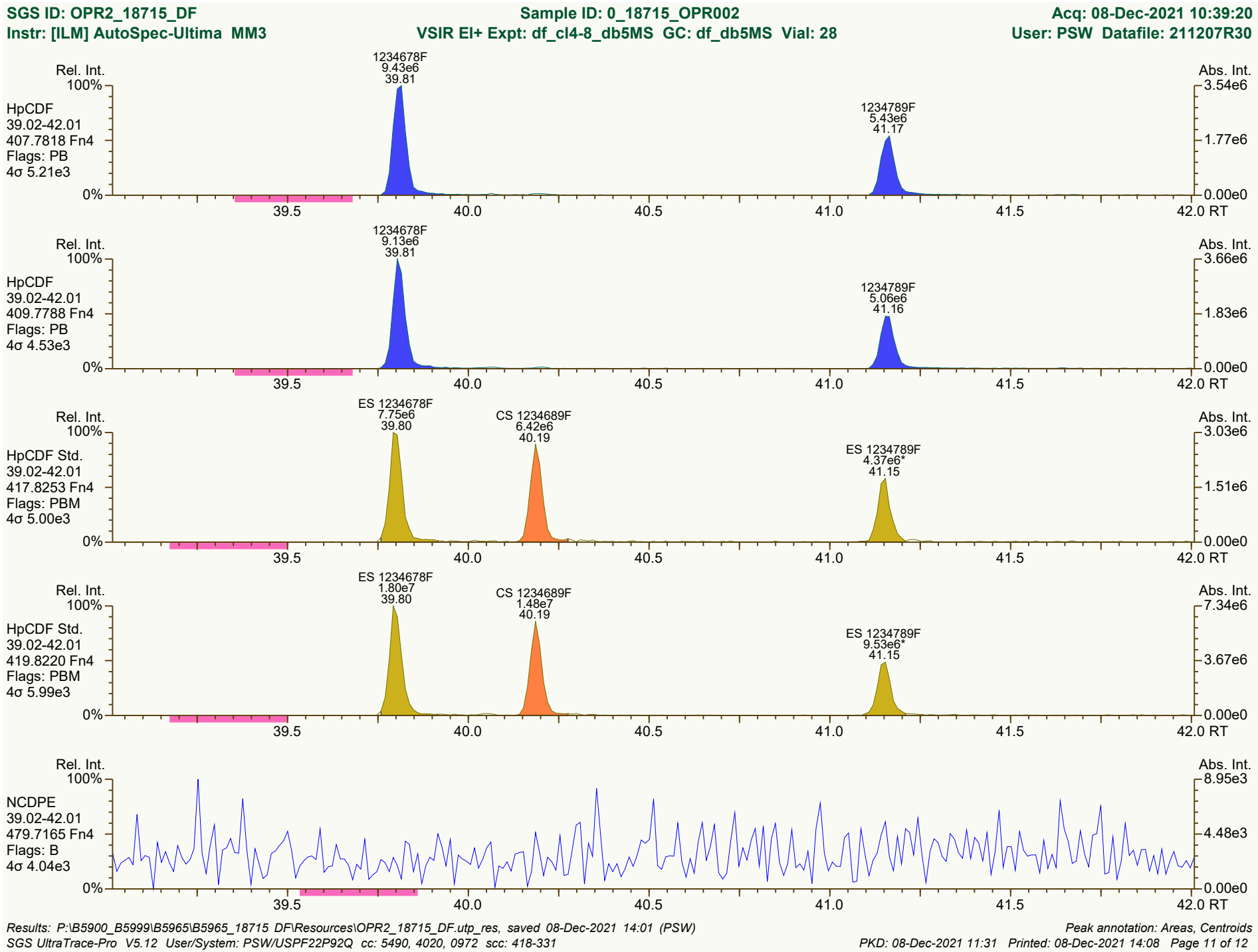

SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30
OCDD
5.61e6*
43.28
Rel. Int.
Abs. Int.
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 8.43e3
OCDD
6.08e6*
43.28
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 5.42e3
ES OCDD
9.70e6*
43.27
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 5.87e3
ES OCDD
1.09e7*
43.27
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 5.43e3
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7688, 1541 scc: 418-331
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:08 Page 6 of 12

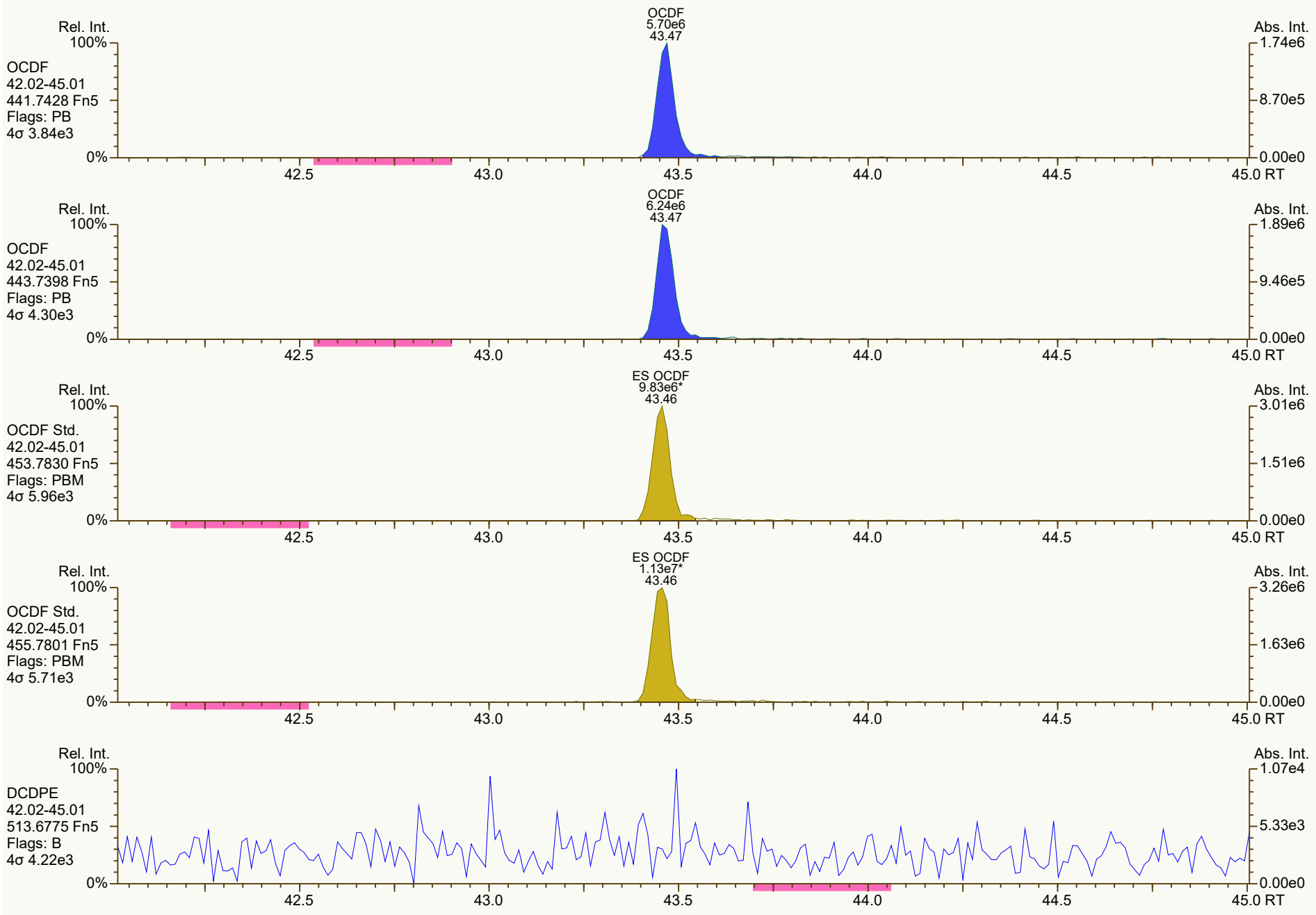

SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.63e3
1368F 2.47e6 22.99
2468F 5.94e5 24.17
2348F 2.43e6* 27.66
2378F 1.91e6* 27.77
1289F 2.92e6* 29.75
6.55e5
3.28e5
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 5.39e3
1368F 3.11e6 22.99
2468F 8.16e5 24.17
2348F 3.19e6* 27.66
2378F 2.42e6* 27.77
1289F 3.66e6* 29.75
8.49e5
4.25e5
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.26e4
JS 1234F 1.80e7 26.42
ES 2378F 1.65e7 27.75
3.79e6
1.89e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.48e4
JS 1234F 2.21e7 26.42
ES 2378F 2.09e7 27.75
4.96e6
2.48e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.20e3
1.47e4
7.35e3
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 4.26e3
13468/12468F
2.13e7
29.66
Abs. Int.
5.16e6
2.58e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 4.29e3
13468/12468F
1.29e7
29.66
Abs. Int.
3.36e6
1.68e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
Abs. Int.
4.74e6
2.37e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 6.76e3
0%
12378F
1.06e7
32.46
23478F
1.08e7
33.56
12389F
2.25e6
34.62
Abs. Int.
2.90e6
1.45e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 5.99e3
0%
12378F
6.85e6
32.46
23478F
6.88e6
33.56
12389F
1.53e6
34.62
Abs. Int.
1.85e6
9.24e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 6.28e3
0%
CS 12346F
1.85e7
31.92
ES 12378F
2.02e7
32.44
ES 23478F
1.90e7
33.54
Abs. Int.
5.18e6
2.59e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 6.61e3
0%
CS 12346F
1.23e7
31.92
ES 12378F
1.28e7
32.44
ES 23478F
1.24e7
33.54
Abs. Int.
3.46e6
1.73e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.13e3
0%
Abs. Int.
1.59e4
7.95e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 1.20e4
123468F 2.22e7 35.39
123478F 9.20e6 36.76
123678F 1.10e7 36.90
234678F 9.87e6 37.57
123789F 7.50e6* 38.49
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 7.26e3
123468F 1.74e7 35.39
123478F 7.29e6 36.76
123678F 8.70e6 36.90
234678F 7.68e6 37.57
123789F 5.92e6* 38.49
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 1.19e4
ES 123478F 8.60e6 36.74
ES 123678F 1.19e7 36.88
CS 123469F 9.98e6 37.20
ES 234678F 9.67e6 37.56
ES 123789F 7.90e6 38.48
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 1.93e4
ES 123478F 1.64e7 36.74
ES 123678F 2.09e7 36.88
CS 123469F 1.89e7 37.20
ES 234678F 1.87e7 37.56
ES 123789F 1.55e7 38.48
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 4.57e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
6.54e6
3.27e6
0.00e0
5.15e6
2.58e6
3.29e6
1.65e6
5.85e6
2.93e6
1.05e4
5.24e3


SGS ID: OPR2_18715_DF
Sample ID: 0_18715_OPR002
Acq: 08-Dec-2021 10:39:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211207R30
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 5.21e3
1234678F
9.43e6
39.81
1234789F
5.43e6
41.17
3.54e6
1.77e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 4.53e3
1234678F
9.13e6
39.81
1234789F
5.06e6
41.16
3.66e6
1.83e6
0.00e0
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 5.00e3
ES 1234678F
7.75e6
39.80
CS 1234689F
6.42e6
40.19
ES 1234789F
4.37e6*
41.15
3.03e6
1.51e6
0.00e0
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 5.99e3
ES 1234678F
1.80e7
39.80
CS 1234689F
1.48e7
40.19
ES 1234789F
9.53e6*
41.15
7.34e6
3.67e6
0.00e0
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.04e3
8.95e3
4.48e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5965\B5965_18715 DF\Resources\OPR2_18715_DF.utp_res, saved 08-Dec-2021 14:01 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5490, 4020, 0972 scc: 418-331
PKD: 08-Dec-2021 11:31 Printed: 08-Dec-2021 14:08 Page 11 of 12


OCDF
5.70e6
43.47
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 3.84e3
0%
Abs. Int.
1.74e6
8.70e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.24e6
43.47
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 4.30e3
0%
Abs. Int.
1.89e6
9.46e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.83e6*
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 5.96e3
0%
Abs. Int.
3.01e6
1.51e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.13e7*
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 5.71e3
0%
Abs. Int.
3.26e6
1.63e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.22e3
0%
Abs. Int.
1.07e4
5.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-113021-S-SPS-NE-O-5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.05 g	Lab Sample ID	B5966_18718_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	70.2 %	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:25:08

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	0.594				ES 2378-TCDD	76.6	
12378-PeCDD	EMPC		0.677	J	ES 12378-PeCDD	66.2	
123478-HxCDD	1.63			J	ES 123478-HxCDD	74.2	
123678-HxCDD	6.49				ES 123678-HxCDD	82.3	
123789-HxCDD	3.07				ES 123789-HxCDD	83.7	
1234678-HpCDD	235				ES 1234678-HpCDD	71.8	
OCDD	2,880				ES OCDD	50.3	
2378-TCDF	3.75				ES 2378-TCDF	68.5	
12378-PeCDF	EMPC		0.9	J	ES 12378-PeCDF	72.2	
23478-PeCDF	2.36			J	ES 23478-PeCDF	71.3	
123478-HxCDF	1.98			J	ES 123478-HxCDF	84	
123678-HxCDF	2.55				ES 123678-HxCDF	94.1	
234678-HxCDF	EMPC		2.28	J	ES 234678-HxCDF	84	
123789-HxCDF	ND	0.551			ES 123789-HxCDF	82.3	
1234678-HpCDF	48.1				ES 1234678-HpCDF	87.2	
1234789-HpCDF	2.15			J	ES 1234789-HpCDF	81.3	
OCDF	72.6				ES OCDF	54.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	72.7	
Total TCDD	0.594		2.08		CS 12347-PeCDD	73.7	
Total PeCDD	5.31		7.62		CS 12346-PeCDF	81.8	
Total HxCDD	57.1		57.1		CS 123469-HxCDF	103	
Total HpCDD	500		500		CS 1234689-HpCDF	104	
Total TCDF	18.1		23.4				
Total PeCDF	18.3		22.3				
Total HxCDF	42.5		44.8				
Total HpCDF	117		117				
Total PCDD/Fs	**3,710**		**3,720**				
WHO-2005 TEQs							
TEQ: ND=0	6.99		7.92				
TEQ: ND=DL/2	7.01	0.509	7.95				
TEQ: ND=DL	7.04	1.02	7.97				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: 11215131-113021-S-SPS-NE-O-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.05 g	Lab Sample ID:	B5966_18718_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	70.2 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:25:08

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.799]		12479/12468D	2.43	J	124679/124689D	17.6		1234679D	264	
1379D	[0.471]	J	12469D	[0.781]	J	123468D	3.13		1234678D	235	
1369D	(0.279)		12368D	0.946	J	123679/123689D	21.4				
1469D	[0.22]	J	12478D	0.894	J	123469D	2.57				
1247D...[4]	(0.279)		12379D	[0.452]	J	123478D	1.63	J			
1378D	(0.279)		12369D...[3]	1.04	J	123678D	6.49				
1268D	(0.279)		12346/12347D	[0.405]	J	123467D	1.17	J			
1478D	(0.279)		12378D	[0.677]	J	123789D	3.07		**Conc.**	500	
1279D	(0.279)		12367D	(0.32)					**EMPC**	500	
1234/1269D	(0.279)		12389D	(0.32)							
1236D	(0.279)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.279)										
1239D	(0.279)								OCDD	2880	
2378D	0.594										
1278D	(0.279)										
1267D	(0.279)										
1289D	(0.279)										
Conc.	0.594		**Conc.**	5.31		**Conc.**	57.1				
EMPC	2.08		**EMPC**	7.62		**EMPC**	57.1				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	6.99	7.92
TEQ: ND=DL/2	7.01	7.95
TEQ: ND=DL	7.04	7.97

	Conc.	EMPC
Total PCDD/Fs	3,710	3,720

Checkcode: 108-875-RWC

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-113021-S-SPS-NE-O-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.05 g	Lab Sample ID:	B5966_18718_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	70.2 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:25:08

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.272]	J	13468/12468F	6.73		123468F	4.06		1234678F	48.1	
1468F	0.668		13678F...[3]	1.85	J	124678/134678F	15.5		1234679F	1.33	J
2468F	1.34		12368F...[3]	5.2		134679F	(0.504)		1234689F	65.2	
1346/1246F	0.447	J	14678F	[0.518]	J	124679F	(0.504)		1234789F	2.15	J
1347F...[3]	2.11		13479F	(0.231)		124689F	17.5				
1348F	0.307	J	13469/12479F	(0.231)		123467F	0.989	J			
1248F...[3]	1.32		12346F	[0.24]	J	123478F	1.98	J			
1268F	1.09		23468/12469F	[1.3]	J	123678F	2.55				
1467F	0.658		12347F	[0.199]	J	123479F	(0.504)				
1478F	[0.792]		12348F	0.388	J	123469F	(0.504)				
1369/1237F	0.502		12378F	[0.9]	J	123679F	(0.504)				
2467F	[0.596]		12678/12367F	1.73	J	234678F	[2.28]	J	**Conc.**	117	
2368F	1.48		12379F	(0.231)		234678/123689F	0		**EMPC**	117	
1238F...[5]	1.62		12679F	(0.231)		123689F	(0.504)				
1278F	[1.64]		23467/12369F	[0.903]	J	123789F	(0.551)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.246)		23478F	2.36	J	123789/123489F	0				
1267F	[0.63]		23478/12489F	0		123489F	(0.504)		OCDF	72.6	
2346/1249F	(0.246)		12489F	(0.231)							
2347/1279F	[0.486]	J	12349F	(0.231)							
2348F	[0.406]	J	12389F	(0.231)							
2378F	3.75										
2367/3467F	2.84										
1269F	(0.246)										
1239F	(0.246)										
1289F	[0.47]	J									
Conc.	18.1		**Conc.**	18.3		**Conc.**	42.5				
EMPC	23.4		**EMPC**	22.3		**EMPC**	44.8				

Checkcode: 108-875-RWC

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-113021-S-SPS-NE-O-5 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5966_18718_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.05 g	QC Batch No.:	18718
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	15-Dec-2021 18:25
Lab Project No:	B5966	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	0.594		0.279	0.594	0.594	0.594
12378-PeCDD	[0.677]	J	0.32	[0.339]	[0.677]	[0.677]
123478-HxCDD	1.63	J	0.365	0.163	0.163	0.163
123678-HxCDD	6.49		0.374	0.649	0.649	0.649
123789-HxCDD	3.07		0.326	0.307	0.307	0.307
1234678-HpCDD	235		0.329	2.35	2.35	2.35
OCDD	2880		0.97	2.88	0.288	0.863
2378-TCDF	3.75		0.246	0.375	0.375	0.375
12378-PeCDF	[0.9]	J	0.228	[0.045]	[0.045]	[0.027]
23478-PeCDF	2.36	J	0.235	1.18	1.18	0.707
123478-HxCDF	1.98	J	0.477	0.198	0.198	0.198
123678-HxCDF	2.55		0.454	0.255	0.255	0.255
234678-HxCDF	[2.28]	J	0.552	[0.228]	[0.228]	[0.228]
123789-HxCDF	(0.551)		0.551	(0.0551)	(0.0551)	(0.0551)
1234678-HpCDF	48.1		0.147	0.481	0.481	0.481
1234789-HpCDF	2.15	J	0.23	0.0215	0.0215	0.0215
OCDF	72.6		0.643	0.0726	0.00726	0.0218

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TEQ Summaries			
EMPC = 0, ND = 0	9.52	6.87	6.99
EMPC = 0, ND = DL / 2	9.55	6.9	7.01
EMPC = 0, ND = DL	9.58	6.92	7.04
EMPC = 0, < J-level = 0	7.96	5.31	5.9
EMPC = EMPC, ND = 0	10.1	7.82	7.92
EMPC = EMPC, ND = DL / 2	10.2	7.85	7.95
EMPC = EMPC, ND = DL	10.2	7.87	7.97
EMPC = EMPC, < J-level = 0	7.96	5.31	5.9

Checkcode: 108-875-RWC

Sample ID: 11215131-113021-S-SPS-NE-O-4 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.18 g	Lab Sample ID	B5966_18718_DF_002	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	76.3 %	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:12:41

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	0.446			J	ES 2378-TCDD	79.3	
12378-PeCDD	1.21			J	ES 12378-PeCDD	72.6	
123478-HxCDD	2.07			J	ES 123478-HxCDD	82	
123678-HxCDD	9.11				ES 123678-HxCDD	84.4	
123789-HxCDD	4.69				ES 123789-HxCDD	83.6	
1234678-HpCDD	326				ES 1234678-HpCDD	73.5	
OCDD	4,330				ES OCDD	49.3	
2378-TCDF	3.52				ES 2378-TCDF	68.7	
12378-PeCDF	EMPC		1.01	J	ES 12378-PeCDF	77.7	
23478-PeCDF	2.87				ES 23478-PeCDF	75.9	
123478-HxCDF	2.7				ES 123478-HxCDF	89.1	
123678-HxCDF	2.29			J	ES 123678-HxCDF	100	
234678-HxCDF	3.35				ES 234678-HxCDF	88.3	
123789-HxCDF	ND	0.566			ES 123789-HxCDF	85.9	
1234678-HpCDF	47.8				ES 1234678-HpCDF	92.5	
1234789-HpCDF	3.85				ES 1234789-HpCDF	85.7	
OCDF	146				ES OCDF	52	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77	
Total TCDD	1.28		1.53		CS 12347-PeCDD	80.2	
Total PeCDD	5.9		9.14		CS 12346-PeCDF	87.7	
Total HxCDD	73.1		74.4		CS 123469-HxCDF	106	
Total HpCDD	685		685		CS 1234689-HpCDF	104	
Total TCDF	16.9		22.2				
Total PeCDF	25		28.4				
Total HxCDF	56.8		58.9				
Total HpCDF	152		152				
Total PCDD/Fs	**5,490**		**5,510**				
WHO-2005 TEQs							
TEQ: ND=0	10.4		10.4				
TEQ: ND=DL/2	10.4	0.468	10.5				
TEQ: ND=DL	10.5	0.936	10.5				

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Sample ID: 11215131-113021-S-SPS-NE-O-4 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.18 g	Lab Sample ID:	B5966_18718_DF_002	Date Extracted: 13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	76.3 %	QC Batch No.:	18718	Date Analyzed: 15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 19:12:41

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.834		12479/12468D	2.59		124679/124689D	24		1234679D	359	
1379D	(0.28)		12469D	[1.35]	J	123468D	3.7		1234678D	326	
1369D	(0.28)		12368D	1.04	J	123679/123689D	26.4				
1469D	(0.28)		12478D	[1.1]	J	123469D	3.04				
1247D...[4]	(0.28)		12379D	0.782	J	123478D	2.07	J			
1378D	[0.25]	J	12369D...[3]	[0.778]	J	123678D	9.11				
1268D	(0.28)		12346/12347D	0.288	J	123467D	[1.35]	J			
1478D	(0.28)		12378D	1.21	J	123789D	4.69		**Conc.**	685	
1279D	(0.28)		12367D	(0.266)					**EMPC**	685	
1234/1269D	(0.28)		12389D	(0.266)							
1236D	(0.28)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.28)										
1239D	(0.28)								OCDD	4330	
2378D	0.446	J									
1278D	(0.28)										
1267D	(0.28)										
1289D	(0.28)										
Conc.	1.28		**Conc.**	5.9		**Conc.**	73.1				
EMPC	1.53		**EMPC**	9.14		**EMPC**	74.4				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	10.4	10.4
TEQ: ND=DL/2	10.4	10.5
TEQ: ND=DL	10.5	10.5

	Conc.	EMPC
Total PCDD/Fs	5,490	5,510

Checkcode: 121-258-PHS

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-113021-S-SPS-NE-O-4 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.18 g	Lab Sample ID:	B5966_18718_DF_002	Date Extracted: 13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	76.3 %	QC Batch No.:	18718	Date Analyzed: 15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 19:12:41

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.363]	J	13468/12468F	9.38		123468F	5.57		1234678F	47.8	
1468F	[0.649]		13678F...[3]	[1.66]	J	124678/134678F	20		1234679F	2.37	J
2468F	[1.61]		12368F...[3]	6.14		134679F	(0.473)		1234689F	97.6	
1346/1246F	[0.582]		14678F	0.786	J	124679F	0.595	J	1234789F	3.85	
1347F...[3]	1.68		13479F	[0.161]	J	124689F	22.3				
1348F	0.228	J	13469/12479F	(0.255)		123467F	[1.54]	J			
1248F...[3]	1.2		12346F	0.407	J	123478F	2.7				
1268F	1.01		23468/12469F	1.76	J	123678F	2.29	J			
1467F	[0.492]		12347F	[0.594]	J	123479F	(0.473)				
1478F	0.841		12348F	0.572	J	123469F	(0.473)				
1369/1237F	[0.343]	J	12378F	[1.01]	J	123679F	(0.473)				
2467F	0.623		12678/12367F	1.87	J	234678F	3.35		**Conc.**	152	
2368F	1.9		12379F	(0.255)		234678/123689F	0		**EMPC**	152	
1238F...[5]	[0.815]		12679F	(0.255)		123689F	(0.473)				
1278F	1.19		23467/12369F	1.24	J	123789F	(0.566)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.234)		23478F	2.87		123789/123489F	0				
1267F	0.779		23478/12489F	0		123489F	[0.535]	J	OCDF	146	
2346/1249F	0.456	J	12489F	(0.255)							
2347/1279F	0.548		12349F	(0.255)							
2348F	0.466	J	12389F	(0.255)							
2378F	3.52										
2367/3467F	2.41										
1269F	(0.234)										
1239F	(0.234)										
1289F	[0.444]	J									
Conc.	16.9		**Conc.**	25		**Conc.**	56.8				
EMPC	22.2		**EMPC**	28.4		**EMPC**	58.9				

Checkcode: 121-258-PHS

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-113021-S-SPS-NE-O-4 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5966_18718_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.18 g	QC Batch No.:	18718
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	15-Dec-2021 19:12
Lab Project No:	B5966	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	0.446	J	0.28	0.446	0.446	0.446
12378-PeCDD	1.21	J	0.266	0.603	1.21	1.21
123478-HxCDD	2.07	J	0.275	0.207	0.207	0.207
123678-HxCDD	9.11		0.284	0.911	0.911	0.911
123789-HxCDD	4.69		0.271	0.469	0.469	0.469
1234678-HpCDD	326		0.355	3.26	3.26	3.26
OCDD	4330		0.865	4.33	0.433	1.3
2378-TCDF	3.52		0.234	0.352	0.352	0.352
12378-PeCDF	[1.01]	J	0.255	[0.0504]	[0.0504]	[0.0302]
23478-PeCDF	2.87		0.254	1.44	1.44	0.862
123478-HxCDF	2.7		0.425	0.27	0.27	0.27
123678-HxCDF	2.29	J	0.41	0.229	0.229	0.229
234678-HxCDF	3.35		0.519	0.335	0.335	0.335
123789-HxCDF	(0.566)		0.566	(0.0566)	(0.0566)	(0.0566)
1234678-HpCDF	47.8		0.13	0.478	0.478	0.478
1234789-HpCDF	3.85		0.17	0.0385	0.0385	0.0385
OCDF	146		0.579	0.146	0.0146	0.0438

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TEQ Summaries			
EMPC = 0, ND = 0	13.5	10.1	10.4
EMPC = 0, ND = DL / 2	13.5	10.1	10.4
EMPC = 0, ND = DL	13.6	10.1	10.5
EMPC = 0, < J-level = 0	12	8	8.32
EMPC = EMPC, ND = 0	13.6	10.1	10.4
EMPC = EMPC, ND = DL / 2	13.6	10.2	10.5
EMPC = EMPC, ND = DL	13.6	10.2	10.5
EMPC = EMPC, < J-level = 0	12	8	8.32

Checkcode: 121-258-PHS

Sample ID: 11215131-113021-S-JC-NE-O-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.11 g	Lab Sample ID	B5966_18718_DF_003	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	77.6 %	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:00:14

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		0.498		ES 2378-TCDD	74.6	
12378-PeCDD	0.936			J	ES 12378-PeCDD	69.4	
123478-HxCDD	1.88			J	ES 123478-HxCDD	76.7	
123678-HxCDD	8.34				ES 123678-HxCDD	83.7	
123789-HxCDD	4.19				ES 123789-HxCDD	81.8	
1234678-HpCDD	341				ES 1234678-HpCDD	69	
OCDD	3,390				ES OCDD	48.3	
2378-TCDF	3.29				ES 2378-TCDF	68.8	
12378-PeCDF	1.36			J	ES 12378-PeCDF	74.6	
23478-PeCDF	2.78				ES 23478-PeCDF	74	
123478-HxCDF	2.59				ES 123478-HxCDF	86	
123678-HxCDF	1.75			J	ES 123678-HxCDF	93.6	
234678-HxCDF	2.54				ES 234678-HxCDF	86.3	
123789-HxCDF	ND	0.436			ES 123789-HxCDF	84.1	
1234678-HpCDF	38.6				ES 1234678-HpCDF	85.4	
1234789-HpCDF	2.54				ES 1234789-HpCDF	82.7	
OCDF	87				ES OCDF	52.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	69.6	
Total TCDD	2.92		3.66		CS 12347-PeCDD	71.1	
Total PeCDD	9.52		10.8		CS 12346-PeCDF	75.2	
Total HxCDD	87.5		87.5		CS 123469-HxCDF	96.8	
Total HpCDD	767		767		CS 1234689-HpCDF	92.2	
Total TCDF	20.9		28				
Total PeCDF	17.6		26.1				
Total HxCDF	39		40.3				
Total HpCDF	105		105				
Total PCDD/Fs	**4,530**		**4,550**				
WHO-2005 TEQs							
TEQ: ND=0	9.13		9.63				
TEQ: ND=DL/2	9.15	0.445	9.65				
TEQ: ND=DL	9.18	0.89	9.67				

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Sample ID: 11215131-113021-S-JC-NE-O-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.11 g	Lab Sample ID:	B5966_18718_DF_003	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	77.6 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:00:14

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.16		12479/12468D	3.22		124679/124689D	29		1234679D	427	
1379D	0.556		12469D	[1.08]	J	123468D	4.73		1234678D	341	
1369D	0.309	J	12368D	1.22	J	123679/123689D	34.8				
1469D	(0.243)		12478D	1.42	J	123469D	2.76				
1247D...[4]	[0.244]	J	12379D	0.872	J	123478D	1.88	J			
1378D	0.551		12369D...[3]	0.897	J	123678D	8.34				
1268D	(0.243)		12346/12347D	0.954	J	123467D	1.67	J			
1478D	(0.243)		12378D	0.936	J	123789D	4.19		**Conc.**	767	
1279D	(0.243)		12367D	[0.167]	J				**EMPC**	767	
1234/1269D	(0.243)		12389D	(0.285)							
1236D	(0.243)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	0.336	J									
1239D	(0.243)								OCDD	3390	
2378D	[0.498]										
1278D	(0.243)										
1267D	(0.243)										
1289D	(0.243)										
Conc.	2.92		**Conc.**	9.52		**Conc.**	87.5				
EMPC	3.66		**EMPC**	10.8		**EMPC**	87.5				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	9.13	9.63
TEQ: ND=DL/2	9.15	9.65
TEQ: ND=DL	9.18	9.67

	Conc.	EMPC
Total PCDD/Fs	4,530	4,550

Checkcode: 994-247-DFB

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-O-1 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received: 03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.11 g	Lab Sample ID:	B5966_18718_DF_003	Date Extracted: 13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	77.6 %	QC Batch No.:	18718	Date Analyzed: 15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 20:00:14

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.634]		13468/12468F	6.03		123468F	3.75		1234678F	38.6	
1468F	[0.66]		13678F...[3]	2.54		124678/134678F	14.4		1234679F	1.74	J
2468F	1.41		12368F...[3]	[4.67]		134679F	(0.379)		1234689F	62.6	
1346/1246F	[0.935]		14678F	[0.831]	J	124679F	(0.379)		1234789F	2.54	
1347F...[3]	2.38		13479F	[0.218]	J	124689F	13.5				
1348F	[0.382]	J	13469/12479F	0.371	J	123467F	[1.37]	J			
1248F...[3]	[1.61]		12346F	[0.457]	J	123478F	2.59				
1268F	0.819		23468/12469F	1.67	J	123678F	1.75	J			
1467F	[0.705]		12347F	[0.867]	J	123479F	(0.379)				
1478F	1.21		12348F	0.671	J	123469F	(0.379)				
1369/1237F	0.707		12378F	1.36	J	123679F	(0.379)				
2467F	1.04		12678/12367F	2.01	J	234678F	2.54		**Conc.**	105	
2368F	1.62		12379F	(0.182)		234678/123689F	0		**EMPC**	105	
1238F...[5]	2.04		12679F	(0.182)		123689F	(0.379)				
1278F	1.7		23467/12369F	[1.4]	J	123789F	(0.436)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	[0.184]	J	23478F	2.78		123789/123489F	0				
1267F	0.878		23478/12489F	0		123489F	0.486	J	OCDF	87	
2346/1249F	0.808		12489F	(0.182)							
2347/1279F	[0.999]		12349F	(0.182)							
2348F	[0.583]		12389F	0.183	J						
2378F	3.29										
2367/3467F	2.98										
1269F	(0.233)										
1239F	(0.233)										
1289F	[0.413]	J									
Conc.	20.9		**Conc.**	17.6		**Conc.**	39				
EMPC	28		**EMPC**	26.1		**EMPC**	40.3				

Checkcode: 994-247-DFB

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-O-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5966_18718_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.11 g	QC Batch No.:	18718
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	15-Dec-2021 20:00
Lab Project No:	B5966	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	[0.498]		0.243	[0.498]	[0.498]	[0.498]
12378-PeCDD	0.936	J	0.285	0.468	0.936	0.936
123478-HxCDD	1.88	J	0.394	0.188	0.188	0.188
123678-HxCDD	8.34		0.42	0.834	0.834	0.834
123789-HxCDD	4.19		0.379	0.419	0.419	0.419
1234678-HpCDD	341		0.343	3.41	3.41	3.41
OCDD	3390		1.05	3.39	0.339	1.02
2378-TCDF	3.29		0.233	0.329	0.329	0.329
12378-PeCDF	1.36	J	0.185	0.0681	0.0681	0.0408
23478-PeCDF	2.78		0.179	1.39	1.39	0.833
123478-HxCDF	2.59		0.362	0.259	0.259	0.259
123678-HxCDF	1.75	J	0.327	0.175	0.175	0.175
234678-HxCDF	2.54		0.407	0.254	0.254	0.254
123789-HxCDF	(0.436)		0.436	(0.0436)	(0.0436)	(0.0436)
1234678-HpCDF	38.6		0.161	0.386	0.386	0.386
1234789-HpCDF	2.54		0.224	0.0254	0.0254	0.0254
OCDF	87		0.579	0.087	0.0087	0.0261

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TEQ Summaries			
EMPC = 0, ND = 0	11.7	9.02	9.13
EMPC = 0, ND = DL / 2	11.7	9.04	9.15
EMPC = 0, ND = DL	11.7	9.06	9.18
EMPC = 0, < J-level = 0	10.8	7.65	7.79
EMPC = EMPC, ND = 0	12.2	9.52	9.63
EMPC = EMPC, ND = DL / 2	12.2	9.54	9.65
EMPC = EMPC, ND = DL	12.2	9.56	9.67
EMPC = EMPC, < J-level = 0	11.3	8.15	8.29

Checkcode: 994-247-DFB

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Sample ID: 11215131-113021-S-JC-NE-O-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID	B5966_18718_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	80.7 %	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:47:48

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	2.19				ES 2378-TCDD	80.3	
12378-PeCDD	EMPC		1.23	J	ES 12378-PeCDD	65.5	
123478-HxCDD	EMPC		3.12		ES 123478-HxCDD	77.1	
123678-HxCDD	15.3				ES 123678-HxCDD	80.9	
123789-HxCDD	7.89				ES 123789-HxCDD	79.2	
1234678-HpCDD	1,000				ES 1234678-HpCDD	66.7	
OCDD	12,900			E	ES OCDD	47.5	
2378-TCDF	12.9				ES 2378-TCDF	72.8	
12378-PeCDF	1.85			J	ES 12378-PeCDF	70.3	
23478-PeCDF	5.12				ES 23478-PeCDF	68.4	
123478-HxCDF	3.83				ES 123478-HxCDF	83.1	
123678-HxCDF	2.58				ES 123678-HxCDF	85.7	
234678-HxCDF	3.84				ES 234678-HxCDF	83.8	
123789-HxCDF	ND	0.654			ES 123789-HxCDF	82.4	
1234678-HpCDF	59.3				ES 1234678-HpCDF	79	
1234789-HpCDF	5.05				ES 1234789-HpCDF	74.6	
OCDF	198				ES OCDF	49.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	70.6	
Total TCDD	3.01		5.14		CS 12347-PeCDD	70.9	
Total PeCDD	5.21		12.4		CS 12346-PeCDF	72	
Total HxCDD	116		119		CS 123469-HxCDF	92.4	
Total HpCDD	1,910		1,910		CS 1234689-HpCDF	86.1	
Total TCDF	60.6		67				
Total PeCDF	49.7		52.7				
Total HxCDF	73.8		73.8				
Total HpCDF	219		219				
Total PCDD/Fs	**15,600**		**15,600**	E			
WHO-2005 TEQs							
TEQ: ND=0	23.1		24.6				
TEQ: ND=DL/2	23.1	0.654	24.6				
TEQ: ND=DL	23.1	1.31	24.7				

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Sample ID: 11215131-113021-S-JC-NE-O-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID:	B5966_18718_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	80.7 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:47:48

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[1.11]		12479/12468D	3.78		124679/124689D	32.4		1234679D	902	
1379D	[0.687]		12469D	[1.62]	J	123468D	5.41		1234678D	1000	
1369D	(0.297)		12368D	[1.3]	J	123679/123689D	49				
1469D	(0.297)		12478D	[1.47]	J	123469D	3.8				
1247D...[4]	0.34	J	12379D	[1.02]	J	123478D	[3.12]				
1378D	0.481	J	12369D...[3]	1.44	J	123678D	15.3				
1268D	(0.297)		12346/12347D	[0.521]	J	123467D	2.26	J			
1478D	(0.297)		12378D	[1.23]	J	123789D	7.89		**Conc.**	1,910	
1279D	(0.297)		12367D	(0.509)					**EMPC**	1,910	
1234/1269D	(0.297)		12389D	(0.509)							
1236D	(0.297)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.297)										
1239D	(0.297)								OCDD	12900	E
2378D	2.19										
1278D	[0.328]	J									
1267D	(0.297)										
1289D	(0.297)										
Conc.	3.01		**Conc.**	5.21		**Conc.**	116				
EMPC	5.14		**EMPC**	12.4		**EMPC**	119				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	23.1	24.6
TEQ: ND=DL/2	23.1	24.6
TEQ: ND=DL	23.1	24.7

	Conc.	EMPC
Total PCDD/Fs	15,600	15,600

Checkcode: 651-553-JSV

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-O-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID:	B5966_18718_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	30-Nov-2021	% Solid:	80.7 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:47:48

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.819		13468/12468F	15.9		123468F	6.26		1234678F	59.3	
1468F	1.38		13678F...[3]	4.08		124678/134678F	23.3		1234679F	2.42	J
2468F	4.27		12368F...[3]	11.5		134679F	(0.585)		1234689F	153	
1346/1246F	1.46		14678F	[1.65]	J	124679F	(0.585)		1234789F	5.05	
1347F...[3]	3.71		13479F	[0.338]	J	124689F	31.6				
1348F	[0.71]		13469/12479F	0.571	J	123467F	1.59	J			
1248F...[3]	3.35		12346F	0.651	J	123478F	3.83				
1268F	2.51		23468/12469F	2.91		123678F	2.58				
1467F	[1.94]		12347F	[1.02]	J	123479F	(0.585)				
1478F	3.46		12348F	0.902	J	123469F	(0.585)				
1369/1237F	[0.66]		12378F	1.85	J	123679F	(0.585)				
2467F	[1.18]		12678/12367F	4.2		234678F	3.84		**Conc.**	219	
2368F	4.51		12379F	(0.226)		234678/123689F	0		**EMPC**	219	
1238F...[5]	[1.43]		12679F	(0.226)		123689F	(0.585)				
1278F	5.56		23467/12369F	1.98	J	123789F	(0.654)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.211)		23478F	5.12		123789/123489F	0				
1267F	1.96		23478/12489F	0		123489F	0.772	J	OCDF	198	
2346/1249F	0.827		12489F	(0.226)							
2347/1279F	1.43		12349F	(0.226)							
2348F	1.52		12389F	(0.226)							
2378F	12.9										
2367/3467F	9.71										
1269F	[0.496]	J									
1239F	(0.211)										
1289F	1.24										
Conc.	60.6		**Conc.**	49.7		**Conc.**	73.8				
EMPC	67		**EMPC**	52.7		**EMPC**	73.8				

Checkcode: 651-553-JSV

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-113021-S-JC-NE-O-2 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5966_18718_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	QC Batch No.:	18718
Date Collected:	30-Nov-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	15-Dec-2021 20:47
Lab Project No:	B5966	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	2.19		0.297	2.19	2.19	2.19
12378-PeCDD	[1.23]	J	0.509	[0.614]	[1.23]	[1.23]
123478-HxCDD	[3.12]		0.549	[0.312]	[0.312]	[0.312]
123678-HxCDD	15.3		0.545	1.53	1.53	1.53
123789-HxCDD	7.89		0.525	0.789	0.789	0.789
1234678-HpCDD	1000		0.397	10	10	10
OCDD	12900	E	1.09	12.9	1.29	3.88
2378-TCDF	12.9		0.211	1.29	1.29	1.29
12378-PeCDF	1.85	J	0.229	0.0926	0.0926	0.0556
23478-PeCDF	5.12		0.224	2.56	2.56	1.53
123478-HxCDF	3.83		0.552	0.383	0.383	0.383
123678-HxCDF	2.58		0.531	0.258	0.258	0.258
234678-HxCDF	3.84		0.615	0.384	0.384	0.384
123789-HxCDF	(0.654)		0.654	(0.0654)	(0.0654)	(0.0654)
1234678-HpCDF	59.3		0.17	0.593	0.593	0.593
1234789-HpCDF	5.05		0.218	0.0505	0.0505	0.0505
OCDF	198		0.878	0.198	0.0198	0.0595

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TEQ Summaries			
EMPC = 0, ND = 0	33.3	21.5	23.1
EMPC = 0, ND = DL / 2	33.3	21.5	23.1
EMPC = 0, ND = DL	33.4	21.6	23.1
EMPC = 0, < J-level = 0	33.2	21.4	23
EMPC = EMPC, ND = 0	34.2	23	24.6
EMPC = EMPC, ND = DL / 2	34.3	23.1	24.6
EMPC = EMPC, ND = DL	34.3	23.1	24.7
EMPC = EMPC, < J-level = 0	33.5	21.7	23.3

Checkcode: 651-553-JSV

Sample ID: 11215131-120121-S-JC-NE-O-3 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID	B5966_18718_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	81.5 %	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:35:17

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	0.811				ES 2378-TCDD	68	
12378-PeCDD	0.805			J	ES 12378-PeCDD	64.2	
123478-HxCDD	1.7			J	ES 123478-HxCDD	74.4	
123678-HxCDD	5.84				ES 123678-HxCDD	80	
123789-HxCDD	3.47				ES 123789-HxCDD	78.5	
1234678-HpCDD	248				ES 1234678-HpCDD	68.7	
OCDD	8,790				ES OCDD	55.4	
2378-TCDF	3.79				ES 2378-TCDF	64.3	
12378-PeCDF	0.754			J	ES 12378-PeCDF	73.5	
23478-PeCDF	1.6			J	ES 23478-PeCDF	70.2	
123478-HxCDF	1.79			J	ES 123478-HxCDF	79.8	
123678-HxCDF	1.5			J	ES 123678-HxCDF	87.2	
234678-HxCDF	1.92			J	ES 234678-HxCDF	82.2	
123789-HxCDF	ND	0.397			ES 123789-HxCDF	81.4	
1234678-HpCDF	27.2				ES 1234678-HpCDF	85.9	
1234789-HpCDF	2.49				ES 1234789-HpCDF	79.6	
OCDF	90				ES OCDF	59.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	69.6	
Total TCDD	0.811		1.67		CS 12347-PeCDD	73.6	
Total PeCDD	4.72		7.53		CS 12346-PeCDF	84.5	
Total HxCDD	54.6		55.6		CS 123469-HxCDF	100	
Total HpCDD	591		591		CS 1234689-HpCDF	98.7	
Total TCDF	12.6		16.9				
Total PeCDF	14.4		16.3				
Total HxCDF	33		33.4				
Total HpCDF	89.4		90.4				
Total PCDD/Fs	**9,680**		**9,690**				
WHO-2005 TEQs							
TEQ: ND=0	9.56		9.56				
TEQ: ND=DL/2	9.58	0.443	9.58				
TEQ: ND=DL	9.6	0.886	9.6				

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Sample ID: 11215131-120121-S-JC-NE-O-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID:	B5966_18718_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	81.5 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:35:17

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.553]		12479/12468D	1.89	J	124679/124689D	18.7		1234679D	343	
1379D	[0.306]	J	12469D	[1.1]	J	123468D	3.22		1234678D	248	
1369D	(0.282)		12368D	0.685	J	123679/123689D	19.7				
1469D	(0.282)		12478D	1.04	J	123469D	1.97	J			
1247D...[4]	(0.282)		12379D	[0.484]	J	123478D	1.7	J			
1378D	(0.282)		12369D...[3]	[0.809]	J	123678D	5.84				
1268D	(0.282)		12346/12347D	[0.418]	J	123467D	[1.07]	J			
1478D	(0.282)		12378D	0.805	J	123789D	3.47		**Conc.**	591	
1279D	(0.282)		12367D	0.303	J				**EMPC**	591	
1234/1269D	(0.282)		12389D	(0.265)							
1236D	(0.282)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.282)										
1239D	(0.282)								OCDD	8790	
2378D	0.811										
1278D	(0.282)										
1267D	(0.282)										
1289D	(0.282)										
Conc.	0.811		**Conc.**	4.72		**Conc.**	54.6				
EMPC	1.67		**EMPC**	7.53		**EMPC**	55.6				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	9.56	9.56
TEQ: ND=DL/2	9.58	9.58
TEQ: ND=DL	9.6	9.6

	Conc.	EMPC
Total PCDD/Fs	9,680	9,690

Checkcode: 355-269-BPH

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-O-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	03-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID:	B5966_18718_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	01-Dec-2021	% Solid:	81.5 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:35:17

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.244)		13468/12468F	4.71		123468F	3.07		1234678F	27.2	
1468F	0.391	J	13678F...[3]	1.12	J	124678/134678F	11.1		1234679F	[1.03]	J
2468F	1.24		12368F...[3]	3.89		134679F	(0.341)		1234689F	59.7	
1346/1246F	0.317	J	14678F	[0.36]	J	124679F	[0.317]	J	1234789F	2.49	
1347F...[3]	1.35		13479F	(0.199)		124689F	13				
1348F	(0.244)		13469/12479F	0.267	J	123467F	0.684	J			
1248F...[3]	0.822		12346F	0.227	J	123478F	1.79	J			
1268F	0.545		23468/12469F	[0.951]	J	123678F	1.5	J			
1467F	[0.363]	J	12347F	[0.261]	J	123479F	(0.341)				
1478F	[0.702]		12348F	[0.307]	J	123469F	(0.341)				
1369/1237F	0.242	J	12378F	0.754	J	123679F	(0.341)				
2467F	[0.353]	J	12678/12367F	1.06	J	234678F	1.92	J	**Conc.**	89.4	
2368F	[0.628]		12379F	(0.199)		234678/123689F	0		**EMPC**	90.4	
1238F...[5]	[0.929]		12679F	(0.199)		123689F	(0.341)				
1278F	1.7		23467/12369F	0.781	J	123789F	(0.397)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.244)		23478F	1.6	J	123789/123489F	0				
1267F	[0.488]	J	23478/12489F	0		123489F	(0.341)		OCDF	90	
2346/1249F	[0.264]	J	12489F	(0.199)							
2347/1279F	[0.365]	J	12349F	(0.199)							
2348F	[0.225]	J	12389F	(0.199)							
2378F	3.79										
2367/3467F	1.68										
1269F	(0.244)										
1239F	(0.244)										
1289F	0.541										
Conc.	12.6		**Conc.**	14.4		**Conc.**	33				
EMPC	16.9		**EMPC**	16.3		**EMPC**	33.4				

Checkcode: 355-269-BPH

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: 11215131-120121-S-JC-NE-O-3 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5966_18718_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	QC Batch No.:	18718
Date Collected:	01-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	03-Dec-2021	Dilution:	-	Date Analyzed:	15-Dec-2021 21:35
Lab Project No:	B5966	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	0.811		0.282	0.811	0.811	0.811
12378-PeCDD	0.805	J	0.265	0.403	0.805	0.805
123478-HxCDD	1.7	J	0.337	0.17	0.17	0.17
123678-HxCDD	5.84		0.35	0.584	0.584	0.584
123789-HxCDD	3.47		0.327	0.347	0.347	0.347
1234678-HpCDD	248		0.394	2.48	2.48	2.48
OCDD	8790		1.25	8.79	0.879	2.64
2378-TCDF	3.79		0.244	0.379	0.379	0.379
12378-PeCDF	0.754	J	0.192	0.0377	0.0377	0.0226
23478-PeCDF	1.6	J	0.206	0.798	0.798	0.479
123478-HxCDF	1.79	J	0.332	0.179	0.179	0.179
123678-HxCDF	1.5	J	0.304	0.15	0.15	0.15
234678-HxCDF	1.92	J	0.342	0.192	0.192	0.192
123789-HxCDF	(0.397)		0.397	(0.0397)	(0.0397)	(0.0397)
1234678-HpCDF	27.2		0.135	0.272	0.272	0.272
1234789-HpCDF	2.49		0.181	0.0249	0.0249	0.0249
OCDF	90		0.497	0.09	0.009	0.027

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TEQ Summaries			
EMPC = 0, ND = 0	15.7	8.12	9.56
EMPC = 0, ND = DL / 2	15.7	8.14	9.58
EMPC = 0, ND = DL	15.7	8.16	9.6
EMPC = 0, < J-level = 0	13.8	5.78	7.56
EMPC = EMPC, ND = 0	15.7	8.12	9.56
EMPC = EMPC, ND = DL / 2	15.7	8.14	9.58
EMPC = EMPC, ND = DL	15.7	8.16	9.6
EMPC = EMPC, < J-level = 0	13.8	5.78	7.56

Checkcode: 355-269-BPH

Sample ID: Method Blank B5966_18718 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18718_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:37:36

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.365			ES 2378-TCDD	80.5	
12378-PeCDD	ND	0.324			ES 12378-PeCDD	72.6	
123478-HxCDD	ND	0.189			ES 123478-HxCDD	86.8	
123678-HxCDD	ND	0.179			ES 123678-HxCDD	95.1	
123789-HxCDD	ND	0.166			ES 123789-HxCDD	91.8	
1234678-HpCDD	ND	0.259			ES 1234678-HpCDD	74.4	
OCDD	ND	0.71			ES OCDD	45.7	
2378-TCDF	ND	0.183			ES 2378-TCDF	67.5	
12378-PeCDF	ND	0.149			ES 12378-PeCDF	85.1	
23478-PeCDF	ND	0.166			ES 23478-PeCDF	75.8	
123478-HxCDF	ND	0.156			ES 123478-HxCDF	92.3	
123678-HxCDF	ND	0.123			ES 123678-HxCDF	116	
234678-HxCDF	ND	0.171			ES 234678-HxCDF	94.5	
123789-HxCDF	ND	0.217			ES 123789-HxCDF	77.5	
1234678-HpCDF	ND	0.105			ES 1234678-HpCDF	120	
1234789-HpCDF	ND	0.263			ES 1234789-HpCDF	67.4	
OCDF	ND	0.723			ES OCDF	36.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.1	
Total TCDD	ND	0.365	ND		CS 12347-PeCDD	83.7	
Total PeCDD	ND	0.324	ND		CS 12346-PeCDF	95	
Total HxCDD	ND	0.177	ND		CS 123469-HxCDF	119	
Total HpCDD	ND	0.259	ND		CS 1234689-HpCDF	108	
Total TCDF	ND	0.183	ND				
Total PeCDF	ND	0.157	ND				
Total HxCDF	ND	0.16	ND				
Total HpCDF	ND	0.157	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.444	0.444	0.444				
TEQ: ND=DL	0.888	0.888	0.888				

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Sample ID: Method Blank B5966_18718 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18718_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:37:36

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.365)		12479/12468D	(0.324)		124679/124689D	(0.177)		1234679D	(0.259)	
1379D	(0.365)		12469D	(0.324)		123468D	(0.177)		1234678D	(0.259)	
1369D	(0.365)		12368D	(0.324)		123679/123689D	(0.177)				
1469D	(0.365)		12478D	(0.324)		123469D	(0.177)				
1247D...[4]	(0.365)		12379D	(0.324)		123478D	(0.189)				
1378D	(0.365)		12369D...[3]	(0.324)		123678D	(0.179)				
1268D	(0.365)		12346/12347D	(0.324)		123467D	(0.177)				
1478D	(0.365)		12378D	(0.324)		123789D	(0.166)		**Conc.**	0	
1279D	(0.365)		12367D	(0.324)					**EMPC**	0	
1234/1269D	(0.365)		12389D	(0.324)							
1236D	(0.365)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.365)										
1239D	(0.365)								OCDD	(0.71)	
2378D	(0.365)										
1278D	(0.365)										
1267D	(0.365)										
1289D	(0.365)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.444	0.444
TEQ: ND=DL	0.888	0.888

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 204-041-YDT

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: Method Blank B5966_18718 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18718_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:37:36

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.183)		13468/12468F	(0.195)		123468F	(0.16)		1234678F	(0.105)	
1468F	(0.183)		13678F...[3]	(0.157)		124678/134678F	(0.16)		1234679F	(0.157)	
2468F	(0.183)		12368F...[3]	(0.157)		134679F	(0.16)		1234689F	(0.157)	
1346/1246F	(0.183)		14678F	(0.157)		124679F	(0.16)		1234789F	(0.263)	
1347F...[3]	(0.183)		13479F	(0.157)		124689F	(0.16)				
1348F	(0.183)		13469/12479F	(0.157)		123467F	(0.16)				
1248F...[3]	(0.183)		12346F	(0.157)		123478F	(0.156)				
1268F	(0.183)		23468/12469F	(0.157)		123678F	(0.123)				
1467F	(0.183)		12347F	(0.157)		123479F	(0.16)				
1478F	(0.183)		12348F	(0.157)		123469F	(0.16)				
1369/1237F	(0.183)		12378F	(0.149)		123679F	(0.16)				
2467F	(0.183)		12678/12367F	(0.157)		234678F	(0.171)		**Conc.**	0	
2368F	(0.183)		12379F	(0.157)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.183)		12679F	(0.157)		123689F	(0.16)				
1278F	(0.183)		23467/12369F	(0.157)		123789F	(0.217)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.183)		23478F	(0.166)		123789/123489F	0			**(pg/g)**	
1267F	(0.183)		23478/12489F	0		123489F	(0.16)		OCDF	(0.723)	
2346/1249F	(0.183)		12489F	(0.157)							
2347/1279F	(0.183)		12349F	(0.157)							
2348F	(0.183)		12389F	(0.157)							
2378F	(0.183)										
2367/3467F	(0.183)										
1269F	(0.183)										
1239F	(0.183)										
1289F	(0.183)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 204-041-YDT

Report Created: 16-Dec-2021 10:54 Analyst: pw

Sample ID: Method Blank B5966_18718 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18718_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18718
Date Collected:	n/a	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	15-Dec-2021 17:37
Lab Project No:	B5966	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.365)		0.365	(0.365)	(0.365)	(0.365)
12378-PeCDD	(0.324)		0.324	(0.162)	(0.324)	(0.324)
123478-HxCDD	(0.189)		0.189	(0.0189)	(0.0189)	(0.0189)
123678-HxCDD	(0.179)		0.179	(0.0179)	(0.0179)	(0.0179)
123789-HxCDD	(0.166)		0.166	(0.0166)	(0.0166)	(0.0166)
1234678-HpCDD	(0.259)		0.259	(0.00259)	(0.00259)	(0.00259)
OCDD	(0.71)		0.71	(0.00071)	(0.000071)	(0.000213)
2378-TCDF	(0.183)		0.183	(0.0183)	(0.0183)	(0.0183)
12378-PeCDF	(0.149)		0.149	(0.00747)	(0.00747)	(0.00448)
23478-PeCDF	(0.166)		0.166	(0.083)	(0.083)	(0.0498)
123478-HxCDF	(0.156)		0.156	(0.0156)	(0.0156)	(0.0156)
123678-HxCDF	(0.123)		0.123	(0.0123)	(0.0123)	(0.0123)
234678-HxCDF	(0.171)		0.171	(0.0171)	(0.0171)	(0.0171)
123789-HxCDF	(0.217)		0.217	(0.0217)	(0.0217)	(0.0217)
1234678-HpCDF	(0.105)		0.105	(0.00105)	(0.00105)	(0.00105)
1234789-HpCDF	(0.263)		0.263	(0.00263)	(0.00263)	(0.00263)
OCDF	(0.723)		0.723	(0.000723)	(0.0000723)	(0.000217)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.382	0.462	0.444
EMPC = 0, ND = DL	0.763	0.924	0.888
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.382	0.462	0.444
EMPC = EMPC, ND = DL	0.763	0.924	0.888
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 204-041-YDT

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Sample ID: 0_18718_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18718_DF	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	15:15:44

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	9.58				ES 2378-TCDD	81.1	
12378-PeCDD	47.1				ES 12378-PeCDD	74	
123478-HxCDD	53.7				ES 123478-HxCDD	90.3	
123678-HxCDD	57.7				ES 123678-HxCDD	90.7	
123789-HxCDD	50.4				ES 123789-HxCDD	93.6	
1234678-HpCDD	55.4				ES 1234678-HpCDD	72.4	
OCDD	107				ES OCDD	42.3	
2378-TCDF	13				ES 2378-TCDF	70.7	
12378-PeCDF	54.5				ES 12378-PeCDF	85.6	
23478-PeCDF	58.9				ES 23478-PeCDF	74.9	
123478-HxCDF	56.4				ES 123478-HxCDF	89.5	
123678-HxCDF	53.7				ES 123678-HxCDF	109	
234678-HxCDF	55.2				ES 234678-HxCDF	95.4	
123789-HxCDF	53.2				ES 123789-HxCDF	83.2	
1234678-HpCDF	53.2				ES 1234678-HpCDF	113	
1234789-HpCDF	53.9				ES 1234789-HpCDF	68	
OCDF	108				ES OCDF	36.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	83.9	
Total TCDD	43.3		43.3		CS 12347-PeCDD	89.7	
Total PeCDD	70		70		CS 12346-PeCDF	95.9	
Total HxCDD	177		177		CS 123469-HxCDF	118	
Total HpCDD	69		69		CS 1234689-HpCDF	106	
Total TCDF	65.1		69.2				
Total PeCDF	217		217				
Total HxCDF	350		350				
Total HpCDF	107		107				
Total PCDD/Fs	**1,310**		**1,320**				
WHO-2005 TEQs							
TEQ: ND=0	117		117				
TEQ: ND=DL/2	117	0.328	117				
TEQ: ND=DL	117	0.656	117				

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Sample ID: 0_18718_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5966	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18718_DF	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	16:02:28

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	8.92				ES 2378-TCDD	78.3	
12378-PeCDD	43.8				ES 12378-PeCDD	71.3	
123478-HxCDD	50.7				ES 123478-HxCDD	83.2	
123678-HxCDD	54.3				ES 123678-HxCDD	88.3	
123789-HxCDD	47.8				ES 123789-HxCDD	88.8	
1234678-HpCDD	52.7				ES 1234678-HpCDD	72.7	
OCDD	102				ES OCDD	41.5	
2378-TCDF	12				ES 2378-TCDF	64.5	
12378-PeCDF	51.8				ES 12378-PeCDF	80.3	
23478-PeCDF	56.3				ES 23478-PeCDF	71.1	
123478-HxCDF	51.4				ES 123478-HxCDF	90.6	
123678-HxCDF	50.3				ES 123678-HxCDF	112	
234678-HxCDF	51.8				ES 234678-HxCDF	90.9	
123789-HxCDF	48.8				ES 123789-HxCDF	77.3	
1234678-HpCDF	50.6				ES 1234678-HpCDF	111	
1234789-HpCDF	51.4				ES 1234789-HpCDF	63.6	
OCDF	104				ES OCDF	36	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	72.9	
Total TCDD	42.6		42.6		CS 12347-PeCDD	80.2	
Total PeCDD	67.2		67.2		CS 12346-PeCDF	85.7	
Total HxCDD	169		169		CS 123469-HxCDF	109	
Total HpCDD	65.8		65.8		CS 1234689-HpCDF	100	
Total TCDF	67.3		67.3				
Total PeCDF	211		211				
Total HxCDF	333		333				
Total HpCDF	102		102				
Total PCDD/Fs	**1,260**		**1,260**				
WHO-2005 TEQs							
TEQ: ND=0	109		109				
TEQ: ND=DL/2	109	0.251	109				
TEQ: ND=DL	109	0.503	109				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample DUP

Method 1613B

Sample ID: 0_18718_OPR001

Analyte	OPR1_18718_DF pg/uL	OPR2_18718_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	9.58	8.92	7.2%
1,2,3,7,8-PeCDD	47.1	43.8	7.2%
1,2,3,4,7,8-HxCDD	53.7	50.7	5.7%
1,2,3,6,7,8-HxCDD	57.7	54.3	6.0%
1,2,3,7,8,9-HxCDD	50.4	47.8	5.3%
1,2,3,4,6,7,8-HpCDD	55.4	52.7	5.0%
OCDD	107	102	4.8%
2,3,7,8-TCDF	13	12	7.9%
1,2,3,7,8-PeCDF	54.5	51.8	5.0%
2,3,4,7,8-PeCDF	58.9	56.3	4.5%
1,2,3,4,7,8-HxCDF	56.4	51.4	9.4%
1,2,3,6,7,8-HxCDF	53.7	50.3	6.5%
2,3,4,6,7,8-HxCDF	55.2	51.8	6.3%
1,2,3,7,8,9-HxCDF	53.2	48.8	8.5%
1,2,3,4,6,7,8-HpCDF	53.2	50.6	4.9%
1,2,3,4,7,8,9-HpCDF	53.9	51.4	4.9%
OCDF	108	104	3.3%
Totals			
Total TCDD	43.3	42.6	1.6%
Total PeCDD	70	67.2	4.0%
Total HxCDD	177	169	4.7%
Total HpCDD	69	65.8	4.8%
Total TCDF	69.2	67.3	2.8%
Total PeCDF	217	211	3.0%
Total HxCDF	350	333	5.0%
Total HpCDF	107	102	4.9%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*03-Dec-21 at 10:47*
AP Project name:	*B5966*
Requested TAT:	*10 business days*
Projected due date:	*17-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-113021-S-SPS-NE-O-5	B5966_001	Solid	1	4oz Amber	30-Nov-21	14:10	1.2	1	4905 2704 1753
11215131-113021-S-SPS-NE-O-4	B5966_002	Solid	1	4oz Amber	30-Nov-21	15:45	1.2	1	4905 2704 1753
11215131-113021-S-JC-NE-O-1	B5966_003	Solid	1	4oz Amber	30-Nov-21	13:40	0.4	2	4905 2704 1764
11215131-113021-S-JC-NE-O-2	B5966_004	Solid	1	4oz Amber	30-Nov-21	15:20	0.4	2	4905 2704 1764
11215131-120121-S-JC-NE-O-3	B5966_005	Solid	1	4oz Amber	01-Dec-21	09:30	0.4	2	4905 2704 1764

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact; Samples 001 and 002 IDs updated per email from client

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* TB 12/3/2021

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS

CHAIN OF CUSTODY

B59666 1/2

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ■ Level II ■ Level IV

SPECIAL DELIVERABLES:

☐ DoD ■ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS
11215131-113021-S-SPS- NE-S-7	11/30/21	1340	C	S	4 oz	X					RUSH
11215131- 113021-S-SPS- NE-S-6	↓	1350	C	↓	4 oz	X					RUSH
11215131 - 113021-S-SPS- NE-O-5	CMS 12/3/21	1410	C	↓	4 oz	X					SSOW *
11215131 - 113021-S-SPS- NE-O-4	↓	1545	C	↓	4 oz	X					SSOW *
11215131 - 120121-S-SPS-NE-S-12	12/1/21	915	C	↓	4 oz	X					RUSH
11215131- 120121-S-SPS-NE-S-14	↓	940	C	↓	4 oz	X					RUSH
11215131- 120121-S-SPS-NE-S-13	↓	1045	C	↓	4 oz	X					RUSH
					4 oz						
					4 oz						
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE:	TIME:
Stephen Sellers	12/1/21	1530	Eddie Castro	Ashley Owens	12/3/21	10:47
RELINQUISHED BY (2): Eddie Castro	12-1-21	1605	RECEIVED BY: [signature]	COOLER SEAL: ☑ INTACT ☐ BROKEN ☐ ABSENT		
				CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☑ ABSENT		
RELINQUISHED BY (3): [signature]	12/1/21	1600	RECEIVED BY: FedEx	CARRIER: FedEx	TEMP: °C 1.2°	
				TRACKING #: 4905 2704 1753		

*=samples in this project.

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SGS CHAIN OF CUSTODY

B591616 2/2

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUNDTIME: Refer to Notes and Remarks
REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV
SPECIAL DELIVERABLES:
☐ DoD ☒ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
112151311130211-S-JC-NE-0-1	11-30-21	1340	C	S	4 oz		X					SEE SSOW *
112151311130211-S-JC-NE-S-1		1350			4 oz		X					RUSH
112151311130211-S-JC-NE-S-2		1410			4 oz		X					RUSH
112151311130211-S-JC-NE-0-2		1520			4 oz		X					*
112151311130211-S-JC-NE-S-3		1530			4 oz		X					RUSH
(BN) 112151311201211-S-JC-NE-S-4	12-1-21	0910			4 oz		X					RUSH
112151311201211-S-JC-NE-S-5		0920			4 oz		X					RUSH
112151311201211-S-JC-NE-0-3		0930			4 oz		X					*
					4 oz		X (BN)					
					4 oz							

COLLECTED/RELINQUISHED BY (1): Brianna North	DATE: 12-1-21	TIME: 1530	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE: 12/3/21 TIME: 10:47
RELINQUISHED BY (2):	DATE: 12-1-21	TIME: 1605	RECEIVED BY:	COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT	
RELINQUISHED BY (3):	DATE: 12/1/21	TIME: 1608	RECEIVED BY: FedEx	CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT	
				CARRIER: FedEx TEMP °C 0.4°	
				TRACKING #: 4905 2704 1710 4	

*=samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

B59166 1/1

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 01DEC21
ACTWGT: 40.00 LB MAN
CAD: 0317565/CAFE3313

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/3/2021
10:47
1.2° (T.B.)

565C2/ADE5/05A2

FedEx Express

1 of 2

TRK# 0201 4905 2704 1753
MASTER

THU - 02 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Part # 156148-434 MTW EXP 07/22

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 01DEC21
ACTWGT: 40.00 LB MAN
CAD: 0317565/CAFE3313

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/3/2021
10:47
0.4° (T.B.)

565C2/ADE5/05A2

FedEx Express

2 of 2

MPS# 0263 4905 2704 1764
Mstr# 4905 2704 1753 0201

THU - 02 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Part # 156148-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5966

Initiation Date: 03-Dec-21

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Read and understood, initial and date: Prep Lab: KE 12/10/21 RB 12/14/21

HRMS Lab: 12/16/21

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab: 12/16/21

PM Initials: tburkamper Date: 03-Dec-2021

SGS

Methods: PCB / PAH | (PCDD/F) / WHO-2 | QUANTICS / USV | DoD PCDD/F / PEST

Extraction Type: (SDS) / CLL | TALEX / Carbon SPE

Solid

Final Volume: 20 µL

Batch# 18718

Split: ~~1/2~~ ~~1/4~~

Extract Initial/Date: KE 12/13/21

Clean-up Initial/Date: ~~RAB~~ 12/14/21

Transfer Init/Date: RAB 12/14/21

Lab Sample ID	Extraction Position (Solvent: Tol)	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5966_18718_001	45	14.32				gray, sandy, wet
B5966_18718_002	44	13.34				light brown, wet, clay-like
B5966_18718_003	43	13.03				brown/gray, sandy, clay-like
B5966_18718_004	42	12.48				brown, clay-like
B5966_18718_005	41	12.35				brown, clay-like
B5970_18718_001	40	11.70				brown, clay-like
B5970_18718_002	39	14.19				dark gray, clay-like
B5970_18718_003	38	12.72				dark gray, clay-like, oil smell
B5970_18718_004	37	12.32		17Dec21		brown, clay-like
B5970_18718_005	36	13.89			CL	gray, clay-like, oil smell
B5970_18718_006	35	12.29				brown/gray, clay-like
B5970_18718_007	34	11.97				brown, clay-like, plant matter
B5970_18718_008	28	14.23				dark gray, clay-like, oil smell
MB1_18718	48	10.00				sodium sulfate
OPR1_18718	47	10.00				sodium sulfate
OPR2_18718	46	10.00				sodium sulfate

Supply IDs	
Toluene	STL14-20
MeCHL	STL14-2
Florisil	SPLS-70
Hexane	STL14-19
Silica	SPLS-28D
S Nitrate	N/A
Base Silica	SPLS-67
HydroMatrix	N/A
Tetradecane	SPLS-28B
H_2SO_4	N/A
A Silica	SPLS-65
Sodium Sulfate	SPLS-28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	17Dec21 CL
Carbon Column Date/Initial:	
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start:	1430
	Stop:	0900
HEX	Start:	
	Stop:	17Dec21 CL
DCM	Start:	
	Stop:	

RAB 12/14/21

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18718

Inter-Department Communication Sheet

17Dec21

CL

SGS

Wt. Volume Results

Batch #: 18718 **Comments:**

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5966_001	0.81	4.33	3.28	70.17%	70.17%			14.25	14.32	10.05
B5966_002	0.81	3.89	3.16	76.30%	76.30%			13.11	13.34	10.18
B5966_003	0.81	4.38	3.58	77.59%	77.59%			12.89	13.03	10.11
B5966_004	0.8	4.01	3.39	80.69%	80.69%			12.39	12.48	10.07
B5966_005	0.79	4.79	4.05	81.50%	81.50%			12.27	12.35	10.07
B5970_001	0.8	4.59	4.06	86.02%	86.02%			11.63	11.7	10.06
B5970_002	0.8	4.48	3.43	71.47%	71.47%			13.99	14.19	10.14
B5970_003	0.8	3.9	3.24	78.71%	78.71%			12.7	12.72	10.01
B5970_004	0.8	4.13	3.51	81.38%	81.38%			12.29	12.32	10.03
B5970_005	0.8	4.05	3.17	72.92%	72.92%			13.71	13.89	10.13
B5970_006	0.8	3.74	3.23	82.65%	82.65%			12.1	12.29	10.16
B5970_007	0.78	5.09	4.39	83.76%	83.76%			11.94	11.97	10.03
B5970_008	0.82	3.9	3	70.78%	70.78%			14.13	14.23	10.07

REVIEWED
Carla_Lyon , 12/17/2021, 12:23:07 PM

% Solid Determination WorkSheet

SGS

Batch: 18718

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5966_18718_001	0.81	4.33	3.28	
B5966_18718_002	0.81	3.89	3.16	
B5966_18718_003	0.81	4.38	3.58	
B5966_18718_004	0.80	4.01	3.39	
B5966_18718_005	0.79	4.79	4.05	
B5970_18718_001	0.80	4.59	4.06	
B5970_18718_002	0.80	4.48	3.43	
B5970_18718_003	0.80	3.90	3.24	
B5970_18718_004	0.80	4.13	3.51	
B5970_18718_005	0.80	4.05	3.17	
B5970_18718_006	0.80	3.74	3.23	CL
B5970_18718_007	0.78	5.09	4.39	17Dec21
B5970_18718_008	0.82	3.90	3.00	

12/14/21

Date/Initials: KE 12/10/21

SGS | Methods: PCB / PAH | PCDD/F / WHO-2 | QUANTICS / USV | DoD PCDD/F / PEST | Solid

Batch # 18718

Spiker Initials/Date:	JRH 12/13/21	JRH 12/13/21	JRH 12/13/21	RDS 12/14/21	RDS 12/14/21		
Lab Sample ID	DIF Ax-A Amount: 20 µL Observer Initials	DIF Ax-B Amount: 20 µL Observer Initials	DIF ES Amount: 20 µL Observer Initials	DIF CS Amount: 20 µL Observer Initials	DIF JS Amount: 20 µL Observer Initials	Amount: Observer Initials	Amount: Observer Initials
B5966_18718_001	—	—	KE	KE	KE		
B5966_18718_002	—	—	KE	KE	KE		
B5966_18718_003	—	—	KE	KE	KE		
B5966_18718_004	—	—	KE	KE	KE		
B5966_18718_005	—	—	KE	KE	KE		
B5970_18718_001	—	—	KE	KE	KE		
B5970_18718_002	—	—	KE	KE	KE		
B5970_18718_003	—	—	KE	KE	KE		
B5970_18718_004	—	—	KE	KE	KE		
B5970_18718_005	—	—	KE	KE	KE		
B5970_18718_006	—	—	KE	KE	KE		
B5970_18718_007	—	—	KE	KE	KE		
B5970_18718_008	—	—	KE	KE	KE		
MB1_18718	—	—	KE	KE	KE		
OPR1_18718	KE	KE	KE	KE	KE		
OPR2_18718	KE	KE	KE	KE	KE		

RDS 12/14/21

Standard Information

Pipette ID						
Spike ID	DIF Ax-A	DIF Ax-B	DIF ES	DIF CS	DIF JS	
SIL #	24-15-4	25-187-2	26-1-7	25.338.1	25.309.1	
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL	
Expiration Date	7/9/25	6/22/22	5/2023	11/16/22	10/8/22	

RDS 12/14/21

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
5	211215R05	3	CS3_211215_DF_RB ✓	1.00	SIL 25-347-1	PSW	171-983	15-Dec-2021	14:15:21
6	211215R06	28	OPR1_18718_DF	1.00	0_18718_OPR001	PSW	364-859	15-Dec-2021	15:15:44
7	211215R07	29	OPR2_18718_DF	1.00	0_18718_OPR002	PSW	062-626	15-Dec-2021	16:02:28
8	211215R08	2	SBS_211215_DF_RB	1.00	SIL 20-61-1	PSW	291-279	15-Dec-2021	16:50:02
9	211215R09	27	MB1_18718_DF_SDS	10.00	Method Blank	PSW	204-041	15-Dec-2021	17:37:36
10	211215R10	30	B5966_18718_DF_001	10.05	11215131-113021-S-SPS-NE-O-5	PSW	108-875	15-Dec-2021	18:25:08
11	211215R11	31	B5966_18718_DF_002	10.18	11215131-113021-S-SPS-NE-O-4	PSW	121-258	15-Dec-2021	19:12:41
12	211215R12	32	B5966_18718_DF_003	10.11	11215131-113021-S-JC-NE-O-1	PSW	994-247	15-Dec-2021	20:00:14
13	211215R13	33	B5966_18718_DF_004	10.07	11215131-113021-S-JC-NE-O-2	PSW	651-553	15-Dec-2021	20:47:48
14	211215R14	34	B5966_18718_DF_005 ✓	10.07	11215131-120121-S-JC-NE-O-3	PSW	355-269	15-Dec-2021	21:35:17

REVIEWED
paul_walton , 12/16/2021, 11:04:37 AM

APPROVED
Carla_Lyon , 12/17/2021, 1:35:19 PM

Lab ID: MB1_18718_DF_SDS **Acq'd:** 15 Dec 2021 17:37 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5966_18718 **UTP:** 16-Dec-2021 09:47:35 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 204-041-YDT

Datafile: 211215R09 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	12224.908	0.365
12378-PeCDD	NotFnd		1.0005	-		-	-	-	1.06	-	8381.859	0.324
123478-HxCDD	NotFnd		1.0003	-		-	-	-	1.06	-	4135.373	0.189
123678-HxCDD	NotFnd		1.0033	-		-	-	-	1.08	-	4135.373	0.179
123789-HxCDD	NotFnd		1.0110	-		-	-	-	1.02	-	4135.373	0.166
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	0.97	-	5414.31	0.259
OCDD	NotFnd		1.0003	-		-	-	-	1.07	-	6818.402	0.71
2378-TCDF	NotFnd		1.0006	-		-	-	-	0.96	-	5730.649	0.183
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	5756.038	0.149
23478-PeCDF	NotFnd		1.0006	-		-	-	-	0.94	-	5756.038	0.166
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	5090.064	0.156
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.13	-	5090.064	0.123
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	5090.064	0.171
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	5090.064	0.217
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.36	-	5153.618	0.105
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.30	-	5153.618	0.263
OCDF	NotFnd		1.0002	-		-	-	-	1.03	-	6271.35	0.723

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0239	+0.3	5.46E+07	0.77	Y	1.03	80.5
ES 12378-PeCDD	33.58	1.2158	1.2178	+4.0	4.92E+07	1.66	Y	1.03	72.6
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	3.81E+07	1.26	Y	0.99	86.8
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	4.08E+07	1.27	Y	0.97	95.1
ES 123789-HxCDD	37.88	1.0026	1.0029	+0.7	4.55E+07	1.30	Y	1.12	91.8
ES 1234678-HpCDD	40.51	1.0713	1.0723	+2.4	3.25E+07	1.09	Y	0.99	74.4
ES OCDD	43.05	1.1385	1.1397	+3.1	3.14E+07	0.93	Y	0.78	45.7
ES 2378-TCDF	27.38	1.0519	1.0525	+1.0	7.49E+07	0.77	Y	1.08	67.5
ES 12378-PeCDF	32.14	1.2331	1.2356	+4.8	8.13E+07	1.61	Y	0.93	85.1
ES 23478-PeCDF	33.25	1.2754	1.2784	+6.0	7.15E+07	1.59	Y	0.92	75.8
ES 123478-HxCDF	36.48	0.9656	0.9656	0	4.65E+07	0.53	Y	1.14	92.3
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	6.65E+07	0.53	Y	1.30	116
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	5.01E+07	0.53	Y	1.20	94.5
ES 123789-HxCDF	38.25	1.0121	1.0124	+0.7	3.88E+07	0.52	Y	1.14	77.5
ES 1234678-HpCDF	39.61	1.0478	1.0486	+1.9	5.04E+07	0.46	Y	0.95	120
ES 1234789-HpCDF	40.96	1.0832	1.0843	+2.7	2.52E+07	0.45	Y	0.85	67.4
ES OCDF	43.23	1.1434	1.1445	+2.9	3.00E+07	0.88	Y	0.93	36.7

Lab ID: MB1_18718_DF_SDS | **Acq'd:** 15 Dec 2021 17:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5966_18718 | **UTP:** 16-Dec-2021 09:47:35 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 204-041-YDT

Datafile: 211215R09 | **Report:** 16 Dec 2021 10:54 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	6.55E+07	0.80	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	1.02E+08	0.77	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.20E+07	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.75E+07	n/a	-	1.31	80.1	
CS 12347-PeCDD	33.09		1.1978	1.1998	+4.0	4.89E+07	1.65	Y	0.89	83.7	
CS 12346-PeCDF	31.62		1.2130	1.2155	+4.7	8.44E+07	1.60	Y	0.87	95	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	5.70E+07	0.51	Y	1.09	119	
CS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	4.10E+07	0.45	Y	0.86	108	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.75E+07~~	~~n/a~~		~~1.26~~	~~100~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1998~~	~~+4.0~~	~~4.89E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~115~~	CL 17Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2155~~	~~+4.7~~	~~8.44E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~112~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.70E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~102~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~4.10E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~89.3~~	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18718_DF_SDS **Acq'd: 15 Dec 2021 17:37 PSW** **Wt/Vol: 10.00 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: Method Blank B5966_18718 **UTP: 16-Dec-2021 09:47:35 PSW** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 204-041-YDT**

Datafile: 211215R09 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		12224.908	0.365
1379-TCDD	NotFnd		0.8851						1.34		12224.908	0.365
1369-TCDD	NotFnd		0.9002						1.34		12224.908	0.365
1469-TCDD	NotFnd		0.9275						1.34		12224.908	0.365
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		12224.908	0.365
1378-TCDD	NotFnd		0.9427						1.34		12224.908	0.365
1268-TCDD	NotFnd		0.9498						1.34		12224.908	0.365
1478-TCDD	NotFnd		0.9584						1.34		12224.908	0.365
1279-TCDD	NotFnd		0.9644						1.34		12224.908	0.365
1234/1269-TCDD	NotFnd		0.9766						1.34		12224.908	0.365
1236-TCDD	NotFnd		0.9813						1.34		12224.908	0.365
1237/1238-TCDD	NotFnd		0.9906						1.34		12224.908	0.365
1239-TCDD	NotFnd		0.9952						1.34		12224.908	0.365
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**12224.908**	**0.365**
1278-TCDD	NotFnd		1.0122						1.34		12224.908	0.365
1267-TCDD	NotFnd		1.0168						1.34		12224.908	0.365
1289-TCDD	NotFnd		1.0349						1.34		12224.908	0.365
12479/12468-PeCDD	NotFnd		0.9267						1.06		8381.859	0.324
12469-PeCDD	NotFnd		0.9425						1.06		8381.859	0.324
12368-PeCDD	NotFnd		0.9588						1.06		8381.859	0.324
12478-PeCDD	NotFnd		0.9643						1.06		8381.859	0.324
12379-PeCDD	NotFnd		0.9673						1.06		8381.859	0.324
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		8381.859	0.324
12346/12347-PeCDD	NotFnd		0.9859						1.06		8381.859	0.324
12378-PeCDD	NotFnd		**1.0005**						**1.06**		**8381.859**	**0.324**
12367-PeCDD	NotFnd		1.0032						1.06		8381.859	0.324
12389-PeCDD	NotFnd		1.0135						1.06		8381.859	0.324
124679/124689-HxCDD	NotFnd		0.9544						1.05		4135.373	0.177
123468-HxCDD	NotFnd		0.9716						1.05		4135.373	0.177
123679/123689-HxCDD	NotFnd		0.9793						1.05		4135.373	0.177
123469-HxCDD	NotFnd		0.9829						1.05		4135.373	0.177
123478-HxCDD	NotFnd		**1.0003**						1.06		**4135.373**	**0.189**
123678-HxCDD	NotFnd		**1.0033**						1.08		**4135.373**	**0.179**
123467-HxCDD	NotFnd		1.0084						1.05		4135.373	0.177
123789-HxCDD	NotFnd		**1.0110**						1.02		**4135.373**	**0.166**

Lab ID: MB1_18718_DF_SDS | **Acq'd:** 15 Dec 2021 17:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5966_18718 | **UTP:** 16-Dec-2021 09:47:35 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 204-041-YDT

Datafile: 211215R09 | **Report:** 16 Dec 2021 10:54 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

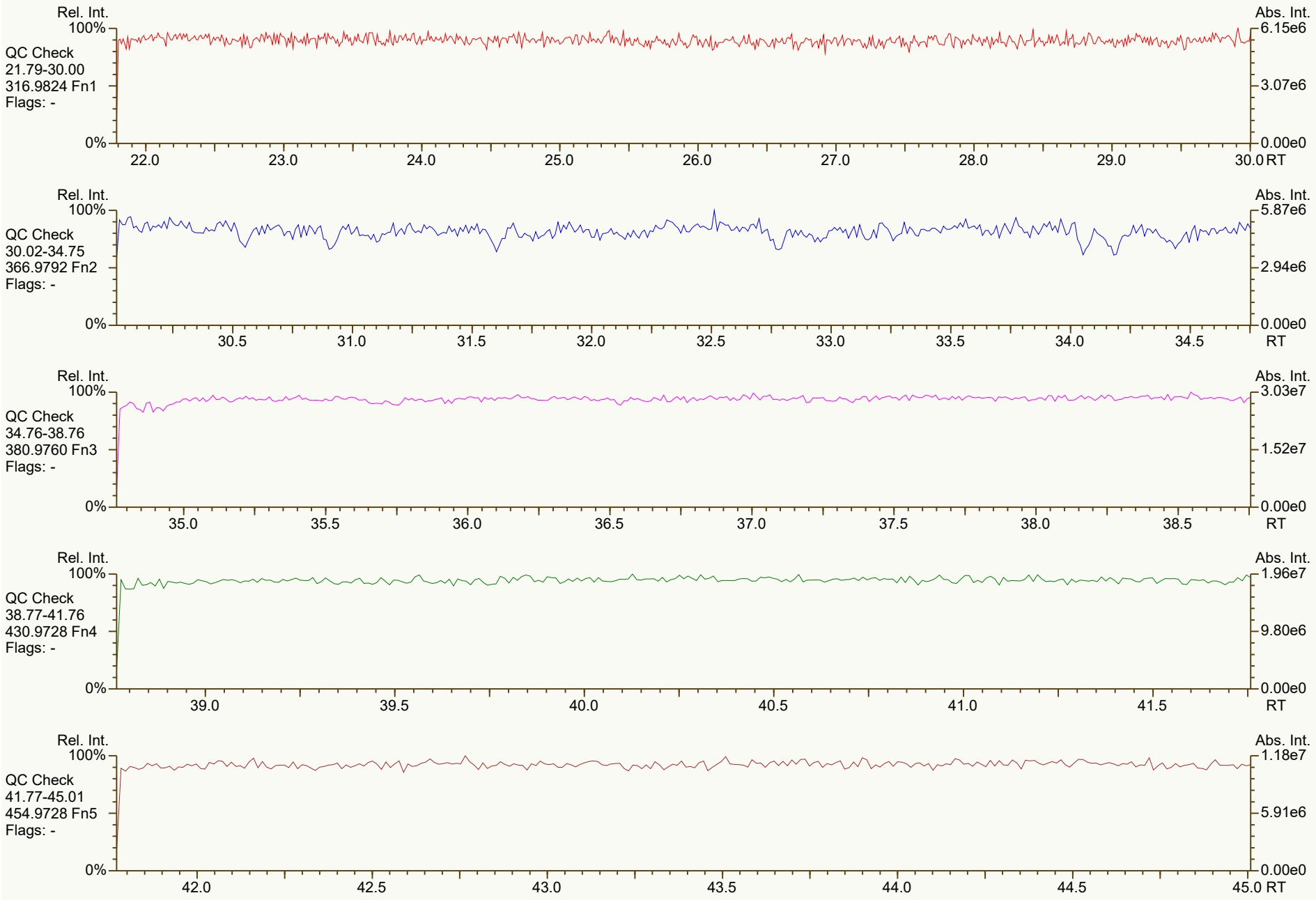
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9843						0.97		5414.31	0.259
1234678-HpCDD	**NotFnd**		**1.0003**						**0.97**		**5414.31**	**0.259**
OCDD	**NotFnd**		**1.0003**						**1.07**		**6818.402**	**0.71**
OCDD-a	NotFnd		1.0001						0.07		9078.22	15.3
1368-TCDF	NotFnd		0.8230						0.96		5730.649	0.183
1468-TCDF	NotFnd		0.8443						0.96		5730.649	0.183
2468-TCDF	NotFnd		0.8672						0.96		5730.649	0.183
1346/1246-TCDF	NotFnd		0.8802						0.96		5730.649	0.183
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		5730.649	0.183
1348-TCDF	NotFnd		0.8952						0.96		5730.649	0.183
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		5730.649	0.183
1268-TCDF	NotFnd		0.9136						0.96		5730.649	0.183
1467-TCDF	NotFnd		0.9185						0.96		5730.649	0.183
1478-TCDF	NotFnd		0.9247						0.96		5730.649	0.183
1369/1237-TCDF	NotFnd		0.9381						0.96		5730.649	0.183
2467-TCDF	NotFnd		0.9427						0.96		5730.649	0.183
2368-TCDF	NotFnd		0.9484						0.96		5730.649	0.183
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		5730.649	0.183
1278-TCDF	NotFnd		0.9682						0.96		5730.649	0.183
1349-TCDF	NotFnd		0.9725						0.96		5730.649	0.183
1267-TCDF	NotFnd		0.9782						0.96		5730.649	0.183
2346/1249-TCDF	NotFnd		0.9846						0.96		5730.649	0.183
2347/1279-TCDF	NotFnd		0.9926						0.96		5730.649	0.183
2348-TCDF	NotFnd		0.9966						0.96		5730.649	0.183
2378-TCDF	**NotFnd**		**1.0006**						**0.96**		**5730.649**	**0.183**
2367/3467-TCDF	NotFnd		1.0139						0.96		5730.649	0.183
1269-TCDF	NotFnd		1.0226						0.96		5730.649	0.183
1239-TCDF	NotFnd		1.0322						0.96		5730.649	0.183
1289-TCDF	NotFnd		1.0729						0.96		5730.649	0.183
13468/12468-PeCDF	NotFnd		0.9135						0.94		7150.233	0.195
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		5756.038	0.157
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		5756.038	0.157
14678-PeCDF	NotFnd		0.9693						0.94		5756.038	0.157
13479-PeCDF	NotFnd		0.9723						0.94		5756.038	0.157
13469/12479-PeCDF	NotFnd		0.9799						0.94		5756.038	0.157
12346-PeCDF	NotFnd		0.9842						0.94		5756.038	0.157

Lab ID: MB1_18718_DF_SDS | **Acq'd:** 15 Dec 2021 17:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5966_18718 | **UTP:** 16-Dec-2021 09:47:35 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 204-041-YDT

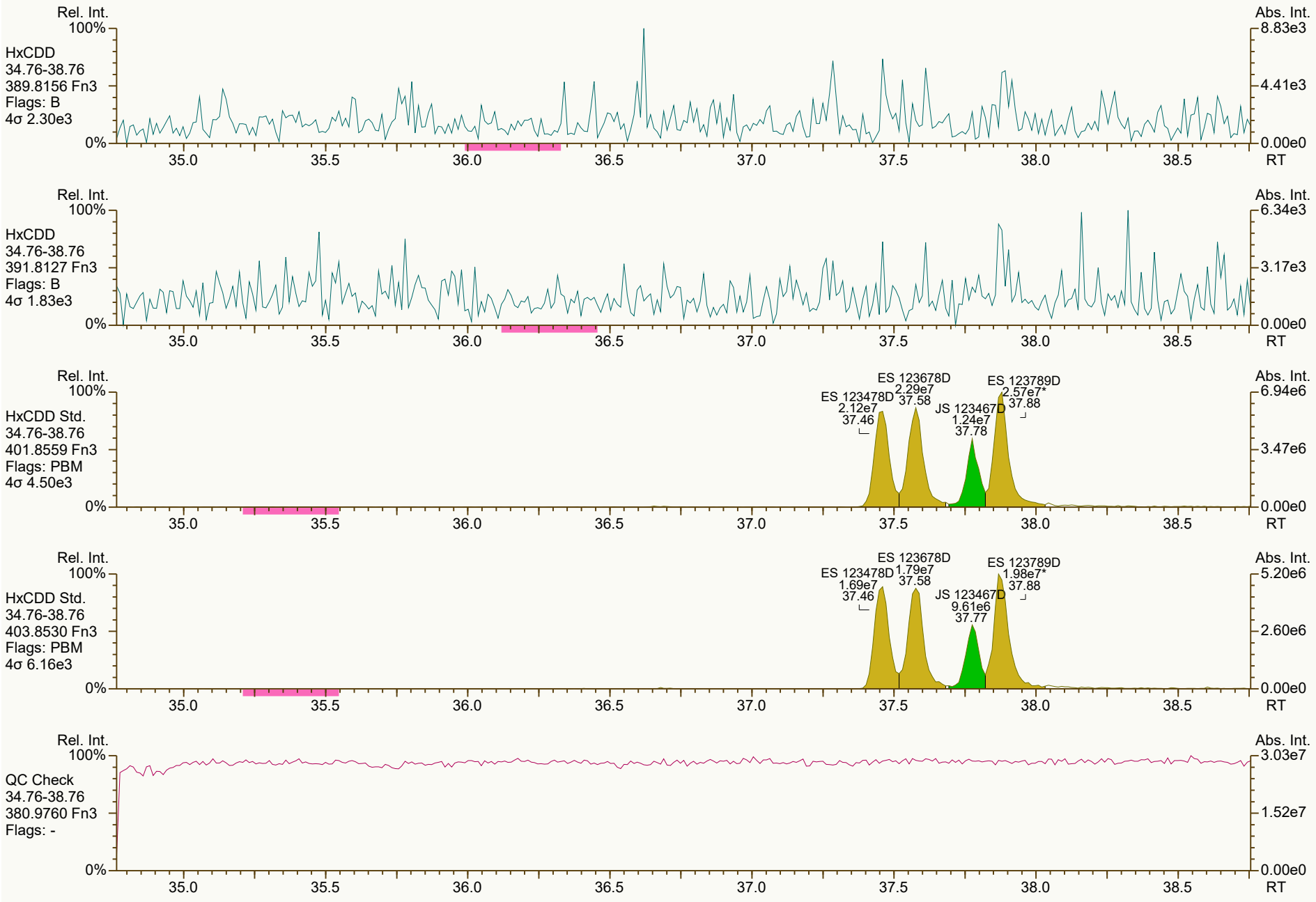
Datafile: 211215R09 | **Report:** 16 Dec 2021 10:54 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		5756.038	0.157
12347-PeCDF	NotFnd		0.9893						0.94		5756.038	0.157
12348-PeCDF	NotFnd		0.9941						0.94		5756.038	0.157
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**5756.038**	**0.149**
12678/12367-PeCDF	NotFnd		1.0090						0.94		5756.038	0.157
12379-PeCDF	NotFnd		1.0143						0.94		5756.038	0.157
12679-PeCDF	NotFnd		0.9929						0.94		5756.038	0.157
23467/12369-PeCDF	NotFnd		0.9966						0.94		5756.038	0.157
23478-PeCDF	**NotFnd**		**1.0006**						**0.94**		**5756.038**	**0.166**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5756.038	0.157
12349-PeCDF	NotFnd		1.0102						0.94		5756.038	0.157
12389-PeCDF	NotFnd		1.0325						0.94		5756.038	0.157
123468-HxCDF	NotFnd		0.9628						1.16		5090.064	0.16
124678/134678-HxCDF	NotFnd		0.9683						1.16		5090.064	0.16
134679-HxCDF	NotFnd		0.9746						1.16		5090.064	0.16
124679-HxCDF	NotFnd		0.9798						1.16		5090.064	0.16
124689-HxCDF	NotFnd		0.9859						1.16		5090.064	0.16
123467-HxCDF	NotFnd		0.9972						1.16		5090.064	0.16
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**5090.064**	**0.156**
123678-HxCDF	**NotFnd**		**1.0004**						**1.13**		**5090.064**	**0.123**
123479-HxCDF	NotFnd		1.0049						1.16		5090.064	0.16
123469-HxCDF	NotFnd		1.0088						1.16		5090.064	0.16
123679-HxCDF	NotFnd		0.9943						1.16		5090.064	0.16
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**5090.064**	**0.171**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		5090.064	0.16
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**5090.064**	**0.217**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		5090.064	0.16
1234678-HpCDF	**NotFnd**		**1.0003**						**1.36**		**5153.618**	**0.105**
1234679-HpCDF	NotFnd		1.0067						1.33		5153.618	0.157
1234689-HpCDF	NotFnd		1.0100						1.33		5153.618	0.157
1234789-HpCDF	**NotFnd**		**1.0003**						**1.30**		**5153.618**	**0.263**
OCDF	**NotFnd**		**1.0002**						**1.03**		**6271.35**	**0.723**
OCDF-a	NotFnd		1.0002						0.06		8764.216	17.5


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.15e6
3.07e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.87e6
2.94e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.03e7
1.52e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.96e7
9.80e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 7.57e3
0%
Abs. Int.
2.98e4
1.49e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 4.65e3
0%
Abs. Int.
2.45e4
1.22e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.23e3
0%
CS 37Cl-2378D
2.75e7
28.26
Abs. Int.
6.25e6
3.12e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.52e4
0%
JS 1234D
2.90e7
27.58
ES 2378D
2.38e7
28.23
Abs. Int.
6.33e6
3.16e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 7.68e3
0%
JS 1234D
3.65e7
27.58
ES 2378D
3.08e7
28.24
Abs. Int.
8.10e6
4.05e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: B
4σ 4.36e3
0%
Abs. Int.
9.89e3
4.94e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: B
4σ 4.02e3
0%
Abs. Int.
1.07e4
5.37e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 4.75e3
0%
CS 12347D
3.05e7
33.09
ES 12378D
3.07e7*
33.58
Abs. Int.
8.13e6
4.07e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 5.59e3
0%
CS 12347D
1.84e7
33.09
ES 12378D
1.85e7*
33.58
Abs. Int.
4.94e6
2.47e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.87e6
2.94e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

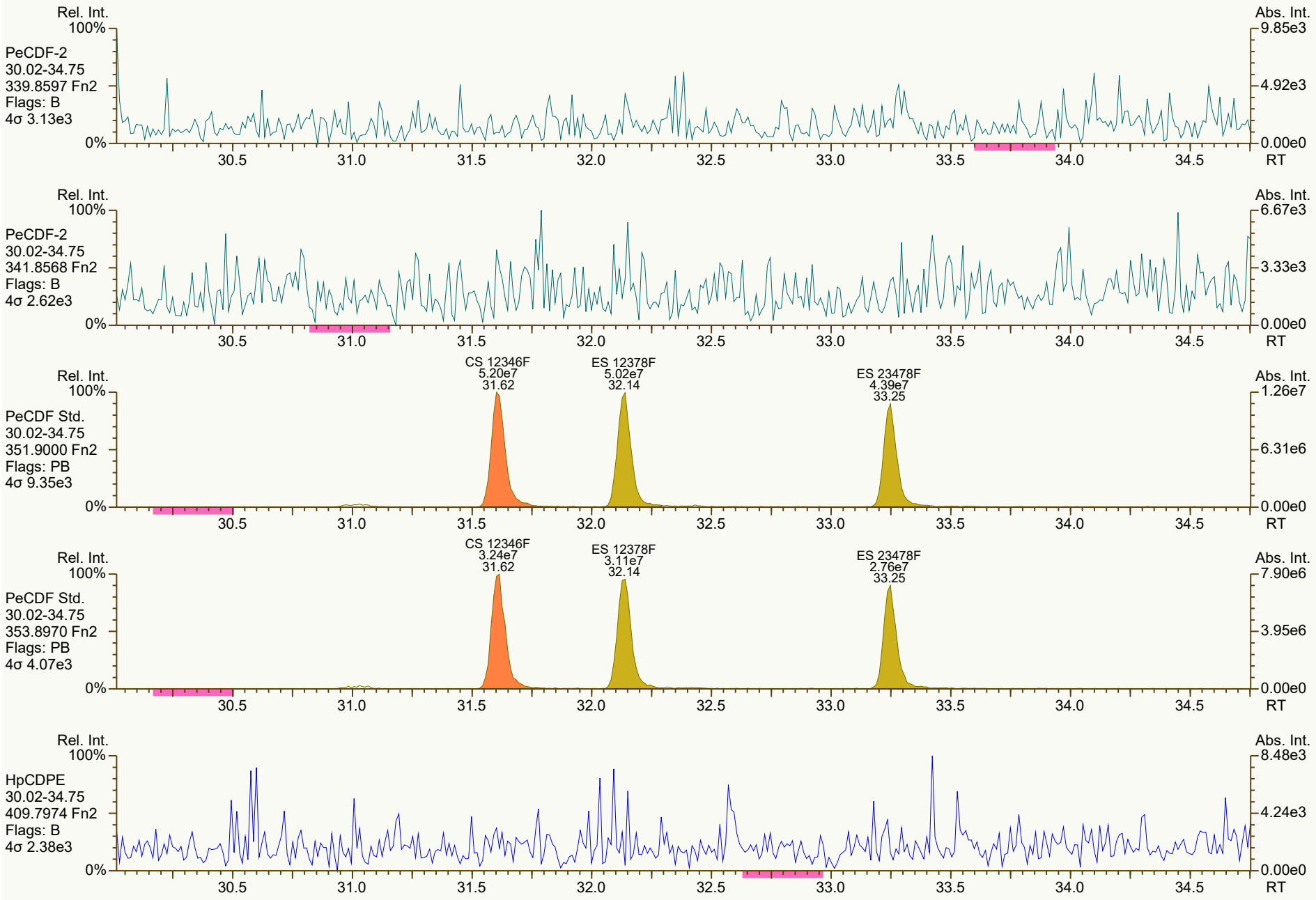

Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: B
4σ 2.30e3
0%
Abs. Int.
8.83e3
4.41e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: B
4σ 1.83e3
0%
Abs. Int.
6.34e3
3.17e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 4.50e3
0%
ES 123478D
2.12e7
37.46
ES 123678D
2.29e7
37.58
JS 123467D
1.24e7
37.78
ES 123789D
2.57e7*
37.88
Abs. Int.
6.94e6
3.47e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 6.16e3
0%
ES 123478D
1.69e7
37.46
ES 123678D
1.79e7
37.58
JS 123467D
9.61e6
37.77
ES 123789D
1.98e7*
37.88
Abs. Int.
5.20e6
2.60e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.03e7
1.52e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

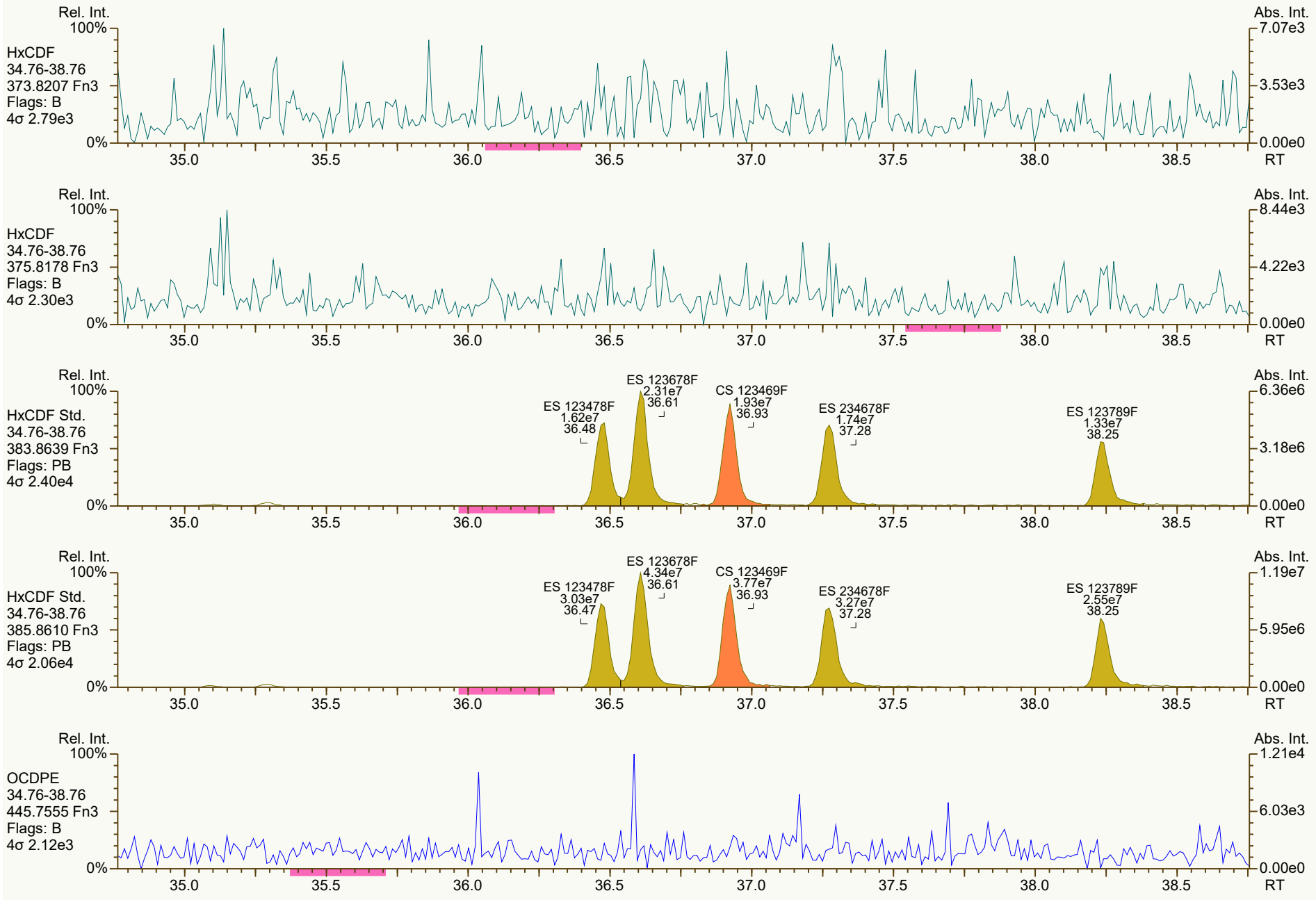

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: B
4σ 3.17e3
0%
Abs. Int.
8.45e3
4.22e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: B
4σ 2.25e3
0%
Abs. Int.
8.36e3
4.18e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
ES 1234678D
1.69e7*
40.51
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 3.33e3
0%
Abs. Int.
5.59e6
2.79e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
ES 1234678D
1.56e7*
40.51
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 3.52e3
0%
Abs. Int.
5.47e6
2.74e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.96e7
9.80e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

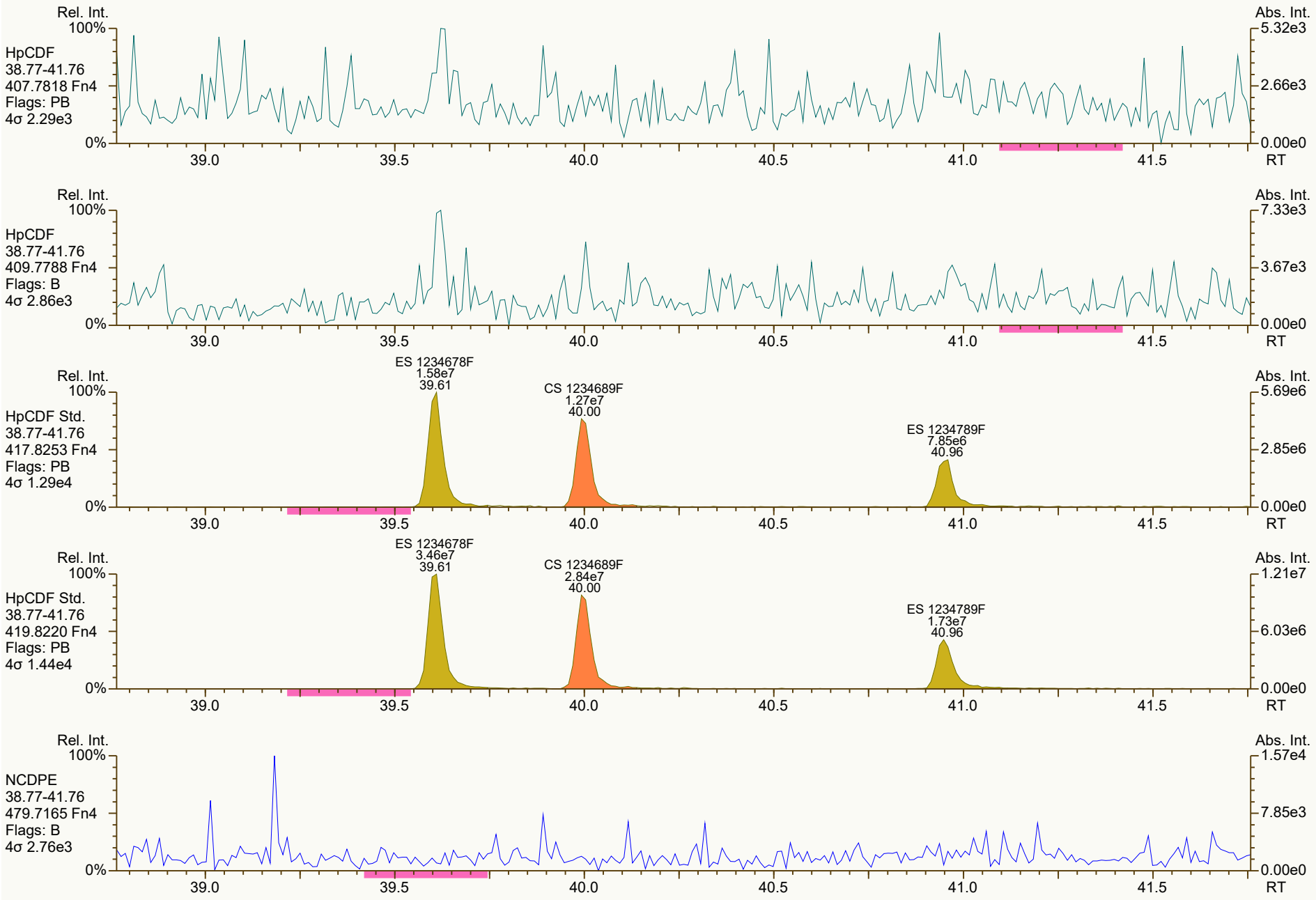

Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: B
4σ 4.17e3
0%
Abs. Int.
1.23e4
6.13e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 2.65e3
0%
Abs. Int.
2.69e4
1.34e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.51e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.64e3
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.63e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 3.84e3
0%
Abs. Int.
4.59e6
2.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: MB1_18718_DF_SDS
Sample ID: Method Blank
Acq: 15-Dec-2021 17:37:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: PSW Datafile: 211215R09
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: B
4σ 3.36e3
7.70e3
3.85e3
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: B
4σ 2.37e3
1.45e4
7.24e3
JS 1234F
4.44e7*
26.01
ES 2378F
3.25e7
27.38
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 2.11e4
8.76e6
4.38e6
JS 1234F
5.80e7*
26.01
ES 2378F
4.24e7
27.37
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.70e4
1.18e7
5.89e6
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.54e3
1.11e4
5.54e3
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\MB1_18718_DF_SDS.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1124, 8947, 0554 scc: 204-041
PKD: 16-Dec-2021 08:17 Printed: 16-Dec-2021 10:59 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
9.60e3
4.80e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 4.35e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.29e4
6.43e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 2.80e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
6.15e6
3.07e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: B
4σ 3.13e3
0%
Abs. Int.
9.85e3
4.92e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: B
4σ 2.62e3
0%
Abs. Int.
6.67e3
3.33e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 9.35e3
0%
CS 12346F
5.20e7
31.62
ES 12378F
5.02e7
32.14
ES 23478F
4.39e7
33.25
Abs. Int.
1.26e7
6.31e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.07e3
0%
CS 12346F
3.24e7
31.62
ES 12378F
3.11e7
32.14
ES 23478F
2.76e7
33.25
Abs. Int.
7.90e6
3.95e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: B
4σ 2.79e3
0%
Abs. Int.
7.07e3
3.53e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: B
4σ 2.30e3
0%
Abs. Int.
8.44e3
4.22e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 2.40e4
0%
ES 123478F
1.62e7
36.48
ES 123678F
2.31e7
36.61
CS 123469F
1.93e7
36.93
ES 234678F
1.74e7
37.28
ES 123789F
1.33e7
38.25
Abs. Int.
6.36e6
3.18e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 2.06e4
0%
ES 123478F
3.03e7
36.47
ES 123678F
4.34e7
36.61
CS 123469F
3.77e7
36.93
ES 234678F
3.27e7
37.28
ES 123789F
2.55e7
38.25
Abs. Int.
1.19e7
5.95e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.12e3
0%
Abs. Int.
1.21e4
6.03e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 2.29e3
0%
Abs. Int.
5.32e3
2.66e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: B
4σ 2.86e3
0%
Abs. Int.
7.33e3
3.67e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.29e4
0%
ES 1234678F
1.58e7
39.61
CS 1234689F
1.27e7
40.00
ES 1234789F
7.85e6
40.96
Abs. Int.
5.69e6
2.85e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 1.44e4
0%
ES 1234678F
3.46e7
39.61
CS 1234689F
2.84e7
40.00
ES 1234789F
1.73e7
40.96
Abs. Int.
1.21e7
6.03e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.76e3
0%
Abs. Int.
1.57e4
7.85e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.77e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 2.50e3
0%
Abs. Int.
8.65e3
4.33e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.41e7
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.73e3
0%
Abs. Int.
3.97e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.59e7
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 3.81e3
0%
Abs. Int.
4.29e6
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.89e3
0%
Abs. Int.
1.11e4
5.57e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5966_18718_DF_001 **Acq'd:** 15 Dec 2021 18:25 PSW **Wt/Vol:** 10.05 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-O-5 **UTP:** 16-Dec-2021 09:47:36 PSW **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 108-875-RWC

Datafile: 211215R10 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26		1.0008	1.0007	-0.2	1.80E+05	0.73	Y	1.34	0.594	7359.503	0.279
12378-PeCDD	33.61	J EMPC	1.0005	1.0005	0	1.40E+05	1.79	N	1.06	0.677	7086.898	0.32
123478-HxCDD	37.48	J	1.0003	1.0003	0	2.60E+05	1.24	Y	1.06	1.63	6534.61	0.365
123678-HxCDD	37.61		1.0033	1.0037	+0.9	1.15E+06	1.40	Y	1.08	6.49	6534.61	0.374
123789-HxCDD	37.90		1.0110	1.0115	+1.1	6.02E+05	1.25	Y	1.02	3.07	6534.61	0.326
1234678-HpCDD	40.53		1.0003	1.0003	0	3.35E+07	1.03	Y	0.97	235	6311.493	0.329
OCDD	43.07		1.0003	1.0003	0	2.47E+08	0.91	Y	1.07	2,880	9841.047	0.97
2378-TCDF	27.39		1.0006	1.0004	-0.3	1.14E+06	0.84	Y	0.96	3.75	5803.021	0.246
12378-PeCDF	32.16	J EMPC	1.0006	1.0005	-0.2	2.45E+05	1.25	N	0.95	0.9	6293.412	0.228
23478-PeCDF	33.28	J	1.0006	1.0006	0	6.20E+05	1.51	Y	0.94	2.36	6293.412	0.235
123478-HxCDF	36.50	J	1.0004	1.0004	0	4.82E+05	1.15	Y	1.23	1.98	13472.346	0.477
123678-HxCDF	36.63		1.0004	1.0003	-0.2	7.22E+05	1.38	Y	1.13	2.55	13472.346	0.454
234678-HxCDF	37.30	J EMPC	1.0005	1.0004	-0.2	5.43E+05	1.45	N	1.15	2.28	13472.346	0.552
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	13472.346	0.551
1234678-HpCDF	39.63		1.0003	1.0002	-0.2	1.11E+07	1.07	Y	1.36	48.1	4954.547	0.147
1234789-HpCDF	40.98	J	1.0003	1.0002	-0.2	3.94E+05	1.01	Y	1.30	2.15	4954.547	0.23
OCDF	43.25		1.0002	1.0002	0	7.76E+06	0.91	Y	1.03	72.6	7516.712	0.643

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24		1.0237	1.0239	+0.3	4.49E+07	0.77	Y	1.03	76.6
ES 12378-PeCDD	33.59		1.2158	1.2179	+4.2	3.89E+07	1.58	Y	1.03	66.2
ES 123478-HxCDD	37.47		0.9920	0.9916	-0.9	3.01E+07	1.26	Y	0.99	74.2
ES 123678-HxCDD	37.59		0.9949	0.9947	-0.5	3.27E+07	1.24	Y	0.97	82.3
ES 123789-HxCDD	37.89		1.0026	1.0029	+0.7	3.84E+07	1.24	Y	1.12	83.7
ES 1234678-HpCDD	40.52		1.0713	1.0723	+2.4	2.91E+07	1.09	Y	0.99	71.8
ES OCDD	43.06		1.1385	1.1396	+2.8	3.19E+07	0.89	Y	0.78	50.3
ES 2378-TCDF	27.38		1.0519	1.0526	+1.2	6.30E+07	0.79	Y	1.08	68.5
ES 12378-PeCDF	32.15		1.2331	1.2357	+5.0	5.71E+07	1.60	Y	0.93	72.2
ES 23478-PeCDF	33.26		1.2754	1.2784	+6.0	5.58E+07	1.64	Y	0.92	71.3
ES 123478-HxCDF	36.48		0.9656	0.9655	-0.2	3.92E+07	0.51	Y	1.14	84
ES 123678-HxCDF	36.62		0.9693	0.9693	0	4.98E+07	0.52	Y	1.30	94.1
ES 234678-HxCDF	37.29		0.9869	0.9868	-0.2	4.12E+07	0.54	Y	1.20	84
ES 123789-HxCDF	38.25		1.0121	1.0124	+0.7	3.82E+07	0.55	Y	1.14	82.3
ES 1234678-HpCDF	39.62		1.0478	1.0486	+1.9	3.38E+07	0.45	Y	0.95	87.2
ES 1234789-HpCDF	40.97		1.0832	1.0843	+2.7	2.81E+07	0.50	Y	0.85	81.3
ES OCDF	43.24		1.1434	1.1444	+2.6	4.15E+07	0.93	Y	0.93	54.9

Lab ID: B5966_18718_DF_001 **Acq'd:** 15 Dec 2021 18:25 PSW **Wt/Vol:** 10.05 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-O-5 **UTP:** 16-Dec-2021 09:47:36 PSW **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 108-875-RWC

Datafile: 211215R10 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	5.68E+07	0.77	Y	-	-	
JS 1234-TCDF	26.02		-	-	-	8.48E+07	0.78	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.04E+07	1.34	Y	-	-	
CS 37Cl-2378-TCDD	28.27		1.0245	1.0248	+0.5	2.16E+07	n/a	-	1.31	72.7	
CS 12347-PeCDD	33.09		1.1978	1.1997	+3.8	3.74E+07	1.59	Y	0.89	73.7	
CS 12346-PeCDF	31.62		1.2130	1.2154	+4.6	6.02E+07	1.66	Y	0.87	81.8	
CS 123469-HxCDF	36.94		0.9775	0.9775	0	4.57E+07	0.51	Y	1.09	103	
CS 1234689-HpCDF	40.01		1.0580	1.0590	+2.4	3.65E+07	0.46	Y	0.86	104	
~~SS 37Cl-2378-TCDD~~	~~28.27~~		~~1.0245~~	~~1.0248~~	~~+0.5~~	~~2.16E+07~~	~~n/a~~		~~1.26~~	~~95.5~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~3.74E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~111~~	CL 17Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2154~~	~~+4.6~~	~~6.02E+07~~	~~1.66~~	~~Y~~	~~0.93~~	~~113~~	
~~SS 123469-HxCDF~~	~~36.94~~		~~0.9775~~	~~0.9775~~	~~0~~	~~4.57E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~109~~	
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~3.65E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~118~~	

Totals	Conc	EMPC
Total TCDD	0.594	2.08
Total PeCDD	5.31	7.62
Total HxCDD	57.1	57.1
Total HpCDD	500	500
Total Tetra-Octa Dioxins	3440	3440
Total TCDF	18.1	23.4
Total PeCDF	18.3	22.3
Total HxCDF	42.5	44.8
Total HpCDF	117	117
Total Tetra-Octa Furans	268	280
Total Tetra-Octa Dioxins & Furans	3710	3720

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.649	0.73
Response	1.93E+05	1.80E+05

Lab ID: B5966_18718_DF_001 **Acq'd: 15 Dec 2021 18:25 PSW** **Wt/Vol: 10.05 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-SPS-NE-O-5 **UTP: 16-Dec-2021 09:47:36 PSW** **J-level: 0.498 pg/g** **Split: 1** **Checkcode: 108-875-RWC**

Datafile: 211215R10 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.61	EMPC	0.8726	0.8714	-1.8	2.43E+05	0.89	N	1.34	0.799	7359.503	0.279
1379-TCDD	24.95	J EMPC	0.8851	0.8835	-2.4	1.43E+05	0.99	N	1.34	0.471	7359.503	0.279
1369-TCDD	NotFnd		0.9002						1.34		7359.503	0.279
1469-TCDD	26.17	J EMPC	0.9275	0.9266	-1.4	6.69E+04	1.20	N	1.34	0.22	7359.503	0.279
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		7359.503	0.279
1378-TCDD	NotFnd		0.9427						1.34		7359.503	0.279
1268-TCDD	NotFnd		0.9498						1.34		7359.503	0.279
1478-TCDD	NotFnd		0.9584						1.34		7359.503	0.279
1279-TCDD	NotFnd		0.9644						1.34		7359.503	0.279
1234/1269-TCDD	NotFnd		0.9766						1.34		7359.503	0.279
1236-TCDD	NotFnd		0.9813						1.34		7359.503	0.279
1237/1238-TCDD	NotFnd		0.9906						1.34		7359.503	0.279
1239-TCDD	NotFnd		0.9952						1.34		7359.503	0.279
2378-TCDD	**28.26**		**1.0008**	1.0007	**-0.2**	1.80E+05	0.73	Y	**1.34**	**0.594**	**7359.503**	**0.279**
1278-TCDD	NotFnd		1.0122						1.34		7359.503	0.279
1267-TCDD	NotFnd		1.0168						1.34		7359.503	0.279
1289-TCDD	NotFnd		1.0349						1.34		7359.503	0.279
12479/12468-PeCDD	31.11	J	0.9267	0.9261	-1.1	5.02E+05	1.38	Y	1.06	2.43	7086.898	0.32
12469-PeCDD	31.64	J EMPC	0.9425	0.9419	-1.1	1.62E+05	1.02	N	1.06	0.781	7086.898	0.32
12368-PeCDD	32.19	J	0.9588	0.9584	-0.8	1.96E+05	1.56	Y	1.06	0.946	7086.898	0.32
12478-PeCDD	32.38	J	0.9643	0.9640	-0.6	1.85E+05	1.58	Y	1.06	0.894	7086.898	0.32
12379-PeCDD	32.49	J EMPC	0.9673	0.9672	-0.2	9.35E+04	2.00	N	1.06	0.452	7086.898	0.32
12369/12467/12489-PeCDD	32.74	J	0.9750	0.9746	-0.8	2.16E+05	1.65	Y	1.06	1.04	7086.898	0.32
12346/12347-PeCDD	33.11	J EMPC	0.9859	0.9856	-0.6	8.39E+04	1.16	N	1.06	0.405	7086.898	0.32
12378-PeCDD	33.61	J EMPC	**1.0005**	**1.0005**	**0**	**1.40E+05**	**1.79**	**N**	**1.06**	**0.677**	**7086.898**	**0.32**
12367-PeCDD	NotFnd		1.0032						1.06		7086.898	0.32
12389-PeCDD	NotFnd		1.0135						1.06		7086.898	0.32
124679/124689-HxCDD	35.77		0.9544	0.9547	+0.6	3.14E+06	1.30	Y	1.05	17.6	6534.61	0.353
123468-HxCDD	36.41		0.9716	0.9719	+0.7	5.57E+05	1.30	Y	1.05	3.13	6534.61	0.353
123679/123689-HxCDD	36.71		0.9793	0.9797	+0.9	3.82E+06	1.28	Y	1.05	21.4	6534.61	0.353
123469-HxCDD	36.83		0.9829	0.9829	0	4.59E+05	1.21	Y	1.05	2.57	6534.61	0.353
123478-HxCDD	37.48	J	**1.0003**	**1.0003**	**0**	**2.60E+05**	**1.24**	**Y**	1.06	**1.63**	**6534.61**	**0.365**
123678-HxCDD	37.61		**1.0033**	**1.0037**	**+0.9**	**1.15E+06**	**1.40**	**Y**	1.08	**6.49**	**6534.61**	**0.374**
123467-HxCDD	37.79	J	1.0084	1.0086	+0.5	2.08E+05	1.32	Y	1.05	1.17	6534.61	0.353
123789-HxCDD	37.90		**1.0110**	**1.0115**	**+1.1**	**6.02E+05**	**1.25**	**Y**	1.02	**3.07**	**6534.61**	**0.326**

Lab ID: B5966_18718_DF_001 **Acq'd:** 15 Dec 2021 18:25 PSW **Wt/Vol:** 10.05 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-O-5 **UTP:** 16-Dec-2021 09:47:36 PSW **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 108-875-RWC

Datafile: 211215R10 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

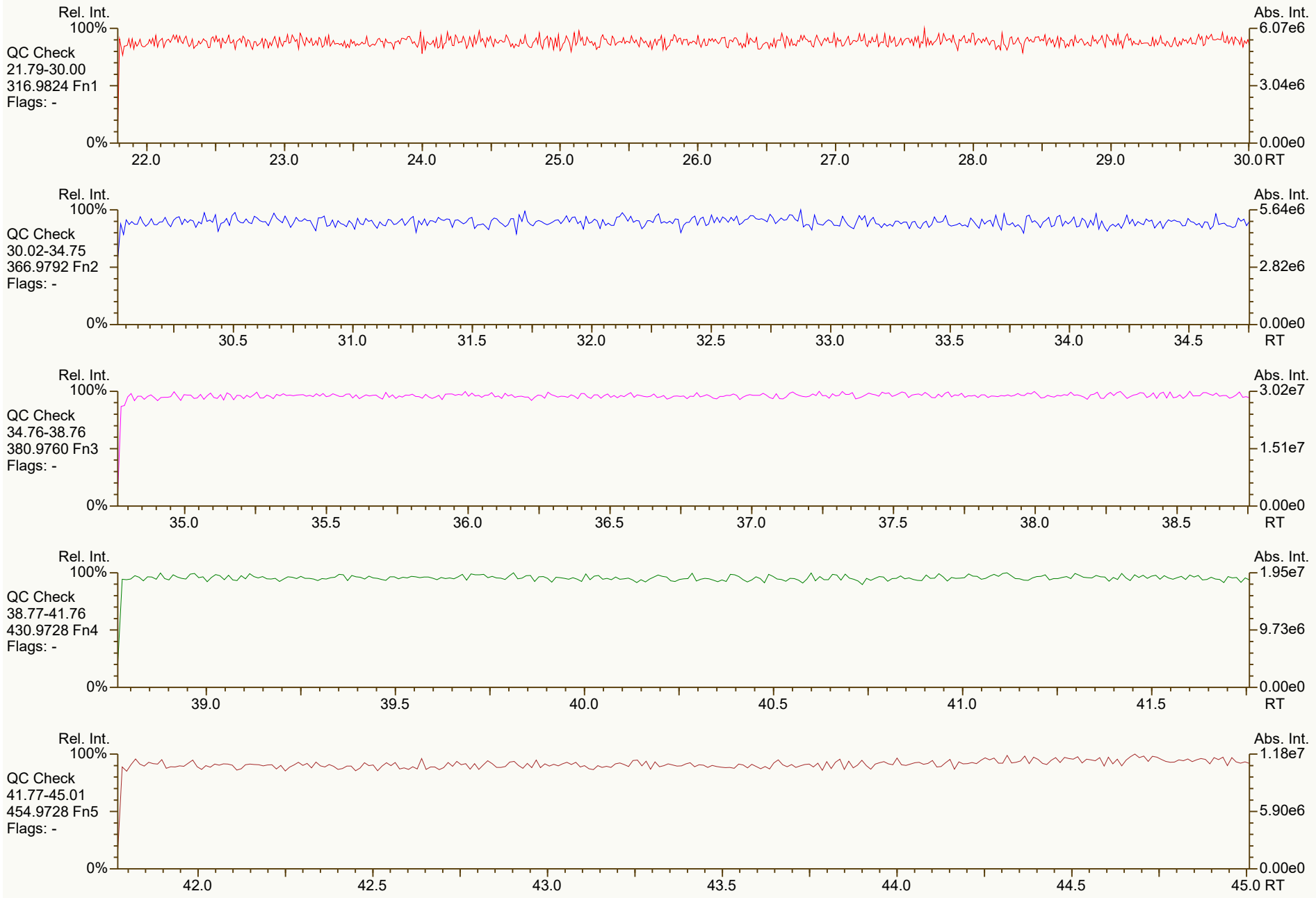
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.88		0.9843	0.9842	-0.2	3.76E+07	1.03	Y	0.97	264	6311.493	0.329
1234678-HpCDD	**40.53**		**1.0003**	**1.0003**	**0**	**3.35E+07**	**1.03**	**Y**	**0.97**	**235**	**6311.493**	**0.329**
OCDD	**43.07**		**1.0003**	**1.0003**	**0**	**2.47E+08**	**0.91**	**Y**	**1.07**	**2,880**	**9841.047**	**0.97**
OCDD-a	43.07		1.0001	1.0002	+0.3	1.51E+07	2.47	Y	0.07	2,850	9564.818	15.3
1368-TCDF	22.44	J EMPC	0.8230	0.8194	-4.8	8.26E+04	0.45	N	0.96	0.272	5803.021	0.246
1468-TCDF	23.05		0.8443	0.8416	-3.7	2.03E+05	0.70	Y	0.96	0.668	5803.021	0.246
2468-TCDF	23.70		0.8672	0.8655	-2.4	4.08E+05	0.70	Y	0.96	1.34	5803.021	0.246
1346/1246-TCDF	24.08	J	0.8802	0.8795	-1.0	1.36E+05	0.74	Y	0.96	0.447	5803.021	0.246
1347/1378/1247-TCDF	24.22		0.8855	0.8846	-1.3	6.40E+05	0.78	Y	0.96	2.11	5803.021	0.246
1348-TCDF	24.48	J	0.8952	0.8939	-1.9	9.35E+04	0.84	Y	0.96	0.307	5803.021	0.246
1248/1367/1379-TCDF	24.59		0.9000	0.8978	-3.2	4.00E+05	0.69	Y	0.96	1.32	5803.021	0.246
1268-TCDF	24.99		0.9136	0.9127	-1.3	3.32E+05	0.88	Y	0.96	1.09	5803.021	0.246
1467-TCDF	25.14		0.9185	0.9179	-0.9	2.00E+05	0.85	Y	0.96	0.658	5803.021	0.246
1478-TCDF	25.29	EMPC	0.9247	0.9237	-1.5	2.41E+05	0.59	N	0.96	0.792	5803.021	0.246
1369/1237-TCDF	25.68		0.9381	0.9376	-0.8	1.53E+05	0.84	Y	0.96	0.502	5803.021	0.246
2467-TCDF	25.80	EMPC	0.9427	0.9421	-0.9	1.81E+05	1.01	N	0.96	0.596	5803.021	0.246
2368-TCDF	25.95		0.9484	0.9477	-1.1	4.50E+05	0.78	Y	0.96	1.48	5803.021	0.246
1238/1234/1678/1469/1236-TCDF	26.04		0.9517	0.9511	-0.9	4.92E+05	0.87	Y	0.96	1.62	5803.021	0.246
1278-TCDF	26.51	EMPC	0.9682	0.9680	-0.3	4.99E+05	0.94	N	0.96	1.64	5803.021	0.246
1349-TCDF	NotFnd		0.9725						0.96		5803.021	0.246
1267-TCDF	26.77	EMPC	0.9782	0.9777	-0.8	1.92E+05	0.93	N	0.96	0.63	5803.021	0.246
2346/1249-TCDF	NotFnd		0.9846						0.96		5803.021	0.246
2347/1279-TCDF	27.17	J EMPC	0.9926	0.9923	-0.5	1.48E+05	1.01	N	0.96	0.486	5803.021	0.246
2348-TCDF	27.27	J EMPC	0.9966	0.9957	-1.5	1.23E+05	0.50	N	0.96	0.406	5803.021	0.246
2378-TCDF	**27.39**		**1.0006**	**1.0004**	**-0.3**	**1.14E+06**	**0.84**	**Y**	**0.96**	**3.75**	**5803.021**	**0.246**
2367/3467-TCDF	27.76		1.0139	1.0138	-0.2	8.62E+05	0.69	Y	0.96	2.84	5803.021	0.246
1269-TCDF	NotFnd		1.0226						0.96		5803.021	0.246
1239-TCDF	NotFnd		1.0322						0.96		5803.021	0.246
1289-TCDF	29.39	J EMPC	1.0729	1.0734	+0.9	1.43E+05	1.25	N	0.96	0.47	5803.021	0.246
13468/12468-PeCDF	29.36		0.9135	0.9134	-0.2	1.80E+06	1.78	Y	0.94	6.73	6397.385	0.235
13678/13467/12467-PeCDF	30.90	J	0.9612	0.9612	0	4.95E+05	1.39	Y	0.94	1.85	6293.412	0.231
12368/13478/12478-PeCDF	31.06		0.9661	0.9661	0	1.39E+06	1.43	Y	0.94	5.2	6293.412	0.231
14678-PeCDF	31.17	J EMPC	0.9693	0.9695	+0.4	1.38E+05	1.07	N	0.94	0.518	6293.412	0.231
13479-PeCDF	NotFnd		0.9723						0.94		6293.412	0.231
13469/12479-PeCDF	NotFnd		0.9799						0.94		6293.412	0.231
12346-PeCDF	31.63	J EMPC	0.9842	0.9840	-0.4	6.41E+04	2.23	N	0.94	0.24	6293.412	0.231

Lab ID: B5966_18718_DF_001 **Acq'd: 15 Dec 2021 18:25 PSW** **Wt/Vol: 10.05 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-SPS-NE-O-5 **UTP: 16-Dec-2021 09:47:36 PSW** **J-level: 0.498 pg/g** **Split: 1** **Checkcode: 108-875-RWC**

Datafile: 211215R10 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.73	J EMPC	0.9868	0.9869	+0.2	3.48E+05	2.10	N	0.94	1.3	6293.412	0.231
12347-PeCDF	31.82	J EMPC	0.9893	0.9898	+1.0	5.32E+04	1.07	N	0.94	0.199	6293.412	0.231
12348-PeCDF	31.95	J	0.9941	0.9939	-0.4	1.04E+05	1.53	Y	0.94	0.388	6293.412	0.231
12378-PeCDF	**32.16**	J EMPC	**1.0006**	**1.0005**	**-0.2**	**2.45E+05**	**1.25**	**N**	**0.95**	**0.9**	**6293.412**	**0.228**
12678/12367-PeCDF	32.45	J	1.0090	1.0094	+0.8	4.63E+05	1.63	Y	0.94	1.73	6293.412	0.231
12379-PeCDF	NotFnd		1.0143						0.94		6293.412	0.231
12679-PeCDF	NotFnd		0.9929						0.94		6293.412	0.231
23467/12369-PeCDF	33.14	J EMPC	0.9966	0.9964	-0.4	2.41E+05	1.91	N	0.94	0.903	6293.412	0.231
23478-PeCDF	**33.28**	J	**1.0006**	**1.0006**	**0**	**6.20E+05**	**1.51**	**Y**	**0.94**	**2.36**	**6293.412**	**0.235**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6293.412	0.231
12349-PeCDF	NotFnd		1.0102						0.94		6293.412	0.231
12389-PeCDF	NotFnd		1.0325						0.94		6293.412	0.231
123468-HxCDF	35.12		0.9628	0.9627	-0.2	9.98E+05	1.24	Y	1.16	4.06	13472.346	0.504
124678/134678-HxCDF	35.32		0.9683	0.9680	-0.6	3.80E+06	1.23	Y	1.16	15.5	13472.346	0.504
134679-HxCDF	NotFnd		0.9746						1.16		13472.346	0.504
124679-HxCDF	NotFnd		0.9798						1.16		13472.346	0.504
124689-HxCDF	35.97		0.9859	0.9859	0	4.31E+06	1.24	Y	1.16	17.5	13472.346	0.504
123467-HxCDF	36.38	J	0.9972	0.9972	0	2.43E+05	1.40	Y	1.16	0.989	13472.346	0.504
123478-HxCDF	**36.50**	J	**1.0004**	**1.0004**	**0**	**4.82E+05**	**1.15**	**Y**	**1.23**	**1.98**	**13472.346**	**0.477**
123678-HxCDF	**36.63**		**1.0004**	**1.0003**	**-0.2**	**7.22E+05**	**1.38**	**Y**	**1.13**	**2.55**	**13472.346**	**0.454**
123479-HxCDF	NotFnd		1.0049						1.16		13472.346	0.504
123469-HxCDF	NotFnd		1.0088						1.16		13472.346	0.504
123679-HxCDF	NotFnd		0.9943						1.16		13472.346	0.504
234678-HxCDF	**37.30**	J EMPC	**1.0005**	**1.0004**	**-0.2**	**5.43E+05**	**1.45**	**N**	**1.15**	**2.28**	**13472.346**	**0.552**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		13472.346	0.504
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**13472.346**	**0.551**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		13472.346	0.504
1234678-HpCDF	**39.63**		**1.0003**	**1.0002**	**-0.2**	**1.11E+07**	**1.07**	**Y**	**1.36**	**48.1**	**4954.547**	**0.147**
1234679-HpCDF	39.88	**J**	1.0067	1.0065	-0.5	2.76E+05	1.11	Y	1.33	1.33	4954.547	0.184
1234689-HpCDF	40.02		1.0100	1.0101	+0.2	1.35E+07	1.05	Y	1.33	65.2	4954.547	0.184
1234789-HpCDF	**40.98**	**J**	**1.0003**	**1.0002**	**-0.2**	**3.94E+05**	**1.01**	**Y**	**1.30**	**2.15**	**4954.547**	**0.23**
OCDF	**43.25**		**1.0002**	**1.0002**	**0**	**7.76E+06**	**0.91**	**Y**	**1.03**	**72.6**	**7516.712**	**0.643**
OCDF-a	43.27	**EMPC**	1.0002	1.0007	+1.3	1.32E+05	1.81	N	0.06	21.3	7947.466	11.8


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.07e6
3.04e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.64e6
2.82e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.02e7
1.51e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.95e7
9.73e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: B5966_18718_DF_001 | Sample ID: 11215131-113021-S-SPS-NE-O-5 | Acq: 15-Dec-2021 18:25:08

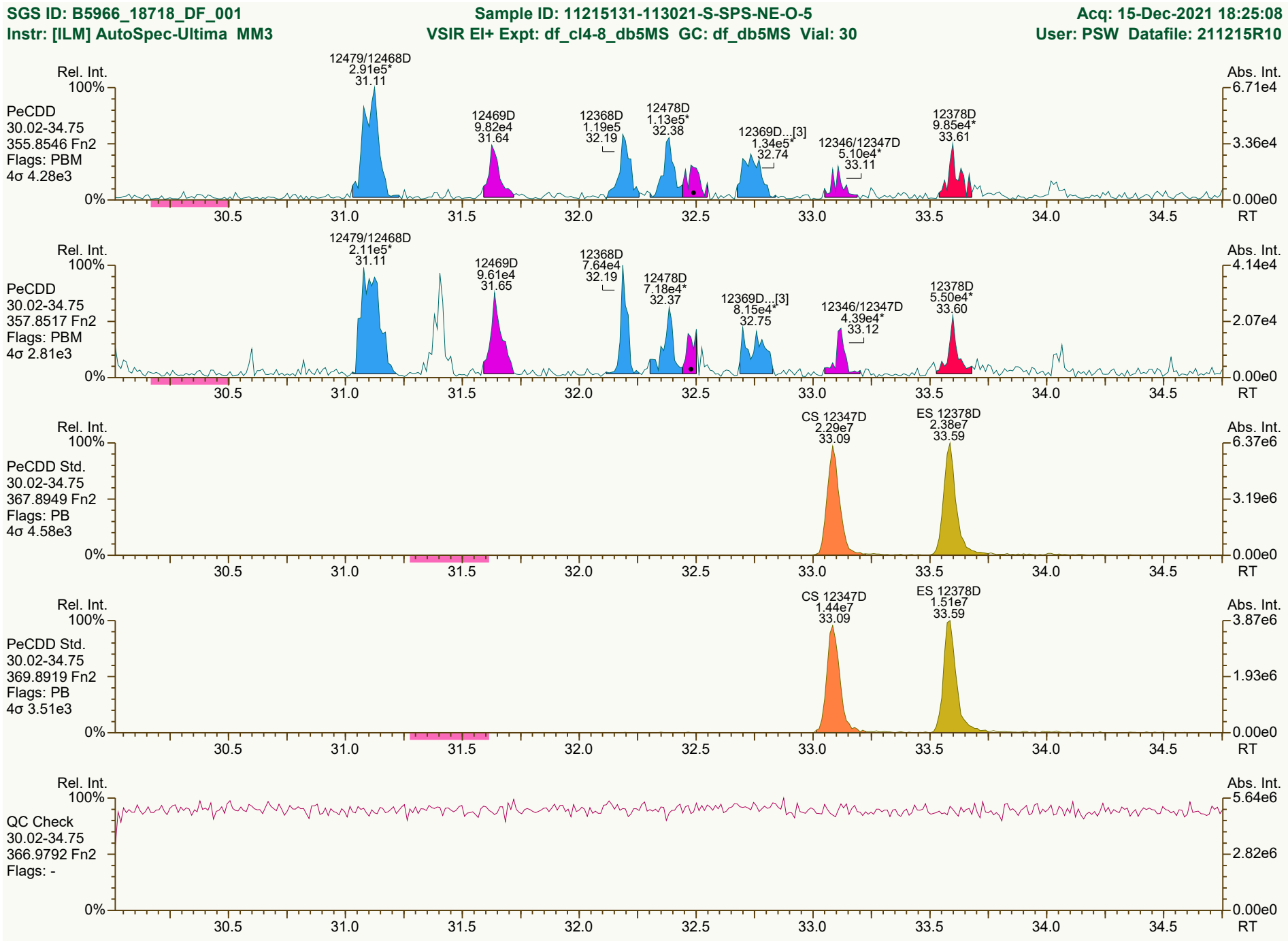
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 30 | User: PSW Datafile: 211215R10



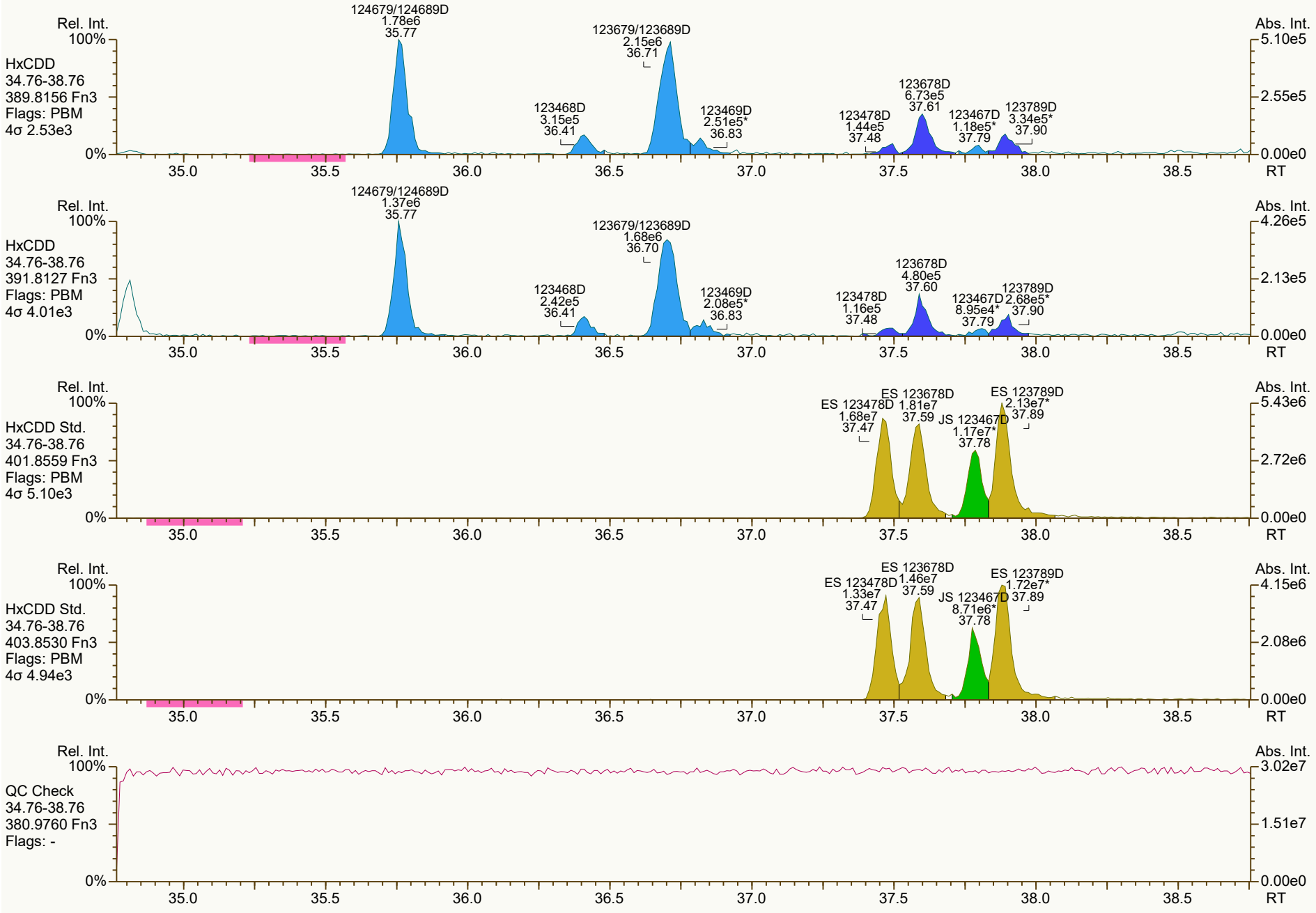
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_001.utp_res, saved 16-Dec-2021 09:47 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4300, 3727, 6555 scc: 108-875 | *PKD: 16-Dec-2021 08:22 Printed: 16-Dec-2021 10:59 Page 2 of 12*

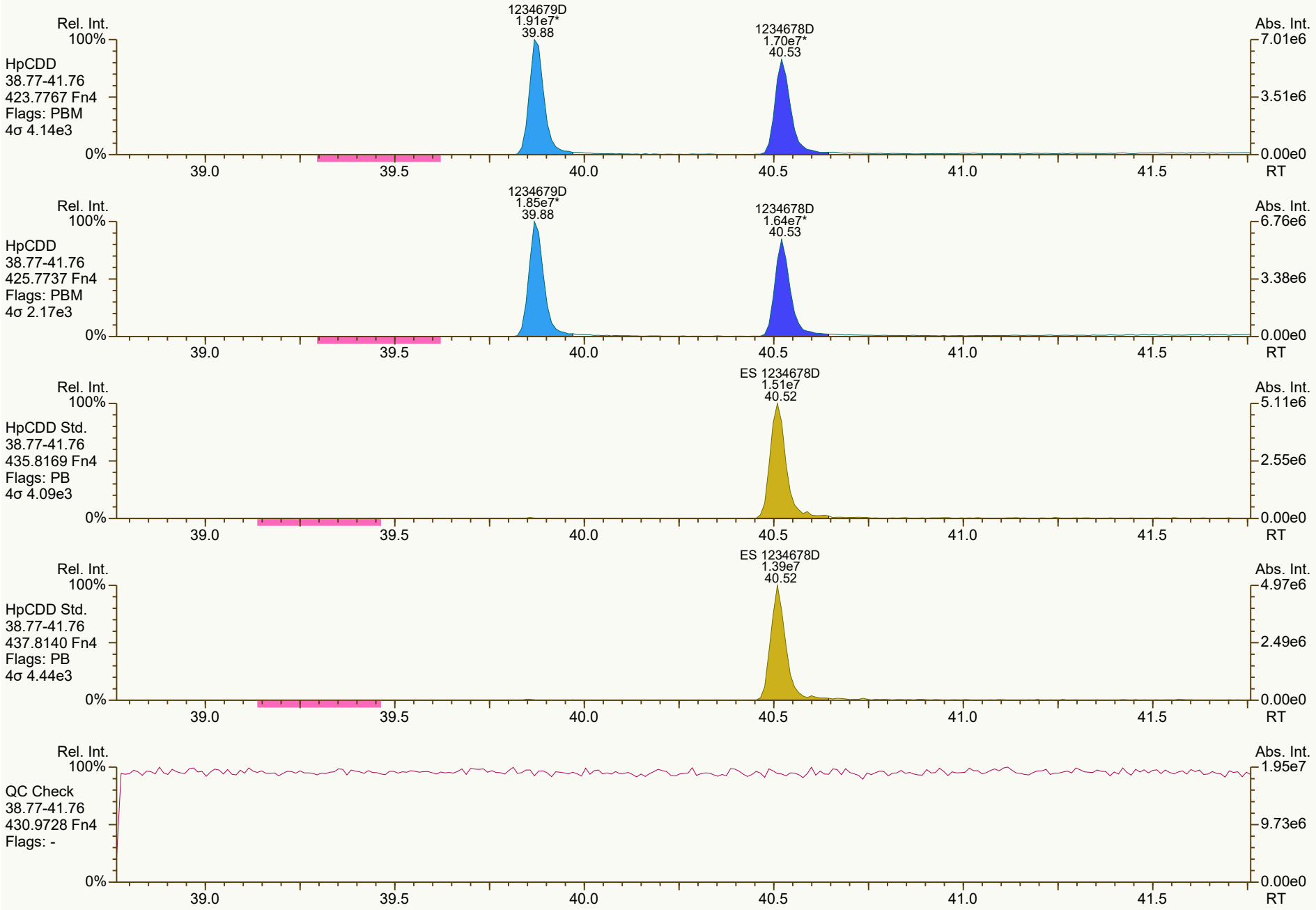
SGS ID: B5966_18718_DF_001 | Sample ID: 11215131-113021-S-SPS-NE-O-5 | Acq: 15-Dec-2021 18:25:08
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 30 | User: PSW Datafile: 211215R10

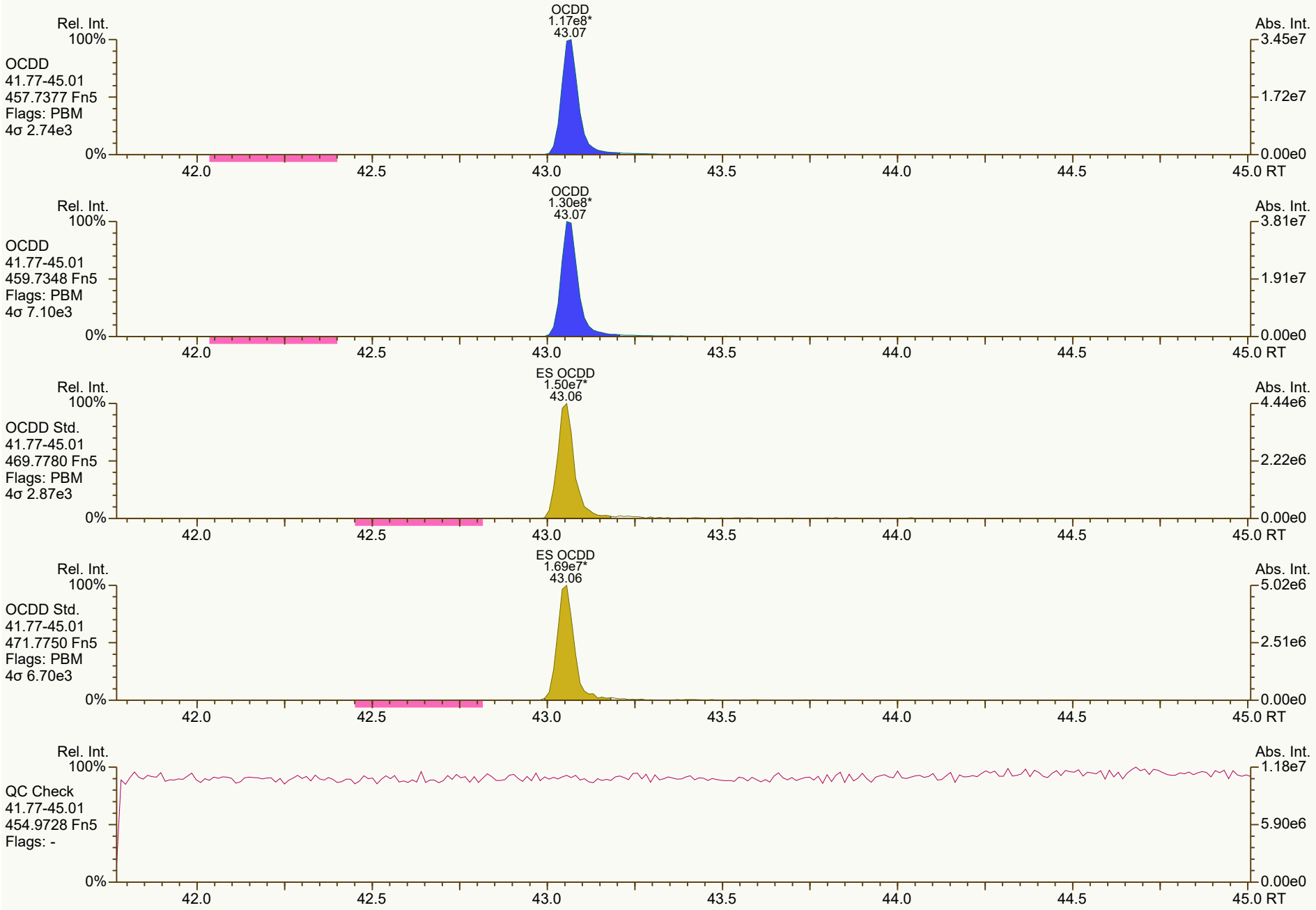


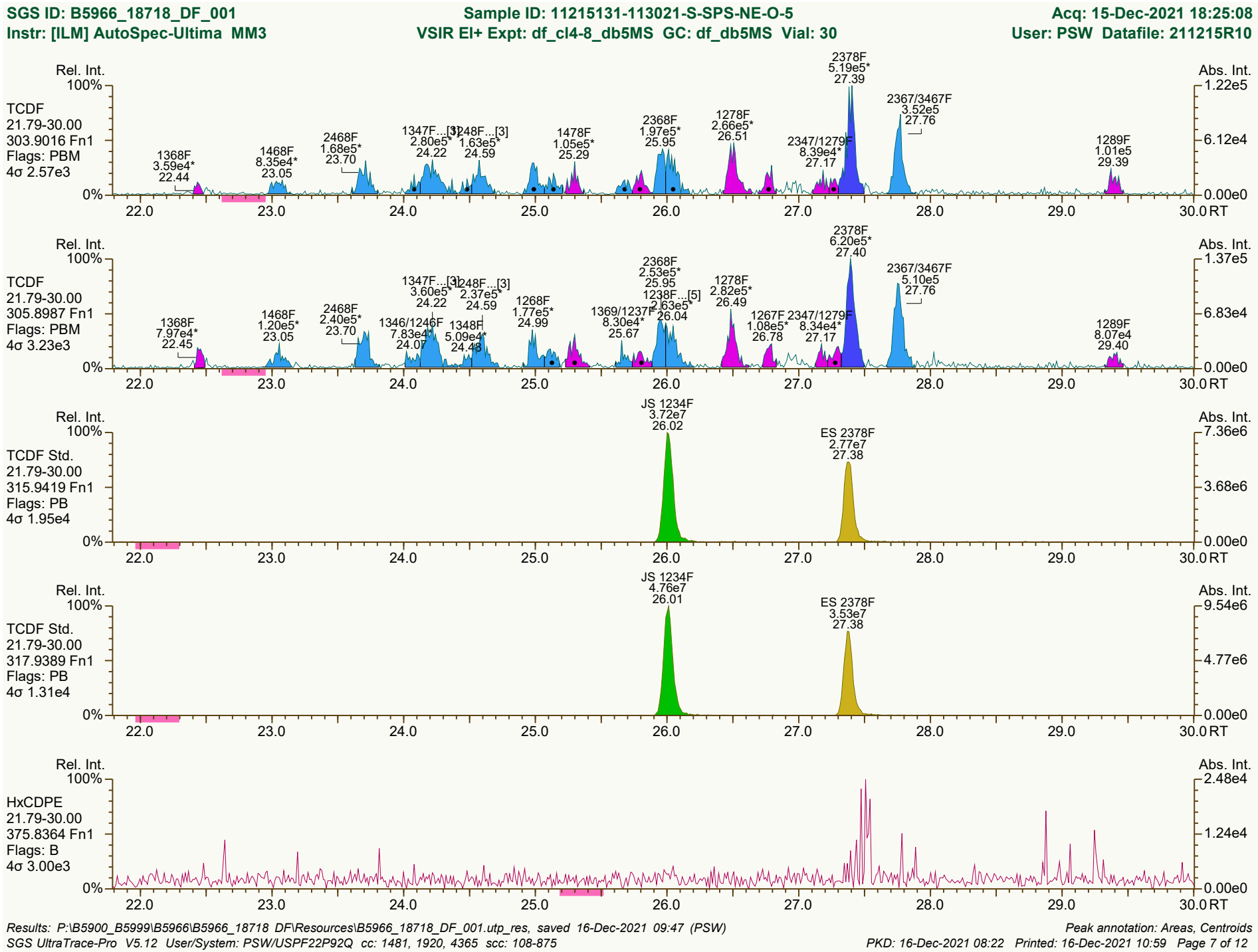
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_001.utp_res, saved 16-Dec-2021 09:47 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1833, 7074 scc: 108-875 | PKD: 16-Dec-2021 08:22 Printed: 16-Dec-2021 10:59 Page 3 of 12



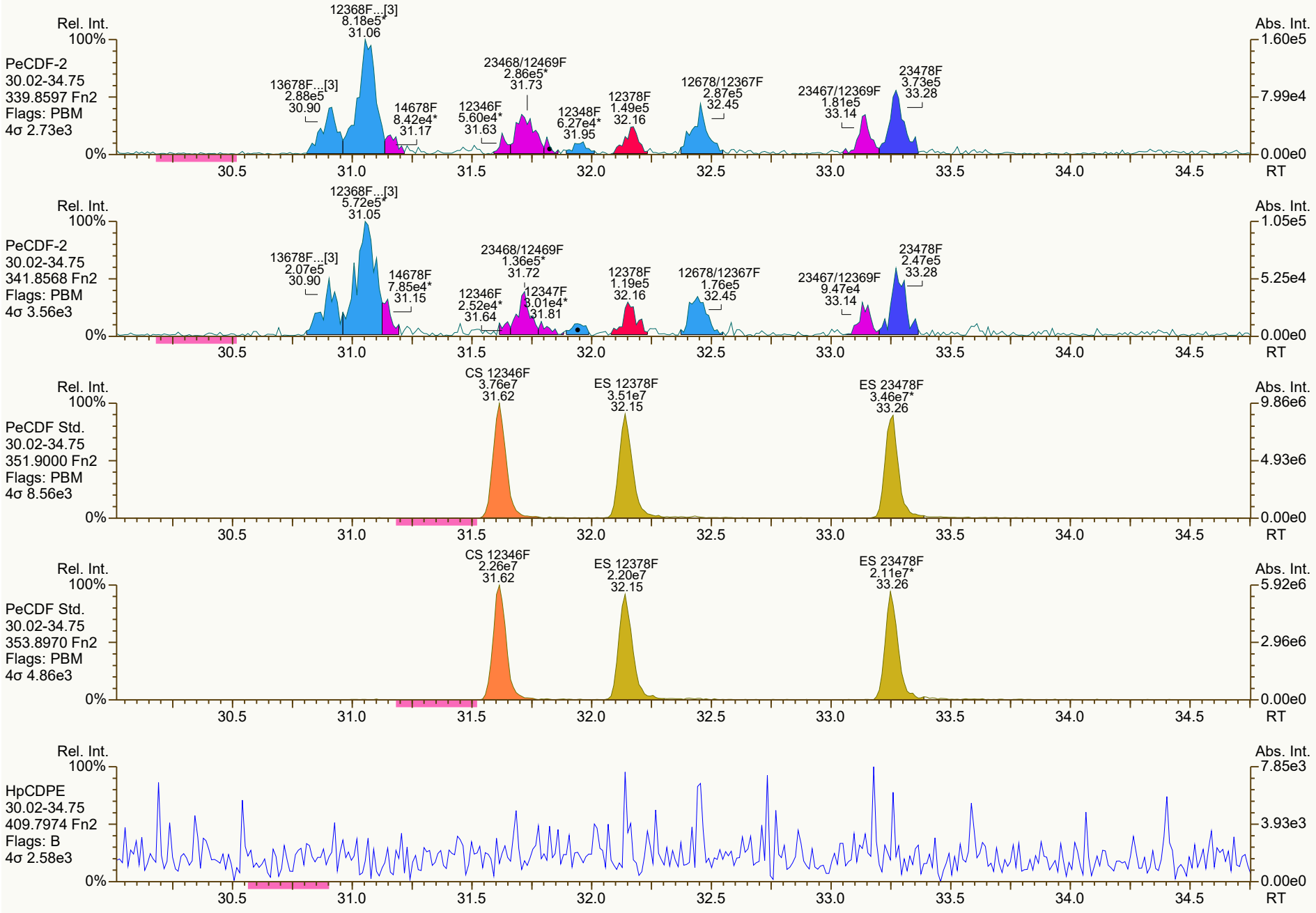
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_001.utp_res, saved 16-Dec-2021 09:47 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9956, 4492 scc: 108-875 *PKD: 16-Dec-2021 08:22 Printed: 16-Dec-2021 10:59 Page 4 of 12*

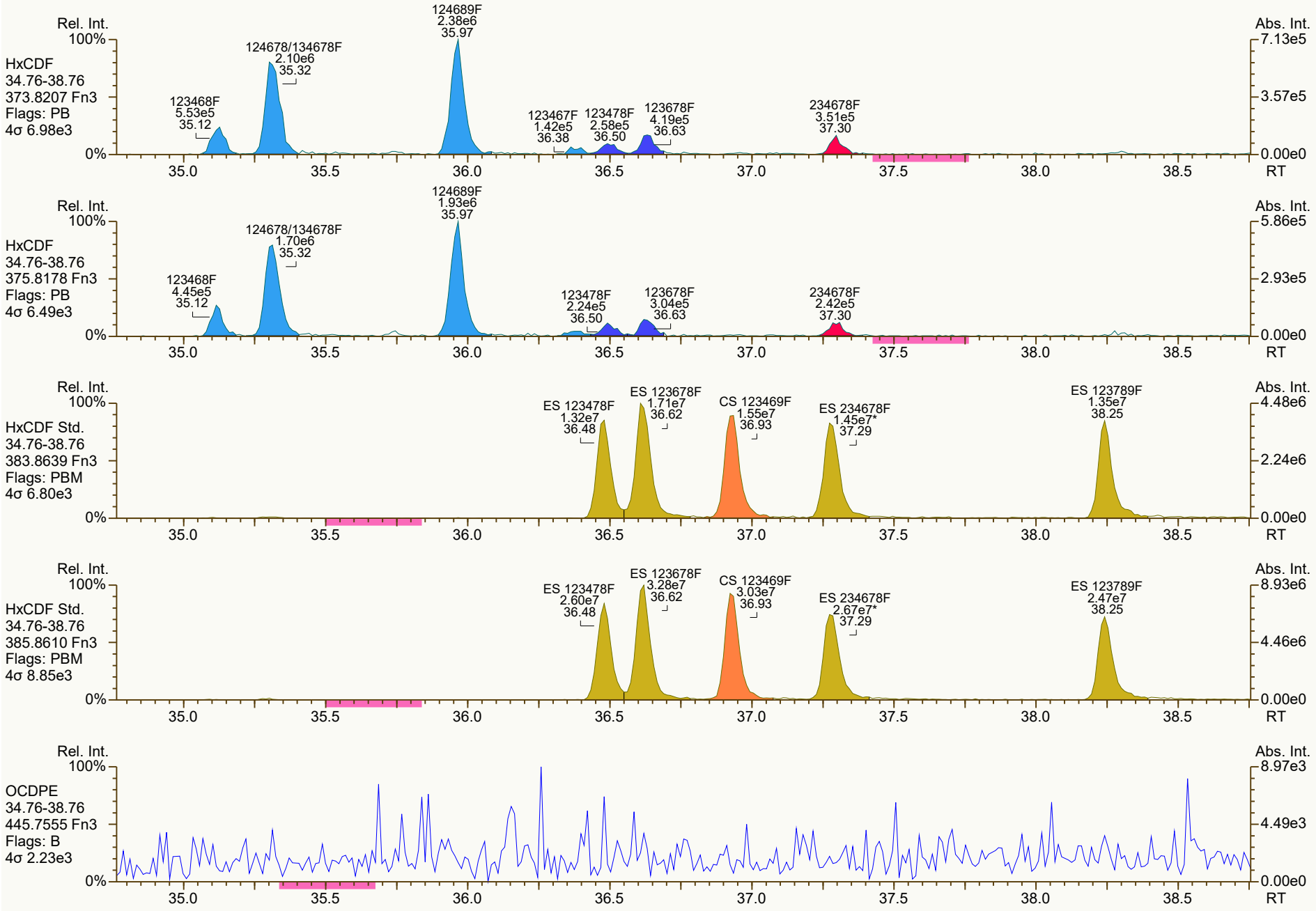

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 4.14e3
0%
1234679D
1.91e7*
39.88
1234678D
1.70e7*
40.53
Abs. Int.
7.01e6
3.51e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 2.17e3
0%
1234679D
1.85e7*
39.88
1234678D
1.64e7*
40.53
Abs. Int.
6.76e6
3.38e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.09e3
0%
ES 1234678D
1.51e7
40.52
Abs. Int.
5.11e6
2.55e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.44e3
0%
ES 1234678D
1.39e7
40.52
Abs. Int.
4.97e6
2.49e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.95e7
9.73e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

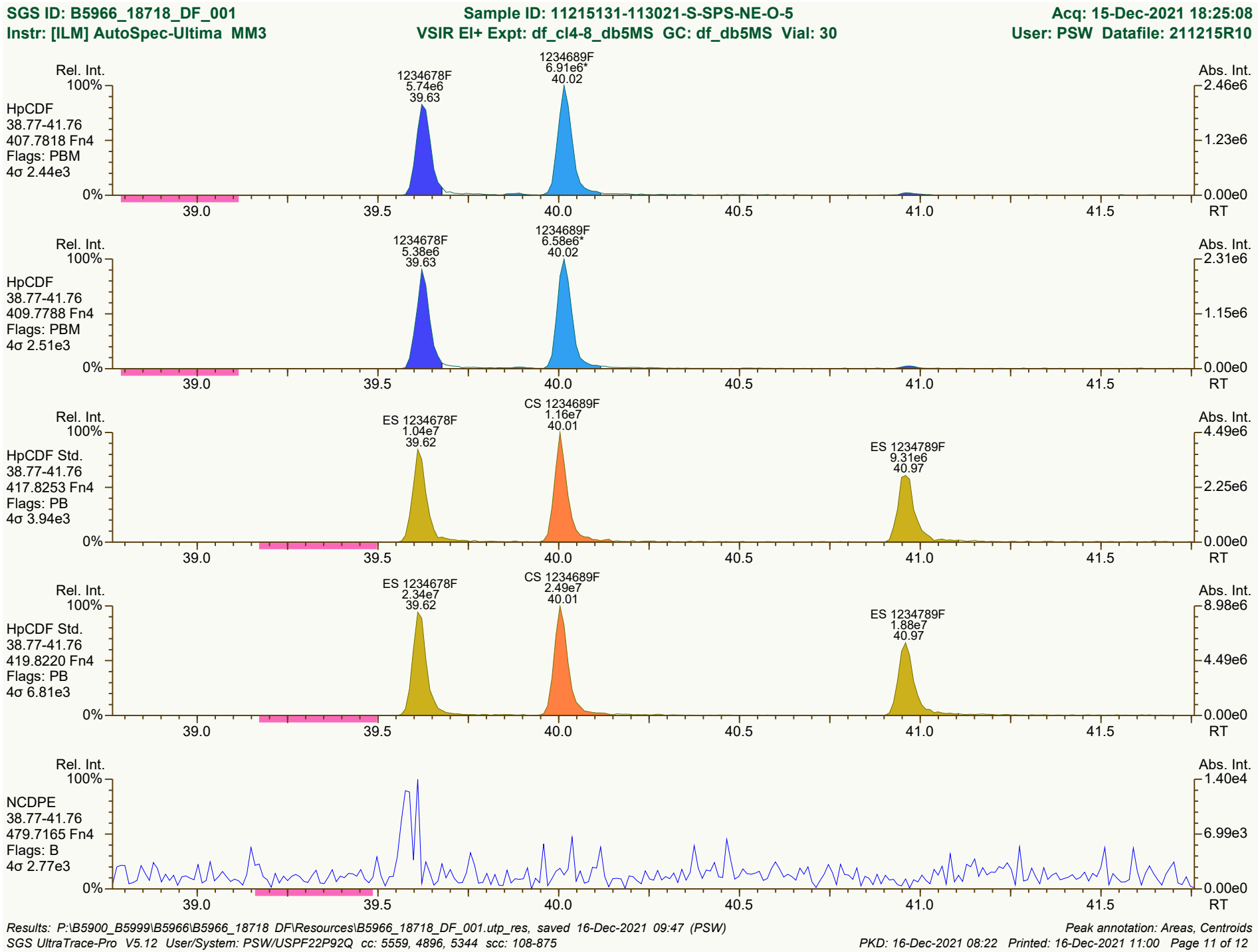

OCDD
1.17e8*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 2.74e3
0%
Abs. Int.
3.45e7
1.72e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.30e8*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 7.10e3
0%
Abs. Int.
3.81e7
1.91e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.50e7*
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 2.87e3
0%
Abs. Int.
4.44e6
2.22e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.69e7*
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 6.70e3
0%
Abs. Int.
5.02e6
2.51e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5966_18718_DF_001
Sample ID: 11215131-113021-S-SPS-NE-O-5
Acq: 15-Dec-2021 18:25:08
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 30
User: PSW Datafile: 211215R10
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.57e3
1368F 3.59e4* 22.44
1468F 8.35e4* 23.05
2468F 1.68e5* 23.70
1347F...[3] 2.80e5* 24.22
1248F...[3] 1.63e5* 24.59
1478F 1.05e5* 25.29
2368F 1.97e5* 25.95
1278F 2.66e5* 26.51
2347/1279F 8.39e4* 27.17
2378F 5.19e5* 27.39
2367/3467F 3.52e5 27.76
1289F 1.01e5 29.39
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 3.23e3
1368F 7.97e4* 22.45
1468F 1.20e5* 23.05
2468F 2.40e5* 23.70
1346/1246F 7.83e4* 24.07
1347F...[3] 3.60e5* 24.22
1348F 5.09e4* 24.43
1248F...[3] 2.37e5* 24.59
1268F 1.77e5* 24.99
1369/1237F 8.30e4* 25.67
2368F 2.53e5* 25.95
1238F...[5] 2.63e5* 26.04
1278F 2.82e5* 26.49
1267F 1.08e5* 26.78
2347/1279F 8.34e4* 27.17
2378F 6.20e5* 27.40
2367/3467F 5.10e5 27.76
1289F 8.07e4 29.40
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.95e4
JS 1234F 3.72e7 26.02
ES 2378F 2.77e7 27.38
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.31e4
JS 1234F 4.76e7 26.01
ES 2378F 3.53e7 27.38
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.00e3
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
1.22e5
6.12e4
0.00e0
1.37e5
6.83e4
7.36e6
3.68e6
9.54e6
4.77e6
2.48e4
1.24e4
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_001.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1481, 1920, 4365 scc: 108-875
PKD: 16-Dec-2021 08:22 Printed: 16-Dec-2021 10:59 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
2.52e5
1.26e5
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PBM
4σ 3.18e3
13468/12468F
1.15e6*
29.36
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.74e5
8.68e4
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PBM
4σ 3.22e3
13468/12468F
6.48e5*
29.36
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
6.07e6
3.04e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 2.73e3
12368F...[3] 8.18e5* 31.06
13678F...[3] 2.88e5 30.90
14678F 8.42e4* 31.17
12346F 5.60e4* 31.63
23468/12469F 2.86e5* 31.73
12348F 6.27e4* 31.95
12378F 1.49e5 32.16
12678/12367F 2.87e5 32.45
23467/12369F 1.81e5 33.14
23478F 3.73e5 33.28
Abs. Int.
1.60e5
7.99e4
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.56e3
12368F...[3] 5.72e5* 31.05
13678F...[3] 2.07e5 30.90
14678F 7.85e4* 31.15
12346F 2.52e4* 31.64
23468/12469F 1.36e5* 31.72
12347F 3.01e4* 31.81
12378F 1.19e5 32.16
12678/12367F 1.76e5 32.45
23467/12369F 9.47e4 33.14
23478F 2.47e5 33.28
Abs. Int.
1.05e5
5.25e4
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 8.56e3
CS 12346F 3.76e7 31.62
ES 12378F 3.51e7 32.15
ES 23478F 3.46e7* 33.26
Abs. Int.
9.86e6
4.93e6
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 4.86e3
CS 12346F 2.26e7 31.62
ES 12378F 2.20e7 32.15
ES 23478F 2.11e7* 33.26
Abs. Int.
5.92e6
2.96e6
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.58e3
Abs. Int.
7.85e3
3.93e3
0.00e0
0%
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PB
4σ 6.98e3
0%
123468F 5.53e5 35.12
124678/134678F 2.10e6 35.32
124689F 2.38e6 35.97
123467F 1.42e5 36.38
123478F 2.58e5 36.50
123678F 4.19e5 36.63
234678F 3.51e5 37.30
Abs. Int.
7.13e5
3.57e5
0.00e0
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PB
4σ 6.49e3
123468F 4.45e5 35.12
124678/134678F 1.70e6 35.32
124689F 1.93e6 35.97
123478F 2.24e5 36.50
123678F 3.04e5 36.63
234678F 2.42e5 37.30
5.86e5
2.93e5
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PBM
4σ 6.80e3
ES 123478F 1.32e7 36.48
ES 123678F 1.71e7 36.62
CS 123469F 1.55e7 36.93
ES 234678F 1.45e7* 37.29
ES 123789F 1.35e7 38.25
4.48e6
2.24e6
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PBM
4σ 8.85e3
ES 123478F 2.60e7 36.48
ES 123678F 3.28e7 36.62
CS 123469F 3.03e7 36.93
ES 234678F 2.67e7* 37.29
ES 123789F 2.47e7 38.25
8.93e6
4.46e6
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.23e3
8.97e3
4.49e3
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: B5966_18718_DF_001
Sample ID: 11215131-113021-S-SPS-NE-O-5
Acq: 15-Dec-2021 18:25:08
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 30
User: PSW Datafile: 211215R10
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.44e3
1234678F
5.74e6
39.63
1234689F
6.91e6*
40.02
2.46e6
1.23e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 2.51e3
1234678F
5.38e6
39.63
1234689F
6.58e6*
40.02
2.31e6
1.15e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 3.94e3
ES 1234678F
1.04e7
39.62
CS 1234689F
1.16e7
40.01
ES 1234789F
9.31e6
40.97
4.49e6
2.25e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 6.81e3
ES 1234678F
2.34e7
39.62
CS 1234689F
2.49e7
40.01
ES 1234789F
1.88e7
40.97
8.98e6
4.49e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.77e3
1.40e4
6.99e3
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_001.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5559, 4896, 5344 scc: 108-875
PKD: 16-Dec-2021 08:22 Printed: 16-Dec-2021 11:00 Page 11 of 12


OCDF
3.70e6*
43.25
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PBM
4σ 3.86e3
0%
Abs. Int.
1.04e6
5.18e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.06e6*
43.25
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
1.15e6
5.77e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.00e7
43.24
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.87e3
0%
Abs. Int.
5.47e6
2.74e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7
43.24
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 2.67e3
0%
Abs. Int.
6.21e6
3.10e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.82e3
0%
Abs. Int.
1.44e4
7.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5966_18718_DF_002 **Acq'd:** 15 Dec 2021 19:12 PSW **Wt/Vol:** 10.18 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-O-4 **UTP:** 16-Dec-2021 09:47:36 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 121-258-PHS

Datafile: 211215R11 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25	J	1.0008	1.0007	-0.2	1.60E+05	0.79	Y	1.34	0.446	9330.728	0.28
12378-PeCDD	33.61	J	1.0005	1.0009	+0.8	3.13E+05	1.45	Y	1.06	1.21	7335.535	0.266
123478-HxCDD	37.47	J	1.0003	1.0003	0	4.26E+05	1.34	Y	1.06	2.07	6250.681	0.275
123678-HxCDD	37.59		1.0033	1.0037	+0.9	1.94E+06	1.25	Y	1.08	9.11	6250.681	0.284
123789-HxCDD	37.89		1.0110	1.0116	+1.4	1.07E+06	1.34	Y	1.02	4.69	6250.681	0.271
1234678-HpCDD	40.52		1.0003	1.0004	+0.2	5.53E+07	1.04	Y	0.97	326	8344.079	0.355
OCDD	43.06		1.0003	1.0003	0	4.24E+08	0.90	Y	1.07	4,330	10731.401	0.865
2378-TCDF	27.39		1.0006	1.0008	+0.3	1.28E+06	0.78	Y	0.96	3.52	7112.954	0.234
12378-PeCDF	32.15	J EMPC	1.0006	1.0003	-0.6	3.50E+05	1.17	N	0.95	1.01	8720.647	0.255
23478-PeCDF	33.28		1.0006	1.0008	+0.4	9.57E+05	1.44	Y	0.94	2.87	8720.647	0.254
123478-HxCDF	36.49		1.0004	1.0004	0	8.13E+05	1.32	Y	1.23	2.7	15349.952	0.425
123678-HxCDF	36.63	J	1.0004	1.0004	0	8.08E+05	1.10	Y	1.13	2.29	15349.952	0.41
234678-HxCDF	37.30		1.0005	1.0005	0	9.79E+05	1.31	Y	1.15	3.35	15349.952	0.519
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	15349.952	0.566
1234678-HpCDF	39.62		1.0003	1.0002	-0.2	1.37E+07	1.04	Y	1.36	47.8	5185.95	0.13
1234789-HpCDF	40.96		1.0003	1.0003	0	8.68E+05	1.08	Y	1.30	3.85	5185.95	0.17
OCDF	43.24		1.0002	1.0002	0	1.72E+07	0.93	Y	1.03	146	7773.05	0.579

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0237	1.0239	+0.3	5.25E+07	0.78	Y	1.03	79.3
ES 12378-PeCDD	33.58	1.2158	1.2179	+4.2	4.80E+07	1.57	Y	1.03	72.6
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	3.83E+07	1.26	Y	0.99	82
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	3.86E+07	1.31	Y	0.97	84.4
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	4.41E+07	1.24	Y	1.12	83.6
ES 1234678-HpCDD	40.50	1.0713	1.0723	+2.4	3.42E+07	1.13	Y	0.99	73.5
ES OCDD	43.05	1.1385	1.1396	+2.8	3.60E+07	0.89	Y	0.78	49.3
ES 2378-TCDF	27.37	1.0519	1.0525	+1.0	7.41E+07	0.80	Y	1.08	68.7
ES 12378-PeCDF	32.14	1.2331	1.2357	+5.0	7.21E+07	1.52	Y	0.93	77.7
ES 23478-PeCDF	33.25	1.2754	1.2784	+6.0	6.97E+07	1.59	Y	0.92	75.9
ES 123478-HxCDF	36.47	0.9656	0.9655	-0.2	4.78E+07	0.51	Y	1.14	89.1
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	6.12E+07	0.53	Y	1.30	100
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	4.98E+07	0.52	Y	1.20	88.3
ES 123789-HxCDF	38.25	1.0121	1.0125	+0.9	4.58E+07	0.52	Y	1.14	85.9
ES 1234678-HpCDF	39.61	1.0478	1.0486	+1.9	4.13E+07	0.45	Y	0.95	92.5
ES 1234789-HpCDF	40.95	1.0832	1.0841	+2.2	3.41E+07	0.45	Y	0.85	85.7
ES OCDF	43.23	1.1434	1.1445	+2.9	4.52E+07	0.93	Y	0.93	52

Lab ID: B5966_18718_DF_002 **Acq'd:** 15 Dec 2021 19:12 PSW **Wt/Vol:** 10.18 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-O-4 **UTP:** 16-Dec-2021 09:47:36 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 121-258-PHS

Datafile: 211215R11 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.57		-	-	-	6.40E+07	0.80	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	9.95E+07	0.78	Y	-	-	
JS 123467-HxCDD	37.77		-	-	-	2.35E+07	1.24	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.58E+07	n/a	-	1.31	77	
CS 12347-PeCDD	33.08		1.1978	1.1998	+4.0	4.58E+07	1.56	Y	0.89	80.2	
CS 12346-PeCDF	31.61		1.2130	1.2154	+4.6	7.57E+07	1.61	Y	0.87	87.7	
CS 123469-HxCDF	36.92		0.9775	0.9775	0	5.45E+07	0.53	Y	1.09	106	
CS 1234689-HpCDF	40.00		1.0580	1.0589	+2.2	4.22E+07	0.46	Y	0.86	104	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.58E+07~~	~~n/a~~		~~1.26~~	~~97.6~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.08~~		~~1.1978~~	~~1.1998~~	~~+4.0~~	~~4.58E+07~~	~~1.56~~	~~Y~~	~~0.86~~	~~110~~	CL 17Dec21
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2154~~	~~+4.6~~	~~7.57E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~113~~	
~~SS 123469-HxCDF~~	~~36.92~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.45E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~106~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0589~~	~~+2.2~~	~~4.22E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~112~~	

Totals	Conc	EMPC
Total TCDD	1.28	1.53
Total PeCDD	5.9	9.14
Total HxCDD	73.1	74.4
Total HpCDD	685	685
Total Tetra-Octa Dioxins	5090	5100
Total TCDF	16.9	22.2
Total PeCDF	25	28.4
Total HxCDF	56.8	58.9
Total HpCDF	152	152
Total Tetra-Octa Furans	396	407
Total Tetra-Octa Dioxins & Furans	5490	5510

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.67	0.79
Response	1.76E+05	1.60E+05

Lab ID: B5966_18718_DF_002 **Acq'd: 15 Dec 2021 19:12 PSW** **Wt/Vol: 10.18 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-SPS-NE-O-4 **UTP: 16-Dec-2021 09:47:36 PSW** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 121-258-PHS**

Datafile: 211215R11 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.60		0.8726	0.8712	-2.1	3.00E+05	0.69	Y	1.34	0.834	9330.728	0.28
1379-TCDD	NotFnd		0.8851						1.34		9330.728	0.28
1369-TCDD	NotFnd		0.9002						1.34		9330.728	0.28
1469-TCDD	NotFnd		0.9275						1.34		9330.728	0.28
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		9330.728	0.28
1378-TCDD	26.60	J EMPC	0.9427	0.9421	-1.0	8.99E+04	0.99	N	1.34	0.25	9330.728	0.28
1268-TCDD	NotFnd		0.9498						1.34		9330.728	0.28
1478-TCDD	NotFnd		0.9584						1.34		9330.728	0.28
1279-TCDD	NotFnd		0.9644						1.34		9330.728	0.28
1234/1269-TCDD	NotFnd		0.9766						1.34		9330.728	0.28
1236-TCDD	NotFnd		0.9813						1.34		9330.728	0.28
1237/1238-TCDD	NotFnd		0.9906						1.34		9330.728	0.28
1239-TCDD	NotFnd		0.9952						1.34		9330.728	0.28
2378-TCDD	**28.25**	J	**1.0008**	1.0007	**-0.2**	1.60E+05	0.79	Y	**1.34**	**0.446**	**9330.728**	**0.28**
1278-TCDD	NotFnd		1.0122						1.34		9330.728	0.28
1267-TCDD	NotFnd		1.0168						1.34		9330.728	0.28
1289-TCDD	NotFnd		1.0349						1.34		9330.728	0.28
12479/12468-PeCDD	31.10		0.9267	0.9261	-1.1	6.70E+05	1.75	Y	1.06	2.59	7335.535	0.266
12469-PeCDD	31.63	J EMPC	0.9425	0.9420	-0.9	3.51E+05	1.24	N	1.06	1.35	7335.535	0.266
12368-PeCDD	32.18	J	0.9588	0.9582	-1.2	2.69E+05	1.50	Y	1.06	1.04	7335.535	0.266
12478-PeCDD	32.37	J EMPC	0.9643	0.9640	-0.6	2.86E+05	1.20	N	1.06	1.1	7335.535	0.266
12379-PeCDD	32.48	J	0.9673	0.9671	-0.4	2.03E+05	1.49	Y	1.06	0.782	7335.535	0.266
12369/12467/12489-PeCDD	32.73	J EMPC	0.9750	0.9747	-0.6	2.02E+05	1.09	N	1.06	0.778	7335.535	0.266
12346/12347-PeCDD	33.11	J	0.9859	0.9860	+0.2	7.47E+04	1.71	Y	1.06	0.288	7335.535	0.266
12378-PeCDD	33.61	J	**1.0005**	**1.0009**	**+0.8**	**3.13E+05**	**1.45**	**Y**	**1.06**	**1.21**	**7335.535**	**0.266**
12367-PeCDD	NotFnd		1.0032						1.06		7335.535	0.266
12389-PeCDD	NotFnd		1.0135						1.06		7335.535	0.266
124679/124689-HxCDD	35.76		0.9544	0.9546	+0.4	5.19E+06	1.23	Y	1.05	24	6250.681	0.276
123468-HxCDD	36.41		0.9716	0.9720	+0.9	7.98E+05	1.34	Y	1.05	3.7	6250.681	0.276
123679/123689-HxCDD	36.69		0.9793	0.9796	+0.7	5.71E+06	1.25	Y	1.05	26.4	6250.681	0.276
123469-HxCDD	36.83		0.9829	0.9832	+0.7	6.56E+05	1.25	Y	1.05	3.04	6250.681	0.276
123478-HxCDD	37.47	J	**1.0003**	**1.0003**	**0**	**4.26E+05**	**1.34**	**Y**	1.06	**2.07**	**6250.681**	**0.275**
123678-HxCDD	37.59		**1.0033**	**1.0037**	**+0.9**	**1.94E+06**	**1.25**	**Y**	1.08	**9.11**	**6250.681**	**0.284**
123467-HxCDD	37.78	J EMPC	1.0084	1.0086	+0.5	2.92E+05	1.00	N	1.05	1.35	6250.681	0.276
123789-HxCDD	37.89		**1.0110**	**1.0116**	**+1.4**	**1.07E+06**	**1.34**	**Y**	1.02	**4.69**	**6250.681**	**0.271**

Lab ID: B5966_18718_DF_002 **Acq'd:** 15 Dec 2021 19:12 PSW **Wt/Vol:** 10.18 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-SPS-NE-O-4 **UTP:** 16-Dec-2021 09:47:36 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 121-258-PHS

Datafile: 211215R11 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

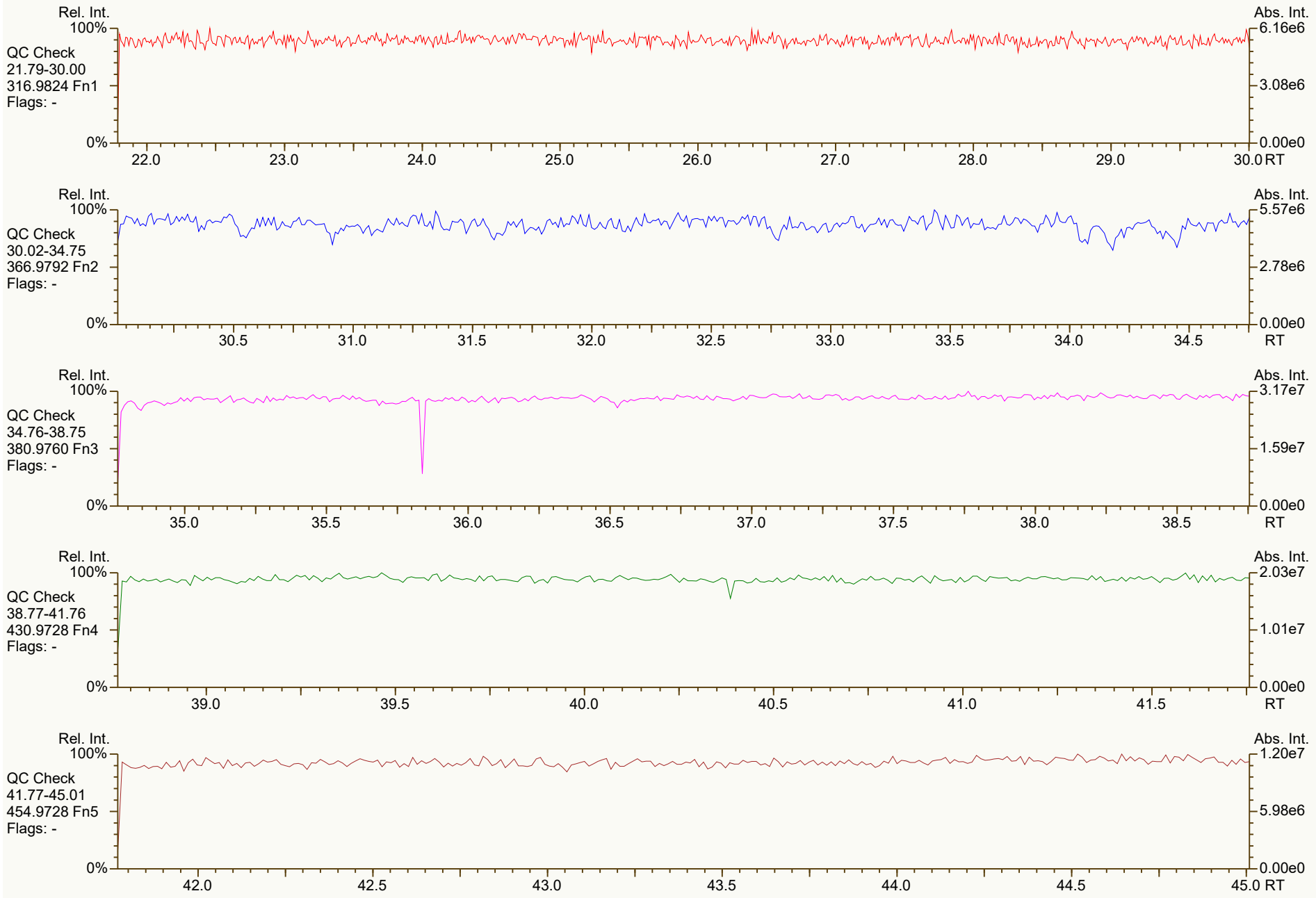
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	6.09E+07	1.03	Y	0.97	359	8344.079	0.355
1234678-HpCDD	**40.52**		**1.0003**	**1.0004**	**+0.2**	**5.53E+07**	**1.04**	**Y**	**0.97**	**326**	**8344.079**	**0.355**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**4.24E+08**	**0.90**	**Y**	**1.07**	**4,330**	**10731.401**	**0.865**
OCDD-a	43.06		1.0001	1.0001	0	2.53E+07	2.61	Y	0.07	4,190	16999.987	22.2
1368-TCDF	22.45	J EMPC	0.8230	0.8200	-4.0	1.32E+05	1.08	N	0.96	0.363	7112.954	0.234
1468-TCDF	23.05	EMPC	0.8443	0.8419	-3.3	2.35E+05	0.99	N	0.96	0.649	7112.954	0.234
2468-TCDF	23.69	EMPC	0.8672	0.8654	-2.6	5.81E+05	1.01	N	0.96	1.61	7112.954	0.234
1346/1246-TCDF	24.08	EMPC	0.8802	0.8797	-0.7	2.11E+05	1.02	N	0.96	0.582	7112.954	0.234
1347/1378/1247-TCDF	24.23		0.8855	0.8850	-0.7	6.10E+05	0.76	Y	0.96	1.68	7112.954	0.234
1348-TCDF	24.46	J	0.8952	0.8937	-2.2	8.24E+04	0.76	Y	0.96	0.228	7112.954	0.234
1248/1367/1379-TCDF	24.59		0.9000	0.8982	-2.7	4.36E+05	0.87	Y	0.96	1.2	7112.954	0.234
1268-TCDF	24.99		0.9136	0.9128	-1.2	3.66E+05	0.73	Y	0.96	1.01	7112.954	0.234
1467-TCDF	25.11	EMPC	0.9185	0.9173	-1.8	1.78E+05	0.95	N	0.96	0.492	7112.954	0.234
1478-TCDF	25.29		0.9247	0.9239	-1.2	3.04E+05	0.84	Y	0.96	0.841	7112.954	0.234
1369/1237-TCDF	25.67	J EMPC	0.9381	0.9377	-0.6	1.24E+05	0.89	N	0.96	0.343	7112.954	0.234
2467-TCDF	25.78		0.9427	0.9419	-1.2	2.26E+05	0.79	Y	0.96	0.623	7112.954	0.234
2368-TCDF	25.95		0.9484	0.9479	-0.8	6.89E+05	0.67	Y	0.96	1.9	7112.954	0.234
1238/1234/1678/1469/1236-TCDF	26.04	EMPC	0.9517	0.9515	-0.3	2.95E+05	0.96	N	0.96	0.815	7112.954	0.234
1278-TCDF	26.50		0.9682	0.9682	0	4.30E+05	0.72	Y	0.96	1.19	7112.954	0.234
1349-TCDF	NotFnd		0.9725						0.96		7112.954	0.234
1267-TCDF	26.76		0.9782	0.9776	-1.0	2.82E+05	0.82	Y	0.96	0.779	7112.954	0.234
2346/1249-TCDF	26.95	J	0.9846	0.9846	0	1.65E+05	0.82	Y	0.96	0.456	7112.954	0.234
2347/1279-TCDF	27.17		0.9926	0.9924	-0.3	1.98E+05	0.79	Y	0.96	0.548	7112.954	0.234
2348-TCDF	27.26	J	0.9966	0.9958	-1.3	1.68E+05	0.86	Y	0.96	0.466	7112.954	0.234
2378-TCDF	**27.39**		**1.0006**	**1.0008**	**+0.3**	**1.28E+06**	**0.78**	**Y**	**0.96**	**3.52**	**7112.954**	**0.234**
2367/3467-TCDF	27.76		1.0139	1.0140	+0.2	8.72E+05	0.84	Y	0.96	2.41	7112.954	0.234
1269-TCDF	NotFnd		1.0226						0.96		7112.954	0.234
1239-TCDF	NotFnd		1.0322						0.96		7112.954	0.234
1289-TCDF	29.37	J EMPC	1.0729	1.0728	-0.2	1.61E+05	0.99	N	0.96	0.444	7112.954	0.234
13468/12468-PeCDF	29.35		0.9135	0.9134	-0.2	3.19E+06	1.72	Y	0.94	9.38	6636.981	0.194
13678/13467/12467-PeCDF	30.89	J EMPC	0.9612	0.9612	0	5.64E+05	1.97	N	0.94	1.66	8720.647	0.255
12368/13478/12478-PeCDF	31.05		0.9661	0.9660	-0.2	2.09E+06	1.78	Y	0.94	6.14	8720.647	0.255
14678-PeCDF	31.14	J	0.9693	0.9689	-0.7	2.67E+05	1.66	Y	0.94	0.786	8720.647	0.255
13479-PeCDF	31.23	J EMPC	0.9723	0.9718	-0.9	5.48E+04	2.11	N	0.94	0.161	8720.647	0.255
13469/12479-PeCDF	NotFnd		0.9799						0.94		8720.647	0.255
12346-PeCDF	31.62	J	0.9842	0.9839	-0.6	1.38E+05	1.52	Y	0.94	0.407	8720.647	0.255

Lab ID: B5966_18718_DF_002 **Acq'd: 15 Dec 2021 19:12 PSW** **Wt/Vol: 10.18 g** **ICAL: MM3_DF_10272021_27JUL2021**

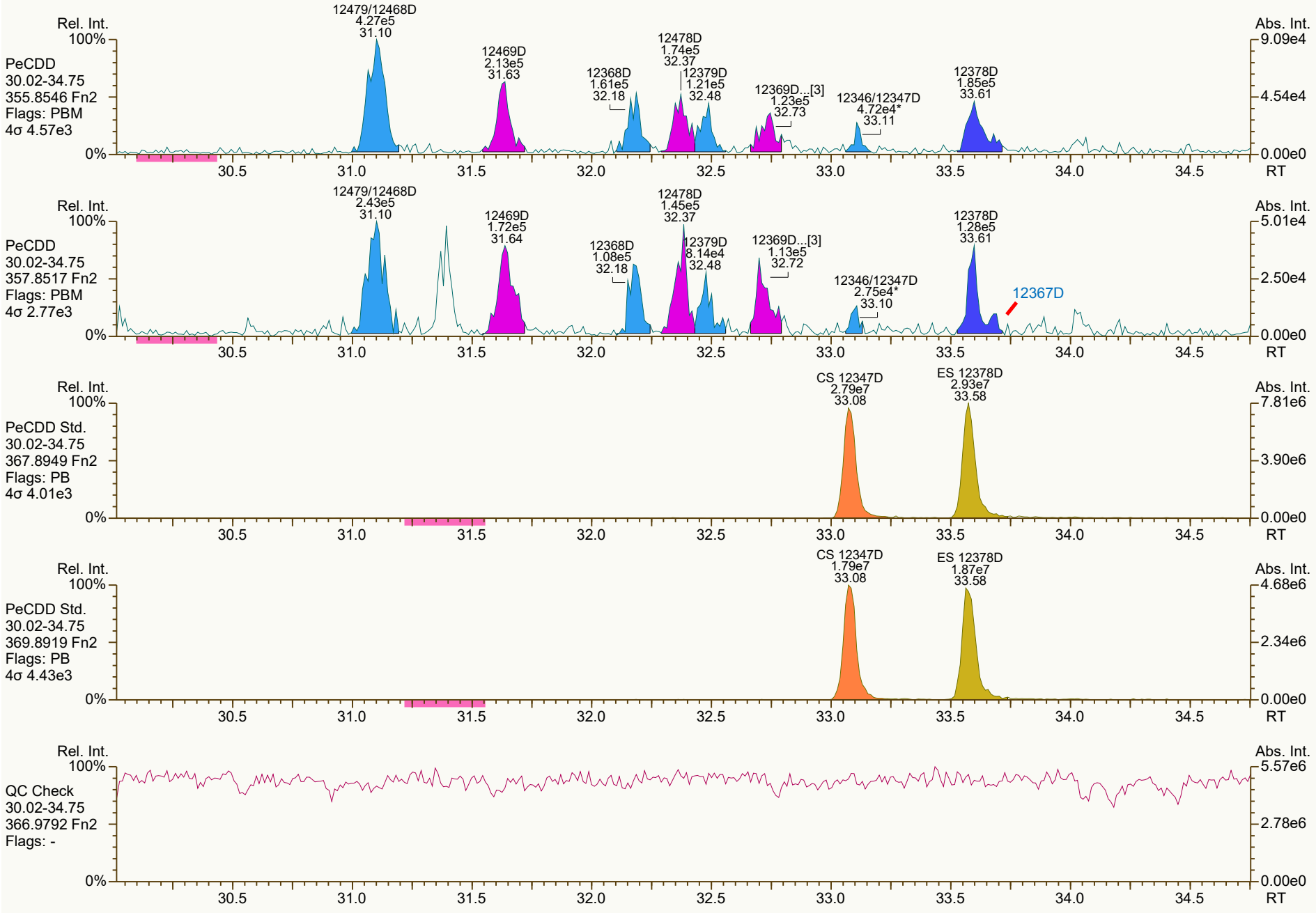
Client ID: 11215131-113021-S-SPS-NE-O-4 **UTP: 16-Dec-2021 09:47:36 PSW** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 121-258-PHS**

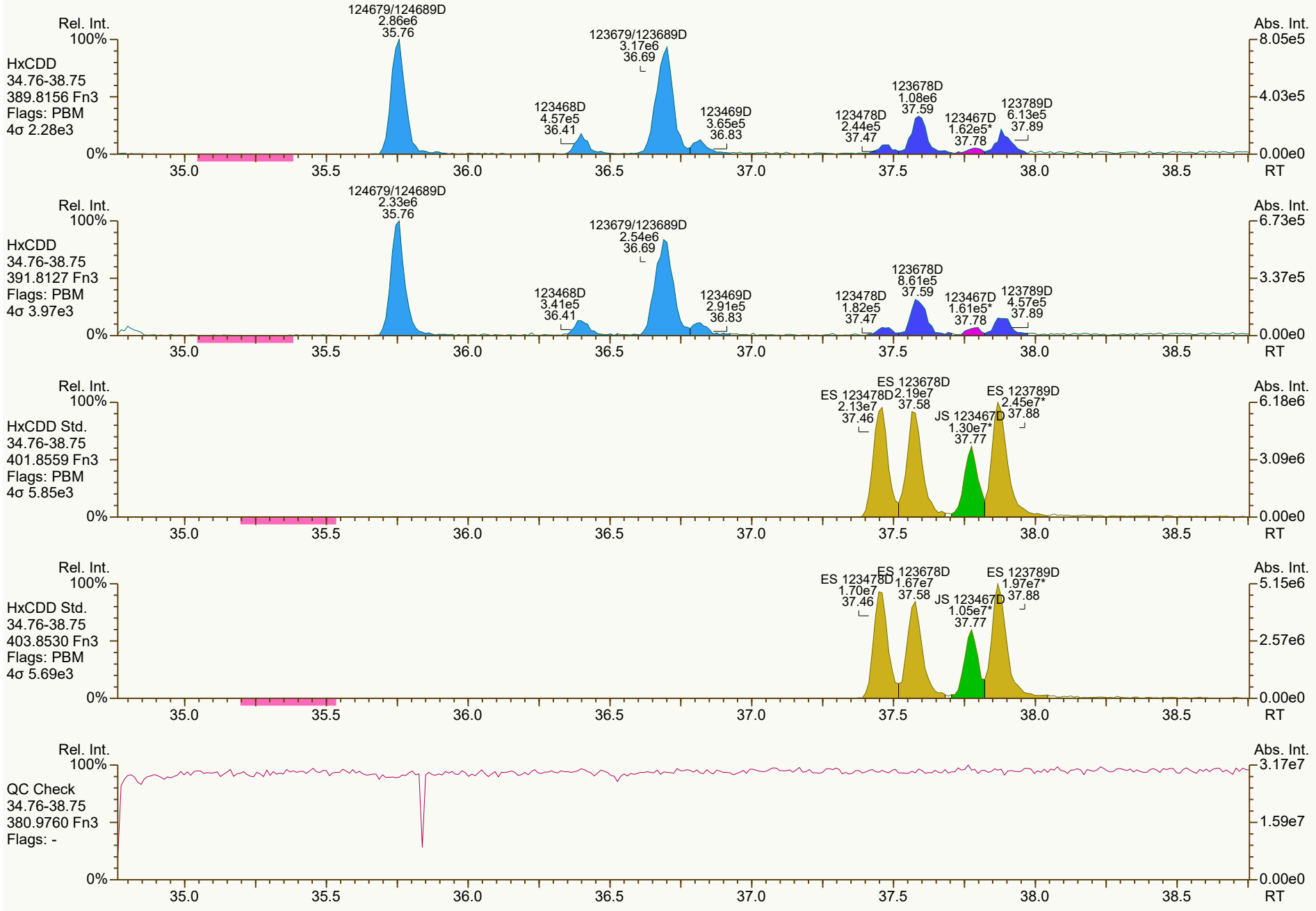
Datafile: 211215R11 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

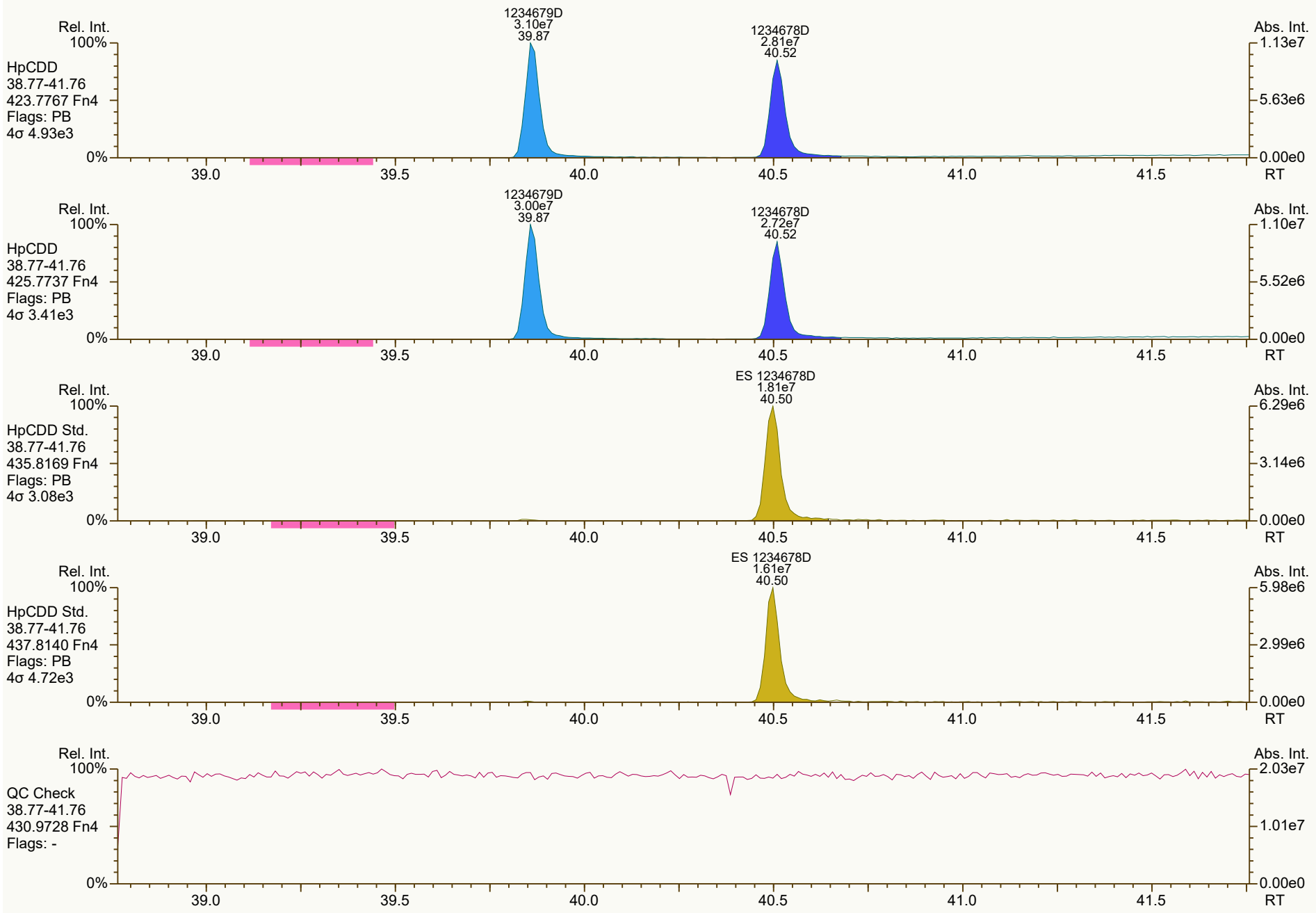
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.71	J	0.9868	0.9865	-0.6	5.98E+05	1.43	Y	0.94	1.76	8720.647	0.255
12347-PeCDF	31.79	J EMPC	0.9893	0.9890	-0.6	2.02E+05	1.30	N	0.94	0.594	8720.647	0.255
12348-PeCDF	31.94	J	0.9941	0.9940	-0.2	1.95E+05	1.56	Y	0.94	0.572	8720.647	0.255
12378-PeCDF	**32.15**	J EMPC	**1.0006**	**1.0003**	**-0.6**	**3.50E+05**	**1.17**	**N**	**0.95**	**1.01**	**8720.647**	**0.255**
12678/12367-PeCDF	32.44	J	1.0090	1.0095	+1.0	6.36E+05	1.61	Y	0.94	1.87	8720.647	0.255
12379-PeCDF	NotFnd		1.0143						0.94		8720.647	0.255
12679-PeCDF	NotFnd		0.9929						0.94		8720.647	0.255
23467/12369-PeCDF	33.13	J	0.9966	0.9965	-0.2	4.23E+05	1.52	Y	0.94	1.24	8720.647	0.255
23478-PeCDF	**33.28**		**1.0006**	**1.0008**	**+0.4**	**9.57E+05**	**1.44**	**Y**	**0.94**	**2.87**	**8720.647**	**0.254**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8720.647	0.255
12349-PeCDF	NotFnd		1.0102						0.94		8720.647	0.255
12389-PeCDF	NotFnd		1.0325						0.94		8720.647	0.255
123468-HxCDF	35.11		0.9628	0.9627	-0.2	1.69E+06	1.21	Y	1.16	5.57	15349.952	0.473
124678/134678-HxCDF	35.31		0.9683	0.9681	-0.4	6.07E+06	1.29	Y	1.16	20	15349.952	0.473
134679-HxCDF	NotFnd		0.9746						1.16		15349.952	0.473
124679-HxCDF	35.74	J	0.9798	0.9798	0	1.80E+05	1.29	Y	1.16	0.595	15349.952	0.473
124689-HxCDF	35.96		0.9859	0.9859	0	6.74E+06	1.24	Y	1.16	22.3	15349.952	0.473
123467-HxCDF	36.37	J EMPC	0.9972	0.9971	-0.2	4.68E+05	1.04	N	1.16	1.54	15349.952	0.473
123478-HxCDF	**36.49**		**1.0004**	**1.0004**	**0**	**8.13E+05**	**1.32**	**Y**	**1.23**	**2.7**	**15349.952**	**0.425**
123678-HxCDF	**36.63**	J	**1.0004**	**1.0004**	**0**	**8.08E+05**	**1.10**	**Y**	**1.13**	**2.29**	**15349.952**	**0.41**
123479-HxCDF	NotFnd		1.0049						1.16		15349.952	0.473
123469-HxCDF	NotFnd		1.0088						1.16		15349.952	0.473
123679-HxCDF	NotFnd		0.9943						1.16		15349.952	0.473
234678-HxCDF	**37.30**		**1.0005**	**1.0005**	**0**	**9.79E+05**	**1.31**	**Y**	**1.15**	**3.35**	**15349.952**	**0.519**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		15349.952	0.473
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**15349.952**	**0.566**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.28	J EMPC	1.0007	1.0008	+0.2	1.62E+05	1.51	N	1.16	0.535	15349.952	0.473
1234678-HpCDF	**39.62**		**1.0003**	**1.0002**	**-0.2**	**1.37E+07**	**1.04**	**Y**	**1.36**	**47.8**	**5185.95**	**0.13**
1234679-HpCDF	39.87	**J**	1.0067	1.0066	-0.2	6.04E+05	1.02	Y	1.33	2.37	5185.95	0.148
1234689-HpCDF	40.01		1.0100	1.0100	0	2.49E+07	1.05	Y	1.33	97.6	5185.95	0.148
1234789-HpCDF	**40.96**		**1.0003**	**1.0003**	**0**	**8.68E+05**	**1.08**	**Y**	**1.30**	**3.85**	**5185.95**	**0.17**
OCDF	**43.24**		**1.0002**	**1.0002**	**0**	**1.72E+07**	**0.93**	**Y**	**1.03**	**146**	**7773.05**	**0.579**
OCDF-a	43.24	**EMPC**	1.0002	1.0001	-0.3	1.00E+06	2.07	N	0.06	147	11396.299	14.7

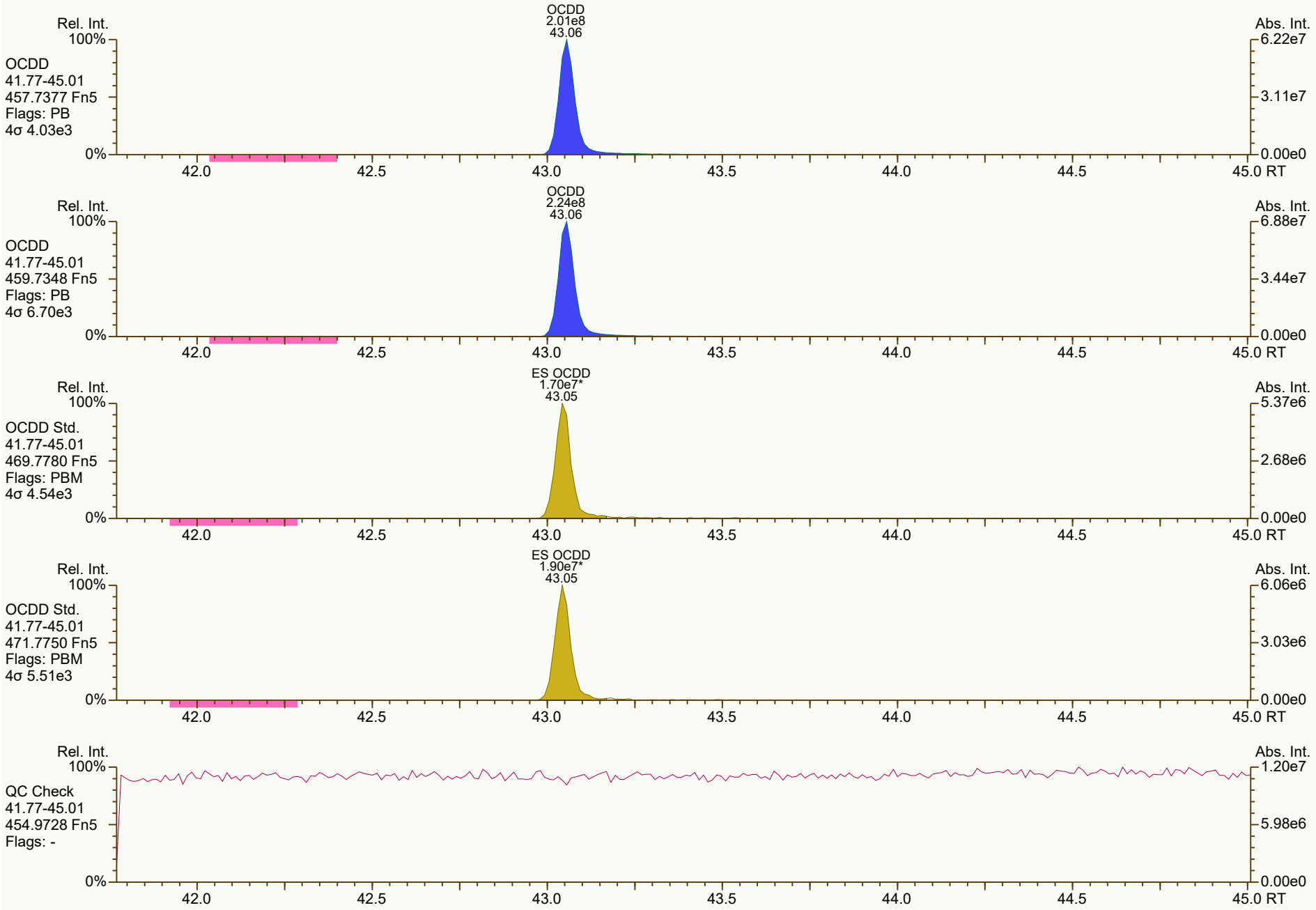

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.16e6
3.08e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.57e6
2.78e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.17e7
1.59e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.03e7
1.01e7
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.20e7
5.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 4.73e3
1368D
1.22e5
24.60
1378D
5.04e4*
26.60
2378D
7.05e4*
28.25
Abs. Int.
3.84e4
1.92e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 4.60e3
1368D
1.77e5
24.60
1378D
5.08e4*
26.59
2378D
1.05e5*
28.26
Abs. Int.
3.93e4
1.97e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.74e3
CS 37Cl-2378D
2.58e7
28.26
Abs. Int.
5.81e6
2.91e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 6.96e3
JS 1234D
2.84e7
27.57
ES 2378D
2.30e7
28.23
Abs. Int.
6.36e6
3.18e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 6.89e3
JS 1234D
3.57e7
27.57
ES 2378D
2.95e7
28.23
Abs. Int.
7.88e6
3.94e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 4.57e3
0%
12479/12468D
4.27e5
31.10
12469D
2.13e5
31.63
12368D
1.61e5
32.18
12478D
1.74e5
32.37
12379D
1.21e5
32.48
12369D...[3]
1.23e5
32.73
12346/12347D
4.72e4*
33.11
12378D
1.85e5
33.61
Abs. Int.
9.09e4
4.54e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 2.77e3
0%
12479/12468D
2.43e5
31.10
12469D
1.72e5
31.64
12368D
1.08e5
32.18
12478D
1.45e5
32.37
12379D
8.14e4
32.48
12369D...[3]
1.13e5
32.72
12346/12347D
2.75e4*
33.10
12378D
1.28e5
33.61
12367D
Abs. Int.
5.01e4
2.50e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.01e3
0%
CS 12347D
2.79e7
33.08
ES 12378D
2.93e7
33.58
Abs. Int.
7.81e6
3.90e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 4.43e3
0%
CS 12347D
1.79e7
33.08
ES 12378D
1.87e7
33.58
Abs. Int.
4.68e6
2.34e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.57e6
2.78e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PBM
4σ 2.28e3
0%
124679/124689D
2.86e6
35.76
123679/123689D
3.17e6
36.69
123468D
4.57e5
36.41
123469D
3.65e5
36.83
123478D
2.44e5
37.47
123678D
1.08e6
37.59
123467D
1.62e5*
37.78
123789D
6.13e5
37.89
Abs. Int.
8.05e5
4.03e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 3.97e3
0%
124679/124689D
2.33e6
35.76
123679/123689D
2.54e6
36.69
123468D
3.41e5
36.41
123469D
2.91e5
36.83
123478D
1.82e5
37.47
123678D
8.61e5
37.59
123467D
1.61e5*
37.78
123789D
4.57e5
37.89
Abs. Int.
6.73e5
3.37e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 5.85e3
0%
ES 123678D
2.19e7
37.58
ES 123478D
2.13e7
37.46
ES 123789D
2.45e7*
37.88
JS 123467D
1.30e7*
37.77
Abs. Int.
6.18e6
3.09e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 5.69e3
0%
ES 123678D
1.67e7
37.58
ES 123478D
1.70e7
37.46
ES 123789D
1.97e7*
37.88
JS 123467D
1.05e7*
37.77
Abs. Int.
5.15e6
2.57e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.17e7
1.59e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.93e3
1234679D
3.10e7
39.87
1234678D
2.81e7
40.52
Abs. Int.
1.13e7
5.63e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.41e3
1234679D
3.00e7
39.87
1234678D
2.72e7
40.52
Abs. Int.
1.10e7
5.52e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 3.08e3
ES 1234678D
1.81e7
40.50
Abs. Int.
6.29e6
3.14e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.72e3
ES 1234678D
1.61e7
40.50
Abs. Int.
5.98e6
2.99e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
2.03e7
1.01e7
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

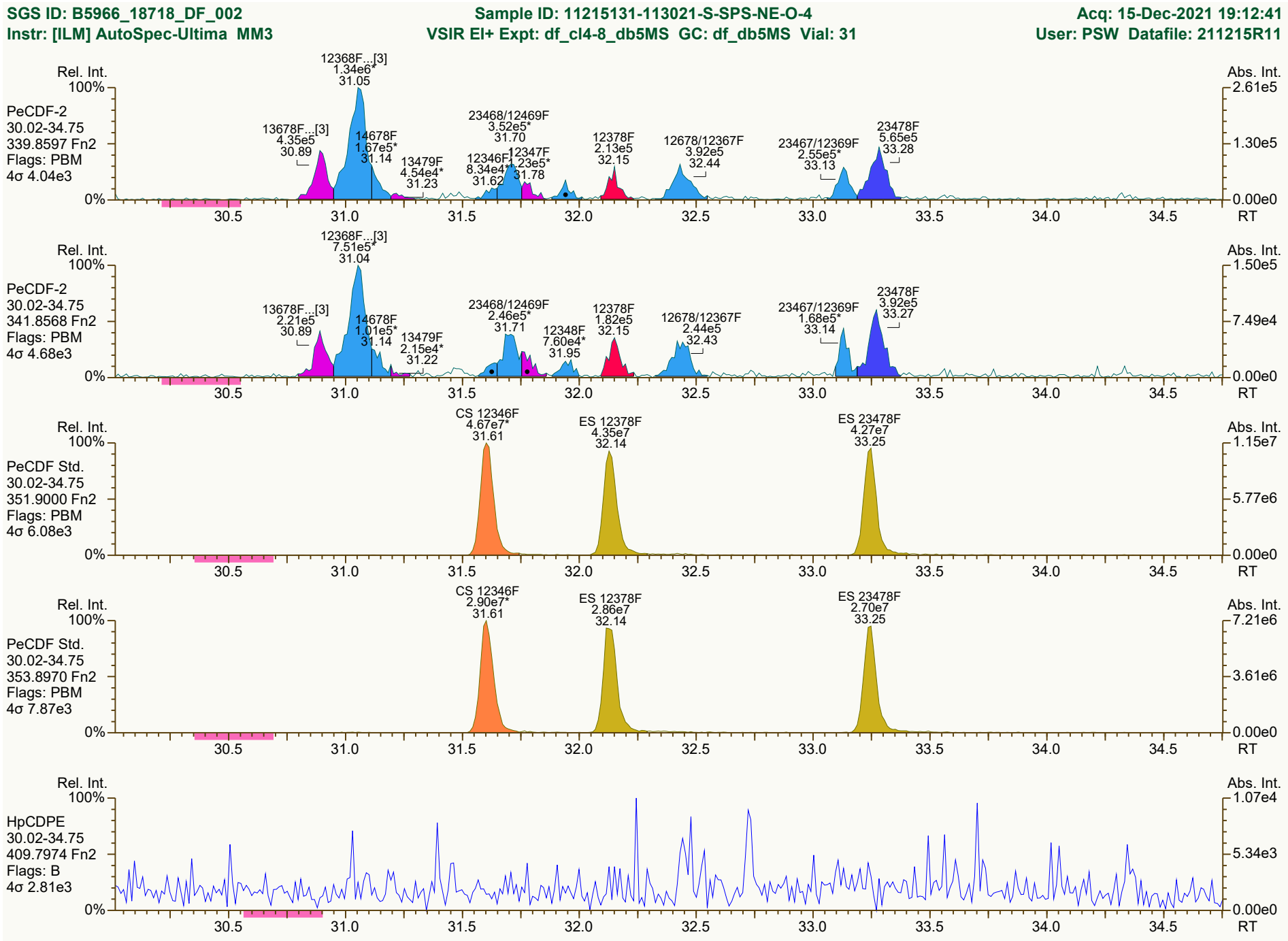

Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 4.03e3
0%
OCDD
2.01e8
43.06
Abs. Int.
6.22e7
3.11e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 6.70e3
0%
OCDD
2.24e8
43.06
Abs. Int.
6.88e7
3.44e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 4.54e3
0%
ES OCDD
1.70e7*
43.05
Abs. Int.
5.37e6
2.68e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 5.51e3
0%
ES OCDD
1.90e7*
43.05
Abs. Int.
6.06e6
3.03e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.20e7
5.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5966_18718_DF_002
Sample ID: 11215131-113021-S-SPS-NE-O-4
Acq: 15-Dec-2021 19:12:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31
User: PSW Datafile: 211215R11
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.74e3
1368F 8.01e4* 22.45
1468F 1.31e5* 23.04
2468F 3.32e5 23.69
1347F...[3] 2.63e5* 24.23
1248F...[3] 2.03e5* 24.59
1268F 1.54e5* 24.99
1369/1237F 6.23e4* 25.67
2368F 2.77e5* 25.95
1278F 1.80e5* 26.50
2346/1249F 7.45e4* 26.95
2378F 5.59e5* 27.39
2367/3467F 3.98e5 27.76
1289F 8.96e4 29.37
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 4.38e3
1368F 7.43e4* 22.47
1468F 1.33e5* 23.05
2468F 3.29e5 23.69
1347F...[3] 3.47e5* 24.22
1248F...[3] 2.33e5* 24.58
1268F 2.12e5* 24.98
2467F 1.26e5* 25.78
2368F 4.12e5* 25.95
1238F...[5] 1.67e5* 26.05
1278F 2.50e5* 26.49
2347/1279F 1.11e5* 27.16
2378F 7.17e5* 27.39
2367/3467F 4.74e5 27.75
1289F 9.08e4 29.37
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.54e4
JS 1234F 4.35e7 26.01
ES 2378F 3.29e7 27.37
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.18e4
JS 1234F 5.60e7 26.01
ES 2378F 4.11e7 27.37
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.98e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_002.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2274, 6704, 2962 scc: 121-258
PKD: 16-Dec-2021 08:31 Printed: 16-Dec-2021 11:00 Page 7 of 12

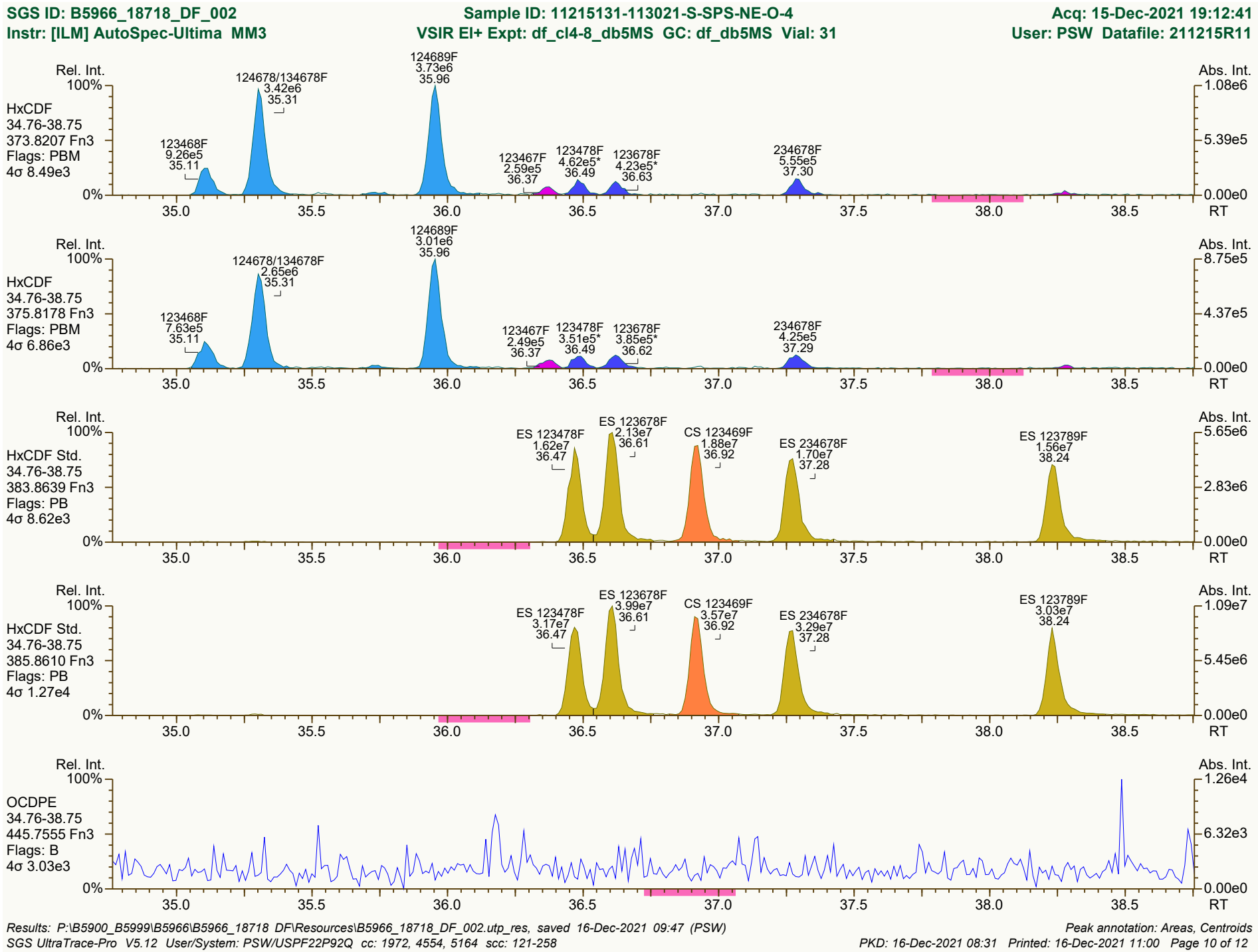
SGS ID: B5966_18718_DF_002 | Sample ID: 11215131-113021-S-SPS-NE-O-4 | Acq: 15-Dec-2021 19:12:41
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31 | User: PSW Datafile: 211215R11



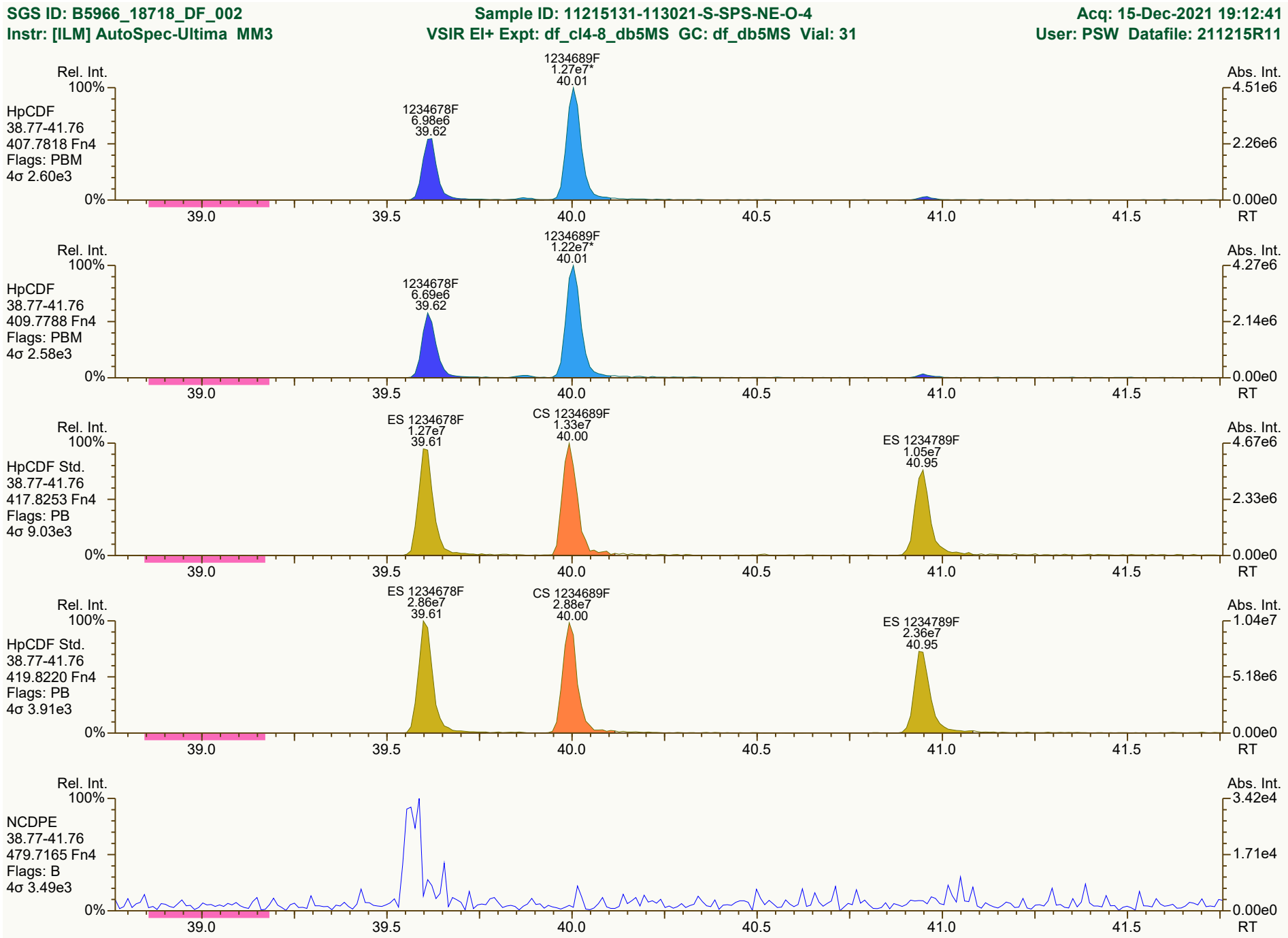
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_002.utp_res, saved 16-Dec-2021 09:47 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8098 scc: 121-258 | *PKD: 16-Dec-2021 08:31 Printed: 16-Dec-2021 11:00 Page 8 of 12*

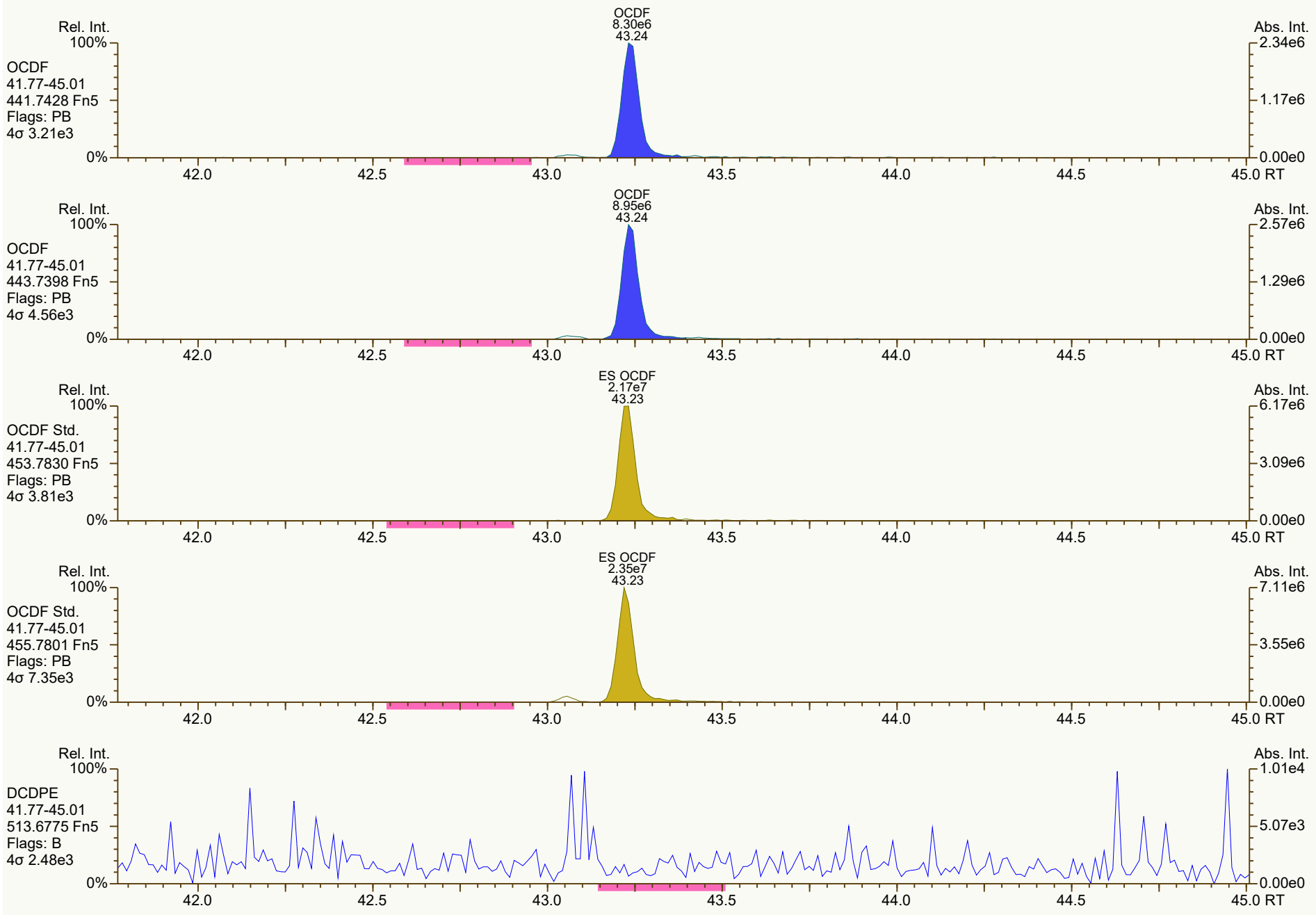

SGS ID: B5966_18718_DF_002
Sample ID: 11215131-113021-S-SPS-NE-O-4
Acq: 15-Dec-2021 19:12:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31
User: PSW Datafile: 211215R11
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 4.04e3
12368F...[3] 1.34e6* 31.05
13678F...[3] 4.35e5 30.89
14678F 1.67e5* 31.14
13479F 4.54e4* 31.23
23468/12469F 3.52e5* 31.70
12346F 8.34e4* 31.62
12347F 1.23e5* 31.78
12378F 2.13e5 32.15
12678/12367F 3.92e5 32.44
23467/12369F 2.55e5* 33.13
23478F 5.65e5 33.28
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 4.68e3
12368F...[3] 7.51e5* 31.04
13678F...[3] 2.21e5 30.89
14678F 1.01e5* 31.14
13479F 2.15e4* 31.22
23468/12469F 2.46e5* 31.71
12348F 7.60e4* 31.95
12378F 1.82e5 32.15
12678/12367F 2.44e5 32.43
23467/12369F 1.68e5* 33.14
23478F 3.92e5 33.27
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 6.08e3
CS 12346F 4.67e7* 31.61
ES 12378F 4.35e7 32.14
ES 23478F 4.27e7 33.25
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 7.87e3
CS 12346F 2.90e7* 31.61
ES 12378F 2.86e7 32.14
ES 23478F 2.70e7 33.25
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.81e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_002.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4291, 7583, 9032 scc: 121-258
PKD: 16-Dec-2021 08:31 Printed: 16-Dec-2021 11:00 Page 9 of 12

SGS ID: B5966_18718_DF_002 | Sample ID: 11215131-113021-S-SPS-NE-O-4 | Acq: 15-Dec-2021 19:12:41
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31 | User: PSW Datafile: 211215R11



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_002.utp_res, saved 16-Dec-2021 09:47 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1972, 4554, 5164 scc: 121-258 | PKD: 16-Dec-2021 08:31 Printed: 16-Dec-2021 11:00 Page 10 of 12


SGS ID: B5966_18718_DF_002
Sample ID: 11215131-113021-S-SPS-NE-O-4
Acq: 15-Dec-2021 19:12:41
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31
User: PSW Datafile: 211215R11
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.60e3
1234678F
6.98e6
39.62
1234689F
1.27e7*
40.01
4.51e6
2.26e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 2.58e3
1234678F
6.69e6
39.62
1234689F
1.22e7*
40.01
4.27e6
2.14e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 9.03e3
ES 1234678F
1.27e7
39.61
CS 1234689F
1.33e7
40.00
ES 1234789F
1.05e7
40.95
4.67e6
2.33e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 3.91e3
ES 1234678F
2.86e7
39.61
CS 1234689F
2.88e7
40.00
ES 1234789F
2.36e7
40.95
1.04e7
5.18e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.49e3
3.42e4
1.71e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_002.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1187, 4162, 7584 scc: 121-258
PKD: 16-Dec-2021 08:31 Printed: 16-Dec-2021 11:00 Page 11 of 12


OCDF
8.30e6
43.24
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.21e3
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
8.95e6
43.24
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 4.56e3
0%
Abs. Int.
2.57e6
1.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.17e7
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.81e3
0%
Abs. Int.
6.17e6
3.09e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.35e7
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 7.35e3
0%
Abs. Int.
7.11e6
3.55e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.48e3
0%
Abs. Int.
1.01e4
5.07e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5966_18718_DF_003 **Acq'd:** 15 Dec 2021 20:00 PSW **Wt/Vol:** 10.11 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-O-1 **UTP:** 16-Dec-2021 09:47:37 PSW **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 994-247-DFB

Datafile: 211215R12 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25	EMPC	1.0008	1.0006	-0.3	1.89E+05	0.91	N	1.34	0.498	8510.565	0.243
12378-PeCDD	33.60	J	1.0005	1.0005	0	2.61E+05	1.50	Y	1.06	0.936	7928.984	0.285
123478-HxCDD	37.47	J	1.0003	1.0002	-0.2	4.04E+05	1.15	Y	1.06	1.88	10149.216	0.394
123678-HxCDD	37.60		1.0033	1.0036	+0.7	1.97E+06	1.38	Y	1.08	8.34	10149.216	0.42
123789-HxCDD	37.90		1.0110	1.0117	+1.6	1.05E+06	1.26	Y	1.02	4.19	10149.216	0.379
1234678-HpCDD	40.52		1.0003	1.0003	0	6.07E+07	1.05	Y	0.97	341	8721.47	0.343
OCDD	43.07		1.0003	1.0002	-0.3	3.64E+08	0.89	Y	1.07	3,390	13738.336	1.05
2378-TCDF	27.39		1.0006	1.0005	-0.2	1.29E+06	0.76	Y	0.96	3.29	7779.928	0.233
12378-PeCDF	32.15	J	1.0006	1.0003	-0.6	4.92E+05	1.69	Y	0.95	1.36	6682.265	0.185
23478-PeCDF	33.27		1.0006	1.0006	0	9.76E+05	1.60	Y	0.94	2.78	6682.265	0.179
123478-HxCDF	36.50		1.0004	1.0005	+0.2	8.39E+05	1.06	Y	1.23	2.59	13576.964	0.362
123678-HxCDF	36.63	J	1.0004	1.0004	0	6.43E+05	1.08	Y	1.13	1.75	13576.964	0.327
234678-HxCDF	37.30		1.0005	1.0005	0	8.09E+05	1.19	Y	1.15	2.54	13576.964	0.407
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	13576.964	0.436
1234678-HpCDF	39.63		1.0003	1.0003	0	1.14E+07	1.02	Y	1.36	38.6	7174.739	0.161
1234789-HpCDF	40.97		1.0003	1.0001	-0.5	6.18E+05	1.05	Y	1.30	2.54	7174.739	0.224
OCDF	43.25		1.0002	1.0003	+0.3	1.15E+07	0.86	Y	1.03	87	9329.12	0.579

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0239	+0.3	5.59E+07	0.81	Y	1.03	74.6
ES 12378-PeCDD	33.59	1.2158	1.2179	+4.2	5.20E+07	1.55	Y	1.03	69.4
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	4.03E+07	1.29	Y	0.99	76.7
ES 123678-HxCDD	37.58	0.9949	0.9947	-0.5	4.31E+07	1.27	Y	0.97	83.7
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	4.86E+07	1.29	Y	1.12	81.8
ES 1234678-HpCDD	40.51	1.0713	1.0723	+2.4	3.61E+07	1.05	Y	0.99	69
ES OCDD	43.06	1.1385	1.1397	+3.1	3.96E+07	0.92	Y	0.78	48.3
ES 2378-TCDF	27.38	1.0519	1.0525	+1.0	8.09E+07	0.80	Y	1.08	68.8
ES 12378-PeCDF	32.14	1.2331	1.2356	+4.8	7.56E+07	1.55	Y	0.93	74.6
ES 23478-PeCDF	33.25	1.2754	1.2784	+6.0	7.41E+07	1.61	Y	0.92	74
ES 123478-HxCDF	36.48	0.9656	0.9656	0	5.19E+07	0.52	Y	1.14	86
ES 123678-HxCDF	36.62	0.9693	0.9692	-0.2	6.42E+07	0.53	Y	1.30	93.6
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	5.48E+07	0.53	Y	1.20	86.3
ES 123789-HxCDF	38.24	1.0121	1.0123	+0.5	5.05E+07	0.53	Y	1.14	84.1
ES 1234678-HpCDF	39.62	1.0478	1.0486	+1.9	4.29E+07	0.45	Y	0.95	85.4
ES 1234789-HpCDF	40.96	1.0832	1.0843	+2.7	3.70E+07	0.46	Y	0.85	82.7
ES OCDF	43.24	1.1434	1.1445	+2.9	5.10E+07	0.92	Y	0.93	52.1

Lab ID: B5966_18718_DF_003 **Acq'd:** 15 Dec 2021 20:00 PSW **Wt/Vol:** 10.11 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-O-1 **UTP:** 16-Dec-2021 09:47:37 PSW **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 994-247-DFB

Datafile: 211215R12 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	7.24E+07	0.79	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	1.09E+08	0.80	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.64E+07	1.29	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.64E+07	n/a	-	1.31	69.6	
CS 12347-PeCDD	33.09		1.1978	1.1997	+3.8	4.60E+07	1.63	Y	0.89	71.1	
CS 12346-PeCDF	31.61		1.2130	1.2153	+4.4	7.09E+07	1.59	Y	0.87	75.2	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	5.58E+07	0.52	Y	1.09	96.8	
CS 1234689-HpCDF	40.01		1.0580	1.0590	+2.4	4.21E+07	0.45	Y	0.86	92.2	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.64E+07~~	~~n/a~~		~~1.26~~	~~93.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~4.60E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~102~~	CL 17Dec21
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2153~~	~~+4.4~~	~~7.09E+07~~	~~1.59~~	~~Y~~	~~0.93~~	~~101~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.58E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~103~~	
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~4.21E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~108~~	

Totals	Conc	EMPC
Total TCDD	2.92	3.66
Total PeCDD	9.52	10.8
Total HxCDD	87.5	87.5
Total HpCDD	767	767
Total Tetra-Octa Dioxins	4260	4260
Total TCDF	20.9	28
Total PeCDF	17.6	26.1
Total HxCDF	39	40.3
Total HpCDF	105	105
Total Tetra-Octa Furans	270	287
Total Tetra-Octa Dioxins & Furans	4530	4550

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.791	0.91
Response	2.20E+05	2.04E+05

Lab ID: B5966_18718_DF_003 **Acq'd: 15 Dec 2021 20:00 PSW** **Wt/Vol: 10.11 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-JC-NE-O-1 **UTP: 16-Dec-2021 09:47:37 PSW** **J-level: 0.495 pg/g** **Split: 1** **Checkcode: 994-247-DFB**

Datafile: 211215R12 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.61		0.8726	0.8716	-1.5	4.42E+05	0.84	Y	1.34	1.16	8510.565	0.243
1379-TCDD	24.95		0.8851	0.8837	-2.1	2.11E+05	0.73	Y	1.34	0.556	8510.565	0.243
1369-TCDD	25.40	J	0.9002	0.8996	-0.9	1.17E+05	0.80	Y	1.34	0.309	8510.565	0.243
1469-TCDD	NotFnd		0.9275						1.34		8510.565	0.243
1247/1246/1248/1249-TCDD	26.38	J EMPC	0.9361	0.9344	-2.7	9.25E+04	0.89	N	1.34	0.244	8510.565	0.243
1378-TCDD	26.60		0.9427	0.9422	-0.8	2.09E+05	0.74	Y	1.34	0.551	8510.565	0.243
1268-TCDD	NotFnd		0.9498						1.34		8510.565	0.243
1478-TCDD	NotFnd		0.9584						1.34		8510.565	0.243
1279-TCDD	NotFnd		0.9644						1.34		8510.565	0.243
1234/1269-TCDD	NotFnd		0.9766						1.34		8510.565	0.243
1236-TCDD	NotFnd		0.9813						1.34		8510.565	0.243
1237/1238-TCDD	27.98	J	0.9906	0.9909	+0.5	1.27E+05	0.88	Y	1.34	0.336	8510.565	0.243
1239-TCDD	NotFnd		0.9952						1.34		8510.565	0.243
2378-TCDD	**28.25**	EMPC	**1.0008**	1.0006	**-0.3**	1.89E+05	0.91	N	**1.34**	**0.498**	**8510.565**	**0.243**
1278-TCDD	NotFnd		1.0122						1.34		8510.565	0.243
1267-TCDD	NotFnd		1.0168						1.34		8510.565	0.243
1289-TCDD	NotFnd		1.0349						1.34		8510.565	0.243
12479/12468-PeCDD	31.10		0.9267	0.9260	-1.3	8.96E+05	1.54	Y	1.06	3.22	7928.984	0.285
12469-PeCDD	31.64	J EMPC	0.9425	0.9421	-0.8	2.99E+05	1.28	N	1.06	1.08	7928.984	0.285
12368-PeCDD	32.19	J	0.9588	0.9584	-0.8	3.40E+05	1.63	Y	1.06	1.22	7928.984	0.285
12478-PeCDD	32.38	J	0.9643	0.9639	-0.8	3.94E+05	1.38	Y	1.06	1.42	7928.984	0.285
12379-PeCDD	32.48	J	0.9673	0.9669	-0.8	2.43E+05	1.67	Y	1.06	0.872	7928.984	0.285
12369/12467/12489-PeCDD	32.74	J	0.9750	0.9747	-0.6	2.50E+05	1.55	Y	1.06	0.897	7928.984	0.285
12346/12347-PeCDD	33.10	J	0.9859	0.9856	-0.6	2.66E+05	1.45	Y	1.06	0.954	7928.984	0.285
12378-PeCDD	33.60	J	**1.0005**	**1.0005**	**0**	**2.61E+05**	**1.50**	**Y**	**1.06**	**0.936**	**7928.984**	**0.285**
12367-PeCDD	33.69	J EMPC	1.0032	1.0031	-0.2	4.66E+04	3.12	N	1.06	0.167	7928.984	0.285
12389-PeCDD	NotFnd		1.0135						1.06		7928.984	0.285
124679/124689-HxCDD	35.77		0.9544	0.9547	+0.6	6.79E+06	1.23	Y	1.05	29	10149.216	0.397
123468-HxCDD	36.41		0.9716	0.9720	+0.9	1.10E+06	1.33	Y	1.05	4.73	10149.216	0.397
123679/123689-HxCDD	36.70		0.9793	0.9797	+0.9	8.14E+06	1.26	Y	1.05	34.8	10149.216	0.397
123469-HxCDD	36.85		0.9829	0.9836	+1.5	6.46E+05	1.38	Y	1.05	2.76	10149.216	0.397
123478-HxCDD	37.47	J	**1.0003**	**1.0002**	**-0.2**	**4.04E+05**	**1.15**	**Y**	1.06	**1.88**	**10149.216**	**0.394**
123678-HxCDD	37.60		**1.0033**	**1.0036**	**+0.7**	**1.97E+06**	**1.38**	**Y**	1.08	**8.34**	**10149.216**	**0.42**
123467-HxCDD	37.79	J	1.0084	1.0088	+0.9	3.91E+05	1.40	Y	1.05	1.67	10149.216	0.397
123789-HxCDD	37.90		**1.0110**	**1.0117**	**+1.6**	**1.05E+06**	**1.26**	**Y**	1.02	**4.19**	**10149.216**	**0.379**

Lab ID: B5966_18718_DF_003 **Acq'd:** 15 Dec 2021 20:00 PSW **Wt/Vol:** 10.11 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-O-1 **UTP:** 16-Dec-2021 09:47:37 PSW **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 994-247-DFB

Datafile: 211215R12 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

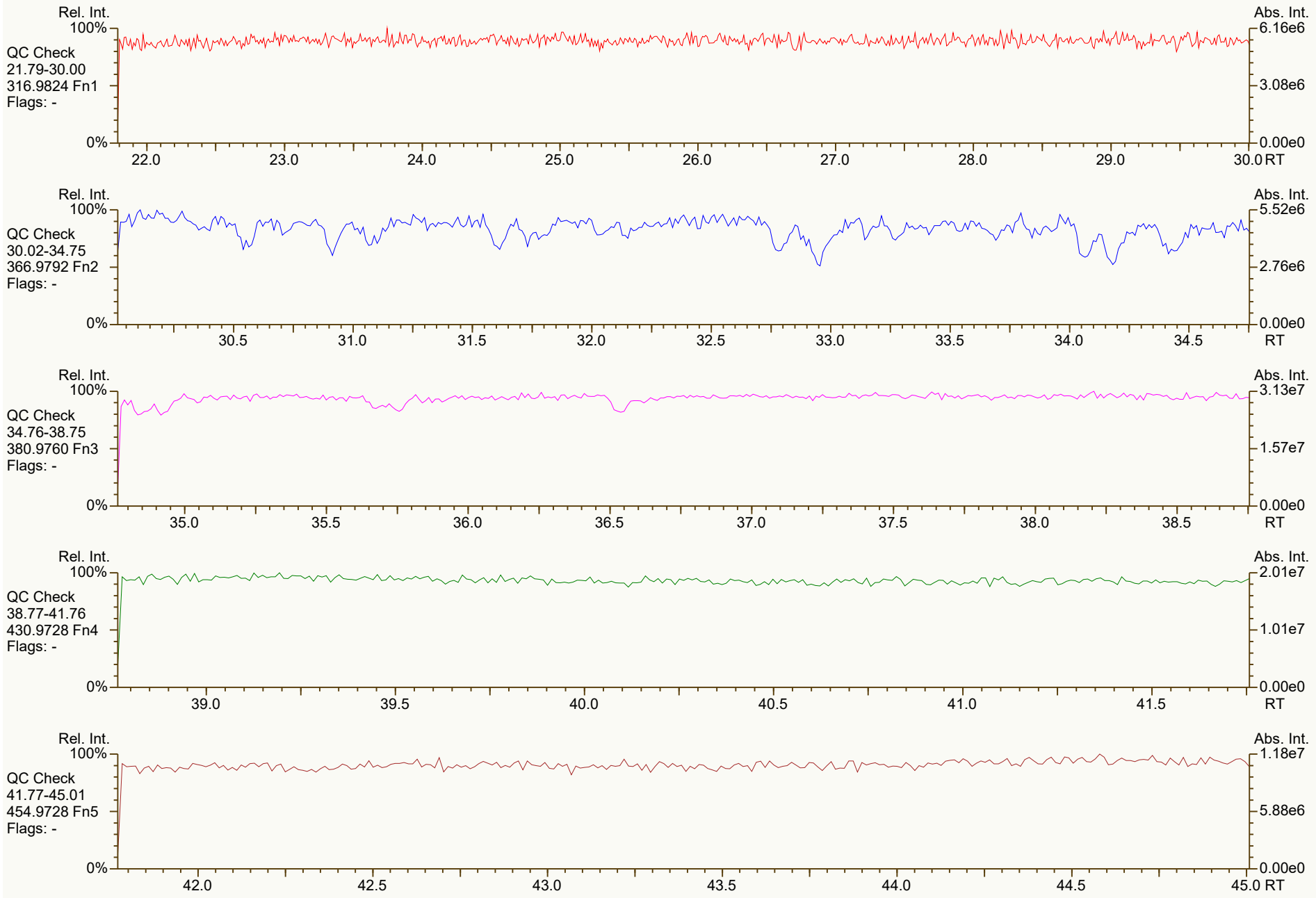
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.88		0.9843	0.9844	+0.2	7.59E+07	1.04	Y	0.97	427	8721.47	0.343
1234678-HpCDD	**40.52**		**1.0003**	**1.0003**	**0**	**6.07E+07**	**1.05**	**Y**	**0.97**	**341**	**8721.47**	**0.343**
OCDD	**43.07**		**1.0003**	**1.0002**	**-0.3**	**3.64E+08**	**0.89**	**Y**	**1.07**	**3,390**	**13738.336**	**1.05**
OCDD-a	43.06		1.0001	1.0001	0	2.14E+07	2.55	Y	0.07	3,240	15309.712	18.9
1368-TCDF	22.47	EMPC	0.8230	0.8207	-3.1	2.49E+05	0.92	N	0.96	0.634	7779.928	0.233
1468-TCDF	23.05	EMPC	0.8443	0.8418	-3.5	2.59E+05	0.92	N	0.96	0.66	7779.928	0.233
2468-TCDF	23.70		0.8672	0.8657	-2.1	5.55E+05	0.83	Y	0.96	1.41	7779.928	0.233
1346/1246-TCDF	24.09	EMPC	0.8802	0.8799	-0.4	3.67E+05	0.58	N	0.96	0.935	7779.928	0.233
1347/1378/1247-TCDF	24.23		0.8855	0.8848	-1.0	9.35E+05	0.76	Y	0.96	2.38	7779.928	0.233
1348-TCDF	24.46	J EMPC	0.8952	0.8936	-2.3	1.50E+05	0.63	N	0.96	0.382	7779.928	0.233
1248/1367/1379-TCDF	24.59	EMPC	0.9000	0.8982	-2.7	6.32E+05	0.95	N	0.96	1.61	7779.928	0.233
1268-TCDF	24.98		0.9136	0.9126	-1.5	3.22E+05	0.80	Y	0.96	0.819	7779.928	0.233
1467-TCDF	25.13	EMPC	0.9185	0.9178	-1.1	2.77E+05	0.98	N	0.96	0.705	7779.928	0.233
1478-TCDF	25.29		0.9247	0.9237	-1.5	4.76E+05	0.73	Y	0.96	1.21	7779.928	0.233
1369/1237-TCDF	25.67		0.9381	0.9376	-0.8	2.78E+05	0.66	Y	0.96	0.707	7779.928	0.233
2467-TCDF	25.79		0.9427	0.9422	-0.8	4.09E+05	0.84	Y	0.96	1.04	7779.928	0.233
2368-TCDF	25.96		0.9484	0.9481	-0.5	6.35E+05	0.82	Y	0.96	1.62	7779.928	0.233
1238/1234/1678/1469/1236-TCDF	26.05		0.9517	0.9514	-0.5	8.01E+05	0.66	Y	0.96	2.04	7779.928	0.233
1278-TCDF	26.50		0.9682	0.9678	-0.6	6.69E+05	0.76	Y	0.96	1.7	7779.928	0.233
1349-TCDF	26.61	J EMPC	0.9725	0.9718	-1.1	7.24E+04	1.23	N	0.96	0.184	7779.928	0.233
1267-TCDF	26.76		0.9782	0.9776	-1.0	3.45E+05	0.77	Y	0.96	0.878	7779.928	0.233
2346/1249-TCDF	26.96		0.9846	0.9846	0	3.18E+05	0.74	Y	0.96	0.808	7779.928	0.233
2347/1279-TCDF	27.17	EMPC	0.9926	0.9925	-0.2	3.93E+05	0.97	N	0.96	0.999	7779.928	0.233
2348-TCDF	27.28	EMPC	0.9966	0.9964	-0.3	2.29E+05	0.92	N	0.96	0.583	7779.928	0.233
2378-TCDF	**27.39**		**1.0006**	**1.0005**	**-0.2**	**1.29E+06**	**0.76**	**Y**	**0.96**	**3.29**	**7779.928**	**0.233**
2367/3467-TCDF	27.76		1.0139	1.0139	0	1.17E+06	0.77	Y	0.96	2.98	7779.928	0.233
1269-TCDF	NotFnd		1.0226						0.96		7779.928	0.233
1239-TCDF	NotFnd		1.0322						0.96		7779.928	0.233
1289-TCDF	29.38	J EMPC	1.0729	1.0731	+0.4	1.62E+05	1.13	N	0.96	0.413	7779.928	0.233
13468/12468-PeCDF	29.35		0.9135	0.9133	-0.4	2.15E+06	1.44	Y	0.94	6.03	7113.445	0.194
13678/13467/12467-PeCDF	30.90		0.9612	0.9613	+0.2	9.04E+05	1.64	Y	0.94	2.54	6682.265	0.182
12368/13478/12478-PeCDF	31.05	EMPC	0.9661	0.9660	-0.2	1.67E+06	1.84	N	0.94	4.67	6682.265	0.182
14678-PeCDF	31.15	J EMPC	0.9693	0.9693	0	2.96E+05	0.91	N	0.94	0.831	6682.265	0.182
13479-PeCDF	31.25	J EMPC	0.9723	0.9723	0	7.78E+04	1.15	N	0.94	0.218	6682.265	0.182
13469/12479-PeCDF	31.47	J	0.9799	0.9792	-1.3	1.32E+05	1.36	Y	0.94	0.371	6682.265	0.182
12346-PeCDF	31.62	J EMPC	0.9842	0.9838	-0.8	1.63E+05	1.80	N	0.94	0.457	6682.265	0.182

Lab ID: B5966_18718_DF_003 | **Acq'd: 15 Dec 2021 20:00 PSW** | **Wt/Vol: 10.11 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-JC-NE-O-1 | **UTP: 16-Dec-2021 09:47:37 PSW** | **J-level: 0.495 pg/g** | **Split: 1** | **Checkcode: 994-247-DFB**

Datafile: 211215R12 | **Report: 16 Dec 2021 10:54 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.71	J	0.9868	0.9865	-0.6	5.97E+05	1.69	Y	0.94	1.67	6682.265	0.182
12347-PeCDF	31.80	J EMPC	0.9893	0.9892	-0.2	3.09E+05	1.12	N	0.94	0.867	6682.265	0.182
12348-PeCDF	31.95	J	0.9941	0.9942	+0.2	2.39E+05	1.75	Y	0.94	0.671	6682.265	0.182
12378-PeCDF	**32.15**	J	**1.0006**	**1.0003**	**-0.6**	**4.92E+05**	**1.69**	**Y**	**0.95**	**1.36**	**6682.265**	**0.185**
12678/12367-PeCDF	32.43	J	1.0090	1.0091	+0.2	7.16E+05	1.63	Y	0.94	2.01	6682.265	0.182
12379-PeCDF	NotFnd		1.0143						0.94		6682.265	0.182
12679-PeCDF	NotFnd		0.9929						0.94		6682.265	0.182
23467/12369-PeCDF	33.14	J EMPC	0.9966	0.9965	-0.2	4.99E+05	1.81	N	0.94	1.4	6682.265	0.182
23478-PeCDF	**33.27**		**1.0006**	**1.0006**	**0**	**9.76E+05**	**1.60**	**Y**	**0.94**	**2.78**	**6682.265**	**0.179**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6682.265	0.182
12349-PeCDF	NotFnd		1.0102						0.94		6682.265	0.182
12389-PeCDF	34.35	J	1.0325	1.0329	+0.8	6.52E+04	1.70	Y	0.94	0.183	6682.265	0.182
123468-HxCDF	35.12		0.9628	0.9627	-0.2	1.22E+06	1.34	Y	1.16	3.75	13576.964	0.379
124678/134678-HxCDF	35.32		0.9683	0.9681	-0.4	4.68E+06	1.25	Y	1.16	14.4	13576.964	0.379
134679-HxCDF	NotFnd		0.9746						1.16		13576.964	0.379
124679-HxCDF	NotFnd		0.9798						1.16		13576.964	0.379
124689-HxCDF	35.97		0.9859	0.9859	0	4.38E+06	1.24	Y	1.16	13.5	13576.964	0.379
123467-HxCDF	36.38	J EMPC	0.9972	0.9973	+0.2	4.45E+05	1.53	N	1.16	1.37	13576.964	0.379
123478-HxCDF	**36.50**		**1.0004**	**1.0005**	**+0.2**	**8.39E+05**	**1.06**	**Y**	**1.23**	**2.59**	**13576.964**	**0.362**
123678-HxCDF	**36.63**	J	**1.0004**	**1.0004**	**0**	**6.43E+05**	**1.08**	**Y**	**1.13**	**1.75**	**13576.964**	**0.327**
123479-HxCDF	NotFnd		1.0049						1.16		13576.964	0.379
123469-HxCDF	NotFnd		1.0088						1.16		13576.964	0.379
123679-HxCDF	NotFnd		0.9943						1.16		13576.964	0.379
234678-HxCDF	**37.30**		**1.0005**	**1.0005**	**0**	**8.09E+05**	**1.19**	**Y**	**1.15**	**2.54**	**13576.964**	**0.407**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		13576.964	0.379
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**13576.964**	**0.436**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.28	J	1.0007	1.0008	+0.2	1.58E+05	1.26	Y	1.16	0.486	13576.964	0.379
1234678-HpCDF	**39.63**		**1.0003**	**1.0003**	**0**	**1.14E+07**	**1.02**	**Y**	**1.36**	**38.6**	**7174.739**	**0.161**
1234679-HpCDF	39.88	**J**	1.0067	1.0067	0	4.66E+05	1.09	Y	1.33	1.74	7174.739	0.19
1234689-HpCDF	40.02		1.0100	1.0101	+0.2	1.68E+07	1.04	Y	1.33	62.6	7174.739	0.19
1234789-HpCDF	**40.97**		**1.0003**	**1.0001**	**-0.5**	**6.18E+05**	**1.05**	**Y**	**1.30**	**2.54**	**7174.739**	**0.224**
OCDF	**43.25**		**1.0002**	**1.0003**	**+0.3**	**1.15E+07**	**0.86**	**Y**	**1.03**	**87**	**9329.12**	**0.579**
OCDF-a	43.25		1.0002	1.0002	0	8.12E+05	2.53	Y	0.06	106	9281.47	9.96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0%
Abs. Int.
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3.08e6
0.00e0
RT
QC Check
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316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
5.52e6
2.76e6
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
3.13e7
1.57e7
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
2.01e7
1.01e7
39.0
39.5
40.0
40.5
41.0
41.5
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
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5.88e6
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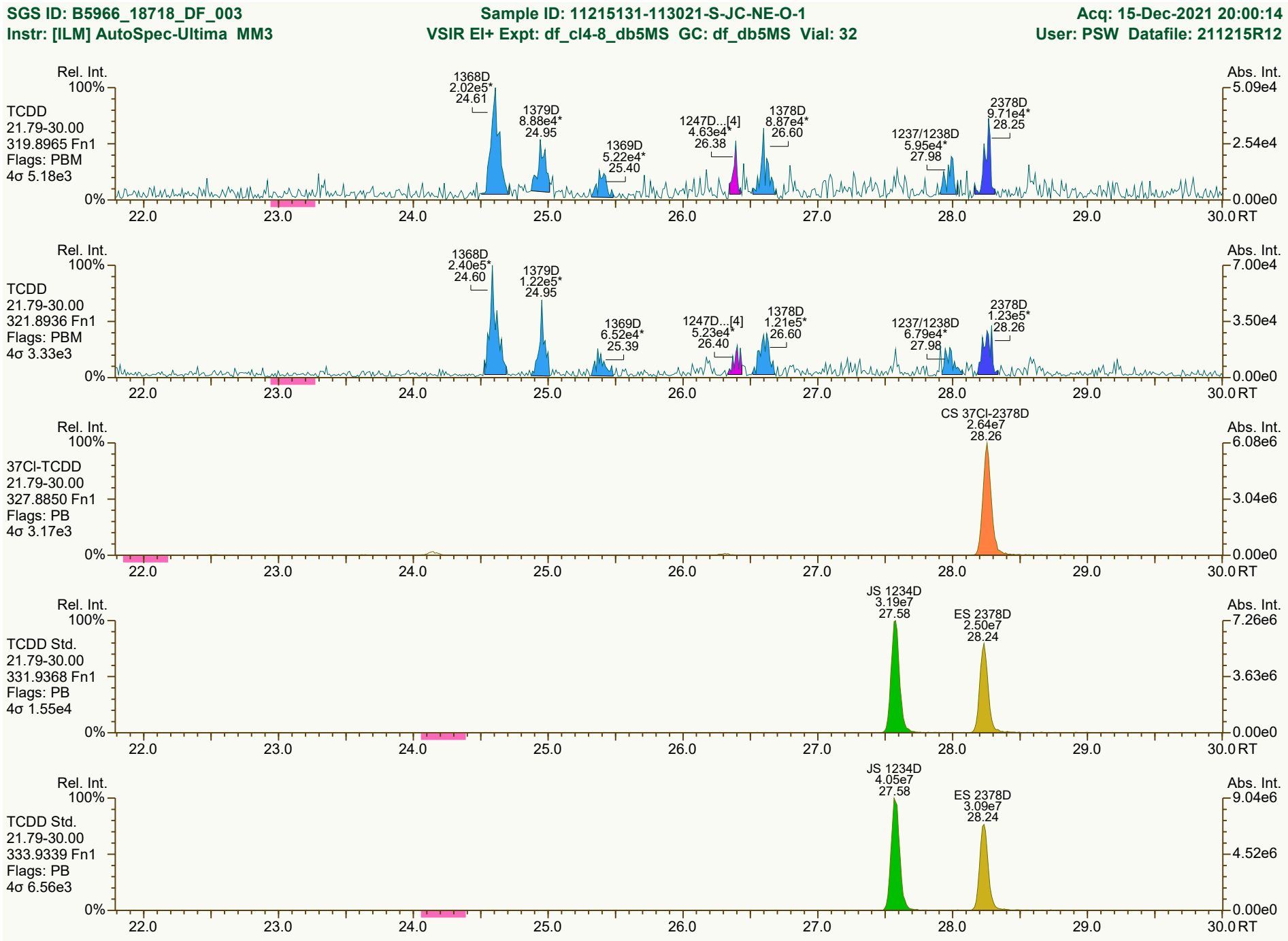
42.5
43.0
43.5
44.0
44.5
45.0

SGS ID: B5966_18718_DF_003 | Sample ID: 11215131-113021-S-JC-NE-O-1 | Acq: 15-Dec-2021 20:00:14
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32 | User: PSW Datafile: 211215R12



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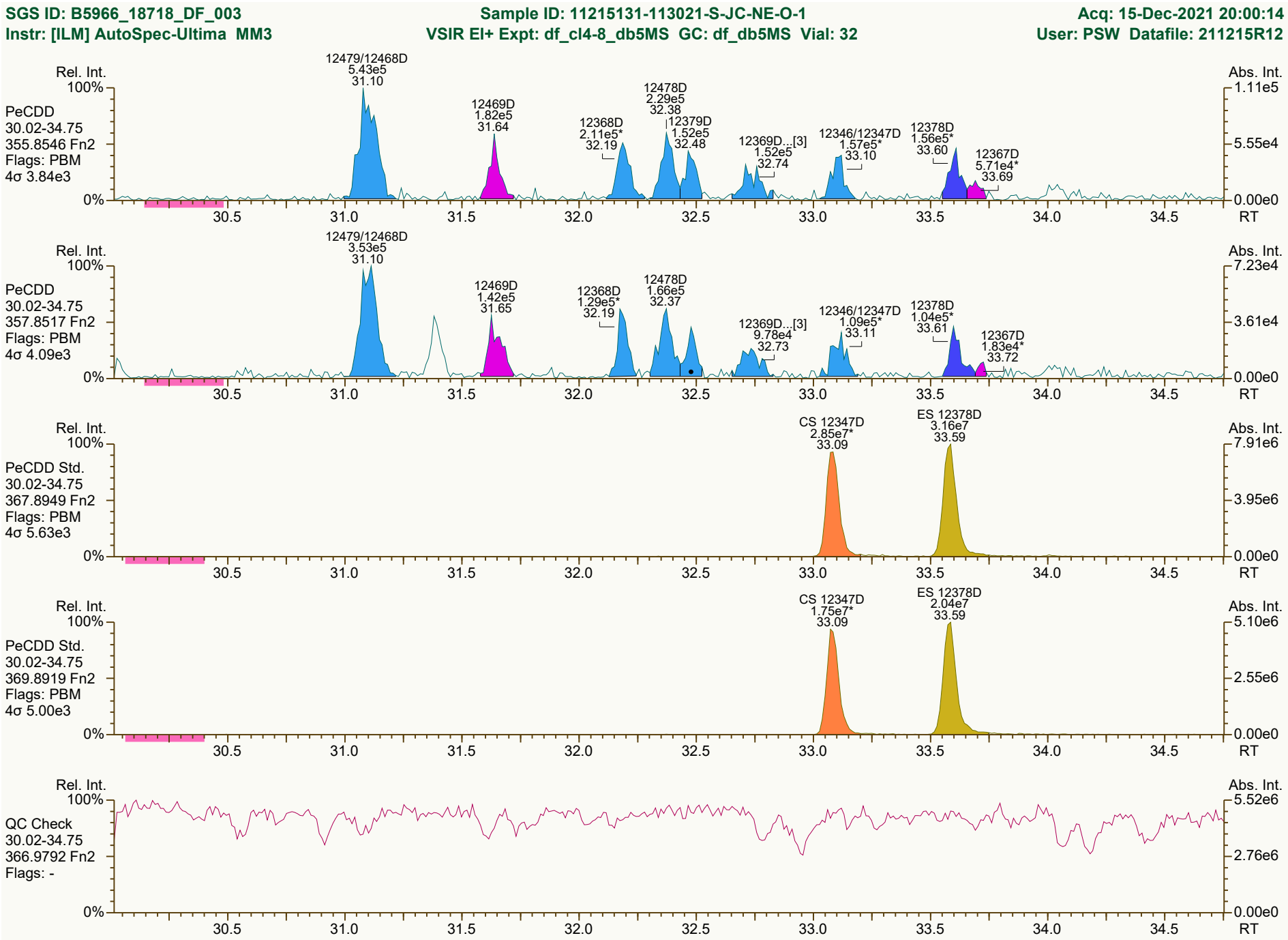
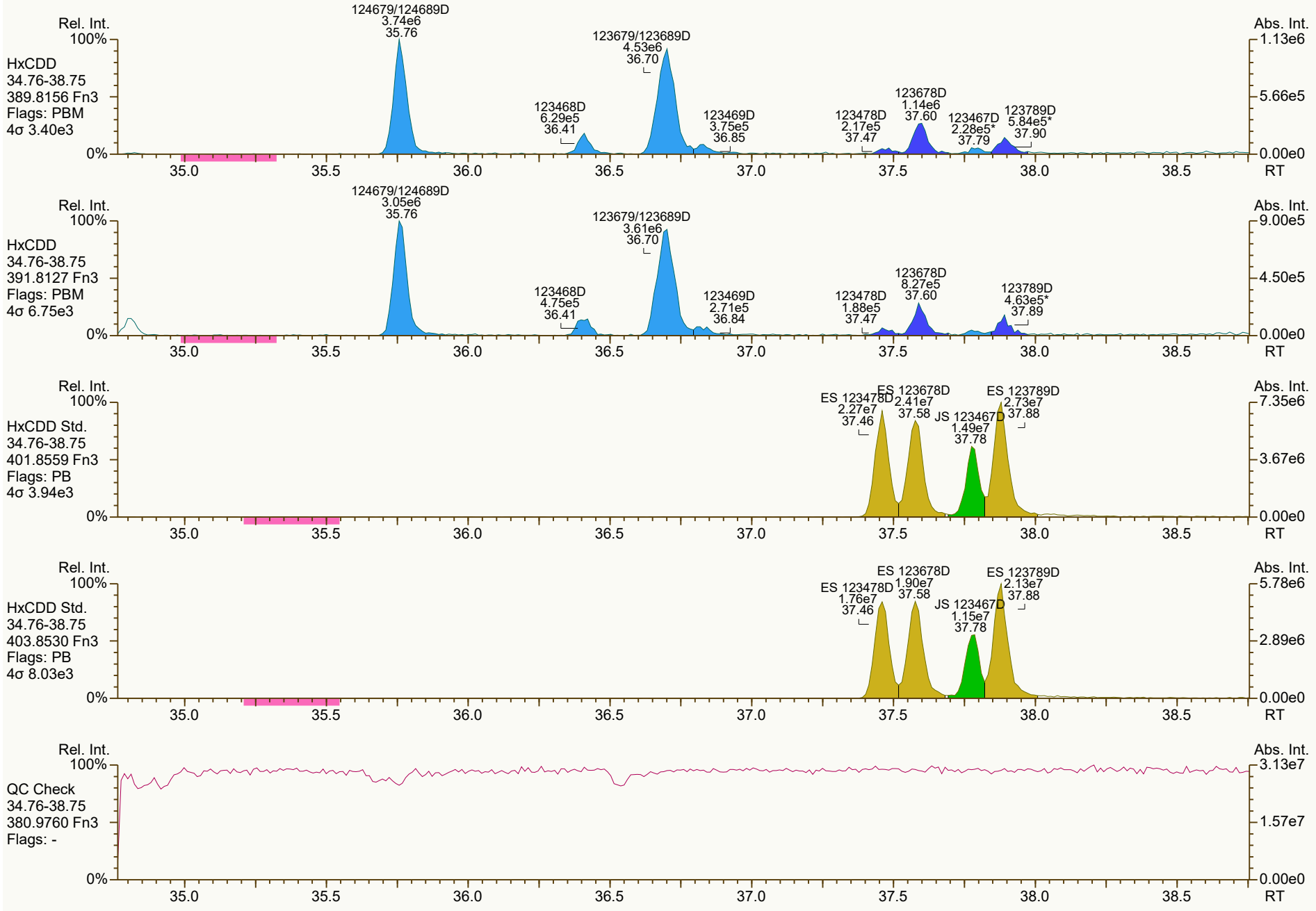
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1681, 8973, 6031 scc: 994-247 | PKD: 16-Dec-2021 08:44 Printed: 16-Dec-2021 11:00 Page 2 of 12

SGS ID: B5966_18718_DF_003 | Sample ID: 11215131-113021-S-JC-NE-O-1 | Acq: 15-Dec-2021 20:00:14
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32 | User: PSW Datafile: 211215R12



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_003.utp_res, saved 16-Dec-2021 09:47 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0286, 1104 scc: 994-247 | PKD: 16-Dec-2021 08:44 Printed: 16-Dec-2021 11:00 Page 3 of 12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HxCDD
34.76-38.75
389.8156 Fn3
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0%
124679/124689D
3.74e6
35.76
123679/123689D
4.53e6
36.70
123468D
6.29e5
36.41
123469D
3.75e5
36.85
123478D
2.17e5
37.47
123678D
1.14e6
37.60
123467D
2.28e5*
37.79
123789D
5.84e5*
37.90
Abs. Int.
1.13e6
5.66e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 6.75e3
0%
124679/124689D
3.05e6
35.76
123679/123689D
3.61e6
36.70
123468D
4.75e5
36.41
123469D
2.71e5
36.84
123478D
1.88e5
37.47
123678D
8.27e5
37.60
123789D
4.63e5*
37.89
Abs. Int.
9.00e5
4.50e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PB
4σ 3.94e3
0%
ES 123478D
2.27e7
37.46
ES 123678D
2.41e7
37.58
JS 123467D
1.49e7
37.78
ES 123789D
2.73e7
37.88
Abs. Int.
7.35e6
3.67e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PB
4σ 8.03e3
0%
ES 123478D
1.76e7
37.46
ES 123678D
1.90e7
37.58
JS 123467D
1.15e7
37.78
ES 123789D
2.13e7
37.88
Abs. Int.
5.78e6
2.89e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.13e7
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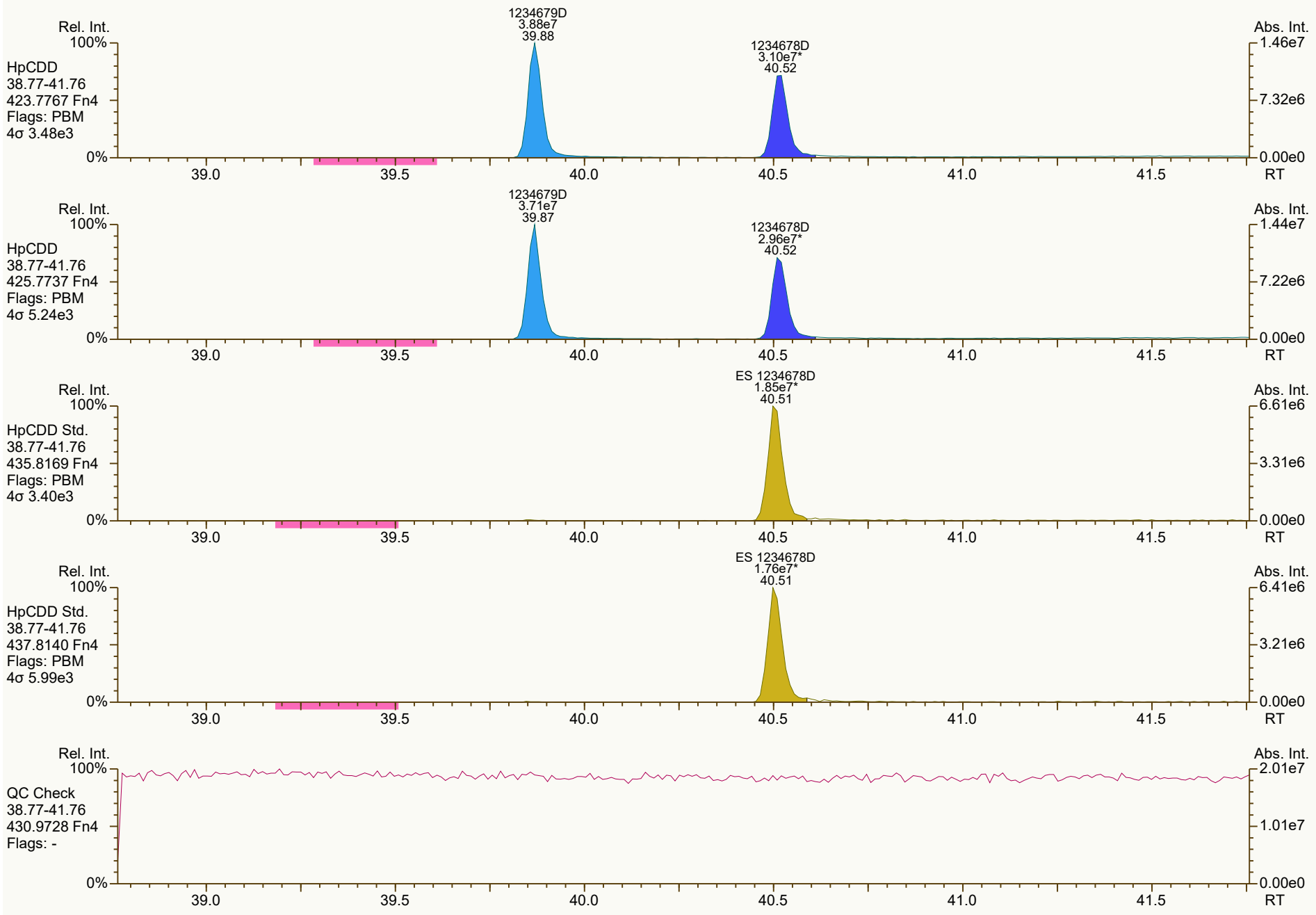
37.5
38.0
38.5
RT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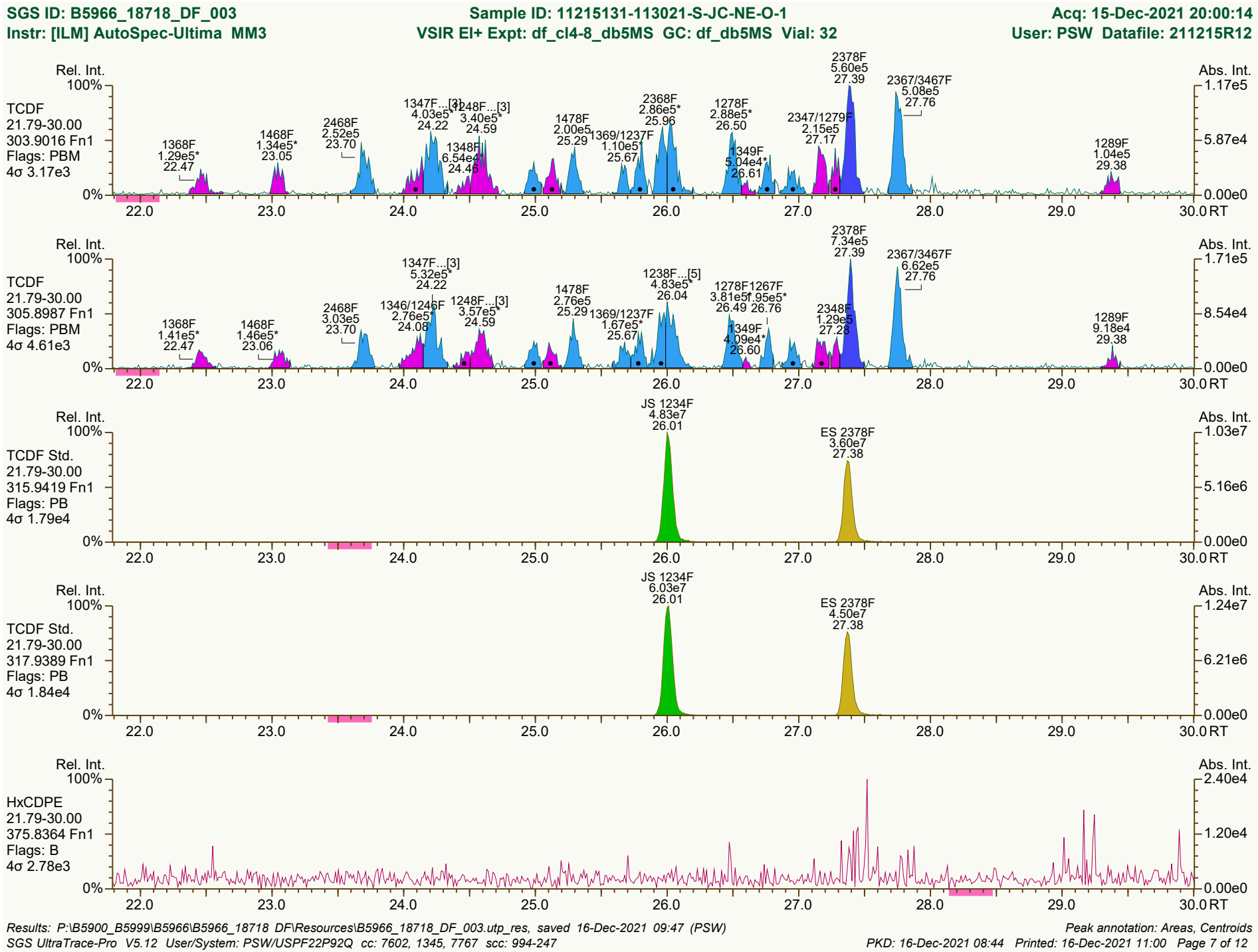
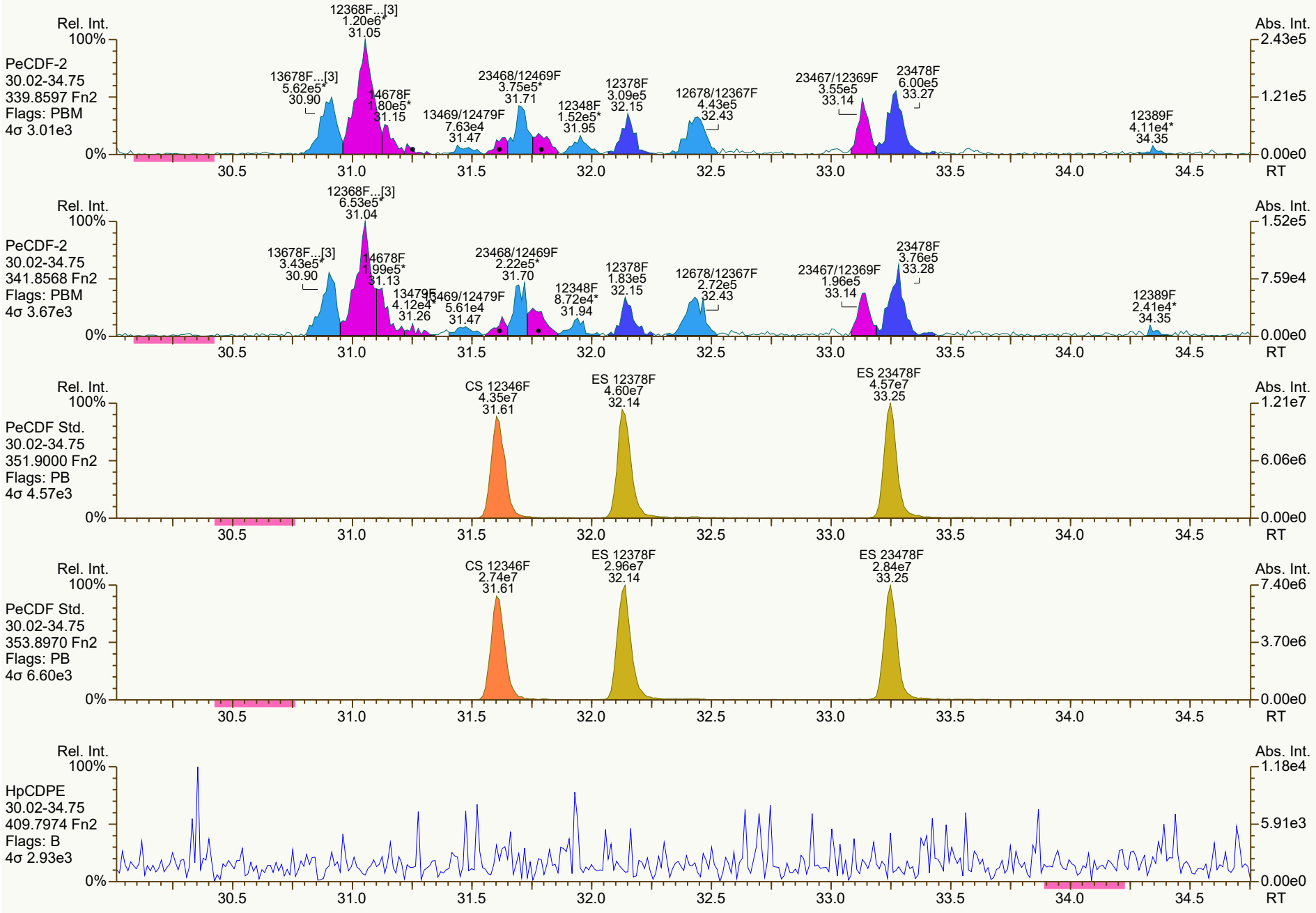
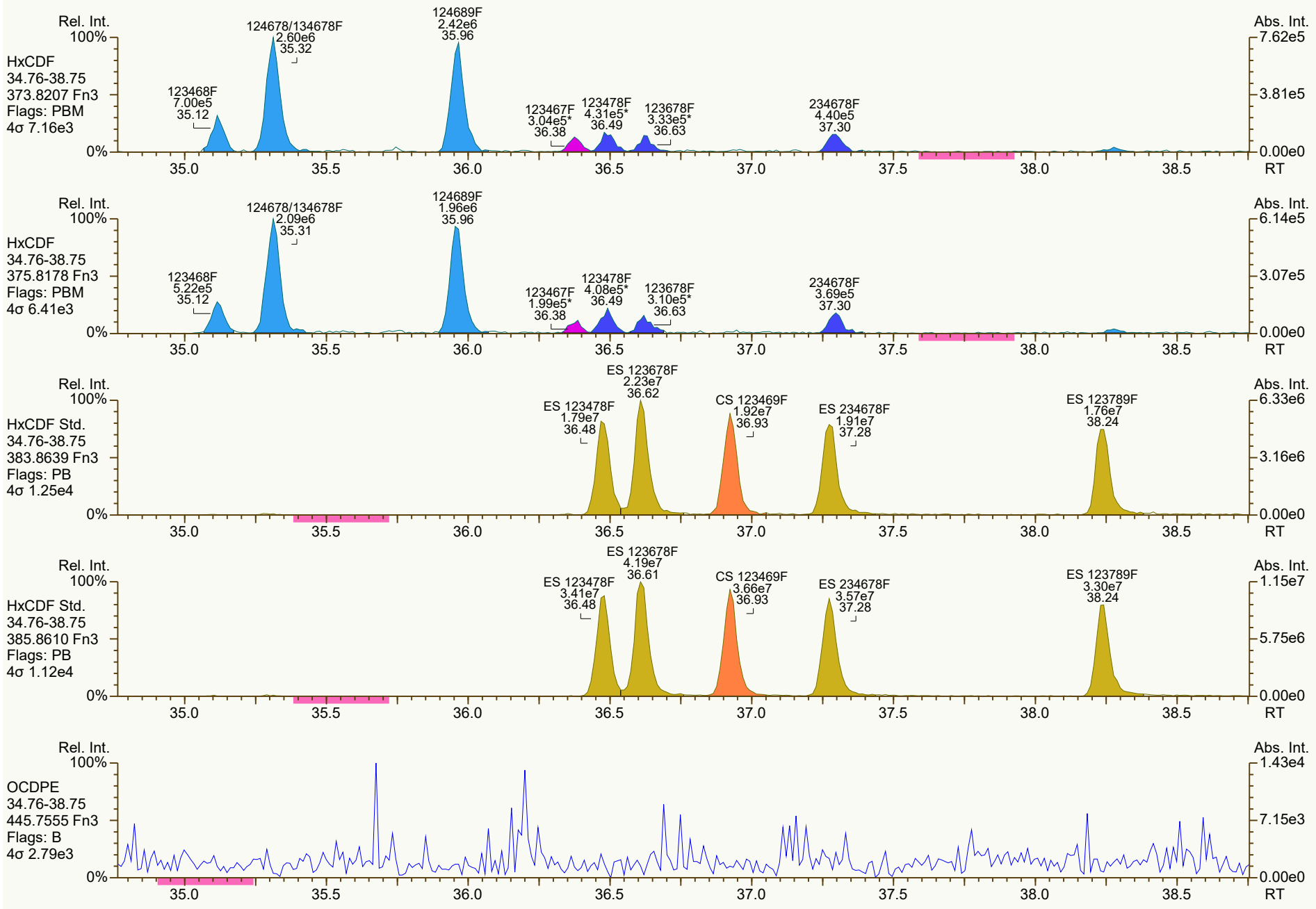
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 3.48e3
1234679D
3.88e7
39.88
1234678D
3.10e7*
40.52
Abs. Int.
1.46e7
7.32e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 5.24e3
1234679D
3.71e7
39.87
1234678D
2.96e7*
40.52
Abs. Int.
1.44e7
7.22e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 3.40e3
ES 1234678D
1.85e7*
40.51
Abs. Int.
6.61e6
3.31e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 5.99e3
ES 1234678D
1.76e7*
40.51
Abs. Int.
6.41e6
3.21e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
2.01e7
1.01e7
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
1.72e8*
43.06
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 7.31e3
0%
Abs. Int.
5.13e7
2.57e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.92e8*
43.06
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 6.43e3
0%
Abs. Int.
5.85e7
2.92e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.90e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 6.17e3
0%
Abs. Int.
5.79e6
2.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.07e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 6.90e3
0%
Abs. Int.
6.13e6
3.06e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.88e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

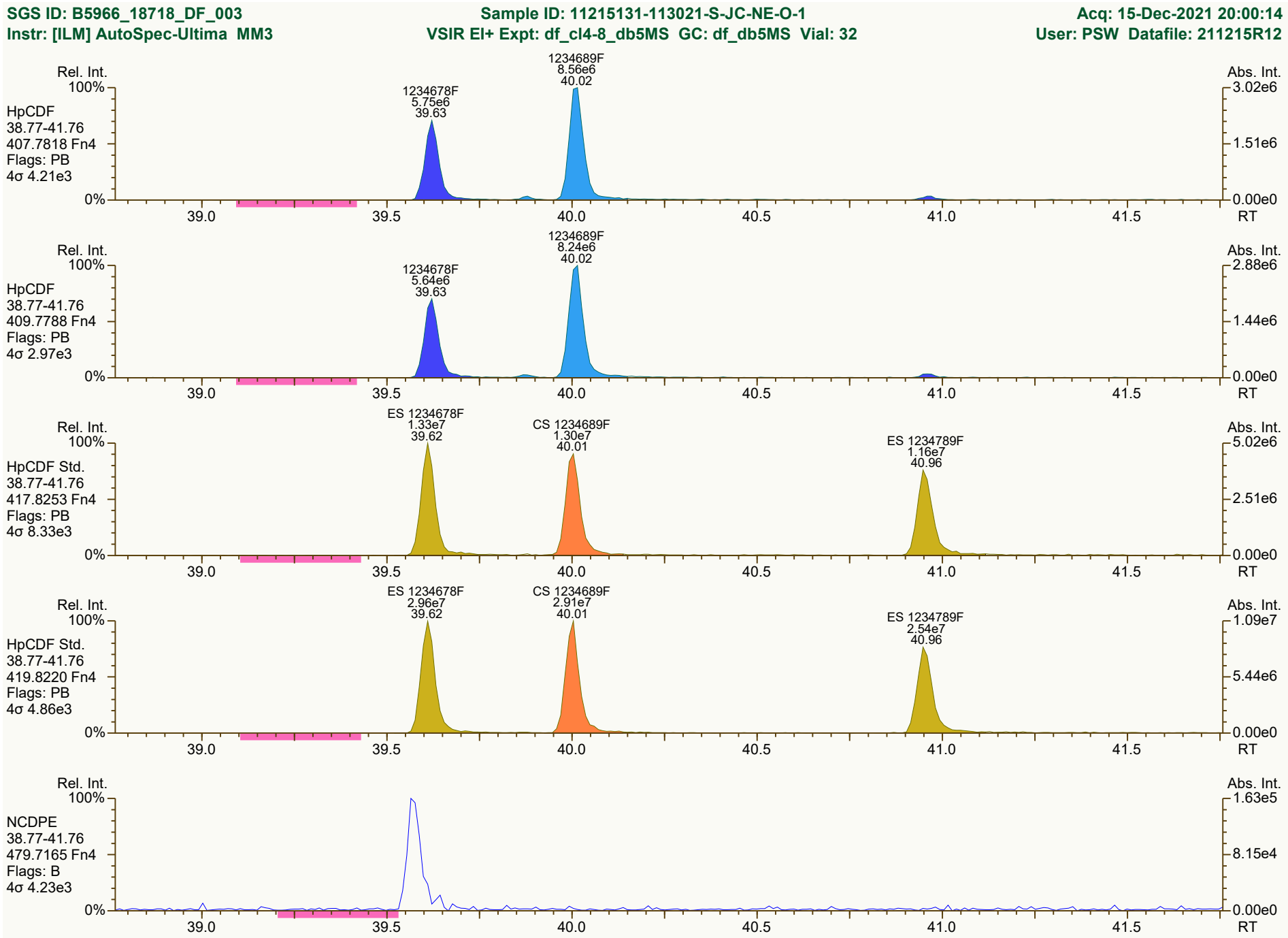

SGS ID: B5966_18718_DF_003
Sample ID: 11215131-113021-S-JC-NE-O-1
Acq: 15-Dec-2021 20:00:14
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: PSW Datafile: 211215R12
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.17e3
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 4.61e3
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.79e4
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.84e4
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.78e3
Rel. Int.
Abs. Int.
RT
JS 1234F
ES 2378F
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_003.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7602, 1345, 7767 scc: 994-247
PKD: 16-Dec-2021 08:44 Printed: 16-Dec-2021 11:00 Page 7 of 12


13468/12468F
1.27e6
29.35
Rel. Int.
100%
0%
Abs. Int.
2.96e5
1.48e5
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.31e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
8.81e5
29.36
Rel. Int.
100%
0%
Abs. Int.
1.99e5
9.97e4
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.80e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
6.16e6
3.08e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

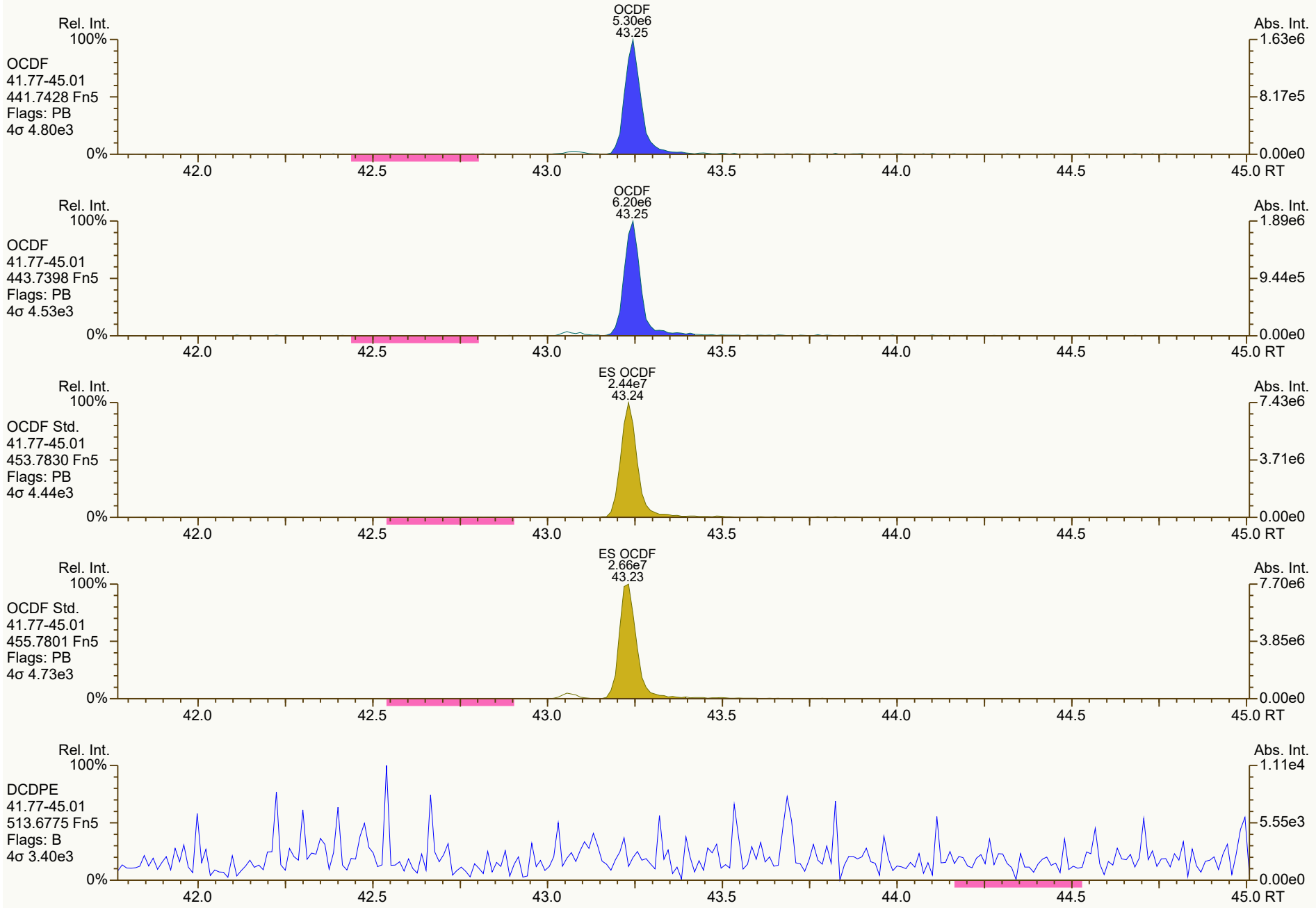

PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.01e3
12368F...[3] 1.20e6* 31.05
13678F...[3] 5.62e5* 30.90
14678F 1.80e5* 31.15
13469/12479F 7.63e4 31.47
23468/12469F 3.75e5* 31.71
12348F 1.52e5* 31.95
12378F 3.09e5 32.15
12678/12367F 4.43e5 32.43
23467/12369F 3.55e5 33.14
23478F 6.00e5 33.27
12389F 4.11e4* 34.35
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.67e3
12368F...[3] 6.53e5* 31.04
13678F...[3] 3.43e5* 30.90
14678F 1.99e5* 31.13
13479F 4.12e4* 31.26
13469/12479F 5.61e4 31.47
23468/12469F 2.22e5* 31.70
12348F 8.72e4* 31.94
12378F 1.83e5 32.15
12678/12367F 2.72e5 32.43
23467/12369F 1.96e5 33.14
23478F 3.76e5 33.28
12389F 2.41e4* 34.35
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.57e3
CS 12346F 4.35e7 31.61
ES 12378F 4.60e7 32.14
ES 23478F 4.57e7 33.25
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 6.60e3
CS 12346F 2.74e7 31.61
ES 12378F 2.96e7 32.14
ES 23478F 2.84e7 33.25
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.93e3
Rel. Int.
Abs. Int.
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 7.16e3
123468F
7.00e5
35.12
124678/134678F
2.60e6
35.32
124689F
2.42e6
35.96
123467F
3.04e5*
36.38
123478F
4.31e5*
36.49
123678F
3.33e5*
36.63
234678F
4.40e5
37.30
Abs. Int.
7.62e5
3.81e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 6.41e3
123468F
5.22e5
35.12
124678/134678F
2.09e6
35.31
124689F
1.96e6
35.96
123467F
1.99e5*
36.38
123478F
4.08e5*
36.49
123678F
3.10e5*
36.63
234678F
3.69e5
37.30
Abs. Int.
6.14e5
3.07e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 1.25e4
ES 123478F
1.79e7
36.48
ES 123678F
2.23e7
36.62
CS 123469F
1.92e7
36.93
ES 234678F
1.91e7
37.28
ES 123789F
1.76e7
38.24
Abs. Int.
6.33e6
3.16e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.12e4
ES 123478F
3.41e7
36.48
ES 123678F
4.19e7
36.61
CS 123469F
3.66e7
36.93
ES 234678F
3.57e7
37.28
ES 123789F
3.30e7
38.24
Abs. Int.
1.15e7
5.75e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.79e3
Abs. Int.
1.43e4
7.15e3
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

SGS ID: B5966_18718_DF_003 | Sample ID: 11215131-113021-S-JC-NE-O-1 | Acq: 15-Dec-2021 20:00:14
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32 | User: PSW Datafile: 211215R12



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_003.utp_res, saved 16-Dec-2021 09:47 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6565, 6516, 9650 scc: 994-247 | PKD: 16-Dec-2021 08:44 Printed: 16-Dec-2021 11:00 Page 11 of 12


OCDF
5.30e6
43.25
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 4.80e3
0%
Abs. Int.
1.63e6
8.17e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.20e6
43.25
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 4.53e3
0%
Abs. Int.
1.89e6
9.44e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.44e7
43.24
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.44e3
0%
Abs. Int.
7.43e6
3.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.66e7
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.73e3
0%
Abs. Int.
7.70e6
3.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.40e3
0%
Abs. Int.
1.11e4
5.55e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5966_18718_DF_004 **Acq'd:** 15 Dec 2021 20:47 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-O-2 **UTP:** 16-Dec-2021 09:47:37 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 651-553-JSV

Datafile: 211215R13 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26		1.0008	1.0007	-0.2	8.11E+05	0.70	Y	1.34	2.19	9446.826	0.297
12378-PeCDD	33.60	J EMPC	1.0005	1.0004	-0.2	2.92E+05	1.90	N	1.06	1.23	11860.634	0.509
123478-HxCDD	37.47	EMPC	1.0003	1.0003	0	6.03E+05	1.44	N	1.06	3.12	12303.516	0.549
123678-HxCDD	37.60		1.0033	1.0037	+0.9	3.12E+06	1.23	Y	1.08	15.3	12303.516	0.545
123789-HxCDD	37.90		1.0110	1.0116	+1.4	1.71E+06	1.26	Y	1.02	7.89	12303.516	0.525
1234678-HpCDD	40.52		1.0003	1.0004	+0.2	1.55E+08	1.04	Y	0.97	1,000	8387.898	0.397
OCDD	43.07	E	1.0003	1.0003	0	1.22E+09	0.90	Y	1.07	12,900	13242.5	1.09
2378-TCDF	27.39		1.0006	1.0008	+0.3	4.84E+06	0.74	Y	0.96	12.9	6686.712	0.211
12378-PeCDF	32.16	J	1.0006	1.0006	0	5.70E+05	1.69	Y	0.95	1.85	6909.832	0.229
23478-PeCDF	33.28		1.0006	1.0008	+0.4	1.50E+06	1.64	Y	0.94	5.12	6909.832	0.224
123478-HxCDF	36.49		1.0004	1.0005	+0.2	1.07E+06	1.29	Y	1.23	3.83	17807.683	0.552
123678-HxCDF	36.62		1.0004	1.0003	-0.2	7.74E+05	1.18	Y	1.13	2.58	17807.683	0.531
234678-HxCDF	37.30		1.0005	1.0004	-0.2	1.07E+06	1.30	Y	1.15	3.84	17807.683	0.615
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	17807.683	0.654
1234678-HpCDF	39.62		1.0003	1.0002	-0.2	1.45E+07	1.04	Y	1.36	59.3	5978.684	0.17
1234789-HpCDF	40.97		1.0003	1.0002	-0.2	9.94E+05	0.96	Y	1.30	5.05	5978.684	0.218
OCDF	43.25		1.0002	1.0002	0	2.22E+07	0.88	Y	1.03	198	11674.962	0.878

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23		1.0237	1.0239	+0.3	5.46E+07	0.83	Y	1.03	80.3
ES 12378-PeCDD	33.58		1.2158	1.2179	+4.2	4.46E+07	1.60	Y	1.03	65.5
ES 123478-HxCDD	37.46		0.9920	0.9916	-0.9	3.64E+07	1.26	Y	0.99	77.1
ES 123678-HxCDD	37.58		0.9949	0.9948	-0.2	3.74E+07	1.28	Y	0.97	80.9
ES 123789-HxCDD	37.88		1.0026	1.0028	+0.5	4.23E+07	1.28	Y	1.12	79.2
ES 1234678-HpCDD	40.51		1.0713	1.0723	+2.4	3.14E+07	1.02	Y	0.99	66.7
ES OCDD	43.06		1.1385	1.1398	+3.4	3.51E+07	0.95	Y	0.78	47.5
ES 2378-TCDF	27.37		1.0519	1.0525	+1.0	7.76E+07	0.81	Y	1.08	72.8
ES 12378-PeCDF	32.14		1.2331	1.2357	+5.0	6.46E+07	1.58	Y	0.93	70.3
ES 23478-PeCDF	33.25		1.2754	1.2784	+6.0	6.21E+07	1.58	Y	0.92	68.4
ES 123478-HxCDF	36.47		0.9656	0.9655	-0.2	4.51E+07	0.54	Y	1.14	83.1
ES 123678-HxCDF	36.61		0.9693	0.9692	-0.2	5.28E+07	0.53	Y	1.30	85.7
ES 234678-HxCDF	37.28		0.9869	0.9869	0	4.78E+07	0.51	Y	1.20	83.8
ES 123789-HxCDF	38.24		1.0121	1.0124	+0.7	4.45E+07	0.53	Y	1.14	82.4
ES 1234678-HpCDF	39.61		1.0478	1.0487	+2.1	3.57E+07	0.45	Y	0.95	79
ES 1234789-HpCDF	40.96		1.0832	1.0843	+2.7	3.00E+07	0.44	Y	0.85	74.6
ES OCDF	43.24		1.1434	1.1446	+3.1	4.35E+07	0.86	Y	0.93	49.4

Lab ID: B5966_18718_DF_004 **Acq'd:** 15 Dec 2021 20:47 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-O-2 **UTP:** 16-Dec-2021 09:47:37 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 651-553-JSV

Datafile: 211215R13 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	6.58E+07	0.78	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	9.83E+07	0.78	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.37E+07	1.23	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.43E+07	n/a	-	1.31	70.6	
CS 12347-PeCDD	33.08		1.1978	1.1997	+3.8	4.17E+07	1.51	Y	0.89	70.9	
CS 12346-PeCDF	31.61		1.2130	1.2154	+4.6	6.14E+07	1.55	Y	0.87	72	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	4.78E+07	0.54	Y	1.09	92.4	
CS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	3.54E+07	0.46	Y	0.86	86.1	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.43E+07~~	~~n/a~~		~~1.26~~	~~80.4~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.08~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~4.17E+07~~	~~1.51~~	~~Y~~	~~0.86~~	~~100~~	CL 17Dec21
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2154~~	~~+4.6~~	~~6.14E+07~~	~~1.55~~	~~Y~~	~~0.93~~	~~102~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~4.78E+07~~	~~0.54~~	~~Y~~	~~0.84~~	~~100~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~3.54E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~109~~	

Totals	Conc	EMPC
Total TCDD	3.01	5.14
Total PeCDD	5.21	12.4
Total HxCDD	116	119
Total HpCDD	1910	1910
Total Tetra-Octa Dioxins	15000	15000
Total TCDF	60.6	67
Total PeCDF	49.7	52.7
Total HxCDF	73.8	73.8
Total HpCDF	219	219
Total Tetra-Octa Furans	602	611
Total Tetra-Octa Dioxins & Furans	15600	15600

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.676	0.70
Response	8.26E+05	8.11E+05

Lab ID: B5966_18718_DF_004 **Acq'd: 15 Dec 2021 20:47 PSW** **Wt/Vol: 10.07 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-JC-NE-O-2 **UTP: 16-Dec-2021 09:47:37 PSW** **J-level: 0.497 pg/g** **Split: 1** **Checkcode: 651-553-JSV**

Datafile: 211215R13 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.59	EMPC	0.8726	0.8711	-2.2	4.10E+05	0.64	N	1.34	1.11	9446.826	0.297
1379-TCDD	24.95	EMPC	0.8851	0.8838	-1.9	2.54E+05	0.91	N	1.34	0.687	9446.826	0.297
1369-TCDD	NotFnd		0.9002						1.34		9446.826	0.297
1469-TCDD	NotFnd		0.9275						1.34		9446.826	0.297
1247/1246/1248/1249-TCDD	26.39	J	0.9361	0.9348	-2.1	1.26E+05	0.76	Y	1.34	0.34	9446.826	0.297
1378-TCDD	26.59	J	0.9427	0.9419	-1.3	1.78E+05	0.69	Y	1.34	0.481	9446.826	0.297
1268-TCDD	NotFnd		0.9498						1.34		9446.826	0.297
1478-TCDD	NotFnd		0.9584						1.34		9446.826	0.297
1279-TCDD	NotFnd		0.9644						1.34		9446.826	0.297
1234/1269-TCDD	NotFnd		0.9766						1.34		9446.826	0.297
1236-TCDD	NotFnd		0.9813						1.34		9446.826	0.297
1237/1238-TCDD	NotFnd		0.9906						1.34		9446.826	0.297
1239-TCDD	NotFnd		0.9952						1.34		9446.826	0.297
2378-TCDD	**28.26**		**1.0008**	1.0007	**-0.2**	8.11E+05	0.70	Y	**1.34**	**2.19**	**9446.826**	**0.297**
1278-TCDD	28.59	J EMPC	1.0122	1.0125	+0.5	1.21E+05	0.62	N	1.34	0.328	9446.826	0.297
1267-TCDD	NotFnd		1.0168						1.34		9446.826	0.297
1289-TCDD	NotFnd		1.0349						1.34		9446.826	0.297
12479/12468-PeCDD	31.10		0.9267	0.9260	-1.3	8.98E+05	1.58	Y	1.06	3.78	11860.634	0.509
12469-PeCDD	31.64	J EMPC	0.9425	0.9421	-0.8	3.86E+05	0.39	N	1.06	1.62	11860.634	0.509
12368-PeCDD	32.18	J EMPC	0.9588	0.9583	-1.0	3.10E+05	1.85	N	1.06	1.3	11860.634	0.509
12478-PeCDD	32.37	J EMPC	0.9643	0.9640	-0.6	3.50E+05	0.80	N	1.06	1.47	11860.634	0.509
12379-PeCDD	32.47	J EMPC	0.9673	0.9669	-0.8	2.43E+05	1.79	N	1.06	1.02	11860.634	0.509
12369/12467/12489-PeCDD	32.73	J	0.9750	0.9747	-0.6	3.42E+05	1.56	Y	1.06	1.44	11860.634	0.509
12346/12347-PeCDD	33.11	J EMPC	0.9859	0.9859	0	1.24E+05	2.42	N	1.06	0.521	11860.634	0.509
12378-PeCDD	33.60	J EMPC	**1.0005**	**1.0004**	**-0.2**	**2.92E+05**	**1.90**	**N**	**1.06**	**1.23**	**11860.634**	**0.509**
12367-PeCDD	NotFnd		1.0032						1.06		11860.634	0.509
12389-PeCDD	NotFnd		1.0135						1.06		11860.634	0.509
124679/124689-HxCDD	35.76		0.9544	0.9546	+0.4	6.65E+06	1.26	Y	1.05	32.4	12303.516	0.539
123468-HxCDD	36.40		0.9716	0.9718	+0.4	1.11E+06	1.35	Y	1.05	5.41	12303.516	0.539
123679/123689-HxCDD	36.70		0.9793	0.9796	+0.7	1.00E+07	1.24	Y	1.05	49	12303.516	0.539
123469-HxCDD	36.84		0.9829	0.9833	+0.9	7.79E+05	1.22	Y	1.05	3.8	12303.516	0.539
123478-HxCDD	37.47	EMPC	**1.0003**	**1.0003**	**0**	**6.03E+05**	**1.44**	**N**	1.06	**3.12**	**12303.516**	**0.549**
123678-HxCDD	37.60		**1.0033**	**1.0037**	**+0.9**	**3.12E+06**	**1.23**	**Y**	1.08	**15.3**	**12303.516**	**0.545**
123467-HxCDD	37.78	J	1.0084	1.0087	+0.7	4.64E+05	1.32	Y	1.05	2.26	12303.516	0.539
123789-HxCDD	37.90		**1.0110**	**1.0116**	**+1.4**	**1.71E+06**	**1.26**	**Y**	1.02	**7.89**	**12303.516**	**0.525**

Lab ID: B5966_18718_DF_004 | Acq'd: 15 Dec 2021 20:47 PSW | Wt/Vol: 10.07 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-113021-S-JC-NE-O-2 | UTP: 16-Dec-2021 09:47:37 PSW | J-level: 0.497 pg/g | Split: 1 | Checkcode: 651-553-JSV

Datafile: 211215R13 | Report: 16 Dec 2021 10:54 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

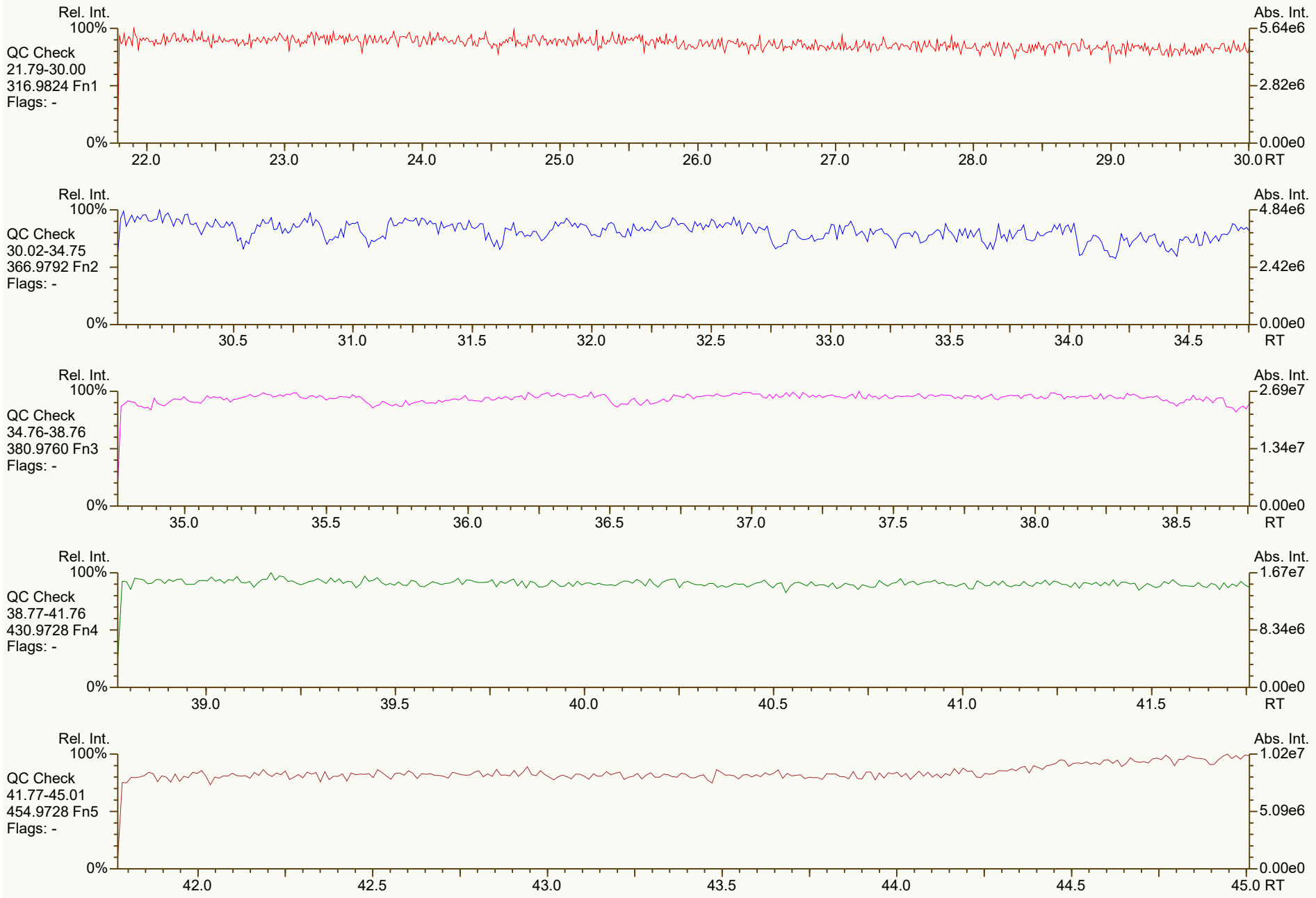
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	1.39E+08	1.06	Y	0.97	902	8387.898	0.397
1234678-HpCDD	**40.52**		**1.0003**	**1.0004**	**+0.2**	**1.55E+08**	**1.04**	**Y**	**0.97**	**1,000**	**8387.898**	**0.397**
OCDD	**43.07**	**E**	**1.0003**	**1.0003**	**0**	**1.22E+09**	**0.90**	**Y**	**1.07**	**12,900**	**13242.5**	**1.09**
OCDD-a	43.07	E	1.0001	1.0002	+0.3	7.39E+07	2.58	Y	0.07	12,700	21160.615	28.1
1368-TCDF	22.46		0.8230	0.8203	-3.6	3.07E+05	0.68	Y	0.96	0.819	6686.712	0.211
1468-TCDF	23.05		0.8443	0.8419	-3.3	5.19E+05	0.88	Y	0.96	1.38	6686.712	0.211
2468-TCDF	23.70		0.8672	0.8656	-2.3	1.60E+06	0.82	Y	0.96	4.27	6686.712	0.211
1346/1246-TCDF	24.09		0.8802	0.8800	-0.3	5.48E+05	0.78	Y	0.96	1.46	6686.712	0.211
1347/1378/1247-TCDF	24.22		0.8855	0.8847	-1.2	1.39E+06	0.77	Y	0.96	3.71	6686.712	0.211
1348-TCDF	24.47	EMPC	0.8952	0.8939	-1.9	2.66E+05	0.91	N	0.96	0.71	6686.712	0.211
1248/1367/1379-TCDF	24.58		0.9000	0.8979	-3.1	1.26E+06	0.79	Y	0.96	3.35	6686.712	0.211
1268-TCDF	24.98		0.9136	0.9127	-1.3	9.42E+05	0.69	Y	0.96	2.51	6686.712	0.211
1467-TCDF	25.11	EMPC	0.9185	0.9174	-1.7	7.29E+05	0.90	N	0.96	1.94	6686.712	0.211
1478-TCDF	25.28		0.9247	0.9237	-1.5	1.30E+06	0.82	Y	0.96	3.46	6686.712	0.211
1369/1237-TCDF	25.66	EMPC	0.9381	0.9372	-1.4	2.47E+05	0.61	N	0.96	0.66	6686.712	0.211
2467-TCDF	25.79	EMPC	0.9427	0.9420	-1.1	4.43E+05	0.64	N	0.96	1.18	6686.712	0.211
2368-TCDF	25.95		0.9484	0.9481	-0.5	1.69E+06	0.66	Y	0.96	4.51	6686.712	0.211
1238/1234/1678/1469/1236-TCDF	26.05	EMPC	0.9517	0.9518	+0.2	5.35E+05	1.08	N	0.96	1.43	6686.712	0.211
1278-TCDF	26.49		0.9682	0.9678	-0.6	2.09E+06	0.80	Y	0.96	5.56	6686.712	0.211
1349-TCDF	NotFnd		0.9725						0.96		6686.712	0.211
1267-TCDF	26.77		0.9782	0.9778	-0.6	7.36E+05	0.88	Y	0.96	1.96	6686.712	0.211
2346/1249-TCDF	26.96		0.9846	0.9848	+0.3	3.10E+05	0.71	Y	0.96	0.827	6686.712	0.211
2347/1279-TCDF	27.16		0.9926	0.9923	-0.5	5.38E+05	0.80	Y	0.96	1.43	6686.712	0.211
2348-TCDF	27.28		0.9966	0.9966	0	5.71E+05	0.76	Y	0.96	1.52	6686.712	0.211
2378-TCDF	**27.39**		**1.0006**	**1.0008**	**+0.3**	**4.84E+06**	**0.74**	**Y**	**0.96**	**12.9**	**6686.712**	**0.211**
2367/3467-TCDF	27.75		1.0139	1.0139	0	3.64E+06	0.86	Y	0.96	9.71	6686.712	0.211
1269-TCDF	27.99	J EMPC	1.0226	1.0226	0	1.86E+05	1.03	N	0.96	0.496	6686.712	0.211
1239-TCDF	NotFnd		1.0322						0.96		6686.712	0.211
1289-TCDF	29.39		1.0729	1.0737	+1.4	4.64E+05	0.79	Y	0.96	1.24	6686.712	0.211
13468/12468-PeCDF	29.36		0.9135	0.9134	-0.2	4.79E+06	1.55	Y	0.94	15.9	6750.742	0.221
13678/13467/12467-PeCDF	30.90		0.9612	0.9614	+0.4	1.23E+06	1.52	Y	0.94	4.08	6909.832	0.226
12368/13478/12478-PeCDF	31.05		0.9661	0.9660	-0.2	3.46E+06	1.69	Y	0.94	11.5	6909.832	0.226
14678-PeCDF	31.14	J EMPC	0.9693	0.9689	-0.7	4.95E+05	1.05	N	0.94	1.65	6909.832	0.226
13479-PeCDF	31.22	J EMPC	0.9723	0.9714	-1.7	1.02E+05	1.84	N	0.94	0.338	6909.832	0.226
13469/12479-PeCDF	31.46	J	0.9799	0.9788	-2.1	1.72E+05	1.51	Y	0.94	0.571	6909.832	0.226
12346-PeCDF	31.62	J	0.9842	0.9837	-0.9	1.96E+05	1.59	Y	0.94	0.651	6909.832	0.226

Lab ID: B5966_18718_DF_004 | **Acq'd: 15 Dec 2021 20:47 PSW** | **Wt/Vol: 10.07 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-113021-S-JC-NE-O-2 | **UTP: 16-Dec-2021 09:47:37 PSW** | **J-level: 0.497 pg/g** | **Split: 1** | **Checkcode: 651-553-JSV**

Datafile: 211215R13 | **Report: 16 Dec 2021 10:54 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.71		0.9868	0.9866	-0.4	8.73E+05	1.51	Y	0.94	2.91	6909.832	0.226
12347-PeCDF	31.79	J EMPC	0.9893	0.9892	-0.2	3.06E+05	1.21	N	0.94	1.02	6909.832	0.226
12348-PeCDF	31.94	J	0.9941	0.9939	-0.4	2.71E+05	1.51	Y	0.94	0.902	6909.832	0.226
12378-PeCDF	**32.16**	J	**1.0006**	**1.0006**	**0**	**5.70E+05**	**1.69**	**Y**	**0.95**	**1.85**	**6909.832**	**0.229**
12678/12367-PeCDF	32.44		1.0090	1.0094	+0.8	1.26E+06	1.50	Y	0.94	4.2	6909.832	0.226
12379-PeCDF	NotFnd		1.0143						0.94		6909.832	0.226
12679-PeCDF	NotFnd		0.9929						0.94		6909.832	0.226
23467/12369-PeCDF	33.13	J	0.9966	0.9965	-0.2	5.95E+05	1.62	Y	0.94	1.98	6909.832	0.226
23478-PeCDF	**33.28**		**1.0006**	**1.0008**	**+0.4**	**1.50E+06**	**1.64**	**Y**	**0.94**	**5.12**	**6909.832**	**0.224**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6909.832	0.226
12349-PeCDF	NotFnd		1.0102						0.94		6909.832	0.226
12389-PeCDF	NotFnd		1.0325						0.94		6909.832	0.226
123468-HxCDF	35.12		0.9628	0.9628	0	1.74E+06	1.26	Y	1.16	6.26	17807.683	0.585
124678/134678-HxCDF	35.31		0.9683	0.9682	-0.2	6.49E+06	1.28	Y	1.16	23.3	17807.683	0.585
134679-HxCDF	NotFnd		0.9746						1.16		17807.683	0.585
124679-HxCDF	NotFnd		0.9798						1.16		17807.683	0.585
124689-HxCDF	35.96		0.9859	0.9860	+0.2	8.80E+06	1.22	Y	1.16	31.6	17807.683	0.585
123467-HxCDF	36.37	J	0.9972	0.9972	0	4.43E+05	1.24	Y	1.16	1.59	17807.683	0.585
123478-HxCDF	**36.49**		**1.0004**	**1.0005**	**+0.2**	**1.07E+06**	**1.29**	**Y**	**1.23**	**3.83**	**17807.683**	**0.552**
123678-HxCDF	**36.62**		**1.0004**	**1.0003**	**-0.2**	**7.74E+05**	**1.18**	**Y**	**1.13**	**2.58**	**17807.683**	**0.531**
123479-HxCDF	NotFnd		1.0049						1.16		17807.683	0.585
123469-HxCDF	NotFnd		1.0088						1.16		17807.683	0.585
123679-HxCDF	NotFnd		0.9943						1.16		17807.683	0.585
234678-HxCDF	**37.30**		**1.0005**	**1.0004**	**-0.2**	**1.07E+06**	**1.30**	**Y**	**1.15**	**3.84**	**17807.683**	**0.615**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		17807.683	0.585
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**17807.683**	**0.654**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.28	J	1.0007	1.0009	+0.5	2.15E+05	1.14	Y	1.16	0.772	17807.683	0.585
1234678-HpCDF	**39.62**		**1.0003**	**1.0002**	**-0.2**	**1.45E+07**	**1.04**	**Y**	**1.36**	**59.3**	**5978.684**	**0.17**
1234679-HpCDF	39.87	**J**	1.0067	1.0065	-0.5	5.31E+05	1.05	Y	1.33	2.42	5978.684	0.192
1234689-HpCDF	40.01		1.0100	1.0101	+0.2	3.36E+07	1.07	Y	1.33	153	5978.684	0.192
1234789-HpCDF	**40.97**		**1.0003**	**1.0002**	**-0.2**	**9.94E+05**	**0.96**	**Y**	**1.30**	**5.05**	**5978.684**	**0.218**
OCDF	**43.25**		**1.0002**	**1.0002**	**0**	**2.22E+07**	**0.88**	**Y**	**1.03**	**198**	**11674.962**	**0.878**
OCDF-a	43.24		1.0002	1.0001	-0.3	1.26E+06	2.37	Y	0.06	194	10410.355	13.5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24.0
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27.0
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29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
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2.42e6
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30.5
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31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
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Abs. Int.
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35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
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8.34e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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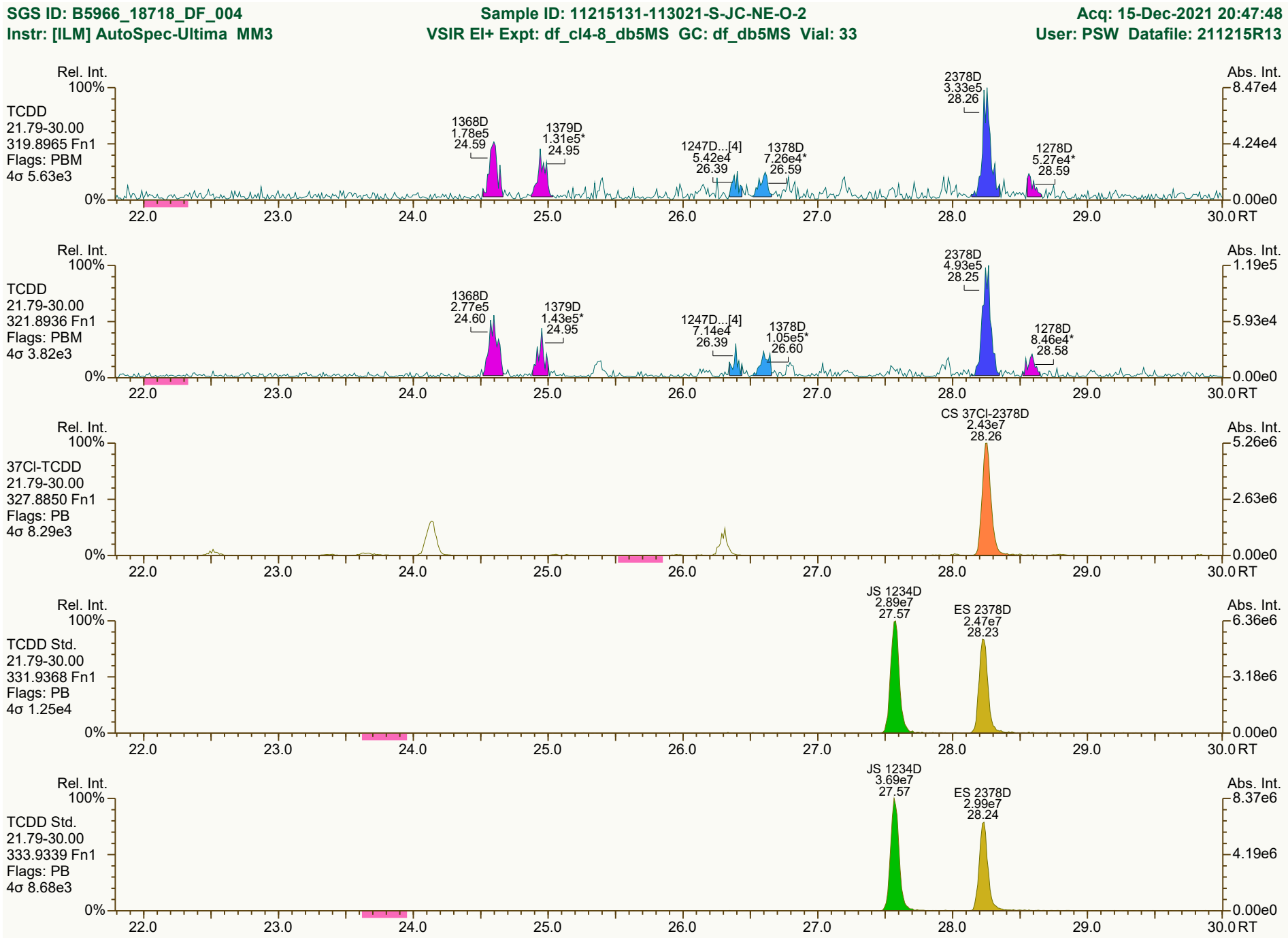
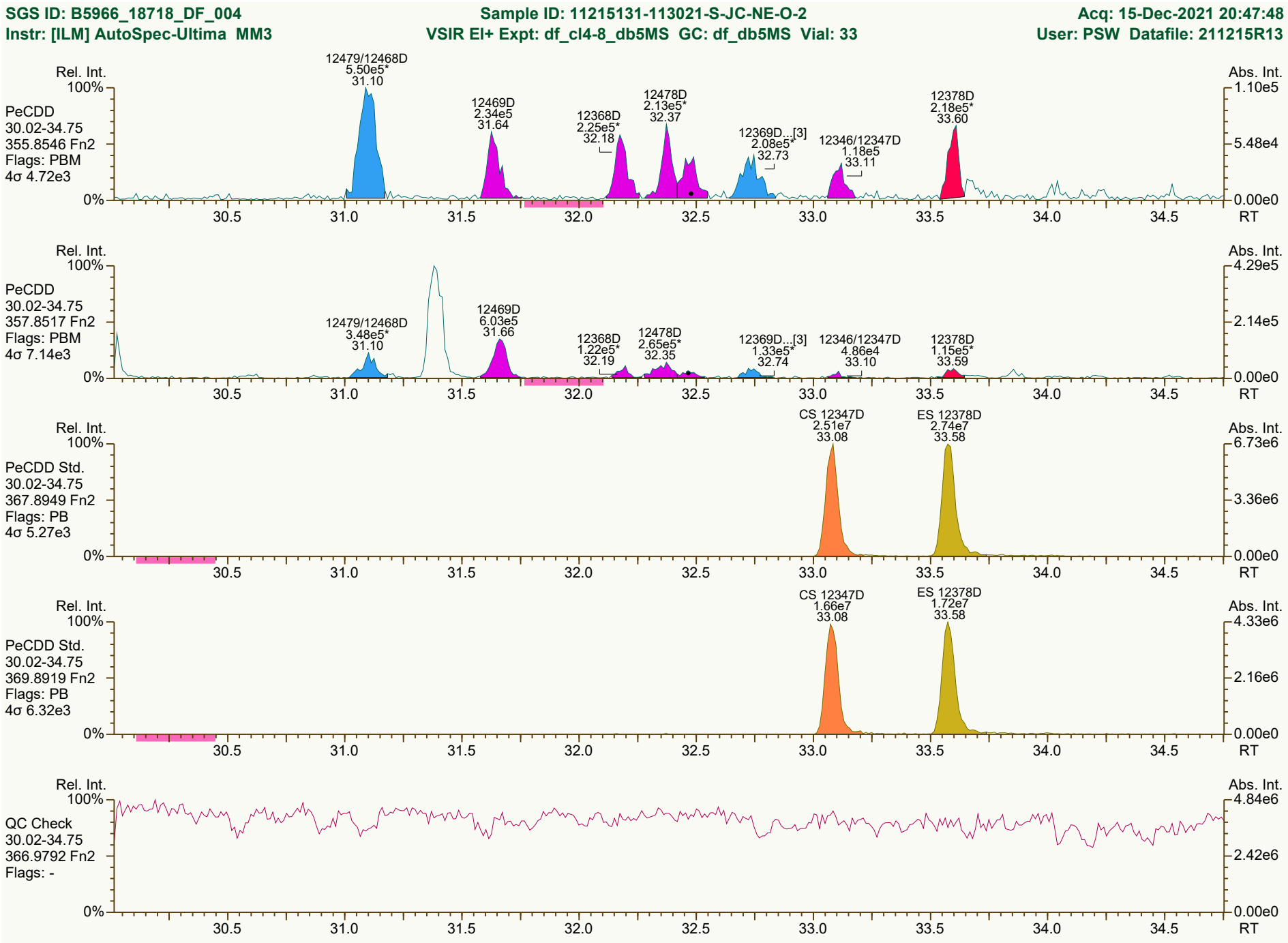
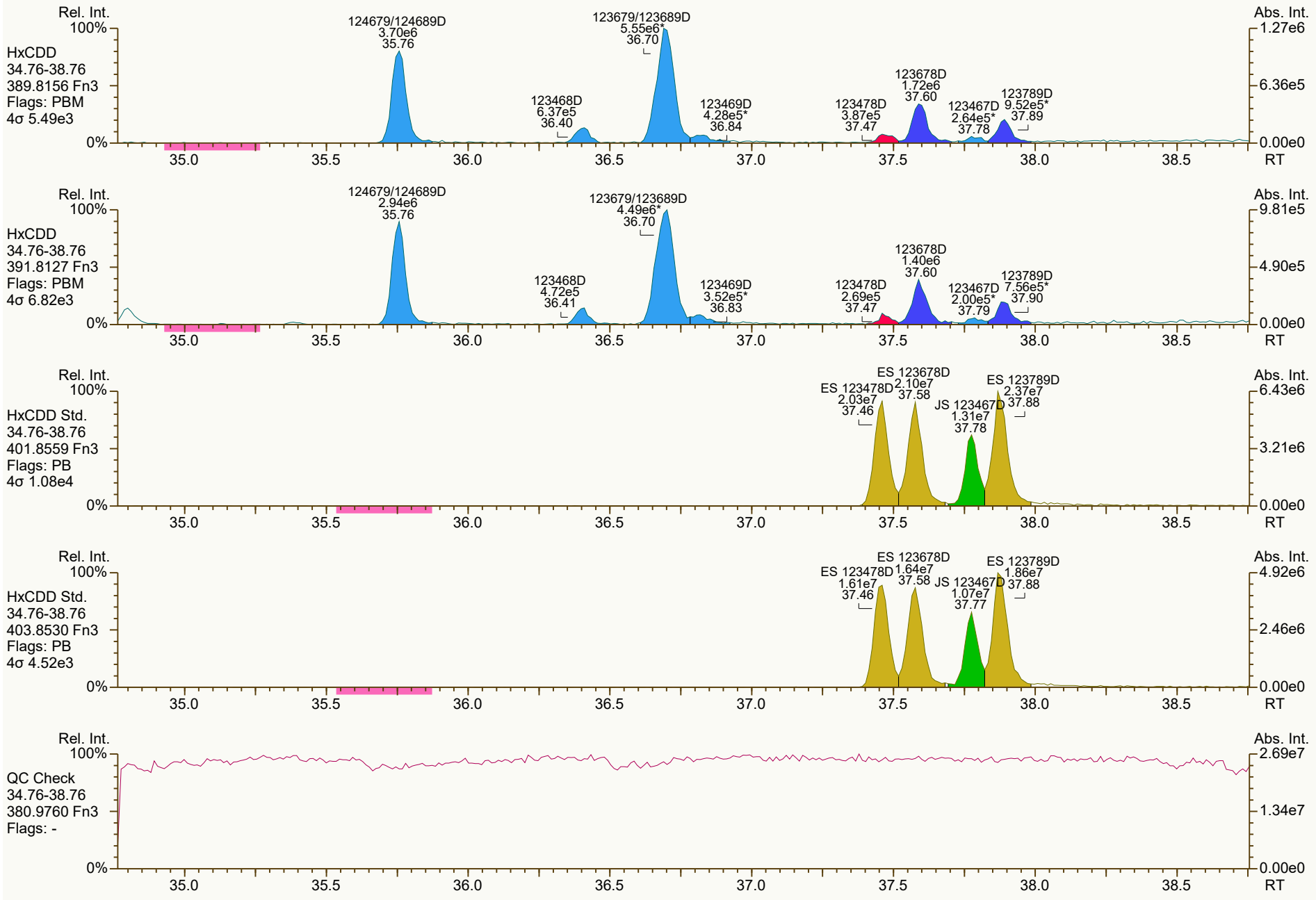
5.09e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

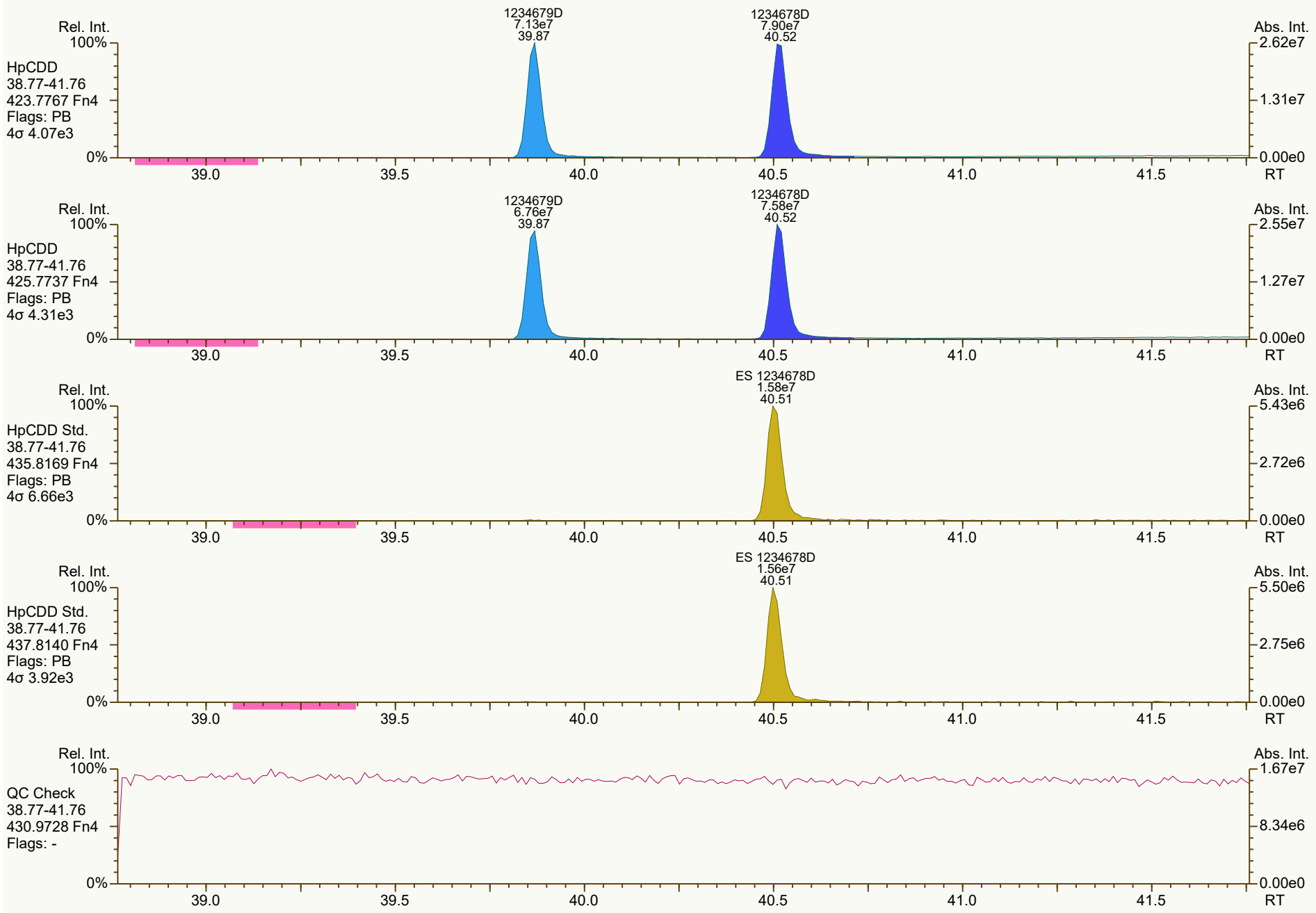
SGS ID: B5966_18718_DF_004 | Sample ID: 11215131-113021-S-JC-NE-O-2 | Acq: 15-Dec-2021 20:47:48
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33 | User: PSW Datafile: 211215R13

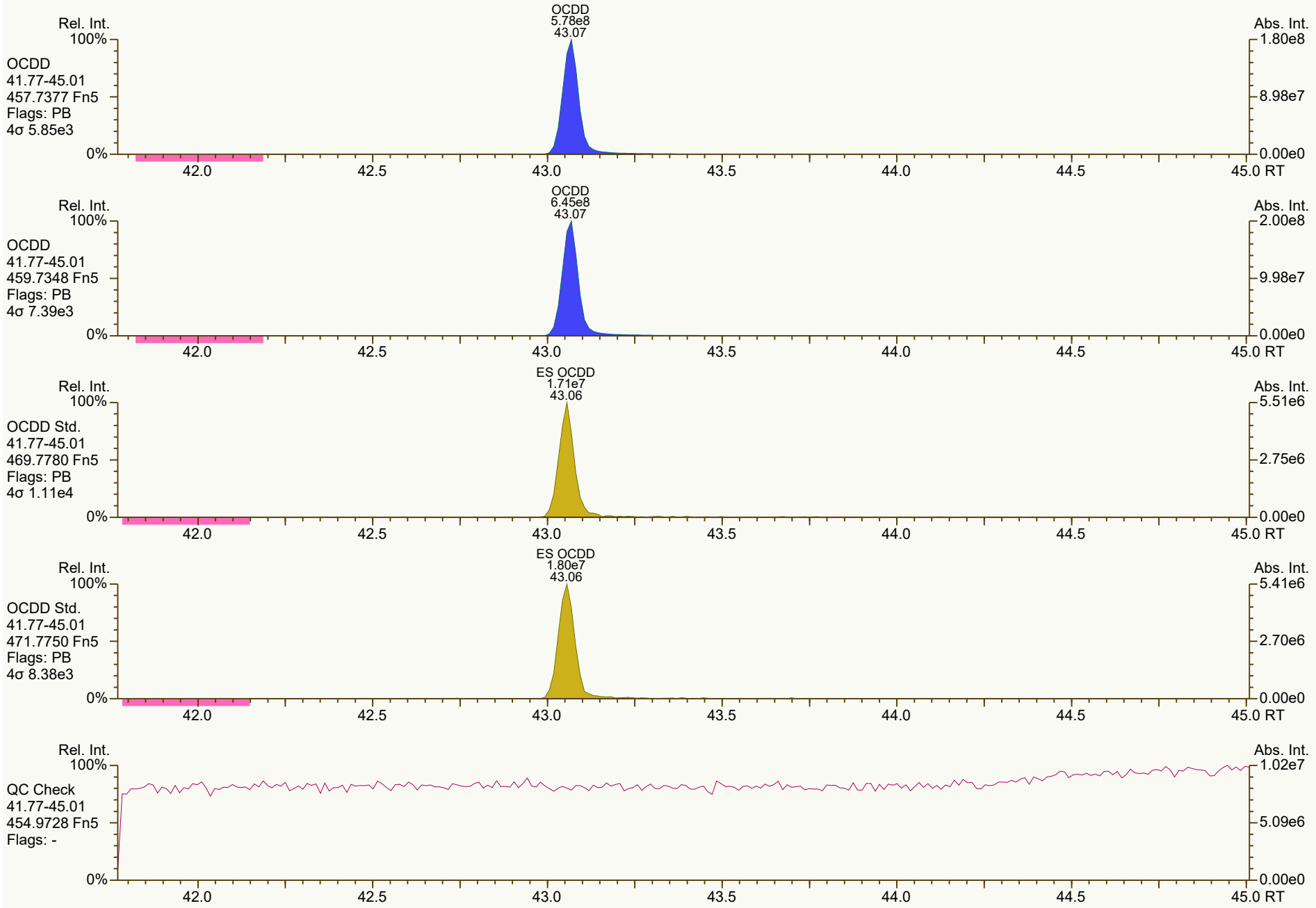


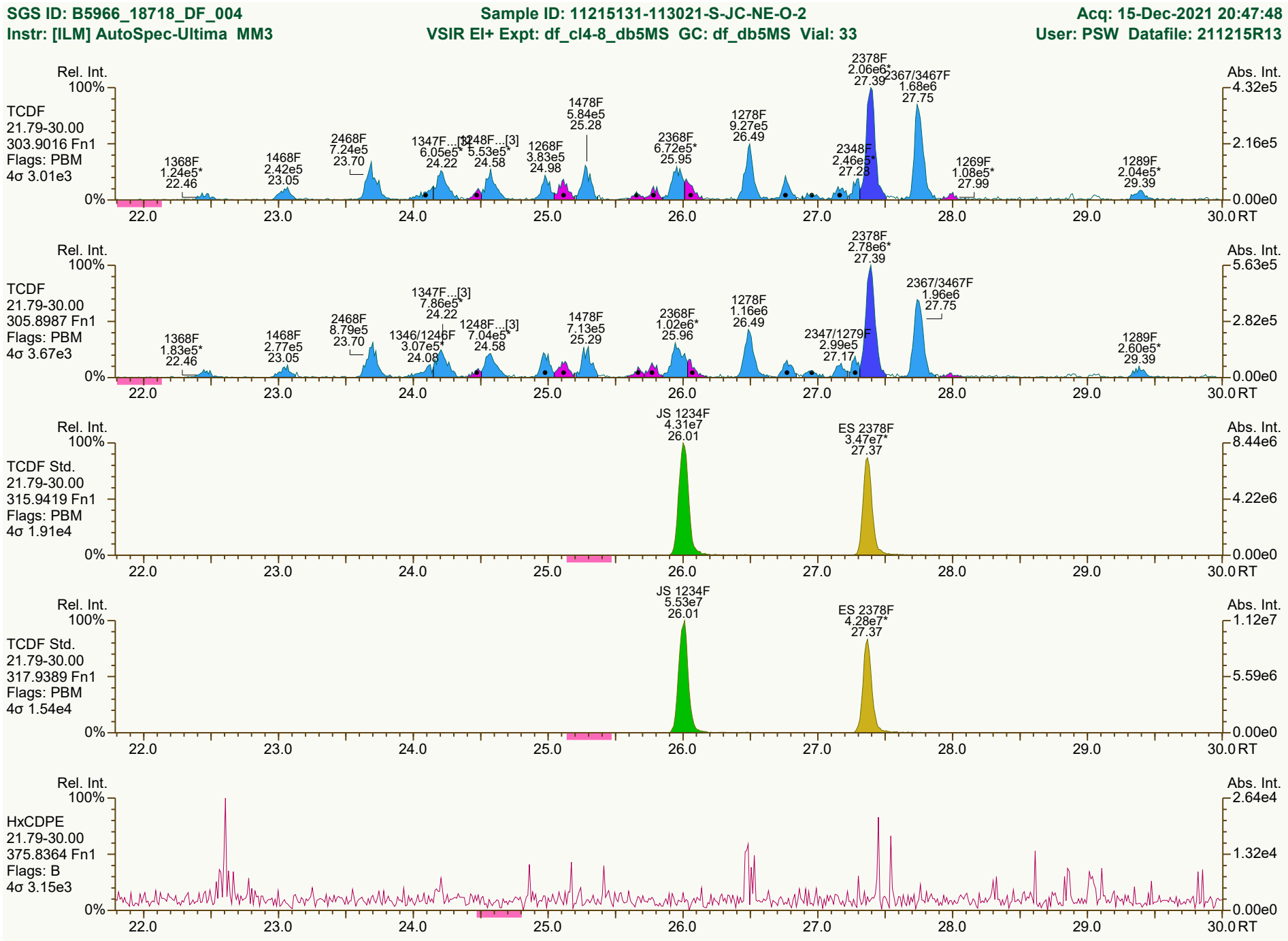
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_004.utp_res, saved 16-Dec-2021 09:47 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1420, 3600, 7138 scc: 651-553 | *PKD: 16-Dec-2021 08:55 Printed: 16-Dec-2021 11:00 Page 2 of 12*


SGS ID: B5966_18718_DF_004
Sample ID: 11215131-113021-S-JC-NE-O-2
Acq: 15-Dec-2021 20:47:48
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211215R13
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 4.72e3
12479/12468D 5.50e5* 31.10
12469D 2.34e5 31.64
12368D 2.25e5* 32.18
12478D 2.13e5* 32.37
12369D...[3] 2.08e5* 32.73
12346/12347D 1.18e5 33.11
12378D 2.18e5* 33.60
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 7.14e3
12479/12468D 3.48e5* 31.10
12469D 6.03e5 31.66
12368D 1.22e5* 32.19
12478D 2.65e5* 32.35
12369D...[3] 1.33e5* 32.74
12346/12347D 4.86e4 33.10
12378D 1.15e5* 33.59
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.27e3
CS 12347D 2.51e7 33.08
ES 12378D 2.74e7 33.58
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 6.32e3
CS 12347D 1.66e7 33.08
ES 12378D 1.72e7 33.58
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_004.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5498, 7308 scc: 651-553
PKD: 16-Dec-2021 08:55 Printed: 16-Dec-2021 11:00 Page 3 of 12

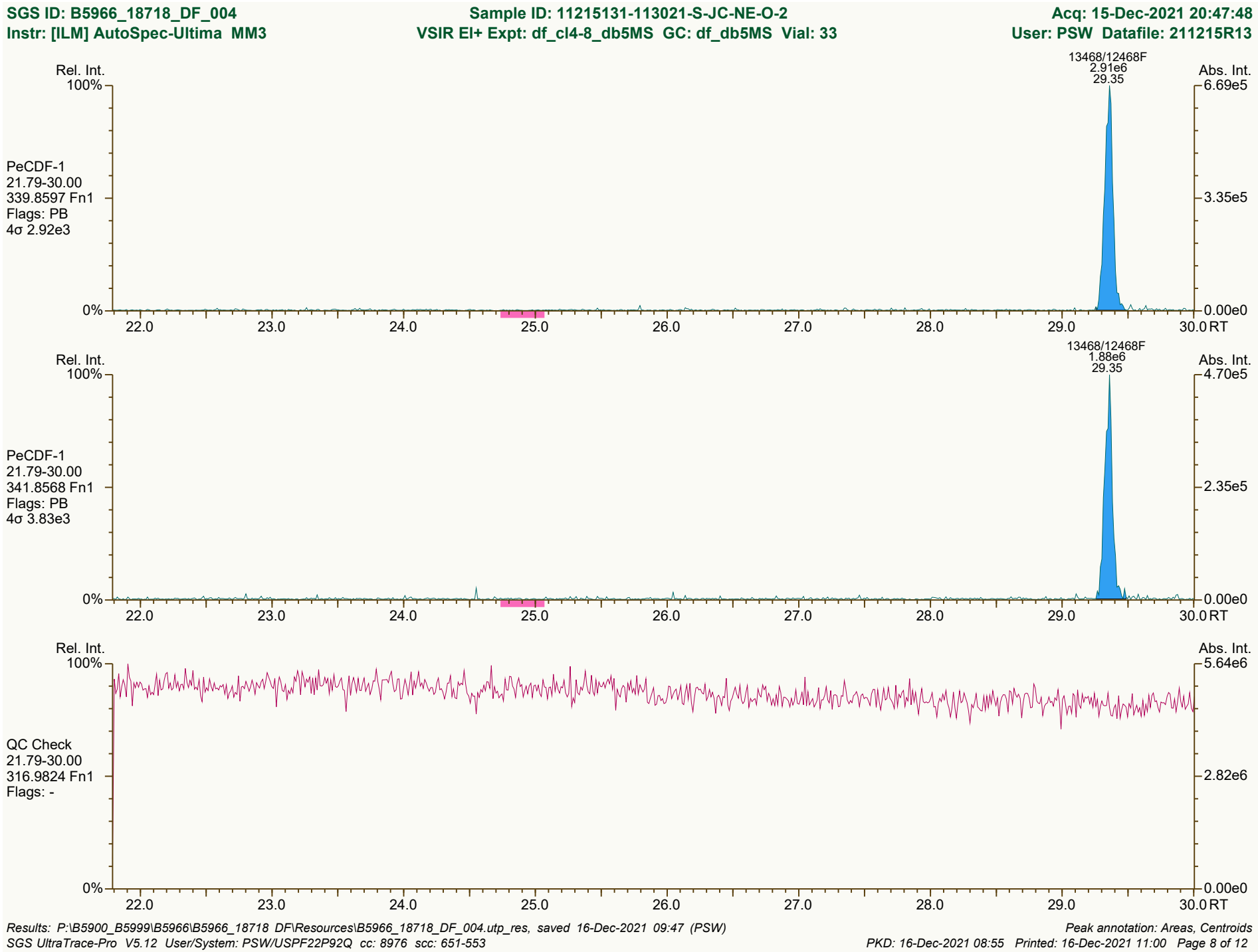

Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 5.49e3
124679/124689D
3.70e6
35.76
123679/123689D
5.55e6*
36.70
123468D
6.37e5
36.40
123469D
4.28e5*
36.84
123478D
3.87e5
37.47
123678D
1.72e6
37.60
123467D
2.64e5*
37.78
123789D
9.52e5*
37.89
Abs. Int.
1.27e6
6.36e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 6.82e3
124679/124689D
2.94e6
35.76
123679/123689D
4.49e6*
36.70
123468D
4.72e5
36.41
123469D
3.52e5*
36.83
123478D
2.69e5
37.47
123678D
1.40e6
37.60
123467D
2.00e5*
37.79
123789D
7.56e5*
37.90
Abs. Int.
9.81e5
4.90e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 1.08e4
ES 123678D
2.10e7
37.58
ES 123478D
2.03e7
37.46
JS 123467D
1.31e7
37.78
ES 123789D
2.37e7
37.88
Abs. Int.
6.43e6
3.21e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 4.52e3
ES 123678D
1.64e7
37.58
ES 123478D
1.61e7
37.46
JS 123467D
1.07e7
37.77
ES 123789D
1.86e7
37.88
Abs. Int.
4.92e6
2.46e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
Abs. Int.
2.69e7
1.34e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.07e3
0%
1234679D
7.13e7
39.87
1234678D
7.90e7
40.52
Abs. Int.
2.62e7
1.31e7
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 4.31e3
0%
1234679D
6.76e7
39.87
1234678D
7.58e7
40.52
Abs. Int.
2.55e7
1.27e7
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 6.66e3
0%
ES 1234678D
1.58e7
40.51
Abs. Int.
5.43e6
2.72e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 3.92e3
0%
ES 1234678D
1.56e7
40.51
Abs. Int.
5.50e6
2.75e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.67e7
8.34e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

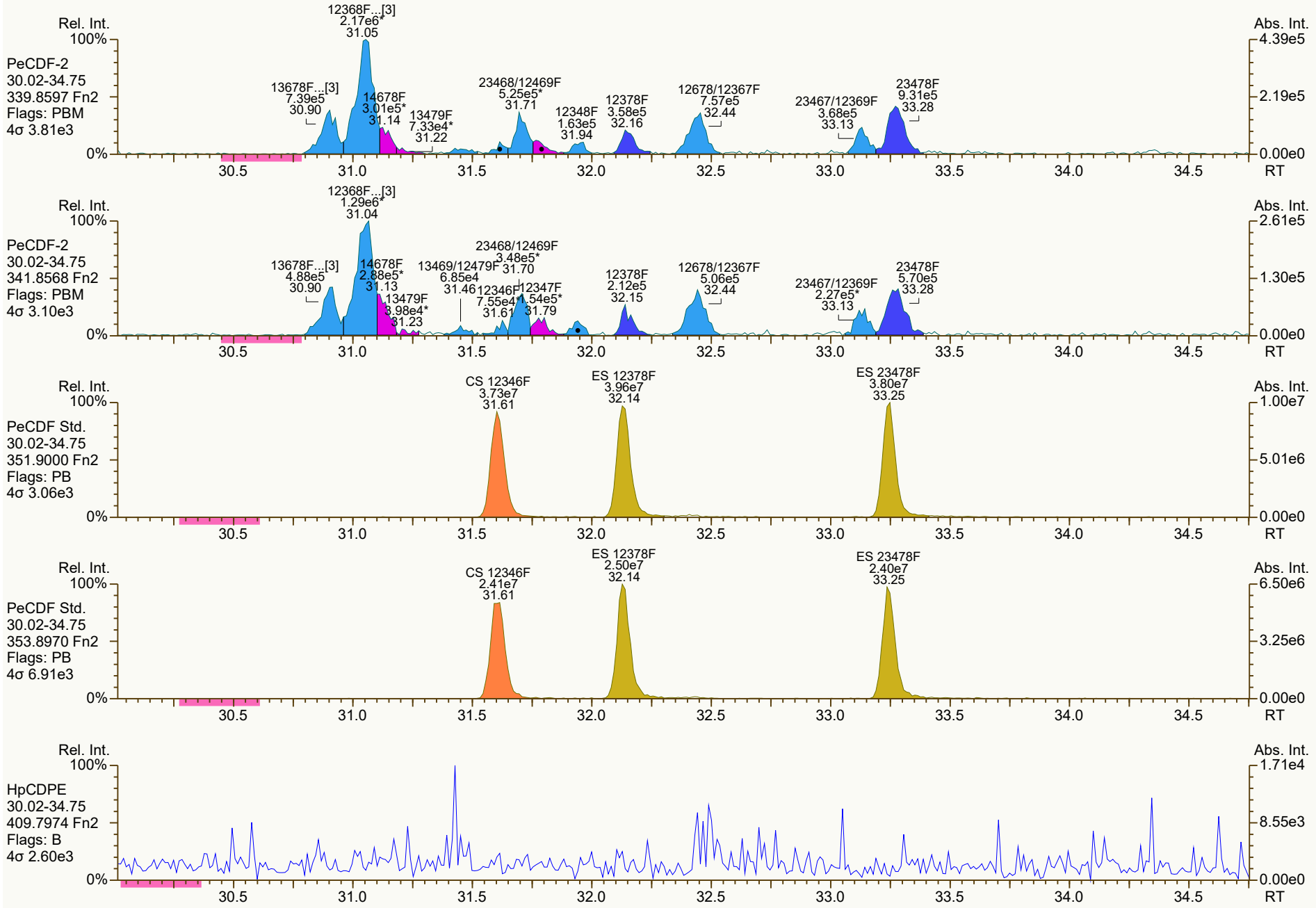

OCDD
5.78e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 5.85e3
0%
Abs. Int.
1.80e8
8.98e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.45e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 7.39e3
0%
Abs. Int.
2.00e8
9.98e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.71e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 1.11e4
0%
Abs. Int.
5.51e6
2.75e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.80e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 8.38e3
0%
Abs. Int.
5.41e6
2.70e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.02e7
5.09e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

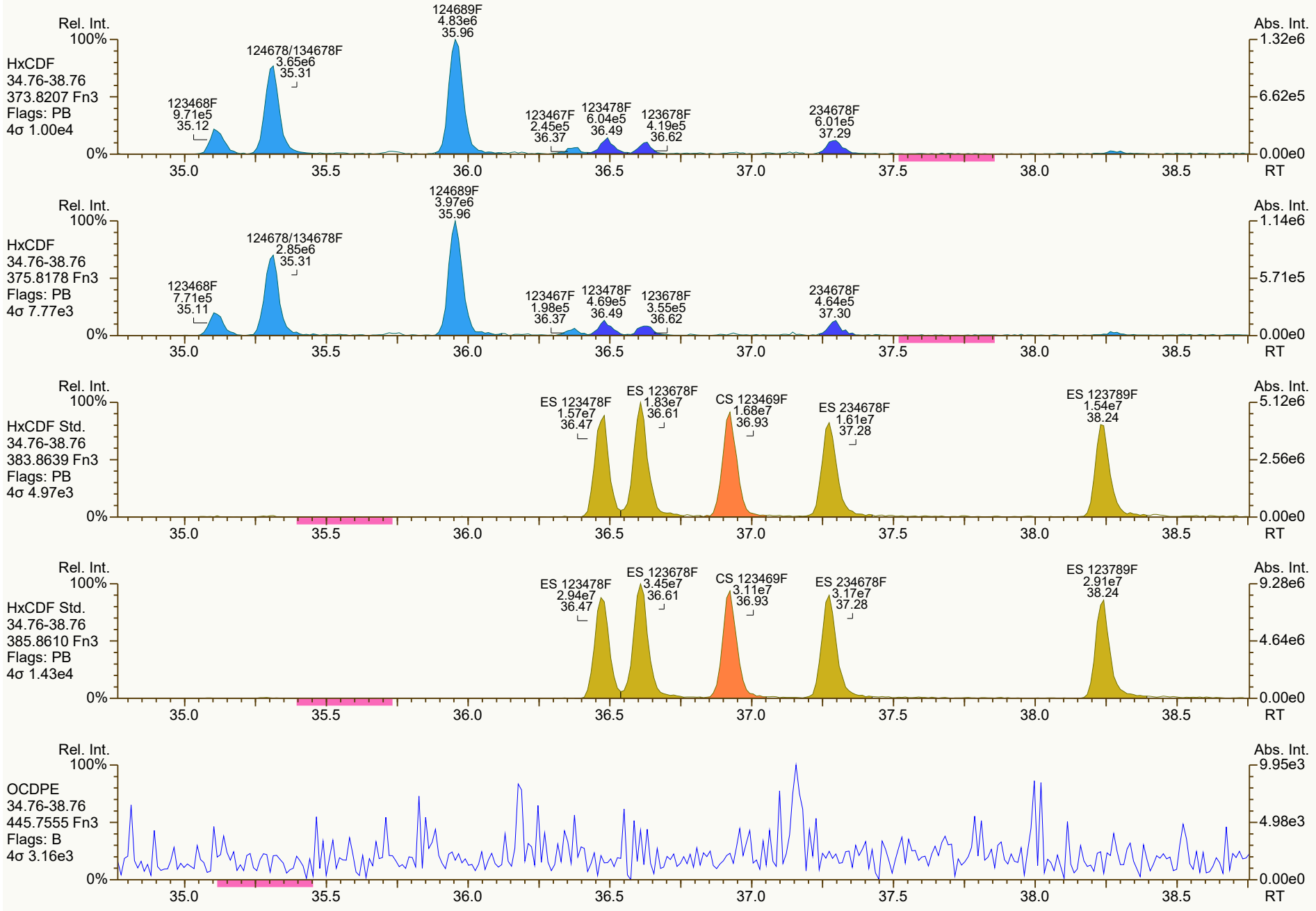

SGS ID: B5966_18718_DF_004
Sample ID: 11215131-113021-S-JC-NE-O-2
Acq: 15-Dec-2021 20:47:48
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211215R13
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.01e3
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 3.67e3
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 1.91e4
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.54e4
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.15e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_004.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4861, 3155, 2128 scc: 651-553
PKD: 16-Dec-2021 08:55 Printed: 16-Dec-2021 11:00 Page 7 of 12

SGS ID: B5966_18718_DF_004 | Sample ID: 11215131-113021-S-JC-NE-O-2 | Acq: 15-Dec-2021 20:47:48
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33 | User: PSW Datafile: 211215R13

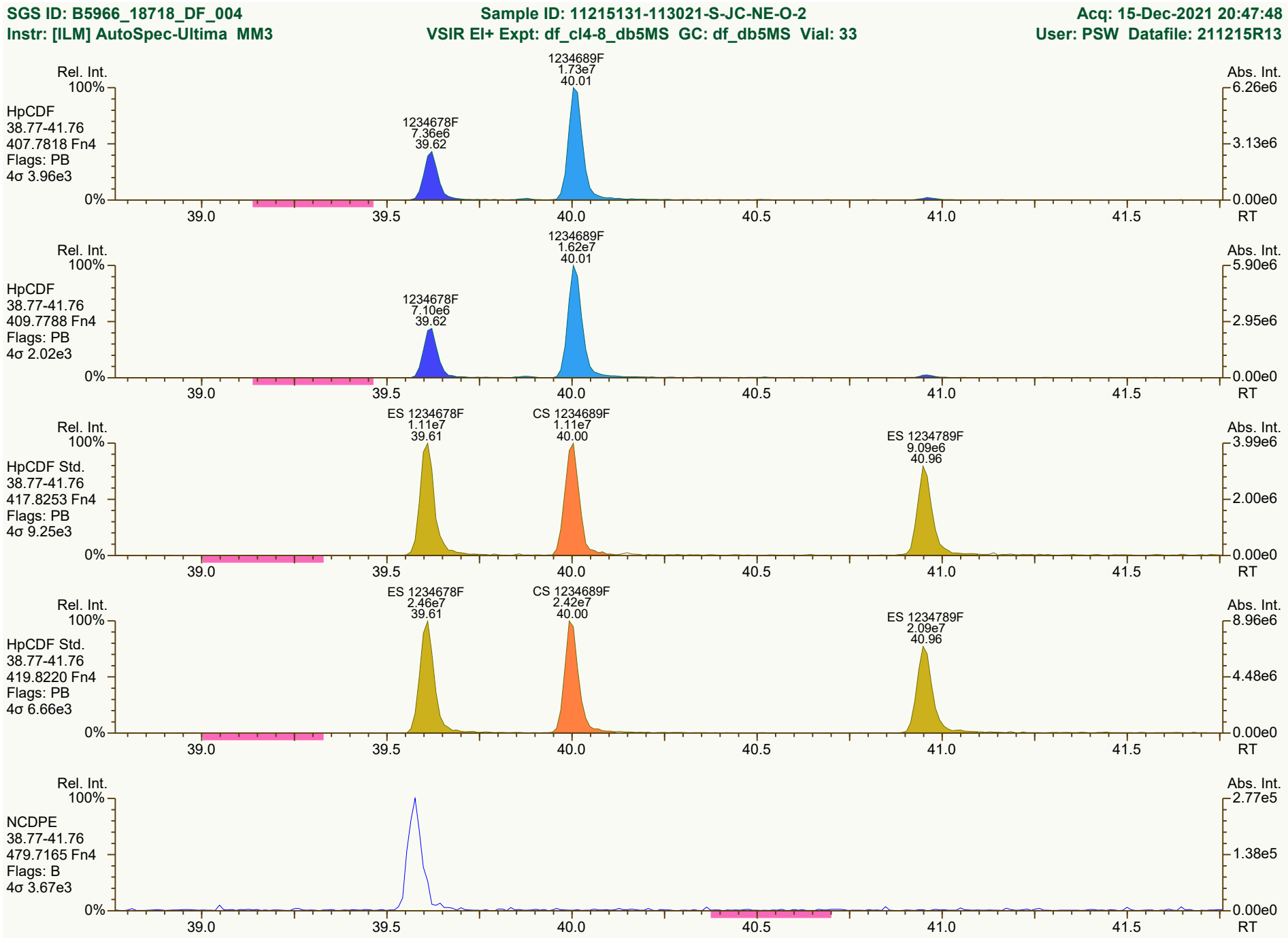


Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_004.utp_res, saved 16-Dec-2021 09:47 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8976 scc: 651-553 *PKD: 16-Dec-2021 08:55 Printed: 16-Dec-2021 11:00 Page 8 of 12*


PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.81e3
12368F...[3] 2.17e6* 31.05
13678F...[3] 7.39e5 30.90
14678F 3.01e5* 31.14
13479F 7.33e4* 31.22
23468/12469F 5.25e5* 31.71
12348F 1.63e5 31.94
12378F 3.58e5 32.16
12678/12367F 7.57e5 32.44
23467/12369F 3.68e5 33.13
23478F 9.31e5 33.28
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.10e3
12368F...[3] 1.29e6* 31.04
13678F...[3] 4.88e5 30.90
14678F 2.88e5* 31.13
13479F 3.98e4* 31.23
13469/12479F 6.85e4 31.46
23468/12469F 3.48e5* 31.70
12346F 7.55e4* 31.61
12347F 1.54e5* 31.79
12378F 2.12e5 32.15
12678/12367F 5.06e5 32.44
23467/12369F 2.27e5* 33.13
23478F 5.70e5 33.28
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 3.06e3
CS 12346F 3.73e7 31.61
ES 12378F 3.96e7 32.14
ES 23478F 3.80e7 33.25
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 6.91e3
CS 12346F 2.41e7 31.61
ES 12378F 2.50e7 32.14
ES 23478F 2.40e7 33.25
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.60e3
Rel. Int.
Abs. Int.
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PB
4σ 1.00e4
124689F
4.83e6
35.96
124678/134678F
3.65e6
35.31
123468F
9.71e5
35.12
123467F
2.45e5
36.37
123478F
6.04e5
36.49
123678F
4.19e5
36.62
234678F
6.01e5
37.29
Abs. Int.
1.32e6
6.62e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PB
4σ 7.77e3
124689F
3.97e6
35.96
124678/134678F
2.85e6
35.31
123468F
7.71e5
35.11
123467F
1.98e5
36.37
123478F
4.69e5
36.49
123678F
3.55e5
36.62
234678F
4.64e5
37.30
Abs. Int.
1.14e6
5.71e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 4.97e3
ES 123478F
1.57e7
36.47
ES 123678F
1.83e7
36.61
CS 123469F
1.68e7
36.93
ES 234678F
1.61e7
37.28
ES 123789F
1.54e7
38.24
Abs. Int.
5.12e6
2.56e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 1.43e4
ES 123478F
2.94e7
36.47
ES 123678F
3.45e7
36.61
CS 123469F
3.11e7
36.93
ES 234678F
3.17e7
37.28
ES 123789F
2.91e7
38.24
Abs. Int.
9.28e6
4.64e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.16e3
Abs. Int.
9.95e3
4.98e3
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

SGS ID: B5966_18718_DF_004 | Sample ID: 11215131-113021-S-JC-NE-O-2 | Acq: 15-Dec-2021 20:47:48
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33 | User: PSW Datafile: 211215R13



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_004.utp_res, saved 16-Dec-2021 09:47 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3697, 2917, 7608 scc: 651-553 | PKD: 16-Dec-2021 08:55 Printed: 16-Dec-2021 11:00 Page 11 of 12


OCDF
1.04e7*
43.25
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PBM
4σ 6.47e3
0%
Abs. Int.
3.13e6
1.56e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.19e7*
43.25
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PBM
4σ 5.21e3
0%
Abs. Int.
3.54e6
1.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7*
43.24
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PBM
4σ 4.29e3
0%
Abs. Int.
5.97e6
2.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.33e7*
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PBM
4σ 6.01e3
0%
Abs. Int.
6.73e6
3.37e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.01e3
0%
Abs. Int.
1.74e4
8.70e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5966_18718_DF_005 **Acq'd:** 15 Dec 2021 21:35 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-3 **UTP:** 16-Dec-2021 09:47:38 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 355-269-BPH

Datafile: 211215R14 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25		1.0008	1.0005	-0.5	2.81E+05	0.81	Y	1.34	0.811	8587.692	0.282
12378-PeCDD	33.60	J	1.0005	1.0005	0	2.08E+05	1.63	Y	1.06	0.805	7400.298	0.265
123478-HxCDD	37.47	J	1.0003	1.0003	0	3.59E+05	1.11	Y	1.06	1.7	8114.561	0.337
123678-HxCDD	37.60		1.0033	1.0036	+0.7	1.33E+06	1.28	Y	1.08	5.84	8114.561	0.35
123789-HxCDD	37.89		1.0110	1.0115	+1.1	8.40E+05	1.32	Y	1.02	3.47	8114.561	0.327
1234678-HpCDD	40.52		1.0003	1.0004	+0.2	4.45E+07	1.05	Y	0.97	248	10139.847	0.394
OCDD	43.07		1.0003	1.0003	0	1.09E+09	0.90	Y	1.07	8,790	18237.899	1.25
2378-TCDF	27.39		1.0006	1.0006	0	1.33E+06	0.86	Y	0.96	3.79	7089.584	0.244
12378-PeCDF	32.15	J	1.0006	1.0005	-0.2	2.57E+05	1.43	Y	0.95	0.754	6572.562	0.192
23478-PeCDF	33.28	J	1.0006	1.0008	+0.4	5.10E+05	1.52	Y	0.94	1.6	6572.562	0.206
123478-HxCDF	36.49	J	1.0004	1.0004	0	5.45E+05	1.22	Y	1.23	1.79	11705.806	0.332
123678-HxCDF	36.63	J	1.0004	1.0005	+0.2	5.19E+05	1.34	Y	1.13	1.5	11705.806	0.304
234678-HxCDF	37.29	J	1.0005	1.0004	-0.2	5.91E+05	1.20	Y	1.15	1.92	11705.806	0.342
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	11705.806	0.397
1234678-HpCDF	39.62		1.0003	1.0002	-0.2	8.14E+06	1.03	Y	1.36	27.2	5677.222	0.135
1234789-HpCDF	40.96		1.0003	1.0000	-0.7	5.90E+05	1.13	Y	1.30	2.49	5677.222	0.181
OCDF	43.25		1.0002	1.0003	+0.3	1.38E+07	0.87	Y	1.03	90	8911.638	0.497

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0239	+0.3	5.13E+07	0.75	Y	1.03	68
ES 12378-PeCDD	33.58	1.2158	1.2178	+4.0	4.84E+07	1.51	Y	1.03	64.2
ES 123478-HxCDD	37.46	0.9920	0.9917	-0.7	3.97E+07	1.29	Y	0.99	74.4
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	4.18E+07	1.24	Y	0.97	80
ES 123789-HxCDD	37.88	1.0026	1.0029	+0.7	4.73E+07	1.24	Y	1.12	78.5
ES 1234678-HpCDD	40.51	1.0713	1.0724	+2.7	3.66E+07	1.03	Y	0.99	68.7
ES OCDD	43.05	1.1385	1.1397	+3.1	4.62E+07	0.93	Y	0.78	55.4
ES 2378-TCDF	27.37	1.0519	1.0525	+1.0	7.27E+07	0.77	Y	1.08	64.3
ES 12378-PeCDF	32.14	1.2331	1.2357	+5.0	7.16E+07	1.57	Y	0.93	73.5
ES 23478-PeCDF	33.25	1.2754	1.2784	+6.0	6.75E+07	1.55	Y	0.92	70.2
ES 123478-HxCDF	36.48	0.9656	0.9656	0	4.89E+07	0.55	Y	1.14	79.8
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	6.07E+07	0.51	Y	1.30	87.2
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	5.30E+07	0.54	Y	1.20	82.2
ES 123789-HxCDF	38.25	1.0121	1.0125	+0.9	4.96E+07	0.51	Y	1.14	81.4
ES 1234678-HpCDF	39.61	1.0478	1.0486	+1.9	4.38E+07	0.46	Y	0.95	85.9
ES 1234789-HpCDF	40.96	1.0832	1.0843	+2.7	3.62E+07	0.46	Y	0.85	79.6
ES OCDF	43.24	1.1434	1.1446	+3.1	5.92E+07	0.92	Y	0.93	59.6

Lab ID: B5966_18718_DF_005 **Acq'd:** 15 Dec 2021 21:35 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-3 **UTP:** 16-Dec-2021 09:47:38 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 355-269-BPH

Datafile: 211215R14 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	7.29E+07	0.79	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	1.04E+08	0.77	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.68E+07	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.66E+07	n/a	-	1.31	69.6	
CS 12347-PeCDD	33.09		1.1978	1.1998	+4.0	4.79E+07	1.57	Y	0.89	73.6	
CS 12346-PeCDF	31.61		1.2130	1.2153	+4.4	7.65E+07	1.60	Y	0.87	84.5	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	5.87E+07	0.53	Y	1.09	100	
CS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	4.58E+07	0.45	Y	0.86	98.7	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.66E+07~~	~~n/a~~		~~1.26~~	~~103~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1998~~	~~+4.0~~	~~4.79E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~115~~	CL 17Dec21
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2153~~	~~+4.4~~	~~7.65E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~115~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.87E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~115~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~4.58E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~115~~	

Totals	Conc	EMPC
Total TCDD	0.811	1.67
Total PeCDD	4.72	7.53
Total HxCDD	54.6	55.6
Total HpCDD	591	591
Total Tetra-Octa Dioxins	9440	9440
Total TCDF	12.6	16.9
Total PeCDF	14.4	16.3
Total HxCDF	33	33.4
Total HpCDF	89.4	90.4
Total Tetra-Octa Furans	239	247
Total Tetra-Octa Dioxins & Furans	9680	9690

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.738	0.81
Response	2.97E+05	2.81E+05

Lab ID: B5966_18718_DF_005 **Acq'd: 15 Dec 2021 21:35 PSW** **Wt/Vol: 10.07 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-O-3 **UTP: 16-Dec-2021 09:47:38 PSW** **J-level: 0.497 pg/g** **Split: 1** **Checkcode: 355-269-BPH**

Datafile: 211215R14 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.59	EMPC	0.8726	0.8709	-2.5	1.92E+05	0.91	N	1.34	0.553	8587.692	0.282
1379-TCDD	24.97	J EMPC	0.8851	0.8843	-1.2	1.06E+05	1.03	N	1.34	0.306	8587.692	0.282
1369-TCDD	NotFnd		0.9002						1.34		8587.692	0.282
1469-TCDD	NotFnd		0.9275						1.34		8587.692	0.282
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		8587.692	0.282
1378-TCDD	NotFnd		0.9427						1.34		8587.692	0.282
1268-TCDD	NotFnd		0.9498						1.34		8587.692	0.282
1478-TCDD	NotFnd		0.9584						1.34		8587.692	0.282
1279-TCDD	NotFnd		0.9644						1.34		8587.692	0.282
1234/1269-TCDD	NotFnd		0.9766						1.34		8587.692	0.282
1236-TCDD	NotFnd		0.9813						1.34		8587.692	0.282
1237/1238-TCDD	NotFnd		0.9906						1.34		8587.692	0.282
1239-TCDD	NotFnd		0.9952						1.34		8587.692	0.282
2378-TCDD	**28.25**		**1.0008**	1.0005	**-0.5**	2.81E+05	0.81	Y	**1.34**	**0.811**	**8587.692**	**0.282**
1278-TCDD	NotFnd		1.0122						1.34		8587.692	0.282
1267-TCDD	NotFnd		1.0168						1.34		8587.692	0.282
1289-TCDD	NotFnd		1.0349						1.34		8587.692	0.282
12479/12468-PeCDD	31.09	J	0.9267	0.9259	-1.5	4.87E+05	1.32	Y	1.06	1.89	7400.298	0.265
12469-PeCDD	31.64	J EMPC	0.9425	0.9420	-0.9	2.84E+05	1.00	N	1.06	1.1	7400.298	0.265
12368-PeCDD	32.18	J	0.9588	0.9583	-1.0	1.77E+05	1.69	Y	1.06	0.685	7400.298	0.265
12478-PeCDD	32.38	J	0.9643	0.9641	-0.4	2.68E+05	1.33	Y	1.06	1.04	7400.298	0.265
12379-PeCDD	32.49	J EMPC	0.9673	0.9673	0	1.25E+05	1.93	N	1.06	0.484	7400.298	0.265
12369/12467/12489-PeCDD	32.74	J EMPC	0.9750	0.9748	-0.4	2.09E+05	1.26	N	1.06	0.809	7400.298	0.265
12346/12347-PeCDD	33.11	J EMPC	0.9859	0.9859	0	1.08E+05	1.80	N	1.06	0.418	7400.298	0.265
12378-PeCDD	33.60	J	**1.0005**	**1.0005**	**0**	**2.08E+05**	**1.63**	**Y**	**1.06**	**0.805**	**7400.298**	**0.265**
12367-PeCDD	33.68	J	1.0032	1.0029	-0.6	7.81E+04	1.62	Y	1.06	0.303	7400.298	0.265
12389-PeCDD	NotFnd		1.0135						1.06		7400.298	0.265
124679/124689-HxCDD	35.76		0.9544	0.9547	+0.6	4.25E+06	1.27	Y	1.05	18.7	8114.561	0.337
123468-HxCDD	36.41		0.9716	0.9719	+0.7	7.31E+05	1.24	Y	1.05	3.22	8114.561	0.337
123679/123689-HxCDD	36.70		0.9793	0.9796	+0.7	4.47E+06	1.29	Y	1.05	19.7	8114.561	0.337
123469-HxCDD	36.82	J	0.9829	0.9829	0	4.48E+05	1.39	Y	1.05	1.97	8114.561	0.337
123478-HxCDD	37.47	J	**1.0003**	**1.0003**	**0**	**3.59E+05**	**1.11**	**Y**	1.06	**1.7**	**8114.561**	**0.337**
123678-HxCDD	37.60		**1.0033**	**1.0036**	**+0.7**	**1.33E+06**	**1.28**	**Y**	1.08	**5.84**	**8114.561**	**0.35**
123467-HxCDD	37.79	J EMPC	1.0084	1.0087	+0.7	2.44E+05	0.98	N	1.05	1.07	8114.561	0.337
123789-HxCDD	37.89		**1.0110**	**1.0115**	**+1.1**	**8.40E+05**	**1.32**	**Y**	1.02	**3.47**	**8114.561**	**0.327**

Lab ID: B5966_18718_DF_005 **Acq'd:** 15 Dec 2021 21:35 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120121-S-JC-NE-O-3 **UTP:** 16-Dec-2021 09:47:38 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 355-269-BPH

Datafile: 211215R14 **Report:** 16 Dec 2021 10:54 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

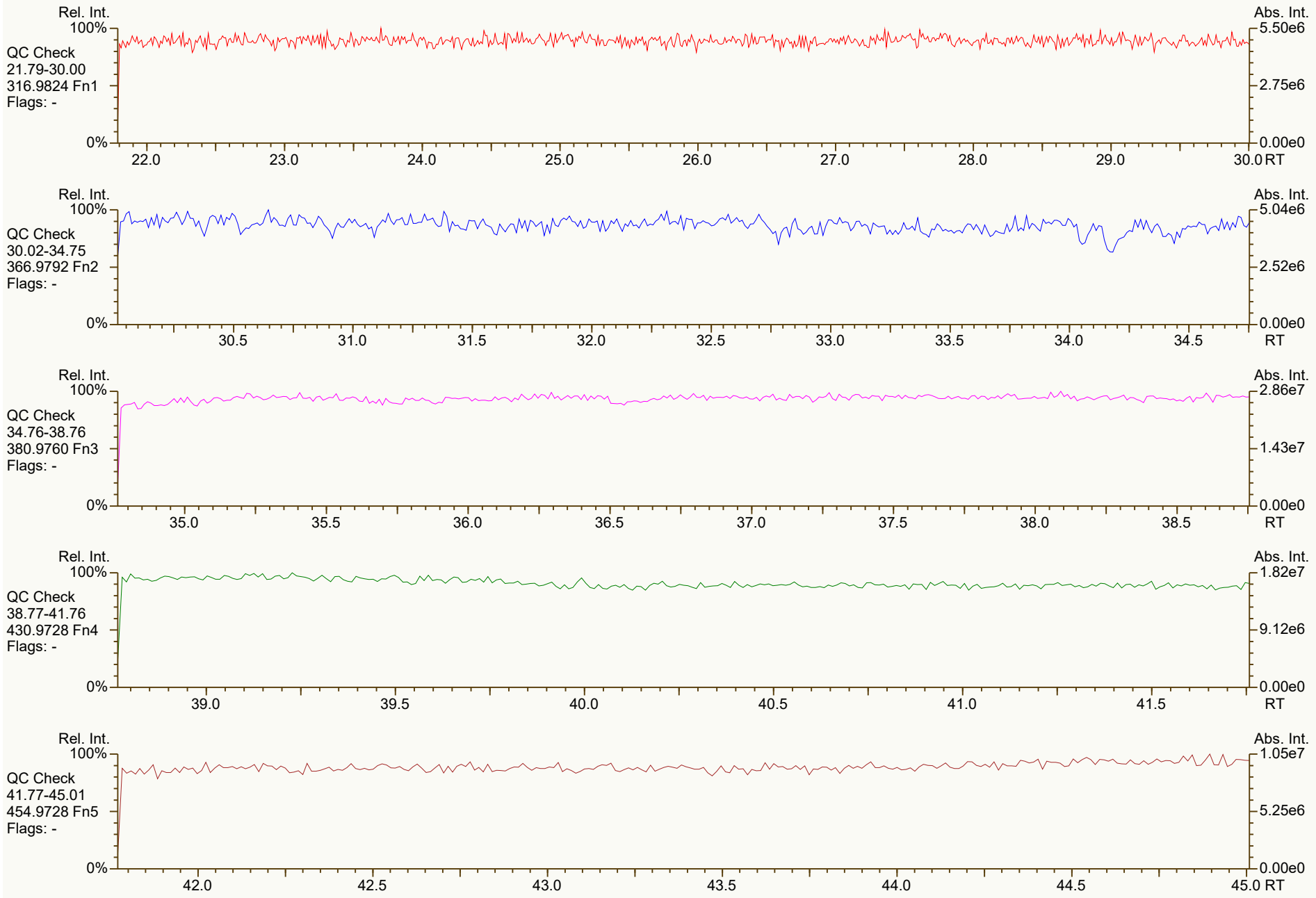
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	6.15E+07	1.04	Y	0.97	343	10139.847	0.394
1234678-HpCDD	**40.52**		**1.0003**	**1.0004**	**+0.2**	**4.45E+07**	**1.05**	**Y**	**0.97**	**248**	**10139.847**	**0.394**
OCDD	**43.07**		**1.0003**	**1.0003**	**0**	**1.09E+09**	**0.90**	**Y**	**1.07**	**8,790**	**18237.899**	**1.25**
OCDD-a	43.06		1.0001	1.0002	+0.3	6.64E+07	2.37	Y	0.07	8,650	17190.301	19
1368-TCDF	NotFnd		0.8230						0.96		7089.584	0.244
1468-TCDF	23.07	J	0.8443	0.8426	-2.4	1.37E+05	0.67	Y	0.96	0.391	7089.584	0.244
2468-TCDF	23.70		0.8672	0.8658	-2.0	4.35E+05	0.78	Y	0.96	1.24	7089.584	0.244
1346/1246-TCDF	24.09	J	0.8802	0.8799	-0.4	1.11E+05	0.74	Y	0.96	0.317	7089.584	0.244
1347/1378/1247-TCDF	24.22		0.8855	0.8848	-1.0	4.75E+05	0.84	Y	0.96	1.35	7089.584	0.244
1348-TCDF	NotFnd		0.8952						0.96		7089.584	0.244
1248/1367/1379-TCDF	24.58		0.9000	0.8980	-2.9	2.89E+05	0.73	Y	0.96	0.822	7089.584	0.244
1268-TCDF	24.98		0.9136	0.9126	-1.5	1.91E+05	0.71	Y	0.96	0.545	7089.584	0.244
1467-TCDF	25.12	J EMPC	0.9185	0.9175	-1.5	1.28E+05	1.30	N	0.96	0.363	7089.584	0.244
1478-TCDF	25.28	EMPC	0.9247	0.9236	-1.7	2.47E+05	0.96	N	0.96	0.702	7089.584	0.244
1369/1237-TCDF	25.69	J	0.9381	0.9383	+0.3	8.52E+04	0.71	Y	0.96	0.242	7089.584	0.244
2467-TCDF	25.79	J EMPC	0.9427	0.9421	-0.9	1.24E+05	1.25	N	0.96	0.353	7089.584	0.244
2368-TCDF	25.96	EMPC	0.9484	0.9482	-0.3	2.21E+05	1.28	N	0.96	0.628	7089.584	0.244
1238/1234/1678/1469/1236-TCDF	26.05	EMPC	0.9517	0.9516	-0.2	3.26E+05	0.57	N	0.96	0.929	7089.584	0.244
1278-TCDF	26.49		0.9682	0.9679	-0.5	5.98E+05	0.88	Y	0.96	1.7	7089.584	0.244
1349-TCDF	NotFnd		0.9725						0.96		7089.584	0.244
1267-TCDF	26.77	J EMPC	0.9782	0.9780	-0.3	1.71E+05	0.98	N	0.96	0.488	7089.584	0.244
2346/1249-TCDF	26.95	J EMPC	0.9846	0.9846	0	9.29E+04	1.03	N	0.96	0.264	7089.584	0.244
2347/1279-TCDF	27.16	J EMPC	0.9926	0.9922	-0.7	1.28E+05	0.94	N	0.96	0.365	7089.584	0.244
2348-TCDF	27.27	J EMPC	0.9966	0.9962	-0.7	7.89E+04	0.40	N	0.96	0.225	7089.584	0.244
2378-TCDF	**27.39**		**1.0006**	**1.0006**	**0**	**1.33E+06**	**0.86**	**Y**	**0.96**	**3.79**	**7089.584**	**0.244**
2367/3467-TCDF	27.75		1.0139	1.0138	-0.2	5.90E+05	0.80	Y	0.96	1.68	7089.584	0.244
1269-TCDF	NotFnd		1.0226						0.96		7089.584	0.244
1239-TCDF	NotFnd		1.0322						0.96		7089.584	0.244
1289-TCDF	29.38		1.0729	1.0732	+0.5	1.90E+05	0.75	Y	0.96	0.541	7089.584	0.244
13468/12468-PeCDF	29.35		0.9135	0.9133	-0.4	1.55E+06	1.69	Y	0.94	4.71	6046.205	0.183
13678/13467/12467-PeCDF	30.89	J	0.9612	0.9612	0	3.71E+05	1.54	Y	0.94	1.12	6572.562	0.199
12368/13478/12478-PeCDF	31.05		0.9661	0.9661	0	1.28E+06	1.48	Y	0.94	3.89	6572.562	0.199
14678-PeCDF	31.16	J EMPC	0.9693	0.9696	+0.6	1.19E+05	1.29	N	0.94	0.36	6572.562	0.199
13479-PeCDF	NotFnd		0.9723						0.94		6572.562	0.199
13469/12479-PeCDF	31.48	J	0.9799	0.9794	-0.9	8.83E+04	1.38	Y	0.94	0.267	6572.562	0.199
12346-PeCDF	31.62	J	0.9842	0.9839	-0.6	7.51E+04	1.40	Y	0.94	0.227	6572.562	0.199

Lab ID: B5966_18718_DF_005 | **Acq'd: 15 Dec 2021 21:35 PSW** | **Wt/Vol: 10.07 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120121-S-JC-NE-O-3 | **UTP: 16-Dec-2021 09:47:38 PSW** | **J-level: 0.497 pg/g** | **Split: 1** | **Checkcode: 355-269-BPH**

Datafile: 211215R14 | **Report: 16 Dec 2021 10:54 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.71	J EMPC	0.9868	0.9865	-0.6	3.14E+05	1.29	N	0.94	0.951	6572.562	0.199
12347-PeCDF	31.79	J EMPC	0.9893	0.9891	-0.4	8.63E+04	2.51	N	0.94	0.261	6572.562	0.199
12348-PeCDF	31.95	J EMPC	0.9941	0.9940	-0.2	1.01E+05	1.16	N	0.94	0.307	6572.562	0.199
12378-PeCDF	**32.15**	J	**1.0006**	**1.0005**	**-0.2**	**2.57E+05**	**1.43**	**Y**	**0.95**	**0.754**	**6572.562**	**0.192**
12678/12367-PeCDF	32.44	J	1.0090	1.0094	+0.8	3.49E+05	1.68	Y	0.94	1.06	6572.562	0.199
12379-PeCDF	NotFnd		1.0143						0.94		6572.562	0.199
12679-PeCDF	NotFnd		0.9929						0.94		6572.562	0.199
23467/12369-PeCDF	33.14	J	0.9966	0.9965	-0.2	2.58E+05	1.44	Y	0.94	0.781	6572.562	0.199
23478-PeCDF	**33.28**	J	**1.0006**	**1.0008**	**+0.4**	**5.10E+05**	**1.52**	**Y**	**0.94**	**1.6**	**6572.562**	**0.206**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6572.562	0.199
12349-PeCDF	NotFnd		1.0102						0.94		6572.562	0.199
12389-PeCDF	NotFnd		1.0325						0.94		6572.562	0.199
123468-HxCDF	35.12		0.9628	0.9628	0	9.53E+05	1.37	Y	1.16	3.07	11705.806	0.341
124678/134678-HxCDF	35.31		0.9683	0.9681	-0.4	3.45E+06	1.25	Y	1.16	11.1	11705.806	0.341
134679-HxCDF	NotFnd		0.9746						1.16		11705.806	0.341
124679-HxCDF	35.75	J EMPC	0.9798	0.9800	+0.4	9.85E+04	0.82	N	1.16	0.317	11705.806	0.341
124689-HxCDF	35.96		0.9859	0.9860	+0.2	4.03E+06	1.25	Y	1.16	13	11705.806	0.341
123467-HxCDF	36.37	J	0.9972	0.9970	-0.4	2.13E+05	1.08	Y	1.16	0.684	11705.806	0.341
123478-HxCDF	**36.49**	J	**1.0004**	**1.0004**	**0**	**5.45E+05**	**1.22**	**Y**	**1.23**	**1.79**	**11705.806**	**0.332**
123678-HxCDF	**36.63**	J	**1.0004**	**1.0005**	**+0.2**	**5.19E+05**	**1.34**	**Y**	**1.13**	**1.5**	**11705.806**	**0.304**
123479-HxCDF	NotFnd		1.0049						1.16		11705.806	0.341
123469-HxCDF	NotFnd		1.0088						1.16		11705.806	0.341
123679-HxCDF	NotFnd		0.9943						1.16		11705.806	0.341
234678-HxCDF	**37.29**	J	**1.0005**	**1.0004**	**-0.2**	**5.91E+05**	**1.20**	**Y**	**1.15**	**1.92**	**11705.806**	**0.342**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		11705.806	0.341
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**11705.806**	**0.397**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		11705.806	0.341
1234678-HpCDF	**39.62**		**1.0003**	**1.0002**	**-0.2**	**8.14E+06**	**1.03**	**Y**	**1.36**	**27.2**	**5677.222**	**0.135**
1234679-HpCDF	39.88	**J EMPC**	1.0067	1.0066	-0.2	2.77E+05	1.22	N	1.33	1.03	5677.222	0.156
1234689-HpCDF	40.02		1.0100	1.0101	+0.2	1.60E+07	1.05	Y	1.33	59.7	5677.222	0.156
1234789-HpCDF	**40.96**		**1.0003**	**1.0000**	**-0.7**	**5.90E+05**	**1.13**	**Y**	**1.30**	**2.49**	**5677.222**	**0.181**
OCDF	**43.25**		**1.0002**	**1.0003**	**+0.3**	**1.38E+07**	**0.87**	**Y**	**1.03**	**90**	**8911.638**	**0.497**
OCDF-a	43.23		1.0002	0.9999	-0.8	7.24E+05	2.51	Y	0.06	81.9	10290.477	9.93

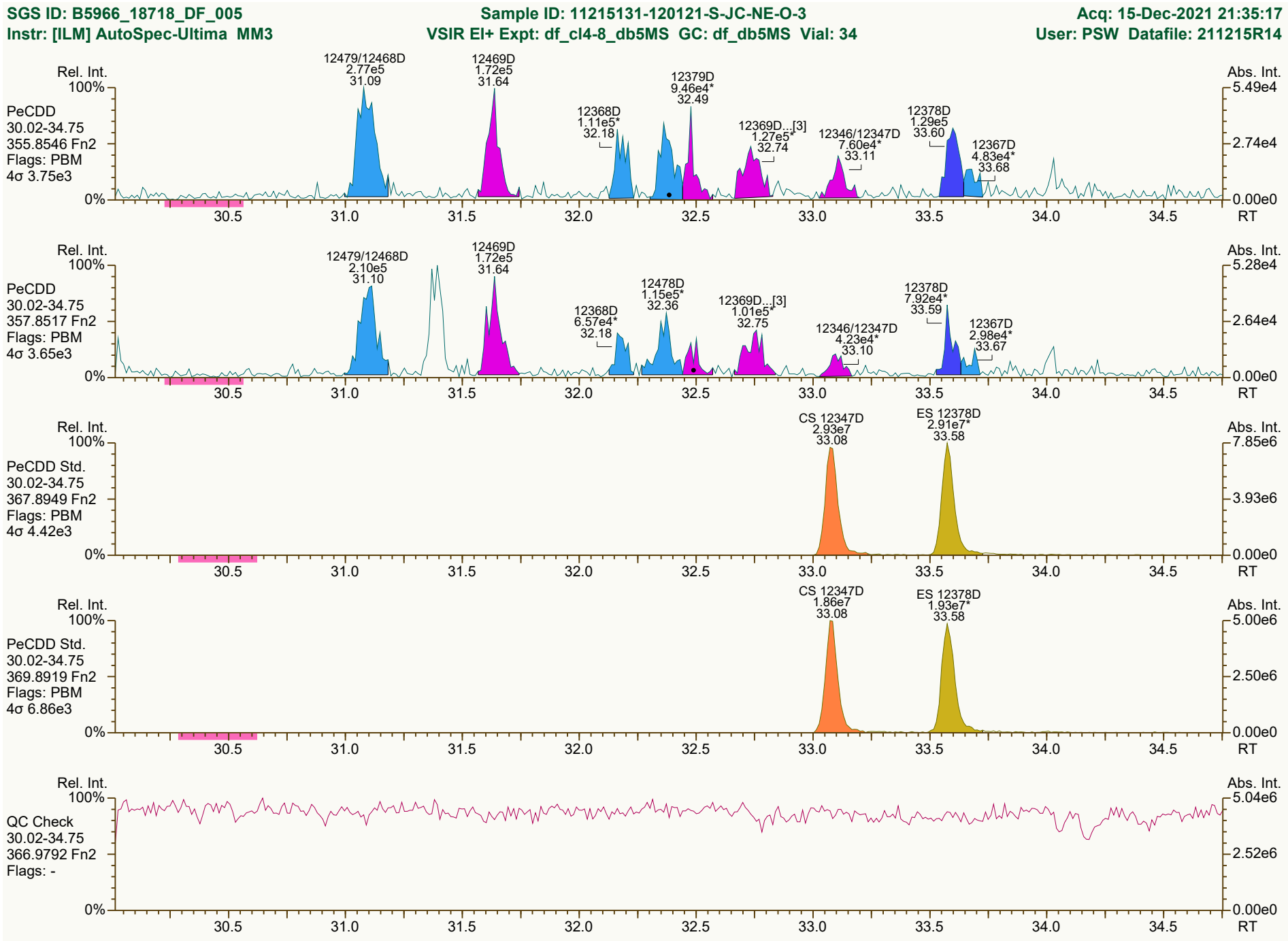

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.50e6
2.75e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.04e6
2.52e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.86e7
1.43e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.82e7
9.12e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.05e7
5.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: B5966_18718_DF_005 | Sample ID: 11215131-120121-S-JC-NE-O-3 | Acq: 15-Dec-2021 21:35:17
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34 | User: PSW Datafile: 211215R14

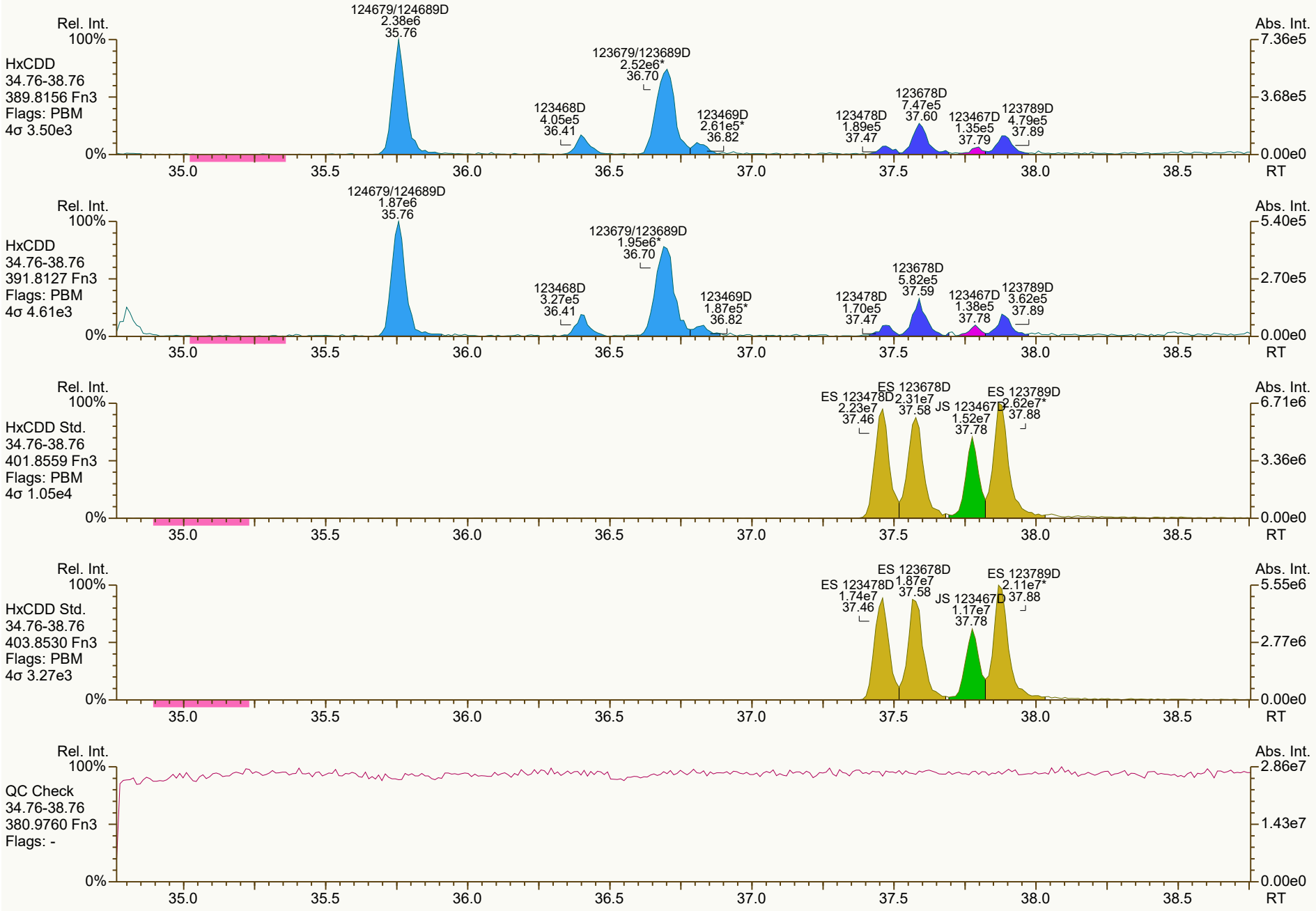


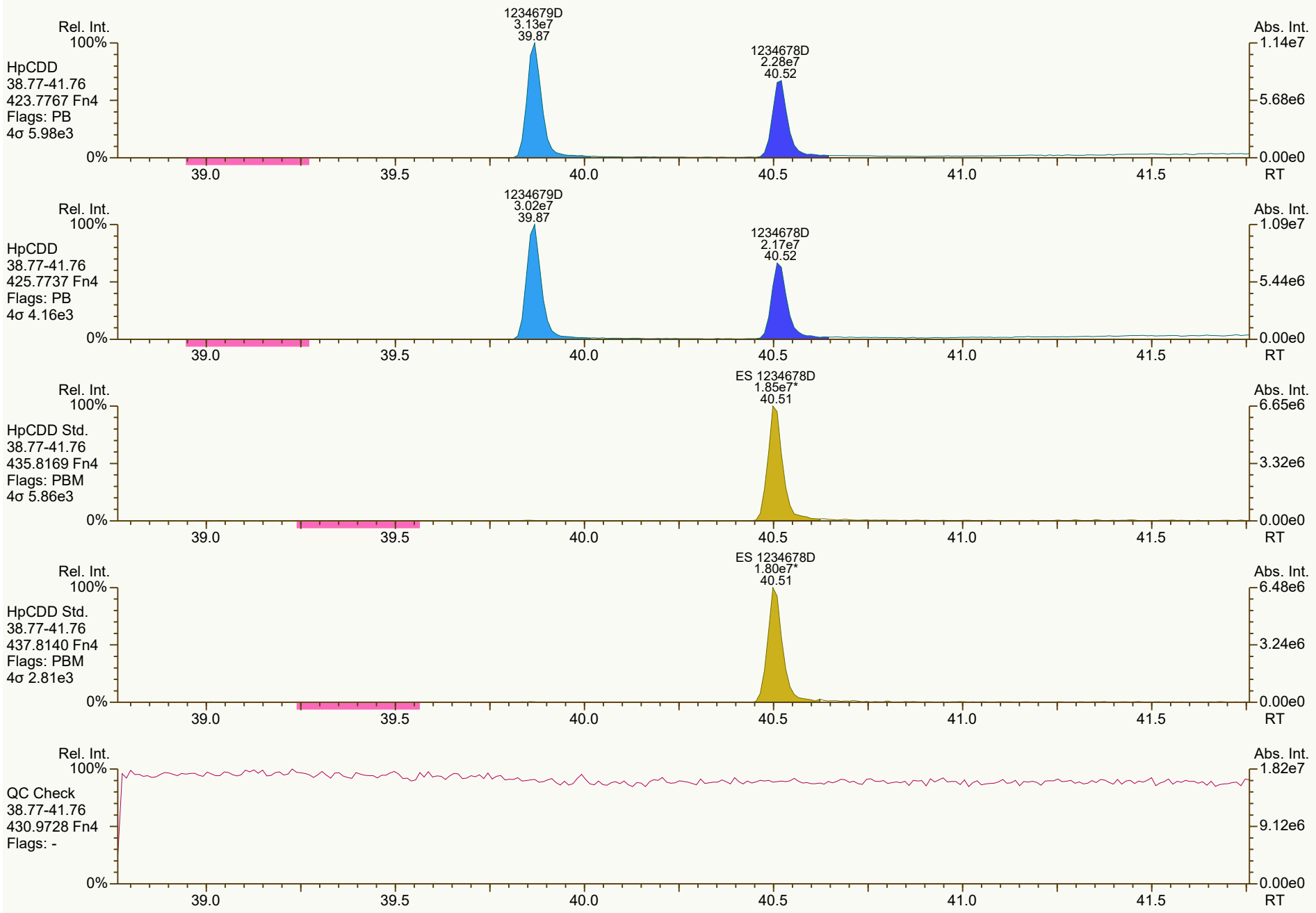
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_005.utp_res, saved 16-Dec-2021 10:57 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2263, 5213, 5242 scc: 355-269 | Revised: 16-Dec-2021 09:47 (PSW) Printed: 16-Dec-2021 11:00 Page 2 of 12

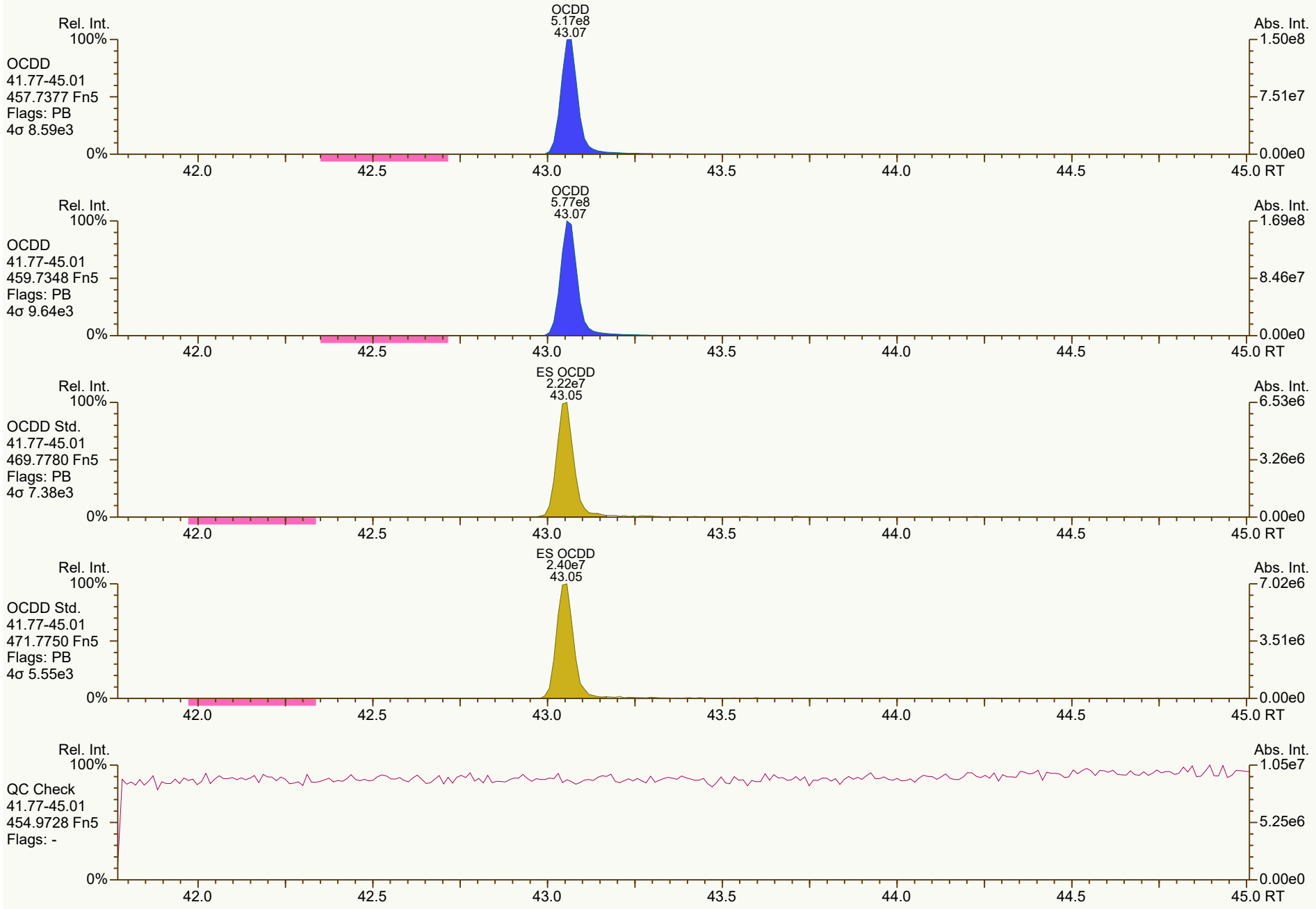
SGS ID: B5966_18718_DF_005 | Sample ID: 11215131-120121-S-JC-NE-O-3 | Acq: 15-Dec-2021 21:35:17
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34 | User: PSW Datafile: 211215R14



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_005.utp_res, saved 16-Dec-2021 10:57 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2851, 2466 scc: 355-269 | PKD: 16-Dec-2021 09:01 Printed: 16-Dec-2021 11:00 Page 3 of 12


Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 3.50e3
0%
124679/124689D
2.38e6
35.76
123679/123689D
2.52e6*
36.70
123468D
4.05e5
36.41
123469D
2.61e5*
36.82
123478D
1.89e5
37.47
123678D
7.47e5
37.60
123467D
1.35e5
37.79
123789D
4.79e5
37.89
Abs. Int.
7.36e5
3.68e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 4.61e3
0%
124679/124689D
1.87e6
35.76
123679/123689D
1.95e6*
36.70
123468D
3.27e5
36.41
123469D
1.87e5*
36.82
123478D
1.70e5
37.47
123678D
5.82e5
37.59
123467D
1.38e5
37.78
123789D
3.62e5
37.89
Abs. Int.
5.40e5
2.70e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 1.05e4
0%
ES 123478D
2.23e7
37.46
ES 123678D
2.31e7
37.58
JS 123467D
1.52e7
37.78
ES 123789D
2.62e7*
37.88
Abs. Int.
6.71e6
3.36e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 3.27e3
0%
ES 123478D
1.74e7
37.46
ES 123678D
1.87e7
37.58
JS 123467D
1.17e7
37.78
ES 123789D
2.11e7*
37.88
Abs. Int.
5.55e6
2.77e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.86e7
1.43e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 5.98e3
1234679D
3.13e7
39.87
1234678D
2.28e7
40.52
Abs. Int.
1.14e7
5.68e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 4.16e3
1234679D
3.02e7
39.87
1234678D
2.17e7
40.52
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 5.86e3
ES 1234678D
1.85e7*
40.51
Abs. Int.
6.65e6
3.32e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 2.81e3
ES 1234678D
1.80e7*
40.51
Abs. Int.
6.48e6
3.24e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.82e7
9.12e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

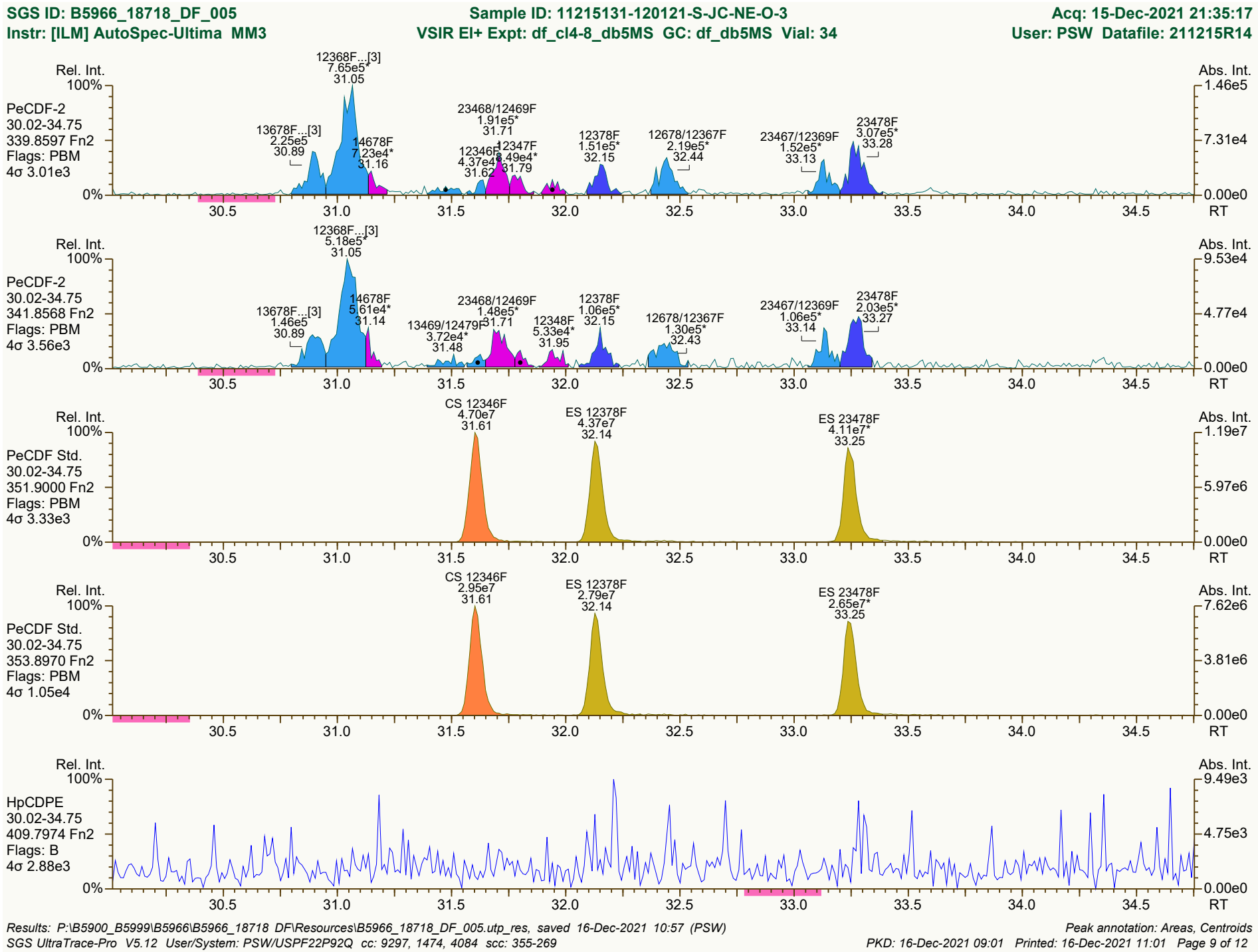

OCDD
5.17e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 8.59e3
0%
Abs. Int.
1.50e8
7.51e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.77e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 9.64e3
0%
Abs. Int.
1.69e8
8.46e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.22e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 7.38e3
0%
Abs. Int.
6.53e6
3.26e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.40e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.55e3
0%
Abs. Int.
7.02e6
3.51e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.05e7
5.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

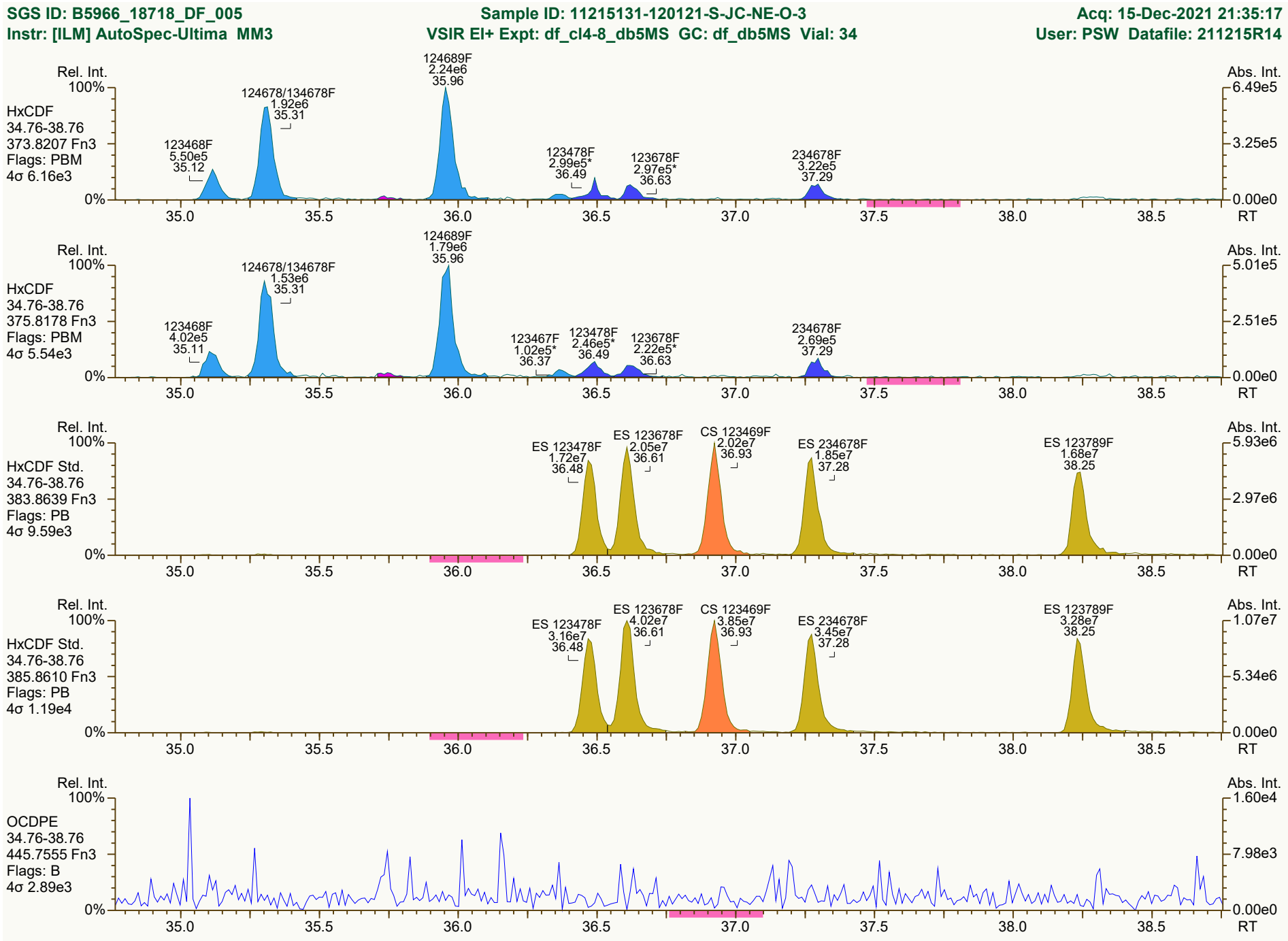

TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.93e3
1468F 5.52e4* 23.07
2468F 1.90e5 23.70
1347F...[3] 2.17e5* 24.22
1346/1246F 4.72e4* 24.09
1248F...[3] 1.22e5* 24.58
1478F 1.34e5* 25.28
2368F 1.59e5* 25.96
1278F 2.80e5* 26.49
1267F 9.53e4* 26.77
2348F 3.43e4* 27.27
2378F 6.17e5* 27.39
2367/3467F 2.63e5 27.75
1289F 8.13e4 29.38
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 4.16e3
1468F 8.21e4* 23.05
2468F 2.45e5 23.69
1347F...[3] 2.58e5* 24.22
1248F...[3] 1.67e5* 24.59
1478F 1.39e5* 25.28
1369/1237F 4.99e4* 25.66
2368F 1.25e5* 25.93
1238F...[5] 2.48e5* 26.03
1278F 3.18e5* 26.49
2348F 8.56e4* 27.28
2378F 7.16e5* 27.39
2367/3467F 3.27e5 27.75
1289F 1.09e5 29.38
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.06e4
Conc(2378F) = (6.17e5 + 7.16e5) * 2000pg / (3.17e7 + 4.10e7) * 0.96 * 10.07g = 3.79pg/g
PSW 16-Dec-2021 10:57
VERIFIED
JS 1234F 4.55e7 26.01
ES 2378F 3.17e7 27.37
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 7.71e3
JS 1234F 5.89e7 26.01
ES 2378F 4.10e7 27.37
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.96e3
Rel. Int.
Abs. Int.
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
1.41e5
7.03e4
0.00e0
1.70e5
8.51e4
9.64e6
4.82e6
1.20e7
6.02e6
1.75e4
8.73e3

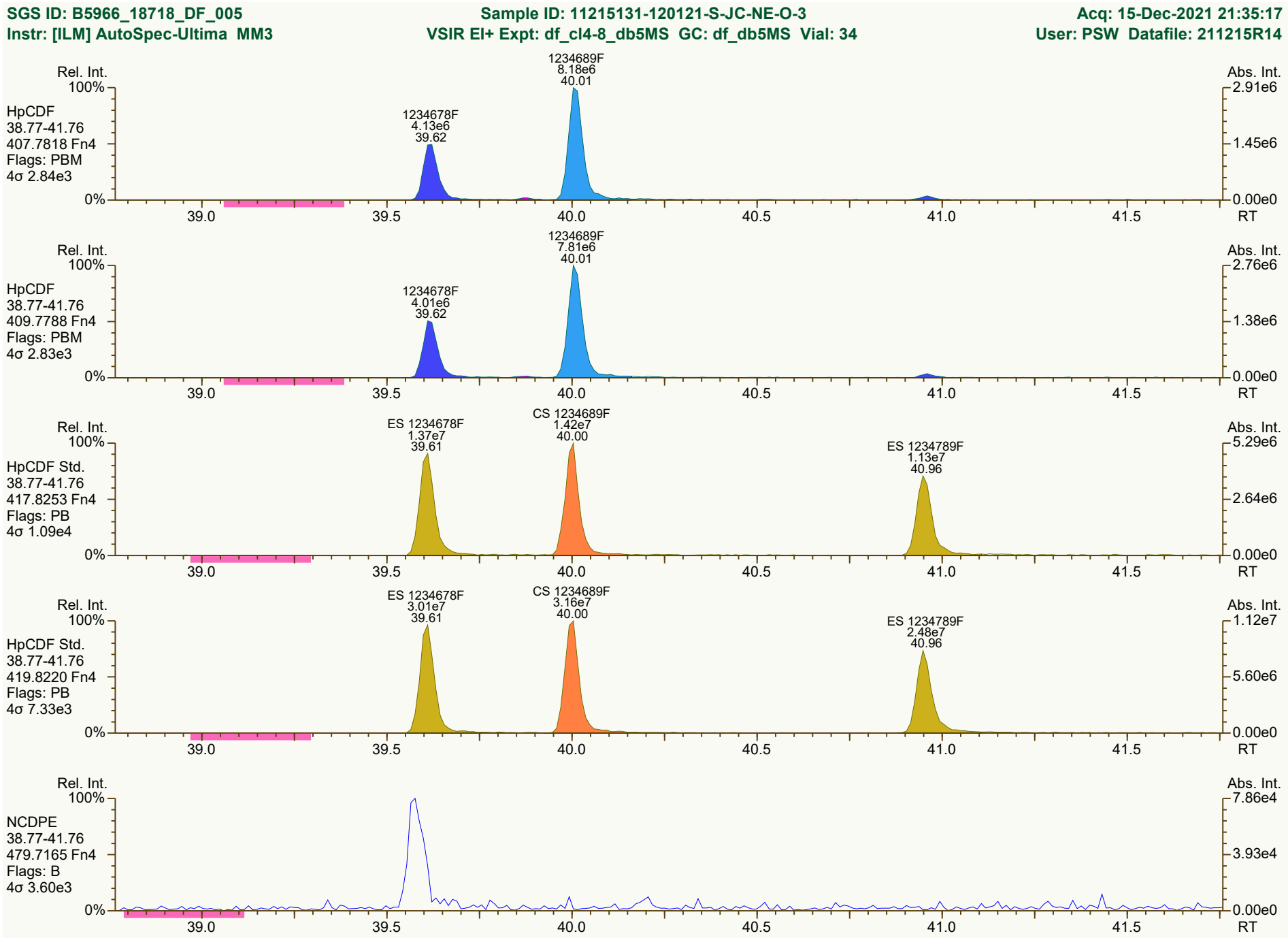
SGS ID: B5966_18718_DF_005 | Sample ID: 11215131-120121-S-JC-NE-O-3 | Acq: 15-Dec-2021 21:35:17
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34 | User: PSW Datafile: 211215R14



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_005.utp_res, saved 16-Dec-2021 10:57 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4244 scc: 355-269 *PKD: 16-Dec-2021 09:01 Printed: 16-Dec-2021 11:01 Page 8 of 12*


SGS ID: B5966_18718_DF_005
Sample ID: 11215131-120121-S-JC-NE-O-3
Acq: 15-Dec-2021 21:35:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34
User: PSW Datafile: 211215R14
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.01e3
12368F...[3] 7.65e5* 31.05
13678F...[3] 2.25e5 30.89
14678F 7.23e4* 31.16
23468/12469F 1.91e5* 31.71
12346F 4.37e4* 31.62
12347F 8.49e4* 31.79
12378F 1.51e5* 32.15
12678/12367F 2.19e5* 32.44
23467/12369F 1.52e5* 33.13
23478F 3.07e5* 33.28
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.56e3
12368F...[3] 5.18e5* 31.05
13678F...[3] 1.46e5 30.89
14678F 5.61e4* 31.14
13469/12479F 3.72e4* 31.48
23468/12469F 1.48e5* 31.71
12348F 5.33e4* 31.95
12378F 1.06e5* 32.15
12678/12367F 1.30e5* 32.43
23467/12369F 1.06e5* 33.14
23478F 2.03e5* 33.27
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 3.33e3
CS 12346F 4.70e7 31.61
ES 12378F 4.37e7 32.14
ES 23478F 4.11e7* 33.25
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 1.05e4
CS 12346F 2.95e7 31.61
ES 12378F 2.79e7 32.14
ES 23478F 2.65e7* 33.25
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.88e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_005.utp_res, saved 16-Dec-2021 10:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9297, 1474, 4084 scc: 355-269
PKD: 16-Dec-2021 09:01 Printed: 16-Dec-2021 11:01 Page 9 of 12


SGS ID: B5966_18718_DF_005
Sample ID: 11215131-120121-S-JC-NE-O-3
Acq: 15-Dec-2021 21:35:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34
User: PSW Datafile: 211215R14
Rel. Int.
Abs. Int.
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 6.16e3
123468F 5.50e5 35.12
124678/134678F 1.92e6 35.31
124689F 2.24e6 35.96
123478F 2.99e5* 36.49
123678F 2.97e5* 36.63
234678F 3.22e5 37.29
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 5.54e3
123468F 4.02e5 35.11
124678/134678F 1.53e6 35.31
124689F 1.79e6 35.96
123467F 1.02e5* 36.37
123478F 2.46e5* 36.49
123678F 2.22e5* 36.63
234678F 2.69e5 37.29
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 9.59e3
ES 123478F 1.72e7 36.48
ES 123678F 2.05e7 36.61
CS 123469F 2.02e7 36.93
ES 234678F 1.85e7 37.28
ES 123789F 1.68e7 38.25
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 1.19e4
ES 123478F 3.16e7 36.48
ES 123678F 4.02e7 36.61
CS 123469F 3.85e7 36.93
ES 234678F 3.45e7 37.28
ES 123789F 3.28e7 38.25
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.89e3
RT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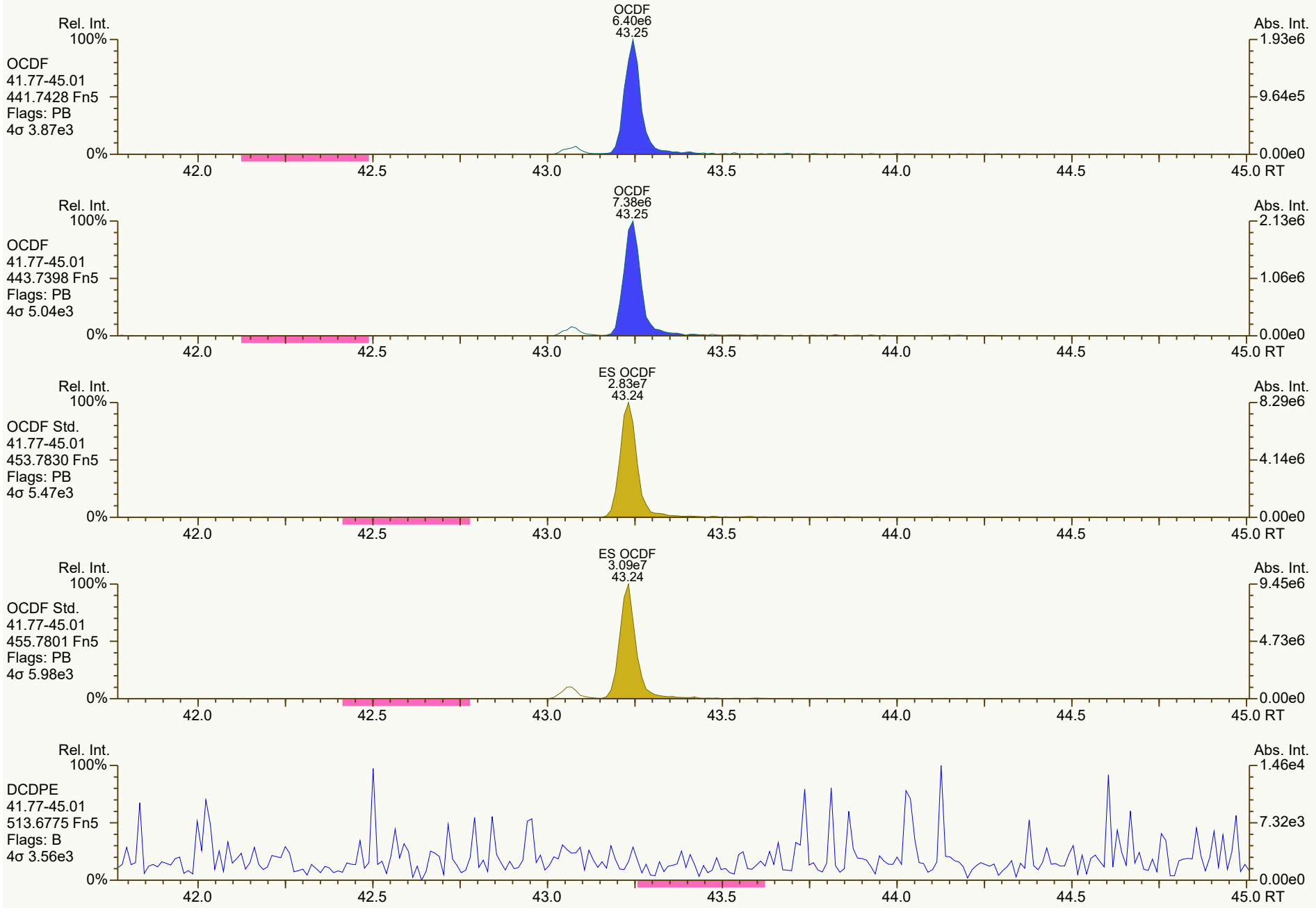
Sample ID: 11215131-120121-S-JC-NE-O-3
Acq: 15-Dec-2021 21:35:17
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34
User: PSW Datafile: 211215R14
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.84e3
1234678F
4.13e6
39.62
1234689F
8.18e6
40.01
2.91e6
1.45e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 2.83e3
1234678F
4.01e6
39.62
1234689F
7.81e6
40.01
2.76e6
1.38e6
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.09e4
ES 1234678F
1.37e7
39.61
CS 1234689F
1.42e7
40.00
ES 1234789F
1.13e7
40.96
5.29e6
2.64e6
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 7.33e3
ES 1234678F
3.01e7
39.61
CS 1234689F
3.16e7
40.00
ES 1234789F
2.48e7
40.96
1.12e7
5.60e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.60e3
7.86e4
3.93e4
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\B5966_18718_DF_005.utp_res, saved 16-Dec-2021 10:57 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1600, 0734, 4425 scc: 355-269
PKD: 16-Dec-2021 09:01 Printed: 16-Dec-2021 11:01 Page 11 of 12


OCDF
6.40e6
43.25
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.87e3
0%
Abs. Int.
1.93e6
9.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
7.38e6
43.25
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 5.04e3
0%
Abs. Int.
2.13e6
1.06e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.83e7
43.24
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 5.47e3
0%
Abs. Int.
8.29e6
4.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.09e7
43.24
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 5.98e3
0%
Abs. Int.
9.45e6
4.73e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.56e3
0%
Abs. Int.
1.46e4
7.32e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
5	211215R05	3	CS3_211215_DF_RB ✓	1.00	SIL 25-347-1	PSW	171-983	15-Dec-2021	14:15:21
6	211215R06	28	OPR1_18718_DF	1.00	0_18718_OPR001	PSW	364-859	15-Dec-2021	15:15:44
7	211215R07	29	OPR2_18718_DF	1.00	0_18718_OPR002	PSW	062-626	15-Dec-2021	16:02:28
8	211215R08	2	SBS_211215_DF_RB	1.00	SIL 20-61-1	PSW	291-279	15-Dec-2021	16:50:02
9	211215R09	27	MB1_18718_DF_SDS	10.00	Method Blank	PSW	204-041	15-Dec-2021	17:37:36
10	211215R10	30	B5966_18718_DF_001	10.05	11215131-113021-S-SPS-NE-O-5	PSW	108-875	15-Dec-2021	18:25:08
11	211215R11	31	B5966_18718_DF_002	10.18	11215131-113021-S-SPS-NE-O-4	PSW	121-258	15-Dec-2021	19:12:41
12	211215R12	32	B5966_18718_DF_003	10.11	11215131-113021-S-JC-NE-O-1	PSW	994-247	15-Dec-2021	20:00:14
13	211215R13	33	B5966_18718_DF_004	10.07	11215131-113021-S-JC-NE-O-2	PSW	651-553	15-Dec-2021	20:47:48
14	211215R14	34	B5966_18718_DF_005 ✓	10.07	11215131-120121-S-JC-NE-O-3	PSW	355-269	15-Dec-2021	21:35:17

REVIEWED
paul_walton , 12/16/2021, 11:04:37 AM

APPROVED
Carla_Lyon , 12/17/2021, 12:54:36 PM

Dioxin/Furan QC Summary	Acq'd: 15 Dec 2021 14:15 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211215_DF_RB	UTP: 16-Dec-2021 09:47:33 PSW	Checkcode: 171-983-RDP
Sample ID: SIL 25-347-1	Report: 16 Dec 2021 10:53 pw	Datafile: 211215R05

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.27	8.94E+06	0.83	Y	1.34	1.16	-14%
12378-PeCDD	33.61	3.31E+07	1.56	Y	1.06	1.00	-5%
123478-HxCDD	37.48	2.72E+07	1.27	Y	1.06	1.08	3%
123678-HxCDD	37.61	3.04E+07	1.27	Y	1.08	1.13	5%
123789-HxCDD	37.91	3.04E+07	1.26	Y	1.02	0.97	-5%
1234678-HpCDD	40.53	2.45E+07	1.02	Y	0.97	1.00	3%
OCDD	43.08	2.93E+07	0.92	Y	1.07	1.05	-2%
2378-TCDF	27.41	1.24E+07	0.80	Y	0.96	1.07	11%
12378-PeCDF	32.16	5.05E+07	1.56	Y	0.95	1.02	8%
23478-PeCDF	33.27	4.96E+07	1.57	Y	0.94	1.05	12%
123478-HxCDF	36.50	4.22E+07	1.26	Y	1.23	1.28	4%
123678-HxCDF	36.64	4.77E+07	1.28	Y	1.13	1.19	5%
234678-HxCDF	37.30	4.19E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.27	3.71E+07	1.26	Y	1.14	1.18	4%
1234678-HpCDF	39.63	3.84E+07	1.05	Y	1.36	1.39	2%
1234789-HpCDF	40.98	3.14E+07	1.04	Y	1.30	1.38	6%
OCDF	43.26	3.74E+07	0.93	Y	1.03	1.04	1%
ES 2378-TCDD	28.24	7.71E+07	0.82	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.588	6.61E+07	1.58	Y	1.03	0.88	-15%
ES 123478-HxCDD	37.466	5.03E+07	1.26	Y	0.99	0.99	0%
ES 123678-HxCDD	37.589	5.37E+07	1.30	Y	0.97	1.06	9%
ES 123789-HxCDD	37.893	6.27E+07	1.25	Y	1.12	1.24	10%
ES 1234678-HpCDD	40.518	4.91E+07	1.08	Y	0.99	0.97	-2%
ES OCDD	43.069	5.61E+07	0.90	Y	0.78	0.55	-29%
ES 2378-TCDF	27.385	1.16E+08	0.80	Y	1.08	1.06	-3%
ES 12378-PeCDF	32.146	9.86E+07	1.60	Y	0.93	0.90	-4%
ES 23478-PeCDF	33.255	9.47E+07	1.60	Y	0.92	0.86	-7%
ES 123478-HxCDF	36.48	6.60E+07	0.53	Y	1.14	1.30	14%
ES 123678-HxCDF	36.619	8.00E+07	0.54	Y	1.30	1.58	22%
ES 234678-HxCDF	37.288	7.11E+07	0.54	Y	1.20	1.40	17%
ES 123789-HxCDF	38.253	6.26E+07	0.53	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.623	5.52E+07	0.44	Y	0.95	1.09	15%
ES 1234789-HpCDF	40.967	4.55E+07	0.45	Y	0.85	0.90	6%
ES OCDF	43.253	7.21E+07	0.90	Y	0.93	0.71	-23%

Dioxin/Furan QC Summary	Acq'd: 15 Dec 2021 14:15 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211215_DF_RB	UTP: 16-Dec-2021 09:47:33 PSW	Checkcode: 171-983-RDP
Sample ID: SIL 25-347-1	Report: 16 Dec 2021 10:53 pw	Datafile: 211215R05

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.59	7.51E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.02	1.10E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.78	2.53E+07	1.29	Y	-	-	-
CS 37Cl-2378-TCDD	28.27	8.74E+06	n/a	-	1.31	1.16	-11%
CS 12347-PeCDD	33.09	5.65E+07	1.65	Y	0.89	0.75	-16%
CS 12346-PeCDF	31.62	9.40E+07	1.59	Y	0.87	0.85	-2%
CS 123469-HxCDF	36.93	6.64E+07	0.55	Y	1.09	1.31	21%
CS 1234689-HpCDF	40.01	5.01E+07	0.46	Y	0.86	0.99	15%
~~SS 37Cl-2378-TCDD~~	~~28.27~~	~~8.74E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.13~~	~~-10%~~
~~SS 12347-PeCDD~~	~~33.09~~	~~5.65E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~0.86~~	~~-1%~~
~~SS 12346-PeCDF~~	~~31.62~~	~~9.40E+07~~	~~1.59~~	~~Y~~	~~0.93~~	~~0.95~~	~~2%~~
~~SS 123469-HxCDF~~	~~36.93~~	~~6.64E+07~~	~~0.55~~	~~Y~~	~~0.84~~	~~0.83~~	~~-1%~~
~~SS 1234689-HpCDF~~	~~40.01~~	~~5.01E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~0.91~~	~~0%~~
Not used in this project.							
CL 17Dec21							
~~OCDD-a~~	~~43.07~~	~~1.67E+06~~	~~2.49~~	~~Y~~	~~0.07~~	~~0.06~~	~~-10%~~
~~OCDF-a~~	~~43.25~~	~~1.77E+06~~	~~3.18~~	~~N~~	~~0.06~~	~~0.05~~	~~-17%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211215R05 Analysis Date: 15-DEC-2021 14:15:21

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.83	0.65	-	0.89	Y	8.62	7.8	-	12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32	-	1.78	Y	47.3	39	-	65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	51.3	39	-	64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	52.3	39	-	64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	47.7	41	-	61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88	-	1.20	Y	51.3	43	-	58	Y
OCDD	M+2/M+4	0.92	0.76	-	1.02	Y	97.7	79	-	126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	11.1	8.4	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	54.1	41	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	55.8	41	-	61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	51.8	45	-	56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.28	1.05	-	1.43	Y	52.7	44	-	57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	51.2	44	-	57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	52.1	45	-	56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88	-	1.20	Y	51.2	45	-	55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88	-	1.20	Y	53.1	43	-	58	Y
OCDF	M+2/M+4	0.93	0.76	-	1.02	Y	101	63	-	159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 16 Dec 2021 10:53 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

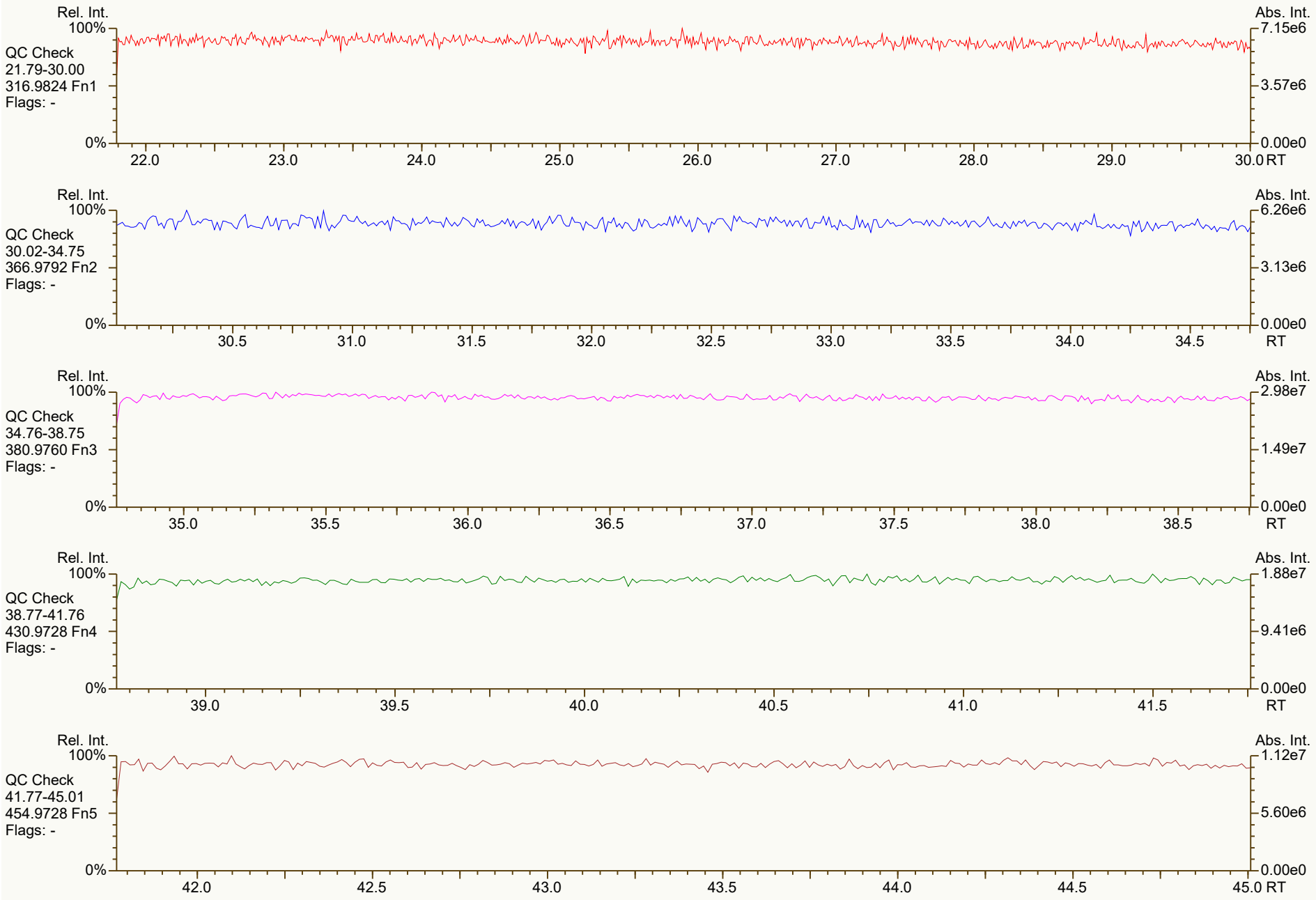
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

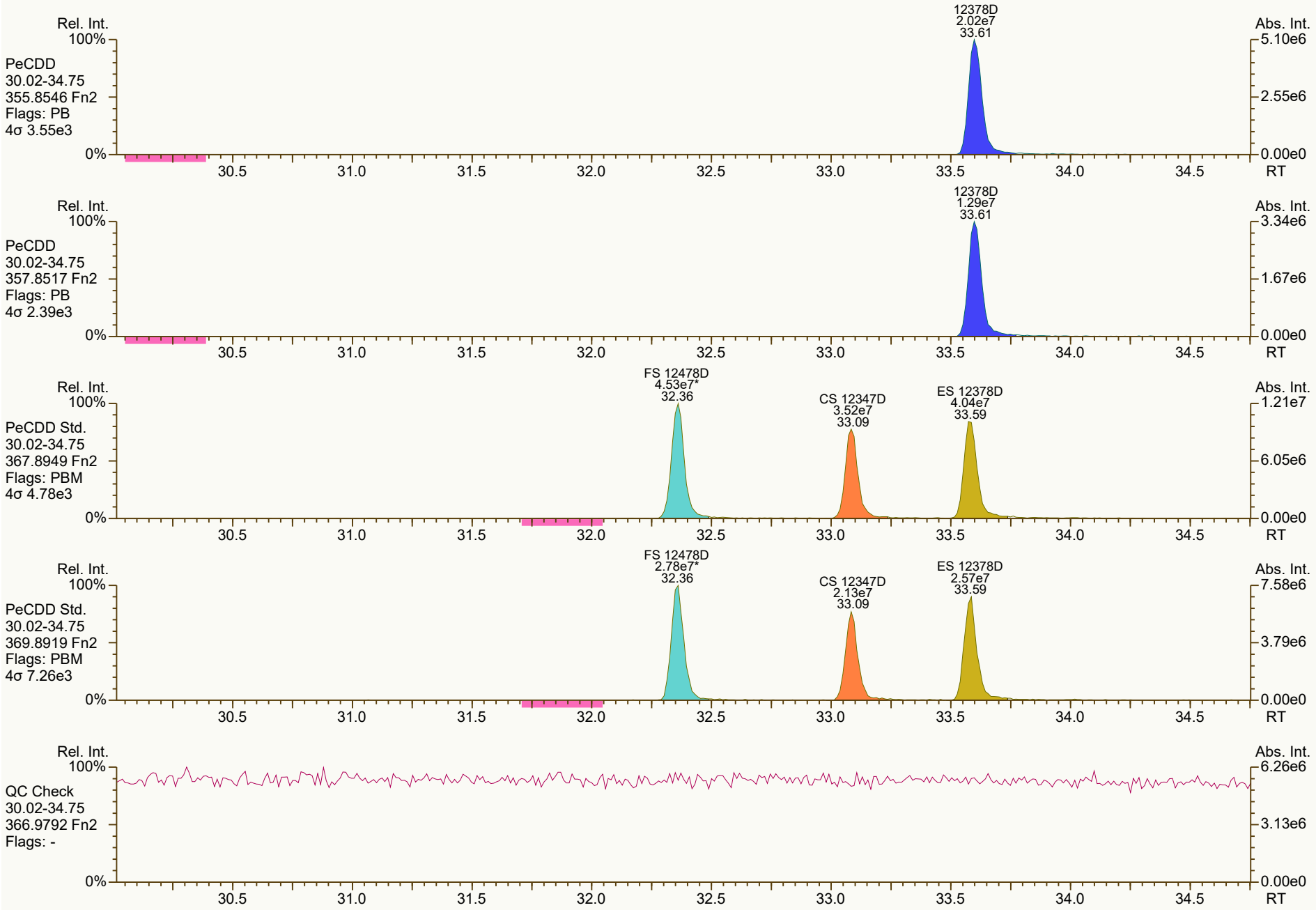
VER Data Filename: 211215R05 Analysis Date: 15-DEC-2021 14:15:21

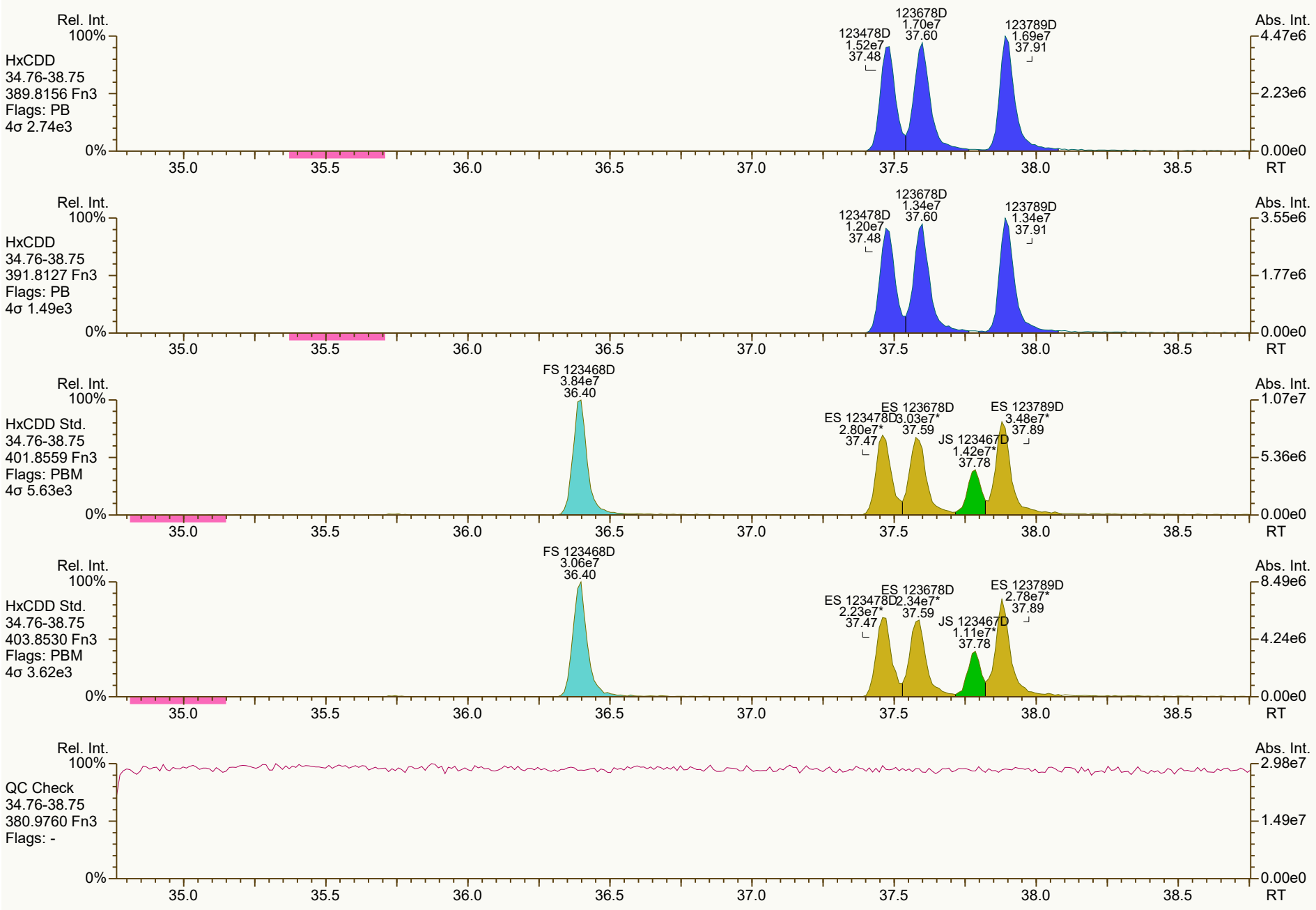
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65	-	0.89	Y	99.3	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	85	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	100	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05	-	1.43	Y	109	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	110	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88	-	1.20	Y	97.9	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	143	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	97.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	95.9	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	93.1	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	114	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	122	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	117	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	109	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	115	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	106	77	-	129	Y
13C-OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	154	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						8.88	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	84.3	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.59	1.32	-	1.78	Y	98.3	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	121	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	115	70	-	130	Y

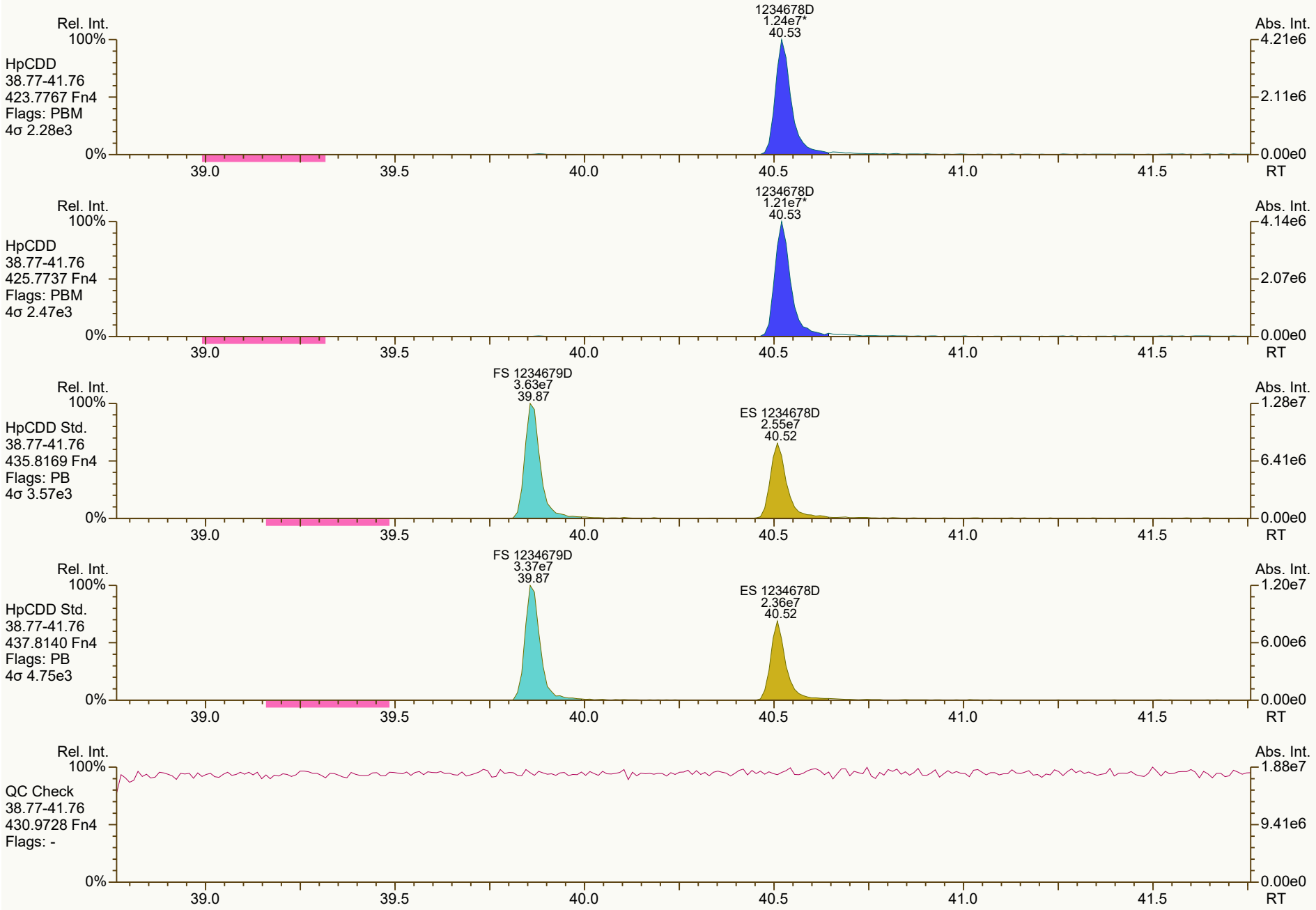
Processed: 16 Dec 2021 10:53 Analyst: pw

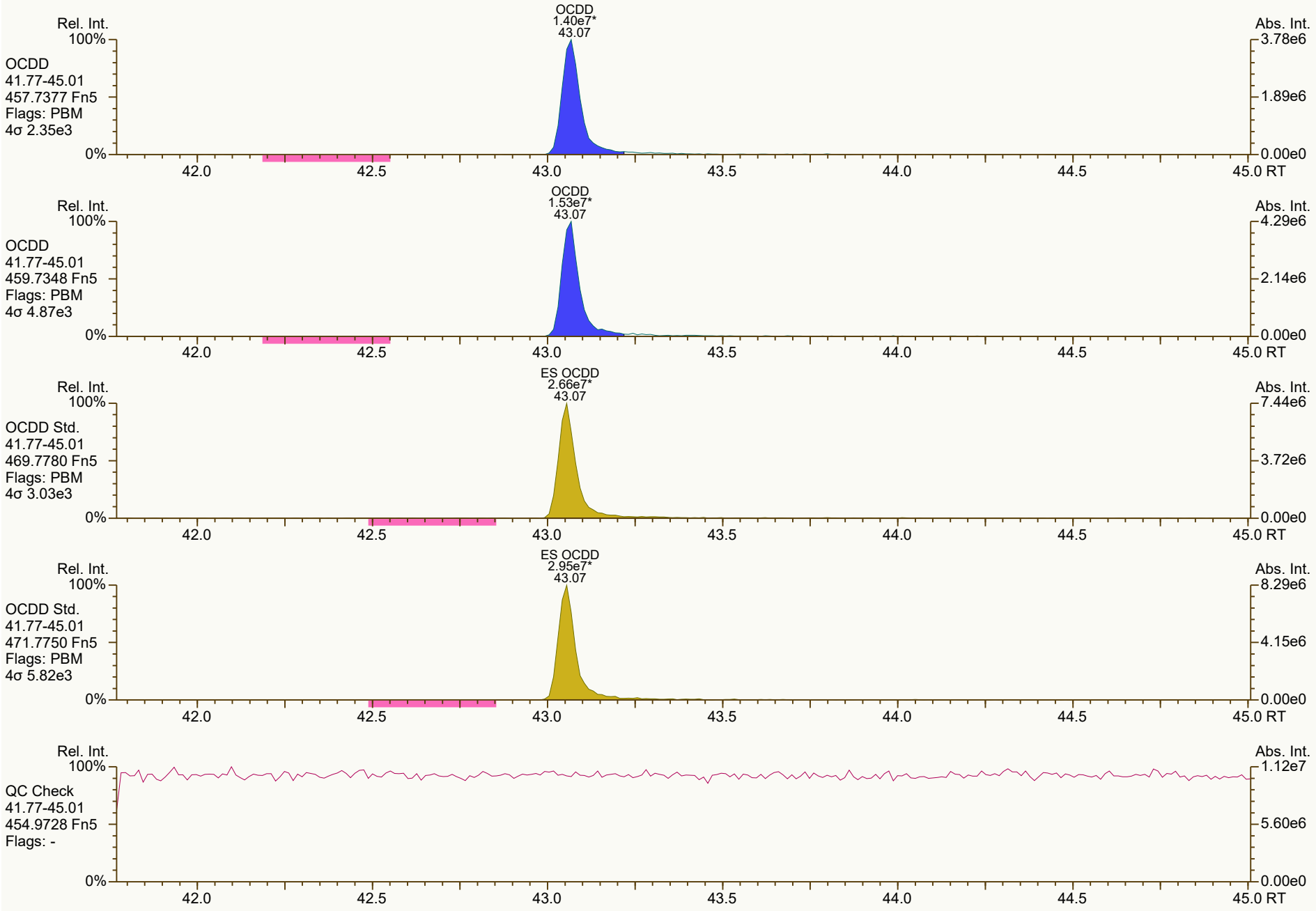

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
7.15e6
3.57e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.26e6
3.13e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.98e7
1.49e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.88e7
9.41e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.12e7
5.60e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PB
4σ 3.31e3
0%
2378D
4.04e6
28.27
Abs. Int.
9.55e5
4.78e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PB
4σ 3.45e3
0%
RRF(2378D) = (4.04e6 + 4.89e6) * 100pg / (3.46e7 + 4.25e7) * 10pg * 1 = 1.16
PSW 16-Dec-2021 10:58
VERIFIED
2378D
4.89e6
28.26
Abs. Int.
1.09e6
5.47e5
0.00e0
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.82e3
0%
CS 37Cl-2378D
8.74e6
28.27
Abs. Int.
1.86e6
9.30e5
0.00e0
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.46e4
0%
AS 1368D
3.51e7
24.58
TS 1378D
4.65e7
26.59
JS 1234D
3.37e7
27.59
ES 2378D
3.46e7
28.24
FS 1278D
3.67e7
28.57
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 5.15e3
0%
AS 1368D
4.44e7
24.58
TS 1378D
5.93e7
26.59
JS 1234D
4.14e7
27.59
ES 2378D
4.25e7
28.24
FS 1278D
4.74e7
28.57
Abs. Int.
1.26e7
6.31e6
0.00e0


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PB
4σ 3.55e3
0%
12378D
2.02e7
33.61
Abs. Int.
5.10e6
2.55e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 2.39e3
0%
12378D
1.29e7
33.61
Abs. Int.
3.34e6
1.67e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 4.78e3
0%
FS 12478D
4.53e7*
32.36
CS 12347D
3.52e7
33.09
ES 12378D
4.04e7
33.59
Abs. Int.
1.21e7
6.05e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 7.26e3
0%
FS 12478D
2.78e7*
32.36
CS 12347D
2.13e7
33.09
ES 12378D
2.57e7
33.59
Abs. Int.
7.58e6
3.79e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.26e6
3.13e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 2.74e3
123478D
1.52e7
37.48
123678D
1.70e7
37.60
123789D
1.69e7
37.91
Abs. Int.
4.47e6
2.23e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 1.49e3
123478D
1.20e7
37.48
123678D
1.34e7
37.60
123789D
1.34e7
37.91
Abs. Int.
3.55e6
1.77e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 5.63e3
FS 123468D
3.84e7
36.40
ES 123478D
2.80e7*
37.47
ES 123678D
3.03e7*
37.59
JS 123467D
1.42e7*
37.78
ES 123789D
3.48e7*
37.89
Abs. Int.
1.07e7
5.36e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 3.62e3
FS 123468D
3.06e7
36.40
ES 123478D
2.23e7*
37.47
ES 123678D
2.34e7*
37.59
JS 123467D
1.11e7*
37.78
ES 123789D
2.78e7*
37.89
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
Abs. Int.
2.98e7
1.49e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

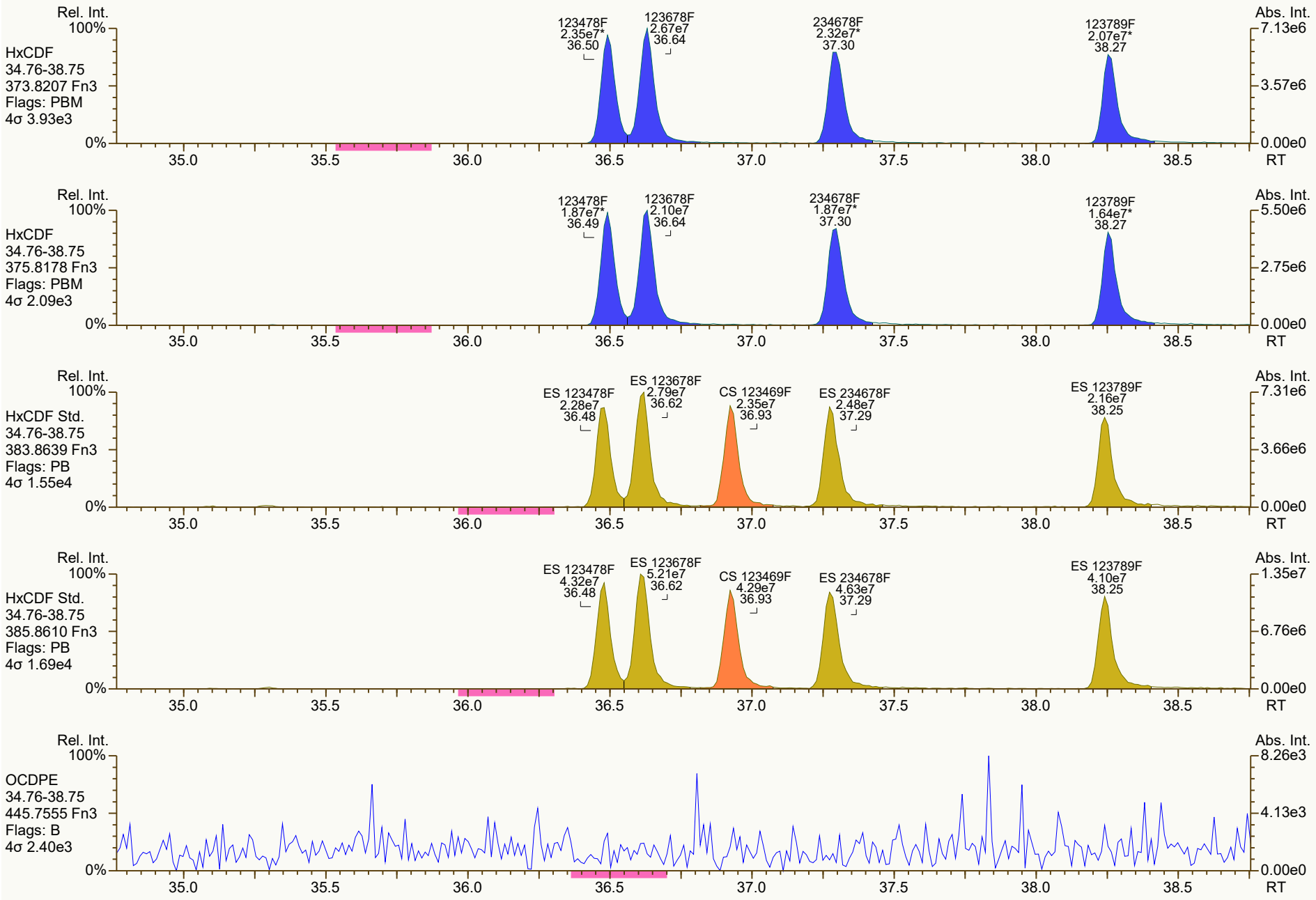

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 2.28e3
0%
1234678D
1.24e7*
40.53
Abs. Int.
4.21e6
2.11e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 2.47e3
0%
1234678D
1.21e7*
40.53
Abs. Int.
4.14e6
2.07e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 3.57e3
0%
FS 1234679D
3.63e7
39.87
ES 1234678D
2.55e7
40.52
Abs. Int.
1.28e7
6.41e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.75e3
0%
FS 1234679D
3.37e7
39.87
ES 1234678D
2.36e7
40.52
Abs. Int.
1.20e7
6.00e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.88e7
9.41e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

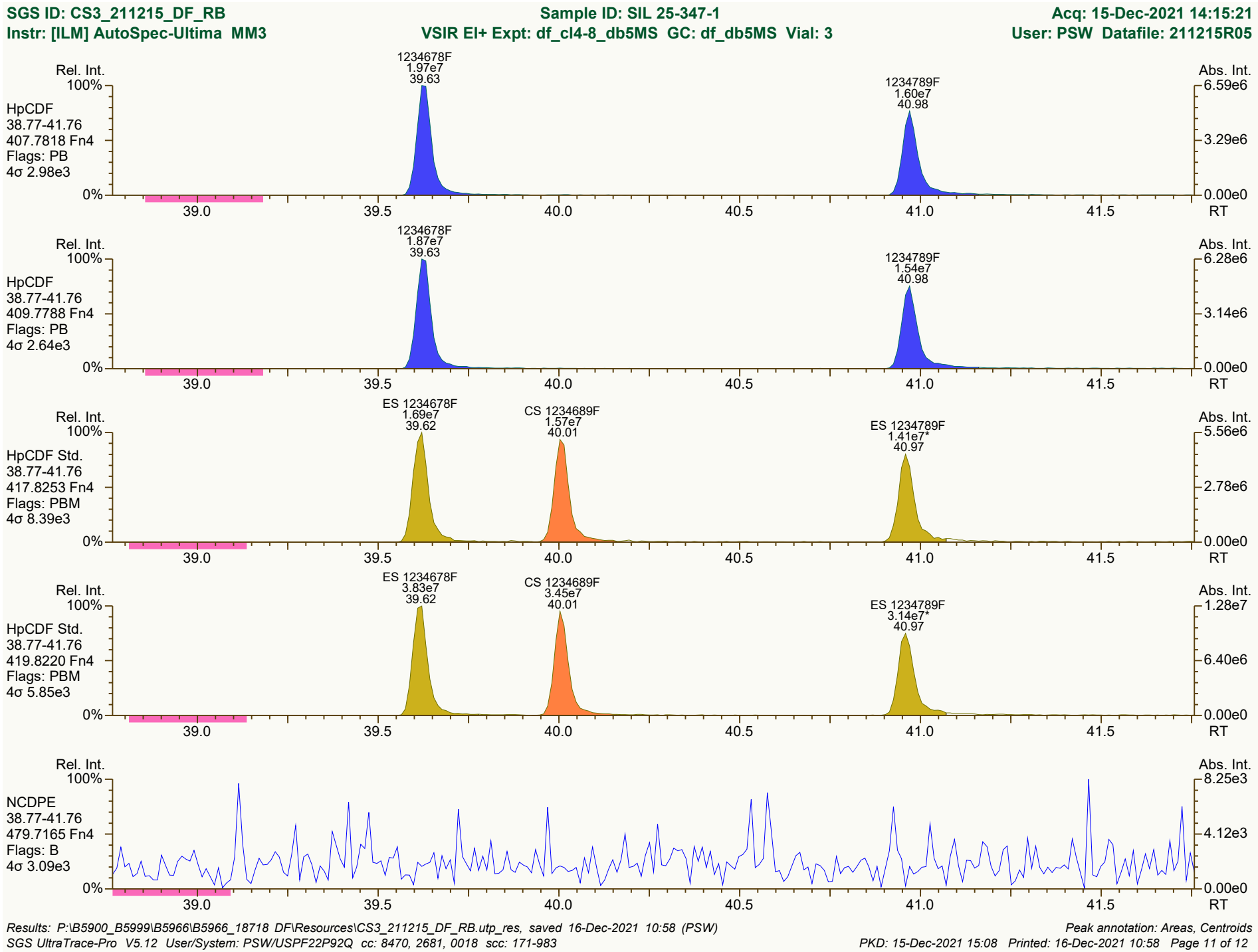

OCDD
1.40e7*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 2.35e3
0%
Abs. Int.
3.78e6
1.89e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.53e7*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 4.87e3
0%
Abs. Int.
4.29e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.66e7*
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 3.03e3
0%
Abs. Int.
7.44e6
3.72e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.95e7*
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 5.82e3
0%
Abs. Int.
8.29e6
4.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.12e7
5.60e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

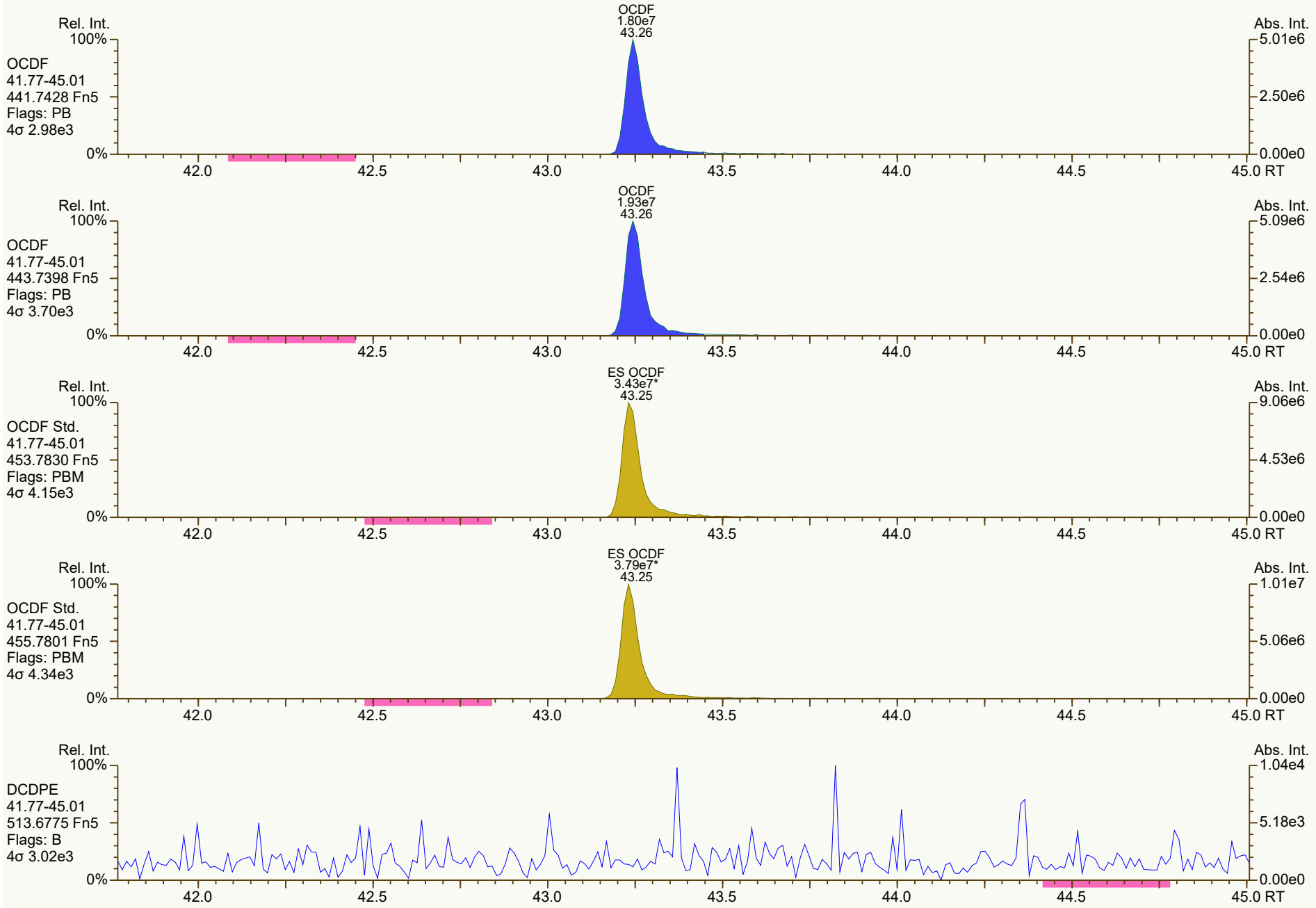

Rel. Int.
100%
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 3.27e3
0%
2378F
5.53e6
27.41
Abs. Int.
1.16e6
5.79e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 2.55e3
0%
2378F
6.88e6
27.41
Abs. Int.
1.44e6
7.21e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 2.43e4
0%
AS 1368F
5.68e7
22.44
JS 1234F
4.81e7
26.02
ES 2378F
5.18e7*
27.38
Abs. Int.
1.06e7
5.29e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.68e4
0%
AS 1368F
7.07e7
22.44
JS 1234F
6.22e7
26.02
ES 2378F
6.47e7*
27.38
Abs. Int.
1.37e7
6.86e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.20e3
0%
Abs. Int.
1.10e4
5.52e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

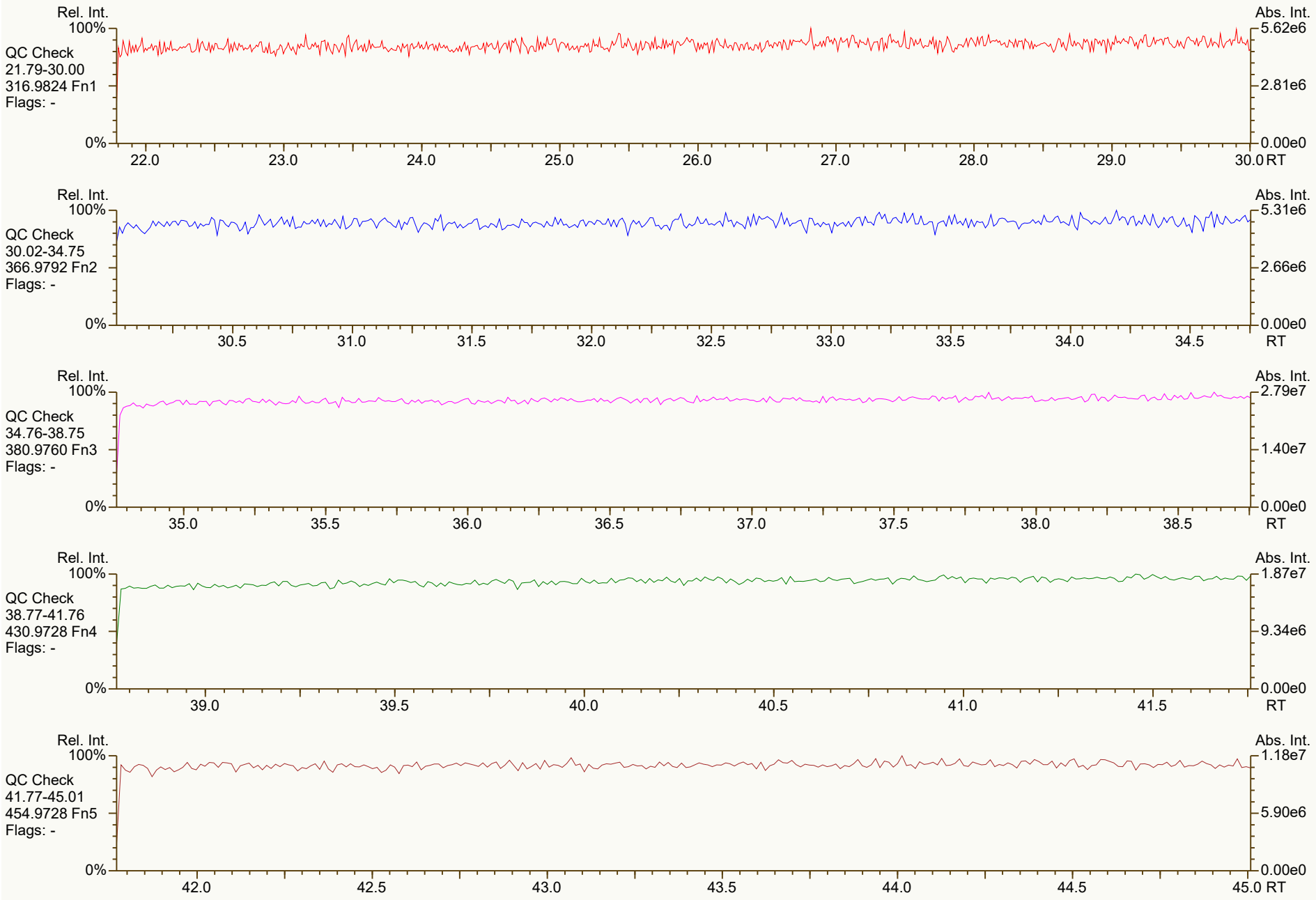

Rel. Int.
100%
0%
Abs. Int.
8.52e3
4.26e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 3.20e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
3.68e4
1.84e4
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.03e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
7.15e6
3.57e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 2.36e3
0%
12378F
3.08e7
32.16
23478F
3.03e7
33.27
Abs. Int.
7.90e6
3.95e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 2.51e3
0%
12378F
1.97e7
32.16
23478F
1.93e7
33.27
Abs. Int.
5.09e6
2.54e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 4.03e3
0%
CS 12346F
5.77e7
31.62
ES 12378F
6.07e7*
32.15
ES 23478F
5.82e7
33.25
Abs. Int.
1.55e7
7.76e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 8.91e3
0%
CS 12346F
3.64e7
31.62
ES 12378F
3.79e7*
32.15
ES 23478F
3.65e7
33.26
Abs. Int.
9.81e6
4.90e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.14e3
0%
Abs. Int.
9.78e3
4.89e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 3.93e3
0%
123478F
2.35e7*
36.50
123678F
2.67e7
36.64
234678F
2.32e7*
37.30
123789F
2.07e7*
38.27
Abs. Int.
7.13e6
3.57e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 2.09e3
0%
123478F
1.87e7*
36.49
123678F
2.10e7
36.64
234678F
1.87e7*
37.30
123789F
1.64e7*
38.27
Abs. Int.
5.50e6
2.75e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 1.55e4
0%
ES 123478F
2.28e7
36.48
ES 123678F
2.79e7
36.62
CS 123469F
2.35e7
36.93
ES 234678F
2.48e7
37.29
ES 123789F
2.16e7
38.25
Abs. Int.
7.31e6
3.66e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.69e4
0%
ES 123478F
4.32e7
36.48
ES 123678F
5.21e7
36.62
CS 123469F
4.29e7
36.93
ES 234678F
4.63e7
37.29
ES 123789F
4.10e7
38.25
Abs. Int.
1.35e7
6.76e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.40e3
0%
Abs. Int.
8.26e3
4.13e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: CS3_211215_DF_RB
Sample ID: SIL 25-347-1
Acq: 15-Dec-2021 14:15:21
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211215R05
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 2.98e3
1234678F
1.97e7
39.63
1234789F
1.60e7
40.98
6.59e6
3.29e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 2.64e3
1234678F
1.87e7
39.63
1234789F
1.54e7
40.98
6.28e6
3.14e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 8.39e3
ES 1234678F
1.69e7
39.62
CS 1234689F
1.57e7
40.01
ES 1234789F
1.41e7*
40.97
5.56e6
2.78e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 5.85e3
ES 1234678F
3.83e7
39.62
CS 1234689F
3.45e7
40.01
ES 1234789F
3.14e7*
40.97
1.28e7
6.40e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.09e3
8.25e3
4.12e3
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\CS3_211215_DF_RB.utp_res, saved 16-Dec-2021 10:58 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8470, 2681, 0018 scc: 171-983
PKD: 15-Dec-2021 15:08 Printed: 16-Dec-2021 10:58 Page 11 of 12


OCDF
1.80e7
43.26
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 2.98e3
0%
Abs. Int.
5.01e6
2.50e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.93e7
43.26
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.70e3
0%
Abs. Int.
5.09e6
2.54e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.43e7*
43.25
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
9.06e6
4.53e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.79e7*
43.25
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PBM
4σ 4.34e3
0%
Abs. Int.
1.01e7
5.06e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.02e3
0%
Abs. Int.
1.04e4
5.18e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.62e6
2.81e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.31e6
2.66e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.79e7
1.40e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.87e7
9.34e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 3.18e3
0%
Abs. Int.
8.33e3
4.17e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 2.05e3
0%
Abs. Int.
1.43e4
7.17e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: B
4σ 2.25e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: B
4σ 1.07e4
0%
Abs. Int.
2.64e4
1.32e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: B
4σ 6.92e3
0%
Abs. Int.
2.13e4
1.07e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

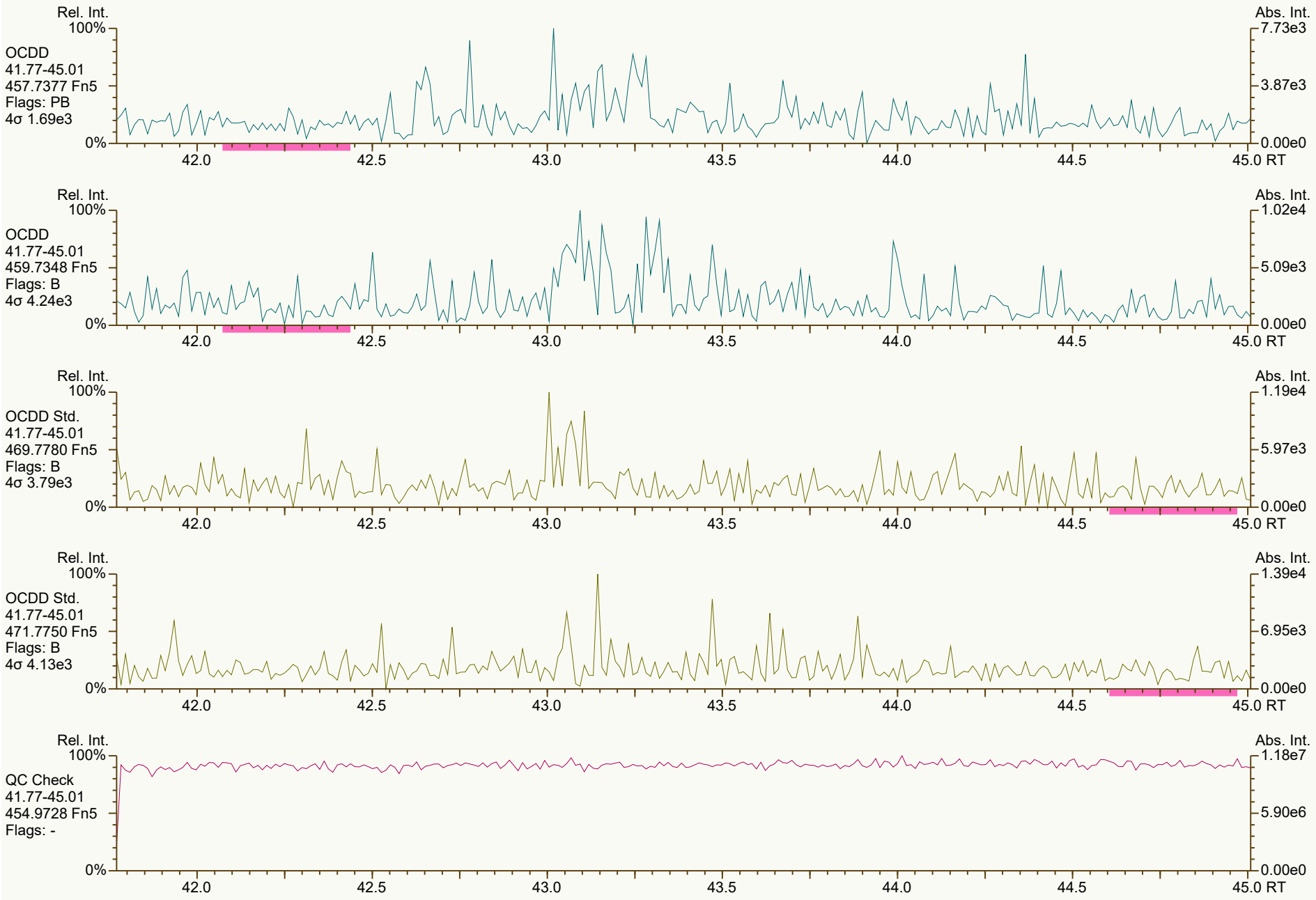
SGS ID: SBS_211215_DF_RB
Sample ID: SIL 20-61-1
Acq: 15-Dec-2021 16:50:02
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
User: PSW Datafile: 211215R08



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\SBS_211215_DF_RB.utp_res, saved 16-Dec-2021 08:09 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9993, 6146 scc: 291-279
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 10:59 Page 3 of 12


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 2.36e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: B
4σ 1.94e3
0%
Abs. Int.
6.99e3
3.50e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: B
4σ 5.09e3
0%
Abs. Int.
1.86e4
9.30e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: B
4σ 6.21e3
0%
Abs. Int.
1.58e4
7.90e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.79e7
1.40e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

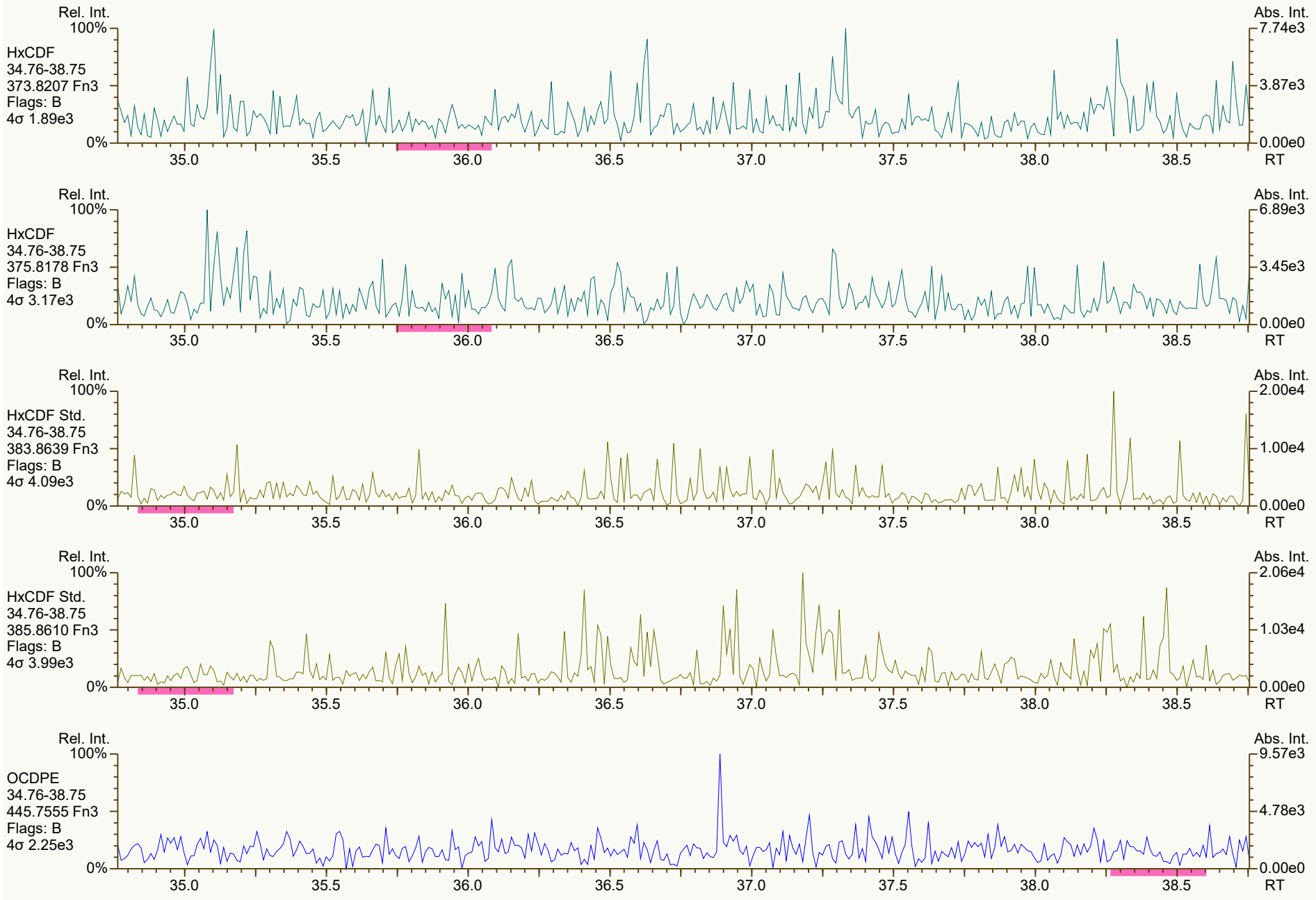

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.16e3
0%
Abs. Int.
4.24e3
2.12e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 2.09e3
0%
Abs. Int.
4.40e3
2.20e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: B
4σ 2.70e3
0%
Abs. Int.
1.95e4
9.77e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: B
4σ 3.21e3
0%
Abs. Int.
1.17e4
5.84e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.87e7
9.34e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 1.69e3
0%
Abs. Int.
7.73e3
3.87e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 4.24e3
0%
Abs. Int.
1.02e4
5.09e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: B
4σ 3.79e3
0%
Abs. Int.
1.19e4
5.97e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: B
4σ 4.13e3
0%
Abs. Int.
1.39e4
6.95e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


2468F; SPIKED
6.43e5
23.69
Rel. Int.
100%
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 2.21e3
0%
Abs. Int.
1.11e5
5.57e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
2468F
8.20e5
23.69
Rel. Int.
100%
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 3.37e3
0%
Abs. Int.
1.48e5
7.40e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: B
4σ 2.02e4
0%
Abs. Int.
4.11e4
2.06e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: B
4σ 9.28e3
0%
Abs. Int.
2.28e4
1.14e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.43e3
0%
Abs. Int.
1.96e4
9.78e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
0%
Abs. Int.
1.51e4
7.57e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 2.66e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.40e4
6.98e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.92e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
5.62e6
2.81e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
5.51e3
2.75e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: B
4σ 3.03e3
0%
Abs. Int.
9.81e3
4.90e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: B
4σ 3.41e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: B
4σ 3.80e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.81e3
0%
Abs. Int.
8.44e3
4.22e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: B
4σ 1.89e3
0%
Abs. Int.
7.74e3
3.87e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: B
4σ 3.17e3
0%
Abs. Int.
6.89e3
3.45e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: B
4σ 4.09e3
0%
Abs. Int.
2.00e4
1.00e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: B
4σ 3.99e3
0%
Abs. Int.
2.06e4
1.03e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.25e3
0%
Abs. Int.
9.57e3
4.78e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

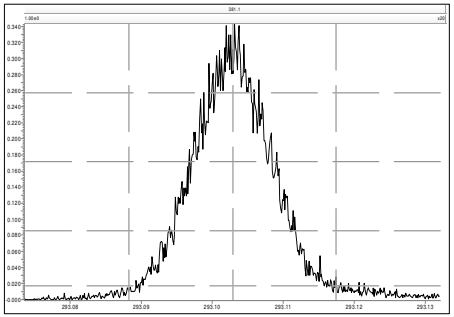

Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: B
4σ 2.31e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: B
4σ 2.15e3
0%
Abs. Int.
7.76e3
3.88e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: B
4σ 5.41e3
0%
Abs. Int.
2.14e4
1.07e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: B
4σ 6.12e3
0%
Abs. Int.
2.55e4
1.28e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.05e3
0%
Abs. Int.
8.77e3
4.39e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: B
4σ 2.73e3
0%
Abs. Int.
6.69e3
3.35e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 2.70e3
0%
Abs. Int.
7.52e3
3.76e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: B
4σ 2.72e3
0%
Abs. Int.
2.11e4
1.05e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: B
4σ 4.38e3
0%
Abs. Int.
1.12e4
5.59e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

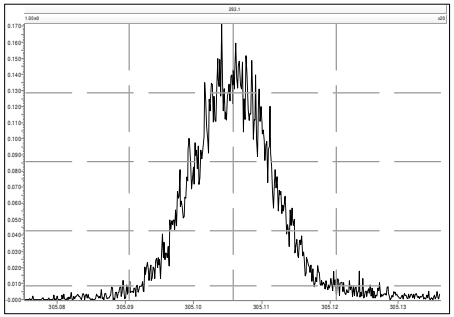
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:57:00 Eastern Standard Time

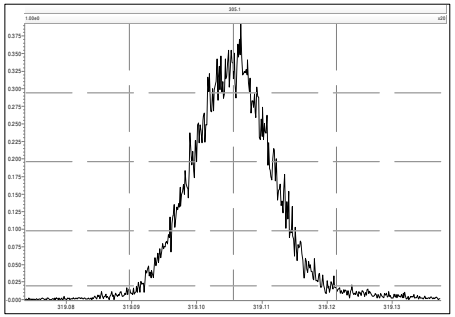
M 292.9824 R 10821



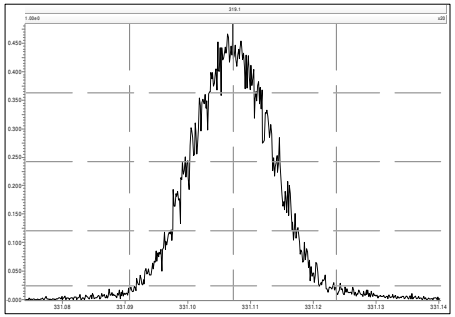
M 304.9824 R 11523



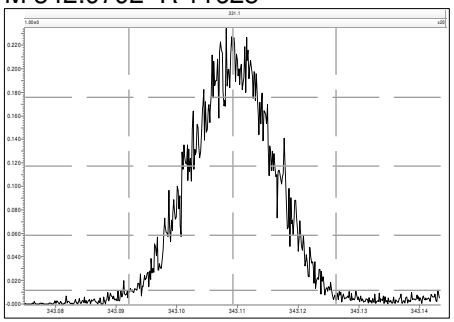
M 318.9792 R 11570



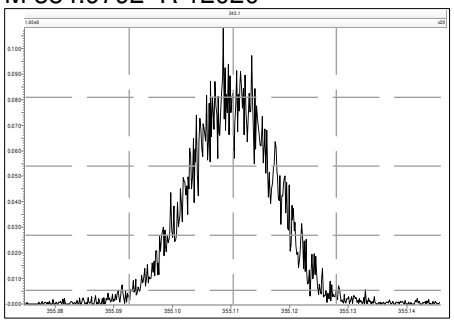
M 330.9792 R 10964



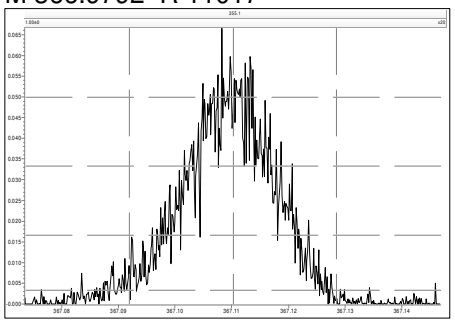
M 342.9792 R 11625



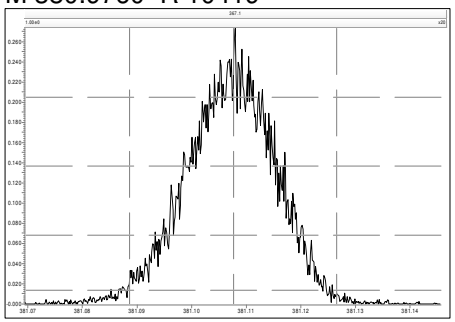
M 354.9792 R 12020



M 366.9792 R 11017



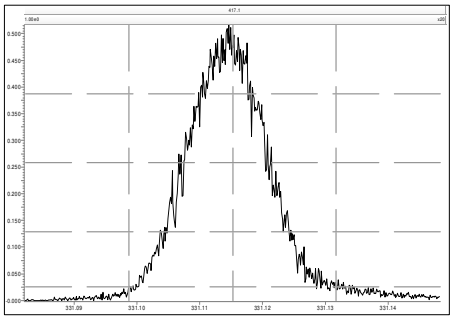
M 380.9760 R 10419



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:57:17 Eastern Standard Time

M 330.9792 R 11520



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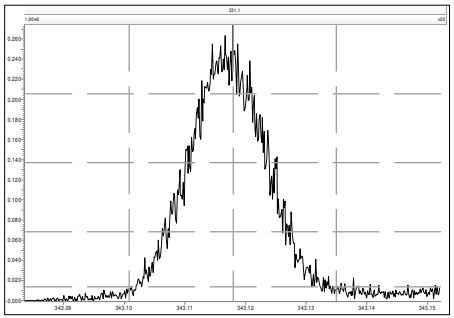
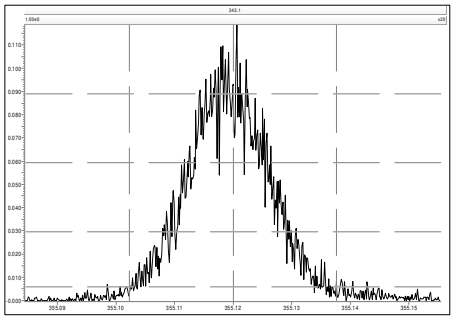
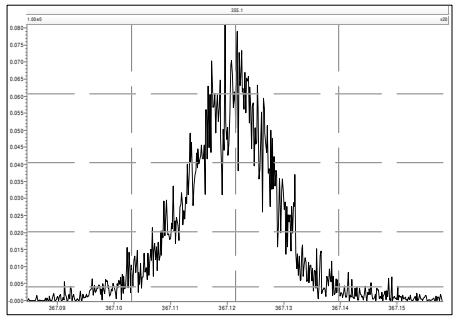


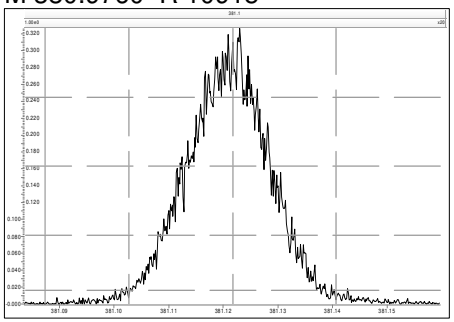
M 354.9792 R 11522



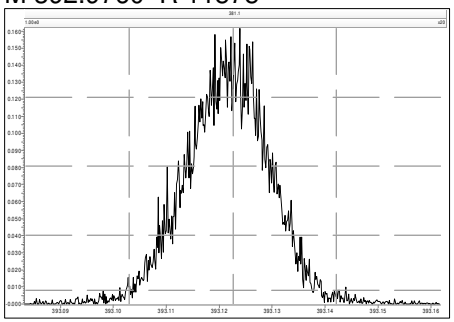
M 366.9792 R 11904



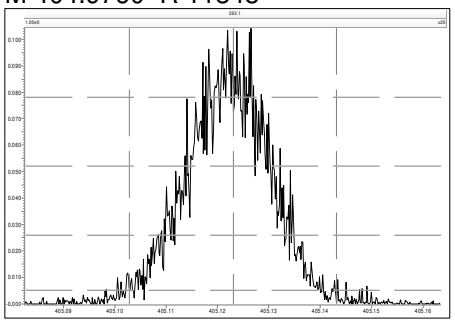
M 380.9760 R 10915



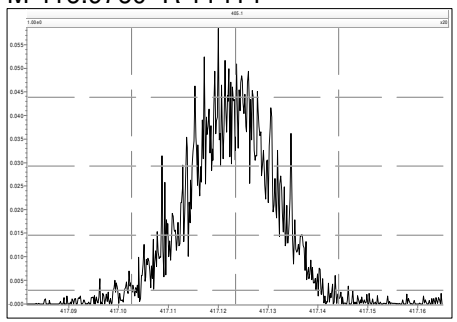
M 392.9760 R 11575



M 404.9760 R 11848



M 416.9760 R 11414



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

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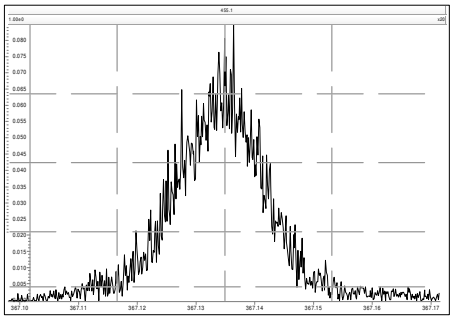
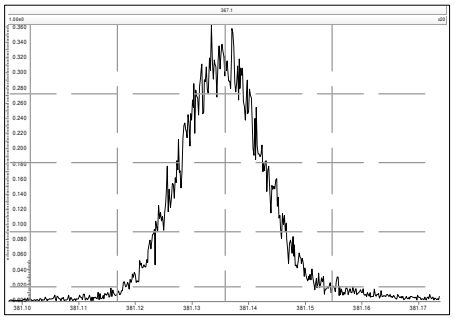
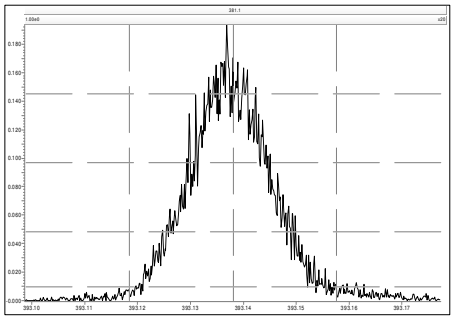
M 366.9792 R 11516



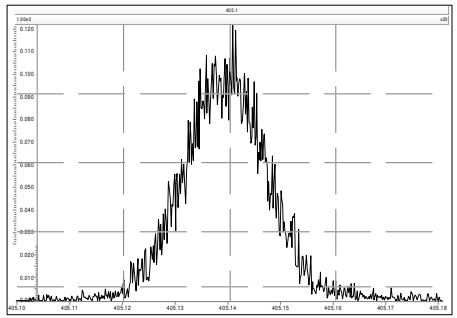
M 380.9760 R 11681



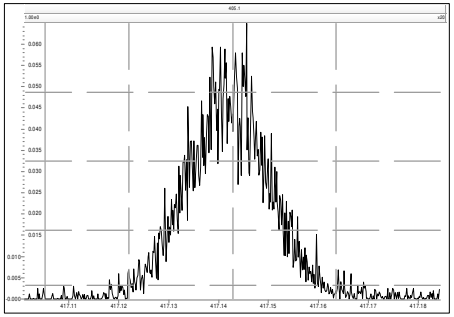
M 392.9760 R 12016



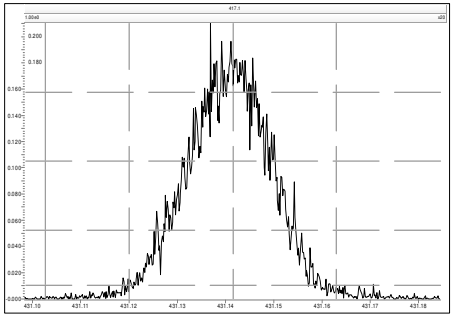
M 404.9760 R 12195



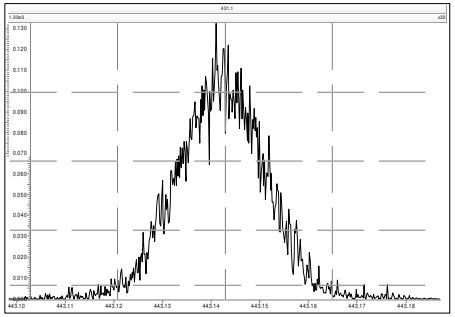
M 416.9760 R 11736



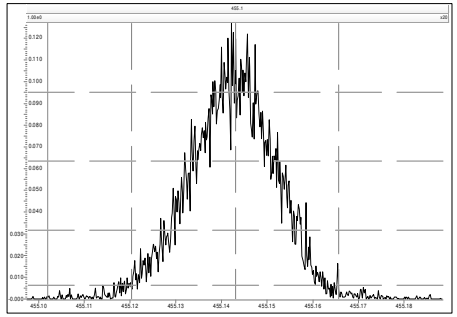
M 430.9728 R 11469



M 442.9728 R 11624



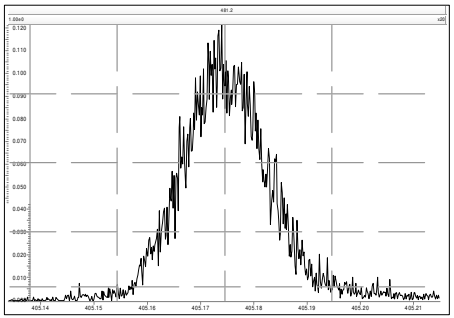
M 454.9728 R 10416



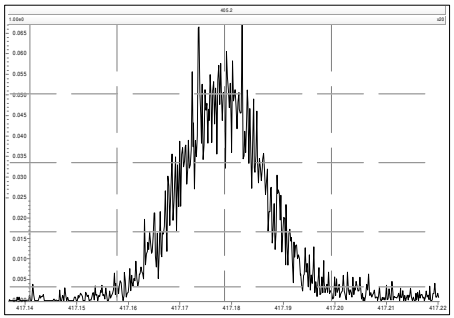
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:58:04 Eastern Standard Time

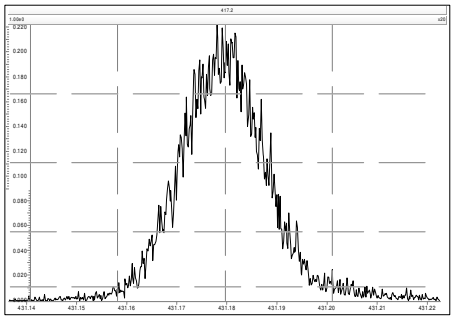
M 404.9760 R 11906



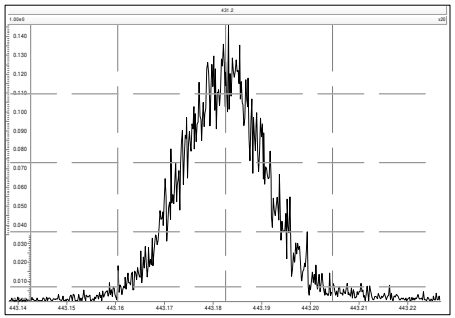
M 416.9760 R 12376



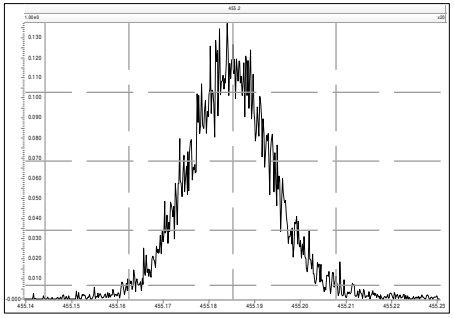
M 430.9728 R 11847



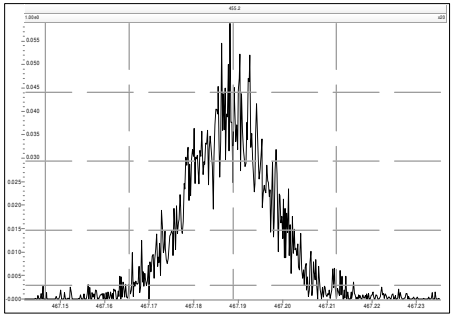
M 442.9728 R 12378



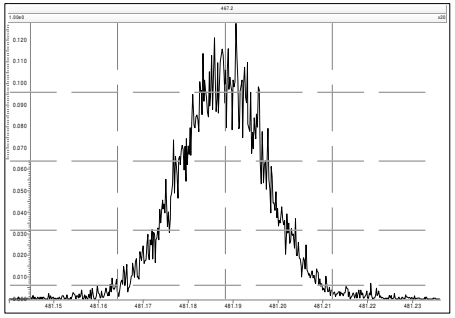
M 454.9728 R 11415



M 466.9728 R 13087



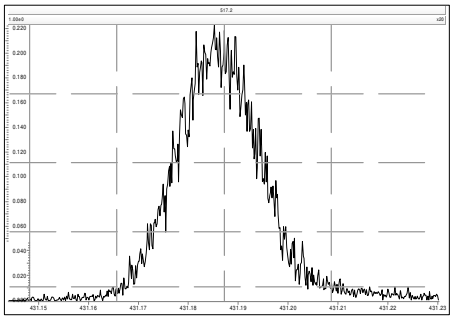
M 480.9696 R 11209



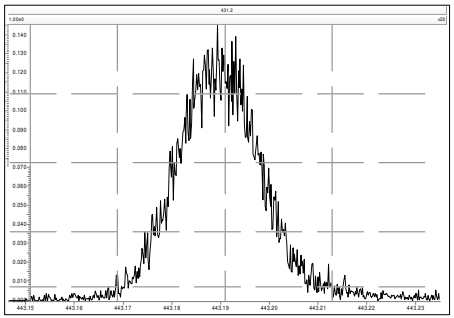
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:58:20 Eastern Standard Time

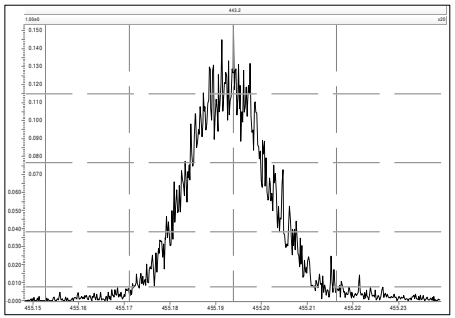
M 430.9728 R 11903



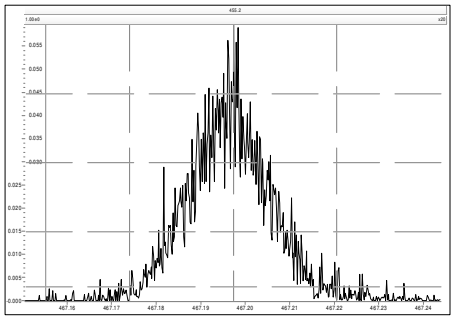
M 442.9728 R 12079



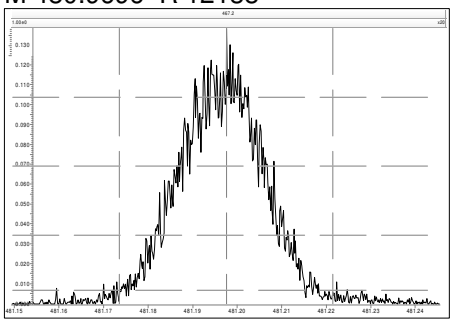
M 454.9728 R 10965



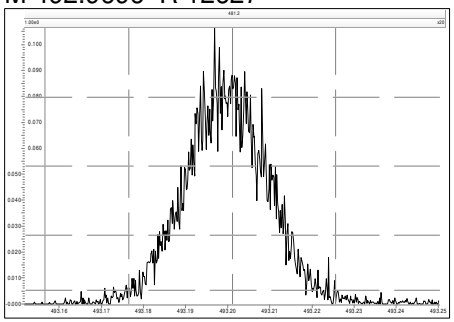
M 466.9728 R 12135



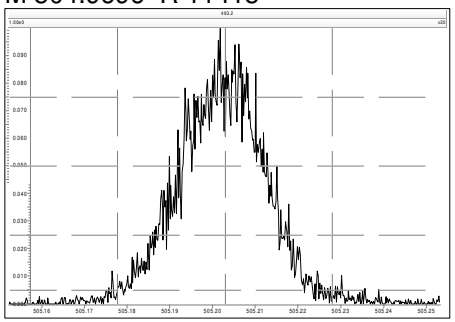
M 480.9696 R 12138



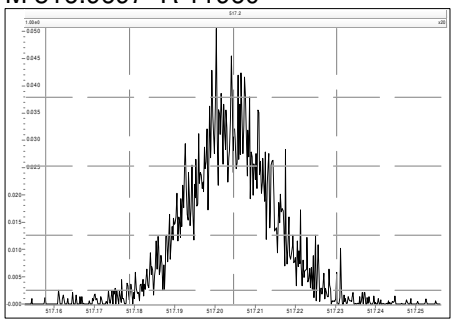
M 492.9696 R 12627



M 504.9696 R 11415



M 516.9697 R 11960



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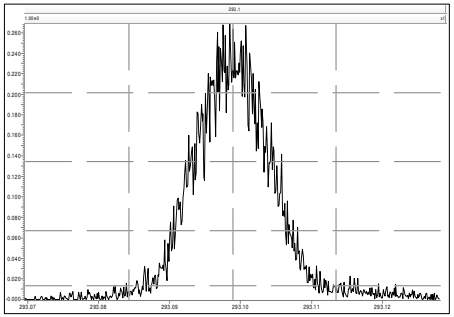
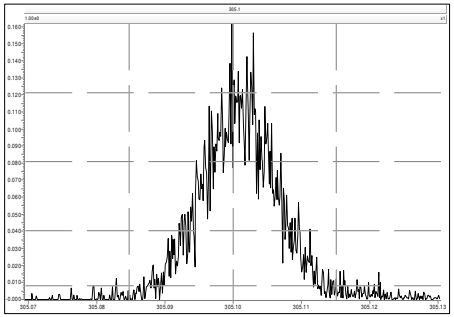
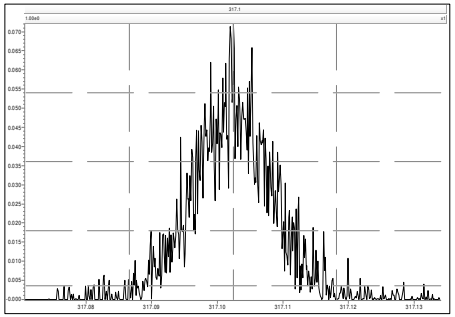
M 292.9824 R 12440



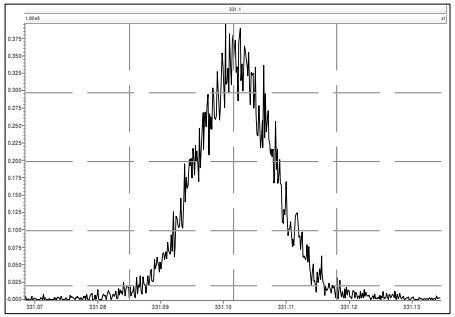
M 304.9824 R 13822



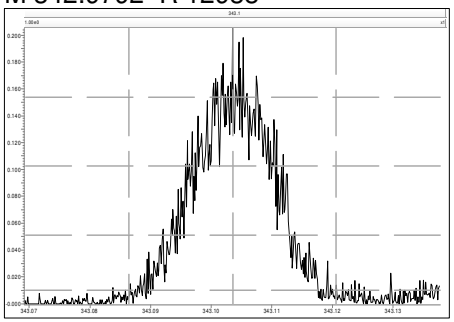
M 316.9824 R 13930



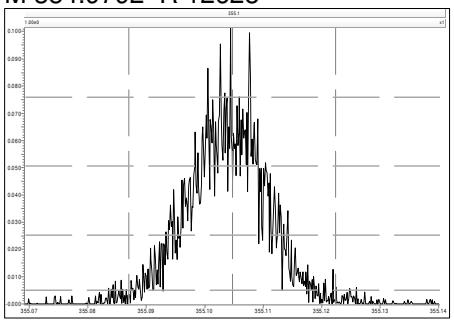
M 330.9792 R 12472



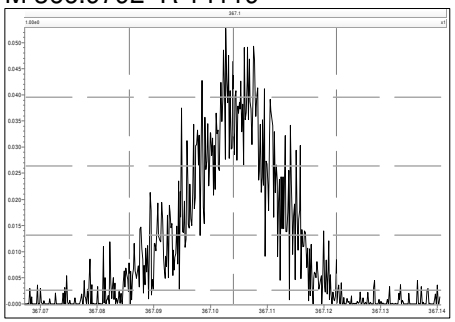
M 342.9792 R 12938



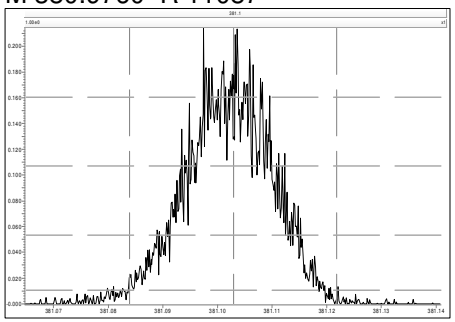
M 354.9792 R 12628



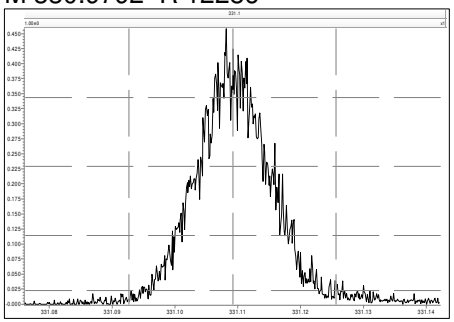
M 366.9792 R 14119



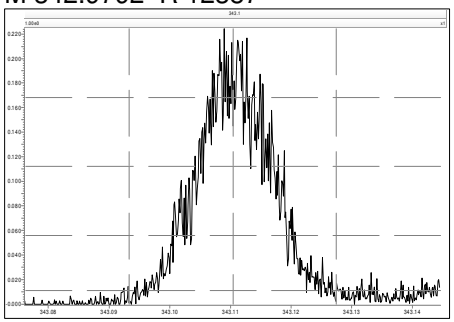
M 380.9760 R 11087



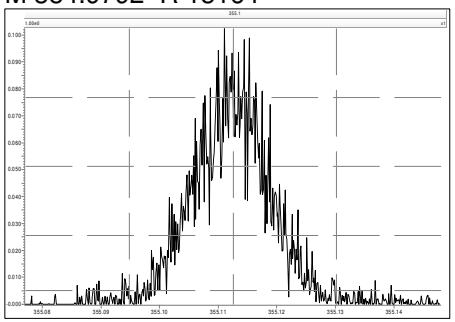
M 330.9792 R 12286



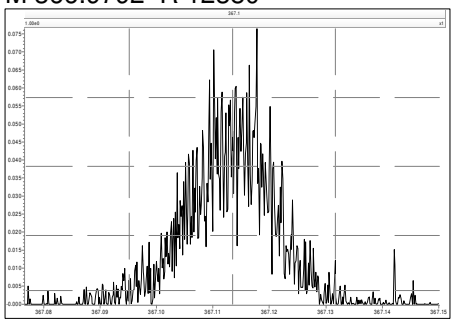
M 342.9792 R 12387



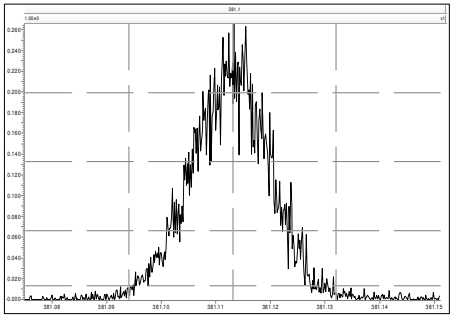
M 354.9792 R 15164



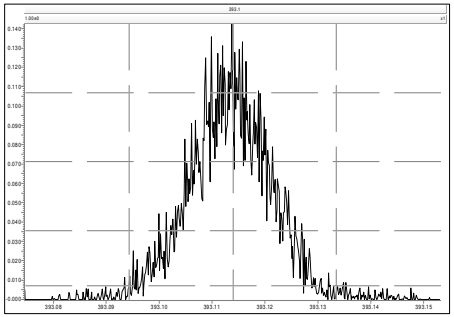
M 366.9792 R 12380



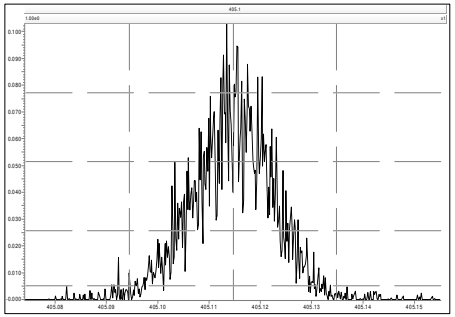
M 380.9760 R 12278



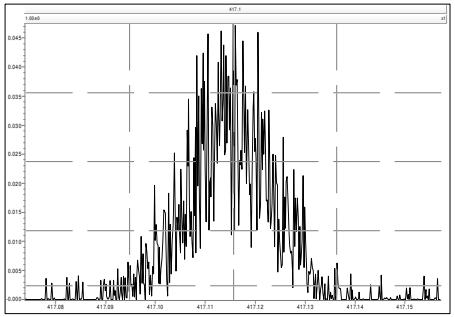
M 392.9760 R 12577



M 404.9760 R 12173



M 416.9760 R 14970



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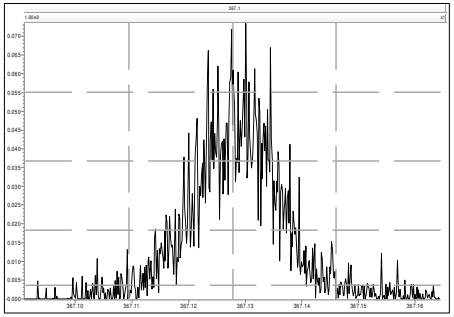

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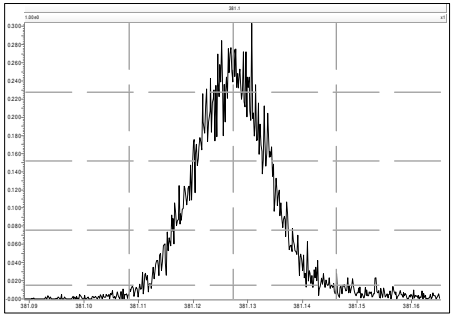

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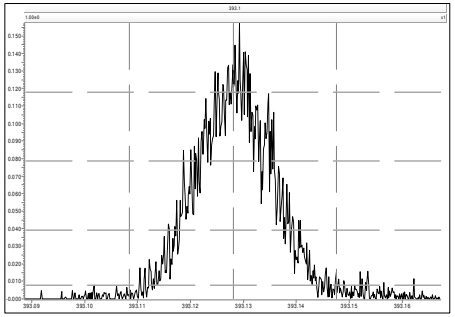

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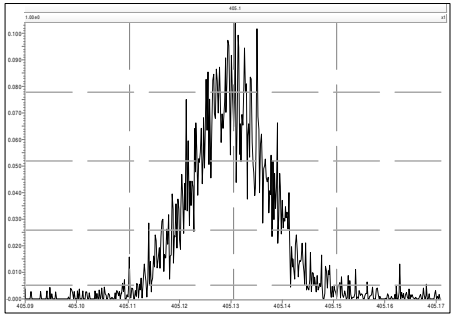

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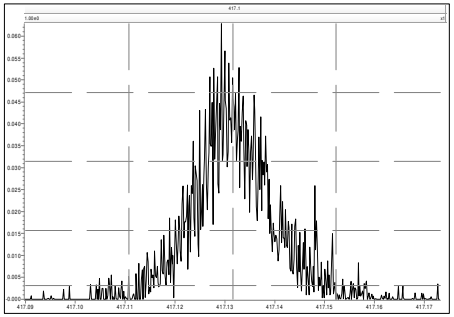
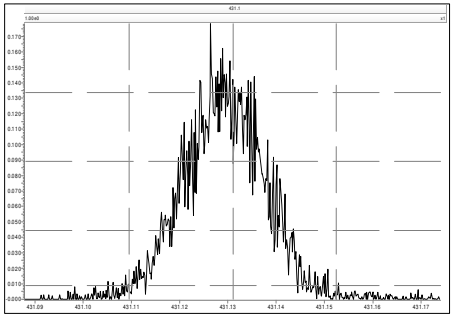
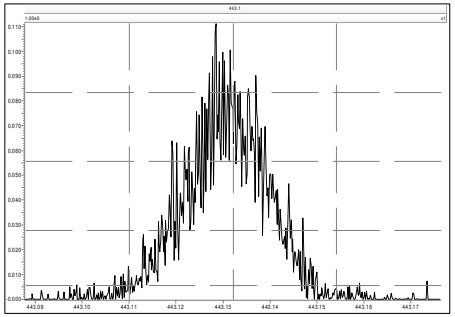


M 430.9728 R 13446



M 442.9728 R 12531



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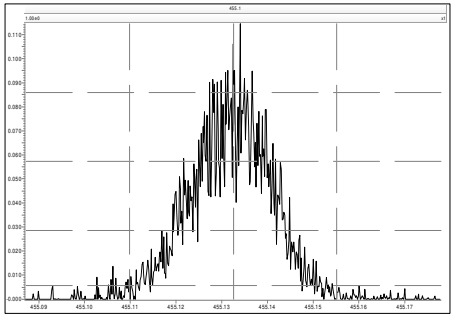

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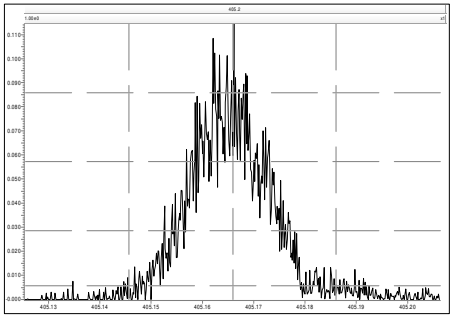
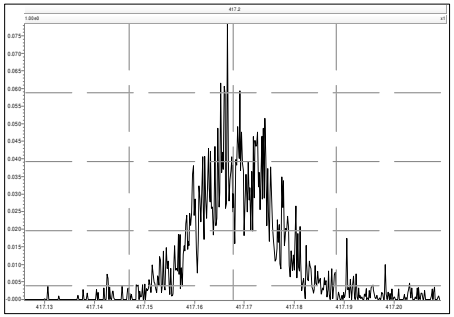


M 416.9760 R 14631



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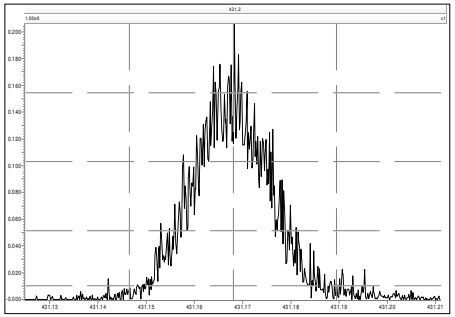

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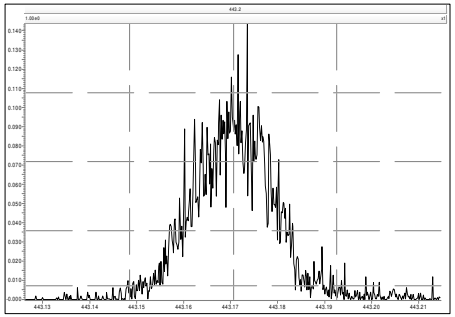

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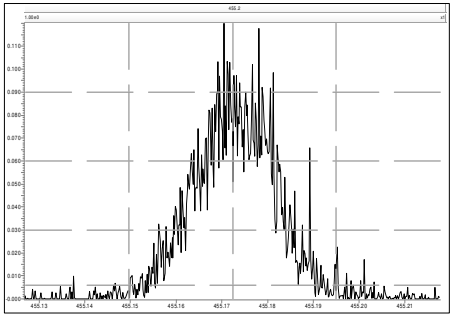
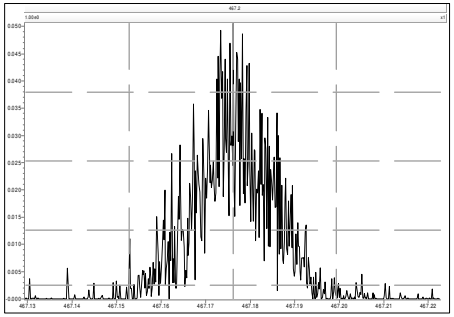
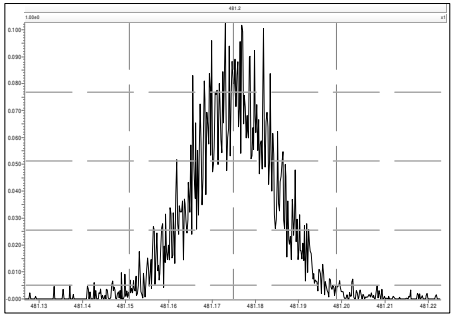


M 466.9728 R 16112



M 480.9696 R 12795



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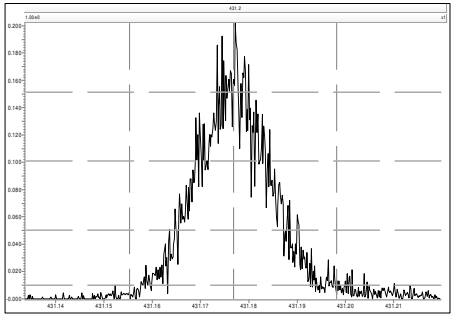
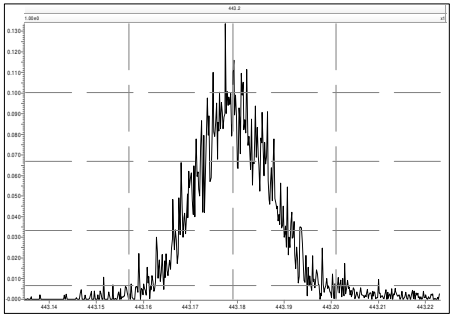


M 442.9728 R 13915



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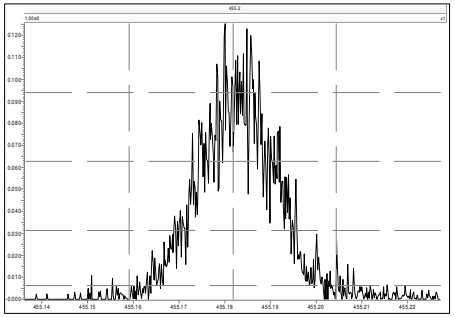

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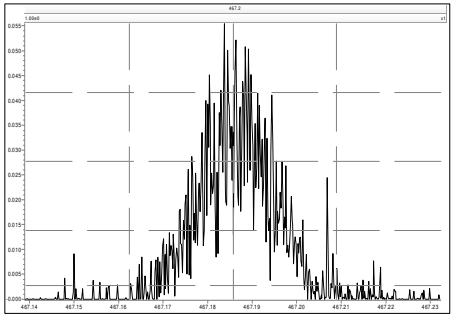

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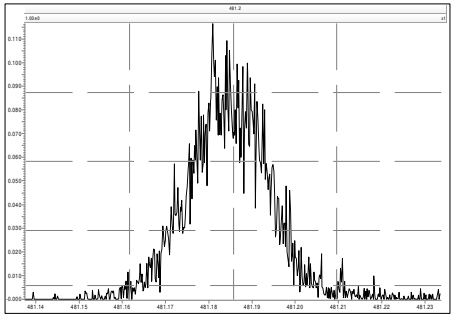

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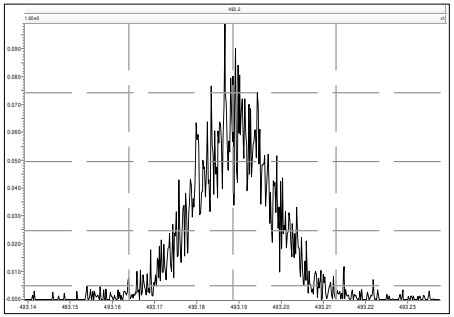

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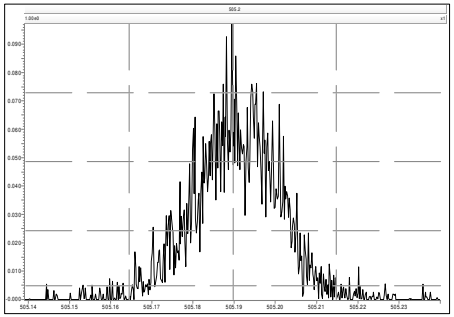

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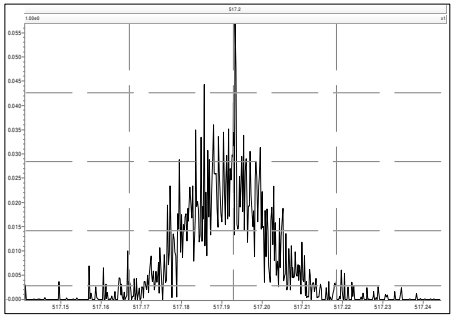

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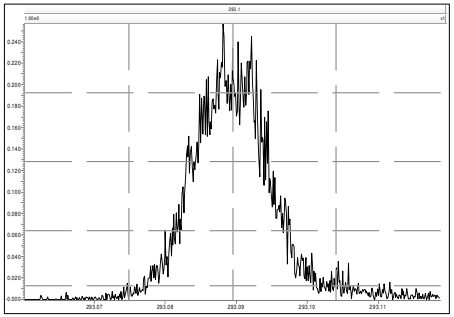

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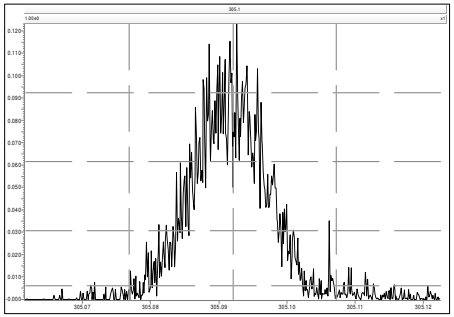
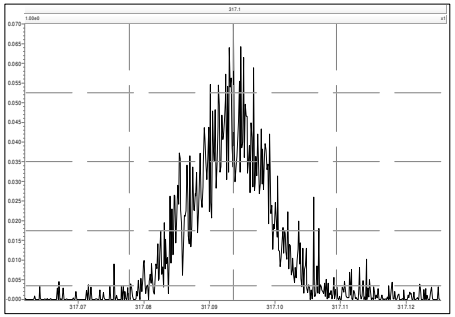
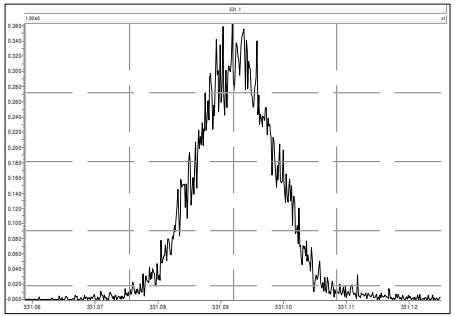


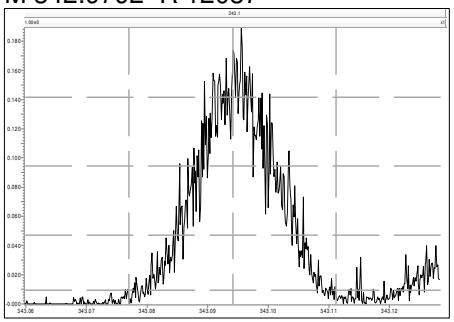
M 316.9824 R 14329



M 330.9792 R 12168



M 342.9792 R 12037



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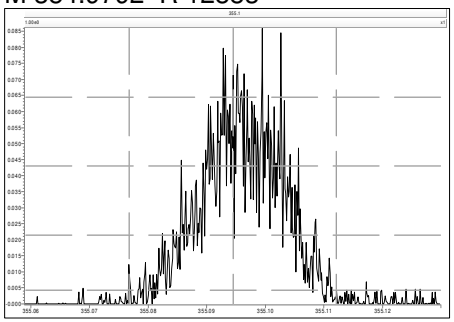
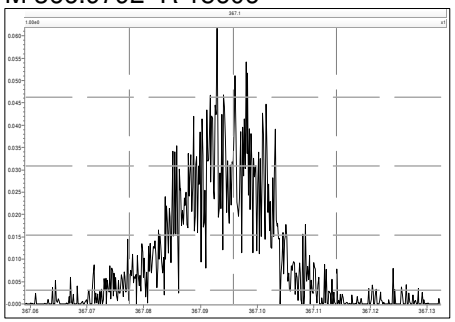
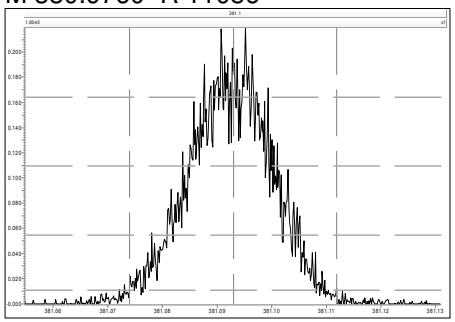


M 366.9792 R 15606



M 380.9760 R 11056



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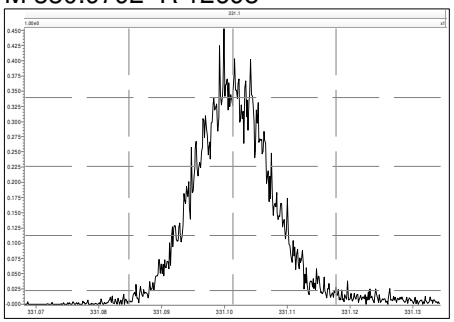
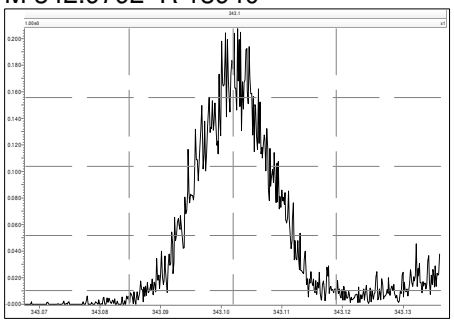
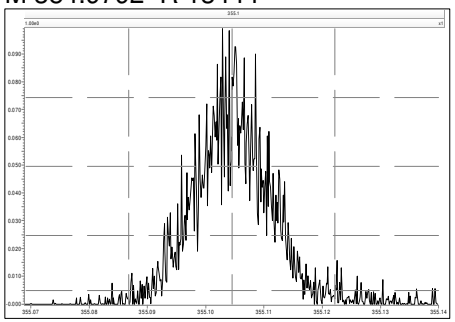


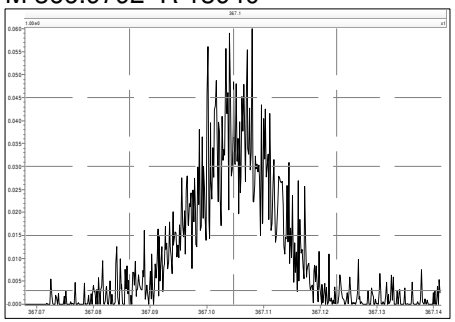
M 342.9792 R 13940



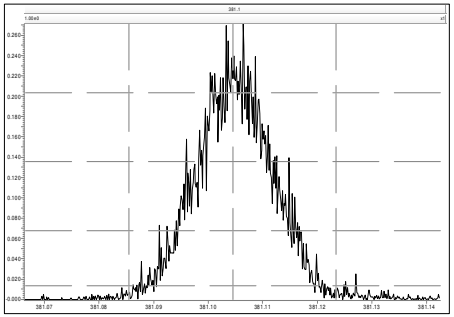
M 354.9792 R 13444



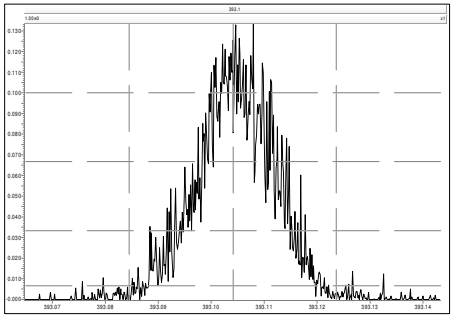
M 366.9792 R 13940



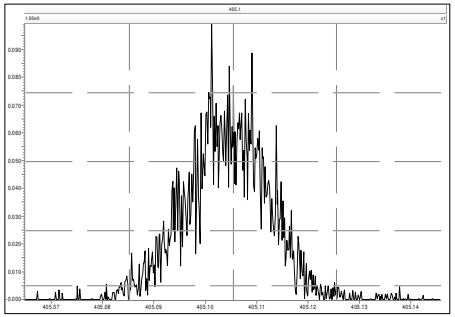
M 380.9760 R 12634



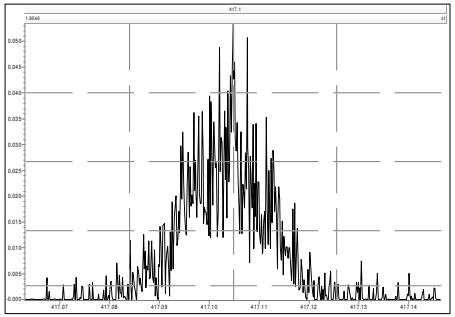
M 392.9760 R 12642



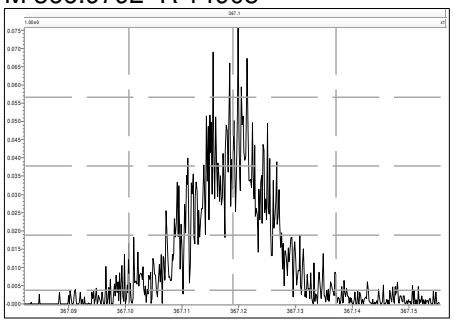
M 404.9760 R 13966



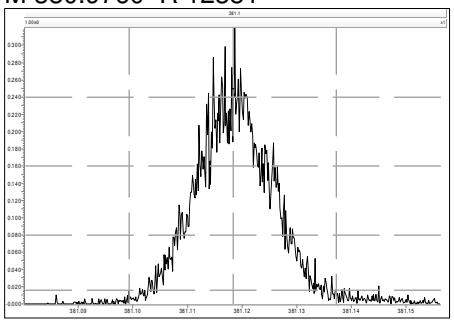
M 416.9760 R 17210



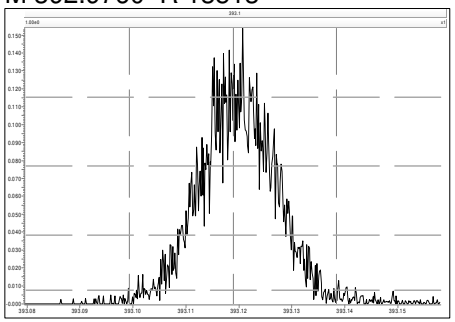
M 366.9792 R 14905



M 380.9760 R 12351



M 392.9760 R 13513



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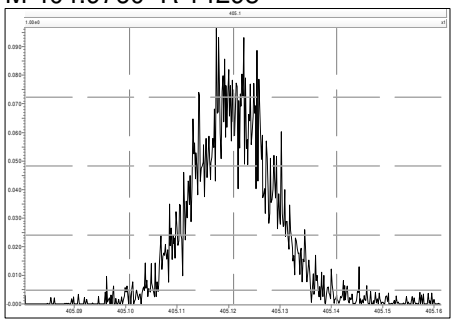
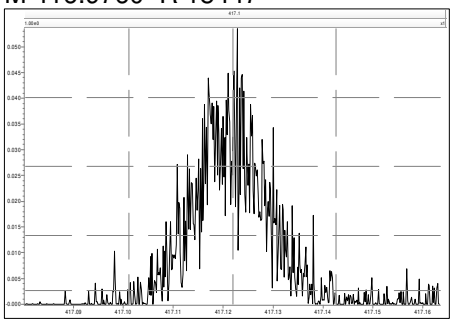
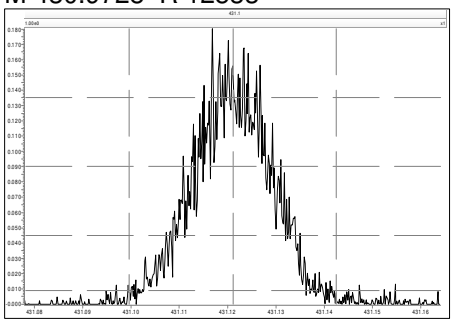


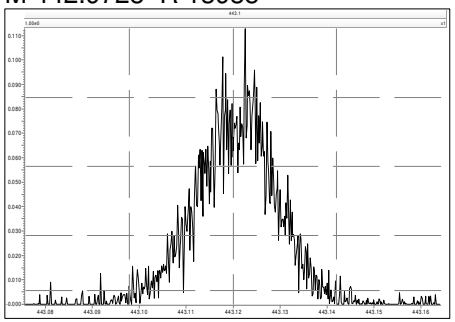
M 416.9760 R 15447



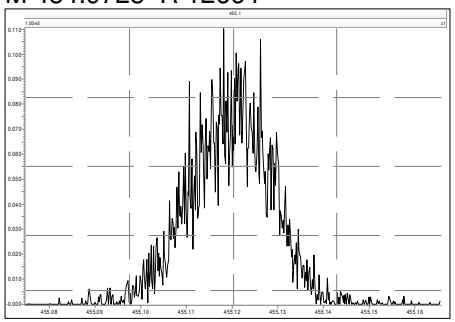
M 430.9728 R 12533



M 442.9728 R 13935



M 454.9728 R 12664



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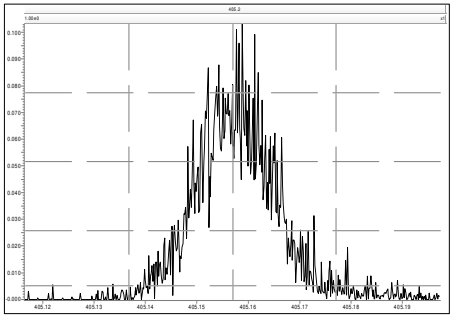
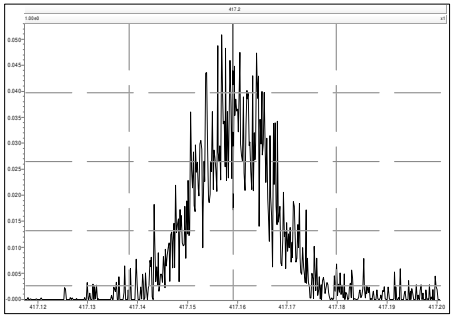
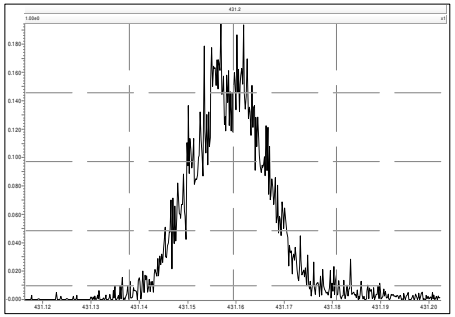
M 404.9760 R 14493



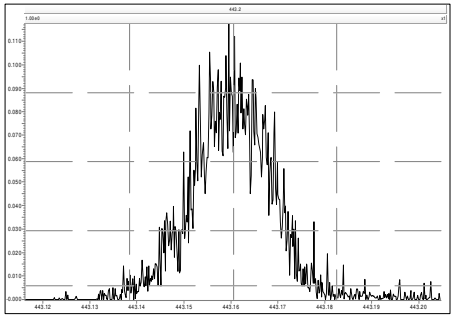
M 416.9760 R 14008



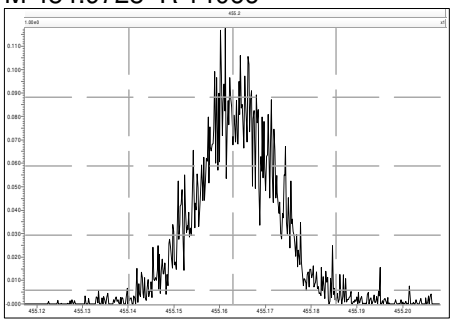
M 430.9728 R 13061



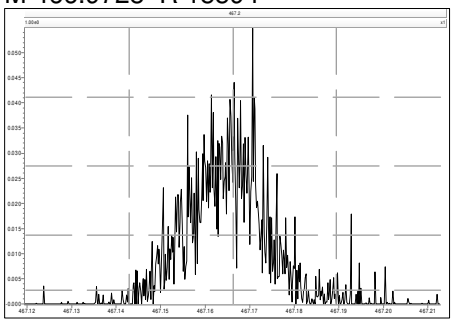
M 442.9728 R 13163



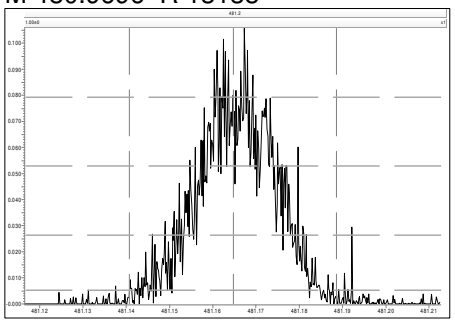
M 454.9728 R 14066



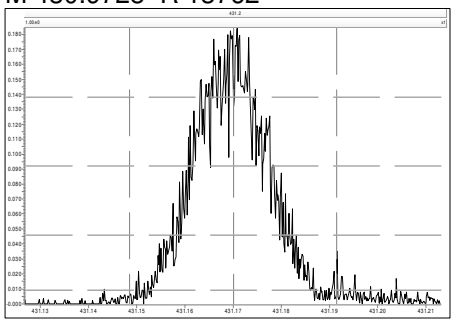
M 466.9728 R 15594



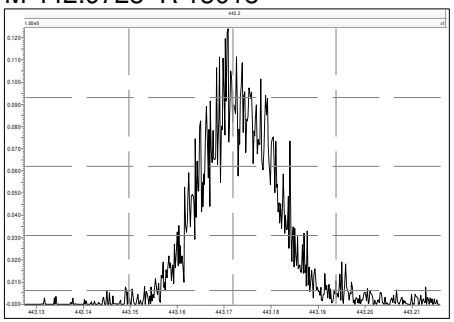
M 480.9696 R 13138



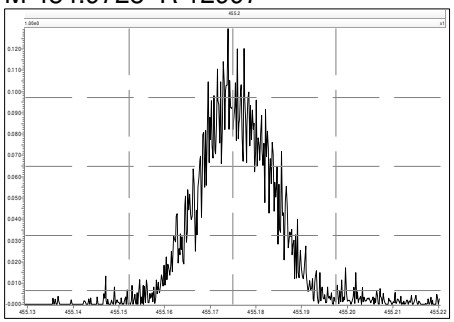
M 430.9728 R 13762



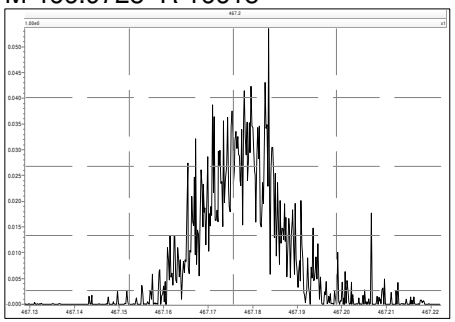
M 442.9728 R 13018



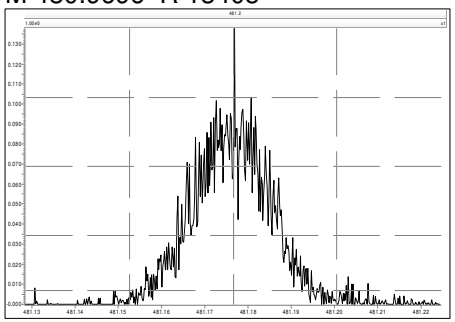
M 454.9728 R 12997



M 466.9728 R 16615

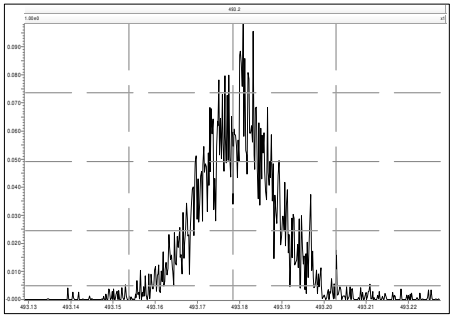


M 480.9696 R 13405

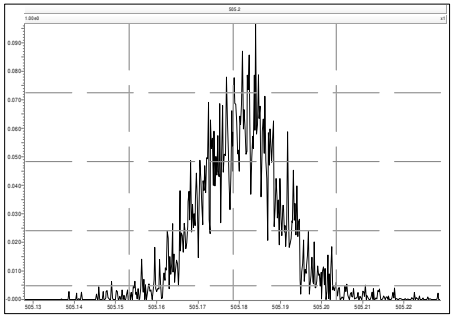


Printed: Thursday, December 16, 2021 00:53:22 Eastern Standard Time

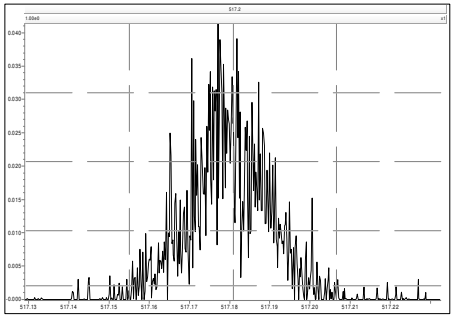
M 492.9696 R 14180



M 504.9696 R 14632



M 516.9697 R 15619



Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 0.25 pg/uL CS0	210727R03 0.5 pg/uL CS1	210727R04 2 pg/uL CS2	210727R05 10 pg/uL CS3	210727R06 40 pg/uL CS4	210727R07 200 pg/uL CS5	210727R08 500 pg/uL CS6
2378-TCDD	1.34	4.7%	1.45 ✓	1.34	1.26	1.32	1.30	1.35	1.39
12378-PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
123478-HxCDD	1.06	3.3%	1.10	1.10	0.99	1.05	1.05	1.06	1.05
123678-HxCDD	1.08	2.9%	1.12	1.07	1.02 ✓	1.08	1.10	1.10	1.09
123789-HxCDD	1.02	4.8%	1.10	1.05	0.95	0.99	0.99	1.01	1.00
1234678-HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
OCDD	1.07	4.2%	1.15	1.04	1.01	1.07	1.08 ✓	1.06	1.08
2378-TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
12378-PeCDF	0.95	3.2%	1.00	0.94	0.90	0.94	0.95	0.93	0.96
23478-PeCDF	0.94	3.7%	0.99	0.90 ✓	0.90	0.92	0.93	0.96	0.96
123478-HxCDF	1.23	3.3%	1.32	1.23	1.19	1.22	1.24	1.24	1.22
123678-HxCDF	1.13	3.0%	1.17	1.16	1.07	1.10	1.13	1.14	1.14
234678-HxCDF	1.15	4.2%	1.23	1.19	1.08	1.14	1.13	1.15	1.15
123789-HxCDF	1.14	3.5%	1.19	1.08	1.09	1.14	1.14	1.15	1.16 ✓
1234678-HpCDF	1.36	3.6%	1.46	1.35	1.31	1.34 ✓	1.33	1.37	1.36
1234789-HpCDF	1.30	4.0%	1.34	1.20	1.26	1.34	1.30	1.35	1.33
OCDF	1.03	4.1%	1.01	1.01	0.95	1.03	1.05	1.06 ✓	1.08
ES 2378-TCDD	1.03	1.7%	1.02	1.02	1.02	1.05	1.06	1.04	1.02
ES 12378-PeCDD	1.03	3.5%	1.01	1.02	0.99	1.01	1.03	1.07	1.10
ES 123478-HxCDD	0.99	4.4%	0.97	0.93	0.99	1.00	0.98	1.03	1.07
ES 123678-HxCDD	0.97	5.2%	0.94	0.91	0.95	1.01	0.94	1.02	1.05
ES 123789-HxCDD	1.12	5.1%	1.09	1.04	1.12	1.14	1.09	1.17	1.22
ES 1234678-HpCDD	0.99	5.2%	0.95	0.92	0.98	1.02	0.97	1.05	1.06
ES OCDD	0.78	8.4%	0.73	0.71	0.74	0.77	0.75	0.85	0.89
ES 2378-TCDF	1.08	1.2%	1.06	1.08	1.07 ✓	1.09	1.09	1.08	1.10
ES 12378-PeCDF	0.93	2.7%	0.91	0.91	0.92	0.93	0.95	0.95	0.98
ES 23478-PeCDF	0.92	2.4%	0.90	0.91	0.90	0.93	0.93	0.93	0.96
ES 123478-HxCDF	1.14	5.9%	1.09	1.04	1.13	1.18	1.12	1.21	1.23
ES 123678-HxCDF	1.30	4.9%	1.24	1.21	1.27	1.35	1.27	1.36	1.37
ES 234678-HxCDF	1.20	4.9%	1.14	1.12	1.18	1.23	1.20	1.27	1.27
ES 123789-HxCDF	1.14	5.9%	1.06	1.07	1.11	1.16	1.12	1.20	1.24
ES 1234678-HpCDF	0.95	5.7%	0.90	0.88	0.92	0.98	0.94	1.00	1.03
ES 1234789-HpCDF	0.85	7.0%	0.79	0.78	0.82	0.86	0.83	0.90	0.94
ES OCDF	0.93	8.9%	0.86	0.83	0.88	0.93	0.90	1.01	1.06

APPROVED
Carla_Lyon , 7/28/2021, 12:24:59 PM

Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 **0.25 pg/uL CS0**	210727R03 **0.5 pg/uL CS1**	210727R04 **2 pg/uL CS2**	210727R05 **10 pg/uL CS3**	210727R06 **40 pg/uL CS4**	210727R07 **200 pg/uL CS5**	210727R08 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.31	2.3%	-	1.32	1.27	1.30	1.31	1.35	-
CS 12347-PeCDD	0.89	2.1%	0.89	0.91	0.88	0.87	0.93	0.88	0.89
CS 12346-PeCDF	0.87	1.7%	0.86	0.88	0.86	0.89	0.88	0.86	0.85
CS 123469-HxCDF	1.09	2.8%	1.06	1.04	1.08	1.14	1.09	1.12	1.09
CS 1234689-HpCDF	0.86	3.3%	0.86	0.84	0.86	0.92	0.86	0.86	0.84
SS 37Cl-2378-TCDD	1.26	2.3%	-	1.29	1.25	1.24	1.23	1.29	-
SS 12347-PeCDD	0.86	4.0%	0.88	0.89	0.89	0.86	0.90	0.82 ✓	0.81
SS 12346-PeCDF	0.93	3.5%	0.94	0.97	0.93	0.96	0.93	0.91	0.87
SS 123469-HxCDF	0.84	2.8%	0.86	0.86	0.85	0.84	0.86	0.82	0.80
SS 1234689-HpCDF	0.91	6.0%	0.96	0.96	0.94	0.94	0.92	0.86	0.81
AS 1368-TCDD	1.02	0.7%	1.01	1.03	1.02	1.02 ✓	1.02	1.04	1.02
AS 1368-TCDF	1.08	1.9%	1.05	1.06	1.07	1.10	1.09	1.10	1.07
~~OCDD-a~~	~~0.07~~	~~7.2%~~	~~0.06~~	~~0.08~~	~~0.07~~	~~0.07~~	~~0.07~~	~~0.06~~	~~0.07~~
~~OCDF-a~~	~~0.06~~	~~7.0%~~	~~0.05~~	~~0.06~~	~~0.05~~	~~0.06~~	~~0.06~~	~~0.06~~	~~0.06~~
Not reported from this ICAL - CL 28Jul21									
Totals									
Total TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
Total PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
Total HxCDD	1.05	3.3%	1.11	1.07	0.99	1.04	1.05	1.06	1.05
Total HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
Total TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
Total PeCDF	0.94	3.3%	1.00	0.92	0.90	0.93	0.94	0.95	0.96
Total HxCDF	1.16	3.1%	1.23	1.16	1.11	1.15	1.16	1.17	1.17
Total HpCDF	1.33	3.2%	1.40	1.28	1.28	1.34	1.32	1.36	1.34
FS 1278-TCDD	1.08	0.7%	1.08	1.08	1.09	1.08	1.08	1.08	1.10
FS 12478-PeCDD	1.09	3.7%	1.10	1.10 ✓	1.12	1.13	1.13	1.07	1.01
FS 123468-HxCDD	1.26	4.2%	1.27	1.30	1.28	1.32	1.28	1.24	1.16
FS 1234679-HpCDD	1.36	5.0%	1.41	1.37	1.38	1.42	1.38 ✓	1.30	1.23
TS 1378-TCDD	1.35	2.3%	1.36 ✓	1.38	1.36	1.31	1.30	1.35	1.37

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	210727R01	2	SBS_210727_DF_RA	1.00	SIL 20-61-1	PSW	638-037	27-Jul-2021	08:17:39
2	210727R02	85	CS0_210727_DF_RA	1.00	SIL 25-6-3	PSW	693-472	27-Jul-2021	09:04:23
3	210727R03	86	CS1_210727_DF_RA	1.00	SIL 25-6-2	PSW	554-132	27-Jul-2021	09:54:34
4	210727R04	87	CS2_210727_DF_RA	1.00	SIL 25-6-1	PSW	377-233	27-Jul-2021	10:44:24
5	210727R05	3	CS3_210727_DF_RA	1.00	SIL 23-672-1	PSW	230-891	27-Jul-2021	11:32:33
6	210727R06	88	CS4_210727_DF_RA	1.00	SIL 25-5-4	PSW	602-590	27-Jul-2021	12:19:16
7	210727R07	89	CS5_210727_DF_RA	1.00	SIL 25-5-3	PSW	147-553	27-Jul-2021	13:09:36
8	210727R08	90	CS6_210727_DF_RA	1.00	SIL 25-5-2	PSW	783-472	27-Jul-2021	13:58:27

Alternate OCDD/OCDF - NR in this ICAL. CL 28Jul21

REVIEWED
paul_walton , 7/28/2021, 8:31:00 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:08 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan STD Association	SGS Environmental Services

Individual Native Standards

2378-TCDD	ES 2378-TCDD
12378-PeCDD	ES 12378-PeCDD
123478-HxCDD	ES 123478-HxCDD
123678-HxCDD	ES 123678-HxCDD
123789-HxCDD	ES 123789-HxCDD
1234678-HpCDD	ES 1234678-HpCDD
OCDD	ES OCDD
2378-TCDF	ES 2378-TCDF
12378-PeCDF	ES 12378-PeCDF
23478-PeCDF	ES 23478-PeCDF
123478-HxCDF	ES 123478-HxCDF
123678-HxCDF	ES 123678-HxCDF
234678-HxCDF	ES 234678-HxCDF
123789-HxCDF	ES 123789-HxCDF
1234678-HpCDF	ES 1234678-HpCDF
1234789-HpCDF	ES 1234789-HpCDF
OCDF	ES OCDF

Cleanup/Sampling Standards

CS 37Cl-2378-TCDD	1234 TCDD 13C12
CS 12347-PeCDD	1234 TCDD 13C12
CS 12346-PeCDF	1234 TCDF 13C12
CS 123469-HxCDF	123467 HxCDD 13C12
CS 1234689-HpCDF	123467 HxCDD 13C12

Alternate Standards

AS 1368-TCDD	1234 TCDD 13C12
AS 1368-TCDF	1234 TCDF 13C12

Shipping Standards

FS 1278-TCDD	ES 2378-TCDD
FS 12478-PeCDD	ES 12378-PeCDD
FS 123468-HxCDD	ES 123478-HxCDD
FS 1234679-HpCDD	ES 1234678-HpCDD
TS 1378-TCDD	ES 2378-TCDD

Extraction Standards

ES 2378-TCDD	1234 TCDD 13C12
ES 12378-PeCDD	1234 TCDD 13C12
ES 123478-HxCDD	123467 HxCDD 13C12
ES 123678-HxCDD	123467 HxCDD 13C12
ES 123789-HxCDD	123467 HxCDD 13C12
ES 1234678-HpCDD	123467 HxCDD 13C12
ES OCDD	123467 HxCDD 13C12
ES 2378-TCDF	1234 TCDF 13C12
ES 12378-PeCDF	1234 TCDF 13C12
ES 23478-PeCDF	1234 TCDF 13C12
ES 123478-HxCDF	123467 HxCDD 13C12
ES 123678-HxCDF	123467 HxCDD 13C12
ES 234678-HxCDF	123467 HxCDD 13C12
ES 123789-HxCDF	123467 HxCDD 13C12
ES 1234678-HpCDF	123467 HxCDD 13C12
ES 1234789-HpCDF	123467 HxCDD 13C12
ES OCDF	123467 HxCDD 13C12

Injection Standards

1234 TCDD 13C12
1234 TCDF 13C12
123467 HxCDD 13C12

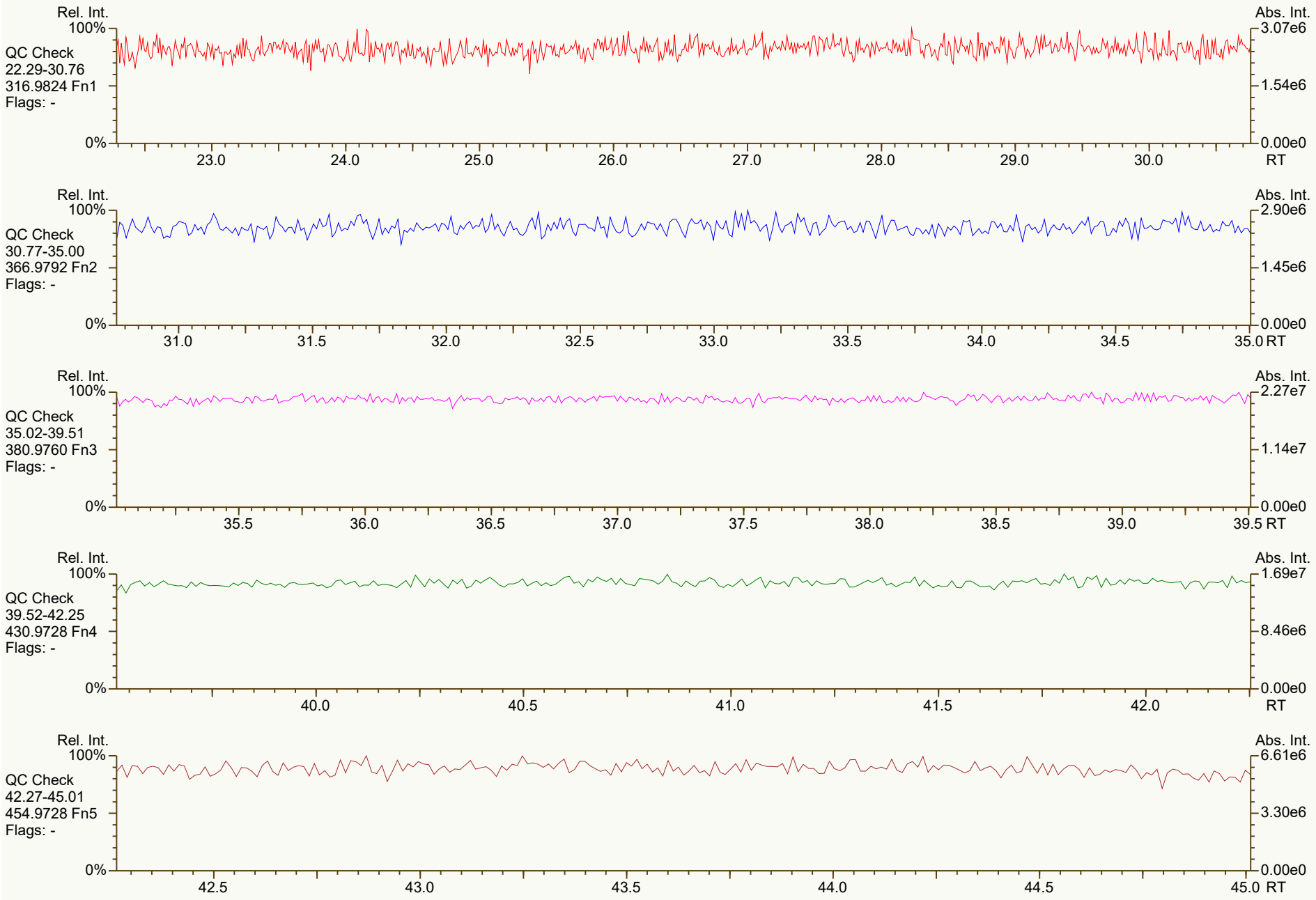
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	6.43E+05	0.73	Y	1.34	1.45	8%
12378-PeCDD	33.80	2.41E+06	1.48	Y	1.06	1.09	3%
123478-HxCDD	37.67	2.24E+06	1.35	Y	1.06	1.10	4%
123678-HxCDD	37.78	2.20E+06	1.31	Y	1.08	1.12	3%
123789-HxCDD	38.07	2.52E+06	1.21	Y	1.02	1.10	9%
1234678-HpCDD	40.66	2.08E+06	0.99	Y	0.97	1.05	7%
OCDD	43.22	3.52E+06	0.85	Y	1.07	1.15	8%
2378-TCDF	27.66	7.49E+05	0.72	Y	0.96	1.01	5%
12378-PeCDF	32.38	3.19E+06	1.44	Y	0.95	1.00	5%
23478-PeCDF	33.46	3.11E+06	1.57	Y	0.94	0.99	6%
123478-HxCDF	36.68	3.00E+06	1.23	Y	1.23	1.32	7%
123678-HxCDF	36.82	3.05E+06	1.18	Y	1.13	1.17	4%
234678-HxCDF	37.49	2.95E+06	1.17	Y	1.15	1.23	7%
123789-HxCDF	38.42	2.65E+06	1.30	Y	1.14	1.19	5%
1234678-HpCDF	39.76	2.75E+06	1.00	Y	1.36	1.46	7%
1234789-HpCDF	41.10	2.20E+06	1.11	Y	1.30	1.34	3%
OCDF	43.40	3.66E+06	0.85	Y	1.03	1.01	-1%
ES 2378-TCDD	28.50	1.77E+08	0.79	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.781	1.77E+08	1.63	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.653	1.63E+08	1.26	Y	0.99	0.97	-2%
ES 123678-HxCDD	37.766	1.57E+08	1.27	Y	0.97	0.94	-3%
ES 123789-HxCDD	38.056	1.82E+08	1.26	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.643	1.59E+08	1.05	Y	0.99	0.95	-4%
ES OCDD	43.205	2.44E+08	0.92	Y	0.78	0.73	-6%
ES 2378-TCDF	27.645	2.97E+08	0.78	Y	1.08	1.06	-2%
ES 12378-PeCDF	32.355	2.55E+08	1.55	Y	0.93	0.91	-2%
ES 23478-PeCDF	33.445	2.50E+08	1.56	Y	0.92	0.90	-3%
ES 123478-HxCDF	36.661	1.82E+08	0.53	Y	1.14	1.09	-5%
ES 123678-HxCDF	36.801	2.08E+08	0.53	Y	1.30	1.24	-4%
ES 234678-HxCDF	37.466	1.92E+08	0.53	Y	1.20	1.14	-5%
ES 123789-HxCDF	38.399	1.78E+08	0.52	Y	1.14	1.06	-7%
ES 1234678-HpCDF	39.748	1.51E+08	0.44	Y	0.95	0.90	-5%
ES 1234789-HpCDF	41.09	1.32E+08	0.45	Y	0.85	0.79	-7%
ES OCDF	43.389	2.89E+08	0.89	Y	0.93	0.86	-7%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

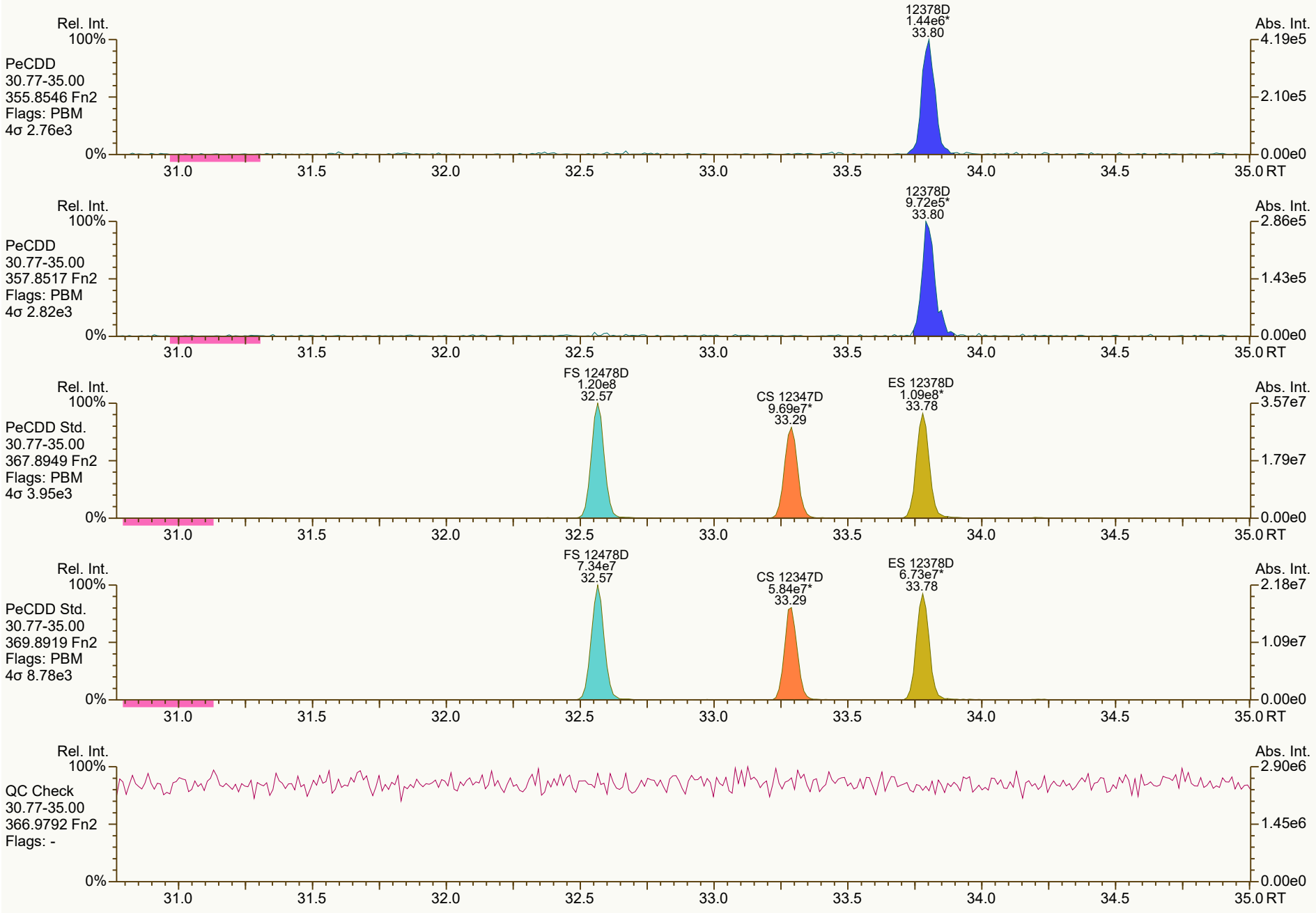
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.74E+08	0.80	Y	-	-	-
JS 1234-TCDF	26.33	2.80E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	8.38E+07	1.33	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.89	0.89	0%
CS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.78E+08	0.52	Y	1.09	1.06	-2%
CS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.86	0.88	2%
SS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.93	0.94	2%
SS 123469-HxCDF	37.12	1.78E+08	0.52	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.91	0.96	5%
AS 1368-TCDD	24.91	1.76E+08	0.79	Y	1.02	1.01	-1%
AS 1368-TCDF	22.86	2.95E+08	0.78	Y	1.08	1.05	-2%
FS 1278-TCDD	28.82	1.91E+08	0.78	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.94E+08	1.64	Y	1.09	1.10	0%
FS 123468-HxCDD	36.58	2.07E+08	1.26	Y	1.26	1.27	0%
FS 1234679-HpCDD	39.99	2.24E+08	1.06	Y	1.36	1.41	4%
TS 1378-TCDD	26.87	2.41E+08	0.79	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.22~~	~~1.80E+05~~	~~0.99~~	~~N~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.41~~	~~1.98E+05~~	~~2.81~~	~~Y~~	~~0.06~~	~~0.05~~	~~-7%~~

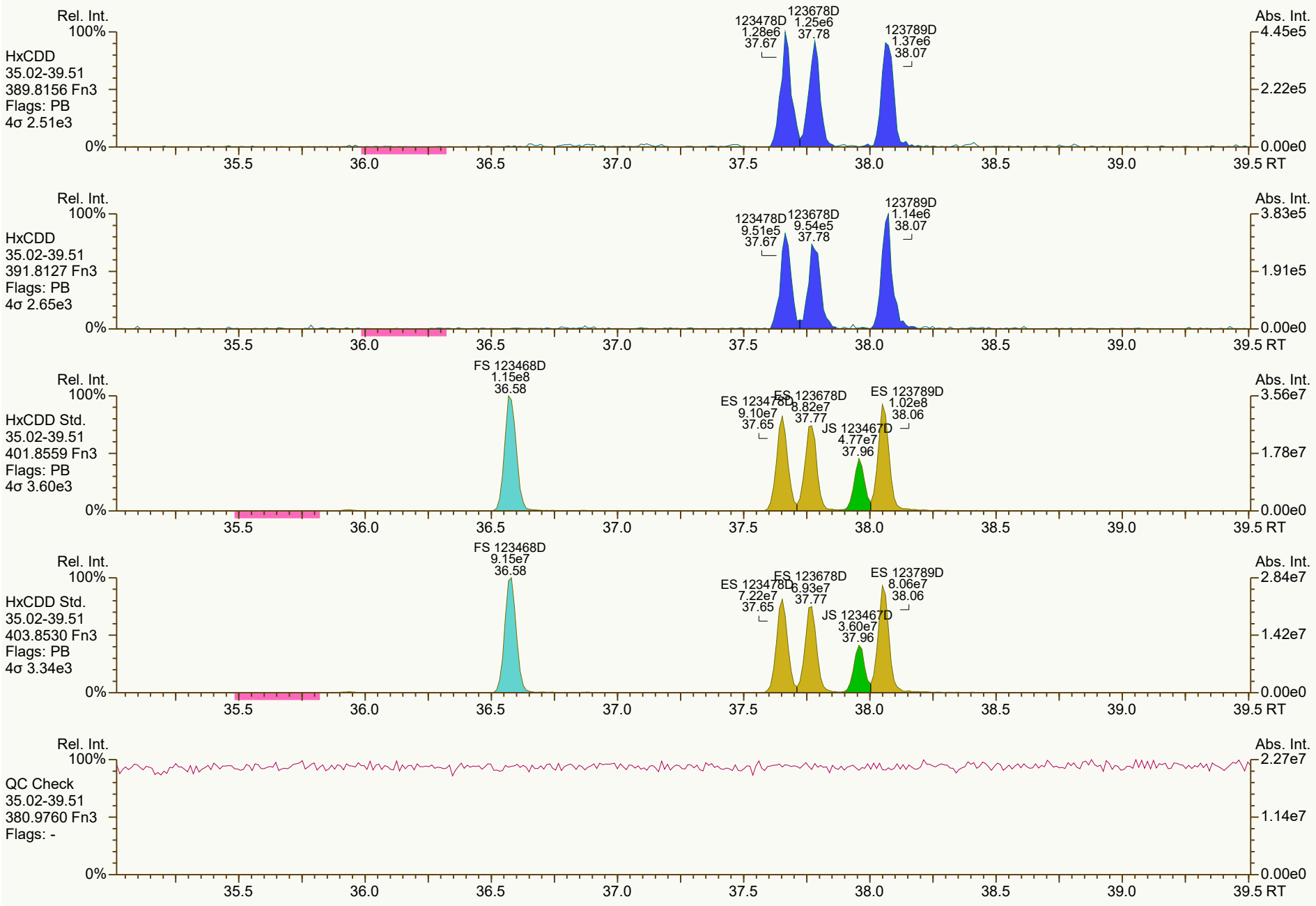
Not reported from this ICAL - CL 28Jul21

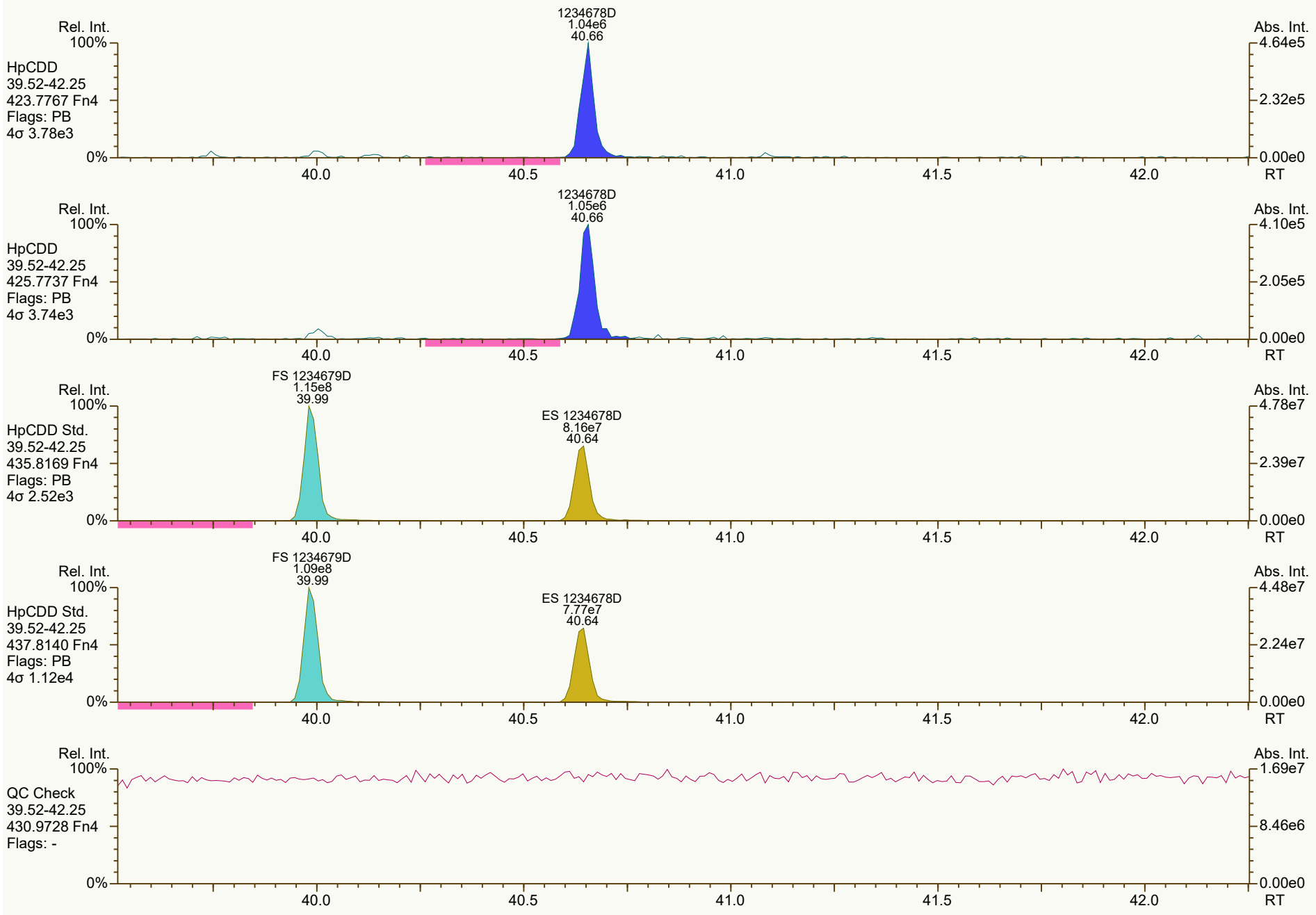


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 693-472
PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12

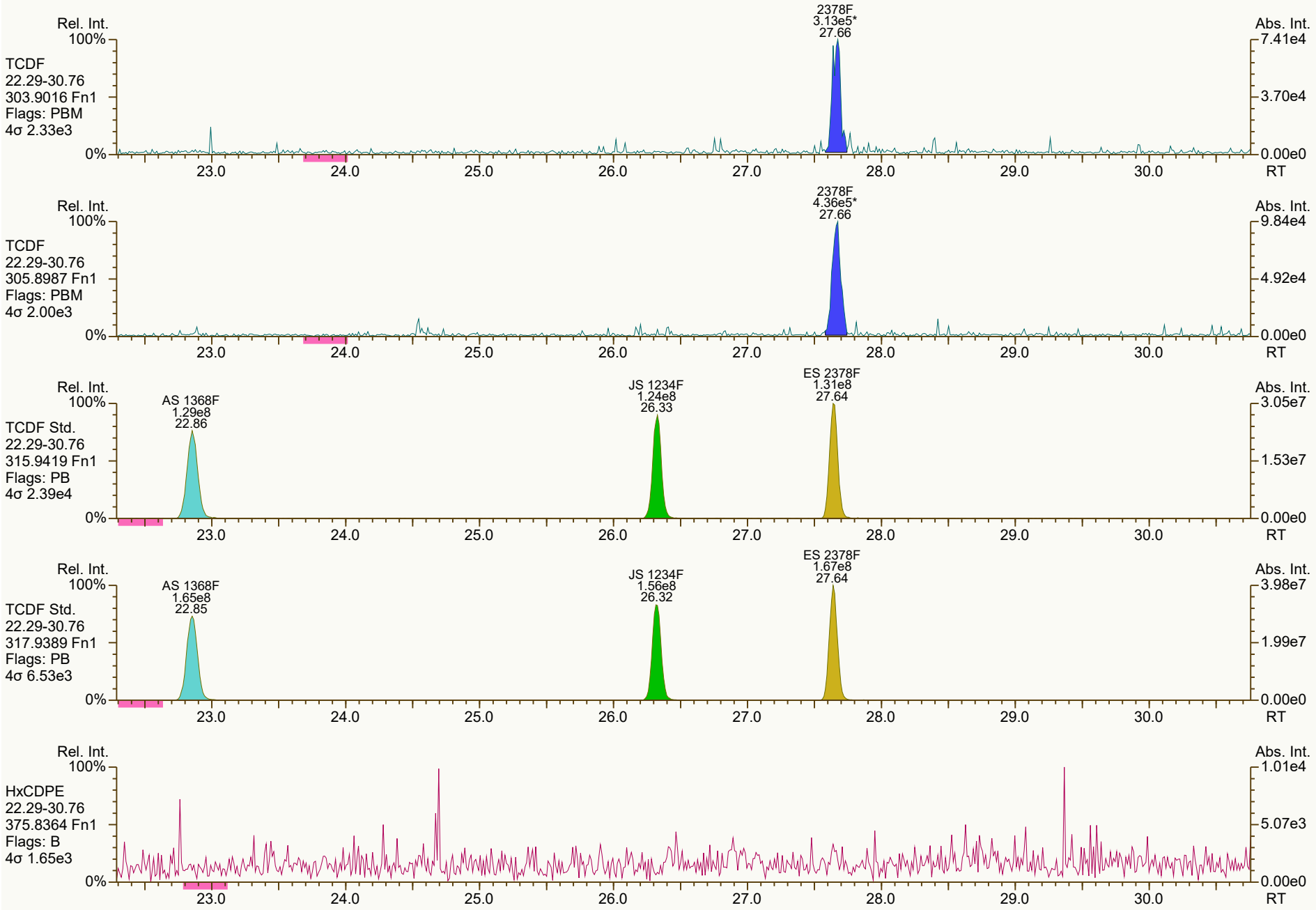

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 2.21e3
0%
2378D
2.70e5*
28.52
Abs. Int.
6.87e4
3.43e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.34e3
RRF(2378D) = (2.70e5 + 3.73e5) * 100pg / (7.81e7 + 9.89e7) * 0.25pg = 1.45
PSW 27-Jul-2021 15:08
OK
CL 28Jul21
2378D
3.73e5*
28.52
9.52e4
4.76e4
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.84e3
1.43e4
7.14e3
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.61e3
AS 1368D
7.76e7
24.91
TS 1378D
1.07e8
26.87
JS 1234D
7.74e7
27.86
ES 2378D
7.81e7
28.50
FS 1278D
8.37e7
28.82
2.55e7
1.28e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.86e3
RRF(TS 1378D) = (1.07e8 + 1.34e8) * 100pg / (7.81e7 + 9.89e7) * 100pg = 1.36
PSW 27-Jul-2021 15:11
OK - CL 28Jul21
AS 1368D
9.87e7
24.91
TS 1378D
1.34e8
26.87
JS 1234D
9.66e7
27.86
ES 2378D
9.89e7
28.50
FS 1278D
1.08e8
28.82
3.19e7
1.59e7


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 2.76e3
0%
12378D
1.44e6*
33.80
Abs. Int.
4.19e5
2.10e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.82e3
0%
12378D
9.72e5*
33.80
Abs. Int.
2.86e5
1.43e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.95e3
0%
FS 12478D
1.20e8
32.57
CS 12347D
9.69e7*
33.29
ES 12378D
1.09e8*
33.78
Abs. Int.
3.57e7
1.79e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 8.78e3
0%
FS 12478D
7.34e7
32.57
CS 12347D
5.84e7*
33.29
ES 12378D
6.73e7*
33.78
Abs. Int.
2.18e7
1.09e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

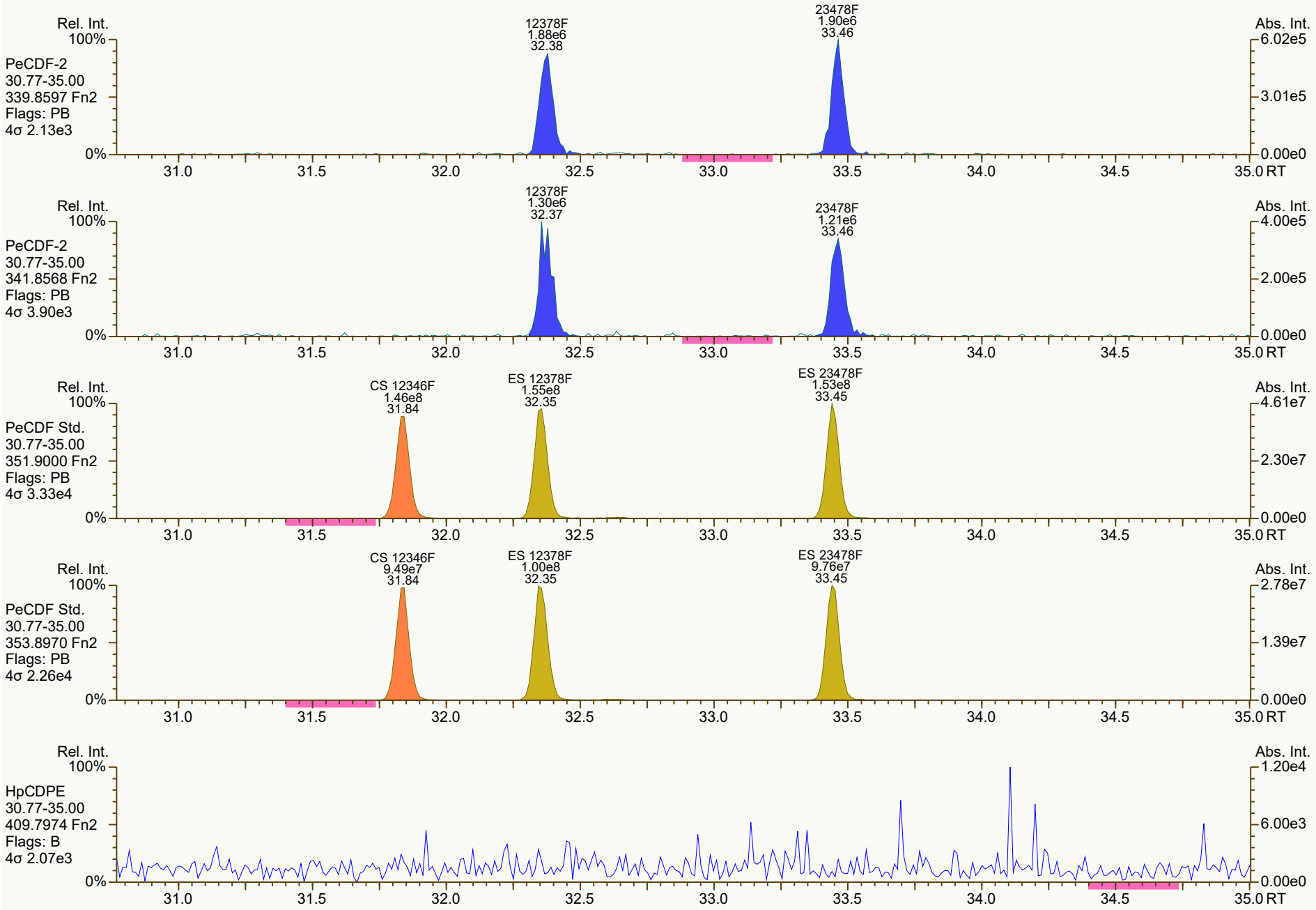

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.51e3
123478D
1.28e6
37.67
123678D
1.25e6
37.78
123789D
1.37e6
38.07
Abs. Int.
4.45e5
2.22e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.65e3
123478D
9.51e5
37.67
123678D
9.54e5
37.78
123789D
1.14e6
38.07
Abs. Int.
3.83e5
1.91e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.60e3
FS 123468D
1.15e8
36.58
ES 123478D
9.10e7
37.65
ES 123678D
8.82e7
37.77
JS 123467D
4.77e7
37.96
ES 123789D
1.02e8
38.06
Abs. Int.
3.56e7
1.78e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.34e3
FS 123468D
9.15e7
36.58
ES 123478D
7.22e7
37.65
ES 123678D
6.93e7
37.77
JS 123467D
3.60e7
37.96
ES 123789D
8.06e7
38.06
Abs. Int.
2.84e7
1.42e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

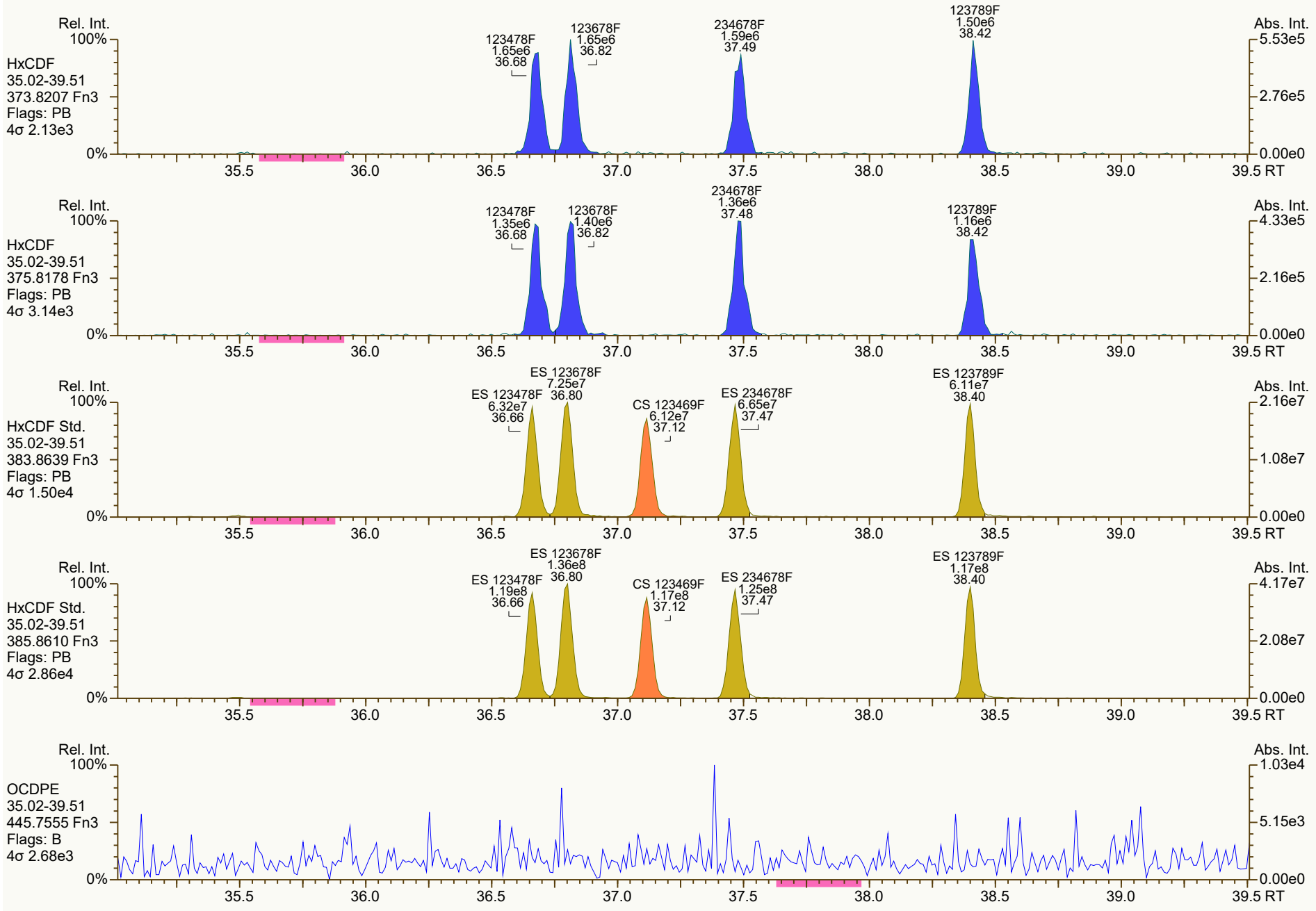

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 3.78e3
1234678D
1.04e6
40.66
Abs. Int.
4.64e5
2.32e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.74e3
1234678D
1.05e6
40.66
Abs. Int.
4.10e5
2.05e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.52e3
FS 1234679D
1.15e8
39.99
ES 1234678D
8.16e7
40.64
Abs. Int.
4.78e7
2.39e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.12e4
FS 1234679D
1.09e8
39.99
ES 1234678D
7.77e7
40.64
Abs. Int.
4.48e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.69e7
8.46e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT

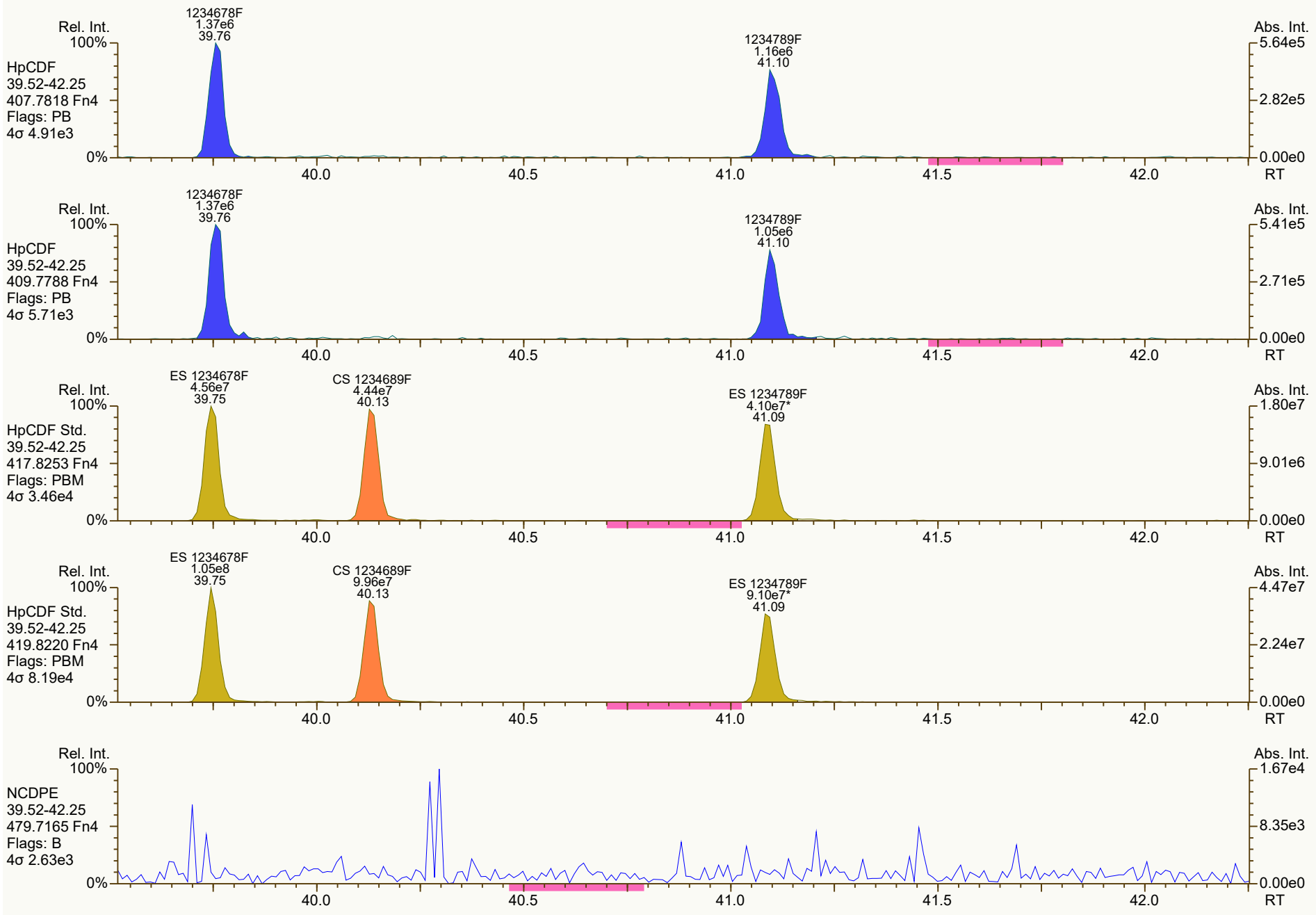

OCDD
1.61e6
43.21
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.80e3
0%
Abs. Int.
5.57e5
2.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
5.93e5
2.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.17e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PBM
4σ 3.76e3
0%
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.27e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PBM
4σ 3.92e3
0%
Abs. Int.
4.10e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.33e3
2378F
3.13e5*
27.66
Abs. Int.
7.41e4
3.70e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.00e3
2378F
4.36e5*
27.66
Abs. Int.
9.84e4
4.92e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.39e4
AS 1368F
1.29e8
22.86
JS 1234F
1.24e8
26.33
ES 2378F
1.31e8
27.64
Abs. Int.
3.05e7
1.53e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 6.53e3
AS 1368F
1.65e8
22.85
JS 1234F
1.56e8
26.32
ES 2378F
1.67e8
27.64
Abs. Int.
3.98e7
1.99e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.65e3
Abs. Int.
1.01e4
5.07e3
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
4.15e4
2.08e4
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.62e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.30e4
1.15e4
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 1.94e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.07e6
1.54e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.13e3
0%
12378F
1.88e6
32.38
23478F
1.90e6
33.46
Abs. Int.
6.02e5
3.01e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.90e3
0%
12378F
1.30e6
32.37
23478F
1.21e6
33.46
Abs. Int.
4.00e5
2.00e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 3.33e4
0%
CS 12346F
1.46e8
31.84
ES 12378F
1.55e8
32.35
ES 23478F
1.53e8
33.45
Abs. Int.
4.61e7
2.30e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.26e4
0%
CS 12346F
9.49e7
31.84
ES 12378F
1.00e8
32.35
ES 23478F
9.76e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
1.20e4
6.00e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

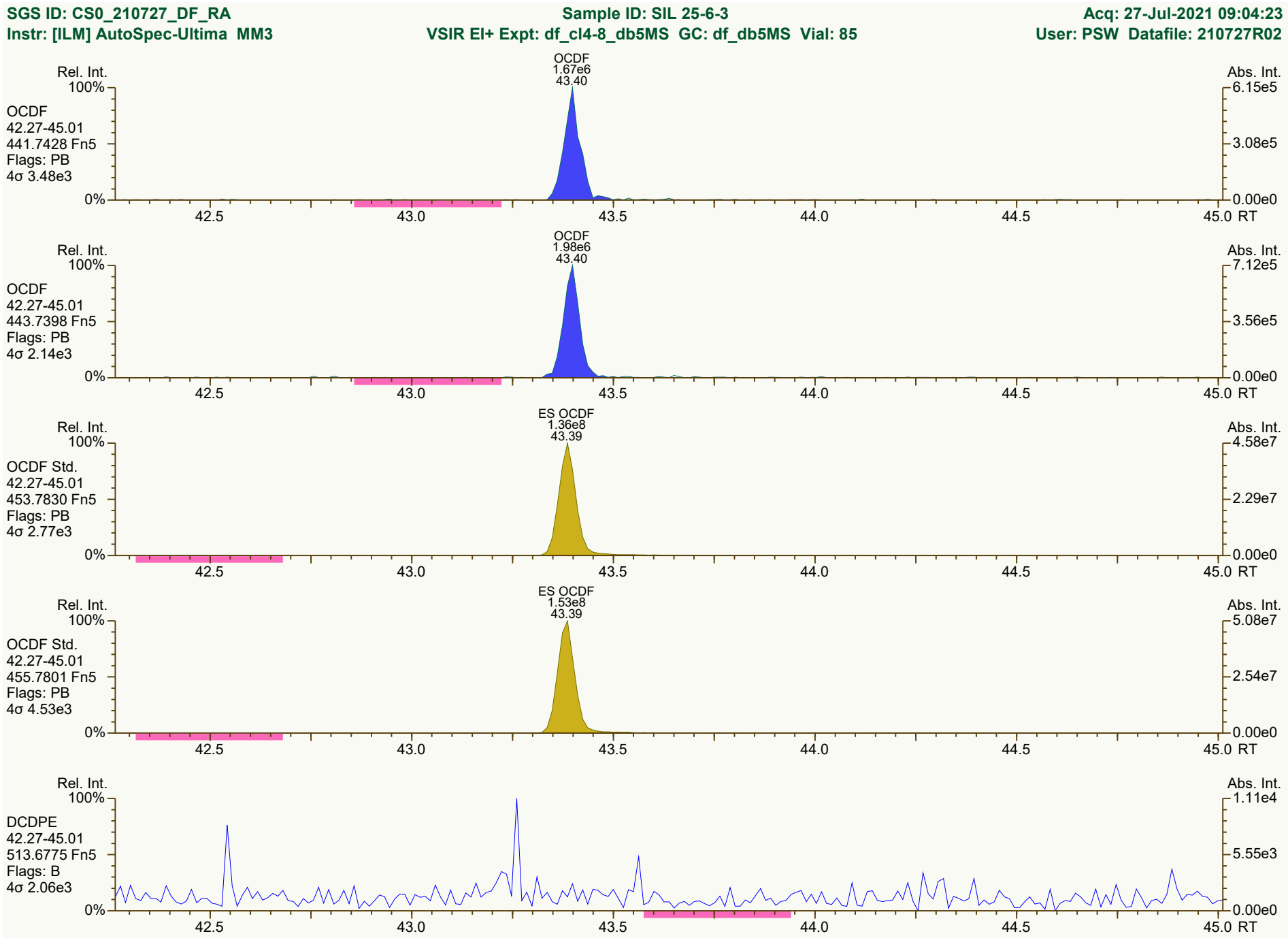

Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.13e3
0%
123478F 1.65e6 36.68
123678F 1.65e6 36.82
234678F 1.59e6 37.49
123789F 1.50e6 38.42
Abs. Int.
5.53e5
2.76e5
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 3.14e3
0%
123478F 1.35e6 36.68
123678F 1.40e6 36.82
234678F 1.36e6 37.48
123789F 1.16e6 38.42
Abs. Int.
4.33e5
2.16e5
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.50e4
0%
ES 123478F 6.32e7 36.66
ES 123678F 7.25e7 36.80
CS 123469F 6.12e7 37.12
ES 234678F 6.65e7 37.47
ES 123789F 6.11e7 38.40
Abs. Int.
2.16e7
1.08e7
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.86e4
0%
ES 123478F 1.19e8 36.66
ES 123678F 1.36e8 36.80
CS 123469F 1.17e8 37.12
ES 234678F 1.25e8 37.47
ES 123789F 1.17e8 38.40
Abs. Int.
4.17e7
2.08e7
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.68e3
0%
Abs. Int.
1.03e4
5.15e3
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e3
1234678F
1.37e6
39.76
1234789F
1.16e6
41.10
Abs. Int.
5.64e5
2.82e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.71e3
1234678F
1.37e6
39.76
1234789F
1.05e6
41.10
Abs. Int.
5.41e5
2.71e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.46e4
ES 1234678F
4.56e7
39.75
CS 1234689F
4.44e7
40.13
ES 1234789F
4.10e7*
41.09
Abs. Int.
1.80e7
9.01e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 8.19e4
ES 1234678F
1.05e8
39.75
CS 1234689F
9.96e7
40.13
ES 1234789F
9.10e7*
41.09
Abs. Int.
4.47e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
Abs. Int.
1.67e4
8.35e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT

SGS ID: CS0_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85

Acq: 27-Jul-2021 09:04:23
User: PSW Datafile: 210727R02



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2212, 1649, 1411 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 12 of 12

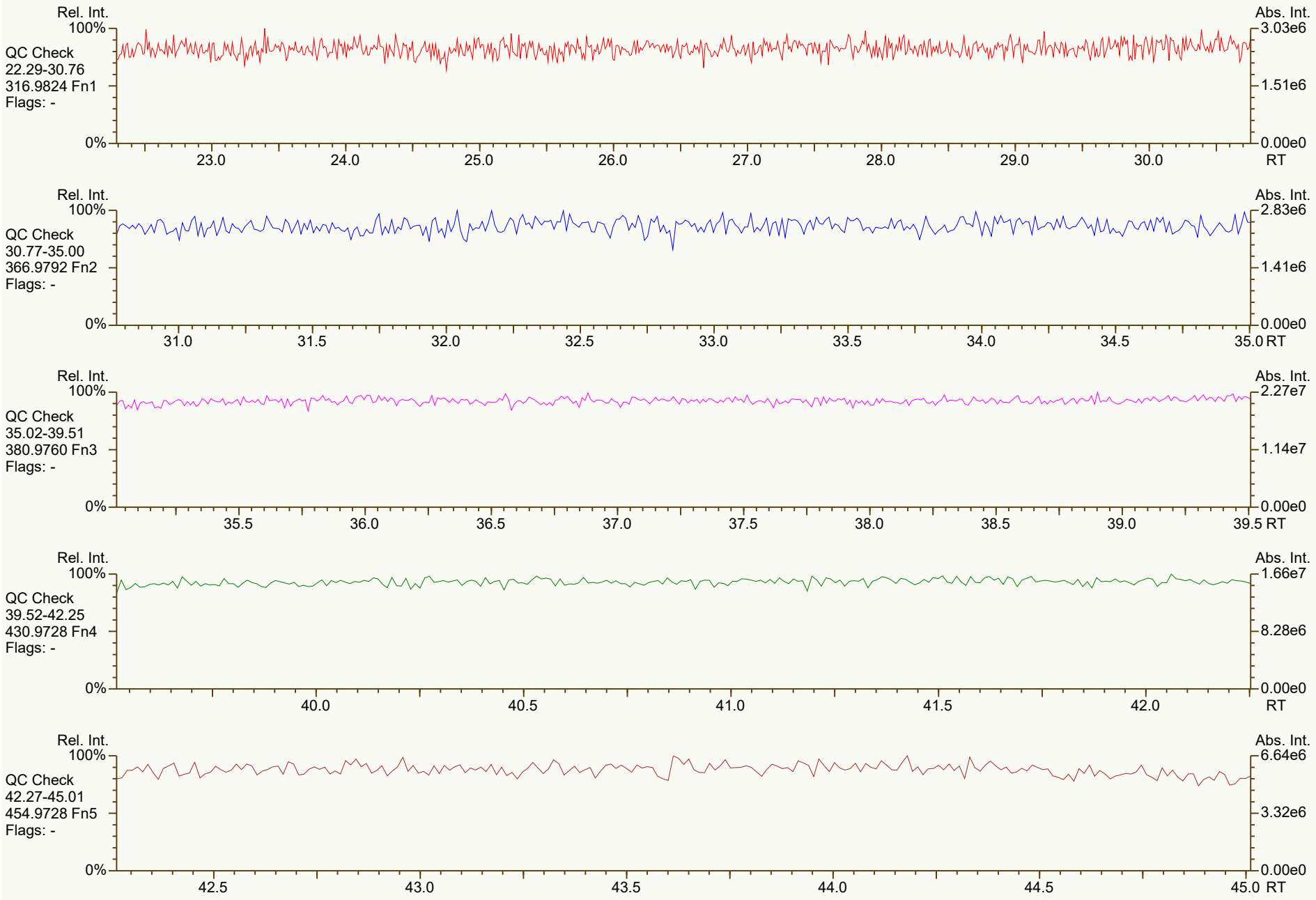
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.04E+06	0.76	Y	1.34	1.34	-1%
12378-PeCDD	33.81	4.16E+06	1.48	Y	1.06	1.07	1%
123478-HxCDD	37.68	3.92E+06	1.22	Y	1.06	1.10	4%
123678-HxCDD	37.79	3.74E+06	1.22	Y	1.08	1.07	-1%
123789-HxCDD	38.08	4.22E+06	1.33	Y	1.02	1.05	4%
1234678-HpCDD	40.66	3.34E+06	1.16	Y	0.97	0.95	-3%
OCDD	43.23	5.66E+06	0.85	Y	1.07	1.04	-3%
2378-TCDF	27.67	1.25E+06	0.72	Y	0.96	0.94	-2%
12378-PeCDF	32.38	5.24E+06	1.54	Y	0.95	0.94	0%
23478-PeCDF	33.47	5.06E+06	1.63	Y	0.94	0.90	-4%
123478-HxCDF	36.69	4.92E+06	1.14	Y	1.23	1.23	-1%
123678-HxCDF	36.83	5.41E+06	1.33	Y	1.13	1.16	3%
234678-HxCDF	37.49	5.10E+06	1.23	Y	1.15	1.19	3%
123789-HxCDF	38.42	4.41E+06	1.28	Y	1.14	1.08	-5%
1234678-HpCDF	39.76	4.59E+06	0.97	Y	1.36	1.35	0%
1234789-HpCDF	41.11	3.63E+06	1.08	Y	1.30	1.20	-7%
OCDF	43.41	6.46E+06	0.90	Y	1.03	1.01	-2%
ES 2378-TCDD	28.51	1.56E+08	0.81	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.789	1.56E+08	1.63	Y	1.03	1.02	-1%
ES 123478-HxCDD	37.66	1.43E+08	1.26	Y	0.99	0.93	-6%
ES 123678-HxCDD	37.773	1.40E+08	1.27	Y	0.97	0.91	-6%
ES 123789-HxCDD	38.062	1.60E+08	1.24	Y	1.12	1.04	-7%
ES 1234678-HpCDD	40.65	1.41E+08	1.06	Y	0.99	0.92	-8%
ES OCDD	43.215	2.18E+08	0.91	Y	0.78	0.71	-9%
ES 2378-TCDF	27.651	2.66E+08	0.77	Y	1.08	1.08	0%
ES 12378-PeCDF	32.362	2.22E+08	1.59	Y	0.93	0.91	-3%
ES 23478-PeCDF	33.454	2.24E+08	1.55	Y	0.92	0.91	-1%
ES 123478-HxCDF	36.667	1.60E+08	0.52	Y	1.14	1.04	-9%
ES 123678-HxCDF	36.807	1.86E+08	0.54	Y	1.30	1.21	-7%
ES 234678-HxCDF	37.474	1.72E+08	0.53	Y	1.20	1.12	-7%
ES 123789-HxCDF	38.407	1.64E+08	0.51	Y	1.14	1.07	-6%
ES 1234678-HpCDF	39.755	1.36E+08	0.46	Y	0.95	0.88	-7%
ES 1234789-HpCDF	41.099	1.21E+08	0.45	Y	0.85	0.78	-7%
ES OCDF	43.396	2.56E+08	0.88	Y	0.93	0.83	-10%

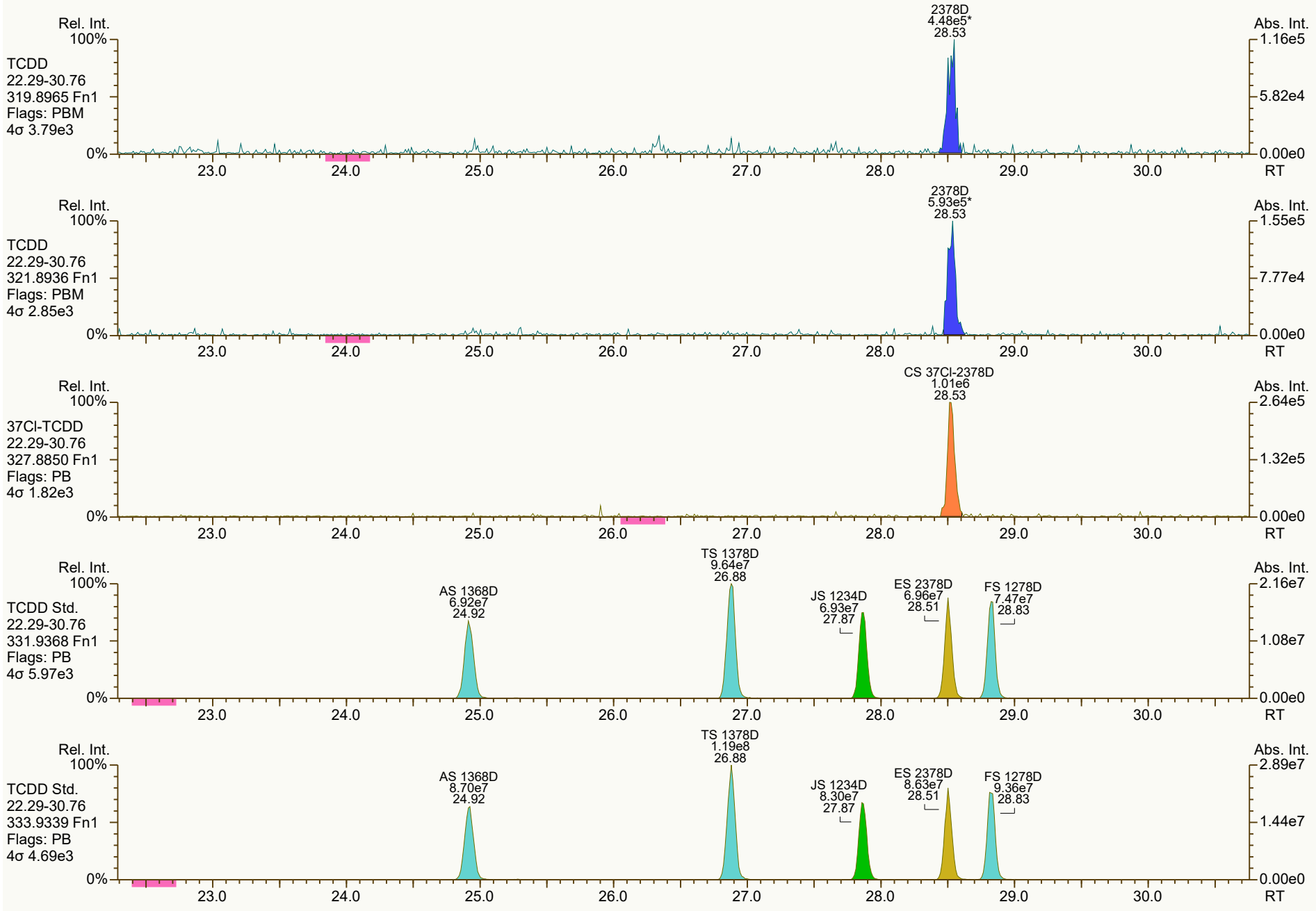
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

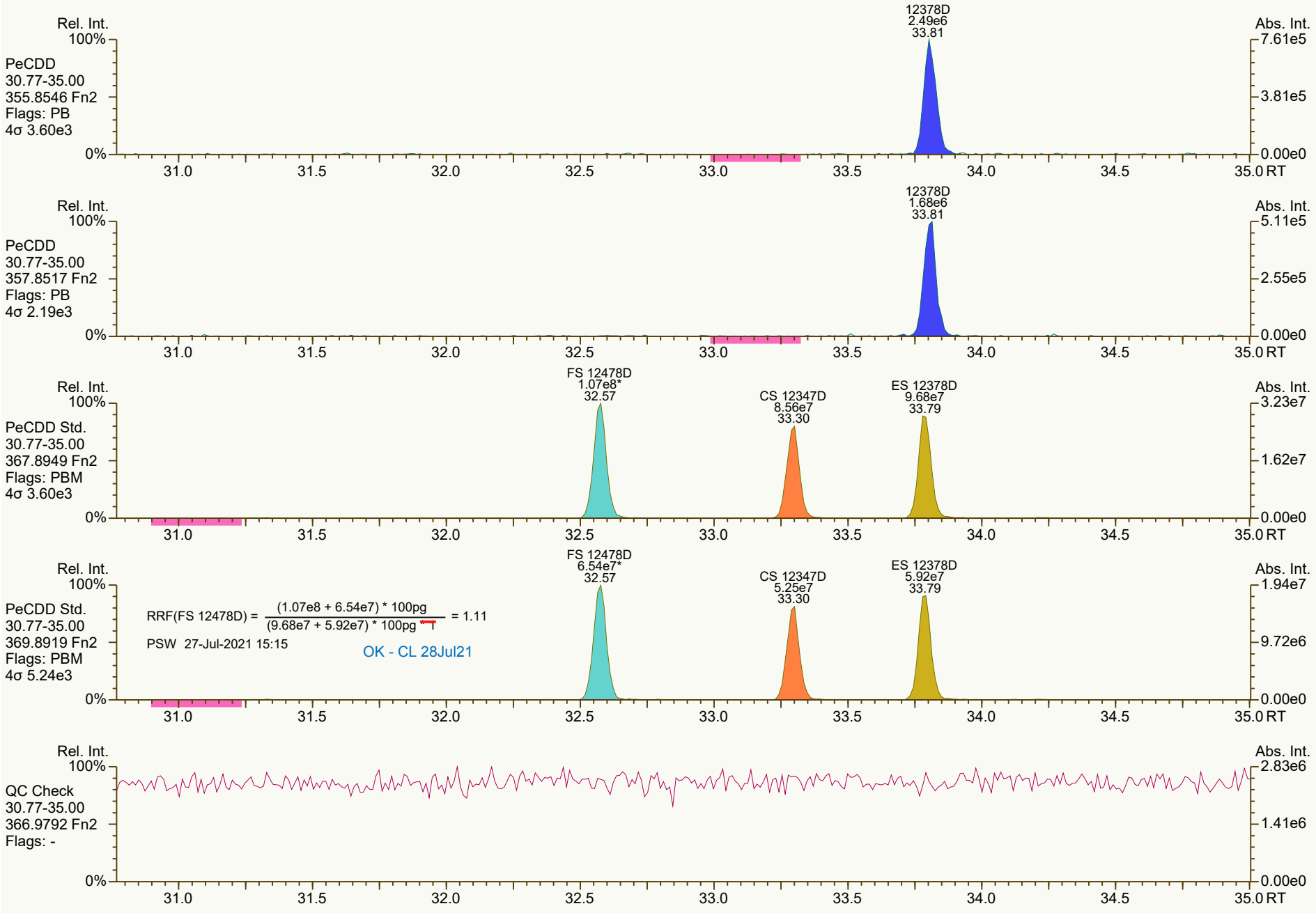
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.52E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.33	2.45E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	7.69E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.31	1.32	1%
CS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.89	0.91	2%
CS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.87	0.88	1%
CS 123469-HxCDF	37.12	1.61E+08	0.52	Y	1.09	1.04	-4%
CS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.86	0.84	-2%
SS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.26	1.29	2%
SS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.86	0.89	2%
SS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.61E+08	0.52	Y	0.84	0.86	3%
SS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.91	0.96	5%
AS 1368-TCDD	24.92	1.56E+08	0.80	Y	1.02	1.03	0%
AS 1368-TCDF	22.86	2.59E+08	0.77	Y	1.08	1.06	-2%
FS 1278-TCDD	28.83	1.68E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.72E+08	1.63	Y	1.09	1.10	1%
FS 123468-HxCDD	36.59	1.86E+08	1.29	Y	1.26	1.30	3%
FS 1234679-HpCDD	39.99	1.93E+08	1.05	Y	1.36	1.37	1%
TS 1378-TCDD	26.88	2.16E+08	0.81	Y	1.35	1.38	3%
~~OCDD-a~~	~~43.23~~	~~4.10E+05~~	~~2.91~~	~~N~~	~~0.07~~	~~0.08~~	~~14%~~
~~OCDF-a~~	~~43.40~~	~~3.79E+05~~	~~1.92~~	~~N~~	~~0.06~~	~~0.06~~	~~0%~~

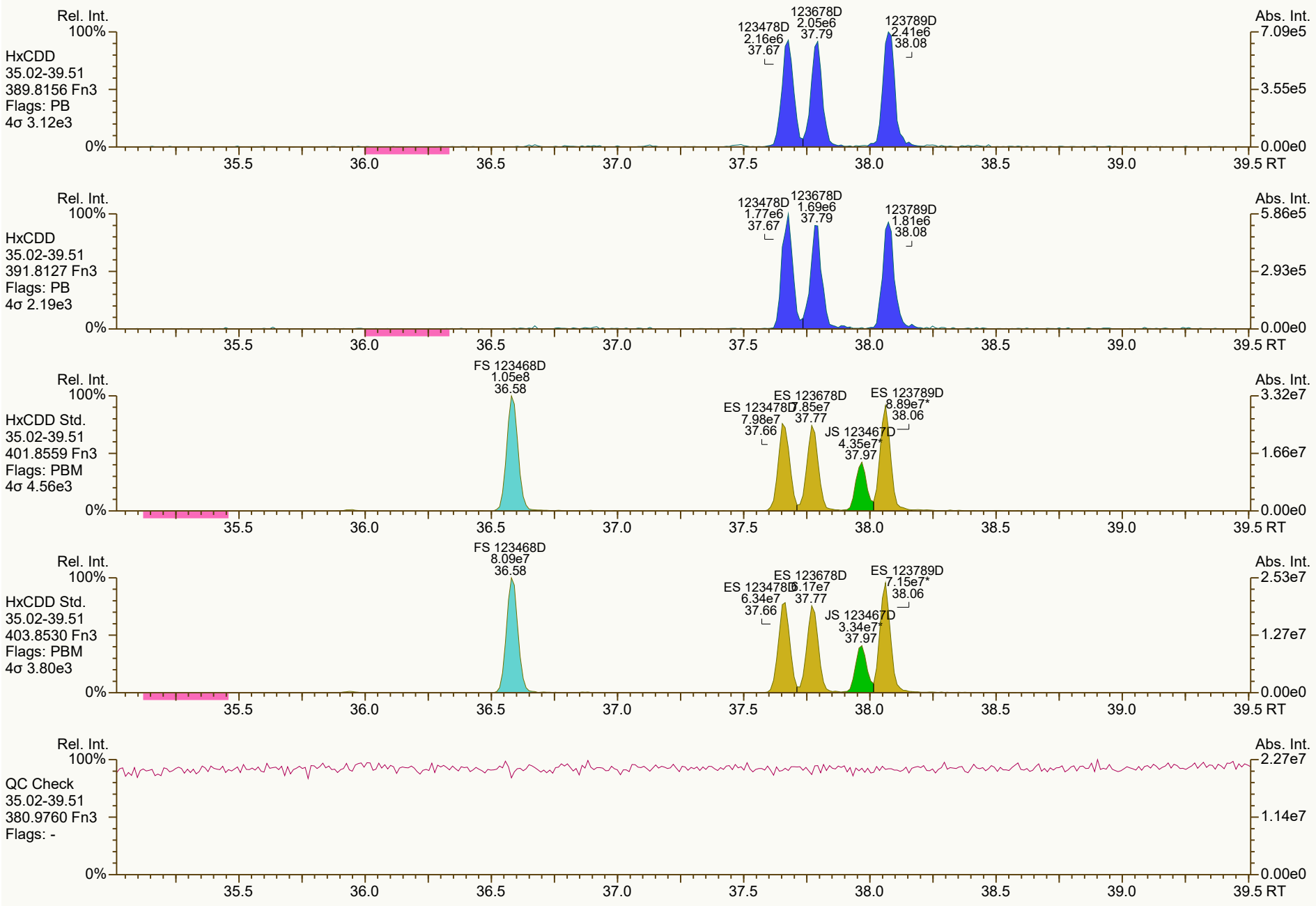
Not reported from this ICAL - CL 28Jul21

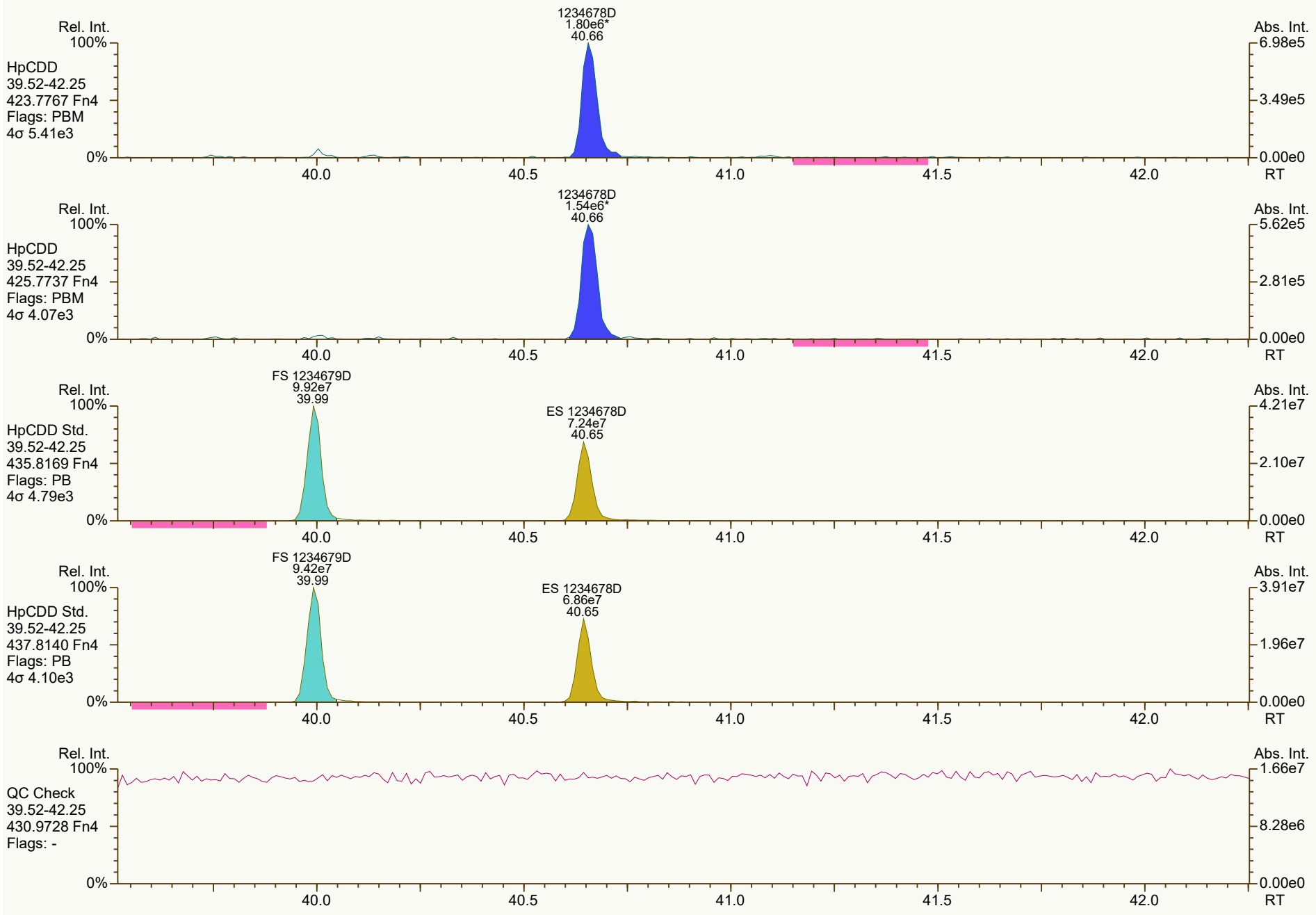


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 554-132 *PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12*


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 3.79e3
0%
2378D
4.48e5*
28.53
Abs. Int.
1.16e5
5.82e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.85e3
0%
2378D
5.93e5*
28.53
Abs. Int.
1.55e5
7.77e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.82e3
0%
CS 37Cl-2378D
1.01e6
28.53
Abs. Int.
2.64e5
1.32e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.97e3
0%
AS 1368D
6.92e7
24.92
TS 1378D
9.64e7
26.88
JS 1234D
6.93e7
27.87
ES 2378D
6.96e7
28.51
FS 1278D
7.47e7
28.83
Abs. Int.
2.16e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.69e3
0%
AS 1368D
8.70e7
24.92
TS 1378D
1.19e8
26.88
JS 1234D
8.30e7
27.87
ES 2378D
8.63e7
28.51
FS 1278D
9.36e7
28.83
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.60e3
0%
12378D
2.49e6
33.81
Abs. Int.
7.61e5
3.81e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.19e3
0%
12378D
1.68e6
33.81
Abs. Int.
5.11e5
2.55e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.60e3
0%
FS 12478D
1.07e8*
32.57
CS 12347D
8.56e7
33.30
ES 12378D
9.68e7
33.79
Abs. Int.
3.23e7
1.62e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 5.24e3
0%
RRF(FS 12478D) = (1.07e8 + 6.54e7) * 100pg / (9.68e7 + 5.92e7) * 100pg = 1.11
PSW 27-Jul-2021 15:15
OK - CL 28Jul21
FS 12478D
6.54e7*
32.57
CS 12347D
5.25e7
33.30
ES 12378D
5.92e7
33.79
Abs. Int.
1.94e7
9.72e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.12e3
123478D
2.16e6
37.67
123678D
2.05e6
37.79
123789D
2.41e6
38.08
Abs. Int.
7.09e5
3.55e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.19e3
123478D
1.77e6
37.67
123678D
1.69e6
37.79
123789D
1.81e6
38.08
Abs. Int.
5.86e5
2.93e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.56e3
FS 123468D
1.05e8
36.58
ES 123478D
7.98e7
37.66
ES 123678D
7.85e7
37.77
JS 123467D
4.35e7*
37.97
ES 123789D
8.89e7*
38.06
Abs. Int.
3.32e7
1.66e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.80e3
FS 123468D
8.09e7
36.58
ES 123478D
6.34e7
37.66
ES 123678D
6.17e7
37.77
JS 123467D
3.34e7*
37.97
ES 123789D
7.15e7*
38.06
Abs. Int.
2.53e7
1.27e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

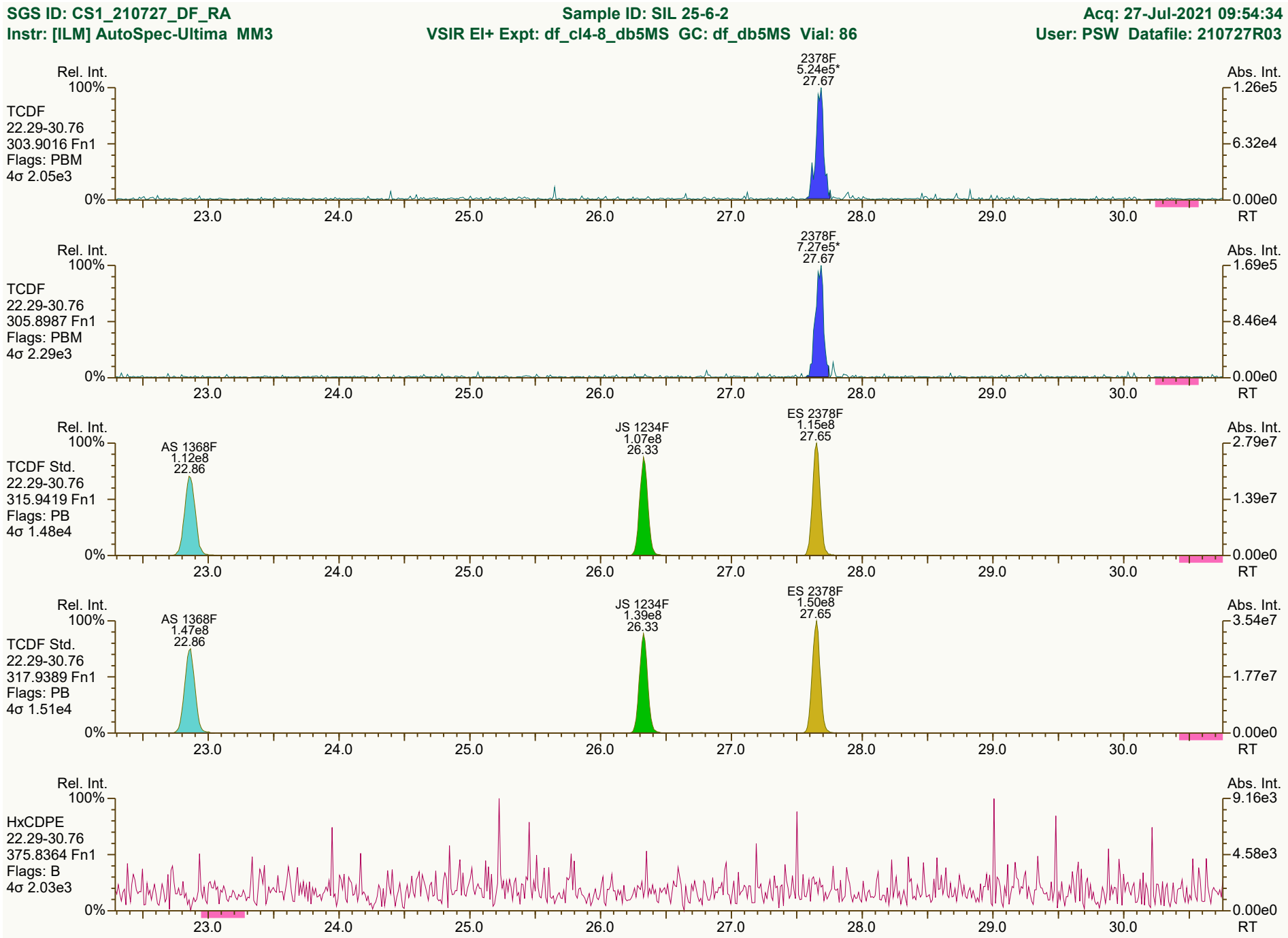

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 5.41e3
0%
1234678D
1.80e6*
40.66
Abs. Int.
6.98e5
3.49e5
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 4.07e3
0%
1234678D
1.54e6*
40.66
Abs. Int.
5.62e5
2.81e5
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 4.79e3
0%
FS 1234679D
9.92e7
39.99
ES 1234678D
7.24e7
40.65
Abs. Int.
4.21e7
2.10e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.10e3
0%
FS 1234679D
9.42e7
39.99
ES 1234678D
6.86e7
40.65
Abs. Int.
3.91e7
1.96e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0


OCDD
2.61e6
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.60e3
0%
Abs. Int.
8.02e5
4.01e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.05e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.89e3
0%
Abs. Int.
1.09e6
5.45e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.04e8
43.22
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 2.94e3
0%
Abs. Int.
3.50e7
1.75e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.14e8
43.22
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 3.15e3
0%
Abs. Int.
3.84e7
1.92e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

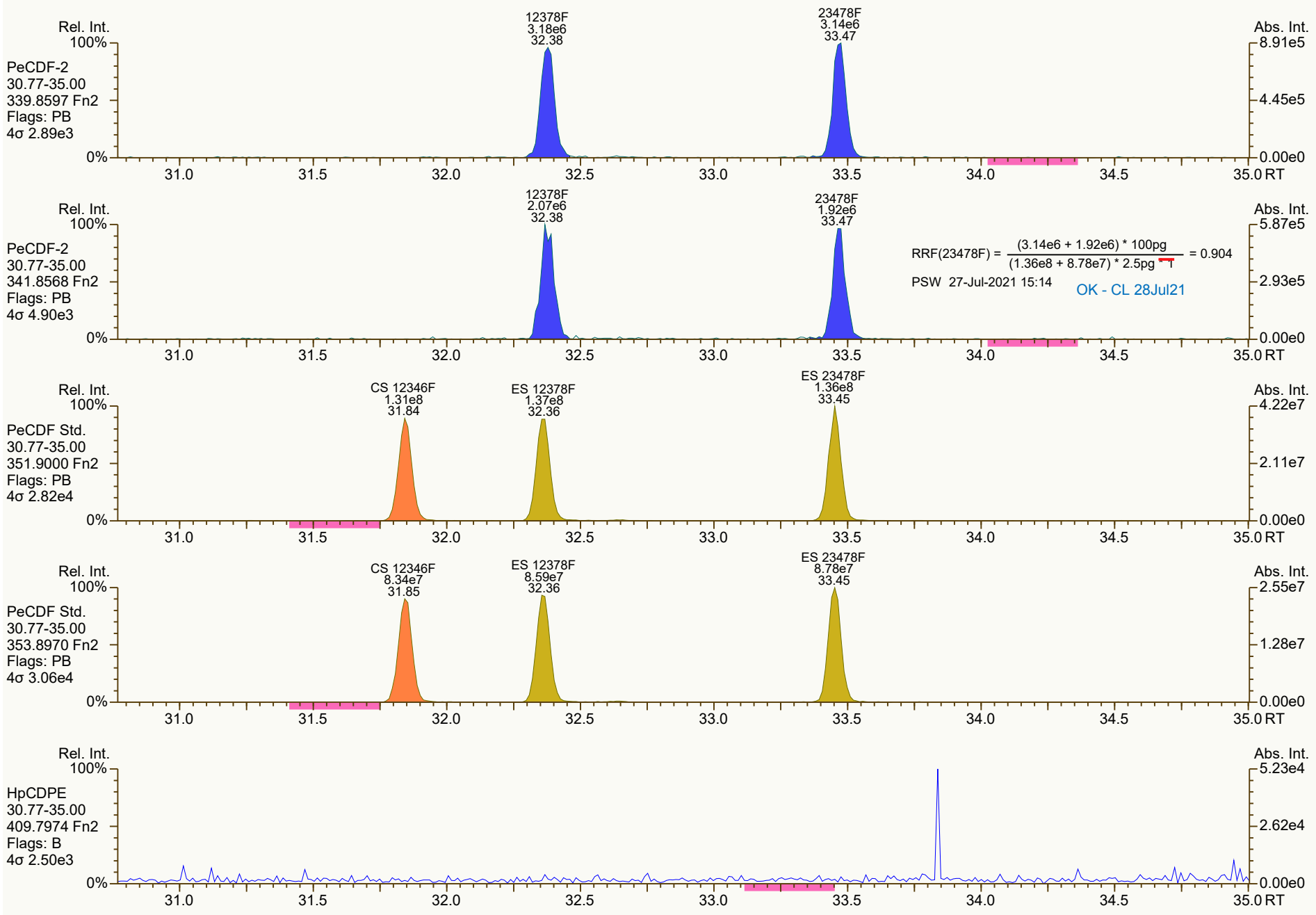
Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0890, 2579, 1486 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 7 of 12

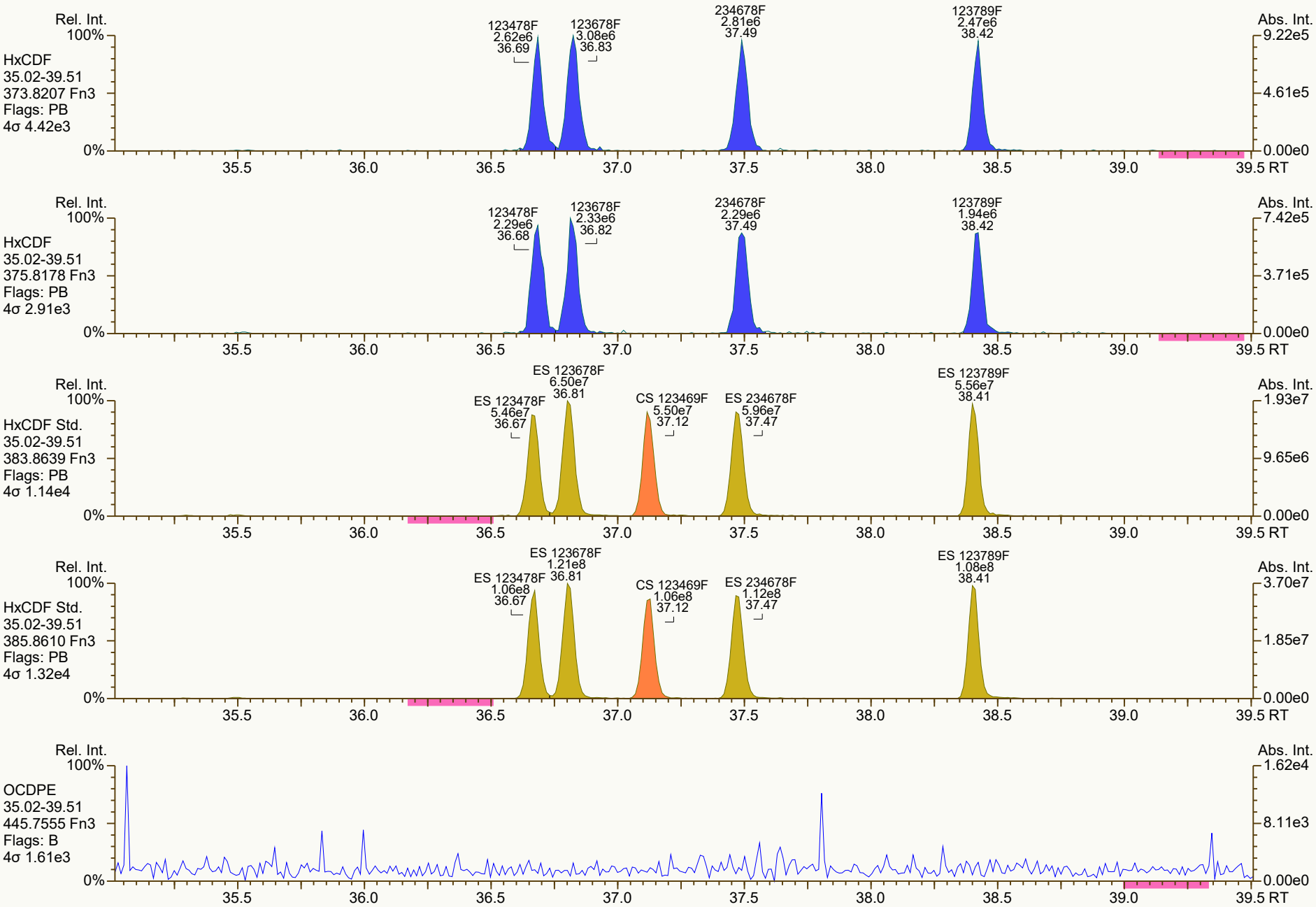

Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.43e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.60e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.89e3
12378F
3.18e6
32.38
23478F
3.14e6
33.47
Abs. Int.
8.91e5
4.45e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 4.90e3
12378F
2.07e6
32.38
23478F
1.92e6
33.47
RRF(23478F) = (3.14e6 + 1.92e6) * 100pg / (1.36e8 + 8.78e7) * 2.5pg * T = 0.904
PSW 27-Jul-2021 15:14
OK - CL 28Jul21
Abs. Int.
5.87e5
2.93e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.82e4
CS 12346F
1.31e8
31.84
ES 12378F
1.37e8
32.36
ES 23478F
1.36e8
33.45
Abs. Int.
4.22e7
2.11e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 3.06e4
CS 12346F
8.34e7
31.85
ES 12378F
8.59e7
32.36
ES 23478F
8.78e7
33.45
Abs. Int.
2.55e7
1.28e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.50e3
Abs. Int.
5.23e4
2.62e4
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

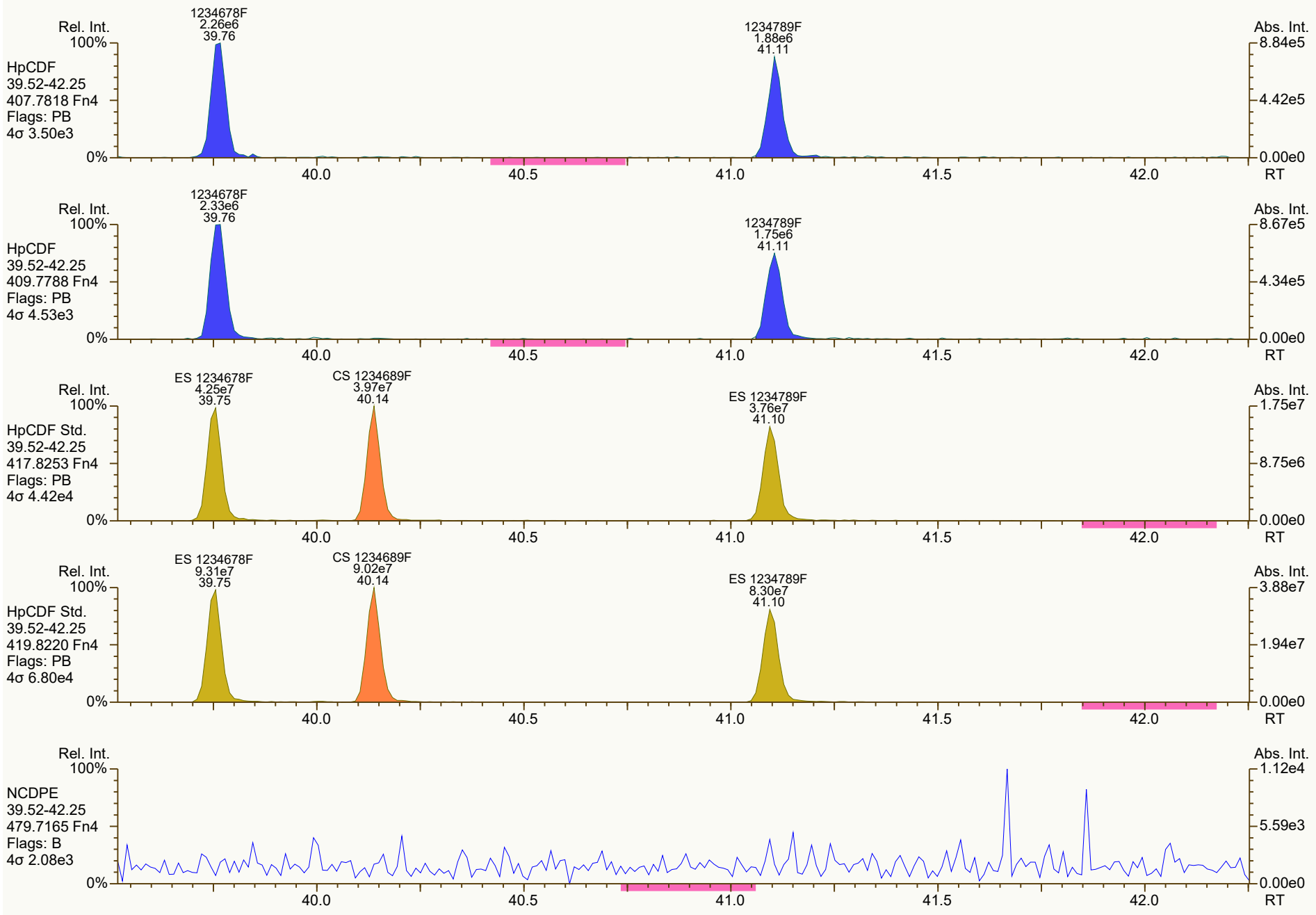
SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

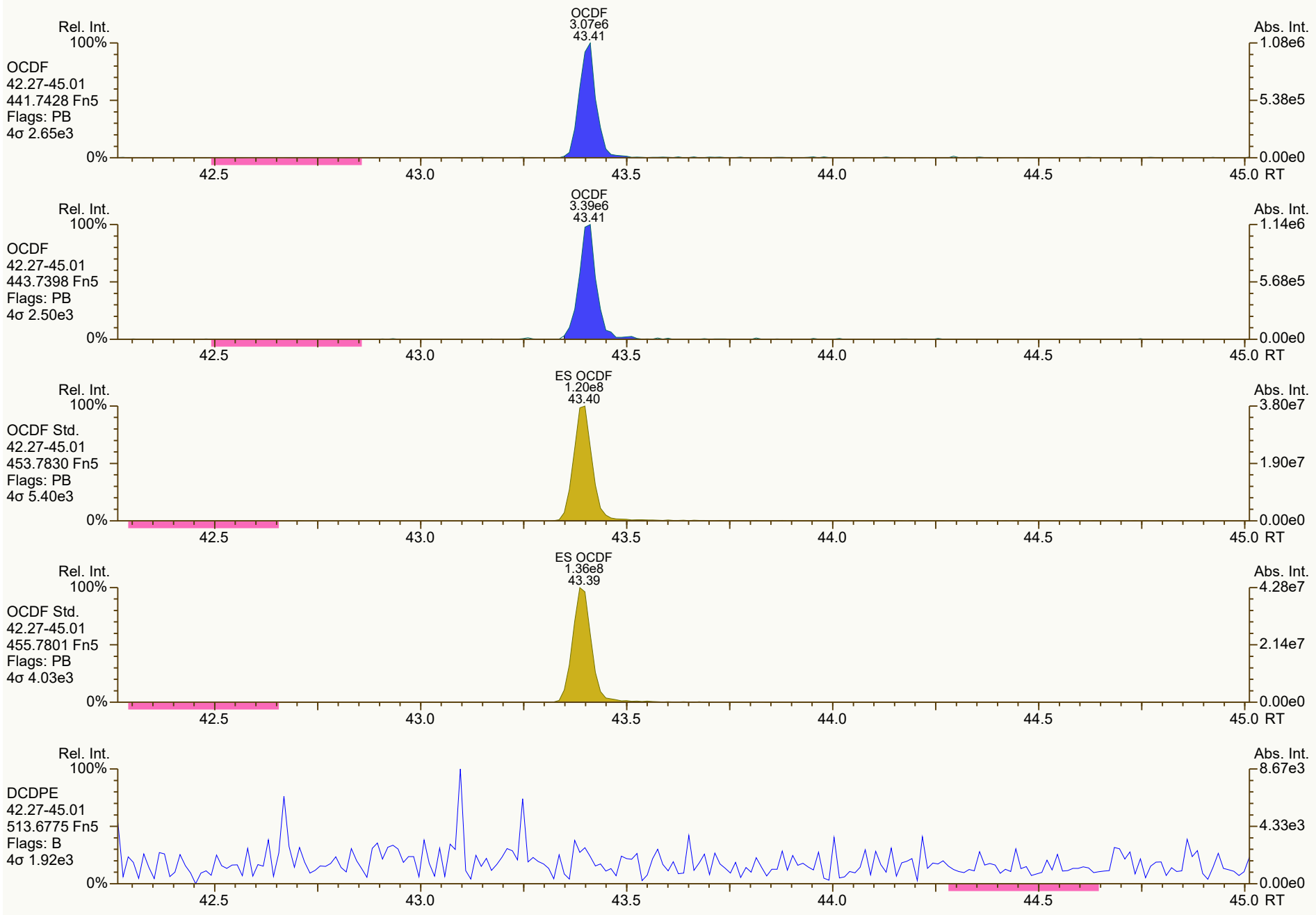
Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6555, 5794, 9510 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 3.50e3
1234678F
2.26e6
39.76
1234789F
1.88e6
41.11
Abs. Int.
8.84e5
4.42e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 4.53e3
1234678F
2.33e6
39.76
1234789F
1.75e6
41.11
Abs. Int.
8.67e5
4.34e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 4.42e4
ES 1234678F
4.25e7
39.75
CS 1234689F
3.97e7
40.14
ES 1234789F
3.76e7
41.10
Abs. Int.
1.75e7
8.75e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 6.80e4
ES 1234678F
9.31e7
39.75
CS 1234689F
9.02e7
40.14
ES 1234789F
8.30e7
41.10
Abs. Int.
3.88e7
1.94e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.08e3
Abs. Int.
1.12e4
5.59e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 2.65e3
0%
OCDF
3.07e6
43.41
Abs. Int.
1.08e6
5.38e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.50e3
0%
OCDF
3.39e6
43.41
Abs. Int.
1.14e6
5.68e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.40e3
0%
ES OCDF
1.20e8
43.40
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.03e3
0%
ES OCDF
1.36e8
43.39
Abs. Int.
4.28e7
2.14e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.67e3
4.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

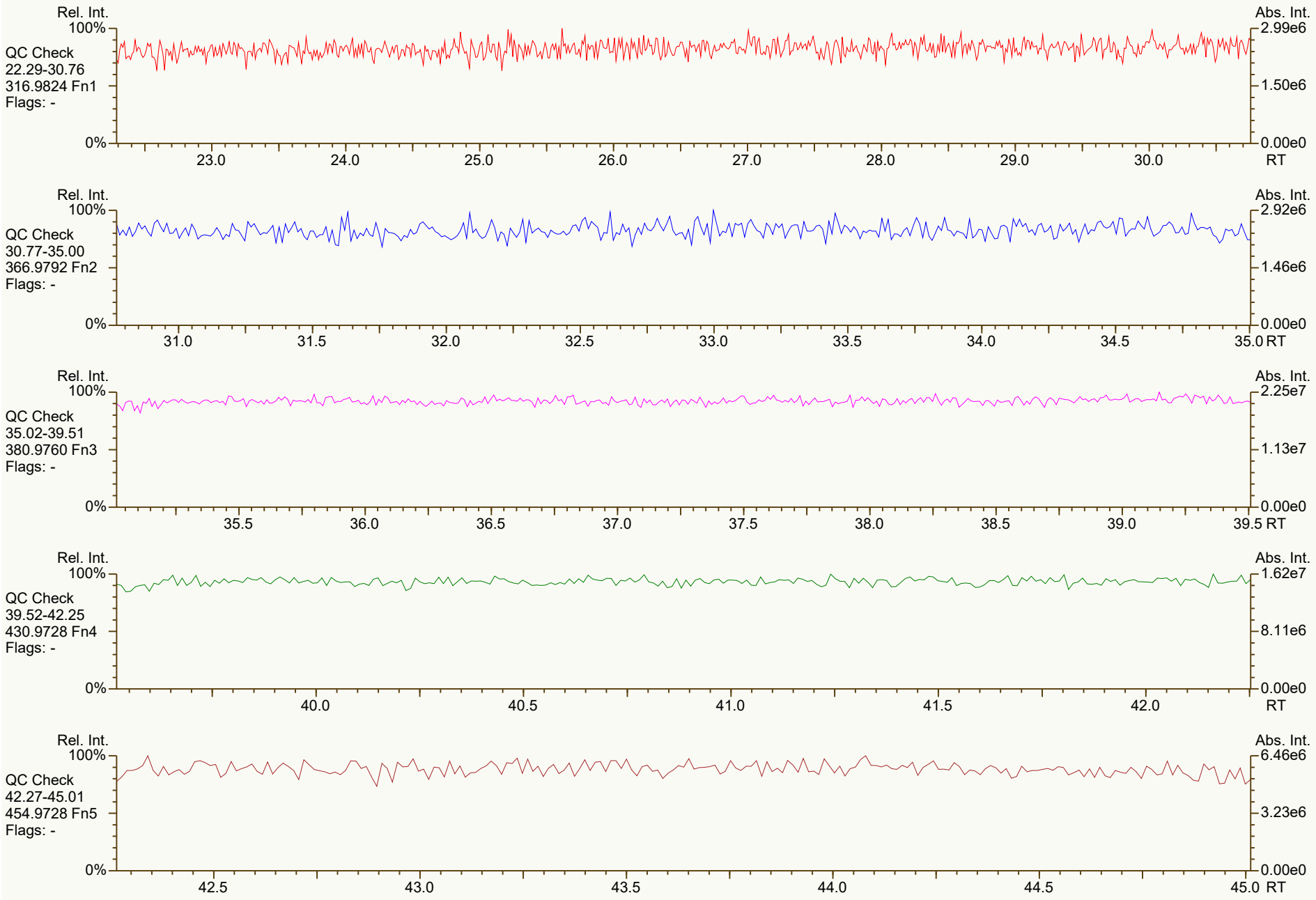
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

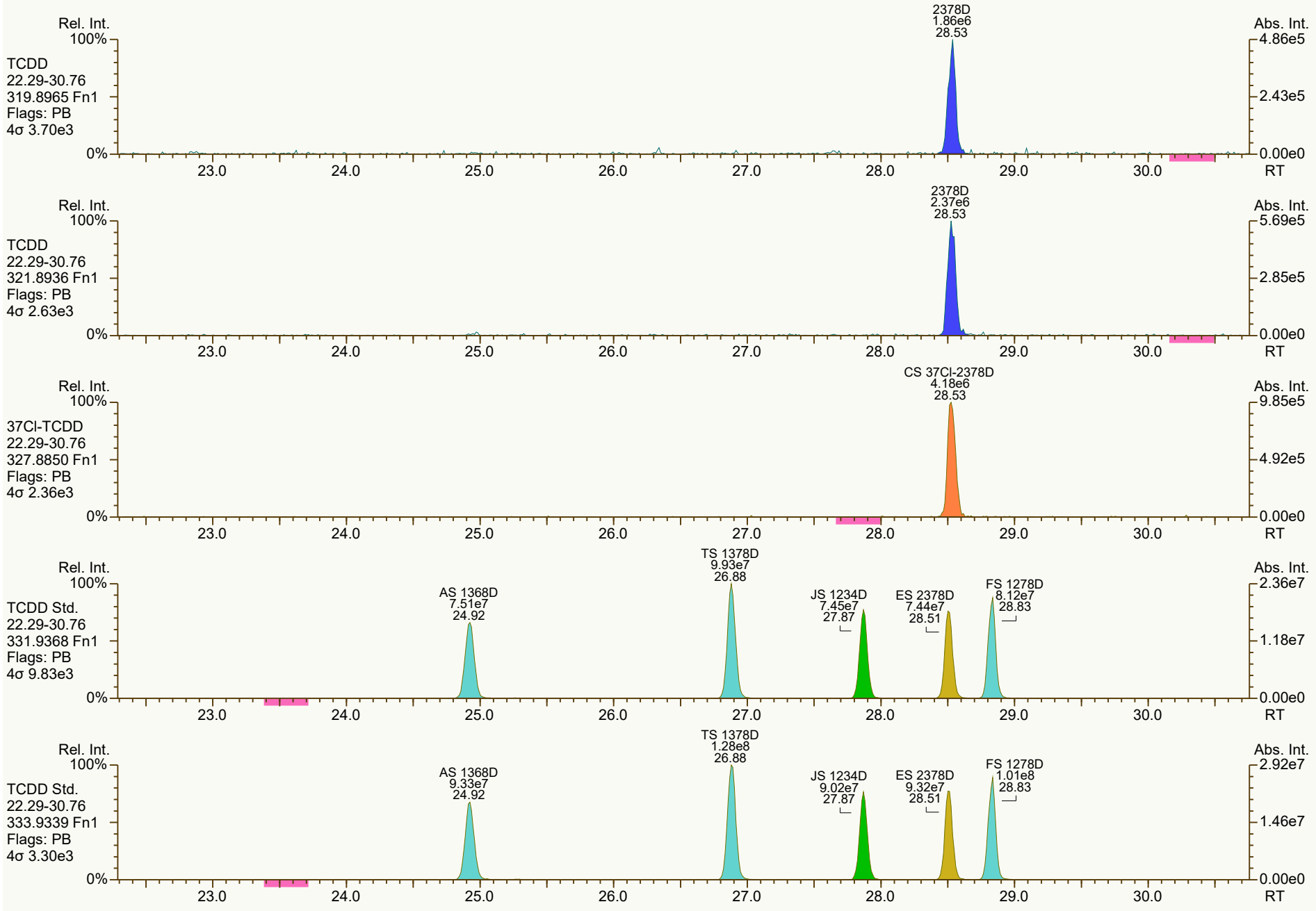
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	4.23E+06	0.79	Y	1.34	1.26	-6%
12378-PeCDD	33.81	1.67E+07	1.63	Y	1.06	1.02	-4%
123478-HxCDD	37.68	1.53E+07	1.32	Y	1.06	0.99	-6%
123678-HxCDD	37.80	1.52E+07	1.22	Y	1.08	1.02	-5%
123789-HxCDD	38.08	1.66E+07	1.25	Y	1.02	0.95	-6%
1234678-HpCDD	40.67	1.41E+07	1.01	Y	0.97	0.92	-6%
OCDD	43.23	2.33E+07	0.88	Y	1.07	1.01	-6%
2378-TCDF	27.68	5.04E+06	0.83	Y	0.96	0.90	-6%
12378-PeCDF	32.39	2.16E+07	1.63	Y	0.95	0.90	-5%
23478-PeCDF	33.48	2.12E+07	1.52	Y	0.94	0.90	-4%
123478-HxCDF	36.69	2.09E+07	1.25	Y	1.23	1.19	-4%
123678-HxCDF	36.83	2.13E+07	1.24	Y	1.13	1.07	-5%
234678-HxCDF	37.50	1.98E+07	1.20	Y	1.15	1.08	-6%
123789-HxCDF	38.43	1.89E+07	1.24	Y	1.14	1.09	-4%
1234678-HpCDF	39.77	1.87E+07	1.01	Y	1.36	1.31	-4%
1234789-HpCDF	41.12	1.60E+07	1.02	Y	1.30	1.26	-3%
OCDF	43.41	2.61E+07	0.92	Y	1.03	0.95	-7%
ES 2378-TCDD	28.51	1.68E+08	0.80	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.794	1.63E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.667	1.54E+08	1.28	Y	0.99	0.99	-1%
ES 123678-HxCDD	37.781	1.49E+08	1.24	Y	0.97	0.95	-2%
ES 123789-HxCDD	38.07	1.75E+08	1.26	Y	1.12	1.12	0%
ES 1234678-HpCDD	40.658	1.53E+08	1.06	Y	0.99	0.98	-1%
ES OCDD	43.222	2.31E+08	0.90	Y	0.78	0.74	-5%
ES 2378-TCDF	27.656	2.80E+08	0.80	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.368	2.40E+08	1.55	Y	0.93	0.92	-2%
ES 23478-PeCDF	33.459	2.36E+08	1.59	Y	0.92	0.90	-2%
ES 123478-HxCDF	36.674	1.76E+08	0.52	Y	1.14	1.13	-1%
ES 123678-HxCDF	36.814	1.99E+08	0.52	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.481	1.84E+08	0.52	Y	1.20	1.18	-2%
ES 123789-HxCDF	38.416	1.73E+08	0.52	Y	1.14	1.11	-2%
ES 1234678-HpCDF	39.761	1.43E+08	0.44	Y	0.95	0.92	-3%
ES 1234789-HpCDF	41.105	1.28E+08	0.46	Y	0.85	0.82	-3%
ES OCDF	43.404	2.74E+08	0.87	Y	0.93	0.88	-5%

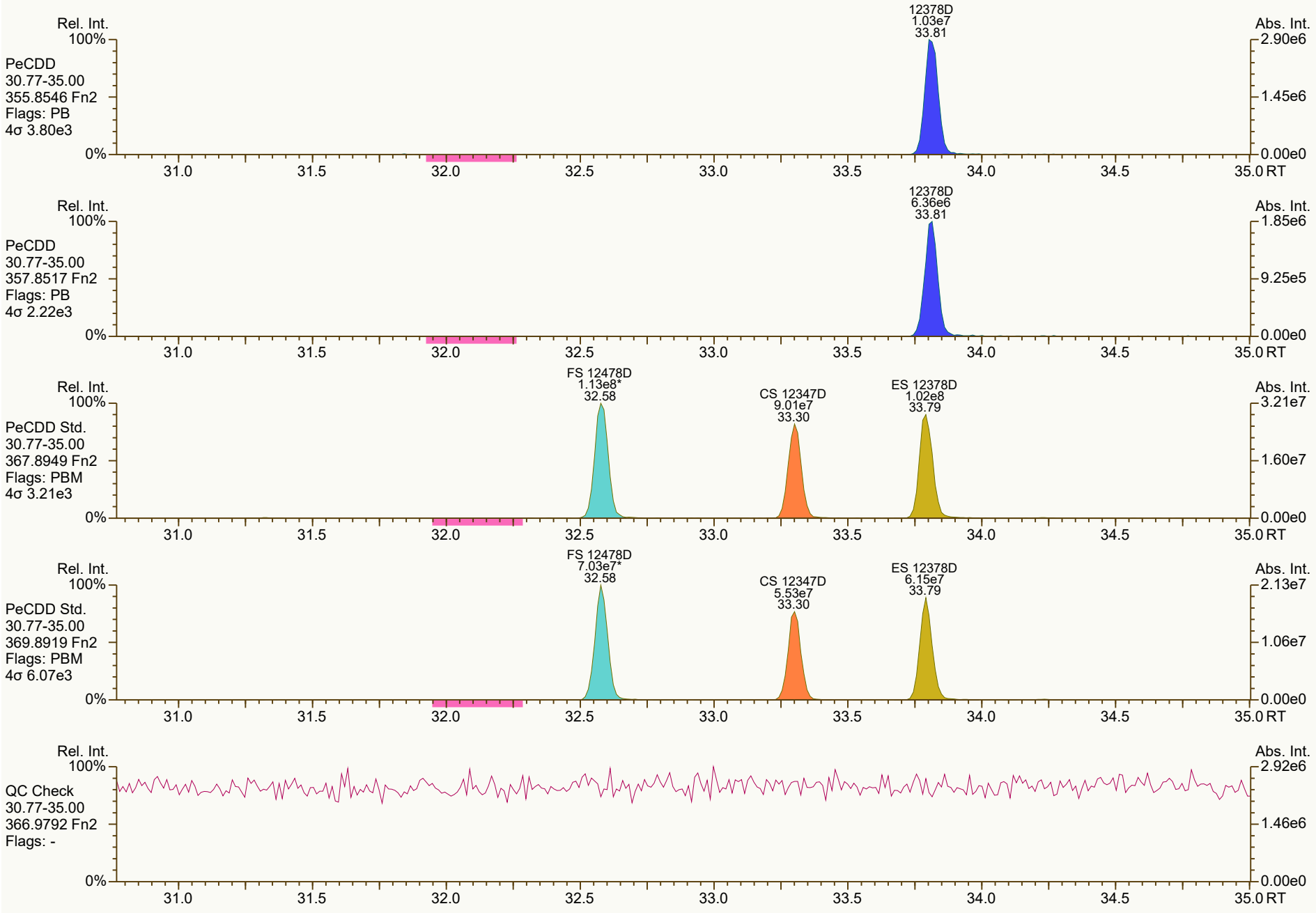
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

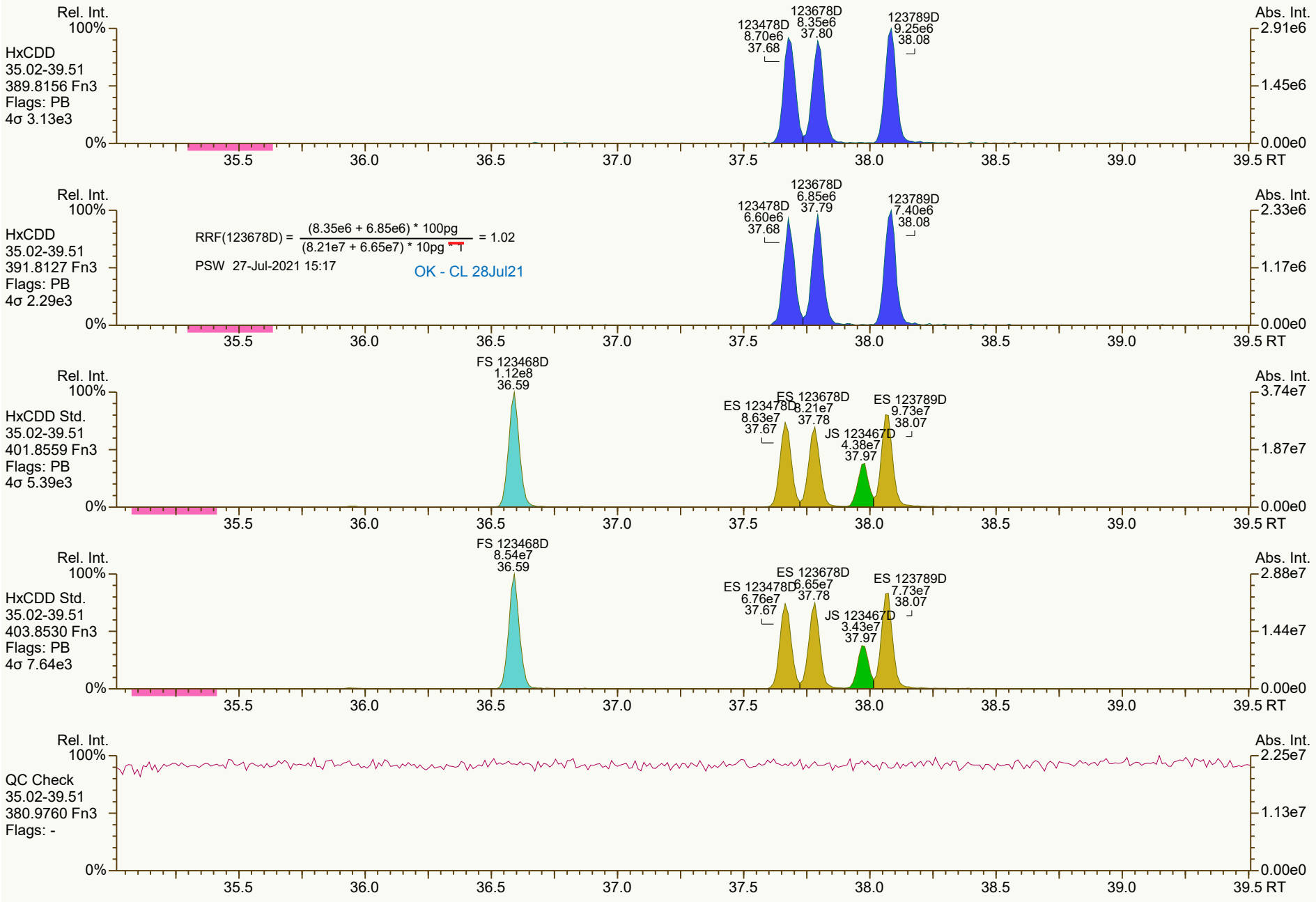
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.65E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.34	2.62E+08	0.75	Y	-	-	-
JS 123467-HxCDD	37.97	7.80E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.31	1.27	-3%
CS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.13	1.69E+08	0.52	Y	1.09	1.08	-1%
CS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.86	0.89	3%
SS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.13	1.69E+08	0.52	Y	0.84	0.85	1%
SS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.92	1.68E+08	0.81	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.81E+08	0.77	Y	1.08	1.07	-1%
FS 1278-TCDD	28.83	1.83E+08	0.80	Y	1.08	1.09	0%
FS 12478-PeCDD	32.58	1.83E+08	1.61	Y	1.09	1.12	3%
FS 123468-HxCDD	36.59	1.97E+08	1.31	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	2.12E+08	1.04	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	2.27E+08	0.78	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.23~~	~~1.51E+06~~	~~2.07~~	~~N~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.41~~	~~1.45E+06~~	~~3.13~~	~~N~~	~~0.06~~	~~0.05~~	~~-11%~~

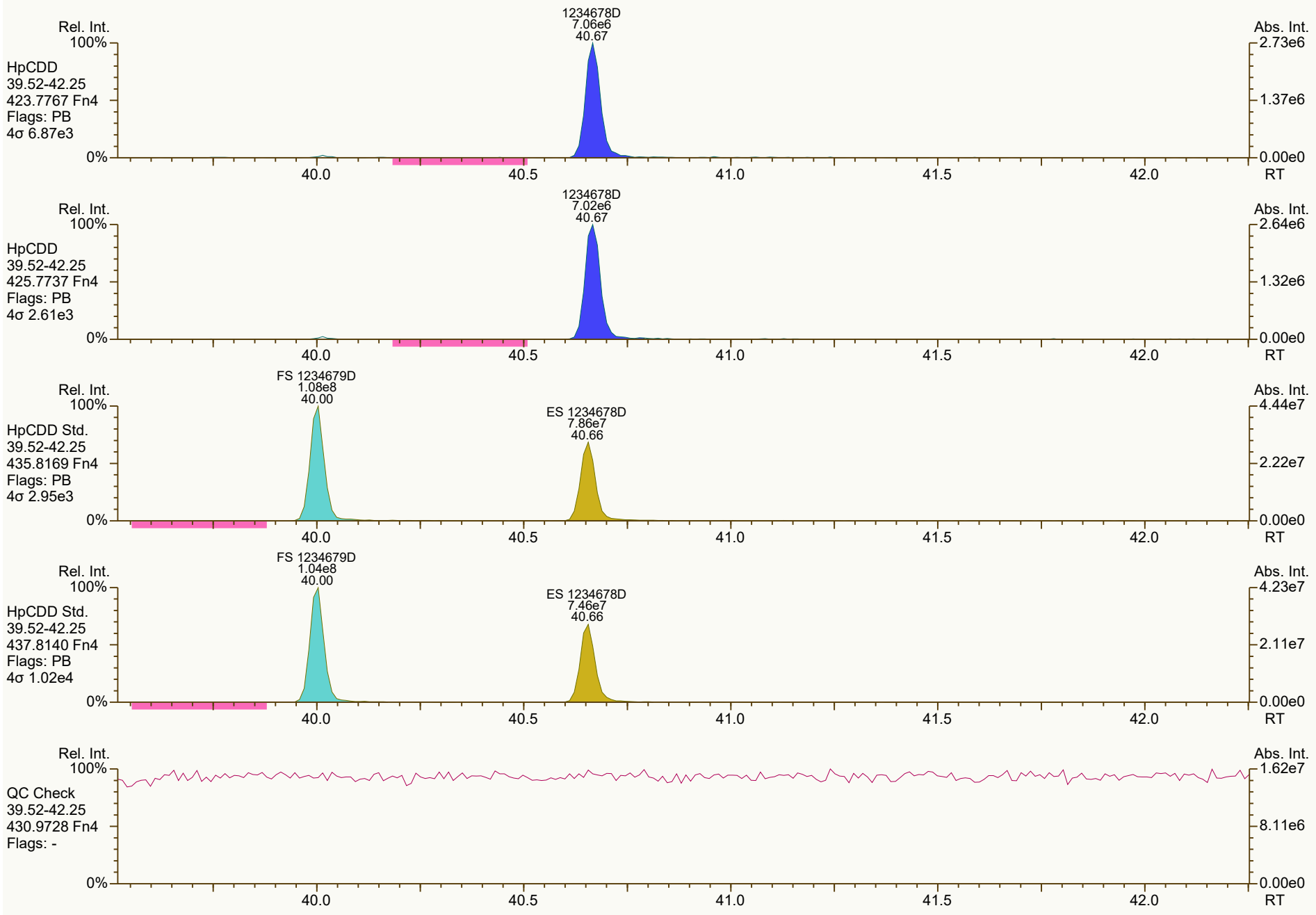
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.99e6
1.50e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.46e6
3.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

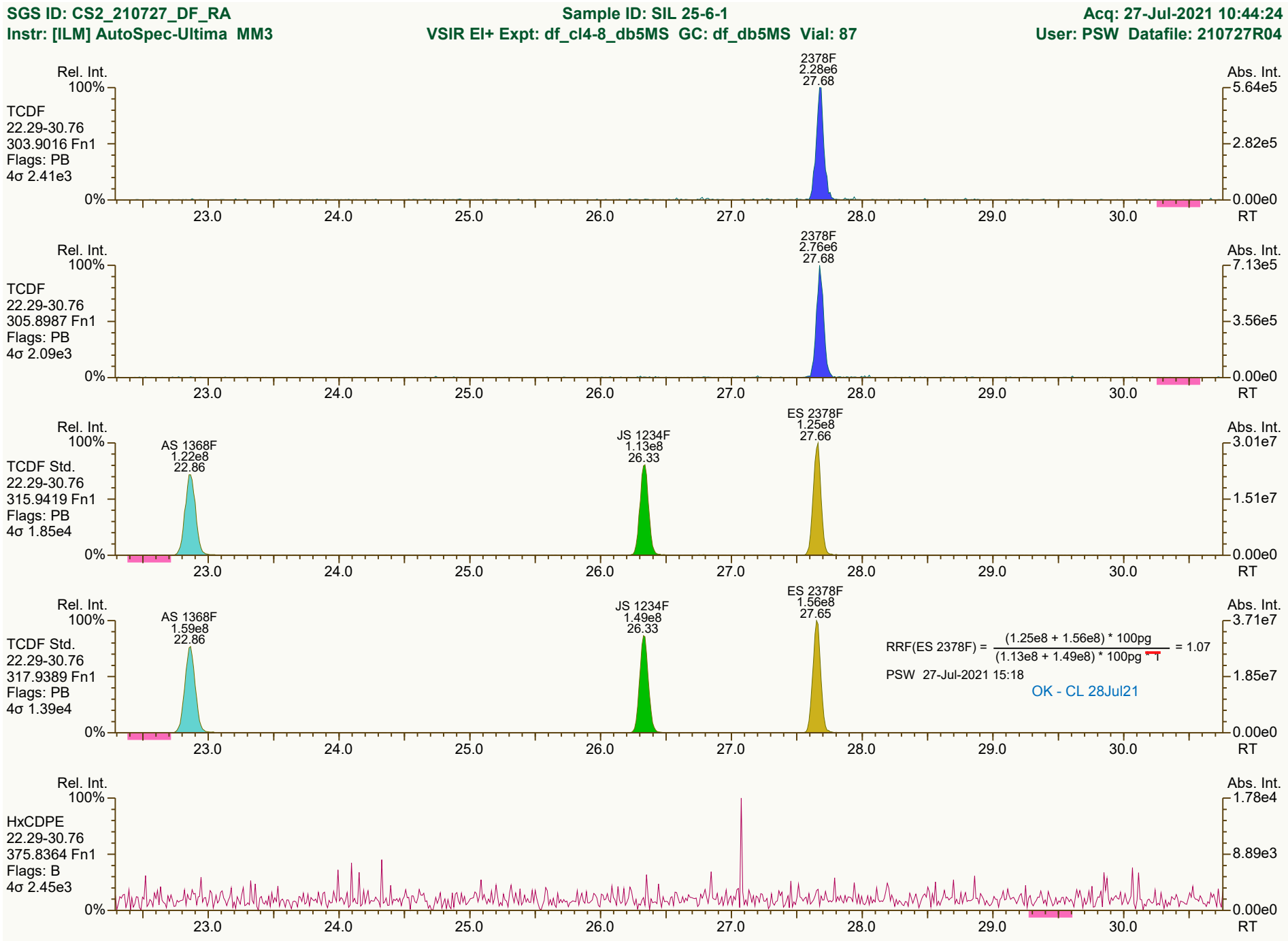

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.70e3
0%
2378D
1.86e6
28.53
Abs. Int.
4.86e5
2.43e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.63e3
0%
2378D
2.37e6
28.53
Abs. Int.
5.69e5
2.85e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.36e3
0%
CS 37Cl-2378D
4.18e6
28.53
Abs. Int.
9.85e5
4.92e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 9.83e3
0%
AS 1368D
7.51e7
24.92
TS 1378D
9.93e7
26.88
JS 1234D
7.45e7
27.87
ES 2378D
7.44e7
28.51
FS 1278D
8.12e7
28.83
Abs. Int.
2.36e7
1.18e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.30e3
0%
AS 1368D
9.33e7
24.92
TS 1378D
1.28e8
26.88
JS 1234D
9.02e7
27.87
ES 2378D
9.32e7
28.51
FS 1278D
1.01e8
28.83
Abs. Int.
2.92e7
1.46e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.80e3
12378D
1.03e7
33.81
Abs. Int.
2.90e6
1.45e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.22e3
12378D
6.36e6
33.81
Abs. Int.
1.85e6
9.25e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.21e3
FS 12478D
1.13e8*
32.58
CS 12347D
9.01e7
33.30
ES 12378D
1.02e8
33.79
Abs. Int.
3.21e7
1.60e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 6.07e3
FS 12478D
7.03e7*
32.58
CS 12347D
5.53e7
33.30
ES 12378D
6.15e7
33.79
Abs. Int.
2.13e7
1.06e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
Abs. Int.
2.92e6
1.46e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

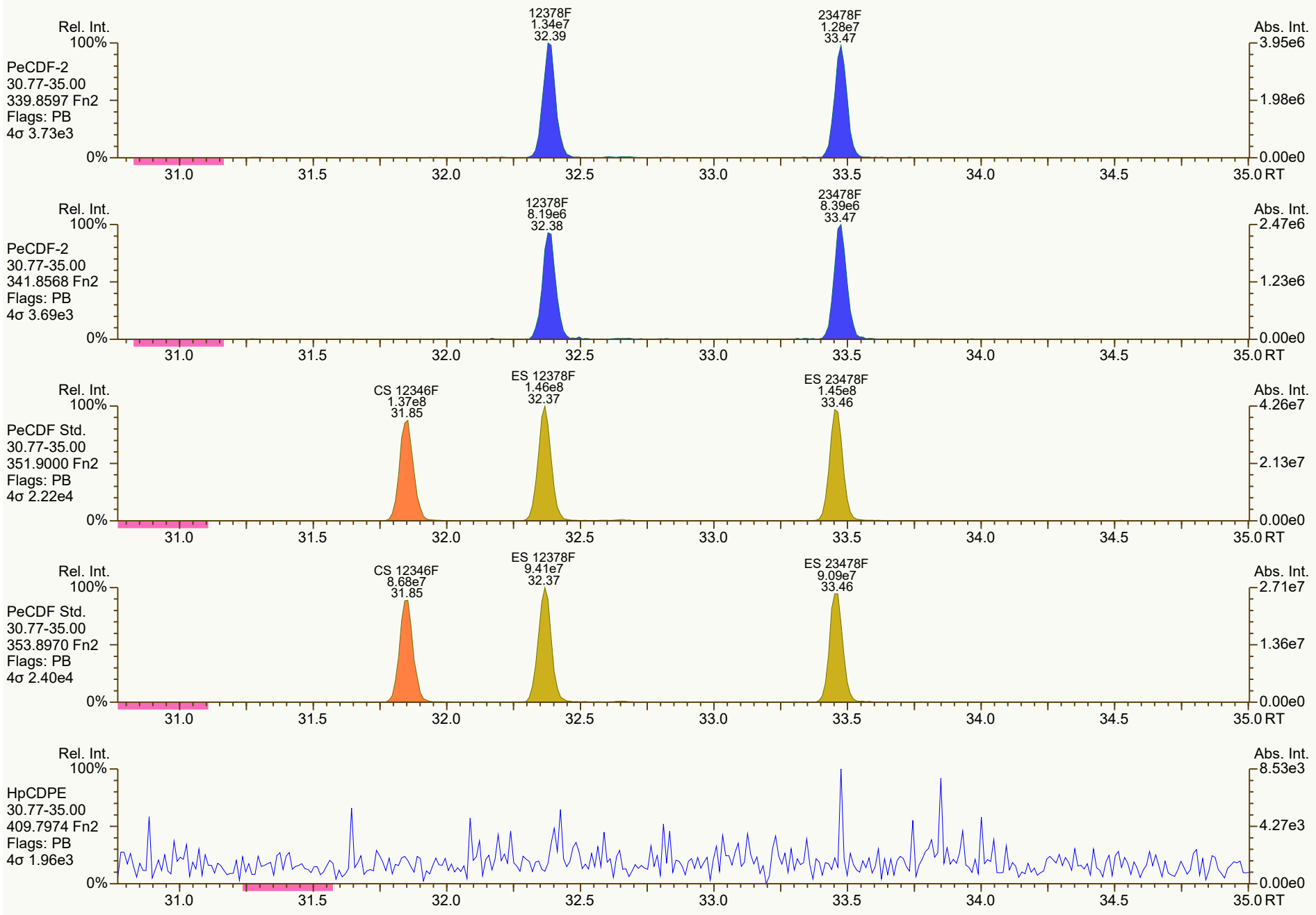

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.13e3
123478D 8.70e6 37.68
123678D 8.35e6 37.80
123789D 9.25e6 38.08
Abs. Int.
2.91e6
1.45e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.29e3
RRF(123678D) = (8.35e6 + 6.85e6) * 100pg / (8.21e7 + 6.65e7) * 10pg = 1.02
PSW 27-Jul-2021 15:17
OK - CL 28Jul21
123478D 6.60e6 37.68
123678D 6.85e6 37.79
123789D 7.40e6 38.08
2.33e6
1.17e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 5.39e3
FS 123468D 1.12e8 36.59
ES 123478D 8.63e7 37.67
ES 123678D 8.21e7 37.78
JS 123467D 4.38e7 37.97
ES 123789D 9.73e7 38.07
3.74e7
1.87e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 7.64e3
FS 123468D 8.54e7 36.59
ES 123478D 6.76e7 37.67
ES 123678D 6.65e7 37.78
JS 123467D 3.43e7 37.97
ES 123789D 7.73e7 38.07
2.88e7
1.44e7
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.25e7
1.13e7

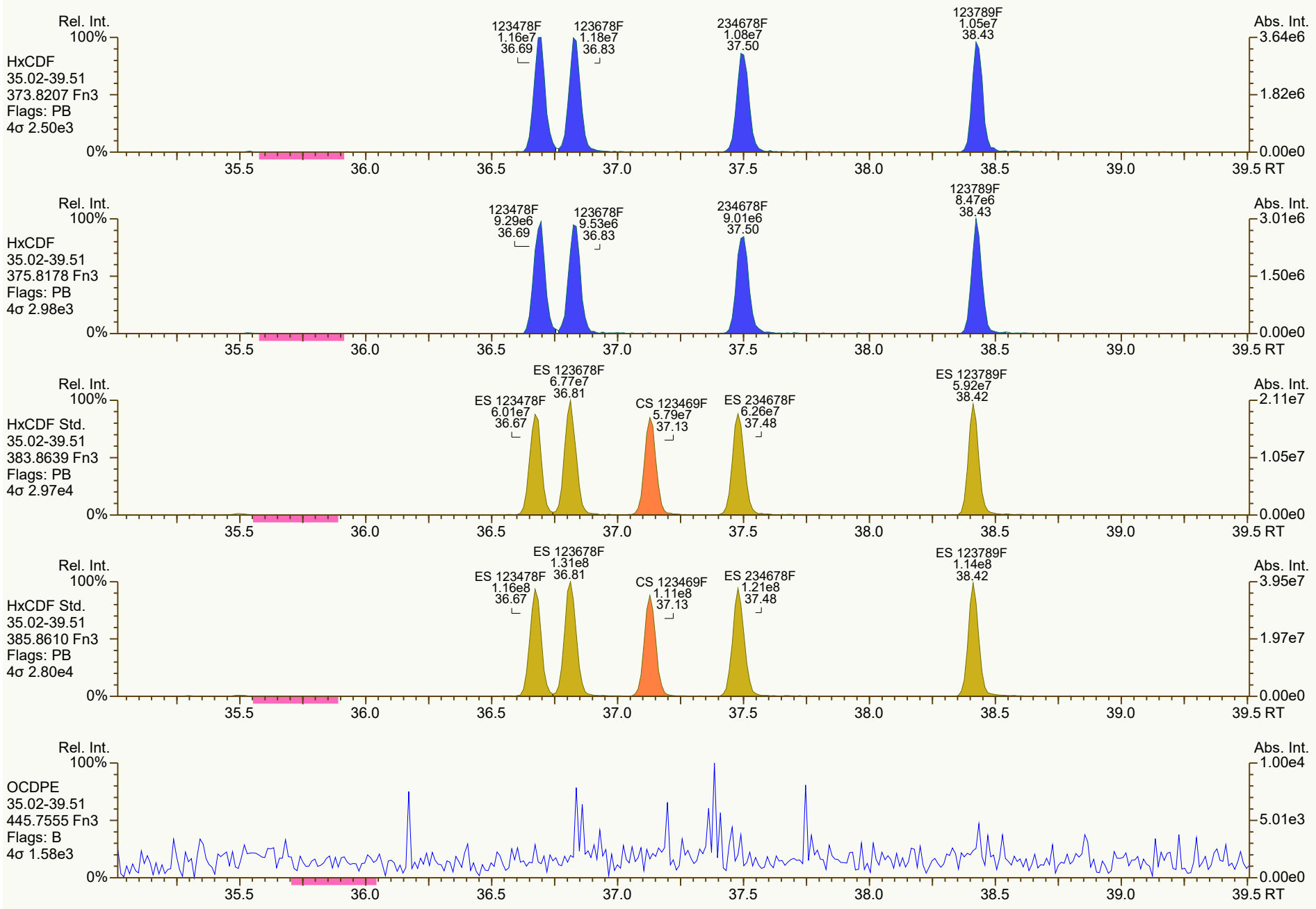

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 6.87e3
0%
1234678D
7.06e6
40.67
Abs. Int.
2.73e6
1.37e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 2.61e3
0%
1234678D
7.02e6
40.67
Abs. Int.
2.64e6
1.32e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.95e3
0%
FS 1234679D
1.08e8
40.00
ES 1234678D
7.86e7
40.66
Abs. Int.
4.44e7
2.22e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.02e4
0%
FS 1234679D
1.04e8
40.00
ES 1234678D
7.46e7
40.66
Abs. Int.
4.23e7
2.11e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0

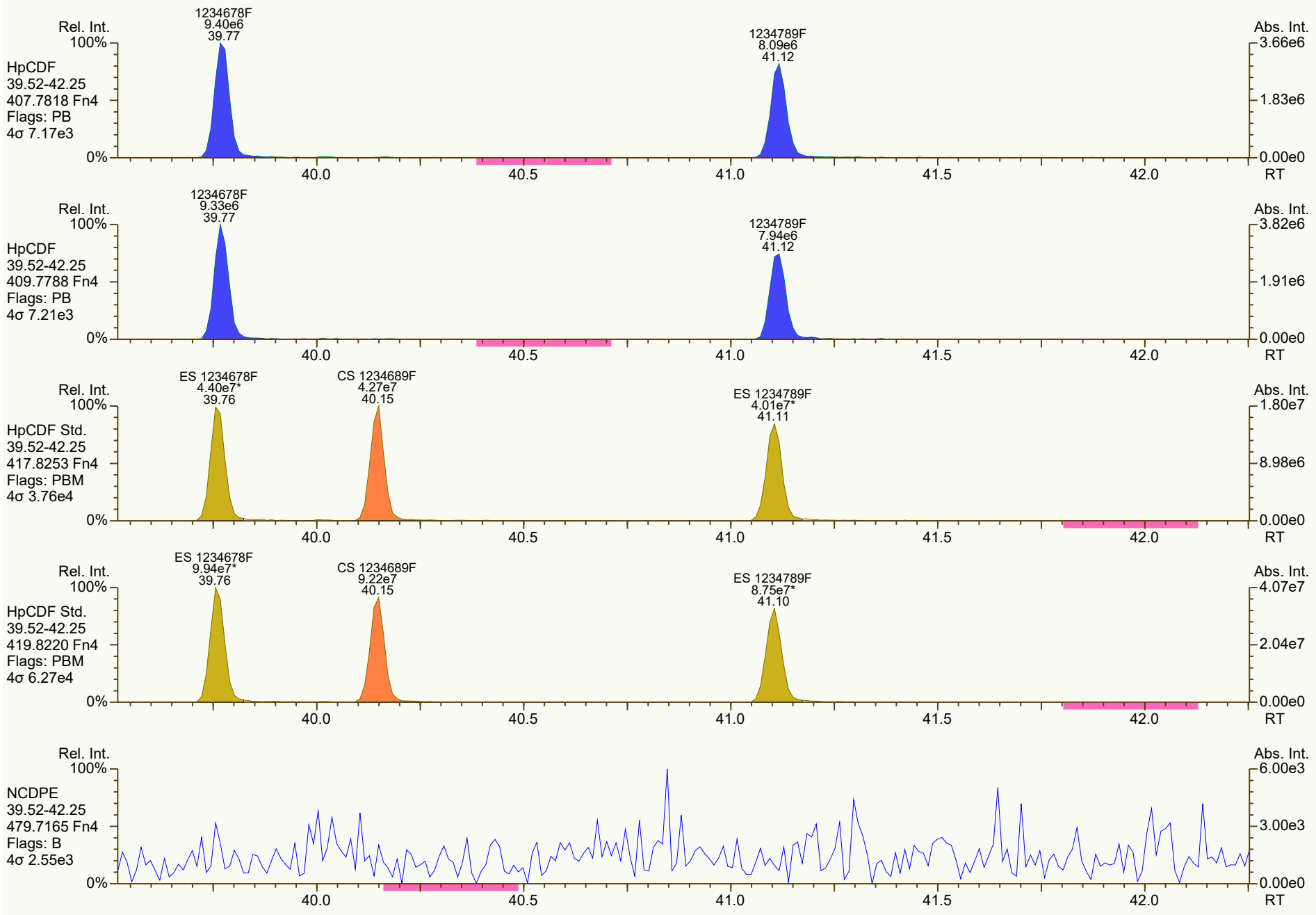

OCDD
1.09e7
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 3.62e3
0%
Abs. Int.
3.54e6
1.77e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.24e7
43.23
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 1.67e3
4.01e6
2.00e6
ES OCDD
1.10e8
43.22
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 3.79e3
3.53e7
1.77e7
ES OCDD
1.22e8
43.22
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 7.59e3
3.84e7
1.92e7
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
6.46e6
3.23e6

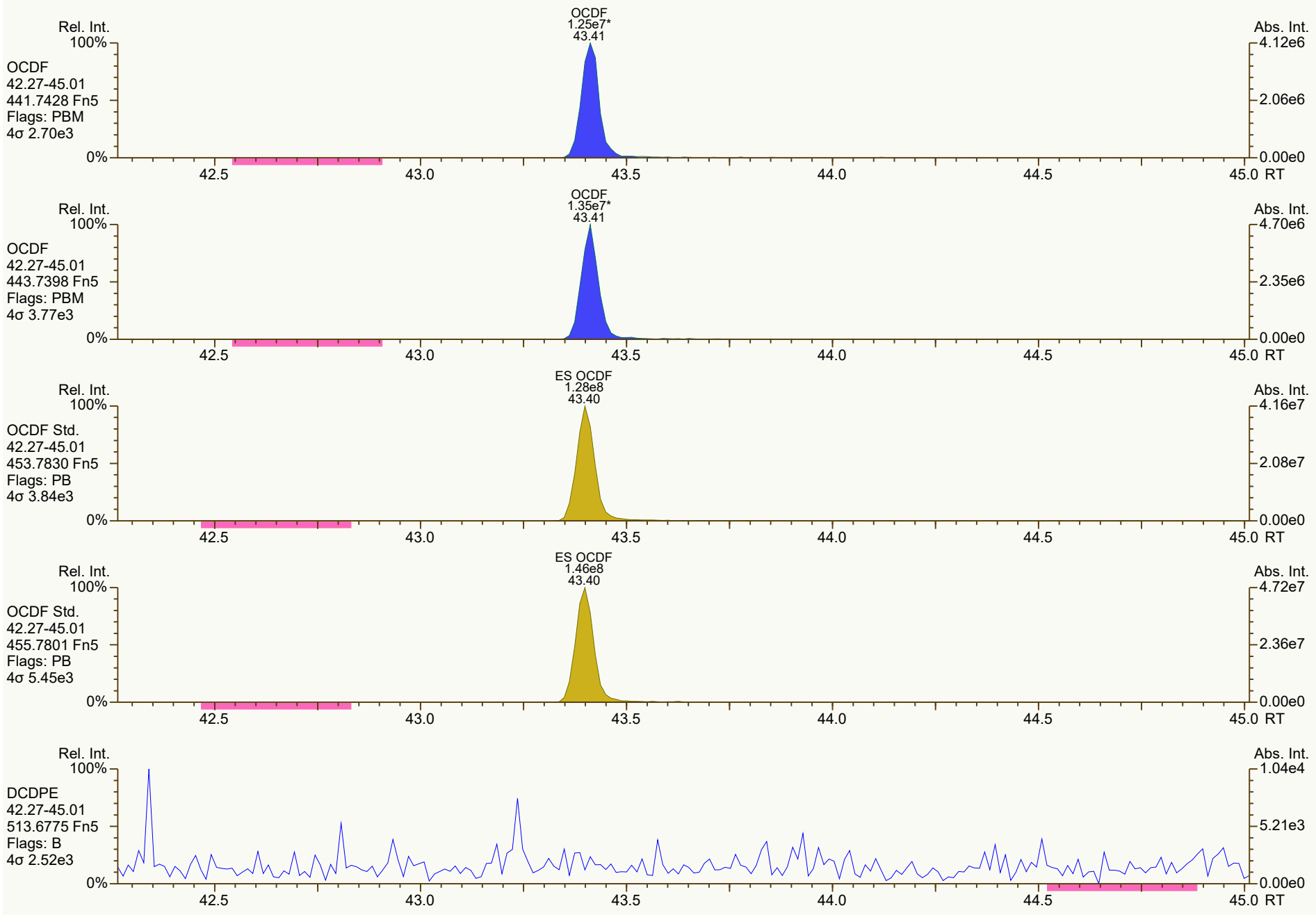

SGS ID: CS2_210727_DF_RA
Sample ID: SIL 25-6-1
Acq: 27-Jul-2021 10:44:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
User: PSW Datafile: 210727R04
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.41e3
2378F
2.28e6
27.68
5.64e5
2.82e5
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.09e3
2378F
2.76e6
27.68
7.13e5
3.56e5
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.85e4
AS 1368F
1.22e8
22.86
JS 1234F
1.13e8
26.33
ES 2378F
1.25e8
27.66
3.01e7
1.51e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.39e4
AS 1368F
1.59e8
22.86
JS 1234F
1.49e8
26.33
ES 2378F
1.56e8
27.65
RRF(ES 2378F) = (1.25e8 + 1.56e8) * 100pg / (1.13e8 + 1.49e8) * 100pg * 1 = 1.07
PSW 27-Jul-2021 15:18
OK - CL 28Jul21
3.71e7
1.85e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.45e3
1.78e4
8.89e3
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9273, 2389, 5803 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.66e4
8.28e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.30e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.23e3
2.64e4
1.32e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.99e6
1.50e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 3.73e3
0%
12378F
1.34e7
32.39
23478F
1.28e7
33.47
Abs. Int.
3.95e6
1.98e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.69e3
0%
12378F
8.19e6
32.38
23478F
8.39e6
33.47
Abs. Int.
2.47e6
1.23e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.22e4
0%
CS 12346F
1.37e8
31.85
ES 12378F
1.46e8
32.37
ES 23478F
1.45e8
33.46
Abs. Int.
4.26e7
2.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.40e4
0%
CS 12346F
8.68e7
31.85
ES 12378F
9.41e7
32.37
ES 23478F
9.09e7
33.46
Abs. Int.
2.71e7
1.36e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: PB
4σ 1.96e3
0%
Abs. Int.
8.53e3
4.27e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.50e3
0%
123478F
1.16e7
36.69
123678F
1.18e7
36.83
234678F
1.08e7
37.50
123789F
1.05e7
38.43
Abs. Int.
3.64e6
1.82e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 2.98e3
123478F
9.29e6
36.69
123678F
9.53e6
36.83
234678F
9.01e6
37.50
123789F
8.47e6
38.43
3.01e6
1.50e6
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 2.97e4
ES 123478F
6.01e7
36.67
ES 123678F
6.77e7
36.81
CS 123469F
5.79e7
37.13
ES 234678F
6.26e7
37.48
ES 123789F
5.92e7
38.42
2.11e7
1.05e7
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.80e4
ES 123478F
1.16e8
36.67
ES 123678F
1.31e8
36.81
CS 123469F
1.11e8
37.13
ES 234678F
1.21e8
37.48
ES 123789F
1.14e8
38.42
3.95e7
1.97e7
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.58e3
1.00e4
5.01e3


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 7.17e3
1234678F
9.40e6
39.77
1234789F
8.09e6
41.12
Abs. Int.
3.66e6
1.83e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 7.21e3
1234678F
9.33e6
39.77
1234789F
7.94e6
41.12
Abs. Int.
3.82e6
1.91e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.76e4
ES 1234678F
4.40e7*
39.76
CS 1234689F
4.27e7
40.15
ES 1234789F
4.01e7*
41.11
Abs. Int.
1.80e7
8.98e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 6.27e4
ES 1234678F
9.94e7*
39.76
CS 1234689F
9.22e7
40.15
ES 1234789F
8.75e7*
41.10
Abs. Int.
4.07e7
2.04e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.55e3
Abs. Int.
6.00e3
3.00e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PBM
4σ 2.70e3
0%
OCDF
1.25e7*
43.41
Abs. Int.
4.12e6
2.06e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PBM
4σ 3.77e3
0%
OCDF
1.35e7*
43.41
Abs. Int.
4.70e6
2.35e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 3.84e3
0%
ES OCDF
1.28e8
43.40
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 5.45e3
0%
ES OCDF
1.46e8
43.40
Abs. Int.
4.72e7
2.36e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.52e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

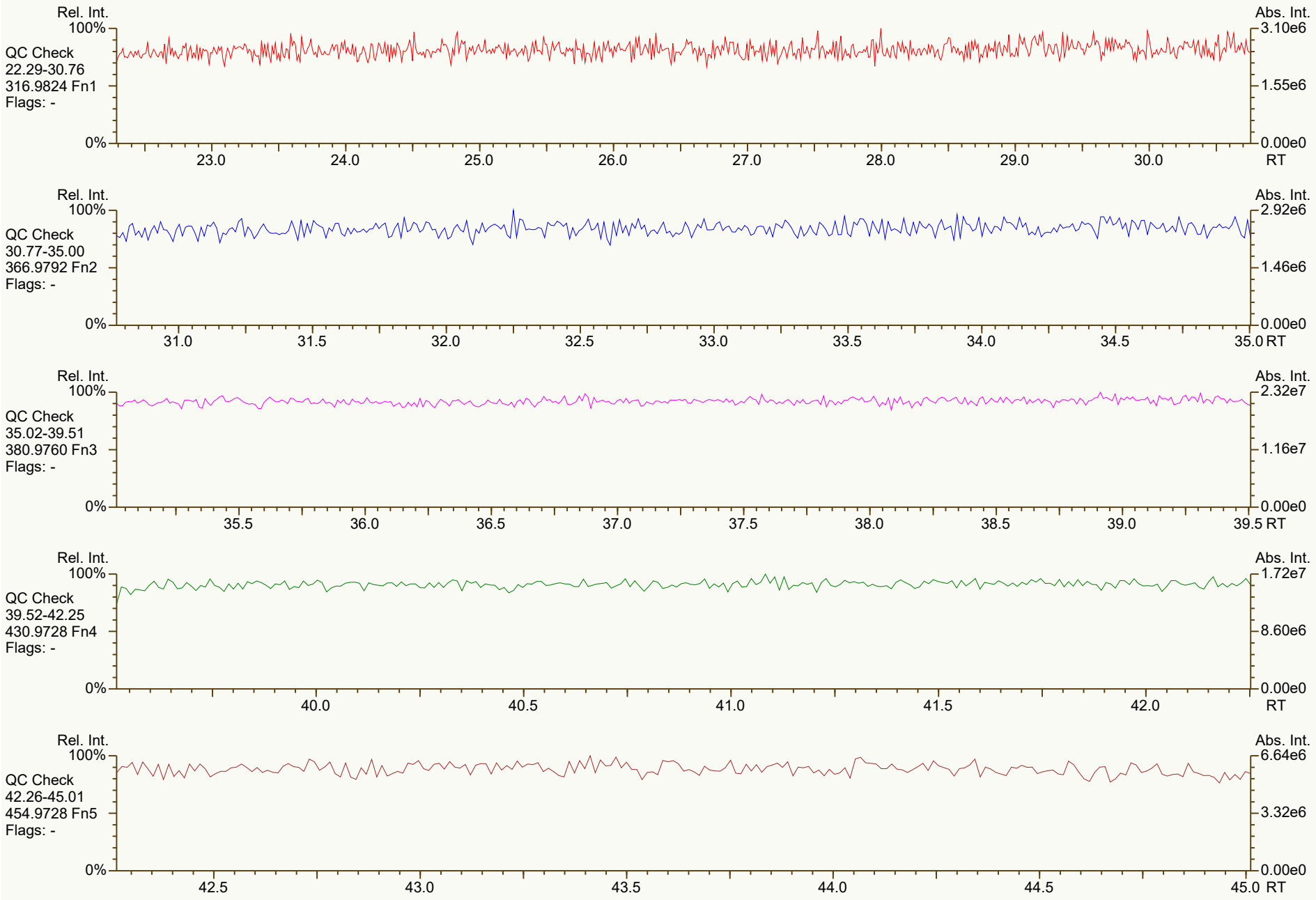
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

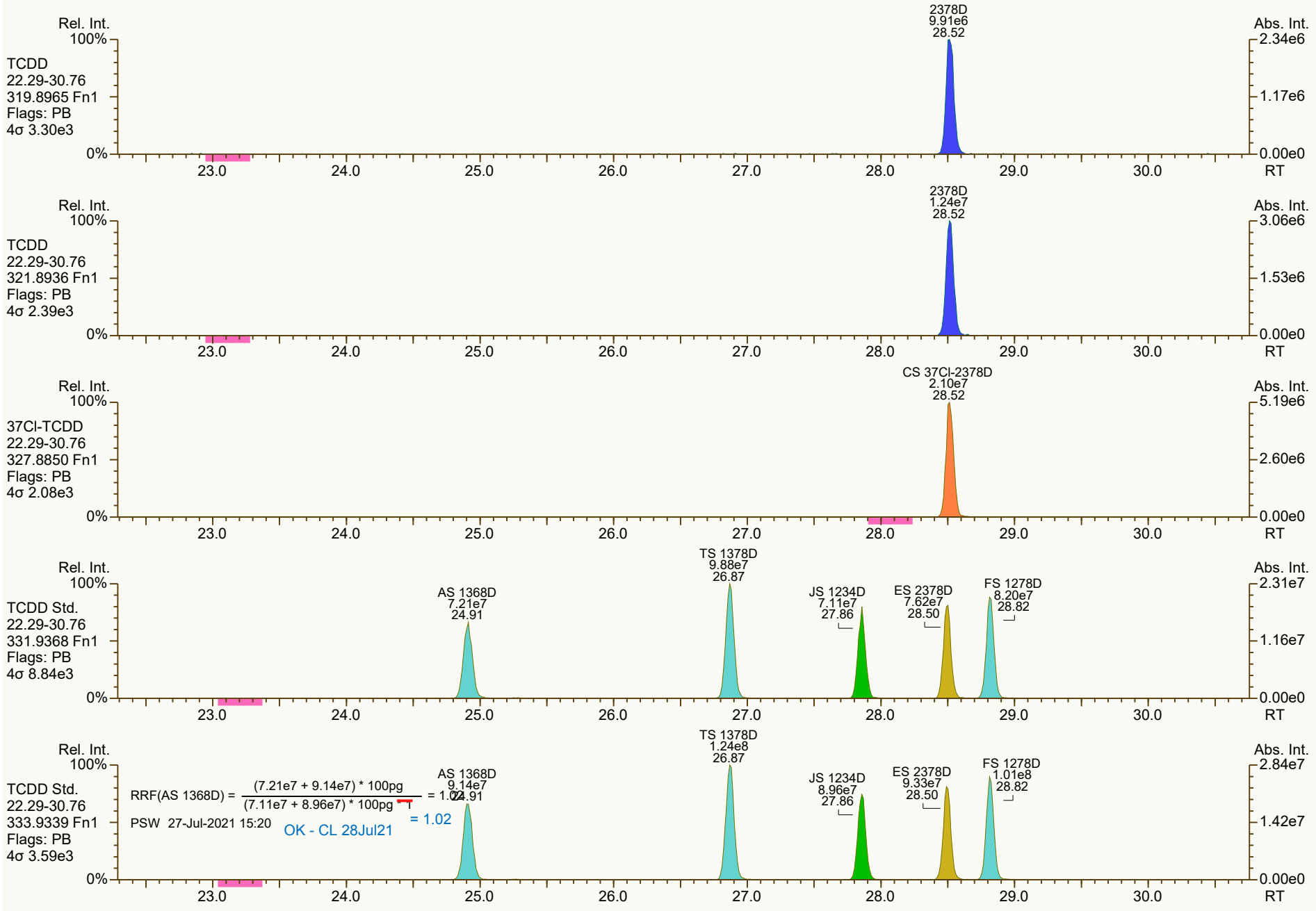
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.23E+07	0.80	Y	1.34	1.32	-2%
12378-PeCDD	33.80	8.56E+07	1.57	Y	1.06	1.05	-1%
123478-HxCDD	37.67	7.63E+07	1.25	Y	1.06	1.05	-1%
123678-HxCDD	37.78	7.89E+07	1.25	Y	1.08	1.08	0%
123789-HxCDD	38.07	8.22E+07	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.66	7.06E+07	1.03	Y	0.97	0.95	-2%
OCDD	43.22	1.21E+08	0.89	Y	1.07	1.07	0%
2378-TCDF	27.66	2.66E+07	0.80	Y	0.96	0.95	-1%
12378-PeCDF	32.37	1.11E+08	1.56	Y	0.95	0.94	-1%
23478-PeCDF	33.46	1.09E+08	1.56	Y	0.94	0.92	-2%
123478-HxCDF	36.68	1.05E+08	1.22	Y	1.23	1.22	-2%
123678-HxCDF	36.82	1.08E+08	1.25	Y	1.13	1.10	-2%
234678-HxCDF	37.49	1.02E+08	1.24	Y	1.15	1.14	-1%
123789-HxCDF	38.42	9.59E+07	1.23	Y	1.14	1.14	0%
1234678-HpCDF	39.76	9.62E+07	1.03	Y	1.36	1.34	-1%
1234789-HpCDF	41.10	8.35E+07	1.03	Y	1.30	1.34	3%
OCDF	43.41	1.40E+08	0.89	Y	1.03	1.03	0%
ES 2378-TCDD	28.50	1.70E+08	0.82	Y	1.03	1.05	2%
ES 12378-PeCDD	33.782	1.63E+08	1.65	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.654	1.45E+08	1.26	Y	0.99	1.00	0%
ES 123678-HxCDD	37.768	1.46E+08	1.27	Y	0.97	1.01	3%
ES 123789-HxCDD	38.057	1.66E+08	1.23	Y	1.12	1.14	1%
ES 1234678-HpCDD	40.644	1.48E+08	1.08	Y	0.99	1.02	3%
ES OCDD	43.211	2.25E+08	0.88	Y	0.78	0.77	-1%
ES 2378-TCDF	27.643	2.80E+08	0.79	Y	1.08	1.09	1%
ES 12378-PeCDF	32.354	2.37E+08	1.58	Y	0.93	0.93	-1%
ES 23478-PeCDF	33.446	2.37E+08	1.53	Y	0.92	0.93	0%
ES 123478-HxCDF	36.661	1.72E+08	0.52	Y	1.14	1.18	4%
ES 123678-HxCDF	36.801	1.96E+08	0.52	Y	1.30	1.35	4%
ES 234678-HxCDF	37.469	1.79E+08	0.54	Y	1.20	1.23	2%
ES 123789-HxCDF	38.404	1.68E+08	0.52	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.75	1.43E+08	0.45	Y	0.95	0.98	4%
ES 1234789-HpCDF	41.092	1.25E+08	0.44	Y	0.85	0.86	1%
ES OCDF	43.395	2.71E+08	0.89	Y	0.93	0.93	1%

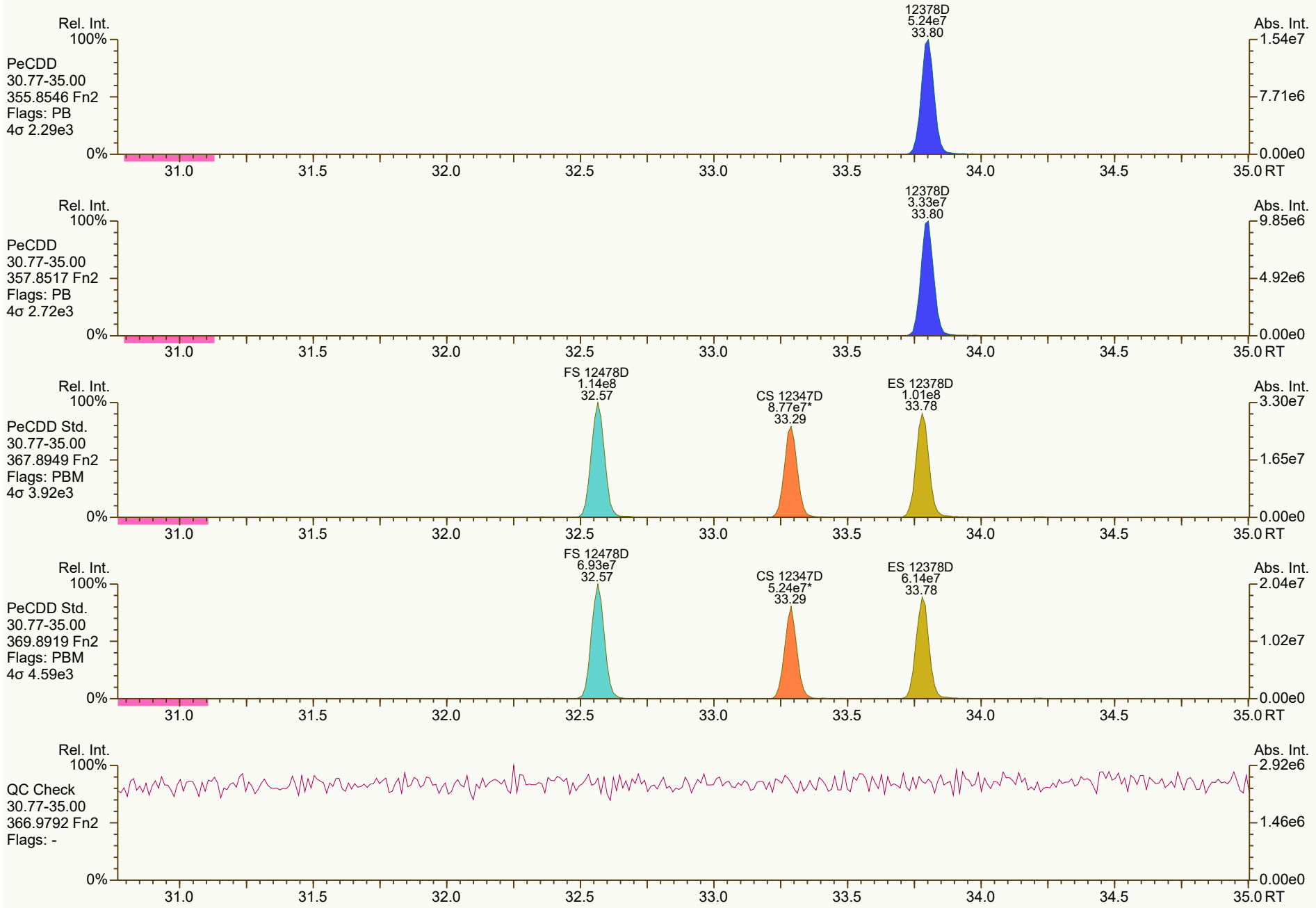
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

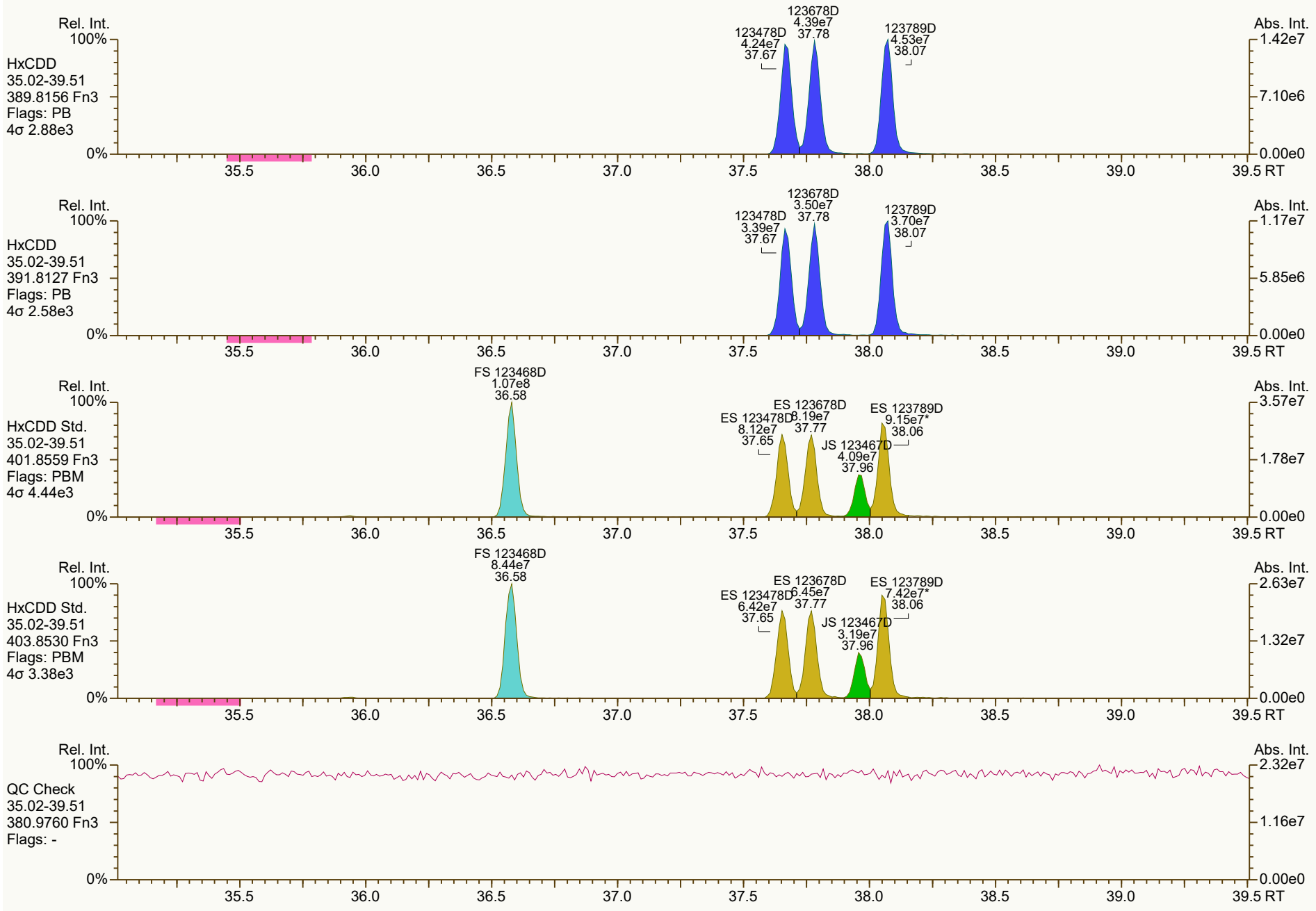
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.61E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.32	2.56E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.96	7.28E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.31	1.30	0%
CS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.89	0.87	-2%
CS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.87	0.89	2%
CS 123469-HxCDF	37.12	1.65E+08	0.52	Y	1.09	1.14	4%
CS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.86	0.92	7%
SS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.26	1.24	-2%
SS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.86	0.86	0%
SS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.93	0.96	3%
SS 123469-HxCDF	37.12	1.65E+08	0.52	Y	0.84	0.84	0%
SS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.91	1.64E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.85	2.82E+08	0.79	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.83E+08	0.81	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.84E+08	1.65	Y	1.09	1.13	3%
FS 123468-HxCDD	36.58	1.91E+08	1.27	Y	1.26	1.32	4%
FS 1234679-HpCDD	39.99	2.10E+08	1.06	Y	1.36	1.42	5%
TS 1378-TCDD	26.87	2.23E+08	0.80	Y	1.35	1.31	-3%
~~OCDD-a~~	~~43.22~~	~~7.32E+06~~	~~2.45~~	~~Y~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.40~~	~~8.14E+06~~	~~2.47~~	~~Y~~	~~0.06~~	~~0.06~~	~~1%~~

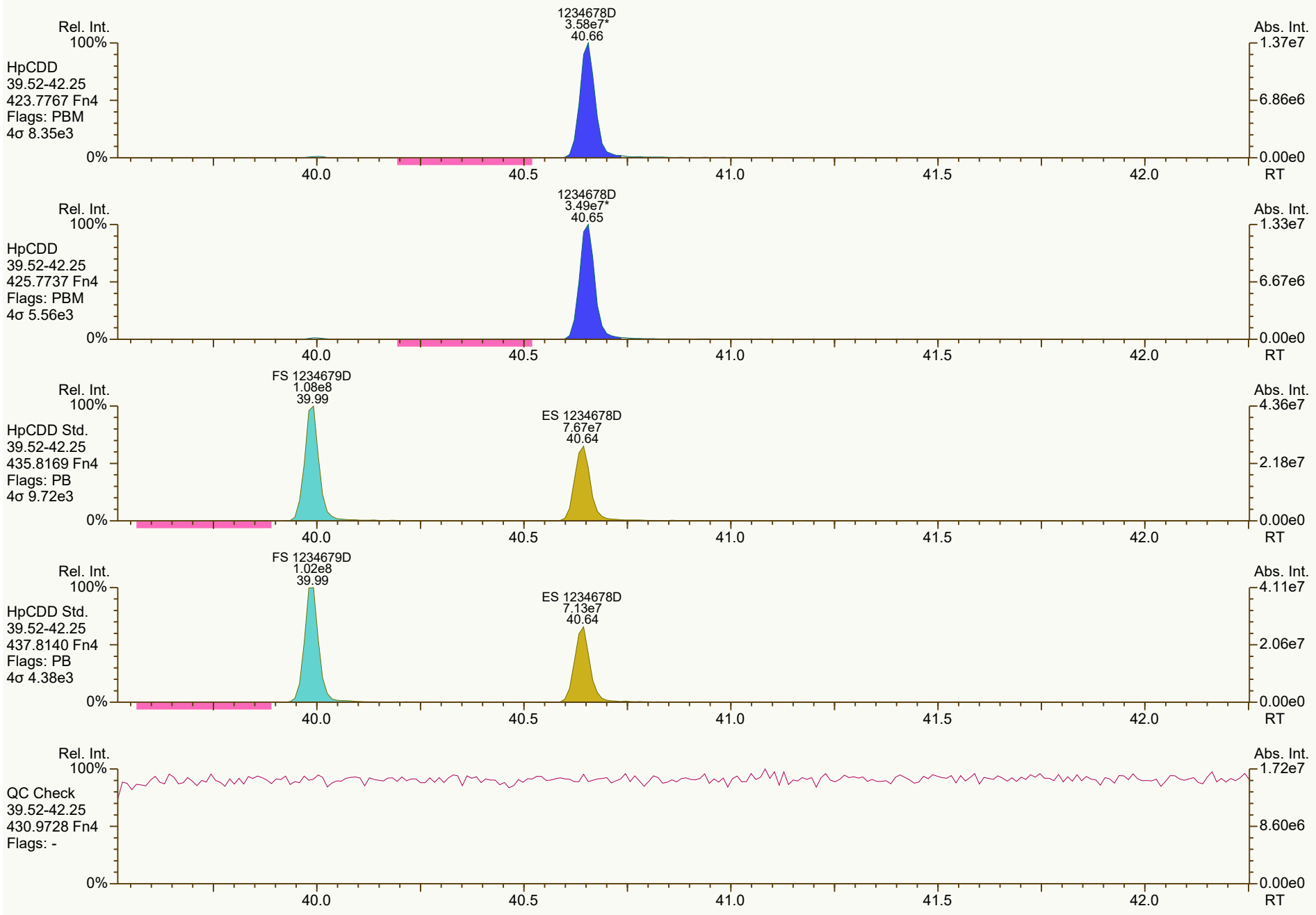
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.32e7
1.16e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.72e7
8.60e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

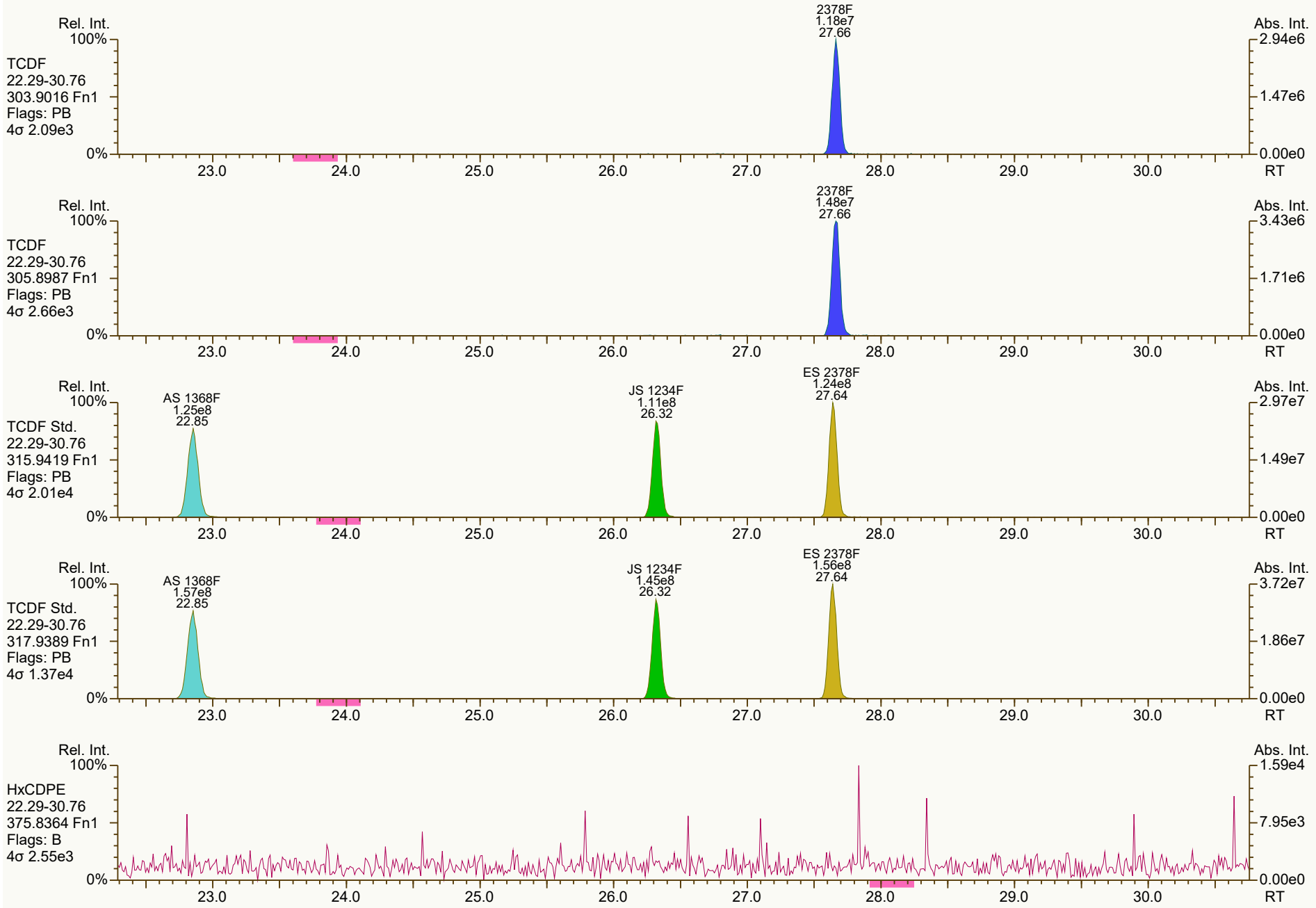

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.30e3
0%
2378D
9.91e6
28.52
Abs. Int.
2.34e6
1.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.39e3
0%
2378D
1.24e7
28.52
Abs. Int.
3.06e6
1.53e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.08e3
0%
CS 37Cl-2378D
2.10e7
28.52
Abs. Int.
5.19e6
2.60e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 8.84e3
0%
AS 1368D
7.21e7
24.91
TS 1378D
9.88e7
26.87
JS 1234D
7.11e7
27.86
ES 2378D
7.62e7
28.50
FS 1278D
8.20e7
28.82
Abs. Int.
2.31e7
1.16e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.59e3
0%
RRF(AS 1368D) = (7.21e7 + 9.14e7) * 100pg / (7.11e7 + 8.96e7) * 100pg = 1.02
PSW 27-Jul-2021 15:20
OK - CL 28Jul21
= 1.02
AS 1368D
9.14e7
24.91
TS 1378D
1.24e8
26.87
JS 1234D
8.96e7
27.86
ES 2378D
9.33e7
28.50
FS 1278D
1.01e8
28.82
Abs. Int.
2.84e7
1.42e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.29e3
0%
12378D
5.24e7
33.80
Abs. Int.
1.54e7
7.71e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.72e3
0%
12378D
3.33e7
33.80
Abs. Int.
9.85e6
4.92e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.92e3
0%
FS 12478D
1.14e8
32.57
CS 12347D
8.77e7*
33.29
ES 12378D
1.01e8
33.78
Abs. Int.
3.30e7
1.65e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 4.59e3
0%
FS 12478D
6.93e7
32.57
CS 12347D
5.24e7*
33.29
ES 12378D
6.14e7
33.78
Abs. Int.
2.04e7
1.02e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

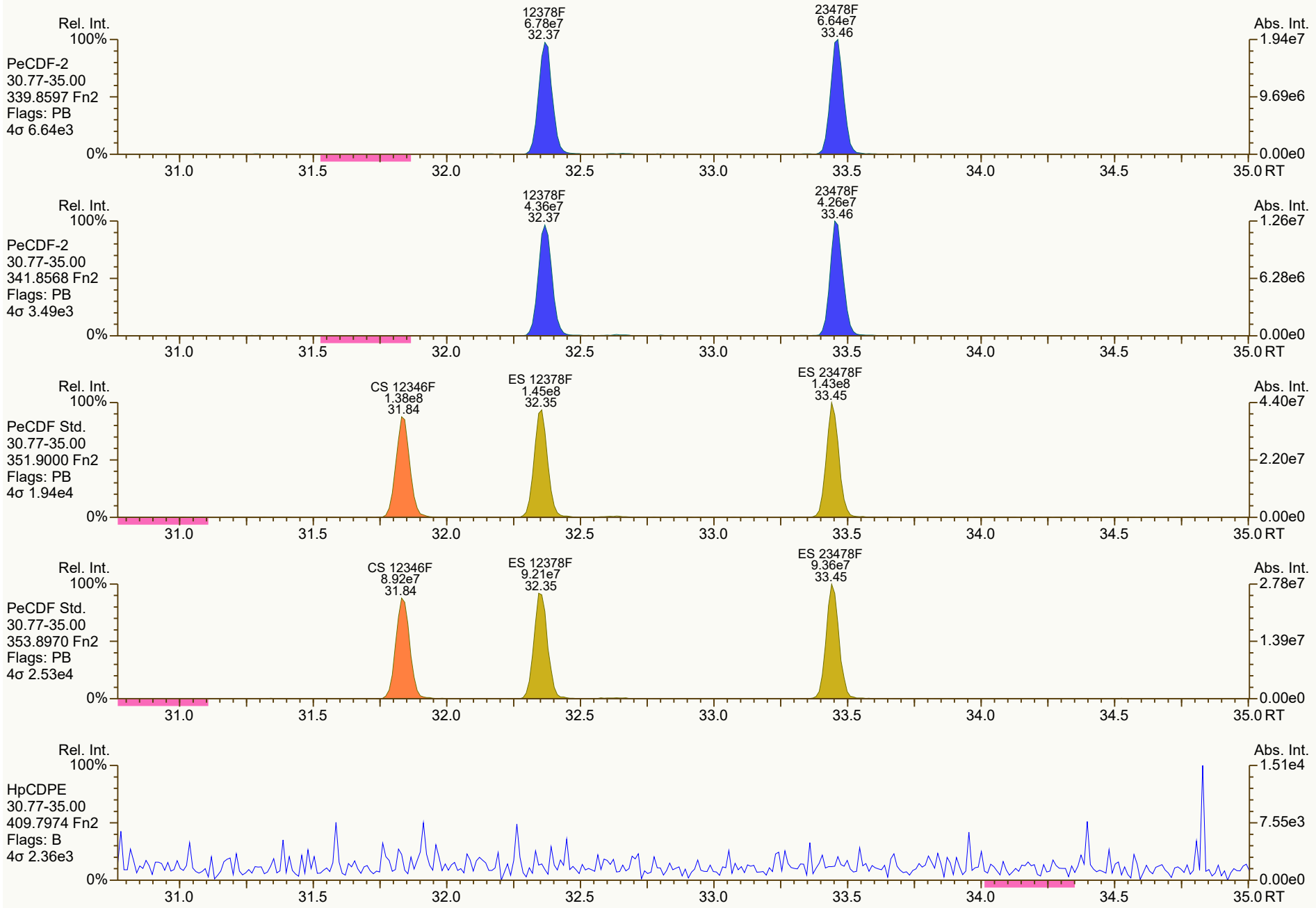

Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.88e3
123678D 4.39e7 37.78
123478D 4.24e7 37.67
123789D 4.53e7 38.07
1.42e7
7.10e6
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.58e3
123678D 3.50e7 37.78
123478D 3.39e7 37.67
123789D 3.70e7 38.07
1.17e7
5.85e6
0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.44e3
FS 123468D 1.07e8 36.58
ES 123678D 8.19e7 37.77
ES 123478D 8.12e7 37.65
ES 123789D 9.15e7* 38.06
JS 123467D 4.09e7 37.96
3.57e7
1.78e7
0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.38e3
FS 123468D 8.44e7 36.58
ES 123678D 6.45e7 37.77
ES 123478D 6.42e7 37.65
ES 123789D 7.42e7* 38.06
JS 123467D 3.19e7 37.96
2.63e7
1.32e7
0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.32e7
1.16e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 8.35e3
0%
1234678D
3.58e7*
40.66
Abs. Int.
1.37e7
6.86e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 5.56e3
1234678D
3.49e7*
40.65
1.33e7
6.67e6
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 9.72e3
FS 1234679D
1.08e8
39.99
ES 1234678D
7.67e7
40.64
4.36e7
2.18e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.38e3
FS 1234679D
1.02e8
39.99
ES 1234678D
7.13e7
40.64
4.11e7
2.06e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.72e7
8.60e6


OCDD
5.68e7*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.46e3
0%
Abs. Int.
2.00e7
1.00e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.38e7*
43.22
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 3.66e3
Abs. Int.
2.18e7
1.09e7
ES OCDD
1.05e8*
43.21
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 6.38e3
Abs. Int.
3.38e7
1.69e7
ES OCDD
1.20e8*
43.21
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.59e3
Abs. Int.
3.96e7
1.98e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
Abs. Int.
6.64e6
3.32e6


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.09e3
0%
2378F
1.18e7
27.66
Abs. Int.
2.94e6
1.47e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.66e3
0%
2378F
1.48e7
27.66
Abs. Int.
3.43e6
1.71e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.01e4
0%
AS 1368F
1.25e8
22.85
JS 1234F
1.11e8
26.32
ES 2378F
1.24e8
27.64
Abs. Int.
2.97e7
1.49e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.37e4
0%
AS 1368F
1.57e8
22.85
JS 1234F
1.45e8
26.32
ES 2378F
1.56e8
27.64
Abs. Int.
3.72e7
1.86e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.55e3
0%
Abs. Int.
1.59e4
7.95e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

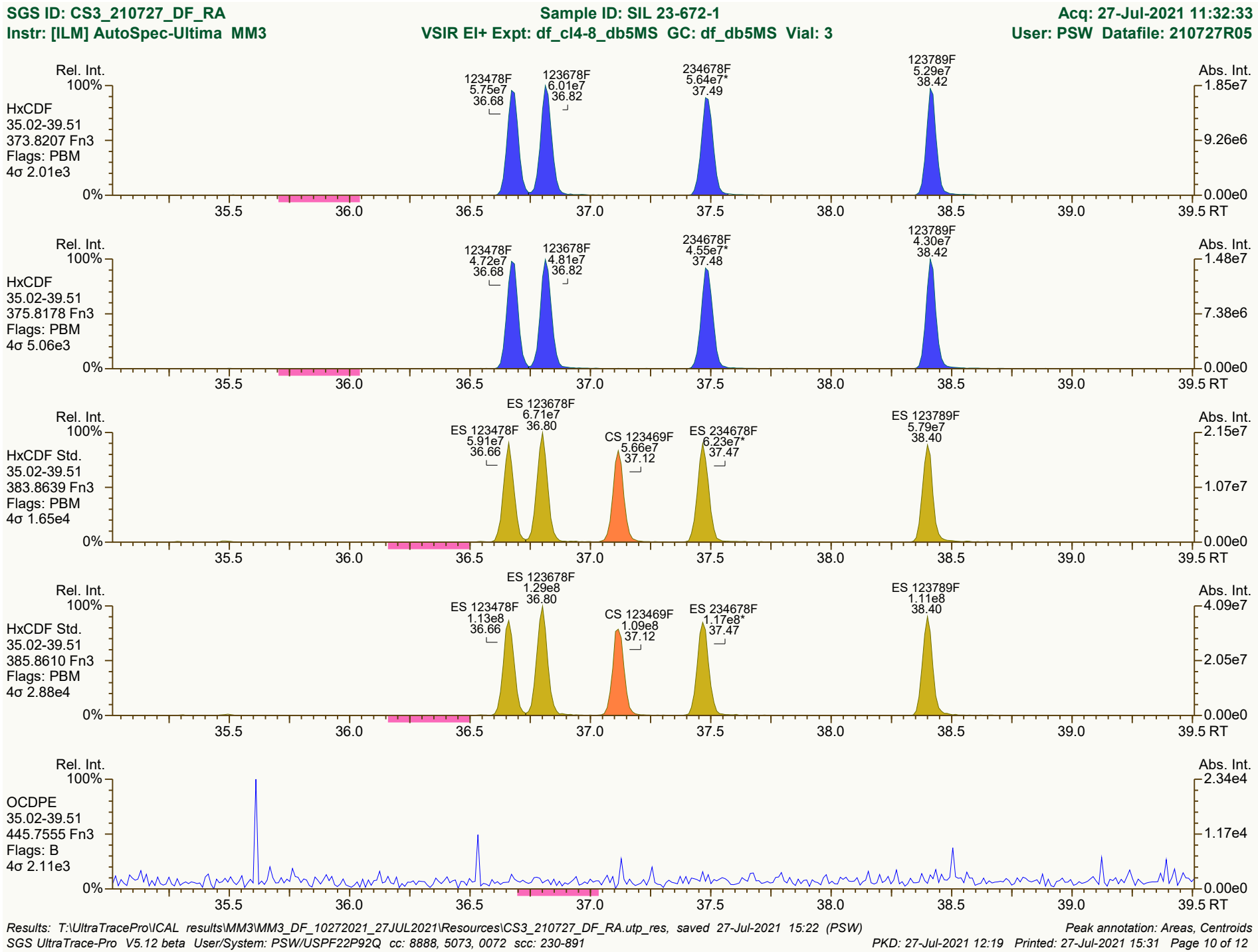

Rel. Int.
100%
0%
Abs. Int.
1.52e4
7.61e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.35e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.57e4
7.83e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.27e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 6.64e3
0%
12378F
6.78e7
32.37
23478F
6.64e7
33.46
Abs. Int.
1.94e7
9.69e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.49e3
0%
12378F
4.36e7
32.37
23478F
4.26e7
33.46
Abs. Int.
1.26e7
6.28e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 1.94e4
0%
CS 12346F
1.38e8
31.84
ES 12378F
1.45e8
32.35
ES 23478F
1.43e8
33.45
Abs. Int.
4.40e7
2.20e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.53e4
0%
CS 12346F
8.92e7
31.84
ES 12378F
9.21e7
32.35
ES 23478F
9.36e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.36e3
0%
Abs. Int.
1.51e4
7.55e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

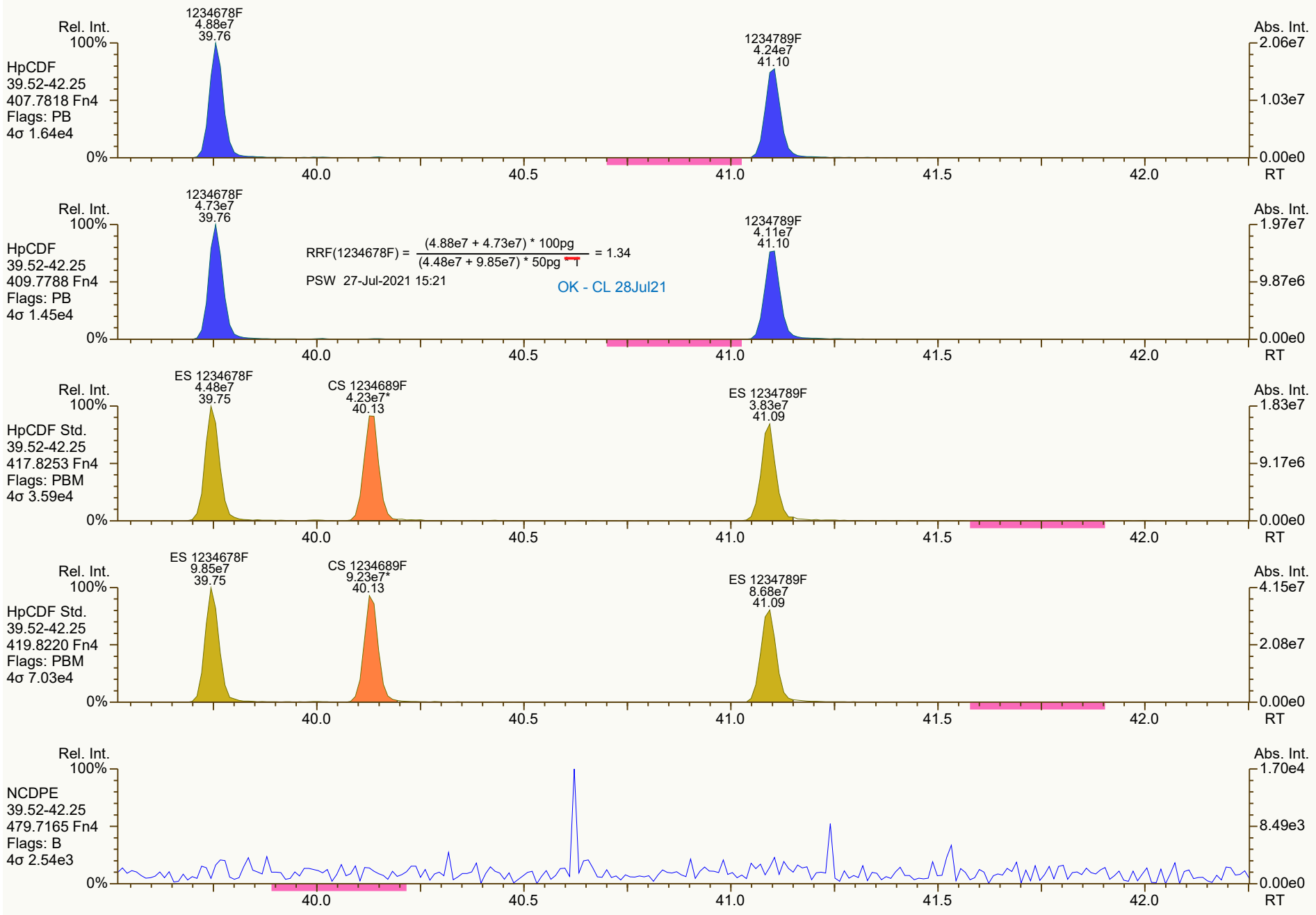
SGS ID: CS3_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

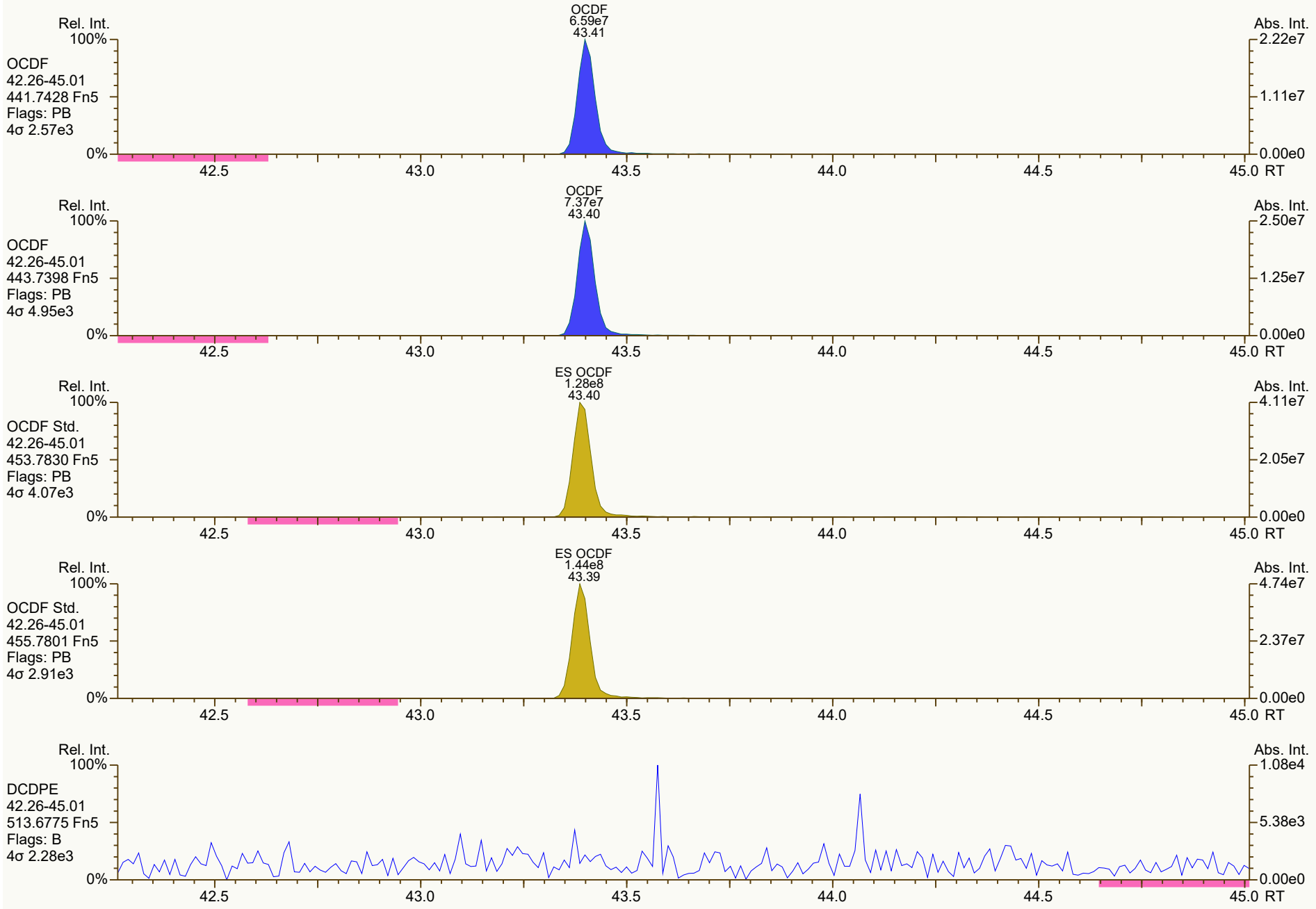
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 27-Jul-2021 11:32:33
User: PSW Datafile: 210727R05



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8888, 5073, 0072 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.64e4
1234678F
4.88e7
39.76
1234789F
4.24e7
41.10
Abs. Int.
2.06e7
1.03e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.45e4
1234678F
4.73e7
39.76
RRF(1234678F) = (4.88e7 + 4.73e7) * 100pg / (4.48e7 + 9.85e7) * 50pg = 1.34
PSW 27-Jul-2021 15:21
OK - CL 28Jul21
1234789F
4.11e7
41.10
1.97e7
9.87e6
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.59e4
ES 1234678F
4.48e7
39.75
CS 1234689F
4.23e7*
40.13
ES 1234789F
3.83e7
41.09
1.83e7
9.17e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 7.03e4
ES 1234678F
9.85e7
39.75
CS 1234689F
9.23e7*
40.13
ES 1234789F
8.68e7
41.09
4.15e7
2.08e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.54e3
1.70e4
8.49e3


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.57e3
0%
OCDF
6.59e7
43.41
Abs. Int.
2.22e7
1.11e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 4.95e3
0%
OCDF
7.37e7
43.40
Abs. Int.
2.50e7
1.25e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 4.07e3
0%
ES OCDF
1.28e8
43.40
Abs. Int.
4.11e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.91e3
0%
ES OCDF
1.44e8
43.39
Abs. Int.
4.74e7
2.37e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.28e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

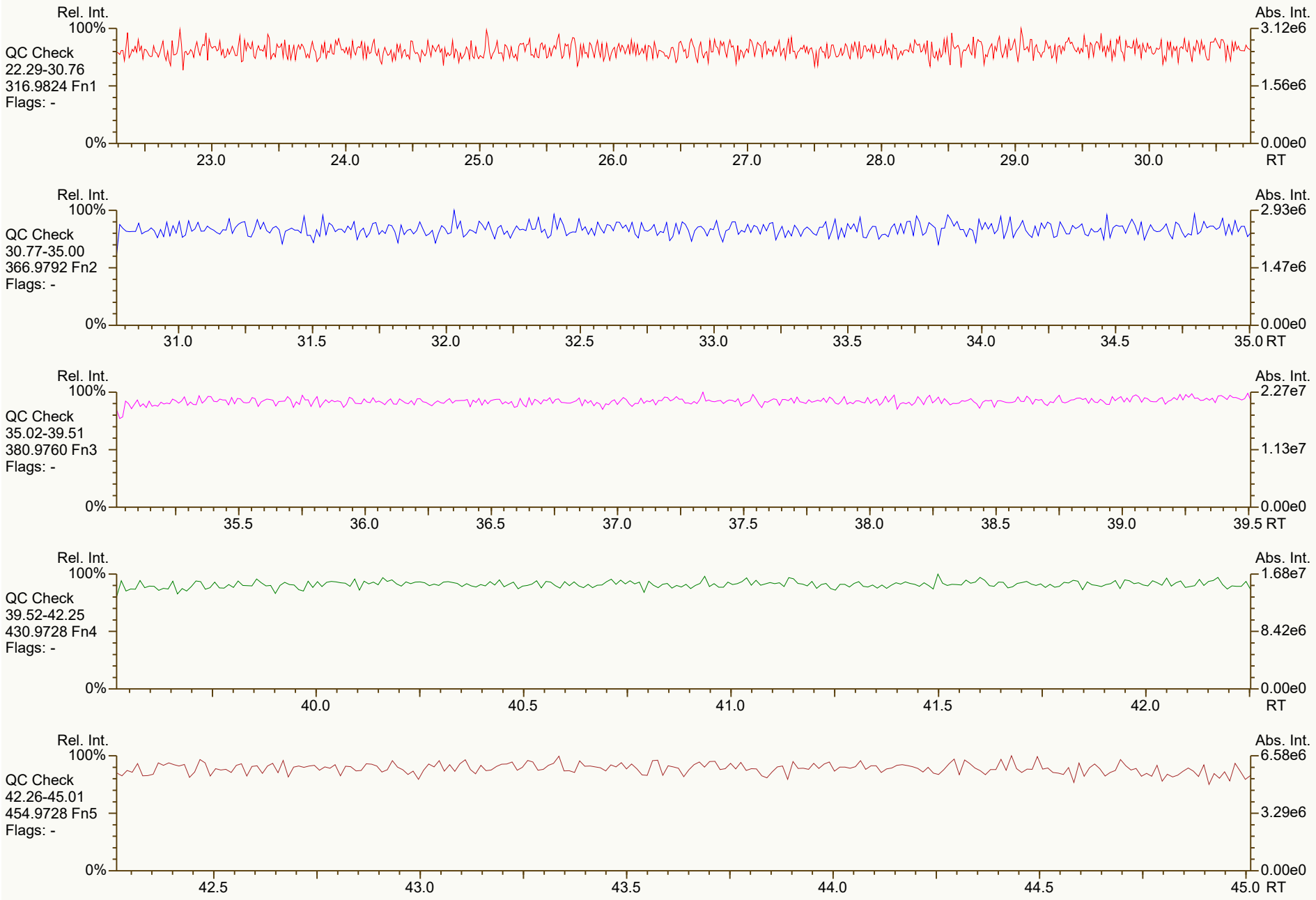
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

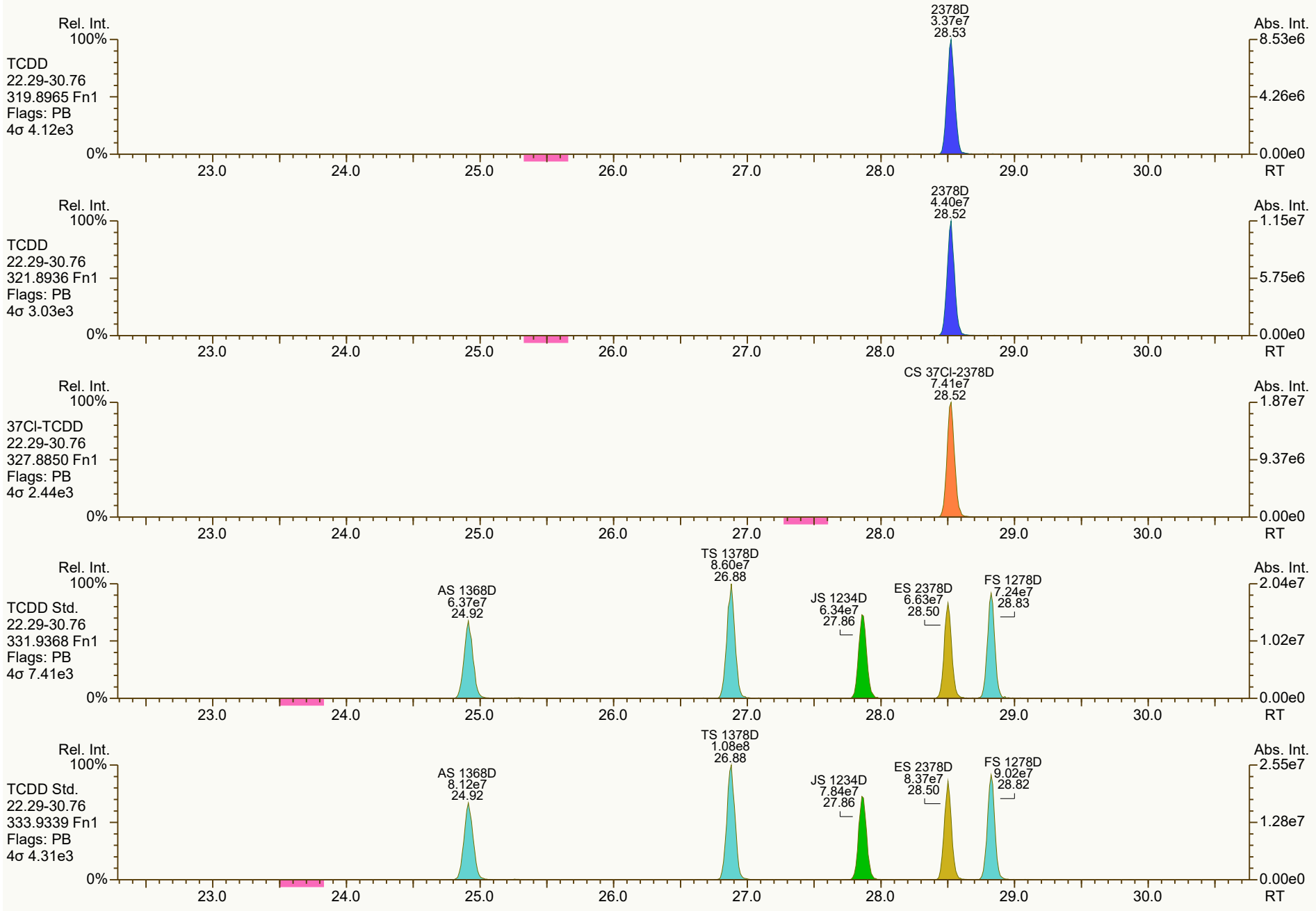
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	7.77E+07	0.76	Y	1.34	1.30	-4%
12378-PeCDD	33.81	3.10E+08	1.55	Y	1.06	1.06	0%
123478-HxCDD	37.68	2.82E+08	1.23	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.84E+08	1.24	Y	1.08	1.10	2%
123789-HxCDD	38.08	2.99E+08	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.67	2.61E+08	1.03	Y	0.97	0.98	0%
OCDD	43.23	4.49E+08	0.90	Y	1.07	1.08	1%
2378-TCDF	27.67	9.59E+07	0.77	Y	0.96	0.96	0%
12378-PeCDF	32.38	4.09E+08	1.58	Y	0.95	0.95	0%
23478-PeCDF	33.47	3.96E+08	1.56	Y	0.94	0.93	-1%
123478-HxCDF	36.69	3.82E+08	1.23	Y	1.23	1.24	0%
123678-HxCDF	36.83	3.97E+08	1.25	Y	1.13	1.13	0%
234678-HxCDF	37.49	3.75E+08	1.25	Y	1.15	1.13	-2%
123789-HxCDF	38.43	3.51E+08	1.24	Y	1.14	1.14	0%
1234678-HpCDF	39.77	3.45E+08	1.03	Y	1.36	1.33	-2%
1234789-HpCDF	41.11	2.99E+08	1.04	Y	1.30	1.30	0%
OCDF	43.41	5.22E+08	0.91	Y	1.03	1.05	2%
ES 2378-TCDD	28.50	1.50E+08	0.79	Y	1.03	1.06	2%
ES 12378-PeCDD	33.789	1.46E+08	1.59	Y	1.03	1.03	0%
ES 123478-HxCDD	37.662	1.34E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.775	1.29E+08	1.28	Y	0.97	0.94	-4%
ES 123789-HxCDD	38.064	1.51E+08	1.27	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.654	1.33E+08	1.06	Y	0.99	0.97	-2%
ES OCDD	43.216	2.07E+08	0.92	Y	0.78	0.75	-3%
ES 2378-TCDF	27.649	2.49E+08	0.80	Y	1.08	1.09	1%
ES 12378-PeCDF	32.362	2.16E+08	1.57	Y	0.93	0.95	2%
ES 23478-PeCDF	33.454	2.12E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.668	1.54E+08	0.51	Y	1.14	1.12	-2%
ES 123678-HxCDF	36.808	1.75E+08	0.53	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.477	1.66E+08	0.53	Y	1.20	1.20	0%
ES 123789-HxCDF	38.409	1.54E+08	0.52	Y	1.14	1.12	-1%
ES 1234678-HpCDF	39.757	1.30E+08	0.45	Y	0.95	0.94	-1%
ES 1234789-HpCDF	41.102	1.15E+08	0.45	Y	0.85	0.83	-2%
ES OCDF	43.398	2.49E+08	0.90	Y	0.93	0.90	-2%

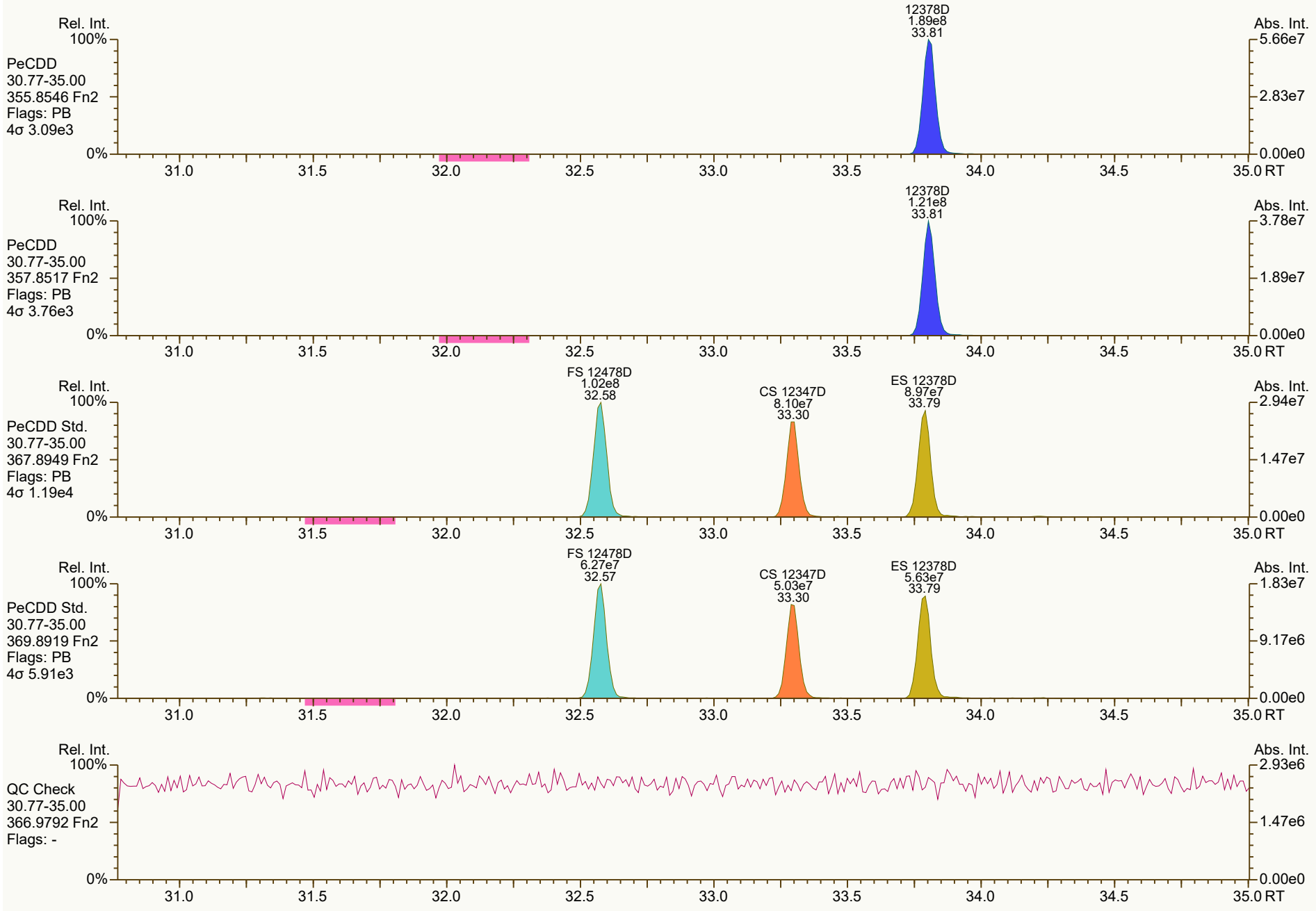
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

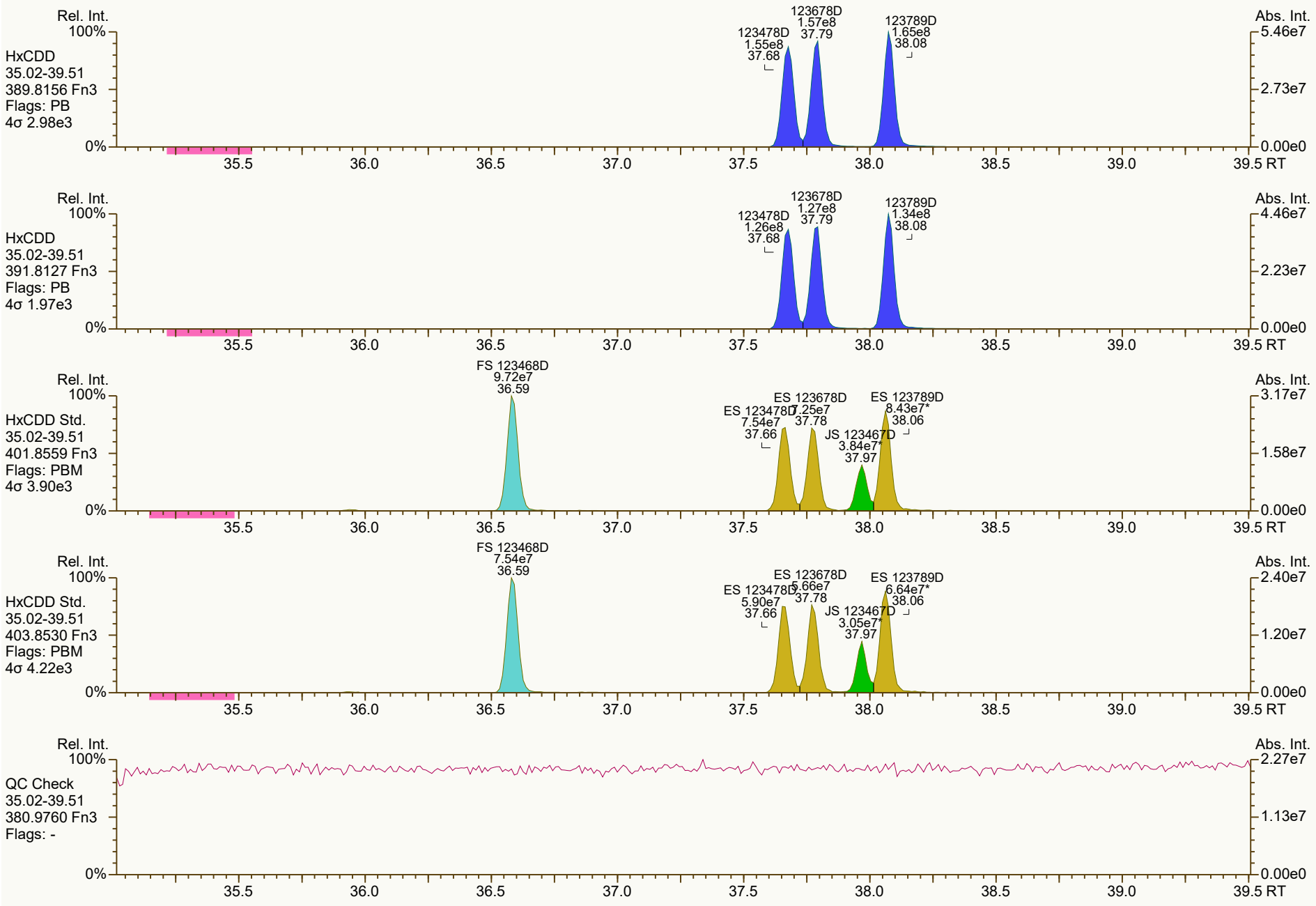
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.42E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	2.27E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	6.89E+07	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.31	1.31	0%
CS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.89	0.93	4%
CS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.87	0.88	2%
CS 123469-HxCDF	37.12	1.50E+08	0.54	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.26	1.23	-2%
SS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.86	0.90	4%
SS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.12	1.50E+08	0.54	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.91	0.92	1%
AS 1368-TCDD	24.92	1.45E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.49E+08	0.79	Y	1.08	1.09	1%
FS 1278-TCDD	28.83	1.63E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.64E+08	1.62	Y	1.09	1.13	3%
FS 123468-HxCDD	36.59	1.73E+08	1.29	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	1.84E+08	1.07	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	1.94E+08	0.79	Y	1.35	1.30	-4%
~~OCDD-a~~	~~43.22~~	~~2.77E+07~~	~~2.50~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~
~~OCDF-a~~	~~43.41~~	~~3.08E+07~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~4%~~

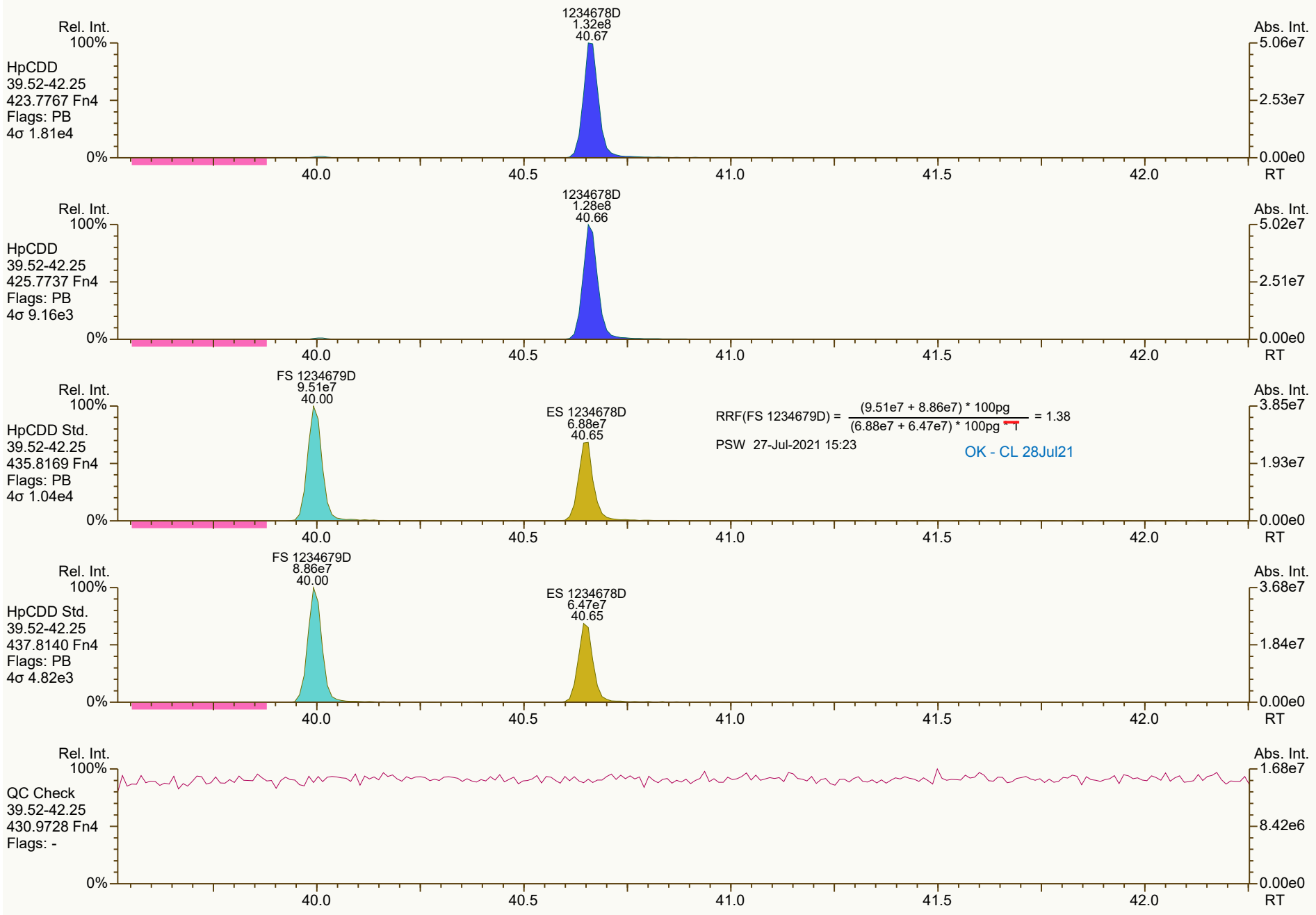
Not reported from this ICAL - CL 28Jul21

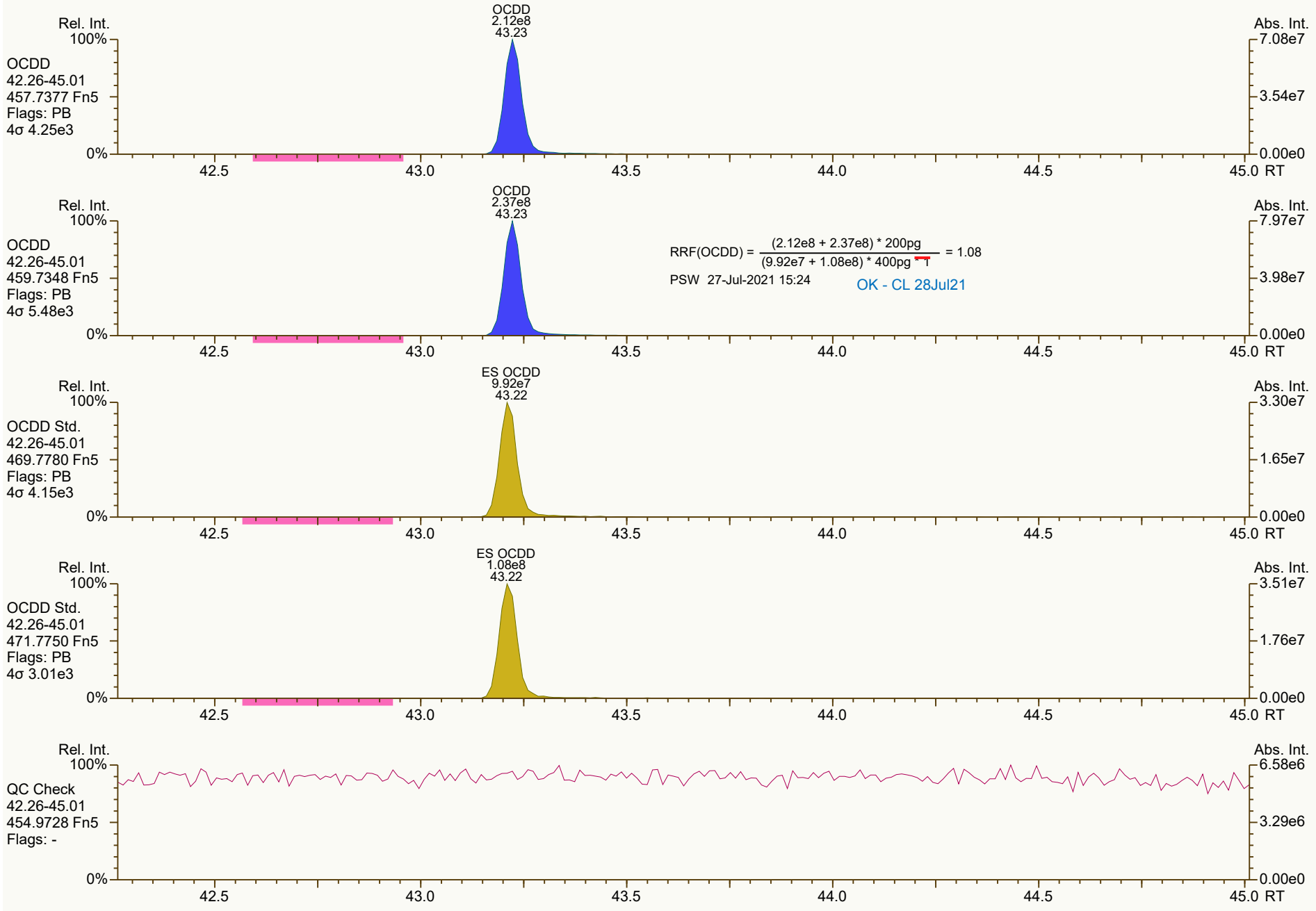

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.68e7
8.42e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 4.12e3
2378D
3.37e7
28.53
8.53e6
4.26e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 3.03e3
2378D
4.40e7
28.52
1.15e7
5.75e6
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.44e3
CS 37Cl-2378D
7.41e7
28.52
1.87e7
9.37e6
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.41e3
AS 1368D
6.37e7
24.92
TS 1378D
8.60e7
26.88
JS 1234D
6.34e7
27.86
ES 2378D
6.63e7
28.50
FS 1278D
7.24e7
28.83
2.04e7
1.02e7
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.31e3
AS 1368D
8.12e7
24.92
TS 1378D
1.08e8
26.88
JS 1234D
7.84e7
27.86
ES 2378D
8.37e7
28.50
FS 1278D
9.02e7
28.82
2.55e7
1.28e7
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.09e3
0%
12378D
1.89e8
33.81
Abs. Int.
5.66e7
2.83e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 3.76e3
0%
12378D
1.21e8
33.81
Abs. Int.
3.78e7
1.89e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 1.19e4
0%
FS 12478D
1.02e8
32.58
CS 12347D
8.10e7
33.30
ES 12378D
8.97e7
33.79
Abs. Int.
2.94e7
1.47e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 5.91e3
0%
FS 12478D
6.27e7
32.57
CS 12347D
5.03e7
33.30
ES 12378D
5.63e7
33.79
Abs. Int.
1.83e7
9.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

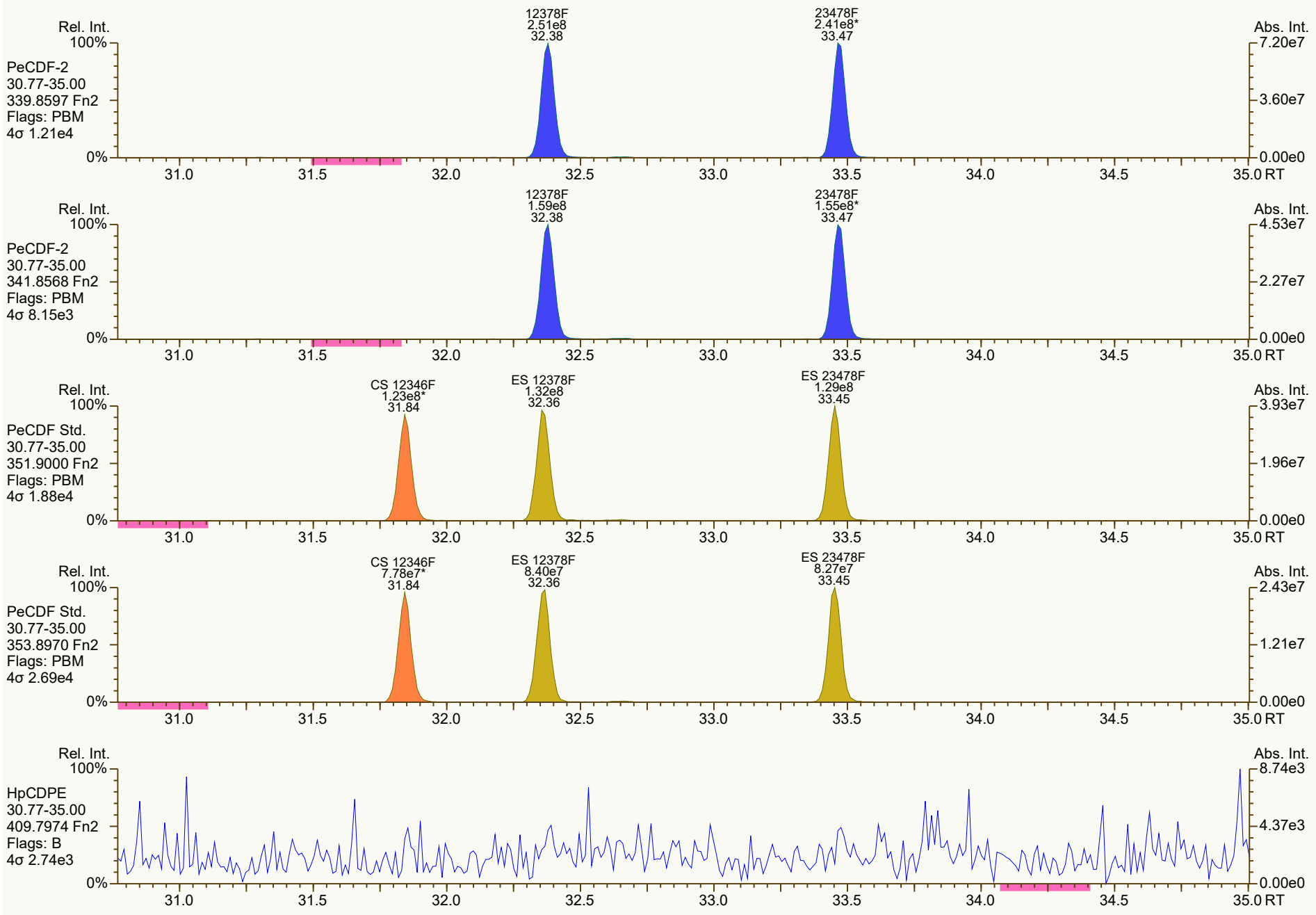

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.98e3
123678D
1.57e8
37.79
123478D
1.55e8
37.68
123789D
1.65e8
38.08
Abs. Int.
5.46e7
2.73e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.97e3
123678D
1.27e8
37.79
123478D
1.26e8
37.68
123789D
1.34e8
38.08
Abs. Int.
4.46e7
2.23e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.90e3
FS 123468D
9.72e7
36.59
ES 123678D
7.25e7
37.78
ES 123478D
7.54e7
37.66
ES 123789D
8.43e7*
38.06
JS 123467D
3.84e7*
37.97
Abs. Int.
3.17e7
1.58e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 4.22e3
FS 123468D
7.54e7
36.59
ES 123678D
5.66e7
37.78
ES 123478D
5.90e7
37.66
ES 123789D
6.64e7*
38.06
JS 123467D
3.05e7*
37.97
Abs. Int.
2.40e7
1.20e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.13e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

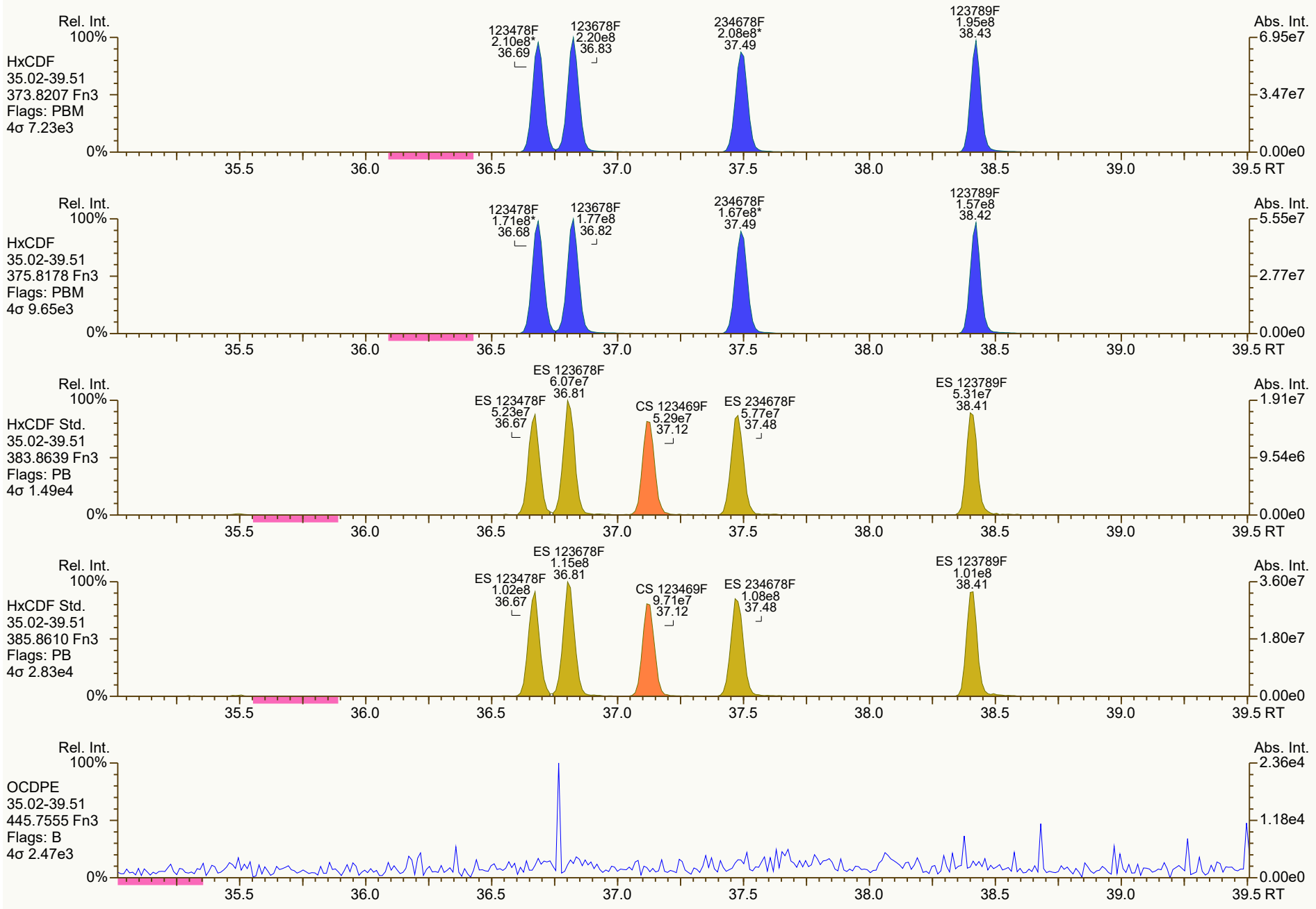

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.81e4
1234678D
1.32e8
40.67
Abs. Int.
5.06e7
2.53e7
0.00e0
RT
0%
40.0
40.5
41.0
41.5
42.0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 9.16e3
1234678D
1.28e8
40.66
5.02e7
2.51e7
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.04e4
FS 1234679D
9.51e7
40.00
ES 1234678D
6.88e7
40.65
RRF(FS 1234679D) = (9.51e7 + 8.86e7) * 100pg / (6.88e7 + 6.47e7) * 100pg = 1.38
PSW 27-Jul-2021 15:23
OK - CL 28Jul21
3.85e7
1.93e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.82e3
FS 1234679D
8.86e7
40.00
ES 1234678D
6.47e7
40.65
3.68e7
1.84e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.68e7
8.42e6

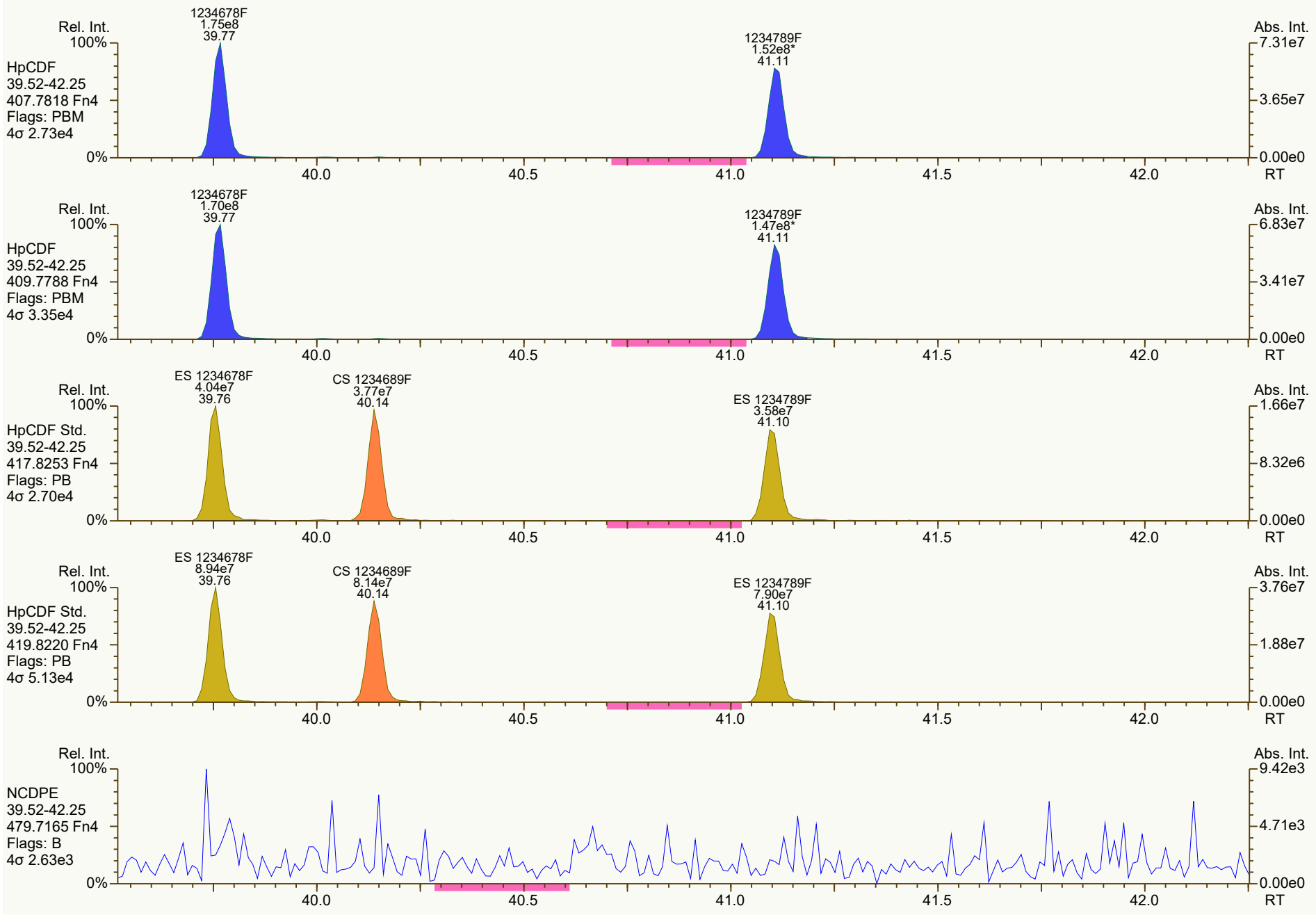

Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PB
4σ 4.25e3
0%
OCDD
2.12e8
43.23
Abs. Int.
7.08e7
3.54e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PB
4σ 5.48e3
0%
OCDD
2.37e8
43.23
RRF(OCDD) = (2.12e8 + 2.37e8) * 200pg / (9.92e7 + 1.08e8) * 400pg = 1.08
PSW 27-Jul-2021 15:24
OK - CL 28Jul21
Abs. Int.
7.97e7
3.98e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.15e3
0%
ES OCDD
9.92e7
43.22
Abs. Int.
3.30e7
1.65e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.01e3
0%
ES OCDD
1.08e8
43.22
Abs. Int.
3.51e7
1.76e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.95e3
0%
2378F
4.17e7
27.67
Abs. Int.
9.81e6
4.91e6
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.51e3
0%
2378F
5.43e7
27.67
Abs. Int.
1.28e7
6.42e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.36e4
0%
AS 1368F
1.10e8
22.86
JS 1234F
9.87e7
26.33
ES 2378F
1.10e8
27.65
Abs. Int.
2.69e7
1.34e7
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.34e4
0%
AS 1368F
1.39e8
22.85
JS 1234F
1.29e8
26.33
ES 2378F
1.38e8
27.65
Abs. Int.
3.21e7
1.60e7
0.00e0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.81e3
0%
Abs. Int.
9.37e3
4.68e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.32e4
6.61e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.55e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.28e3
2.14e4
1.07e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
3.12e6
1.56e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PBM
4σ 1.21e4
0%
12378F
2.51e8
32.38
23478F
2.41e8*
33.47
Abs. Int.
7.20e7
3.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PBM
4σ 8.15e3
0%
12378F
1.59e8
32.38
23478F
1.55e8*
33.47
Abs. Int.
4.53e7
2.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 1.88e4
0%
CS 12346F
1.23e8*
31.84
ES 12378F
1.32e8
32.36
ES 23478F
1.29e8
33.45
Abs. Int.
3.93e7
1.96e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.69e4
0%
CS 12346F
7.78e7*
31.84
ES 12378F
8.40e7
32.36
ES 23478F
8.27e7
33.45
Abs. Int.
2.43e7
1.21e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.74e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 7.23e3
123478F
2.10e8*
36.69
123678F
2.20e8
36.83
234678F
2.08e8*
37.49
123789F
1.95e8
38.43
Abs. Int.
6.95e7
3.47e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.65e3
123478F
1.71e8*
36.68
123678F
1.77e8
36.82
234678F
1.67e8*
37.49
123789F
1.57e8
38.42
Abs. Int.
5.55e7
2.77e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.49e4
ES 123478F
5.23e7
36.67
ES 123678F
6.07e7
36.81
CS 123469F
5.29e7
37.12
ES 234678F
5.77e7
37.48
ES 123789F
5.31e7
38.41
Abs. Int.
1.91e7
9.54e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.83e4
ES 123478F
1.02e8
36.67
ES 123678F
1.15e8
36.81
CS 123469F
9.71e7
37.12
ES 234678F
1.08e8
37.48
ES 123789F
1.01e8
38.41
Abs. Int.
3.60e7
1.80e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.47e3
Abs. Int.
2.36e4
1.18e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PBM
4σ 2.73e4
1234678F
1.75e8
39.77
1234789F
1.52e8*
41.11
Abs. Int.
7.31e7
3.65e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PBM
4σ 3.35e4
1234678F
1.70e8
39.77
1234789F
1.47e8*
41.11
6.83e7
3.41e7
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.70e4
ES 1234678F
4.04e7
39.76
CS 1234689F
3.77e7
40.14
ES 1234789F
3.58e7
41.10
1.66e7
8.32e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.13e4
ES 1234678F
8.94e7
39.76
CS 1234689F
8.14e7
40.14
ES 1234789F
7.90e7
41.10
3.76e7
1.88e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
9.42e3
4.71e3


OCDF
2.49e8
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.68e3
0%
Abs. Int.
8.08e7
4.04e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.73e8
43.41
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.81e3
0%
Abs. Int.
8.85e7
4.43e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.18e8
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.20e3
0%
Abs. Int.
3.94e7
1.97e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.31e8
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 5.23e3
0%
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
0%
Abs. Int.
4.05e3
2.02e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

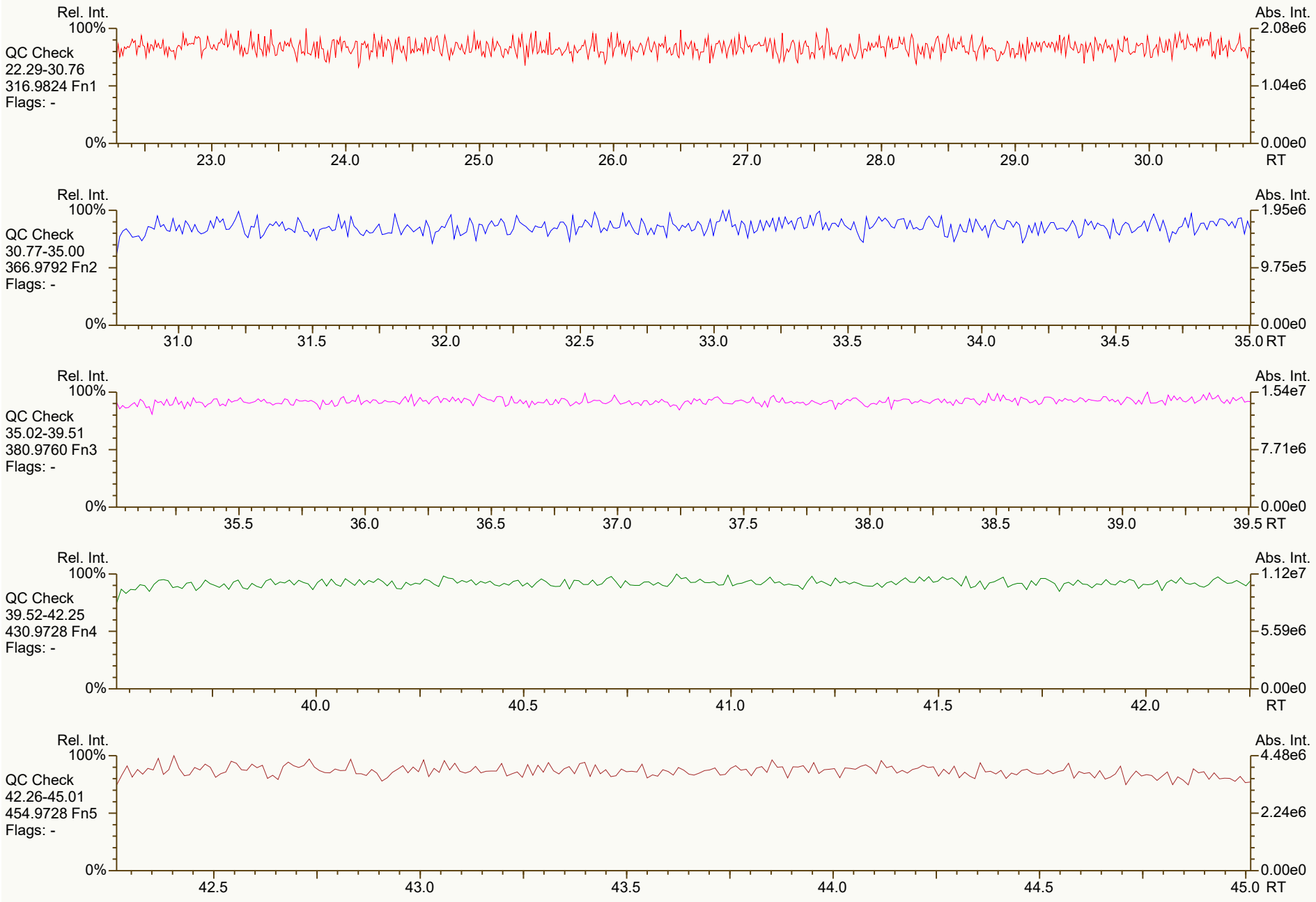
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

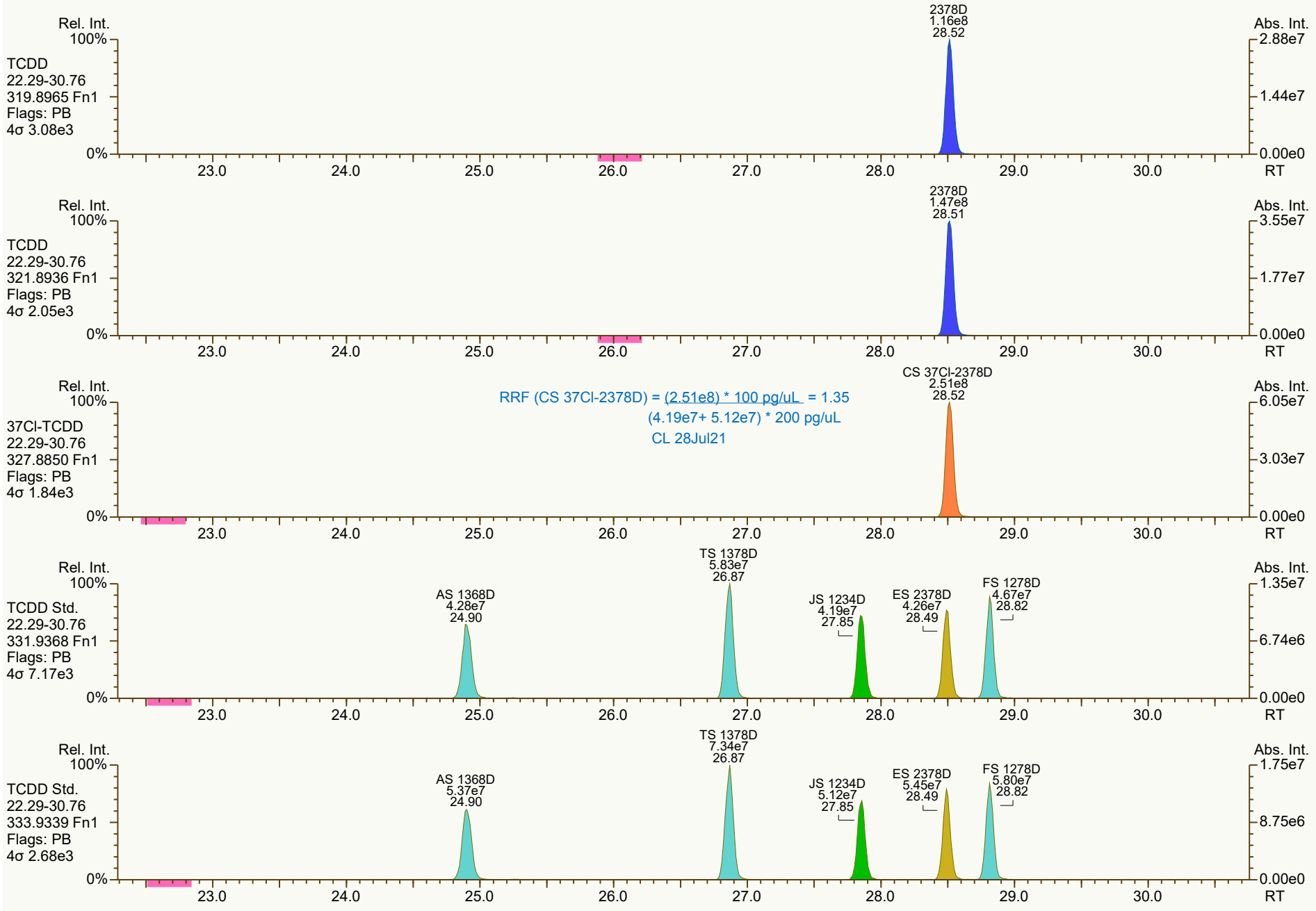
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.63E+08	0.78	Y	1.34	1.35	1%
12378-PeCDD	33.80	1.06E+09	1.56	Y	1.06	1.07	1%
123478-HxCDD	37.67	9.52E+08	1.24	Y	1.06	1.06	0%
123678-HxCDD	37.78	9.75E+08	1.25	Y	1.08	1.10	1%
123789-HxCDD	38.07	1.03E+09	1.25	Y	1.02	1.01	-1%
1234678-HpCDD	40.66	8.94E+08	1.04	Y	0.97	0.98	1%
OCDD	43.22	1.57E+09	0.88	Y	1.07	1.06	-1%
2378-TCDF	27.66	3.19E+08	0.77	Y	0.96	0.97	1%
12378-PeCDF	32.37	1.33E+09	1.51	Y	0.95	0.93	-1%
23478-PeCDF	33.46	1.36E+09	1.58	Y	0.94	0.96	3%
123478-HxCDF	36.68	1.30E+09	1.25	Y	1.23	1.24	0%
123678-HxCDF	36.82	1.35E+09	1.25	Y	1.13	1.14	1%
234678-HxCDF	37.49	1.27E+09	1.24	Y	1.15	1.15	0%
123789-HxCDF	38.42	1.20E+09	1.24	Y	1.14	1.15	2%
1234678-HpCDF	39.76	1.19E+09	1.03	Y	1.36	1.37	1%
1234789-HpCDF	41.10	1.06E+09	1.03	Y	1.30	1.35	4%
OCDF	43.40	1.87E+09	0.90	Y	1.03	1.06	3%
ES 2378-TCDD	28.49	9.72E+07	0.78	Y	1.03	1.04	1%
ES 12378-PeCDD	33.782	9.96E+07	1.62	Y	1.03	1.07	3%
ES 123478-HxCDD	37.654	8.99E+07	1.27	Y	0.99	1.03	4%
ES 123678-HxCDD	37.768	8.89E+07	1.27	Y	0.97	1.02	5%
ES 123789-HxCDD	38.058	1.02E+08	1.27	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.644	9.11E+07	1.06	Y	0.99	1.05	6%
ES OCDD	43.21	1.48E+08	0.89	Y	0.78	0.85	9%
ES 2378-TCDF	27.639	1.64E+08	0.80	Y	1.08	1.08	0%
ES 12378-PeCDF	32.354	1.43E+08	1.61	Y	0.93	0.95	1%
ES 23478-PeCDF	33.446	1.41E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.662	1.05E+08	0.52	Y	1.14	1.21	6%
ES 123678-HxCDF	36.801	1.19E+08	0.53	Y	1.30	1.36	5%
ES 234678-HxCDF	37.468	1.11E+08	0.51	Y	1.20	1.27	6%
ES 123789-HxCDF	38.402	1.04E+08	0.54	Y	1.14	1.20	5%
ES 1234678-HpCDF	39.749	8.70E+07	0.46	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.092	7.84E+07	0.46	Y	0.85	0.90	6%
ES OCDF	43.392	1.76E+08	0.89	Y	0.93	1.01	9%

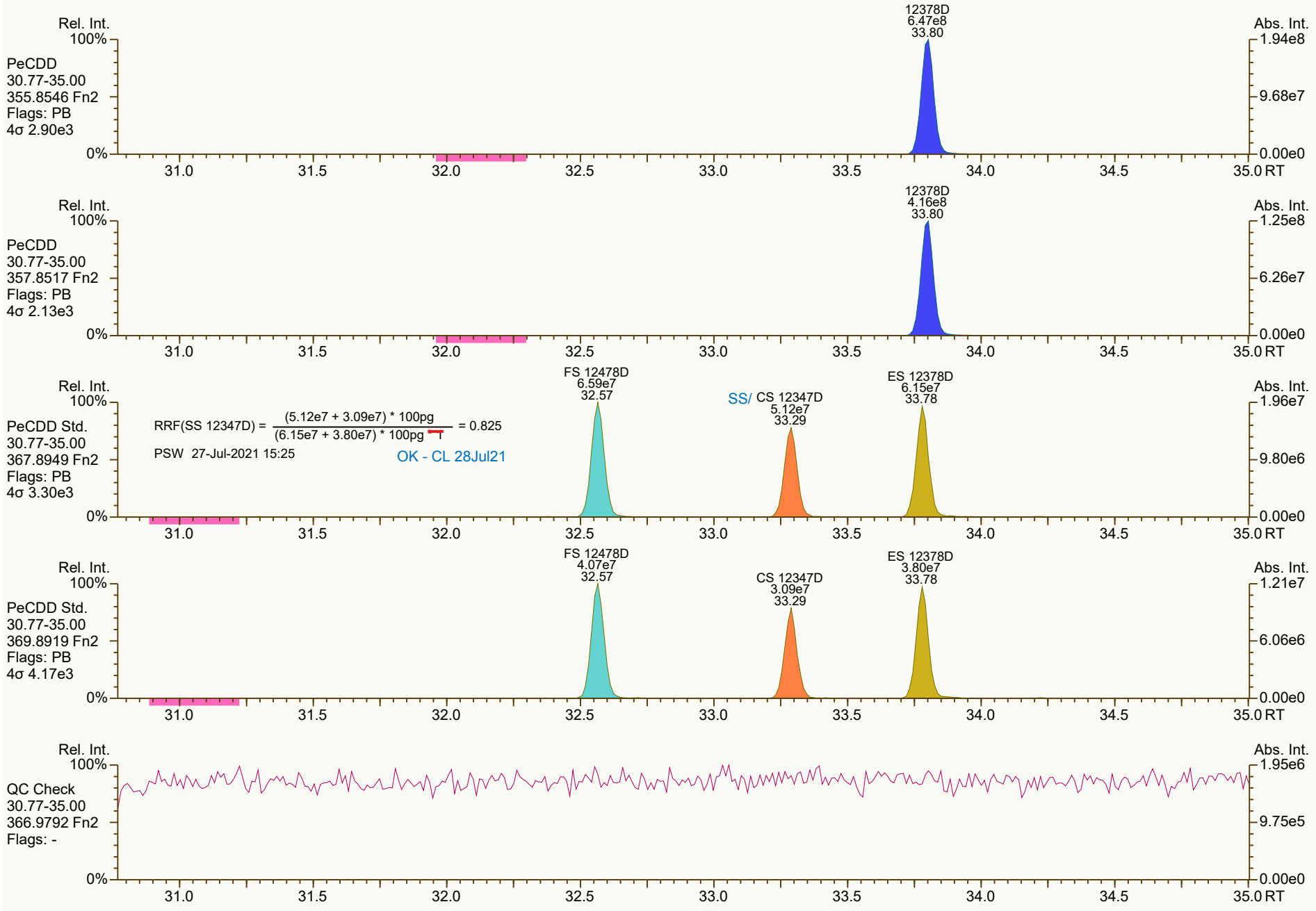
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

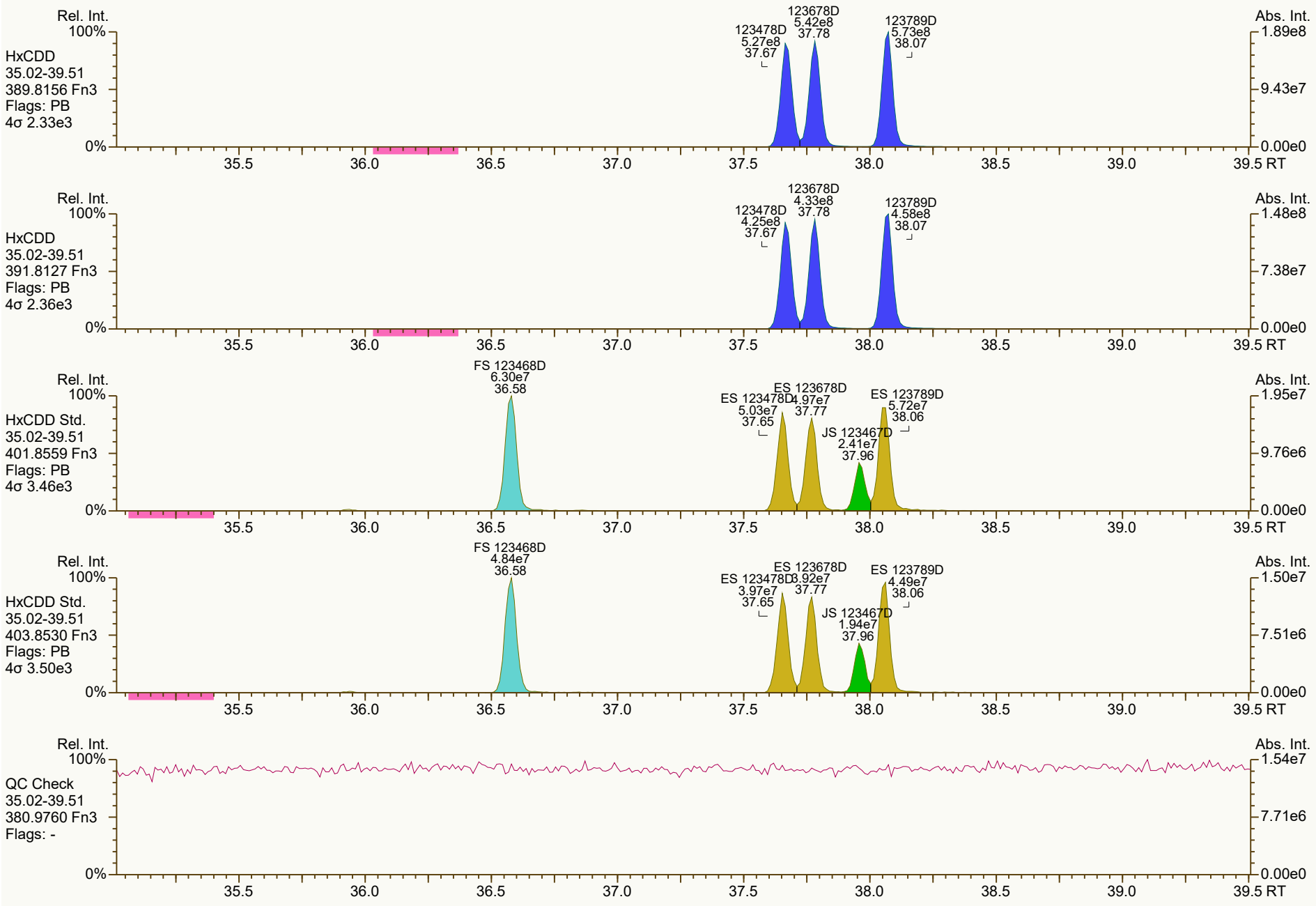
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.85	9.31E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.32	1.51E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	4.35E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.31	1.35	3%
CS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.11	9.75E+07	0.53	Y	1.09	1.12	3%
CS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.26	1.29	3%
SS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.86	0.82	-5%
SS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.93	0.91	-2%
SS 123469-HxCDF	37.11	9.75E+07	0.53	Y	0.84	0.82	-2%
SS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.91	0.86	-6%
AS 1368-TCDD	24.90	9.65E+07	0.80	Y	1.02	1.04	1%
AS 1368-TCDF	22.84	1.66E+08	0.78	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.05E+08	0.81	Y	1.08	1.08	-1%
FS 12478-PeCDD	32.57	1.07E+08	1.62	Y	1.09	1.07	-2%
FS 123468-HxCDD	36.58	1.11E+08	1.30	Y	1.26	1.24	-2%
FS 1234679-HpCDD	39.99	1.18E+08	1.06	Y	1.36	1.30	-4%
TS 1378-TCDD	26.87	1.32E+08	0.79	Y	1.35	1.35	1%
~~OCDD-a~~	~~43.22~~	~~9.57E+07~~	~~2.52~~	~~Y~~	~~0.07~~	~~0.06~~	~~-2%~~
~~OCDF-a~~	~~43.40~~	~~1.10E+08~~	~~2.51~~	~~Y~~	~~0.06~~	~~0.06~~	~~5%~~

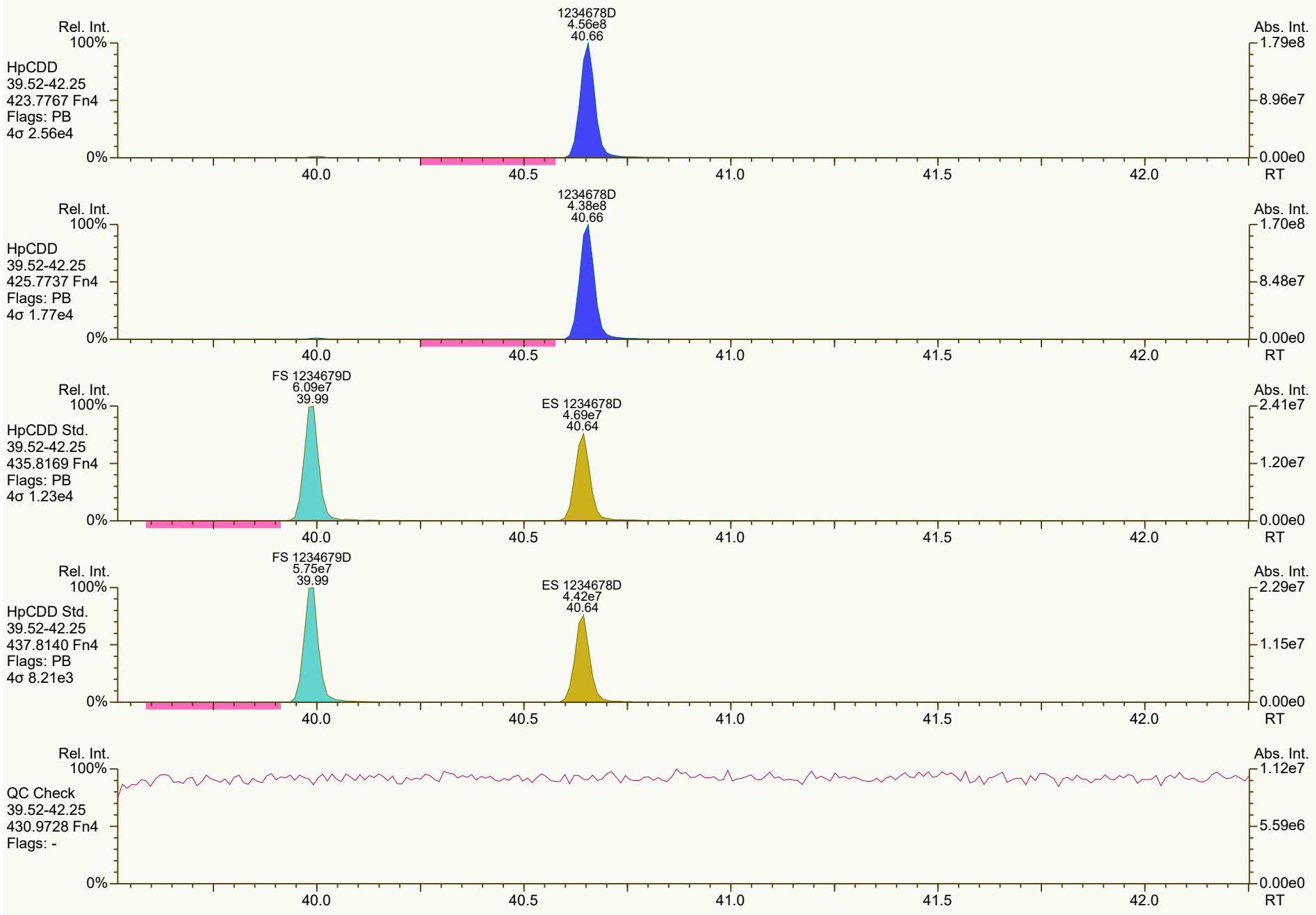
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.08e6
1.04e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.54e7
7.71e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.12e7
5.59e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

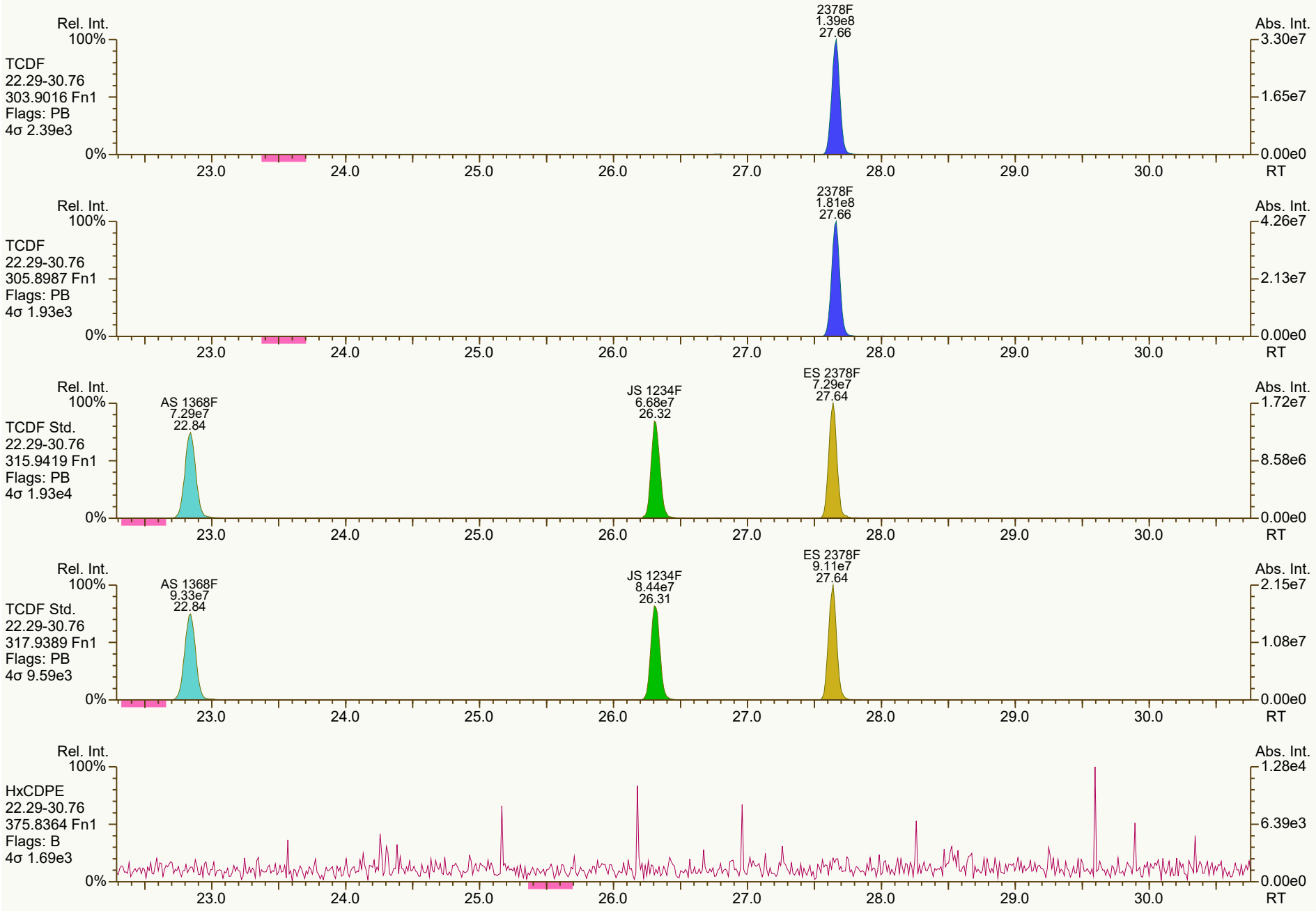

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.08e3
0%
2378D
1.16e8
28.52
Abs. Int.
2.88e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.05e3
0%
2378D
1.47e8
28.51
Abs. Int.
3.55e7
1.77e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.84e3
0%
RRF (CS 37Cl-2378D) = (2.51e8) * 100 pg/uL = 1.35
(4.19e7+ 5.12e7) * 200 pg/uL
CL 28Jul21
CS 37Cl-2378D
2.51e8
28.52
Abs. Int.
6.05e7
3.03e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.17e3
0%
AS 1368D
4.28e7
24.90
TS 1378D
5.83e7
26.87
JS 1234D
4.19e7
27.85
ES 2378D
4.26e7
28.49
FS 1278D
4.67e7
28.82
Abs. Int.
1.35e7
6.74e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.68e3
0%
AS 1368D
5.37e7
24.90
TS 1378D
7.34e7
26.87
JS 1234D
5.12e7
27.85
ES 2378D
5.45e7
28.49
FS 1278D
5.80e7
28.82
Abs. Int.
1.75e7
8.75e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.90e3
0%
12378D
6.47e8
33.80
Abs. Int.
1.94e8
9.68e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.13e3
0%
12378D
4.16e8
33.80
Abs. Int.
1.25e8
6.26e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.30e3
0%
RRF(SS 12347D) = (5.12e7 + 3.09e7) * 100pg / (6.15e7 + 3.80e7) * 100pg = 0.825
PSW 27-Jul-2021 15:25
OK - CL 28Jul21
FS 12478D
6.59e7
32.57
SS/ CS 12347D
5.12e7
33.29
ES 12378D
6.15e7
33.78
Abs. Int.
1.96e7
9.80e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.17e3
0%
FS 12478D
4.07e7
32.57
CS 12347D
3.09e7
33.29
ES 12378D
3.80e7
33.78
Abs. Int.
1.21e7
6.06e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.33e3
123478D
5.27e8
37.67
123678D
5.42e8
37.78
123789D
5.73e8
38.07
Abs. Int.
1.89e8
9.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.36e3
123478D
4.25e8
37.67
123678D
4.33e8
37.78
123789D
4.58e8
38.07
Abs. Int.
1.48e8
7.38e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.46e3
FS 123468D
6.30e7
36.58
ES 123478D
5.03e7
37.65
ES 123678D
4.97e7
37.77
JS 123467D
2.41e7
37.96
ES 123789D
5.72e7
38.06
Abs. Int.
1.95e7
9.76e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.50e3
FS 123468D
4.84e7
36.58
ES 123478D
3.97e7
37.65
ES 123678D
3.92e7
37.77
JS 123467D
1.94e7
37.96
ES 123789D
4.49e7
38.06
Abs. Int.
1.50e7
7.51e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.54e7
7.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.56e4
1234678D
4.56e8
40.66
Abs. Int.
1.79e8
8.96e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.77e4
1234678D
4.38e8
40.66
Abs. Int.
1.70e8
8.48e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.23e4
FS 1234679D
6.09e7
39.99
ES 1234678D
4.69e7
40.64
Abs. Int.
2.41e7
1.20e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 8.21e3
FS 1234679D
5.75e7
39.99
ES 1234678D
4.42e7
40.64
Abs. Int.
2.29e7
1.15e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.12e7
5.59e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.62e3
0%
OCDD
7.34e8*
43.22
Abs. Int.
2.52e8
1.26e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
OCDD
8.31e8*
43.22
Abs. Int.
2.81e8
1.40e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 3.01e3
0%
ES OCDD
6.94e7
43.21
Abs. Int.
2.31e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.23e3
0%
ES OCDD
7.81e7
43.21
Abs. Int.
2.71e7
1.35e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.39e3
2378F
1.39e8
27.66
3.30e7
1.65e7
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 1.93e3
2378F
1.81e8
27.66
4.26e7
2.13e7
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.93e4
AS 1368F
7.29e7
22.84
JS 1234F
6.68e7
26.32
ES 2378F
7.29e7
27.64
1.72e7
8.58e6
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 9.59e3
AS 1368F
9.33e7
22.84
JS 1234F
8.44e7
26.31
ES 2378F
9.11e7
27.64
2.15e7
1.08e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.69e3
1.28e4
6.39e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

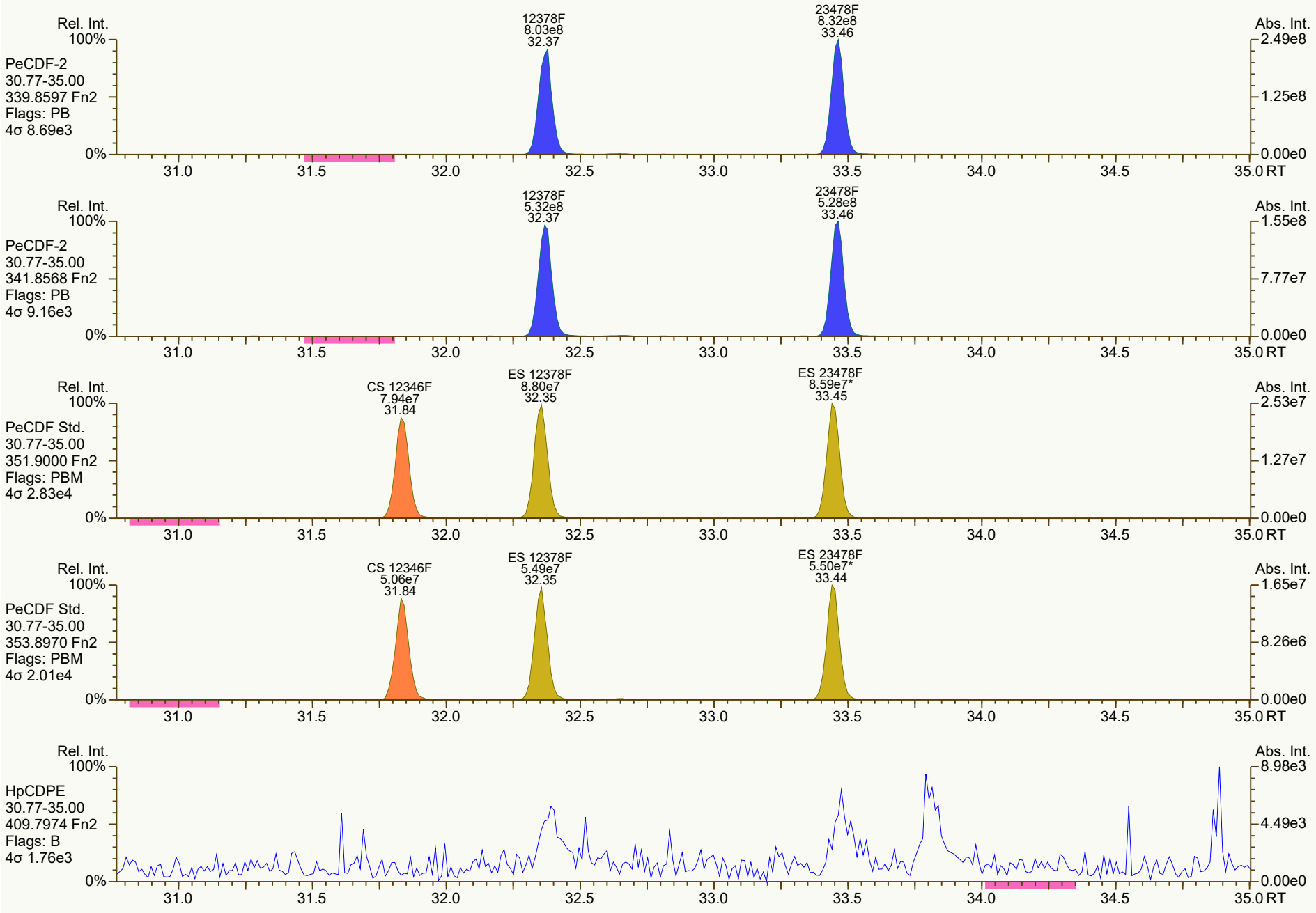
SGS ID: CS5_210727_DF_RA | Sample ID: SIL 25-5-3 | Acq: 27-Jul-2021 13:09:36

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89 | User: PSW Datafile: 210727R07



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW) | *Peak annotation: Areas, Centroids*

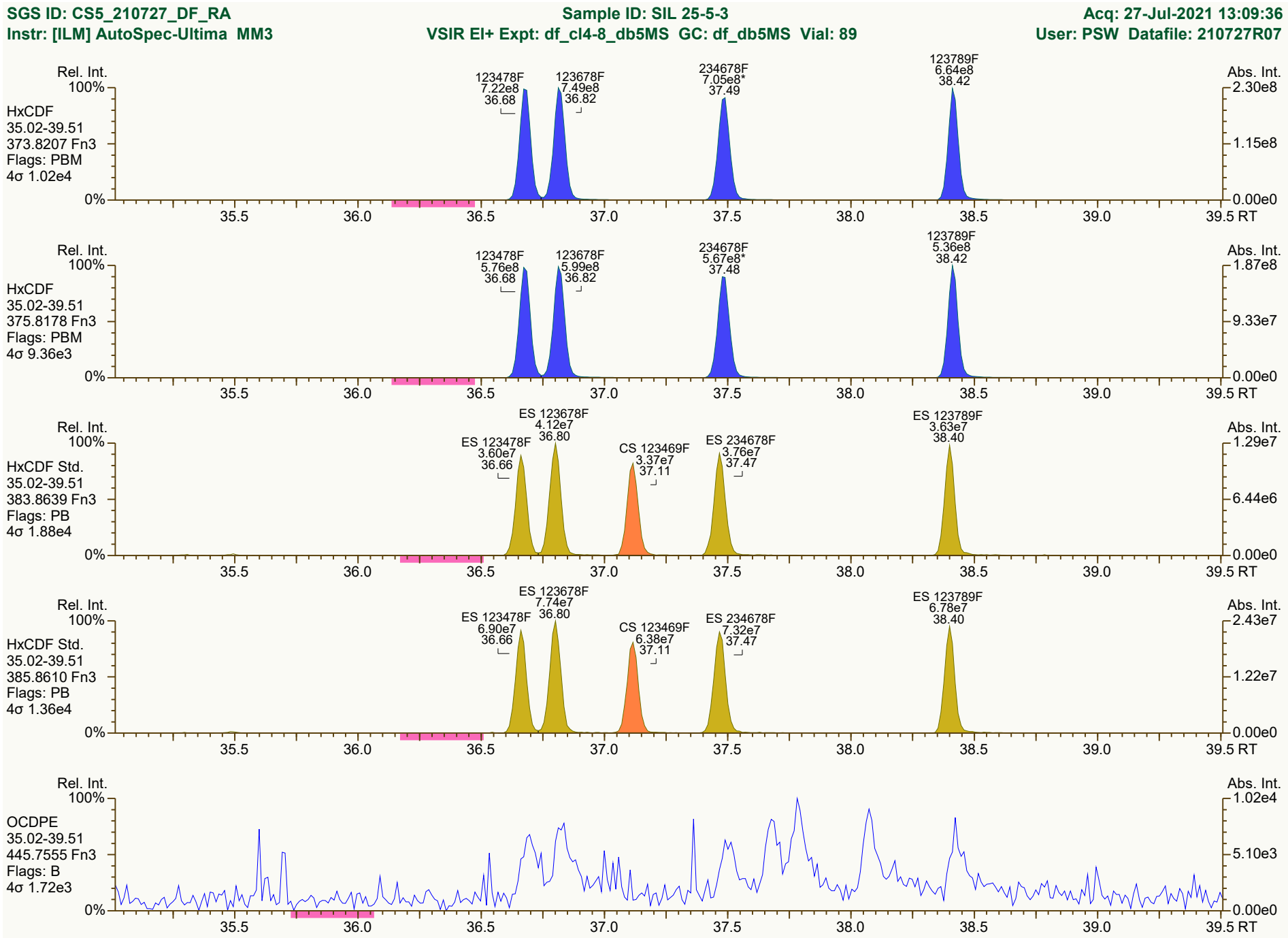
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7511 scc: 147-553 | *PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 8.69e3
0%
12378F
8.03e8
32.37
23478F
8.32e8
33.46
Abs. Int.
2.49e8
1.25e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 9.16e3
0%
12378F
5.32e8
32.37
23478F
5.28e8
33.46
Abs. Int.
1.55e8
7.77e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.83e4
0%
CS 12346F
7.94e7
31.84
ES 12378F
8.80e7
32.35
ES 23478F
8.59e7*
33.45
Abs. Int.
2.53e7
1.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.01e4
0%
CS 12346F
5.06e7
31.84
ES 12378F
5.49e7
32.35
ES 23478F
5.50e7*
33.44
Abs. Int.
1.65e7
8.26e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 1.76e3
0%
Abs. Int.
8.98e3
4.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

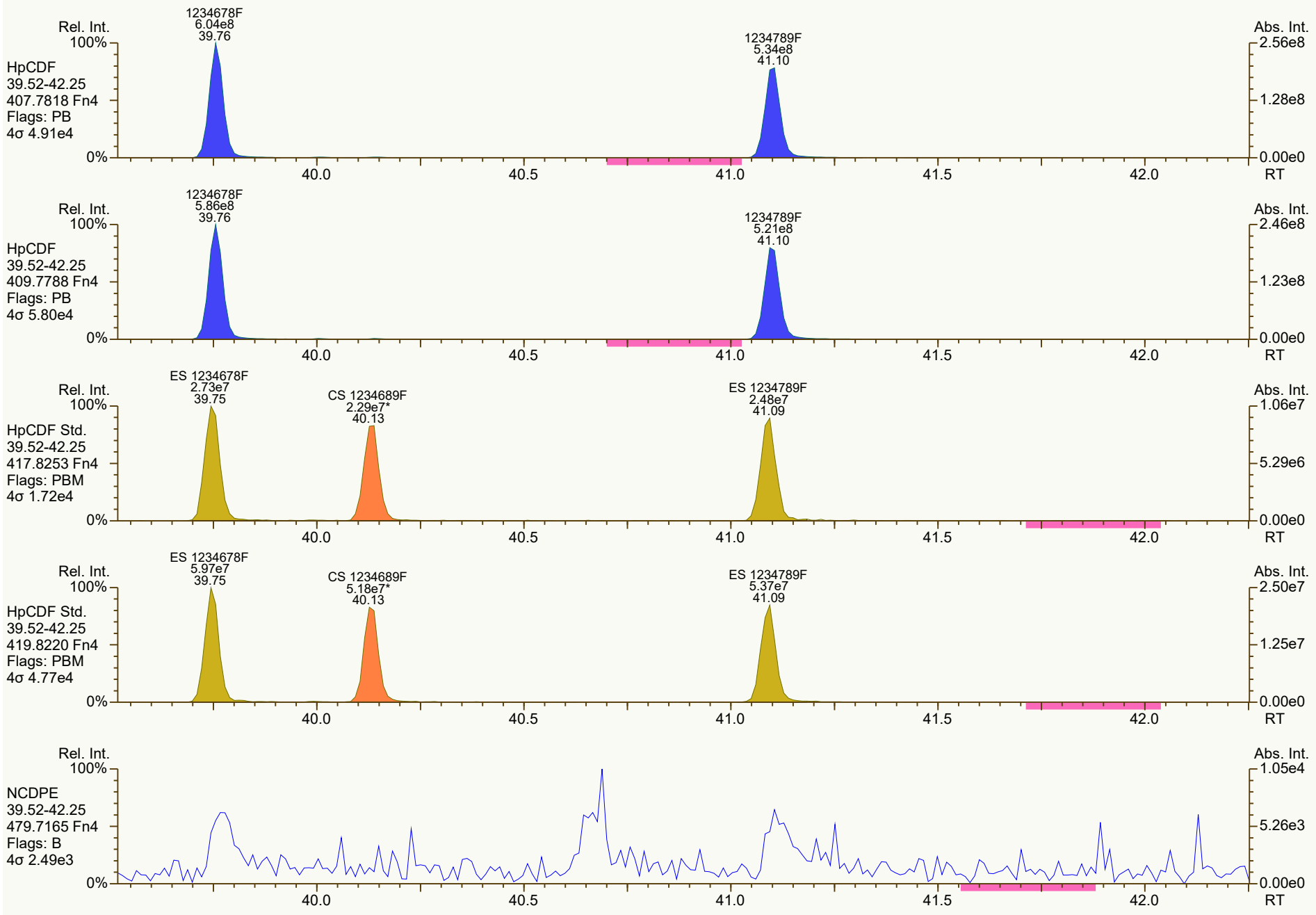
SGS ID: CS5_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

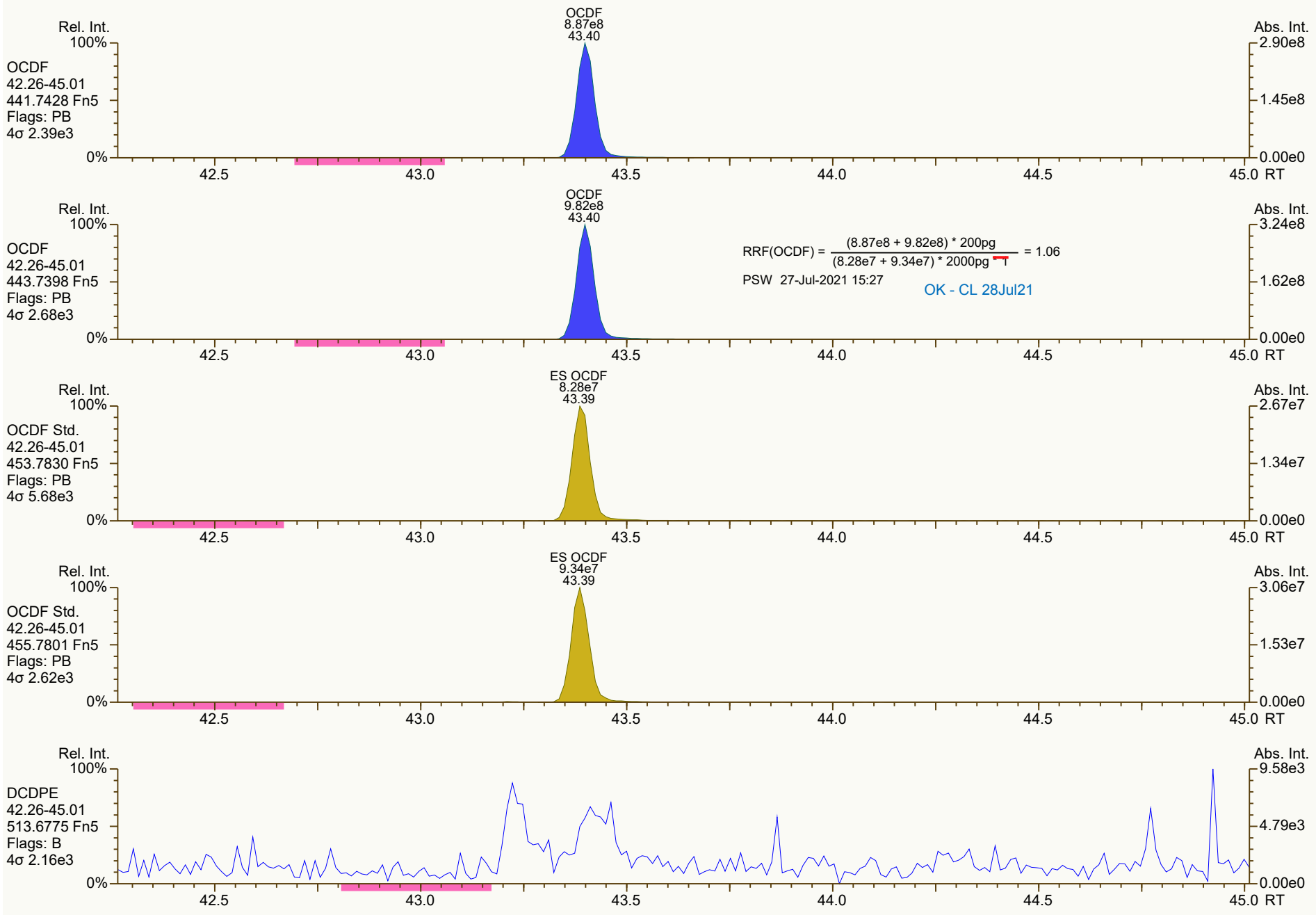
Sample ID: SIL 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89

Acq: 27-Jul-2021 13:09:36
User: PSW Datafile: 210727R07



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5016, 0733, 9416 scc: 147-553
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e4
1234678F
6.04e8
39.76
1234789F
5.34e8
41.10
Abs. Int.
2.56e8
1.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.80e4
1234678F
5.86e8
39.76
1234789F
5.21e8
41.10
Abs. Int.
2.46e8
1.23e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 1.72e4
ES 1234678F
2.73e7
39.75
CS 1234689F
2.29e7*
40.13
ES 1234789F
2.48e7
41.09
Abs. Int.
1.06e7
5.29e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 4.77e4
ES 1234678F
5.97e7
39.75
CS 1234689F
5.18e7*
40.13
ES 1234789F
5.37e7
41.09
Abs. Int.
2.50e7
1.25e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.49e3
Abs. Int.
1.05e4
5.26e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.39e3
0%
OCDF
8.87e8
43.40
Abs. Int.
2.90e8
1.45e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.68e3
0%
OCDF
9.82e8
43.40
RRF(OCDF) = (8.87e8 + 9.82e8) * 200pg / (8.28e7 + 9.34e7) * 2000pg = 1.06
PSW 27-Jul-2021 15:27
OK - CL 28Jul21
Abs. Int.
3.24e8
1.62e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.68e3
0%
ES OCDF
8.28e7
43.39
Abs. Int.
2.67e7
1.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.62e3
0%
ES OCDF
9.34e7
43.39
Abs. Int.
3.06e7
1.53e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.16e3
0%
Abs. Int.
9.58e3
4.79e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

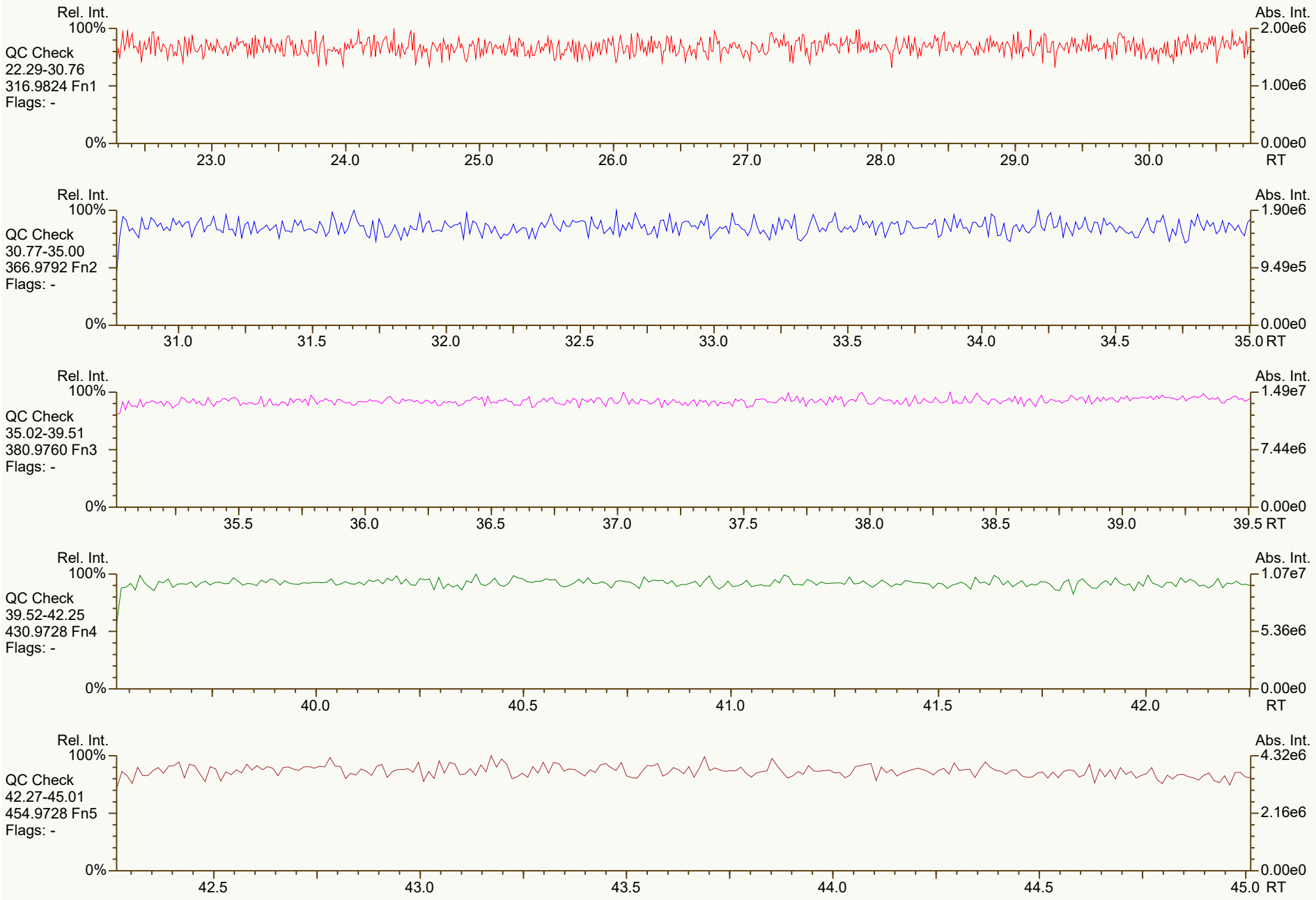
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

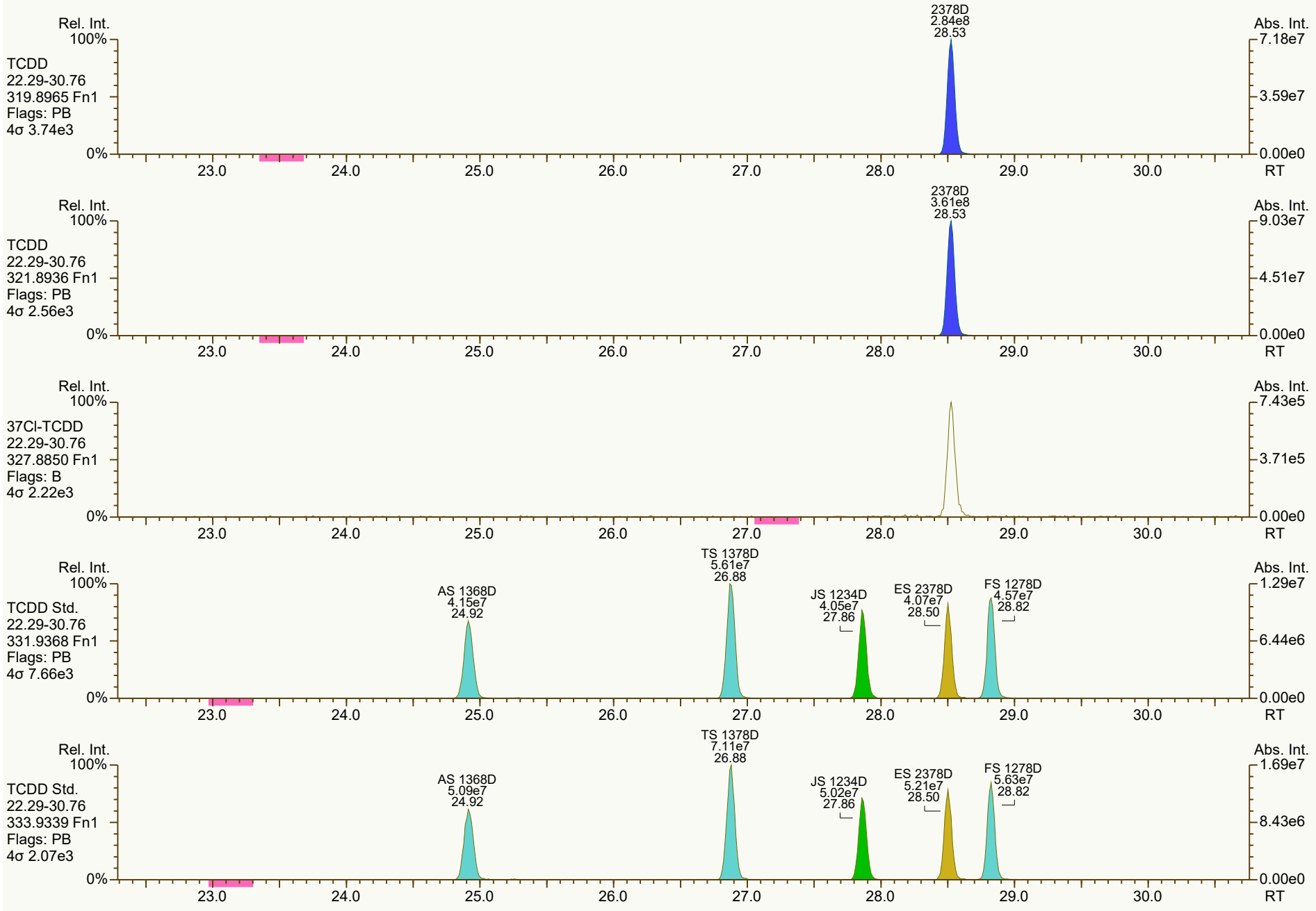
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	6.45E+08	0.79	Y	1.34	1.39	3%
12378-PeCDD	33.81	2.62E+09	1.57	Y	1.06	1.05	0%
123478-HxCDD	37.68	2.41E+09	1.26	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.46E+09	1.25	Y	1.08	1.09	1%
123789-HxCDD	38.08	2.63E+09	1.25	Y	1.02	1.00	-1%
1234678-HpCDD	40.66	2.28E+09	1.03	Y	0.97	1.00	2%
OCDD	43.24	4.13E+09	0.89	Y	1.07	1.08	1%
2378-TCDF	27.67	7.99E+08	0.77	Y	0.96	0.99	3%
12378-PeCDF	32.38	3.47E+09	1.57	Y	0.95	0.96	2%
23478-PeCDF	33.47	3.38E+09	1.55	Y	0.94	0.96	2%
123478-HxCDF	36.69	3.24E+09	1.24	Y	1.23	1.22	-1%
123678-HxCDF	36.83	3.36E+09	1.24	Y	1.13	1.14	0%
234678-HxCDF	37.49	3.14E+09	1.25	Y	1.15	1.15	0%
123789-HxCDF	38.43	3.10E+09	1.25	Y	1.14	1.16	2%
1234678-HpCDF	39.77	3.01E+09	1.04	Y	1.36	1.36	0%
1234789-HpCDF	41.11	2.70E+09	1.03	Y	1.30	1.33	2%
OCDF	43.42	4.91E+09	0.91	Y	1.03	1.08	5%
ES 2378-TCDD	28.50	9.29E+07	0.78	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.791	9.93E+07	1.63	Y	1.03	1.10	6%
ES 123478-HxCDD	37.663	9.19E+07	1.24	Y	0.99	1.07	7%
ES 123678-HxCDD	37.778	9.02E+07	1.27	Y	0.97	1.05	7%
ES 123789-HxCDD	38.067	1.05E+08	1.27	Y	1.12	1.22	8%
ES 1234678-HpCDD	40.65	9.14E+07	1.03	Y	0.99	1.06	7%
ES OCDD	43.227	1.53E+08	0.91	Y	0.78	0.89	14%
ES 2378-TCDF	27.65	1.62E+08	0.78	Y	1.08	1.10	2%
ES 12378-PeCDF	32.365	1.44E+08	1.56	Y	0.93	0.98	5%
ES 23478-PeCDF	33.455	1.42E+08	1.59	Y	0.92	0.96	4%
ES 123478-HxCDF	36.671	1.06E+08	0.53	Y	1.14	1.23	8%
ES 123678-HxCDF	36.81	1.18E+08	0.53	Y	1.30	1.37	6%
ES 234678-HxCDF	37.477	1.09E+08	0.52	Y	1.20	1.27	5%
ES 123789-HxCDF	38.411	1.07E+08	0.52	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.757	8.85E+07	0.45	Y	0.95	1.03	8%
ES 1234789-HpCDF	41.1	8.15E+07	0.45	Y	0.85	0.94	12%
ES OCDF	43.407	1.83E+08	0.90	Y	0.93	1.06	14%

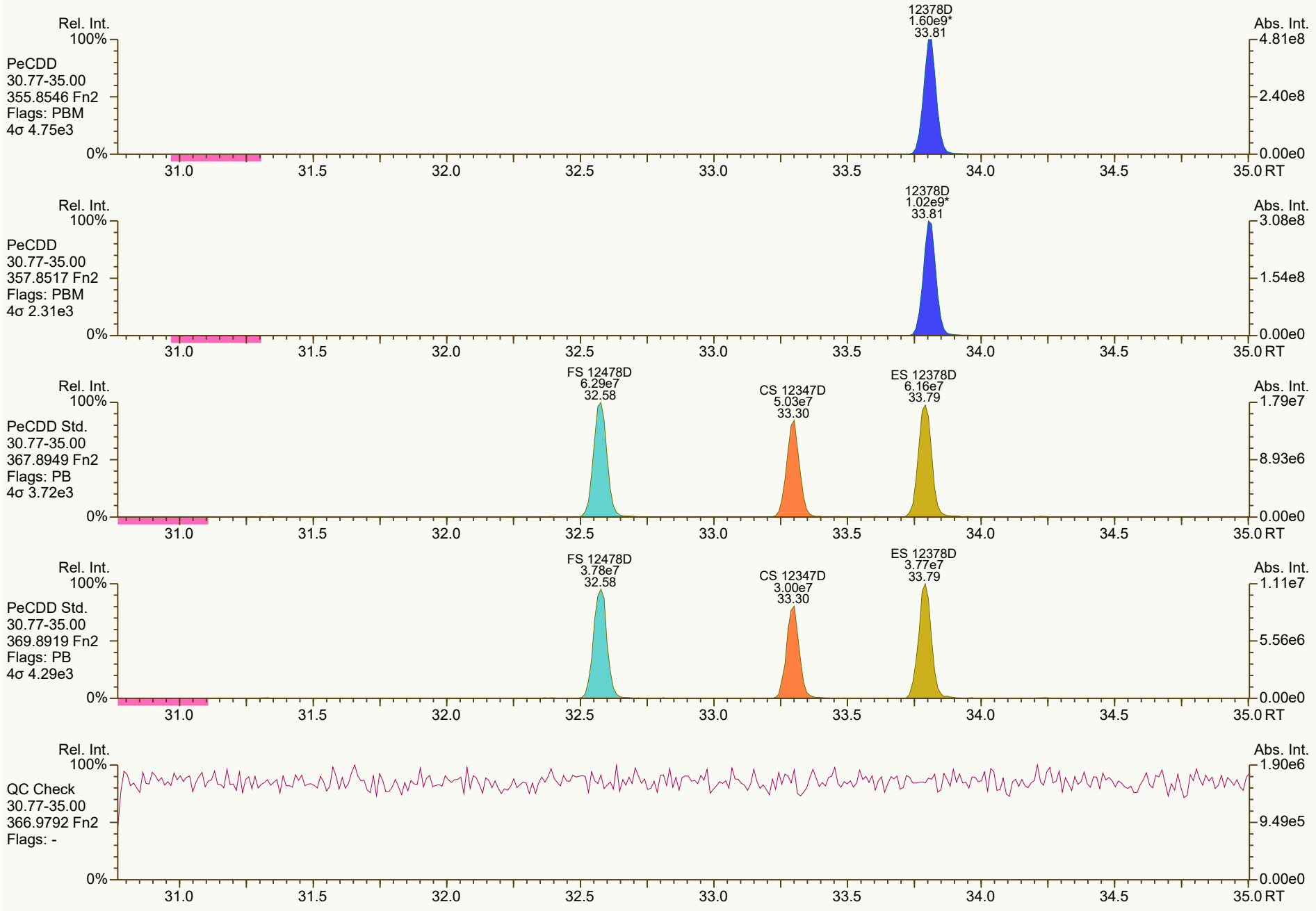
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

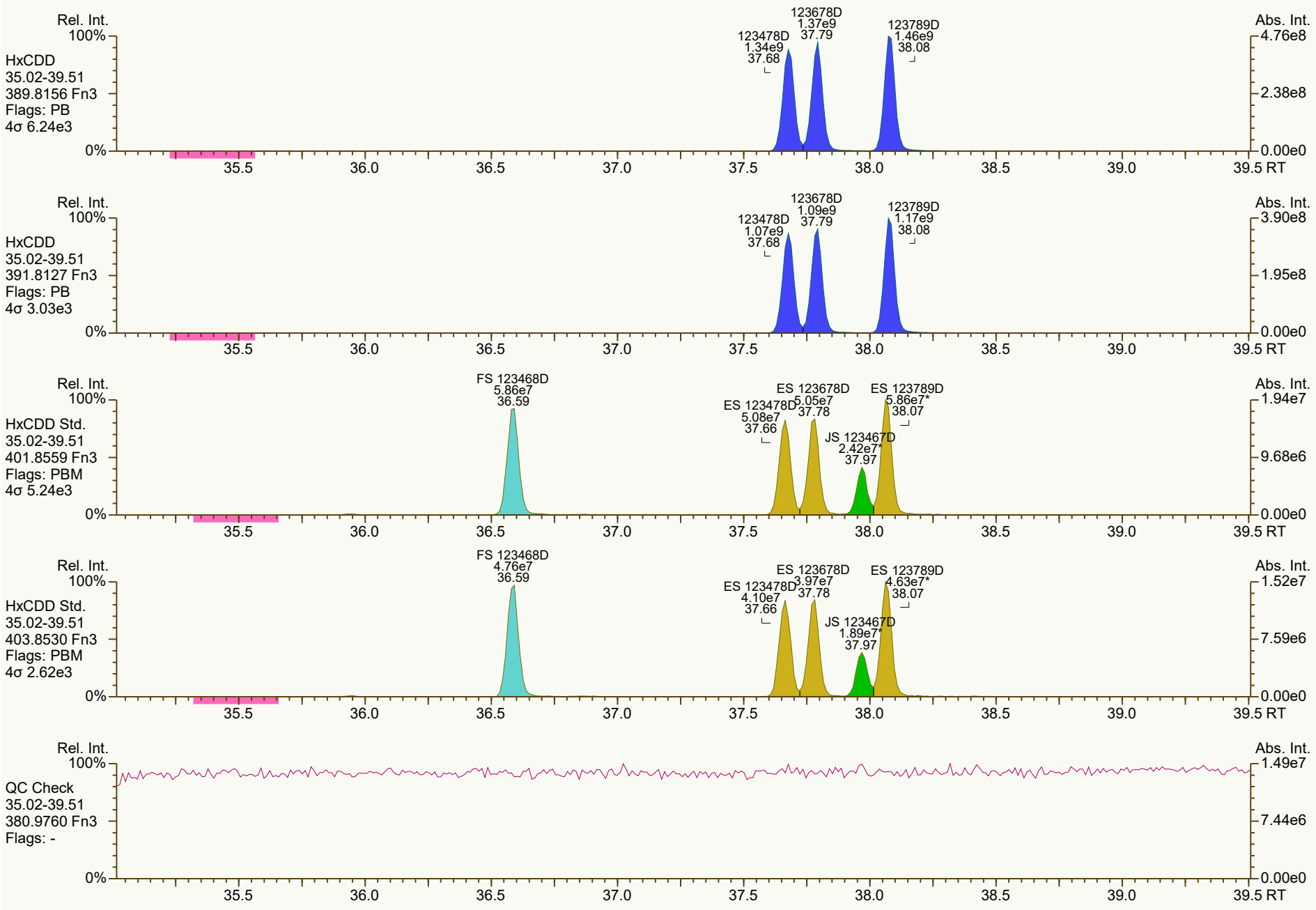
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	9.07E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.33	1.47E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	4.31E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.89	0.89	-1%
CS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.87	0.85	-2%
CS 123469-HxCDF	37.12	9.43E+07	0.51	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.86	0.84	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.86	0.81	-6%
SS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.93	0.87	-7%
SS 123469-HxCDF	37.12	9.43E+07	0.51	Y	0.84	0.80	-5%
SS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.91	0.81	-11%
AS 1368-TCDD	24.92	9.24E+07	0.82	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	1.58E+08	0.79	Y	1.08	1.07	0%
FS 1278-TCDD	28.83	1.02E+08	0.81	Y	1.08	1.10	1%
FS 12478-PeCDD	32.58	1.01E+08	1.67	Y	1.09	1.01	-7%
FS 123468-HxCDD	36.59	1.06E+08	1.23	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.99	1.12E+08	1.07	Y	1.36	1.23	-9%
TS 1378-TCDD	26.88	1.27E+08	0.79	Y	1.35	1.37	2%
~~OCDD-a~~	~~43.23~~	~~2.53E+08~~	~~2.47~~	~~Y~~	~~0.07~~	~~0.07~~	~~0%~~
~~OCDF-a~~	~~43.42~~	~~2.93E+08~~	~~2.57~~	~~Y~~	~~0.06~~	~~0.06~~	~~8%~~

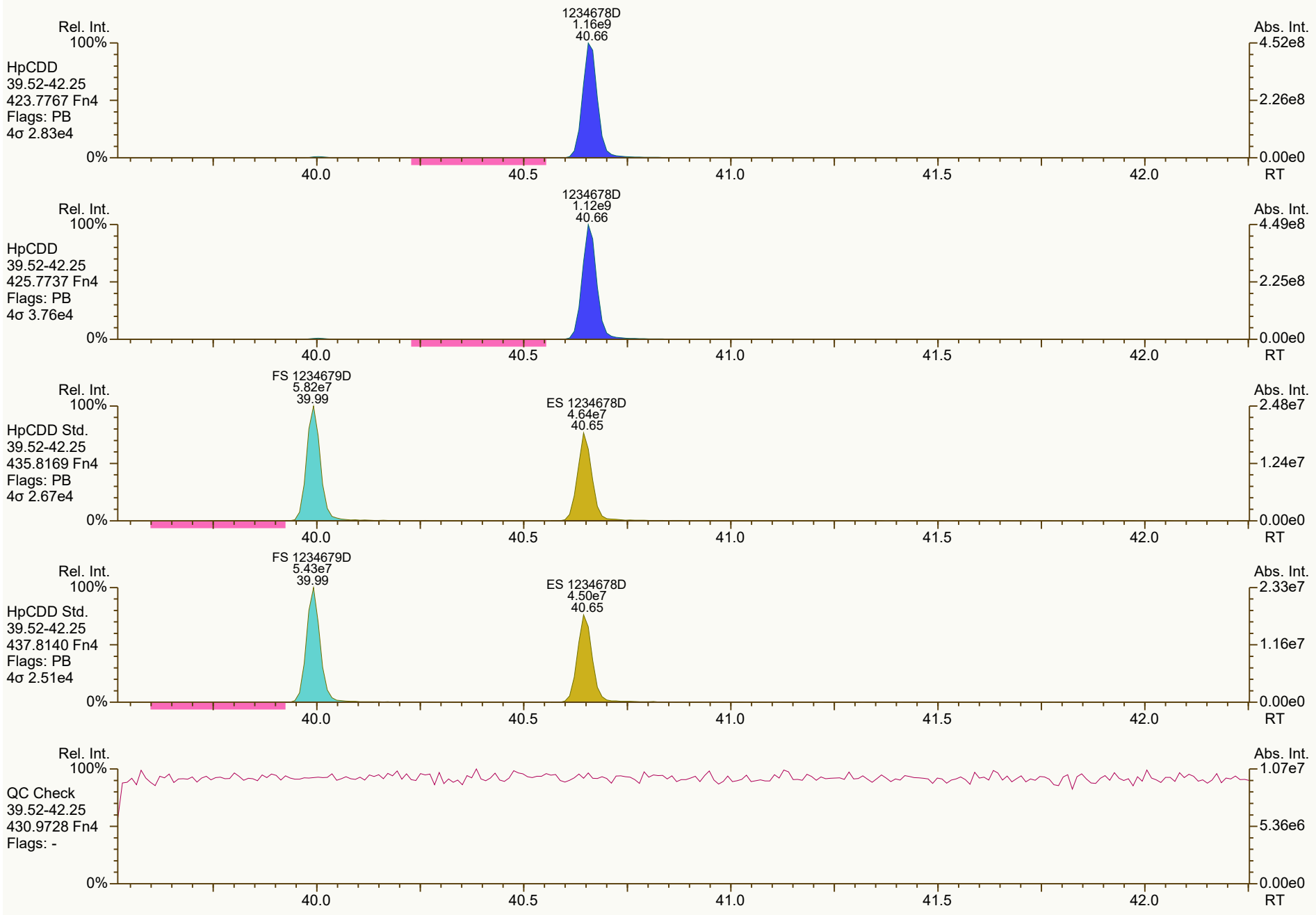
Not reported from this ICAL - CL 28Jul21

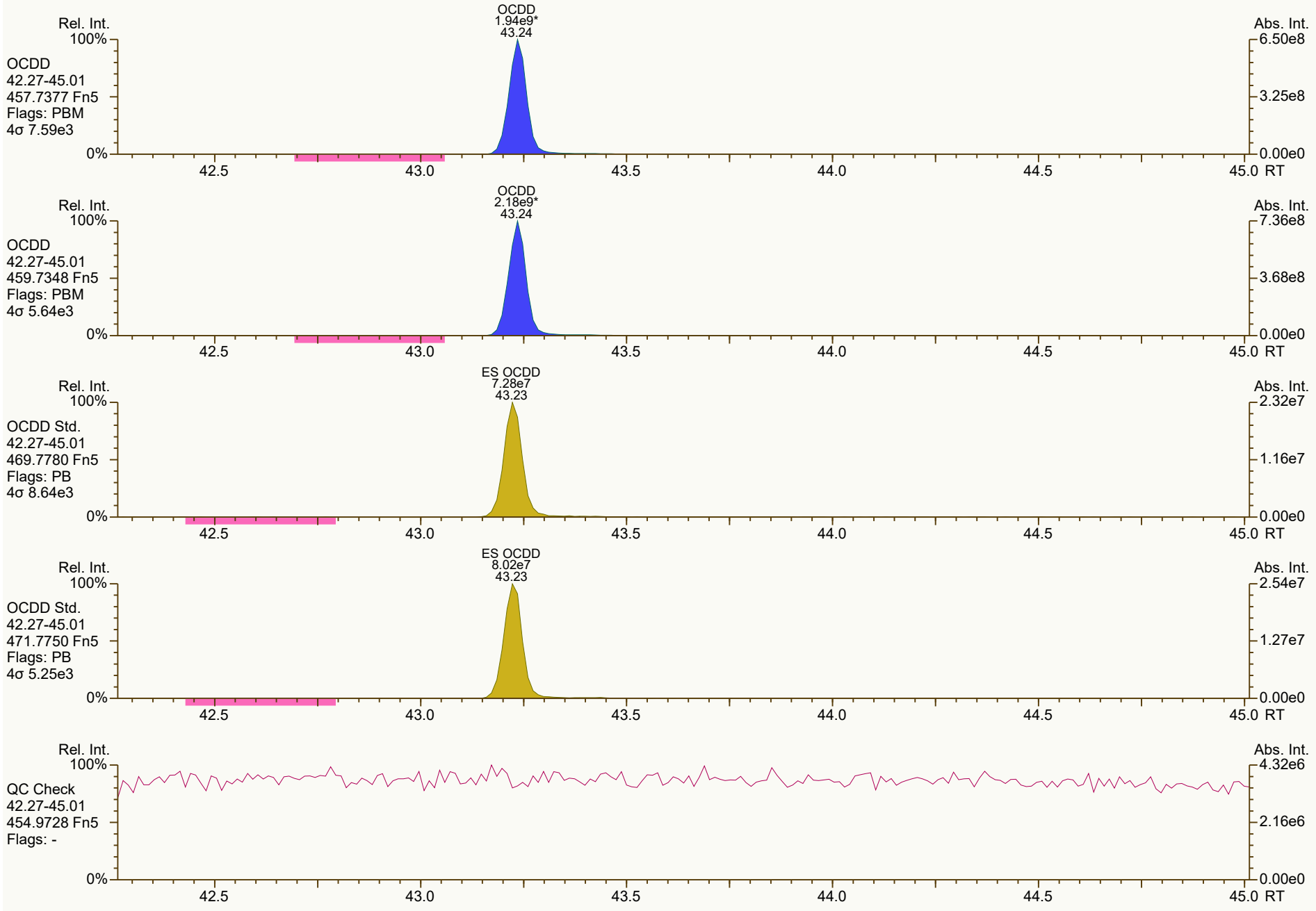

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.00e6
1.00e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.49e7
7.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.74e3
0%
2378D
2.84e8
28.53
Abs. Int.
7.18e7
3.59e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.56e3
0%
2378D
3.61e8
28.53
Abs. Int.
9.03e7
4.51e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.22e3
0%
Abs. Int.
7.43e5
3.71e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.66e3
0%
AS 1368D
4.15e7
24.92
TS 1378D
5.61e7
26.88
JS 1234D
4.05e7
27.86
ES 2378D
4.07e7
28.50
FS 1278D
4.57e7
28.82
Abs. Int.
1.29e7
6.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.07e3
0%
AS 1368D
5.09e7
24.92
TS 1378D
7.11e7
26.88
JS 1234D
5.02e7
27.86
ES 2378D
5.21e7
28.50
FS 1278D
5.63e7
28.82
Abs. Int.
1.69e7
8.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 4.75e3
0%
12378D
1.60e9*
33.81
Abs. Int.
4.81e8
2.40e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.31e3
0%
12378D
1.02e9*
33.81
Abs. Int.
3.08e8
1.54e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.72e3
0%
FS 12478D
6.29e7
32.58
CS 12347D
5.03e7
33.30
ES 12378D
6.16e7
33.79
Abs. Int.
1.79e7
8.93e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.29e3
0%
FS 12478D
3.78e7
32.58
CS 12347D
3.00e7
33.30
ES 12378D
3.77e7
33.79
Abs. Int.
1.11e7
5.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

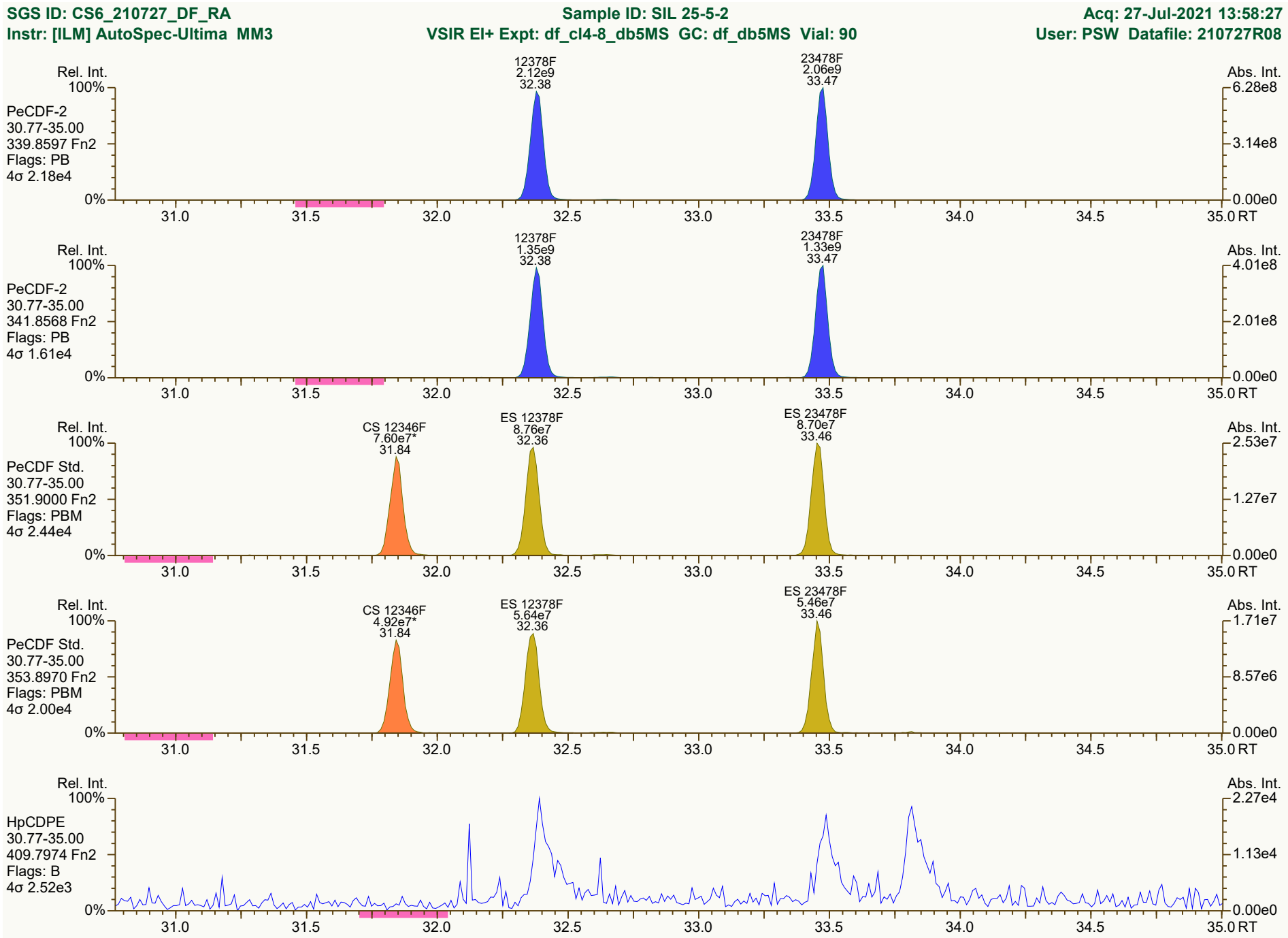

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 6.24e3
123478D
1.34e9
37.68
123678D
1.37e9
37.79
123789D
1.46e9
38.08
Abs. Int.
4.76e8
2.38e8
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 3.03e3
123478D
1.07e9
37.68
123678D
1.09e9
37.79
123789D
1.17e9
38.08
Abs. Int.
3.90e8
1.95e8
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 5.24e3
FS 123468D
5.86e7
36.59
ES 123478D
5.08e7
37.66
ES 123678D
5.05e7
37.78
JS 123467D
2.42e7*
37.97
ES 123789D
5.86e7*
38.07
Abs. Int.
1.94e7
9.68e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.62e3
FS 123468D
4.76e7
36.59
ES 123478D
4.10e7
37.66
ES 123678D
3.97e7
37.78
JS 123467D
1.89e7*
37.97
ES 123789D
4.63e7*
38.07
Abs. Int.
1.52e7
7.59e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.49e7
7.44e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

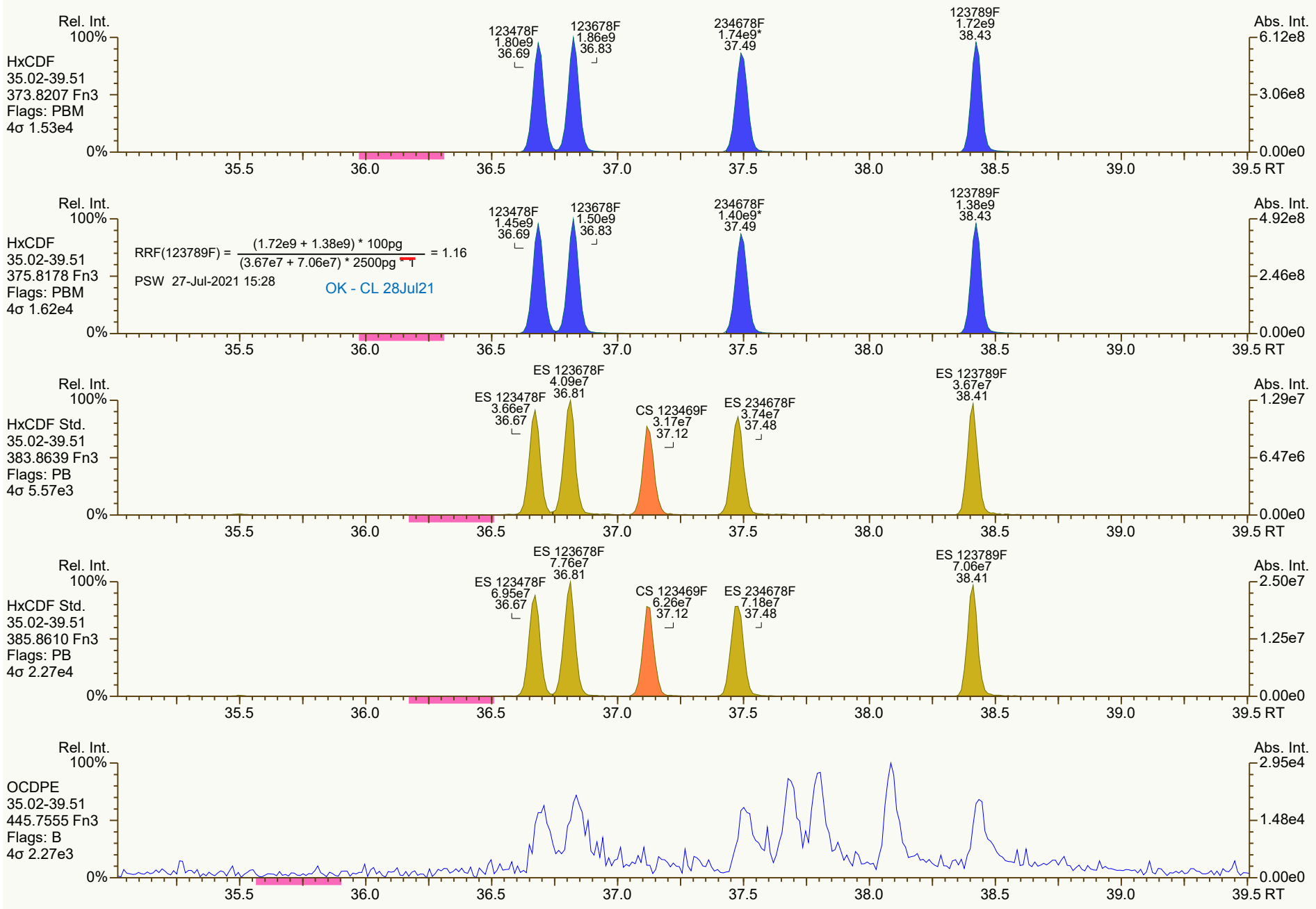

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.83e4
0%
1234678D
1.16e9
40.66
Abs. Int.
4.52e8
2.26e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.76e4
1234678D
1.12e9
40.66
4.49e8
2.25e8
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.67e4
FS 1234679D
5.82e7
39.99
ES 1234678D
4.64e7
40.65
2.48e7
1.24e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 2.51e4
FS 1234679D
5.43e7
39.99
ES 1234678D
4.50e7
40.65
2.33e7
1.16e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.07e7
5.36e6

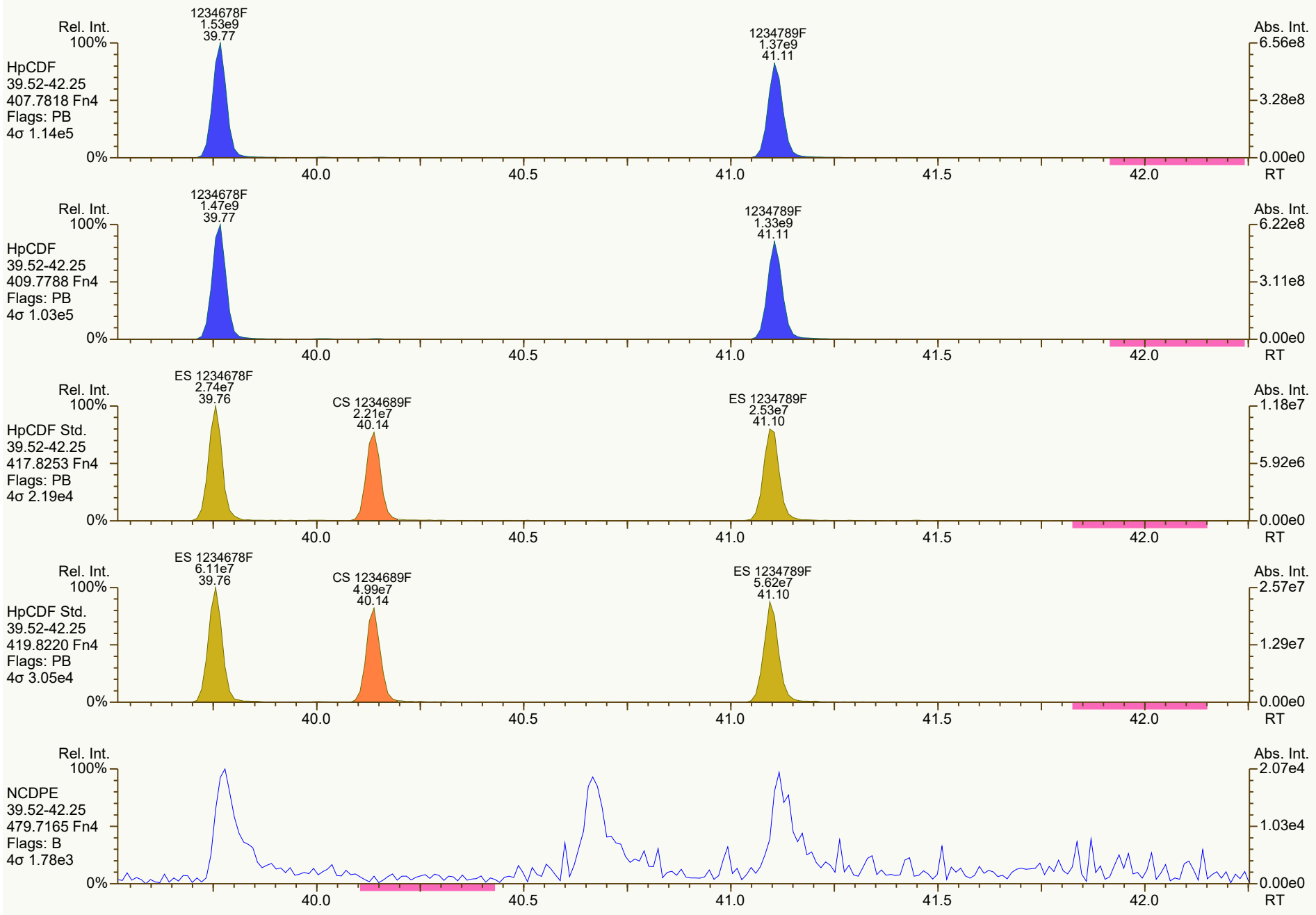

OCDD
1.94e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PBM
4σ 7.59e3
0%
Abs. Int.
6.50e8
3.25e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.18e9*
43.24
OCDD
42.27-45.01
459.7348 Fn5
Flags: PBM
4σ 5.64e3
7.36e8
3.68e8
ES OCDD
7.28e7
43.23
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 8.64e3
2.32e7
1.16e7
ES OCDD
8.02e7
43.23
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 5.25e3
2.54e7
1.27e7
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
4.32e6
2.16e6

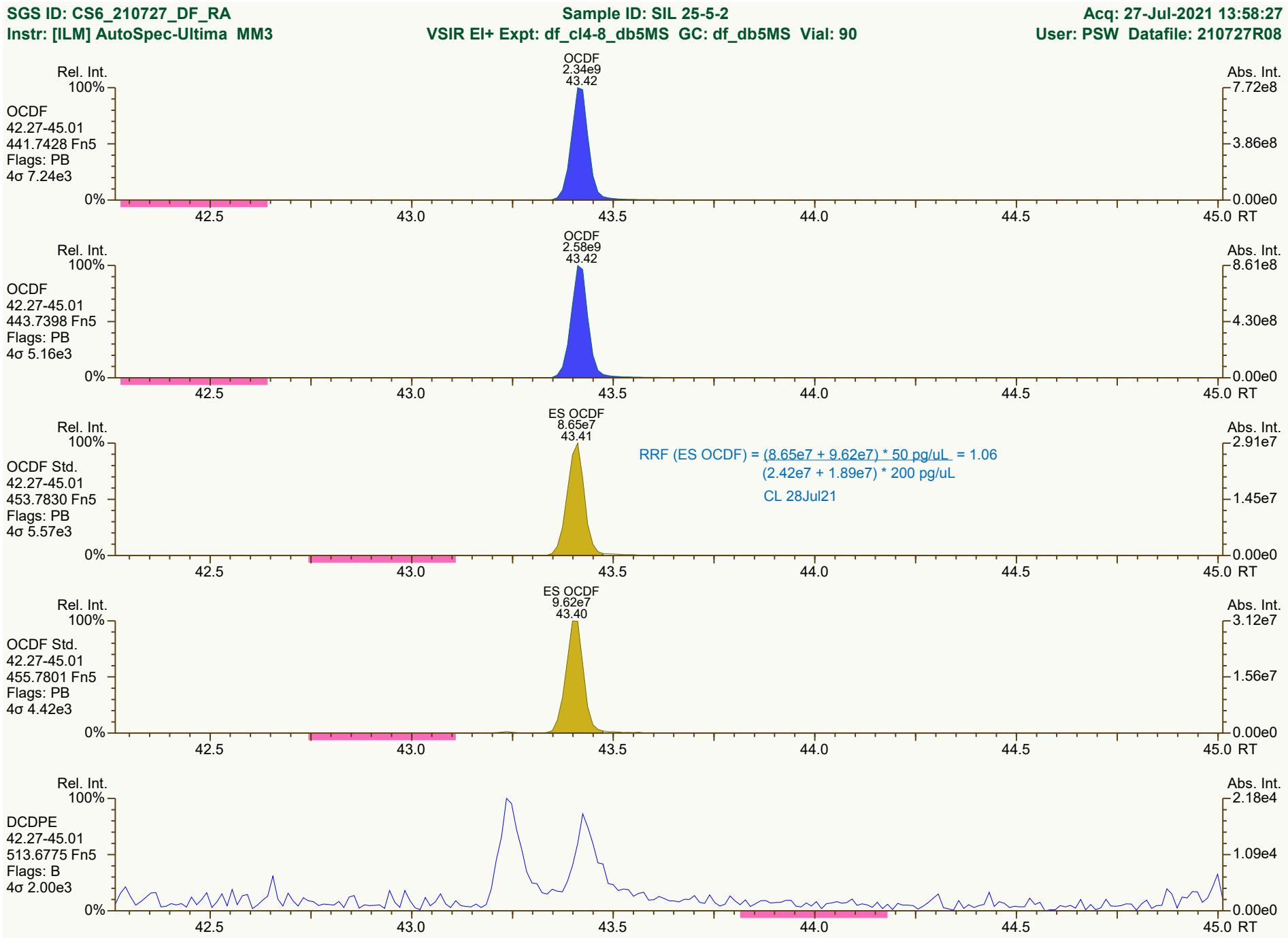

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.81e3
0%
2378F
3.47e8
27.67
Abs. Int.
8.18e7
4.09e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.63e3
0%
2378F
4.52e8
27.67
Abs. Int.
1.06e8
5.31e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
6.97e7
22.86
JS 1234F
6.51e7
26.33
ES 2378F
7.12e7
27.65
Abs. Int.
1.73e7
8.65e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 8.59e3
0%
AS 1368F
8.87e7
22.85
JS 1234F
8.23e7
26.33
ES 2378F
9.09e7
27.65
Abs. Int.
2.19e7
1.09e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.16e3
0%
Abs. Int.
1.85e4
9.24e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.81e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 4.96e3
1.40e4
7.01e3
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.00e6
1.00e6


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.18e4
12378F
2.12e9
32.38
23478F
2.06e9
33.47
6.28e8
3.14e8
0.00e0
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 1.61e4
12378F
1.35e9
32.38
23478F
1.33e9
33.47
4.01e8
2.01e8
0.00e0
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.44e4
CS 12346F
7.60e7*
31.84
ES 12378F
8.76e7
32.36
ES 23478F
8.70e7
33.46
2.53e7
1.27e7
0.00e0
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.00e4
CS 12346F
4.92e7*
31.84
ES 12378F
5.64e7
32.36
ES 23478F
5.46e7
33.46
1.71e7
8.57e6
0.00e0
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.52e3
2.27e4
1.13e4
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.53e4
0%
123478F
1.80e9
36.69
123678F
1.86e9
36.83
234678F
1.74e9*
37.49
123789F
1.72e9
38.43
Abs. Int.
6.12e8
3.06e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 1.62e4
RRF(123789F) = (1.72e9 + 1.38e9) * 100pg / (3.67e7 + 7.06e7) * 2500pg = 1.16
PSW 27-Jul-2021 15:28
OK - CL 28Jul21
123478F
1.45e9
36.69
123678F
1.50e9
36.83
234678F
1.40e9*
37.49
123789F
1.38e9
38.43
4.92e8
2.46e8
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.57e3
ES 123678F
4.09e7
36.81
ES 123478F
3.66e7
36.67
CS 123469F
3.17e7
37.12
ES 234678F
3.74e7
37.48
ES 123789F
3.67e7
38.41
1.29e7
6.47e6
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.27e4
ES 123678F
7.76e7
36.81
ES 123478F
6.95e7
36.67
CS 123469F
6.26e7
37.12
ES 234678F
7.18e7
37.48
ES 123789F
7.06e7
38.41
2.50e7
1.25e7
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.27e3
2.95e4
1.48e4

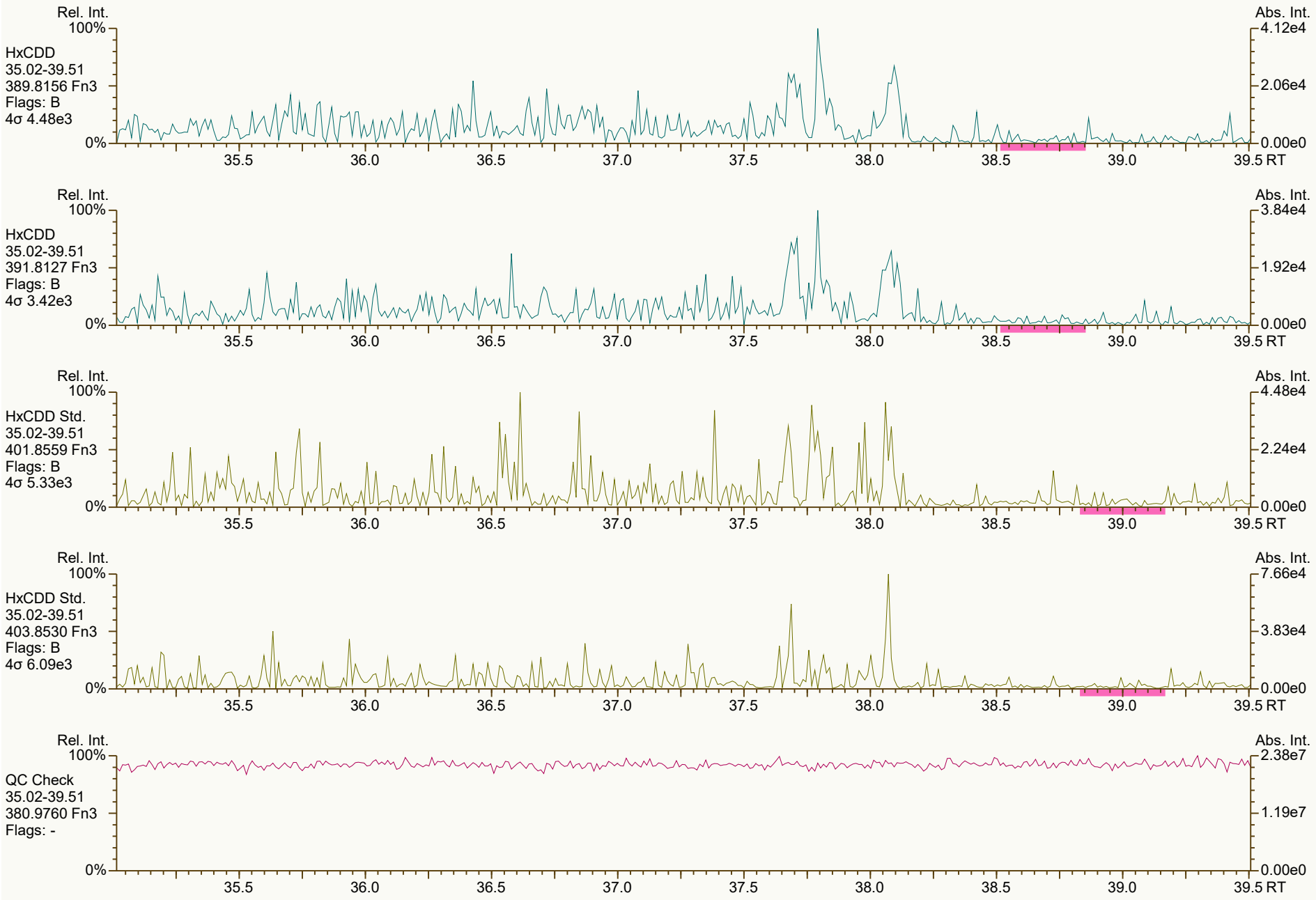

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.14e5
1234678F
1.53e9
39.77
1234789F
1.37e9
41.11
Abs. Int.
6.56e8
3.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.03e5
1234678F
1.47e9
39.77
1234789F
1.33e9
41.11
Abs. Int.
6.22e8
3.11e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.19e4
ES 1234678F
2.74e7
39.76
CS 1234689F
2.21e7
40.14
ES 1234789F
2.53e7
41.10
Abs. Int.
1.18e7
5.92e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 3.05e4
ES 1234678F
6.11e7
39.76
CS 1234689F
4.99e7
40.14
ES 1234789F
5.62e7
41.10
Abs. Int.
2.57e7
1.29e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 1.78e3
Abs. Int.
2.07e4
1.03e4
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
OCDF
2.34e9
43.42
Rel. Int.
Abs. Int.
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 7.24e3
OCDF
2.58e9
43.42
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 5.16e3
ES OCDF
8.65e7
43.41
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.57e3
RRF (ES OCDF) = (8.65e7 + 9.62e7) * 50 pg/uL = 1.06
(2.42e7 + 1.89e7) * 200 pg/uL
CL 28Jul21
ES OCDF
9.62e7
43.40
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.42e3
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.00e3
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8670, 9652, 4309 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:32 Page 12 of 12

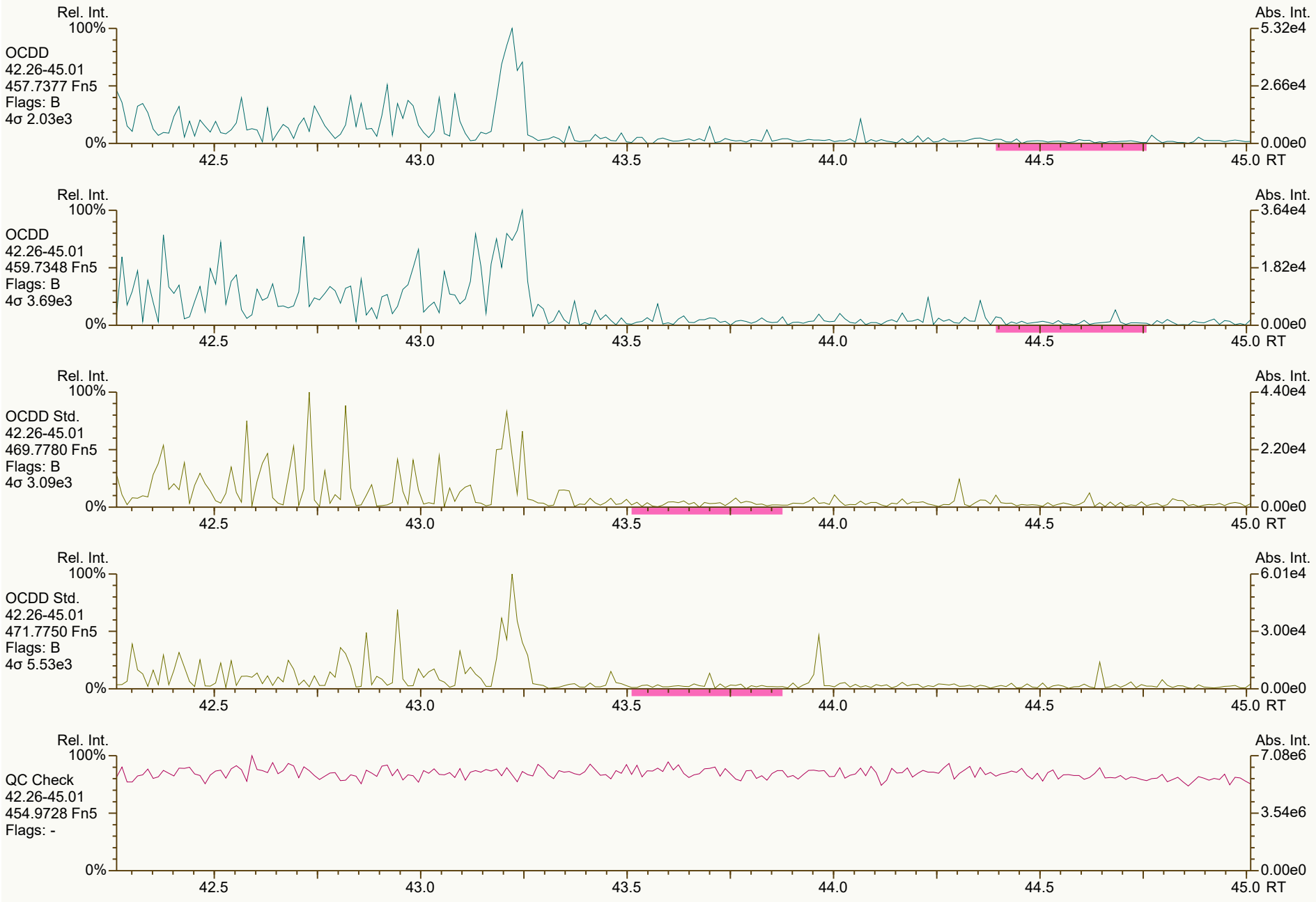

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: B
4σ 5.46e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: B
4σ 3.81e3
0%
Abs. Int.
1.72e4
8.58e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.57e4
7.86e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: B
4σ 1.19e4
0%
Abs. Int.
4.60e4
2.30e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: B
4σ 4.18e3
0%
Abs. Int.
4.81e4
2.40e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: B
4σ 9.54e3
0%
Abs. Int.
3.89e4
1.94e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: B
4σ 5.05e3
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: B
4σ 5.45e3
0%
Abs. Int.
6.36e4
3.18e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: B
4σ 4.94e3
0%
Abs. Int.
2.95e4
1.48e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: B
4σ 4.48e3
0%
Abs. Int.
4.12e4
2.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: B
4σ 3.42e3
0%
Abs. Int.
3.84e4
1.92e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: B
4σ 5.33e3
0%
Abs. Int.
4.48e4
2.24e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: B
4σ 6.09e3
0%
Abs. Int.
7.66e4
3.83e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: B
4σ 8.10e3
0%
Abs. Int.
5.65e4
2.82e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: B
4σ 9.20e3
0%
Abs. Int.
3.29e4
1.64e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: B
4σ 7.86e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: B
4σ 3.02e3
0%
Abs. Int.
6.85e4
3.43e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: B
4σ 2.03e3
0%
Abs. Int.
5.32e4
2.66e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: B
4σ 3.69e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: B
4σ 3.09e3
0%
Abs. Int.
4.40e4
2.20e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: B
4σ 5.53e3
0%
Abs. Int.
6.01e4
3.00e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_210727_DF_RA | Sample ID: SIL 20-61-1 | Acq: 27-Jul-2021 08:17:39

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: PSW Datafile: 210727R01



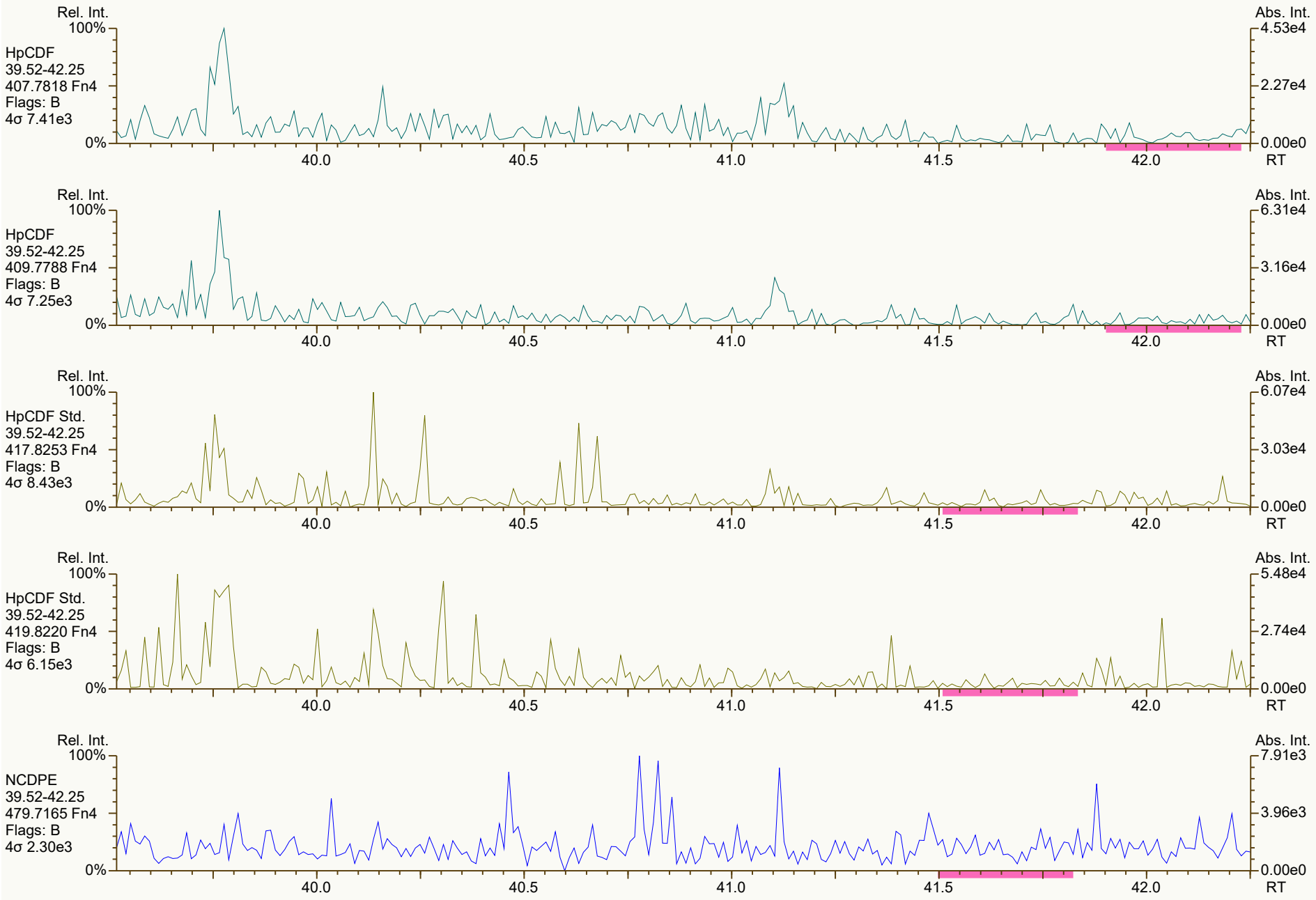
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9293, 5161, 7483 scc: 638-037 *PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 7 of 12*


Rel. Int.
100%
0%
Abs. Int.
3.87e4
1.94e4
0.00e0
RT
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 6.47e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
0%
Abs. Int.
3.57e4
1.78e4
0.00e0
RT
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 6.41e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
RT
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: B
4σ 6.52e3
0%
Abs. Int.
4.88e4
2.44e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: B
4σ 6.57e3
0%
Abs. Int.
3.28e4
1.64e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: B
4σ 2.11e3
0%
Abs. Int.
6.19e4
3.10e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: B
4σ 3.42e3
0%
Abs. Int.
5.42e4
2.71e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: B
4σ 6.81e3
0%
Abs. Int.
5.46e4
2.73e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: B
4σ 4.05e3
0%
Abs. Int.
3.51e4
1.76e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: B
4σ 6.70e3
0%
Abs. Int.
4.23e4
2.11e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: B
4σ 1.33e4
0%
Abs. Int.
8.19e4
4.10e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.51e3
0%
Abs. Int.
2.13e4
1.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: B
4σ 7.41e3
0%
Abs. Int.
4.53e4
2.27e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: B
4σ 7.25e3
0%
Abs. Int.
6.31e4
3.16e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: B
4σ 8.43e3
0%
Abs. Int.
6.07e4
3.03e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: B
4σ 6.15e3
0%
Abs. Int.
5.48e4
2.74e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.30e3
0%
Abs. Int.
7.91e3
3.96e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: B
4σ 2.18e3
0%
Abs. Int.
4.13e4
2.06e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: B
4σ 1.96e3
0%
Abs. Int.
5.82e4
2.91e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: B
4σ 3.42e3
0%
Abs. Int.
6.44e4
3.22e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: B
4σ 2.75e3
0%
Abs. Int.
6.15e4
3.08e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 2.12e3
0%
Abs. Int.
5.85e3
2.93e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
15	210727R15	3	CS3_210727_DF_RB ✓	1.00	SIL 23-672-1	PSW	320-816	27-Jul-2021	19:43:55
16	210727R16	92	CS3_210727_DF_RC	1.00	ICV SIL 24-11-9 ✓	PSW	537-883	27-Jul-2021	20:31:28

REVIEWED
paul_walton , 7/28/2021, 8:29:53 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:21 PM

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.67E+07	0.81	Y	1.34	1.35	0%
12378-PeCDD	33.81	6.38E+07	1.58	Y	1.06	1.06	0%
123478-HxCDD	37.68	5.49E+07	1.25	Y	1.06	1.06	1%
123678-HxCDD	37.79	5.63E+07	1.26	Y	1.08	1.10	2%
123789-HxCDD	38.08	5.86E+07	1.24	Y	1.02	1.00	-2%
1234678-HpCDD	40.66	4.96E+07	1.04	Y	0.97	0.98	0%
OCDD	43.23	8.27E+07	0.89	Y	1.07	1.07	0%
2378-TCDF	27.67	2.12E+07	0.80	Y	0.96	0.97	1%
12378-PeCDF	32.38	8.71E+07	1.57	Y	0.95	0.97	2%
23478-PeCDF	33.47	7.79E+07	1.46	Y	0.94	0.92	-2%
123478-HxCDF	36.69	7.88E+07	1.25	Y	1.23	1.25	2%
123678-HxCDF	36.83	8.26E+07	1.26	Y	1.13	1.13	0%
234678-HxCDF	37.49	7.73E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.43	6.95E+07	1.26	Y	1.14	1.13	0%
1234678-HpCDF	39.77	7.02E+07	1.03	Y	1.36	1.34	-2%
1234789-HpCDF	41.11	5.97E+07	1.05	Y	1.30	1.36	5%
OCDF	43.41	9.92E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.50	1.24E+08	0.80	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.788	1.20E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.661	1.03E+08	1.29	Y	0.99	0.98	-1%
ES 123678-HxCDD	37.775	1.02E+08	1.32	Y	0.97	0.97	0%
ES 123789-HxCDD	38.065	1.17E+08	1.31	Y	1.12	1.12	-1%
ES 1234678-HpCDD	40.653	1.01E+08	1.07	Y	0.99	0.96	-3%
ES OCDD	43.218	1.54E+08	0.91	Y	0.78	0.73	-6%
ES 2378-TCDF	27.65	2.18E+08	0.77	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.362	1.80E+08	1.58	Y	0.93	0.89	-5%
ES 23478-PeCDF	33.452	1.68E+08	1.62	Y	0.92	0.83	-10%
ES 123478-HxCDF	36.669	1.26E+08	0.54	Y	1.14	1.19	4%
ES 123678-HxCDF	36.809	1.47E+08	0.50	Y	1.30	1.39	7%
ES 234678-HxCDF	37.476	1.31E+08	0.52	Y	1.20	1.25	4%
ES 123789-HxCDF	38.411	1.23E+08	0.52	Y	1.14	1.17	3%
ES 1234678-HpCDF	39.758	1.05E+08	0.47	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.102	8.75E+07	0.45	Y	0.85	0.83	-2%
ES OCDF	43.399	1.88E+08	0.89	Y	0.93	0.89	-4%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.21E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.33	2.03E+08	0.78	Y	-	-	-
JS 123467-HxCDD	37.97	5.27E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.31	1.28	-2%
CS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.89	0.87	-3%
CS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.22E+08	0.52	Y	1.09	1.16	7%
CS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.86	0.90	4%
SS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.86	0.87	1%
SS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.22E+08	0.52	Y	0.84	0.83	-1%
SS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.91	0.90	-1%
~~OCDD-a~~	~~43.22~~	~~4.70E+06~~	~~2.62~~	~~Y~~	~~0.07~~	~~0.06~~	~~-8%~~
~~OCDF-a~~	~~43.41~~	~~5.40E+06~~	~~2.31~~	~~Y~~	~~0.06~~	~~0.06~~	~~-3%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	10	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	50.1	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	50.3	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	50.9	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	49.1	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88	-	1.20	Y	50.1	40	-	60	Y
OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	10.1	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	51.2	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32	-	1.78	Y	49.2	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	50.8	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	51.1	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.1	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88	-	1.20	Y	52.4	40	-	60	Y
OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	103	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	70	-	130	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	70	-	130	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	140	-	260	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	10	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.1	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.1	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32 - 1.78	Y	49.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	52.4	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

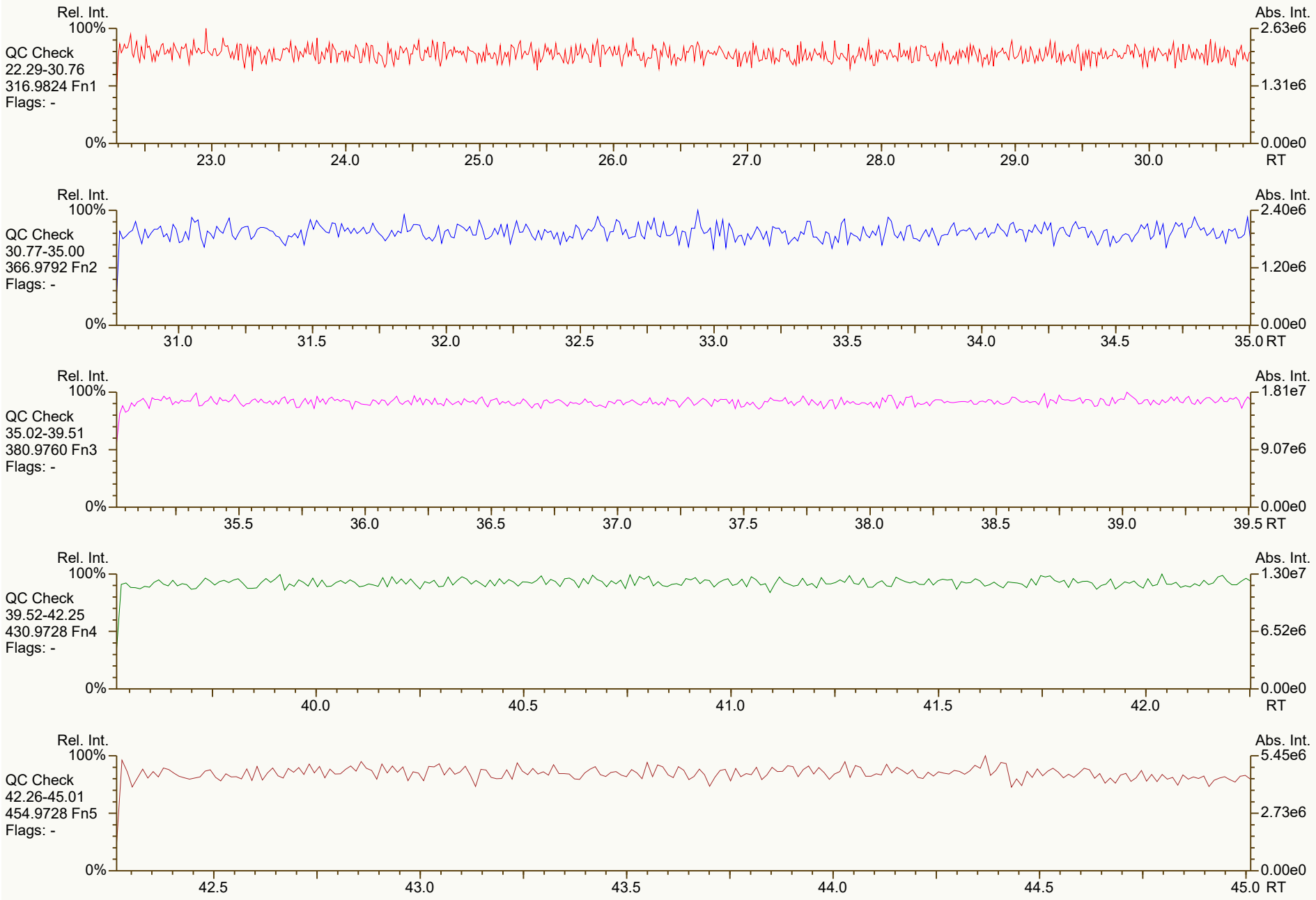
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	72	-	138	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	77	-	129	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:18 Analyst: pw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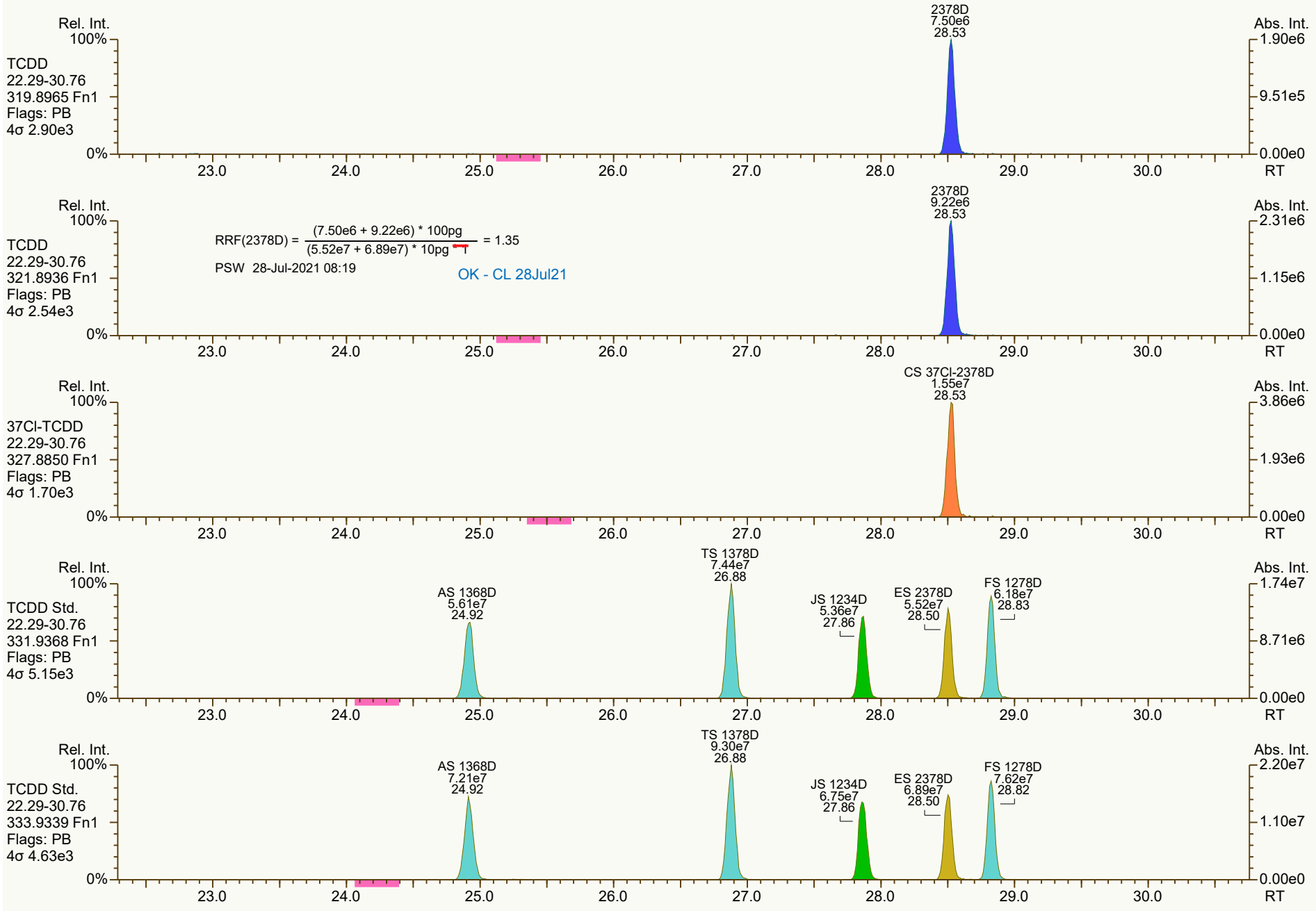
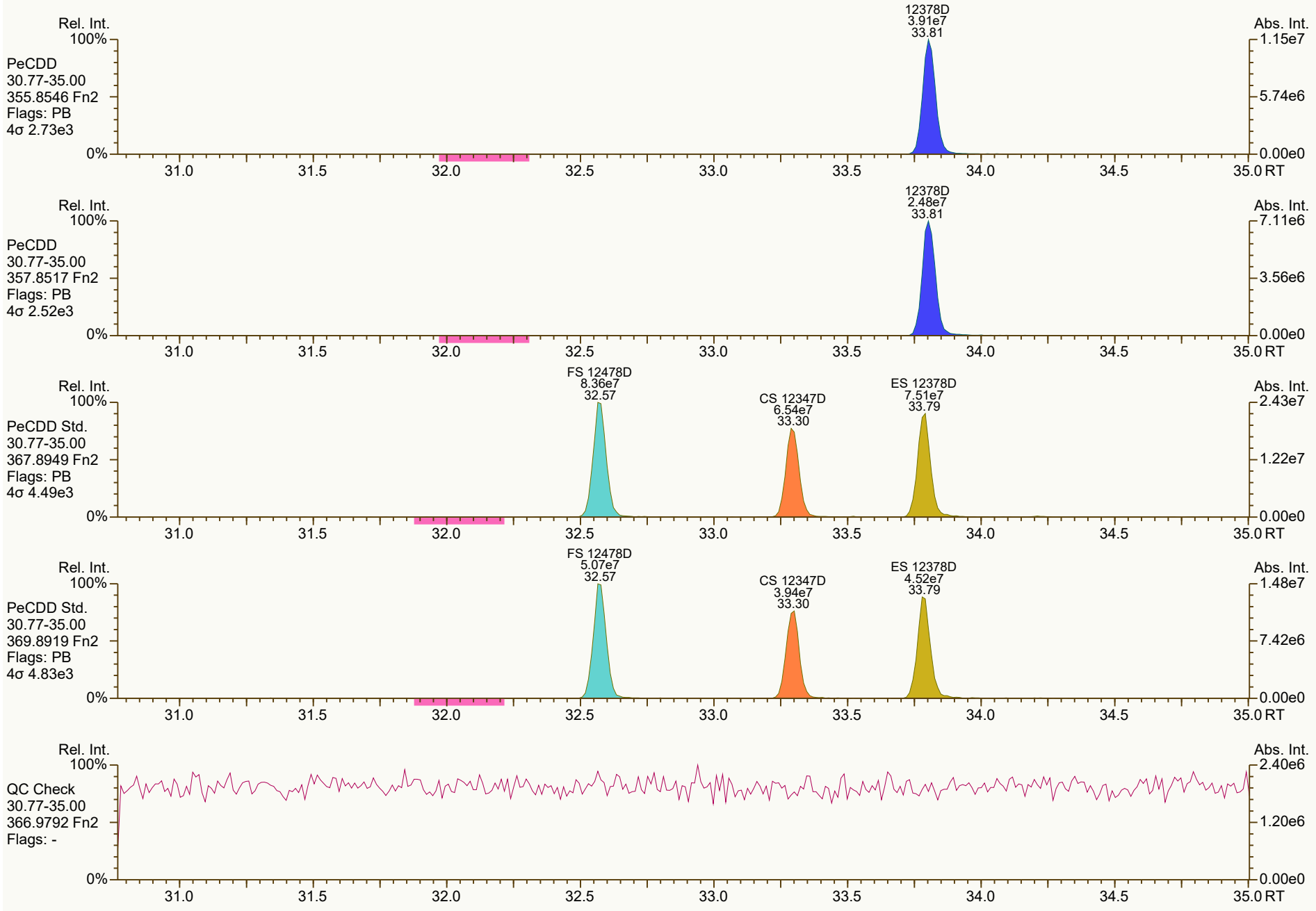
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.40e6
1.20e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.81e7
9.07e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.52e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
5.45e6
2.73e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.90e3
2378D
7.50e6
28.53
1.90e6
9.51e5
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.54e3
RRF(2378D) = (7.50e6 + 9.22e6) * 100pg / (5.52e7 + 6.89e7) * 10pg = 1.35
PSW 28-Jul-2021 08:19
OK - CL 28Jul21
2378D
9.22e6
28.53
2.31e6
1.15e6
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.70e3
CS 37Cl-2378D
1.55e7
28.53
3.86e6
1.93e6
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.15e3
AS 1368D
5.61e7
24.92
TS 1378D
7.44e7
26.88
JS 1234D
5.36e7
27.86
ES 2378D
5.52e7
28.50
FS 1278D
6.18e7
28.83
1.74e7
8.71e6
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.63e3
AS 1368D
7.21e7
24.92
TS 1378D
9.30e7
26.88
JS 1234D
6.75e7
27.86
ES 2378D
6.89e7
28.50
FS 1278D
7.62e7
28.82
2.20e7
1.10e7


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.73e3
0%
12378D
3.91e7
33.81
Abs. Int.
1.15e7
5.74e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.52e3
0%
12378D
2.48e7
33.81
Abs. Int.
7.11e6
3.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 4.49e3
0%
FS 12478D
8.36e7
32.57
CS 12347D
6.54e7
33.30
ES 12378D
7.51e7
33.79
Abs. Int.
2.43e7
1.22e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
5.07e7
32.57
CS 12347D
3.94e7
33.30
ES 12378D
4.52e7
33.79
Abs. Int.
1.48e7
7.42e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.40e6
1.20e6
0.00e0
31.0
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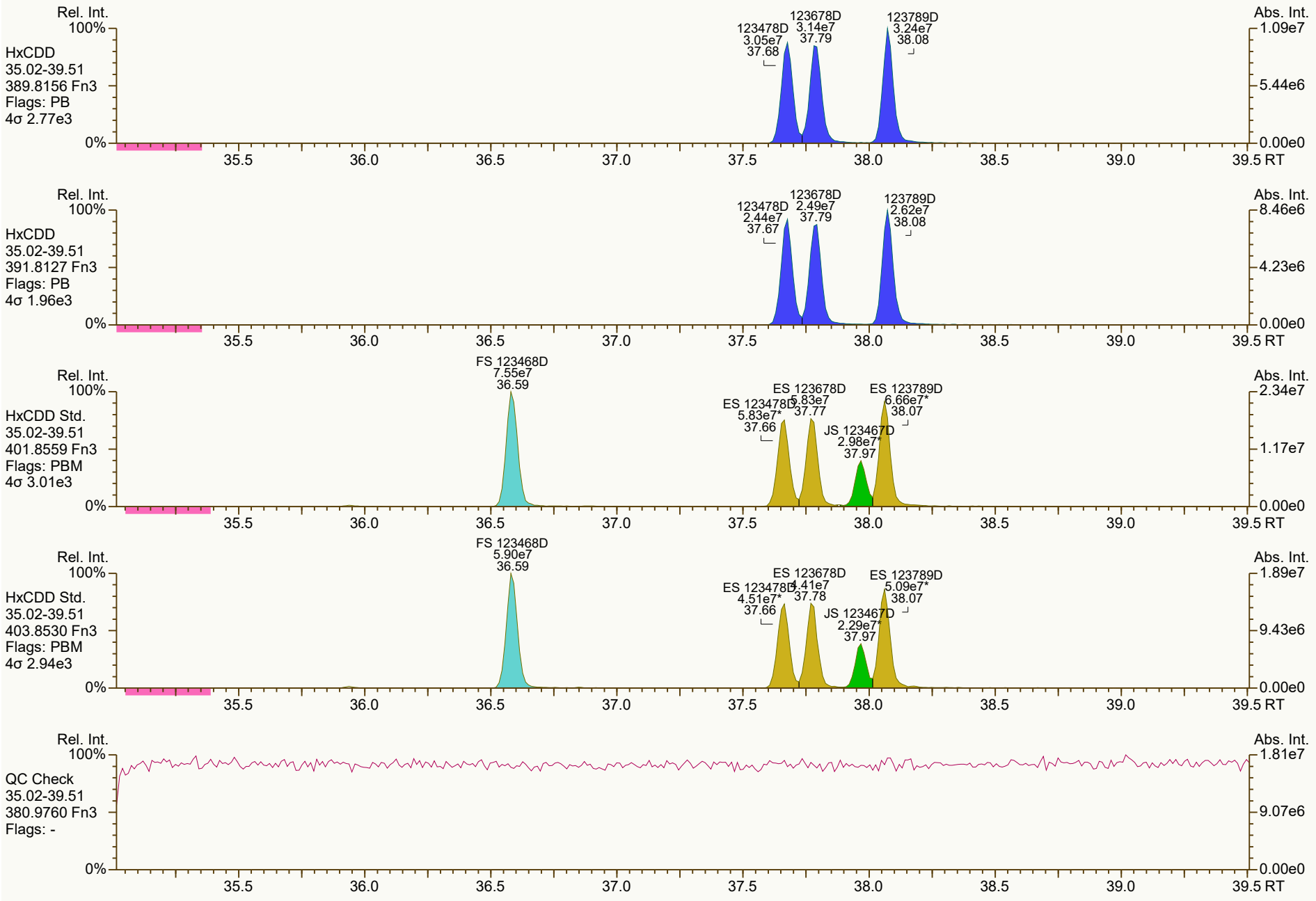
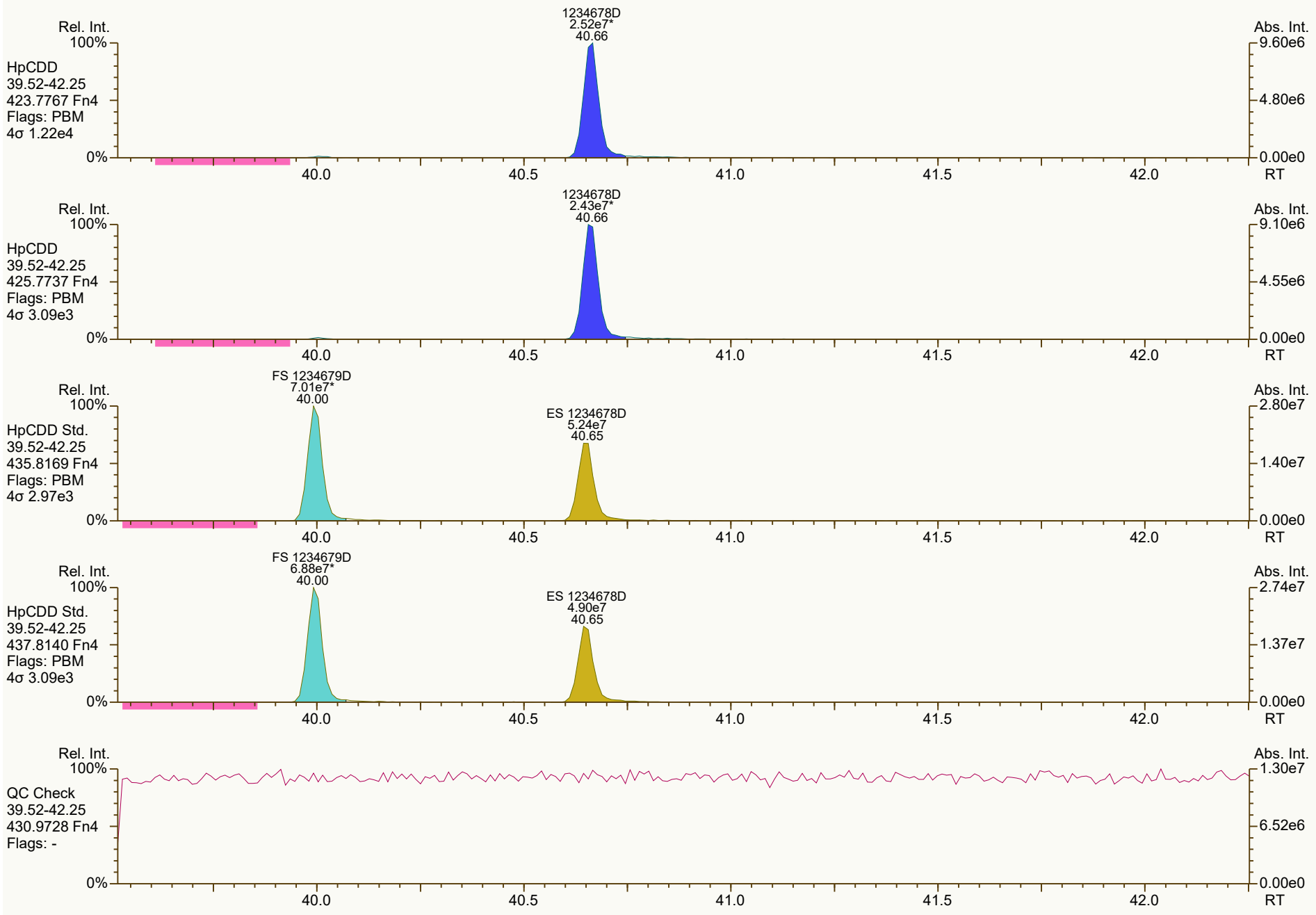
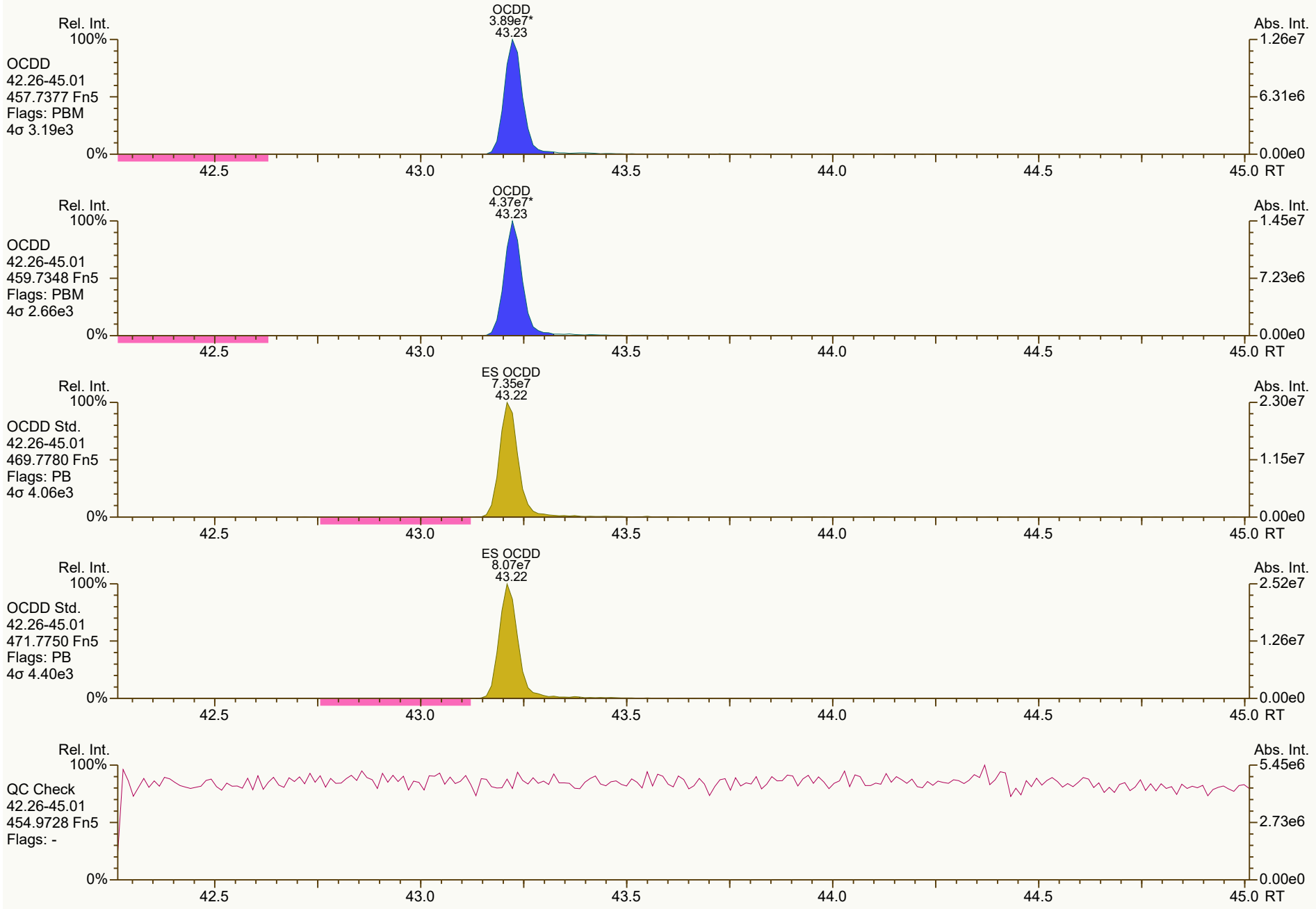
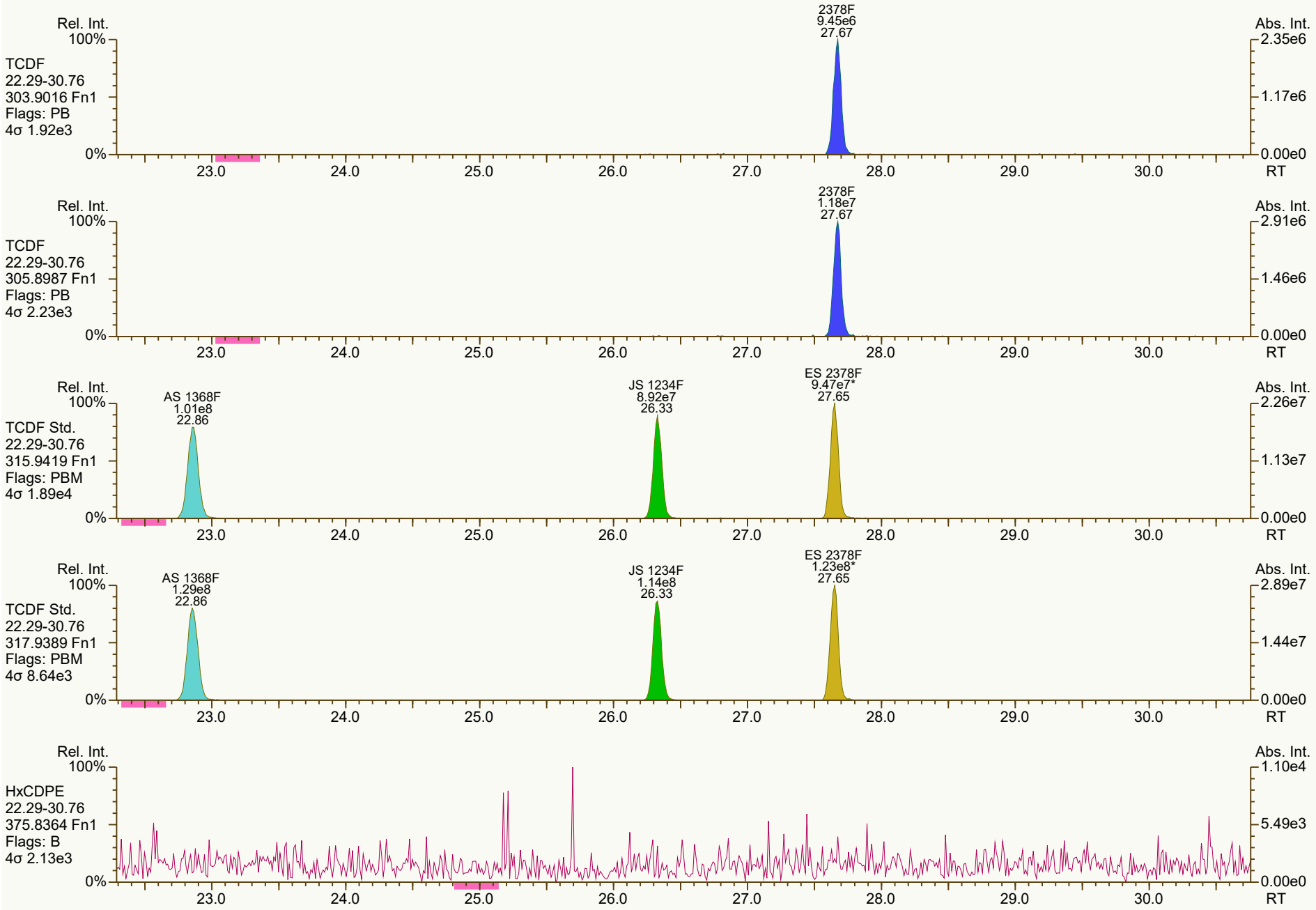
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.77e3
123478D 3.05e7 37.68
123678D 3.14e7 37.79
123789D 3.24e7 38.08
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.96e3
123478D 2.44e7 37.67
123678D 2.49e7 37.79
123789D 2.62e7 38.08
Abs. Int.
8.46e6
4.23e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.01e3
FS 123468D 7.55e7 36.59
ES 123478D 5.83e7* 37.66
ES 123678D 5.83e7* 37.77
JS 123467D 2.98e7* 37.97
ES 123789D 6.66e7* 38.07
Abs. Int.
2.34e7
1.17e7
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.94e3
FS 123468D 5.90e7 36.59
ES 123478D 4.51e7* 37.66
ES 123678D 4.41e7* 37.78
JS 123467D 2.29e7* 37.97
ES 123789D 5.09e7* 38.07
Abs. Int.
1.89e7
9.43e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.81e7
9.07e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT

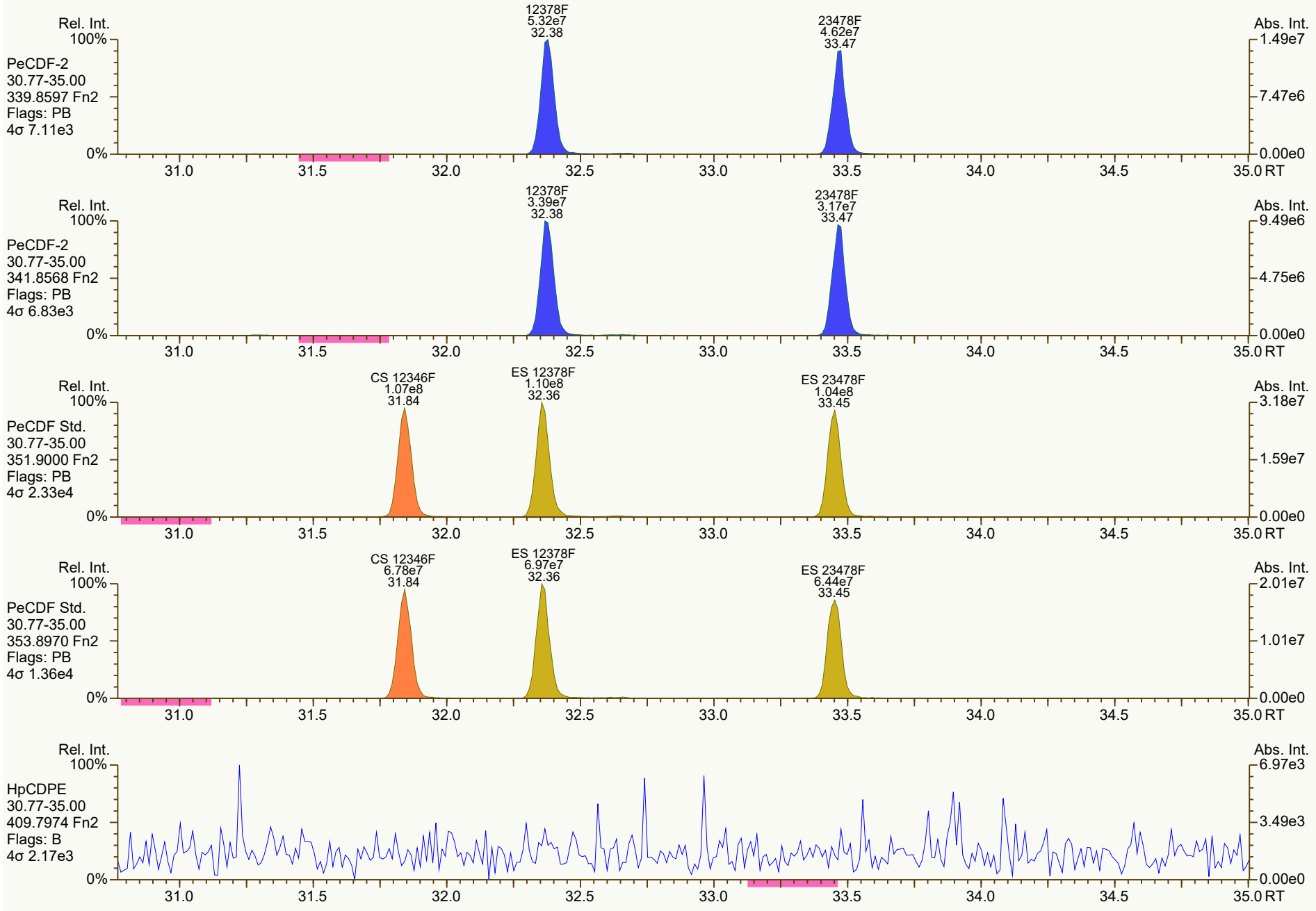

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 1.22e4
0%
1234678D
2.52e7*
40.66
Abs. Int.
9.60e6
4.80e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 3.09e3
0%
1234678D
2.43e7*
40.66
Abs. Int.
9.10e6
4.55e6
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 2.97e3
0%
FS 1234679D
7.01e7*
40.00
ES 1234678D
5.24e7
40.65
Abs. Int.
2.80e7
1.40e7
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 3.09e3
0%
FS 1234679D
6.88e7*
40.00
ES 1234678D
4.90e7
40.65
Abs. Int.
2.74e7
1.37e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.52e6
0.00e0
RT


OCDD
3.89e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.19e3
0%
Abs. Int.
1.26e7
6.31e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.37e7*
43.23
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.66e3
1.45e7
7.23e6
ES OCDD
7.35e7
43.22
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.06e3
2.30e7
1.15e7
ES OCDD
8.07e7
43.22
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 4.40e3
2.52e7
1.26e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
5.45e6
2.73e6


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 1.92e3
2378F
9.45e6
27.67
2.35e6
1.17e6
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.23e3
2378F
1.18e7
27.67
2.91e6
1.46e6
0.00e0
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PBM
4σ 1.89e4
AS 1368F
1.01e8
22.86
JS 1234F
8.92e7
26.33
ES 2378F
9.47e7*
27.65
2.26e7
1.13e7
0.00e0
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PBM
4σ 8.64e3
AS 1368F
1.29e8
22.86
JS 1234F
1.14e8
26.33
ES 2378F
1.23e8*
27.65
2.89e7
1.44e7
0.00e0
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.13e3
1.10e4
5.49e3
0.00e0


Rel. Int.
100%
0%
Abs. Int.
2.70e4
1.35e4
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.78e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.25e4
6.25e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.56e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15



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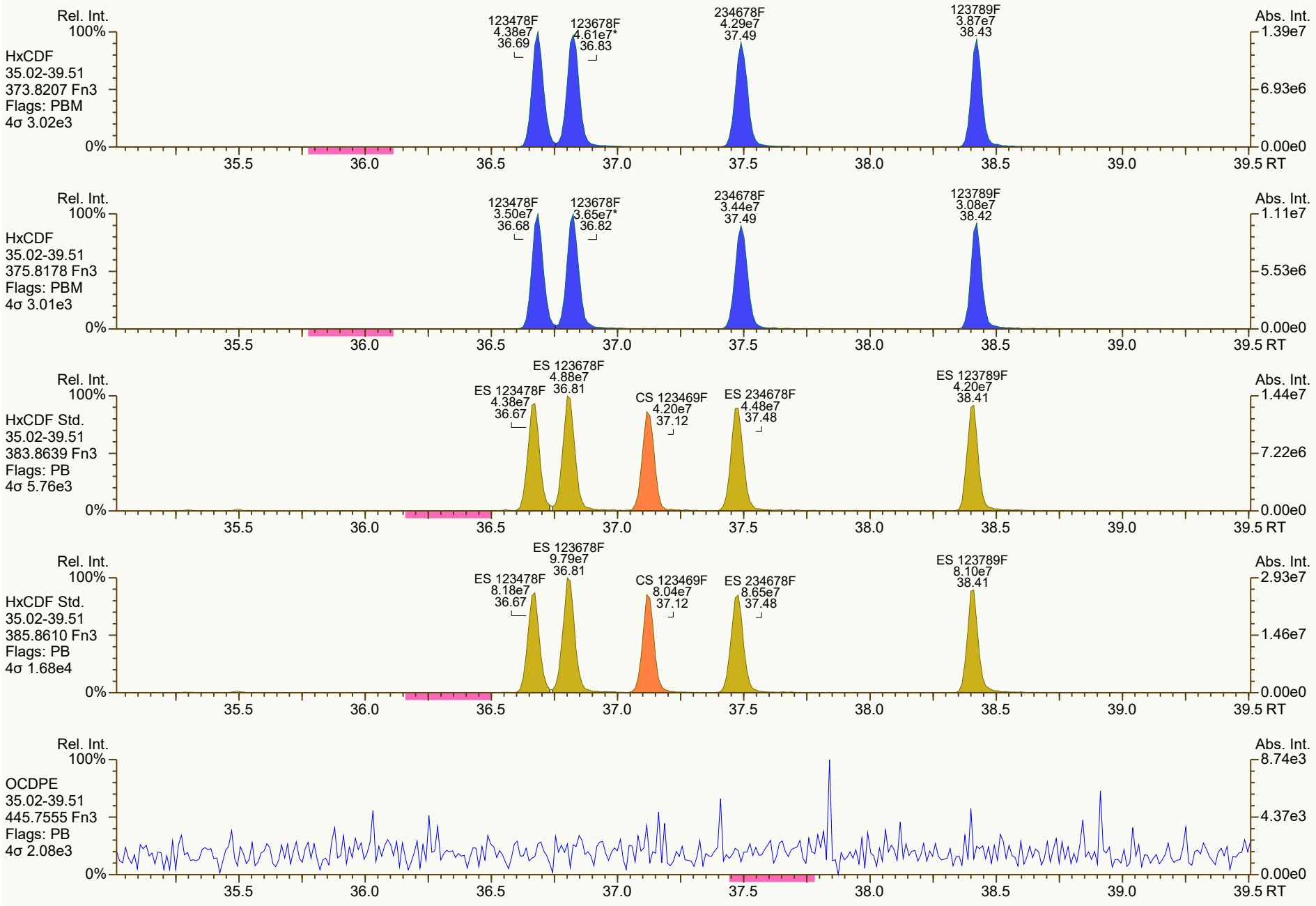
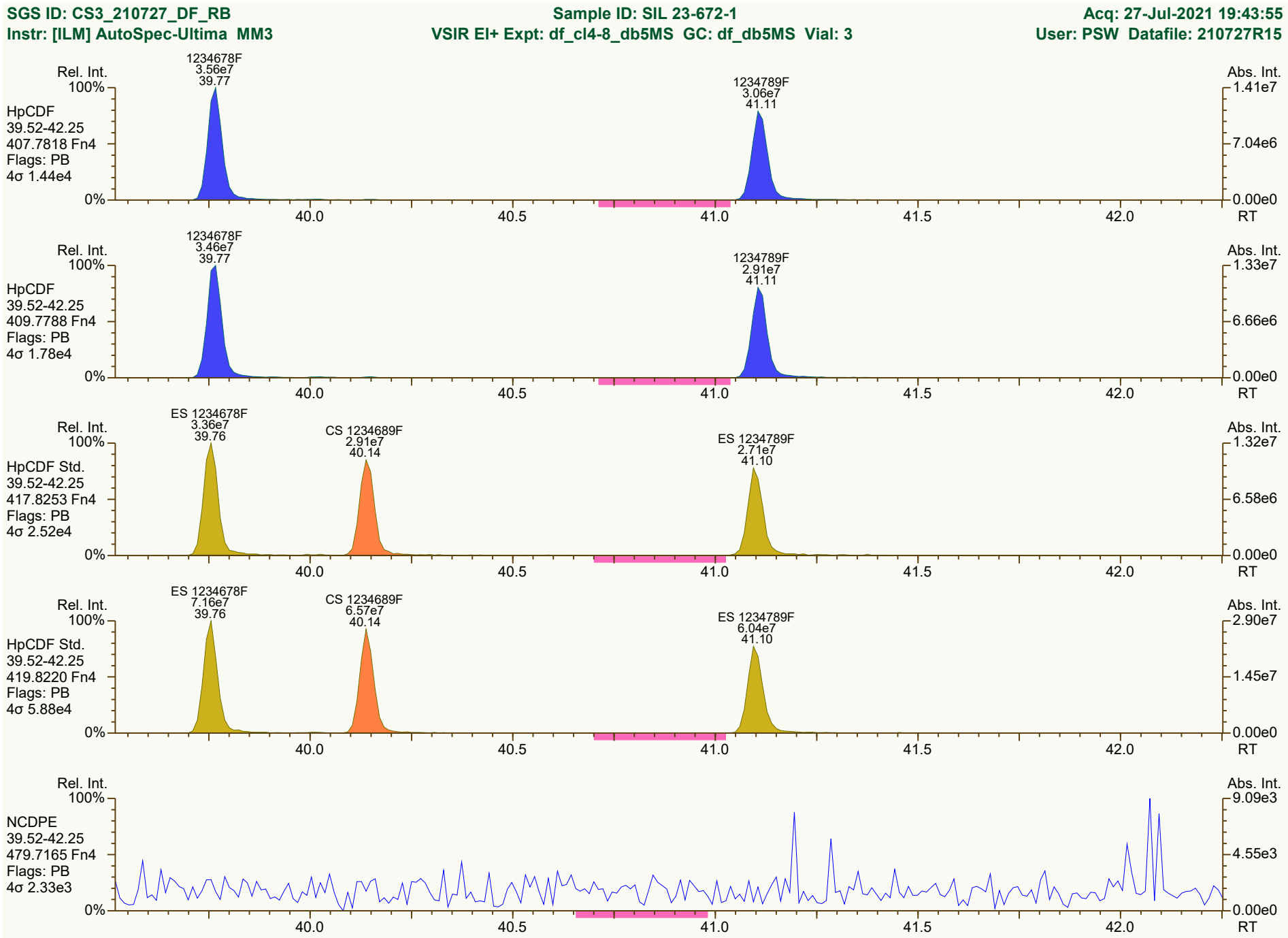
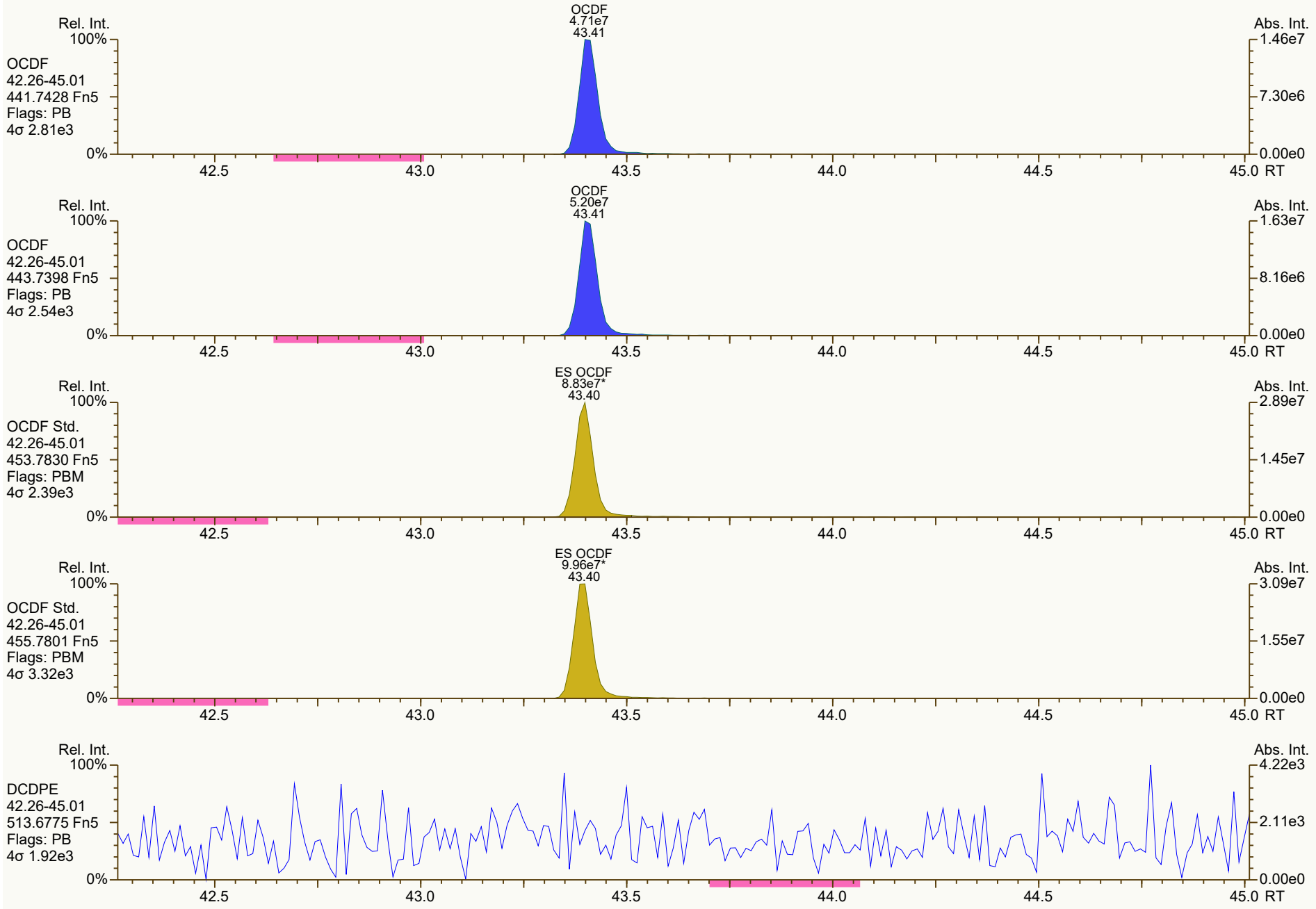
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1037, 5263, 2332 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 3.02e3
0%
123478F
4.38e7
36.69
123678F
4.61e7*
36.83
234678F
4.29e7
37.49
123789F
3.87e7
38.43
Abs. Int.
1.39e7
6.93e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 3.01e3
0%
123478F
3.50e7
36.68
123678F
3.65e7*
36.82
234678F
3.44e7
37.49
123789F
3.08e7
38.42
Abs. Int.
1.11e7
5.53e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.76e3
0%
ES 123478F
4.38e7
36.67
ES 123678F
4.88e7
36.81
CS 123469F
4.20e7
37.12
ES 234678F
4.48e7
37.48
ES 123789F
4.20e7
38.41
Abs. Int.
1.44e7
7.22e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.68e4
0%
ES 123478F
8.18e7
36.67
ES 123678F
9.79e7
36.81
CS 123469F
8.04e7
37.12
ES 234678F
8.65e7
37.48
ES 123789F
8.10e7
38.41
Abs. Int.
2.93e7
1.46e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: PB
4σ 2.08e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0218, 7977, 3988 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 11 of 12


OCDF
4.71e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.81e3
0%
Abs. Int.
1.46e7
7.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.20e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.54e3
0%
Abs. Int.
1.63e7
8.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.83e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PBM
4σ 2.39e3
0%
Abs. Int.
2.89e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.96e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PBM
4σ 3.32e3
0%
Abs. Int.
3.09e7
1.55e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 1.92e3
0%
Abs. Int.
4.22e3
2.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 20:31 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_210727_DF_RC		UTP: 28-Jul-2021 08:16:59 PSW				Checkcode: 537-883-PJZ	
Sample ID: ICV SIL 24-11-9		Report: 28 Jul 2021 08:18 pw				Datafile: 210727R16	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.53	2.48E+07	0.79	Y	1.34	1.22	-9%
12378-PeCDD	33.81	9.55E+07	1.55	Y	1.06	0.98	-8%
123478-HxCDD	37.68	8.89E+07	1.25	Y	1.06	1.04	-1%
123678-HxCDD	37.80	9.70E+07	1.25	Y	1.08	1.14	5%
123789-HxCDD	38.09	9.52E+07	1.24	Y	1.02	0.95	-7%
1234678-HpCDD	40.67	8.40E+07	1.03	Y	0.97	0.99	1%
OCDD	43.24	1.45E+08	0.90	Y	1.07	1.07	0%
2378-TCDF	27.68	3.32E+07	0.79	Y	0.96	0.95	-1%
12378-PeCDF	32.38	1.28E+08	1.52	Y	0.95	0.87	-8%
23478-PeCDF	33.48	1.47E+08	1.58	Y	0.94	1.00	6%
123478-HxCDF	36.69	1.27E+08	1.27	Y	1.23	1.25	1%
123678-HxCDF	36.83	1.34E+08	1.26	Y	1.13	1.11	-2%
234678-HxCDF	37.50	1.26E+08	1.24	Y	1.15	1.17	1%
123789-HxCDF	38.43	1.13E+08	1.25	Y	1.14	1.10	-3%
1234678-HpCDF	39.77	1.18E+08	1.02	Y	1.36	1.34	-2%
1234789-HpCDF	41.12	9.93E+07	1.03	Y	1.30	1.29	-1%
OCDF	43.42	1.67E+08	0.90	Y	1.03	1.02	-1%
ES 2378-TCDD	28.51	2.04E+08	0.81	Y	1.03	0.96	-7%
ES 12378-PeCDD	33.795	1.95E+08	1.65	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.667	1.70E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.781	1.70E+08	1.29	Y	0.97	0.97	0%
ES 123789-HxCDD	38.071	2.01E+08	1.25	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.656	1.70E+08	1.05	Y	0.99	0.97	-2%
ES OCDD	43.225	2.69E+08	0.90	Y	0.78	0.77	-1%
ES 2378-TCDF	27.654	3.51E+08	0.77	Y	1.08	0.99	-9%
ES 12378-PeCDF	32.366	2.97E+08	1.58	Y	0.93	0.84	-10%
ES 23478-PeCDF	33.459	2.95E+08	1.56	Y	0.92	0.84	-9%
ES 123478-HxCDF	36.673	2.04E+08	0.52	Y	1.14	1.17	2%
ES 123678-HxCDF	36.814	2.41E+08	0.53	Y	1.30	1.38	7%
ES 234678-HxCDF	37.481	2.17E+08	0.52	Y	1.20	1.24	3%
ES 123789-HxCDF	38.414	2.06E+08	0.52	Y	1.14	1.18	4%
ES 1234678-HpCDF	39.764	1.76E+08	0.46	Y	0.95	1.01	6%
ES 1234789-HpCDF	41.106	1.54E+08	0.45	Y	0.85	0.88	4%
ES OCDF	43.408	3.28E+08	0.88	Y	0.93	0.94	2%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	2.13E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	3.53E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	8.73E+07	1.21	Y	-	-	-
~~OCDD-a~~	~~43.23~~	~~9.07E+06~~	~~2.21~~	~~Y~~	~~0.07~~	~~0.07~~	~~2%~~
~~OCDF-a~~	~~43.42~~	~~9.95E+06~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~2%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	9.05	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	46.2	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	49.4	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	52.7	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	46.7	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88	-	1.20	Y	50.7	40	-	60	Y
OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65	-	0.89	Y	9.87	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	45.8	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	53.1	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05	-	1.43	Y	50.5	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.2	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05	-	1.43	Y	50.6	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	48.4	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88	-	1.20	Y	49.2	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.7	40	-	60	Y
OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	99.5	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	70	-	130	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	70	-	130	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	140	-	260	Y
CLEANUP STANDARDS n/a - CL 28Jul21											
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	9.05	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	52.7	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	46.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	50.7	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.87	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	45.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	53.1	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.5	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.2	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.4	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	49.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.7	43 - 58	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.5	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

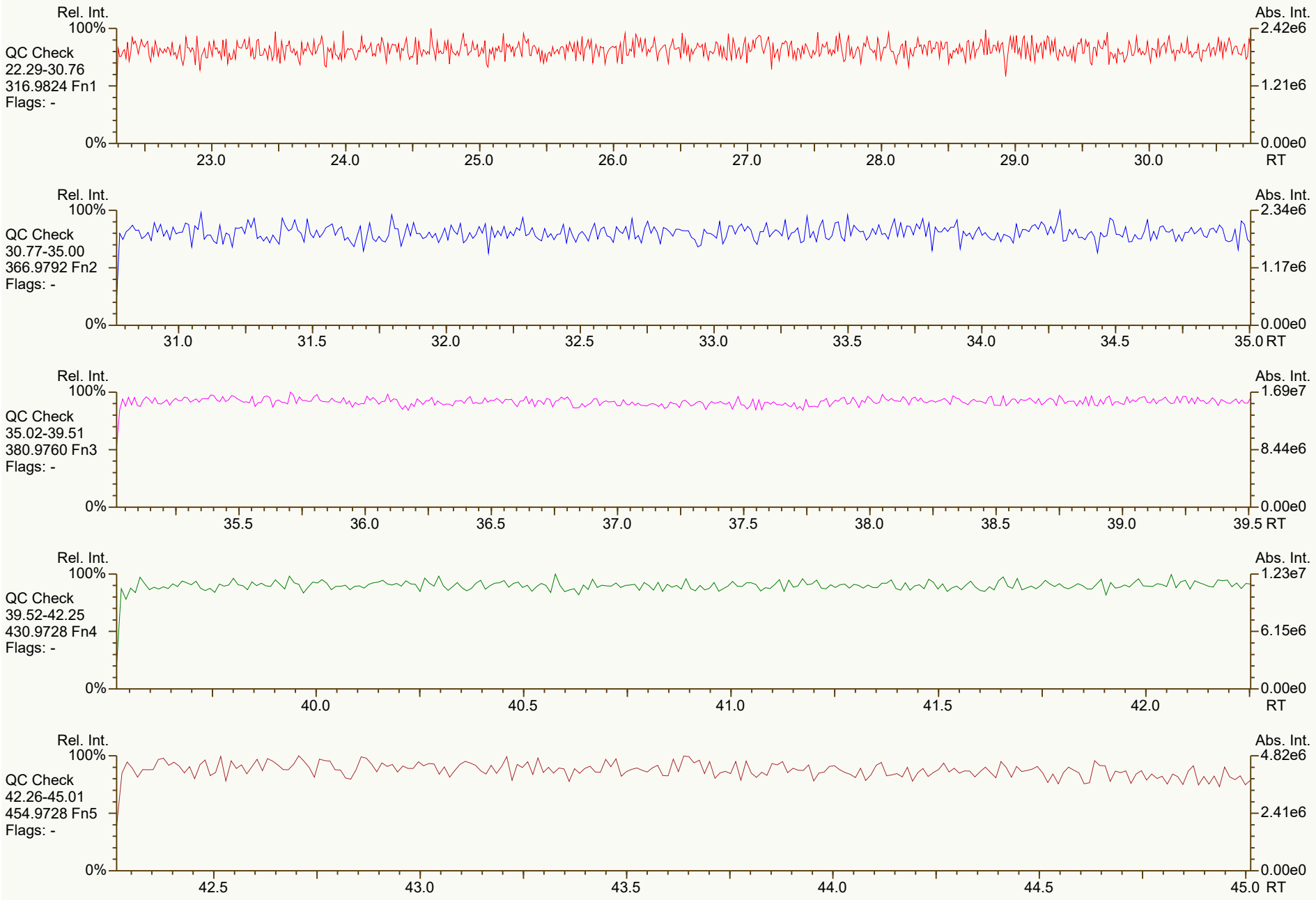
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

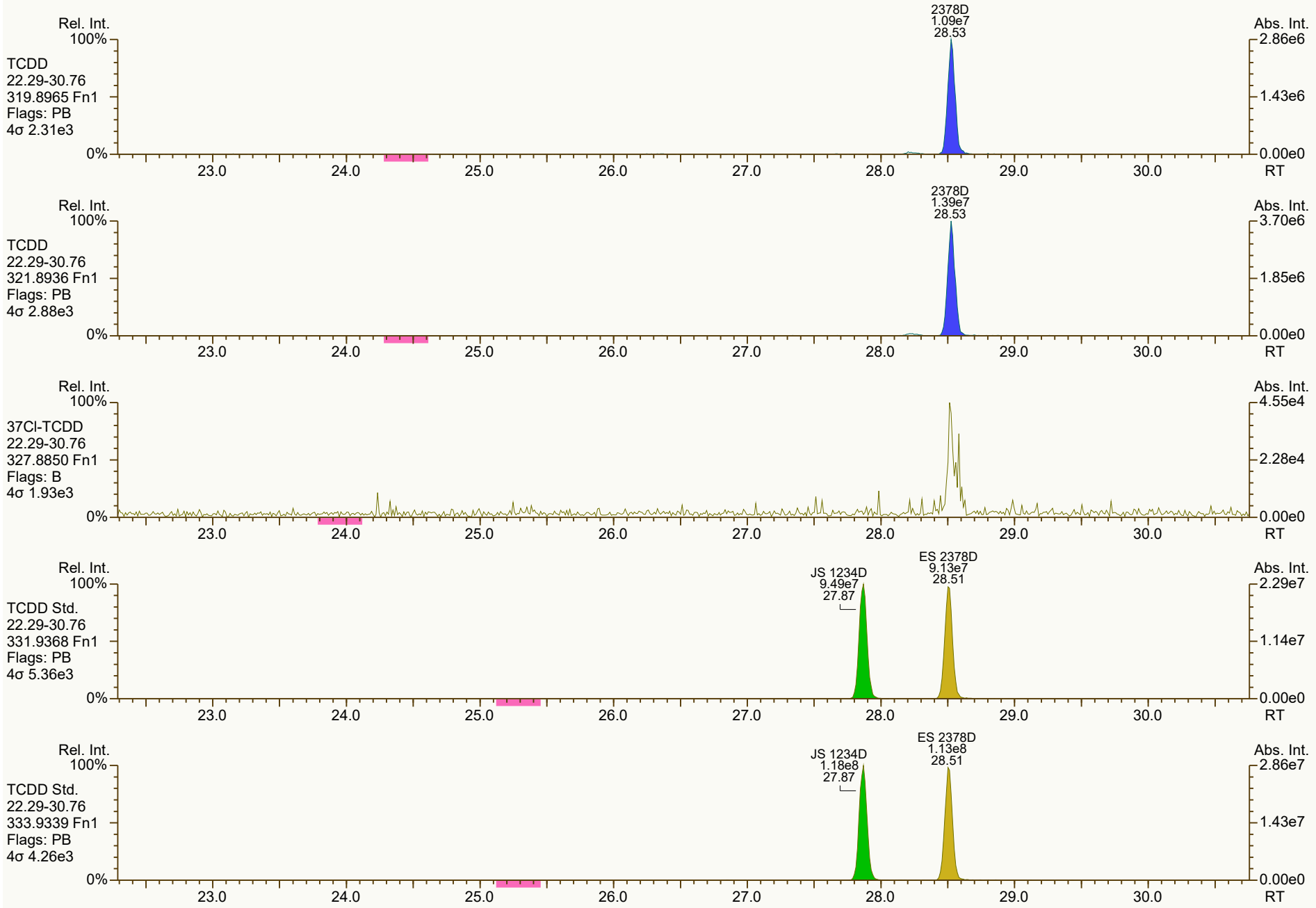
Instrument ID: MM3 GC Column ID: ZB-5ms

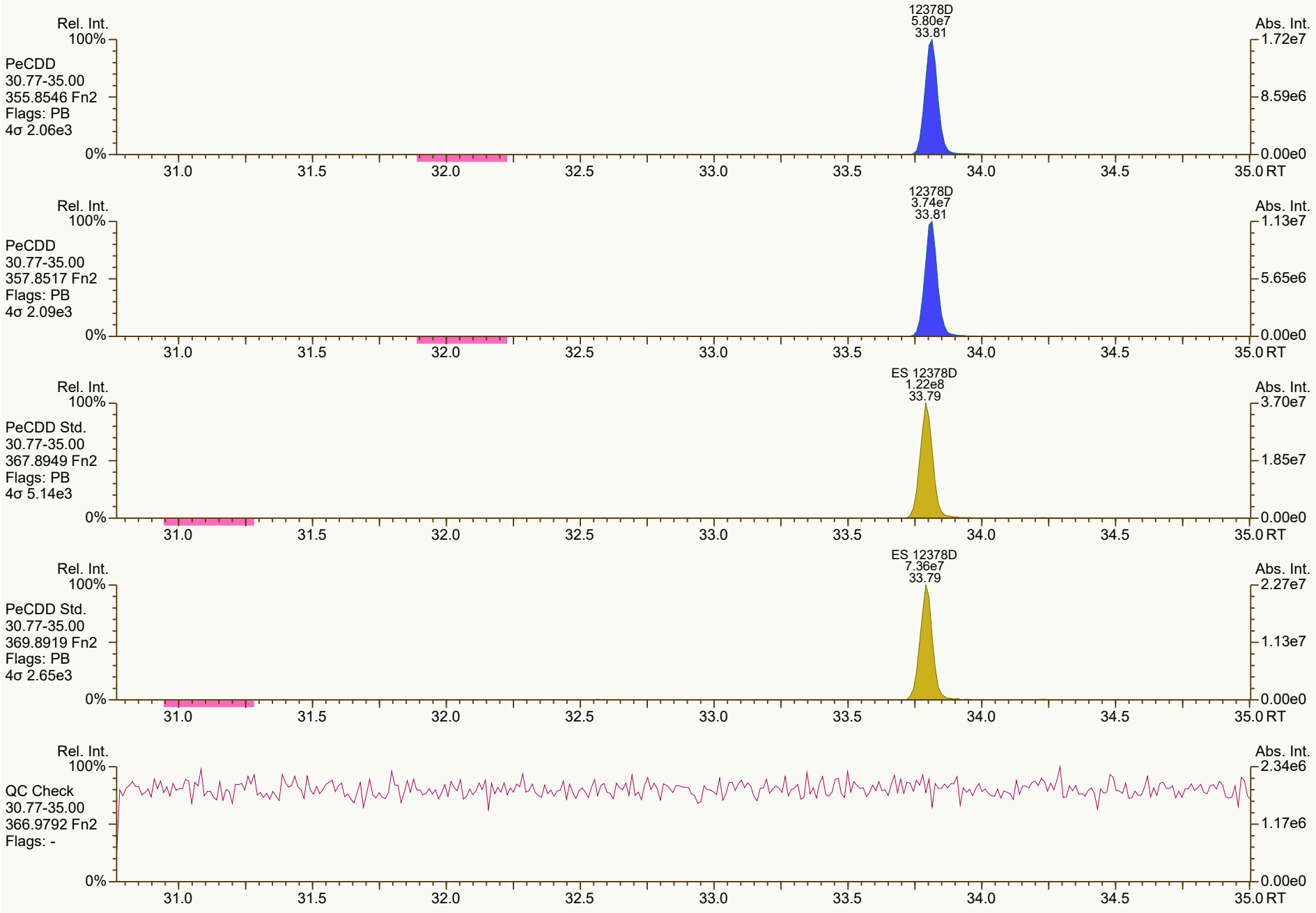
VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

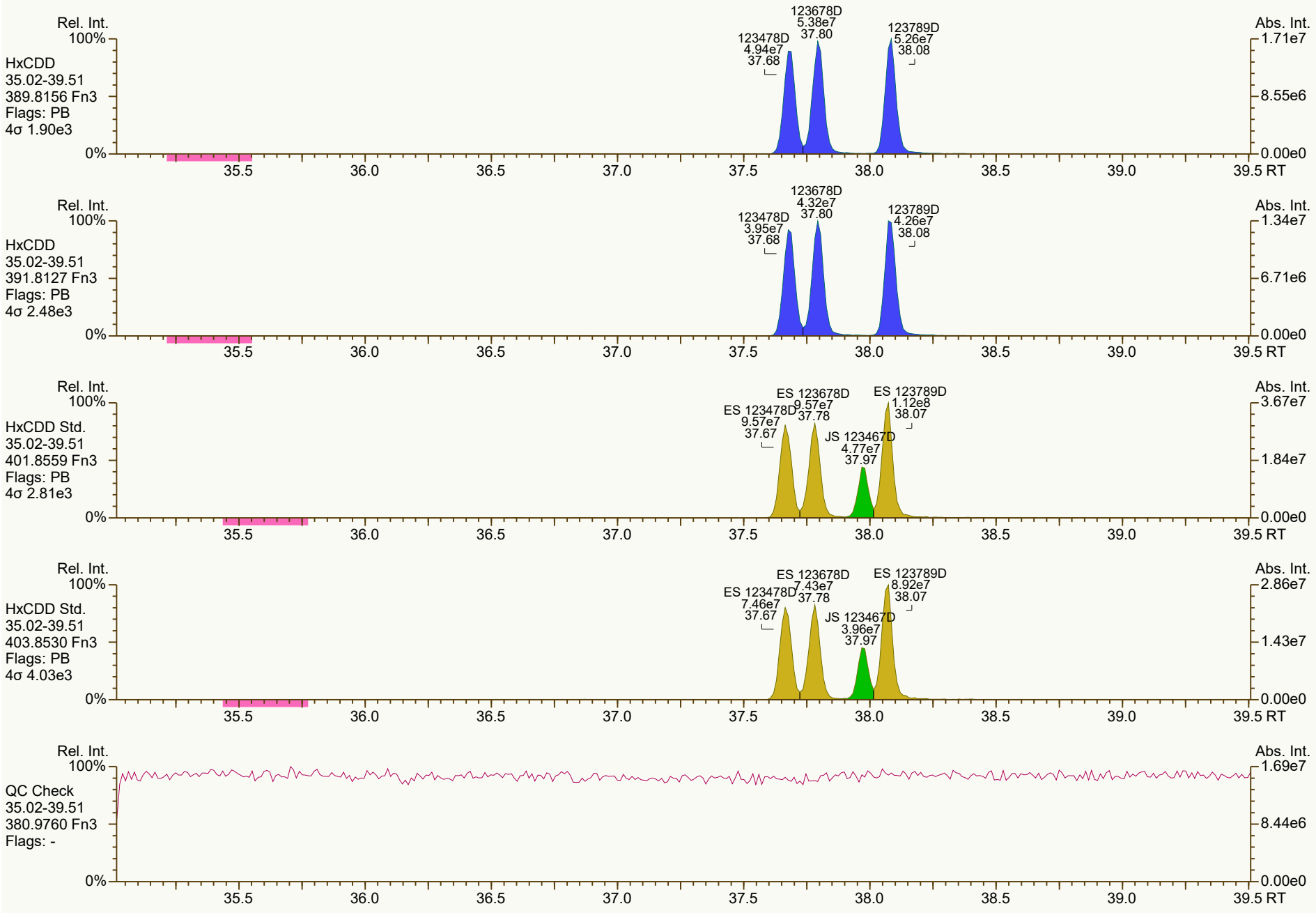
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	77	-	129	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	96	-	415	Y
CLEANUP STANDARDS	n/a - CL 28Jul21										
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

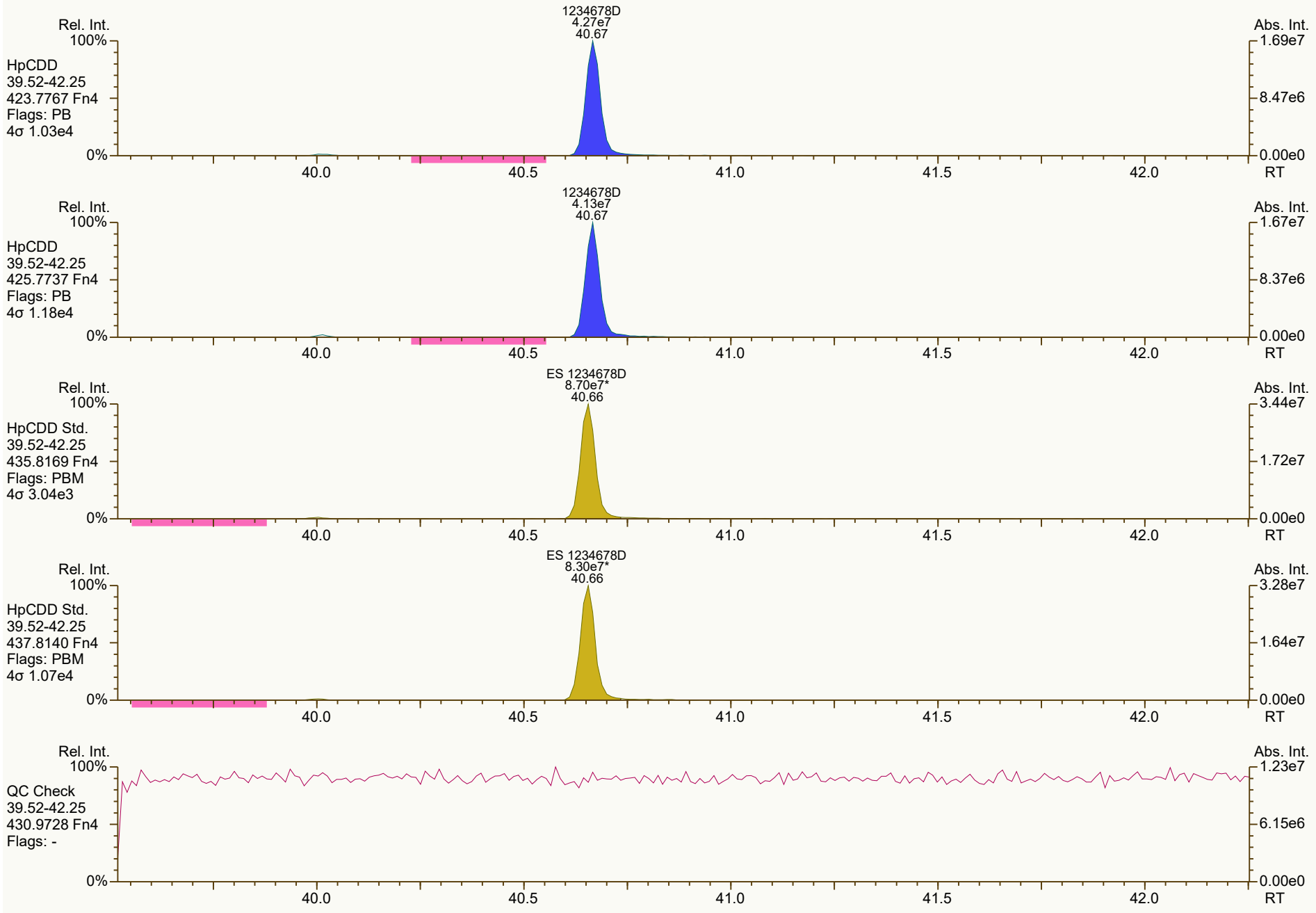
Processed: 28 Jul 2021 08:18 Analyst: pw


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.42e6
1.21e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.69e7
8.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.23e7
6.15e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.82e6
2.41e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

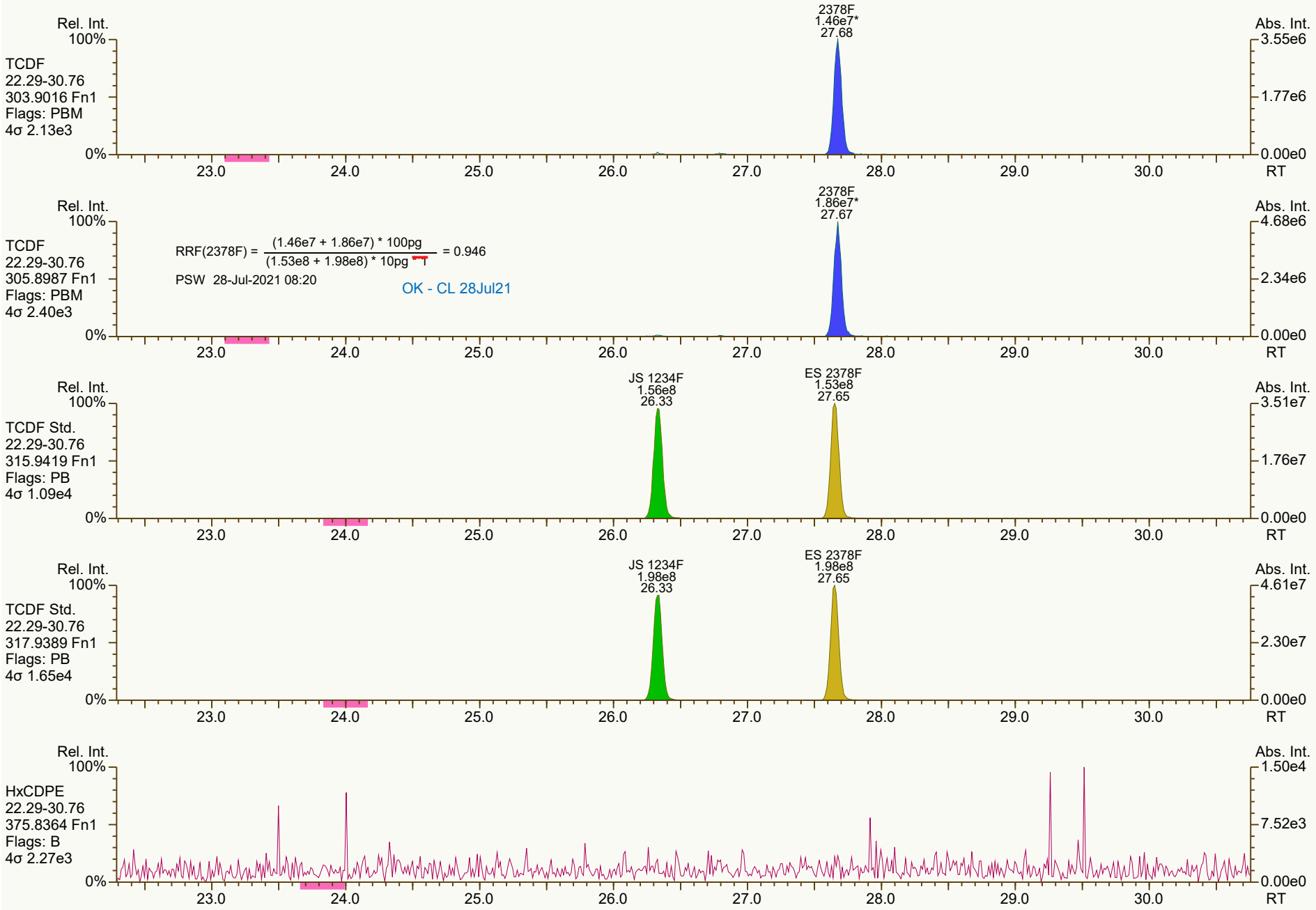

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.31e3
0%
2378D
1.09e7
28.53
Abs. Int.
2.86e6
1.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.88e3
0%
2378D
1.39e7
28.53
Abs. Int.
3.70e6
1.85e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.93e3
0%
Abs. Int.
4.55e4
2.28e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.36e3
0%
JS 1234D
9.49e7
27.87
ES 2378D
9.13e7
28.51
Abs. Int.
2.29e7
1.14e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.26e3
0%
JS 1234D
1.18e8
27.87
ES 2378D
1.13e8
28.51
Abs. Int.
2.86e7
1.43e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.06e3
0%
12378D
5.80e7
33.81
Abs. Int.
1.72e7
8.59e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.09e3
0%
12378D
3.74e7
33.81
Abs. Int.
1.13e7
5.65e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 5.14e3
0%
ES 12378D
1.22e8
33.79
Abs. Int.
3.70e7
1.85e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 2.65e3
0%
ES 12378D
7.36e7
33.79
Abs. Int.
2.27e7
1.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 1.90e3
123678D
5.38e7
37.80
123478D
4.94e7
37.68
123789D
5.26e7
38.08
Abs. Int.
1.71e7
8.55e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.48e3
123678D
4.32e7
37.80
123478D
3.95e7
37.68
123789D
4.26e7
38.08
Abs. Int.
1.34e7
6.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 2.81e3
ES 123678D
9.57e7
37.78
ES 123478D
9.57e7
37.67
ES 123789D
1.12e8
38.07
JS 123467D
4.77e7
37.97
Abs. Int.
3.67e7
1.84e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 4.03e3
ES 123678D
7.43e7
37.78
ES 123478D
7.46e7
37.67
ES 123789D
8.92e7
38.07
JS 123467D
3.96e7
37.97
Abs. Int.
2.86e7
1.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.69e7
8.44e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


1234678D
4.27e7
40.67
Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.03e4
0%
Abs. Int.
1.69e7
8.47e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
1234678D
4.13e7
40.67
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.18e4
1.67e7
8.37e6
ES 1234678D
8.70e7*
40.66
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 3.04e3
3.44e7
1.72e7
ES 1234678D
8.30e7*
40.66
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 1.07e4
3.28e7
1.64e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.23e7
6.15e6


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.37e3
0%
OCDD
6.83e7*
43.24
Abs. Int.
2.30e7
1.15e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 4.65e3
0%
OCDD
7.63e7*
43.23
Abs. Int.
2.58e7
1.29e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 3.40e3
0%
ES OCDD
1.28e8*
43.22
Abs. Int.
4.34e7
2.17e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.30e3
0%
ES OCDD
1.41e8*
43.22
Abs. Int.
4.68e7
2.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.82e6
2.41e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

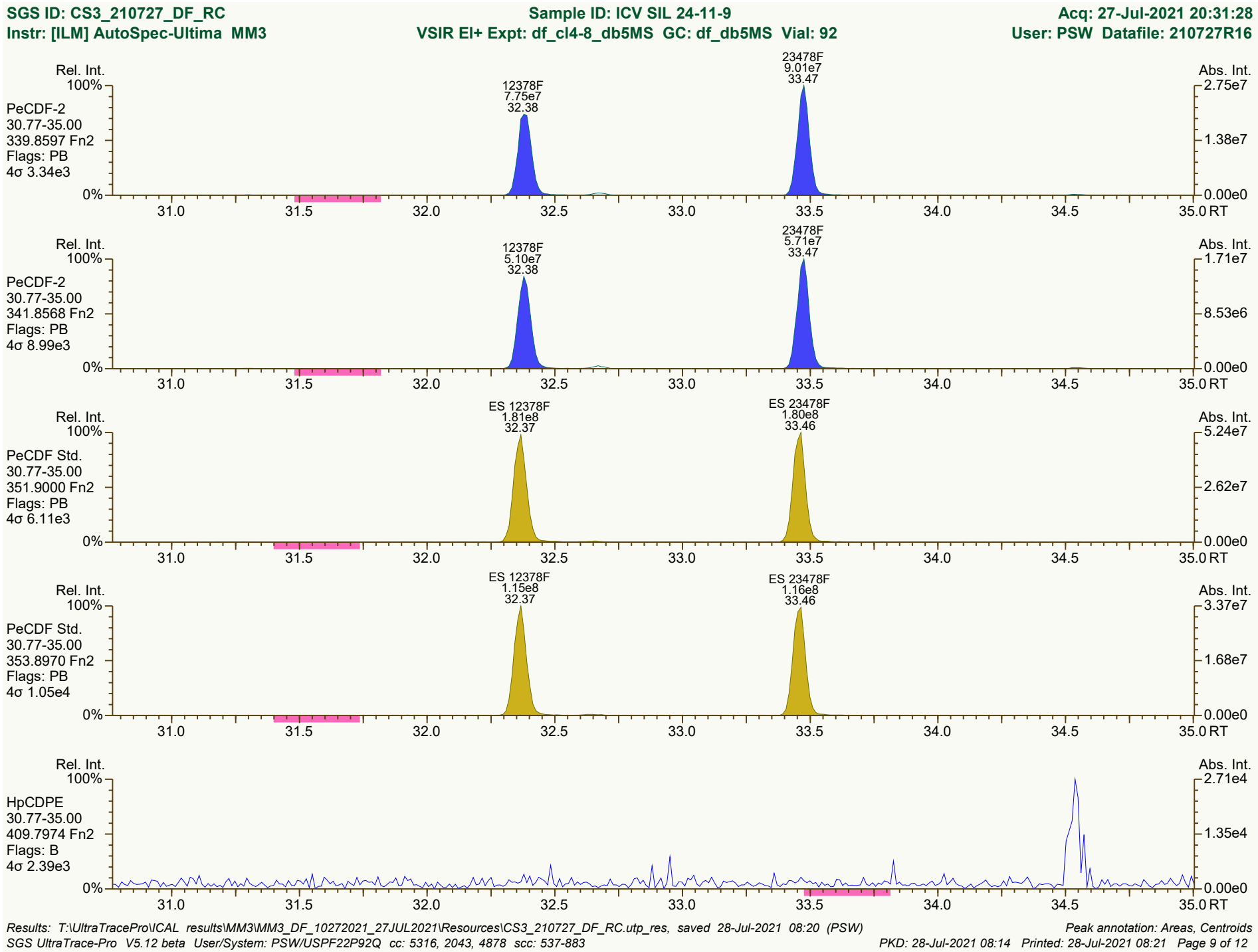

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.13e3
0%
2378F
1.46e7*
27.68
Abs. Int.
3.55e6
1.77e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.40e3
0%
RRF(2378F) = (1.46e7 + 1.86e7) * 100pg / (1.53e8 + 1.98e8) * 10pg * 1 = 0.946
PSW 28-Jul-2021 08:20
OK - CL 28Jul21
2378F
1.86e7*
27.67
Abs. Int.
4.68e6
2.34e6
0.00e0
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.09e4
0%
JS 1234F
1.56e8
26.33
ES 2378F
1.53e8
27.65
Abs. Int.
3.51e7
1.76e7
0.00e0
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.65e4
0%
JS 1234F
1.98e8
26.33
ES 2378F
1.98e8
27.65
Abs. Int.
4.61e7
2.30e7
0.00e0
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.27e3
0%
Abs. Int.
1.50e4
7.52e3
0.00e0


Rel. Int.
100%
0%
Abs. Int.
1.31e4
6.54e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.61e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.73e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.05e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.42e6
1.21e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS3_210727_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

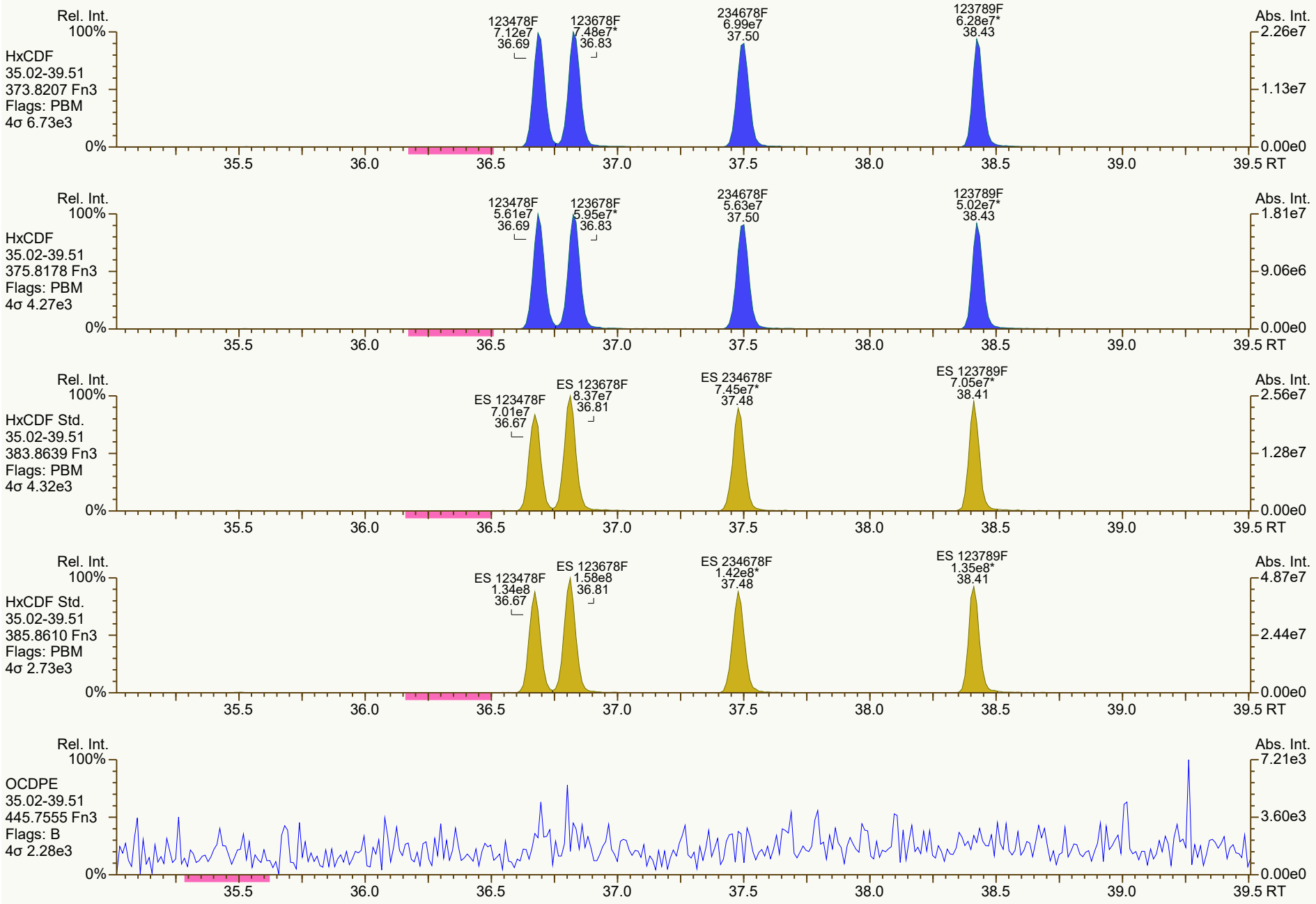
Sample ID: ICV SIL 24-11-9
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92

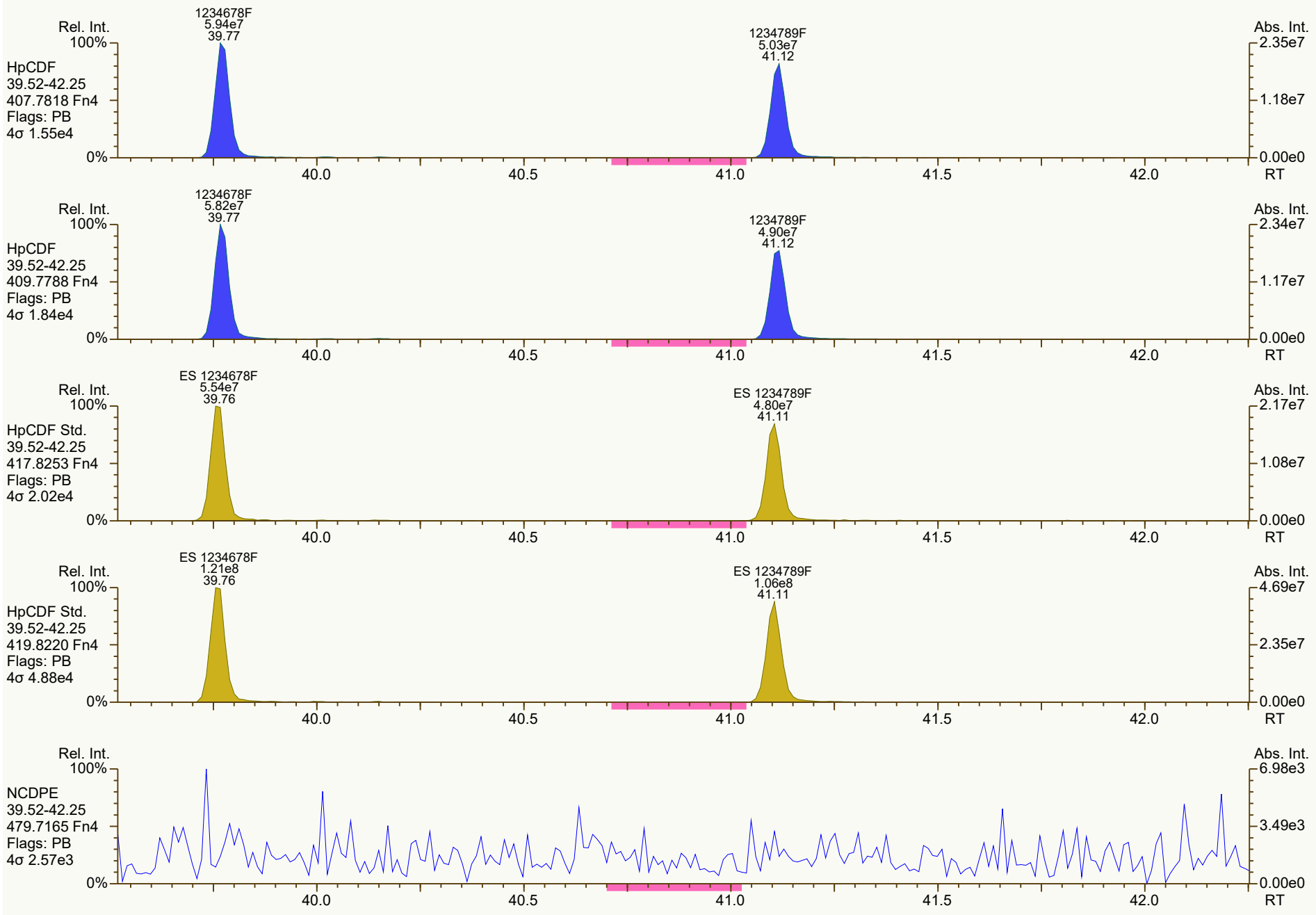
Acq: 27-Jul-2021 20:31:28
User: PSW Datafile: 210727R16



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5316, 2043, 4878 scc: 537-883

Peak annotation: Areas, Centroids
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 9 of 12

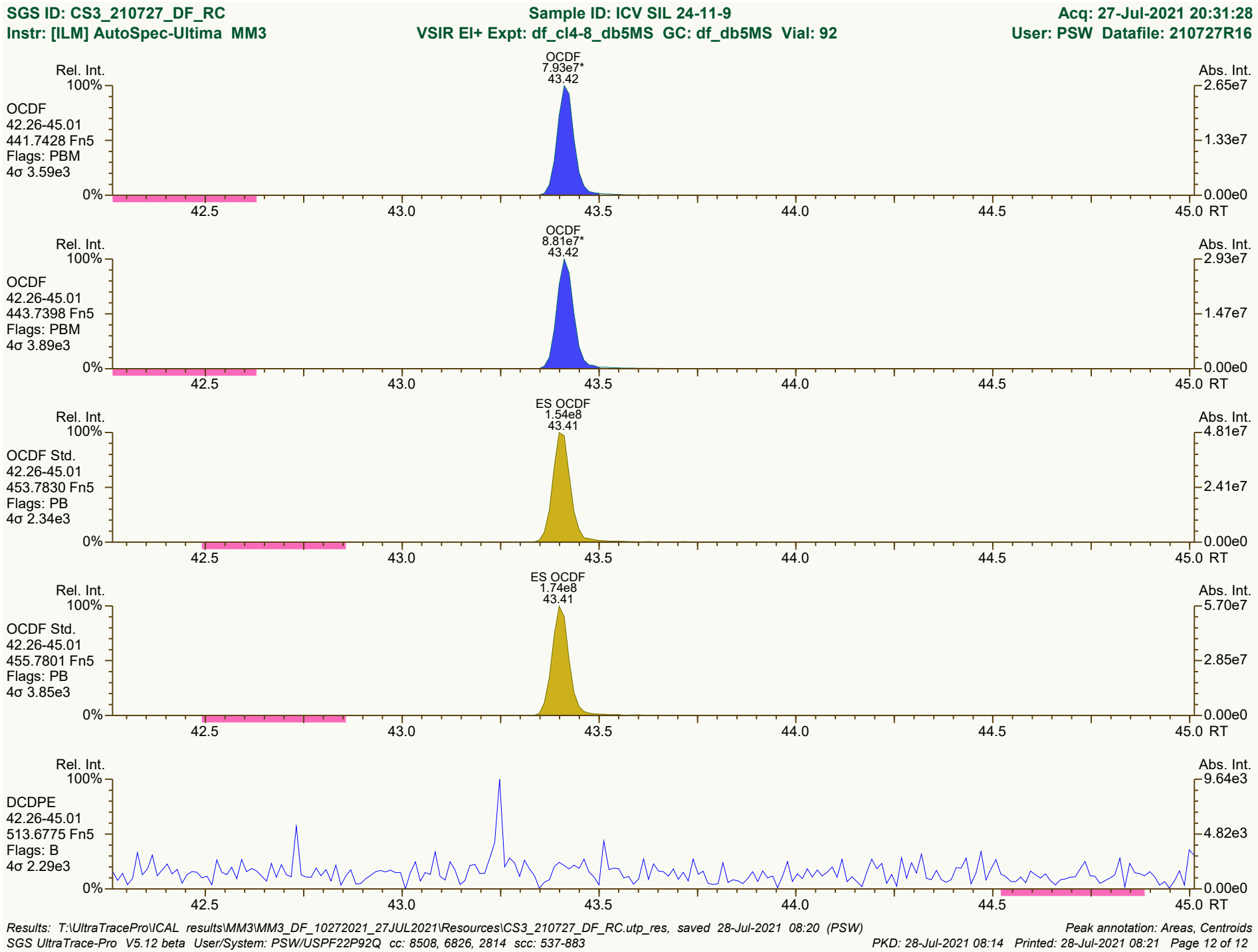

Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 6.73e3
123478F
7.12e7
36.69
123678F
7.48e7*
36.83
234678F
6.99e7
37.50
123789F
6.28e7*
38.43
Abs. Int.
2.26e7
1.13e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 4.27e3
123478F
5.61e7
36.69
123678F
5.95e7*
36.83
234678F
5.63e7
37.50
123789F
5.02e7*
38.43
Abs. Int.
1.81e7
9.06e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 4.32e3
ES 123478F
7.01e7
36.67
ES 123678F
8.37e7
36.81
ES 234678F
7.45e7*
37.48
ES 123789F
7.05e7*
38.41
Abs. Int.
2.56e7
1.28e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.73e3
ES 123478F
1.34e8
36.67
ES 123678F
1.58e8
36.81
ES 234678F
1.42e8*
37.48
ES 123789F
1.35e8*
38.41
Abs. Int.
4.87e7
2.44e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.28e3
Abs. Int.
7.21e3
3.60e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.55e4
0%
1234678F
5.94e7
39.77
1234789F
5.03e7
41.12
Abs. Int.
2.35e7
1.18e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.84e4
0%
1234678F
5.82e7
39.77
1234789F
4.90e7
41.12
Abs. Int.
2.34e7
1.17e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.02e4
0%
ES 1234678F
5.54e7
39.76
ES 1234789F
4.80e7
41.11
Abs. Int.
2.17e7
1.08e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 4.88e4
0%
ES 1234678F
1.21e8
39.76
ES 1234789F
1.06e8
41.11
Abs. Int.
4.69e7
2.35e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.57e3
0%
Abs. Int.
6.98e3
3.49e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT

SGS ID: CS3_210727_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: ICV SIL 24-11-9
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92

Acq: 27-Jul-2021 20:31:28
User: PSW Datafile: 210727R16

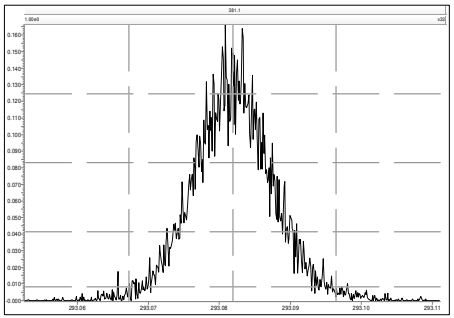


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8508, 6826, 2814 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 12 of 12

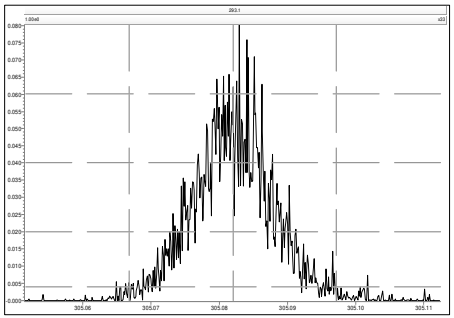
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:15:38 Eastern Daylight Time

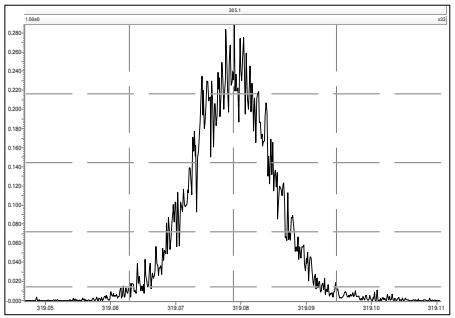
M 292.9824 R 12951



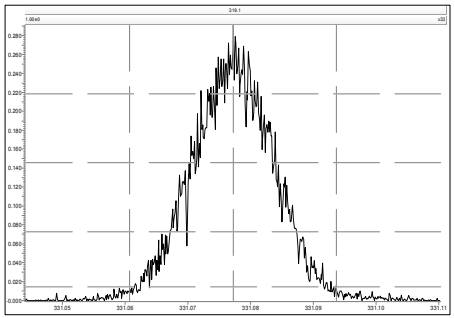
M 304.9824 R 13589



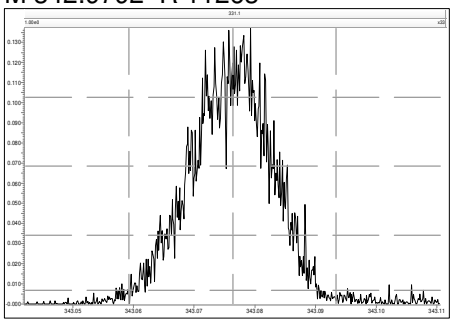
M 318.9792 R 11848



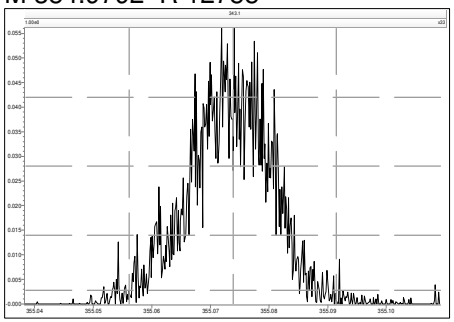
M 330.9792 R 11310



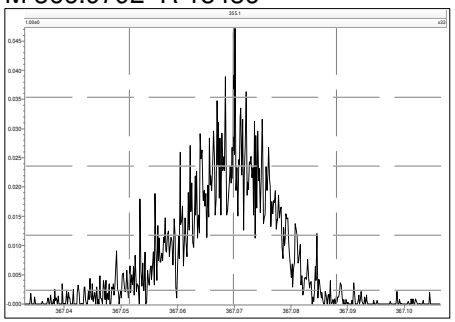
M 342.9792 R 11263



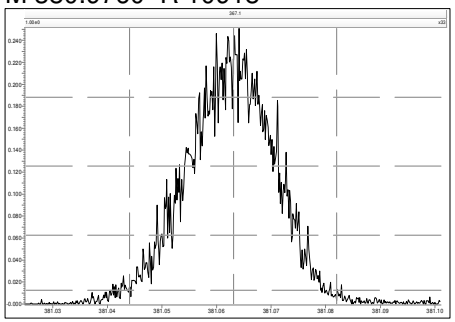
M 354.9792 R 12755



M 366.9792 R 15436



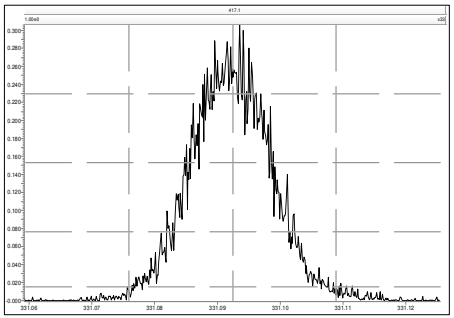
M 380.9760 R 10918



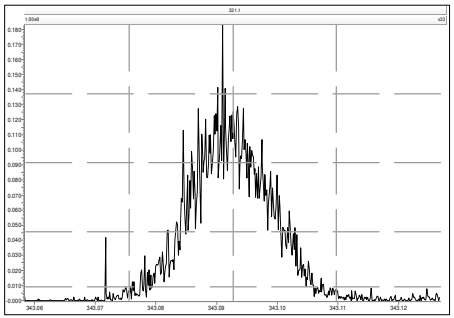
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:03 Eastern Daylight Time

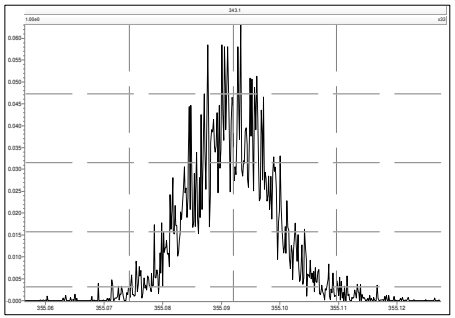
M 330.9792 R 11165



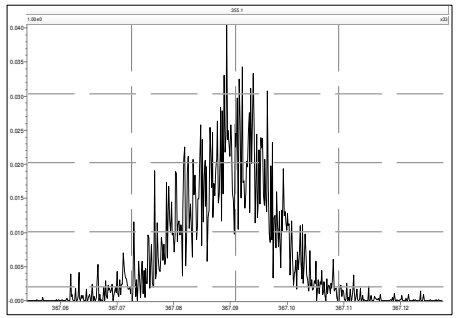
M 342.9792 R 12440



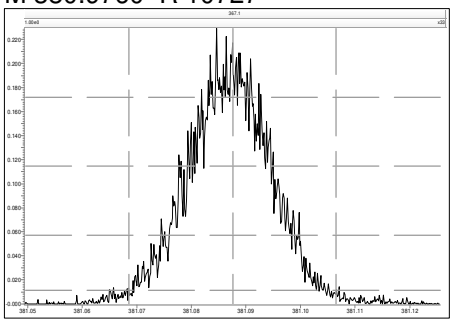
M 354.9792 R 12626



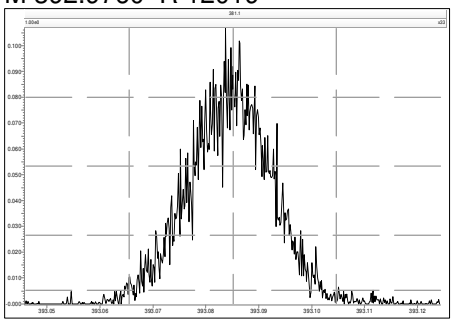
M 366.9792 R 12134



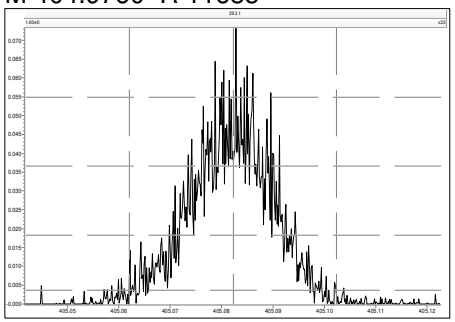
M 380.9760 R 10727



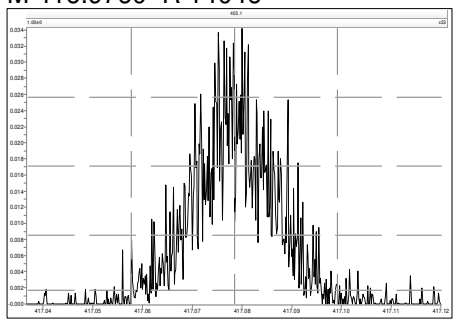
M 392.9760 R 12019



M 404.9760 R 11685



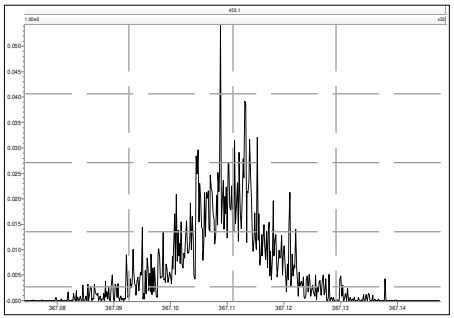
M 416.9760 R 14046



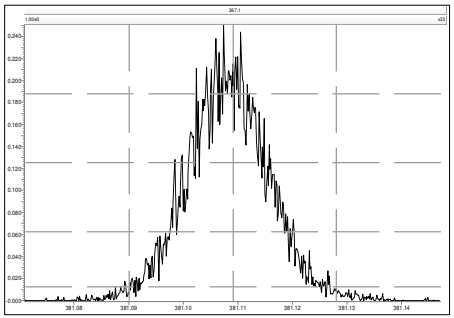
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:24 Eastern Daylight Time

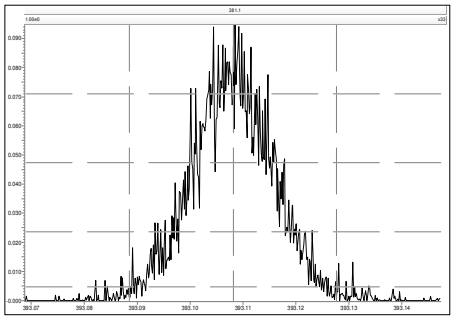
M 366.9792 R 13020



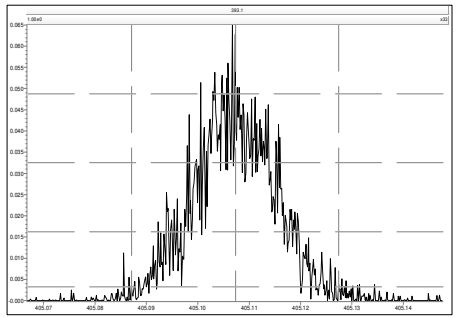
M 380.9760 R 11361



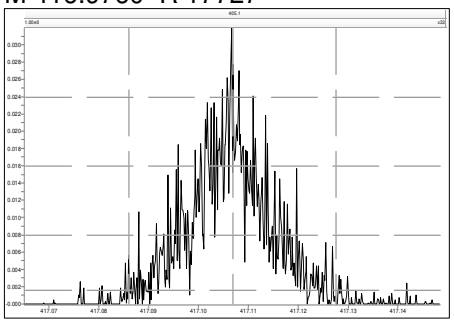
M 392.9760 R 11464



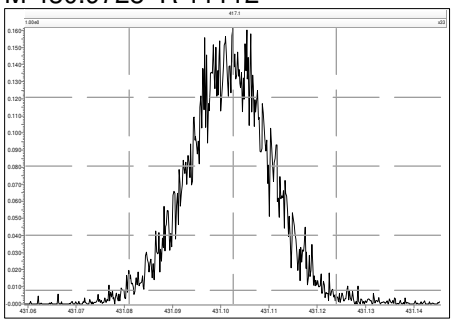
M 404.9760 R 12314



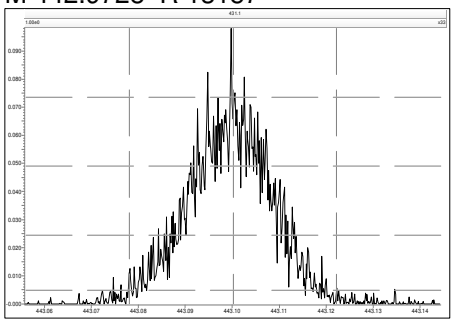
M 416.9760 R 17727



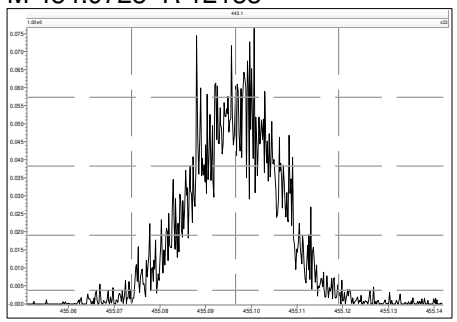
M 430.9728 R 11112



M 442.9728 R 13157



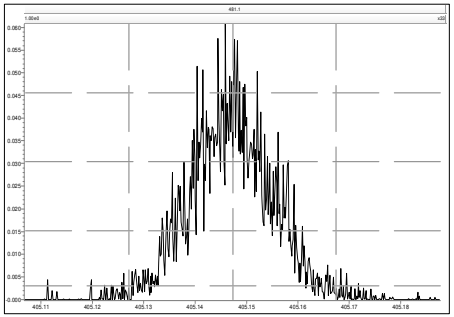
M 454.9728 R 12133



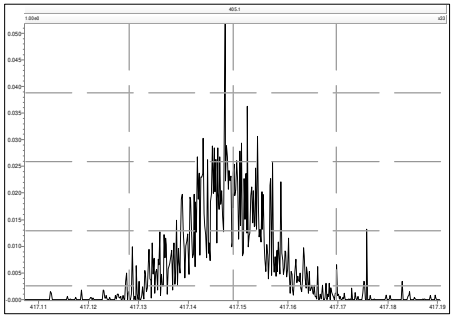
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:47 Eastern Daylight Time

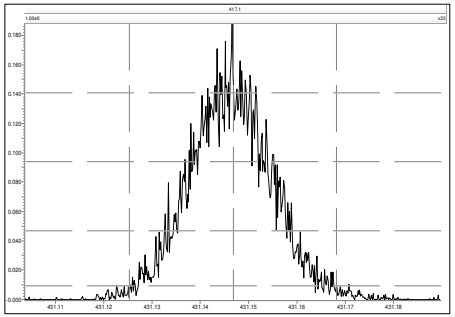
M 404.9760 R 12954



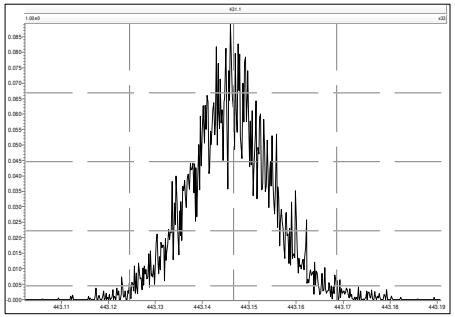
M 416.9760 R 17005



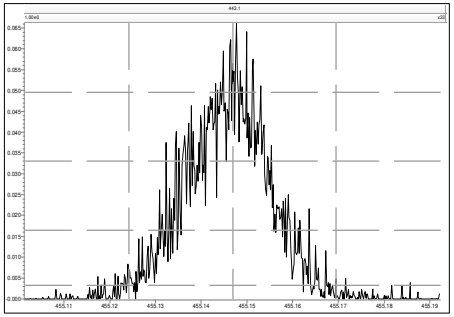
M 430.9728 R 11739



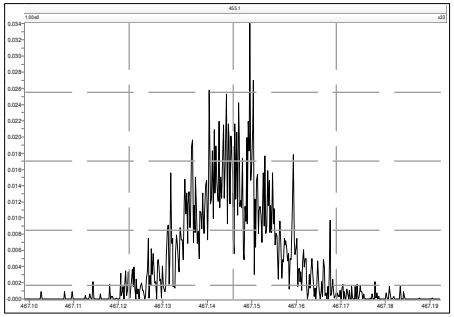
M 442.9728 R 11849



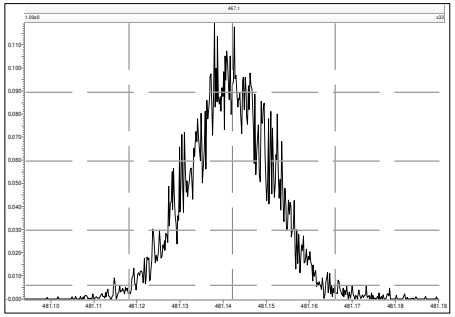
M 454.9728 R 12562



M 466.9728 R 14617



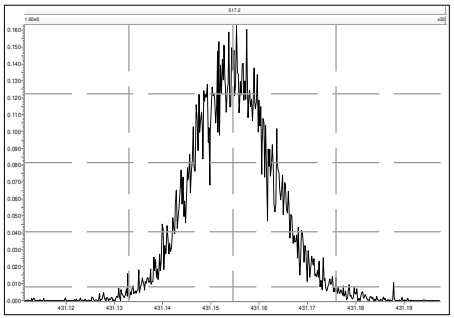
M 480.9696 R 11211



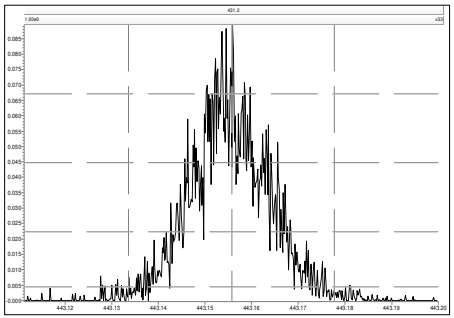
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:17:11 Eastern Daylight Time

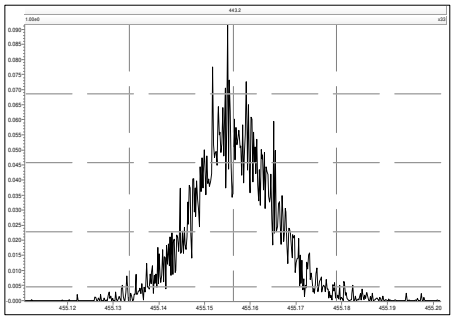
M 430.9728 R 11739



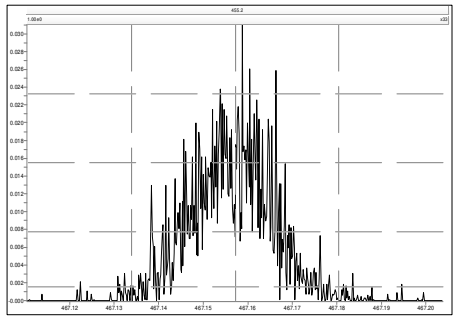
M 442.9728 R 12623



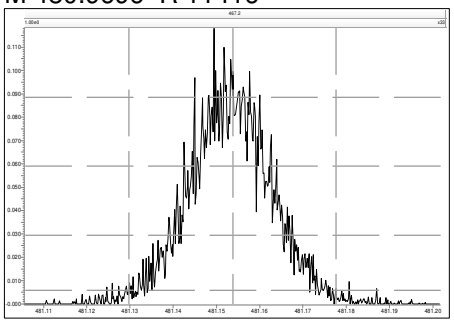
M 454.9728 R 12952



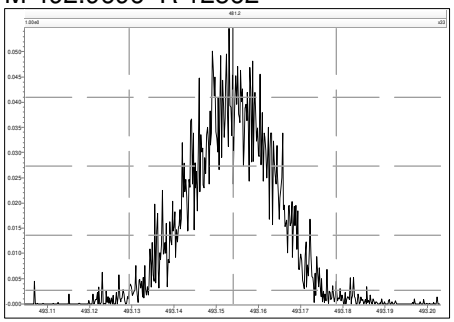
M 466.9728 R 17238



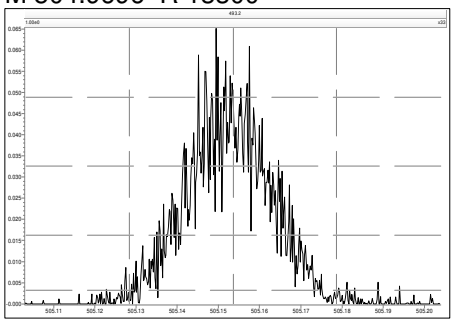
M 480.9696 R 11416



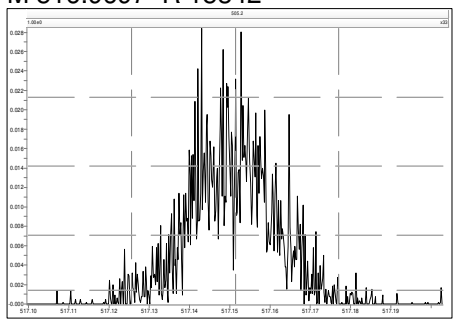
M 492.9696 R 12562



M 504.9696 R 13300

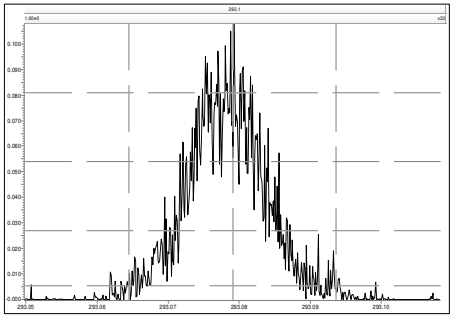


M 516.9697 R 15342

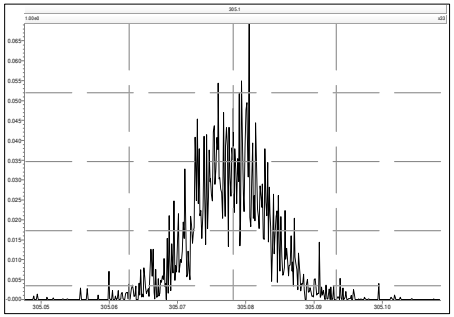


Printed: Tuesday, July 27, 2021 14:53:02 Eastern Daylight Time

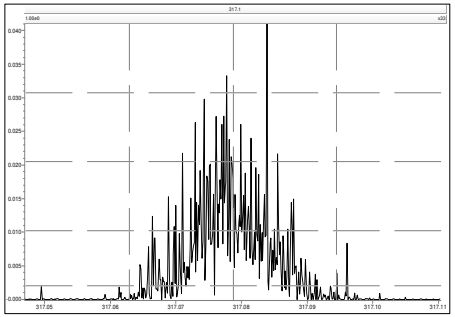
M 292.9824 R 13333



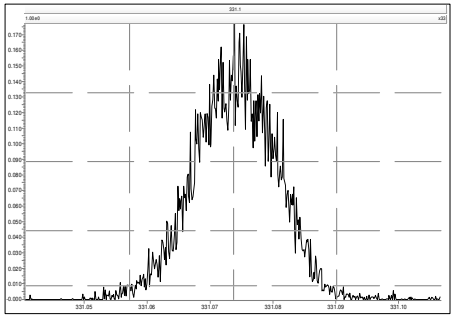
M 304.9824 R 14839



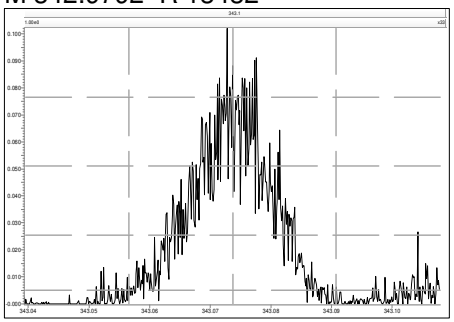
M 316.9824 R 17537



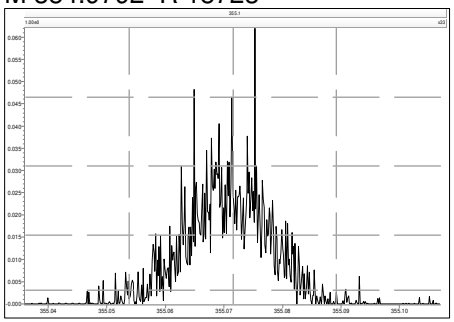
M 330.9792 R 11836



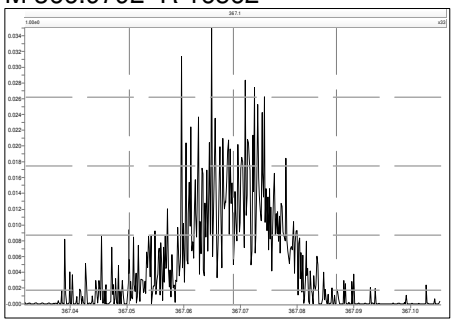
M 342.9792 R 13432



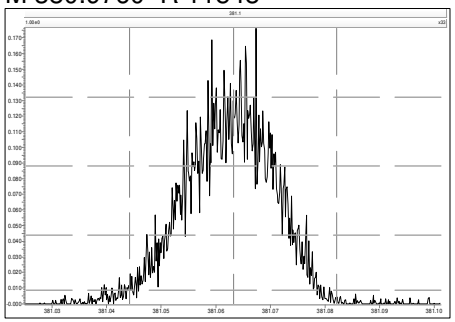
M 354.9792 R 15723



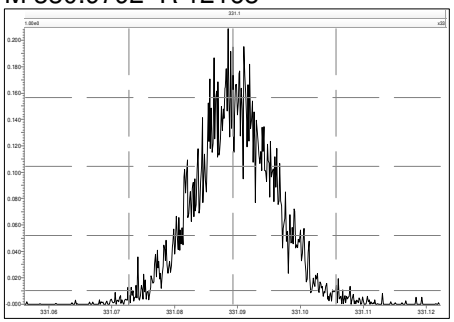
M 366.9792 R 16562



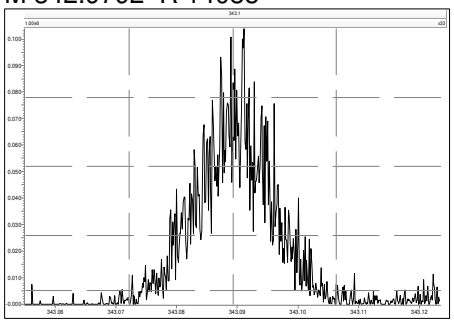
M 380.9760 R 11548



M 330.9792 R 12168



M 342.9792 R 14085



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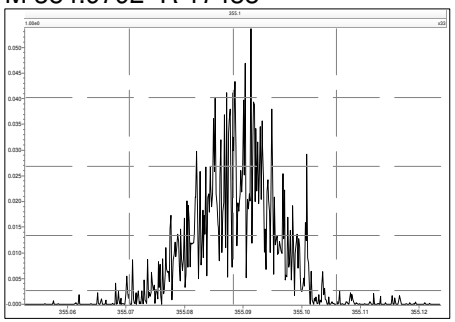

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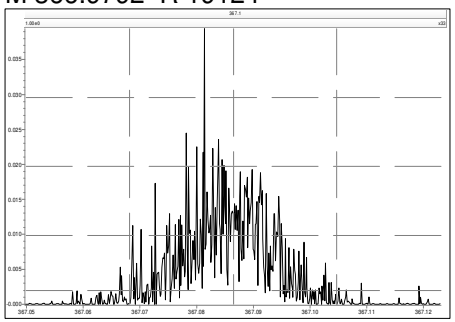

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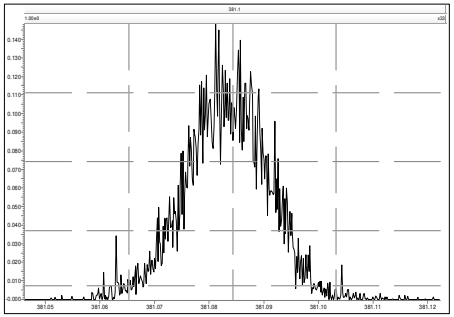

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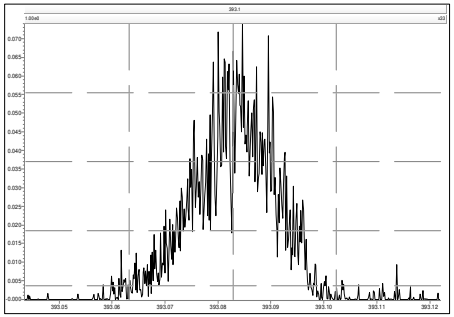

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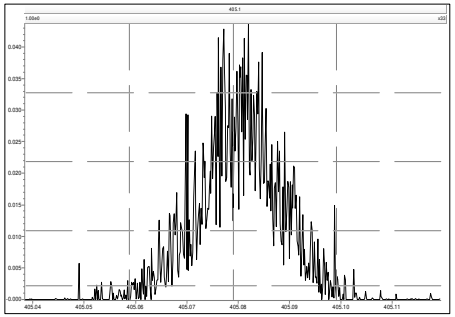

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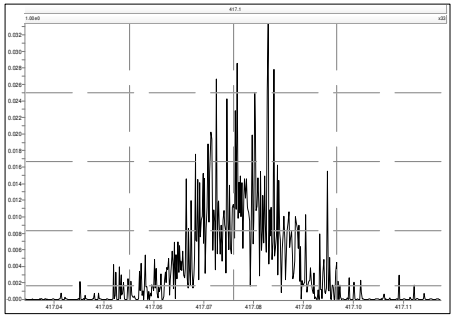

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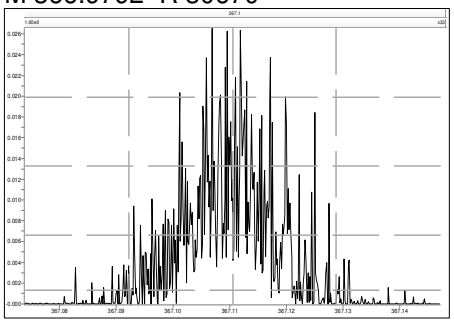

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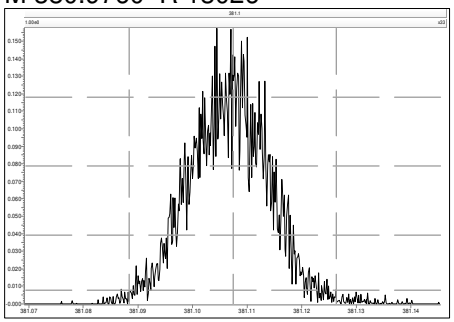

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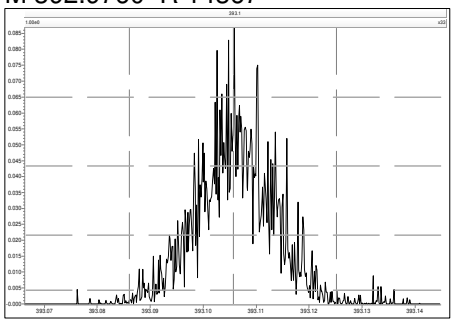

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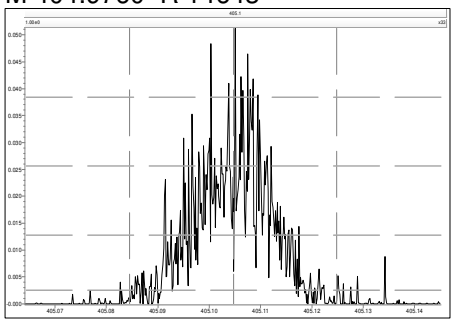

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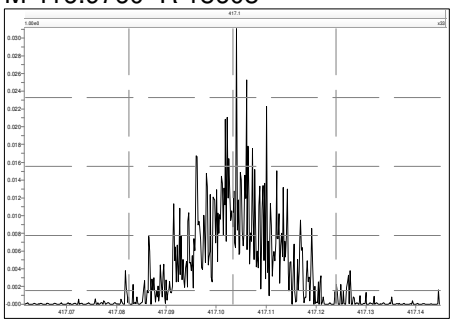
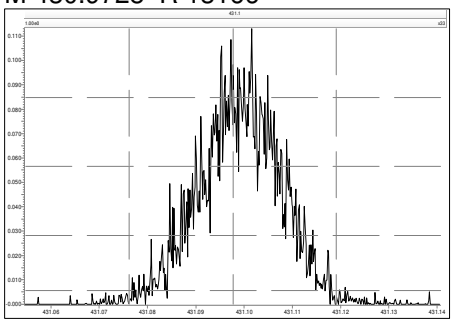


M 430.9728 R 13166



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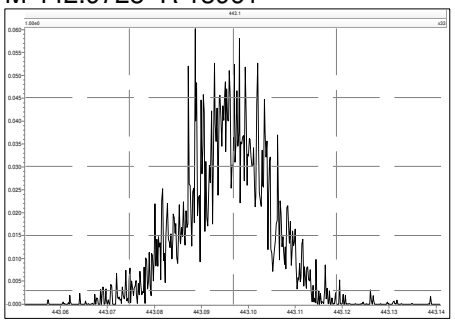

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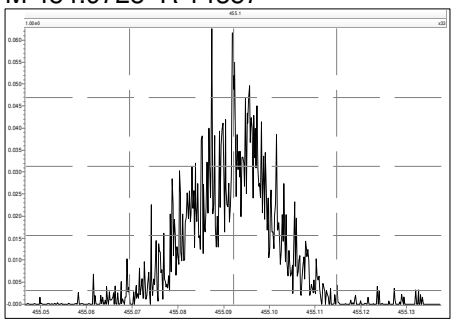

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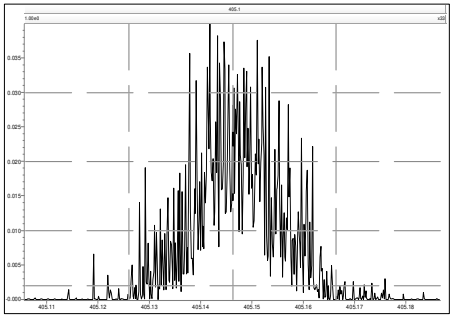

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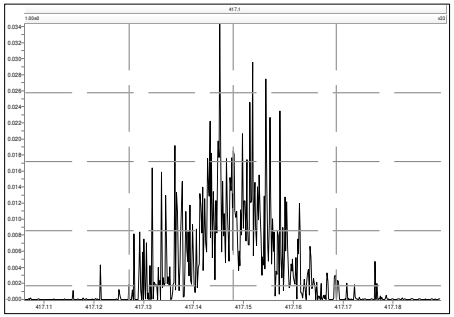
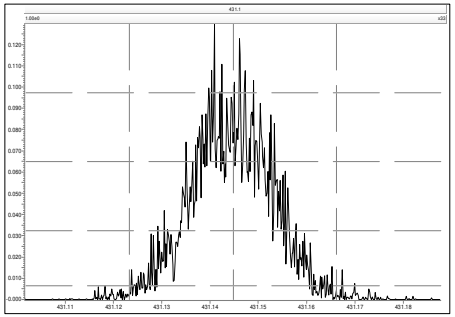


M 430.9728 R 12961



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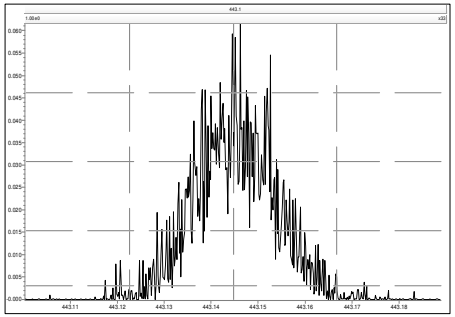

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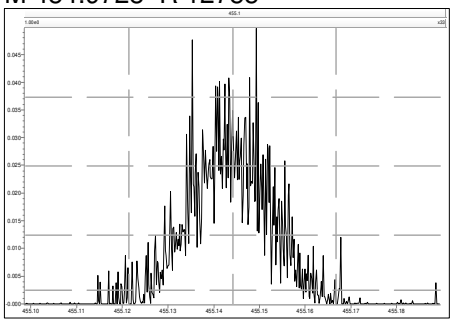

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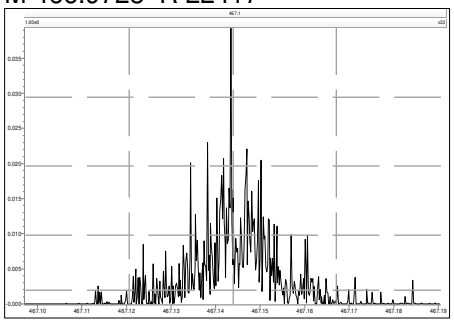

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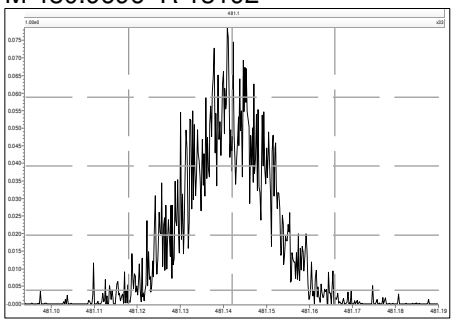

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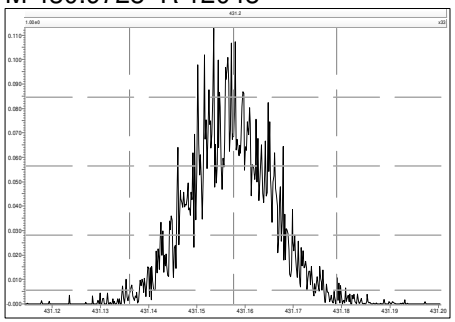

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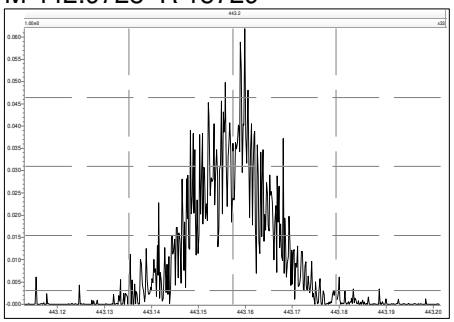

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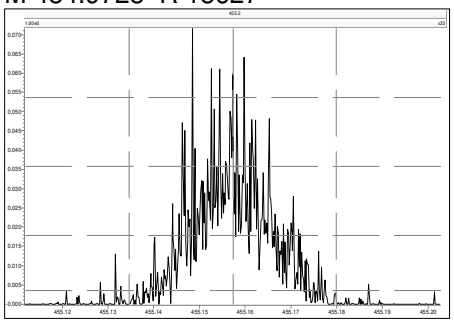

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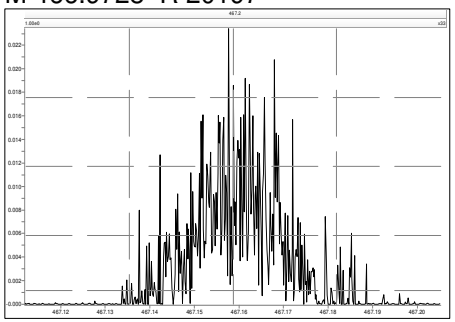
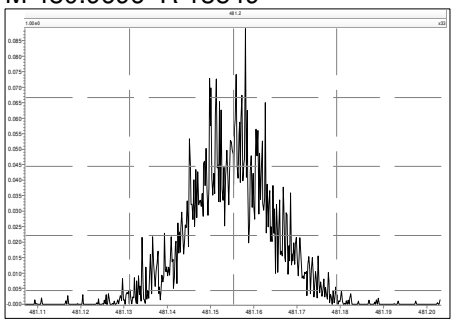


M 480.9696 R 13549



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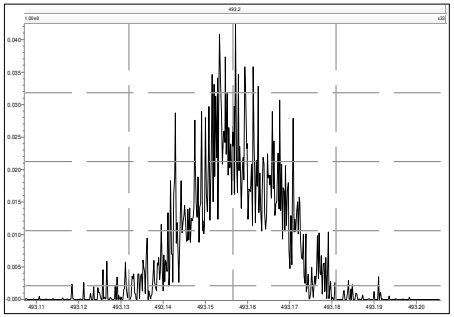

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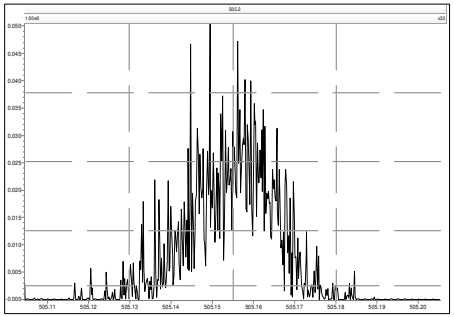

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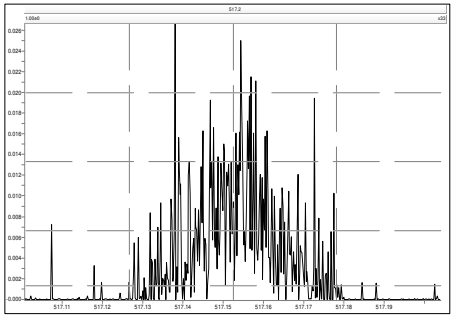

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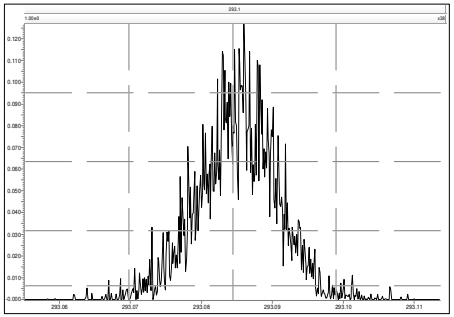

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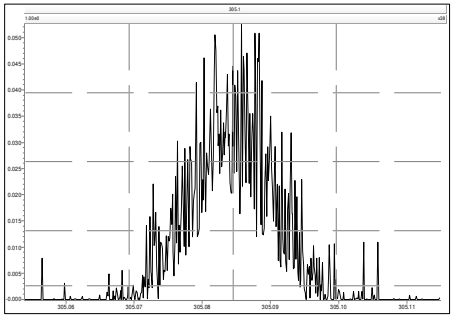

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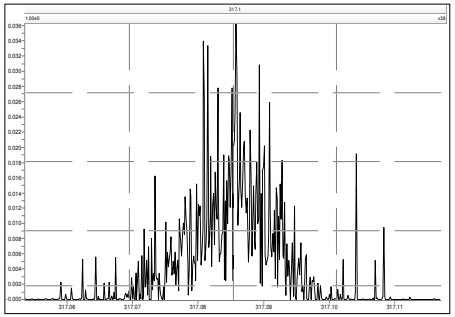
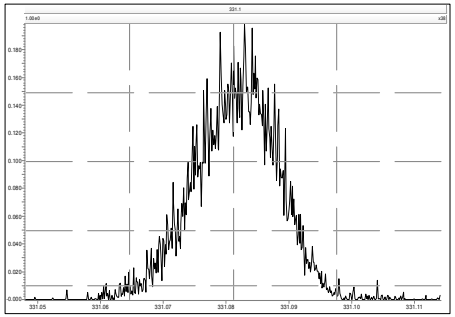
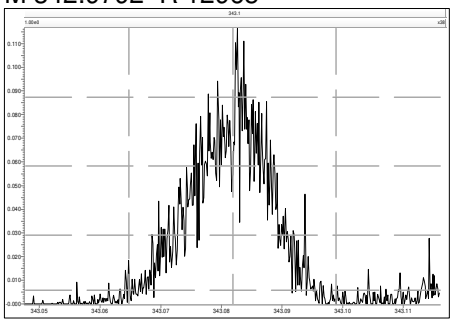


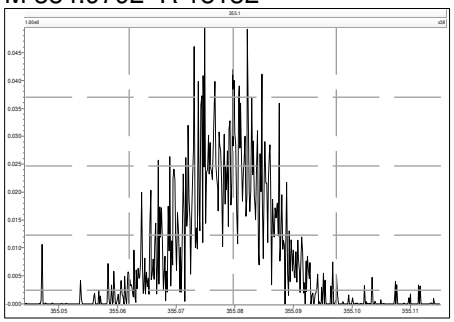
M 330.9792 R 11364



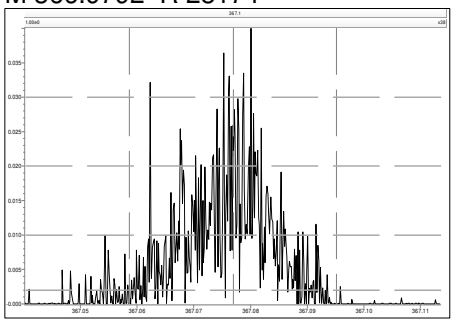
M 342.9792 R 12965



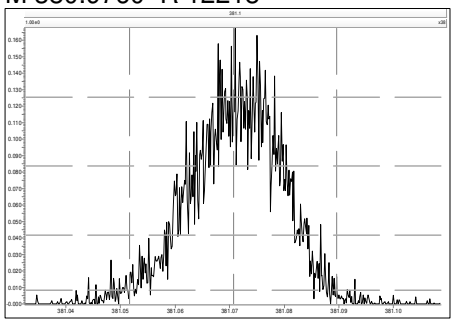
M 354.9792 R 18132



M 366.9792 R 28174



M 380.9760 R 12218



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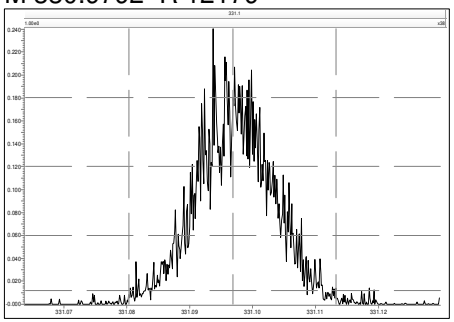

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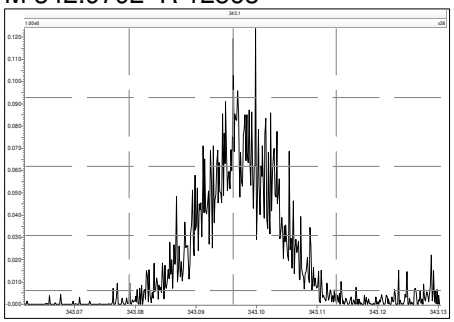

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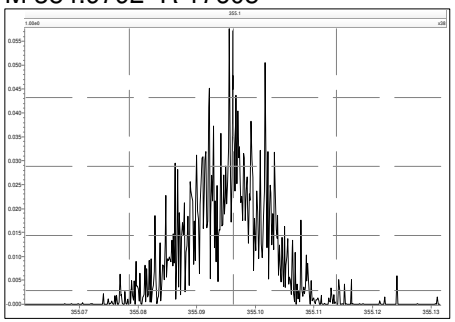

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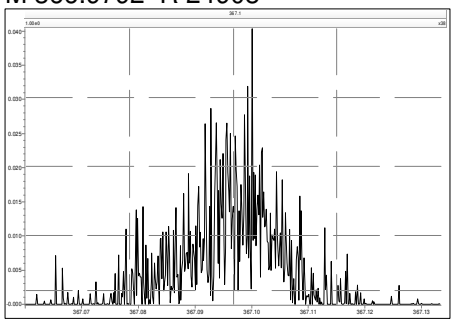
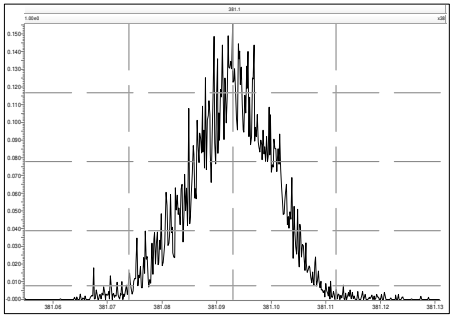
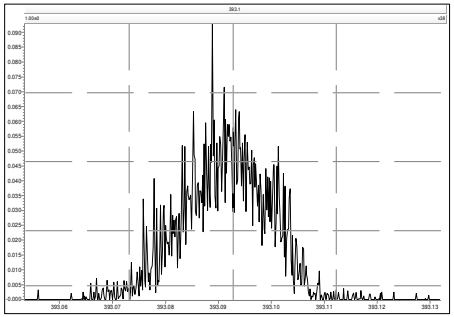


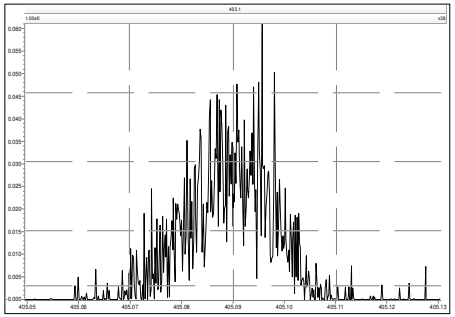
M 380.9760 R 11843



M 392.9760 R 13626



M 404.9760 R 14699



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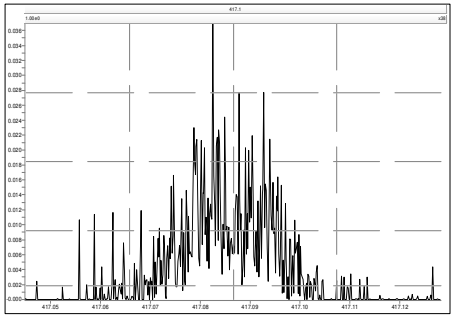
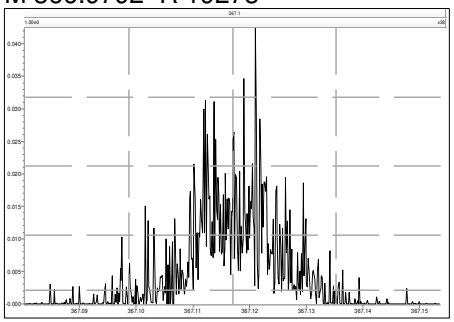
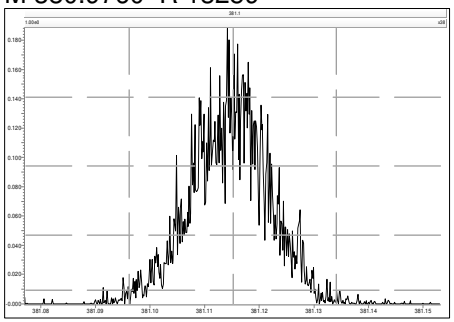


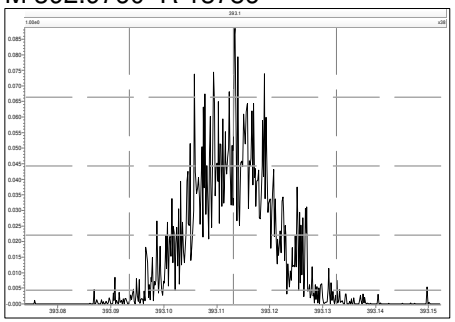
M 366.9792 R 19278



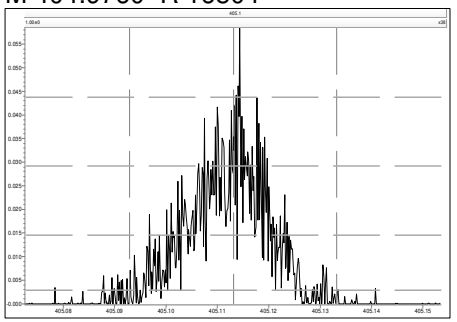
M 380.9760 R 13259



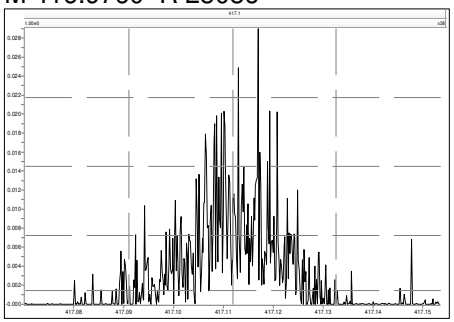
M 392.9760 R 13786



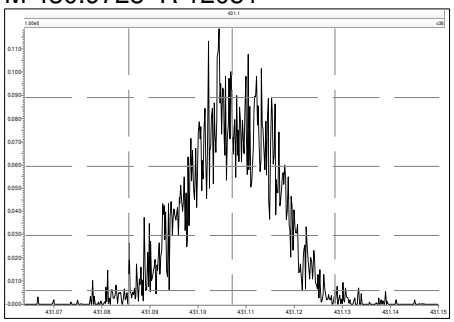
M 404.9760 R 16504



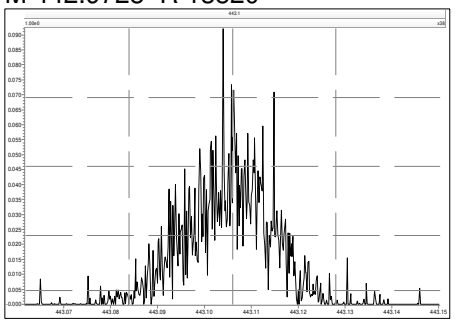
M 416.9760 R 25086



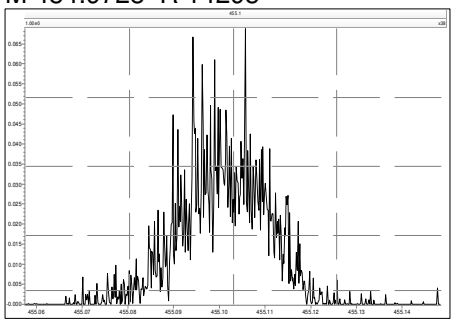
M 430.9728 R 12051



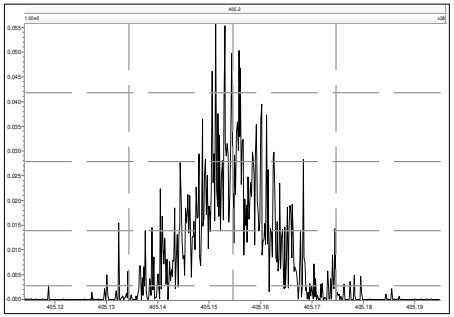
M 442.9728 R 13520



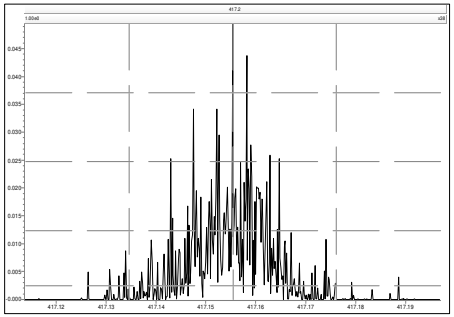
M 454.9728 R 14295



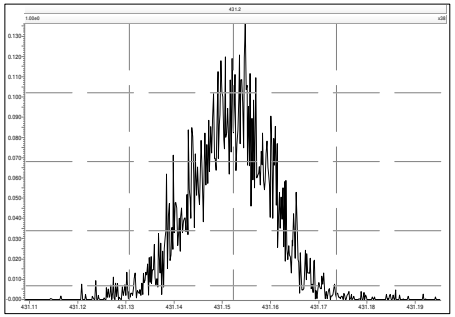
M 404.9760 R 19329



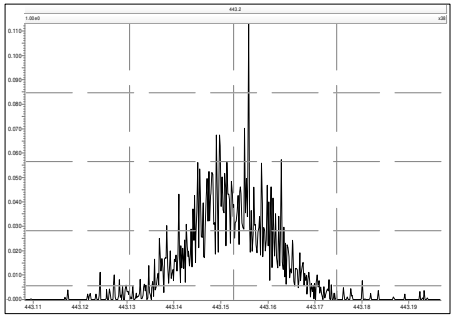
M 416.9760 R 50019



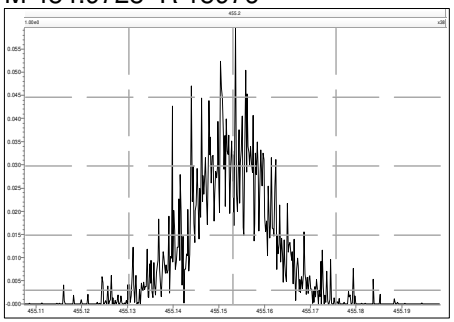
M 430.9728 R 13499



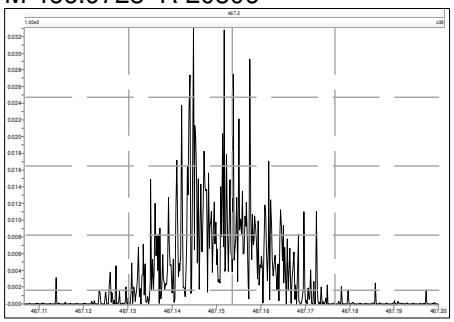
M 442.9728 R 14060



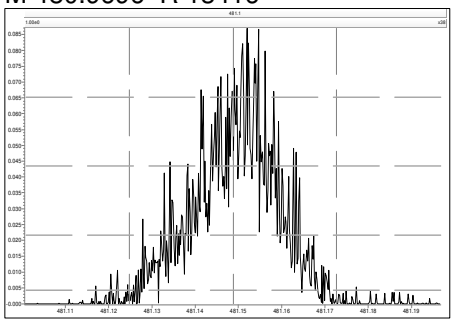
M 454.9728 R 15976



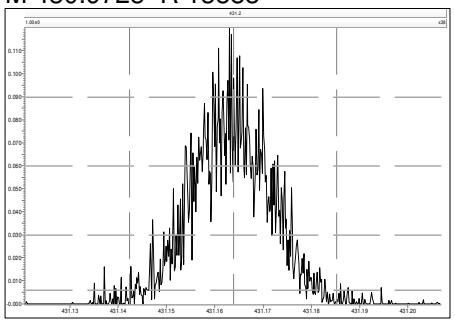
M 466.9728 R 20806



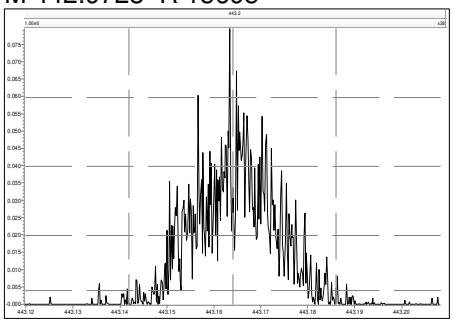
M 480.9696 R 13416



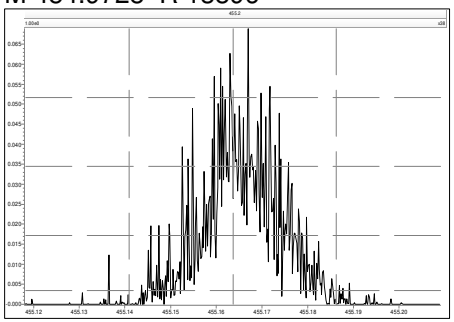
M 430.9728 R 13588



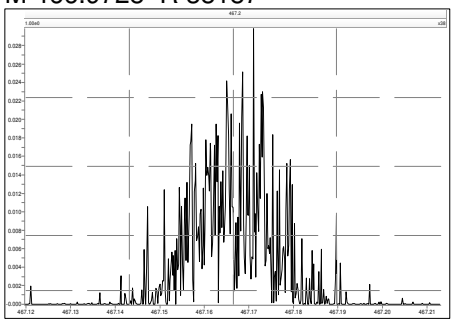
M 442.9728 R 15695



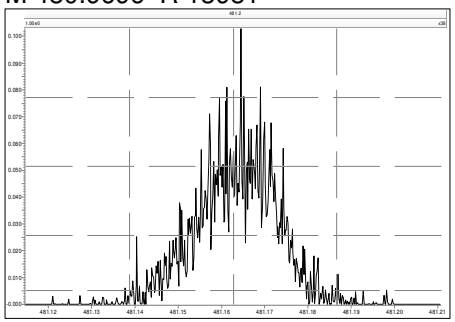
M 454.9728 R 13896



M 466.9728 R 38187

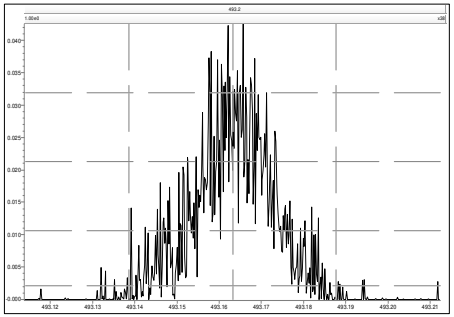


M 480.9696 R 13981

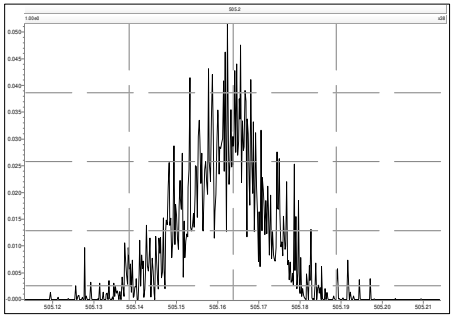


Printed: Tuesday, July 27, 2021 21:27:04 Eastern Daylight Time

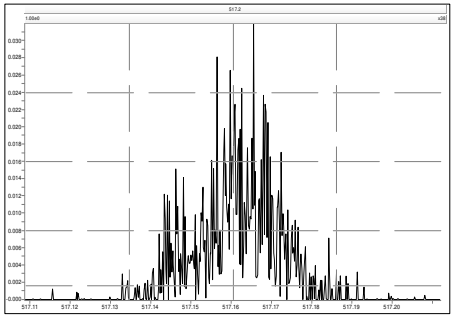
M 492.9696 R 16021



M 504.9696 R 14411



M 516.9697 R 27065



APPROVED
Carla_Lyon , 12/17/2021, 1:04:03 PM

Lab ID: OPR1_18718_DF | **Acq'd:** 15 Dec 2021 15:15 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18718_OPR001 | **UTP:** 16-Dec-2021 09:47:34 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 364-859-NLF

Datafile: 211215R06 | **Report:** 16 Dec 2021 10:54 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26		1.0008	1.0008	0	7.60E+06	0.82	Y	1.34	9.58	13972.259	0.197
12378-PeCDD	33.62		1.0005	1.0006	+0.2	2.69E+07	1.52	Y	1.06	47.1	10835.958	0.196
123478-HxCDD	37.47		1.0003	1.0004	+0.2	2.59E+07	1.25	Y	1.06	53.7	9271.165	0.162
123678-HxCDD	37.60		1.0033	1.0036	+0.7	2.80E+07	1.25	Y	1.08	57.7	9271.165	0.171
123789-HxCDD	37.90		1.0110	1.0116	+1.4	2.74E+07	1.26	Y	1.02	50.4	9271.165	0.149
1234678-HpCDD	40.52		1.0003	1.0003	0	1.97E+07	1.04	Y	0.97	55.4	5458.621	0.0996
OCDD	43.06		1.0003	1.0003	0	1.91E+07	0.88	Y	1.07	107	8789.311	0.408
2378-TCDF	27.40		1.0006	1.0008	+0.3	1.03E+07	0.79	Y	0.96	13	8582.035	0.125
12378-PeCDF	32.16		1.0006	1.0006	0	4.43E+07	1.56	Y	0.95	54.5	16461.076	0.194
23478-PeCDF	33.27		1.0006	1.0005	-0.2	4.10E+07	1.57	Y	0.94	58.9	16461.076	0.229
123478-HxCDF	36.49		1.0004	1.0005	+0.2	3.63E+07	1.21	Y	1.23	56.4	23917.11	0.304
123678-HxCDF	36.63		1.0004	1.0005	+0.2	4.36E+07	1.25	Y	1.13	53.7	23917.11	0.236
234678-HxCDF	37.30		1.0005	1.0005	0	3.71E+07	1.26	Y	1.15	55.2	23917.11	0.327
123789-HxCDF	38.26		1.0005	1.0004	-0.2	2.90E+07	1.27	Y	1.14	53.2	23917.11	0.371
1234678-HpCDF	39.62		1.0003	1.0003	0	3.95E+07	1.06	Y	1.36	53.2	9373.179	0.082
1234789-HpCDF	40.96		1.0003	1.0002	-0.2	2.05E+07	1.04	Y	1.30	53.9	9373.179	0.171
OCDF	43.24		1.0002	1.0003	+0.3	1.90E+07	0.91	Y	1.03	108	8272.486	0.415

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0238	+0.2	5.90E+07	0.80	Y	1.03	81.1
ES 12378-PeCDD	33.60	1.2158	1.2181	+4.6	5.39E+07	1.57	Y	1.03	74
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	4.57E+07	1.26	Y	0.99	90.3
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	4.49E+07	1.24	Y	0.97	90.7
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	5.35E+07	1.27	Y	1.12	93.6
ES 1234678-HpCDD	40.51	1.0713	1.0723	+2.4	3.65E+07	1.05	Y	0.99	72.4
ES OCDD	43.05	1.1385	1.1396	+2.8	3.34E+07	0.92	Y	0.78	42.3
ES 2378-TCDF	27.38	1.0519	1.0524	+0.8	8.24E+07	0.79	Y	1.08	70.7
ES 12378-PeCDF	32.14	1.2331	1.2355	+4.6	8.59E+07	1.63	Y	0.93	85.6
ES 23478-PeCDF	33.26	1.2754	1.2783	+5.8	7.43E+07	1.60	Y	0.92	74.9
ES 123478-HxCDF	36.48	0.9656	0.9656	0	5.20E+07	0.52	Y	1.14	89.5
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	7.18E+07	0.54	Y	1.30	109
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	5.84E+07	0.52	Y	1.20	95.4
ES 123789-HxCDF	38.24	1.0121	1.0123	+0.5	4.81E+07	0.51	Y	1.14	83.2
ES 1234678-HpCDF	39.61	1.0478	1.0486	+1.9	5.46E+07	0.45	Y	0.95	113
ES 1234789-HpCDF	40.96	1.0832	1.0841	+2.2	2.93E+07	0.44	Y	0.85	68
ES OCDF	43.23	1.1434	1.1444	+2.6	3.44E+07	0.92	Y	0.93	36.5

Lab ID: OPR1_18718_DF | **Acq'd:** 15 Dec 2021 15:15 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18718_OPR001 | **UTP:** 16-Dec-2021 09:47:34 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 364-859-NLF

Datafile: 211215R06 | **Report:** 16 Dec 2021 10:54 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	7.04E+07	0.79	Y	-	-	
JS 1234-TCDF	26.02		-	-	-	1.08E+08	0.79	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.54E+07	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0246	+0.2	3.09E+07	n/a	-	1.31	83.9	
CS 12347-PeCDD	33.09		1.1978	1.1997	+3.8	5.63E+07	1.64	Y	0.89	89.7	
CS 12346-PeCDF	31.62		1.2130	1.2153	+4.4	8.95E+07	1.56	Y	0.87	95.9	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	6.54E+07	0.51	Y	1.09	118	
CS 1234689-HpCDF	40.00		1.0580	1.0589	+2.2	4.68E+07	0.46	Y	0.86	106	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0246~~	~~+0.2~~	~~3.09E+07~~	~~n/a~~		~~1.26~~	~~104~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~5.63E+07~~	~~1.64~~	~~Y~~	~~0.86~~	~~121~~	CL 17Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2153~~	~~+4.4~~	~~8.95E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~112~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~6.54E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~108~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0589~~	~~+2.2~~	~~4.68E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~94.1~~	

Totals	Conc	EMPC
Total TCDD	43.3	43.3
Total PeCDD	70	70
Total HxCDD	177	177
Total HpCDD	69	69
Total Tetra-Octa Dioxins	466	466
Total TCDF	65.1	69.2
Total PeCDF	217	217
Total HxCDF	350	350
Total HpCDF	107	107
Total Tetra-Octa Furans	848	852
Total Tetra-Octa Dioxins & Furans	1310	1320

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.814	0.82
Response	7.62E+06	7.60E+06

Lab ID: OPR1_18718_DF | **Acq'd: 15 Dec 2021 15:15 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR001 | **UTP: 16-Dec-2021 09:47:34 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 364-859-NLF**

Datafile: 211215R06 | **Report: 16 Dec 2021 10:54 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.61		0.8726	0.8714	-1.8	9.73E+06	0.78	Y	1.34	12.3	13972.259	0.197
1379-TCDD	NotFnd		0.8851						1.34		13972.259	0.197
1369-TCDD	NotFnd		0.9002						1.34		13972.259	0.197
1469-TCDD	NotFnd		0.9275						1.34		13972.259	0.197
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		13972.259	0.197
1378-TCDD	NotFnd		0.9427						1.34		13972.259	0.197
1268-TCDD	NotFnd		0.9498						1.34		13972.259	0.197
1478-TCDD	NotFnd		0.9584						1.34		13972.259	0.197
1279-TCDD	NotFnd		0.9644						1.34		13972.259	0.197
1234/1269-TCDD	NotFnd		0.9766						1.34		13972.259	0.197
1236-TCDD	NotFnd		0.9813						1.34		13972.259	0.197
1237/1238-TCDD	NotFnd		0.9906						1.34		13972.259	0.197
1239-TCDD	28.11		0.9952	0.9953	+0.2	7.00E+06	0.77	Y	1.34	8.82	13972.259	0.197
2378-TCDD	**28.26**		**1.0008**	1.0008	**0**	7.60E+06	0.82	Y	**1.34**	**9.58**	**13972.259**	**0.197**
1278-TCDD	NotFnd		1.0122						1.34		13972.259	0.197
1267-TCDD	NotFnd		1.0168						1.34		13972.259	0.197
1289-TCDD	29.23		1.0349	1.0352	+0.5	9.99E+06	0.78	Y	1.34	12.6	13972.259	0.197
12479/12468-PeCDD	31.11		0.9267	0.9260	-1.3	6.36E+06	1.53	Y	1.06	11.1	10835.958	0.196
12469-PeCDD	NotFnd		0.9425						1.06		10835.958	0.196
12368-PeCDD	NotFnd		0.9588						1.06		10835.958	0.196
12478-PeCDD	NotFnd		0.9643						1.06		10835.958	0.196
12379-PeCDD	NotFnd		0.9673						1.06		10835.958	0.196
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		10835.958	0.196
12346/12347-PeCDD	NotFnd		0.9859						1.06		10835.958	0.196
12378-PeCDD	33.62		**1.0005**	**1.0006**	**+0.2**	**2.69E+07**	**1.52**	**Y**	**1.06**	**47.1**	**10835.958**	**0.196**
12367-PeCDD	NotFnd		1.0032						1.06		10835.958	0.196
12389-PeCDD	34.06		1.0135	1.0137	+0.4	6.70E+06	1.56	Y	1.06	11.7	10835.958	0.196
124679/124689-HxCDD	35.76		0.9544	0.9547	+0.6	7.54E+06	1.26	Y	1.05	14.9	9271.165	0.16
123468-HxCDD	NotFnd		0.9716						1.05		9271.165	0.16
123679/123689-HxCDD	NotFnd		0.9793						1.05		9271.165	0.16
123469-HxCDD	NotFnd		0.9829						1.05		9271.165	0.16
123478-HxCDD	37.47		**1.0003**	**1.0004**	**+0.2**	**2.59E+07**	**1.25**	**Y**	1.06	**53.7**	**9271.165**	**0.162**
123678-HxCDD	37.60		**1.0033**	**1.0036**	**+0.7**	**2.80E+07**	**1.25**	**Y**	1.08	**57.7**	**9271.165**	**0.171**
123467-HxCDD	NotFnd		1.0084						1.05		9271.165	0.16
123789-HxCDD	37.90		**1.0110**	**1.0116**	**+1.4**	**2.74E+07**	**1.26**	**Y**	1.02	**50.4**	**9271.165**	**0.149**

Lab ID: OPR1_18718_DF | **Acq'd: 15 Dec 2021 15:15 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR001 | **UTP: 16-Dec-2021 09:47:34 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 364-859-NLF**

Datafile: 211215R06 | **Report: 16 Dec 2021 10:54 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	4.84E+06	0.98	Y	0.97	13.6	5458.621	0.0996
1234678-HpCDD	**40.52**		**1.0003**	**1.0003**	**0**	**1.97E+07**	**1.04**	**Y**	**0.97**	**55.4**	**5458.621**	**0.0996**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**1.91E+07**	**0.88**	**Y**	**1.07**	**107**	**8789.311**	**0.408**
OCDD-a	43.06	**EMPC**	1.0001	1.0002	+0.3	9.83E+05	3.17	N	0.07	89.1	12645.079	9.51
1368-TCDF	22.48		0.8230	0.8210	-2.7	1.37E+07	0.81	Y	0.96	17.3	8582.035	0.125
1468-TCDF	NotFnd		0.8443						0.96		8582.035	0.125
2468-TCDF	23.71	EMPC	0.8672	0.8659	-1.8	3.22E+06	0.90	N	0.96	4.07	8582.035	0.125
1346/1246-TCDF	NotFnd		0.8802						0.96		8582.035	0.125
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		8582.035	0.125
1348-TCDF	NotFnd		0.8952						0.96		8582.035	0.125
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		8582.035	0.125
1268-TCDF	NotFnd		0.9136						0.96		8582.035	0.125
1467-TCDF	NotFnd		0.9185						0.96		8582.035	0.125
1478-TCDF	NotFnd		0.9247						0.96		8582.035	0.125
1369/1237-TCDF	NotFnd		0.9381						0.96		8582.035	0.125
2467-TCDF	NotFnd		0.9427						0.96		8582.035	0.125
2368-TCDF	NotFnd		0.9484						0.96		8582.035	0.125
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		8582.035	0.125
1278-TCDF	NotFnd		0.9682						0.96		8582.035	0.125
1349-TCDF	NotFnd		0.9725						0.96		8582.035	0.125
1267-TCDF	NotFnd		0.9782						0.96		8582.035	0.125
2346/1249-TCDF	NotFnd		0.9846						0.96		8582.035	0.125
2347/1279-TCDF	NotFnd		0.9926						0.96		8582.035	0.125
2348-TCDF	27.29		0.9966	0.9967	+0.2	1.31E+07	0.79	Y	0.96	16.5	8582.035	0.125
2378-TCDF	**27.40**		**1.0006**	**1.0008**	**+0.3**	**1.03E+07**	**0.79**	**Y**	**0.96**	**13**	**8582.035**	**0.125**
2367/3467-TCDF	NotFnd		1.0139						0.96		8582.035	0.125
1269-TCDF	NotFnd		1.0226						0.96		8582.035	0.125
1239-TCDF	NotFnd		1.0322						0.96		8582.035	0.125
1289-TCDF	29.40		1.0729	1.0739	+1.8	1.46E+07	0.77	Y	0.96	18.4	8582.035	0.125
13468/12468-PeCDF	29.33		0.9135	0.9125	-1.8	7.03E+07	1.56	Y	0.94	93.2	8106.959	0.104
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		16461.076	0.211
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		16461.076	0.211
14678-PeCDF	NotFnd		0.9693						0.94		16461.076	0.211
13479-PeCDF	NotFnd		0.9723						0.94		16461.076	0.211
13469/12479-PeCDF	NotFnd		0.9799						0.94		16461.076	0.211
12346-PeCDF	NotFnd		0.9842						0.94		16461.076	0.211

Lab ID: OPR1_18718_DF **Acq'd: 15 Dec 2021 15:15 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR001 **UTP: 16-Dec-2021 09:47:34 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 364-859-NLF**

Datafile: 211215R06 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		16461.076	0.211
12347-PeCDF	NotFnd		0.9893						0.94		16461.076	0.211
12348-PeCDF	NotFnd		0.9941						0.94		16461.076	0.211
12378-PeCDF	**32.16**		**1.0006**	**1.0006**	**0**	**4.43E+07**	**1.56**	**Y**	**0.95**	**54.5**	**16461.076**	**0.194**
12678/12367-PeCDF	NotFnd		1.0090						0.94		16461.076	0.211
12379-PeCDF	NotFnd		1.0143						0.94		16461.076	0.211
12679-PeCDF	NotFnd		0.9929						0.94		16461.076	0.211
23467/12369-PeCDF	NotFnd		0.9966						0.94		16461.076	0.211
23478-PeCDF	**33.27**		**1.0006**	**1.0005**	**-0.2**	**4.10E+07**	**1.57**	**Y**	**0.94**	**58.9**	**16461.076**	**0.229**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		16461.076	0.211
12349-PeCDF	NotFnd		1.0102						0.94		16461.076	0.211
12389-PeCDF	34.35		1.0325	1.0329	+0.8	8.31E+06	1.56	Y	0.94	11	16461.076	0.211
123468-HxCDF	35.13		0.9628	0.9630	+0.4	8.84E+07	1.25	Y	1.16	132	23917.11	0.302
124678/134678-HxCDF	NotFnd		0.9683						1.16		23917.11	0.302
134679-HxCDF	NotFnd		0.9746						1.16		23917.11	0.302
124679-HxCDF	NotFnd		0.9798						1.16		23917.11	0.302
124689-HxCDF	NotFnd		0.9859						1.16		23917.11	0.302
123467-HxCDF	NotFnd		0.9972						1.16		23917.11	0.302
123478-HxCDF	**36.49**		**1.0004**	**1.0005**	**+0.2**	**3.63E+07**	**1.21**	**Y**	**1.23**	**56.4**	**23917.11**	**0.304**
123678-HxCDF	**36.63**		**1.0004**	**1.0005**	**+0.2**	**4.36E+07**	**1.25**	**Y**	**1.13**	**53.7**	**23917.11**	**0.236**
123479-HxCDF	NotFnd		1.0049						1.16		23917.11	0.302
123469-HxCDF	NotFnd		1.0088						1.16		23917.11	0.302
123679-HxCDF	NotFnd		0.9943						1.16		23917.11	0.302
234678-HxCDF	**37.30**		**1.0005**	**1.0005**	**0**	**3.71E+07**	**1.26**	**Y**	**1.15**	**55.2**	**23917.11**	**0.327**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		23917.11	0.302
123789-HxCDF	**38.26**		**1.0005**	**1.0004**	**-0.2**	**2.90E+07**	**1.27**	**Y**	**1.14**	**53.2**	**23917.11**	**0.371**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		23917.11	0.302
1234678-HpCDF	**39.62**		**1.0003**	**1.0003**	**0**	**3.95E+07**	**1.06**	**Y**	**1.36**	**53.2**	**9373.179**	**0.082**
1234679-HpCDF	NotFnd		1.0067						1.33		9373.179	0.113
1234689-HpCDF	NotFnd		1.0100						1.33		9373.179	0.113
1234789-HpCDF	**40.96**		**1.0003**	**1.0002**	**-0.2**	**2.05E+07**	**1.04**	**Y**	**1.30**	**53.9**	**9373.179**	**0.171**
OCDF	**43.24**		**1.0002**	**1.0003**	**+0.3**	**1.90E+07**	**0.91**	**Y**	**1.03**	**108**	**8272.486**	**0.415**
OCDF-a	43.24		1.0002	1.0003	+0.3	1.19E+06	2.12	Y	0.06	117	11022.096	9.57

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211215R06	Analysis Date:	15-DEC-2021 15:15:44
Lab ID:	OPR1_18718_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.58	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	47.1	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	57.7	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	50.4	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	55.4	35	-	70	Y
OCDD	100	107	78	-	144	Y
2,3,7,8-TCDF	10	13	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.5	40	-	67	Y
2,3,4,7,8-PeCDF	50	58.9	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	56.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53.7	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55.2	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	53.2	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	53.2	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	53.9	39	-	69	Y
OCDF	100	108	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 16 Dec 2021 10:54 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211215R06	Analysis Date:	15-DEC-2021 15:15:44
Lab ID:	OPR1_18718_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	81.1	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	74	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	90.3	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	90.7	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	93.6	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	72.4	26	-	166	Y
13C-OCDD	200	84.6	26	-	397	Y
13C-2,3,7,8-TCDF	100	70.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	85.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	74.9	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	89.5	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	109	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	95.4	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	83.2	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	113	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	68	20	-	186	Y
13C-OCDF	200	73.1	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	33.6	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 16 Dec 2021 10:54 Analyst: pw

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211215R06	Analysis Date:	15-DEC-2021 15:15:44
Lab ID:	OPR1_18718_DF		

Window Defining Standards Results

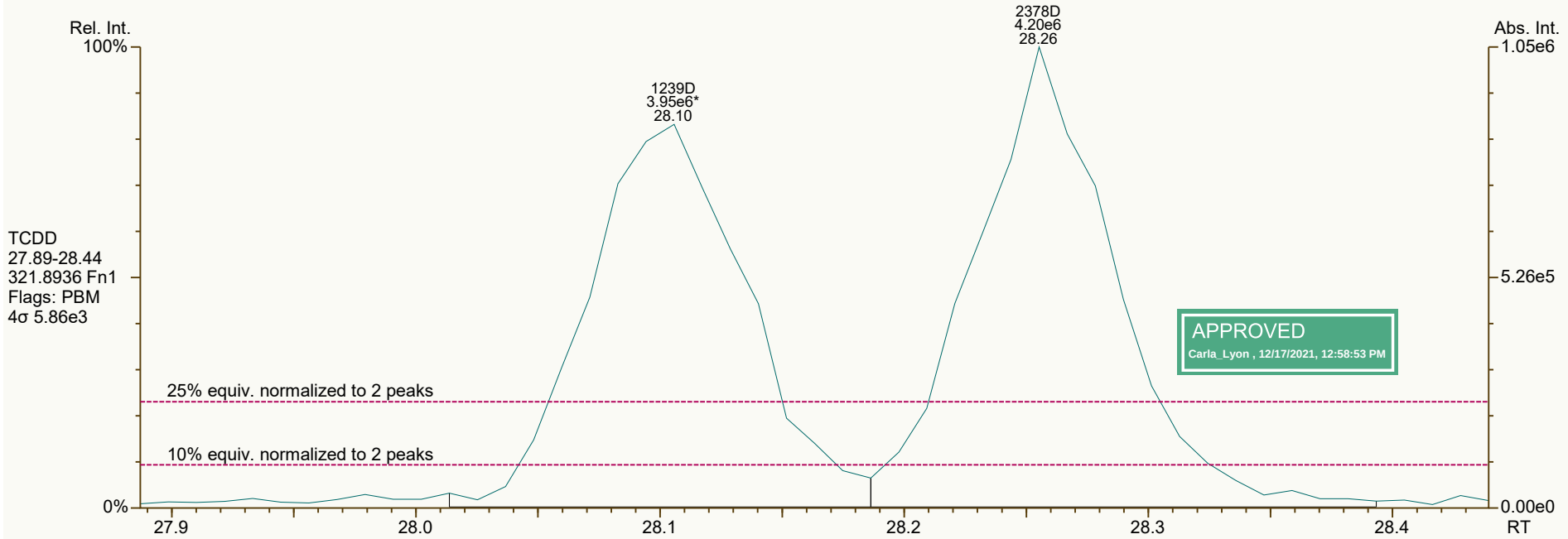
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.61	1289-TCDD	29.23
12479/12468-PeCDD	31.11	12389-PeCDD	34.06
124679/124689-HxCDD	35.76	123789-HxCDD	37.90
1234679-HpCDD	39.87	1234678-HpCDD	40.52
1368-TCDF	22.48	1289-TCDF	29.40
13468/12468-PeCDF	29.33	12389-PeCDF	34.35
123468-HxCDF	35.13	123789-HxCDF	38.26
1234678-HpCDF	39.62	1234789-HpCDF	40.96

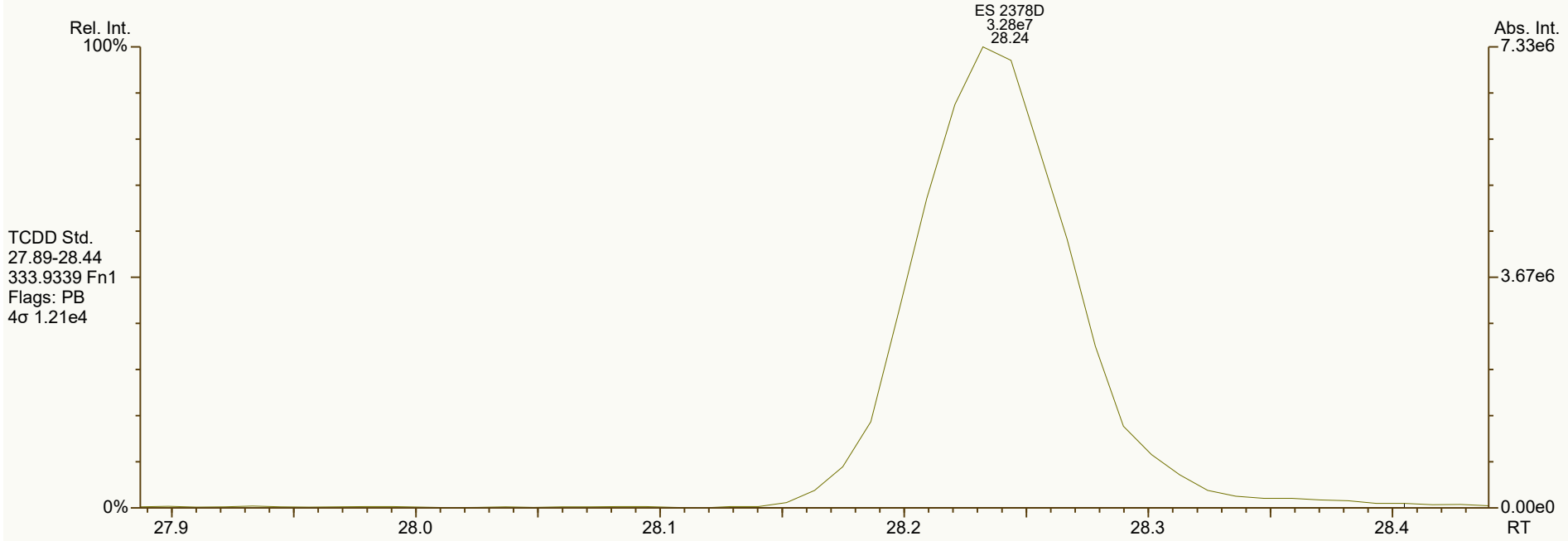
Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.11	2378-TCDD	28.26
2348-TCDF	27.29	2378-TCDF	27.40

Processed: 16 Dec 2021 10:54 Analyst: pw

SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06





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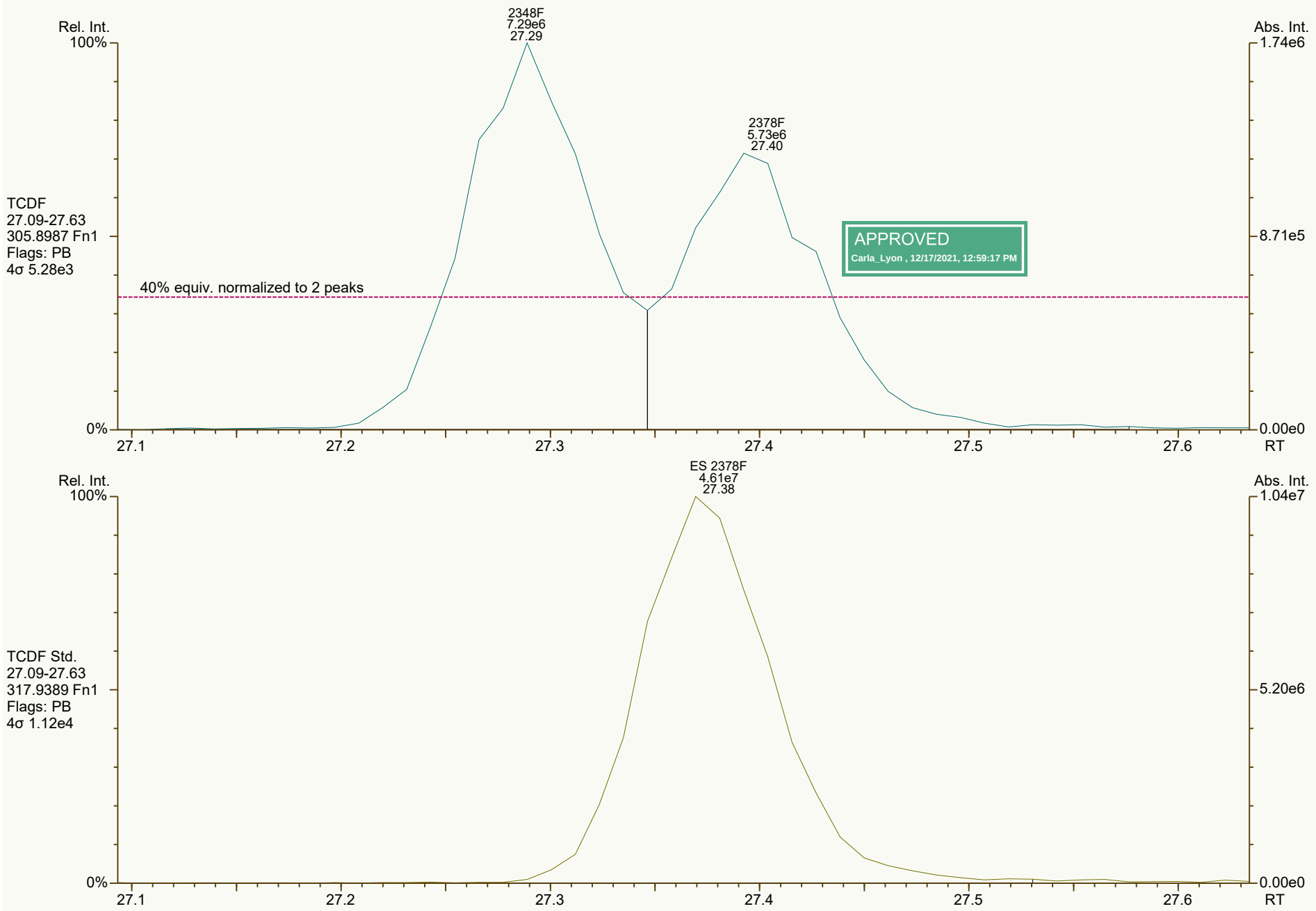
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 10:57

SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06



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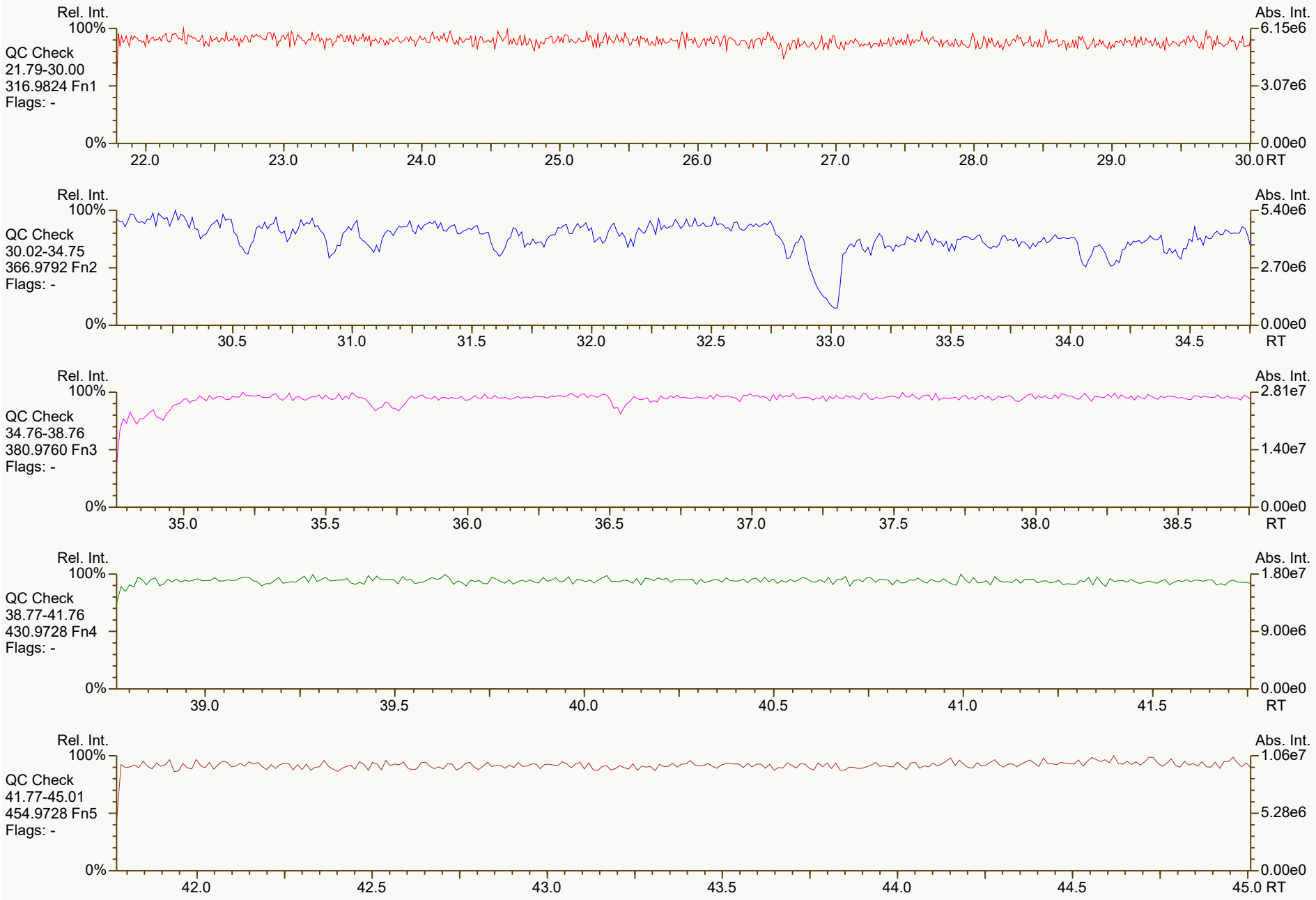
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 10:57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QC Check
21.79-30.00
316.9824 Fn1
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0%
Abs. Int.
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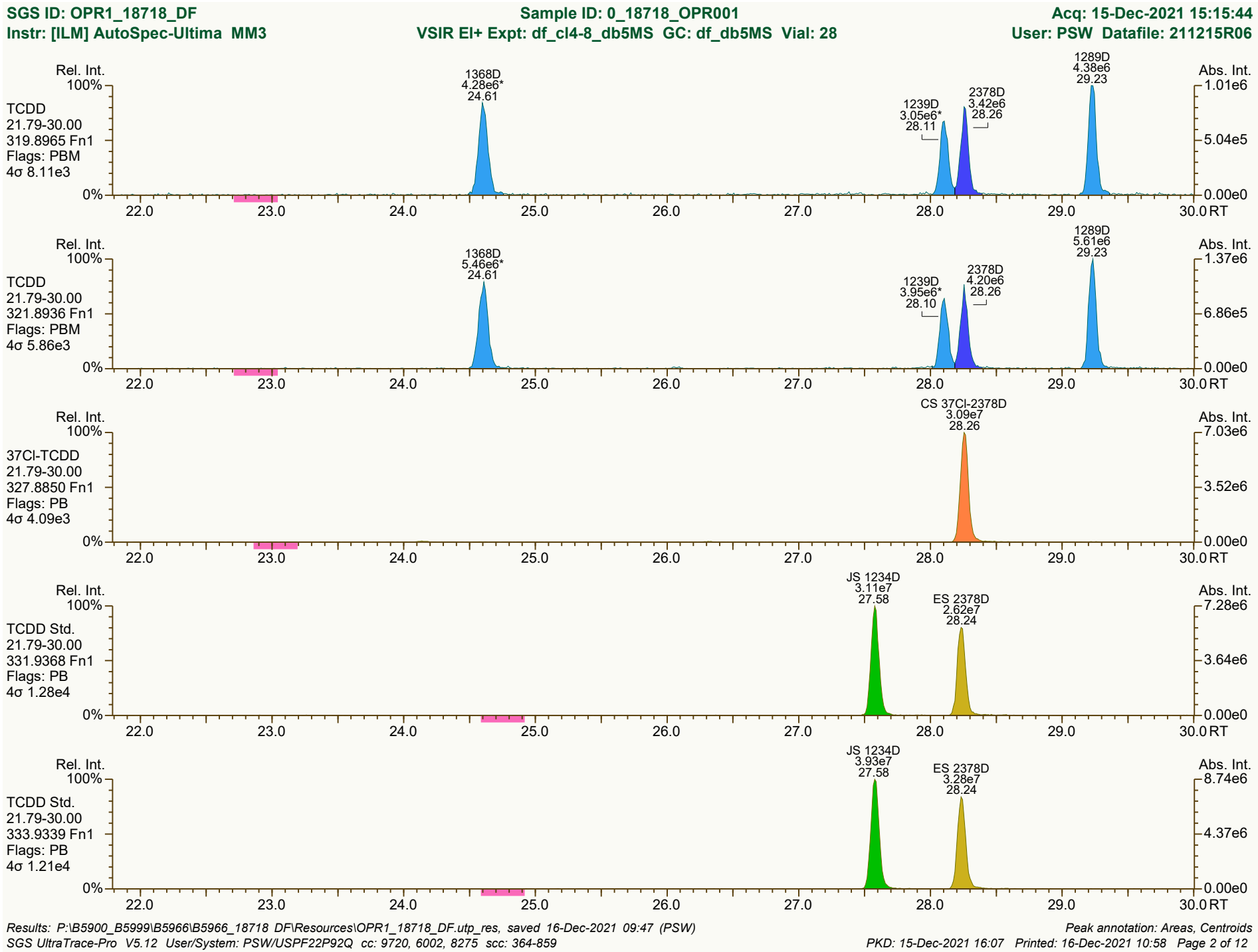
3.07e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.40e6
2.70e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.81e7
1.40e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.80e7
9.00e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.06e7
5.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: OPR1_18718_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18718_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28

Acq: 15-Dec-2021 15:15:44
User: PSW Datafile: 211215R06



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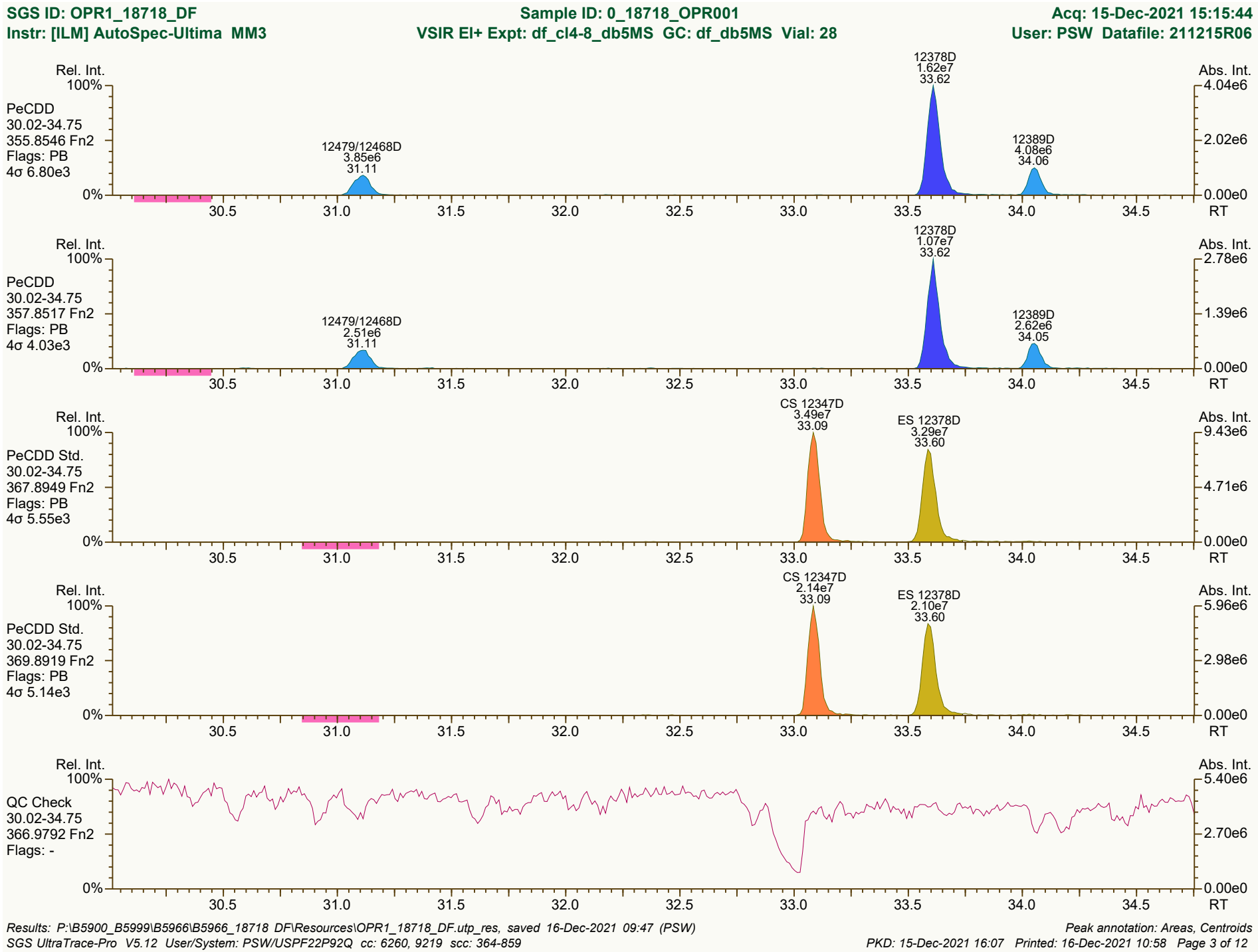
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9720, 6002, 8275 scc: 364-859

Peak annotation: Areas, Centroids
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 10:58 Page 2 of 12



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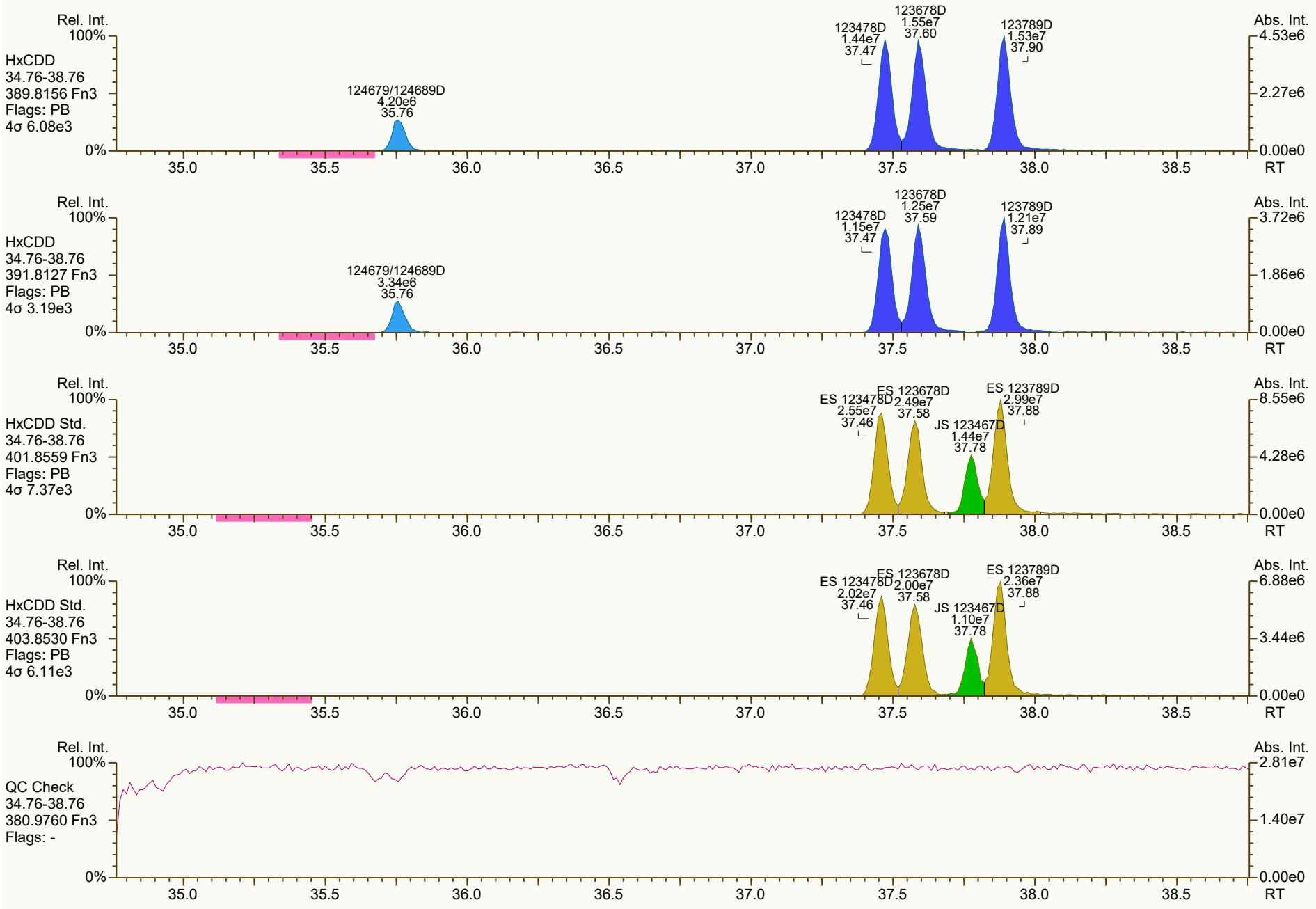
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6260, 9219 scc: 364-859
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 10:58 Page 3 of 12


Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PB
4σ 6.08e3
124679/124689D
4.20e6
35.76
123478D
1.44e7
37.47
123678D
1.55e7
37.60
123789D
1.53e7
37.90
Abs. Int.
4.53e6
2.27e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PB
4σ 3.19e3
124679/124689D
3.34e6
35.76
123478D
1.15e7
37.47
123678D
1.25e7
37.59
123789D
1.21e7
37.89
Abs. Int.
3.72e6
1.86e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 7.37e3
ES 123478D
2.55e7
37.46
ES 123678D
2.49e7
37.58
JS 123467D
1.44e7
37.78
ES 123789D
2.99e7
37.88
Abs. Int.
8.55e6
4.28e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 6.11e3
ES 123478D
2.02e7
37.46
ES 123678D
2.00e7
37.58
JS 123467D
1.10e7
37.78
ES 123789D
2.36e7
37.88
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
Abs. Int.
2.81e7
1.40e7
0.00e0
0%
35.0
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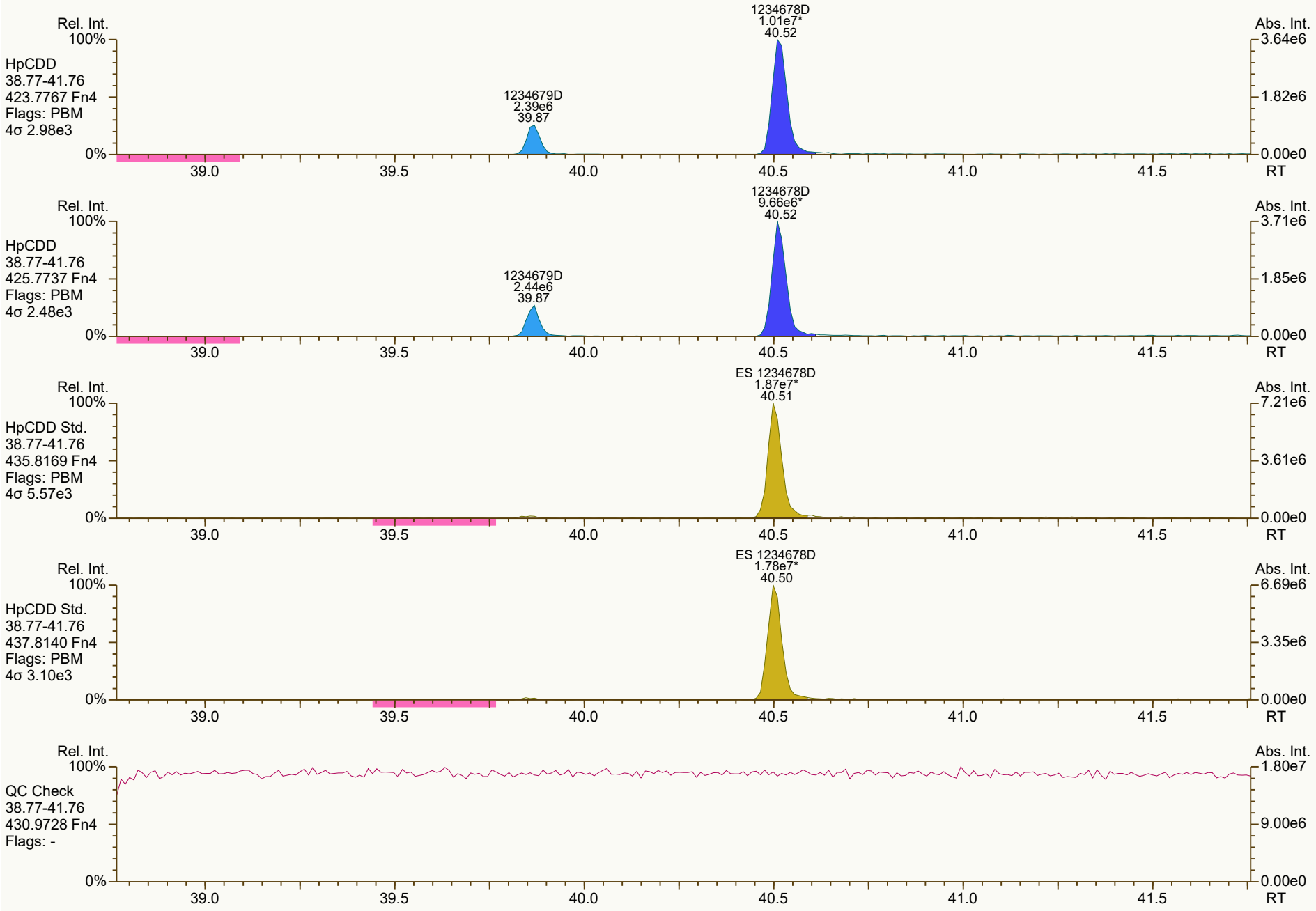
37.5
38.0
38.5
RT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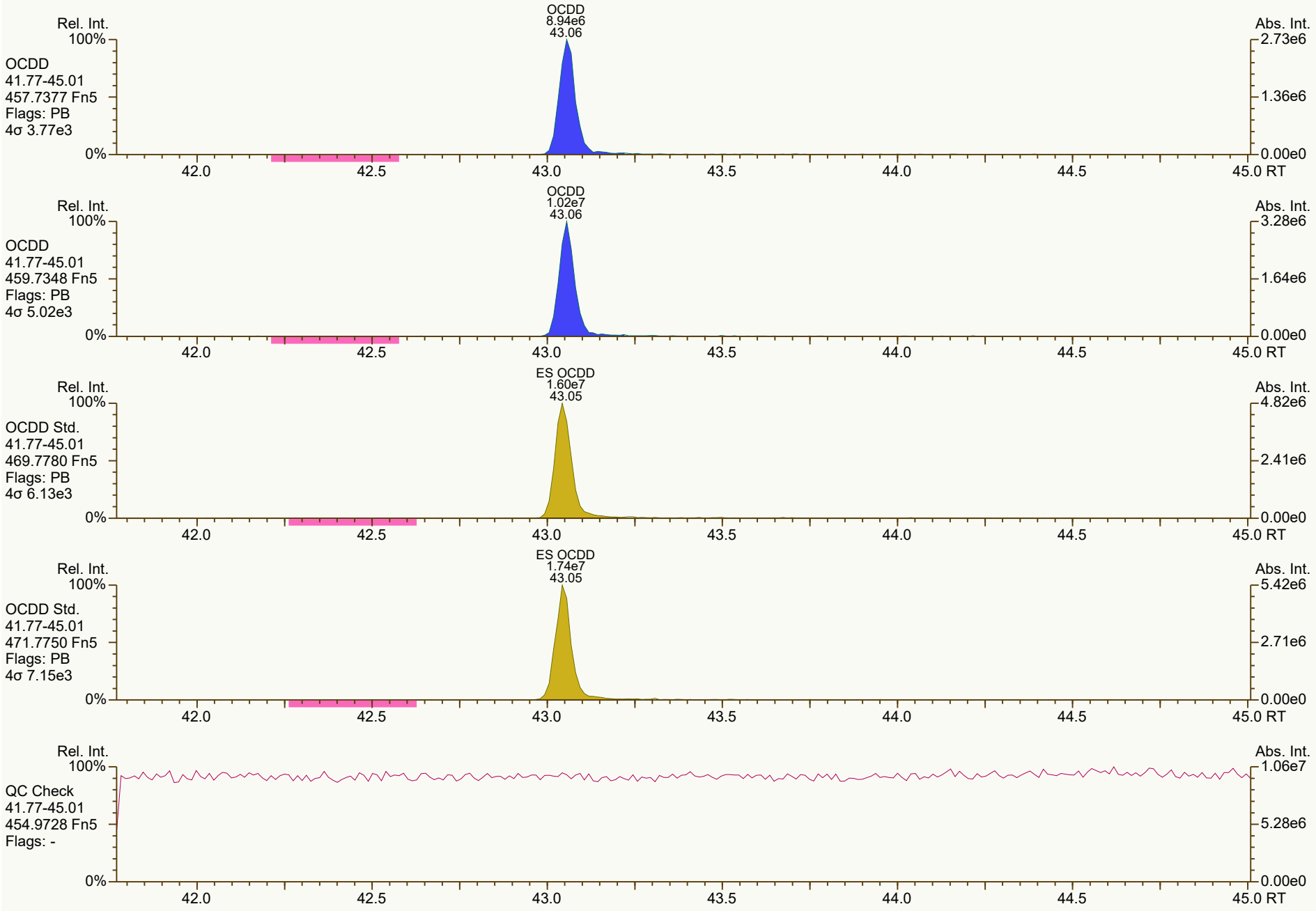
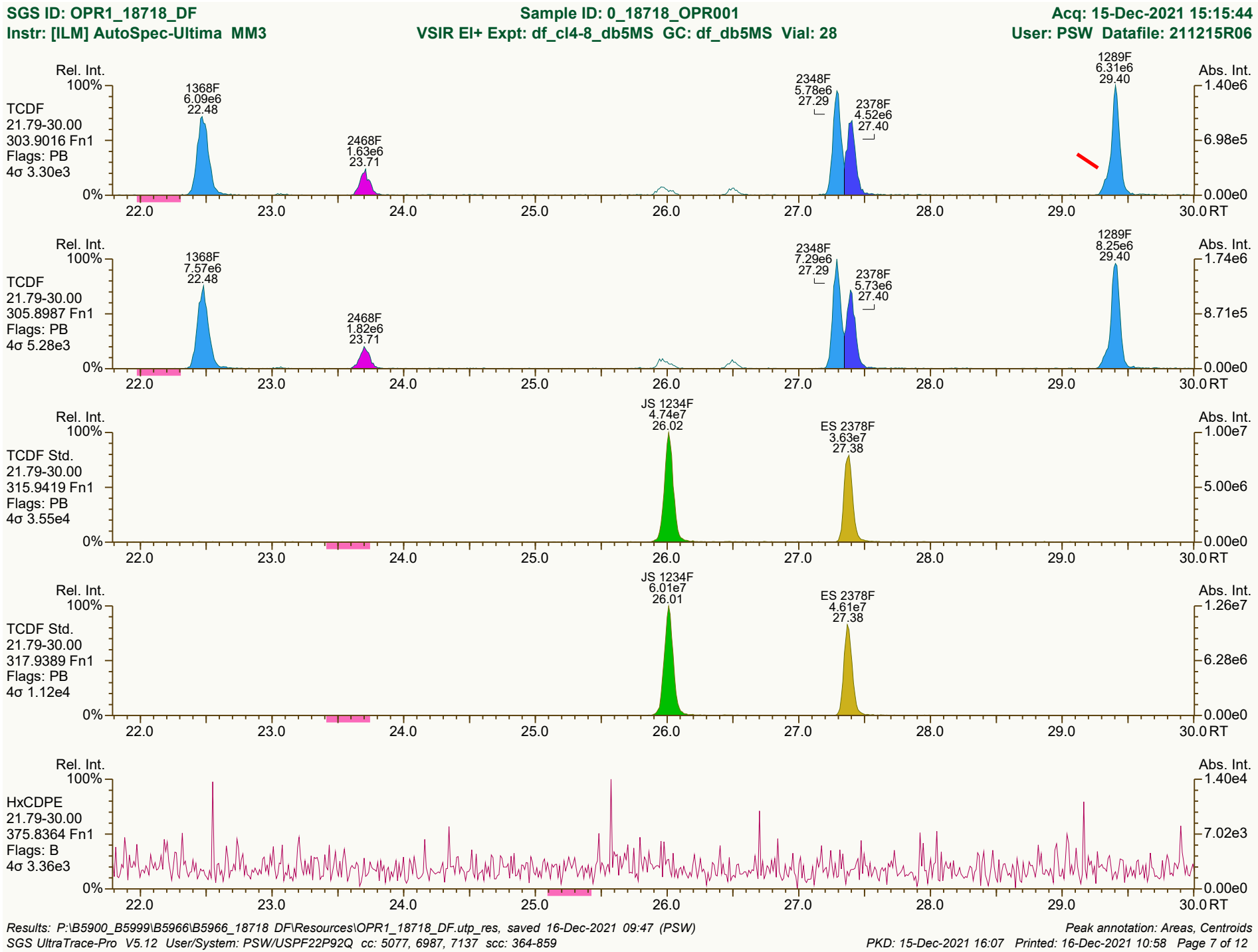
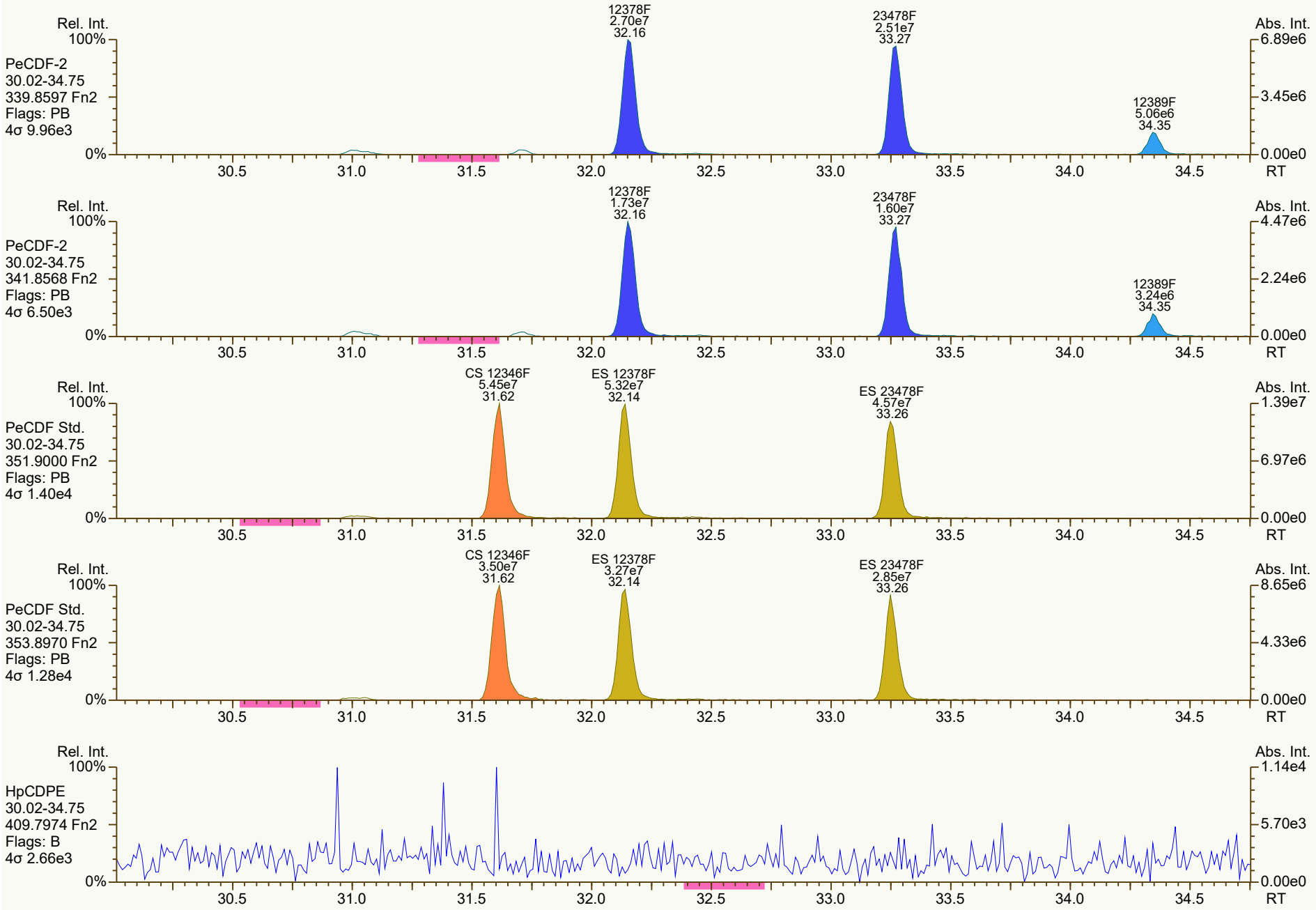
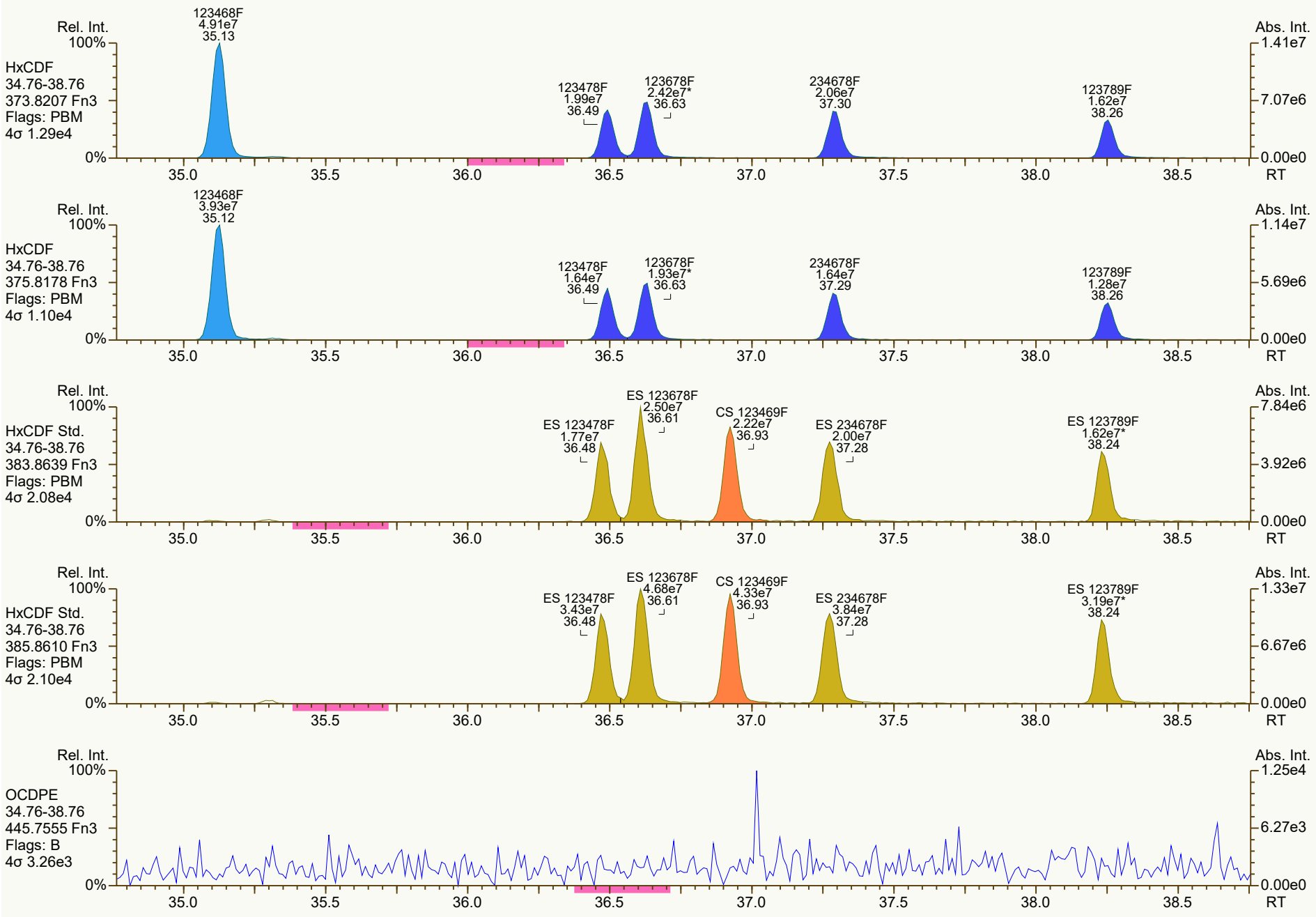
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 2.98e3
0%
1234678D
1.01e7*
40.52
1234679D
2.39e6
39.87
Abs. Int.
3.64e6
1.82e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 2.48e3
0%
1234678D
9.66e6*
40.52
1234679D
2.44e6
39.87
Abs. Int.
3.71e6
1.85e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 5.57e3
0%
ES 1234678D
1.87e7*
40.51
Abs. Int.
7.21e6
3.61e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 3.10e3
0%
ES 1234678D
1.78e7*
40.50
Abs. Int.
6.69e6
3.35e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.80e7
9.00e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

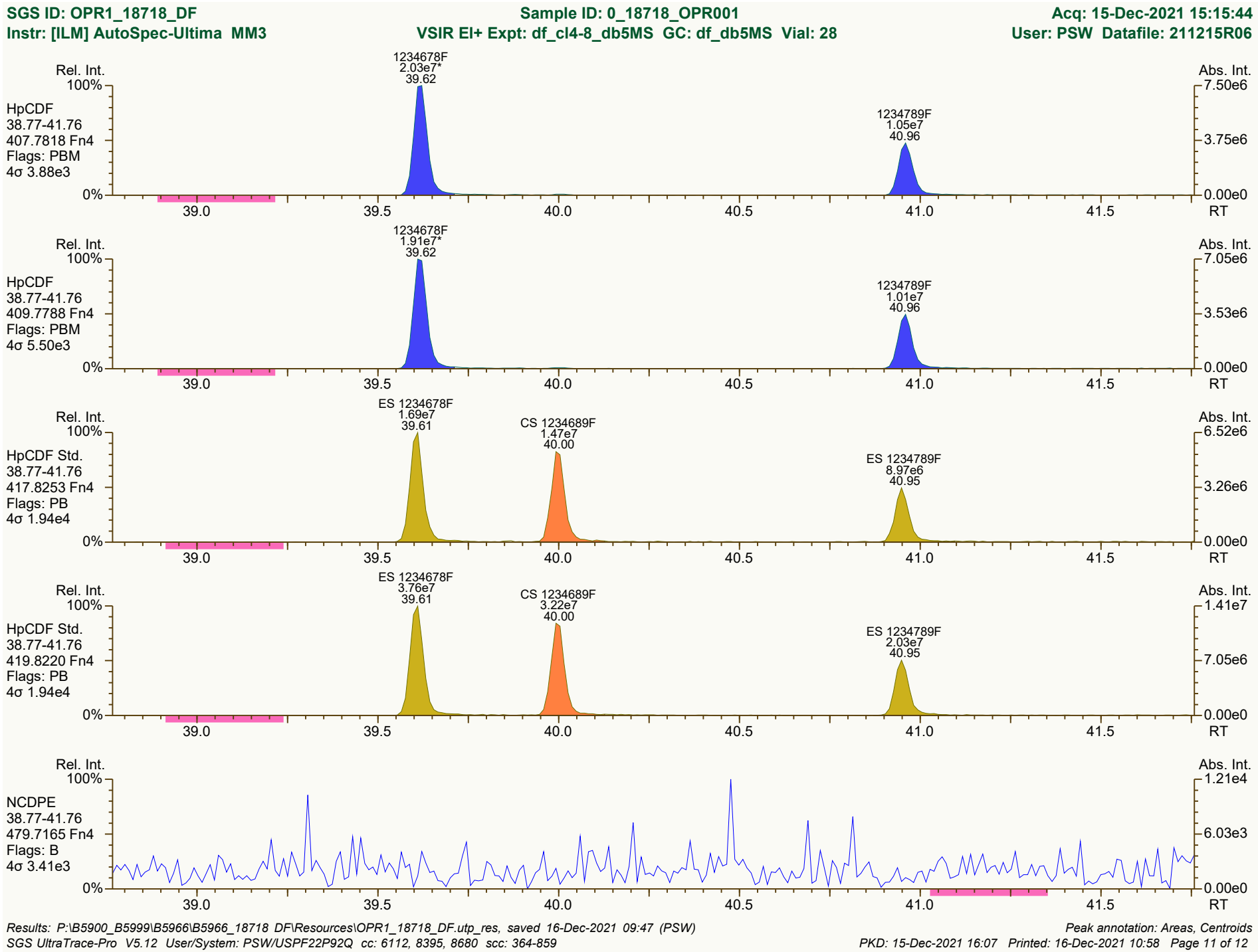

OCDD
8.94e6
43.06
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 3.77e3
0%
Abs. Int.
2.73e6
1.36e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.02e7
43.06
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 5.02e3
0%
Abs. Int.
3.28e6
1.64e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.60e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 6.13e3
0%
Abs. Int.
4.82e6
2.41e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.74e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 7.15e3
0%
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.06e7
5.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 3.30e3
1368F 6.09e6 22.48
2468F 1.63e6 23.71
2348F 5.78e6 27.29
2378F 4.52e6 27.40
1289F 6.31e6 29.40
1.40e6
6.98e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 5.28e3
1368F 7.57e6 22.48
2468F 1.82e6 23.71
2348F 7.29e6 27.29
2378F 5.73e6 27.40
1289F 8.25e6 29.40
1.74e6
8.71e5
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 3.55e4
JS 1234F 4.74e7 26.02
ES 2378F 3.63e7 27.38
1.00e7
5.00e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.12e4
JS 1234F 6.01e7 26.01
ES 2378F 4.61e7 27.38
1.26e7
6.28e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.36e3
1.40e4
7.02e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5077, 6987, 7137 scc: 364-859
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 10:58 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.20e3
13468/12468F
4.29e7
29.33
Abs. Int.
1.03e7
5.13e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 4.90e3
13468/12468F
2.74e7
29.33
Abs. Int.
6.65e6
3.33e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
6.15e6
3.07e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 9.96e3
0%
12378F
2.70e7
32.16
23478F
2.51e7
33.27
12389F
5.06e6
34.35
Abs. Int.
6.89e6
3.45e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 6.50e3
0%
12378F
1.73e7
32.16
23478F
1.60e7
33.27
12389F
3.24e6
34.35
Abs. Int.
4.47e6
2.24e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 1.40e4
0%
CS 12346F
5.45e7
31.62
ES 12378F
5.32e7
32.14
ES 23478F
4.57e7
33.26
Abs. Int.
1.39e7
6.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 1.28e4
0%
CS 12346F
3.50e7
31.62
ES 12378F
3.27e7
32.14
ES 23478F
2.85e7
33.26
Abs. Int.
8.65e6
4.33e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.66e3
0%
Abs. Int.
1.14e4
5.70e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

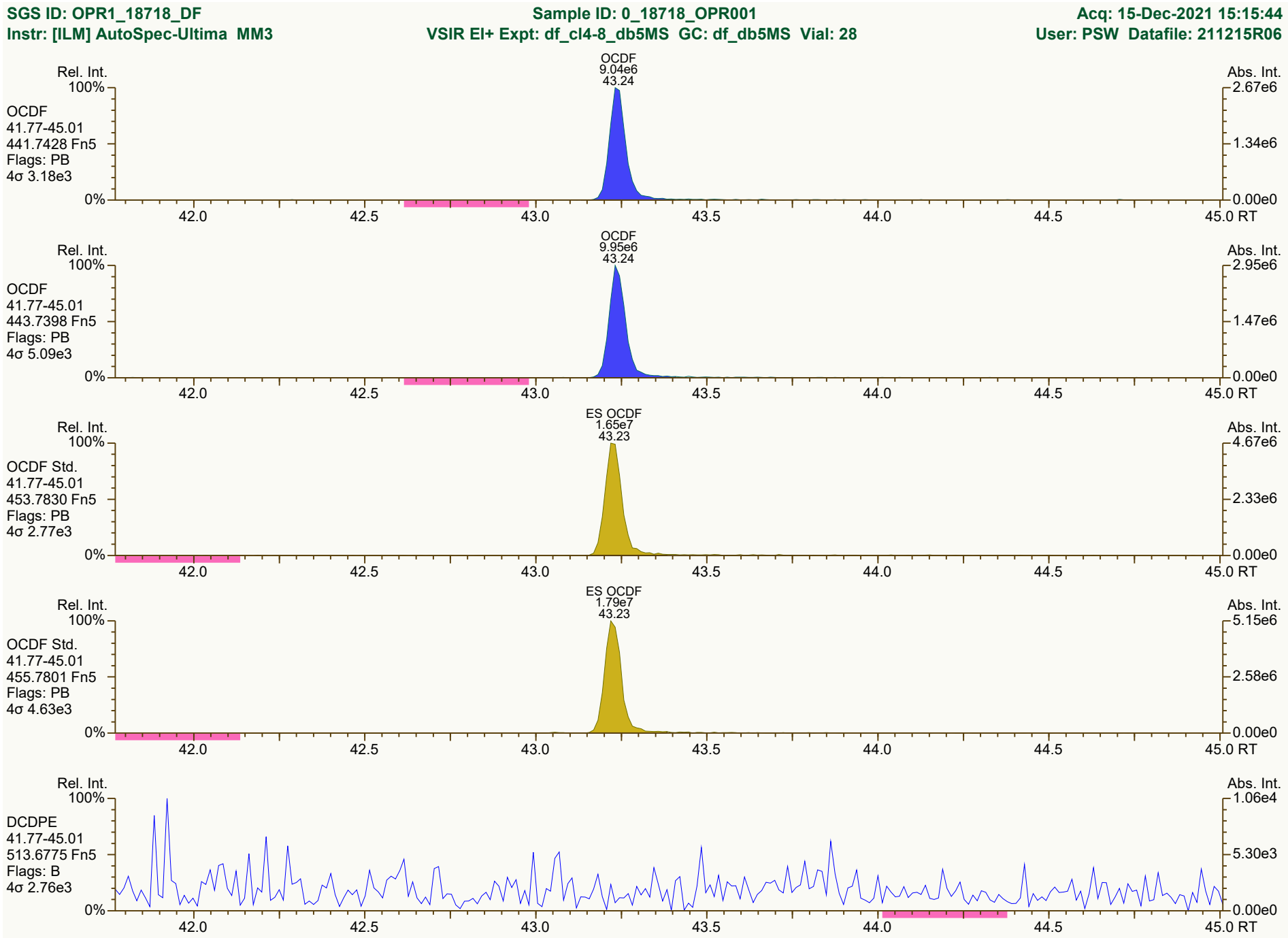

Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 1.29e4
123468F
4.91e7
35.13
123478F
1.99e7
36.49
123678F
2.42e7*
36.63
234678F
2.06e7
37.30
123789F
1.62e7
38.26
Abs. Int.
1.41e7
7.07e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 1.10e4
123468F
3.93e7
35.12
123478F
1.64e7
36.49
123678F
1.93e7*
36.63
234678F
1.64e7
37.29
123789F
1.28e7
38.26
Abs. Int.
1.14e7
5.69e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PBM
4σ 2.08e4
ES 123478F
1.77e7
36.48
ES 123678F
2.50e7
36.61
CS 123469F
2.22e7
36.93
ES 234678F
2.00e7
37.28
ES 123789F
1.62e7*
38.24
Abs. Int.
7.84e6
3.92e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PBM
4σ 2.10e4
ES 123478F
3.43e7
36.48
ES 123678F
4.68e7
36.61
CS 123469F
4.33e7
36.93
ES 234678F
3.84e7
37.28
ES 123789F
3.19e7*
38.24
Abs. Int.
1.33e7
6.67e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.26e3
Abs. Int.
1.25e4
6.27e3
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 3.88e3
1234678F
2.03e7*
39.62
1234789F
1.05e7
40.96
7.50e6
3.75e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 5.50e3
1234678F
1.91e7*
39.62
1234789F
1.01e7
40.96
7.05e6
3.53e6
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.94e4
ES 1234678F
1.69e7
39.61
CS 1234689F
1.47e7
40.00
ES 1234789F
8.97e6
40.95
6.52e6
3.26e6
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 1.94e4
ES 1234678F
3.76e7
39.61
CS 1234689F
3.22e7
40.00
ES 1234789F
2.03e7
40.95
1.41e7
7.05e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.41e3
1.21e4
6.03e3
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6112, 8395, 8680 scc: 364-859
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 10:58 Page 11 of 12

SGS ID: OPR1_18718_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18718_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28

Acq: 15-Dec-2021 15:15:44
User: PSW Datafile: 211215R06



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5993, 2599, 3912 scc: 364-859

Peak annotation: Areas, Centroids
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 10:58 Page 12 of 12

Lab ID: OPR2_18718_DF **Acq'd: 15 Dec 2021 16:02 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR002 **UTP: 16-Dec-2021 09:47:34 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 062-626-VHB**

Datafile: 211215R07 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26		1.0008	1.0008	0	7.02E+06	0.81	Y	1.34	8.92	7676.713	0.104
12378-PeCDD	33.61		1.0005	1.0006	+0.2	2.48E+07	1.61	Y	1.06	43.8	6083.517	0.1
123478-HxCDD	37.48		1.0003	1.0004	+0.2	2.21E+07	1.27	Y	1.06	50.7	5113.987	0.0991
123678-HxCDD	37.60		1.0033	1.0036	+0.7	2.52E+07	1.30	Y	1.08	54.3	5113.987	0.106
123789-HxCDD	37.90		1.0110	1.0117	+1.6	2.42E+07	1.26	Y	1.02	47.8	5113.987	0.0909
1234678-HpCDD	40.53		1.0003	1.0004	+0.2	1.85E+07	1.03	Y	0.97	52.7	4696.105	0.0984
OCDD	43.07		1.0003	1.0003	0	1.76E+07	0.91	Y	1.07	102	8433.338	0.417
2378-TCDF	27.40		1.0006	1.0007	+0.2	9.35E+06	0.79	Y	0.96	12	6379.315	0.0968
12378-PeCDF	32.16		1.0006	1.0005	-0.2	4.27E+07	1.56	Y	0.95	51.8	17822.561	0.224
23478-PeCDF	33.27		1.0006	1.0005	-0.2	4.03E+07	1.57	Y	0.94	56.3	17822.561	0.234
123478-HxCDF	36.50		1.0004	1.0004	0	3.28E+07	1.27	Y	1.23	51.4	31253.65	0.411
123678-HxCDF	36.63		1.0004	1.0004	0	4.14E+07	1.28	Y	1.13	50.3	31253.65	0.343
234678-HxCDF	37.30		1.0005	1.0004	-0.2	3.26E+07	1.24	Y	1.15	51.8	31253.65	0.498
123789-HxCDF	38.26		1.0005	1.0004	-0.2	2.43E+07	1.25	Y	1.14	48.8	31253.65	0.541
1234678-HpCDF	39.63		1.0003	1.0003	0	3.64E+07	1.03	Y	1.36	50.6	5974.399	0.0587
1234789-HpCDF	40.97		1.0003	1.0003	0	1.80E+07	1.02	Y	1.30	51.4	5974.399	0.136
OCDF	43.25		1.0002	1.0003	+0.3	1.78E+07	0.92	Y	1.03	104	7843.348	0.378

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0239	+0.3	5.86E+07	0.79	Y	1.03	78.3
ES 12378-PeCDD	33.59	1.2158	1.2178	+4.0	5.34E+07	1.57	Y	1.03	71.3
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	4.13E+07	1.24	Y	0.99	83.2
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	4.29E+07	1.30	Y	0.97	88.3
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	4.99E+07	1.30	Y	1.12	88.8
ES 1234678-HpCDD	40.52	1.0713	1.0725	+2.9	3.60E+07	1.08	Y	0.99	72.7
ES OCDD	43.06	1.1385	1.1398	+3.4	3.22E+07	0.88	Y	0.78	41.5
ES 2378-TCDF	27.38	1.0519	1.0524	+0.8	8.13E+07	0.79	Y	1.08	64.5
ES 12378-PeCDF	32.15	1.2331	1.2356	+4.8	8.72E+07	1.57	Y	0.93	80.3
ES 23478-PeCDF	33.26	1.2754	1.2783	+5.8	7.62E+07	1.55	Y	0.92	71.1
ES 123478-HxCDF	36.48	0.9656	0.9656	0	5.17E+07	0.51	Y	1.14	90.6
ES 123678-HxCDF	36.62	0.9693	0.9693	0	7.28E+07	0.52	Y	1.30	112
ES 234678-HxCDF	37.28	0.9869	0.9869	0	5.46E+07	0.54	Y	1.20	90.9
ES 123789-HxCDF	38.25	1.0121	1.0124	+0.7	4.39E+07	0.51	Y	1.14	77.3
ES 1234678-HpCDF	39.62	1.0478	1.0487	+2.1	5.29E+07	0.45	Y	0.95	111
ES 1234789-HpCDF	40.96	1.0832	1.0843	+2.7	2.69E+07	0.45	Y	0.85	63.6
ES OCDF	43.24	1.1434	1.1446	+3.1	3.33E+07	0.91	Y	0.93	36

Lab ID: OPR2_18718_DF | **Acq'd:** 15 Dec 2021 16:02 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18718_OPR002 | **UTP:** 16-Dec-2021 09:47:34 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 062-626-VHB

Datafile: 211215R07 | **Report:** 16 Dec 2021 10:54 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	7.24E+07	0.80	Y	-	-	
JS 1234-TCDF	26.02		-	-	-	1.16E+08	0.80	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.50E+07	1.25	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.77E+07	n/a	-	1.31	72.9	
CS 12347-PeCDD	33.09		1.1978	1.1997	+3.8	5.18E+07	1.62	Y	0.89	80.2	
CS 12346-PeCDF	31.62		1.2130	1.2154	+4.6	8.64E+07	1.57	Y	0.87	85.7	
CS 123469-HxCDF	36.93		0.9775	0.9776	+0.2	5.93E+07	0.50	Y	1.09	109	
CS 1234689-HpCDF	40.01		1.0580	1.0591	+2.6	4.33E+07	0.45	Y	0.86	100	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.77E+07~~	~~n/a~~		~~1.26~~	~~93.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~5.18E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~112~~	CL 17Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2154~~	~~+4.6~~	~~8.64E+07~~	~~1.57~~	~~Y~~	~~0.93~~	~~107~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9776~~	~~+0.2~~	~~5.93E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~96.9~~	
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0591~~	~~+2.6~~	~~4.33E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~89.8~~	

Totals	Conc	EMPC
Total TCDD	42.6	42.6
Total PeCDD	67.2	67.2
Total HxCDD	169	169
Total HpCDD	65.8	65.8
Total Tetra-Octa Dioxins	446	446
Total TCDF	67.3	67.3
Total PeCDF	211	211
Total HxCDF	333	333
Total HpCDF	102	102
Total Tetra-Octa Furans	818	818
Total Tetra-Octa Dioxins & Furans	1260	1260

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.805	0.81
Response	7.04E+06	7.02E+06

Lab ID: OPR2_18718_DF | **Acq'd: 15 Dec 2021 16:02 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR002 | **UTP: 16-Dec-2021 09:47:34 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 062-626-VHB**

Datafile: 211215R07 | **Report: 16 Dec 2021 10:54 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.61		0.8726	0.8713	-1.9	1.02E+07	0.77	Y	1.34	12.9	7676.713	0.104
1379-TCDD	NotFnd		0.8851						1.34		7676.713	0.104
1369-TCDD	NotFnd		0.9002						1.34		7676.713	0.104
1469-TCDD	NotFnd		0.9275						1.34		7676.713	0.104
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		7676.713	0.104
1378-TCDD	NotFnd		0.9427						1.34		7676.713	0.104
1268-TCDD	NotFnd		0.9498						1.34		7676.713	0.104
1478-TCDD	NotFnd		0.9584						1.34		7676.713	0.104
1279-TCDD	NotFnd		0.9644						1.34		7676.713	0.104
1234/1269-TCDD	NotFnd		0.9766						1.34		7676.713	0.104
1236-TCDD	NotFnd		0.9813						1.34		7676.713	0.104
1237/1238-TCDD	NotFnd		0.9906						1.34		7676.713	0.104
1239-TCDD	28.10		0.9952	0.9951	-0.2	6.73E+06	0.80	Y	1.34	8.55	7676.713	0.104
2378-TCDD	**28.26**		**1.0008**	1.0008	**0**	7.02E+06	0.81	Y	**1.34**	**8.92**	**7676.713**	**0.104**
1278-TCDD	NotFnd		1.0122						1.34		7676.713	0.104
1267-TCDD	NotFnd		1.0168						1.34		7676.713	0.104
1289-TCDD	29.24		1.0349	1.0353	+0.7	9.61E+06	0.77	Y	1.34	12.2	7676.713	0.104
12479/12468-PeCDD	31.11		0.9267	0.9262	-0.9	6.56E+06	1.59	Y	1.06	11.6	6083.517	0.1
12469-PeCDD	NotFnd		0.9425						1.06		6083.517	0.1
12368-PeCDD	NotFnd		0.9588						1.06		6083.517	0.1
12478-PeCDD	NotFnd		0.9643						1.06		6083.517	0.1
12379-PeCDD	NotFnd		0.9673						1.06		6083.517	0.1
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		6083.517	0.1
12346/12347-PeCDD	NotFnd		0.9859						1.06		6083.517	0.1
12378-PeCDD	33.61		**1.0005**	**1.0006**	**+0.2**	**2.48E+07**	**1.61**	**Y**	**1.06**	**43.8**	**6083.517**	**0.1**
12367-PeCDD	NotFnd		1.0032						1.06		6083.517	0.1
12389-PeCDD	34.05		1.0135	1.0136	+0.2	6.68E+06	1.53	Y	1.06	11.8	6083.517	0.1
124679/124689-HxCDD	35.77		0.9544	0.9547	+0.6	7.42E+06	1.31	Y	1.05	15.8	5113.987	0.0983
123468-HxCDD	NotFnd		0.9716						1.05		5113.987	0.0983
123679/123689-HxCDD	NotFnd		0.9793						1.05		5113.987	0.0983
123469-HxCDD	NotFnd		0.9829						1.05		5113.987	0.0983
123478-HxCDD	37.48		**1.0003**	**1.0004**	**+0.2**	**2.21E+07**	**1.27**	**Y**	1.06	**50.7**	**5113.987**	**0.0991**
123678-HxCDD	37.60		**1.0033**	**1.0036**	**+0.7**	**2.52E+07**	**1.30**	**Y**	1.08	**54.3**	**5113.987**	**0.106**
123467-HxCDD	NotFnd		1.0084						1.05		5113.987	0.0983
123789-HxCDD	37.90		**1.0110**	**1.0117**	**+1.6**	**2.42E+07**	**1.26**	**Y**	1.02	**47.8**	**5113.987**	**0.0909**

Lab ID: OPR2_18718_DF | **Acq'd: 15 Dec 2021 16:02 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR002 | **UTP: 16-Dec-2021 09:47:34 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 062-626-VHB**

Datafile: 211215R07 | **Report: 16 Dec 2021 10:54 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9841	-0.5	4.60E+06	1.12	Y	0.97	13.1	4696.105	0.0984
1234678-HpCDD	**40.53**		**1.0003**	**1.0004**	**+0.2**	**1.85E+07**	**1.03**	**Y**	**0.97**	**52.7**	**4696.105**	**0.0984**
OCDD	**43.07**		**1.0003**	**1.0003**	**0**	**1.76E+07**	**0.91**	**Y**	**1.07**	**102**	**8433.338**	**0.417**
OCDD-a	43.06		1.0001	1.0001	0	1.07E+06	2.66	Y	0.07	101	9351.084	7.49
1368-TCDF	22.48		0.8230	0.8209	-2.8	1.39E+07	0.77	Y	0.96	17.8	6379.315	0.0968
1468-TCDF	NotFnd		0.8443						0.96		6379.315	0.0968
2468-TCDF	23.71		0.8672	0.8658	-2.0	3.37E+06	0.76	Y	0.96	4.32	6379.315	0.0968
1346/1246-TCDF	NotFnd		0.8802						0.96		6379.315	0.0968
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		6379.315	0.0968
1348-TCDF	NotFnd		0.8952						0.96		6379.315	0.0968
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		6379.315	0.0968
1268-TCDF	NotFnd		0.9136						0.96		6379.315	0.0968
1467-TCDF	NotFnd		0.9185						0.96		6379.315	0.0968
1478-TCDF	NotFnd		0.9247						0.96		6379.315	0.0968
1369/1237-TCDF	NotFnd		0.9381						0.96		6379.315	0.0968
2467-TCDF	NotFnd		0.9427						0.96		6379.315	0.0968
2368-TCDF	NotFnd		0.9484						0.96		6379.315	0.0968
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		6379.315	0.0968
1278-TCDF	NotFnd		0.9682						0.96		6379.315	0.0968
1349-TCDF	NotFnd		0.9725						0.96		6379.315	0.0968
1267-TCDF	NotFnd		0.9782						0.96		6379.315	0.0968
2346/1249-TCDF	NotFnd		0.9846						0.96		6379.315	0.0968
2347/1279-TCDF	NotFnd		0.9926						0.96		6379.315	0.0968
2348-TCDF	27.29		0.9966	0.9967	+0.2	1.28E+07	0.80	Y	0.96	16.4	6379.315	0.0968
2378-TCDF	**27.40**		**1.0006**	**1.0007**	**+0.2**	**9.35E+06**	**0.79**	**Y**	**0.96**	**12**	**6379.315**	**0.0968**
2367/3467-TCDF	NotFnd		1.0139						0.96		6379.315	0.0968
1269-TCDF	NotFnd		1.0226						0.96		6379.315	0.0968
1239-TCDF	NotFnd		1.0322						0.96		6379.315	0.0968
1289-TCDF	29.41		1.0729	1.0742	+2.3	1.31E+07	0.78	Y	0.96	16.8	6379.315	0.0968
13468/12468-PeCDF	29.33		0.9135	0.9124	-1.9	7.10E+07	1.61	Y	0.94	92.2	6037.888	0.0774
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		17822.561	0.228
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		17822.561	0.228
14678-PeCDF	NotFnd		0.9693						0.94		17822.561	0.228
13479-PeCDF	NotFnd		0.9723						0.94		17822.561	0.228
13469/12479-PeCDF	NotFnd		0.9799						0.94		17822.561	0.228
12346-PeCDF	NotFnd		0.9842						0.94		17822.561	0.228

Lab ID: OPR2_18718_DF **Acq'd: 15 Dec 2021 16:02 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR002 **UTP: 16-Dec-2021 09:47:34 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 062-626-VHB**

Datafile: 211215R07 **Report: 16 Dec 2021 10:54 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		17822.561	0.228
12347-PeCDF	NotFnd		0.9893						0.94		17822.561	0.228
12348-PeCDF	NotFnd		0.9941						0.94		17822.561	0.228
12378-PeCDF	**32.16**		**1.0006**	**1.0005**	**-0.2**	**4.27E+07**	**1.56**	**Y**	**0.95**	**51.8**	**17822.561**	**0.224**
12678/12367-PeCDF	NotFnd		1.0090						0.94		17822.561	0.228
12379-PeCDF	NotFnd		1.0143						0.94		17822.561	0.228
12679-PeCDF	NotFnd		0.9929						0.94		17822.561	0.228
23467/12369-PeCDF	NotFnd		0.9966						0.94		17822.561	0.228
23478-PeCDF	**33.27**		**1.0006**	**1.0005**	**-0.2**	**4.03E+07**	**1.57**	**Y**	**0.94**	**56.3**	**17822.561**	**0.234**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		17822.561	0.228
12349-PeCDF	NotFnd		1.0102						0.94		17822.561	0.228
12389-PeCDF	34.35		1.0325	1.0328	+0.6	8.24E+06	1.53	Y	0.94	10.7	17822.561	0.228
123468-HxCDF	35.12		0.9628	0.9627	-0.2	8.50E+07	1.25	Y	1.16	131	31253.65	0.434
124678/134678-HxCDF	NotFnd		0.9683						1.16		31253.65	0.434
134679-HxCDF	NotFnd		0.9746						1.16		31253.65	0.434
124679-HxCDF	NotFnd		0.9798						1.16		31253.65	0.434
124689-HxCDF	NotFnd		0.9859						1.16		31253.65	0.434
123467-HxCDF	NotFnd		0.9972						1.16		31253.65	0.434
123478-HxCDF	**36.50**		**1.0004**	**1.0004**	**0**	**3.28E+07**	**1.27**	**Y**	**1.23**	**51.4**	**31253.65**	**0.411**
123678-HxCDF	**36.63**		**1.0004**	**1.0004**	**0**	**4.14E+07**	**1.28**	**Y**	**1.13**	**50.3**	**31253.65**	**0.343**
123479-HxCDF	NotFnd		1.0049						1.16		31253.65	0.434
123469-HxCDF	NotFnd		1.0088						1.16		31253.65	0.434
123679-HxCDF	NotFnd		0.9943						1.16		31253.65	0.434
234678-HxCDF	**37.30**		**1.0005**	**1.0004**	**-0.2**	**3.26E+07**	**1.24**	**Y**	**1.15**	**51.8**	**31253.65**	**0.498**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		31253.65	0.434
123789-HxCDF	**38.26**		**1.0005**	**1.0004**	**-0.2**	**2.43E+07**	**1.25**	**Y**	**1.14**	**48.8**	**31253.65**	**0.541**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		31253.65	0.434
1234678-HpCDF	**39.63**		**1.0003**	**1.0003**	**0**	**3.64E+07**	**1.03**	**Y**	**1.36**	**50.6**	**5974.399**	**0.0587**
1234679-HpCDF	NotFnd		1.0067						1.33		5974.399	0.0847
1234689-HpCDF	NotFnd		1.0100						1.33		5974.399	0.0847
1234789-HpCDF	**40.97**		**1.0003**	**1.0003**	**0**	**1.80E+07**	**1.02**	**Y**	**1.30**	**51.4**	**5974.399**	**0.136**
OCDF	**43.25**		**1.0002**	**1.0003**	**+0.3**	**1.78E+07**	**0.92**	**Y**	**1.03**	**104**	**7843.348**	**0.378**
OCDF-a	43.25	**EMPC**	1.0002	1.0001	-0.3	8.43E+05	3.33	N	0.06	85.5	10541.867	8.78

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211215R07	Analysis Date:	15-DEC-2021 16:02:28
Lab ID:	OPR2_18718_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	8.92	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	43.8	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	50.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	54.3	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	47.8	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	52.7	35	-	70	Y
OCDD	100	102	78	-	144	Y
2,3,7,8-TCDF	10	12	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	51.8	40	-	67	Y
2,3,4,7,8-PeCDF	50	56.3	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	51.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	50.3	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	51.8	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	48.8	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	50.6	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	51.4	39	-	69	Y
OCDF	100	104	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 16 Dec 2021 10:54 Analyst: pw

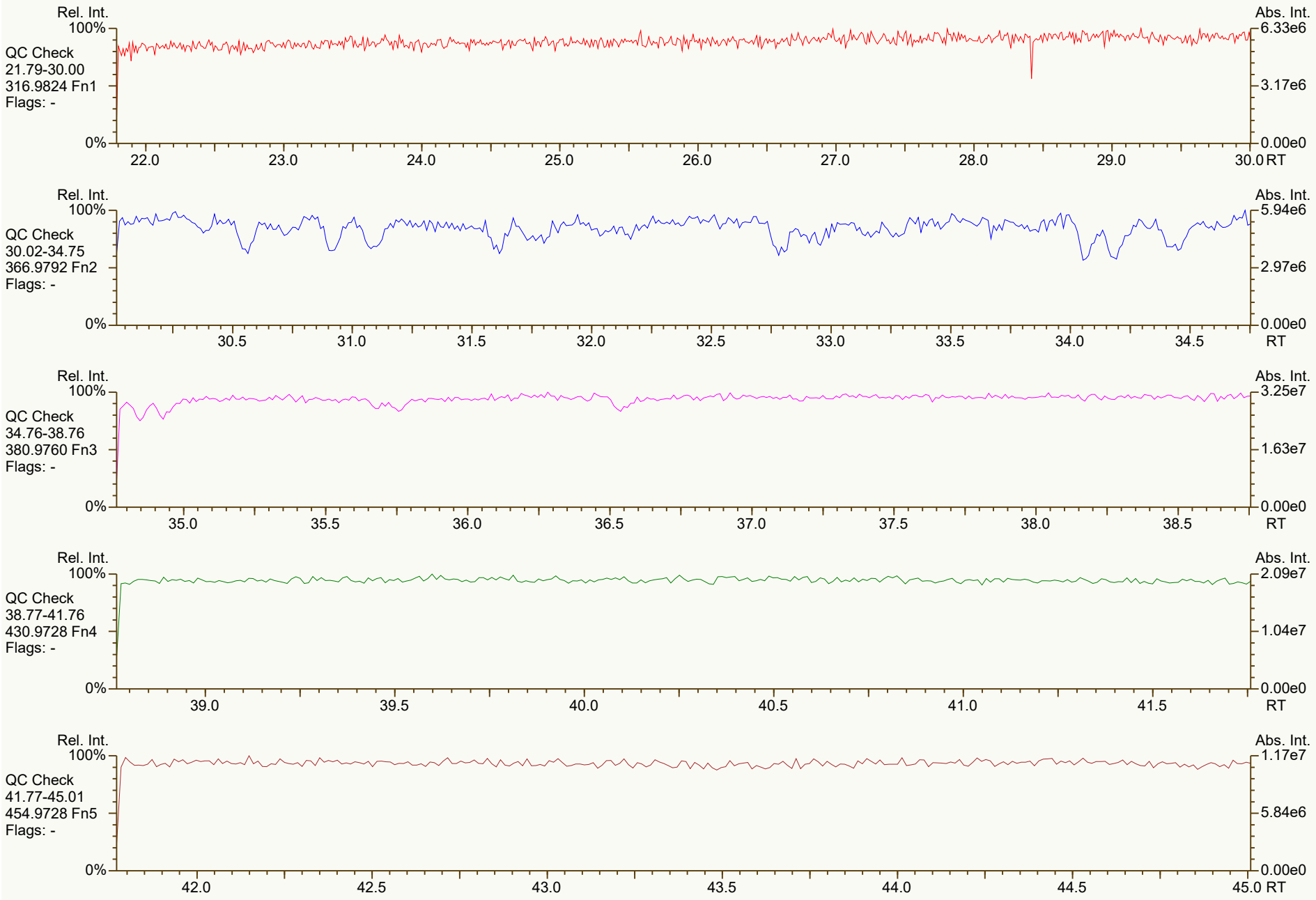
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

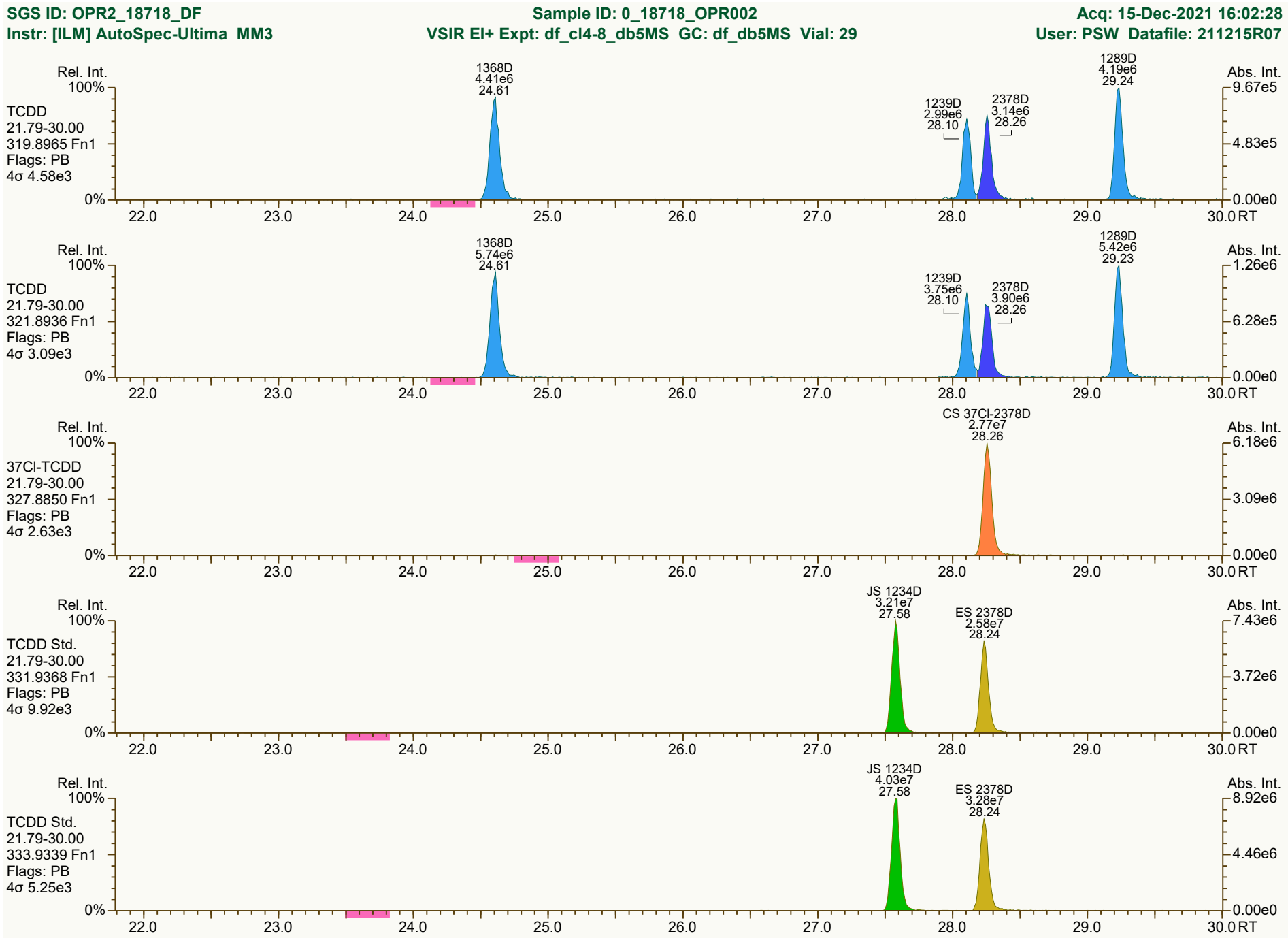
Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211215R07	Analysis Date:	15-DEC-2021 16:02:28
Lab ID:	OPR2_18718_DF		

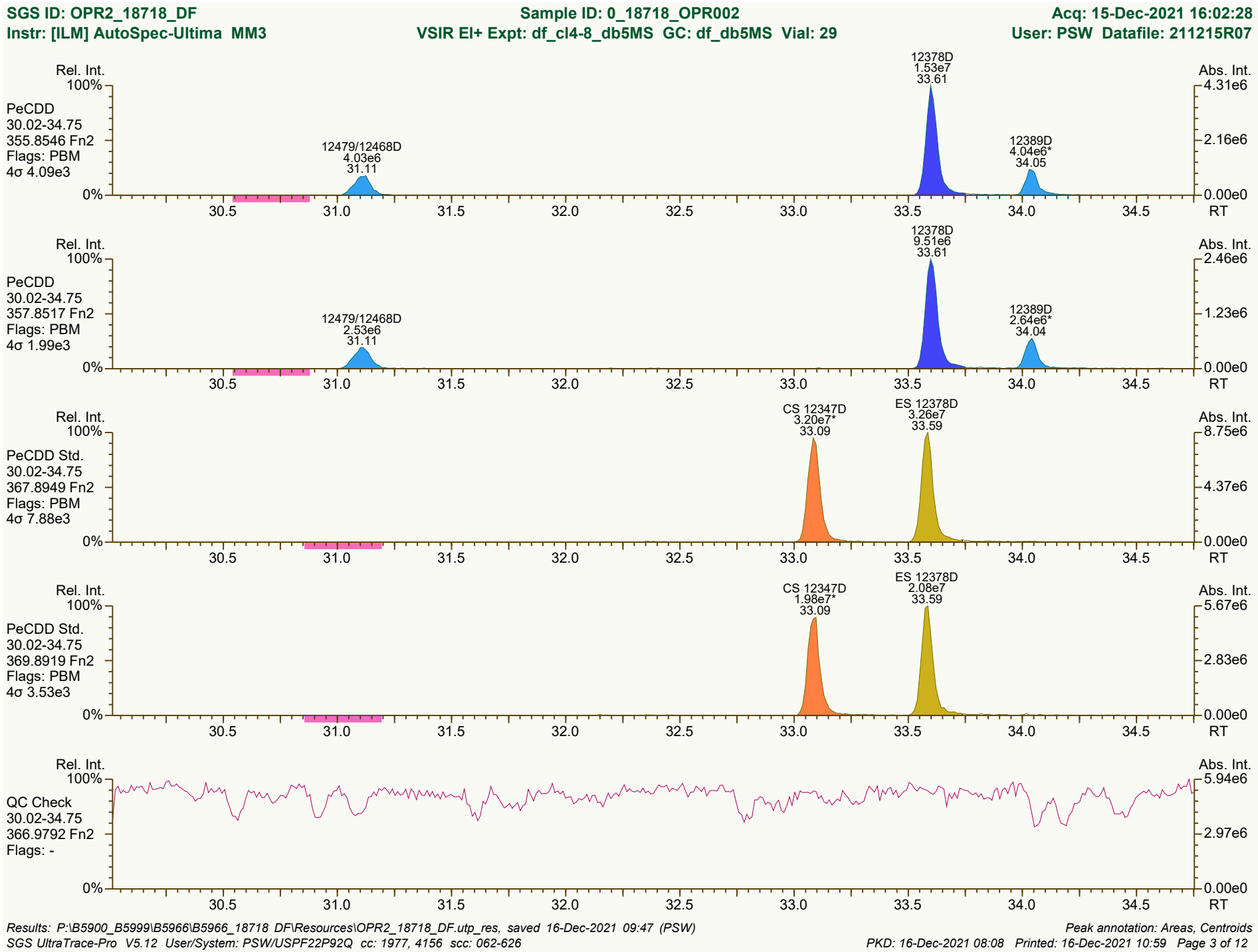
LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	78.3	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	71.3	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	83.2	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	88.3	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	88.8	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	72.7	26	-	166	Y
13C-OCDD	200	83	26	-	397	Y
13C-2,3,7,8-TCDF	100	64.5	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	80.3	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	71.1	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	90.6	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	112	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	90.9	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	77.3	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	111	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	63.6	20	-	186	Y
13C-OCDF	200	71.9	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	29.2	12.4	-	76.4	Y

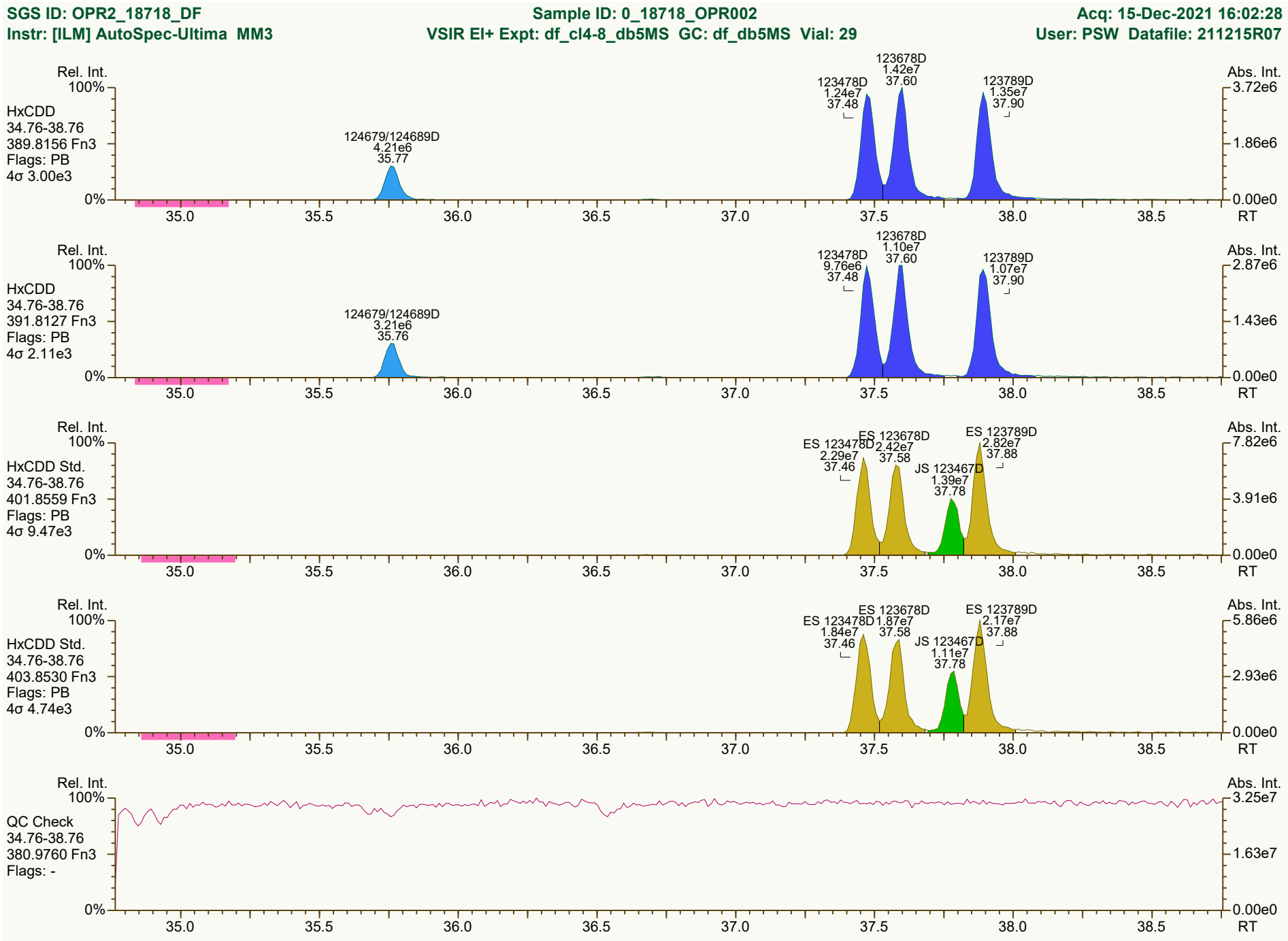
Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 16 Dec 2021 10:54 Analyst: pw


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.33e6
3.17e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.94e6
2.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.25e7
1.63e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.09e7
1.04e7
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.17e7
5.84e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR2_18718_DF
Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: PB
4σ 4.58e3
1368D 4.41e6 24.61
1239D 2.99e6 28.10
2378D 3.14e6 28.26
1289D 4.19e6 29.24
9.67e5
4.83e5
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: PB
4σ 3.09e3
1368D 5.74e6 24.61
1239D 3.75e6 28.10
2378D 3.90e6 28.26
1289D 5.42e6 29.23
1.26e6
6.28e5
0.00e0
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.63e3
CS 37Cl-2378D 2.77e7 28.26
6.18e6
3.09e6
0.00e0
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 9.92e3
JS 1234D 3.21e7 27.58
ES 2378D 2.58e7 28.24
7.43e6
3.72e6
0.00e0
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 5.25e3
JS 1234D 4.03e7 27.58
ES 2378D 3.28e7 28.24
8.92e6
4.46e6
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0553, 0349, 4264 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 10:59 Page 2 of 12

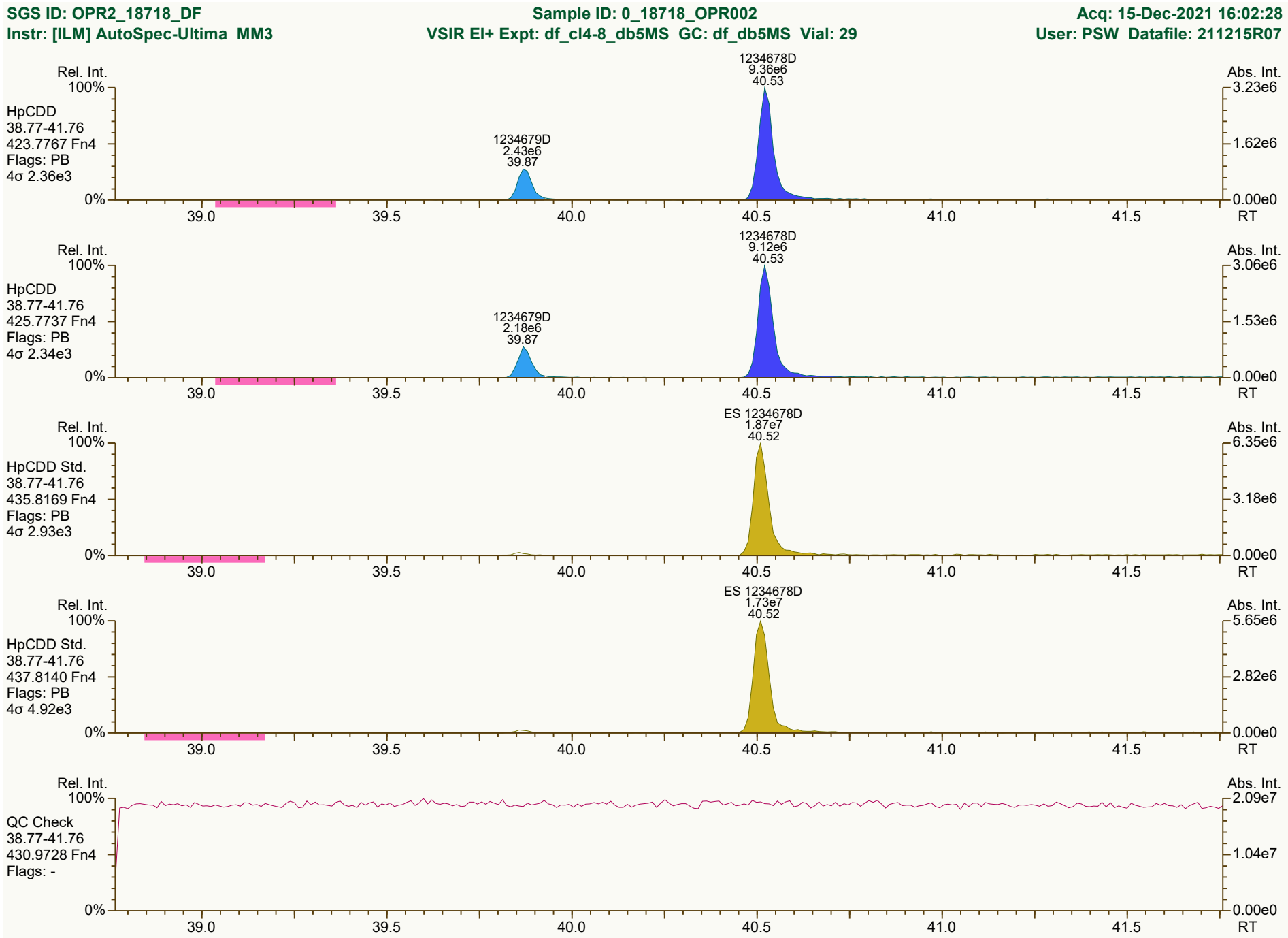

SGS ID: OPR2_18718_DF
Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 4.09e3
12479/12468D
4.03e6
31.11
12378D
1.53e7
33.61
12389D
4.04e6*
34.05
4.31e6
2.16e6
0.00e0
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 1.99e3
12479/12468D
2.53e6
31.11
12378D
9.51e6
33.61
12389D
2.64e6*
34.04
2.46e6
1.23e6
0.00e0
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 7.88e3
CS 12347D
3.20e7*
33.09
ES 12378D
3.26e7
33.59
8.75e6
4.37e6
0.00e0
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 3.53e3
CS 12347D
1.98e7*
33.09
ES 12378D
2.08e7
33.59
5.67e6
2.83e6
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
5.94e6
2.97e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1977, 4156 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 10:59 Page 3 of 12


SGS ID: OPR2_18718_DF
Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PB
4σ 3.00e3
124679/124689D
4.21e6
35.77
123478D
1.24e7
37.48
123678D
1.42e7
37.60
123789D
1.35e7
37.90
3.72e6
1.86e6
0.00e0
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PB
4σ 2.11e3
124679/124689D
3.21e6
35.76
123478D
9.76e6
37.48
123678D
1.10e7
37.60
123789D
1.07e7
37.90
2.87e6
1.43e6
0.00e0
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 9.47e3
ES 123478D
2.29e7
37.46
ES 123678D
2.42e7
37.58
JS 123467D
1.39e7
37.78
ES 123789D
2.82e7
37.88
7.82e6
3.91e6
0.00e0
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 4.74e3
ES 123478D
1.84e7
37.46
ES 123678D
1.87e7
37.58
JS 123467D
1.11e7
37.78
ES 123789D
2.17e7
37.88
5.86e6
2.93e6
0.00e0
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
3.25e7
1.63e7
0.00e0
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5977, 2707 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 10:59 Page 4 of 12

SGS ID: OPR2_18718_DF
Instr: [ILM] AutoSpec-Ultima MM3

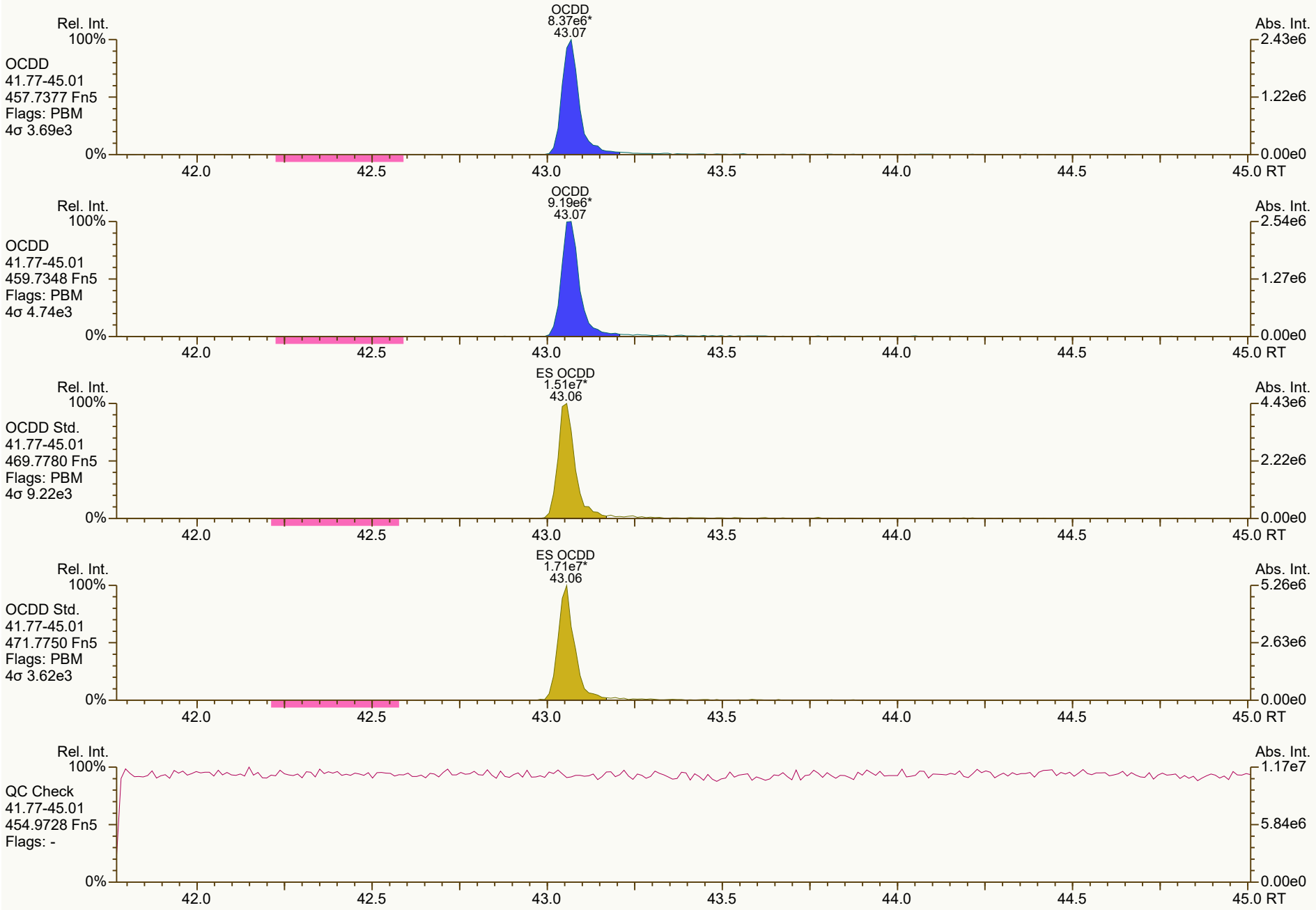
Sample ID: 0_18718_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29

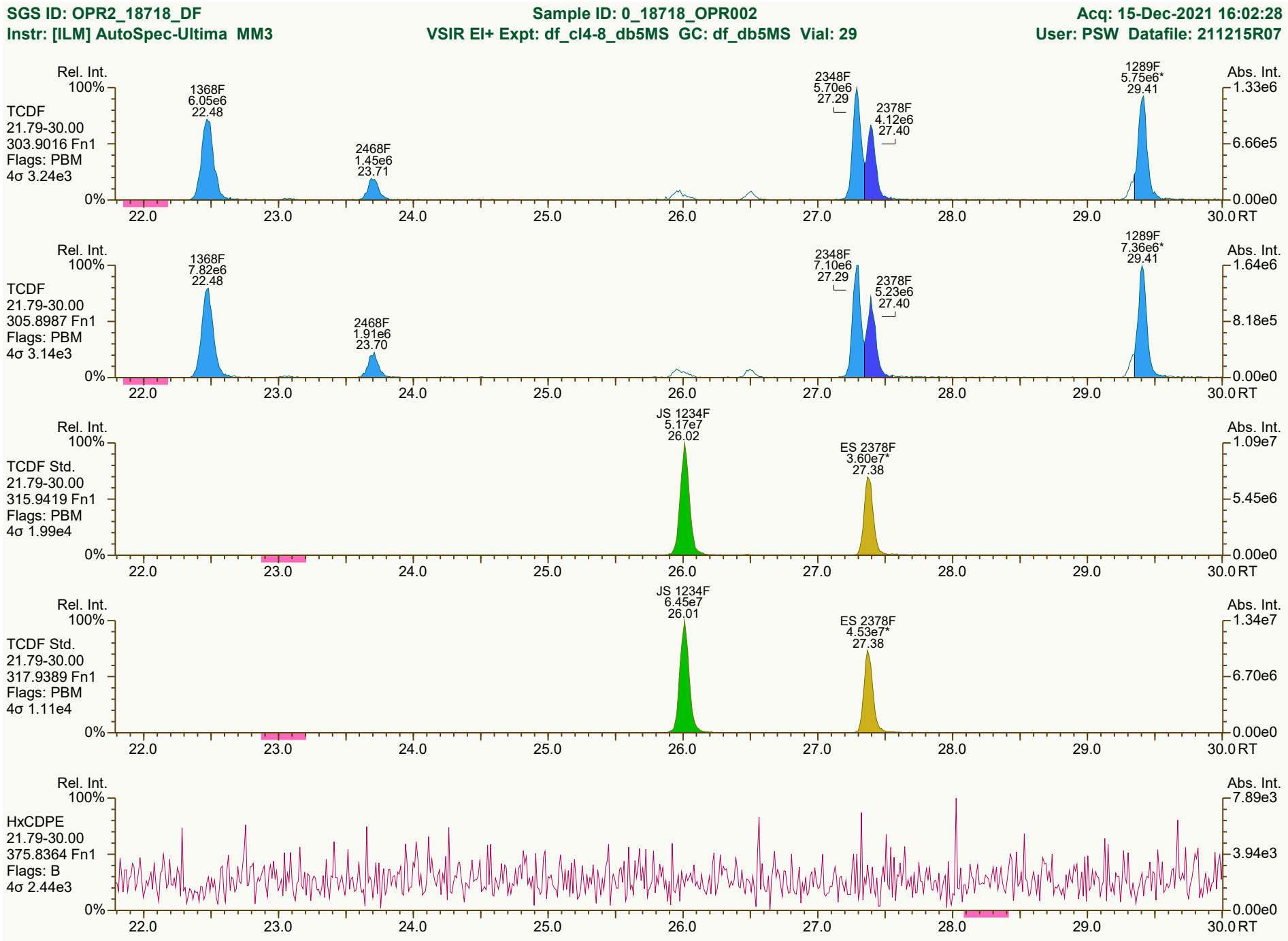
Acq: 15-Dec-2021 16:02:28
User: PSW Datafile: 211215R07



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8633, 2710 scc: 062-626

Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 10:59 Page 5 of 12


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 3.69e3
0%
OCDD
8.37e6*
43.07
Abs. Int.
2.43e6
1.22e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 4.74e3
0%
OCDD
9.19e6*
43.07
Abs. Int.
2.54e6
1.27e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 9.22e3
0%
ES OCDD
1.51e7*
43.06
Abs. Int.
4.43e6
2.22e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 3.62e3
0%
ES OCDD
1.71e7*
43.06
Abs. Int.
5.26e6
2.63e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.17e7
5.84e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

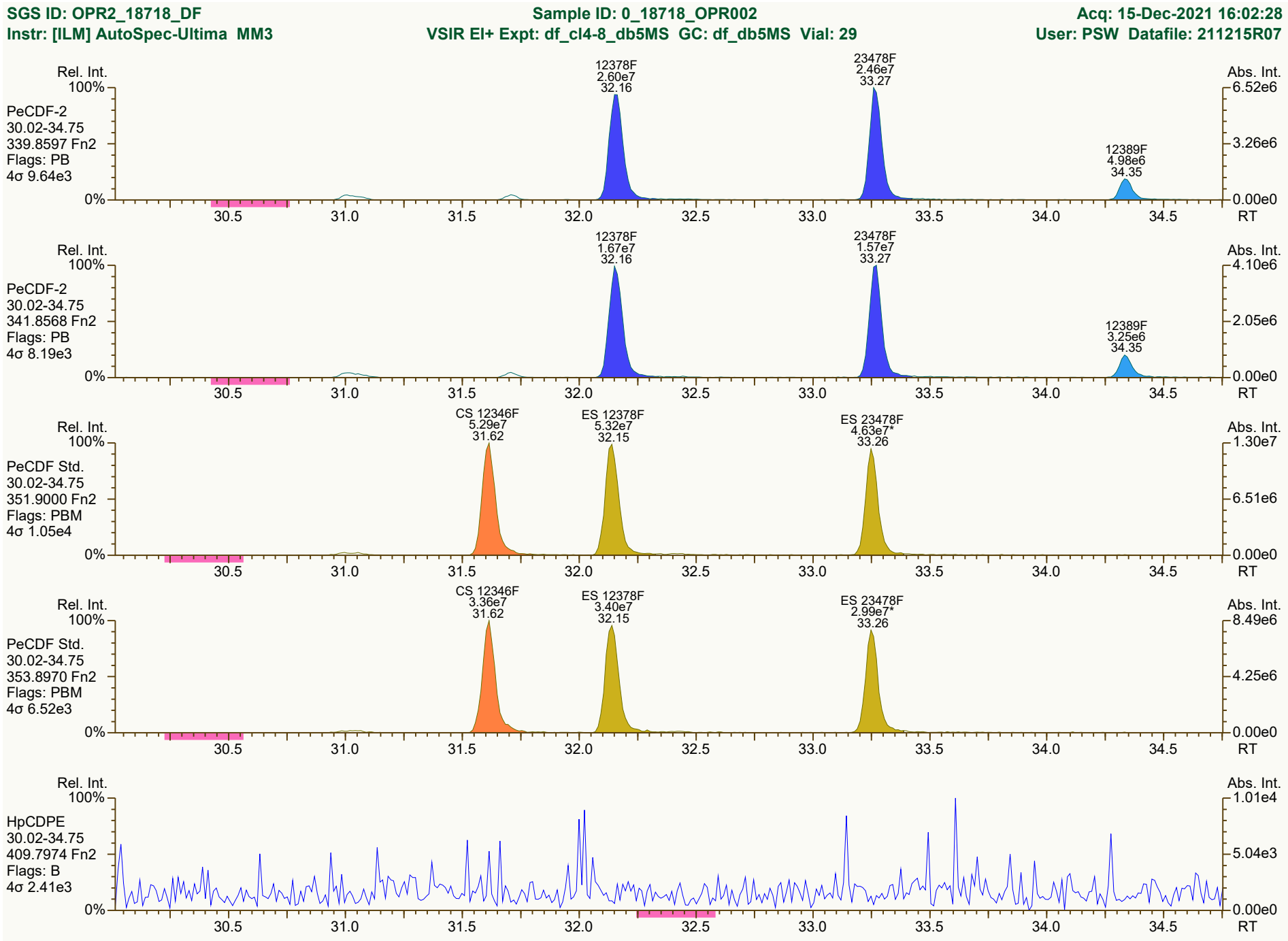

SGS ID: OPR2_18718_DF
Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.24e3
1368F 6.05e6 22.48
2468F 1.45e6 23.71
2348F 5.70e6 27.29
2378F 4.12e6 27.40
1289F 5.75e6* 29.41
1.33e6
6.66e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 3.14e3
1368F 7.82e6 22.48
2468F 1.91e6 23.70
2348F 7.10e6 27.29
2378F 5.23e6 27.40
1289F 7.36e6* 29.41
1.64e6
8.18e5
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 1.99e4
JS 1234F 5.17e7 26.02
ES 2378F 3.60e7* 27.38
1.09e7
5.45e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.11e4
JS 1234F 6.45e7 26.01
ES 2378F 4.53e7* 27.38
1.34e7
6.70e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.44e3
7.89e3
3.94e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4102, 3848, 1855 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 10:59 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 2.55e3
13468/12468F
4.37e7
29.33
Abs. Int.
1.06e7
5.30e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.49e3
13468/12468F
2.72e7
29.33
Abs. Int.
6.40e6
3.20e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
6.33e6
3.17e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

SGS ID: OPR2_18718_DF
Instr: [ILM] AutoSpec-Ultima MM3

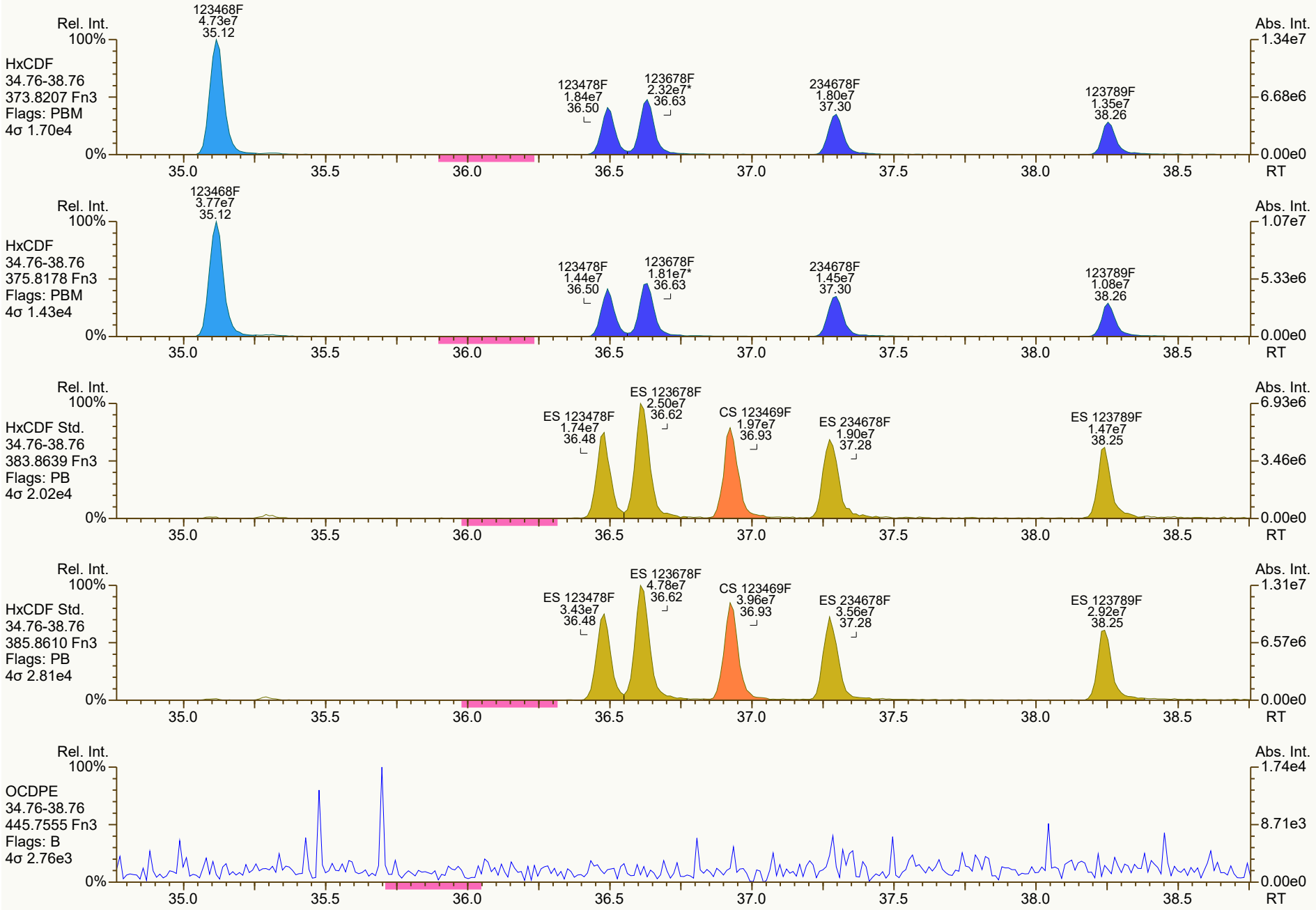
Sample ID: 0_18718_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29

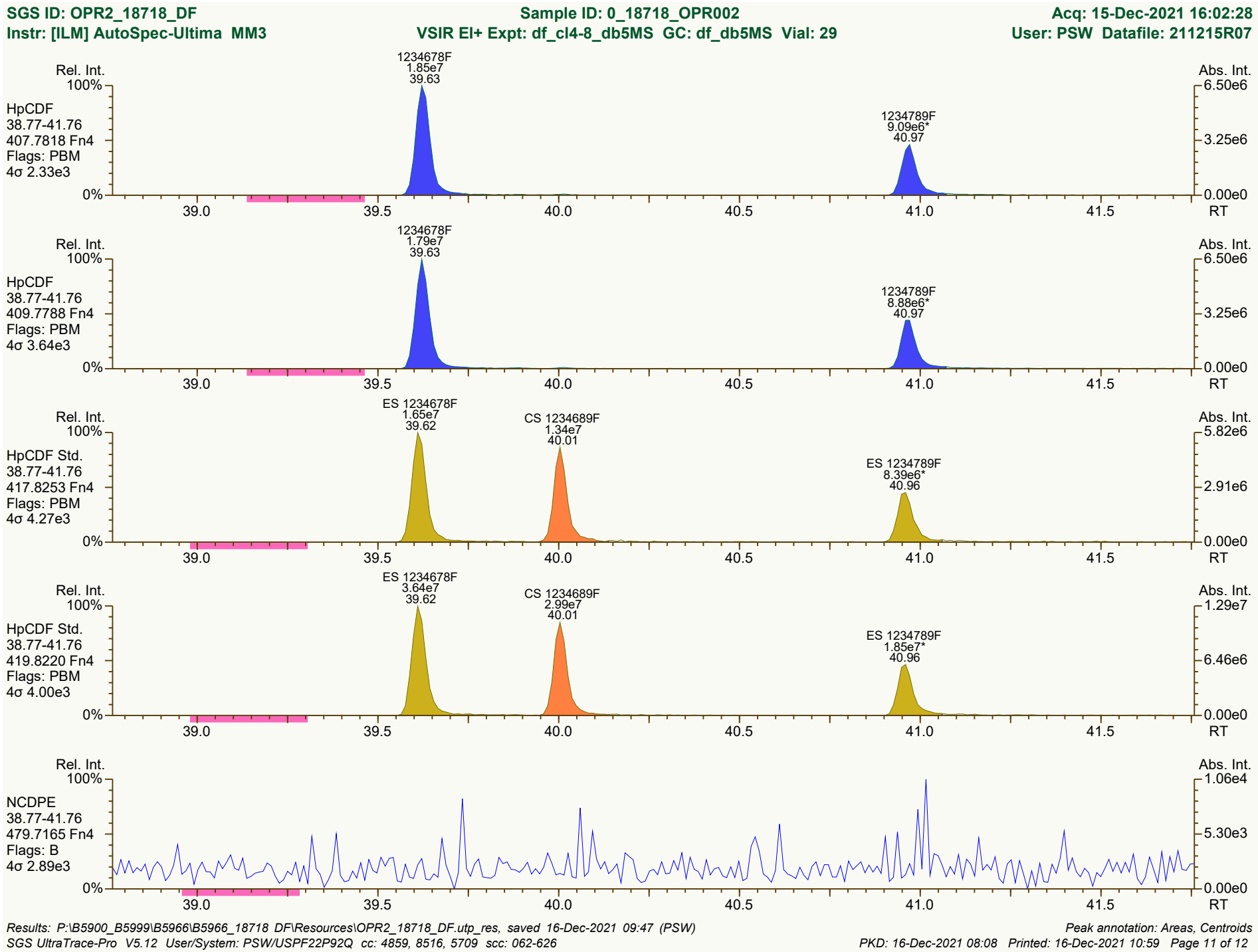
Acq: 15-Dec-2021 16:02:28
User: PSW Datafile: 211215R07



Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9897, 4536, 5741 scc: 062-626

Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 10:59 Page 9 of 12


Rel. Int.
Abs. Int.
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 1.70e4
123468F 4.73e7 35.12
123478F 1.84e7 36.50
123678F 2.32e7* 36.63
234678F 1.80e7 37.30
123789F 1.35e7 38.26
1.34e7
6.68e6
0.00e0
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 1.43e4
123468F 3.77e7 35.12
123478F 1.44e7 36.50
123678F 1.81e7* 36.63
234678F 1.45e7 37.30
123789F 1.08e7 38.26
1.07e7
5.33e6
0.00e0
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 2.02e4
ES 123478F 1.74e7 36.48
ES 123678F 2.50e7 36.62
CS 123469F 1.97e7 36.93
ES 234678F 1.90e7 37.28
ES 123789F 1.47e7 38.25
6.93e6
3.46e6
0.00e0
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 2.81e4
ES 123478F 3.43e7 36.48
ES 123678F 4.78e7 36.62
CS 123469F 3.96e7 36.93
ES 234678F 3.56e7 37.28
ES 123789F 2.92e7 38.25
1.31e7
6.57e6
0.00e0
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.76e3
1.74e4
8.71e3
0.00e0
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: OPR2_18718_DF
Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.33e3
1234678F
1.85e7
39.63
1234789F
9.09e6*
40.97
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 3.64e3
1234678F
1.79e7
39.63
1234789F
8.88e6*
40.97
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 4.27e3
ES 1234678F
1.65e7
39.62
CS 1234689F
1.34e7
40.01
ES 1234789F
8.39e6*
40.96
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 4.00e3
ES 1234678F
3.64e7
39.62
CS 1234689F
2.99e7
40.01
ES 1234789F
1.85e7*
40.96
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.89e3
RT
Results: P:\B5900_B5999\B5966\B5966_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 09:47 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4859, 8516, 5709 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 10:59 Page 11 of 12


OCDF
8.51e6
43.25
Rel. Int.
Abs. Int.
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.03e3
OCDF
9.25e6
43.25
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 4.81e3
ES OCDF
1.59e7*
43.24
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PBM
4σ 6.52e3
ES OCDF
1.74e7*
43.24
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PBM
4σ 4.22e3
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.49e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996. and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.13.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

OPR1/OPR2_18712 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120221-S-JC-SW-S-3 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.17 g	Lab Sample ID	B5969_18712_DF_001	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	75.7 %	QC Batch No:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:24:03

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	295				ES 2378-TCDD	78	
12378-PeCDD	3.92				ES 12378-PeCDD	65.6	
123478-HxCDD	2.07				ES 123478-HxCDD	80.9	
123678-HxCDD	9.32				ES 123678-HxCDD	80.5	
123789-HxCDD	5.22				ES 123789-HxCDD	78.5	
1234678-HpCDD	225				ES 1234678-HpCDD	62.4	
OCDD	3,190				ES OCDD	34.7	
2378-TCDF	1,030			E	ES 2378-TCDF	72.9	
12378-PeCDF	39.1				ES 12378-PeCDF	67.9	
23478-PeCDF	30.7				ES 23478-PeCDF	68.3	
123478-HxCDF	77.6				ES 123478-HxCDF	90.9	
123678-HxCDF	18.1				ES 123678-HxCDF	98.4	
234678-HxCDF	4.94				ES 234678-HxCDF	81.2	
123789-HxCDF	ND	0.703			ES 123789-HxCDF	81.2	
1234678-HpCDF	58.9				ES 1234678-HpCDF	78.3	
1234789-HpCDF	11.4				ES 1234789-HpCDF	68.3	
OCDF	129				ES OCDF	39	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	68.7	
Total TCDD	334		339		CS 12347-PeCDD	65.3	
Total PeCDD	15.6		16.9		CS 12346-PeCDF	70.1	
Total HxCDD	80.4		80.4		CS 123469-HxCDF	91.7	
Total HpCDD	459		459		CS 1234689-HpCDF	80	
Total TCDF	2,090		2,090	E			
Total PeCDF	121		132				
Total HxCDF	144		147				
Total HpCDF	118		118				
Total PCDD/Fs	**6,690**		**6,710**	E			
WHO-2005 TEQs							
TEQ: ND=0	428		428				
TEQ: ND=DL/2	428	0.739	428				
TEQ: ND=DL	428	1.48	428				

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Sample ID: 11215131-120221-S-JC-SW-S-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.17 g	Lab Sample ID:	B5969_18712_DF_001	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	75.7 %	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:24:03

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.44		12479/12468D	3.84		124679/124689D	31.3		1234679D	234	
1379D	1.36		12469D	3.03		123468D	6.2		1234678D	225	
1369D	(0.396)		12368D	2.51		123679/123689D	23.4				
1469D	[3.42]		12478D	0.882	J	123469D	1.6	J			
1247D...[4]	0.951		12379D	1.47	J	123478D	2.07				
1378D	0.987		12369D...[3]	[1.23]	J	123678D	9.32				
1268D	(0.396)		12346/12347D	(0.44)		123467D	1.25	J			
1478D	[0.791]		12378D	3.92		123789D	5.22		**Conc.**	459	
1279D	(0.396)		12367D	(0.44)					**EMPC**	459	
1234/1269D	(0.396)		12389D	(0.44)							
1236D	(0.396)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	4.72										
1239D	(0.396)								OCDD	3190	
2378D	295										
1278D	28.5										
1267D	(0.396)										
1289D	(0.396)										
Conc.	334		**Conc.**	15.6		**Conc.**	80.4				
EMPC	339		**EMPC**	16.9		**EMPC**	80.4				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	428	428
TEQ: ND=DL/2	428	428
TEQ: ND=DL	428	428

	Conc.	EMPC
Total PCDD/Fs	6,690	6,710

Checkcode: 866-721-CGR

Report Created: 09-Dec-2021 10:41 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-S-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.17 g	Lab Sample ID:	B5969_18712_DF_001	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	75.7 %	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:24:03

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.53		13468/12468F	[6.45]		123468F	5.38		1234678F	58.9	
1468F	3.6		13678F...[3]	3.12		124678/134678F	19.9		1234679F	4.07	
2468F	5.47		12368F...[3]	21.8		134679F	(0.716)		1234689F	43.2	
1346/1246F	2.38		14678F	[2.9]		124679F	(0.716)		1234789F	11.4	
1347F...[3]	13.8		13479F	(0.364)		124689F	12.1				
1348F	3.05		13469/12479F	(0.364)		123467F	[2]				
1248F...[3]	56.9		12346F	0.8	J	123478F	77.6				
1268F	17.6		23468/12469F	2.54		123678F	18.1				
1467F	3.36		12347F	1.85		123479F	(0.716)				
1478F	45		12348F	5.53		123469F	[1.27]	J			
1369/1237F	11.7		12378F	39.1		123679F	(0.716)				
2467F	2.19		12678/12367F	13.7		234678F	4.94		**Conc.**	118	
2368F	25.9		12379F	(0.364)		234678/123689F	0		**EMPC**	118	
1238F...[5]	65		12679F	(0.364)		123689F	(0.716)				
1278F	499		23467/12369F	1.18	J	123789F	(0.703)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.383)		23478F	30.7		123789/123489F	0				
1267F	27.1		23478/12489F	0		123489F	5.65		OCDF	129	
2346/1249F	(0.383)		12489F	(0.364)							
2347/1279F	13.4		12349F	0.505	J						
2348F	90		12389F	[1.49]	J						
2378F	1030	E									
2367/3467F	82.8										
1269F	17.6										
1239F	(0.383)										
1289F	78.4										
Conc.	2,090		**Conc.**	121		**Conc.**	144				
EMPC	2,090		**EMPC**	132		**EMPC**	147				

Checkcode: 866-721-CGR

Report Created: 09-Dec-2021 10:41 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-S-3 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.17 g	QC Batch No.:	18712
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 20:24
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	295		0.396	295	295	295
12378-PeCDD	3.92		0.44	1.96	3.92	3.92
123478-HxCDD	2.07		0.622	0.207	0.207	0.207
123678-HxCDD	9.32		0.607	0.932	0.932	0.932
123789-HxCDD	5.22		0.586	0.522	0.522	0.522
1234678-HpCDD	225		0.726	2.25	2.25	2.25
OCDD	3190		1.88	3.19	0.319	0.958
2378-TCDF	1030	E	0.383	103	103	103
12378-PeCDF	39.1		0.376	1.96	1.96	1.17
23478-PeCDF	30.7		0.353	15.3	15.3	9.2
123478-HxCDF	77.6		0.683	7.76	7.76	7.76
123678-HxCDF	18.1		0.654	1.81	1.81	1.81
234678-HxCDF	4.94		0.845	0.494	0.494	0.494
123789-HxCDF	(0.703)		0.703	(0.0703)	(0.0703)	(0.0703)
1234678-HpCDF	58.9		0.351	0.589	0.589	0.589
1234789-HpCDF	11.4		0.493	0.114	0.114	0.114
OCDF	129		1.17	0.129	0.0129	0.0388

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Wilmington, NC 28405, USA
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TEQ Summaries			
EMPC = 0, ND = 0	436	435	428
EMPC = 0, ND = DL / 2	436	435	428
EMPC = 0, ND = DL	436	435	428
EMPC = 0, < J-level = 0	436	435	428
EMPC = EMPC, ND = 0	436	435	428
EMPC = EMPC, ND = DL / 2	436	435	428
EMPC = EMPC, ND = DL	436	435	428
EMPC = EMPC, < J-level = 0	436	435	428

Checkcode: 866-721-CGR

Sample ID: 11215131-120221-S-JC-SW-S-4 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	18.76 g	Lab Sample ID	B5969_18712_DF_002	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.5 %	QC Batch No:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:11:35

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	43.1				ES 2378-TCDD	87.4	
12378-PeCDD	0.948			J	ES 12378-PeCDD	83.4	
123478-HxCDD	1.14			J	ES 123478-HxCDD	87.7	
123678-HxCDD	3.69				ES 123678-HxCDD	90.5	
123789-HxCDD	2.41				ES 123789-HxCDD	86.9	
1234678-HpCDD	102				ES 1234678-HpCDD	75.8	
OCDD	1,520				ES OCDD	56.9	
2378-TCDF	152				ES 2378-TCDF	84.8	
12378-PeCDF	7.45				ES 12378-PeCDF	85.7	
23478-PeCDF	6.48				ES 23478-PeCDF	86.6	
123478-HxCDF	13.3				ES 123478-HxCDF	96.2	
123678-HxCDF	3.86				ES 123678-HxCDF	97.5	
234678-HxCDF	2				ES 234678-HxCDF	94.8	
123789-HxCDF	ND	0.326			ES 123789-HxCDF	92.6	
1234678-HpCDF	22.2				ES 1234678-HpCDF	92	
1234789-HpCDF	3.09				ES 1234789-HpCDF	86.8	
OCDF	72.3				ES OCDF	62.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	81.2	
Total TCDD	49.4		50.6		CS 12347-PeCDD	84.1	
Total PeCDD	3.66		6.59		CS 12346-PeCDF	87	
Total HxCDD	45.6		45.6		CS 123469-HxCDF	101	
Total HpCDD	266		266		CS 1234689-HpCDF	99.2	
Total TCDF	296		302				
Total PeCDF	35.1		36				
Total HxCDF	40.8		42.8				
Total HpCDF	57.3		58.4				
Total PCDD/Fs	**2,380**		**2,400**				
WHO-2005 TEQs							
TEQ: ND=0	65.9		65.9				
TEQ: ND=DL/2	65.9	0.408	65.9				
TEQ: ND=DL	65.9	0.816	65.9				

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Sample ID: 11215131-120221-S-JC-SW-S-4 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	18.76 g	Lab Sample ID:	B5969_18712_DF_002	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.5 %	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:11:35

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.461]		12479/12468D	1.27	J	124679/124689D	22.4		1234679D	164	
1379D	(0.294)		12469D	[1.94]		123468D	2.26		1234678D	102	
1369D	(0.294)		12368D	[0.52]	J	123679/123689D	11.6				
1469D	2.14		12478D	[0.469]	J	123469D	1.27	J			
1247D...[4]	(0.294)		12379D	0.522	J	123478D	1.14	J			
1378D	(0.294)		12369D...[3]	0.92	J	123678D	3.69				
1268D	(0.294)		12346/12347D	(0.231)		123467D	0.872	J			
1478D	(0.294)		12378D	0.948	J	123789D	2.41		**Conc.**	266	
1279D	(0.294)		12367D	(0.231)					**EMPC**	266	
1234/1269D	(0.294)		12389D	(0.231)							
1236D	(0.294)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	[0.736]									**(pg/g)**	
1239D	(0.294)								OCDD	1520	
2378D	43.1										
1278D	4.13										
1267D	(0.294)										
1289D	(0.294)										
Conc.	49.4		**Conc.**	3.66		**Conc.**	45.6				
EMPC	50.6		**EMPC**	6.59		**EMPC**	45.6				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	65.9	65.9
TEQ: ND=DL/2	65.9	65.9
TEQ: ND=DL	65.9	65.9

	Conc.	EMPC
Total PCDD/Fs	2,380	2,400

Checkcode: 750-531-LHT

Report Created: 09-Dec-2021 10:41 Analyst: pw

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Sample ID: 11215131-120221-S-JC-SW-S-4 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	18.76 g	Lab Sample ID:	B5969_18712_DF_002	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	76.5 %	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:11:35

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.225	J	13468/12468F	5.84		123468F	2.38		1234678F	22.2	
1468F	1.04		13678F...[3]	1.41		124678/134678F	9.56		1234679F	[1.14]	J
2468F	2.06		12368F...[3]	6.61		134679F	(0.315)		1234689F	31.9	
1346/1246F	(0.179)		14678F	0.586	J	124679F	[0.369]	J	1234789F	3.09	
1347F...[3]	2.71		13479F	(0.159)		124689F	8.64				
1348F	0.773		13469/12479F	[0.242]	J	123467F	0.981	J			
1248F...[3]	6.55		12346F	0.313	J	123478F	13.3				
1268F	3.07		23468/12469F	1.38		123678F	3.86				
1467F	[0.724]		12347F	[0.576]	J	123479F	(0.315)				
1478F	6.04		12348F	1.06	J	123469F	[0.52]	J			
1369/1237F	2.01		12378F	7.45		123679F	(0.315)				
2467F	[0.503]		12678/12367F	2.89		234678F	2		**Conc.**	57.3	
2368F	[5.21]		12379F	(0.159)		234678/123689F	0		**EMPC**	58.4	
1238F...[5]	8.4		12679F	(0.159)		123689F	(0.315)				
1278F	60.5		23467/12369F	0.75	J	123789F	(0.326)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.179)		23478F	6.48		123789/123489F	0				
1267F	3.79		23478/12489F	0		123489F	[1.12]	J	OCDF	72.3	
2346/1249F	(0.179)		12489F	(0.159)							
2347/1279F	2.18		12349F	(0.159)							
2348F	10.4		12389F	0.379	J						
2378F	152										
2367/3467F	14.8										
1269F	3.99										
1239F	(0.179)										
1289F	14.7										
Conc.	296		**Conc.**	35.1		**Conc.**	40.8				
EMPC	302		**EMPC**	36		**EMPC**	42.8				

Checkcode: 750-531-LHT

Report Created: 09-Dec-2021 10:41 Analyst: pw

Sample ID: 11215131-120221-S-JC-SW-S-4 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	18.76 g	QC Batch No.:	18712
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 21:11
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	43.1		0.294	43.1	43.1	43.1
12378-PeCDD	0.948	J	0.231	0.474	0.948	0.948
123478-HxCDD	1.14	J	0.293	0.114	0.114	0.114
123678-HxCDD	3.69		0.292	0.369	0.369	0.369
123789-HxCDD	2.41		0.292	0.241	0.241	0.241
1234678-HpCDD	102		0.272	1.02	1.02	1.02
OCDD	1520		0.595	1.52	0.152	0.455
2378-TCDF	152		0.179	15.2	15.2	15.2
12378-PeCDF	7.45		0.161	0.372	0.372	0.223
23478-PeCDF	6.48		0.156	3.24	3.24	1.94
123478-HxCDF	13.3		0.311	1.33	1.33	1.33
123678-HxCDF	3.86		0.287	0.386	0.386	0.386
234678-HxCDF	2		0.338	0.2	0.2	0.2
123789-HxCDF	(0.326)		0.326	(0.0326)	(0.0326)	(0.0326)
1234678-HpCDF	22.2		0.188	0.222	0.222	0.222
1234789-HpCDF	3.09		0.244	0.0309	0.0309	0.0309
OCDF	72.3		0.615	0.0723	0.00723	0.0217

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TEQ Summaries			
EMPC = 0, ND = 0	68	67	65.9
EMPC = 0, ND = DL / 2	68	67	65.9
EMPC = 0, ND = DL	68	67	65.9
EMPC = 0, < J-level = 0	67.4	65.9	64.8
EMPC = EMPC, ND = 0	68	67	65.9
EMPC = EMPC, ND = DL / 2	68	67	65.9
EMPC = EMPC, ND = DL	68	67	65.9
EMPC = EMPC, < J-level = 0	67.4	65.9	64.8

Checkcode: 750-531-LHT

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Sample ID: 11215131-120321-S-JC-SW-S-5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	18.40 g	Lab Sample ID	B5969_18712_DF_003	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	76.6 %	QC Batch No:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:59:10

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	34.8				ES 2378-TCDD	86	
12378-PeCDD	EMPC		0.601	J	ES 12378-PeCDD	71.4	
123478-HxCDD	0.847			J	ES 123478-HxCDD	93.6	
123678-HxCDD	3.02				ES 123678-HxCDD	96.7	
123789-HxCDD	1.94				ES 123789-HxCDD	95.8	
1234678-HpCDD	85.6				ES 1234678-HpCDD	75.1	
OCDD	1,160				ES OCDD	42.5	
2378-TCDF	115				ES 2378-TCDF	85.4	
12378-PeCDF	4.64				ES 12378-PeCDF	87.5	
23478-PeCDF	4.48				ES 23478-PeCDF	86.5	
123478-HxCDF	8.71				ES 123478-HxCDF	103	
123678-HxCDF	EMPC		2.05		ES 123678-HxCDF	110	
234678-HxCDF	1.06			J	ES 234678-HxCDF	101	
123789-HxCDF	ND	0.305			ES 123789-HxCDF	96.5	
1234678-HpCDF	12.5				ES 1234678-HpCDF	92.3	
1234789-HpCDF	1.82				ES 1234789-HpCDF	76.9	
OCDF	35.2				ES OCDF	43.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	81.1	
Total TCDD	37.7		42		CS 12347-PeCDD	78.5	
Total PeCDD	4.87		7.9		CS 12346-PeCDF	88.1	
Total HxCDD	49.7		51.3		CS 123469-HxCDF	113	
Total HpCDD	212		212		CS 1234689-HpCDF	101	
Total TCDF	233		237				
Total PeCDF	20.2		23.2				
Total HxCDF	21.9		25.4				
Total HpCDF	30.3		30.3				
Total PCDD/Fs	**1,810**		**1,830**				
WHO-2005 TEQs							
TEQ: ND=0	50.8		51.6				
TEQ: ND=DL/2	50.8	0.477	51.6				
TEQ: ND=DL	50.8	0.954	51.6				

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Sample ID: 11215131-120321-S-JC-SW-S-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	18.40 g	Lab Sample ID:	B5969_18712_DF_003	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	76.6 %	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:59:10

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.661]		12479/12468D	1.68		124679/124689D	31.4		1234679D	126	
1379D	(0.234)		12469D	3.19		123468D	2.03		1234678D	85.6	
1369D	(0.234)		12368D	[0.58]	J	123679/123689D	10.5				
1469D	2.47		12478D	[0.448]	J	123469D	[0.934]	J			
1247D...[4]	(0.234)		12379D	[0.517]	J	123478D	0.847	J			
1378D	(0.234)		12369D...[3]	[0.89]	J	123678D	3.02				
1268D	(0.234)		12346/12347D	(0.366)		123467D	[0.666]	J			
1478D	(0.234)		12378D	[0.601]	J	123789D	1.94		**Conc.**	212	
1279D	(0.234)		12367D	(0.366)					**EMPC**	212	
1234/1269D	0.395		12389D	(0.366)							
1236D	(0.234)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[0.672]										
1239D	(0.234)								OCDD	1160	
2378D	34.8										
1278D	[3.01]										
1267D	(0.234)										
1289D	(0.234)										
Conc.	37.7		**Conc.**	4.87		**Conc.**	49.7				
EMPC	42		**EMPC**	7.9		**EMPC**	51.3				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	50.8	51.6
TEQ: ND=DL/2	50.8	51.6
TEQ: ND=DL	50.8	51.6

	Conc.	EMPC
Total PCDD/Fs	1,810	1,830

Checkcode: 117-914-NPB

Report Created: 09-Dec-2021 10:41 Analyst: pw

Sample ID: 11215131-120321-S-JC-SW-S-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	18.40 g	Lab Sample ID:	B5969_18712_DF_003	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	76.6 %	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	21:59:10

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.309)		13468/12468F	[2.38]		123468F	1.49		1234678F	12.5	
1468F	[0.741]		13678F...[3]	1.26	J	124678/134678F	6.06		1234679F	0.938	J
2468F	[1.19]		12368F...[3]	4.79		134679F	(0.303)		1234689F	15.1	
1346/1246F	[0.197]	J	14678F	[0.651]	J	124679F	(0.303)		1234789F	1.82	
1347F...[3]	2.95		13479F	(0.208)		124689F	4.55				
1348F	[0.41]		13469/12479F	(0.208)		123467F	[0.703]	J			
1248F...[3]	6.61		12346F	(0.208)		123478F	8.71				
1268F	2.15		23468/12469F	0.704	J	123678F	[2.05]				
1467F	0.641		12347F	0.57	J	123479F	(0.303)				
1478F	5.53		12348F	0.964	J	123469F	(0.303)				
1369/1237F	1.52		12378F	4.64		123679F	(0.303)				
2467F	0.641		12678/12367F	2.2		234678F	1.06	J	**Conc.**	30.3	
2368F	3.98		12379F	(0.208)		234678/123689F	0		**EMPC**	30.3	
1238F...[5]	6.82		12679F	(0.208)		123689F	(0.303)				
1278F	52.3		23467/12369F	0.576	J	123789F	(0.305)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.309)		23478F	4.48		123789/123489F	0				
1267F	3.08		23478/12489F	0		123489F	[0.769]	J	OCDF	35.2	
2346/1249F	(0.309)		12489F	(0.208)							
2347/1279F	1.96		12349F	(0.208)							
2348F	8.63		12389F	(0.208)							
2378F	115										
2367/3467F	10.8										
1269F	[1.88]										
1239F	(0.309)										
1289F	10.1										
Conc.	233		**Conc.**	20.2		**Conc.**	21.9				
EMPC	237		**EMPC**	23.2		**EMPC**	25.4				

Checkcode: 117-914-NPB

Report Created: 09-Dec-2021 10:41 Analyst: pw

Sample ID: 11215131-120321-S-JC-SW-S-5 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	18.40 g	QC Batch No.:	18712
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 21:59
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	34.8		0.234	34.8	34.8	34.8
12378-PeCDD	[0.601]	J	0.366	[0.301]	[0.601]	[0.601]
123478-HxCDD	0.847	J	0.421	0.0847	0.0847	0.0847
123678-HxCDD	3.02		0.408	0.302	0.302	0.302
123789-HxCDD	1.94		0.419	0.194	0.194	0.194
1234678-HpCDD	85.6		0.402	0.856	0.856	0.856
OCDD	1160		1.85	1.16	0.116	0.349
2378-TCDF	115		0.309	11.5	11.5	11.5
12378-PeCDF	4.64		0.214	0.232	0.232	0.139
23478-PeCDF	4.48		0.201	2.24	2.24	1.34
123478-HxCDF	8.71		0.265	0.871	0.871	0.871
123678-HxCDF	[2.05]		0.293	[0.205]	[0.205]	[0.205]
234678-HxCDF	1.06	J	0.353	0.106	0.106	0.106
123789-HxCDF	(0.305)		0.305	(0.0305)	(0.0305)	(0.0305)
1234678-HpCDF	12.5		0.215	0.125	0.125	0.125
1234789-HpCDF	1.82		0.349	0.0182	0.0182	0.0182
OCDF	35.2		0.918	0.0352	0.00352	0.0106

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TEQ Summaries			
EMPC = 0, ND = 0	52.6	51.5	50.8
EMPC = 0, ND = DL / 2	52.6	51.5	50.8
EMPC = 0, ND = DL	52.6	51.5	50.8
EMPC = 0, < J-level = 0	52.4	51.3	50.6
EMPC = EMPC, ND = 0	53.1	52.3	51.6
EMPC = EMPC, ND = DL / 2	53.1	52.3	51.6
EMPC = EMPC, ND = DL	53.1	52.3	51.6
EMPC = EMPC, < J-level = 0	52.6	51.5	50.8

Sample ID: 11215131-120221-S-SPS-SW-S-7 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.40 g	Lab Sample ID	B5969_18712_DF_004	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	75.5 %	QC Batch No:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:46:44

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	2,800			E	ES 2378-TCDD	85.9	
12378-PeCDD	29.6				ES 12378-PeCDD	74.7	
123478-HxCDD	1.44			J	ES 123478-HxCDD	87.9	
123678-HxCDD	5.82				ES 123678-HxCDD	91.8	
123789-HxCDD	EMPC		2.51		ES 123789-HxCDD	88.3	
1234678-HpCDD	258				ES 1234678-HpCDD	80.4	
OCDD	3,650				ES OCDD	56	
2378-TCDF	9,470			E	ES 2378-TCDF	78.3	
12378-PeCDF	324				ES 12378-PeCDF	86.2	
23478-PeCDF	278				ES 23478-PeCDF	81.4	
123478-HxCDF	435				ES 123478-HxCDF	94.1	
123678-HxCDF	113				ES 123678-HxCDF	97.3	
234678-HxCDF	26.9				ES 234678-HxCDF	90.9	
123789-HxCDF	ND	0.552			ES 123789-HxCDF	92.6	
1234678-HpCDF	130				ES 1234678-HpCDF	98.1	
1234789-HpCDF	42.9				ES 1234789-HpCDF	87.6	
OCDF	236				ES OCDF	57.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	75.8	
Total TCDD	3,120		3,150	E	CS 12347-PeCDD	81.5	
Total PeCDD	47.7		50.5		CS 12346-PeCDF	89.7	
Total HxCDD	80.4		83.8		CS 123469-HxCDF	104	
Total HpCDD	527		527		CS 1234689-HpCDF	104	
Total TCDF	18,600		18,600	E			
Total PeCDF	940		942				
Total HxCDF	679		679				
Total HpCDF	239		239				
Total PCDD/Fs	**28,100**		**28,100**	E			
WHO-2005 TEQs							
TEQ: ND=0	3930		3930				
TEQ: ND=DL/2	3930	0.522	3930				
TEQ: ND=DL	3930	1.04	3930				

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Sample ID: 11215131-120221-S-SPS-SW-S-7 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.40 g	Lab Sample ID:	B5969_18712_DF_004	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	75.5 %	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:46:44

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.62		12479/12468D	3.31		124679/124689D	50.3		1234679D	269	
1379D	1.54		12469D	4.95		123468D	2.39		1234678D	258	
1369D	(0.251)		12368D	4.57		123679/123689D	19.3				
1469D	7.02		12478D	2.04		123469D	1.12	J			
1247D...[4]	4.69		12379D	1.86		123478D	1.44	J			
1378D	7.17		12369D...[3]	[0.632]	J	123678D	5.82				
1268D	[0.66]		12346/12347D	0.68	J	123467D	[0.946]	J			
1478D	5.46		12378D	29.6		123789D	[2.51]		**Conc.**	527	
1279D	0.378		12367D	[2.12]					**EMPC**	527	
1234/1269D	1.31		12389D	0.703	J						
1236D	[0.562]								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	44.6										
1239D	(0.251)								OCDD	3650	
2378D	2800	E									
1278D	251										
1267D	[17.6]										
1289D	[5.04]										
Conc.	3,120		**Conc.**	47.7		**Conc.**	80.4				
EMPC	3,150		**EMPC**	50.5		**EMPC**	83.8				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	3,930	3,930
TEQ: ND=DL/2	3,930	3,930
TEQ: ND=DL	3,930	3,930

	Conc.	EMPC
Total PCDD/Fs	28,100	28,100

Checkcode: 834-918-KZD

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120221-S-SPS-SW-S-7 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.40 g	Lab Sample ID:	B5969_18712_DF_004	Date Extracted: 06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	75.5 %	QC Batch No.:	18712	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 22:46:44

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.61		13468/12468F	8.6		123468F	5.46		1234678F	130	
1468F	11.7		13678F...[3]	3.79		124678/134678F	37.9		1234679F	3.08	
2468F	9.04		12368F...[3]	141		134679F	(0.59)		1234689F	62.9	
1346/1246F	10.2		14678F	5.58		124679F	(0.59)		1234789F	42.9	
1347F...[3]	55.2		13479F	(0.297)		124689F	21.8				
1348F	23.1		13469/12479F	(0.297)		123467F	2.35				
1248F...[3]	216		12346F	[0.689]	J	123478F	435				
1268F	101		23468/12469F	6.23		123678F	113				
1467F	22.8		12347F	7.78		123479F	(0.59)				
1478F	253		12348F	36.2		123469F	(0.59)				
1369/1237F	85.6		12378F	324		123679F	(0.59)				
2467F	10.9		12678/12367F	109		234678F	26.9		**Conc.**	239	
2368F	231		12379F	(0.297)		234678/123689F	0		**EMPC**	239	
1238F...[5]	494		12679F	[0.959]	J	123689F	(0.59)				
1278F	4510	E	23467/12369F	4.97		123789F	(0.552)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.236)		23478F	278		123789/123489F	0				
1267F	197		23478/12489F	0		123489F	36.3		OCDF	236	
2346/1249F	33.3		12489F	(0.297)							
2347/1279F	125		12349F	(0.297)							
2348F	911	E	12389F	15.5							
2378F	9470	E									
2367/3467F	811	E									
1269F	118										
1239F	18.3										
1289F	832	E									
Conc.	18,600		**Conc.**	940		**Conc.**	679				
EMPC	18,600		**EMPC**	942		**EMPC**	679				

Checkcode: 834-918-KZD

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120221-S-SPS-SW-S-7 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.40 g	QC Batch No.:	18712
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 22:46
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	2800	E	0.251	2800	2800	2800
12378-PeCDD	29.6		0.296	14.8	29.6	29.6
123478-HxCDD	1.44	J	0.468	0.144	0.144	0.144
123678-HxCDD	5.82		0.406	0.582	0.582	0.582
123789-HxCDD	[2.51]		0.384	[0.251]	[0.251]	[0.251]
1234678-HpCDD	258		0.33	2.58	2.58	2.58
OCDD	3650		0.737	3.65	0.365	1.09
2378-TCDF	9470	E	0.236	947	947	947
12378-PeCDF	324		0.274	16.2	16.2	9.72
23478-PeCDF	278		0.322	139	139	83.4
123478-HxCDF	435		0.624	43.5	43.5	43.5
123678-HxCDF	113		0.541	11.3	11.3	11.3
234678-HxCDF	26.9		0.648	2.69	2.69	2.69
123789-HxCDF	(0.552)		0.552	(0.0552)	(0.0552)	(0.0552)
1234678-HpCDF	130		0.167	1.3	1.3	1.3
1234789-HpCDF	42.9		0.257	0.429	0.429	0.429
OCDF	236		0.5	0.236	0.0236	0.0708

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TEQ Summaries			
EMPC = 0, ND = 0	3980	3990	3930
EMPC = 0, ND = DL / 2	3980	3990	3930
EMPC = 0, ND = DL	3980	3990	3930
EMPC = 0, < J-level = 0	3980	3990	3930
EMPC = EMPC, ND = 0	3980	3990	3930
EMPC = EMPC, ND = DL / 2	3980	3990	3930
EMPC = EMPC, ND = DL	3980	3990	3930
EMPC = EMPC, < J-level = 0	3980	3990	3930

Checkcode: 834-918-KZD

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Sample ID: 11215131-120221-S-SPS-SW-S-6 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.22 g	Lab Sample ID	B5969_18712_DF_005	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	77.0 %	QC Batch No:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:34:22

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	18.3				ES 2378-TCDD	86.5	
12378-PeCDD	0.445			J	ES 12378-PeCDD	72.9	
123478-HxCDD	ND	0.641			ES 123478-HxCDD	89.9	
123678-HxCDD	1.86				ES 123678-HxCDD	93	
123789-HxCDD	1.82				ES 123789-HxCDD	88.6	
1234678-HpCDD	47.2				ES 1234678-HpCDD	75.7	
OCDD	634				ES OCDD	46.4	
2378-TCDF	63.6				ES 2378-TCDF	77.5	
12378-PeCDF	2.15				ES 12378-PeCDF	79.6	
23478-PeCDF	1.78				ES 23478-PeCDF	76.8	
123478-HxCDF	4.21				ES 123478-HxCDF	103	
123678-HxCDF	1.24			J	ES 123678-HxCDF	107	
234678-HxCDF	ND	0.459			ES 234678-HxCDF	95.4	
123789-HxCDF	ND	0.471			ES 123789-HxCDF	84.3	
1234678-HpCDF	7.66				ES 1234678-HpCDF	99.9	
1234789-HpCDF	EMPC		0.713	J	ES 1234789-HpCDF	78.6	
OCDF	32.8				ES OCDF	44.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	83	
Total TCDD	20.7		22		CS 12347-PeCDD	82.6	
Total PeCDD	1.26		3.92		CS 12346-PeCDF	83.2	
Total HxCDD	10.5		23.1		CS 123469-HxCDF	112	
Total HpCDD	124		124		CS 1234689-HpCDF	103	
Total TCDF	128		133				
Total PeCDF	5.53		7.95				
Total HxCDF	7.7		10.2				
Total HpCDF	13.4		14.1				
Total PCDD/Fs	**978**		**1,010**				
WHO-2005 TEQs							
TEQ: ND=0	27.4		27.4				
TEQ: ND=DL/2	27.4	0.729	27.4				
TEQ: ND=DL	27.5	1.46	27.5				

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Sample ID: 11215131-120221-S-SPS-SW-S-6 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.22 g	Lab Sample ID:	B5969_18712_DF_005	Date Extracted:	06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	77.0 %	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:34:22

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.461)		12479/12468D	[0.81]	J	124679/124689D	[11.5]		1234679D	76.9	
1379D	0.542		12469D	[0.807]	J	123468D	[1.1]	J	1234678D	47.2	
1369D	(0.461)		12368D	[0.363]	J	123679/123689D	6.19				
1469D	[0.708]		12478D	(0.439)		123469D	0.675	J			
1247D...[4]	(0.461)		12379D	0.816	J	123478D	(0.641)				
1378D	(0.461)		12369D...[3]	[0.683]	J	123678D	1.86				
1268D	(0.461)		12346/12347D	(0.439)		123467D	(0.607)				
1478D	(0.461)		12378D	0.445	J	123789D	1.82		**Conc.**	124	
1279D	(0.461)		12367D	(0.439)					**EMPC**	124	
1234/1269D	(0.461)		12389D	(0.439)							
1236D	(0.461)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[0.606]										
1239D	(0.461)								OCDD	634	
2378D	18.3										
1278D	1.82										
1267D	(0.461)										
1289D	(0.461)										
Conc.	20.7		**Conc.**	1.26		**Conc.**	10.5				
EMPC	22		**EMPC**	3.92		**EMPC**	23.1				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	27.4	27.4
TEQ: ND=DL/2	27.4	27.4
TEQ: ND=DL	27.5	27.5

	Conc.	EMPC
Total PCDD/Fs	978	1,010

Checkcode: 921-596-KCP

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120221-S-SPS-SW-S-6 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.22 g	Lab Sample ID:	B5969_18712_DF_005	Date Extracted: 06-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	77.0 %	QC Batch No.:	18712	Date Analyzed: 08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 23:34:22

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.581)		13468/12468F	(0.363)		123468F	0.816	J	1234678F	7.66	
1468F	(0.581)		13678F...[3]	0.707	J	124678/134678F	[2.46]		1234679F	(0.402)	
2468F	1.73		12368F...[3]	[2.02]		134679F	(0.438)		1234689F	5.73	
1346/1246F	(0.581)		14678F	[0.391]	J	124679F	(0.438)		1234789F	[0.713]	J
1347F...[3]	1.98		13479F	(0.382)		124689F	1.44	J			
1348F	(0.581)		13469/12479F	(0.382)		123467F	(0.438)				
1248F...[3]	3.65		12346F	(0.382)		123478F	4.21				
1268F	[1.18]		23468/12469F	(0.382)		123678F	1.24	J			
1467F	(0.581)		12347F	(0.382)		123479F	(0.438)				
1478F	2.85		12348F	(0.382)		123469F	(0.438)				
1369/1237F	0.967		12378F	2.15		123679F	(0.438)				
2467F	0.606		12678/12367F	0.892	J	234678F	(0.459)		**Conc.**	13.4	
2368F	[2.22]		12379F	(0.382)		234678/123689F	0		**EMPC**	14.1	
1238F...[5]	4.25		12679F	(0.382)		123689F	(0.438)				
1278F	29		23467/12369F	(0.382)		123789F	(0.471)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	0.766		23478F	1.78		123789/123489F	0				
1267F	[1.89]		23478/12489F	0		123489F	(0.438)		OCDF	32.8	
2346/1249F	(0.581)		12489F	(0.382)							
2347/1279F	1.25		12349F	(0.382)							
2348F	5.36		12389F	(0.382)							
2378F	63.6										
2367/3467F	5.85										
1269F	1.29										
1239F	(0.581)										
1289F	5										
Conc.	128		**Conc.**	5.53		**Conc.**	7.7				
EMPC	133		**EMPC**	7.95		**EMPC**	10.2				

Checkcode: 921-596-KCP

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120221-S-SPS-SW-S-6 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.22 g	QC Batch No.:	18712
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	08-Dec-2021 23:34
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	18.3		0.461	18.3	18.3	18.3
12378-PeCDD	0.445	J	0.439	0.223	0.445	0.445
123478-HxCDD	(0.641)		0.641	(0.0641)	(0.0641)	(0.0641)
123678-HxCDD	1.86		0.594	0.186	0.186	0.186
123789-HxCDD	1.82		0.589	0.182	0.182	0.182
1234678-HpCDD	47.2		0.478	0.472	0.472	0.472
OCDD	634		1.66	0.634	0.0634	0.19
2378-TCDF	63.6		0.581	6.36	6.36	6.36
12378-PeCDF	2.15		0.375	0.107	0.107	0.0645
23478-PeCDF	1.78		0.389	0.892	0.892	0.535
123478-HxCDF	4.21		0.424	0.421	0.421	0.421
123678-HxCDF	1.24	J	0.409	0.124	0.124	0.124
234678-HxCDF	(0.459)		0.459	(0.0459)	(0.0459)	(0.0459)
123789-HxCDF	(0.471)		0.471	(0.0471)	(0.0471)	(0.0471)
1234678-HpCDF	7.66		0.331	0.0766	0.0766	0.0766
1234789-HpCDF	[0.713]	J	0.503	[0.00713]	[0.00713]	[0.00713]
OCDF	32.8		1.39	0.0328	0.00328	0.00985

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TEQ Summaries			
EMPC = 0, ND = 0	28	27.6	27.4
EMPC = 0, ND = DL / 2	28.1	27.7	27.4
EMPC = 0, ND = DL	28.2	27.8	27.5
EMPC = 0, < J-level = 0	27.7	27.1	26.8
EMPC = EMPC, ND = 0	28	27.6	27.4
EMPC = EMPC, ND = DL / 2	28.1	27.7	27.4
EMPC = EMPC, ND = DL	28.2	27.8	27.5
EMPC = EMPC, < J-level = 0	27.7	27.1	26.8

Sample ID: 11215131-120321-S-SPS-SW-S-12 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.56 g	Lab Sample ID	B5969_18712_DF_006	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	81.4 %	QC Batch No:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:21:57

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	127				ES 2378-TCDD	87.7	
12378-PeCDD	1.81				ES 12378-PeCDD	77	
123478-HxCDD	ND	0.424			ES 123478-HxCDD	92.3	
123678-HxCDD	1.18			J	ES 123678-HxCDD	92.3	
123789-HxCDD	EMPC		1.08	J	ES 123789-HxCDD	95.4	
1234678-HpCDD	40.5				ES 1234678-HpCDD	73.4	
OCDD	708				ES OCDD	41.1	
2378-TCDF	428				ES 2378-TCDF	84.2	
12378-PeCDF	13.6				ES 12378-PeCDF	87.9	
23478-PeCDF	11.5				ES 23478-PeCDF	86.9	
123478-HxCDF	19.8				ES 123478-HxCDF	96.4	
123678-HxCDF	5.08				ES 123678-HxCDF	109	
234678-HxCDF	1.07			J	ES 234678-HxCDF	94.7	
123789-HxCDF	ND	0.347			ES 123789-HxCDF	90	
1234678-HpCDF	6.65				ES 1234678-HpCDF	101	
1234789-HpCDF	2.33				ES 1234789-HpCDF	70	
OCDF	7.89				ES OCDF	40.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	78.9	
Total TCDD	144		146		CS 12347-PeCDD	81.3	
Total PeCDD	5.71		6.39		CS 12346-PeCDF	89.2	
Total HxCDD	32.3		34.2		CS 123469-HxCDF	105	
Total HpCDD	127		127		CS 1234689-HpCDF	95.9	
Total TCDF	854		859				
Total PeCDF	37.9		39.4				
Total HxCDF	31.8		31.8				
Total HpCDF	13.5		13.5				
Total PCDD/Fs	**1,960**		**1,970**				
WHO-2005 TEQs							
TEQ: ND=0	178		179				
TEQ: ND=DL/2	178	0.601	179				
TEQ: ND=DL	179	1.2	179				

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Sample ID: 11215131-120321-S-SPS-SW-S-12 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.56 g	Lab Sample ID:	B5969_18712_DF_006	Date Extracted: 06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	81.4 %	QC Batch No.:	18712	Date Analyzed: 09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 0:21:57

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.337)		12479/12468D	[0.688]	J	124679/124689D	24.3		1234679D	86.5	
1379D	(0.337)		12469D	3.02		123468D	0.695	J	1234678D	40.5	
1369D	(0.337)		12368D	(0.477)		123679/123689D	5.63				
1469D	4.49		12478D	(0.477)		123469D	[0.808]	J			
1247D...[4]	(0.337)		12379D	(0.477)		123478D	(0.424)				
1378D	(0.337)		12369D...[3]	0.881	J	123678D	1.18	J			
1268D	(0.337)		12346/12347D	(0.477)		123467D	0.504	J			
1478D	(0.337)		12378D	1.81		123789D	[1.08]	J	**Conc.**	127	
1279D	(0.337)		12367D	(0.477)					**EMPC**	127	
1234/1269D	0.569		12389D	(0.477)							
1236D	(0.337)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	[2]									**(pg/g)**	
1239D	(0.337)								OCDD	708	
2378D	127										
1278D	12.2										
1267D	(0.337)										
1289D	(0.337)										
Conc.	144		**Conc.**	5.71		**Conc.**	32.3				
EMPC	146		**EMPC**	6.39		**EMPC**	34.2				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	178	179
TEQ: ND=DL/2	178	179
TEQ: ND=DL	179	179

	Conc.	EMPC
Total PCDD/Fs	1,960	1,970

Checkcode: 256-296-LGB

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-12 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.56 g	Lab Sample ID:	B5969_18712_DF_006	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	81.4 %	QC Batch No.:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:21:57

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.35)		13468/12468F	(0.287)		123468F	0.453	J	1234678F	6.65	
1468F	0.754		13678F...[3]	0.302	J	124678/134678F	2.59		1234679F	(0.323)	
2468F	1.28		12368F...[3]	6.66		134679F	(0.349)		1234689F	4.53	
1346/1246F	[0.126]	J	14678F	[0.286]	J	124679F	(0.349)		1234789F	2.33	
1347F...[3]	4.97		13479F	(0.24)		124689F	1.48	J			
1348F	1.2		13469/12479F	(0.24)		123467F	(0.349)				
1248F...[3]	20.3		12346F	(0.24)		123478F	19.8				
1268F	7.07		23468/12469F	[0.417]	J	123678F	5.08				
1467F	0.934		12347F	[0.28]	J	123479F	(0.349)				
1478F	17.2		12348F	1.48	J	123469F	(0.349)				
1369/1237F	[4.49]		12378F	13.6		123679F	(0.349)				
2467F	(0.35)		12678/12367F	4.07		234678F	1.07	J	**Conc.**	13.5	
2368F	10.2		12379F	(0.24)		234678/123689F	0		**EMPC**	13.5	
1238F...[5]	26.6		12679F	(0.24)		123689F	(0.349)				
1278F	199		23467/12369F	0.331	J	123789F	(0.347)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.35)		23478F	11.5		123789/123489F	0				
1267F	11		23478/12489F	0		123489F	1.32	J	OCDF	7.89	
2346/1249F	1.64		12489F	(0.24)							
2347/1279F	5.16		12349F	(0.24)							
2348F	38.4		12389F	[0.561]	J						
2378F	428										
2367/3467F	37.4										
1269F	7.39										
1239F	(0.35)										
1289F	35.9										
Conc.	854		**Conc.**	37.9		**Conc.**	31.8				
EMPC	859		**EMPC**	39.4		**EMPC**	31.8				

Checkcode: 256-296-LGB

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-12 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_006
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.56 g	QC Batch No.:	18712
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	09-Dec-2021 00:21
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	127		0.337	127	127	127
12378-PeCDD	1.81		0.477	0.904	1.81	1.81
123478-HxCDD	(0.424)		0.424	(0.0424)	(0.0424)	(0.0424)
123678-HxCDD	1.18	J	0.422	0.118	0.118	0.118
123789-HxCDD	[1.08]	J	0.383	[0.108]	[0.108]	[0.108]
1234678-HpCDD	40.5		0.397	0.405	0.405	0.405
OCDD	708		1.16	0.708	0.0708	0.212
2378-TCDF	428		0.35	42.8	42.8	42.8
12378-PeCDF	13.6		0.241	0.679	0.679	0.407
23478-PeCDF	11.5		0.24	5.73	5.73	3.44
123478-HxCDF	19.8		0.34	1.98	1.98	1.98
123678-HxCDF	5.08		0.322	0.508	0.508	0.508
234678-HxCDF	1.07	J	0.396	0.107	0.107	0.107
123789-HxCDF	(0.347)		0.347	(0.0347)	(0.0347)	(0.0347)
1234678-HpCDF	6.65		0.241	0.0665	0.0665	0.0665
1234789-HpCDF	2.33		0.458	0.0233	0.0233	0.0233
OCDF	7.89		0.849	0.00789	0.000789	0.00237

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TEQ Summaries			
EMPC = 0, ND = 0	181	181	178
EMPC = 0, ND = DL / 2	181	181	178
EMPC = 0, ND = DL	181	181	179
EMPC = 0, < J-level = 0	180	181	178
EMPC = EMPC, ND = 0	181	181	179
EMPC = EMPC, ND = DL / 2	181	181	179
EMPC = EMPC, ND = DL	181	181	179
EMPC = EMPC, < J-level = 0	180	181	178

Checkcode: 256-296-LGB

Sample ID: 11215131-120321-S-SPS-SW-S-11 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.62 g	Lab Sample ID	B5969_18712_DF_007	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	72.2 %	QC Batch No:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:09:31

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	6,820			E	ES 2378-TCDD	84.8	
12378-PeCDD	75.8				ES 12378-PeCDD	79.2	
123478-HxCDD	1.96				ES 123478-HxCDD	86	
123678-HxCDD	10.7				ES 123678-HxCDD	85.4	
123789-HxCDD	4.38				ES 123789-HxCDD	87.8	
1234678-HpCDD	343				ES 1234678-HpCDD	78	
OCDD	4,800				ES OCDD	62	
2378-TCDF	22,500			E	ES 2378-TCDF	77.9	
12378-PeCDF	744				ES 12378-PeCDF	85.5	
23478-PeCDF	529				ES 23478-PeCDF	81.8	
123478-HxCDF	1,380				ES 123478-HxCDF	92.9	
123678-HxCDF	331				ES 123678-HxCDF	97.7	
234678-HxCDF	62.2				ES 234678-HxCDF	92.5	
123789-HxCDF	ND	0.614			ES 123789-HxCDF	90.6	
1234678-HpCDF	492				ES 1234678-HpCDF	91.7	
1234789-HpCDF	160				ES 1234789-HpCDF	90.1	
OCDF	2,410				ES OCDF	65.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	69.3	
Total TCDD	7,620		7,640	E	CS 12347-PeCDD	80.9	
Total PeCDD	101		107		CS 12346-PeCDF	85.4	
Total HxCDD	102		105		CS 123469-HxCDF	96.8	
Total HpCDD	712		712		CS 1234689-HpCDF	99	
Total TCDF	42,700		42,700	E			
Total PeCDF	2,000		2,000				
Total HxCDF	2,070		2,070				
Total HpCDF	826		826				
Total PCDD/Fs	**63,300**		**63,400**	E			
WHO-2005 TEQs							
TEQ: ND=0	9510		9510				
TEQ: ND=DL/2	9510	0.712	9510				
TEQ: ND=DL	9510	1.42	9510				

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Sample ID: 11215131-120321-S-SPS-SW-S-11 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.62 g	Lab Sample ID:	B5969_18712_DF_007	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	72.2 %	QC Batch No.:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:09:31

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.21		12479/12468D	5.02		124679/124689D	49.7		1234679D	369	
1379D	1.97		12469D	3.64		123468D	4.47		1234678D	343	
1369D	(0.31)		12368D	4.81		123679/123689D	31				
1469D	5.29		12478D	4.01		123469D	[1.59]	J			
1247D...[4]	[9.59]		12379D	2.01		123478D	1.96				
1378D	17.4		12369D...[3]	2.68		123678D	10.7				
1268D	[1.43]		12346/12347D	1.58	J	123467D	[1.17]	J			
1478D	10.6		12378D	75.8		123789D	4.38		**Conc.**	712	
1279D	0.889		12367D	[5.45]					**EMPC**	712	
1234/1269D	2.08		12389D	1.85							
1236D	[1.14]								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	104										
1239D	(0.31)								OCDD	4800	
2378D	6820	E									
1278D	654										
1267D	(0.31)										
1289D	[7.52]										
Conc.	7,620		**Conc.**	101		**Conc.**	102				
EMPC	7,640		**EMPC**	107		**EMPC**	105				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	9,510	9,510
TEQ: ND=DL/2	9,510	9,510
TEQ: ND=DL	9,510	9,510

	Conc.	EMPC
Total PCDD/Fs	63,300	63,400

Checkcode: 109-751-YCT

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-11 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.62 g	Lab Sample ID:	B5969_18712_DF_007	Date Extracted: 06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	72.2 %	QC Batch No.:	18712	Date Analyzed: 09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 1:09:31

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.92		13468/12468F	25.2		123468F	13		1234678F	492	
1468F	21.6		13678F...[3]	8.82		124678/134678F	108		1234679F	11.7	
2468F	21.4		12368F...[3]	318		134679F	(0.617)		1234689F	163	
1346/1246F	2.27		14678F	9.69		124679F	1.81		1234789F	160	
1347F...[3]	92.8		13479F	2.29		124689F	59.1				
1348F	54.9		13469/12479F	2.07		123467F	6.88				
1248F...[3]	180		12346F	1.6	J	123478F	1380				
1268F	118		23468/12469F	14.9		123678F	331				
1467F	52.1		12347F	16.3		123479F	10.7				
1478F	319		12348F	69		123469F	7				
1369/1237F	156		12378F	744		123679F	5.38				
2467F	22		12678/12367F	214		234678F	62.2		**Conc.**	826	
2368F	352		12379F	(0.485)		234678/123689F	0		**EMPC**	826	
1238F...[5]	1110	E	12679F	2.21		123689F	(0.617)				
1278F	10700	E	23467/12369F	11		123789F	(0.614)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.294)		23478F	529		123789/123489F	0			**(pg/g)**	
1267F	348		23478/12489F	0		123489F	88.7		OCDF	2410	
2346/1249F	(0.294)		12489F	(0.485)							
2347/1279F	273		12349F	(0.485)							
2348F	2060	E	12389F	30.8							
2378F	22500	E									
2367/3467F	2050	E									
1269F	201										
1239F	40.1										
1289F	2060	E									
Conc.	42,700		**Conc.**	2,000		**Conc.**	2,070				
EMPC	42,700		**EMPC**	2,000		**EMPC**	2,070				

Checkcode: 109-751-YCT

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-11 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_007
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.62 g	QC Batch No.:	18712
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	09-Dec-2021 01:09
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	6820	E	0.31	6820	6820	6820
12378-PeCDD	75.8		0.4	37.9	75.8	75.8
123478-HxCDD	1.96		0.858	0.196	0.196	0.196
123678-HxCDD	10.7		0.82	1.07	1.07	1.07
123789-HxCDD	4.38		0.769	0.438	0.438	0.438
1234678-HpCDD	343		0.369	3.43	3.43	3.43
OCDD	4800		0.806	4.8	0.48	1.44
2378-TCDF	22500	E	0.294	2250	2250	2250
12378-PeCDF	744		0.418	37.2	37.2	22.3
23478-PeCDF	529		0.556	264	264	159
123478-HxCDF	1380		0.632	138	138	138
123678-HxCDF	331		0.542	33.1	33.1	33.1
234678-HxCDF	62.2		0.693	6.22	6.22	6.22
123789-HxCDF	(0.614)		0.614	(0.0614)	(0.0614)	(0.0614)
1234678-HpCDF	492		0.361	4.92	4.92	4.92
1234789-HpCDF	160		0.486	1.6	1.6	1.6
OCDF	2410		0.482	2.41	0.241	0.722

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TEQ Summaries			
EMPC = 0, ND = 0	9600	9630	9510
EMPC = 0, ND = DL / 2	9600	9630	9510
EMPC = 0, ND = DL	9600	9630	9510
EMPC = 0, < J-level = 0	9600	9630	9510
EMPC = EMPC, ND = 0	9600	9630	9510
EMPC = EMPC, ND = DL / 2	9600	9630	9510
EMPC = EMPC, ND = DL	9600	9630	9510
EMPC = EMPC, < J-level = 0	9600	9630	9510

Checkcode: 109-751-YCT

Sample ID: 11215131-120321-S-SPS-SW-S-10 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.67 g	Lab Sample ID	B5969_18712_DF_008	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.6 %	QC Batch No:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:57:09

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	2,000			E	ES 2378-TCDD	84.4	
12378-PeCDD	23.2				ES 12378-PeCDD	78.5	
123478-HxCDD	EMPC		1.56	J	ES 123478-HxCDD	94.9	
123678-HxCDD	6.66				ES 123678-HxCDD	97.2	
123789-HxCDD	3.92				ES 123789-HxCDD	98.7	
1234678-HpCDD	247				ES 1234678-HpCDD	83.9	
OCDD	6,550			E	ES OCDD	59.2	
2378-TCDF	7,240			E	ES 2378-TCDF	86.4	
12378-PeCDF	386				ES 12378-PeCDF	88.6	
23478-PeCDF	245				ES 23478-PeCDF	87.5	
123478-HxCDF	642				ES 123478-HxCDF	106	
123678-HxCDF	151				ES 123678-HxCDF	113	
234678-HxCDF	31.3				ES 234678-HxCDF	103	
123789-HxCDF	ND	1.12			ES 123789-HxCDF	102	
1234678-HpCDF	199				ES 1234678-HpCDF	102	
1234789-HpCDF	74				ES 1234789-HpCDF	93.8	
OCDF	1,040				ES OCDF	61.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	71.1	
Total TCDD	2,240		2,260	E	CS 12347-PeCDD	80.9	
Total PeCDD	31.9		37.4		CS 12346-PeCDF	91.4	
Total HxCDD	69.9		72.9		CS 123469-HxCDF	111	
Total HpCDD	550		550		CS 1234689-HpCDF	106	
Total TCDF	14,300		14,300	E			
Total PeCDF	968		970				
Total HxCDF	968		968				
Total HpCDF	369		369				
Total PCDD/Fs	**27,000**		**27,100**	E			
WHO-2005 TEQs							
TEQ: ND=0	2930		2930				
TEQ: ND=DL/2	2930	0.828	2930				
TEQ: ND=DL	2930	1.66	2930				

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Sample ID: 11215131-120321-S-SPS-SW-S-10 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.67 g	Lab Sample ID:	B5969_18712_DF_008	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.6 %	QC Batch No.:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:57:09

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.45		12479/12468D	[2.34]		124679/124689D	34		1234679D	303	
1379D	[0.821]		12469D	2.56		123468D	3.43		1234678D	247	
1369D	(0.369)		12368D	2.54		123679/123689D	20.4				
1469D	2.9		12478D	1.77		123469D	[1.38]	J			
1247D...[4]	[3.31]		12379D	1.09	J	123478D	[1.56]	J			
1378D	5.72		12369D...[3]	[1.27]	J	123678D	6.66				
1268D	0.593		12346/12347D	0.714	J	123467D	1.57	J			
1478D	5.11		12378D	23.2		123789D	3.92		**Conc.**	550	
1279D	(0.369)		12367D	[1.21]	J				**EMPC**	550	
1234/1269D	[0.885]		12389D	[0.62]	J						
1236D	[0.435]								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	31.7										
1239D	(0.369)								OCDD	6550	E
2378D	2000	E									
1278D	186										
1267D	[10.8]										
1289D	[7.99]										
Conc.	2,240		**Conc.**	31.9		**Conc.**	69.9				
EMPC	2,260		**EMPC**	37.4		**EMPC**	72.9				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	2,930	2,930
TEQ: ND=DL/2	2,930	2,930
TEQ: ND=DL	2,930	2,930

	Conc.	EMPC
Total PCDD/Fs	27,000	27,100

Checkcode: 803-681-WVS

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-10 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.67 g	Lab Sample ID:	B5969_18712_DF_008	Date Extracted: 06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.6 %	QC Batch No.:	18712	Date Analyzed: 09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 1:57:09

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.42		13468/12468F	15.8		123468F	6.82		1234678F	199	
1468F	9.39		13678F...[3]	3.83		124678/134678F	52.9		1234679F	7.55	
2468F	8.28		12368F...[3]	153		134679F	(1.13)		1234689F	88.4	
1346/1246F	(0.565)		14678F	2.86		124679F	(1.13)		1234789F	74	
1347F...[3]	64.5		13479F	0.855	J	124689F	32				
1348F	15.6		13469/12479F	[1.18]	J	123467F	2.97				
1248F...[3]	263		12346F	[0.794]	J	123478F	642				
1268F	99.1		23468/12469F	6.07		123678F	151				
1467F	16.9		12347F	5.56		123479F	(1.13)				
1478F	263		12348F	27.6		123469F	3.6				
1369/1237F	69		12378F	386		123679F	(1.13)				
2467F	9.85		12678/12367F	105		234678F	31.3		**Conc.**	369	
2368F	152		12379F	(0.559)		234678/123689F	0		**EMPC**	369	
1238F...[5]	414		12679F	(0.559)		123689F	(1.13)				
1278F	3450	E	23467/12369F	4.01		123789F	(1.12)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.565)		23478F	245		123789/123489F	0				
1267F	175		23478/12489F	0		123489F	45.3		OCDF	1040	
2346/1249F	28.1		12489F	(0.559)							
2347/1279F	76.8		12349F	(0.559)							
2348F	593		12389F	12.9							
2378F	7240	E									
2367/3467F	594										
1269F	111										
1239F	(0.565)										
1289F	598										
Conc.	14,300		**Conc.**	968		**Conc.**	968				
EMPC	14,300		**EMPC**	970		**EMPC**	968				

Checkcode: 803-681-WVS

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-10 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_008
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	15.67 g	QC Batch No.:	18712
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	09-Dec-2021 01:57
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	2000	E	0.369	2000	2000	2000
12378-PeCDD	23.2		0.379	11.6	23.2	23.2
123478-HxCDD	[1.56]	J	0.652	[0.156]	[0.156]	[0.156]
123678-HxCDD	6.66		0.628	0.666	0.666	0.666
123789-HxCDD	3.92		0.564	0.392	0.392	0.392
1234678-HpCDD	247		0.485	2.47	2.47	2.47
OCDD	6550	E	1.23	6.55	0.655	1.97
2378-TCDF	7240	E	0.565	724	724	724
12378-PeCDF	386		0.512	19.3	19.3	11.6
23478-PeCDF	245		0.607	122	122	73.4
123478-HxCDF	642		1.11	64.2	64.2	64.2
123678-HxCDF	151		0.996	15.1	15.1	15.1
234678-HxCDF	31.3		1.32	3.13	3.13	3.13
123789-HxCDF	(1.12)		1.12	(0.112)	(0.112)	(0.112)
1234678-HpCDF	199		0.405	1.99	1.99	1.99
1234789-HpCDF	74		0.58	0.74	0.74	0.74
OCDF	1040		0.935	1.04	0.104	0.311

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TEQ Summaries			
EMPC = 0, ND = 0	2980	2980	2930
EMPC = 0, ND = DL / 2	2980	2980	2930
EMPC = 0, ND = DL	2980	2980	2930
EMPC = 0, < J-level = 0	2980	2980	2930
EMPC = EMPC, ND = 0	2980	2980	2930
EMPC = EMPC, ND = DL / 2	2980	2980	2930
EMPC = EMPC, ND = DL	2980	2980	2930
EMPC = EMPC, < J-level = 0	2980	2980	2930

Sample ID: 11215131-120321-S-SPS-SW-S-9 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.91 g	Lab Sample ID	B5969_18712_DF_009	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	77.1 %	QC Batch No:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:44:49

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	2,360			E	ES 2378-TCDD	88.1	
12378-PeCDD	26.9				ES 12378-PeCDD	77.5	
123478-HxCDD	3.78				ES 123478-HxCDD	86.5	
123678-HxCDD	9.37				ES 123678-HxCDD	90	
123789-HxCDD	6.93				ES 123789-HxCDD	94.9	
1234678-HpCDD	503				ES 1234678-HpCDD	75.2	
OCDD	17,800			E	ES OCDD	49.5	
2378-TCDF	8,390			E	ES 2378-TCDF	87.1	
12378-PeCDF	323				ES 12378-PeCDF	90.2	
23478-PeCDF	235				ES 23478-PeCDF	84.4	
123478-HxCDF	513				ES 123478-HxCDF	95.5	
123678-HxCDF	122				ES 123678-HxCDF	103	
234678-HxCDF	24.9				ES 234678-HxCDF	96	
123789-HxCDF	ND	1.42			ES 123789-HxCDF	89.5	
1234678-HpCDF	153				ES 1234678-HpCDF	97.6	
1234789-HpCDF	52.1				ES 1234789-HpCDF	81.9	
OCDF	358				ES OCDF	48.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77.8	
Total TCDD	2,620		2,650	E	CS 12347-PeCDD	80.4	
Total PeCDD	37.9		41.5		CS 12346-PeCDF	89	
Total HxCDD	127		127		CS 123469-HxCDF	98.6	
Total HpCDD	1,430		1,430		CS 1234689-HpCDF	94.9	
Total TCDF	16,600		16,600	E			
Total PeCDF	860		861				
Total HxCDF	784		784				
Total HpCDF	292		292				
Total PCDD/Fs	**40,900**		**40,900**	E			
WHO-2005 TEQs							
TEQ: ND=0	3380		3380				
TEQ: ND=DL/2	3380	0.894	3380				
TEQ: ND=DL	3380	1.79	3380				

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Sample ID: 11215131-120321-S-SPS-SW-S-9 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.91 g	Lab Sample ID:	B5969_18712_DF_009	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	77.1 %	QC Batch No.:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:44:49

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.73		12479/12468D	2.5		124679/124689D	55.8		1234679D	926	
1379D	[0.705]		12469D	2.54		123468D	6.24		1234678D	503	
1369D	(0.433)		12368D	2.83		123679/123689D	35.8				
1469D	[1.13]		12478D	2.23		123469D	6.14				
1247D...[4]	[3.99]		12379D	0.991	J	123478D	3.78				
1378D	6.01		12369D...[3]	[1.22]	J	123678D	9.37				
1268D	(0.433)		12346/12347D	[0.551]	J	123467D	3.18				
1478D	5.69		12378D	26.9		123789D	6.93		**Conc.**	1,430	
1279D	(0.433)		12367D	[1.74]					**EMPC**	1,430	
1234/1269D	[0.487]		12389D	(0.366)							
1236D	0.658								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	35.7										
1239D	(0.433)								OCDD	17800	E
2378D	2360	E									
1278D	214										
1267D	[14.5]										
1289D	[10.1]										
Conc.	2,620		**Conc.**	37.9		**Conc.**	127				
EMPC	2,650		**EMPC**	41.5		**EMPC**	127				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	3,380	3,380
TEQ: ND=DL/2	3,380	3,380
TEQ: ND=DL	3,380	3,380

	Conc.	EMPC
Total PCDD/Fs	40,900	40,900

Checkcode: 945-326-PMV

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-9 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.91 g	Lab Sample ID:	B5969_18712_DF_009	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	77.1 %	QC Batch No.:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:44:49

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.44		13468/12468F	11.6		123468F	6.66		1234678F	153	
1468F	11.4		13678F...[3]	3.32		124678/134678F	47.2		1234679F	4.08	
2468F	7.29		12368F...[3]	131		134679F	(1.42)		1234689F	82.4	
1346/1246F	(0.573)		14678F	5.78		124679F	(1.42)		1234789F	52.1	
1347F...[3]	62.7		13479F	0.874	J	124689F	26.6				
1348F	22.3		13469/12479F	(0.545)		123467F	1.93				
1248F...[3]	297		12346F	0.868	J	123478F	513				
1268F	112		23468/12469F	5.16		123678F	122				
1467F	16.5		12347F	6.6		123479F	4.52				
1478F	295		12348F	28.3		123469F	(1.42)				
1369/1237F	80.6		12378F	323		123679F	(1.42)				
2467F	9.02		12678/12367F	92.3		234678F	24.9		**Conc.**	292	
2368F	195		12379F	(0.545)		234678/123689F	0		**EMPC**	292	
1238F...[5]	453		12679F	[0.896]	J	123689F	(1.42)				
1278F	4000	E	23467/12369F	3.89		123789F	(1.42)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.573)		23478F	235		123789/123489F	0				
1267F	206		23478/12489F	0		123489F	36.9		OCDF	358	
2346/1249F	32.3		12489F	(0.545)							
2347/1279F	97.5		12349F	(0.545)							
2348F	747	E	12389F	12.5							
2378F	8390	E									
2367/3467F	686	E									
1269F	133										
1239F	15.6										
1289F	683	E									
Conc.	16,600		**Conc.**	860		**Conc.**	784				
EMPC	16,600		**EMPC**	861		**EMPC**	784				

Checkcode: 945-326-PMV

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-9 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_009
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	14.91 g	QC Batch No.:	18712
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	09-Dec-2021 02:44
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	2360	E	0.433	2360	2360	2360
12378-PeCDD	26.9		0.366	13.4	26.9	26.9
123478-HxCDD	3.78		0.565	0.378	0.378	0.378
123678-HxCDD	9.37		0.539	0.937	0.937	0.937
123789-HxCDD	6.93		0.489	0.693	0.693	0.693
1234678-HpCDD	503		0.709	5.03	5.03	5.03
OCDD	17800	E	1.83	17.8	1.78	5.34
2378-TCDF	8390	E	0.573	839	839	839
12378-PeCDF	323		0.527	16.1	16.1	9.69
23478-PeCDF	235		0.566	118	118	70.6
123478-HxCDF	513		1.45	51.3	51.3	51.3
123678-HxCDF	122		1.25	12.2	12.2	12.2
234678-HxCDF	24.9		1.58	2.49	2.49	2.49
123789-HxCDF	(1.42)		1.42	(0.142)	(0.142)	(0.142)
1234678-HpCDF	153		0.322	1.53	1.53	1.53
1234789-HpCDF	52.1		0.563	0.521	0.521	0.521
OCDF	358		1.19	0.358	0.0358	0.107

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TEQ Summaries			
EMPC = 0, ND = 0	3440	3430	3380
EMPC = 0, ND = DL / 2	3440	3430	3380
EMPC = 0, ND = DL	3440	3430	3380
EMPC = 0, < J-level = 0	3440	3430	3380
EMPC = EMPC, ND = 0	3440	3430	3380
EMPC = EMPC, ND = DL / 2	3440	3430	3380
EMPC = EMPC, ND = DL	3440	3430	3380
EMPC = EMPC, < J-level = 0	3440	3430	3380

Checkcode: 945-326-PMV

Sample ID: 11215131-120321-S-SPS-SW-S-8 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.30 g	Lab Sample ID	B5969_18712_DF_010	Date Extracted:	06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	81.2 %	QC Batch No:	18712	Date Analyzed:	09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:02:25

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	13.7				ES 2378-TCDD	84.9	
12378-PeCDD	1.04			J	ES 12378-PeCDD	81.3	
123478-HxCDD	ND	0.909			ES 123478-HxCDD	90.4	
123678-HxCDD	EMPC		4.22		ES 123678-HxCDD	93.1	
123789-HxCDD	2.97				ES 123789-HxCDD	85.6	
1234678-HpCDD	165				ES 1234678-HpCDD	71.6	
OCDD	2,170				ES OCDD	43.8	
2378-TCDF	54.2				ES 2378-TCDF	74.4	
12378-PeCDF	3.07				ES 12378-PeCDF	83.4	
23478-PeCDF	EMPC		3.83		ES 23478-PeCDF	83.8	
123478-HxCDF	6.42				ES 123478-HxCDF	96.7	
123678-HxCDF	2.92				ES 123678-HxCDF	103	
234678-HxCDF	2.5				ES 234678-HxCDF	92.5	
123789-HxCDF	ND	0.533			ES 123789-HxCDF	92.2	
1234678-HpCDF	25.3				ES 1234678-HpCDF	91.2	
1234789-HpCDF	3.08				ES 1234789-HpCDF	80.7	
OCDF	124				ES OCDF	47.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77.1	
Total TCDD	20		21.3		CS 12347-PeCDD	85.9	
Total PeCDD	7.24		10		CS 12346-PeCDF	85.6	
Total HxCDD	63.3		67.5		CS 123469-HxCDF	101	
Total HpCDD	475		475		CS 1234689-HpCDF	92.7	
Total TCDF	113		137				
Total PeCDF	16.7		31				
Total HxCDF	37.7		37.7				
Total HpCDF	61.4		61.4				
Total PCDD/Fs	**3,090**		**3,130**				
WHO-2005 TEQs							
TEQ: ND=0	24.3		25.9				
TEQ: ND=DL/2	24.4	0.744	26				
TEQ: ND=DL	24.5	1.49	26				

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Sample ID: 11215131-120321-S-SPS-SW-S-8 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.30 g	Lab Sample ID:	B5969_18712_DF_010	Date Extracted: 06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	81.2 %	QC Batch No.:	18712	Date Analyzed: 09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 6:02:25

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.51		12479/12468D	2.24		124679/124689D	32.9		1234679D	310	
1379D	(0.413)		12469D	2.96		123468D	4.89		1234678D	165	
1369D	(0.413)		12368D	0.996	J	123679/123689D	19				
1469D	4.83		12478D	[0.62]	J	123469D	2.35				
1247D...[4]	(0.413)		12379D	[0.651]	J	123478D	(0.909)				
1378D	(0.413)		12369D...[3]	[1.23]	J	123678D	[4.22]				
1268D	(0.413)		12346/12347D	[0.3]	J	123467D	1.17	J			
1478D	(0.413)		12378D	1.04	J	123789D	2.97		**Conc.**	475	
1279D	(0.413)		12367D	(0.456)					**EMPC**	475	
1234/1269D	(0.413)		12389D	(0.456)							
1236D	(0.413)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.413)										
1239D	(0.413)								OCDD	2170	
2378D	13.7										
1278D	[1.29]										
1267D	(0.413)										
1289D	(0.413)										
Conc.	20		**Conc.**	7.24		**Conc.**	63.3				
EMPC	21.3		**EMPC**	10		**EMPC**	67.5				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	24.3	25.9
TEQ: ND=DL/2	24.4	26
TEQ: ND=DL	24.5	26

	Conc.	EMPC
Total PCDD/Fs	3,090	3,130

Checkcode: 784-880-PDH

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-8 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.30 g	Lab Sample ID:	B5969_18712_DF_010	Date Extracted: 06-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	81.2 %	QC Batch No.:	18712	Date Analyzed: 09-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 6:02:25

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.419)		13468/12468F	[5.21]		123468F	3.21		1234678F	25.3	
1468F	(0.419)		13678F...[3]	2.9		124678/134678F	11.9		1234679F	2.11	
2468F	2.01		12368F...[3]	6.16		134679F	(0.51)		1234689F	30.9	
1346/1246F	[0.694]		14678F	[1.04]	J	124679F	(0.51)		1234789F	3.08	
1347F...[3]	2.99		13479F	(0.246)		124689F	7.82				
1348F	[0.397]		13469/12479F	0.374	J	123467F	1.95				
1248F...[3]	3.69		12346F	0.666	J	123478F	6.42				
1268F	1.47		23468/12469F	2.01		123678F	2.92				
1467F	0.784		12347F	[0.765]	J	123479F	(0.51)				
1478F	2.91		12348F	[0.789]	J	123469F	(0.51)				
1369/1237F	1.4		12378F	3.07		123679F	(0.51)				
2467F	[1.25]		12678/12367F	[2.43]		234678F	2.5		**Conc.**	61.4	
2368F	4.62		12379F	(0.246)		234678/123689F	0		**EMPC**	61.4	
1238F...[5]	3.74		12679F	(0.246)		123689F	(0.51)				
1278F	19.7		23467/12369F	1.56		123789F	(0.533)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.419)		23478F	[3.83]		123789/123489F	0				
1267F	[2.2]		23478/12489F	0		123489F	0.949	J	OCDF	124	
2346/1249F	(0.419)		12489F	(0.246)							
2347/1279F	1.68		12349F	(0.246)							
2348F	4.47		12389F	[0.197]	J						
2378F	54.2										
2367/3467F	8.83										
1269F	[1.32]										
1239F	(0.419)										
1289F	[18.1]										
Conc.	113		**Conc.**	16.7		**Conc.**	37.7				
EMPC	137		**EMPC**	31		**EMPC**	37.7				

Checkcode: 784-880-PDH

Report Created: 09-Dec-2021 10:42 Analyst: pw

Sample ID: 11215131-120321-S-SPS-SW-S-8 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5969_18712_DF_010
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	16.30 g	QC Batch No.:	18712
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	09-Dec-2021 06:02
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	13.7		0.413	13.7	13.7	13.7
12378-PeCDD	1.04	J	0.456	0.52	1.04	1.04
123478-HxCDD	(0.909)		0.909	(0.0909)	(0.0909)	(0.0909)
123678-HxCDD	[4.22]		0.995	[0.422]	[0.422]	[0.422]
123789-HxCDD	2.97		0.895	0.297	0.297	0.297
1234678-HpCDD	165		0.423	1.65	1.65	1.65
OCDD	2170		1.36	2.17	0.217	0.651
2378-TCDF	54.2		0.419	5.42	5.42	5.42
12378-PeCDF	3.07		0.249	0.154	0.154	0.0921
23478-PeCDF	[3.83]		0.243	[1.92]	[1.92]	[1.15]
123478-HxCDF	6.42		0.497	0.642	0.642	0.642
123678-HxCDF	2.92		0.471	0.292	0.292	0.292
234678-HxCDF	2.5		0.552	0.25	0.25	0.25
123789-HxCDF	(0.533)		0.533	(0.0533)	(0.0533)	(0.0533)
1234678-HpCDF	25.3		0.261	0.253	0.253	0.253
1234789-HpCDF	3.08		0.384	0.0308	0.0308	0.0308
OCDF	124		0.857	0.124	0.0124	0.0373

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TEQ Summaries			
EMPC = 0, ND = 0	25.5	23.9	24.3
EMPC = 0, ND = DL / 2	25.5	24	24.4
EMPC = 0, ND = DL	25.6	24.1	24.5
EMPC = 0, < J-level = 0	25	22.9	23.3
EMPC = EMPC, ND = 0	27.8	26.3	25.9
EMPC = EMPC, ND = DL / 2	27.9	26.3	26
EMPC = EMPC, ND = DL	28	26.4	26
EMPC = EMPC, < J-level = 0	27.3	25.2	24.9

Checkcode: 784-880-PDH

SGS North America - DF v0.99

Sample ID: Method Blank B5969_18712 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18712_DF_SDS	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:36:29

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.478			ES 2378-TCDD	87.5	
12378-PeCDD	ND	0.356			ES 12378-PeCDD	71.4	
123478-HxCDD	ND	0.46			ES 123478-HxCDD	95.4	
123678-HxCDD	ND	0.485			ES 123678-HxCDD	96.7	
123789-HxCDD	ND	0.46			ES 123789-HxCDD	91	
1234678-HpCDD	ND	0.536			ES 1234678-HpCDD	76.8	
OCDD	ND	1.83			ES OCDD	45.4	
2378-TCDF	ND	0.362			ES 2378-TCDF	84.3	
12378-PeCDF	ND	0.365			ES 12378-PeCDF	84.4	
23478-PeCDF	ND	0.36			ES 23478-PeCDF	81.3	
123478-HxCDF	ND	0.313			ES 123478-HxCDF	104	
123678-HxCDF	ND	0.286			ES 123678-HxCDF	116	
234678-HxCDF	ND	0.34			ES 234678-HxCDF	103	
123789-HxCDF	ND	0.356			ES 123789-HxCDF	94.2	
1234678-HpCDF	ND	0.255			ES 1234678-HpCDF	99.7	
1234789-HpCDF	ND	0.364			ES 1234789-HpCDF	77	
OCDF	ND	1.32			ES OCDF	46.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	83.7	
Total TCDD	ND	0.478	ND		CS 12347-PeCDD	80.7	
Total PeCDD	ND	0.356	ND		CS 12346-PeCDF	86.2	
Total HxCDD	ND	0.468	ND		CS 123469-HxCDF	113	
Total HpCDD	ND	0.536	ND		CS 1234689-HpCDF	102	
Total TCDF	ND	0.362	ND				
Total PeCDF	ND	0.362	ND				
Total HxCDF	ND	0.32	ND				
Total HpCDF	ND	0.299	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.636	0.636	0.636				
TEQ: ND=DL	1.27	1.27	1.27				

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Sample ID: Method Blank B5969_18712 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18712_DF_SDS	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:36:29

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.478)		12479/12468D	(0.356)		124679/124689D	(0.468)		1234679D	(0.536)	
1379D	(0.478)		12469D	(0.356)		123468D	(0.468)		1234678D	(0.536)	
1369D	(0.478)		12368D	(0.356)		123679/123689D	(0.468)				
1469D	(0.478)		12478D	(0.356)		123469D	(0.468)				
1247D...[4]	(0.478)		12379D	(0.356)		123478D	(0.46)				
1378D	(0.478)		12369D...[3]	(0.356)		123678D	(0.485)				
1268D	(0.478)		12346/12347D	(0.356)		123467D	(0.468)				
1478D	(0.478)		12378D	(0.356)		123789D	(0.46)		**Conc.**	0	
1279D	(0.478)		12367D	(0.356)					**EMPC**	0	
1234/1269D	(0.478)		12389D	(0.356)							
1236D	(0.478)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	(0.478)									**(pg/g)**	
1239D	(0.478)								OCDD	(1.83)	
2378D	(0.478)										
1278D	(0.478)										
1267D	(0.478)										
1289D	(0.478)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.636	0.636
TEQ: ND=DL	1.27	1.27

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 825-601-WBB

Report Created: 09-Dec-2021 10:41 Analyst: pw

Sample ID: Method Blank B5969_18712 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18712_DF_SDS	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:36:29

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.362)		13468/12468F	(0.444)		123468F	(0.32)		1234678F	(0.255)	
1468F	(0.362)		13678F...[3]	(0.362)		124678/134678F	(0.32)		1234679F	(0.299)	
2468F	(0.362)		12368F...[3]	(0.362)		134679F	(0.32)		1234689F	(0.299)	
1346/1246F	(0.362)		14678F	(0.362)		124679F	(0.32)		1234789F	(0.364)	
1347F...[3]	(0.362)		13479F	(0.362)		124689F	(0.32)				
1348F	(0.362)		13469/12479F	(0.362)		123467F	(0.32)				
1248F...[3]	(0.362)		12346F	(0.362)		123478F	(0.313)				
1268F	(0.362)		23468/12469F	(0.362)		123678F	(0.286)				
1467F	(0.362)		12347F	(0.362)		123479F	(0.32)				
1478F	(0.362)		12348F	(0.362)		123469F	(0.32)				
1369/1237F	(0.362)		12378F	(0.365)		123679F	(0.32)				
2467F	(0.362)		12678/12367F	(0.362)		234678F	(0.34)		**Conc.**	0	
2368F	(0.362)		12379F	(0.362)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.362)		12679F	(0.362)		123689F	(0.32)				
1278F	(0.362)		23467/12369F	(0.362)		123789F	(0.356)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.362)		23478F	(0.36)		123789/123489F	0				
1267F	(0.362)		23478/12489F	0		123489F	(0.32)		OCDF	(1.32)	
2346/1249F	(0.362)		12489F	(0.362)							
2347/1279F	(0.362)		12349F	(0.362)							
2348F	(0.362)		12389F	(0.362)							
2378F	(0.362)										
2367/3467F	(0.362)										
1269F	(0.362)										
1239F	(0.362)										
1289F	(0.362)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 825-601-WBB

Report Created: 09-Dec-2021 10:41 Analyst: pw

Sample ID: Method Blank B5969_18712 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18712_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18712
Date Collected:	n/a	Split:	-	Date Extracted:	06-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	08-Dec-2021 19:36
Lab Project No:	B5969	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.478)		0.478	(0.478)	(0.478)	(0.478)
12378-PeCDD	(0.356)		0.356	(0.178)	(0.356)	(0.356)
123478-HxCDD	(0.46)		0.46	(0.046)	(0.046)	(0.046)
123678-HxCDD	(0.485)		0.485	(0.0485)	(0.0485)	(0.0485)
123789-HxCDD	(0.46)		0.46	(0.046)	(0.046)	(0.046)
1234678-HpCDD	(0.536)		0.536	(0.00536)	(0.00536)	(0.00536)
OCDD	(1.83)		1.83	(0.00183)	(0.000183)	(0.00055)
2378-TCDF	(0.362)		0.362	(0.0362)	(0.0362)	(0.0362)
12378-PeCDF	(0.365)		0.365	(0.0182)	(0.0182)	(0.0109)
23478-PeCDF	(0.36)		0.36	(0.18)	(0.18)	(0.108)
123478-HxCDF	(0.313)		0.313	(0.0313)	(0.0313)	(0.0313)
123678-HxCDF	(0.286)		0.286	(0.0286)	(0.0286)	(0.0286)
234678-HxCDF	(0.34)		0.34	(0.034)	(0.034)	(0.034)
123789-HxCDF	(0.356)		0.356	(0.0356)	(0.0356)	(0.0356)
1234678-HpCDF	(0.255)		0.255	(0.00255)	(0.00255)	(0.00255)
1234789-HpCDF	(0.364)		0.364	(0.00364)	(0.00364)	(0.00364)
OCDF	(1.32)		1.32	(0.00132)	(0.000132)	(0.000396)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.587	0.675	0.636
EMPC = 0, ND = DL	1.17	1.35	1.27
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.587	0.675	0.636
EMPC = EMPC, ND = DL	1.17	1.35	1.27
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 825-601-WBB

SGS North America - DF v0.99

Sample ID: 0_18712_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18712_DF	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:13:48

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	9.8				ES 2378-TCDD	89.3	
12378-PeCDD	49.3				ES 12378-PeCDD	71.8	
123478-HxCDD	53.7				ES 123478-HxCDD	96	
123678-HxCDD	58				ES 123678-HxCDD	99.6	
123789-HxCDD	49.2				ES 123789-HxCDD	101	
1234678-HpCDD	57.3				ES 1234678-HpCDD	78.6	
OCDD	106				ES OCDD	47.3	
2378-TCDF	12.5				ES 2378-TCDF	78.3	
12378-PeCDF	54.6				ES 12378-PeCDF	80	
23478-PeCDF	59.5				ES 23478-PeCDF	77.8	
123478-HxCDF	57.4				ES 123478-HxCDF	103	
123678-HxCDF	53.6				ES 123678-HxCDF	114	
234678-HxCDF	55.8				ES 234678-HxCDF	106	
123789-HxCDF	52.4				ES 123789-HxCDF	93.9	
1234678-HpCDF	54.8				ES 1234678-HpCDF	101	
1234789-HpCDF	54.3				ES 1234789-HpCDF	77.9	
OCDF	108				ES OCDF	47.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	78.8	
Total TCDD	42.6		42.6		CS 12347-PeCDD	78.6	
Total PeCDD	73.7		73.7		CS 12346-PeCDF	82.2	
Total HxCDD	177		177		CS 123469-HxCDF	113	
Total HpCDD	72.4		72.4		CS 1234689-HpCDF	99.4	
Total TCDF	66.1		66.1				
Total PeCDF	228		228				
Total HxCDF	357		357				
Total HpCDF	109		109				
Total PCDD/Fs	**1,340**		**1,340**				
WHO-2005 TEQs							
TEQ: ND=0	120		120				
TEQ: ND=DL/2	120	0.39	120				
TEQ: ND=DL	120	0.78	120				

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Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: 0_18712_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5969	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18712_DF	Date Extracted:	06-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18712	Date Analyzed:	08-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	18:01:22

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	9.49				ES 2378-TCDD	92.6	
12378-PeCDD	47.4				ES 12378-PeCDD	85.5	
123478-HxCDD	53.5				ES 123478-HxCDD	94	
123678-HxCDD	57.8				ES 123678-HxCDD	93.9	
123789-HxCDD	53.3				ES 123789-HxCDD	90.1	
1234678-HpCDD	57.7				ES 1234678-HpCDD	72.3	
OCDD	112				ES OCDD	43.4	
2378-TCDF	11.8				ES 2378-TCDF	82.1	
12378-PeCDF	55.2				ES 12378-PeCDF	92.3	
23478-PeCDF	60.4				ES 23478-PeCDF	89.8	
123478-HxCDF	53.9				ES 123478-HxCDF	105	
123678-HxCDF	53.6				ES 123678-HxCDF	115	
234678-HxCDF	53.1				ES 234678-HxCDF	103	
123789-HxCDF	51.9				ES 123789-HxCDF	94.3	
1234678-HpCDF	54.9				ES 1234678-HpCDF	91.2	
1234789-HpCDF	54				ES 1234789-HpCDF	76	
OCDF	108				ES OCDF	44.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	88.7	
Total TCDD	44.5		44.5		CS 12347-PeCDD	94.1	
Total PeCDD	69.6		69.6		CS 12346-PeCDF	93.4	
Total HxCDD	180		180		CS 123469-HxCDF	112	
Total HpCDD	73		73		CS 1234689-HpCDF	97.5	
Total TCDF	69.6		69.6				
Total PeCDF	237		237				
Total HxCDF	349		349				
Total HpCDF	109		109				
Total PCDD/Fs	**1,350**		**1,350**				
WHO-2005 TEQs							
TEQ: ND=0	117		117				
TEQ: ND=DL/2	117	0.333	117				
TEQ: ND=DL	117	0.667	117				

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Sample DUP

Method 1613B

Sample ID: 0_18712_OPR001

Analyte	OPR1_18712_DF pg/uL	OPR2_18712_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	9.8	9.49	3.2%
1,2,3,7,8-PeCDD	49.3	47.4	3.8%
1,2,3,4,7,8-HxCDD	53.7	53.5	0.5%
1,2,3,6,7,8-HxCDD	58	57.8	0.4%
1,2,3,7,8,9-HxCDD	49.2	53.3	8.0%
1,2,3,4,6,7,8-HpCDD	57.3	57.7	0.7%
OCDD	106	112	5.1%
2,3,7,8-TCDF	12.5	11.8	6.3%
1,2,3,7,8-PeCDF	54.6	55.2	1.1%
2,3,4,7,8-PeCDF	59.5	60.4	1.4%
1,2,3,4,7,8-HxCDF	57.4	53.9	6.3%
1,2,3,6,7,8-HxCDF	53.6	53.6	0.0%
2,3,4,6,7,8-HxCDF	55.8	53.1	5.0%
1,2,3,7,8,9-HxCDF	52.4	51.9	0.9%
1,2,3,4,6,7,8-HpCDF	54.8	54.9	0.2%
1,2,3,4,7,8,9-HpCDF	54.3	54	0.5%
OCDF	108	108	0.2%
Totals			
Total TCDD	42.6	44.5	4.5%
Total PeCDD	73.7	69.6	5.7%
Total HxCDD	177	180	1.7%
Total HpCDD	72.4	73	0.8%
Total TCDF	66.1	69.6	5.3%
Total PeCDF	228	237	3.6%
Total HxCDF	357	349	2.5%
Total HpCDF	109	109	0.2%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*04-Dec-21 at 11:30*
AP Project name:	*B5969*
Requested TAT:	*3 business days*
Projected due date:	*9-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120221-S-JC-SW-S-3	B5969_001	Solid	1	4oz Amber	02-Dec-21	13:30	0.3	1	4905 2704 1992
11215131-120221-S-JC-SW-S-4	B5969_002	Solid	1	4oz Amber	02-Dec-21	13:40	0.3	1	4905 2704 1992
11215131-120321-S-JC-SW-S-5	B5969_003	Solid	1	4oz Amber	03-Dec-21	09:40	0.3	1	4905 2704 1992
11215131-120221-S-SPS-SW-S-7	B5969_004	Solid	1	4oz Amber	02-Dec-21	13:25	0.5	3	4905 2704 2017
11215131-120221-S-SPS-SW-S-6	B5969_005	Solid	1	4oz Amber	02-Dec-21	14:00	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-S-12	B5969_006	Solid	1	4oz Amber	03-Dec-21	08:45	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-S-11	B5969_007	Solid	1	4oz Amber	03-Dec-21	09:30	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-S-10	B5969_008	Solid	1	4oz Amber	03-Dec-21	10:30	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-S-9	B5969_009	Solid	1	4oz Amber	03-Dec-21	10:55	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-S-8	B5969_010	Solid	1	4oz Amber	03-Dec-21	11:05	0.5	3	4905 2704 2017

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Iesha L. Clinton *Logged in by: Ashley Owens* *QC'ed by:* TB 12/6/2021

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS

CHAIN OF CUSTODY

1/3

B5969

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remark

REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV

SPECIAL DELIVERABLES:

☐ DoD ■ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400, Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION (BN)	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS SEESSOW
11215131-120221-S-JC-SW-S-3	12-2-21	1330 (BN)	C	S	4 oz	X				1	RUSH *
11215131-120221-S-JC-SW-S-4	↓	1340	↓	↓	4 oz	X				1	RUSH *
11215131-120221-S-JC-SW-O-2	↓	1350	↓	↓	4 oz	X				1	
11215131-120221-S-JC-SW-B-2	↓	1400	↓	↓	4 oz	X				1	
11215131-120221-S-JC-SW-B-2H	↓	1410	↓	↓	4 oz	X				1	HOLD
(BN) ~~11215131-120221-S-JC-RB-1~~	↓	~~1500~~	—	~~we~~	~~4 oz~~ 1-oz	*				~~2R~~	(BN)
11215131-120321-S-JC-SW-S-5	12-3-21	0940	C	S	4 oz	X				1	RUSH *
11215131-120321-S-JC-SW-B-3	↓	0950	↓	↓	4 oz	X				1	
11215131-120321-S-JC-SW-B-3H	↓	1000	↓	↓	4 oz	X				1	HOLD
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Breanna Norsh	12-3-21	1230	[signature]
RELINQUISHED BY (2): [signature]	12-3-21	1345	RECEIVED BY: [signature]
RELINQUISHED BY (3): [signature]	12/3/21	1700	RECEIVED BY: Fedex

RECEIVED BY LABORATORY:	DATE:	TIME:
[signature]	12/4/21	11:30

COOLER SEAL: ☑ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☑ INTACT ☐ BROKEN ☐ ABSENT

CARRIER: TEMP: °C 0.3°C

TRACKING #:

* = Samples in this project.

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SGS

CHAIN OF CUSTODY

B5969 2/3

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS
11215131-120221-S-SPS-SW-S-7	12/2/21	1325	C	S	4 oz	X				1	RUSH *
11215131-120221-S-SPS-SW-S-6		1400			4 oz	X					RUSH *
11215131-120221-S-SPS-SW-D-3		1420			4 oz	X					D is overwritten not zero (SW-C)
11215131-120221-S-SPS-SW-B-4		1425			4 oz	X					
11215131-120221-S-SPS-SW-B-4H1		1430			4 oz	X					HOLD
11215131-120221-S-SPS-SW-B-4H2		1435			4 oz	X					HOLD
11215131-120321-S-SPS-SW-S-12	12/3/21	845			4 oz	X					RUSH *
11215131-120321-S-SPS-SW-S-11		930			4 oz	X					RUSH *
11215131-120321-S-SPS-SW-D-5		925			4 oz	X					D is overwritten
11215131-120321-S-SPS-SW-S-10		1030			4 oz	X					RUSH *

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Stephen Sellers	12/3/21	1230	Eddie Castro
RELINQUISHED BY (2): Eddie Castro	12/3/21	1325	RECEIVED BY:
RELINQUISHED BY (3):	DATE:	TIME:	RECEIVED BY:

RECEIVED BY LABORATORY:	DATE:	TIME:
Josh Clinton	12/4/21	11:30

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT

CARRIER: TEMP: °C 0.5 °C

TRACKING #:

*=Samples in this project.

Page 1 of 2

CHAIN OF CUSTODY

B59169 3/3

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV
SPECIAL DELIVERABLES:
☐ DoD ■ EDD Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120321-S-SPS-SW-S-9	12/3/21	1055	C	S	4 oz		X					RUSH *
11215131-120321-S-SPS-SW-S-8		1105			4 oz		X					RUSH *
11215131-120321-S-SPS-SW-0-4		1110			4 oz		X					0 is for Overburden SW-0
11215131-120321-S-SPS-SW-B-5		1115			4 oz		X					
11215131-120321-S-SPSSW-B-SH		1120			4 oz		X					HOLD
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							

COLLECTED/RELINQUISHED BY (1): Stephen Salter	DATE: 12/3/21	TIME: 1230	RECEIVED BY: Eddie Carter	RECEIVED BY LABORATORY: Jessica Clinton DATE: 12/4/21 TIME: 1130
RELINQUISHED BY (2): Eddie Carter	DATE: 12/3/21	TIME: 1325	RECEIVED BY:	COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT
RELINQUISHED BY (3):	DATE: 12/3/21	TIME: 1700	RECEIVED BY:	CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT
				CARRIER: TEMP: °C 0.5°C
				TRACKING #:

*=Samples in this project.

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B59169 1/2

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 03DEC21
ACTWGT: 45.00 LB MAN
CAD: 0317565/CAFE3313

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/4/2021
11:30
0.3° (T.B.)

FedEx Express

1 of 3

TRK# 0201 4905 2704 1992

SATURDAY 12:00P
PRIORITY OVERNIGHT

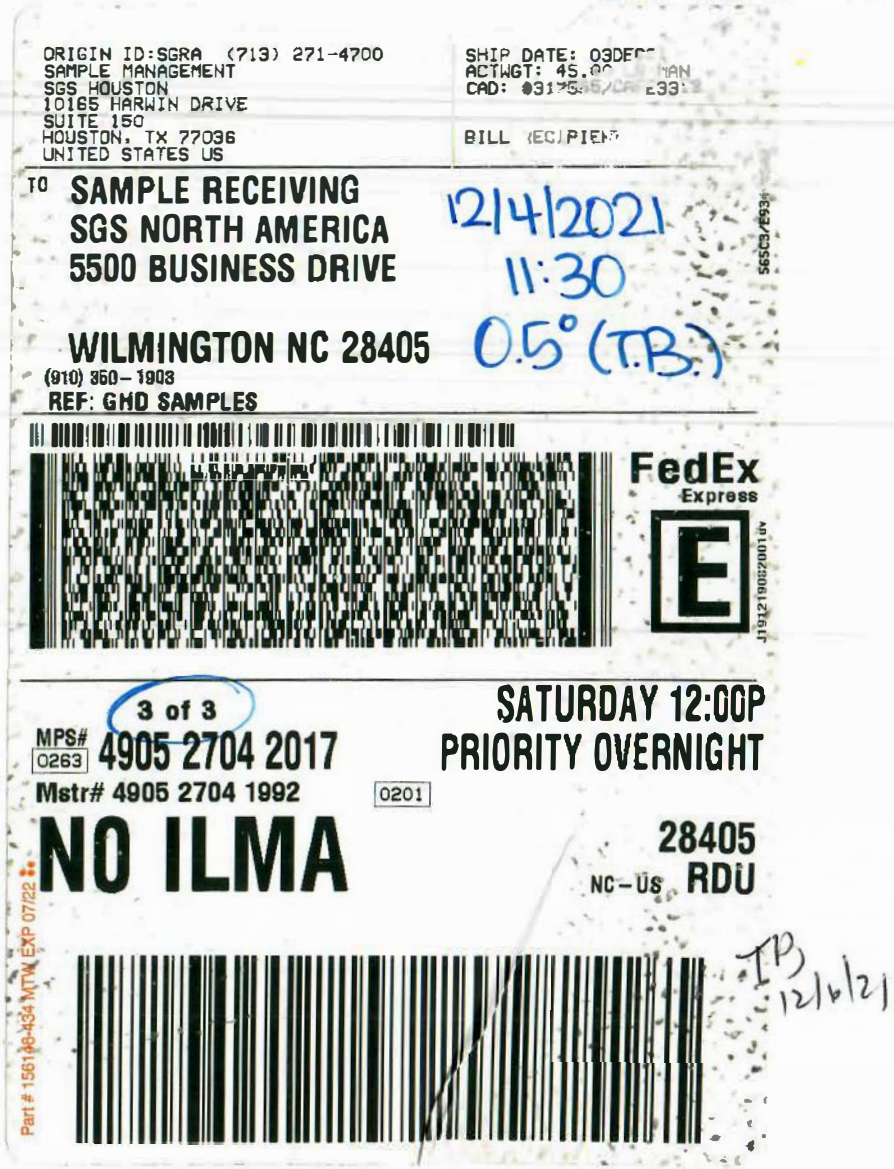
MASTER

NO ILMA

28405
NC-US RDU

TB
12/6/21

B5969 2/2



ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 03DEC
ACTWGT: 45.00 LB MAN
CAD: 0317545/CAFE3312

BILL RECIPIENT

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/4/2021
11:30
0.5° (T.B.)

FedEx Express

E

J191219082001dv

3 of 3

MPS# 0263 4905 2704 2017
Mstr# 4905 2704 1992 0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

NO ILMA

28405
NC-US RDU

TB 12/6/21

Part # 156198-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5969

Initiation Date: 06-Dec-21

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 3 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Read and understood, initial and date: Prep Lab: KE 12/6/21 RJB 12/7/21 HRMS Lab:

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: tburkamper Date: 06-Dec-2021

SGS

Methods: PCB / PAH; PCDD/F / WHO-2; QUANTICS / USV; DoD PCDD/F / PEST

Extraction Type: SDS / CLL; TALEX Carbon SPE

Solid

Final Volume: 20 mL

Batch# 18712

Split: ~~1/2~~ ~~1/4~~

Extract Initial/Date: KE 12/6/21

Clean-up Initial/Date: RDD 12/7/21

Transfer Init/Date: RDD 12/7/21

Lab Sample ID	Extraction Position (Solvent: TOL)	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5969_18712_001	4	20.03				gray, clay-like
B5969_18712_002	5	24.53				gray, clay-like
B5969_18712_003	6	24.01				gray, clay-like
B5969_18712_004	7	21.71				gray, clay-like
B5969_18712_005	8	19.77				gray, clay-like
B5969_18712_006	9	17.89				gray, clay-like
B5969_18712_007	10	20.25				gray, clay-like
B5969_18712_008	11	19.94				gray, clay-like
B5969_18712_009	12	19.35				gray, clay-like
B5969_18712_010	13	20.08				gray-brown, clay-like
MB1_18712	1	10.00				sodium sulfate
OPR1_18712	2	10.00				sodium sulfate
OPR2_18712	3	10.00				sodium sulfate

CC 09Dec21

Supply IDs	
Toluene	STL14.20
MeCHL	STL14.2
Florisil	SPL5.66
Hexane	STL14.19
Silica	SPL5.28D
S Nitrate	N/A
Base Silica	SPL5.63
HydroMatrix	N/A
Tetradecane	SPL5.28B
H_2SO_4	N/A
A Silica	SPL5.65
Sodium Sulfate	SPL5.28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	CC 09Dec21
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1616
	Stop: 0900
HEX	Start:
	Stop:
DCM	Start:
	Stop:

RDD 12/8/21

CC 09Dec21

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18712

Inter-Department Communication Sheet

SGS

Wt. Volume Results

Batch #: 18712 **Comments:**

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5969_001	0.79	3.92	3.16	75.72%	75.72%			13.21	20.03	15.17
B5969_002	0.79	4.36	3.52	76.47%	76.47%			13.08	24.53	18.76
B5969_003	0.79	3.83	3.12	76.64%	76.64%			13.05	24.01	18.4
B5969_004	0.81	4.12	3.31	75.53%	75.53%			13.24	21.71	16.4
B5969_005	0.81	3.85	3.15	76.97%	76.97%			12.99	19.77	15.22
B5969_006	0.81	4.57	3.87	81.38%	81.38%			12.29	17.89	14.56
B5969_007	0.81	4.3	3.33	72.21%	72.21%			13.85	20.25	14.62
B5969_008	0.81	4.22	3.49	78.59%	78.59%			12.72	19.94	15.67
B5969_009	0.81	4.17	3.4	77.08%	77.08%			12.97	19.35	14.91
B5969_010	0.8	4.47	3.78	81.20%	81.20%			12.32	20.08	16.3

reviewed

12/09/21

% Solid Determination WorkSheet

SGS

Batch: 18712

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5969_18712_001	0.79	3.92	3.16	
B5969_18712_002	0.79	4.36	3.52	
B5969_18712_003	0.79	3.83	3.12	
B5969_18712_004	0.81	4.12	3.31	
B5969_18712_005	0.81	3.85	3.15	
B5969_18712_006	0.81	4.57	3.87	
B5969_18712_007	0.81	4.30	3.33	
B5969_18712_008	0.81	4.22	3.49	
B5969_18712_009	0.81	4.17	3.40	
B5969_18712_010	0.80	4.47	3.78	

09 Dec 21

12/8/21

Date/Initials: 12/7/21 KE

SGS

Methods: PCB / PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Solid

Batch # 18712

Spiker Initials/Date:	JRH 12/6/21	JRH 12/6/21	JRH 12/6/21	RDB 12/7/21	RDB 12/7/21		
Lab Sample ID	D/F Ax-A Amount: 20µL Observer Initials	D/F Ax-B Amount: 20µL Observer Initials	D/F ES Amount: 20µL Observer Initials	D/F CS Amount: 20µL Observer Initials	D/F JS Amount: 20µL Observer Initials	Amount: Observer Initials	Amount: Observer Initials
B5969_18712_001	—	—	KE	KE	KE		
B5969_18712_002	—	—	KE	KE	KE		
B5969_18712_003	—	—	KE	KE	KE		
B5969_18712_004	—	—	KE	KE	KE		
B5969_18712_005	—	—	KE	KE	KE		
B5969_18712_006	—	—	KE	KE	KE		
B5969_18712_007	—	—	KE	KE	KE		
B5969_18712_008	—	—	KE	KE	KE		
B5969_18712_009	—	—	KE	KE	KE		
B5969_18712_010	—	—	KE	KE	KE		
MB1_18712	—	—	KE	KE	KE		
OPR1_18712	KE	KE	KE	KE	KE		
OPR2_18712	KE	KE	KE	KE	KE		

RDB 12/8/21

RDB 12/8/21

Standard Information

Pipette ID					
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS
SIL #	24-15-4	25-187-2	26-1-7	25.273.1	25.309.1
Concentration	100pg/µL	100pg/µL	100pg/µL	100 pg/µL	100 pg/µL
Expiration Date	7/9/28	6/22/22	8/2028	9/8/22	10/8/22

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
0	211208R01	3	CS3_211208_DF_RA ✓	1.00	SIL 25-347-1	PSW	442-607	08-Dec-2021	16:27:04
1	211208R02	32	OPR1_18712_DF	1.00	0_18712_OPR001	PSW	098-240	08-Dec-2021	17:13:48
2	211208R03	33	OPR2_18712_DF	1.00	0_18712_OPR002	PSW	754-873	08-Dec-2021	18:01:22
3	211208R04	2	SBS_211208_DF_RA	1.00	SIL 20-61-1	PSW	290-577	08-Dec-2021	18:48:55
4	211208R05	31	MB1_18712_DF_SDS	10.00	Method Blank	PSW	825-601	08-Dec-2021	19:36:29
5	211208R06	34	B5969_18712_DF_001	15.17	11215131-120221-S-JC-SW-S-3	PSW	866-721	08-Dec-2021	20:24:03
6	211208R07	35	B5969_18712_DF_002	18.76	11215131-120221-S-JC-SW-S-4	PSW	750-531	08-Dec-2021	21:11:35
7	211208R08	36	B5969_18712_DF_003	18.40	11215131-120321-S-JC-SW-S-5	PSW	117-914	08-Dec-2021	21:59:10
8	211208R09	37	B5969_18712_DF_004	16.40	11215131-120221-S-SPS-SW-S-7	PSW	834-918	08-Dec-2021	22:46:44
9	211208R10	38	B5969_18712_DF_005	15.22	11215131-120221-S-SPS-SW-S-6	PSW	921-596	08-Dec-2021	23:34:22
10	211208R11	39	B5969_18712_DF_006	14.56	11215131-120321-S-SPS-SW-S-12	PSW	256-296	09-Dec-2021	00:21:57
11	211208R12	40	B5969_18712_DF_007	14.62	11215131-120321-S-SPS-SW-S-11	PSW	109-751	09-Dec-2021	01:09:31
12	211208R13	41	B5969_18712_DF_008	15.67	11215131-120321-S-SPS-SW-S-10	PSW	803-681	09-Dec-2021	01:57:09
13	211208R14	42	B5969_18712_DF_009	14.91	11215131-120321-S-SPS-SW-S-9	PSW	945-326	09-Dec-2021	02:44:49
15	211208R15	3	CS3_211208_DF_RB	1.00	SIL 25-347-1	PSW	185-568	09-Dec-2021	03:40:30
16	211208R16	33	OPR2_18712_DF-RJ	1.00	0_18712_OPR002 CPSM only	PSW	577-569	09-Dec-2021	04:27:13
17	211208R17	2	SBS_211208_DF_RB	1.00	SIL 20-61-1 CL 09Dec21	PSW	833-490	09-Dec-2021	05:14:47
18	211208R18	43	B5969_18712_DF_010 ✓	16.30	11215131-120321-S-SPS-SW-S-8	PSW	784-880	09-Dec-2021	06:02:25





Lab ID: MB1_18712_DF_SDS **Acq'd:** 08 Dec 2021 19:36 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5969_18712 **UTP:** 09-Dec-2021 10:40:15 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 825-601-WBB

Datafile: 211208R05 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	8783.725	0.478
12378-PeCDD	NotFnd		1.0004	-		-	-	-	1.06	-	4990.38	0.356
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.06	-	5740.799	0.46
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.08	-	5740.799	0.485
123789-HxCDD	NotFnd		1.0111	-		-	-	-	1.02	-	5740.799	0.46
1234678-HpCDD	NotFnd		1.0004	-		-	-	-	0.97	-	6290.065	0.536
OCDD	NotFnd		1.0003	-		-	-	-	1.07	-	8465.998	1.83
2378-TCDF	NotFnd		1.0007	-		-	-	-	0.96	-	6774.394	0.362
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	6396.593	0.365
23478-PeCDF	NotFnd		1.0005	-		-	-	-	0.94	-	6396.593	0.36
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	5574.087	0.313
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.13	-	5574.087	0.286
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	5574.087	0.34
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	5574.087	0.356
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.36	-	4896.871	0.255
1234789-HpCDF	NotFnd		1.0004	-		-	-	-	1.30	-	4896.871	0.364
OCDF	NotFnd		1.0002	-		-	-	-	1.03	-	6443.681	1.32

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58	1.0233	1.0232	-0.2	2.81E+07	0.80	Y	1.03	87.5
ES 12378-PeCDD	33.86	1.2118	1.2123	+1.0	2.29E+07	1.61	Y	1.03	71.4
ES 123478-HxCDD	37.72	0.9921	0.9921	0	1.89E+07	1.28	Y	0.99	95.4
ES 123678-HxCDD	37.83	0.9951	0.9951	0	1.87E+07	1.30	Y	0.97	96.7
ES 123789-HxCDD	38.11	1.0027	1.0025	-0.5	2.03E+07	1.24	Y	1.12	91
ES 1234678-HpCDD	40.69	1.0702	1.0702	0	1.51E+07	1.05	Y	0.99	76.8
ES OCDD	43.26	1.1377	1.1379	+0.5	1.40E+07	0.93	Y	0.78	45.4
ES 2378-TCDF	27.73	1.0505	1.0505	0	4.22E+07	0.79	Y	1.08	84.3
ES 12378-PeCDF	32.43	1.2278	1.2284	+1.2	3.64E+07	1.67	Y	0.93	84.4
ES 23478-PeCDF	33.53	1.2691	1.2701	+2.0	3.46E+07	1.63	Y	0.92	81.3
ES 123478-HxCDF	36.72	0.9660	0.9660	0	2.36E+07	0.53	Y	1.14	104
ES 123678-HxCDF	36.87	0.9698	0.9697	-0.2	3.00E+07	0.53	Y	1.30	116
ES 234678-HxCDF	37.54	0.9875	0.9874	-0.2	2.46E+07	0.54	Y	1.20	103
ES 123789-HxCDF	38.46	1.0121	1.0118	-0.7	2.13E+07	0.55	Y	1.14	94.2
ES 1234678-HpCDF	39.79	1.0468	1.0467	-0.2	1.88E+07	0.44	Y	0.95	99.7
ES 1234789-HpCDF	41.14	1.0822	1.0821	-0.2	1.30E+07	0.46	Y	0.85	77
ES OCDF	43.45	1.1426	1.1429	+0.8	1.72E+07	0.90	Y	0.93	46.7

Lab ID: MB1_18712_DF_SDS | **Acq'd:** 08 Dec 2021 19:36 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5969_18712 | **UTP:** 09-Dec-2021 10:40:15 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 825-601-WBB

Datafile: 211208R05 | **Report:** 09 Dec 2021 10:41 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.93		-	-	-	3.10E+07	0.81	Y	-	-	
JS 1234-TCDF	26.40		-	-	-	4.62E+07	0.79	Y	-	-	
JS 123467-HxCDD	38.02		-	-	-	9.94E+06	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.60		1.0241	1.0240	-0.2	1.36E+07	n/a	-	1.31	83.7	
CS 12347-PeCDD	33.36		1.1940	1.1946	+1.2	2.23E+07	1.63	Y	0.89	80.7	
CS 12346-PeCDF	31.90		1.2080	1.2086	+1.1	3.45E+07	1.57	Y	0.87	86.2	
CS 123469-HxCDF	37.18		0.9781	0.9780	-0.2	2.45E+07	0.56	Y	1.09	113	
CS 1234689-HpCDF	40.18		1.0569	1.0568	-0.2	1.74E+07	0.45	Y	0.86	102	
~~SS 37Cl-2378-TCDD~~	~~28.60~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~1.36E+07~~	~~n/a~~		~~1.26~~	~~96.1~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.36~~		~~1.1940~~	~~1.1946~~	~~+1.2~~	~~2.23E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~113~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.90~~		~~1.2080~~	~~1.2086~~	~~+1.1~~	~~3.45E+07~~	~~1.57~~	~~Y~~	~~0.93~~	~~102~~	
~~SS 123469-HxCDF~~	~~37.18~~		~~0.9781~~	~~0.9780~~	~~-0.2~~	~~2.45E+07~~	~~0.56~~	~~Y~~	~~0.84~~	~~97.4~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.74E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~102~~	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18712_DF_SDS **Acq'd: 08 Dec 2021 19:36 PSW** **Wt/Vol: 10.00 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: Method Blank B5969_18712 **UTP: 09-Dec-2021 10:40:15 PSW** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 825-601-WBB**

Datafile: 211208R05 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8758						1.34		8783.725	0.478
1379-TCDD	NotFnd		0.8878						1.34		8783.725	0.478
1369-TCDD	NotFnd		0.9025						1.34		8783.725	0.478
1469-TCDD	NotFnd		0.9291						1.34		8783.725	0.478
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8783.725	0.478
1378-TCDD	NotFnd		0.9440						1.34		8783.725	0.478
1268-TCDD	NotFnd		0.9505						1.34		8783.725	0.478
1478-TCDD	NotFnd		0.9591						1.34		8783.725	0.478
1279-TCDD	NotFnd		0.9650						1.34		8783.725	0.478
1234/1269-TCDD	NotFnd		0.9771						1.34		8783.725	0.478
1236-TCDD	NotFnd		0.9821						1.34		8783.725	0.478
1237/1238-TCDD	NotFnd		0.9907						1.34		8783.725	0.478
1239-TCDD	NotFnd		0.9953						1.34		8783.725	0.478
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**8783.725**	**0.478**
1278-TCDD	NotFnd		1.0118						1.34		8783.725	0.478
1267-TCDD	NotFnd		1.0162						1.34		8783.725	0.478
1289-TCDD	NotFnd		1.0340						1.34		8783.725	0.478
12479/12468-PeCDD	NotFnd		0.9274						1.06		4990.38	0.356
12469-PeCDD	NotFnd		0.9430						1.06		4990.38	0.356
12368-PeCDD	NotFnd		0.9591						1.06		4990.38	0.356
12478-PeCDD	NotFnd		0.9645						1.06		4990.38	0.356
12379-PeCDD	NotFnd		0.9676						1.06		4990.38	0.356
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		4990.38	0.356
12346/12347-PeCDD	NotFnd		0.9860						1.06		4990.38	0.356
12378-PeCDD	NotFnd		**1.0004**						**1.06**		**4990.38**	**0.356**
12367-PeCDD	NotFnd		1.0034						1.06		4990.38	0.356
12389-PeCDD	NotFnd		1.0133						1.06		4990.38	0.356
124679/124689-HxCDD	NotFnd		0.9546						1.05		5740.799	0.468
123468-HxCDD	NotFnd		0.9718						1.05		5740.799	0.468
123679/123689-HxCDD	NotFnd		0.9795						1.05		5740.799	0.468
123469-HxCDD	NotFnd		0.9832						1.05		5740.799	0.468
123478-HxCDD	NotFnd		**1.0004**						1.06		**5740.799**	**0.46**
123678-HxCDD	NotFnd		**1.0034**						1.08		**5740.799**	**0.485**
123467-HxCDD	NotFnd		1.0083						1.05		5740.799	0.468
123789-HxCDD	NotFnd		**1.0111**						1.02		**5740.799**	**0.46**

Lab ID: MB1_18712_DF_SDS | **Acq'd:** 08 Dec 2021 19:36 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5969_18712 | **UTP:** 09-Dec-2021 10:40:15 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 825-601-WBB

Datafile: 211208R05 | **Report:** 09 Dec 2021 10:41 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

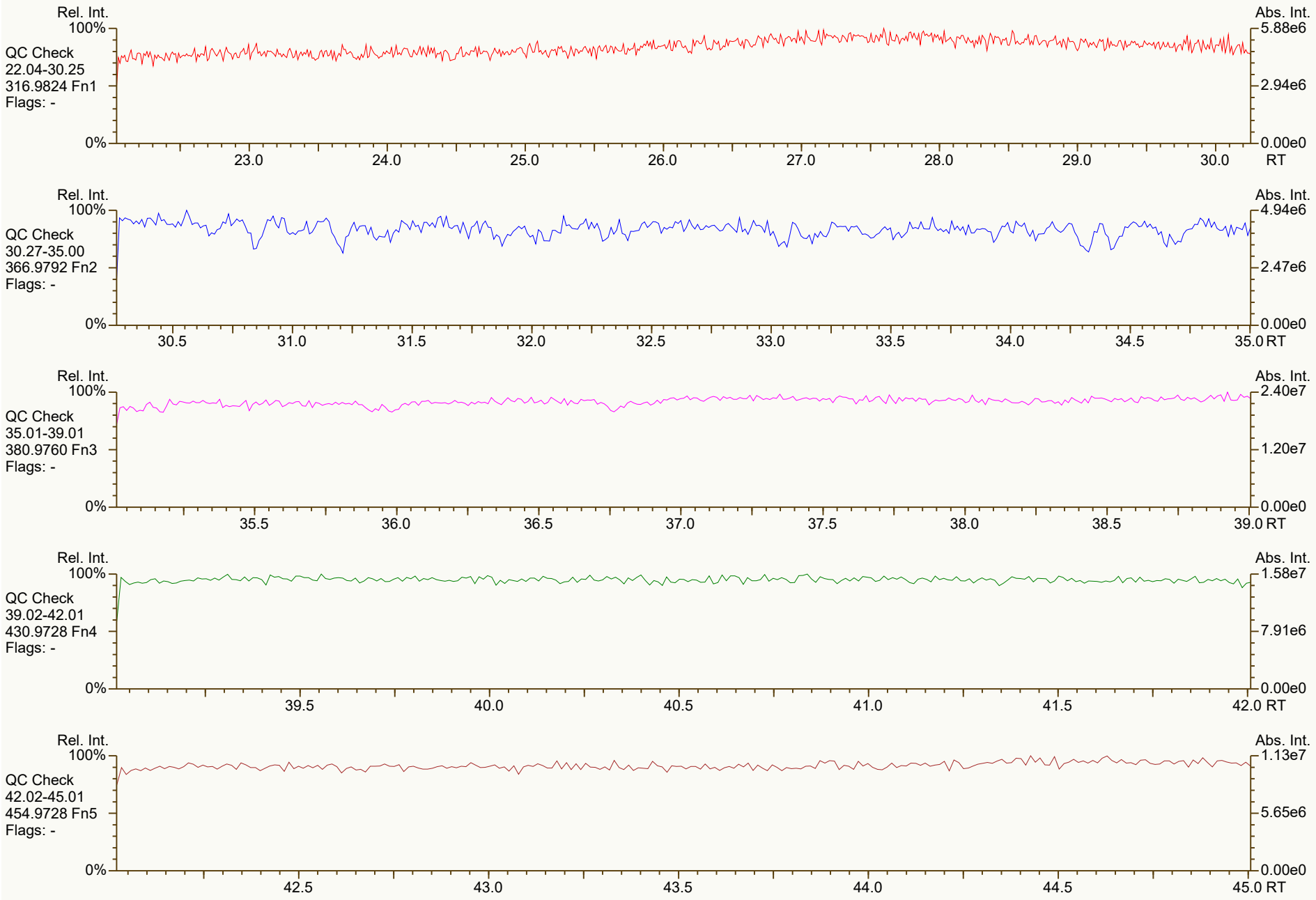
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9843						0.97		6290.065	0.536
1234678-HpCDD	**NotFnd**		**1.0004**						**0.97**		**6290.065**	**0.536**
OCDD	**NotFnd**		**1.0003**						**1.07**		**8465.998**	**1.83**
OCDD-a	NotFnd		1.0001						0.07		10122.298	35.5
1368-TCDF	NotFnd		0.8284						0.96		6774.394	0.362
1468-TCDF	NotFnd		0.8487						0.96		6774.394	0.362
2468-TCDF	NotFnd		0.8709						0.96		6774.394	0.362
1346/1246-TCDF	NotFnd		0.8828						0.96		6774.394	0.362
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		6774.394	0.362
1348-TCDF	NotFnd		0.8980						0.96		6774.394	0.362
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		6774.394	0.362
1268-TCDF	NotFnd		0.9159						0.96		6774.394	0.362
1467-TCDF	NotFnd		0.9206						0.96		6774.394	0.362
1478-TCDF	NotFnd		0.9266						0.96		6774.394	0.362
1369/1237-TCDF	NotFnd		0.9396						0.96		6774.394	0.362
2467-TCDF	NotFnd		0.9440						0.96		6774.394	0.362
2368-TCDF	NotFnd		0.9496						0.96		6774.394	0.362
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		6774.394	0.362
1278-TCDF	NotFnd		0.9689						0.96		6774.394	0.362
1349-TCDF	NotFnd		0.9732						0.96		6774.394	0.362
1267-TCDF	NotFnd		0.9786						0.96		6774.394	0.362
2346/1249-TCDF	NotFnd		0.9849						0.96		6774.394	0.362
2347/1279-TCDF	NotFnd		0.9927						0.96		6774.394	0.362
2348-TCDF	NotFnd		0.9967						0.96		6774.394	0.362
2378-TCDF	**NotFnd**		**1.0007**						**0.96**		**6774.394**	**0.362**
2367/3467-TCDF	NotFnd		1.0136						0.96		6774.394	0.362
1269-TCDF	NotFnd		1.0223						0.96		6774.394	0.362
1239-TCDF	NotFnd		1.0313						0.96		6774.394	0.362
1289-TCDF	NotFnd		1.0711						0.96		6774.394	0.362
13468/12468-PeCDF	NotFnd		0.9147						0.94		7838.89	0.444
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		6396.593	0.362
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		6396.593	0.362
14678-PeCDF	NotFnd		0.9695						0.94		6396.593	0.362
13479-PeCDF	NotFnd		0.9727						0.94		6396.593	0.362
13469/12479-PeCDF	NotFnd		0.9799						0.94		6396.593	0.362
12346-PeCDF	NotFnd		0.9839						0.94		6396.593	0.362

Lab ID: MB1_18712_DF_SDS | **Acq'd:** 08 Dec 2021 19:36 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

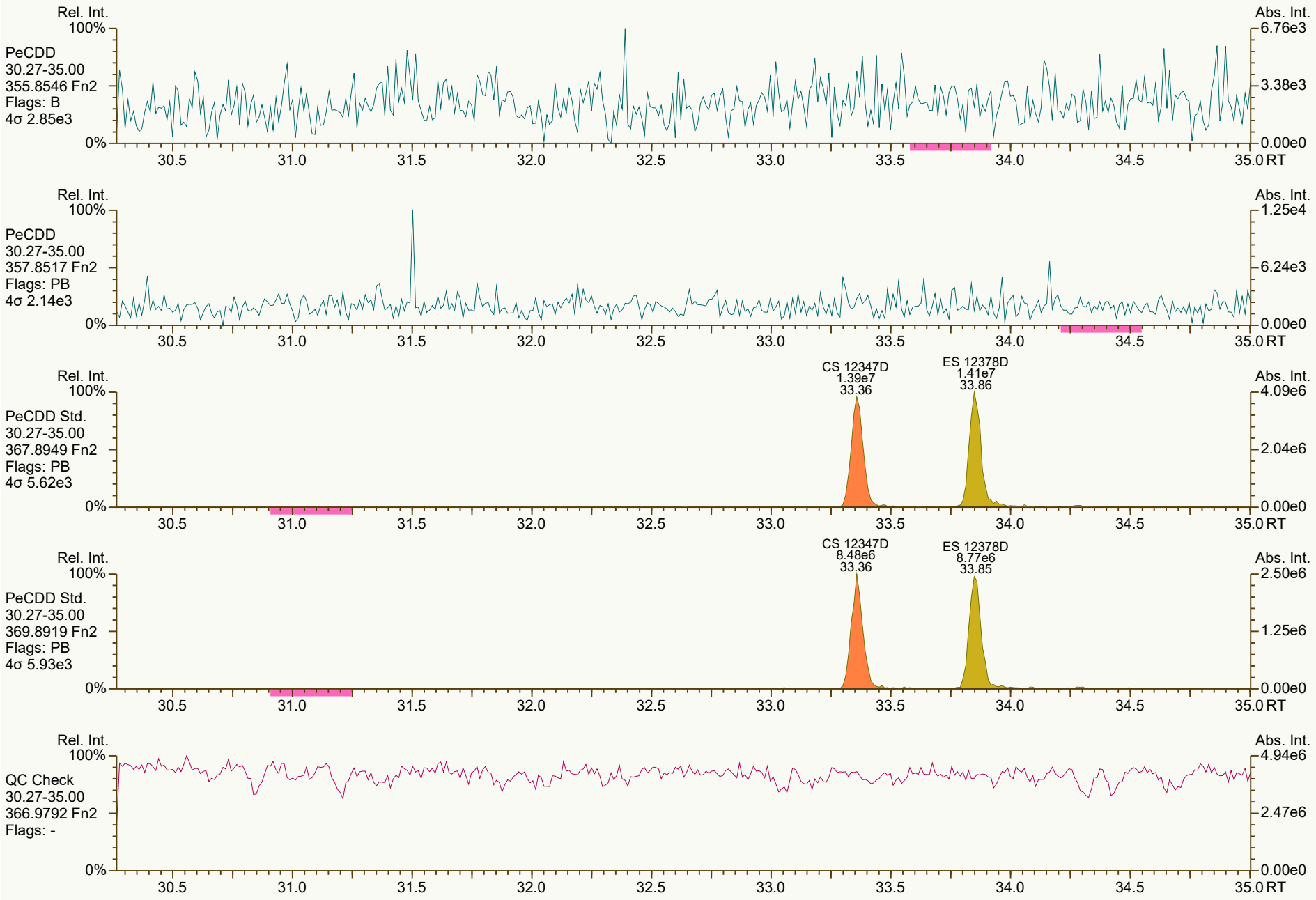
Client ID: Method Blank B5969_18712 | **UTP:** 09-Dec-2021 10:40:15 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 825-601-WBB

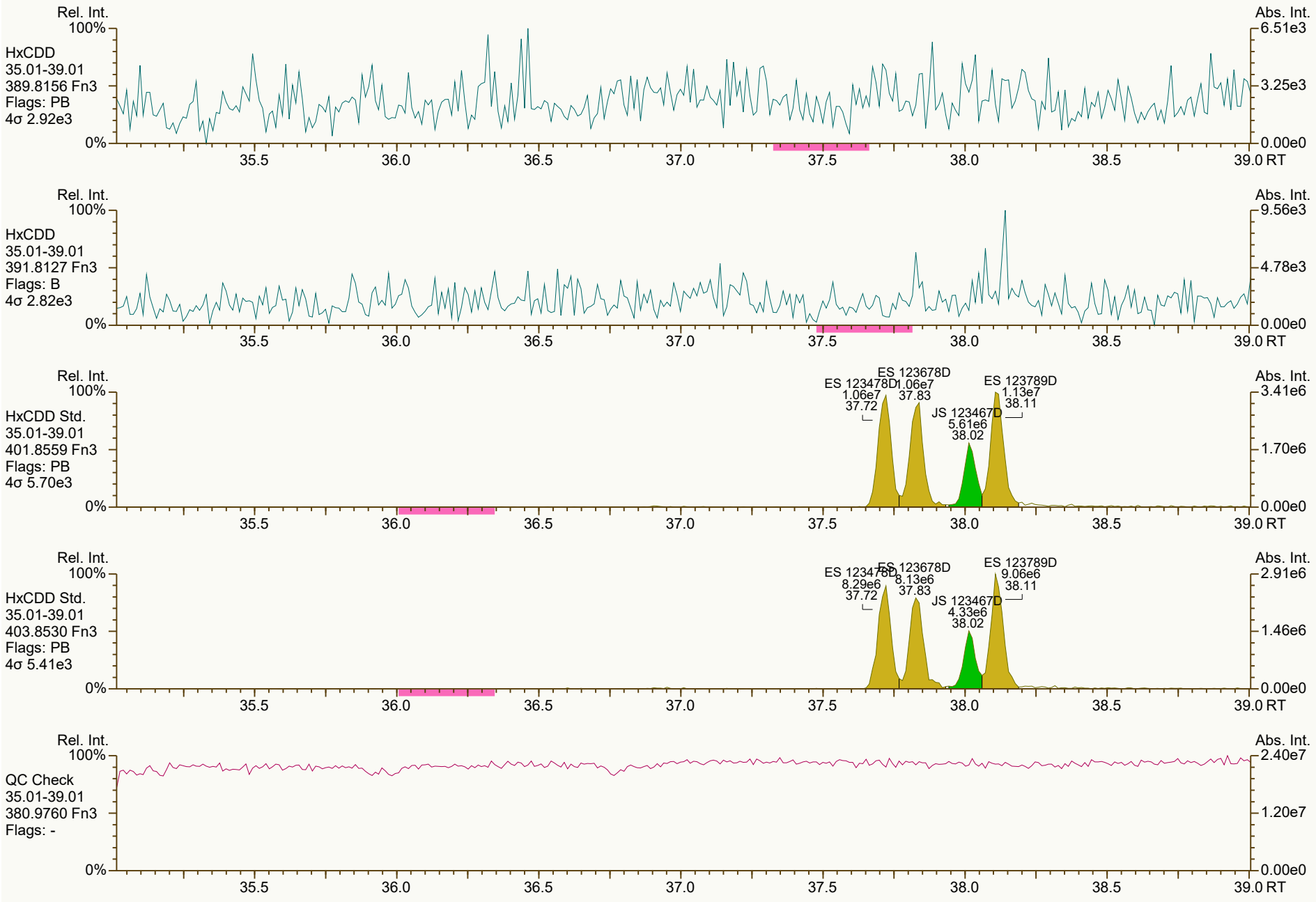
Datafile: 211208R05 | **Report:** 09 Dec 2021 10:41 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		6396.593	0.362
12347-PeCDF	NotFnd		0.9892						0.94		6396.593	0.362
12348-PeCDF	NotFnd		0.9940						0.94		6396.593	0.362
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**6396.593**	**0.365**
12678/12367-PeCDF	NotFnd		1.0088						0.94		6396.593	0.362
12379-PeCDF	NotFnd		1.0142						0.94		6396.593	0.362
12679-PeCDF	NotFnd		0.9931						0.94		6396.593	0.362
23467/12369-PeCDF	NotFnd		0.9966						0.94		6396.593	0.362
23478-PeCDF	**NotFnd**		**1.0005**						**0.94**		**6396.593**	**0.36**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6396.593	0.362
12349-PeCDF	NotFnd		1.0100						0.94		6396.593	0.362
12389-PeCDF	NotFnd		1.0323						0.94		6396.593	0.362
123468-HxCDF	NotFnd		0.9631						1.16		5574.087	0.32
124678/134678-HxCDF	NotFnd		0.9686						1.16		5574.087	0.32
134679-HxCDF	NotFnd		0.9747						1.16		5574.087	0.32
124679-HxCDF	NotFnd		0.9800						1.16		5574.087	0.32
124689-HxCDF	NotFnd		0.9859						1.16		5574.087	0.32
123467-HxCDF	NotFnd		0.9972						1.16		5574.087	0.32
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**5574.087**	**0.313**
123678-HxCDF	**NotFnd**		**1.0005**						**1.13**		**5574.087**	**0.286**
123479-HxCDF	NotFnd		1.0048						1.16		5574.087	0.32
123469-HxCDF	NotFnd		1.0089						1.16		5574.087	0.32
123679-HxCDF	NotFnd		0.9943						1.16		5574.087	0.32
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**5574.087**	**0.34**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		5574.087	0.32
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**5574.087**	**0.356**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		5574.087	0.32
1234678-HpCDF	**NotFnd**		**1.0003**						**1.36**		**4896.871**	**0.255**
1234679-HpCDF	NotFnd		1.0065						1.33		4896.871	0.299
1234689-HpCDF	NotFnd		1.0097						1.33		4896.871	0.299
1234789-HpCDF	**NotFnd**		**1.0004**						**1.30**		**4896.871**	**0.364**
OCDF	**NotFnd**		**1.0002**						**1.03**		**6443.681**	**1.32**
OCDF-a	NotFnd		1.0001						0.06		9579.945	33.9


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Abs. Int.
5.88e6
2.94e6
0.00e0
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Abs. Int.
4.94e6
2.47e6
0.00e0
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Abs. Int.
2.40e7
1.20e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.58e7
7.91e6
0.00e0
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.13e7
5.65e6
0.00e0

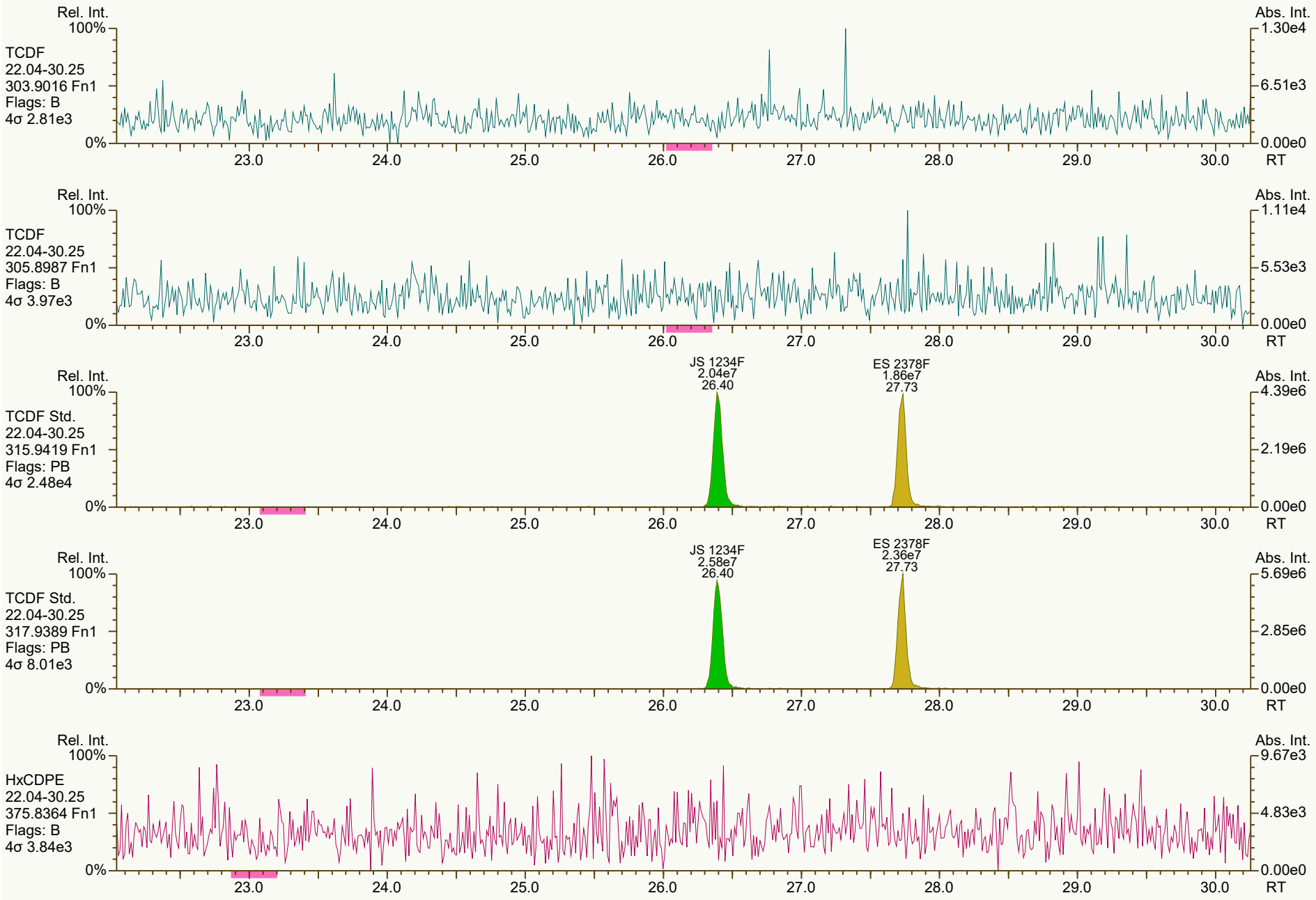

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 4.59e3
0%
Abs. Int.
1.24e4
6.19e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 4.19e3
0%
Abs. Int.
2.91e4
1.45e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.63e3
0%
CS 37Cl-2378D
1.36e7
28.60
Abs. Int.
3.39e6
1.69e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.20e4
0%
JS 1234D
1.39e7
27.93
ES 2378D
1.25e7
28.58
Abs. Int.
3.35e6
1.67e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 8.71e3
0%
JS 1234D
1.71e7
27.93
ES 2378D
1.55e7
28.58
Abs. Int.
3.99e6
1.99e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 2.85e3
0%
Abs. Int.
6.76e3
3.38e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 2.14e3
0%
Abs. Int.
1.25e4
6.24e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 5.62e3
0%
CS 12347D
1.39e7
33.36
ES 12378D
1.41e7
33.86
Abs. Int.
4.09e6
2.04e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 5.93e3
0%
CS 12347D
8.48e6
33.36
ES 12378D
8.77e6
33.85
Abs. Int.
2.50e6
1.25e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.94e6
2.47e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: PB
4σ 2.92e3
0%
Abs. Int.
6.51e3
3.25e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: B
4σ 2.82e3
0%
Abs. Int.
9.56e3
4.78e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PB
4σ 5.70e3
0%
ES 123678D
1.06e7
37.83
ES 123478D
1.06e7
37.72
ES 123789D
1.13e7
38.11
JS 123467D
5.61e6
38.02
Abs. Int.
3.41e6
1.70e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PB
4σ 5.41e3
0%
ES 123678D
8.13e6
37.83
ES 123478D
8.29e6
37.72
ES 123789D
9.06e6
38.11
JS 123467D
4.33e6
38.02
Abs. Int.
2.91e6
1.46e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.40e7
1.20e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

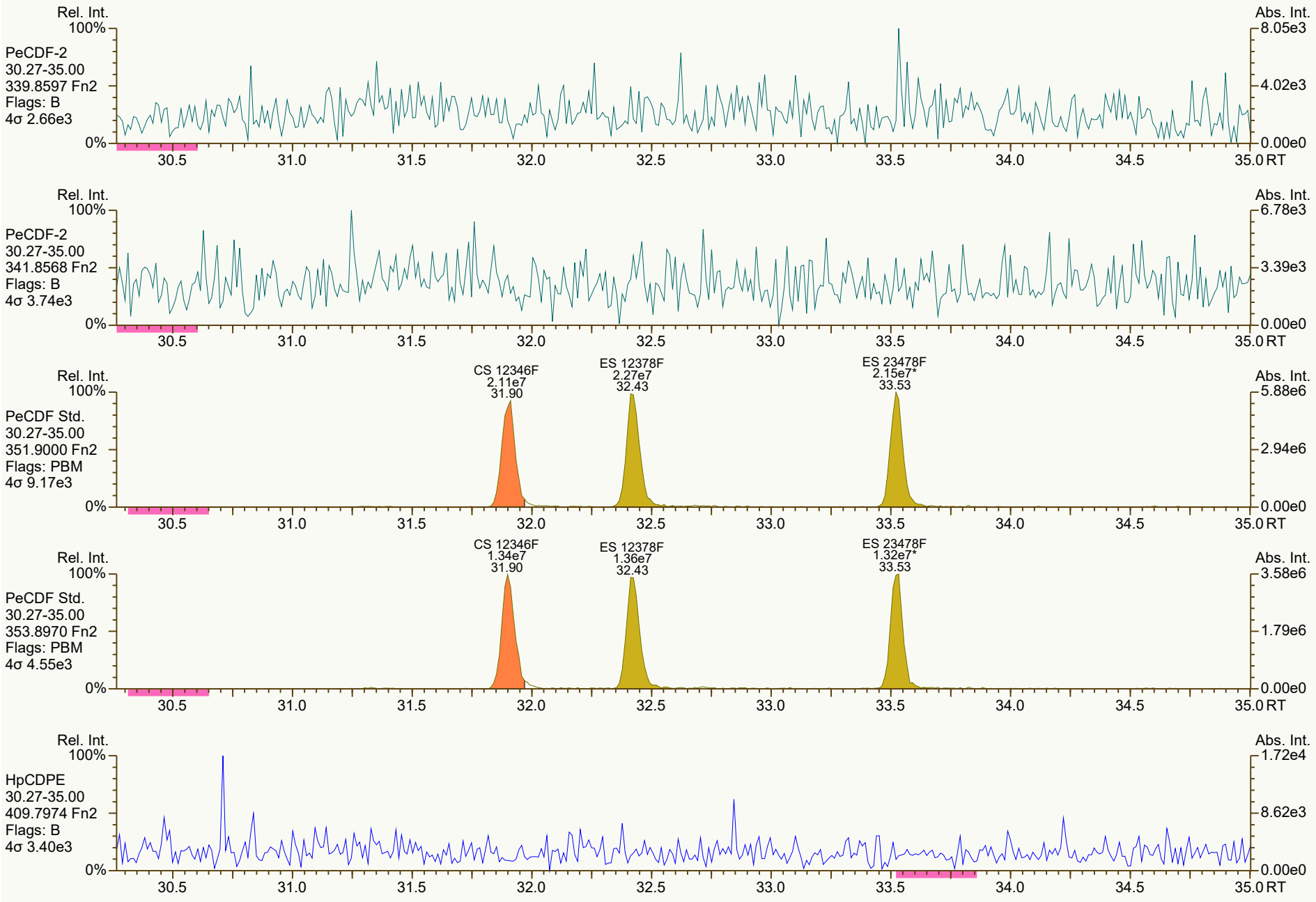

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: B
4σ 3.28e3
0%
Abs. Int.
1.20e4
6.01e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: B
4σ 3.01e3
0%
Abs. Int.
7.02e3
3.51e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
ES 1234678D
7.76e6
40.69
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 7.81e3
0%
Abs. Int.
3.09e6
1.54e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
ES 1234678D
7.38e6
40.69
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.96e3
0%
Abs. Int.
2.98e6
1.49e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.58e7
7.91e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: B
4σ 4.53e3
0%
Abs. Int.
9.58e3
4.79e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: B
4σ 3.94e3
0%
Abs. Int.
9.52e3
4.76e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.78e6
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 5.65e3
0%
Abs. Int.
2.09e6
1.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.26e6
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 4.01e3
0%
Abs. Int.
2.18e6
1.09e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.13e7
5.65e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: B
4σ 2.81e3
0%
Abs. Int.
1.30e4
6.51e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.04-30.25
305.8987 Fn1
Flags: B
4σ 3.97e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 2.48e4
0%
JS 1234F
2.04e7
26.40
ES 2378F
1.86e7
27.73
Abs. Int.
4.39e6
2.19e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 8.01e3
0%
JS 1234F
2.58e7
26.40
ES 2378F
2.36e7
27.73
Abs. Int.
5.69e6
2.85e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.84e3
0%
Abs. Int.
9.67e3
4.83e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

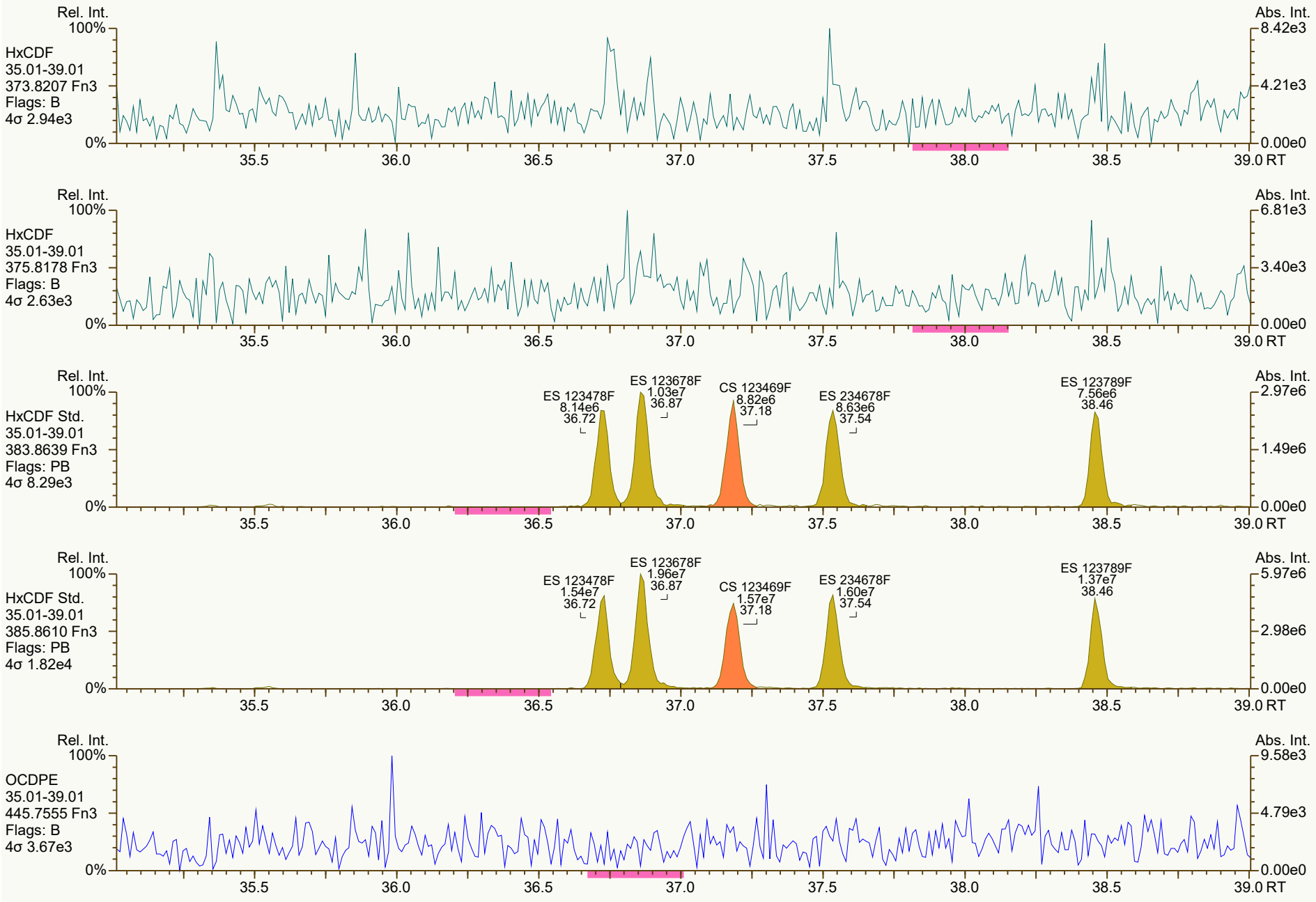
SGS ID: MB1_18712_DF_SDS
Sample ID: Method Blank
Acq: 08-Dec-2021 19:36:29
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31
User: PSW Datafile: 211208R05




Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: B
4σ 2.66e3
0%
Abs. Int.
8.05e3
4.02e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: B
4σ 3.74e3
0%
Abs. Int.
6.78e3
3.39e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 9.17e3
0%
CS 12346F
2.11e7
31.90
ES 12378F
2.27e7
32.43
ES 23478F
2.15e7*
33.53
Abs. Int.
5.88e6
2.94e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 4.55e3
0%
CS 12346F
1.34e7
31.90
ES 12378F
1.36e7
32.43
ES 23478F
1.32e7*
33.53
Abs. Int.
3.58e6
1.79e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.40e3
0%
Abs. Int.
1.72e4
8.62e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

SGS ID: MB1_18712_DF_SDS | Sample ID: Method Blank | Acq: 08-Dec-2021 19:36:29

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 31 | User: PSW Datafile: 211208R05



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\MB1_18712_DF_SDS.utp_res, saved 09-Dec-2021 10:40 (PSW)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5333, 3739, 6311 scc: 825-601

PKD: 09-Dec-2021 08:34 Printed: 09-Dec-2021 10:47 Page 10 of 12


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: B
4σ 2.12e3
0%
Abs. Int.
7.65e3
3.83e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: B
4σ 2.78e3
0%
Abs. Int.
7.68e3
3.84e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 4.55e3
0%
ES 1234678F
5.79e6
39.79
CS 1234689F
5.37e6
40.18
ES 1234789F
4.07e6*
41.14
Abs. Int.
2.31e6
1.16e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 5.13e3
0%
ES 1234678F
1.30e7
39.79
CS 1234689F
1.21e7
40.18
ES 1234789F
8.89e6
41.14
Abs. Int.
5.10e6
2.55e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.15e3
0%
Abs. Int.
9.16e3
4.58e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: B
4σ 3.60e3
0%
Abs. Int.
6.24e3
3.12e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: B
4σ 2.84e3
0%
Abs. Int.
7.13e3
3.56e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.15e6
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 5.87e3
0%
Abs. Int.
2.26e6
1.13e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.03e6
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 7.42e3
0%
Abs. Int.
2.99e6
1.50e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 4.14e3
0%
Abs. Int.
1.04e4
5.19e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5969_18712_DF_001 **Acq'd:** 08 Dec 2021 20:24 PSW **Wt/Vol:** 15.17 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-S-3 **UTP:** 09-Dec-2021 10:40:16 PSW **J-level:** 0.33 pg/g **Split:** 1 **Checkcode:** 866-721-CGR

Datafile: 211208R06 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62		1.0008	1.0008	0	6.46E+07	0.80	Y	1.34	295	9016.529	0.396
12378-PeCDD	33.88		1.0004	1.0006	+0.4	5.69E+05	1.57	Y	1.06	3.92	7039.864	0.44
123478-HxCDD	37.74		1.0004	1.0003	-0.2	2.41E+05	1.06	Y	1.06	2.07	9085.32	0.622
123678-HxCDD	37.86		1.0034	1.0035	+0.2	1.08E+06	1.32	Y	1.08	9.32	9085.32	0.607
123789-HxCDD	38.14		1.0111	1.0110	-0.2	6.39E+05	1.26	Y	1.02	5.22	9085.32	0.586
1234678-HpCDD	40.71		1.0004	1.0004	0	1.85E+07	1.04	Y	0.97	225	9032.587	0.726
OCDD	43.28		1.0003	1.0002	-0.3	1.26E+08	0.88	Y	1.07	3,190	9998.326	1.88
2378-TCDF	27.77	E	1.0007	1.0008	+0.2	2.36E+08	0.80	Y	0.96	1,030	7907.976	0.383
12378-PeCDF	32.46		1.0006	1.0006	0	7.10E+06	1.50	Y	0.95	39.1	7424.373	0.376
23478-PeCDF	33.56		1.0005	1.0007	+0.4	5.49E+06	1.59	Y	0.94	30.7	7424.373	0.353
123478-HxCDF	36.75		1.0004	1.0005	+0.2	1.36E+07	1.21	Y	1.23	77.6	14607.261	0.683
123678-HxCDF	36.90		1.0005	1.0005	0	3.57E+06	1.20	Y	1.13	18.1	14607.261	0.654
234678-HxCDF	37.57		1.0005	1.0004	-0.2	7.59E+05	1.18	Y	1.15	4.94	14607.261	0.845
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	14607.261	0.703
1234678-HpCDF	39.81		1.0003	1.0003	0	8.14E+06	1.07	Y	1.36	58.9	7114.721	0.351
1234789-HpCDF	41.16		1.0004	1.0002	-0.5	1.17E+06	0.98	Y	1.30	11.4	7114.721	0.493
OCDF	43.47		1.0002	1.0002	0	6.54E+06	0.87	Y	1.03	129	7575.201	1.17

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0232	-0.2	2.15E+07	0.82	Y	1.03	78
ES 12378-PeCDD	33.87	1.2118	1.2119	+0.2	1.80E+07	1.53	Y	1.03	65.6
ES 123478-HxCDD	37.73	0.9921	0.9921	0	1.45E+07	1.26	Y	0.99	80.9
ES 123678-HxCDD	37.84	0.9951	0.9951	0	1.41E+07	1.22	Y	0.97	80.5
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	1.59E+07	1.26	Y	1.12	78.5
ES 1234678-HpCDD	40.70	1.0702	1.0702	0	1.11E+07	1.10	Y	0.99	62.4
ES OCDD	43.27	1.1377	1.1379	+0.5	9.71E+06	0.91	Y	0.78	34.7
ES 2378-TCDF	27.75	1.0505	1.0506	+0.2	3.15E+07	0.78	Y	1.08	72.9
ES 12378-PeCDF	32.44	1.2278	1.2283	+1.0	2.53E+07	1.51	Y	0.93	67.9
ES 23478-PeCDF	33.54	1.2691	1.2698	+1.4	2.51E+07	1.62	Y	0.92	68.3
ES 123478-HxCDF	36.73	0.9660	0.9660	0	1.87E+07	0.49	Y	1.14	90.9
ES 123678-HxCDF	36.88	0.9698	0.9697	-0.2	2.30E+07	0.53	Y	1.30	98.4
ES 234678-HxCDF	37.55	0.9875	0.9874	-0.2	1.76E+07	0.52	Y	1.20	81.2
ES 123789-HxCDF	38.47	1.0121	1.0117	-0.9	1.66E+07	0.51	Y	1.14	81.2
ES 1234678-HpCDF	39.80	1.0468	1.0466	-0.5	1.34E+07	0.43	Y	0.95	78.3
ES 1234789-HpCDF	41.15	1.0822	1.0822	0	1.04E+07	0.47	Y	0.85	68.3
ES OCDF	43.46	1.1426	1.1428	+0.5	1.30E+07	0.93	Y	0.93	39

Lab ID: B5969_18712_DF_001 **Acq'd:** 08 Dec 2021 20:24 PSW **Wt/Vol:** 15.17 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-S-3 **UTP:** 09-Dec-2021 10:40:16 PSW **J-level:** 0.33 pg/g **Split:** 1 **Checkcode:** 866-721-CGR

Datafile: 211208R06 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.95		-	-	-	2.66E+07	0.80	Y	-	-	
JS 1234-TCDF	26.41		-	-	-	3.99E+07	0.80	Y	-	-	
JS 123467-HxCDD	38.03		-	-	-	9.00E+06	1.29	Y	-	-	
CS 37Cl-2378-TCDD	28.62		1.0241	1.0240	-0.2	9.57E+06	n/a	-	1.31	68.7	
CS 12347-PeCDD	33.37		1.1940	1.1942	+0.4	1.55E+07	1.49	Y	0.89	65.3	
CS 12346-PeCDF	31.92		1.2080	1.2085	+1.0	2.43E+07	1.61	Y	0.87	70.1	
CS 123469-HxCDF	37.19		0.9781	0.9781	0	1.80E+07	0.52	Y	1.09	91.7	
CS 1234689-HpCDF	40.19		1.0569	1.0568	-0.2	1.25E+07	0.42	Y	0.86	80	
~~SS 37Cl-2378-TCDD~~	~~28.62~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~9.57E+06~~	~~n/a~~		~~1.26~~	~~80.5~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1942~~	~~+0.4~~	~~1.55E+07~~	~~1.49~~	~~Y~~	~~0.86~~	~~99.4~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.92~~		~~1.2080~~	~~1.2085~~	~~+1.0~~	~~2.43E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~103~~	
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.80E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~93~~	
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.25E+07~~	~~0.42~~	~~Y~~	~~0.91~~	~~102~~	

Totals	Conc	EMPC
Total TCDD	334	339
Total PeCDD	15.6	16.9
Total HxCDD	80.4	80.4
Total HpCDD	459	459
Total Tetra-Octa Dioxins	4080	4090
Total TCDF	2,090	2090
Total PeCDF	121	132
Total HxCDF	144	147
Total HpCDF	118	118
Total Tetra-Octa Furans	2,610	2620
Total Tetra-Octa Dioxins & Furans	6690	6710

Lab ID: B5969_18712_DF_001 **Acq'd: 08 Dec 2021 20:24 PSW** **Wt/Vol: 15.17 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-S-3 **UTP: 09-Dec-2021 10:40:16 PSW** **J-level: 0.33 pg/g** **Split: 1** **Checkcode: 866-721-CGR**

Datafile: 211208R06 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8753	-0.8	5.34E+05	0.85	Y	1.34	2.44	9016.529	0.396
1379-TCDD	25.38		0.8878	0.8877	-0.2	2.97E+05	0.76	Y	1.34	1.36	9016.529	0.396
1369-TCDD	NotFnd		0.9025						1.34		9016.529	0.396
1469-TCDD	26.57	EMPC	0.9291	0.9291	0	7.48E+05	0.90	N	1.34	3.42	9016.529	0.396
1247/1246/1248/1249-TCDD	26.80		0.9374	0.9372	-0.3	2.08E+05	0.80	Y	1.34	0.951	9016.529	0.396
1378-TCDD	26.99		0.9440	0.9440	0	2.16E+05	0.82	Y	1.34	0.987	9016.529	0.396
1268-TCDD	NotFnd		0.9505						1.34		9016.529	0.396
1478-TCDD	27.42	EMPC	0.9591	0.9590	-0.2	1.73E+05	0.93	N	1.34	0.791	9016.529	0.396
1279-TCDD	NotFnd		0.9650						1.34		9016.529	0.396
1234/1269-TCDD	NotFnd		0.9771						1.34		9016.529	0.396
1236-TCDD	NotFnd		0.9821						1.34		9016.529	0.396
1237/1238-TCDD	28.32		0.9907	0.9905	-0.3	1.03E+06	0.85	Y	1.34	4.72	9016.529	0.396
1239-TCDD	NotFnd		0.9953						1.34		9016.529	0.396
2378-TCDD	**28.62**		**1.0008**	1.0008	**0**	6.46E+07	0.80	Y	**1.34**	**295**	**9016.529**	**0.396**
1278-TCDD	28.94		1.0118	1.0120	+0.3	6.24E+06	0.80	Y	1.34	28.5	9016.529	0.396
1267-TCDD	NotFnd		1.0162						1.34		9016.529	0.396
1289-TCDD	NotFnd		1.0340						1.34		9016.529	0.396
12479/12468-PeCDD	31.41		0.9274	0.9275	+0.2	5.57E+05	1.50	Y	1.06	3.84	7039.864	0.44
12469-PeCDD	31.94		0.9430	0.9431	+0.2	4.39E+05	1.45	Y	1.06	3.03	7039.864	0.44
12368-PeCDD	32.48		0.9591	0.9592	+0.2	3.64E+05	1.38	Y	1.06	2.51	7039.864	0.44
12478-PeCDD	32.67	J	0.9645	0.9647	+0.4	1.28E+05	1.51	Y	1.06	0.882	7039.864	0.44
12379-PeCDD	32.77	J	0.9676	0.9677	+0.2	2.13E+05	1.60	Y	1.06	1.47	7039.864	0.44
12369/12467/12489-PeCDD	33.03	J EMPC	0.9751	0.9754	+0.6	1.79E+05	1.91	N	1.06	1.23	7039.864	0.44
12346/12347-PeCDD	NotFnd		0.9860						1.06		7039.864	0.44
12378-PeCDD	33.88		**1.0004**	**1.0006**	**+0.4**	**5.69E+05**	**1.57**	**Y**	**1.06**	**3.92**	**7039.864**	**0.44**
12367-PeCDD	NotFnd		1.0034						1.06		7039.864	0.44
12389-PeCDD	NotFnd		1.0133						1.06		7039.864	0.44
124679/124689-HxCDD	36.02		0.9546	0.9547	+0.2	3.70E+06	1.28	Y	1.05	31.3	9085.32	0.604
123468-HxCDD	36.66		0.9718	0.9718	0	7.34E+05	1.14	Y	1.05	6.2	9085.32	0.604
123679/123689-HxCDD	36.96		0.9795	0.9795	0	2.77E+06	1.23	Y	1.05	23.4	9085.32	0.604
123469-HxCDD	37.09	J	0.9832	0.9831	-0.2	1.89E+05	1.17	Y	1.05	1.6	9085.32	0.604
123478-HxCDD	37.74		**1.0004**	**1.0003**	**-0.2**	**2.41E+05**	**1.06**	**Y**	1.06	**2.07**	**9085.32**	**0.622**
123678-HxCDD	37.86		**1.0034**	**1.0035**	**+0.2**	**1.08E+06**	**1.32**	**Y**	1.08	**9.32**	**9085.32**	**0.607**
123467-HxCDD	38.04	J	1.0083	1.0083	0	1.47E+05	1.09	Y	1.05	1.25	9085.32	0.604
123789-HxCDD	38.14		**1.0111**	**1.0110**	**-0.2**	**6.39E+05**	**1.26**	**Y**	1.02	**5.22**	**9085.32**	**0.586**

Lab ID: B5969_18712_DF_001 **Acq'd:** 08 Dec 2021 20:24 PSW **Wt/Vol:** 15.17 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-S-3 **UTP:** 09-Dec-2021 10:40:16 PSW **J-level:** 0.33 pg/g **Split:** 1 **Checkcode:** 866-721-CGR

Datafile: 211208R06 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

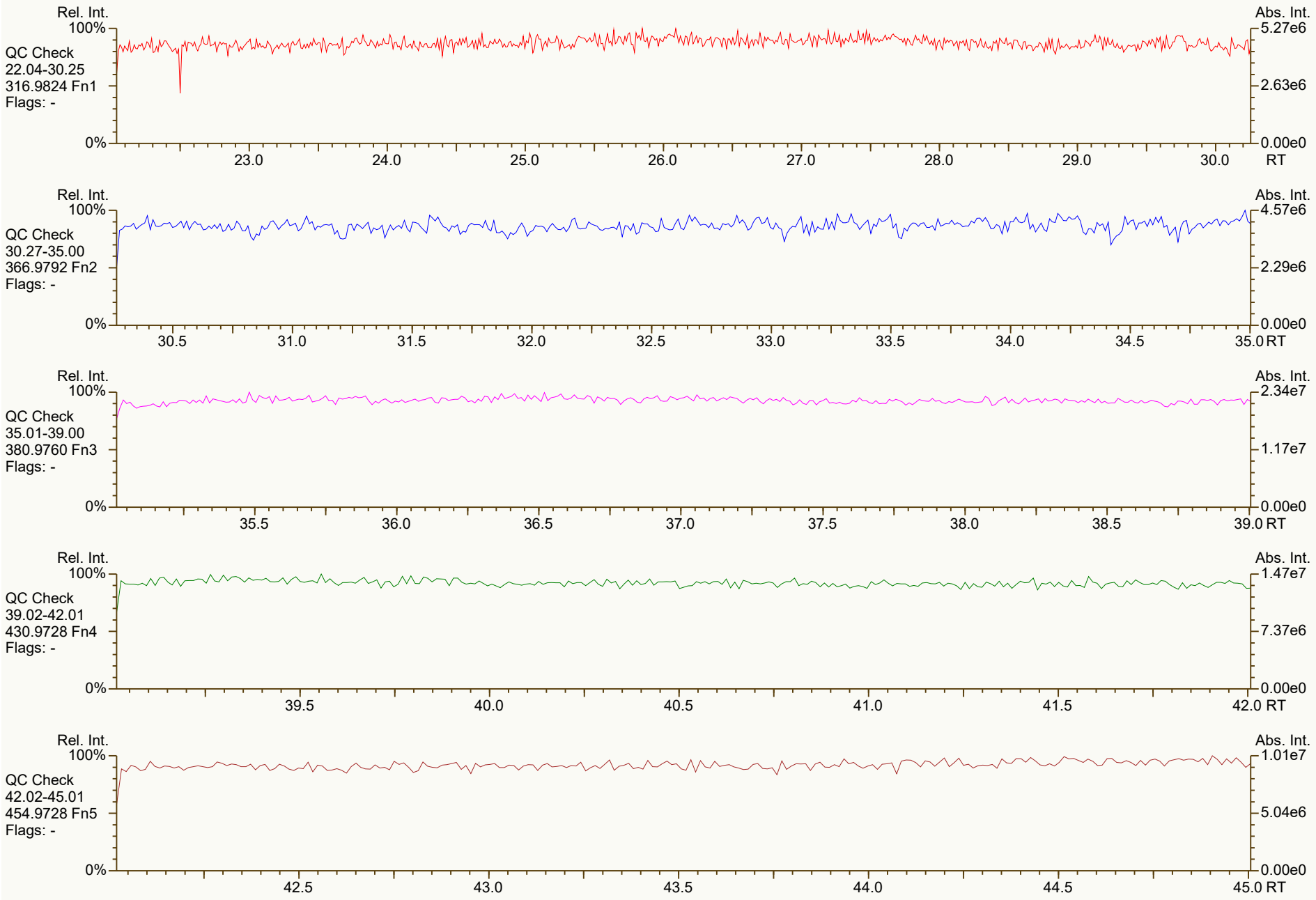
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.06		0.9843	0.9843	0	1.93E+07	1.04	Y	0.97	234	9032.587	0.726
1234678-HpCDD	**40.71**		**1.0004**	**1.0004**	**0**	**1.85E+07**	**1.04**	**Y**	**0.97**	**225**	**9032.587**	**0.726**
OCDD	**43.28**		**1.0003**	**1.0002**	**-0.3**	**1.26E+08**	**0.88**	**Y**	**1.07**	**3,190**	**9998.326**	**1.88**
OCDD-a	43.28		1.0001	1.0002	+0.3	7.68E+06	2.60	Y	0.07	3,160	14367.145	43.8
1368-TCDF	22.99		0.8284	0.8285	+0.1	1.22E+05	0.81	Y	0.96	0.53	7907.976	0.383
1468-TCDF	23.54		0.8487	0.8482	-0.7	8.25E+05	0.79	Y	0.96	3.6	7907.976	0.383
2468-TCDF	24.15		0.8709	0.8704	-0.7	1.25E+06	0.85	Y	0.96	5.47	7907.976	0.383
1346/1246-TCDF	24.55		0.8828	0.8846	+2.7	5.47E+05	0.77	Y	0.96	2.38	7907.976	0.383
1347/1378/1247-TCDF	24.68		0.8886	0.8893	+1.0	3.18E+06	0.77	Y	0.96	13.8	7907.976	0.383
1348-TCDF	24.89		0.8980	0.8971	-1.3	7.00E+05	0.79	Y	0.96	3.05	7907.976	0.383
1248/1367/1379-TCDF	25.01		0.9027	0.9012	-2.3	1.31E+07	0.78	Y	0.96	56.9	7907.976	0.383
1268-TCDF	25.41		0.9159	0.9157	-0.3	4.04E+06	0.80	Y	0.96	17.6	7907.976	0.383
1467-TCDF	25.54		0.9206	0.9204	-0.3	7.71E+05	0.83	Y	0.96	3.36	7907.976	0.383
1478-TCDF	25.71		0.9266	0.9265	-0.2	1.03E+07	0.80	Y	0.96	45	7907.976	0.383
1369/1237-TCDF	26.08		0.9396	0.9399	+0.5	2.69E+06	0.84	Y	0.96	11.7	7907.976	0.383
2467-TCDF	26.20		0.9440	0.9441	+0.2	5.01E+05	0.86	Y	0.96	2.19	7907.976	0.383
2368-TCDF	26.34		0.9496	0.9492	-0.6	5.94E+06	0.77	Y	0.96	25.9	7907.976	0.383
1238/1234/1678/1469/1236-TCDF	26.42		0.9530	0.9522	-1.3	1.49E+07	0.78	Y	0.96	65	7907.976	0.383
1278-TCDF	26.89		0.9689	0.9689	0	1.14E+08	0.78	Y	0.96	499	7907.976	0.383
1349-TCDF	NotFnd		0.9732						0.96		7907.976	0.383
1267-TCDF	27.15		0.9786	0.9785	-0.2	6.22E+06	0.78	Y	0.96	27.1	7907.976	0.383
2346/1249-TCDF	NotFnd		0.9849						0.96		7907.976	0.383
2347/1279-TCDF	27.54		0.9927	0.9925	-0.3	3.08E+06	0.72	Y	0.96	13.4	7907.976	0.383
2348-TCDF	27.66		0.9967	0.9968	+0.2	2.07E+07	0.78	Y	0.96	90	7907.976	0.383
2378-TCDF	**27.77**	E	**1.0007**	**1.0008**	**+0.2**	**2.36E+08**	**0.80**	**Y**	**0.96**	**1,030**	**7907.976**	**0.383**
2367/3467-TCDF	28.12		1.0136	1.0132	-0.7	1.90E+07	0.77	Y	0.96	82.8	7907.976	0.383
1269-TCDF	28.36		1.0223	1.0222	-0.2	4.03E+06	0.71	Y	0.96	17.6	7907.976	0.383
1239-TCDF	NotFnd		1.0313						0.96		7907.976	0.383
1289-TCDF	29.75		1.0711	1.0722	+2.0	1.80E+07	0.86	Y	0.96	78.4	7907.976	0.383
13468/12468-PeCDF	29.69	EMPC	0.9147	0.9153	+1.1	1.16E+06	2.09	N	0.94	6.45	8745.463	0.429
13678/13467/12467-PeCDF	31.22		0.9616	0.9624	+1.5	5.62E+05	1.47	Y	0.94	3.12	7424.373	0.364
12368/13478/12478-PeCDF	31.37		0.9663	0.9670	+1.3	3.92E+06	1.63	Y	0.94	21.8	7424.373	0.364
14678-PeCDF	31.44	EMPC	0.9695	0.9693	-0.4	5.23E+05	1.30	N	0.94	2.9	7424.373	0.364
13479-PeCDF	NotFnd		0.9727						0.94		7424.373	0.364
13469/12479-PeCDF	NotFnd		0.9799						0.94		7424.373	0.364
12346-PeCDF	31.93	J	0.9839	0.9843	+0.8	1.44E+05	1.67	Y	0.94	0.8	7424.373	0.364

Lab ID: B5969_18712_DF_001 **Acq'd:** 08 Dec 2021 20:24 PSW **Wt/Vol:** 15.17 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-S-3 **UTP:** 09-Dec-2021 10:40:16 PSW **J-level:** 0.33 pg/g **Split:** 1 **Checkcode:** 866-721-CGR

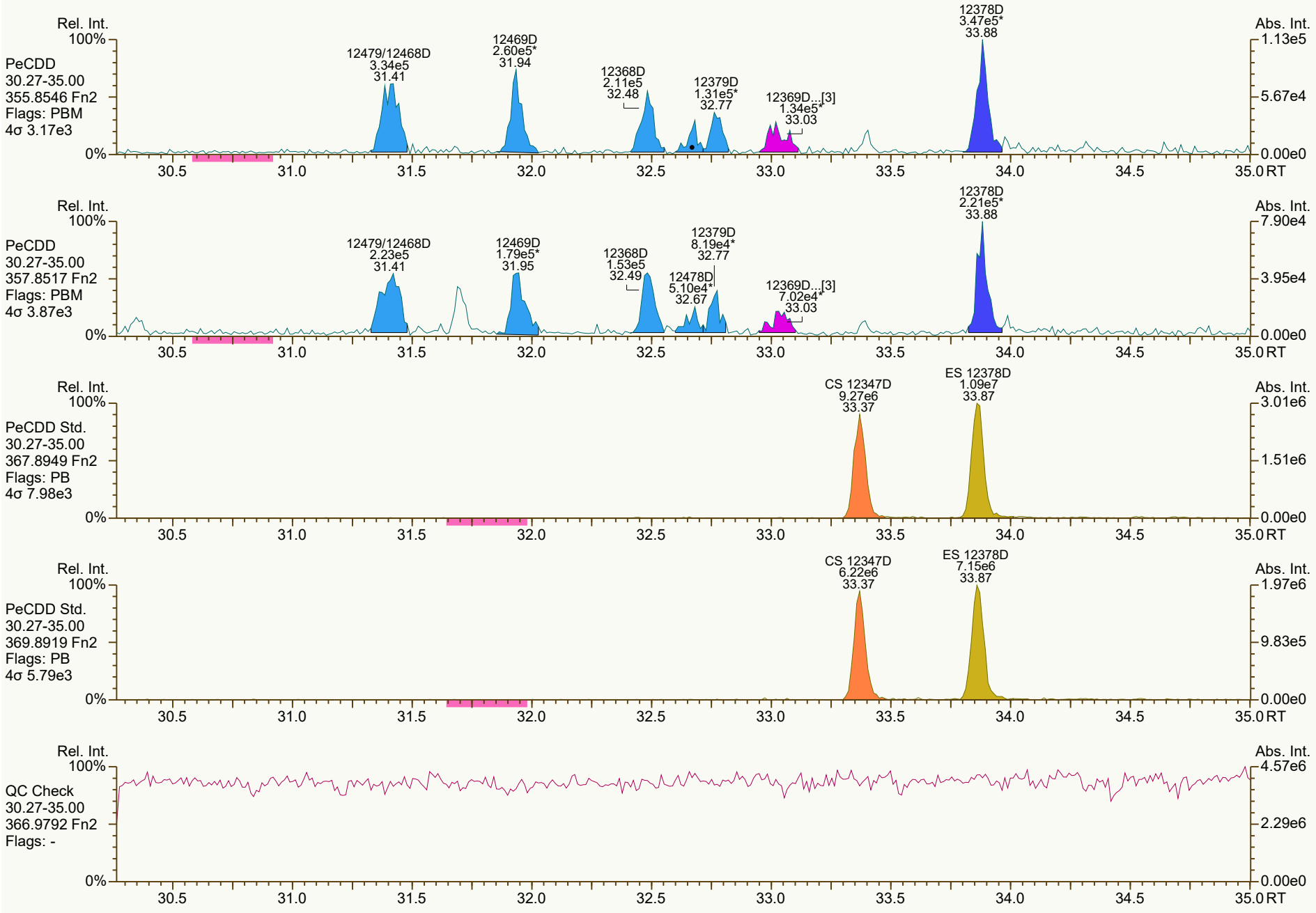
Datafile: 211208R06 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.02		0.9864	0.9870	+1.2	4.59E+05	1.74	Y	0.94	2.54	7424.373	0.364
12347-PeCDF	32.10		0.9892	0.9894	+0.4	3.33E+05	1.40	Y	0.94	1.85	7424.373	0.364
12348-PeCDF	32.25		0.9940	0.9942	+0.4	9.96E+05	1.65	Y	0.94	5.53	7424.373	0.364
12378-PeCDF	**32.46**		**1.0006**	**1.0006**	**0**	**7.10E+06**	**1.50**	**Y**	**0.95**	**39.1**	**7424.373**	**0.376**
12678/12367-PeCDF	32.75		1.0088	1.0095	+1.4	2.47E+06	1.45	Y	0.94	13.7	7424.373	0.364
12379-PeCDF	NotFnd		1.0142						0.94		7424.373	0.364
12679-PeCDF	NotFnd		0.9931						0.94		7424.373	0.364
23467/12369-PeCDF	33.42	J	0.9966	0.9965	-0.2	2.13E+05	1.42	Y	0.94	1.18	7424.373	0.364
23478-PeCDF	**33.56**		**1.0005**	**1.0007**	**+0.4**	**5.49E+06**	**1.59**	**Y**	**0.94**	**30.7**	**7424.373**	**0.353**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7424.373	0.364
12349-PeCDF	33.88	J	1.0100	1.0102	+0.4	9.10E+04	1.63	Y	0.94	0.505	7424.373	0.364
12389-PeCDF	34.62	J EMPC	1.0323	1.0322	-0.2	2.68E+05	1.85	N	0.94	1.49	7424.373	0.364
123468-HxCDF	35.38		0.9631	0.9632	+0.2	9.01E+05	1.32	Y	1.16	5.38	14607.261	0.716
124678/134678-HxCDF	35.58		0.9686	0.9686	0	3.33E+06	1.25	Y	1.16	19.9	14607.261	0.716
134679-HxCDF	NotFnd		0.9747						1.16		14607.261	0.716
124679-HxCDF	NotFnd		0.9800						1.16		14607.261	0.716
124689-HxCDF	36.22		0.9859	0.9860	+0.2	2.03E+06	1.08	Y	1.16	12.1	14607.261	0.716
123467-HxCDF	36.63	EMPC	0.9972	0.9971	-0.2	3.35E+05	1.50	N	1.16	2	14607.261	0.716
123478-HxCDF	**36.75**		**1.0004**	**1.0005**	**+0.2**	**1.36E+07**	**1.21**	**Y**	**1.23**	**77.6**	**14607.261**	**0.683**
123678-HxCDF	**36.90**		**1.0005**	**1.0005**	**0**	**3.57E+06**	**1.20**	**Y**	**1.13**	**18.1**	**14607.261**	**0.654**
123479-HxCDF	NotFnd		1.0048						1.16		14607.261	0.716
123469-HxCDF	37.21	J EMPC	1.0089	1.0089	0	2.12E+05	1.01	N	1.16	1.27	14607.261	0.716
123679-HxCDF	NotFnd		0.9943						1.16		14607.261	0.716
234678-HxCDF	**37.57**		**1.0005**	**1.0004**	**-0.2**	**7.59E+05**	**1.18**	**Y**	**1.15**	**4.94**	**14607.261**	**0.845**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		14607.261	0.716
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**14607.261**	**0.703**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.51		1.0004	1.0010	+1.4	9.46E+05	1.08	Y	1.16	5.65	14607.261	0.716
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**8.14E+06**	**1.07**	**Y**	**1.36**	**58.9**	**7114.721**	**0.351**
1234679-HpCDF	40.06		1.0065	1.0066	+0.2	4.89E+05	1.02	Y	1.33	4.07	7114.721	0.413
1234689-HpCDF	40.20		1.0097	1.0101	+1.0	5.19E+06	1.06	Y	1.33	43.2	7114.721	0.413
1234789-HpCDF	**41.16**		**1.0004**	**1.0002**	**-0.5**	**1.17E+06**	**0.98**	**Y**	**1.30**	**11.4**	**7114.721**	**0.493**
OCDF	**43.47**		**1.0002**	**1.0002**	**0**	**6.54E+06**	**0.87**	**Y**	**1.03**	**129**	**7575.201**	**1.17**
OCDF-a	43.46		1.0001	1.0001	0	4.15E+05	2.26	Y	0.06	142	7845.217	21

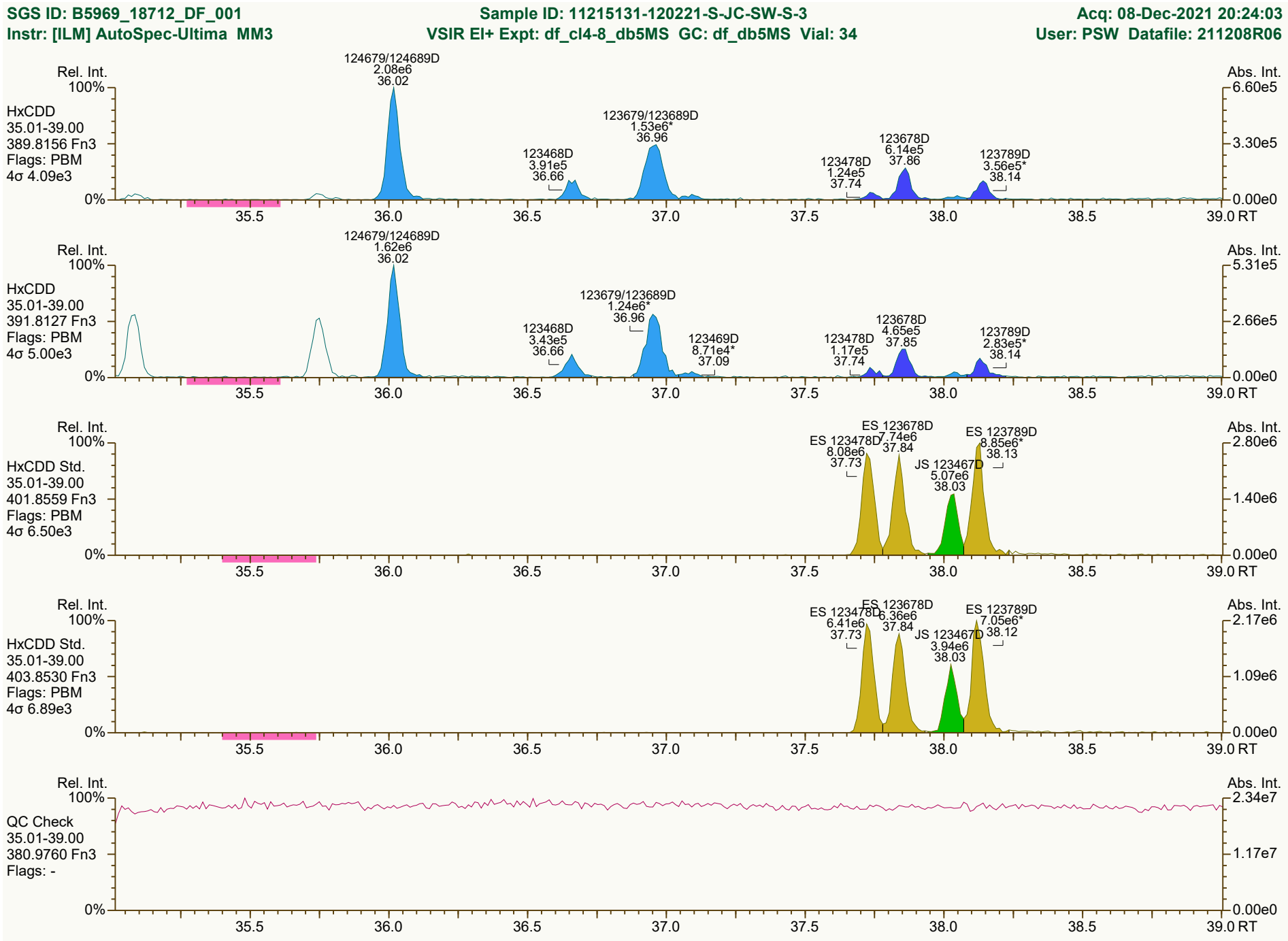

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.27e6
2.63e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.57e6
2.29e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.34e7
1.17e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.47e7
7.37e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.01e7
5.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT

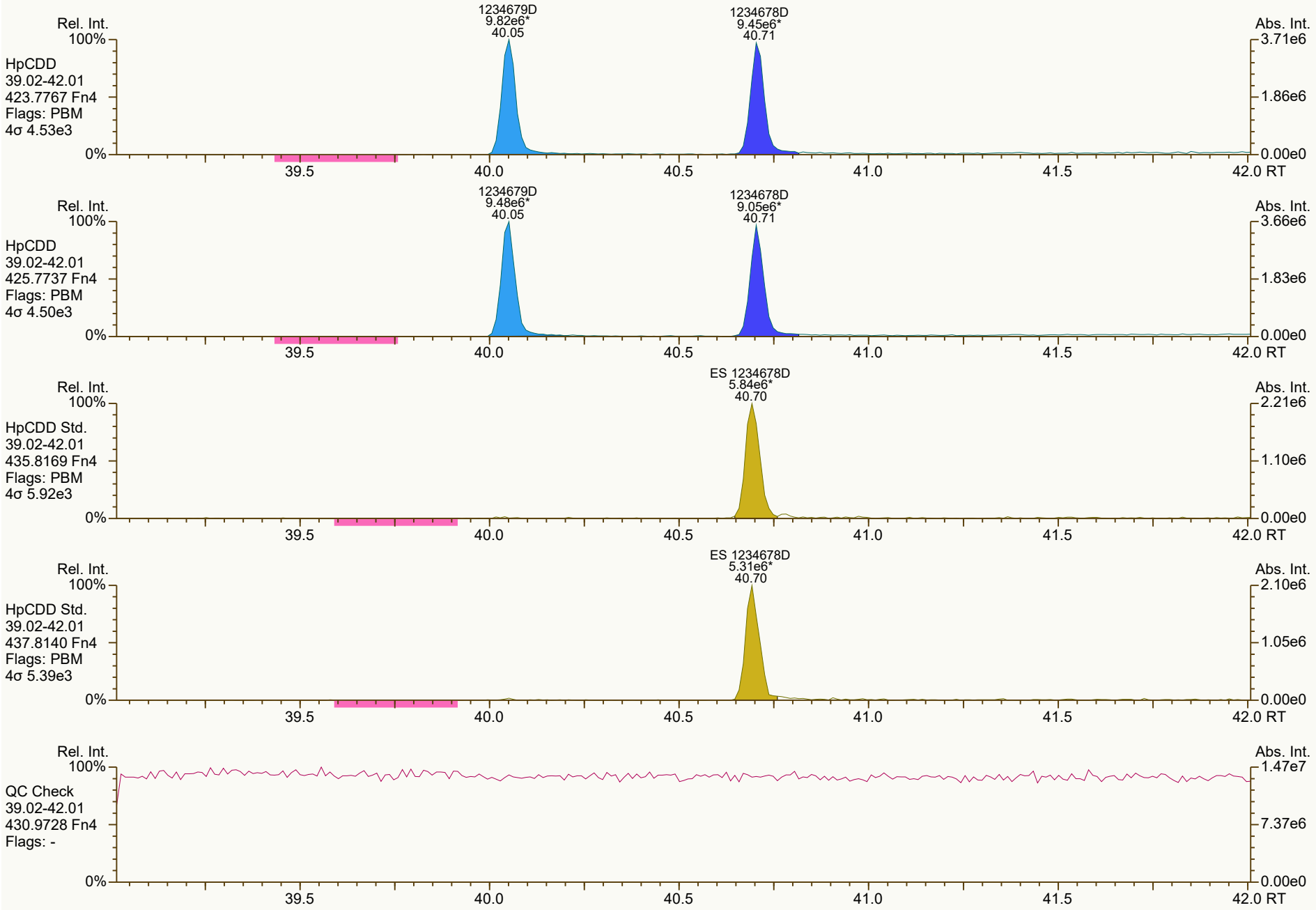

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 5.96e3
0%
2378D
2.86e7
28.61
1278D
2.78e6
28.94
Abs. Int.
6.94e6
3.47e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 3.06e3
0%
2378D
3.60e7
28.61
1278D
3.46e6
28.94
Abs. Int.
8.45e6
4.22e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.40e3
0%
CS 37Cl-2378D
9.91e6
28.61
Abs. Int.
2.45e6
1.22e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.15e4
0%
JS 1234D
1.18e7
27.94
ES 2378D
9.67e6
28.59
Abs. Int.
2.71e6
1.36e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 5.21e3
0%
JS 1234D
1.48e7
27.95
ES 2378D
1.18e7
28.59
Abs. Int.
3.42e6
1.71e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

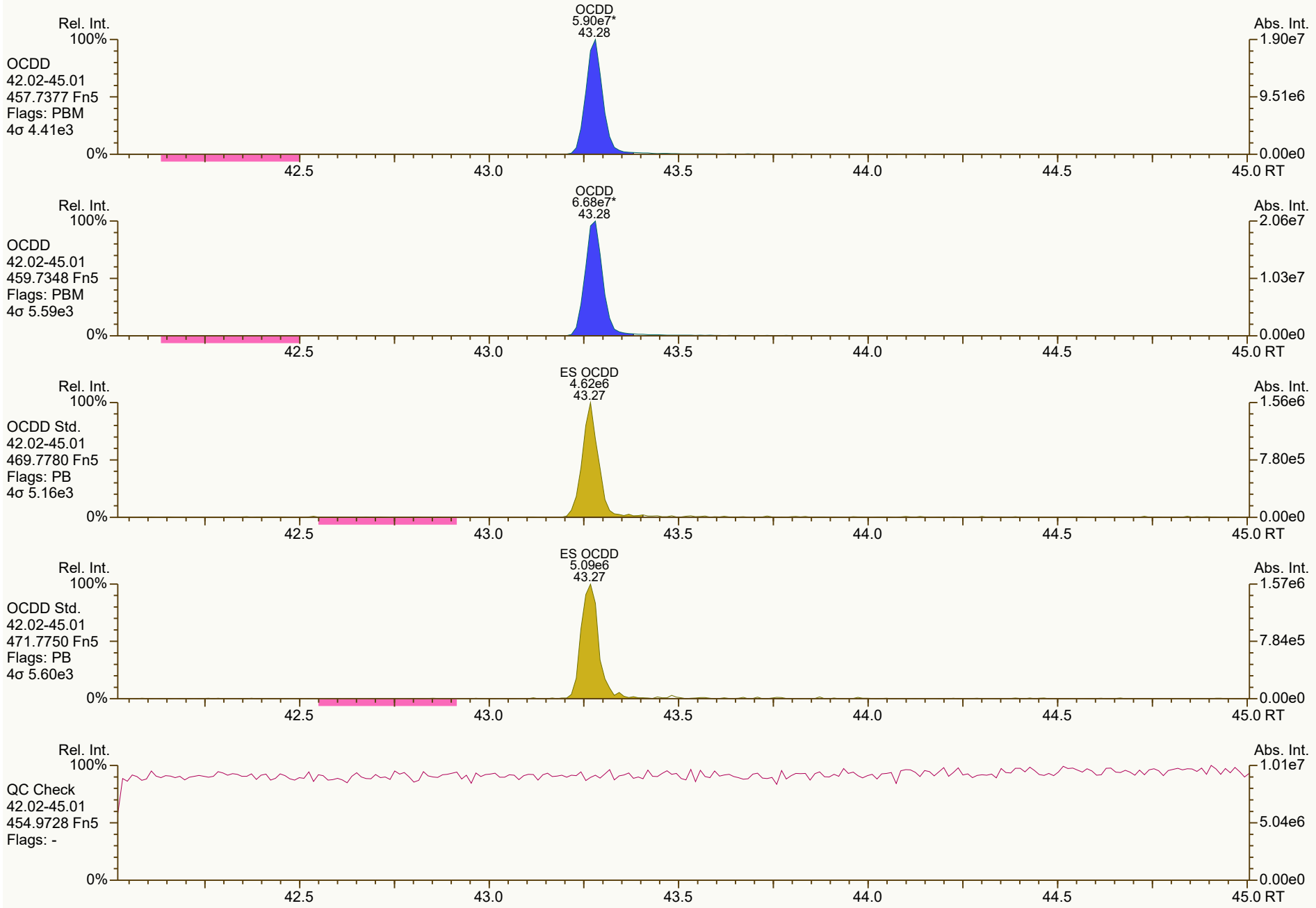
SGS ID: B5969_18712_DF_001 Sample ID: 11215131-120221-S-JC-SW-S-3 Acq: 08-Dec-2021 20:24:03
Instr: [ILM] AutoSpec-Ultima MM3 VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34 User: PSW Datafile: 211208R06

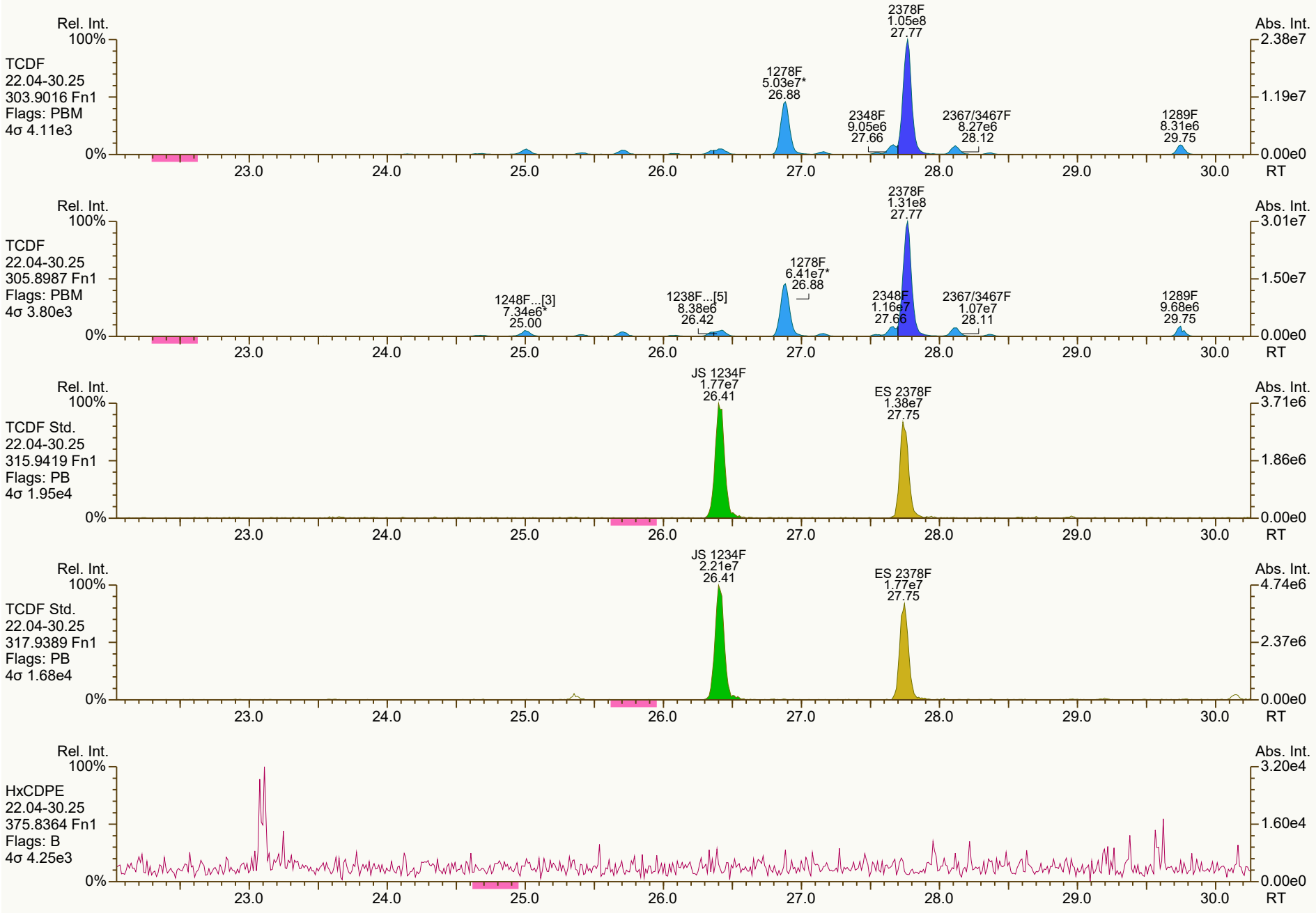


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_001.utp_res, saved 09-Dec-2021 10:40 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9306, 0981 scc: 866-721 *PKD: 09-Dec-2021 08:49 Printed: 09-Dec-2021 10:47 Page 3 of 12*


SGS ID: B5969_18712_DF_001
Sample ID: 11215131-120221-S-JC-SW-S-3
Acq: 08-Dec-2021 20:24:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34
User: PSW Datafile: 211208R06
Rel. Int.
Abs. Int.
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PBM
4σ 4.09e3
124679/124689D
2.08e6
36.02
123679/123689D
1.53e6*
36.96
123468D
3.91e5
36.66
123478D
1.24e5
37.74
123678D
6.14e5
37.86
123789D
3.56e5*
38.14
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PBM
4σ 5.00e3
124679/124689D
1.62e6
36.02
123679/123689D
1.24e6*
36.96
123468D
3.43e5
36.66
123469D
8.71e4*
37.09
123478D
1.17e5
37.74
123678D
4.65e5
37.85
123789D
2.83e5*
38.14
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 6.50e3
ES 123678D
7.74e6
37.84
ES 123478D
8.08e6
37.73
ES 123789D
8.85e6*
38.13
JS 123467D
5.07e6
38.03
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 6.89e3
ES 123678D
6.36e6
37.84
ES 123478D
6.41e6
37.73
ES 123789D
7.05e6*
38.12
JS 123467D
3.94e6
38.03
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_001.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7077, 2861 scc: 866-721
PKD: 09-Dec-2021 08:49 Printed: 09-Dec-2021 10:47 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 4.53e3
1234679D
9.82e6*
40.05
1234678D
9.45e6*
40.71
Abs. Int.
3.71e6
1.86e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 4.50e3
1234679D
9.48e6*
40.05
1234678D
9.05e6*
40.71
Abs. Int.
3.66e6
1.83e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 5.92e3
ES 1234678D
5.84e6*
40.70
Abs. Int.
2.21e6
1.10e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 5.39e3
ES 1234678D
5.31e6*
40.70
Abs. Int.
2.10e6
1.05e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.47e7
7.37e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 4.41e3
0%
OCDD
5.90e7*
43.28
Abs. Int.
1.90e7
9.51e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 5.59e3
0%
OCDD
6.68e7*
43.28
Abs. Int.
2.06e7
1.03e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 5.16e3
0%
ES OCDD
4.62e6
43.27
Abs. Int.
1.56e6
7.80e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 5.60e3
0%
ES OCDD
5.09e6
43.27
Abs. Int.
1.57e6
7.84e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.01e7
5.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

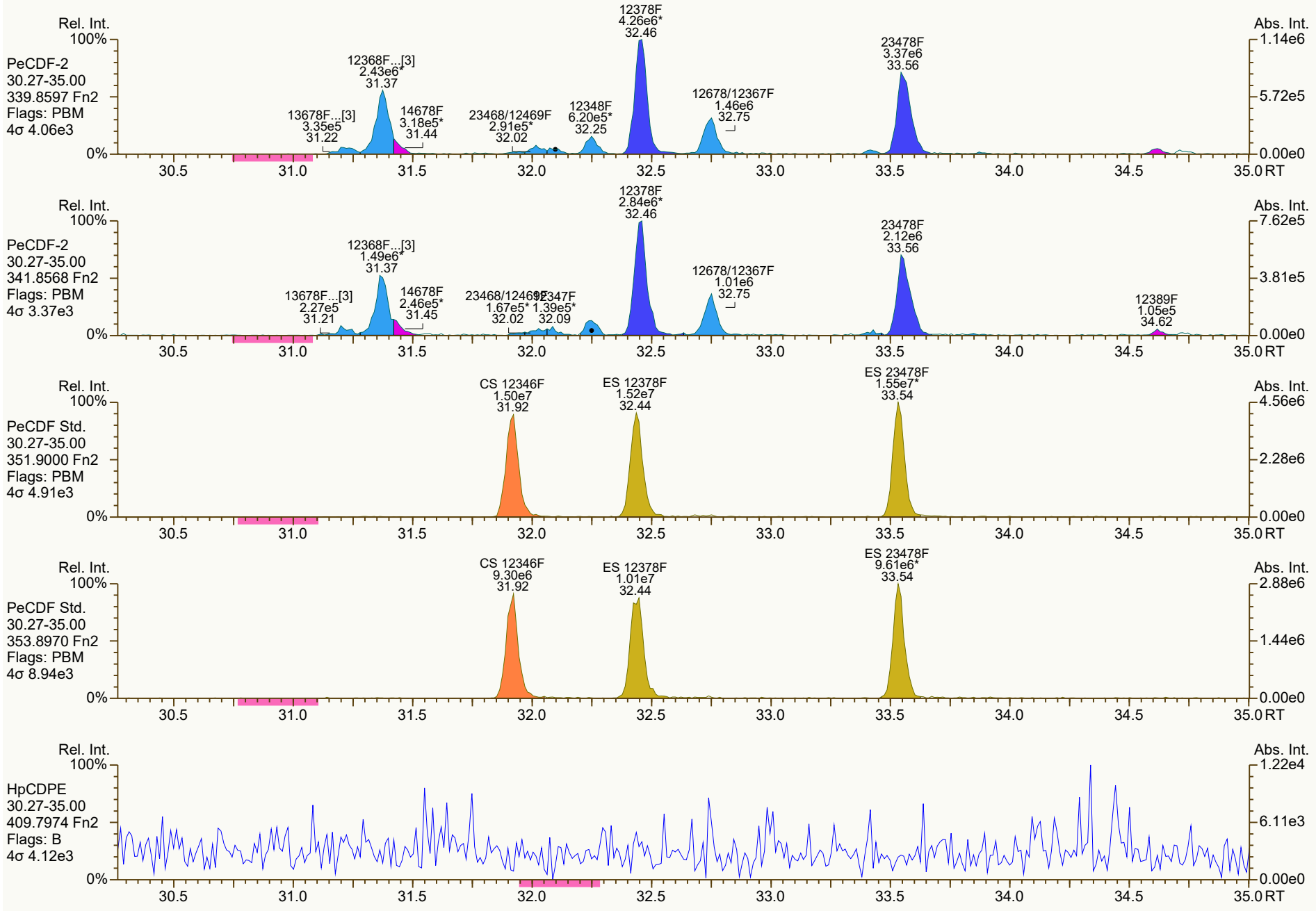

Rel. Int.
100%
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 4.11e3
0%
2378F
1.05e8
27.77
1278F
5.03e7*
26.88
2348F
9.05e6
27.66
2367/3467F
8.27e6
28.12
1289F
8.31e6
29.75
Abs. Int.
2.38e7
1.19e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.80e3
0%
2378F
1.31e8
27.77
1278F
6.41e7*
26.88
1248F...[3]
7.34e6*
25.00
1238F...[5]
8.38e6
26.42
2348F
1.16e7
27.66
2367/3467F
1.07e7
28.11
1289F
9.68e6
29.75
Abs. Int.
3.01e7
1.50e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.95e4
0%
JS 1234F
1.77e7
26.41
ES 2378F
1.38e7
27.75
Abs. Int.
3.71e6
1.86e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.68e4
0%
JS 1234F
2.21e7
26.41
ES 2378F
1.77e7
27.75
Abs. Int.
4.74e6
2.37e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.25e3
0%
Abs. Int.
3.20e4
1.60e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

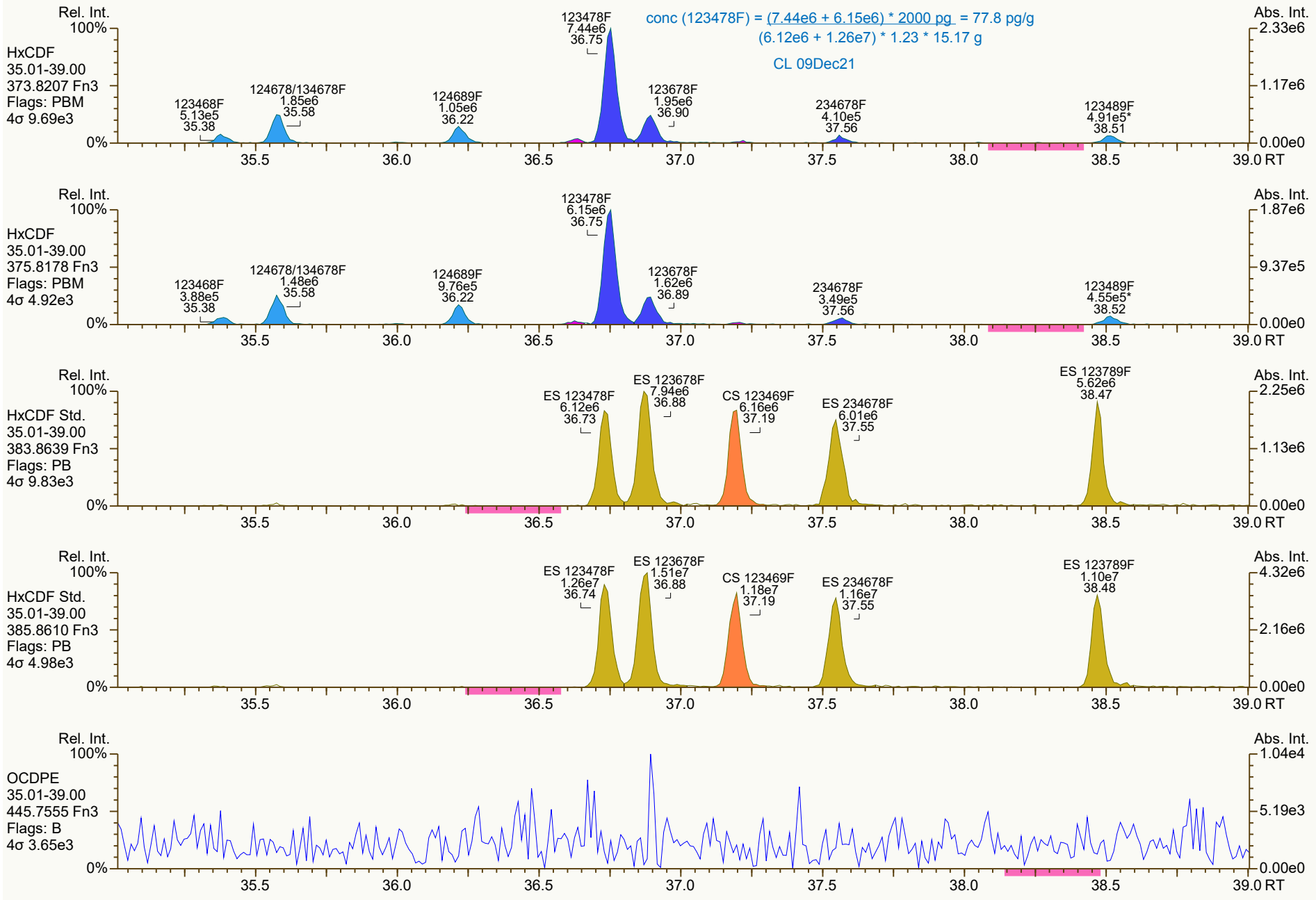
SGS ID: B5969_18712_DF_001 | Sample ID: 11215131-120221-S-JC-SW-S-3 | Acq: 08-Dec-2021 20:24:03
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34 | User: PSW Datafile: 211208R06

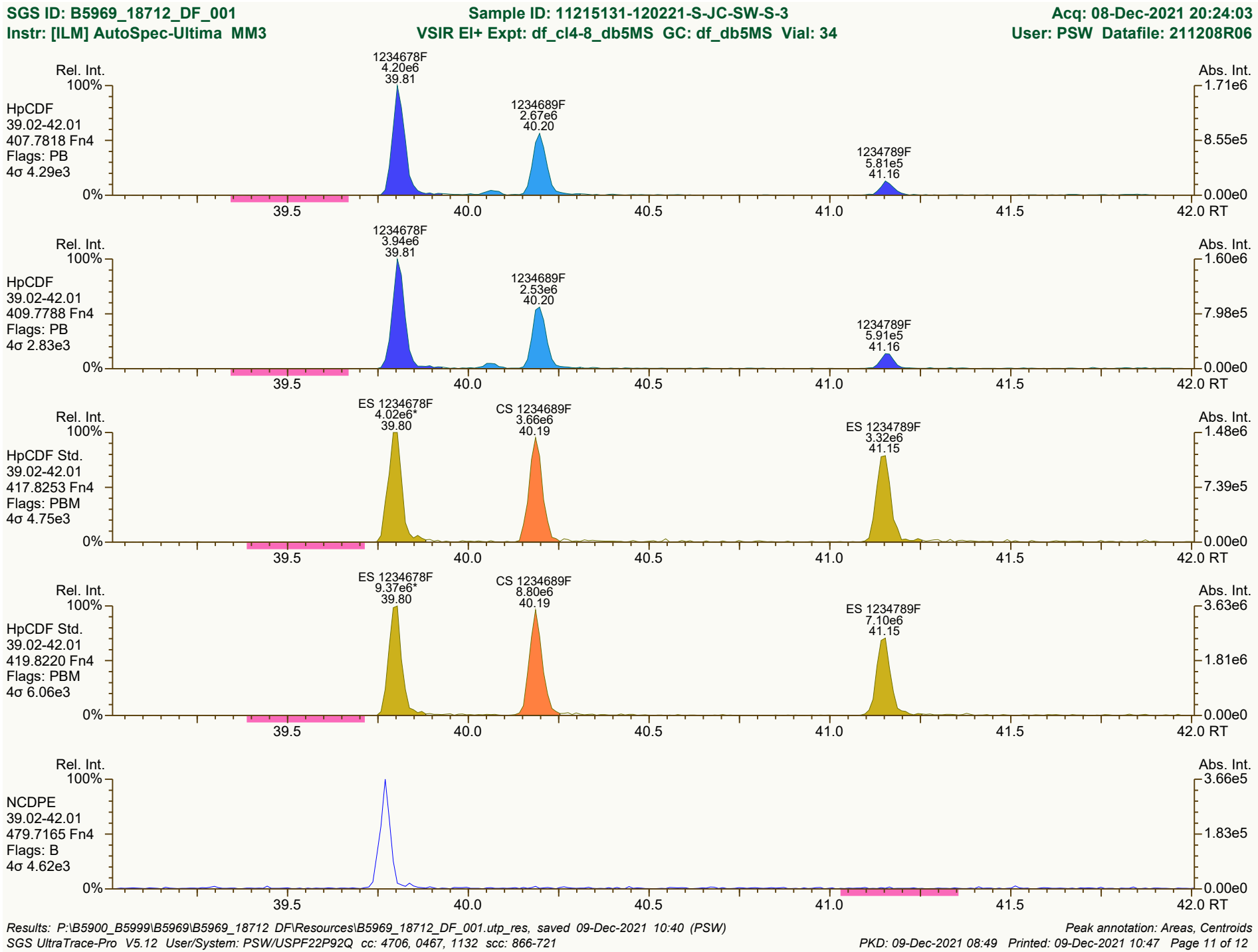


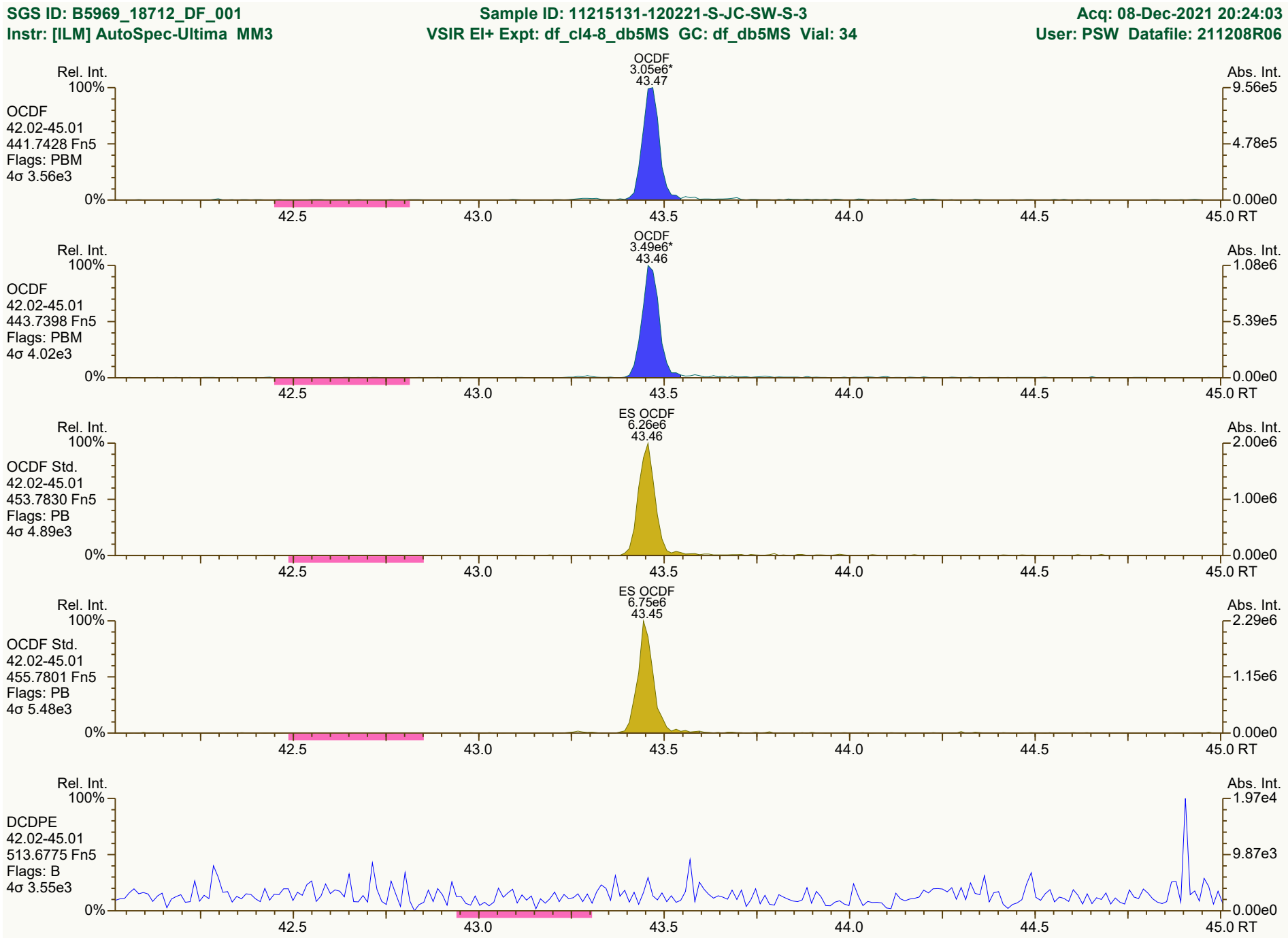
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_001.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9708 scc: 866-721 | *PKD: 09-Dec-2021 08:49 Printed: 09-Dec-2021 10:47 Page 8 of 12*


PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 4.06e3
12368F...[3] 2.43e6* 31.37
13678F...[3] 3.35e5 31.22
14678F 3.18e5* 31.44
23468/12469F 2.91e5* 32.02
12348F 6.20e5* 32.25
12378F 4.26e6* 32.46
12678/12367F 1.46e6 32.75
23478F 3.37e6 33.56
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.37e3
12368F...[3] 1.49e6* 31.37
13678F...[3] 2.27e5 31.21
14678F 2.46e5* 31.45
23468/12469F 1.67e5* 32.02
12347F 1.39e5* 32.09
12378F 2.84e6* 32.46
12678/12367F 1.01e6 32.75
23478F 2.12e6 33.56
12389F 1.05e5 34.62
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 4.91e3
CS 12346F 1.50e7 31.92
ES 12378F 1.52e7 32.44
ES 23478F 1.55e7* 33.54
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 8.94e3
CS 12346F 9.30e6 31.92
ES 12378F 1.01e7 32.44
ES 23478F 9.61e6* 33.54
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.12e3
Rel. Int.
Abs. Int.
RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 9.69e3
123468F 5.13e5 35.38
124678/134678F 1.85e6 35.58
124689F 1.05e6 36.22
123478F 7.44e6 36.75
123678F 1.95e6 36.90
234678F 4.10e5 37.56
123489F 4.91e5* 38.51
conc (123478F) = (7.44e6 + 6.15e6) * 2000 pg = 77.8 pg/g
(6.12e6 + 1.26e7) * 1.23 * 15.17 g
CL 09Dec21
Abs. Int.
2.33e6
1.17e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 4.92e3
123468F 3.88e5 35.38
124678/134678F 1.48e6 35.58
124689F 9.76e5 36.22
123478F 6.15e6 36.75
123678F 1.62e6 36.89
234678F 3.49e5 37.56
123489F 4.55e5* 38.52
1.87e6
9.37e5
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 9.83e3
ES 123478F 6.12e6 36.73
ES 123678F 7.94e6 36.88
CS 123469F 6.16e6 37.19
ES 234678F 6.01e6 37.55
ES 123789F 5.62e6 38.47
2.25e6
1.13e6
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 4.98e3
ES 123478F 1.26e7 36.74
ES 123678F 1.51e7 36.88
CS 123469F 1.18e7 37.19
ES 234678F 1.16e7 37.55
ES 123789F 1.10e7 38.48
4.32e6
2.16e6
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.65e3
1.04e4
5.19e3


SGS ID: B5969_18712_DF_001
Sample ID: 11215131-120221-S-JC-SW-S-3
Acq: 08-Dec-2021 20:24:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34
User: PSW Datafile: 211208R06
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 4.29e3
1234678F
4.20e6
39.81
1234689F
2.67e6
40.20
1234789F
5.81e5
41.16
1.71e6
8.55e5
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 2.83e3
1234678F
3.94e6
39.81
1234689F
2.53e6
40.20
1234789F
5.91e5
41.16
1.60e6
7.98e5
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 4.75e3
ES 1234678F
4.02e6*
39.80
CS 1234689F
3.66e6
40.19
ES 1234789F
3.32e6
41.15
1.48e6
7.39e5
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 6.06e3
ES 1234678F
9.37e6*
39.80
CS 1234689F
8.80e6
40.19
ES 1234789F
7.10e6
41.15
3.63e6
1.81e6
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.62e3
3.66e5
1.83e5
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_001.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4706, 0467, 1132 scc: 866-721
PKD: 09-Dec-2021 08:49 Printed: 09-Dec-2021 10:47 Page 11 of 12


SGS ID: B5969_18712_DF_001
Sample ID: 11215131-120221-S-JC-SW-S-3
Acq: 08-Dec-2021 20:24:03
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 34
User: PSW Datafile: 211208R06
OCDF
3.05e6*
43.47
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 3.56e3
0%
Abs. Int.
9.56e5
4.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.49e6*
43.46
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 4.02e3
0%
Abs. Int.
1.08e6
5.39e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
6.26e6
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 4.89e3
0%
Abs. Int.
2.00e6
1.00e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
6.75e6
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 5.48e3
0%
Abs. Int.
2.29e6
1.15e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.55e3
0%
Abs. Int.
1.97e4
9.87e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_001.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4535, 1813, 1243 scc: 866-721
PKD: 09-Dec-2021 08:49 Printed: 09-Dec-2021 10:47 Page 12 of 12

Lab ID: B5969_18712_DF_002 **Acq'd:** 08 Dec 2021 21:11 PSW **Wt/Vol:** 18.76 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-S-4 **UTP:** 09-Dec-2021 10:40:16 PSW **J-level:** 0.267 pg/g **Split:** 1 **Checkcode:** 750-531-LHT

Datafile: 211208R07 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.60		1.0008	1.0008	0	1.83E+07	0.76	Y	1.34	43.1	12515.308	0.294
12378-PeCDD	33.87	J	1.0004	1.0005	+0.2	3.02E+05	1.57	Y	1.06	0.948	8478.796	0.231
123478-HxCDD	37.73	J	1.0004	1.0004	0	2.94E+05	1.28	Y	1.06	1.14	9790.273	0.293
123678-HxCDD	37.84		1.0034	1.0034	0	9.90E+05	1.23	Y	1.08	3.69	9790.273	0.292
123789-HxCDD	38.13		1.0111	1.0109	-0.5	6.72E+05	1.19	Y	1.02	2.41	9790.273	0.292
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	2.10E+07	1.04	Y	0.97	102	8583.919	0.272
OCDD	43.27		1.0003	1.0002	-0.3	2.02E+08	0.90	Y	1.07	1,520	10110.785	0.595
2378-TCDF	27.76		1.0007	1.0008	+0.2	6.83E+07	0.80	Y	0.96	152	7188.427	0.179
12378-PeCDF	32.44		1.0006	1.0006	0	2.86E+06	1.50	Y	0.95	7.45	6867.98	0.161
23478-PeCDF	33.55		1.0005	1.0008	+0.6	2.47E+06	1.58	Y	0.94	6.48	6867.98	0.156
123478-HxCDF	36.74		1.0004	1.0005	+0.2	5.09E+06	1.22	Y	1.23	13.3	14202.638	0.311
123678-HxCDF	36.88		1.0005	1.0003	-0.4	1.55E+06	1.16	Y	1.13	3.86	14202.638	0.287
234678-HxCDF	37.55		1.0005	1.0004	-0.2	7.40E+05	1.41	Y	1.15	2	14202.638	0.338
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	14202.638	0.326
1234678-HpCDF	39.80		1.0003	1.0002	-0.2	7.43E+06	1.01	Y	1.36	22.2	9506.467	0.188
1234789-HpCDF	41.16		1.0004	1.0003	-0.2	8.31E+05	1.06	Y	1.30	3.09	9506.467	0.244
OCDF	43.46		1.0002	1.0002	0	1.20E+07	0.89	Y	1.03	72.3	12352.582	0.615

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58	1.0233	1.0231	-0.3	3.36E+07	0.84	Y	1.03	87.4
ES 12378-PeCDD	33.85	1.2118	1.2120	+0.4	3.21E+07	1.61	Y	1.03	83.4
ES 123478-HxCDD	37.72	0.9921	0.9921	0	2.62E+07	1.24	Y	0.99	87.7
ES 123678-HxCDD	37.83	0.9951	0.9951	0	2.64E+07	1.26	Y	0.97	90.5
ES 123789-HxCDD	38.11	1.0027	1.0026	-0.2	2.93E+07	1.27	Y	1.12	86.9
ES 1234678-HpCDD	40.69	1.0702	1.0703	+0.2	2.25E+07	1.03	Y	0.99	75.8
ES OCDD	43.26	1.1377	1.1381	+1.0	2.65E+07	0.95	Y	0.78	56.9
ES 2378-TCDF	27.74	1.0505	1.0506	+0.2	4.97E+07	0.79	Y	1.08	84.8
ES 12378-PeCDF	32.42	1.2278	1.2281	+0.6	4.33E+07	1.53	Y	0.93	85.7
ES 23478-PeCDF	33.52	1.2691	1.2697	+1.2	4.32E+07	1.61	Y	0.92	86.6
ES 123478-HxCDF	36.72	0.9660	0.9660	0	3.30E+07	0.53	Y	1.14	96.2
ES 123678-HxCDF	36.86	0.9698	0.9697	-0.2	3.79E+07	0.54	Y	1.30	97.5
ES 234678-HxCDF	37.54	0.9875	0.9874	-0.2	3.42E+07	0.51	Y	1.20	94.8
ES 123789-HxCDF	38.46	1.0121	1.0118	-0.7	3.16E+07	0.52	Y	1.14	92.6
ES 1234678-HpCDF	39.79	1.0468	1.0467	-0.2	2.62E+07	0.46	Y	0.95	92
ES 1234789-HpCDF	41.14	1.0822	1.0822	0	2.20E+07	0.44	Y	0.85	86.8
ES OCDF	43.45	1.1426	1.1430	+1.0	3.45E+07	0.88	Y	0.93	62.2

Lab ID: B5969_18712_DF_002 **Acq'd:** 08 Dec 2021 21:11 PSW **Wt/Vol:** 18.76 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-S-4 **UTP:** 09-Dec-2021 10:40:16 PSW **J-level:** 0.267 pg/g **Split:** 1 **Checkcode:** 750-531-LHT

Datafile: 211208R07 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.93		-	-	-	3.72E+07	0.80	Y	-	-	
JS 1234-TCDF	26.40		-	-	-	5.41E+07	0.79	Y	-	-	
JS 123467-HxCDD	38.01		-	-	-	1.50E+07	1.32	Y	-	-	
CS 37Cl-2378-TCDD	28.60		1.0241	1.0240	-0.2	1.58E+07	n/a	-	1.31	81.2	
CS 12347-PeCDD	33.36		1.1940	1.1943	+0.6	2.79E+07	1.52	Y	0.89	84.1	
CS 12346-PeCDF	31.90		1.2080	1.2084	+0.8	4.08E+07	1.67	Y	0.87	87	
CS 123469-HxCDF	37.18		0.9781	0.9781	0	3.31E+07	0.51	Y	1.09	101	
CS 1234689-HpCDF	40.18		1.0569	1.0569	0	2.57E+07	0.43	Y	0.86	99.2	
~~SS 37Cl-2378-TCDD~~	~~28.60~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~1.58E+07~~	~~n/a~~		~~1.26~~	~~93.4~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.36~~		~~1.1940~~	~~1.1943~~	~~+0.6~~	~~2.79E+07~~	~~1.52~~	~~Y~~	~~0.86~~	~~101~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.90~~		~~1.2080~~	~~1.2084~~	~~+0.8~~	~~4.08E+07~~	~~1.67~~	~~Y~~	~~0.93~~	~~101~~	
~~SS 123469-HxCDF~~	~~37.18~~		~~0.9781~~	~~0.9781~~	~~0~~	~~3.31E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~104~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0569~~	~~0~~	~~2.57E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~108~~	

Totals	Conc	EMPC
Total TCDD	49.4	50.6
Total PeCDD	3.66	6.59
Total HxCDD	45.6	45.6
Total HpCDD	266	266
Total Tetra-Octa Dioxins	1880	1880
Total TCDF	296	302
Total PeCDF	35.1	36
Total HxCDF	40.8	42.8
Total HpCDF	57.3	58.4
Total Tetra-Octa Furans	501	512
Total Tetra-Octa Dioxins & Furans	2380	2400

Lab ID: B5969_18712_DF_002 **Acq'd: 08 Dec 2021 21:11 PSW** **Wt/Vol: 18.76 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-S-4 **UTP: 09-Dec-2021 10:40:16 PSW** **J-level: 0.267 pg/g** **Split: 1** **Checkcode: 750-531-LHT**

Datafile: 211208R07 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.01	EMPC	0.8758	0.8752	-0.9	1.96E+05	0.64	N	1.34	0.461	12515.308	0.294
1379-TCDD	NotFnd		0.8878						1.34		12515.308	0.294
1369-TCDD	NotFnd		0.9025						1.34		12515.308	0.294
1469-TCDD	26.56		0.9291	0.9293	+0.3	9.08E+05	0.76	Y	1.34	2.14	12515.308	0.294
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		12515.308	0.294
1378-TCDD	NotFnd		0.9440						1.34		12515.308	0.294
1268-TCDD	NotFnd		0.9505						1.34		12515.308	0.294
1478-TCDD	NotFnd		0.9591						1.34		12515.308	0.294
1279-TCDD	NotFnd		0.9650						1.34		12515.308	0.294
1234/1269-TCDD	NotFnd		0.9771						1.34		12515.308	0.294
1236-TCDD	NotFnd		0.9821						1.34		12515.308	0.294
1237/1238-TCDD	28.30	EMPC	0.9907	0.9903	-0.7	3.12E+05	1.03	N	1.34	0.736	12515.308	0.294
1239-TCDD	NotFnd		0.9953						1.34		12515.308	0.294
2378-TCDD	**28.60**		**1.0008**	1.0008	**0**	1.83E+07	0.76	Y	**1.34**	**43.1**	**12515.308**	**0.294**
1278-TCDD	28.93		1.0118	1.0122	+0.7	1.75E+06	0.78	Y	1.34	4.13	12515.308	0.294
1267-TCDD	NotFnd		1.0162						1.34		12515.308	0.294
1289-TCDD	NotFnd		1.0340						1.34		12515.308	0.294
12479/12468-PeCDD	31.39	J	0.9274	0.9274	0	4.06E+05	1.36	Y	1.06	1.27	8478.796	0.231
12469-PeCDD	31.93	EMPC	0.9430	0.9431	+0.2	6.18E+05	1.88	N	1.06	1.94	8478.796	0.231
12368-PeCDD	32.47	J EMPC	0.9591	0.9593	+0.4	1.66E+05	1.88	N	1.06	0.52	8478.796	0.231
12478-PeCDD	32.66	J EMPC	0.9645	0.9647	+0.4	1.50E+05	1.87	N	1.06	0.469	8478.796	0.231
12379-PeCDD	32.75	J	0.9676	0.9675	-0.2	1.66E+05	1.73	Y	1.06	0.522	8478.796	0.231
12369/12467/12489-PeCDD	33.02	J	0.9751	0.9754	+0.6	2.93E+05	1.64	Y	1.06	0.92	8478.796	0.231
12346/12347-PeCDD	NotFnd		0.9860						1.06		8478.796	0.231
12378-PeCDD	33.87	J	**1.0004**	**1.0005**	**+0.2**	**3.02E+05**	**1.57**	**Y**	**1.06**	**0.948**	**8478.796**	**0.231**
12367-PeCDD	NotFnd		1.0034						1.06		8478.796	0.231
12389-PeCDD	NotFnd		1.0133						1.06		8478.796	0.231
124679/124689-HxCDD	36.01		0.9546	0.9547	+0.2	6.02E+06	1.22	Y	1.05	22.4	9790.273	0.292
123468-HxCDD	36.65		0.9718	0.9718	0	6.07E+05	1.30	Y	1.05	2.26	9790.273	0.292
123679/123689-HxCDD	36.94		0.9795	0.9795	0	3.12E+06	1.20	Y	1.05	11.6	9790.273	0.292
123469-HxCDD	37.08	J	0.9832	0.9831	-0.2	3.41E+05	1.41	Y	1.05	1.27	9790.273	0.292
123478-HxCDD	37.73	J	**1.0004**	**1.0004**	**0**	**2.94E+05**	**1.28**	**Y**	1.06	**1.14**	**9790.273**	**0.293**
123678-HxCDD	37.84		**1.0034**	**1.0034**	**0**	**9.90E+05**	**1.23**	**Y**	1.08	**3.69**	**9790.273**	**0.292**
123467-HxCDD	38.02	J	1.0083	1.0081	-0.5	2.35E+05	1.42	Y	1.05	0.872	9790.273	0.292
123789-HxCDD	38.13		**1.0111**	**1.0109**	**-0.5**	**6.72E+05**	**1.19**	**Y**	1.02	**2.41**	**9790.273**	**0.292**

Lab ID: B5969_18712_DF_002 **Acq'd:** 08 Dec 2021 21:11 PSW **Wt/Vol:** 18.76 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-S-4 **UTP:** 09-Dec-2021 10:40:16 PSW **J-level:** 0.267 pg/g **Split:** 1 **Checkcode:** 750-531-LHT

Datafile: 211208R07 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

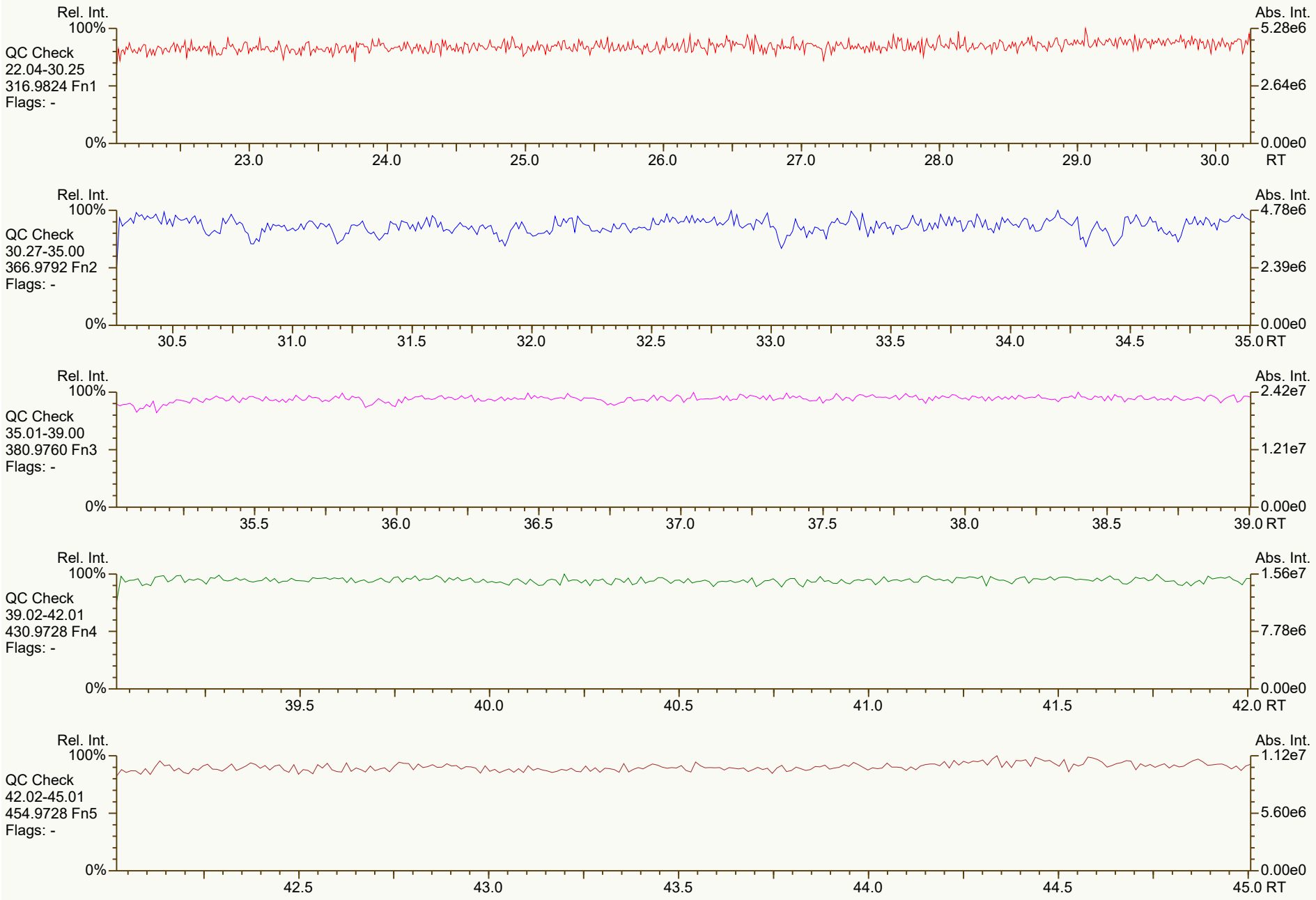
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9843	0.9841	-0.5	3.38E+07	1.02	Y	0.97	164	8583.919	0.272
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**2.10E+07**	**1.04**	**Y**	**0.97**	**102**	**8583.919**	**0.272**
OCDD	**43.27**		**1.0003**	**1.0002**	**-0.3**	**2.02E+08**	**0.90**	**Y**	**1.07**	**1,520**	**10110.785**	**0.595**
OCDD-a	43.27		1.0001	1.0002	+0.3	1.26E+07	2.42	Y	0.07	1,530	11638.522	11.1
1368-TCDF	22.96	J	0.8284	0.8278	-0.8	1.01E+05	0.74	Y	0.96	0.225	7188.427	0.179
1468-TCDF	23.55		0.8487	0.8489	+0.3	4.66E+05	0.66	Y	0.96	1.04	7188.427	0.179
2468-TCDF	24.15		0.8709	0.8707	-0.3	9.22E+05	0.76	Y	0.96	2.06	7188.427	0.179
1346/1246-TCDF	NotFnd		0.8828						0.96		7188.427	0.179
1347/1378/1247-TCDF	24.67		0.8886	0.8893	+1.0	1.21E+06	0.83	Y	0.96	2.71	7188.427	0.179
1348-TCDF	24.91		0.8980	0.8981	+0.1	3.46E+05	0.68	Y	0.96	0.773	7188.427	0.179
1248/1367/1379-TCDF	25.00		0.9027	0.9014	-2.0	2.94E+06	0.76	Y	0.96	6.55	7188.427	0.179
1268-TCDF	25.40		0.9159	0.9159	0	1.37E+06	0.78	Y	0.96	3.07	7188.427	0.179
1467-TCDF	25.54	EMPC	0.9206	0.9208	+0.3	3.24E+05	0.62	N	0.96	0.724	7188.427	0.179
1478-TCDF	25.70		0.9266	0.9264	-0.3	2.71E+06	0.76	Y	0.96	6.04	7188.427	0.179
1369/1237-TCDF	26.07		0.9396	0.9399	+0.5	8.99E+05	0.78	Y	0.96	2.01	7188.427	0.179
2467-TCDF	26.19	EMPC	0.9440	0.9443	+0.5	2.25E+05	0.58	N	0.96	0.503	7188.427	0.179
2368-TCDF	26.34	EMPC	0.9496	0.9496	0	2.34E+06	0.94	N	0.96	5.21	7188.427	0.179
1238/1234/1678/1469/1236-TCDF	26.42		0.9530	0.9527	-0.5	3.76E+06	0.66	Y	0.96	8.4	7188.427	0.179
1278-TCDF	26.88		0.9689	0.9689	0	2.71E+07	0.79	Y	0.96	60.5	7188.427	0.179
1349-TCDF	NotFnd		0.9732						0.96		7188.427	0.179
1267-TCDF	27.14		0.9786	0.9785	-0.2	1.70E+06	0.71	Y	0.96	3.79	7188.427	0.179
2346/1249-TCDF	NotFnd		0.9849						0.96		7188.427	0.179
2347/1279-TCDF	27.53		0.9927	0.9925	-0.3	9.75E+05	0.79	Y	0.96	2.18	7188.427	0.179
2348-TCDF	27.65		0.9967	0.9969	+0.3	4.67E+06	0.77	Y	0.96	10.4	7188.427	0.179
2378-TCDF	**27.76**		**1.0007**	**1.0008**	**+0.2**	**6.83E+07**	**0.80**	**Y**	**0.96**	**152**	**7188.427**	**0.179**
2367/3467-TCDF	28.10		1.0136	1.0132	-0.7	6.61E+06	0.77	Y	0.96	14.8	7188.427	0.179
1269-TCDF	28.35		1.0223	1.0222	-0.2	1.79E+06	0.83	Y	0.96	3.99	7188.427	0.179
1239-TCDF	NotFnd		1.0313						0.96		7188.427	0.179
1289-TCDF	29.73		1.0711	1.0720	+1.6	6.59E+06	0.87	Y	0.96	14.7	7188.427	0.179
13468/12468-PeCDF	29.68		0.9147	0.9153	+1.1	2.23E+06	1.68	Y	0.94	5.84	8235.069	0.19
13678/13467/12467-PeCDF	31.20		0.9616	0.9622	+1.1	5.39E+05	1.46	Y	0.94	1.41	6867.98	0.159
12368/13478/12478-PeCDF	31.35		0.9663	0.9669	+1.1	2.53E+06	1.60	Y	0.94	6.61	6867.98	0.159
14678-PeCDF	31.45	J	0.9695	0.9699	+0.8	2.24E+05	1.42	Y	0.94	0.586	6867.98	0.159
13479-PeCDF	NotFnd		0.9727						0.94		6867.98	0.159
13469/12479-PeCDF	31.77	J EMPC	0.9799	0.9800	+0.2	9.25E+04	2.39	N	0.94	0.242	6867.98	0.159
12346-PeCDF	31.92	J	0.9839	0.9843	+0.8	1.20E+05	1.39	Y	0.94	0.313	6867.98	0.159

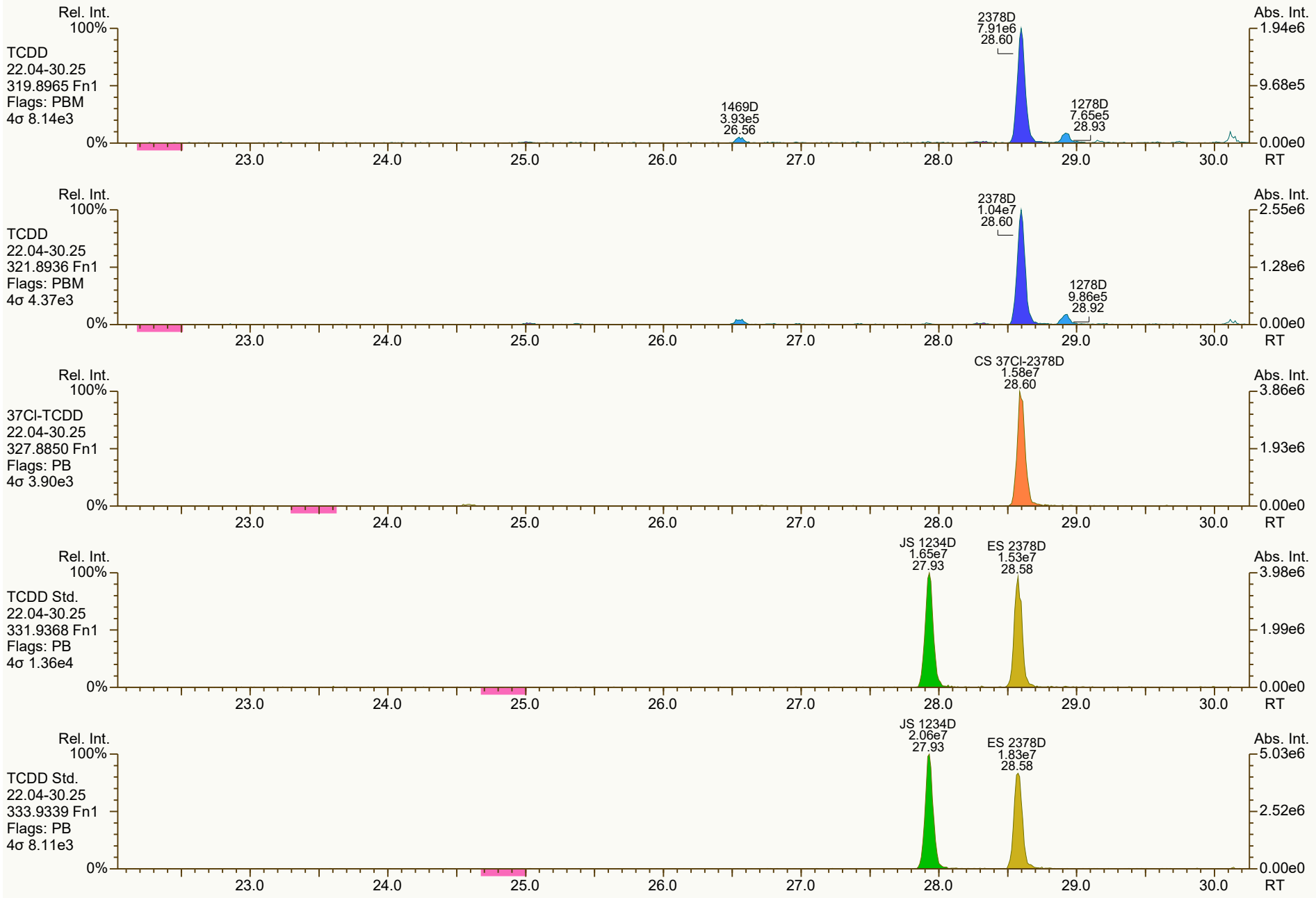
Lab ID: B5969_18712_DF_002 **Acq'd: 08 Dec 2021 21:11 PSW** **Wt/Vol: 18.76 g** **ICAL: MM3_DF_10272021_27JUL2021**

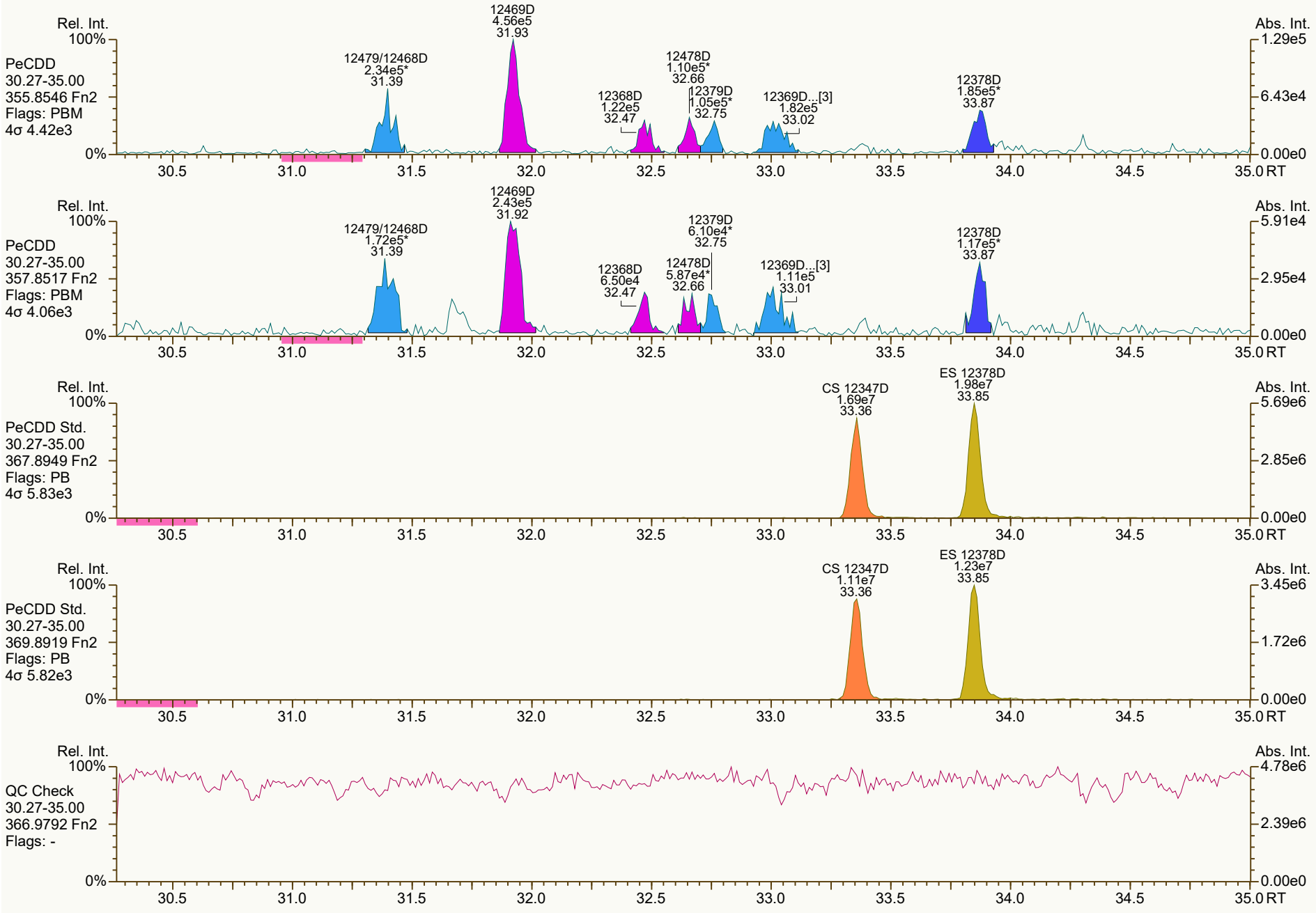
Client ID: 11215131-120221-S-JC-SW-S-4 **UTP: 09-Dec-2021 10:40:16 PSW** **J-level: 0.267 pg/g** **Split: 1** **Checkcode: 750-531-LHT**

Datafile: 211208R07 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

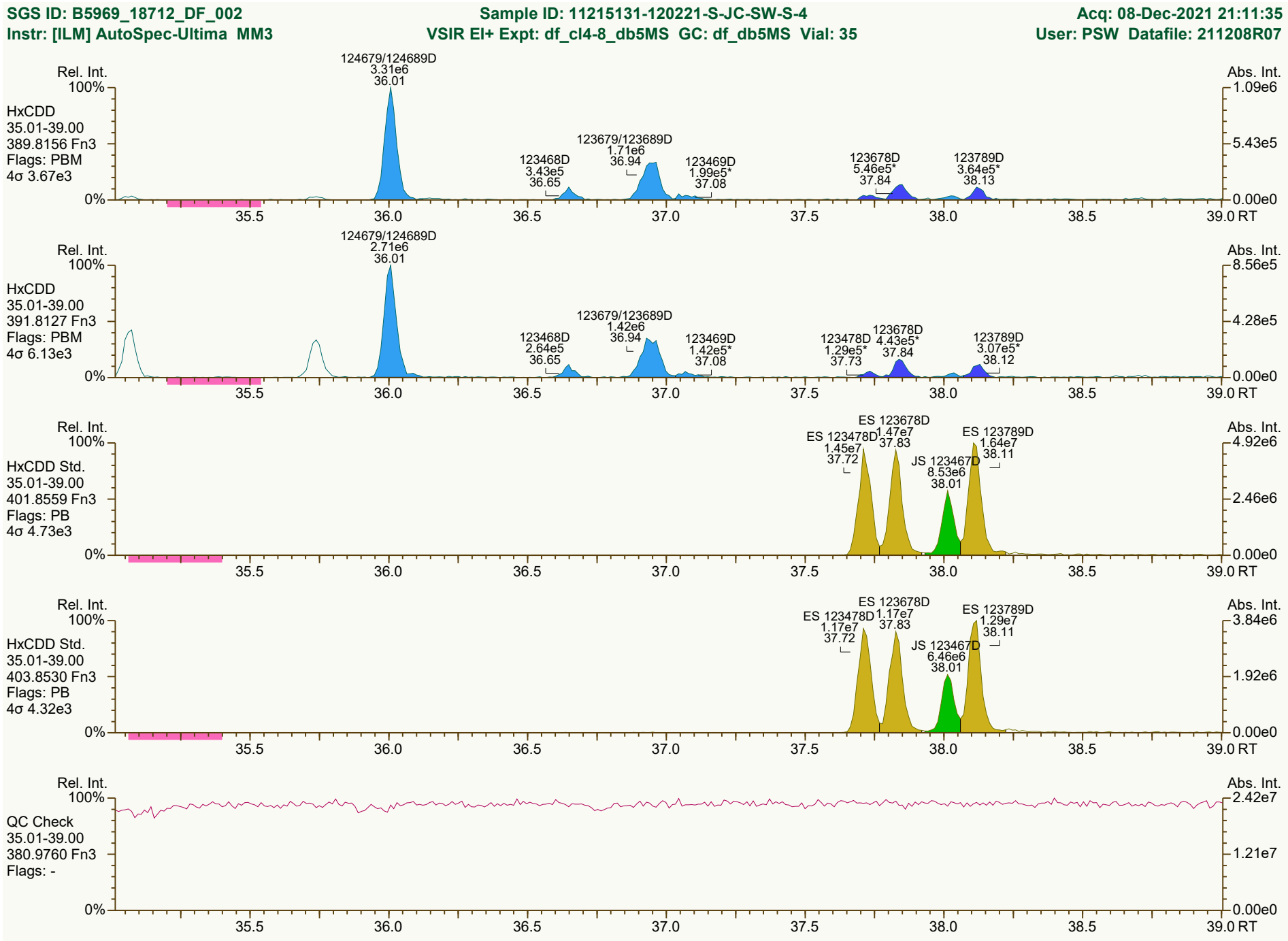
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.01		0.9864	0.9871	+1.3	5.28E+05	1.71	Y	0.94	1.38	6867.98	0.159
12347-PeCDF	32.08	J EMPC	0.9892	0.9894	+0.4	2.20E+05	1.84	N	0.94	0.576	6867.98	0.159
12348-PeCDF	32.23	J	0.9940	0.9941	+0.2	4.04E+05	1.40	Y	0.94	1.06	6867.98	0.159
12378-PeCDF	**32.44**		**1.0006**	**1.0006**	**0**	**2.86E+06**	**1.50**	**Y**	**0.95**	**7.45**	**6867.98**	**0.161**
12678/12367-PeCDF	32.73		1.0088	1.0093	+1.0	1.10E+06	1.53	Y	0.94	2.89	6867.98	0.159
12379-PeCDF	NotFnd		1.0142						0.94		6867.98	0.159
12679-PeCDF	NotFnd		0.9931						0.94		6867.98	0.159
23467/12369-PeCDF	33.41	J	0.9966	0.9966	0	2.87E+05	1.77	Y	0.94	0.75	6867.98	0.159
23478-PeCDF	**33.55**		**1.0005**	**1.0008**	**+0.6**	**2.47E+06**	**1.58**	**Y**	**0.94**	**6.48**	**6867.98**	**0.156**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6867.98	0.159
12349-PeCDF	NotFnd		1.0100						0.94		6867.98	0.159
12389-PeCDF	34.61	J	1.0323	1.0324	+0.2	1.45E+05	1.49	Y	0.94	0.379	6867.98	0.159
123468-HxCDF	35.37		0.9631	0.9632	+0.2	8.89E+05	1.17	Y	1.16	2.38	14202.638	0.315
124678/134678-HxCDF	35.57		0.9686	0.9685	-0.2	3.56E+06	1.35	Y	1.16	9.56	14202.638	0.315
134679-HxCDF	NotFnd		0.9747						1.16		14202.638	0.315
124679-HxCDF	35.98	J EMPC	0.9800	0.9798	-0.4	1.38E+05	0.91	N	1.16	0.369	14202.638	0.315
124689-HxCDF	36.21		0.9859	0.9860	+0.2	3.22E+06	1.30	Y	1.16	8.64	14202.638	0.315
123467-HxCDF	36.62	J	0.9972	0.9972	0	3.65E+05	1.35	Y	1.16	0.981	14202.638	0.315
123478-HxCDF	**36.74**		**1.0004**	**1.0005**	**+0.2**	**5.09E+06**	**1.22**	**Y**	**1.23**	**13.3**	**14202.638**	**0.311**
123678-HxCDF	**36.88**		**1.0005**	**1.0003**	**-0.4**	**1.55E+06**	**1.16**	**Y**	**1.13**	**3.86**	**14202.638**	**0.287**
123479-HxCDF	NotFnd		1.0048						1.16		14202.638	0.315
123469-HxCDF	37.20	J EMPC	1.0089	1.0091	+0.4	1.94E+05	1.52	N	1.16	0.52	14202.638	0.315
123679-HxCDF	NotFnd		0.9943						1.16		14202.638	0.315
234678-HxCDF	**37.55**		**1.0005**	**1.0004**	**-0.2**	**7.40E+05**	**1.41**	**Y**	**1.15**	**2**	**14202.638**	**0.338**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		14202.638	0.315
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**14202.638**	**0.326**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.50	J EMPC	1.0004	1.0010	+1.4	4.17E+05	1.43	N	1.16	1.12	14202.638	0.315
1234678-HpCDF	**39.80**		**1.0003**	**1.0002**	**-0.2**	**7.43E+06**	**1.01**	**Y**	**1.36**	**22.2**	**9506.467**	**0.188**
1234679-HpCDF	40.05	**J EMPC**	1.0065	1.0066	+0.2	3.42E+05	0.82	N	1.33	1.14	9506.467	0.213
1234689-HpCDF	40.19		1.0097	1.0100	+0.7	9.62E+06	1.06	Y	1.33	31.9	9506.467	0.213
1234789-HpCDF	**41.16**		**1.0004**	**1.0003**	**-0.2**	**8.31E+05**	**1.06**	**Y**	**1.30**	**3.09**	**9506.467**	**0.244**
OCDF	**43.46**		**1.0002**	**1.0002**	**0**	**1.20E+07**	**0.89**	**Y**	**1.03**	**72.3**	**12352.582**	**0.615**
OCDF-a	43.46	**EMPC**	1.0001	1.0002	+0.3	6.04E+05	1.73	N	0.06	62.9	12445.932	10.7


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Abs. Int.
5.28e6
2.64e6
0.00e0
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
4.78e6
2.39e6
0.00e0
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
2.42e7
1.21e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
1.56e7
7.78e6
0.00e0
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.12e7
5.60e6
0.00e0


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 8.14e3
0%
2378D
7.91e6
28.60
1469D
3.93e5
26.56
1278D
7.65e5
28.93
Abs. Int.
1.94e6
9.68e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 4.37e3
0%
2378D
1.04e7
28.60
1278D
9.86e5
28.92
Abs. Int.
2.55e6
1.28e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.90e3
0%
CS 37Cl-2378D
1.58e7
28.60
Abs. Int.
3.86e6
1.93e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.36e4
0%
JS 1234D
1.65e7
27.93
ES 2378D
1.53e7
28.58
Abs. Int.
3.98e6
1.99e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 8.11e3
0%
JS 1234D
2.06e7
27.93
ES 2378D
1.83e7
28.58
Abs. Int.
5.03e6
2.52e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

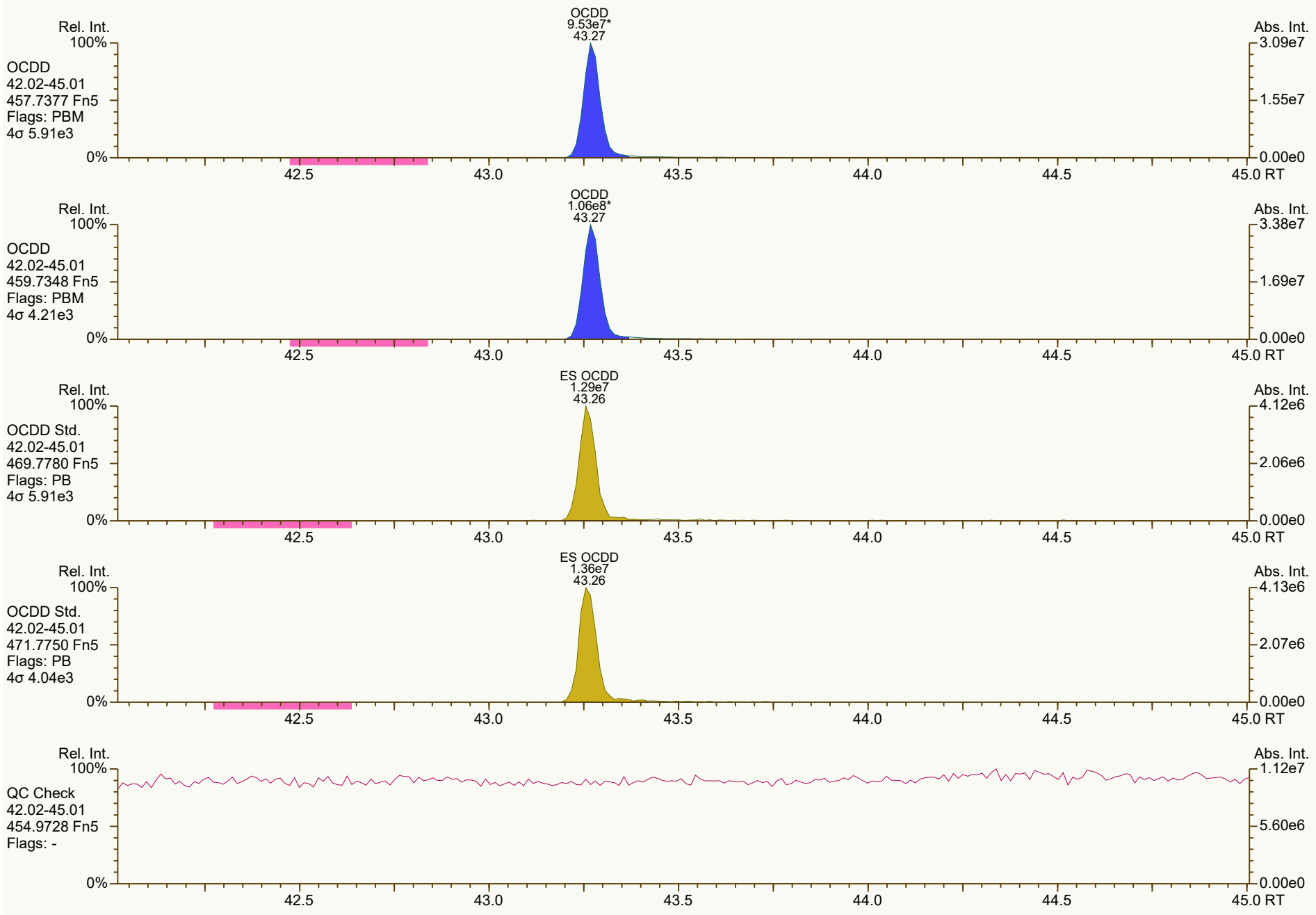

Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 4.42e3
12479/12468D
2.34e5*
31.39
12469D
4.56e5
31.93
12368D
1.22e5
32.47
12478D
1.10e5*
32.66
12379D
1.05e5*
32.75
12369D...[3]
1.82e5
33.02
12378D
1.85e5*
33.87
Abs. Int.
1.29e5
6.43e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 4.06e3
12479/12468D
1.72e5*
31.39
12469D
2.43e5
31.92
12368D
6.50e4
32.47
12379D
6.10e4*
32.75
12478D
5.87e4*
32.66
12369D...[3]
1.11e5
33.01
12378D
1.17e5*
33.87
Abs. Int.
5.91e4
2.95e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 5.83e3
CS 12347D
1.69e7
33.36
ES 12378D
1.98e7
33.85
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 5.82e3
CS 12347D
1.11e7
33.36
ES 12378D
1.23e7
33.85
Abs. Int.
3.45e6
1.72e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
Abs. Int.
4.78e6
2.39e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

SGS ID: B5969_18712_DF_002 | Sample ID: 11215131-120221-S-JC-SW-S-4 | Acq: 08-Dec-2021 21:11:35
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35 | User: PSW Datafile: 211208R07

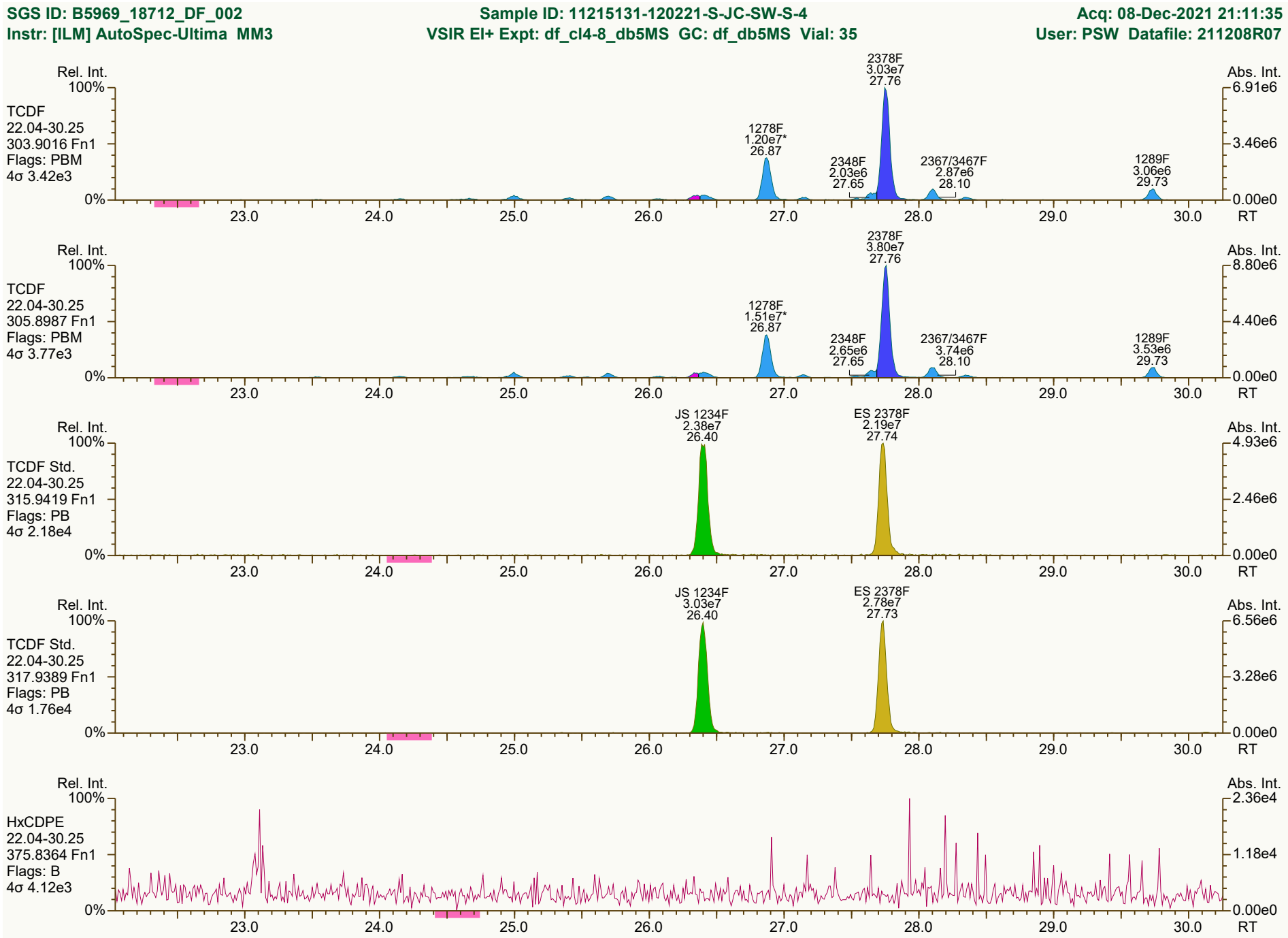


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_002.utp_res, saved 09-Dec-2021 10:40 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5113, 6234 scc: 750-531 | PKD: 09-Dec-2021 08:54 Printed: 09-Dec-2021 10:47 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 5.03e3
1234679D
1.70e7*
40.04
1234678D
1.07e7*
40.70
Abs. Int.
6.73e6
3.36e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 3.55e3
1234679D
1.67e7*
40.04
1234678D
1.03e7*
40.70
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 6.74e3
ES 1234678D
1.14e7*
40.69
Abs. Int.
4.38e6
2.19e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 5.82e3
ES 1234678D
1.11e7*
40.69
Abs. Int.
4.36e6
2.18e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.56e7
7.78e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
9.53e7*
43.27
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 5.91e3
0%
Abs. Int.
3.09e7
1.55e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.06e8*
43.27
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 4.21e3
3.38e7
1.69e7
ES OCDD
1.29e7
43.26
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 5.91e3
4.12e6
2.06e6
ES OCDD
1.36e7
43.26
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 4.04e3
4.13e6
2.07e6
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
1.12e7
5.60e6

SGS ID: B5969_18712_DF_002 | Sample ID: 11215131-120221-S-JC-SW-S-4 | Acq: 08-Dec-2021 21:11:35
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35 | User: PSW Datafile: 211208R07

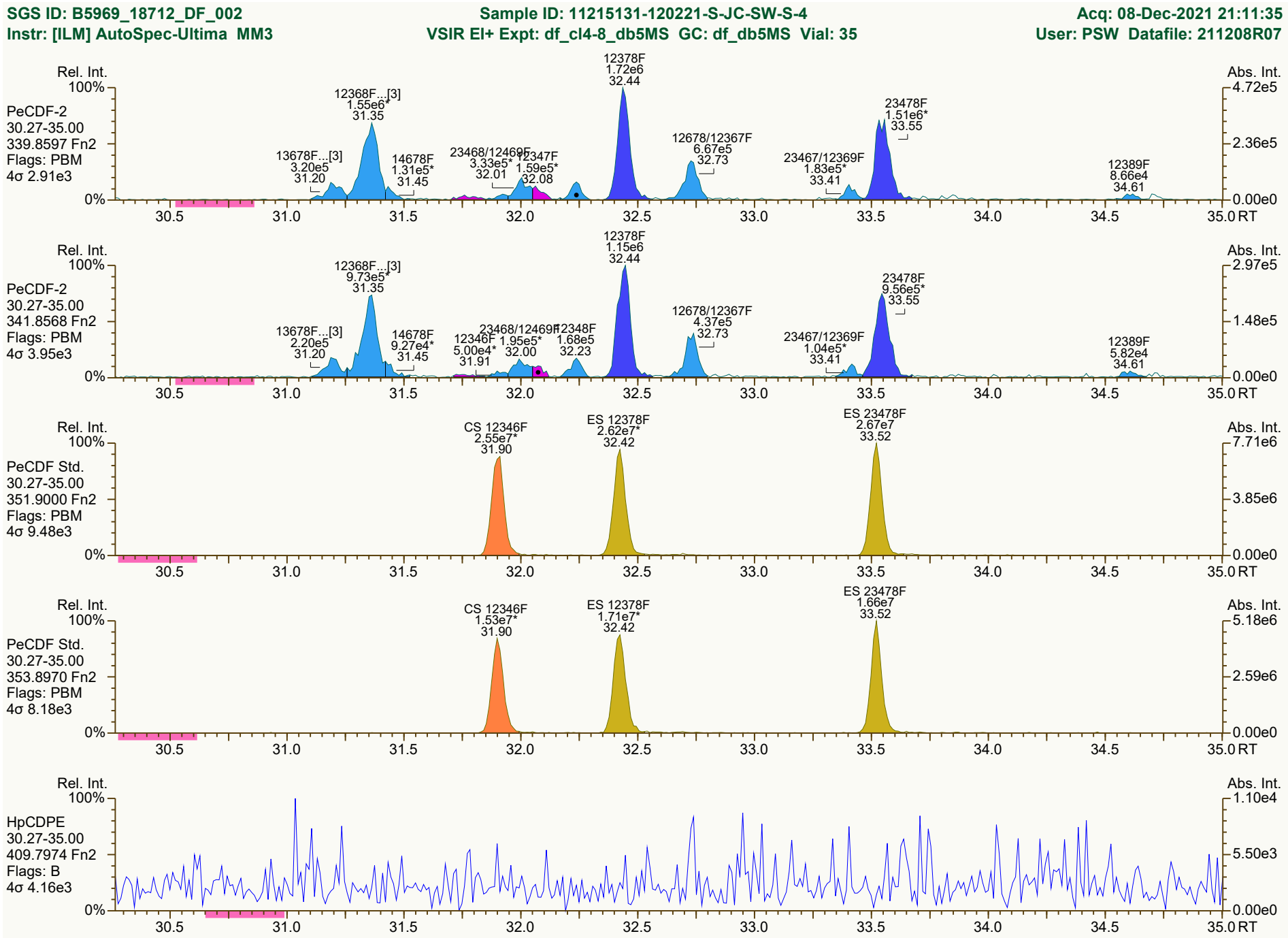


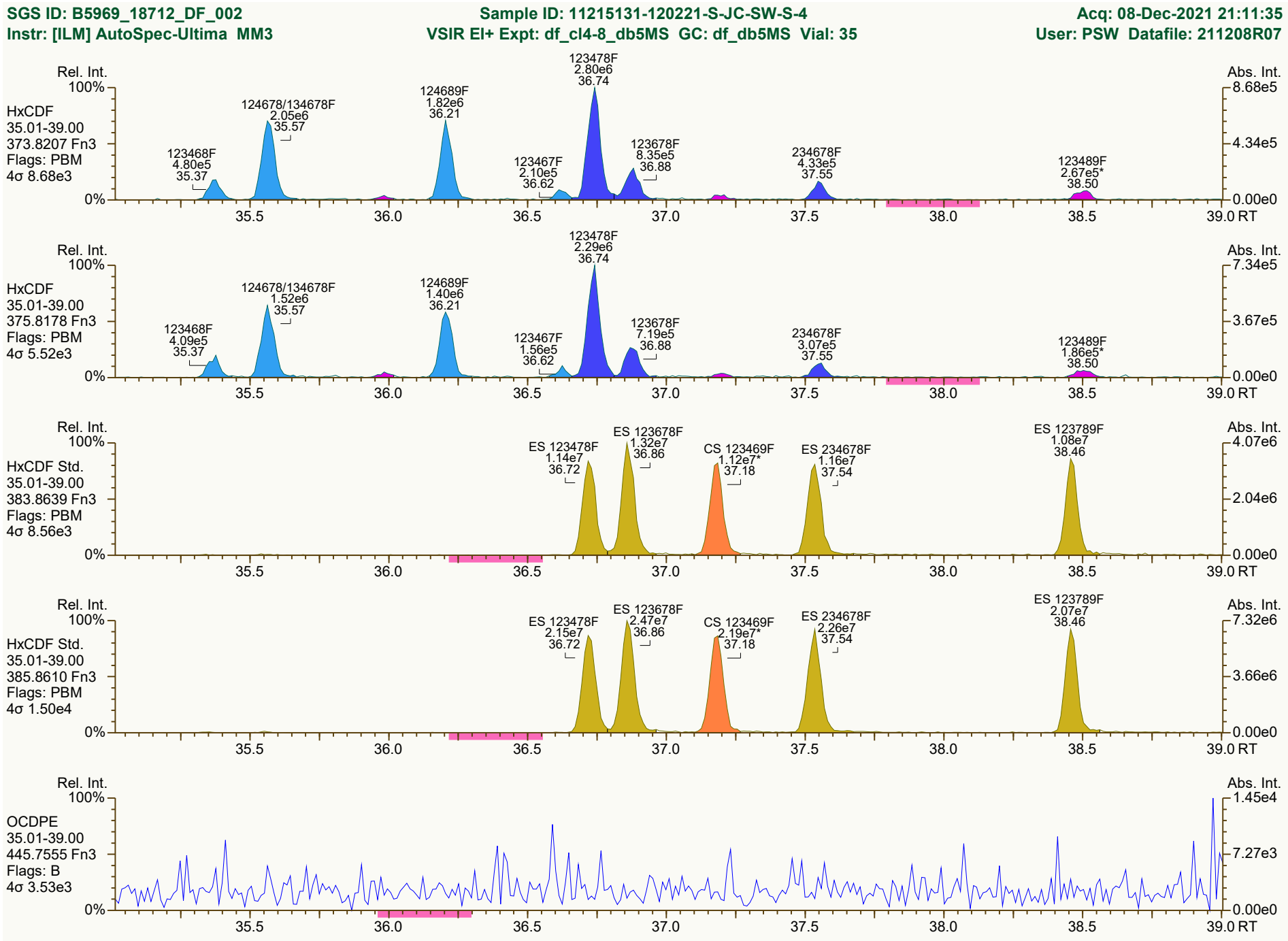
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_002.utp_res, saved 09-Dec-2021 10:40 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3929, 7952, 6821 scc: 750-531 | PKD: 09-Dec-2021 08:54 Printed: 09-Dec-2021 10:47 Page 7 of 12

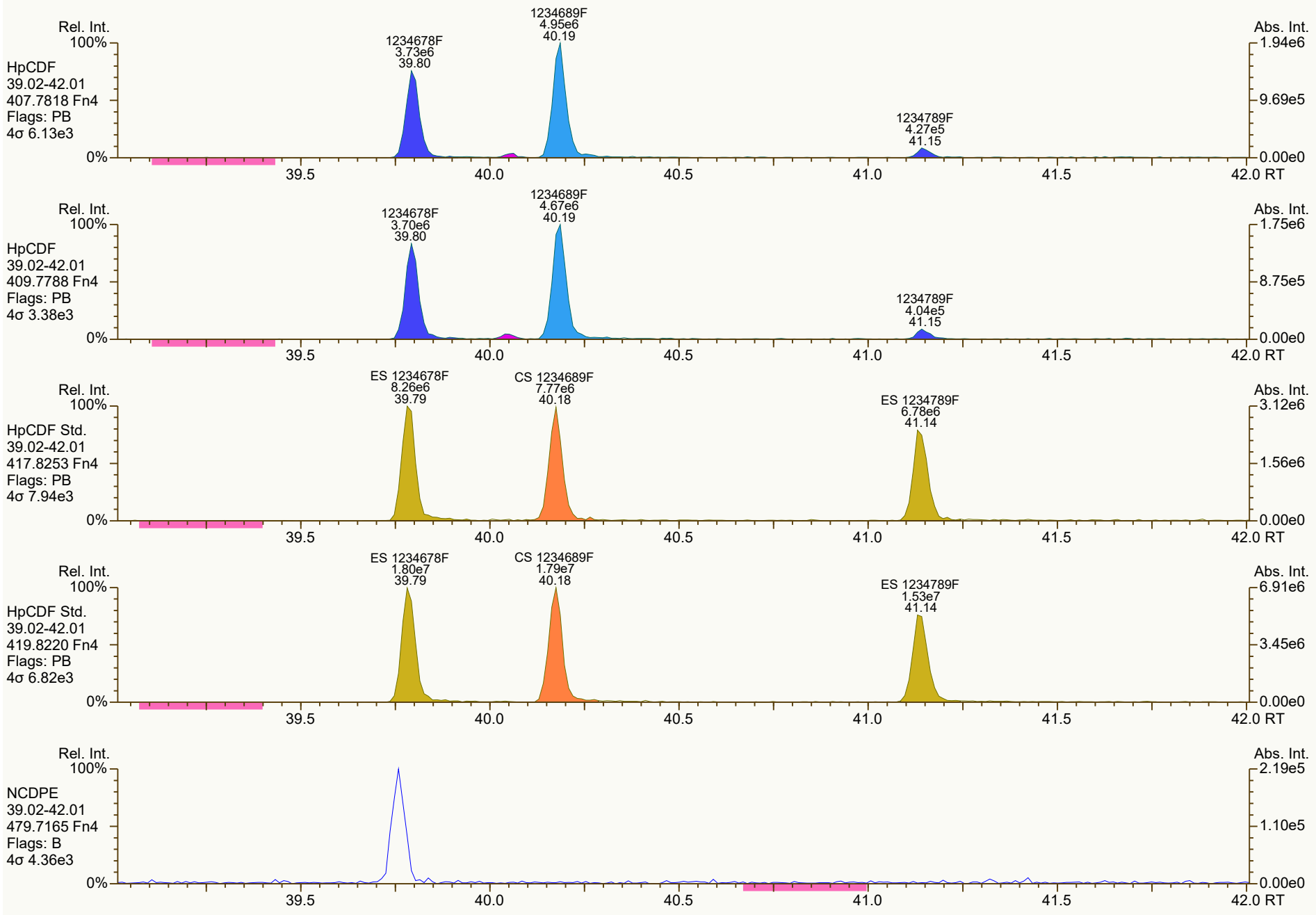
SGS ID: B5969_18712_DF_002 | Sample ID: 11215131-120221-S-JC-SW-S-4 | Acq: 08-Dec-2021 21:11:35
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35 | User: PSW Datafile: 211208R07



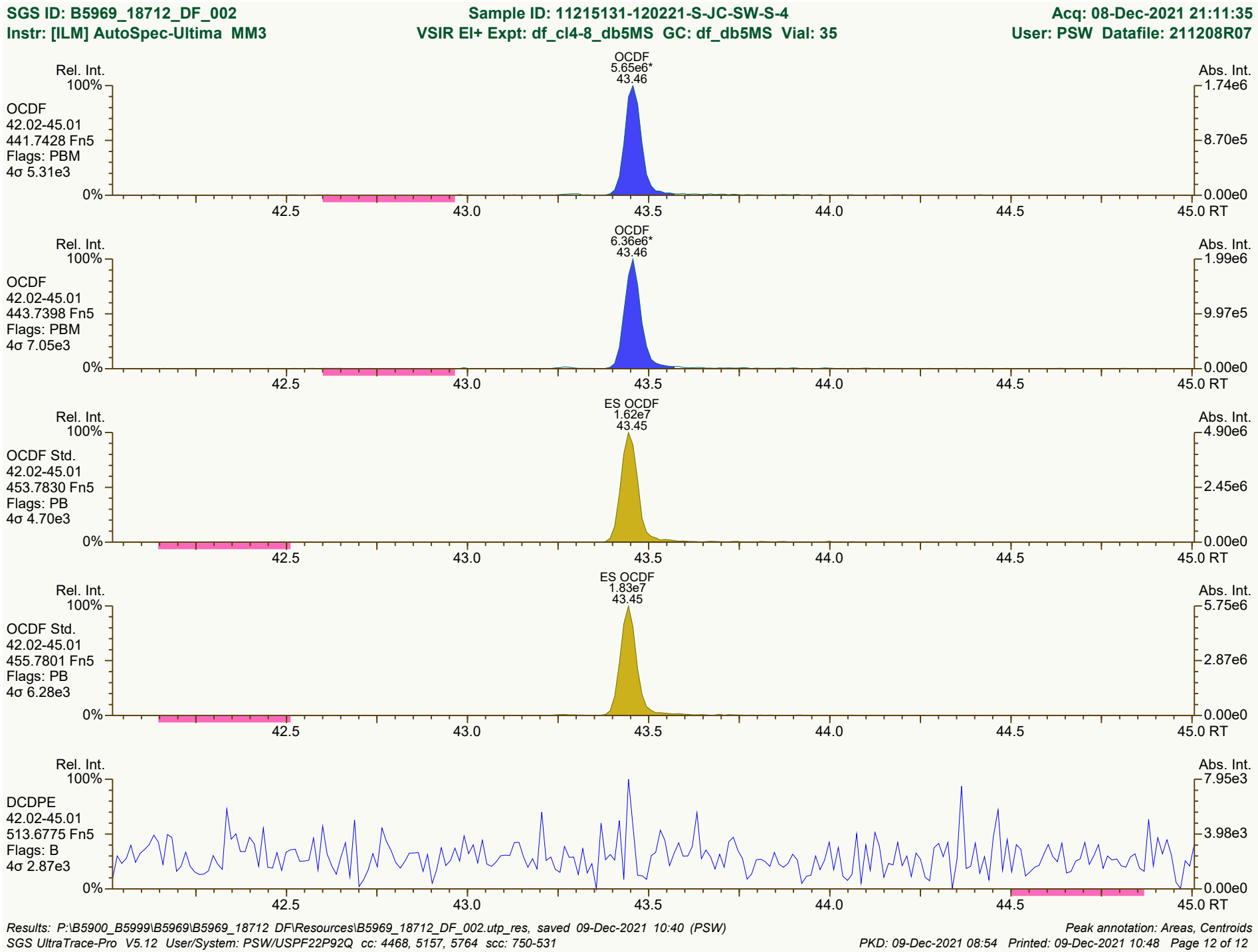
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_002.utp_res, saved 09-Dec-2021 10:40 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9725 scc: 750-531 *PKD: 09-Dec-2021 08:54 Printed: 09-Dec-2021 10:47 Page 8 of 12*


SGS ID: B5969_18712_DF_002
Sample ID: 11215131-120221-S-JC-SW-S-4
Acq: 08-Dec-2021 21:11:35
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35
User: PSW Datafile: 211208R07
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 2.91e3
12378F 1.72e6 32.44
12368F...[3] 1.55e6* 31.35
13678F...[3] 3.20e5 31.20
14678F 1.31e5* 31.45
23468/12469F 3.33e5* 32.01
12347F 1.59e5* 32.08
12678/12367F 6.67e5 32.73
23467/12369F 1.83e5* 33.41
23478F 1.51e6* 33.55
12389F 8.66e4 34.61
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.95e3
12378F 1.15e6 32.44
12368F...[3] 9.73e5* 31.35
13678F...[3] 2.20e5 31.20
14678F 9.27e4* 31.45
12346F 5.00e4* 31.91
23468/12469F 1.95e5* 32.00
12348F 1.68e5 32.23
12678/12367F 4.37e5 32.73
23467/12369F 1.04e5* 33.41
23478F 9.56e5* 33.55
12389F 5.82e4 34.61
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 9.48e3
CS 12346F 2.55e7* 31.90
ES 12378F 2.62e7* 32.42
ES 23478F 2.67e7 33.52
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 8.18e3
CS 12346F 1.53e7* 31.90
ES 12378F 1.71e7* 32.42
ES 23478F 1.66e7 33.52
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.16e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_002.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3816, 4786, 3060 scc: 750-531
PKD: 09-Dec-2021 08:54 Printed: 09-Dec-2021 10:47 Page 9 of 12


SGS ID: B5969_18712_DF_002
Sample ID: 11215131-120221-S-JC-SW-S-4
Acq: 08-Dec-2021 21:11:35
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35
User: PSW Datafile: 211208R07
Rel. Int.
Abs. Int.
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 8.68e3
123468F 4.80e5 35.37
124678/134678F 2.05e6 35.57
124689F 1.82e6 36.21
123467F 2.10e5 36.62
123478F 2.80e6 36.74
123678F 8.35e5 36.88
234678F 4.33e5 37.55
123489F 2.67e5* 38.50
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 5.52e3
123468F 4.09e5 35.37
124678/134678F 1.52e6 35.57
124689F 1.40e6 36.21
123467F 1.56e5 36.62
123478F 2.29e6 36.74
123678F 7.19e5 36.88
234678F 3.07e5 37.55
123489F 1.86e5* 38.50
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PBM
4σ 8.56e3
ES 123478F 1.14e7 36.72
ES 123678F 1.32e7 36.86
CS 123469F 1.12e7* 37.18
ES 234678F 1.16e7 37.54
ES 123789F 1.08e7 38.46
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PBM
4σ 1.50e4
ES 123478F 2.15e7 36.72
ES 123678F 2.47e7 36.86
CS 123469F 2.19e7* 37.18
ES 234678F 2.26e7 37.54
ES 123789F 2.07e7 38.46
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.53e3
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_002.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2081, 2097, 3958 scc: 750-531
PKD: 09-Dec-2021 08:54 Printed: 09-Dec-2021 10:48 Page 10 of 12


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 6.13e3
1234678F
3.73e6
39.80
1234689F
4.95e6
40.19
1234789F
4.27e5
41.15
Abs. Int.
1.94e6
9.69e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 3.38e3
1234678F
3.70e6
39.80
1234689F
4.67e6
40.19
1234789F
4.04e5
41.15
Abs. Int.
1.75e6
8.75e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 7.94e3
ES 1234678F
8.26e6
39.79
CS 1234689F
7.77e6
40.18
ES 1234789F
6.78e6
41.14
Abs. Int.
3.12e6
1.56e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 6.82e3
ES 1234678F
1.80e7
39.79
CS 1234689F
1.79e7
40.18
ES 1234789F
1.53e7
41.14
Abs. Int.
6.91e6
3.45e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.36e3
Abs. Int.
2.19e5
1.10e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

SGS ID: B5969_18712_DF_002 | Sample ID: 11215131-120221-S-JC-SW-S-4 | Acq: 08-Dec-2021 21:11:35
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35 | User: PSW Datafile: 211208R07



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_002.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4468, 5157, 5764 scc: 750-531 | *PKD: 09-Dec-2021 08:54 Printed: 09-Dec-2021 10:48 Page 12 of 12*

Lab ID: B5969_18712_DF_003 **Acq'd:** 08 Dec 2021 21:59 PSW **Wt/Vol:** 18.40 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-JC-SW-S-5 **UTP:** 09-Dec-2021 10:40:17 PSW **J-level:** 0.272 pg/g **Split:** 1 **Checkcode:** 117-914-NPB

Datafile: 211208R08 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.61		1.0008	1.0009	+0.2	1.11E+07	0.82	Y	1.34	34.8	7614.272	0.234
12378-PeCDD	33.88	J EMPC	1.0004	1.0007	+0.6	1.26E+05	1.94	N	1.06	0.601	8641.977	0.366
123478-HxCDD	37.74	J	1.0004	1.0004	0	1.38E+05	1.06	Y	1.06	0.847	8648.178	0.421
123678-HxCDD	37.85		1.0034	1.0034	0	5.12E+05	1.09	Y	1.08	3.02	8648.178	0.408
123789-HxCDD	38.14		1.0111	1.0110	-0.2	3.52E+05	1.16	Y	1.02	1.94	8648.178	0.419
1234678-HpCDD	40.70		1.0004	1.0004	0	1.03E+07	1.04	Y	0.97	85.6	7184.057	0.402
OCDD	43.28		1.0003	1.0002	-0.3	6.83E+07	0.90	Y	1.07	1,160	13651.625	1.85
2378-TCDF	27.76		1.0007	1.0008	+0.2	3.64E+07	0.78	Y	0.96	115	8692.109	0.309
12378-PeCDF	32.45		1.0006	1.0005	-0.2	1.27E+06	1.39	Y	0.95	4.64	6194.517	0.214
23478-PeCDF	33.55		1.0005	1.0006	+0.2	1.19E+06	1.66	Y	0.94	4.48	6194.517	0.201
123478-HxCDF	36.75		1.0004	1.0004	0	2.10E+06	1.25	Y	1.23	8.71	8678.419	0.265
123678-HxCDF	36.88	EMPC	1.0005	1.0004	-0.2	5.49E+05	1.53	N	1.13	2.05	8678.419	0.293
234678-HxCDF	37.55	J	1.0005	1.0003	-0.5	2.47E+05	1.28	Y	1.15	1.06	8678.419	0.353
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	8678.419	0.305
1234678-HpCDF	39.80		1.0003	1.0003	0	2.47E+06	1.06	Y	1.36	12.5	7032.083	0.215
1234789-HpCDF	41.15		1.0004	1.0002	-0.5	2.56E+05	1.16	Y	1.30	1.82	7032.083	0.349
OCDF	43.46		1.0002	1.0002	0	2.44E+06	0.97	Y	1.03	35.2	7877.989	0.918

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58	1.0233	1.0231	-0.3	2.58E+07	0.81	Y	1.03	86
ES 12378-PeCDD	33.86	1.2118	1.2121	+0.6	2.14E+07	1.53	Y	1.03	71.4
ES 123478-HxCDD	37.72	0.9921	0.9922	+0.2	1.68E+07	1.22	Y	0.99	93.6
ES 123678-HxCDD	37.83	0.9951	0.9951	0	1.70E+07	1.24	Y	0.97	96.7
ES 123789-HxCDD	38.12	1.0027	1.0027	0	1.95E+07	1.30	Y	1.12	95.8
ES 1234678-HpCDD	40.69	1.0702	1.0702	0	1.35E+07	1.10	Y	0.99	75.1
ES OCDD	43.27	1.1377	1.1380	+0.8	1.19E+07	0.92	Y	0.78	42.5
ES 2378-TCDF	27.74	1.0505	1.0506	+0.2	3.58E+07	0.79	Y	1.08	85.4
ES 12378-PeCDF	32.43	1.2278	1.2285	+1.4	3.16E+07	1.61	Y	0.93	87.5
ES 23478-PeCDF	33.53	1.2691	1.2701	+2.0	3.08E+07	1.59	Y	0.92	86.5
ES 123478-HxCDF	36.73	0.9660	0.9661	+0.2	2.12E+07	0.52	Y	1.14	103
ES 123678-HxCDF	36.87	0.9698	0.9697	-0.2	2.57E+07	0.54	Y	1.30	110
ES 234678-HxCDF	37.54	0.9875	0.9874	-0.2	2.19E+07	0.54	Y	1.20	101
ES 123789-HxCDF	38.47	1.0121	1.0119	-0.5	1.98E+07	0.51	Y	1.14	96.5
ES 1234678-HpCDF	39.79	1.0468	1.0466	-0.5	1.58E+07	0.44	Y	0.95	92.3
ES 1234789-HpCDF	41.15	1.0822	1.0823	+0.2	1.18E+07	0.46	Y	0.85	76.9
ES OCDF	43.45	1.1426	1.1429	+0.8	1.47E+07	0.88	Y	0.93	43.9

Lab ID: B5969_18712_DF_003 **Acq'd:** 08 Dec 2021 21:59 PSW **Wt/Vol:** 18.40 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-JC-SW-S-5 **UTP:** 09-Dec-2021 10:40:17 PSW **J-level:** 0.272 pg/g **Split:** 1 **Checkcode:** 117-914-NPB

Datafile: 211208R08 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.93		-	-	-	2.90E+07	0.84	Y	-	-	
JS 1234-TCDF	26.40		-	-	-	3.86E+07	0.75	Y	-	-	
JS 123467-HxCDD	38.02		-	-	-	9.03E+06	1.25	Y	-	-	
CS 37Cl-2378-TCDD	28.60		1.0241	1.0240	-0.2	1.23E+07	n/a	-	1.31	81.1	
CS 12347-PeCDD	33.37		1.1940	1.1945	+1.0	2.03E+07	1.60	Y	0.89	78.5	
CS 12346-PeCDF	31.91		1.2080	1.2088	+1.5	2.95E+07	1.53	Y	0.87	88.1	
CS 123469-HxCDF	37.19		0.9781	0.9781	0	2.23E+07	0.52	Y	1.09	113	
CS 1234689-HpCDF	40.18		1.0569	1.0569	0	1.58E+07	0.48	Y	0.86	101	
~~SS 37Cl-2378-TCDD~~	~~28.60~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~1.23E+07~~	~~n/a~~		~~1.26~~	~~94.8~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1945~~	~~+1.0~~	~~2.03E+07~~	~~1.60~~	~~Y~~	~~0.86~~	~~110~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.91~~		~~1.2080~~	~~1.2088~~	~~+1.5~~	~~2.95E+07~~	~~1.53~~	~~Y~~	~~0.93~~	~~101~~	
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~2.23E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~103~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0569~~	~~0~~	~~1.58E+07~~	~~0.48~~	~~Y~~	~~0.91~~	~~109~~	

Totals	Conc	EMPC
Total TCDD	37.7	42
Total PeCDD	4.87	7.9
Total HxCDD	49.7	51.3
Total HpCDD	212	212
Total Tetra-Octa Dioxins	1470	1480
Total TCDF	233	237
Total PeCDF	20.2	23.2
Total HxCDF	21.9	25.4
Total HpCDF	30.3	30.3
Total Tetra-Octa Furans	341	352
Total Tetra-Octa Dioxins & Furans	1810	1830

Lab ID: B5969_18712_DF_003 **Acq'd: 08 Dec 2021 21:59 PSW** **Wt/Vol: 18.40 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-JC-SW-S-5 **UTP: 09-Dec-2021 10:40:17 PSW** **J-level: 0.272 pg/g** **Split: 1** **Checkcode: 117-914-NPB**

Datafile: 211208R08 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.02	EMPC	0.8758	0.8754	-0.6	2.11E+05	0.95	N	1.34	0.661	7614.272	0.234
1379-TCDD	NotFnd		0.8878						1.34		7614.272	0.234
1369-TCDD	NotFnd		0.9025						1.34		7614.272	0.234
1469-TCDD	26.56		0.9291	0.9291	0	7.89E+05	0.71	Y	1.34	2.47	7614.272	0.234
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		7614.272	0.234
1378-TCDD	NotFnd		0.9440						1.34		7614.272	0.234
1268-TCDD	NotFnd		0.9505						1.34		7614.272	0.234
1478-TCDD	NotFnd		0.9591						1.34		7614.272	0.234
1279-TCDD	NotFnd		0.9650						1.34		7614.272	0.234
1234/1269-TCDD	27.93		0.9771	0.9771	0	1.26E+05	0.85	Y	1.34	0.395	7614.272	0.234
1236-TCDD	NotFnd		0.9821						1.34		7614.272	0.234
1237/1238-TCDD	28.33	EMPC	0.9907	0.9913	+1.0	2.14E+05	1.08	N	1.34	0.672	7614.272	0.234
1239-TCDD	NotFnd		0.9953						1.34		7614.272	0.234
2378-TCDD	**28.61**		**1.0008**	1.0009	**+0.2**	1.11E+07	0.82	Y	**1.34**	**34.8**	**7614.272**	**0.234**
1278-TCDD	28.92	EMPC	1.0118	1.0117	-0.2	9.61E+05	0.91	N	1.34	3.01	7614.272	0.234
1267-TCDD	NotFnd		1.0162						1.34		7614.272	0.234
1289-TCDD	NotFnd		1.0340						1.34		7614.272	0.234
12479/12468-PeCDD	31.40		0.9274	0.9275	+0.2	3.51E+05	1.64	Y	1.06	1.68	8641.977	0.366
12469-PeCDD	31.93		0.9430	0.9431	+0.2	6.66E+05	1.42	Y	1.06	3.19	8641.977	0.366
12368-PeCDD	32.48	J EMPC	0.9591	0.9594	+0.6	1.21E+05	2.19	N	1.06	0.58	8641.977	0.366
12478-PeCDD	32.66	J EMPC	0.9645	0.9647	+0.4	9.36E+04	1.11	N	1.06	0.448	8641.977	0.366
12379-PeCDD	32.76	J EMPC	0.9676	0.9675	-0.2	1.08E+05	1.88	N	1.06	0.517	8641.977	0.366
12369/12467/12489-PeCDD	33.03	J EMPC	0.9751	0.9756	+1.0	1.86E+05	1.82	N	1.06	0.89	8641.977	0.366
12346/12347-PeCDD	NotFnd		0.9860						1.06		8641.977	0.366
12378-PeCDD	33.88	J EMPC	**1.0004**	**1.0007**	**+0.6**	**1.26E+05**	**1.94**	**N**	**1.06**	**0.601**	**8641.977**	**0.366**
12367-PeCDD	NotFnd		1.0034						1.06		8641.977	0.366
12389-PeCDD	NotFnd		1.0133						1.06		8641.977	0.366
124679/124689-HxCDD	36.01		0.9546	0.9547	+0.2	5.39E+06	1.23	Y	1.05	31.4	8648.178	0.416
123468-HxCDD	36.66		0.9718	0.9718	0	3.48E+05	1.28	Y	1.05	2.03	8648.178	0.416
123679/123689-HxCDD	36.95		0.9795	0.9795	0	1.80E+06	1.16	Y	1.05	10.5	8648.178	0.416
123469-HxCDD	37.08	J EMPC	0.9832	0.9830	-0.4	1.60E+05	1.01	N	1.05	0.934	8648.178	0.416
123478-HxCDD	37.74	J	**1.0004**	**1.0004**	**0**	**1.38E+05**	**1.06**	**Y**	1.06	**0.847**	**8648.178**	**0.421**
123678-HxCDD	37.85		**1.0034**	**1.0034**	**0**	**5.12E+05**	**1.09**	**Y**	1.08	**3.02**	**8648.178**	**0.408**
123467-HxCDD	38.03	J EMPC	1.0083	1.0082	-0.2	1.14E+05	1.94	N	1.05	0.666	8648.178	0.416
123789-HxCDD	38.14		**1.0111**	**1.0110**	**-0.2**	**3.52E+05**	**1.16**	**Y**	1.02	**1.94**	**8648.178**	**0.419**

Lab ID: B5969_18712_DF_003 **Acq'd:** 08 Dec 2021 21:59 PSW **Wt/Vol:** 18.40 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-JC-SW-S-5 **UTP:** 09-Dec-2021 10:40:17 PSW **J-level:** 0.272 pg/g **Split:** 1 **Checkcode:** 117-914-NPB

Datafile: 211208R08 **Report:** 09 Dec 2021 10:41 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

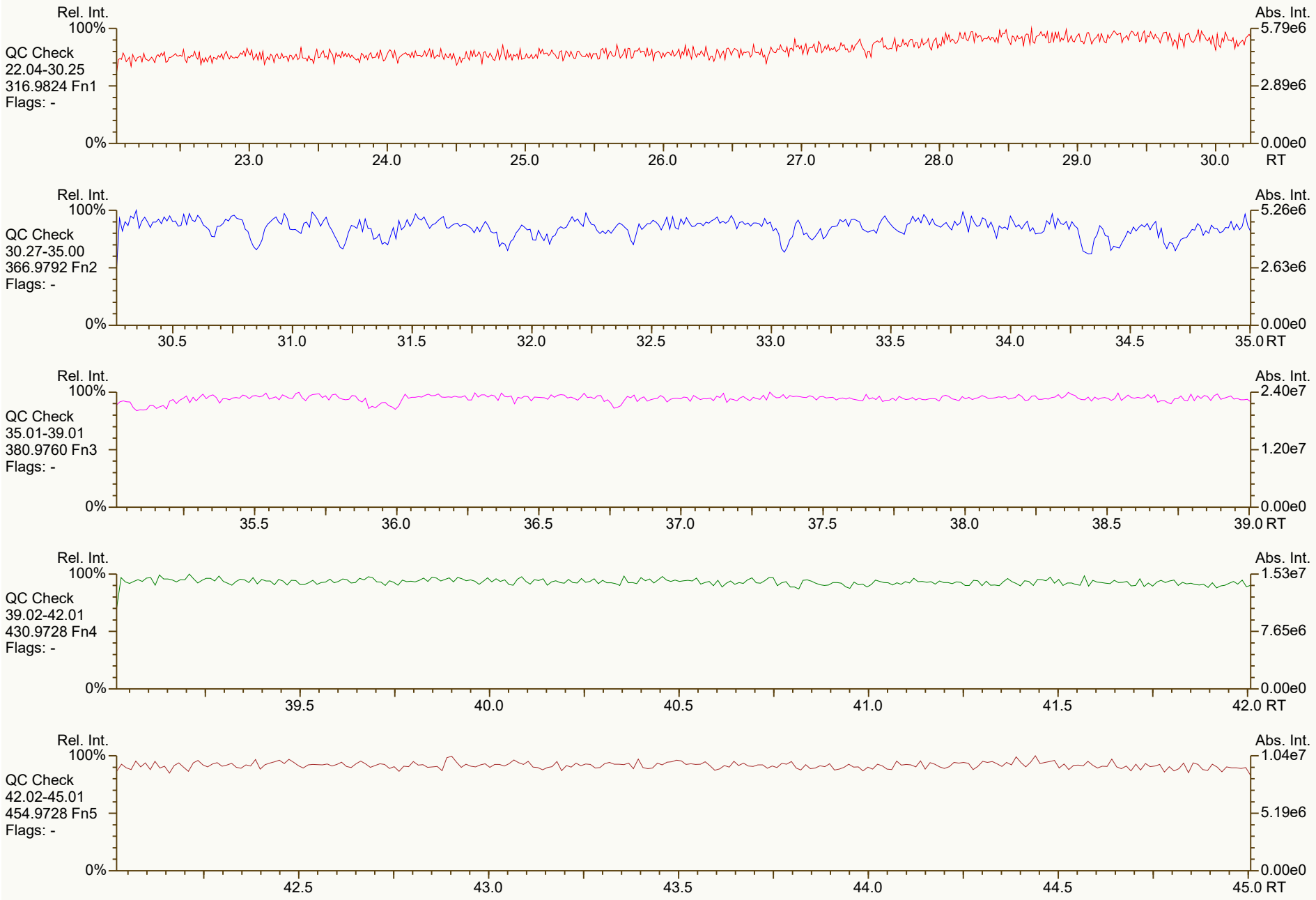
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	1.52E+07	1.02	Y	0.97	126	7184.057	0.402
1234678-HpCDD	**40.70**		**1.0004**	**1.0004**	**0**	**1.03E+07**	**1.04**	**Y**	**0.97**	**85.6**	**7184.057**	**0.402**
OCDD	**43.28**		**1.0003**	**1.0002**	**-0.3**	**6.83E+07**	**0.90**	**Y**	**1.07**	**1,160**	**13651.625**	**1.85**
OCDD-a	43.27		1.0001	1.0002	+0.3	4.20E+06	2.42	Y	0.07	1,160	11310.376	24.8
1368-TCDF	NotFnd		0.8284						0.96		8692.109	0.309
1468-TCDF	23.53	EMPC	0.8487	0.8482	-0.7	2.34E+05	0.59	N	0.96	0.741	8692.109	0.309
2468-TCDF	24.15	EMPC	0.8709	0.8705	-0.6	3.77E+05	0.90	N	0.96	1.19	8692.109	0.309
1346/1246-TCDF	24.49	J EMPC	0.8828	0.8828	0	6.22E+04	1.18	N	0.96	0.197	8692.109	0.309
1347/1378/1247-TCDF	24.65		0.8886	0.8887	+0.1	9.33E+05	0.88	Y	0.96	2.95	8692.109	0.309
1348-TCDF	24.89	EMPC	0.8980	0.8975	-0.7	1.29E+05	0.89	N	0.96	0.41	8692.109	0.309
1248/1367/1379-TCDF	25.00		0.9027	0.9012	-2.2	2.09E+06	0.81	Y	0.96	6.61	8692.109	0.309
1268-TCDF	25.40		0.9159	0.9157	-0.3	6.78E+05	0.86	Y	0.96	2.15	8692.109	0.309
1467-TCDF	25.52		0.9206	0.9202	-0.6	2.02E+05	0.86	Y	0.96	0.641	8692.109	0.309
1478-TCDF	25.70		0.9266	0.9266	0	1.75E+06	0.72	Y	0.96	5.53	8692.109	0.309
1369/1237-TCDF	26.07		0.9396	0.9398	+0.3	4.79E+05	0.85	Y	0.96	1.52	8692.109	0.309
2467-TCDF	26.19		0.9440	0.9442	+0.3	2.02E+05	0.77	Y	0.96	0.641	8692.109	0.309
2368-TCDF	26.34		0.9496	0.9495	-0.2	1.26E+06	0.80	Y	0.96	3.98	8692.109	0.309
1238/1234/1678/1469/1236-TCDF	26.41		0.9530	0.9523	-1.1	2.16E+06	0.75	Y	0.96	6.82	8692.109	0.309
1278-TCDF	26.87		0.9689	0.9689	0	1.65E+07	0.74	Y	0.96	52.3	8692.109	0.309
1349-TCDF	NotFnd		0.9732						0.96		8692.109	0.309
1267-TCDF	27.14		0.9786	0.9786	0	9.73E+05	0.70	Y	0.96	3.08	8692.109	0.309
2346/1249-TCDF	NotFnd		0.9849						0.96		8692.109	0.309
2347/1279-TCDF	27.53		0.9927	0.9927	0	6.20E+05	0.80	Y	0.96	1.96	8692.109	0.309
2348-TCDF	27.64		0.9967	0.9966	-0.2	2.73E+06	0.75	Y	0.96	8.63	8692.109	0.309
2378-TCDF	**27.76**		**1.0007**	**1.0008**	**+0.2**	**3.64E+07**	**0.78**	**Y**	**0.96**	**115**	**8692.109**	**0.309**
2367/3467-TCDF	28.11		1.0136	1.0133	-0.5	3.42E+06	0.78	Y	0.96	10.8	8692.109	0.309
1269-TCDF	28.35	EMPC	1.0223	1.0223	0	5.94E+05	0.98	N	0.96	1.88	8692.109	0.309
1239-TCDF	NotFnd		1.0313						0.96		8692.109	0.309
1289-TCDF	29.74		1.0711	1.0722	+2.0	3.19E+06	0.75	Y	0.96	10.1	8692.109	0.309
13468/12468-PeCDF	29.68	EMPC	0.9147	0.9151	+0.7	6.45E+05	1.10	N	0.94	2.38	7740.321	0.26
13678/13467/12467-PeCDF	31.20	J	0.9616	0.9621	+0.9	3.41E+05	1.58	Y	0.94	1.26	6194.517	0.208
12368/13478/12478-PeCDF	31.36		0.9663	0.9669	+1.1	1.30E+06	1.55	Y	0.94	4.79	6194.517	0.208
14678-PeCDF	31.45	J EMPC	0.9695	0.9696	+0.2	1.76E+05	1.16	N	0.94	0.651	6194.517	0.208
13479-PeCDF	NotFnd		0.9727						0.94		6194.517	0.208
13469/12479-PeCDF	NotFnd		0.9799						0.94		6194.517	0.208
12346-PeCDF	NotFnd		0.9839						0.94		6194.517	0.208

Lab ID: B5969_18712_DF_003 **Acq'd: 08 Dec 2021 21:59 PSW** **Wt/Vol: 18.40 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-JC-SW-S-5 **UTP: 09-Dec-2021 10:40:17 PSW** **J-level: 0.272 pg/g** **Split: 1** **Checkcode: 117-914-NPB**

Datafile: 211208R08 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.01	J	0.9864	0.9869	+1.0	1.90E+05	1.36	Y	0.94	0.704	6194.517	0.208
12347-PeCDF	32.09	J	0.9892	0.9894	+0.4	1.54E+05	1.60	Y	0.94	0.57	6194.517	0.208
12348-PeCDF	32.25	J	0.9940	0.9942	+0.4	2.61E+05	1.41	Y	0.94	0.964	6194.517	0.208
12378-PeCDF	**32.45**		**1.0006**	**1.0005**	**-0.2**	**1.27E+06**	**1.39**	**Y**	**0.95**	**4.64**	**6194.517**	**0.214**
12678/12367-PeCDF	32.74		1.0088	1.0094	+1.2	5.94E+05	1.37	Y	0.94	2.2	6194.517	0.208
12379-PeCDF	NotFnd		1.0142						0.94		6194.517	0.208
12679-PeCDF	NotFnd		0.9931						0.94		6194.517	0.208
23467/12369-PeCDF	33.42	J	0.9966	0.9967	+0.2	1.56E+05	1.49	Y	0.94	0.576	6194.517	0.208
23478-PeCDF	**33.55**		**1.0005**	**1.0006**	**+0.2**	**1.19E+06**	**1.66**	**Y**	**0.94**	**4.48**	**6194.517**	**0.201**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6194.517	0.208
12349-PeCDF	NotFnd		1.0100						0.94		6194.517	0.208
12389-PeCDF	NotFnd		1.0323						0.94		6194.517	0.208
123468-HxCDF	35.38		0.9631	0.9632	+0.2	3.53E+05	1.21	Y	1.16	1.49	8678.419	0.303
124678/134678-HxCDF	35.57		0.9686	0.9684	-0.4	1.44E+06	1.20	Y	1.16	6.06	8678.419	0.303
134679-HxCDF	NotFnd		0.9747						1.16		8678.419	0.303
124679-HxCDF	NotFnd		0.9800						1.16		8678.419	0.303
124689-HxCDF	36.21		0.9859	0.9860	+0.2	1.08E+06	1.35	Y	1.16	4.55	8678.419	0.303
123467-HxCDF	36.63	J EMPC	0.9972	0.9974	+0.4	1.67E+05	1.03	N	1.16	0.703	8678.419	0.303
123478-HxCDF	**36.75**		**1.0004**	**1.0004**	**0**	**2.10E+06**	**1.25**	**Y**	**1.23**	**8.71**	**8678.419**	**0.265**
123678-HxCDF	**36.88**	EMPC	**1.0005**	**1.0004**	**-0.2**	**5.49E+05**	**1.53**	**N**	**1.13**	**2.05**	**8678.419**	**0.293**
123479-HxCDF	NotFnd		1.0048						1.16		8678.419	0.303
123469-HxCDF	NotFnd		1.0089						1.16		8678.419	0.303
123679-HxCDF	NotFnd		0.9943						1.16		8678.419	0.303
234678-HxCDF	**37.55**	J	**1.0005**	**1.0003**	**-0.5**	**2.47E+05**	**1.28**	**Y**	**1.15**	**1.06**	**8678.419**	**0.353**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		8678.419	0.303
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**8678.419**	**0.305**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.50	J EMPC	1.0004	1.0009	+1.2	1.82E+05	1.54	N	1.16	0.769	8678.419	0.303
1234678-HpCDF	**39.80**		**1.0003**	**1.0003**	**0**	**2.47E+06**	**1.06**	**Y**	**1.36**	**12.5**	**7032.083**	**0.215**
1234679-HpCDF	40.06	**J**	1.0065	1.0066	+0.2	1.58E+05	1.10	Y	1.33	0.938	7032.083	0.272
1234689-HpCDF	40.19		1.0097	1.0100	+0.7	2.55E+06	0.96	Y	1.33	15.1	7032.083	0.272
1234789-HpCDF	**41.15**		**1.0004**	**1.0002**	**-0.5**	**2.56E+05**	**1.16**	**Y**	**1.30**	**1.82**	**7032.083**	**0.349**
OCDF	**43.46**		**1.0002**	**1.0002**	**0**	**2.44E+06**	**0.97**	**Y**	**1.03**	**35.2**	**7877.989**	**0.918**
OCDF-a	NotFnd		1.0001						0.06		9486.925	19.1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24.0
25.0
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27.0
28.0
29.0
30.0
RT
Abs. Int.
5.79e6
2.89e6
0.00e0
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
5.26e6
2.63e6
0.00e0
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
2.40e7
1.20e7
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Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
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41.5
42.0 RT
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1.53e7
7.65e6
0.00e0
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
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43.5
44.0
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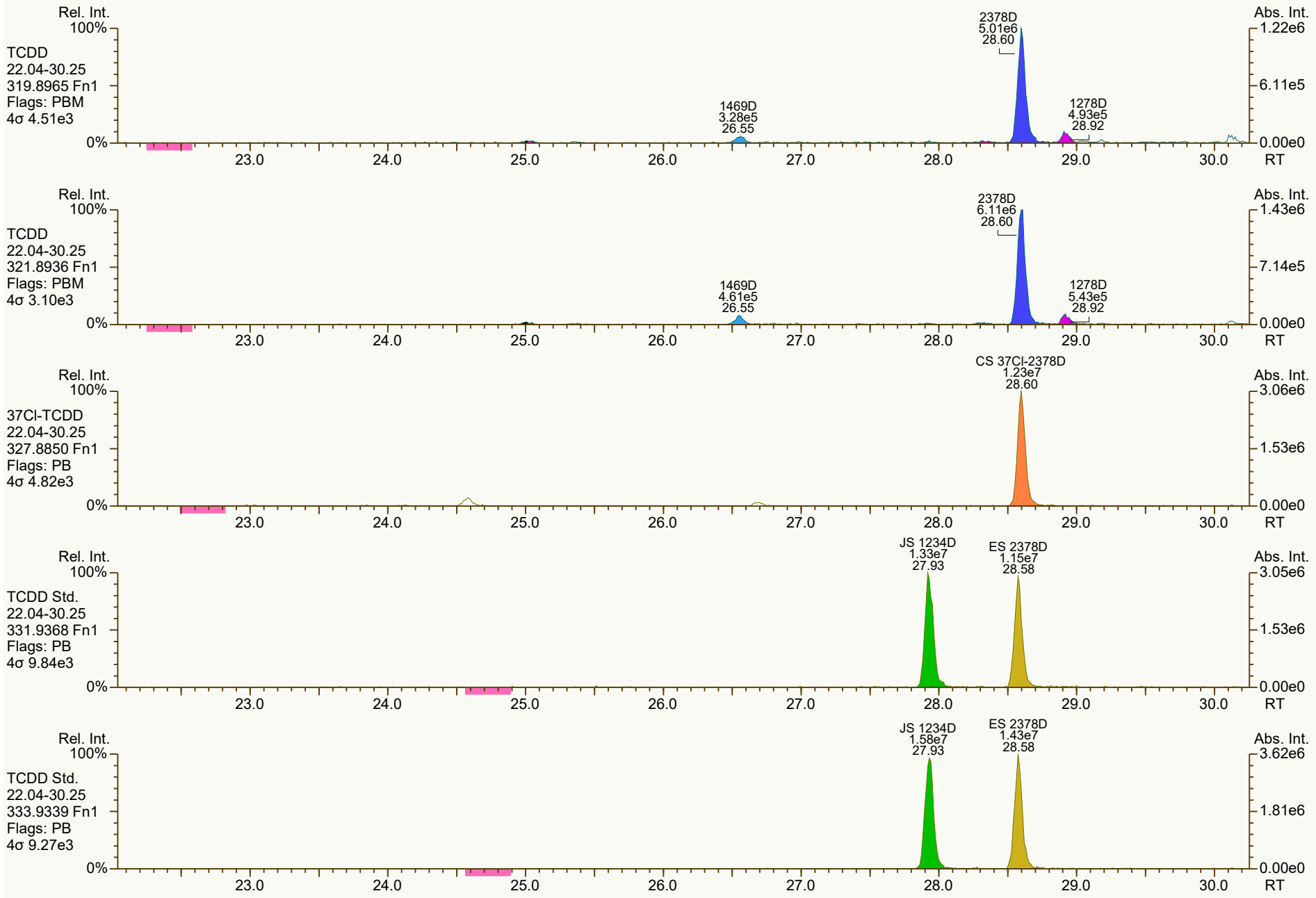
5.19e6
0.00e0



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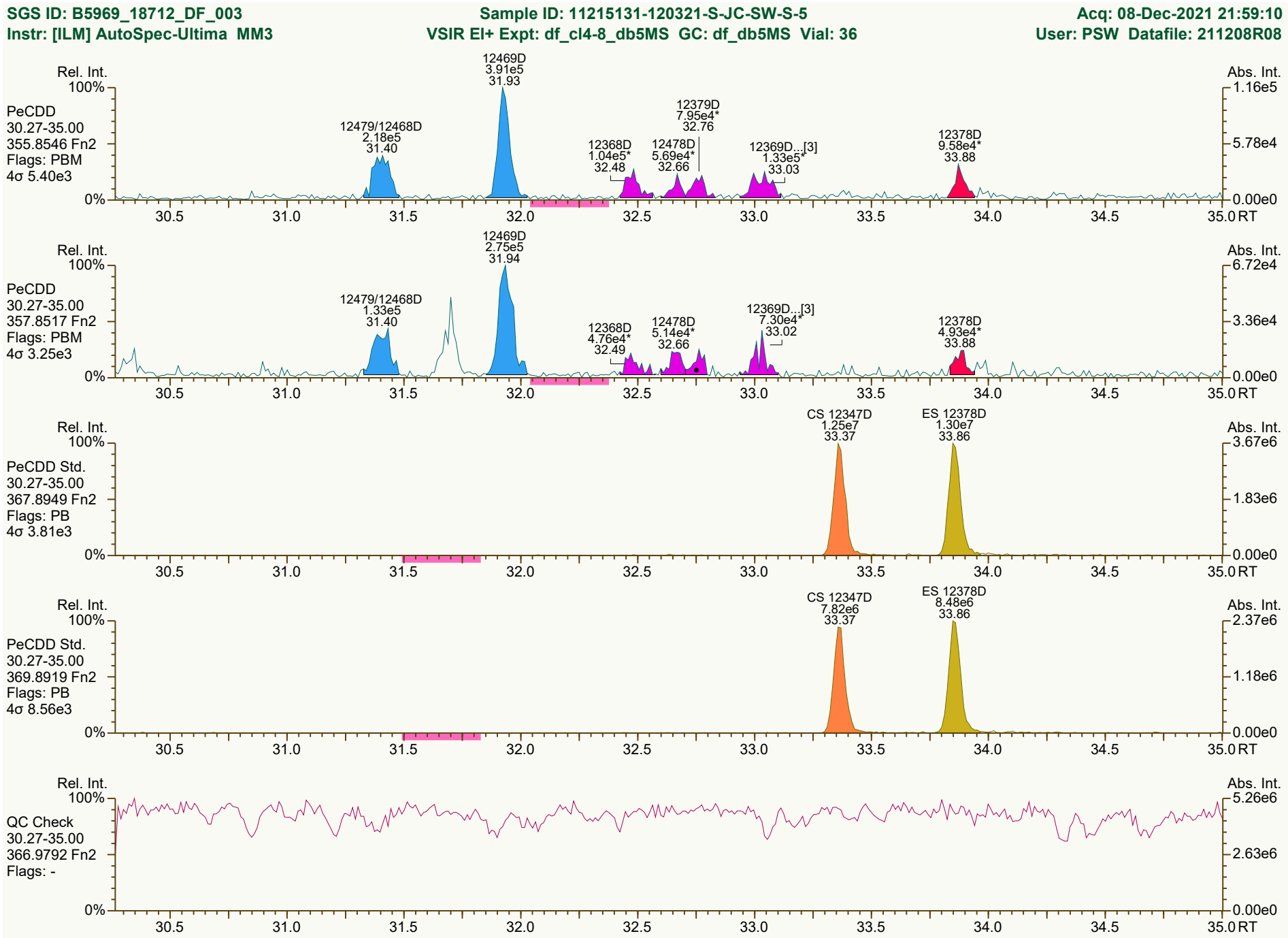
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0271, 8719, 8263 scc: 117-914 *PKD: 09-Dec-2021 08:59 Printed: 09-Dec-2021 10:49 Page 2 of 12*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Sample ID: 11215131-120321-S-JC-SW-S-5
Acq: 08-Dec-2021 21:59:10
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36
User: PSW Datafile: 211208R08
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
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4σ 5.40e3
12469D 3.91e5 31.93
12479/12468D 2.18e5 31.40
12368D 1.04e5* 32.48
12478D 5.69e4* 32.66
12379D 7.95e4* 32.76
12369D...[3] 1.33e5* 33.03
12378D 9.58e4* 33.88
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 3.25e3
12469D 2.75e5 31.94
12479/12468D 1.33e5 31.40
12368D 4.76e4* 32.49
12478D 5.14e4* 32.66
12369D...[3] 7.30e4* 33.02
12378D 4.93e4* 33.88
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 3.81e3
CS 12347D 1.25e7 33.37
ES 12378D 1.30e7 33.86
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 8.56e3
CS 12347D 7.82e6 33.37
ES 12378D 8.48e6 33.86
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
1.16e5
5.78e4
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1.18e6
5.26e6
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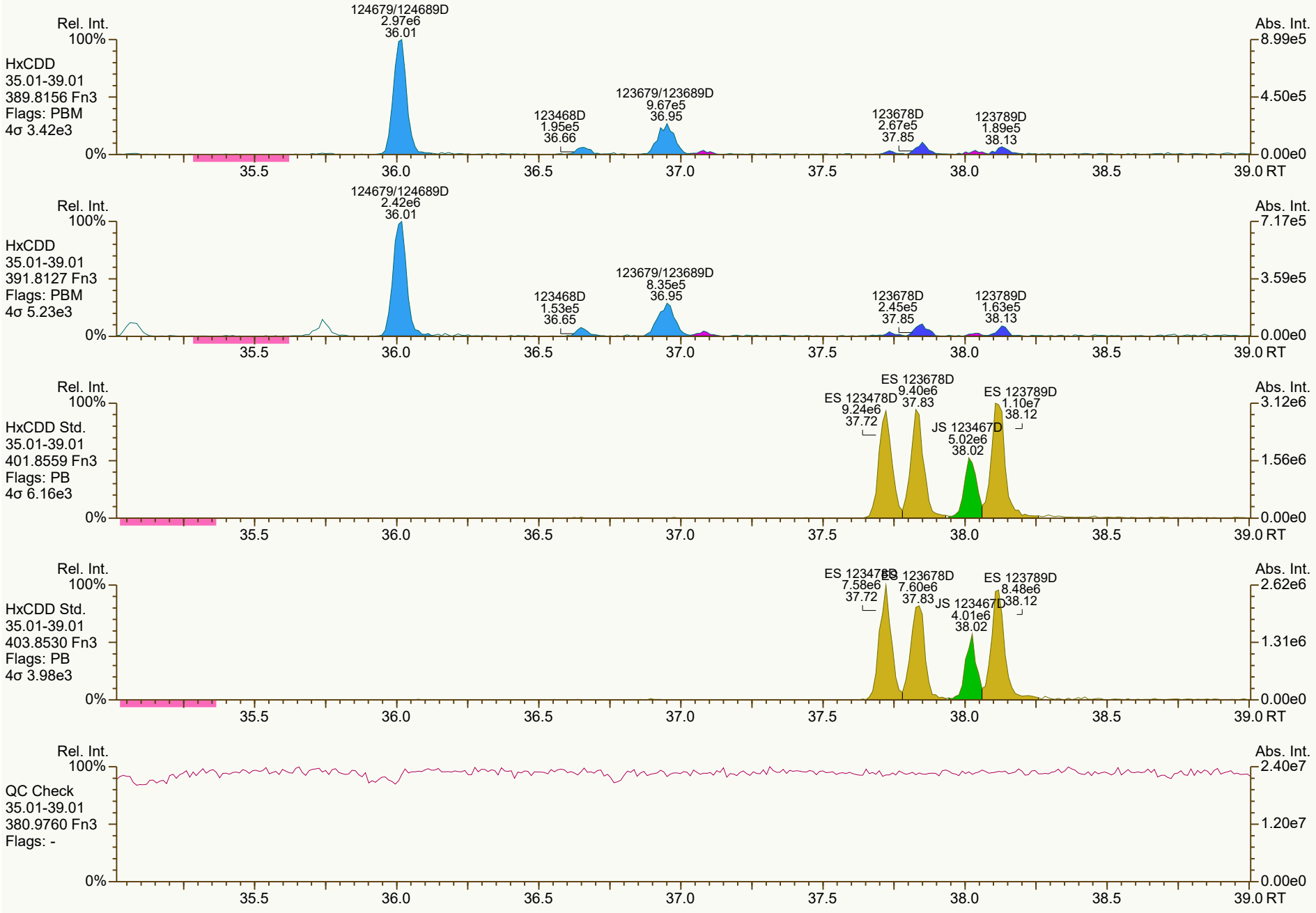
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9153, 8415 scc: 117-914
PKD: 09-Dec-2021 08:59 Printed: 09-Dec-2021 10:49 Page 3 of 12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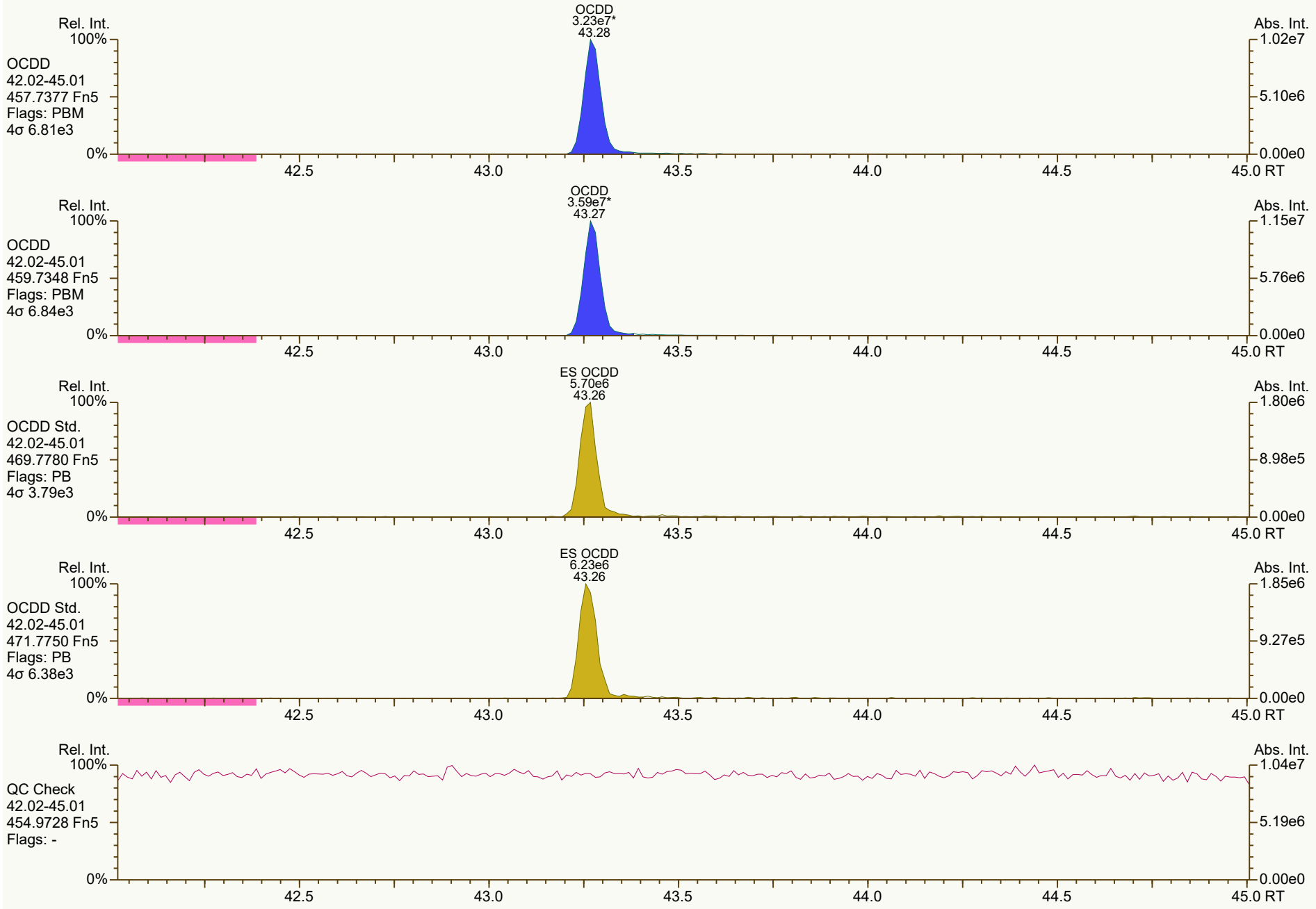
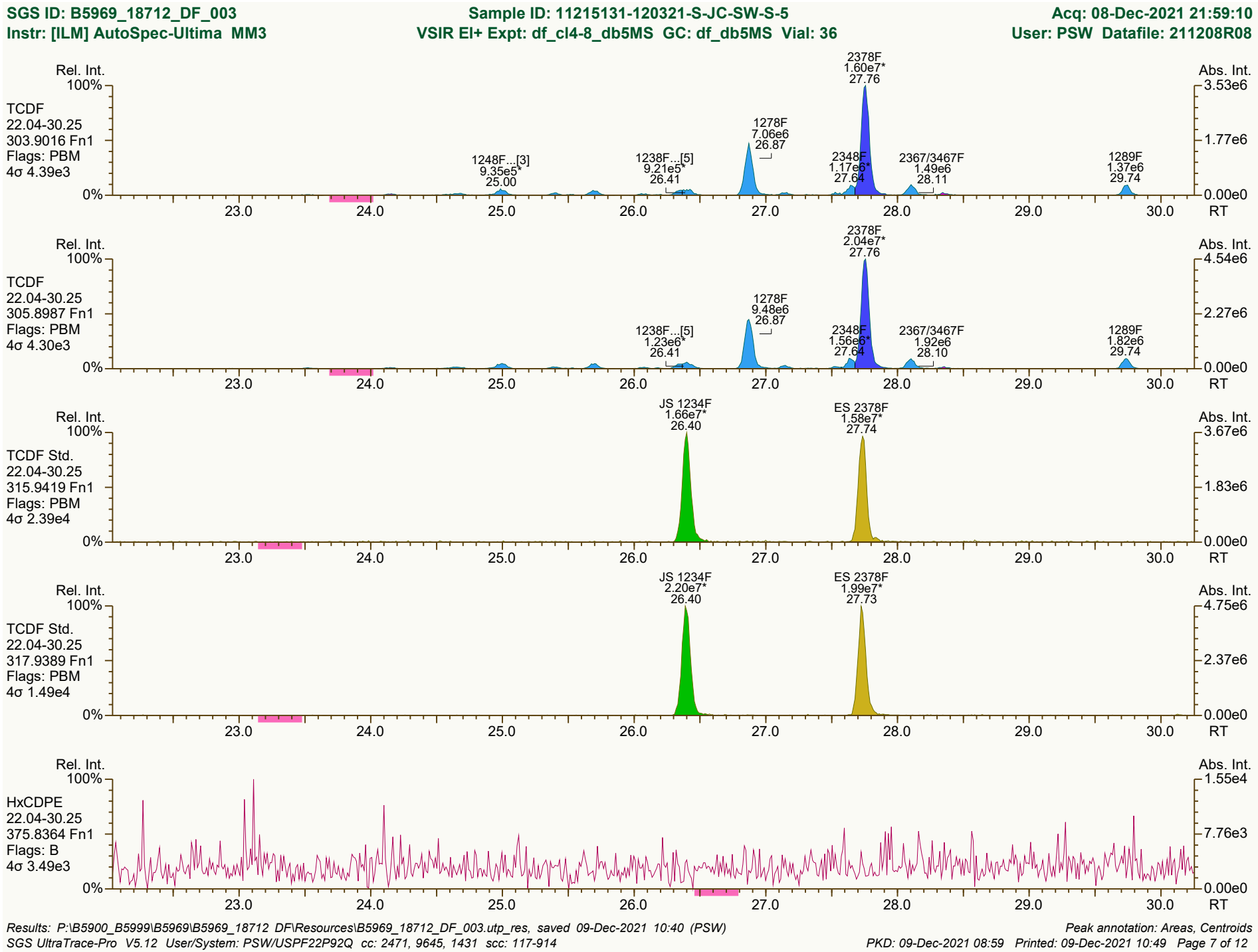
2.97e6
36.01
123468D
1.95e5
36.66
123679/123689D
9.67e5
36.95
123678D
2.67e5
37.85
123789D
1.89e5
38.13
Abs. Int.
8.99e5
4.50e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PBM
4σ 5.23e3
124679/124689D
2.42e6
36.01
123468D
1.53e5
36.65
123679/123689D
8.35e5
36.95
123678D
2.45e5
37.85
123789D
1.63e5
38.13
Abs. Int.
7.17e5
3.59e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PB
4σ 6.16e3
ES 123678D
9.40e6
37.83
ES 123478D
9.24e6
37.72
ES 123789D
1.10e7
38.12
JS 123467D
5.02e6
38.02
Abs. Int.
3.12e6
1.56e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PB
4σ 3.98e3
ES 123678D
7.60e6
37.83
ES 123789D
8.48e6
38.12
JS 123467D
4.01e6
38.02
Abs. Int.
2.62e6
1.31e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
Abs. Int.
2.40e7
1.20e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 3.99e3
1234679D
7.65e6*
40.04
1234678D
5.25e6
40.70
Abs. Int.
2.95e6
1.47e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 3.20e3
1234679D
7.54e6*
40.04
1234678D
5.08e6
40.70
Abs. Int.
3.01e6
1.51e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PBM
4σ 5.16e3
ES 1234678D
7.04e6*
40.69
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PBM
4σ 6.05e3
ES 1234678D
6.41e6*
40.69
Abs. Int.
2.57e6
1.29e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.53e7
7.65e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

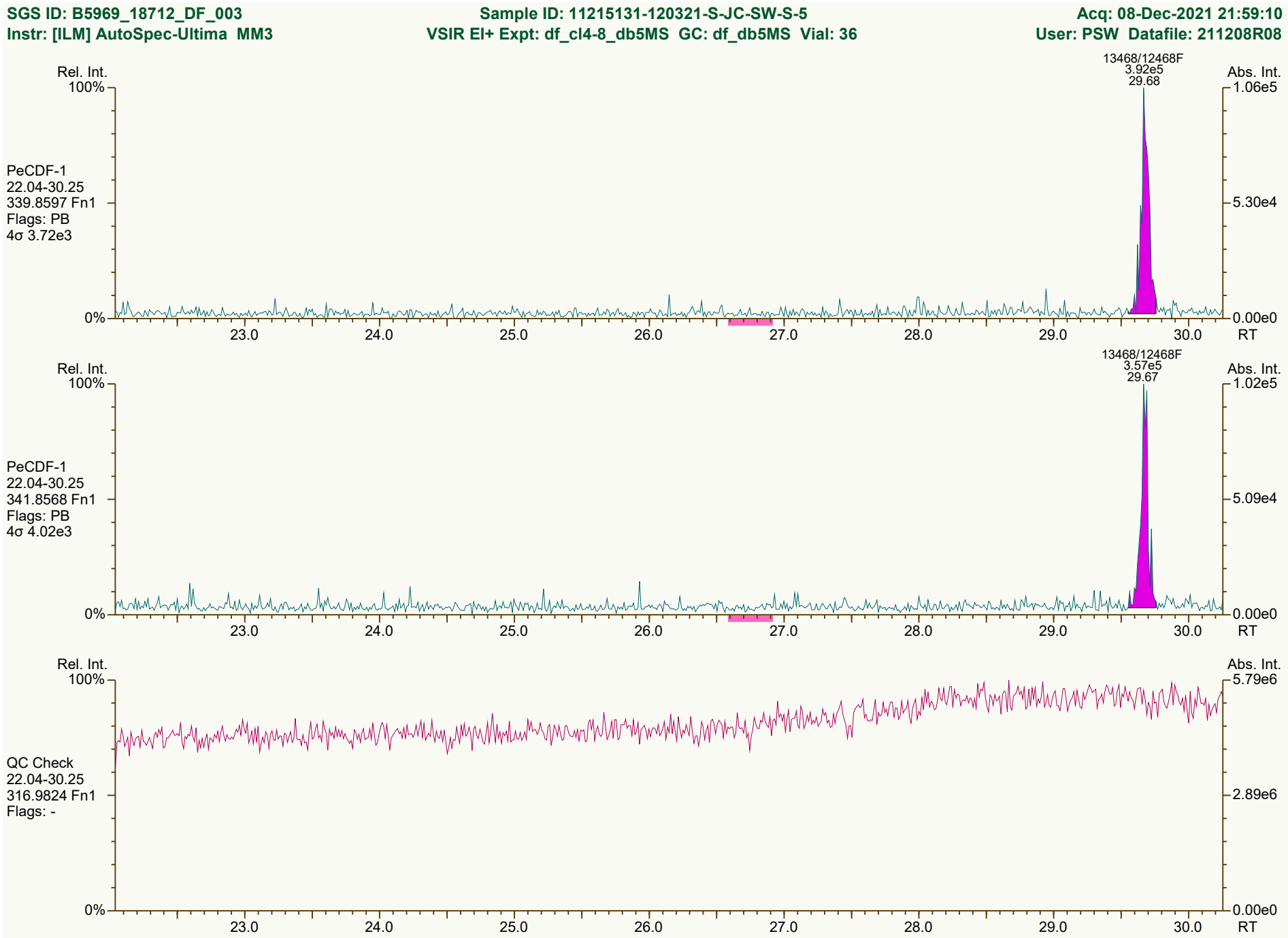

OCDD
3.23e7*
43.28
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 6.81e3
0%
Abs. Int.
1.02e7
5.10e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.59e7*
43.27
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 6.84e3
0%
Abs. Int.
1.15e7
5.76e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
5.70e6
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 3.79e3
0%
Abs. Int.
1.80e6
8.98e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.23e6
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 6.38e3
0%
Abs. Int.
1.85e6
9.27e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.04e7
5.19e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: B5969_18712_DF_003 | Sample ID: 11215131-120321-S-JC-SW-S-5 | Acq: 08-Dec-2021 21:59:10
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36 | User: PSW Datafile: 211208R08

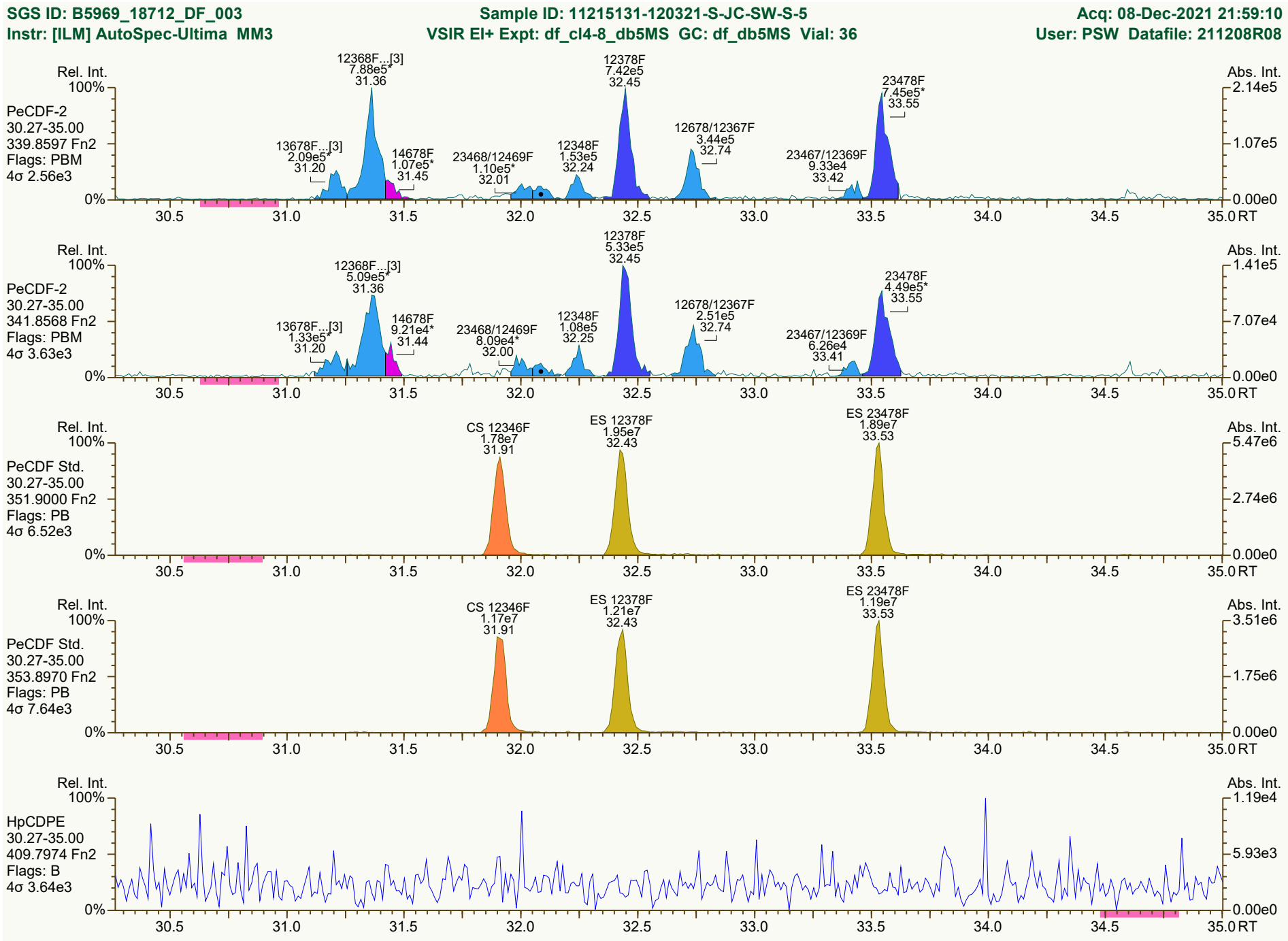


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_003.utp_res, saved 09-Dec-2021 10:40 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2471, 9645, 1431 scc: 117-914 | PKD: 09-Dec-2021 08:59 Printed: 09-Dec-2021 10:49 Page 7 of 12

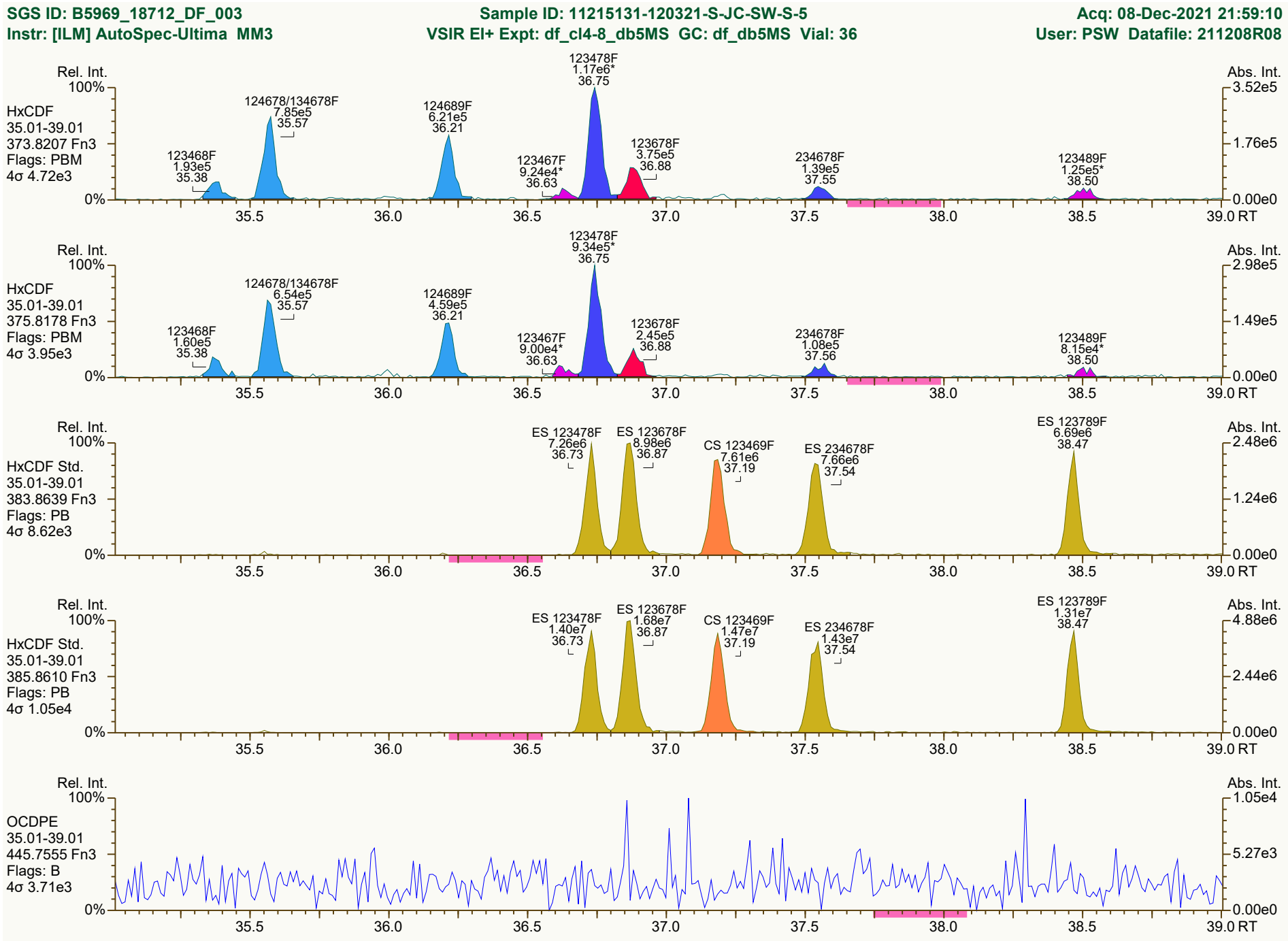
SGS ID: B5969_18712_DF_003 | Sample ID: 11215131-120321-S-JC-SW-S-5 | Acq: 08-Dec-2021 21:59:10
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36 | User: PSW Datafile: 211208R08



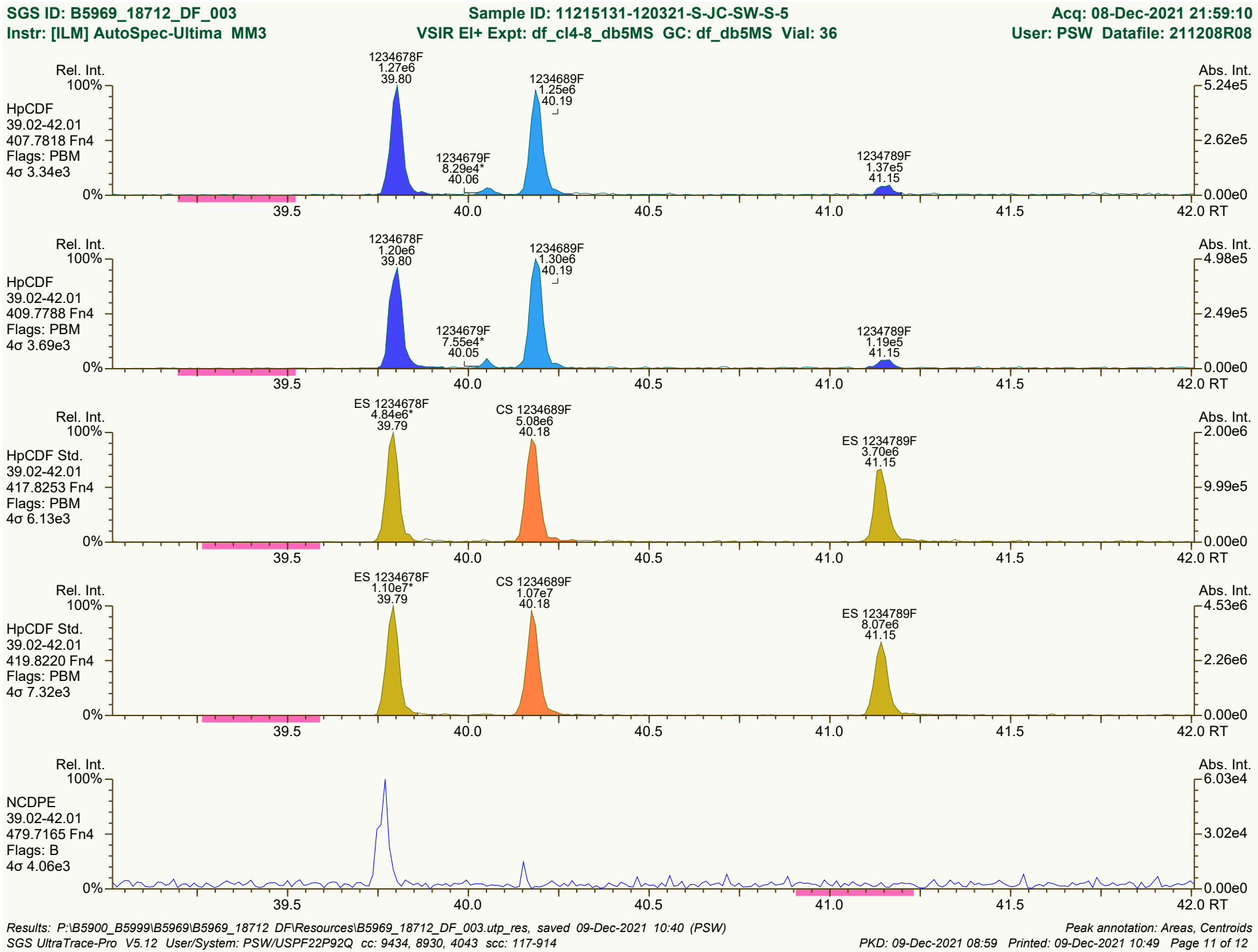
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_003.utp_res, saved 09-Dec-2021 10:40 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3278 scc: 117-914 *PKD: 09-Dec-2021 08:59 Printed: 09-Dec-2021 10:49 Page 8 of 12*

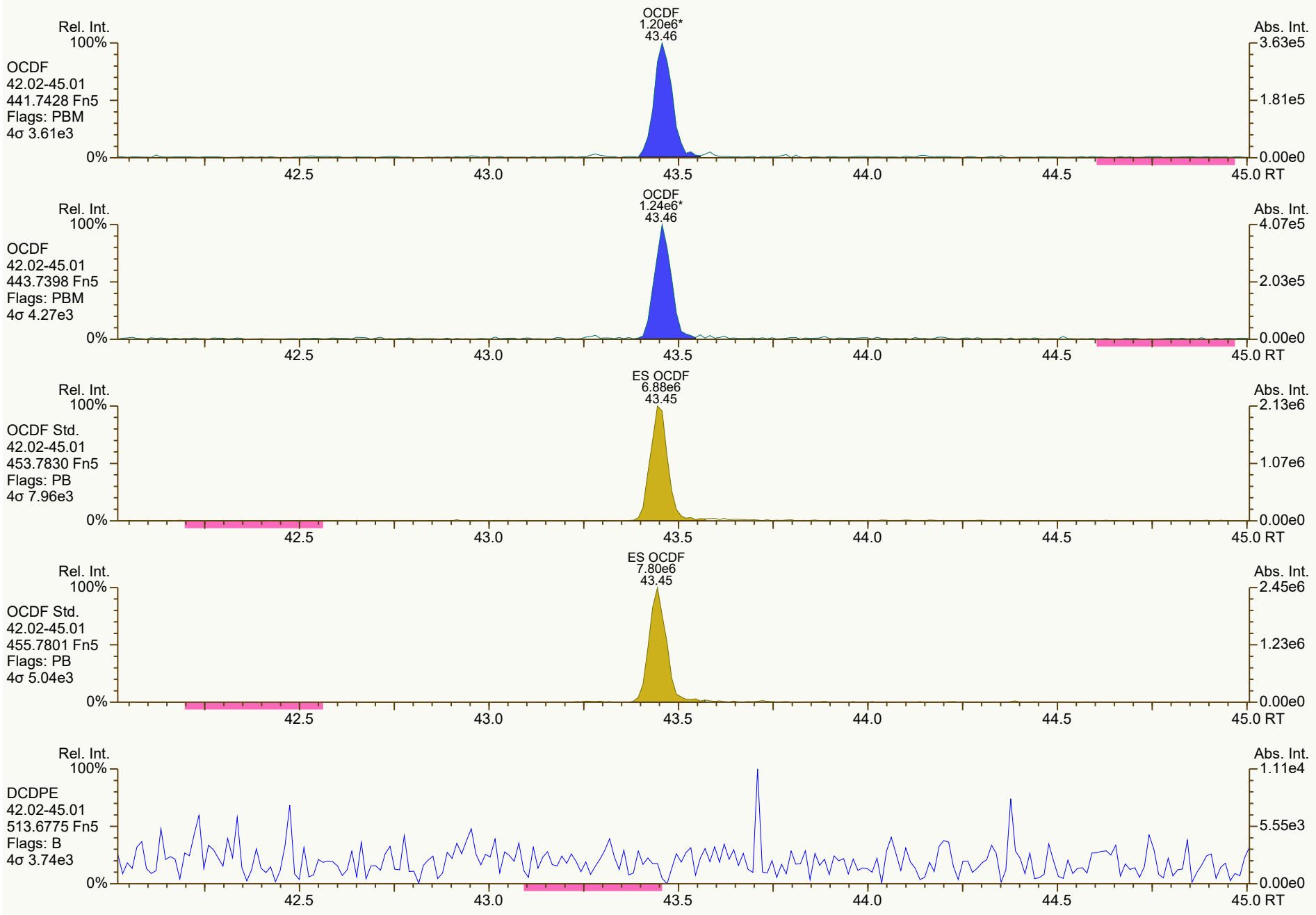

SGS ID: B5969_18712_DF_003
Sample ID: 11215131-120321-S-JC-SW-S-5
Acq: 08-Dec-2021 21:59:10
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36
User: PSW Datafile: 211208R08
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 2.56e3
12368F...[3] 7.88e5* 31.36
13678F...[3] 2.09e5* 31.20
14678F 1.07e5* 31.45
23468/12469F 1.10e5* 32.01
12348F 1.53e5 32.24
12378F 7.42e5 32.45
12678/12367F 3.44e5 32.74
23467/12369F 9.33e4 33.42
23478F 7.45e5* 33.55
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.63e3
12368F...[3] 5.09e5* 31.36
13678F...[3] 1.33e5* 31.20
14678F 9.21e4* 31.44
23468/12469F 8.09e4* 32.00
12348F 1.08e5 32.25
12378F 5.33e5 32.45
12678/12367F 2.51e5 32.74
23467/12369F 6.26e4 33.41
23478F 4.49e5* 33.55
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 6.52e3
CS 12346F 1.78e7 31.91
ES 12378F 1.95e7 32.43
ES 23478F 1.89e7 33.53
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 7.64e3
CS 12346F 1.17e7 31.91
ES 12378F 1.21e7 32.43
ES 23478F 1.19e7 33.53
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.64e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_003.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9353, 3874, 6314 scc: 117-914
PKD: 09-Dec-2021 08:59 Printed: 09-Dec-2021 10:49 Page 9 of 12

SGS ID: B5969_18712_DF_003 | Sample ID: 11215131-120321-S-JC-SW-S-5 | Acq: 08-Dec-2021 21:59:10
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36 | User: PSW Datafile: 211208R08



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_003.utp_res, saved 09-Dec-2021 10:40 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6817, 6375, 8618 scc: 117-914 | PKD: 09-Dec-2021 08:59 Printed: 09-Dec-2021 10:49 Page 10 of 12


SGS ID: B5969_18712_DF_003
Sample ID: 11215131-120321-S-JC-SW-S-5
Acq: 08-Dec-2021 21:59:10
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36
User: PSW Datafile: 211208R08
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 3.34e3
1234678F
1.27e6
39.80
1234689F
1.25e6
40.19
1234679F
8.29e4*
40.06
1234789F
1.37e5
41.15
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 3.69e3
1234678F
1.20e6
39.80
1234689F
1.30e6
40.19
1234679F
7.55e4*
40.05
1234789F
1.19e5
41.15
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 6.13e3
ES 1234678F
4.84e6*
39.79
CS 1234689F
5.08e6
40.18
ES 1234789F
3.70e6
41.15
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 7.32e3
ES 1234678F
1.10e7*
39.79
CS 1234689F
1.07e7
40.18
ES 1234789F
8.07e6
41.15
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.06e3
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_003.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9434, 8930, 4043 scc: 117-914
PKD: 09-Dec-2021 08:59 Printed: 09-Dec-2021 10:49 Page 11 of 12


OCDF
1.20e6*
43.46
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 3.61e3
0%
Abs. Int.
3.63e5
1.81e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.24e6*
43.46
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 4.27e3
4.07e5
2.03e5
ES OCDF
6.88e6
43.45
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 7.96e3
2.13e6
1.07e6
ES OCDF
7.80e6
43.45
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 5.04e3
2.45e6
1.23e6
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.74e3
1.11e4
5.55e3

Lab ID: B5969_18712_DF_004 **Acq'd:** 08 Dec 2021 22:46 PSW **Wt/Vol:** 16.40 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-S-7 **UTP:** 09-Dec-2021 10:40:17 PSW **J-level:** 0.305 pg/g **Split:** 1 **Checkcode:** 834-918-KZD

Datafile: 211208R09 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.63	E	1.0008	1.0007	-0.2	1.06E+09	0.78	Y	1.34	2,800	9130.667	0.251
12378-PeCDD	33.90		1.0004	1.0006	+0.4	7.72E+06	1.66	Y	1.06	29.6	8481.73	0.296
123478-HxCDD	37.74	J	1.0004	1.0002	-0.5	3.16E+05	1.21	Y	1.06	1.44	11910.397	0.468
123678-HxCDD	37.86		1.0034	1.0034	0	1.34E+06	1.36	Y	1.08	5.82	11910.397	0.406
123789-HxCDD	38.15	EMPC	1.0111	1.0109	-0.5	6.02E+05	1.46	N	1.02	2.51	11910.397	0.384
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	4.77E+07	1.04	Y	0.97	258	9230.854	0.33
OCDD	43.29		1.0003	1.0003	0	4.04E+08	0.90	Y	1.07	3,650	9808.595	0.737
2378-TCDF	27.79	E	1.0007	1.0009	+0.3	3.45E+09	0.79	Y	0.96	9,470	7794.495	0.236
12378-PeCDF	32.48		1.0006	1.0005	-0.2	1.10E+08	1.57	Y	0.95	324	10192.258	0.274
23478-PeCDF	33.59		1.0005	1.0008	+0.6	8.76E+07	1.57	Y	0.94	278	10192.258	0.322
123478-HxCDF	36.77		1.0004	1.0004	0	1.37E+08	1.25	Y	1.23	435	22677.31	0.624
123678-HxCDF	36.91		1.0005	1.0005	0	3.85E+07	1.24	Y	1.13	113	22677.31	0.541
234678-HxCDF	37.58		1.0005	1.0005	0	8.05E+06	1.31	Y	1.15	26.9	22677.31	0.648
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	22677.31	0.552
1234678-HpCDF	39.82		1.0003	1.0002	-0.2	3.92E+07	1.04	Y	1.36	130	8230.677	0.167
1234789-HpCDF	41.17		1.0004	1.0003	-0.2	9.86E+06	1.01	Y	1.30	42.9	8230.677	0.257
OCDF	43.47		1.0002	1.0002	0	3.06E+07	0.93	Y	1.03	236	7778.805	0.5

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.61	1.0233	1.0229	-0.7	3.45E+07	0.82	Y	1.03	85.9
ES 12378-PeCDD	33.88	1.2118	1.2115	-0.6	3.00E+07	1.54	Y	1.03	74.7
ES 123478-HxCDD	37.74	0.9921	0.9921	0	2.54E+07	1.21	Y	0.99	87.9
ES 123678-HxCDD	37.85	0.9951	0.9950	-0.2	2.59E+07	1.27	Y	0.97	91.8
ES 123789-HxCDD	38.14	1.0027	1.0026	-0.2	2.88E+07	1.30	Y	1.12	88.3
ES 1234678-HpCDD	40.70	1.0702	1.0700	-0.5	2.32E+07	1.09	Y	0.99	80.4
ES OCDD	43.27	1.1377	1.1377	0	2.53E+07	0.89	Y	0.78	56
ES 2378-TCDF	27.77	1.0505	1.0505	0	4.62E+07	0.81	Y	1.08	78.3
ES 12378-PeCDF	32.47	1.2278	1.2284	+1.2	4.39E+07	1.56	Y	0.93	86.2
ES 23478-PeCDF	33.56	1.2691	1.2699	+1.6	4.09E+07	1.59	Y	0.92	81.4
ES 123478-HxCDF	36.75	0.9660	0.9661	+0.2	3.12E+07	0.54	Y	1.14	94.1
ES 123678-HxCDF	36.89	0.9698	0.9698	0	3.66E+07	0.53	Y	1.30	97.3
ES 234678-HxCDF	37.56	0.9875	0.9874	-0.2	3.17E+07	0.53	Y	1.20	90.9
ES 123789-HxCDF	38.48	1.0121	1.0117	-0.9	3.06E+07	0.51	Y	1.14	92.6
ES 1234678-HpCDF	39.81	1.0468	1.0465	-0.7	2.71E+07	0.46	Y	0.95	98.1
ES 1234789-HpCDF	41.15	1.0822	1.0819	-0.7	2.15E+07	0.46	Y	0.85	87.6
ES OCDF	43.46	1.1426	1.1426	0	3.08E+07	0.93	Y	0.93	57.4

Lab ID: B5969_18712_DF_004 **Acq'd:** 08 Dec 2021 22:46 PSW **Wt/Vol:** 16.40 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-S-7 **UTP:** 09-Dec-2021 10:40:17 PSW **J-level:** 0.305 pg/g **Split:** 1 **Checkcode:** 834-918-KZD

Datafile: 211208R09 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.97		-	-	-	3.89E+07	0.81	Y	-	-	
JS 1234-TCDF	26.43		-	-	-	5.45E+07	0.77	Y	-	-	
JS 123467-HxCDD	38.04		-	-	-	1.45E+07	1.31	Y	-	-	
CS 37Cl-2378-TCDD	28.63		1.0241	1.0236	-0.9	1.54E+07	n/a	-	1.31	75.8	
CS 12347-PeCDD	33.40		1.1940	1.1940	0	2.83E+07	1.69	Y	0.89	81.5	
CS 12346-PeCDF	31.95		1.2080	1.2087	+1.3	4.24E+07	1.53	Y	0.87	89.7	
CS 123469-HxCDF	37.21		0.9781	0.9783	+0.4	3.30E+07	0.53	Y	1.09	104	
CS 1234689-HpCDF	40.19		1.0569	1.0566	-0.7	2.60E+07	0.45	Y	0.86	104	
~~SS 37Cl-2378-TCDD~~	~~28.63~~		~~1.0241~~	~~1.0236~~	~~-0.9~~	~~1.54E+07~~	~~n/a~~		~~1.26~~	~~88.8~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.40~~		~~1.1940~~	~~1.1940~~	~~0~~	~~2.83E+07~~	~~1.69~~	~~Y~~	~~0.86~~	~~109~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.95~~		~~1.2080~~	~~1.2087~~	~~+1.3~~	~~4.24E+07~~	~~1.53~~	~~Y~~	~~0.93~~	~~104~~	
~~SS 123469-HxCDF~~	~~37.21~~		~~0.9781~~	~~0.9783~~	~~+0.4~~	~~3.30E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~107~~	
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0566~~	~~-0.7~~	~~2.60E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~105~~	

Totals	Conc	EMPC
Total TCDD	3120	3150
Total PeCDD	47.7	50.5
Total HxCDD	80.4	83.8
Total HpCDD	527	527
Total Tetra-Octa Dioxins	7430	7460
Total TCDF	18,600	18600
Total PeCDF	940	942
Total HxCDF	679	679
Total HpCDF	239	239
Total Tetra-Octa Furans	20,600	20600
Total Tetra-Octa Dioxins & Furans	28100	28100

Lab ID: B5969_18712_DF_004 **Acq'd: 08 Dec 2021 22:46 PSW** **Wt/Vol: 16.40 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-SPS-SW-S-7 **UTP: 09-Dec-2021 10:40:17 PSW** **J-level: 0.305 pg/g** **Split: 1** **Checkcode: 834-918-KZD**

Datafile: 211208R09 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.06		0.8758	0.8760	+0.3	9.98E+05	0.77	Y	1.34	2.62	9130.667	0.251
1379-TCDD	25.40		0.8878	0.8879	+0.2	5.85E+05	0.78	Y	1.34	1.54	9130.667	0.251
1369-TCDD	NotFnd		0.9025						1.34		9130.667	0.251
1469-TCDD	26.59		0.9291	0.9293	+0.3	2.67E+06	0.80	Y	1.34	7.02	9130.667	0.251
1247/1246/1248/1249-TCDD	26.81		0.9374	0.9373	-0.2	1.78E+06	0.88	Y	1.34	4.69	9130.667	0.251
1378-TCDD	27.00		0.9440	0.9437	-0.5	2.73E+06	0.78	Y	1.34	7.17	9130.667	0.251
1268-TCDD	27.22	EMPC	0.9505	0.9514	+1.5	2.51E+05	0.90	N	1.34	0.66	9130.667	0.251
1478-TCDD	27.45		0.9591	0.9594	+0.5	2.08E+06	0.82	Y	1.34	5.46	9130.667	0.251
1279-TCDD	27.60		0.9650	0.9647	-0.5	1.44E+05	0.87	Y	1.34	0.378	9130.667	0.251
1234/1269-TCDD	27.96		0.9771	0.9771	0	4.97E+05	0.87	Y	1.34	1.31	9130.667	0.251
1236-TCDD	28.10	EMPC	0.9821	0.9823	+0.3	2.14E+05	1.05	N	1.34	0.562	9130.667	0.251
1237/1238-TCDD	28.34		0.9907	0.9905	-0.3	1.70E+07	0.83	Y	1.34	44.6	9130.667	0.251
1239-TCDD	NotFnd		0.9953						1.34		9130.667	0.251
2378-TCDD	**28.63**	E	**1.0008**	1.0007	**-0.2**	1.06E+09	0.78	Y	**1.34**	**2,800**	**9130.667**	**0.251**
1278-TCDD	28.96		1.0118	1.0121	+0.5	9.53E+07	0.78	Y	1.34	251	9130.667	0.251
1267-TCDD	29.08	EMPC	1.0162	1.0165	+0.5	6.69E+06	1.07	N	1.34	17.6	9130.667	0.251
1289-TCDD	29.53	EMPC	1.0340	1.0323	-3.0	1.92E+06	1.26	N	1.34	5.04	9130.667	0.251
12479/12468-PeCDD	31.44		0.9274	0.9277	+0.6	8.65E+05	1.52	Y	1.06	3.31	8481.73	0.296
12469-PeCDD	31.97		0.9430	0.9434	+0.8	1.29E+06	1.56	Y	1.06	4.95	8481.73	0.296
12368-PeCDD	32.51		0.9591	0.9593	+0.4	1.19E+06	1.70	Y	1.06	4.57	8481.73	0.296
12478-PeCDD	32.70		0.9645	0.9650	+1.0	5.32E+05	1.48	Y	1.06	2.04	8481.73	0.296
12379-PeCDD	32.80		0.9676	0.9680	+0.8	4.85E+05	1.53	Y	1.06	1.86	8481.73	0.296
12369/12467/12489-PeCDD	33.08	J EMPC	0.9751	0.9762	+2.2	1.65E+05	1.31	N	1.06	0.632	8481.73	0.296
12346/12347-PeCDD	33.42	J	0.9860	0.9862	+0.4	1.78E+05	1.73	Y	1.06	0.68	8481.73	0.296
12378-PeCDD	33.90		**1.0004**	**1.0006**	**+0.4**	**7.72E+06**	**1.66**	**Y**	**1.06**	**29.6**	**8481.73**	**0.296**
12367-PeCDD	34.03	EMPC	1.0034	1.0043	+1.8	5.53E+05	1.82	N	1.06	2.12	8481.73	0.296
12389-PeCDD	34.34	J	1.0133	1.0134	+0.2	1.83E+05	1.52	Y	1.06	0.703	8481.73	0.296
124679/124689-HxCDD	36.04		0.9546	0.9550	+0.9	1.16E+07	1.17	Y	1.05	50.3	11910.397	0.417
123468-HxCDD	36.67		0.9718	0.9718	0	5.49E+05	1.23	Y	1.05	2.39	11910.397	0.417
123679/123689-HxCDD	36.97		0.9795	0.9796	+0.2	4.45E+06	1.27	Y	1.05	19.3	11910.397	0.417
123469-HxCDD	37.11	J	0.9832	0.9835	+0.7	2.57E+05	1.42	Y	1.05	1.12	11910.397	0.417
123478-HxCDD	37.74	J	**1.0004**	**1.0002**	**-0.5**	**3.16E+05**	**1.21**	**Y**	1.06	**1.44**	**11910.397**	**0.468**
123678-HxCDD	37.86		**1.0034**	**1.0034**	**0**	**1.34E+06**	**1.36**	**Y**	1.08	**5.82**	**11910.397**	**0.406**
123467-HxCDD	38.05	J EMPC	1.0083	1.0083	0	2.18E+05	1.05	N	1.05	0.946	11910.397	0.417
123789-HxCDD	38.15	EMPC	**1.0111**	**1.0109**	**-0.5**	**6.02E+05**	**1.46**	**N**	1.02	**2.51**	**11910.397**	**0.384**

Lab ID: B5969_18712_DF_004 | Acq'd: 08 Dec 2021 22:46 PSW | Wt/Vol: 16.40 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-S-7 | UTP: 09-Dec-2021 10:40:17 PSW | J-level: 0.305 pg/g | Split: 1 | Checkcode: 834-918-KZD

Datafile: 211208R09 | Report: 09 Dec 2021 10:42 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

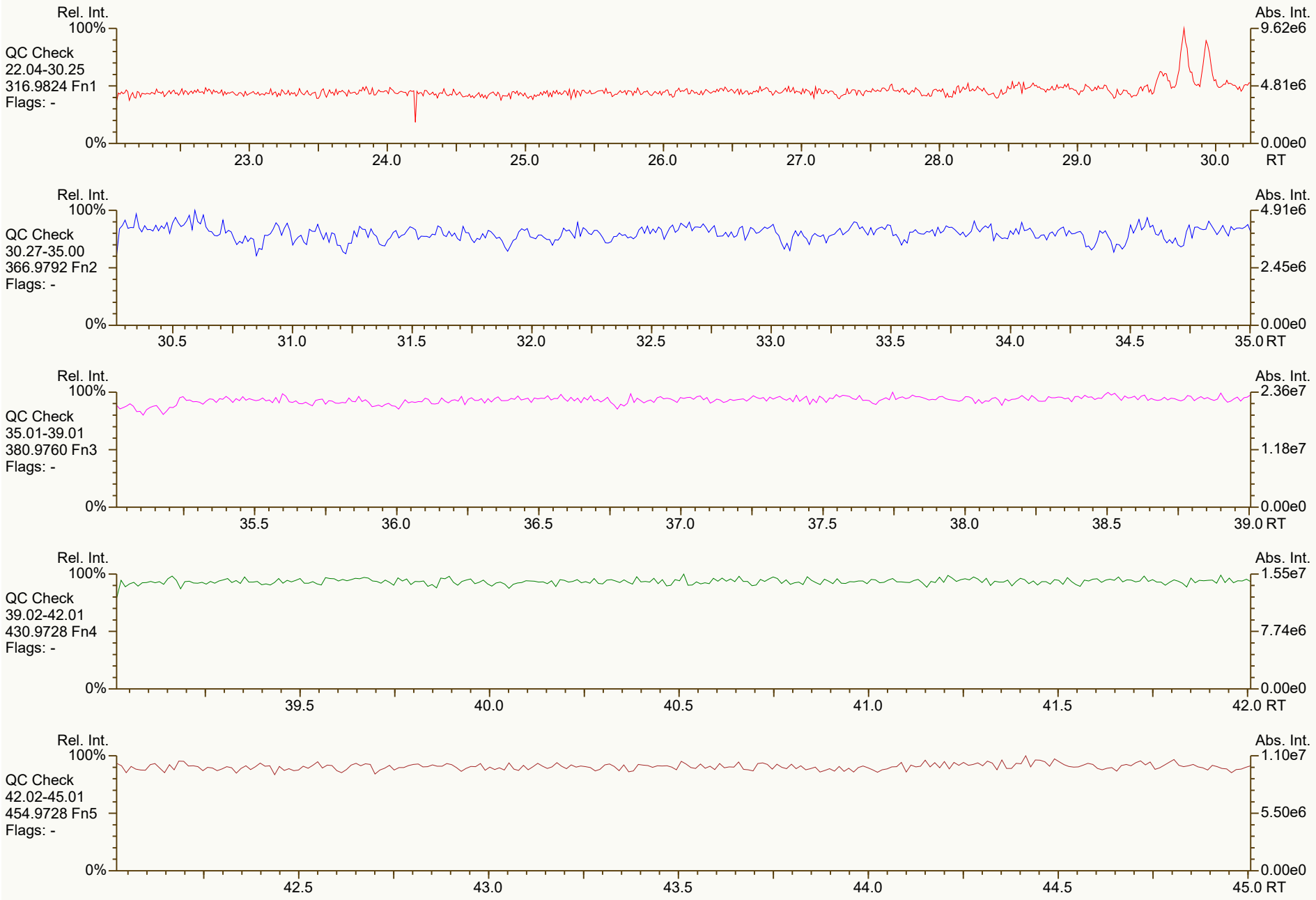
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.06		0.9843	0.9842	-0.2	4.98E+07	1.04	Y	0.97	269	9230.854	0.33
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**4.77E+07**	**1.04**	**Y**	**0.97**	**258**	**9230.854**	**0.33**
OCDD	**43.29**		**1.0003**	**1.0003**	**0**	**4.04E+08**	**0.90**	**Y**	**1.07**	**3,650**	**9808.595**	**0.737**
OCDD-a	43.29		1.0001	1.0002	+0.3	2.43E+07	2.63	Y	0.07	3,560	13011.08	15.8
1368-TCDF	22.99		0.8284	0.8282	-0.3	5.85E+05	0.80	Y	0.96	1.61	7794.495	0.236
1468-TCDF	23.57		0.8487	0.8489	+0.3	4.26E+06	0.86	Y	0.96	11.7	7794.495	0.236
2468-TCDF	24.19		0.8709	0.8711	+0.3	3.29E+06	0.72	Y	0.96	9.04	7794.495	0.236
1346/1246-TCDF	24.61		0.8828	0.8865	+5.5	3.73E+06	0.79	Y	0.96	10.2	7794.495	0.236
1347/1378/1247-TCDF	24.72		0.8886	0.8904	+2.7	2.01E+07	0.81	Y	0.96	55.2	7794.495	0.236
1348-TCDF	24.94		0.8980	0.8984	+0.6	8.41E+06	0.82	Y	0.96	23.1	7794.495	0.236
1248/1367/1379-TCDF	25.05		0.9027	0.9022	-0.8	7.87E+07	0.78	Y	0.96	216	7794.495	0.236
1268-TCDF	25.44		0.9159	0.9161	+0.3	3.68E+07	0.79	Y	0.96	101	7794.495	0.236
1467-TCDF	25.56		0.9206	0.9207	+0.2	8.32E+06	0.76	Y	0.96	22.8	7794.495	0.236
1478-TCDF	25.73		0.9266	0.9268	+0.3	9.20E+07	0.79	Y	0.96	253	7794.495	0.236
1369/1237-TCDF	26.11		0.9396	0.9403	+1.1	3.12E+07	0.79	Y	0.96	85.6	7794.495	0.236
2467-TCDF	26.21		0.9440	0.9440	0	3.95E+06	0.77	Y	0.96	10.9	7794.495	0.236
2368-TCDF	26.36		0.9496	0.9494	-0.3	8.42E+07	0.78	Y	0.96	231	7794.495	0.236
1238/1234/1678/1469/1236-TCDF	26.44		0.9530	0.9522	-1.3	1.80E+08	0.80	Y	0.96	494	7794.495	0.236
1278-TCDF	26.90	E	0.9689	0.9688	-0.2	1.64E+09	0.79	Y	0.96	4,510	7794.495	0.236
1349-TCDF	NotFnd		0.9732						0.96		7794.495	0.236
1267-TCDF	27.17		0.9786	0.9785	-0.2	7.18E+07	0.77	Y	0.96	197	7794.495	0.236
2346/1249-TCDF	27.35		0.9849	0.9852	+0.5	1.21E+07	0.78	Y	0.96	33.3	7794.495	0.236
2347/1279-TCDF	27.56		0.9927	0.9926	-0.2	4.54E+07	0.80	Y	0.96	125	7794.495	0.236
2348-TCDF	27.68	E	0.9967	0.9970	+0.5	3.32E+08	0.77	Y	0.96	911	7794.495	0.236
2378-TCDF	**27.79**	E	**1.0007**	**1.0009**	**+0.3**	**3.45E+09**	**0.79**	**Y**	**0.96**	**9,470**	**7794.495**	**0.236**
2367/3467-TCDF	28.14	E	1.0136	1.0133	-0.5	2.95E+08	0.78	Y	0.96	811	7794.495	0.236
1269-TCDF	28.38		1.0223	1.0223	0	4.30E+07	0.81	Y	0.96	118	7794.495	0.236
1239-TCDF	28.64		1.0313	1.0315	+0.3	6.67E+06	0.76	Y	0.96	18.3	7794.495	0.236
1289-TCDF	29.79	E	1.0711	1.0728	+3.0	3.03E+08	0.79	Y	0.96	832	7794.495	0.236
13468/12468-PeCDF	29.73		0.9147	0.9156	+1.6	2.82E+06	1.49	Y	0.94	8.6	9439.552	0.275
13678/13467/12467-PeCDF	31.25		0.9616	0.9625	+1.7	1.24E+06	1.56	Y	0.94	3.79	10192.258	0.297
12368/13478/12478-PeCDF	31.40		0.9663	0.9672	+1.7	4.62E+07	1.55	Y	0.94	141	10192.258	0.297
14678-PeCDF	31.50		0.9695	0.9702	+1.3	1.83E+06	1.48	Y	0.94	5.58	10192.258	0.297
13479-PeCDF	NotFnd		0.9727						0.94		10192.258	0.297
13469/12479-PeCDF	NotFnd		0.9799						0.94		10192.258	0.297
12346-PeCDF	31.95	J EMPC	0.9839	0.9843	+0.8	2.26E+05	2.03	N	0.94	0.689	10192.258	0.297

Lab ID: B5969_18712_DF_004 **Acq'd: 08 Dec 2021 22:46 PSW** **Wt/Vol: 16.40 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-SPS-SW-S-7 **UTP: 09-Dec-2021 10:40:17 PSW** **J-level: 0.305 pg/g** **Split: 1** **Checkcode: 834-918-KZD**

Datafile: 211208R09 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.04		0.9864	0.9868	+0.8	2.04E+06	1.50	Y	0.94	6.23	10192.258	0.297
12347-PeCDF	32.12		0.9892	0.9893	+0.2	2.55E+06	1.57	Y	0.94	7.78	10192.258	0.297
12348-PeCDF	32.28		0.9940	0.9942	+0.4	1.19E+07	1.55	Y	0.94	36.2	10192.258	0.297
12378-PeCDF	**32.48**		**1.0006**	**1.0005**	**-0.2**	**1.10E+08**	**1.57**	**Y**	**0.95**	**324**	**10192.258**	**0.274**
12678/12367-PeCDF	32.77		1.0088	1.0094	+1.2	3.56E+07	1.51	Y	0.94	109	10192.258	0.297
12379-PeCDF	NotFnd		1.0142						0.94		10192.258	0.297
12679-PeCDF	33.32	J EMPC	0.9931	0.9928	-0.6	3.14E+05	1.82	N	0.94	0.959	10192.258	0.297
23467/12369-PeCDF	33.45		0.9966	0.9965	-0.2	1.63E+06	1.57	Y	0.94	4.97	10192.258	0.297
23478-PeCDF	**33.59**		**1.0005**	**1.0008**	**+0.6**	**8.76E+07**	**1.57**	**Y**	**0.94**	**278**	**10192.258**	**0.322**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		10192.258	0.297
12349-PeCDF	NotFnd		1.0100						0.94		10192.258	0.297
12389-PeCDF	34.63		1.0323	1.0318	-1.0	5.08E+06	1.56	Y	0.94	15.5	10192.258	0.297
123468-HxCDF	35.41		0.9631	0.9635	+0.8	1.69E+06	1.29	Y	1.16	5.46	22677.31	0.59
124678/134678-HxCDF	35.60		0.9686	0.9688	+0.4	1.18E+07	1.25	Y	1.16	37.9	22677.31	0.59
134679-HxCDF	NotFnd		0.9747						1.16		22677.31	0.59
124679-HxCDF	NotFnd		0.9800						1.16		22677.31	0.59
124689-HxCDF	36.24		0.9859	0.9862	+0.7	6.77E+06	1.25	Y	1.16	21.8	22677.31	0.59
123467-HxCDF	36.64		0.9972	0.9971	-0.2	7.30E+05	1.39	Y	1.16	2.35	22677.31	0.59
123478-HxCDF	**36.77**		**1.0004**	**1.0004**	**0**	**1.37E+08**	**1.25**	**Y**	**1.23**	**435**	**22677.31**	**0.624**
123678-HxCDF	**36.91**		**1.0005**	**1.0005**	**0**	**3.85E+07**	**1.24**	**Y**	**1.13**	**113**	**22677.31**	**0.541**
123479-HxCDF	NotFnd		1.0048						1.16		22677.31	0.59
123469-HxCDF	NotFnd		1.0089						1.16		22677.31	0.59
123679-HxCDF	NotFnd		0.9943						1.16		22677.31	0.59
234678-HxCDF	**37.58**		**1.0005**	**1.0005**	**0**	**8.05E+06**	**1.31**	**Y**	**1.15**	**26.9**	**22677.31**	**0.648**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		22677.31	0.59
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**22677.31**	**0.552**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.53		1.0004	1.0011	+1.6	1.13E+07	1.24	Y	1.16	36.3	22677.31	0.59
1234678-HpCDF	**39.82**		**1.0003**	**1.0002**	**-0.2**	**3.92E+07**	**1.04**	**Y**	**1.36**	**130**	**8230.677**	**0.167**
1234679-HpCDF	40.07		1.0065	1.0066	+0.2	8.15E+05	1.01	Y	1.33	3.08	8230.677	0.207
1234689-HpCDF	40.20		1.0097	1.0100	+0.7	1.67E+07	1.03	Y	1.33	62.9	8230.677	0.207
1234789-HpCDF	**41.17**		**1.0004**	**1.0003**	**-0.2**	**9.86E+06**	**1.01**	**Y**	**1.30**	**42.9**	**8230.677**	**0.257**
OCDF	**43.47**		**1.0002**	**1.0002**	**0**	**3.06E+07**	**0.93**	**Y**	**1.03**	**236**	**7778.805**	**0.5**
OCDF-a	43.47		1.0001	1.0001	0	1.92E+06	2.58	Y	0.06	256	9589.611	10.7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QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
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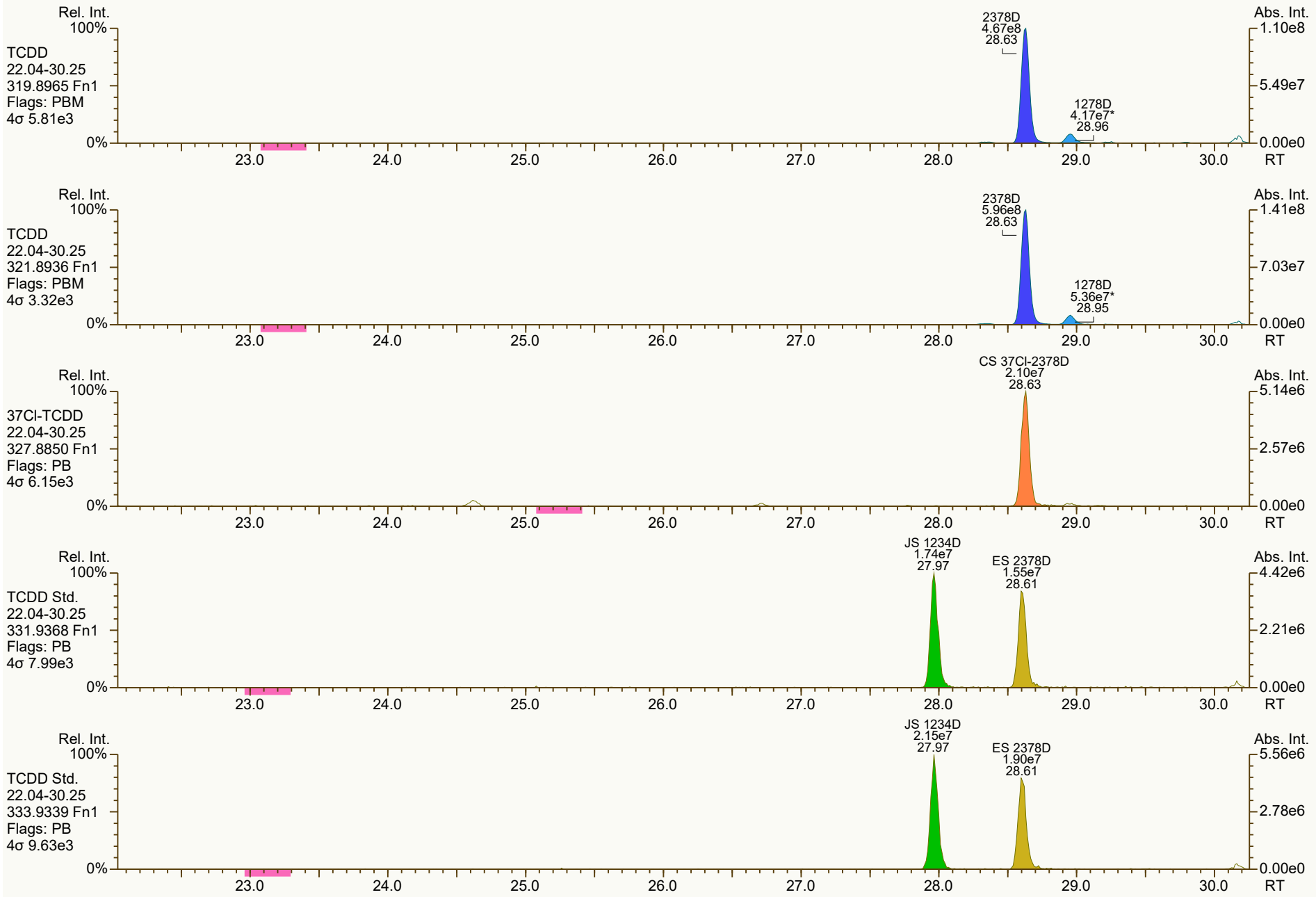
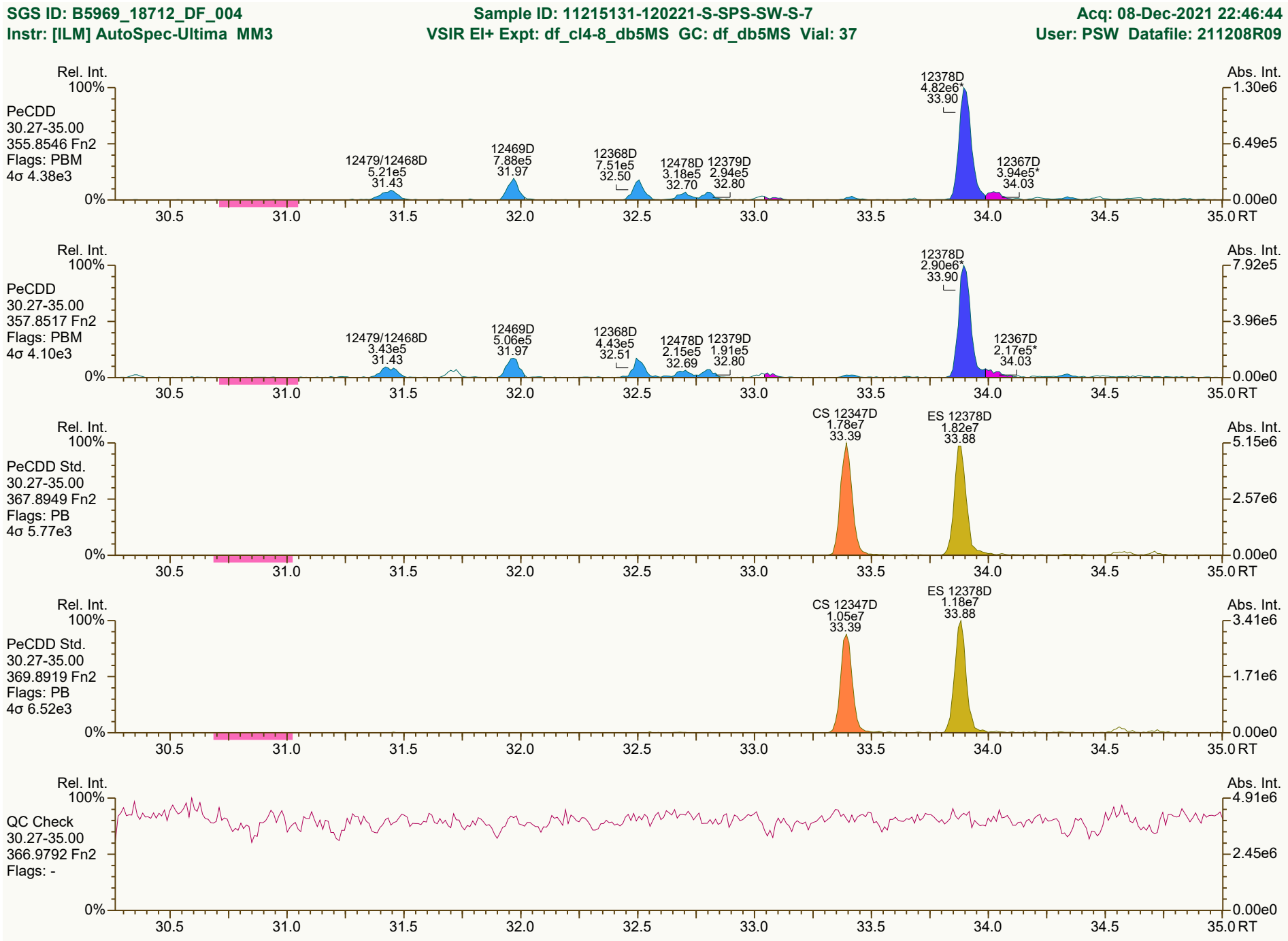
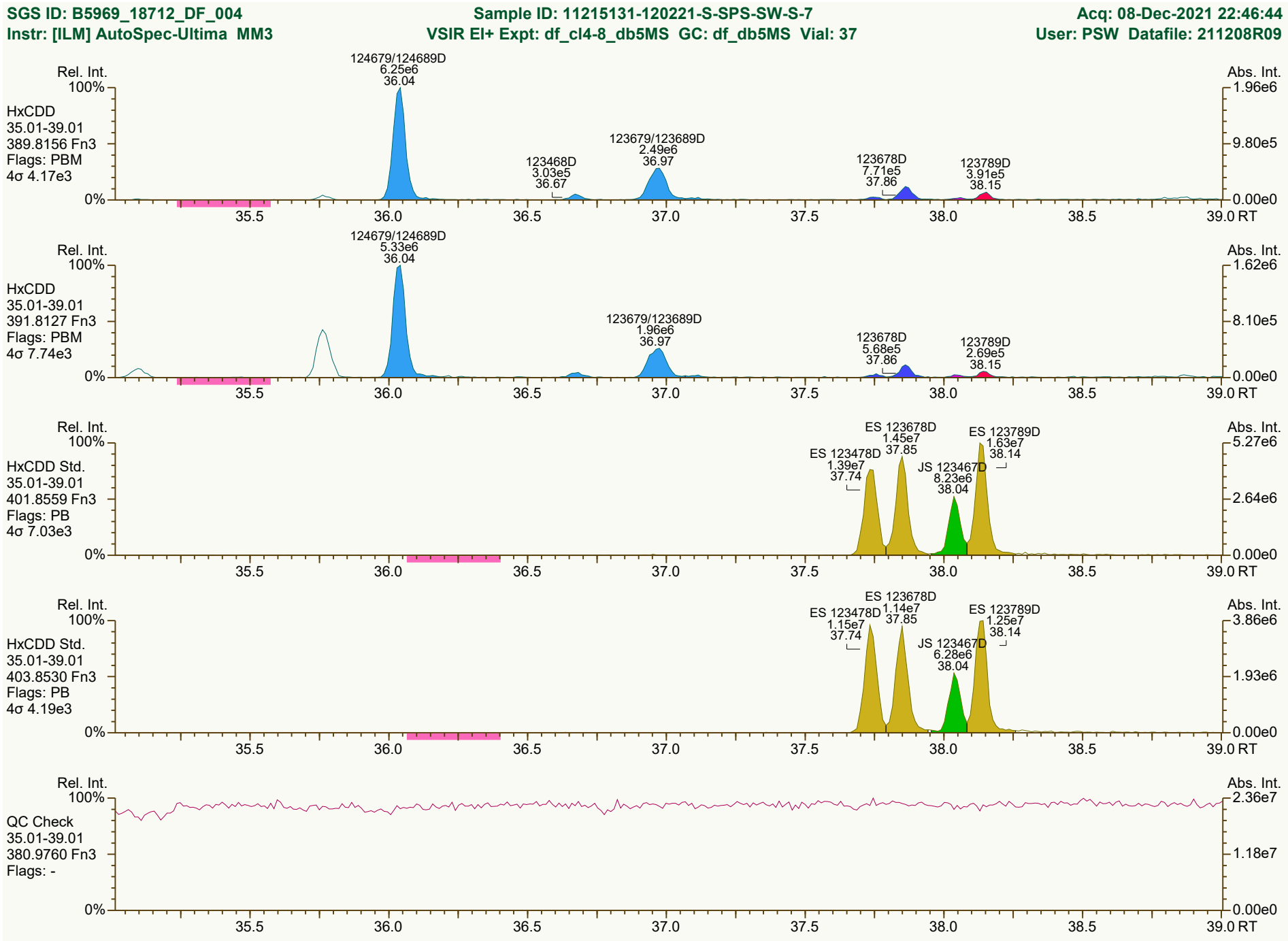
4.81e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.91e6
2.45e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.36e7
1.18e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.55e7
7.74e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.10e7
5.50e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

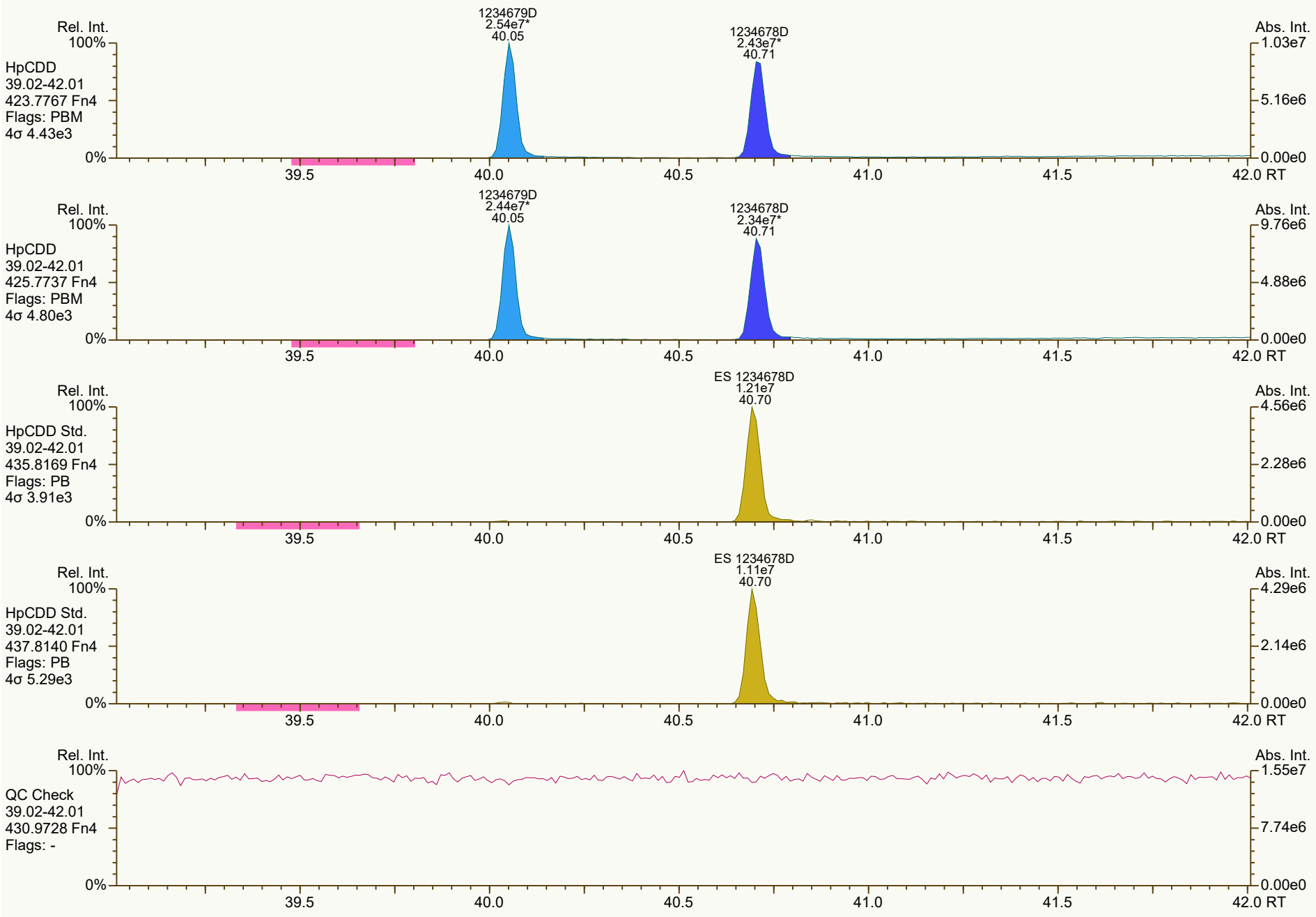

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 5.81e3
0%
2378D
4.67e8
28.63
1278D
4.17e7*
28.96
Abs. Int.
1.10e8
5.49e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 3.32e3
0%
2378D
5.96e8
28.63
1278D
5.36e7*
28.95
Abs. Int.
1.41e8
7.03e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 6.15e3
0%
CS 37Cl-2378D
2.10e7
28.63
Abs. Int.
5.14e6
2.57e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 7.99e3
0%
JS 1234D
1.74e7
27.97
ES 2378D
1.55e7
28.61
Abs. Int.
4.42e6
2.21e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 9.63e3
0%
JS 1234D
2.15e7
27.97
ES 2378D
1.90e7
28.61
Abs. Int.
5.56e6
2.78e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

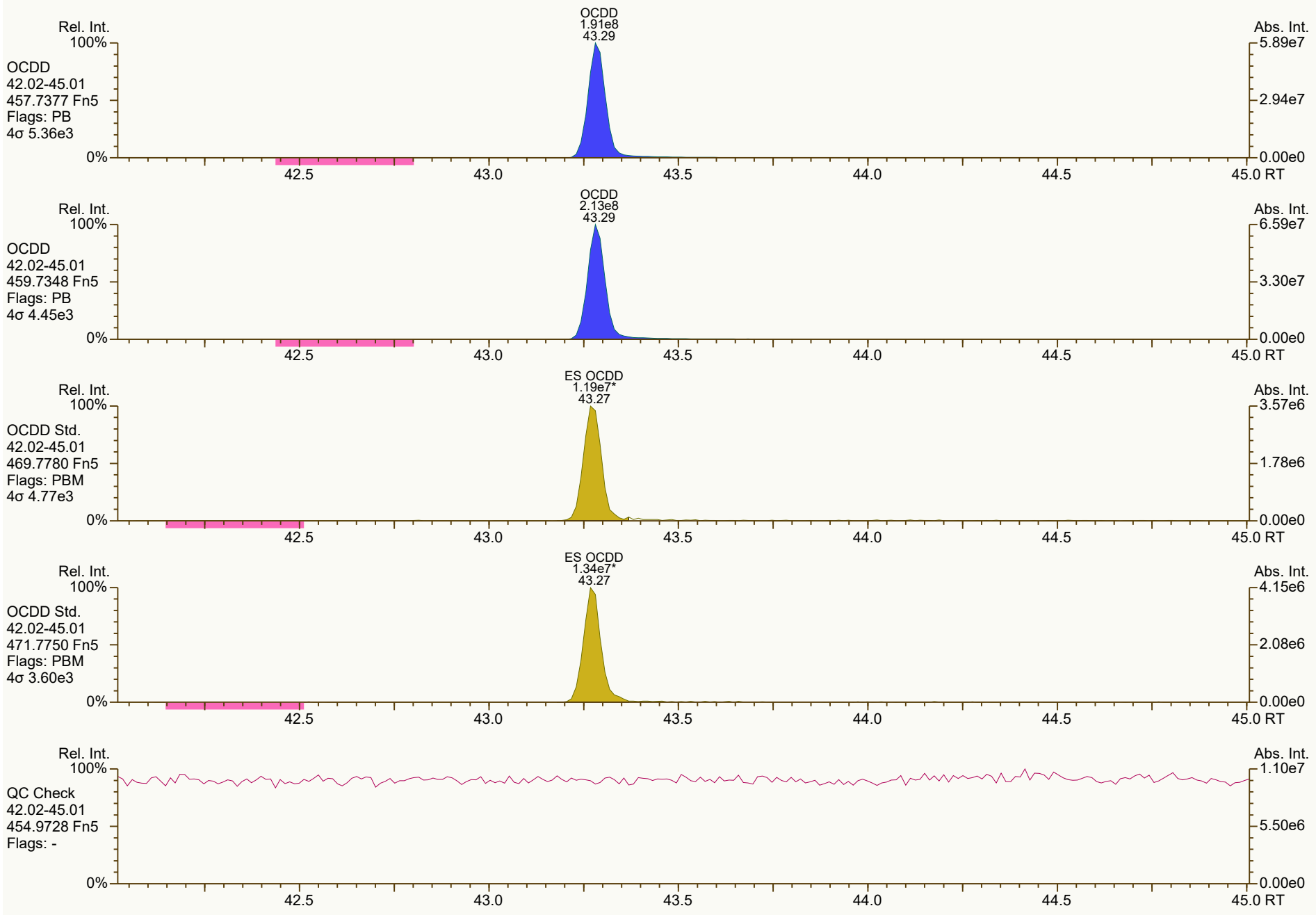


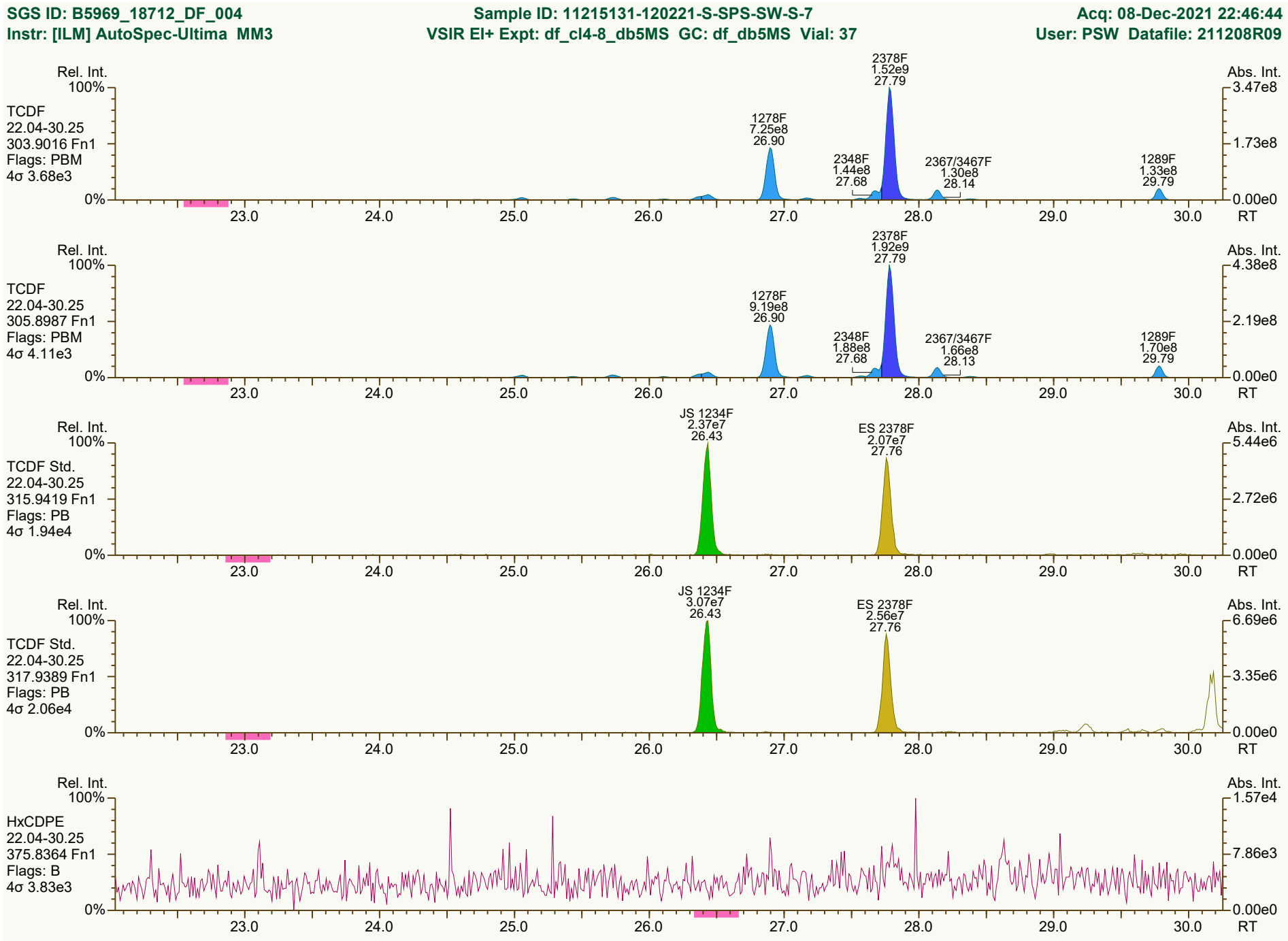
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_004.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0559, 0201 scc: 834-918
PKD: 09-Dec-2021 09:03 Printed: 09-Dec-2021 10:49 Page 3 of 12



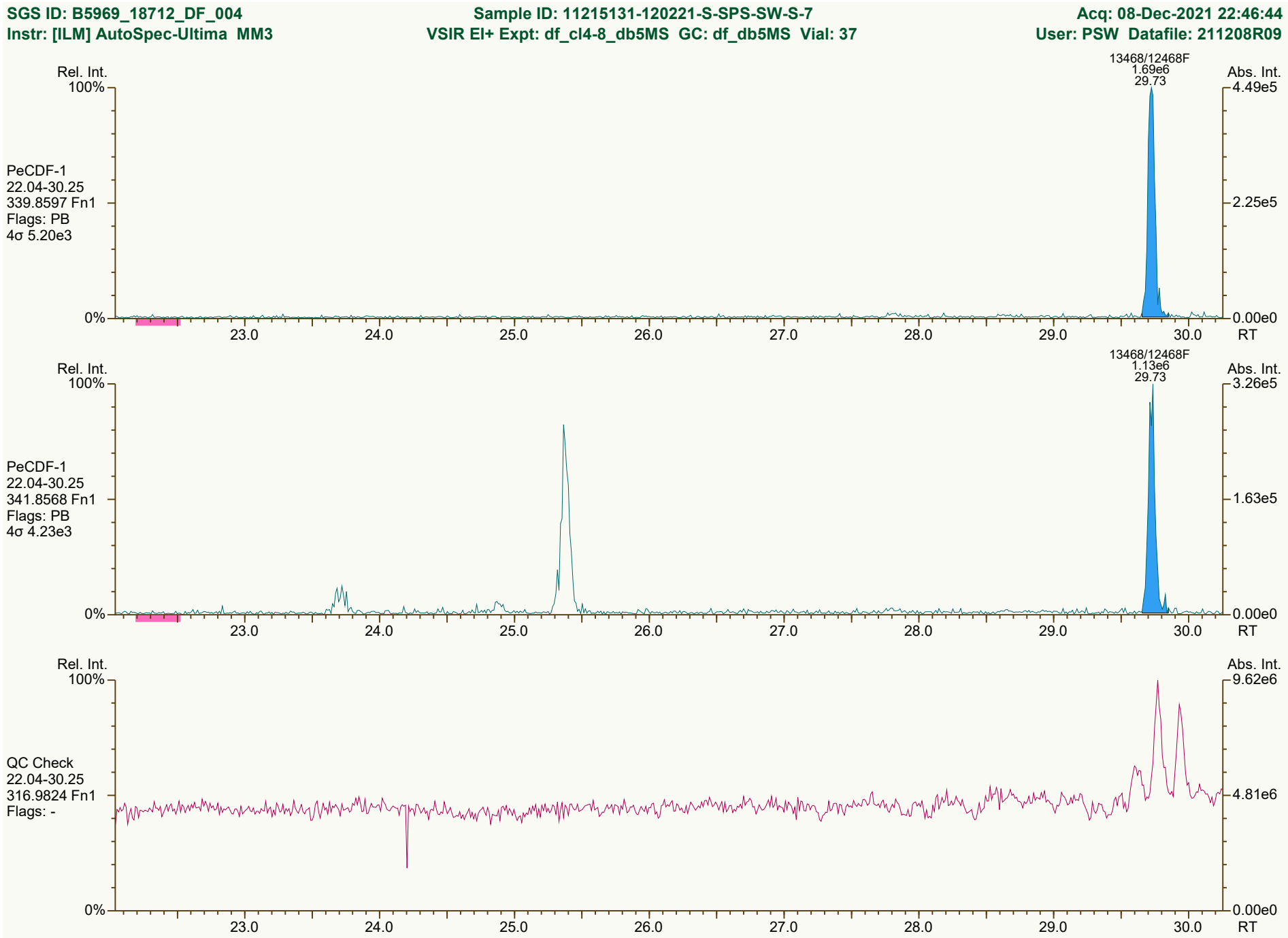
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_004.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2097, 3480 scc: 834-918
PKD: 09-Dec-2021 09:03 Printed: 09-Dec-2021 10:49 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 4.43e3
1234679D
2.54e7*
40.05
1234678D
2.43e7*
40.71
Abs. Int.
1.03e7
5.16e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 4.80e3
1234679D
2.44e7*
40.05
1234678D
2.34e7*
40.71
Abs. Int.
9.76e6
4.88e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 3.91e3
ES 1234678D
1.21e7
40.70
Abs. Int.
4.56e6
2.28e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.29e3
ES 1234678D
1.11e7
40.70
Abs. Int.
4.29e6
2.14e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.55e7
7.74e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

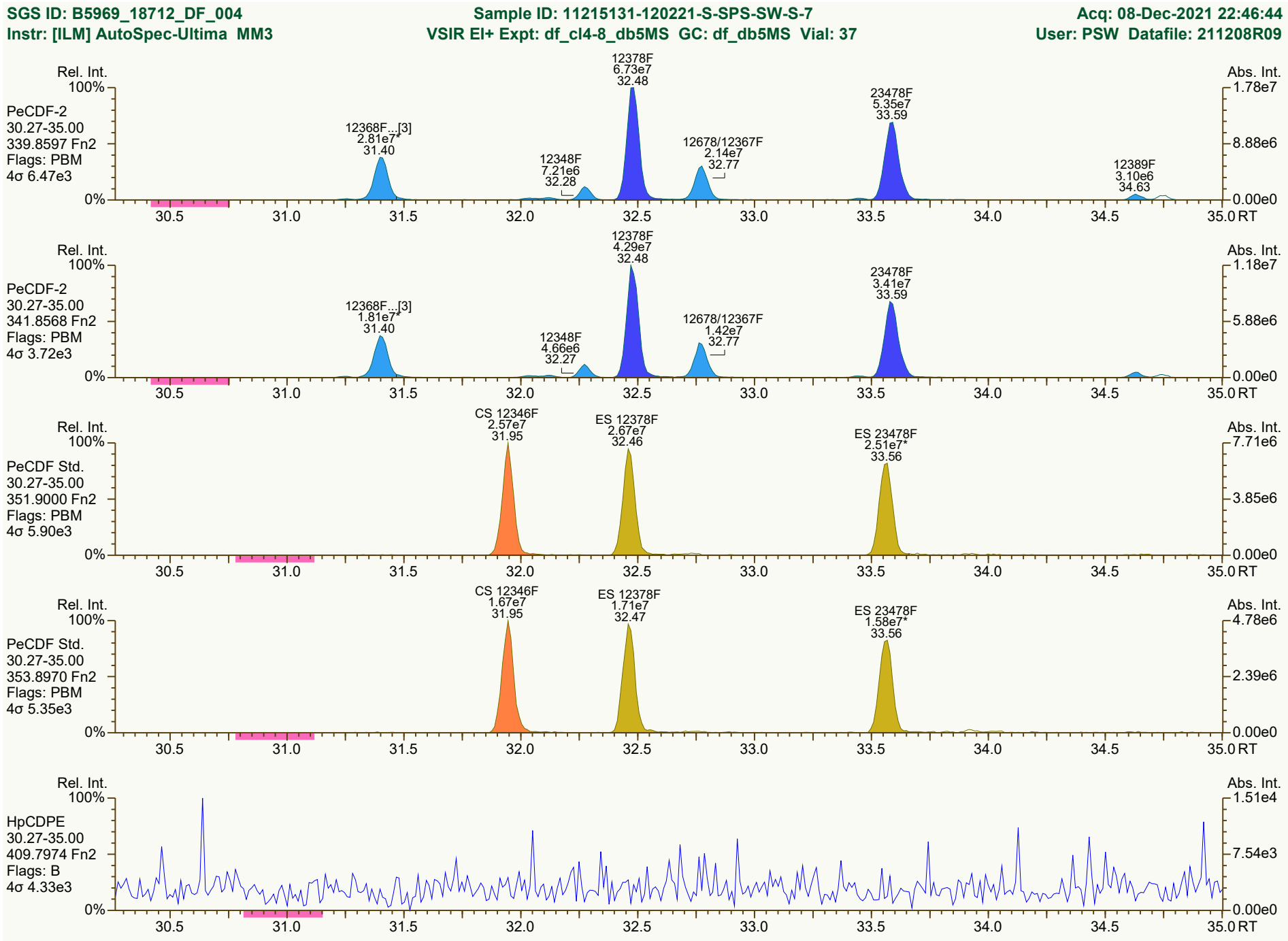

OCDD
1.91e8
43.29
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 5.36e3
0%
Abs. Int.
5.89e7
2.94e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.13e8
43.29
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 4.45e3
0%
Abs. Int.
6.59e7
3.30e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.19e7*
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 4.77e3
0%
Abs. Int.
3.57e6
1.78e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.34e7*
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 3.60e3
0%
Abs. Int.
4.15e6
2.08e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.10e7
5.50e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

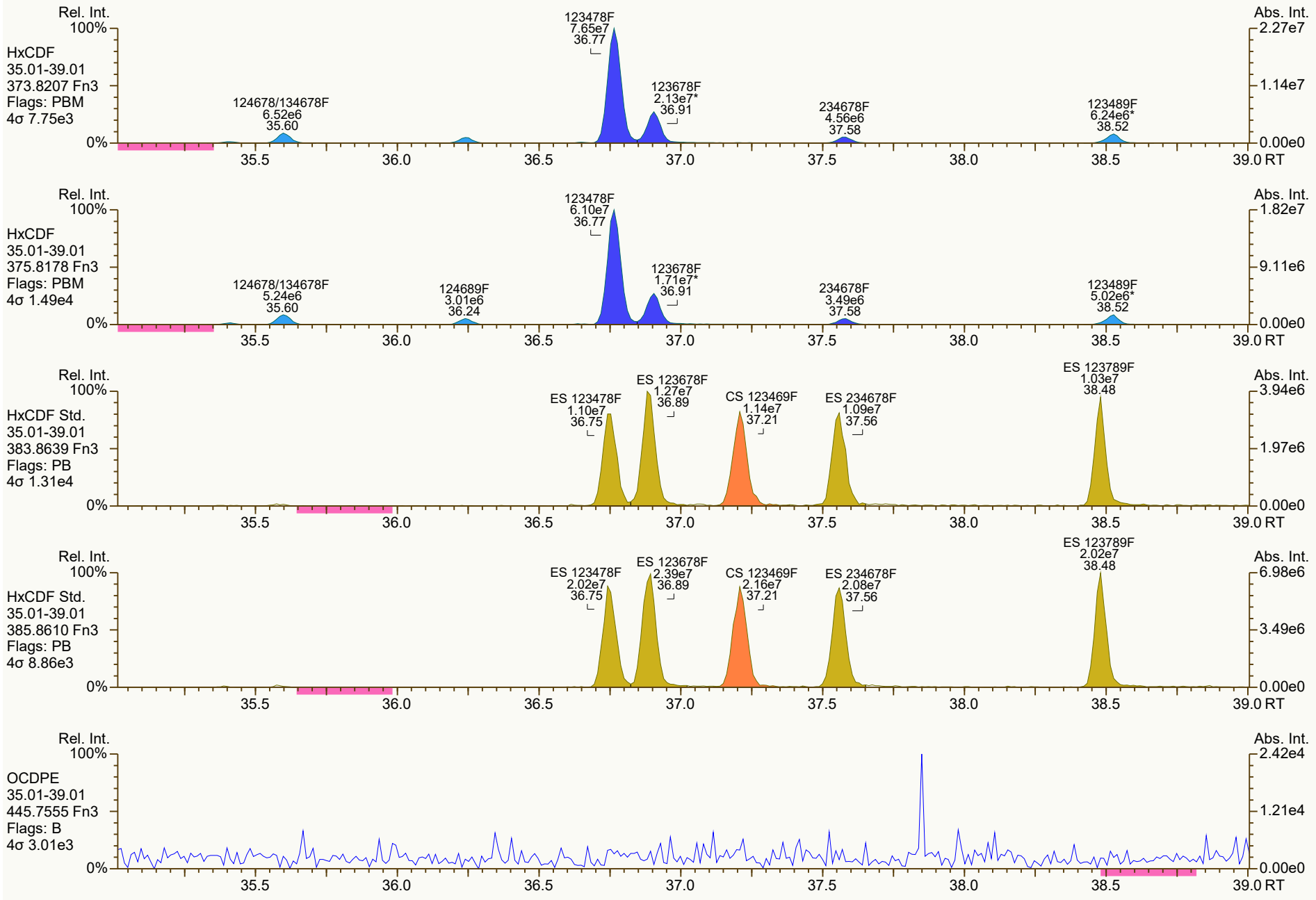

SGS ID: B5969_18712_DF_004
Sample ID: 11215131-120221-S-SPS-SW-S-7
Acq: 08-Dec-2021 22:46:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 37
User: PSW Datafile: 211208R09
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.68e3
2378F
1.52e9
27.79
1278F
7.25e8
26.90
2348F
1.44e8
27.68
2367/3467F
1.30e8
28.14
1289F
1.33e8
29.79
3.47e8
1.73e8
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 4.11e3
2378F
1.92e9
27.79
1278F
9.19e8
26.90
2348F
1.88e8
27.68
2367/3467F
1.66e8
28.13
1289F
1.70e8
29.79
4.38e8
2.19e8
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.94e4
JS 1234F
2.37e7
26.43
ES 2378F
2.07e7
27.76
5.44e6
2.72e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 2.06e4
JS 1234F
3.07e7
26.43
ES 2378F
2.56e7
27.76
6.69e6
3.35e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.83e3
1.57e4
7.86e3
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

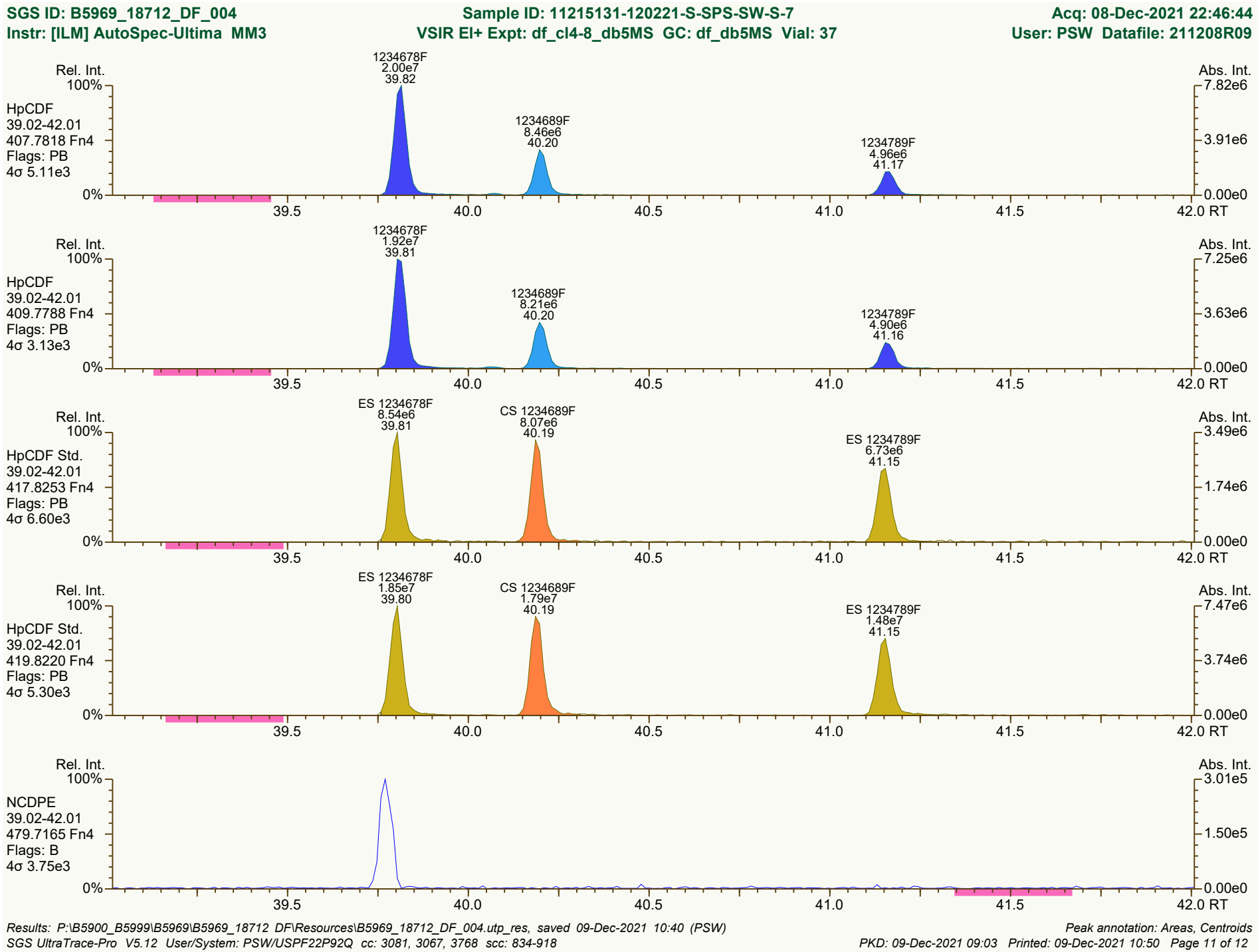
SGS ID: B5969_18712_DF_004 | Sample ID: 11215131-120221-S-SPS-SW-S-7 | Acq: 08-Dec-2021 22:46:44
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 37 | User: PSW Datafile: 211208R09

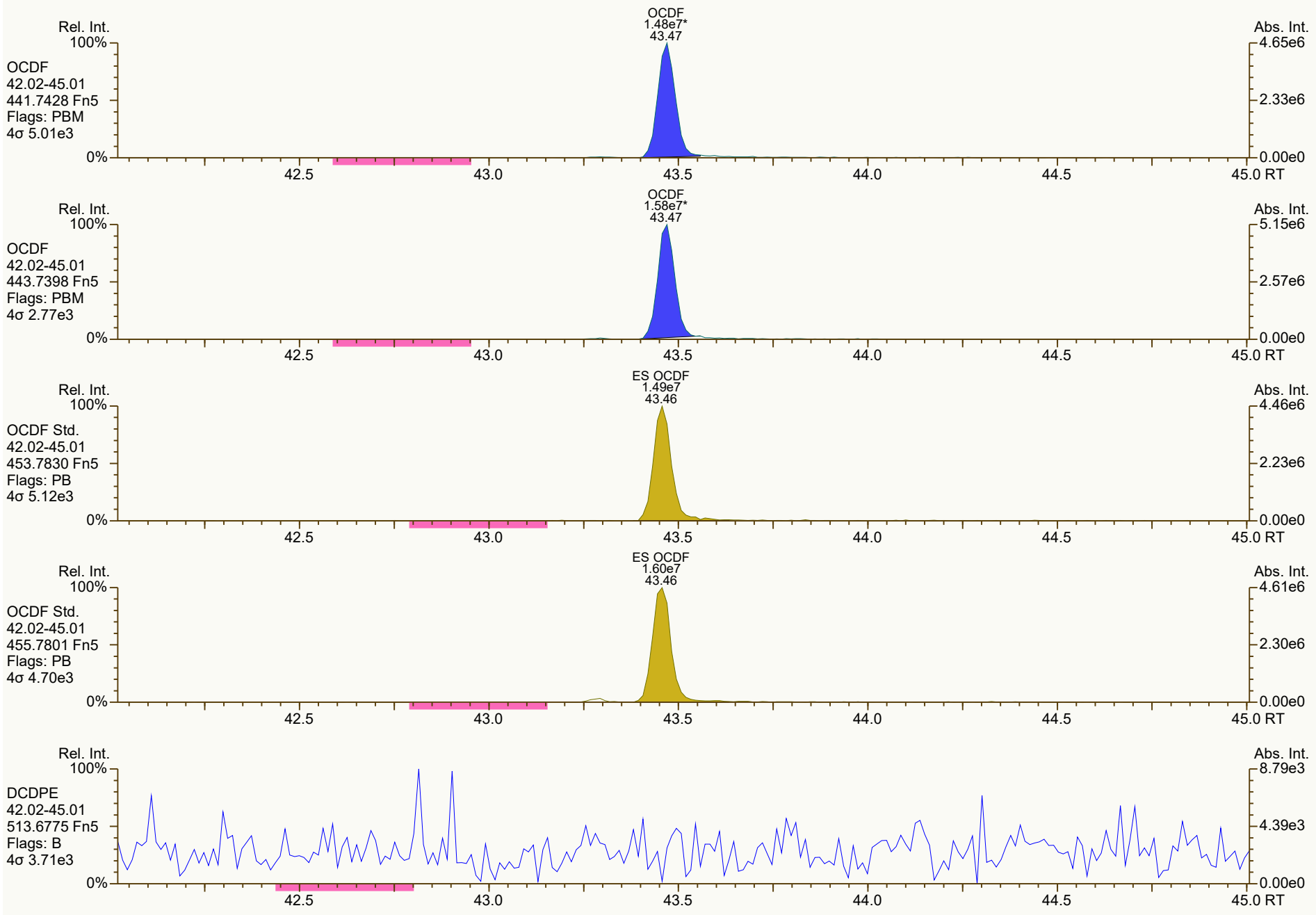


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_004.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2325 scc: 834-918 | *PKD: 09-Dec-2021 09:03 Printed: 09-Dec-2021 10:49 Page 8 of 12*


SGS ID: B5969_18712_DF_004
Sample ID: 11215131-120221-S-SPS-SW-S-7
Acq: 08-Dec-2021 22:46:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 37
User: PSW Datafile: 211208R09
Rel. Int.
Abs. Int.
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 6.47e3
12368F...[3] 2.81e7* 31.40
12348F 7.21e6 32.28
12378F 6.73e7 32.48
12678/12367F 2.14e7 32.77
23478F 5.35e7 33.59
12389F 3.10e6 34.63
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.72e3
12368F...[3] 1.81e7* 31.40
12348F 4.66e6 32.27
12378F 4.29e7 32.48
12678/12367F 1.42e7 32.77
23478F 3.41e7 33.59
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 5.90e3
CS 12346F 2.57e7 31.95
ES 12378F 2.67e7 32.46
ES 23478F 2.51e7* 33.56
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 5.35e3
CS 12346F 1.67e7 31.95
ES 12378F 1.71e7 32.47
ES 23478F 1.58e7* 33.56
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.33e3
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_004.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1002, 9759, 2024 scc: 834-918
PKD: 09-Dec-2021 09:03 Printed: 09-Dec-2021 10:49 Page 9 of 12


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 7.75e3
123478F
7.65e7
36.77
123678F
2.13e7*
36.91
124678/134678F
6.52e6
35.60
234678F
4.56e6
37.58
123489F
6.24e6*
38.52
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 1.49e4
123478F
6.10e7
36.77
123678F
1.71e7*
36.91
124678/134678F
5.24e6
35.60
124689F
3.01e6
36.24
234678F
3.49e6
37.58
123489F
5.02e6*
38.52
1.82e7
9.11e6
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 1.31e4
ES 123478F
1.10e7
36.75
ES 123678F
1.27e7
36.89
CS 123469F
1.14e7
37.21
ES 234678F
1.09e7
37.56
ES 123789F
1.03e7
38.48
3.94e6
1.97e6
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 8.86e3
ES 123478F
2.02e7
36.75
ES 123678F
2.39e7
36.89
CS 123469F
2.16e7
37.21
ES 234678F
2.08e7
37.56
ES 123789F
2.02e7
38.48
6.98e6
3.49e6
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.01e3
2.42e4
1.21e4


SGS ID: B5969_18712_DF_004
Sample ID: 11215131-120221-S-SPS-SW-S-7
Acq: 08-Dec-2021 22:46:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 37
User: PSW Datafile: 211208R09
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 5.11e3
1234678F
2.00e7
39.82
1234689F
8.46e6
40.20
1234789F
4.96e6
41.17
7.82e6
3.91e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 3.13e3
1234678F
1.92e7
39.81
1234689F
8.21e6
40.20
1234789F
4.90e6
41.16
7.25e6
3.63e6
0.00e0
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 6.60e3
ES 1234678F
8.54e6
39.81
CS 1234689F
8.07e6
40.19
ES 1234789F
6.73e6
41.15
3.49e6
1.74e6
0.00e0
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 5.30e3
ES 1234678F
1.85e7
39.80
CS 1234689F
1.79e7
40.19
ES 1234789F
1.48e7
41.15
7.47e6
3.74e6
0.00e0
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.75e3
3.01e5
1.50e5
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_004.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3081, 3067, 3768 scc: 834-918
PKD: 09-Dec-2021 09:03 Printed: 09-Dec-2021 10:50 Page 11 of 12


OCDF
1.48e7*
43.47
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 5.01e3
0%
Abs. Int.
4.65e6
2.33e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.58e7*
43.47
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 2.77e3
0%
Abs. Int.
5.15e6
2.57e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.49e7
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 5.12e3
0%
Abs. Int.
4.46e6
2.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.60e7
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 4.70e3
0%
Abs. Int.
4.61e6
2.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.71e3
0%
Abs. Int.
8.79e3
4.39e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5969_18712_DF_005 **Acq'd:** 08 Dec 2021 23:34 PSW **Wt/Vol:** 15.22 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-S-6 **UTP:** 09-Dec-2021 10:40:18 PSW **J-level:** 0.329 pg/g **Split:** 1 **Checkcode:** 921-596-KCP

Datafile: 211208R10 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.60		1.0008	1.0008	0	4.50E+06	0.80	Y	1.34	18.3	10752.717	0.461
12378-PeCDD	33.86	J	1.0004	1.0003	-0.2	7.27E+04	1.57	Y	1.06	0.445	8104.233	0.439
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.06	-	9649.887	0.641
123678-HxCDD	37.84		1.0034	1.0034	0	2.40E+05	1.13	Y	1.08	1.86	9649.887	0.594
123789-HxCDD	38.12		1.0111	1.0108	-0.7	2.42E+05	1.37	Y	1.02	1.82	9649.887	0.589
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	4.55E+06	1.06	Y	0.97	47.2	7042.848	0.478
OCDD	43.27		1.0003	1.0003	0	3.22E+07	0.90	Y	1.07	634	9970.905	1.66
2378-TCDF	27.75		1.0007	1.0008	+0.2	1.59E+07	0.79	Y	0.96	63.6	13261.815	0.581
12378-PeCDF	32.44		1.0006	1.0005	-0.2	4.68E+05	1.71	Y	0.95	2.15	8851.164	0.375
23478-PeCDF	33.55		1.0005	1.0008	+0.6	3.67E+05	1.46	Y	0.94	1.78	8851.164	0.389
123478-HxCDF	36.74		1.0004	1.0005	+0.2	8.05E+05	1.32	Y	1.23	4.21	9840.58	0.424
123678-HxCDF	36.88	J	1.0005	1.0004	-0.2	2.56E+05	1.31	Y	1.13	1.24	9840.58	0.409
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	9840.58	0.459
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	9840.58	0.471
1234678-HpCDF	39.80		1.0003	1.0003	0	1.30E+06	1.15	Y	1.36	7.66	8323.596	0.331
1234789-HpCDF	41.15	J EMPC	1.0004	1.0003	-0.2	8.12E+04	0.54	N	1.30	0.713	8323.596	0.503
OCDF	43.46		1.0002	1.0003	+0.3	1.81E+06	0.86	Y	1.03	32.8	9228.305	1.39

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.57	1.0233	1.0232	-0.2	2.40E+07	0.83	Y	1.03	86.5
ES 12378-PeCDD	33.85	1.2118	1.2121	+0.6	2.03E+07	1.62	Y	1.03	72.9
ES 123478-HxCDD	37.71	0.9921	0.9921	0	1.55E+07	1.28	Y	0.99	89.9
ES 123678-HxCDD	37.83	0.9951	0.9950	-0.2	1.57E+07	1.30	Y	0.97	93
ES 123789-HxCDD	38.11	1.0027	1.0026	-0.2	1.72E+07	1.40	Y	1.12	88.6
ES 1234678-HpCDD	40.68	1.0702	1.0702	0	1.30E+07	1.06	Y	0.99	75.7
ES OCDD	43.26	1.1377	1.1379	+0.5	1.25E+07	1.02	Y	0.78	46.4
ES 2378-TCDF	27.73	1.0505	1.0505	0	3.42E+07	0.78	Y	1.08	77.5
ES 12378-PeCDF	32.42	1.2278	1.2284	+1.2	3.02E+07	1.51	Y	0.93	79.6
ES 23478-PeCDF	33.52	1.2691	1.2700	+1.8	2.88E+07	1.56	Y	0.92	76.8
ES 123478-HxCDF	36.72	0.9660	0.9660	0	2.03E+07	0.54	Y	1.14	103
ES 123678-HxCDF	36.86	0.9698	0.9697	-0.2	2.41E+07	0.54	Y	1.30	107
ES 234678-HxCDF	37.53	0.9875	0.9873	-0.5	1.98E+07	0.51	Y	1.20	95.4
ES 123789-HxCDF	38.46	1.0121	1.0117	-0.9	1.66E+07	0.53	Y	1.14	84.3
ES 1234678-HpCDF	39.79	1.0468	1.0466	-0.5	1.64E+07	0.46	Y	0.95	99.9
ES 1234789-HpCDF	41.14	1.0822	1.0822	0	1.15E+07	0.49	Y	0.85	78.6
ES OCDF	43.44	1.1426	1.1428	+0.5	1.41E+07	0.94	Y	0.93	44.1

Lab ID: B5969_18712_DF_005 **Acq'd:** 08 Dec 2021 23:34 PSW **Wt/Vol:** 15.22 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-S-6 **UTP:** 09-Dec-2021 10:40:18 PSW **J-level:** 0.329 pg/g **Split:** 1 **Checkcode:** 921-596-KCP

Datafile: 211208R10 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.93		-	-	-	2.69E+07	0.82	Y	-	-	
JS 1234-TCDF	26.39		-	-	-	4.07E+07	0.78	Y	-	-	
JS 123467-HxCDD	38.01		-	-	-	8.65E+06	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.59		1.0241	1.0240	-0.2	1.17E+07	n/a	-	1.31	83	
CS 12347-PeCDD	33.36		1.1940	1.1945	+1.0	1.98E+07	1.57	Y	0.89	82.6	
CS 12346-PeCDF	31.90		1.2080	1.2087	+1.3	2.94E+07	1.62	Y	0.87	83.2	
CS 123469-HxCDF	37.18		0.9781	0.9780	-0.2	2.11E+07	0.51	Y	1.09	112	
CS 1234689-HpCDF	40.18		1.0569	1.0569	0	1.54E+07	0.44	Y	0.86	103	
~~SS 37Cl-2378-TCDD~~	~~28.59~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~1.17E+07~~	~~n/a~~		~~1.26~~	~~96.4~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.36~~		~~1.1940~~	~~1.1945~~	~~+1.0~~	~~1.98E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~113~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.90~~		~~1.2080~~	~~1.2087~~	~~+1.3~~	~~2.94E+07~~	~~1.62~~	~~Y~~	~~0.93~~	~~104~~	
~~SS 123469-HxCDF~~	~~37.18~~		~~0.9781~~	~~0.9780~~	~~-0.2~~	~~2.11E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~104~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0569~~	~~0~~	~~1.54E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~103~~	

Totals	Conc	EMPC
Total TCDD	20.7	22
Total PeCDD	1.26	3.92
Total HxCDD	10.5	23.1
Total HpCDD	124	124
Total Tetra-Octa Dioxins	791	807
Total TCDF	128	133
Total PeCDF	5.53	7.95
Total HxCDF	7.7	10.2
Total HpCDF	13.4	14.1
Total Tetra-Octa Furans	188	198
Total Tetra-Octa Dioxins & Furans	978	1010

Lab ID: B5969_18712_DF_005 **Acq'd: 08 Dec 2021 23:34 PSW** **Wt/Vol: 15.22 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-SPS-SW-S-6 **UTP: 09-Dec-2021 10:40:18 PSW** **J-level: 0.329 pg/g** **Split: 1** **Checkcode: 921-596-KCP**

Datafile: 211208R10 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8758						1.34		10752.717	0.461
1379-TCDD	25.37		0.8878	0.8878	0	1.33E+05	0.77	Y	1.34	0.542	10752.717	0.461
1369-TCDD	NotFnd		0.9025						1.34		10752.717	0.461
1469-TCDD	26.55	EMPC	0.9291	0.9291	0	1.74E+05	0.93	N	1.34	0.708	10752.717	0.461
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		10752.717	0.461
1378-TCDD	NotFnd		0.9440						1.34		10752.717	0.461
1268-TCDD	NotFnd		0.9505						1.34		10752.717	0.461
1478-TCDD	NotFnd		0.9591						1.34		10752.717	0.461
1279-TCDD	NotFnd		0.9650						1.34		10752.717	0.461
1234/1269-TCDD	NotFnd		0.9771						1.34		10752.717	0.461
1236-TCDD	NotFnd		0.9821						1.34		10752.717	0.461
1237/1238-TCDD	28.30	EMPC	0.9907	0.9905	-0.3	1.49E+05	1.13	N	1.34	0.606	10752.717	0.461
1239-TCDD	NotFnd		0.9953						1.34		10752.717	0.461
2378-TCDD	**28.60**		**1.0008**	1.0008	**0**	4.50E+06	0.80	Y	**1.34**	**18.3**	**10752.717**	**0.461**
1278-TCDD	28.91		1.0118	1.0119	+0.2	4.48E+05	0.78	Y	1.34	1.82	10752.717	0.461
1267-TCDD	NotFnd		1.0162						1.34		10752.717	0.461
1289-TCDD	NotFnd		1.0340						1.34		10752.717	0.461
12479/12468-PeCDD	31.39	J EMPC	0.9274	0.9273	-0.2	1.32E+05	2.07	N	1.06	0.81	8104.233	0.439
12469-PeCDD	31.92	J EMPC	0.9430	0.9431	+0.2	1.32E+05	2.06	N	1.06	0.807	8104.233	0.439
12368-PeCDD	32.46	J EMPC	0.9591	0.9589	-0.4	5.93E+04	0.93	N	1.06	0.363	8104.233	0.439
12478-PeCDD	NotFnd		0.9645						1.06		8104.233	0.439
12379-PeCDD	32.75	J	0.9676	0.9676	0	1.33E+05	1.55	Y	1.06	0.816	8104.233	0.439
12369/12467/12489-PeCDD	33.01	J EMPC	0.9751	0.9753	+0.4	1.12E+05	1.28	N	1.06	0.683	8104.233	0.439
12346/12347-PeCDD	NotFnd		0.9860						1.06		8104.233	0.439
12378-PeCDD	33.86	J	**1.0004**	**1.0003**	**-0.2**	**7.27E+04**	**1.57**	**Y**	**1.06**	**0.445**	**8104.233**	**0.439**
12367-PeCDD	NotFnd		1.0034						1.06		8104.233	0.439
12389-PeCDD	NotFnd		1.0133						1.06		8104.233	0.439
124679/124689-HxCDD	36.01	EMPC	0.9546	0.9547	+0.2	1.48E+06	1.47	N	1.05	11.5	9649.887	0.607
123468-HxCDD	36.64	J EMPC	0.9718	0.9717	-0.2	1.42E+05	1.47	N	1.05	1.1	9649.887	0.607
123679/123689-HxCDD	36.94		0.9795	0.9795	0	7.98E+05	1.41	Y	1.05	6.19	9649.887	0.607
123469-HxCDD	37.07	J	0.9832	0.9829	-0.7	8.70E+04	1.12	Y	1.05	0.675	9649.887	0.607
123478-HxCDD	NotFnd		**1.0004**						1.06		**9649.887**	**0.641**
123678-HxCDD	37.84		**1.0034**	**1.0034**	**0**	**2.40E+05**	**1.13**	**Y**	1.08	**1.86**	**9649.887**	**0.594**
123467-HxCDD	NotFnd		1.0083						1.05		9649.887	0.607
123789-HxCDD	38.12		**1.0111**	**1.0108**	**-0.7**	**2.42E+05**	**1.37**	**Y**	1.02	**1.82**	**9649.887**	**0.589**

Lab ID: B5969_18712_DF_005 **Acq'd:** 08 Dec 2021 23:34 PSW **Wt/Vol:** 15.22 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-S-6 **UTP:** 09-Dec-2021 10:40:18 PSW **J-level:** 0.329 pg/g **Split:** 1 **Checkcode:** 921-596-KCP

Datafile: 211208R10 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

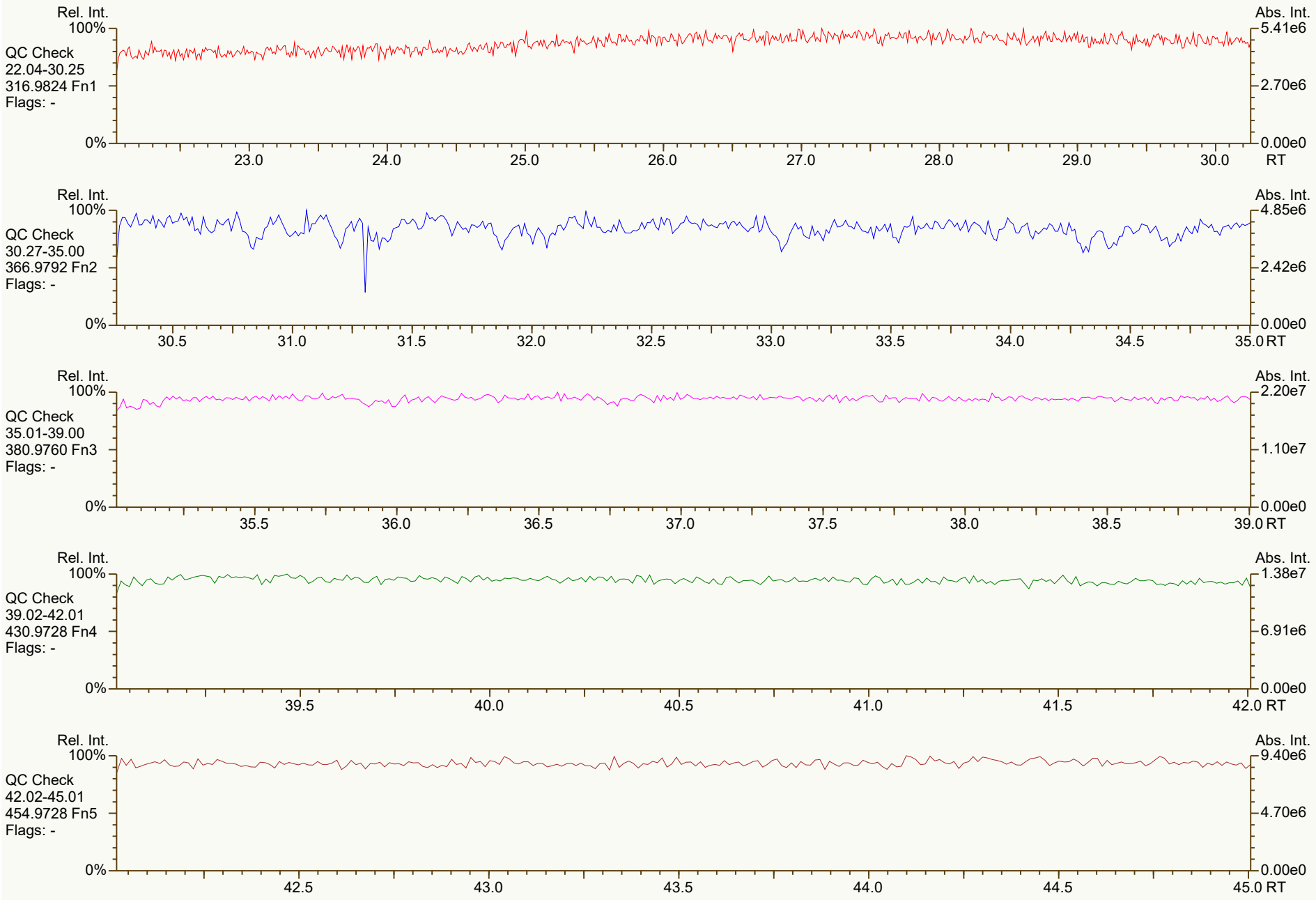
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9843	0.9842	-0.2	7.41E+06	1.02	Y	0.97	76.9	7042.848	0.478
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**4.55E+06**	**1.06**	**Y**	**0.97**	**47.2**	**7042.848**	**0.478**
OCDD	**43.27**		**1.0003**	**1.0003**	**0**	**3.22E+07**	**0.90**	**Y**	**1.07**	**634**	**9970.905**	**1.66**
OCDD-a	43.27		1.0001	1.0002	+0.3	1.91E+06	2.77	Y	0.07	609	11436.597	30.9
1368-TCDF	NotFnd		0.8284						0.96		13261.815	0.581
1468-TCDF	NotFnd		0.8487						0.96		13261.815	0.581
2468-TCDF	24.13		0.8709	0.8703	-0.9	4.33E+05	0.81	Y	0.96	1.73	13261.815	0.581
1346/1246-TCDF	NotFnd		0.8828						0.96		13261.815	0.581
1347/1378/1247-TCDF	24.65		0.8886	0.8890	+0.6	4.95E+05	0.73	Y	0.96	1.98	13261.815	0.581
1348-TCDF	NotFnd		0.8980						0.96		13261.815	0.581
1248/1367/1379-TCDF	24.99		0.9027	0.9012	-2.2	9.11E+05	0.88	Y	0.96	3.65	13261.815	0.581
1268-TCDF	25.39	EMPC	0.9159	0.9157	-0.3	2.94E+05	0.93	N	0.96	1.18	13261.815	0.581
1467-TCDF	NotFnd		0.9206						0.96		13261.815	0.581
1478-TCDF	25.69		0.9266	0.9265	-0.2	7.13E+05	0.72	Y	0.96	2.85	13261.815	0.581
1369/1237-TCDF	26.05		0.9396	0.9397	+0.2	2.42E+05	0.85	Y	0.96	0.967	13261.815	0.581
2467-TCDF	26.18		0.9440	0.9443	+0.5	1.51E+05	0.71	Y	0.96	0.606	13261.815	0.581
2368-TCDF	26.33	EMPC	0.9496	0.9495	-0.2	5.56E+05	0.92	N	0.96	2.22	13261.815	0.581
1238/1234/1678/1469/1236-TCDF	26.42		0.9530	0.9527	-0.5	1.06E+06	0.66	Y	0.96	4.25	13261.815	0.581
1278-TCDF	26.86		0.9689	0.9689	0	7.24E+06	0.80	Y	0.96	29	13261.815	0.581
1349-TCDF	26.97		0.9732	0.9727	-0.8	1.91E+05	0.69	Y	0.96	0.766	13261.815	0.581
1267-TCDF	27.13	EMPC	0.9786	0.9785	-0.2	4.72E+05	0.64	N	0.96	1.89	13261.815	0.581
2346/1249-TCDF	NotFnd		0.9849						0.96		13261.815	0.581
2347/1279-TCDF	27.51		0.9927	0.9923	-0.7	3.12E+05	0.83	Y	0.96	1.25	13261.815	0.581
2348-TCDF	27.64		0.9967	0.9968	+0.2	1.34E+06	0.77	Y	0.96	5.36	13261.815	0.581
2378-TCDF	**27.75**		**1.0007**	**1.0008**	**+0.2**	**1.59E+07**	**0.79**	**Y**	**0.96**	**63.6**	**13261.815**	**0.581**
2367/3467-TCDF	28.09		1.0136	1.0132	-0.7	1.46E+06	0.76	Y	0.96	5.85	13261.815	0.581
1269-TCDF	28.34		1.0223	1.0220	-0.5	3.23E+05	0.85	Y	0.96	1.29	13261.815	0.581
1239-TCDF	NotFnd		1.0313						0.96		13261.815	0.581
1289-TCDF	29.73		1.0711	1.0721	+1.8	1.25E+06	0.78	Y	0.96	5	13261.815	0.581
13468/12468-PeCDF	NotFnd		0.9147						0.94		8414.186	0.363
13678/13467/12467-PeCDF	31.19	J	0.9616	0.9620	+0.7	1.50E+05	1.44	Y	0.94	0.707	8851.164	0.382
12368/13478/12478-PeCDF	31.35	EMPC	0.9663	0.9669	+1.1	4.28E+05	1.16	N	0.94	2.02	8851.164	0.382
14678-PeCDF	31.45	J EMPC	0.9695	0.9699	+0.8	8.28E+04	2.36	N	0.94	0.391	8851.164	0.382
13479-PeCDF	NotFnd		0.9727						0.94		8851.164	0.382
13469/12479-PeCDF	NotFnd		0.9799						0.94		8851.164	0.382
12346-PeCDF	NotFnd		0.9839						0.94		8851.164	0.382

Lab ID: B5969_18712_DF_005 **Acq'd: 08 Dec 2021 23:34 PSW** **Wt/Vol: 15.22 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-SPS-SW-S-6 **UTP: 09-Dec-2021 10:40:18 PSW** **J-level: 0.329 pg/g** **Split: 1** **Checkcode: 921-596-KCP**

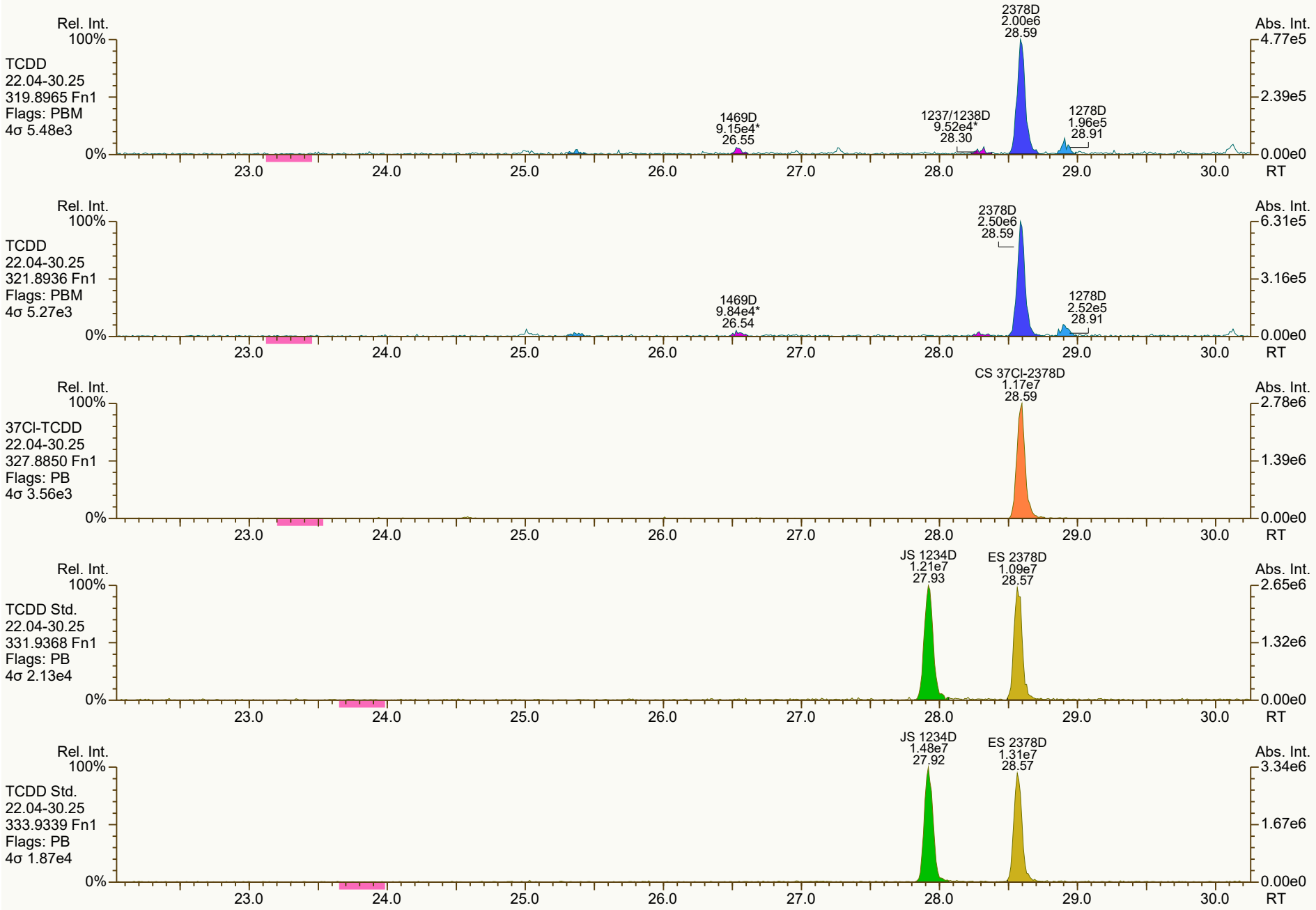
Datafile: 211208R10 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		8851.164	0.382
12347-PeCDF	NotFnd		0.9892						0.94		8851.164	0.382
12348-PeCDF	NotFnd		0.9940						0.94		8851.164	0.382
12378-PeCDF	**32.44**		**1.0006**	**1.0005**	**-0.2**	**4.68E+05**	**1.71**	**Y**	**0.95**	**2.15**	**8851.164**	**0.375**
12678/12367-PeCDF	32.73	J	1.0088	1.0094	+1.2	1.89E+05	1.56	Y	0.94	0.892	8851.164	0.382
12379-PeCDF	NotFnd		1.0142						0.94		8851.164	0.382
12679-PeCDF	NotFnd		0.9931						0.94		8851.164	0.382
23467/12369-PeCDF	NotFnd		0.9966						0.94		8851.164	0.382
23478-PeCDF	**33.55**		**1.0005**	**1.0008**	**+0.6**	**3.67E+05**	**1.46**	**Y**	**0.94**	**1.78**	**8851.164**	**0.389**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8851.164	0.382
12349-PeCDF	NotFnd		1.0100						0.94		8851.164	0.382
12389-PeCDF	NotFnd		1.0323						0.94		8851.164	0.382
123468-HxCDF	35.37	J	0.9631	0.9632	+0.2	1.46E+05	1.32	Y	1.16	0.816	9840.58	0.438
124678/134678-HxCDF	35.56	EMPC	0.9686	0.9685	-0.2	4.40E+05	1.46	N	1.16	2.46	9840.58	0.438
134679-HxCDF	NotFnd		0.9747						1.16		9840.58	0.438
124679-HxCDF	NotFnd		0.9800						1.16		9840.58	0.438
124689-HxCDF	36.21	J	0.9859	0.9860	+0.2	2.58E+05	1.23	Y	1.16	1.44	9840.58	0.438
123467-HxCDF	NotFnd		0.9972						1.16		9840.58	0.438
123478-HxCDF	**36.74**		**1.0004**	**1.0005**	**+0.2**	**8.05E+05**	**1.32**	**Y**	**1.23**	**4.21**	**9840.58**	**0.424**
123678-HxCDF	**36.88**	J	**1.0005**	**1.0004**	**-0.2**	**2.56E+05**	**1.31**	**Y**	**1.13**	**1.24**	**9840.58**	**0.409**
123479-HxCDF	NotFnd		1.0048						1.16		9840.58	0.438
123469-HxCDF	NotFnd		1.0089						1.16		9840.58	0.438
123679-HxCDF	NotFnd		0.9943						1.16		9840.58	0.438
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**9840.58**	**0.459**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		9840.58	0.438
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**9840.58**	**0.471**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		9840.58	0.438
1234678-HpCDF	**39.80**		**1.0003**	**1.0003**	**0**	**1.30E+06**	**1.15**	**Y**	**1.36**	**7.66**	**8323.596**	**0.331**
1234679-HpCDF	NotFnd		1.0065						1.33		8323.596	0.402
1234689-HpCDF	40.19		1.0097	1.0101	+1.0	8.11E+05	1.06	Y	1.33	5.73	8323.596	0.402
1234789-HpCDF	**41.15**	**J EMPC**	**1.0004**	**1.0003**	**-0.2**	**8.12E+04**	**0.54**	**N**	**1.30**	**0.713**	**8323.596**	**0.503**
OCDF	**43.46**		**1.0002**	**1.0003**	**+0.3**	**1.81E+06**	**0.86**	**Y**	**1.03**	**32.8**	**9228.305**	**1.39**
OCDF-a	NotFnd		1.0001						0.06		9973.636	25.9


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.41e6
2.70e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.85e6
2.42e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.20e7
1.10e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.38e7
6.91e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.40e6
4.70e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT

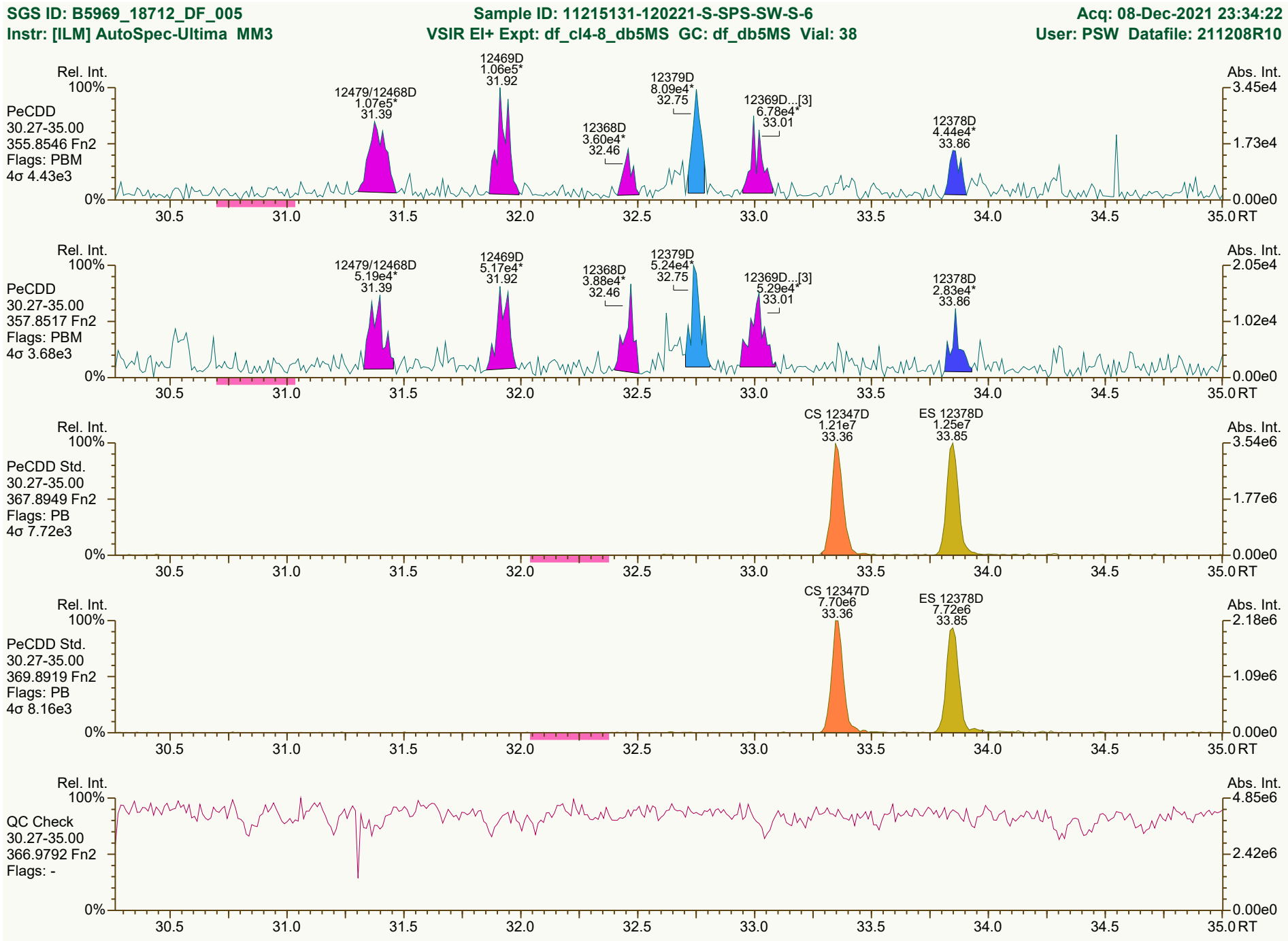
SGS ID: B5969_18712_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-S-6 | Acq: 08-Dec-2021 23:34:22

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 38 | User: PSW Datafile: 211208R10

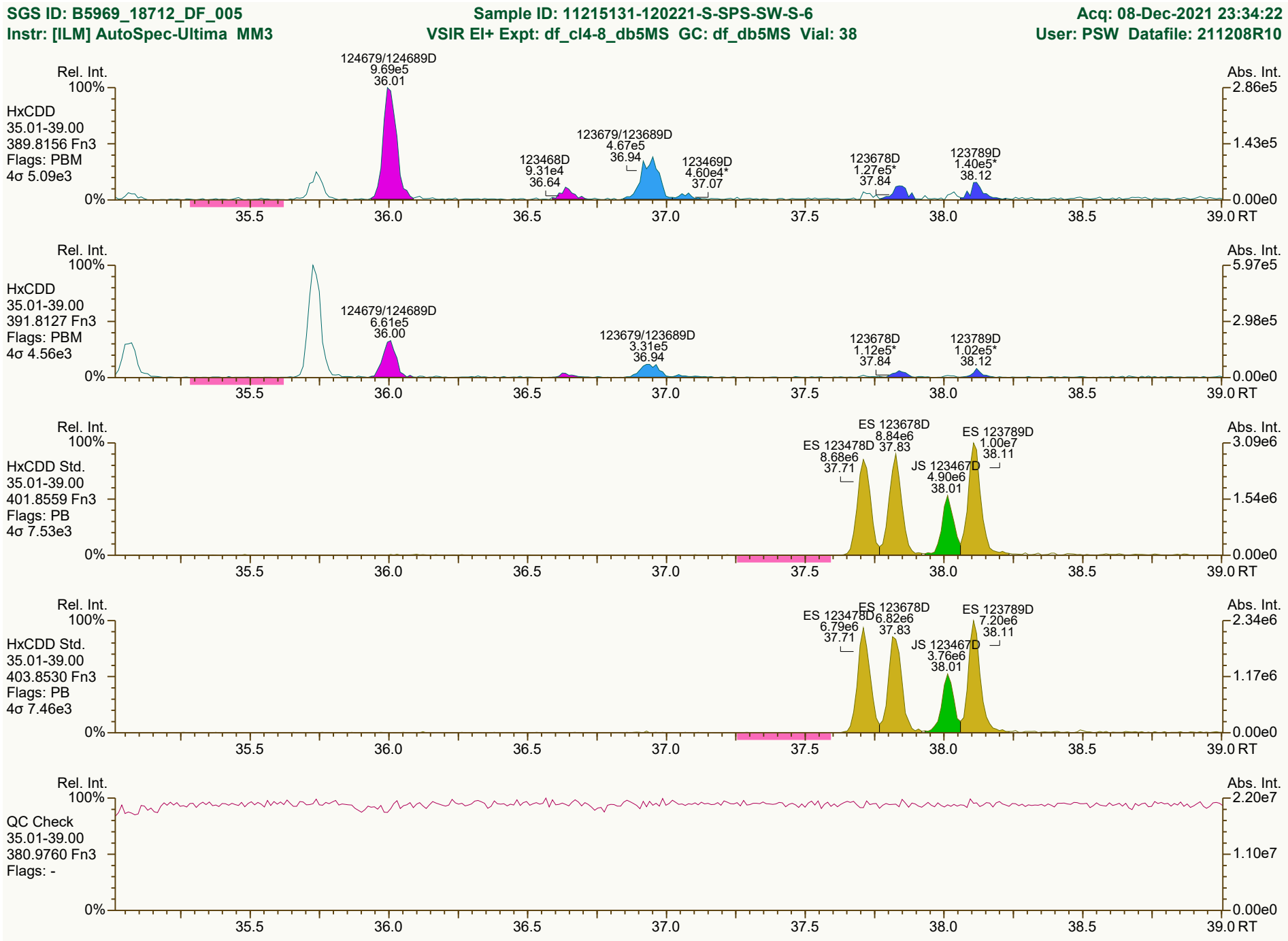


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_005.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6256, 1514, 8554 scc: 921-596 | *PKD: 09-Dec-2021 09:09 Printed: 09-Dec-2021 10:50 Page 2 of 12*

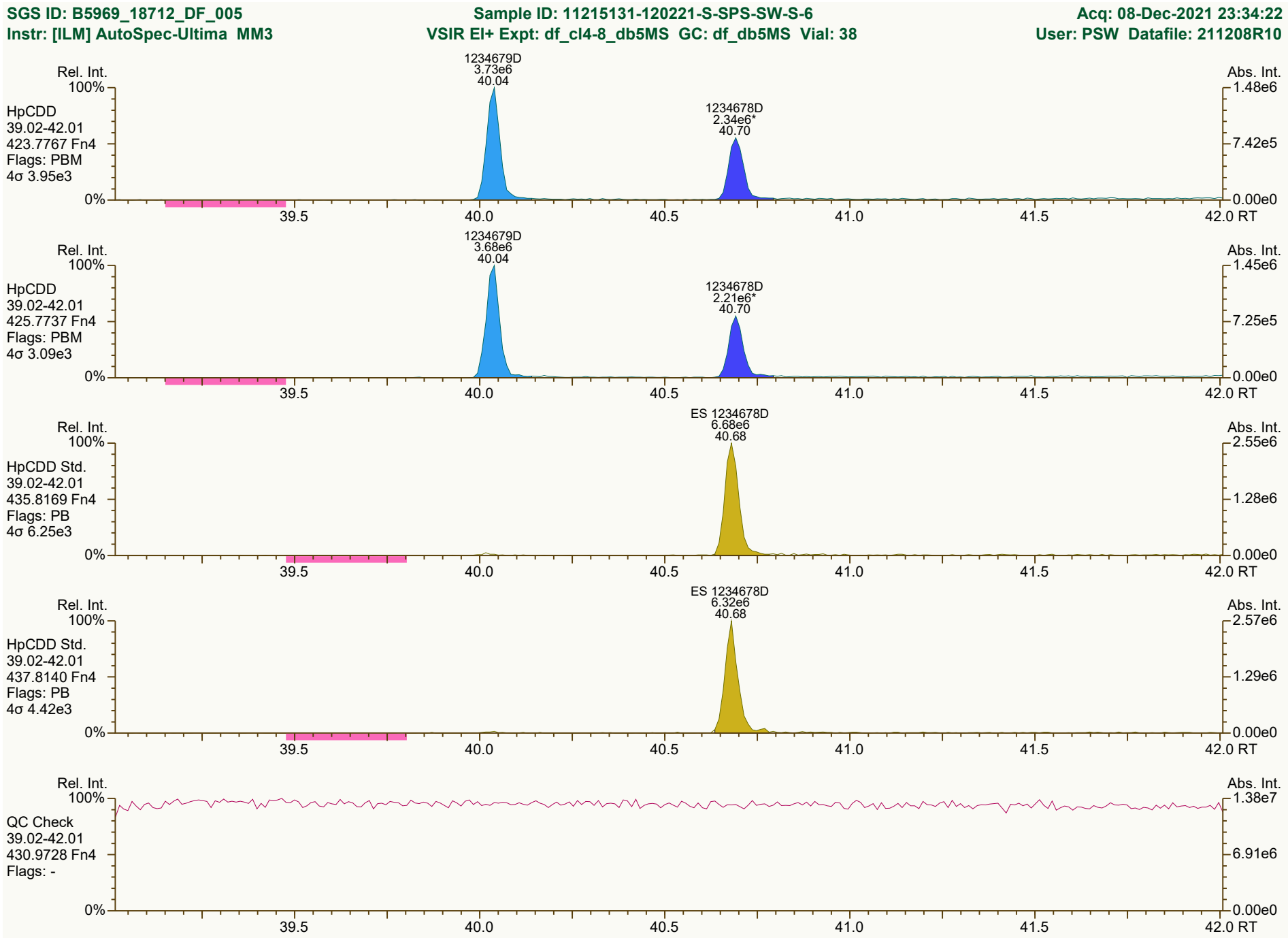

SGS ID: B5969_18712_DF_005
Sample ID: 11215131-120221-S-SPS-SW-S-6
Acq: 08-Dec-2021 23:34:22
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 38
User: PSW Datafile: 211208R10
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 4.43e3
12479/12468D 1.07e5* 31.39
12469D 1.06e5* 31.92
12368D 3.60e4* 32.46
12379D 8.09e4* 32.75
12369D...[3] 6.78e4* 33.01
12378D 4.44e4* 33.86
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 3.68e3
12479/12468D 5.19e4* 31.39
12469D 5.17e4* 31.92
12368D 3.88e4* 32.46
12379D 5.24e4* 32.75
12369D...[3] 5.29e4* 33.01
12378D 2.83e4* 33.86
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 7.72e3
CS 12347D 1.21e7 33.36
ES 12378D 1.25e7 33.85
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 8.16e3
CS 12347D 7.70e6 33.36
ES 12378D 7.72e6 33.85
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
Rel. Int.
Abs. Int.
RT

SGS ID: B5969_18712_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-S-6 | Acq: 08-Dec-2021 23:34:22
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 38 | User: PSW Datafile: 211208R10

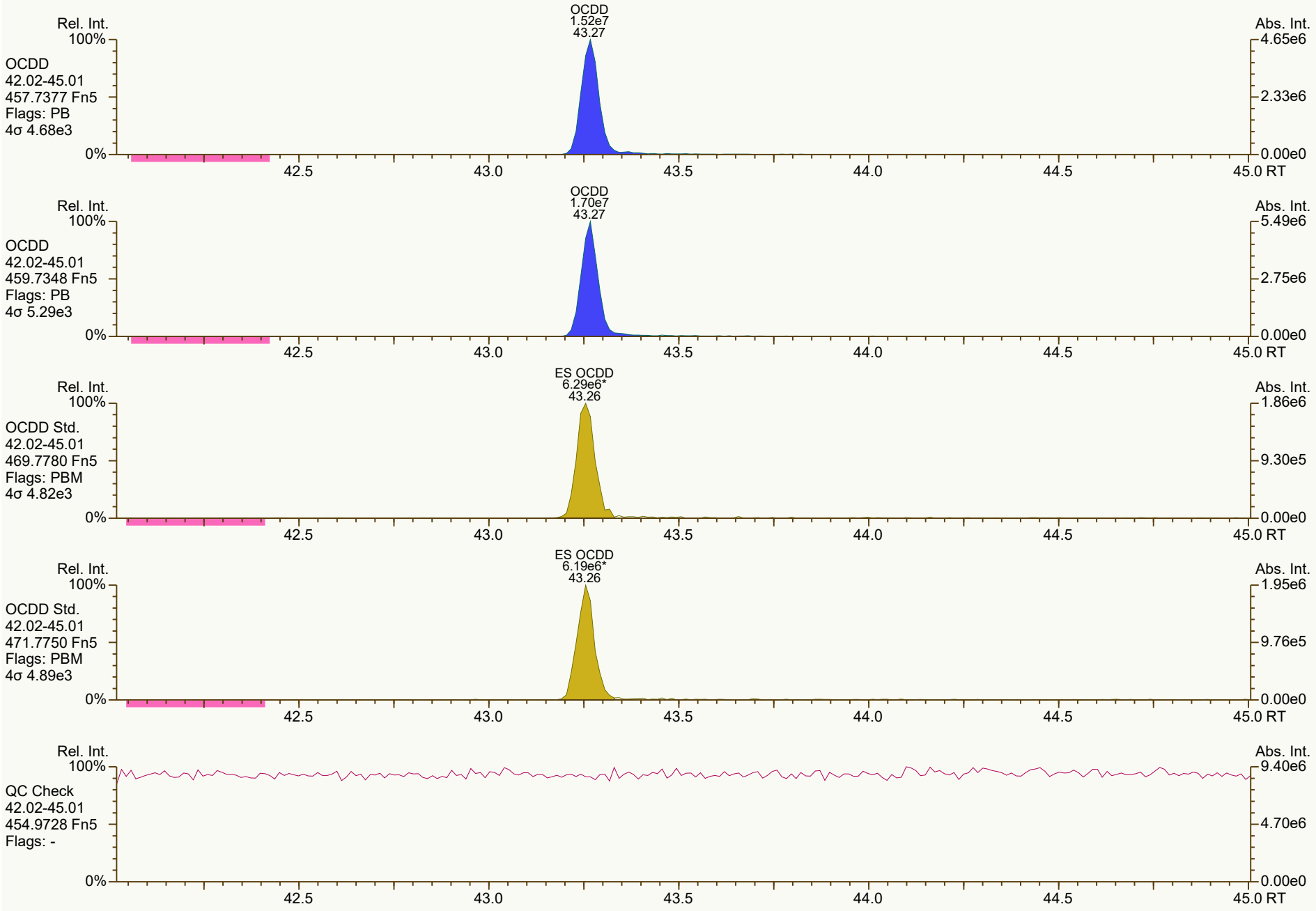


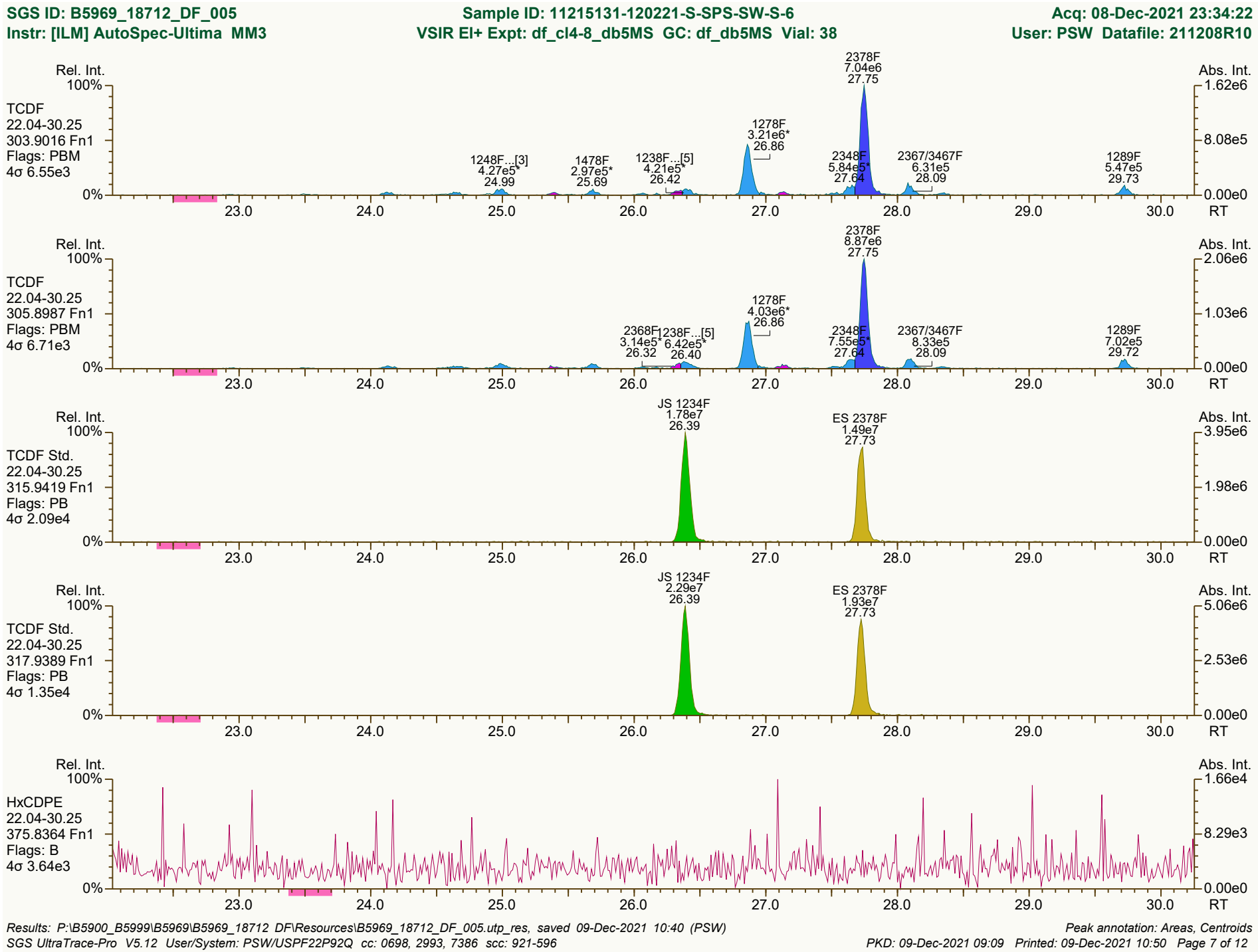
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_005.utp_res, saved 09-Dec-2021 10:40 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8384, 3015 scc: 921-596 | PKD: 09-Dec-2021 09:09 Printed: 09-Dec-2021 10:50 Page 4 of 12

SGS ID: B5969_18712_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-S-6 | Acq: 08-Dec-2021 23:34:22
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 38 | User: PSW Datafile: 211208R10



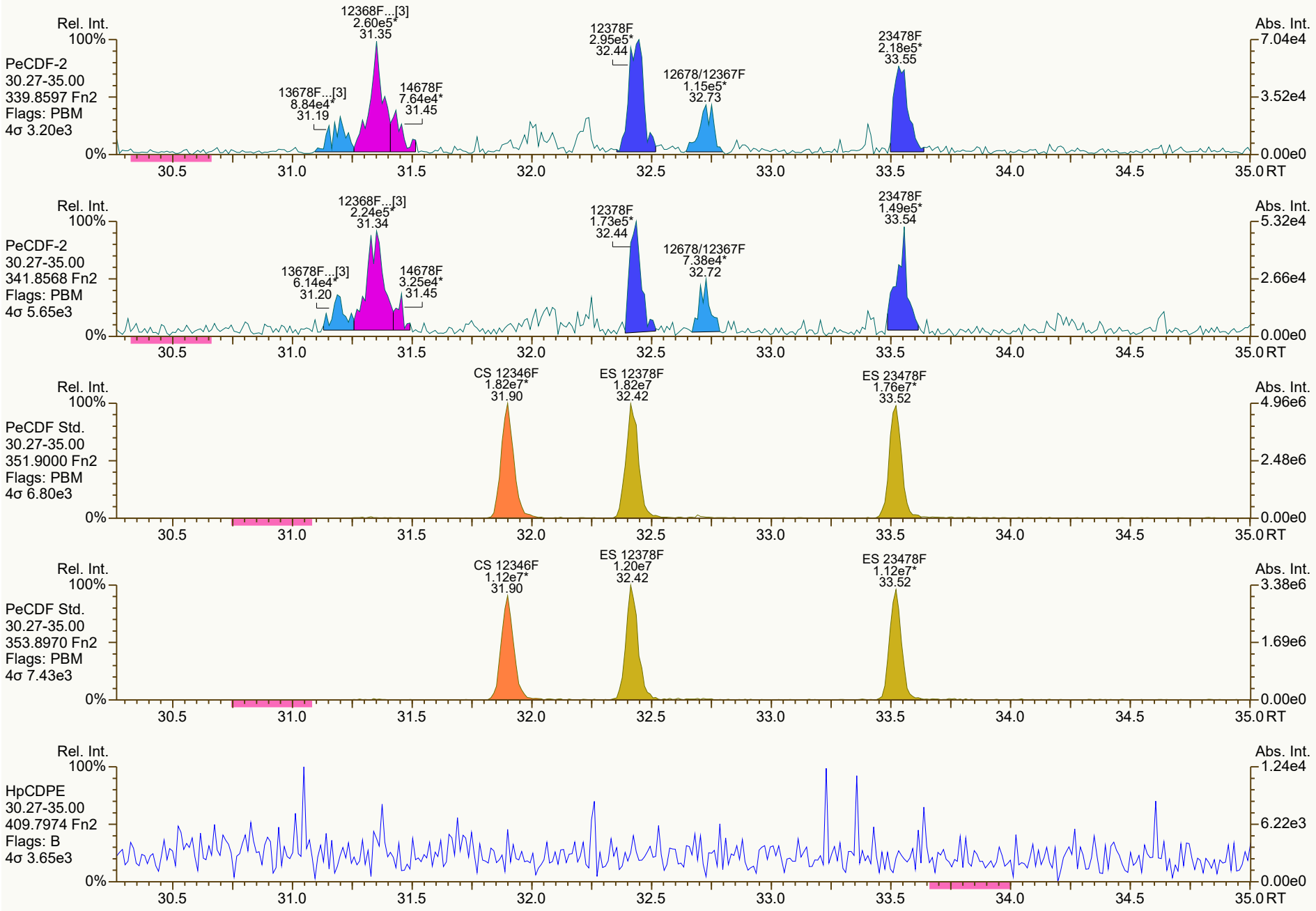
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_005.utp_res, saved 09-Dec-2021 10:40 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3265, 2215 scc: 921-596 | PKD: 09-Dec-2021 09:09 Printed: 09-Dec-2021 10:50 Page 5 of 12

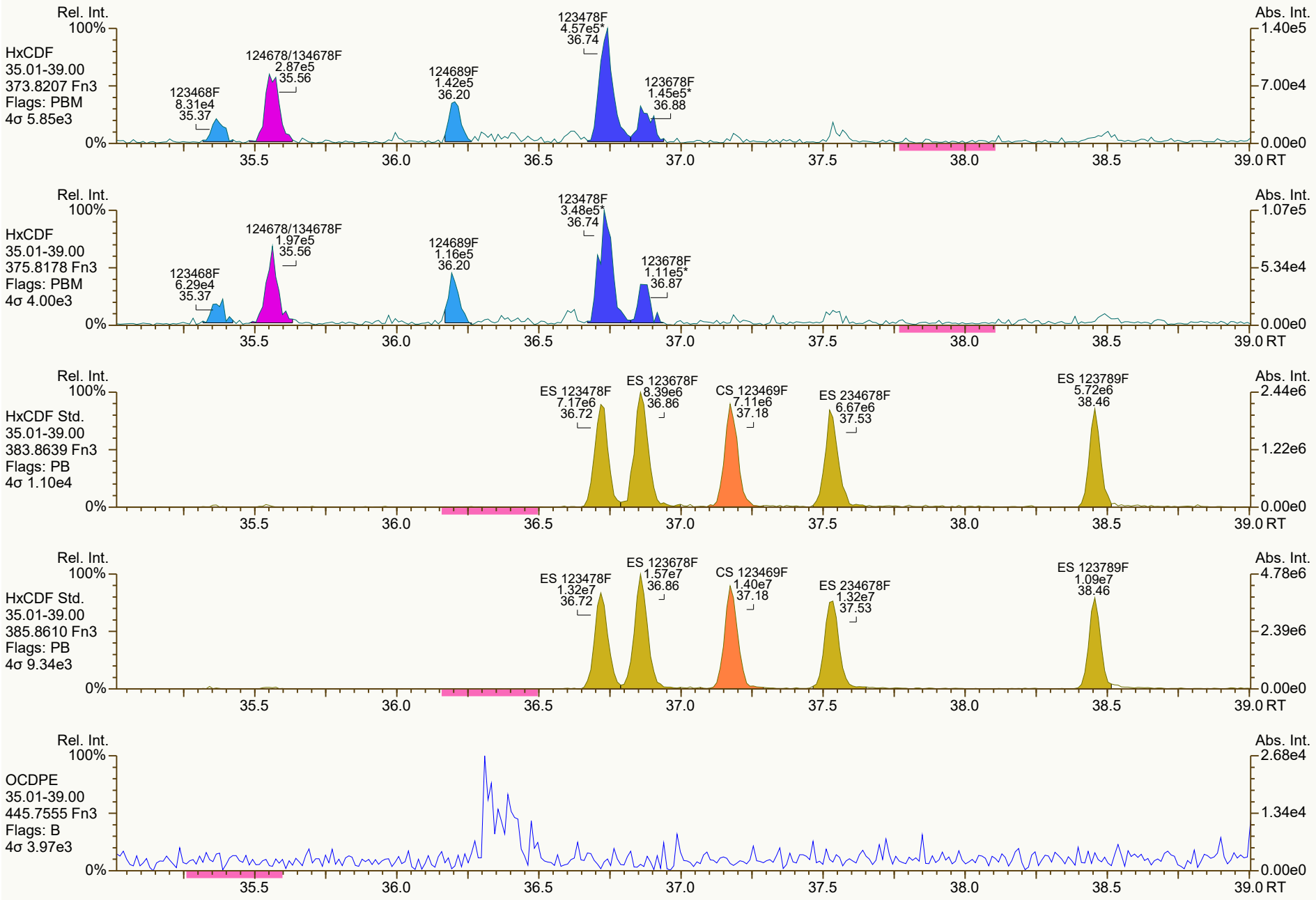

OCDD
1.52e7
43.27
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 4.68e3
0%
Abs. Int.
4.65e6
2.33e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.70e7
43.27
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 5.29e3
0%
Abs. Int.
5.49e6
2.75e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.29e6*
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 4.82e3
0%
Abs. Int.
1.86e6
9.30e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.19e6*
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 4.89e3
0%
Abs. Int.
1.95e6
9.76e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.40e6
4.70e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

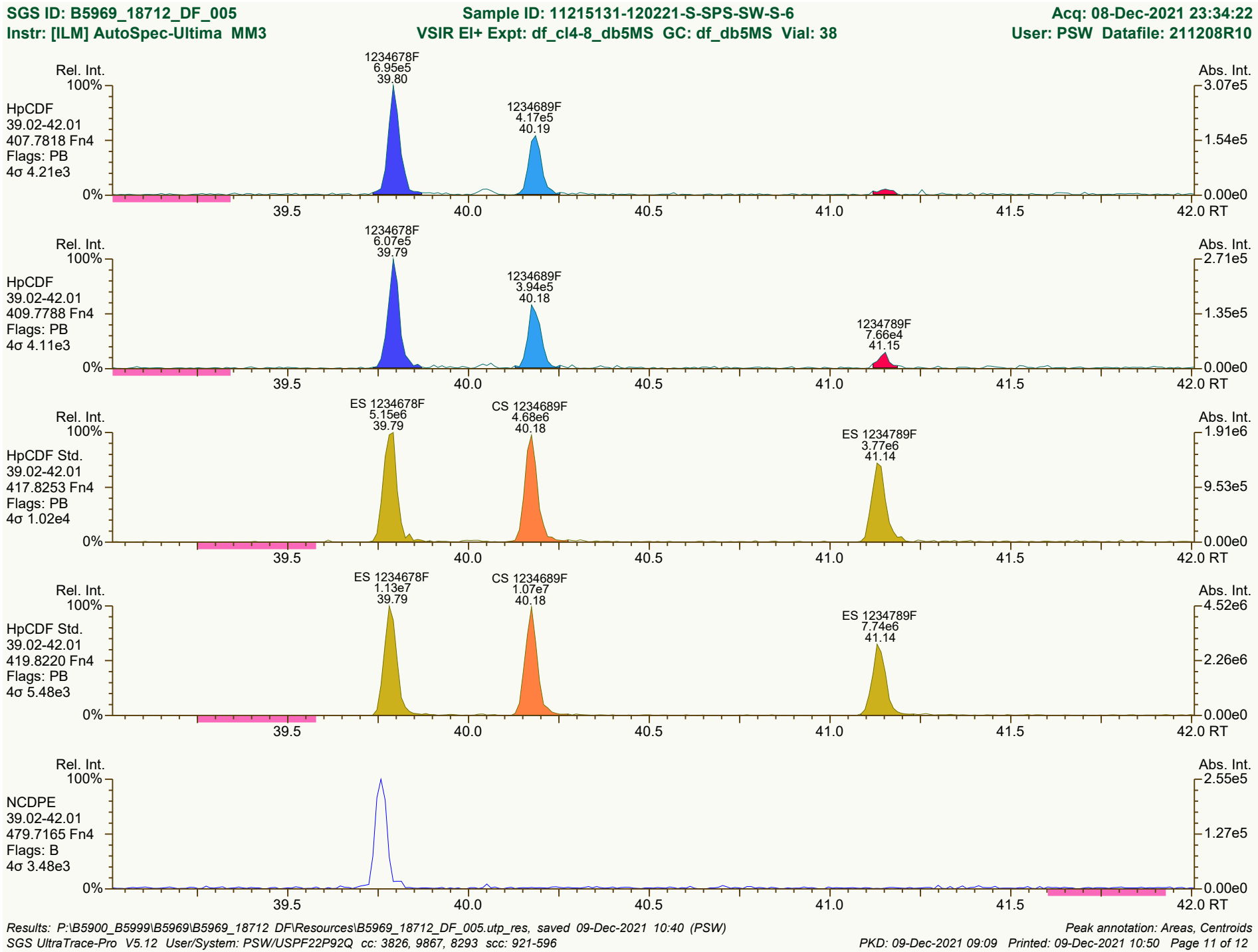


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_005.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0698, 2993, 7386 scc: 921-596
PKD: 09-Dec-2021 09:09 Printed: 09-Dec-2021 10:50 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
4.00e4
2.00e4
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 4.86e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
6.02e4
3.01e4
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 3.55e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
5.41e6
2.70e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

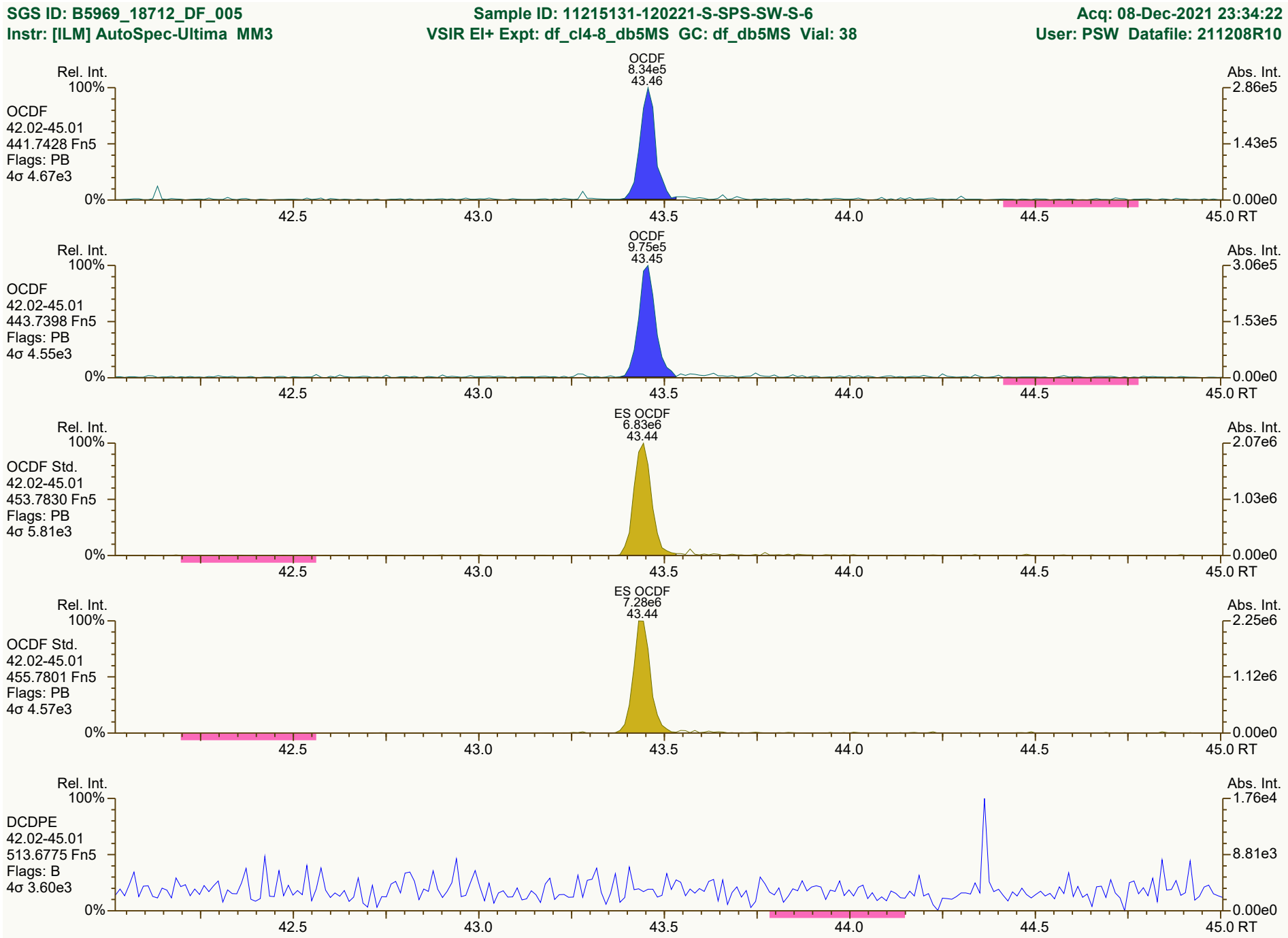

Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 3.20e3
0%
12368F...[3]
2.60e5*
31.35
13678F...[3]
8.84e4*
31.19
14678F
7.64e4*
31.45
12378F
2.95e5*
32.44
12678/12367F
1.15e5*
32.73
23478F
2.18e5*
33.55
Abs. Int.
7.04e4
3.52e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 5.65e3
0%
12368F...[3]
2.24e5*
31.34
13678F...[3]
6.14e4*
31.20
14678F
3.25e4*
31.45
12378F
1.73e5*
32.44
12678/12367F
7.38e4*
32.72
23478F
1.49e5*
33.54
Abs. Int.
5.32e4
2.66e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 6.80e3
0%
CS 12346F
1.82e7*
31.90
ES 12378F
1.82e7
32.42
ES 23478F
1.76e7*
33.52
Abs. Int.
4.96e6
2.48e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 7.43e3
0%
CS 12346F
1.12e7*
31.90
ES 12378F
1.20e7
32.42
ES 23478F
1.12e7*
33.52
Abs. Int.
3.38e6
1.69e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.65e3
0%
Abs. Int.
1.24e4
6.22e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 5.85e3
123468F
8.31e4
35.37
124678/134678F
2.87e5
35.56
124689F
1.42e5
36.20
123478F
4.57e5*
36.74
123678F
1.45e5*
36.88
Abs. Int.
1.40e5
7.00e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 4.00e3
123468F
6.29e4
35.37
124678/134678F
1.97e5
35.56
124689F
1.16e5
36.20
123478F
3.48e5*
36.74
123678F
1.11e5*
36.87
1.07e5
5.34e4
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 1.10e4
ES 123478F
7.17e6
36.72
ES 123678F
8.39e6
36.86
CS 123469F
7.11e6
37.18
ES 234678F
6.67e6
37.53
ES 123789F
5.72e6
38.46
2.44e6
1.22e6
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 9.34e3
ES 123478F
1.32e7
36.72
ES 123678F
1.57e7
36.86
CS 123469F
1.40e7
37.18
ES 234678F
1.32e7
37.53
ES 123789F
1.09e7
38.46
4.78e6
2.39e6
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.97e3
2.68e4
1.34e4



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_005.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3826, 9867, 8293 scc: 921-596
PKD: 09-Dec-2021 09:09 Printed: 09-Dec-2021 10:50 Page 11 of 12

SGS ID: B5969_18712_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-S-6 | Acq: 08-Dec-2021 23:34:22
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 38 | User: PSW Datafile: 211208R10



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_005.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9241, 8621, 2315 scc: 921-596 | *PKD: 09-Dec-2021 09:09 Printed: 09-Dec-2021 10:50 Page 12 of 12*

Lab ID: B5969_18712_DF_006 **Acq'd:** 09 Dec 2021 00:21 PSW **Wt/Vol:** 14.56 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-12 **UTP:** 09-Dec-2021 10:40:19 PSW **J-level:** 0.343 pg/g **Split:** 1 **Checkcode:** 256-296-LGB

Datafile: 211208R11 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.60		1.0008	1.0008	0	3.78E+07	0.80	Y	1.34	127	9876.241	0.337
12378-PeCDD	33.89		1.0004	1.0006	+0.4	3.74E+05	1.55	Y	1.06	1.81	10338.509	0.477
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.06	-	9070.903	0.424
123678-HxCDD	37.85	J	1.0034	1.0033	-0.2	1.96E+05	1.14	Y	1.08	1.18	9070.903	0.422
123789-HxCDD	38.13	J EMPC	1.0111	1.0109	-0.5	2.01E+05	1.49	N	1.02	1.08	9070.903	0.383
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	4.91E+06	0.99	Y	0.97	40.5	7509.664	0.397
OCDD	43.27		1.0003	1.0003	0	4.14E+07	0.89	Y	1.07	708	8670.558	1.16
2378-TCDF	27.76		1.0007	1.0008	+0.2	1.24E+08	0.79	Y	0.96	428	8999.466	0.35
12378-PeCDF	32.45		1.0006	1.0006	0	3.50E+06	1.49	Y	0.95	13.6	6574.73	0.241
23478-PeCDF	33.55		1.0005	1.0007	+0.4	2.86E+06	1.50	Y	0.94	11.5	6574.73	0.24
123478-HxCDF	36.75		1.0004	1.0004	0	4.60E+06	1.31	Y	1.23	19.8	9734.335	0.34
123678-HxCDF	36.89		1.0005	1.0005	0	1.39E+06	1.40	Y	1.13	5.08	9734.335	0.322
234678-HxCDF	37.56	J	1.0005	1.0005	0	2.39E+05	1.16	Y	1.15	1.07	9734.335	0.396
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	9734.335	0.347
1234678-HpCDF	39.80		1.0003	1.0002	-0.2	1.48E+06	1.15	Y	1.36	6.65	8402.227	0.241
1234789-HpCDF	41.15		1.0004	1.0002	-0.5	3.07E+05	1.20	Y	1.30	2.33	8402.227	0.458
OCDF	43.45		1.0002	1.0002	0	5.17E+05	0.95	Y	1.03	7.89	6741.709	0.849

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58		1.0233	1.0232	-0.2	3.05E+07	0.79	Y	1.03	87.7
ES 12378-PeCDD	33.87		1.2118	1.2125	+1.4	2.68E+07	1.61	Y	1.03	77
ES 123478-HxCDD	37.72		0.9921	0.9921	0	2.16E+07	1.23	Y	0.99	92.3
ES 123678-HxCDD	37.83		0.9951	0.9951	0	2.11E+07	1.30	Y	0.97	92.3
ES 123789-HxCDD	38.12		1.0027	1.0025	-0.5	2.51E+07	1.30	Y	1.12	95.4
ES 1234678-HpCDD	40.69		1.0702	1.0701	-0.2	1.71E+07	1.00	Y	0.99	73.4
ES OCDD	43.25		1.1377	1.1376	-0.3	1.50E+07	0.88	Y	0.78	41.1
ES 2378-TCDF	27.74		1.0505	1.0505	0	4.16E+07	0.77	Y	1.08	84.2
ES 12378-PeCDF	32.43		1.2278	1.2283	+1.0	3.74E+07	1.61	Y	0.93	87.9
ES 23478-PeCDF	33.53		1.2691	1.2700	+1.8	3.66E+07	1.56	Y	0.92	86.9
ES 123478-HxCDF	36.73		0.9660	0.9661	+0.2	2.58E+07	0.54	Y	1.14	96.4
ES 123678-HxCDF	36.87		0.9698	0.9698	0	3.32E+07	0.55	Y	1.30	109
ES 234678-HxCDF	37.54		0.9875	0.9873	-0.5	2.67E+07	0.52	Y	1.20	94.7
ES 123789-HxCDF	38.47		1.0121	1.0117	-0.9	2.40E+07	0.53	Y	1.14	90
ES 1234678-HpCDF	39.79		1.0468	1.0466	-0.5	2.25E+07	0.47	Y	0.95	101
ES 1234789-HpCDF	41.14		1.0822	1.0821	-0.2	1.39E+07	0.47	Y	0.85	70
ES OCDF	43.44		1.1426	1.1426	0	1.75E+07	0.89	Y	0.93	40.4

Lab ID: B5969_18712_DF_006 **Acq'd:** 09 Dec 2021 00:21 PSW **Wt/Vol:** 14.56 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-12 **UTP:** 09-Dec-2021 10:40:19 PSW **J-level:** 0.343 pg/g **Split:** 1 **Checkcode:** 256-296-LGB

Datafile: 211208R11 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.93		-	-	-	3.36E+07	0.79	Y	-	-	
JS 1234-TCDF	26.40		-	-	-	4.56E+07	0.80	Y	-	-	
JS 123467-HxCDD	38.02		-	-	-	1.17E+07	1.33	Y	-	-	
CS 37Cl-2378-TCDD	28.60		1.0241	1.0239	-0.3	1.39E+07	n/a	-	1.31	78.9	
CS 12347-PeCDD	33.37		1.1940	1.1946	+1.2	2.44E+07	1.59	Y	0.89	81.3	
CS 12346-PeCDF	31.91		1.2080	1.2085	+1.0	3.53E+07	1.55	Y	0.87	89.2	
CS 123469-HxCDF	37.19		0.9781	0.9781	0	2.69E+07	0.53	Y	1.09	105	
CS 1234689-HpCDF	40.18		1.0569	1.0568	-0.2	1.95E+07	0.47	Y	0.86	95.9	
~~SS 37Cl-2378-TCDD~~	~~28.60~~		~~1.0241~~	~~1.0239~~	~~-0.3~~	~~1.39E+07~~	~~n/a~~		~~1.26~~	~~90.4~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1946~~	~~+1.2~~	~~2.44E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~105~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.91~~		~~1.2080~~	~~1.2085~~	~~+1.0~~	~~3.53E+07~~	~~1.55~~	~~Y~~	~~0.93~~	~~101~~	
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9781~~	~~0~~	~~2.69E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~96.3~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.95E+07~~	~~0.47~~	~~Y~~	~~0.91~~	~~94.9~~	

Totals	Conc	EMPC
Total TCDD	144	146
Total PeCDD	5.71	6.39
Total HxCDD	32.3	34.2
Total HpCDD	127	127
Total Tetra-Octa Dioxins	1020	1020
Total TCDF	854	859
Total PeCDF	37.9	39.4
Total HxCDF	31.8	31.8
Total HpCDF	13.5	13.5
Total Tetra-Octa Furans	945	951
Total Tetra-Octa Dioxins & Furans	1960	1970

Lab ID: B5969_18712_DF_006 **Acq'd: 09 Dec 2021 00:21 PSW** **Wt/Vol: 14.56 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-S-12 **UTP: 09-Dec-2021 10:40:19 PSW** **J-level: 0.343 pg/g** **Split: 1** **Checkcode: 256-296-LGB**

Datafile: 211208R11 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8758						1.34		9876.241	0.337
1379-TCDD	NotFnd		0.8878						1.34		9876.241	0.337
1369-TCDD	NotFnd		0.9025						1.34		9876.241	0.337
1469-TCDD	26.55		0.9291	0.9291	0	1.34E+06	0.79	Y	1.34	4.49	9876.241	0.337
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		9876.241	0.337
1378-TCDD	NotFnd		0.9440						1.34		9876.241	0.337
1268-TCDD	NotFnd		0.9505						1.34		9876.241	0.337
1478-TCDD	NotFnd		0.9591						1.34		9876.241	0.337
1279-TCDD	NotFnd		0.9650						1.34		9876.241	0.337
1234/1269-TCDD	27.90		0.9771	0.9763	-1.3	1.70E+05	0.71	Y	1.34	0.569	9876.241	0.337
1236-TCDD	NotFnd		0.9821						1.34		9876.241	0.337
1237/1238-TCDD	28.30	EMPC	0.9907	0.9904	-0.5	5.97E+05	1.03	N	1.34	2	9876.241	0.337
1239-TCDD	NotFnd		0.9953						1.34		9876.241	0.337
2378-TCDD	**28.60**		**1.0008**	1.0008	**0**	3.78E+07	0.80	Y	**1.34**	**127**	**9876.241**	**0.337**
1278-TCDD	28.92		1.0118	1.0119	+0.2	3.65E+06	0.88	Y	1.34	12.2	9876.241	0.337
1267-TCDD	NotFnd		1.0162						1.34		9876.241	0.337
1289-TCDD	NotFnd		1.0340						1.34		9876.241	0.337
12479/12468-PeCDD	31.40	J EMPC	0.9274	0.9270	-0.8	1.42E+05	1.12	N	1.06	0.688	10338.509	0.477
12469-PeCDD	31.94		0.9430	0.9430	0	6.24E+05	1.41	Y	1.06	3.02	10338.509	0.477
12368-PeCDD	NotFnd		0.9591						1.06		10338.509	0.477
12478-PeCDD	NotFnd		0.9645						1.06		10338.509	0.477
12379-PeCDD	NotFnd		0.9676						1.06		10338.509	0.477
12369/12467/12489-PeCDD	33.03	J	0.9751	0.9753	+0.4	1.82E+05	1.56	Y	1.06	0.881	10338.509	0.477
12346/12347-PeCDD	NotFnd		0.9860						1.06		10338.509	0.477
12378-PeCDD	33.89		**1.0004**	**1.0006**	**+0.4**	**3.74E+05**	**1.55**	**Y**	**1.06**	**1.81**	**10338.509**	**0.477**
12367-PeCDD	NotFnd		1.0034						1.06		10338.509	0.477
12389-PeCDD	NotFnd		1.0133						1.06		10338.509	0.477
124679/124689-HxCDD	36.02		0.9546	0.9548	+0.4	4.21E+06	1.34	Y	1.05	24.3	9070.903	0.408
123468-HxCDD	36.66	J	0.9718	0.9718	0	1.20E+05	1.32	Y	1.05	0.695	9070.903	0.408
123679/123689-HxCDD	36.95		0.9795	0.9795	0	9.74E+05	1.25	Y	1.05	5.63	9070.903	0.408
123469-HxCDD	37.09	J EMPC	0.9832	0.9832	0	1.40E+05	0.98	N	1.05	0.808	9070.903	0.408
123478-HxCDD	NotFnd		**1.0004**						1.06		**9070.903**	**0.424**
123678-HxCDD	37.85	J	**1.0034**	**1.0033**	**-0.2**	**1.96E+05**	**1.14**	**Y**	1.08	**1.18**	**9070.903**	**0.422**
123467-HxCDD	38.03	J	1.0083	1.0082	-0.2	8.72E+04	1.12	Y	1.05	0.504	9070.903	0.408
123789-HxCDD	38.13	J EMPC	**1.0111**	**1.0109**	**-0.5**	**2.01E+05**	**1.49**	**N**	1.02	**1.08**	**9070.903**	**0.383**

Lab ID: B5969_18712_DF_006 | **Acq'd: 09 Dec 2021 00:21 PSW** | **Wt/Vol: 14.56 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-S-12 | **UTP: 09-Dec-2021 10:40:19 PSW** | **J-level: 0.343 pg/g** | **Split: 1** | **Checkcode: 256-296-LGB**

Datafile: 211208R11 | **Report: 09 Dec 2021 10:42 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

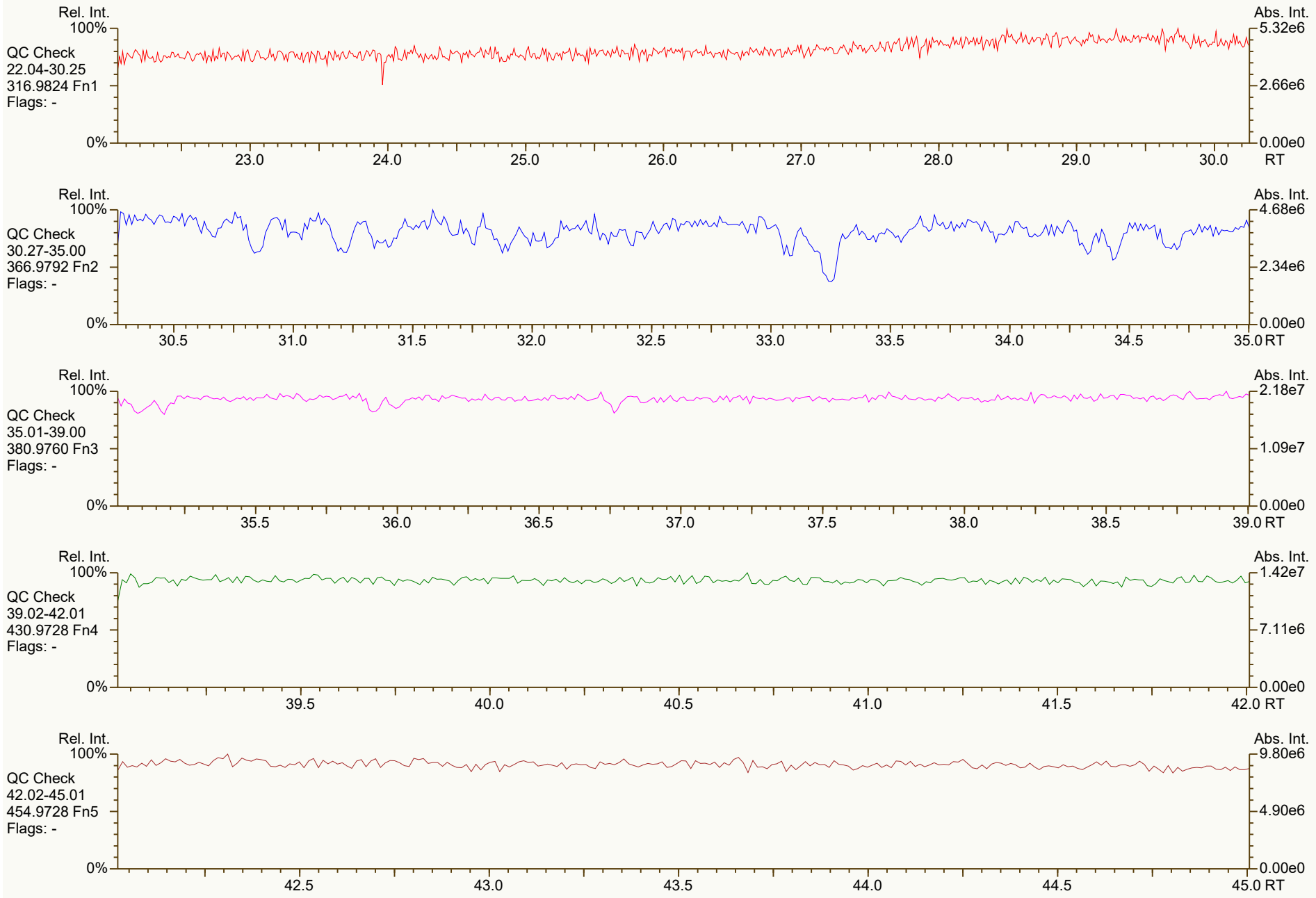
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9843	0.9842	-0.2	1.05E+07	1.04	Y	0.97	86.5	7509.664	0.397
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**4.91E+06**	**0.99**	**Y**	**0.97**	**40.5**	**7509.664**	**0.397**
OCDD	**43.27**		**1.0003**	**1.0003**	**0**	**4.14E+07**	**0.89**	**Y**	**1.07**	**708**	**8670.558**	**1.16**
OCDD-a	43.26		1.0001	1.0002	+0.3	2.41E+06	2.53	Y	0.07	668	9302.179	20.2
1368-TCDF	NotFnd		0.8284						0.96		8999.466	0.35
1468-TCDF	23.53		0.8487	0.8485	-0.3	2.20E+05	0.69	Y	0.96	0.754	8999.466	0.35
2468-TCDF	24.14		0.8709	0.8704	-0.7	3.73E+05	0.81	Y	0.96	1.28	8999.466	0.35
1346/1246-TCDF	24.54	J EMPC	0.8828	0.8847	+2.8	3.66E+04	0.34	N	0.96	0.126	8999.466	0.35
1347/1378/1247-TCDF	24.66		0.8886	0.8893	+1.0	1.45E+06	0.77	Y	0.96	4.97	8999.466	0.35
1348-TCDF	24.89		0.8980	0.8975	-0.7	3.49E+05	0.86	Y	0.96	1.2	8999.466	0.35
1248/1367/1379-TCDF	25.00		0.9027	0.9013	-2.1	5.92E+06	0.79	Y	0.96	20.3	8999.466	0.35
1268-TCDF	25.40		0.9159	0.9159	0	2.06E+06	0.84	Y	0.96	7.07	8999.466	0.35
1467-TCDF	25.54		0.9206	0.9209	+0.5	2.72E+05	0.68	Y	0.96	0.934	8999.466	0.35
1478-TCDF	25.70		0.9266	0.9266	0	5.01E+06	0.76	Y	0.96	17.2	8999.466	0.35
1369/1237-TCDF	26.07	EMPC	0.9396	0.9400	+0.6	1.31E+06	0.93	N	0.96	4.49	8999.466	0.35
2467-TCDF	NotFnd		0.9440						0.96		8999.466	0.35
2368-TCDF	26.32		0.9496	0.9491	-0.8	2.97E+06	0.83	Y	0.96	10.2	8999.466	0.35
1238/1234/1678/1469/1236-TCDF	26.41		0.9530	0.9522	-1.3	7.75E+06	0.81	Y	0.96	26.6	8999.466	0.35
1278-TCDF	26.87		0.9689	0.9689	0	5.78E+07	0.79	Y	0.96	199	8999.466	0.35
1349-TCDF	NotFnd		0.9732						0.96		8999.466	0.35
1267-TCDF	27.14		0.9786	0.9786	0	3.21E+06	0.79	Y	0.96	11	8999.466	0.35
2346/1249-TCDF	27.33		0.9849	0.9854	+0.8	4.77E+05	0.69	Y	0.96	1.64	8999.466	0.35
2347/1279-TCDF	27.53		0.9927	0.9925	-0.3	1.50E+06	0.72	Y	0.96	5.16	8999.466	0.35
2348-TCDF	27.65		0.9967	0.9968	+0.2	1.12E+07	0.78	Y	0.96	38.4	8999.466	0.35
2378-TCDF	**27.76**		**1.0007**	**1.0008**	**+0.2**	**1.24E+08**	**0.79**	**Y**	**0.96**	**428**	**8999.466**	**0.35**
2367/3467-TCDF	28.10		1.0136	1.0132	-0.7	1.09E+07	0.75	Y	0.96	37.4	8999.466	0.35
1269-TCDF	28.35		1.0223	1.0221	-0.3	2.15E+06	0.77	Y	0.96	7.39	8999.466	0.35
1239-TCDF	NotFnd		1.0313						0.96		8999.466	0.35
1289-TCDF	29.74		1.0711	1.0721	+1.8	1.05E+07	0.78	Y	0.96	35.9	8999.466	0.35
13468/12468-PeCDF	NotFnd		0.9147						0.94		7864.801	0.287
13678/13467/12467-PeCDF	31.19	J	0.9616	0.9617	+0.2	7.67E+04	1.43	Y	0.94	0.302	6574.73	0.24
12368/13478/12478-PeCDF	31.36		0.9663	0.9669	+1.1	1.69E+06	1.59	Y	0.94	6.66	6574.73	0.24
14678-PeCDF	31.45	J EMPC	0.9695	0.9698	+0.6	7.26E+04	1.83	N	0.94	0.286	6574.73	0.24
13479-PeCDF	NotFnd		0.9727						0.94		6574.73	0.24
13469/12479-PeCDF	NotFnd		0.9799						0.94		6574.73	0.24
12346-PeCDF	NotFnd		0.9839						0.94		6574.73	0.24

Lab ID: B5969_18712_DF_006 | **Acq'd: 09 Dec 2021 00:21 PSW** | **Wt/Vol: 14.56 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-S-12 | **UTP: 09-Dec-2021 10:40:19 PSW** | **J-level: 0.343 pg/g** | **Split: 1** | **Checkcode: 256-296-LGB**

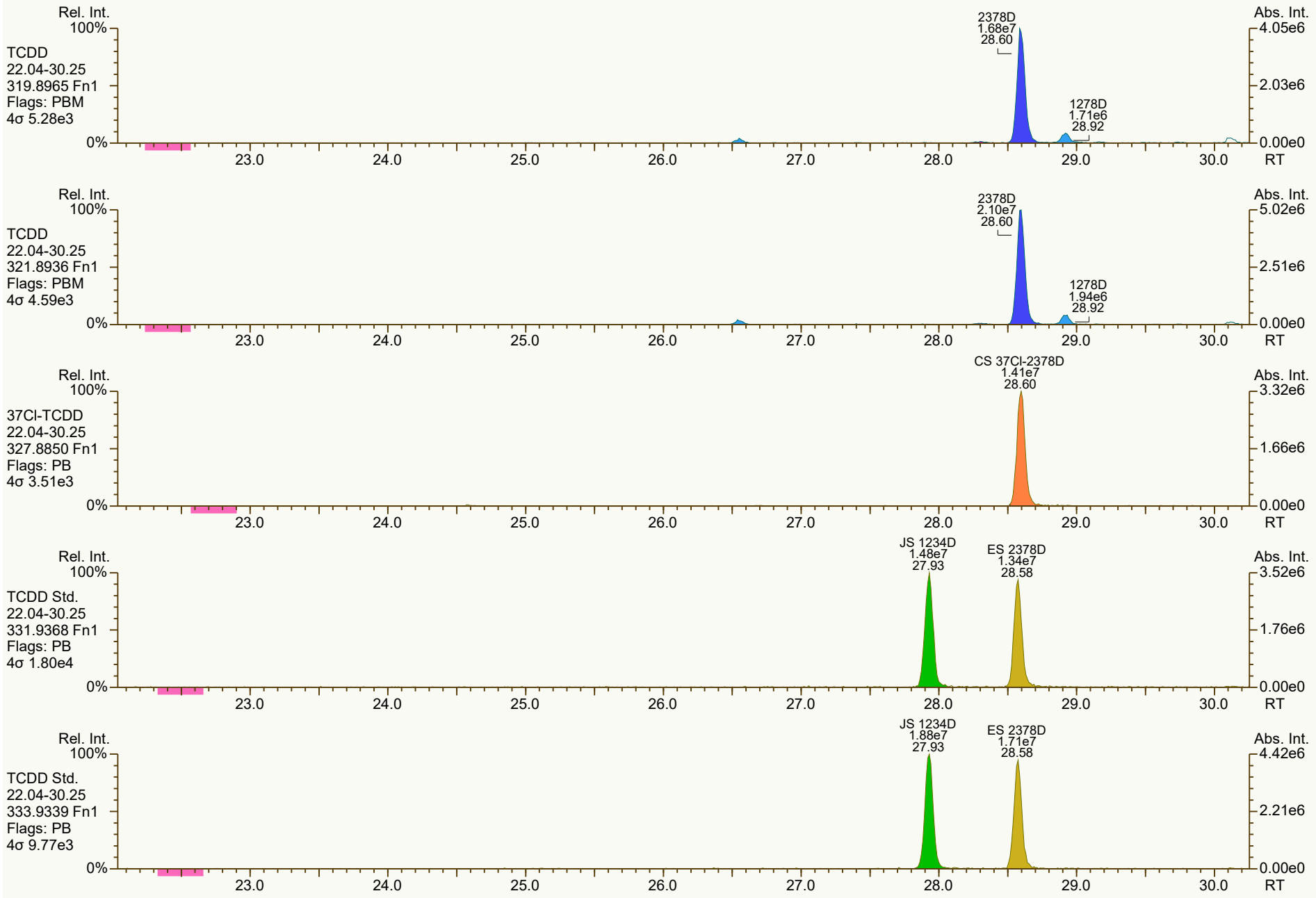
Datafile: 211208R11 | **Report: 09 Dec 2021 10:42 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.00	J EMPC	0.9864	0.9869	+1.0	1.06E+05	1.91	N	0.94	0.417	6574.73	0.24
12347-PeCDF	32.08	J EMPC	0.9892	0.9893	+0.2	7.11E+04	2.05	N	0.94	0.28	6574.73	0.24
12348-PeCDF	32.24	J	0.9940	0.9941	+0.2	3.75E+05	1.66	Y	0.94	1.48	6574.73	0.24
12378-PeCDF	**32.45**		**1.0006**	**1.0006**	**0**	**3.50E+06**	**1.49**	**Y**	**0.95**	**13.6**	**6574.73**	**0.241**
12678/12367-PeCDF	32.74		1.0088	1.0094	+1.2	1.03E+06	1.64	Y	0.94	4.07	6574.73	0.24
12379-PeCDF	NotFnd		1.0142						0.94		6574.73	0.24
12679-PeCDF	NotFnd		0.9931						0.94		6574.73	0.24
23467/12369-PeCDF	33.43	J	0.9966	0.9969	+0.6	8.40E+04	1.59	Y	0.94	0.331	6574.73	0.24
23478-PeCDF	**33.55**		**1.0005**	**1.0007**	**+0.4**	**2.86E+06**	**1.50**	**Y**	**0.94**	**11.5**	**6574.73**	**0.24**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		6574.73	0.24
12349-PeCDF	NotFnd		1.0100						0.94		6574.73	0.24
12389-PeCDF	34.62	J EMPC	1.0323	1.0323	0	1.42E+05	1.87	N	0.94	0.561	6574.73	0.24
123468-HxCDF	35.38	J	0.9631	0.9632	+0.2	1.05E+05	1.39	Y	1.16	0.453	9734.335	0.349
124678/134678-HxCDF	35.58		0.9686	0.9686	0	6.02E+05	1.25	Y	1.16	2.59	9734.335	0.349
134679-HxCDF	NotFnd		0.9747						1.16		9734.335	0.349
124679-HxCDF	NotFnd		0.9800						1.16		9734.335	0.349
124689-HxCDF	36.22	J	0.9859	0.9860	+0.2	3.43E+05	1.14	Y	1.16	1.48	9734.335	0.349
123467-HxCDF	NotFnd		0.9972						1.16		9734.335	0.349
123478-HxCDF	**36.75**		**1.0004**	**1.0004**	**0**	**4.60E+06**	**1.31**	**Y**	**1.23**	**19.8**	**9734.335**	**0.34**
123678-HxCDF	**36.89**		**1.0005**	**1.0005**	**0**	**1.39E+06**	**1.40**	**Y**	**1.13**	**5.08**	**9734.335**	**0.322**
123479-HxCDF	NotFnd		1.0048						1.16		9734.335	0.349
123469-HxCDF	NotFnd		1.0089						1.16		9734.335	0.349
123679-HxCDF	NotFnd		0.9943						1.16		9734.335	0.349
234678-HxCDF	**37.56**	J	**1.0005**	**1.0005**	**0**	**2.39E+05**	**1.16**	**Y**	**1.15**	**1.07**	**9734.335**	**0.396**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		9734.335	0.349
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**9734.335**	**0.347**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.51	J	1.0004	1.0010	+1.4	3.07E+05	1.18	Y	1.16	1.32	9734.335	0.349
1234678-HpCDF	**39.80**		**1.0003**	**1.0002**	**-0.2**	**1.48E+06**	**1.15**	**Y**	**1.36**	**6.65**	**8402.227**	**0.241**
1234679-HpCDF	NotFnd		1.0065						1.33		8402.227	0.323
1234689-HpCDF	40.19		1.0097	1.0101	+1.0	7.98E+05	1.15	Y	1.33	4.53	8402.227	0.323
1234789-HpCDF	**41.15**		**1.0004**	**1.0002**	**-0.5**	**3.07E+05**	**1.20**	**Y**	**1.30**	**2.33**	**8402.227**	**0.458**
OCDF	**43.45**		**1.0002**	**1.0002**	**0**	**5.17E+05**	**0.95**	**Y**	**1.03**	**7.89**	**6741.709**	**0.849**
OCDF-a	NotFnd		1.0001						0.06		8636.99	18.8


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.32e6
2.66e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.18e7
1.09e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.42e7
7.11e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.80e6
4.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

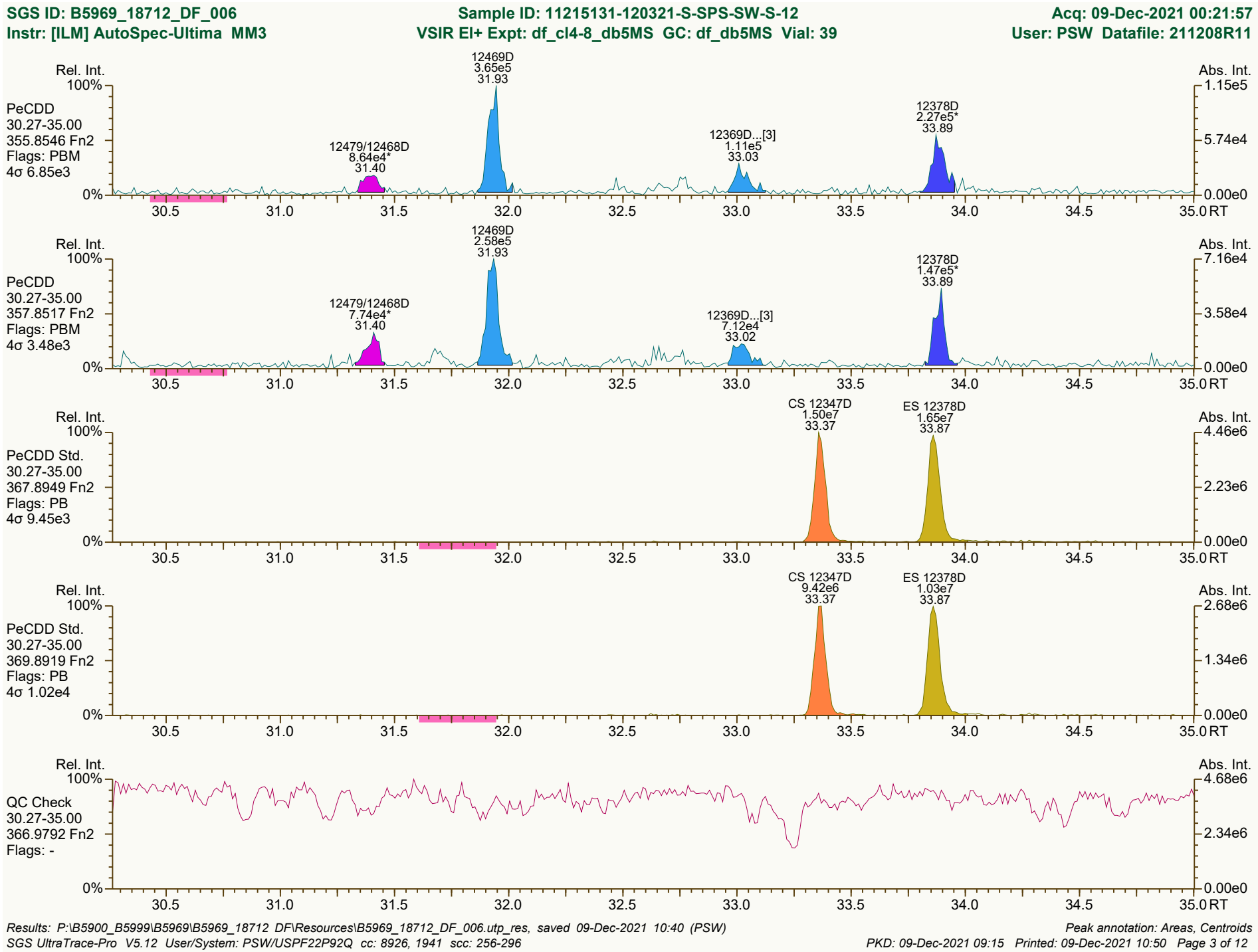
SGS ID: B5969_18712_DF_006 | Sample ID: 11215131-120321-S-SPS-SW-S-12 | Acq: 09-Dec-2021 00:21:57

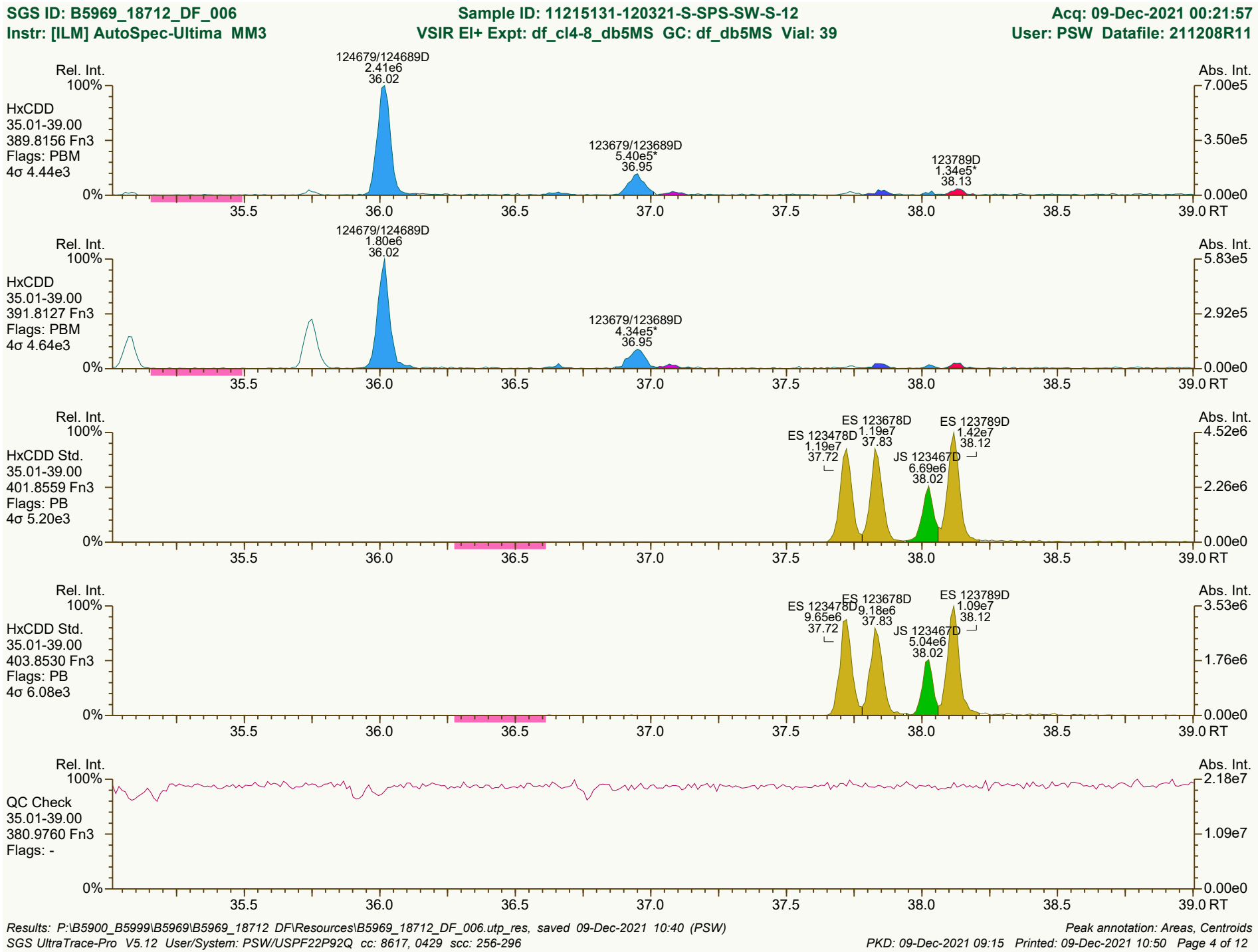
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39 | User: PSW Datafile: 211208R11

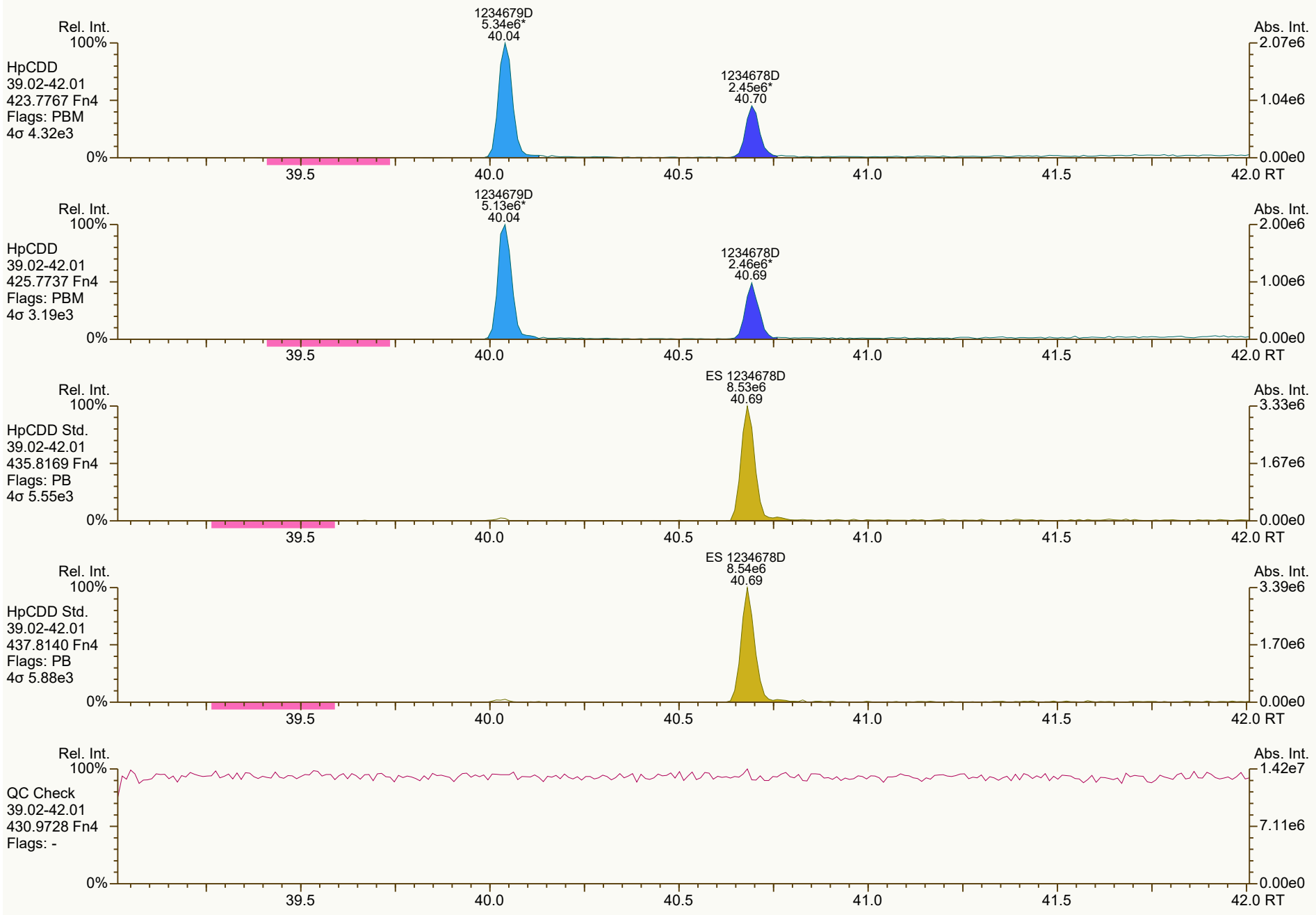


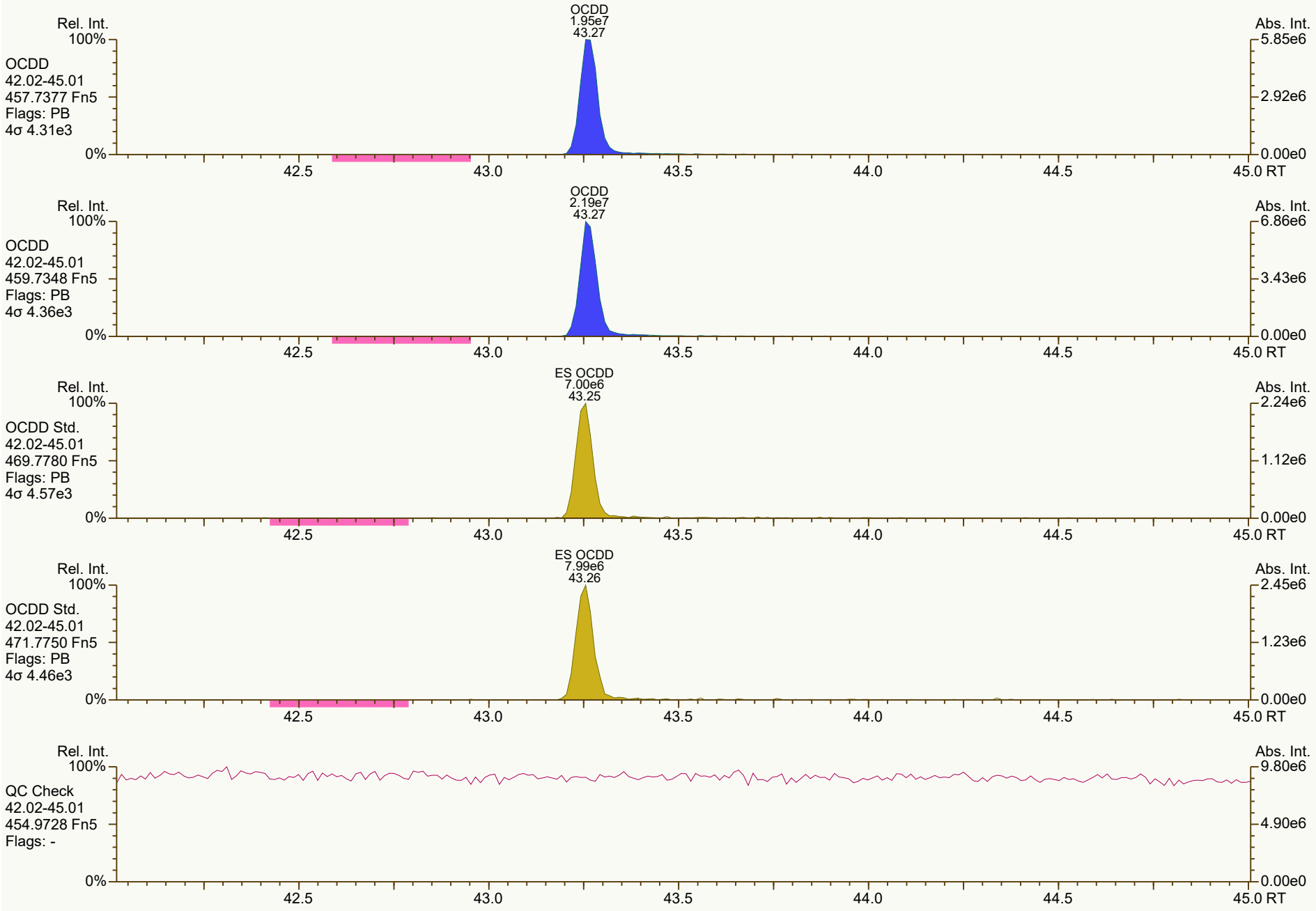
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_006.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5402, 2213, 9426 scc: 256-296 | *PKD: 09-Dec-2021 09:15 Printed: 09-Dec-2021 10:50 Page 2 of 12*

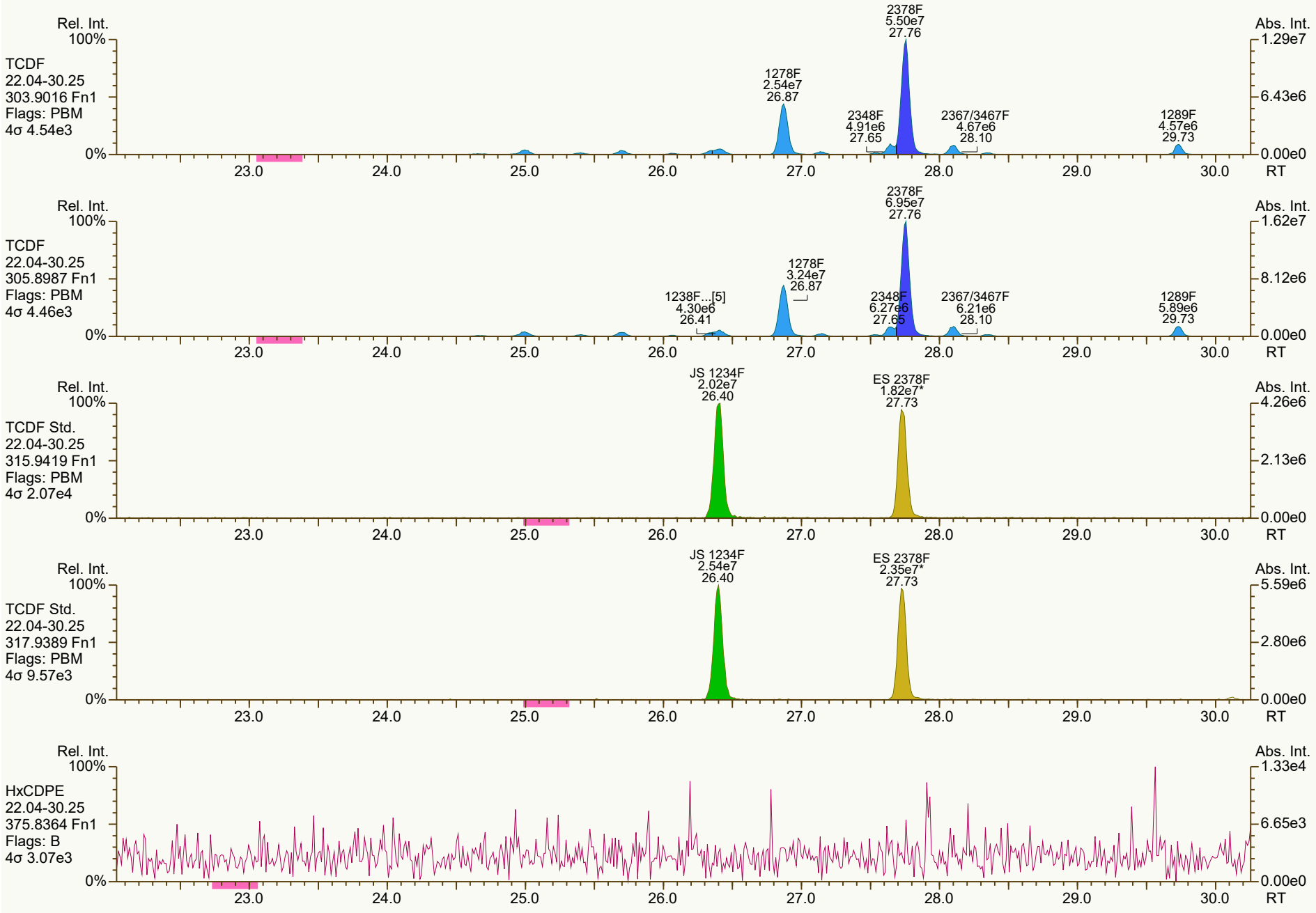

SGS ID: B5969_18712_DF_006
Sample ID: 11215131-120321-S-SPS-SW-S-12
Acq: 09-Dec-2021 00:21:57
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39
User: PSW Datafile: 211208R11
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 6.85e3
12469D
3.65e5
31.93
12479/12468D
8.64e4*
31.40
12369D...[3]
1.11e5
33.03
12378D
2.27e5*
33.89
1.15e5
5.74e4
0.00e0
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 3.48e3
12469D
2.58e5
31.93
12479/12468D
7.74e4*
31.40
12369D...[3]
7.12e4
33.02
12378D
1.47e5*
33.89
7.16e4
3.58e4
0.00e0
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 9.45e3
CS 12347D
1.50e7
33.37
ES 12378D
1.65e7
33.87
4.46e6
2.23e6
0.00e0
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 1.02e4
CS 12347D
9.42e6
33.37
ES 12378D
1.03e7
33.87
2.68e6
1.34e6
0.00e0
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
4.68e6
2.34e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_006.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8926, 1941 scc: 256-296
PKD: 09-Dec-2021 09:15 Printed: 09-Dec-2021 10:50 Page 3 of 12


SGS ID: B5969_18712_DF_006
Sample ID: 11215131-120321-S-SPS-SW-S-12
Acq: 09-Dec-2021 00:21:57
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39
User: PSW Datafile: 211208R11
Rel. Int.
Abs. Int.
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PBM
4σ 4.44e3
124679/124689D
2.41e6
36.02
123679/123689D
5.40e5*
36.95
123789D
1.34e5*
38.13
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PBM
4σ 4.64e3
124679/124689D
1.80e6
36.02
123679/123689D
4.34e5*
36.95
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PB
4σ 5.20e3
ES 123478D
1.19e7
37.72
ES 123678D
1.19e7
37.83
JS 123467D
6.69e6
38.02
ES 123789D
1.42e7
38.12
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PB
4σ 6.08e3
ES 123478D
9.65e6
37.72
ES 123678D
9.18e6
37.83
JS 123467D
5.04e6
38.02
ES 123789D
1.09e7
38.12
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_006.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8617, 0429 scc: 256-296
PKD: 09-Dec-2021 09:15 Printed: 09-Dec-2021 10:50 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 4.32e3
1234679D
5.34e6*
40.04
1234678D
2.45e6*
40.70
Abs. Int.
2.07e6
1.04e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 3.19e3
1234679D
5.13e6*
40.04
1234678D
2.46e6*
40.69
Abs. Int.
2.00e6
1.00e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 5.55e3
ES 1234678D
8.53e6
40.69
Abs. Int.
3.33e6
1.67e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.88e3
ES 1234678D
8.54e6
40.69
Abs. Int.
3.39e6
1.70e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.42e7
7.11e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

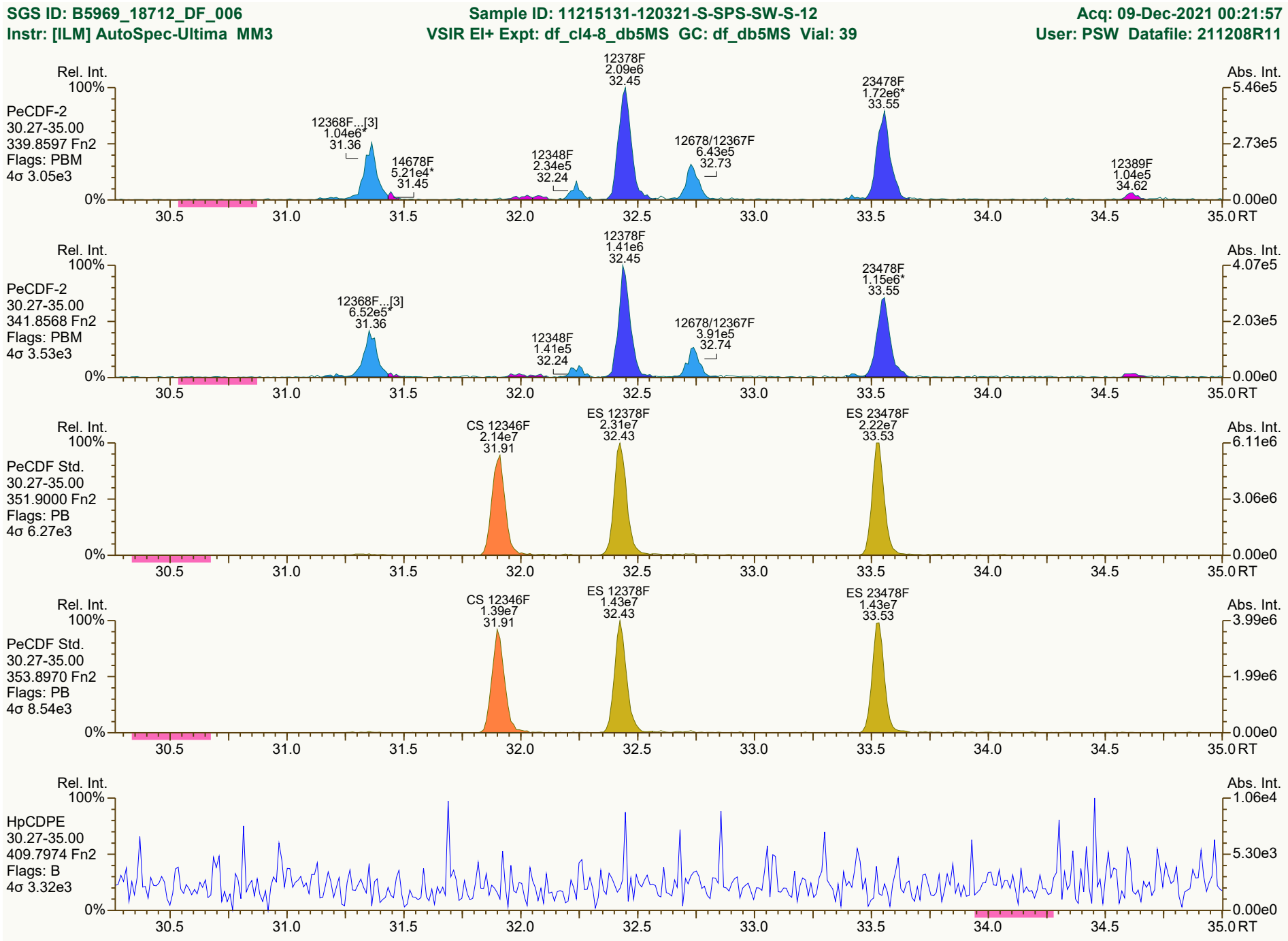

OCDD
1.95e7
43.27
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 4.31e3
0%
Abs. Int.
5.85e6
2.92e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.19e7
43.27
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 4.36e3
0%
Abs. Int.
6.86e6
3.43e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.00e6
43.25
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 4.57e3
0%
Abs. Int.
2.24e6
1.12e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.99e6
43.26
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 4.46e3
0%
Abs. Int.
2.45e6
1.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.80e6
4.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

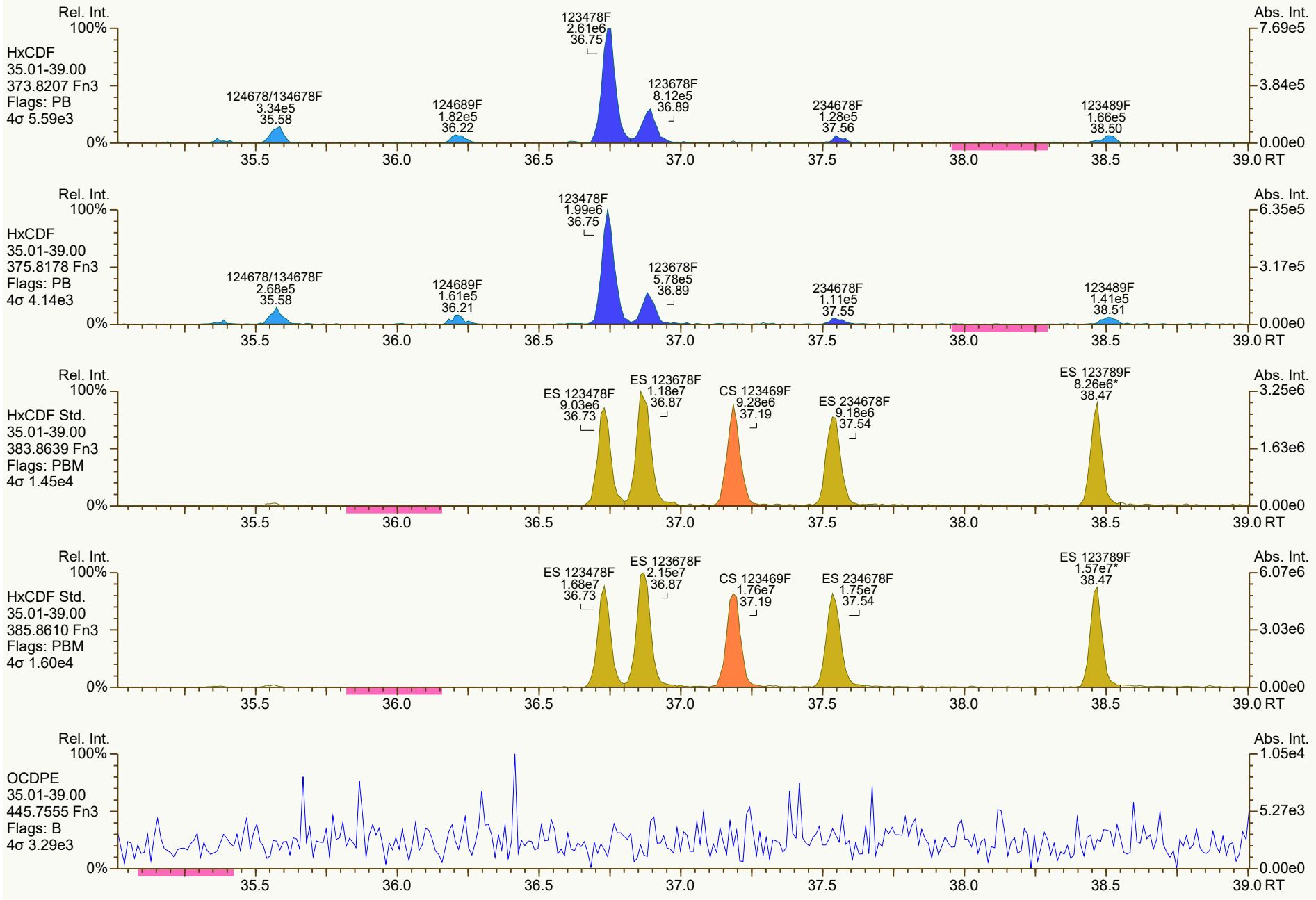
SGS ID: B5969_18712_DF_006 Sample ID: 11215131-120321-S-SPS-SW-S-12 Acq: 09-Dec-2021 00:21:57
Instr: [ILM] AutoSpec-Ultima MM3 VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39 User: PSW Datafile: 211208R11

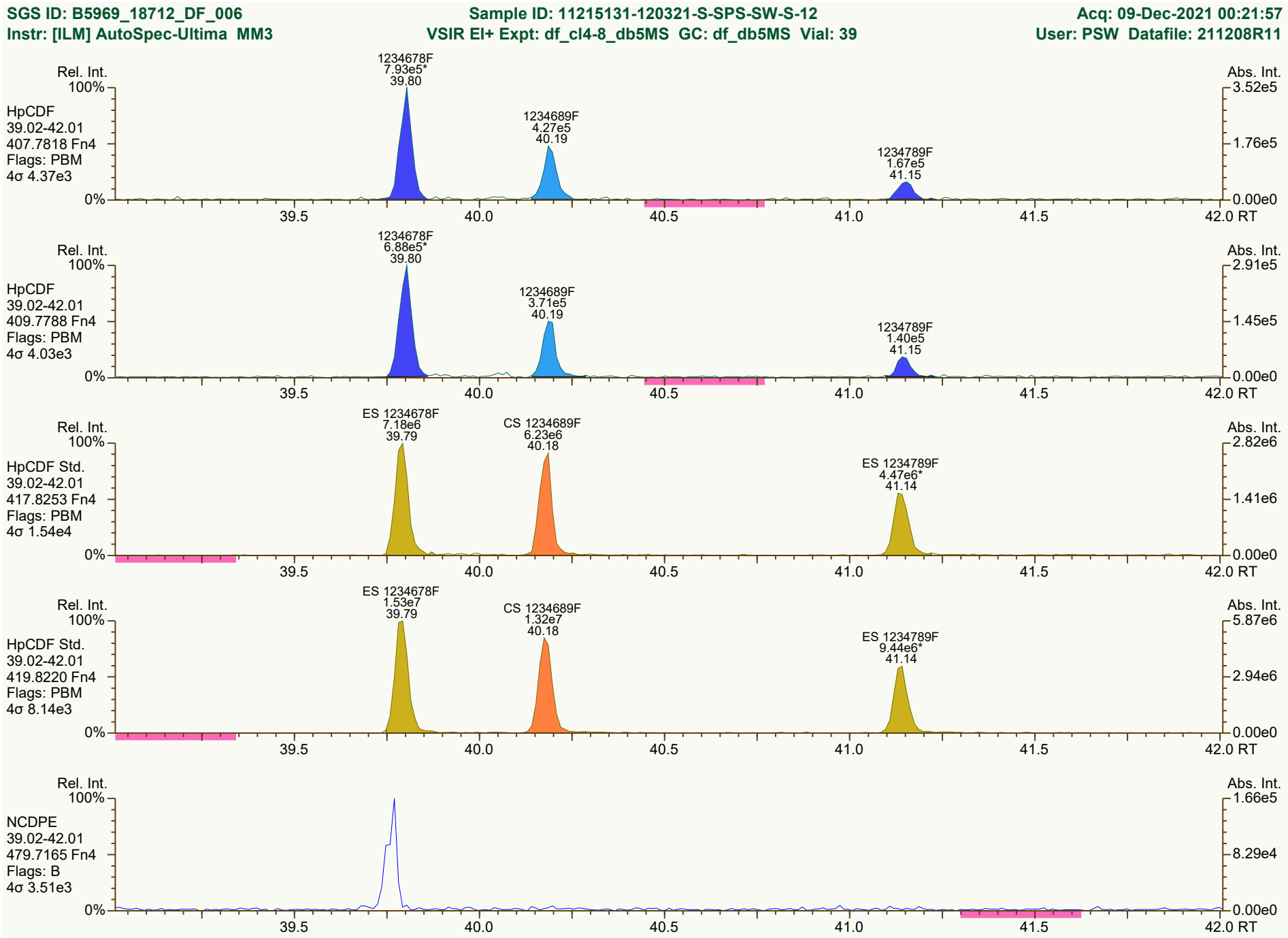


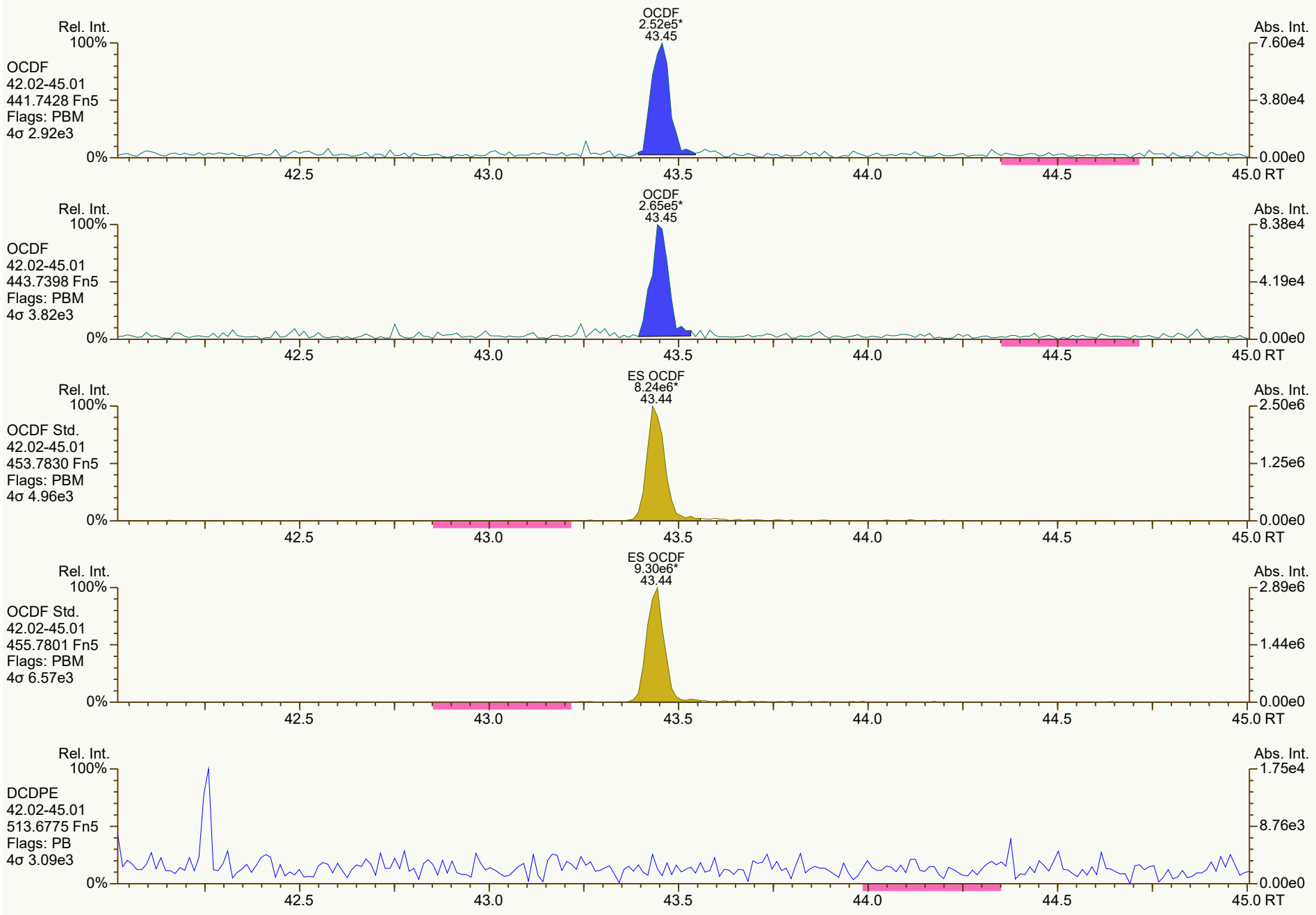
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_006.utp_res, saved 09-Dec-2021 10:40 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6473, 6366, 6497 scc: 256-296 *PKD: 09-Dec-2021 09:15 Printed: 09-Dec-2021 10:50 Page 7 of 12*


Rel. Int.
100%
0%
Abs. Int.
4.07e4
2.03e4
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 4.13e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.03e4
1.02e4
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 3.74e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
5.32e6
2.66e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


SGS ID: B5969_18712_DF_006
Sample ID: 11215131-120321-S-SPS-SW-S-12
Acq: 09-Dec-2021 00:21:57
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39
User: PSW Datafile: 211208R11
Rel. Int.
Abs. Int.
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 3.05e3
12368F...[3]
1.04e6*
31.36
14678F
5.21e4*
31.45
12348F
2.34e5
32.24
12378F
2.09e6
32.45
12678/12367F
6.43e5
32.73
23478F
1.72e6*
33.55
12389F
1.04e5
34.62
5.46e5
2.73e5
0.00e0
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 3.53e3
12368F...[3]
6.52e5*
31.36
12348F
1.41e5
32.24
12378F
1.41e6
32.45
12678/12367F
3.91e5
32.74
23478F
1.15e6*
33.55
4.07e5
2.03e5
0.00e0
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 6.27e3
CS 12346F
2.14e7
31.91
ES 12378F
2.31e7
32.43
ES 23478F
2.22e7
33.53
6.11e6
3.06e6
0.00e0
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 8.54e3
CS 12346F
1.39e7
31.91
ES 12378F
1.43e7
32.43
ES 23478F
1.43e7
33.53
3.99e6
1.99e6
0.00e0
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.32e3
1.06e4
5.30e3
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_006.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5852, 0123, 3652 scc: 256-296
PKD: 09-Dec-2021 09:15 Printed: 09-Dec-2021 10:50 Page 9 of 12


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PB
4σ 5.59e3
0%
123478F
2.61e6
36.75
123678F
8.12e5
36.89
124678/134678F
3.34e5
35.58
124689F
1.82e5
36.22
234678F
1.28e5
37.56
123489F
1.66e5
38.50
Abs. Int.
7.69e5
3.84e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PB
4σ 4.14e3
123478F
1.99e6
36.75
123678F
5.78e5
36.89
124678/134678F
2.68e5
35.58
124689F
1.61e5
36.21
234678F
1.11e5
37.55
123489F
1.41e5
38.51
6.35e5
3.17e5
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PBM
4σ 1.45e4
ES 123478F
9.03e6
36.73
ES 123678F
1.18e7
36.87
CS 123469F
9.28e6
37.19
ES 234678F
9.18e6
37.54
ES 123789F
8.26e6*
38.47
3.25e6
1.63e6
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PBM
4σ 1.60e4
ES 123478F
1.68e7
36.73
ES 123678F
2.15e7
36.87
CS 123469F
1.76e7
37.19
ES 234678F
1.75e7
37.54
ES 123789F
1.57e7*
38.47
6.07e6
3.03e6
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.29e3
1.05e4
5.27e3


SGS ID: B5969_18712_DF_006
Sample ID: 11215131-120321-S-SPS-SW-S-12
Acq: 09-Dec-2021 00:21:57
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39
User: PSW Datafile: 211208R11
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 4.37e3
1234678F
7.93e5*
39.80
1234689F
4.27e5
40.19
1234789F
1.67e5
41.15
3.52e5
1.76e5
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 4.03e3
1234678F
6.88e5*
39.80
1234689F
3.71e5
40.19
1234789F
1.40e5
41.15
2.91e5
1.45e5
0.00e0
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 1.54e4
ES 1234678F
7.18e6
39.79
CS 1234689F
6.23e6
40.18
ES 1234789F
4.47e6*
41.14
2.82e6
1.41e6
0.00e0
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 8.14e3
ES 1234678F
1.53e7
39.79
CS 1234689F
1.32e7
40.18
ES 1234789F
9.44e6*
41.14
5.87e6
2.94e6
0.00e0
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.51e3
1.66e5
8.29e4
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_006.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5078, 7528, 3549 scc: 256-296
PKD: 09-Dec-2021 09:15 Printed: 09-Dec-2021 10:50 Page 11 of 12


OCDF
2.52e5*
43.45
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 2.92e3
0%
Abs. Int.
7.60e4
3.80e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.65e5*
43.45
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 3.82e3
0%
Abs. Int.
8.38e4
4.19e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.24e6*
43.44
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PBM
4σ 4.96e3
0%
Abs. Int.
2.50e6
1.25e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.30e6*
43.44
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PBM
4σ 6.57e3
0%
Abs. Int.
2.89e6
1.44e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: PB
4σ 3.09e3
0%
Abs. Int.
1.75e4
8.76e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5969_18712_DF_007 **Acq'd:** 09 Dec 2021 01:09 PSW **Wt/Vol:** 14.62 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-11 **UTP:** 09-Dec-2021 10:40:19 PSW **J-level:** 0.342 pg/g **Split:** 1 **Checkcode:** 109-751-YCT

Datafile: 211208R12 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.63	E	1.0008	1.0008	0	2.09E+09	0.79	Y	1.34	6,820	9470.816	0.31
12378-PeCDD	33.91		1.0004	1.0007	+0.6	1.71E+07	1.71	Y	1.06	75.8	9519.988	0.4
123478-HxCDD	37.74		1.0004	1.0004	0	3.76E+05	1.35	Y	1.06	1.96	20975.51	0.858
123678-HxCDD	37.86		1.0034	1.0034	0	2.05E+06	1.30	Y	1.08	10.7	20975.51	0.82
123789-HxCDD	38.14		1.0111	1.0109	-0.5	9.33E+05	1.17	Y	1.02	4.38	20975.51	0.769
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	5.50E+07	1.03	Y	0.97	343	9450.077	0.369
OCDD	43.28		1.0003	1.0003	0	5.26E+08	0.90	Y	1.07	4,800	10348.84	0.806
2378-TCDF	27.79	E	1.0007	1.0008	+0.2	6.82E+09	0.79	Y	0.96	22,500	7530.669	0.294
12378-PeCDF	32.49		1.0006	1.0005	-0.2	2.10E+08	1.55	Y	0.95	744	13091.734	0.418
23478-PeCDF	33.60		1.0005	1.0008	+0.6	1.40E+08	1.56	Y	0.94	529	13091.734	0.556
123478-HxCDF	36.76		1.0004	1.0005	+0.2	3.83E+08	1.25	Y	1.23	1,380	21155.15	0.632
123678-HxCDF	36.90		1.0005	1.0004	-0.2	1.01E+08	1.26	Y	1.13	331	21155.15	0.542
234678-HxCDF	37.57		1.0005	1.0005	0	1.69E+07	1.22	Y	1.15	62.2	21155.15	0.693
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	21155.15	0.614
1234678-HpCDF	39.80		1.0003	1.0003	0	1.24E+08	1.03	Y	1.36	492	14997.478	0.361
1234789-HpCDF	41.15		1.0004	1.0003	-0.2	3.37E+07	1.04	Y	1.30	160	14997.478	0.486
OCDF	43.46		1.0002	1.0003	+0.3	3.19E+08	0.89	Y	1.03	2,410	8281.184	0.482

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.61	1.0233	1.0230	-0.5	3.12E+07	0.81	Y	1.03	84.8
ES 12378-PeCDD	33.88	1.2118	1.2117	-0.2	2.91E+07	1.64	Y	1.03	79.2
ES 123478-HxCDD	37.73	0.9921	0.9921	0	2.49E+07	1.32	Y	0.99	86
ES 123678-HxCDD	37.84	0.9951	0.9951	0	2.42E+07	1.26	Y	0.97	85.4
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	2.87E+07	1.29	Y	1.12	87.8
ES 1234678-HpCDD	40.69	1.0702	1.0699	-0.7	2.25E+07	1.08	Y	0.99	78
ES OCDD	43.26	1.1377	1.1376	-0.3	2.80E+07	0.90	Y	0.78	62
ES 2378-TCDF	27.77	1.0505	1.0505	0	4.32E+07	0.82	Y	1.08	77.9
ES 12378-PeCDF	32.47	1.2278	1.2285	+1.4	4.08E+07	1.58	Y	0.93	85.5
ES 23478-PeCDF	33.57	1.2691	1.2701	+2.0	3.86E+07	1.63	Y	0.92	81.8
ES 123478-HxCDF	36.75	0.9660	0.9663	+0.7	3.09E+07	0.53	Y	1.14	92.9
ES 123678-HxCDF	36.89	0.9698	0.9699	+0.2	3.69E+07	0.53	Y	1.30	97.7
ES 234678-HxCDF	37.56	0.9875	0.9876	+0.2	3.23E+07	0.54	Y	1.20	92.5
ES 123789-HxCDF	38.47	1.0121	1.0116	-1.2	3.00E+07	0.50	Y	1.14	90.6
ES 1234678-HpCDF	39.79	1.0468	1.0463	-1.2	2.53E+07	0.44	Y	0.95	91.7
ES 1234789-HpCDF	41.14	1.0822	1.0818	-1.0	2.22E+07	0.45	Y	0.85	90.1
ES OCDF	43.45	1.1426	1.1425	-0.3	3.54E+07	0.89	Y	0.93	65.8

Lab ID: B5969_18712_DF_007 **Acq'd:** 09 Dec 2021 01:09 PSW **Wt/Vol:** 14.62 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-11 **UTP:** 09-Dec-2021 10:40:19 PSW **J-level:** 0.342 pg/g **Split:** 1 **Checkcode:** 109-751-YCT

Datafile: 211208R12 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.97		-	-	-	3.55E+07	0.81	Y	-	-	
JS 1234-TCDF	26.43		-	-	-	5.11E+07	0.79	Y	-	-	
JS 123467-HxCDD	38.03		-	-	-	1.45E+07	1.26	Y	-	-	
CS 37Cl-2378-TCDD	28.63		1.0241	1.0239	-0.3	1.29E+07	n/a	-	1.31	69.3	
CS 12347-PeCDD	33.40		1.1940	1.1943	+0.6	2.57E+07	1.60	Y	0.89	80.9	
CS 12346-PeCDF	31.95		1.2080	1.2090	+1.9	3.79E+07	1.61	Y	0.87	85.4	
CS 123469-HxCDF	37.20		0.9781	0.9783	+0.4	3.07E+07	0.50	Y	1.09	96.8	
CS 1234689-HpCDF	40.18		1.0569	1.0566	-0.7	2.49E+07	0.45	Y	0.86	99	
~~SS 37Cl-2378-TCDD~~	~~28.63~~		~~1.0241~~	~~1.0239~~	~~-0.3~~	~~1.29E+07~~	~~n/a~~		~~1.26~~	~~82.1~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.40~~		~~1.1940~~	~~1.1943~~	~~+0.6~~	~~2.57E+07~~	~~1.60~~	~~Y~~	~~0.86~~	~~102~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.95~~		~~1.2080~~	~~1.2090~~	~~+1.9~~	~~3.79E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~99.9~~	
~~SS 123469-HxCDF~~	~~37.20~~		~~0.9781~~	~~0.9783~~	~~+0.4~~	~~3.07E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~98.9~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0566~~	~~-0.7~~	~~2.49E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~108~~	

Totals	Conc	EMPC
Total TCDD	7620	7640
Total PeCDD	101	107
Total HxCDD	102	105
Total HpCDD	712	712
Total Tetra-Octa Dioxins	13300	13400
Total TCDF	42,700	42700
Total PeCDF	2,000	2000
Total HxCDF	2,070	2070
Total HpCDF	826	826
Total Tetra-Octa Furans	50,000	50000
Total Tetra-Octa Dioxins & Furans	63300	63400

Lab ID: B5969_18712_DF_007 **Acq'd: 09 Dec 2021 01:09 PSW** **Wt/Vol: 14.62 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-S-11 **UTP: 09-Dec-2021 10:40:19 PSW** **J-level: 0.342 pg/g** **Split: 1** **Checkcode: 109-751-YCT**

Datafile: 211208R12 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.07		0.8758	0.8764	+0.9	6.75E+05	0.84	Y	1.34	2.21	9470.816	0.31
1379-TCDD	25.40		0.8878	0.8879	+0.2	6.04E+05	0.85	Y	1.34	1.97	9470.816	0.31
1369-TCDD	NotFnd		0.9025						1.34		9470.816	0.31
1469-TCDD	26.58		0.9291	0.9292	+0.2	1.62E+06	0.81	Y	1.34	5.29	9470.816	0.31
1247/1246/1248/1249-TCDD	26.82	EMPC	0.9374	0.9374	0	2.94E+06	0.96	N	1.34	9.59	9470.816	0.31
1378-TCDD	27.00		0.9440	0.9436	-0.6	5.34E+06	0.78	Y	1.34	17.4	9470.816	0.31
1268-TCDD	27.19	EMPC	0.9505	0.9503	-0.3	4.37E+05	0.92	N	1.34	1.43	9470.816	0.31
1478-TCDD	27.44		0.9591	0.9592	+0.2	3.24E+06	0.87	Y	1.34	10.6	9470.816	0.31
1279-TCDD	27.60		0.9650	0.9648	-0.3	2.72E+05	0.75	Y	1.34	0.889	9470.816	0.31
1234/1269-TCDD	27.96		0.9771	0.9772	+0.2	6.38E+05	0.82	Y	1.34	2.08	9470.816	0.31
1236-TCDD	28.11	EMPC	0.9821	0.9824	+0.5	3.50E+05	1.24	N	1.34	1.14	9470.816	0.31
1237/1238-TCDD	28.34		0.9907	0.9906	-0.2	3.18E+07	0.83	Y	1.34	104	9470.816	0.31
1239-TCDD	NotFnd		0.9953						1.34		9470.816	0.31
2378-TCDD	**28.63**	E	**1.0008**	1.0008	**0**	2.09E+09	0.79	Y	**1.34**	**6,820**	**9470.816**	**0.31**
1278-TCDD	28.97		1.0118	1.0124	+1.0	2.00E+08	0.80	Y	1.34	654	9470.816	0.31
1267-TCDD	NotFnd		1.0162						1.34		9470.816	0.31
1289-TCDD	29.55	EMPC	1.0340	1.0328	-2.1	2.30E+06	1.22	N	1.34	7.52	9470.816	0.31
12479/12468-PeCDD	31.45		0.9274	0.9282	+1.5	1.13E+06	1.55	Y	1.06	5.02	9519.988	0.4
12469-PeCDD	31.97		0.9430	0.9437	+1.3	8.20E+05	1.57	Y	1.06	3.64	9519.988	0.4
12368-PeCDD	32.51		0.9591	0.9593	+0.4	1.08E+06	1.45	Y	1.06	4.81	9519.988	0.4
12478-PeCDD	32.70		0.9645	0.9649	+0.8	9.05E+05	1.72	Y	1.06	4.01	9519.988	0.4
12379-PeCDD	32.80		0.9676	0.9681	+1.0	4.52E+05	1.35	Y	1.06	2.01	9519.988	0.4
12369/12467/12489-PeCDD	33.06		0.9751	0.9756	+1.0	6.05E+05	1.46	Y	1.06	2.68	9519.988	0.4
12346/12347-PeCDD	33.42	J	0.9860	0.9862	+0.4	3.56E+05	1.73	Y	1.06	1.58	9519.988	0.4
12378-PeCDD	33.91		**1.0004**	**1.0007**	**+0.6**	**1.71E+07**	**1.71**	**Y**	**1.06**	**75.8**	**9519.988**	**0.4**
12367-PeCDD	34.04	EMPC	1.0034	1.0047	+2.7	1.23E+06	1.79	N	1.06	5.45	9519.988	0.4
12389-PeCDD	34.34		1.0133	1.0135	+0.4	4.18E+05	1.45	Y	1.06	1.85	9519.988	0.4
124679/124689-HxCDD	36.04		0.9546	0.9552	+1.3	9.90E+06	1.27	Y	1.05	49.7	20975.51	0.813
123468-HxCDD	36.67		0.9718	0.9720	+0.4	8.91E+05	1.30	Y	1.05	4.47	20975.51	0.813
123679/123689-HxCDD	36.97		0.9795	0.9798	+0.7	6.17E+06	1.27	Y	1.05	31	20975.51	0.813
123469-HxCDD	37.11	J EMPC	0.9832	0.9835	+0.7	3.17E+05	0.98	N	1.05	1.59	20975.51	0.813
123478-HxCDD	37.74		**1.0004**	**1.0004**	**0**	**3.76E+05**	**1.35**	**Y**	1.06	**1.96**	**20975.51**	**0.858**
123678-HxCDD	37.86		**1.0034**	**1.0034**	**0**	**2.05E+06**	**1.30**	**Y**	1.08	**10.7**	**20975.51**	**0.82**
123467-HxCDD	38.04	J EMPC	1.0083	1.0083	0	2.34E+05	1.55	N	1.05	1.17	20975.51	0.813
123789-HxCDD	38.14		**1.0111**	**1.0109**	**-0.5**	**9.33E+05**	**1.17**	**Y**	1.02	**4.38**	**20975.51**	**0.769**

Lab ID: B5969_18712_DF_007 **Acq'd:** 09 Dec 2021 01:09 PSW **Wt/Vol:** 14.62 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-11 **UTP:** 09-Dec-2021 10:40:19 PSW **J-level:** 0.342 pg/g **Split:** 1 **Checkcode:** 109-751-YCT

Datafile: 211208R12 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9843	0	5.91E+07	1.04	Y	0.97	369	9450.077	0.369
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**5.50E+07**	**1.03**	**Y**	**0.97**	**343**	**9450.077**	**0.369**
OCDD	**43.28**		**1.0003**	**1.0003**	**0**	**5.26E+08**	**0.90**	**Y**	**1.07**	**4,800**	**10348.84**	**0.806**
OCDD-a	43.27		1.0001	1.0002	+0.3	3.15E+07	2.66	Y	0.07	4,650	10451.69	13.2
1368-TCDF	22.98		0.8284	0.8277	-1.0	5.81E+05	0.85	Y	0.96	1.92	7530.669	0.294
1468-TCDF	23.56		0.8487	0.8487	0	6.55E+06	0.74	Y	0.96	21.6	7530.669	0.294
2468-TCDF	24.18		0.8709	0.8710	+0.1	6.48E+06	0.77	Y	0.96	21.4	7530.669	0.294
1346/1246-TCDF	24.53		0.8828	0.8835	+1.0	6.88E+05	0.83	Y	0.96	2.27	7530.669	0.294
1347/1378/1247-TCDF	24.69		0.8886	0.8894	+1.2	2.82E+07	0.81	Y	0.96	92.8	7530.669	0.294
1348-TCDF	24.96		0.8980	0.8991	+1.6	1.67E+07	0.79	Y	0.96	54.9	7530.669	0.294
1248/1367/1379-TCDF	25.07		0.9027	0.9028	+0.2	5.47E+07	0.80	Y	0.96	180	7530.669	0.294
1268-TCDF	25.44		0.9159	0.9163	+0.6	3.59E+07	0.78	Y	0.96	118	7530.669	0.294
1467-TCDF	25.57		0.9206	0.9208	+0.3	1.58E+07	0.80	Y	0.96	52.1	7530.669	0.294
1478-TCDF	25.73		0.9266	0.9268	+0.3	9.69E+07	0.78	Y	0.96	319	7530.669	0.294
1369/1237-TCDF	26.11		0.9396	0.9405	+1.4	4.74E+07	0.79	Y	0.96	156	7530.669	0.294
2467-TCDF	26.22		0.9440	0.9444	+0.6	6.68E+06	0.81	Y	0.96	22	7530.669	0.294
2368-TCDF	26.35		0.9496	0.9491	-0.8	1.07E+08	0.77	Y	0.96	352	7530.669	0.294
1238/1234/1678/1469/1236-TCDF	26.43	E	0.9530	0.9521	-1.4	3.36E+08	0.79	Y	0.96	1,110	7530.669	0.294
1278-TCDF	26.90	E	0.9689	0.9688	-0.2	3.25E+09	0.79	Y	0.96	10,700	7530.669	0.294
1349-TCDF	NotFnd		0.9732						0.96		7530.669	0.294
1267-TCDF	27.16		0.9786	0.9783	-0.5	1.05E+08	0.78	Y	0.96	348	7530.669	0.294
2346/1249-TCDF	NotFnd		0.9849						0.96		7530.669	0.294
2347/1279-TCDF	27.55		0.9927	0.9924	-0.5	8.30E+07	0.78	Y	0.96	273	7530.669	0.294
2348-TCDF	27.68	E	0.9967	0.9970	+0.5	6.24E+08	0.77	Y	0.96	2,060	7530.669	0.294
2378-TCDF	**27.79**	E	**1.0007**	**1.0008**	**+0.2**	**6.82E+09**	**0.79**	**Y**	**0.96**	**22,500**	**7530.669**	**0.294**
2367/3467-TCDF	28.14	E	1.0136	1.0134	-0.3	6.22E+08	0.79	Y	0.96	2,050	7530.669	0.294
1269-TCDF	28.38		1.0223	1.0222	-0.2	6.09E+07	0.78	Y	0.96	201	7530.669	0.294
1239-TCDF	28.64		1.0313	1.0314	+0.2	1.22E+07	0.79	Y	0.96	40.1	7530.669	0.294
1289-TCDF	29.80	E	1.0711	1.0733	+3.9	6.24E+08	0.81	Y	0.96	2,060	7530.669	0.294
13468/12468-PeCDF	29.75		0.9147	0.9161	+2.5	6.88E+06	1.65	Y	0.94	25.2	9105.163	0.337
13678/13467/12467-PeCDF	31.26		0.9616	0.9627	+2.1	2.41E+06	1.64	Y	0.94	8.82	13091.734	0.485
12368/13478/12478-PeCDF	31.41		0.9663	0.9674	+2.1	8.70E+07	1.55	Y	0.94	318	13091.734	0.485
14678-PeCDF	31.50		0.9695	0.9701	+1.1	2.65E+06	1.69	Y	0.94	9.69	13091.734	0.485
13479-PeCDF	31.59		0.9727	0.9729	+0.4	6.25E+05	1.56	Y	0.94	2.29	13091.734	0.485
13469/12479-PeCDF	31.78		0.9799	0.9788	-2.1	5.67E+05	1.46	Y	0.94	2.07	13091.734	0.485
12346-PeCDF	31.95	J	0.9839	0.9840	+0.2	4.39E+05	1.64	Y	0.94	1.6	13091.734	0.485

Lab ID: B5969_18712_DF_007 | **Acq'd: 09 Dec 2021 01:09 PSW** | **Wt/Vol: 14.62 g** | **ICAL: MM3_DF_10272021_27JUL2021**

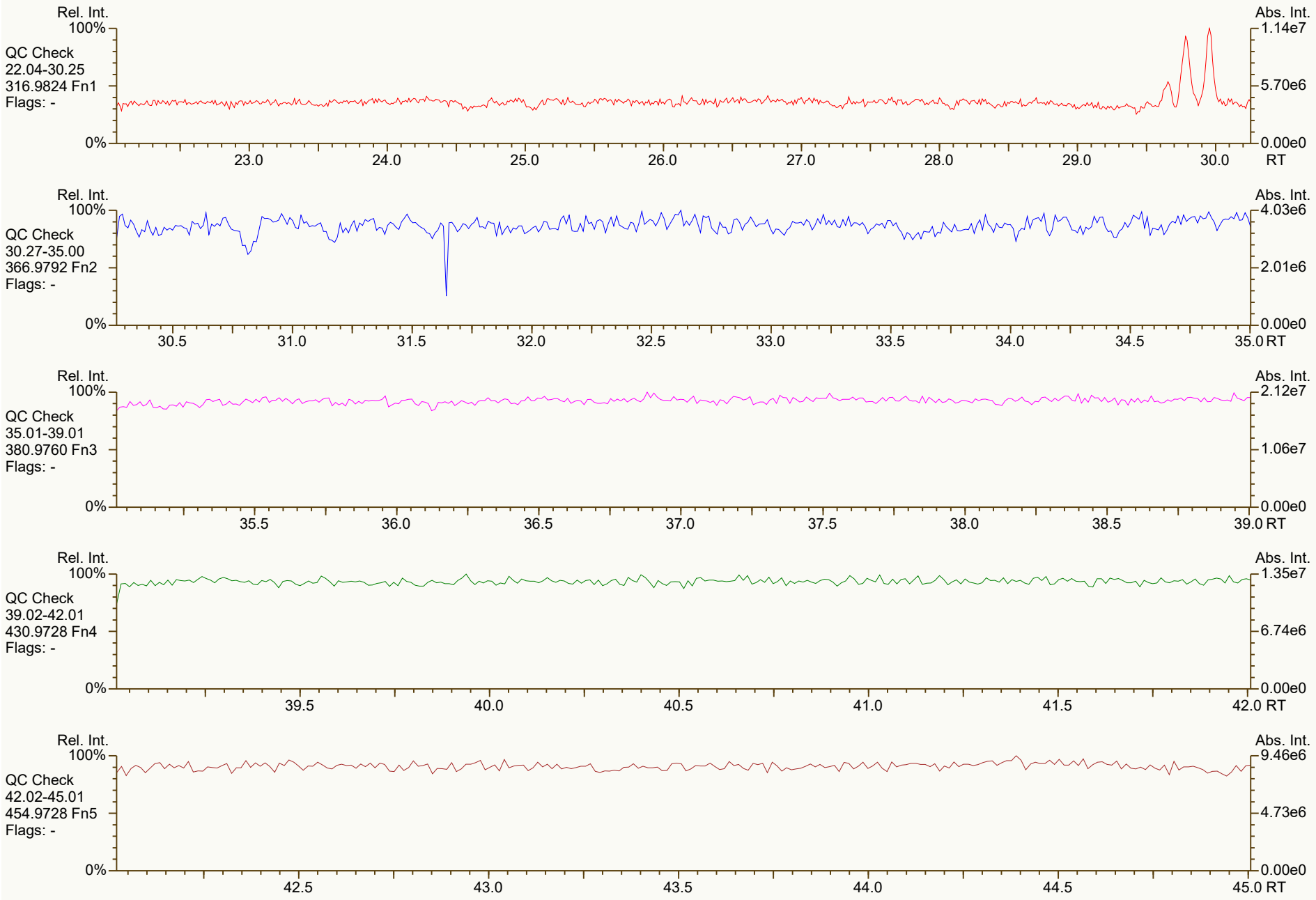
Client ID: 11215131-120321-S-SPS-SW-S-11 | **UTP: 09-Dec-2021 10:40:19 PSW** | **J-level: 0.342 pg/g** | **Split: 1** | **Checkcode: 109-751-YCT**

Datafile: 211208R12 | **Report: 09 Dec 2021 10:42 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.04		0.9864	0.9869	+1.0	4.08E+06	1.55	Y	0.94	14.9	13091.734	0.485
12347-PeCDF	32.13		0.9892	0.9895	+0.6	4.47E+06	1.54	Y	0.94	16.3	13091.734	0.485
12348-PeCDF	32.28		0.9940	0.9942	+0.4	1.89E+07	1.57	Y	0.94	69	13091.734	0.485
12378-PeCDF	**32.49**		**1.0006**	**1.0005**	**-0.2**	**2.10E+08**	**1.55**	**Y**	**0.95**	**744**	**13091.734**	**0.418**
12678/12367-PeCDF	32.77		1.0088	1.0093	+1.0	5.86E+07	1.53	Y	0.94	214	13091.734	0.485
12379-PeCDF	NotFnd		1.0142						0.94		13091.734	0.485
12679-PeCDF	33.32		0.9931	0.9925	-1.2	6.05E+05	1.58	Y	0.94	2.21	13091.734	0.485
23467/12369-PeCDF	33.44		0.9966	0.9962	-0.8	3.00E+06	1.61	Y	0.94	11	13091.734	0.485
23478-PeCDF	**33.60**		**1.0005**	**1.0008**	**+0.6**	**1.40E+08**	**1.56**	**Y**	**0.94**	**529**	**13091.734**	**0.556**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		13091.734	0.485
12349-PeCDF	NotFnd		1.0100						0.94		13091.734	0.485
12389-PeCDF	34.64		1.0323	1.0318	-1.0	8.41E+06	1.56	Y	0.94	30.8	13091.734	0.485
123468-HxCDF	35.42		0.9631	0.9638	+1.5	3.60E+06	1.24	Y	1.16	13	21155.15	0.617
124678/134678-HxCDF	35.60		0.9686	0.9689	+0.6	2.99E+07	1.25	Y	1.16	108	21155.15	0.617
134679-HxCDF	NotFnd		0.9747						1.16		21155.15	0.617
124679-HxCDF	36.02		0.9800	0.9802	+0.4	5.01E+05	1.36	Y	1.16	1.81	21155.15	0.617
124689-HxCDF	36.24		0.9859	0.9863	+0.9	1.63E+07	1.25	Y	1.16	59.1	21155.15	0.617
123467-HxCDF	36.64		0.9972	0.9972	0	1.90E+06	1.22	Y	1.16	6.88	21155.15	0.617
123478-HxCDF	**36.76**		**1.0004**	**1.0005**	**+0.2**	**3.83E+08**	**1.25**	**Y**	**1.23**	**1,380**	**21155.15**	**0.632**
123678-HxCDF	**36.90**		**1.0005**	**1.0004**	**-0.2**	**1.01E+08**	**1.26**	**Y**	**1.13**	**331**	**21155.15**	**0.542**
123479-HxCDF	37.10		1.0048	1.0057	+2.0	2.95E+06	1.28	Y	1.16	10.7	21155.15	0.617
123469-HxCDF	37.22		1.0089	1.0091	+0.4	1.94E+06	1.30	Y	1.16	7	21155.15	0.617
123679-HxCDF	37.34		0.9943	0.9942	-0.2	1.49E+06	1.28	Y	1.16	5.38	21155.15	0.617
234678-HxCDF	**37.57**		**1.0005**	**1.0005**	**0**	**1.69E+07**	**1.22**	**Y**	**1.15**	**62.2**	**21155.15**	**0.693**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		21155.15	0.617
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**21155.15**	**0.614**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.51		1.0004	1.0011	+1.6	2.45E+07	1.27	Y	1.16	88.7	21155.15	0.617
1234678-HpCDF	**39.80**		**1.0003**	**1.0003**	**0**	**1.24E+08**	**1.03**	**Y**	**1.36**	**492**	**14997.478**	**0.361**
1234679-HpCDF	40.05		1.0065	1.0065	0	2.70E+06	1.05	Y	1.33	11.7	14997.478	0.419
1234689-HpCDF	40.19		1.0097	1.0101	+1.0	3.77E+07	1.04	Y	1.33	163	14997.478	0.419
1234789-HpCDF	**41.15**		**1.0004**	**1.0003**	**-0.2**	**3.37E+07**	**1.04**	**Y**	**1.30**	**160**	**14997.478**	**0.486**
OCDF	**43.46**		**1.0002**	**1.0003**	**+0.3**	**3.19E+08**	**0.89**	**Y**	**1.03**	**2,410**	**8281.184**	**0.482**
OCDF-a	43.46		1.0001	1.0002	+0.3	1.96E+07	2.45	Y	0.06	2,560	9099.79	9.16

SGS ID: B5969_18712_DF_007 | **Sample ID: 11215131-120321-S-SPS-SW-S-11** | **Acq: 09-Dec-2021 01:09:31**

Instr: [ILM] AutoSpec-Ultima MM3 | **VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40** | **User: PSW Datafile: 211208R12**

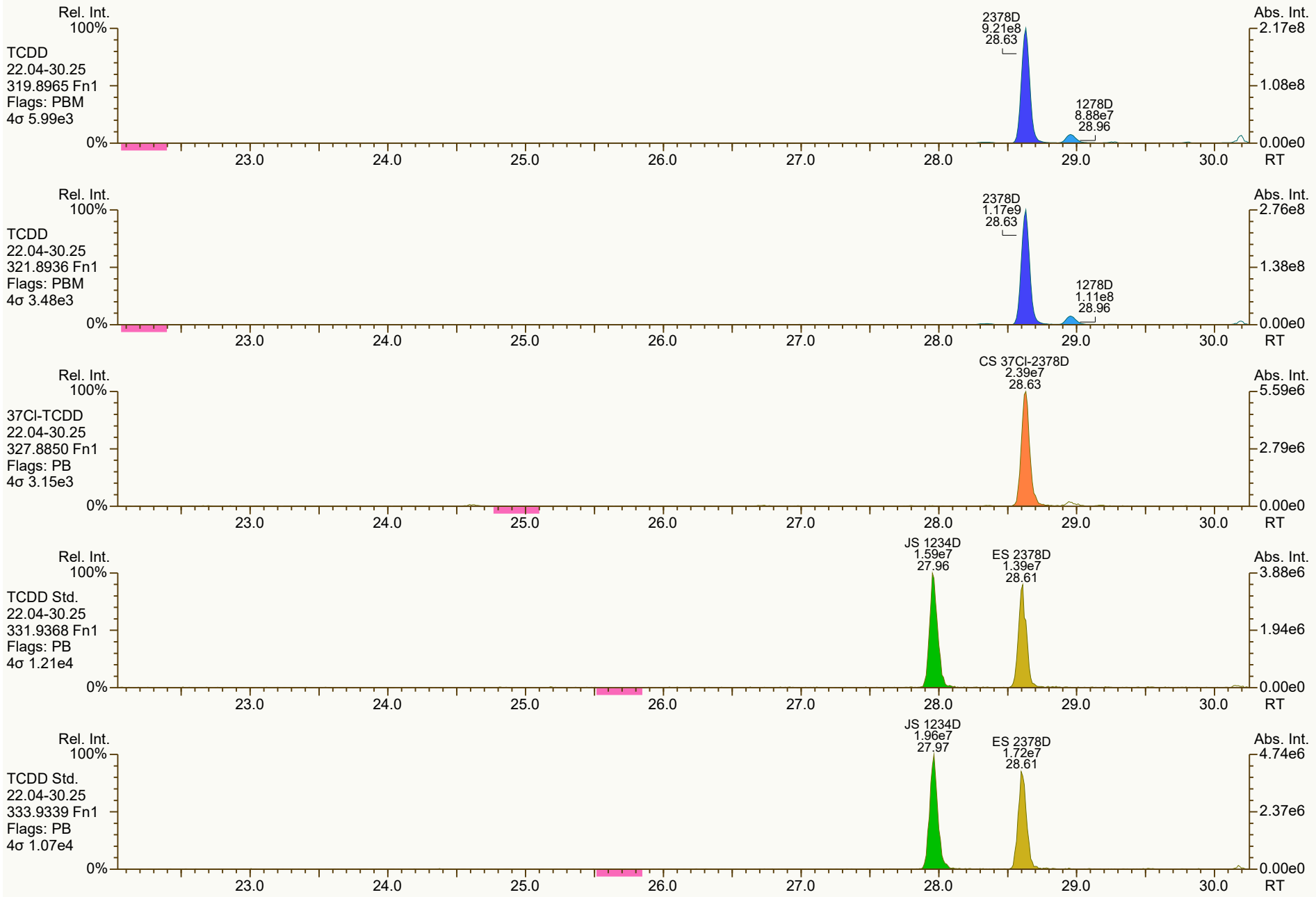


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_007.utp_res, saved 09-Dec-2021 10:40 (PSW)

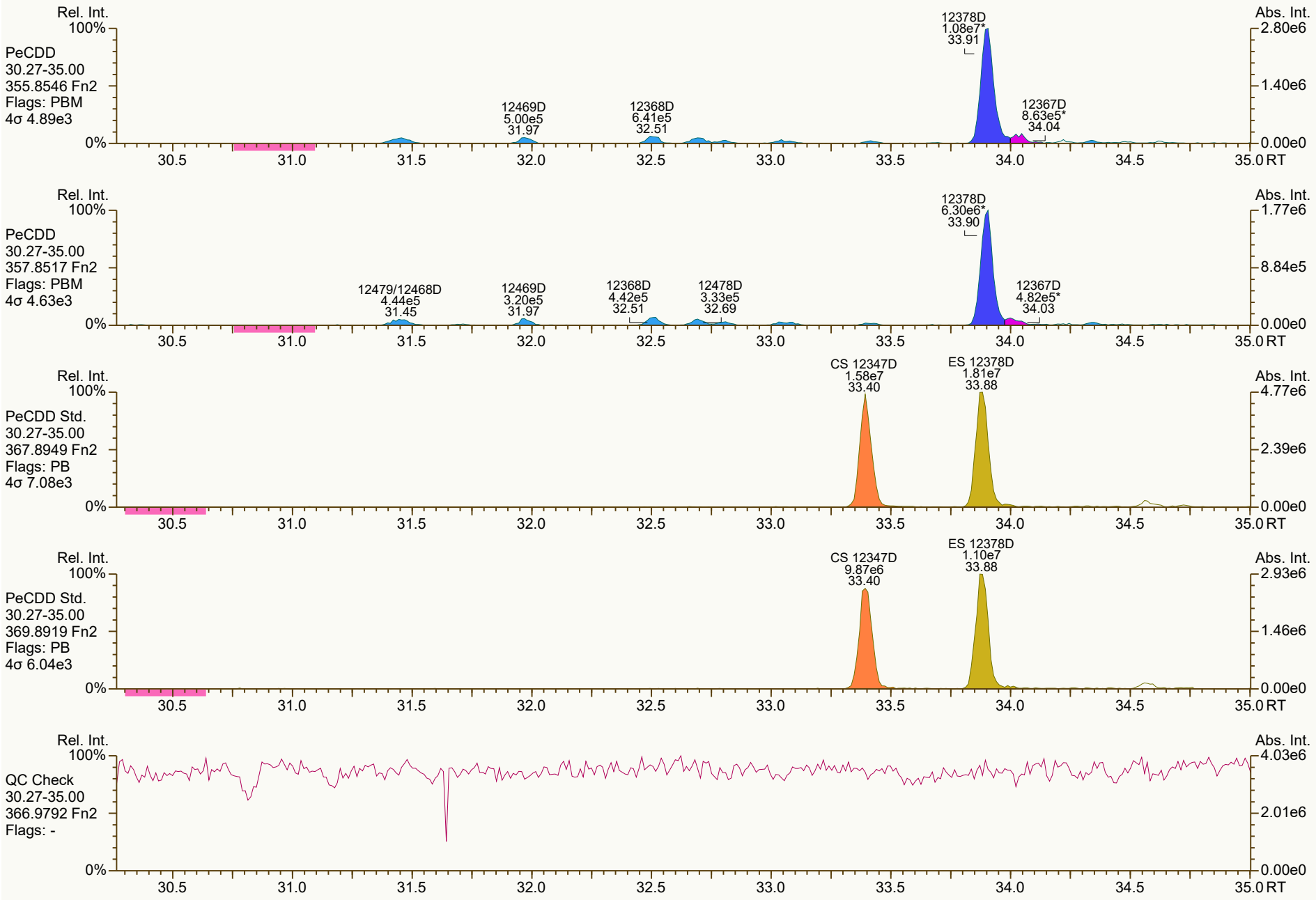
Peak annotation: Areas, Centroids

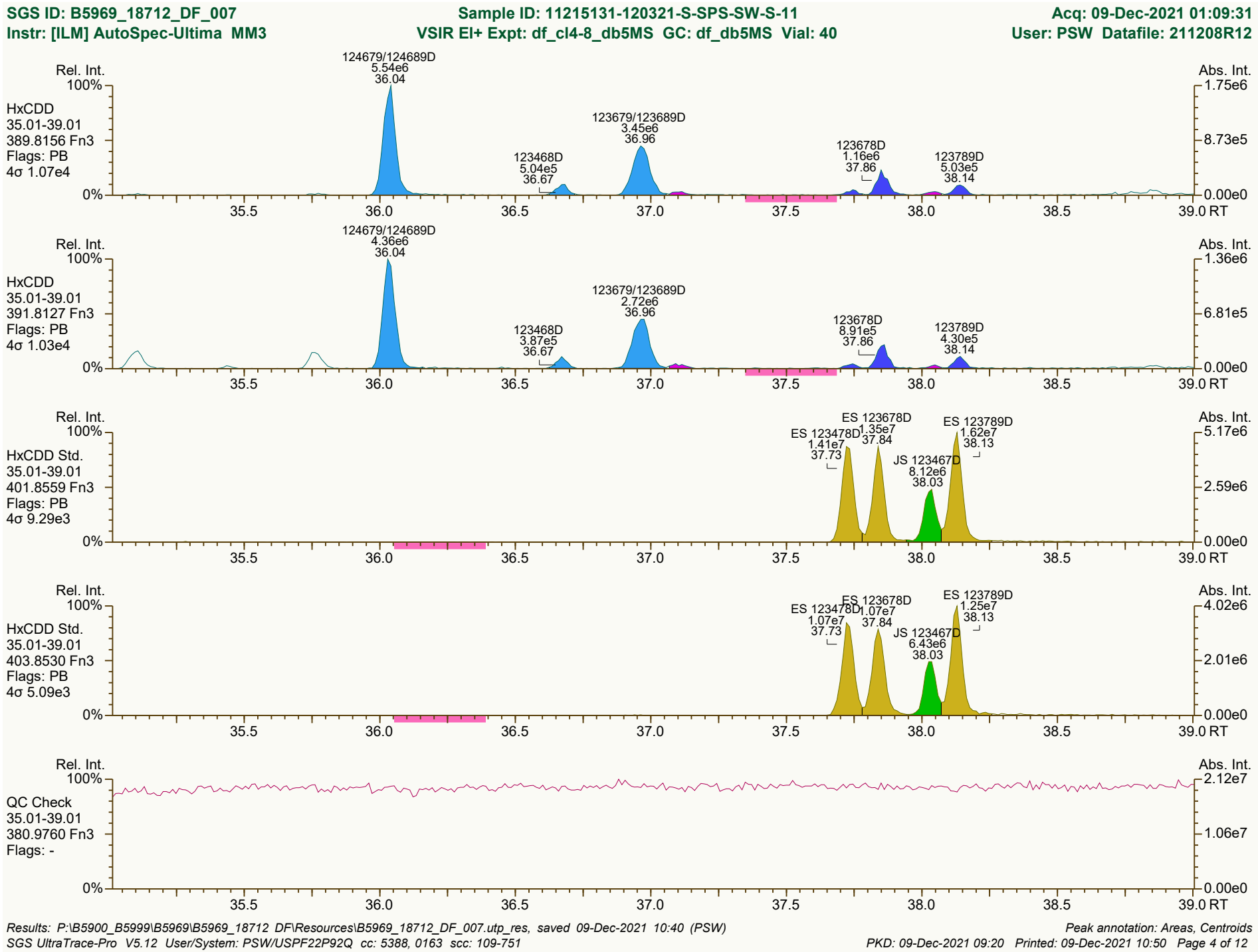
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 109-751

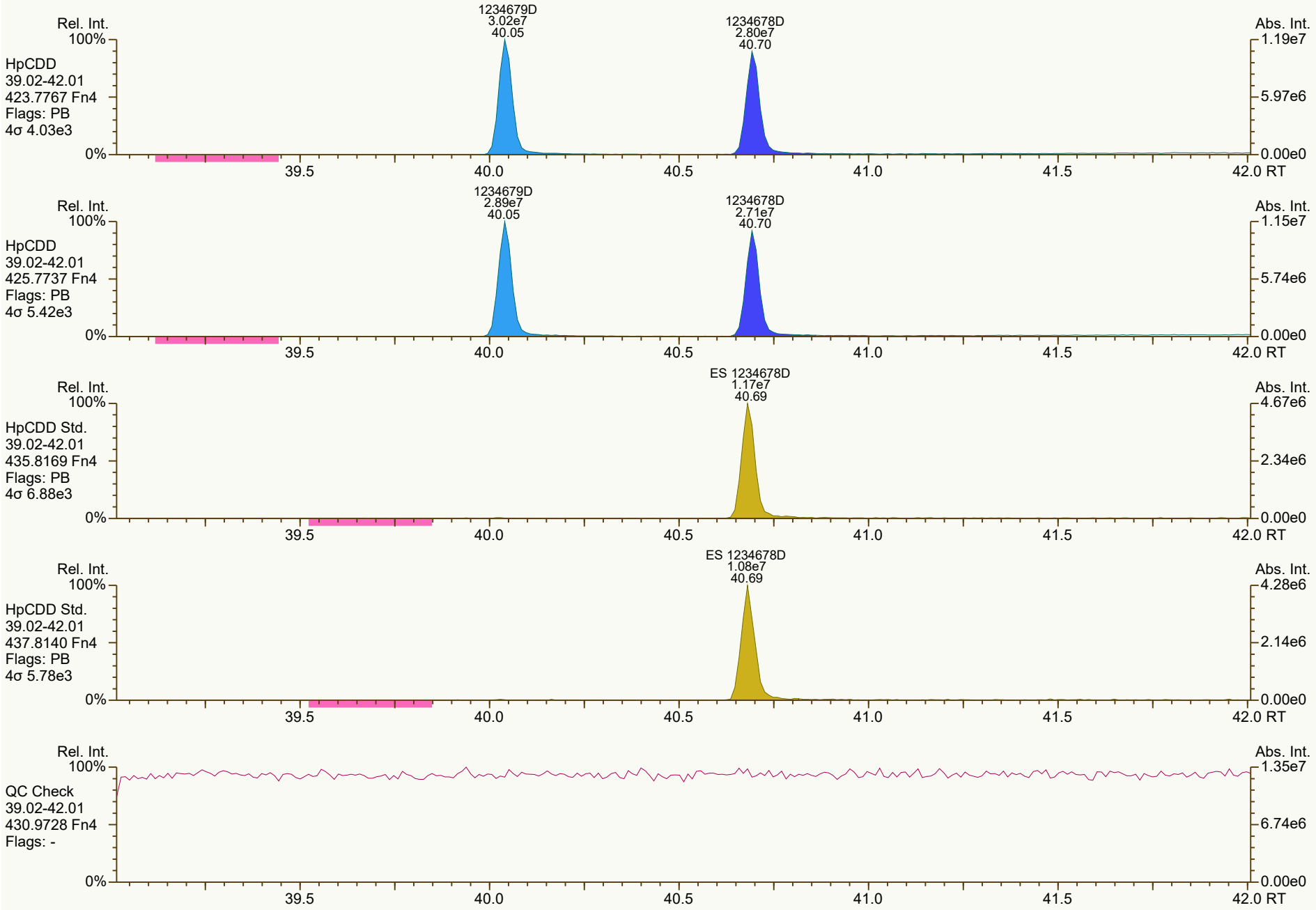
PKD: n/a Printed: 09-Dec-2021 10:50 Page 1 of 12

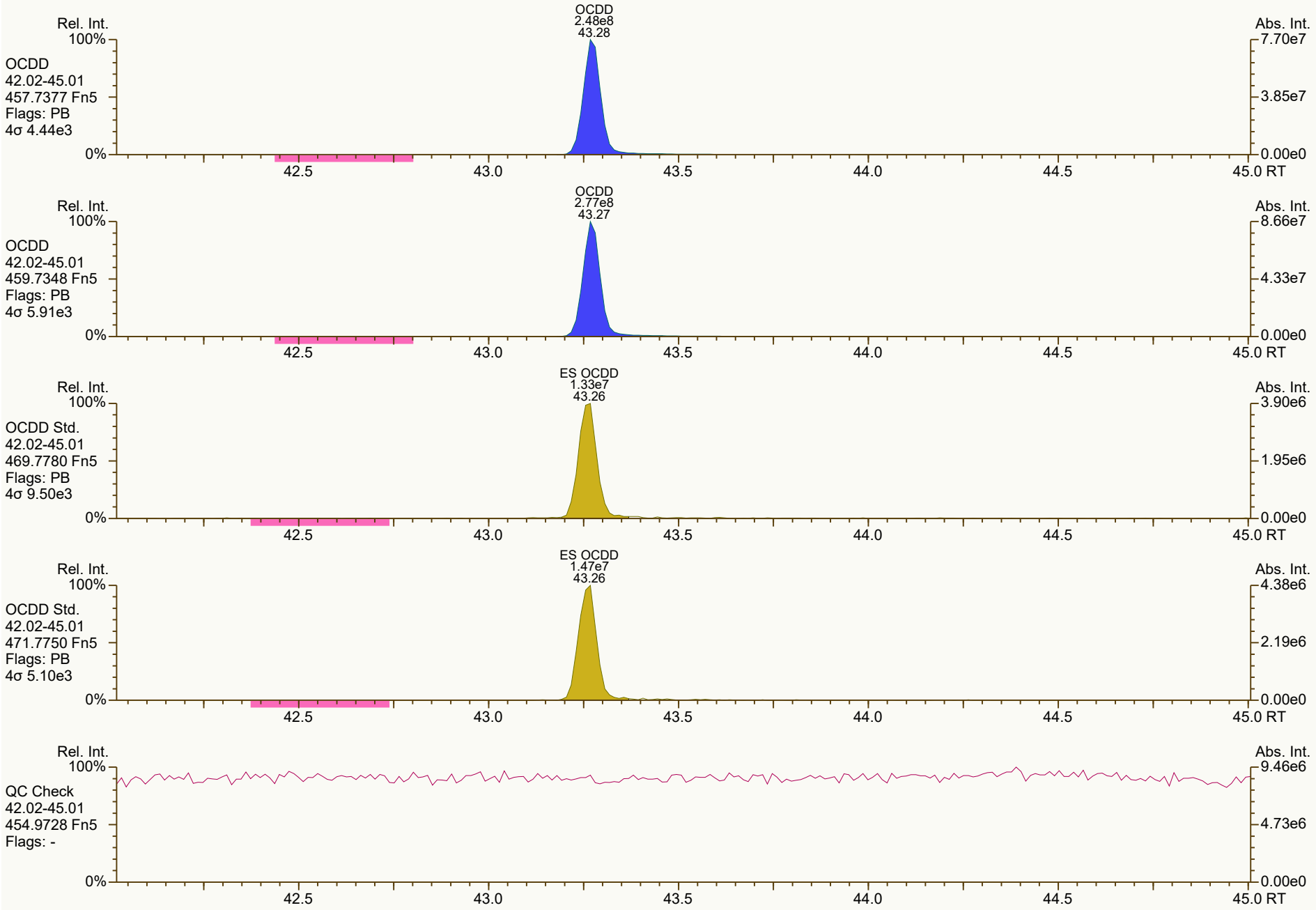


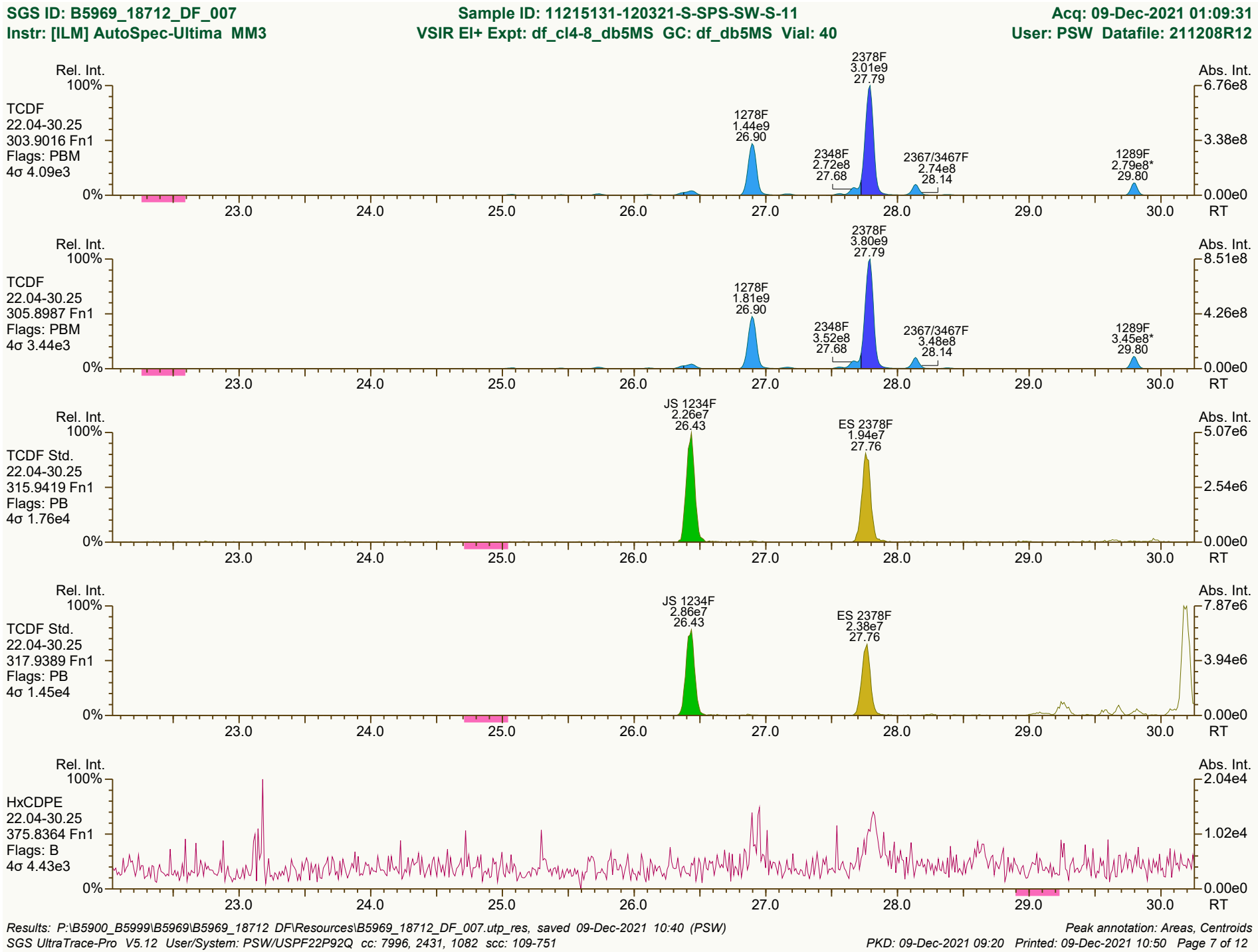
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_007.utp_res, saved 09-Dec-2021 10:40 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8976, 3368, 4017 scc: 109-751 *PKD: 09-Dec-2021 09:20 Printed: 09-Dec-2021 10:50 Page 2 of 12*


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 4.89e3
0%
12378D
1.08e7*
33.91
12469D
5.00e5
31.97
12368D
6.41e5
32.51
12367D
8.63e5*
34.04
Abs. Int.
2.80e6
1.40e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 4.63e3
0%
12378D
6.30e6*
33.90
12479/12468D
4.44e5
31.45
12469D
3.20e5
31.97
12368D
4.42e5
32.51
12478D
3.33e5
32.69
12367D
4.82e5*
34.03
Abs. Int.
1.77e6
8.84e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 7.08e3
0%
CS 12347D
1.58e7
33.40
ES 12378D
1.81e7
33.88
Abs. Int.
4.77e6
2.39e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 6.04e3
0%
CS 12347D
9.87e6
33.40
ES 12378D
1.10e7
33.88
Abs. Int.
2.93e6
1.46e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.03e6
2.01e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

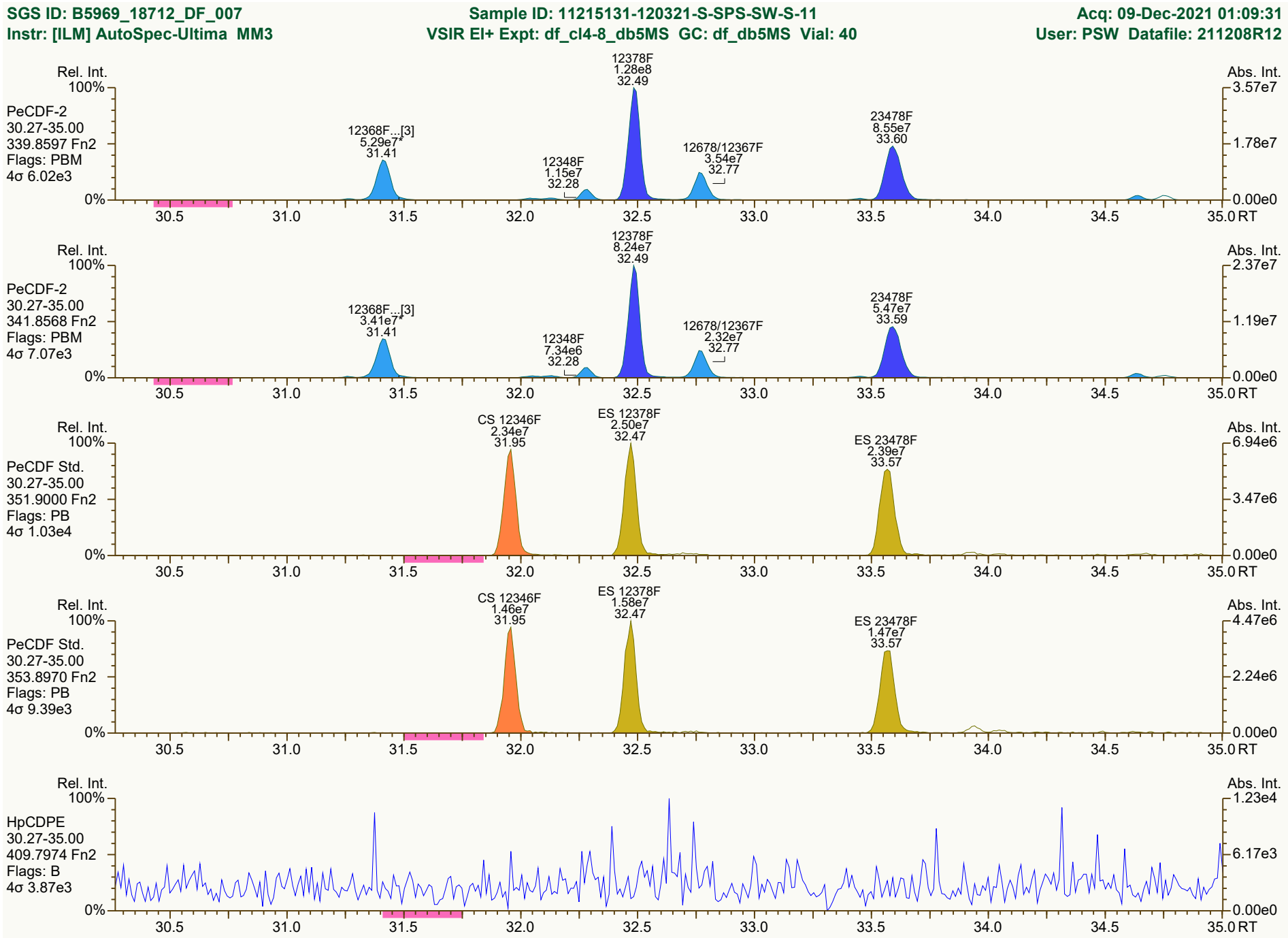

SGS ID: B5969_18712_DF_007
Sample ID: 11215131-120321-S-SPS-SW-S-11
Acq: 09-Dec-2021 01:09:31
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40
User: PSW Datafile: 211208R12
Rel. Int.
Abs. Int.
HxCDD
35.01-39.01
389.8156 Fn3
Flags: PB
4σ 1.07e4
124679/124689D
5.54e6
36.04
123679/123689D
3.45e6
36.96
123468D
5.04e5
36.67
123678D
1.16e6
37.86
123789D
5.03e5
38.14
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PB
4σ 1.03e4
124679/124689D
4.36e6
36.04
123679/123689D
2.72e6
36.96
123468D
3.87e5
36.67
123678D
8.91e5
37.86
123789D
4.30e5
38.14
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PB
4σ 9.29e3
ES 123678D
1.35e7
37.84
ES 123478D
1.41e7
37.73
JS 123467D
8.12e6
38.03
ES 123789D
1.62e7
38.13
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PB
4σ 5.09e3
ES 123678D
1.07e7
37.84
ES 123478D
1.07e7
37.73
JS 123467D
6.43e6
38.03
ES 123789D
1.25e7
38.13
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_007.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5388, 0163 scc: 109-751
PKD: 09-Dec-2021 09:20 Printed: 09-Dec-2021 10:50 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 4.03e3
1234679D
3.02e7
40.05
1234678D
2.80e7
40.70
Abs. Int.
1.19e7
5.97e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 5.42e3
1234679D
2.89e7
40.05
1234678D
2.71e7
40.70
Abs. Int.
1.15e7
5.74e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.88e3
ES 1234678D
1.17e7
40.69
Abs. Int.
4.67e6
2.34e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.78e3
ES 1234678D
1.08e7
40.69
Abs. Int.
4.28e6
2.14e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.35e7
6.74e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

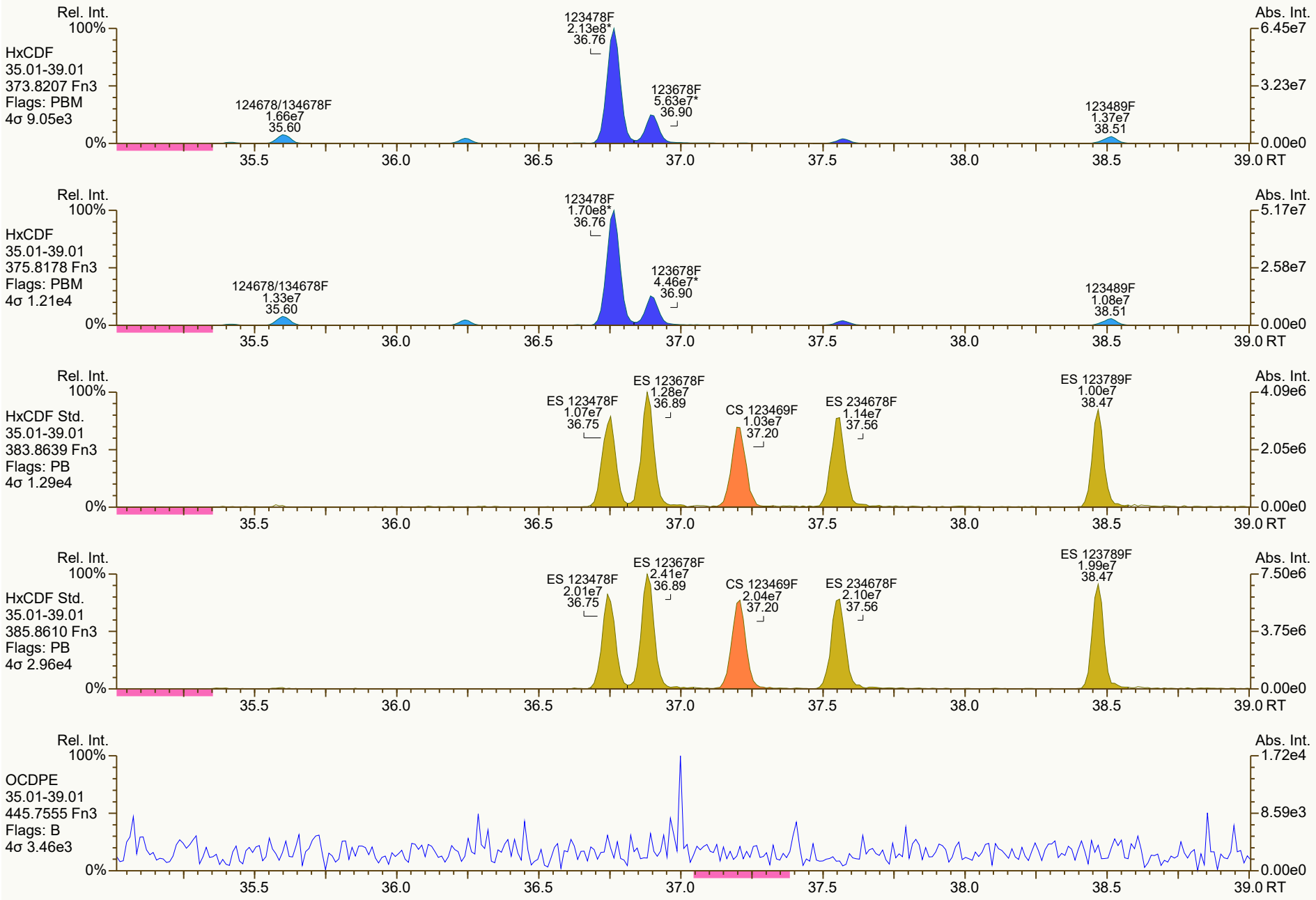

Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 4.44e3
0%
OCDD
2.48e8
43.28
Abs. Int.
7.70e7
3.85e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 5.91e3
0%
OCDD
2.77e8
43.27
Abs. Int.
8.66e7
4.33e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 9.50e3
0%
ES OCDD
1.33e7
43.26
Abs. Int.
3.90e6
1.95e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 5.10e3
0%
ES OCDD
1.47e7
43.26
Abs. Int.
4.38e6
2.19e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.46e6
4.73e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

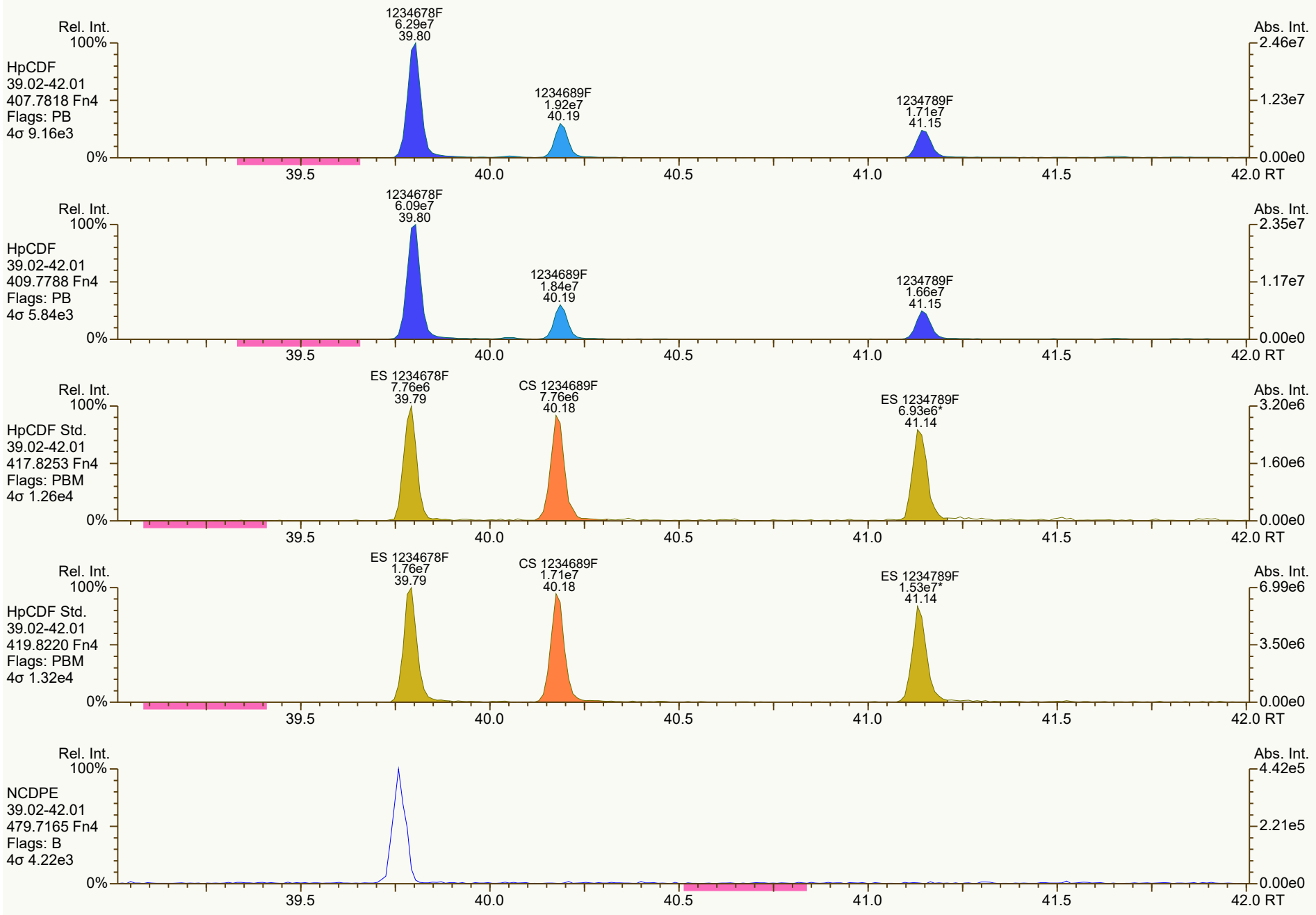

SGS ID: B5969_18712_DF_007
Sample ID: 11215131-120321-S-SPS-SW-S-11
Acq: 09-Dec-2021 01:09:31
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40
User: PSW Datafile: 211208R12
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 4.09e3
2378F
3.01e9
27.79
1278F
1.44e9
26.90
2348F
2.72e8
27.68
2367/3467F
2.74e8
28.14
1289F
2.79e8*
29.80
6.76e8
3.38e8
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.44e3
2378F
3.80e9
27.79
1278F
1.81e9
26.90
2348F
3.52e8
27.68
2367/3467F
3.48e8
28.14
1289F
3.45e8*
29.80
8.51e8
4.26e8
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.76e4
JS 1234F
2.26e7
26.43
ES 2378F
1.94e7
27.76
5.07e6
2.54e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.45e4
JS 1234F
2.86e7
26.43
ES 2378F
2.38e7
27.76
7.87e6
3.94e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 4.43e3
2.04e4
1.02e4
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_007.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7996, 2431, 1082 scc: 109-751
PKD: 09-Dec-2021 09:20 Printed: 09-Dec-2021 10:50 Page 7 of 12

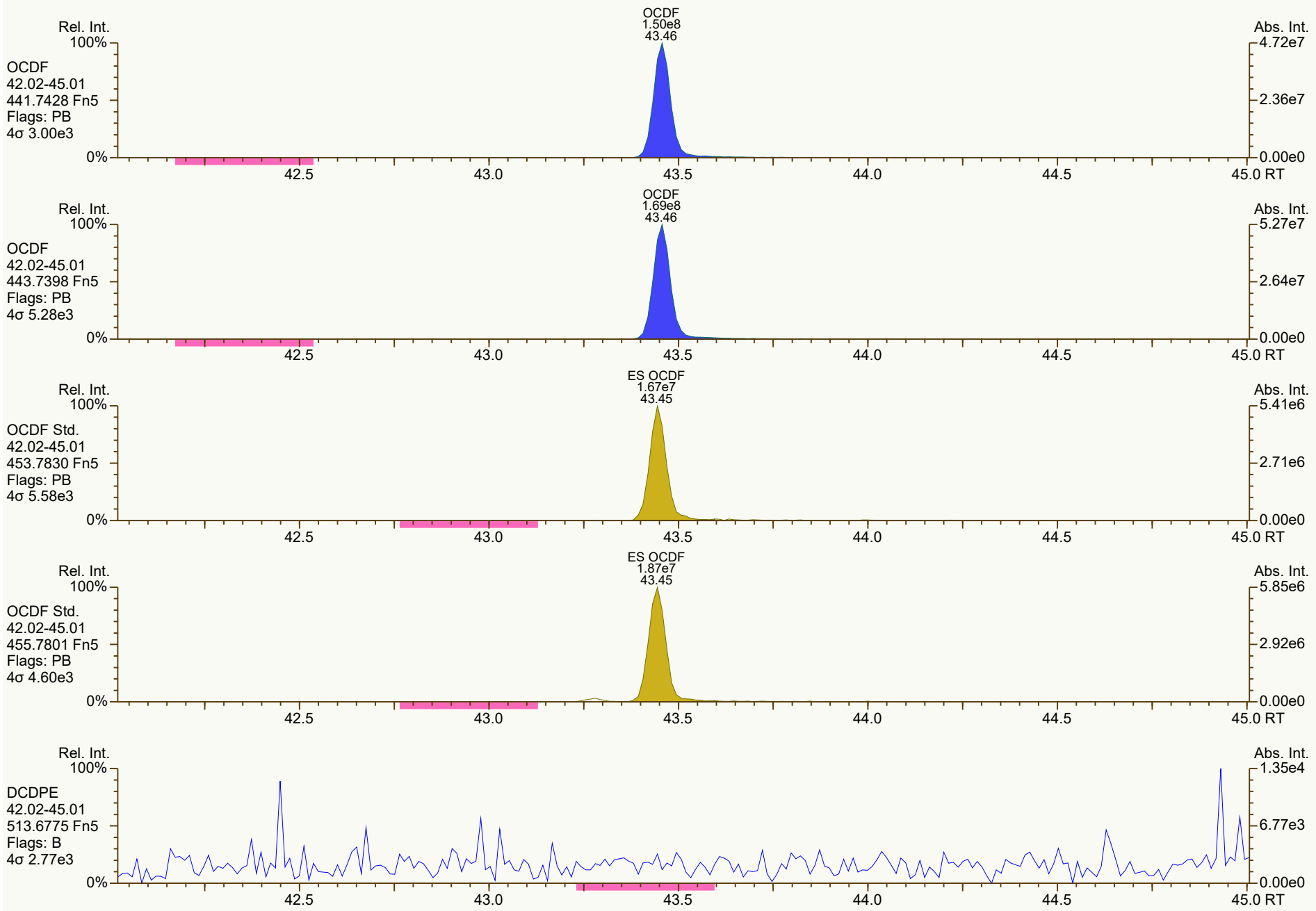

Rel. Int.
100%
0%
Abs. Int.
1.21e6
6.05e5
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
13468/12468F
4.29e6
29.75
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 4.46e3
13468/12468F
2.60e6
29.75
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 4.64e3
Abs. Int.
6.83e5
3.42e5
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
Abs. Int.
1.14e7
5.70e6



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_007.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8026, 4764, 9666 scc: 109-751
PKD: 09-Dec-2021 09:20 Printed: 09-Dec-2021 10:50 Page 9 of 12


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 9.05e3
0%
123478F
2.13e8*
36.76
123678F
5.63e7*
36.90
124678/134678F
1.66e7
35.60
123489F
1.37e7
38.51
Abs. Int.
6.45e7
3.23e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 1.21e4
0%
123478F
1.70e8*
36.76
123678F
4.46e7*
36.90
124678/134678F
1.33e7
35.60
123489F
1.08e7
38.51
Abs. Int.
5.17e7
2.58e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 1.29e4
0%
ES 123478F
1.07e7
36.75
ES 123678F
1.28e7
36.89
CS 123469F
1.03e7
37.20
ES 234678F
1.14e7
37.56
ES 123789F
1.00e7
38.47
Abs. Int.
4.09e6
2.05e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 2.96e4
0%
ES 123478F
2.01e7
36.75
ES 123678F
2.41e7
36.89
CS 123469F
2.04e7
37.20
ES 234678F
2.10e7
37.56
ES 123789F
1.99e7
38.47
Abs. Int.
7.50e6
3.75e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.46e3
0%
Abs. Int.
1.72e4
8.59e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 9.16e3
1234678F
6.29e7
39.80
1234689F
1.92e7
40.19
1234789F
1.71e7
41.15
Abs. Int.
2.46e7
1.23e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 5.84e3
1234678F
6.09e7
39.80
1234689F
1.84e7
40.19
1234789F
1.66e7
41.15
Abs. Int.
2.35e7
1.17e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 1.26e4
ES 1234678F
7.76e6
39.79
CS 1234689F
7.76e6
40.18
ES 1234789F
6.93e6*
41.14
Abs. Int.
3.20e6
1.60e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 1.32e4
ES 1234678F
1.76e7
39.79
CS 1234689F
1.71e7
40.18
ES 1234789F
1.53e7*
41.14
Abs. Int.
6.99e6
3.50e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.22e3
Abs. Int.
4.42e5
2.21e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDF
1.50e8
43.46
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 3.00e3
0%
Abs. Int.
4.72e7
2.36e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.69e8
43.46
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 5.28e3
0%
Abs. Int.
5.27e7
2.64e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.67e7
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 5.58e3
0%
Abs. Int.
5.41e6
2.71e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.87e7
43.45
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 4.60e3
0%
Abs. Int.
5.85e6
2.92e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 2.77e3
0%
Abs. Int.
1.35e4
6.77e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5969_18712_DF_008 **Acq'd:** 09 Dec 2021 01:57 PSW **Wt/Vol:** 15.67 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-10 **UTP:** 09-Dec-2021 10:40:20 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 803-681-WVS

Datafile: 211208R13 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62	E	1.0008	1.0008	0	5.77E+08	0.79	Y	1.34	2,000	11670.381	0.369
12378-PeCDD	33.89		1.0004	1.0006	+0.4	4.91E+06	1.70	Y	1.06	23.2	9188.107	0.379
123478-HxCDD	37.74	J EMPC	1.0004	1.0004	0	2.66E+05	1.44	N	1.06	1.56	13640.702	0.652
123678-HxCDD	37.85		1.0034	1.0033	-0.2	1.16E+06	1.26	Y	1.08	6.66	13640.702	0.628
123789-HxCDD	38.14		1.0111	1.0110	-0.2	7.54E+05	1.29	Y	1.02	3.92	13640.702	0.564
1234678-HpCDD	40.70		1.0004	1.0004	0	3.42E+07	1.04	Y	0.97	247	11153.251	0.485
OCDD	43.27	E	1.0003	1.0003	0	5.51E+08	0.89	Y	1.07	6,550	13269.853	1.23
2378-TCDF	27.77	E	1.0007	1.0008	+0.2	2.18E+09	0.79	Y	0.96	7,240	15926.238	0.565
12378-PeCDF	32.46		1.0006	1.0005	-0.2	1.01E+08	1.55	Y	0.95	386	15608.291	0.512
23478-PeCDF	33.57		1.0005	1.0008	+0.6	6.19E+07	1.59	Y	0.94	245	15608.291	0.607
123478-HxCDF	36.75		1.0004	1.0005	+0.2	1.64E+08	1.25	Y	1.23	642	35312.29	1.11
123678-HxCDF	36.89		1.0005	1.0004	-0.2	4.28E+07	1.23	Y	1.13	151	35312.29	0.996
234678-HxCDF	37.56		1.0005	1.0005	0	7.61E+06	1.24	Y	1.15	31.3	35312.29	1.32
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	35312.29	1.12
1234678-HpCDF	39.80		1.0003	1.0003	0	4.48E+07	1.03	Y	1.36	199	14992.397	0.405
1234789-HpCDF	41.15		1.0004	1.0003	-0.2	1.30E+07	1.04	Y	1.30	74	14992.397	0.58
OCDF	43.46		1.0002	1.0003	+0.3	1.03E+08	0.90	Y	1.03	1,040	11806.387	0.935

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.59	1.0233	1.0228	-0.9	2.73E+07	0.72	Y	1.03	84.4
ES 12378-PeCDD	33.87	1.2118	1.2115	-0.6	2.54E+07	1.62	Y	1.03	78.5
ES 123478-HxCDD	37.72	0.9921	0.9921	0	2.06E+07	1.27	Y	0.99	94.9
ES 123678-HxCDD	37.84	0.9951	0.9951	0	2.06E+07	1.24	Y	0.97	97.2
ES 123789-HxCDD	38.12	1.0027	1.0025	-0.5	2.42E+07	1.26	Y	1.12	98.7
ES 1234678-HpCDD	40.69	1.0702	1.0700	-0.5	1.81E+07	1.07	Y	0.99	83.9
ES OCDD	43.26	1.1377	1.1377	0	2.01E+07	0.89	Y	0.78	59.2
ES 2378-TCDF	27.75	1.0505	1.0506	+0.2	3.99E+07	0.80	Y	1.08	86.4
ES 12378-PeCDF	32.45	1.2278	1.2284	+1.2	3.53E+07	1.54	Y	0.93	88.6
ES 23478-PeCDF	33.55	1.2691	1.2700	+1.8	3.44E+07	1.62	Y	0.92	87.5
ES 123478-HxCDF	36.73	0.9660	0.9661	+0.2	2.65E+07	0.54	Y	1.14	106
ES 123678-HxCDF	36.88	0.9698	0.9698	0	3.20E+07	0.52	Y	1.30	113
ES 234678-HxCDF	37.55	0.9875	0.9874	-0.2	2.70E+07	0.50	Y	1.20	103
ES 123789-HxCDF	38.47	1.0121	1.0117	-0.9	2.52E+07	0.53	Y	1.14	102
ES 1234678-HpCDF	39.79	1.0468	1.0465	-0.7	2.12E+07	0.45	Y	0.95	102
ES 1234789-HpCDF	41.14	1.0822	1.0819	-0.7	1.73E+07	0.44	Y	0.85	93.8
ES OCDF	43.45	1.1426	1.1426	0	2.48E+07	0.91	Y	0.93	61.5

Lab ID: B5969_18712_DF_008 **Acq'd:** 09 Dec 2021 01:57 PSW **Wt/Vol:** 15.67 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-10 **UTP:** 09-Dec-2021 10:40:20 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 803-681-WVS

Datafile: 211208R13 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.95		-	-	-	3.13E+07	0.83	Y	-	-
JS 1234-TCDF	26.41		-	-	-	4.26E+07	0.77	Y	-	-
JS 123467-HxCDD	38.02		-	-	-	1.09E+07	1.28	Y	-	-
CS 37Cl-2378-TCDD	28.62		1.0241	1.0237	-0.7	1.17E+07	n/a	-	1.31	71.1
CS 12347-PeCDD	33.38		1.1940	1.1941	+0.2	2.26E+07	1.62	Y	0.89	80.9
CS 12346-PeCDF	31.93		1.2080	1.2086	+1.1	3.38E+07	1.85	N	0.87	91.4
CS 123469-HxCDF	37.19		0.9781	0.9782	+0.2	2.63E+07	0.51	Y	1.09	111
CS 1234689-HpCDF	40.18		1.0569	1.0567	-0.5	2.00E+07	0.45	Y	0.86	106
~~SS 37Cl-2378-TCDD~~	~~28.62~~		~~1.0241~~	~~1.0237~~	~~-0.7~~	~~1.17E+07~~	~~n/a~~		~~1.26~~	~~84.0~~ Not used in this project.
~~SS 12347-PeCDD~~	~~33.38~~		~~1.1940~~	~~1.1941~~	~~+0.2~~	~~2.26E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~103~~ CL 09Dec21
~~SS 12346-PeCDF~~	~~31.93~~		~~1.2080~~	~~1.2086~~	~~+1.1~~	~~3.38E+07~~	~~1.85~~	~~N~~	~~0.93~~	~~103~~
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9782~~	~~+0.2~~	~~2.63E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~98~~
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0567~~	~~-0.5~~	~~2.00E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~103~~

Totals	Conc	EMPC
Total TCDD	2240	2260
Total PeCDD	31.9	37.4
Total HxCDD	69.9	72.9
Total HpCDD	550	550
Total Tetra-Octa Dioxins	9440	9470
Total TCDF	14,300	14300
Total PeCDF	968	970
Total HxCDF	968	968
Total HpCDF	369	369
Total Tetra-Octa Furans	17,600	17600
Total Tetra-Octa Dioxins & Furans	27000	27100

Lab ID: B5969_18712_DF_008 **Acq'd:** 09 Dec 2021 01:57 PSW **Wt/Vol:** 15.67 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-10 **UTP:** 09-Dec-2021 10:40:20 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 803-681-WVS

Datafile: 211208R13 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8758	0.8759	+0.2	7.05E+05	0.78	Y	1.34	2.45	11670.381	0.369
1379-TCDD	25.39	EMPC	0.8878	0.8881	+0.5	2.36E+05	0.61	N	1.34	0.821	11670.381	0.369
1369-TCDD	NotFnd		0.9025						1.34		11670.381	0.369
1469-TCDD	26.57		0.9291	0.9292	+0.2	8.35E+05	0.79	Y	1.34	2.9	11670.381	0.369
1247/1246/1248/1249-TCDD	26.81	EMPC	0.9374	0.9376	+0.3	9.53E+05	1.02	N	1.34	3.31	11670.381	0.369
1378-TCDD	26.99		0.9440	0.9438	-0.3	1.65E+06	0.80	Y	1.34	5.72	11670.381	0.369
1268-TCDD	27.19		0.9505	0.9511	+1.0	1.71E+05	0.88	Y	1.34	0.593	11670.381	0.369
1478-TCDD	27.43		0.9591	0.9594	+0.5	1.47E+06	0.76	Y	1.34	5.11	11670.381	0.369
1279-TCDD	NotFnd		0.9650						1.34		11670.381	0.369
1234/1269-TCDD	27.95	EMPC	0.9771	0.9774	+0.5	2.55E+05	0.99	N	1.34	0.885	11670.381	0.369
1236-TCDD	28.07	EMPC	0.9821	0.9818	-0.5	1.25E+05	1.31	N	1.34	0.435	11670.381	0.369
1237/1238-TCDD	28.32		0.9907	0.9906	-0.2	9.11E+06	0.84	Y	1.34	31.7	11670.381	0.369
1239-TCDD	NotFnd		0.9953						1.34		11670.381	0.369
2378-TCDD	**28.62**	E	**1.0008**	1.0008	**0**	5.77E+08	0.79	Y	**1.34**	**2,000**	**11670.381**	**0.369**
1278-TCDD	28.94		1.0118	1.0122	+0.7	5.35E+07	0.81	Y	1.34	186	11670.381	0.369
1267-TCDD	29.07	EMPC	1.0162	1.0168	+1.0	3.10E+06	1.02	N	1.34	10.8	11670.381	0.369
1289-TCDD	29.54	EMPC	1.0340	1.0332	-1.4	2.30E+06	1.16	N	1.34	7.99	11670.381	0.369
12479/12468-PeCDD	31.42	EMPC	0.9274	0.9278	+0.8	4.95E+05	1.86	N	1.06	2.34	9188.107	0.379
12469-PeCDD	31.95		0.9430	0.9433	+0.6	5.41E+05	1.70	Y	1.06	2.56	9188.107	0.379
12368-PeCDD	32.49		0.9591	0.9594	+0.6	5.36E+05	1.64	Y	1.06	2.54	9188.107	0.379
12478-PeCDD	32.68		0.9645	0.9648	+0.6	3.73E+05	1.67	Y	1.06	1.77	9188.107	0.379
12379-PeCDD	32.78	J	0.9676	0.9680	+0.8	2.30E+05	1.64	Y	1.06	1.09	9188.107	0.379
12369/12467/12489-PeCDD	33.04	J EMPC	0.9751	0.9756	+1.0	2.68E+05	1.89	N	1.06	1.27	9188.107	0.379
12346/12347-PeCDD	33.40	J	0.9860	0.9863	+0.6	1.51E+05	1.73	Y	1.06	0.714	9188.107	0.379
12378-PeCDD	33.89		**1.0004**	**1.0006**	**+0.4**	**4.91E+06**	**1.70**	**Y**	**1.06**	**23.2**	**9188.107**	**0.379**
12367-PeCDD	34.01	J EMPC	1.0034	1.0042	+1.6	2.56E+05	2.90	N	1.06	1.21	9188.107	0.379
12389-PeCDD	34.32	J EMPC	1.0133	1.0135	+0.4	1.31E+05	2.19	N	1.06	0.62	9188.107	0.379
124679/124689-HxCDD	36.02		0.9546	0.9549	+0.6	6.10E+06	1.29	Y	1.05	34	13640.702	0.612
123468-HxCDD	36.66		0.9718	0.9719	+0.2	6.15E+05	1.42	Y	1.05	3.43	13640.702	0.612
123679/123689-HxCDD	36.96		0.9795	0.9797	+0.4	3.66E+06	1.32	Y	1.05	20.4	13640.702	0.612
123469-HxCDD	37.09	J EMPC	0.9832	0.9832	0	2.47E+05	1.71	N	1.05	1.38	13640.702	0.612
123478-HxCDD	37.74	J EMPC	**1.0004**	**1.0004**	**0**	**2.66E+05**	**1.44**	**N**	1.06	**1.56**	**13640.702**	**0.652**
123678-HxCDD	37.85		**1.0034**	**1.0033**	**-0.2**	**1.16E+06**	**1.26**	**Y**	1.08	**6.66**	**13640.702**	**0.628**
123467-HxCDD	38.02	J	1.0083	1.0079	-0.9	2.83E+05	1.22	Y	1.05	1.57	13640.702	0.612
123789-HxCDD	38.14		**1.0111**	**1.0110**	**-0.2**	**7.54E+05**	**1.29**	**Y**	1.02	**3.92**	**13640.702**	**0.564**

Lab ID: B5969_18712_DF_008 **Acq'd:** 09 Dec 2021 01:57 PSW **Wt/Vol:** 15.67 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-10 **UTP:** 09-Dec-2021 10:40:20 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 803-681-WVS

Datafile: 211208R13 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

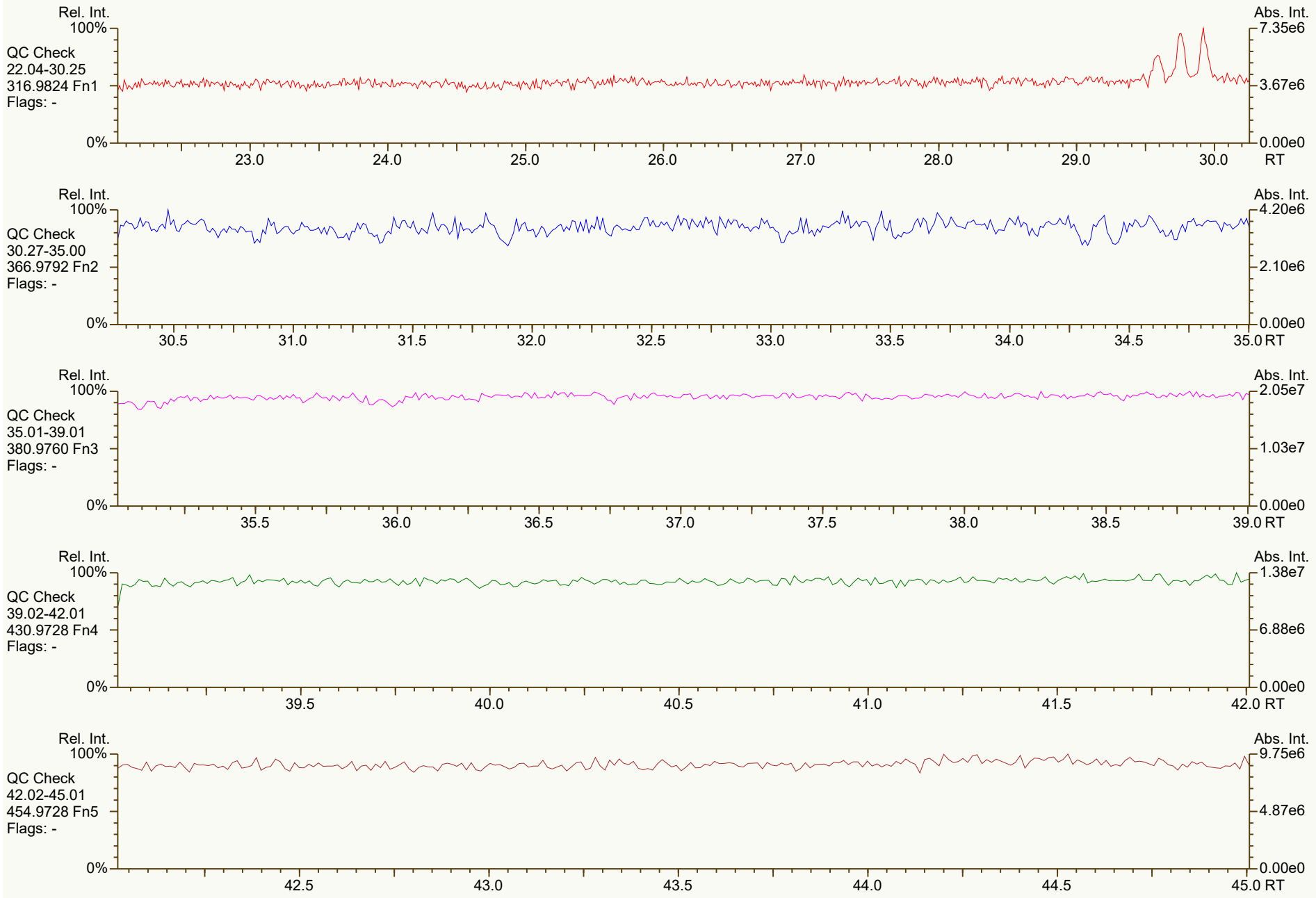
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	4.19E+07	1.04	Y	0.97	303	11153.251	0.485
1234678-HpCDD	**40.70**		**1.0004**	**1.0004**	**0**	**3.42E+07**	**1.04**	**Y**	**0.97**	**247**	**11153.251**	**0.485**
OCDD	**43.27**	**E**	**1.0003**	**1.0003**	**0**	**5.51E+08**	**0.89**	**Y**	**1.07**	**6,550**	**13269.853**	**1.23**
OCDD-a	43.27	E	1.0001	1.0002	+0.3	3.33E+07	2.48	Y	0.07	6,420	14096.108	21.2
1368-TCDF	22.97		0.8284	0.8278	-0.8	4.25E+05	0.68	Y	0.96	1.42	15926.238	0.565
1468-TCDF	23.55		0.8487	0.8486	-0.1	2.82E+06	0.72	Y	0.96	9.39	15926.238	0.565
2468-TCDF	24.17		0.8709	0.8709	0	2.49E+06	0.75	Y	0.96	8.28	15926.238	0.565
1346/1246-TCDF	NotFnd		0.8828						0.96		15926.238	0.565
1347/1378/1247-TCDF	24.69		0.8886	0.8898	+1.8	1.94E+07	0.78	Y	0.96	64.5	15926.238	0.565
1348-TCDF	24.92		0.8980	0.8978	-0.3	4.68E+06	0.78	Y	0.96	15.6	15926.238	0.565
1248/1367/1379-TCDF	25.03		0.9027	0.9018	-1.4	7.91E+07	0.80	Y	0.96	263	15926.238	0.565
1268-TCDF	25.42		0.9159	0.9159	0	2.98E+07	0.79	Y	0.96	99.1	15926.238	0.565
1467-TCDF	25.55		0.9206	0.9206	0	5.08E+06	0.77	Y	0.96	16.9	15926.238	0.565
1478-TCDF	25.72		0.9266	0.9267	+0.2	7.90E+07	0.80	Y	0.96	263	15926.238	0.565
1369/1237-TCDF	26.09		0.9396	0.9401	+0.8	2.07E+07	0.81	Y	0.96	69	15926.238	0.565
2467-TCDF	26.20		0.9440	0.9439	-0.2	2.96E+06	0.75	Y	0.96	9.85	15926.238	0.565
2368-TCDF	26.34		0.9496	0.9491	-0.8	4.57E+07	0.77	Y	0.96	152	15926.238	0.565
1238/1234/1678/1469/1236-TCDF	26.42		0.9530	0.9520	-1.6	1.24E+08	0.80	Y	0.96	414	15926.238	0.565
1278-TCDF	26.89	E	0.9689	0.9688	-0.2	1.04E+09	0.79	Y	0.96	3,450	15926.238	0.565
1349-TCDF	NotFnd		0.9732						0.96		15926.238	0.565
1267-TCDF	27.16		0.9786	0.9785	-0.2	5.27E+07	0.78	Y	0.96	175	15926.238	0.565
2346/1249-TCDF	27.34		0.9849	0.9852	+0.5	8.44E+06	0.83	Y	0.96	28.1	15926.238	0.565
2347/1279-TCDF	27.54		0.9927	0.9924	-0.5	2.31E+07	0.78	Y	0.96	76.8	15926.238	0.565
2348-TCDF	27.66		0.9967	0.9966	-0.2	1.78E+08	0.78	Y	0.96	593	15926.238	0.565
2378-TCDF	**27.77**	E	**1.0007**	**1.0008**	**+0.2**	**2.18E+09**	**0.79**	**Y**	**0.96**	**7,240**	**15926.238**	**0.565**
2367/3467-TCDF	28.12		1.0136	1.0133	-0.5	1.78E+08	0.79	Y	0.96	594	15926.238	0.565
1269-TCDF	28.37		1.0223	1.0222	-0.2	3.33E+07	0.78	Y	0.96	111	15926.238	0.565
1239-TCDF	NotFnd		1.0313						0.96		15926.238	0.565
1289-TCDF	29.76		1.0711	1.0724	+2.3	1.80E+08	0.80	Y	0.96	598	15926.238	0.565
13468/12468-PeCDF	29.71		0.9147	0.9155	+1.4	4.06E+06	1.57	Y	0.94	15.8	9327.665	0.334
13678/13467/12467-PeCDF	31.22		0.9616	0.9623	+1.3	9.86E+05	1.57	Y	0.94	3.83	15608.291	0.559
12368/13478/12478-PeCDF	31.39		0.9663	0.9673	+1.9	3.95E+07	1.55	Y	0.94	153	15608.291	0.559
14678-PeCDF	31.49		0.9695	0.9705	+1.9	7.35E+05	1.63	Y	0.94	2.86	15608.291	0.559
13479-PeCDF	31.59	J	0.9727	0.9736	+1.7	2.20E+05	1.56	Y	0.94	0.855	15608.291	0.559
13469/12479-PeCDF	31.78	J EMPC	0.9799	0.9794	-1.0	3.05E+05	1.87	N	0.94	1.18	15608.291	0.559
12346-PeCDF	31.94	J EMPC	0.9839	0.9843	+0.8	2.04E+05	1.18	N	0.94	0.794	15608.291	0.559

Lab ID: B5969_18712_DF_008 **Acq'd:** 09 Dec 2021 01:57 PSW **Wt/Vol:** 15.67 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-10 **UTP:** 09-Dec-2021 10:40:20 PSW **J-level:** 0.319 pg/g **Split:** 1 **Checkcode:** 803-681-WVS

Datafile: 211208R13 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.02		0.9864	0.9870	+1.2	1.56E+06	1.51	Y	0.94	6.07	15608.291	0.559
12347-PeCDF	32.10		0.9892	0.9894	+0.4	1.43E+06	1.49	Y	0.94	5.56	15608.291	0.559
12348-PeCDF	32.26		0.9940	0.9942	+0.4	7.10E+06	1.52	Y	0.94	27.6	15608.291	0.559
12378-PeCDF	**32.46**		**1.0006**	**1.0005**	**-0.2**	**1.01E+08**	**1.55**	**Y**	**0.95**	**386**	**15608.291**	**0.512**
12678/12367-PeCDF	32.76		1.0088	1.0095	+1.4	2.69E+07	1.52	Y	0.94	105	15608.291	0.559
12379-PeCDF	NotFnd		1.0142						0.94		15608.291	0.559
12679-PeCDF	NotFnd		0.9931						0.94		15608.291	0.559
23467/12369-PeCDF	33.43		0.9966	0.9964	-0.4	1.03E+06	1.53	Y	0.94	4.01	15608.291	0.559
23478-PeCDF	**33.57**		**1.0005**	**1.0008**	**+0.6**	**6.19E+07**	**1.59**	**Y**	**0.94**	**245**	**15608.291**	**0.607**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		15608.291	0.559
12349-PeCDF	NotFnd		1.0100						0.94		15608.291	0.559
12389-PeCDF	34.62		1.0323	1.0319	-0.8	3.32E+06	1.65	Y	0.94	12.9	15608.291	0.559
123468-HxCDF	35.39		0.9631	0.9634	+0.6	1.72E+06	1.24	Y	1.16	6.82	35312.29	1.13
124678/134678-HxCDF	35.58		0.9686	0.9687	+0.2	1.33E+07	1.28	Y	1.16	52.9	35312.29	1.13
134679-HxCDF	NotFnd		0.9747						1.16		35312.29	1.13
124679-HxCDF	NotFnd		0.9800						1.16		35312.29	1.13
124689-HxCDF	36.22		0.9859	0.9861	+0.4	8.06E+06	1.26	Y	1.16	32	35312.29	1.13
123467-HxCDF	36.64		0.9972	0.9973	+0.2	7.48E+05	1.19	Y	1.16	2.97	35312.29	1.13
123478-HxCDF	**36.75**		**1.0004**	**1.0005**	**+0.2**	**1.64E+08**	**1.25**	**Y**	**1.23**	**642**	**35312.29**	**1.11**
123678-HxCDF	**36.89**		**1.0005**	**1.0004**	**-0.2**	**4.28E+07**	**1.23**	**Y**	**1.13**	**151**	**35312.29**	**0.996**
123479-HxCDF	NotFnd		1.0048						1.16		35312.29	1.13
123469-HxCDF	37.20		1.0089	1.0089	0	9.07E+05	1.25	Y	1.16	3.6	35312.29	1.13
123679-HxCDF	NotFnd		0.9943						1.16		35312.29	1.13
234678-HxCDF	**37.56**		**1.0005**	**1.0005**	**0**	**7.61E+06**	**1.24**	**Y**	**1.15**	**31.3**	**35312.29**	**1.32**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		35312.29	1.13
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**35312.29**	**1.12**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.51		1.0004	1.0010	+1.4	1.14E+07	1.22	Y	1.16	45.3	35312.29	1.13
1234678-HpCDF	**39.80**		**1.0003**	**1.0003**	**0**	**4.48E+07**	**1.03**	**Y**	**1.36**	**199**	**14992.397**	**0.405**
1234679-HpCDF	40.05		1.0065	1.0065	0	1.51E+06	1.07	Y	1.33	7.55	14992.397	0.483
1234689-HpCDF	40.19		1.0097	1.0100	+0.7	1.77E+07	1.03	Y	1.33	88.4	14992.397	0.483
1234789-HpCDF	**41.15**		**1.0004**	**1.0003**	**-0.2**	**1.30E+07**	**1.04**	**Y**	**1.30**	**74**	**14992.397**	**0.58**
OCDF	**43.46**		**1.0002**	**1.0003**	**+0.3**	**1.03E+08**	**0.90**	**Y**	**1.03**	**1,040**	**11806.387**	**0.935**
OCDF-a	43.45		1.0001	1.0002	+0.3	5.96E+06	2.57	Y	0.06	1,030	11313.007	15.5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22.04-30.25
316.9824 Fn1
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3.67e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.20e6
2.10e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
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1.03e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.38e7
6.88e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
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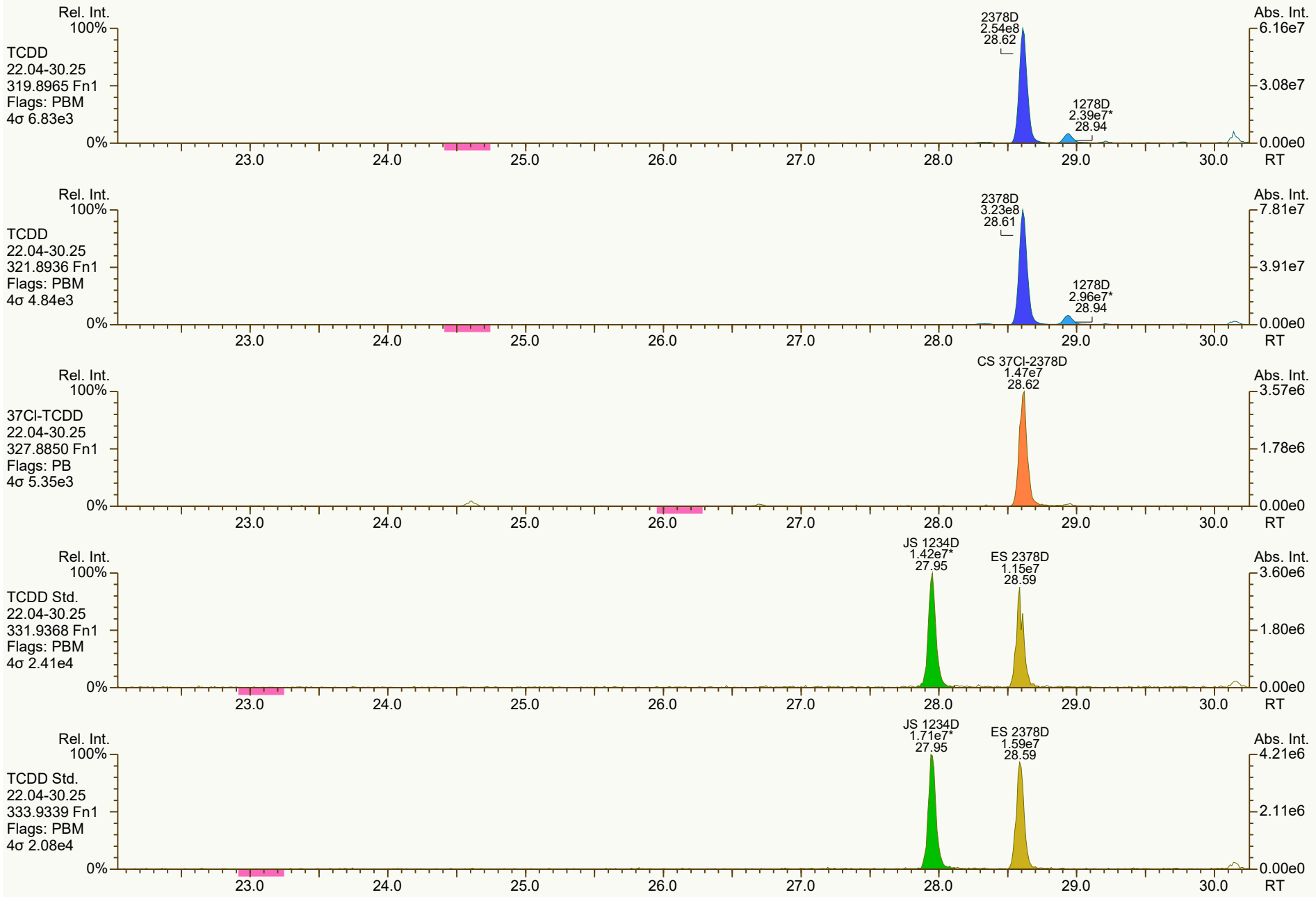
Abs. Int.
9.75e6
4.87e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT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100%
TCDD
22.04-30.25
319.8965 Fn1
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4σ 6.83e3
0%
2378D
2.54e8
28.62
1278D
2.39e7*
28.94
Abs. Int.
6.16e7
3.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 4.84e3
0%
2378D
3.23e8
28.61
1278D
2.96e7*
28.94
Abs. Int.
7.81e7
3.91e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 5.35e3
0%
CS 37Cl-2378D
1.47e7
28.62
Abs. Int.
3.57e6
1.78e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PBM
4σ 2.41e4
0%
JS 1234D
1.42e7*
27.95
ES 2378D
1.15e7
28.59
Abs. Int.
3.60e6
1.80e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PBM
4σ 2.08e4
0%
JS 1234D
1.71e7*
27.95
ES 2378D
1.59e7
28.59
Abs. Int.
4.21e6
2.11e6
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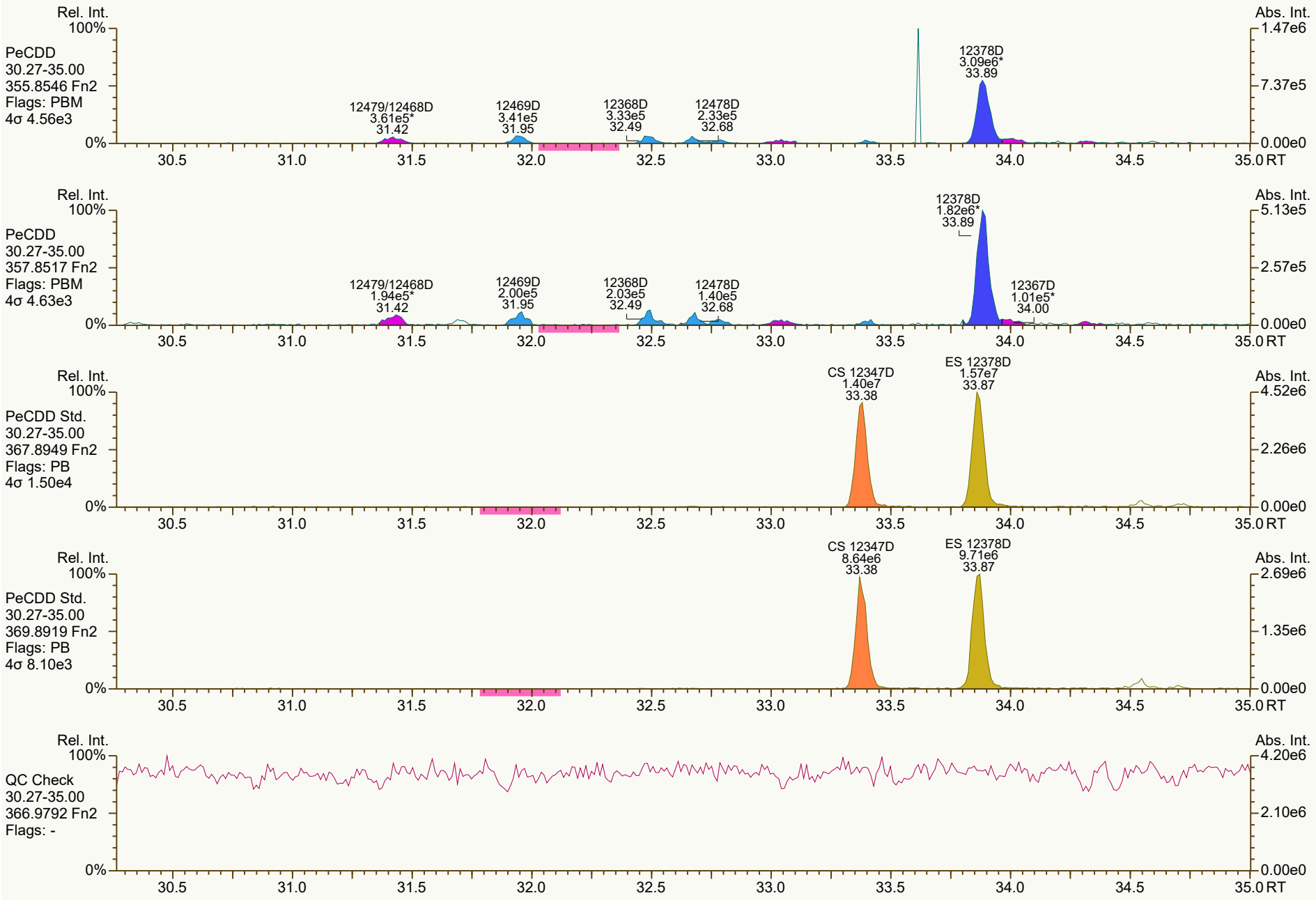
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
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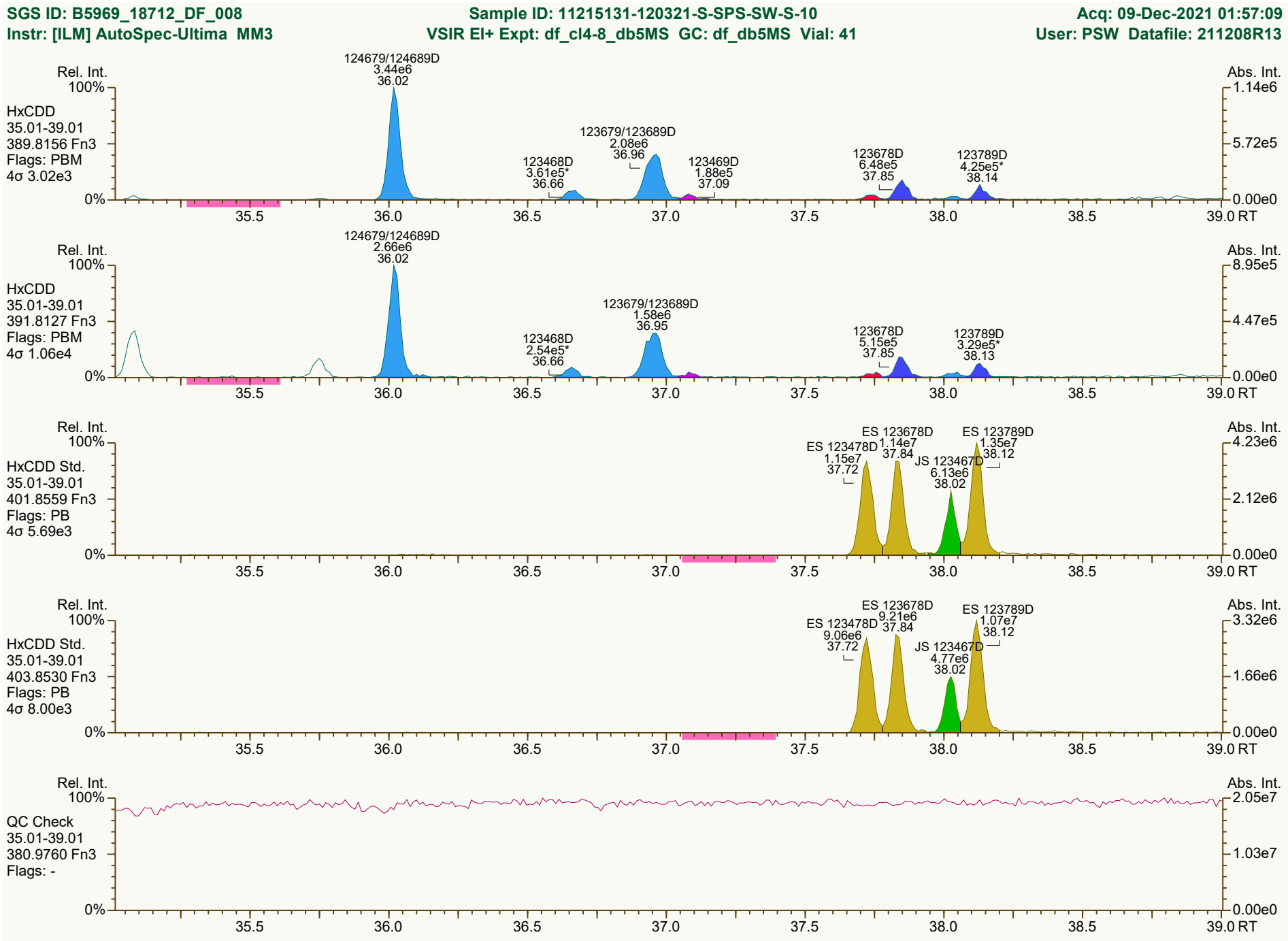
12479/12468D
3.61e5*
31.42
12469D
3.41e5
31.95
12368D
3.33e5
32.49
12478D
2.33e5
32.68
12378D
3.09e6*
33.89
0%
Abs. Int.
1.47e6
7.37e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 4.63e3
12479/12468D
1.94e5*
31.42
12469D
2.00e5
31.95
12368D
2.03e5
32.49
12478D
1.40e5
32.68
12378D
1.82e6*
33.89
12367D
1.01e5*
34.00
0%
Abs. Int.
5.13e5
2.57e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 1.50e4
CS 12347D
1.40e7
33.38
ES 12378D
1.57e7
33.87
0%
Abs. Int.
4.52e6
2.26e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 8.10e3
CS 12347D
8.64e6
33.38
ES 12378D
9.71e6
33.87
0%
Abs. Int.
2.69e6
1.35e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.20e6
2.10e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

SGS ID: B5969_18712_DF_008 | Sample ID: 11215131-120321-S-SPS-SW-S-10 | Acq: 09-Dec-2021 01:57:09
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41 | User: PSW Datafile: 211208R13



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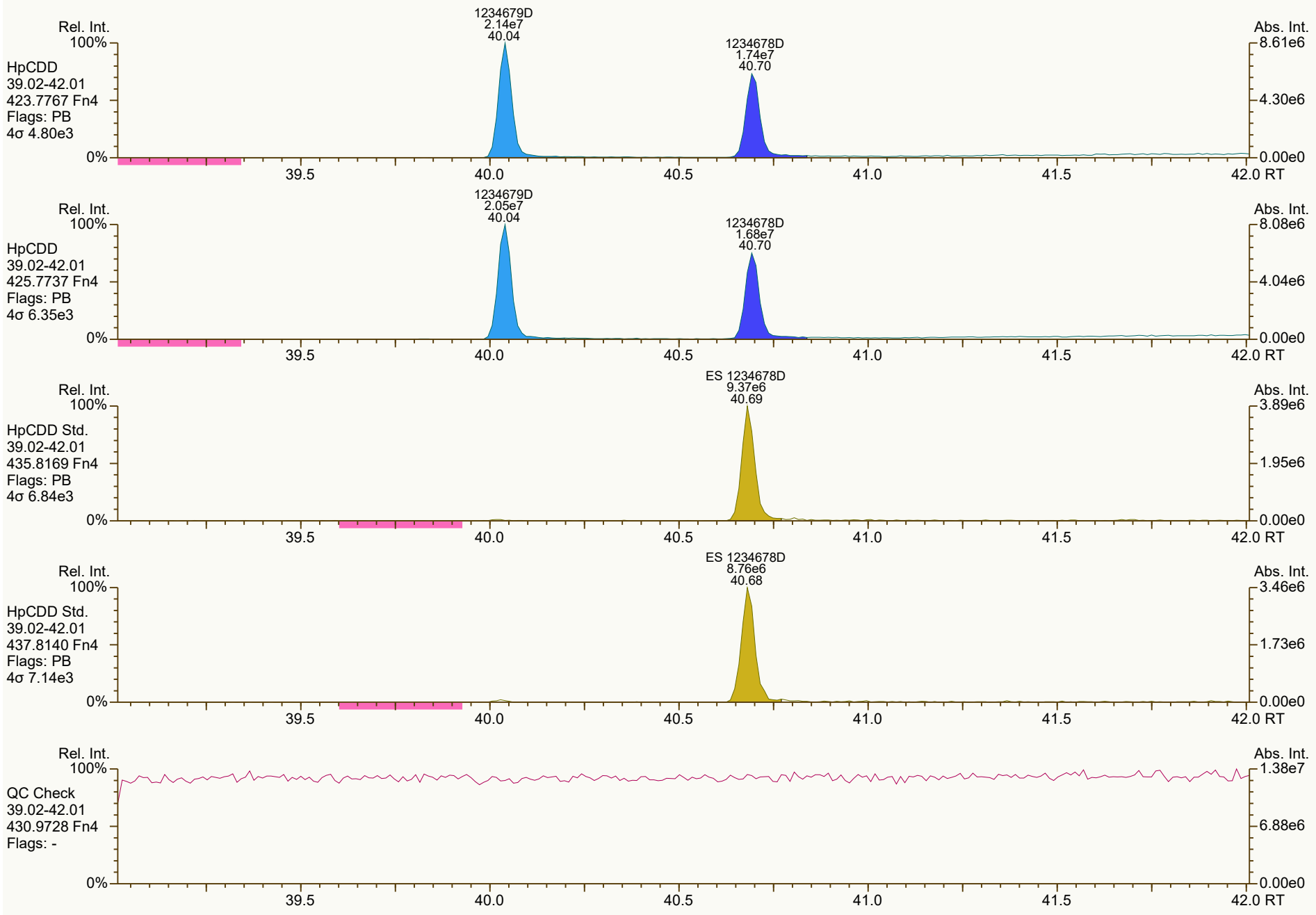
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4856, 9343 scc: 803-681 | PKD: 09-Dec-2021 09:24 Printed: 09-Dec-2021 10:50 Page 4 of 12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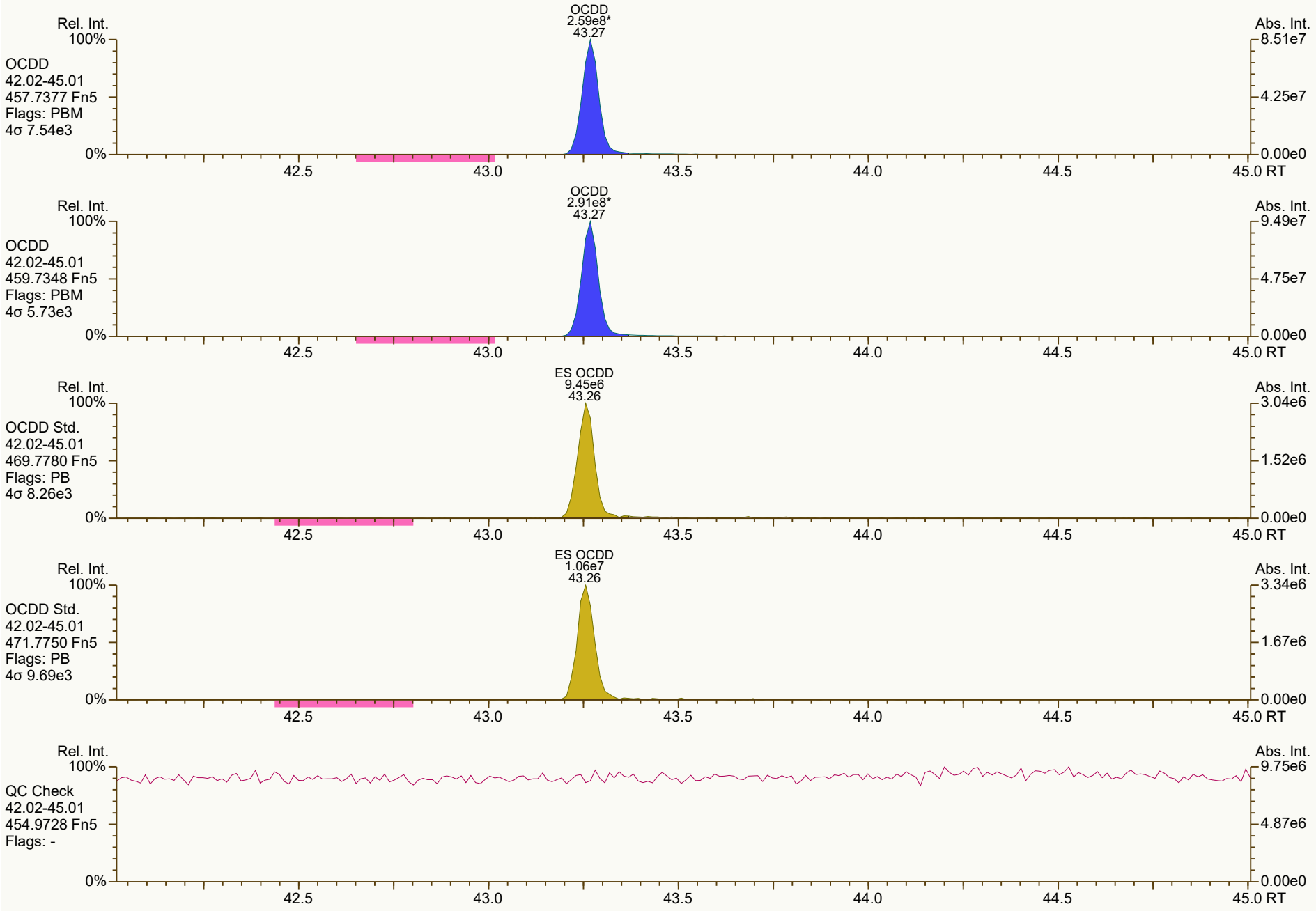
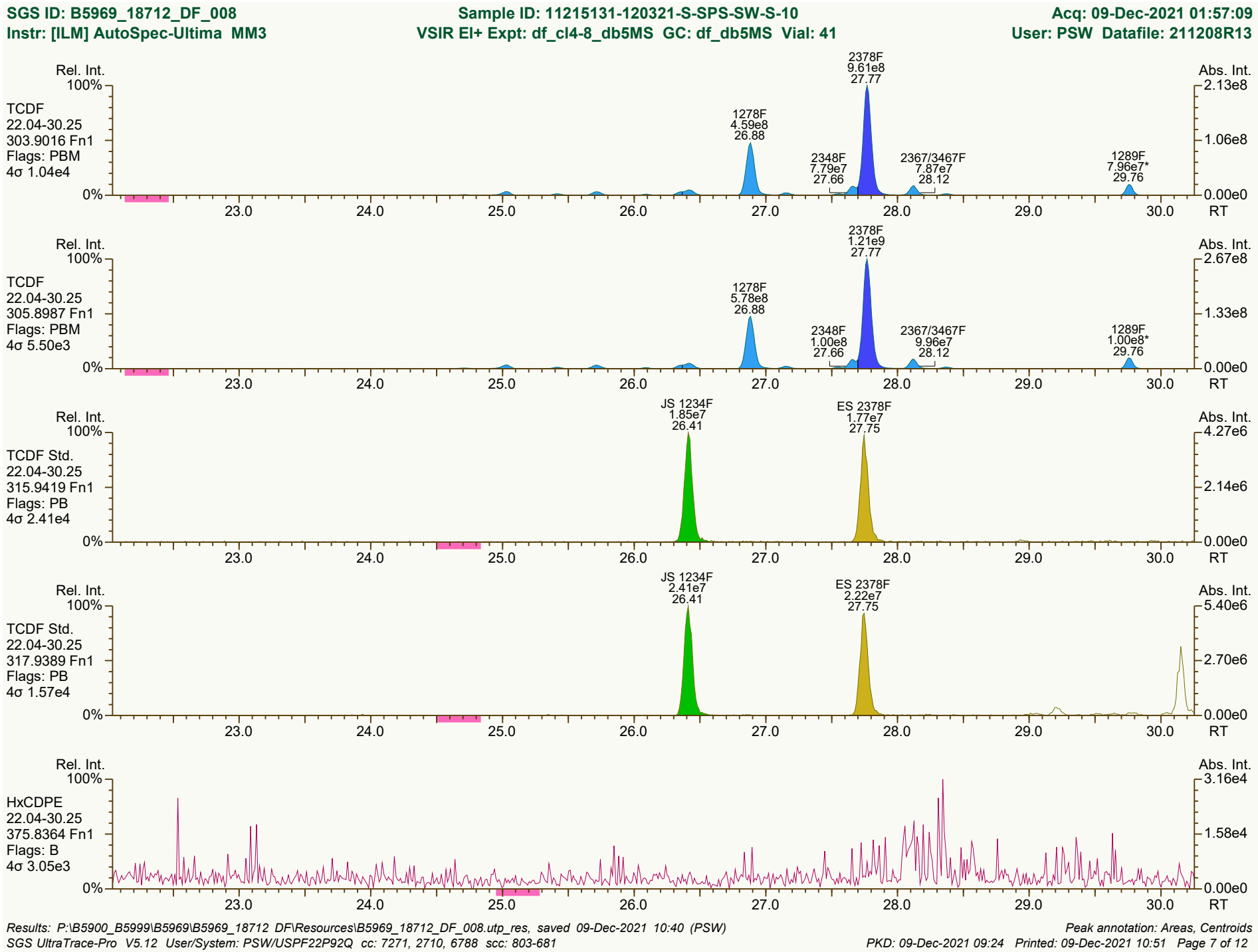
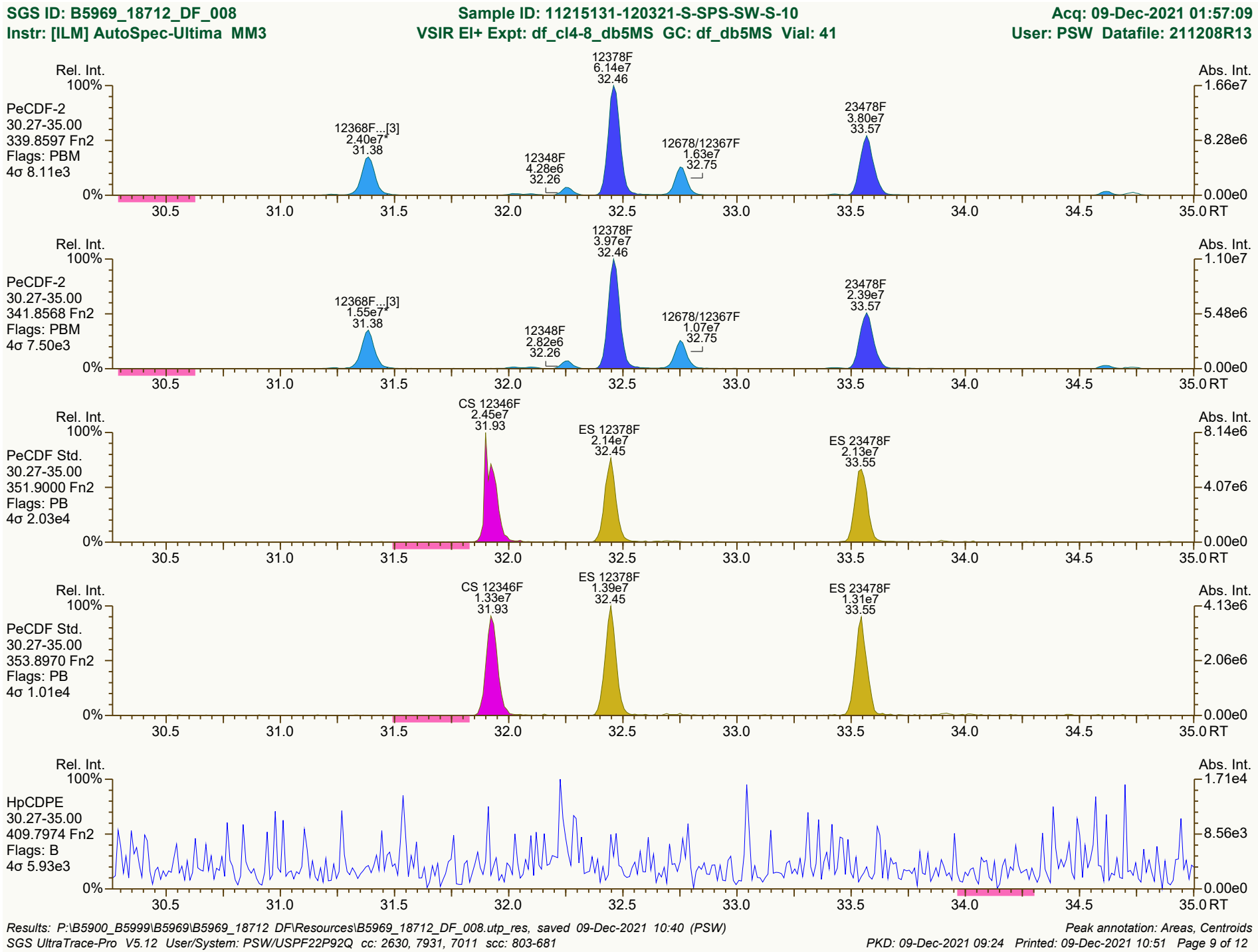
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 4.80e3
0%
1234679D
2.14e7
40.04
1234678D
1.74e7
40.70
Abs. Int.
8.61e6
4.30e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 6.35e3
0%
1234679D
2.05e7
40.04
1234678D
1.68e7
40.70
Abs. Int.
8.08e6
4.04e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.84e3
0%
ES 1234678D
9.37e6
40.69
Abs. Int.
3.89e6
1.95e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 7.14e3
0%
ES 1234678D
8.76e6
40.68
Abs. Int.
3.46e6
1.73e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.38e7
6.88e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
2.59e8*
43.27
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 7.54e3
0%
Abs. Int.
8.51e7
4.25e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.91e8*
43.27
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 5.73e3
9.49e7
4.75e7
ES OCDD
9.45e6
43.26
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 8.26e3
3.04e6
1.52e6
ES OCDD
1.06e7
43.26
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 9.69e3
3.34e6
1.67e6
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
9.75e6
4.87e6

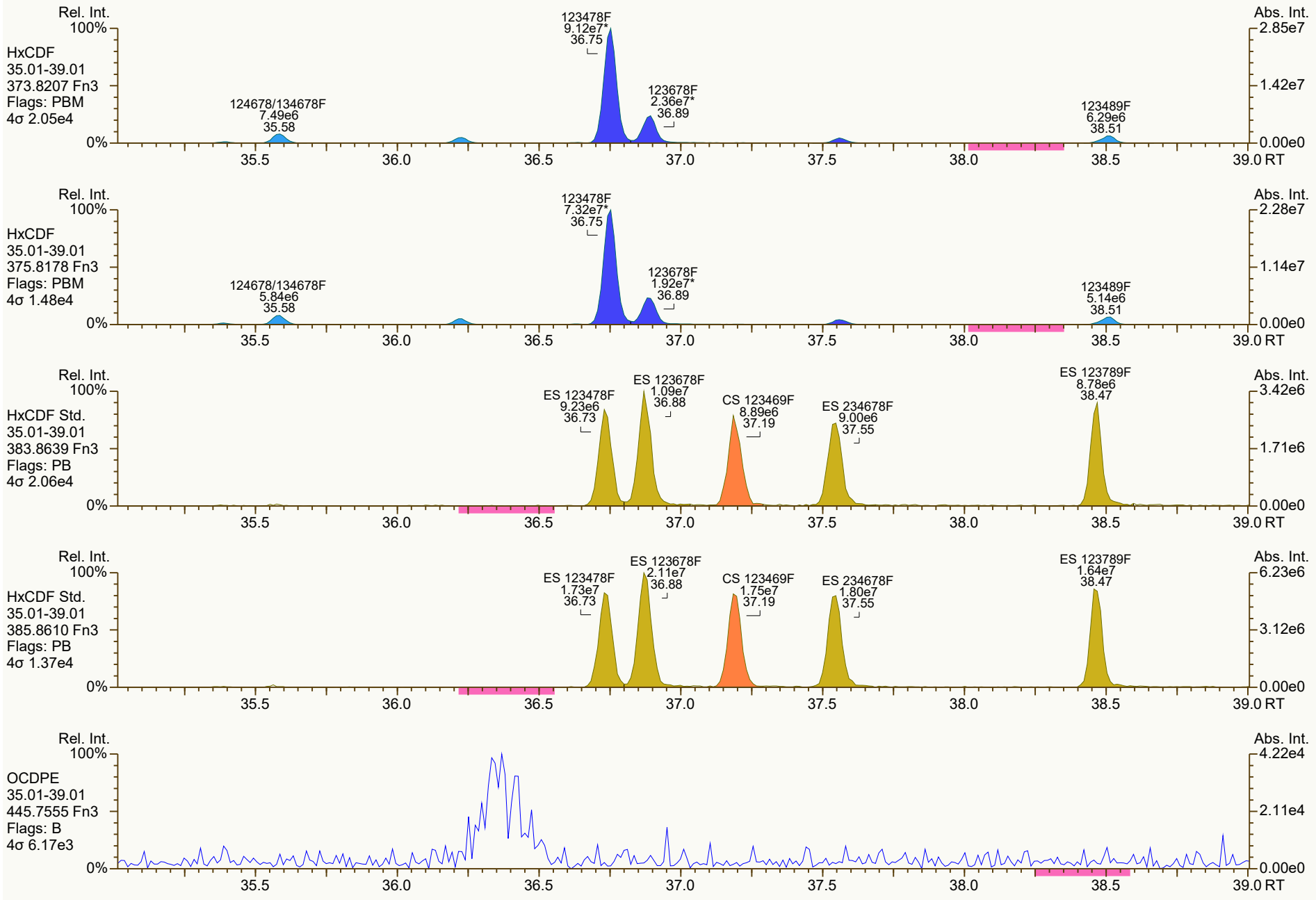

SGS ID: B5969_18712_DF_008
Sample ID: 11215131-120321-S-SPS-SW-S-10
Acq: 09-Dec-2021 01:57:09
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41
User: PSW Datafile: 211208R13
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 1.04e4
2378F
9.61e8
27.77
1278F
4.59e8
26.88
2348F
7.79e7
27.66
2367/3467F
7.87e7
28.12
1289F
7.96e7*
29.76
2.13e8
1.06e8
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 5.50e3
2378F
1.21e9
27.77
1278F
5.78e8
26.88
2348F
1.00e8
27.66
2367/3467F
9.96e7
28.12
1289F
1.00e8*
29.76
2.67e8
1.33e8
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 2.41e4
JS 1234F
1.85e7
26.41
ES 2378F
1.77e7
27.75
4.27e6
2.14e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.57e4
JS 1234F
2.41e7
26.41
ES 2378F
2.22e7
27.75
5.40e6
2.70e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.05e3
3.16e4
1.58e4
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_008.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7271, 2710, 6788 scc: 803-681
PKD: 09-Dec-2021 09:24 Printed: 09-Dec-2021 10:51 Page 7 of 12

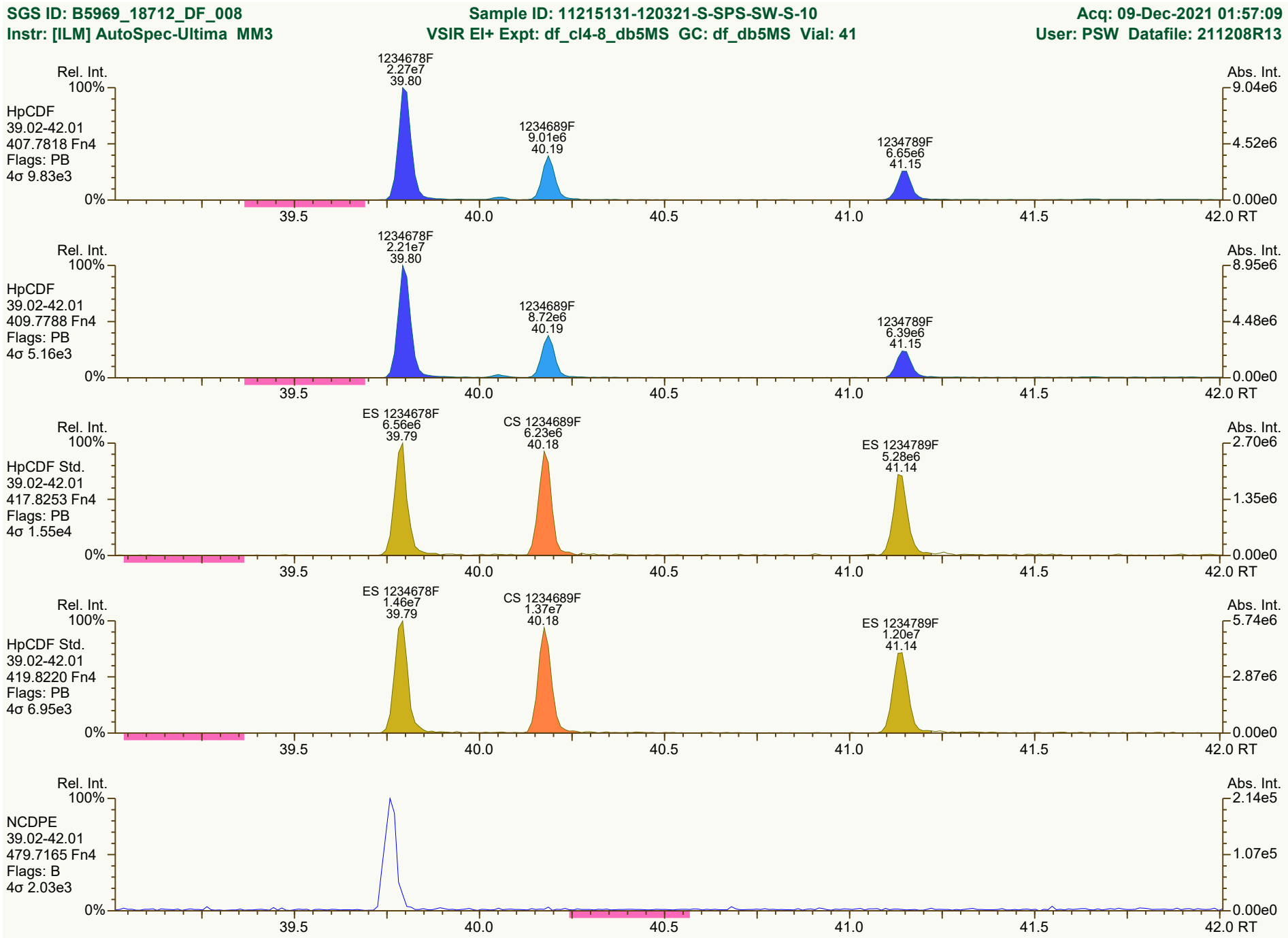

Rel. Int.
100%
0%
Abs. Int.
6.50e5
3.25e5
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
13468/12468F
2.48e6
29.71
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 5.38e3
13468/12468F
1.58e6
29.71
4.59e5
2.29e5
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 3.94e3
7.35e6
3.67e6
QC Check
22.04-30.25
316.9824 Fn1
Flags: -

SGS ID: B5969_18712_DF_008 | Sample ID: 11215131-120321-S-SPS-SW-S-10 | Acq: 09-Dec-2021 01:57:09
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41 | User: PSW Datafile: 211208R13



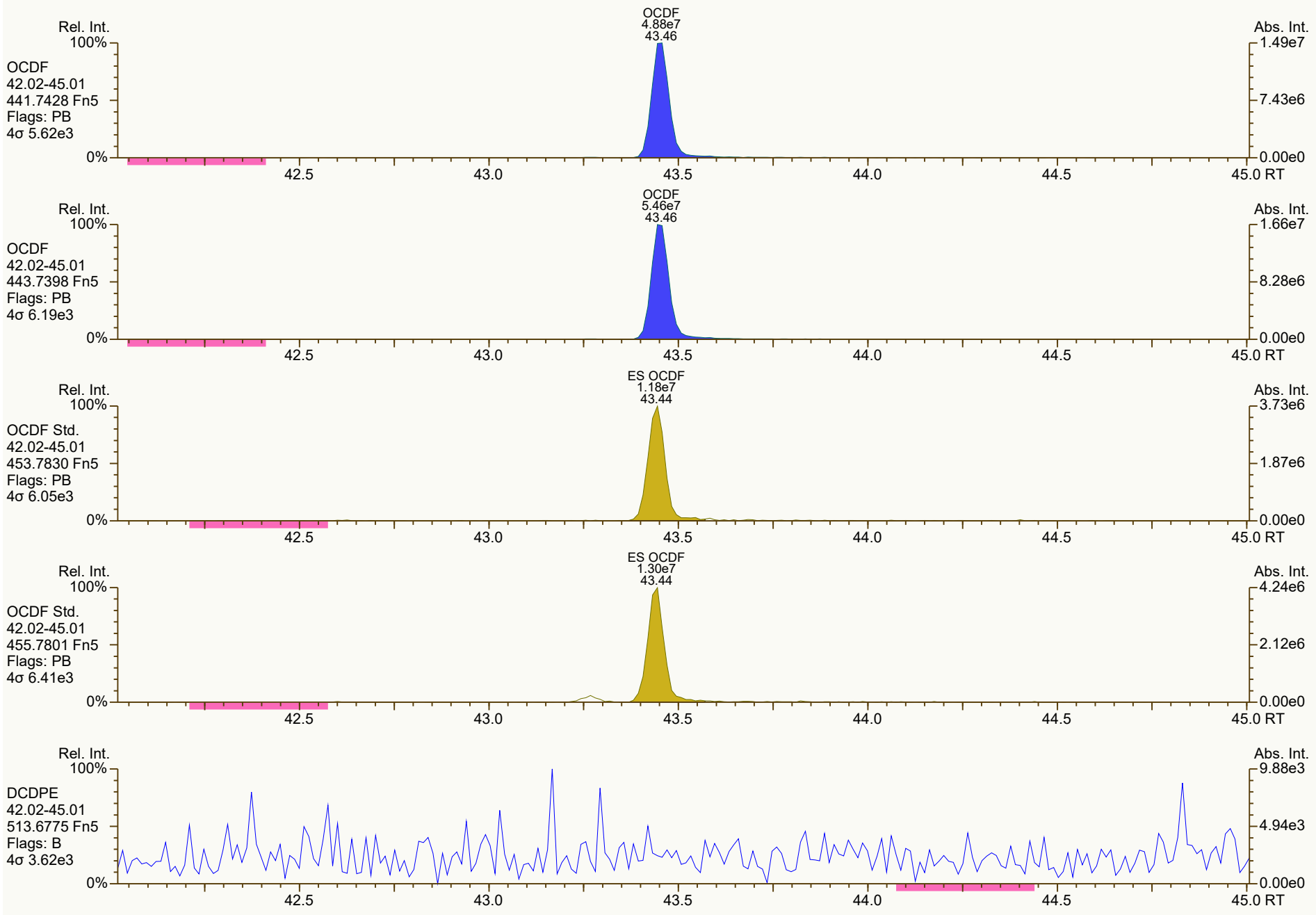
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_008.utp_res, saved 09-Dec-2021 10:40 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2630, 7931, 7011 scc: 803-681 | PKD: 09-Dec-2021 09:24 Printed: 09-Dec-2021 10:51 Page 9 of 12


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 2.05e4
123478F
9.12e7*
36.75
123678F
2.36e7*
36.89
124678/134678F
7.49e6
35.58
123489F
6.29e6
38.51
Abs. Int.
2.85e7
1.42e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 1.48e4
123478F
7.32e7*
36.75
123678F
1.92e7*
36.89
124678/134678F
5.84e6
35.58
123489F
5.14e6
38.51
2.28e7
1.14e7
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 2.06e4
ES 123478F
9.23e6
36.73
ES 123678F
1.09e7
36.88
CS 123469F
8.89e6
37.19
ES 234678F
9.00e6
37.55
ES 123789F
8.78e6
38.47
3.42e6
1.71e6
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 1.37e4
ES 123478F
1.73e7
36.73
ES 123678F
2.11e7
36.88
CS 123469F
1.75e7
37.19
ES 234678F
1.80e7
37.55
ES 123789F
1.64e7
38.47
6.23e6
3.12e6
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 6.17e3
4.22e4
2.11e4


SGS ID: B5969_18712_DF_008
Sample ID: 11215131-120321-S-SPS-SW-S-10
Acq: 09-Dec-2021 01:57:09
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41
User: PSW Datafile: 211208R13
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 9.83e3
1234678F
2.27e7
39.80
1234689F
9.01e6
40.19
1234789F
6.65e6
41.15
9.04e6
4.52e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 5.16e3
1234678F
2.21e7
39.80
1234689F
8.72e6
40.19
1234789F
6.39e6
41.15
8.95e6
4.48e6
0.00e0
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 1.55e4
ES 1234678F
6.56e6
39.79
CS 1234689F
6.23e6
40.18
ES 1234789F
5.28e6
41.14
2.70e6
1.35e6
0.00e0
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 6.95e3
ES 1234678F
1.46e7
39.79
CS 1234689F
1.37e7
40.18
ES 1234789F
1.20e7
41.14
5.74e6
2.87e6
0.00e0
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 2.03e3
2.14e5
1.07e5
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_008.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1479, 7580, 0322 scc: 803-681
PKD: 09-Dec-2021 09:24 Printed: 09-Dec-2021 10:51 Page 11 of 12

SGS ID: B5969_18712_DF_008 | Sample ID: 11215131-120321-S-SPS-SW-S-10 | Acq: 09-Dec-2021 01:57:09

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41 | User: PSW Datafile: 211208R13



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_008.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9676, 6257, 2692 scc: 803-681 | *PKD: 09-Dec-2021 09:24 Printed: 09-Dec-2021 10:51 Page 12 of 12*

Lab ID: B5969_18712_DF_009 **Acq'd:** 09 Dec 2021 02:44 PSW **Wt/Vol:** 14.91 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-9 **UTP:** 09-Dec-2021 10:40:20 PSW **J-level:** 0.335 pg/g **Split:** 1 **Checkcode:** 945-326-PMV

Datafile: 211208R14 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.62	E	1.0008	1.0008	0	5.30E+08	0.79	Y	1.34	2,360	9964.848	0.433
12378-PeCDD	33.89		1.0004	1.0006	+0.4	4.19E+06	1.61	Y	1.06	26.9	6082.796	0.366
123478-HxCDD	37.74		1.0004	1.0004	0	4.53E+05	1.18	Y	1.06	3.78	8729.248	0.565
123678-HxCDD	37.85		1.0034	1.0034	0	1.17E+06	1.38	Y	1.08	9.37	8729.248	0.539
123789-HxCDD	38.14		1.0111	1.0110	-0.2	9.92E+05	1.26	Y	1.02	6.93	8729.248	0.489
1234678-HpCDD	40.71		1.0004	1.0003	-0.2	4.83E+07	1.04	Y	0.97	503	10254.826	0.709
OCDD	43.29	E	1.0003	1.0003	0	9.66E+08	0.89	Y	1.07	17,800	12136.375	1.83
2378-TCDF	27.78	E	1.0007	1.0008	+0.2	1.95E+09	0.79	Y	0.96	8,390	12291.043	0.573
12378-PeCDF	32.47		1.0006	1.0005	-0.2	6.60E+07	1.57	Y	0.95	323	11304.951	0.527
23478-PeCDF	33.57		1.0005	1.0008	+0.6	4.41E+07	1.57	Y	0.94	235	11304.951	0.566
123478-HxCDF	36.76		1.0004	1.0005	+0.2	9.13E+07	1.24	Y	1.23	513	30202.84	1.45
123678-HxCDF	36.89		1.0005	1.0005	0	2.43E+07	1.27	Y	1.13	122	30202.84	1.25
234678-HxCDF	37.57		1.0005	1.0005	0	4.37E+06	1.26	Y	1.15	24.9	30202.84	1.58
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	30202.84	1.42
1234678-HpCDF	39.81		1.0003	1.0003	0	2.55E+07	1.02	Y	1.36	153	9199.894	0.322
1234789-HpCDF	41.16		1.0004	1.0003	-0.2	6.21E+06	1.02	Y	1.30	52.1	9199.894	0.563
OCDF	43.47		1.0002	1.0002	0	2.16E+07	0.91	Y	1.03	358	8535.42	1.19

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.60	1.0233	1.0229	-0.7	2.24E+07	0.81	Y	1.03	88.1
ES 12378-PeCDD	33.87	1.2118	1.2116	-0.4	1.97E+07	1.57	Y	1.03	77.5
ES 123478-HxCDD	37.73	0.9921	0.9921	0	1.52E+07	1.27	Y	0.99	86.5
ES 123678-HxCDD	37.84	0.9951	0.9951	0	1.55E+07	1.26	Y	0.97	90
ES 123789-HxCDD	38.13	1.0027	1.0026	-0.2	1.89E+07	1.27	Y	1.12	94.9
ES 1234678-HpCDD	40.69	1.0702	1.0701	-0.2	1.32E+07	1.05	Y	0.99	75.2
ES OCDD	43.27	1.1377	1.1379	+0.5	1.36E+07	0.91	Y	0.78	49.5
ES 2378-TCDF	27.76	1.0505	1.0506	+0.2	3.25E+07	0.76	Y	1.08	87.1
ES 12378-PeCDF	32.45	1.2278	1.2284	+1.2	2.90E+07	1.52	Y	0.93	90.2
ES 23478-PeCDF	33.55	1.2691	1.2699	+1.6	2.68E+07	1.56	Y	0.92	84.4
ES 123478-HxCDF	36.74	0.9660	0.9661	+0.2	1.93E+07	0.48	Y	1.14	95.5
ES 123678-HxCDF	36.88	0.9698	0.9698	0	2.36E+07	0.53	Y	1.30	103
ES 234678-HxCDF	37.55	0.9875	0.9874	-0.2	2.04E+07	0.52	Y	1.20	96
ES 123789-HxCDF	38.47	1.0121	1.0117	-0.9	1.80E+07	0.50	Y	1.14	89.5
ES 1234678-HpCDF	39.80	1.0468	1.0466	-0.5	1.64E+07	0.45	Y	0.95	97.6
ES 1234789-HpCDF	41.15	1.0822	1.0820	-0.5	1.23E+07	0.44	Y	0.85	81.9
ES OCDF	43.46	1.1426	1.1427	+0.3	1.58E+07	0.93	Y	0.93	48.1

Lab ID: B5969_18712_DF_009 **Acq'd:** 09 Dec 2021 02:44 PSW **Wt/Vol:** 14.91 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-9 **UTP:** 09-Dec-2021 10:40:20 PSW **J-level:** 0.335 pg/g **Split:** 1 **Checkcode:** 945-326-PMV

Datafile: 211208R14 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.96		-	-	-	2.46E+07	0.82	Y	-	-	
JS 1234-TCDF	26.42		-	-	-	3.44E+07	0.77	Y	-	-	
JS 123467-HxCDD	38.03		-	-	-	8.86E+06	1.26	Y	-	-	
CS 37Cl-2378-TCDD	28.62		1.0241	1.0237	-0.7	1.00E+07	n/a	-	1.31	77.8	
CS 12347-PeCDD	33.38		1.1940	1.1940	0	1.77E+07	1.63	Y	0.89	80.4	
CS 12346-PeCDF	31.93		1.2080	1.2087	+1.3	2.66E+07	1.62	Y	0.87	89	
CS 123469-HxCDF	37.20		0.9781	0.9781	0	1.90E+07	0.51	Y	1.09	98.6	
CS 1234689-HpCDF	40.19		1.0569	1.0568	-0.2	1.45E+07	0.46	Y	0.86	94.9	
~~SS 37Cl-2378-TCDD~~	~~28.62~~		~~1.0241~~	~~1.0237~~	~~-0.7~~	~~1.00E+07~~	~~n/a~~		~~1.26~~	~~88.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.38~~		~~1.1940~~	~~1.1940~~	~~0~~	~~1.77E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~104~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.93~~		~~1.2080~~	~~1.2087~~	~~+1.3~~	~~2.66E+07~~	~~1.62~~	~~Y~~	~~0.93~~	~~98.6~~	
~~SS 123469-HxCDF~~	~~37.20~~		~~0.9781~~	~~0.9781~~	~~0~~	~~1.90E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~96~~	
~~SS 1234689-HpCDF~~	~~40.19~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.45E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~96.9~~	

Totals	Conc	EMPC
Total TCDD	2620	2650
Total PeCDD	37.9	41.5
Total HxCDD	127	127
Total HpCDD	1430	1430
Total Tetra-Octa Dioxins	22000	22000
Total TCDF	16,600	16600
Total PeCDF	860	861
Total HxCDF	784	784
Total HpCDF	292	292
Total Tetra-Octa Furans	18,900	18900
Total Tetra-Octa Dioxins & Furans	40900	40900

Lab ID: B5969_18712_DF_009 | **Acq'd: 09 Dec 2021 02:44 PSW** | **Wt/Vol: 14.91 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-S-9 | **UTP: 09-Dec-2021 10:40:20 PSW** | **J-level: 0.335 pg/g** | **Split: 1** | **Checkcode: 945-326-PMV**

Datafile: 211208R14 | **Report: 09 Dec 2021 10:42 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8758	0.8757	-0.2	3.88E+05	0.77	Y	1.34	1.73	9964.848	0.433
1379-TCDD	25.39	EMPC	0.8878	0.8877	-0.2	1.59E+05	1.03	N	1.34	0.705	9964.848	0.433
1369-TCDD	NotFnd		0.9025						1.34		9964.848	0.433
1469-TCDD	26.56	EMPC	0.9291	0.9289	-0.3	2.53E+05	0.64	N	1.34	1.13	9964.848	0.433
1247/1246/1248/1249-TCDD	26.81	EMPC	0.9374	0.9374	0	8.96E+05	0.91	N	1.34	3.99	9964.848	0.433
1378-TCDD	26.99		0.9440	0.9440	0	1.35E+06	0.80	Y	1.34	6.01	9964.848	0.433
1268-TCDD	NotFnd		0.9505						1.34		9964.848	0.433
1478-TCDD	27.44		0.9591	0.9595	+0.7	1.28E+06	0.87	Y	1.34	5.69	9964.848	0.433
1279-TCDD	NotFnd		0.9650						1.34		9964.848	0.433
1234/1269-TCDD	27.96	EMPC	0.9771	0.9777	+1.0	1.09E+05	1.44	N	1.34	0.487	9964.848	0.433
1236-TCDD	28.09		0.9821	0.9822	+0.2	1.48E+05	0.88	Y	1.34	0.658	9964.848	0.433
1237/1238-TCDD	28.33		0.9907	0.9906	-0.2	8.02E+06	0.84	Y	1.34	35.7	9964.848	0.433
1239-TCDD	NotFnd		0.9953						1.34		9964.848	0.433
2378-TCDD	**28.62**	E	**1.0008**	1.0008	**0**	5.30E+08	0.79	Y	**1.34**	**2,360**	**9964.848**	**0.433**
1278-TCDD	28.94		1.0118	1.0122	+0.7	4.81E+07	0.79	Y	1.34	214	9964.848	0.433
1267-TCDD	29.06	EMPC	1.0162	1.0163	+0.2	3.25E+06	0.99	N	1.34	14.5	9964.848	0.433
1289-TCDD	29.56	EMPC	1.0340	1.0338	-0.4	2.27E+06	1.22	N	1.34	10.1	9964.848	0.433
12479/12468-PeCDD	31.42		0.9274	0.9277	+0.6	3.90E+05	1.53	Y	1.06	2.5	6082.796	0.366
12469-PeCDD	31.95		0.9430	0.9434	+0.8	3.95E+05	1.43	Y	1.06	2.54	6082.796	0.366
12368-PeCDD	32.49		0.9591	0.9592	+0.2	4.41E+05	1.67	Y	1.06	2.83	6082.796	0.366
12478-PeCDD	32.68		0.9645	0.9649	+0.8	3.47E+05	1.53	Y	1.06	2.23	6082.796	0.366
12379-PeCDD	32.79	J	0.9676	0.9681	+1.0	1.54E+05	1.63	Y	1.06	0.991	6082.796	0.366
12369/12467/12489-PeCDD	33.05	J EMPC	0.9751	0.9756	+1.0	1.90E+05	1.80	N	1.06	1.22	6082.796	0.366
12346/12347-PeCDD	33.40	J EMPC	0.9860	0.9860	0	8.58E+04	1.97	N	1.06	0.551	6082.796	0.366
12378-PeCDD	33.89		**1.0004**	**1.0006**	**+0.4**	**4.19E+06**	**1.61**	**Y**	**1.06**	**26.9**	**6082.796**	**0.366**
12367-PeCDD	34.01	EMPC	1.0034	1.0042	+1.6	2.72E+05	2.23	N	1.06	1.74	6082.796	0.366
12389-PeCDD	NotFnd		1.0133						1.06		6082.796	0.366
124679/124689-HxCDD	36.03		0.9546	0.9549	+0.6	7.24E+06	1.31	Y	1.05	55.8	8729.248	0.527
123468-HxCDD	36.67		0.9718	0.9719	+0.2	8.10E+05	1.08	Y	1.05	6.24	8729.248	0.527
123679/123689-HxCDD	36.96		0.9795	0.9796	+0.2	4.64E+06	1.25	Y	1.05	35.8	8729.248	0.527
123469-HxCDD	37.10		0.9832	0.9833	+0.2	7.96E+05	1.32	Y	1.05	6.14	8729.248	0.527
123478-HxCDD	37.74		**1.0004**	**1.0004**	**0**	**4.53E+05**	**1.18**	**Y**	1.06	**3.78**	**8729.248**	**0.565**
123678-HxCDD	37.85		**1.0034**	**1.0034**	**0**	**1.17E+06**	**1.38**	**Y**	1.08	**9.37**	**8729.248**	**0.539**
123467-HxCDD	38.03		1.0083	1.0082	-0.2	4.13E+05	1.20	Y	1.05	3.18	8729.248	0.527
123789-HxCDD	38.14		**1.0111**	**1.0110**	**-0.2**	**9.92E+05**	**1.26**	**Y**	1.02	**6.93**	**8729.248**	**0.489**

Lab ID: B5969_18712_DF_009 | Acq'd: 09 Dec 2021 02:44 PSW | Wt/Vol: 14.91 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-9 | UTP: 09-Dec-2021 10:40:20 PSW | J-level: 0.335 pg/g | Split: 1 | Checkcode: 945-326-PMV

Datafile: 211208R14 | Report: 09 Dec 2021 10:42 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

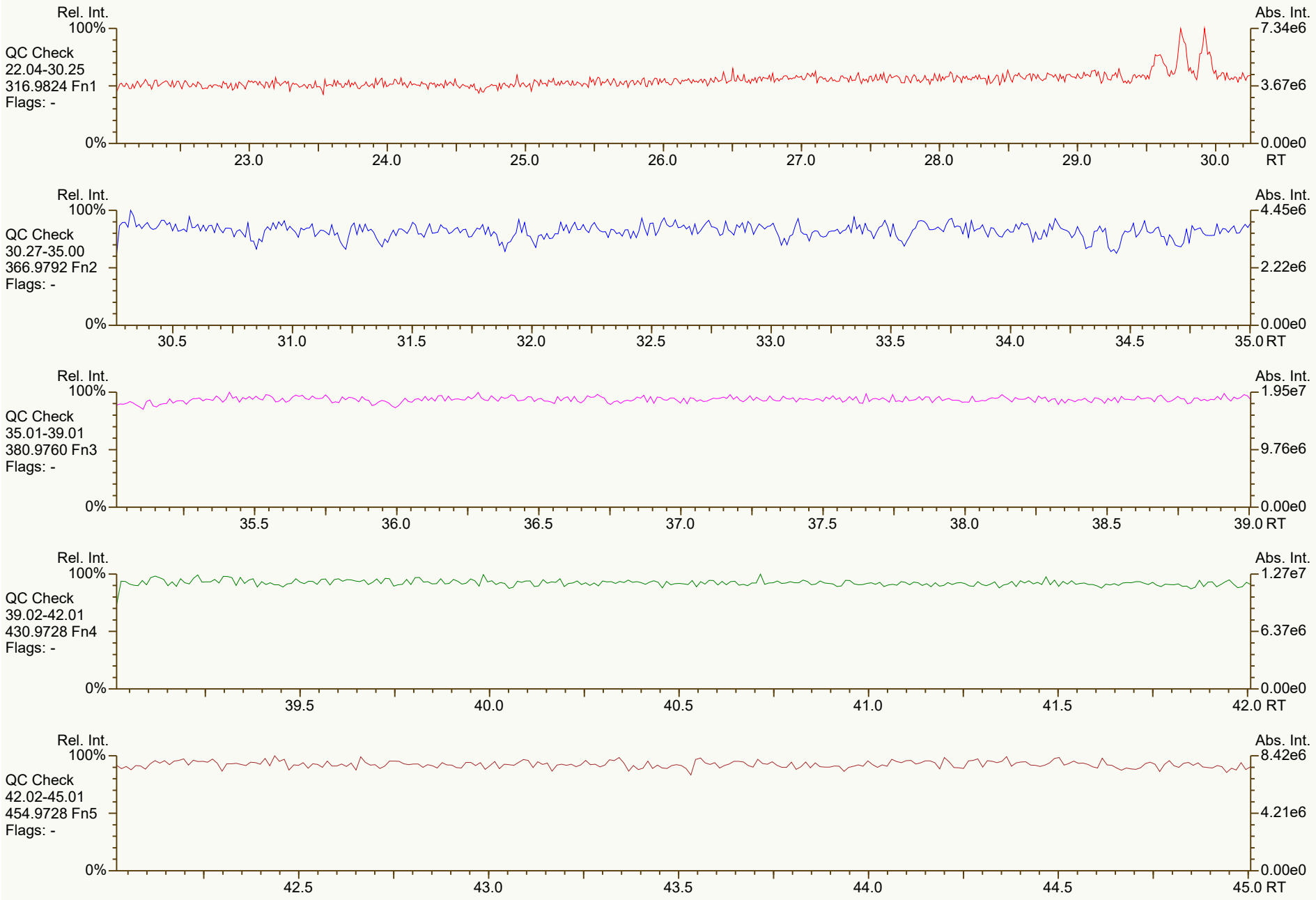
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	8.89E+07	1.04	Y	0.97	926	10254.826	0.709
1234678-HpCDD	**40.71**		**1.0004**	**1.0003**	**-0.2**	**4.83E+07**	**1.04**	**Y**	**0.97**	**503**	**10254.826**	**0.709**
OCDD	**43.29**	**E**	**1.0003**	**1.0003**	**0**	**9.66E+08**	**0.89**	**Y**	**1.07**	**17,800**	**12136.375**	**1.83**
OCDD-a	43.28	E	1.0001	1.0002	+0.3	5.77E+07	2.57	Y	0.07	17,200	11079.17	27
1368-TCDF	22.98		0.8284	0.8280	-0.6	3.34E+05	0.78	Y	0.96	1.44	12291.043	0.573
1468-TCDF	23.55		0.8487	0.8486	-0.1	2.65E+06	0.74	Y	0.96	11.4	12291.043	0.573
2468-TCDF	24.17		0.8709	0.8709	0	1.70E+06	0.75	Y	0.96	7.29	12291.043	0.573
1346/1246-TCDF	NotFnd		0.8828						0.96		12291.043	0.573
1347/1378/1247-TCDF	24.71		0.8886	0.8901	+2.2	1.46E+07	0.76	Y	0.96	62.7	12291.043	0.573
1348-TCDF	24.92		0.8980	0.8980	0	5.20E+06	0.81	Y	0.96	22.3	12291.043	0.573
1248/1367/1379-TCDF	25.03		0.9027	0.9017	-1.5	6.92E+07	0.79	Y	0.96	297	12291.043	0.573
1268-TCDF	25.42		0.9159	0.9159	0	2.60E+07	0.76	Y	0.96	112	12291.043	0.573
1467-TCDF	25.55		0.9206	0.9207	+0.2	3.84E+06	0.83	Y	0.96	16.5	12291.043	0.573
1478-TCDF	25.72		0.9266	0.9267	+0.2	6.86E+07	0.79	Y	0.96	295	12291.043	0.573
1369/1237-TCDF	26.09		0.9396	0.9400	+0.6	1.88E+07	0.79	Y	0.96	80.6	12291.043	0.573
2467-TCDF	26.20		0.9440	0.9441	+0.2	2.10E+06	0.82	Y	0.96	9.02	12291.043	0.573
2368-TCDF	26.35		0.9496	0.9493	-0.5	4.53E+07	0.79	Y	0.96	195	12291.043	0.573
1238/1234/1678/1469/1236-TCDF	26.43		0.9530	0.9522	-1.3	1.05E+08	0.80	Y	0.96	453	12291.043	0.573
1278-TCDF	26.89	E	0.9689	0.9688	-0.2	9.31E+08	0.79	Y	0.96	4,000	12291.043	0.573
1349-TCDF	NotFnd		0.9732						0.96		12291.043	0.573
1267-TCDF	27.16		0.9786	0.9785	-0.2	4.80E+07	0.79	Y	0.96	206	12291.043	0.573
2346/1249-TCDF	27.35		0.9849	0.9855	+1.0	7.51E+06	0.77	Y	0.96	32.3	12291.043	0.573
2347/1279-TCDF	27.55		0.9927	0.9925	-0.3	2.27E+07	0.77	Y	0.96	97.5	12291.043	0.573
2348-TCDF	27.67	E	0.9967	0.9969	+0.3	1.74E+08	0.78	Y	0.96	747	12291.043	0.573
2378-TCDF	**27.78**	E	**1.0007**	**1.0008**	**+0.2**	**1.95E+09**	**0.79**	**Y**	**0.96**	**8,390**	**12291.043**	**0.573**
2367/3467-TCDF	28.12	E	1.0136	1.0132	-0.7	1.60E+08	0.78	Y	0.96	686	12291.043	0.573
1269-TCDF	28.37		1.0223	1.0221	-0.3	3.10E+07	0.77	Y	0.96	133	12291.043	0.573
1239-TCDF	28.63		1.0313	1.0315	+0.3	3.62E+06	0.81	Y	0.96	15.6	12291.043	0.573
1289-TCDF	29.77	E	1.0711	1.0725	+2.5	1.59E+08	0.80	Y	0.96	683	12291.043	0.573
13468/12468-PeCDF	29.71		0.9147	0.9155	+1.4	2.27E+06	1.66	Y	0.94	11.6	8039.753	0.388
13678/13467/12467-PeCDF	31.23		0.9616	0.9623	+1.3	6.50E+05	1.33	Y	0.94	3.32	11304.951	0.545
12368/13478/12478-PeCDF	31.39		0.9663	0.9672	+1.7	2.56E+07	1.59	Y	0.94	131	11304.951	0.545
14678-PeCDF	31.46		0.9695	0.9696	+0.2	1.13E+06	1.70	Y	0.94	5.78	11304.951	0.545
13479-PeCDF	31.58	J	0.9727	0.9731	+0.8	1.71E+05	1.35	Y	0.94	0.874	11304.951	0.545
13469/12479-PeCDF	NotFnd		0.9799						0.94		11304.951	0.545
12346-PeCDF	31.94	J	0.9839	0.9842	+0.6	1.70E+05	1.72	Y	0.94	0.868	11304.951	0.545

Lab ID: B5969_18712_DF_009 **Acq'd: 09 Dec 2021 02:44 PSW** **Wt/Vol: 14.91 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-S-9 **UTP: 09-Dec-2021 10:40:20 PSW** **J-level: 0.335 pg/g** **Split: 1** **Checkcode: 945-326-PMV**

Datafile: 211208R14 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.02		0.9864	0.9867	+0.6	1.01E+06	1.62	Y	0.94	5.16	11304.951	0.545
12347-PeCDF	32.10		0.9892	0.9892	0	1.29E+06	1.49	Y	0.94	6.6	11304.951	0.545
12348-PeCDF	32.26		0.9940	0.9941	+0.2	5.54E+06	1.49	Y	0.94	28.3	11304.951	0.545
12378-PeCDF	**32.47**		**1.0006**	**1.0005**	**-0.2**	**6.60E+07**	**1.57**	**Y**	**0.95**	**323**	**11304.951**	**0.527**
12678/12367-PeCDF	32.76		1.0088	1.0094	+1.2	1.81E+07	1.60	Y	0.94	92.3	11304.951	0.545
12379-PeCDF	NotFnd		1.0142						0.94		11304.951	0.545
12679-PeCDF	33.31	J EMPC	0.9931	0.9930	-0.2	1.76E+05	2.32	N	0.94	0.896	11304.951	0.545
23467/12369-PeCDF	33.43		0.9966	0.9963	-0.6	7.62E+05	1.52	Y	0.94	3.89	11304.951	0.545
23478-PeCDF	**33.57**		**1.0005**	**1.0008**	**+0.6**	**4.41E+07**	**1.57**	**Y**	**0.94**	**235**	**11304.951**	**0.566**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		11304.951	0.545
12349-PeCDF	NotFnd		1.0100						0.94		11304.951	0.545
12389-PeCDF	34.62		1.0323	1.0319	-0.8	2.44E+06	1.57	Y	0.94	12.5	11304.951	0.545
123468-HxCDF	35.39		0.9631	0.9634	+0.6	1.17E+06	1.36	Y	1.16	6.66	30202.84	1.42
124678/134678-HxCDF	35.59		0.9686	0.9686	0	8.32E+06	1.27	Y	1.16	47.2	30202.84	1.42
134679-HxCDF	NotFnd		0.9747						1.16		30202.84	1.42
124679-HxCDF	NotFnd		0.9800						1.16		30202.84	1.42
124689-HxCDF	36.23		0.9859	0.9861	+0.4	4.70E+06	1.23	Y	1.16	26.6	30202.84	1.42
123467-HxCDF	36.63		0.9972	0.9972	0	3.41E+05	1.21	Y	1.16	1.93	30202.84	1.42
123478-HxCDF	**36.76**		**1.0004**	**1.0005**	**+0.2**	**9.13E+07**	**1.24**	**Y**	**1.23**	**513**	**30202.84**	**1.45**
123678-HxCDF	**36.89**		**1.0005**	**1.0005**	**0**	**2.43E+07**	**1.27**	**Y**	**1.13**	**122**	**30202.84**	**1.25**
123479-HxCDF	37.05		1.0048	1.0046	-0.4	7.97E+05	1.20	Y	1.16	4.52	30202.84	1.42
123469-HxCDF	NotFnd		1.0089						1.16		30202.84	1.42
123679-HxCDF	NotFnd		0.9943						1.16		30202.84	1.42
234678-HxCDF	**37.57**		**1.0005**	**1.0005**	**0**	**4.37E+06**	**1.26**	**Y**	**1.15**	**24.9**	**30202.84**	**1.58**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		30202.84	1.42
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**30202.84**	**1.42**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.52		1.0004	1.0011	+1.6	6.52E+06	1.25	Y	1.16	36.9	30202.84	1.42
1234678-HpCDF	**39.81**		**1.0003**	**1.0003**	**0**	**2.55E+07**	**1.02**	**Y**	**1.36**	**153**	**9199.894**	**0.322**
1234679-HpCDF	40.06		1.0065	1.0066	+0.2	5.81E+05	1.09	Y	1.33	4.08	9199.894	0.424
1234689-HpCDF	40.20		1.0097	1.0101	+1.0	1.17E+07	1.05	Y	1.33	82.4	9199.894	0.424
1234789-HpCDF	**41.16**		**1.0004**	**1.0003**	**-0.2**	**6.21E+06**	**1.02**	**Y**	**1.30**	**52.1**	**9199.894**	**0.563**
OCDF	**43.47**		**1.0002**	**1.0002**	**0**	**2.16E+07**	**0.91**	**Y**	**1.03**	**358**	**8535.42**	**1.19**
OCDF-a	43.46	**EMPC**	1.0001	1.0002	+0.3	1.13E+06	3.25	N	0.06	325	8279.821	19.9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24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.45e6
2.22e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
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9.76e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.27e7
6.37e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
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Abs. Int.
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4.21e6
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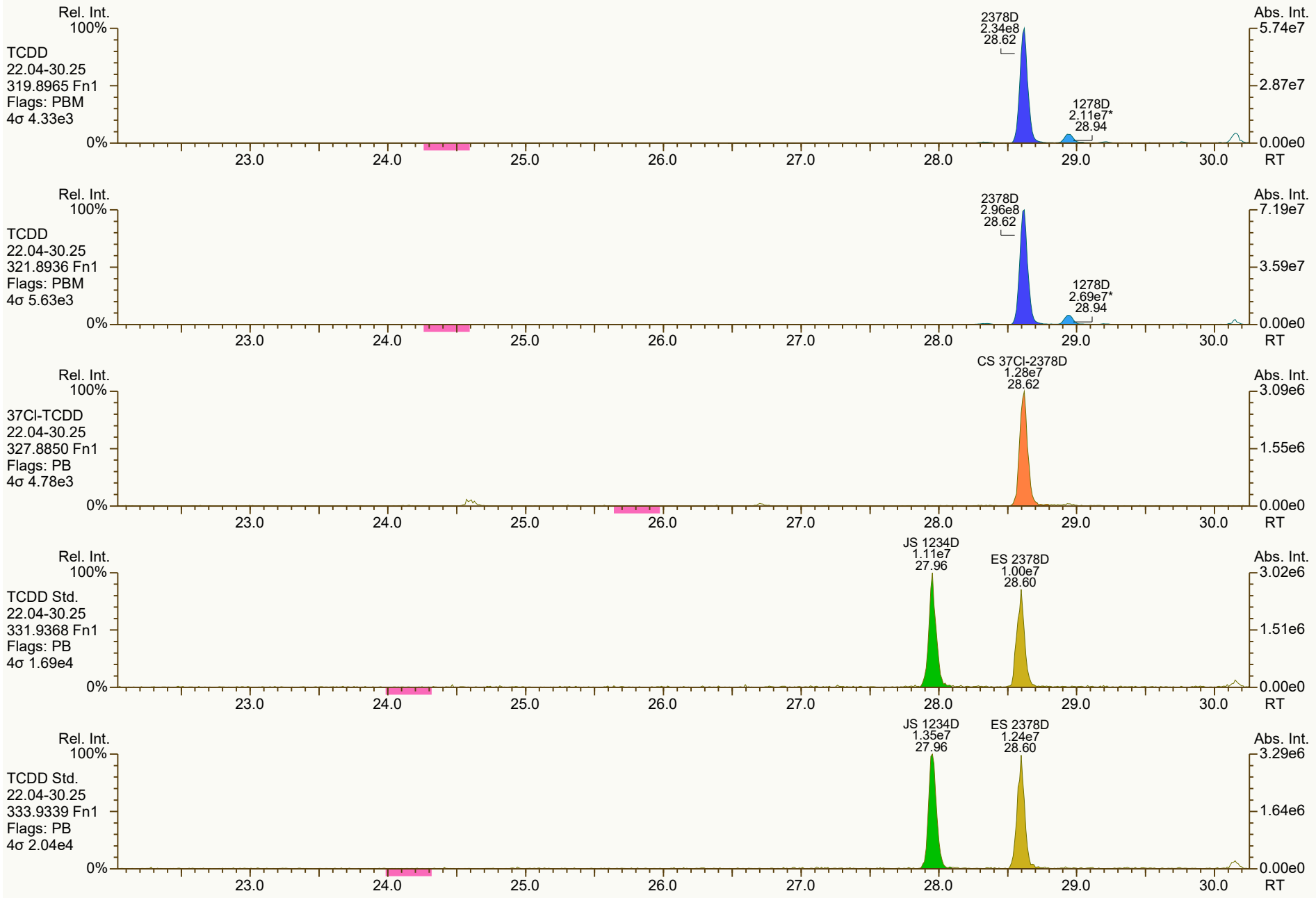
43.5
44.0
44.5
45.0 RT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TCDD
22.04-30.25
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2378D
2.34e8
28.62
1278D
2.11e7*
28.94
Abs. Int.
5.74e7
2.87e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 5.63e3
0%
2378D
2.96e8
28.62
1278D
2.69e7*
28.94
Abs. Int.
7.19e7
3.59e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.78e3
0%
CS 37Cl-2378D
1.28e7
28.62
Abs. Int.
3.09e6
1.55e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.69e4
0%
JS 1234D
1.11e7
27.96
ES 2378D
1.00e7
28.60
Abs. Int.
3.02e6
1.51e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 2.04e4
0%
JS 1234D
1.35e7
27.96
ES 2378D
1.24e7
28.60
Abs. Int.
3.29e6
1.64e6
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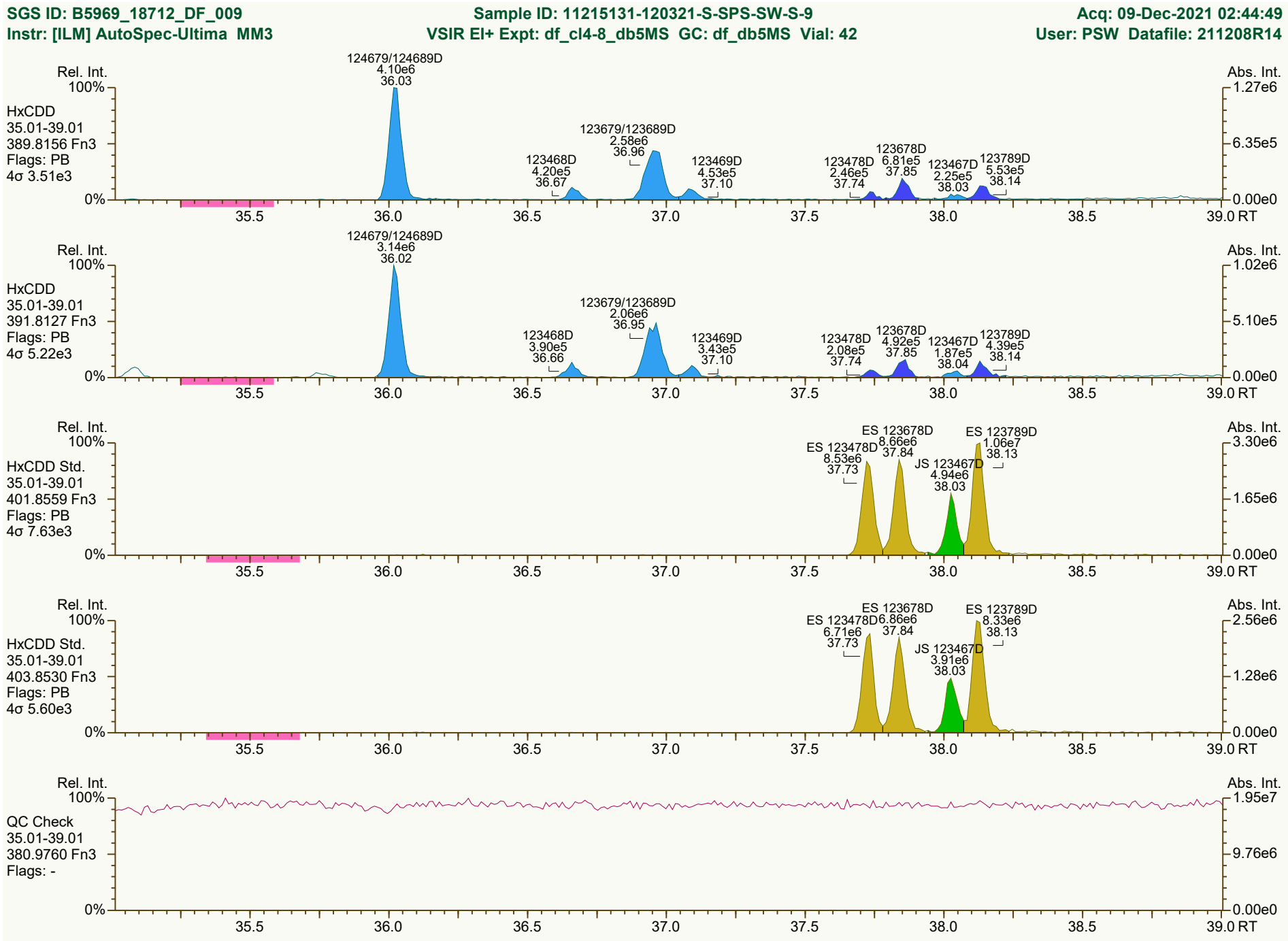
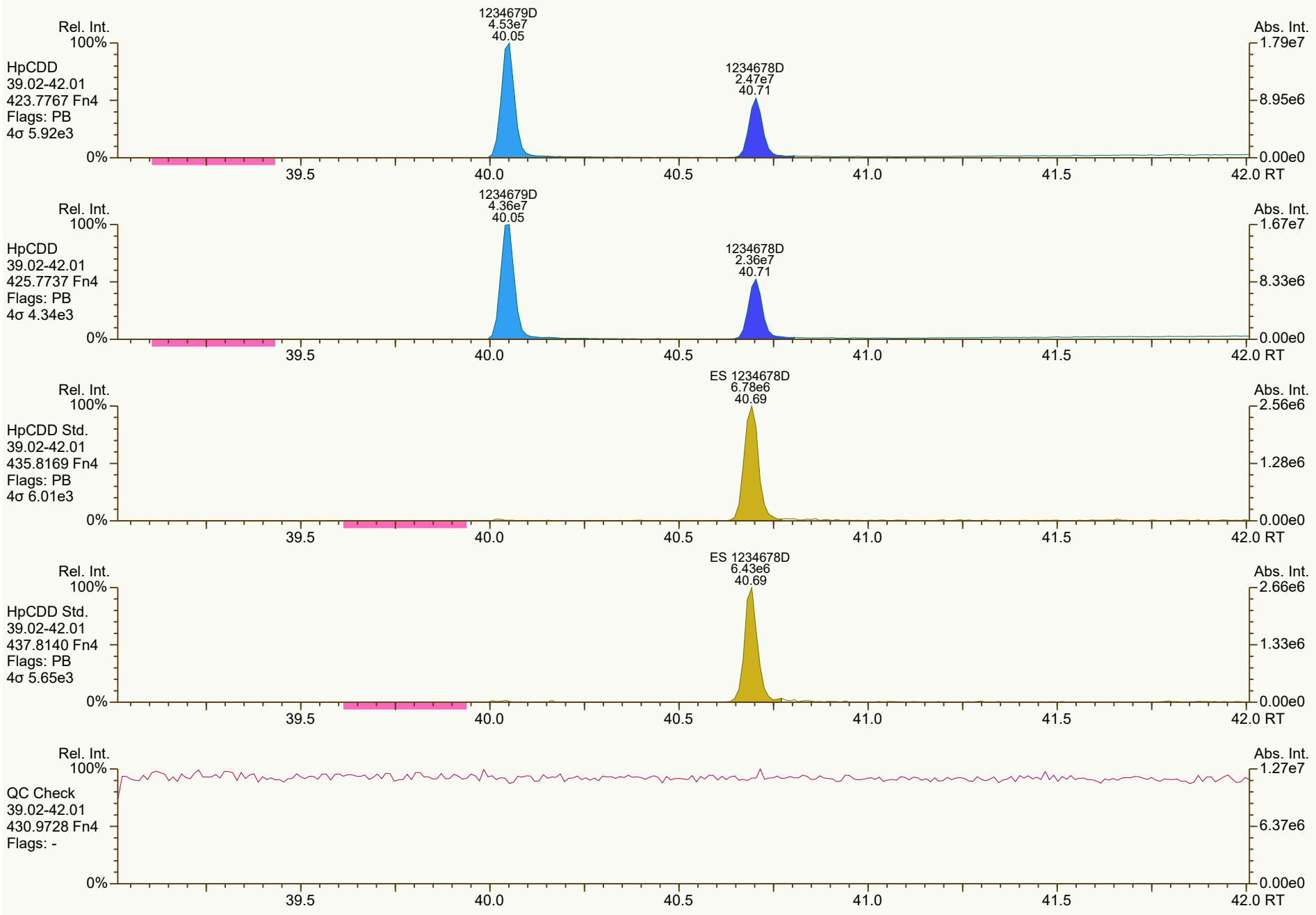
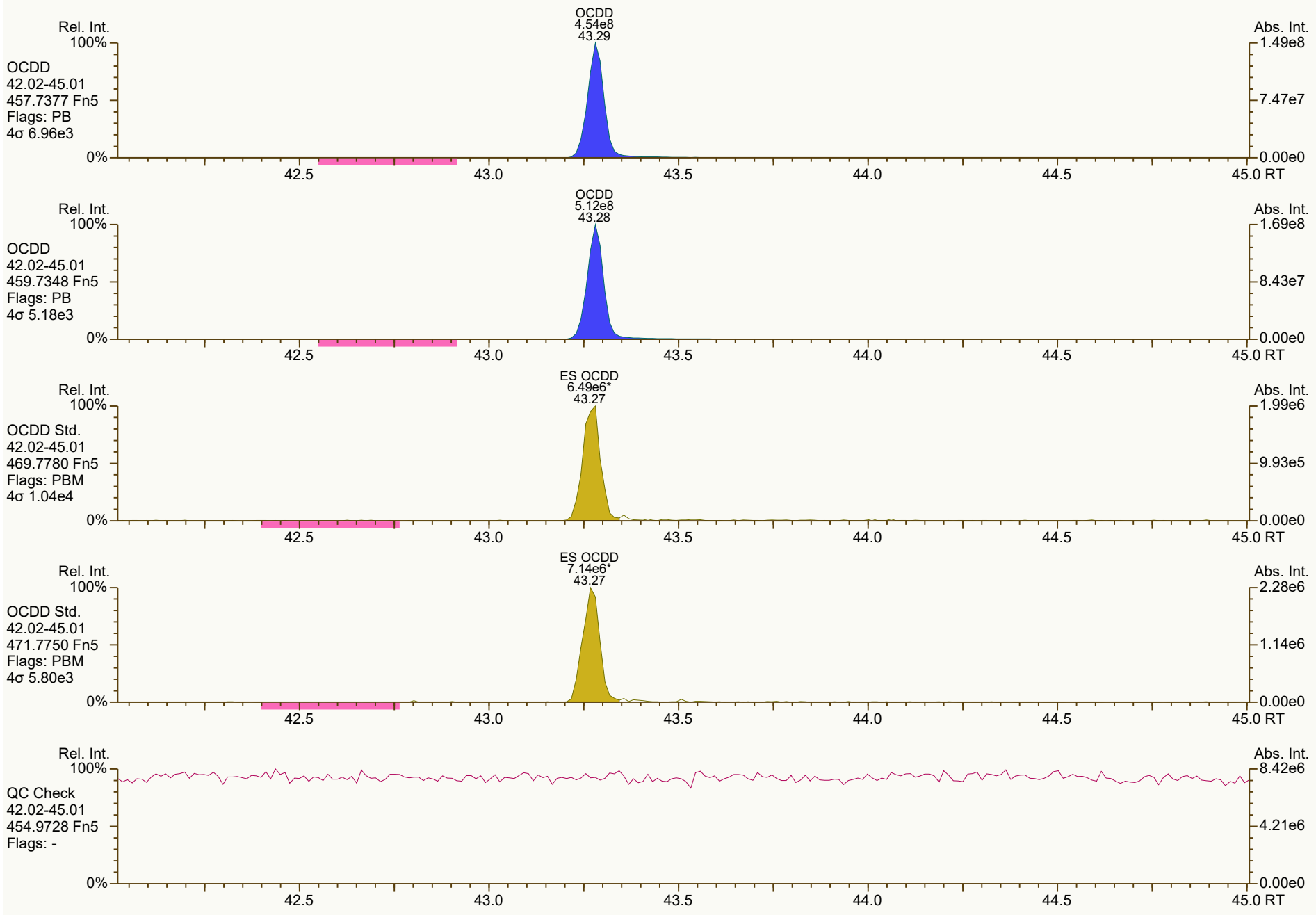
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

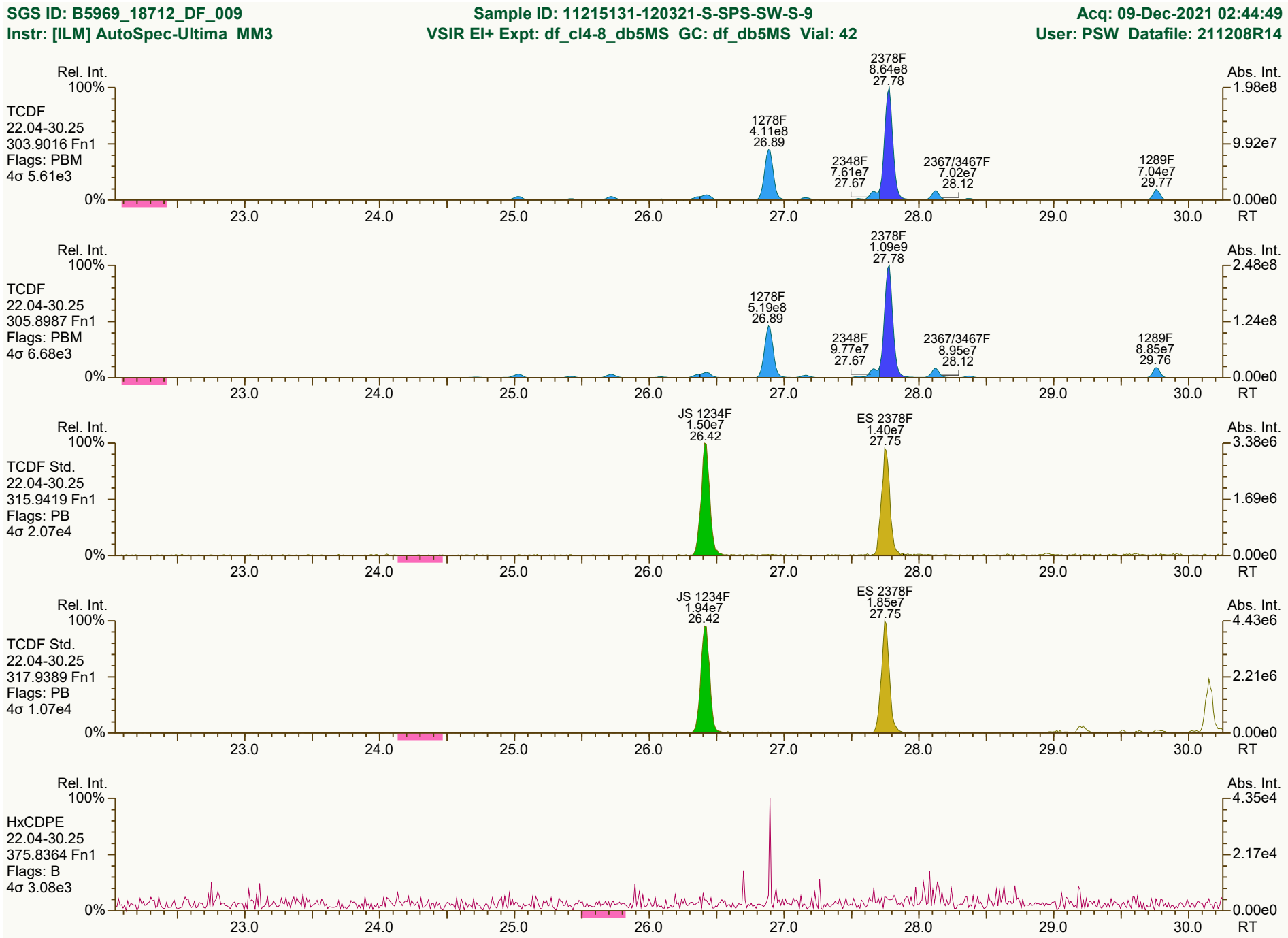

Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 3.31e3
0%
12479/12468D
2.36e5
31.42
12469D
2.33e5
31.95
12368D
2.76e5
32.49
12478D
2.09e5
32.68
12379D
9.57e4
32.79
12378D
2.58e6*
33.89
12367D
2.38e5*
34.01
Abs. Int.
7.01e5
3.50e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 2.77e3
0%
12479/12468D
1.54e5
31.42
12469D
1.62e5
31.95
12368D
1.66e5
32.50
12478D
1.37e5
32.68
12369D...[3]
7.44e4
33.03
12378D
1.61e6*
33.89
12367D
1.07e5*
34.01
Abs. Int.
4.71e5
2.35e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 1.11e4
0%
CS 12347D
1.10e7
33.38
ES 12378D
1.21e7
33.87
Abs. Int.
3.22e6
1.61e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 7.78e3
0%
CS 12347D
6.71e6
33.38
ES 12378D
7.67e6
33.87
Abs. Int.
2.16e6
1.08e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.45e6
2.22e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT



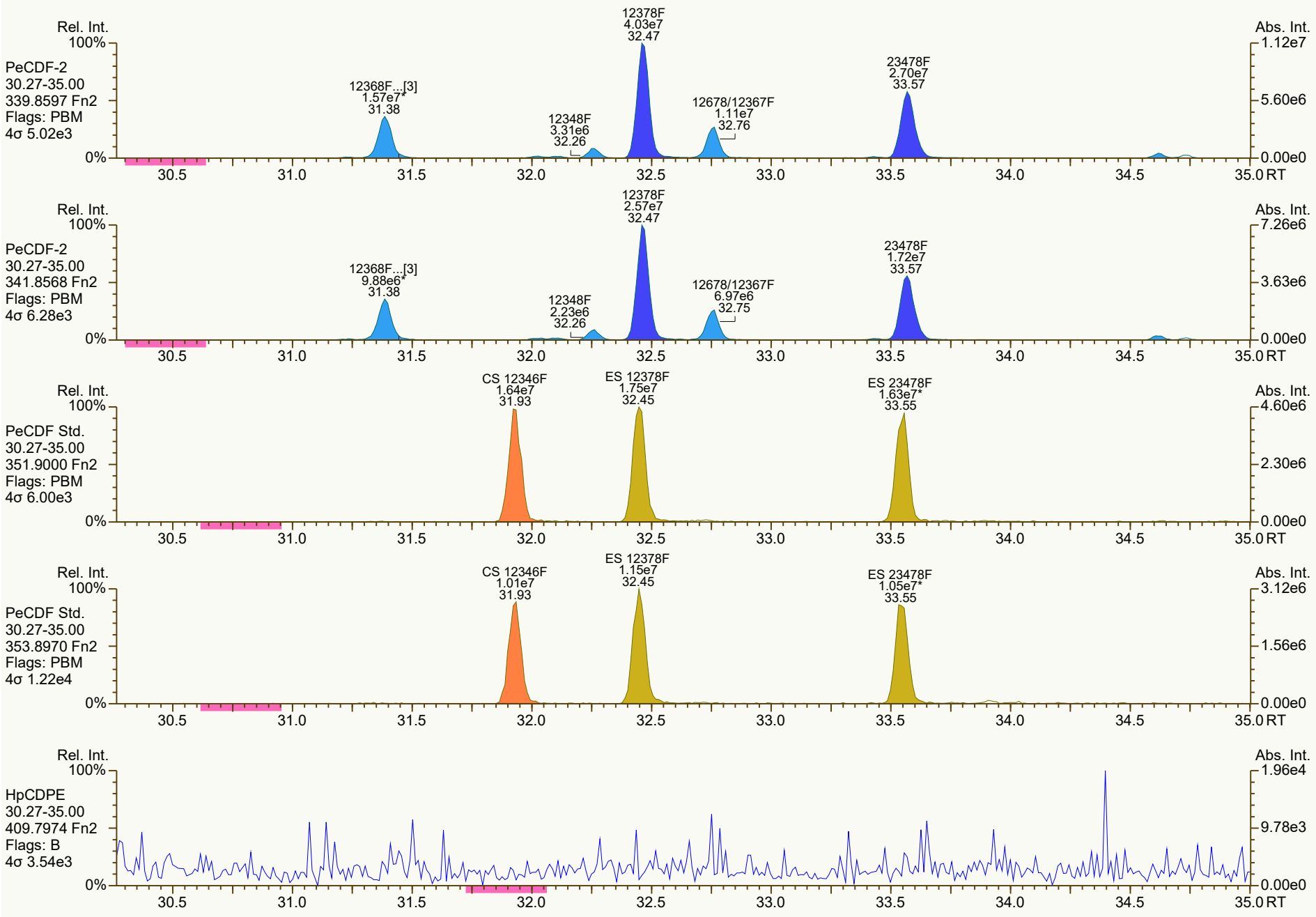
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_009.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9625, 8098 scc: 945-326
PKD: 09-Dec-2021 09:26 Printed: 09-Dec-2021 10:51 Page 4 of 12

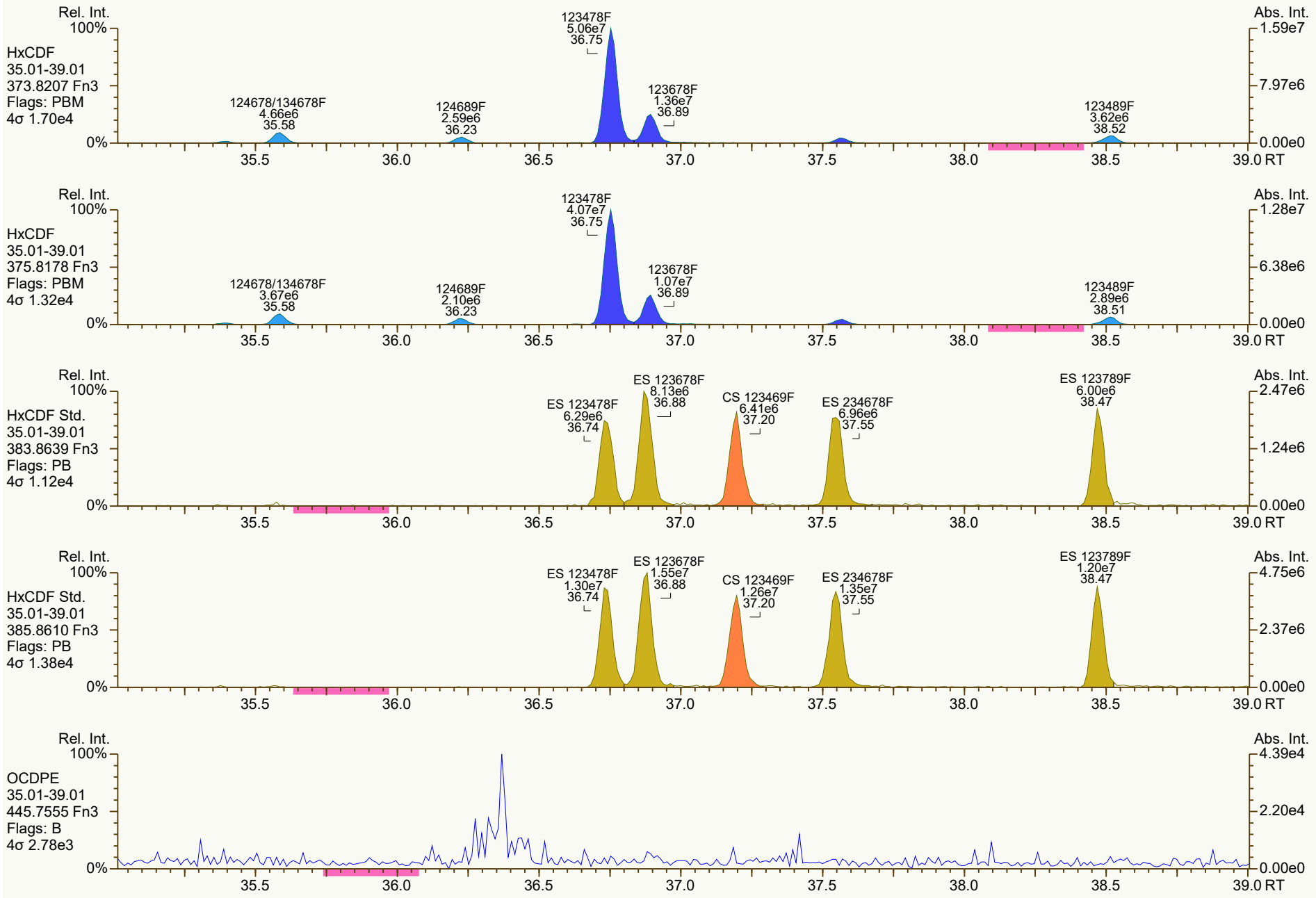

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 5.92e3
1234679D
4.53e7
40.05
1234678D
2.47e7
40.71
Abs. Int.
1.79e7
8.95e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 4.34e3
1234679D
4.36e7
40.05
1234678D
2.36e7
40.71
Abs. Int.
1.67e7
8.33e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 6.01e3
ES 1234678D
6.78e6
40.69
Abs. Int.
2.56e6
1.28e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.65e3
ES 1234678D
6.43e6
40.69
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.27e7
6.37e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

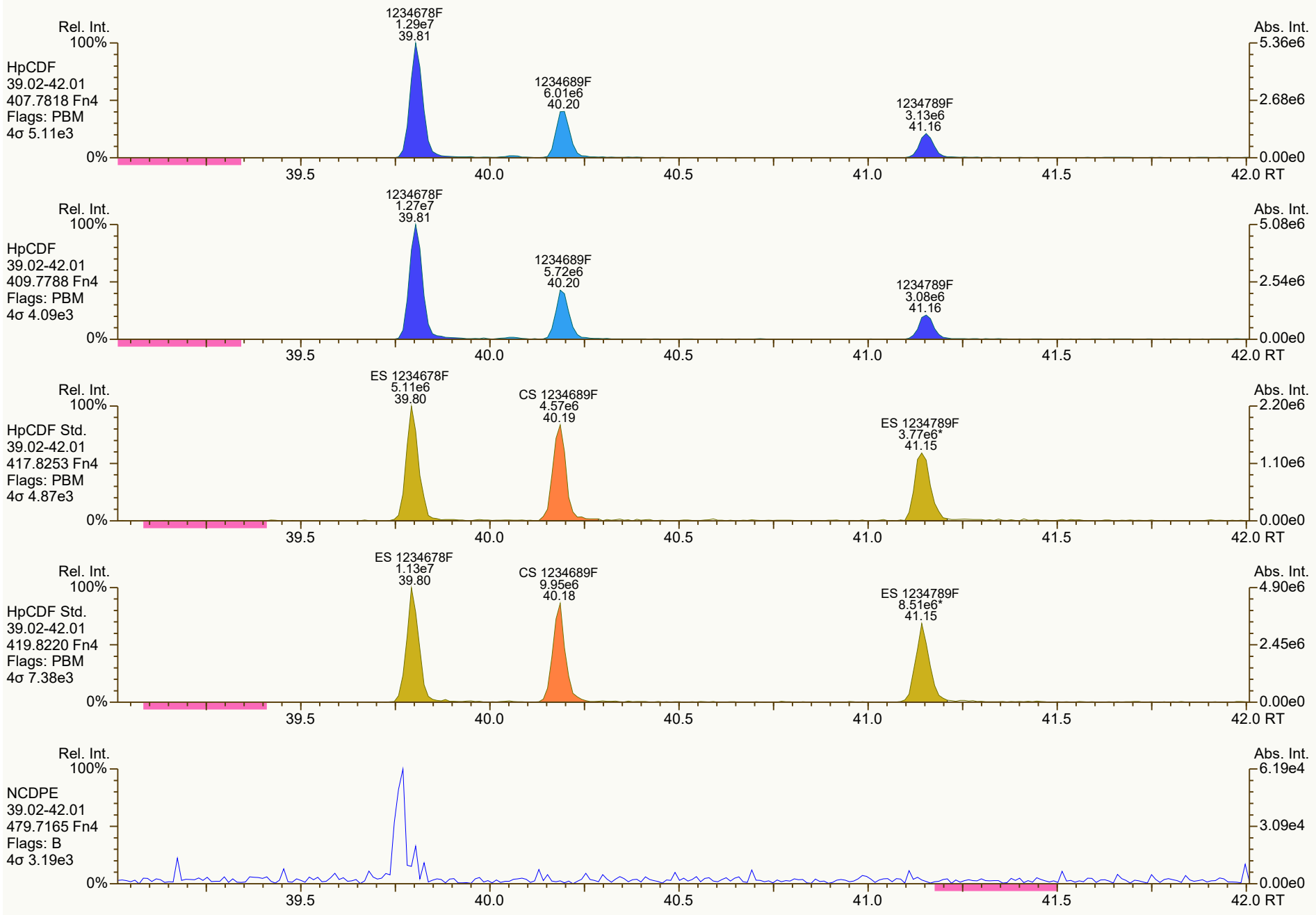

OCDD
4.54e8
43.29
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 6.96e3
0%
Abs. Int.
1.49e8
7.47e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.12e8
43.28
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 5.18e3
0%
Abs. Int.
1.69e8
8.43e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.49e6*
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 1.04e4
0%
Abs. Int.
1.99e6
9.93e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.14e6*
43.27
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 5.80e3
0%
Abs. Int.
2.28e6
1.14e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.42e6
4.21e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5969_18712_DF_009
Sample ID: 11215131-120321-S-SPS-SW-S-9
Acq: 09-Dec-2021 02:44:49
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 42
User: PSW Datafile: 211208R14
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 5.61e3
1278F
4.11e8
26.89
2378F
8.64e8
27.78
2348F
7.61e7
27.67
2367/3467F
7.02e7
28.12
1289F
7.04e7
29.77
1.98e8
9.92e7
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 6.68e3
1278F
5.19e8
26.89
2378F
1.09e9
27.78
2348F
9.77e7
27.67
2367/3467F
8.95e7
28.12
1289F
8.85e7
29.76
2.48e8
1.24e8
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 2.07e4
JS 1234F
1.50e7
26.42
ES 2378F
1.40e7
27.75
3.38e6
1.69e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.07e4
JS 1234F
1.94e7
26.42
ES 2378F
1.85e7
27.75
4.43e6
2.21e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.08e3
4.35e4
2.17e4
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_009.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2063, 1928, 4222 scc: 945-326
PKD: 09-Dec-2021 09:26 Printed: 09-Dec-2021 10:51 Page 7 of 12

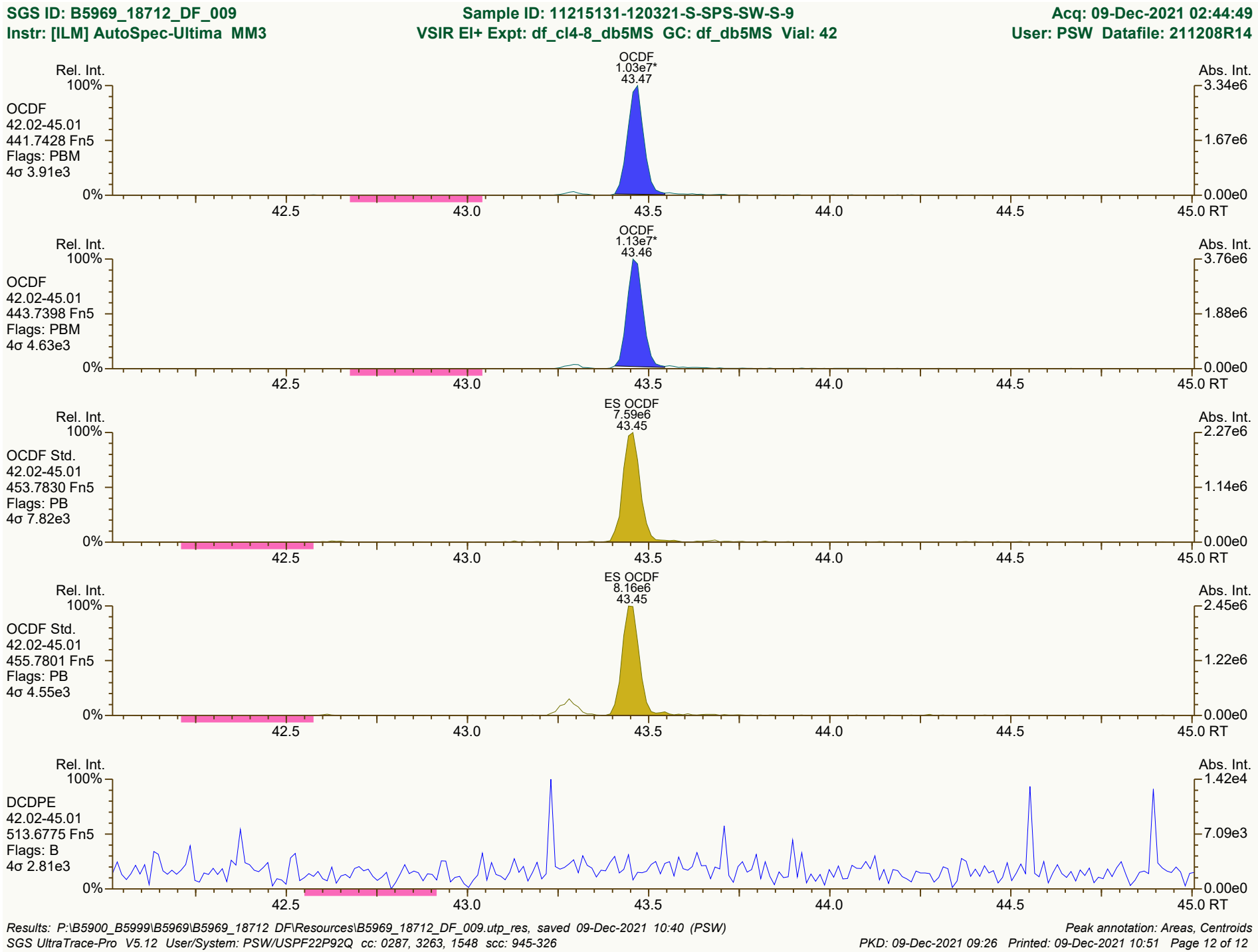

13468/12468F
1.42e6
29.71
Rel. Int.
100%
Abs. Int.
3.49e5
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 4.30e3
1.74e5
0%
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
13468/12468F
8.52e5
29.71
Rel. Int.
100%
Abs. Int.
2.53e5
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 3.74e3
1.27e5
0%
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
Abs. Int.
7.34e6
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
3.67e6
0%
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 5.02e3
0%
12368F...[3]
1.57e7*
31.38
12348F
3.31e6
32.26
12378F
4.03e7
32.47
12678/12367F
1.11e7
32.76
23478F
2.70e7
33.57
Abs. Int.
1.12e7
5.60e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 6.28e3
0%
12368F...[3]
9.88e6*
31.38
12348F
2.23e6
32.26
12378F
2.57e7
32.47
12678/12367F
6.97e6
32.75
23478F
1.72e7
33.57
Abs. Int.
7.26e6
3.63e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 6.00e3
0%
CS 12346F
1.64e7
31.93
ES 12378F
1.75e7
32.45
ES 23478F
1.63e7*
33.55
Abs. Int.
4.60e6
2.30e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 1.22e4
0%
CS 12346F
1.01e7
31.93
ES 12378F
1.15e7
32.45
ES 23478F
1.05e7*
33.55
Abs. Int.
3.12e6
1.56e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.54e3
0%
Abs. Int.
1.96e4
9.78e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 1.70e4
0%
123478F
5.06e7
36.75
123678F
1.36e7
36.89
124678/134678F
4.66e6
35.58
124689F
2.59e6
36.23
123489F
3.62e6
38.52
Abs. Int.
1.59e7
7.97e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 1.32e4
123478F
4.07e7
36.75
123678F
1.07e7
36.89
124678/134678F
3.67e6
35.58
124689F
2.10e6
36.23
123489F
2.89e6
38.51
1.28e7
6.38e6
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PB
4σ 1.12e4
ES 123478F
6.29e6
36.74
ES 123678F
8.13e6
36.88
CS 123469F
6.41e6
37.20
ES 234678F
6.96e6
37.55
ES 123789F
6.00e6
38.47
2.47e6
1.24e6
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PB
4σ 1.38e4
ES 123478F
1.30e7
36.74
ES 123678F
1.55e7
36.88
CS 123469F
1.26e7
37.20
ES 234678F
1.35e7
37.55
ES 123789F
1.20e7
38.47
4.75e6
2.37e6
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 2.78e3
4.39e4
2.20e4


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 5.11e3
1234678F
1.29e7
39.81
1234689F
6.01e6
40.20
1234789F
3.13e6
41.16
Abs. Int.
5.36e6
2.68e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 4.09e3
1234678F
1.27e7
39.81
1234689F
5.72e6
40.20
1234789F
3.08e6
41.16
Abs. Int.
5.08e6
2.54e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PBM
4σ 4.87e3
ES 1234678F
5.11e6
39.80
CS 1234689F
4.57e6
40.19
ES 1234789F
3.77e6*
41.15
Abs. Int.
2.20e6
1.10e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PBM
4σ 7.38e3
ES 1234678F
1.13e7
39.80
CS 1234689F
9.95e6
40.18
ES 1234789F
8.51e6*
41.15
Abs. Int.
4.90e6
2.45e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.19e3
Abs. Int.
6.19e4
3.09e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

SGS ID: B5969_18712_DF_009 | Sample ID: 11215131-120321-S-SPS-SW-S-9 | Acq: 09-Dec-2021 02:44:49
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 42 | User: PSW Datafile: 211208R14



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_009.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0287, 3263, 1548 scc: 945-326 | *PKD: 09-Dec-2021 09:26 Printed: 09-Dec-2021 10:51 Page 12 of 12*

Lab ID: B5969_18712_DF_010 **Acq'd:** 09 Dec 2021 06:02 PSW **Wt/Vol:** 16.30 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-8 **UTP:** 09-Dec-2021 10:40:22 PSW **J-level:** 0.307 pg/g **Split:** 1 **Checkcode:** 784-880-PDH

Datafile: 211208R18 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.60		1.0008	1.0009	+0.2	2.73E+06	0.76	Y	1.34	13.7	8049.759	0.413
12378-PeCDD	33.86	J	1.0004	1.0004	0	1.57E+05	1.60	Y	1.06	1.04	8890.25	0.456
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.06	-	14343.71	0.909
123678-HxCDD	37.84	EMPC	1.0034	1.0033	-0.2	5.28E+05	1.04	N	1.08	4.22	14343.71	0.995
123789-HxCDD	38.12		1.0111	1.0109	-0.5	3.70E+05	1.29	Y	1.02	2.97	14343.71	0.895
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	1.46E+07	1.05	Y	0.97	165	5992.649	0.423
OCDD	43.26		1.0003	1.0002	-0.3	1.01E+08	0.89	Y	1.07	2,170	8096.46	1.36
2378-TCDF	27.75		1.0007	1.0009	+0.3	1.10E+07	0.80	Y	0.96	54.2	7681.929	0.419
12378-PeCDF	32.44		1.0006	1.0006	0	5.94E+05	1.71	Y	0.95	3.07	5304.596	0.249
23478-PeCDF	33.54	EMPC	1.0005	1.0007	+0.4	7.30E+05	1.85	N	0.94	3.83	5304.596	0.243
123478-HxCDF	36.74		1.0004	1.0004	0	1.12E+06	1.36	Y	1.23	6.42	10850.117	0.497
123678-HxCDF	36.88		1.0005	1.0005	0	5.63E+05	1.20	Y	1.13	2.92	10850.117	0.471
234678-HxCDF	37.55		1.0005	1.0004	-0.2	4.09E+05	1.25	Y	1.15	2.5	10850.117	0.552
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	10850.117	0.533
1234678-HpCDF	39.80		1.0003	1.0003	0	3.81E+06	1.03	Y	1.36	25.3	6360.362	0.261
1234789-HpCDF	41.15		1.0004	1.0002	-0.5	3.49E+05	0.96	Y	1.30	3.08	6360.362	0.384
OCDF	43.45		1.0002	1.0002	0	7.14E+06	0.88	Y	1.03	124	6430.545	0.857

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.57	1.0233	1.0232	-0.2	1.82E+07	0.83	Y	1.03	84.9
ES 12378-PeCDD	33.85	1.2118	1.2122	+0.8	1.74E+07	1.62	Y	1.03	81.3
ES 123478-HxCDD	37.71	0.9921	0.9920	-0.2	1.41E+07	1.26	Y	0.99	90.4
ES 123678-HxCDD	37.83	0.9951	0.9950	-0.2	1.42E+07	1.30	Y	0.97	93.1
ES 123789-HxCDD	38.11	1.0027	1.0025	-0.5	1.51E+07	1.25	Y	1.12	85.6
ES 1234678-HpCDD	40.68	1.0702	1.0702	0	1.11E+07	1.05	Y	0.99	71.6
ES OCDD	43.25	1.1377	1.1378	+0.3	1.07E+07	0.94	Y	0.78	43.8
ES 2378-TCDF	27.73	1.0505	1.0507	+0.3	2.60E+07	0.78	Y	1.08	74.4
ES 12378-PeCDF	32.42	1.2278	1.2286	+1.6	2.51E+07	1.67	Y	0.93	83.4
ES 23478-PeCDF	33.52	1.2691	1.2702	+2.2	2.49E+07	1.55	Y	0.92	83.8
ES 123478-HxCDF	36.72	0.9660	0.9660	0	1.73E+07	0.56	Y	1.14	96.7
ES 123678-HxCDF	36.86	0.9698	0.9697	-0.2	2.10E+07	0.50	Y	1.30	103
ES 234678-HxCDF	37.53	0.9875	0.9873	-0.5	1.74E+07	0.51	Y	1.20	92.5
ES 123789-HxCDF	38.46	1.0121	1.0118	-0.7	1.64E+07	0.51	Y	1.14	92.2
ES 1234678-HpCDF	39.79	1.0468	1.0466	-0.5	1.36E+07	0.45	Y	0.95	91.2
ES 1234789-HpCDF	41.14	1.0822	1.0821	-0.2	1.07E+07	0.46	Y	0.85	80.7
ES OCDF	43.44	1.1426	1.1428	+0.5	1.37E+07	0.90	Y	0.93	47.4

Lab ID: B5969_18712_DF_010 **Acq'd:** 09 Dec 2021 06:02 PSW **Wt/Vol:** 16.30 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-S-8 **UTP:** 09-Dec-2021 10:40:22 PSW **J-level:** 0.307 pg/g **Split:** 1 **Checkcode:** 784-880-PDH

Datafile: 211208R18 **Report:** 09 Dec 2021 10:42 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.92		-	-	-	2.07E+07	0.79	Y	-	-	
JS 1234-TCDF	26.39		-	-	-	3.22E+07	0.79	Y	-	-	
JS 123467-HxCDD	38.01		-	-	-	7.83E+06	1.15	Y	-	-	
CS 37Cl-2378-TCDD	28.59		1.0241	1.0240	-0.2	8.38E+06	n/a	-	1.31	77.1	
CS 12347-PeCDD	33.36		1.1940	1.1946	+1.2	1.59E+07	1.61	Y	0.89	85.9	
CS 12346-PeCDF	31.90		1.2080	1.2088	+1.5	2.39E+07	1.50	Y	0.87	85.6	
CS 123469-HxCDF	37.18		0.9781	0.9780	-0.2	1.73E+07	0.52	Y	1.09	101	
CS 1234689-HpCDF	40.17		1.0569	1.0568	-0.2	1.25E+07	0.44	Y	0.86	92.7	
~~SS 37Cl-2378-TCDD~~	~~28.59~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~8.38E+06~~	~~n/a~~		~~1.26~~	~~91.3~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.36~~		~~1.1940~~	~~1.1946~~	~~+1.2~~	~~1.59E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~106~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.90~~		~~1.2080~~	~~1.2088~~	~~+1.5~~	~~2.39E+07~~	~~1.50~~	~~Y~~	~~0.93~~	~~103~~	
~~SS 123469-HxCDF~~	~~37.18~~		~~0.9781~~	~~0.9780~~	~~-0.2~~	~~1.73E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~98.1~~	
~~SS 1234689-HpCDF~~	~~40.17~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.25E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~101~~	

Totals	Conc	EMPC
Total TCDD	20	21.3
Total PeCDD	7.24	10
Total HxCDD	63.3	67.5
Total HpCDD	475	475
Total Tetra-Octa Dioxins	2730	2740
Total TCDF	113	137
Total PeCDF	16.7	31
Total HxCDF	37.7	37.7
Total HpCDF	61.4	61.4
Total Tetra-Octa Furans	353	391
Total Tetra-Octa Dioxins & Furans	3090	3130

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.759	0.76
Response	2.73E+06	2.73E+06

Lab ID: B5969_18712_DF_010 **Acq'd: 09 Dec 2021 06:02 PSW** **Wt/Vol: 16.30 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-S-8 **UTP: 09-Dec-2021 10:40:22 PSW** **J-level: 0.307 pg/g** **Split: 1** **Checkcode: 784-880-PDH**

Datafile: 211208R18 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.01		0.8758	0.8753	-0.8	3.02E+05	0.83	Y	1.34	1.51	8049.759	0.413
1379-TCDD	NotFnd		0.8878						1.34		8049.759	0.413
1369-TCDD	NotFnd		0.9025						1.34		8049.759	0.413
1469-TCDD	26.55		0.9291	0.9291	0	9.63E+05	0.85	Y	1.34	4.83	8049.759	0.413
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8049.759	0.413
1378-TCDD	NotFnd		0.9440						1.34		8049.759	0.413
1268-TCDD	NotFnd		0.9505						1.34		8049.759	0.413
1478-TCDD	NotFnd		0.9591						1.34		8049.759	0.413
1279-TCDD	NotFnd		0.9650						1.34		8049.759	0.413
1234/1269-TCDD	NotFnd		0.9771						1.34		8049.759	0.413
1236-TCDD	NotFnd		0.9821						1.34		8049.759	0.413
1237/1238-TCDD	NotFnd		0.9907						1.34		8049.759	0.413
1239-TCDD	NotFnd		0.9953						1.34		8049.759	0.413
2378-TCDD	**28.60**		**1.0008**	1.0009	**+0.2**	2.73E+06	0.76	Y	**1.34**	**13.7**	**8049.759**	**0.413**
1278-TCDD	28.92	EMPC	1.0118	1.0121	+0.5	2.58E+05	0.94	N	1.34	1.29	8049.759	0.413
1267-TCDD	NotFnd		1.0162						1.34		8049.759	0.413
1289-TCDD	NotFnd		1.0340						1.34		8049.759	0.413
12479/12468-PeCDD	31.39		0.9274	0.9274	0	3.37E+05	1.43	Y	1.06	2.24	8890.25	0.456
12469-PeCDD	31.92		0.9430	0.9430	0	4.46E+05	1.54	Y	1.06	2.96	8890.25	0.456
12368-PeCDD	32.46	J	0.9591	0.9591	0	1.50E+05	1.62	Y	1.06	0.996	8890.25	0.456
12478-PeCDD	32.65	J EMPC	0.9645	0.9645	0	9.34E+04	0.59	N	1.06	0.62	8890.25	0.456
12379-PeCDD	32.75	J EMPC	0.9676	0.9676	0	9.80E+04	1.28	N	1.06	0.651	8890.25	0.456
12369/12467/12489-PeCDD	33.01	J EMPC	0.9751	0.9753	+0.4	1.85E+05	1.87	N	1.06	1.23	8890.25	0.456
12346/12347-PeCDD	33.38	J EMPC	0.9860	0.9862	+0.4	4.51E+04	3.13	N	1.06	0.3	8890.25	0.456
12378-PeCDD	33.86	J	**1.0004**	**1.0004**	**0**	**1.57E+05**	**1.60**	**Y**	**1.06**	**1.04**	**8890.25**	**0.456**
12367-PeCDD	NotFnd		1.0034						1.06		8890.25	0.456
12389-PeCDD	NotFnd		1.0133						1.06		8890.25	0.456
124679/124689-HxCDD	36.00		0.9546	0.9547	+0.2	4.07E+06	1.24	Y	1.05	32.9	14343.71	0.933
123468-HxCDD	36.65		0.9718	0.9718	0	6.06E+05	1.18	Y	1.05	4.89	14343.71	0.933
123679/123689-HxCDD	36.94		0.9795	0.9795	0	2.35E+06	1.16	Y	1.05	19	14343.71	0.933
123469-HxCDD	37.08		0.9832	0.9831	-0.2	2.90E+05	1.39	Y	1.05	2.35	14343.71	0.933
123478-HxCDD	NotFnd		**1.0004**						1.06		**14343.71**	**0.909**
123678-HxCDD	37.84	EMPC	**1.0034**	**1.0033**	**-0.2**	**5.28E+05**	**1.04**	**N**	1.08	**4.22**	**14343.71**	**0.995**
123467-HxCDD	38.02	J	1.0083	1.0083	0	1.45E+05	1.29	Y	1.05	1.17	14343.71	0.933
123789-HxCDD	38.12		**1.0111**	**1.0109**	**-0.5**	**3.70E+05**	**1.29**	**Y**	1.02	**2.97**	**14343.71**	**0.895**

Lab ID: B5969_18712_DF_010 | **Acq'd: 09 Dec 2021 06:02 PSW** | **Wt/Vol: 16.30 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-S-8 | **UTP: 09-Dec-2021 10:40:22 PSW** | **J-level: 0.307 pg/g** | **Split: 1** | **Checkcode: 784-880-PDH**

Datafile: 211208R18 | **Report: 09 Dec 2021 10:42 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

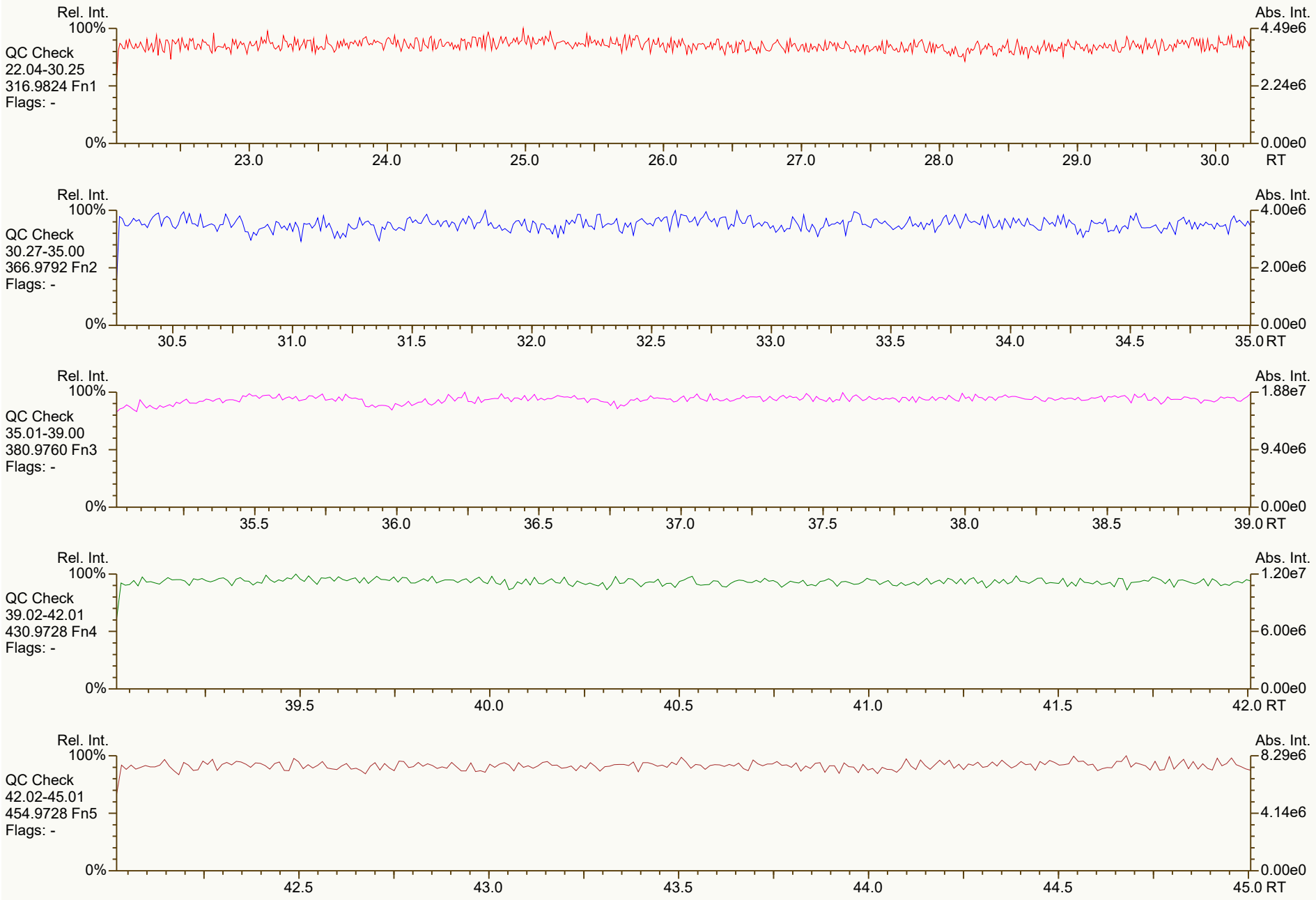
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9843	0.9842	-0.2	2.73E+07	1.04	Y	0.97	310	5992.649	0.423
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**1.46E+07**	**1.05**	**Y**	**0.97**	**165**	**5992.649**	**0.423**
OCDD	**43.26**		**1.0003**	**1.0002**	**-0.3**	**1.01E+08**	**0.89**	**Y**	**1.07**	**2,170**	**8096.46**	**1.36**
OCDD-a	43.26		1.0001	1.0002	+0.3	6.12E+06	2.67	Y	0.07	2,130	10096.721	27.5
1368-TCDF	NotFnd		0.8284						0.96		7681.929	0.419
1468-TCDF	NotFnd		0.8487						0.96		7681.929	0.419
2468-TCDF	24.13		0.8709	0.8702	-1.0	4.09E+05	0.76	Y	0.96	2.01	7681.929	0.419
1346/1246-TCDF	24.50	EMPC	0.8828	0.8837	+1.3	1.41E+05	0.64	N	0.96	0.694	7681.929	0.419
1347/1378/1247-TCDF	24.63		0.8886	0.8884	-0.3	6.09E+05	0.66	Y	0.96	2.99	7681.929	0.419
1348-TCDF	24.87	EMPC	0.8980	0.8971	-1.3	8.08E+04	1.01	N	0.96	0.397	7681.929	0.419
1248/1367/1379-TCDF	24.99		0.9027	0.9012	-2.2	7.50E+05	0.81	Y	0.96	3.69	7681.929	0.419
1268-TCDF	25.39		0.9159	0.9156	-0.5	2.99E+05	0.83	Y	0.96	1.47	7681.929	0.419
1467-TCDF	25.52		0.9206	0.9205	-0.2	1.59E+05	0.75	Y	0.96	0.784	7681.929	0.419
1478-TCDF	25.70		0.9266	0.9267	+0.2	5.92E+05	0.69	Y	0.96	2.91	7681.929	0.419
1369/1237-TCDF	26.06		0.9396	0.9397	+0.2	2.84E+05	0.69	Y	0.96	1.4	7681.929	0.419
2467-TCDF	26.17	EMPC	0.9440	0.9438	-0.3	2.53E+05	0.94	N	0.96	1.25	7681.929	0.419
2368-TCDF	26.33		0.9496	0.9497	+0.2	9.39E+05	0.81	Y	0.96	4.62	7681.929	0.419
1238/1234/1678/1469/1236-TCDF	26.42		0.9530	0.9528	-0.3	7.61E+05	0.77	Y	0.96	3.74	7681.929	0.419
1278-TCDF	26.86		0.9689	0.9689	0	4.01E+06	0.82	Y	0.96	19.7	7681.929	0.419
1349-TCDF	NotFnd		0.9732						0.96		7681.929	0.419
1267-TCDF	27.13	EMPC	0.9786	0.9786	0	4.48E+05	0.90	N	0.96	2.2	7681.929	0.419
2346/1249-TCDF	NotFnd		0.9849						0.96		7681.929	0.419
2347/1279-TCDF	27.53		0.9927	0.9928	+0.2	3.42E+05	0.71	Y	0.96	1.68	7681.929	0.419
2348-TCDF	27.64		0.9967	0.9968	+0.2	9.09E+05	0.76	Y	0.96	4.47	7681.929	0.419
2378-TCDF	**27.75**		**1.0007**	**1.0009**	**+0.3**	**1.10E+07**	**0.80**	**Y**	**0.96**	**54.2**	**7681.929**	**0.419**
2367/3467-TCDF	28.10		1.0136	1.0133	-0.5	1.80E+06	0.85	Y	0.96	8.83	7681.929	0.419
1269-TCDF	28.34	EMPC	1.0223	1.0222	-0.2	2.69E+05	0.64	N	0.96	1.32	7681.929	0.419
1239-TCDF	NotFnd		1.0313						0.96		7681.929	0.419
1289-TCDF	29.69	EMPC	1.0711	1.0709	-0.4	3.68E+06	1.70	N	0.96	18.1	7681.929	0.419
13468/12468-PeCDF	29.67	EMPC	0.9147	0.9151	+0.7	9.99E+05	1.78	N	0.94	5.21	6970.719	0.324
13678/13467/12467-PeCDF	31.19		0.9616	0.9620	+0.7	5.57E+05	1.66	Y	0.94	2.9	5304.596	0.246
12368/13478/12478-PeCDF	31.35		0.9663	0.9668	+0.9	1.18E+06	1.57	Y	0.94	6.16	5304.596	0.246
14678-PeCDF	31.43	J EMPC	0.9695	0.9695	0	2.00E+05	1.79	N	0.94	1.04	5304.596	0.246
13479-PeCDF	NotFnd		0.9727						0.94		5304.596	0.246
13469/12479-PeCDF	31.76	J	0.9799	0.9796	-0.6	7.17E+04	1.43	Y	0.94	0.374	5304.596	0.246
12346-PeCDF	31.91	J	0.9839	0.9843	+0.8	1.28E+05	1.63	Y	0.94	0.666	5304.596	0.246

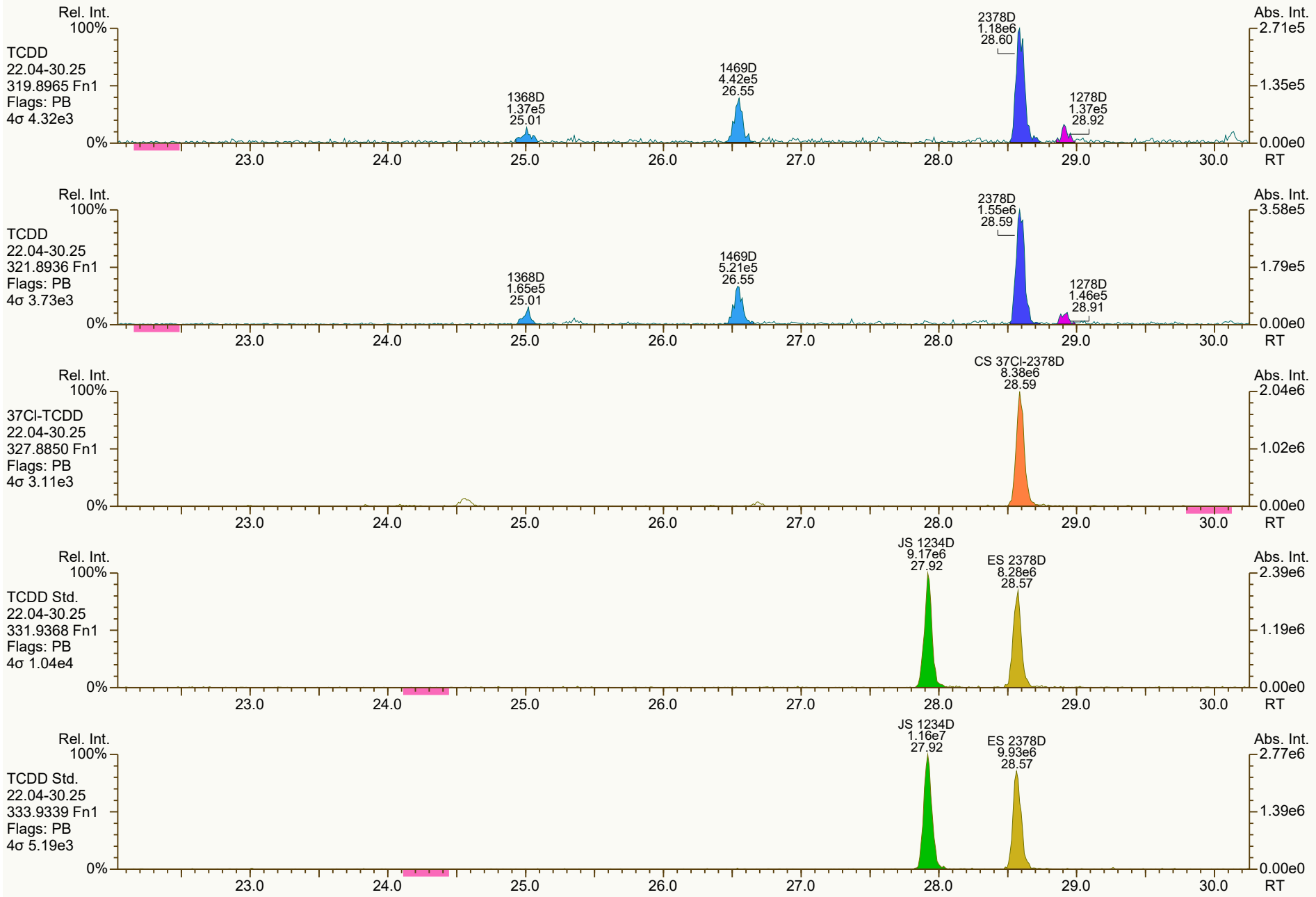
Lab ID: B5969_18712_DF_010 **Acq'd: 09 Dec 2021 06:02 PSW** **Wt/Vol: 16.30 g** **ICAL: MM3_DF_10272021_27JUL2021**

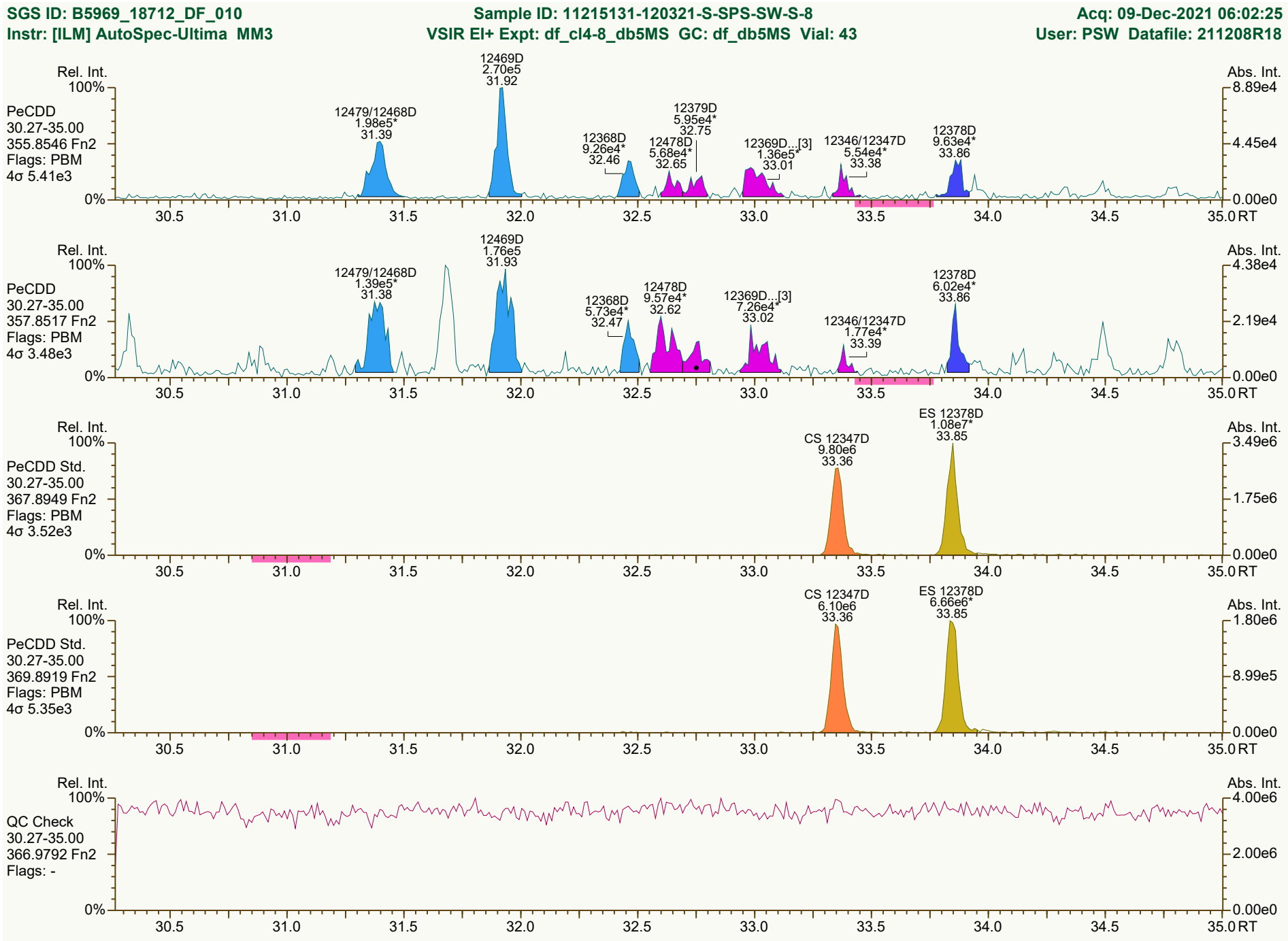
Client ID: 11215131-120321-S-SPS-SW-S-8 **UTP: 09-Dec-2021 10:40:22 PSW** **J-level: 0.307 pg/g** **Split: 1** **Checkcode: 784-880-PDH**

Datafile: 211208R18 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

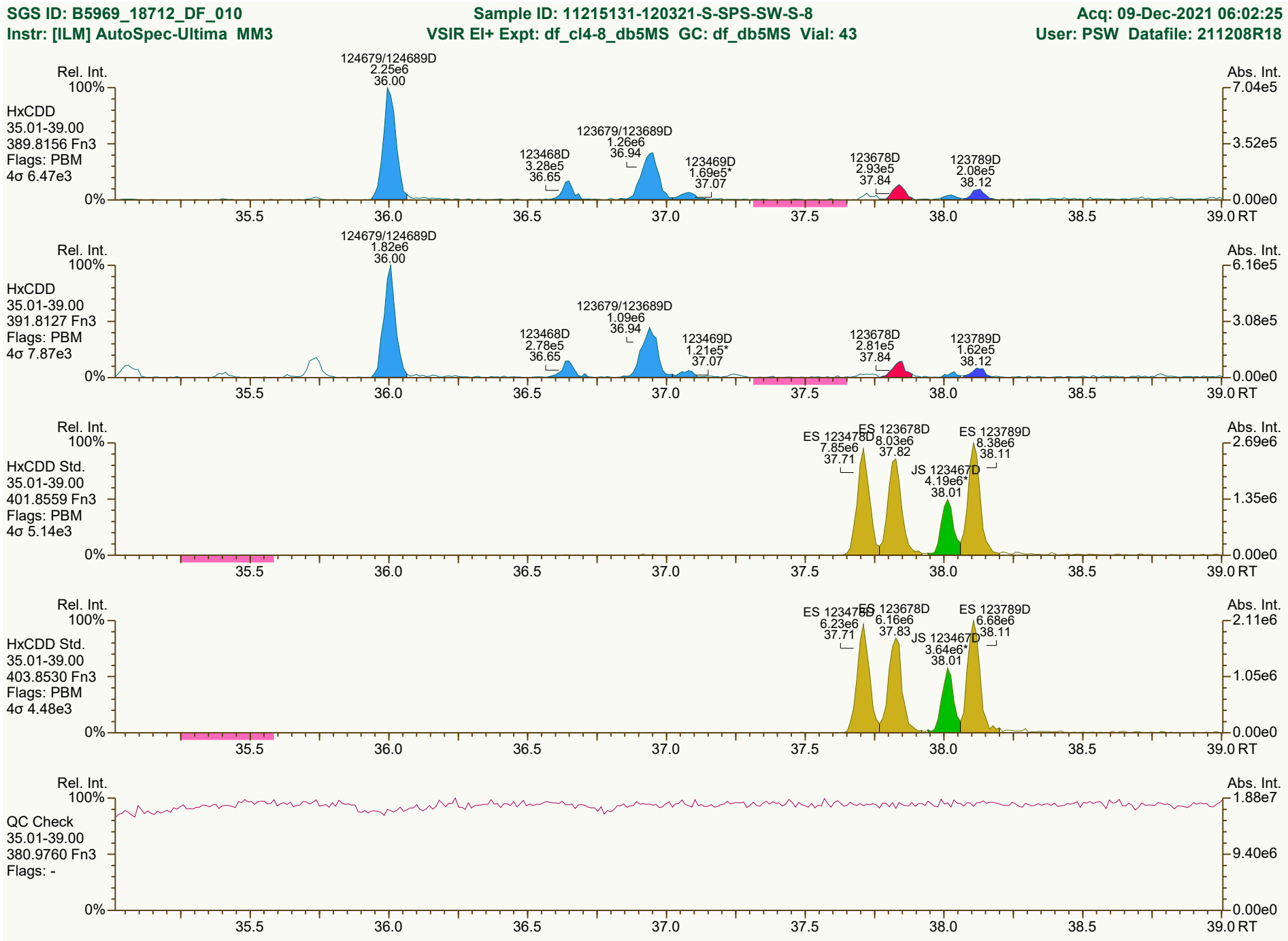
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.99		0.9864	0.9867	+0.6	3.87E+05	1.41	Y	0.94	2.01	5304.596	0.246
12347-PeCDF	32.07	J EMPC	0.9892	0.9892	0	1.47E+05	1.27	N	0.94	0.765	5304.596	0.246
12348-PeCDF	32.23	J EMPC	0.9940	0.9941	+0.2	1.51E+05	1.22	N	0.94	0.789	5304.596	0.246
12378-PeCDF	**32.44**		**1.0006**	**1.0006**	**0**	**5.94E+05**	**1.71**	**Y**	**0.95**	**3.07**	**5304.596**	**0.249**
12678/12367-PeCDF	32.72	EMPC	1.0088	1.0091	+0.6	4.66E+05	1.86	N	0.94	2.43	5304.596	0.246
12379-PeCDF	NotFnd		1.0142						0.94		5304.596	0.246
12679-PeCDF	NotFnd		0.9931						0.94		5304.596	0.246
23467/12369-PeCDF	33.41		0.9966	0.9967	+0.2	3.00E+05	1.54	Y	0.94	1.56	5304.596	0.246
23478-PeCDF	**33.54**	EMPC	**1.0005**	**1.0007**	**+0.4**	**7.30E+05**	**1.85**	**N**	**0.94**	**3.83**	**5304.596**	**0.243**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5304.596	0.246
12349-PeCDF	NotFnd		1.0100						0.94		5304.596	0.246
12389-PeCDF	34.60	J EMPC	1.0323	1.0321	-0.4	3.79E+04	1.24	N	0.94	0.197	5304.596	0.246
123468-HxCDF	35.37		0.9631	0.9632	+0.2	5.48E+05	1.31	Y	1.16	3.21	10850.117	0.51
124678/134678-HxCDF	35.56		0.9686	0.9685	-0.2	2.03E+06	1.36	Y	1.16	11.9	10850.117	0.51
134679-HxCDF	NotFnd		0.9747						1.16		10850.117	0.51
124679-HxCDF	NotFnd		0.9800						1.16		10850.117	0.51
124689-HxCDF	36.21		0.9859	0.9860	+0.2	1.34E+06	1.22	Y	1.16	7.82	10850.117	0.51
123467-HxCDF	36.62		0.9972	0.9972	0	3.32E+05	1.27	Y	1.16	1.95	10850.117	0.51
123478-HxCDF	**36.74**		**1.0004**	**1.0004**	**0**	**1.12E+06**	**1.36**	**Y**	**1.23**	**6.42**	**10850.117**	**0.497**
123678-HxCDF	**36.88**		**1.0005**	**1.0005**	**0**	**5.63E+05**	**1.20**	**Y**	**1.13**	**2.92**	**10850.117**	**0.471**
123479-HxCDF	NotFnd		1.0048						1.16		10850.117	0.51
123469-HxCDF	NotFnd		1.0089						1.16		10850.117	0.51
123679-HxCDF	NotFnd		0.9943						1.16		10850.117	0.51
234678-HxCDF	**37.55**		**1.0005**	**1.0004**	**-0.2**	**4.09E+05**	**1.25**	**Y**	**1.15**	**2.5**	**10850.117**	**0.552**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		10850.117	0.51
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**10850.117**	**0.533**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.50	J	1.0004	1.0009	+1.2	1.62E+05	1.11	Y	1.16	0.949	10850.117	0.51
1234678-HpCDF	**39.80**		**1.0003**	**1.0003**	**0**	**3.81E+06**	**1.03**	**Y**	**1.36**	**25.3**	**6360.362**	**0.261**
1234679-HpCDF	40.05		1.0065	1.0066	+0.2	2.77E+05	1.17	Y	1.33	2.11	6360.362	0.315
1234689-HpCDF	40.19		1.0097	1.0100	+0.7	4.07E+06	1.05	Y	1.33	30.9	6360.362	0.315
1234789-HpCDF	**41.15**		**1.0004**	**1.0002**	**-0.5**	**3.49E+05**	**0.96**	**Y**	**1.30**	**3.08**	**6360.362**	**0.384**
OCDF	**43.45**		**1.0002**	**1.0002**	**0**	**7.14E+06**	**0.88**	**Y**	**1.03**	**124**	**6430.545**	**0.857**
OCDF-a	43.45		1.0001	1.0002	+0.3	4.21E+05	2.82	Y	0.06	127	8636.088	19.9

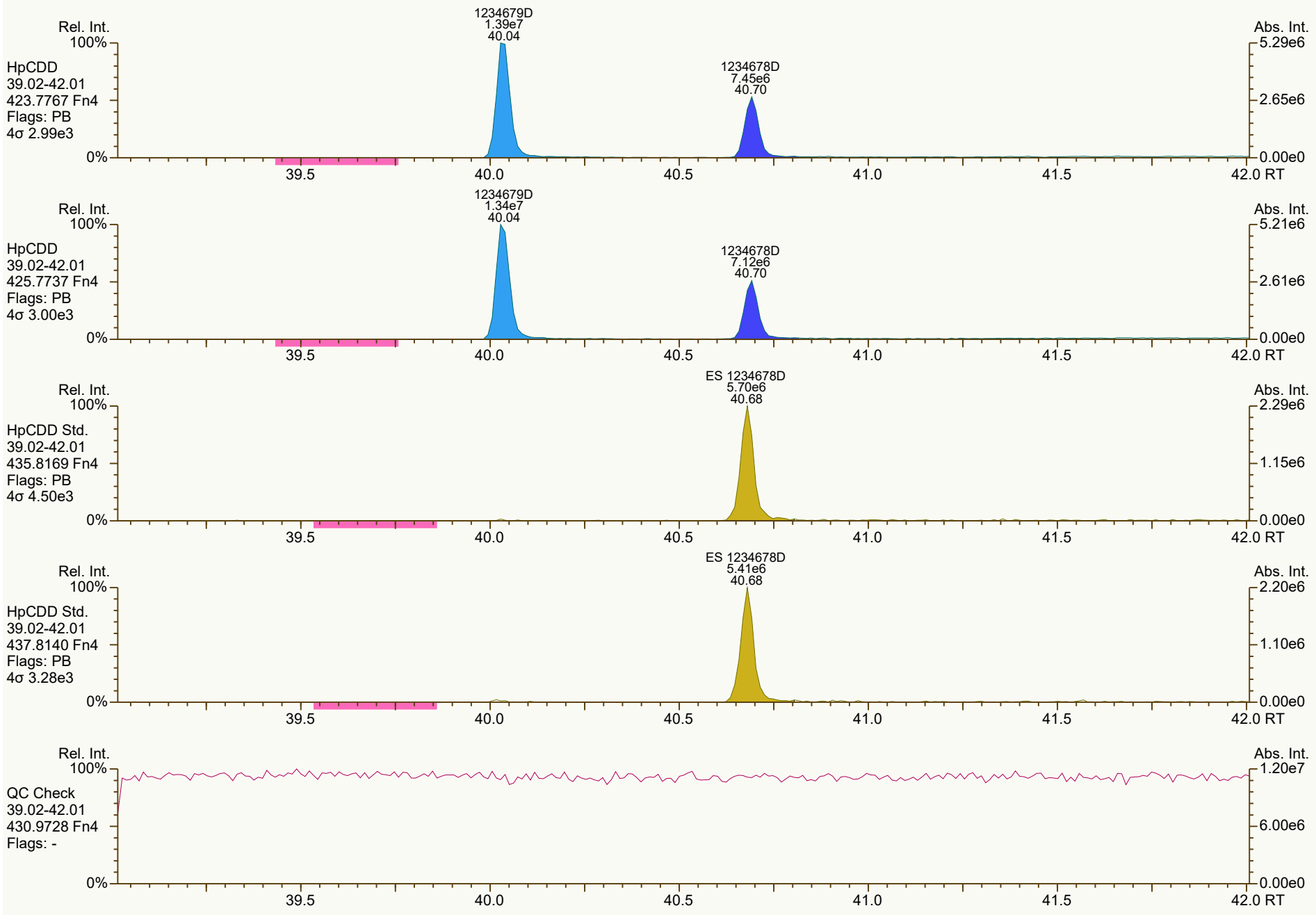

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.49e6
2.24e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.00e6
2.00e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.88e7
9.40e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.20e7
6.00e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.29e6
4.14e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT

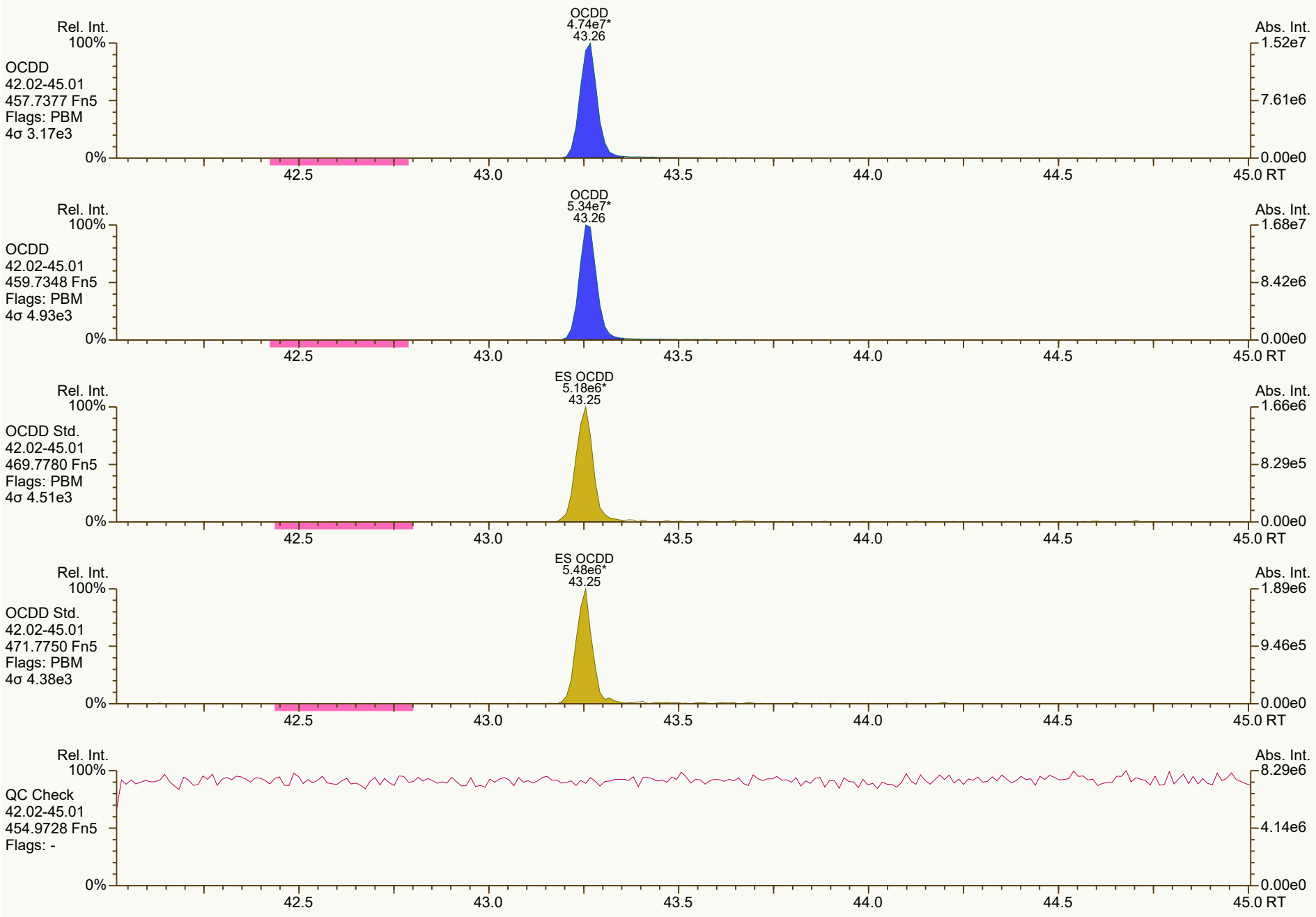

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PB
4σ 4.32e3
0%
1368D
1.37e5
25.01
1469D
4.42e5
26.55
2378D
1.18e6
28.60
1278D
1.37e5
28.92
Abs. Int.
2.71e5
1.35e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PB
4σ 3.73e3
0%
1368D
1.65e5
25.01
1469D
5.21e5
26.55
2378D
1.55e6
28.59
1278D
1.46e5
28.91
Abs. Int.
3.58e5
1.79e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.11e3
0%
CS 37Cl-2378D
8.38e6
28.59
Abs. Int.
2.04e6
1.02e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.04e4
0%
JS 1234D
9.17e6
27.92
ES 2378D
8.28e6
28.57
Abs. Int.
2.39e6
1.19e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 5.19e3
0%
JS 1234D
1.16e7
27.92
ES 2378D
9.93e6
28.57
Abs. Int.
2.77e6
1.39e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

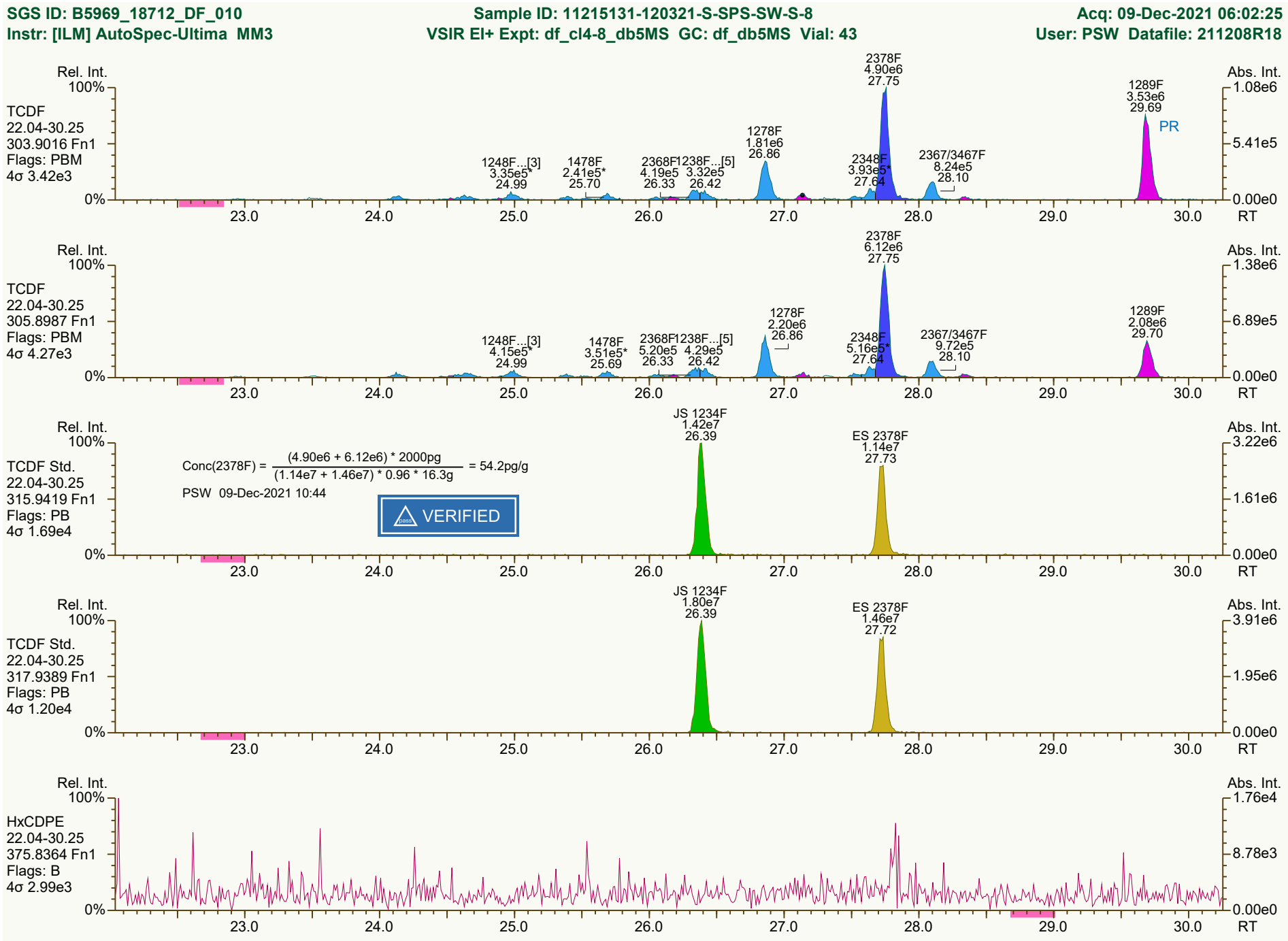


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_010.utp_res, saved 09-Dec-2021 10:44 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3976, 0978 scc: 784-880
PKD: 09-Dec-2021 09:30 Printed: 09-Dec-2021 10:52 Page 3 of 12

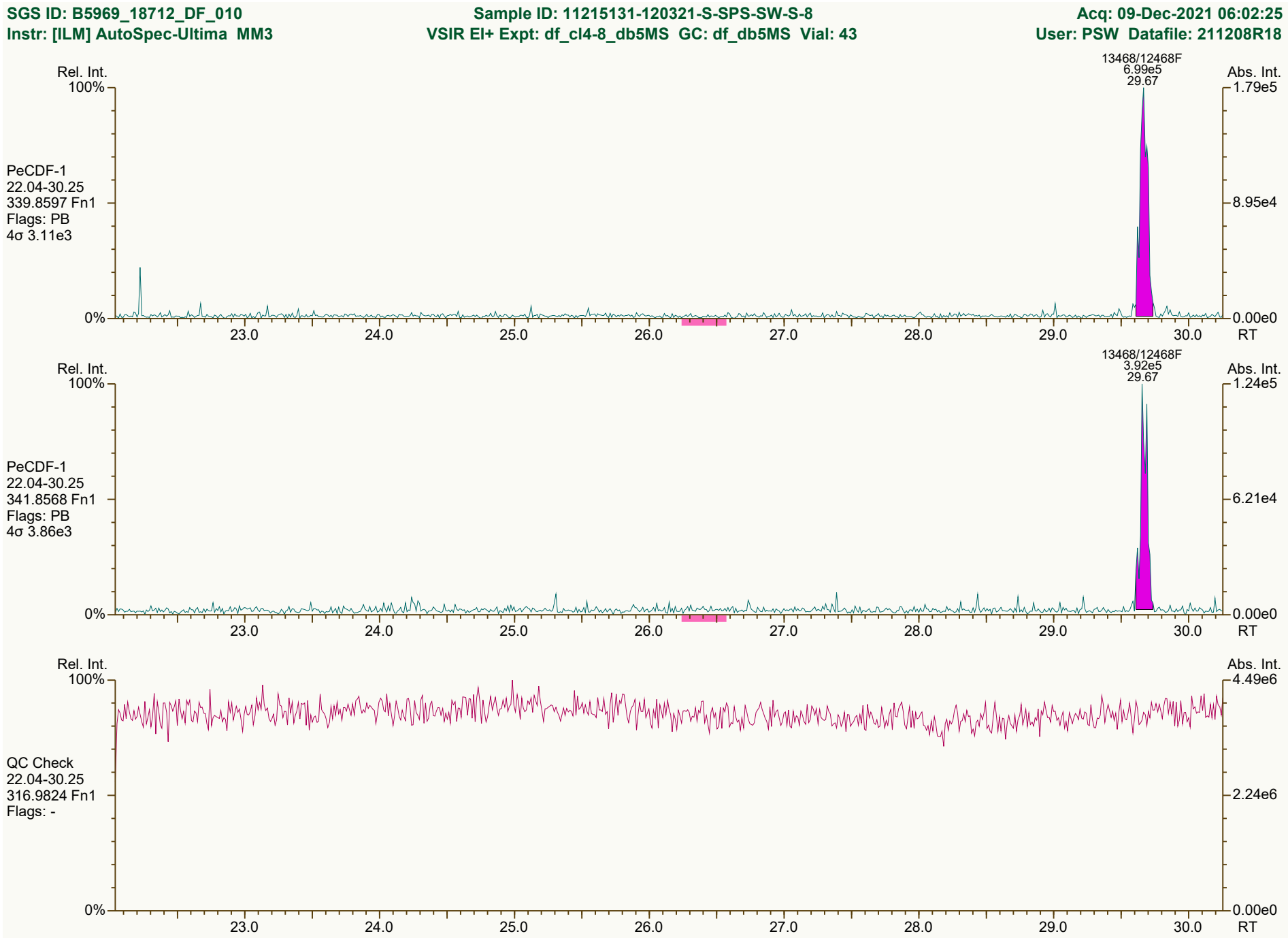

SGS ID: B5969_18712_DF_010
Sample ID: 11215131-120321-S-SPS-SW-S-8
Acq: 09-Dec-2021 06:02:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 43
User: PSW Datafile: 211208R18
Rel. Int.
Abs. Int.
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PBM
4σ 6.47e3
124679/124689D
2.25e6
36.00
123468D
3.28e5
36.65
123679/123689D
1.26e6
36.94
123469D
1.69e5*
37.07
123678D
2.93e5
37.84
123789D
2.08e5
38.12
7.04e5
3.52e5
0.00e0
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PBM
4σ 7.87e3
124679/124689D
1.82e6
36.00
123468D
2.78e5
36.65
123679/123689D
1.09e6
36.94
123469D
1.21e5*
37.07
123678D
2.81e5
37.84
123789D
1.62e5
38.12
6.16e5
3.08e5
0.00e0
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 5.14e3
ES 123478D
7.85e6
37.71
ES 123678D
8.03e6
37.82
JS 123467D
4.19e6*
38.01
ES 123789D
8.38e6
38.11
2.69e6
1.35e6
0.00e0
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 4.48e3
ES 123478D
6.23e6
37.71
ES 123678D
6.16e6
37.83
JS 123467D
3.64e6*
38.01
ES 123789D
6.68e6
38.11
2.11e6
1.05e6
0.00e0
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
1.88e7
9.40e6
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_010.utp_res, saved 09-Dec-2021 10:44 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3020, 1926 scc: 784-880
PKD: 09-Dec-2021 09:30 Printed: 09-Dec-2021 10:52 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 2.99e3
1234679D
1.39e7
40.04
1234678D
7.45e6
40.70
Abs. Int.
5.29e6
2.65e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 3.00e3
1234679D
1.34e7
40.04
1234678D
7.12e6
40.70
Abs. Int.
5.21e6
2.61e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 4.50e3
ES 1234678D
5.70e6
40.68
Abs. Int.
2.29e6
1.15e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 3.28e3
ES 1234678D
5.41e6
40.68
Abs. Int.
2.20e6
1.10e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.20e7
6.00e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

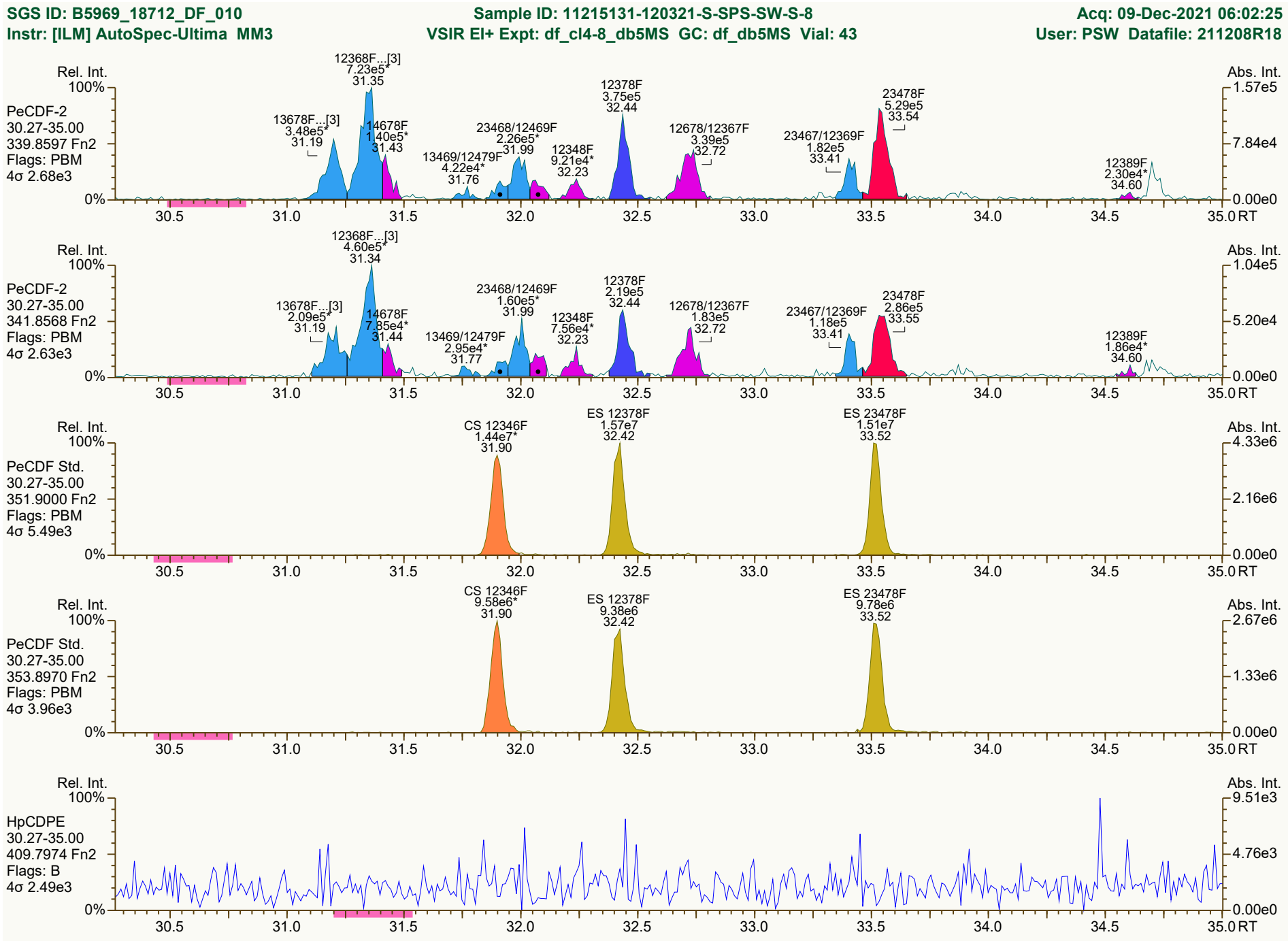

OCDD
4.74e7*
43.26
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 3.17e3
0%
Abs. Int.
1.52e7
7.61e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.34e7*
43.26
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 4.93e3
1.68e7
8.42e6
ES OCDD
5.18e6*
43.25
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PBM
4σ 4.51e3
1.66e6
8.29e5
ES OCDD
5.48e6*
43.25
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PBM
4σ 4.38e3
1.89e6
9.46e5
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
8.29e6
4.14e6

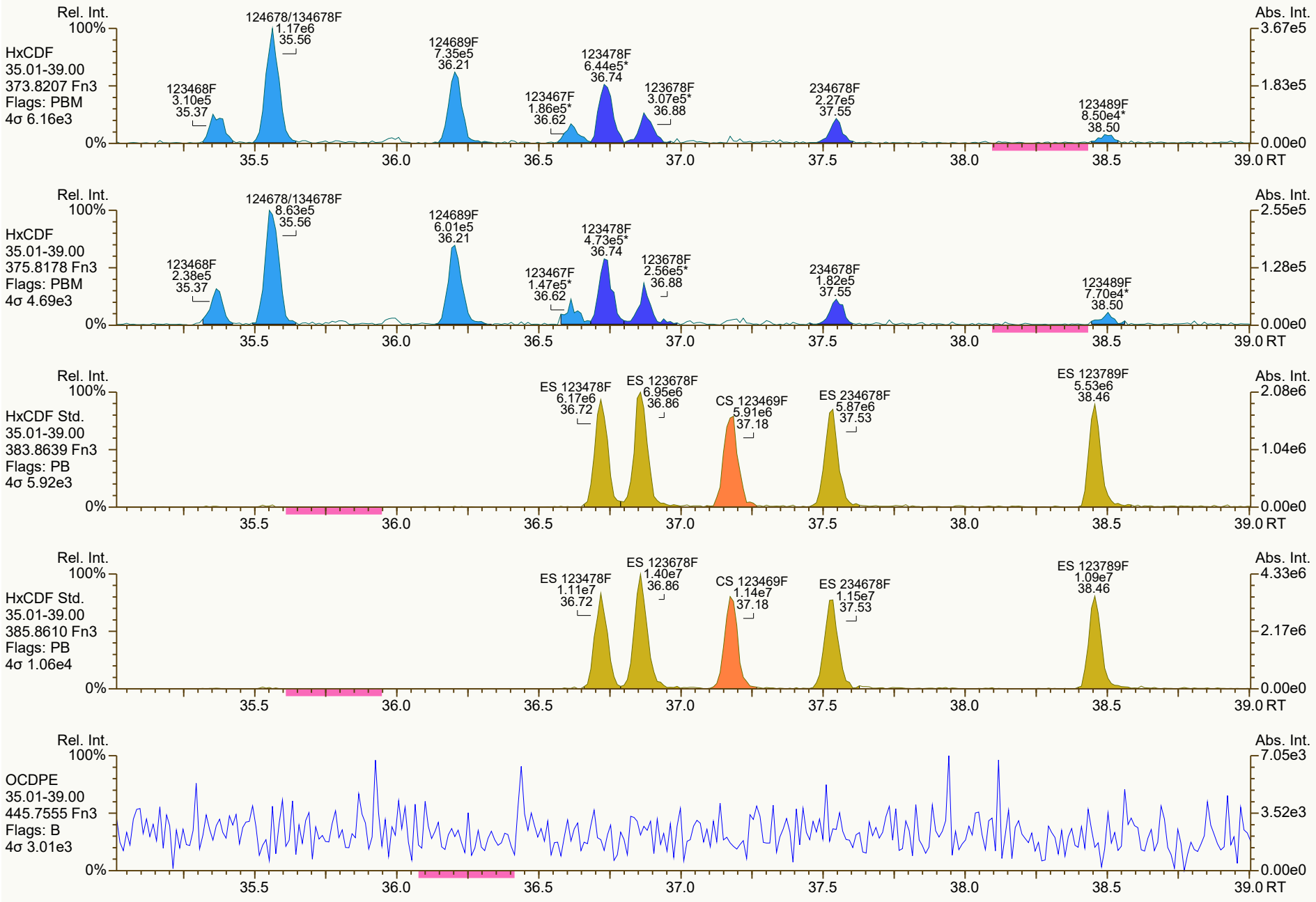

SGS ID: B5969_18712_DF_010
Sample ID: 11215131-120321-S-SPS-SW-S-8
Acq: 09-Dec-2021 06:02:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 43
User: PSW Datafile: 211208R18
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 3.42e3
2378F 4.90e6 27.75
1289F 3.53e6 29.69
PR
1278F 1.81e6 26.86
1248F...[3] 3.35e5* 24.99
1478F 2.41e5* 25.70
2368F 4.19e5 26.33
1238F...[5] 3.32e5 26.42
2348F 3.93e5* 27.64
2367/3467F 8.24e5 28.10
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 4.27e3
2378F 6.12e6 27.75
1278F 2.20e6 26.86
1248F...[3] 4.15e5* 24.99
1478F 3.51e5* 25.69
2368F 5.20e5 26.33
1238F...[5] 4.29e5 26.42
2348F 5.16e5* 27.64
2367/3467F 9.72e5 28.10
1289F 2.08e6 29.70
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PB
4σ 1.69e4
Conc(2378F) = (4.90e6 + 6.12e6) * 2000pg / (1.14e7 + 1.46e7) * 0.96 * 16.3g = 54.2pg/g
PSW 09-Dec-2021 10:44
VERIFIED
JS 1234F 1.42e7 26.39
ES 2378F 1.14e7 27.73
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PB
4σ 1.20e4
JS 1234F 1.80e7 26.39
ES 2378F 1.46e7 27.72
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 2.99e3
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_010.utp_res, saved 09-Dec-2021 10:44 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4046, 1316, 9330 scc: 784-880
PKD: 09-Dec-2021 09:30 Printed: 09-Dec-2021 10:52 Page 7 of 12

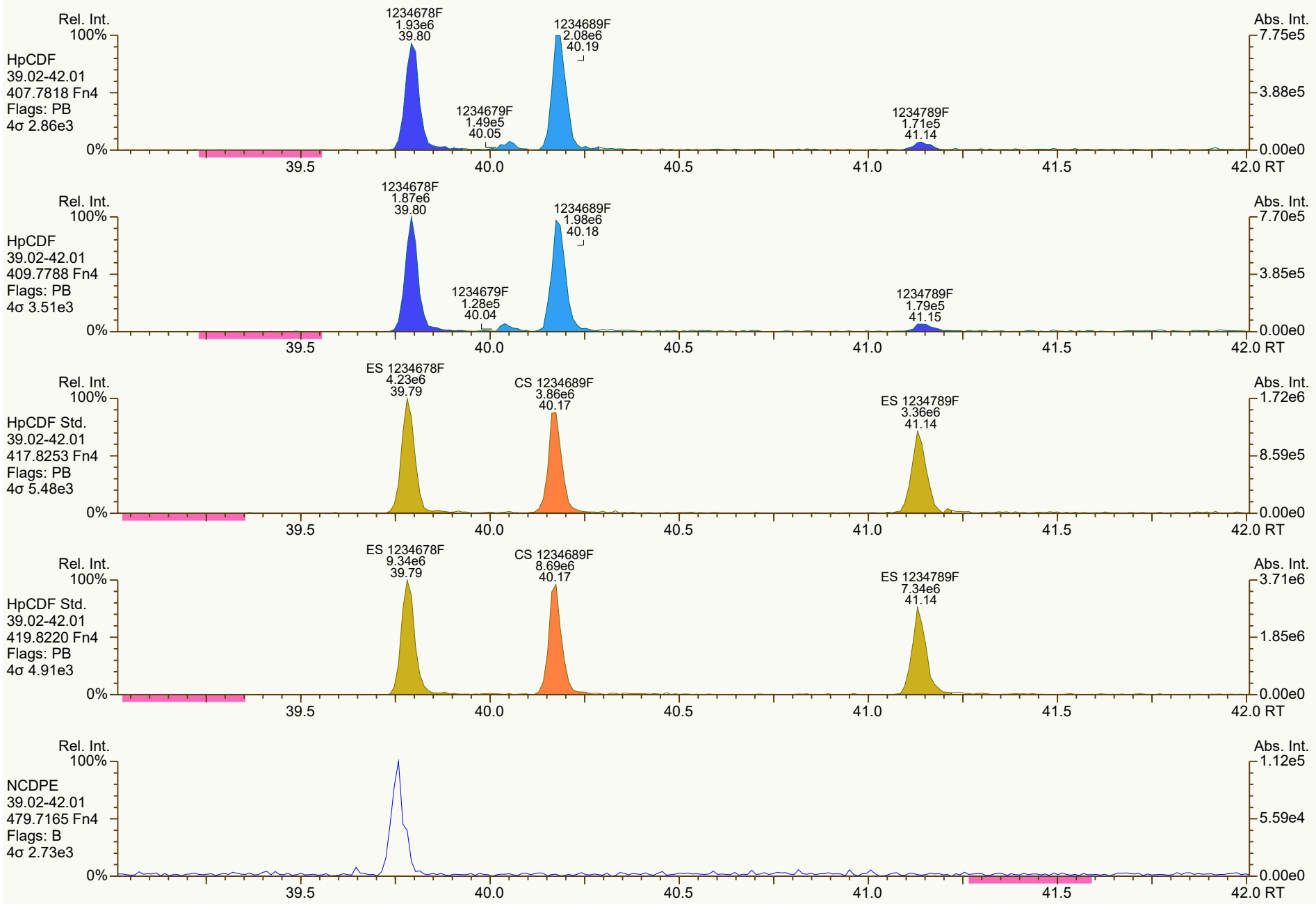
SGS ID: B5969_18712_DF_010 | Sample ID: 11215131-120321-S-SPS-SW-S-8 | Acq: 09-Dec-2021 06:02:25
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 43 | User: PSW Datafile: 211208R18

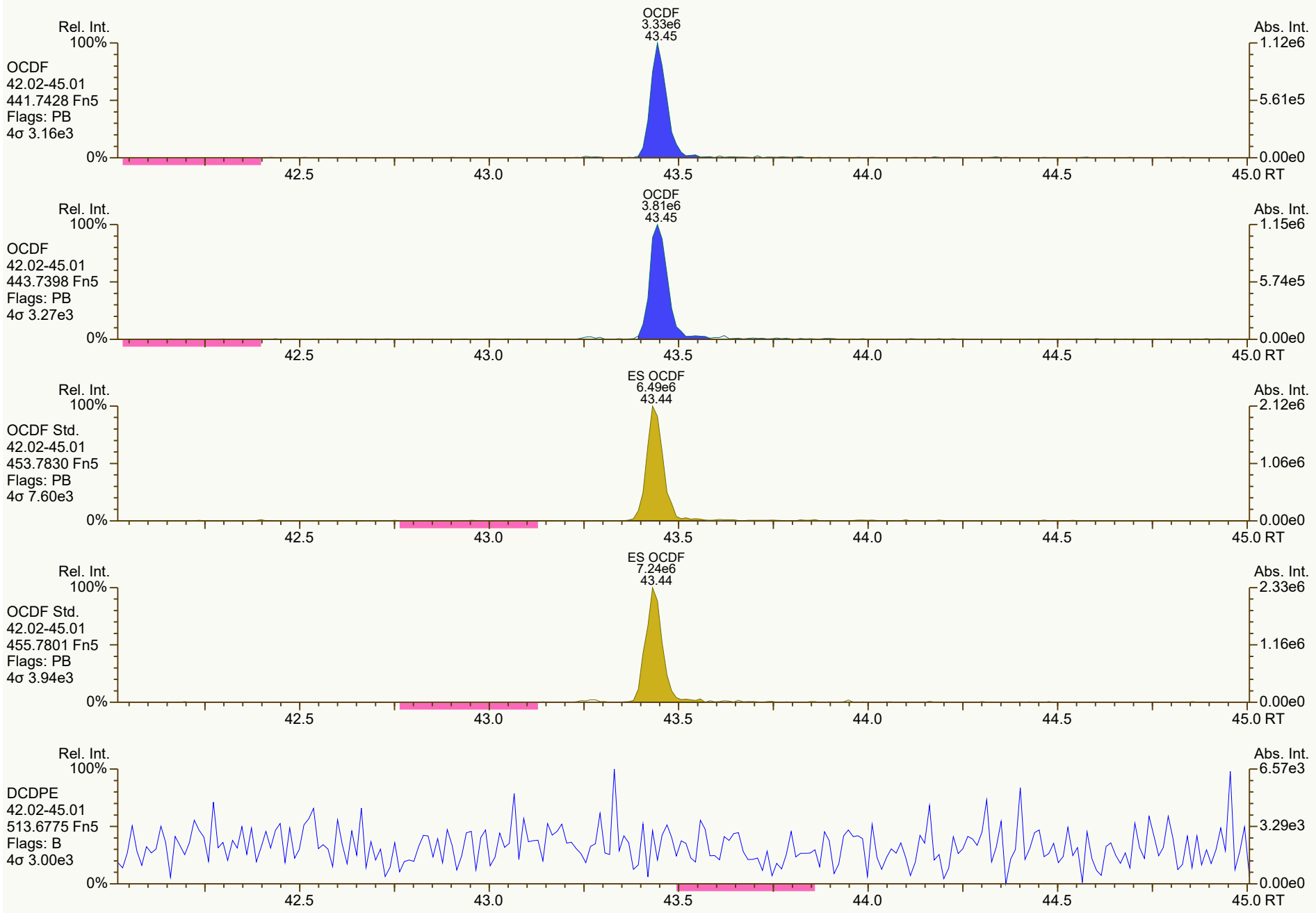


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_010.utp_res, saved 09-Dec-2021 10:44 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7132 scc: 784-880 | *PKD: 09-Dec-2021 09:30 Printed: 09-Dec-2021 10:52 Page 8 of 12*


SGS ID: B5969_18712_DF_010
Sample ID: 11215131-120321-S-SPS-SW-S-8
Acq: 09-Dec-2021 06:02:25
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 43
User: PSW Datafile: 211208R18
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PBM
4σ 2.68e3
12368F...[3] 7.23e5* 31.35
13678F...[3] 3.48e5* 31.19
14678F 1.40e5* 31.43
13469/12479F 4.22e4* 31.76
23468/12469F 2.26e5* 31.99
12348F 9.21e4* 32.23
12378F 3.75e5 32.44
12678/12367F 3.39e5 32.72
23467/12369F 1.82e5 33.41
23478F 5.29e5 33.54
12389F 2.30e4* 34.60
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PBM
4σ 2.63e3
12368F...[3] 4.60e5* 31.34
13678F...[3] 2.09e5* 31.19
14678F 7.85e4* 31.44
13469/12479F 2.95e4* 31.77
23468/12469F 1.60e5* 31.99
12348F 7.56e4* 32.23
12378F 2.19e5 32.44
12678/12367F 1.83e5 32.72
23467/12369F 1.18e5 33.41
23478F 2.86e5 33.55
12389F 1.86e4* 34.60
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 5.49e3
CS 12346F 1.44e7* 31.90
ES 12378F 1.57e7 32.42
ES 23478F 1.51e7 33.52
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 3.96e3
CS 12346F 9.58e6* 31.90
ES 12378F 9.38e6 32.42
ES 23478F 9.78e6 33.52
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 2.49e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\B5969_18712_DF_010.utp_res, saved 09-Dec-2021 10:44 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9976, 7590, 4166 scc: 784-880
PKD: 09-Dec-2021 09:30 Printed: 09-Dec-2021 10:52 Page 9 of 12


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 6.16e3
123468F 3.10e5 35.37
124678/134678F 1.17e6 35.56
124689F 7.35e5 36.21
123467F 1.86e5* 36.62
123478F 6.44e5* 36.74
123678F 3.07e5* 36.88
234678F 2.27e5 37.55
123489F 8.50e4* 38.50
Abs. Int.
3.67e5
1.83e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 4.69e3
123468F 2.38e5 35.37
124678/134678F 8.63e5 35.56
124689F 6.01e5 36.21
123467F 1.47e5* 36.62
123478F 4.73e5* 36.74
123678F 2.56e5* 36.88
234678F 1.82e5 37.55
123489F 7.70e4* 38.50
Abs. Int.
2.55e5
1.28e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 5.92e3
ES 123478F 6.17e6 36.72
ES 123678F 6.95e6 36.86
CS 123469F 5.91e6 37.18
ES 234678F 5.87e6 37.53
ES 123789F 5.53e6 38.46
Abs. Int.
2.08e6
1.04e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 1.06e4
ES 123478F 1.11e7 36.72
ES 123678F 1.40e7 36.86
CS 123469F 1.14e7 37.18
ES 234678F 1.15e7 37.53
ES 123789F 1.09e7 38.46
Abs. Int.
4.33e6
2.17e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.01e3
Abs. Int.
7.05e3
3.52e3
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 2.86e3
1234678F
1.93e6
39.80
1234679F
1.49e5
40.05
1234689F
2.08e6
40.19
1234789F
1.71e5
41.14
Abs. Int.
7.75e5
3.88e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 3.51e3
1234678F
1.87e6
39.80
1234679F
1.28e5
40.04
1234689F
1.98e6
40.18
1234789F
1.79e5
41.15
Abs. Int.
7.70e5
3.85e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 5.48e3
ES 1234678F
4.23e6
39.79
CS 1234689F
3.86e6
40.17
ES 1234789F
3.36e6
41.14
Abs. Int.
1.72e6
8.59e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 4.91e3
ES 1234678F
9.34e6
39.79
CS 1234689F
8.69e6
40.17
ES 1234789F
7.34e6
41.14
Abs. Int.
3.71e6
1.85e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 2.73e3
Abs. Int.
1.12e5
5.59e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDF
3.33e6
43.45
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 3.16e3
0%
Abs. Int.
1.12e6
5.61e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.81e6
43.45
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 3.27e3
0%
Abs. Int.
1.15e6
5.74e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
6.49e6
43.44
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 7.60e3
0%
Abs. Int.
2.12e6
1.06e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
7.24e6
43.44
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 3.94e3
0%
Abs. Int.
2.33e6
1.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.00e3
0%
Abs. Int.
6.57e3
3.29e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
0	211208R01	3	CS3_211208_DF_RA ✓	1.00	SIL 25-347-1	PSW	442-607	08-Dec-2021	16:27:04
1	211208R02	32	OPR1_18712_DF	1.00	0_18712_OPR001	PSW	098-240	08-Dec-2021	17:13:48
2	211208R03	33	OPR2_18712_DF	1.00	0_18712_OPR002	PSW	754-873	08-Dec-2021	18:01:22
3	211208R04	2	SBS_211208_DF_RA	1.00	SIL 20-61-1	PSW	290-577	08-Dec-2021	18:48:55
4	211208R05	31	MB1_18712_DF_SDS	10.00	Method Blank	PSW	825-601	08-Dec-2021	19:36:29
5	211208R06	34	B5969_18712_DF_001	15.17	11215131-120221-S-JC-SW-S-3	PSW	866-721	08-Dec-2021	20:24:03
6	211208R07	35	B5969_18712_DF_002	18.76	11215131-120221-S-JC-SW-S-4	PSW	750-531	08-Dec-2021	21:11:35
7	211208R08	36	B5969_18712_DF_003	18.40	11215131-120321-S-JC-SW-S-5	PSW	117-914	08-Dec-2021	21:59:10
8	211208R09	37	B5969_18712_DF_004	16.40	11215131-120221-S-SPS-SW-S-7	PSW	834-918	08-Dec-2021	22:46:44
9	211208R10	38	B5969_18712_DF_005	15.22	11215131-120221-S-SPS-SW-S-6	PSW	921-596	08-Dec-2021	23:34:22
10	211208R11	39	B5969_18712_DF_006	14.56	11215131-120321-S-SPS-SW-S-12	PSW	256-296	09-Dec-2021	00:21:57
11	211208R12	40	B5969_18712_DF_007	14.62	11215131-120321-S-SPS-SW-S-11	PSW	109-751	09-Dec-2021	01:09:31
12	211208R13	41	B5969_18712_DF_008	15.67	11215131-120321-S-SPS-SW-S-10	PSW	803-681	09-Dec-2021	01:57:09
13	211208R14	42	B5969_18712_DF_009	14.91	11215131-120321-S-SPS-SW-S-9	PSW	945-326	09-Dec-2021	02:44:49
15	211208R15	3	CS3_211208_DF_RB	1.00	SIL 25-347-1	PSW	185-568	09-Dec-2021	03:40:30
16	211208R16	33	OPR2_18712_DF-RJ	1.00	0_18712_OPR002 CPSM only	PSW	577-569	09-Dec-2021	04:27:13
17	211208R17	2	SBS_211208_DF_RB	1.00	SIL 20-61-1 CL 09Dec21	PSW	833-490	09-Dec-2021	05:14:47
18	211208R18	43	B5969_18712_DF_010 ✓	16.30	11215131-120321-S-SPS-SW-S-8	PSW	784-880	09-Dec-2021	06:02:25

REVIEWED
paul_walton , 12/9/2021, 10:58:31 AM

APPROVED
Carla_Lyon , 12/9/2021, 12:50:26 PM

Dioxin/Furan QC Summary	Acq'd: 08 Dec 2021 16:27 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211208_DF_RA	UTP: 09-Dec-2021 10:40:13 PSW	Checkcode: 442-607-VRQ
Sample ID: SIL 25-347-1	Report: 09 Dec 2021 10:41 pw	Datafile: 211208R01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.61	3.84E+06	0.81	Y	1.34	1.07	-21%
12378-PeCDD	33.88	1.59E+07	1.60	Y	1.06	0.98	-7%
123478-HxCDD	37.74	1.45E+07	1.21	Y	1.06	1.03	-3%
123678-HxCDD	37.85	1.53E+07	1.28	Y	1.08	1.13	4%
123789-HxCDD	38.14	1.55E+07	1.22	Y	1.02	0.97	-4%
1234678-HpCDD	40.71	1.29E+07	1.05	Y	0.97	0.99	2%
OCDD	43.28	1.78E+07	0.90	Y	1.07	1.05	-2%
2378-TCDF	27.76	5.36E+06	0.80	Y	0.96	1.01	6%
12378-PeCDF	32.45	2.25E+07	1.53	Y	0.95	0.97	3%
23478-PeCDF	33.55	2.23E+07	1.49	Y	0.94	0.94	0%
123478-HxCDF	36.75	2.09E+07	1.30	Y	1.23	1.24	0%
123678-HxCDF	36.89	2.26E+07	1.24	Y	1.13	1.15	1%
234678-HxCDF	37.56	2.08E+07	1.27	Y	1.15	1.14	-1%
123789-HxCDF	38.49	1.90E+07	1.27	Y	1.14	1.15	2%
1234678-HpCDF	39.81	1.89E+07	1.02	Y	1.36	1.34	-2%
1234789-HpCDF	41.16	1.54E+07	1.02	Y	1.30	1.32	1%
OCDF	43.47	2.17E+07	0.90	Y	1.03	1.02	0%
ES 2378-TCDD	28.59	3.60E+07	0.80	Y	1.03	0.99	-5%
ES 12378-PeCDD	33.857	3.23E+07	1.57	Y	1.03	0.88	-15%
ES 123478-HxCDD	37.724	2.82E+07	1.20	Y	0.99	0.96	-3%
ES 123678-HxCDD	37.836	2.71E+07	1.27	Y	0.97	0.92	-5%
ES 123789-HxCDD	38.124	3.19E+07	1.23	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.695	2.61E+07	1.09	Y	0.99	0.89	-10%
ES OCDD	43.273	3.39E+07	0.93	Y	0.78	0.58	-26%
ES 2378-TCDF	27.743	5.29E+07	0.78	Y	1.08	1.02	-5%
ES 12378-PeCDF	32.43	4.64E+07	1.60	Y	0.93	0.90	-4%
ES 23478-PeCDF	33.527	4.74E+07	1.60	Y	0.92	0.92	-1%
ES 123478-HxCDF	36.73	3.39E+07	0.53	Y	1.14	1.15	1%
ES 123678-HxCDF	36.871	3.94E+07	0.54	Y	1.30	1.34	3%
ES 234678-HxCDF	37.542	3.65E+07	0.53	Y	1.20	1.24	3%
ES 123789-HxCDF	38.472	3.29E+07	0.52	Y	1.14	1.12	-1%
ES 1234678-HpCDF	39.8	2.83E+07	0.45	Y	0.95	0.96	1%
ES 1234789-HpCDF	41.152	2.34E+07	0.43	Y	0.85	0.80	-6%
ES OCDF	43.461	4.24E+07	0.91	Y	0.93	0.72	-22%

ok 1613B
CL 09Dec21

Dioxin/Furan QC Summary	Acq'd: 08 Dec 2021 16:27 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211208_DF_RA	UTP: 09-Dec-2021 10:40:13 PSW	Checkcode: 442-607-VRQ
Sample ID: SIL 25-347-1	Report: 09 Dec 2021 10:41 pw	Datafile: 211208R01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.94	3.66E+07	0.83	Y	-	-	-
JS 1234-TCDF	26.41	5.16E+07	0.78	Y	-	-	-
JS 123467-HxCDD	38.03	1.47E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	28.61	4.59E+06	n/a	-	1.31	1.26	-4%
CS 12347-PeCDD	33.36	2.99E+07	1.54	Y	0.89	0.82	-8%
CS 12346-PeCDF	31.91	4.53E+07	1.55	Y	0.87	0.88	1%
CS 123469-HxCDF	37.19	3.58E+07	0.53	Y	1.09	1.22	12%
CS 1234689-HpCDF	40.19	2.90E+07	0.45	Y	0.86	0.99	14%
~~SS 37Cl-2378-TCDD~~	~~28.61~~	~~4.59E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.27~~	~~1%~~
~~SS 12347-PeCDD~~	~~33.36~~	~~2.99E+07~~	~~1.54~~	~~Y~~	~~0.86~~	~~0.93~~	~~7%~~
~~SS 12346-PeCDF~~	~~31.91~~	~~4.53E+07~~	~~1.55~~	~~Y~~	~~0.93~~	~~0.97~~	~~5%~~
~~SS 123469-HxCDF~~	~~37.19~~	~~3.58E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~0.91~~	~~8%~~
~~SS 1234689-HpCDF~~	~~40.19~~	~~2.90E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~1.03~~	~~12%~~
Not used in this project.							
CL 09Dec21							
~~OCDD-a~~	~~43.28~~	~~8.64E+05~~	~~2.22~~	~~Y~~	~~0.07~~	~~0.05~~	~~-23%~~
~~OCDF-a~~	~~43.47~~	~~1.11E+06~~	~~2.69~~	~~Y~~	~~0.06~~	~~0.05~~	~~-12%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211208R01 Analysis Date: 08-DEC-2021 16:27:04

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	7.92	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.60	1.32 - 1.78	Y	46.4	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.21	1.05 - 1.43	Y	48.7	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	52.1	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.22	1.05 - 1.43	Y	47.9	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	50.9	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	98	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.6	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.53	1.32 - 1.78	Y	51.3	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.49	1.32 - 1.78	Y	50.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.30	1.05 - 1.43	Y	50	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.7	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	49.5	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.9	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	49.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	50.7	43 - 58	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.6	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 09 Dec 2021 10:41 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

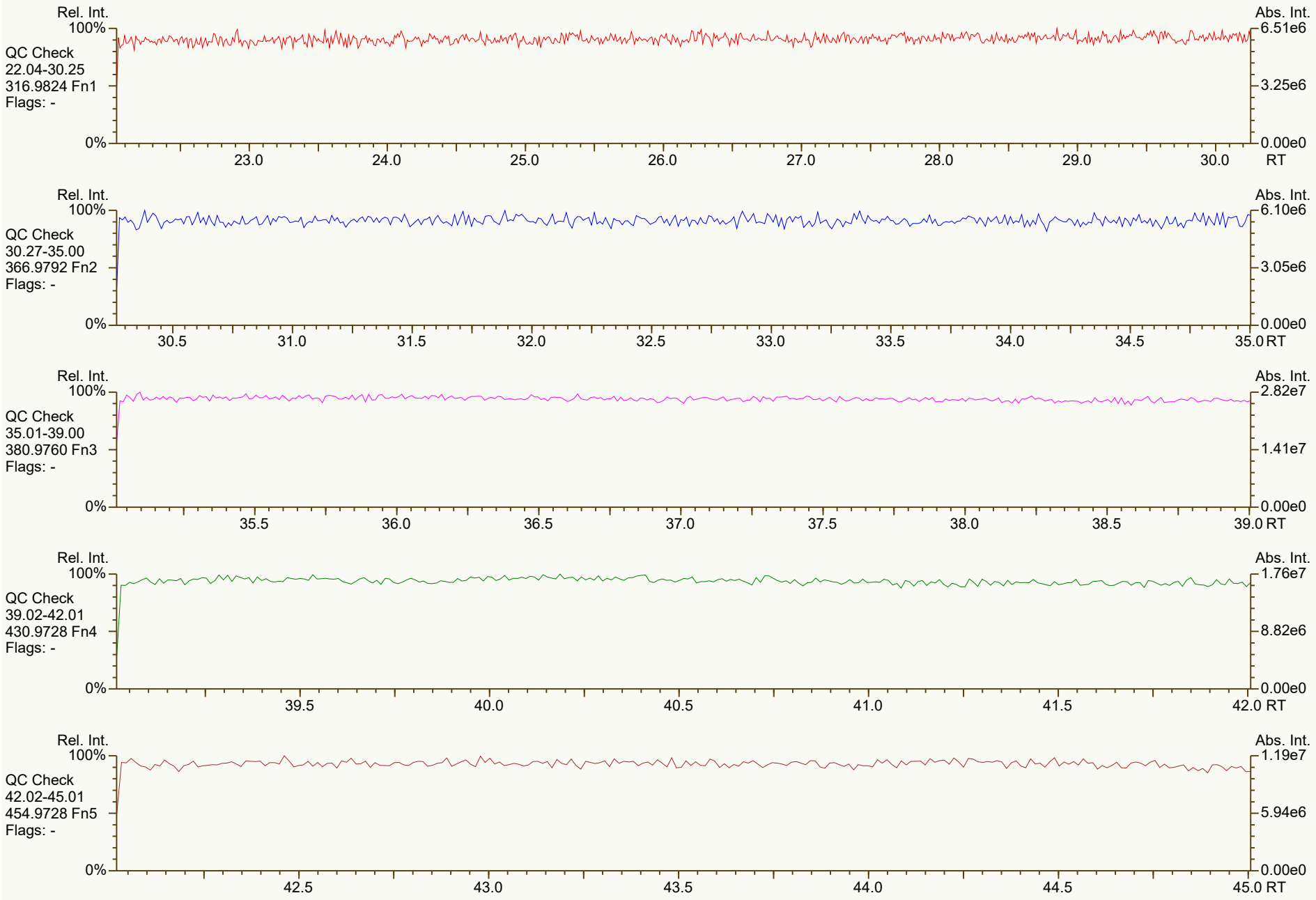
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211208R01 Analysis Date: 08-DEC-2021 16:27:04

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	95.3	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32	-	1.78	Y	85.3	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.20	1.05	-	1.43	Y	96.6	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	94.8	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05	-	1.43	Y	96.6	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.09	0.88	-	1.20	Y	89.5	72	-	138	Y
13C-OCDD	M+2/M+4	0.93	0.76	-	1.02	Y	149	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.78	0.65	-	0.89	Y	94.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	96.3	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	99.4	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	101	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	103	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	103	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	98.6	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	101	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.43	0.37	-	0.51	Y	93.9	77	-	129	Y
13C-OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	156	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.58	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.54	1.32	-	1.78	Y	91.6	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.55	1.32	-	1.78	Y	101	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	112	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	114	70	-	130	Y

Processed: 09 Dec 2021 10:41 Analyst: pw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100%
QC Check
22.04-30.25
316.9824 Fn1
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0%
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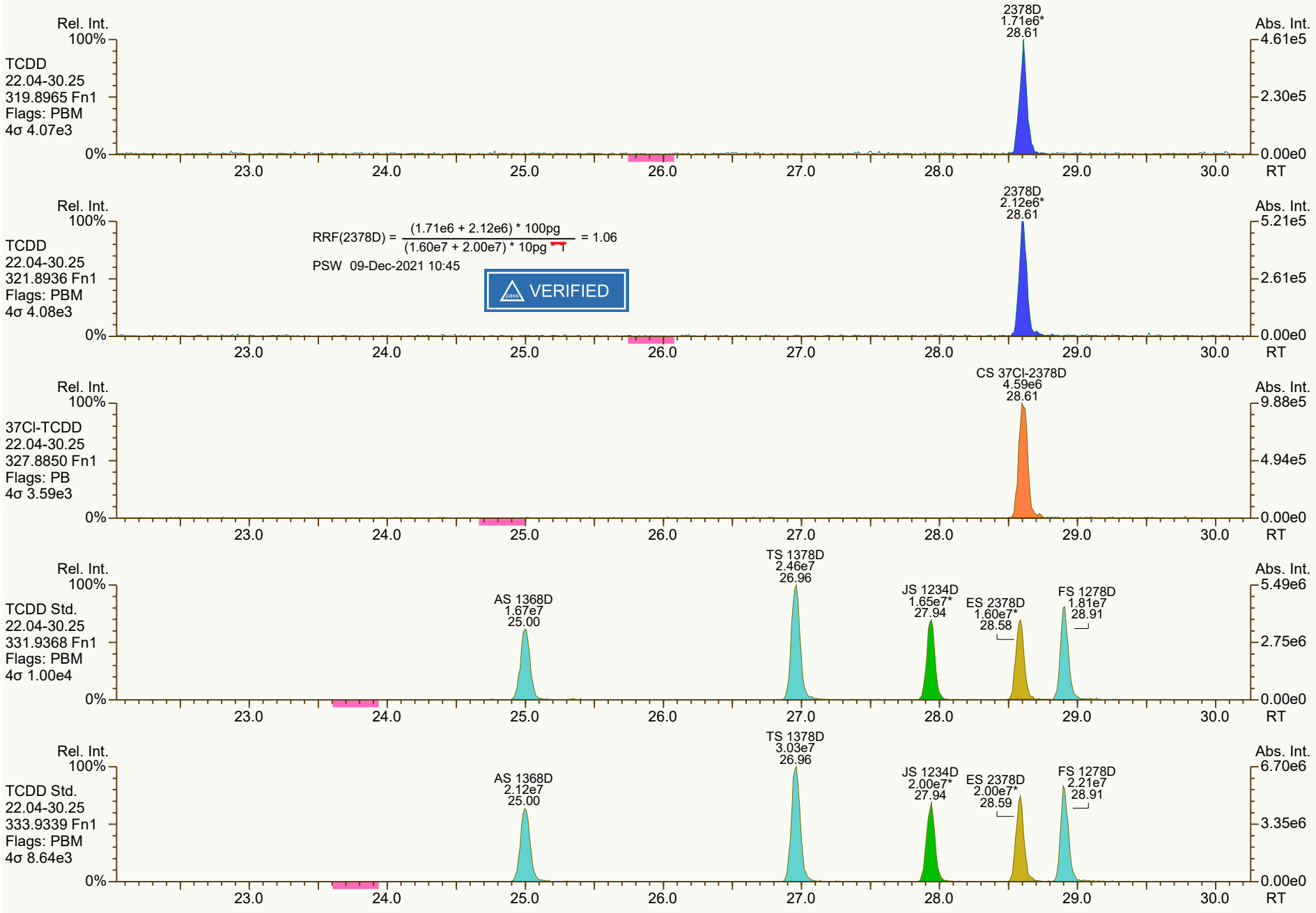
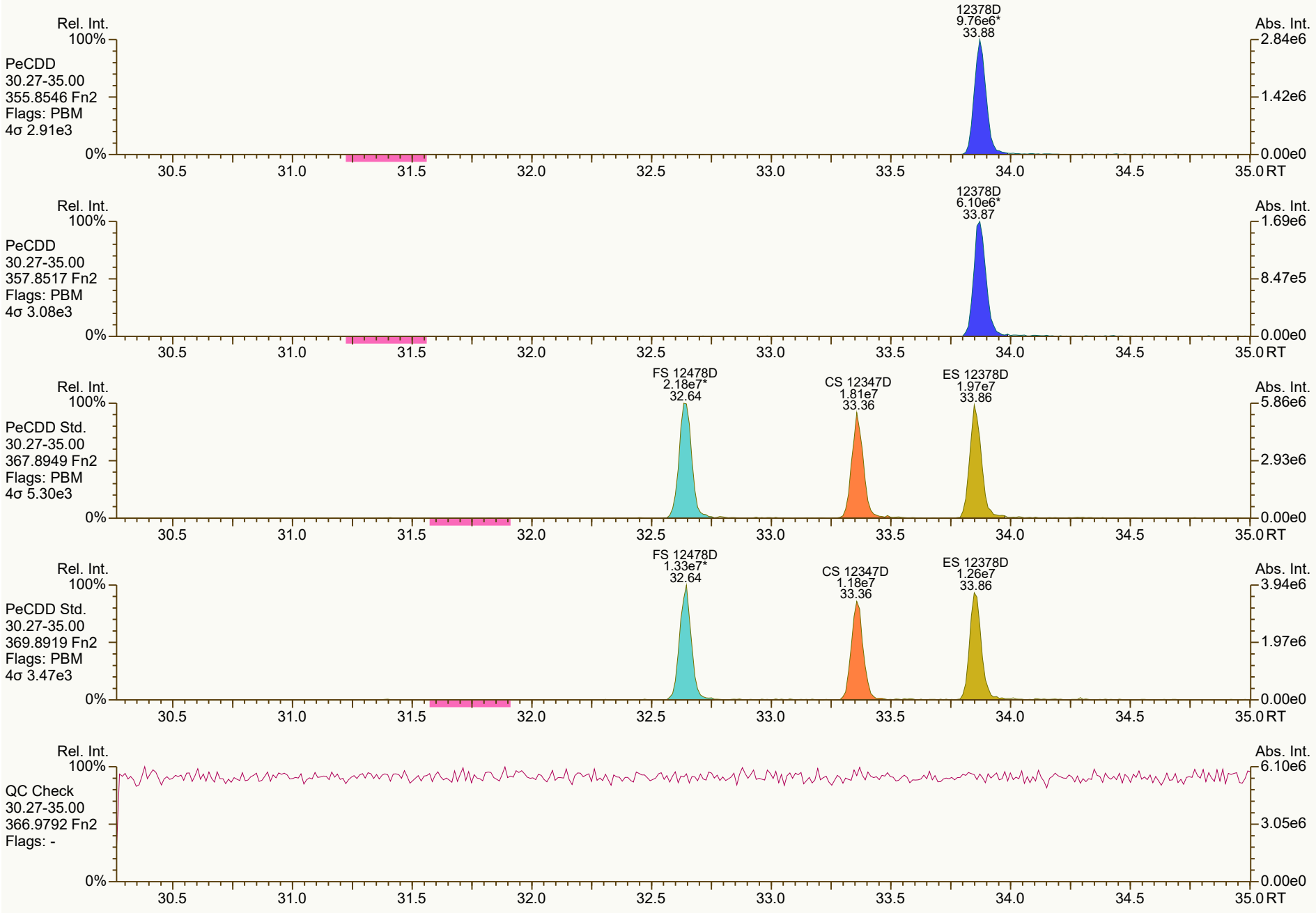
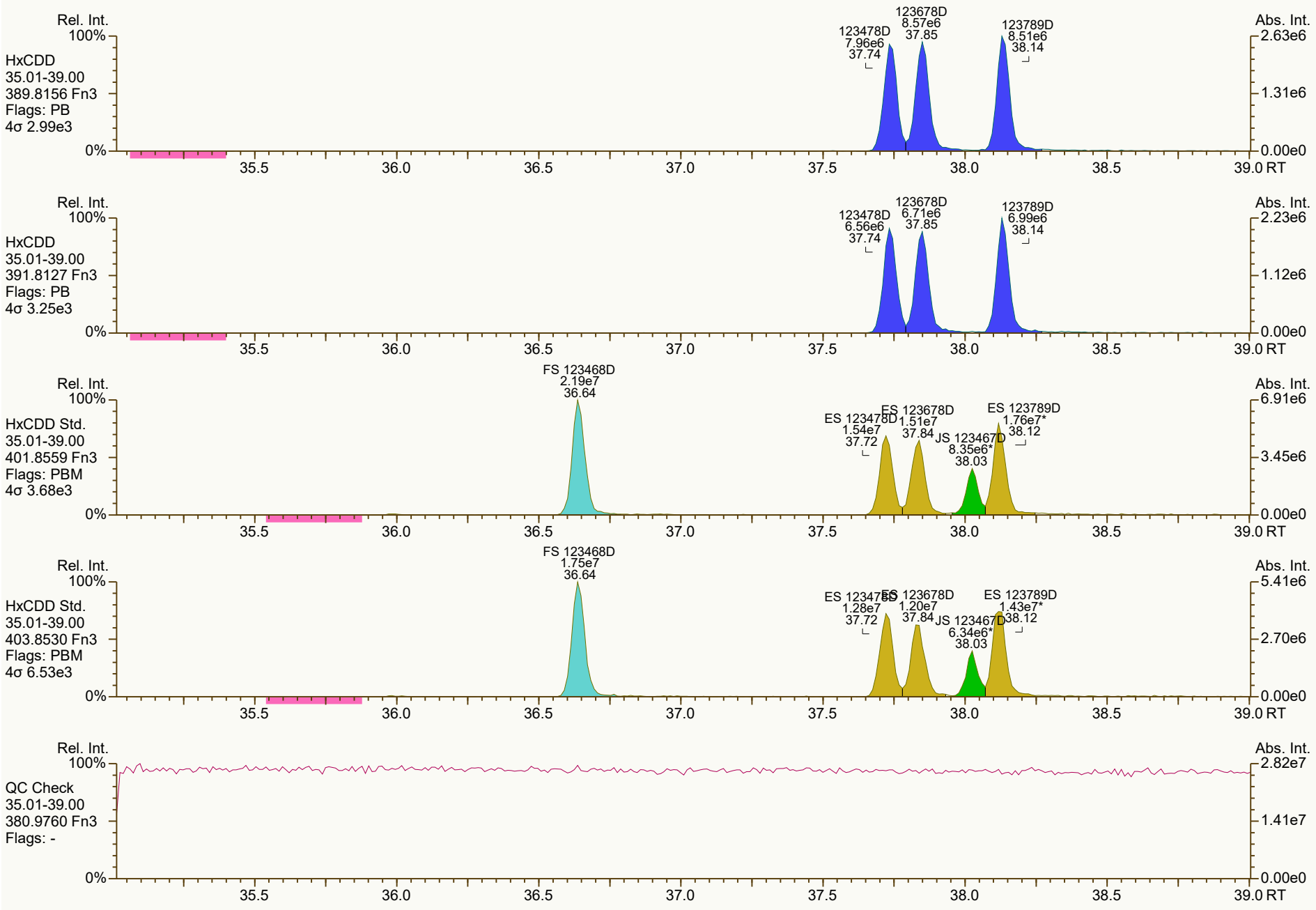
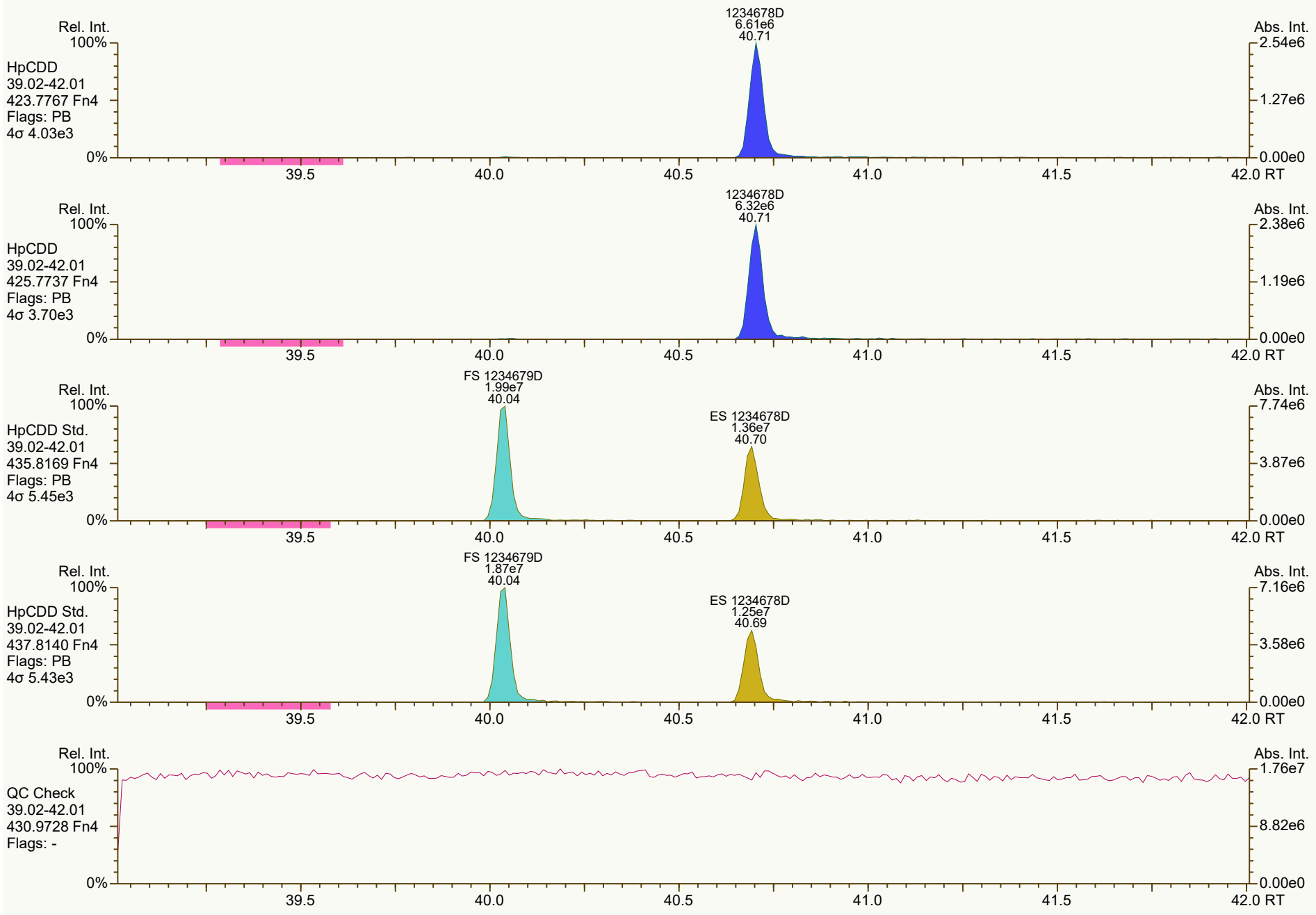
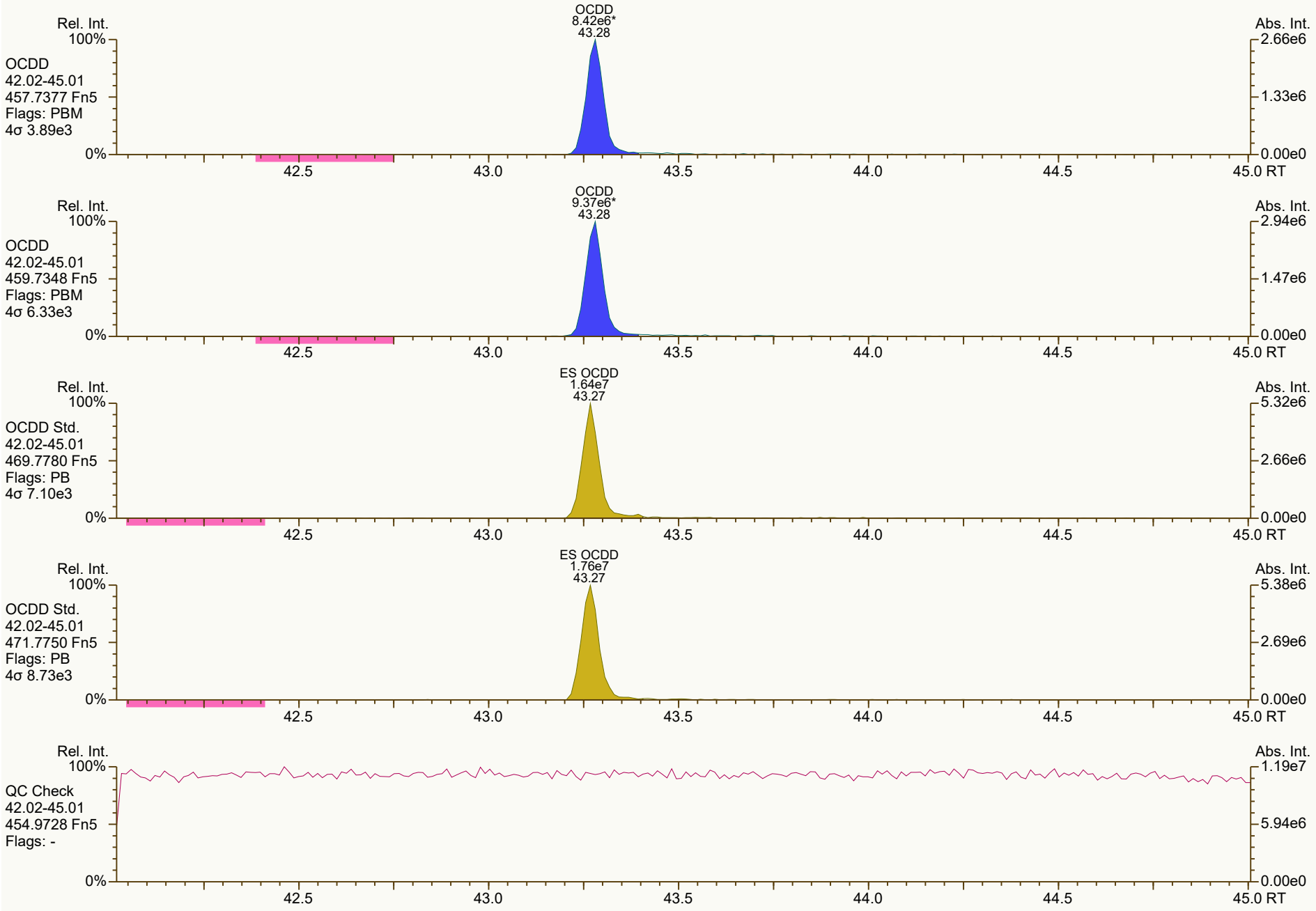
3.25e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.10e6
3.05e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.82e7
1.41e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.76e7
8.82e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.19e7
5.94e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PBM
4σ 4.07e3
0%
2378D
1.71e6*
28.61
Abs. Int.
4.61e5
2.30e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PBM
4σ 4.08e3
0%
RRF(2378D) = (1.71e6 + 2.12e6) * 100pg / (1.60e7 + 2.00e7) * 10pg * 1 = 1.06
PSW 09-Dec-2021 10:45
VERIFIED
2378D
2.12e6*
28.61
Abs. Int.
5.21e5
2.61e5
0.00e0
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.59e3
0%
CS 37Cl-2378D
4.59e6
28.61
Abs. Int.
9.88e5
4.94e5
0.00e0
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PBM
4σ 1.00e4
0%
AS 1368D
1.67e7
25.00
TS 1378D
2.46e7
26.96
JS 1234D
1.65e7*
27.94
ES 2378D
1.60e7*
28.58
FS 1278D
1.81e7
28.91
Abs. Int.
5.49e6
2.75e6
0.00e0
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PBM
4σ 8.64e3
0%
AS 1368D
2.12e7
25.00
TS 1378D
3.03e7
26.96
JS 1234D
2.00e7*
27.94
ES 2378D
2.00e7*
28.59
FS 1278D
2.21e7
28.91
Abs. Int.
6.70e6
3.35e6
0.00e0


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 2.91e3
0%
12378D
9.76e6*
33.88
Abs. Int.
2.84e6
1.42e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 3.08e3
0%
12378D
6.10e6*
33.87
Abs. Int.
1.69e6
8.47e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PBM
4σ 5.30e3
0%
FS 12478D
2.18e7*
32.64
CS 12347D
1.81e7
33.36
ES 12378D
1.97e7
33.86
Abs. Int.
5.86e6
2.93e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PBM
4σ 3.47e3
0%
FS 12478D
1.33e7*
32.64
CS 12347D
1.18e7
33.36
ES 12378D
1.26e7
33.86
Abs. Int.
3.94e6
1.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.10e6
3.05e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 2.99e3
123478D
7.96e6
37.74
123678D
8.57e6
37.85
123789D
8.51e6
38.14
Abs. Int.
2.63e6
1.31e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 3.25e3
123478D
6.56e6
37.74
123678D
6.71e6
37.85
123789D
6.99e6
38.14
Abs. Int.
2.23e6
1.12e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 3.68e3
FS 123468D
2.19e7
36.64
ES 123478D
1.54e7
37.72
ES 123678D
1.51e7
37.84
JS 123467D
8.35e6*
38.03
ES 123789D
1.76e7*
38.12
Abs. Int.
6.91e6
3.45e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 6.53e3
FS 123468D
1.75e7
36.64
ES 123478D
1.28e7
37.72
ES 123678D
1.20e7
37.84
JS 123467D
6.34e6*
38.03
ES 123789D
1.43e7*
38.12
Abs. Int.
5.41e6
2.70e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
Abs. Int.
2.82e7
1.41e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

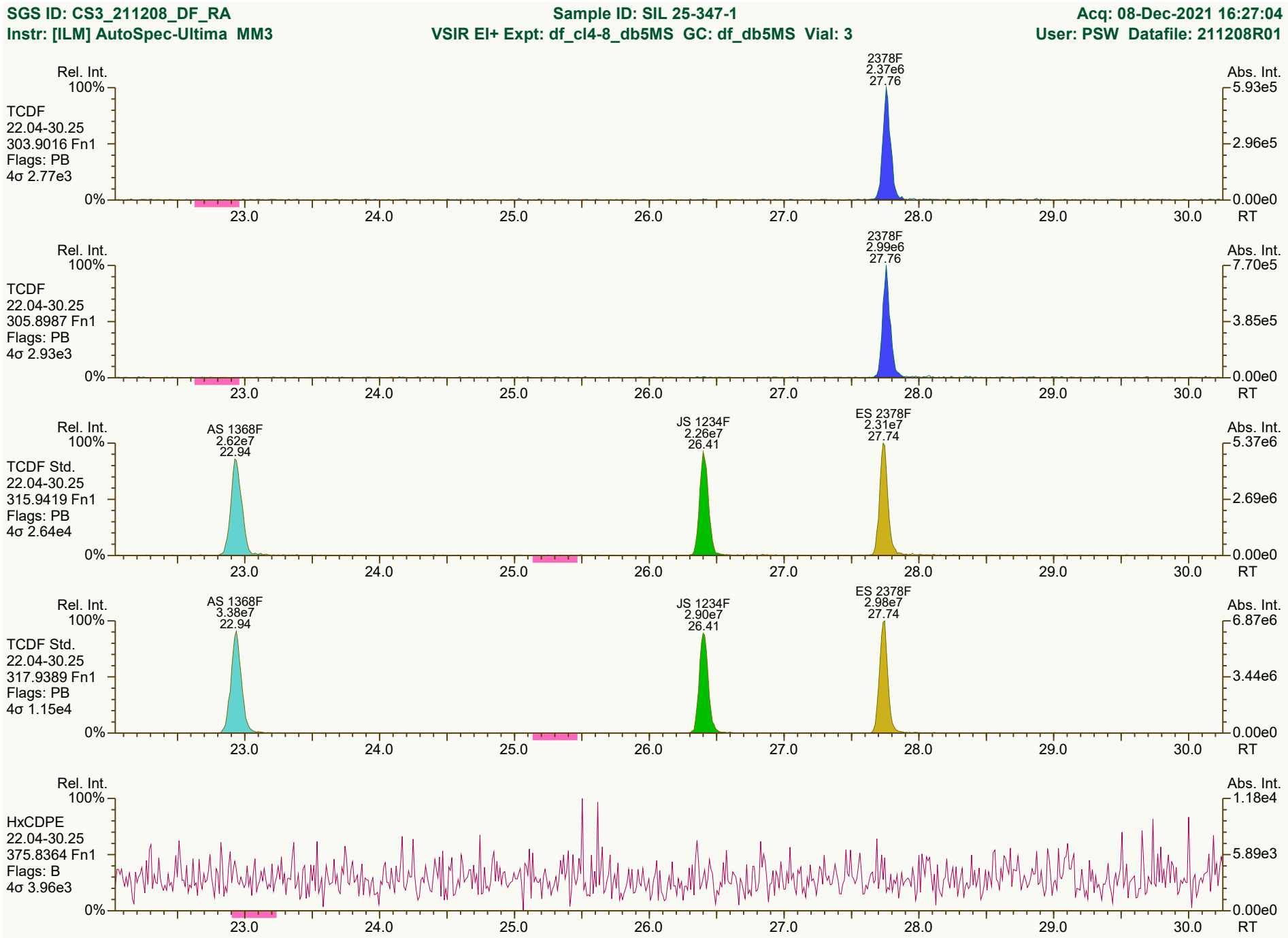

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 4.03e3
1234678D
6.61e6
40.71
Abs. Int.
2.54e6
1.27e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 3.70e3
1234678D
6.32e6
40.71
Abs. Int.
2.38e6
1.19e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 5.45e3
FS 1234679D
1.99e7
40.04
ES 1234678D
1.36e7
40.70
Abs. Int.
7.74e6
3.87e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.43e3
FS 1234679D
1.87e7
40.04
ES 1234678D
1.25e7
40.69
Abs. Int.
7.16e6
3.58e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.76e7
8.82e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 3.89e3
0%
OCDD
8.42e6*
43.28
Abs. Int.
2.66e6
1.33e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 6.33e3
0%
OCDD
9.37e6*
43.28
Abs. Int.
2.94e6
1.47e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 7.10e3
0%
ES OCDD
1.64e7
43.27
Abs. Int.
5.32e6
2.66e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 8.73e3
0%
ES OCDD
1.76e7
43.27
Abs. Int.
5.38e6
2.69e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.19e7
5.94e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: CS3_211208_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

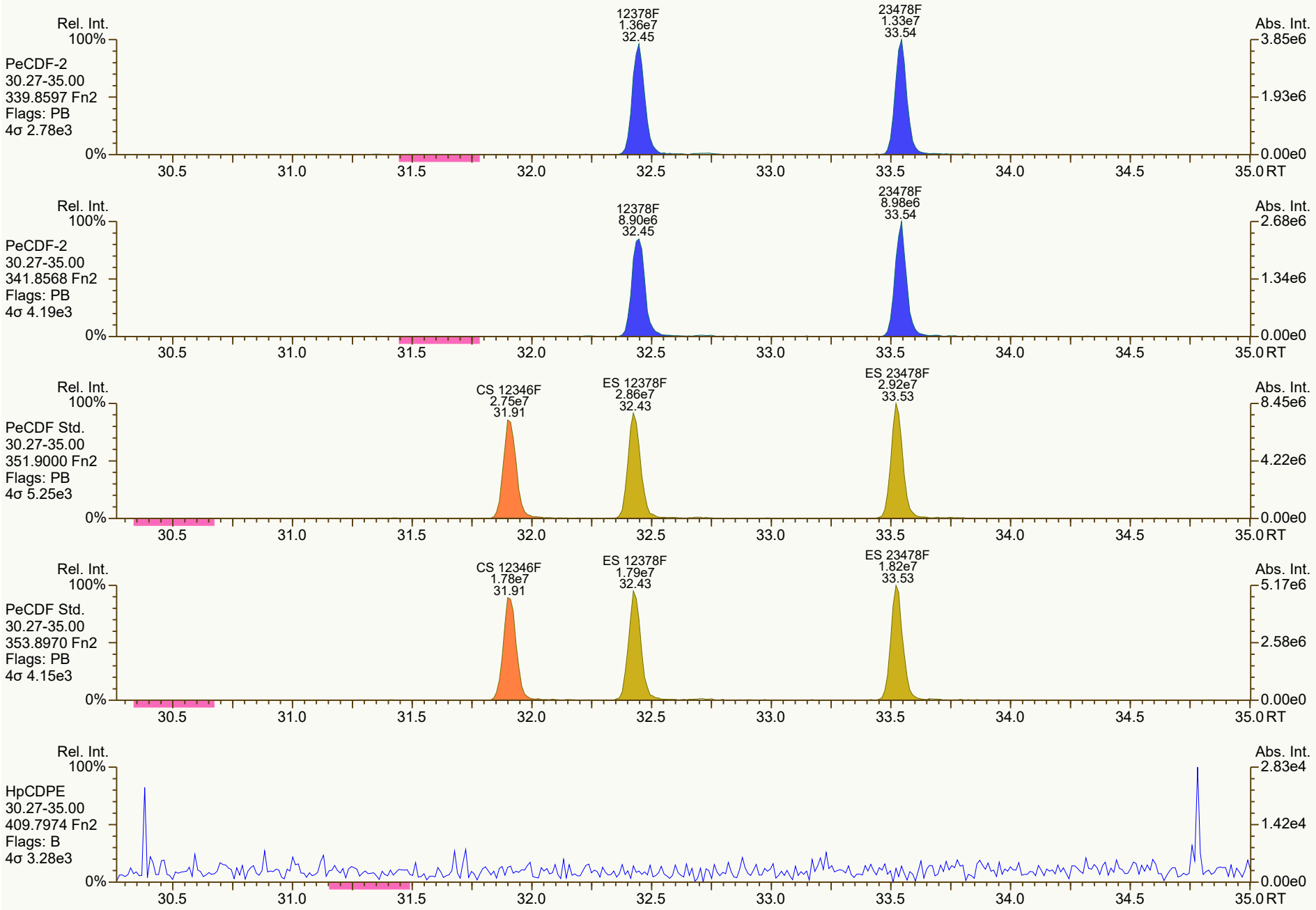
Acq: 08-Dec-2021 16:27:04
User: PSW Datafile: 211208R01

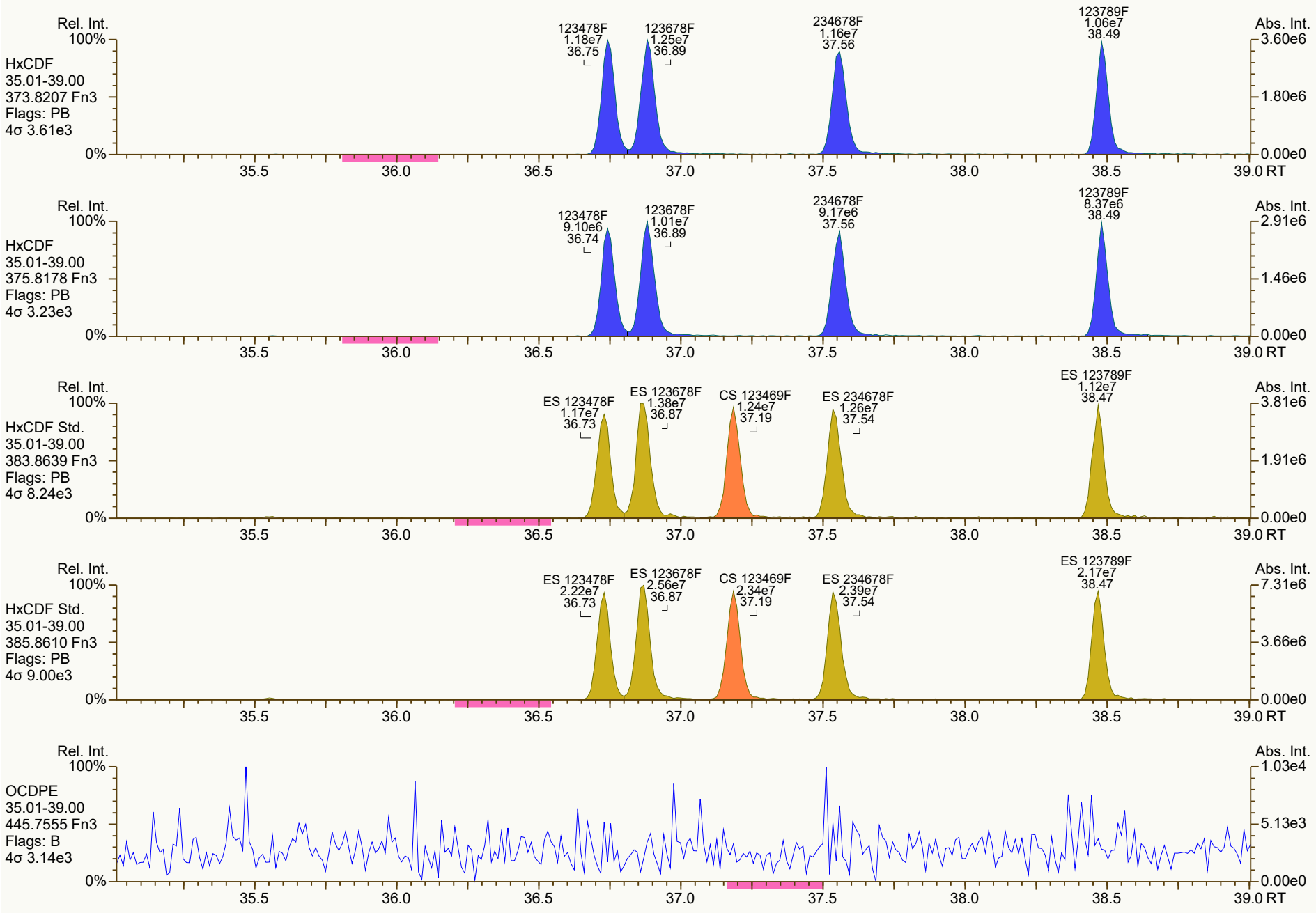


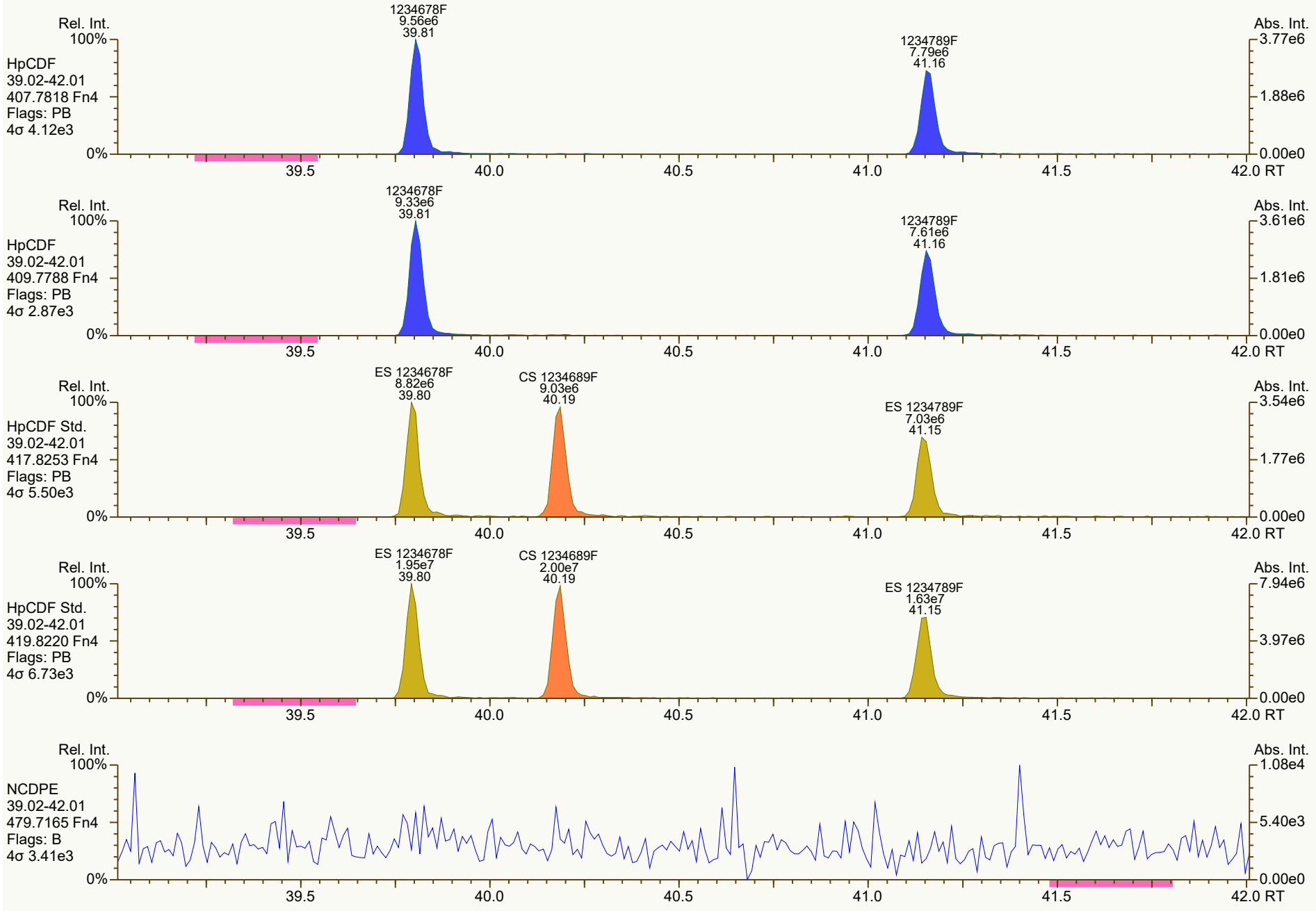
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\CS3_211208_DF_RA.utp_res, saved 09-Dec-2021 10:46 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6035, 3515, 8954 scc: 442-607

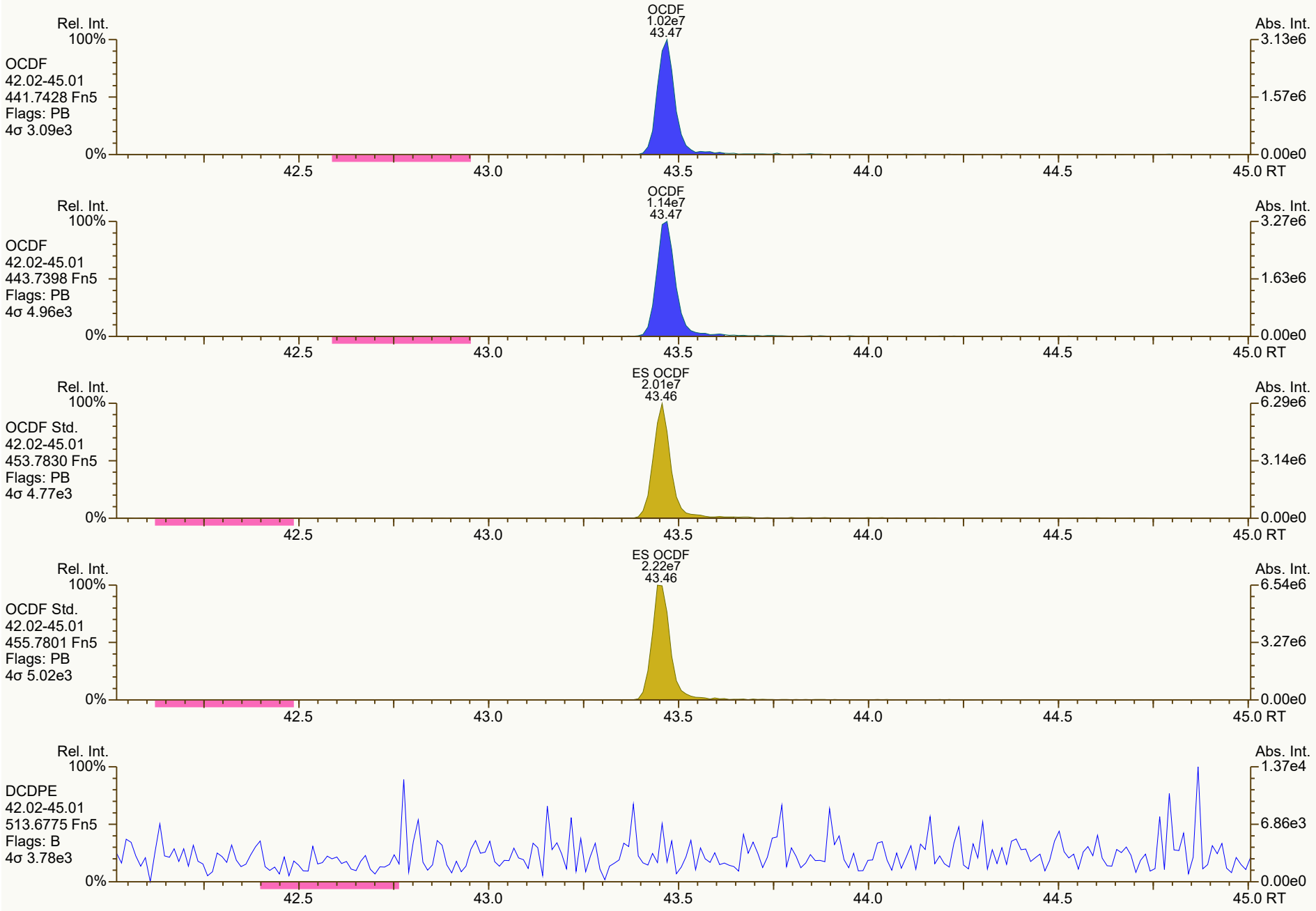
Peak annotation: Areas, Centroids
PKD: 09-Dec-2021 08:12 Printed: 09-Dec-2021 10:46 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
9.93e3
4.97e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 3.54e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.94e4
9.71e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 3.73e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
6.51e6
3.25e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 2.78e3
0%
12378F
1.36e7
32.45
23478F
1.33e7
33.54
Abs. Int.
3.85e6
1.93e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 4.19e3
0%
12378F
8.90e6
32.45
23478F
8.98e6
33.54
Abs. Int.
2.68e6
1.34e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 5.25e3
0%
CS 12346F
2.75e7
31.91
ES 12378F
2.86e7
32.43
ES 23478F
2.92e7
33.53
Abs. Int.
8.45e6
4.22e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 4.15e3
0%
CS 12346F
1.78e7
31.91
ES 12378F
1.79e7
32.43
ES 23478F
1.82e7
33.53
Abs. Int.
5.17e6
2.58e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.28e3
0%
Abs. Int.
2.83e4
1.42e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PB
4σ 3.61e3
123478F
1.18e7
36.75
123678F
1.25e7
36.89
234678F
1.16e7
37.56
123789F
1.06e7
38.49
Abs. Int.
3.60e6
1.80e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PB
4σ 3.23e3
123478F
9.10e6
36.74
123678F
1.01e7
36.89
234678F
9.17e6
37.56
123789F
8.37e6
38.49
Abs. Int.
2.91e6
1.46e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 8.24e3
ES 123478F
1.17e7
36.73
ES 123678F
1.38e7
36.87
CS 123469F
1.24e7
37.19
ES 234678F
1.26e7
37.54
ES 123789F
1.12e7
38.47
Abs. Int.
3.81e6
1.91e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 9.00e3
ES 123478F
2.22e7
36.73
ES 123678F
2.56e7
36.87
CS 123469F
2.34e7
37.19
ES 234678F
2.39e7
37.54
ES 123789F
2.17e7
38.47
Abs. Int.
7.31e6
3.66e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.14e3
Abs. Int.
1.03e4
5.13e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 4.12e3
1234678F
9.56e6
39.81
1234789F
7.79e6
41.16
Abs. Int.
3.77e6
1.88e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 2.87e3
1234678F
9.33e6
39.81
1234789F
7.61e6
41.16
Abs. Int.
3.61e6
1.81e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 5.50e3
ES 1234678F
8.82e6
39.80
CS 1234689F
9.03e6
40.19
ES 1234789F
7.03e6
41.15
Abs. Int.
3.54e6
1.77e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 6.73e3
ES 1234678F
1.95e7
39.80
CS 1234689F
2.00e7
40.19
ES 1234789F
1.63e7
41.15
Abs. Int.
7.94e6
3.97e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.41e3
Abs. Int.
1.08e4
5.40e3
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDF
1.02e7
43.47
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 3.09e3
0%
Abs. Int.
3.13e6
1.57e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.14e7
43.47
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 4.96e3
0%
Abs. Int.
3.27e6
1.63e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 4.77e3
0%
Abs. Int.
6.29e6
3.14e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.22e7
43.46
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 5.02e3
0%
Abs. Int.
6.54e6
3.27e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.78e3
0%
Abs. Int.
1.37e4
6.86e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 09 Dec 2021 03:40 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211208_DF_RB	UTP: 09-Dec-2021 10:40:21 PSW	Checkcode: 185-568-CHF
Sample ID: SIL 25-347-1	Report: 09 Dec 2021 10:41 pw	Datafile: 211208R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.59	2.75E+06	0.78	Y	1.34	1.08	-19%
12378-PeCDD	33.85	1.09E+07	1.61	Y	1.06	1.01	-4%
123478-HxCDD	37.72	9.47E+06	1.26	Y	1.06	1.03	-3%
123678-HxCDD	37.83	9.90E+06	1.30	Y	1.08	1.05	-3%
123789-HxCDD	38.12	1.00E+07	1.22	Y	1.02	0.93	-8%
1234678-HpCDD	40.69	7.86E+06	1.01	Y	0.97	0.95	-2%
OCDD	43.26	1.02E+07	0.90	Y	1.07	1.13	5%
2378-TCDF	27.74	4.13E+06	0.83	Y	0.96	1.12	17%
12378-PeCDF	32.43	1.52E+07	1.54	Y	0.95	0.99	4%
23478-PeCDF	33.52	1.49E+07	1.58	Y	0.94	0.97	4%
123478-HxCDF	36.72	1.37E+07	1.25	Y	1.23	1.24	0%
123678-HxCDF	36.87	1.45E+07	1.28	Y	1.13	1.15	2%
234678-HxCDF	37.54	1.35E+07	1.24	Y	1.15	1.13	-2%
123789-HxCDF	38.47	1.17E+07	1.23	Y	1.14	1.10	-3%
1234678-HpCDF	39.79	1.19E+07	1.03	Y	1.36	1.30	-4%
1234789-HpCDF	41.14	9.70E+06	1.05	Y	1.30	1.29	-1%
OCDF	43.44	1.16E+07	0.96	Y	1.03	1.02	-1%
ES 2378-TCDD	28.56	2.54E+07	0.80	Y	1.03	1.00	-3%
ES 12378-PeCDD	33.836	2.15E+07	1.62	Y	1.03	0.85	-18%
ES 123478-HxCDD	37.701	1.85E+07	1.30	Y	0.99	1.00	1%
ES 123678-HxCDD	37.816	1.89E+07	1.30	Y	0.97	1.03	5%
ES 123789-HxCDD	38.102	2.15E+07	1.31	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.675	1.65E+07	1.06	Y	0.99	0.89	-10%
ES OCDD	43.246	1.82E+07	0.94	Y	0.78	0.49	-36% *
ES 2378-TCDF	27.714	3.68E+07	0.74	Y	1.08	1.03	-5%
ES 12378-PeCDF	32.408	3.08E+07	1.59	Y	0.93	0.86	-8%
ES 23478-PeCDF	33.507	3.06E+07	1.57	Y	0.92	0.86	-7%
ES 123478-HxCDF	36.708	2.20E+07	0.53	Y	1.14	1.20	5%
ES 123678-HxCDF	36.848	2.52E+07	0.56	Y	1.30	1.37	5%
ES 234678-HxCDF	37.522	2.39E+07	0.52	Y	1.20	1.29	8%
ES 123789-HxCDF	38.45	2.12E+07	0.55	Y	1.14	1.15	1%
ES 1234678-HpCDF	39.779	1.84E+07	0.47	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.132	1.51E+07	0.45	Y	0.85	0.82	-3%
ES OCDF	43.434	2.27E+07	0.92	Y	0.93	0.61	-34% *

* ok 1613B
CL 09Dec21

Dioxin/Furan QC Summary	Acq'd: 09 Dec 2021 03:40 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211208_DF_RB	UTP: 09-Dec-2021 10:40:21 PSW	Checkcode: 185-568-CHF
Sample ID: SIL 25-347-1	Report: 09 Dec 2021 10:41 pw	Datafile: 211208R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.91	2.53E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.38	3.57E+07	0.78	Y	-	-	-
JS 123467-HxCDD	38.00	9.22E+06	1.40	Y	-	-	-
CS 37Cl-2378-TCDD	28.58	3.28E+06	n/a	-	1.31	1.30	-1%
CS 12347-PeCDD	33.34	2.03E+07	1.54	Y	0.89	0.80	-10%
CS 12346-PeCDF	31.89	3.01E+07	1.60	Y	0.87	0.84	-3%
CS 123469-HxCDF	37.16	2.41E+07	0.50	Y	1.09	1.31	20%
CS 1234689-HpCDF	40.17	1.77E+07	0.44	Y	0.86	0.96	11%
~~SS 37Cl-2378-TCDD~~	~~28.58~~	~~3.28E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.29~~	~~3%~~
~~SS 12347-PeCDD~~	~~33.34~~	~~2.03E+07~~	~~1.54~~	~~Y~~	~~0.86~~	~~0.94~~	~~9%~~
~~SS 12346-PeCDF~~	~~31.89~~	~~3.01E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~0.98~~	~~5%~~
~~SS 123469-HxCDF~~	~~37.16~~	~~2.41E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~0.96~~	~~14%~~
~~SS 1234689-HpCDF~~	~~40.17~~	~~1.77E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~0.97~~	~~6%~~
Not used in this project.							
CL 09Dec21							
~~OCDD-a~~	~~43.25~~	~~4.62E+05~~	~~2.11~~	~~N~~	~~0.07~~	~~0.05~~	~~-23%~~
~~OCDF-a~~	~~43.44~~	~~6.12E+05~~	~~1.99~~	~~N~~	~~0.06~~	~~0.05~~	~~-9%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211208R15 Analysis Date: 09-DEC-2021 03:40:30

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.78	0.65 - 0.89	Y	8.06	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.61	1.32 - 1.78	Y	47.8	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	48.6	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05 - 1.43	Y	48.4	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.22	1.05 - 1.43	Y	45.9	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.01	0.88 - 1.20	Y	48.9	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	105	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.83	0.65 - 0.89	Y	11.7	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32 - 1.78	Y	52.2	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	51.8	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.2	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	50.9	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	49	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.23	1.05 - 1.43	Y	48.6	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	47.8	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	49.5	43 - 58	Y
OCDF	M+2/M+4	0.96	0.76 - 1.02	Y	99.4	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 09 Dec 2021 10:41 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

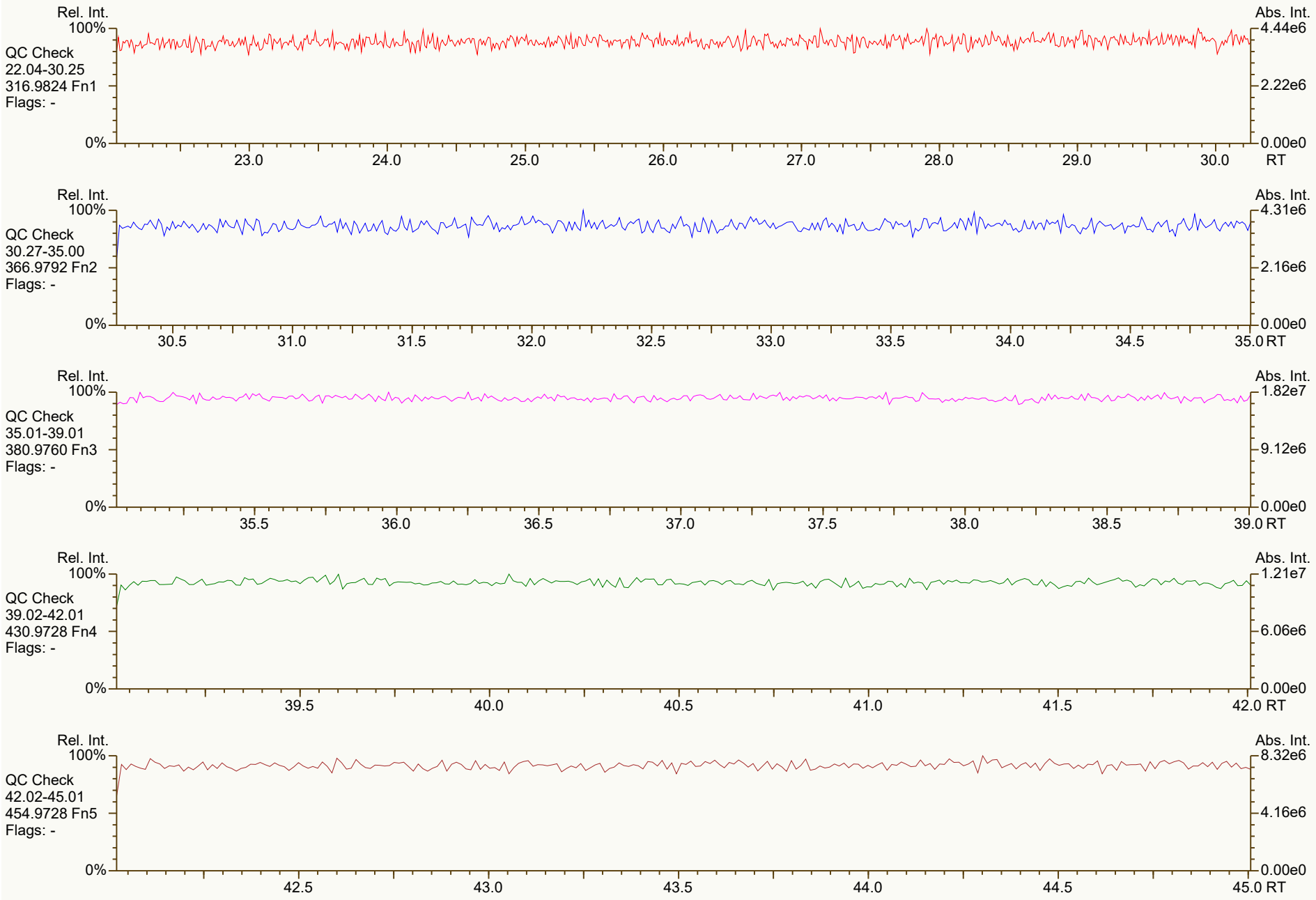
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211208R15 Analysis Date: 09-DEC-2021 03:40:30

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	97	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.62	1.32	-	1.78	Y	82.2	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05	-	1.43	Y	101	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05	-	1.43	Y	105	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	104	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	90.2	72	-	138	Y
13C-OCDD	M+2/M+4	0.94	0.76	-	1.02	Y	127	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.74	0.65	-	0.89	Y	95	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.59	1.32	-	1.78	Y	92.3	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	92.8	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	105	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.56	0.43	-	0.59	Y	105	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	108	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	101	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	96.6	77	-	129	Y
13C-OCDF	M+2/M+4	0.92	0.76	-	1.02	Y	133	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.89	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.54	1.32	-	1.78	Y	89.8	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	97.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	120	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	111	70	-	130	Y

Processed: 09 Dec 2021 10:41 Analyst: pw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0%
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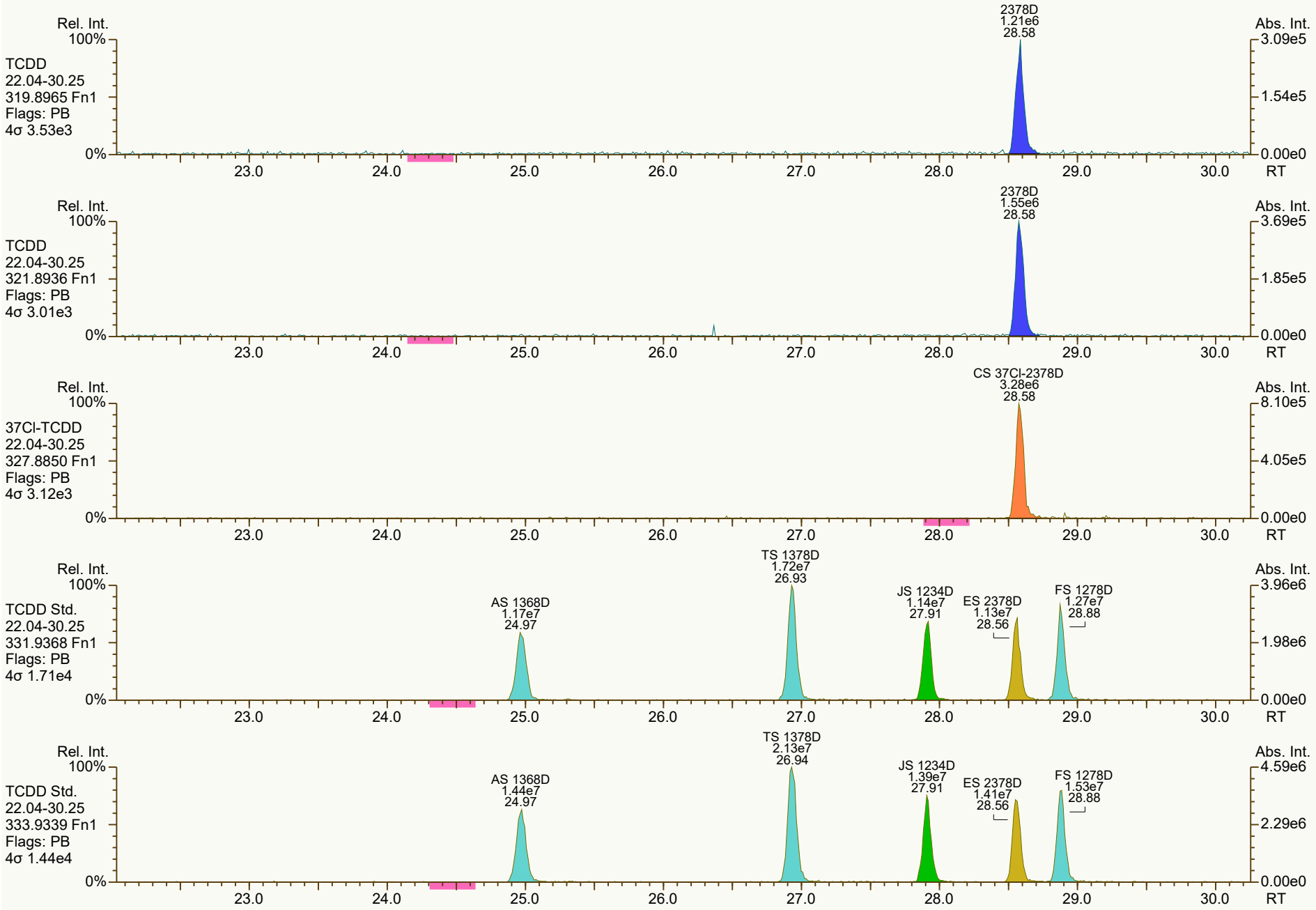
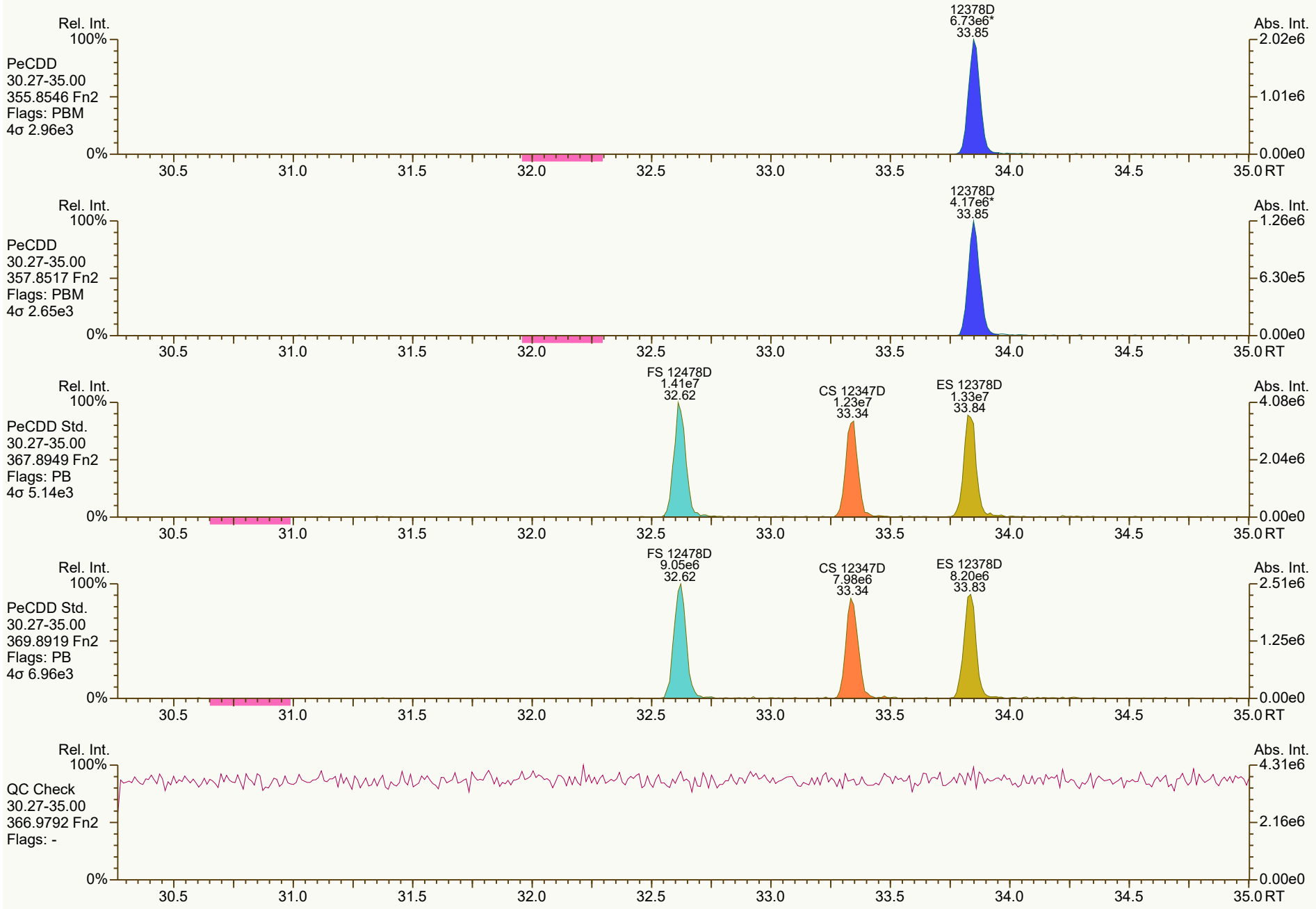
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.31e6
2.16e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.82e7
9.12e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.21e7
6.06e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.32e6
4.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.04-30.25
319.8965 Fn1
Flags: PB
4σ 3.53e3
2378D
1.21e6
28.58
3.09e5
1.54e5
0.00e0
TCDD
22.04-30.25
321.8936 Fn1
Flags: PB
4σ 3.01e3
2378D
1.55e6
28.58
3.69e5
1.85e5
0.00e0
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 3.12e3
CS 37Cl-2378D
3.28e6
28.58
8.10e5
4.05e5
0.00e0
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.71e4
AS 1368D
1.17e7
24.97
TS 1378D
1.72e7
26.93
JS 1234D
1.14e7
27.91
ES 2378D
1.13e7
28.56
FS 1278D
1.27e7
28.88
3.96e6
1.98e6
0.00e0
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 1.44e4
AS 1368D
1.44e7
24.97
TS 1378D
2.13e7
26.94
JS 1234D
1.39e7
27.91
ES 2378D
1.41e7
28.56
FS 1278D
1.53e7
28.88
4.59e6
2.29e6
0.00e0


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PBM
4σ 2.96e3
0%
12378D
6.73e6*
33.85
Abs. Int.
2.02e6
1.01e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PBM
4σ 2.65e3
0%
12378D
4.17e6*
33.85
Abs. Int.
1.26e6
6.30e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 5.14e3
0%
FS 12478D
1.41e7
32.62
CS 12347D
1.23e7
33.34
ES 12378D
1.33e7
33.84
Abs. Int.
4.08e6
2.04e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 6.96e3
0%
FS 12478D
9.05e6
32.62
CS 12347D
7.98e6
33.34
ES 12378D
8.20e6
33.83
Abs. Int.
2.51e6
1.25e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.31e6
2.16e6
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32.0
32.5
33.0
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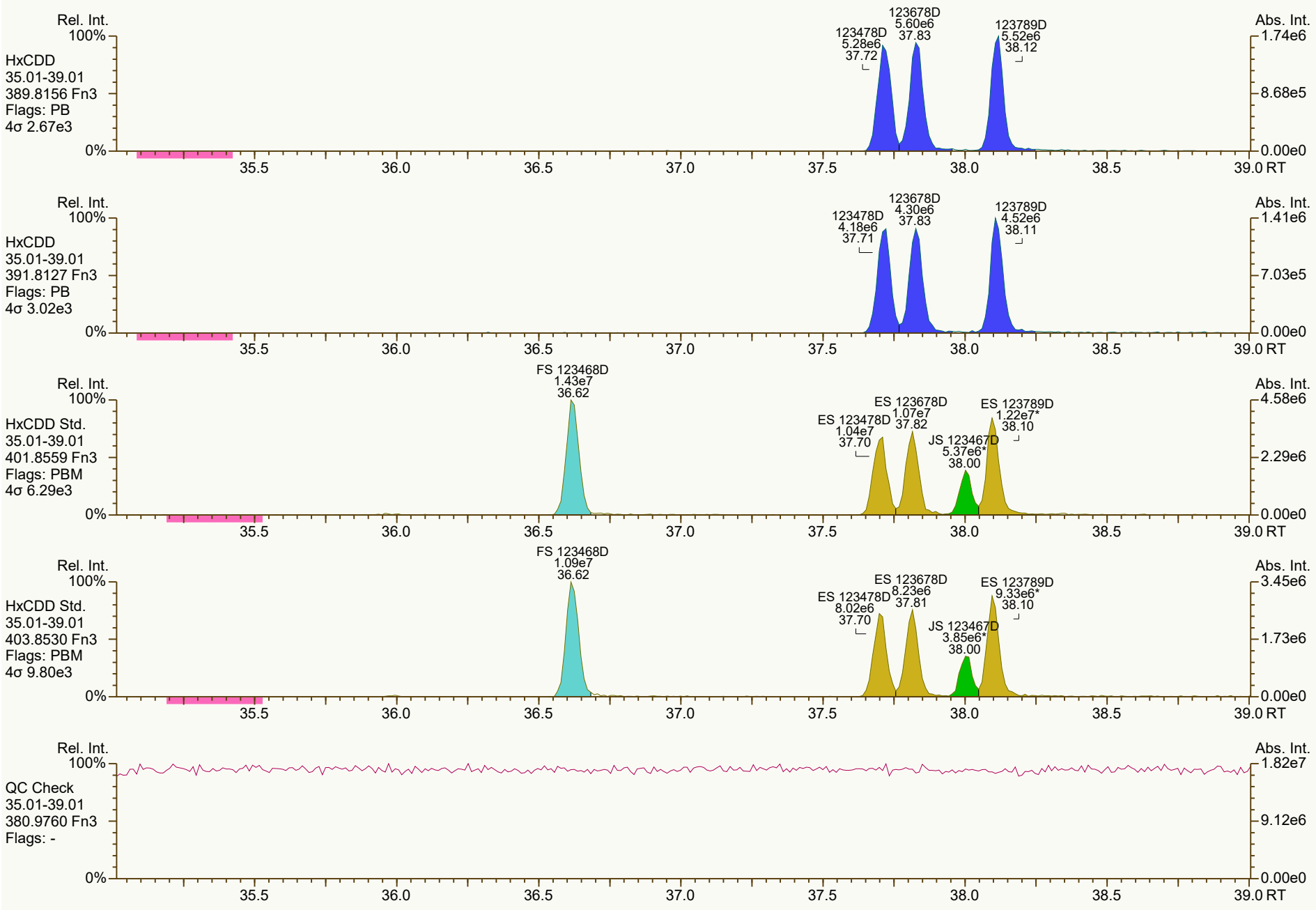
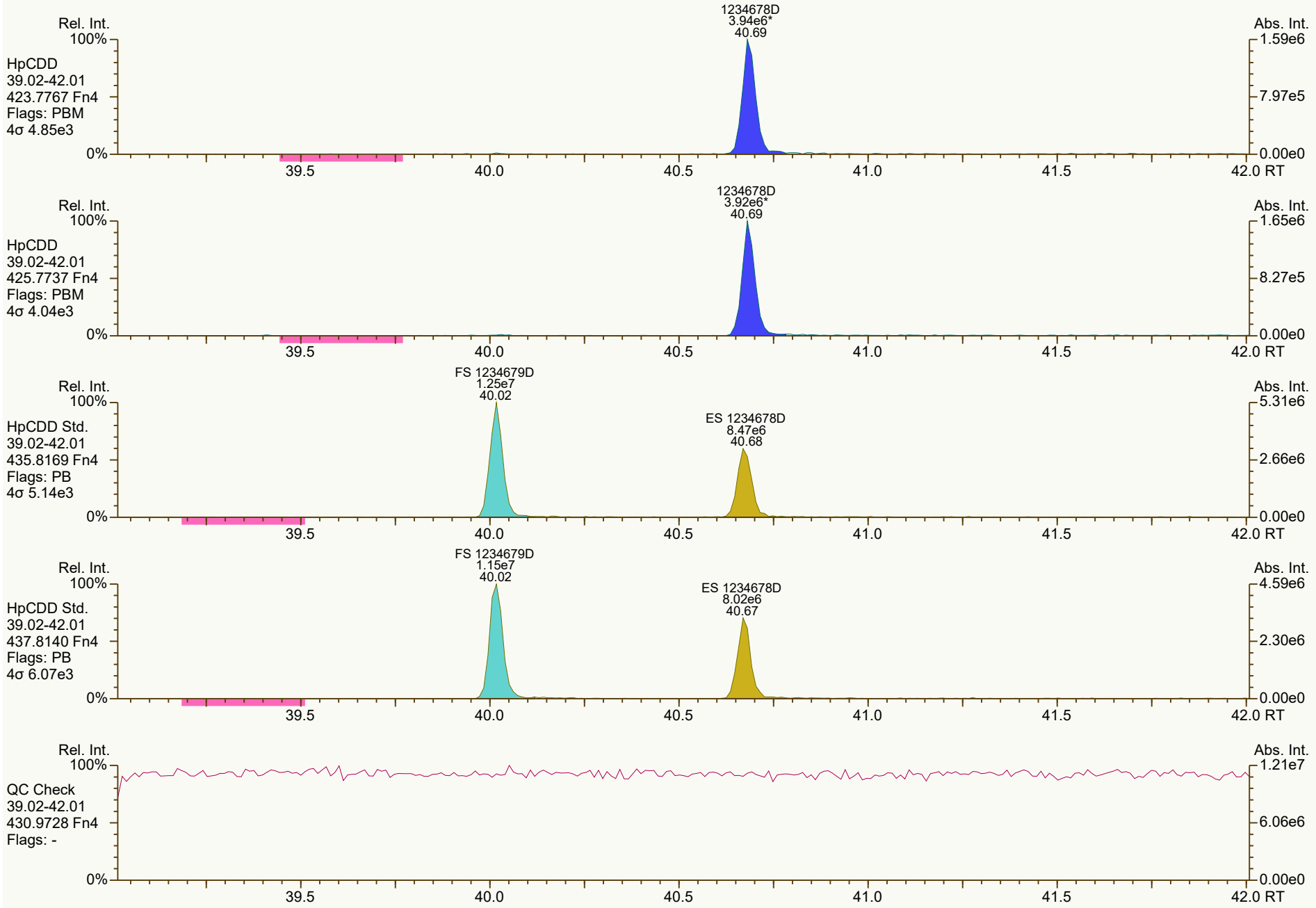
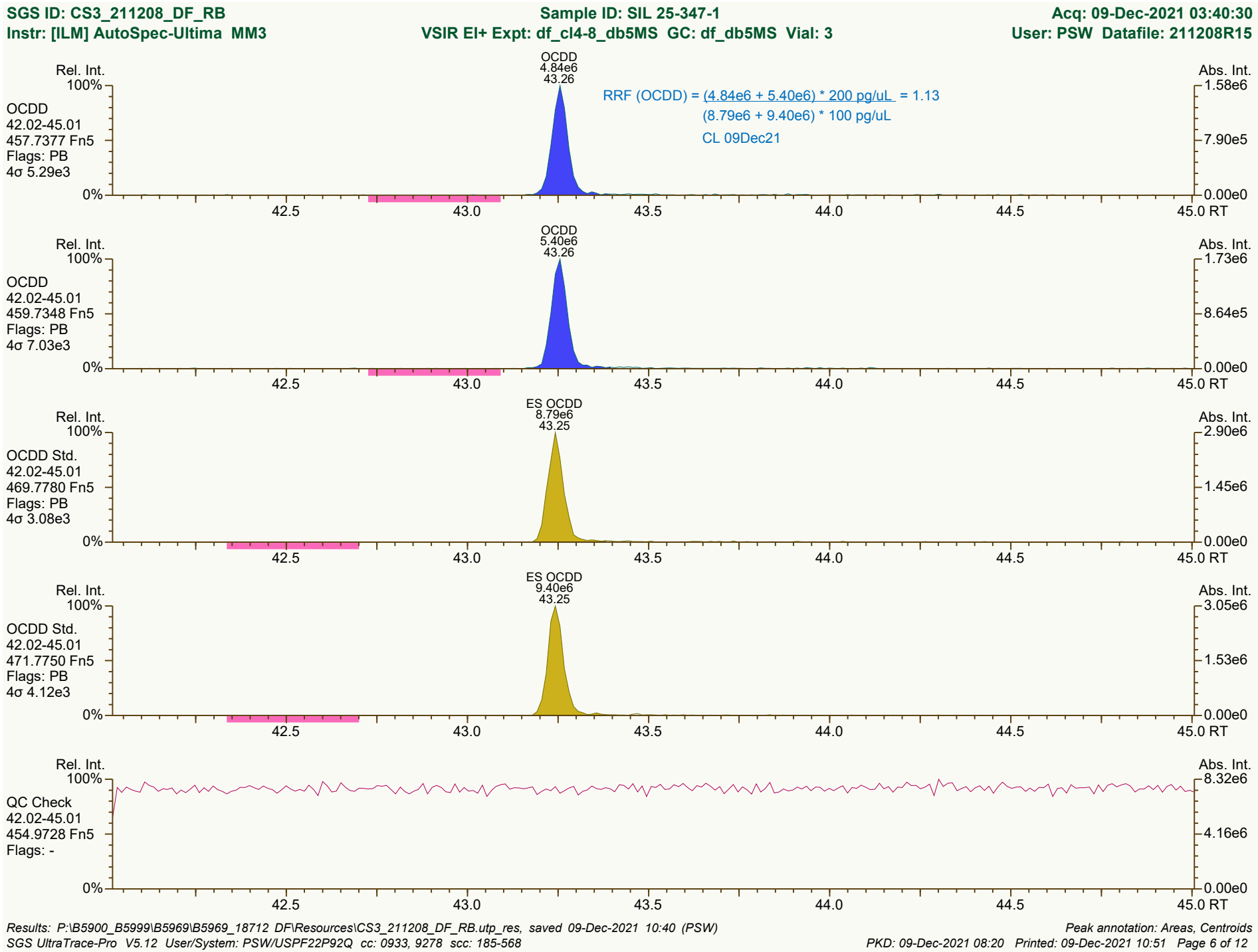
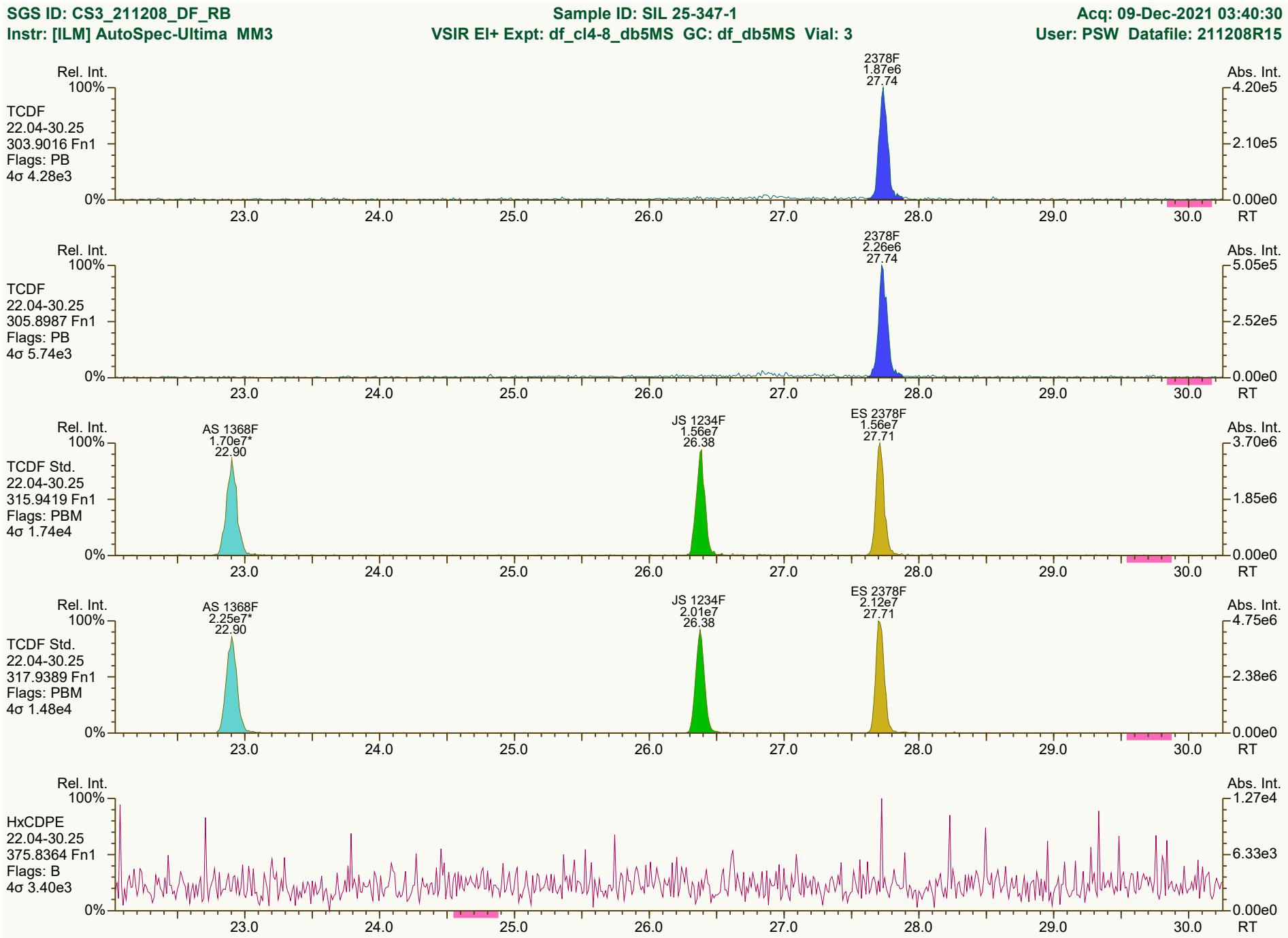
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: PB
4σ 2.67e3
123478D
5.28e6
37.72
123678D
5.60e6
37.83
123789D
5.52e6
38.12
Abs. Int.
1.74e6
8.68e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: PB
4σ 3.02e3
123478D
4.18e6
37.71
123678D
4.30e6
37.83
123789D
4.52e6
38.11
Abs. Int.
1.41e6
7.03e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: PBM
4σ 6.29e3
FS 123468D
1.43e7
36.62
ES 123478D
1.04e7
37.70
ES 123678D
1.07e7
37.82
JS 123467D
5.37e6*
38.00
ES 123789D
1.22e7*
38.10
Abs. Int.
4.58e6
2.29e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: PBM
4σ 9.80e3
FS 123468D
1.09e7
36.62
ES 123478D
8.02e6
37.70
ES 123678D
8.23e6
37.81
JS 123467D
3.85e6*
38.00
ES 123789D
9.33e6*
38.10
Abs. Int.
3.45e6
1.73e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
Abs. Int.
1.82e7
9.12e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

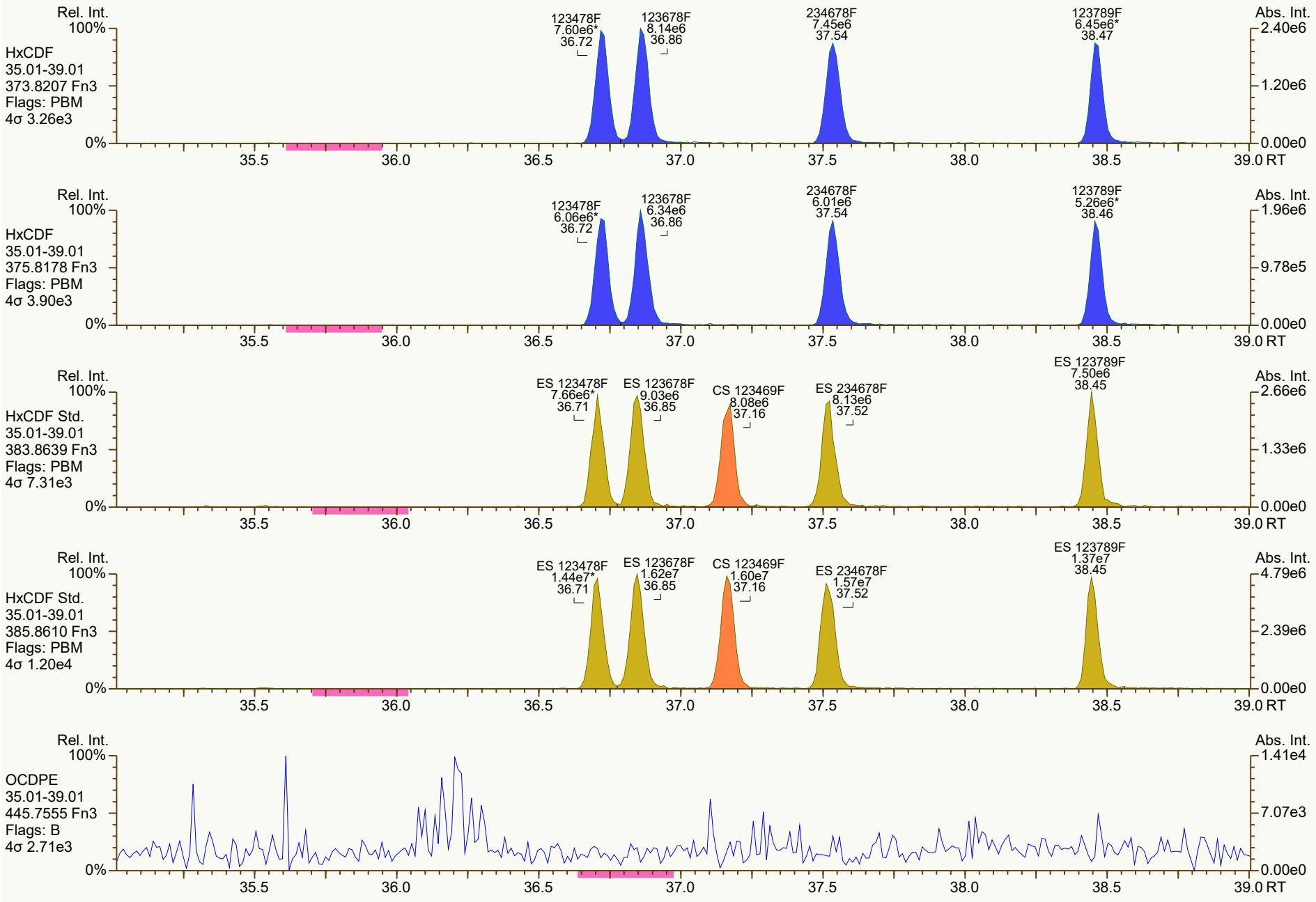

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PBM
4σ 4.85e3
1234678D
3.94e6*
40.69
Abs. Int.
1.59e6
7.97e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PBM
4σ 4.04e3
1234678D
3.92e6*
40.69
Abs. Int.
1.65e6
8.27e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 5.14e3
FS 1234679D
1.25e7
40.02
ES 1234678D
8.47e6
40.68
Abs. Int.
5.31e6
2.66e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 6.07e3
FS 1234679D
1.15e7
40.02
ES 1234678D
8.02e6
40.67
Abs. Int.
4.59e6
2.30e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.21e7
6.06e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

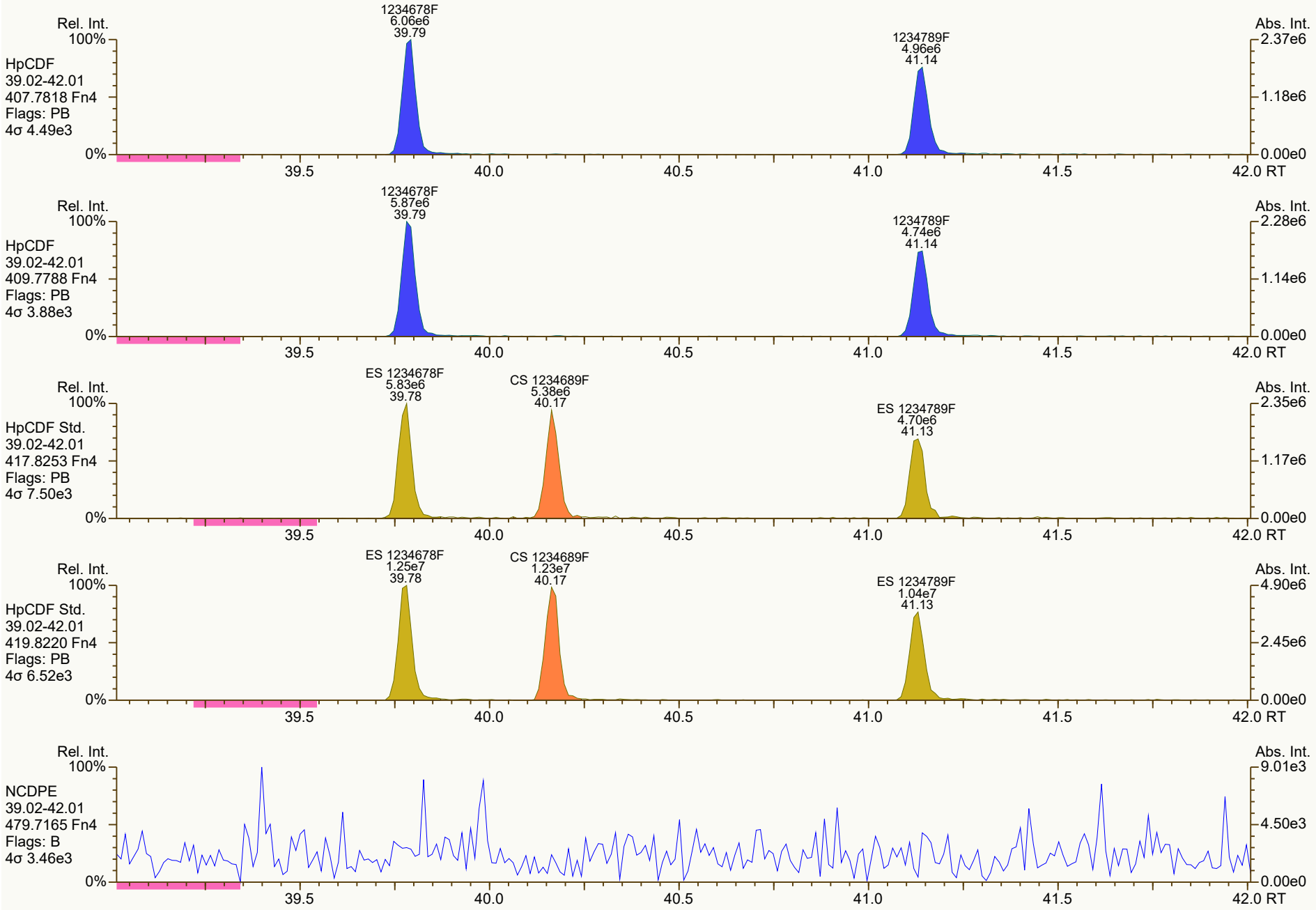

SGS ID: CS3_211208_DF_RB
Sample ID: SIL 25-347-1
Acq: 09-Dec-2021 03:40:30
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211208R15
OCDD
4.84e6
43.26
RRF (OCDD) = (4.84e6 + 5.40e6) * 200 pg/uL = 1.13
(8.79e6 + 9.40e6) * 100 pg/uL
CL 09Dec21
Rel. Int.
Abs. Int.
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 5.29e3
OCDD
5.40e6
43.26
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 7.03e3
ES OCDD
8.79e6
43.25
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 3.08e3
ES OCDD
9.40e6
43.25
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 4.12e3
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
1.58e6
7.90e5
0.00e0
1.73e6
8.64e5
2.90e6
1.45e6
3.05e6
1.53e6
8.32e6
4.16e6
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\CS3_211208_DF_RB.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0933, 9278 scc: 185-568
PKD: 09-Dec-2021 08:20 Printed: 09-Dec-2021 10:51 Page 6 of 12

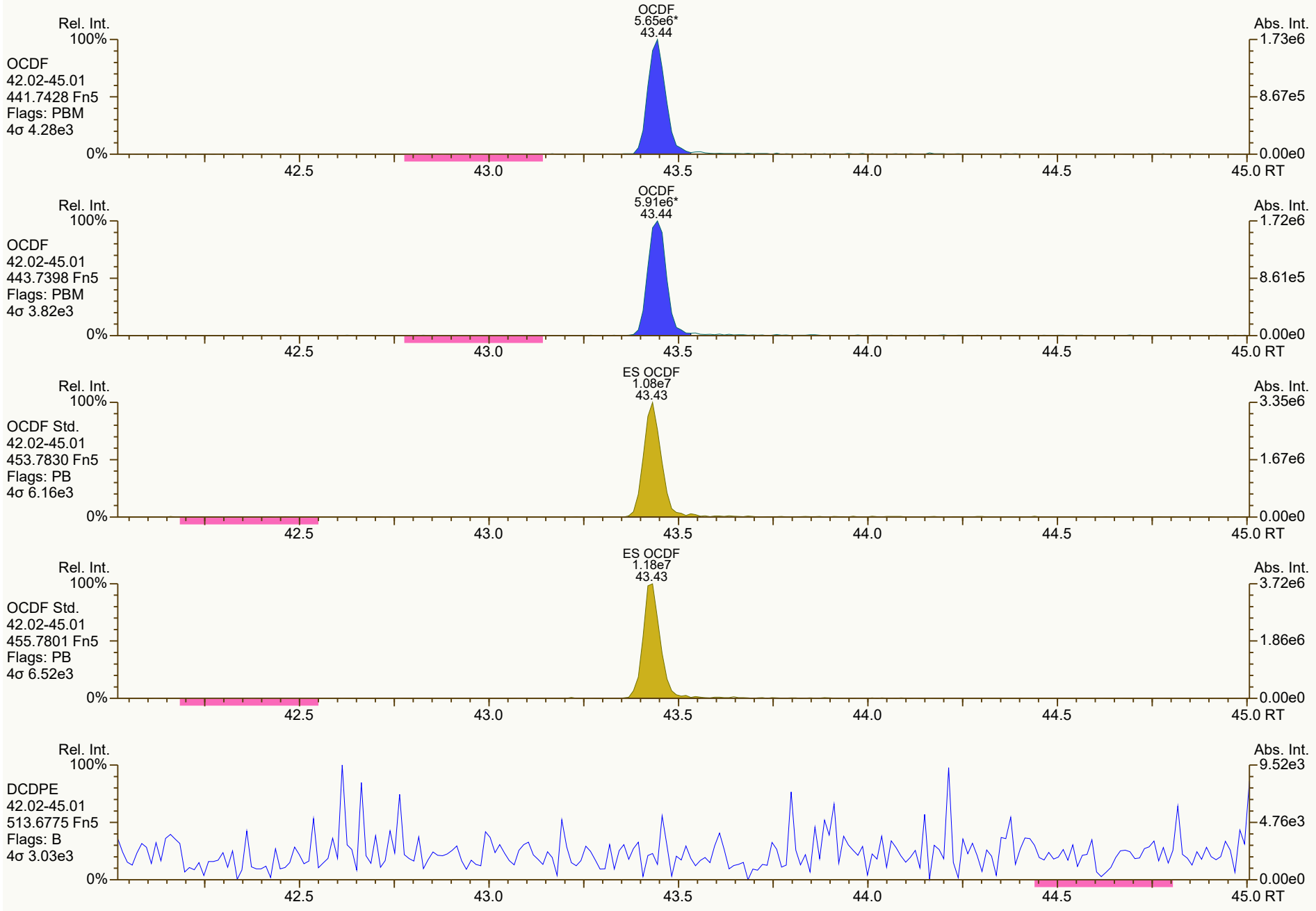

SGS ID: CS3_211208_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
Acq: 09-Dec-2021 03:40:30
User: PSW Datafile: 211208R15
Rel. Int.
100%
0%
TCDF
22.04-30.25
303.9016 Fn1
Flags: PB
4σ 4.28e3
2378F
1.87e6
27.74
Abs. Int.
4.20e5
2.10e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
TCDF
22.04-30.25
305.8987 Fn1
Flags: PB
4σ 5.74e3
2378F
2.26e6
27.74
5.05e5
2.52e5
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PBM
4σ 1.74e4
AS 1368F
1.70e7*
22.90
JS 1234F
1.56e7
26.38
ES 2378F
1.56e7
27.71
3.70e6
1.85e6
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PBM
4σ 1.48e4
AS 1368F
2.25e7*
22.90
JS 1234F
2.01e7
26.38
ES 2378F
2.12e7
27.71
4.75e6
2.38e6
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.40e3
1.27e4
6.33e3
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\CS3_211208_DF_RB.utp_res, saved 09-Dec-2021 10:40 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0166, 8436, 9440 scc: 185-568
Peak annotation: Areas, Centroids
PKD: 09-Dec-2021 08:20 Printed: 09-Dec-2021 10:51 Page 7 of 12

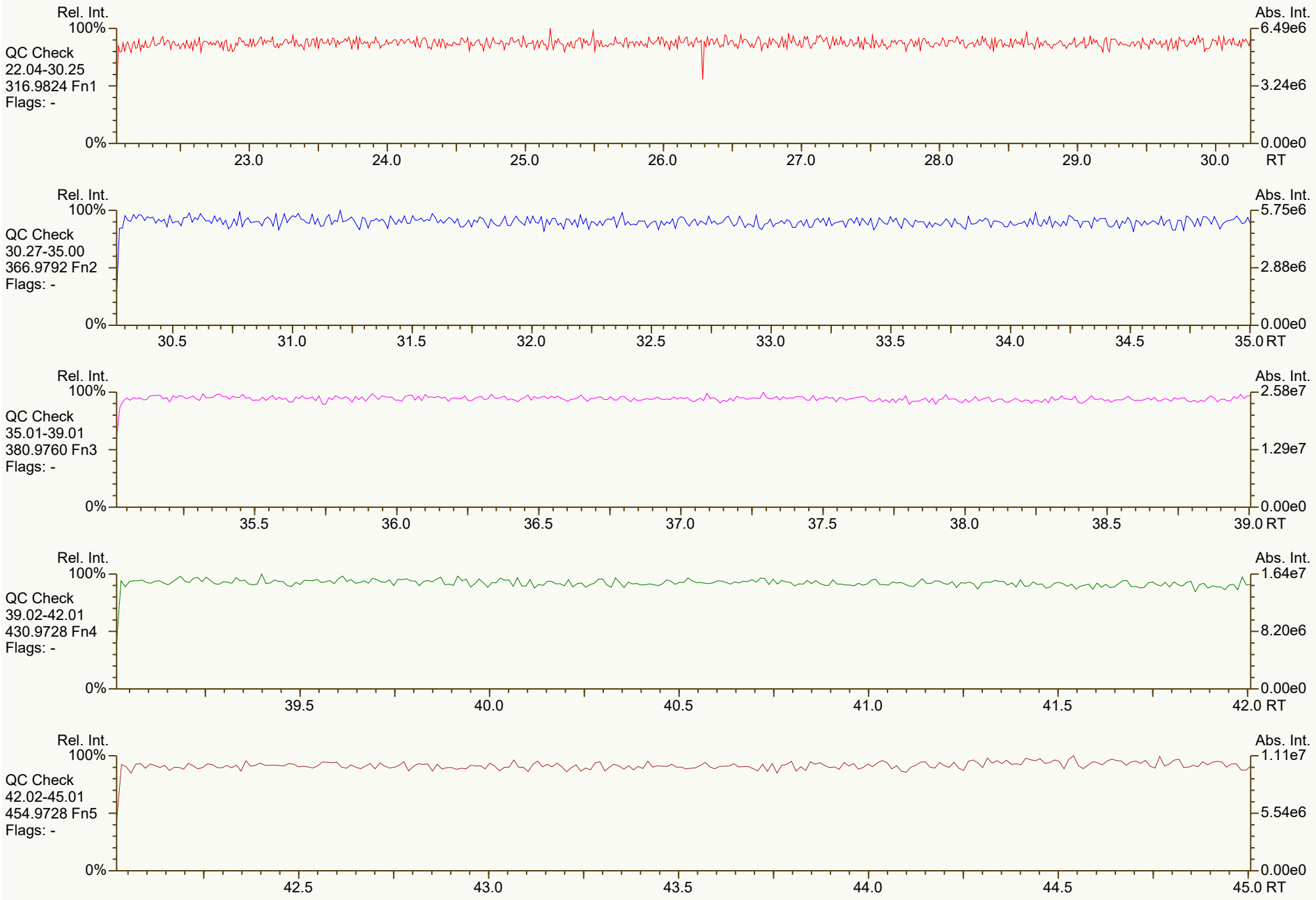

Rel. Int.
100%
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 2.83e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 4.58e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.44e6
2.22e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

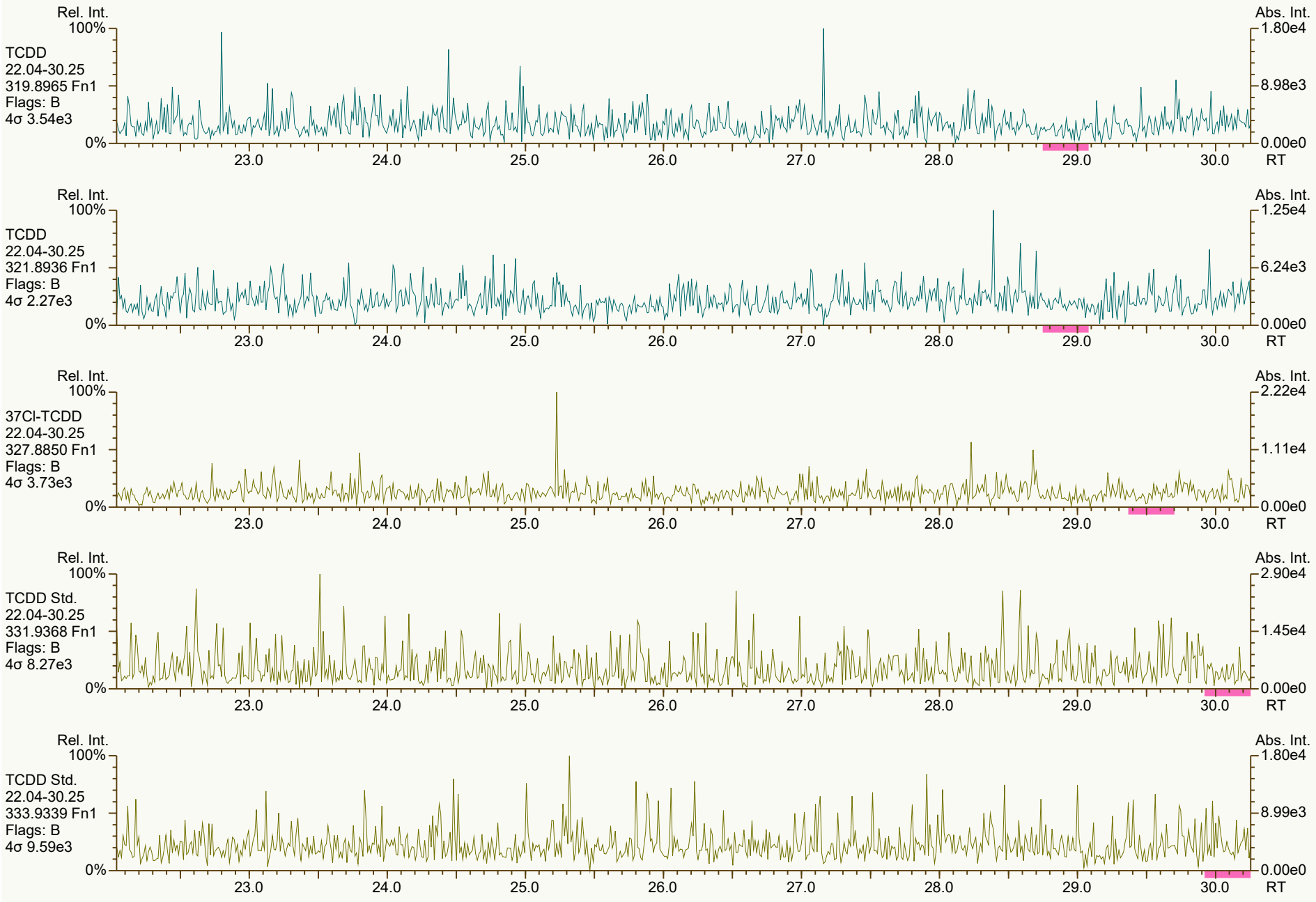

Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 2.84e3
0%
12378F
9.21e6
32.43
23478F
9.11e6
33.52
Abs. Int.
2.52e6
1.26e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 3.99e3
0%
12378F
5.99e6
32.42
23478F
5.77e6
33.52
Abs. Int.
1.70e6
8.48e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 4.31e3
0%
CS 12346F
1.86e7
31.89
ES 12378F
1.89e7
32.41
ES 23478F
1.87e7
33.51
Abs. Int.
5.37e6
2.68e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 6.09e3
0%
CS 12346F
1.16e7
31.89
ES 12378F
1.19e7
32.41
ES 23478F
1.19e7
33.51
Abs. Int.
3.35e6
1.68e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.06e3
0%
Abs. Int.
9.01e3
4.51e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: PBM
4σ 3.26e3
0%
123478F 7.60e6* 36.72
123678F 8.14e6 36.86
234678F 7.45e6 37.54
123789F 6.45e6* 38.47
Abs. Int.
2.40e6
1.20e6
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
HxCDF
35.01-39.01
375.8178 Fn3
Flags: PBM
4σ 3.90e3
123478F 6.06e6* 36.72
123678F 6.34e6 36.86
234678F 6.01e6 37.54
123789F 5.26e6* 38.46
1.96e6
9.78e5
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: PBM
4σ 7.31e3
ES 123478F 7.66e6* 36.71
ES 123678F 9.03e6 36.85
CS 123469F 8.08e6 37.16
ES 234678F 8.13e6 37.52
ES 123789F 7.50e6 38.45
2.66e6
1.33e6
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: PBM
4σ 1.20e4
ES 123478F 1.44e7* 36.71
ES 123678F 1.62e7 36.85
CS 123469F 1.60e7 37.16
ES 234678F 1.57e7 37.52
ES 123789F 1.37e7 38.45
4.79e6
2.39e6
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 2.71e3
1.41e4
7.07e3


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 4.49e3
1234678F
6.06e6
39.79
1234789F
4.96e6
41.14
Abs. Int.
2.37e6
1.18e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 3.88e3
1234678F
5.87e6
39.79
1234789F
4.74e6
41.14
Abs. Int.
2.28e6
1.14e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 7.50e3
ES 1234678F
5.83e6
39.78
CS 1234689F
5.38e6
40.17
ES 1234789F
4.70e6
41.13
Abs. Int.
2.35e6
1.17e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 6.52e3
ES 1234678F
1.25e7
39.78
CS 1234689F
1.23e7
40.17
ES 1234789F
1.04e7
41.13
Abs. Int.
4.90e6
2.45e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.46e3
Abs. Int.
9.01e3
4.50e3
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDF
5.65e6*
43.44
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PBM
4σ 4.28e3
0%
Abs. Int.
1.73e6
8.67e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.91e6*
43.44
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PBM
4σ 3.82e3
0%
Abs. Int.
1.72e6
8.61e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.08e7
43.43
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 6.16e3
0%
Abs. Int.
3.35e6
1.67e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.18e7
43.43
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 6.52e3
0%
Abs. Int.
3.72e6
1.86e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.03e3
0%
Abs. Int.
9.52e3
4.76e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.49e6
3.24e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.75e6
2.88e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.58e7
1.29e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.64e7
8.20e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.11e7
5.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

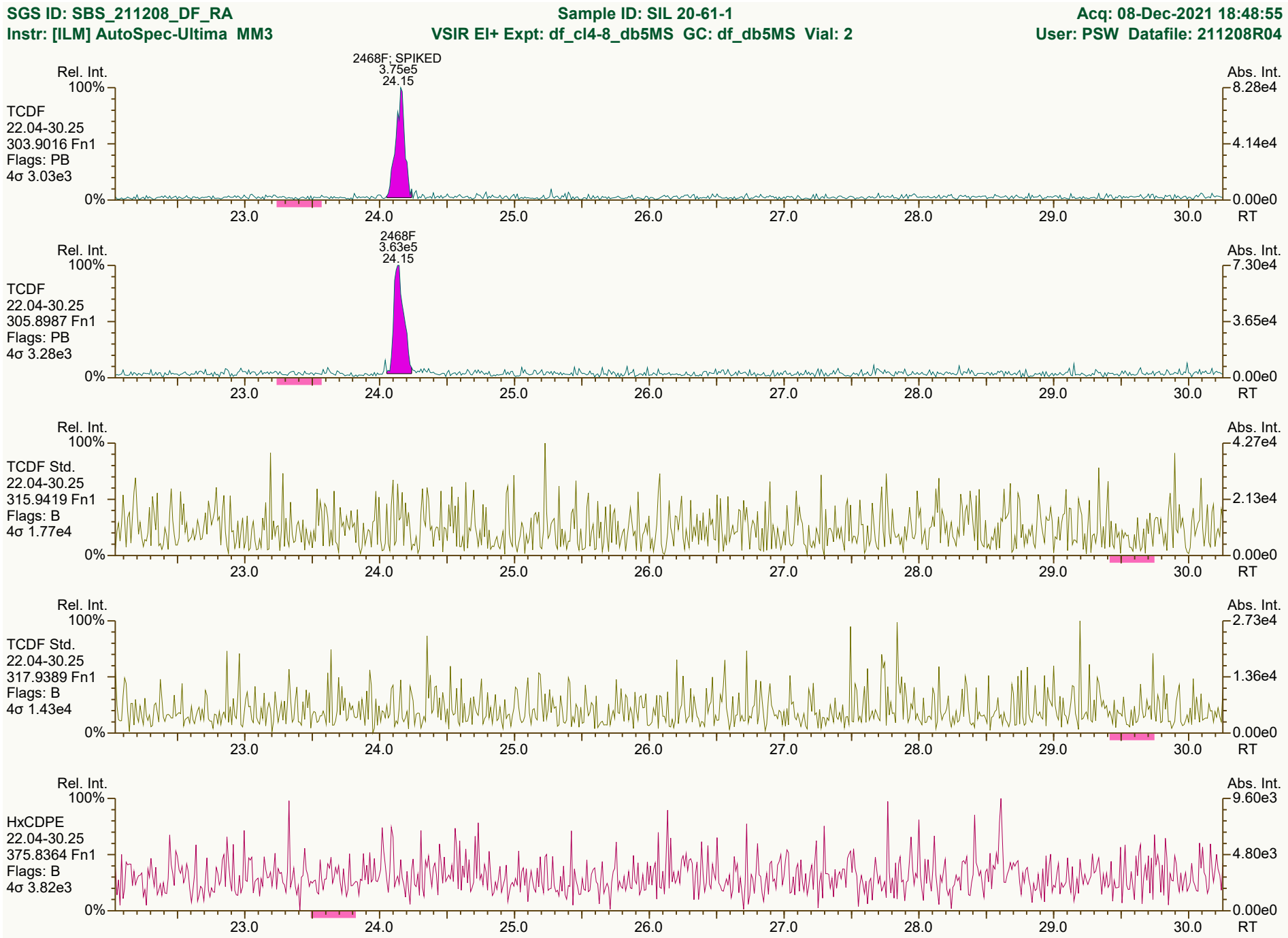

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 3.54e3
0%
Abs. Int.
1.80e4
8.98e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 2.27e3
0%
Abs. Int.
1.25e4
6.24e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: B
4σ 3.73e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: B
4σ 8.27e3
0%
Abs. Int.
2.90e4
1.45e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: B
4σ 9.59e3
0%
Abs. Int.
1.80e4
8.99e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 1.84e3
0%
Abs. Int.
7.53e3
3.77e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 2.72e3
0%
Abs. Int.
5.26e3
2.63e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: B
4σ 5.55e3
0%
Abs. Int.
1.66e4
8.29e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: B
4σ 4.46e3
0%
Abs. Int.
1.30e4
6.48e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.75e6
2.88e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.01-39.01
389.8156 Fn3
Flags: B
4σ 2.36e3
0%
Abs. Int.
8.68e3
4.34e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.01
391.8127 Fn3
Flags: B
4σ 3.18e3
0%
Abs. Int.
9.75e3
4.88e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
401.8559 Fn3
Flags: B
4σ 4.59e3
0%
Abs. Int.
2.76e4
1.38e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.01
403.8530 Fn3
Flags: B
4σ 4.27e3
0%
Abs. Int.
1.24e4
6.20e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.58e7
1.29e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

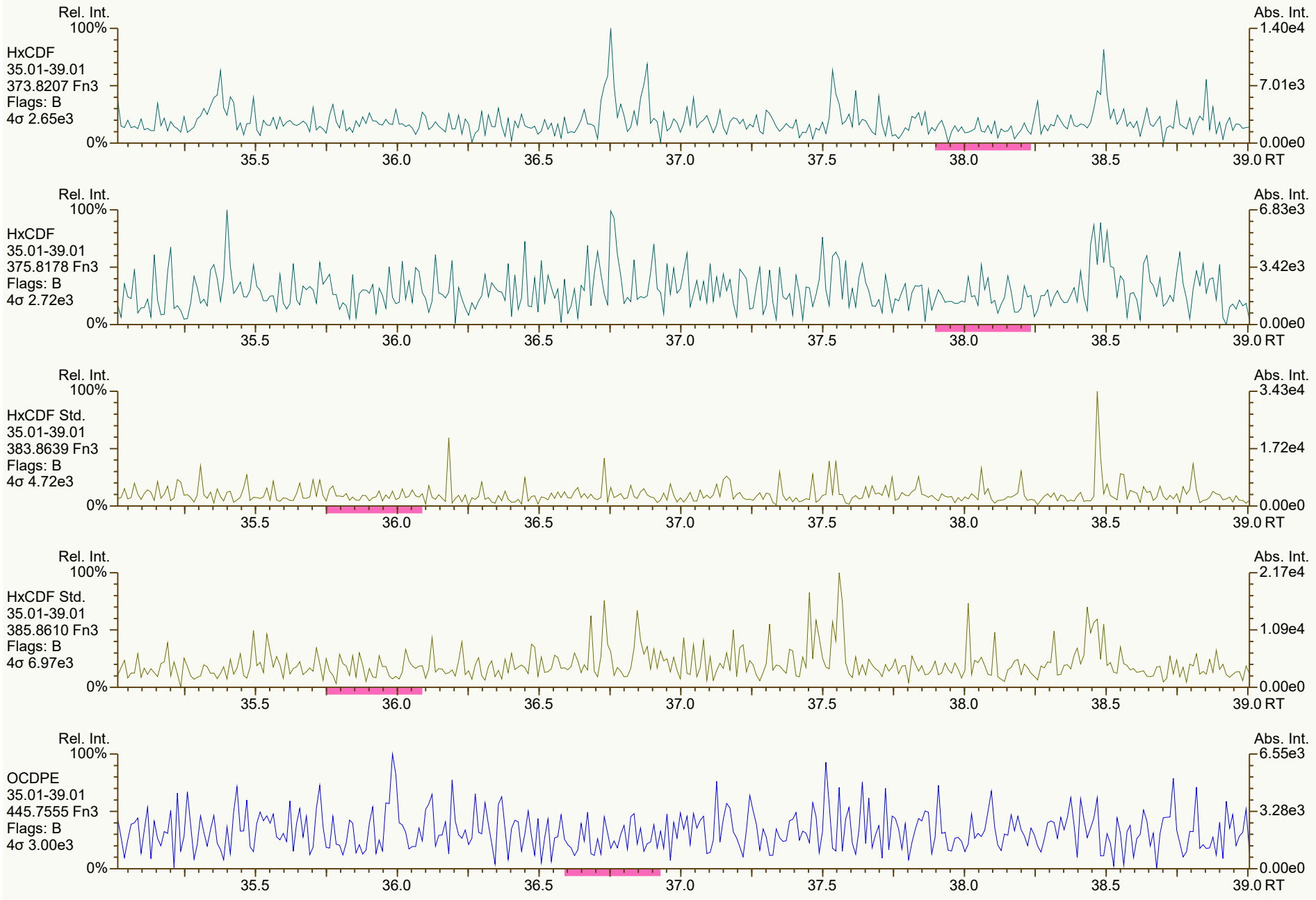

Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: B
4σ 2.91e3
0%
Abs. Int.
9.53e3
4.76e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: B
4σ 3.13e3
0%
Abs. Int.
1.24e4
6.22e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: B
4σ 4.32e3
0%
Abs. Int.
1.76e4
8.78e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: B
4σ 4.62e3
0%
Abs. Int.
2.25e4
1.12e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.64e7
8.20e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: B
4σ 4.90e3
0%
Abs. Int.
1.53e4
7.64e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: B
4σ 3.44e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: B
4σ 3.39e3
0%
Abs. Int.
2.05e4
1.02e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: B
4σ 4.00e3
0%
Abs. Int.
1.67e4
8.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.11e7
5.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

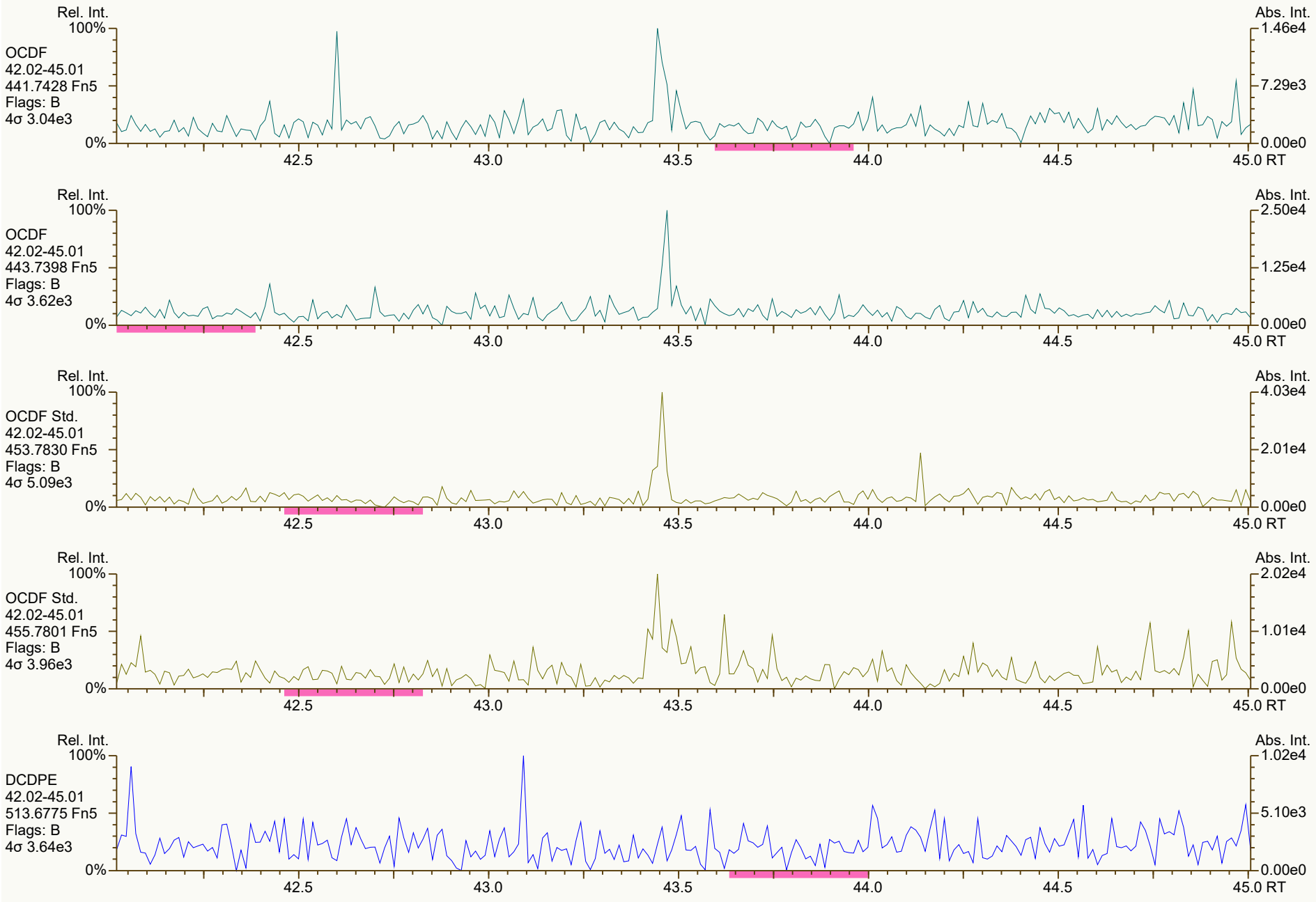

SGS ID: SBS_211208_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
Acq: 08-Dec-2021 18:48:55
User: PSW Datafile: 211208R04
2468F; SPIKED
3.75e5
24.15
Rel. Int.
100%
0%
Abs. Int.
8.28e4
4.14e4
0.00e0
TCDF
22.04-30.25
303.9016 Fn1
Flags: PB
4σ 3.03e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
2468F
3.63e5
24.15
Rel. Int.
100%
0%
Abs. Int.
7.30e4
3.65e4
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PB
4σ 3.28e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.27e4
2.13e4
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: B
4σ 1.77e4
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.73e4
1.36e4
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: B
4σ 1.43e4
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.60e3
4.80e3
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.82e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\SBS_211208_DF_RA.utp_res, saved 09-Dec-2021 08:16 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5614, 9278, 8651 scc: 290-577
Peak annotation: Areas, Centroids
PKD: 09-Dec-2021 08:16 Printed: 09-Dec-2021 10:47 Page 7 of 12

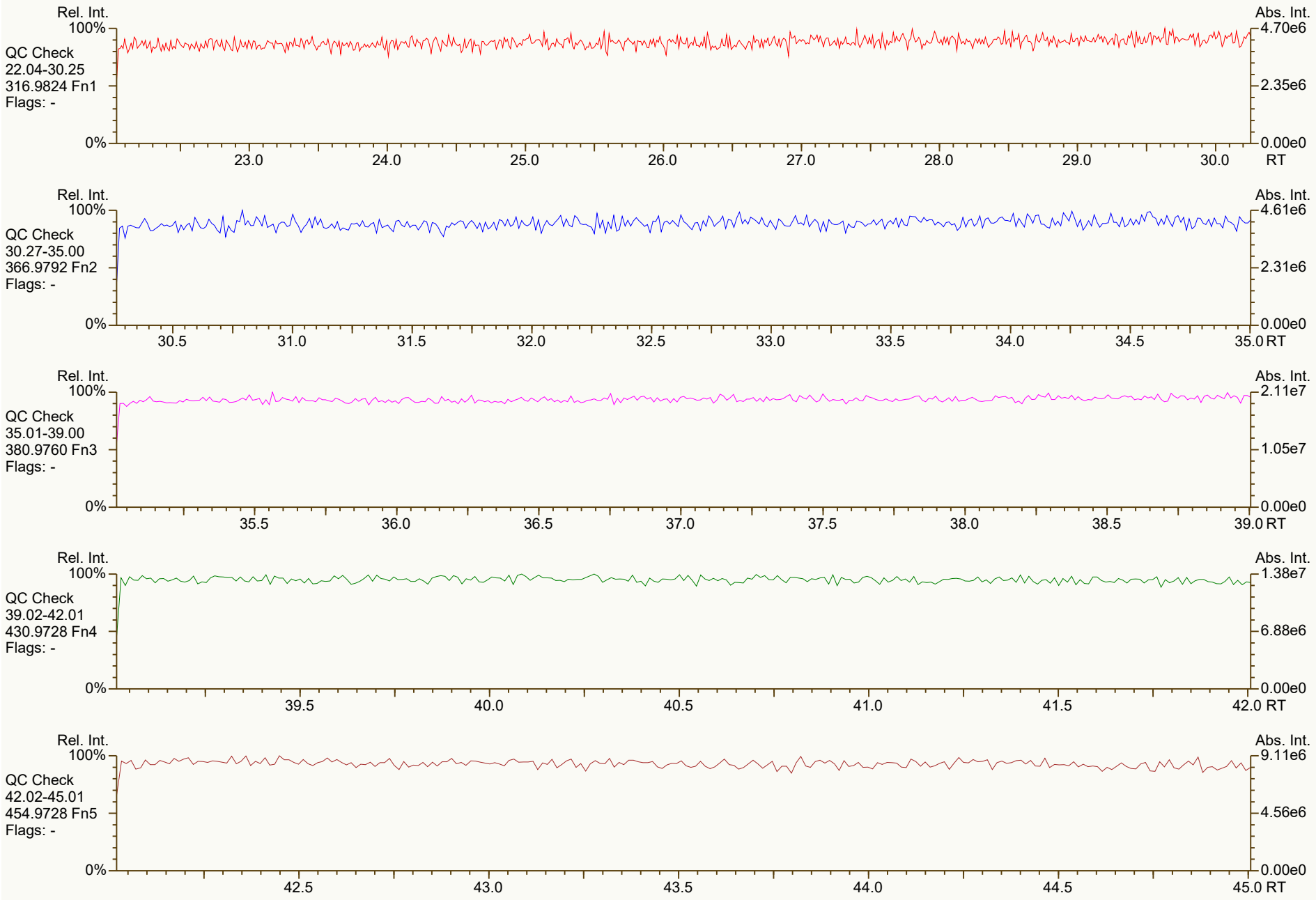

Rel. Int.
100%
0%
Abs. Int.
1.07e4
5.33e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 3.83e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.27e4
1.13e4
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 3.70e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
6.49e6
3.24e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: B
4σ 3.36e3
0%
Abs. Int.
6.92e3
3.46e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: B
4σ 2.66e3
0%
Abs. Int.
9.21e3
4.61e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: B
4σ 4.74e3
0%
Abs. Int.
1.59e4
7.97e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: B
4σ 4.66e3
0%
Abs. Int.
1.49e4
7.47e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.22e3
0%
Abs. Int.
1.10e4
5.50e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
100%
HxCDF
35.01-39.01
373.8207 Fn3
Flags: B
4σ 2.65e3
0%
Abs. Int.
1.40e4
7.01e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.01
375.8178 Fn3
Flags: B
4σ 2.72e3
0%
Abs. Int.
6.83e3
3.42e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
383.8639 Fn3
Flags: B
4σ 4.72e3
0%
Abs. Int.
3.43e4
1.72e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.01
385.8610 Fn3
Flags: B
4σ 6.97e3
0%
Abs. Int.
2.17e4
1.09e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.01
445.7555 Fn3
Flags: B
4σ 3.00e3
0%
Abs. Int.
6.55e3
3.28e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: B
4σ 3.06e3
0%
Abs. Int.
7.23e3
3.61e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: B
4σ 2.59e3
0%
Abs. Int.
1.18e4
5.91e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: B
4σ 6.05e3
0%
Abs. Int.
2.29e4
1.15e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 2.78e3
0%
Abs. Int.
7.16e3
3.58e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT

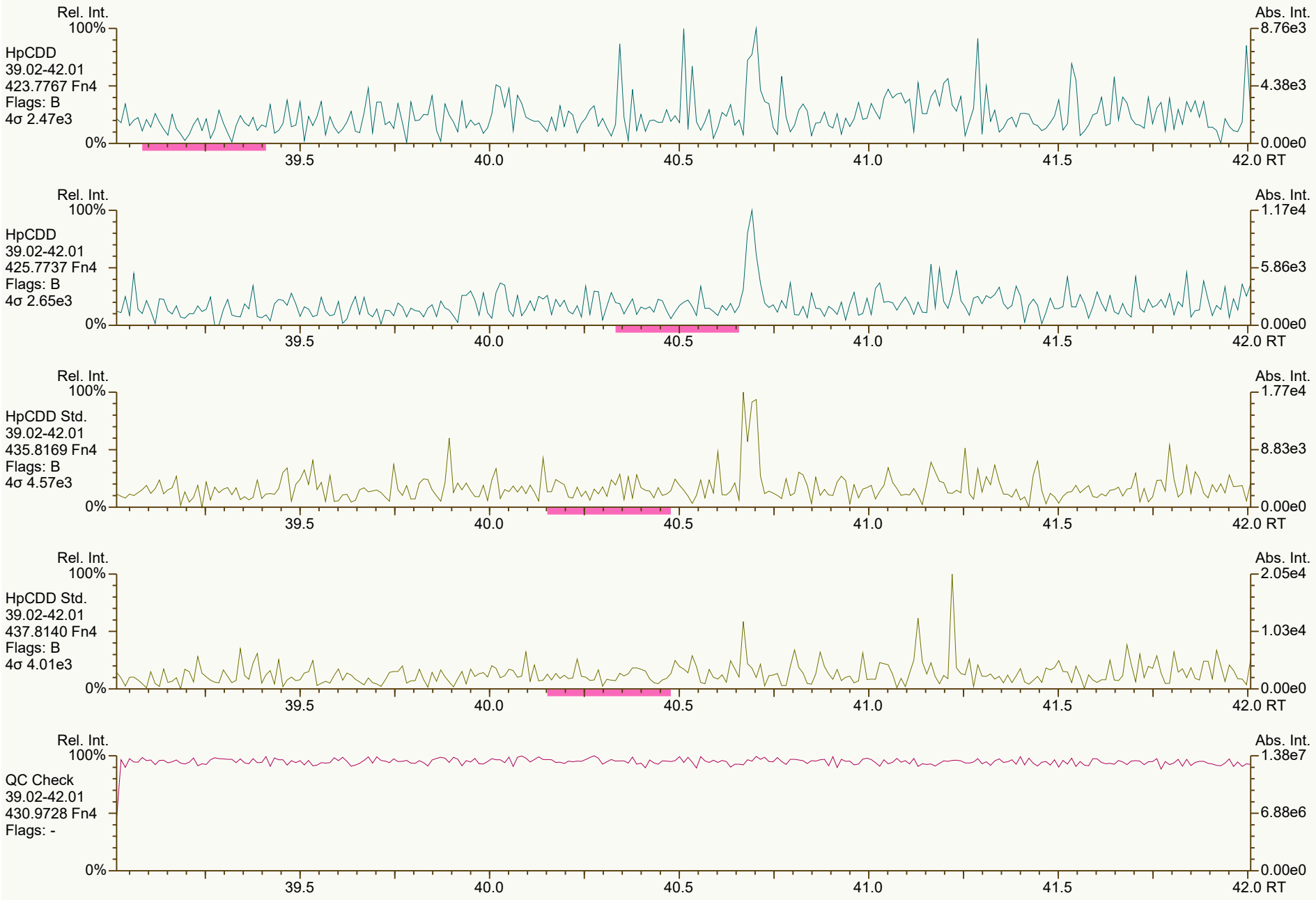

Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: B
4σ 3.04e3
0%
Abs. Int.
1.46e4
7.29e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: B
4σ 3.62e3
0%
Abs. Int.
2.50e4
1.25e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: B
4σ 5.09e3
0%
Abs. Int.
4.03e4
2.01e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: B
4σ 3.96e3
0%
Abs. Int.
2.02e4
1.01e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.64e3
0%
Abs. Int.
1.02e4
5.10e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Abs. Int.
4.70e6
2.35e6
0.00e0
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
4.61e6
2.31e6
0.00e0
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
2.11e7
1.05e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Abs. Int.
1.38e7
6.88e6
0.00e0
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
9.11e6
4.56e6
0.00e0

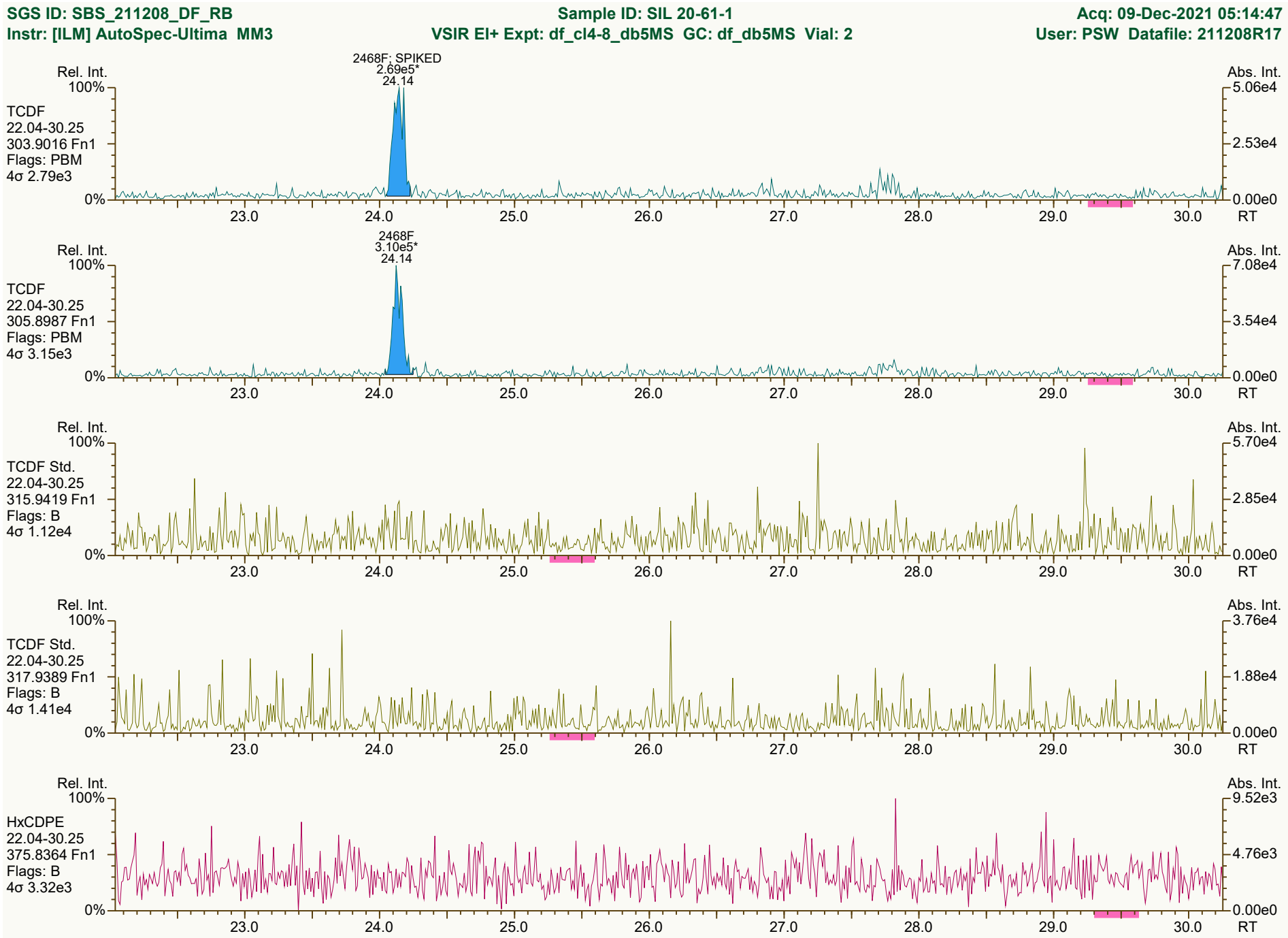

Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: B
4σ 3.68e3
0%
Abs. Int.
1.78e4
8.89e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: B
4σ 3.16e3
0%
Abs. Int.
2.27e4
1.14e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: B
4σ 2.93e3
0%
Abs. Int.
1.63e4
8.16e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: B
4σ 1.34e4
0%
Abs. Int.
3.70e4
1.85e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: B
4σ 3.70e3
0%
Abs. Int.
1.01e5
5.04e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.27-35.00
355.8546 Fn2
Flags: B
4σ 3.05e3
0%
Abs. Int.
1.05e4
5.24e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD
30.27-35.00
357.8517 Fn2
Flags: B
4σ 2.29e3
0%
Abs. Int.
5.73e3
2.87e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: B
4σ 4.82e3
0%
Abs. Int.
1.16e4
5.81e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: B
4σ 3.48e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.61e6
2.31e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT

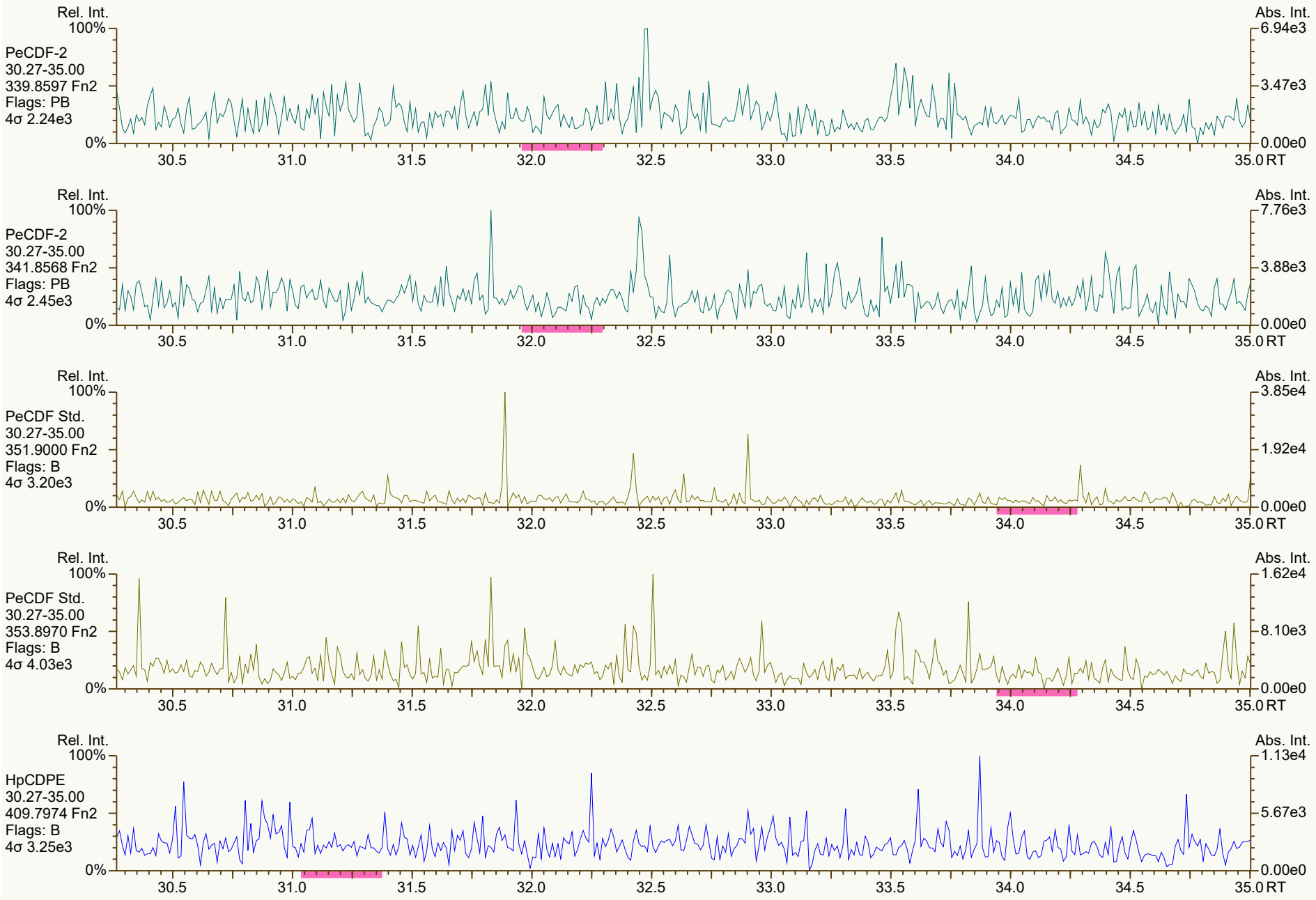

Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: B
4σ 2.60e3
0%
Abs. Int.
7.67e3
3.83e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 2.13e3
0%
Abs. Int.
6.32e3
3.16e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: B
4σ 4.63e3
0%
Abs. Int.
3.46e4
1.73e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.11e7
1.05e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: B
4σ 2.47e3
0%
Abs. Int.
8.76e3
4.38e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: B
4σ 2.65e3
0%
Abs. Int.
1.17e4
5.86e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: B
4σ 4.57e3
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: B
4σ 4.01e3
0%
Abs. Int.
2.05e4
1.03e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.38e7
6.88e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT


Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: B
4σ 2.46e3
0%
Abs. Int.
2.71e4
1.35e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: B
4σ 4.65e3
0%
Abs. Int.
1.94e4
9.71e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: B
4σ 3.84e3
0%
Abs. Int.
1.49e4
7.45e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: B
4σ 4.76e3
0%
Abs. Int.
2.92e4
1.46e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.11e6
4.56e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: SBS_211208_DF_RB
Sample ID: SIL 20-61-1
Acq: 09-Dec-2021 05:14:47
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
User: PSW Datafile: 211208R17
2468F: SPIKED
2.69e5*
24.14
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PBM
4σ 2.79e3
2468F
3.10e5*
24.14
TCDF
22.04-30.25
305.8987 Fn1
Flags: PBM
4σ 3.15e3
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: B
4σ 1.12e4
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: B
4σ 1.41e4
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.32e3
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\SBS_211208_DF_RB.utp_res, saved 09-Dec-2021 08:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7897, 5110, 9662 scc: 833-490
Revised: 09-Dec-2021 08:22 (PSW) Printed: 09-Dec-2021 10:52 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
9.69e3
4.85e3
0.00e0
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: B
4σ 2.79e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.11e4
5.57e3
0.00e0
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: B
4σ 2.71e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
4.70e6
2.35e6
0.00e0
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 2.24e3
0%
Abs. Int.
6.94e3
3.47e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 2.45e3
0%
Abs. Int.
7.76e3
3.88e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: B
4σ 3.20e3
0%
Abs. Int.
3.85e4
1.92e4
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: B
4σ 4.03e3
0%
Abs. Int.
1.62e4
8.10e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.25e3
0%
Abs. Int.
1.13e4
5.67e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT

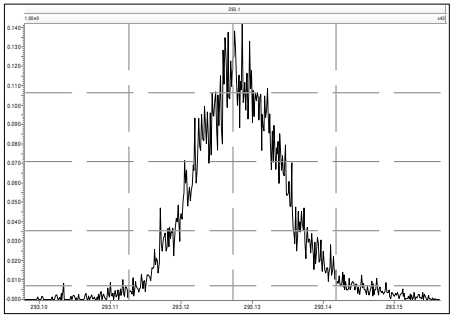

Rel. Int.
100%
HxCDF
35.01-39.00
373.8207 Fn3
Flags: B
4σ 2.95e3
0%
Abs. Int.
9.75e3
4.88e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.01-39.00
375.8178 Fn3
Flags: B
4σ 1.98e3
0%
Abs. Int.
7.33e3
3.66e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: B
4σ 4.71e3
0%
Abs. Int.
1.92e4
9.62e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: B
4σ 3.61e3
0%
Abs. Int.
4.42e4
2.21e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 2.39e3
0%
Abs. Int.
9.73e3
4.87e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.01
407.7818 Fn4
Flags: B
4σ 2.35e3
0%
Abs. Int.
1.15e4
5.75e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF
39.02-42.01
409.7788 Fn4
Flags: B
4σ 3.22e3
0%
Abs. Int.
9.40e3
4.70e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: B
4σ 6.41e3
0%
Abs. Int.
1.77e4
8.84e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: B
4σ 3.94e3
0%
Abs. Int.
2.04e4
1.02e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.12e3
0%
Abs. Int.
1.59e4
7.93e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT

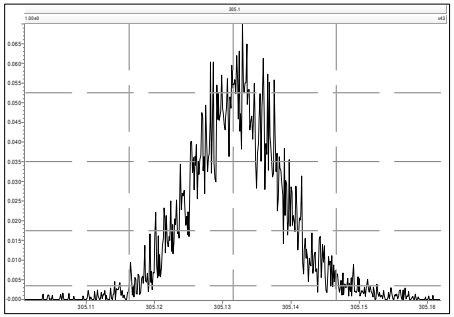

Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: B
4σ 2.15e3
0%
Abs. Int.
1.14e4
5.72e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: B
4σ 3.22e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: B
4σ 4.15e3
0%
Abs. Int.
2.21e4
1.10e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: B
4σ 5.36e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 2.94e3
0%
Abs. Int.
7.12e3
3.56e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Printed: Wednesday, December 08, 2021 16:25:47 Eastern Standard Time

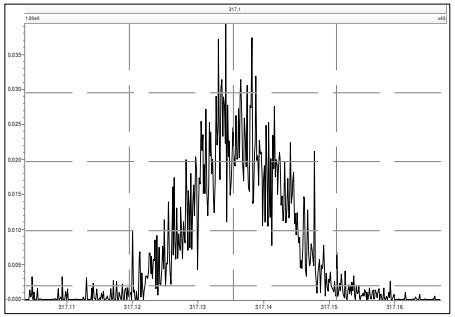
M 292.9824 R 10127



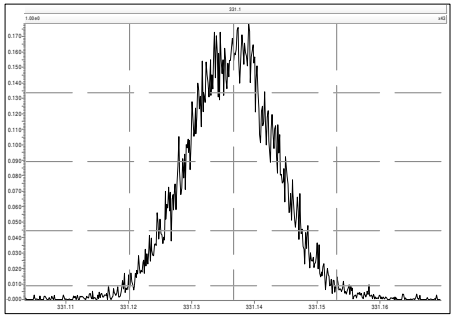
M 304.9824 R 11771



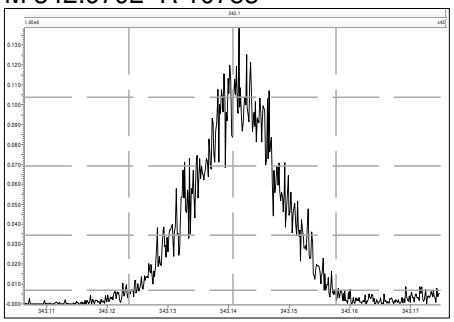
M 316.9824 R 12496



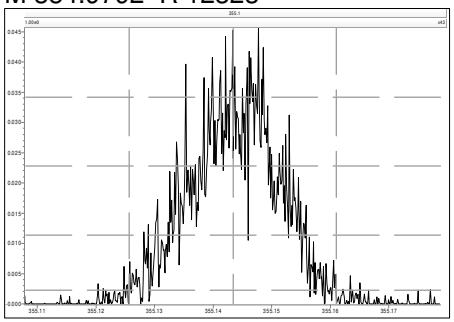
M 330.9792 R 10599



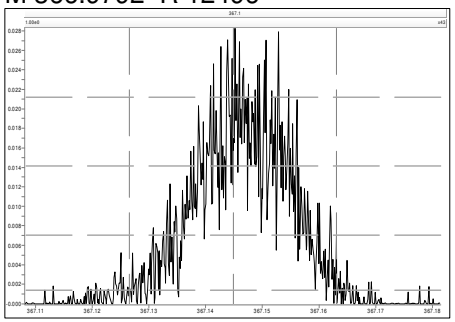
M 342.9792 R 10753



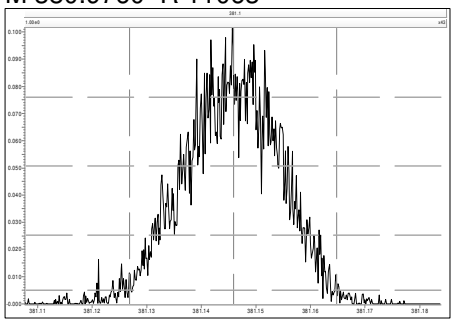
M 354.9792 R 12323



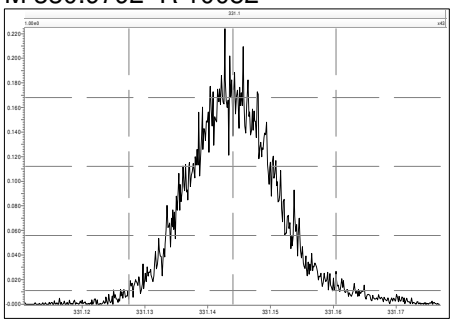
M 366.9792 R 12496



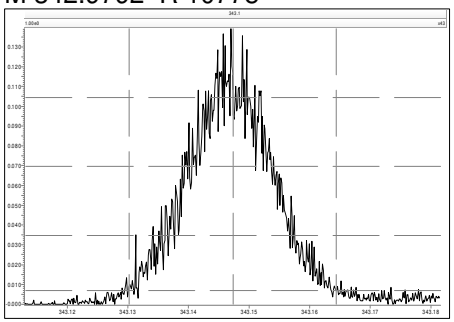
M 380.9760 R 11063



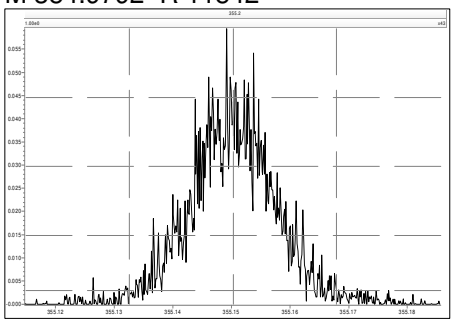
M 330.9792 R 10052



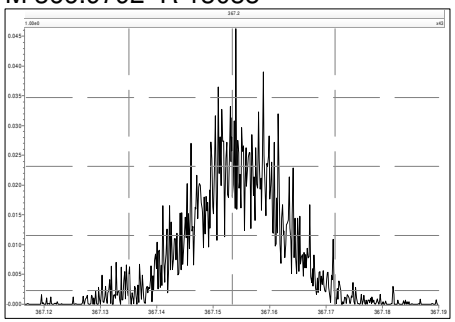
M 342.9792 R 10775



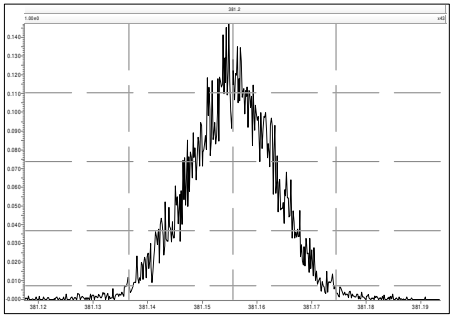
M 354.9792 R 11542



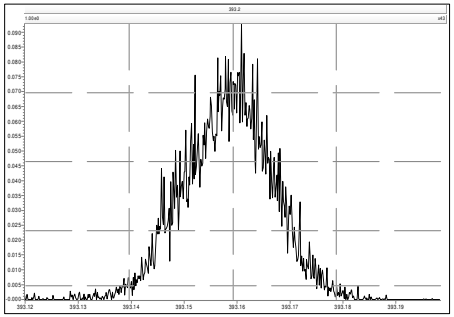
M 366.9792 R 13038



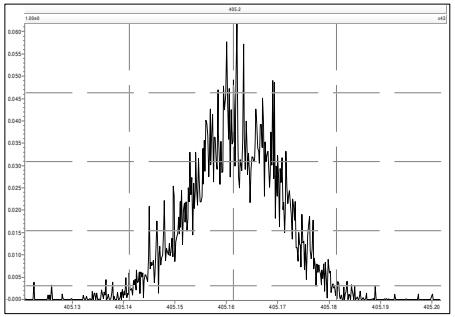
M 380.9760 R 11037



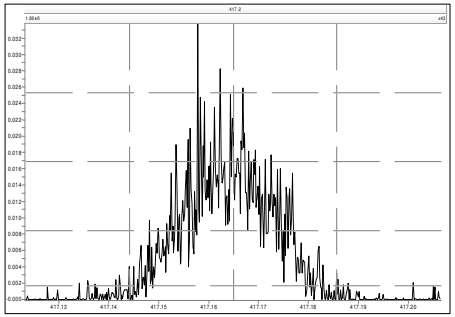
M 392.9760 R 10706



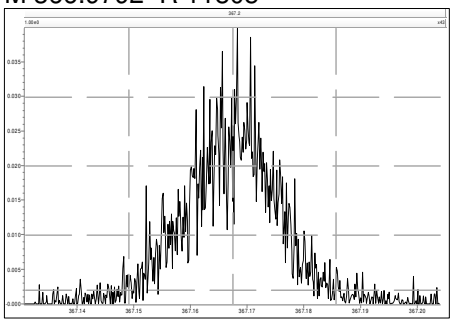
M 404.9760 R 12537



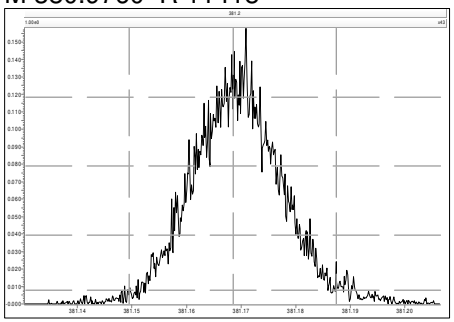
M 416.9760 R 12641



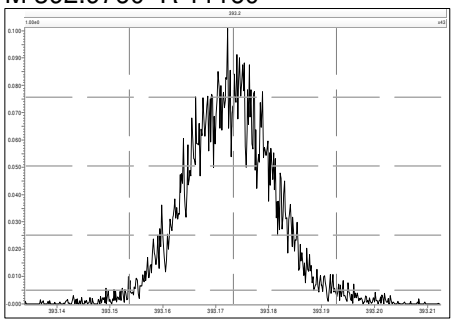
M 366.9792 R 11805



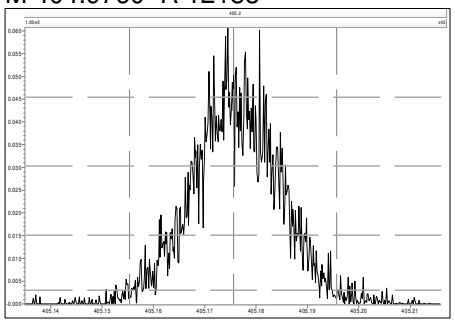
M 380.9760 R 11418



M 392.9760 R 11160



M 404.9760 R 12158



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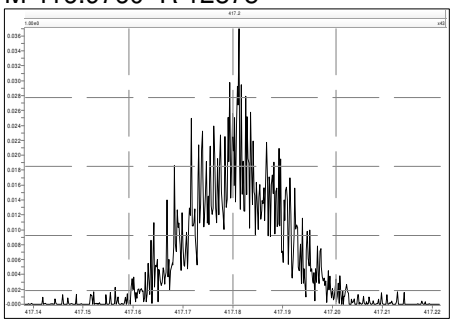

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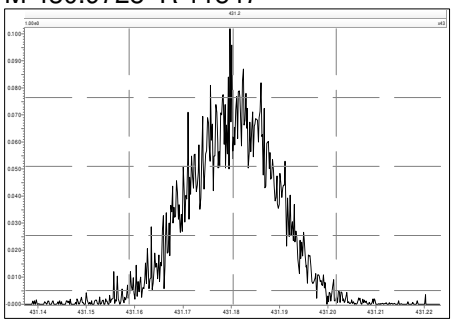

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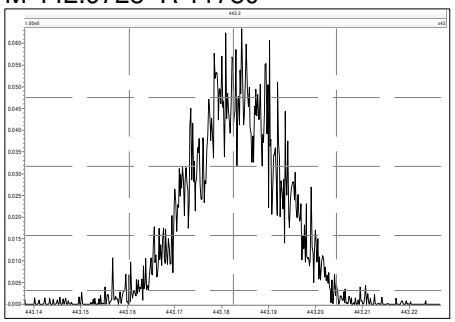

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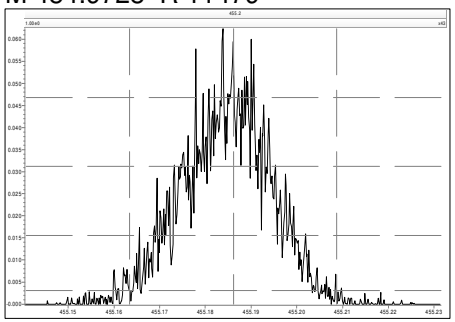

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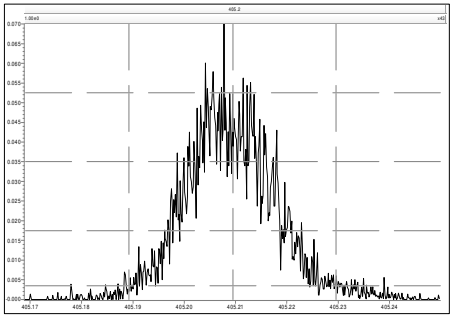

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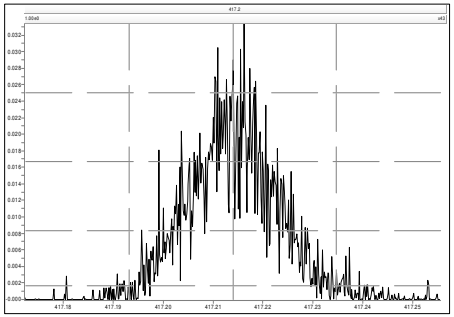

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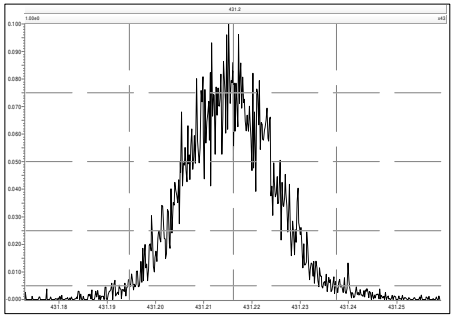

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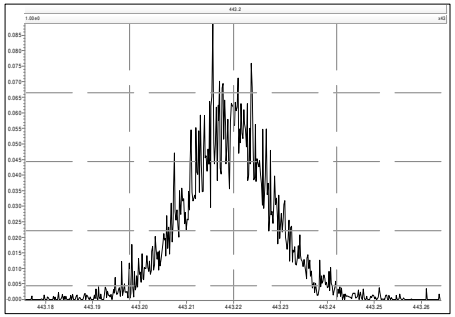

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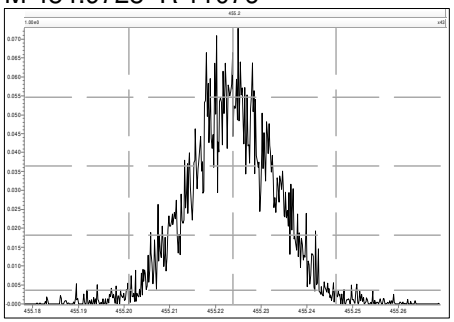

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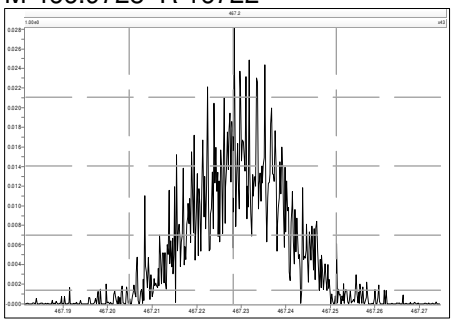

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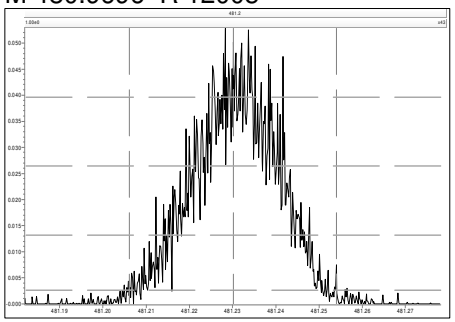

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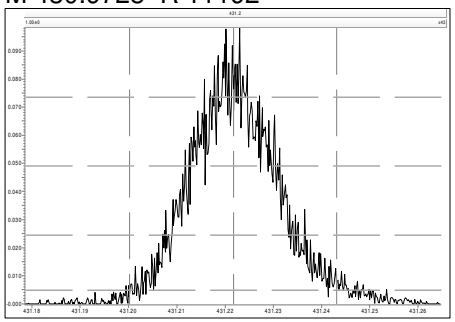

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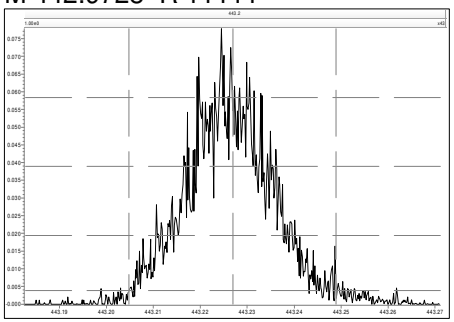

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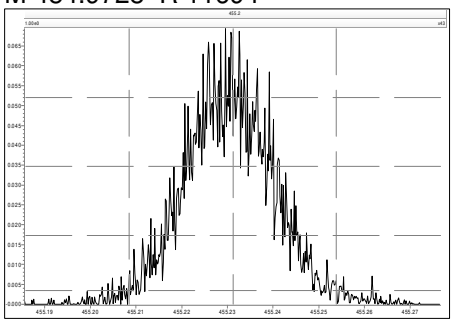

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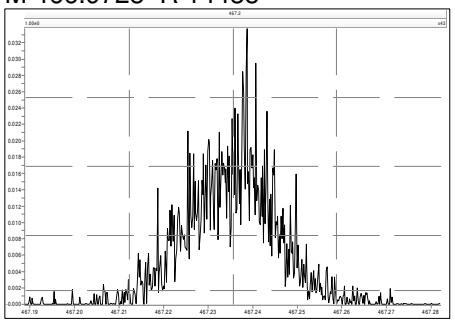

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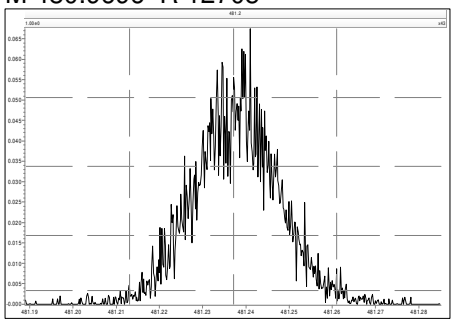

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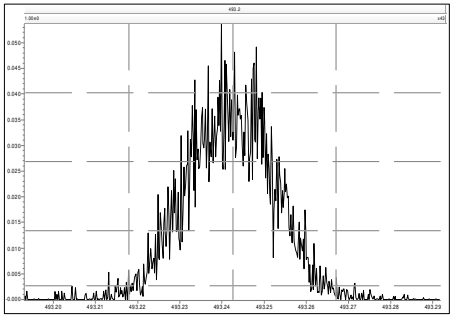

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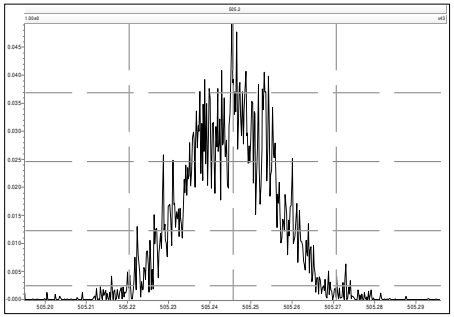

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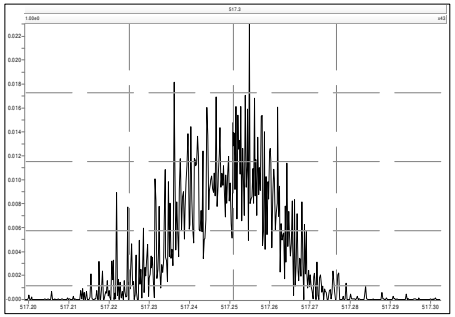

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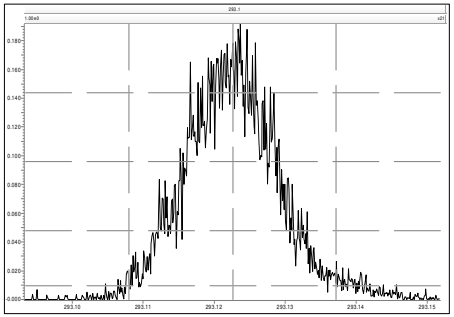

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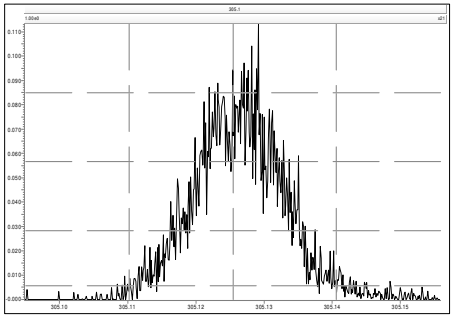

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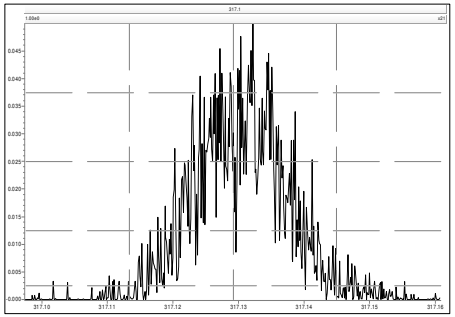

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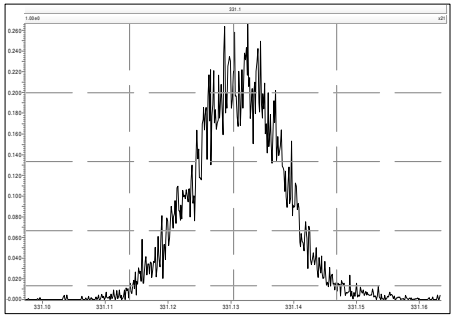

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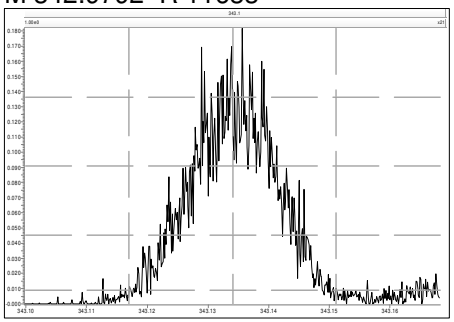

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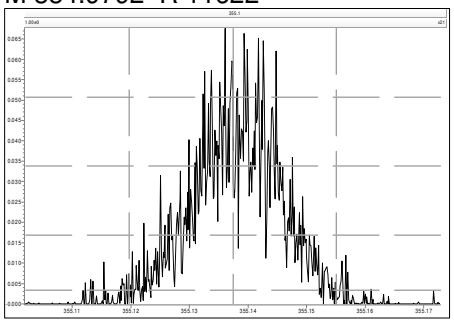

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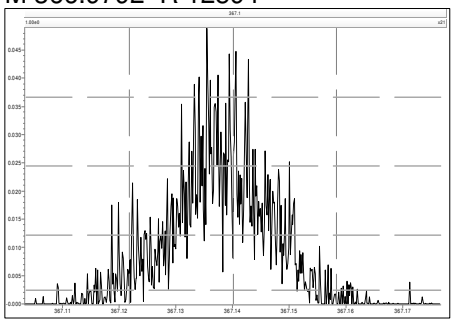

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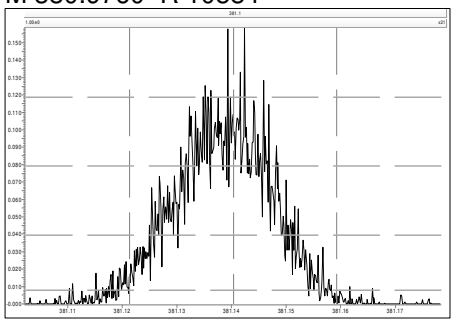

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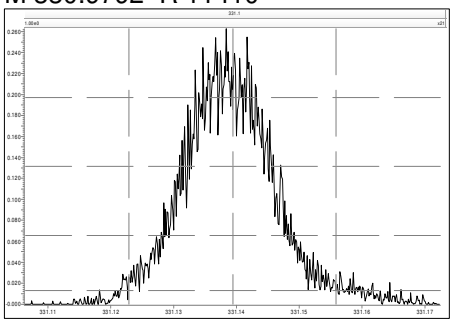

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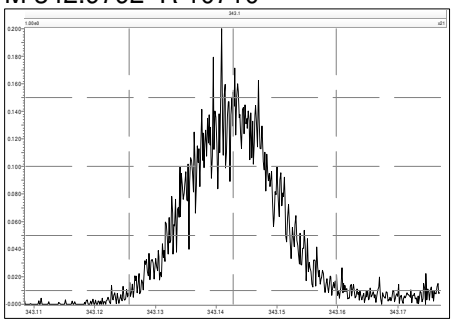

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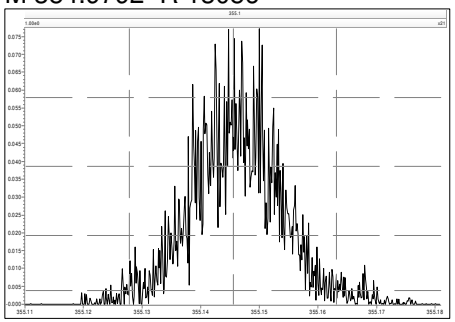

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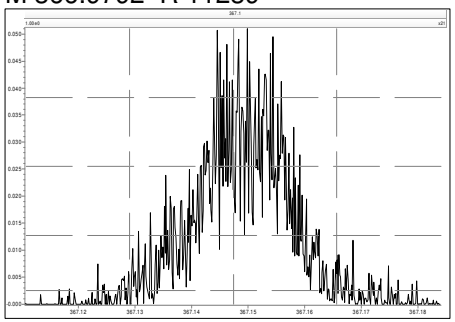

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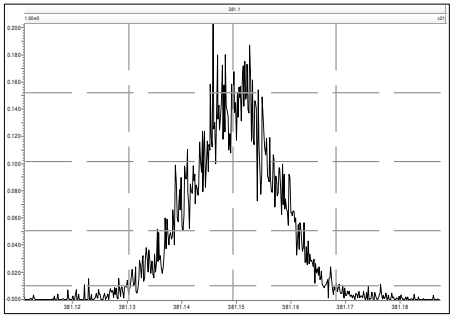

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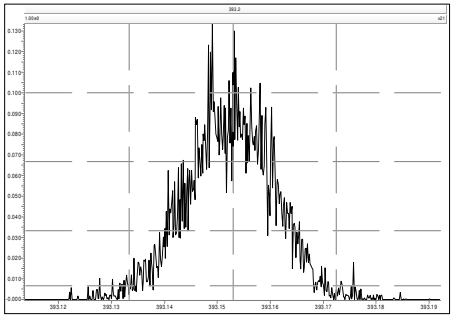

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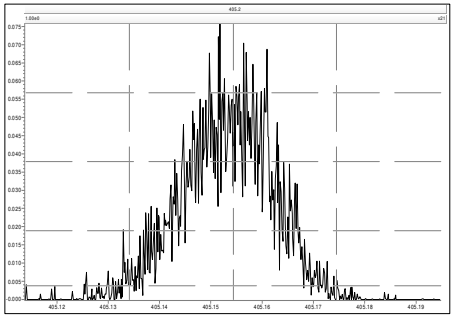

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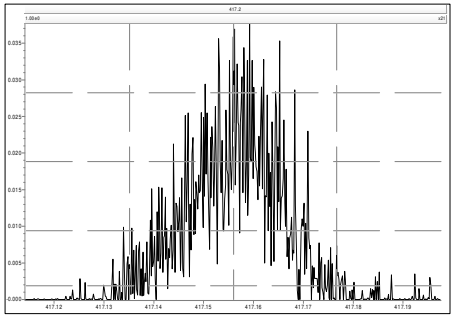

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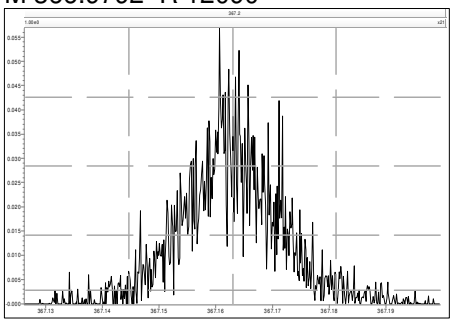

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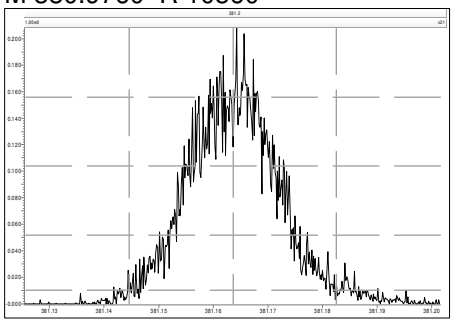

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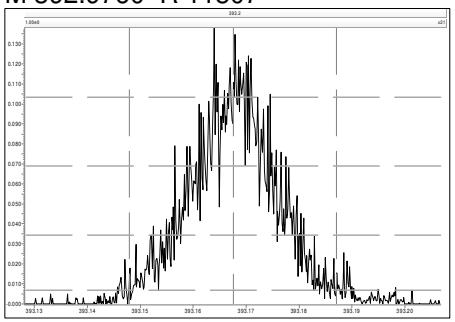

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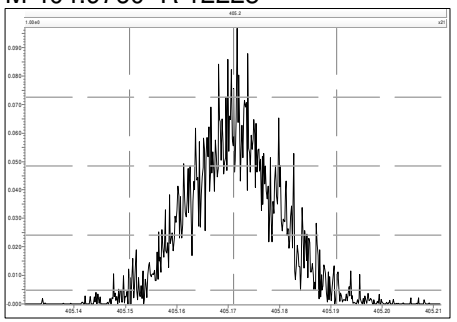

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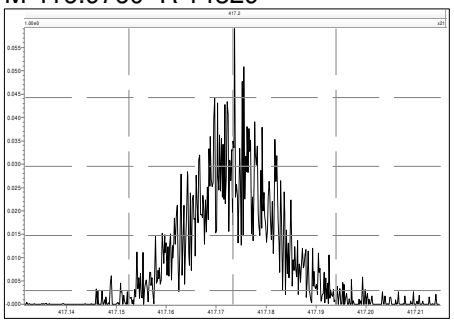

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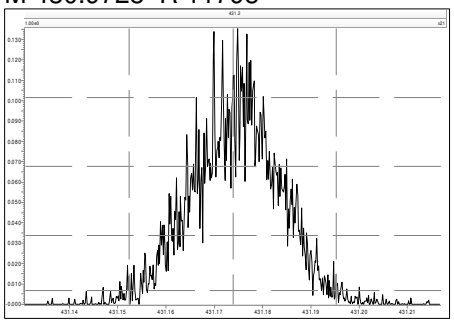

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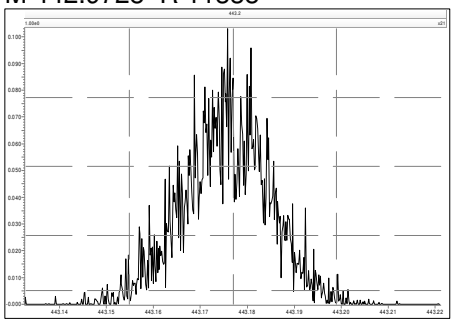

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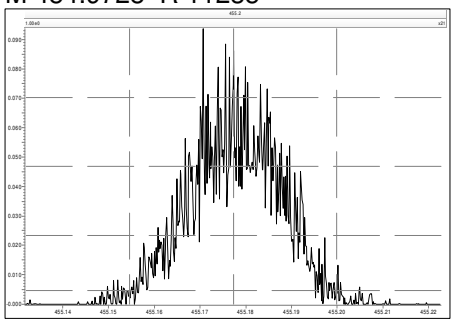

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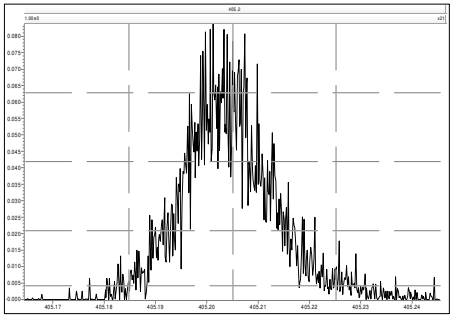

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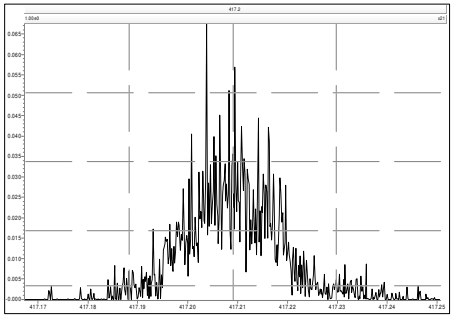

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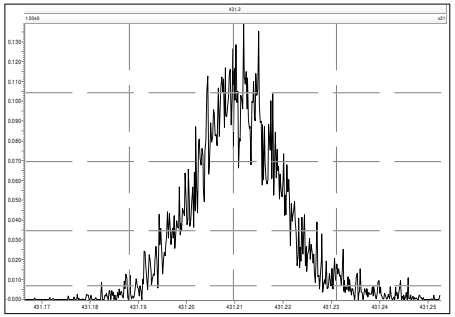

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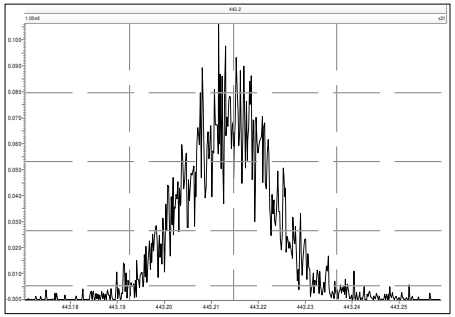

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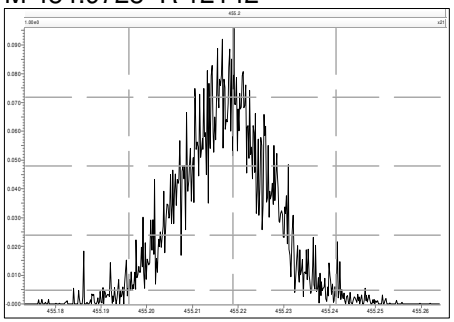

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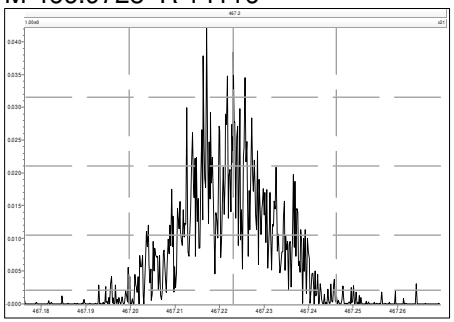

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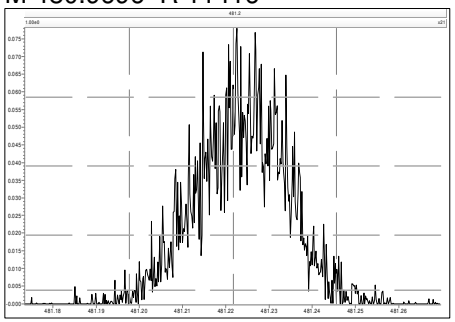

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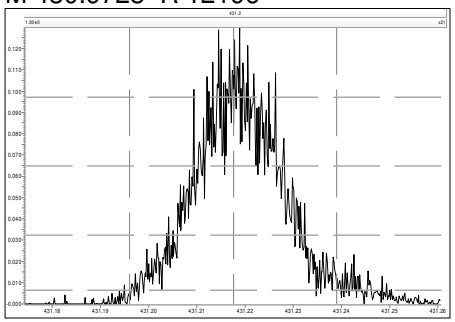

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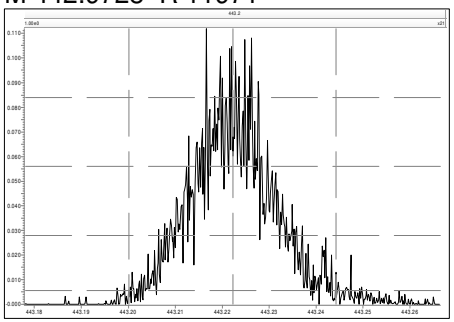

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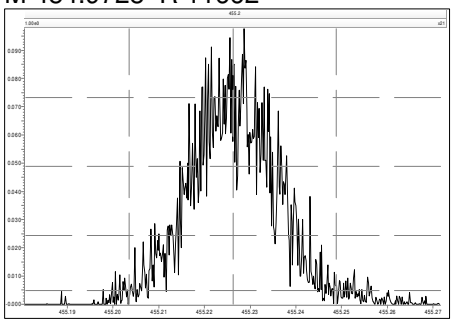

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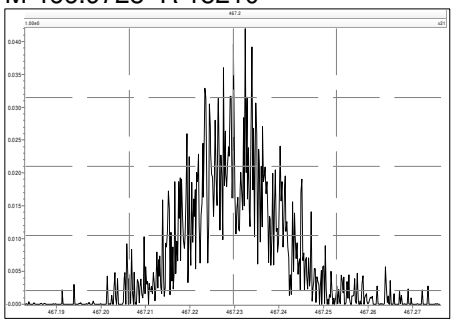
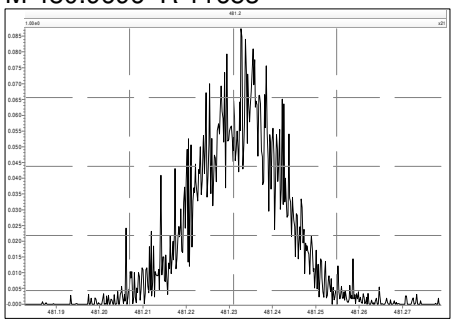


M 480.9696 R 11653



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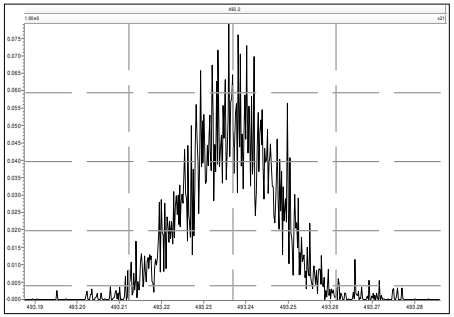

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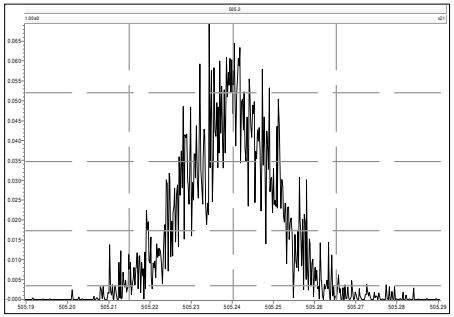

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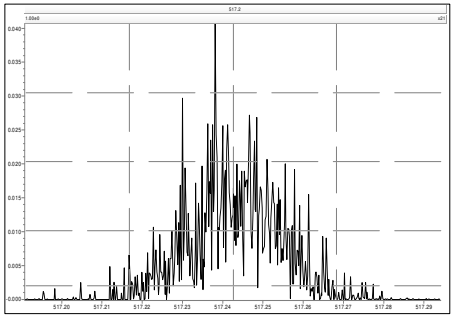

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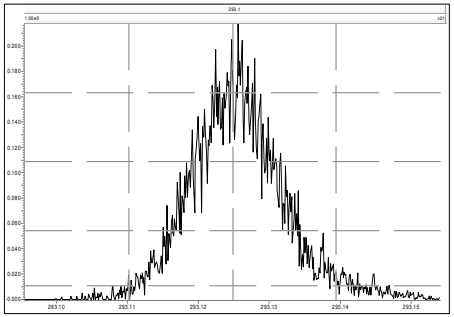

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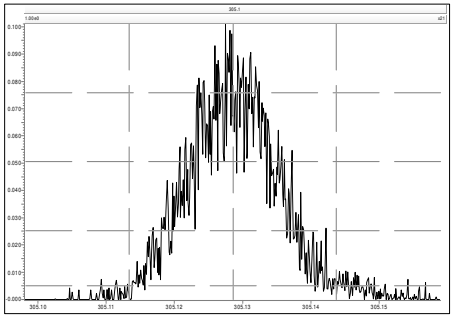

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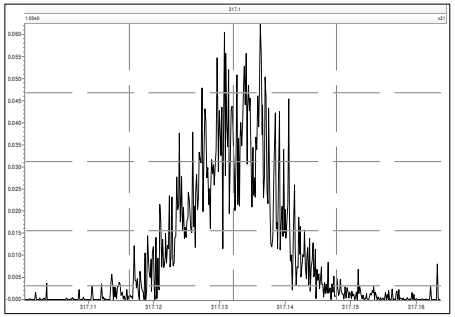

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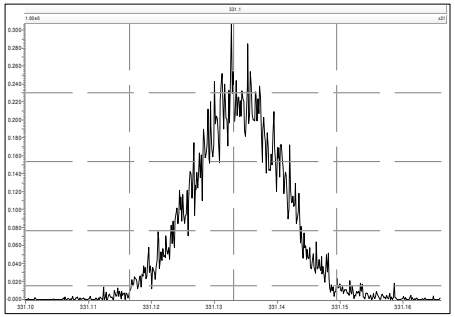
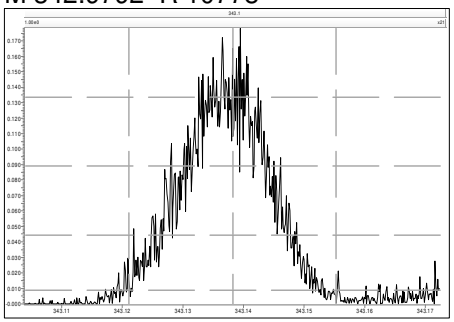


M 342.9792 R 10778



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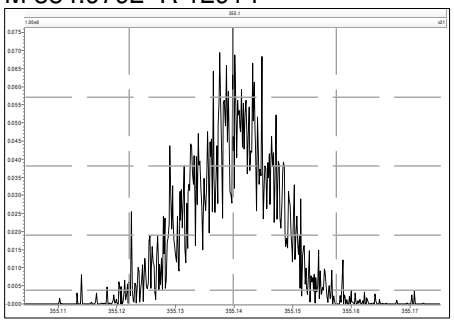

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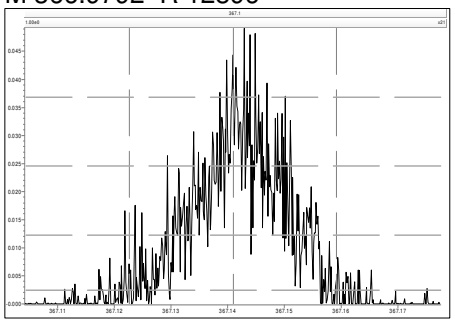
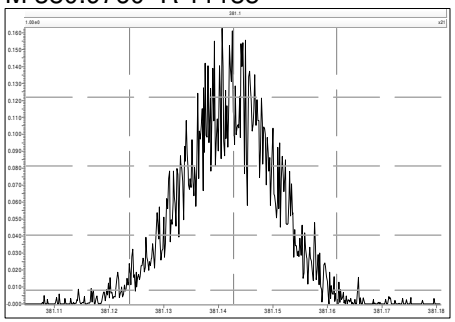


M 380.9760 R 11135



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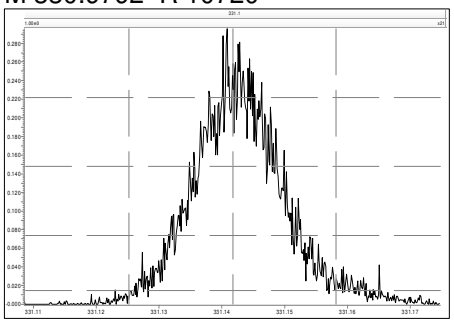
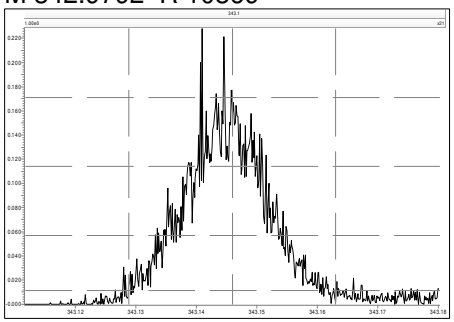
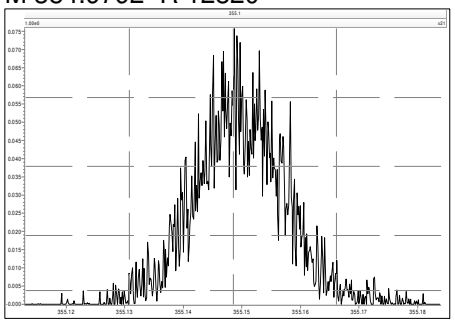


M 342.9792 R 10869



M 354.9792 R 12820



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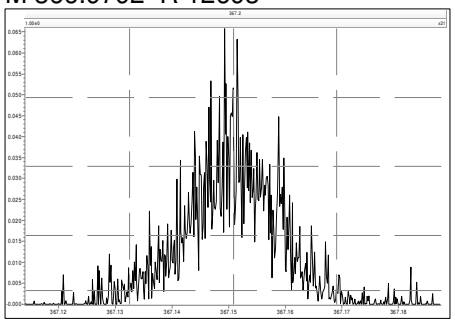
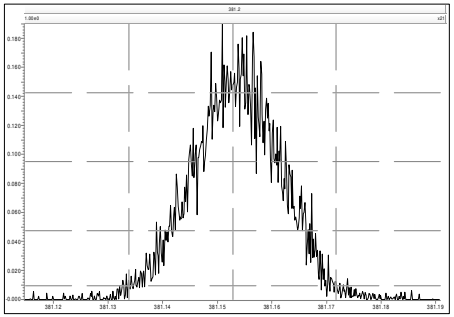
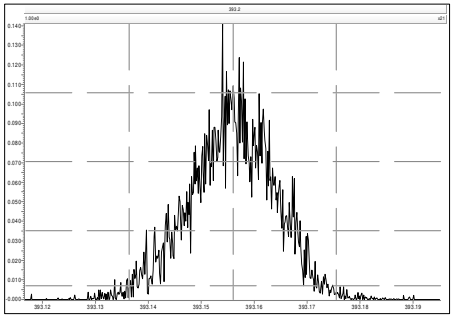


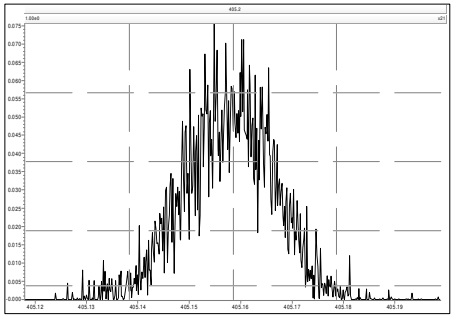
M 380.9760 R 11317



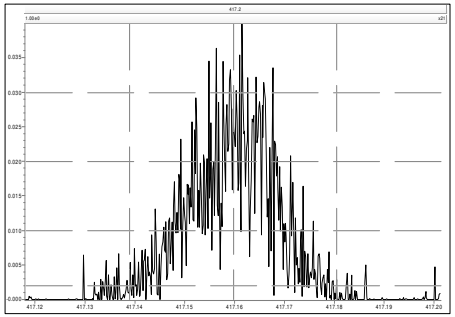
M 392.9760 R 11962



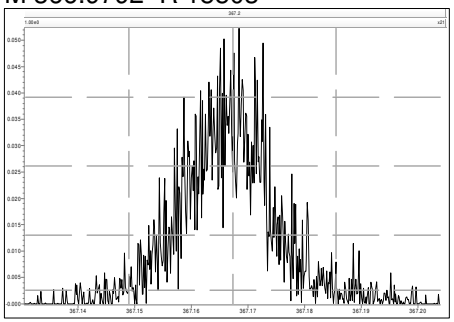
M 404.9760 R 12658



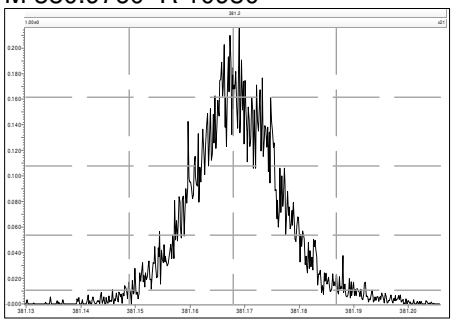
M 416.9760 R 15911



M 366.9792 R 15503



M 380.9760 R 10930



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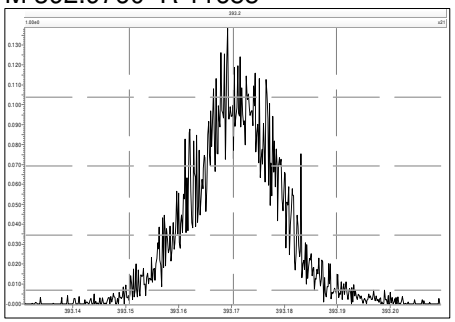

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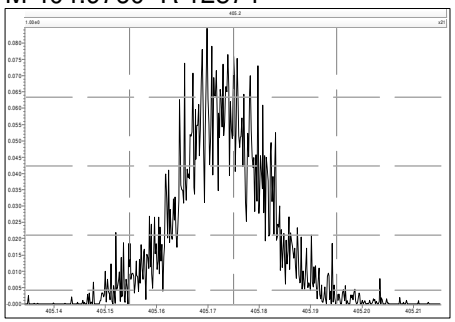

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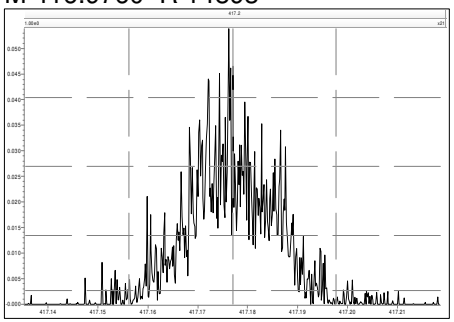
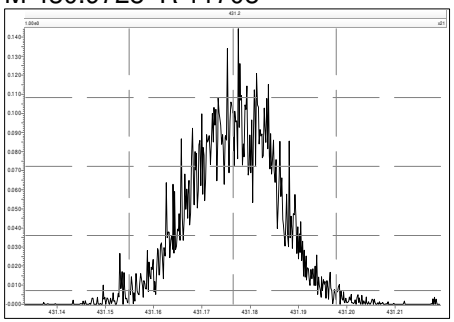
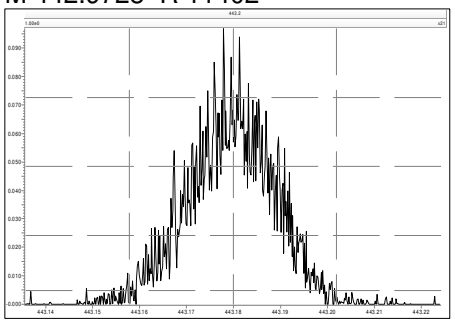


M 430.9728 R 11708



M 442.9728 R 11402



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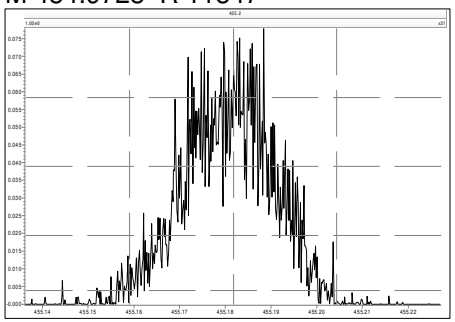

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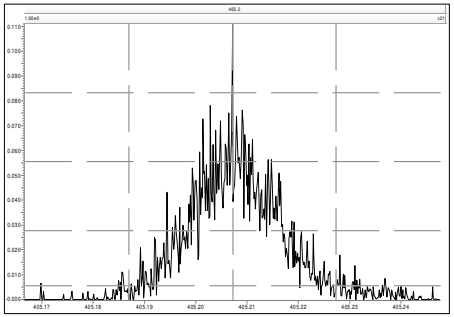

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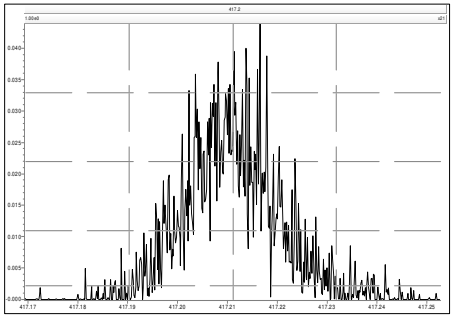

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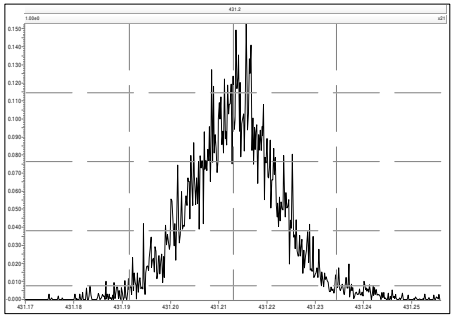
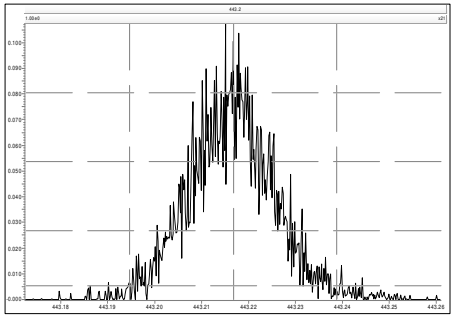
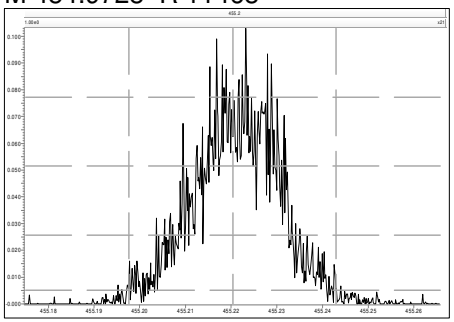


M 442.9728 R 12126



M 454.9728 R 11468



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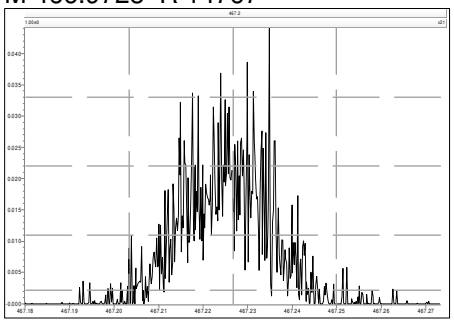

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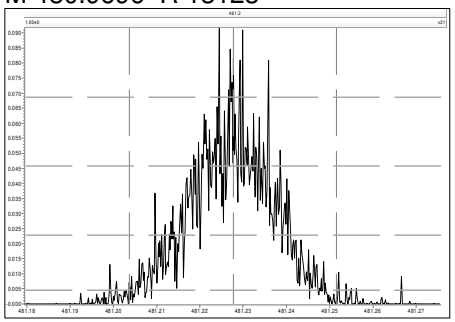

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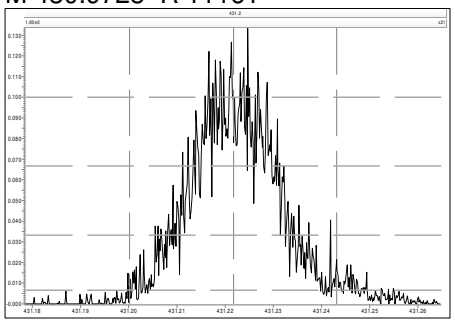

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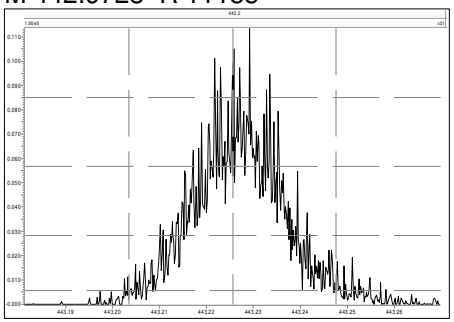
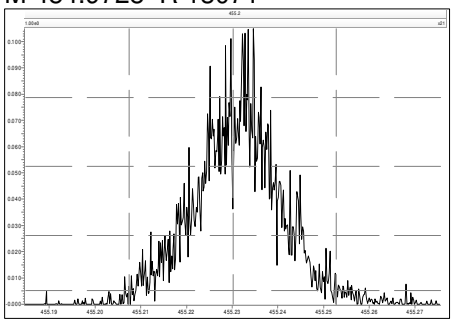
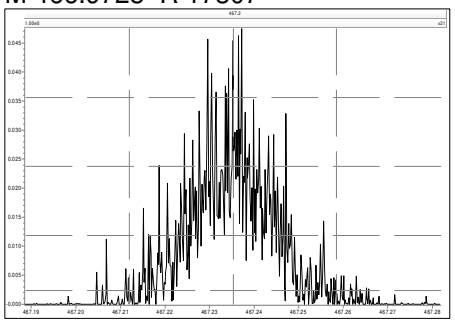


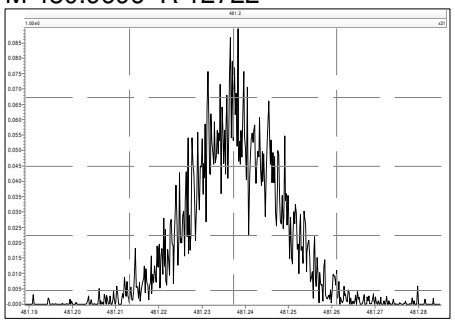
M 454.9728 R 13071



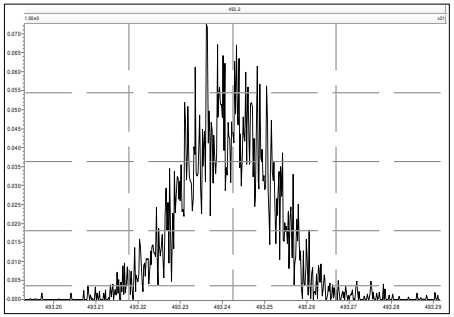
M 466.9728 R 17307



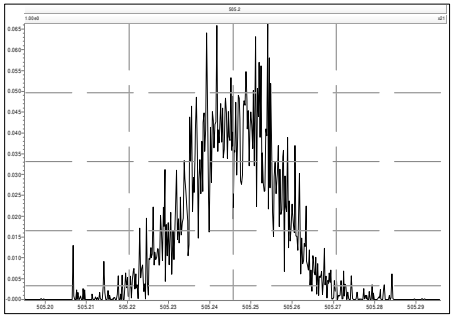
M 480.9696 R 12722



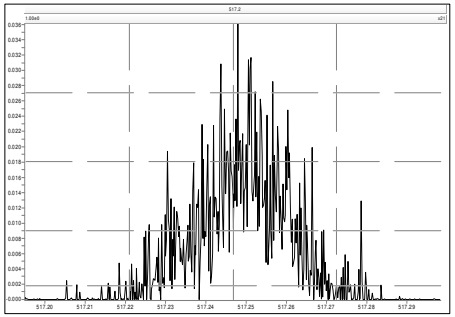
M 492.9696 R 12634



M 504.9696 R 12469



M 516.9697 R 17138



Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 0.25 pg/uL CS0	210727R03 0.5 pg/uL CS1	210727R04 2 pg/uL CS2	210727R05 10 pg/uL CS3	210727R06 40 pg/uL CS4	210727R07 200 pg/uL CS5	210727R08 500 pg/uL CS6
2378-TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
12378-PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
123478-HxCDD	1.06	3.3%	1.10	1.10	0.99	1.05	1.05	1.06	1.05
123678-HxCDD	1.08	2.9%	1.12	1.07	1.02	1.08	1.10	1.10	1.09
123789-HxCDD	1.02	4.8%	1.10	1.05	0.95	0.99	0.99	1.01	1.00
1234678-HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
OCDD	1.07	4.2%	1.15	1.04	1.01	1.07	1.08	1.06	1.08
2378-TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
12378-PeCDF	0.95	3.2%	1.00	0.94	0.90	0.94	0.95	0.93	0.96
23478-PeCDF	0.94	3.7%	0.99	0.90	0.90	0.92	0.93	0.96	0.96
123478-HxCDF	1.23	3.3%	1.32	1.23	1.19	1.22	1.24	1.24	1.22
123678-HxCDF	1.13	3.0%	1.17	1.16	1.07	1.10	1.13	1.14	1.14
234678-HxCDF	1.15	4.2%	1.23	1.19	1.08	1.14	1.13	1.15	1.15
123789-HxCDF	1.14	3.5%	1.19	1.08	1.09	1.14	1.14	1.15	1.16
1234678-HpCDF	1.36	3.6%	1.46	1.35	1.31	1.34	1.33	1.37	1.36
1234789-HpCDF	1.30	4.0%	1.34	1.20	1.26	1.34	1.30	1.35	1.33
OCDF	1.03	4.1%	1.01	1.01	0.95	1.03	1.05	1.06	1.08
ES 2378-TCDD	1.03	1.7%	1.02	1.02	1.02	1.05	1.06	1.04	1.02
ES 12378-PeCDD	1.03	3.5%	1.01	1.02	0.99	1.01	1.03	1.07	1.10
ES 123478-HxCDD	0.99	4.4%	0.97	0.93	0.99	1.00	0.98	1.03	1.07
ES 123678-HxCDD	0.97	5.2%	0.94	0.91	0.95	1.01	0.94	1.02	1.05
ES 123789-HxCDD	1.12	5.1%	1.09	1.04	1.12	1.14	1.09	1.17	1.22
ES 1234678-HpCDD	0.99	5.2%	0.95	0.92	0.98	1.02	0.97	1.05	1.06
ES OCDD	0.78	8.4%	0.73	0.71	0.74	0.77	0.75	0.85	0.89
ES 2378-TCDF	1.08	1.2%	1.06	1.08	1.07	1.09	1.09	1.08	1.10
ES 12378-PeCDF	0.93	2.7%	0.91	0.91	0.92	0.93	0.95	0.95	0.98
ES 23478-PeCDF	0.92	2.4%	0.90	0.91	0.90	0.93	0.93	0.93	0.96
ES 123478-HxCDF	1.14	5.9%	1.09	1.04	1.13	1.18	1.12	1.21	1.23
ES 123678-HxCDF	1.30	4.9%	1.24	1.21	1.27	1.35	1.27	1.36	1.37
ES 234678-HxCDF	1.20	4.9%	1.14	1.12	1.18	1.23	1.20	1.27	1.27
ES 123789-HxCDF	1.14	5.9%	1.06	1.07	1.11	1.16	1.12	1.20	1.24
ES 1234678-HpCDF	0.95	5.7%	0.90	0.88	0.92	0.98	0.94	1.00	1.03
ES 1234789-HpCDF	0.85	7.0%	0.79	0.78	0.82	0.86	0.83	0.90	0.94
ES OCDF	0.93	8.9%	0.86	0.83	0.88	0.93	0.90	1.01	1.06

APPROVED
Carla_Lyon , 7/28/2021, 12:24:59 PM

Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 **0.25 pg/uL CS0**	210727R03 **0.5 pg/uL CS1**	210727R04 **2 pg/uL CS2**	210727R05 **10 pg/uL CS3**	210727R06 **40 pg/uL CS4**	210727R07 **200 pg/uL CS5**	210727R08 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.31	2.3%	-	1.32	1.27	1.30	1.31	1.35	-
CS 12347-PeCDD	0.89	2.1%	0.89	0.91	0.88	0.87	0.93	0.88	0.89
CS 12346-PeCDF	0.87	1.7%	0.86	0.88	0.86	0.89	0.88	0.86	0.85
CS 123469-HxCDF	1.09	2.8%	1.06	1.04	1.08	1.14	1.09	1.12	1.09
CS 1234689-HpCDF	0.86	3.3%	0.86	0.84	0.86	0.92	0.86	0.86	0.84
SS 37Cl-2378-TCDD	1.26	2.3%	-	1.29	1.25	1.24	1.23	1.29	-
SS 12347-PeCDD	0.86	4.0%	0.88	0.89	0.89	0.86	0.90	0.82 ✓	0.81
SS 12346-PeCDF	0.93	3.5%	0.94	0.97	0.93	0.96	0.93	0.91	0.87
SS 123469-HxCDF	0.84	2.8%	0.86	0.86	0.85	0.84	0.86	0.82	0.80
SS 1234689-HpCDF	0.91	6.0%	0.96	0.96	0.94	0.94	0.92	0.86	0.81
AS 1368-TCDD	1.02	0.7%	1.01	1.03	1.02	1.02 ✓	1.02	1.04	1.02
AS 1368-TCDF	1.08	1.9%	1.05	1.06	1.07	1.10	1.09	1.10	1.07
~~OCDD-a~~	~~0.07~~	~~7.2%~~	~~0.06~~	~~0.08~~	~~0.07~~	~~0.07~~	~~0.07~~	~~0.06~~	~~0.07~~
~~OCDF-a~~	~~0.06~~	~~7.0%~~	~~0.05~~	~~0.06~~	~~0.05~~	~~0.06~~	~~0.06~~	~~0.06~~	~~0.06~~
Not reported from this ICAL - CL 28Jul21									
Totals									
Total TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
Total PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
Total HxCDD	1.05	3.3%	1.11	1.07	0.99	1.04	1.05	1.06	1.05
Total HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
Total TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
Total PeCDF	0.94	3.3%	1.00	0.92	0.90	0.93	0.94	0.95	0.96
Total HxCDF	1.16	3.1%	1.23	1.16	1.11	1.15	1.16	1.17	1.17
Total HpCDF	1.33	3.2%	1.40	1.28	1.28	1.34	1.32	1.36	1.34
FS 1278-TCDD	1.08	0.7%	1.08	1.08	1.09	1.08	1.08	1.08	1.10
FS 12478-PeCDD	1.09	3.7%	1.10	1.10 ✓	1.12	1.13	1.13	1.07	1.01
FS 123468-HxCDD	1.26	4.2%	1.27	1.30	1.28	1.32	1.28	1.24	1.16
FS 1234679-HpCDD	1.36	5.0%	1.41	1.37	1.38	1.42	1.38 ✓	1.30	1.23
TS 1378-TCDD	1.35	2.3%	1.36 ✓	1.38	1.36	1.31	1.30	1.35	1.37

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	210727R01	2	SBS_210727_DF_RA	1.00	SIL 20-61-1	PSW	638-037	27-Jul-2021	08:17:39
2	210727R02	85	CS0_210727_DF_RA	1.00	SIL 25-6-3	PSW	693-472	27-Jul-2021	09:04:23
3	210727R03	86	CS1_210727_DF_RA	1.00	SIL 25-6-2	PSW	554-132	27-Jul-2021	09:54:34
4	210727R04	87	CS2_210727_DF_RA	1.00	SIL 25-6-1	PSW	377-233	27-Jul-2021	10:44:24
5	210727R05	3	CS3_210727_DF_RA	1.00	SIL 23-672-1	PSW	230-891	27-Jul-2021	11:32:33
6	210727R06	88	CS4_210727_DF_RA	1.00	SIL 25-5-4	PSW	602-590	27-Jul-2021	12:19:16
7	210727R07	89	CS5_210727_DF_RA	1.00	SIL 25-5-3	PSW	147-553	27-Jul-2021	13:09:36
8	210727R08	90	CS6_210727_DF_RA	1.00	SIL 25-5-2	PSW	783-472	27-Jul-2021	13:58:27

Alternate OCDD/OCDF - NR in this ICAL. CL 28Jul21

REVIEWED
paul_walton , 7/28/2021, 8:31:00 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:08 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan STD Association	SGS Environmental Services

Individual Native Standards

2378-TCDD	ES 2378-TCDD
12378-PeCDD	ES 12378-PeCDD
123478-HxCDD	ES 123478-HxCDD
123678-HxCDD	ES 123678-HxCDD
123789-HxCDD	ES 123789-HxCDD
1234678-HpCDD	ES 1234678-HpCDD
OCDD	ES OCDD
2378-TCDF	ES 2378-TCDF
12378-PeCDF	ES 12378-PeCDF
23478-PeCDF	ES 23478-PeCDF
123478-HxCDF	ES 123478-HxCDF
123678-HxCDF	ES 123678-HxCDF
234678-HxCDF	ES 234678-HxCDF
123789-HxCDF	ES 123789-HxCDF
1234678-HpCDF	ES 1234678-HpCDF
1234789-HpCDF	ES 1234789-HpCDF
OCDF	ES OCDF

Cleanup/Sampling Standards

CS 37Cl-2378-TCDD	1234 TCDD 13C12
CS 12347-PeCDD	1234 TCDD 13C12
CS 12346-PeCDF	1234 TCDF 13C12
CS 123469-HxCDF	123467 HxCDD 13C12
CS 1234689-HpCDF	123467 HxCDD 13C12

Alternate Standards

AS 1368-TCDD	1234 TCDD 13C12
AS 1368-TCDF	1234 TCDF 13C12

Shipping Standards

FS 1278-TCDD	ES 2378-TCDD
FS 12478-PeCDD	ES 12378-PeCDD
FS 123468-HxCDD	ES 123478-HxCDD
FS 1234679-HpCDD	ES 1234678-HpCDD
TS 1378-TCDD	ES 2378-TCDD

Extraction Standards

ES 2378-TCDD	1234 TCDD 13C12
ES 12378-PeCDD	1234 TCDD 13C12
ES 123478-HxCDD	123467 HxCDD 13C12
ES 123678-HxCDD	123467 HxCDD 13C12
ES 123789-HxCDD	123467 HxCDD 13C12
ES 1234678-HpCDD	123467 HxCDD 13C12
ES OCDD	123467 HxCDD 13C12
ES 2378-TCDF	1234 TCDF 13C12
ES 12378-PeCDF	1234 TCDF 13C12
ES 23478-PeCDF	1234 TCDF 13C12
ES 123478-HxCDF	123467 HxCDD 13C12
ES 123678-HxCDF	123467 HxCDD 13C12
ES 234678-HxCDF	123467 HxCDD 13C12
ES 123789-HxCDF	123467 HxCDD 13C12
ES 1234678-HpCDF	123467 HxCDD 13C12
ES 1234789-HpCDF	123467 HxCDD 13C12
ES OCDF	123467 HxCDD 13C12

Injection Standards

1234 TCDD 13C12
1234 TCDF 13C12
123467 HxCDD 13C12

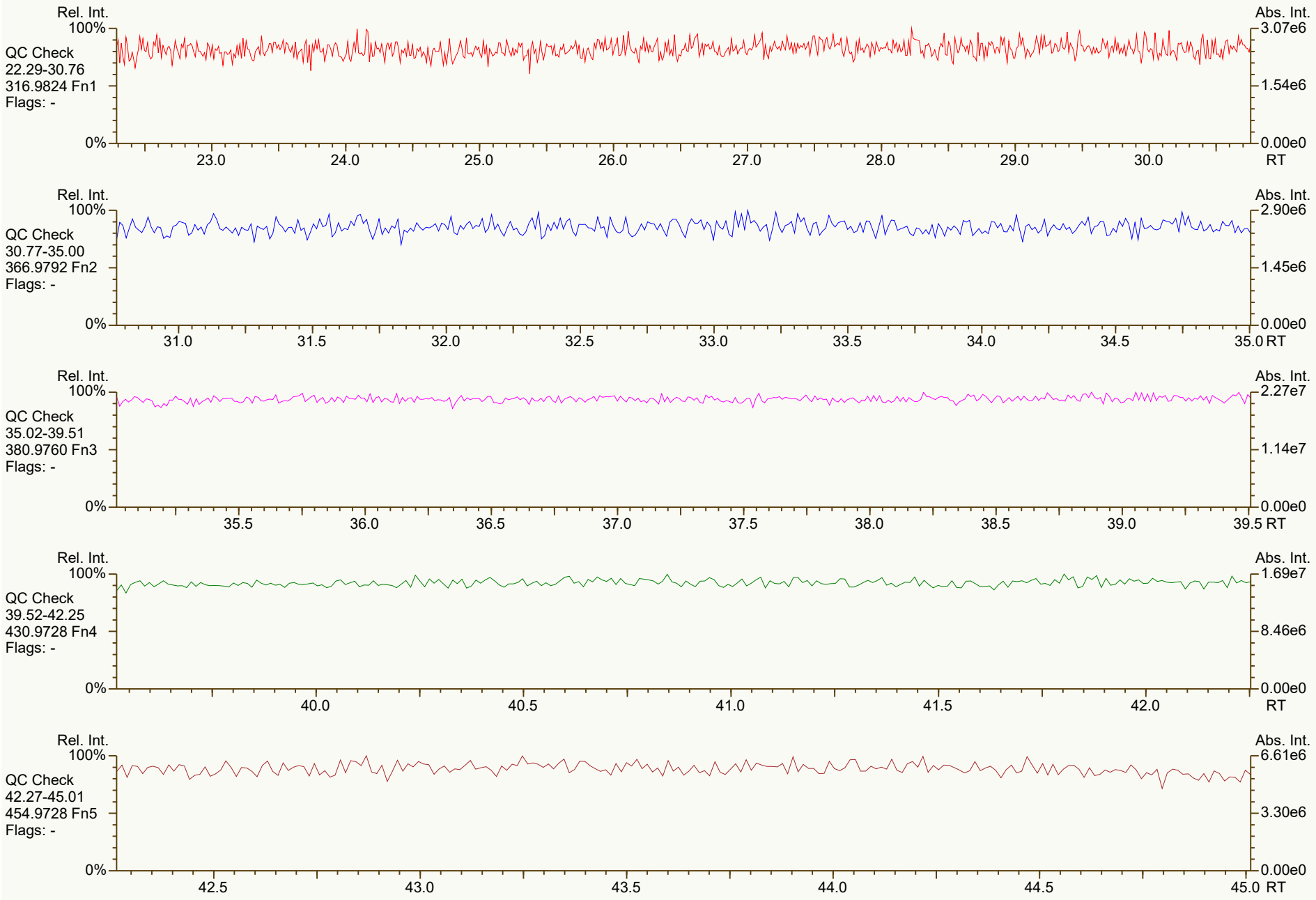
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	6.43E+05	0.73	Y	1.34	1.45	8%
12378-PeCDD	33.80	2.41E+06	1.48	Y	1.06	1.09	3%
123478-HxCDD	37.67	2.24E+06	1.35	Y	1.06	1.10	4%
123678-HxCDD	37.78	2.20E+06	1.31	Y	1.08	1.12	3%
123789-HxCDD	38.07	2.52E+06	1.21	Y	1.02	1.10	9%
1234678-HpCDD	40.66	2.08E+06	0.99	Y	0.97	1.05	7%
OCDD	43.22	3.52E+06	0.85	Y	1.07	1.15	8%
2378-TCDF	27.66	7.49E+05	0.72	Y	0.96	1.01	5%
12378-PeCDF	32.38	3.19E+06	1.44	Y	0.95	1.00	5%
23478-PeCDF	33.46	3.11E+06	1.57	Y	0.94	0.99	6%
123478-HxCDF	36.68	3.00E+06	1.23	Y	1.23	1.32	7%
123678-HxCDF	36.82	3.05E+06	1.18	Y	1.13	1.17	4%
234678-HxCDF	37.49	2.95E+06	1.17	Y	1.15	1.23	7%
123789-HxCDF	38.42	2.65E+06	1.30	Y	1.14	1.19	5%
1234678-HpCDF	39.76	2.75E+06	1.00	Y	1.36	1.46	7%
1234789-HpCDF	41.10	2.20E+06	1.11	Y	1.30	1.34	3%
OCDF	43.40	3.66E+06	0.85	Y	1.03	1.01	-1%
ES 2378-TCDD	28.50	1.77E+08	0.79	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.781	1.77E+08	1.63	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.653	1.63E+08	1.26	Y	0.99	0.97	-2%
ES 123678-HxCDD	37.766	1.57E+08	1.27	Y	0.97	0.94	-3%
ES 123789-HxCDD	38.056	1.82E+08	1.26	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.643	1.59E+08	1.05	Y	0.99	0.95	-4%
ES OCDD	43.205	2.44E+08	0.92	Y	0.78	0.73	-6%
ES 2378-TCDF	27.645	2.97E+08	0.78	Y	1.08	1.06	-2%
ES 12378-PeCDF	32.355	2.55E+08	1.55	Y	0.93	0.91	-2%
ES 23478-PeCDF	33.445	2.50E+08	1.56	Y	0.92	0.90	-3%
ES 123478-HxCDF	36.661	1.82E+08	0.53	Y	1.14	1.09	-5%
ES 123678-HxCDF	36.801	2.08E+08	0.53	Y	1.30	1.24	-4%
ES 234678-HxCDF	37.466	1.92E+08	0.53	Y	1.20	1.14	-5%
ES 123789-HxCDF	38.399	1.78E+08	0.52	Y	1.14	1.06	-7%
ES 1234678-HpCDF	39.748	1.51E+08	0.44	Y	0.95	0.90	-5%
ES 1234789-HpCDF	41.09	1.32E+08	0.45	Y	0.85	0.79	-7%
ES OCDF	43.389	2.89E+08	0.89	Y	0.93	0.86	-7%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

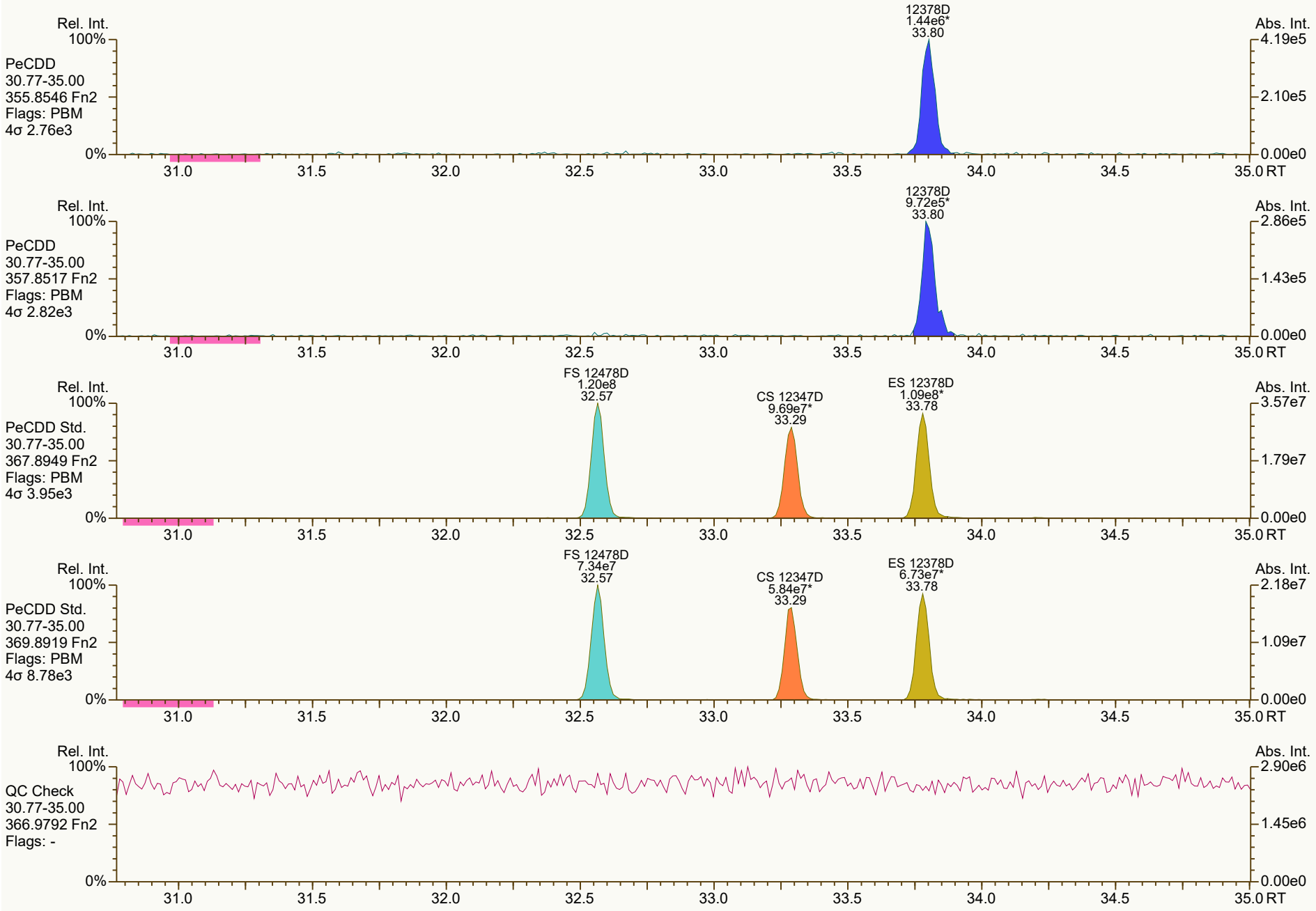
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.74E+08	0.80	Y	-	-	-
JS 1234-TCDF	26.33	2.80E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	8.38E+07	1.33	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.89	0.89	0%
CS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.78E+08	0.52	Y	1.09	1.06	-2%
CS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.86	0.88	2%
SS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.93	0.94	2%
SS 123469-HxCDF	37.12	1.78E+08	0.52	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.91	0.96	5%
AS 1368-TCDD	24.91	1.76E+08	0.79	Y	1.02	1.01	-1%
AS 1368-TCDF	22.86	2.95E+08	0.78	Y	1.08	1.05	-2%
FS 1278-TCDD	28.82	1.91E+08	0.78	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.94E+08	1.64	Y	1.09	1.10	0%
FS 123468-HxCDD	36.58	2.07E+08	1.26	Y	1.26	1.27	0%
FS 1234679-HpCDD	39.99	2.24E+08	1.06	Y	1.36	1.41	4%
TS 1378-TCDD	26.87	2.41E+08	0.79	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.22~~	~~1.80E+05~~	~~0.99~~	~~N~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.41~~	~~1.98E+05~~	~~2.81~~	~~Y~~	~~0.06~~	~~0.05~~	~~-7%~~

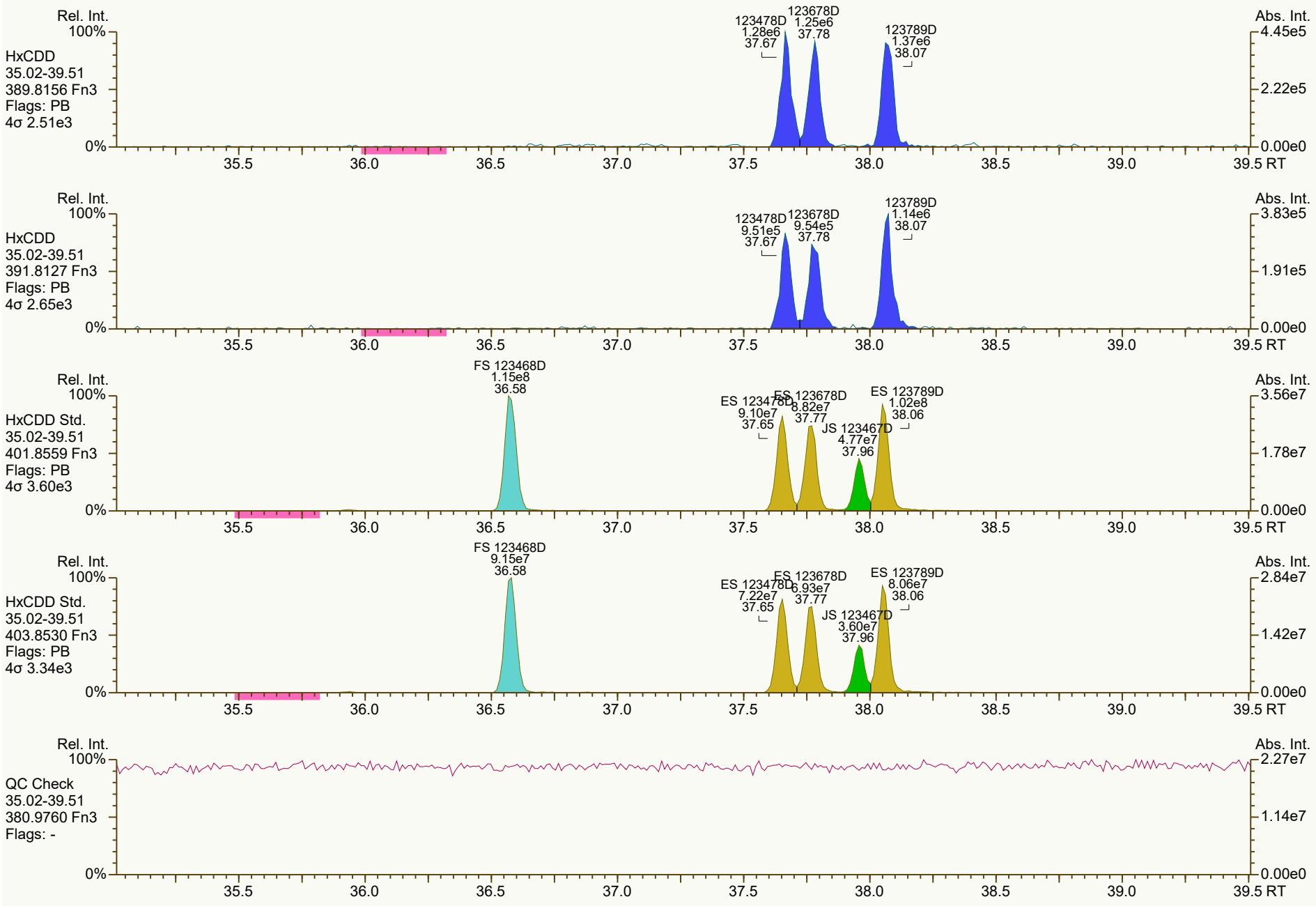
Not reported from this ICAL - CL 28Jul21

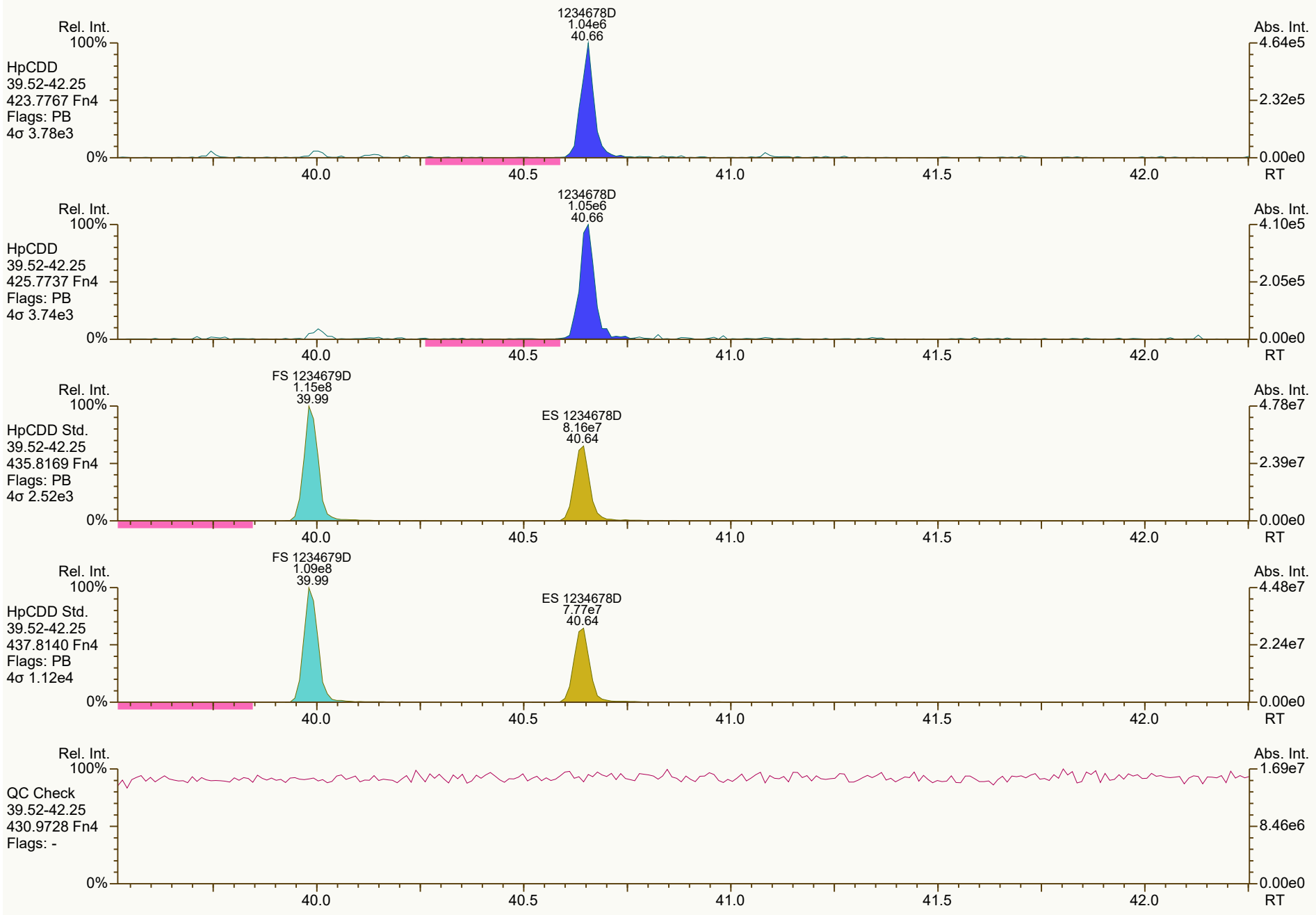


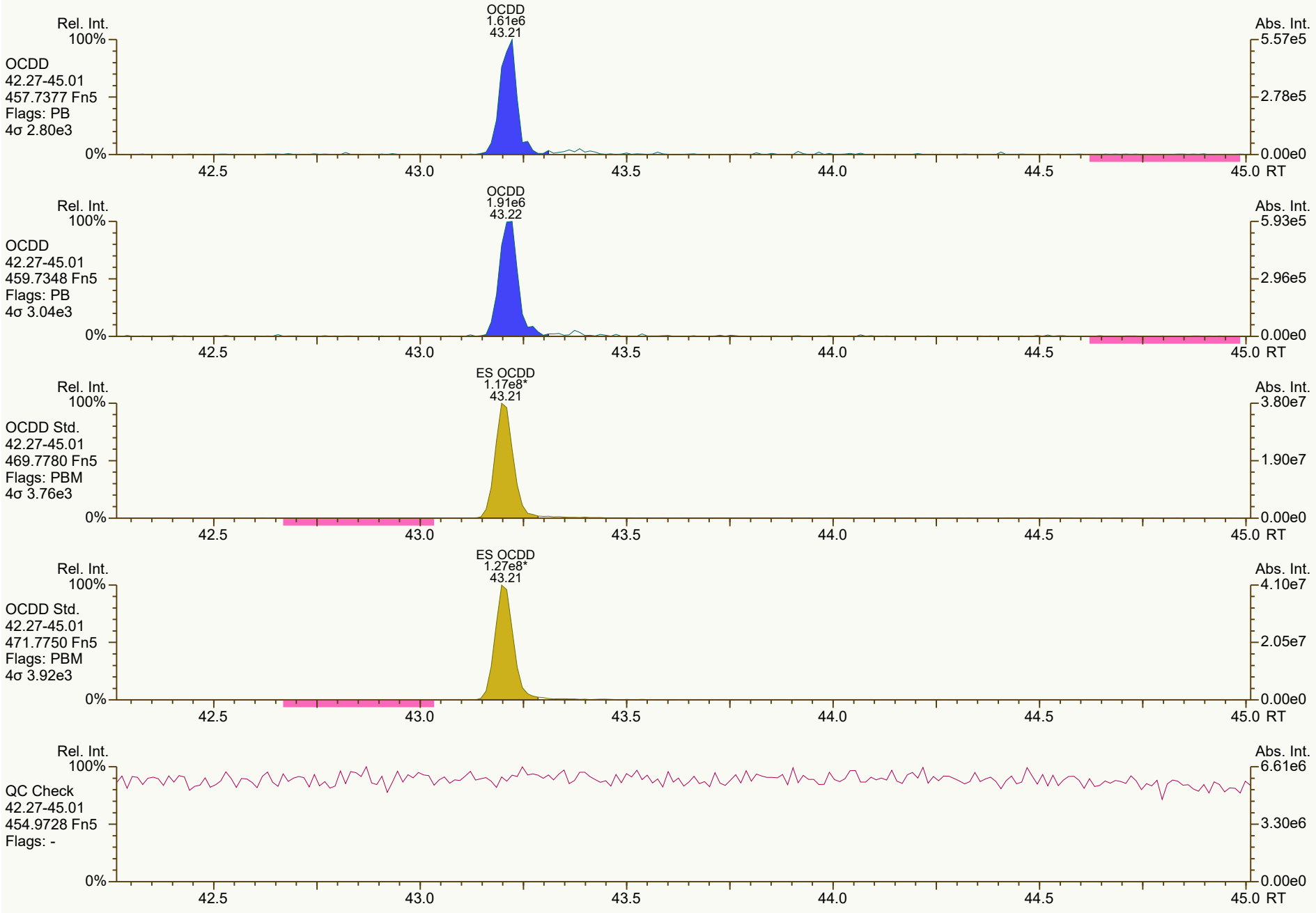
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 693-472
PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12

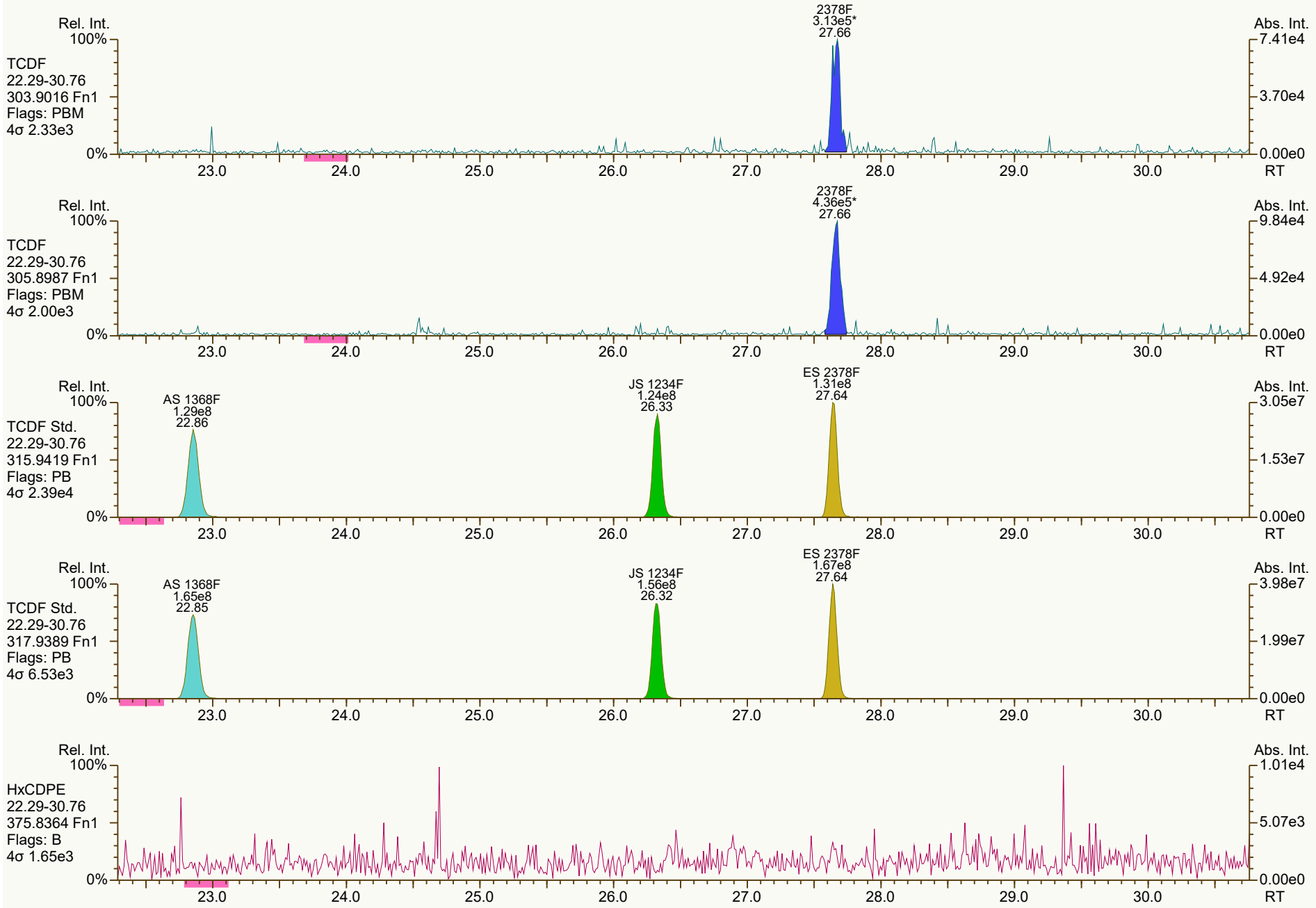

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 2.21e3
0%
2378D
2.70e5*
28.52
Abs. Int.
6.87e4
3.43e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.34e3
RRF(2378D) = (2.70e5 + 3.73e5) * 100pg / (7.81e7 + 9.89e7) * 0.25pg = 1.45
PSW 27-Jul-2021 15:08
OK
CL 28Jul21
2378D
3.73e5*
28.52
9.52e4
4.76e4
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.84e3
1.43e4
7.14e3
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.61e3
AS 1368D
7.76e7
24.91
TS 1378D
1.07e8
26.87
JS 1234D
7.74e7
27.86
ES 2378D
7.81e7
28.50
FS 1278D
8.37e7
28.82
2.55e7
1.28e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.86e3
RRF(TS 1378D) = (1.07e8 + 1.34e8) * 100pg / (7.81e7 + 9.89e7) * 100pg = 1.36
PSW 27-Jul-2021 15:11
OK - CL 28Jul21
AS 1368D
9.87e7
24.91
TS 1378D
1.34e8
26.87
JS 1234D
9.66e7
27.86
ES 2378D
9.89e7
28.50
FS 1278D
1.08e8
28.82
3.19e7
1.59e7


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 2.76e3
0%
12378D
1.44e6*
33.80
Abs. Int.
4.19e5
2.10e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.82e3
0%
12378D
9.72e5*
33.80
Abs. Int.
2.86e5
1.43e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.95e3
0%
FS 12478D
1.20e8
32.57
CS 12347D
9.69e7*
33.29
ES 12378D
1.09e8*
33.78
Abs. Int.
3.57e7
1.79e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 8.78e3
0%
FS 12478D
7.34e7
32.57
CS 12347D
5.84e7*
33.29
ES 12378D
6.73e7*
33.78
Abs. Int.
2.18e7
1.09e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

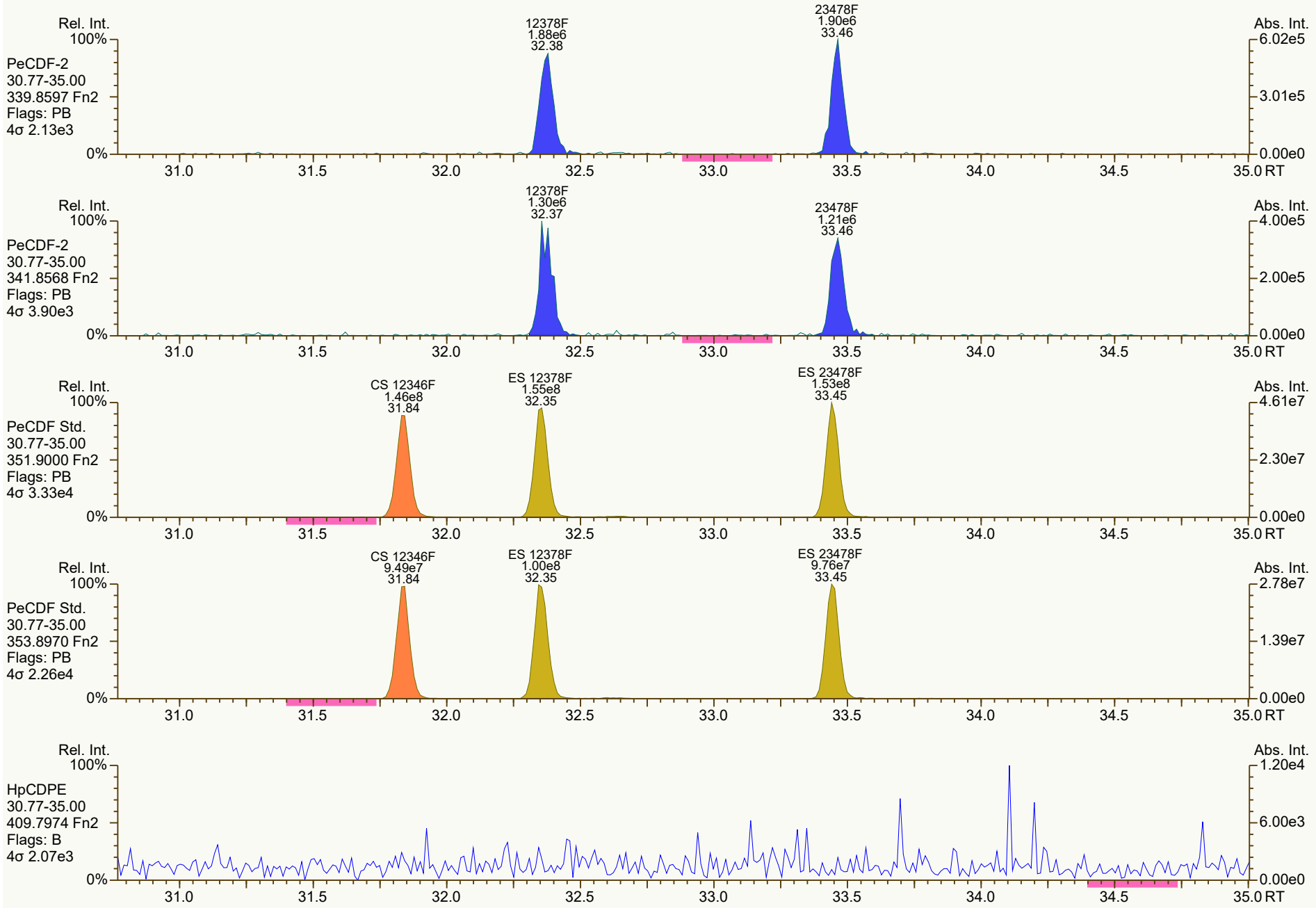

Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.51e3
123478D 1.28e6 37.67
123678D 1.25e6 37.78
123789D 1.37e6 38.07
4.45e5
2.22e5
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.65e3
123478D 9.51e5 37.67
123678D 9.54e5 37.78
123789D 1.14e6 38.07
3.83e5
1.91e5
0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.60e3
FS 123468D 1.15e8 36.58
ES 123478D 9.10e7 37.65
ES 123678D 8.82e7 37.77
JS 123467D 4.77e7 37.96
ES 123789D 1.02e8 38.06
3.56e7
1.78e7
0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.34e3
FS 123468D 9.15e7 36.58
ES 123478D 7.22e7 37.65
ES 123678D 6.93e7 37.77
JS 123467D 3.60e7 37.96
ES 123789D 8.06e7 38.06
2.84e7
1.42e7
0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.27e7
1.14e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

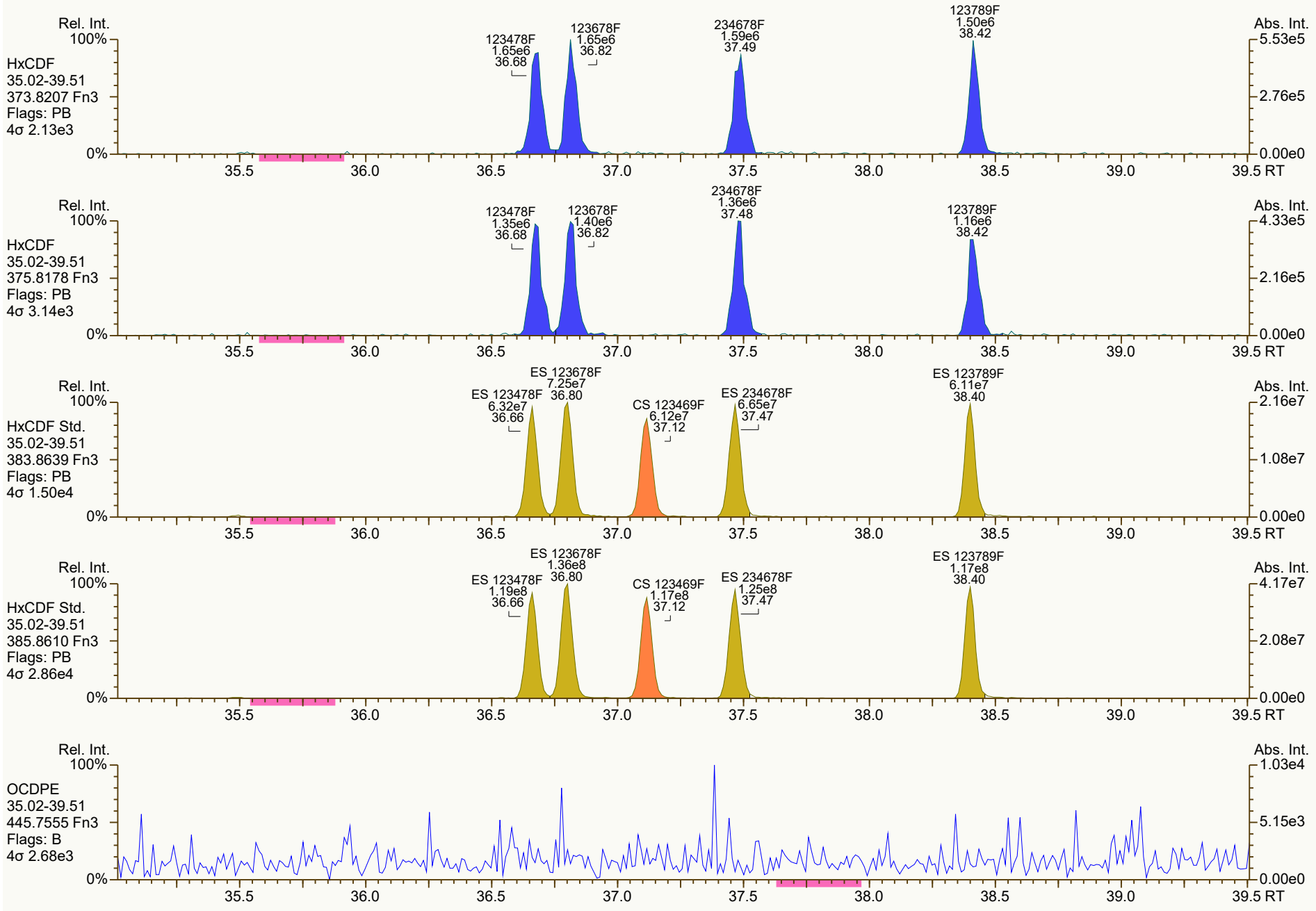

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 3.78e3
1234678D
1.04e6
40.66
Abs. Int.
4.64e5
2.32e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.74e3
1234678D
1.05e6
40.66
Abs. Int.
4.10e5
2.05e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.52e3
FS 1234679D
1.15e8
39.99
ES 1234678D
8.16e7
40.64
Abs. Int.
4.78e7
2.39e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.12e4
FS 1234679D
1.09e8
39.99
ES 1234678D
7.77e7
40.64
Abs. Int.
4.48e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.69e7
8.46e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDD
1.61e6
43.21
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.80e3
0%
Abs. Int.
5.57e5
2.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
5.93e5
2.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.17e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PBM
4σ 3.76e3
0%
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.27e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PBM
4σ 3.92e3
0%
Abs. Int.
4.10e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.33e3
2378F
3.13e5*
27.66
Abs. Int.
7.41e4
3.70e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.00e3
2378F
4.36e5*
27.66
Abs. Int.
9.84e4
4.92e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.39e4
AS 1368F
1.29e8
22.86
JS 1234F
1.24e8
26.33
ES 2378F
1.31e8
27.64
Abs. Int.
3.05e7
1.53e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 6.53e3
AS 1368F
1.65e8
22.85
JS 1234F
1.56e8
26.32
ES 2378F
1.67e8
27.64
Abs. Int.
3.98e7
1.99e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.65e3
Abs. Int.
1.01e4
5.07e3
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
4.15e4
2.08e4
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.62e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.30e4
1.15e4
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 1.94e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.07e6
1.54e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

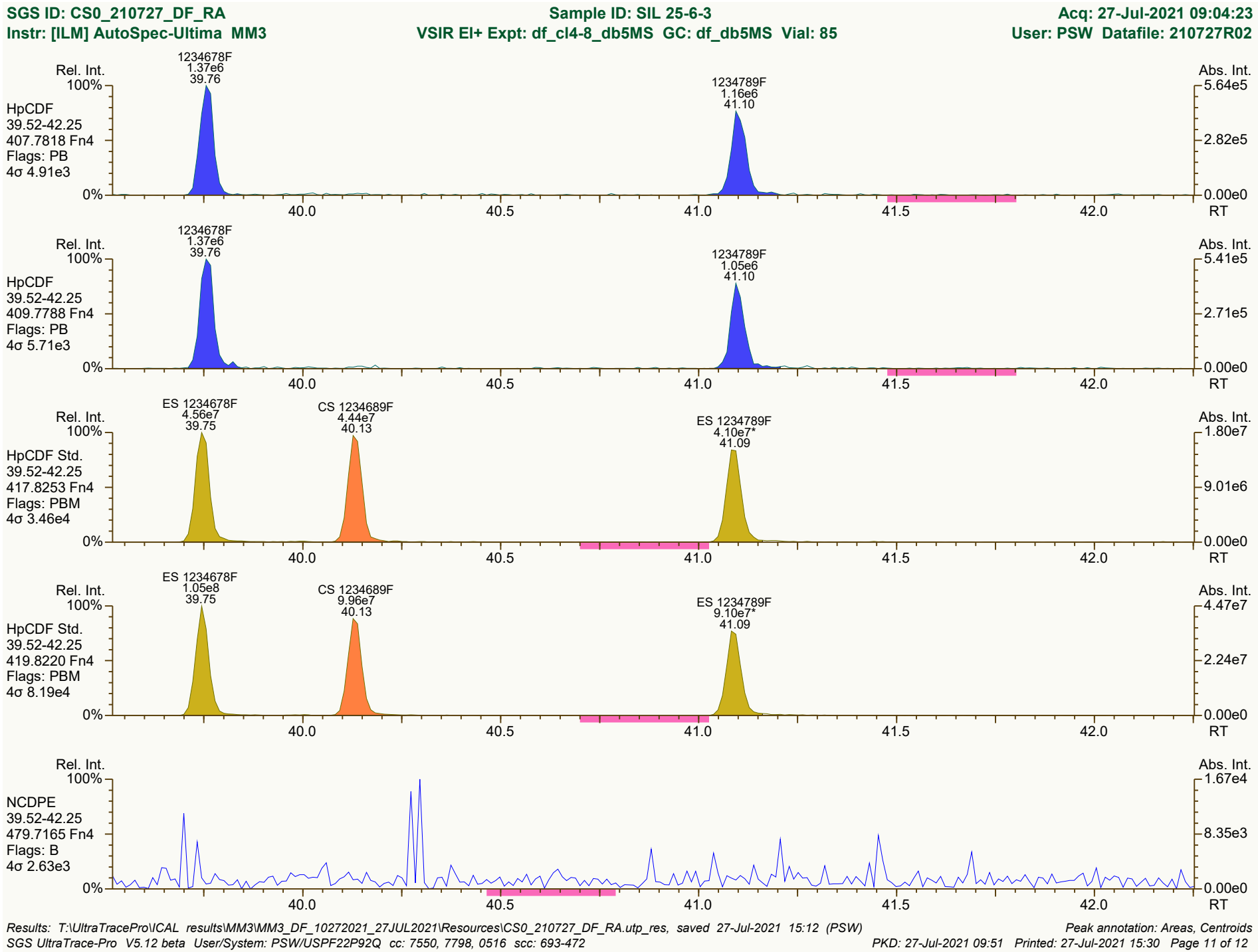

Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.13e3
0%
12378F
1.88e6
32.38
23478F
1.90e6
33.46
Abs. Int.
6.02e5
3.01e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.90e3
0%
12378F
1.30e6
32.37
23478F
1.21e6
33.46
Abs. Int.
4.00e5
2.00e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 3.33e4
0%
CS 12346F
1.46e8
31.84
ES 12378F
1.55e8
32.35
ES 23478F
1.53e8
33.45
Abs. Int.
4.61e7
2.30e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.26e4
0%
CS 12346F
9.49e7
31.84
ES 12378F
1.00e8
32.35
ES 23478F
9.76e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
1.20e4
6.00e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.13e3
123478F 1.65e6 36.68
123678F 1.65e6 36.82
234678F 1.59e6 37.49
123789F 1.50e6 38.42
Abs. Int.
5.53e5
2.76e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 3.14e3
123478F 1.35e6 36.68
123678F 1.40e6 36.82
234678F 1.36e6 37.48
123789F 1.16e6 38.42
Abs. Int.
4.33e5
2.16e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.50e4
ES 123478F 6.32e7 36.66
ES 123678F 7.25e7 36.80
CS 123469F 6.12e7 37.12
ES 234678F 6.65e7 37.47
ES 123789F 6.11e7 38.40
Abs. Int.
2.16e7
1.08e7
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.86e4
ES 123478F 1.19e8 36.66
ES 123678F 1.36e8 36.80
CS 123469F 1.17e8 37.12
ES 234678F 1.25e8 37.47
ES 123789F 1.17e8 38.40
Abs. Int.
4.17e7
2.08e7
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.68e3
Abs. Int.
1.03e4
5.15e3
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT

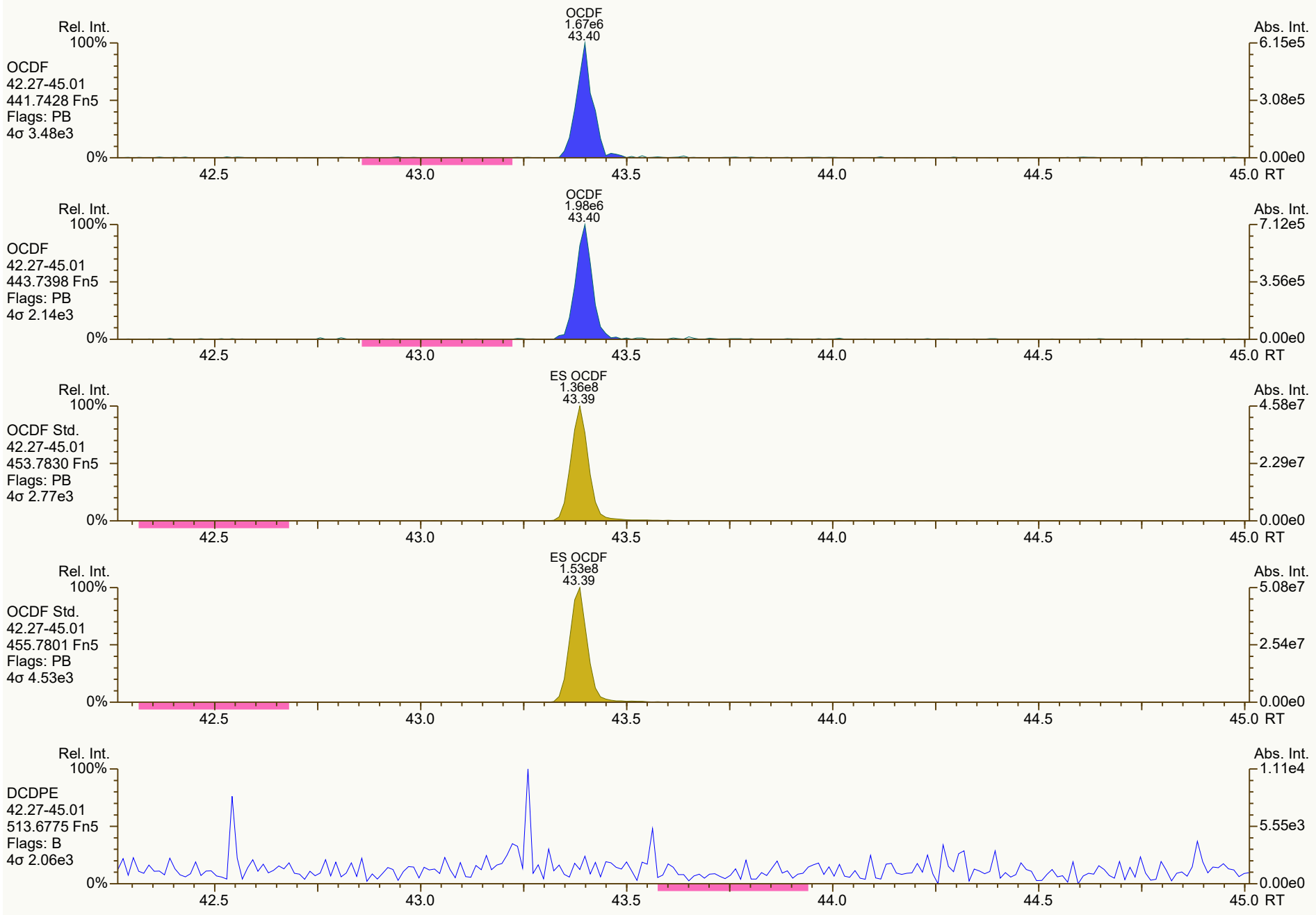
SGS ID: CS0_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85

Acq: 27-Jul-2021 09:04:23
User: PSW Datafile: 210727R02



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7550, 7798, 0516 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 11 of 12


OCDF
1.67e6
43.40
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 3.48e3
0%
Abs. Int.
6.15e5
3.08e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.98e6
43.40
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.14e3
0%
Abs. Int.
7.12e5
3.56e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.36e8
43.39
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 2.77e3
0%
Abs. Int.
4.58e7
2.29e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.53e8
43.39
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.53e3
0%
Abs. Int.
5.08e7
2.54e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.11e4
5.55e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

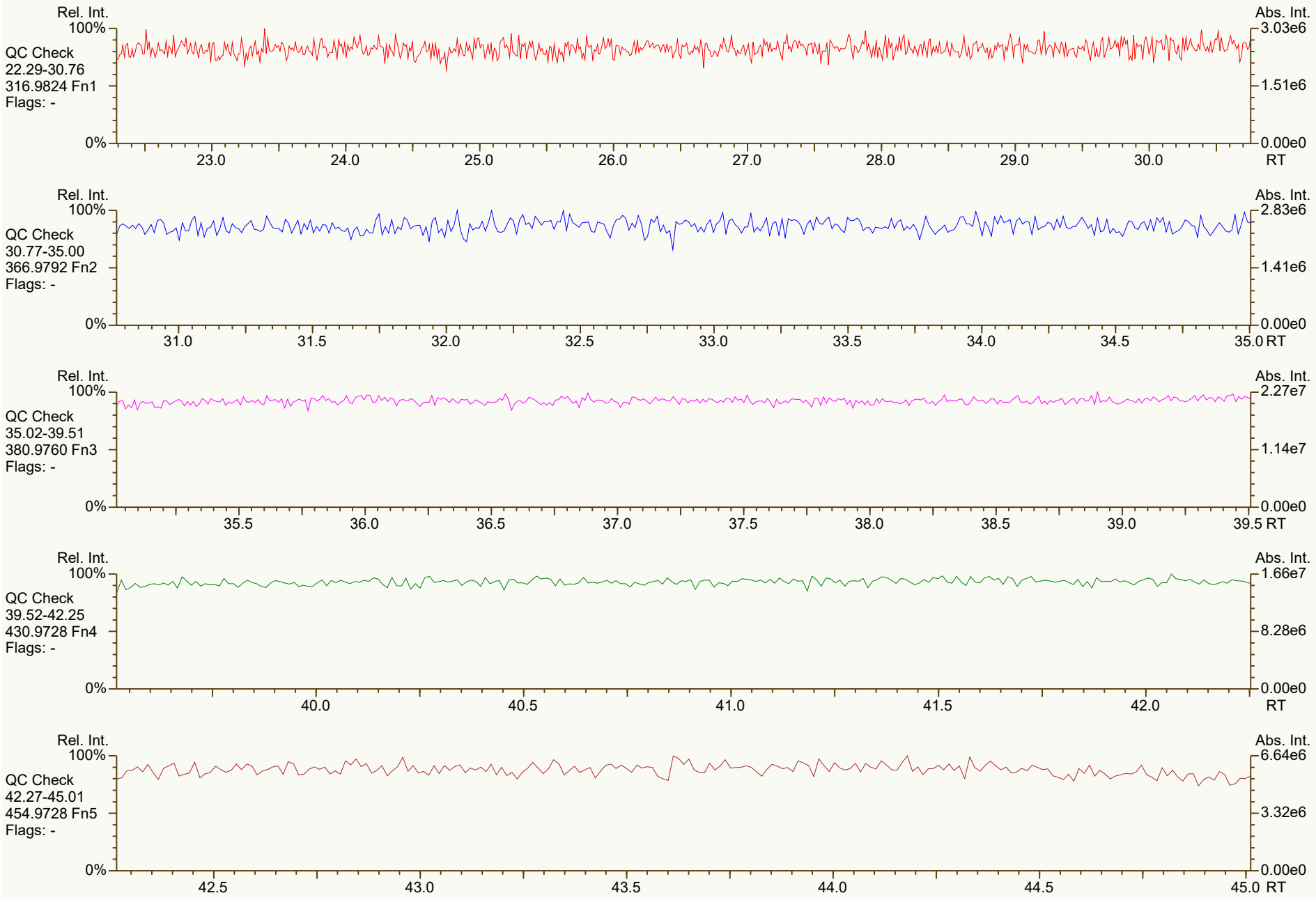
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

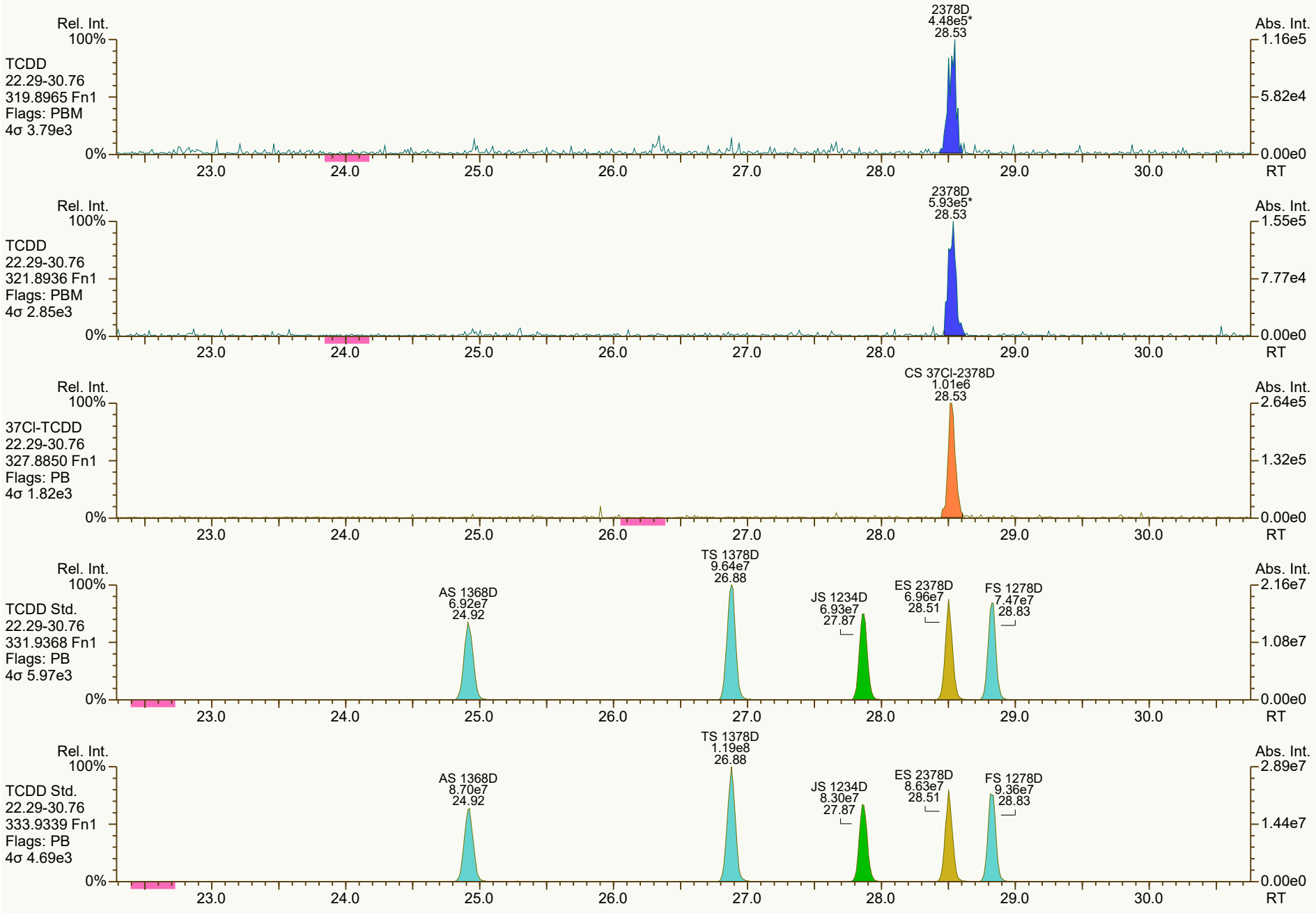
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.04E+06	0.76	Y	1.34	1.34	-1%
12378-PeCDD	33.81	4.16E+06	1.48	Y	1.06	1.07	1%
123478-HxCDD	37.68	3.92E+06	1.22	Y	1.06	1.10	4%
123678-HxCDD	37.79	3.74E+06	1.22	Y	1.08	1.07	-1%
123789-HxCDD	38.08	4.22E+06	1.33	Y	1.02	1.05	4%
1234678-HpCDD	40.66	3.34E+06	1.16	Y	0.97	0.95	-3%
OCDD	43.23	5.66E+06	0.85	Y	1.07	1.04	-3%
2378-TCDF	27.67	1.25E+06	0.72	Y	0.96	0.94	-2%
12378-PeCDF	32.38	5.24E+06	1.54	Y	0.95	0.94	0%
23478-PeCDF	33.47	5.06E+06	1.63	Y	0.94	0.90	-4%
123478-HxCDF	36.69	4.92E+06	1.14	Y	1.23	1.23	-1%
123678-HxCDF	36.83	5.41E+06	1.33	Y	1.13	1.16	3%
234678-HxCDF	37.49	5.10E+06	1.23	Y	1.15	1.19	3%
123789-HxCDF	38.42	4.41E+06	1.28	Y	1.14	1.08	-5%
1234678-HpCDF	39.76	4.59E+06	0.97	Y	1.36	1.35	0%
1234789-HpCDF	41.11	3.63E+06	1.08	Y	1.30	1.20	-7%
OCDF	43.41	6.46E+06	0.90	Y	1.03	1.01	-2%
ES 2378-TCDD	28.51	1.56E+08	0.81	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.789	1.56E+08	1.63	Y	1.03	1.02	-1%
ES 123478-HxCDD	37.66	1.43E+08	1.26	Y	0.99	0.93	-6%
ES 123678-HxCDD	37.773	1.40E+08	1.27	Y	0.97	0.91	-6%
ES 123789-HxCDD	38.062	1.60E+08	1.24	Y	1.12	1.04	-7%
ES 1234678-HpCDD	40.65	1.41E+08	1.06	Y	0.99	0.92	-8%
ES OCDD	43.215	2.18E+08	0.91	Y	0.78	0.71	-9%
ES 2378-TCDF	27.651	2.66E+08	0.77	Y	1.08	1.08	0%
ES 12378-PeCDF	32.362	2.22E+08	1.59	Y	0.93	0.91	-3%
ES 23478-PeCDF	33.454	2.24E+08	1.55	Y	0.92	0.91	-1%
ES 123478-HxCDF	36.667	1.60E+08	0.52	Y	1.14	1.04	-9%
ES 123678-HxCDF	36.807	1.86E+08	0.54	Y	1.30	1.21	-7%
ES 234678-HxCDF	37.474	1.72E+08	0.53	Y	1.20	1.12	-7%
ES 123789-HxCDF	38.407	1.64E+08	0.51	Y	1.14	1.07	-6%
ES 1234678-HpCDF	39.755	1.36E+08	0.46	Y	0.95	0.88	-7%
ES 1234789-HpCDF	41.099	1.21E+08	0.45	Y	0.85	0.78	-7%
ES OCDF	43.396	2.56E+08	0.88	Y	0.93	0.83	-10%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.52E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.33	2.45E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	7.69E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.31	1.32	1%
CS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.89	0.91	2%
CS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.87	0.88	1%
CS 123469-HxCDF	37.12	1.61E+08	0.52	Y	1.09	1.04	-4%
CS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.86	0.84	-2%
SS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.26	1.29	2%
SS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.86	0.89	2%
SS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.61E+08	0.52	Y	0.84	0.86	3%
SS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.91	0.96	5%
AS 1368-TCDD	24.92	1.56E+08	0.80	Y	1.02	1.03	0%
AS 1368-TCDF	22.86	2.59E+08	0.77	Y	1.08	1.06	-2%
FS 1278-TCDD	28.83	1.68E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.72E+08	1.63	Y	1.09	1.10	1%
FS 123468-HxCDD	36.59	1.86E+08	1.29	Y	1.26	1.30	3%
FS 1234679-HpCDD	39.99	1.93E+08	1.05	Y	1.36	1.37	1%
TS 1378-TCDD	26.88	2.16E+08	0.81	Y	1.35	1.38	3%
~~OCDD-a~~	~~43.23~~	~~4.10E+05~~	~~2.91~~	~~N~~	~~0.07~~	~~0.08~~	~~14%~~
~~OCDF-a~~	~~43.40~~	~~3.79E+05~~	~~1.92~~	~~N~~	~~0.06~~	~~0.06~~	~~0%~~

Not reported from this ICAL - CL 28Jul21

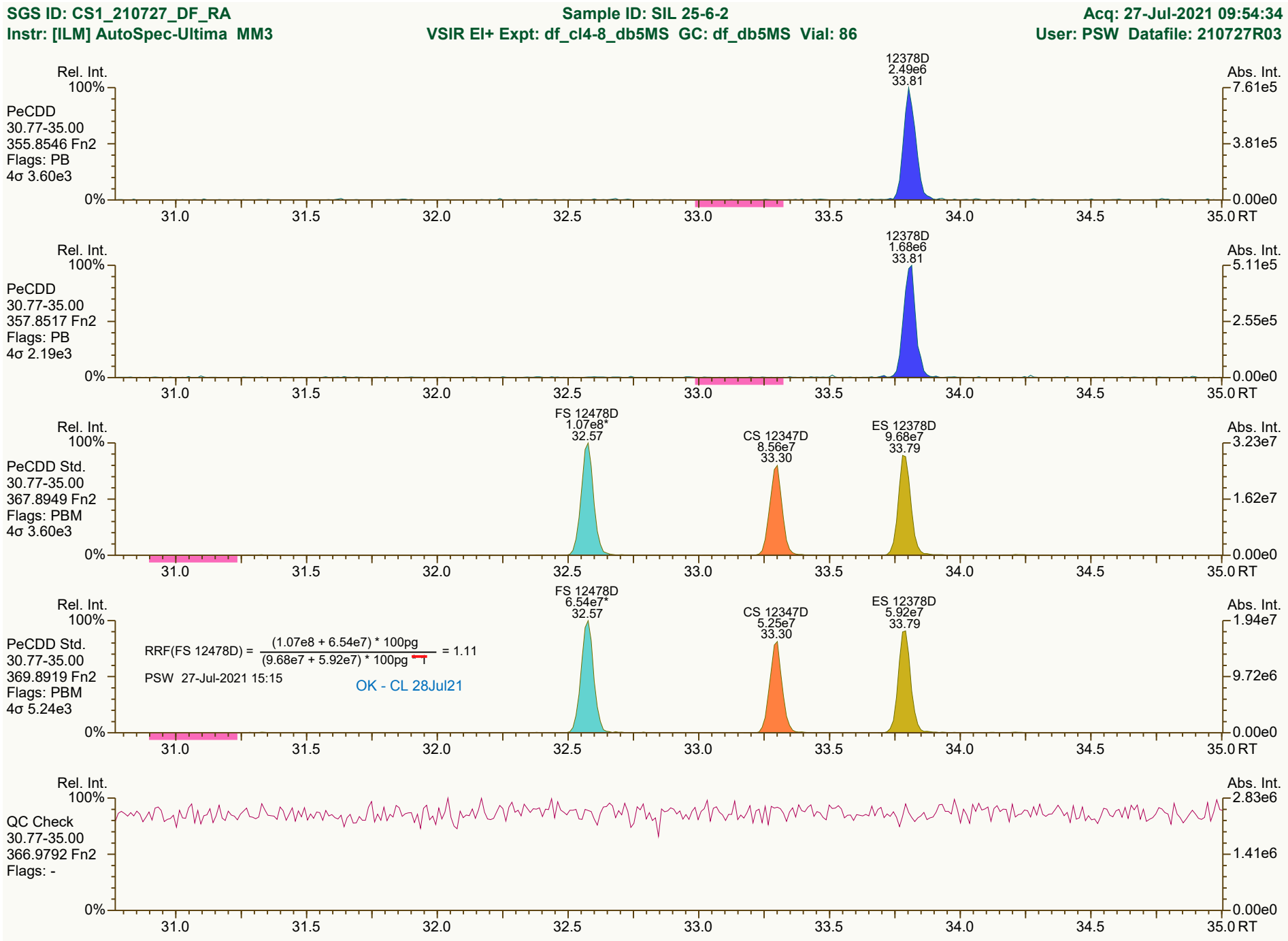

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 3.79e3
0%
2378D
4.48e5*
28.53
Abs. Int.
1.16e5
5.82e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.85e3
0%
2378D
5.93e5*
28.53
Abs. Int.
1.55e5
7.77e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.82e3
0%
CS 37Cl-2378D
1.01e6
28.53
Abs. Int.
2.64e5
1.32e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.97e3
0%
AS 1368D
6.92e7
24.92
TS 1378D
9.64e7
26.88
JS 1234D
6.93e7
27.87
ES 2378D
6.96e7
28.51
FS 1278D
7.47e7
28.83
Abs. Int.
2.16e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.69e3
0%
AS 1368D
8.70e7
24.92
TS 1378D
1.19e8
26.88
JS 1234D
8.30e7
27.87
ES 2378D
8.63e7
28.51
FS 1278D
9.36e7
28.83
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

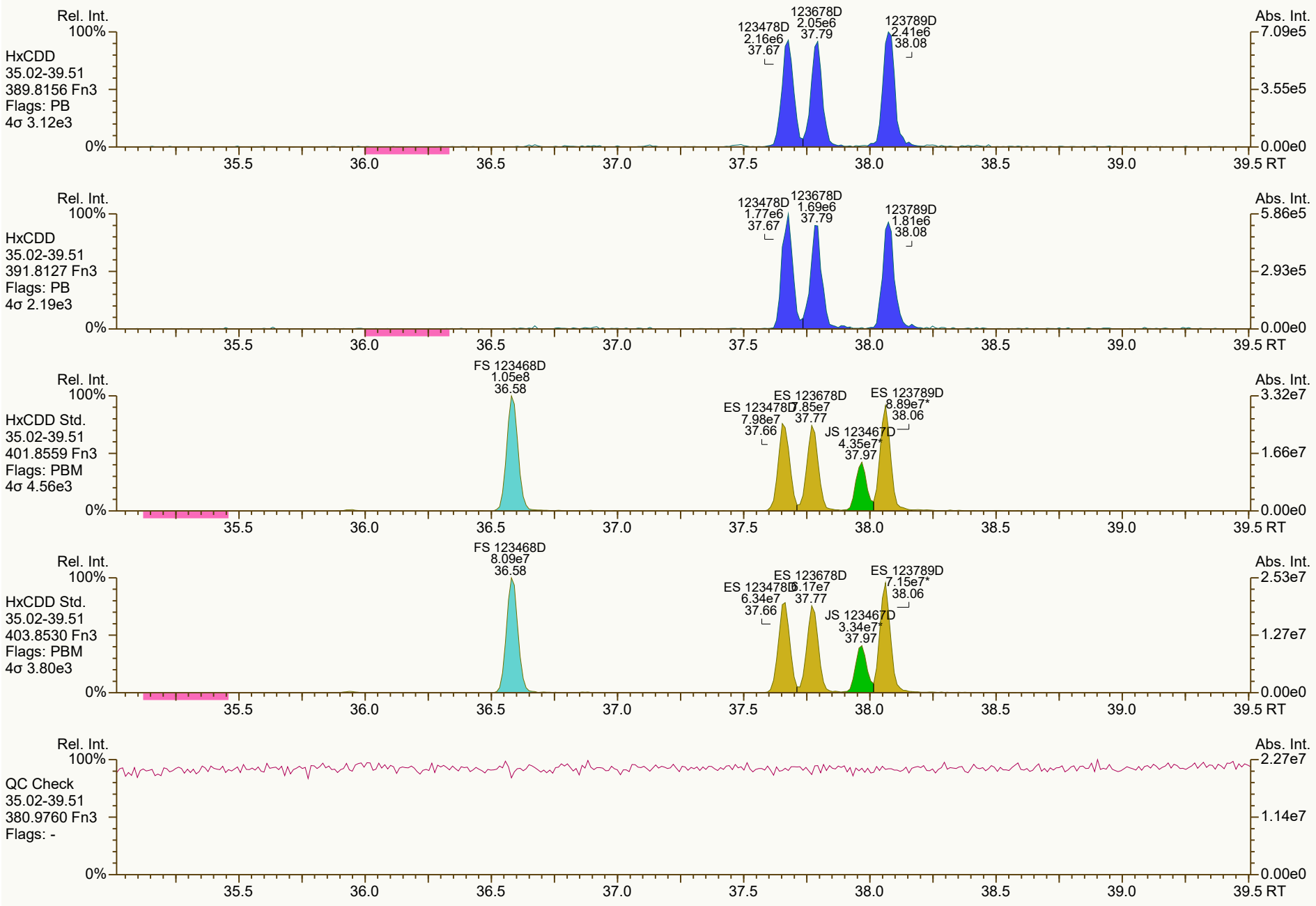
SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



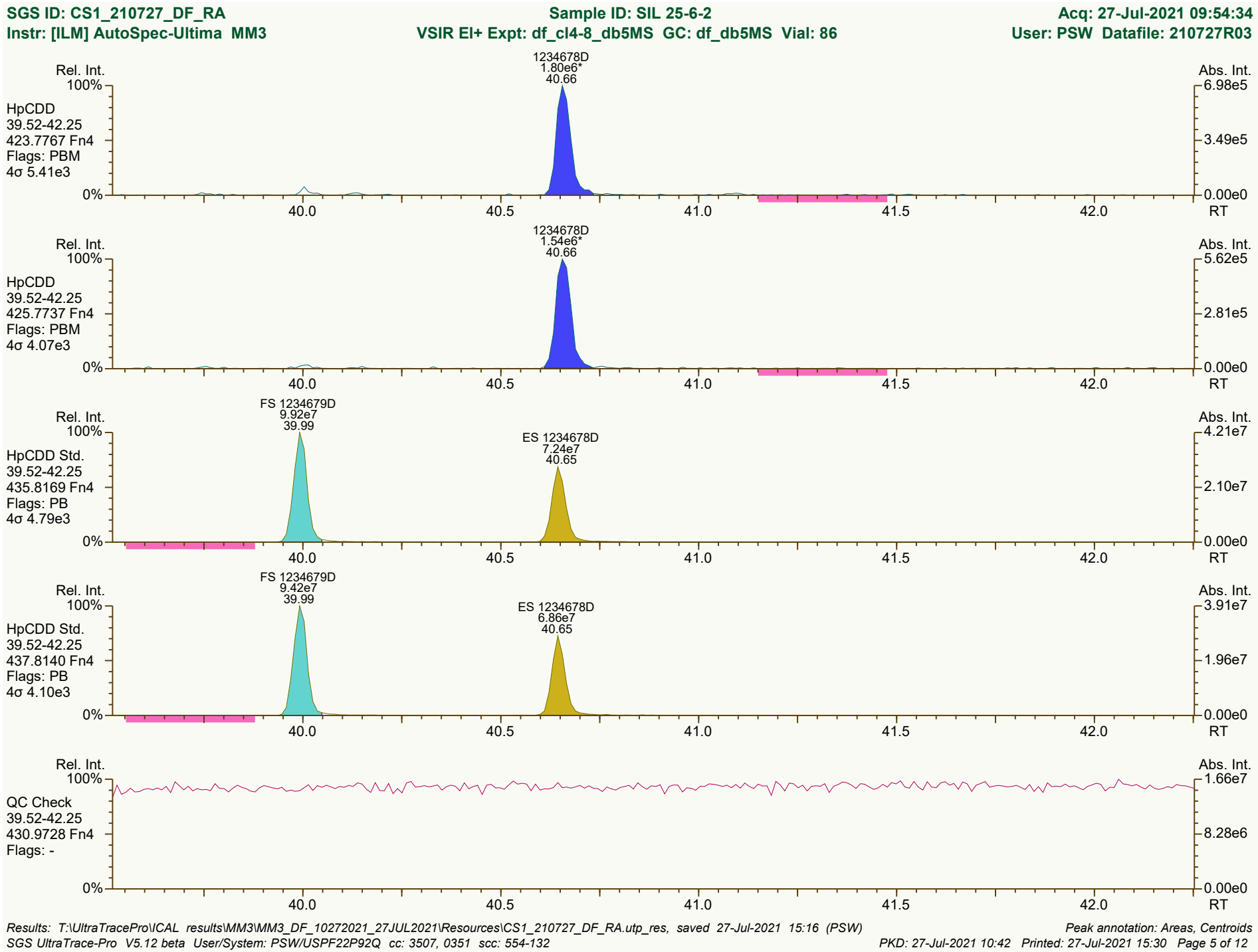
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3875, 0321 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 3 of 12


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.12e3
123478D
2.16e6
37.67
123678D
2.05e6
37.79
123789D
2.41e6
38.08
Abs. Int.
7.09e5
3.55e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.19e3
123478D
1.77e6
37.67
123678D
1.69e6
37.79
123789D
1.81e6
38.08
Abs. Int.
5.86e5
2.93e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.56e3
FS 123468D
1.05e8
36.58
ES 123478D
7.98e7
37.66
ES 123678D
7.85e7
37.77
JS 123467D
4.35e7*
37.97
ES 123789D
8.89e7*
38.06
Abs. Int.
3.32e7
1.66e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.80e3
FS 123468D
8.09e7
36.58
ES 123478D
6.34e7
37.66
ES 123678D
6.17e7
37.77
JS 123467D
3.34e7*
37.97
ES 123789D
7.15e7*
38.06
Abs. Int.
2.53e7
1.27e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03

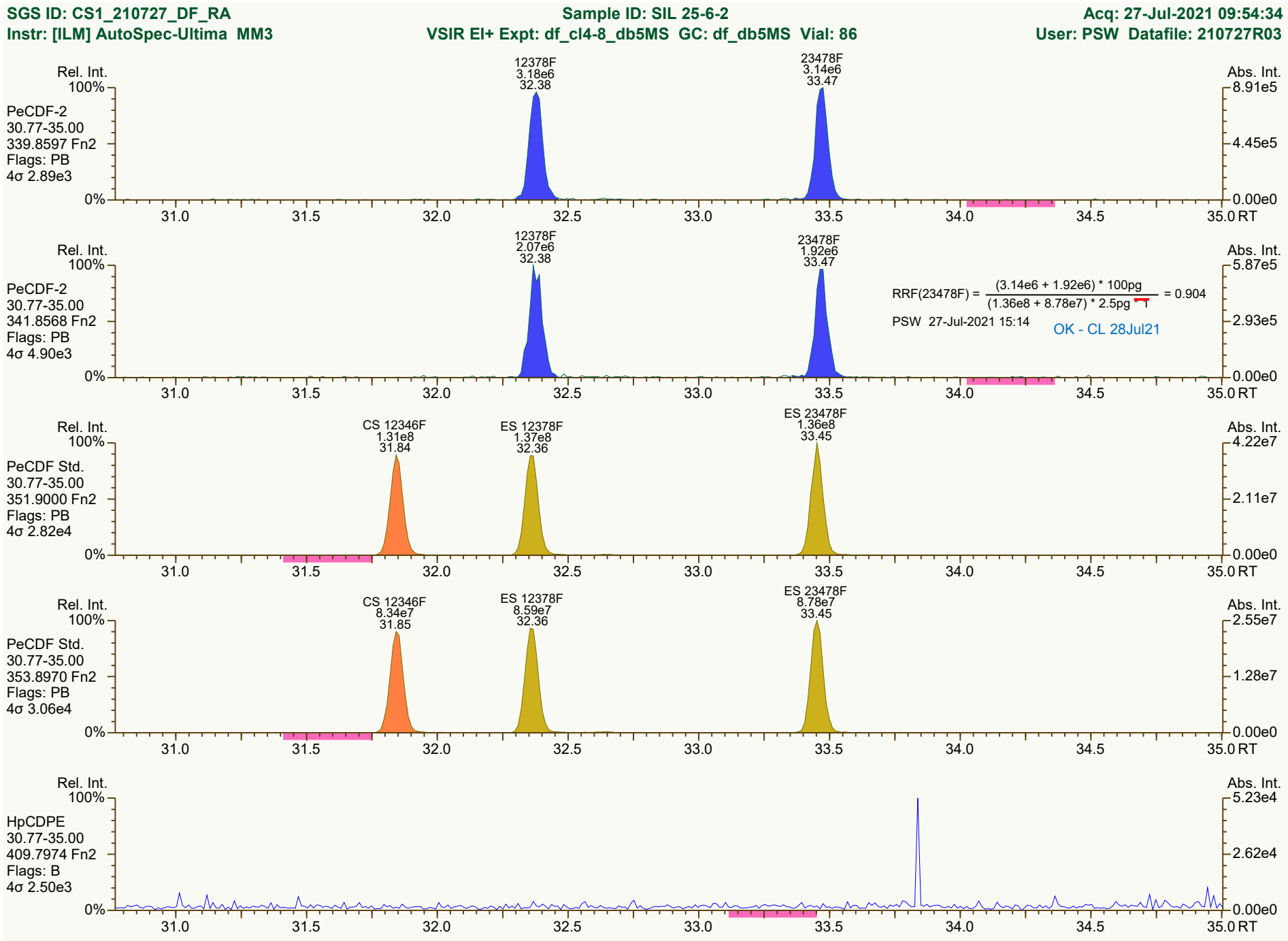


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3507, 0351 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 5 of 12


Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.60e3
0%
OCDD
2.61e6
43.23
Abs. Int.
8.02e5
4.01e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.89e3
0%
OCDD
3.05e6
43.22
Abs. Int.
1.09e6
5.45e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 2.94e3
0%
ES OCDD
1.04e8
43.22
Abs. Int.
3.50e7
1.75e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 3.15e3
0%
ES OCDD
1.14e8
43.22
Abs. Int.
3.84e7
1.92e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.05e3
2378F
5.24e5*
27.67
Abs. Int.
1.26e5
6.32e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.29e3
2378F
7.27e5*
27.67
Abs. Int.
1.69e5
8.46e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.48e4
AS 1368F
1.12e8
22.86
JS 1234F
1.07e8
26.33
ES 2378F
1.15e8
27.65
Abs. Int.
2.79e7
1.39e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.51e4
AS 1368F
1.47e8
22.86
JS 1234F
1.39e8
26.33
ES 2378F
1.50e8
27.65
Abs. Int.
3.54e7
1.77e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.03e3
Abs. Int.
9.16e3
4.58e3
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

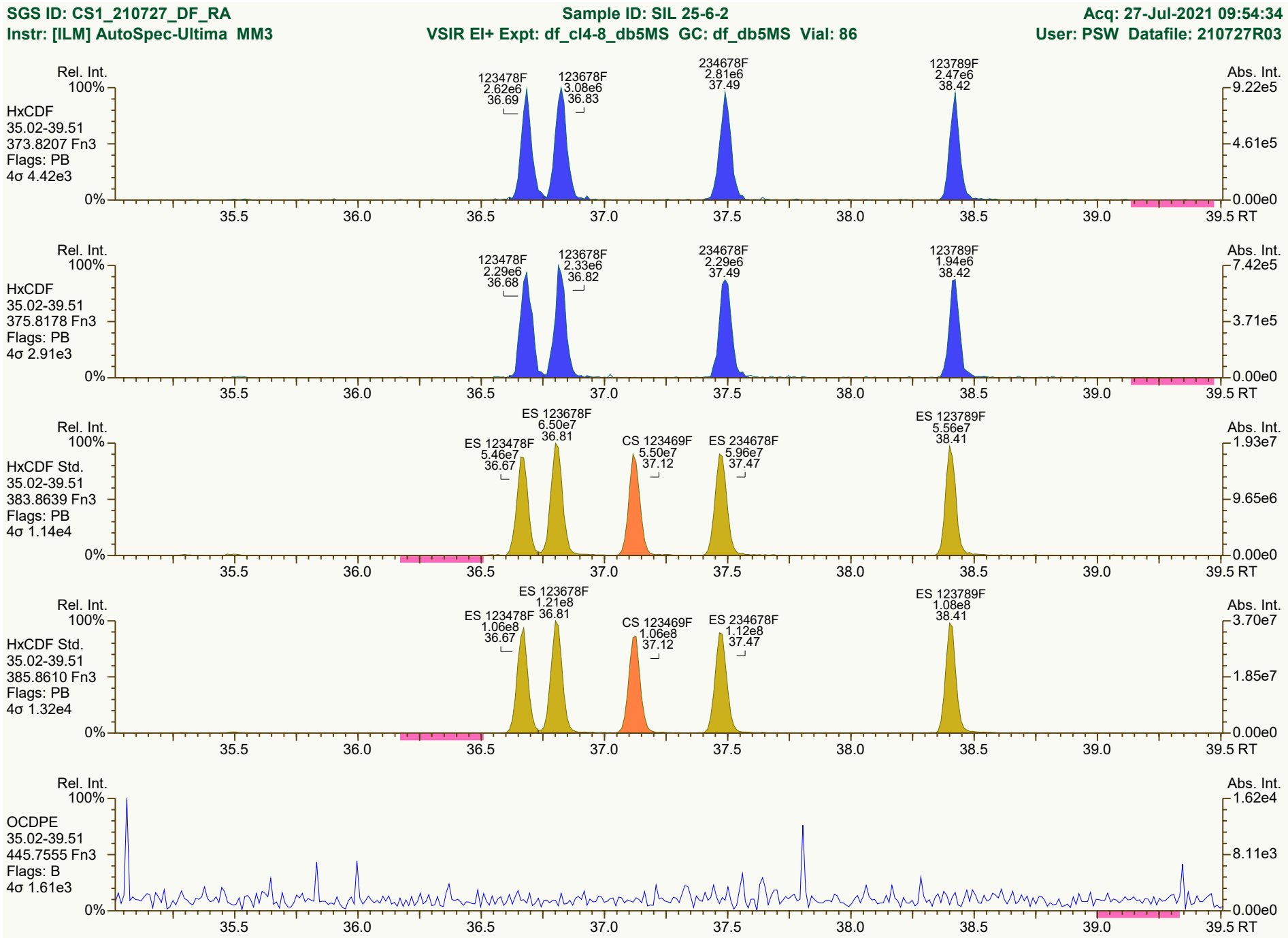

Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
RT
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.43e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
RT
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.60e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
RT
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0


SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.89e3
12378F
3.18e6
32.38
23478F
3.14e6
33.47
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 4.90e3
12378F
2.07e6
32.38
23478F
1.92e6
33.47
RRF(23478F) = (3.14e6 + 1.92e6) * 100pg / (1.36e8 + 8.78e7) * 2.5pg * 1 = 0.904
PSW 27-Jul-2021 15:14
OK - CL 28Jul21
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.82e4
CS 12346F
1.31e8
31.84
ES 12378F
1.37e8
32.36
ES 23478F
1.36e8
33.45
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 3.06e4
CS 12346F
8.34e7
31.85
ES 12378F
8.59e7
32.36
ES 23478F
8.78e7
33.45
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.50e3
RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0783, 1661, 1108 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 9 of 12

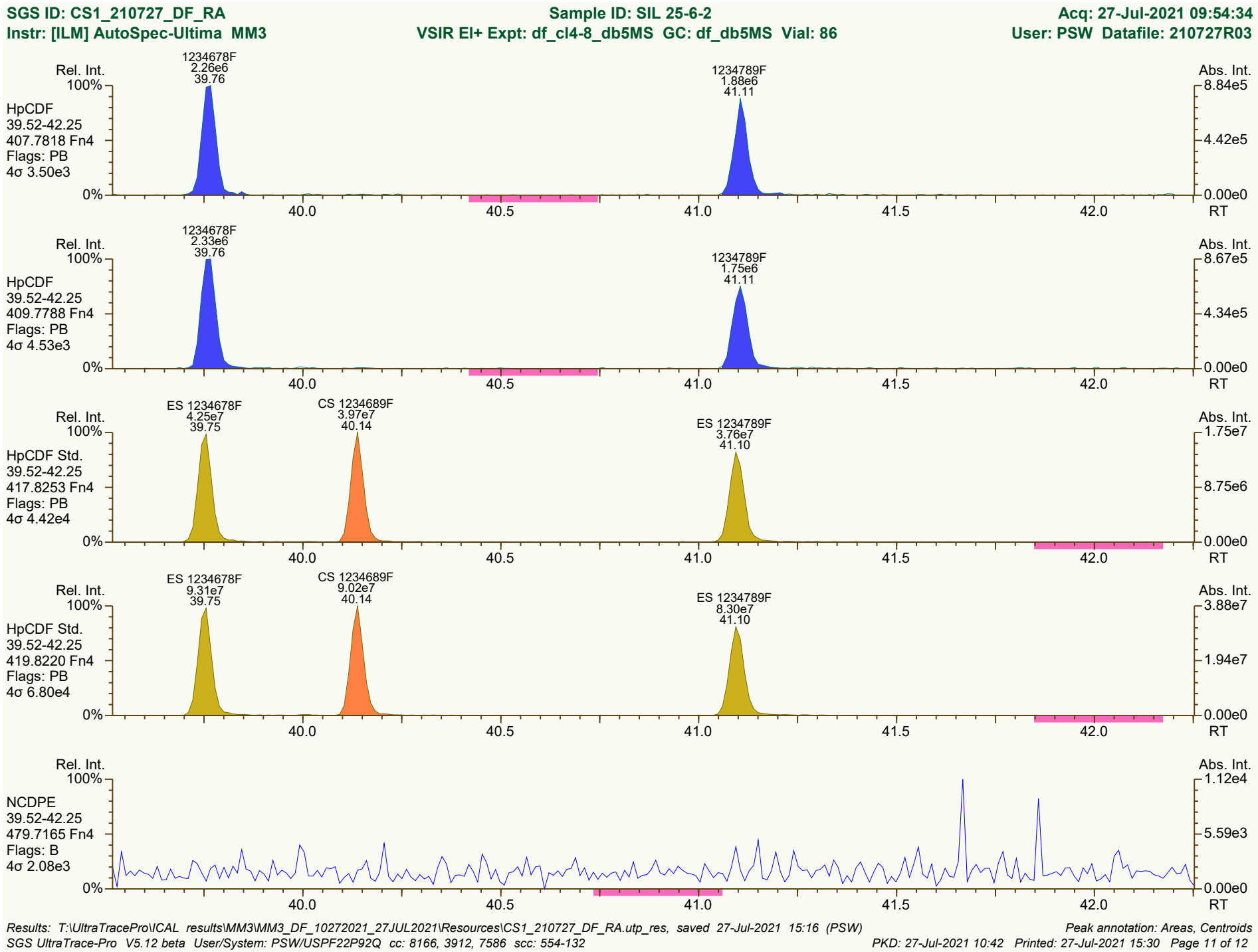
SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

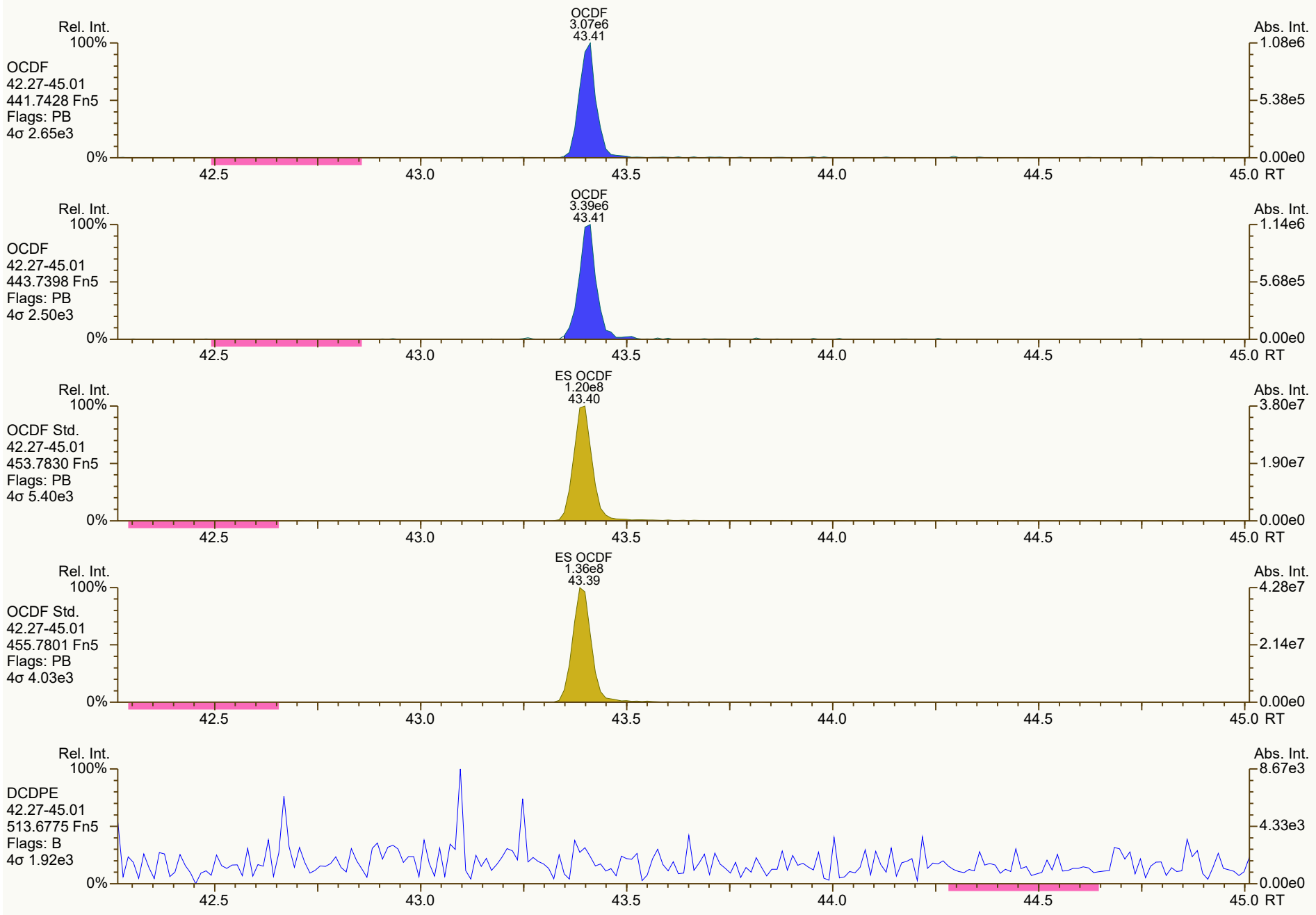
Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6555, 5794, 9510 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 10 of 12


SGS ID: CS1_210727_DF_RA
Sample ID: SIL 25-6-2
Acq: 27-Jul-2021 09:54:34
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86
User: PSW Datafile: 210727R03
Rel. Int.
Abs. Int.
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 3.50e3
1234678F
2.26e6
39.76
1234789F
1.88e6
41.11
8.84e5
4.42e5
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 4.53e3
1234678F
2.33e6
39.76
1234789F
1.75e6
41.11
8.67e5
4.34e5
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 4.42e4
ES 1234678F
4.25e7
39.75
CS 1234689F
3.97e7
40.14
ES 1234789F
3.76e7
41.10
1.75e7
8.75e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 6.80e4
ES 1234678F
9.31e7
39.75
CS 1234689F
9.02e7
40.14
ES 1234789F
8.30e7
41.10
3.88e7
1.94e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.08e3
1.12e4
5.59e3
0.00e0
100%
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDF
3.07e6
43.41
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 2.65e3
0%
Abs. Int.
1.08e6
5.38e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.39e6
43.41
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.50e3
0%
Abs. Int.
1.14e6
5.68e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.20e8
43.40
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.40e3
0%
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.36e8
43.39
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.03e3
0%
Abs. Int.
4.28e7
2.14e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.67e3
4.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

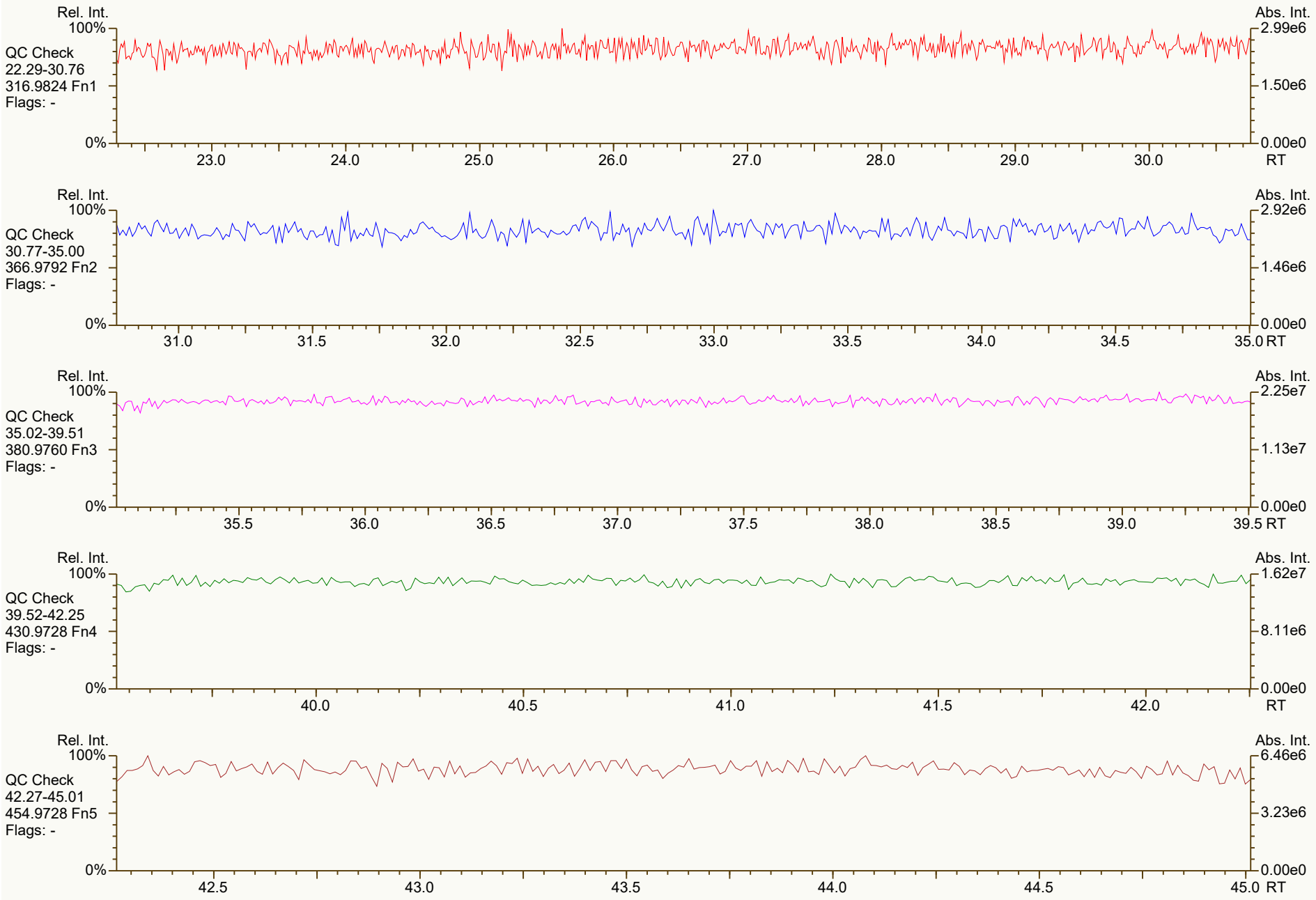
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

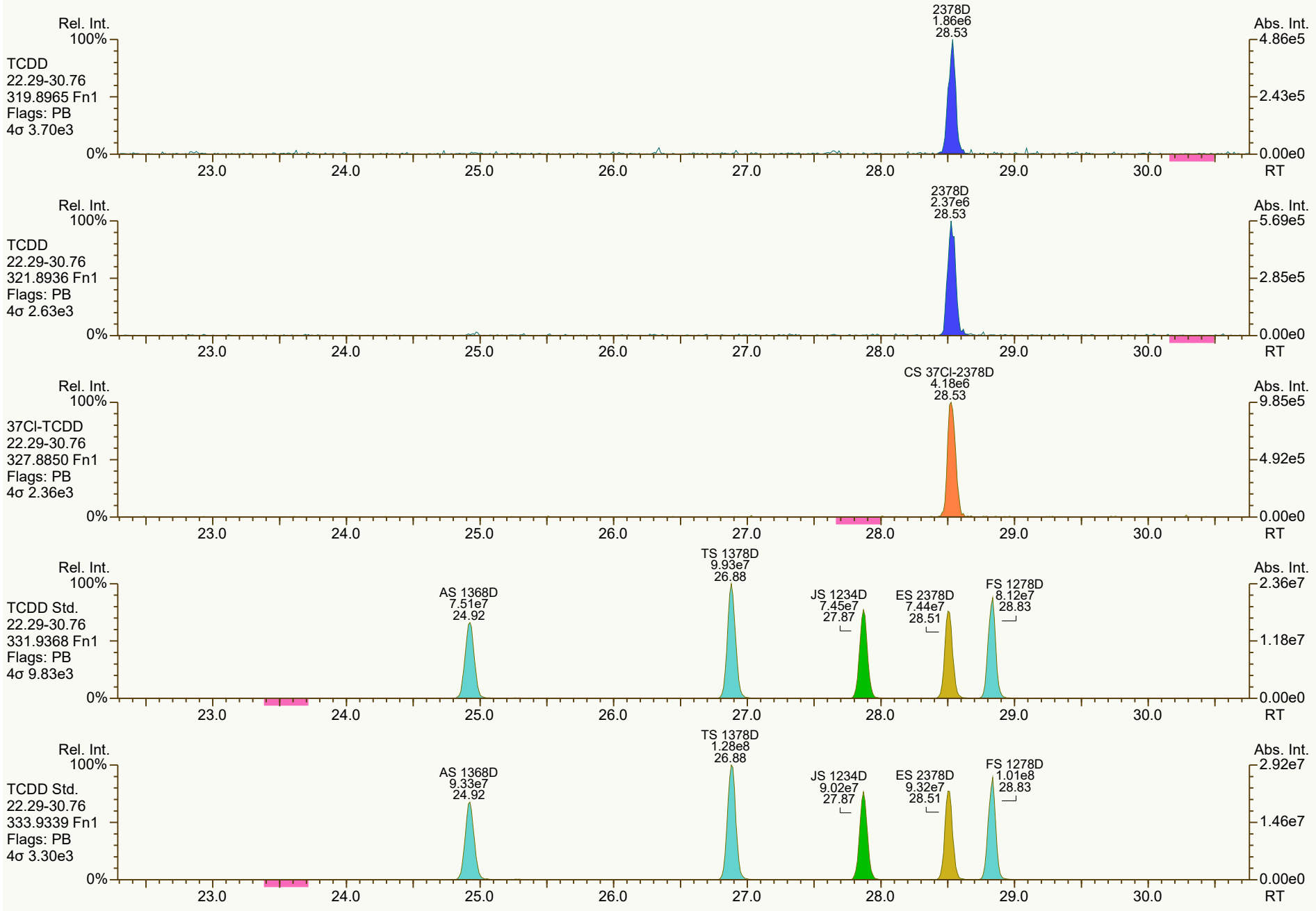
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	4.23E+06	0.79	Y	1.34	1.26	-6%
12378-PeCDD	33.81	1.67E+07	1.63	Y	1.06	1.02	-4%
123478-HxCDD	37.68	1.53E+07	1.32	Y	1.06	0.99	-6%
123678-HxCDD	37.80	1.52E+07	1.22	Y	1.08	1.02	-5%
123789-HxCDD	38.08	1.66E+07	1.25	Y	1.02	0.95	-6%
1234678-HpCDD	40.67	1.41E+07	1.01	Y	0.97	0.92	-6%
OCDD	43.23	2.33E+07	0.88	Y	1.07	1.01	-6%
2378-TCDF	27.68	5.04E+06	0.83	Y	0.96	0.90	-6%
12378-PeCDF	32.39	2.16E+07	1.63	Y	0.95	0.90	-5%
23478-PeCDF	33.48	2.12E+07	1.52	Y	0.94	0.90	-4%
123478-HxCDF	36.69	2.09E+07	1.25	Y	1.23	1.19	-4%
123678-HxCDF	36.83	2.13E+07	1.24	Y	1.13	1.07	-5%
234678-HxCDF	37.50	1.98E+07	1.20	Y	1.15	1.08	-6%
123789-HxCDF	38.43	1.89E+07	1.24	Y	1.14	1.09	-4%
1234678-HpCDF	39.77	1.87E+07	1.01	Y	1.36	1.31	-4%
1234789-HpCDF	41.12	1.60E+07	1.02	Y	1.30	1.26	-3%
OCDF	43.41	2.61E+07	0.92	Y	1.03	0.95	-7%
ES 2378-TCDD	28.51	1.68E+08	0.80	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.794	1.63E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.667	1.54E+08	1.28	Y	0.99	0.99	-1%
ES 123678-HxCDD	37.781	1.49E+08	1.24	Y	0.97	0.95	-2%
ES 123789-HxCDD	38.07	1.75E+08	1.26	Y	1.12	1.12	0%
ES 1234678-HpCDD	40.658	1.53E+08	1.06	Y	0.99	0.98	-1%
ES OCDD	43.222	2.31E+08	0.90	Y	0.78	0.74	-5%
ES 2378-TCDF	27.656	2.80E+08	0.80	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.368	2.40E+08	1.55	Y	0.93	0.92	-2%
ES 23478-PeCDF	33.459	2.36E+08	1.59	Y	0.92	0.90	-2%
ES 123478-HxCDF	36.674	1.76E+08	0.52	Y	1.14	1.13	-1%
ES 123678-HxCDF	36.814	1.99E+08	0.52	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.481	1.84E+08	0.52	Y	1.20	1.18	-2%
ES 123789-HxCDF	38.416	1.73E+08	0.52	Y	1.14	1.11	-2%
ES 1234678-HpCDF	39.761	1.43E+08	0.44	Y	0.95	0.92	-3%
ES 1234789-HpCDF	41.105	1.28E+08	0.46	Y	0.85	0.82	-3%
ES OCDF	43.404	2.74E+08	0.87	Y	0.93	0.88	-5%

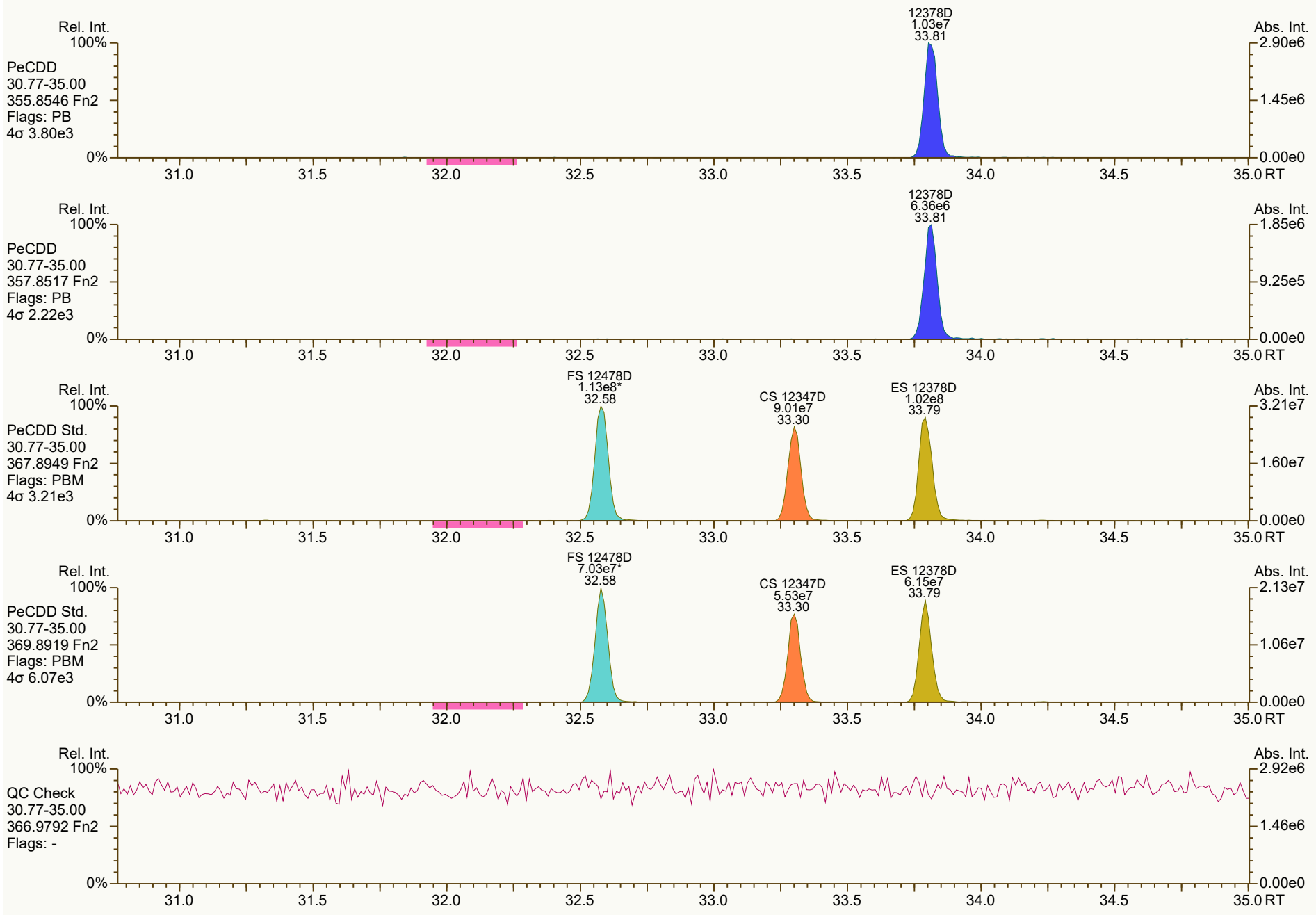
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

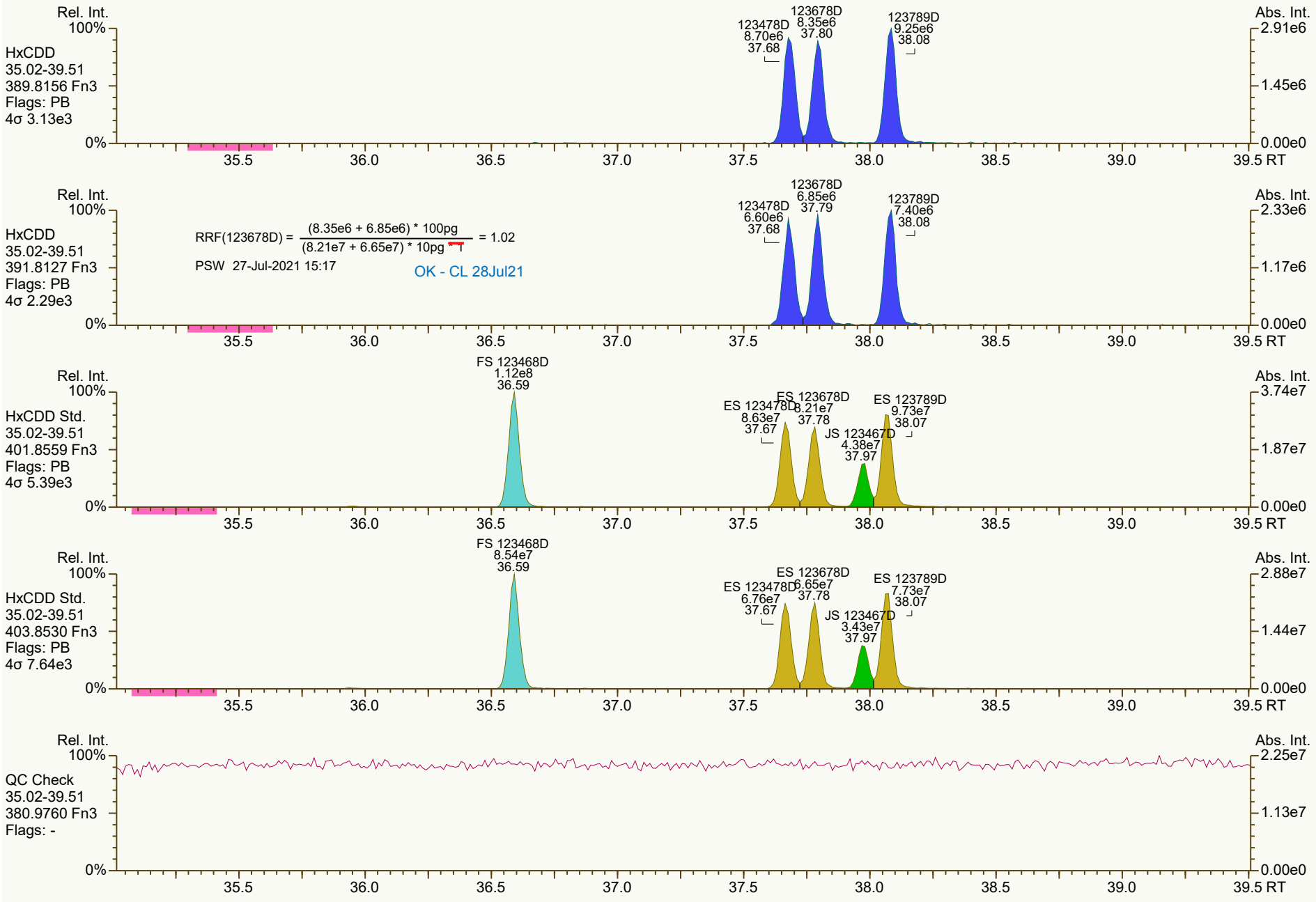
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.65E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.34	2.62E+08	0.75	Y	-	-	-
JS 123467-HxCDD	37.97	7.80E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.31	1.27	-3%
CS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.13	1.69E+08	0.52	Y	1.09	1.08	-1%
CS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.86	0.89	3%
SS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.13	1.69E+08	0.52	Y	0.84	0.85	1%
SS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.92	1.68E+08	0.81	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.81E+08	0.77	Y	1.08	1.07	-1%
FS 1278-TCDD	28.83	1.83E+08	0.80	Y	1.08	1.09	0%
FS 12478-PeCDD	32.58	1.83E+08	1.61	Y	1.09	1.12	3%
FS 123468-HxCDD	36.59	1.97E+08	1.31	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	2.12E+08	1.04	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	2.27E+08	0.78	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.23~~	~~1.51E+06~~	~~2.07~~	~~N~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.41~~	~~1.45E+06~~	~~3.13~~	~~N~~	~~0.06~~	~~0.05~~	~~-11%~~

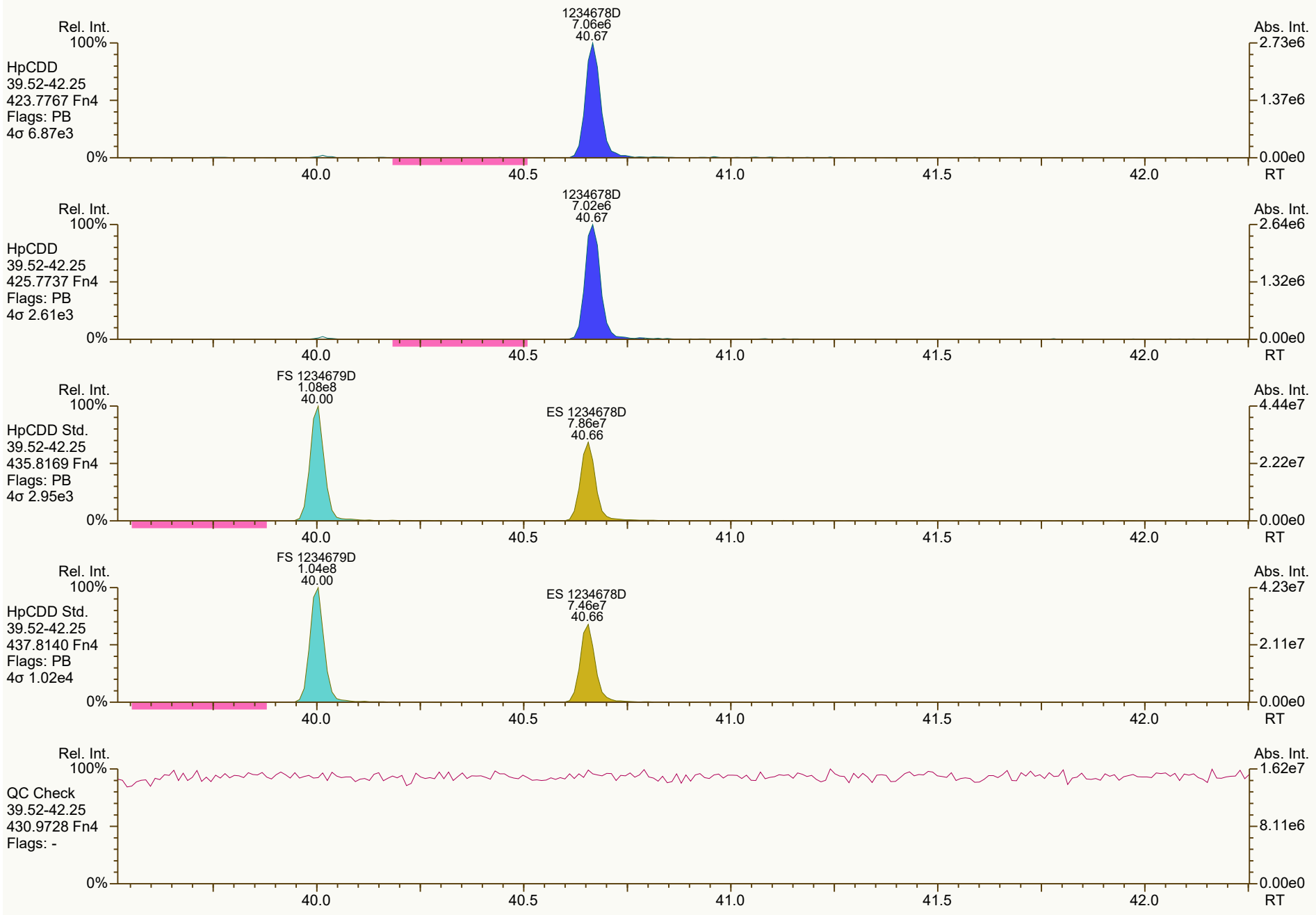
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.99e6
1.50e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.46e6
3.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.70e3
0%
2378D
1.86e6
28.53
Abs. Int.
4.86e5
2.43e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.63e3
0%
2378D
2.37e6
28.53
Abs. Int.
5.69e5
2.85e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.36e3
0%
CS 37Cl-2378D
4.18e6
28.53
Abs. Int.
9.85e5
4.92e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 9.83e3
0%
AS 1368D
7.51e7
24.92
TS 1378D
9.93e7
26.88
JS 1234D
7.45e7
27.87
ES 2378D
7.44e7
28.51
FS 1278D
8.12e7
28.83
Abs. Int.
2.36e7
1.18e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.30e3
0%
AS 1368D
9.33e7
24.92
TS 1378D
1.28e8
26.88
JS 1234D
9.02e7
27.87
ES 2378D
9.32e7
28.51
FS 1278D
1.01e8
28.83
Abs. Int.
2.92e7
1.46e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.80e3
12378D
1.03e7
33.81
Abs. Int.
2.90e6
1.45e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.22e3
12378D
6.36e6
33.81
Abs. Int.
1.85e6
9.25e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.21e3
FS 12478D
1.13e8*
32.58
CS 12347D
9.01e7
33.30
ES 12378D
1.02e8
33.79
Abs. Int.
3.21e7
1.60e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 6.07e3
FS 12478D
7.03e7*
32.58
CS 12347D
5.53e7
33.30
ES 12378D
6.15e7
33.79
Abs. Int.
2.13e7
1.06e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
Abs. Int.
2.92e6
1.46e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.13e3
123478D 8.70e6 37.68
123678D 8.35e6 37.80
123789D 9.25e6 38.08
Abs. Int. 2.91e6 1.45e6 0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.29e3
RRF(123678D) = (8.35e6 + 6.85e6) * 100pg / (8.21e7 + 6.65e7) * 10pg = 1.02
PSW 27-Jul-2021 15:17
OK - CL 28Jul21
123478D 6.60e6 37.68
123678D 6.85e6 37.79
123789D 7.40e6 38.08
Abs. Int. 2.33e6 1.17e6 0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 5.39e3
FS 123468D 1.12e8 36.59
ES 123478D 8.63e7 37.67
ES 123678D 8.21e7 37.78
JS 123467D 4.38e7 37.97
ES 123789D 9.73e7 38.07
Abs. Int. 3.74e7 1.87e7 0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 7.64e3
FS 123468D 8.54e7 36.59
ES 123478D 6.76e7 37.67
ES 123678D 6.65e7 37.78
JS 123467D 3.43e7 37.97
ES 123789D 7.73e7 38.07
Abs. Int. 2.88e7 1.44e7 0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int. 2.25e7 1.13e7 0.00e0

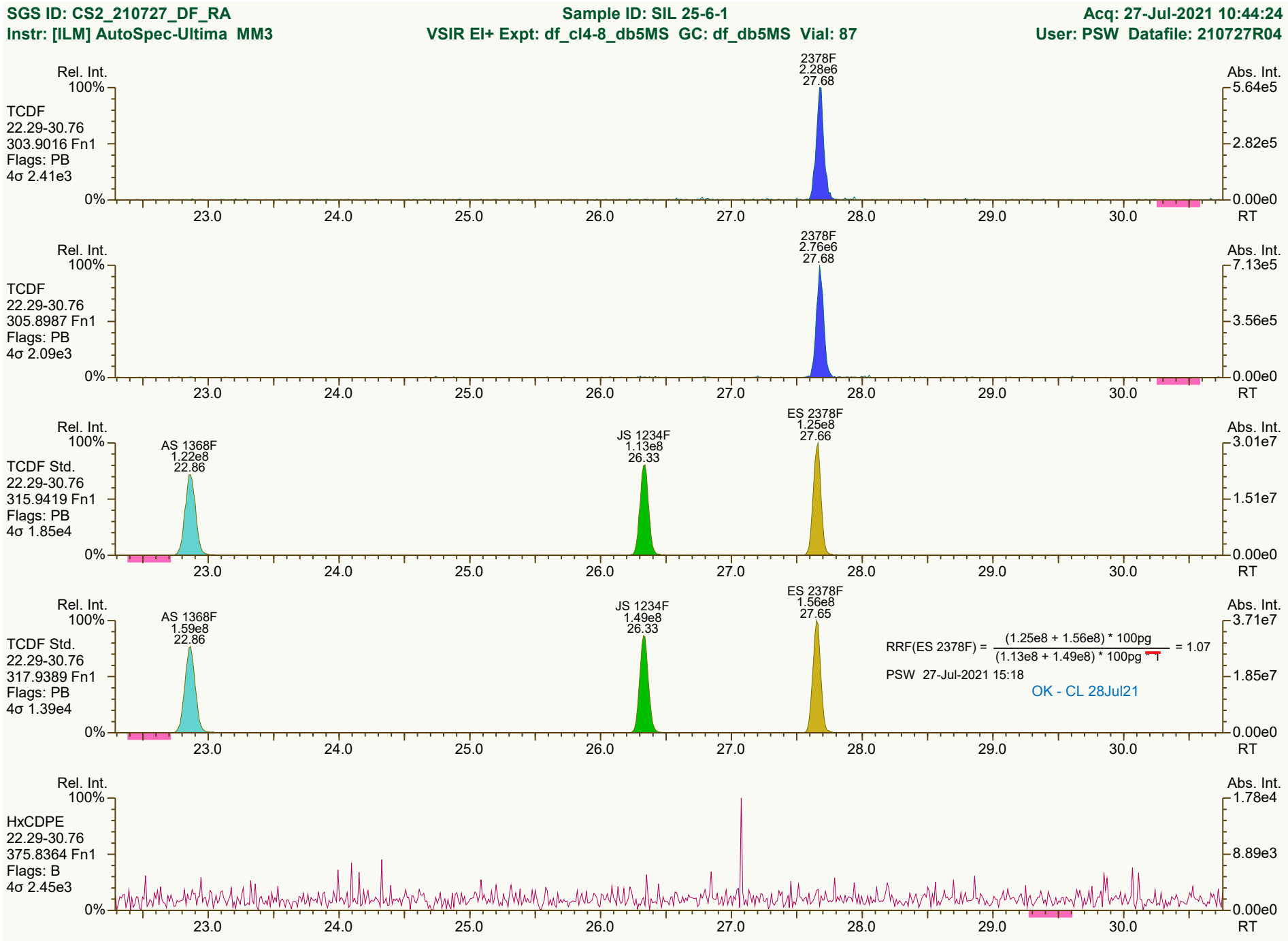

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 6.87e3
0%
1234678D
7.06e6
40.67
Abs. Int.
2.73e6
1.37e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 2.61e3
0%
1234678D
7.02e6
40.67
Abs. Int.
2.64e6
1.32e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.95e3
0%
FS 1234679D
1.08e8
40.00
ES 1234678D
7.86e7
40.66
Abs. Int.
4.44e7
2.22e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.02e4
0%
FS 1234679D
1.04e8
40.00
ES 1234678D
7.46e7
40.66
Abs. Int.
4.23e7
2.11e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0


OCDD
1.09e7
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 3.62e3
0%
Abs. Int.
3.54e6
1.77e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.24e7
43.23
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 1.67e3
4.01e6
2.00e6
ES OCDD
1.10e8
43.22
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 3.79e3
3.53e7
1.77e7
ES OCDD
1.22e8
43.22
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 7.59e3
3.84e7
1.92e7
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
6.46e6
3.23e6

SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87

Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04



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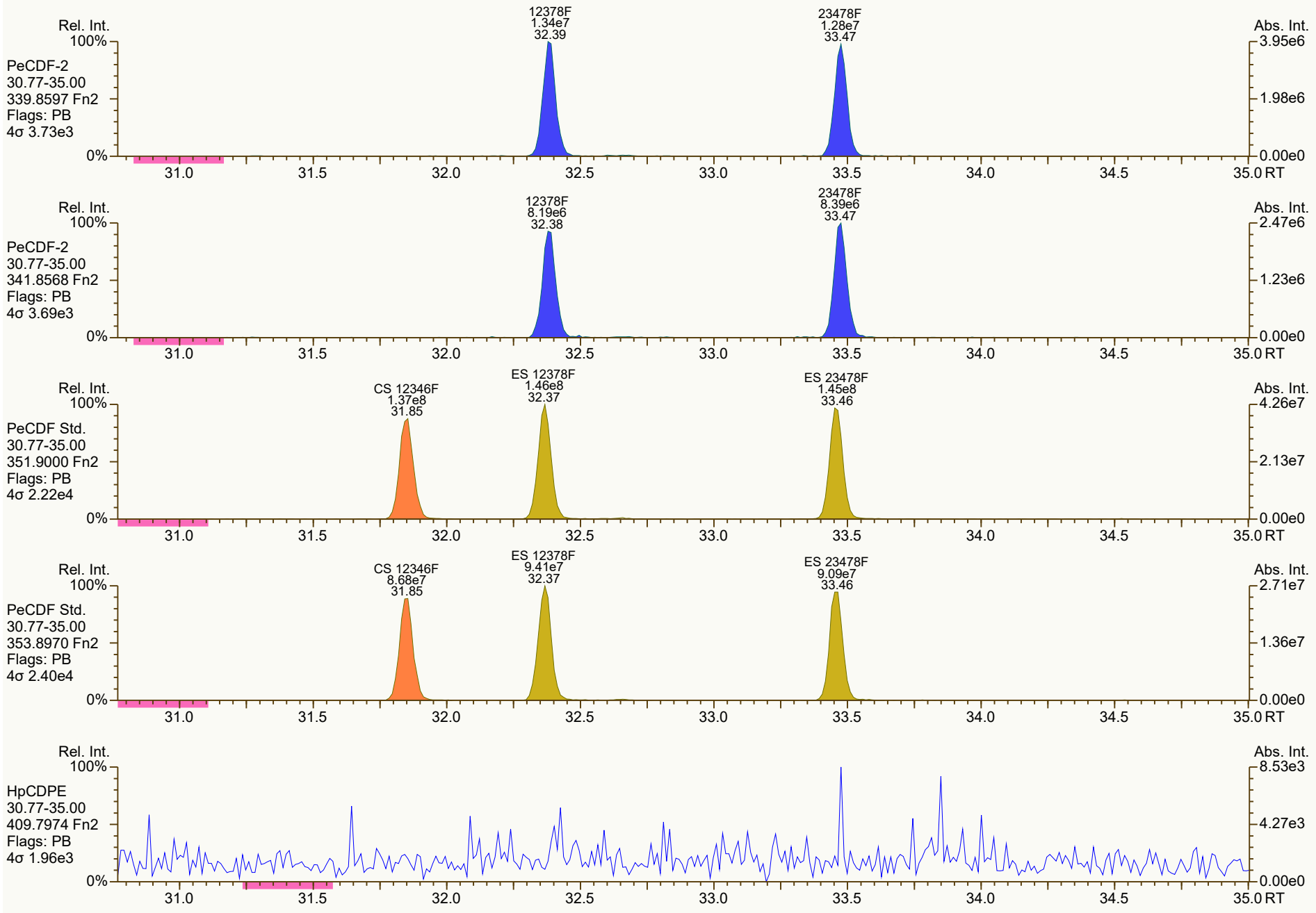
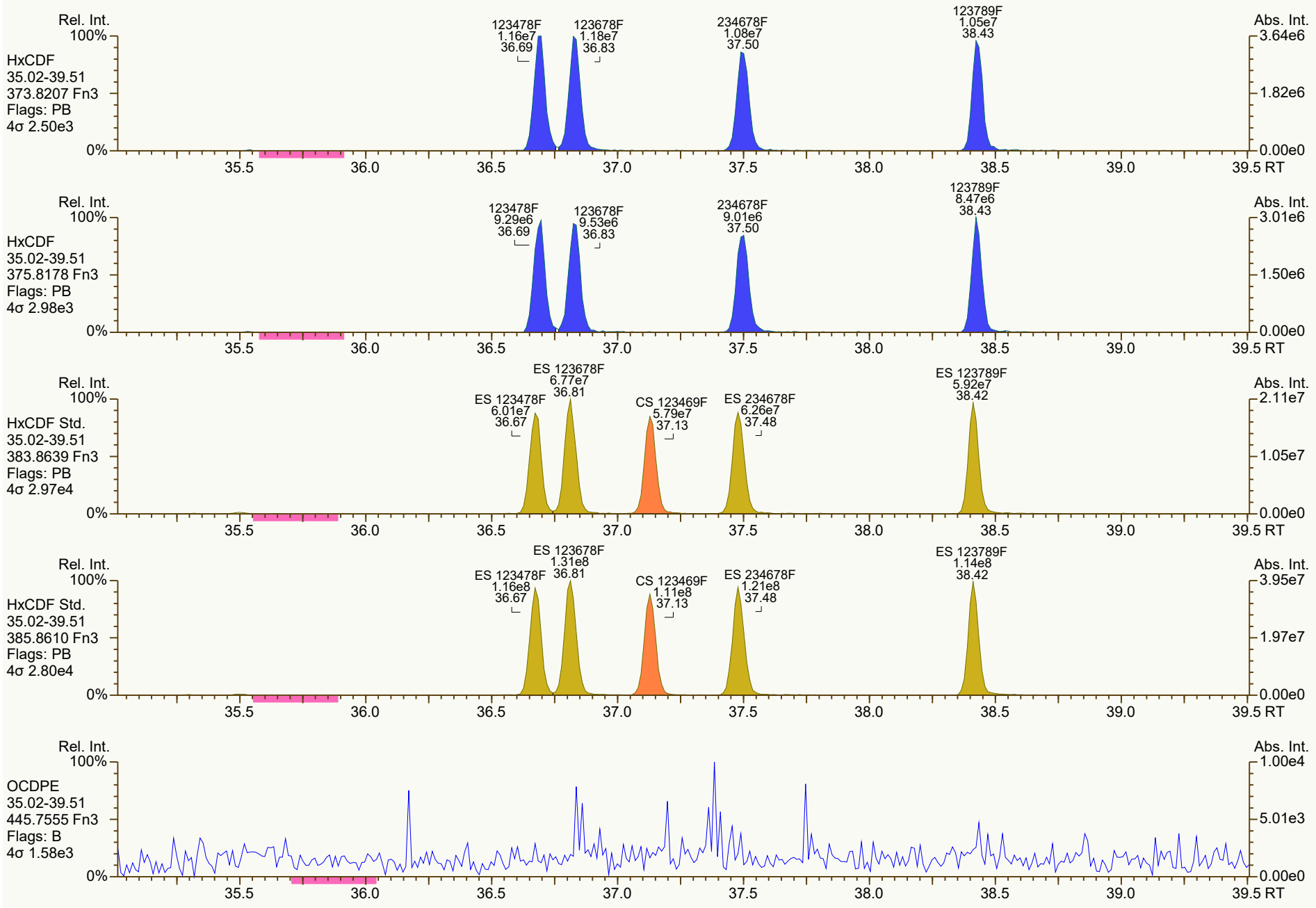
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9273, 2389, 5803 scc: 377-233

Peak annotation: Areas, Centroids
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.66e4
8.28e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.30e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.23e3
2.64e4
1.32e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.99e6
1.50e6

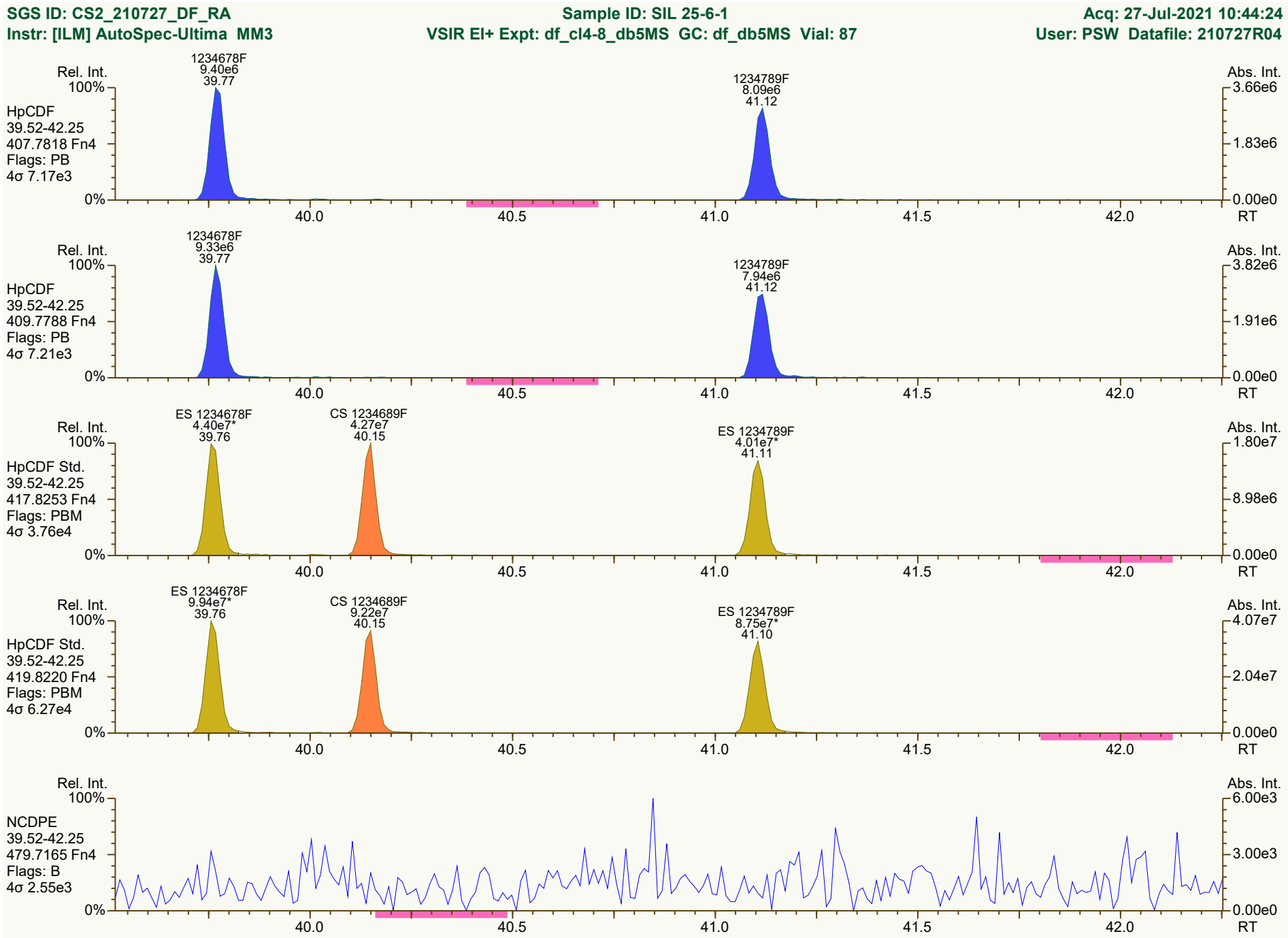

Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 3.73e3
0%
12378F
1.34e7
32.39
23478F
1.28e7
33.47
Abs. Int.
3.95e6
1.98e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.69e3
0%
12378F
8.19e6
32.38
23478F
8.39e6
33.47
Abs. Int.
2.47e6
1.23e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.22e4
0%
CS 12346F
1.37e8
31.85
ES 12378F
1.46e8
32.37
ES 23478F
1.45e8
33.46
Abs. Int.
4.26e7
2.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.40e4
0%
CS 12346F
8.68e7
31.85
ES 12378F
9.41e7
32.37
ES 23478F
9.09e7
33.46
Abs. Int.
2.71e7
1.36e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: PB
4σ 1.96e3
0%
Abs. Int.
8.53e3
4.27e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.50e3
0%
123478F
1.16e7
36.69
123678F
1.18e7
36.83
234678F
1.08e7
37.50
123789F
1.05e7
38.43
Abs. Int.
3.64e6
1.82e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 2.98e3
0%
123478F
9.29e6
36.69
123678F
9.53e6
36.83
234678F
9.01e6
37.50
123789F
8.47e6
38.43
Abs. Int.
3.01e6
1.50e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 2.97e4
0%
ES 123478F
6.01e7
36.67
ES 123678F
6.77e7
36.81
CS 123469F
5.79e7
37.13
ES 234678F
6.26e7
37.48
ES 123789F
5.92e7
38.42
Abs. Int.
2.11e7
1.05e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.80e4
0%
ES 123478F
1.16e8
36.67
ES 123678F
1.31e8
36.81
CS 123469F
1.11e8
37.13
ES 234678F
1.21e8
37.48
ES 123789F
1.14e8
38.42
Abs. Int.
3.95e7
1.97e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.00e4
5.01e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

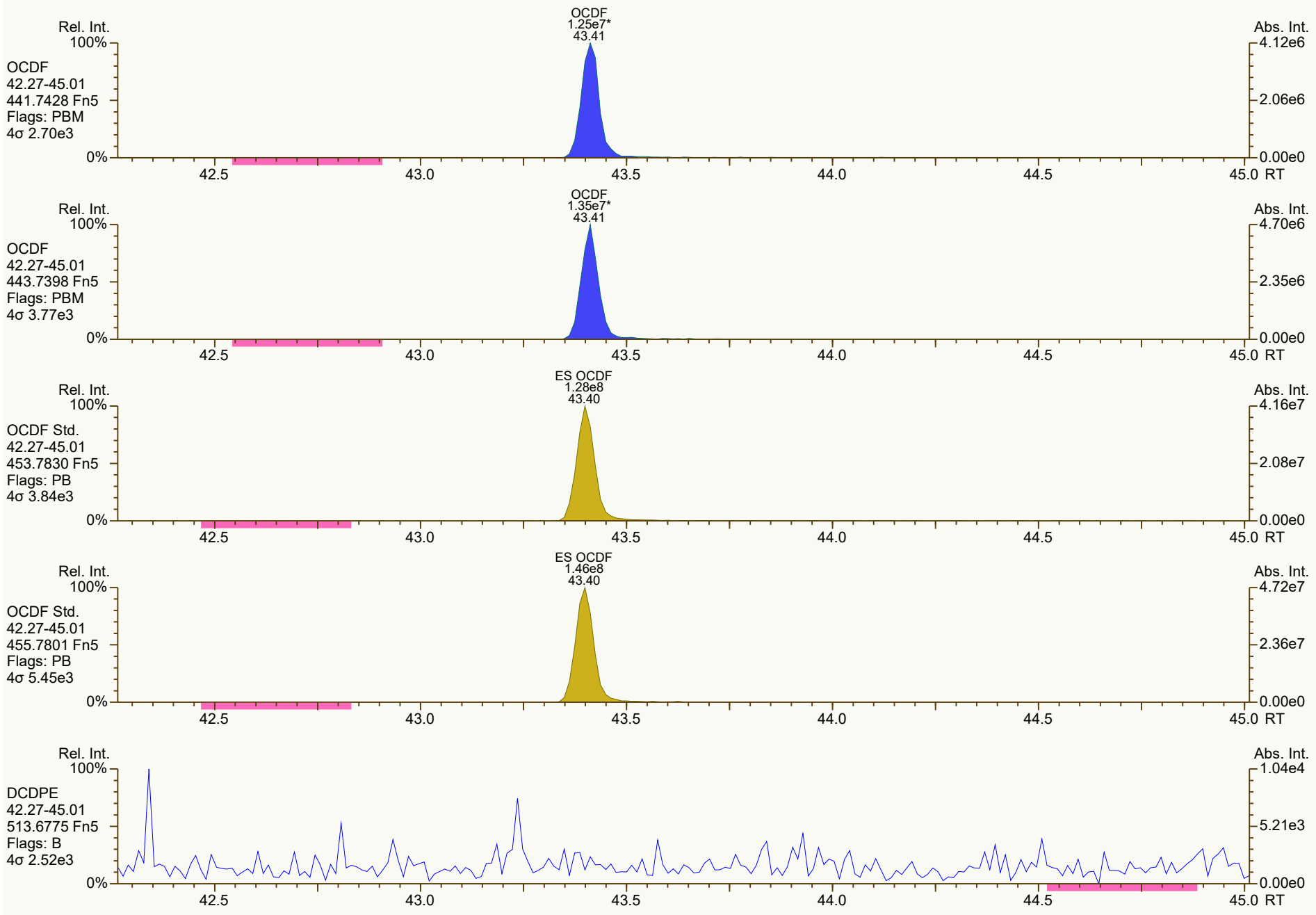
SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87

Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7424, 0679, 0705 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 11 of 12


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PBM
4σ 2.70e3
0%
OCDF
1.25e7*
43.41
Abs. Int.
4.12e6
2.06e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PBM
4σ 3.77e3
0%
OCDF
1.35e7*
43.41
Abs. Int.
4.70e6
2.35e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 3.84e3
0%
ES OCDF
1.28e8
43.40
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 5.45e3
0%
ES OCDF
1.46e8
43.40
Abs. Int.
4.72e7
2.36e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.52e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

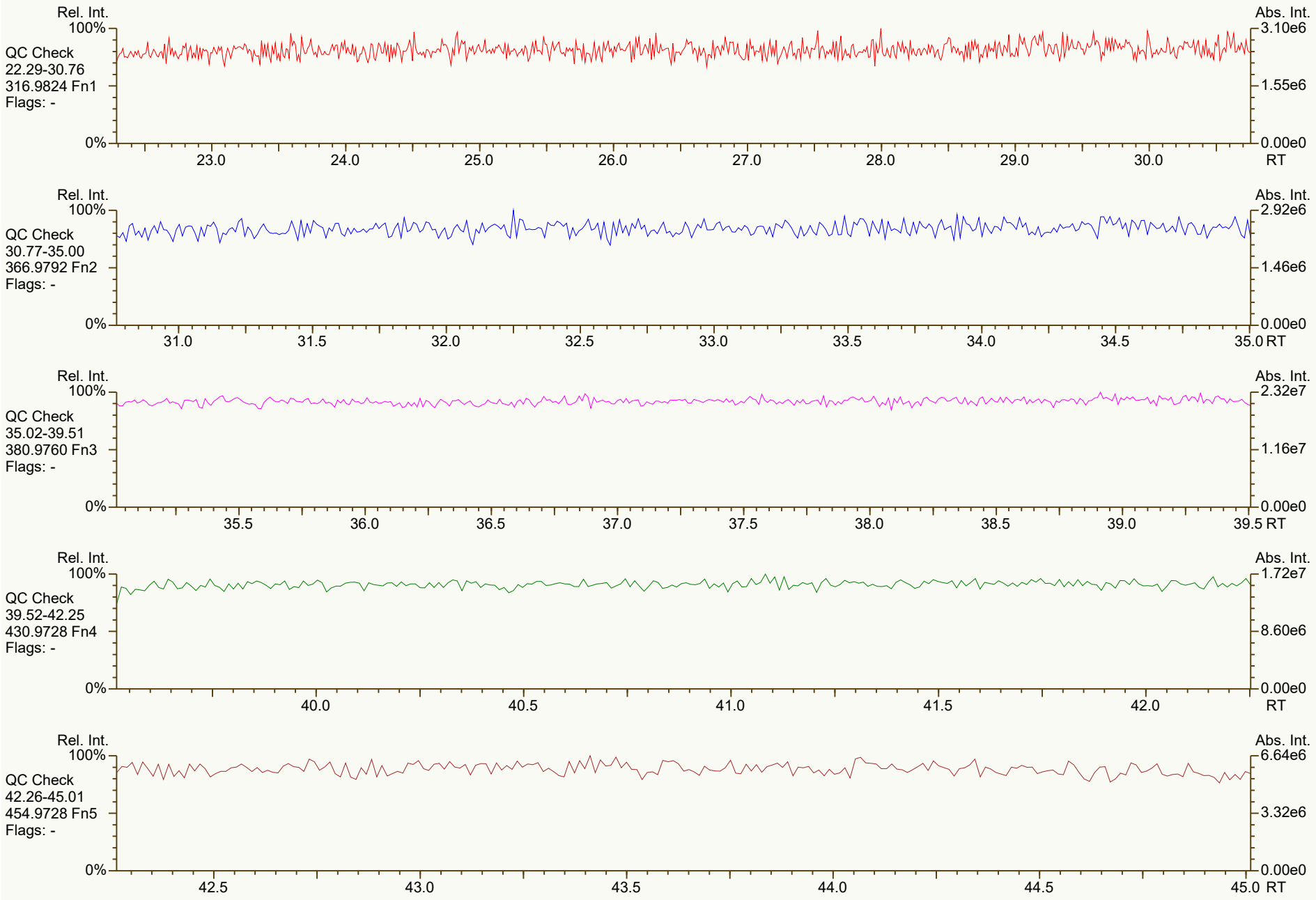
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.23E+07	0.80	Y	1.34	1.32	-2%
12378-PeCDD	33.80	8.56E+07	1.57	Y	1.06	1.05	-1%
123478-HxCDD	37.67	7.63E+07	1.25	Y	1.06	1.05	-1%
123678-HxCDD	37.78	7.89E+07	1.25	Y	1.08	1.08	0%
123789-HxCDD	38.07	8.22E+07	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.66	7.06E+07	1.03	Y	0.97	0.95	-2%
OCDD	43.22	1.21E+08	0.89	Y	1.07	1.07	0%
2378-TCDF	27.66	2.66E+07	0.80	Y	0.96	0.95	-1%
12378-PeCDF	32.37	1.11E+08	1.56	Y	0.95	0.94	-1%
23478-PeCDF	33.46	1.09E+08	1.56	Y	0.94	0.92	-2%
123478-HxCDF	36.68	1.05E+08	1.22	Y	1.23	1.22	-2%
123678-HxCDF	36.82	1.08E+08	1.25	Y	1.13	1.10	-2%
234678-HxCDF	37.49	1.02E+08	1.24	Y	1.15	1.14	-1%
123789-HxCDF	38.42	9.59E+07	1.23	Y	1.14	1.14	0%
1234678-HpCDF	39.76	9.62E+07	1.03	Y	1.36	1.34	-1%
1234789-HpCDF	41.10	8.35E+07	1.03	Y	1.30	1.34	3%
OCDF	43.41	1.40E+08	0.89	Y	1.03	1.03	0%
ES 2378-TCDD	28.50	1.70E+08	0.82	Y	1.03	1.05	2%
ES 12378-PeCDD	33.782	1.63E+08	1.65	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.654	1.45E+08	1.26	Y	0.99	1.00	0%
ES 123678-HxCDD	37.768	1.46E+08	1.27	Y	0.97	1.01	3%
ES 123789-HxCDD	38.057	1.66E+08	1.23	Y	1.12	1.14	1%
ES 1234678-HpCDD	40.644	1.48E+08	1.08	Y	0.99	1.02	3%
ES OCDD	43.211	2.25E+08	0.88	Y	0.78	0.77	-1%
ES 2378-TCDF	27.643	2.80E+08	0.79	Y	1.08	1.09	1%
ES 12378-PeCDF	32.354	2.37E+08	1.58	Y	0.93	0.93	-1%
ES 23478-PeCDF	33.446	2.37E+08	1.53	Y	0.92	0.93	0%
ES 123478-HxCDF	36.661	1.72E+08	0.52	Y	1.14	1.18	4%
ES 123678-HxCDF	36.801	1.96E+08	0.52	Y	1.30	1.35	4%
ES 234678-HxCDF	37.469	1.79E+08	0.54	Y	1.20	1.23	2%
ES 123789-HxCDF	38.404	1.68E+08	0.52	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.75	1.43E+08	0.45	Y	0.95	0.98	4%
ES 1234789-HpCDF	41.092	1.25E+08	0.44	Y	0.85	0.86	1%
ES OCDF	43.395	2.71E+08	0.89	Y	0.93	0.93	1%

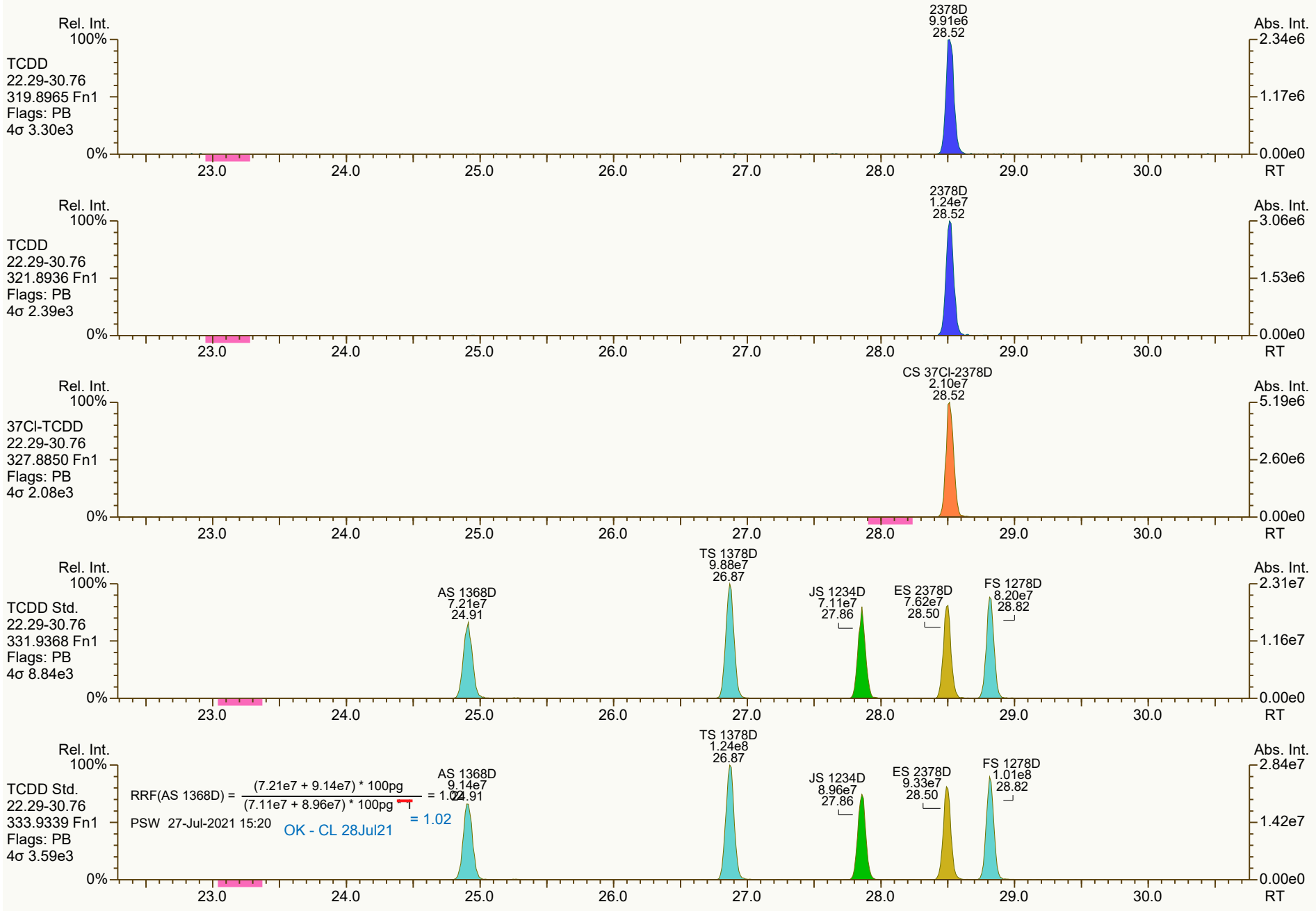
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

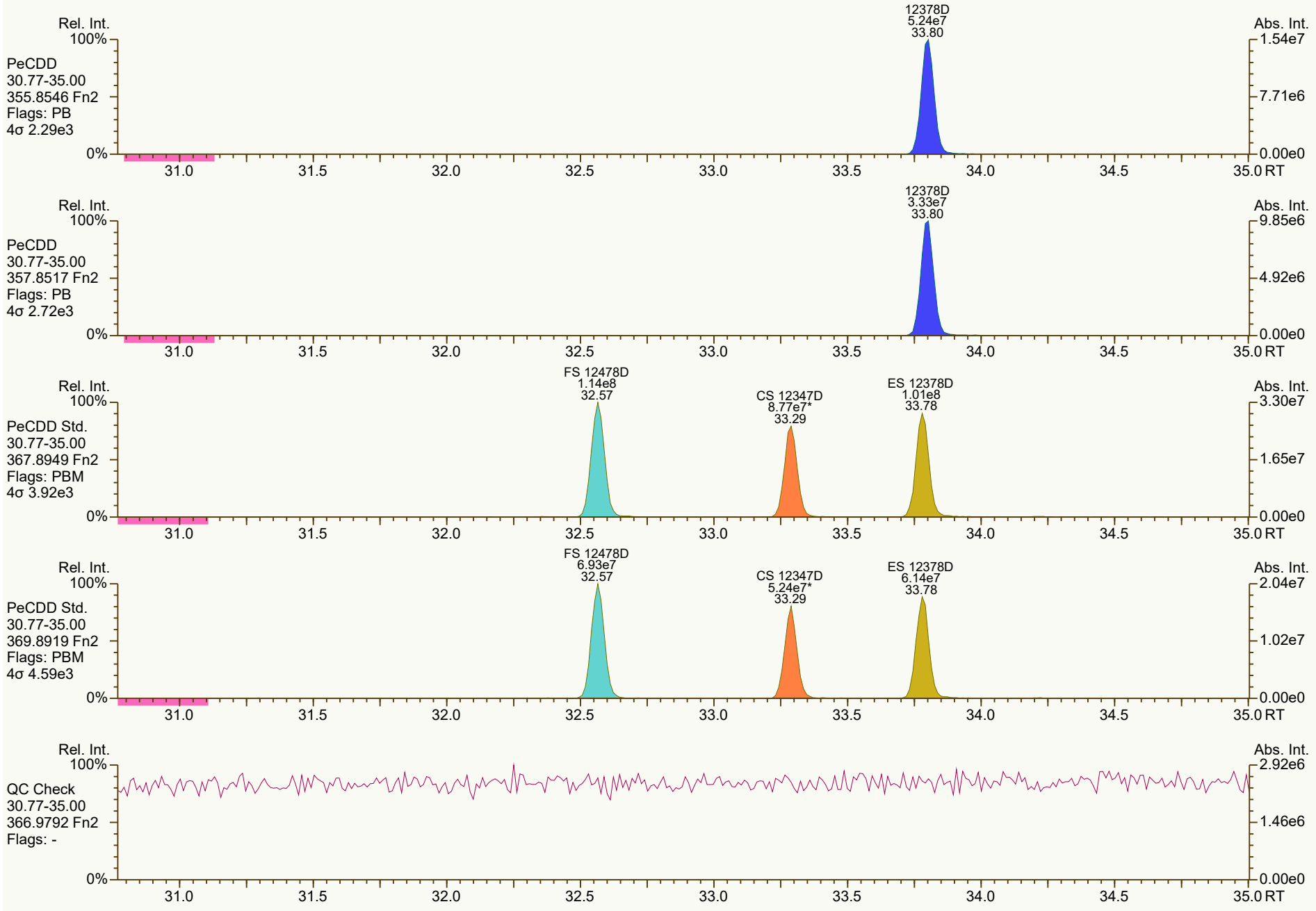
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.61E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.32	2.56E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.96	7.28E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.31	1.30	0%
CS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.89	0.87	-2%
CS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.87	0.89	2%
CS 123469-HxCDF	37.12	1.65E+08	0.52	Y	1.09	1.14	4%
CS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.86	0.92	7%
SS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.26	1.24	-2%
SS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.86	0.86	0%
SS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.93	0.96	3%
SS 123469-HxCDF	37.12	1.65E+08	0.52	Y	0.84	0.84	0%
SS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.91	1.64E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.85	2.82E+08	0.79	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.83E+08	0.81	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.84E+08	1.65	Y	1.09	1.13	3%
FS 123468-HxCDD	36.58	1.91E+08	1.27	Y	1.26	1.32	4%
FS 1234679-HpCDD	39.99	2.10E+08	1.06	Y	1.36	1.42	5%
TS 1378-TCDD	26.87	2.23E+08	0.80	Y	1.35	1.31	-3%
~~OCDD-a~~	~~43.22~~	~~7.32E+06~~	~~2.45~~	~~Y~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.40~~	~~8.14E+06~~	~~2.47~~	~~Y~~	~~0.06~~	~~0.06~~	~~1%~~

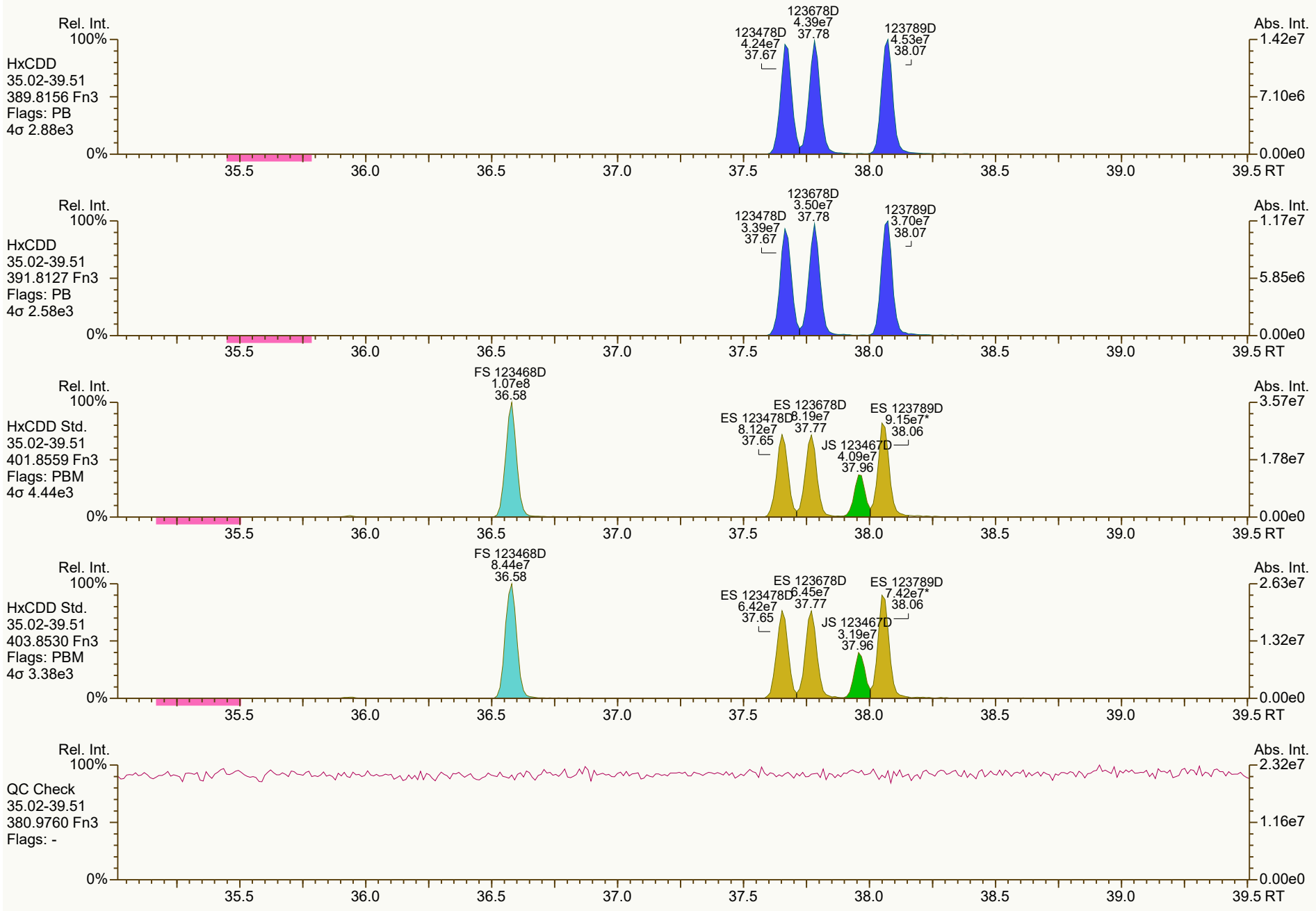
Not reported from this ICAL - CL 28Jul21

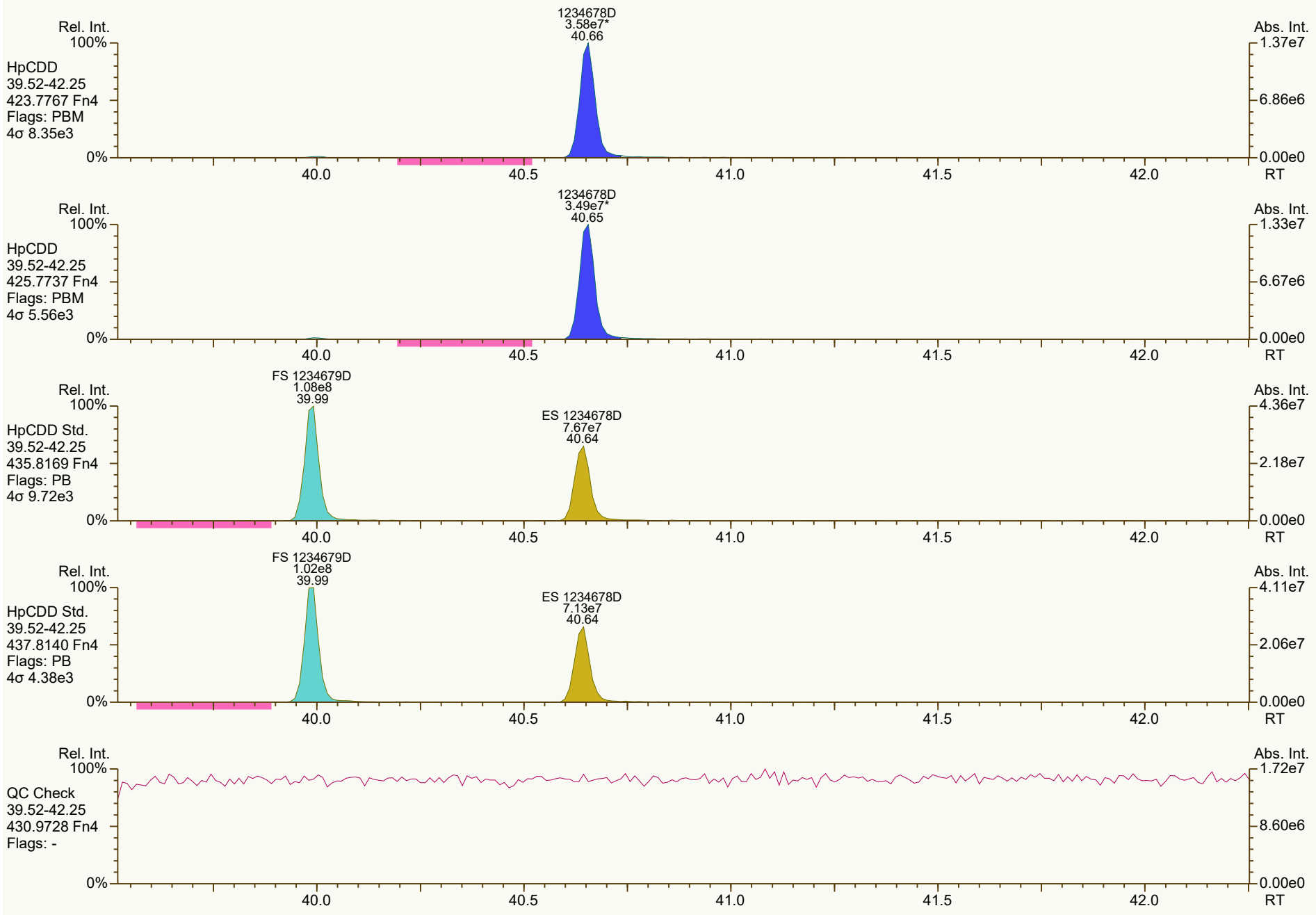


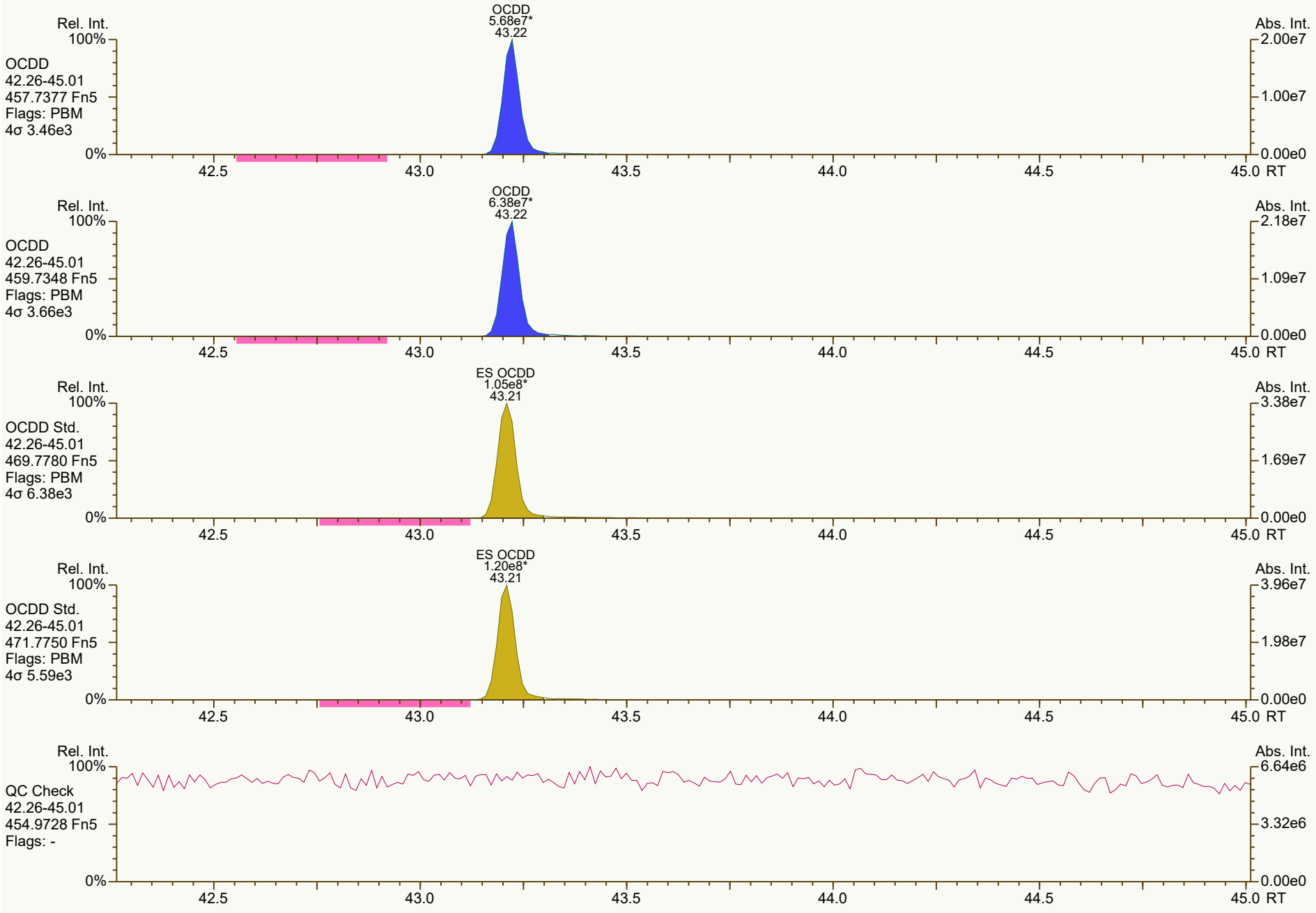
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 230-891
PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12

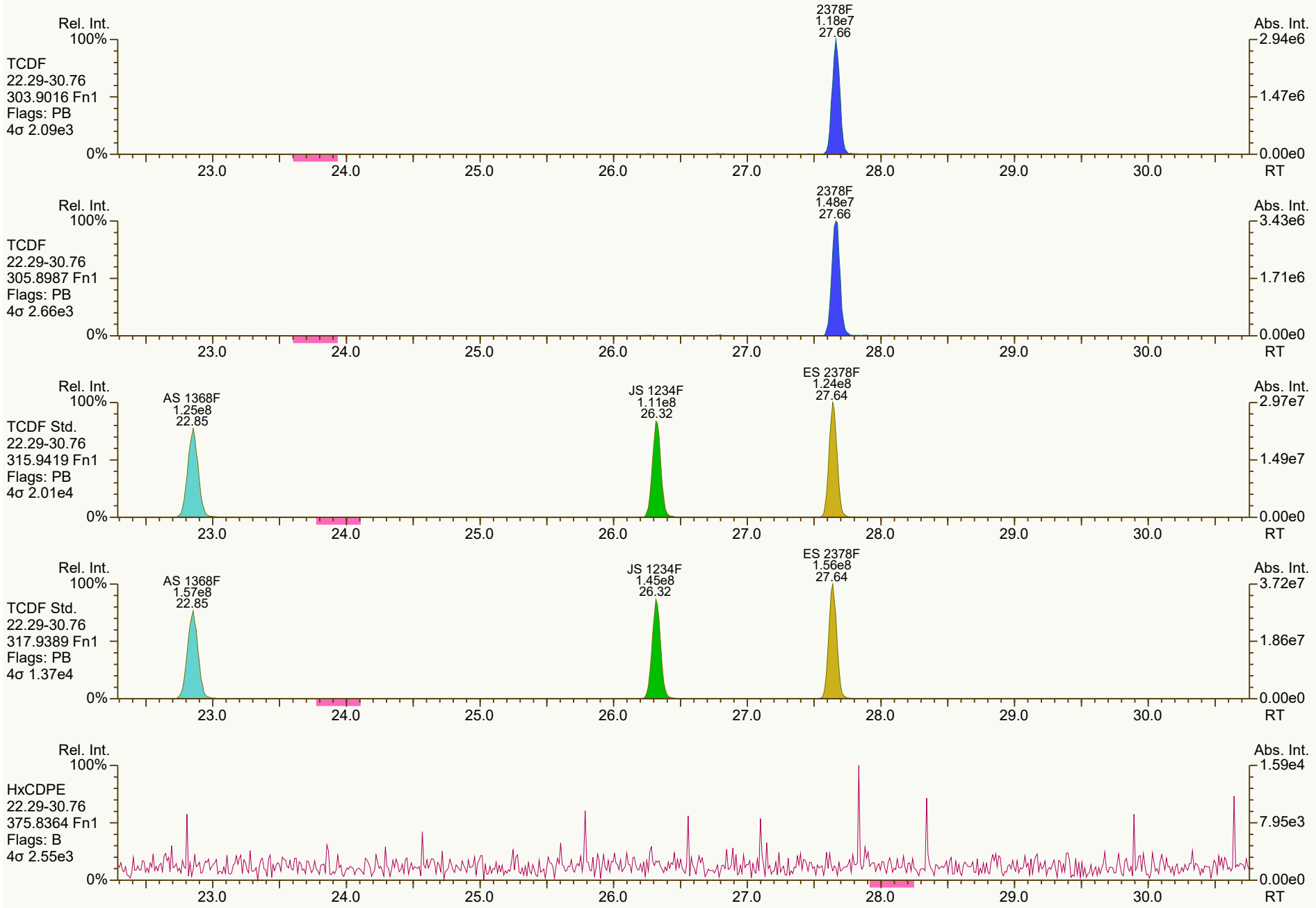

Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.30e3
2378D
9.91e6
28.52
2.34e6
1.17e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.39e3
2378D
1.24e7
28.52
3.06e6
1.53e6
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.08e3
CS 37Cl-2378D
2.10e7
28.52
5.19e6
2.60e6
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 8.84e3
AS 1368D
7.21e7
24.91
TS 1378D
9.88e7
26.87
JS 1234D
7.11e7
27.86
ES 2378D
7.62e7
28.50
FS 1278D
8.20e7
28.82
2.31e7
1.16e7
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.59e3
RRF(AS 1368D) = (7.21e7 + 9.14e7) * 100pg / (7.11e7 + 8.96e7) * 100pg = 1.02
PSW 27-Jul-2021 15:20
OK - CL 28Jul21
= 1.02
AS 1368D
9.14e7
24.91
TS 1378D
1.24e8
26.87
JS 1234D
8.96e7
27.86
ES 2378D
9.33e7
28.50
FS 1278D
1.01e8
28.82
2.84e7
1.42e7
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.29e3
0%
12378D
5.24e7
33.80
Abs. Int.
1.54e7
7.71e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.72e3
0%
12378D
3.33e7
33.80
Abs. Int.
9.85e6
4.92e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.92e3
0%
FS 12478D
1.14e8
32.57
CS 12347D
8.77e7*
33.29
ES 12378D
1.01e8
33.78
Abs. Int.
3.30e7
1.65e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 4.59e3
0%
FS 12478D
6.93e7
32.57
CS 12347D
5.24e7*
33.29
ES 12378D
6.14e7
33.78
Abs. Int.
2.04e7
1.02e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

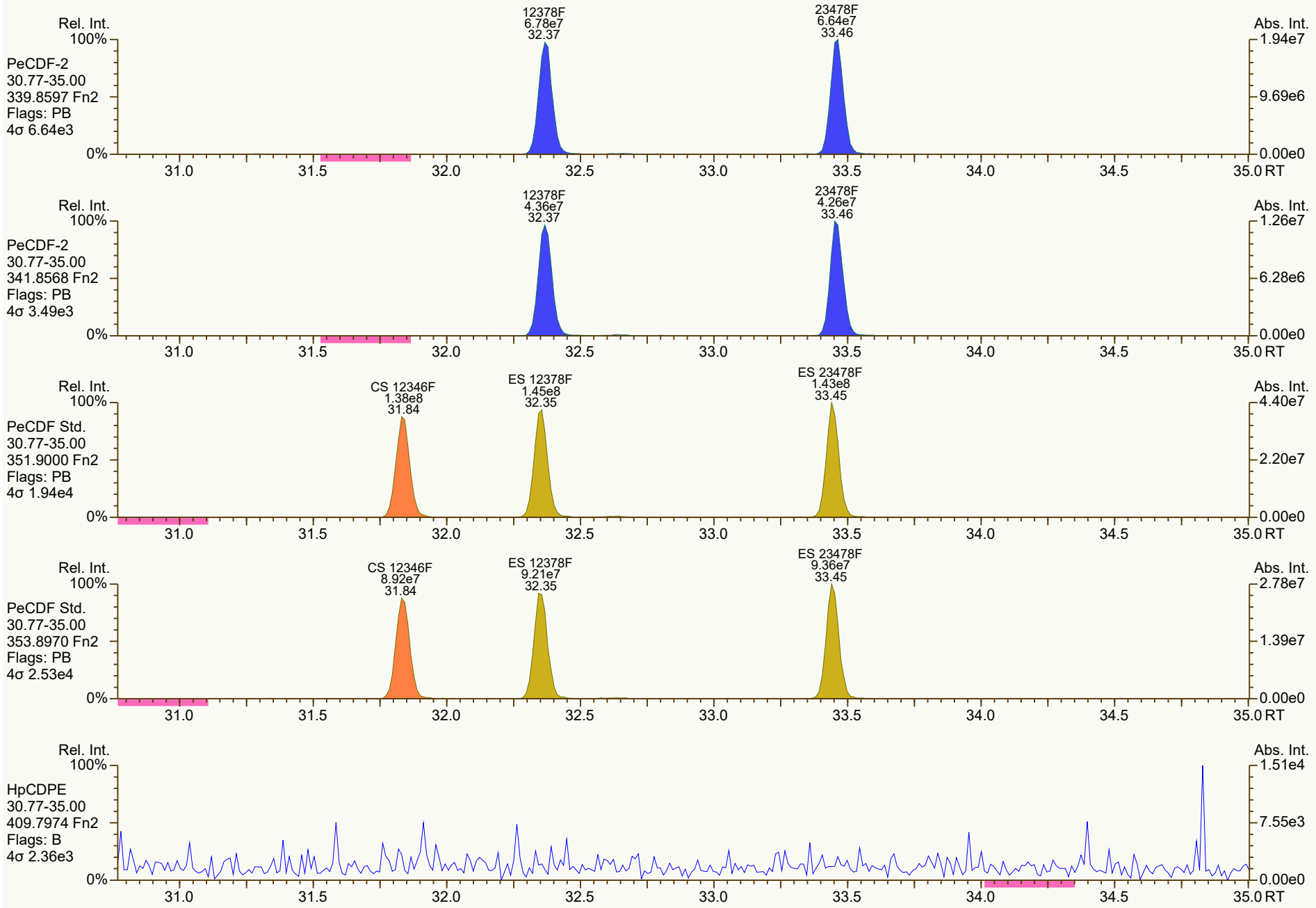

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.88e3
123678D
4.39e7
37.78
123478D
4.24e7
37.67
123789D
4.53e7
38.07
Abs. Int.
1.42e7
7.10e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.58e3
123678D
3.50e7
37.78
123478D
3.39e7
37.67
123789D
3.70e7
38.07
Abs. Int.
1.17e7
5.85e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.44e3
FS 123468D
1.07e8
36.58
ES 123678D
8.19e7
37.77
ES 123478D
8.12e7
37.65
ES 123789D
9.15e7*
38.06
JS 123467D
4.09e7
37.96
Abs. Int.
3.57e7
1.78e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.38e3
FS 123468D
8.44e7
36.58
ES 123678D
6.45e7
37.77
ES 123478D
6.42e7
37.65
ES 123789D
7.42e7*
38.06
JS 123467D
3.19e7
37.96
Abs. Int.
2.63e7
1.32e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.32e7
1.16e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

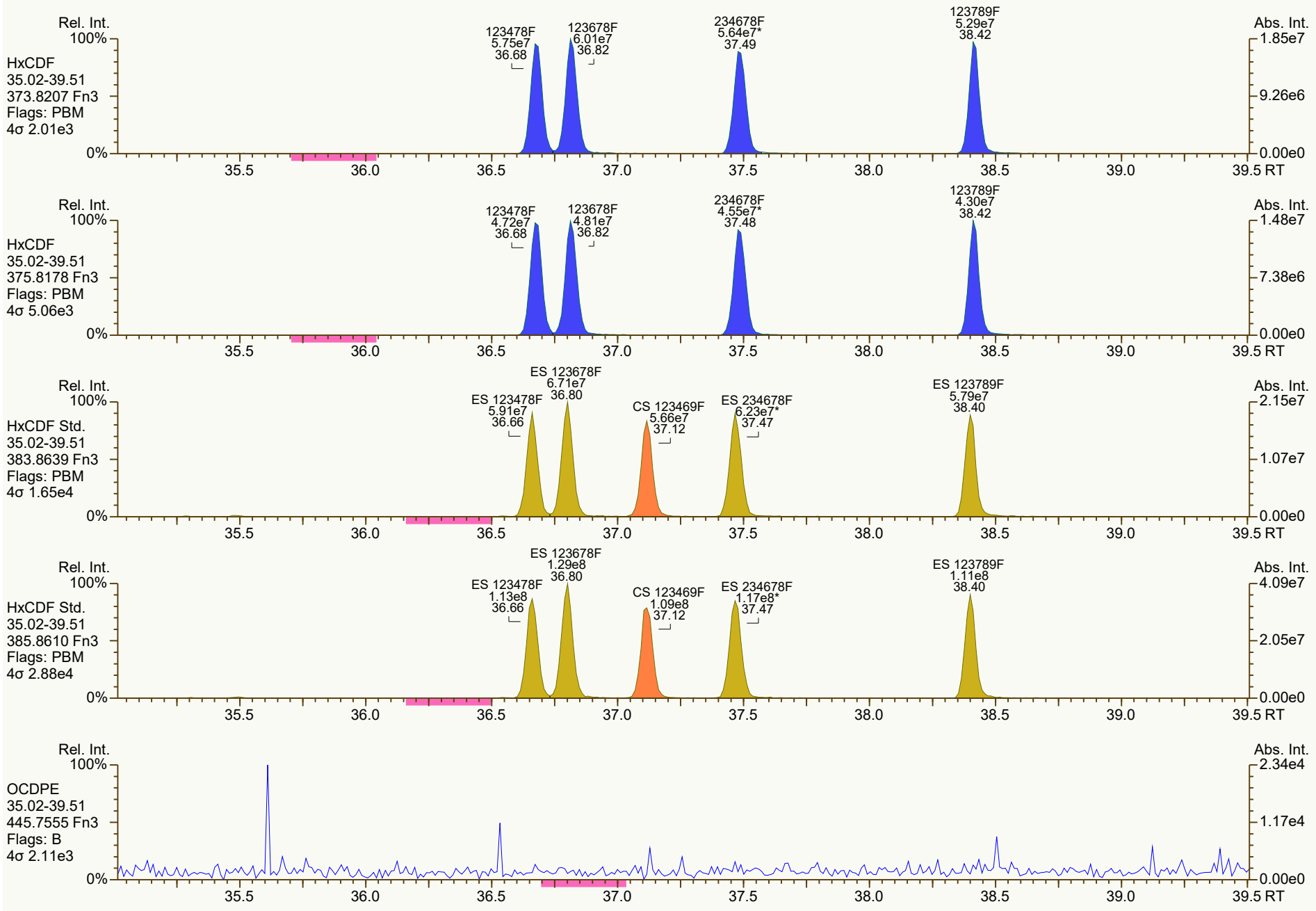

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 8.35e3
0%
1234678D
3.58e7*
40.66
Abs. Int.
1.37e7
6.86e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 5.56e3
1234678D
3.49e7*
40.65
1.33e7
6.67e6
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 9.72e3
FS 1234679D
1.08e8
39.99
ES 1234678D
7.67e7
40.64
4.36e7
2.18e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.38e3
FS 1234679D
1.02e8
39.99
ES 1234678D
7.13e7
40.64
4.11e7
2.06e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.72e7
8.60e6

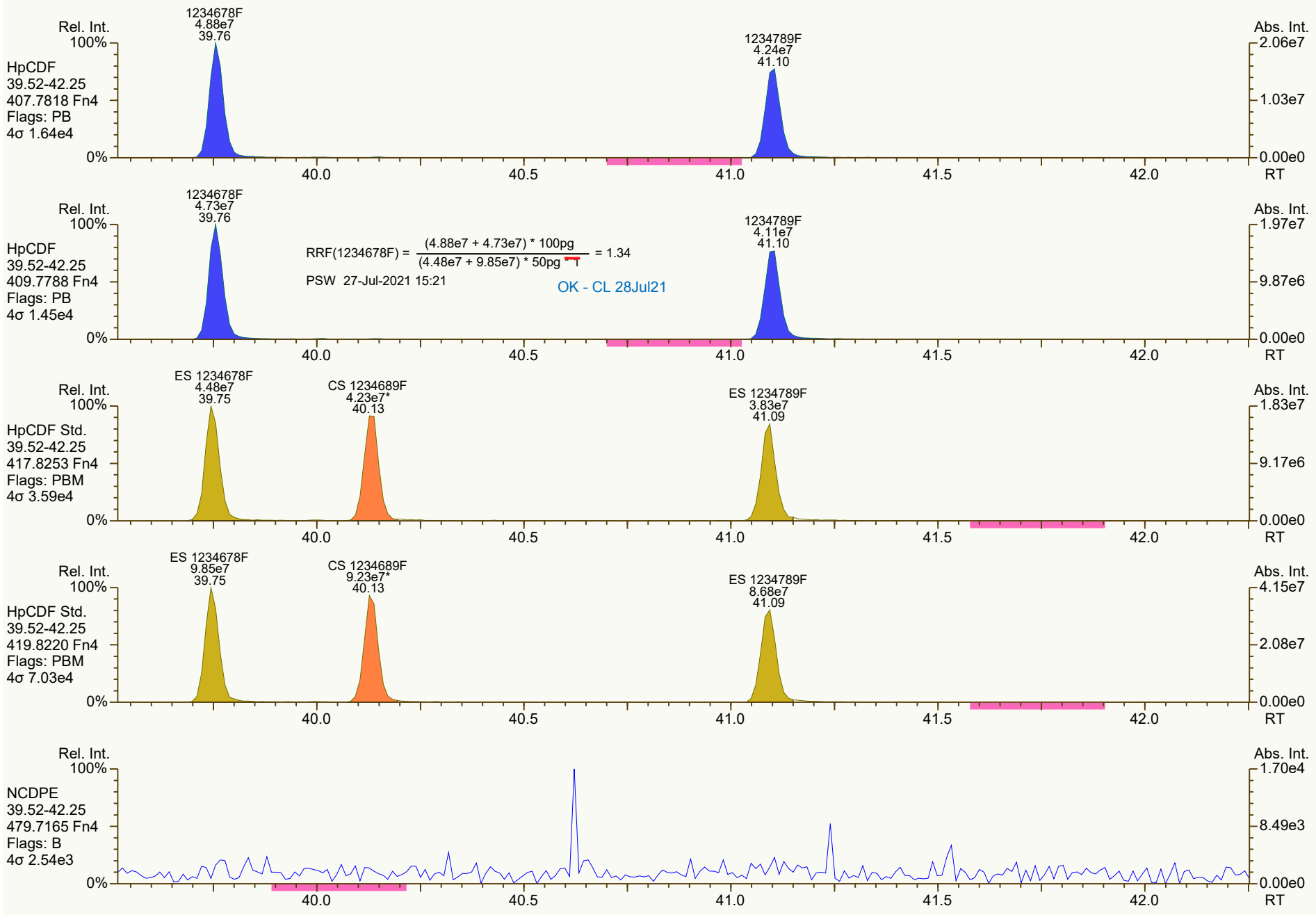

OCDD
5.68e7*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.46e3
0%
Abs. Int.
2.00e7
1.00e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.38e7*
43.22
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 3.66e3
Abs. Int.
2.18e7
1.09e7
ES OCDD
1.05e8*
43.21
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 6.38e3
Abs. Int.
3.38e7
1.69e7
ES OCDD
1.20e8*
43.21
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.59e3
Abs. Int.
3.96e7
1.98e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
Abs. Int.
6.64e6
3.32e6

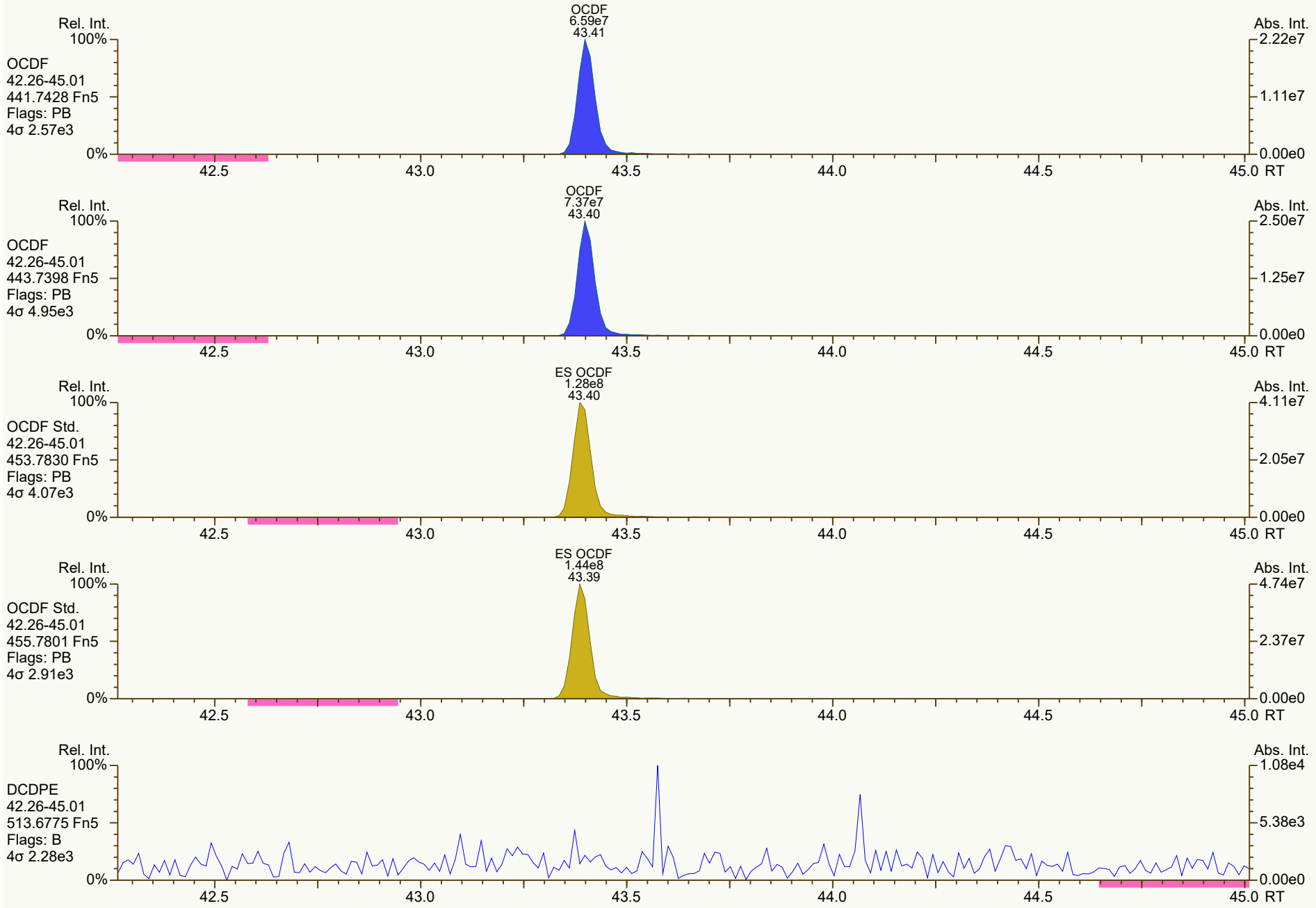

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.09e3
0%
2378F
1.18e7
27.66
Abs. Int.
2.94e6
1.47e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.66e3
0%
2378F
1.48e7
27.66
Abs. Int.
3.43e6
1.71e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.01e4
0%
AS 1368F
1.25e8
22.85
JS 1234F
1.11e8
26.32
ES 2378F
1.24e8
27.64
Abs. Int.
2.97e7
1.49e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.37e4
0%
AS 1368F
1.57e8
22.85
JS 1234F
1.45e8
26.32
ES 2378F
1.56e8
27.64
Abs. Int.
3.72e7
1.86e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.55e3
0%
Abs. Int.
1.59e4
7.95e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.52e4
7.61e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.35e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.57e4
7.83e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.27e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 6.64e3
0%
12378F
6.78e7
32.37
23478F
6.64e7
33.46
Abs. Int.
1.94e7
9.69e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.49e3
0%
12378F
4.36e7
32.37
23478F
4.26e7
33.46
Abs. Int.
1.26e7
6.28e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 1.94e4
0%
CS 12346F
1.38e8
31.84
ES 12378F
1.45e8
32.35
ES 23478F
1.43e8
33.45
Abs. Int.
4.40e7
2.20e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.53e4
0%
CS 12346F
8.92e7
31.84
ES 12378F
9.21e7
32.35
ES 23478F
9.36e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.36e3
0%
Abs. Int.
1.51e4
7.55e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 2.01e3
0%
123478F
5.75e7
36.68
123678F
6.01e7
36.82
234678F
5.64e7*
37.49
123789F
5.29e7
38.42
Abs. Int.
1.85e7
9.26e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 5.06e3
0%
123478F
4.72e7
36.68
123678F
4.81e7
36.82
234678F
4.55e7*
37.48
123789F
4.30e7
38.42
Abs. Int.
1.48e7
7.38e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 1.65e4
0%
ES 123678F
6.71e7
36.80
ES 123478F
5.91e7
36.66
CS 123469F
5.66e7
37.12
ES 234678F
6.23e7*
37.47
ES 123789F
5.79e7
38.40
Abs. Int.
2.15e7
1.07e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.88e4
0%
ES 123678F
1.29e8
36.80
ES 123478F
1.13e8
36.66
CS 123469F
1.09e8
37.12
ES 234678F
1.17e8*
37.47
ES 123789F
1.11e8
38.40
Abs. Int.
4.09e7
2.05e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.11e3
0%
Abs. Int.
2.34e4
1.17e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.64e4
1234678F
4.88e7
39.76
1234789F
4.24e7
41.10
Abs. Int.
2.06e7
1.03e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.45e4
1234678F
4.73e7
39.76
RRF(1234678F) = (4.88e7 + 4.73e7) * 100pg / (4.48e7 + 9.85e7) * 50pg = 1.34
PSW 27-Jul-2021 15:21
OK - CL 28Jul21
1234789F
4.11e7
41.10
1.97e7
9.87e6
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.59e4
ES 1234678F
4.48e7
39.75
CS 1234689F
4.23e7*
40.13
ES 1234789F
3.83e7
41.09
1.83e7
9.17e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 7.03e4
ES 1234678F
9.85e7
39.75
CS 1234689F
9.23e7*
40.13
ES 1234789F
8.68e7
41.09
4.15e7
2.08e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.54e3
1.70e4
8.49e3


OCDF
6.59e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.57e3
0%
Abs. Int.
2.22e7
1.11e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
7.37e7
43.40
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 4.95e3
0%
Abs. Int.
2.50e7
1.25e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.28e8
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 4.07e3
0%
Abs. Int.
4.11e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.44e8
43.39
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.91e3
0%
Abs. Int.
4.74e7
2.37e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.28e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

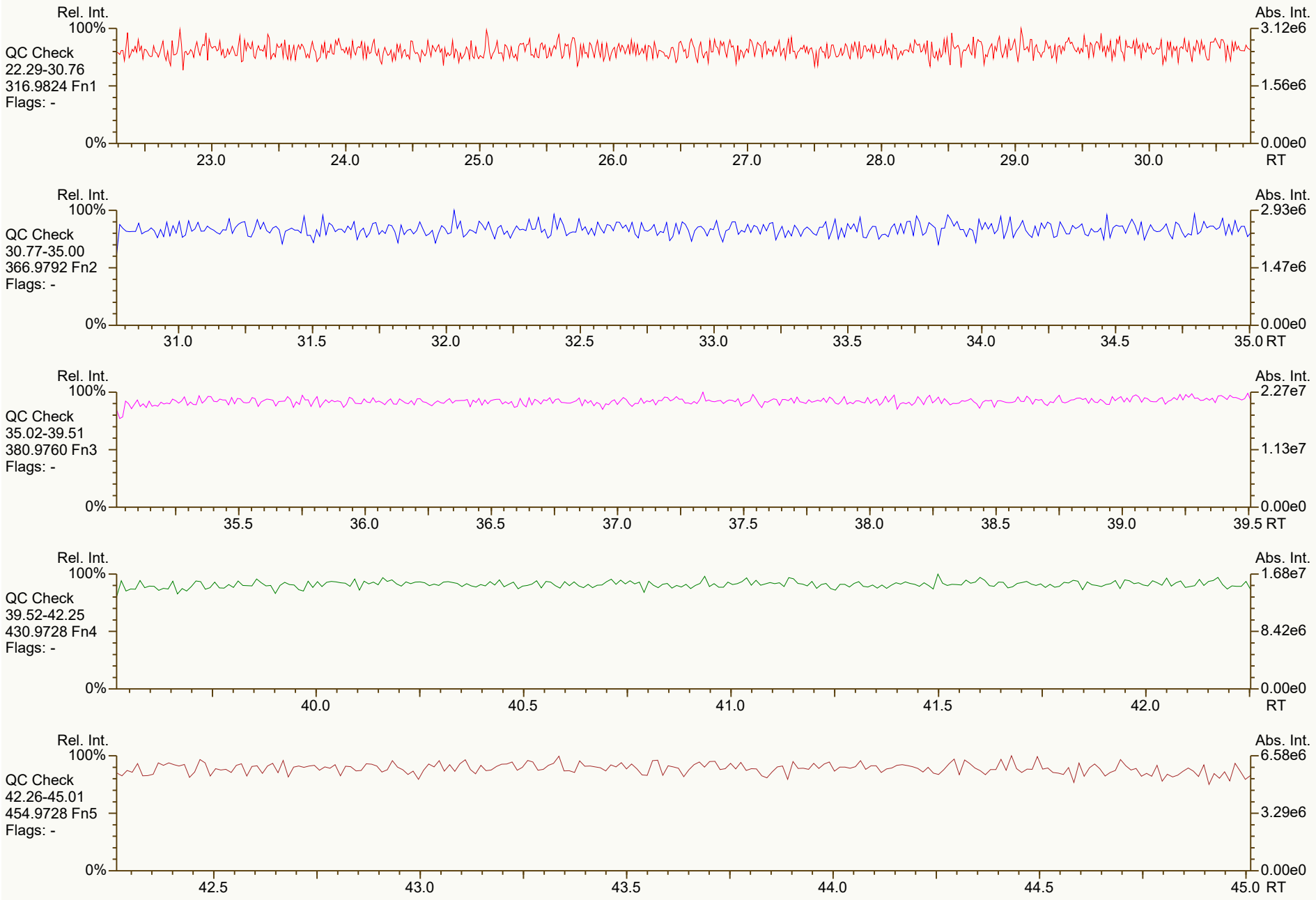
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

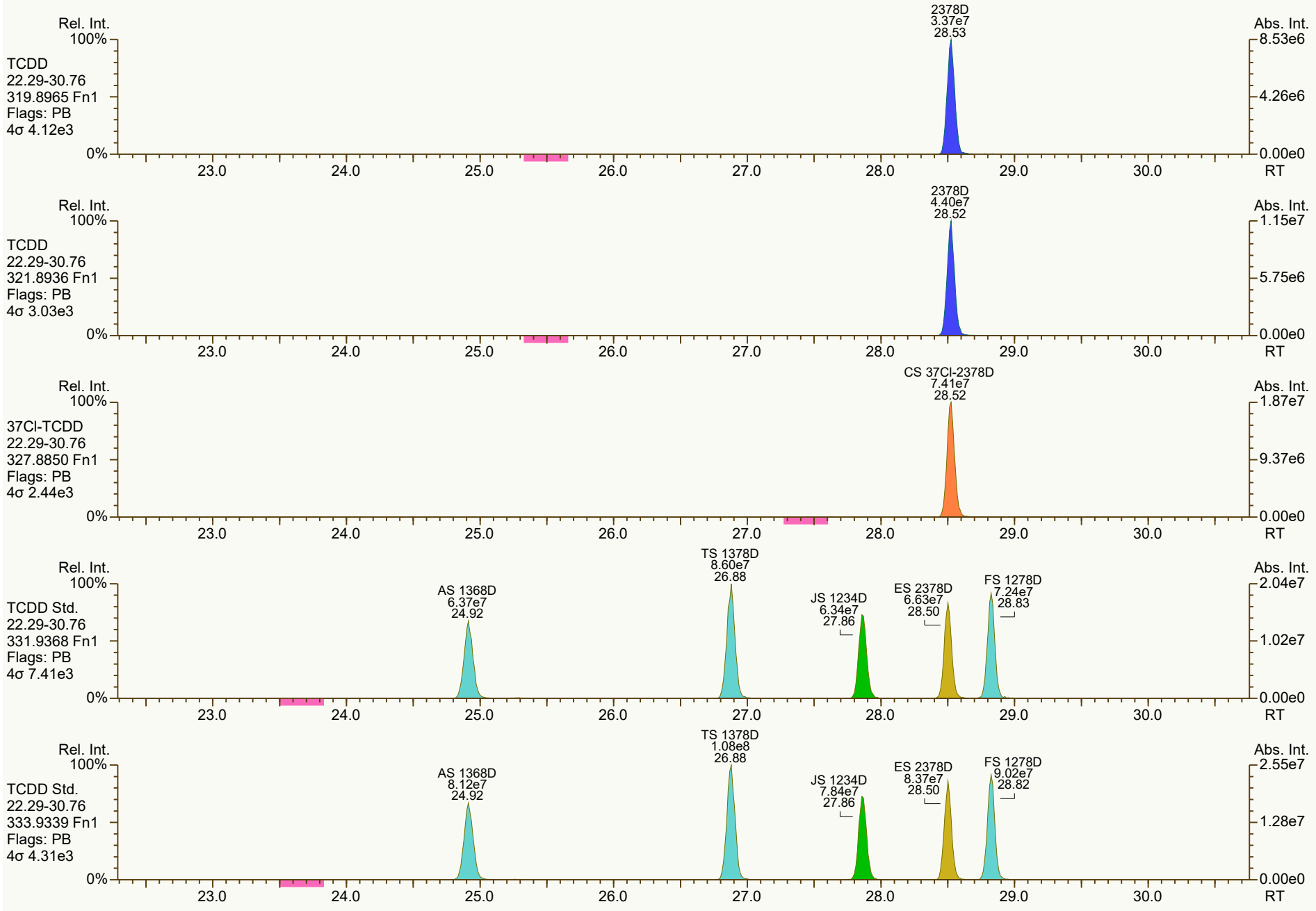
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	7.77E+07	0.76	Y	1.34	1.30	-4%
12378-PeCDD	33.81	3.10E+08	1.55	Y	1.06	1.06	0%
123478-HxCDD	37.68	2.82E+08	1.23	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.84E+08	1.24	Y	1.08	1.10	2%
123789-HxCDD	38.08	2.99E+08	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.67	2.61E+08	1.03	Y	0.97	0.98	0%
OCDD	43.23	4.49E+08	0.90	Y	1.07	1.08	1%
2378-TCDF	27.67	9.59E+07	0.77	Y	0.96	0.96	0%
12378-PeCDF	32.38	4.09E+08	1.58	Y	0.95	0.95	0%
23478-PeCDF	33.47	3.96E+08	1.56	Y	0.94	0.93	-1%
123478-HxCDF	36.69	3.82E+08	1.23	Y	1.23	1.24	0%
123678-HxCDF	36.83	3.97E+08	1.25	Y	1.13	1.13	0%
234678-HxCDF	37.49	3.75E+08	1.25	Y	1.15	1.13	-2%
123789-HxCDF	38.43	3.51E+08	1.24	Y	1.14	1.14	0%
1234678-HpCDF	39.77	3.45E+08	1.03	Y	1.36	1.33	-2%
1234789-HpCDF	41.11	2.99E+08	1.04	Y	1.30	1.30	0%
OCDF	43.41	5.22E+08	0.91	Y	1.03	1.05	2%
ES 2378-TCDD	28.50	1.50E+08	0.79	Y	1.03	1.06	2%
ES 12378-PeCDD	33.789	1.46E+08	1.59	Y	1.03	1.03	0%
ES 123478-HxCDD	37.662	1.34E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.775	1.29E+08	1.28	Y	0.97	0.94	-4%
ES 123789-HxCDD	38.064	1.51E+08	1.27	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.654	1.33E+08	1.06	Y	0.99	0.97	-2%
ES OCDD	43.216	2.07E+08	0.92	Y	0.78	0.75	-3%
ES 2378-TCDF	27.649	2.49E+08	0.80	Y	1.08	1.09	1%
ES 12378-PeCDF	32.362	2.16E+08	1.57	Y	0.93	0.95	2%
ES 23478-PeCDF	33.454	2.12E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.668	1.54E+08	0.51	Y	1.14	1.12	-2%
ES 123678-HxCDF	36.808	1.75E+08	0.53	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.477	1.66E+08	0.53	Y	1.20	1.20	0%
ES 123789-HxCDF	38.409	1.54E+08	0.52	Y	1.14	1.12	-1%
ES 1234678-HpCDF	39.757	1.30E+08	0.45	Y	0.95	0.94	-1%
ES 1234789-HpCDF	41.102	1.15E+08	0.45	Y	0.85	0.83	-2%
ES OCDF	43.398	2.49E+08	0.90	Y	0.93	0.90	-2%

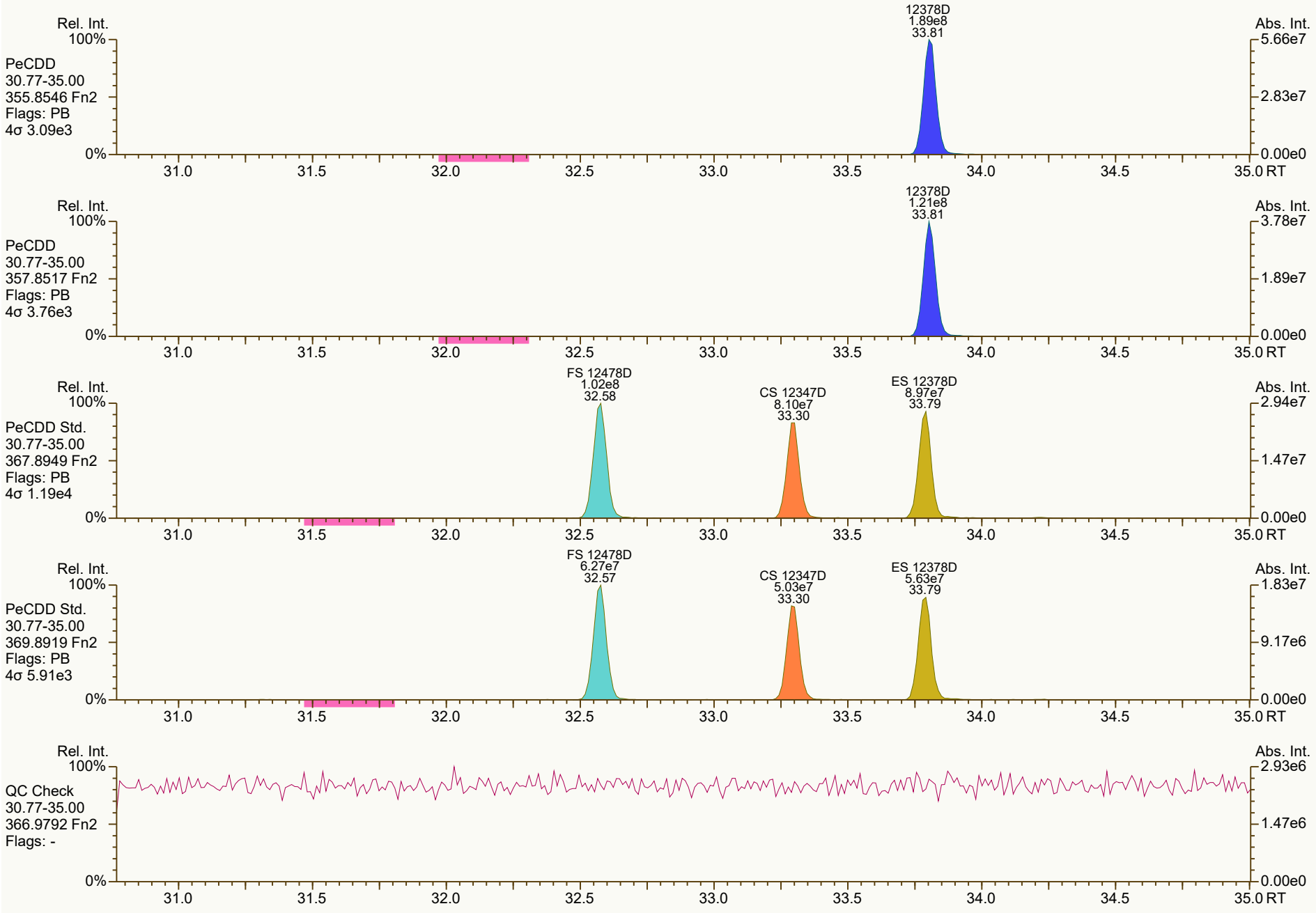
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

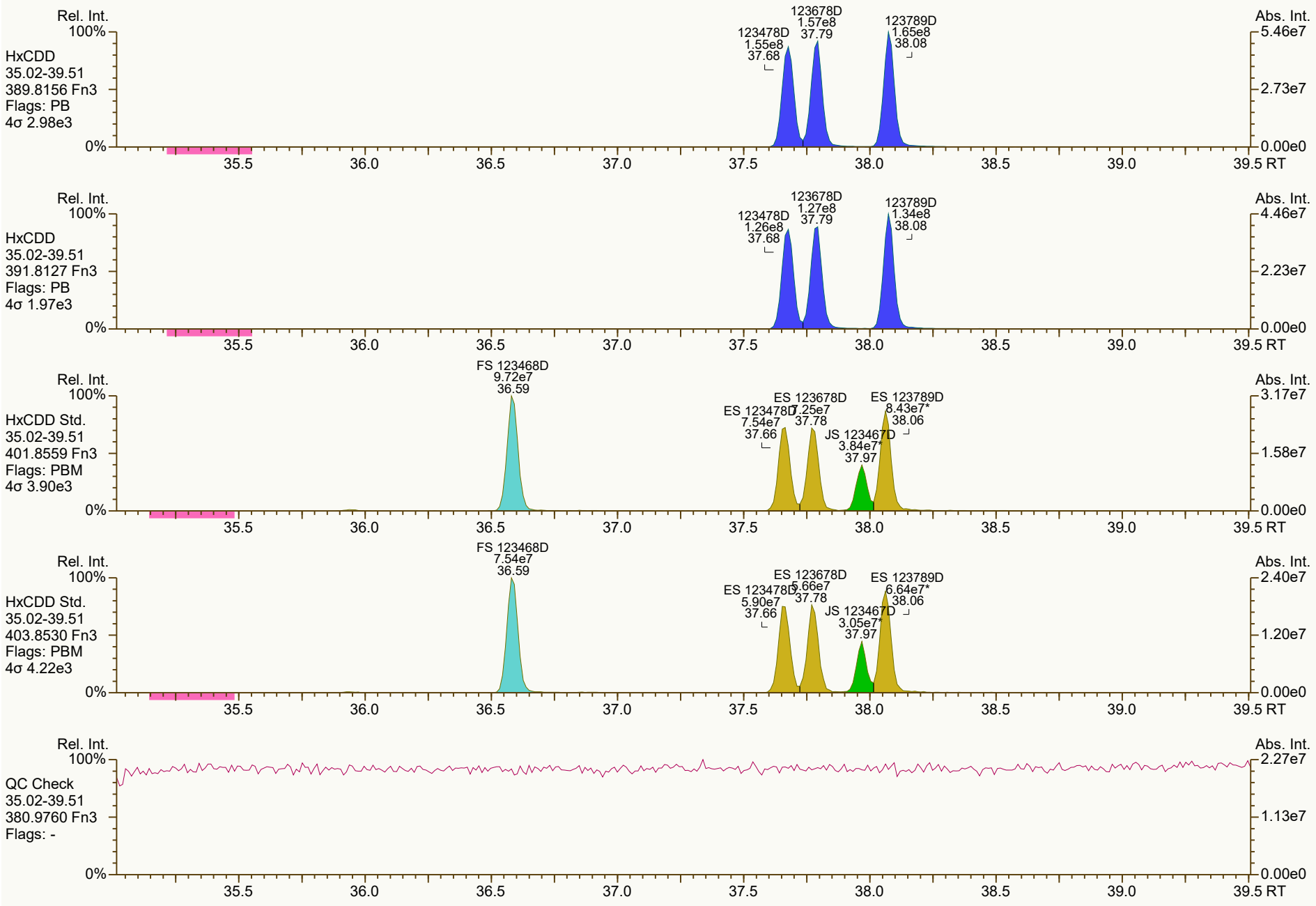
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.42E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	2.27E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	6.89E+07	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.31	1.31	0%
CS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.89	0.93	4%
CS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.87	0.88	2%
CS 123469-HxCDF	37.12	1.50E+08	0.54	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.26	1.23	-2%
SS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.86	0.90	4%
SS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.12	1.50E+08	0.54	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.91	0.92	1%
AS 1368-TCDD	24.92	1.45E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.49E+08	0.79	Y	1.08	1.09	1%
FS 1278-TCDD	28.83	1.63E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.64E+08	1.62	Y	1.09	1.13	3%
FS 123468-HxCDD	36.59	1.73E+08	1.29	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	1.84E+08	1.07	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	1.94E+08	0.79	Y	1.35	1.30	-4%
~~OCDD-a~~	~~43.22~~	~~2.77E+07~~	~~2.50~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~
~~OCDF-a~~	~~43.41~~	~~3.08E+07~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~4%~~

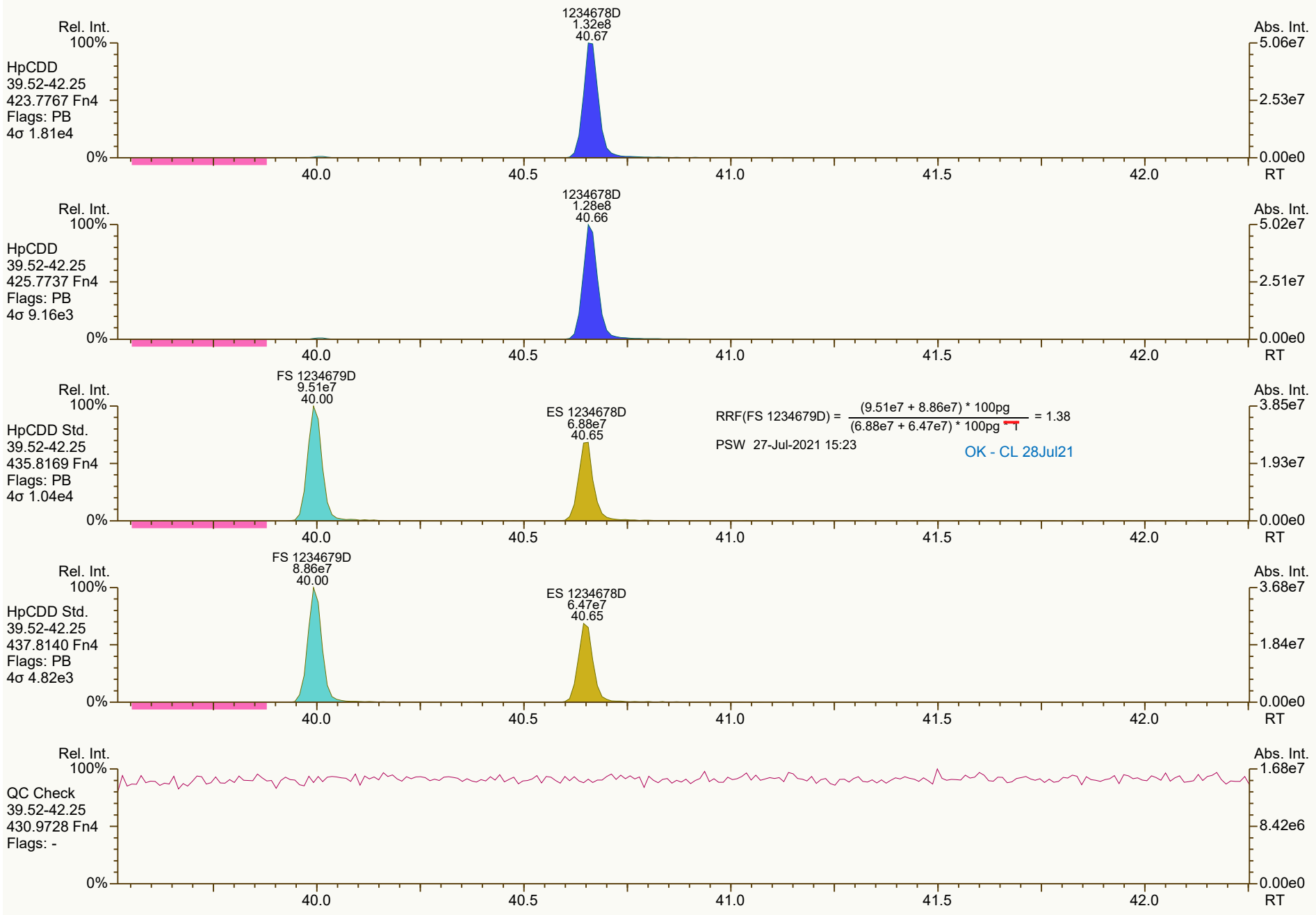
Not reported from this ICAL - CL 28Jul21

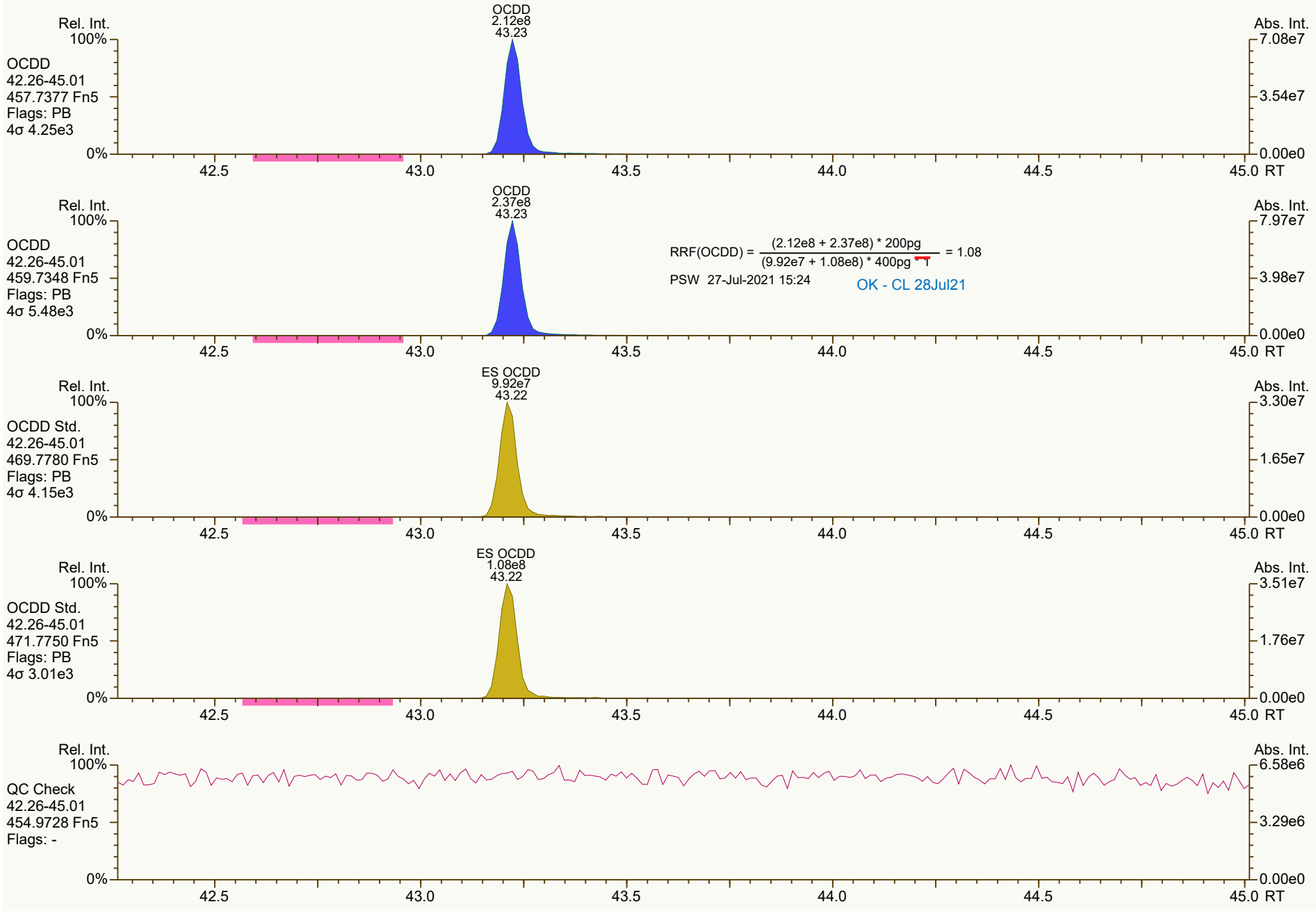

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.68e7
8.42e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 4.12e3
2378D
3.37e7
28.53
8.53e6
4.26e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 3.03e3
2378D
4.40e7
28.52
1.15e7
5.75e6
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.44e3
CS 37Cl-2378D
7.41e7
28.52
1.87e7
9.37e6
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.41e3
AS 1368D
6.37e7
24.92
TS 1378D
8.60e7
26.88
JS 1234D
6.34e7
27.86
ES 2378D
6.63e7
28.50
FS 1278D
7.24e7
28.83
2.04e7
1.02e7
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.31e3
AS 1368D
8.12e7
24.92
TS 1378D
1.08e8
26.88
JS 1234D
7.84e7
27.86
ES 2378D
8.37e7
28.50
FS 1278D
9.02e7
28.82
2.55e7
1.28e7
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.09e3
0%
12378D
1.89e8
33.81
Abs. Int.
5.66e7
2.83e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 3.76e3
0%
12378D
1.21e8
33.81
Abs. Int.
3.78e7
1.89e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 1.19e4
0%
FS 12478D
1.02e8
32.58
CS 12347D
8.10e7
33.30
ES 12378D
8.97e7
33.79
Abs. Int.
2.94e7
1.47e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 5.91e3
0%
FS 12478D
6.27e7
32.57
CS 12347D
5.03e7
33.30
ES 12378D
5.63e7
33.79
Abs. Int.
1.83e7
9.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

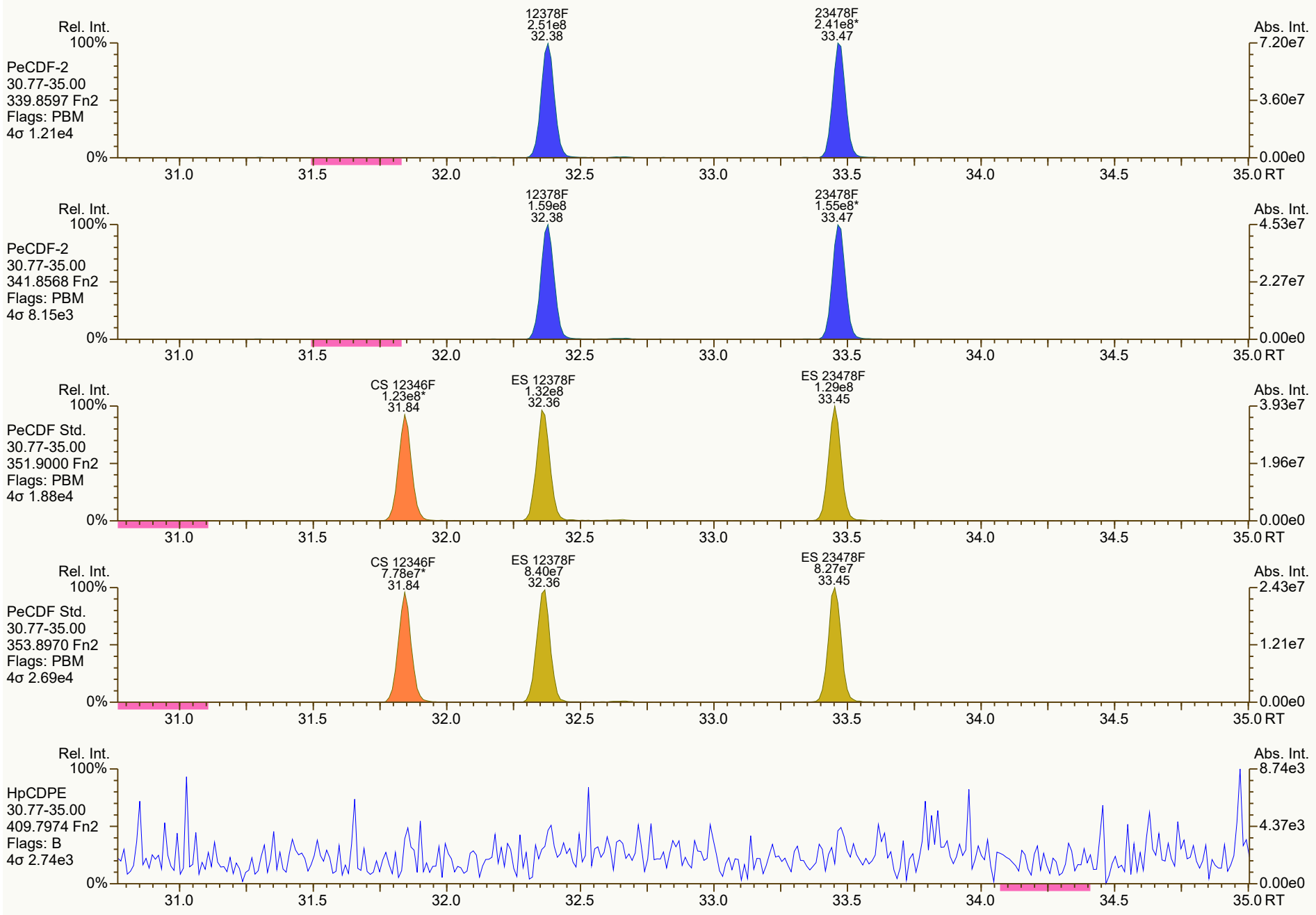

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.98e3
123678D
1.57e8
37.79
123478D
1.55e8
37.68
123789D
1.65e8
38.08
Abs. Int.
5.46e7
2.73e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.97e3
123678D
1.27e8
37.79
123478D
1.26e8
37.68
123789D
1.34e8
38.08
Abs. Int.
4.46e7
2.23e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.90e3
FS 123468D
9.72e7
36.59
ES 123678D
7.25e7
37.78
ES 123478D
7.54e7
37.66
ES 123789D
8.43e7*
38.06
JS 123467D
3.84e7*
37.97
Abs. Int.
3.17e7
1.58e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 4.22e3
FS 123468D
7.54e7
36.59
ES 123678D
5.66e7
37.78
ES 123478D
5.90e7
37.66
ES 123789D
6.64e7*
38.06
JS 123467D
3.05e7*
37.97
Abs. Int.
2.40e7
1.20e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.13e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

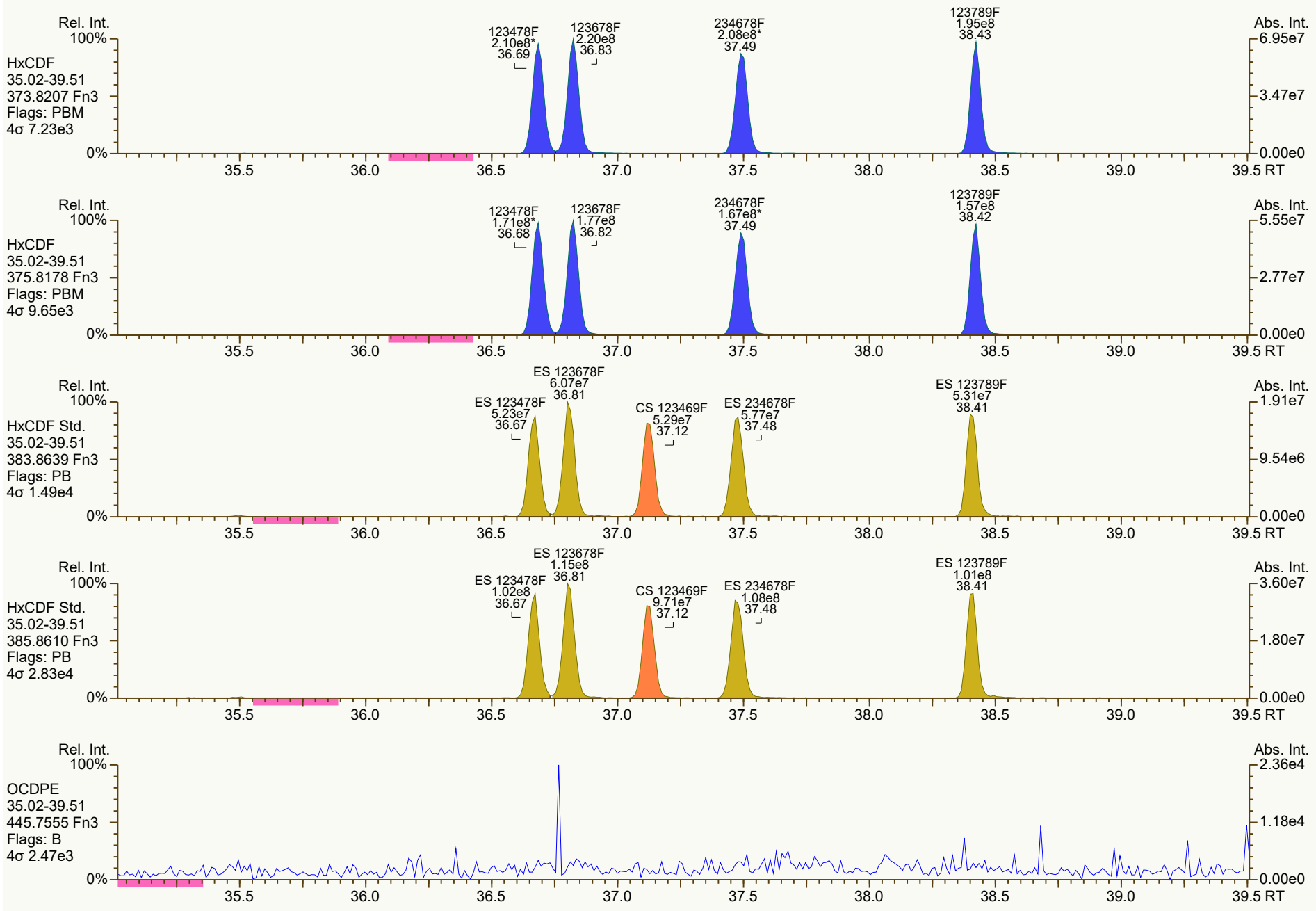

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.81e4
1234678D
1.32e8
40.67
Abs. Int.
5.06e7
2.53e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 9.16e3
1234678D
1.28e8
40.66
5.02e7
2.51e7
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.04e4
FS 1234679D
9.51e7
40.00
ES 1234678D
6.88e7
40.65
RRF(FS 1234679D) = (9.51e7 + 8.86e7) * 100pg / (6.88e7 + 6.47e7) * 100pg = 1.38
PSW 27-Jul-2021 15:23
OK - CL 28Jul21
3.85e7
1.93e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.82e3
FS 1234679D
8.86e7
40.00
ES 1234678D
6.47e7
40.65
3.68e7
1.84e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.68e7
8.42e6

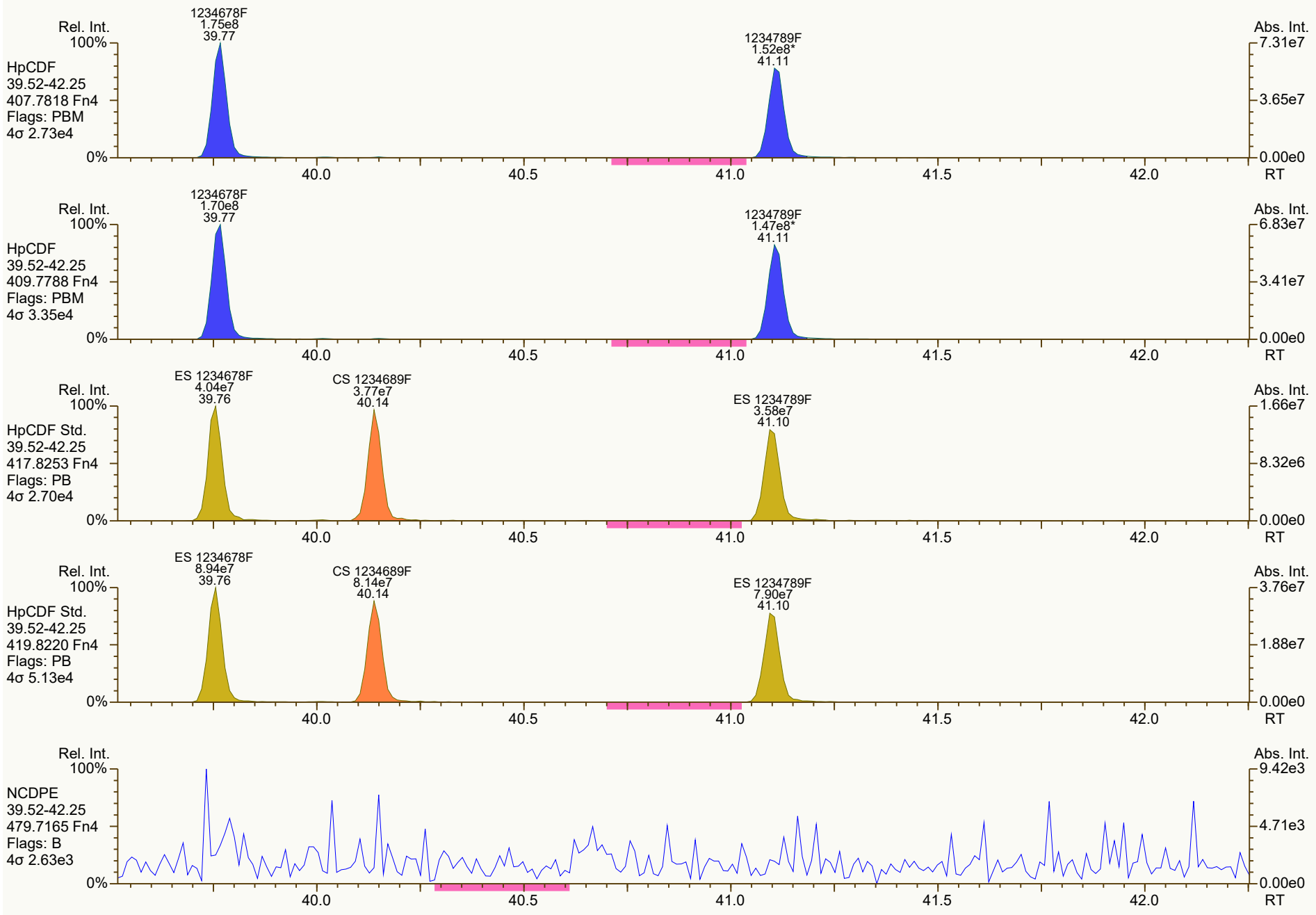

Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PB
4σ 4.25e3
0%
OCDD
2.12e8
43.23
Abs. Int.
7.08e7
3.54e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PB
4σ 5.48e3
0%
OCDD
2.37e8
43.23
RRF(OCDD) = (2.12e8 + 2.37e8) * 200pg / (9.92e7 + 1.08e8) * 400pg = 1.08
PSW 27-Jul-2021 15:24
OK - CL 28Jul21
Abs. Int.
7.97e7
3.98e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.15e3
0%
ES OCDD
9.92e7
43.22
Abs. Int.
3.30e7
1.65e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.01e3
0%
ES OCDD
1.08e8
43.22
Abs. Int.
3.51e7
1.76e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.95e3
0%
2378F
4.17e7
27.67
Abs. Int.
9.81e6
4.91e6
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.51e3
0%
2378F
5.43e7
27.67
Abs. Int.
1.28e7
6.42e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.36e4
0%
AS 1368F
1.10e8
22.86
JS 1234F
9.87e7
26.33
ES 2378F
1.10e8
27.65
Abs. Int.
2.69e7
1.34e7
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.34e4
0%
AS 1368F
1.39e8
22.85
JS 1234F
1.29e8
26.33
ES 2378F
1.38e8
27.65
Abs. Int.
3.21e7
1.60e7
0.00e0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.81e3
0%
Abs. Int.
9.37e3
4.68e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.32e4
6.61e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.55e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.28e3
2.14e4
1.07e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
3.12e6
1.56e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PBM
4σ 1.21e4
0%
12378F
2.51e8
32.38
23478F
2.41e8*
33.47
Abs. Int.
7.20e7
3.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PBM
4σ 8.15e3
0%
12378F
1.59e8
32.38
23478F
1.55e8*
33.47
Abs. Int.
4.53e7
2.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 1.88e4
0%
CS 12346F
1.23e8*
31.84
ES 12378F
1.32e8
32.36
ES 23478F
1.29e8
33.45
Abs. Int.
3.93e7
1.96e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.69e4
0%
CS 12346F
7.78e7*
31.84
ES 12378F
8.40e7
32.36
ES 23478F
8.27e7
33.45
Abs. Int.
2.43e7
1.21e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.74e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 7.23e3
0%
123478F
2.10e8*
36.69
123678F
2.20e8
36.83
234678F
2.08e8*
37.49
123789F
1.95e8
38.43
Abs. Int.
6.95e7
3.47e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.65e3
0%
123478F
1.71e8*
36.68
123678F
1.77e8
36.82
234678F
1.67e8*
37.49
123789F
1.57e8
38.42
Abs. Int.
5.55e7
2.77e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.49e4
0%
ES 123478F
5.23e7
36.67
ES 123678F
6.07e7
36.81
CS 123469F
5.29e7
37.12
ES 234678F
5.77e7
37.48
ES 123789F
5.31e7
38.41
Abs. Int.
1.91e7
9.54e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.83e4
0%
ES 123478F
1.02e8
36.67
ES 123678F
1.15e8
36.81
CS 123469F
9.71e7
37.12
ES 234678F
1.08e8
37.48
ES 123789F
1.01e8
38.41
Abs. Int.
3.60e7
1.80e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.47e3
0%
Abs. Int.
2.36e4
1.18e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
0%
Abs. Int.
RT
40.0
40.5
41.0
41.5
42.0
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PBM
4σ 2.73e4
1234678F
1.75e8
39.77
1234789F
1.52e8*
41.11
7.31e7
3.65e7
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PBM
4σ 3.35e4
1234678F
1.70e8
39.77
1234789F
1.47e8*
41.11
6.83e7
3.41e7
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.70e4
ES 1234678F
4.04e7
39.76
CS 1234689F
3.77e7
40.14
ES 1234789F
3.58e7
41.10
1.66e7
8.32e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.13e4
ES 1234678F
8.94e7
39.76
CS 1234689F
8.14e7
40.14
ES 1234789F
7.90e7
41.10
3.76e7
1.88e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
9.42e3
4.71e3
0.00e0


OCDF
2.49e8
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.68e3
0%
Abs. Int.
8.08e7
4.04e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.73e8
43.41
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.81e3
8.85e7
4.43e7
ES OCDF
1.18e8
43.40
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.20e3
3.94e7
1.97e7
ES OCDF
1.31e8
43.40
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 5.23e3
4.16e7
2.08e7
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
4.05e3
2.02e3

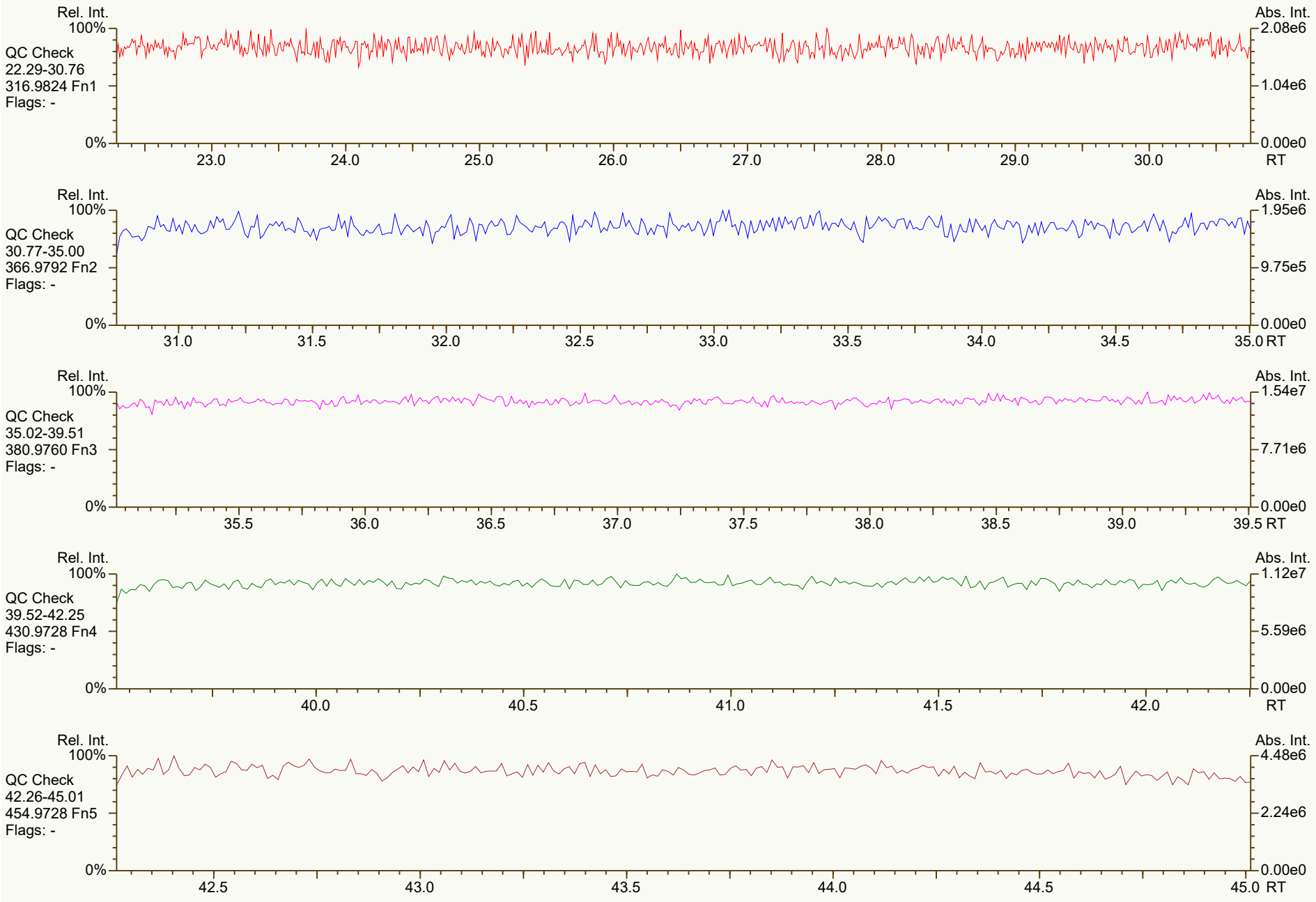
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

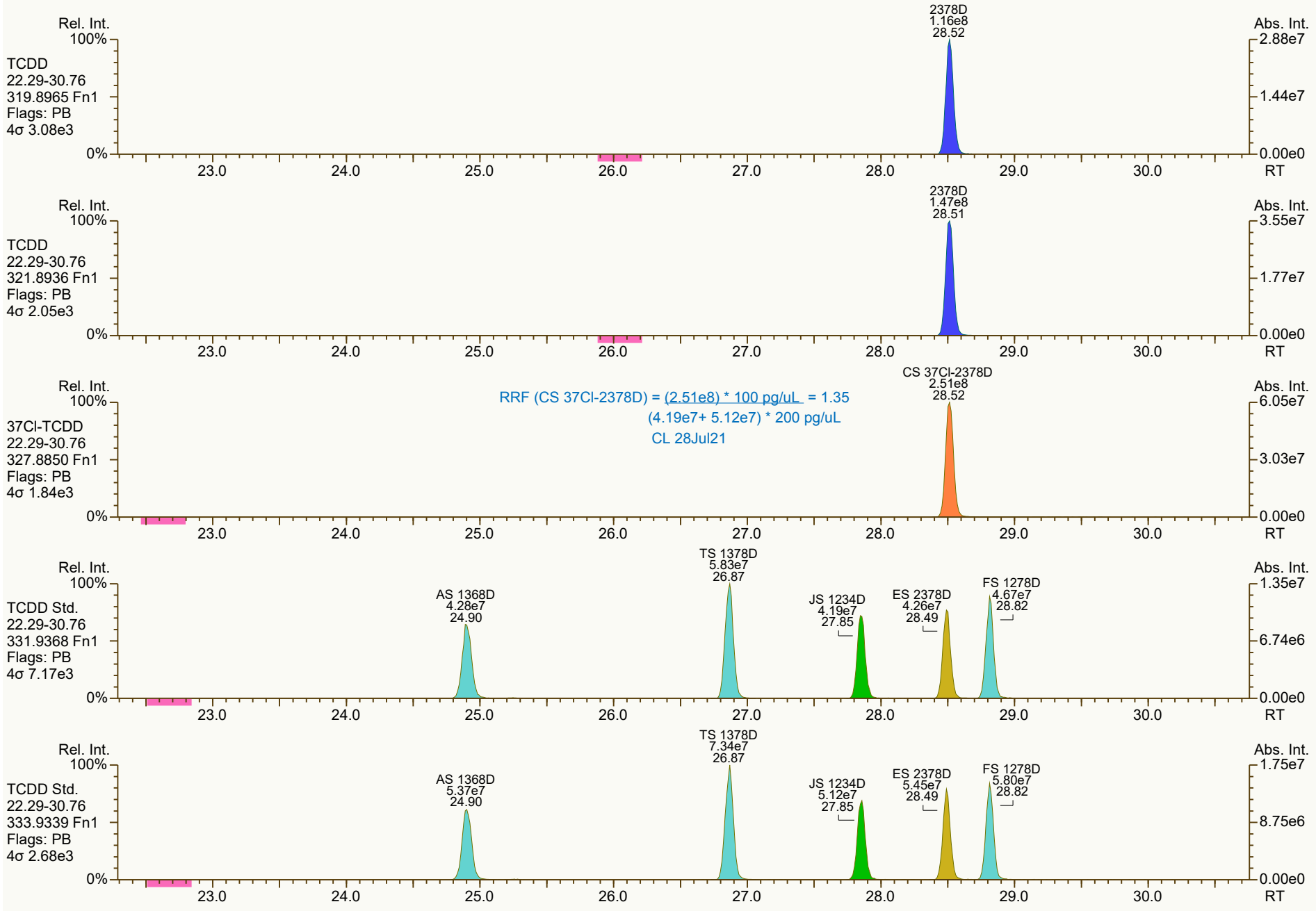
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.63E+08	0.78	Y	1.34	1.35	1%
12378-PeCDD	33.80	1.06E+09	1.56	Y	1.06	1.07	1%
123478-HxCDD	37.67	9.52E+08	1.24	Y	1.06	1.06	0%
123678-HxCDD	37.78	9.75E+08	1.25	Y	1.08	1.10	1%
123789-HxCDD	38.07	1.03E+09	1.25	Y	1.02	1.01	-1%
1234678-HpCDD	40.66	8.94E+08	1.04	Y	0.97	0.98	1%
OCDD	43.22	1.57E+09	0.88	Y	1.07	1.06	-1%
2378-TCDF	27.66	3.19E+08	0.77	Y	0.96	0.97	1%
12378-PeCDF	32.37	1.33E+09	1.51	Y	0.95	0.93	-1%
23478-PeCDF	33.46	1.36E+09	1.58	Y	0.94	0.96	3%
123478-HxCDF	36.68	1.30E+09	1.25	Y	1.23	1.24	0%
123678-HxCDF	36.82	1.35E+09	1.25	Y	1.13	1.14	1%
234678-HxCDF	37.49	1.27E+09	1.24	Y	1.15	1.15	0%
123789-HxCDF	38.42	1.20E+09	1.24	Y	1.14	1.15	2%
1234678-HpCDF	39.76	1.19E+09	1.03	Y	1.36	1.37	1%
1234789-HpCDF	41.10	1.06E+09	1.03	Y	1.30	1.35	4%
OCDF	43.40	1.87E+09	0.90	Y	1.03	1.06	3%
ES 2378-TCDD	28.49	9.72E+07	0.78	Y	1.03	1.04	1%
ES 12378-PeCDD	33.782	9.96E+07	1.62	Y	1.03	1.07	3%
ES 123478-HxCDD	37.654	8.99E+07	1.27	Y	0.99	1.03	4%
ES 123678-HxCDD	37.768	8.89E+07	1.27	Y	0.97	1.02	5%
ES 123789-HxCDD	38.058	1.02E+08	1.27	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.644	9.11E+07	1.06	Y	0.99	1.05	6%
ES OCDD	43.21	1.48E+08	0.89	Y	0.78	0.85	9%
ES 2378-TCDF	27.639	1.64E+08	0.80	Y	1.08	1.08	0%
ES 12378-PeCDF	32.354	1.43E+08	1.61	Y	0.93	0.95	1%
ES 23478-PeCDF	33.446	1.41E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.662	1.05E+08	0.52	Y	1.14	1.21	6%
ES 123678-HxCDF	36.801	1.19E+08	0.53	Y	1.30	1.36	5%
ES 234678-HxCDF	37.468	1.11E+08	0.51	Y	1.20	1.27	6%
ES 123789-HxCDF	38.402	1.04E+08	0.54	Y	1.14	1.20	5%
ES 1234678-HpCDF	39.749	8.70E+07	0.46	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.092	7.84E+07	0.46	Y	0.85	0.90	6%
ES OCDF	43.392	1.76E+08	0.89	Y	0.93	1.01	9%

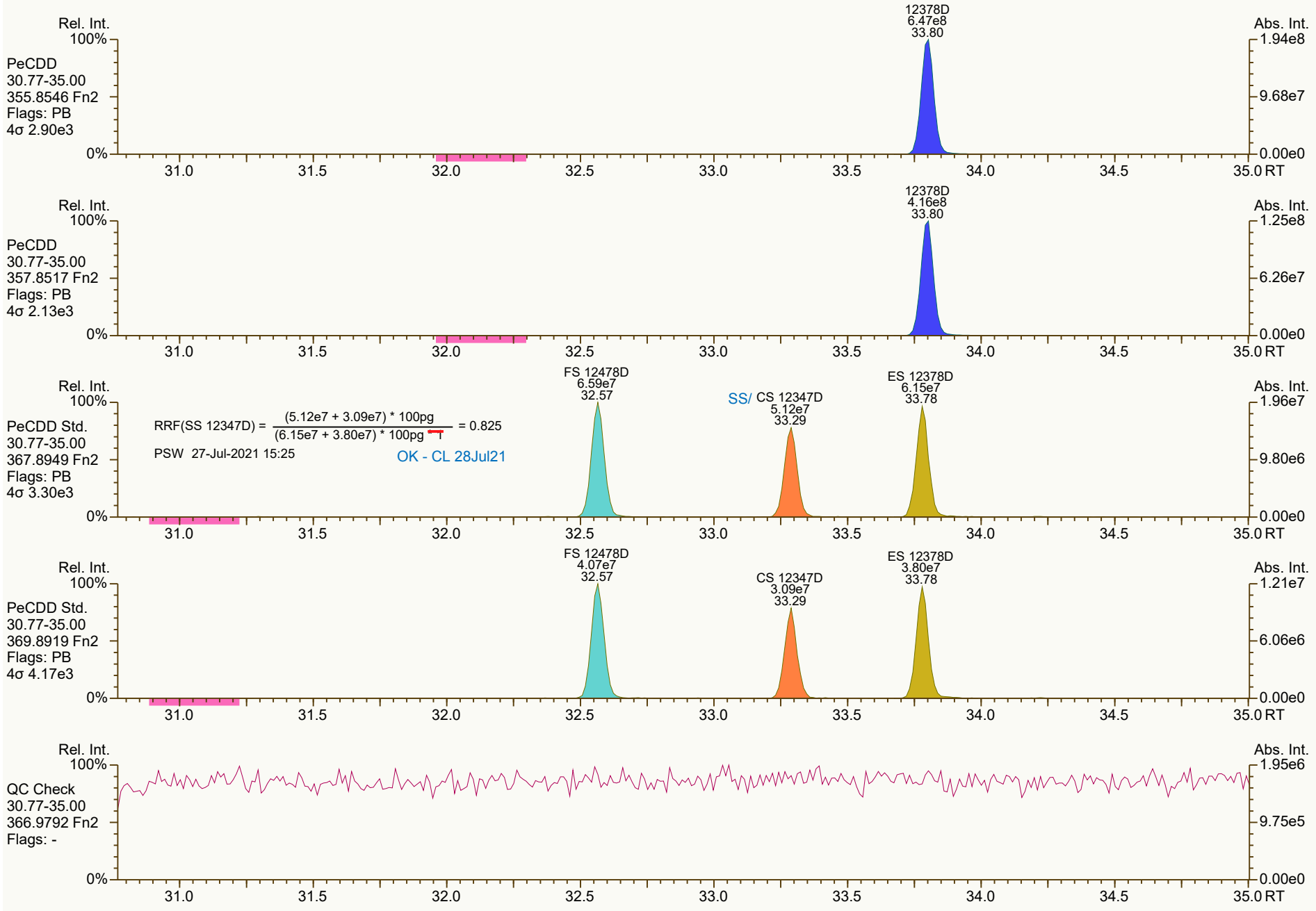
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

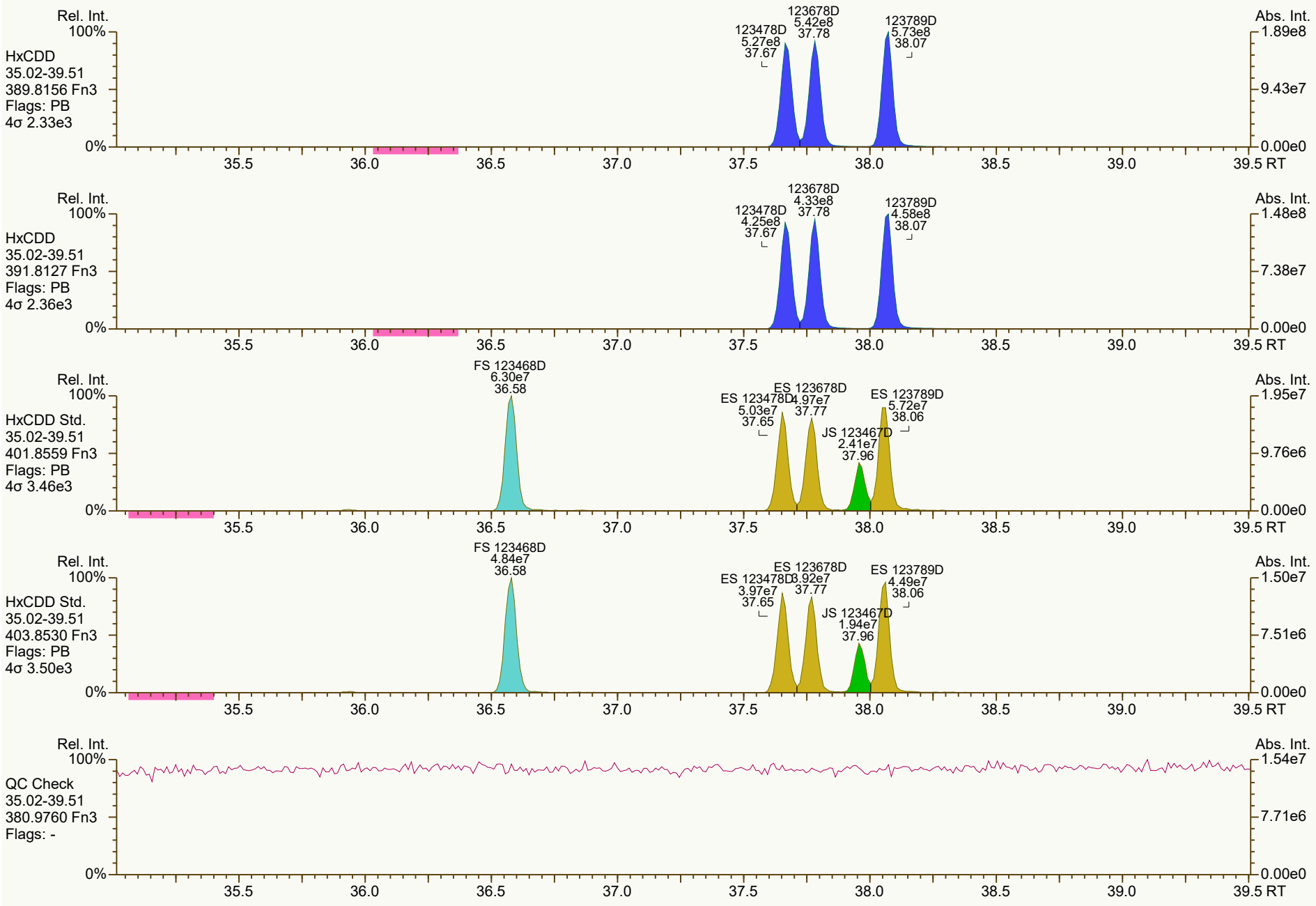
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.85	9.31E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.32	1.51E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	4.35E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.31	1.35	3%
CS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.11	9.75E+07	0.53	Y	1.09	1.12	3%
CS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.26	1.29	3%
SS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.86	0.82	-5%
SS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.93	0.91	-2%
SS 123469-HxCDF	37.11	9.75E+07	0.53	Y	0.84	0.82	-2%
SS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.91	0.86	-6%
AS 1368-TCDD	24.90	9.65E+07	0.80	Y	1.02	1.04	1%
AS 1368-TCDF	22.84	1.66E+08	0.78	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.05E+08	0.81	Y	1.08	1.08	-1%
FS 12478-PeCDD	32.57	1.07E+08	1.62	Y	1.09	1.07	-2%
FS 123468-HxCDD	36.58	1.11E+08	1.30	Y	1.26	1.24	-2%
FS 1234679-HpCDD	39.99	1.18E+08	1.06	Y	1.36	1.30	-4%
TS 1378-TCDD	26.87	1.32E+08	0.79	Y	1.35	1.35	1%
~~OCDD-a~~	~~43.22~~	~~9.57E+07~~	~~2.52~~	~~Y~~	~~0.07~~	~~0.06~~	~~-2%~~
~~OCDF-a~~	~~43.40~~	~~1.10E+08~~	~~2.51~~	~~Y~~	~~0.06~~	~~0.06~~	~~5%~~

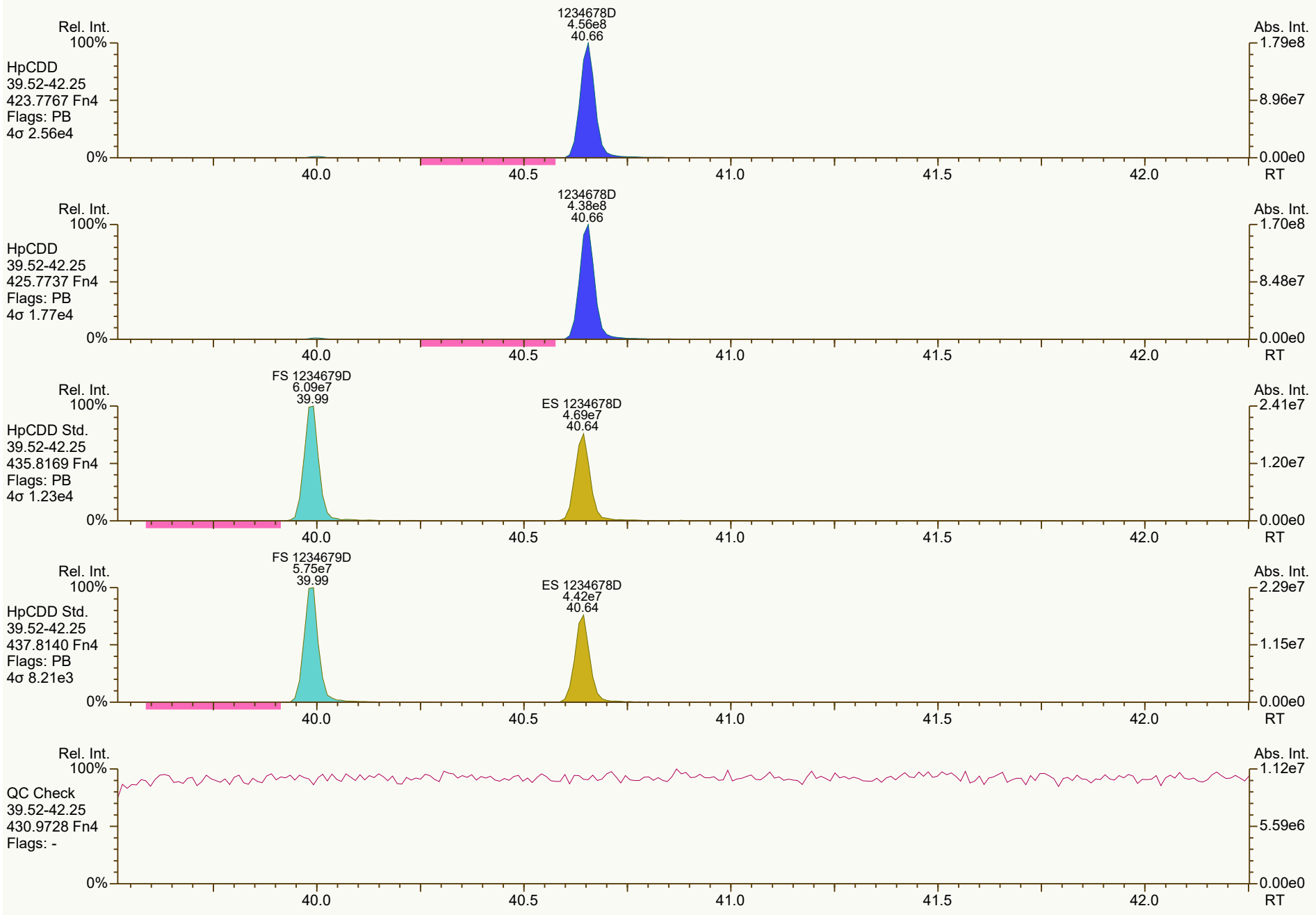
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.08e6
1.04e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.54e7
7.71e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.12e7
5.59e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.08e3
2378D
1.16e8
28.52
2.88e7
1.44e7
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.05e3
2378D
1.47e8
28.51
3.55e7
1.77e7
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.84e3
RRF (CS 37Cl-2378D) = (2.51e8) * 100 pg/uL = 1.35
(4.19e7+ 5.12e7) * 200 pg/uL
CL 28Jul21
CS 37Cl-2378D
2.51e8
28.52
6.05e7
3.03e7
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.17e3
AS 1368D
4.28e7
24.90
TS 1378D
5.83e7
26.87
JS 1234D
4.19e7
27.85
ES 2378D
4.26e7
28.49
FS 1278D
4.67e7
28.82
1.35e7
6.74e6
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.68e3
AS 1368D
5.37e7
24.90
TS 1378D
7.34e7
26.87
JS 1234D
5.12e7
27.85
ES 2378D
5.45e7
28.49
FS 1278D
5.80e7
28.82
1.75e7
8.75e6
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.90e3
0%
12378D
6.47e8
33.80
Abs. Int.
1.94e8
9.68e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.13e3
0%
12378D
4.16e8
33.80
Abs. Int.
1.25e8
6.26e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.30e3
0%
RRF(SS 12347D) = (5.12e7 + 3.09e7) * 100pg / (6.15e7 + 3.80e7) * 100pg = 0.825
PSW 27-Jul-2021 15:25
OK - CL 28Jul21
FS 12478D
6.59e7
32.57
SS/ CS 12347D
5.12e7
33.29
ES 12378D
6.15e7
33.78
Abs. Int.
1.96e7
9.80e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.17e3
0%
FS 12478D
4.07e7
32.57
CS 12347D
3.09e7
33.29
ES 12378D
3.80e7
33.78
Abs. Int.
1.21e7
6.06e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.33e3
123478D
5.27e8
37.67
123678D
5.42e8
37.78
123789D
5.73e8
38.07
Abs. Int.
1.89e8
9.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.36e3
123478D
4.25e8
37.67
123678D
4.33e8
37.78
123789D
4.58e8
38.07
Abs. Int.
1.48e8
7.38e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.46e3
FS 123468D
6.30e7
36.58
ES 123478D
5.03e7
37.65
ES 123678D
4.97e7
37.77
JS 123467D
2.41e7
37.96
ES 123789D
5.72e7
38.06
Abs. Int.
1.95e7
9.76e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.50e3
FS 123468D
4.84e7
36.58
ES 123478D
3.97e7
37.65
ES 123678D
3.92e7
37.77
JS 123467D
1.94e7
37.96
ES 123789D
4.49e7
38.06
Abs. Int.
1.50e7
7.51e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.54e7
7.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

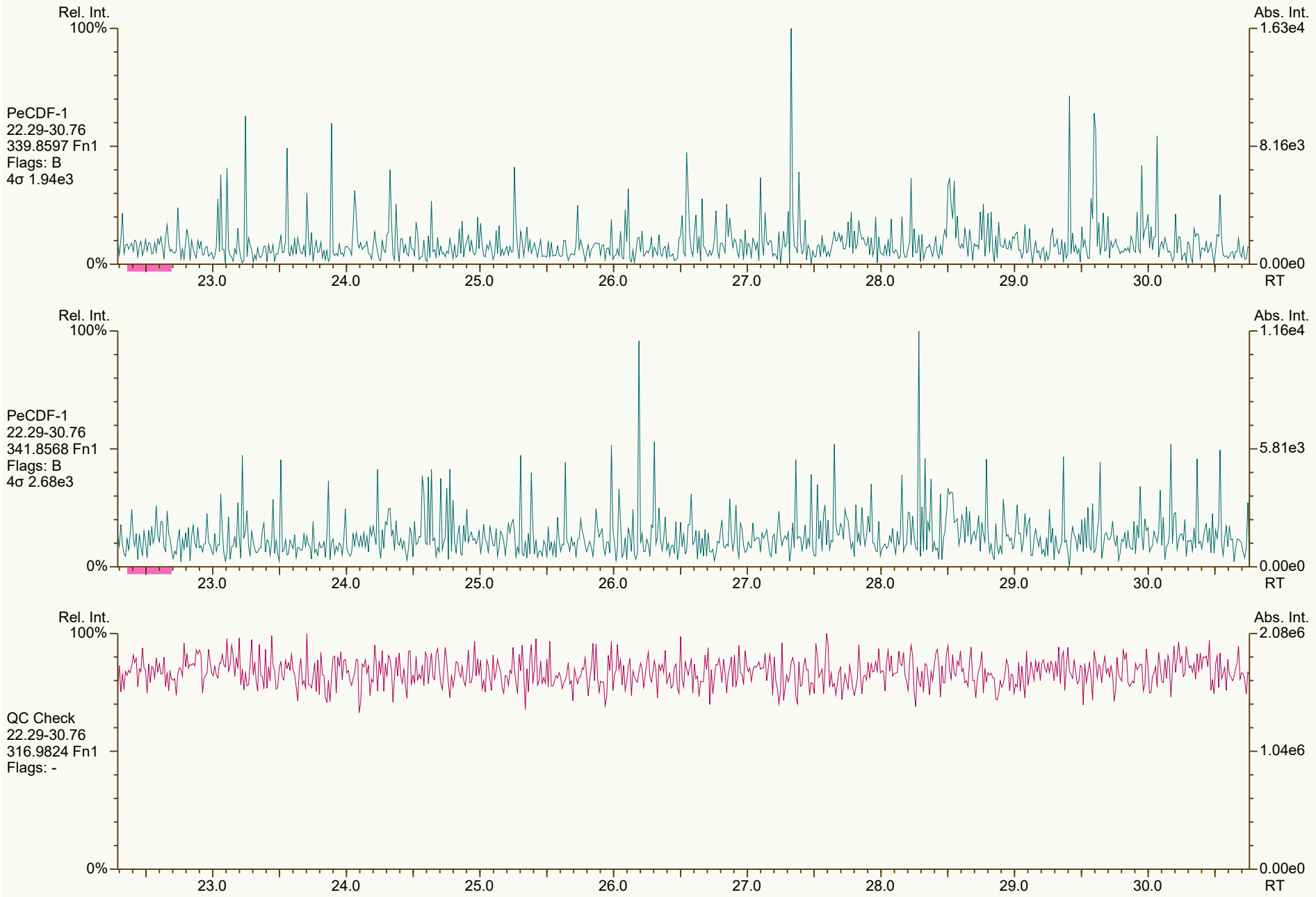

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.56e4
1234678D
4.56e8
40.66
Abs. Int.
1.79e8
8.96e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.77e4
1234678D
4.38e8
40.66
Abs. Int.
1.70e8
8.48e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.23e4
FS 1234679D
6.09e7
39.99
ES 1234678D
4.69e7
40.64
Abs. Int.
2.41e7
1.20e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 8.21e3
FS 1234679D
5.75e7
39.99
ES 1234678D
4.42e7
40.64
Abs. Int.
2.29e7
1.15e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.12e7
5.59e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.62e3
0%
OCDD
7.34e8*
43.22
Abs. Int.
2.52e8
1.26e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
OCDD
8.31e8*
43.22
Abs. Int.
2.81e8
1.40e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 3.01e3
0%
ES OCDD
6.94e7
43.21
Abs. Int.
2.31e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.23e3
0%
ES OCDD
7.81e7
43.21
Abs. Int.
2.71e7
1.35e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.39e3
2378F
1.39e8
27.66
3.30e7
1.65e7
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 1.93e3
2378F
1.81e8
27.66
4.26e7
2.13e7
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.93e4
AS 1368F
7.29e7
22.84
JS 1234F
6.68e7
26.32
ES 2378F
7.29e7
27.64
1.72e7
8.58e6
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 9.59e3
AS 1368F
9.33e7
22.84
JS 1234F
8.44e7
26.31
ES 2378F
9.11e7
27.64
2.15e7
1.08e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.69e3
1.28e4
6.39e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS5_210727_DF_RA | Sample ID: SIL 25-5-3 | Acq: 27-Jul-2021 13:09:36

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89 | User: PSW Datafile: 210727R07

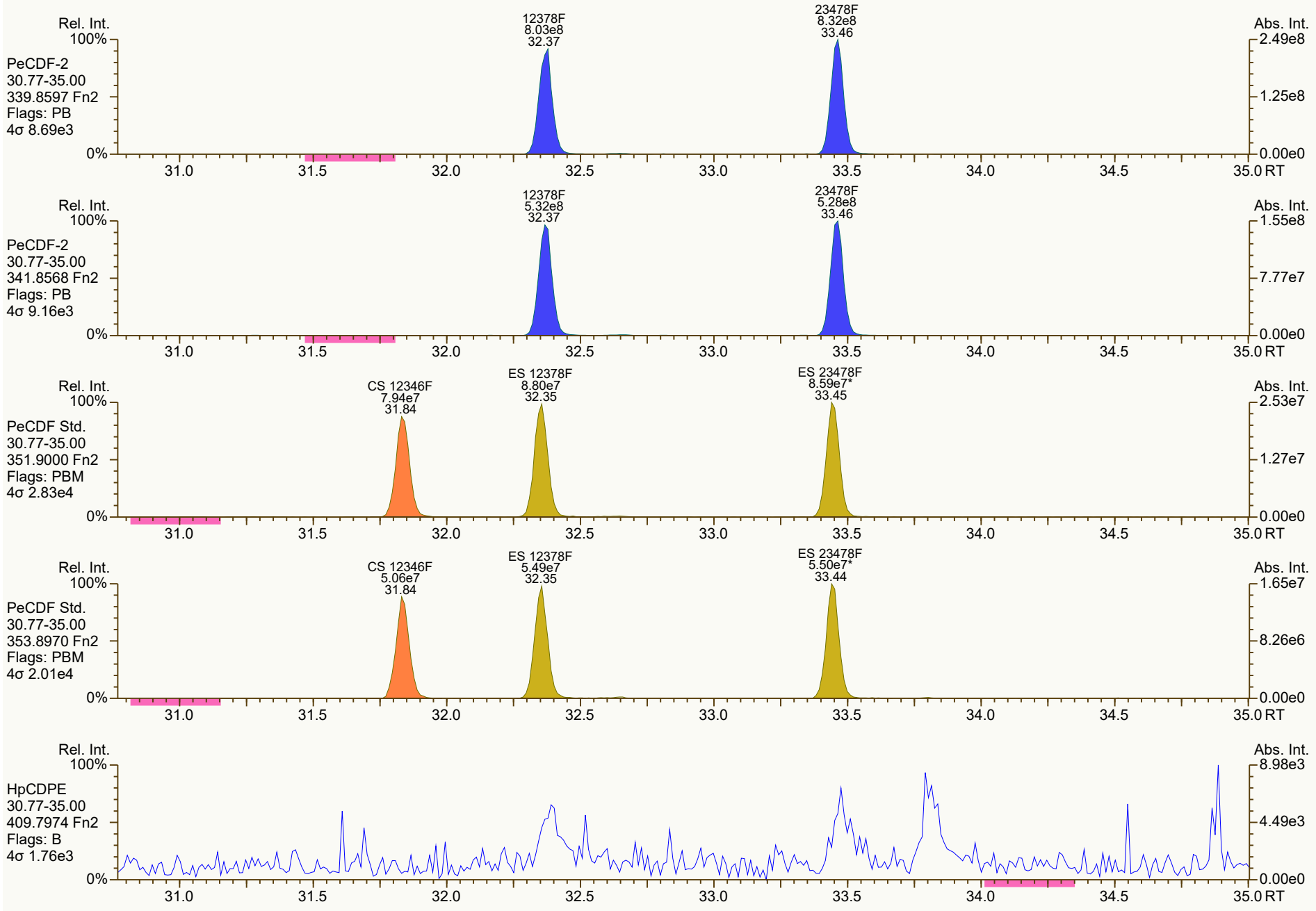


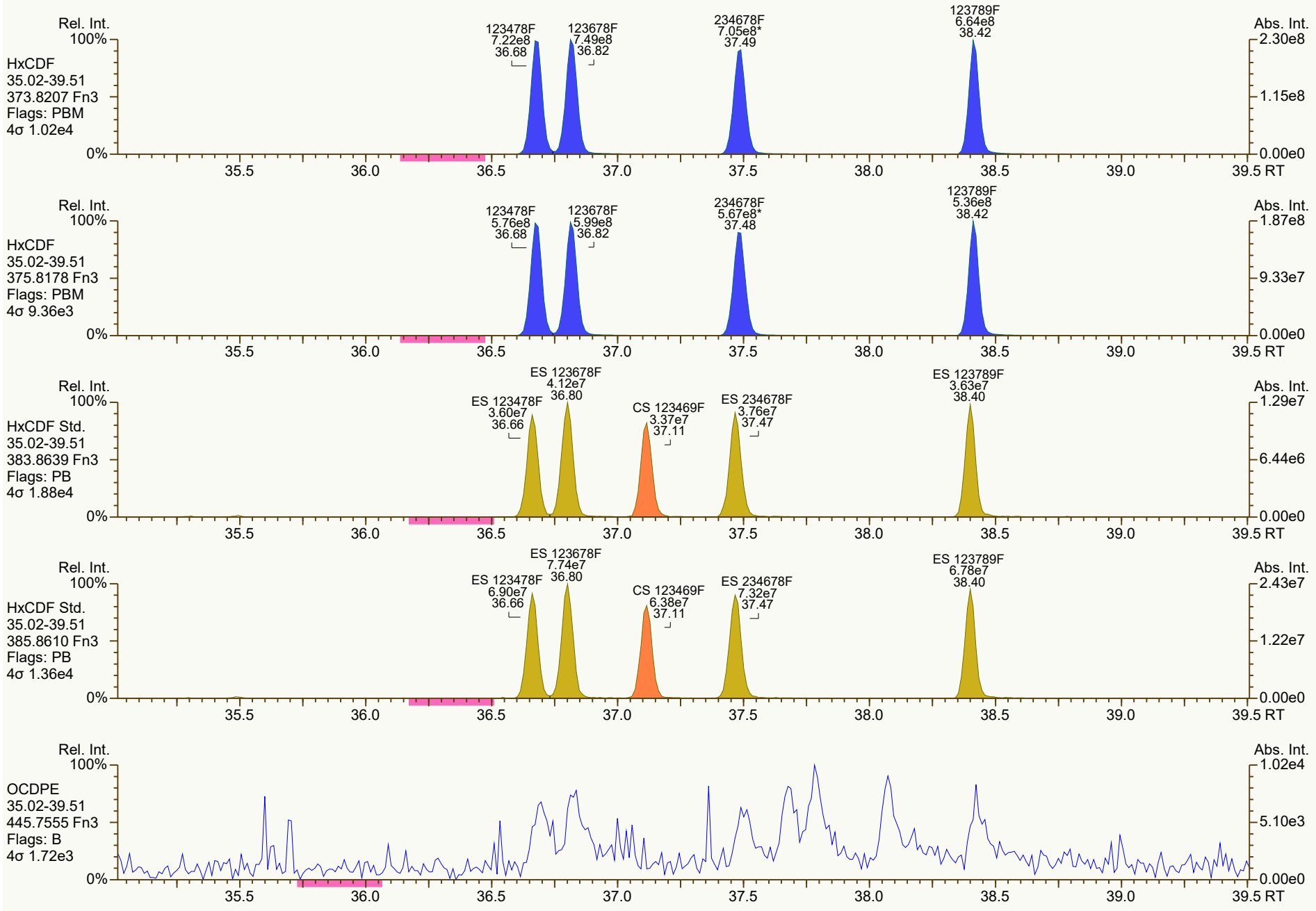
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)

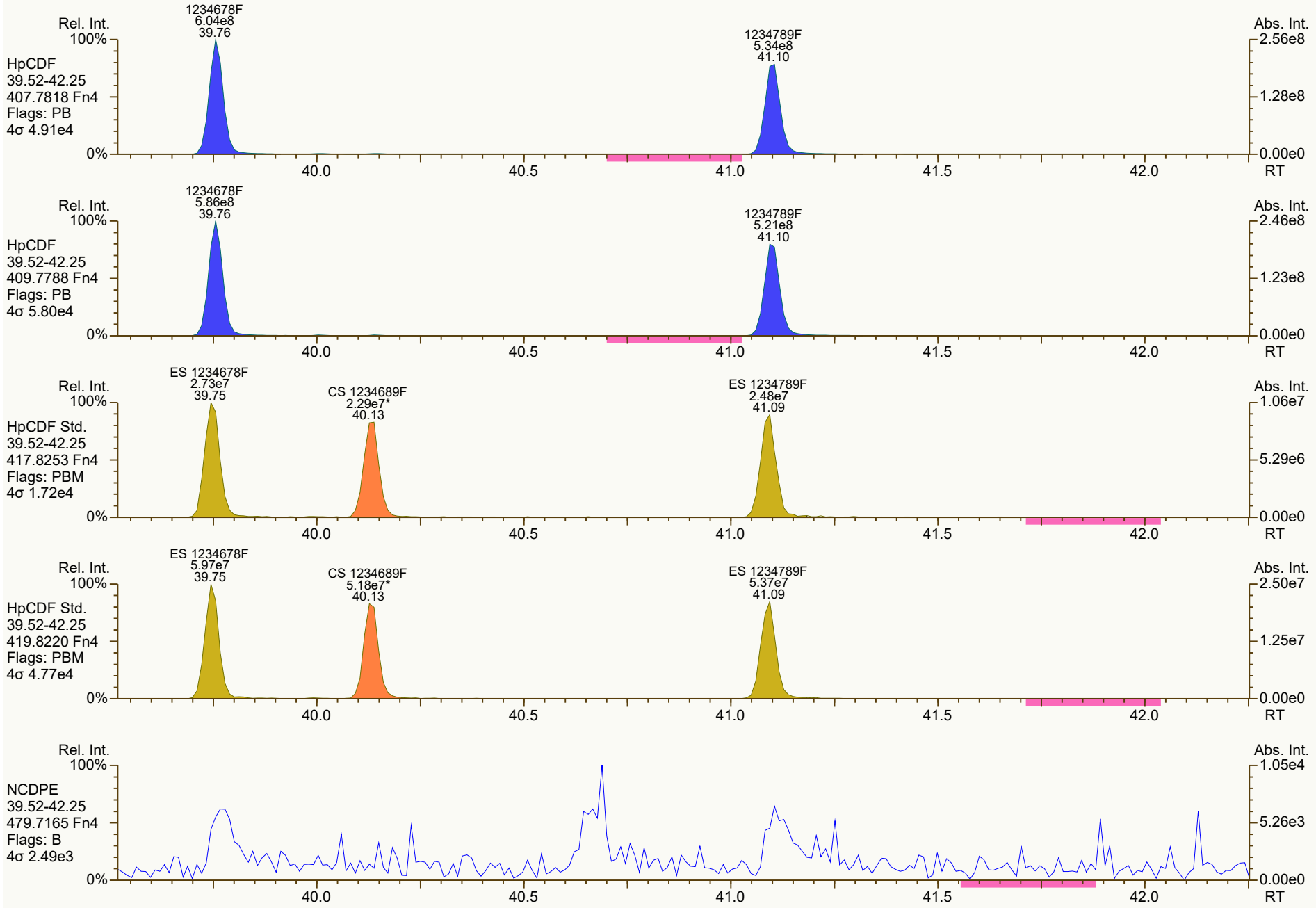
Peak annotation: Areas, Centroids

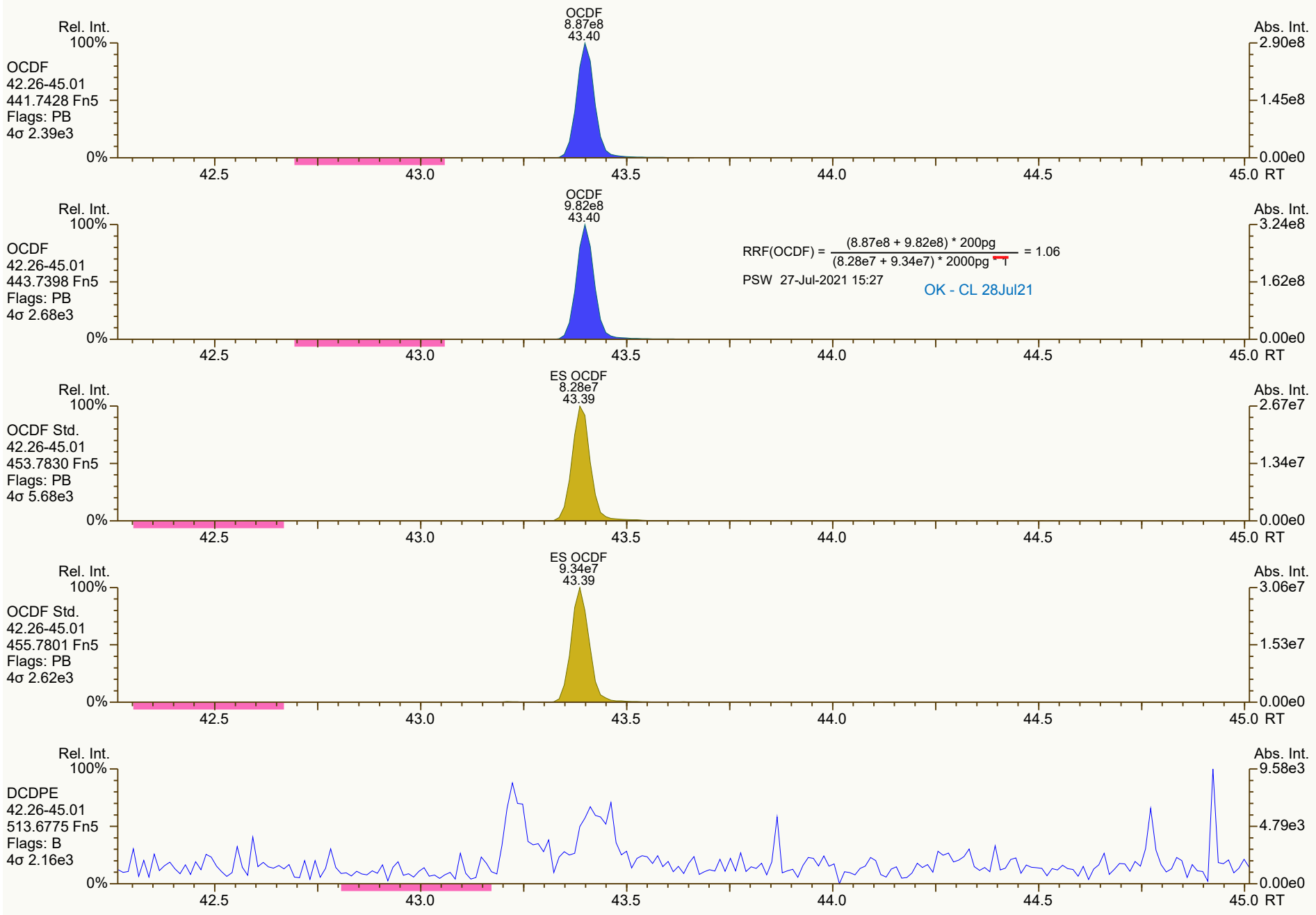
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7511 scc: 147-553

PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 8.69e3
0%
12378F
8.03e8
32.37
23478F
8.32e8
33.46
Abs. Int.
2.49e8
1.25e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 9.16e3
0%
12378F
5.32e8
32.37
23478F
5.28e8
33.46
Abs. Int.
1.55e8
7.77e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.83e4
0%
CS 12346F
7.94e7
31.84
ES 12378F
8.80e7
32.35
ES 23478F
8.59e7*
33.45
Abs. Int.
2.53e7
1.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.01e4
0%
CS 12346F
5.06e7
31.84
ES 12378F
5.49e7
32.35
ES 23478F
5.50e7*
33.44
Abs. Int.
1.65e7
8.26e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 1.76e3
0%
Abs. Int.
8.98e3
4.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.02e4
0%
123478F
7.22e8
36.68
123678F
7.49e8
36.82
234678F
7.05e8*
37.49
123789F
6.64e8
38.42
Abs. Int.
2.30e8
1.15e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.36e3
0%
123478F
5.76e8
36.68
123678F
5.99e8
36.82
234678F
5.67e8*
37.48
123789F
5.36e8
38.42
Abs. Int.
1.87e8
9.33e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.88e4
0%
ES 123478F
3.60e7
36.66
ES 123678F
4.12e7
36.80
CS 123469F
3.37e7
37.11
ES 234678F
3.76e7
37.47
ES 123789F
3.63e7
38.40
Abs. Int.
1.29e7
6.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.36e4
0%
ES 123478F
6.90e7
36.66
ES 123678F
7.74e7
36.80
CS 123469F
6.38e7
37.11
ES 234678F
7.32e7
37.47
ES 123789F
6.78e7
38.40
Abs. Int.
2.43e7
1.22e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.72e3
0%
Abs. Int.
1.02e4
5.10e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e4
1234678F
6.04e8
39.76
1234789F
5.34e8
41.10
0%
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
2.56e8
1.28e8
0.00e0
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.80e4
1234678F
5.86e8
39.76
1234789F
5.21e8
41.10
0%
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
2.46e8
1.23e8
0.00e0
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 1.72e4
ES 1234678F
2.73e7
39.75
CS 1234689F
2.29e7*
40.13
ES 1234789F
2.48e7
41.09
0%
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.06e7
5.29e6
0.00e0
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 4.77e4
ES 1234678F
5.97e7
39.75
CS 1234689F
5.18e7*
40.13
ES 1234789F
5.37e7
41.09
0%
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
2.50e7
1.25e7
0.00e0
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.49e3
0%
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.05e4
5.26e3
0.00e0


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.39e3
0%
OCDF
8.87e8
43.40
Abs. Int.
2.90e8
1.45e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.68e3
0%
OCDF
9.82e8
43.40
RRF(OCDF) = (8.87e8 + 9.82e8) * 200pg / (8.28e7 + 9.34e7) * 2000pg = 1.06
PSW 27-Jul-2021 15:27
OK - CL 28Jul21
Abs. Int.
3.24e8
1.62e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.68e3
0%
ES OCDF
8.28e7
43.39
Abs. Int.
2.67e7
1.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.62e3
0%
ES OCDF
9.34e7
43.39
Abs. Int.
3.06e7
1.53e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.16e3
0%
Abs. Int.
9.58e3
4.79e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

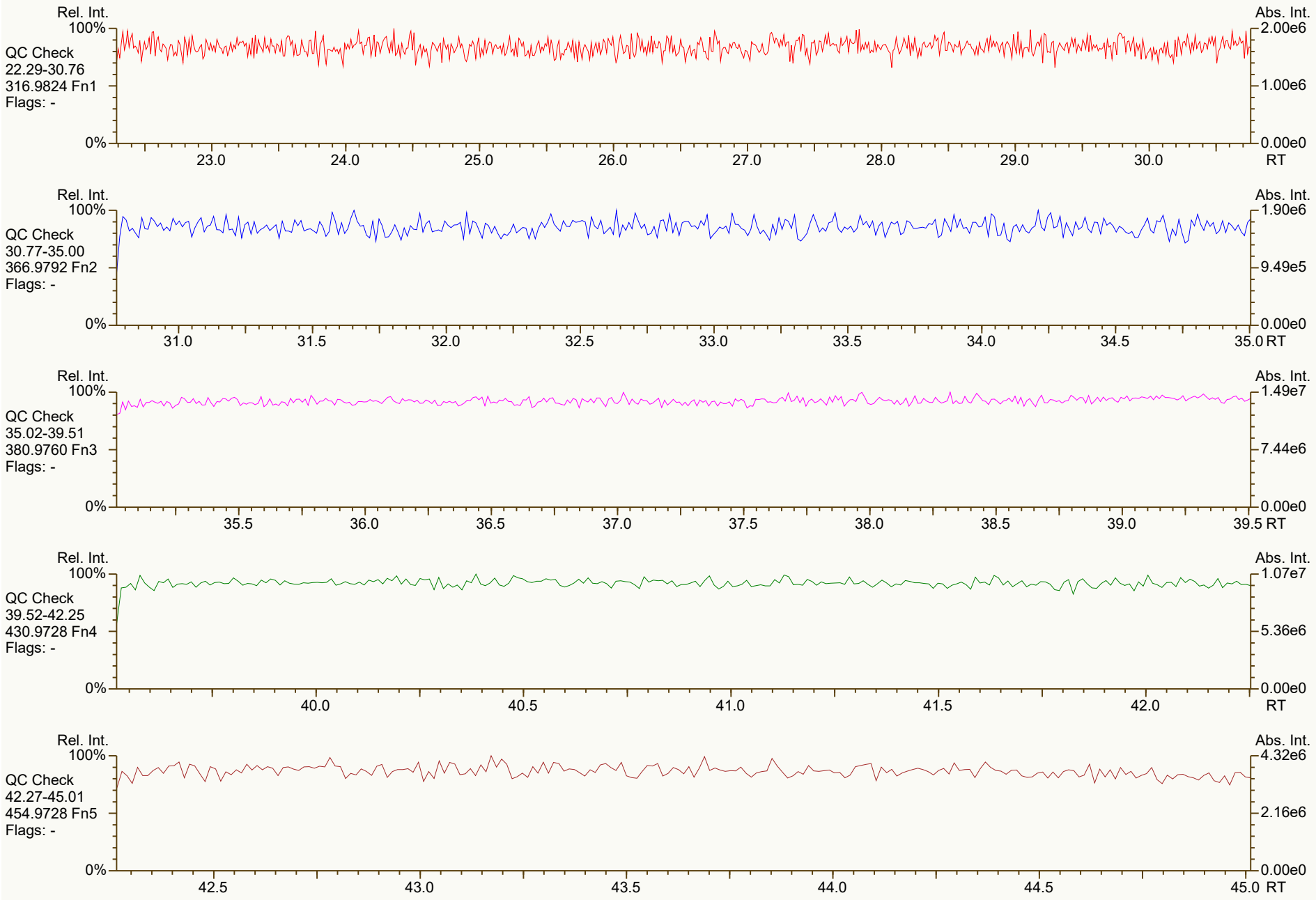
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

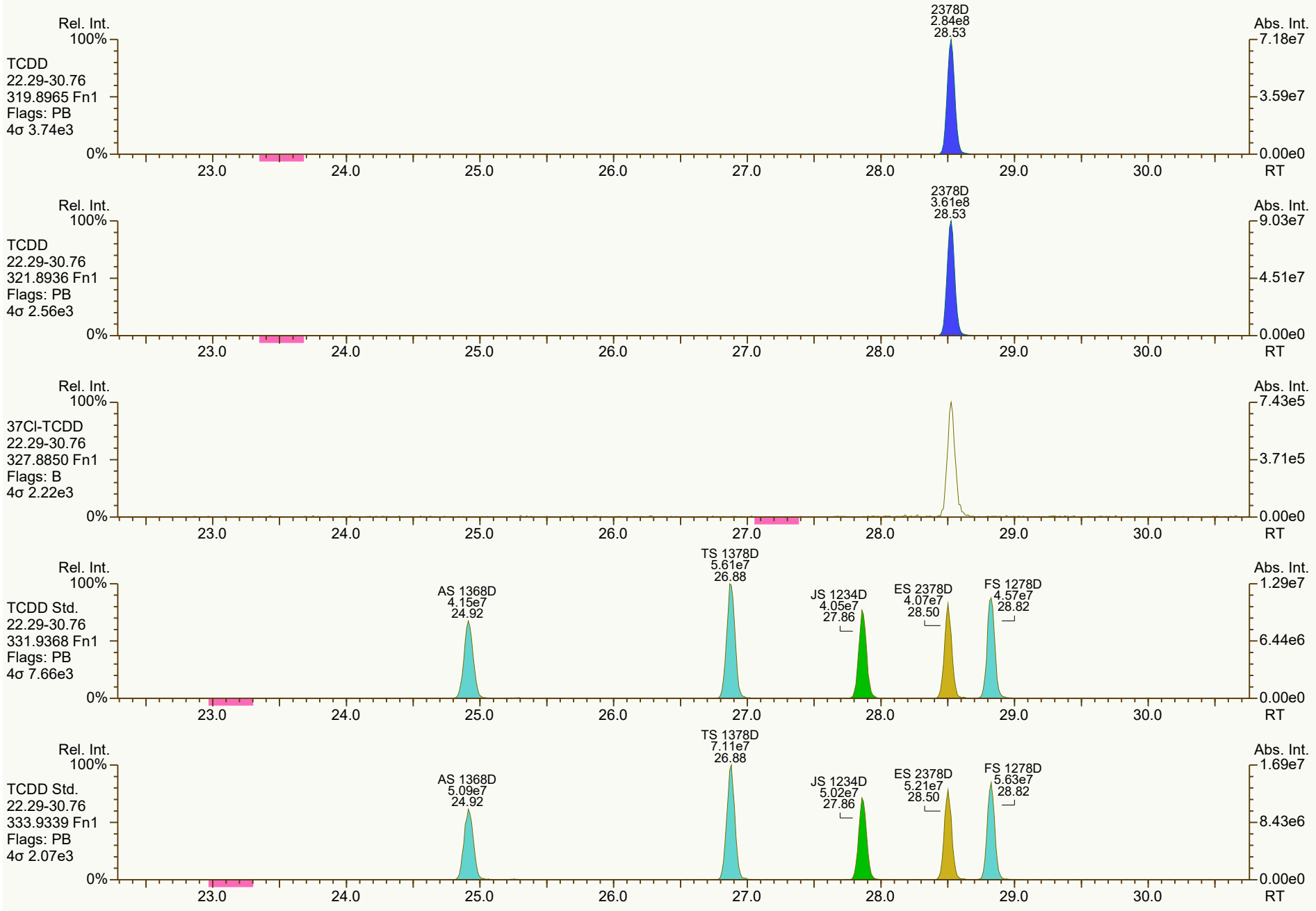
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	6.45E+08	0.79	Y	1.34	1.39	3%
12378-PeCDD	33.81	2.62E+09	1.57	Y	1.06	1.05	0%
123478-HxCDD	37.68	2.41E+09	1.26	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.46E+09	1.25	Y	1.08	1.09	1%
123789-HxCDD	38.08	2.63E+09	1.25	Y	1.02	1.00	-1%
1234678-HpCDD	40.66	2.28E+09	1.03	Y	0.97	1.00	2%
OCDD	43.24	4.13E+09	0.89	Y	1.07	1.08	1%
2378-TCDF	27.67	7.99E+08	0.77	Y	0.96	0.99	3%
12378-PeCDF	32.38	3.47E+09	1.57	Y	0.95	0.96	2%
23478-PeCDF	33.47	3.38E+09	1.55	Y	0.94	0.96	2%
123478-HxCDF	36.69	3.24E+09	1.24	Y	1.23	1.22	-1%
123678-HxCDF	36.83	3.36E+09	1.24	Y	1.13	1.14	0%
234678-HxCDF	37.49	3.14E+09	1.25	Y	1.15	1.15	0%
123789-HxCDF	38.43	3.10E+09	1.25	Y	1.14	1.16	2%
1234678-HpCDF	39.77	3.01E+09	1.04	Y	1.36	1.36	0%
1234789-HpCDF	41.11	2.70E+09	1.03	Y	1.30	1.33	2%
OCDF	43.42	4.91E+09	0.91	Y	1.03	1.08	5%
ES 2378-TCDD	28.50	9.29E+07	0.78	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.791	9.93E+07	1.63	Y	1.03	1.10	6%
ES 123478-HxCDD	37.663	9.19E+07	1.24	Y	0.99	1.07	7%
ES 123678-HxCDD	37.778	9.02E+07	1.27	Y	0.97	1.05	7%
ES 123789-HxCDD	38.067	1.05E+08	1.27	Y	1.12	1.22	8%
ES 1234678-HpCDD	40.65	9.14E+07	1.03	Y	0.99	1.06	7%
ES OCDD	43.227	1.53E+08	0.91	Y	0.78	0.89	14%
ES 2378-TCDF	27.65	1.62E+08	0.78	Y	1.08	1.10	2%
ES 12378-PeCDF	32.365	1.44E+08	1.56	Y	0.93	0.98	5%
ES 23478-PeCDF	33.455	1.42E+08	1.59	Y	0.92	0.96	4%
ES 123478-HxCDF	36.671	1.06E+08	0.53	Y	1.14	1.23	8%
ES 123678-HxCDF	36.81	1.18E+08	0.53	Y	1.30	1.37	6%
ES 234678-HxCDF	37.477	1.09E+08	0.52	Y	1.20	1.27	5%
ES 123789-HxCDF	38.411	1.07E+08	0.52	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.757	8.85E+07	0.45	Y	0.95	1.03	8%
ES 1234789-HpCDF	41.1	8.15E+07	0.45	Y	0.85	0.94	12%
ES OCDF	43.407	1.83E+08	0.90	Y	0.93	1.06	14%

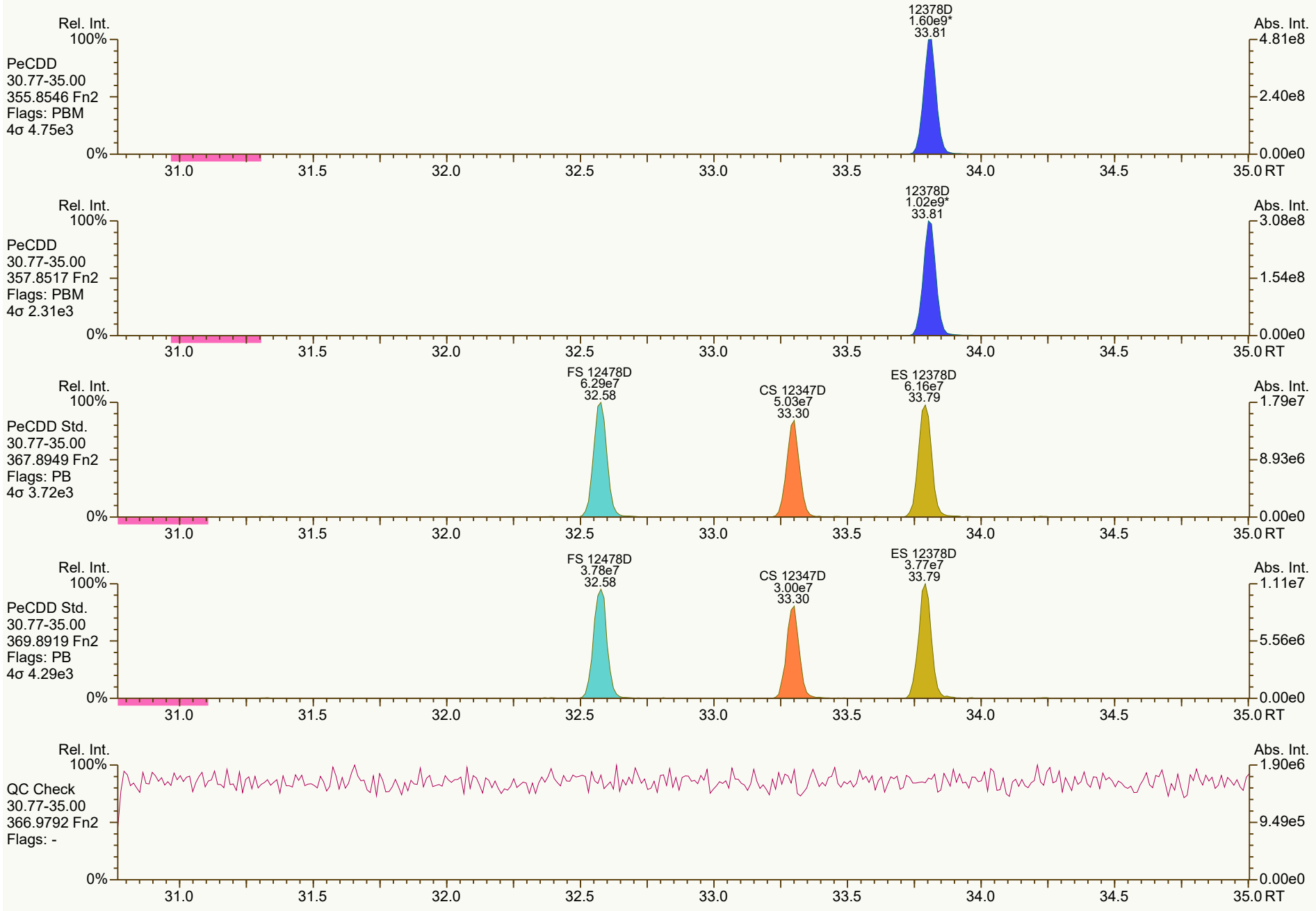
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

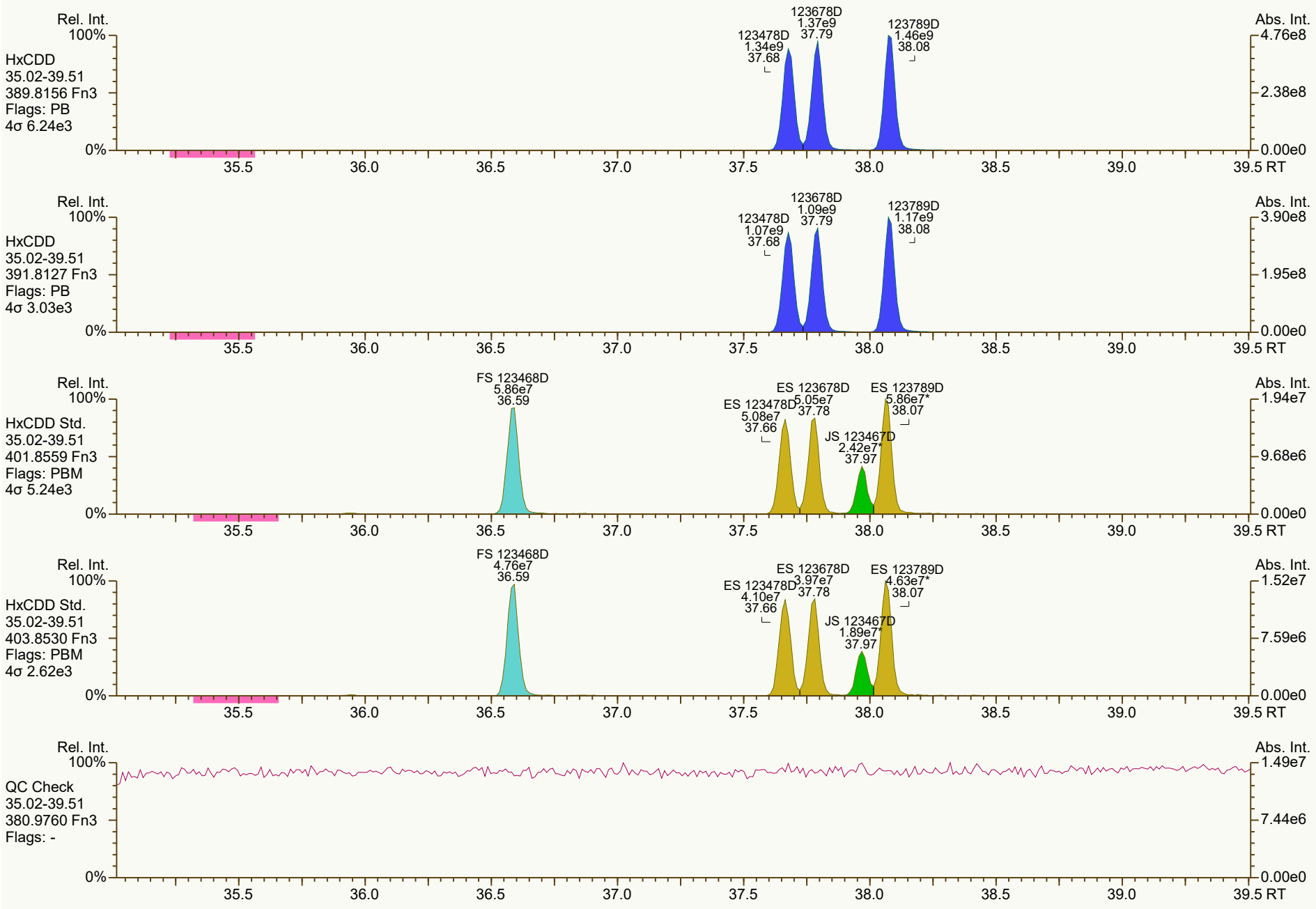
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	9.07E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.33	1.47E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	4.31E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.89	0.89	-1%
CS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.87	0.85	-2%
CS 123469-HxCDF	37.12	9.43E+07	0.51	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.86	0.84	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.86	0.81	-6%
SS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.93	0.87	-7%
SS 123469-HxCDF	37.12	9.43E+07	0.51	Y	0.84	0.80	-5%
SS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.91	0.81	-11%
AS 1368-TCDD	24.92	9.24E+07	0.82	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	1.58E+08	0.79	Y	1.08	1.07	0%
FS 1278-TCDD	28.83	1.02E+08	0.81	Y	1.08	1.10	1%
FS 12478-PeCDD	32.58	1.01E+08	1.67	Y	1.09	1.01	-7%
FS 123468-HxCDD	36.59	1.06E+08	1.23	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.99	1.12E+08	1.07	Y	1.36	1.23	-9%
TS 1378-TCDD	26.88	1.27E+08	0.79	Y	1.35	1.37	2%
~~OCDD-a~~	~~43.23~~	~~2.53E+08~~	~~2.47~~	~~Y~~	~~0.07~~	~~0.07~~	~~0%~~
~~OCDF-a~~	~~43.42~~	~~2.93E+08~~	~~2.57~~	~~Y~~	~~0.06~~	~~0.06~~	~~8%~~

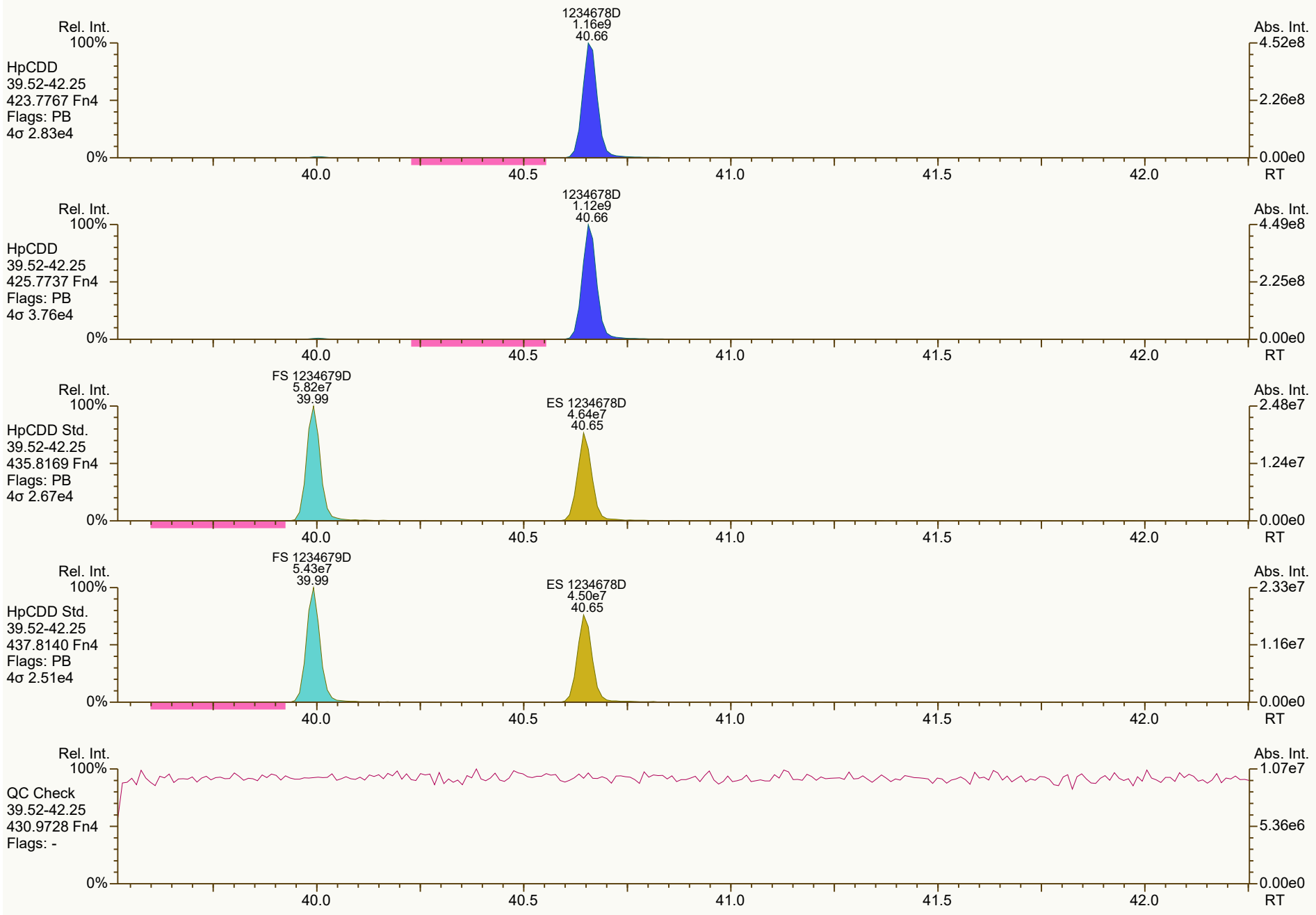
Not reported from this ICAL - CL 28Jul21

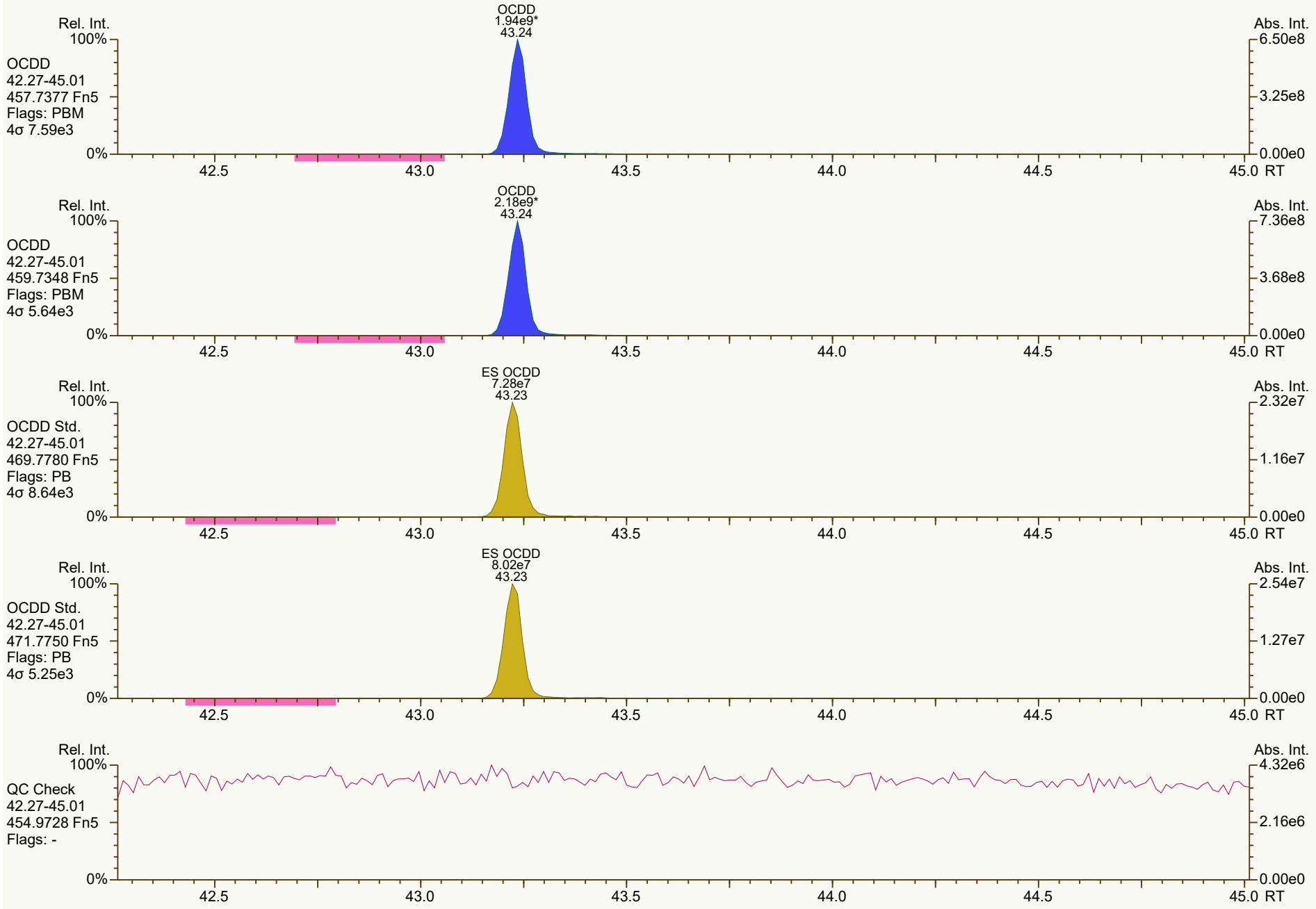

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.00e6
1.00e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.49e7
7.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.74e3
0%
2378D
2.84e8
28.53
Abs. Int.
7.18e7
3.59e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.56e3
0%
2378D
3.61e8
28.53
Abs. Int.
9.03e7
4.51e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.22e3
0%
Abs. Int.
7.43e5
3.71e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.66e3
0%
AS 1368D
4.15e7
24.92
TS 1378D
5.61e7
26.88
JS 1234D
4.05e7
27.86
ES 2378D
4.07e7
28.50
FS 1278D
4.57e7
28.82
Abs. Int.
1.29e7
6.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.07e3
0%
AS 1368D
5.09e7
24.92
TS 1378D
7.11e7
26.88
JS 1234D
5.02e7
27.86
ES 2378D
5.21e7
28.50
FS 1278D
5.63e7
28.82
Abs. Int.
1.69e7
8.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 4.75e3
0%
12378D
1.60e9*
33.81
Abs. Int.
4.81e8
2.40e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.31e3
0%
12378D
1.02e9*
33.81
Abs. Int.
3.08e8
1.54e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.72e3
0%
FS 12478D
6.29e7
32.58
CS 12347D
5.03e7
33.30
ES 12378D
6.16e7
33.79
Abs. Int.
1.79e7
8.93e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.29e3
0%
FS 12478D
3.78e7
32.58
CS 12347D
3.00e7
33.30
ES 12378D
3.77e7
33.79
Abs. Int.
1.11e7
5.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

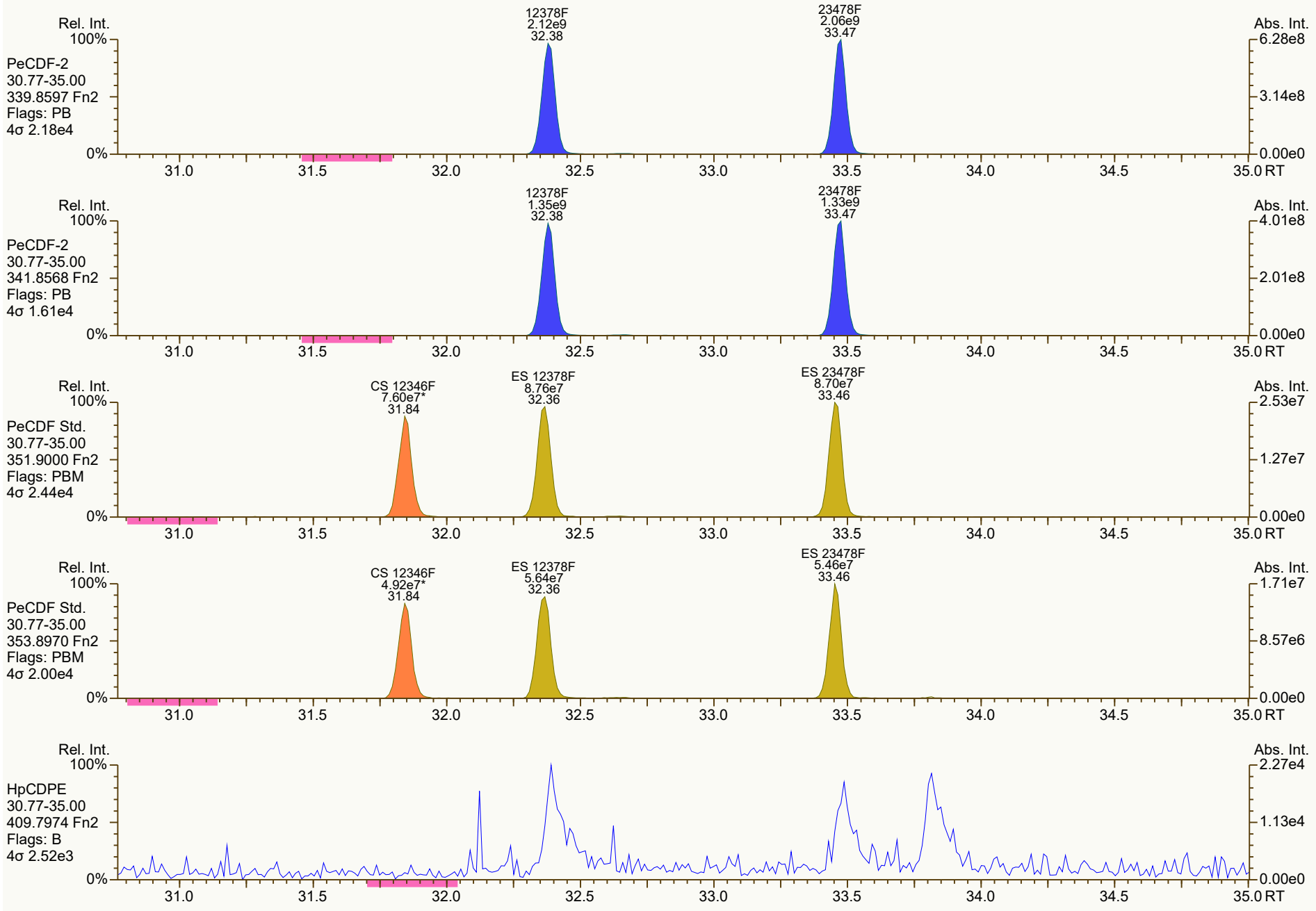

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 6.24e3
123478D 1.34e9 37.68
123678D 1.37e9 37.79
123789D 1.46e9 38.08
Abs. Int.
4.76e8
2.38e8
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 3.03e3
123478D 1.07e9 37.68
123678D 1.09e9 37.79
123789D 1.17e9 38.08
Abs. Int.
3.90e8
1.95e8
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 5.24e3
FS 123468D 5.86e7 36.59
ES 123478D 5.08e7 37.66
ES 123678D 5.05e7 37.78
JS 123467D 2.42e7* 37.97
ES 123789D 5.86e7* 38.07
Abs. Int.
1.94e7
9.68e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.62e3
FS 123468D 4.76e7 36.59
ES 123478D 4.10e7 37.66
ES 123678D 3.97e7 37.78
JS 123467D 1.89e7* 37.97
ES 123789D 4.63e7* 38.07
Abs. Int.
1.52e7
7.59e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.49e7
7.44e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT

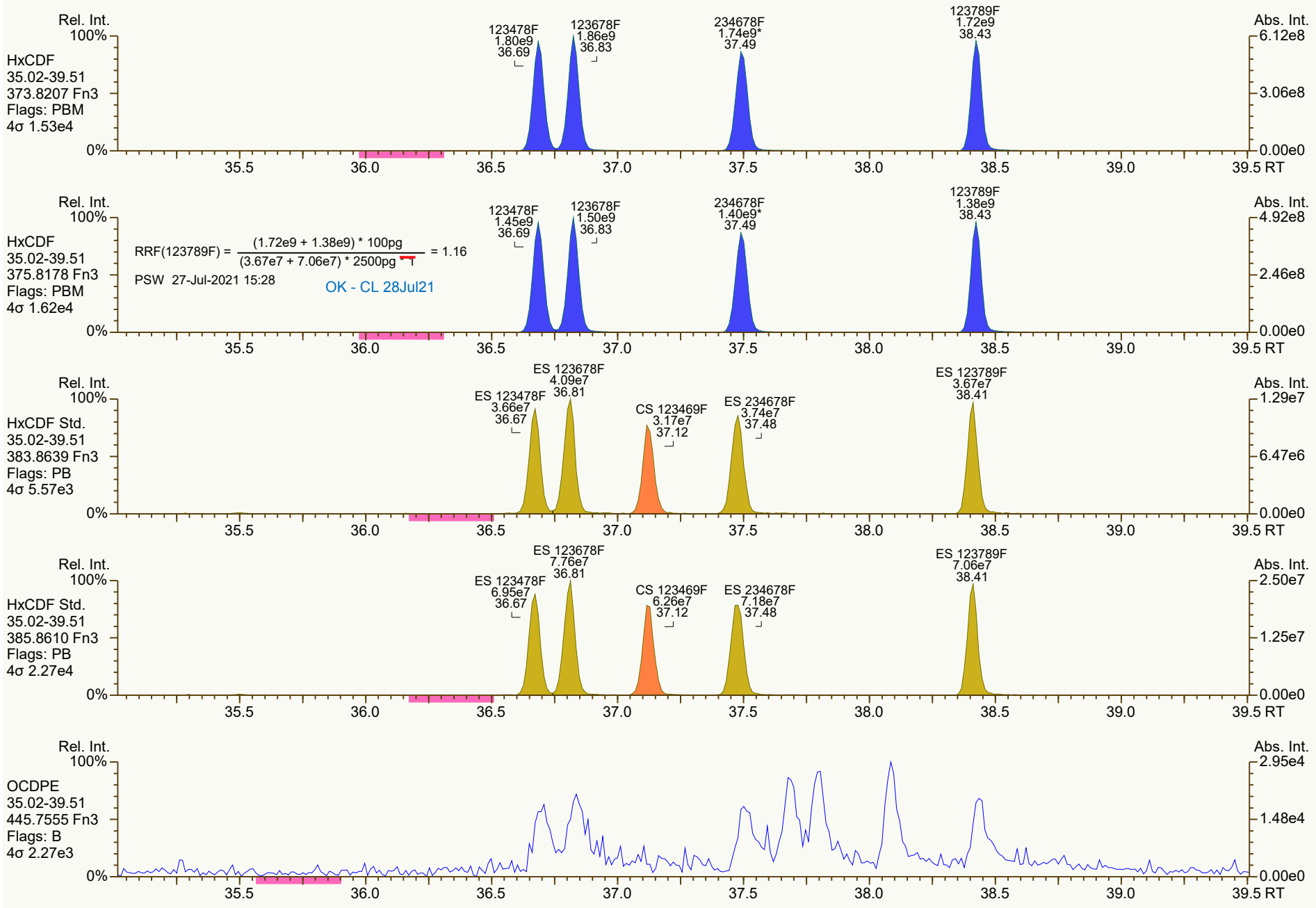

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.83e4
0%
1234678D
1.16e9
40.66
Abs. Int.
4.52e8
2.26e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.76e4
0%
1234678D
1.12e9
40.66
Abs. Int.
4.49e8
2.25e8
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.67e4
0%
FS 1234679D
5.82e7
39.99
ES 1234678D
4.64e7
40.65
Abs. Int.
2.48e7
1.24e7
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 2.51e4
0%
FS 1234679D
5.43e7
39.99
ES 1234678D
4.50e7
40.65
Abs. Int.
2.33e7
1.16e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
RT

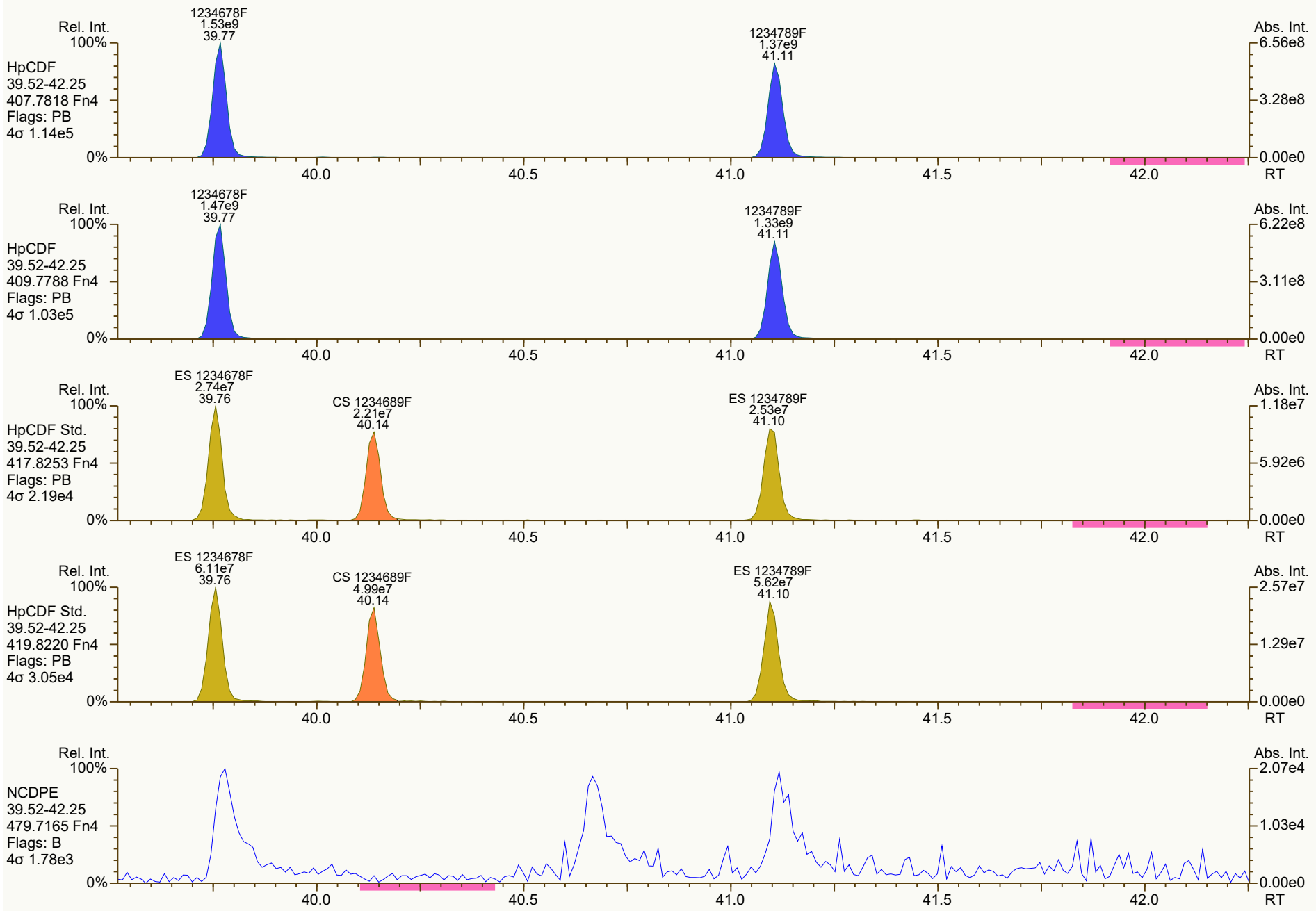

OCDD
1.94e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PBM
4σ 7.59e3
0%
Abs. Int.
6.50e8
3.25e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.18e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PBM
4σ 5.64e3
0%
Abs. Int.
7.36e8
3.68e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.28e7
43.23
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 8.64e3
0%
Abs. Int.
2.32e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.02e7
43.23
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 5.25e3
0%
Abs. Int.
2.54e7
1.27e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

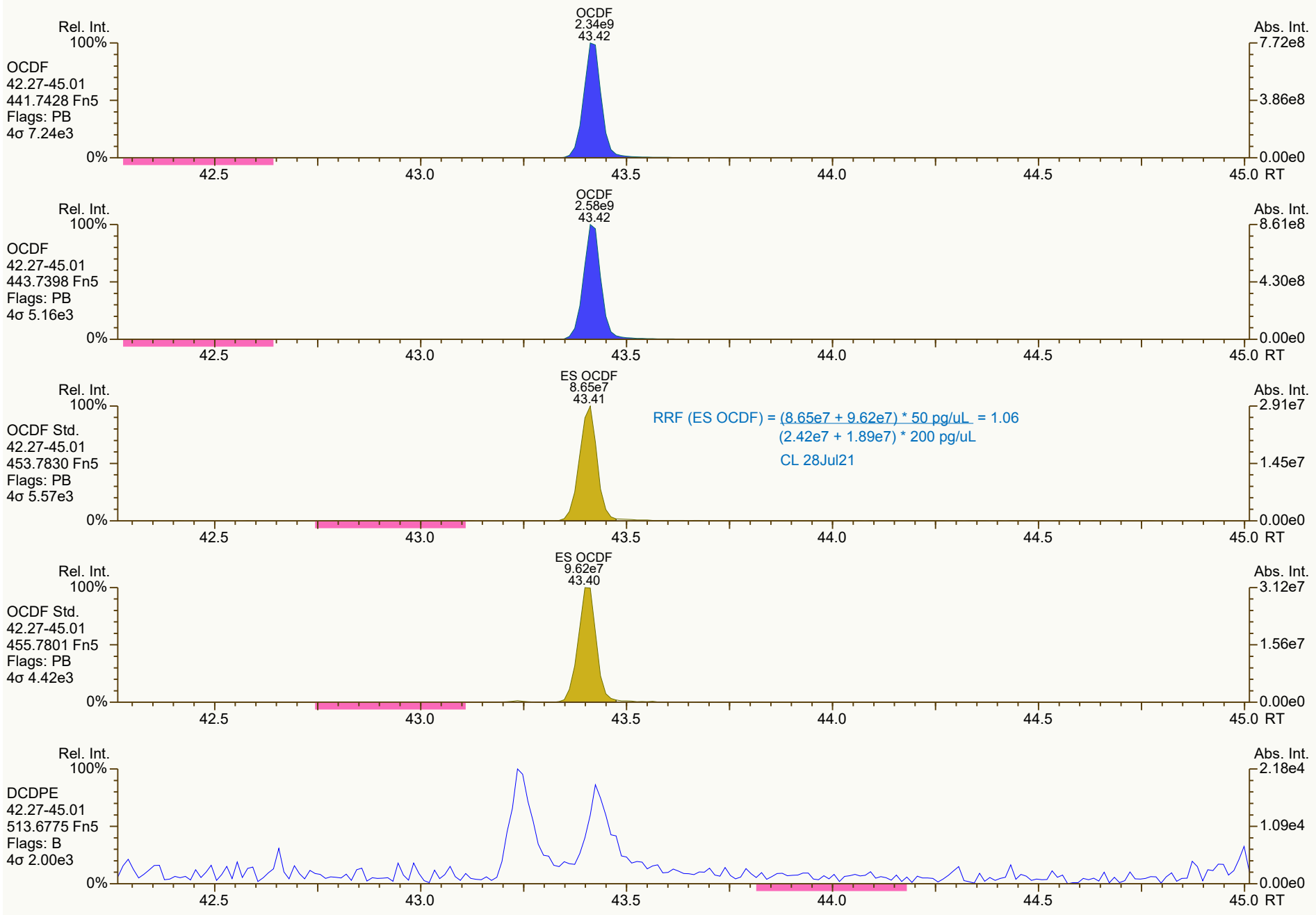

Rel. Int.
100%
0%
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.81e3
2378F
3.47e8
27.67
8.18e7
4.09e7
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.63e3
2378F
4.52e8
27.67
1.06e8
5.31e7
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.51e4
AS 1368F
6.97e7
22.86
JS 1234F
6.51e7
26.33
ES 2378F
7.12e7
27.65
1.73e7
8.65e6
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 8.59e3
AS 1368F
8.87e7
22.85
JS 1234F
8.23e7
26.33
ES 2378F
9.09e7
27.65
2.19e7
1.09e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.16e3
1.85e4
9.24e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.81e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 4.96e3
1.40e4
7.01e3
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.00e6
1.00e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.18e4
0%
12378F
2.12e9
32.38
23478F
2.06e9
33.47
Abs. Int.
6.28e8
3.14e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 1.61e4
0%
12378F
1.35e9
32.38
23478F
1.33e9
33.47
Abs. Int.
4.01e8
2.01e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.44e4
0%
CS 12346F
7.60e7*
31.84
ES 12378F
8.76e7
32.36
ES 23478F
8.70e7
33.46
Abs. Int.
2.53e7
1.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.00e4
0%
CS 12346F
4.92e7*
31.84
ES 12378F
5.64e7
32.36
ES 23478F
5.46e7
33.46
Abs. Int.
1.71e7
8.57e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.52e3
0%
Abs. Int.
2.27e4
1.13e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.53e4
0%
123478F
1.80e9
36.69
123678F
1.86e9
36.83
234678F
1.74e9*
37.49
123789F
1.72e9
38.43
Abs. Int.
6.12e8
3.06e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 1.62e4
RRF(123789F) = (1.72e9 + 1.38e9) * 100pg / (3.67e7 + 7.06e7) * 2500pg = 1.16
PSW 27-Jul-2021 15:28
OK - CL 28Jul21
123478F
1.45e9
36.69
123678F
1.50e9
36.83
234678F
1.40e9*
37.49
123789F
1.38e9
38.43
4.92e8
2.46e8
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.57e3
ES 123678F
4.09e7
36.81
ES 123478F
3.66e7
36.67
CS 123469F
3.17e7
37.12
ES 234678F
3.74e7
37.48
ES 123789F
3.67e7
38.41
1.29e7
6.47e6
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.27e4
ES 123678F
7.76e7
36.81
ES 123478F
6.95e7
36.67
CS 123469F
6.26e7
37.12
ES 234678F
7.18e7
37.48
ES 123789F
7.06e7
38.41
2.50e7
1.25e7
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.27e3
2.95e4
1.48e4

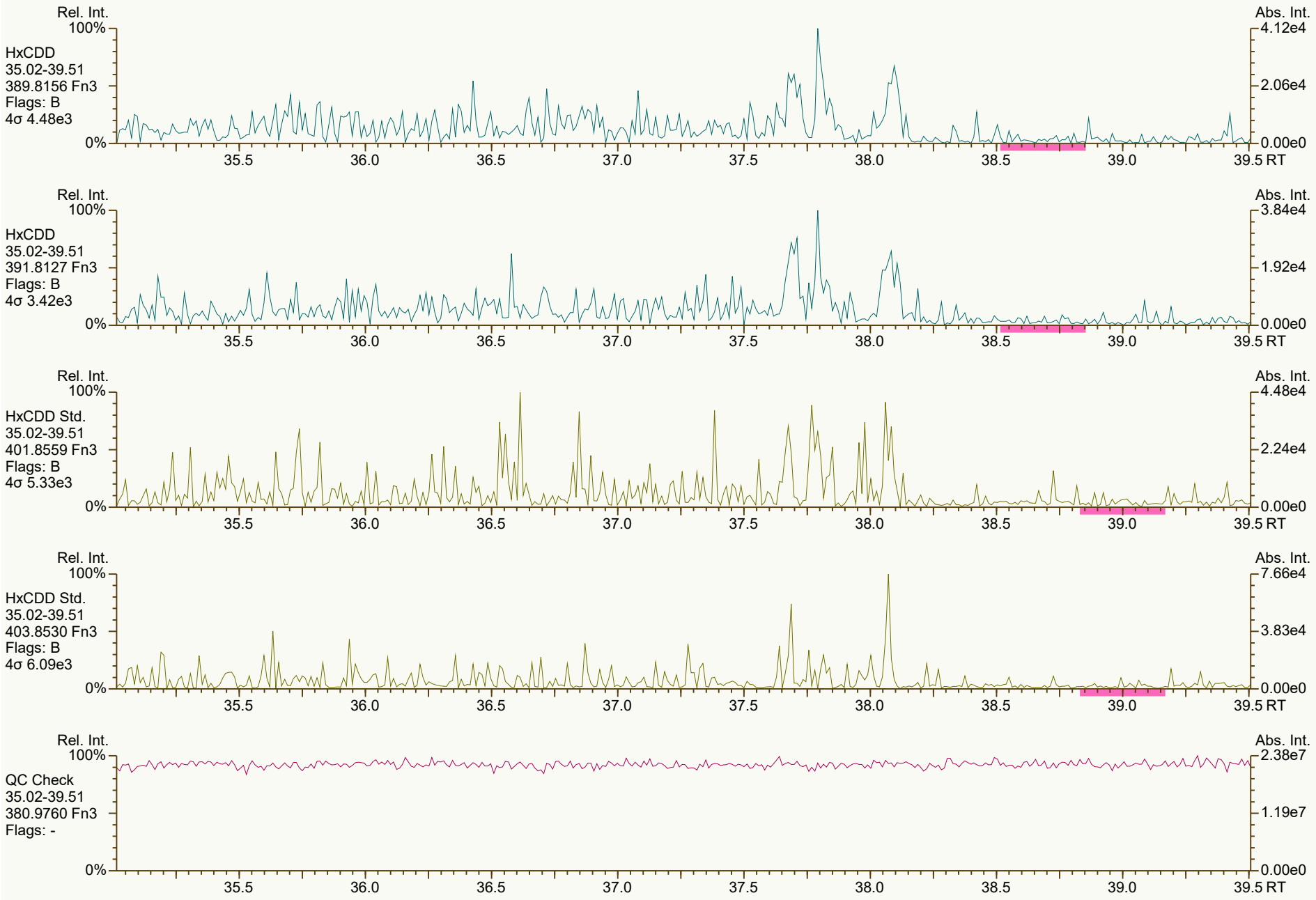

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.14e5
1234678F
1.53e9
39.77
1234789F
1.37e9
41.11
Abs. Int.
6.56e8
3.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.03e5
1234678F
1.47e9
39.77
1234789F
1.33e9
41.11
Abs. Int.
6.22e8
3.11e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.19e4
ES 1234678F
2.74e7
39.76
CS 1234689F
2.21e7
40.14
ES 1234789F
2.53e7
41.10
Abs. Int.
1.18e7
5.92e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 3.05e4
ES 1234678F
6.11e7
39.76
CS 1234689F
4.99e7
40.14
ES 1234789F
5.62e7
41.10
Abs. Int.
2.57e7
1.29e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 1.78e3
Abs. Int.
2.07e4
1.03e4
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 7.24e3
0%
OCDF
2.34e9
43.42
Abs. Int.
7.72e8
3.86e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 5.16e3
0%
OCDF
2.58e9
43.42
Abs. Int.
8.61e8
4.30e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.57e3
0%
ES OCDF
8.65e7
43.41
RRF (ES OCDF) = (8.65e7 + 9.62e7) * 50 pg/uL = 1.06
(2.42e7 + 1.89e7) * 200 pg/uL
CL 28Jul21
Abs. Int.
2.91e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.42e3
0%
ES OCDF
9.62e7
43.40
Abs. Int.
3.12e7
1.56e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.00e3
0%
Abs. Int.
2.18e4
1.09e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

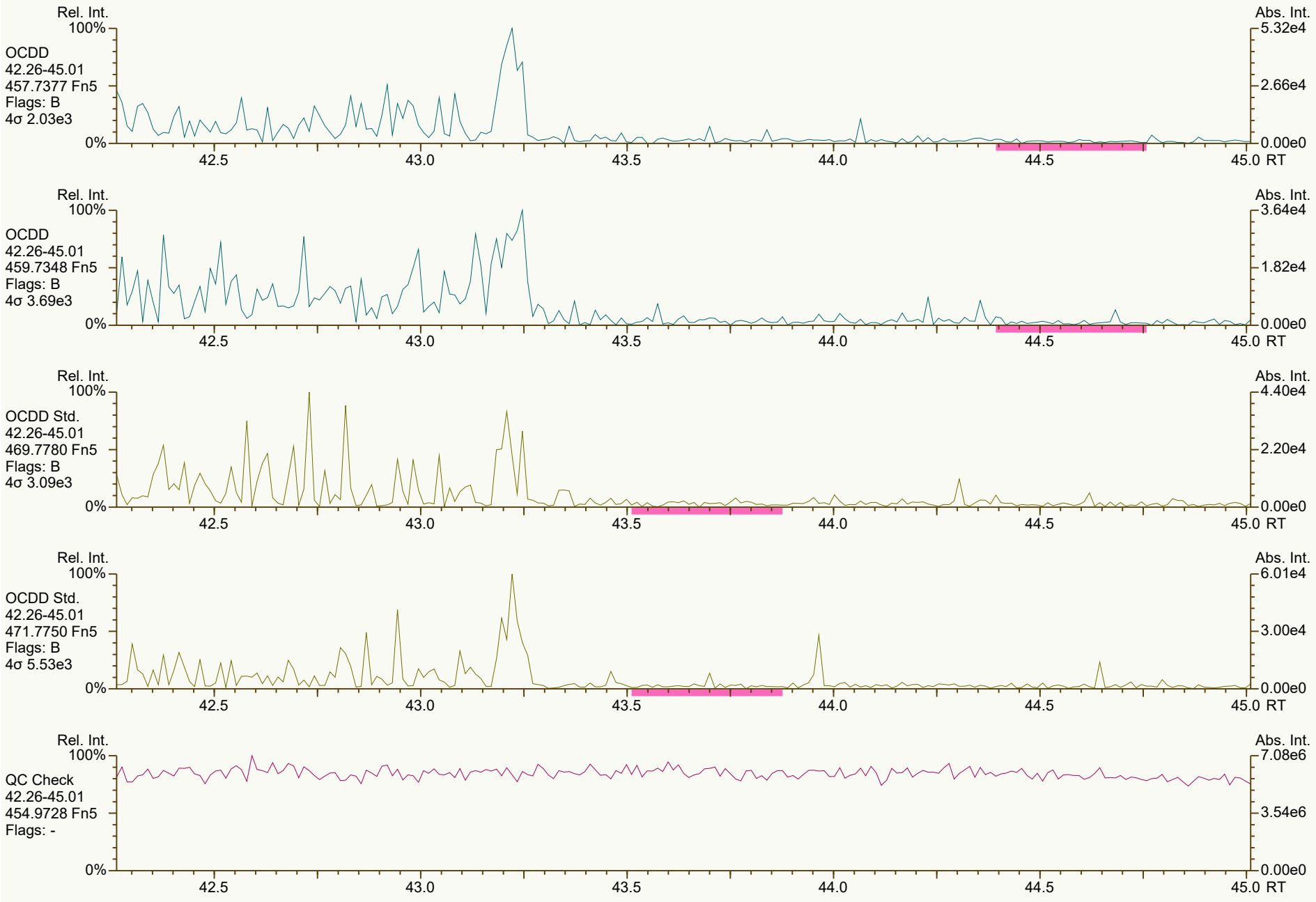

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: B
4σ 5.46e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: B
4σ 3.81e3
0%
Abs. Int.
1.72e4
8.58e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.57e4
7.86e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: B
4σ 1.19e4
0%
Abs. Int.
4.60e4
2.30e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: B
4σ 4.18e3
0%
Abs. Int.
4.81e4
2.40e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: B
4σ 9.54e3
0%
Abs. Int.
3.89e4
1.94e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: B
4σ 5.05e3
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: B
4σ 5.45e3
0%
Abs. Int.
6.36e4
3.18e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: B
4σ 4.94e3
0%
Abs. Int.
2.95e4
1.48e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: B
4σ 4.48e3
0%
Abs. Int.
4.12e4
2.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: B
4σ 3.42e3
0%
Abs. Int.
3.84e4
1.92e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: B
4σ 5.33e3
0%
Abs. Int.
4.48e4
2.24e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: B
4σ 6.09e3
0%
Abs. Int.
7.66e4
3.83e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

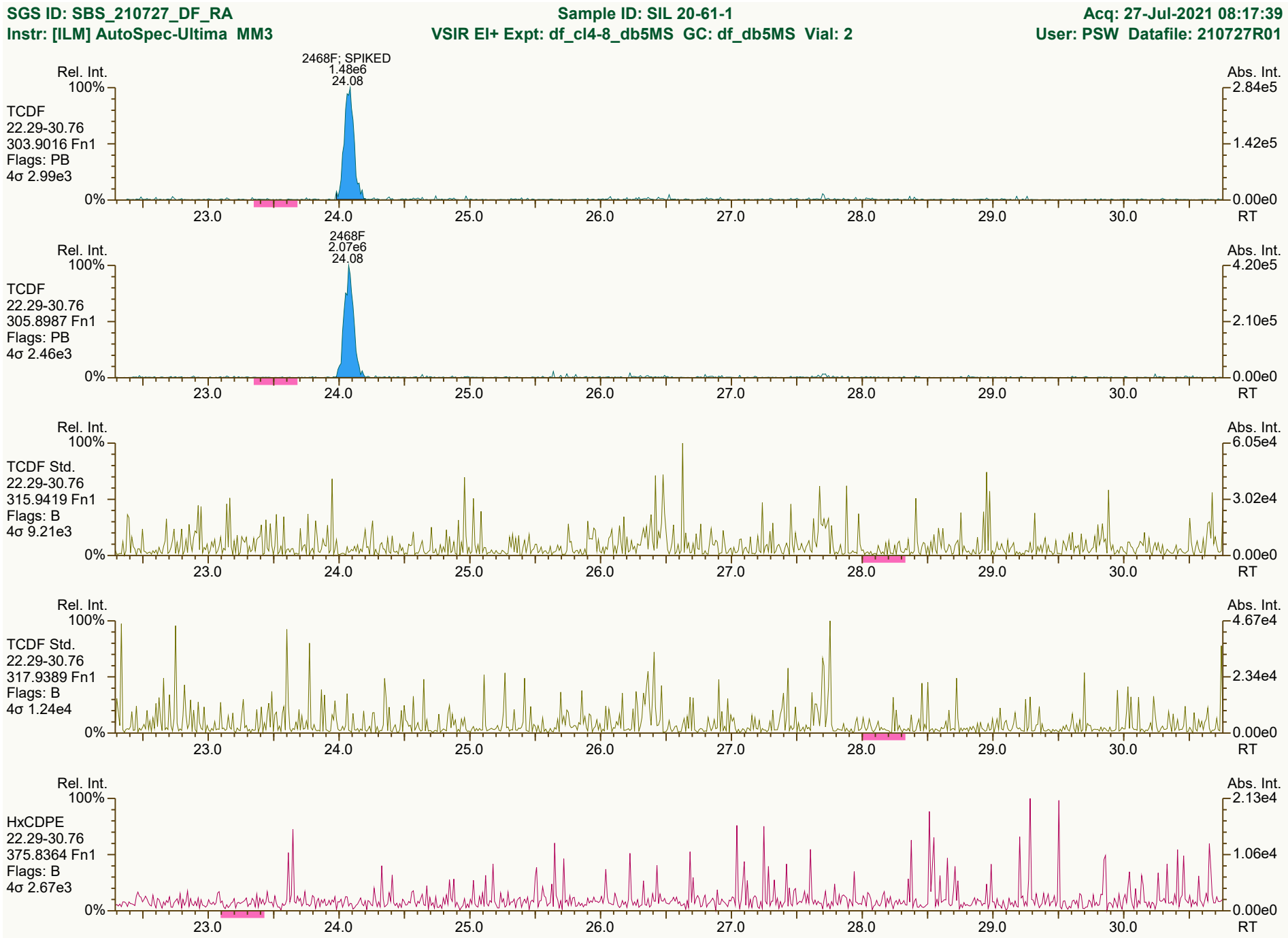

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: B
4σ 8.10e3
0%
Abs. Int.
5.65e4
2.82e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: B
4σ 9.20e3
0%
Abs. Int.
3.29e4
1.64e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: B
4σ 7.86e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: B
4σ 3.02e3
0%
Abs. Int.
6.85e4
3.43e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: B
4σ 2.03e3
0%
Abs. Int.
5.32e4
2.66e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: B
4σ 3.69e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: B
4σ 3.09e3
0%
Abs. Int.
4.40e4
2.20e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: B
4σ 5.53e3
0%
Abs. Int.
6.01e4
3.00e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 27-Jul-2021 08:17:39
User: PSW Datafile: 210727R01

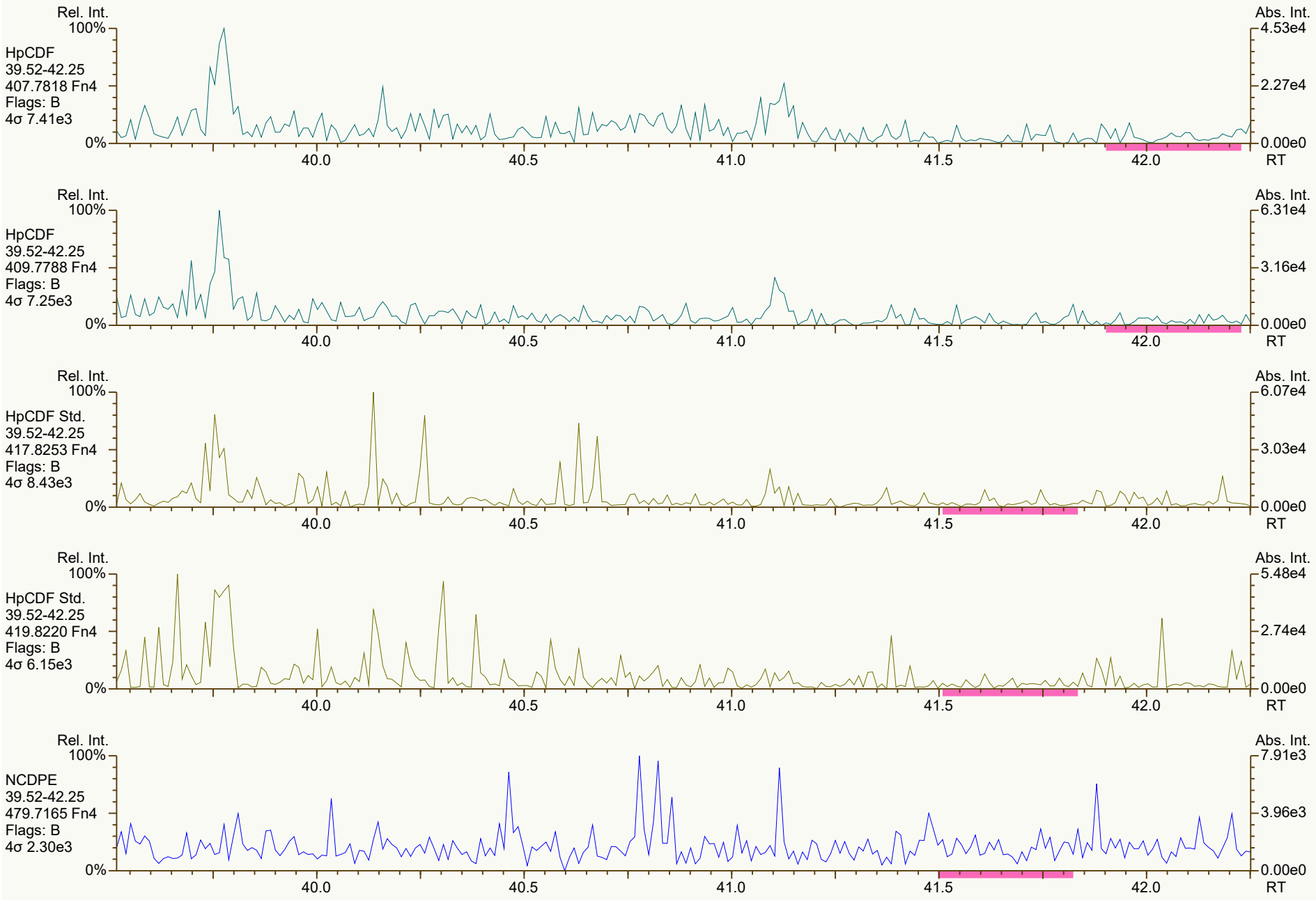


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9293, 5161, 7483 scc: 638-037
PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
3.87e4
1.94e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 6.47e3
Rel. Int.
100%
0%
Abs. Int.
3.57e4
1.78e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 6.41e3
Rel. Int.
100%
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: B
4σ 6.52e3
0%
Abs. Int.
4.88e4
2.44e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: B
4σ 6.57e3
0%
Abs. Int.
3.28e4
1.64e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: B
4σ 2.11e3
0%
Abs. Int.
6.19e4
3.10e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: B
4σ 3.42e3
0%
Abs. Int.
5.42e4
2.71e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: B
4σ 6.81e3
0%
Abs. Int.
5.46e4
2.73e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: B
4σ 4.05e3
0%
Abs. Int.
3.51e4
1.76e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: B
4σ 6.70e3
0%
Abs. Int.
4.23e4
2.11e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: B
4σ 1.33e4
0%
Abs. Int.
8.19e4
4.10e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.51e3
0%
Abs. Int.
2.13e4
1.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: B
4σ 7.41e3
0%
Abs. Int.
4.53e4
2.27e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: B
4σ 7.25e3
0%
Abs. Int.
6.31e4
3.16e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: B
4σ 8.43e3
0%
Abs. Int.
6.07e4
3.03e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: B
4σ 6.15e3
0%
Abs. Int.
5.48e4
2.74e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.30e3
0%
Abs. Int.
7.91e3
3.96e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: B
4σ 2.18e3
0%
Abs. Int.
4.13e4
2.06e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: B
4σ 1.96e3
0%
Abs. Int.
5.82e4
2.91e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: B
4σ 3.42e3
0%
Abs. Int.
6.44e4
3.22e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: B
4σ 2.75e3
0%
Abs. Int.
6.15e4
3.08e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 2.12e3
0%
Abs. Int.
5.85e3
2.93e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
15	210727R15	3	CS3_210727_DF_RB ✓	1.00	SIL 23-672-1	PSW	320-816	27-Jul-2021	19:43:55
16	210727R16	92	CS3_210727_DF_RC	1.00	ICV SIL 24-11-9 ✓	PSW	537-883	27-Jul-2021	20:31:28

REVIEWED
paul_walton , 7/28/2021, 8:29:53 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:21 PM

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.67E+07	0.81	Y	1.34	1.35	0%
12378-PeCDD	33.81	6.38E+07	1.58	Y	1.06	1.06	0%
123478-HxCDD	37.68	5.49E+07	1.25	Y	1.06	1.06	1%
123678-HxCDD	37.79	5.63E+07	1.26	Y	1.08	1.10	2%
123789-HxCDD	38.08	5.86E+07	1.24	Y	1.02	1.00	-2%
1234678-HpCDD	40.66	4.96E+07	1.04	Y	0.97	0.98	0%
OCDD	43.23	8.27E+07	0.89	Y	1.07	1.07	0%
2378-TCDF	27.67	2.12E+07	0.80	Y	0.96	0.97	1%
12378-PeCDF	32.38	8.71E+07	1.57	Y	0.95	0.97	2%
23478-PeCDF	33.47	7.79E+07	1.46	Y	0.94	0.92	-2%
123478-HxCDF	36.69	7.88E+07	1.25	Y	1.23	1.25	2%
123678-HxCDF	36.83	8.26E+07	1.26	Y	1.13	1.13	0%
234678-HxCDF	37.49	7.73E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.43	6.95E+07	1.26	Y	1.14	1.13	0%
1234678-HpCDF	39.77	7.02E+07	1.03	Y	1.36	1.34	-2%
1234789-HpCDF	41.11	5.97E+07	1.05	Y	1.30	1.36	5%
OCDF	43.41	9.92E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.50	1.24E+08	0.80	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.788	1.20E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.661	1.03E+08	1.29	Y	0.99	0.98	-1%
ES 123678-HxCDD	37.775	1.02E+08	1.32	Y	0.97	0.97	0%
ES 123789-HxCDD	38.065	1.17E+08	1.31	Y	1.12	1.12	-1%
ES 1234678-HpCDD	40.653	1.01E+08	1.07	Y	0.99	0.96	-3%
ES OCDD	43.218	1.54E+08	0.91	Y	0.78	0.73	-6%
ES 2378-TCDF	27.65	2.18E+08	0.77	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.362	1.80E+08	1.58	Y	0.93	0.89	-5%
ES 23478-PeCDF	33.452	1.68E+08	1.62	Y	0.92	0.83	-10%
ES 123478-HxCDF	36.669	1.26E+08	0.54	Y	1.14	1.19	4%
ES 123678-HxCDF	36.809	1.47E+08	0.50	Y	1.30	1.39	7%
ES 234678-HxCDF	37.476	1.31E+08	0.52	Y	1.20	1.25	4%
ES 123789-HxCDF	38.411	1.23E+08	0.52	Y	1.14	1.17	3%
ES 1234678-HpCDF	39.758	1.05E+08	0.47	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.102	8.75E+07	0.45	Y	0.85	0.83	-2%
ES OCDF	43.399	1.88E+08	0.89	Y	0.93	0.89	-4%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.21E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.33	2.03E+08	0.78	Y	-	-	-
JS 123467-HxCDD	37.97	5.27E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.31	1.28	-2%
CS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.89	0.87	-3%
CS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.22E+08	0.52	Y	1.09	1.16	7%
CS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.86	0.90	4%
SS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.86	0.87	1%
SS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.22E+08	0.52	Y	0.84	0.83	-1%
SS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.91	0.90	-1%
~~OCDD-a~~	~~43.22~~	~~4.70E+06~~	~~2.62~~	~~Y~~	~~0.07~~	~~0.06~~	~~-8%~~
~~OCDF-a~~	~~43.41~~	~~5.40E+06~~	~~2.31~~	~~Y~~	~~0.06~~	~~0.06~~	~~-3%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	10	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	50.1	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	50.3	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	50.9	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	49.1	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88	-	1.20	Y	50.1	40	-	60	Y
OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	10.1	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	51.2	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32	-	1.78	Y	49.2	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	50.8	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	51.1	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.1	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88	-	1.20	Y	52.4	40	-	60	Y
OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	103	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	70	-	130	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	70	-	130	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	140	-	260	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	10	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.1	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.1	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32 - 1.78	Y	49.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	52.4	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

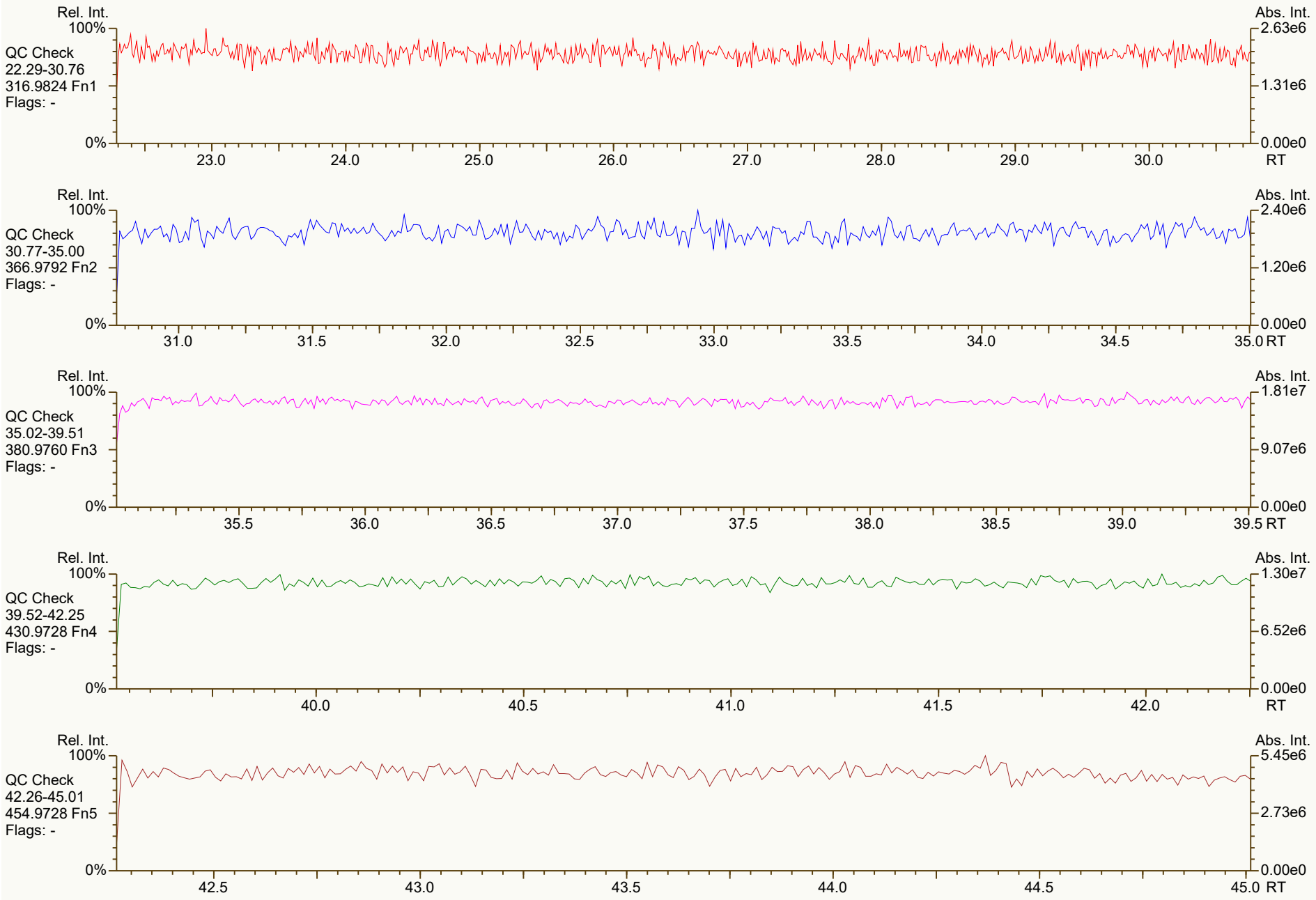
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	72	-	138	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	77	-	129	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:18 Analyst: pw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0%
Abs. Int.
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1.31e6
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RT
QC Check
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316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
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1.20e6
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31.5
32.0
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33.0
33.5
34.0
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35.0
QC Check
35.02-39.51
380.9760 Fn3
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9.07e6
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
QC Check
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430.9728 Fn4
Flags: -
1.30e7
6.52e6
40.0
40.5
41.0
41.5
42.0
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
5.45e6
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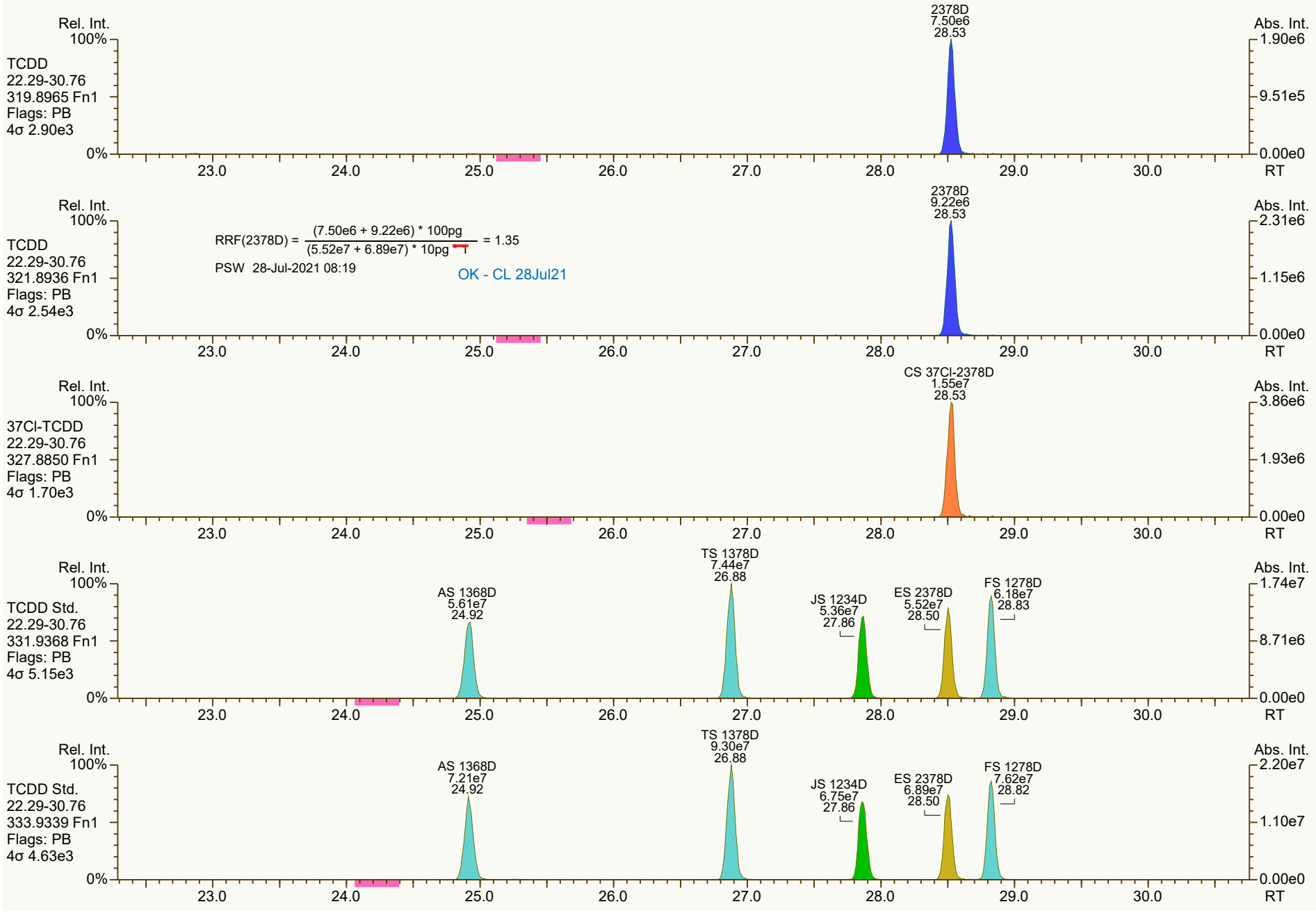
42.5
43.0
43.5
44.0
44.5
45.0


Rel. Int.
100%
0%
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.90e3
2378D
7.50e6
28.53
1.90e6
9.51e5
0.00e0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.54e3
RRF(2378D) = (7.50e6 + 9.22e6) * 100pg / (5.52e7 + 6.89e7) * 10pg = 1.35
PSW 28-Jul-2021 08:19
OK - CL 28Jul21
2378D
9.22e6
28.53
2.31e6
1.15e6
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.70e3
CS 37Cl-2378D
1.55e7
28.53
3.86e6
1.93e6
TCDD Std.
22.29-30.76
331.9368 Fn1
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4σ 5.15e3
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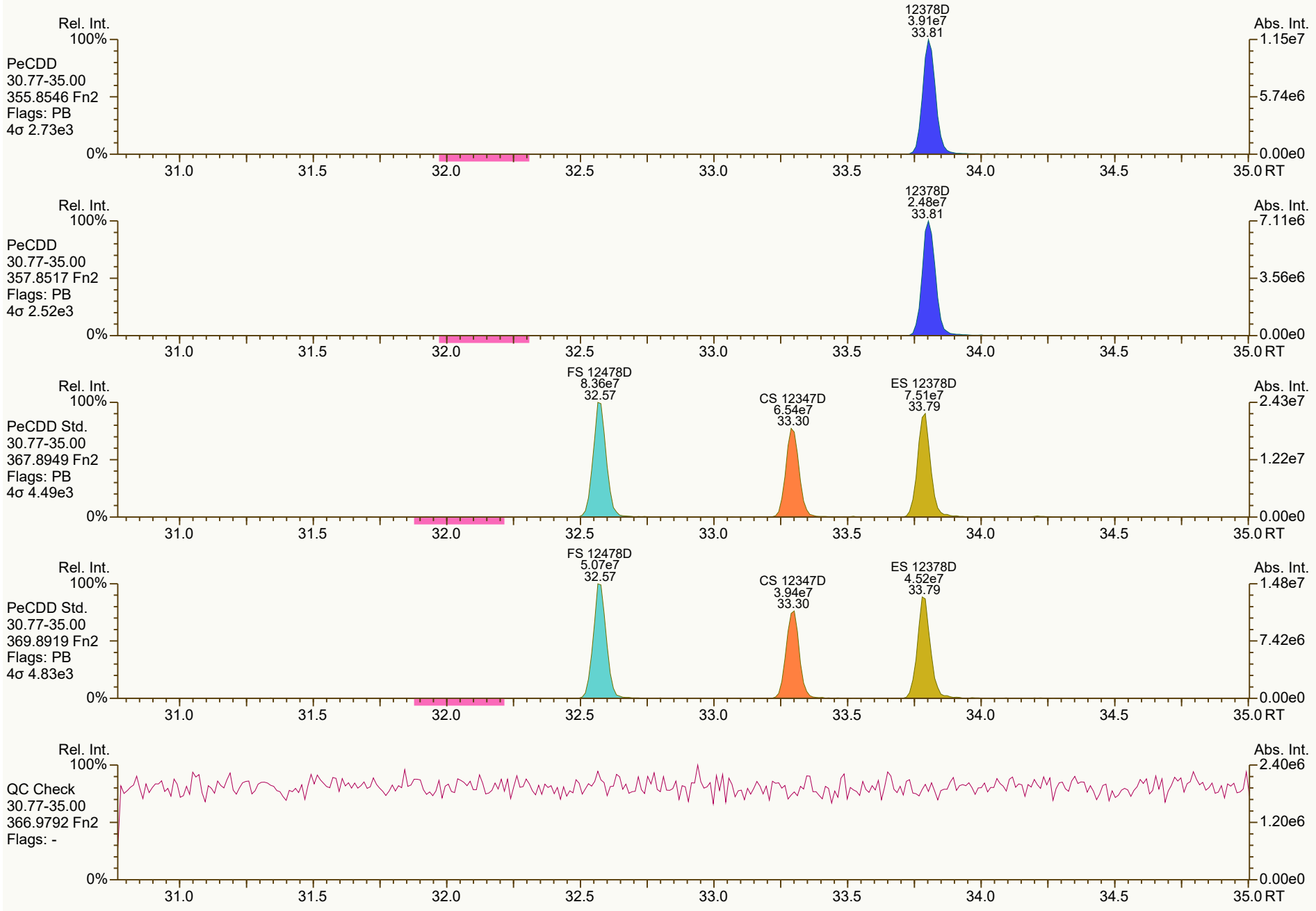
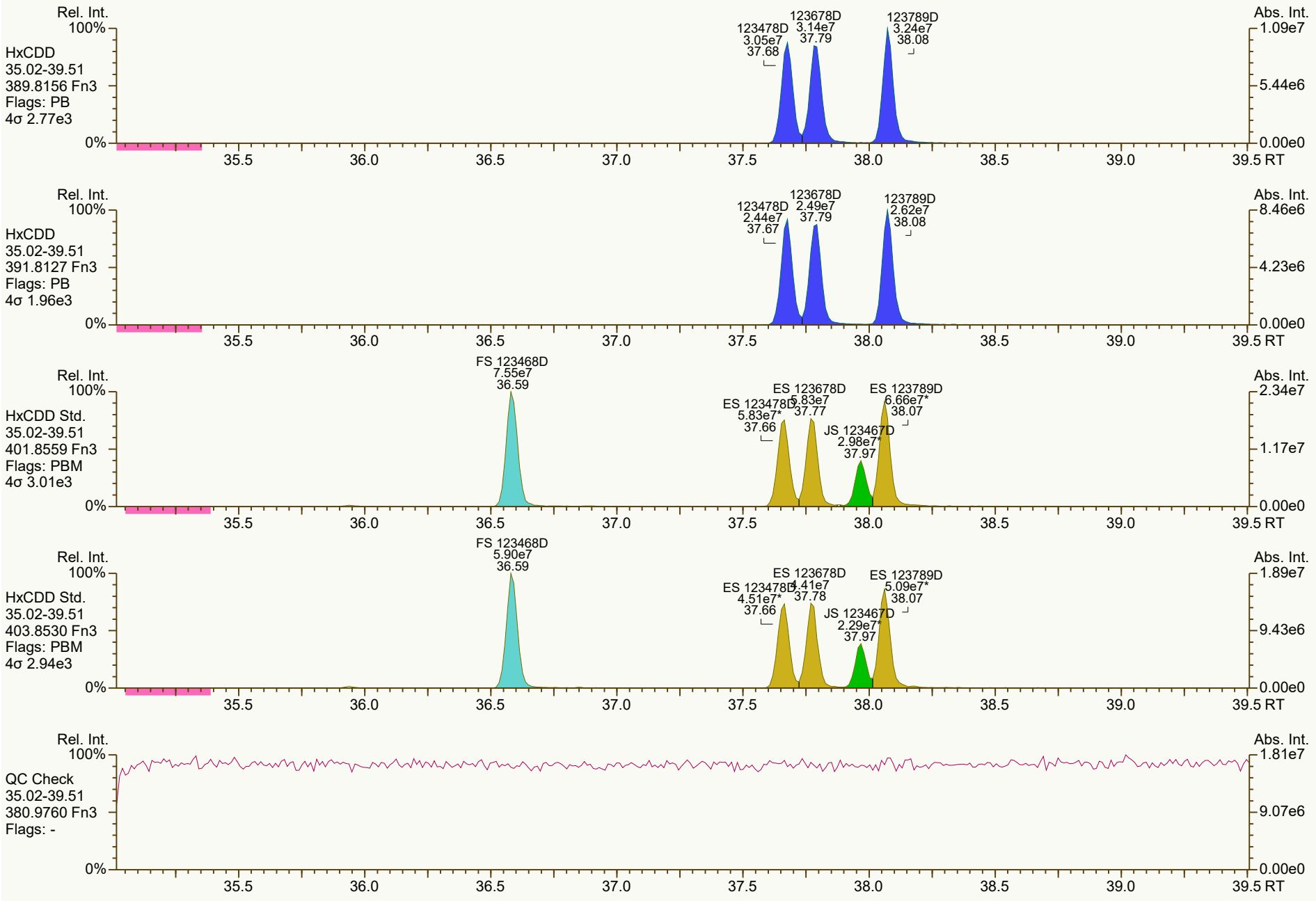
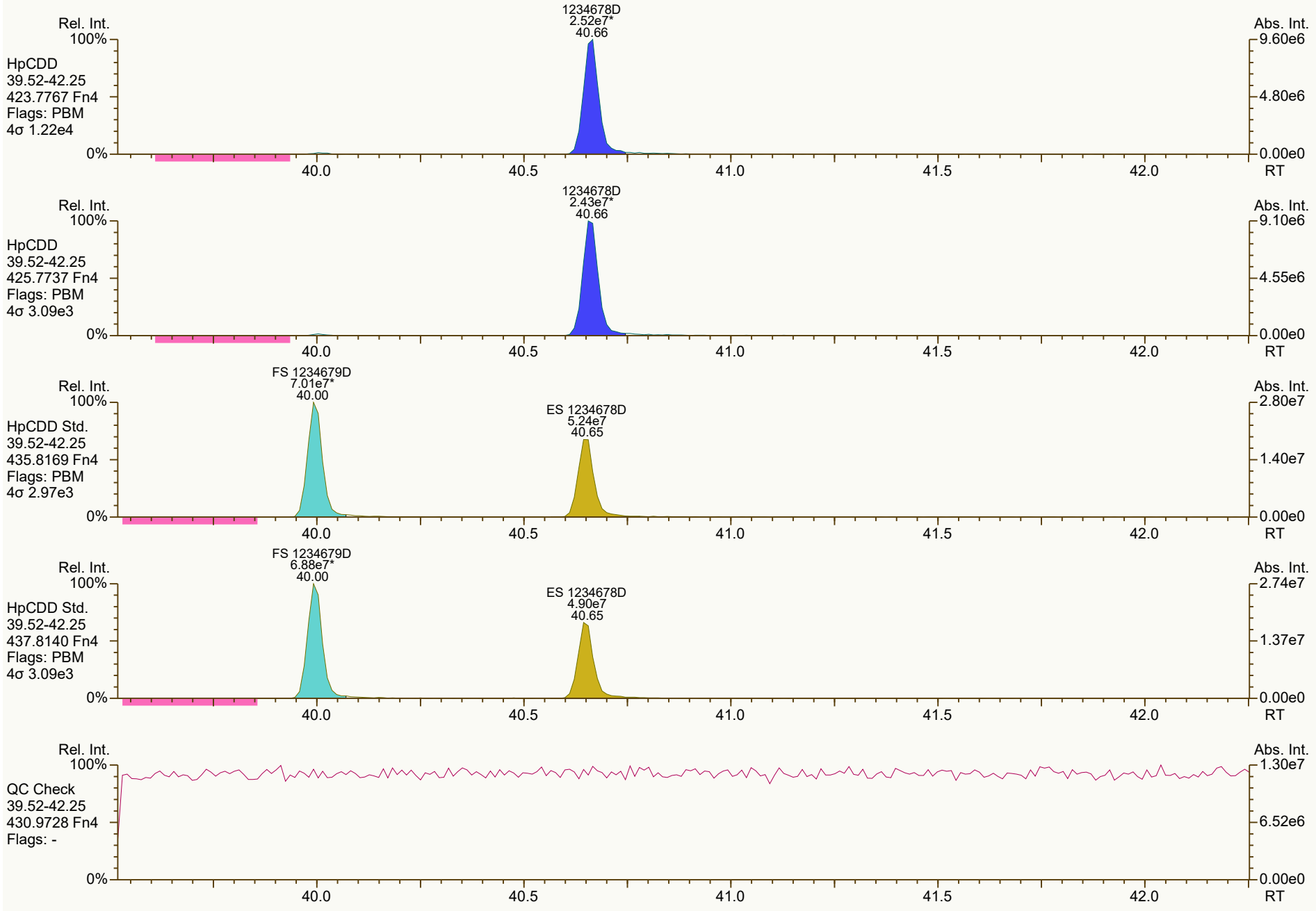
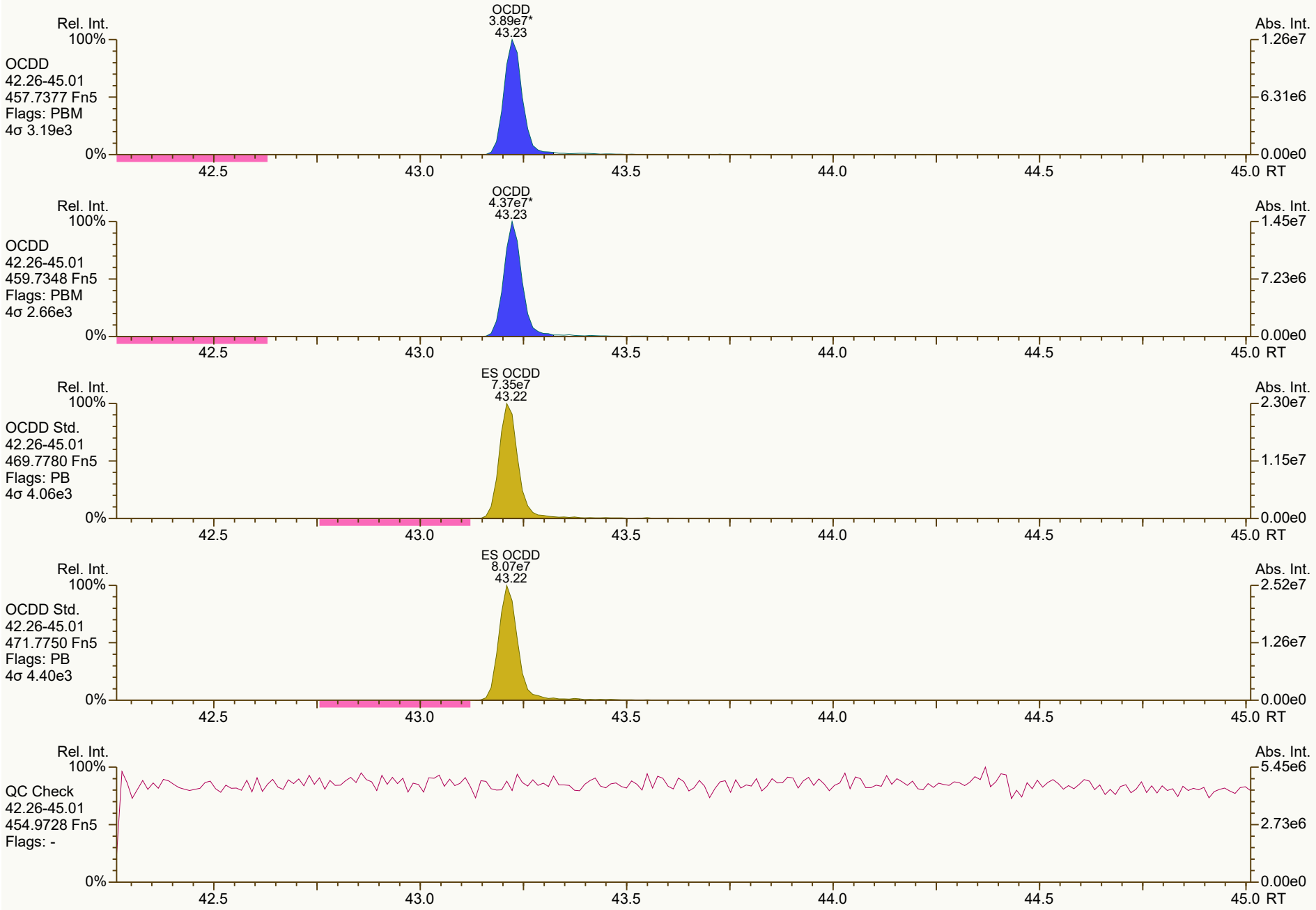
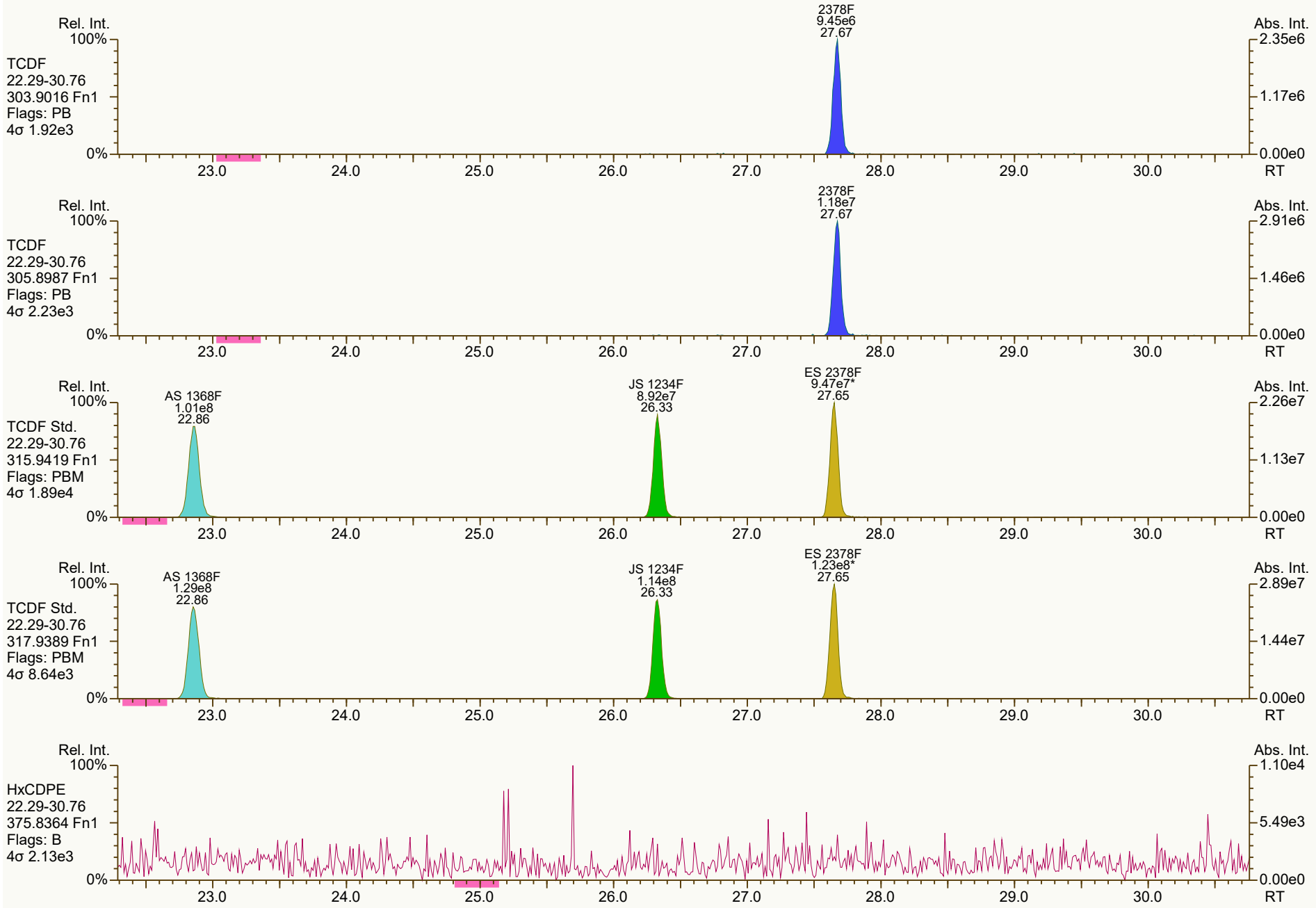
5.61e7
24.92
TS 1378D
7.44e7
26.88
JS 1234D
5.36e7
27.86
ES 2378D
5.52e7
28.50
FS 1278D
6.18e7
28.83
1.74e7
8.71e6
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.63e3
AS 1368D
7.21e7
24.92
TS 1378D
9.30e7
26.88
JS 1234D
6.75e7
27.86
ES 2378D
6.89e7
28.50
FS 1278D
7.62e7
28.82
2.20e7
1.10e7
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.73e3
0%
12378D
3.91e7
33.81
Abs. Int.
1.15e7
5.74e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.52e3
0%
12378D
2.48e7
33.81
Abs. Int.
7.11e6
3.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 4.49e3
0%
FS 12478D
8.36e7
32.57
CS 12347D
6.54e7
33.30
ES 12378D
7.51e7
33.79
Abs. Int.
2.43e7
1.22e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
5.07e7
32.57
CS 12347D
3.94e7
33.30
ES 12378D
4.52e7
33.79
Abs. Int.
1.48e7
7.42e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.40e6
1.20e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

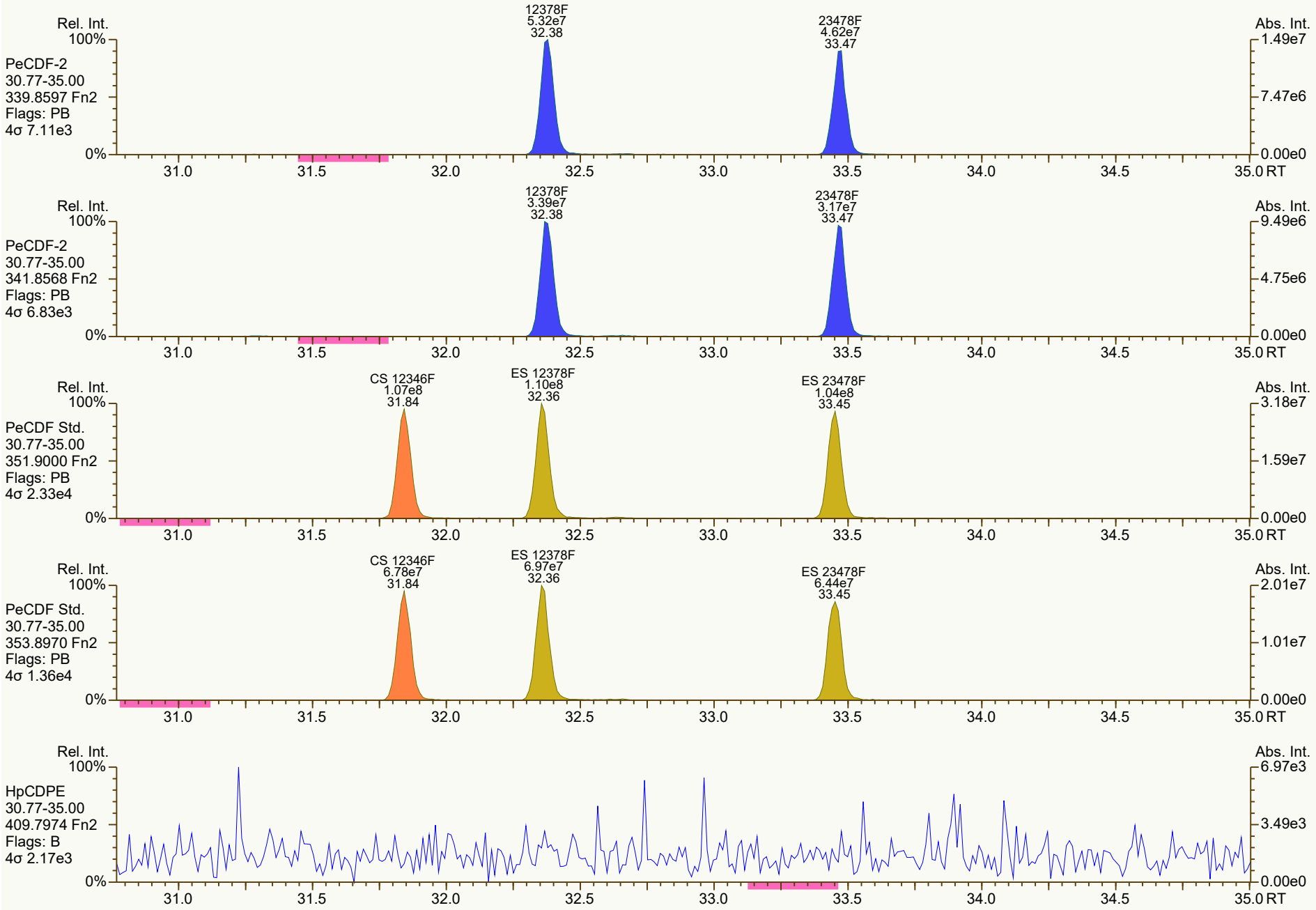

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.77e3
123478D 3.05e7 37.68
123678D 3.14e7 37.79
123789D 3.24e7 38.08
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.96e3
123478D 2.44e7 37.67
123678D 2.49e7 37.79
123789D 2.62e7 38.08
Abs. Int.
8.46e6
4.23e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.01e3
FS 123468D 7.55e7 36.59
ES 123478D 5.83e7* 37.66
ES 123678D 5.83e7* 37.77
JS 123467D 2.98e7* 37.97
ES 123789D 6.66e7* 38.07
Abs. Int.
2.34e7
1.17e7
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.94e3
FS 123468D 5.90e7 36.59
ES 123478D 4.51e7* 37.66
ES 123678D 4.41e7* 37.78
JS 123467D 2.29e7* 37.97
ES 123789D 5.09e7* 38.07
Abs. Int.
1.89e7
9.43e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.81e7
9.07e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT

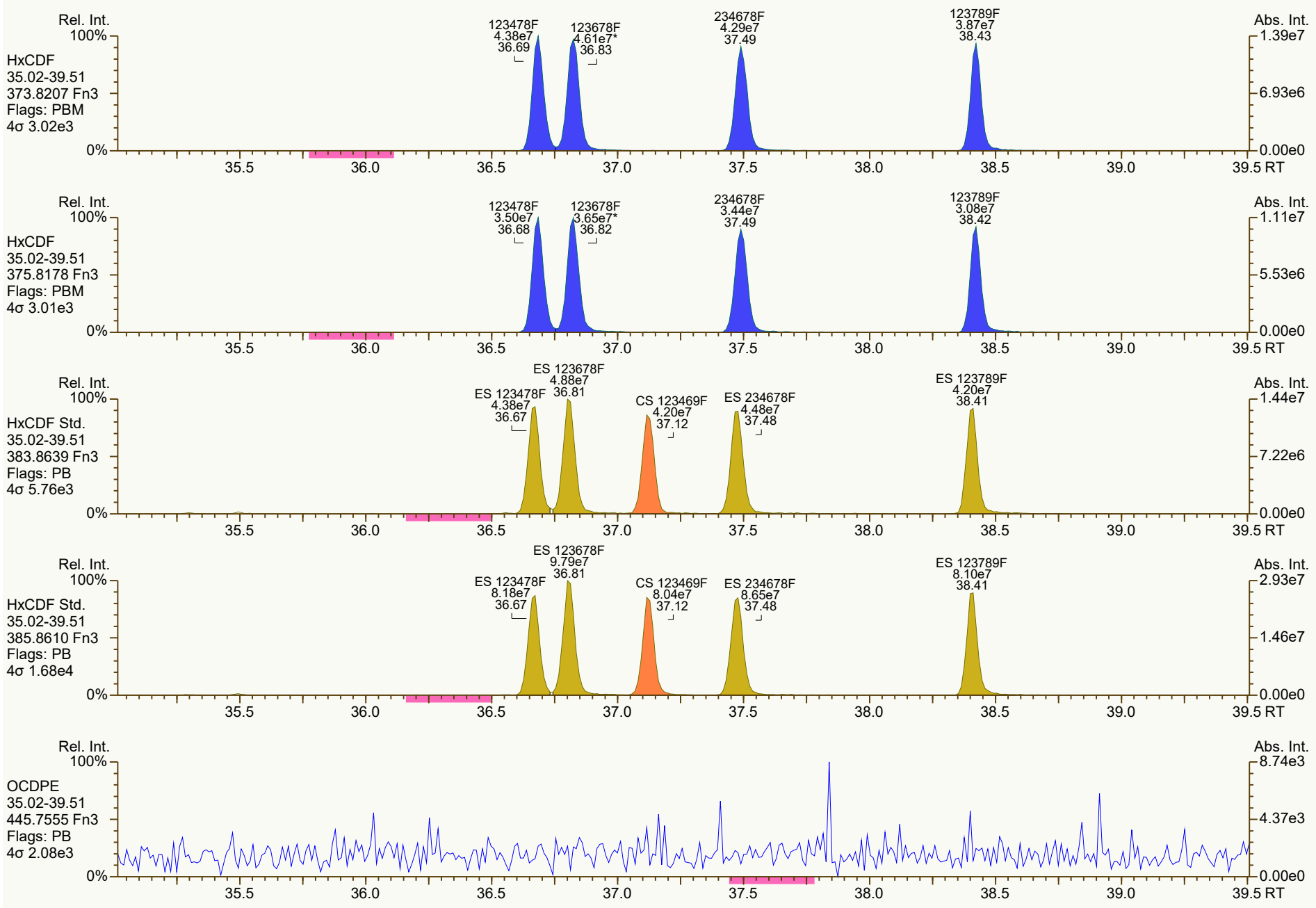

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 1.22e4
0%
1234678D
2.52e7*
40.66
Abs. Int.
9.60e6
4.80e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 3.09e3
0%
1234678D
2.43e7*
40.66
Abs. Int.
9.10e6
4.55e6
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 2.97e3
0%
FS 1234679D
7.01e7*
40.00
ES 1234678D
5.24e7
40.65
Abs. Int.
2.80e7
1.40e7
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 3.09e3
0%
FS 1234679D
6.88e7*
40.00
ES 1234678D
4.90e7
40.65
Abs. Int.
2.74e7
1.37e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.52e6
0.00e0
RT

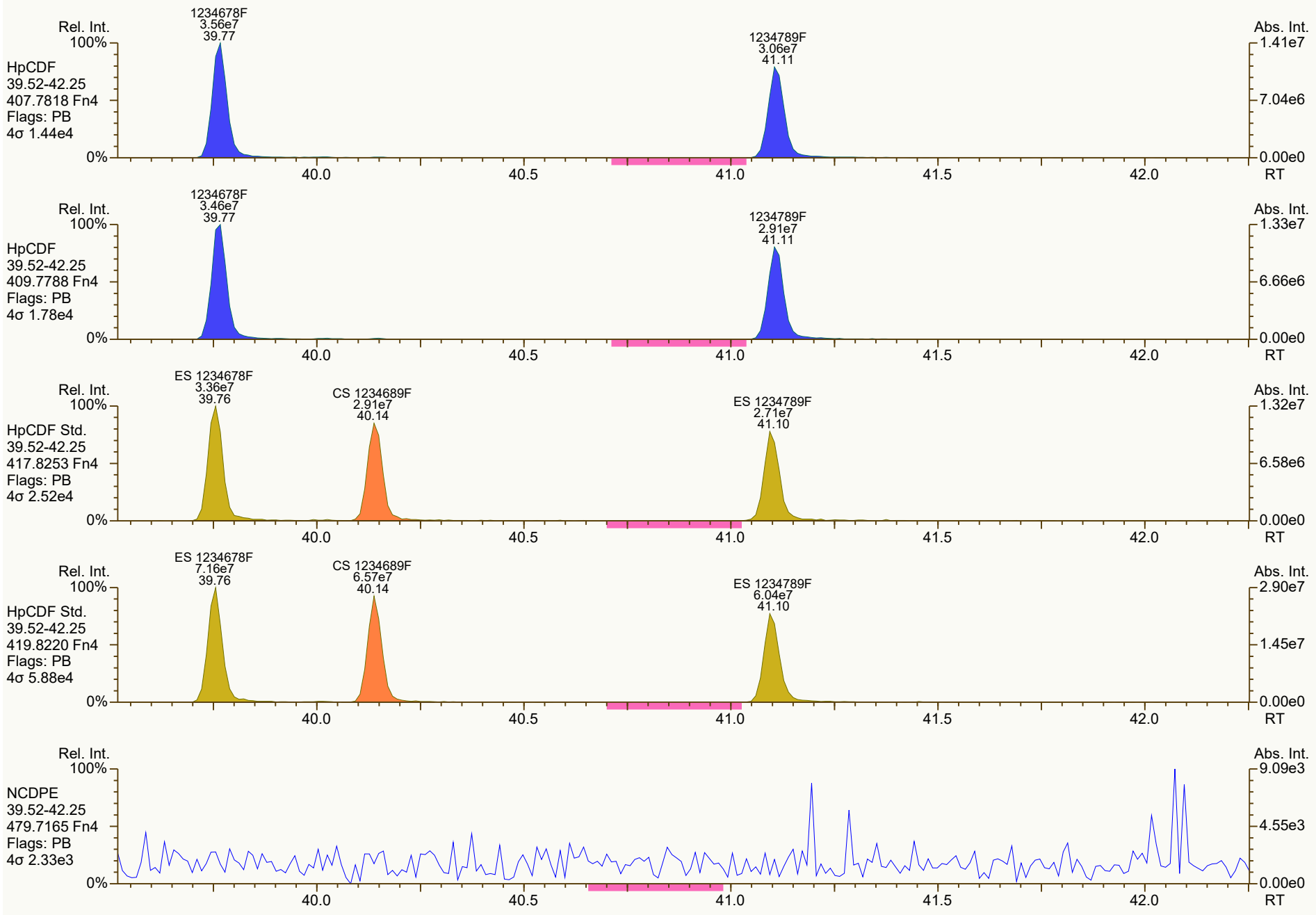

OCDD
3.89e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.19e3
0%
Abs. Int.
1.26e7
6.31e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.37e7*
43.23
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.66e3
1.45e7
7.23e6
ES OCDD
7.35e7
43.22
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.06e3
2.30e7
1.15e7
ES OCDD
8.07e7
43.22
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 4.40e3
2.52e7
1.26e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
5.45e6
2.73e6

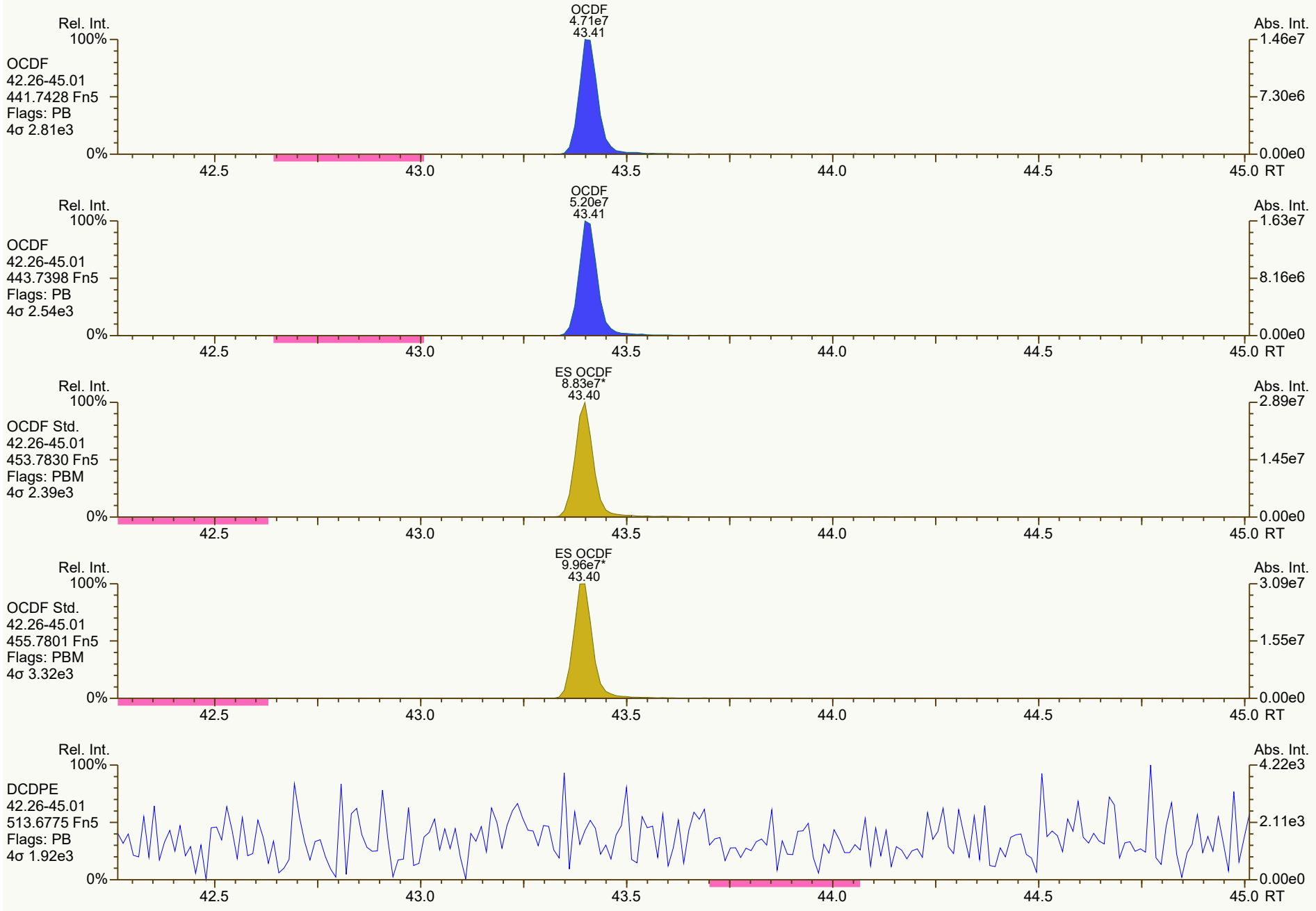

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 1.92e3
0%
2378F
9.45e6
27.67
Abs. Int.
2.35e6
1.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.23e3
0%
2378F
1.18e7
27.67
Abs. Int.
2.91e6
1.46e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PBM
4σ 1.89e4
0%
AS 1368F
1.01e8
22.86
JS 1234F
8.92e7
26.33
ES 2378F
9.47e7*
27.65
Abs. Int.
2.26e7
1.13e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PBM
4σ 8.64e3
0%
AS 1368F
1.29e8
22.86
JS 1234F
1.14e8
26.33
ES 2378F
1.23e8*
27.65
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.13e3
0%
Abs. Int.
1.10e4
5.49e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.70e4
1.35e4
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.78e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.25e4
6.25e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.56e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 7.11e3
0%
12378F
5.32e7
32.38
23478F
4.62e7
33.47
Abs. Int.
1.49e7
7.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 6.83e3
0%
12378F
3.39e7
32.38
23478F
3.17e7
33.47
Abs. Int.
9.49e6
4.75e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.33e4
0%
CS 12346F
1.07e8
31.84
ES 12378F
1.10e8
32.36
ES 23478F
1.04e8
33.45
Abs. Int.
3.18e7
1.59e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 1.36e4
0%
CS 12346F
6.78e7
31.84
ES 12378F
6.97e7
32.36
ES 23478F
6.44e7
33.45
Abs. Int.
2.01e7
1.01e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.17e3
0%
Abs. Int.
6.97e3
3.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 3.02e3
0%
123478F
4.38e7
36.69
123678F
4.61e7*
36.83
234678F
4.29e7
37.49
123789F
3.87e7
38.43
Abs. Int.
1.39e7
6.93e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 3.01e3
0%
123478F
3.50e7
36.68
123678F
3.65e7*
36.82
234678F
3.44e7
37.49
123789F
3.08e7
38.42
Abs. Int.
1.11e7
5.53e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.76e3
0%
ES 123478F
4.38e7
36.67
ES 123678F
4.88e7
36.81
CS 123469F
4.20e7
37.12
ES 234678F
4.48e7
37.48
ES 123789F
4.20e7
38.41
Abs. Int.
1.44e7
7.22e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.68e4
0%
ES 123478F
8.18e7
36.67
ES 123678F
9.79e7
36.81
CS 123469F
8.04e7
37.12
ES 234678F
8.65e7
37.48
ES 123789F
8.10e7
38.41
Abs. Int.
2.93e7
1.46e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: PB
4σ 2.08e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
0%
Abs. Int.
RT
40.0
40.5
41.0
41.5
42.0
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.44e4
1234678F
3.56e7
39.77
1234789F
3.06e7
41.11
1.41e7
7.04e6
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.78e4
1234678F
3.46e7
39.77
1234789F
2.91e7
41.11
1.33e7
6.66e6
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.52e4
ES 1234678F
3.36e7
39.76
CS 1234689F
2.91e7
40.14
ES 1234789F
2.71e7
41.10
1.32e7
6.58e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.88e4
ES 1234678F
7.16e7
39.76
CS 1234689F
6.57e7
40.14
ES 1234789F
6.04e7
41.10
2.90e7
1.45e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.33e3
9.09e3
4.55e3
0.00e0


OCDF
4.71e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.81e3
0%
Abs. Int.
1.46e7
7.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.20e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.54e3
0%
Abs. Int.
1.63e7
8.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.83e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PBM
4σ 2.39e3
0%
Abs. Int.
2.89e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.96e7*
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PBM
4σ 3.32e3
0%
Abs. Int.
3.09e7
1.55e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 1.92e3
0%
Abs. Int.
4.22e3
2.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	2.48E+07	0.79	Y	1.34	1.22	-9%
12378-PeCDD	33.81	9.55E+07	1.55	Y	1.06	0.98	-8%
123478-HxCDD	37.68	8.89E+07	1.25	Y	1.06	1.04	-1%
123678-HxCDD	37.80	9.70E+07	1.25	Y	1.08	1.14	5%
123789-HxCDD	38.09	9.52E+07	1.24	Y	1.02	0.95	-7%
1234678-HpCDD	40.67	8.40E+07	1.03	Y	0.97	0.99	1%
OCDD	43.24	1.45E+08	0.90	Y	1.07	1.07	0%
2378-TCDF	27.68	3.32E+07	0.79	Y	0.96	0.95	-1%
12378-PeCDF	32.38	1.28E+08	1.52	Y	0.95	0.87	-8%
23478-PeCDF	33.48	1.47E+08	1.58	Y	0.94	1.00	6%
123478-HxCDF	36.69	1.27E+08	1.27	Y	1.23	1.25	1%
123678-HxCDF	36.83	1.34E+08	1.26	Y	1.13	1.11	-2%
234678-HxCDF	37.50	1.26E+08	1.24	Y	1.15	1.17	1%
123789-HxCDF	38.43	1.13E+08	1.25	Y	1.14	1.10	-3%
1234678-HpCDF	39.77	1.18E+08	1.02	Y	1.36	1.34	-2%
1234789-HpCDF	41.12	9.93E+07	1.03	Y	1.30	1.29	-1%
OCDF	43.42	1.67E+08	0.90	Y	1.03	1.02	-1%
ES 2378-TCDD	28.51	2.04E+08	0.81	Y	1.03	0.96	-7%
ES 12378-PeCDD	33.795	1.95E+08	1.65	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.667	1.70E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.781	1.70E+08	1.29	Y	0.97	0.97	0%
ES 123789-HxCDD	38.071	2.01E+08	1.25	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.656	1.70E+08	1.05	Y	0.99	0.97	-2%
ES OCDD	43.225	2.69E+08	0.90	Y	0.78	0.77	-1%
ES 2378-TCDF	27.654	3.51E+08	0.77	Y	1.08	0.99	-9%
ES 12378-PeCDF	32.366	2.97E+08	1.58	Y	0.93	0.84	-10%
ES 23478-PeCDF	33.459	2.95E+08	1.56	Y	0.92	0.84	-9%
ES 123478-HxCDF	36.673	2.04E+08	0.52	Y	1.14	1.17	2%
ES 123678-HxCDF	36.814	2.41E+08	0.53	Y	1.30	1.38	7%
ES 234678-HxCDF	37.481	2.17E+08	0.52	Y	1.20	1.24	3%
ES 123789-HxCDF	38.414	2.06E+08	0.52	Y	1.14	1.18	4%
ES 1234678-HpCDF	39.764	1.76E+08	0.46	Y	0.95	1.01	6%
ES 1234789-HpCDF	41.106	1.54E+08	0.45	Y	0.85	0.88	4%
ES OCDF	43.408	3.28E+08	0.88	Y	0.93	0.94	2%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	2.13E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	3.53E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	8.73E+07	1.21	Y	-	-	-
~~OCDD-a~~	~~43.23~~	~~9.07E+06~~	~~2.21~~	~~Y~~	~~0.07~~	~~0.07~~	~~2%~~
~~OCDF-a~~	~~43.42~~	~~9.95E+06~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~2%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	9.05	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	46.2	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	49.4	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	52.7	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	46.7	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88	-	1.20	Y	50.7	40	-	60	Y
OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65	-	0.89	Y	9.87	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	45.8	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	53.1	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05	-	1.43	Y	50.5	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.2	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05	-	1.43	Y	50.6	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	48.4	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88	-	1.20	Y	49.2	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.7	40	-	60	Y
OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	99.5	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	70	-	130	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	70	-	130	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	140	-	260	Y
CLEANUP STANDARDS n/a - CL 28Jul21											
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	9.05	7.8	-	12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	46.2	39	-	65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	49.4	39	-	64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	52.7	39	-	64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	46.7	41	-	61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88	-	1.20	Y	50.7	43	-	58	Y
OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	100	79	-	126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65	-	0.89	Y	9.87	8.4	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	45.8	41	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	53.1	41	-	61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05	-	1.43	Y	50.5	45	-	56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.2	44	-	57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05	-	1.43	Y	50.6	44	-	57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	48.4	45	-	56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88	-	1.20	Y	49.2	45	-	55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.7	43	-	58	Y
OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	99.5	63	-	159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

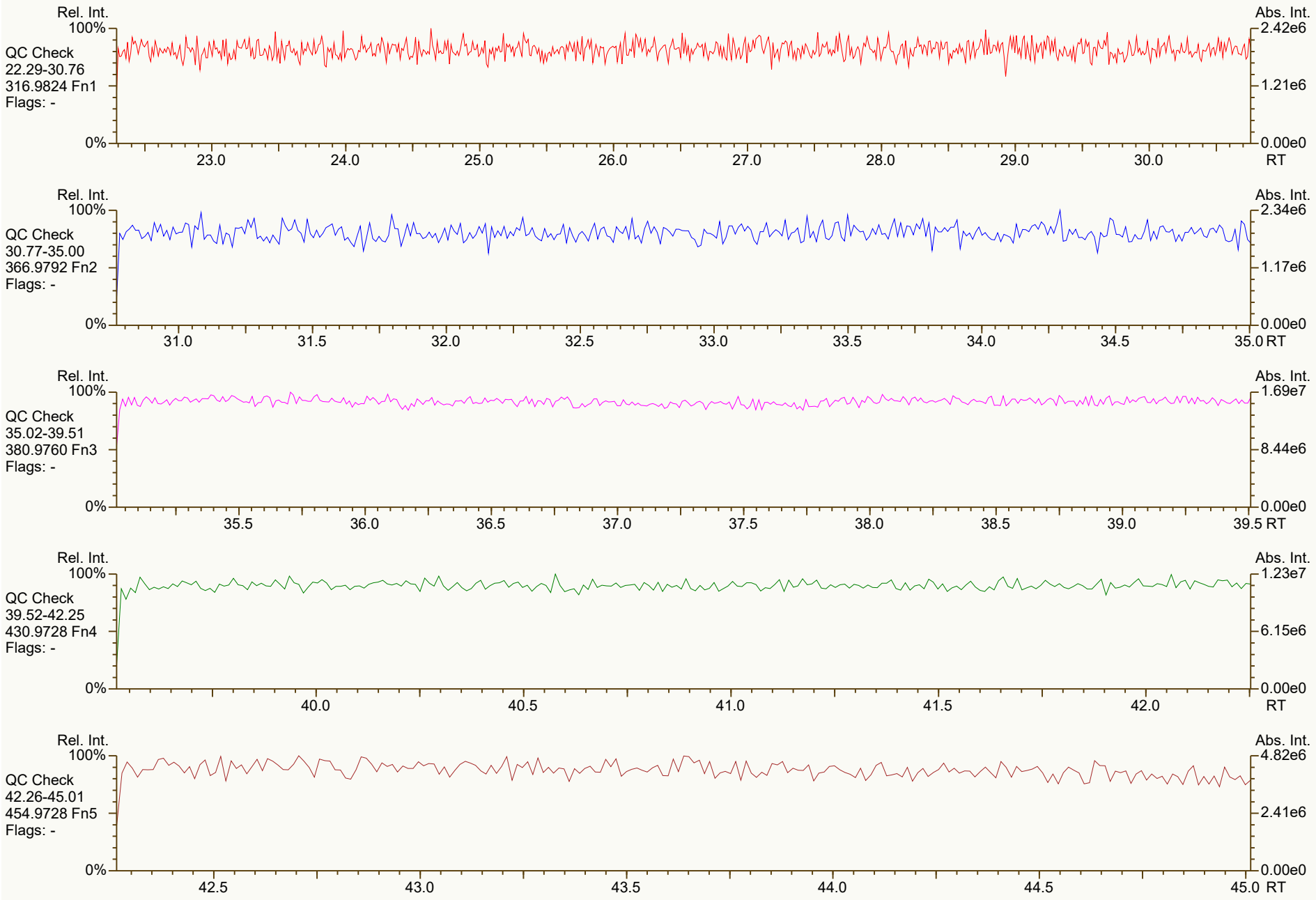
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	77	-	129	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	96	-	415	Y
CLEANUP STANDARDS	n/a - CL 28Jul21										
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:18 Analyst: pw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23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
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1.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.69e7
8.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.23e7
6.15e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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2.41e6
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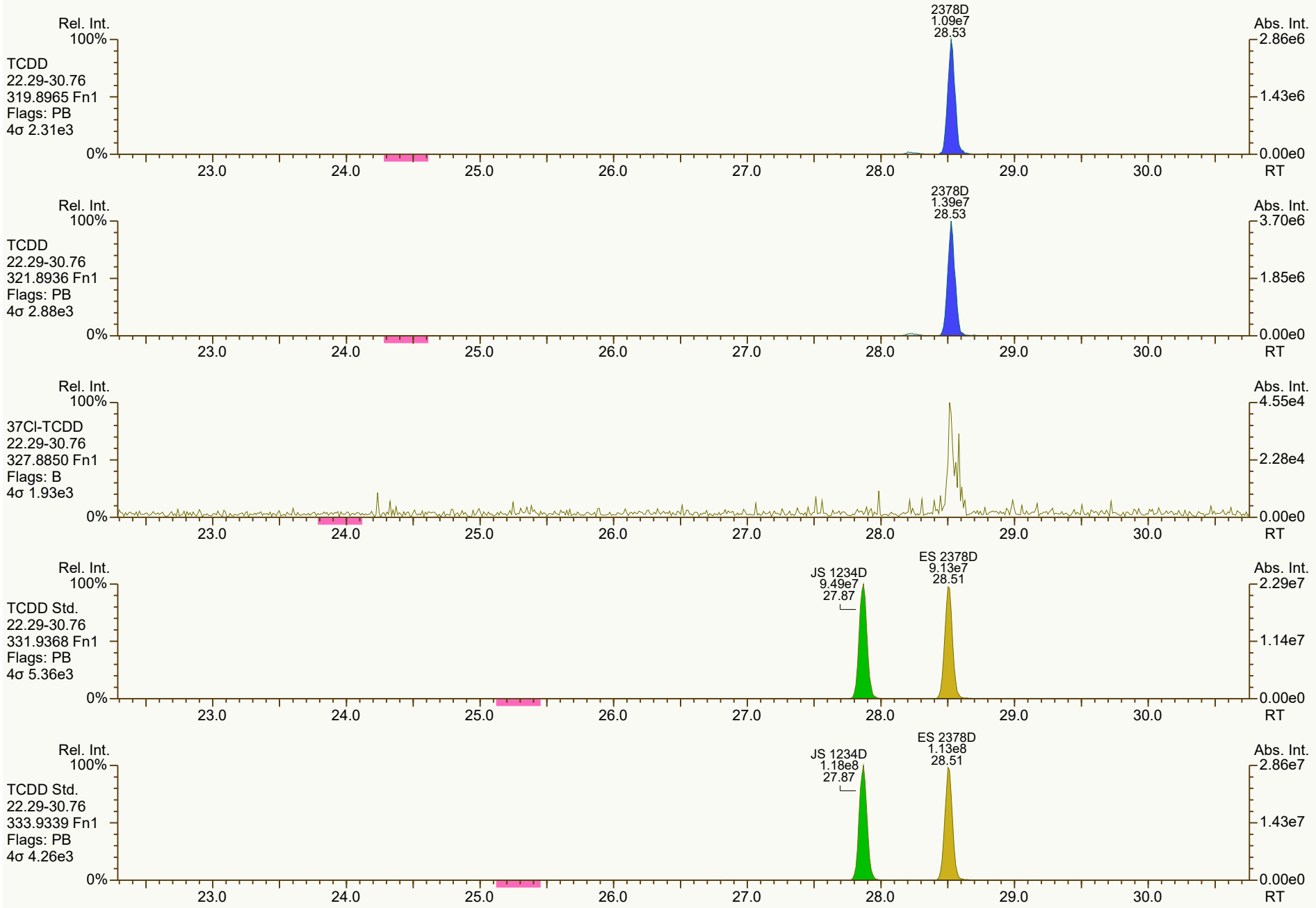
42.5
43.0
43.5
44.0
44.5
45.0 RT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100%
TCDD
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319.8965 Fn1
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0%
2378D
1.09e7
28.53
Abs. Int.
2.86e6
1.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.88e3
0%
2378D
1.39e7
28.53
Abs. Int.
3.70e6
1.85e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.93e3
0%
Abs. Int.
4.55e4
2.28e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.36e3
0%
JS 1234D
9.49e7
27.87
ES 2378D
9.13e7
28.51
Abs. Int.
2.29e7
1.14e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.26e3
0%
JS 1234D
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27.87
ES 2378D
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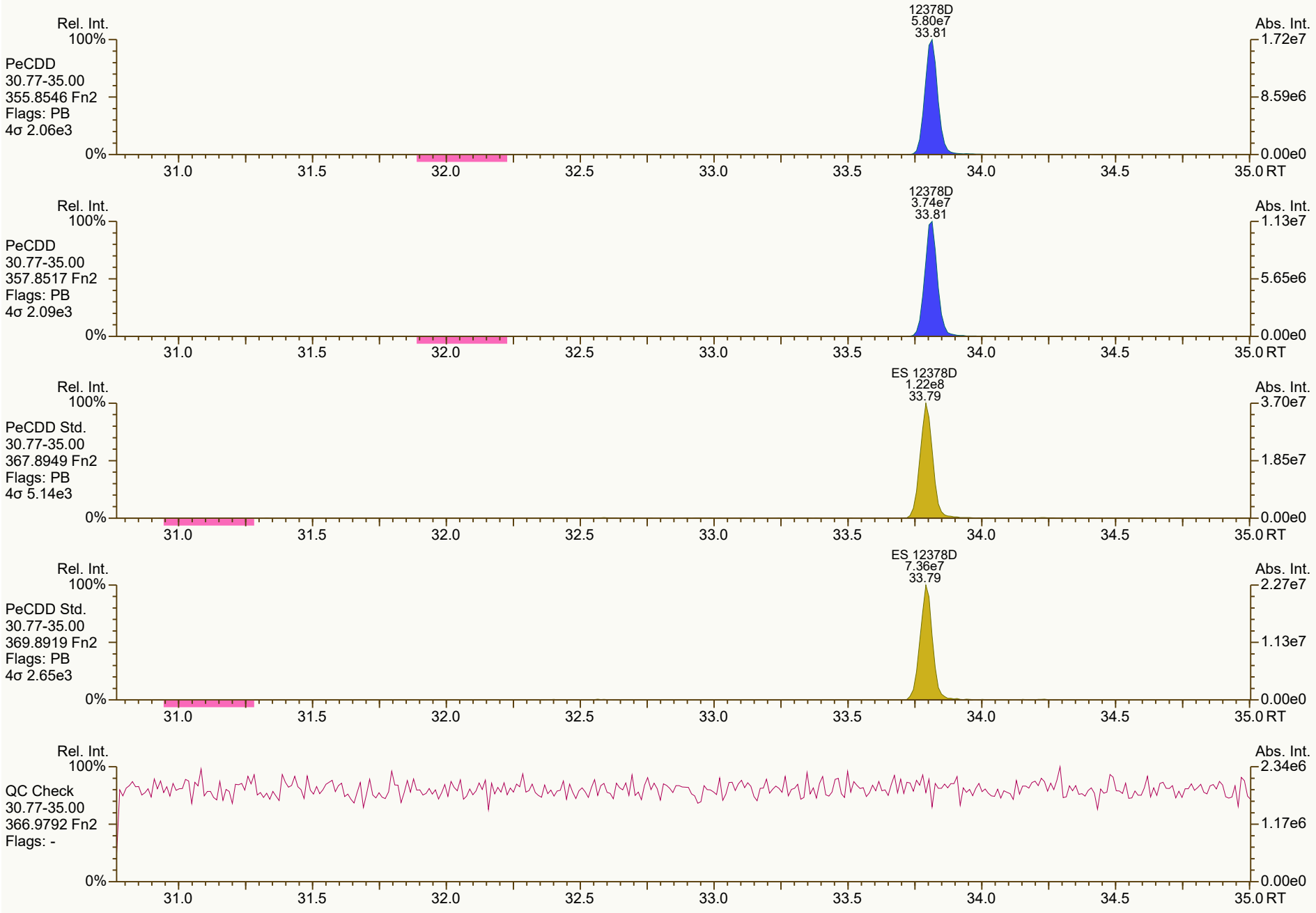
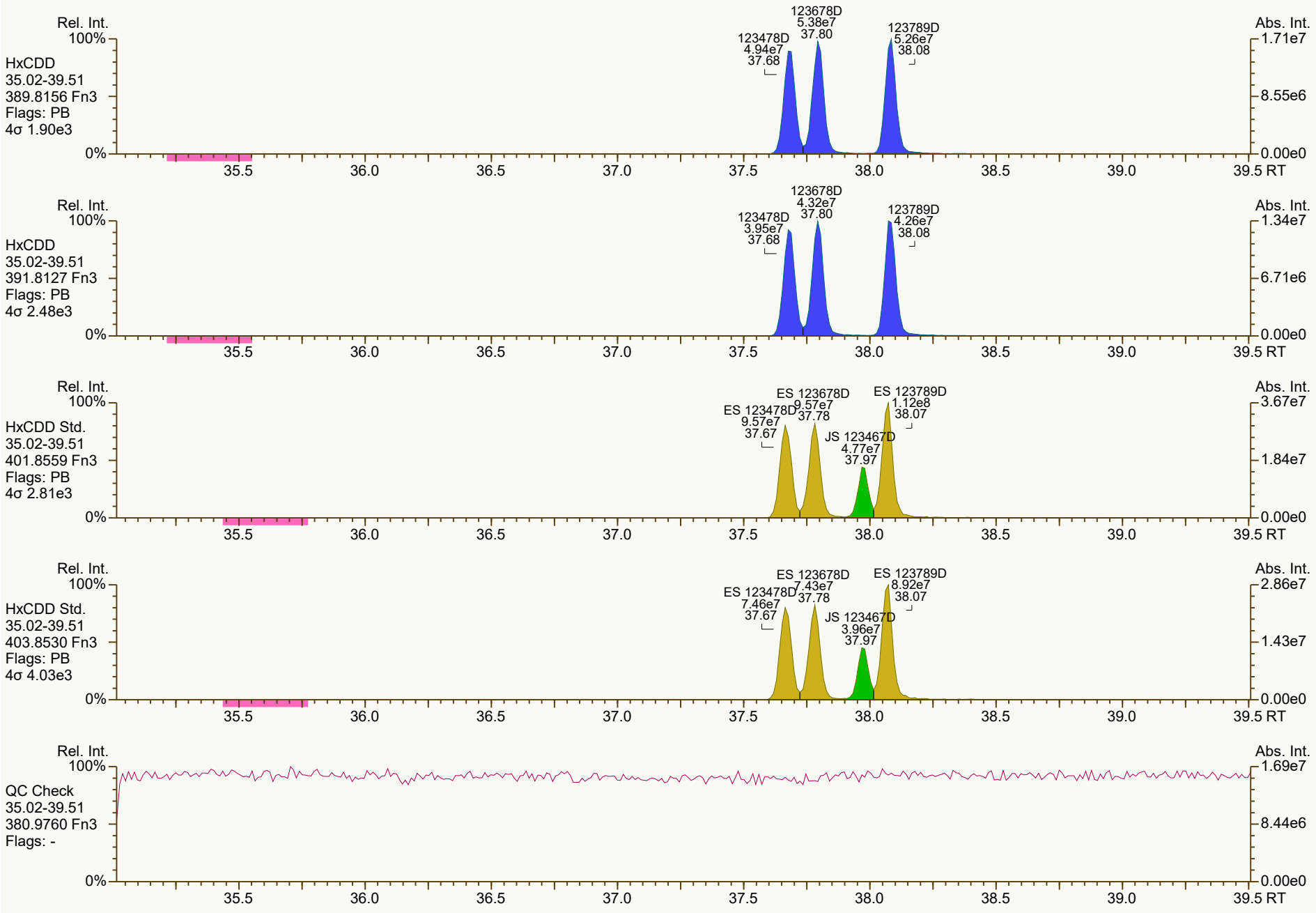
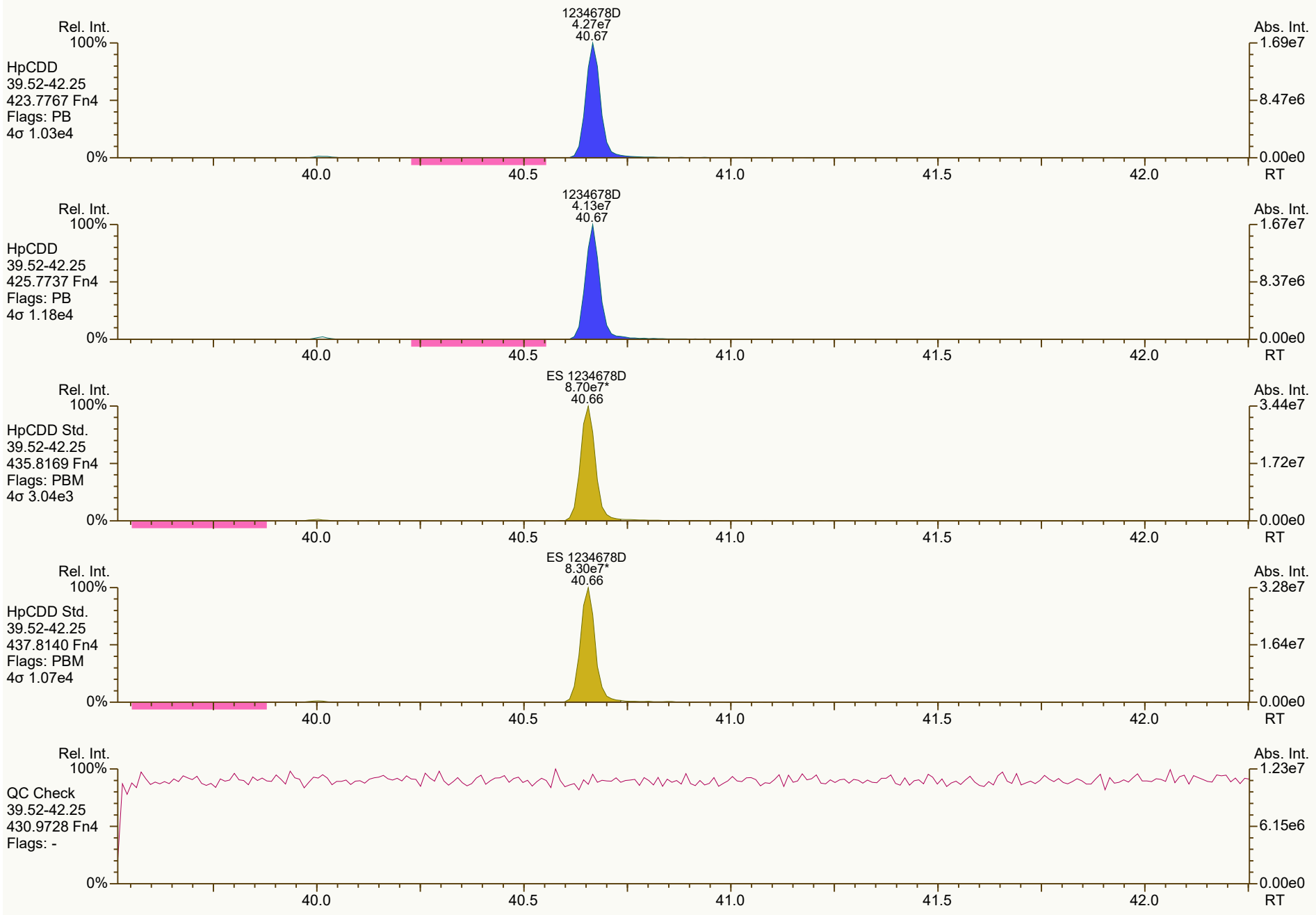
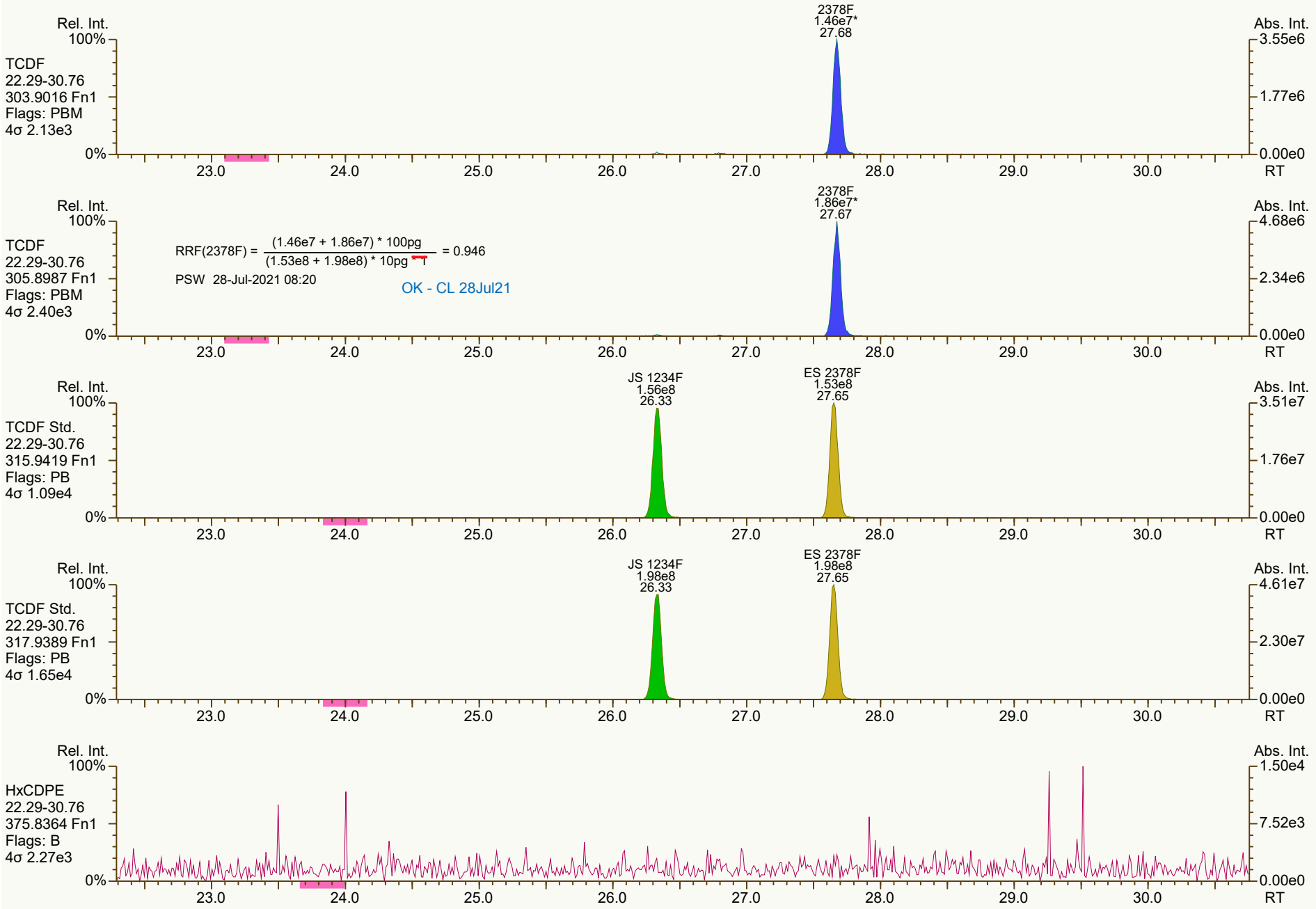
28.51
Abs. Int.
2.86e7
1.43e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.06e3
0%
12378D
5.80e7
33.81
Abs. Int.
1.72e7
8.59e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.09e3
0%
12378D
3.74e7
33.81
Abs. Int.
1.13e7
5.65e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 5.14e3
0%
ES 12378D
1.22e8
33.79
Abs. Int.
3.70e7
1.85e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 2.65e3
0%
ES 12378D
7.36e7
33.79
Abs. Int.
2.27e7
1.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 1.90e3
123678D
5.38e7
37.80
123478D
4.94e7
37.68
123789D
5.26e7
38.08
Abs. Int.
1.71e7
8.55e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.48e3
123678D
4.32e7
37.80
123478D
3.95e7
37.68
123789D
4.26e7
38.08
Abs. Int.
1.34e7
6.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 2.81e3
ES 123678D
9.57e7
37.78
ES 123478D
9.57e7
37.67
ES 123789D
1.12e8
38.07
JS 123467D
4.77e7
37.97
Abs. Int.
3.67e7
1.84e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 4.03e3
ES 123678D
7.43e7
37.78
ES 123478D
7.46e7
37.67
ES 123789D
8.92e7
38.07
JS 123467D
3.96e7
37.97
Abs. Int.
2.86e7
1.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.69e7
8.44e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


1234678D
4.27e7
40.67
Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.03e4
0%
Abs. Int.
1.69e7
8.47e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
1234678D
4.13e7
40.67
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.18e4
1.67e7
8.37e6
ES 1234678D
8.70e7*
40.66
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 3.04e3
3.44e7
1.72e7
ES 1234678D
8.30e7*
40.66
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 1.07e4
3.28e7
1.64e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.23e7
6.15e6


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.37e3
0%
OCDD
6.83e7*
43.24
Abs. Int.
2.30e7
1.15e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 4.65e3
0%
OCDD
7.63e7*
43.23
Abs. Int.
2.58e7
1.29e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 3.40e3
0%
ES OCDD
1.28e8*
43.22
Abs. Int.
4.34e7
2.17e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.30e3
0%
ES OCDD
1.41e8*
43.22
Abs. Int.
4.68e7
2.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.82e6
2.41e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

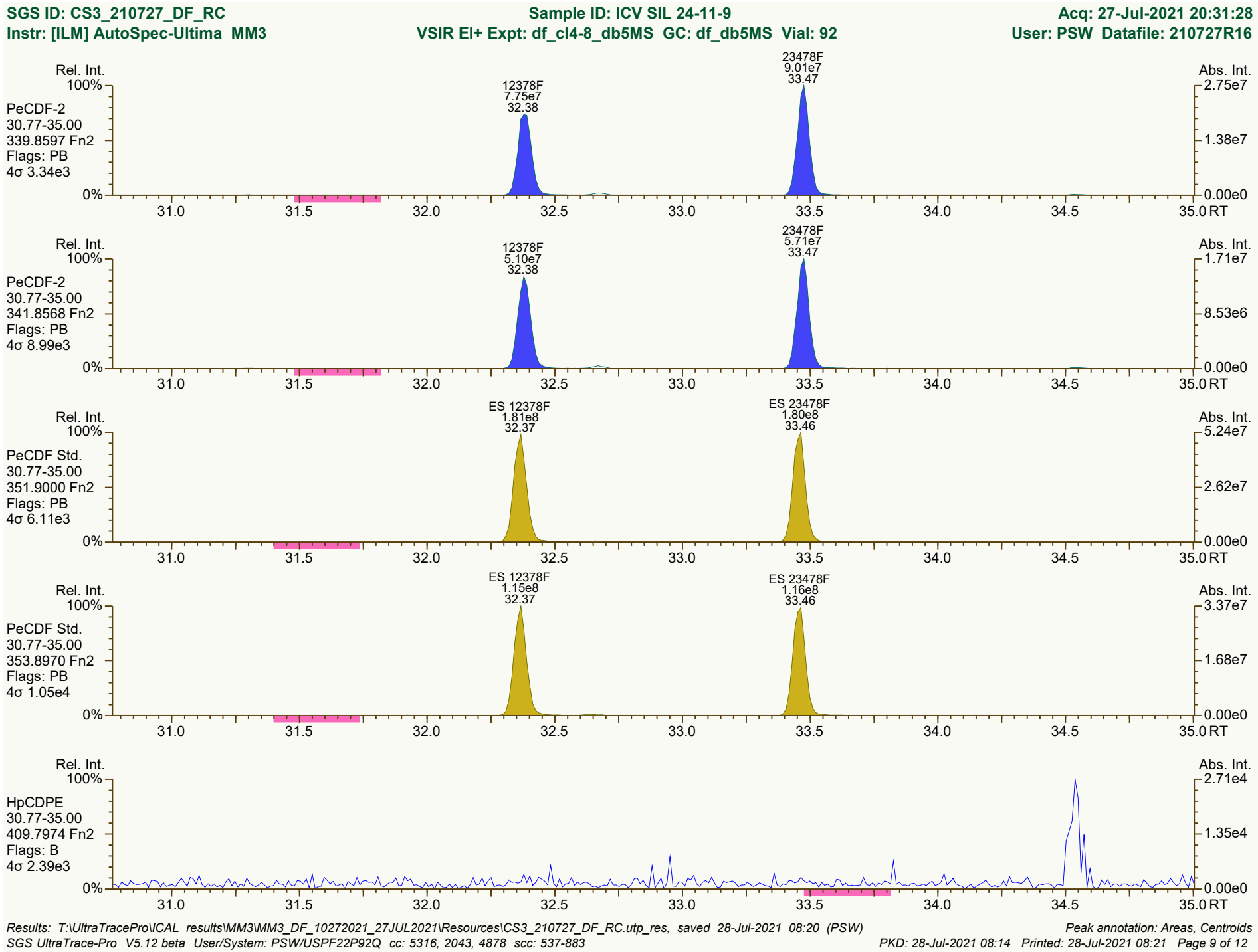

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.13e3
0%
2378F
1.46e7*
27.68
Abs. Int.
3.55e6
1.77e6
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.40e3
0%
RRF(2378F) = (1.46e7 + 1.86e7) * 100pg / (1.53e8 + 1.98e8) * 10pg * 1 = 0.946
PSW 28-Jul-2021 08:20
OK - CL 28Jul21
2378F
1.86e7*
27.67
Abs. Int.
4.68e6
2.34e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.09e4
0%
JS 1234F
1.56e8
26.33
ES 2378F
1.53e8
27.65
Abs. Int.
3.51e7
1.76e7
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.65e4
0%
JS 1234F
1.98e8
26.33
ES 2378F
1.98e8
27.65
Abs. Int.
4.61e7
2.30e7
0.00e0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.27e3
0%
Abs. Int.
1.50e4
7.52e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.31e4
6.54e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.61e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.73e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.05e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.42e6
1.21e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

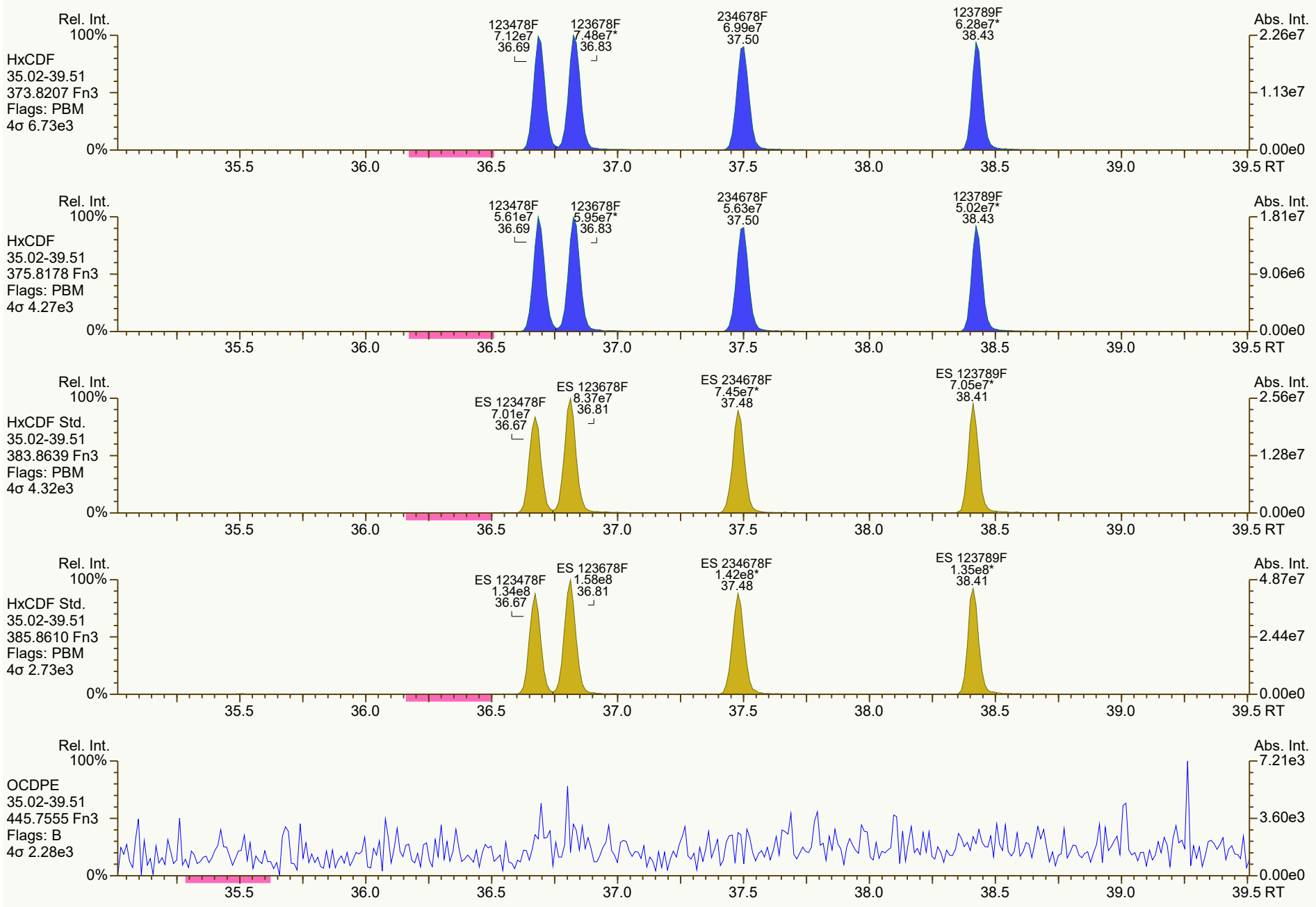
SGS ID: CS3_210727_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

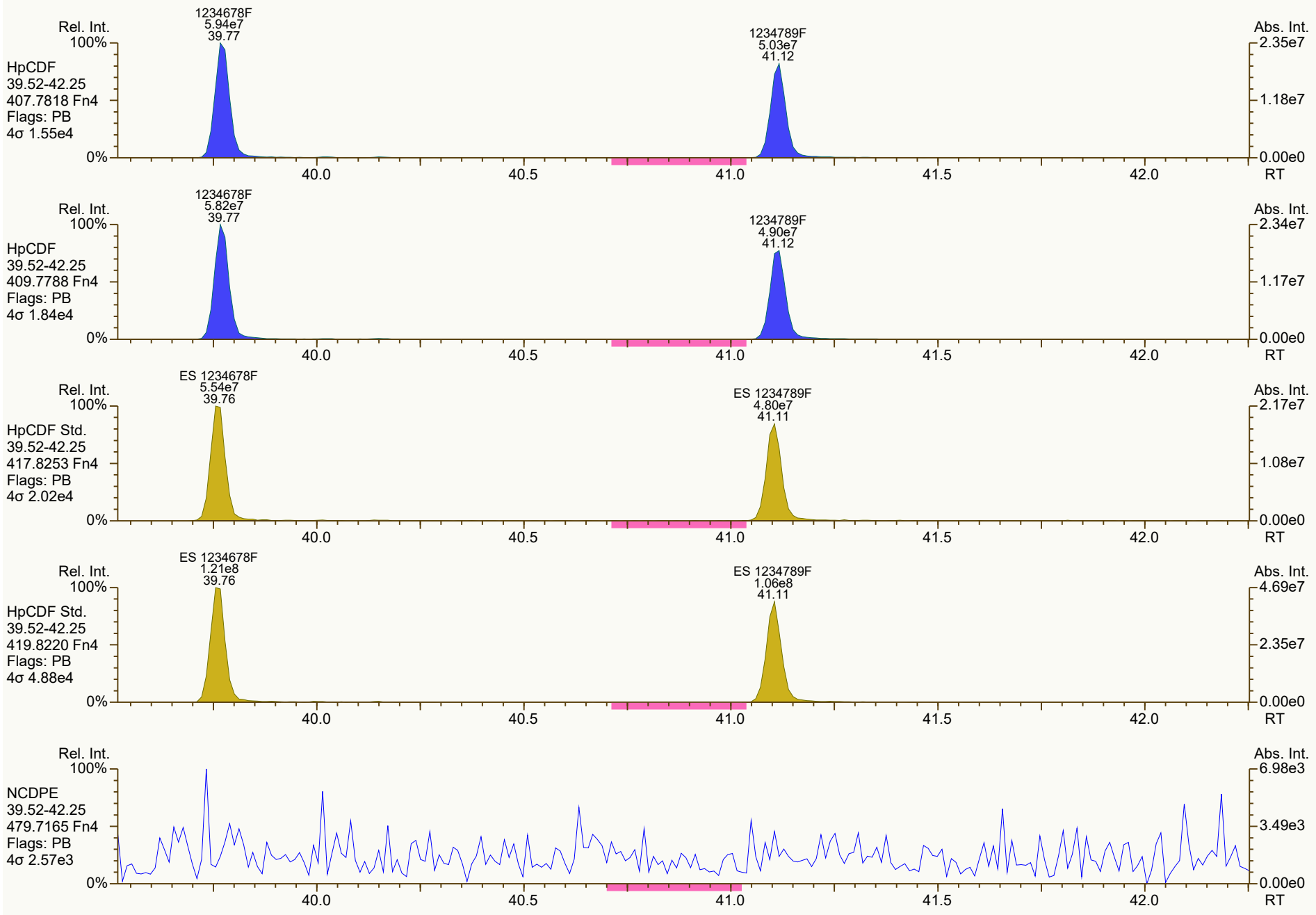
Sample ID: ICV SIL 24-11-9
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92

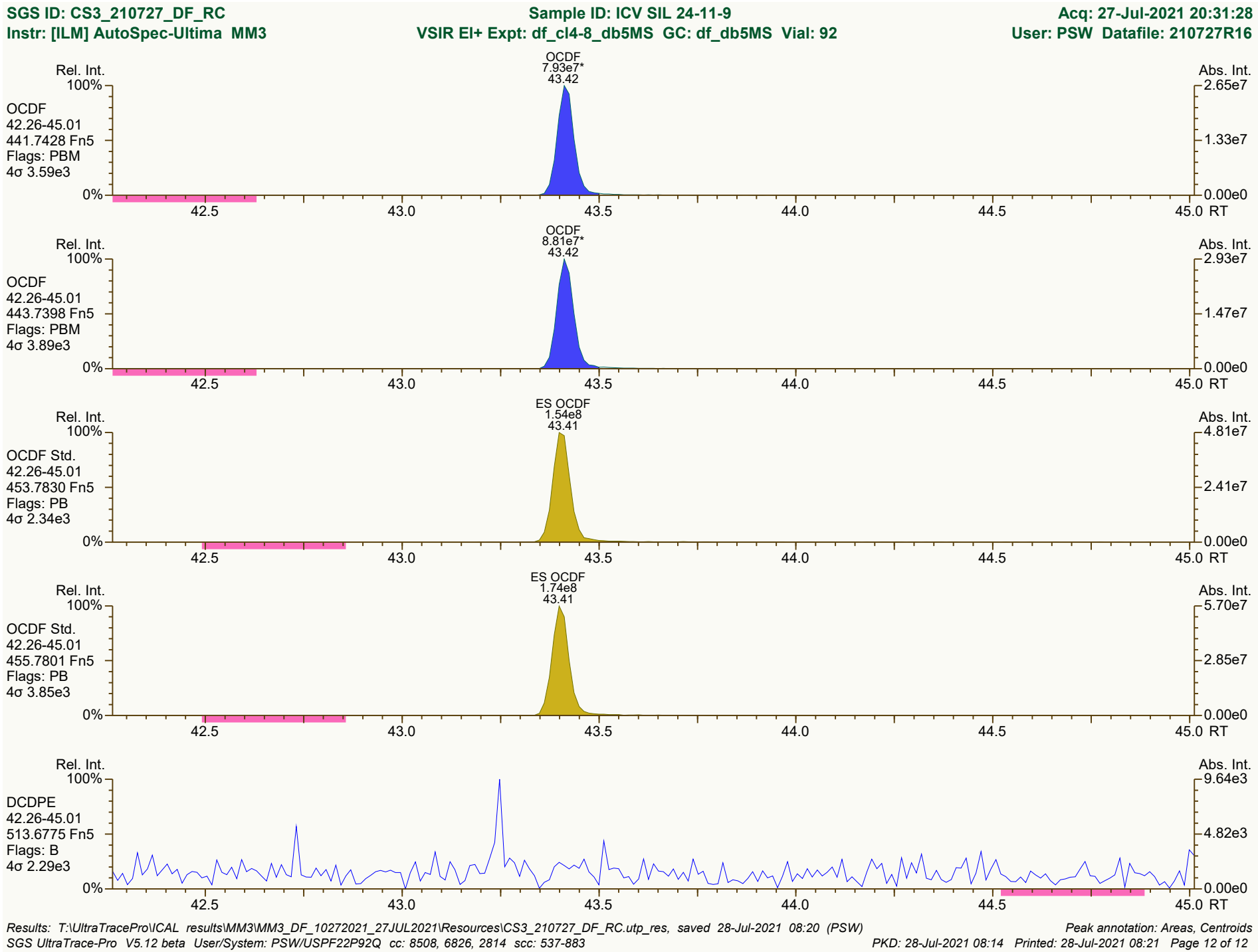
Acq: 27-Jul-2021 20:31:28
User: PSW Datafile: 210727R16



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5316, 2043, 4878 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 6.73e3
0%
123478F
7.12e7
36.69
123678F
7.48e7*
36.83
234678F
6.99e7
37.50
123789F
6.28e7*
38.43
Abs. Int.
2.26e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 4.27e3
0%
123478F
5.61e7
36.69
123678F
5.95e7*
36.83
234678F
5.63e7
37.50
123789F
5.02e7*
38.43
Abs. Int.
1.81e7
9.06e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 4.32e3
0%
ES 123478F
7.01e7
36.67
ES 123678F
8.37e7
36.81
ES 234678F
7.45e7*
37.48
ES 123789F
7.05e7*
38.41
Abs. Int.
2.56e7
1.28e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.73e3
0%
ES 123478F
1.34e8
36.67
ES 123678F
1.58e8
36.81
ES 234678F
1.42e8*
37.48
ES 123789F
1.35e8*
38.41
Abs. Int.
4.87e7
2.44e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.28e3
0%
Abs. Int.
7.21e3
3.60e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

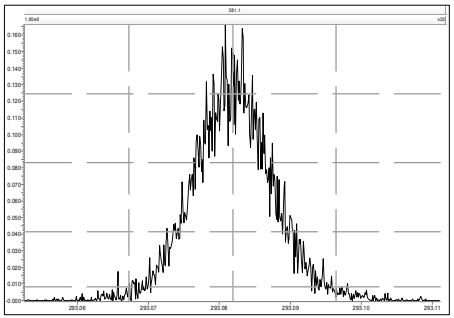

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.55e4
0%
1234678F
5.94e7
39.77
1234789F
5.03e7
41.12
Abs. Int.
2.35e7
1.18e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.84e4
0%
1234678F
5.82e7
39.77
1234789F
4.90e7
41.12
Abs. Int.
2.34e7
1.17e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.02e4
0%
ES 1234678F
5.54e7
39.76
ES 1234789F
4.80e7
41.11
Abs. Int.
2.17e7
1.08e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 4.88e4
0%
ES 1234678F
1.21e8
39.76
ES 1234789F
1.06e8
41.11
Abs. Int.
4.69e7
2.35e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.57e3
0%
Abs. Int.
6.98e3
3.49e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


SGS ID: CS3_210727_DF_RC
Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
OCDF
7.93e7*
43.42
Rel. Int.
Abs. Int.
OCDF
42.26-45.01
441.7428 Fn5
Flags: PBM
4σ 3.59e3
OCDF
8.81e7*
43.42
OCDF
42.26-45.01
443.7398 Fn5
Flags: PBM
4σ 3.89e3
ES OCDF
1.54e8
43.41
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 2.34e3
ES OCDF
1.74e8
43.41
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 3.85e3
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.29e3
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8508, 6826, 2814 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 12 of 12

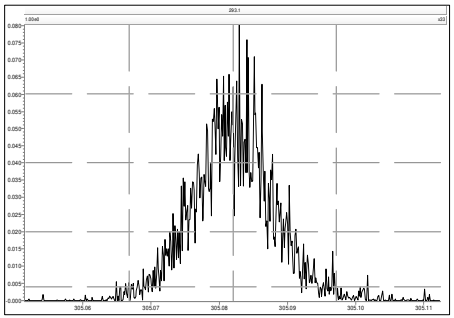
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:15:38 Eastern Daylight Time

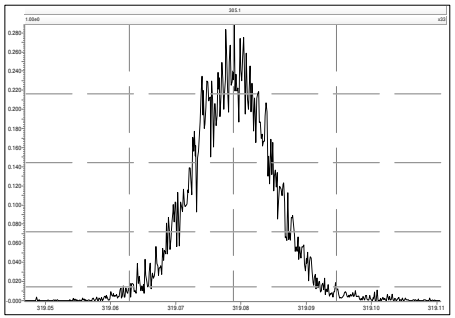
M 292.9824 R 12951



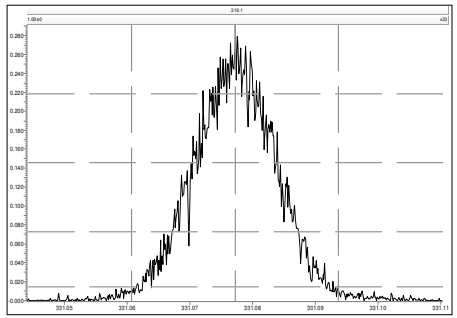
M 304.9824 R 13589



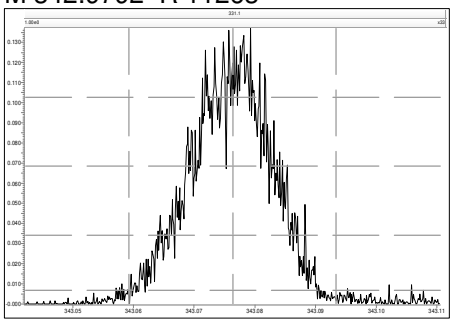
M 318.9792 R 11848



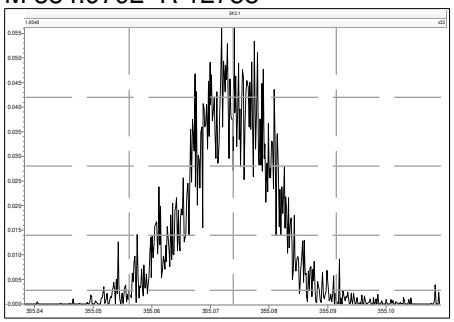
M 330.9792 R 11310



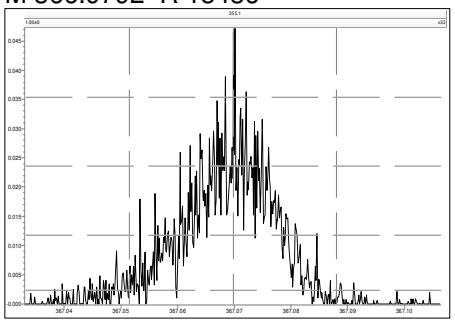
M 342.9792 R 11263



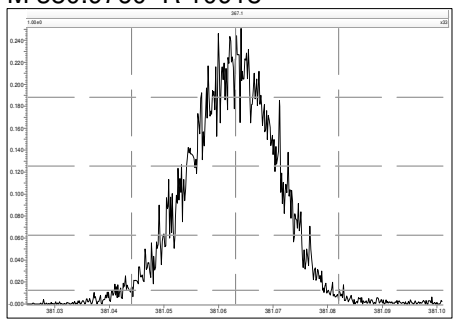
M 354.9792 R 12755



M 366.9792 R 15436



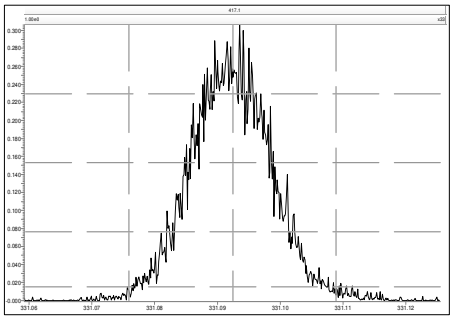
M 380.9760 R 10918



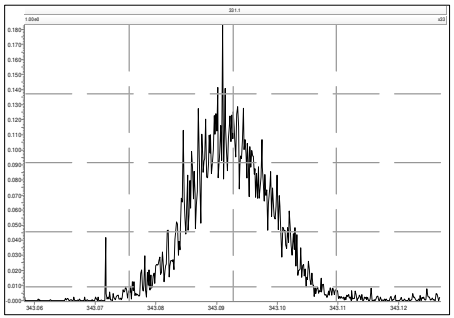
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:03 Eastern Daylight Time

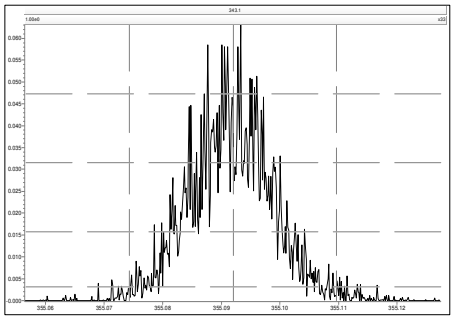
M 330.9792 R 11165



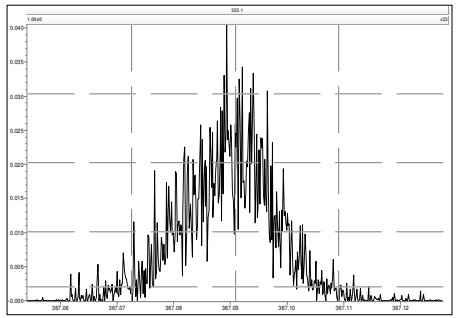
M 342.9792 R 12440



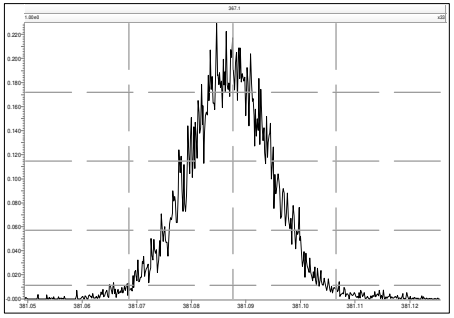
M 354.9792 R 12626



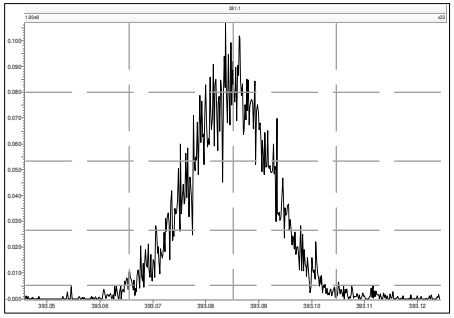
M 366.9792 R 12134



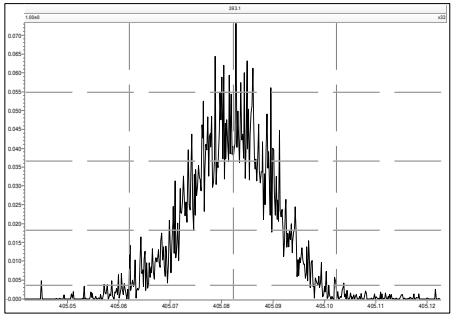
M 380.9760 R 10727



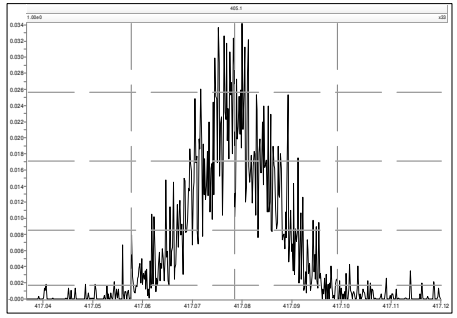
M 392.9760 R 12019



M 404.9760 R 11685



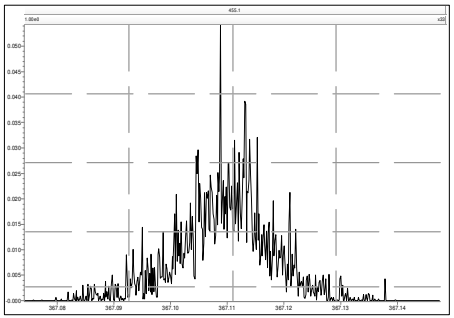
M 416.9760 R 14046



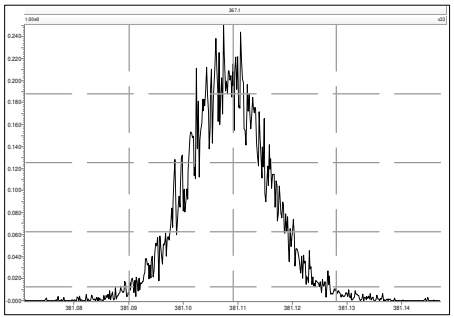
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:24 Eastern Daylight Time

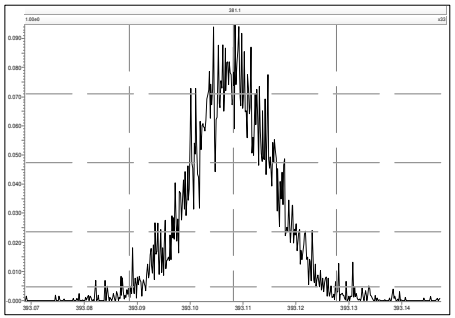
M 366.9792 R 13020



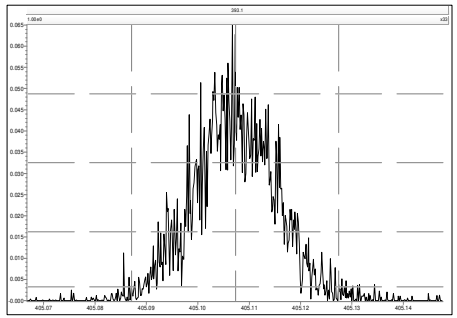
M 380.9760 R 11361



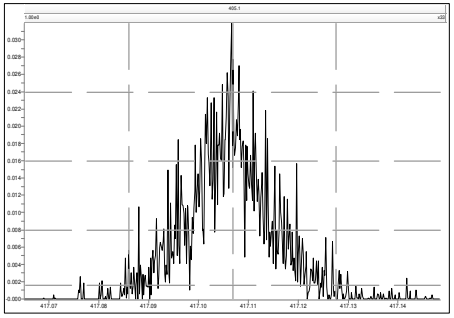
M 392.9760 R 11464



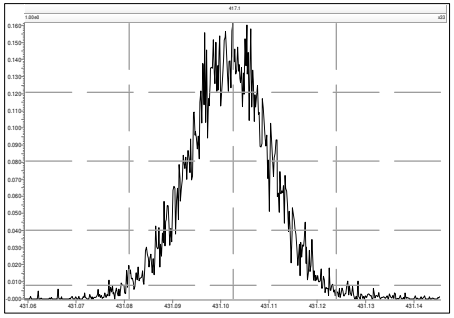
M 404.9760 R 12314



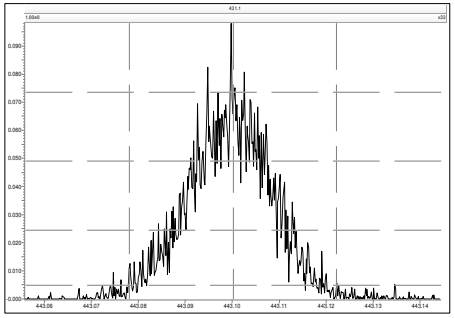
M 416.9760 R 17727



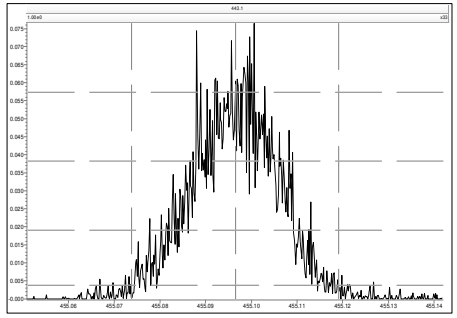
M 430.9728 R 11112



M 442.9728 R 13157



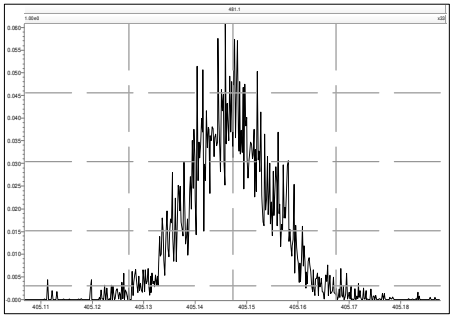
M 454.9728 R 12133



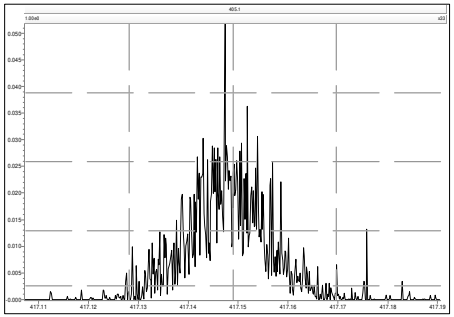
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:47 Eastern Daylight Time

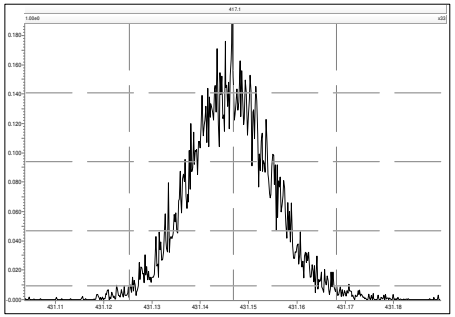
M 404.9760 R 12954



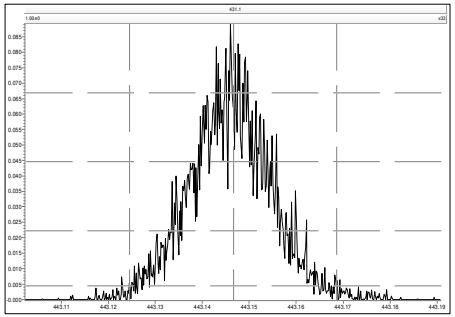
M 416.9760 R 17005



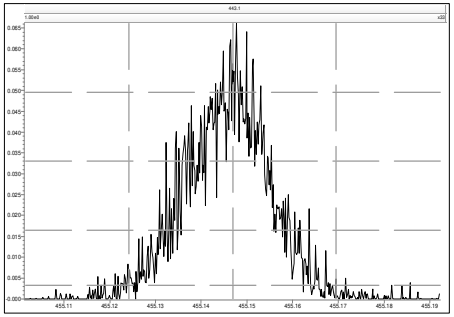
M 430.9728 R 11739



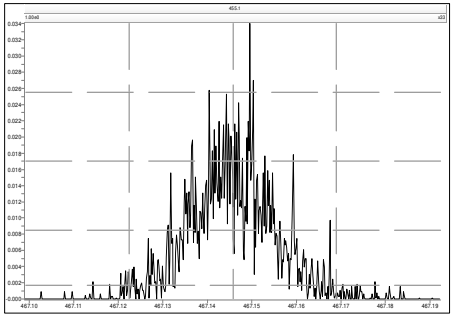
M 442.9728 R 11849



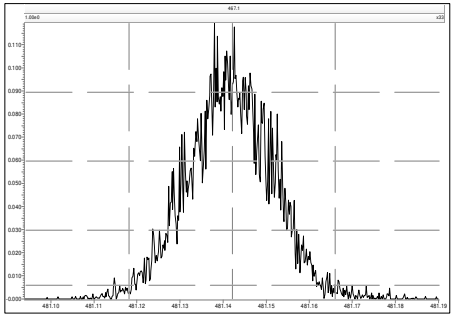
M 454.9728 R 12562



M 466.9728 R 14617



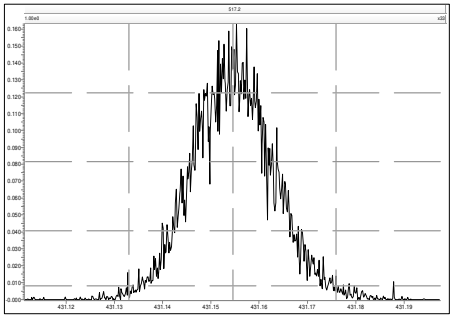
M 480.9696 R 11211



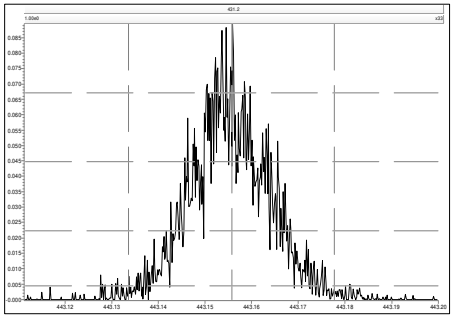
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:17:11 Eastern Daylight Time

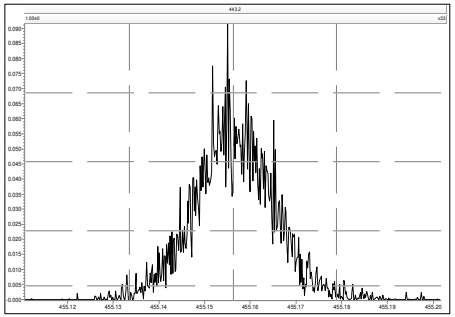
M 430.9728 R 11739



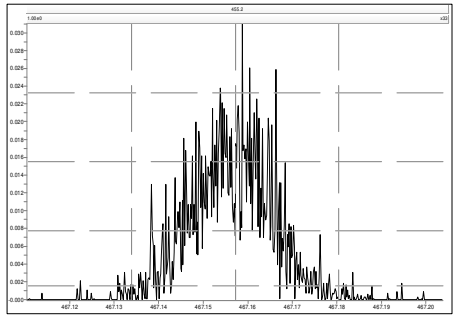
M 442.9728 R 12623



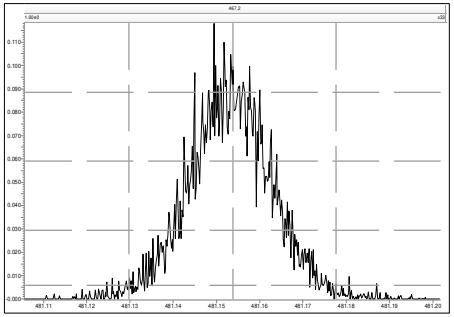
M 454.9728 R 12952



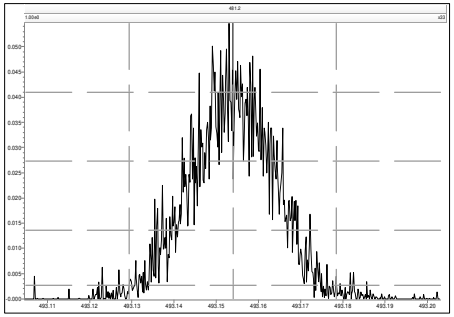
M 466.9728 R 17238



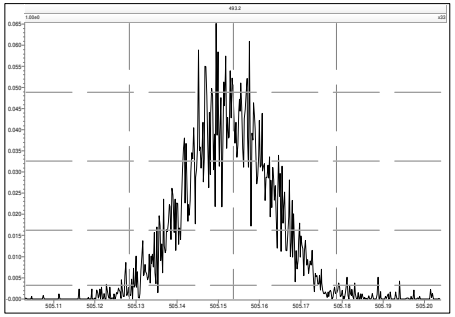
M 480.9696 R 11416



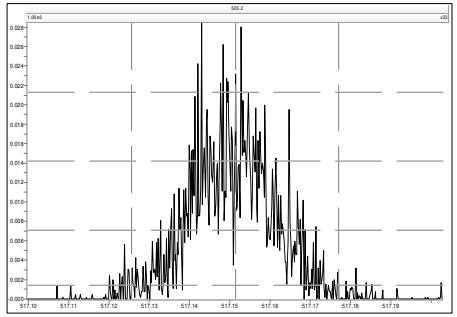
M 492.9696 R 12562



M 504.9696 R 13300



M 516.9697 R 15342



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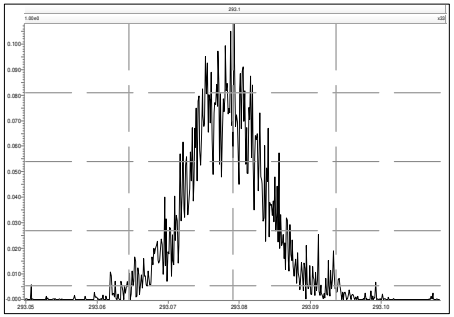
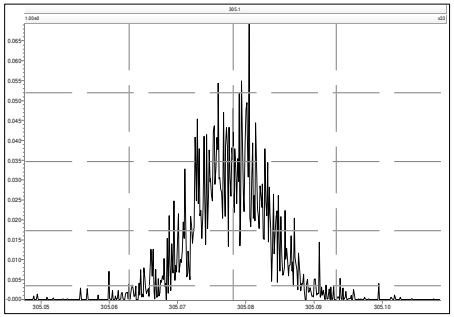
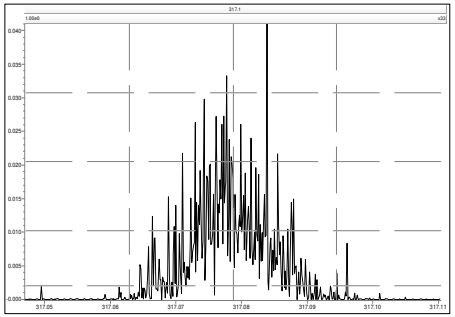
M 292.9824 R 13333



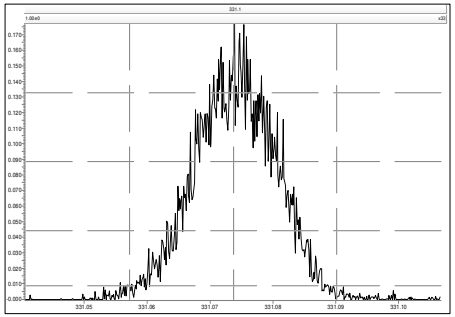
M 304.9824 R 14839



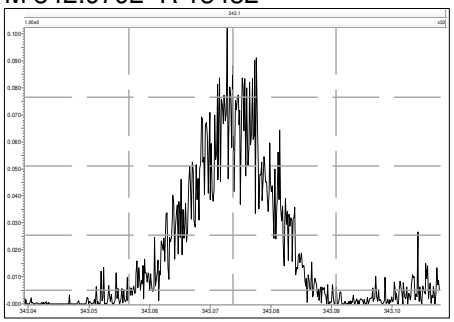
M 316.9824 R 17537



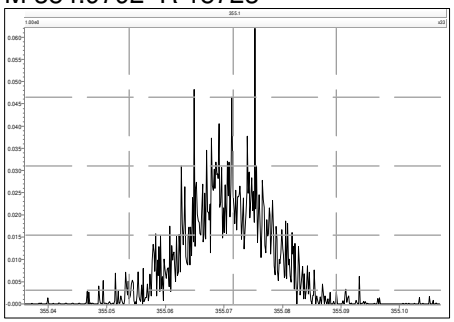
M 330.9792 R 11836



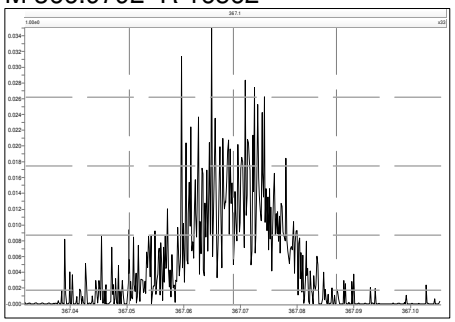
M 342.9792 R 13432



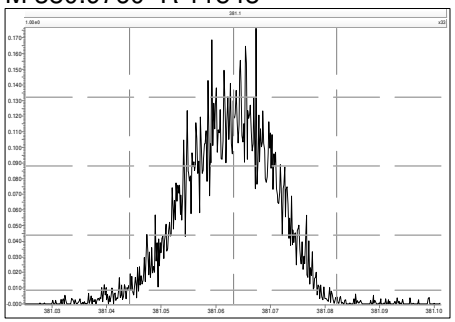
M 354.9792 R 15723



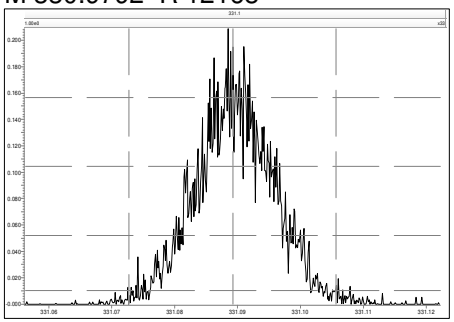
M 366.9792 R 16562



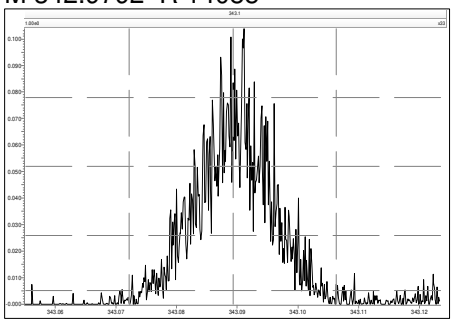
M 380.9760 R 11548



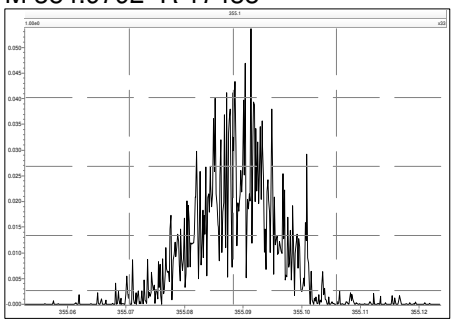
M 330.9792 R 12168



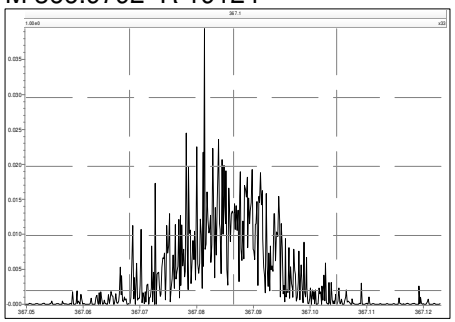
M 342.9792 R 14085



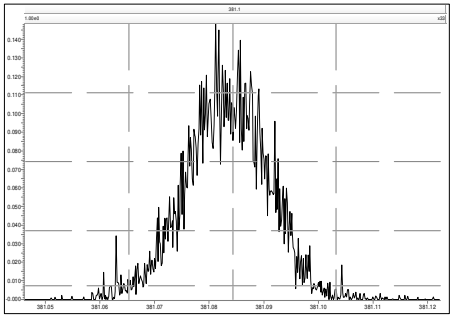
M 354.9792 R 17438



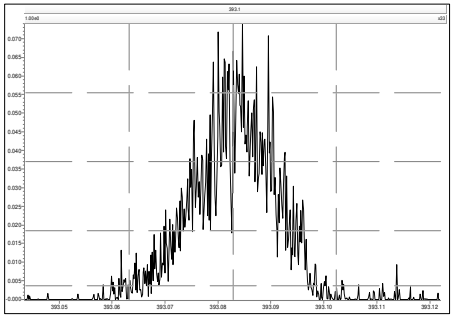
M 366.9792 R 19124



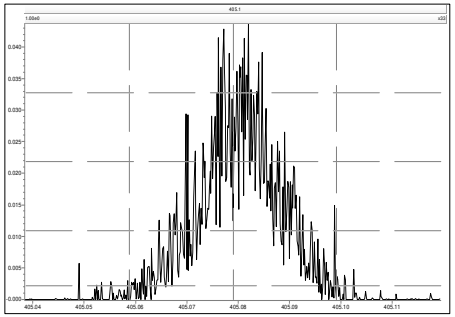
M 380.9760 R 12109



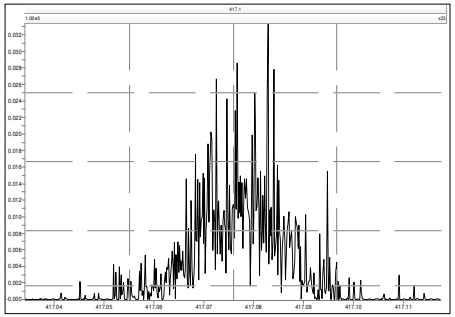
M 392.9760 R 12919



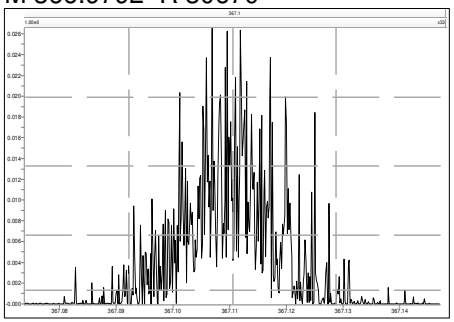
M 404.9760 R 13512



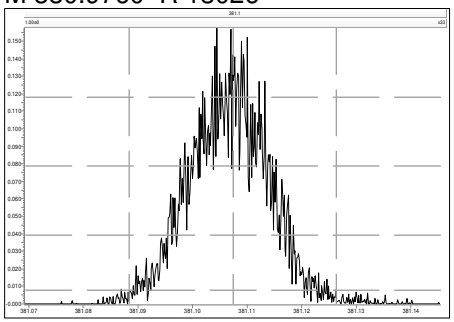
M 416.9760 R 18043



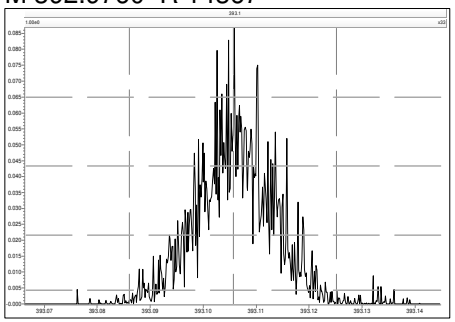
M 366.9792 R 30670



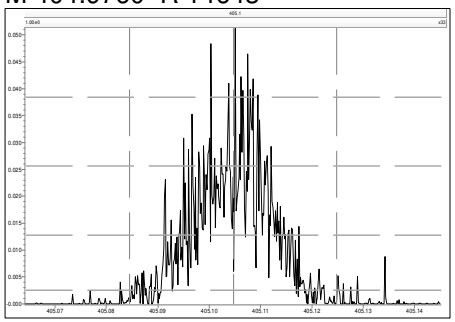
M 380.9760 R 13026



M 392.9760 R 14367



M 404.9760 R 14643



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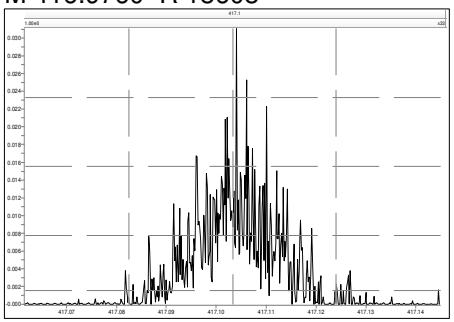

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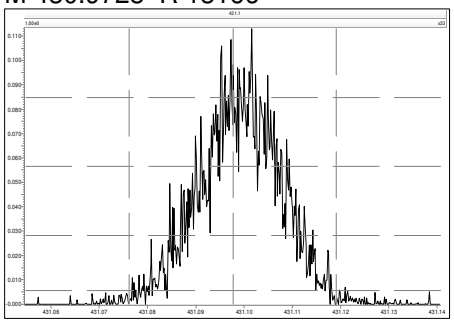

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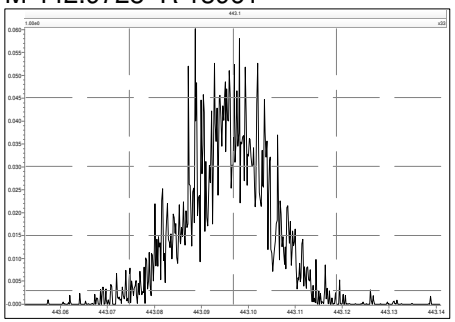

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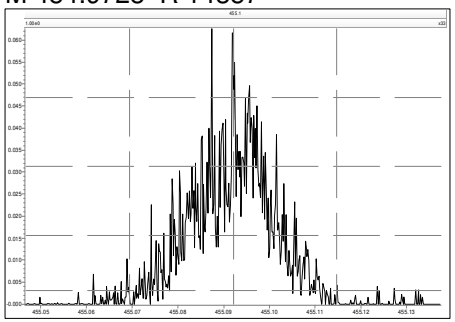

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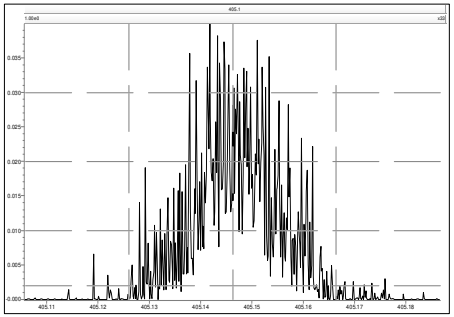

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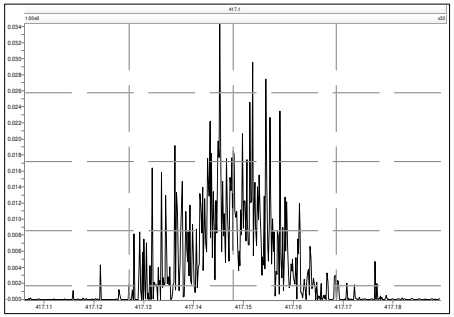

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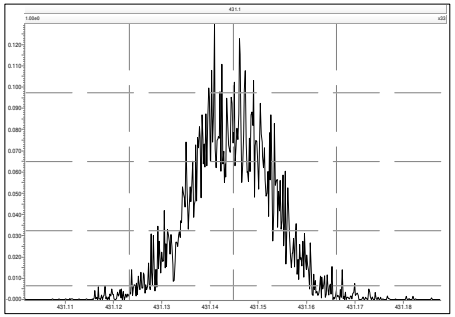

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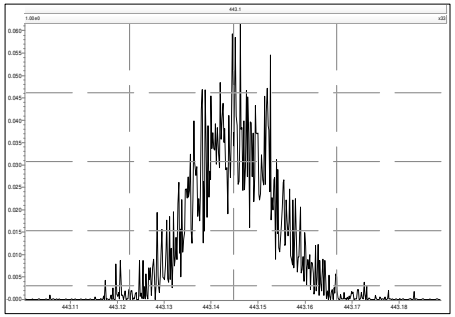

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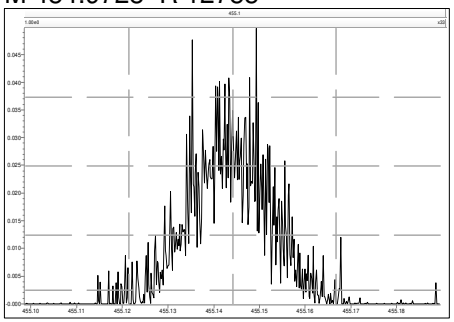

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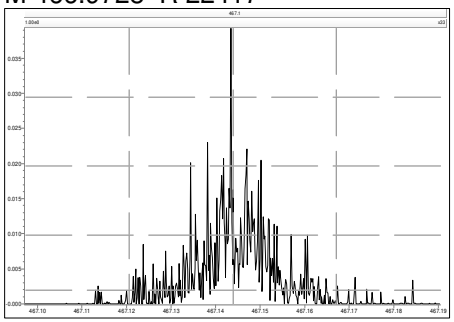

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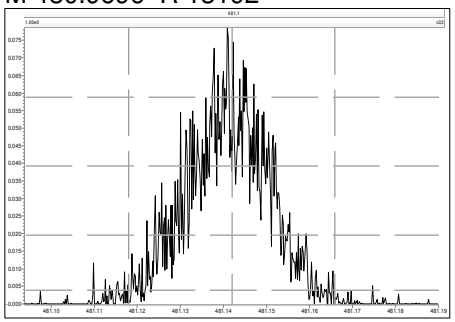

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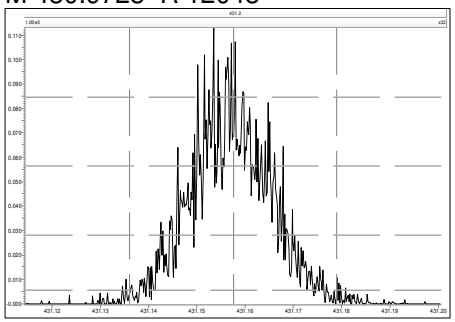

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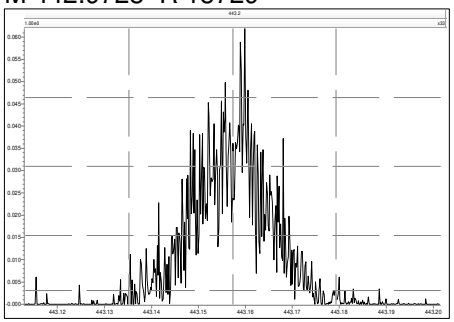

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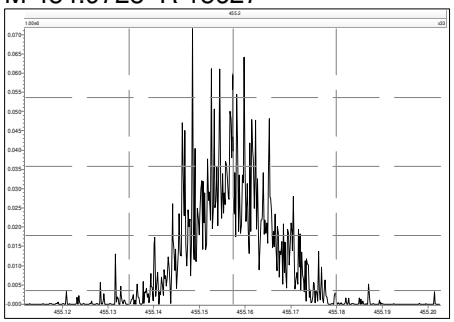

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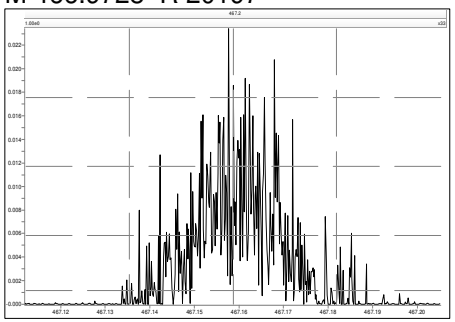

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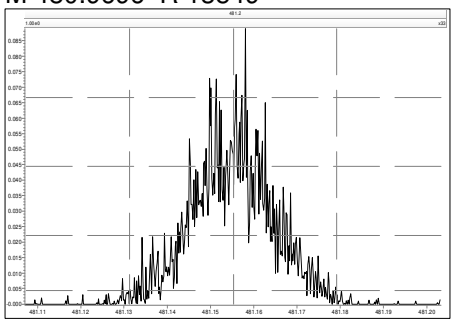

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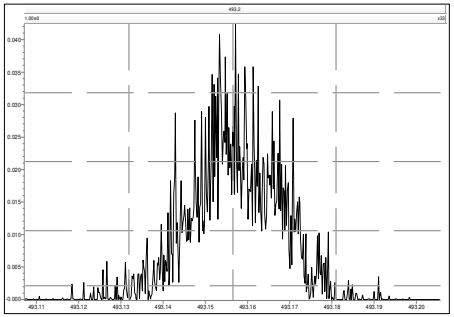

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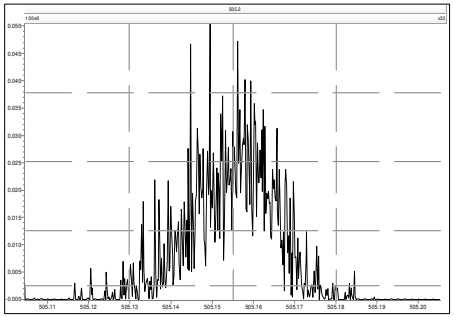

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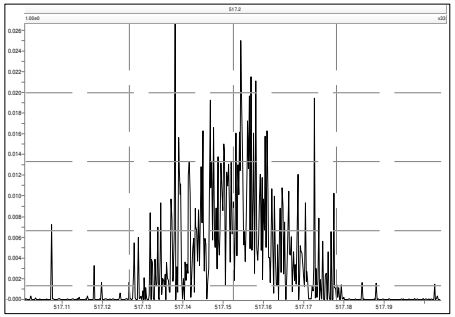

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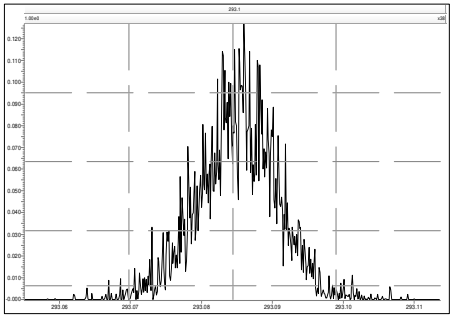

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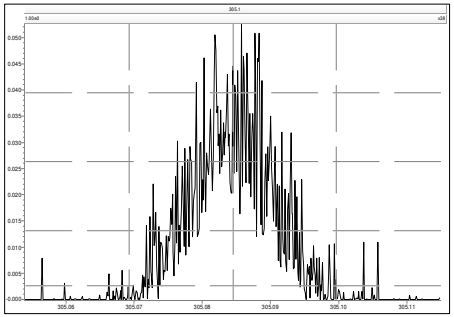

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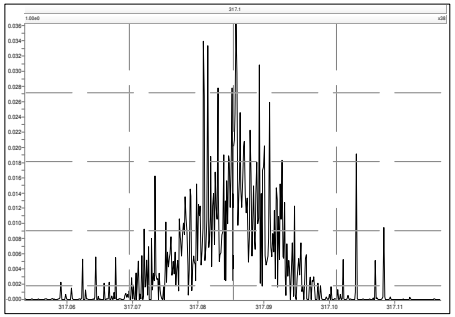

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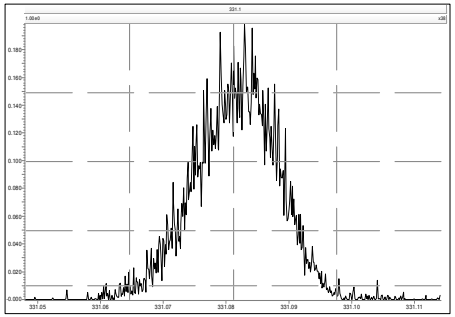

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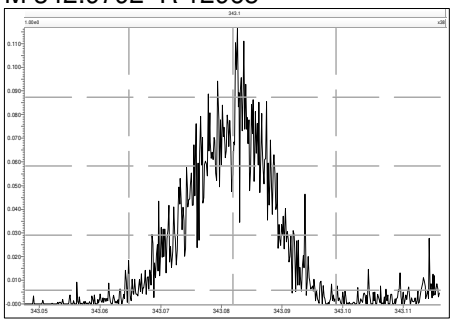

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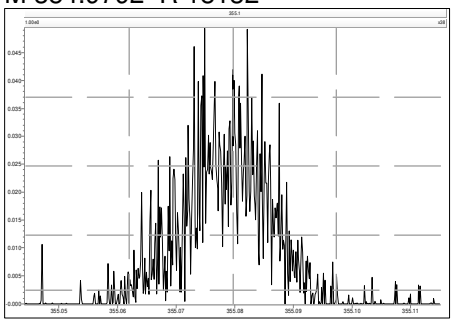

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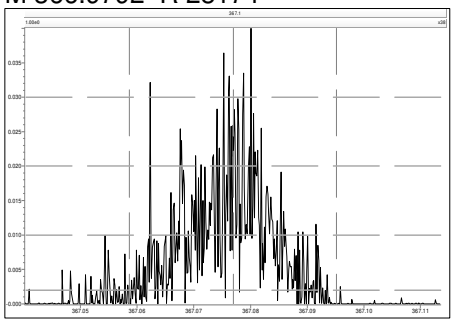

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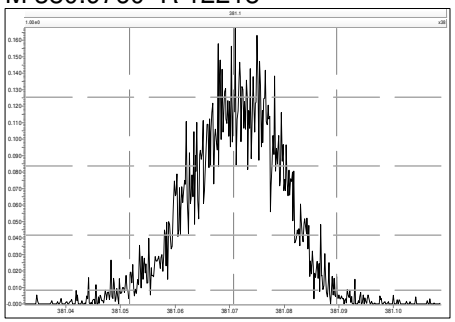

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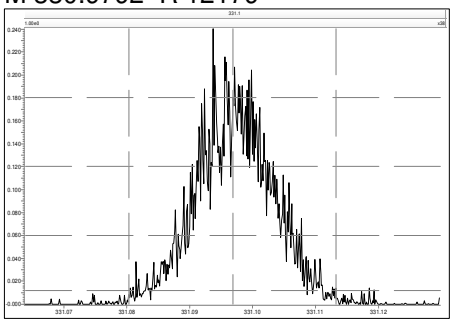

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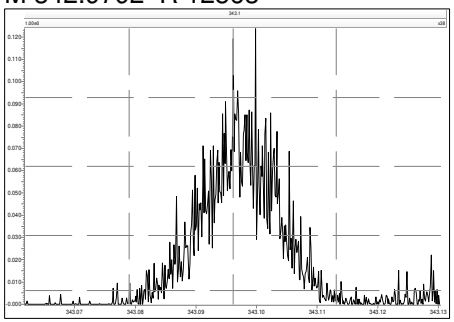

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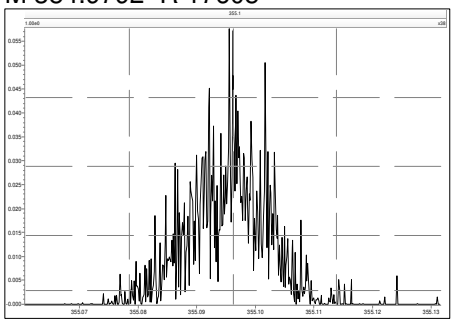

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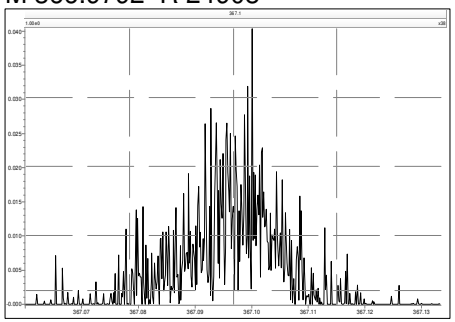

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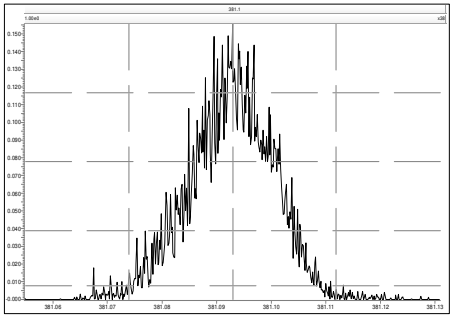

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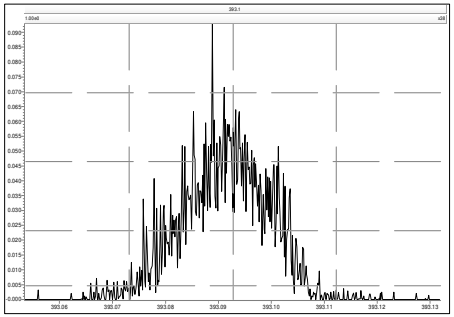

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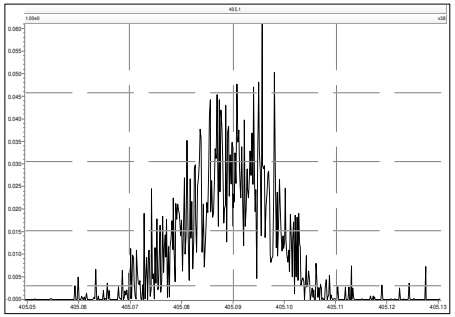

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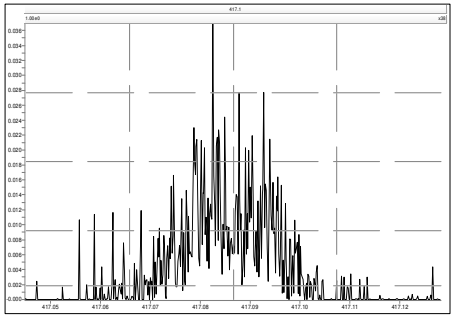

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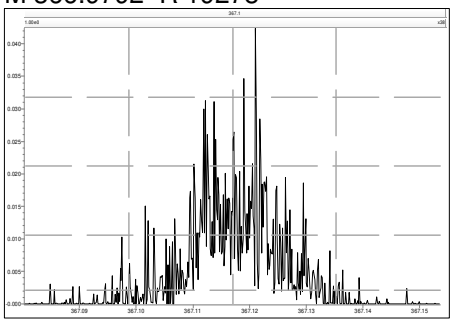

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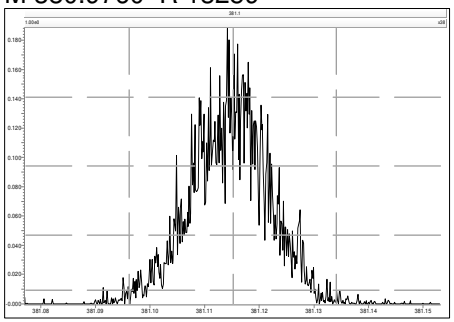

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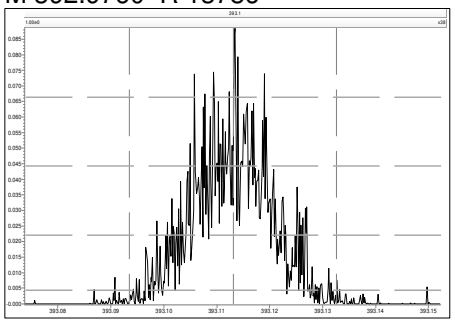

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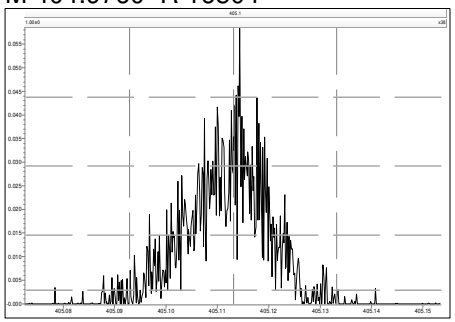

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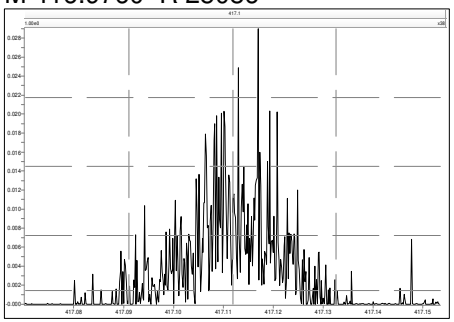

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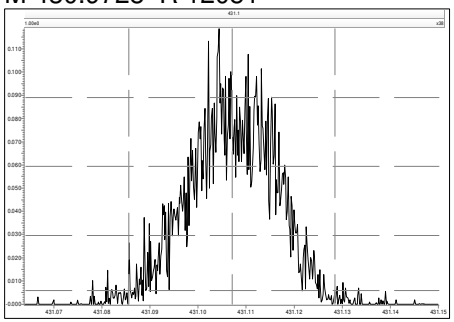

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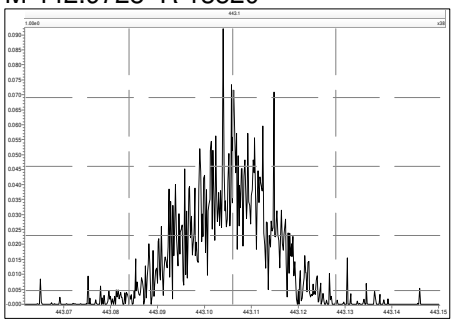

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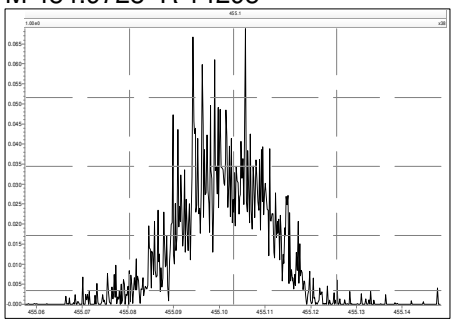

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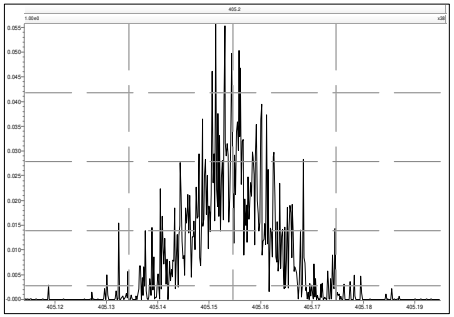

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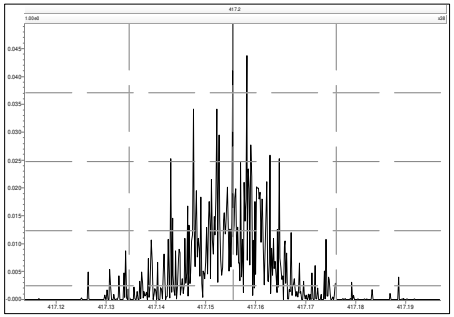

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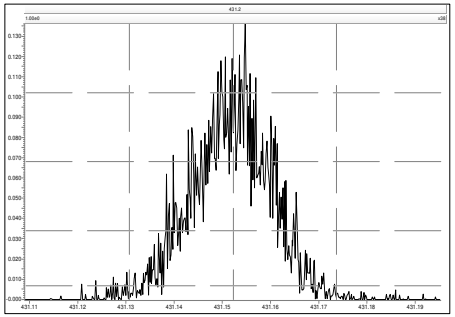

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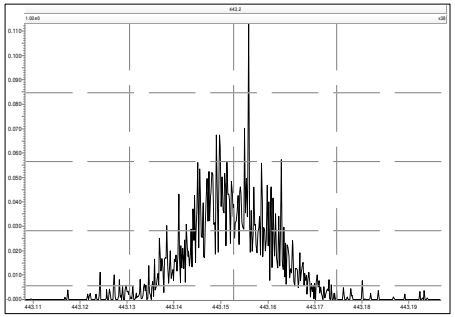

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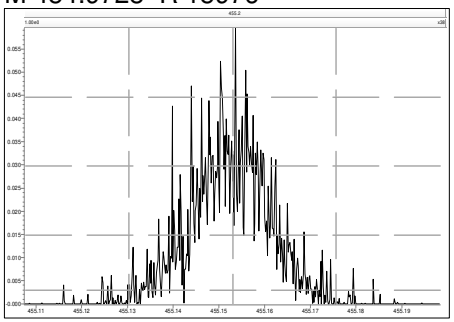

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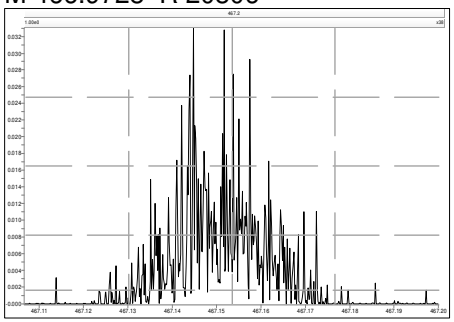

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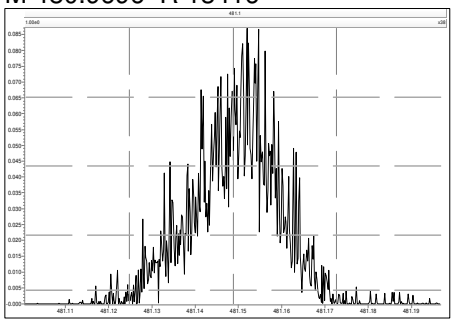

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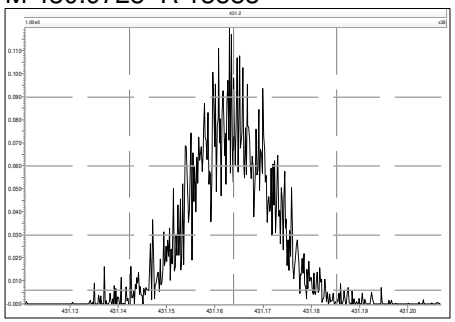

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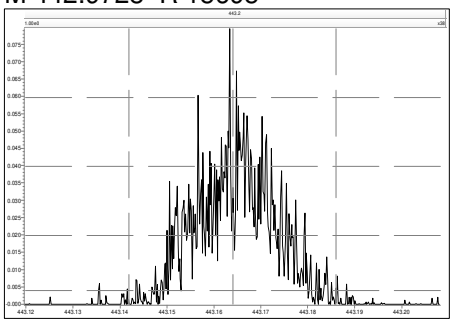

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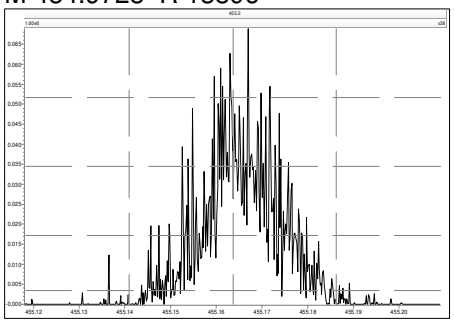
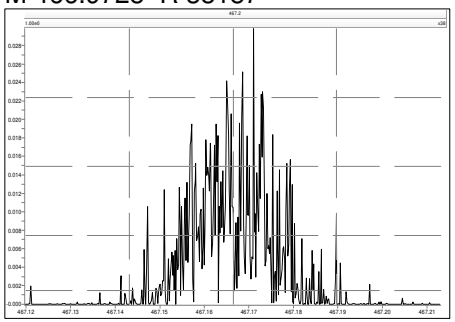
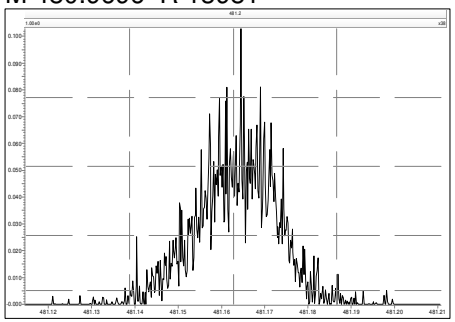


M 466.9728 R 38187

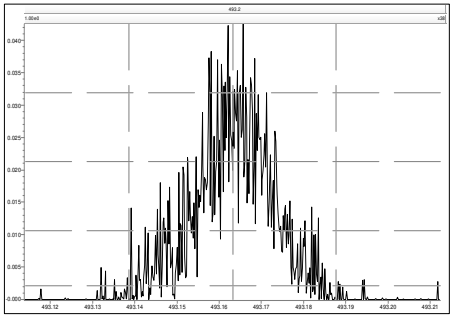


M 480.9696 R 13981

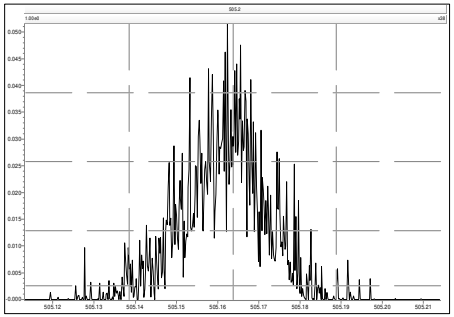


Printed: Tuesday, July 27, 2021 21:27:04 Eastern Daylight Time

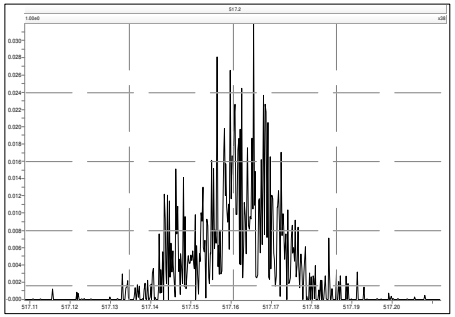
M 492.9696 R 16021



M 504.9696 R 14411



M 516.9697 R 27065



Lab ID: OPR1_18712_DF | **Acq'd:** 08 Dec 2021 17:13 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

APPROVED
Carla_Lyon , 12/9/2021, 1:05:09 PM

Client ID: 0_18712_OPR001 | **UTP:** 09-Dec-2021 10:40:14 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 098-240-TNJ

Datafile: 211208R02 | **Report:** 09 Dec 2021 10:41 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.60		1.0008	1.0008	0	4.24E+06	0.77	Y	1.34	9.8	8906.495	0.205
12378-PeCDD	33.87		1.0004	1.0006	+0.4	1.35E+07	1.57	Y	1.06	49.3	5788.108	0.178
123478-HxCDD	37.73		1.0004	1.0004	0	1.23E+07	1.26	Y	1.06	53.7	7381.399	0.266
123678-HxCDD	37.84		1.0034	1.0034	0	1.38E+07	1.25	Y	1.08	58	7381.399	0.252
123789-HxCDD	38.13		1.0111	1.0110	-0.2	1.28E+07	1.25	Y	1.02	49.2	7381.399	0.234
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	9.88E+06	1.07	Y	0.97	57.3	7718.623	0.314
OCDD	43.27		1.0003	1.0003	0	9.48E+06	0.90	Y	1.07	106	9875.931	0.868
2378-TCDF	27.75		1.0007	1.0007	0	5.59E+06	0.74	Y	0.96	12.5	7316.225	0.179
12378-PeCDF	32.45		1.0006	1.0005	-0.2	2.11E+07	1.52	Y	0.95	54.6	13700.925	0.334
23478-PeCDF	33.54		1.0005	1.0005	0	2.20E+07	1.57	Y	0.94	59.5	13700.925	0.327
123478-HxCDF	36.74		1.0004	1.0005	+0.2	1.89E+07	1.22	Y	1.23	57.4	18973.356	0.463
123678-HxCDF	36.88		1.0005	1.0005	0	2.04E+07	1.23	Y	1.13	53.6	18973.356	0.42
234678-HxCDF	37.55		1.0005	1.0004	-0.2	1.86E+07	1.31	Y	1.15	55.8	18973.356	0.483
123789-HxCDF	38.48		1.0005	1.0004	-0.2	1.44E+07	1.22	Y	1.14	52.4	18973.356	0.516
1234678-HpCDF	39.80		1.0003	1.0003	0	1.62E+07	1.05	Y	1.36	54.8	6868.624	0.15
1234789-HpCDF	41.15		1.0004	1.0003	-0.2	1.06E+07	1.04	Y	1.30	54.3	6868.624	0.231
OCDF	43.46		1.0002	1.0003	+0.3	1.09E+07	0.90	Y	1.03	108	10829.251	0.788

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58	1.0233	1.0232	-0.2	3.22E+07	0.78	Y	1.03	89.3
ES 12378-PeCDD	33.85	1.2118	1.2122	+0.8	2.59E+07	1.66	Y	1.03	71.8
ES 123478-HxCDD	37.72	0.9921	0.9921	0	2.17E+07	1.31	Y	0.99	96
ES 123678-HxCDD	37.83	0.9951	0.9951	0	2.20E+07	1.22	Y	0.97	99.6
ES 123789-HxCDD	38.12	1.0027	1.0027	0	2.57E+07	1.34	Y	1.12	101
ES 1234678-HpCDD	40.69	1.0702	1.0702	0	1.77E+07	1.04	Y	0.99	78.6
ES OCDD	43.26	1.1377	1.1380	+0.8	1.67E+07	0.91	Y	0.78	47.3
ES 2378-TCDF	27.73	1.0505	1.0506	+0.2	4.64E+07	0.79	Y	1.08	78.3
ES 12378-PeCDF	32.43	1.2278	1.2284	+1.2	4.09E+07	1.50	Y	0.93	80
ES 23478-PeCDF	33.53	1.2691	1.2700	+1.8	3.93E+07	1.57	Y	0.92	77.8
ES 123478-HxCDF	36.72	0.9660	0.9660	0	2.67E+07	0.52	Y	1.14	103
ES 123678-HxCDF	36.87	0.9698	0.9697	-0.2	3.37E+07	0.51	Y	1.30	114
ES 234678-HxCDF	37.54	0.9875	0.9874	-0.2	2.89E+07	0.52	Y	1.20	106
ES 123789-HxCDF	38.46	1.0121	1.0118	-0.7	2.43E+07	0.51	Y	1.14	93.9
ES 1234678-HpCDF	39.79	1.0468	1.0466	-0.5	2.17E+07	0.45	Y	0.95	101
ES 1234789-HpCDF	41.14	1.0822	1.0822	0	1.50E+07	0.42	Y	0.85	77.9
ES OCDF	43.45	1.1426	1.1429	+0.8	1.98E+07	0.92	Y	0.93	47.1

Lab ID: OPR1_18712_DF | **Acq'd:** 08 Dec 2021 17:13 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18712_OPR001 | **UTP:** 09-Dec-2021 10:40:14 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 098-240-TNJ

Datafile: 211208R02 | **Report:** 09 Dec 2021 10:41 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.93		-	-	-	3.49E+07	0.84	Y	-	-	
JS 1234-TCDF	26.40		-	-	-	5.47E+07	0.77	Y	-	-	
JS 123467-HxCDD	38.02		-	-	-	1.14E+07	1.40	Y	-	-	
CS 37Cl-2378-TCDD	28.60		1.0241	1.0240	-0.2	1.44E+07	n/a	-	1.31	78.8	
CS 12347-PeCDD	33.36		1.1940	1.1945	+1.0	2.44E+07	1.63	Y	0.89	78.6	
CS 12346-PeCDF	31.91		1.2080	1.2087	+1.3	3.91E+07	1.57	Y	0.87	82.2	
CS 123469-HxCDF	37.18		0.9781	0.9781	0	2.81E+07	0.52	Y	1.09	113	
CS 1234689-HpCDF	40.18		1.0569	1.0568	-0.2	1.95E+07	0.42	Y	0.86	99.4	
~~SS 37Cl-2378-TCDD~~	~~28.60~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~1.44E+07~~	~~n/a~~		~~1.26~~	~~88.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.36~~		~~1.1940~~	~~1.1945~~	~~+1.0~~	~~2.44E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~109~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.91~~		~~1.2080~~	~~1.2087~~	~~+1.3~~	~~3.91E+07~~	~~1.57~~	~~Y~~	~~0.93~~	~~103~~	
~~SS 123469-HxCDF~~	~~37.18~~		~~0.9781~~	~~0.9781~~	~~0~~	~~2.81E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~99~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~1.95E+07~~	~~0.42~~	~~Y~~	~~0.91~~	~~98.7~~	

Totals	Conc	EMPC
Total TCDD	42.6	42.6
Total PeCDD	73.7	73.7
Total HxCDD	177	177
Total HpCDD	72.4	72.4
Total Tetra-Octa Dioxins	471	471
Total TCDF	66.1	66.1
Total PeCDF	228	228
Total HxCDF	357	357
Total HpCDF	109	109
Total Tetra-Octa Furans	868	868
Total Tetra-Octa Dioxins & Furans	1340	1340

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.763	0.77
Response	4.25E+06	4.24E+06

Lab ID: OPR1_18712_DF | **Acq'd: 08 Dec 2021 17:13 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR001 | **UTP: 09-Dec-2021 10:40:14 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 098-240-TNJ**

Datafile: 211208R02 | **Report: 09 Dec 2021 10:41 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.02		0.8758	0.8754	-0.6	5.32E+06	0.82	Y	1.34	12.3	8906.495	0.205
1379-TCDD	NotFnd		0.8878						1.34		8906.495	0.205
1369-TCDD	NotFnd		0.9025						1.34		8906.495	0.205
1469-TCDD	NotFnd		0.9291						1.34		8906.495	0.205
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8906.495	0.205
1378-TCDD	NotFnd		0.9440						1.34		8906.495	0.205
1268-TCDD	NotFnd		0.9505						1.34		8906.495	0.205
1478-TCDD	NotFnd		0.9591						1.34		8906.495	0.205
1279-TCDD	NotFnd		0.9650						1.34		8906.495	0.205
1234/1269-TCDD	NotFnd		0.9771						1.34		8906.495	0.205
1236-TCDD	NotFnd		0.9821						1.34		8906.495	0.205
1237/1238-TCDD	NotFnd		0.9907						1.34		8906.495	0.205
1239-TCDD	28.44		0.9953	0.9952	-0.2	3.77E+06	0.84	Y	1.34	8.71	8906.495	0.205
2378-TCDD	**28.60**		**1.0008**	1.0008	**0**	4.24E+06	0.77	Y	**1.34**	**9.8**	**8906.495**	**0.205**
1278-TCDD	NotFnd		1.0118						1.34		8906.495	0.205
1267-TCDD	NotFnd		1.0162						1.34		8906.495	0.205
1289-TCDD	29.55		1.0340	1.0341	+0.2	5.09E+06	0.80	Y	1.34	11.8	8906.495	0.205
12479/12468-PeCDD	31.40		0.9274	0.9275	+0.2	3.43E+06	1.50	Y	1.06	12.5	5788.108	0.178
12469-PeCDD	NotFnd		0.9430						1.06		5788.108	0.178
12368-PeCDD	NotFnd		0.9591						1.06		5788.108	0.178
12478-PeCDD	NotFnd		0.9645						1.06		5788.108	0.178
12379-PeCDD	NotFnd		0.9676						1.06		5788.108	0.178
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		5788.108	0.178
12346/12347-PeCDD	NotFnd		0.9860						1.06		5788.108	0.178
12378-PeCDD	33.87		**1.0004**	**1.0006**	**+0.4**	**1.35E+07**	**1.57**	**Y**	**1.06**	**49.3**	**5788.108**	**0.178**
12367-PeCDD	NotFnd		1.0034						1.06		5788.108	0.178
12389-PeCDD	34.31		1.0133	1.0134	+0.2	3.27E+06	1.41	Y	1.06	11.9	5788.108	0.178
124679/124689-HxCDD	36.01		0.9546	0.9548	+0.4	3.83E+06	1.25	Y	1.05	15.7	7381.399	0.25
123468-HxCDD	NotFnd		0.9718						1.05		7381.399	0.25
123679/123689-HxCDD	NotFnd		0.9795						1.05		7381.399	0.25
123469-HxCDD	NotFnd		0.9832						1.05		7381.399	0.25
123478-HxCDD	37.73		**1.0004**	**1.0004**	**0**	**1.23E+07**	**1.26**	**Y**	1.06	**53.7**	**7381.399**	**0.266**
123678-HxCDD	37.84		**1.0034**	**1.0034**	**0**	**1.38E+07**	**1.25**	**Y**	1.08	**58**	**7381.399**	**0.252**
123467-HxCDD	NotFnd		1.0083						1.05		7381.399	0.25
123789-HxCDD	38.13		**1.0111**	**1.0110**	**-0.2**	**1.28E+07**	**1.25**	**Y**	1.02	**49.2**	**7381.399**	**0.234**

Lab ID: OPR1_18712_DF | **Acq'd: 08 Dec 2021 17:13 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR001 | **UTP: 09-Dec-2021 10:40:14 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 098-240-TNJ**

Datafile: 211208R02 | **Report: 09 Dec 2021 10:41 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9843	0.9841	-0.5	2.60E+06	1.04	Y	0.97	15.1	7718.623	0.314
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**9.88E+06**	**1.07**	**Y**	**0.97**	**57.3**	**7718.623**	**0.314**
OCDD	**43.27**		**1.0003**	**1.0003**	**0**	**9.48E+06**	**0.90**	**Y**	**1.07**	**106**	**9875.931**	**0.868**
OCDD-a	43.27	**EMPC**	1.0001	1.0002	+0.3	6.30E+05	1.93	N	0.07	114	12543.823	17.9
1368-TCDF	22.96		0.8284	0.8280	-0.6	6.94E+06	0.79	Y	0.96	15.6	7316.225	0.179
1468-TCDF	NotFnd		0.8487						0.96		7316.225	0.179
2468-TCDF	24.15		0.8709	0.8706	-0.4	1.70E+06	0.76	Y	0.96	3.81	7316.225	0.179
1346/1246-TCDF	NotFnd		0.8828						0.96		7316.225	0.179
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		7316.225	0.179
1348-TCDF	NotFnd		0.8980						0.96		7316.225	0.179
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		7316.225	0.179
1268-TCDF	NotFnd		0.9159						0.96		7316.225	0.179
1467-TCDF	NotFnd		0.9206						0.96		7316.225	0.179
1478-TCDF	NotFnd		0.9266						0.96		7316.225	0.179
1369/1237-TCDF	NotFnd		0.9396						0.96		7316.225	0.179
2467-TCDF	NotFnd		0.9440						0.96		7316.225	0.179
2368-TCDF	NotFnd		0.9496						0.96		7316.225	0.179
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		7316.225	0.179
1278-TCDF	NotFnd		0.9689						0.96		7316.225	0.179
1349-TCDF	NotFnd		0.9732						0.96		7316.225	0.179
1267-TCDF	NotFnd		0.9786						0.96		7316.225	0.179
2346/1249-TCDF	NotFnd		0.9849						0.96		7316.225	0.179
2347/1279-TCDF	NotFnd		0.9927						0.96		7316.225	0.179
2348-TCDF	27.64		0.9967	0.9967	0	7.58E+06	0.76	Y	0.96	17	7316.225	0.179
2378-TCDF	**27.75**		**1.0007**	**1.0007**	**0**	**5.59E+06**	**0.74**	**Y**	**0.96**	**12.5**	**7316.225**	**0.179**
2367/3467-TCDF	NotFnd		1.0136						0.96		7316.225	0.179
1269-TCDF	NotFnd		1.0223						0.96		7316.225	0.179
1239-TCDF	NotFnd		1.0313						0.96		7316.225	0.179
1289-TCDF	29.73		1.0711	1.0719	+1.4	7.67E+06	0.77	Y	0.96	17.2	7316.225	0.179
13468/12468-PeCDF	29.64		0.9147	0.9142	-0.9	3.86E+07	1.60	Y	0.94	102	7928.224	0.191
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		13700.925	0.331
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		13700.925	0.331
14678-PeCDF	NotFnd		0.9695						0.94		13700.925	0.331
13479-PeCDF	NotFnd		0.9727						0.94		13700.925	0.331
13469/12479-PeCDF	NotFnd		0.9799						0.94		13700.925	0.331
12346-PeCDF	NotFnd		0.9839						0.94		13700.925	0.331

Lab ID: OPR1_18712_DF **Acq'd: 08 Dec 2021 17:13 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR001 **UTP: 09-Dec-2021 10:40:14 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 098-240-TNJ**

Datafile: 211208R02 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		13700.925	0.331
12347-PeCDF	NotFnd		0.9892						0.94		13700.925	0.331
12348-PeCDF	NotFnd		0.9940						0.94		13700.925	0.331
12378-PeCDF	**32.45**		**1.0006**	**1.0005**	**-0.2**	**2.11E+07**	**1.52**	**Y**	**0.95**	**54.6**	**13700.925**	**0.334**
12678/12367-PeCDF	NotFnd		1.0088						0.94		13700.925	0.331
12379-PeCDF	NotFnd		1.0142						0.94		13700.925	0.331
12679-PeCDF	NotFnd		0.9931						0.94		13700.925	0.331
23467/12369-PeCDF	NotFnd		0.9966						0.94		13700.925	0.331
23478-PeCDF	**33.54**		**1.0005**	**1.0005**	**0**	**2.20E+07**	**1.57**	**Y**	**0.94**	**59.5**	**13700.925**	**0.327**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		13700.925	0.331
12349-PeCDF	NotFnd		1.0100						0.94		13700.925	0.331
12389-PeCDF	34.61		1.0323	1.0323	0	4.48E+06	1.51	Y	0.94	11.8	13700.925	0.331
123468-HxCDF	35.37		0.9631	0.9632	+0.2	4.56E+07	1.25	Y	1.16	138	18973.356	0.466
124678/134678-HxCDF	NotFnd		0.9686						1.16		18973.356	0.466
134679-HxCDF	NotFnd		0.9747						1.16		18973.356	0.466
124679-HxCDF	NotFnd		0.9800						1.16		18973.356	0.466
124689-HxCDF	NotFnd		0.9859						1.16		18973.356	0.466
123467-HxCDF	NotFnd		0.9972						1.16		18973.356	0.466
123478-HxCDF	**36.74**		**1.0004**	**1.0005**	**+0.2**	**1.89E+07**	**1.22**	**Y**	**1.23**	**57.4**	**18973.356**	**0.463**
123678-HxCDF	**36.88**		**1.0005**	**1.0005**	**0**	**2.04E+07**	**1.23**	**Y**	**1.13**	**53.6**	**18973.356**	**0.42**
123479-HxCDF	NotFnd		1.0048						1.16		18973.356	0.466
123469-HxCDF	NotFnd		1.0089						1.16		18973.356	0.466
123679-HxCDF	NotFnd		0.9943						1.16		18973.356	0.466
234678-HxCDF	**37.55**		**1.0005**	**1.0004**	**-0.2**	**1.86E+07**	**1.31**	**Y**	**1.15**	**55.8**	**18973.356**	**0.483**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		18973.356	0.466
123789-HxCDF	**38.48**		**1.0005**	**1.0004**	**-0.2**	**1.44E+07**	**1.22**	**Y**	**1.14**	**52.4**	**18973.356**	**0.516**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		18973.356	0.466
1234678-HpCDF	**39.80**		**1.0003**	**1.0003**	**0**	**1.62E+07**	**1.05**	**Y**	**1.36**	**54.8**	**6868.624**	**0.15**
1234679-HpCDF	NotFnd		1.0065						1.33		6868.624	0.183
1234689-HpCDF	NotFnd		1.0097						1.33		6868.624	0.183
1234789-HpCDF	**41.15**		**1.0004**	**1.0003**	**-0.2**	**1.06E+07**	**1.04**	**Y**	**1.30**	**54.3**	**6868.624**	**0.231**
OCDF	**43.46**		**1.0002**	**1.0003**	**+0.3**	**1.09E+07**	**0.90**	**Y**	**1.03**	**108**	**10829.251**	**0.788**
OCDF-a	43.45		1.0001	1.0001	0	6.04E+05	2.26	Y	0.06	103	9077.378	11.4

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211208R02	Analysis Date:	08-DEC-2021 17:13:48
Lab ID:	OPR1_18712_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.8	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	49.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	58	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	49.2	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	57.3	35	-	70	Y
OCDD	100	106	78	-	144	Y
2,3,7,8-TCDF	10	12.5	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.6	40	-	67	Y
2,3,4,7,8-PeCDF	50	59.5	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	57.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53.6	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55.8	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	52.4	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	54.8	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	54.3	39	-	69	Y
OCDF	100	108	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 09 Dec 2021 10:41 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211208R02	Analysis Date:	08-DEC-2021 17:13:48
Lab ID:	OPR1_18712_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	89.3	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	71.8	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	96	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	99.6	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	101	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	78.6	26	-	166	Y
13C-OCDD	200	94.6	26	-	397	Y
13C-2,3,7,8-TCDF	100	78.3	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	80	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	77.8	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	103	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	114	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	106	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	93.9	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	101	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	77.9	20	-	186	Y
13C-OCDF	200	94.2	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	31.5	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 09 Dec 2021 10:41 Analyst: pw

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211208R02	Analysis Date:	08-DEC-2021 17:13:48
Lab ID:	OPR1_18712_DF		

Window Defining Standards Results

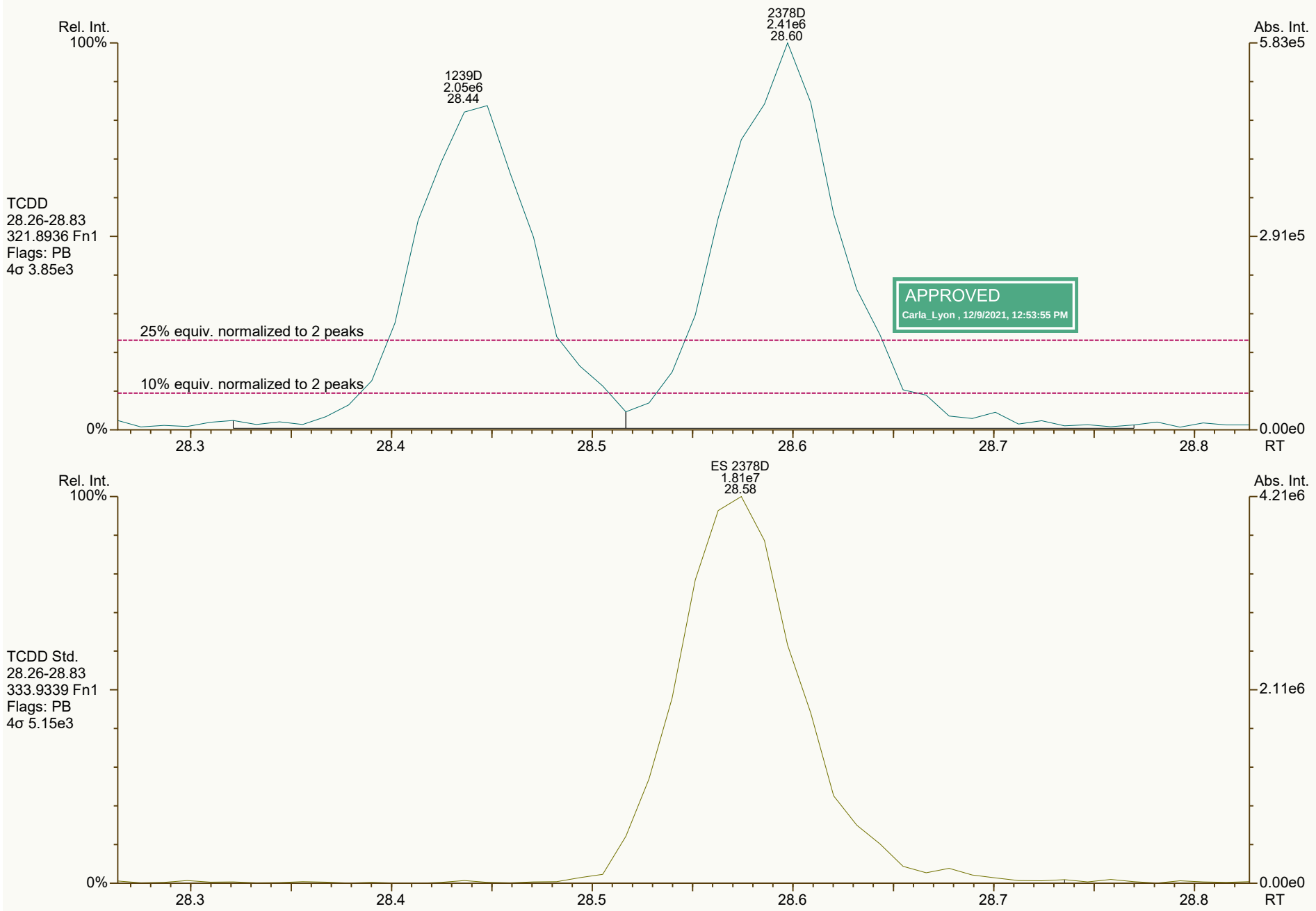
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.02	1289-TCDD	29.55
12479/12468-PeCDD	31.40	12389-PeCDD	34.31
124679/124689-HxCDD	36.01	123789-HxCDD	38.13
1234679-HpCDD	40.04	1234678-HpCDD	40.70
1368-TCDF	22.96	1289-TCDF	29.73
13468/12468-PeCDF	29.64	12389-PeCDF	34.61
123468-HxCDF	35.37	123789-HxCDF	38.48
1234678-HpCDF	39.80	1234789-HpCDF	41.15

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.44	2378-TCDD	28.60
2348-TCDF	27.64	2378-TCDF	27.75

Processed: 09 Dec 2021 10:41 Analyst: pw

SGS ID: OPR1_18712_DF
Sample ID: 0_18712_OPR001
Acq: 08-Dec-2021 17:13:48
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: PSW Datafile: 211208R02



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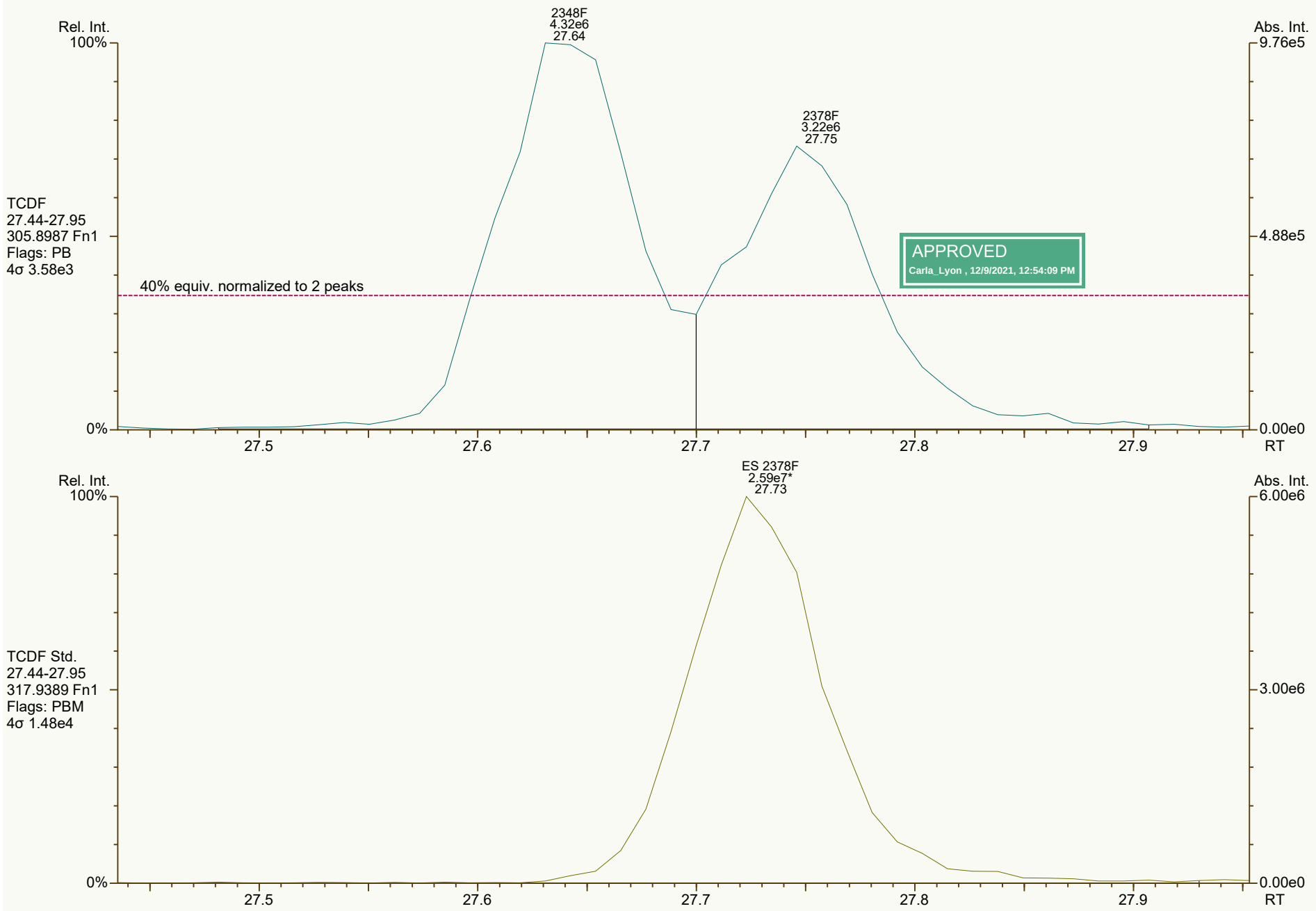
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 09-Dec-2021 08:44 Printed: 09-Dec-2021 10:45

SGS ID: OPR1_18712_DF
Sample ID: 0_18712_OPR001
Acq: 08-Dec-2021 17:13:48
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: PSW Datafile: 211208R02



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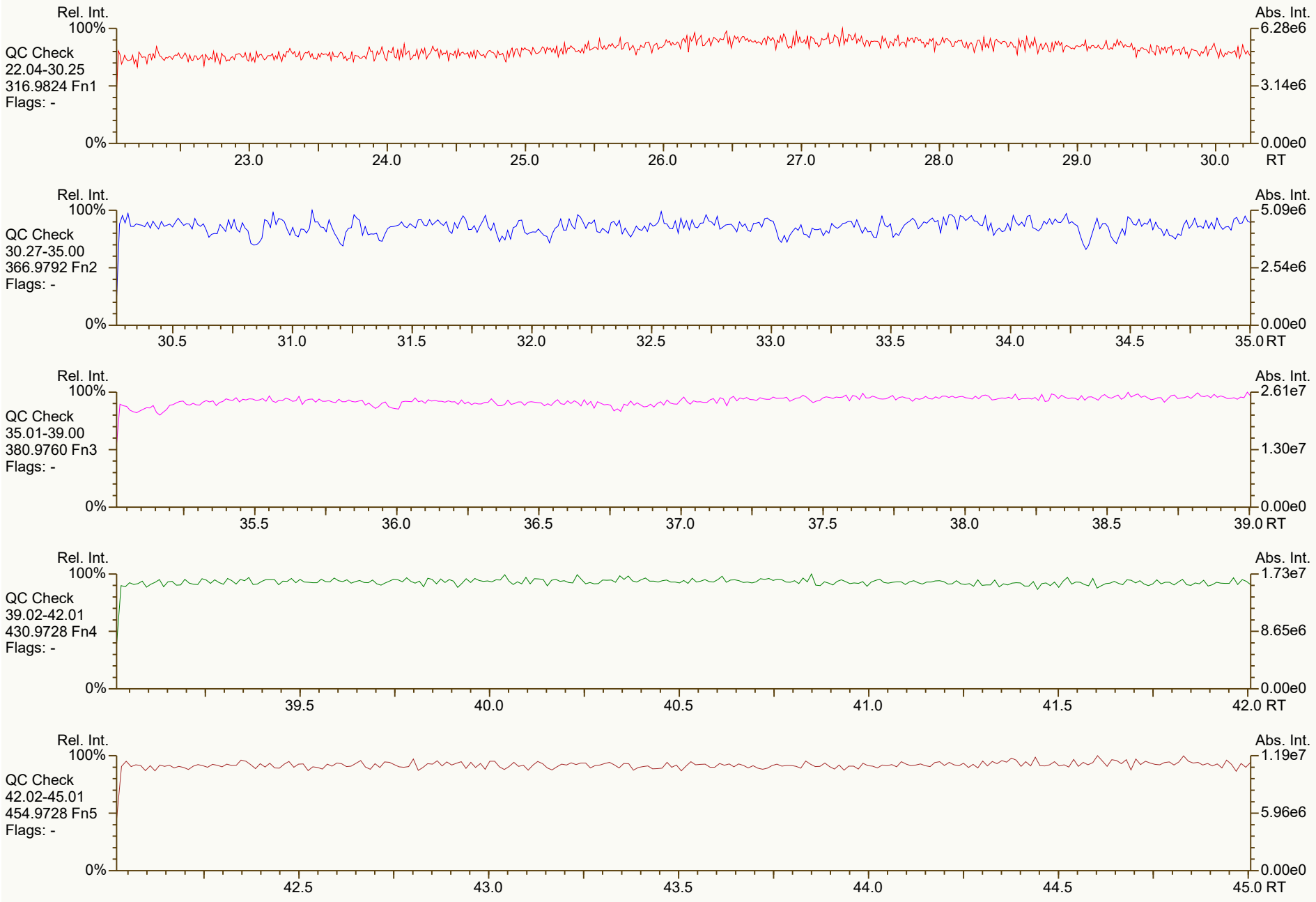
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 09-Dec-2021 08:44 Printed: 09-Dec-2021 10:45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0%
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3.14e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.09e6
2.54e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.61e7
1.30e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.73e7
8.65e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
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44.0
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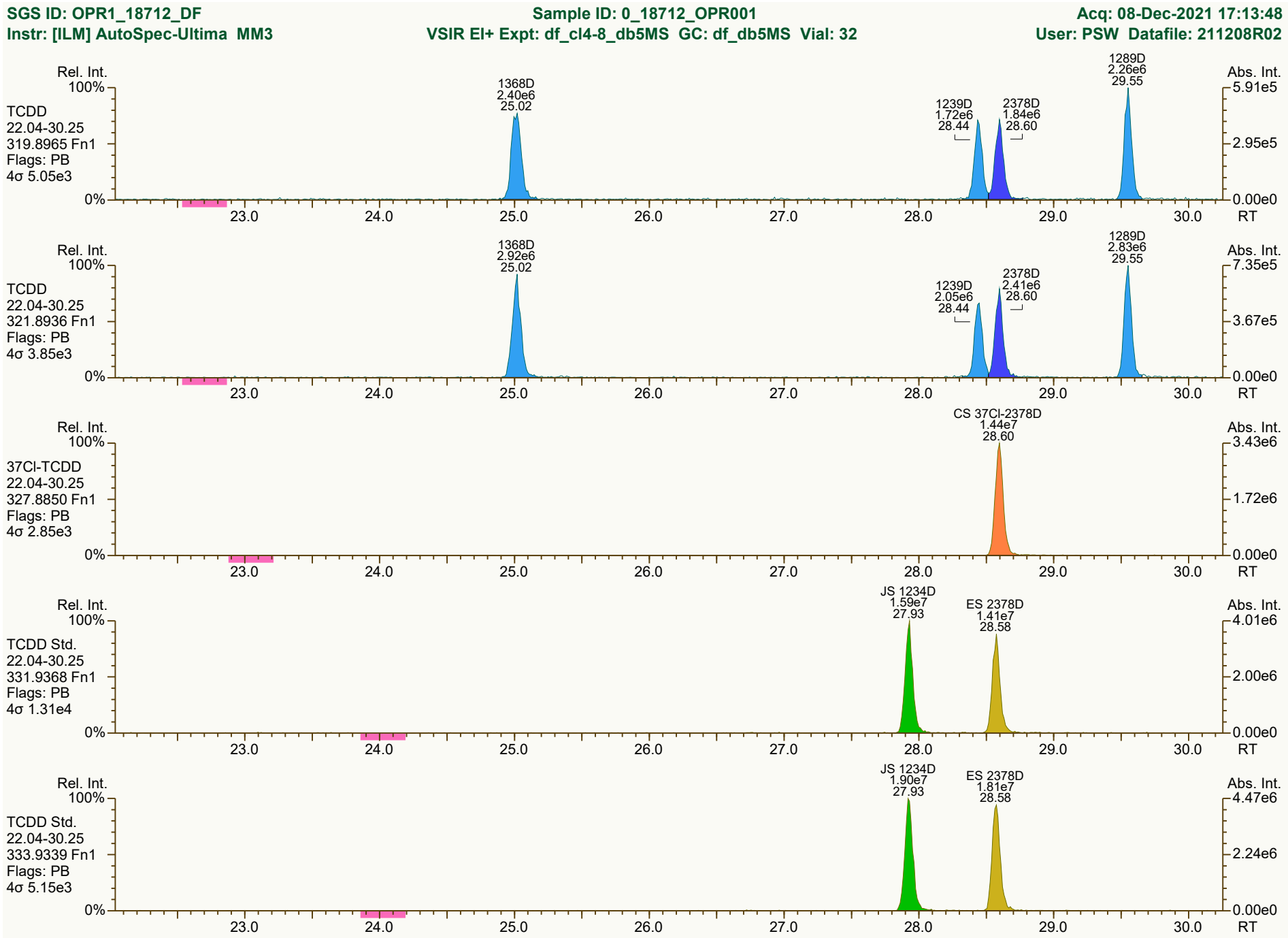
45.0 RT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VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: PSW Datafile: 211208R02
Rel. Int.
Abs. Int.
TCDD
22.04-30.25
319.8965 Fn1
Flags: PB
4σ 5.05e3
1368D 2.40e6 25.02
1239D 1.72e6 28.44
2378D 1.84e6 28.60
1289D 2.26e6 29.55
5.91e5
2.95e5
0.00e0
TCDD
22.04-30.25
321.8936 Fn1
Flags: PB
4σ 3.85e3
1368D 2.92e6 25.02
1239D 2.05e6 28.44
2378D 2.41e6 28.60
1289D 2.83e6 29.55
7.35e5
3.67e5
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37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 2.85e3
CS 37Cl-2378D 1.44e7 28.60
3.43e6
1.72e6
0.00e0
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.31e4
JS 1234D 1.59e7 27.93
ES 2378D 1.41e7 28.58
4.01e6
2.00e6
0.00e0
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 5.15e3
JS 1234D 1.90e7 27.93
ES 2378D 1.81e7 28.58
4.47e6
2.24e6
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
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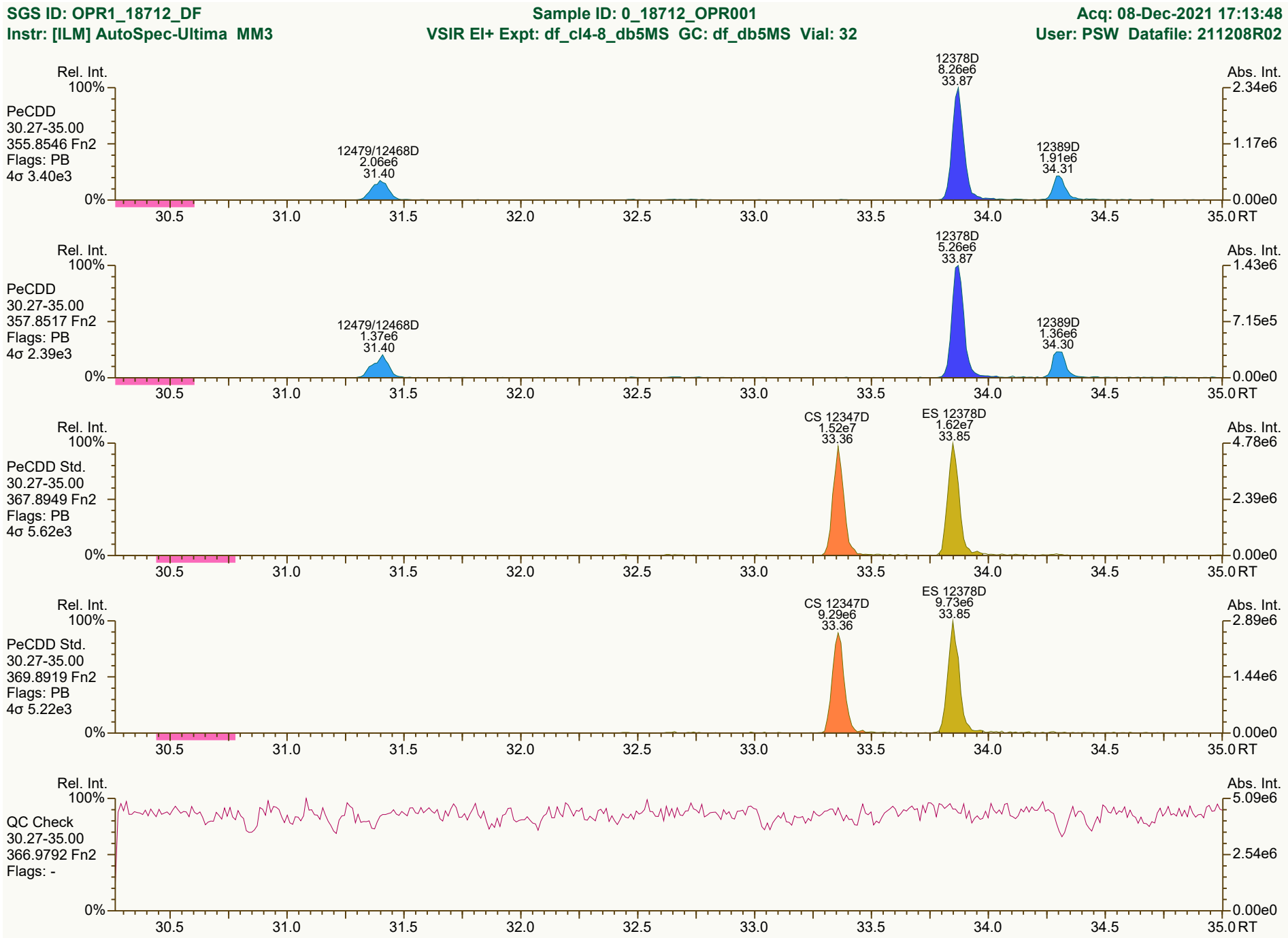
PKD: 09-Dec-2021 08:44 Printed: 09-Dec-2021 10:46 Page 2 of 12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Sample ID: 0_18712_OPR001
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Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: PSW Datafile: 211208R02
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PB
4σ 3.40e3
12479/12468D
2.06e6
31.40
12378D
8.26e6
33.87
12389D
1.91e6
34.31
2.34e6
1.17e6
0.00e0
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 2.39e3
12479/12468D
1.37e6
31.40
12378D
5.26e6
33.87
12389D
1.36e6
34.30
1.43e6
7.15e5
0.00e0
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 5.62e3
CS 12347D
1.52e7
33.36
ES 12378D
1.62e7
33.85
4.78e6
2.39e6
0.00e0
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 5.22e3
CS 12347D
9.29e6
33.36
ES 12378D
9.73e6
33.85
2.89e6
1.44e6
0.00e0
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
5.09e6
2.54e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
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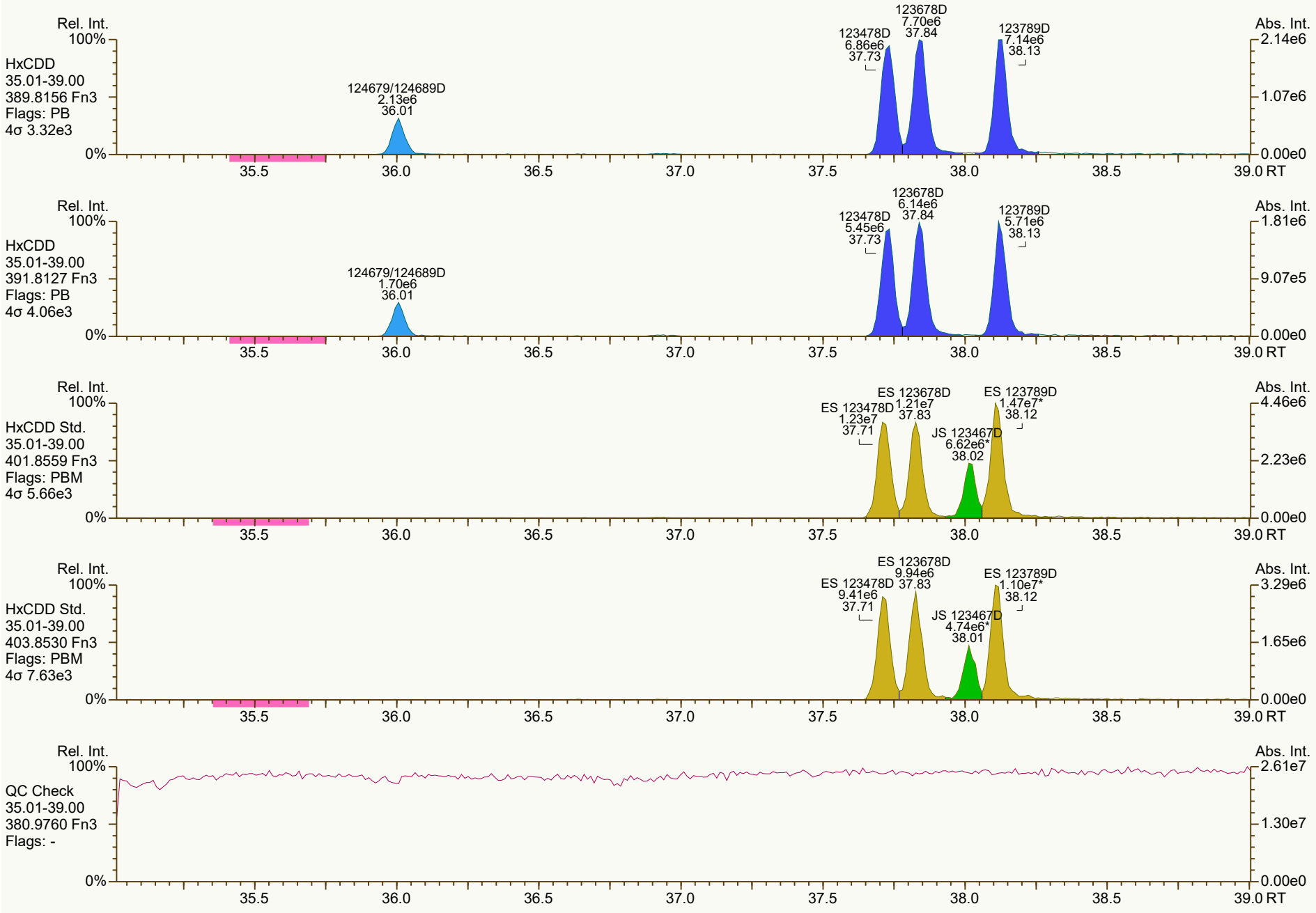
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35.01-39.00
389.8156 Fn3
Flags: PB
4σ 3.32e3
124679/124689D
2.13e6
36.01
123478D
6.86e6
37.73
123678D
7.70e6
37.84
123789D
7.14e6
38.13
Abs. Int.
2.14e6
1.07e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 4.06e3
124679/124689D
1.70e6
36.01
123478D
5.45e6
37.73
123678D
6.14e6
37.84
123789D
5.71e6
38.13
Abs. Int.
1.81e6
9.07e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 5.66e3
ES 123478D
1.23e7
37.71
ES 123678D
1.21e7
37.83
JS 123467D
6.62e6*
38.02
ES 123789D
1.47e7*
38.12
Abs. Int.
4.46e6
2.23e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 7.63e3
ES 123478D
9.41e6
37.71
ES 123678D
9.94e6
37.83
JS 123467D
4.74e6*
38.01
ES 123789D
1.10e7*
38.12
Abs. Int.
3.29e6
1.65e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
Abs. Int.
2.61e7
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0%
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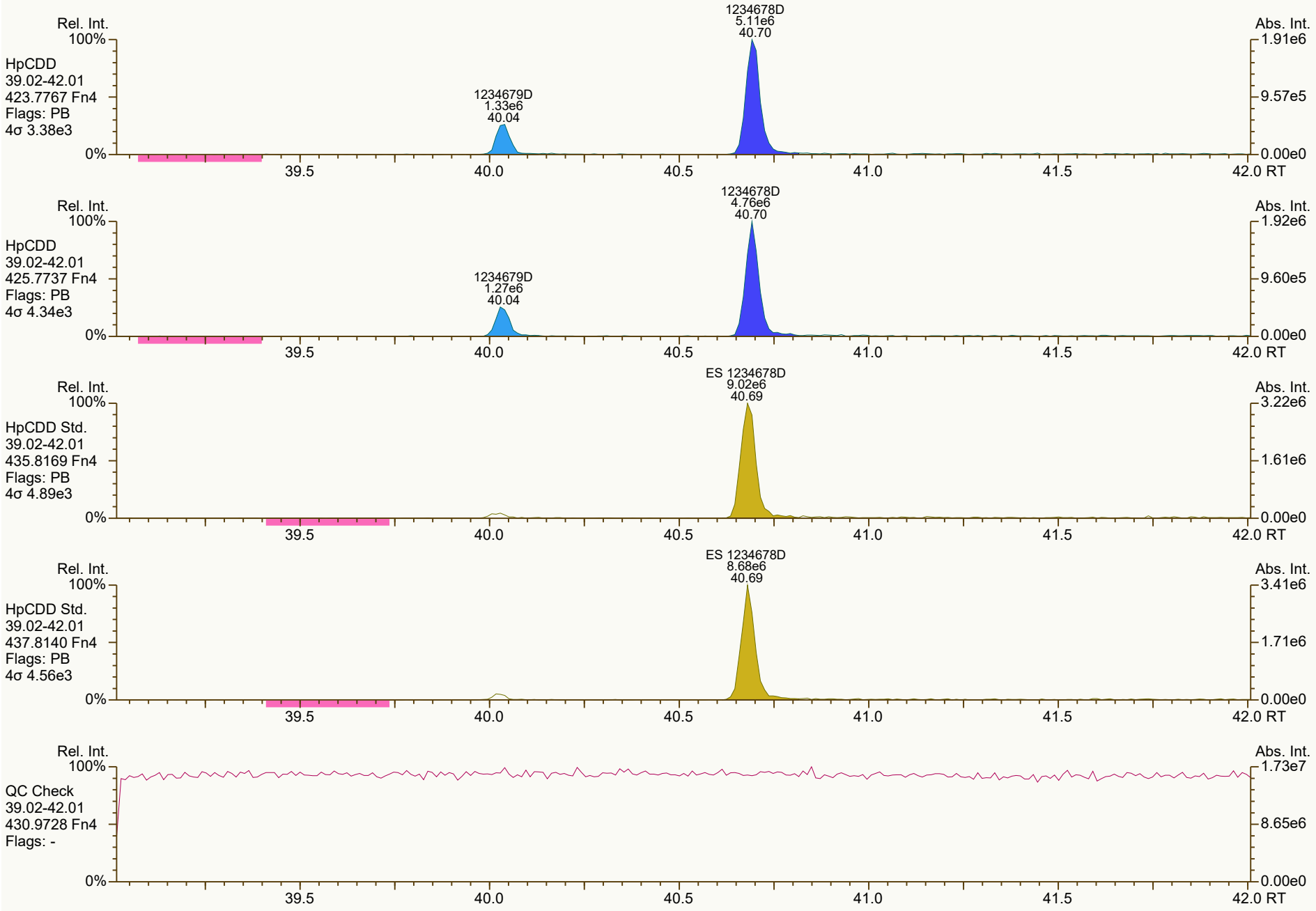
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT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HpCDD
39.02-42.01
423.7767 Fn4
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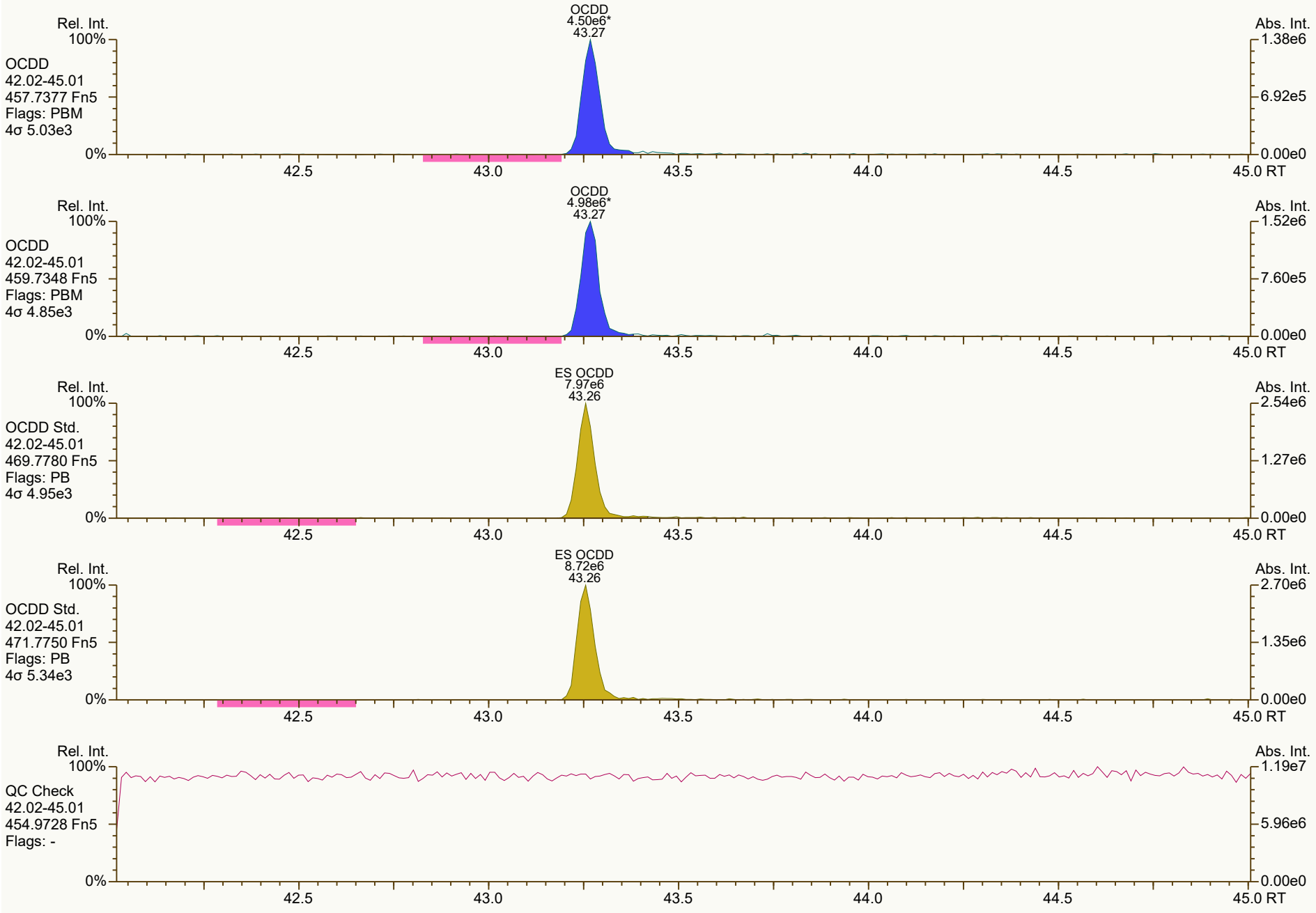
1234678D
5.11e6
40.70
1234679D
1.33e6
40.04
Abs. Int.
1.91e6
9.57e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 4.34e3
1234678D
4.76e6
40.70
1234679D
1.27e6
40.04
Abs. Int.
1.92e6
9.60e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 4.89e3
ES 1234678D
9.02e6
40.69
Abs. Int.
3.22e6
1.61e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 4.56e3
ES 1234678D
8.68e6
40.69
Abs. Int.
3.41e6
1.71e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.73e7
8.65e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

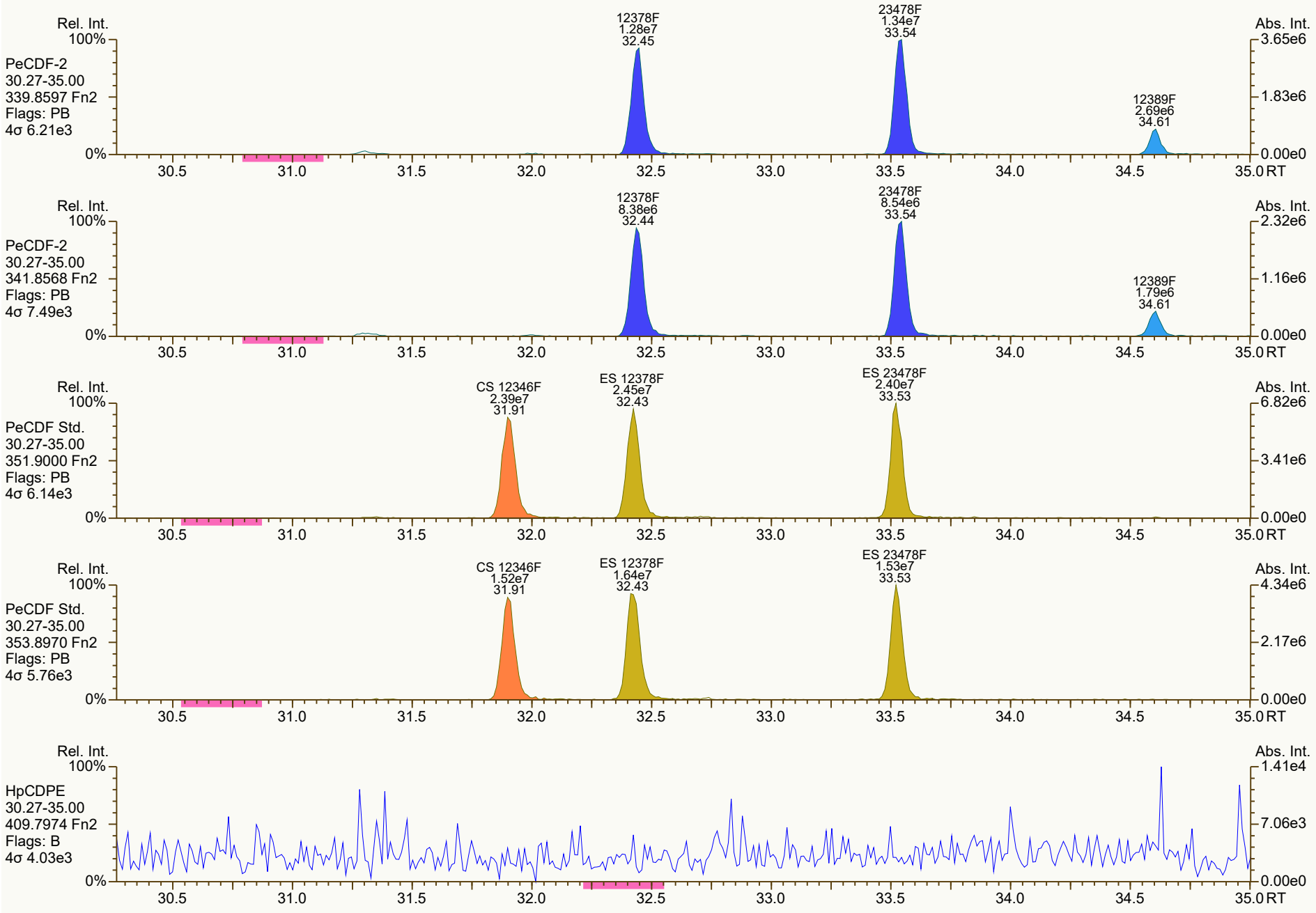

Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PBM
4σ 5.03e3
0%
OCDD
4.50e6*
43.27
Abs. Int.
1.38e6
6.92e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.02-45.01
459.7348 Fn5
Flags: PBM
4σ 4.85e3
0%
OCDD
4.98e6*
43.27
Abs. Int.
1.52e6
7.60e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 4.95e3
0%
ES OCDD
7.97e6
43.26
Abs. Int.
2.54e6
1.27e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 5.34e3
0%
ES OCDD
8.72e6
43.26
Abs. Int.
2.70e6
1.35e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.19e7
5.96e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

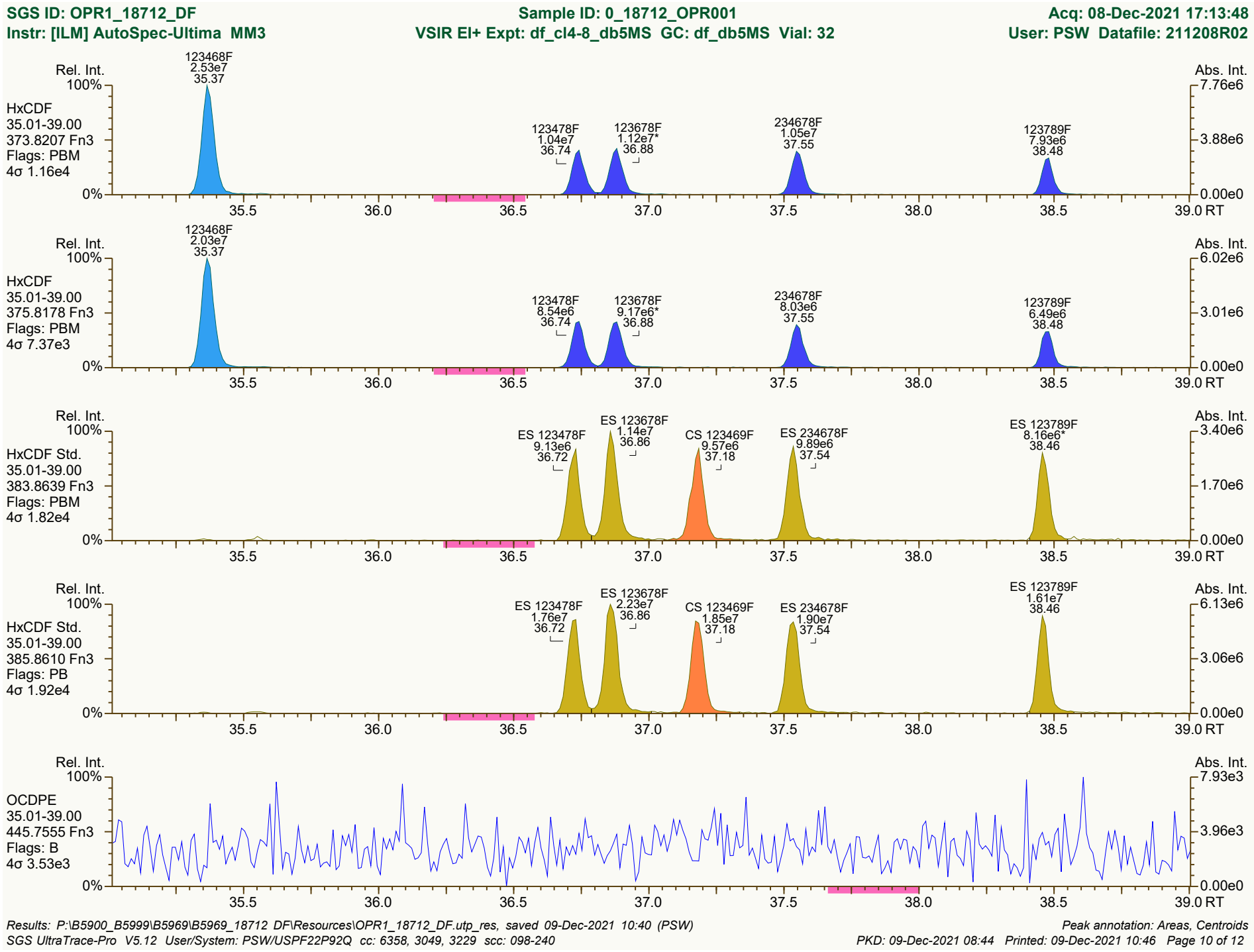

SGS ID: OPR1_18712_DF
Sample ID: 0_18712_OPR001
Acq: 08-Dec-2021 17:13:48
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: PSW Datafile: 211208R02
Rel. Int.
Abs. Int.
TCDF
22.04-30.25
303.9016 Fn1
Flags: PB
4σ 3.73e3
1368F 3.07e6 22.96
2468F 7.34e5 24.15
2348F 3.26e6 27.64
2378F 2.37e6 27.75
1289F 3.32e6 29.73
8.16e5
4.08e5
0.00e0
TCDF
22.04-30.25
305.8987 Fn1
Flags: PB
4σ 3.58e3
1368F 3.87e6 22.96
2468F 9.63e5 24.14
2348F 4.32e6 27.64
2378F 3.22e6 27.75
1289F 4.34e6 29.73
9.76e5
4.88e5
0.00e0
TCDF Std.
22.04-30.25
315.9419 Fn1
Flags: PBM
4σ 2.24e4
JS 1234F 2.39e7 26.40
ES 2378F 2.06e7* 27.73
5.13e6
2.57e6
0.00e0
TCDF Std.
22.04-30.25
317.9389 Fn1
Flags: PBM
4σ 1.48e4
JS 1234F 3.09e7 26.40
ES 2378F 2.59e7* 27.73
6.36e6
3.18e6
0.00e0
HxCDPE
22.04-30.25
375.8364 Fn1
Flags: B
4σ 3.70e3
1.20e4
6.02e3
0.00e0
100%
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR1_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3534, 1736, 3788 scc: 098-240
PKD: 09-Dec-2021 08:44 Printed: 09-Dec-2021 10:46 Page 7 of 12

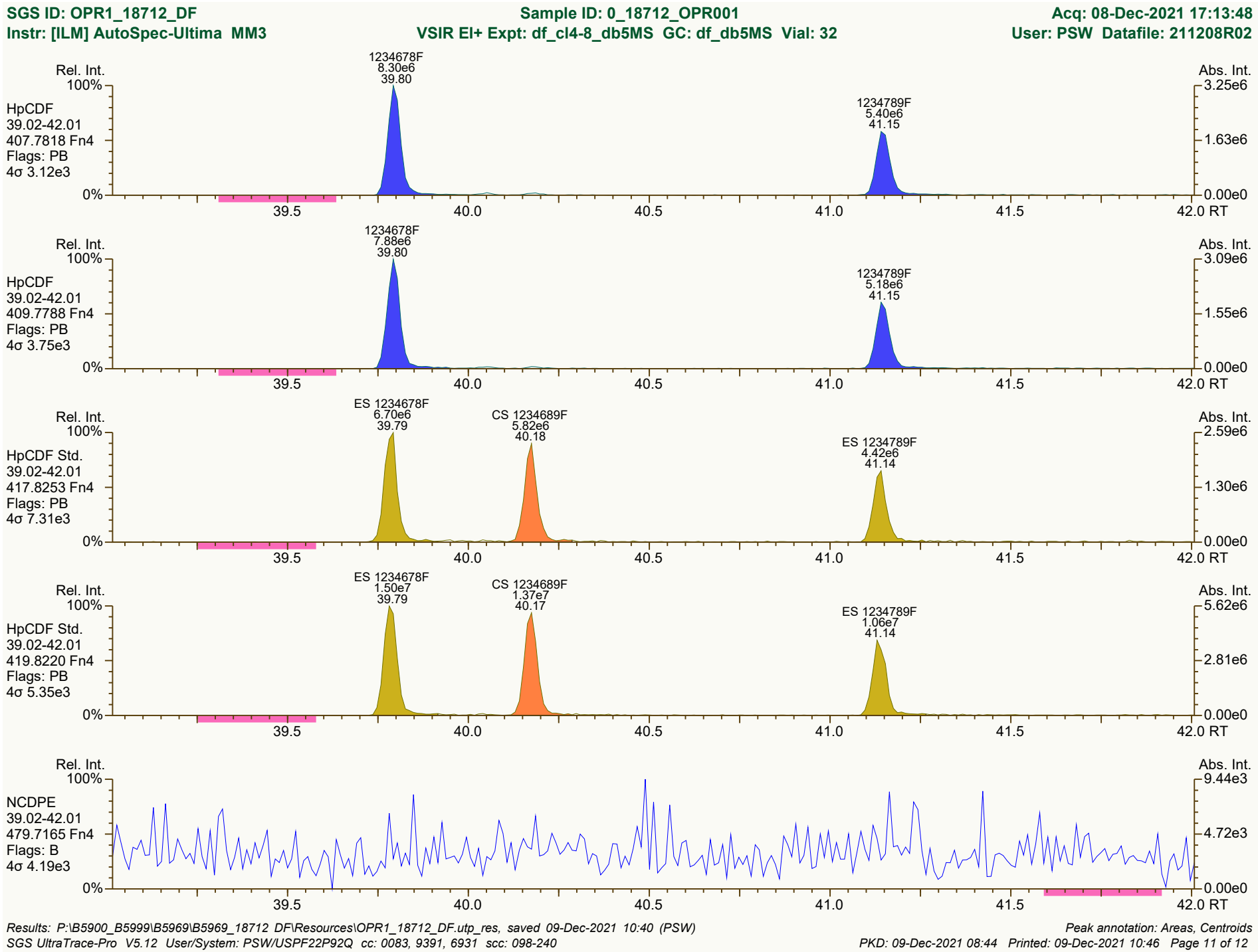
SGS ID: OPR1_18712_DF | Sample ID: 0_18712_OPR001 | Acq: 08-Dec-2021 17:13:48
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32 | User: PSW Datafile: 211208R02



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR1_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9949 scc: 098-240
PKD: 09-Dec-2021 08:44 Printed: 09-Dec-2021 10:46 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 6.21e3
0%
12378F
1.28e7
32.45
23478F
1.34e7
33.54
12389F
2.69e6
34.61
Abs. Int.
3.65e6
1.83e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 7.49e3
0%
12378F
8.38e6
32.44
23478F
8.54e6
33.54
12389F
1.79e6
34.61
Abs. Int.
2.32e6
1.16e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PB
4σ 6.14e3
0%
CS 12346F
2.39e7
31.91
ES 12378F
2.45e7
32.43
ES 23478F
2.40e7
33.53
Abs. Int.
6.82e6
3.41e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PB
4σ 5.76e3
0%
CS 12346F
1.52e7
31.91
ES 12378F
1.64e7
32.43
ES 23478F
1.53e7
33.53
Abs. Int.
4.34e6
2.17e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 4.03e3
0%
Abs. Int.
1.41e4
7.06e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

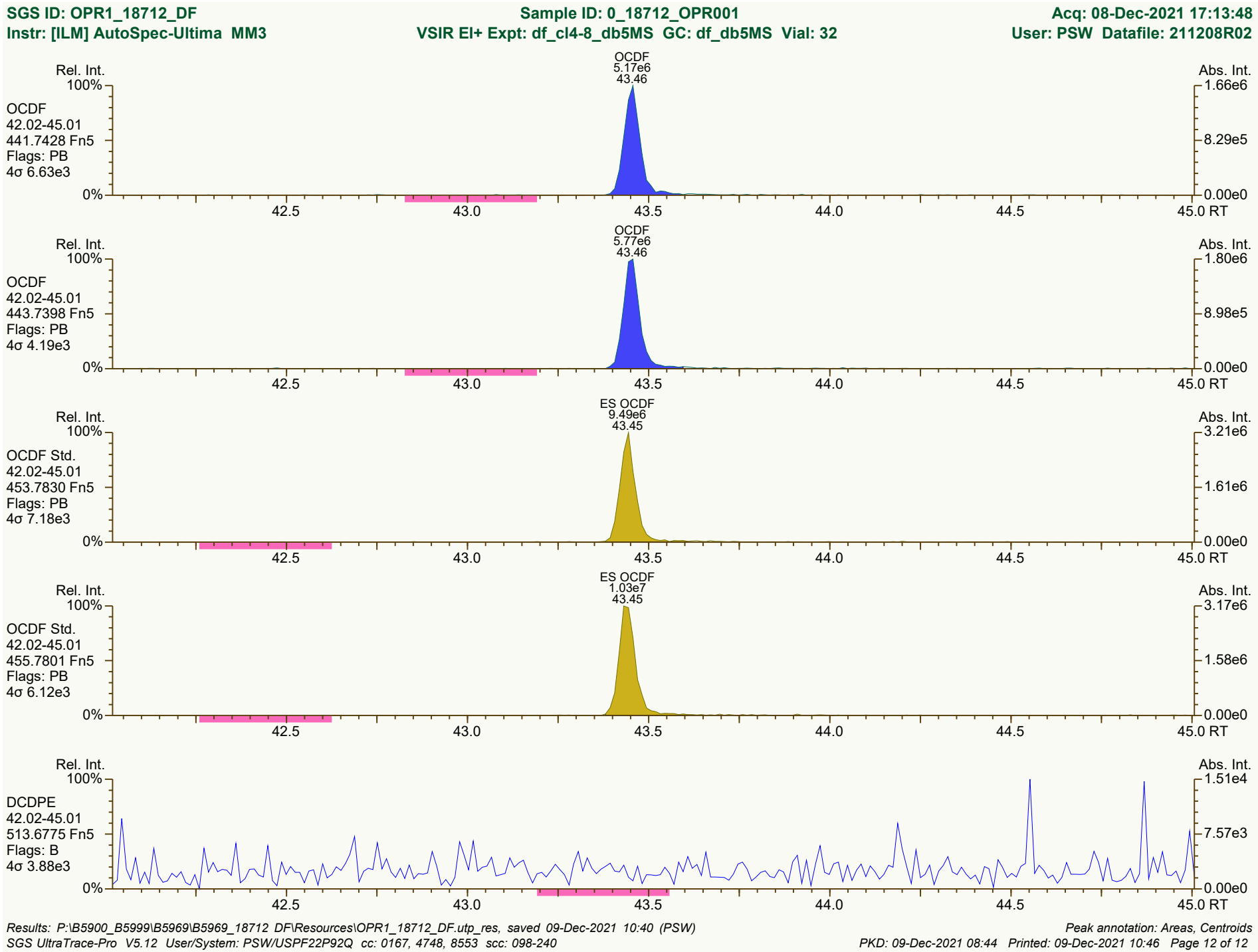

SGS ID: OPR1_18712_DF
Sample ID: 0_18712_OPR001
Acq: 08-Dec-2021 17:13:48
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: PSW Datafile: 211208R02
Rel. Int.
Abs. Int.
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 1.16e4
123468F 2.53e7 35.37
123478F 1.04e7 36.74
123678F 1.12e7* 36.88
234678F 1.05e7 37.55
123789F 7.93e6 38.48
7.76e6
3.88e6
0.00e0
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 7.37e3
123468F 2.03e7 35.37
123478F 8.54e6 36.74
123678F 9.17e6* 36.88
234678F 8.03e6 37.55
123789F 6.49e6 38.48
6.02e6
3.01e6
0.00e0
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PBM
4σ 1.82e4
ES 123478F 9.13e6 36.72
ES 123678F 1.14e7 36.86
CS 123469F 9.57e6 37.18
ES 234678F 9.89e6 37.54
ES 123789F 8.16e6* 38.46
3.40e6
1.70e6
0.00e0
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 1.92e4
ES 123478F 1.76e7 36.72
ES 123678F 2.23e7 36.86
CS 123469F 1.85e7 37.18
ES 234678F 1.90e7 37.54
ES 123789F 1.61e7 38.46
6.13e6
3.06e6
0.00e0
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.53e3
7.93e3
3.96e3
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR1_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6358, 3049, 3229 scc: 098-240
PKD: 09-Dec-2021 08:44 Printed: 09-Dec-2021 10:46 Page 10 of 12


SGS ID: OPR1_18712_DF
Sample ID: 0_18712_OPR001
Acq: 08-Dec-2021 17:13:48
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32
User: PSW Datafile: 211208R02
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 3.12e3
1234678F
8.30e6
39.80
1234789F
5.40e6
41.15
3.25e6
1.63e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 3.75e3
1234678F
7.88e6
39.80
1234789F
5.18e6
41.15
3.09e6
1.55e6
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 7.31e3
ES 1234678F
6.70e6
39.79
CS 1234689F
5.82e6
40.18
ES 1234789F
4.42e6
41.14
2.59e6
1.30e6
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 5.35e3
ES 1234678F
1.50e7
39.79
CS 1234689F
1.37e7
40.17
ES 1234789F
1.06e7
41.14
5.62e6
2.81e6
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 4.19e3
9.44e3
4.72e3
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR1_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0083, 9391, 6931 scc: 098-240
PKD: 09-Dec-2021 08:44 Printed: 09-Dec-2021 10:46 Page 11 of 12

SGS ID: OPR1_18712_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18712_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 32

Acq: 08-Dec-2021 17:13:48
User: PSW Datafile: 211208R02



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR1_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0167, 4748, 8553 scc: 098-240

Peak annotation: Areas, Centroids
PKD: 09-Dec-2021 08:44 Printed: 09-Dec-2021 10:46 Page 12 of 12

Lab ID: OPR2_18712_DF **Acq'd: 08 Dec 2021 18:01 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR002 **UTP: 09-Dec-2021 10:40:15 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 754-873-QVH**

Datafile: 211208R03 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.61		1.0008	1.0007	-0.2	4.81E+06	0.77	Y	1.34	9.49	7765.368	0.164
12378-PeCDD	33.88		1.0004	1.0006	+0.4	1.75E+07	1.59	Y	1.06	47.4	6465.983	0.162
123478-HxCDD	37.74		1.0004	1.0004	0	1.57E+07	1.19	Y	1.06	53.5	6931.074	0.188
123678-HxCDD	37.85		1.0034	1.0034	0	1.70E+07	1.26	Y	1.08	57.8	6931.074	0.194
123789-HxCDD	38.13		1.0111	1.0109	-0.5	1.63E+07	1.24	Y	1.02	53.3	6931.074	0.183
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	1.20E+07	1.06	Y	0.97	57.7	8001.436	0.264
OCDD	43.28		1.0003	1.0003	0	1.20E+07	0.91	Y	1.07	112	10474.33	0.806
2378-TCDF	27.76		1.0007	1.0007	0	5.97E+06	0.76	Y	0.96	11.8	7411.472	0.155
12378-PeCDF	32.45		1.0006	1.0005	-0.2	2.67E+07	1.55	Y	0.95	55.2	15104.084	0.299
23478-PeCDF	33.55		1.0005	1.0005	0	2.79E+07	1.55	Y	0.94	60.4	15104.084	0.282
123478-HxCDF	36.75		1.0004	1.0004	0	2.37E+07	1.25	Y	1.23	53.9	22119.262	0.4
123678-HxCDF	36.89		1.0005	1.0004	-0.2	2.69E+07	1.23	Y	1.13	53.6	22119.262	0.373
234678-HxCDF	37.56		1.0005	1.0004	-0.2	2.25E+07	1.26	Y	1.15	53.1	22119.262	0.463
123789-HxCDF	38.49		1.0005	1.0004	-0.2	1.87E+07	1.26	Y	1.14	51.9	22119.262	0.442
1234678-HpCDF	39.80		1.0003	1.0002	-0.2	1.92E+07	1.04	Y	1.36	54.9	7620.483	0.132
1234789-HpCDF	41.16		1.0004	1.0003	-0.2	1.34E+07	1.02	Y	1.30	54	7620.483	0.217
OCDF	43.46		1.0002	1.0003	+0.3	1.36E+07	0.89	Y	1.03	108	8485.328	0.544

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.58	1.0233	1.0231	-0.3	3.77E+07	0.80	Y	1.03	92.6
ES 12378-PeCDD	33.86	1.2118	1.2120	+0.4	3.48E+07	1.57	Y	1.03	85.5
ES 123478-HxCDD	37.72	0.9921	0.9920	-0.2	2.78E+07	1.28	Y	0.99	94
ES 123678-HxCDD	37.84	0.9951	0.9950	-0.2	2.71E+07	1.23	Y	0.97	93.9
ES 123789-HxCDD	38.12	1.0027	1.0026	-0.2	3.01E+07	1.23	Y	1.12	90.1
ES 1234678-HpCDD	40.69	1.0702	1.0701	-0.2	2.13E+07	1.14	Y	0.99	72.3
ES OCDD	43.27	1.1377	1.1379	+0.5	2.00E+07	0.89	Y	0.78	43.4
ES 2378-TCDF	27.74	1.0505	1.0504	-0.2	5.29E+07	0.80	Y	1.08	82.1
ES 12378-PeCDF	32.43	1.2278	1.2280	+0.4	5.12E+07	1.64	Y	0.93	92.3
ES 23478-PeCDF	33.53	1.2691	1.2696	+1.0	4.92E+07	1.69	Y	0.92	89.8
ES 123478-HxCDF	36.73	0.9660	0.9660	0	3.56E+07	0.51	Y	1.14	105
ES 123678-HxCDF	36.87	0.9698	0.9697	-0.2	4.45E+07	0.53	Y	1.30	115
ES 234678-HxCDF	37.54	0.9875	0.9873	-0.5	3.69E+07	0.55	Y	1.20	103
ES 123789-HxCDF	38.47	1.0121	1.0118	-0.7	3.18E+07	0.51	Y	1.14	94.3
ES 1234678-HpCDF	39.79	1.0468	1.0466	-0.5	2.57E+07	0.43	Y	0.95	91.2
ES 1234789-HpCDF	41.15	1.0822	1.0821	-0.2	1.91E+07	0.43	Y	0.85	76
ES OCDF	43.45	1.1426	1.1427	+0.3	2.47E+07	0.88	Y	0.93	44.9

Lab ID: OPR2_18712_DF | Acq'd: 08 Dec 2021 18:01 PSW | Wt/Vol: 1 uL | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 0_18712_OPR002 | UTP: 09-Dec-2021 10:40:15 PSW | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 754-873-QVH

Datafile: 211208R03 | Report: 09 Dec 2021 10:41 pw | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.94		-	-	-	3.94E+07	0.79	Y	-	-	
JS 1234-TCDF	26.41		-	-	-	5.94E+07	0.79	Y	-	-	
JS 123467-HxCDD	38.02		-	-	-	1.48E+07	1.24	Y	-	-	
CS 37Cl-2378-TCDD	28.61		1.0241	1.0240	-0.2	1.83E+07	n/a	-	1.31	88.7	
CS 12347-PeCDD	33.37		1.1940	1.1943	+0.6	3.31E+07	1.54	Y	0.89	94.1	
CS 12346-PeCDF	31.91		1.2080	1.2082	+0.4	4.82E+07	1.64	Y	0.87	93.4	
CS 123469-HxCDF	37.19		0.9781	0.9780	-0.2	3.64E+07	0.52	Y	1.09	112	
CS 1234689-HpCDF	40.18		1.0569	1.0568	-0.2	2.50E+07	0.44	Y	0.86	97.5	
~~SS 37Cl-2378-TCDD~~	~~28.61~~		~~1.0241~~	~~1.0240~~	~~-0.2~~	~~1.83E+07~~	~~n/a~~		~~1.26~~	~~96.3~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.37~~		~~1.1940~~	~~1.1943~~	~~+0.6~~	~~3.31E+07~~	~~1.54~~	~~Y~~	~~0.86~~	~~110~~	CL 09Dec21
~~SS 12346-PeCDF~~	~~31.91~~		~~1.2080~~	~~1.2082~~	~~+0.4~~	~~4.82E+07~~	~~1.64~~	~~Y~~	~~0.93~~	~~101~~	
~~SS 123469-HxCDF~~	~~37.19~~		~~0.9781~~	~~0.9780~~	~~-0.2~~	~~3.64E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~97.2~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0568~~	~~-0.2~~	~~2.50E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~107~~	

Totals	Conc	EMPC
Total TCDD	44.5	44.5
Total PeCDD	69.6	69.6
Total HxCDD	180	180
Total HpCDD	73	73
Total Tetra-Octa Dioxins	479	479
Total TCDF	69.6	69.6
Total PeCDF	237	237
Total HxCDF	349	349
Total HpCDF	109	109
Total Tetra-Octa Furans	872	872
Total Tetra-Octa Dioxins & Furans	1350	1350

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.767	0.77
Response	4.82E+06	4.81E+06

Lab ID: OPR2_18712_DF | **Acq'd: 08 Dec 2021 18:01 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR002 | **UTP: 09-Dec-2021 10:40:15 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 754-873-QVH**

Datafile: 211208R03 | **Report: 09 Dec 2021 10:41 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.03		0.8758	0.8758	0	6.39E+06	0.77	Y	1.34	12.6	7765.368	0.164
1379-TCDD	NotFnd		0.8878						1.34		7765.368	0.164
1369-TCDD	NotFnd		0.9025						1.34		7765.368	0.164
1469-TCDD	NotFnd		0.9291						1.34		7765.368	0.164
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		7765.368	0.164
1378-TCDD	NotFnd		0.9440						1.34		7765.368	0.164
1268-TCDD	NotFnd		0.9505						1.34		7765.368	0.164
1478-TCDD	NotFnd		0.9591						1.34		7765.368	0.164
1279-TCDD	NotFnd		0.9650						1.34		7765.368	0.164
1234/1269-TCDD	NotFnd		0.9771						1.34		7765.368	0.164
1236-TCDD	NotFnd		0.9821						1.34		7765.368	0.164
1237/1238-TCDD	NotFnd		0.9907						1.34		7765.368	0.164
1239-TCDD	28.45		0.9953	0.9953	0	4.66E+06	0.83	Y	1.34	9.2	7765.368	0.164
2378-TCDD	**28.61**		**1.0008**	1.0007	**-0.2**	4.81E+06	0.77	Y	**1.34**	**9.49**	**7765.368**	**0.164**
1278-TCDD	NotFnd		1.0118						1.34		7765.368	0.164
1267-TCDD	NotFnd		1.0162						1.34		7765.368	0.164
1289-TCDD	29.56		1.0340	1.0342	+0.4	6.70E+06	0.80	Y	1.34	13.2	7765.368	0.164
12479/12468-PeCDD	31.41		0.9274	0.9275	+0.2	3.95E+06	1.61	Y	1.06	10.7	6465.983	0.162
12469-PeCDD	NotFnd		0.9430						1.06		6465.983	0.162
12368-PeCDD	NotFnd		0.9591						1.06		6465.983	0.162
12478-PeCDD	NotFnd		0.9645						1.06		6465.983	0.162
12379-PeCDD	NotFnd		0.9676						1.06		6465.983	0.162
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		6465.983	0.162
12346/12347-PeCDD	NotFnd		0.9860						1.06		6465.983	0.162
12378-PeCDD	33.88		**1.0004**	**1.0006**	**+0.4**	**1.75E+07**	**1.59**	**Y**	**1.06**	**47.4**	**6465.983**	**0.162**
12367-PeCDD	NotFnd		1.0034						1.06		6465.983	0.162
12389-PeCDD	34.31		1.0133	1.0133	0	4.24E+06	1.62	Y	1.06	11.5	6465.983	0.162
124679/124689-HxCDD	36.01		0.9546	0.9547	+0.2	4.52E+06	1.28	Y	1.05	15.2	6931.074	0.188
123468-HxCDD	NotFnd		0.9718						1.05		6931.074	0.188
123679/123689-HxCDD	NotFnd		0.9795						1.05		6931.074	0.188
123469-HxCDD	NotFnd		0.9832						1.05		6931.074	0.188
123478-HxCDD	37.74		**1.0004**	**1.0004**	**0**	**1.57E+07**	**1.19**	**Y**	1.06	**53.5**	**6931.074**	**0.188**
123678-HxCDD	37.85		**1.0034**	**1.0034**	**0**	**1.70E+07**	**1.26**	**Y**	1.08	**57.8**	**6931.074**	**0.194**
123467-HxCDD	NotFnd		1.0083						1.05		6931.074	0.188
123789-HxCDD	38.13		**1.0111**	**1.0109**	**-0.5**	**1.63E+07**	**1.24**	**Y**	1.02	**53.3**	**6931.074**	**0.183**

Lab ID: OPR2_18712_DF | **Acq'd: 08 Dec 2021 18:01 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR002 | **UTP: 09-Dec-2021 10:40:15 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 754-873-QVH**

Datafile: 211208R03 | **Report: 09 Dec 2021 10:41 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.05		0.9843	0.9842	-0.2	3.17E+06	1.07	Y	0.97	15.3	8001.436	0.264
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**1.20E+07**	**1.06**	**Y**	**0.97**	**57.7**	**8001.436**	**0.264**
OCDD	**43.28**		**1.0003**	**1.0003**	**0**	**1.20E+07**	**0.91**	**Y**	**1.07**	**112**	**10474.33**	**0.806**
OCDD-a	NotFnd		1.0001						0.07		9903.517	12.3
1368-TCDF	22.99		0.8284	0.8286	+0.3	8.22E+06	0.80	Y	0.96	16.2	7411.472	0.155
1468-TCDF	NotFnd		0.8487						0.96		7411.472	0.155
2468-TCDF	24.16		0.8709	0.8710	+0.1	1.99E+06	0.81	Y	0.96	3.91	7411.472	0.155
1346/1246-TCDF	NotFnd		0.8828						0.96		7411.472	0.155
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		7411.472	0.155
1348-TCDF	NotFnd		0.8980						0.96		7411.472	0.155
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		7411.472	0.155
1268-TCDF	NotFnd		0.9159						0.96		7411.472	0.155
1467-TCDF	NotFnd		0.9206						0.96		7411.472	0.155
1478-TCDF	NotFnd		0.9266						0.96		7411.472	0.155
1369/1237-TCDF	NotFnd		0.9396						0.96		7411.472	0.155
2467-TCDF	NotFnd		0.9440						0.96		7411.472	0.155
2368-TCDF	NotFnd		0.9496						0.96		7411.472	0.155
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		7411.472	0.155
1278-TCDF	NotFnd		0.9689						0.96		7411.472	0.155
1349-TCDF	NotFnd		0.9732						0.96		7411.472	0.155
1267-TCDF	NotFnd		0.9786						0.96		7411.472	0.155
2346/1249-TCDF	NotFnd		0.9849						0.96		7411.472	0.155
2347/1279-TCDF	NotFnd		0.9927						0.96		7411.472	0.155
2348-TCDF	27.65		0.9967	0.9968	+0.2	8.44E+06	0.76	Y	0.96	16.6	7411.472	0.155
2378-TCDF	**27.76**		**1.0007**	**1.0007**	**0**	**5.97E+06**	**0.76**	**Y**	**0.96**	**11.8**	**7411.472**	**0.155**
2367/3467-TCDF	NotFnd		1.0136						0.96		7411.472	0.155
1269-TCDF	NotFnd		1.0223						0.96		7411.472	0.155
1239-TCDF	NotFnd		1.0313						0.96		7411.472	0.155
1289-TCDF	29.73		1.0711	1.0717	+1.1	1.07E+07	0.75	Y	0.96	21.1	7411.472	0.155
13468/12468-PeCDF	29.65		0.9147	0.9142	-0.9	5.15E+07	1.58	Y	0.94	109	6893.176	0.133
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		15104.084	0.291
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		15104.084	0.291
14678-PeCDF	NotFnd		0.9695						0.94		15104.084	0.291
13479-PeCDF	NotFnd		0.9727						0.94		15104.084	0.291
13469/12479-PeCDF	NotFnd		0.9799						0.94		15104.084	0.291
12346-PeCDF	NotFnd		0.9839						0.94		15104.084	0.291

Lab ID: OPR2_18712_DF **Acq'd: 08 Dec 2021 18:01 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR002 **UTP: 09-Dec-2021 10:40:15 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 754-873-QVH**

Datafile: 211208R03 **Report: 09 Dec 2021 10:41 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		15104.084	0.291
12347-PeCDF	NotFnd		0.9892						0.94		15104.084	0.291
12348-PeCDF	NotFnd		0.9940						0.94		15104.084	0.291
12378-PeCDF	**32.45**		**1.0006**	**1.0005**	**-0.2**	**2.67E+07**	**1.55**	**Y**	**0.95**	**55.2**	**15104.084**	**0.299**
12678/12367-PeCDF	NotFnd		1.0088						0.94		15104.084	0.291
12379-PeCDF	NotFnd		1.0142						0.94		15104.084	0.291
12679-PeCDF	NotFnd		0.9931						0.94		15104.084	0.291
23467/12369-PeCDF	NotFnd		0.9966						0.94		15104.084	0.291
23478-PeCDF	**33.55**		**1.0005**	**1.0005**	**0**	**2.79E+07**	**1.55**	**Y**	**0.94**	**60.4**	**15104.084**	**0.282**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		15104.084	0.291
12349-PeCDF	NotFnd		1.0100						0.94		15104.084	0.291
12389-PeCDF	34.61		1.0323	1.0323	0	5.78E+06	1.50	Y	0.94	12.2	15104.084	0.291
123468-HxCDF	35.38		0.9631	0.9632	+0.2	5.88E+07	1.26	Y	1.16	136	22119.262	0.416
124678/134678-HxCDF	NotFnd		0.9686						1.16		22119.262	0.416
134679-HxCDF	NotFnd		0.9747						1.16		22119.262	0.416
124679-HxCDF	NotFnd		0.9800						1.16		22119.262	0.416
124689-HxCDF	NotFnd		0.9859						1.16		22119.262	0.416
123467-HxCDF	NotFnd		0.9972						1.16		22119.262	0.416
123478-HxCDF	**36.75**		**1.0004**	**1.0004**	**0**	**2.37E+07**	**1.25**	**Y**	**1.23**	**53.9**	**22119.262**	**0.4**
123678-HxCDF	**36.89**		**1.0005**	**1.0004**	**-0.2**	**2.69E+07**	**1.23**	**Y**	**1.13**	**53.6**	**22119.262**	**0.373**
123479-HxCDF	NotFnd		1.0048						1.16		22119.262	0.416
123469-HxCDF	NotFnd		1.0089						1.16		22119.262	0.416
123679-HxCDF	NotFnd		0.9943						1.16		22119.262	0.416
234678-HxCDF	**37.56**		**1.0005**	**1.0004**	**-0.2**	**2.25E+07**	**1.26**	**Y**	**1.15**	**53.1**	**22119.262**	**0.463**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		22119.262	0.416
123789-HxCDF	**38.49**		**1.0005**	**1.0004**	**-0.2**	**1.87E+07**	**1.26**	**Y**	**1.14**	**51.9**	**22119.262**	**0.442**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		22119.262	0.416
1234678-HpCDF	**39.80**		**1.0003**	**1.0002**	**-0.2**	**1.92E+07**	**1.04**	**Y**	**1.36**	**54.9**	**7620.483**	**0.132**
1234679-HpCDF	NotFnd		1.0065						1.33		7620.483	0.168
1234689-HpCDF	NotFnd		1.0097						1.33		7620.483	0.168
1234789-HpCDF	**41.16**		**1.0004**	**1.0003**	**-0.2**	**1.34E+07**	**1.02**	**Y**	**1.30**	**54**	**7620.483**	**0.217**
OCDF	**43.46**		**1.0002**	**1.0003**	**+0.3**	**1.36E+07**	**0.89**	**Y**	**1.03**	**108**	**8485.328**	**0.544**
OCDF-a	43.46		1.0001	1.0001	0	8.96E+05	2.55	Y	0.06	122	11828.4	13.1

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211208R03	Analysis Date:	08-DEC-2021 18:01:22
Lab ID:	OPR2_18712_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.49	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	47.4	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.5	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	57.8	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	53.3	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	57.7	35	-	70	Y
OCDD	100	112	78	-	144	Y
2,3,7,8-TCDF	10	11.8	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	55.2	40	-	67	Y
2,3,4,7,8-PeCDF	50	60.4	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	53.9	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53.6	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	53.1	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	51.9	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	54.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	54	39	-	69	Y
OCDF	100	108	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 09 Dec 2021 10:41 Analyst: pw

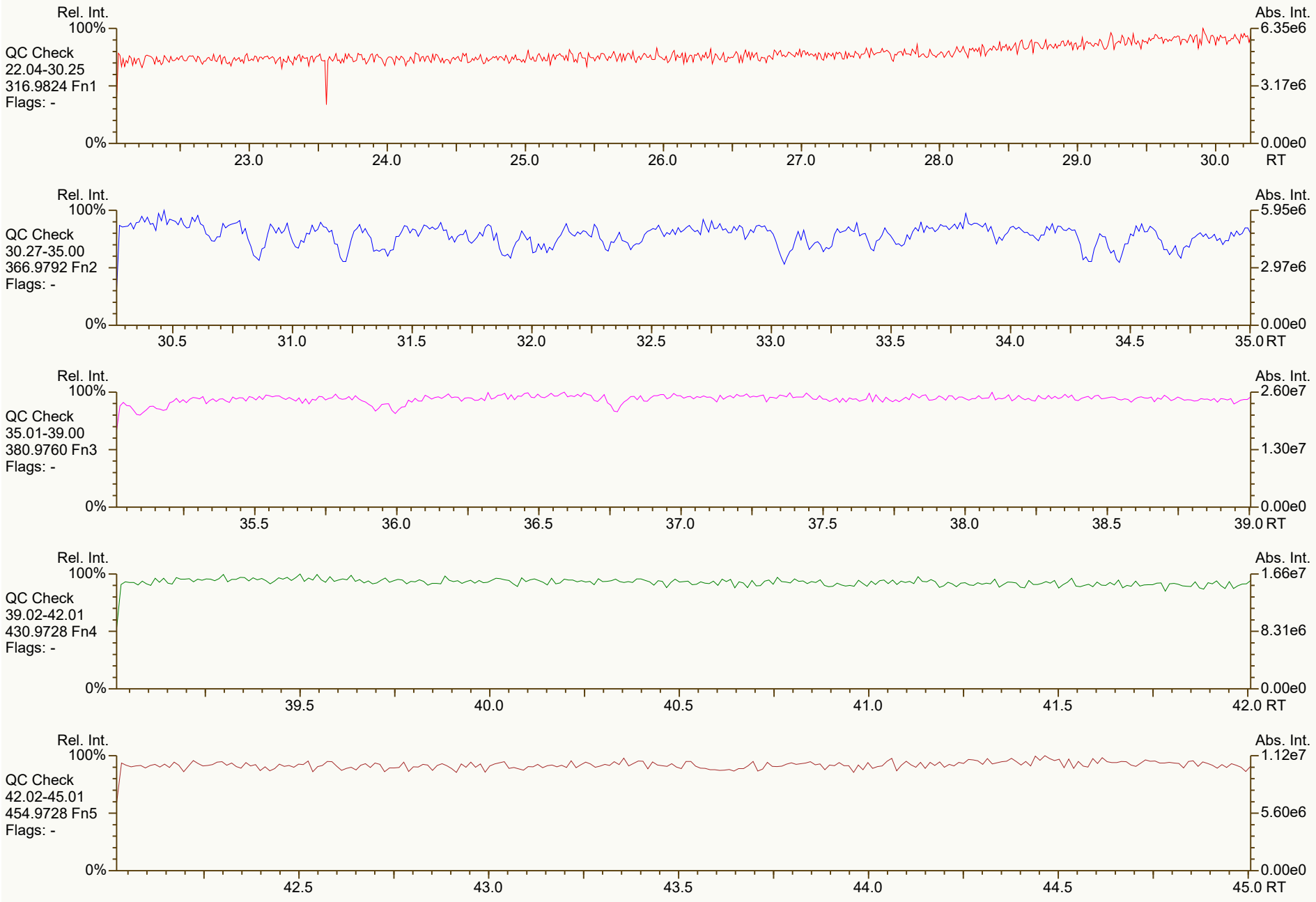
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211208R03	Analysis Date:	08-DEC-2021 18:01:22
Lab ID:	OPR2_18712_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	92.6	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	85.5	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	94	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	93.9	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	90.1	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	72.3	26	-	166	Y
13C-OCDD	200	86.8	26	-	397	Y
13C-2,3,7,8-TCDF	100	82.1	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	92.3	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	89.8	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	105	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	115	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	103	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	94.3	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	91.2	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	76	20	-	186	Y
13C-OCDF	200	89.8	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	35.5	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 09 Dec 2021 10:41 Analyst: pw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QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
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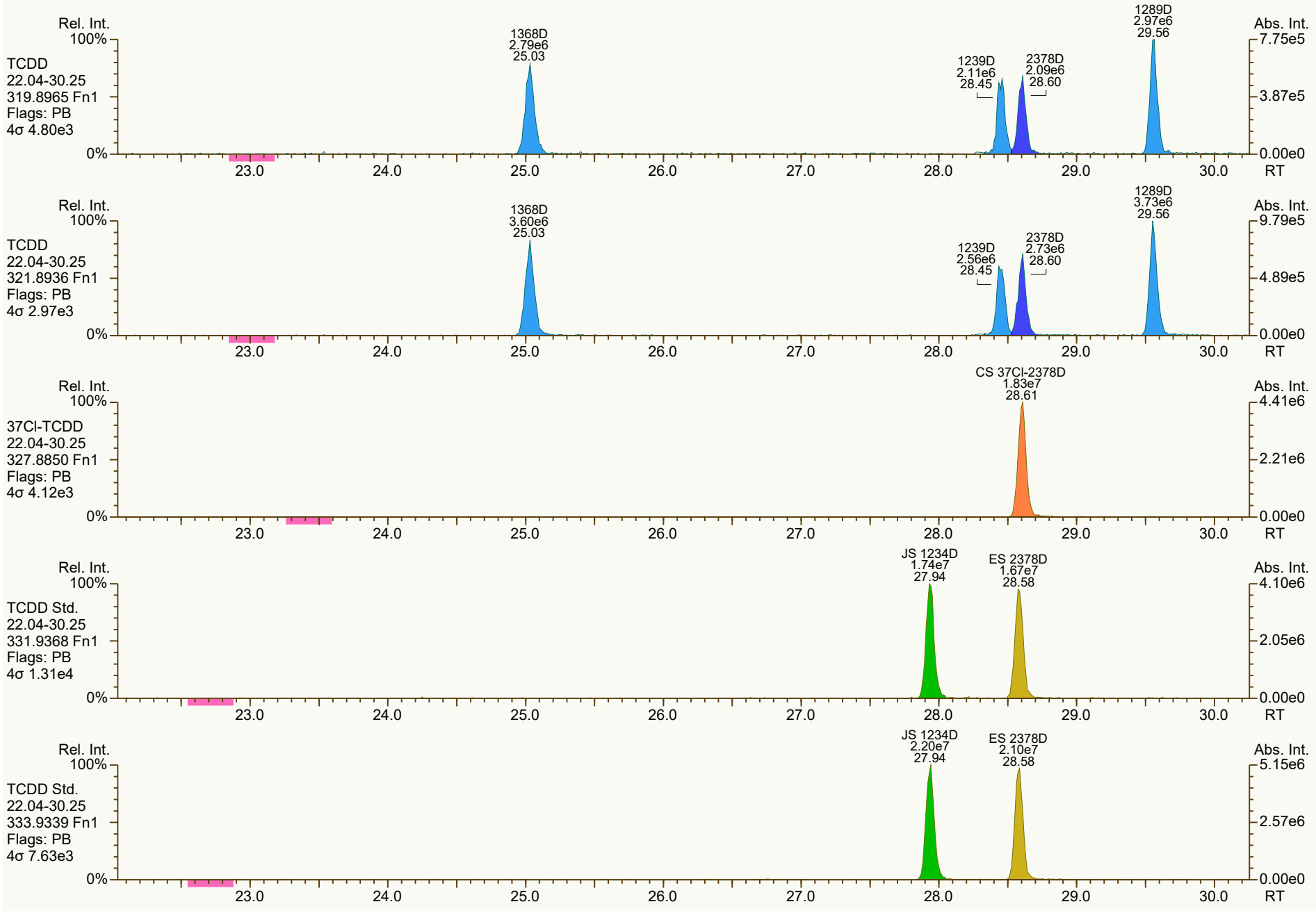
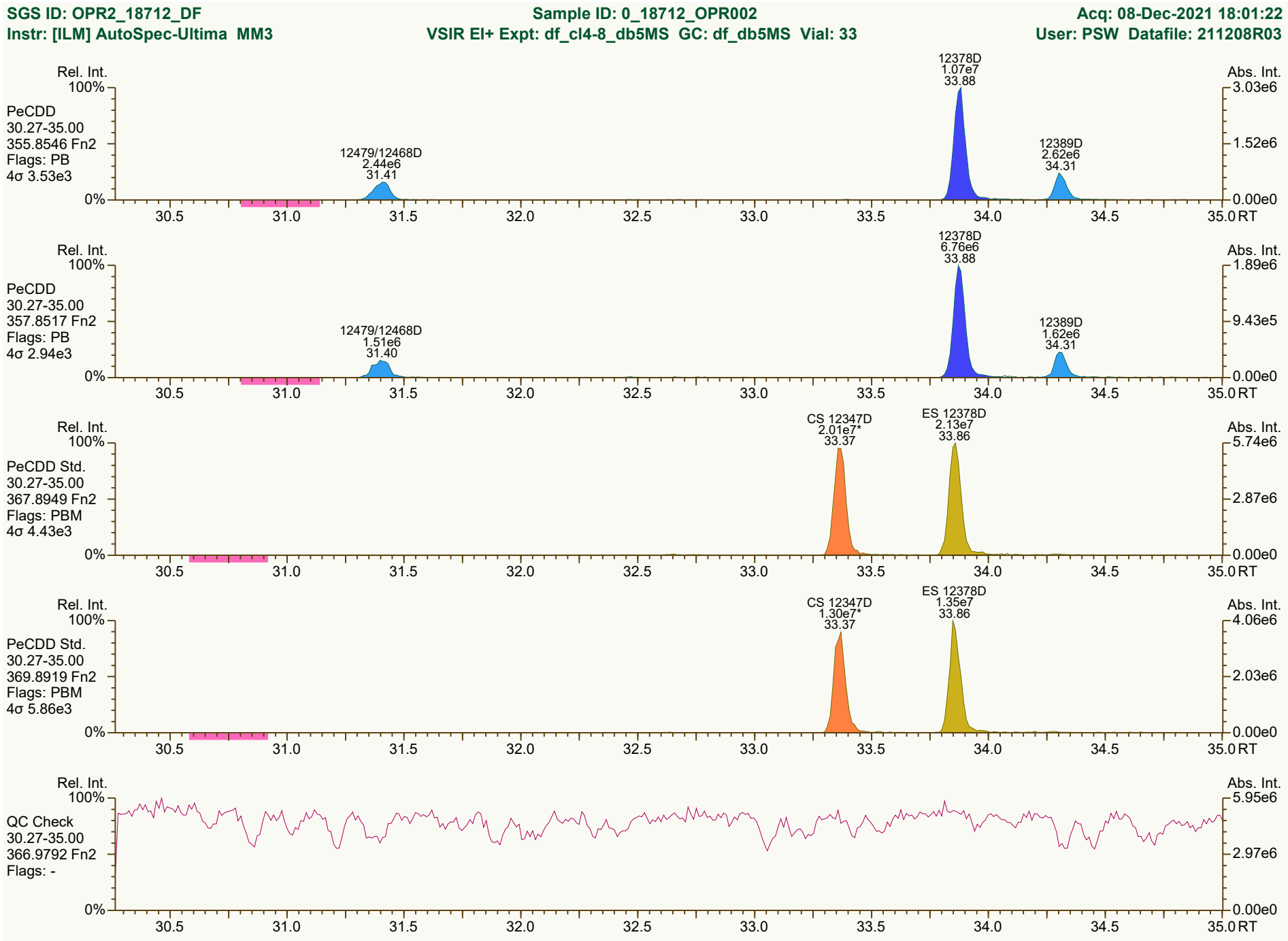
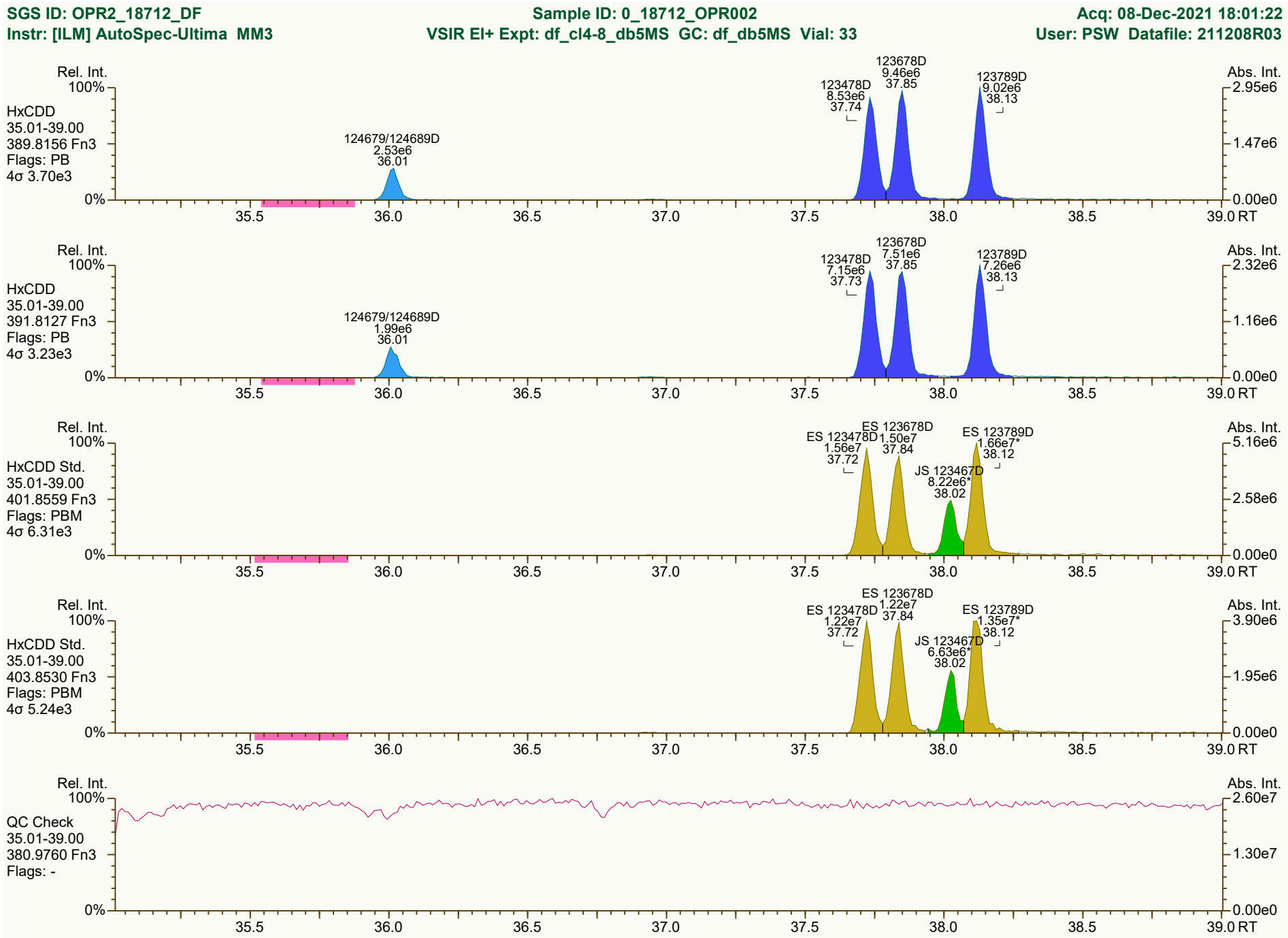
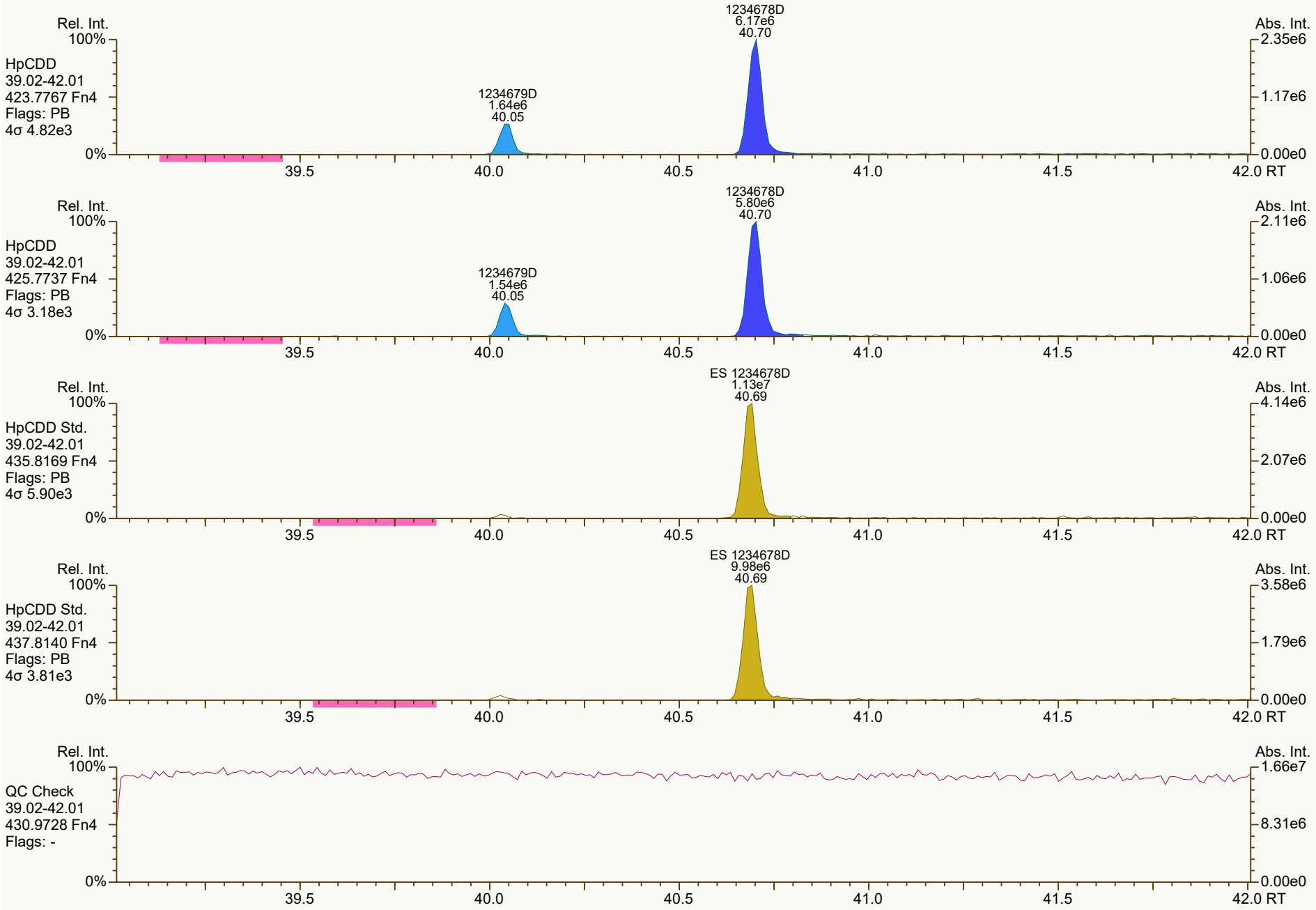
3.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.60e7
1.30e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.31e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.12e7
5.60e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT


Rel. Int.
100%
TCDD
22.04-30.25
319.8965 Fn1
Flags: PB
4σ 4.80e3
0%
1368D
2.79e6
25.03
1239D
2.11e6
28.45
2378D
2.09e6
28.60
1289D
2.97e6
29.56
Abs. Int.
7.75e5
3.87e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.04-30.25
321.8936 Fn1
Flags: PB
4σ 2.97e3
0%
1368D
3.60e6
25.03
1239D
2.56e6
28.45
2378D
2.73e6
28.60
1289D
3.73e6
29.56
Abs. Int.
9.79e5
4.89e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.04-30.25
327.8850 Fn1
Flags: PB
4σ 4.12e3
0%
CS 37Cl-2378D
1.83e7
28.61
Abs. Int.
4.41e6
2.21e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
331.9368 Fn1
Flags: PB
4σ 1.31e4
0%
JS 1234D
1.74e7
27.94
ES 2378D
1.67e7
28.58
Abs. Int.
4.10e6
2.05e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.04-30.25
333.9339 Fn1
Flags: PB
4σ 7.63e3
0%
JS 1234D
2.20e7
27.94
ES 2378D
2.10e7
28.58
Abs. Int.
5.15e6
2.57e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1048, 3557 scc: 754-873
PKD: 09-Dec-2021 08:46 Printed: 09-Dec-2021 10:46 Page 3 of 12

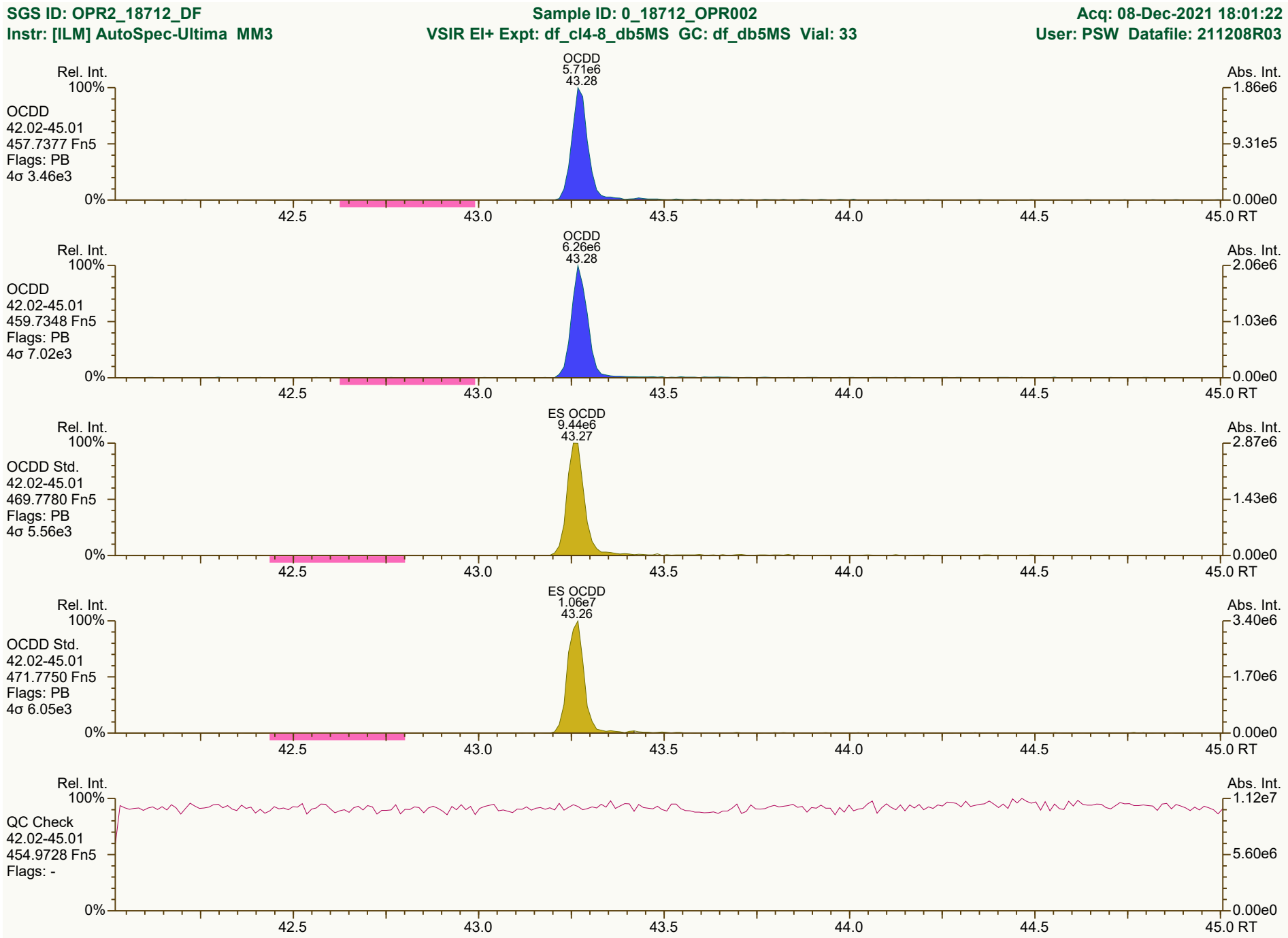

SGS ID: OPR2_18712_DF
Sample ID: 0_18712_OPR002
Acq: 08-Dec-2021 18:01:22
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R03
Rel. Int.
Abs. Int.
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 3.70e3
124679/124689D
2.53e6
36.01
123478D
8.53e6
37.74
123678D
9.46e6
37.85
123789D
9.02e6
38.13
2.95e6
1.47e6
0.00e0
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 3.23e3
124679/124689D
1.99e6
36.01
123478D
7.15e6
37.73
123678D
7.51e6
37.85
123789D
7.26e6
38.13
2.32e6
1.16e6
0.00e0
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PBM
4σ 6.31e3
ES 123478D
1.56e7
37.72
ES 123678D
1.50e7
37.84
JS 123467D
8.22e6*
38.02
ES 123789D
1.66e7*
38.12
5.16e6
2.58e6
0.00e0
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PBM
4σ 5.24e3
ES 123478D
1.22e7
37.72
ES 123678D
1.22e7
37.84
JS 123467D
6.63e6*
38.02
ES 123789D
1.35e7*
38.12
3.90e6
1.95e6
0.00e0
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
2.60e7
1.30e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5380, 0266 scc: 754-873
PKD: 09-Dec-2021 08:46 Printed: 09-Dec-2021 10:46 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 4.82e3
1234678D
6.17e6
40.70
1234679D
1.64e6
40.05
Abs. Int.
2.35e6
1.17e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 3.18e3
1234678D
5.80e6
40.70
1234679D
1.54e6
40.05
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 5.90e3
ES 1234678D
1.13e7
40.69
Abs. Int.
4.14e6
2.07e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 3.81e3
ES 1234678D
9.98e6
40.69
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.66e7
8.31e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT

SGS ID: OPR2_18712_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18712_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33

Acq: 08-Dec-2021 18:01:22
User: PSW Datafile: 211208R03



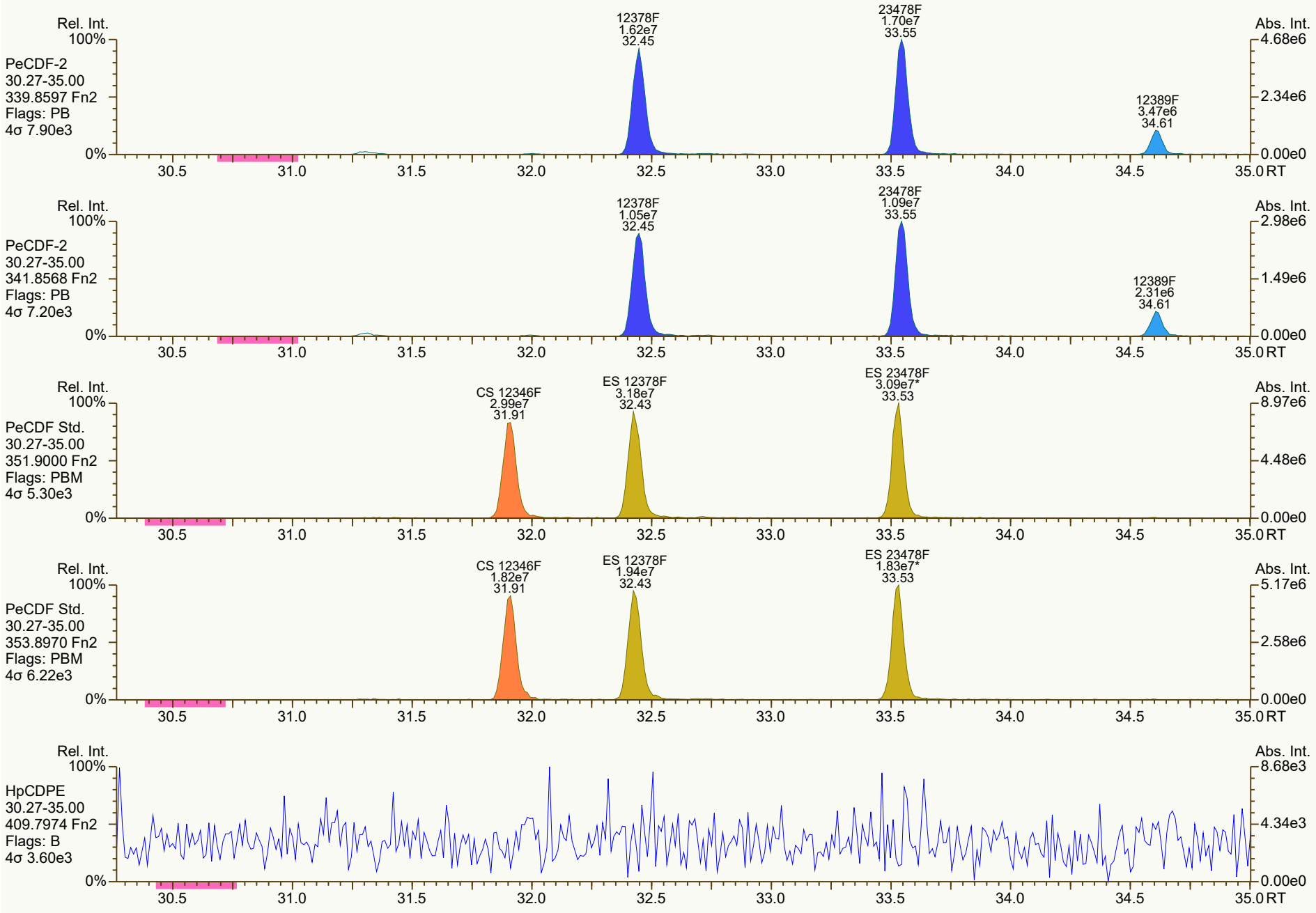
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5300, 6970 scc: 754-873

Peak annotation: Areas, Centroids
PKD: 09-Dec-2021 08:46 Printed: 09-Dec-2021 10:46 Page 6 of 12



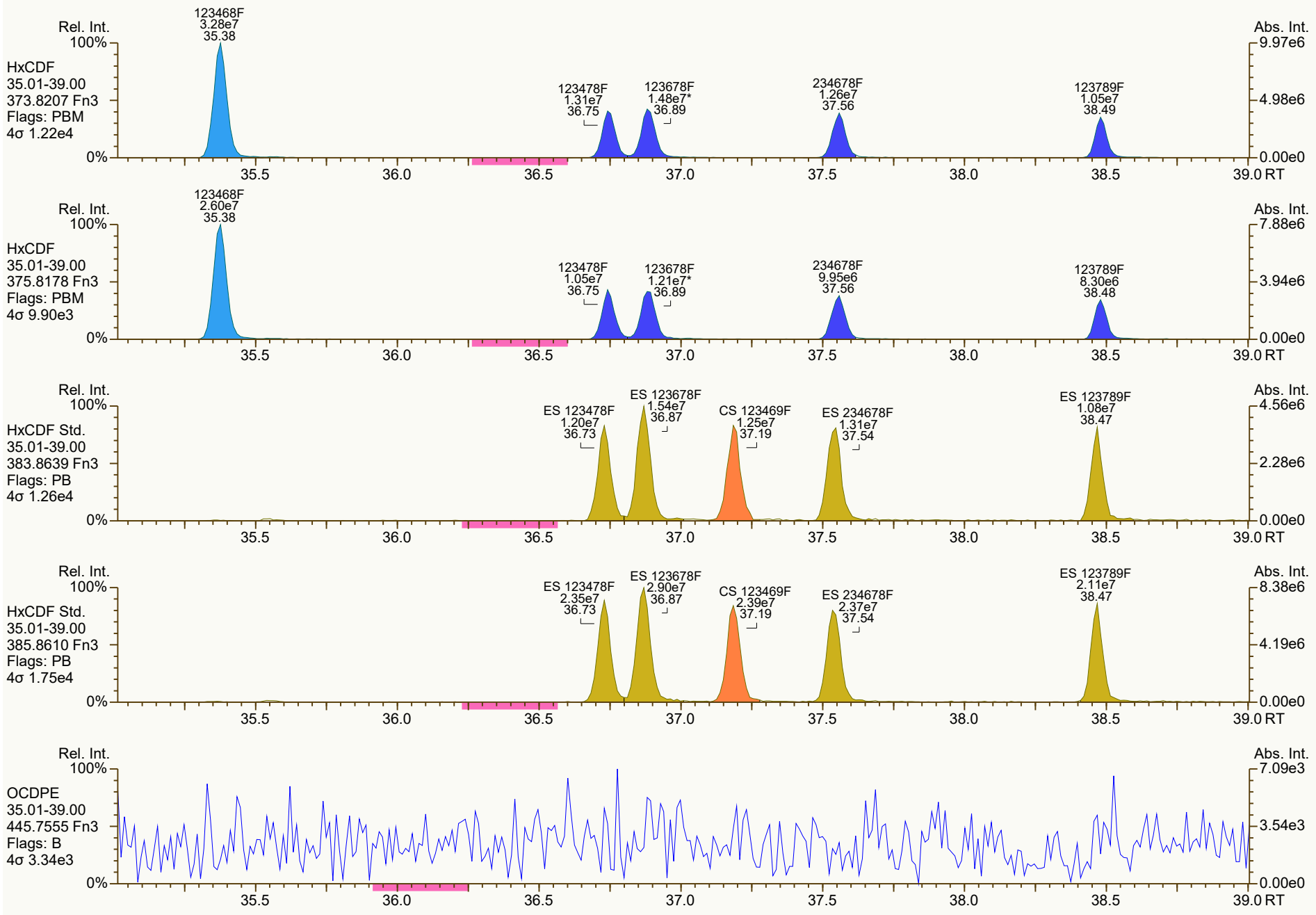
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8488, 0176, 1413 scc: 754-873
PKD: 09-Dec-2021 08:46 Printed: 09-Dec-2021 10:46 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
22.04-30.25
339.8597 Fn1
Flags: PB
4σ 2.86e3
13468/12468F
3.15e7
29.65
Abs. Int.
7.85e6
3.92e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
22.04-30.25
341.8568 Fn1
Flags: PB
4σ 4.03e3
13468/12468F
1.99e7
29.65
Abs. Int.
5.05e6
2.52e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
Abs. Int.
6.35e6
3.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.27-35.00
339.8597 Fn2
Flags: PB
4σ 7.90e3
0%
12378F
1.62e7
32.45
23478F
1.70e7
33.55
12389F
3.47e6
34.61
Abs. Int.
4.68e6
2.34e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.27-35.00
341.8568 Fn2
Flags: PB
4σ 7.20e3
0%
12378F
1.05e7
32.45
23478F
1.09e7
33.55
12389F
2.31e6
34.61
Abs. Int.
2.98e6
1.49e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
351.9000 Fn2
Flags: PBM
4σ 5.30e3
0%
CS 12346F
2.99e7
31.91
ES 12378F
3.18e7
32.43
ES 23478F
3.09e7*
33.53
Abs. Int.
8.97e6
4.48e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.27-35.00
353.8970 Fn2
Flags: PBM
4σ 6.22e3
0%
CS 12346F
1.82e7
31.91
ES 12378F
1.94e7
32.43
ES 23478F
1.83e7*
33.53
Abs. Int.
5.17e6
2.58e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.27-35.00
409.7974 Fn2
Flags: B
4σ 3.60e3
0%
Abs. Int.
8.68e3
4.34e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

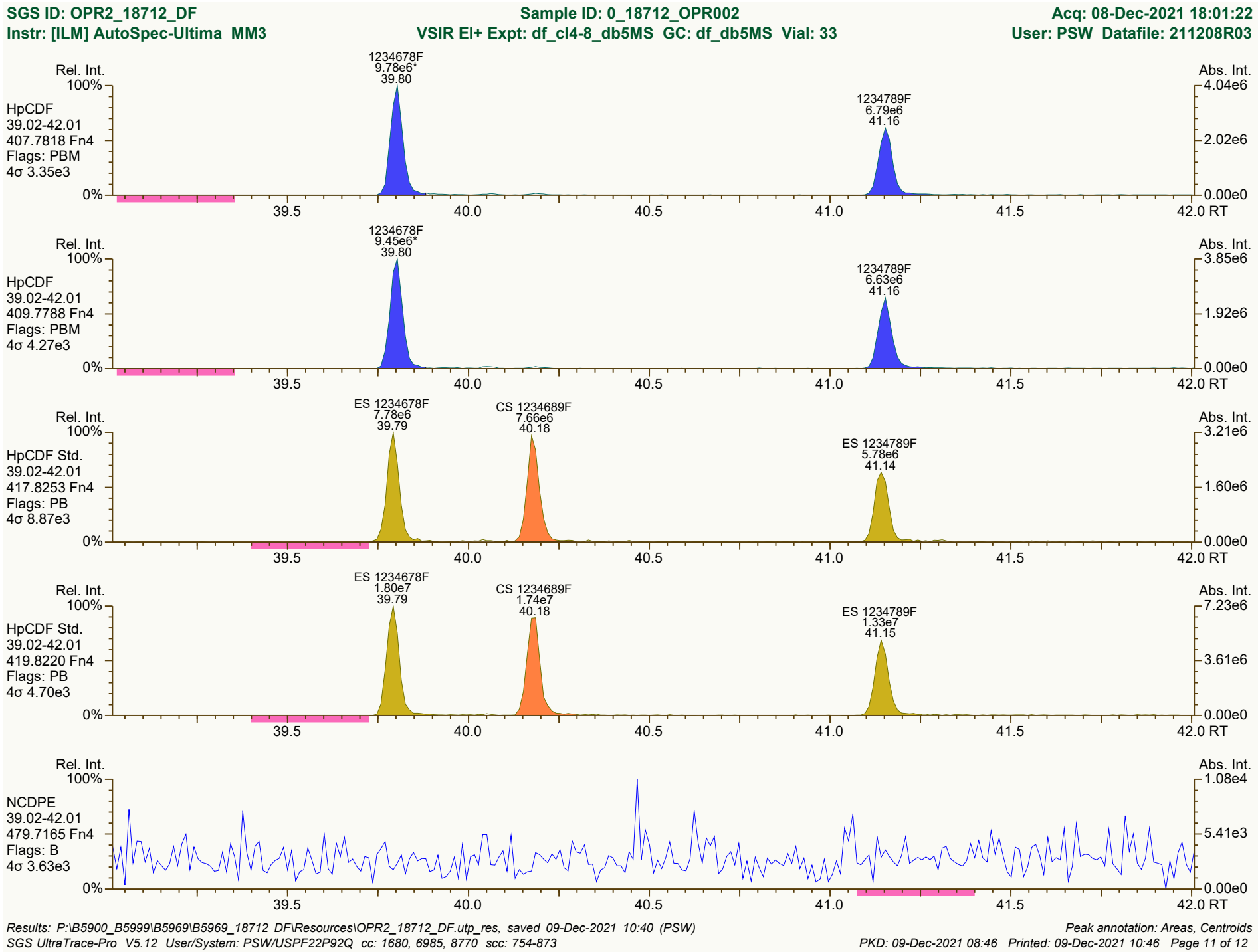
SGS ID: OPR2_18712_DF | Sample ID: 0_18712_OPR002 | Acq: 08-Dec-2021 18:01:22

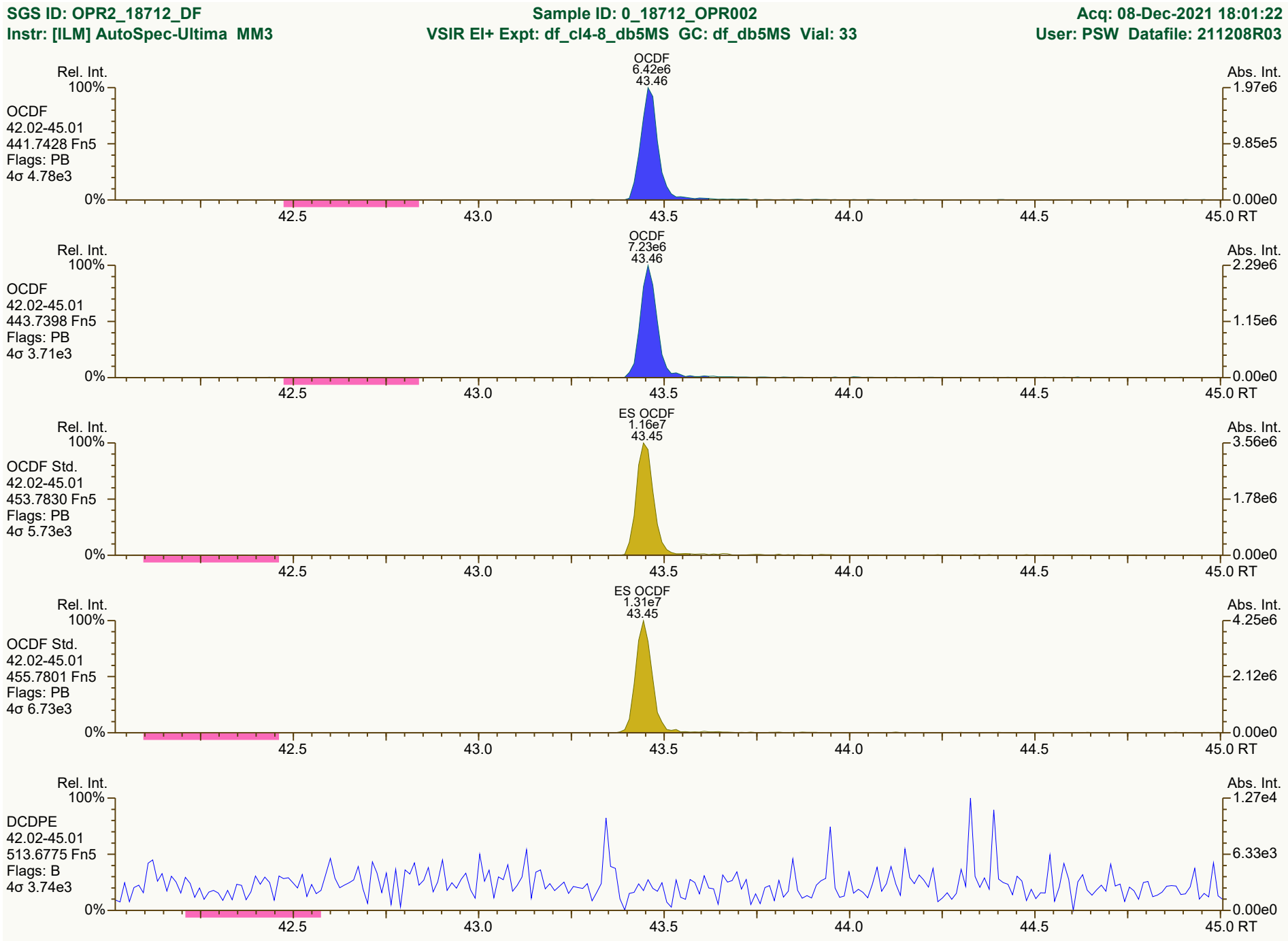
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33 | User: PSW Datafile: 211208R03



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3929, 0699, 4700 scc: 754-873 | *PKD: 09-Dec-2021 08:46 Printed: 09-Dec-2021 10:46 Page 10 of 12*


SGS ID: OPR2_18712_DF
Sample ID: 0_18712_OPR002
Acq: 08-Dec-2021 18:01:22
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R03
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PBM
4σ 3.35e3
1234678F
9.78e6*
39.80
1234789F
6.79e6
41.16
4.04e6
2.02e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PBM
4σ 4.27e3
1234678F
9.45e6*
39.80
1234789F
6.63e6
41.16
3.85e6
1.92e6
0.00e0
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 8.87e3
ES 1234678F
7.78e6
39.79
CS 1234689F
7.66e6
40.18
ES 1234789F
5.78e6
41.14
3.21e6
1.60e6
0.00e0
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 4.70e3
ES 1234678F
1.80e7
39.79
CS 1234689F
1.74e7
40.18
ES 1234789F
1.33e7
41.15
7.23e6
3.61e6
0.00e0
NCDPE
39.02-42.01
479.7165 Fn4
Flags: B
4σ 3.63e3
1.08e4
5.41e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1680, 6985, 8770 scc: 754-873
PKD: 09-Dec-2021 08:46 Printed: 09-Dec-2021 10:46 Page 11 of 12


SGS ID: OPR2_18712_DF
Sample ID: 0_18712_OPR002
Acq: 08-Dec-2021 18:01:22
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R03
Rel. Int.
Abs. Int.
OCDF
6.42e6
43.46
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 4.78e3
1.97e6
9.85e5
0.00e0
OCDF
7.23e6
43.46
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 3.71e3
2.29e6
1.15e6
ES OCDF
1.16e7
43.45
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 5.73e3
3.56e6
1.78e6
ES OCDF
1.31e7
43.45
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 6.73e3
4.25e6
2.12e6
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 3.74e3
1.27e4
6.33e3
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1102, 0765, 0200 scc: 754-873
PKD: 09-Dec-2021 08:46 Printed: 09-Dec-2021 10:46 Page 12 of 12

CPSM only

Lab ID: OPR2_18712_DF-RJ **Acq'd: 09 Dec 2021 04:27 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR002 **UTP: 09-Dec-2021 10:40:21 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 577-569-NFT**

Datafile: 211208R16 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.59		1.0008	1.0007	-0.2	3.42E+06	0.79	Y	1.34	9.6	8485.532	0.253
12378-PeCDD	33.86		1.0004	1.0007	+0.6	1.16E+07	1.59	Y	1.06	49	6194.086	0.239
123478-HxCDD	37.72		1.0004	1.0004	0	1.10E+07	1.27	Y	1.06	51.7	5876.089	0.225
123678-HxCDD	37.84		1.0034	1.0034	0	1.17E+07	1.26	Y	1.08	56.4	5876.089	0.219
123789-HxCDD	38.12		1.0111	1.0110	-0.2	1.17E+07	1.24	Y	1.02	52.1	5876.089	0.2
1234678-HpCDD	40.70		1.0004	1.0003	-0.2	9.40E+06	1.09	Y	0.97	56.5	6993.683	0.274
OCDD	43.27		1.0003	1.0003	0	1.06E+07	0.91	Y	1.07	111	9705.104	0.805
2378-TCDF	27.74		1.0007	1.0007	0	4.34E+06	0.85	Y	0.96	12.3	9007.066	0.273
12378-PeCDF	32.43		1.0006	1.0005	-0.2	1.83E+07	1.55	Y	0.95	55.2	8681.553	0.243
23478-PeCDF	33.53		1.0005	1.0005	0	1.89E+07	1.53	Y	0.94	59.6	8681.553	0.239
123478-HxCDF	36.73		1.0004	1.0004	0	1.66E+07	1.26	Y	1.23	56.8	14914.548	0.424
123678-HxCDF	36.87		1.0005	1.0005	0	1.82E+07	1.25	Y	1.13	54.6	14914.548	0.381
234678-HxCDF	37.54		1.0005	1.0004	-0.2	1.54E+07	1.29	Y	1.15	54.8	14914.548	0.478
123789-HxCDF	38.47		1.0005	1.0004	-0.2	1.25E+07	1.19	Y	1.14	49.4	14914.548	0.441
1234678-HpCDF	39.80		1.0003	1.0003	0	1.43E+07	1.06	Y	1.36	51.9	7071.537	0.156
1234789-HpCDF	41.15		1.0004	1.0002	-0.5	1.06E+07	1.07	Y	1.30	52	7071.537	0.239
OCDF	43.45		1.0002	1.0002	0	1.25E+07	0.94	Y	1.03	110	6786.436	0.465

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.57	1.0233	1.0232	-0.2	2.65E+07	0.82	Y	1.03	91.4
ES 12378-PeCDD	33.84	1.2118	1.2121	+0.6	2.24E+07	1.54	Y	1.03	77.1
ES 123478-HxCDD	37.71	0.9921	0.9921	0	2.02E+07	1.29	Y	0.99	99.9
ES 123678-HxCDD	37.82	0.9951	0.9951	0	1.92E+07	1.29	Y	0.97	97.3
ES 123789-HxCDD	38.11	1.0027	1.0026	-0.2	2.21E+07	1.24	Y	1.12	97
ES 1234678-HpCDD	40.68	1.0702	1.0703	+0.2	1.71E+07	1.05	Y	0.99	85
ES OCDD	43.25	1.1377	1.1380	+0.8	1.79E+07	0.90	Y	0.78	56.7
ES 2378-TCDF	27.73	1.0505	1.0506	+0.2	3.67E+07	0.77	Y	1.08	82
ES 12378-PeCDF	32.42	1.2278	1.2284	+1.2	3.51E+07	1.61	Y	0.93	91.1
ES 23478-PeCDF	33.51	1.2691	1.2700	+1.8	3.37E+07	1.58	Y	0.92	88.6
ES 123478-HxCDF	36.72	0.9660	0.9660	0	2.37E+07	0.53	Y	1.14	102
ES 123678-HxCDF	36.86	0.9698	0.9696	-0.4	2.94E+07	0.52	Y	1.30	112
ES 234678-HxCDF	37.53	0.9875	0.9873	-0.5	2.44E+07	0.53	Y	1.20	100
ES 123789-HxCDF	38.46	1.0121	1.0118	-0.7	2.23E+07	0.50	Y	1.14	96.9
ES 1234678-HpCDF	39.79	1.0468	1.0468	0	2.03E+07	0.45	Y	0.95	105
ES 1234789-HpCDF	41.14	1.0822	1.0824	+0.5	1.56E+07	0.43	Y	0.85	90.9
ES OCDF	43.44	1.1426	1.1429	+0.8	2.21E+07	0.93	Y	0.93	58.9

Lab ID: OPR2_18712_DF-RJ | Acq'd: 09 Dec 2021 04:27 PSW | Wt/Vol: 1 uL | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 0_18712_OPR002 | UTP: 09-Dec-2021 10:40:21 PSW | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 577-569-NFT

Datafile: 211208R16 | Report: 09 Dec 2021 10:42 pw | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.92		-	-	-	2.81E+07	0.81	Y	-	-	
JS 1234-TCDF	26.39		-	-	-	4.12E+07	0.78	Y	-	-	
JS 123467-HxCDD	38.01		-	-	-	1.01E+07	1.21	Y	-	-	
CS 37Cl-2378-TCDD	28.59		1.0241	1.0239	-0.3	1.24E+07	n/a	-	1.31	84.2	
CS 12347-PeCDD	33.35		1.1940	1.1944	+0.8	2.17E+07	1.68	Y	0.89	86.6	
CS 12346-PeCDF	31.89		1.2080	1.2085	+1.0	3.57E+07	1.58	Y	0.87	99.8	
CS 123469-HxCDF	37.17		0.9781	0.9780	-0.2	2.57E+07	0.50	Y	1.09	116	
CS 1234689-HpCDF	40.18		1.0569	1.0570	+0.2	1.87E+07	0.44	Y	0.86	107	
~~SS 37Cl-2378-TCDD~~	~~28.59~~		~~1.0241~~	~~1.0239~~	~~-0.3~~	~~1.24E+07~~	~~n/a~~		~~1.26~~	~~92.6~~	Not used in this project. CL 09Dec21
~~SS 12347-PeCDD~~	~~33.35~~		~~1.1940~~	~~1.1944~~	~~+0.8~~	~~2.17E+07~~	~~1.68~~	~~Y~~	~~0.86~~	~~112~~	
~~SS 12346-PeCDF~~	~~31.89~~		~~1.2080~~	~~1.2085~~	~~+1.0~~	~~3.57E+07~~	~~1.58~~	~~Y~~	~~0.93~~	~~109~~	
~~SS 123469-HxCDF~~	~~37.17~~		~~0.9781~~	~~0.9780~~	~~-0.2~~	~~2.57E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~104~~	
~~SS 1234689-HpCDF~~	~~40.18~~		~~1.0569~~	~~1.0570~~	~~+0.2~~	~~1.87E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~101~~	

Totals	Conc	EMPC
Total TCDD	43.1	43.1
Total PeCDD	74.6	74.6
Total HxCDD	176	176
Total HpCDD	68.8	68.8
Total Tetra-Octa Dioxins	473	473
Total TCDF	61.4	65.2
Total PeCDF	232	232
Total HxCDF	355	355
Total HpCDF	104	104
Total Tetra-Octa Furans	862	866
Total Tetra-Octa Dioxins & Furans	1340	1340

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.79	0.79
Response	3.43E+06	3.42E+06

Lab ID: OPR2_18712_DF-RJ | **Acq'd: 09 Dec 2021 04:27 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR002 | **UTP: 09-Dec-2021 10:40:21 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 577-569-NFT**

Datafile: 211208R16 | **Report: 09 Dec 2021 10:42 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.01		0.8758	0.8755	-0.5	4.49E+06	0.79	Y	1.34	12.6	8485.532	0.253
1379-TCDD	NotFnd		0.8878						1.34		8485.532	0.253
1369-TCDD	NotFnd		0.9025						1.34		8485.532	0.253
1469-TCDD	NotFnd		0.9291						1.34		8485.532	0.253
1247/1246/1248/1249-TCDD	NotFnd		0.9374						1.34		8485.532	0.253
1378-TCDD	NotFnd		0.9440						1.34		8485.532	0.253
1268-TCDD	NotFnd		0.9505						1.34		8485.532	0.253
1478-TCDD	NotFnd		0.9591						1.34		8485.532	0.253
1279-TCDD	NotFnd		0.9650						1.34		8485.532	0.253
1234/1269-TCDD	NotFnd		0.9771						1.34		8485.532	0.253
1236-TCDD	NotFnd		0.9821						1.34		8485.532	0.253
1237/1238-TCDD	NotFnd		0.9907						1.34		8485.532	0.253
1239-TCDD	28.43		0.9953	0.9954	+0.2	2.97E+06	0.82	Y	1.34	8.33	8485.532	0.253
2378-TCDD	**28.59**		**1.0008**	1.0007	**-0.2**	3.42E+06	0.79	Y	**1.34**	**9.6**	**8485.532**	**0.253**
1278-TCDD	NotFnd		1.0118						1.34		8485.532	0.253
1267-TCDD	NotFnd		1.0162						1.34		8485.532	0.253
1289-TCDD	29.55		1.0340	1.0343	+0.5	4.48E+06	0.79	Y	1.34	12.6	8485.532	0.253
12479/12468-PeCDD	31.39		0.9274	0.9275	+0.2	2.85E+06	1.53	Y	1.06	12	6194.086	0.239
12469-PeCDD	NotFnd		0.9430						1.06		6194.086	0.239
12368-PeCDD	NotFnd		0.9591						1.06		6194.086	0.239
12478-PeCDD	NotFnd		0.9645						1.06		6194.086	0.239
12379-PeCDD	NotFnd		0.9676						1.06		6194.086	0.239
12369/12467/12489-PeCDD	NotFnd		0.9751						1.06		6194.086	0.239
12346/12347-PeCDD	NotFnd		0.9860						1.06		6194.086	0.239
12378-PeCDD	33.86		**1.0004**	**1.0007**	**+0.6**	**1.16E+07**	**1.59**	**Y**	**1.06**	**49**	**6194.086**	**0.239**
12367-PeCDD	NotFnd		1.0034						1.06		6194.086	0.239
12389-PeCDD	34.30		1.0133	1.0135	+0.4	3.21E+06	1.59	Y	1.06	13.5	6194.086	0.239
124679/124689-HxCDD	36.00		0.9546	0.9546	0	3.36E+06	1.21	Y	1.05	15.6	5876.089	0.214
123468-HxCDD	NotFnd		0.9718						1.05		5876.089	0.214
123679/123689-HxCDD	NotFnd		0.9795						1.05		5876.089	0.214
123469-HxCDD	NotFnd		0.9832						1.05		5876.089	0.214
123478-HxCDD	37.72		**1.0004**	**1.0004**	**0**	**1.10E+07**	**1.27**	**Y**	1.06	**51.7**	**5876.089**	**0.225**
123678-HxCDD	37.84		**1.0034**	**1.0034**	**0**	**1.17E+07**	**1.26**	**Y**	1.08	**56.4**	**5876.089**	**0.219**
123467-HxCDD	NotFnd		1.0083						1.05		5876.089	0.214
123789-HxCDD	38.12		**1.0111**	**1.0110**	**-0.2**	**1.17E+07**	**1.24**	**Y**	1.02	**52.1**	**5876.089**	**0.2**

Lab ID: OPR2_18712_DF-RJ **Acq'd: 09 Dec 2021 04:27 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR002 **UTP: 09-Dec-2021 10:40:21 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 577-569-NFT**

Datafile: 211208R16 **Report: 09 Dec 2021 10:42 pw** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.04		0.9843	0.9842	-0.2	2.06E+06	1.04	Y	0.97	12.4	6993.683	0.274
1234678-HpCDD	**40.70**		**1.0004**	**1.0003**	**-0.2**	**9.40E+06**	**1.09**	**Y**	**0.97**	**56.5**	**6993.683**	**0.274**
OCDD	**43.27**		**1.0003**	**1.0003**	**0**	**1.06E+07**	**0.91**	**Y**	**1.07**	**111**	**9705.104**	**0.805**
OCDD-a	43.26		1.0001	1.0002	+0.3	7.46E+05	2.34	Y	0.07	126	12216.599	16.4
1368-TCDF	22.95		0.8284	0.8279	-0.7	5.63E+06	0.75	Y	0.96	16	9007.066	0.273
1468-TCDF	NotFnd		0.8487						0.96		9007.066	0.273
2468-TCDF	24.13	EMPC	0.8709	0.8704	-0.7	1.34E+06	0.90	N	0.96	3.79	9007.066	0.273
1346/1246-TCDF	NotFnd		0.8828						0.96		9007.066	0.273
1347/1378/1247-TCDF	NotFnd		0.8886						0.96		9007.066	0.273
1348-TCDF	NotFnd		0.8980						0.96		9007.066	0.273
1248/1367/1379-TCDF	NotFnd		0.9027						0.96		9007.066	0.273
1268-TCDF	NotFnd		0.9159						0.96		9007.066	0.273
1467-TCDF	NotFnd		0.9206						0.96		9007.066	0.273
1478-TCDF	NotFnd		0.9266						0.96		9007.066	0.273
1369/1237-TCDF	NotFnd		0.9396						0.96		9007.066	0.273
2467-TCDF	NotFnd		0.9440						0.96		9007.066	0.273
2368-TCDF	NotFnd		0.9496						0.96		9007.066	0.273
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9530						0.96		9007.066	0.273
1278-TCDF	NotFnd		0.9689						0.96		9007.066	0.273
1349-TCDF	NotFnd		0.9732						0.96		9007.066	0.273
1267-TCDF	NotFnd		0.9786						0.96		9007.066	0.273
2346/1249-TCDF	NotFnd		0.9849						0.96		9007.066	0.273
2347/1279-TCDF	NotFnd		0.9927						0.96		9007.066	0.273
2348-TCDF	27.64		0.9967	0.9968	+0.2	5.51E+06	0.77	Y	0.96	15.6	9007.066	0.273
2378-TCDF	**27.74**		**1.0007**	**1.0007**	**0**	**4.34E+06**	**0.85**	**Y**	**0.96**	**12.3**	**9007.066**	**0.273**
2367/3467-TCDF	NotFnd		1.0136						0.96		9007.066	0.273
1269-TCDF	NotFnd		1.0223						0.96		9007.066	0.273
1239-TCDF	NotFnd		1.0313						0.96		9007.066	0.273
1289-TCDF	29.72		1.0711	1.0720	+1.6	6.15E+06	0.81	Y	0.96	17.5	9007.066	0.273
13468/12468-PeCDF	29.64		0.9147	0.9142	-0.9	3.43E+07	1.56	Y	0.94	106	6588.136	0.183
13678/13467/12467-PeCDF	NotFnd		0.9616						0.94		8681.553	0.241
12368/13478/12478-PeCDF	NotFnd		0.9663						0.94		8681.553	0.241
14678-PeCDF	NotFnd		0.9695						0.94		8681.553	0.241
13479-PeCDF	NotFnd		0.9727						0.94		8681.553	0.241
13469/12479-PeCDF	NotFnd		0.9799						0.94		8681.553	0.241
12346-PeCDF	NotFnd		0.9839						0.94		8681.553	0.241

Lab ID: OPR2_18712_DF-RJ | **Acq'd: 09 Dec 2021 04:27 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18712_OPR002 | **UTP: 09-Dec-2021 10:40:21 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 577-569-NFT**

Datafile: 211208R16 | **Report: 09 Dec 2021 10:42 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9864						0.94		8681.553	0.241
12347-PeCDF	NotFnd		0.9892						0.94		8681.553	0.241
12348-PeCDF	NotFnd		0.9940						0.94		8681.553	0.241
12378-PeCDF	**32.43**		**1.0006**	**1.0005**	**-0.2**	**1.83E+07**	**1.55**	**Y**	**0.95**	**55.2**	**8681.553**	**0.243**
12678/12367-PeCDF	NotFnd		1.0088						0.94		8681.553	0.241
12379-PeCDF	NotFnd		1.0142						0.94		8681.553	0.241
12679-PeCDF	NotFnd		0.9931						0.94		8681.553	0.241
23467/12369-PeCDF	NotFnd		0.9966						0.94		8681.553	0.241
23478-PeCDF	**33.53**		**1.0005**	**1.0005**	**0**	**1.89E+07**	**1.53**	**Y**	**0.94**	**59.6**	**8681.553**	**0.239**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8681.553	0.241
12349-PeCDF	NotFnd		1.0100						0.94		8681.553	0.241
12389-PeCDF	34.60		1.0323	1.0323	0	3.71E+06	1.70	Y	0.94	11.4	8681.553	0.241
123468-HxCDF	35.36		0.9631	0.9631	0	4.04E+07	1.26	Y	1.16	139	14914.548	0.428
124678/134678-HxCDF	NotFnd		0.9686						1.16		14914.548	0.428
134679-HxCDF	NotFnd		0.9747						1.16		14914.548	0.428
124679-HxCDF	NotFnd		0.9800						1.16		14914.548	0.428
124689-HxCDF	NotFnd		0.9859						1.16		14914.548	0.428
123467-HxCDF	NotFnd		0.9972						1.16		14914.548	0.428
123478-HxCDF	**36.73**		**1.0004**	**1.0004**	**0**	**1.66E+07**	**1.26**	**Y**	**1.23**	**56.8**	**14914.548**	**0.424**
123678-HxCDF	**36.87**		**1.0005**	**1.0005**	**0**	**1.82E+07**	**1.25**	**Y**	**1.13**	**54.6**	**14914.548**	**0.381**
123479-HxCDF	NotFnd		1.0048						1.16		14914.548	0.428
123469-HxCDF	NotFnd		1.0089						1.16		14914.548	0.428
123679-HxCDF	NotFnd		0.9943						1.16		14914.548	0.428
234678-HxCDF	**37.54**		**1.0005**	**1.0004**	**-0.2**	**1.54E+07**	**1.29**	**Y**	**1.15**	**54.8**	**14914.548**	**0.478**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		14914.548	0.428
123789-HxCDF	**38.47**		**1.0005**	**1.0004**	**-0.2**	**1.25E+07**	**1.19**	**Y**	**1.14**	**49.4**	**14914.548**	**0.441**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0004						1.16		14914.548	0.428
1234678-HpCDF	**39.80**		**1.0003**	**1.0003**	**0**	**1.43E+07**	**1.06**	**Y**	**1.36**	**51.9**	**7071.537**	**0.156**
1234679-HpCDF	NotFnd		1.0065						1.33		7071.537	0.192
1234689-HpCDF	NotFnd		1.0097						1.33		7071.537	0.192
1234789-HpCDF	**41.15**		**1.0004**	**1.0002**	**-0.5**	**1.06E+07**	**1.07**	**Y**	**1.30**	**52**	**7071.537**	**0.239**
OCDF	**43.45**		**1.0002**	**1.0002**	**0**	**1.25E+07**	**0.94**	**Y**	**1.03**	**110**	**6786.436**	**0.465**
OCDF-a	43.45	**EMPC**	1.0001	1.0001	0	6.13E+05	2.91	N	0.06	93.6	9558.96	11.3

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211208R16	Analysis Date:	09-DEC-2021 04:27:13
Lab ID:	OPR2_18712_DF-RJ		

CPSM only

Window Defining Standards Results

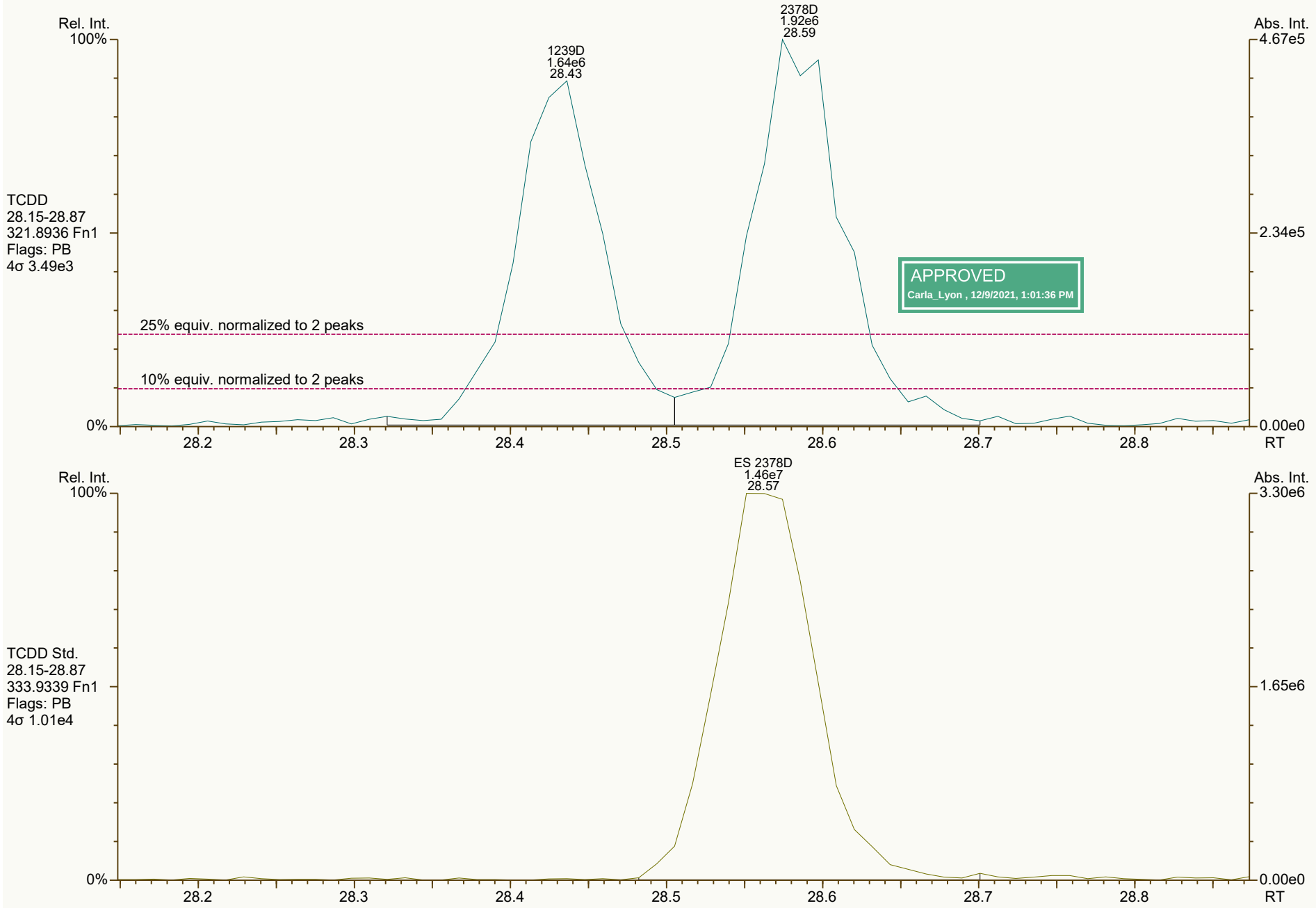
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.01	1289-TCDD	29.55
12479/12468-PeCDD	31.39	12389-PeCDD	34.30
124679/124689-HxCDD	36.00	123789-HxCDD	38.12
1234679-HpCDD	40.04	1234678-HpCDD	40.70
1368-TCDF	22.95	1289-TCDF	29.72
13468/12468-PeCDF	29.64	12389-PeCDF	34.60
123468-HxCDF	35.36	123789-HxCDF	38.47
1234678-HpCDF	39.80	1234789-HpCDF	41.15

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.43	2378-TCDD	28.59
2348-TCDF	27.64	2378-TCDF	27.74

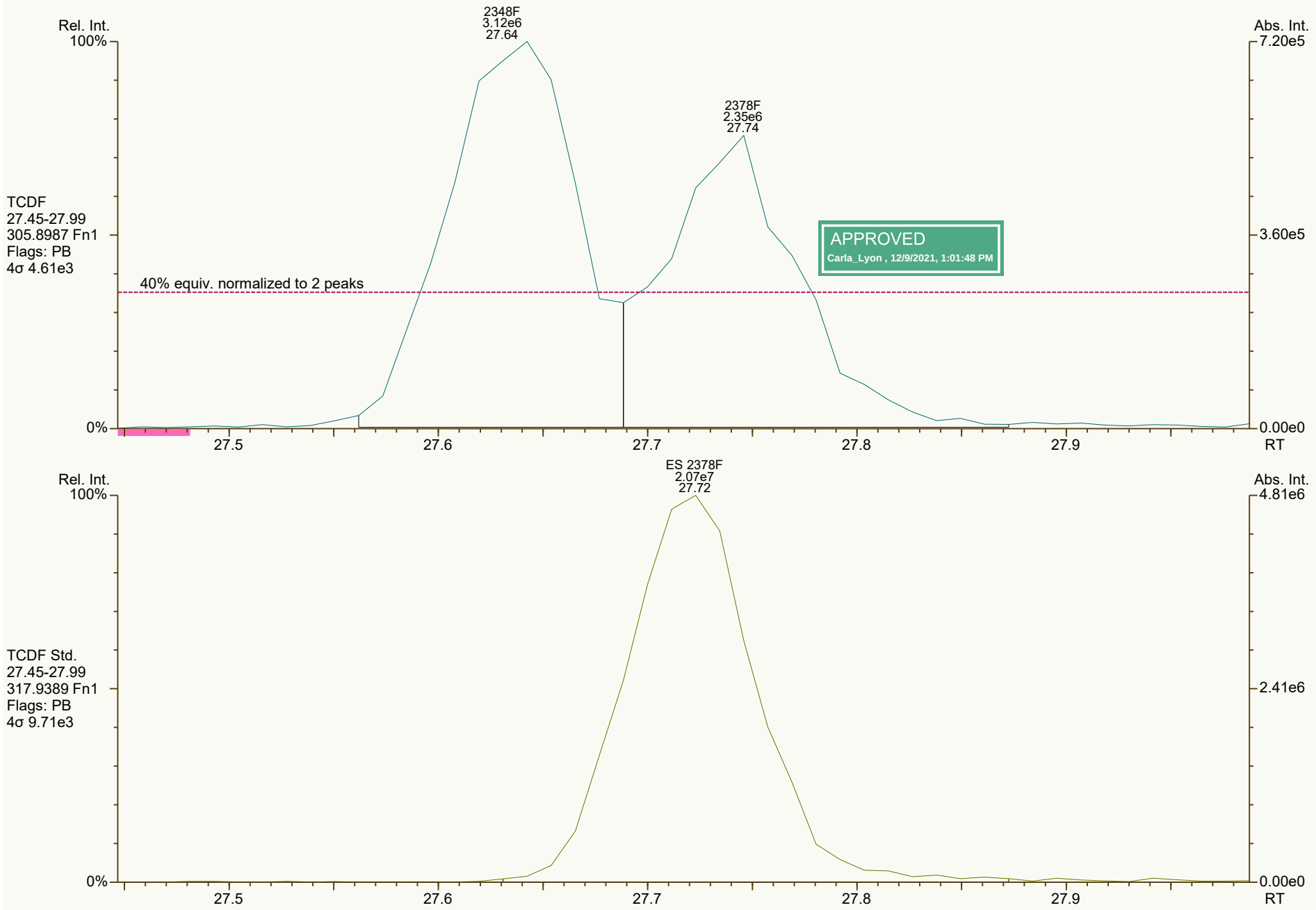
Processed: 09 Dec 2021 10:42 Analyst: pw

SGS ID: OPR2_18712_DF-RJ
Sample ID: 0_18712_OPR002
Acq: 09-Dec-2021 04:27:13
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R16

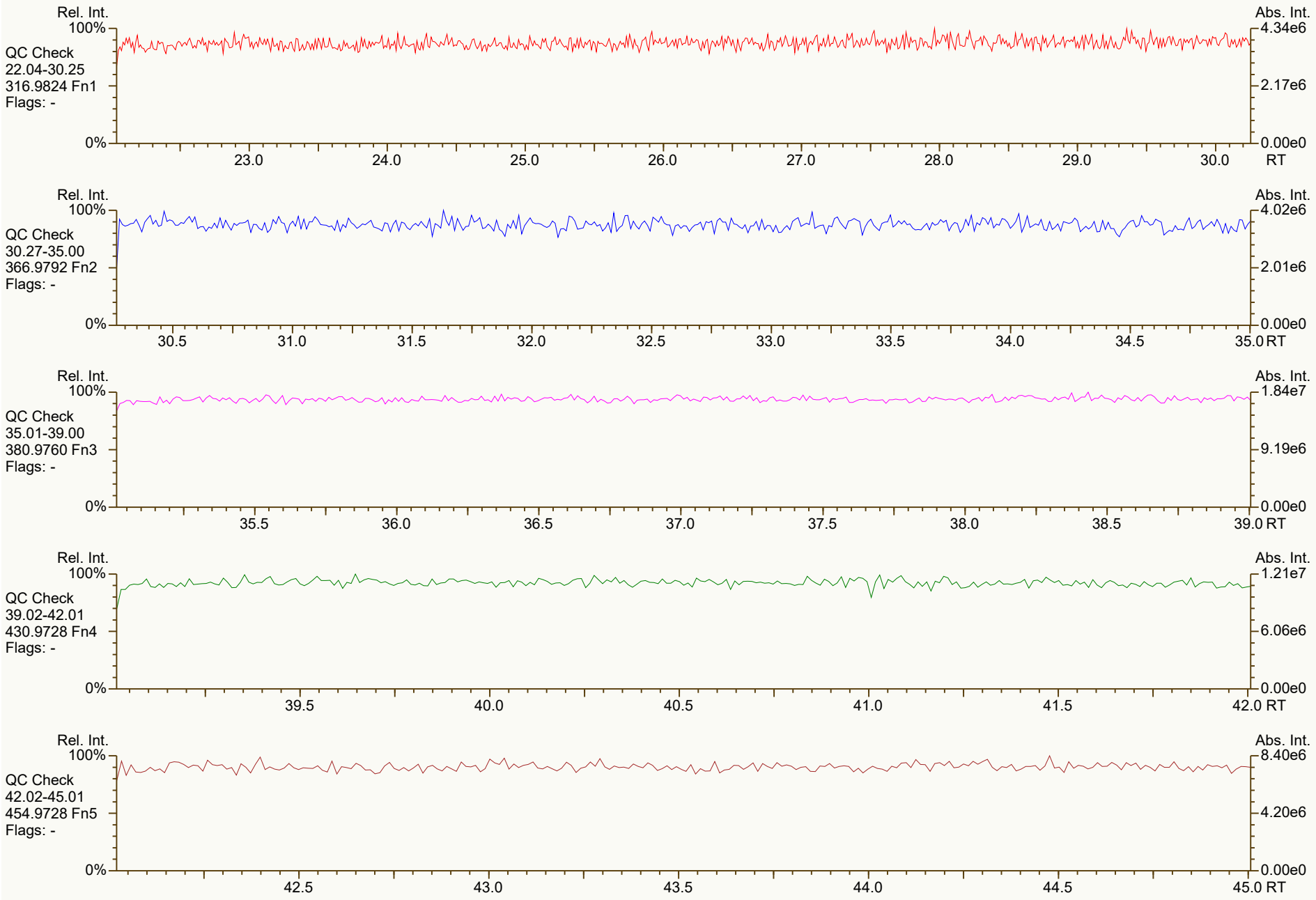


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:45

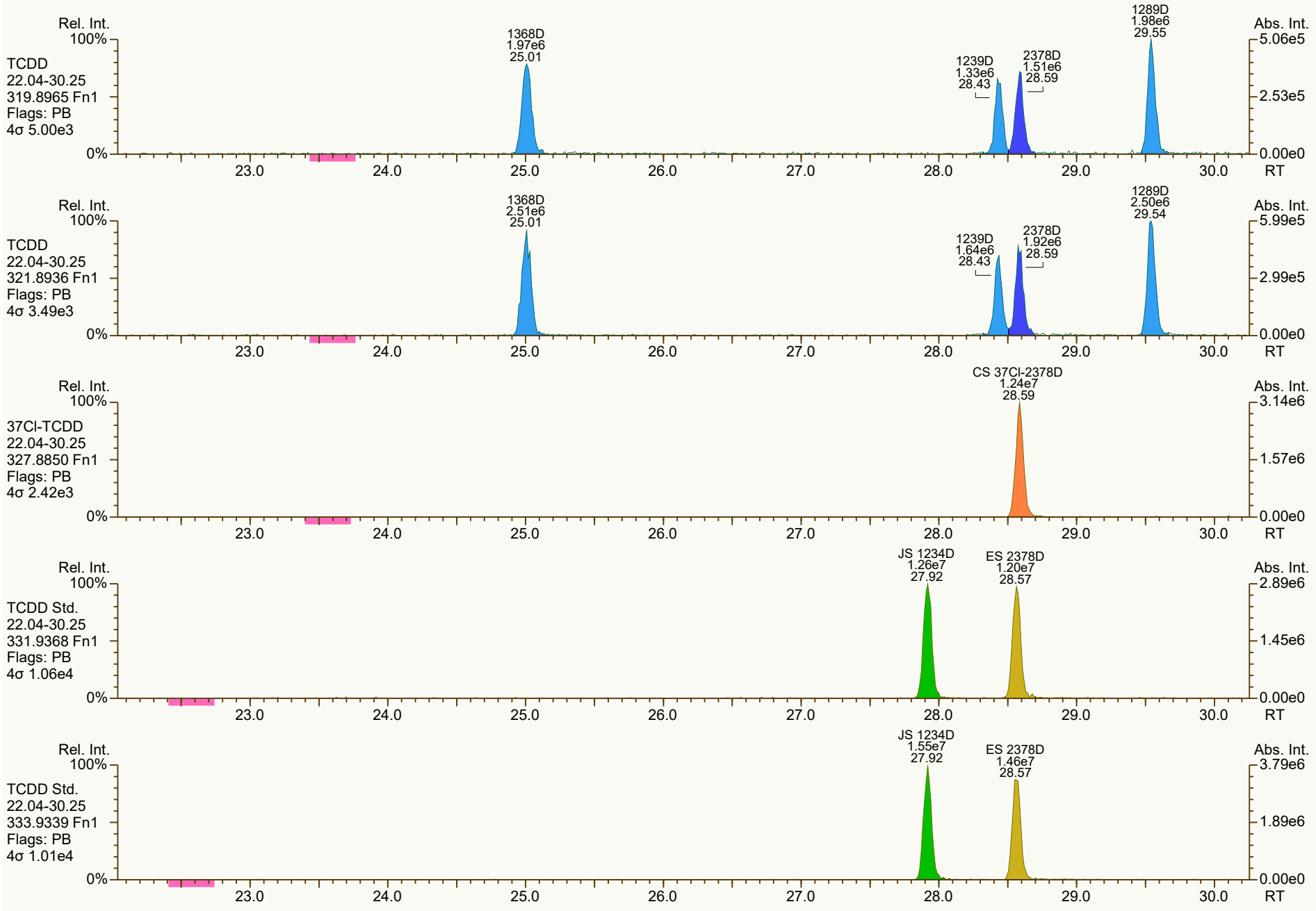
SGS ID: OPR2_18712_DF-RJ
Sample ID: 0_18712_OPR002
Acq: 09-Dec-2021 04:27:13
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R16



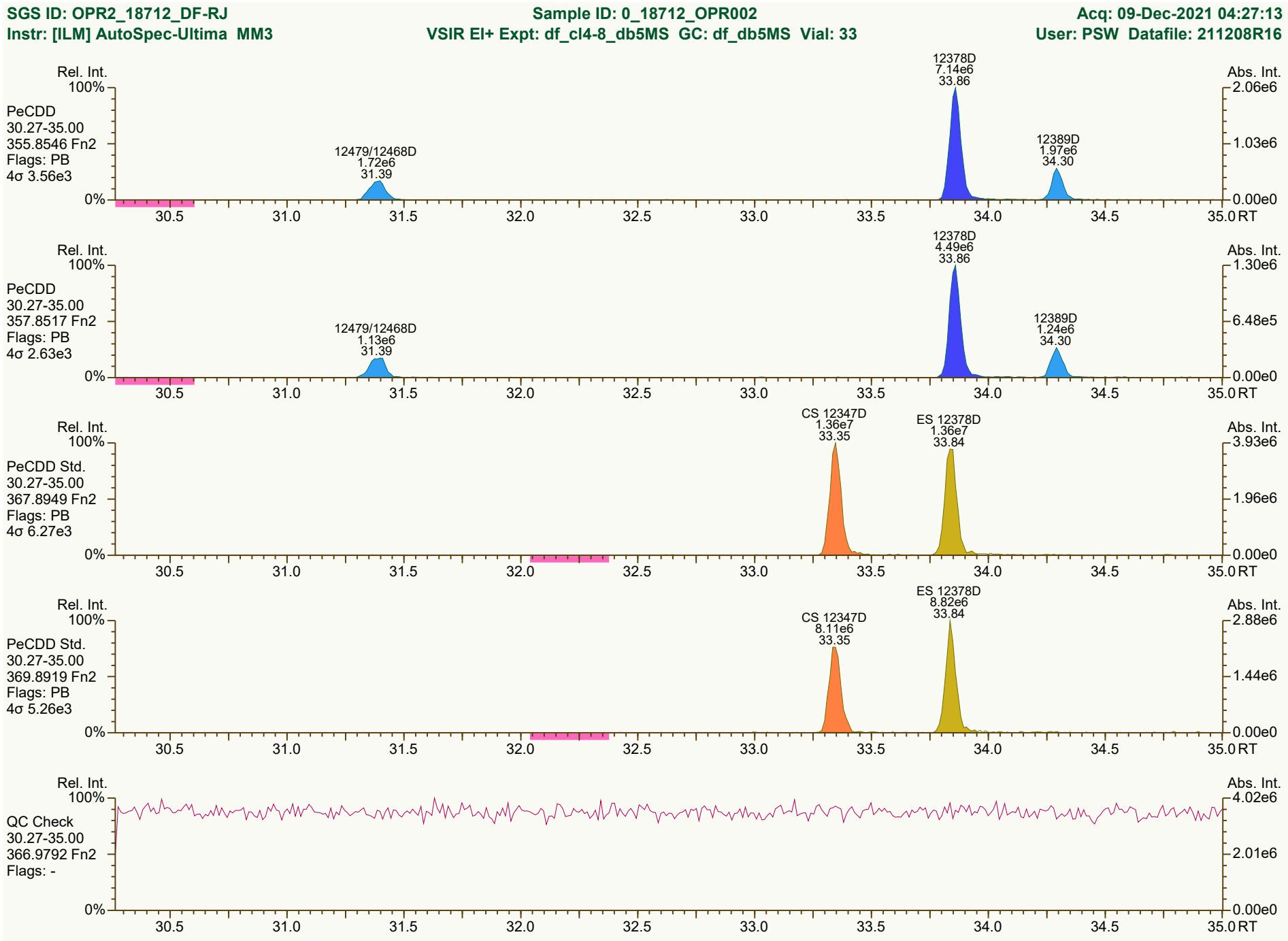
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:45

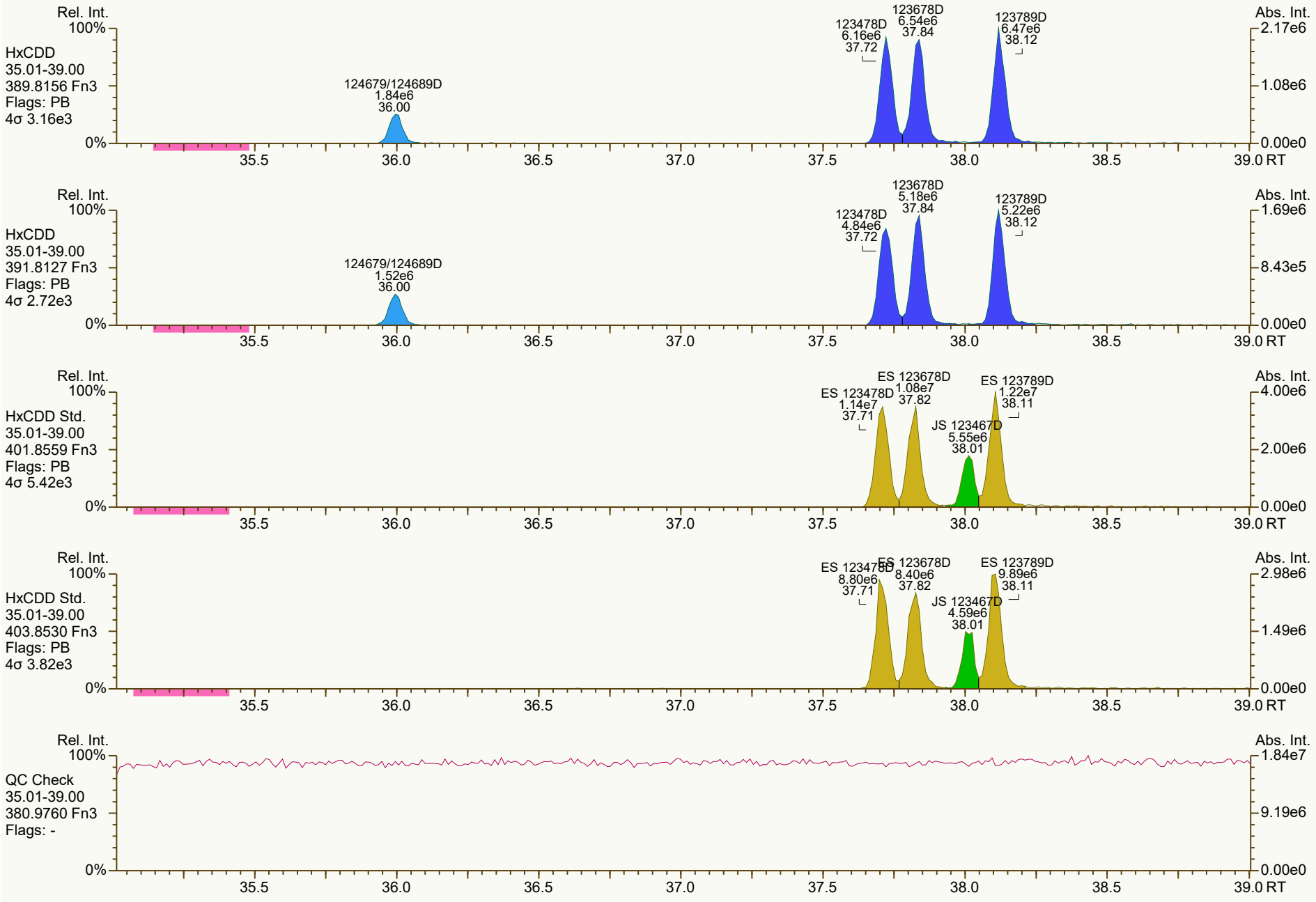

Rel. Int.
100%
QC Check
22.04-30.25
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.34e6
2.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.02e6
2.01e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.84e7
9.19e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.21e7
6.06e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.40e6
4.20e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT

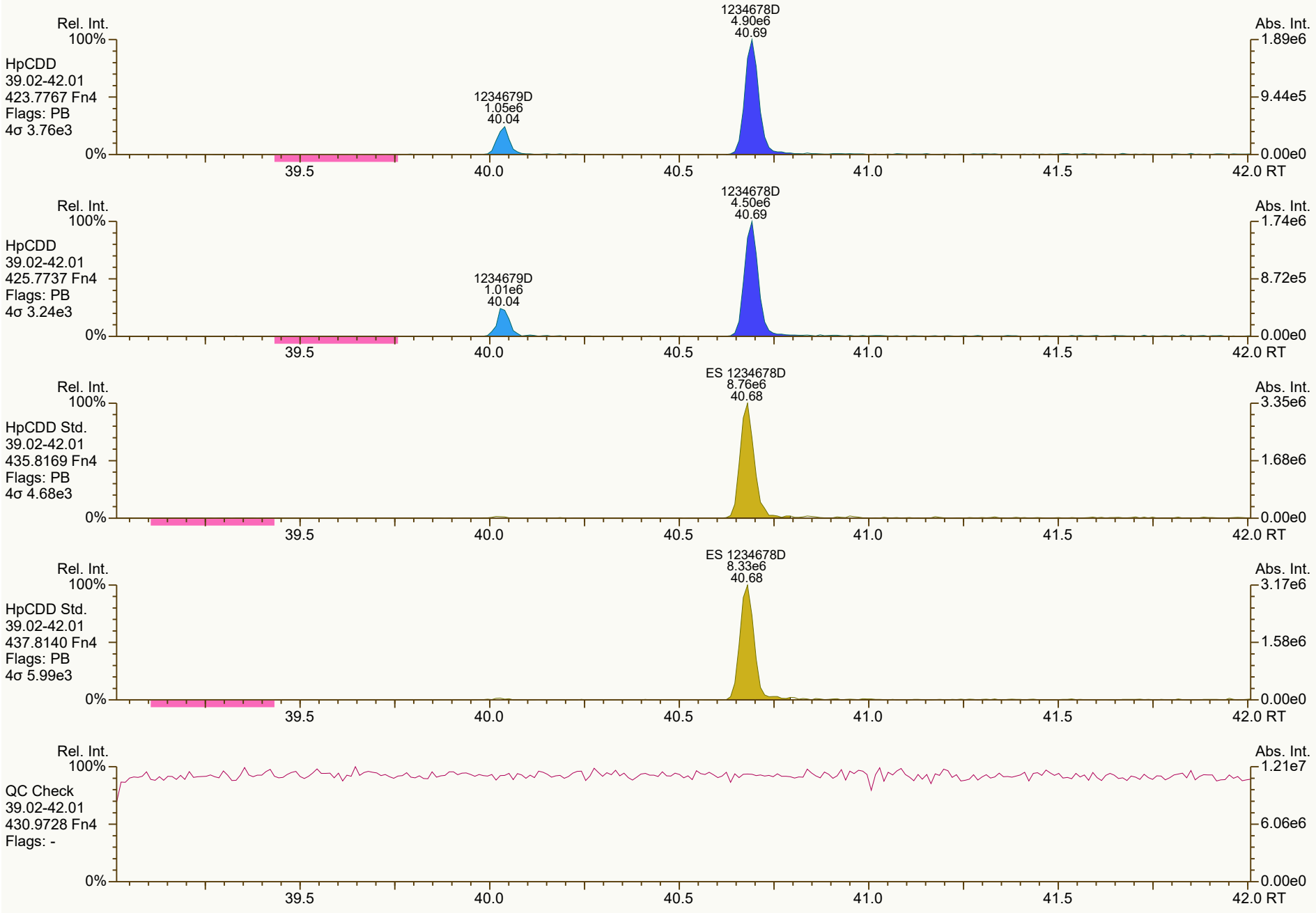
SGS ID: OPR2_18712_DF-RJ
Sample ID: 0_18712_OPR002
Acq: 09-Dec-2021 04:27:13
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R16

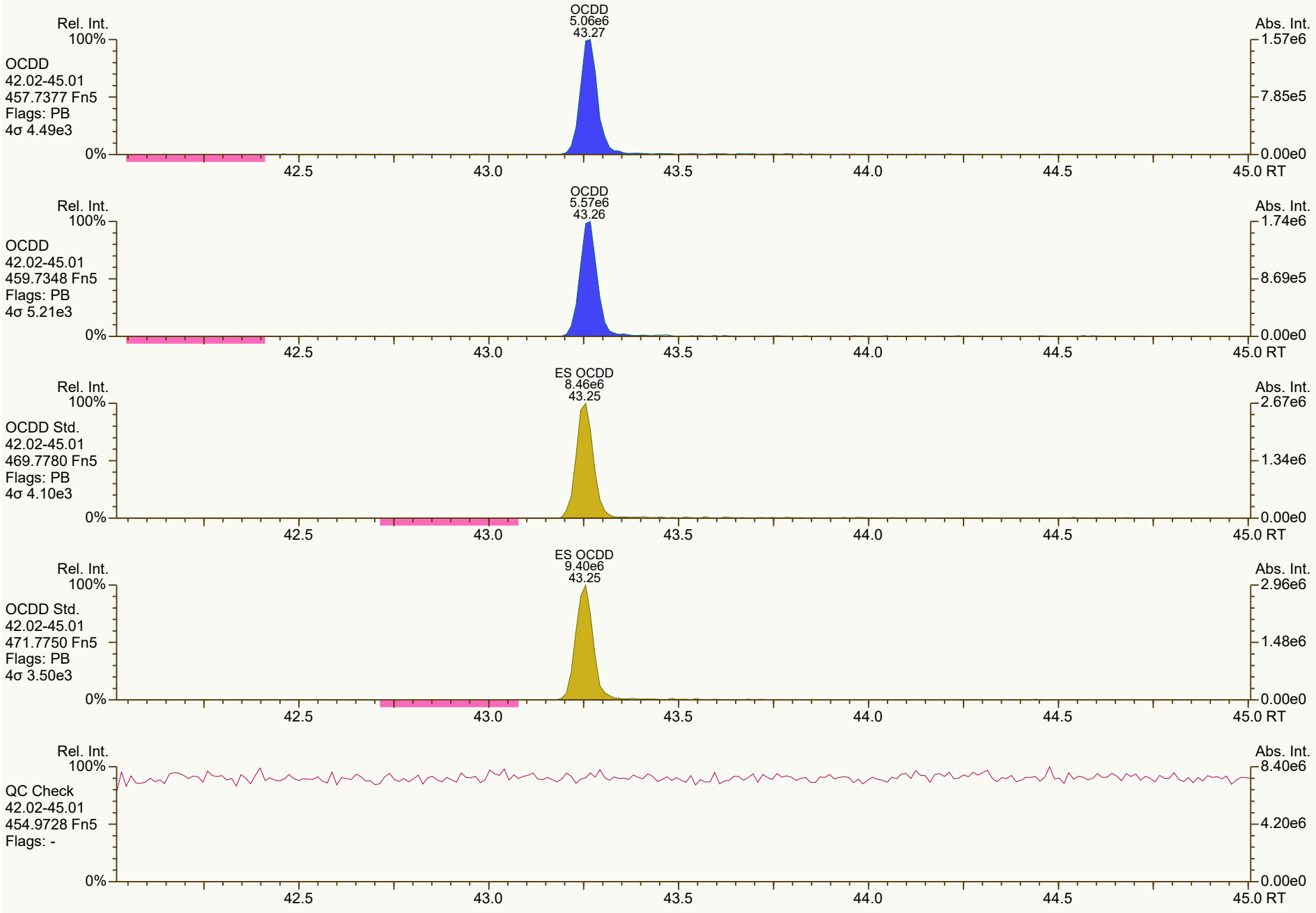


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5398, 8952, 6877 scc: 577-569
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:51 Page 2 of 12


SGS ID: OPR2_18712_DF-RJ
Sample ID: 0_18712_OPR002
Acq: 09-Dec-2021 04:27:13
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R16
Rel. Int.
Abs. Int.
PeCDD
30.27-35.00
355.8546 Fn2
Flags: PB
4σ 3.56e3
12479/12468D
1.72e6
31.39
12378D
7.14e6
33.86
12389D
1.97e6
34.30
2.06e6
1.03e6
0.00e0
PeCDD
30.27-35.00
357.8517 Fn2
Flags: PB
4σ 2.63e3
12479/12468D
1.13e6
31.39
12378D
4.49e6
33.86
12389D
1.24e6
34.30
1.30e6
6.48e5
0.00e0
PeCDD Std.
30.27-35.00
367.8949 Fn2
Flags: PB
4σ 6.27e3
CS 12347D
1.36e7
33.35
ES 12378D
1.36e7
33.84
3.93e6
1.96e6
0.00e0
PeCDD Std.
30.27-35.00
369.8919 Fn2
Flags: PB
4σ 5.26e3
CS 12347D
8.11e6
33.35
ES 12378D
8.82e6
33.84
2.88e6
1.44e6
0.00e0
QC Check
30.27-35.00
366.9792 Fn2
Flags: -
4.02e6
2.01e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3814, 9981 scc: 577-569
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:51 Page 3 of 12


Rel. Int.
100%
HxCDD
35.01-39.00
389.8156 Fn3
Flags: PB
4σ 3.16e3
0%
124679/124689D
1.84e6
36.00
123478D
6.16e6
37.72
123678D
6.54e6
37.84
123789D
6.47e6
38.12
Abs. Int.
2.17e6
1.08e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.01-39.00
391.8127 Fn3
Flags: PB
4σ 2.72e3
0%
124679/124689D
1.52e6
36.00
123478D
4.84e6
37.72
123678D
5.18e6
37.84
123789D
5.22e6
38.12
Abs. Int.
1.69e6
8.43e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
401.8559 Fn3
Flags: PB
4σ 5.42e3
0%
ES 123478D
1.14e7
37.71
ES 123678D
1.08e7
37.82
JS 123467D
5.55e6
38.01
ES 123789D
1.22e7
38.11
Abs. Int.
4.00e6
2.00e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.01-39.00
403.8530 Fn3
Flags: PB
4σ 3.82e3
0%
ES 123478D
8.80e6
37.71
ES 123678D
8.40e6
37.82
JS 123467D
4.59e6
38.01
ES 123789D
9.89e6
38.11
Abs. Int.
2.98e6
1.49e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.01-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.84e7
9.19e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.01
423.7767 Fn4
Flags: PB
4σ 3.76e3
1234678D
4.90e6
40.69
1234679D
1.05e6
40.04
Abs. Int.
1.89e6
9.44e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD
39.02-42.01
425.7737 Fn4
Flags: PB
4σ 3.24e3
1234678D
4.50e6
40.69
1234679D
1.01e6
40.04
Abs. Int.
1.74e6
8.72e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
435.8169 Fn4
Flags: PB
4σ 4.68e3
ES 1234678D
8.76e6
40.68
Abs. Int.
3.35e6
1.68e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
HpCDD Std.
39.02-42.01
437.8140 Fn4
Flags: PB
4σ 5.99e3
ES 1234678D
8.33e6
40.68
Abs. Int.
3.17e6
1.58e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Rel. Int.
100%
QC Check
39.02-42.01
430.9728 Fn4
Flags: -
Abs. Int.
1.21e7
6.06e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT


OCDD
5.06e6
43.27
Rel. Int.
100%
OCDD
42.02-45.01
457.7377 Fn5
Flags: PB
4σ 4.49e3
0%
Abs. Int.
1.57e6
7.85e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.57e6
43.26
OCDD
42.02-45.01
459.7348 Fn5
Flags: PB
4σ 5.21e3
1.74e6
8.69e5
ES OCDD
8.46e6
43.25
OCDD Std.
42.02-45.01
469.7780 Fn5
Flags: PB
4σ 4.10e3
2.67e6
1.34e6
ES OCDD
9.40e6
43.25
OCDD Std.
42.02-45.01
471.7750 Fn5
Flags: PB
4σ 3.50e3
2.96e6
1.48e6
QC Check
42.02-45.01
454.9728 Fn5
Flags: -
8.40e6
4.20e6

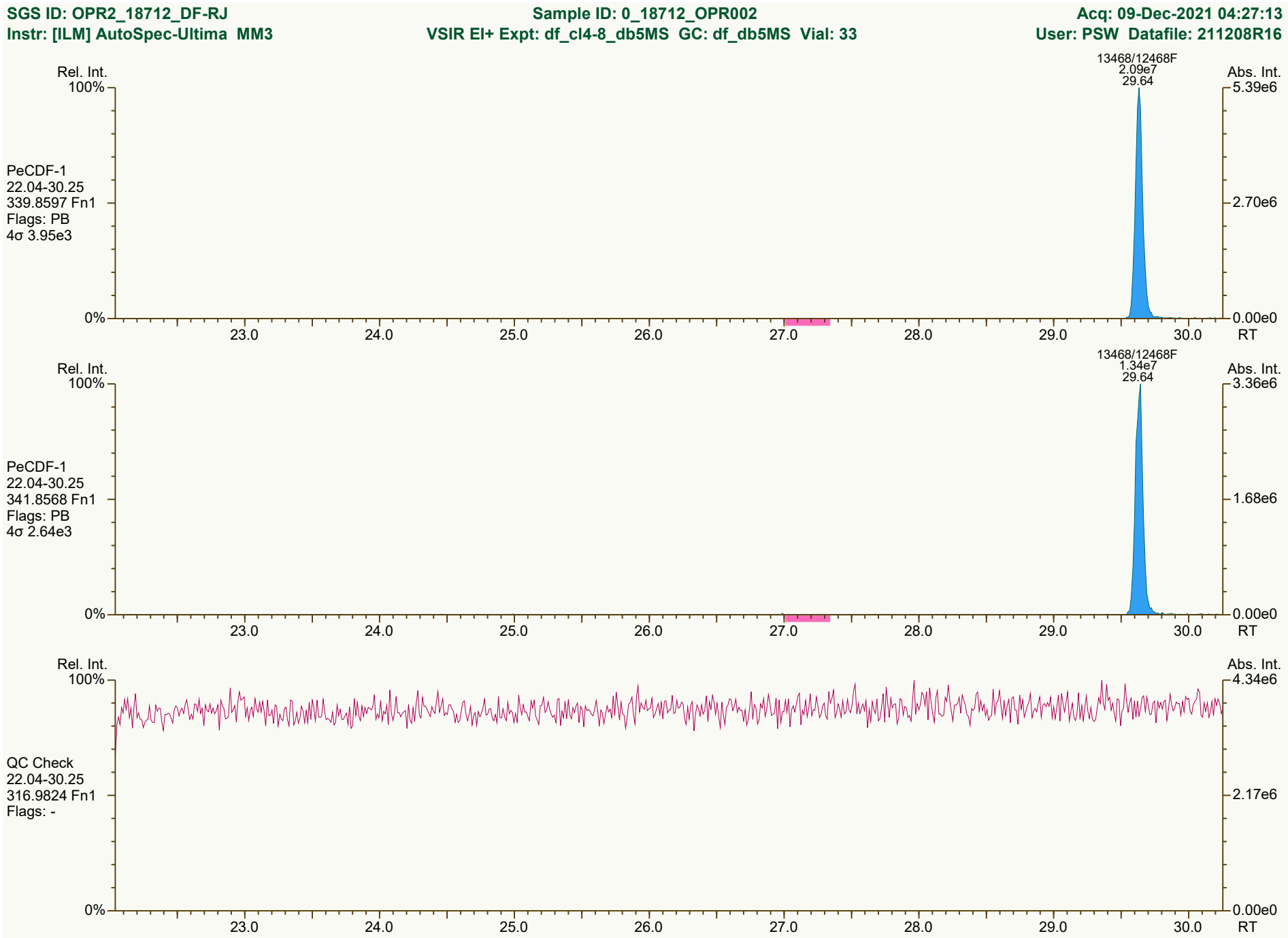


Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3732, 4445, 5407 scc: 577-569
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:51 Page 7 of 12

SGS ID: OPR2_18712_DF-RJ
Instr: [ILM] AutoSpec-Ultima MM3

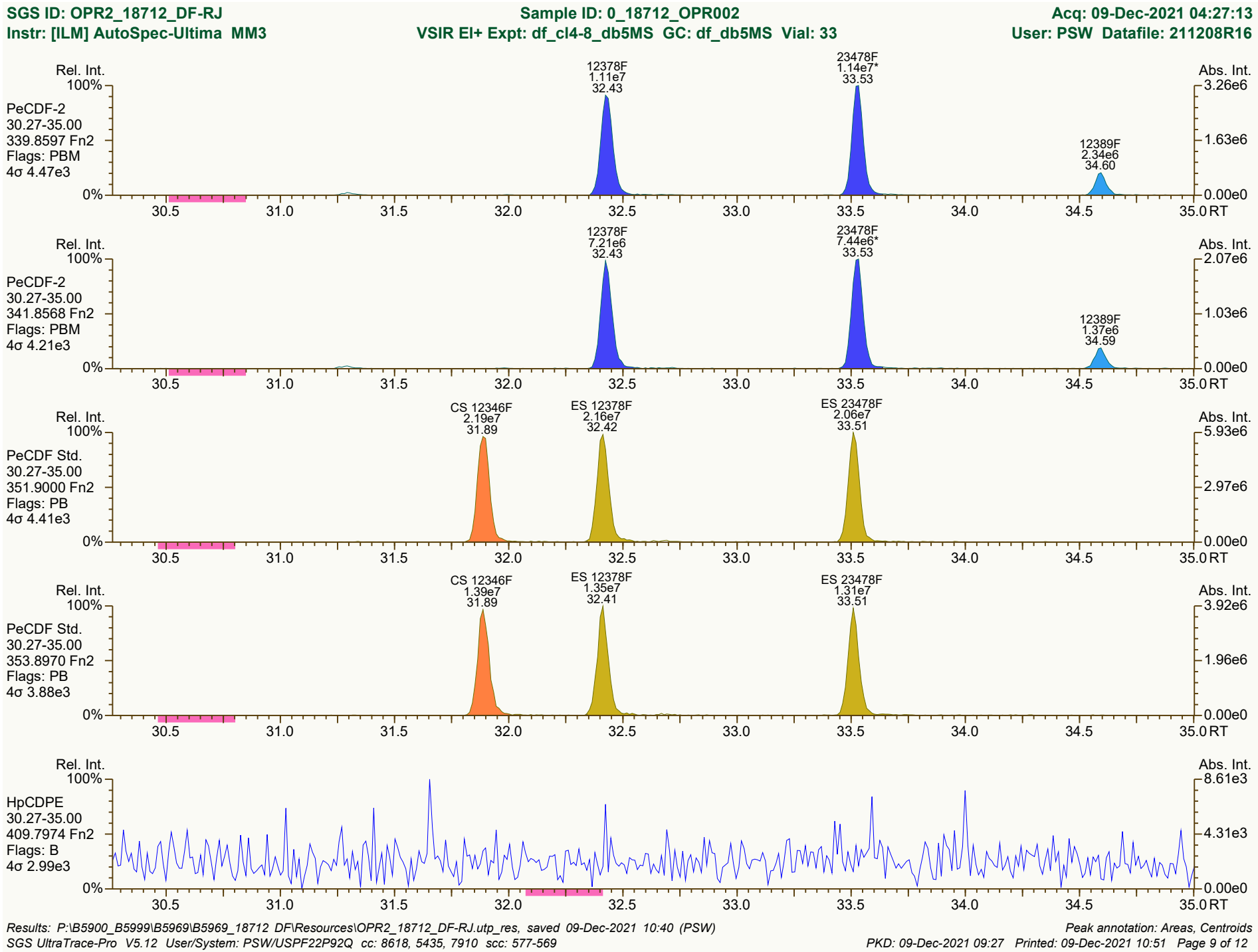
Sample ID: 0_18712_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33

Acq: 09-Dec-2021 04:27:13
User: PSW Datafile: 211208R16

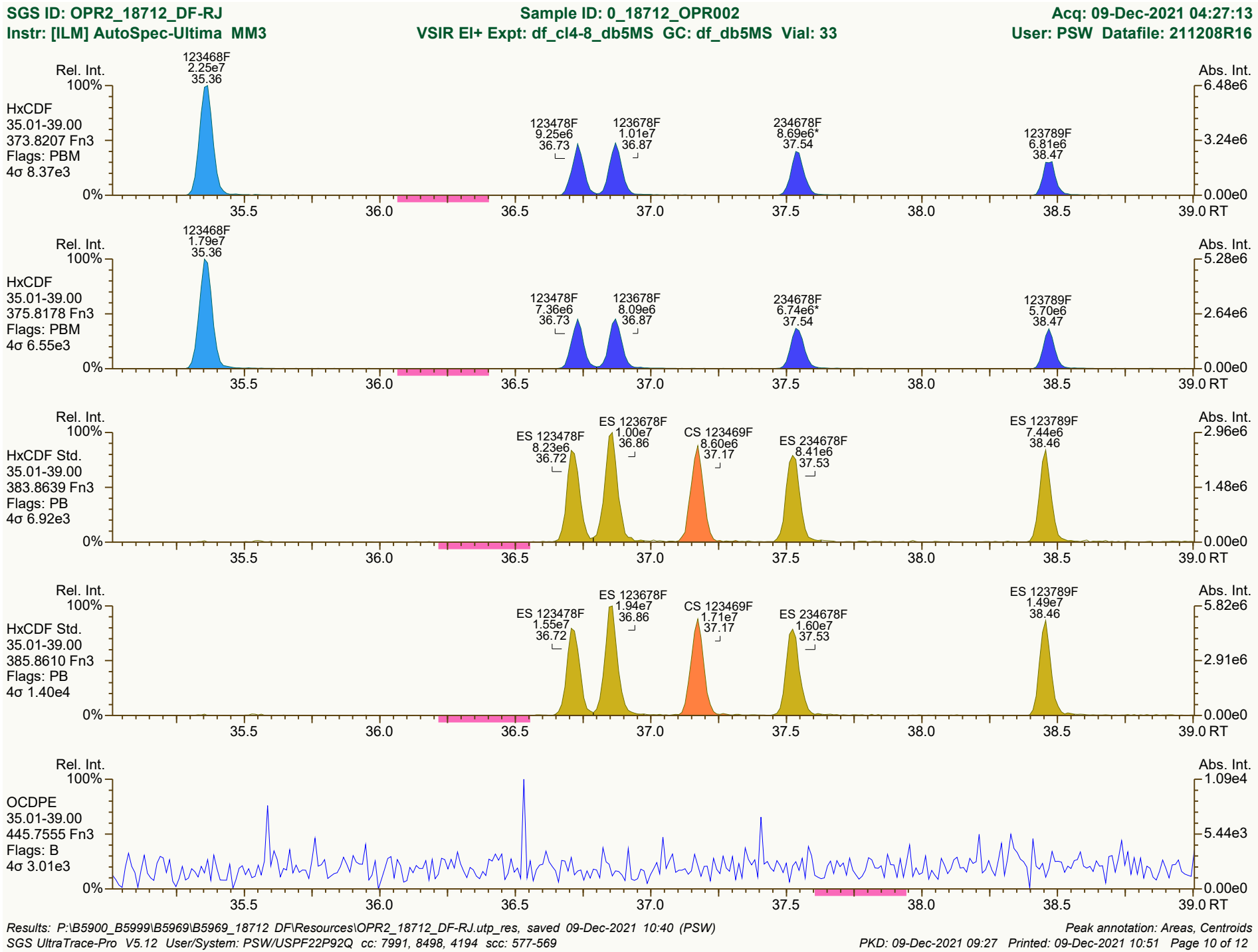


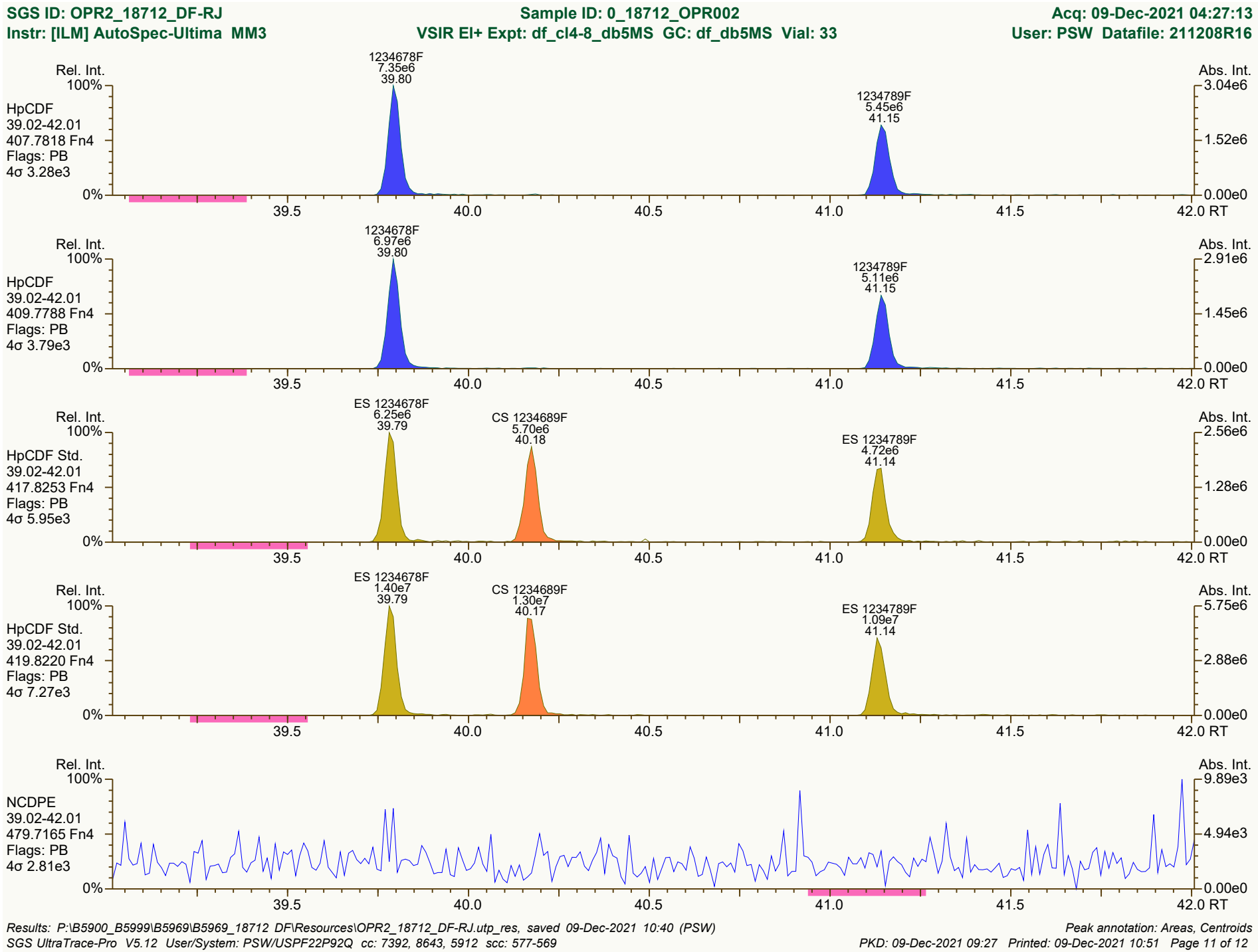
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7273 scc: 577-569

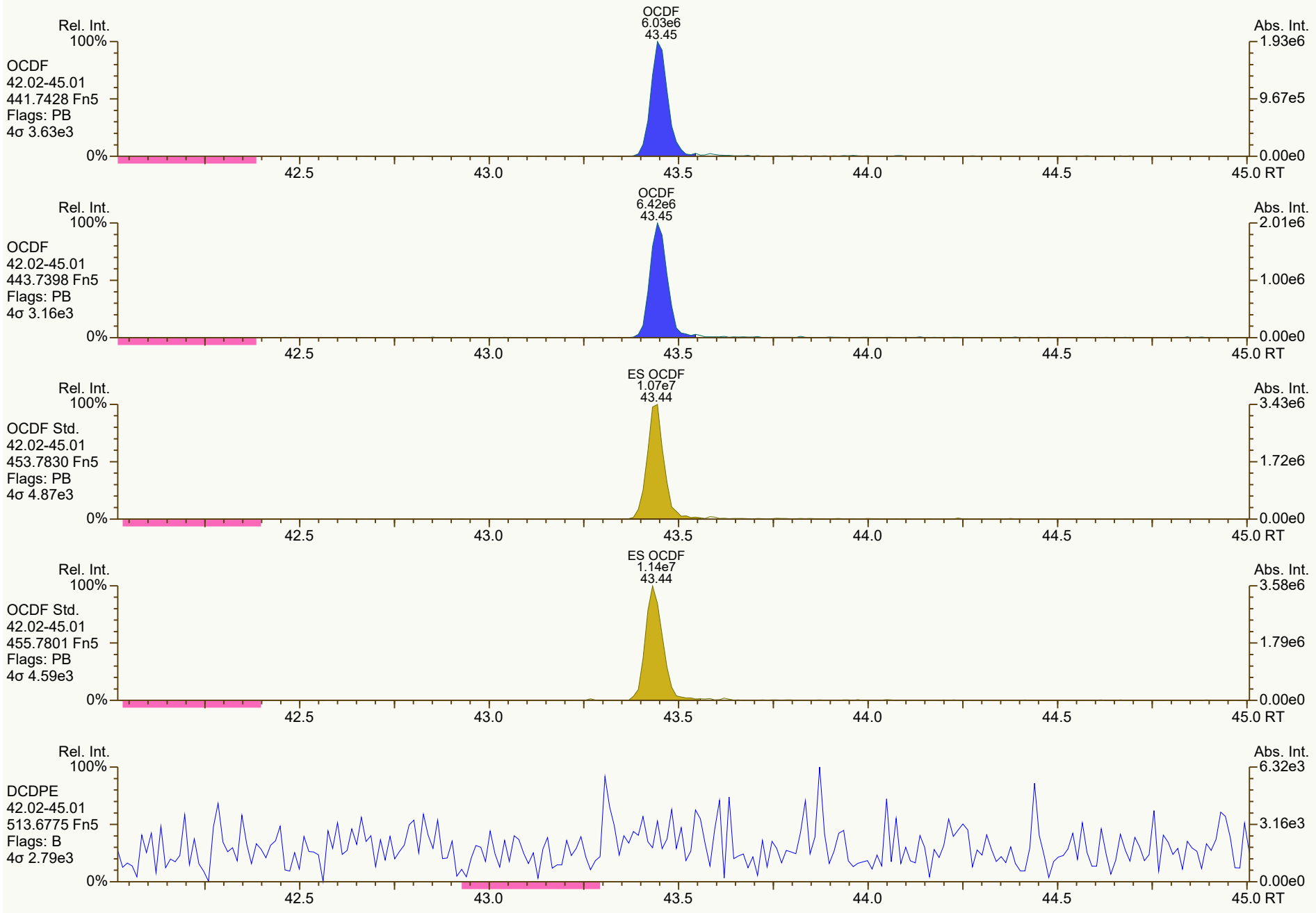
Peak annotation: Areas, Centroids
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:51 Page 8 of 12



Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8618, 5435, 7910 scc: 577-569
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:51 Page 9 of 12


SGS ID: OPR2_18712_DF-RJ
Sample ID: 0_18712_OPR002
Acq: 09-Dec-2021 04:27:13
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R16
Rel. Int.
Abs. Int.
HxCDF
35.01-39.00
373.8207 Fn3
Flags: PBM
4σ 8.37e3
123468F
2.25e7
35.36
123478F
9.25e6
36.73
123678F
1.01e7
36.87
234678F
8.69e6*
37.54
123789F
6.81e6
38.47
6.48e6
3.24e6
0.00e0
HxCDF
35.01-39.00
375.8178 Fn3
Flags: PBM
4σ 6.55e3
123468F
1.79e7
35.36
123478F
7.36e6
36.73
123678F
8.09e6
36.87
234678F
6.74e6*
37.54
123789F
5.70e6
38.47
5.28e6
2.64e6
0.00e0
HxCDF Std.
35.01-39.00
383.8639 Fn3
Flags: PB
4σ 6.92e3
ES 123478F
8.23e6
36.72
ES 123678F
1.00e7
36.86
CS 123469F
8.60e6
37.17
ES 234678F
8.41e6
37.53
ES 123789F
7.44e6
38.46
2.96e6
1.48e6
0.00e0
HxCDF Std.
35.01-39.00
385.8610 Fn3
Flags: PB
4σ 1.40e4
ES 123478F
1.55e7
36.72
ES 123678F
1.94e7
36.86
CS 123469F
1.71e7
37.17
ES 234678F
1.60e7
37.53
ES 123789F
1.49e7
38.46
5.82e6
2.91e6
0.00e0
OCDPE
35.01-39.00
445.7555 Fn3
Flags: B
4σ 3.01e3
1.09e4
5.44e3
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7991, 8498, 4194 scc: 577-569
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:51 Page 10 of 12


SGS ID: OPR2_18712_DF-RJ
Sample ID: 0_18712_OPR002
Acq: 09-Dec-2021 04:27:13
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 33
User: PSW Datafile: 211208R16
Rel. Int.
Abs. Int.
HpCDF
39.02-42.01
407.7818 Fn4
Flags: PB
4σ 3.28e3
1234678F
7.35e6
39.80
1234789F
5.45e6
41.15
3.04e6
1.52e6
0.00e0
HpCDF
39.02-42.01
409.7788 Fn4
Flags: PB
4σ 3.79e3
1234678F
6.97e6
39.80
1234789F
5.11e6
41.15
2.91e6
1.45e6
HpCDF Std.
39.02-42.01
417.8253 Fn4
Flags: PB
4σ 5.95e3
ES 1234678F
6.25e6
39.79
CS 1234689F
5.70e6
40.18
ES 1234789F
4.72e6
41.14
2.56e6
1.28e6
HpCDF Std.
39.02-42.01
419.8220 Fn4
Flags: PB
4σ 7.27e3
ES 1234678F
1.40e7
39.79
CS 1234689F
1.30e7
40.17
ES 1234789F
1.09e7
41.14
5.75e6
2.88e6
NCDPE
39.02-42.01
479.7165 Fn4
Flags: PB
4σ 2.81e3
9.89e3
4.94e3
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0 RT
Results: P:\B5900_B5999\B5969\B5969_18712 DF\Resources\OPR2_18712_DF-RJ.utp_res, saved 09-Dec-2021 10:40 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7392, 8643, 5912 scc: 577-569
PKD: 09-Dec-2021 09:27 Printed: 09-Dec-2021 10:51 Page 11 of 12


OCDF
6.03e6
43.45
Rel. Int.
100%
OCDF
42.02-45.01
441.7428 Fn5
Flags: PB
4σ 3.63e3
0%
Abs. Int.
1.93e6
9.67e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.42e6
43.45
Rel. Int.
100%
OCDF
42.02-45.01
443.7398 Fn5
Flags: PB
4σ 3.16e3
0%
Abs. Int.
2.01e6
1.00e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.07e7
43.44
Rel. Int.
100%
OCDF Std.
42.02-45.01
453.7830 Fn5
Flags: PB
4σ 4.87e3
0%
Abs. Int.
3.43e6
1.72e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.14e7
43.44
Rel. Int.
100%
OCDF Std.
42.02-45.01
455.7801 Fn5
Flags: PB
4σ 4.59e3
0%
Abs. Int.
3.58e6
1.79e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.02-45.01
513.6775 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
6.32e3
3.16e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120221-S-JC-SW-O-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID	B5970_18718_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	86.0 %	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:22:44

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	71.8				ES 2378-TCDD	81.5	
12378-PeCDD	2.32			J	ES 12378-PeCDD	70.6	
123478-HxCDD	2.28			J	ES 123478-HxCDD	80.7	
123678-HxCDD	6.08				ES 123678-HxCDD	84.2	
123789-HxCDD	4.01				ES 123789-HxCDD	82.1	
1234678-HpCDD	208				ES 1234678-HpCDD	65.6	
OCDD	3,610				ES OCDD	36.7	
2378-TCDF	294				ES 2378-TCDF	71.7	
12378-PeCDF	15.2				ES 12378-PeCDF	76.6	
23478-PeCDF	15.6				ES 23478-PeCDF	75.2	
123478-HxCDF	24.8				ES 123478-HxCDF	87.5	
123678-HxCDF	9.47				ES 123678-HxCDF	93.8	
234678-HxCDF	5.73				ES 234678-HxCDF	85	
123789-HxCDF	ND	0.699			ES 123789-HxCDF	87.2	
1234678-HpCDF	39.7				ES 1234678-HpCDF	79.7	
1234789-HpCDF	5.27				ES 1234789-HpCDF	71.9	
OCDF	79.7				ES OCDF	40.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	73.3	
Total TCDD	82.9		84.9		CS 12347-PeCDD	73.6	
Total PeCDD	8.94		15		CS 12346-PeCDF	74.5	
Total HxCDD	61		64.9		CS 123469-HxCDF	95.7	
Total HpCDD	467		467		CS 1234689-HpCDF	84.4	
Total TCDF	584		610				
Total PeCDF	85.2		90.8				
Total HxCDF	84.7		84.7				
Total HpCDF	92.5		92.5				
Total PCDD/Fs	**5,150**		**5,200**				
WHO-2005 TEQs							
TEQ: ND=0	118		118				
TEQ: ND=DL/2	118	0.64	118				
TEQ: ND=DL	118	1.28	118				

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Sample ID: 11215131-120221-S-JC-SW-O-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID:	B5970_18718_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	86.0 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:22:44

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.76		12479/12468D	3.45		124679/124689D	20.1		1234679D	259	
1379D	0.703		12469D	[1.63]	J	123468D	6.75		1234678D	208	
1369D	(0.261)		12368D	[1.75]	J	123679/123689D	21.8				
1469D	[0.509]		12478D	[1.39]	J	123469D	[2.17]	J			
1247D...[4]	0.715		12379D	[1.3]	J	123478D	2.28	J			
1378D	0.594		12369D...[3]	1.72	J	123678D	6.08				
1268D	(0.261)		12346/12347D	0.942	J	123467D	[1.68]	J			
1478D	(0.261)		12378D	2.32	J	123789D	4.01		**Conc.**	467	
1279D	(0.261)		12367D	0.51	J				**EMPC**	467	
1234/1269D	(0.261)		12389D	(0.392)							
1236D	(0.261)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[1.46]										
1239D	(0.261)								OCDD	3610	
2378D	71.8										
1278D	7.36										
1267D	(0.261)										
1289D	(0.261)										
Conc.	82.9		**Conc.**	8.94		**Conc.**	61				
EMPC	84.9		**EMPC**	15		**EMPC**	64.9				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	118	118
TEQ: ND=DL/2	118	118
TEQ: ND=DL	118	118

	Conc.	EMPC
Total PCDD/Fs	5,150	5,200

Checkcode: 338-761-FFF

Report Created: 20-Dec-2021 14:44 Analyst: gd

Sample ID: 11215131-120221-S-JC-SW-O-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID:	B5970_18718_DF_001	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	86.0 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:22:44

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.48		13468/12468F	10.7		123468F	5.22		1234678F	39.7	
1468F	2.47		13678F...[3]	5.73		124678/134678F	20.2		1234679F	3.72	
2468F	3.89		12368F...[3]	14.8		134679F	(0.64)		1234689F	43.9	
1346/1246F	1.49		14678F	3.01		124679F	0.81	J	1234789F	5.27	
1347F...[3]	8.65		13479F	[0.312]	J	124689F	11.8				
1348F	[1.73]		13469/12479F	[0.747]	J	123467F	4.46				
1248F...[3]	13.9		12346F	1.72	J	123478F	24.8				
1268F	6.37		23468/12469F	3.82		123678F	9.47				
1467F	2.16		12347F	1.76	J	123479F	(0.64)				
1478F	12.7		12348F	[2.39]	J	123469F	(0.64)				
1369/1237F	4.86		12378F	15.2		123679F	(0.64)				
2467F	2.53		12678/12367F	8.51		234678F	5.73		**Conc.**	92.5	
2368F	9.21		12379F	[0.472]	J	234678/123689F	0		**EMPC**	92.5	
1238F...[5]	22.3		12679F	[0.323]	J	123689F	(0.64)				
1278F	120		23467/12369F	4.36		123789F	(0.699)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	3.21		23478F	15.6		123789/123489F	0				
1267F	9.54		23478/12489F	0		123489F	2.2	J	OCDF	79.7	
2346/1249F	2.71		12489F	(0.29)							
2347/1279F	4.93		12349F	[0.457]	J						
2348F	17.5		12389F	[0.866]	J						
2378F	294										
2367/3467F	32.1										
1269F	7.81										
1239F	[0.8]										
1289F	[23.4]										
Conc.	584		**Conc.**	85.2		**Conc.**	84.7				
EMPC	610		**EMPC**	90.8		**EMPC**	84.7				

Checkcode: 338-761-FFF

Report Created: 20-Dec-2021 14:44 Analyst: gd

Sample ID: 11215131-120221-S-JC-SW-O-2 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5970_18718_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	QC Batch No.:	18718
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	15-Dec-2021 22:22
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	71.8		0.261	71.8	71.8	71.8
12378-PeCDD	2.32	J	0.392	1.16	2.32	2.32
123478-HxCDD	2.28	J	0.771	0.228	0.228	0.228
123678-HxCDD	6.08		0.868	0.608	0.608	0.608
123789-HxCDD	4.01		0.801	0.401	0.401	0.401
1234678-HpCDD	208		0.605	2.08	2.08	2.08
OCDD	3610		2.52	3.61	0.361	1.08
2378-TCDF	294		0.174	29.4	29.4	29.4
12378-PeCDF	15.2		0.288	0.761	0.761	0.457
23478-PeCDF	15.6		0.293	7.8	7.8	4.68
123478-HxCDF	24.8		0.569	2.48	2.48	2.48
123678-HxCDF	9.47		0.584	0.947	0.947	0.947
234678-HxCDF	5.73		0.728	0.573	0.573	0.573
123789-HxCDF	(0.699)		0.699	(0.0699)	(0.0699)	(0.0699)
1234678-HpCDF	39.7		0.183	0.397	0.397	0.397
1234789-HpCDF	5.27		0.28	0.0527	0.0527	0.0527
OCDF	79.7		1.02	0.0797	0.00797	0.0239

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TEQ Summaries			
EMPC = 0, ND = 0	122	120	118
EMPC = 0, ND = DL / 2	122	120	118
EMPC = 0, ND = DL	122	120	118
EMPC = 0, < J-level = 0	121	118	115
EMPC = EMPC, ND = 0	122	120	118
EMPC = EMPC, ND = DL / 2	122	120	118
EMPC = EMPC, ND = DL	122	120	118
EMPC = EMPC, < J-level = 0	121	118	115

Checkcode: 338-761-FFF

Sample ID: 11215131-120221-S-JC-SW-B-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID	B5970_18718_DF_002	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	71.5 %	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:10:18

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	1,180			E	ES 2378-TCDD	76.8	
12378-PeCDD	12.6				ES 12378-PeCDD	67.6	
123478-HxCDD	2.78				ES 123478-HxCDD	78.9	
123678-HxCDD	10				ES 123678-HxCDD	86.3	
123789-HxCDD	5.08				ES 123789-HxCDD	86	
1234678-HpCDD	218				ES 1234678-HpCDD	74.6	
OCDD	2,590				ES OCDD	57.8	
2378-TCDF	4,260			E	ES 2378-TCDF	71.2	
12378-PeCDF	223				ES 12378-PeCDF	77	
23478-PeCDF	146				ES 23478-PeCDF	73.5	
123478-HxCDF	399				ES 123478-HxCDF	86.7	
123678-HxCDF	94.6				ES 123678-HxCDF	93.9	
234678-HxCDF	19.1				ES 234678-HxCDF	85	
123789-HxCDF	ND	0.78			ES 123789-HxCDF	85.4	
1234678-HpCDF	134				ES 1234678-HpCDF	92.8	
1234789-HpCDF	47.3				ES 1234789-HpCDF	82.5	
OCDF	201				ES OCDF	58.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	72	
Total TCDD	1,290		1,300	E	CS 12347-PeCDD	74.2	
Total PeCDD	32.1		32.1		CS 12346-PeCDF	80	
Total HxCDD	81.1		81.1		CS 123469-HxCDF	100	
Total HpCDD	415		415		CS 1234689-HpCDF	99.7	
Total TCDF	8,630		8,630	E			
Total PeCDF	582		584				
Total HxCDF	616		616				
Total HpCDF	239		239				
Total PCDD/Fs	**14,700**		**14,700**	E			
WHO-2005 TEQs							
TEQ: ND=0	1720		1720				
TEQ: ND=DL/2	1720	0.545	1720				
TEQ: ND=DL	1720	1.09	1720				

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Sample ID: 11215131-120221-S-JC-SW-B-2 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID:	B5970_18718_DF_002	Date Extracted: 13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	71.5 %	QC Batch No.:	18718	Date Analyzed: 15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 23:10:18

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	3.45		12479/12468D	4.73		124679/124689D	35.6		1234679D	198	
1379D	1.93		12469D	3.58		123468D	5.86		1234678D	218	
1369D	(0.254)		12368D	3.36		123679/123689D	19.6				
1469D	4.69		12478D	1.41	J	123469D	1.23	J			
1247D...[4]	[2.12]		12379D	2.85		123478D	2.78				
1378D	3.24		12369D...[3]	1.56	J	123678D	10				
1268D	(0.254)		12346/12347D	0.618	J	123467D	0.938	J			
1478D	3.07		12378D	12.6		123789D	5.08		**Conc.**	415	
1279D	(0.254)		12367D	0.953	J				**EMPC**	415	
1234/1269D	0.871		12389D	0.476	J						
1236D	(0.254)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	18.5										
1239D	(0.254)								OCDD	2590	
2378D	1180	E									
1278D	74.8										
1267D	[6.08]										
1289D	[4.51]										
Conc.	1,290		**Conc.**	32.1		**Conc.**	81.1				
EMPC	1,300		**EMPC**	32.1		**EMPC**	81.1				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	1,720	1,720
TEQ: ND=DL/2	1,720	1,720
TEQ: ND=DL	1,720	1,720

	Conc.	EMPC
Total PCDD/Fs	14,700	14,700

Checkcode: 802-511-WFM

Report Created: 20-Dec-2021 14:44 Analyst: gd

Sample ID: 11215131-120221-S-JC-SW-B-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID:	B5970_18718_DF_002	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	71.5 %	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:10:18

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.55		13468/12468F	9.18		123468F	6.53		1234678F	134	
1468F	8.78		13678F...[3]	4.24		124678/134678F	40.1		1234679F	4.78	
2468F	8.47		12368F...[3]	94.8		134679F	(0.775)		1234689F	52.5	
1346/1246F	11.4		14678F	3.59		124679F	(0.775)		1234789F	47.3	
1347F...[3]	39.3		13479F	[0.792]	J	124689F	18.8				
1348F	20.1		13469/12479F	1.15	J	123467F	4.06				
1248F...[3]	208		12346F	[0.97]	J	123478F	399				
1268F	69.8		23468/12469F	3.56		123678F	94.6				
1467F	11.1		12347F	5.55		123479F	(0.775)				
1478F	182		12348F	18.6		123469F	2.82				
1369/1237F	46.9		12378F	223		123679F	(0.775)				
2467F	5.03		12678/12367F	62.4		234678F	19.1		**Conc.**	239	
2368F	97.6		12379F	(0.279)		234678/123689F	0		**EMPC**	239	
1238F...[5]	260		12679F	(0.279)		123689F	(0.775)				
1278F	2050	E	23467/12369F	2.8		123789F	(0.78)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	29.6		23478F	146		123789/123489F	0				
1267F	115		23478/12489F	0		123489F	30.3		OCDF	201	
2346/1249F	16.7		12489F	(0.279)							
2347/1279F	49.3		12349F	(0.279)							
2348F	363		12389F	7.86							
2378F	4260	E									
2367/3467F	353										
1269F	72.1										
1239F	(0.187)										
1289F	357										
Conc.	8,630		**Conc.**	582		**Conc.**	616				
EMPC	8,630		**EMPC**	584		**EMPC**	616				

Checkcode: 802-511-WFM

Report Created: 20-Dec-2021 14:44 Analyst: gd

Sample ID: 11215131-120221-S-JC-SW-B-2 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5970_18718_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	QC Batch No.:	18718
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	15-Dec-2021 23:10
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	1180	E	0.254	1180	1180	1180
12378-PeCDD	12.6		0.295	6.28	12.6	12.6
123478-HxCDD	2.78		0.403	0.278	0.278	0.278
123678-HxCDD	10		0.394	1	1	1
123789-HxCDD	5.08		0.323	0.508	0.508	0.508
1234678-HpCDD	218		0.338	2.18	2.18	2.18
OCDD	2590		1.16	2.59	0.259	0.777
2378-TCDF	4260	E	0.187	426	426	426
12378-PeCDF	223		0.281	11.1	11.1	6.68
23478-PeCDF	146		0.277	72.8	72.8	43.7
123478-HxCDF	399		0.805	39.9	39.9	39.9
123678-HxCDF	94.6		0.692	9.46	9.46	9.46
234678-HxCDF	19.1		0.842	1.91	1.91	1.91
123789-HxCDF	(0.78)		0.78	(0.078)	(0.078)	(0.078)
1234678-HpCDF	134		0.147	1.34	1.34	1.34
1234789-HpCDF	47.3		0.231	0.473	0.473	0.473
OCDF	201		0.477	0.201	0.0201	0.0603

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TEQ Summaries			
EMPC = 0, ND = 0	1750	1760	1720
EMPC = 0, ND = DL / 2	1750	1760	1720
EMPC = 0, ND = DL	1750	1760	1720
EMPC = 0, < J-level = 0	1750	1760	1720
EMPC = EMPC, ND = 0	1750	1760	1720
EMPC = EMPC, ND = DL / 2	1750	1760	1720
EMPC = EMPC, ND = DL	1750	1760	1720
EMPC = EMPC, < J-level = 0	1750	1760	1720

Checkcode: 802-511-WFM

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Sample ID: 11215131-120321-S-JC-SW-B-3 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID	B5970_18718_DF_003	Date Extracted:	13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.7 %	QC Batch No:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:27:31

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	1,510			E	ES 2378-TCDD	83.8	
12378-PeCDD	16.2				ES 12378-PeCDD	73.6	
123478-HxCDD	0.695			J	ES 123478-HxCDD	85.4	
123678-HxCDD	2.98				ES 123678-HxCDD	90.3	
123789-HxCDD	EMPC		1.85	J	ES 123789-HxCDD	88	
1234678-HpCDD	120				ES 1234678-HpCDD	79.9	
OCDD	1,770				ES OCDD	58.9	
2378-TCDF	5,490			E	ES 2378-TCDF	76.5	
12378-PeCDF	233				ES 12378-PeCDF	82.6	
23478-PeCDF	179				ES 23478-PeCDF	76.4	
123478-HxCDF	354				ES 123478-HxCDF	92.2	
123678-HxCDF	85.8				ES 123678-HxCDF	98.6	
234678-HxCDF	18.1				ES 234678-HxCDF	91.4	
123789-HxCDF	ND	0.913			ES 123789-HxCDF	85.7	
1234678-HpCDF	85.7				ES 1234678-HpCDF	101	
1234789-HpCDF	35.9				ES 1234789-HpCDF	86.4	
OCDF	54.4				ES OCDF	61.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	75.3	
Total TCDD	1,650		1,670	E	CS 12347-PeCDD	77.6	
Total PeCDD	26		27.2		CS 12346-PeCDF	85.2	
Total HxCDD	44.9		47.3		CS 123469-HxCDF	101	
Total HpCDD	262		262		CS 1234689-HpCDF	103	
Total TCDF	11,100		11,100	E			
Total PeCDF	648		648				
Total HxCDF	532		532				
Total HpCDF	158		158				
Total PCDD/Fs	**16,200**		**16,300**	E			
WHO-2005 TEQs							
TEQ: ND=0	2190		2190				
TEQ: ND=DL/2	2190	0.948	2190				
TEQ: ND=DL	2190	1.9	2190				

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Sample ID: 11215131-120321-S-JC-SW-B-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID:	B5970_18718_DF_003	Date Extracted:	13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.7 %	QC Batch No.:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:27:31

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.23		12479/12468D	1.91	J	124679/124689D	28.6		1234679D	142	
1379D	[0.941]		12469D	3.62		123468D	1.21	J	1234678D	120	
1369D	(0.597)		12368D	2.01	J	123679/123689D	10.4				
1469D	5.18		12478D	1.08	J	123469D	1.02	J			
1247D...[4]	[2.55]		12379D	(0.694)		123478D	0.695	J			
1378D	[4.39]		12369D...[3]	1.24	J	123678D	2.98				
1268D	(0.597)		12346/12347D	(0.694)		123467D	[0.525]	J			
1478D	[3.95]		12378D	16.2		123789D	[1.85]	J	**Conc.**	262	
1279D	[0.62]		12367D	[1.21]	J				**EMPC**	262	
1234/1269D	[1.28]		12389D	(0.694)							
1236D	(0.597)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	24.6										
1239D	(0.597)								OCDD	1770	
2378D	1510	E									
1278D	101										
1267D	[7.94]										
1289D	[5.52]										
Conc.	1,650		**Conc.**	26		**Conc.**	44.9				
EMPC	1,670		**EMPC**	27.2		**EMPC**	47.3				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	2,190	2,190
TEQ: ND=DL/2	2,190	2,190
TEQ: ND=DL	2,190	2,190

	Conc.	EMPC
Total PCDD/Fs	16,200	16,300

Checkcode: 140-373-WCS

Report Created: 20-Dec-2021 14:45 Analyst: gd

Sample ID: 11215131-120321-S-JC-SW-B-3 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID:	B5970_18718_DF_003	Date Extracted: 13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.7 %	QC Batch No.:	18718	Date Analyzed: 16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 2:27:31

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.33		13468/12468F	4.99		123468F	3.34		1234678F	85.7	
1468F	7.69		13678F...[3]	2.56		124678/134678F	28.7		1234679F	1.68	J
2468F	5.69		12368F...[3]	106		134679F	(0.825)		1234689F	35.1	
1346/1246F	6.54		14678F	2.39	J	124679F	(0.825)		1234789F	35.9	
1347F...[3]	51.8		13479F	0.743	J	124689F	13.5				
1348F	21.8		13469/12479F	(0.296)		123467F	1.61	J			
1248F...[3]	264		12346F	0.595	J	123478F	354				
1268F	88.9		23468/12469F	3.35		123678F	85.8				
1467F	13.2		12347F	4.24		123479F	(0.825)				
1478F	233		12348F	22.6		123469F	(0.825)				
1369/1237F	58.9		12378F	233		123679F	(0.825)				
2467F	6.83		12678/12367F	75.4		234678F	18.1		**Conc.**	158	
2368F	124		12379F	(0.296)		234678/123689F	0		**EMPC**	158	
1238F...[5]	331		12679F	[0.76]	J	123689F	(0.825)				
1278F	2650	E	23467/12369F	2.8		123789F	(0.913)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	34.2		23478F	179		123789/123489F	0			**(pg/g)**	
1267F	145		23478/12489F	0		123489F	27.4		OCDF	54.4	
2346/1249F	21.2		12489F	(0.296)							
2347/1279F	61.2		12349F	(0.296)							
2348F	459		12389F	9.82							
2378F	5490	E									
2367/3467F	450										
1269F	93.2										
1239F	11.6										
1289F	454										
Conc.	11,100		**Conc.**	648		**Conc.**	532				
EMPC	11,100		**EMPC**	648		**EMPC**	532				

Checkcode: 140-373-WCS

Report Created: 20-Dec-2021 14:45 Analyst: gd

Sample ID: 11215131-120321-S-JC-SW-B-3 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5970_18718_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	QC Batch No.:	18718
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	16-Dec-2021 02:27
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	1510	E	0.597	1510	1510	1510
12378-PeCDD	16.2		0.694	8.08	16.2	16.2
123478-HxCDD	0.695	J	0.477	0.0695	0.0695	0.0695
123678-HxCDD	2.98		0.482	0.298	0.298	0.298
123789-HxCDD	[1.85]	J	0.399	[0.185]	[0.185]	[0.185]
1234678-HpCDD	120		0.289	1.2	1.2	1.2
OCDD	1770		0.534	1.77	0.177	0.53
2378-TCDF	5490	E	0.323	549	549	549
12378-PeCDF	233		0.29	11.6	11.6	6.98
23478-PeCDF	179		0.302	89.7	89.7	53.8
123478-HxCDF	354		0.821	35.4	35.4	35.4
123678-HxCDF	85.8		0.761	8.58	8.58	8.58
234678-HxCDF	18.1		0.83	1.81	1.81	1.81
123789-HxCDF	(0.913)		0.913	(0.0913)	(0.0913)	(0.0913)
1234678-HpCDF	85.7		0.0958	0.857	0.857	0.857
1234789-HpCDF	35.9		0.15	0.359	0.359	0.359
OCDF	54.4		0.301	0.0544	0.00544	0.0163

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TEQ Summaries			
EMPC = 0, ND = 0	2220	2230	2190
EMPC = 0, ND = DL / 2	2220	2230	2190
EMPC = 0, ND = DL	2220	2230	2190
EMPC = 0, < J-level = 0	2220	2230	2190
EMPC = EMPC, ND = 0	2220	2230	2190
EMPC = EMPC, ND = DL / 2	2220	2230	2190
EMPC = EMPC, ND = DL	2220	2230	2190
EMPC = EMPC, < J-level = 0	2220	2230	2190

Checkcode: 140-373-WCS

Sample ID: 11215131-120221-S-SPS-SW-O-3 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID	B5970_18718_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	81.4 %	QC Batch No:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:14:58

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	1,220			E	ES 2378-TCDD	84.8	
12378-PeCDD	13.7				ES 12378-PeCDD	75.5	
123478-HxCDD	EMPC		1.11	J	ES 123478-HxCDD	87.2	
123678-HxCDD	3.02				ES 123678-HxCDD	89	
123789-HxCDD	2.5				ES 123789-HxCDD	90	
1234678-HpCDD	108				ES 1234678-HpCDD	83.2	
OCDD	5,210				ES OCDD	69.1	
2378-TCDF	4,370			E	ES 2378-TCDF	79	
12378-PeCDF	205				ES 12378-PeCDF	85.8	
23478-PeCDF	141				ES 23478-PeCDF	82	
123478-HxCDF	480				ES 123478-HxCDF	91.7	
123678-HxCDF	115				ES 123678-HxCDF	101	
234678-HxCDF	21.4				ES 234678-HxCDF	89.3	
123789-HxCDF	ND	0.922			ES 123789-HxCDF	87.2	
1234678-HpCDF	128				ES 1234678-HpCDF	110	
1234789-HpCDF	58.9				ES 1234789-HpCDF	87.8	
OCDF	92.3				ES OCDF	65.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	73.5	
Total TCDD	1,340		1,350	E	CS 12347-PeCDD	74.2	
Total PeCDD	16.8		20.6		CS 12346-PeCDF	85.1	
Total HxCDD	34.1		36.3		CS 123469-HxCDF	101	
Total HpCDD	240		240		CS 1234689-HpCDF	103	
Total TCDF	8,820		8,820	E			
Total PeCDF	530		530				
Total HxCDF	706		706				
Total HpCDF	226		226				
Total PCDD/Fs	**17,200**		**17,200**	E			
WHO-2005 TEQs							
TEQ: ND=0	1790		1790				
TEQ: ND=DL/2	1790	0.531	1790				
TEQ: ND=DL	1790	1.06	1790				

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Sample ID: 11215131-120221-S-SPS-SW-O-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID:	B5970_18718_DF_004	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	81.4 %	QC Batch No.:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:14:58

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	0.951		12479/12468D	[0.994]	J	124679/124689D	17.7		1234679D	132	
1379D	[0.355]	J	12469D	[1.56]	J	123468D	1.33	J	1234678D	108	
1369D	(0.247)		12368D	[0.916]	J	123679/123689D	9.52				
1469D	1.68		12478D	1.05	J	123469D	[0.58]	J			
1247D...[4]	2.07		12379D	0.592	J	123478D	[1.11]	J			
1378D	3.26		12369D...[3]	0.665	J	123678D	3.02				
1268D	(0.247)		12346/12347D	[0.298]	J	123467D	[0.556]	J			
1478D	[2.69]		12378D	13.7		123789D	2.5		**Conc.**	240	
1279D	(0.247)		12367D	0.845	J				**EMPC**	240	
1234/1269D	0.544		12389D	(0.264)							
1236D	(0.247)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	18.9										
1239D	(0.247)								OCDD	5210	
2378D	1220	E									
1278D	89.5										
1267D	[6.24]										
1289D	[3.93]										
Conc.	1,340		**Conc.**	16.8		**Conc.**	34.1				
EMPC	1,350		**EMPC**	20.6		**EMPC**	36.3				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	1,790	1,790
TEQ: ND=DL/2	1,790	1,790
TEQ: ND=DL	1,790	1,790

	Conc.	EMPC
Total PCDD/Fs	17,200	17,200

Checkcode: 638-179-DXG

Report Created: 20-Dec-2021 14:46 Analyst: gd

Sample ID: 11215131-120221-S-SPS-SW-O-3 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID:	B5970_18718_DF_004	Date Extracted: 13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	81.4 %	QC Batch No.:	18718	Date Analyzed: 16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 3:14:58

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.02		13468/12468F	5.33		123468F	3.82		1234678F	128	
1468F	6.18		13678F...[3]	1.93	J	124678/134678F	38.1		1234679F	2.33	J
2468F	4.96		12368F...[3]	84.1		134679F	(0.818)		1234689F	36.5	
1346/1246F	5.22		14678F	2.45	J	124679F	(0.818)		1234789F	58.9	
1347F...[3]	43.4		13479F	(0.175)		124689F	14.2				
1348F	10.3		13469/12479F	(0.175)		123467F	1.86	J			
1248F...[3]	218		12346F	0.411	J	123478F	480				
1268F	69.3		23468/12469F	2.45	J	123678F	115				
1467F	10.4		12347F	3.41		123479F	(0.818)				
1478F	186		12348F	15		123469F	(0.818)				
1369/1237F	47.3		12378F	205		123679F	(0.818)				
2467F	5.49		12678/12367F	59.8		234678F	21.4		**Conc.**	226	
2368F	111		12379F	(0.175)		234678/123689F	0		**EMPC**	226	
1238F...[5]	240		12679F	(0.175)		123689F	(0.818)				
1278F	2080	E	23467/12369F	2.14	J	123789F	(0.922)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	27.9		23478F	141		123789/123489F	0				
1267F	113		23478/12489F	0		123489F	31.5		OCDF	92.3	
2346/1249F	15.7		12489F	(0.175)							
2347/1279F	52.2		12349F	(0.175)							
2348F	398		12389F	7.17							
2378F	4370	E									
2367/3467F	356										
1269F	77.2										
1239F	7.62										
1289F	367										
Conc.	8,820		**Conc.**	530		**Conc.**	706				
EMPC	8,820		**EMPC**	530		**EMPC**	706				

Checkcode: 638-179-DXG

Report Created: 20-Dec-2021 14:46 Analyst: gd

Sample ID: 11215131-120221-S-SPS-SW-O-3 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5970_18718_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	QC Batch No.:	18718
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	16-Dec-2021 03:14
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	1220	E	0.247	1220	1220	1220
12378-PeCDD	13.7		0.264	6.84	13.7	13.7
123478-HxCDD	[1.11]	J	0.445	[0.111]	[0.111]	[0.111]
123678-HxCDD	3.02		0.439	0.302	0.302	0.302
123789-HxCDD	2.5		0.375	0.25	0.25	0.25
1234678-HpCDD	108		0.186	1.08	1.08	1.08
OCDD	5210		0.486	5.21	0.521	1.56
2378-TCDF	4370	E	0.269	437	437	437
12378-PeCDF	205		0.168	10.2	10.2	6.14
23478-PeCDF	141		0.182	70.6	70.6	42.4
123478-HxCDF	480		0.818	48	48	48
123678-HxCDF	115		0.685	11.5	11.5	11.5
234678-HxCDF	21.4		0.886	2.14	2.14	2.14
123789-HxCDF	(0.922)		0.922	(0.0922)	(0.0922)	(0.0922)
1234678-HpCDF	128		0.178	1.28	1.28	1.28
1234789-HpCDF	58.9		0.279	0.589	0.589	0.589
OCDF	92.3		0.297	0.0923	0.00923	0.0277

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TEQ Summaries			
EMPC = 0, ND = 0	1820	1820	1790
EMPC = 0, ND = DL / 2	1820	1820	1790
EMPC = 0, ND = DL	1820	1820	1790
EMPC = 0, < J-level = 0	1820	1820	1790
EMPC = EMPC, ND = 0	1820	1820	1790
EMPC = EMPC, ND = DL / 2	1820	1820	1790
EMPC = EMPC, ND = DL	1820	1820	1790
EMPC = EMPC, < J-level = 0	1820	1820	1790

Checkcode: 638-179-DXG

Sample ID: 11215131-120221-S-SPS-SW-B-4 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	Lab Sample ID	B5970_18718_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	72.9 %	QC Batch No:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:02:32

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	2,280			E	ES 2378-TCDD	74.9	
12378-PeCDD	25.3				ES 12378-PeCDD	61	
123478-HxCDD	2.39			J	ES 123478-HxCDD	74.1	
123678-HxCDD	10.7				ES 123678-HxCDD	76.8	
123789-HxCDD	EMPC		4.92		ES 123789-HxCDD	72.3	
1234678-HpCDD	326				ES 1234678-HpCDD	64.9	
OCDD	4,780				ES OCDD	49.2	
2378-TCDF	7,980			E	ES 2378-TCDF	69.7	
12378-PeCDF	235				ES 12378-PeCDF	68	
23478-PeCDF	205				ES 23478-PeCDF	65.8	
123478-HxCDF	359				ES 123478-HxCDF	76.6	
123678-HxCDF	84.3				ES 123678-HxCDF	81.4	
234678-HxCDF	21.5				ES 234678-HxCDF	72.6	
123789-HxCDF	ND	1.03			ES 123789-HxCDF	77.3	
1234678-HpCDF	223				ES 1234678-HpCDF	77.7	
1234789-HpCDF	47.9				ES 1234789-HpCDF	75.4	
OCDF	2,830				ES OCDF	53.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	65.2	
Total TCDD	2,500		2,530	E	CS 12347-PeCDD	64.8	
Total PeCDD	48.6		49.3		CS 12346-PeCDF	70.7	
Total HxCDD	92.9		105		CS 123469-HxCDF	81.1	
Total HpCDD	740		740		CS 1234689-HpCDF	79	
Total TCDF	16,000		16,000	E			
Total PeCDF	744		744				
Total HxCDF	594		594				
Total HpCDF	398		398				
Total PCDD/Fs	**28,800**		**28,800**	E			
WHO-2005 TEQs							
TEQ: ND=0	3230		3230				
TEQ: ND=DL/2	3230	0.995	3230				
TEQ: ND=DL	3230	1.99	3230				

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Sample ID: 11215131-120221-S-SPS-SW-B-4 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	Lab Sample ID:	B5970_18718_DF_005	Date Extracted:	13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	72.9 %	QC Batch No.:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:02:32

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	4.55		12479/12468D	6.4		124679/124689D	47.4		1234679D	415	
1379D	1.77		12469D	3.74		123468D	[5.4]		1234678D	326	
1369D	(0.389)		12368D	4.29		123679/123689D	32.5				
1469D	3.06		12478D	2.44	J	123469D	[1.77]	J			
1247D...[4]	4.21		12379D	1.97	J	123478D	2.39	J			
1378D	6.61		12369D...[3]	2.57		123678D	10.7				
1268D	[0.61]		12346/12347D	[0.687]	J	123467D	(1.13)				
1478D	[4.86]		12378D	25.3		123789D	[4.92]		**Conc.**	740	
1279D	0.579		12367D	1.92	J				**EMPC**	740	
1234/1269D	1.33		12389D	(0.548)							
1236D	(0.389)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	34.6										
1239D	(0.389)								OCDD	4780	
2378D	2280	E									
1278D	162										
1267D	[10.8]										
1289D	[9.14]										
Conc.	2,500		**Conc.**	48.6		**Conc.**	92.9				
EMPC	2,530		**EMPC**	49.3		**EMPC**	105				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	3,230	3,230
TEQ: ND=DL/2	3,230	3,230
TEQ: ND=DL	3,230	3,230

	Conc.	EMPC
Total PCDD/Fs	28,800	28,800

Checkcode: 735-325-GBS

Report Created: 20-Dec-2021 14:46 Analyst: gd

Sample ID: 11215131-120221-S-SPS-SW-B-4 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	Lab Sample ID:	B5970_18718_DF_005	Date Extracted: 13-Dec-2021
Date Collected:	02-Dec-2021	% Solid:	72.9 %	QC Batch No.:	18718	Date Analyzed: 16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 4:02:32

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	2.51		13468/12468F	29.4		123468F	10.1		1234678F	223	
1468F	12.8		13678F...[3]	5.59		124678/134678F	48.5		1234679F	9.04	
2468F	12.9		12368F...[3]	121		134679F	(0.971)		1234689F	118	
1346/1246F	7.64		14678F	4.56		124679F	1.14	J	1234789F	47.9	
1347F...[3]	77.9		13479F	[0.632]	J	124689F	37				
1348F	28.6		13469/12479F	2.26	J	123467F	3.17				
1248F...[3]	363		12346F	1.24	J	123478F	359				
1268F	131		23468/12469F	9.62		123678F	84.3				
1467F	20.1		12347F	6.11		123479F	(0.971)				
1478F	339		12348F	28.1		123469F	2.94				
1369/1237F	88.2		12378F	235		123679F	(0.971)				
2467F	8.59		12678/12367F	80		234678F	21.5		**Conc.**	398	
2368F	186		12379F	(0.523)		234678/123689F	0		**EMPC**	398	
1238F...[5]	487		12679F	(0.523)		123689F	(0.971)				
1278F	3780	E	23467/12369F	4.25		123789F	(1.03)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	61		23478F	205		123789/123489F	0				
1267F	209		23478/12489F	0		123489F	27.1		OCDF	2830	
2346/1249F	30.8		12489F	(0.523)							
2347/1279F	88.9		12349F	(0.523)							
2348F	660		12389F	11.7							
2378F	7980	E									
2367/3467F	651										
1269F	133										
1239F	22										
1289F	639										
Conc.	16,000		**Conc.**	744		**Conc.**	594				
EMPC	16,000		**EMPC**	744		**EMPC**	594				

Checkcode: 735-325-GBS

Report Created: 20-Dec-2021 14:46 Analyst: gd

Sample ID: 11215131-120221-S-SPS-SW-B-4 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5970_18718_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	QC Batch No.:	18718
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	16-Dec-2021 04:02
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	2280	E	0.389	2280	2280	2280
12378-PeCDD	25.3		0.548	12.7	25.3	25.3
123478-HxCDD	2.39	J	1.15	0.239	0.239	0.239
123678-HxCDD	10.7		1.14	1.07	1.07	1.07
123789-HxCDD	[4.92]		1.11	[0.492]	[0.492]	[0.492]
1234678-HpCDD	326		0.574	3.26	3.26	3.26
OCDD	4780		1.03	4.78	0.478	1.44
2378-TCDF	7980	E	1.37	798	798	798
12378-PeCDF	235		0.518	11.8	11.8	7.05
23478-PeCDF	205		0.528	103	103	61.6
123478-HxCDF	359		0.986	35.9	35.9	35.9
123678-HxCDF	84.3		0.853	8.43	8.43	8.43
234678-HxCDF	21.5		1.04	2.15	2.15	2.15
123789-HxCDF	(1.03)		1.03	(0.103)	(0.103)	(0.103)
1234678-HpCDF	223		0.246	2.23	2.23	2.23
1234789-HpCDF	47.9		0.35	0.479	0.479	0.479
OCDF	2830		0.675	2.83	0.283	0.85

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TEQ Summaries			
EMPC = 0, ND = 0	3270	3280	3230
EMPC = 0, ND = DL / 2	3270	3280	3230
EMPC = 0, ND = DL	3270	3280	3230
EMPC = 0, < J-level = 0	3270	3280	3230
EMPC = EMPC, ND = 0	3270	3280	3230
EMPC = EMPC, ND = DL / 2	3270	3280	3230
EMPC = EMPC, ND = DL	3270	3280	3230
EMPC = EMPC, < J-level = 0	3270	3280	3230

Checkcode: 735-325-GBS

Sample ID: 11215131-120321-S-SPS-SW-O-5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.16 g	Lab Sample ID	B5970_18718_DF_006	Date Extracted:	13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	82.7 %	QC Batch No:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:50:06

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	330				ES 2378-TCDD	75.4	
12378-PeCDD	3.32				ES 12378-PeCDD	70.4	
123478-HxCDD	EMPC		0.673	J	ES 123478-HxCDD	78.7	
123678-HxCDD	1.79			J	ES 123678-HxCDD	84.3	
123789-HxCDD	2.27			J	ES 123789-HxCDD	78.7	
1234678-HpCDD	74.2				ES 1234678-HpCDD	73.2	
OCDD	2,170				ES OCDD	52.8	
2378-TCDF	1,180			E	ES 2378-TCDF	64.9	
12378-PeCDF	36.4				ES 12378-PeCDF	80.7	
23478-PeCDF	33.8				ES 23478-PeCDF	67.1	
123478-HxCDF	65.7				ES 123478-HxCDF	78.4	
123678-HxCDF	15.6				ES 123678-HxCDF	94.1	
234678-HxCDF	3.26				ES 234678-HxCDF	76.8	
123789-HxCDF	ND	0.608			ES 123789-HxCDF	68.3	
1234678-HpCDF	15.6				ES 1234678-HpCDF	105	
1234789-HpCDF	7.2				ES 1234789-HpCDF	67.9	
OCDF	14.6				ES OCDF	44.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	70.1	
Total TCDD	371		373		CS 12347-PeCDD	74.1	
Total PeCDD	8.13		10.6		CS 12346-PeCDF	86.5	
Total HxCDD	43.9		47		CS 123469-HxCDF	100	
Total HpCDD	203		203		CS 1234689-HpCDF	101	
Total TCDF	2,380		2,390	E			
Total PeCDF	109		112				
Total HxCDF	99.8		99.8				
Total HpCDF	30.6		30.6				
Total PCDD/Fs	**5,430**		**5,450**	E			
WHO-2005 TEQs							
TEQ: ND=0	473		473				
TEQ: ND=DL/2	473	0.553	473				
TEQ: ND=DL	473	1.11	473				

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Sample ID: 11215131-120321-S-SPS-SW-O-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.16 g	Lab Sample ID:	B5970_18718_DF_006	Date Extracted:	13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	82.7 %	QC Batch No.:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:50:06

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.695]		12479/12468D	[1.15]	J	124679/124689D	31.3		1234679D	129	
1379D	[0.293]	J	12469D	3.44		123468D	[0.812]	J	1234678D	74.2	
1369D	(0.297)		12368D	[0.468]	J	123679/123689D	8.57				
1469D	3.79		12478D	[0.476]	J	123469D	[0.984]	J			
1247D...[4]	0.796		12379D	[0.421]	J	123478D	[0.673]	J			
1378D	[0.836]		12369D...[3]	1.37	J	123678D	1.79	J			
1268D	(0.297)		12346/12347D	(0.363)		123467D	[0.602]	J			
1478D	0.902		12378D	3.32		123789D	2.27	J	**Conc.**	203	
1279D	(0.297)		12367D	(0.363)					**EMPC**	203	
1234/1269D	0.662		12389D	(0.363)							
1236D	(0.297)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	5.39										
1239D	(0.297)								OCDD	2170	
2378D	330										
1278D	30.1										
1267D	(0.297)										
1289D	(0.297)										
Conc.	371		**Conc.**	8.13		**Conc.**	43.9				
EMPC	373		**EMPC**	10.6		**EMPC**	47				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	473	473
TEQ: ND=DL/2	473	473
TEQ: ND=DL	473	473

	Conc.	EMPC
Total PCDD/Fs	5,430	5,450

Checkcode: 604-163-RSQ

Report Created: 20-Dec-2021 14:47 Analyst: gd

Sample ID: 11215131-120321-S-SPS-SW-O-5 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.16 g	Lab Sample ID:	B5970_18718_DF_006	Date Extracted: 13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	82.7 %	QC Batch No.:	18718	Date Analyzed: 16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 4:50:06

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.345)		13468/12468F	[1.76]	J	123468F	1.28	J	1234678F	15.6	
1468F	1.8		13678F...[3]	0.56	J	124678/134678F	6.71		1234679F	0.422	J
2468F	2.39		12368F...[3]	18.7		134679F	(0.459)		1234689F	7.38	
1346/1246F	[1.12]		14678F	1.02	J	124679F	(0.459)		1234789F	7.2	
1347F...[3]	12.6		13479F	(0.252)		124689F	2.84				
1348F	7.32		13469/12479F	(0.252)		123467F	(0.459)				
1248F...[3]	55.9		12346F	(0.252)		123478F	65.7				
1268F	20.2		23468/12469F	0.994	J	123678F	15.6				
1467F	3.3		12347F	0.92	J	123479F	(0.459)				
1478F	50.9		12348F	3.9		123469F	(0.459)				
1369/1237F	12.9		12378F	36.4		123679F	(0.459)				
2467F	[1.5]		12678/12367F	12.2		234678F	3.26		**Conc.**	30.6	
2368F	44.2		12379F	(0.252)		234678/123689F	0		**EMPC**	30.6	
1238F...[5]	58.9		12679F	(0.252)		123689F	(0.459)				
1278F	567		23467/12369F	[0.563]	J	123789F	(0.608)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	9.44		23478F	33.8		123789/123489F	0				
1267F	32.4		23478/12489F	0		123489F	4.34		OCDF	14.6	
2346/1249F	4.36		12489F	(0.252)							
2347/1279F	15.3		12349F	(0.252)							
2348F	87.4		12389F	[1.53]	J						
2378F	1180	E									
2367/3467F	97.5										
1269F	21										
1239F	(0.345)										
1289F	101										
Conc.	2,380		**Conc.**	109		**Conc.**	99.8				
EMPC	2,390		**EMPC**	112		**EMPC**	99.8				

Checkcode: 604-163-RSQ

Report Created: 20-Dec-2021 14:47 Analyst: gd

Sample ID: 11215131-120321-S-SPS-SW-O-5 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5970_18718_DF_006
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.16 g	QC Batch No.:	18718
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	16-Dec-2021 04:50
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	330		0.297	330	330	330
12378-PeCDD	3.32		0.363	1.66	3.32	3.32
123478-HxCDD	[0.673]	J	0.414	[0.0673]	[0.0673]	[0.0673]
123678-HxCDD	1.79	J	0.425	0.179	0.179	0.179
123789-HxCDD	2.27	J	0.414	0.227	0.227	0.227
1234678-HpCDD	74.2		0.39	0.742	0.742	0.742
OCDD	2170		0.936	2.17	0.217	0.65
2378-TCDF	1180	E	0.345	118	118	118
12378-PeCDF	36.4		0.239	1.82	1.82	1.09
23478-PeCDF	33.8		0.267	16.9	16.9	10.1
123478-HxCDF	65.7		0.426	6.57	6.57	6.57
123678-HxCDF	15.6		0.369	1.56	1.56	1.56
234678-HxCDF	3.26		0.487	0.326	0.326	0.326
123789-HxCDF	(0.608)		0.608	(0.0608)	(0.0608)	(0.0608)
1234678-HpCDF	15.6		0.193	0.156	0.156	0.156
1234789-HpCDF	7.2		0.353	0.072	0.072	0.072
OCDF	14.6		0.605	0.0146	0.00146	0.00437

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TEQ Summaries			
EMPC = 0, ND = 0	480	480	473
EMPC = 0, ND = DL / 2	480	480	473
EMPC = 0, ND = DL	480	480	473
EMPC = 0, < J-level = 0	480	479	472
EMPC = EMPC, ND = 0	480	480	473
EMPC = EMPC, ND = DL / 2	480	480	473
EMPC = EMPC, ND = DL	480	480	473
EMPC = EMPC, < J-level = 0	480	479	472

Sample ID: 11215131-120321-S-SPS-SW-O-4 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID	B5970_18718_DF_007	Date Extracted:	13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	83.8 %	QC Batch No:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	5:37:38

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		2.71		ES 2378-TCDD	77.3	
12378-PeCDD	0.69			J	ES 12378-PeCDD	66.6	
123478-HxCDD	EMPC		1.78	J	ES 123478-HxCDD	78.3	
123678-HxCDD	4.84				ES 123678-HxCDD	84.1	
123789-HxCDD	3.6				ES 123789-HxCDD	85.6	
1234678-HpCDD	227				ES 1234678-HpCDD	71.4	
OCDD	5,000				ES OCDD	50.1	
2378-TCDF	13.9				ES 2378-TCDF	69.6	
12378-PeCDF	1.04			J	ES 12378-PeCDF	77.1	
23478-PeCDF	1.77			J	ES 23478-PeCDF	73.5	
123478-HxCDF	2.35			J	ES 123478-HxCDF	83.8	
123678-HxCDF	1.35			J	ES 123678-HxCDF	96.5	
234678-HxCDF	1.79			J	ES 234678-HxCDF	83.6	
123789-HxCDF	ND	0.464			ES 123789-HxCDF	79.6	
1234678-HpCDF	27.1				ES 1234678-HpCDF	87.7	
1234789-HpCDF	1.94			J	ES 1234789-HpCDF	74.8	
OCDF	83.3				ES OCDF	49	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	70.4	
Total TCDD	0.347		4.64		CS 12347-PeCDD	75.3	
Total PeCDD	3.02		7.05		CS 12346-PeCDF	83.2	
Total HxCDD	88.5		90.3		CS 123469-HxCDF	99.3	
Total HpCDD	730		730		CS 1234689-HpCDF	95.9	
Total TCDF	27.4		30.7				
Total PeCDF	13.7		14.6				
Total HxCDF	29.1		29.9				
Total HpCDF	73.4		73.4				
Total PCDD/Fs	**6,050**		**6,070**				
WHO-2005 TEQs							
TEQ: ND=0	8.12		11				
TEQ: ND=DL/2	8.15	0.432	11				
TEQ: ND=DL	8.17	0.864	11.1				

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Sample ID: 11215131-120321-S-SPS-SW-O-4 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID:	B5970_18718_DF_007	Date Extracted:	13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	83.8 %	QC Batch No.:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	5:37:38

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.261)		12479/12468D	1.58	J	124679/124689D	41.4		1234679D	503	
1379D	(0.261)		12469D	[2.31]	J	123468D	5.91		1234678D	227	
1369D	(0.261)		12368D	[0.345]	J	123679/123689D	22.1				
1469D	[1.59]		12478D	0.748	J	123469D	8.24				
1247D...[4]	(0.261)		12379D	[0.38]	J	123478D	[1.78]	J			
1378D	(0.261)		12369D...[3]	[0.994]	J	123678D	4.84				
1268D	(0.261)		12346/12347D	(0.214)		123467D	2.54				
1478D	(0.261)		12378D	0.69	J	123789D	3.6		**Conc.**	730	
1279D	(0.261)		12367D	(0.214)					**EMPC**	730	
1234/1269D	(0.261)		12389D	(0.214)							
1236D	(0.261)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.261)										
1239D	(0.261)								OCDD	5000	
2378D	[2.71]										
1278D	0.347	J									
1267D	(0.261)										
1289D	(0.261)										
Conc.	0.347		**Conc.**	3.02		**Conc.**	88.5				
EMPC	4.64		**EMPC**	7.05		**EMPC**	90.3				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	8.12	11
TEQ: ND=DL/2	8.15	11
TEQ: ND=DL	8.17	11.1

	Conc.	EMPC
Total PCDD/Fs	6,050	6,070

Checkcode: 121-696-RHZ

Report Created: 20-Dec-2021 14:47 Analyst: gd

Sample ID: 11215131-120321-S-SPS-SW-O-4 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID:	B5970_18718_DF_007	Date Extracted: 13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	83.8 %	QC Batch No.:	18718	Date Analyzed: 16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 5:37:38

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.236)		13468/12468F	4.26		123468F	3.43		1234678F	27.1	
1468F	(0.236)		13678F...[3]	0.971	J	124678/134678F	12.6		1234679F	1.64	J
2468F	[0.88]		12368F...[3]	3.4		134679F	(0.402)		1234689F	42.8	
1346/1246F	(0.236)		14678F	[0.206]	J	124679F	(0.402)		1234789F	1.94	J
1347F...[3]	0.976		13479F	(0.232)		124689F	7.61				
1348F	0.855		13469/12479F	(0.232)		123467F	[0.748]	J			
1248F...[3]	(0.236)		12346F	0.207	J	123478F	2.35	J			
1268F	0.542		23468/12469F	0.763	J	123678F	1.35	J			
1467F	[0.164]	J	12347F	0.331	J	123479F	(0.402)				
1478F	[0.621]		12348F	[0.243]	J	123469F	(0.402)				
1369/1237F	0.462	J	12378F	1.04	J	123679F	(0.402)				
2467F	(0.236)		12678/12367F	0.965	J	234678F	1.79	J	**Conc.**	73.4	
2368F	1.19		12379F	(0.232)		234678/123689F	0		**EMPC**	73.4	
1238F...[5]	[0.558]		12679F	(0.232)		123689F	(0.402)				
1278F	5.02		23467/12369F	[0.486]	J	123789F	(0.464)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.236)		23478F	1.77	J	123789/123489F	0				
1267F	0.725		23478/12489F	0		123489F	(0.402)		OCDF	83.3	
2346/1249F	(0.236)		12489F	(0.232)							
2347/1279F	0.297	J	12349F	(0.232)							
2348F	0.899		12389F	(0.232)							
2378F	13.9										
2367/3467F	2.09										
1269F	0.356	J									
1239F	(0.236)										
1289F	[1.14]										
Conc.	27.4		**Conc.**	13.7		**Conc.**	29.1				
EMPC	30.7		**EMPC**	14.6		**EMPC**	29.9				

Checkcode: 121-696-RHZ

Report Created: 20-Dec-2021 14:47 Analyst: gd

Sample ID: 11215131-120321-S-SPS-SW-O-4 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5970_18718_DF_007
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	QC Batch No.:	18718
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	16-Dec-2021 05:37
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	[2.71]		0.261	[2.71]	[2.71]	[2.71]
12378-PeCDD	0.69	J	0.214	0.345	0.69	0.69
123478-HxCDD	[1.78]	J	0.4	[0.178]	[0.178]	[0.178]
123678-HxCDD	4.84		0.395	0.484	0.484	0.484
123789-HxCDD	3.6		0.369	0.36	0.36	0.36
1234678-HpCDD	227		0.343	2.27	2.27	2.27
OCDD	5000		1.34	5	0.5	1.5
2378-TCDF	13.9		0.236	1.39	1.39	1.39
12378-PeCDF	1.04	J	0.236	0.0518	0.0518	0.0311
23478-PeCDF	1.77	J	0.229	0.883	0.883	0.53
123478-HxCDF	2.35	J	0.372	0.235	0.235	0.235
123678-HxCDF	1.35	J	0.363	0.135	0.135	0.135
234678-HxCDF	1.79	J	0.429	0.179	0.179	0.179
123789-HxCDF	(0.464)		0.464	(0.0464)	(0.0464)	(0.0464)
1234678-HpCDF	27.1		0.22	0.271	0.271	0.271
1234789-HpCDF	1.94	J	0.338	0.0194	0.0194	0.0194
OCDF	83.3		0.651	0.0833	0.00833	0.025

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TEQ Summaries			
EMPC = 0, ND = 0	11.7	7.48	8.12
EMPC = 0, ND = DL / 2	11.7	7.5	8.15
EMPC = 0, ND = DL	11.8	7.53	8.17
EMPC = 0, < J-level = 0	9.87	5.29	6.31
EMPC = EMPC, ND = 0	14.6	10.4	11
EMPC = EMPC, ND = DL / 2	14.6	10.4	11
EMPC = EMPC, ND = DL	14.6	10.4	11.1
EMPC = EMPC, < J-level = 0	12.6	8	9.01

Checkcode: 121-696-RHZ

Sample ID: 11215131-120321-S-SPS-SW-B-5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID	B5970_18718_DF_008	Date Extracted:	13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	70.8 %	QC Batch No:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:25:06

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	2,900			E	ES 2378-TCDD	81.7	
12378-PeCDD	33				ES 12378-PeCDD	68.8	
123478-HxCDD	3.79				ES 123478-HxCDD	86.9	
123678-HxCDD	15.9				ES 123678-HxCDD	89.4	
123789-HxCDD	7.42				ES 123789-HxCDD	88.7	
1234678-HpCDD	436				ES 1234678-HpCDD	74.5	
OCDD	6,510				ES OCDD	59.8	
2378-TCDF	10,600			E	ES 2378-TCDF	76.7	
12378-PeCDF	424				ES 12378-PeCDF	77.3	
23478-PeCDF	302				ES 23478-PeCDF	73.4	
123478-HxCDF	684				ES 123478-HxCDF	93.2	
123678-HxCDF	175				ES 123678-HxCDF	92	
234678-HxCDF	38.1				ES 234678-HxCDF	90.4	
123789-HxCDF	ND	1.47			ES 123789-HxCDF	87.2	
1234678-HpCDF	390				ES 1234678-HpCDF	86.1	
1234789-HpCDF	91.1				ES 1234789-HpCDF	84.9	
OCDF	5,830				ES OCDF	66.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	72.2	
Total TCDD	3,200		3,220	E	CS 12347-PeCDD	74.4	
Total PeCDD	68		70.3		CS 12346-PeCDF	79.4	
Total HxCDD	162		166		CS 123469-HxCDF	96.7	
Total HpCDD	1,040		1,040		CS 1234689-HpCDF	94	
Total TCDF	21,000		21,000	E			
Total PeCDF	1,210		1,210				
Total HxCDF	1,140		1,140				
Total HpCDF	702		702				
Total PCDD/Fs	**40,800**		**40,900**	E			
WHO-2005 TEQs							
TEQ: ND=0	4200		4200				
TEQ: ND=DL/2	4200	1.06	4200				
TEQ: ND=DL	4200	2.12	4200				

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Sample ID: 11215131-120321-S-SPS-SW-B-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID:	B5970_18718_DF_008	Date Extracted:	13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	70.8 %	QC Batch No.:	18718	Date Analyzed:	16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:25:06

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	5.61		12479/12468D	9.59		124679/124689D	72		1234679D	607	
1379D	1.7		12469D	5.59		123468D	9.68		1234678D	436	
1369D	0.6		12368D	5.47		123679/123689D	50.7				
1469D	3.91		12478D	4.37		123469D	[3.89]				
1247D...[4]	5.8		12379D	2.04	J	123478D	3.79				
1378D	8.61		12369D...[3]	5.25		123678D	15.9				
1268D	[0.858]		12346/12347D	1.33	J	123467D	2.88				
1478D	7.02		12378D	33		123789D	7.42		**Conc.**	1,040	
1279D	0.351	J	12367D	[2.28]	J				**EMPC**	1,040	
1234/1269D	1.8		12389D	1.39	J						
1236D	0.571								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	42.5										
1239D	(0.305)								OCDD	6510	
2378D	2900	E									
1278D	225										
1267D	[12.8]										
1289D	[10.3]										
Conc.	3,200		**Conc.**	68		**Conc.**	162				
EMPC	3,220		**EMPC**	70.3		**EMPC**	166				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	4,200	4,200
TEQ: ND=DL/2	4,200	4,200
TEQ: ND=DL	4,200	4,200

	Conc.	EMPC
Total PCDD/Fs	40,800	40,900

Checkcode: 801-470-KXN

Report Created: 20-Dec-2021 14:48 Analyst: gd

Sample ID: 11215131-120321-S-SPS-SW-B-5 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received: 04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	Lab Sample ID:	B5970_18718_DF_008	Date Extracted: 13-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	70.8 %	QC Batch No.:	18718	Date Analyzed: 16-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 6:25:06

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	3.26		13468/12468F	55.3		123468F	17.2		1234678F	390	
1468F	17.9		13678F...[3]	7.8		124678/134678F	92.6		1234679F	16.2	
2468F	22.2		12368F...[3]	201		134679F	(1.4)		1234689F	205	
1346/1246F	10.6		14678F	7.63		124679F	2.22	J	1234789F	91.1	
1347F...[3]	93.6		13479F	1.19	J	124689F	67.1				
1348F	31.4		13469/12479F	3.08		123467F	4.95				
1248F...[3]	448		12346F	[1.69]	J	123478F	684				
1268F	165		23468/12469F	14.5		123678F	175				
1467F	26.9		12347F	8.11		123479F	(1.4)				
1478F	428		12348F	38.8		123469F	6.01				
1369/1237F	108		12378F	424		123679F	(1.4)				
2467F	13.1		12678/12367F	126		234678F	38.1		**Conc.**	702	
2368F	177		12379F	(0.482)		234678/123689F	0		**EMPC**	702	
1238F...[5]	659		12679F	1.04	J	123689F	(1.4)				
1278F	4980	E	23467/12369F	6.02		123789F	(1.47)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	75.9		23478F	302		123789/123489F	0				
1267F	269		23478/12489F	0		123489F	52.4		OCDF	5830	
2346/1249F	43.3		12489F	(0.482)							
2347/1279F	112		12349F	(0.482)							
2348F	852		12389F	16.9							
2378F	10600	E									
2367/3467F	861										
1269F	167										
1239F	(0.378)										
1289F	839										
Conc.	21,000		**Conc.**	1,210		**Conc.**	1,140				
EMPC	21,000		**EMPC**	1,210		**EMPC**	1,140				

Checkcode: 801-470-KXN

Report Created: 20-Dec-2021 14:48 Analyst: gd

Sample ID: 11215131-120321-S-SPS-SW-B-5 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5970_18718_DF_008
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.07 g	QC Batch No.:	18718
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	16-Dec-2021 06:25
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	2900	E	0.305	2900	2900	2900
12378-PeCDD	33		0.678	16.5	33	33
123478-HxCDD	3.79		1.21	0.379	0.379	0.379
123678-HxCDD	15.9		1.24	1.59	1.59	1.59
123789-HxCDD	7.42		1.13	0.742	0.742	0.742
1234678-HpCDD	436		0.555	4.36	4.36	4.36
OCDD	6510		1.06	6.51	0.651	1.95
2378-TCDF	10600	E	0.378	1060	1060	1060
12378-PeCDF	424		0.455	21.2	21.2	12.7
23478-PeCDF	302		0.51	151	151	90.7
123478-HxCDF	684		1.33	68.4	68.4	68.4
123678-HxCDF	175		1.31	17.5	17.5	17.5
234678-HxCDF	38.1		1.51	3.81	3.81	3.81
123789-HxCDF	(1.47)		1.47	(0.147)	(0.147)	(0.147)
1234678-HpCDF	390		0.266	3.9	3.9	3.9
1234789-HpCDF	91.1		0.353	0.911	0.911	0.911
OCDF	5830		0.791	5.83	0.583	1.75

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TEQ Summaries			
EMPC = 0, ND = 0	4260	4260	4200
EMPC = 0, ND = DL / 2	4260	4260	4200
EMPC = 0, ND = DL	4260	4260	4200
EMPC = 0, < J-level = 0	4260	4260	4200
EMPC = EMPC, ND = 0	4260	4260	4200
EMPC = EMPC, ND = DL / 2	4260	4260	4200
EMPC = EMPC, ND = DL	4260	4260	4200
EMPC = EMPC, < J-level = 0	4260	4260	4200

Checkcode: 801-470-KXN

Sample ID: Method Blank B5970_18718 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18718_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:37:36

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.365			ES 2378-TCDD	80.5	
12378-PeCDD	ND	0.324			ES 12378-PeCDD	72.6	
123478-HxCDD	ND	0.189			ES 123478-HxCDD	86.8	
123678-HxCDD	ND	0.179			ES 123678-HxCDD	95.1	
123789-HxCDD	ND	0.166			ES 123789-HxCDD	91.8	
1234678-HpCDD	ND	0.259			ES 1234678-HpCDD	74.4	
OCDD	ND	0.71			ES OCDD	45.7	
2378-TCDF	ND	0.183			ES 2378-TCDF	67.5	
12378-PeCDF	ND	0.149			ES 12378-PeCDF	85.1	
23478-PeCDF	ND	0.166			ES 23478-PeCDF	75.8	
123478-HxCDF	ND	0.156			ES 123478-HxCDF	92.3	
123678-HxCDF	ND	0.123			ES 123678-HxCDF	116	
234678-HxCDF	ND	0.171			ES 234678-HxCDF	94.5	
123789-HxCDF	ND	0.217			ES 123789-HxCDF	77.5	
1234678-HpCDF	ND	0.105			ES 1234678-HpCDF	120	
1234789-HpCDF	ND	0.263			ES 1234789-HpCDF	67.4	
OCDF	ND	0.723			ES OCDF	36.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.1	
Total TCDD	ND	0.365	ND		CS 12347-PeCDD	83.7	
Total PeCDD	ND	0.324	ND		CS 12346-PeCDF	95	
Total HxCDD	ND	0.177	ND		CS 123469-HxCDF	119	
Total HpCDD	ND	0.259	ND		CS 1234689-HpCDF	108	
Total TCDF	ND	0.183	ND				
Total PeCDF	ND	0.157	ND				
Total HxCDF	ND	0.16	ND				
Total HpCDF	ND	0.157	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.444	0.444	0.444				
TEQ: ND=DL	0.888	0.888	0.888				

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Sample ID: Method Blank B5970_18718 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18718_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:37:36

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.365)		12479/12468D	(0.324)		124679/124689D	(0.177)		1234679D	(0.259)	
1379D	(0.365)		12469D	(0.324)		123468D	(0.177)		1234678D	(0.259)	
1369D	(0.365)		12368D	(0.324)		123679/123689D	(0.177)				
1469D	(0.365)		12478D	(0.324)		123469D	(0.177)				
1247D...[4]	(0.365)		12379D	(0.324)		123478D	(0.189)				
1378D	(0.365)		12369D...[3]	(0.324)		123678D	(0.179)				
1268D	(0.365)		12346/12347D	(0.324)		123467D	(0.177)				
1478D	(0.365)		12378D	(0.324)		123789D	(0.166)		**Conc.**	0	
1279D	(0.365)		12367D	(0.324)					**EMPC**	0	
1234/1269D	(0.365)		12389D	(0.324)							
1236D	(0.365)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.365)										
1239D	(0.365)								OCDD	(0.71)	
2378D	(0.365)										
1278D	(0.365)										
1267D	(0.365)										
1289D	(0.365)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.444	0.444
TEQ: ND=DL	0.888	0.888

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 204-041-YDT

Report Created: 20-Dec-2021 14:43 Analyst: gd

Sample ID: Method Blank B5970_18718 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18718_DF_SDS	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	17:37:36

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.183)		13468/12468F	(0.195)		123468F	(0.16)		1234678F	(0.105)	
1468F	(0.183)		13678F...[3]	(0.157)		124678/134678F	(0.16)		1234679F	(0.157)	
2468F	(0.183)		12368F...[3]	(0.157)		134679F	(0.16)		1234689F	(0.157)	
1346/1246F	(0.183)		14678F	(0.157)		124679F	(0.16)		1234789F	(0.263)	
1347F...[3]	(0.183)		13479F	(0.157)		124689F	(0.16)				
1348F	(0.183)		13469/12479F	(0.157)		123467F	(0.16)				
1248F...[3]	(0.183)		12346F	(0.157)		123478F	(0.156)				
1268F	(0.183)		23468/12469F	(0.157)		123678F	(0.123)				
1467F	(0.183)		12347F	(0.157)		123479F	(0.16)				
1478F	(0.183)		12348F	(0.157)		123469F	(0.16)				
1369/1237F	(0.183)		12378F	(0.149)		123679F	(0.16)				
2467F	(0.183)		12678/12367F	(0.157)		234678F	(0.171)		**Conc.**	0	
2368F	(0.183)		12379F	(0.157)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.183)		12679F	(0.157)		123689F	(0.16)				
1278F	(0.183)		23467/12369F	(0.157)		123789F	(0.217)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.183)		23478F	(0.166)		123789/123489F	0			**(pg/g)**	
1267F	(0.183)		23478/12489F	0		123489F	(0.16)		OCDF	(0.723)	
2346/1249F	(0.183)		12489F	(0.157)							
2347/1279F	(0.183)		12349F	(0.157)							
2348F	(0.183)		12389F	(0.157)							
2378F	(0.183)										
2367/3467F	(0.183)										
1269F	(0.183)										
1239F	(0.183)										
1289F	(0.183)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 204-041-YDT

Report Created: 20-Dec-2021 14:43 Analyst: gd

Sample ID: Method Blank B5970_18718 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18718_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18718
Date Collected:	n/a	Split:	-	Date Extracted:	13-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	15-Dec-2021 17:37
Lab Project No:	B5970	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.365)		0.365	(0.365)	(0.365)	(0.365)
12378-PeCDD	(0.324)		0.324	(0.162)	(0.324)	(0.324)
123478-HxCDD	(0.189)		0.189	(0.0189)	(0.0189)	(0.0189)
123678-HxCDD	(0.179)		0.179	(0.0179)	(0.0179)	(0.0179)
123789-HxCDD	(0.166)		0.166	(0.0166)	(0.0166)	(0.0166)
1234678-HpCDD	(0.259)		0.259	(0.00259)	(0.00259)	(0.00259)
OCDD	(0.71)		0.71	(0.00071)	(0.000071)	(0.000213)
2378-TCDF	(0.183)		0.183	(0.0183)	(0.0183)	(0.0183)
12378-PeCDF	(0.149)		0.149	(0.00747)	(0.00747)	(0.00448)
23478-PeCDF	(0.166)		0.166	(0.083)	(0.083)	(0.0498)
123478-HxCDF	(0.156)		0.156	(0.0156)	(0.0156)	(0.0156)
123678-HxCDF	(0.123)		0.123	(0.0123)	(0.0123)	(0.0123)
234678-HxCDF	(0.171)		0.171	(0.0171)	(0.0171)	(0.0171)
123789-HxCDF	(0.217)		0.217	(0.0217)	(0.0217)	(0.0217)
1234678-HpCDF	(0.105)		0.105	(0.00105)	(0.00105)	(0.00105)
1234789-HpCDF	(0.263)		0.263	(0.00263)	(0.00263)	(0.00263)
OCDF	(0.723)		0.723	(0.000723)	(0.0000723)	(0.000217)

TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.382	0.462	0.444
EMPC = 0, ND = DL	0.763	0.924	0.888
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.382	0.462	0.444
EMPC = EMPC, ND = DL	0.763	0.924	0.888
EMPC = EMPC, < J-level = 0	0	0	0

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Checkcode: 204-041-YDT

Sample ID: 0_18718_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18718_DF	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	15:15:44

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	9.58				ES 2378-TCDD	81.1	
12378-PeCDD	47.1				ES 12378-PeCDD	74	
123478-HxCDD	53.7				ES 123478-HxCDD	90.3	
123678-HxCDD	57.7				ES 123678-HxCDD	90.7	
123789-HxCDD	50.4				ES 123789-HxCDD	93.6	
1234678-HpCDD	55.4				ES 1234678-HpCDD	72.4	
OCDD	107				ES OCDD	42.3	
2378-TCDF	13				ES 2378-TCDF	70.7	
12378-PeCDF	54.5				ES 12378-PeCDF	85.6	
23478-PeCDF	58.9				ES 23478-PeCDF	74.9	
123478-HxCDF	56.4				ES 123478-HxCDF	89.5	
123678-HxCDF	53.7				ES 123678-HxCDF	109	
234678-HxCDF	55.2				ES 234678-HxCDF	95.4	
123789-HxCDF	53.2				ES 123789-HxCDF	83.2	
1234678-HpCDF	53.2				ES 1234678-HpCDF	113	
1234789-HpCDF	53.9				ES 1234789-HpCDF	68	
OCDF	108				ES OCDF	36.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	83.9	
Total TCDD	43.3		43.3		CS 12347-PeCDD	89.7	
Total PeCDD	70		70		CS 12346-PeCDF	95.9	
Total HxCDD	177		177		CS 123469-HxCDF	118	
Total HpCDD	69		69		CS 1234689-HpCDF	106	
Total TCDF	65.1		69.2				
Total PeCDF	217		217				
Total HxCDF	350		350				
Total HpCDF	107		107				
Total PCDD/Fs	**1,310**		**1,320**				
WHO-2005 TEQs							
TEQ: ND=0	117		117				
TEQ: ND=DL/2	117	0.328	117				
TEQ: ND=DL	117	0.656	117				

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Sample ID: 0_18718_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5970	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18718_DF	Date Extracted:	13-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18718	Date Analyzed:	15-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	16:02:28

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	8.92				ES 2378-TCDD	78.3	
12378-PeCDD	43.8				ES 12378-PeCDD	71.3	
123478-HxCDD	50.7				ES 123478-HxCDD	83.2	
123678-HxCDD	54.3				ES 123678-HxCDD	88.3	
123789-HxCDD	47.8				ES 123789-HxCDD	88.8	
1234678-HpCDD	52.7				ES 1234678-HpCDD	72.7	
OCDD	102				ES OCDD	41.5	
2378-TCDF	12				ES 2378-TCDF	64.5	
12378-PeCDF	51.8				ES 12378-PeCDF	80.3	
23478-PeCDF	56.3				ES 23478-PeCDF	71.1	
123478-HxCDF	51.4				ES 123478-HxCDF	90.6	
123678-HxCDF	50.3				ES 123678-HxCDF	112	
234678-HxCDF	51.8				ES 234678-HxCDF	90.9	
123789-HxCDF	48.8				ES 123789-HxCDF	77.3	
1234678-HpCDF	50.6				ES 1234678-HpCDF	111	
1234789-HpCDF	51.4				ES 1234789-HpCDF	63.6	
OCDF	104				ES OCDF	36	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	72.9	
Total TCDD	42.6		42.6		CS 12347-PeCDD	80.2	
Total PeCDD	67.2		67.2		CS 12346-PeCDF	85.7	
Total HxCDD	169		169		CS 123469-HxCDF	109	
Total HpCDD	65.8		65.8		CS 1234689-HpCDF	100	
Total TCDF	67.3		67.3				
Total PeCDF	211		211				
Total HxCDF	333		333				
Total HpCDF	102		102				
Total PCDD/Fs	**1,260**		**1,260**				
WHO-2005 TEQs							
TEQ: ND=0	109		109				
TEQ: ND=DL/2	109	0.251	109				
TEQ: ND=DL	109	0.503	109				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample DUP

Method 1613B

Sample ID: 0_18718_OPR001

Analyte	OPR1_18718_DF pg/uL	OPR2_18718_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	9.58	8.92	7.2%
1,2,3,7,8-PeCDD	47.1	43.8	7.2%
1,2,3,4,7,8-HxCDD	53.7	50.7	5.7%
1,2,3,6,7,8-HxCDD	57.7	54.3	6.0%
1,2,3,7,8,9-HxCDD	50.4	47.8	5.3%
1,2,3,4,6,7,8-HpCDD	55.4	52.7	5.0%
OCDD	107	102	4.8%
2,3,7,8-TCDF	13	12	7.9%
1,2,3,7,8-PeCDF	54.5	51.8	5.0%
2,3,4,7,8-PeCDF	58.9	56.3	4.5%
1,2,3,4,7,8-HxCDF	56.4	51.4	9.4%
1,2,3,6,7,8-HxCDF	53.7	50.3	6.5%
2,3,4,6,7,8-HxCDF	55.2	51.8	6.3%
1,2,3,7,8,9-HxCDF	53.2	48.8	8.5%
1,2,3,4,6,7,8-HpCDF	53.2	50.6	4.9%
1,2,3,4,7,8,9-HpCDF	53.9	51.4	4.9%
OCDF	108	104	3.3%
Totals			
Total TCDD	43.3	42.6	1.6%
Total PeCDD	70	67.2	4.0%
Total HxCDD	177	169	4.7%
Total HpCDD	69	65.8	4.8%
Total TCDF	69.2	67.3	2.8%
Total PeCDF	217	211	3.0%
Total HxCDF	350	333	5.0%
Total HpCDF	107	102	4.9%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*04-Dec-21 at 11:30*
AP Project name:	*B5970*
Requested TAT:	*10 business days*
Projected due date:	*20-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120221-S-JC-SW-O-2	B5970_001	Solid	1	4oz Amber	02-Dec-21	13:50	0.3	1	4905 2704 1992
11215131-120221-S-JC-SW-B-2	B5970_002	Solid	1	4oz Amber	02-Dec-21	14:00	0.3	1	4905 2704 1992
11215131-120321-S-JC-SW-B-3	B5970_003	Solid	1	4oz Amber	03-Dec-21	09:50	0.3	1	4905 2704 1992
11215131-120221-S-SPS-SW-O-3	B5970_004	Solid	1	4oz Amber	02-Dec-21	14:20	0.5	3	4905 2704 2017
11215131-120221-S-SPS-SW-B-4	B5970_005	Solid	1	4oz Amber	02-Dec-21	14:25	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-O-5	B5970_006	Solid	1	4oz Amber	03-Dec-21	09:25	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-O-4	B5970_007	Solid	1	4oz Amber	03-Dec-21	11:10	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-B-5	B5970_008	Solid	1	4oz Amber	03-Dec-21	11:15	0.5	3	4905 2704 2017

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact IDs on sample labels 004-008 do not match IDs on COC. Logged in as listed on COC. CL 20Dec21

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Iesha L. Clinton *Logged in by: Ashley Owens* *QC'ed by:* AK 6 Dec 21

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B5970 1/3

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400, Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION (BN)	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS SEE SSOW
11215131-120221-S-JC-SW-S-3	12-2-21	1330	C	S	4 oz	X				1	RUSH
11215131-120221-S-JC-SW-S-4		1340			4 oz	X				1	RUSH
11215131-120221-S-JC-SW-B-2		1350			4 oz	X				1	*
11215131-120221-S-JC-SW-B-2		1400			4 oz	X				1	*
11215131-120221-S-JC-SW-B-2H		1410			4 oz	X				1	HOLD
(BN) ~~11215131-120221-S-JC-RB-1~~		~~1500~~	—	~~we~~	~~4 oz~~ HC	~~X~~				~~2R~~	(BN) *
11215131-120321-S-JC-SW-S-5	12-3-21	0940	C	S	4 oz	X				1	RUSH
11215131-120321-S-JC-SW-B-3	1	0950	1	1	4 oz	X				1	*
11215131-120321-S-JC-SW-B-3H		1000			4 oz	X				1	HOLD
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Breanna Norsh	12-3-21	1230	[signature]
RELINQUISHED BY (2): [signature]	12-3-21	1325	RECEIVED BY: [signature]
RELINQUISHED BY (3): [signature]	12/3/21	1700	RECEIVED BY: Fedex

RECEIVED BY LABORATORY:	DATE:	TIME:
[signature]	12/4/21	11:30

COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☑ INTACT ☐ BROKEN ☐ ABSENT

CARRIER: TEMP: °C 0.3°C

TRACKING #:

*=samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

SGS CHAIN OF CUSTODY

B59770 2 1 3

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV
SPECIAL DELIVERABLES:
☐ DoD ☒ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None — ANALYSIS & METHOD: M1613B (D/F)	QC: MS	MSD	DUP	QTY	REMARKS
11215131-120321-S-SPS-SW-S-7	12/2/21	1325	C	S	4 oz	X				1	RUSH
11215131-120221-S-SPS-SW-S-6		1400			4 oz	X					RUSH
11215131-120221-S-SPS-SW-O-3		1420			4 oz	X					O is overburden not REC (SW-O) *
11215131-120221-S-SPS-SW-B-4		1425			4 oz	X					*
11215131-120221-S-SPS-SW-B-4H1		1430			4 oz	X					HOLD
11215131-120221-S-SPS-SW-B-4H2	↓	1435			4 oz	X					HOLD
11215131-120321-S-SPS-SW-S-12	12/3/21	845			4 oz	X					RUSH
11215131-120321-S-SPS-SW-S-11		930			4 oz	X					RUSH
11215131-120321-S-SPS-SW-O-5		925			4 oz	X					O is overburden *
11215131-120321-S-SPS-SW-S-10		1030	↓	↓	4 oz	X				↓	RUSH

	DATE:	TIME:	RECEIVED BY:
COLLECTED/RELINQUISHED BY (1): Stephen Schiro	12/3/21	1230	Eddie Castro
RELINQUISHED BY (2): Eddie Castro	12/3/21	1325	
RELINQUISHED BY (3):	DATE:	TIME:	RECEIVED BY:

RECEIVED BY LABORATORY: DATE: TIME:
Josh Christian 12/4/21 11:30
COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT
CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT
CARRIER: TEMP: °C 0.5 °C
TRACKING #:

* = samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

SGS CHAIN OF CUSTODY

B5970 3/3

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUNDTIME: Refer to Notes and Remark

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS
11215131-120321-S-SPS-SW-S-9	12/3/21	1055	C	S	4 oz	X					RUSH
11215131-120321-S-SPS-SW-S-8	↓	1105	↓	↓	4 oz	X					RUSH
11215131-120321-S-SPS-SW-O-4	↓	1110	↓	↓	4 oz	X					O is for overburden SW-O *
11215131-120321-S-SPS-SW-B-5	↓	1115	↓	↓	4 oz	X					*
11215131-120321-S-SPS-SW-B-5H	↓	1120	↓	↓	4 oz	X					HOLD
					4 oz						
					4 oz						
					4 oz						
					4 oz						
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Stephen Sailer	12/3/21	1230	[signature]
RELINQUISHED BY (2): [signature]	DATE: 12/3/21	TIME: 1325	RECEIVED BY: [signature]
RELINQUISHED BY (3): [signature]	DATE: 12/3/21	TIME: 1700	RECEIVED BY: Fedex

RECEIVED BY LABORATORY: [signature] DATE: 12/4/21 TIME: 11:30

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT

CARRIER: TEMP: °C 0.5°C

TRACKING #:

*= Samples in this project.

Member of the SGS Group (SGS SA)

B59970 1/2

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 03DEC21
ACTWGT: 45.00 LB MAN
CAD: 0317565/CAFE3313

BILL RECIPIENT

TO **SAMPLE RECEIVING**
SGS NORTH AMERICA
5500 BUSINESS DRIVE

12/4/2021
11:30
0.3° (T.B.)

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

565C3/E936/0502

FedEx Express

1 of 3

TRK# 0201 **4905 2704 1992**

SATURDAY 12:00P
PRIORITY OVERNIGHT

MASTER

NO ILMA

28405
NC-US **RDU**

Part # 158148-436 MTW EXP 07/22

B59770 2/2



ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 03DEC
ACTWGT: 45.0
CAD: 0317
BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/4/2021
11:30
0.5° (T.B.)

FedEx Express

3 of 3
MPS# 0263 4905 2704 2017
Mstr# 4905 2704 1992

SATURDAY 12:00P
PRIORITY OVERNIGHT

0201

NO ILMA

28405
NC-US RDU

Part # 156144-M34 MITA EXP 07/22

Project Initiation Form

Project Number: B5970 Initiation Date: 06-Dec-21

Client Name: GHD Services Inc. Sample Matrix: Solid
Analysis Method: 1613 PCDD/F TAT: 10 days
Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Read and understood, initial and date: Prep Lab: KE PBB 12/10/21 12/14/21 HRMS Lab:

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: akornegay Date: 06-Dec-2021

SGS

Methods: PCB PAH | (PCDD/F) WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Extraction Type: (SDS) CLL | TALEX Carbon SPE | Solid | Final Volume: 20 µL

Batch# 18718 | Split: ~~1/2~~ ~~1/4~~ | Extract Initial/Date: KE 12/13/21 | Clean-up Initial/Date: RAS 12/14/21 | Transfer Init/Date: RAS 12/14/21

Lab Sample ID	Extraction Position (Solvent: Tol)	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5966_18718_001	45	14.32				gray, sandy, wet
B5966_18718_002	44	13.34				light brown, wet, clay-like
B5966_18718_003	43	13.03				brown/gray, sandy, clay-like
B5966_18718_004	42	12.48				brown, clay-like
B5966_18718_005	41	12.35				brown, clay-like
B5970_18718_001	40	11.70				brown, clay-like
B5970_18718_002	39	14.19				dark gray, clay-like
B5970_18718_003	38	12.72				dark gray, clay-like, oil smell
B5970_18718_004	37	12.32		CL/20Dec21		brown, clay-like
B5970_18718_005	36	13.89				gray, clay-like, oil smell
B5970_18718_006	35	12.29				brown/gray, clay-like
B5970_18718_007	34	11.97				brown, clay-like, plant matter
B5970_18718_008	28	14.23				dark gray, clay-like, oil smell
MB1_18718	48	10.00				sodium sulfate
OPR1_18718	47	10.00				sodium sulfate
OPR2_18718	46	10.00				sodium sulfate

RAS 12/14/21

Supply IDs

Toluene	STL14-20
MeCHL	STL14-2
Florisil	SPLS-70
Hexane	STL14-19
Silica	SPLS-28D
S Nitrate	N/A
Base Silica	SPLS-67
HydroMatrix	N/A
Tetradecane	SPLS-28B
H_2SO_4	N/A
A Silica	SPLS-65
Sodium Sulfate	SPLS-28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	20 Dec 21
Carbon Column Date/Initial:	CL
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start:	1430
	Stop:	0900
HEX	Start:	
	Stop:	
DCM	Start:	
	Stop:	

CL 20Dec21

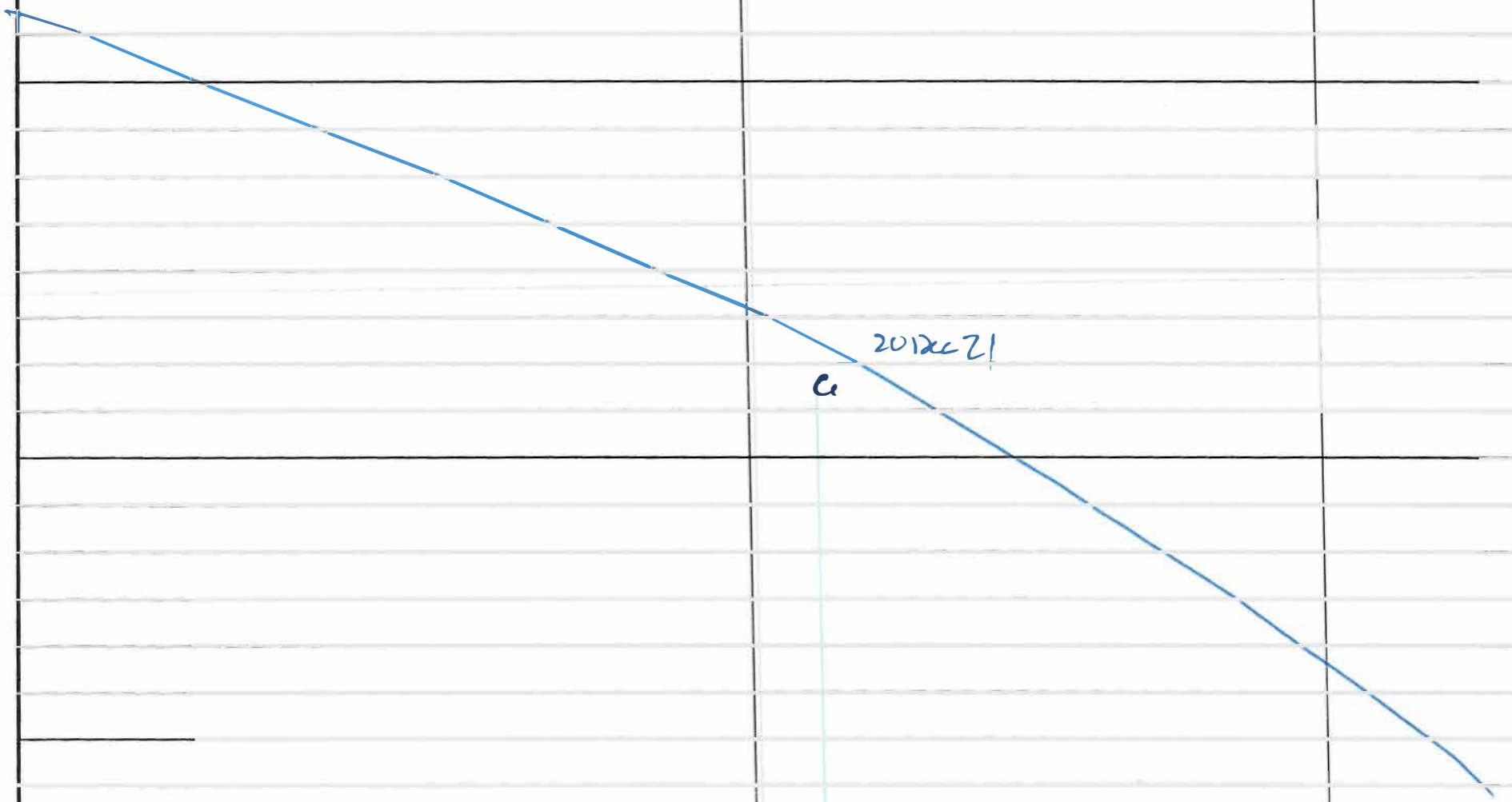
SGS

Methods: PCB PCDD/F QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

Solid

Batch# 18718

Inter-Department Communication Sheet

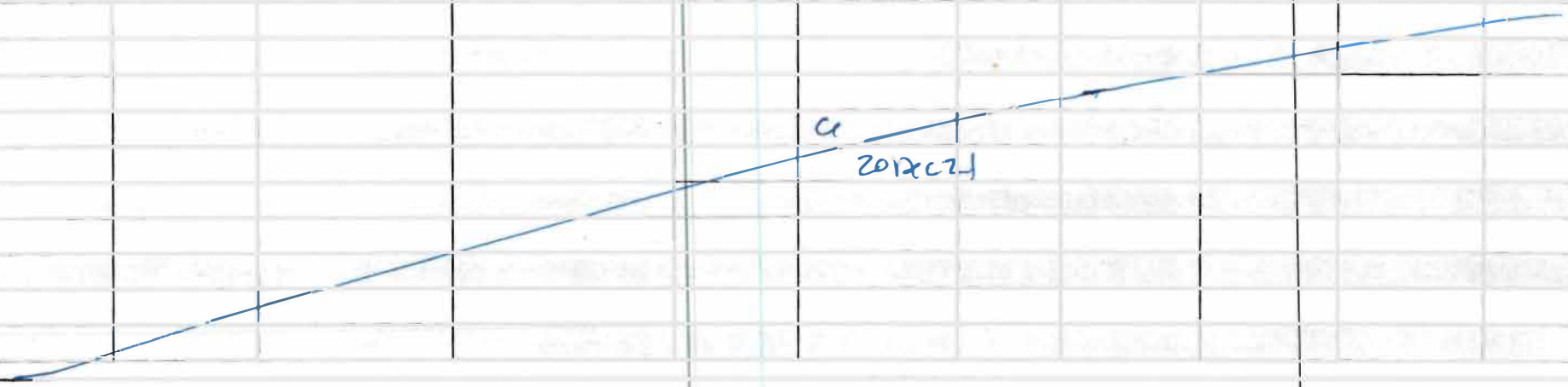


SGS

Wt. Volume Results

Batch #: 18718 **Comments:**

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5966_001	0.81	4.33	3.28	70.17%	70.17%			14.25	14.32	10.05
B5966_002	0.81	3.89	3.16	76.30%	76.30%			13.11	13.34	10.18
B5966_003	0.81	4.38	3.58	77.59%	77.59%			12.89	13.03	10.11
B5966_004	0.8	4.01	3.39	80.69%	80.69%			12.39	12.48	10.07
B5966_005	0.79	4.79	4.05	81.50%	81.50%			12.27	12.35	10.07
B5970_001	0.8	4.59	4.06	86.02%	86.02%			11.63	11.7	10.06
B5970_002	0.8	4.48	3.43	71.47%	71.47%			13.99	14.19	10.14
B5970_003	0.8	3.9	3.24	78.71%	78.71%			12.7	12.72	10.01
B5970_004	0.8	4.13	3.51	81.38%	81.38%			12.29	12.32	10.03
B5970_005	0.8	4.05	3.17	72.92%	72.92%			13.71	13.89	10.13
B5970_006	0.8	3.74	3.23	82.65%	82.65%			12.1	12.29	10.16
B5970_007	0.78	5.09	4.39	83.76%	83.76%			11.94	11.97	10.03
B5970_008	0.82	3.9	3	70.78%	70.78%			14.13	14.23	10.07



% Solid Determination WorkSheet

SGS

Batch: 18718

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5966_18718_001	0.81	4.33	3.28	
B5966_18718_002	0.81	3.89	3.16	
B5966_18718_003	0.81	4.38	3.58	
B5966_18718_004	0.80	4.21	3.39	
B5966_18718_005	0.79	4.79	4.05	
B5970_18718_001	0.80	4.59	4.06	
B5970_18718_002	0.80	4.48	3.43	
B5970_18718_003	0.80	3.90	3.24	
B5970_18718_004	0.80	4.13	3.51	
B5970_18718_005	0.80	4.05	3.17	
B5970_18718_006	0.80	3.74	3.23	
B5970_18718_007	0.78	5.09	4.39	
B5970_18718_008	0.82	3.90	3.00	

12/14/21

CL 20 Dec 21

Date/Initials: KE 12/10/21

SGS

Methods: PCB / PAH | PCDD/F / WHO-2 | QUANTICS / USV | DoD PCDD/F / PEST | Solid

Batch # 18718

Lab Sample ID	Spiker Initials/Date: JRH 12/13/21	JRH 12/13/21	JRH 12/13/21	RDS 12/14/21	RDS 12/14/21		
	DIF Ax-A	DIF Ax-B	DIF ES	DIF CS	DIF JS		
	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5966_18718_001	—	—	KE	KE	KE		
B5966_18718_002	—	—	KE	KE	KE		
B5966_18718_003	—	—	KE	KE	KE		
B5966_18718_004	—	—	KE	KE	KE		
B5966_18718_005	—	—	KE	KE	KE		
B5970_18718_001	—	—	KE	KE	KE		
B5970_18718_002	—	—	KE	KE	KE		
B5970_18718_003	—	—	KE	KE	KE		
B5970_18718_004	—	—	KE	KE	KE		
B5970_18718_005	—	—	KE	KE	KE		
B5970_18718_006	—	—	KE	KE	KE		
B5970_18718_007	—	—	KE	KE	KE		
B5970_18718_008	—	—	KE	KE	KE		
MB1_18718	—	—	KE	KE	KE		
OPR1_18718	KE	KE	KE	KE	KE		
OPR2_18718	KE	KE	KE	KE	KE		

RDS 12/14/21

Standard Information

Pipette ID							
Spike ID	DIF Ax-A	DIF Ax-B	DIF ES	DIF CS	DIF JS		
SIL #	24-15-4	25-187-2	26-1-7	25.338.1	25.309.1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/25	6/22/22	5/2028	11/16/22	10/8/22		

RDS 12/14/21

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
5	211215R05	3	CS3_211215_DF_RB ✓	1.00	SIL 25-347-1	PSW	171-983	15-Dec-2021	14:15:21
6	211215R06	28	OPR1_18718_DF	1.00	0_18718_OPR001	PSW	364-859	15-Dec-2021	15:15:44
7	211215R07	29	OPR2_18718_DF	1.00	0_18718_OPR002	PSW	062-626	15-Dec-2021	16:02:28
8	211215R08	2	SBS_211215_DF_RB	1.00	SIL 20-61-1	PSW	291-279	15-Dec-2021	16:50:02
9	211215R09	27	MB1_18718_DF_SDS	10.00	Method Blank	PSW	204-041	15-Dec-2021	17:37:36
15	211215R15	35	B5970_18718_DF_001	10.06	11215131-120221-S-JC-SW-O-2	PSW	338-761	15-Dec-2021	22:22:44
16	211215R16	36	B5970_18718_DF_002	10.14	11215131-120221-S-JC-SW-B-2	PSW	802-511	15-Dec-2021	23:10:18
17	211215R17	3	CS3_211215_DF_RC	1.00	SIL 25-347-1	PSW	305-552	15-Dec-2021	23:57:52
18	211215R18	28	OPR1_18718_DF-RJ	1.00	0_18718_OPR001 CPSM only	PSW	926-429	16-Dec-2021	00:53:23
19	211215R19	2	SBS_211215_DF_RC	1.00	SIL 20-61-1 CL 20Dec21	PSW	460-089	16-Dec-2021	01:40:02
20	211215R20	37	B5970_18718_DF_003	10.01	11215131-120321-S-JC-SW-B-3	PSW	140-373	16-Dec-2021	02:27:31
21	211215R21	38	B5970_18718_DF_004	10.03	11215131-120221-S-SPS-SW-O-3	PSW	638-179	16-Dec-2021	03:14:58
22	211215R22	39	B5970_18718_DF_005	10.13	11215131-120221-S-SPS-SW-B-4	PSW	735-325	16-Dec-2021	04:02:32
23	211215R23	40	B5970_18718_DF_006	10.16	11215131-120321-S-SPS-SW-O-5	PSW	604-163	16-Dec-2021	04:50:06
24	211215R24	41	B5970_18718_DF_007	10.03	11215131-120321-S-SPS-SW-O-4	PSW	121-696	16-Dec-2021	05:37:38
25	211215R25	42	B5970_18718_DF_008 ✓	10.07	11215131-120321-S-SPS-SW-B-5	PSW	801-470	16-Dec-2021	06:25:06

REVIEWED
paul_walton , 12/16/2021, 11:22:10 AM

APPROVED
Carla_Lyon , 12/20/2021, 3:25:58 PM

Lab ID: MB1_18718_DF_SDS **Acq'd:** 15 Dec 2021 17:37 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5970_18718 **UTP:** 16-Dec-2021 11:07:10 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 204-041-YDT

Datafile: 211215R09 **Report:** 20 Dec 2021 14:43 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	12224.908	0.365
12378-PeCDD	NotFnd		1.0005	-		-	-	-	1.06	-	8381.859	0.324
123478-HxCDD	NotFnd		1.0003	-		-	-	-	1.06	-	4135.373	0.189
123678-HxCDD	NotFnd		1.0033	-		-	-	-	1.08	-	4135.373	0.179
123789-HxCDD	NotFnd		1.0110	-		-	-	-	1.02	-	4135.373	0.166
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	0.97	-	5414.31	0.259
OCDD	NotFnd		1.0003	-		-	-	-	1.07	-	6818.402	0.71
2378-TCDF	NotFnd		1.0006	-		-	-	-	0.96	-	5730.649	0.183
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	5756.038	0.149
23478-PeCDF	NotFnd		1.0006	-		-	-	-	0.94	-	5756.038	0.166
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	5090.064	0.156
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.13	-	5090.064	0.123
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	5090.064	0.171
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	5090.064	0.217
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.36	-	5153.618	0.105
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.30	-	5153.618	0.263
OCDF	NotFnd		1.0002	-		-	-	-	1.03	-	6271.35	0.723

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0239	+0.3	5.46E+07	0.77	Y	1.03	80.5
ES 12378-PeCDD	33.58	1.2158	1.2178	+4.0	4.92E+07	1.66	Y	1.03	72.6
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	3.81E+07	1.26	Y	0.99	86.8
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	4.08E+07	1.27	Y	0.97	95.1
ES 123789-HxCDD	37.88	1.0026	1.0029	+0.7	4.55E+07	1.30	Y	1.12	91.8
ES 1234678-HpCDD	40.51	1.0713	1.0723	+2.4	3.25E+07	1.09	Y	0.99	74.4
ES OCDD	43.05	1.1385	1.1397	+3.1	3.14E+07	0.93	Y	0.78	45.7
ES 2378-TCDF	27.38	1.0519	1.0525	+1.0	7.49E+07	0.77	Y	1.08	67.5
ES 12378-PeCDF	32.14	1.2331	1.2356	+4.8	8.13E+07	1.61	Y	0.93	85.1
ES 23478-PeCDF	33.25	1.2754	1.2784	+6.0	7.15E+07	1.59	Y	0.92	75.8
ES 123478-HxCDF	36.48	0.9656	0.9656	0	4.65E+07	0.53	Y	1.14	92.3
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	6.65E+07	0.53	Y	1.30	116
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	5.01E+07	0.53	Y	1.20	94.5
ES 123789-HxCDF	38.25	1.0121	1.0124	+0.7	3.88E+07	0.52	Y	1.14	77.5
ES 1234678-HpCDF	39.61	1.0478	1.0486	+1.9	5.04E+07	0.46	Y	0.95	120
ES 1234789-HpCDF	40.96	1.0832	1.0843	+2.7	2.52E+07	0.45	Y	0.85	67.4
ES OCDF	43.23	1.1434	1.1445	+2.9	3.00E+07	0.88	Y	0.93	36.7

Lab ID: MB1_18718_DF_SDS | **Acq'd:** 15 Dec 2021 17:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5970_18718 | **UTP:** 16-Dec-2021 11:07:10 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 204-041-YDT

Datafile: 211215R09 | **Report:** 20 Dec 2021 14:43 gd | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	6.55E+07	0.80	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	1.02E+08	0.77	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.20E+07	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.75E+07	n/a	-	1.31	80.1	
CS 12347-PeCDD	33.09		1.1978	1.1998	+4.0	4.89E+07	1.65	Y	0.89	83.7	
CS 12346-PeCDF	31.62		1.2130	1.2155	+4.7	8.44E+07	1.60	Y	0.87	95	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	5.70E+07	0.51	Y	1.09	119	
CS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	4.10E+07	0.45	Y	0.86	108	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.75E+07~~	~~n/a~~		~~1.26~~	~~100~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1998~~	~~+4.0~~	~~4.89E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~115~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2155~~	~~+4.7~~	~~8.44E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~112~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.70E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~102~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~4.10E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~89.3~~	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18718_DF_SDS **Acq'd: 15 Dec 2021 17:37 PSW** **Wt/Vol: 10.00 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: Method Blank B5970_18718 **UTP: 16-Dec-2021 11:07:10 PSW** **J-level: 0.5 pg/g Split: 1** **Checkcode: 204-041-YDT**

Datafile: 211215R09 **Report: 20 Dec 2021 14:43 gd** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		12224.908	0.365
1379-TCDD	NotFnd		0.8851						1.34		12224.908	0.365
1369-TCDD	NotFnd		0.9002						1.34		12224.908	0.365
1469-TCDD	NotFnd		0.9275						1.34		12224.908	0.365
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		12224.908	0.365
1378-TCDD	NotFnd		0.9427						1.34		12224.908	0.365
1268-TCDD	NotFnd		0.9498						1.34		12224.908	0.365
1478-TCDD	NotFnd		0.9584						1.34		12224.908	0.365
1279-TCDD	NotFnd		0.9644						1.34		12224.908	0.365
1234/1269-TCDD	NotFnd		0.9766						1.34		12224.908	0.365
1236-TCDD	NotFnd		0.9813						1.34		12224.908	0.365
1237/1238-TCDD	NotFnd		0.9906						1.34		12224.908	0.365
1239-TCDD	NotFnd		0.9952						1.34		12224.908	0.365
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**12224.908**	**0.365**
1278-TCDD	NotFnd		1.0122						1.34		12224.908	0.365
1267-TCDD	NotFnd		1.0168						1.34		12224.908	0.365
1289-TCDD	NotFnd		1.0349						1.34		12224.908	0.365
12479/12468-PeCDD	NotFnd		0.9267						1.06		8381.859	0.324
12469-PeCDD	NotFnd		0.9425						1.06		8381.859	0.324
12368-PeCDD	NotFnd		0.9588						1.06		8381.859	0.324
12478-PeCDD	NotFnd		0.9643						1.06		8381.859	0.324
12379-PeCDD	NotFnd		0.9673						1.06		8381.859	0.324
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		8381.859	0.324
12346/12347-PeCDD	NotFnd		0.9859						1.06		8381.859	0.324
12378-PeCDD	NotFnd		**1.0005**						**1.06**		**8381.859**	**0.324**
12367-PeCDD	NotFnd		1.0032						1.06		8381.859	0.324
12389-PeCDD	NotFnd		1.0135						1.06		8381.859	0.324
124679/124689-HxCDD	NotFnd		0.9544						1.05		4135.373	0.177
123468-HxCDD	NotFnd		0.9716						1.05		4135.373	0.177
123679/123689-HxCDD	NotFnd		0.9793						1.05		4135.373	0.177
123469-HxCDD	NotFnd		0.9829						1.05		4135.373	0.177
123478-HxCDD	NotFnd		**1.0003**						1.06		**4135.373**	**0.189**
123678-HxCDD	NotFnd		**1.0033**						1.08		**4135.373**	**0.179**
123467-HxCDD	NotFnd		1.0084						1.05		4135.373	0.177
123789-HxCDD	NotFnd		**1.0110**						1.02		**4135.373**	**0.166**

Lab ID: MB1_18718_DF_SDS **Acq'd:** 15 Dec 2021 17:37 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5970_18718 **UTP:** 16-Dec-2021 11:07:10 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 204-041-YDT

Datafile: 211215R09 **Report:** 20 Dec 2021 14:43 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

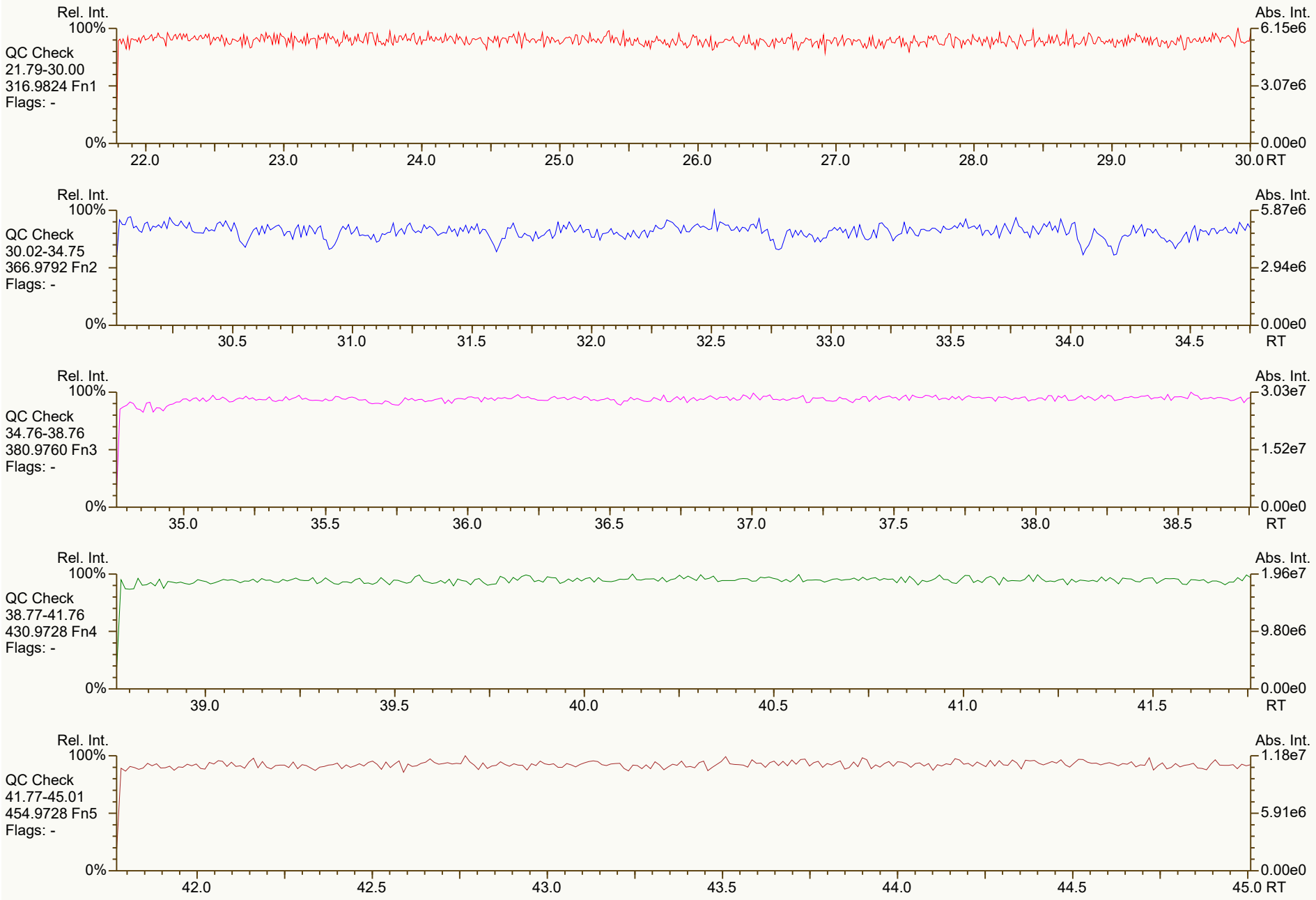
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9843						0.97		5414.31	0.259
1234678-HpCDD	**NotFnd**		**1.0003**						**0.97**		**5414.31**	**0.259**
OCDD	**NotFnd**		**1.0003**						**1.07**		**6818.402**	**0.71**
OCDD-a	NotFnd		1.0001						0.07		9078.22	15.3
1368-TCDF	NotFnd		0.8230						0.96		5730.649	0.183
1468-TCDF	NotFnd		0.8443						0.96		5730.649	0.183
2468-TCDF	NotFnd		0.8672						0.96		5730.649	0.183
1346/1246-TCDF	NotFnd		0.8802						0.96		5730.649	0.183
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		5730.649	0.183
1348-TCDF	NotFnd		0.8952						0.96		5730.649	0.183
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		5730.649	0.183
1268-TCDF	NotFnd		0.9136						0.96		5730.649	0.183
1467-TCDF	NotFnd		0.9185						0.96		5730.649	0.183
1478-TCDF	NotFnd		0.9247						0.96		5730.649	0.183
1369/1237-TCDF	NotFnd		0.9381						0.96		5730.649	0.183
2467-TCDF	NotFnd		0.9427						0.96		5730.649	0.183
2368-TCDF	NotFnd		0.9484						0.96		5730.649	0.183
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		5730.649	0.183
1278-TCDF	NotFnd		0.9682						0.96		5730.649	0.183
1349-TCDF	NotFnd		0.9725						0.96		5730.649	0.183
1267-TCDF	NotFnd		0.9782						0.96		5730.649	0.183
2346/1249-TCDF	NotFnd		0.9846						0.96		5730.649	0.183
2347/1279-TCDF	NotFnd		0.9926						0.96		5730.649	0.183
2348-TCDF	NotFnd		0.9966						0.96		5730.649	0.183
2378-TCDF	**NotFnd**		**1.0006**						**0.96**		**5730.649**	**0.183**
2367/3467-TCDF	NotFnd		1.0139						0.96		5730.649	0.183
1269-TCDF	NotFnd		1.0226						0.96		5730.649	0.183
1239-TCDF	NotFnd		1.0322						0.96		5730.649	0.183
1289-TCDF	NotFnd		1.0729						0.96		5730.649	0.183
13468/12468-PeCDF	NotFnd		0.9135						0.94		7150.233	0.195
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		5756.038	0.157
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		5756.038	0.157
14678-PeCDF	NotFnd		0.9693						0.94		5756.038	0.157
13479-PeCDF	NotFnd		0.9723						0.94		5756.038	0.157
13469/12479-PeCDF	NotFnd		0.9799						0.94		5756.038	0.157
12346-PeCDF	NotFnd		0.9842						0.94		5756.038	0.157

Lab ID: MB1_18718_DF_SDS | **Acq'd:** 15 Dec 2021 17:37 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5970_18718 | **UTP:** 16-Dec-2021 11:07:10 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 204-041-YDT

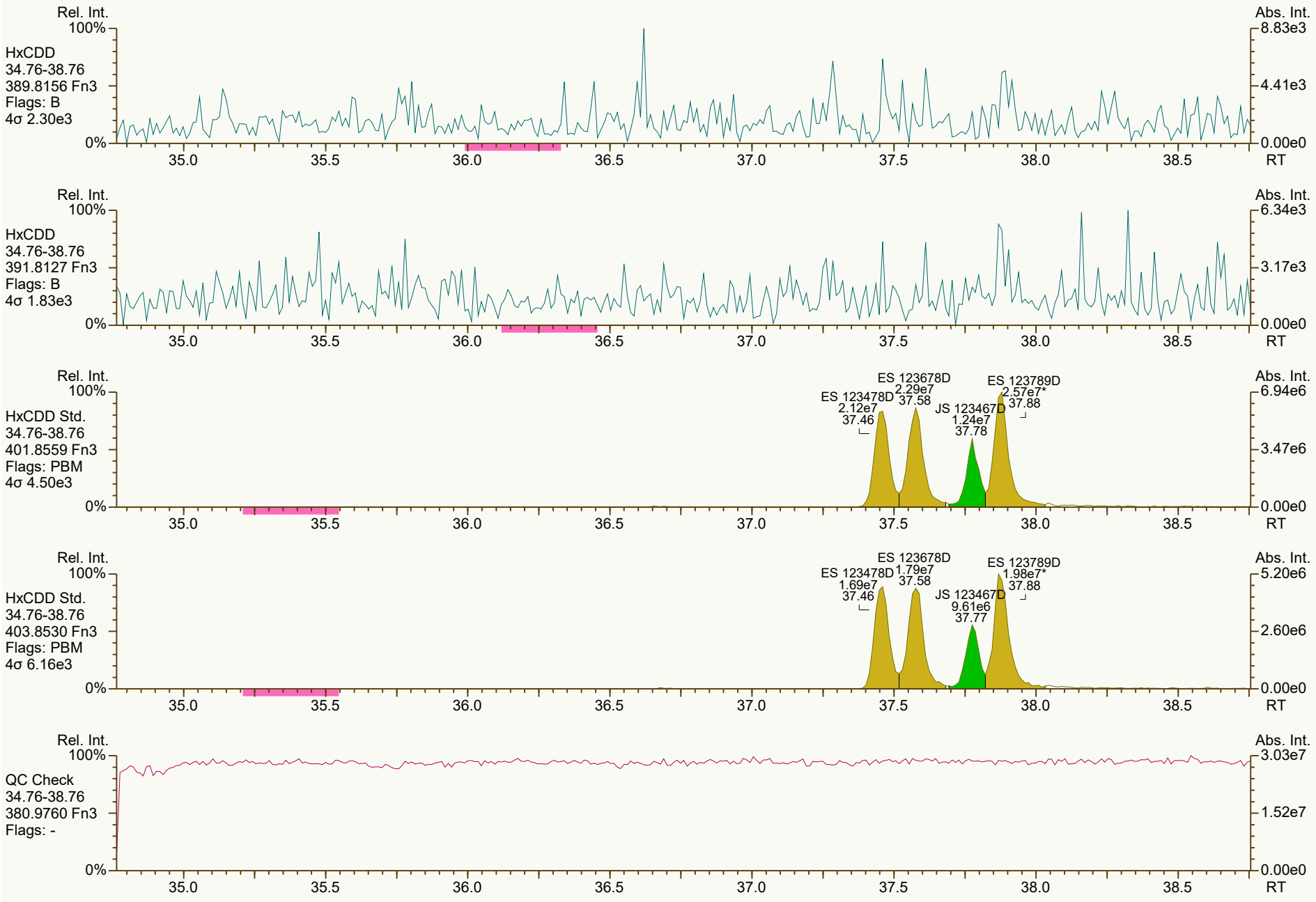
Datafile: 211215R09 | **Report:** 20 Dec 2021 14:43 gd | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		5756.038	0.157
12347-PeCDF	NotFnd		0.9893						0.94		5756.038	0.157
12348-PeCDF	NotFnd		0.9941						0.94		5756.038	0.157
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**5756.038**	**0.149**
12678/12367-PeCDF	NotFnd		1.0090						0.94		5756.038	0.157
12379-PeCDF	NotFnd		1.0143						0.94		5756.038	0.157
12679-PeCDF	NotFnd		0.9929						0.94		5756.038	0.157
23467/12369-PeCDF	NotFnd		0.9966						0.94		5756.038	0.157
23478-PeCDF	**NotFnd**		**1.0006**						**0.94**		**5756.038**	**0.166**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5756.038	0.157
12349-PeCDF	NotFnd		1.0102						0.94		5756.038	0.157
12389-PeCDF	NotFnd		1.0325						0.94		5756.038	0.157
123468-HxCDF	NotFnd		0.9628						1.16		5090.064	0.16
124678/134678-HxCDF	NotFnd		0.9683						1.16		5090.064	0.16
134679-HxCDF	NotFnd		0.9746						1.16		5090.064	0.16
124679-HxCDF	NotFnd		0.9798						1.16		5090.064	0.16
124689-HxCDF	NotFnd		0.9859						1.16		5090.064	0.16
123467-HxCDF	NotFnd		0.9972						1.16		5090.064	0.16
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**5090.064**	**0.156**
123678-HxCDF	**NotFnd**		**1.0004**						**1.13**		**5090.064**	**0.123**
123479-HxCDF	NotFnd		1.0049						1.16		5090.064	0.16
123469-HxCDF	NotFnd		1.0088						1.16		5090.064	0.16
123679-HxCDF	NotFnd		0.9943						1.16		5090.064	0.16
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**5090.064**	**0.171**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		5090.064	0.16
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**5090.064**	**0.217**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		5090.064	0.16
1234678-HpCDF	**NotFnd**		**1.0003**						**1.36**		**5153.618**	**0.105**
1234679-HpCDF	NotFnd		1.0067						1.33		5153.618	0.157
1234689-HpCDF	NotFnd		1.0100						1.33		5153.618	0.157
1234789-HpCDF	**NotFnd**		**1.0003**						**1.30**		**5153.618**	**0.263**
OCDF	**NotFnd**		**1.0002**						**1.03**		**6271.35**	**0.723**
OCDF-a	NotFnd		1.0002						0.06		8764.216	17.5

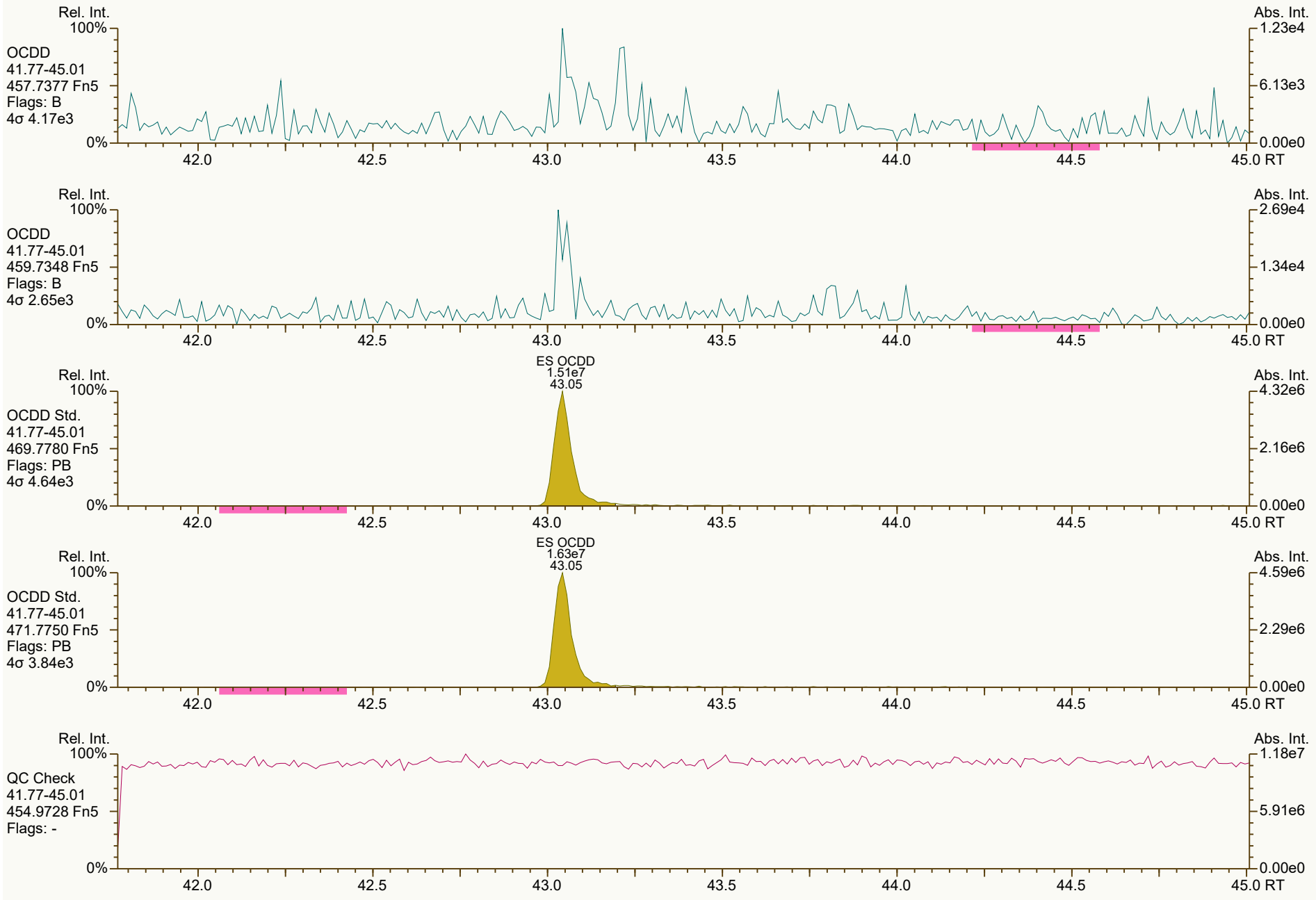

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.15e6
3.07e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.87e6
2.94e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.03e7
1.52e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.96e7
9.80e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

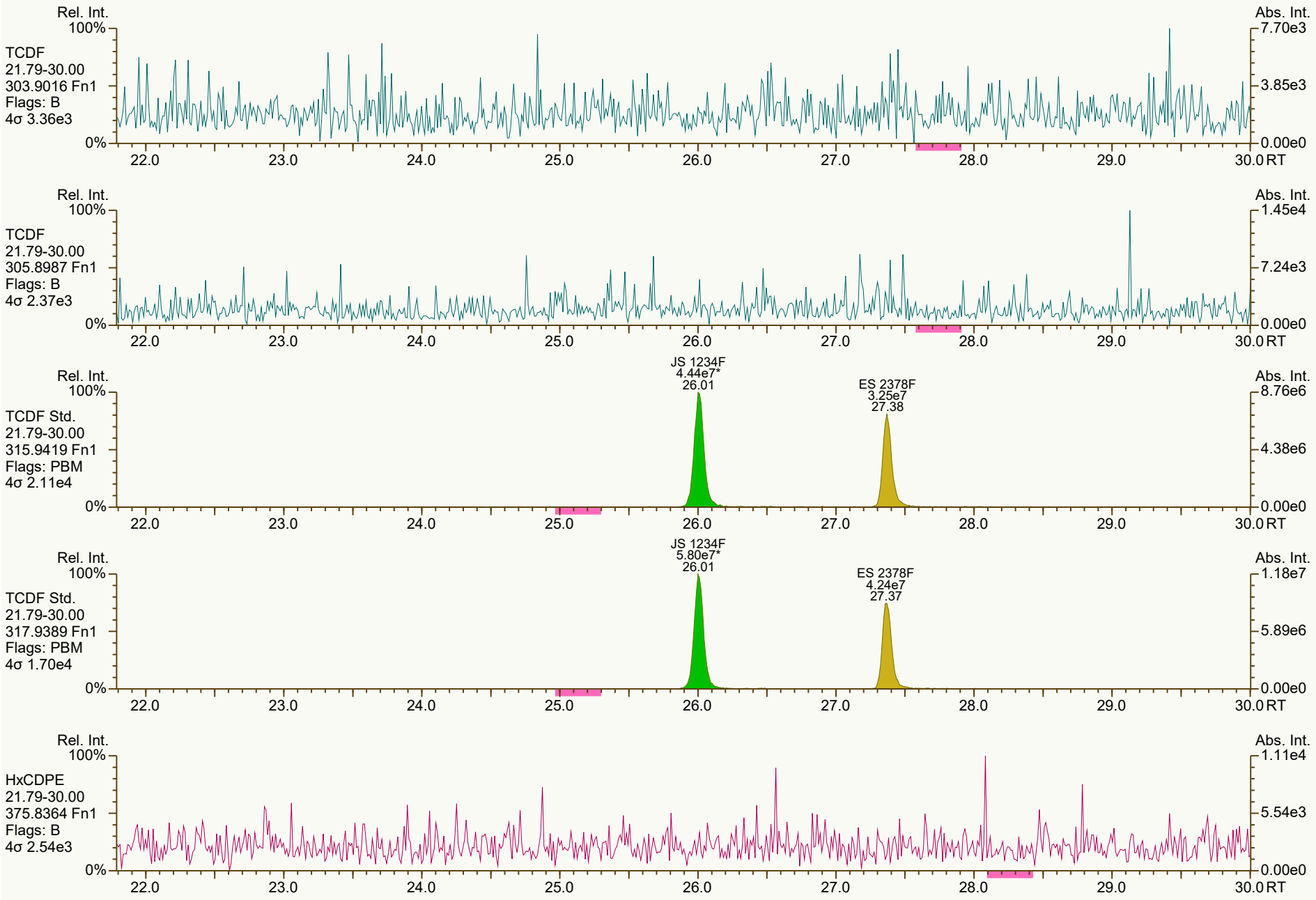

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 7.57e3
0%
Abs. Int.
2.98e4
1.49e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 4.65e3
0%
Abs. Int.
2.45e4
1.22e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.23e3
0%
CS 37Cl-2378D
2.75e7
28.26
Abs. Int.
6.25e6
3.12e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.52e4
0%
JS 1234D
2.90e7
27.58
ES 2378D
2.38e7
28.23
Abs. Int.
6.33e6
3.16e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 7.68e3
0%
JS 1234D
3.65e7
27.58
ES 2378D
3.08e7
28.24
Abs. Int.
8.10e6
4.05e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: B
4σ 4.36e3
0%
Abs. Int.
9.89e3
4.94e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: B
4σ 4.02e3
0%
Abs. Int.
1.07e4
5.37e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 4.75e3
0%
CS 12347D
3.05e7
33.09
ES 12378D
3.07e7*
33.58
Abs. Int.
8.13e6
4.07e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 5.59e3
0%
CS 12347D
1.84e7
33.09
ES 12378D
1.85e7*
33.58
Abs. Int.
4.94e6
2.47e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.87e6
2.94e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

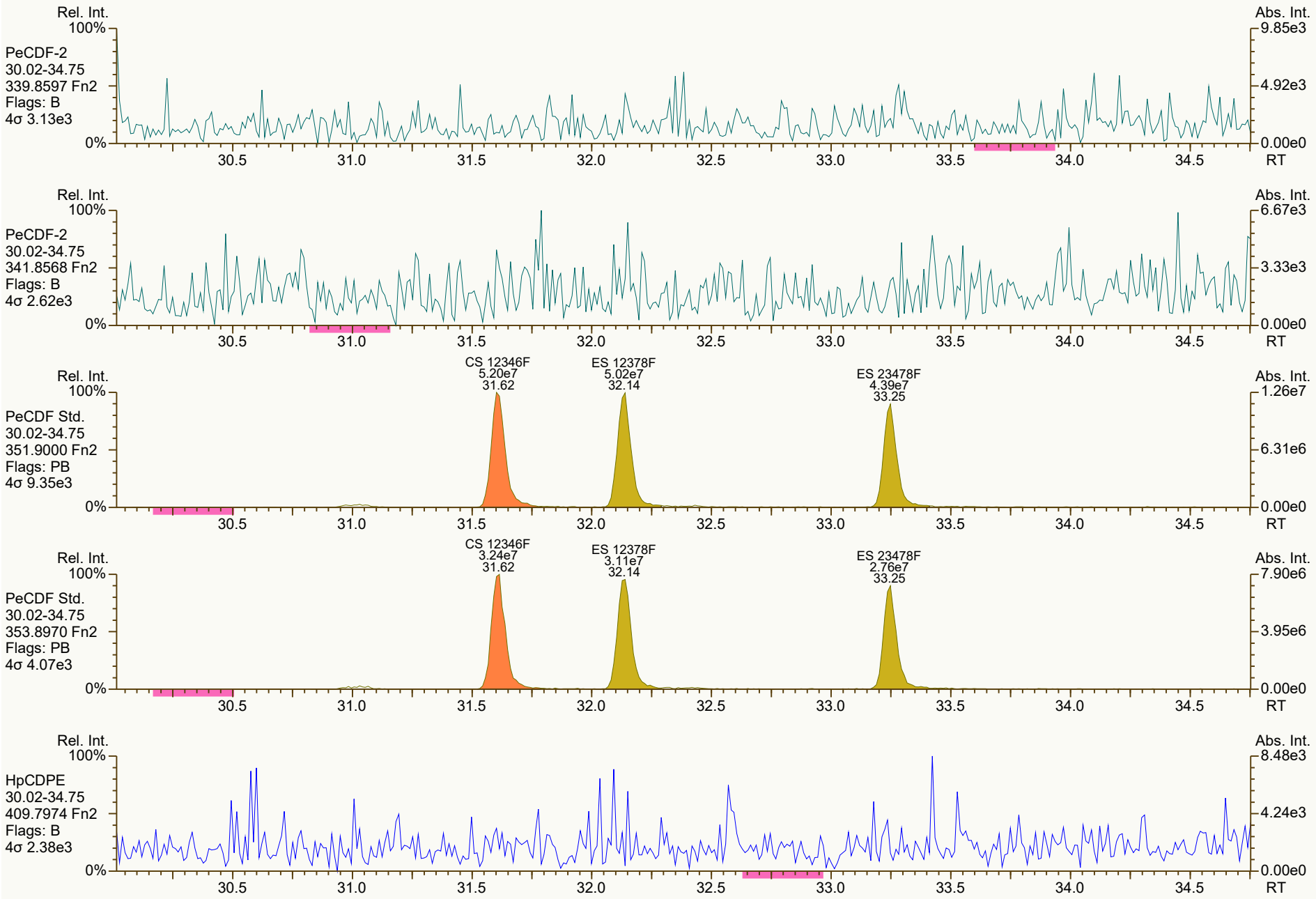

Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: B
4σ 2.30e3
0%
Abs. Int.
8.83e3
4.41e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: B
4σ 1.83e3
0%
Abs. Int.
6.34e3
3.17e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 4.50e3
0%
ES 123478D
2.12e7
37.46
ES 123678D
2.29e7
37.58
JS 123467D
1.24e7
37.78
ES 123789D
2.57e7*
37.88
Abs. Int.
6.94e6
3.47e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 6.16e3
0%
ES 123478D
1.69e7
37.46
ES 123678D
1.79e7
37.58
JS 123467D
9.61e6
37.77
ES 123789D
1.98e7*
37.88
Abs. Int.
5.20e6
2.60e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.03e7
1.52e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

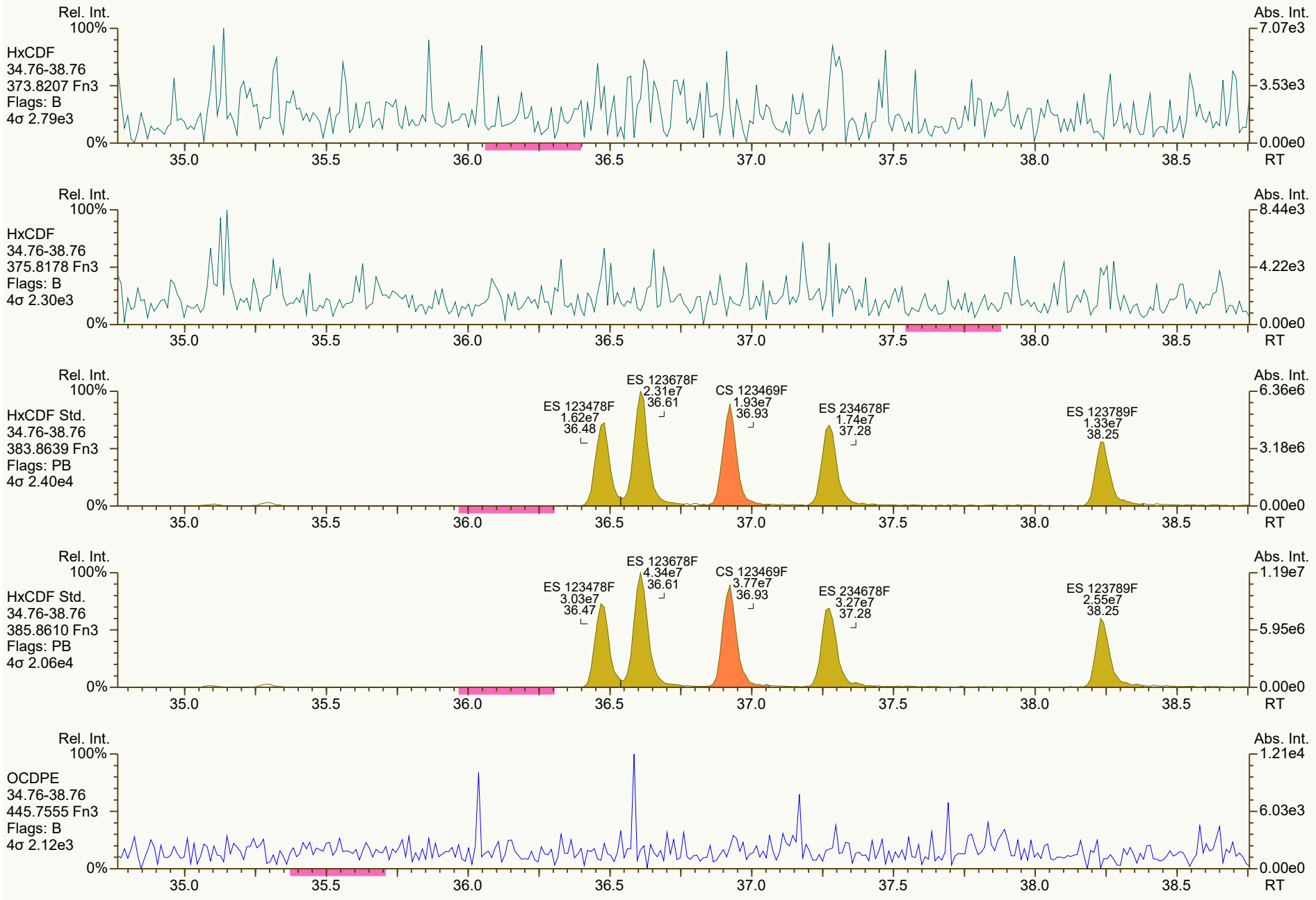

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: B
4σ 3.17e3
0%
Abs. Int.
8.45e3
4.22e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: B
4σ 2.25e3
0%
Abs. Int.
8.36e3
4.18e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
ES 1234678D
1.69e7*
40.51
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 3.33e3
0%
Abs. Int.
5.59e6
2.79e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
ES 1234678D
1.56e7*
40.51
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 3.52e3
0%
Abs. Int.
5.47e6
2.74e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.96e7
9.80e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: B
4σ 4.17e3
0%
Abs. Int.
1.23e4
6.13e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 2.65e3
0%
Abs. Int.
2.69e4
1.34e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.51e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.64e3
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.63e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 3.84e3
0%
Abs. Int.
4.59e6
2.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

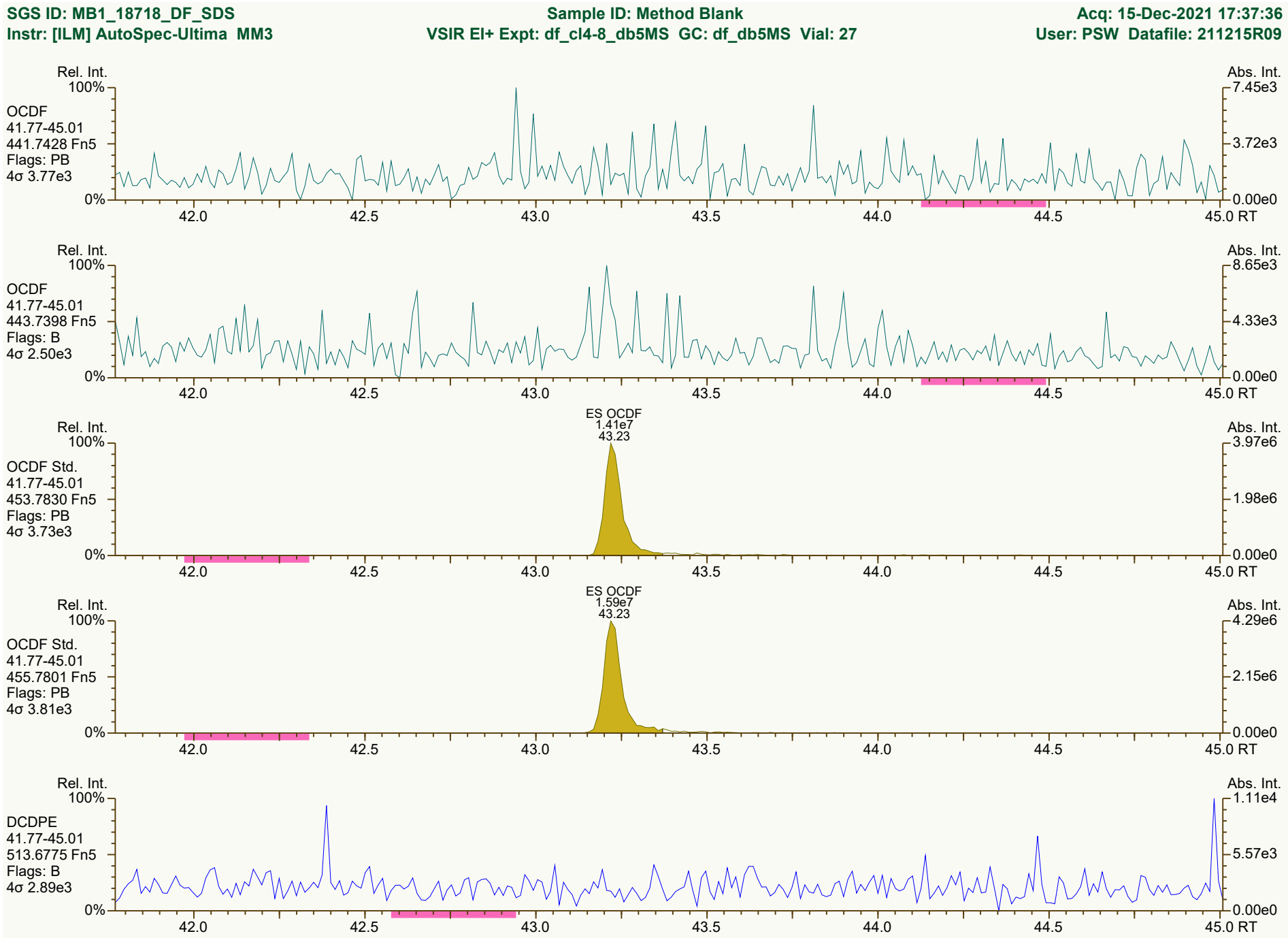

Rel. Int.
100%
TCDF
21.79-30.00
303.9016 Fn1
Flags: B
4σ 3.36e3
0%
Abs. Int.
7.70e3
3.85e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF
21.79-30.00
305.8987 Fn1
Flags: B
4σ 2.37e3
0%
Abs. Int.
1.45e4
7.24e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 2.11e4
0%
JS 1234F
4.44e7*
26.01
ES 2378F
3.25e7
27.38
Abs. Int.
8.76e6
4.38e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.70e4
0%
JS 1234F
5.80e7*
26.01
ES 2378F
4.24e7
27.37
Abs. Int.
1.18e7
5.89e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.54e3
0%
Abs. Int.
1.11e4
5.54e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
0%
Abs. Int.
9.60e3
4.80e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 4.35e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.29e4
6.43e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 2.80e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
6.15e6
3.07e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: B
4σ 3.13e3
0%
Abs. Int.
9.85e3
4.92e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: B
4σ 2.62e3
0%
Abs. Int.
6.67e3
3.33e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 9.35e3
0%
CS 12346F
5.20e7
31.62
ES 12378F
5.02e7
32.14
ES 23478F
4.39e7
33.25
Abs. Int.
1.26e7
6.31e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.07e3
0%
CS 12346F
3.24e7
31.62
ES 12378F
3.11e7
32.14
ES 23478F
2.76e7
33.25
Abs. Int.
7.90e6
3.95e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: B
4σ 2.79e3
0%
Abs. Int.
7.07e3
3.53e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: B
4σ 2.30e3
0%
Abs. Int.
8.44e3
4.22e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 2.40e4
0%
ES 123478F
1.62e7
36.48
ES 123678F
2.31e7
36.61
CS 123469F
1.93e7
36.93
ES 234678F
1.74e7
37.28
ES 123789F
1.33e7
38.25
Abs. Int.
6.36e6
3.18e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 2.06e4
0%
ES 123478F
3.03e7
36.47
ES 123678F
4.34e7
36.61
CS 123469F
3.77e7
36.93
ES 234678F
3.27e7
37.28
ES 123789F
2.55e7
38.25
Abs. Int.
1.19e7
5.95e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.12e3
0%
Abs. Int.
1.21e4
6.03e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 2.29e3
0%
Abs. Int.
5.32e3
2.66e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: B
4σ 2.86e3
0%
Abs. Int.
7.33e3
3.67e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.29e4
0%
ES 1234678F
1.58e7
39.61
CS 1234689F
1.27e7
40.00
ES 1234789F
7.85e6
40.96
Abs. Int.
5.69e6
2.85e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 1.44e4
0%
ES 1234678F
3.46e7
39.61
CS 1234689F
2.84e7
40.00
ES 1234789F
1.73e7
40.96
Abs. Int.
1.21e7
6.03e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.76e3
0%
Abs. Int.
1.57e4
7.85e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


SGS ID: MB1_18718_DF_SDS
Sample ID: Method Blank
Acq: 15-Dec-2021 17:37:36
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 27
User: PSW Datafile: 211215R09
Rel. Int.
Abs. Int.
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.77e3
7.45e3
3.72e3
0.00e0
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 2.50e3
8.65e3
4.33e3
ES OCDF
1.41e7
43.23
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.73e3
3.97e6
1.98e6
ES OCDF
1.59e7
43.23
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 3.81e3
4.29e6
2.15e6
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.89e3
1.11e4
5.57e3
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\MB1_18718_DF_SDS.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9772, 7514, 9702 scc: 204-041
PKD: 16-Dec-2021 08:17 Printed: 16-Dec-2021 11:14 Page 12 of 12

Lab ID: B5970_18718_DF_001 **Acq'd:** 15 Dec 2021 22:22 PSW **Wt/Vol:** 10.06 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-2 **UTP:** 16-Dec-2021 11:07:11 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 338-761-FFF

Datafile: 211215R15 **Report:** 20 Dec 2021 14:44 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26		1.0008	1.0008	0	2.19E+07	0.81	Y	1.34	71.8	7286.333	0.261
12378-PeCDD	33.61	J	1.0005	1.0004	-0.2	4.84E+05	1.37	Y	1.06	2.32	8415.928	0.392
123478-HxCDD	37.49	J	1.0003	1.0004	+0.2	3.91E+05	1.17	Y	1.06	2.28	16668.782	0.771
123678-HxCDD	37.60		1.0033	1.0036	+0.7	1.09E+06	1.26	Y	1.08	6.08	16668.782	0.868
123789-HxCDD	37.90		1.0110	1.0115	+1.1	7.63E+05	1.24	Y	1.02	4.01	16668.782	0.801
1234678-HpCDD	40.53		1.0003	1.0004	+0.2	2.67E+07	1.05	Y	0.97	208	11538.549	0.605
OCDD	43.07		1.0003	1.0003	0	2.23E+08	0.90	Y	1.07	3,610	18671.107	2.52
2378-TCDF	27.40		1.0006	1.0008	+0.3	9.14E+07	0.80	Y	0.96	294	4977.961	0.174
12378-PeCDF	32.17		1.0006	1.0005	-0.2	4.29E+06	1.49	Y	0.95	15.2	8328.329	0.288
23478-PeCDF	33.28		1.0006	1.0007	+0.2	4.23E+06	1.56	Y	0.94	15.6	8328.329	0.293
123478-HxCDF	36.50		1.0004	1.0004	0	6.21E+06	1.23	Y	1.23	24.8	17686.508	0.569
123678-HxCDF	36.64		1.0004	1.0004	0	2.64E+06	1.21	Y	1.13	9.47	17686.508	0.584
234678-HxCDF	37.30		1.0005	1.0004	-0.2	1.37E+06	1.36	Y	1.15	5.73	17686.508	0.728
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	17686.508	0.699
1234678-HpCDF	39.63		1.0003	1.0002	-0.2	8.28E+06	1.03	Y	1.36	39.7	5521.094	0.183
1234789-HpCDF	40.97		1.0003	1.0001	-0.5	8.46E+05	1.13	Y	1.30	5.27	5521.094	0.28
OCDF	43.26		1.0002	1.0003	+0.3	6.17E+06	0.87	Y	1.03	79.7	9092.282	1.02

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0239	+0.3	4.52E+07	0.80	Y	1.03	81.5
ES 12378-PeCDD	33.59	1.2158	1.2180	+4.4	3.92E+07	1.54	Y	1.03	70.6
ES 123478-HxCDD	37.47	0.9920	0.9916	-0.9	3.24E+07	1.24	Y	0.99	80.7
ES 123678-HxCDD	37.59	0.9949	0.9948	-0.2	3.30E+07	1.24	Y	0.97	84.2
ES 123789-HxCDD	37.89	1.0026	1.0028	+0.5	3.72E+07	1.26	Y	1.12	82.1
ES 1234678-HpCDD	40.52	1.0713	1.0723	+2.4	2.62E+07	1.07	Y	0.99	65.6
ES OCDD	43.06	1.1385	1.1396	+2.8	2.30E+07	0.94	Y	0.78	36.7
ES 2378-TCDF	27.38	1.0519	1.0526	+1.1	6.42E+07	0.78	Y	1.08	71.7
ES 12378-PeCDF	32.15	1.2331	1.2360	+5.6	5.92E+07	1.59	Y	0.93	76.6
ES 23478-PeCDF	33.26	1.2754	1.2787	+6.6	5.74E+07	1.53	Y	0.92	75.2
ES 123478-HxCDF	36.48	0.9656	0.9655	-0.2	4.03E+07	0.51	Y	1.14	87.5
ES 123678-HxCDF	36.62	0.9693	0.9693	0	4.91E+07	0.52	Y	1.30	93.8
ES 234678-HxCDF	37.29	0.9869	0.9868	-0.2	4.11E+07	0.53	Y	1.20	85
ES 123789-HxCDF	38.25	1.0121	1.0124	+0.7	4.00E+07	0.49	Y	1.14	87.2
ES 1234678-HpCDF	39.62	1.0478	1.0486	+1.9	3.05E+07	0.46	Y	0.95	79.7
ES 1234789-HpCDF	40.97	1.0832	1.0842	+2.5	2.45E+07	0.46	Y	0.85	71.9
ES OCDF	43.24	1.1434	1.1444	+2.6	3.00E+07	0.89	Y	0.93	40.2

Lab ID: B5970_18718_DF_001 **Acq'd:** 15 Dec 2021 22:22 PSW **Wt/Vol:** 10.06 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-2 **UTP:** 16-Dec-2021 11:07:11 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 338-761-FFF

Datafile: 211215R15 **Report:** 20 Dec 2021 14:44 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	5.36E+07	0.81	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	8.27E+07	0.79	Y	-	-	
JS 123467-HxCDD	37.79		-	-	-	2.01E+07	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.06E+07	n/a	-	1.31	73.3	
CS 12347-PeCDD	33.10		1.1978	1.1999	+4.2	3.52E+07	1.61	Y	0.89	73.6	
CS 12346-PeCDF	31.62		1.2130	1.2157	+5.1	5.35E+07	1.56	Y	0.87	74.5	
CS 123469-HxCDF	36.94		0.9775	0.9775	0	4.20E+07	0.53	Y	1.09	95.7	
CS 1234689-HpCDF	40.01		1.0580	1.0589	+2.2	2.94E+07	0.45	Y	0.86	84.4	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.06E+07~~	~~n/a~~		~~1.26~~	~~90.4~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.10~~		~~1.1978~~	~~1.1999~~	~~+4.2~~	~~3.52E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~104~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2157~~	~~+5.1~~	~~5.35E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~97.2~~	
~~SS 123469-HxCDF~~	~~36.94~~		~~0.9775~~	~~0.9775~~	~~0~~	~~4.20E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~102~~	
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0589~~	~~+2.2~~	~~2.94E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~106~~	

Totals	Conc	EMPC
Total TCDD	82.9	84.9
Total PeCDD	8.94	15
Total HxCDD	61	64.9
Total HpCDD	467	467
Total Tetra-Octa Dioxins	4230	4240
Total TCDF	584	610
Total PeCDF	85.2	90.8
Total HxCDF	84.7	84.7
Total HpCDF	92.5	92.5
Total Tetra-Octa Furans	926	958
Total Tetra-Octa Dioxins & Furans	5150	5200

Lab ID: B5970_18718_DF_001 **Acq'd: 15 Dec 2021 22:22 PSW** **Wt/Vol: 10.06 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-O-2 **UTP: 16-Dec-2021 11:07:11 PSW** **J-level: 0.497 pg/g** **Split: 1** **Checkcode: 338-761-FFF**

Datafile: 211215R15 **Report: 20 Dec 2021 14:44 gd** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.60		0.8726	0.8709	-2.5	5.38E+05	0.70	Y	1.34	1.76	7286.333	0.261
1379-TCDD	24.96		0.8851	0.8838	-1.9	2.15E+05	0.82	Y	1.34	0.703	7286.333	0.261
1369-TCDD	NotFnd		0.9002						1.34		7286.333	0.261
1469-TCDD	26.18	EMPC	0.9275	0.9270	-0.8	1.56E+05	0.95	N	1.34	0.509	7286.333	0.261
1247/1246/1248/1249-TCDD	26.43		0.9361	0.9359	-0.3	2.18E+05	0.82	Y	1.34	0.715	7286.333	0.261
1378-TCDD	26.60		0.9427	0.9420	-1.1	1.81E+05	0.85	Y	1.34	0.594	7286.333	0.261
1268-TCDD	NotFnd		0.9498						1.34		7286.333	0.261
1478-TCDD	NotFnd		0.9584						1.34		7286.333	0.261
1279-TCDD	NotFnd		0.9644						1.34		7286.333	0.261
1234/1269-TCDD	NotFnd		0.9766						1.34		7286.333	0.261
1236-TCDD	NotFnd		0.9813						1.34		7286.333	0.261
1237/1238-TCDD	27.96	EMPC	0.9906	0.9901	-0.8	4.46E+05	0.89	N	1.34	1.46	7286.333	0.261
1239-TCDD	NotFnd		0.9952						1.34		7286.333	0.261
2378-TCDD	**28.26**		**1.0008**	1.0008	**0**	2.19E+07	0.81	Y	**1.34**	**71.8**	**7286.333**	**0.261**
1278-TCDD	28.59		1.0122	1.0124	+0.3	2.25E+06	0.75	Y	1.34	7.36	7286.333	0.261
1267-TCDD	NotFnd		1.0168						1.34		7286.333	0.261
1289-TCDD	NotFnd		1.0349						1.34		7286.333	0.261
12479/12468-PeCDD	31.11		0.9267	0.9261	-1.1	7.20E+05	1.53	Y	1.06	3.45	8415.928	0.392
12469-PeCDD	31.64	J EMPC	0.9425	0.9419	-1.1	3.40E+05	1.02	N	1.06	1.63	8415.928	0.392
12368-PeCDD	32.20	J EMPC	0.9588	0.9585	-0.6	3.64E+05	2.04	N	1.06	1.75	8415.928	0.392
12478-PeCDD	32.38	J EMPC	0.9643	0.9638	-1.0	2.90E+05	1.09	N	1.06	1.39	8415.928	0.392
12379-PeCDD	32.48	J EMPC	0.9673	0.9670	-0.6	2.72E+05	1.83	N	1.06	1.3	8415.928	0.392
12369/12467/12489-PeCDD	32.75	J	0.9750	0.9748	-0.4	3.59E+05	1.65	Y	1.06	1.72	8415.928	0.392
12346/12347-PeCDD	33.12	J	0.9859	0.9858	-0.2	1.97E+05	1.41	Y	1.06	0.942	8415.928	0.392
12378-PeCDD	33.61	J	**1.0005**	**1.0004**	**-0.2**	**4.84E+05**	**1.37**	**Y**	**1.06**	**2.32**	**8415.928**	**0.392**
12367-PeCDD	33.70	J	1.0032	1.0032	0	1.06E+05	1.39	Y	1.06	0.51	8415.928	0.392
12389-PeCDD	NotFnd		1.0135						1.06		8415.928	0.392
124679/124689-HxCDD	35.77		0.9544	0.9546	+0.4	3.63E+06	1.29	Y	1.05	20.1	16668.782	0.813
123468-HxCDD	36.42		0.9716	0.9719	+0.7	1.22E+06	1.34	Y	1.05	6.75	16668.782	0.813
123679/123689-HxCDD	36.71		0.9793	0.9796	+0.7	3.94E+06	1.31	Y	1.05	21.8	16668.782	0.813
123469-HxCDD	36.83	J EMPC	0.9829	0.9830	+0.2	3.93E+05	1.45	N	1.05	2.17	16668.782	0.813
123478-HxCDD	37.49	J	**1.0003**	**1.0004**	**+0.2**	**3.91E+05**	**1.17**	**Y**	1.06	**2.28**	**16668.782**	**0.771**
123678-HxCDD	37.60		**1.0033**	**1.0036**	**+0.7**	**1.09E+06**	**1.26**	**Y**	1.08	**6.08**	**16668.782**	**0.868**
123467-HxCDD	37.79	J EMPC	1.0084	1.0086	+0.5	3.05E+05	1.56	N	1.05	1.68	16668.782	0.813
123789-HxCDD	37.90		**1.0110**	**1.0115**	**+1.1**	**7.63E+05**	**1.24**	**Y**	1.02	**4.01**	**16668.782**	**0.801**

Lab ID: B5970_18718_DF_001 **Acq'd:** 15 Dec 2021 22:22 PSW **Wt/Vol:** 10.06 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-O-2 **UTP:** 16-Dec-2021 11:07:11 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 338-761-FFF

Datafile: 211215R15 **Report:** 20 Dec 2021 14:44 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

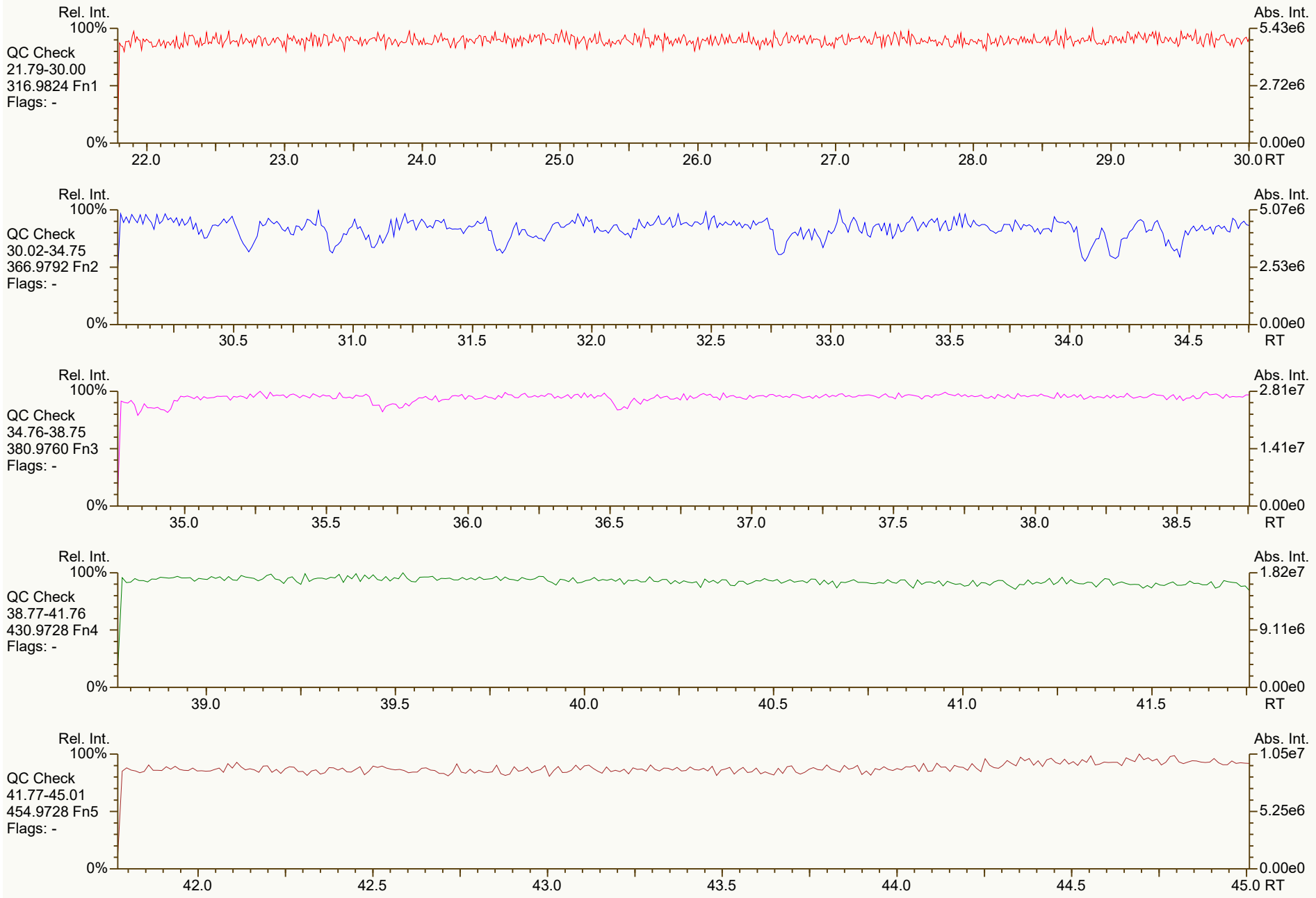
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.88		0.9843	0.9843	0	3.33E+07	1.05	Y	0.97	259	11538.549	0.605
1234678-HpCDD	**40.53**		**1.0003**	**1.0004**	**+0.2**	**2.67E+07**	**1.05**	**Y**	**0.97**	**208**	**11538.549**	**0.605**
OCDD	**43.07**		**1.0003**	**1.0003**	**0**	**2.23E+08**	**0.90**	**Y**	**1.07**	**3,610**	**18671.107**	**2.52**
OCDD-a	43.07		1.0001	1.0002	+0.3	1.31E+07	2.38	Y	0.07	3,450	12971.503	28.3
1368-TCDF	22.46		0.8230	0.8204	-3.5	4.58E+05	0.84	Y	0.96	1.48	4977.961	0.174
1468-TCDF	23.05		0.8443	0.8419	-3.3	7.68E+05	0.77	Y	0.96	2.47	4977.961	0.174
2468-TCDF	23.70		0.8672	0.8655	-2.4	1.21E+06	0.82	Y	0.96	3.89	4977.961	0.174
1346/1246-TCDF	24.05		0.8802	0.8786	-2.3	4.62E+05	0.79	Y	0.96	1.49	4977.961	0.174
1347/1378/1247-TCDF	24.21		0.8855	0.8843	-1.7	2.68E+06	0.81	Y	0.96	8.65	4977.961	0.174
1348-TCDF	24.47	EMPC	0.8952	0.8937	-2.2	5.38E+05	0.90	N	0.96	1.73	4977.961	0.174
1248/1367/1379-TCDF	24.58		0.9000	0.8976	-3.5	4.30E+06	0.76	Y	0.96	13.9	4977.961	0.174
1268-TCDF	24.98		0.9136	0.9125	-1.6	1.98E+06	0.78	Y	0.96	6.37	4977.961	0.174
1467-TCDF	25.11		0.9185	0.9173	-1.8	6.70E+05	0.82	Y	0.96	2.16	4977.961	0.174
1478-TCDF	25.29		0.9247	0.9237	-1.5	3.94E+06	0.79	Y	0.96	12.7	4977.961	0.174
1369/1237-TCDF	25.67		0.9381	0.9375	-0.9	1.51E+06	0.82	Y	0.96	4.86	4977.961	0.174
2467-TCDF	25.79		0.9427	0.9421	-0.9	7.84E+05	0.88	Y	0.96	2.53	4977.961	0.174
2368-TCDF	25.94		0.9484	0.9474	-1.6	2.86E+06	0.81	Y	0.96	9.21	4977.961	0.174
1238/1234/1678/1469/1236-TCDF	26.03		0.9517	0.9506	-1.7	6.93E+06	0.82	Y	0.96	22.3	4977.961	0.174
1278-TCDF	26.49		0.9682	0.9677	-0.8	3.72E+07	0.80	Y	0.96	120	4977.961	0.174
1349-TCDF	26.62		0.9725	0.9721	-0.6	9.97E+05	0.74	Y	0.96	3.21	4977.961	0.174
1267-TCDF	26.77		0.9782	0.9777	-0.8	2.96E+06	0.74	Y	0.96	9.54	4977.961	0.174
2346/1249-TCDF	26.96		0.9846	0.9846	0	8.40E+05	0.87	Y	0.96	2.71	4977.961	0.174
2347/1279-TCDF	27.17		0.9926	0.9923	-0.5	1.53E+06	0.77	Y	0.96	4.93	4977.961	0.174
2348-TCDF	27.28		0.9966	0.9963	-0.5	5.44E+06	0.78	Y	0.96	17.5	4977.961	0.174
2378-TCDF	**27.40**		**1.0006**	**1.0008**	**+0.3**	**9.14E+07**	**0.80**	**Y**	**0.96**	**294**	**4977.961**	**0.174**
2367/3467-TCDF	27.75		1.0139	1.0136	-0.5	9.95E+06	0.82	Y	0.96	32.1	4977.961	0.174
1269-TCDF	28.00		1.0226	1.0228	+0.3	2.42E+06	0.87	Y	0.96	7.81	4977.961	0.174
1239-TCDF	28.25	EMPC	1.0322	1.0317	-0.8	2.48E+05	0.94	N	0.96	0.8	4977.961	0.174
1289-TCDF	29.41	EMPC	1.0729	1.0742	+2.3	7.27E+06	0.89	N	0.96	23.4	4977.961	0.174
13468/12468-PeCDF	29.36		0.9135	0.9133	-0.4	2.97E+06	1.51	Y	0.94	10.7	6008.637	0.21
13678/13467/12467-PeCDF	30.90		0.9612	0.9612	0	1.58E+06	1.41	Y	0.94	5.73	8328.329	0.29
12368/13478/12478-PeCDF	31.06		0.9661	0.9660	-0.2	4.08E+06	1.60	Y	0.94	14.8	8328.329	0.29
14678-PeCDF	31.14		0.9693	0.9686	-1.3	8.31E+05	1.47	Y	0.94	3.01	8328.329	0.29
13479-PeCDF	31.25	J EMPC	0.9723	0.9721	-0.4	8.62E+04	1.96	N	0.94	0.312	8328.329	0.29
13469/12479-PeCDF	31.48	J EMPC	0.9799	0.9793	-1.1	2.06E+05	1.91	N	0.94	0.747	8328.329	0.29
12346-PeCDF	31.64	J	0.9842	0.9840	-0.4	4.75E+05	1.58	Y	0.94	1.72	8328.329	0.29

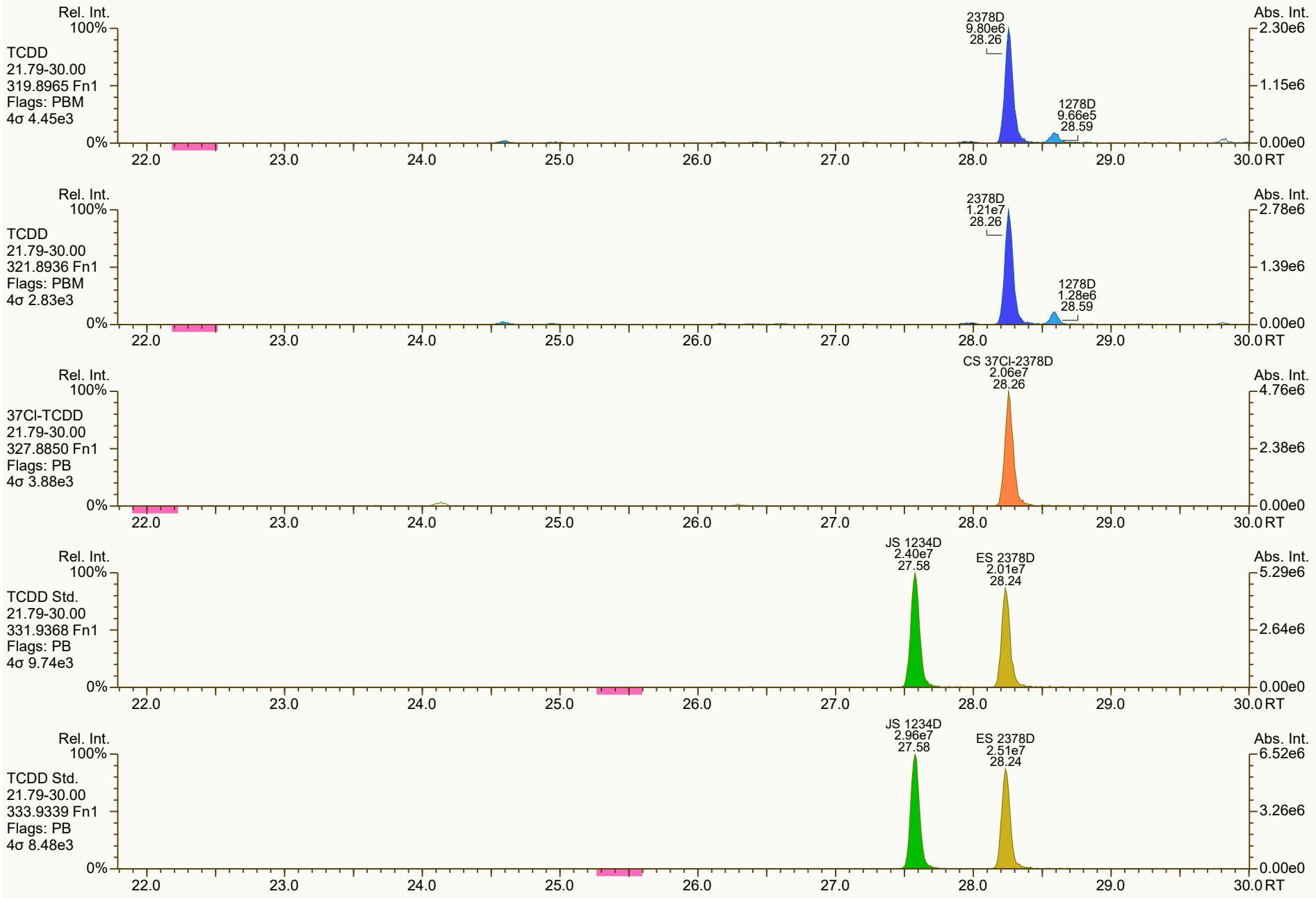
Lab ID: B5970_18718_DF_001 | **Acq'd: 15 Dec 2021 22:22 PSW** | **Wt/Vol: 10.06 g** | **ICAL: MM3_DF_10272021_27JUL2021**

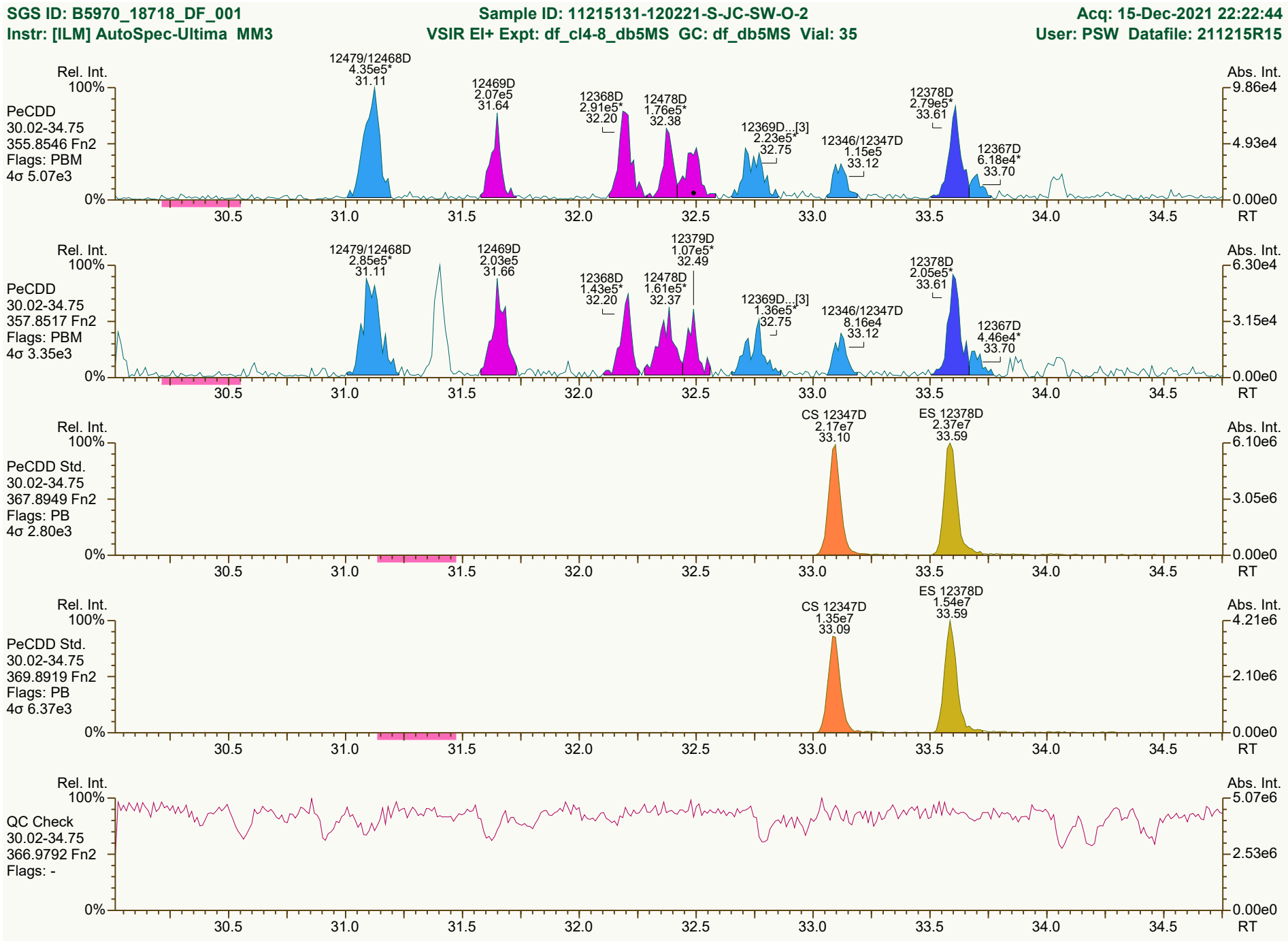
Client ID: 11215131-120221-S-JC-SW-O-2 | **UTP: 16-Dec-2021 11:07:11 PSW** | **J-level: 0.497 pg/g** | **Split: 1** | **Checkcode: 338-761-FFF**

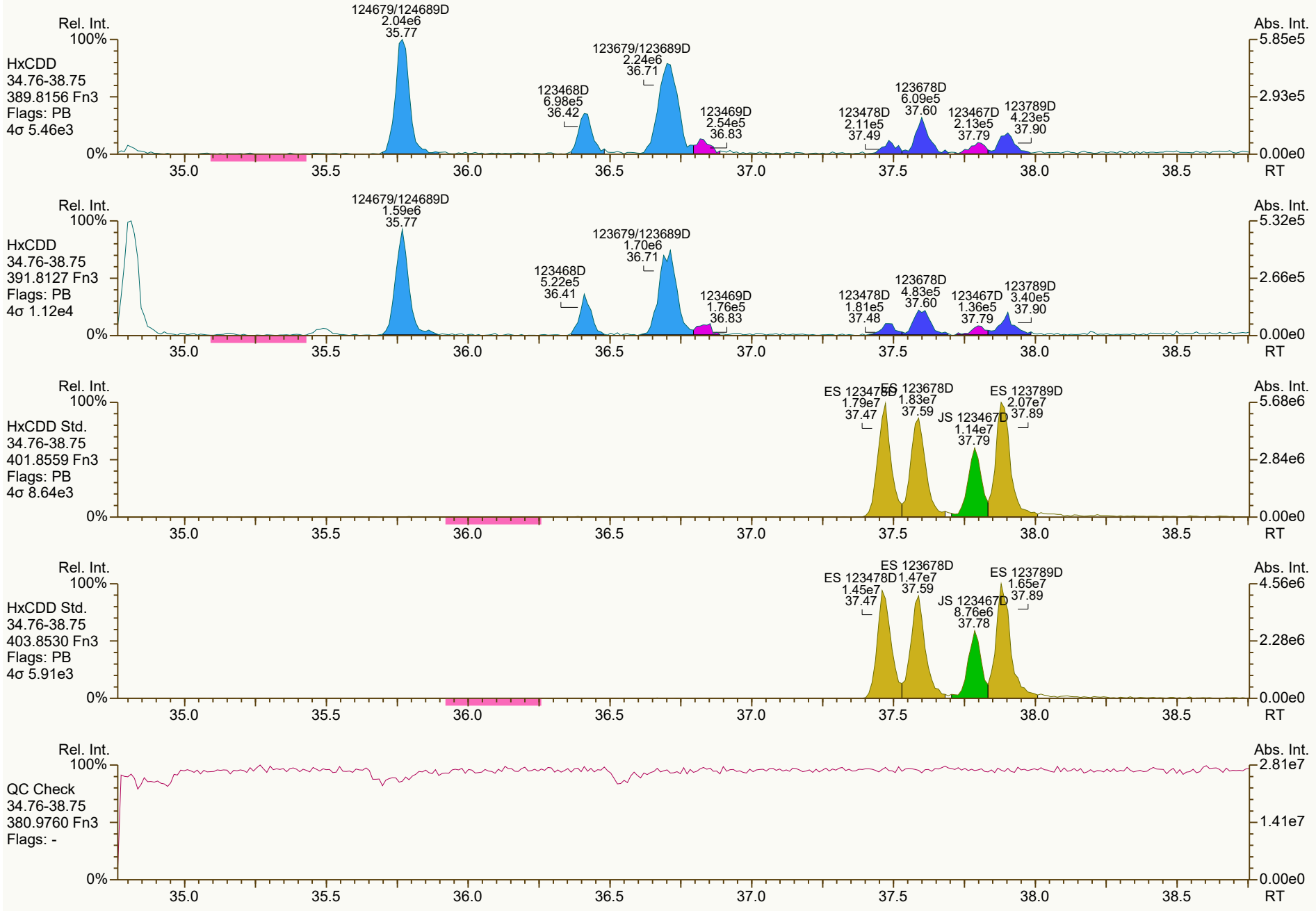
Datafile: 211215R15 | **Report: 20 Dec 2021 14:44 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

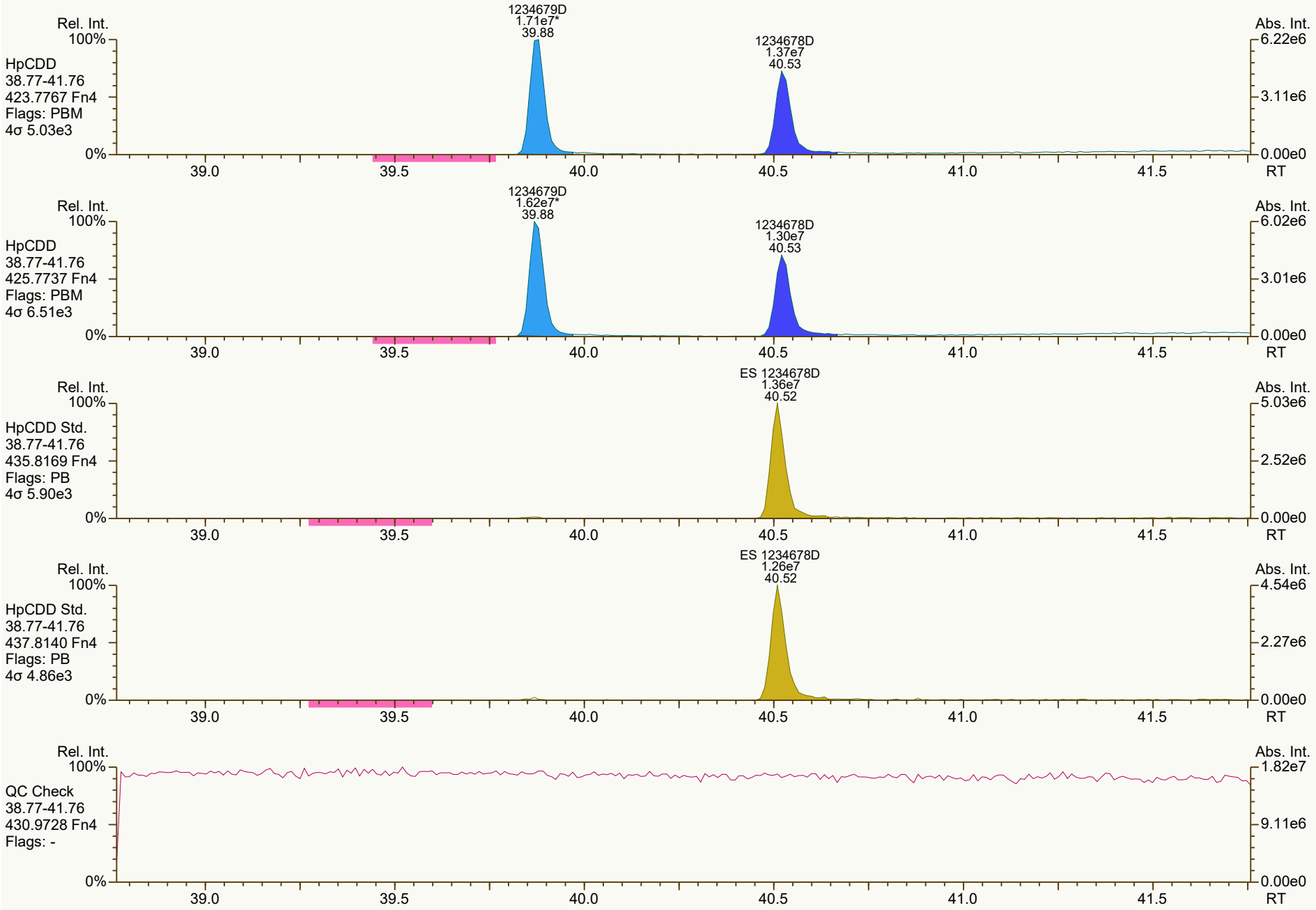
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.72		0.9868	0.9867	-0.2	1.06E+06	1.60	Y	0.94	3.82	8328.329	0.29
12347-PeCDF	31.80	J	0.9893	0.9890	-0.6	4.86E+05	1.51	Y	0.94	1.76	8328.329	0.29
12348-PeCDF	31.96	J EMPC	0.9941	0.9939	-0.4	6.60E+05	1.80	N	0.94	2.39	8328.329	0.29
12378-PeCDF	**32.17**		**1.0006**	**1.0005**	**-0.2**	**4.29E+06**	**1.49**	**Y**	**0.95**	**15.2**	**8328.329**	**0.288**
12678/12367-PeCDF	32.45		1.0090	1.0093	+0.6	2.35E+06	1.50	Y	0.94	8.51	8328.329	0.29
12379-PeCDF	32.61	J EMPC	1.0143	1.0144	+0.2	1.30E+05	1.24	N	0.94	0.472	8328.329	0.29
12679-PeCDF	33.03	J EMPC	0.9929	0.9929	0	8.91E+04	1.06	N	0.94	0.323	8328.329	0.29
23467/12369-PeCDF	33.15		0.9966	0.9965	-0.2	1.20E+06	1.45	Y	0.94	4.36	8328.329	0.29
23478-PeCDF	**33.28**		**1.0006**	**1.0007**	**+0.2**	**4.23E+06**	**1.56**	**Y**	**0.94**	**15.6**	**8328.329**	**0.293**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8328.329	0.29
12349-PeCDF	33.59	J EMPC	1.0102	1.0100	-0.4	1.26E+05	2.08	N	0.94	0.457	8328.329	0.29
12389-PeCDF	34.35	J EMPC	1.0325	1.0327	+0.4	2.39E+05	1.79	N	0.94	0.866	8328.329	0.29
123468-HxCDF	35.13		0.9628	0.9628	0	1.30E+06	1.19	Y	1.16	5.22	17686.508	0.64
124678/134678-HxCDF	35.32		0.9683	0.9682	-0.2	5.03E+06	1.24	Y	1.16	20.2	17686.508	0.64
134679-HxCDF	NotFnd		0.9746						1.16		17686.508	0.64
124679-HxCDF	35.74	J	0.9798	0.9797	-0.2	2.02E+05	1.31	Y	1.16	0.81	17686.508	0.64
124689-HxCDF	35.97		0.9859	0.9859	0	2.93E+06	1.33	Y	1.16	11.8	17686.508	0.64
123467-HxCDF	36.38		0.9972	0.9972	0	1.11E+06	1.30	Y	1.16	4.46	17686.508	0.64
123478-HxCDF	**36.50**		**1.0004**	**1.0004**	**0**	**6.21E+06**	**1.23**	**Y**	**1.23**	**24.8**	**17686.508**	**0.569**
123678-HxCDF	**36.64**		**1.0004**	**1.0004**	**0**	**2.64E+06**	**1.21**	**Y**	**1.13**	**9.47**	**17686.508**	**0.584**
123479-HxCDF	NotFnd		1.0049						1.16		17686.508	0.64
123469-HxCDF	NotFnd		1.0088						1.16		17686.508	0.64
123679-HxCDF	NotFnd		0.9943						1.16		17686.508	0.64
234678-HxCDF	**37.30**		**1.0005**	**1.0004**	**-0.2**	**1.37E+06**	**1.36**	**Y**	**1.15**	**5.73**	**17686.508**	**0.728**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		17686.508	0.64
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**17686.508**	**0.699**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.29	J	1.0007	1.0010	+0.7	5.48E+05	1.09	Y	1.16	2.2	17686.508	0.64
1234678-HpCDF	**39.63**		**1.0003**	**1.0002**	**-0.2**	**8.28E+06**	**1.03**	**Y**	**1.36**	**39.7**	**5521.094**	**0.183**
1234679-HpCDF	39.89		1.0067	1.0067	0	6.85E+05	1.05	Y	1.33	3.72	5521.094	0.226
1234689-HpCDF	40.02		1.0100	1.0101	+0.2	8.08E+06	1.06	Y	1.33	43.9	5521.094	0.226
1234789-HpCDF	**40.97**		**1.0003**	**1.0001**	**-0.5**	**8.46E+05**	**1.13**	**Y**	**1.30**	**5.27**	**5521.094**	**0.28**
OCDF	**43.26**		**1.0002**	**1.0003**	**+0.3**	**6.17E+06**	**0.87**	**Y**	**1.03**	**79.7**	**9092.282**	**1.02**
OCDF-a	NotFnd		1.0002						0.06		10212.528	19.8

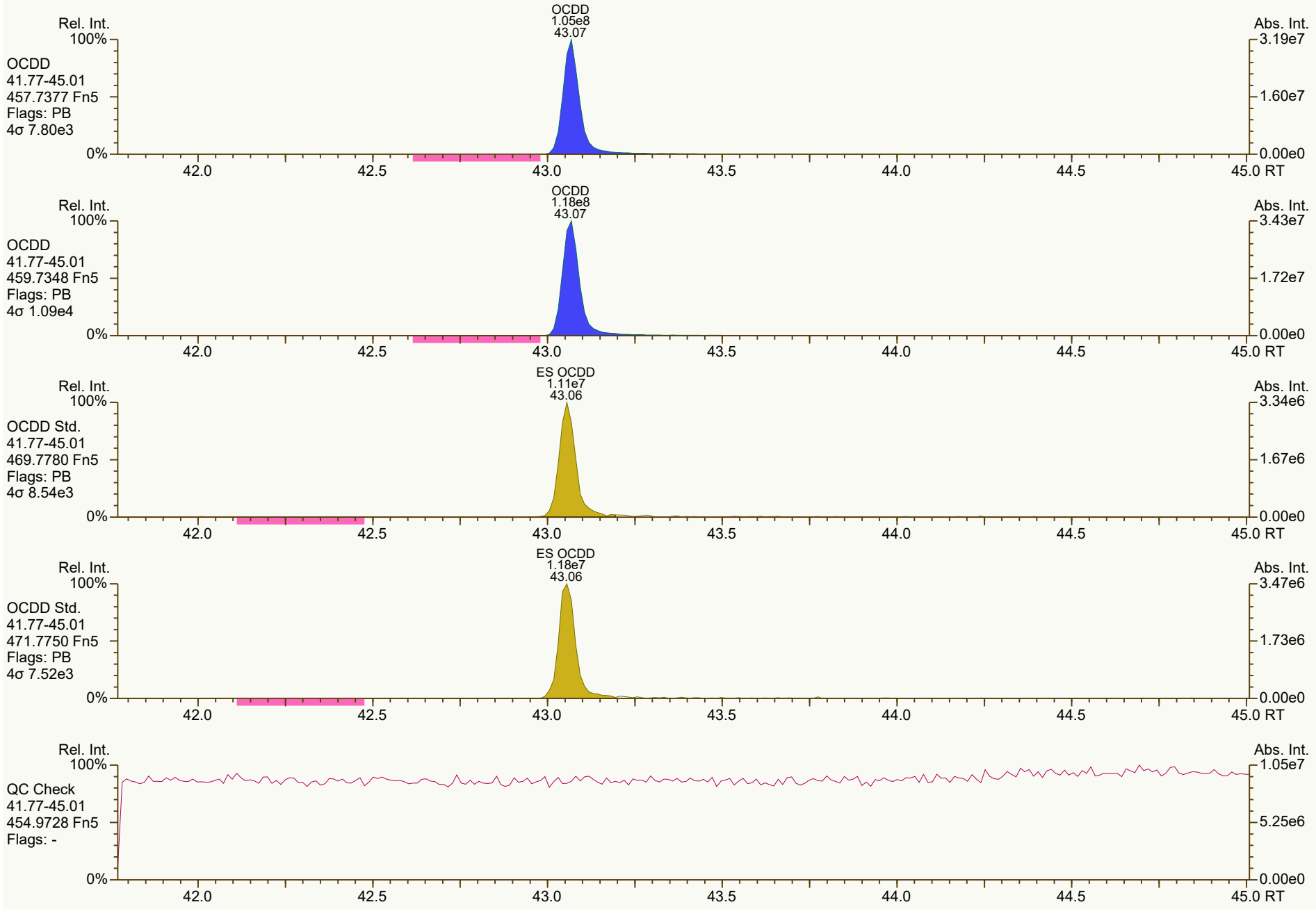

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.43e6
2.72e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.07e6
2.53e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.81e7
1.41e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.82e7
9.11e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.05e7
5.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 4.45e3
0%
2378D
9.80e6
28.26
1278D
9.66e5
28.59
Abs. Int.
2.30e6
1.15e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 2.83e3
0%
2378D
1.21e7
28.26
1278D
1.28e6
28.59
Abs. Int.
2.78e6
1.39e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.88e3
0%
CS 37Cl-2378D
2.06e7
28.26
Abs. Int.
4.76e6
2.38e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 9.74e3
0%
JS 1234D
2.40e7
27.58
ES 2378D
2.01e7
28.24
Abs. Int.
5.29e6
2.64e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 8.48e3
0%
JS 1234D
2.96e7
27.58
ES 2378D
2.51e7
28.24
Abs. Int.
6.52e6
3.26e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


SGS ID: B5970_18718_DF_001
Sample ID: 11215131-120221-S-JC-SW-O-2
Acq: 15-Dec-2021 22:22:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35
User: PSW Datafile: 211215R15
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 5.07e3
12479/12468D 4.35e5* 31.11
12469D 2.07e5 31.64
12368D 2.91e5* 32.20
12478D 1.76e5* 32.38
12369D...[3] 2.23e5* 32.75
12346/12347D 1.15e5 33.12
12378D 2.79e5* 33.61
12367D 6.18e4* 33.70
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 3.35e3
12479/12468D 2.85e5* 31.11
12469D 2.03e5 31.66
12368D 1.43e5* 32.20
12478D 1.61e5* 32.37
12379D 1.07e5* 32.49
12369D...[3] 1.36e5* 32.75
12346/12347D 8.16e4 33.12
12378D 2.05e5* 33.61
12367D 4.46e4* 33.70
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 2.80e3
CS 12347D 2.17e7 33.10
ES 12378D 2.37e7 33.59
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 6.37e3
CS 12347D 1.35e7 33.09
ES 12378D 1.54e7 33.59
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_001.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2118, 5815 scc: 338-761
PKD: 16-Dec-2021 09:05 Printed: 16-Dec-2021 11:14 Page 3 of 12


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 5.46e3
124679/124689D
2.04e6
35.77
123679/123689D
2.24e6
36.71
123468D
6.98e5
36.42
123469D
2.54e5
36.83
123478D
2.11e5
37.49
123678D
6.09e5
37.60
123467D
2.13e5
37.79
123789D
4.23e5
37.90
Abs. Int.
5.85e5
2.93e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 1.12e4
124679/124689D
1.59e6
35.77
123679/123689D
1.70e6
36.71
123468D
5.22e5
36.41
123469D
1.76e5
36.83
123478D
1.81e5
37.48
123678D
4.83e5
37.60
123467D
1.36e5
37.79
123789D
3.40e5
37.90
Abs. Int.
5.32e5
2.66e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PB
4σ 8.64e3
ES 123478D
1.79e7
37.47
ES 123678D
1.83e7
37.59
JS 123467D
1.14e7
37.79
ES 123789D
2.07e7
37.89
Abs. Int.
5.68e6
2.84e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PB
4σ 5.91e3
ES 123678D
1.47e7
37.59
ES 123478D
1.45e7
37.47
JS 123467D
8.76e6
37.78
ES 123789D
1.65e7
37.89
Abs. Int.
4.56e6
2.28e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
Abs. Int.
2.81e7
1.41e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 5.03e3
1234679D
1.71e7*
39.88
1234678D
1.37e7
40.53
Abs. Int.
6.22e6
3.11e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 6.51e3
1234679D
1.62e7*
39.88
1234678D
1.30e7
40.53
Abs. Int.
6.02e6
3.01e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 5.90e3
ES 1234678D
1.36e7
40.52
Abs. Int.
5.03e6
2.52e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.86e3
ES 1234678D
1.26e7
40.52
Abs. Int.
4.54e6
2.27e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.82e7
9.11e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
1.05e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 7.80e3
0%
Abs. Int.
3.19e7
1.60e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.18e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.09e4
0%
Abs. Int.
3.43e7
1.72e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.11e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 8.54e3
0%
Abs. Int.
3.34e6
1.67e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.18e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 7.52e3
0%
Abs. Int.
3.47e6
1.73e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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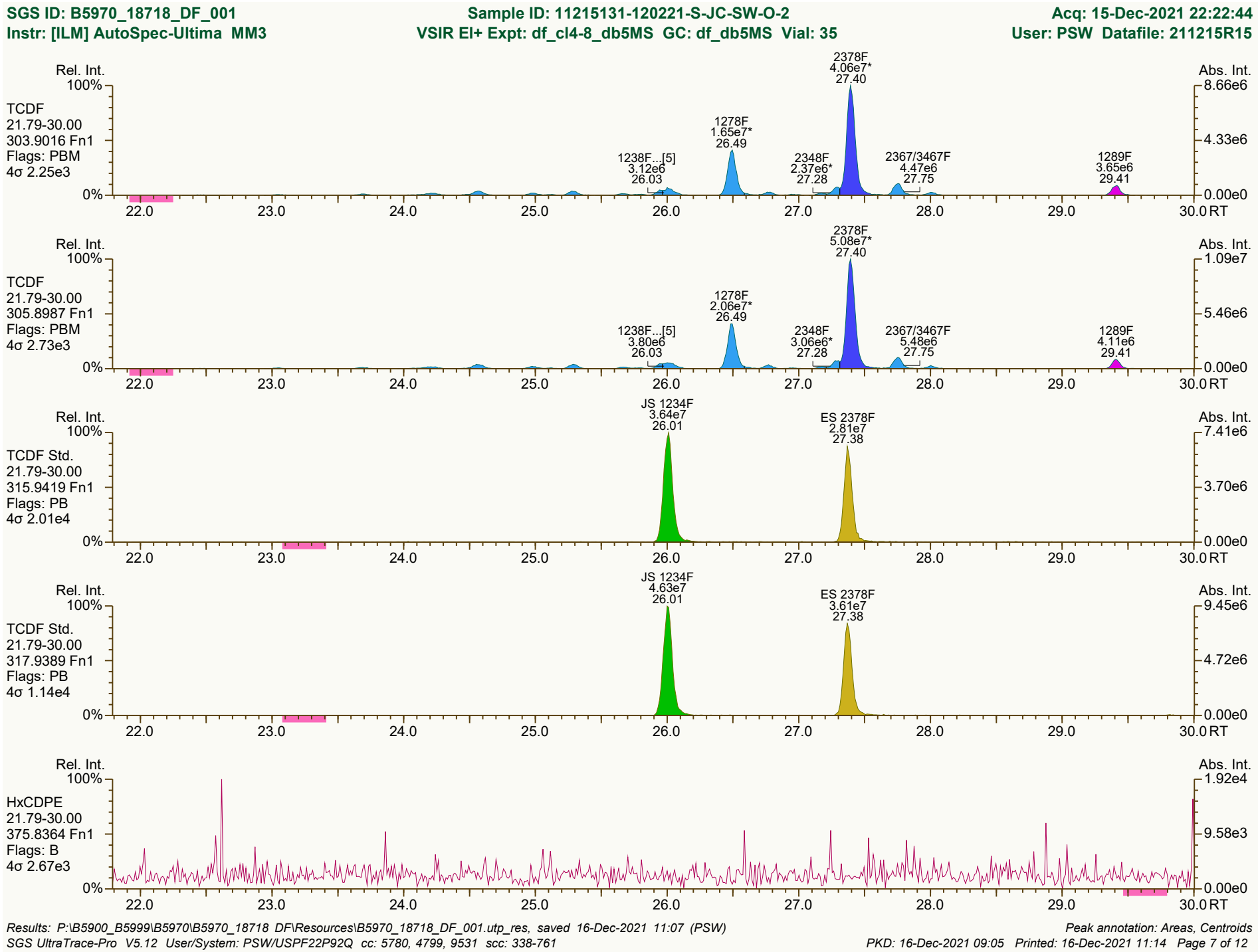
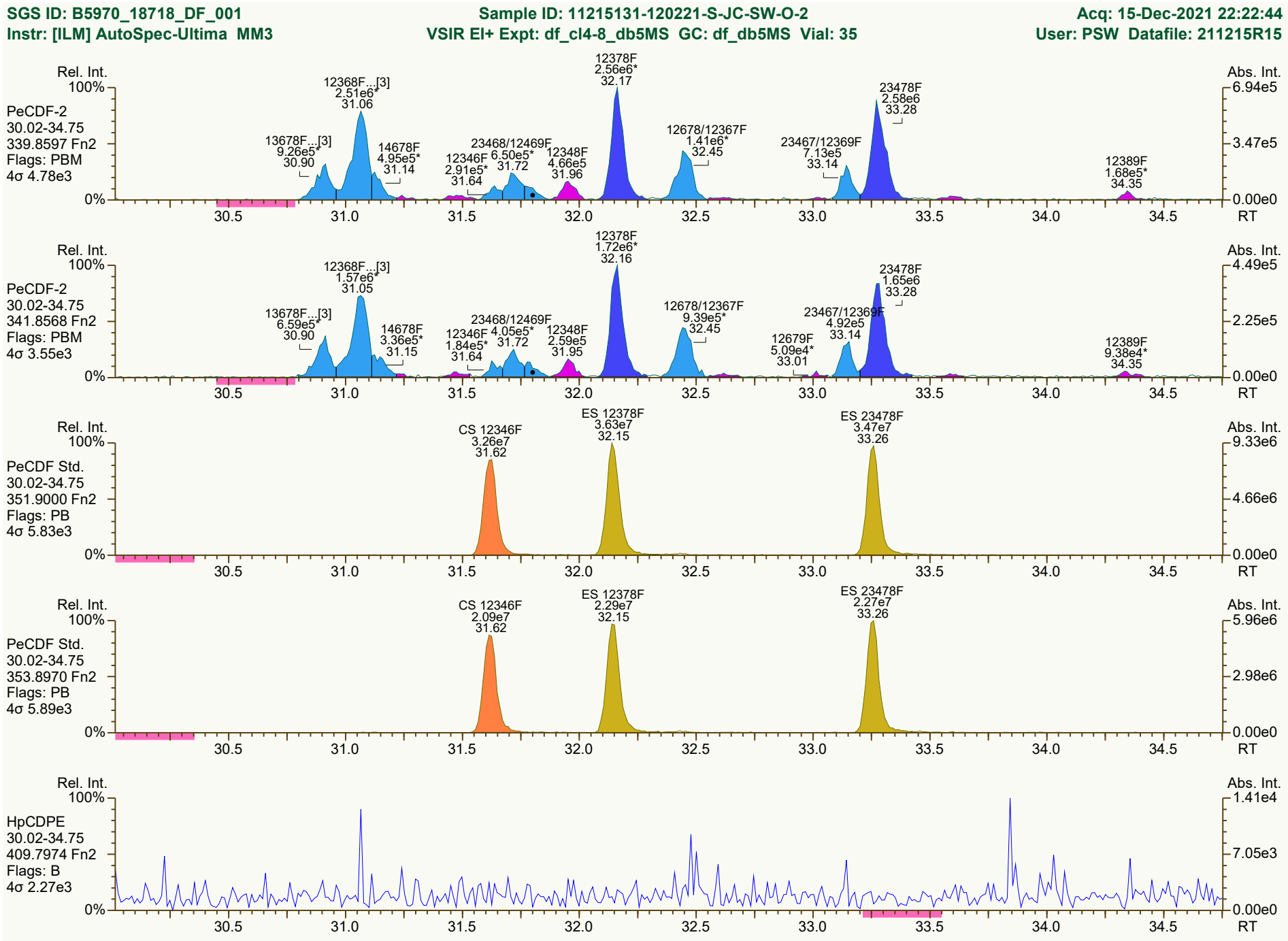
5.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

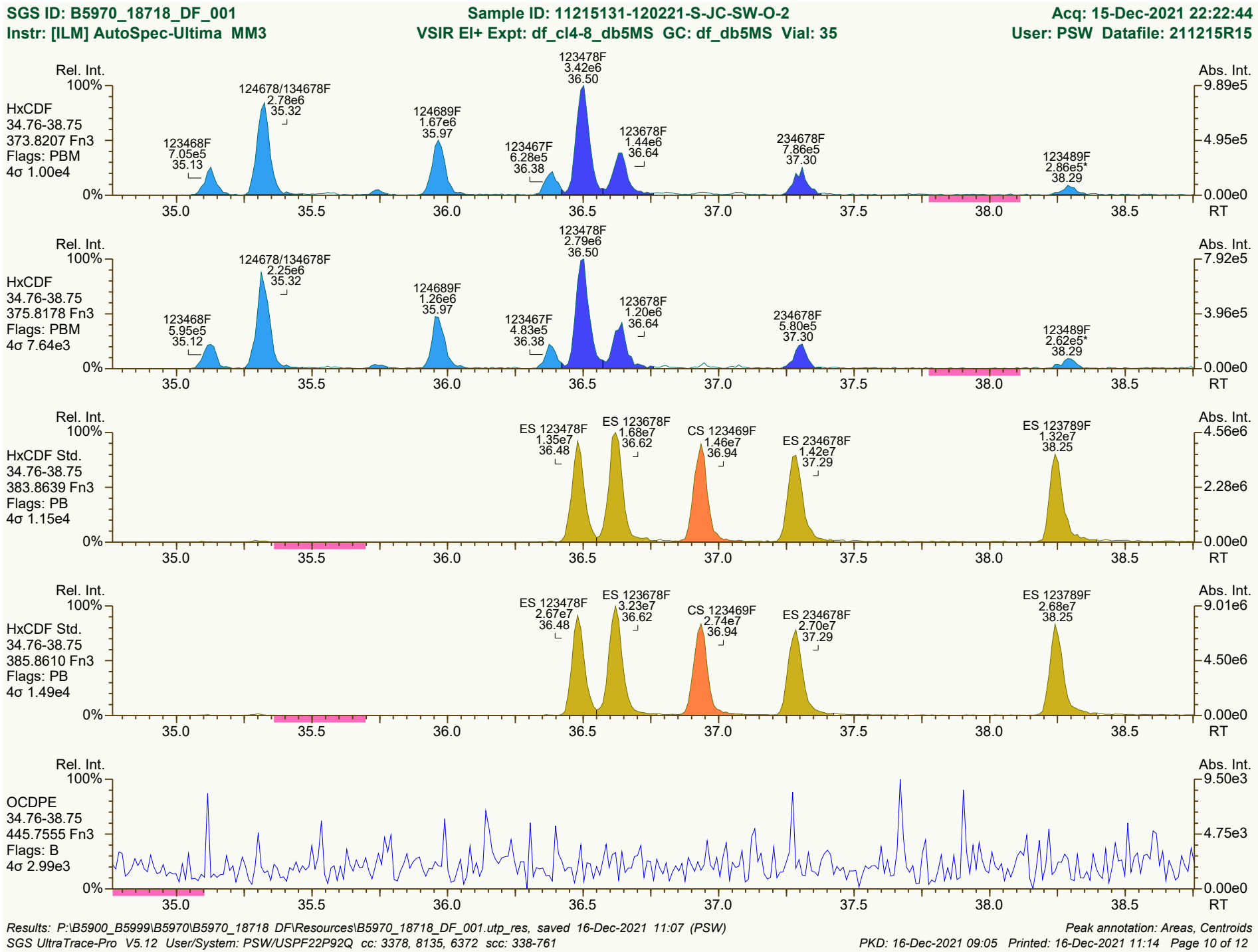

SGS ID: B5970_18718_DF_001
Sample ID: 11215131-120221-S-JC-SW-O-2
Acq: 15-Dec-2021 22:22:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35
User: PSW Datafile: 211215R15
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.25e3
2378F
4.06e7*
27.40
1278F
1.65e7*
26.49
1238F...[5]
3.12e6
26.03
2348F
2.37e6*
27.28
2367/3467F
4.47e6
27.75
1289F
3.65e6
29.41
8.66e6
4.33e6
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 2.73e3
2378F
5.08e7*
27.40
1278F
2.06e7*
26.49
1238F...[5]
3.80e6
26.03
2348F
3.06e6*
27.28
2367/3467F
5.48e6
27.75
1289F
4.11e6
29.41
1.09e7
5.46e6
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.01e4
JS 1234F
3.64e7
26.01
ES 2378F
2.81e7
27.38
7.41e6
3.70e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.14e4
JS 1234F
4.63e7
26.01
ES 2378F
3.61e7
27.38
9.45e6
4.72e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.67e3
1.92e4
9.58e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_001.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5780, 4799, 9531 scc: 338-761
PKD: 16-Dec-2021 09:05 Printed: 16-Dec-2021 11:14 Page 7 of 12

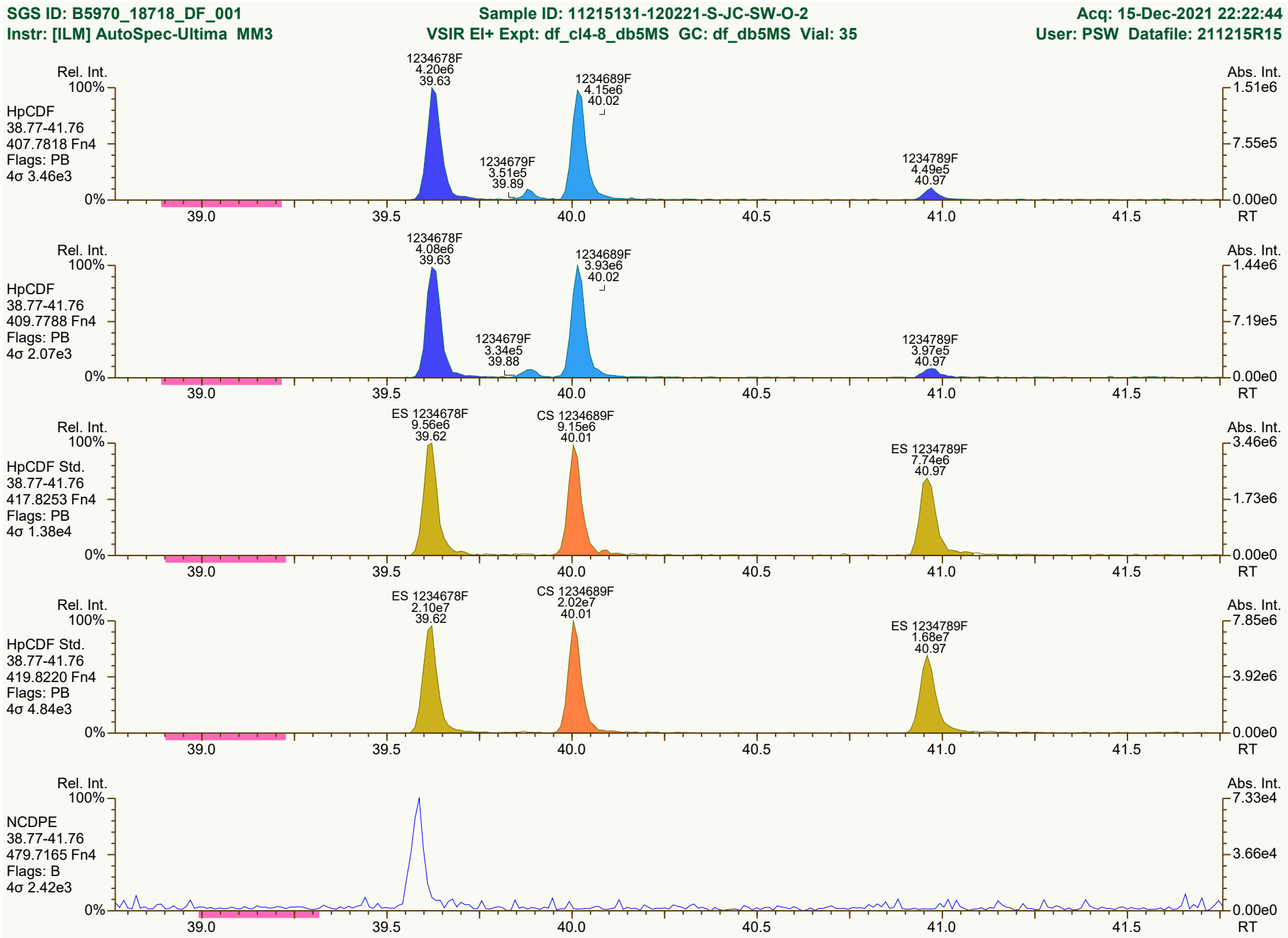
SGS ID: B5970_18718_DF_001 | Sample ID: 11215131-120221-S-JC-SW-O-2 | Acq: 15-Dec-2021 22:22:44
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35 | User: PSW Datafile: 211215R15

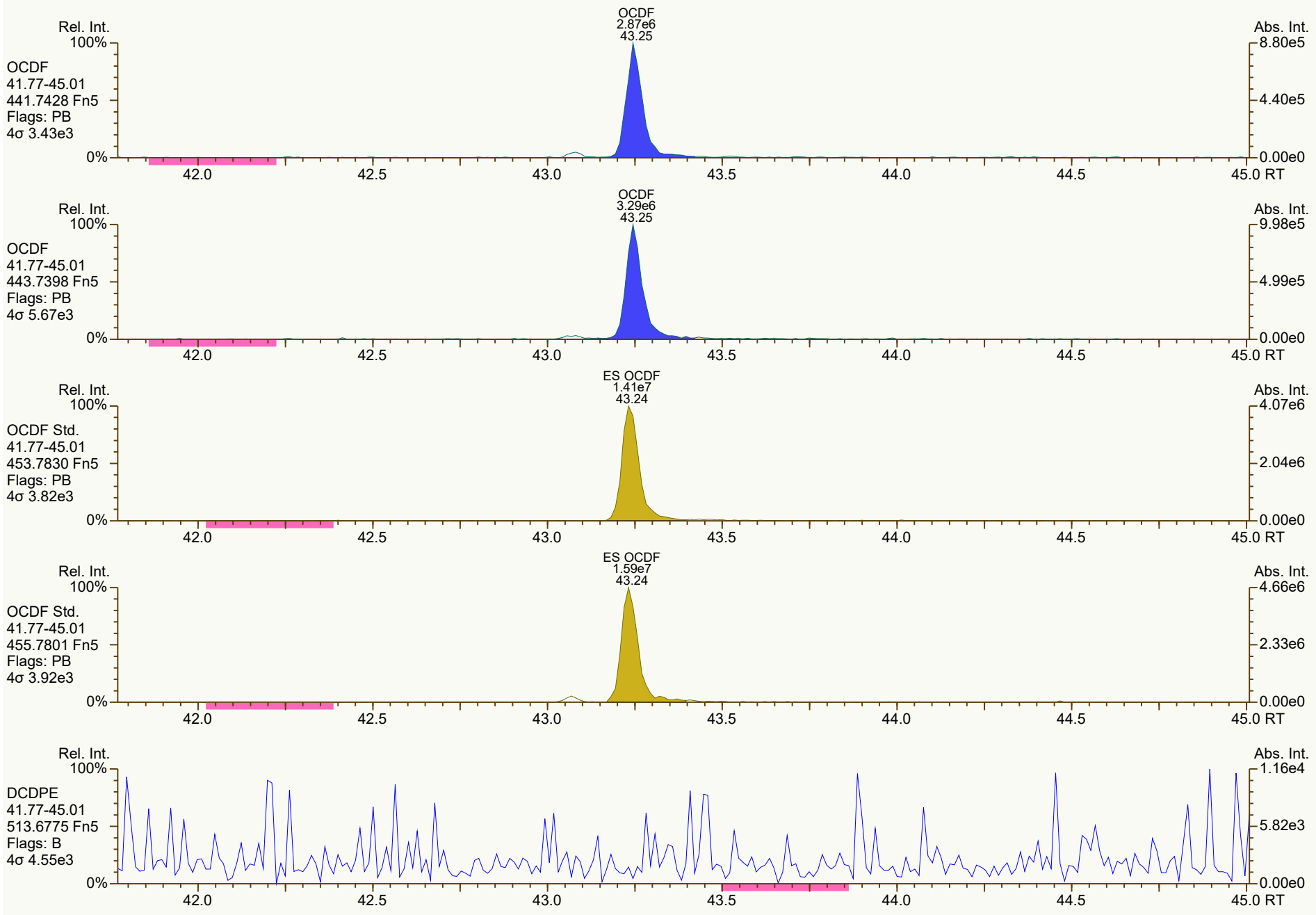


Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_001.utp_res, saved 16-Dec-2021 11:07 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1495 scc: 338-761 *PKD: 16-Dec-2021 09:05 Printed: 16-Dec-2021 11:14 Page 8 of 12*


SGS ID: B5970_18718_DF_001
Sample ID: 11215131-120221-S-JC-SW-O-2
Acq: 15-Dec-2021 22:22:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35
User: PSW Datafile: 211215R15
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 4.78e3
12368F...[3] 2.51e6* 31.06
13678F...[3] 9.26e5* 30.90
14678F 4.95e5* 31.14
12346F 2.91e5* 31.64
23468/12469F 6.50e5* 31.72
12348F 4.66e5 31.96
12378F 2.56e6* 32.17
12678/12367F 1.41e6* 32.45
23467/12369F 7.13e5 33.14
23478F 2.58e6 33.28
12389F 1.68e5* 34.35
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.55e3
12368F...[3] 1.57e6* 31.05
13678F...[3] 6.59e5* 30.90
14678F 3.36e5* 31.15
12346F 1.84e5* 31.64
23468/12469F 4.05e5* 31.72
12348F 2.59e5 31.95
12378F 1.72e6* 32.16
12678/12367F 9.39e5* 32.45
12679F 5.09e4* 33.01
23467/12369F 4.92e5 33.14
23478F 1.65e6 33.28
12389F 9.38e4* 34.35
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 5.83e3
CS 12346F 3.26e7 31.62
ES 12378F 3.63e7 32.15
ES 23478F 3.47e7 33.26
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 5.89e3
CS 12346F 2.09e7 31.62
ES 12378F 2.29e7 32.15
ES 23478F 2.27e7 33.26
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.27e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_001.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1678, 2572, 8892 scc: 338-761
PKD: 16-Dec-2021 09:05 Printed: 16-Dec-2021 11:14 Page 9 of 12


SGS ID: B5970_18718_DF_001
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120221-S-JC-SW-O-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35
Acq: 15-Dec-2021 22:22:44
User: PSW Datafile: 211215R15
Rel. Int.
Abs. Int.
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 1.00e4
123468F 7.05e5 35.13
124678/134678F 2.78e6 35.32
124689F 1.67e6 35.97
123467F 6.28e5 36.38
123478F 3.42e6 36.50
123678F 1.44e6 36.64
234678F 7.86e5 37.30
123489F 2.86e5* 38.29
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 7.64e3
123468F 5.95e5 35.12
124678/134678F 2.25e6 35.32
124689F 1.26e6 35.97
123467F 4.83e5 36.38
123478F 2.79e6 36.50
123678F 1.20e6 36.64
234678F 5.80e5 37.30
123489F 2.62e5* 38.29
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 1.15e4
ES 123478F 1.35e7 36.48
ES 123678F 1.68e7 36.62
CS 123469F 1.46e7 36.94
ES 234678F 1.42e7 37.29
ES 123789F 1.32e7 38.25
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.49e4
ES 123478F 2.67e7 36.48
ES 123678F 3.23e7 36.62
CS 123469F 2.74e7 36.94
ES 234678F 2.70e7 37.29
ES 123789F 2.68e7 38.25
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.99e3
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_001.utp_res, saved 16-Dec-2021 11:07 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3378, 8135, 6372 scc: 338-761
Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 09:05 Printed: 16-Dec-2021 11:14 Page 10 of 12


SGS ID: B5970_18718_DF_001
Sample ID: 11215131-120221-S-JC-SW-O-2
Acq: 15-Dec-2021 22:22:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 35
User: PSW Datafile: 211215R15
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 3.46e3
1234678F
4.20e6
39.63
1234689F
4.15e6
40.02
1234679F
3.51e5
39.89
1234789F
4.49e5
40.97
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 2.07e3
1234678F
4.08e6
39.63
1234689F
3.93e6
40.02
1234679F
3.34e5
39.88
1234789F
3.97e5
40.97
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.38e4
ES 1234678F
9.56e6
39.62
CS 1234689F
9.15e6
40.01
ES 1234789F
7.74e6
40.97
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 4.84e3
ES 1234678F
2.10e7
39.62
CS 1234689F
2.02e7
40.01
ES 1234789F
1.68e7
40.97
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.42e3
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_001.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3259, 5114, 3113 scc: 338-761
PKD: 16-Dec-2021 09:05 Printed: 16-Dec-2021 11:14 Page 11 of 12


OCDF
2.87e6
43.25
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.43e3
0%
Abs. Int.
8.80e5
4.40e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.29e6
43.25
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 5.67e3
9.98e5
4.99e5
ES OCDF
1.41e7
43.24
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.82e3
4.07e6
2.04e6
ES OCDF
1.59e7
43.24
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 3.92e3
4.66e6
2.33e6
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 4.55e3
1.16e4
5.82e3

Lab ID: B5970_18718_DF_002 **Acq'd:** 15 Dec 2021 23:10 PSW **Wt/Vol:** 10.14 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-B-2 **UTP:** 16-Dec-2021 11:07:12 PSW **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 802-511-WFM

Datafile: 211215R16 **Report:** 20 Dec 2021 14:44 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26	E	1.0008	1.0008	0	4.87E+08	0.80	Y	1.34	1,180	9893.947	0.254
12378-PeCDD	33.60		1.0005	1.0006	+0.2	3.61E+06	1.57	Y	1.06	12.6	9481.358	0.295
123478-HxCDD	37.47		1.0003	1.0003	0	6.54E+05	1.31	Y	1.06	2.78	11234.142	0.403
123678-HxCDD	37.59		1.0033	1.0036	+0.7	2.58E+06	1.23	Y	1.08	10	11234.142	0.394
123789-HxCDD	37.88		1.0110	1.0115	+1.1	1.42E+06	1.30	Y	1.02	5.08	11234.142	0.323
1234678-HpCDD	40.52		1.0003	1.0003	0	4.45E+07	1.04	Y	0.97	218	10327.654	0.338
OCDD	43.06		1.0003	1.0003	0	3.53E+08	0.89	Y	1.07	2,590	19338.718	1.16
2378-TCDF	27.40	E	1.0006	1.0008	+0.3	1.81E+09	0.80	Y	0.96	4,260	6898.104	0.187
12378-PeCDF	32.15		1.0006	1.0006	0	8.70E+07	1.56	Y	0.95	223	11206.074	0.281
23478-PeCDF	33.27		1.0006	1.0008	+0.4	5.32E+07	1.59	Y	0.94	146	11206.074	0.277
123478-HxCDF	36.49		1.0004	1.0005	+0.2	1.39E+08	1.25	Y	1.23	399	33015.94	0.805
123678-HxCDF	36.63		1.0004	1.0005	+0.2	3.70E+07	1.27	Y	1.13	94.6	33015.94	0.692
234678-HxCDF	37.29		1.0005	1.0005	0	6.37E+06	1.19	Y	1.15	19.1	33015.94	0.842
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	33015.94	0.78
1234678-HpCDF	39.62		1.0003	1.0003	0	4.58E+07	1.05	Y	1.36	134	8204.924	0.147
1234789-HpCDF	40.96		1.0003	1.0002	-0.2	1.22E+07	1.08	Y	1.30	47.3	8204.924	0.231
OCDF	43.24		1.0002	1.0003	+0.3	3.16E+07	0.88	Y	1.03	201	8939.411	0.477

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0237	0	6.07E+07	0.78	Y	1.03	76.8
ES 12378-PeCDD	33.58	1.2158	1.2174	+3.2	5.35E+07	1.56	Y	1.03	67.6
ES 123478-HxCDD	37.45	0.9920	0.9916	-0.9	4.40E+07	1.26	Y	0.99	78.9
ES 123678-HxCDD	37.57	0.9949	0.9948	-0.2	4.70E+07	1.30	Y	0.97	86.3
ES 123789-HxCDD	37.87	1.0026	1.0027	+0.2	5.42E+07	1.27	Y	1.12	86
ES 1234678-HpCDD	40.50	1.0713	1.0723	+2.4	4.14E+07	1.02	Y	0.99	74.6
ES OCDD	43.05	1.1385	1.1398	+3.4	5.03E+07	0.93	Y	0.78	57.8
ES 2378-TCDF	27.38	1.0519	1.0524	+0.8	8.75E+07	0.80	Y	1.08	71.2
ES 12378-PeCDF	32.14	1.2331	1.2354	+4.4	8.14E+07	1.59	Y	0.93	77
ES 23478-PeCDF	33.25	1.2754	1.2782	+5.6	7.68E+07	1.57	Y	0.92	73.5
ES 123478-HxCDF	36.47	0.9656	0.9656	0	5.54E+07	0.52	Y	1.14	86.7
ES 123678-HxCDF	36.61	0.9693	0.9693	0	6.83E+07	0.55	Y	1.30	93.9
ES 234678-HxCDF	37.27	0.9869	0.9868	-0.2	5.72E+07	0.53	Y	1.20	85
ES 123789-HxCDF	38.23	1.0121	1.0123	+0.5	5.44E+07	0.54	Y	1.14	85.4
ES 1234678-HpCDF	39.60	1.0478	1.0485	+1.7	4.94E+07	0.44	Y	0.95	92.8
ES 1234789-HpCDF	40.95	1.0832	1.0842	+2.5	3.91E+07	0.45	Y	0.85	82.5
ES OCDF	43.23	1.1434	1.1446	+3.1	6.05E+07	0.89	Y	0.93	58.3

Lab ID: B5970_18718_DF_002 **Acq'd:** 15 Dec 2021 23:10 PSW **Wt/Vol:** 10.14 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-B-2 **UTP:** 16-Dec-2021 11:07:12 PSW **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 802-511-WFM

Datafile: 211215R16 **Report:** 20 Dec 2021 14:44 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	7.65E+07	0.78	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	1.13E+08	0.78	Y	-	-	
JS 123467-HxCDD	37.77		-	-	-	2.80E+07	1.27	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0246	+0.2	2.89E+07	n/a	-	1.31	72	
CS 12347-PeCDD	33.08		1.1978	1.1994	+3.2	5.07E+07	1.63	Y	0.89	74.2	
CS 12346-PeCDF	31.61		1.2130	1.2152	+4.2	7.86E+07	1.58	Y	0.87	80	
CS 123469-HxCDF	36.92		0.9775	0.9775	0	6.12E+07	0.54	Y	1.09	100	
CS 1234689-HpCDF	40.00		1.0580	1.0590	+2.4	4.83E+07	0.46	Y	0.86	99.7	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0246~~	~~+0.2~~	~~2.89E+07~~	~~n/a~~		~~1.26~~	~~94.3~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.08~~		~~1.1978~~	~~1.1994~~	~~+3.2~~	~~5.07E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~110~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2152~~	~~+4.2~~	~~7.86E+07~~	~~1.58~~	~~Y~~	~~0.93~~	~~104~~	
~~SS 123469-HxCDF~~	~~36.92~~		~~0.9775~~	~~0.9775~~	~~0~~	~~6.12E+07~~	~~0.54~~	~~Y~~	~~0.84~~	~~107~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~4.83E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~107~~	

Totals	Conc	EMPC
Total TCDD	1290	1300
Total PeCDD	32.1	32.1
Total HxCDD	81.1	81.1
Total HpCDD	415	415
Total Tetra-Octa Dioxins	4400	4420
Total TCDF	8,630	8630
Total PeCDF	582	584
Total HxCDF	616	616
Total HpCDF	239	239
Total Tetra-Octa Furans	10,300	10300
Total Tetra-Octa Dioxins & Furans	14700	14700

Lab ID: B5970_18718_DF_002 **Acq'd:** 15 Dec 2021 23:10 PSW **Wt/Vol:** 10.14 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-B-2 **UTP:** 16-Dec-2021 11:07:12 PSW **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 802-511-WFM

Datafile: 211215R16 **Report:** 20 Dec 2021 14:44 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.60		0.8726	0.8714	-1.8	1.43E+06	0.85	Y	1.34	3.45	9893.947	0.254
1379-TCDD	24.96		0.8851	0.8840	-1.6	7.99E+05	0.73	Y	1.34	1.93	9893.947	0.254
1369-TCDD	NotFnd		0.9002						1.34		9893.947	0.254
1469-TCDD	26.17		0.9275	0.9270	-0.8	1.94E+06	0.79	Y	1.34	4.69	9893.947	0.254
1247/1246/1248/1249-TCDD	26.41	EMPC	0.9361	0.9352	-1.4	8.77E+05	0.92	N	1.34	2.12	9893.947	0.254
1378-TCDD	26.61		0.9427	0.9423	-0.6	1.34E+06	0.85	Y	1.34	3.24	9893.947	0.254
1268-TCDD	NotFnd		0.9498						1.34		9893.947	0.254
1478-TCDD	27.05		0.9584	0.9581	-0.5	1.27E+06	0.85	Y	1.34	3.07	9893.947	0.254
1279-TCDD	NotFnd		0.9644						1.34		9893.947	0.254
1234/1269-TCDD	27.57		0.9766	0.9765	-0.2	3.61E+05	0.87	Y	1.34	0.871	9893.947	0.254
1236-TCDD	NotFnd		0.9813						1.34		9893.947	0.254
1237/1238-TCDD	27.96		0.9906	0.9903	-0.5	7.65E+06	0.81	Y	1.34	18.5	9893.947	0.254
1239-TCDD	NotFnd		0.9952						1.34		9893.947	0.254
2378-TCDD	**28.26**	E	**1.0008**	1.0008	**0**	4.87E+08	0.80	Y	**1.34**	**1,180**	**9893.947**	**0.254**
1278-TCDD	28.58		1.0122	1.0122	0	3.10E+07	0.77	Y	1.34	74.8	9893.947	0.254
1267-TCDD	28.70	EMPC	1.0168	1.0164	-0.7	2.52E+06	0.89	N	1.34	6.08	9893.947	0.254
1289-TCDD	29.21	EMPC	1.0349	1.0346	-0.5	1.87E+06	1.11	N	1.34	4.51	9893.947	0.254
12479/12468-PeCDD	31.10		0.9267	0.9263	-0.7	1.36E+06	1.59	Y	1.06	4.73	9481.358	0.295
12469-PeCDD	31.64		0.9425	0.9422	-0.6	1.03E+06	1.44	Y	1.06	3.58	9481.358	0.295
12368-PeCDD	32.19		0.9588	0.9586	-0.4	9.65E+05	1.47	Y	1.06	3.36	9481.358	0.295
12478-PeCDD	32.38	J	0.9643	0.9642	-0.2	4.04E+05	1.45	Y	1.06	1.41	9481.358	0.295
12379-PeCDD	32.47		0.9673	0.9671	-0.4	8.18E+05	1.54	Y	1.06	2.85	9481.358	0.295
12369/12467/12489-PeCDD	32.74	J	0.9750	0.9749	-0.2	4.47E+05	1.61	Y	1.06	1.56	9481.358	0.295
12346/12347-PeCDD	33.10	J	0.9859	0.9858	-0.2	1.77E+05	1.56	Y	1.06	0.618	9481.358	0.295
12378-PeCDD	33.60		**1.0005**	**1.0006**	**+0.2**	**3.61E+06**	**1.57**	**Y**	**1.06**	**12.6**	**9481.358**	**0.295**
12367-PeCDD	33.71	J	1.0032	1.0038	+1.2	2.74E+05	1.67	Y	1.06	0.953	9481.358	0.295
12389-PeCDD	34.04	J	1.0135	1.0137	+0.4	1.37E+05	1.52	Y	1.06	0.476	9481.358	0.295
124679/124689-HxCDD	35.76		0.9544	0.9548	+0.9	9.18E+06	1.19	Y	1.05	35.6	11234.142	0.37
123468-HxCDD	36.40		0.9716	0.9720	+0.9	1.51E+06	1.24	Y	1.05	5.86	11234.142	0.37
123679/123689-HxCDD	36.69		0.9793	0.9797	+0.9	5.05E+06	1.24	Y	1.05	19.6	11234.142	0.37
123469-HxCDD	36.83	J	0.9829	0.9832	+0.7	3.17E+05	1.27	Y	1.05	1.23	11234.142	0.37
123478-HxCDD	37.47		**1.0003**	**1.0003**	**0**	**6.54E+05**	**1.31**	**Y**	1.06	**2.78**	**11234.142**	**0.403**
123678-HxCDD	37.59		**1.0033**	**1.0036**	**+0.7**	**2.58E+06**	**1.23**	**Y**	1.08	**10**	**11234.142**	**0.394**
123467-HxCDD	37.78	J	1.0084	1.0087	+0.7	2.42E+05	1.37	Y	1.05	0.938	11234.142	0.37
123789-HxCDD	37.88		**1.0110**	**1.0115**	**+1.1**	**1.42E+06**	**1.30**	**Y**	1.02	**5.08**	**11234.142**	**0.323**

Lab ID: B5970_18718_DF_002 **Acq'd:** 15 Dec 2021 23:10 PSW **Wt/Vol:** 10.14 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-JC-SW-B-2 **UTP:** 16-Dec-2021 11:07:12 PSW **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 802-511-WFM

Datafile: 211215R16 **Report:** 20 Dec 2021 14:44 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

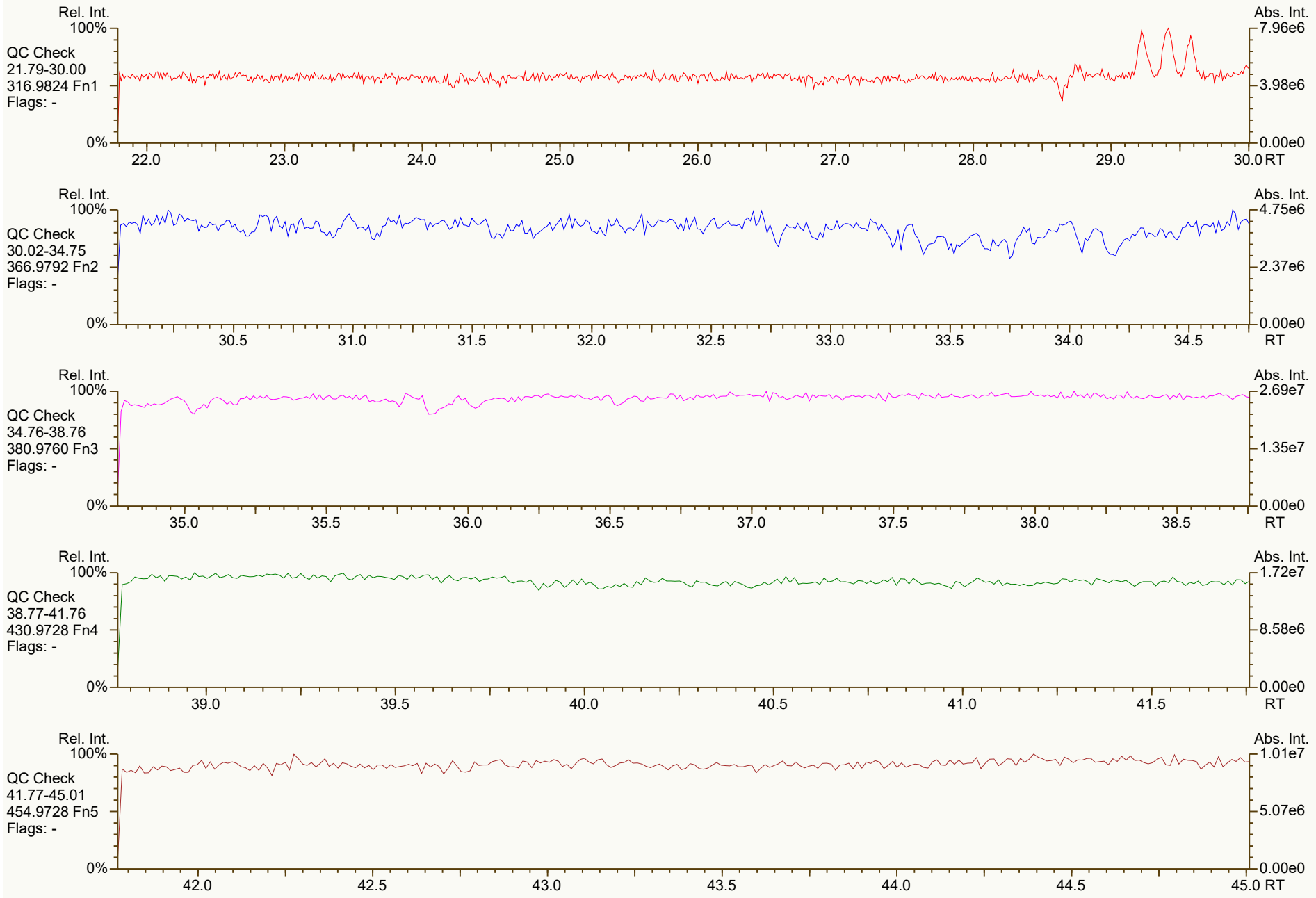
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9842	-0.2	4.05E+07	1.04	Y	0.97	198	10327.654	0.338
1234678-HpCDD	**40.52**		**1.0003**	**1.0003**	**0**	**4.45E+07**	**1.04**	**Y**	**0.97**	**218**	**10327.654**	**0.338**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**3.53E+08**	**0.89**	**Y**	**1.07**	**2,590**	**19338.718**	**1.16**
OCDD-a	43.06		1.0001	1.0002	+0.3	2.17E+07	2.60	Y	0.07	2,580	16939.871	16.4
1368-TCDF	22.47		0.8230	0.8208	-3.0	6.60E+05	0.79	Y	0.96	1.55	6898.104	0.187
1468-TCDF	23.06		0.8443	0.8424	-2.6	3.74E+06	0.79	Y	0.96	8.78	6898.104	0.187
2468-TCDF	23.71		0.8672	0.8660	-1.7	3.61E+06	0.78	Y	0.96	8.47	6898.104	0.187
1346/1246-TCDF	24.15		0.8802	0.8821	+2.8	4.85E+06	0.79	Y	0.96	11.4	6898.104	0.187
1347/1378/1247-TCDF	24.26		0.8855	0.8861	+0.9	1.67E+07	0.84	Y	0.96	39.3	6898.104	0.187
1348-TCDF	24.49		0.8952	0.8945	-1.0	8.56E+06	0.79	Y	0.96	20.1	6898.104	0.187
1248/1367/1379-TCDF	24.58		0.9000	0.8980	-2.9	8.87E+07	0.78	Y	0.96	208	6898.104	0.187
1268-TCDF	24.99		0.9136	0.9129	-1.0	2.97E+07	0.79	Y	0.96	69.8	6898.104	0.187
1467-TCDF	25.13		0.9185	0.9178	-1.1	4.73E+06	0.79	Y	0.96	11.1	6898.104	0.187
1478-TCDF	25.29		0.9247	0.9240	-1.1	7.76E+07	0.80	Y	0.96	182	6898.104	0.187
1369/1237-TCDF	25.68		0.9381	0.9379	-0.3	2.00E+07	0.82	Y	0.96	46.9	6898.104	0.187
2467-TCDF	25.80		0.9427	0.9423	-0.6	2.14E+06	0.77	Y	0.96	5.03	6898.104	0.187
2368-TCDF	25.94		0.9484	0.9475	-1.4	4.16E+07	0.80	Y	0.96	97.6	6898.104	0.187
1238/1234/1678/1469/1236-TCDF	26.02		0.9517	0.9505	-1.9	1.11E+08	0.80	Y	0.96	260	6898.104	0.187
1278-TCDF	26.49	E	0.9682	0.9677	-0.8	8.72E+08	0.80	Y	0.96	2,050	6898.104	0.187
1349-TCDF	26.62		0.9725	0.9722	-0.5	1.26E+07	0.85	Y	0.96	29.6	6898.104	0.187
1267-TCDF	26.77		0.9782	0.9778	-0.6	4.90E+07	0.79	Y	0.96	115	6898.104	0.187
2346/1249-TCDF	26.96		0.9846	0.9849	+0.5	7.12E+06	0.79	Y	0.96	16.7	6898.104	0.187
2347/1279-TCDF	27.16		0.9926	0.9922	-0.7	2.10E+07	0.79	Y	0.96	49.3	6898.104	0.187
2348-TCDF	27.28		0.9966	0.9966	0	1.55E+08	0.79	Y	0.96	363	6898.104	0.187
2378-TCDF	**27.40**	E	**1.0006**	**1.0008**	**+0.3**	**1.81E+09**	**0.80**	**Y**	**0.96**	**4,260**	**6898.104**	**0.187**
2367/3467-TCDF	27.75		1.0139	1.0137	-0.3	1.50E+08	0.81	Y	0.96	353	6898.104	0.187
1269-TCDF	28.00		1.0226	1.0229	+0.5	3.07E+07	0.81	Y	0.96	72.1	6898.104	0.187
1239-TCDF	NotFnd		1.0322						0.96		6898.104	0.187
1289-TCDF	29.41		1.0729	1.0743	+2.5	1.52E+08	0.80	Y	0.96	357	6898.104	0.187
13468/12468-PeCDF	29.36		0.9135	0.9136	+0.2	3.47E+06	1.75	Y	0.94	9.18	6858.703	0.171
13678/13467/12467-PeCDF	30.90		0.9612	0.9615	+0.6	1.60E+06	1.49	Y	0.94	4.24	11206.074	0.279
12368/13478/12478-PeCDF	31.06		0.9661	0.9666	+0.9	3.58E+07	1.57	Y	0.94	94.8	11206.074	0.279
14678-PeCDF	31.16		0.9693	0.9695	+0.4	1.36E+06	1.73	Y	0.94	3.59	11206.074	0.279
13479-PeCDF	31.26	J EMPC	0.9723	0.9727	+0.8	2.99E+05	1.27	N	0.94	0.792	11206.074	0.279
13469/12479-PeCDF	31.45	J	0.9799	0.9786	-2.5	4.36E+05	1.40	Y	0.94	1.15	11206.074	0.279
12346-PeCDF	31.62	J EMPC	0.9842	0.9839	-0.6	3.67E+05	1.28	N	0.94	0.97	11206.074	0.279

Lab ID: B5970_18718_DF_002 | **Acq'd: 15 Dec 2021 23:10 PSW** | **Wt/Vol: 10.14 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-JC-SW-B-2 | **UTP: 16-Dec-2021 11:07:12 PSW** | **J-level: 0.493 pg/g** | **Split: 1** | **Checkcode: 802-511-WFM**

Datafile: 211215R16 | **Report: 20 Dec 2021 14:44 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.70		0.9868	0.9864	-0.8	1.35E+06	1.56	Y	0.94	3.56	11206.074	0.279
12347-PeCDF	31.78		0.9893	0.9888	-1.0	2.10E+06	1.56	Y	0.94	5.55	11206.074	0.279
12348-PeCDF	31.95		0.9941	0.9941	0	7.02E+06	1.59	Y	0.94	18.6	11206.074	0.279
12378-PeCDF	**32.15**		**1.0006**	**1.0006**	**0**	**8.70E+07**	**1.56**	**Y**	**0.95**	**223**	**11206.074**	**0.281**
12678/12367-PeCDF	32.45		1.0090	1.0097	+1.4	2.36E+07	1.56	Y	0.94	62.4	11206.074	0.279
12379-PeCDF	NotFnd		1.0143						0.94		11206.074	0.279
12679-PeCDF	NotFnd		0.9929						0.94		11206.074	0.279
23467/12369-PeCDF	33.13		0.9966	0.9964	-0.4	1.06E+06	1.51	Y	0.94	2.8	11206.074	0.279
23478-PeCDF	**33.27**		**1.0006**	**1.0008**	**+0.4**	**5.32E+07**	**1.59**	**Y**	**0.94**	**146**	**11206.074**	**0.277**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		11206.074	0.279
12349-PeCDF	NotFnd		1.0102						0.94		11206.074	0.279
12389-PeCDF	34.33		1.0325	1.0326	+0.2	2.97E+06	1.50	Y	0.94	7.86	11206.074	0.279
123468-HxCDF	35.12		0.9628	0.9629	+0.2	2.26E+06	1.27	Y	1.16	6.53	33015.94	0.775
124678/134678-HxCDF	35.31		0.9683	0.9682	-0.2	1.39E+07	1.27	Y	1.16	40.1	33015.94	0.775
134679-HxCDF	NotFnd		0.9746						1.16		33015.94	0.775
124679-HxCDF	NotFnd		0.9798						1.16		33015.94	0.775
124689-HxCDF	35.96		0.9859	0.9860	+0.2	6.53E+06	1.28	Y	1.16	18.8	33015.94	0.775
123467-HxCDF	36.37		0.9972	0.9972	0	1.41E+06	1.23	Y	1.16	4.06	33015.94	0.775
123478-HxCDF	**36.49**		**1.0004**	**1.0005**	**+0.2**	**1.39E+08**	**1.25**	**Y**	**1.23**	**399**	**33015.94**	**0.805**
123678-HxCDF	**36.63**		**1.0004**	**1.0005**	**+0.2**	**3.70E+07**	**1.27**	**Y**	**1.13**	**94.6**	**33015.94**	**0.692**
123479-HxCDF	NotFnd		1.0049						1.16		33015.94	0.775
123469-HxCDF	36.94		1.0088	1.0089	+0.2	9.78E+05	1.18	Y	1.16	2.82	33015.94	0.775
123679-HxCDF	NotFnd		0.9943						1.16		33015.94	0.775
234678-HxCDF	**37.29**		**1.0005**	**1.0005**	**0**	**6.37E+06**	**1.19**	**Y**	**1.15**	**19.1**	**33015.94**	**0.842**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		33015.94	0.775
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**33015.94**	**0.78**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.28		1.0007	1.0011	+0.9	1.05E+07	1.20	Y	1.16	30.3	33015.94	0.775
1234678-HpCDF	**39.62**		**1.0003**	**1.0003**	**0**	**4.58E+07**	**1.05**	**Y**	**1.36**	**134**	**8204.924**	**0.147**
1234679-HpCDF	39.87		1.0067	1.0068	+0.2	1.43E+06	1.06	Y	1.33	4.78	8204.924	0.184
1234689-HpCDF	40.01		1.0100	1.0101	+0.2	1.57E+07	1.05	Y	1.33	52.5	8204.924	0.184
1234789-HpCDF	**40.96**		**1.0003**	**1.0002**	**-0.2**	**1.22E+07**	**1.08**	**Y**	**1.30**	**47.3**	**8204.924**	**0.231**
OCDF	**43.24**		**1.0002**	**1.0003**	**+0.3**	**3.16E+07**	**0.88**	**Y**	**1.03**	**201**	**8939.411**	**0.477**
OCDF-a	43.24		1.0002	1.0002	0	1.81E+06	2.47	Y	0.06	199	8535.203	7.88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21.79-30.00
316.9824 Fn1
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22.0 23.0 24.0 25.0 26.0 27.0 28.0 29.0 30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.75e6
2.37e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
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1.35e7
0.00e0
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.72e7
8.58e6
0.00e0
39.0 39.5 40.0 40.5 41.0 41.5 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
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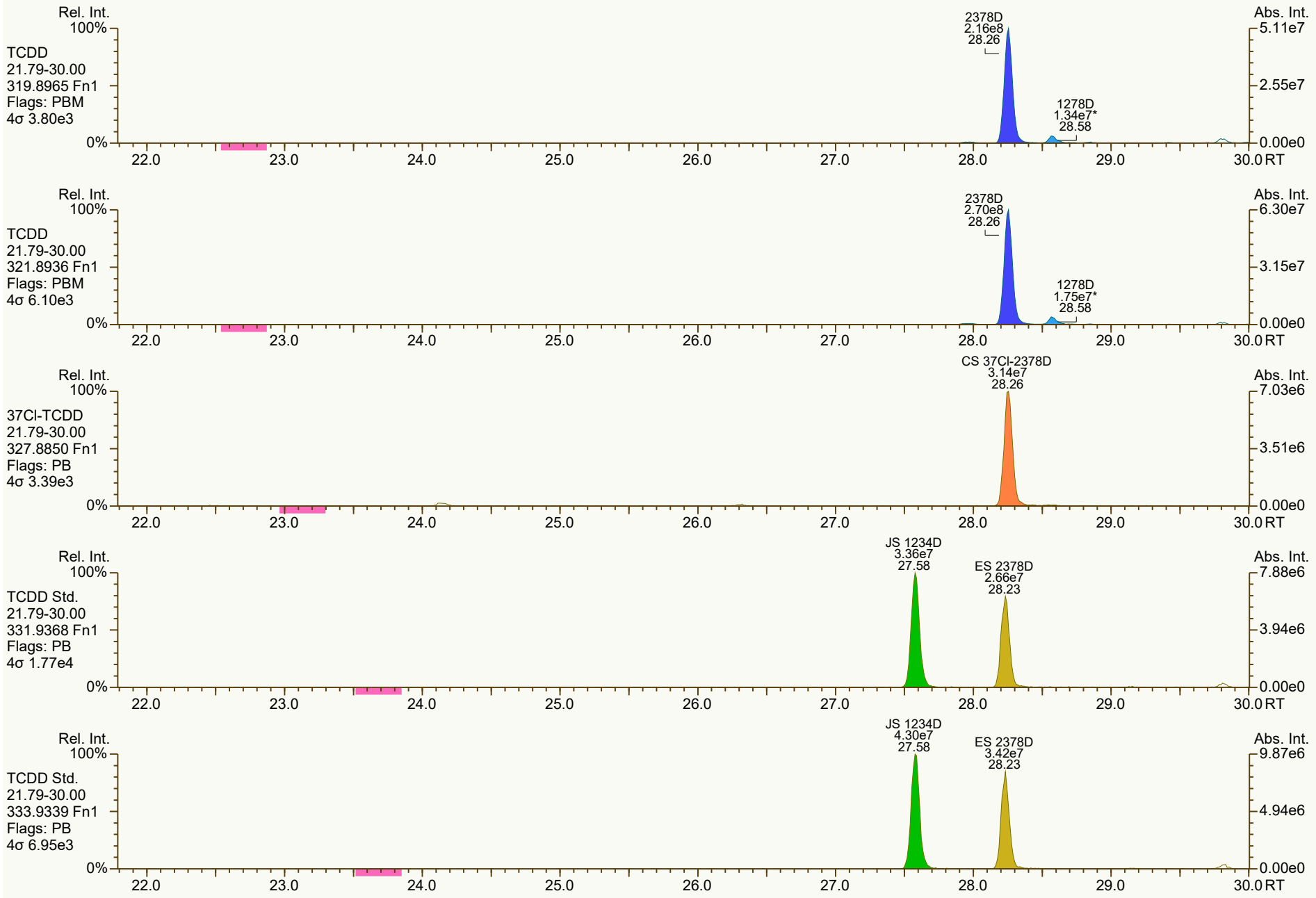
0%
Abs. Int.
1.01e7
5.07e6
0.00e0
42.0 42.5 43.0 43.5 44.0 44.5 45.0 RT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100%
TCDD
21.79-30.00
319.8965 Fn1
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0%
2378D
2.16e8
28.26
1278D
1.34e7*
28.58
Abs. Int.
5.11e7
2.55e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 6.10e3
0%
2378D
2.70e8
28.26
1278D
1.75e7*
28.58
Abs. Int.
6.30e7
3.15e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.39e3
0%
CS 37Cl-2378D
3.14e7
28.26
Abs. Int.
7.03e6
3.51e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.77e4
0%
JS 1234D
3.36e7
27.58
ES 2378D
2.66e7
28.23
Abs. Int.
7.88e6
3.94e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 6.95e3
0%
JS 1234D
4.30e7
27.58
ES 2378D
3.42e7
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Abs. Int.
9.87e6
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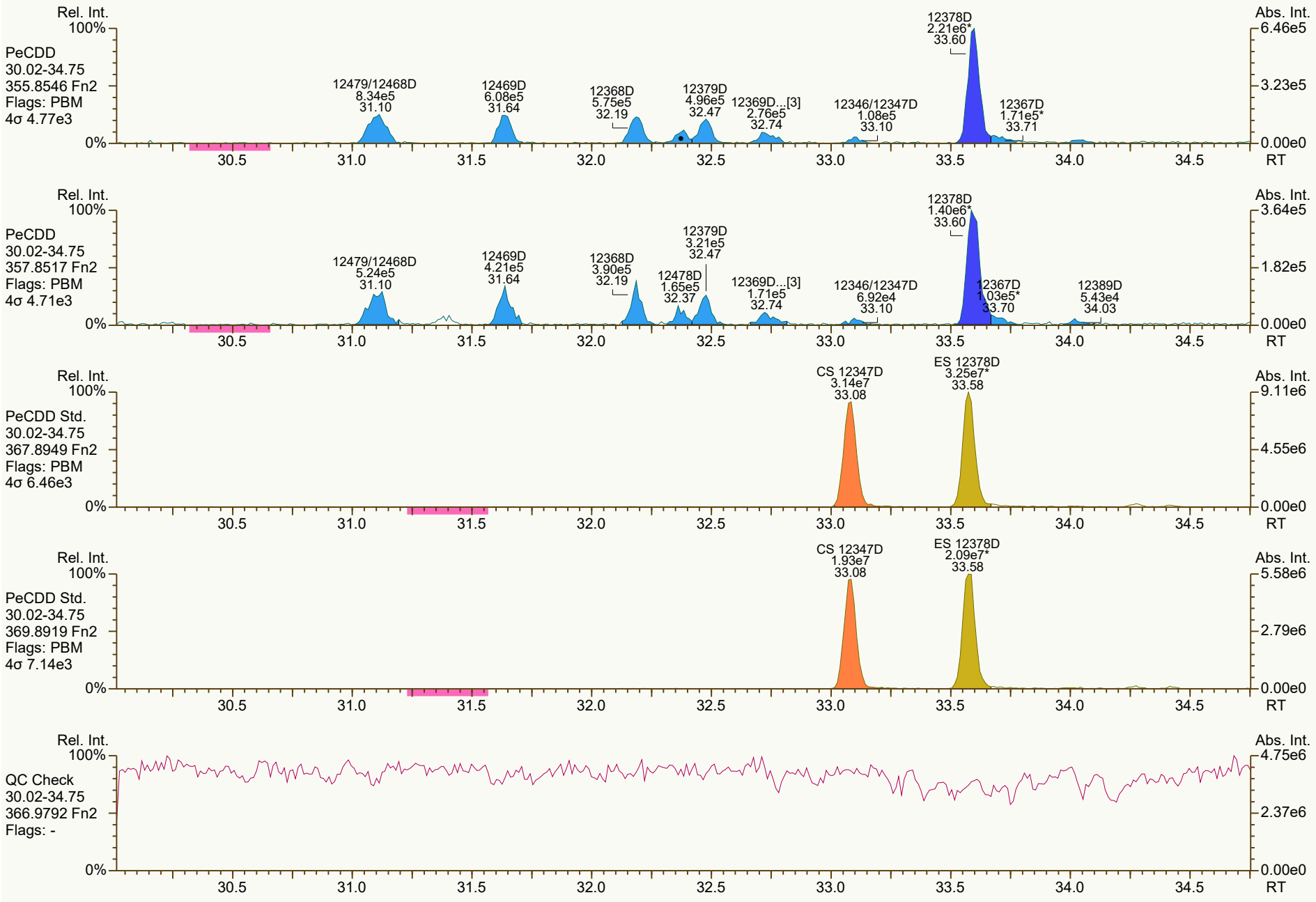
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

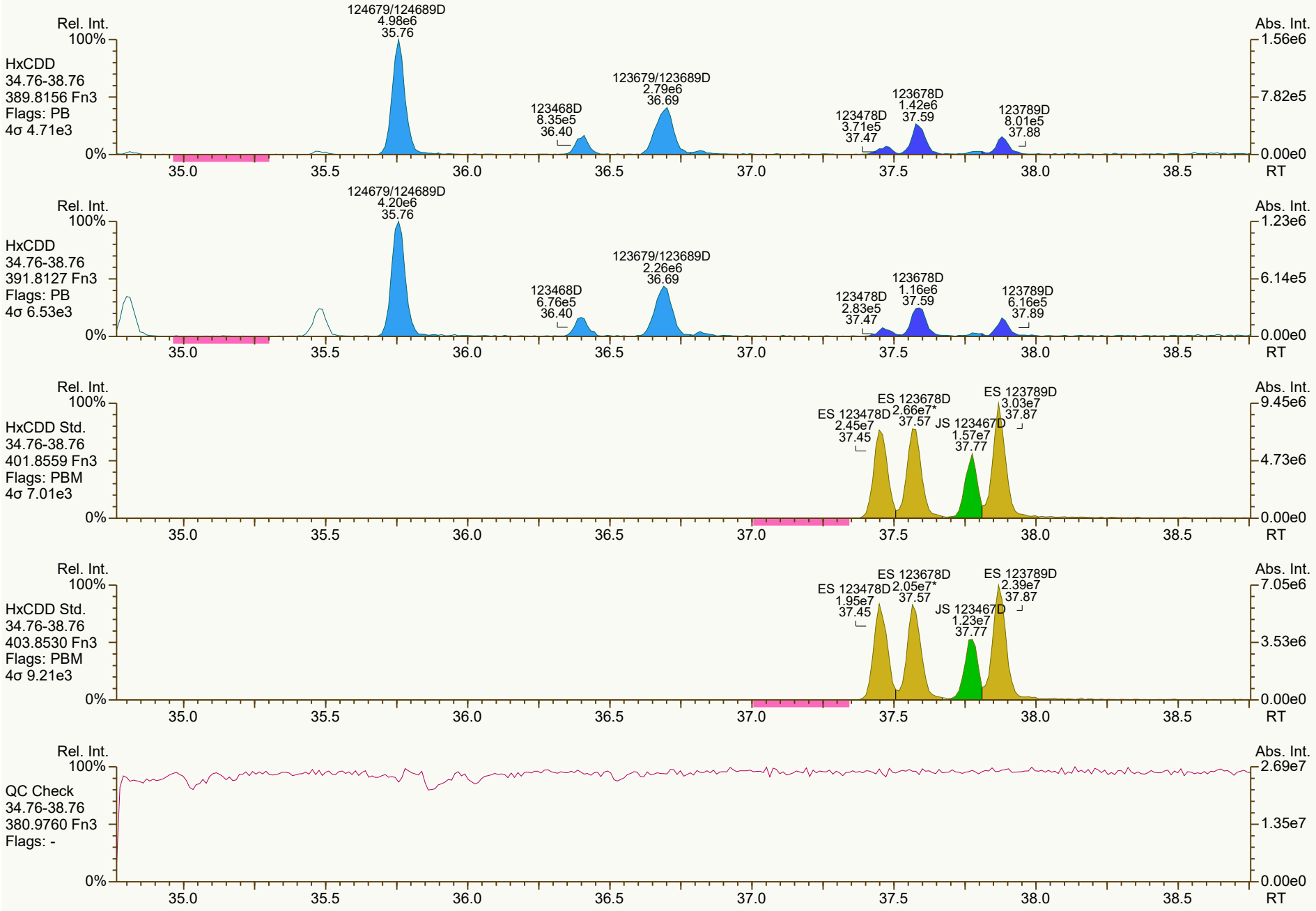
SGS ID: B5970_18718_DF_002 | Sample ID: 11215131-120221-S-JC-SW-B-2 | Acq: 15-Dec-2021 23:10:18

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36 | User: PSW Datafile: 211215R16

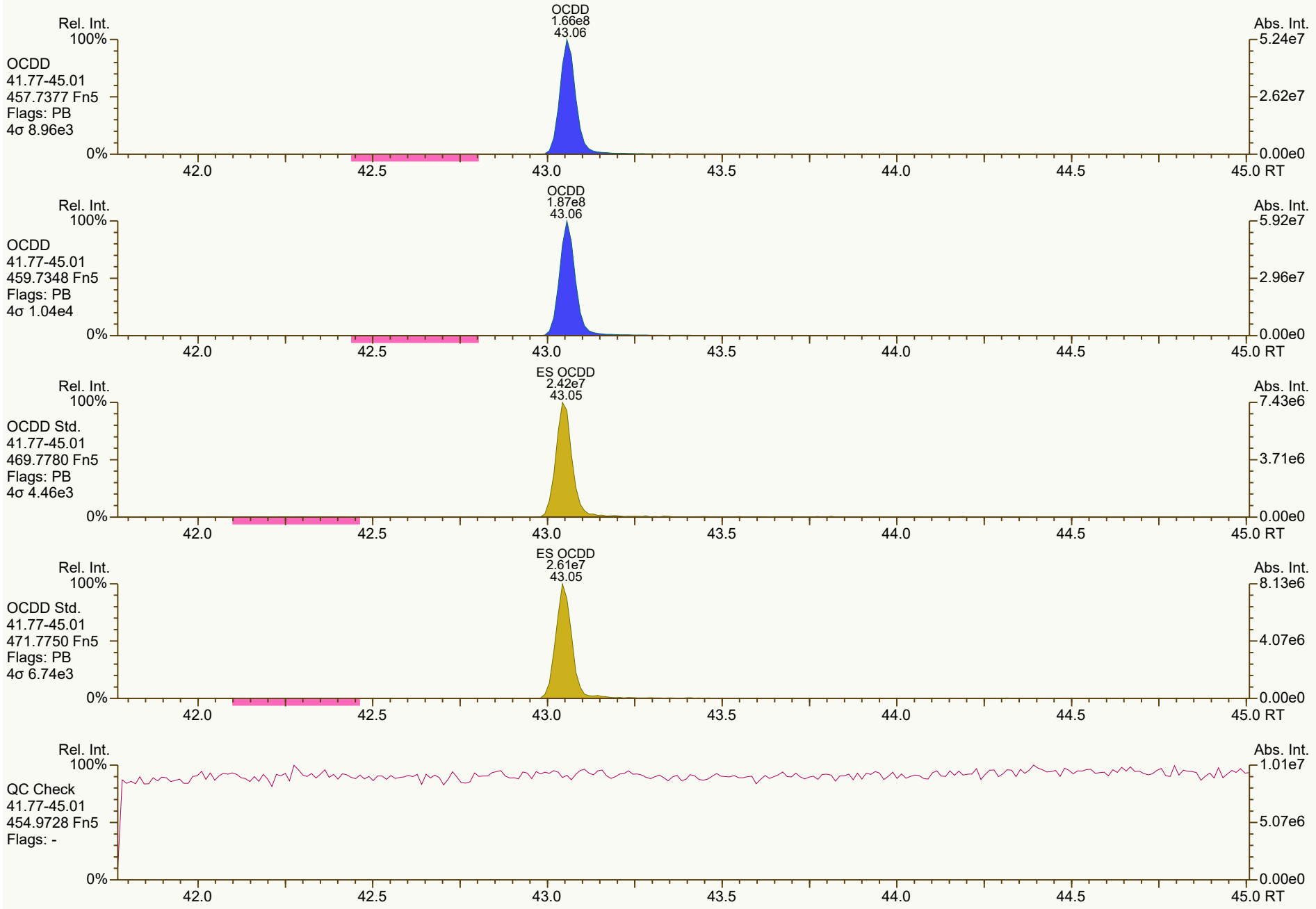


Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_002.utp_res, saved 16-Dec-2021 11:07 (PSW) | *Peak annotation: Areas, Centroids*

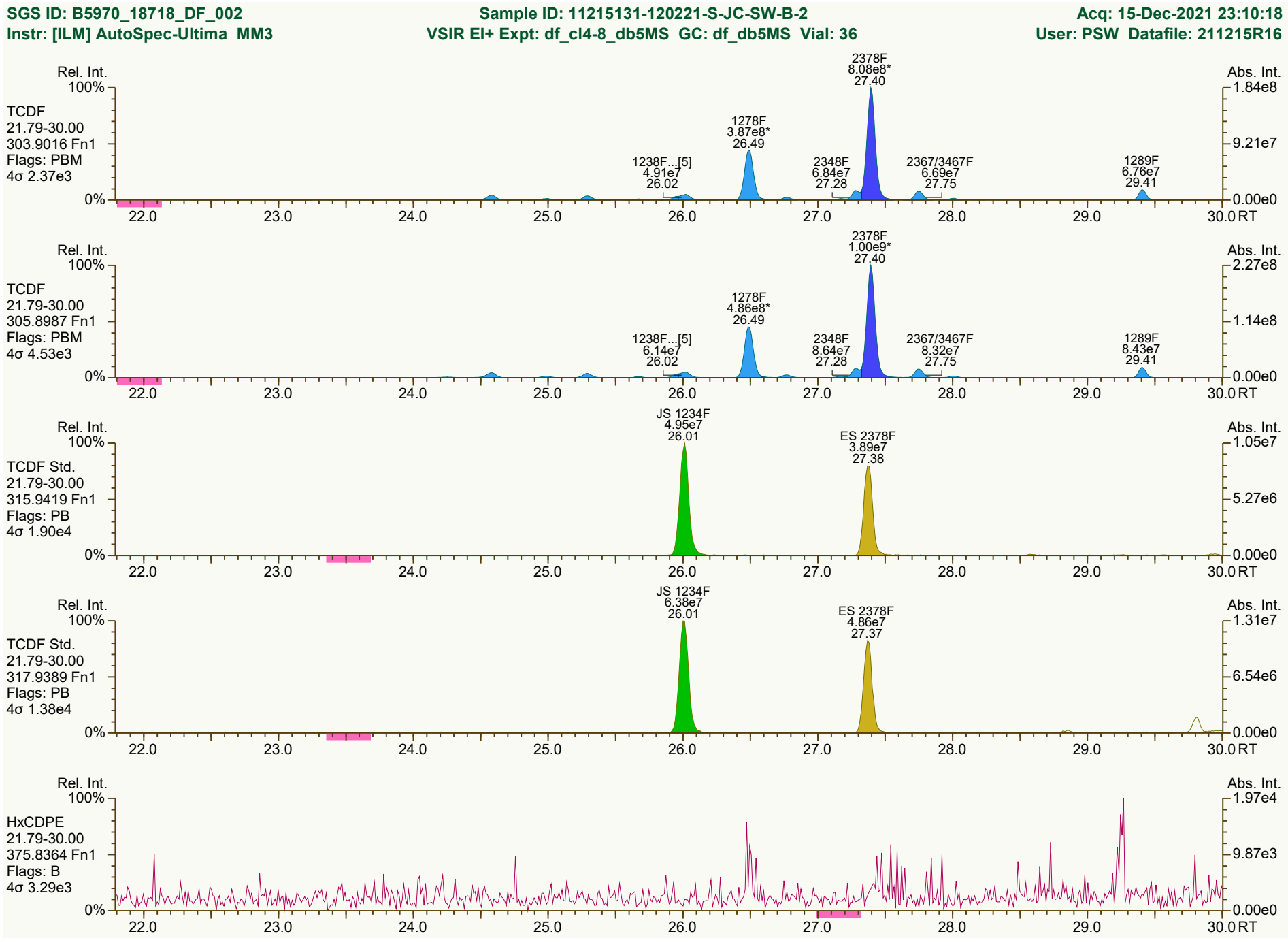
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2118, 5391 scc: 802-511 | *PKD: 16-Dec-2021 09:07 Printed: 16-Dec-2021 11:14 Page 3 of 12*


Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PB
4σ 4.71e3
0%
124679/124689D
4.98e6
35.76
123468D
8.35e5
36.40
123679/123689D
2.79e6
36.69
123478D
3.71e5
37.47
123678D
1.42e6
37.59
123789D
8.01e5
37.88
Abs. Int.
1.56e6
7.82e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PB
4σ 6.53e3
0%
124679/124689D
4.20e6
35.76
123468D
6.76e5
36.40
123679/123689D
2.26e6
36.69
123478D
2.83e5
37.47
123678D
1.16e6
37.59
123789D
6.16e5
37.89
Abs. Int.
1.23e6
6.14e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 7.01e3
0%
ES 123478D
2.45e7
37.45
ES 123678D
2.66e7*
37.57
JS 123467D
1.57e7
37.77
ES 123789D
3.03e7
37.87
Abs. Int.
9.45e6
4.73e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 9.21e3
0%
ES 123478D
1.95e7
37.45
ES 123678D
2.05e7*
37.57
JS 123467D
1.23e7
37.77
ES 123789D
2.39e7
37.87
Abs. Int.
7.05e6
3.53e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.69e7
1.35e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 6.45e3
0%
1234679D
2.06e7*
39.86
1234678D
2.27e7
40.52
Abs. Int.
8.24e6
4.12e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 3.88e3
0%
1234679D
1.99e7*
39.86
1234678D
2.18e7
40.52
Abs. Int.
8.18e6
4.09e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 8.80e3
0%
ES 1234678D
2.09e7
40.50
Abs. Int.
7.79e6
3.90e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 2.99e3
0%
ES 1234678D
2.05e7
40.50
Abs. Int.
7.52e6
3.76e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.72e7
8.58e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

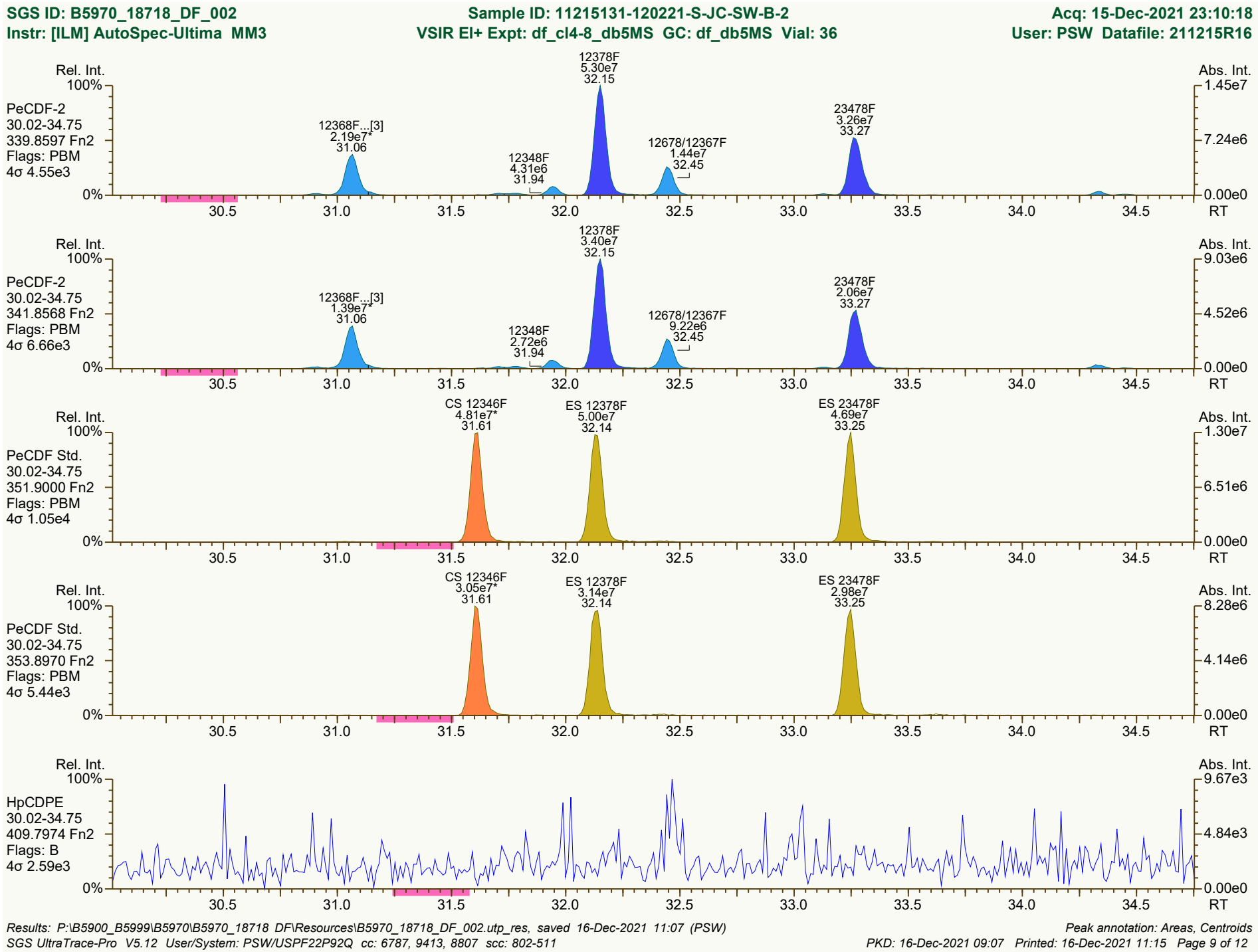

OCDD
1.66e8
43.06
Rel. Int.
100%
Abs. Int.
5.24e7
2.62e7
0.00e0
0%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 8.96e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.87e8
43.06
Rel. Int.
100%
Abs. Int.
5.92e7
2.96e7
0.00e0
0%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 1.04e4
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.42e7
43.05
Rel. Int.
100%
Abs. Int.
7.43e6
3.71e6
0.00e0
0%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.46e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.61e7
43.05
Rel. Int.
100%
Abs. Int.
8.13e6
4.07e6
0.00e0
0%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 6.74e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
Abs. Int.
1.01e7
5.07e6
0.00e0
0%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: B5970_18718_DF_002 | Sample ID: 11215131-120221-S-JC-SW-B-2 | Acq: 15-Dec-2021 23:10:18
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36 | User: PSW Datafile: 211215R16



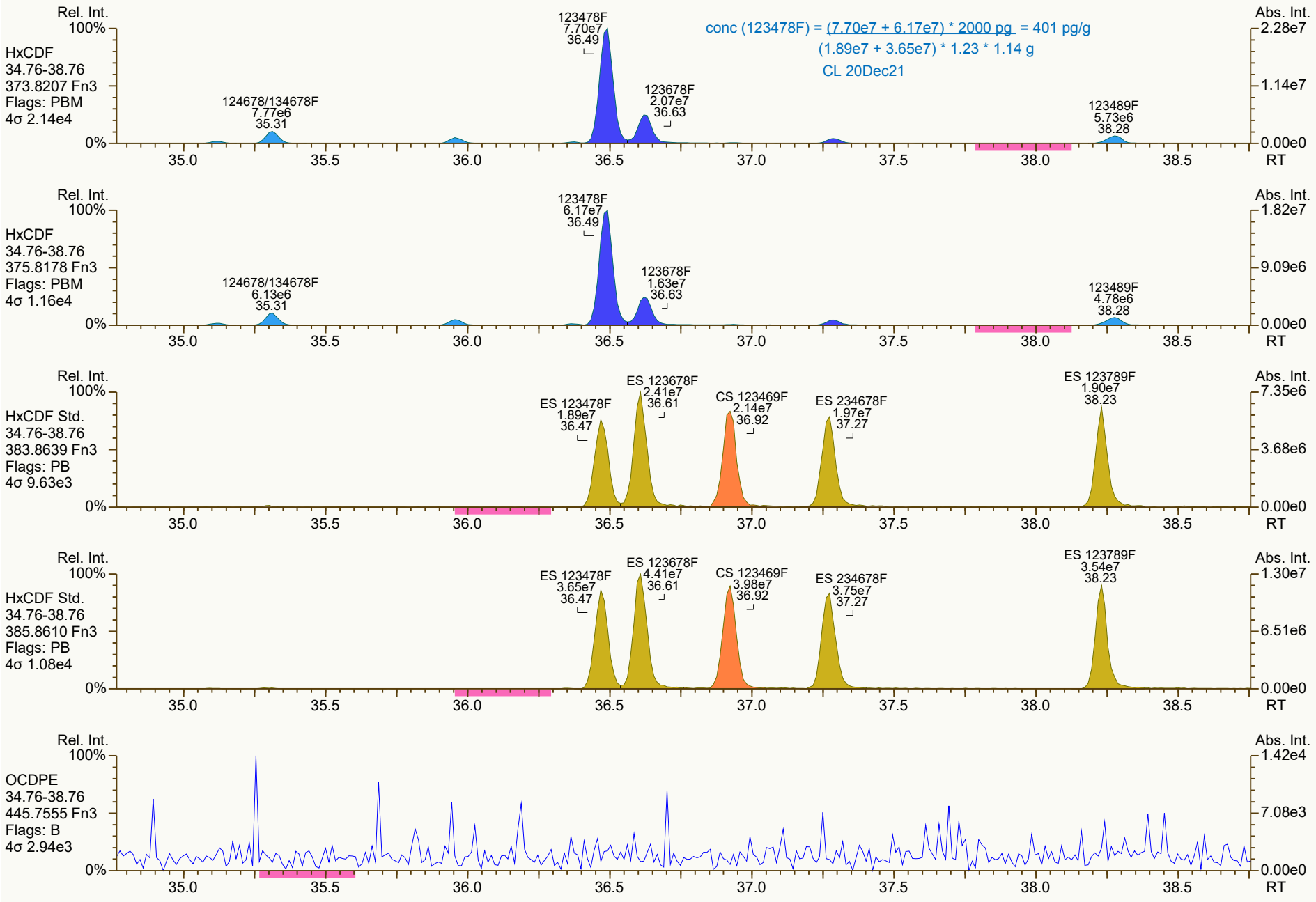
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_002.utp_res, saved 16-Dec-2021 11:07 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0498, 2417, 2296 scc: 802-511 | PKD: 16-Dec-2021 09:07 Printed: 16-Dec-2021 11:15 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
6.63e5
3.31e5
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.72e3
13468/12468F
2.21e6
29.36
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
3.24e5
1.62e5
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.14e3
13468/12468F
1.26e6
29.36
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
7.96e6
3.98e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


SGS ID: B5970_18718_DF_002
Sample ID: 11215131-120221-S-JC-SW-B-2
Acq: 15-Dec-2021 23:10:18
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36
User: PSW Datafile: 211215R16
Rel. Int.
Abs. Int.
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 4.55e3
12368F...[3] 2.19e7* 31.06
12348F 4.31e6 31.94
12378F 5.30e7 32.15
12678/12367F 1.44e7 32.45
23478F 3.26e7 33.27
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 6.66e3
12368F...[3] 1.39e7* 31.06
12348F 2.72e6 31.94
12378F 3.40e7 32.15
12678/12367F 9.22e6 32.45
23478F 2.06e7 33.27
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 1.05e4
CS 12346F 4.81e7* 31.61
ES 12378F 5.00e7 32.14
ES 23478F 4.69e7 33.25
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 5.44e3
CS 12346F 3.05e7* 31.61
ES 12378F 3.14e7 32.14
ES 23478F 2.98e7 33.25
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.59e3
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_002.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6787, 9413, 8807 scc: 802-511
PKD: 16-Dec-2021 09:07 Printed: 16-Dec-2021 11:15 Page 9 of 12

SGS ID: B5970_18718_DF_002 | Sample ID: 11215131-120221-S-JC-SW-B-2 | Acq: 15-Dec-2021 23:10:18

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36 | User: PSW Datafile: 211215R16

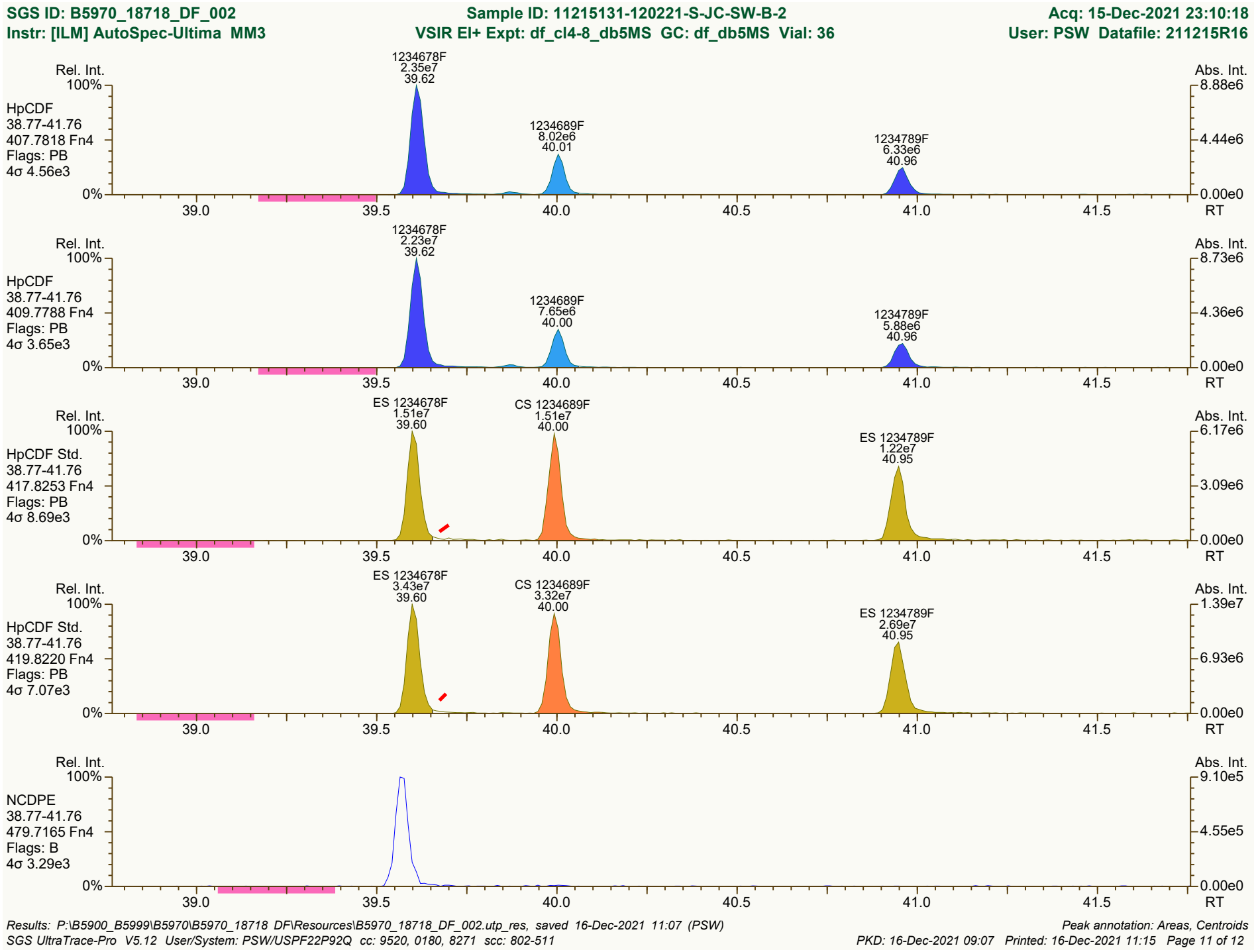


Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_002.utp_res, saved 16-Dec-2021 11:07 (PSW)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3621, 4481, 0603 scc: 802-511

PKD: 16-Dec-2021 09:07 Printed: 16-Dec-2021 11:15 Page 10 of 12


SGS ID: B5970_18718_DF_002
Sample ID: 11215131-120221-S-JC-SW-B-2
Acq: 15-Dec-2021 23:10:18
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 36
User: PSW Datafile: 211215R16
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.56e3
1234678F
2.35e7
39.62
1234689F
8.02e6
40.01
1234789F
6.33e6
40.96
8.88e6
4.44e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.65e3
1234678F
2.23e7
39.62
1234689F
7.65e6
40.00
1234789F
5.88e6
40.96
8.73e6
4.36e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 8.69e3
ES 1234678F
1.51e7
39.60
CS 1234689F
1.51e7
40.00
ES 1234789F
1.22e7
40.95
6.17e6
3.09e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 7.07e3
ES 1234678F
3.43e7
39.60
CS 1234689F
3.32e7
40.00
ES 1234789F
2.69e7
40.95
1.39e7
6.93e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.29e3
9.10e5
4.55e5
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_002.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9520, 0180, 8271 scc: 802-511
PKD: 16-Dec-2021 09:07 Printed: 16-Dec-2021 11:15 Page 11 of 12


OCDF
1.48e7
43.24
Rel. Int.
Abs. Int.
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 4.34e3
OCDF
1.68e7
43.24
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 4.60e3
ES OCDF
2.85e7
43.23
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 5.74e3
ES OCDF
3.19e7
43.23
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.10e3
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 4.67e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5970_18718_DF_003 **Acq'd:** 16 Dec 2021 02:27 PSW **Wt/Vol:** 10.01 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-JC-SW-B-3 **UTP:** 16-Dec-2021 11:07:14 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 140-373-WCS

Datafile: 211215R20 **Report:** 20 Dec 2021 14:46 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.27	E	1.0008	1.0008	0	7.44E+08	0.80	Y	1.34	1,510	27743.52	0.597
12378-PeCDD	33.61		1.0005	1.0005	0	5.49E+06	1.65	Y	1.06	16.2	25949.337	0.694
123478-HxCDD	37.48	J	1.0003	1.0004	+0.2	1.90E+05	1.33	Y	1.06	0.695	15072.221	0.477
123678-HxCDD	37.60		1.0033	1.0036	+0.7	8.63E+05	1.21	Y	1.08	2.98	15072.221	0.482
123789-HxCDD	37.90	J EMPC	1.0110	1.0116	+1.4	5.68E+05	1.48	N	1.02	1.85	15072.221	0.399
1234678-HpCDD	40.52		1.0003	1.0003	0	2.82E+07	1.05	Y	0.97	120	9765.062	0.289
OCDD	43.07		1.0003	1.0003	0	2.64E+08	0.90	Y	1.07	1,770	10484.379	0.534
2378-TCDF	27.41	E	1.0006	1.0008	+0.3	2.68E+09	0.80	Y	0.96	5,490	14230.896	0.323
12378-PeCDF	32.17		1.0006	1.0005	-0.2	1.04E+08	1.54	Y	0.95	233	13706.268	0.29
23478-PeCDF	33.28		1.0006	1.0008	+0.4	7.28E+07	1.57	Y	0.94	179	13706.268	0.302
123478-HxCDF	36.50		1.0004	1.0005	+0.2	1.40E+08	1.25	Y	1.23	354	38674.18	0.821
123678-HxCDF	36.63		1.0004	1.0004	0	3.78E+07	1.24	Y	1.13	85.8	38674.18	0.761
234678-HxCDF	37.30		1.0005	1.0004	-0.2	6.99E+06	1.27	Y	1.15	18.1	38674.18	0.83
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	38674.18	0.913
1234678-HpCDF	39.63		1.0003	1.0003	0	3.41E+07	1.03	Y	1.36	85.7	6067.62	0.0958
1234789-HpCDF	40.97		1.0003	1.0003	0	1.04E+07	1.02	Y	1.30	35.9	6067.62	0.15
OCDF	43.25		1.0002	1.0002	0	9.70E+06	0.88	Y	1.03	54.4	7055.879	0.301

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.25	1.0237	1.0236	-0.2	7.30E+07	0.77	Y	1.03	83.8
ES 12378-PeCDD	33.59	1.2158	1.2172	+2.8	6.41E+07	1.59	Y	1.03	73.6
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	5.18E+07	1.30	Y	0.99	85.4
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	5.36E+07	1.28	Y	0.97	90.3
ES 123789-HxCDD	37.88	1.0026	1.0027	+0.2	6.03E+07	1.25	Y	1.12	88
ES 1234678-HpCDD	40.51	1.0713	1.0723	+2.4	4.83E+07	1.08	Y	0.99	79.9
ES OCDD	43.06	1.1385	1.1397	+3.1	5.58E+07	0.93	Y	0.78	58.9
ES 2378-TCDF	27.39	1.0519	1.0524	+0.8	1.02E+08	0.79	Y	1.08	76.5
ES 12378-PeCDF	32.15	1.2331	1.2354	+4.4	9.45E+07	1.57	Y	0.93	82.6
ES 23478-PeCDF	33.26	1.2754	1.2780	+5.2	8.64E+07	1.56	Y	0.92	76.4
ES 123478-HxCDF	36.48	0.9656	0.9656	0	6.42E+07	0.53	Y	1.14	92.2
ES 123678-HxCDF	36.62	0.9693	0.9693	0	7.80E+07	0.53	Y	1.30	98.6
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	6.70E+07	0.53	Y	1.20	91.4
ES 123789-HxCDF	38.24	1.0121	1.0123	+0.5	5.94E+07	0.52	Y	1.14	85.7
ES 1234678-HpCDF	39.62	1.0478	1.0486	+1.9	5.84E+07	0.46	Y	0.95	101
ES 1234789-HpCDF	40.96	1.0832	1.0842	+2.5	4.46E+07	0.46	Y	0.85	86.4
ES OCDF	43.24	1.1434	1.1445	+2.9	6.95E+07	0.90	Y	0.93	61.6

Lab ID: B5970_18718_DF_003 **Acq'd:** 16 Dec 2021 02:27 PSW **Wt/Vol:** 10.01 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-JC-SW-B-3 **UTP:** 16-Dec-2021 11:07:14 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 140-373-WCS

Datafile: 211215R20 **Report:** 20 Dec 2021 14:46 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.59		-	-	-	8.42E+07	0.78	Y	-	-	
JS 1234-TCDF	26.02		-	-	-	1.22E+08	0.78	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	3.05E+07	1.28	Y	-	-	
CS 37Cl-2378-TCDD	28.27		1.0245	1.0244	-0.2	3.32E+07	n/a	-	1.31	75.3	
CS 12347-PeCDD	33.09		1.1978	1.1992	+2.8	5.83E+07	1.58	Y	0.89	77.6	
CS 12346-PeCDF	31.62		1.2130	1.2152	+4.2	9.06E+07	1.58	Y	0.87	85.2	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	6.71E+07	0.52	Y	1.09	101	
CS 1234689-HpCDF	40.01		1.0580	1.0590	+2.4	5.44E+07	0.44	Y	0.86	103	
~~SS 37Cl-2378-TCDD~~	~~28.27~~		~~1.0245~~	~~1.0244~~	~~-0.2~~	~~3.32E+07~~	~~n/a~~		~~1.26~~	~~90.3~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1992~~	~~+2.8~~	~~5.83E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~105~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2152~~	~~+4.2~~	~~9.06E+07~~	~~1.58~~	~~Y~~	~~0.93~~	~~103~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~6.71E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~102~~	
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~5.44E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~102~~	

Totals	Conc	EMPC
Total TCDD	1650	1670
Total PeCDD	26	27.2
Total HxCDD	44.9	47.3
Total HpCDD	262	262
Total Tetra-Octa Dioxins	3750	3780
Total TCDF	11,100	11100
Total PeCDF	648	648
Total HxCDF	532	532
Total HpCDF	158	158
Total Tetra-Octa Furans	12,500	12500
Total Tetra-Octa Dioxins & Furans	16200	16300

Lab ID: B5970_18718_DF_003 **Acq'd: 16 Dec 2021 02:27 PSW** **Wt/Vol: 10.01 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-JC-SW-B-3 **UTP: 16-Dec-2021 11:07:14 PSW** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 140-373-WCS**

Datafile: 211215R20 **Report: 20 Dec 2021 14:46 gd** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.62		0.8726	0.8715	-1.6	1.10E+06	0.80	Y	1.34	2.23	27743.52	0.597
1379-TCDD	24.97	EMPC	0.8851	0.8839	-1.8	4.62E+05	0.91	N	1.34	0.941	27743.52	0.597
1369-TCDD	NotFnd		0.9002						1.34		27743.52	0.597
1469-TCDD	26.19		0.9275	0.9273	-0.3	2.54E+06	0.82	Y	1.34	5.18	27743.52	0.597
1247/1246/1248/1249-TCDD	26.43	EMPC	0.9361	0.9357	-0.6	1.25E+06	1.06	N	1.34	2.55	27743.52	0.597
1378-TCDD	26.61	EMPC	0.9427	0.9420	-1.1	2.16E+06	0.90	N	1.34	4.39	27743.52	0.597
1268-TCDD	NotFnd		0.9498						1.34		27743.52	0.597
1478-TCDD	27.07	EMPC	0.9584	0.9584	0	1.94E+06	0.97	N	1.34	3.95	27743.52	0.597
1279-TCDD	27.23	EMPC	0.9644	0.9642	-0.3	3.04E+05	2.45	N	1.34	0.62	27743.52	0.597
1234/1269-TCDD	27.58	EMPC	0.9766	0.9765	-0.2	6.31E+05	1.21	N	1.34	1.28	27743.52	0.597
1236-TCDD	NotFnd		0.9813						1.34		27743.52	0.597
1237/1238-TCDD	27.98		0.9906	0.9905	-0.2	1.21E+07	0.85	Y	1.34	24.6	27743.52	0.597
1239-TCDD	NotFnd		0.9952						1.34		27743.52	0.597
2378-TCDD	**28.27**	E	**1.0008**	1.0008	**0**	7.44E+08	0.80	Y	**1.34**	**1,510**	**27743.52**	**0.597**
1278-TCDD	28.59		1.0122	1.0121	-0.2	4.94E+07	0.81	Y	1.34	101	27743.52	0.597
1267-TCDD	28.73	EMPC	1.0168	1.0171	+0.5	3.90E+06	0.96	N	1.34	7.94	27743.52	0.597
1289-TCDD	29.22	EMPC	1.0349	1.0344	-0.9	2.71E+06	1.11	N	1.34	5.52	27743.52	0.597
12479/12468-PeCDD	31.11	J	0.9267	0.9261	-1.1	6.49E+05	1.40	Y	1.06	1.91	25949.337	0.694
12469-PeCDD	31.65		0.9425	0.9422	-0.6	1.23E+06	1.49	Y	1.06	3.62	25949.337	0.694
12368-PeCDD	32.20	J	0.9588	0.9586	-0.4	6.83E+05	1.45	Y	1.06	2.01	25949.337	0.694
12478-PeCDD	32.39	J	0.9643	0.9643	0	3.67E+05	1.57	Y	1.06	1.08	25949.337	0.694
12379-PeCDD	NotFnd		0.9673						1.06		25949.337	0.694
12369/12467/12489-PeCDD	32.75	J	0.9750	0.9751	+0.2	4.21E+05	1.77	Y	1.06	1.24	25949.337	0.694
12346/12347-PeCDD	NotFnd		0.9859						1.06		25949.337	0.694
12378-PeCDD	33.61		**1.0005**	**1.0005**	**0**	**5.49E+06**	**1.65**	**Y**	**1.06**	**16.2**	**25949.337**	**0.694**
12367-PeCDD	33.71	J EMPC	1.0032	1.0035	+0.6	4.10E+05	1.87	N	1.06	1.21	25949.337	0.694
12389-PeCDD	NotFnd		1.0135						1.06		25949.337	0.694
124679/124689-HxCDD	35.77		0.9544	0.9548	+0.9	8.32E+06	1.26	Y	1.05	28.6	15072.221	0.451
123468-HxCDD	36.42	J	0.9716	0.9721	+1.1	3.52E+05	1.08	Y	1.05	1.21	15072.221	0.451
123679/123689-HxCDD	36.70		0.9793	0.9797	+0.9	3.01E+06	1.26	Y	1.05	10.4	15072.221	0.451
123469-HxCDD	36.83	J	0.9829	0.9832	+0.7	2.97E+05	1.22	Y	1.05	1.02	15072.221	0.451
123478-HxCDD	37.48	J	**1.0003**	**1.0004**	**+0.2**	**1.90E+05**	**1.33**	**Y**	1.06	**0.695**	**15072.221**	**0.477**
123678-HxCDD	37.60		**1.0033**	**1.0036**	**+0.7**	**8.63E+05**	**1.21**	**Y**	1.08	**2.98**	**15072.221**	**0.482**
123467-HxCDD	37.78	J EMPC	1.0084	1.0086	+0.5	1.53E+05	0.83	N	1.05	0.525	15072.221	0.451
123789-HxCDD	37.90	J EMPC	**1.0110**	**1.0116**	**+1.4**	**5.68E+05**	**1.48**	**N**	1.02	**1.85**	**15072.221**	**0.399**

Lab ID: B5970_18718_DF_003 **Acq'd:** 16 Dec 2021 02:27 PSW **Wt/Vol:** 10.01 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-JC-SW-B-3 **UTP:** 16-Dec-2021 11:07:14 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 140-373-WCS

Datafile: 211215R20 **Report:** 20 Dec 2021 14:46 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

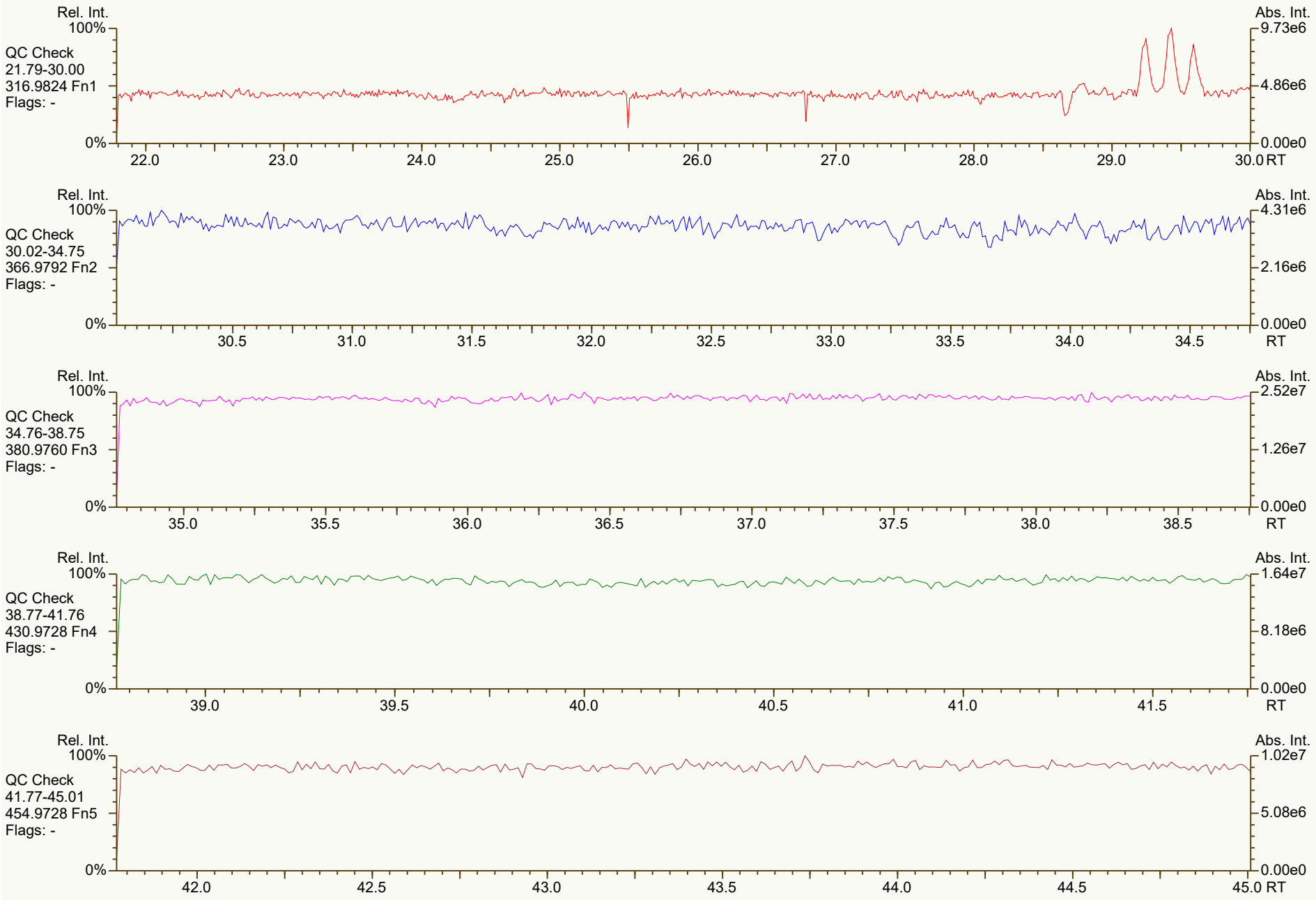
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	3.34E+07	1.02	Y	0.97	142	9765.062	0.289
1234678-HpCDD	**40.52**		**1.0003**	**1.0003**	**0**	**2.82E+07**	**1.05**	**Y**	**0.97**	**120**	**9765.062**	**0.289**
OCDD	**43.07**		**1.0003**	**1.0003**	**0**	**2.64E+08**	**0.90**	**Y**	**1.07**	**1,770**	**10484.379**	**0.534**
OCDD-a	43.06		1.0001	1.0002	+0.3	1.62E+07	2.50	Y	0.07	1,760	11539.078	9.52
1368-TCDF	22.49		0.8230	0.8210	-2.7	6.48E+05	0.83	Y	0.96	1.33	14230.896	0.323
1468-TCDF	23.08		0.8443	0.8427	-2.2	3.75E+06	0.79	Y	0.96	7.69	14230.896	0.323
2468-TCDF	23.72		0.8672	0.8661	-1.6	2.78E+06	0.78	Y	0.96	5.69	14230.896	0.323
1346/1246-TCDF	24.14		0.8802	0.8815	+1.9	3.19E+06	0.81	Y	0.96	6.54	14230.896	0.323
1347/1378/1247-TCDF	24.27		0.8855	0.8862	+1.0	2.53E+07	0.80	Y	0.96	51.8	14230.896	0.323
1348-TCDF	24.50		0.8952	0.8945	-1.0	1.07E+07	0.78	Y	0.96	21.8	14230.896	0.323
1248/1367/1379-TCDF	24.60		0.9000	0.8982	-2.7	1.29E+08	0.80	Y	0.96	264	14230.896	0.323
1268-TCDF	25.00		0.9136	0.9129	-1.1	4.34E+07	0.78	Y	0.96	88.9	14230.896	0.323
1467-TCDF	25.14		0.9185	0.9178	-1.1	6.47E+06	0.73	Y	0.96	13.2	14230.896	0.323
1478-TCDF	25.31		0.9247	0.9241	-0.9	1.14E+08	0.80	Y	0.96	233	14230.896	0.323
1369/1237-TCDF	25.69		0.9381	0.9379	-0.3	2.88E+07	0.79	Y	0.96	58.9	14230.896	0.323
2467-TCDF	25.81		0.9427	0.9423	-0.6	3.34E+06	0.81	Y	0.96	6.83	14230.896	0.323
2368-TCDF	25.95		0.9484	0.9475	-1.4	6.05E+07	0.79	Y	0.96	124	14230.896	0.323
1238/1234/1678/1469/1236-TCDF	26.03		0.9517	0.9505	-1.9	1.62E+08	0.79	Y	0.96	331	14230.896	0.323
1278-TCDF	26.50	E	0.9682	0.9677	-0.8	1.30E+09	0.80	Y	0.96	2,650	14230.896	0.323
1349-TCDF	26.63		0.9725	0.9721	-0.6	1.67E+07	0.79	Y	0.96	34.2	14230.896	0.323
1267-TCDF	26.78		0.9782	0.9778	-0.6	7.06E+07	0.79	Y	0.96	145	14230.896	0.323
2346/1249-TCDF	26.97		0.9846	0.9847	+0.2	1.04E+07	0.76	Y	0.96	21.2	14230.896	0.323
2347/1279-TCDF	27.17		0.9926	0.9922	-0.7	2.99E+07	0.78	Y	0.96	61.2	14230.896	0.323
2348-TCDF	27.29		0.9966	0.9966	0	2.24E+08	0.80	Y	0.96	459	14230.896	0.323
2378-TCDF	**27.41**	E	**1.0006**	**1.0008**	**+0.3**	**2.68E+09**	**0.80**	**Y**	**0.96**	**5,490**	**14230.896**	**0.323**
2367/3467-TCDF	27.76		1.0139	1.0137	-0.3	2.20E+08	0.79	Y	0.96	450	14230.896	0.323
1269-TCDF	28.02		1.0226	1.0229	+0.5	4.55E+07	0.81	Y	0.96	93.2	14230.896	0.323
1239-TCDF	28.27		1.0322	1.0322	0	5.68E+06	0.80	Y	0.96	11.6	14230.896	0.323
1289-TCDF	29.43		1.0729	1.0744	+2.6	2.22E+08	0.80	Y	0.96	454	14230.896	0.323
13468/12468-PeCDF	29.37		0.9135	0.9137	+0.4	2.13E+06	1.65	Y	0.94	4.99	6793.257	0.147
13678/13467/12467-PeCDF	30.91		0.9612	0.9616	+0.7	1.09E+06	1.63	Y	0.94	2.56	13706.268	0.296
12368/13478/12478-PeCDF	31.07		0.9661	0.9666	+0.9	4.52E+07	1.58	Y	0.94	106	13706.268	0.296
14678-PeCDF	31.16	J	0.9693	0.9694	+0.2	1.02E+06	1.64	Y	0.94	2.39	13706.268	0.296
13479-PeCDF	31.24	J	0.9723	0.9717	-1.1	3.17E+05	1.38	Y	0.94	0.743	13706.268	0.296
13469/12479-PeCDF	NotFnd		0.9799						0.94		13706.268	0.296
12346-PeCDF	31.62	J	0.9842	0.9836	-1.1	2.54E+05	1.60	Y	0.94	0.595	13706.268	0.296

Lab ID: B5970_18718_DF_003 **Acq'd: 16 Dec 2021 02:27 PSW** **Wt/Vol: 10.01 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-JC-SW-B-3 **UTP: 16-Dec-2021 11:07:14 PSW** **J-level: 0.5 pg/g Split: 1** **Checkcode: 140-373-WCS**

Datafile: 211215R20 **Report: 20 Dec 2021 14:46 gd** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.72		0.9868	0.9866	-0.4	1.43E+06	1.56	Y	0.94	3.35	13706.268	0.296
12347-PeCDF	31.80		0.9893	0.9890	-0.6	1.81E+06	1.73	Y	0.94	4.24	13706.268	0.296
12348-PeCDF	31.96		0.9941	0.9940	-0.2	9.63E+06	1.51	Y	0.94	22.6	13706.268	0.296
12378-PeCDF	**32.17**		**1.0006**	**1.0005**	**-0.2**	**1.04E+08**	**1.54**	**Y**	**0.95**	**233**	**13706.268**	**0.29**
12678/12367-PeCDF	32.46		1.0090	1.0097	+1.4	3.22E+07	1.56	Y	0.94	75.4	13706.268	0.296
12379-PeCDF	NotFnd		1.0143						0.94		13706.268	0.296
12679-PeCDF	33.02	J EMPC	0.9929	0.9929	0	3.24E+05	1.99	N	0.94	0.76	13706.268	0.296
23467/12369-PeCDF	33.14		0.9966	0.9964	-0.4	1.20E+06	1.53	Y	0.94	2.8	13706.268	0.296
23478-PeCDF	**33.28**		**1.0006**	**1.0008**	**+0.4**	**7.28E+07**	**1.57**	**Y**	**0.94**	**179**	**13706.268**	**0.302**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		13706.268	0.296
12349-PeCDF	NotFnd		1.0102						0.94		13706.268	0.296
12389-PeCDF	34.35		1.0325	1.0327	+0.4	4.19E+06	1.61	Y	0.94	9.82	13706.268	0.296
123468-HxCDF	35.13		0.9628	0.9629	+0.2	1.31E+06	1.26	Y	1.16	3.34	38674.18	0.825
124678/134678-HxCDF	35.32		0.9683	0.9682	-0.2	1.12E+07	1.27	Y	1.16	28.7	38674.18	0.825
134679-HxCDF	NotFnd		0.9746						1.16		38674.18	0.825
124679-HxCDF	NotFnd		0.9798						1.16		38674.18	0.825
124689-HxCDF	35.97		0.9859	0.9859	0	5.27E+06	1.23	Y	1.16	13.5	38674.18	0.825
123467-HxCDF	36.38	J	0.9972	0.9972	0	6.28E+05	1.30	Y	1.16	1.61	38674.18	0.825
123478-HxCDF	**36.50**		**1.0004**	**1.0005**	**+0.2**	**1.40E+08**	**1.25**	**Y**	**1.23**	**354**	**38674.18**	**0.821**
123678-HxCDF	**36.63**		**1.0004**	**1.0004**	**0**	**3.78E+07**	**1.24**	**Y**	**1.13**	**85.8**	**38674.18**	**0.761**
123479-HxCDF	NotFnd		1.0049						1.16		38674.18	0.825
123469-HxCDF	NotFnd		1.0088						1.16		38674.18	0.825
123679-HxCDF	NotFnd		0.9943						1.16		38674.18	0.825
234678-HxCDF	**37.30**		**1.0005**	**1.0004**	**-0.2**	**6.99E+06**	**1.27**	**Y**	**1.15**	**18.1**	**38674.18**	**0.83**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		38674.18	0.825
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**38674.18**	**0.913**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.29		1.0007	1.0012	+1.1	1.07E+07	1.22	Y	1.16	27.4	38674.18	0.825
1234678-HpCDF	**39.63**		**1.0003**	**1.0003**	**0**	**3.41E+07**	**1.03**	**Y**	**1.36**	**85.7**	**6067.62**	**0.0958**
1234679-HpCDF	39.88	**J**	1.0067	1.0067	0	5.75E+05	1.02	Y	1.33	1.68	6067.62	0.119
1234689-HpCDF	40.02		1.0100	1.0101	+0.2	1.20E+07	1.04	Y	1.33	35.1	6067.62	0.119
1234789-HpCDF	**40.97**		**1.0003**	**1.0003**	**0**	**1.04E+07**	**1.02**	**Y**	**1.30**	**35.9**	**6067.62**	**0.15**
OCDF	**43.25**		**1.0002**	**1.0002**	**0**	**9.70E+06**	**0.88**	**Y**	**1.03**	**54.4**	**7055.879**	**0.301**
OCDF-a	43.25	**EMPC**	1.0002	1.0002	0	4.58E+05	1.55	N	0.06	44.4	10554.973	7.79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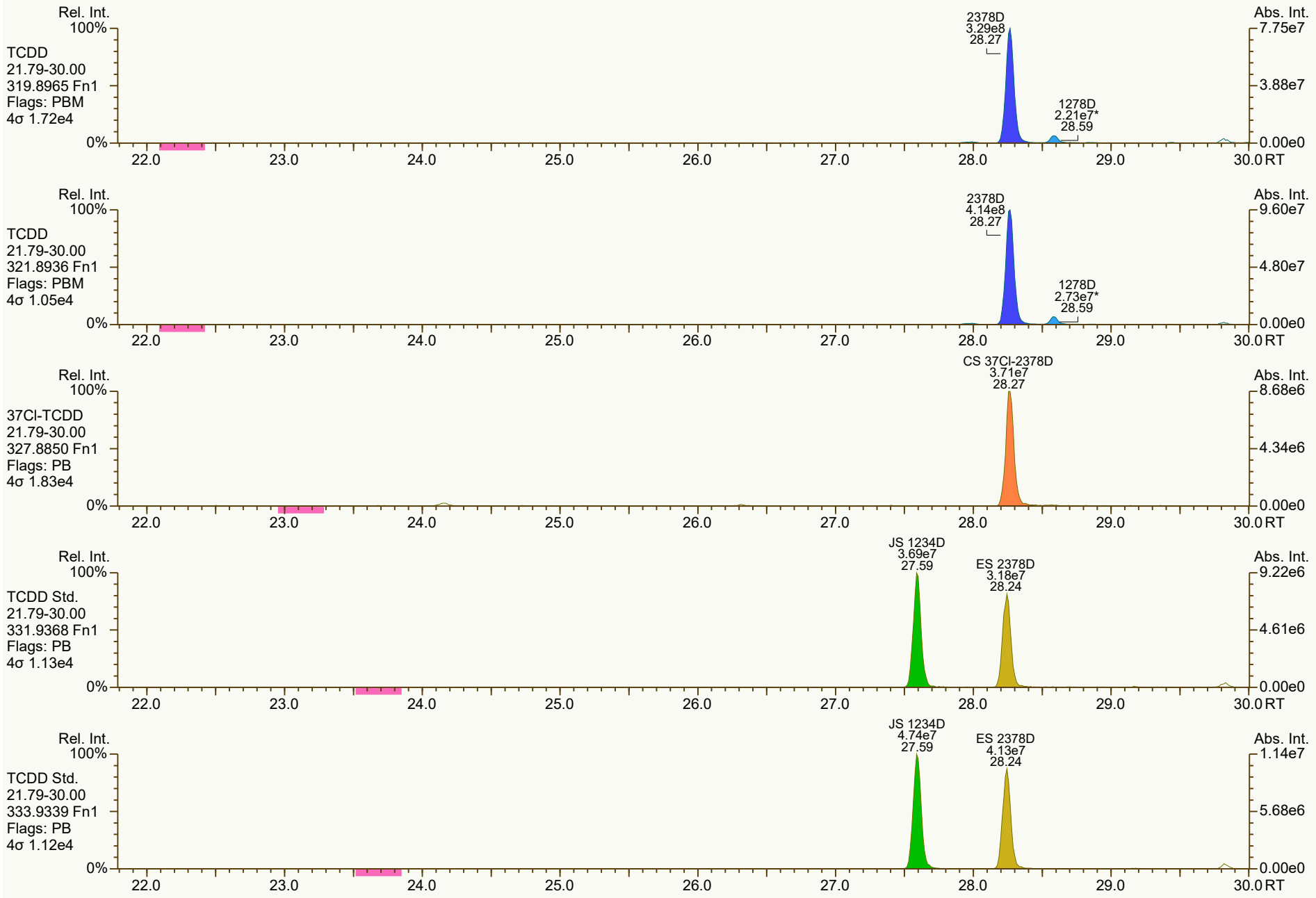
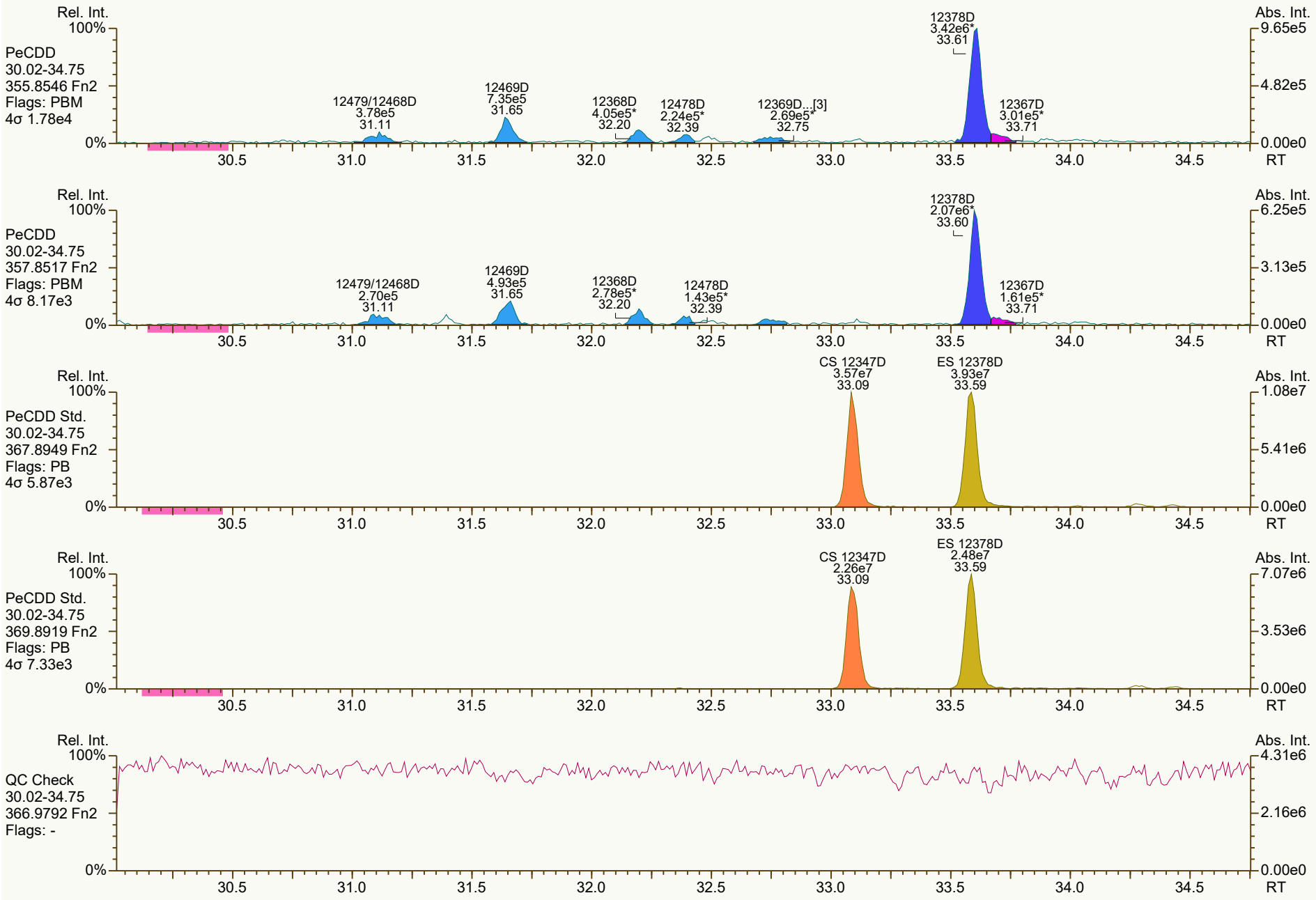
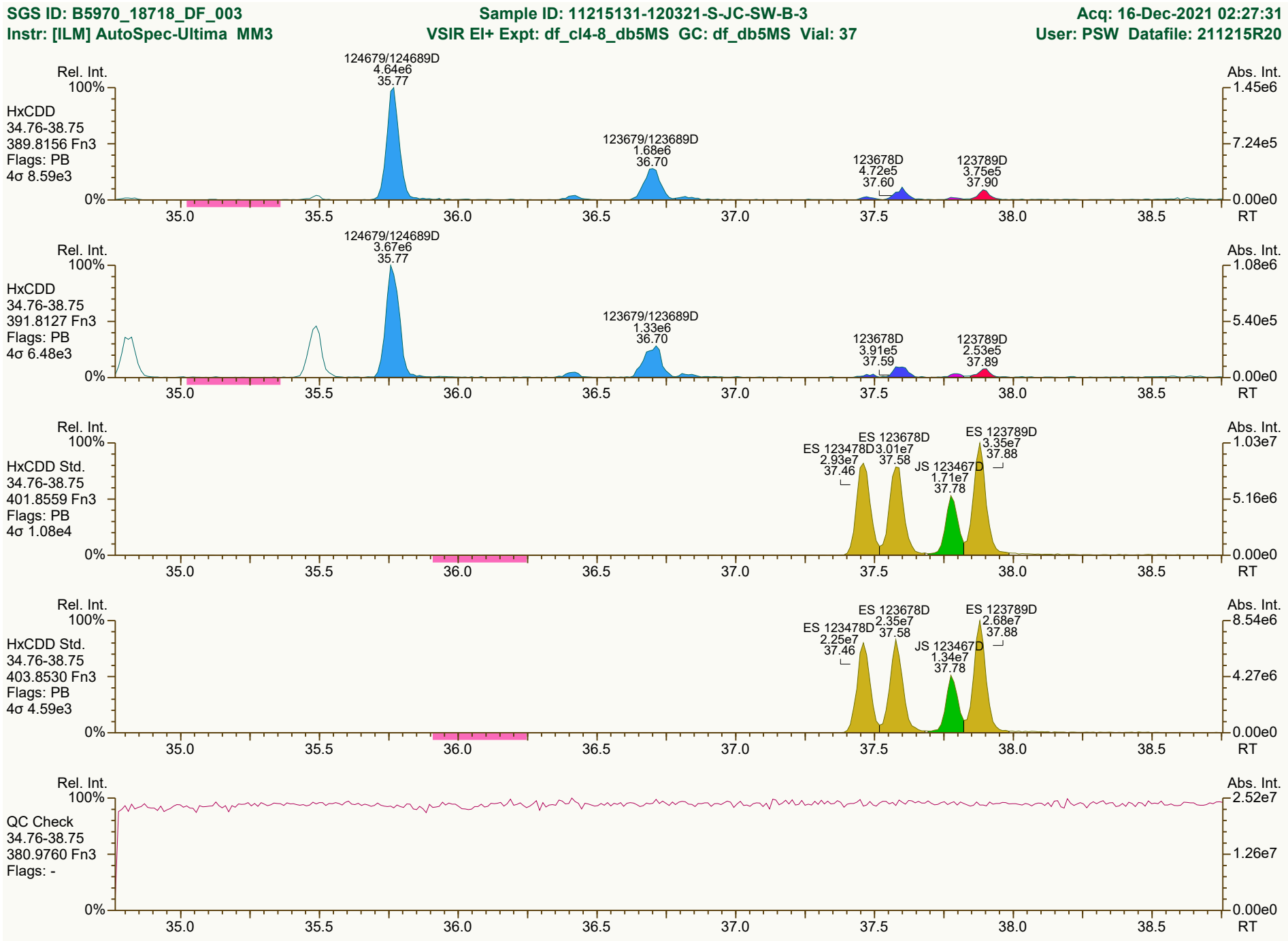
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.31e6
2.16e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.52e7
1.26e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.64e7
8.18e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.02e7
5.08e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

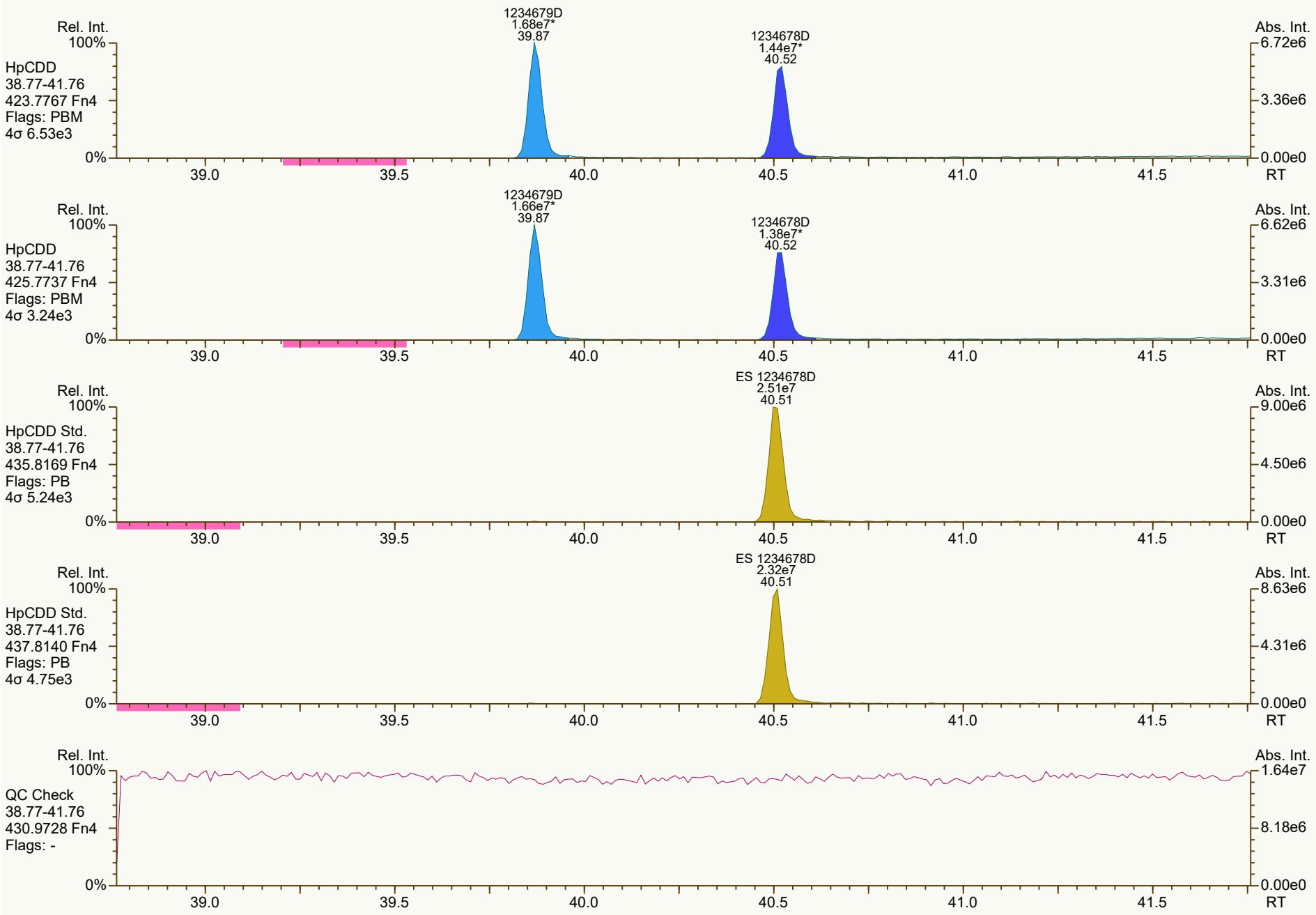

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 1.72e4
0%
2378D
3.29e8
28.27
1278D
2.21e7*
28.59
Abs. Int.
7.75e7
3.88e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 1.05e4
0%
2378D
4.14e8
28.27
1278D
2.73e7*
28.59
Abs. Int.
9.60e7
4.80e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 1.83e4
0%
CS 37Cl-2378D
3.71e7
28.27
Abs. Int.
8.68e6
4.34e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.13e4
0%
JS 1234D
3.69e7
27.59
ES 2378D
3.18e7
28.24
Abs. Int.
9.22e6
4.61e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.12e4
0%
JS 1234D
4.74e7
27.59
ES 2378D
4.13e7
28.24
Abs. Int.
1.14e7
5.68e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

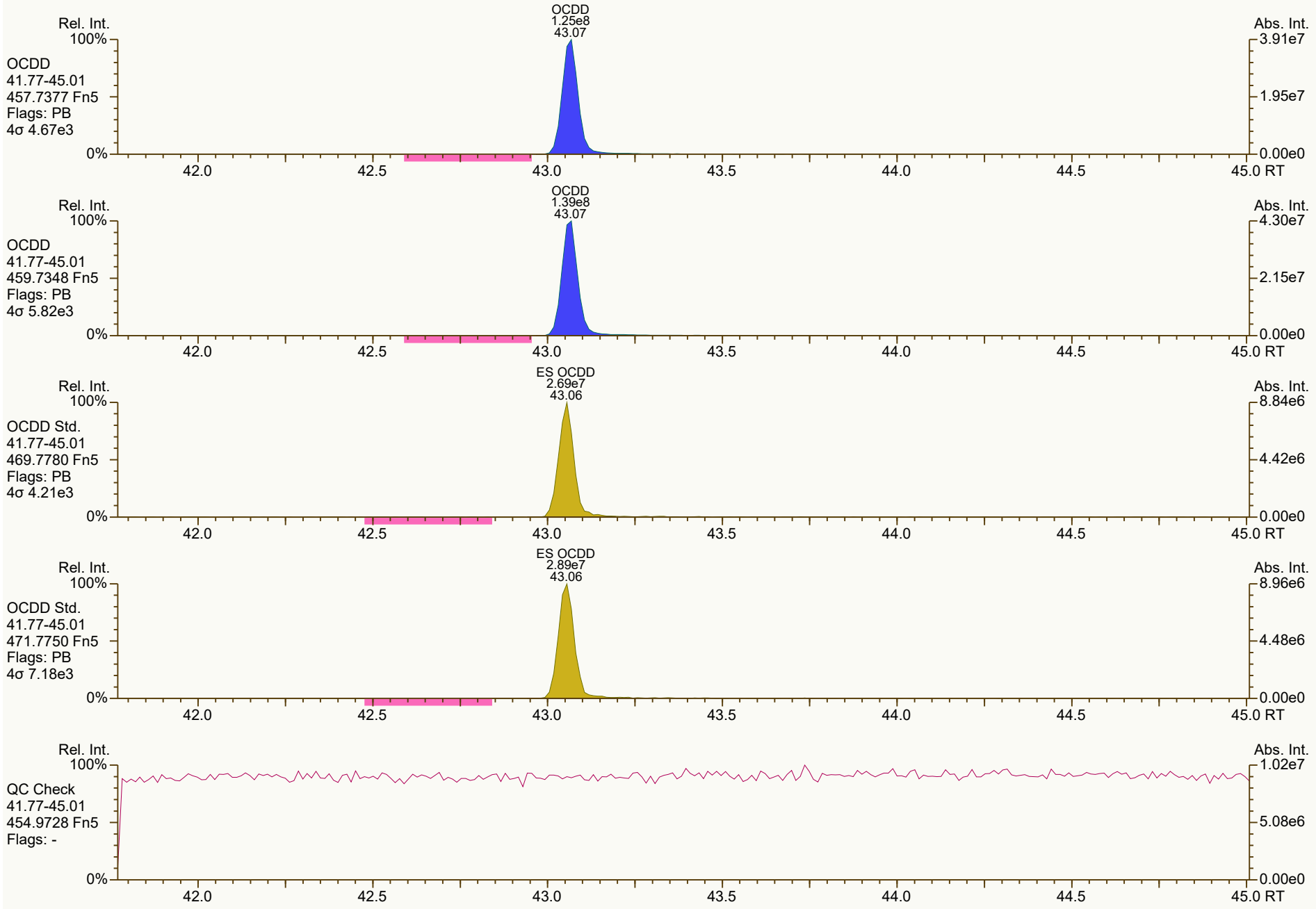

Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 1.78e4
12479/12468D
3.78e5
31.11
12469D
7.35e5
31.65
12368D
4.05e5*
32.20
12478D
2.24e5*
32.39
12369D...[3]
2.69e5*
32.75
12378D
3.42e6*
33.61
12367D
3.01e5*
33.71
Abs. Int.
9.65e5
4.82e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 8.17e3
12479/12468D
2.70e5
31.11
12469D
4.93e5
31.65
12368D
2.78e5*
32.20
12478D
1.43e5*
32.39
12378D
2.07e6*
33.60
12367D
1.61e5*
33.71
Abs. Int.
6.25e5
3.13e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.87e3
CS 12347D
3.57e7
33.09
ES 12378D
3.93e7
33.59
Abs. Int.
1.08e7
5.41e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 7.33e3
CS 12347D
2.26e7
33.09
ES 12378D
2.48e7
33.59
Abs. Int.
7.07e6
3.53e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
4.31e6
2.16e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

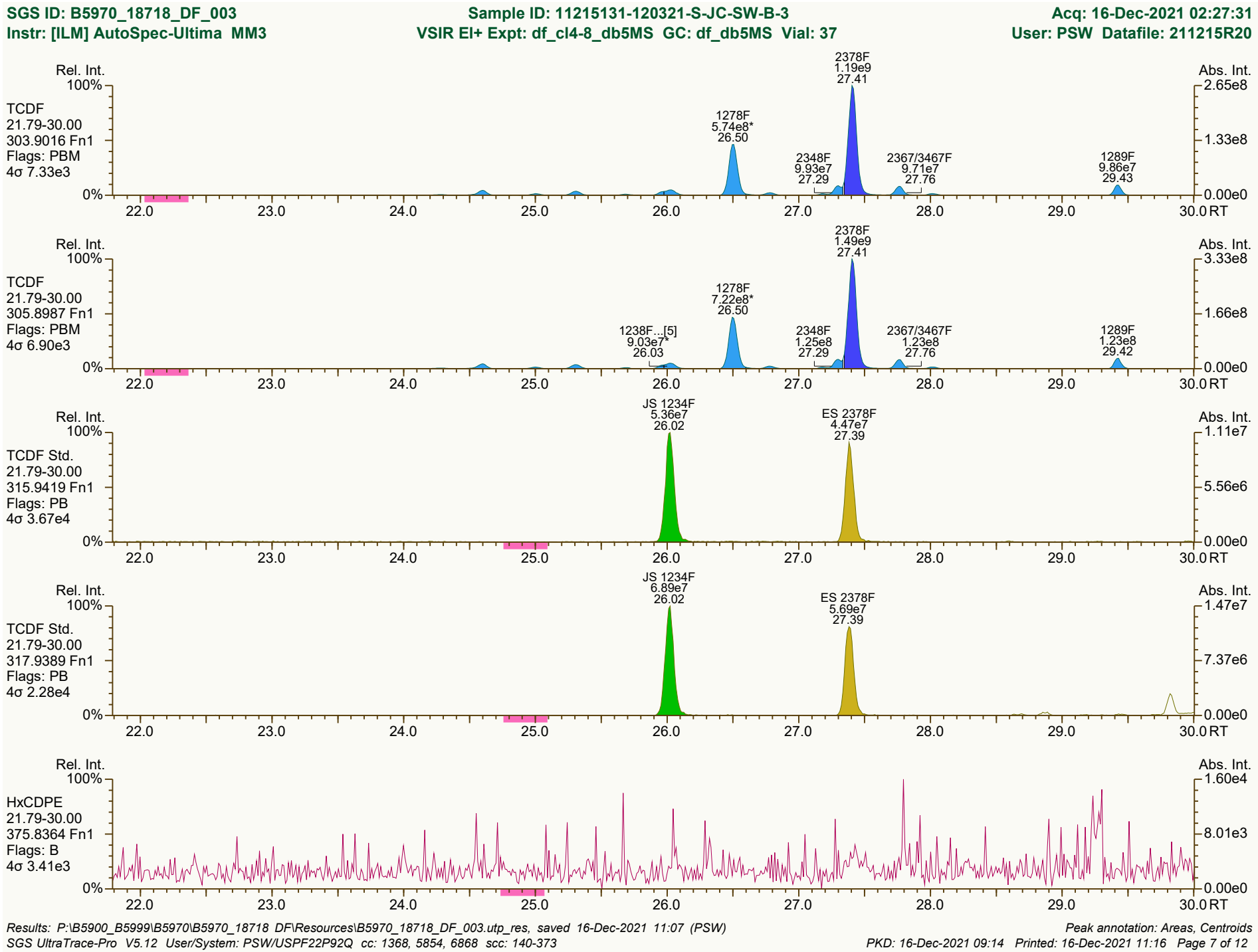
SGS ID: B5970_18718_DF_003 | Sample ID: 11215131-120321-S-JC-SW-B-3 | Acq: 16-Dec-2021 02:27:31
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 37 | User: PSW Datafile: 211215R20



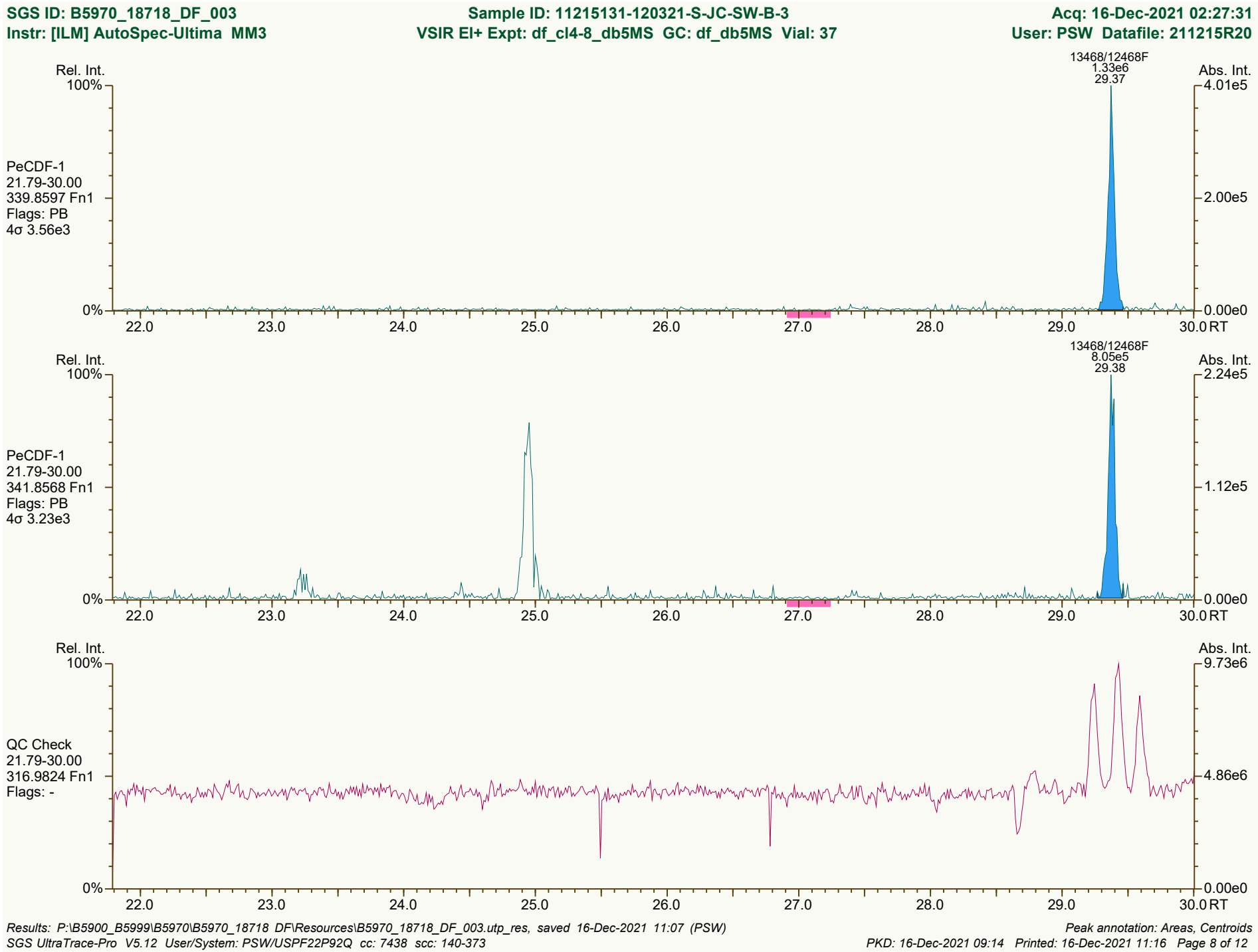
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_003.utp_res, saved 16-Dec-2021 11:07 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3191, 8512 scc: 140-373 | PKD: 16-Dec-2021 09:14 Printed: 16-Dec-2021 11:16 Page 4 of 12


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 6.53e3
0%
1234679D
1.68e7*
39.87
1234678D
1.44e7*
40.52
Abs. Int.
6.72e6
3.36e6
0.00e0
RT
39.0
39.5
40.0
40.5
41.0
41.5
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 3.24e3
0%
1234679D
1.66e7*
39.87
1234678D
1.38e7*
40.52
Abs. Int.
6.62e6
3.31e6
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 5.24e3
0%
ES 1234678D
2.51e7
40.51
Abs. Int.
9.00e6
4.50e6
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.75e3
0%
ES 1234678D
2.32e7
40.51
Abs. Int.
8.63e6
4.31e6
0.00e0
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.64e7
8.18e6
0.00e0
RT


OCDD
1.25e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 4.67e3
0%
Abs. Int.
3.91e7
1.95e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.39e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 5.82e3
0%
Abs. Int.
4.30e7
2.15e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.69e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.21e3
0%
Abs. Int.
8.84e6
4.42e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.89e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 7.18e3
0%
Abs. Int.
8.96e6
4.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.02e7
5.08e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

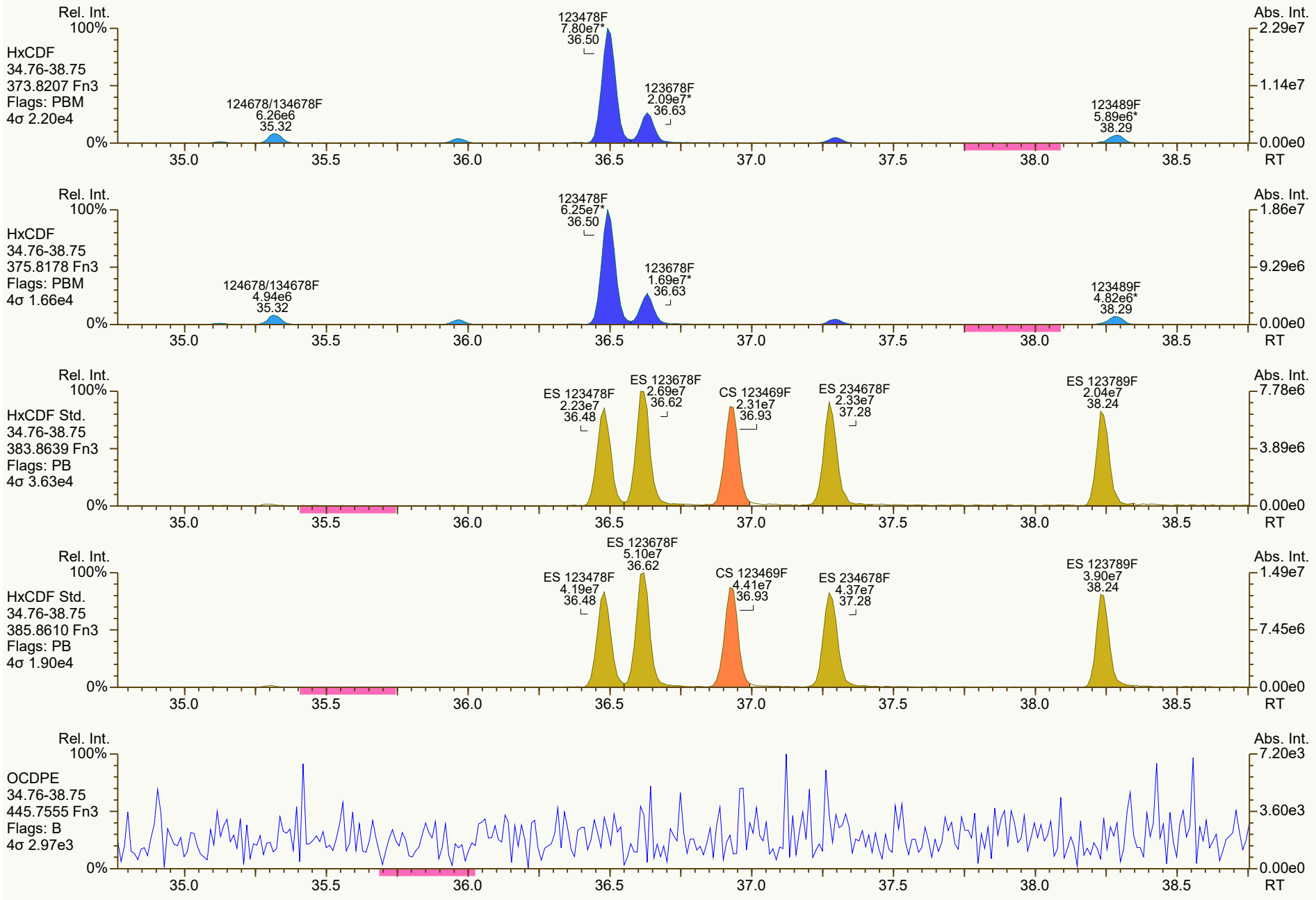

SGS ID: B5970_18718_DF_003
Sample ID: 11215131-120321-S-JC-SW-B-3
Acq: 16-Dec-2021 02:27:31
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 37
User: PSW Datafile: 211215R20
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 7.33e3
2378F
1.19e9
27.41
1278F
5.74e8*
26.50
2348F
9.93e7
27.29
2367/3467F
9.71e7
27.76
1289F
9.86e7
29.43
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 6.90e3
2378F
1.49e9
27.41
1278F
7.22e8*
26.50
1238F...[5]
9.03e7*
26.03
2348F
1.25e8
27.29
2367/3467F
1.23e8
27.76
1289F
1.23e8
29.42
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 3.67e4
JS 1234F
5.36e7
26.02
ES 2378F
4.47e7
27.39
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 2.28e4
JS 1234F
6.89e7
26.02
ES 2378F
5.69e7
27.39
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.41e3
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_003.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1368, 5854, 6868 scc: 140-373
PKD: 16-Dec-2021 09:14 Printed: 16-Dec-2021 11:16 Page 7 of 12

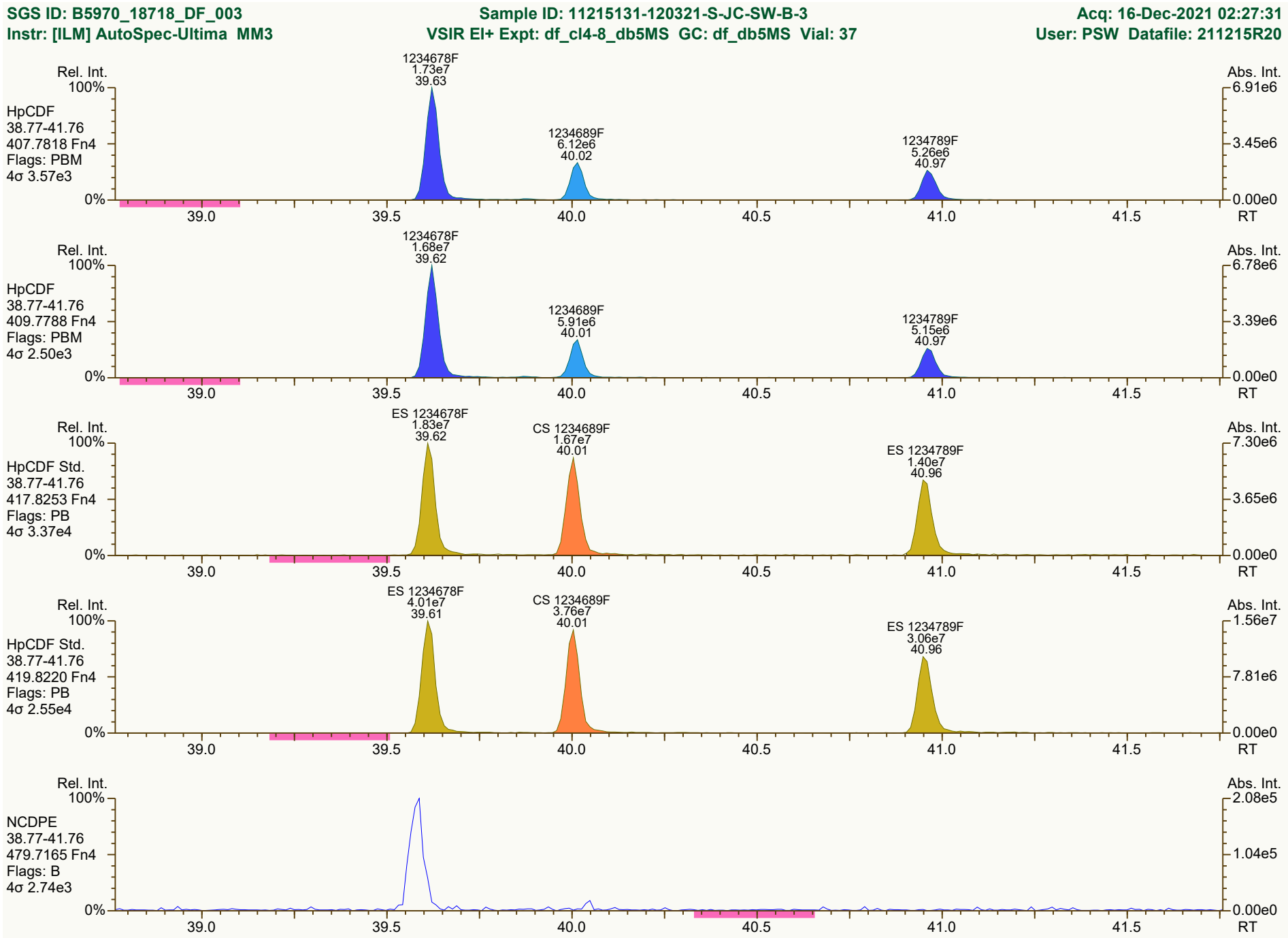
SGS ID: B5970_18718_DF_003 | Sample ID: 11215131-120321-S-JC-SW-B-3 | Acq: 16-Dec-2021 02:27:31
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 37 | User: PSW Datafile: 211215R20



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_003.utp_res, saved 16-Dec-2021 11:07 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7438 scc: 140-373 | *PKD: 16-Dec-2021 09:14 Printed: 16-Dec-2021 11:16 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 5.74e3
0%
12368F...[3]
2.77e7*
31.07
12348F
5.78e6
31.96
12378F
6.31e7
32.17
12678/12367F
1.96e7
32.46
23478F
4.45e7
33.28
Abs. Int.
1.75e7
8.73e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 7.97e3
0%
12368F...[3]
1.75e7*
31.07
12348F
3.84e6
31.95
12378F
4.10e7
32.16
12678/12367F
1.26e7
32.46
23478F
2.83e7
33.28
Abs. Int.
1.10e7
5.52e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 3.12e4
0%
CS 12346F
5.54e7*
31.62
ES 12378F
5.77e7
32.15
ES 23478F
5.26e7*
33.26
Abs. Int.
1.53e7
7.63e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 1.73e4
0%
CS 12346F
3.52e7*
31.62
ES 12378F
3.67e7
32.15
ES 23478F
3.37e7*
33.26
Abs. Int.
9.90e6
4.95e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.86e3
0%
Abs. Int.
8.88e3
4.44e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 2.20e4
123478F
7.80e7*
36.50
123678F
2.09e7*
36.63
124678/134678F
6.26e6
35.32
123489F
5.89e6*
38.29
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 1.66e4
123478F
6.25e7*
36.50
123678F
1.69e7*
36.63
124678/134678F
4.94e6
35.32
123489F
4.82e6*
38.29
0%
Abs. Int.
1.86e7
9.29e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 3.63e4
ES 123478F
2.23e7
36.48
ES 123678F
2.69e7
36.62
CS 123469F
2.31e7
36.93
ES 234678F
2.33e7
37.28
ES 123789F
2.04e7
38.24
0%
Abs. Int.
7.78e6
3.89e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.90e4
ES 123678F
5.10e7
36.62
ES 123478F
4.19e7
36.48
CS 123469F
4.41e7
36.93
ES 234678F
4.37e7
37.28
ES 123789F
3.90e7
38.24
0%
Abs. Int.
1.49e7
7.45e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.97e3
0%
Abs. Int.
7.20e3
3.60e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: B5970_18718_DF_003
Sample ID: 11215131-120321-S-JC-SW-B-3
Acq: 16-Dec-2021 02:27:31
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 37
User: PSW Datafile: 211215R20
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 3.57e3
1234678F
1.73e7
39.63
1234689F
6.12e6
40.02
1234789F
5.26e6
40.97
6.91e6
3.45e6
0.00e0
RT
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 2.50e3
1234678F
1.68e7
39.62
1234689F
5.91e6
40.01
1234789F
5.15e6
40.97
6.78e6
3.39e6
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 3.37e4
ES 1234678F
1.83e7
39.62
CS 1234689F
1.67e7
40.01
ES 1234789F
1.40e7
40.96
7.30e6
3.65e6
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 2.55e4
ES 1234678F
4.01e7
39.61
CS 1234689F
3.76e7
40.01
ES 1234789F
3.06e7
40.96
1.56e7
7.81e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.74e3
2.08e5
1.04e5
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_003.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0648, 3729, 9786 scc: 140-373
PKD: 16-Dec-2021 09:14 Printed: 16-Dec-2021 11:16 Page 11 of 12


OCDF
4.53e6
43.25
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 1.75e3
0%
Abs. Int.
1.42e6
7.08e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.17e6
43.25
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 5.30e3
0%
Abs. Int.
1.62e6
8.12e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.30e7
43.24
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 7.71e3
0%
Abs. Int.
1.08e7
5.42e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.65e7
43.24
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 9.53e3
0%
Abs. Int.
1.20e7
5.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.70e3
0%
Abs. Int.
1.08e4
5.42e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5970_18718_DF_004 **Acq'd:** 16 Dec 2021 03:14 PSW **Wt/Vol:** 10.03 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-O-3 **UTP:** 16-Dec-2021 11:07:14 PSW **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 638-179-DXG

Datafile: 211215R21 **Report:** 20 Dec 2021 14:46 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25	E	1.0008	1.0008	0	5.03E+08	0.79	Y	1.34	1,220	10126.355	0.247
12378-PeCDD	33.59		1.0005	1.0006	+0.2	3.95E+06	1.55	Y	1.06	13.7	8401.502	0.264
123478-HxCDD	37.46	J EMPC	1.0003	1.0003	0	2.57E+05	0.97	N	1.06	1.11	11913.025	0.445
123678-HxCDD	37.58		1.0033	1.0036	+0.7	7.13E+05	1.18	Y	1.08	3.02	11913.025	0.439
123789-HxCDD	37.88		1.0110	1.0116	+1.4	6.47E+05	1.22	Y	1.02	2.5	11913.025	0.375
1234678-HpCDD	40.51		1.0003	1.0003	0	2.18E+07	1.03	Y	0.97	108	5714.902	0.186
OCDD	43.06		1.0003	1.0003	0	7.54E+08	0.89	Y	1.07	5,210	8759.6	0.486
2378-TCDF	27.39	E	1.0006	1.0008	+0.3	1.80E+09	0.80	Y	0.96	4,370	9986.934	0.269
12378-PeCDF	32.15		1.0006	1.0005	-0.2	7.75E+07	1.55	Y	0.95	205	7220.26	0.168
23478-PeCDF	33.26		1.0006	1.0007	+0.2	5.02E+07	1.54	Y	0.94	141	7220.26	0.182
123478-HxCDF	36.48		1.0004	1.0005	+0.2	1.56E+08	1.25	Y	1.23	480	32619.14	0.818
123678-HxCDF	36.61		1.0004	1.0004	0	4.30E+07	1.27	Y	1.13	115	32619.14	0.685
234678-HxCDF	37.28		1.0005	1.0005	0	6.65E+06	1.29	Y	1.15	21.4	32619.14	0.886
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	32619.14	0.922
1234678-HpCDF	39.61		1.0003	1.0003	0	4.59E+07	1.04	Y	1.36	128	9487.847	0.178
1234789-HpCDF	40.96		1.0003	1.0003	0	1.43E+07	1.07	Y	1.30	58.9	9487.847	0.279
OCDF	43.24		1.0002	1.0002	0	1.45E+07	0.88	Y	1.03	92.3	5945.317	0.297

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23	1.0237	1.0237	0	6.11E+07	0.78	Y	1.03	84.8
ES 12378-PeCDD	33.57	1.2158	1.2175	+3.4	5.44E+07	1.58	Y	1.03	75.5
ES 123478-HxCDD	37.45	0.9920	0.9916	-0.9	4.36E+07	1.32	Y	0.99	87.2
ES 123678-HxCDD	37.57	0.9949	0.9948	-0.2	4.35E+07	1.29	Y	0.97	89
ES 123789-HxCDD	37.87	1.0026	1.0027	+0.2	5.08E+07	1.28	Y	1.12	90
ES 1234678-HpCDD	40.50	1.0713	1.0724	+2.7	4.14E+07	1.08	Y	0.99	83.2
ES OCDD	43.04	1.1385	1.1398	+3.4	5.40E+07	0.90	Y	0.78	69.1
ES 2378-TCDF	27.37	1.0519	1.0525	+1.0	8.54E+07	0.78	Y	1.08	79
ES 12378-PeCDF	32.13	1.2331	1.2356	+4.8	7.98E+07	1.59	Y	0.93	85.8
ES 23478-PeCDF	33.24	1.2754	1.2783	+5.8	7.55E+07	1.58	Y	0.92	82
ES 123478-HxCDF	36.46	0.9656	0.9655	-0.2	5.26E+07	0.52	Y	1.14	91.7
ES 123678-HxCDF	36.60	0.9693	0.9692	-0.2	6.61E+07	0.53	Y	1.30	101
ES 234678-HxCDF	37.26	0.9869	0.9867	-0.4	5.39E+07	0.50	Y	1.20	89.3
ES 123789-HxCDF	38.23	1.0121	1.0123	+0.5	4.98E+07	0.52	Y	1.14	87.2
ES 1234678-HpCDF	39.60	1.0478	1.0487	+2.1	5.24E+07	0.43	Y	0.95	110
ES 1234789-HpCDF	40.95	1.0832	1.0843	+2.7	3.73E+07	0.45	Y	0.85	87.8
ES OCDF	43.23	1.1434	1.1446	+3.1	6.10E+07	0.88	Y	0.93	65.6

Lab ID: B5970_18718_DF_004 **Acq'd:** 16 Dec 2021 03:14 PSW **Wt/Vol:** 10.03 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-O-3 **UTP:** 16-Dec-2021 11:07:14 PSW **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 638-179-DXG

Datafile: 211215R21 **Report:** 20 Dec 2021 14:46 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.57		-	-	-	6.97E+07	0.81	Y	-	-	
JS 1234-TCDF	26.00		-	-	-	9.97E+07	0.77	Y	-	-	
JS 123467-HxCDD	37.76		-	-	-	2.51E+07	1.24	Y	-	-	
CS 37Cl-2378-TCDD	28.25		1.0245	1.0245	0	2.68E+07	n/a	-	1.31	73.5	
CS 12347-PeCDD	33.07		1.1978	1.1995	+3.4	4.62E+07	1.63	Y	0.89	74.2	
CS 12346-PeCDF	31.60		1.2130	1.2154	+4.6	7.37E+07	1.50	Y	0.87	85.1	
CS 123469-HxCDF	36.91		0.9775	0.9774	-0.2	5.51E+07	0.53	Y	1.09	101	
CS 1234689-HpCDF	40.00		1.0580	1.0591	+2.6	4.48E+07	0.44	Y	0.86	103	
~~SS 37Cl-2378-TCDD~~	~~28.25~~		~~1.0245~~	~~1.0245~~	~~0~~	~~2.68E+07~~	~~n/a~~		~~1.26~~	~~87.1~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.07~~		~~1.1978~~	~~1.1995~~	~~+3.4~~	~~4.62E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~98.2~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.60~~		~~1.2130~~	~~1.2154~~	~~+4.6~~	~~7.37E+07~~	~~1.50~~	~~Y~~	~~0.93~~	~~99.2~~	
~~SS 123469-HxCDF~~	~~36.91~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~5.51E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~99.1~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0591~~	~~+2.6~~	~~4.48E+07~~	~~0.44~~	~~Y~~	~~0.91~~	~~93.8~~	

Totals	Conc	EMPC
Total TCDD	1340	1350
Total PeCDD	16.8	20.6
Total HxCDD	34.1	36.3
Total HpCDD	240	240
Total Tetra-Octa Dioxins	6840	6860
Total TCDF	8,820	8820
Total PeCDF	530	530
Total HxCDF	706	706
Total HpCDF	226	226
Total Tetra-Octa Furans	10,400	10400
Total Tetra-Octa Dioxins & Furans	17200	17200

Lab ID: B5970_18718_DF_004 **Acq'd: 16 Dec 2021 03:14 PSW** **Wt/Vol: 10.03 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-SPS-SW-O-3 **UTP: 16-Dec-2021 11:07:14 PSW** **J-level: 0.499 pg/g** **Split: 1** **Checkcode: 638-179-DXG**

Datafile: 211215R21 **Report: 20 Dec 2021 14:46 gd** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.58		0.8726	0.8710	-2.4	3.91E+05	0.86	Y	1.34	0.951	10126.355	0.247
1379-TCDD	24.94	J EMPC	0.8851	0.8836	-2.2	1.46E+05	0.48	N	1.34	0.355	10126.355	0.247
1369-TCDD	NotFnd		0.9002						1.34		10126.355	0.247
1469-TCDD	26.17		0.9275	0.9271	-0.6	6.92E+05	0.80	Y	1.34	1.68	10126.355	0.247
1247/1246/1248/1249-TCDD	26.40		0.9361	0.9354	-1.1	8.52E+05	0.73	Y	1.34	2.07	10126.355	0.247
1378-TCDD	26.59		0.9427	0.9421	-1.0	1.34E+06	0.79	Y	1.34	3.26	10126.355	0.247
1268-TCDD	NotFnd		0.9498						1.34		10126.355	0.247
1478-TCDD	27.04	EMPC	0.9584	0.9581	-0.5	1.11E+06	0.96	N	1.34	2.69	10126.355	0.247
1279-TCDD	NotFnd		0.9644						1.34		10126.355	0.247
1234/1269-TCDD	27.56		0.9766	0.9764	-0.3	2.24E+05	0.87	Y	1.34	0.544	10126.355	0.247
1236-TCDD	NotFnd		0.9813						1.34		10126.355	0.247
1237/1238-TCDD	27.96		0.9906	0.9904	-0.3	7.79E+06	0.84	Y	1.34	18.9	10126.355	0.247
1239-TCDD	NotFnd		0.9952						1.34		10126.355	0.247
2378-TCDD	**28.25**	E	**1.0008**	1.0008	**0**	5.03E+08	0.79	Y	**1.34**	**1,220**	**10126.355**	**0.247**
1278-TCDD	28.57		1.0122	1.0123	+0.2	3.68E+07	0.78	Y	1.34	89.5	10126.355	0.247
1267-TCDD	28.72	EMPC	1.0168	1.0175	+1.2	2.57E+06	0.94	N	1.34	6.24	10126.355	0.247
1289-TCDD	29.22	EMPC	1.0349	1.0351	+0.4	1.62E+06	1.13	N	1.34	3.93	10126.355	0.247
12479/12468-PeCDD	31.09	J EMPC	0.9267	0.9262	-0.9	2.87E+05	1.90	N	1.06	0.994	8401.502	0.264
12469-PeCDD	31.63	J EMPC	0.9425	0.9423	-0.4	4.50E+05	1.31	N	1.06	1.56	8401.502	0.264
12368-PeCDD	32.18	J EMPC	0.9588	0.9585	-0.6	2.65E+05	1.28	N	1.06	0.916	8401.502	0.264
12478-PeCDD	32.37	J	0.9643	0.9642	-0.2	3.05E+05	1.74	Y	1.06	1.05	8401.502	0.264
12379-PeCDD	32.47	J	0.9673	0.9673	0	1.71E+05	1.39	Y	1.06	0.592	8401.502	0.264
12369/12467/12489-PeCDD	32.74	J	0.9750	0.9752	+0.4	1.92E+05	1.58	Y	1.06	0.665	8401.502	0.264
12346/12347-PeCDD	33.10	J EMPC	0.9859	0.9861	+0.4	8.60E+04	2.43	N	1.06	0.298	8401.502	0.264
12378-PeCDD	33.59		**1.0005**	**1.0006**	**+0.2**	**3.95E+06**	**1.55**	**Y**	**1.06**	**13.7**	**8401.502**	**0.264**
12367-PeCDD	33.69	J	1.0032	1.0035	+0.6	2.44E+05	1.63	Y	1.06	0.845	8401.502	0.264
12389-PeCDD	NotFnd		1.0135						1.06		8401.502	0.264
124679/124689-HxCDD	35.75		0.9544	0.9547	+0.6	4.30E+06	1.27	Y	1.05	17.7	11913.025	0.418
123468-HxCDD	36.39	J	0.9716	0.9717	+0.2	3.23E+05	1.20	Y	1.05	1.33	11913.025	0.418
123679/123689-HxCDD	36.68		0.9793	0.9796	+0.7	2.31E+06	1.25	Y	1.05	9.52	11913.025	0.418
123469-HxCDD	36.82	J EMPC	0.9829	0.9831	+0.4	1.41E+05	1.66	N	1.05	0.58	11913.025	0.418
123478-HxCDD	37.46	J EMPC	**1.0003**	**1.0003**	**0**	**2.57E+05**	**0.97**	**N**	1.06	**1.11**	**11913.025**	**0.445**
123678-HxCDD	37.58		**1.0033**	**1.0036**	**+0.7**	**7.13E+05**	**1.18**	**Y**	1.08	**3.02**	**11913.025**	**0.439**
123467-HxCDD	37.79	J EMPC	1.0084	1.0091	+1.6	1.35E+05	0.94	N	1.05	0.556	11913.025	0.418
123789-HxCDD	37.88		**1.0110**	**1.0116**	**+1.4**	**6.47E+05**	**1.22**	**Y**	1.02	**2.5**	**11913.025**	**0.375**

Lab ID: B5970_18718_DF_004 **Acq'd:** 16 Dec 2021 03:14 PSW **Wt/Vol:** 10.03 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-O-3 **UTP:** 16-Dec-2021 11:07:14 PSW **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 638-179-DXG

Datafile: 211215R21 **Report:** 20 Dec 2021 14:46 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

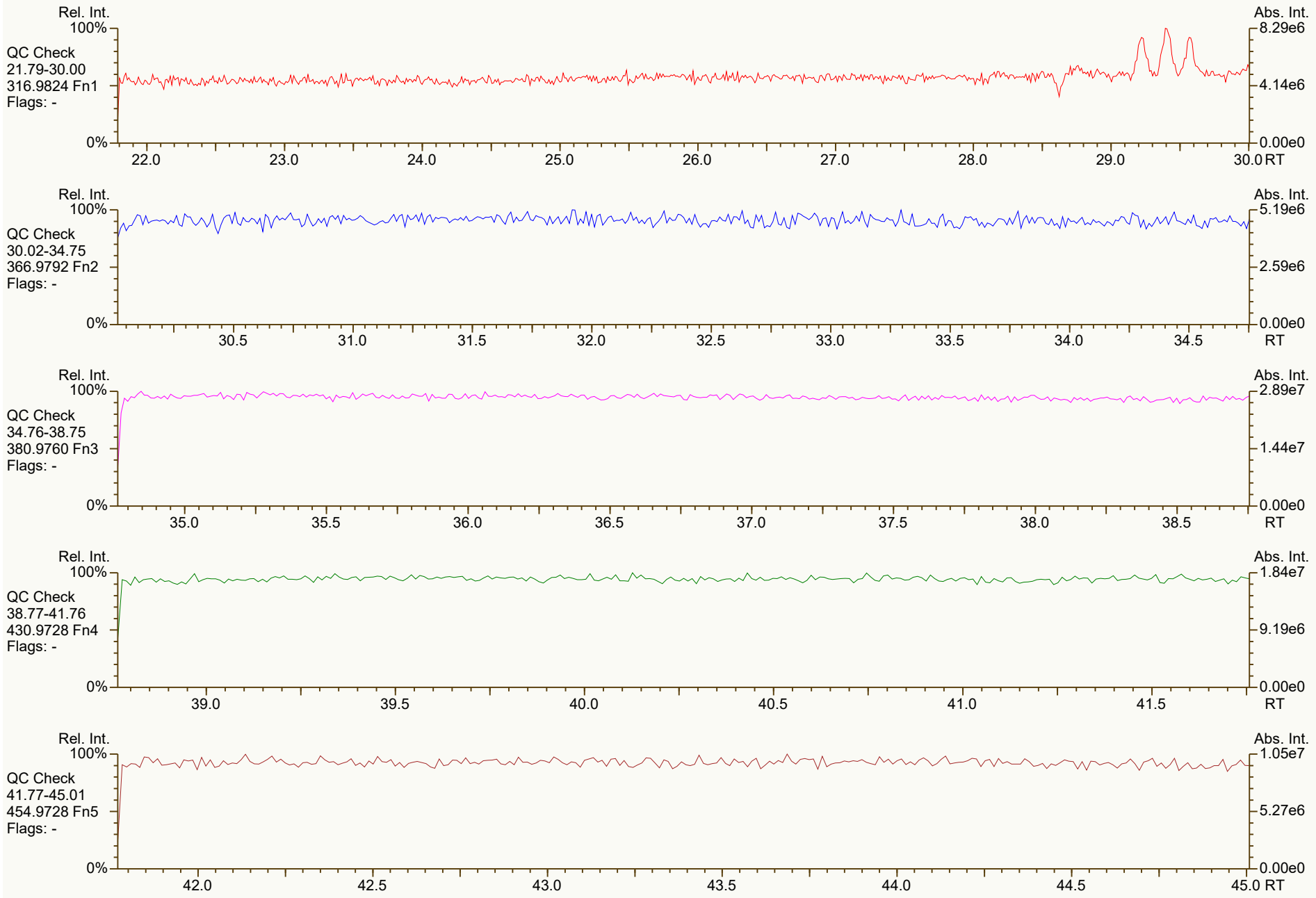
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.86		0.9843	0.9843	0	2.68E+07	1.06	Y	0.97	132	5714.902	0.186
1234678-HpCDD	**40.51**		**1.0003**	**1.0003**	**0**	**2.18E+07**	**1.03**	**Y**	**0.97**	**108**	**5714.902**	**0.186**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**7.54E+08**	**0.89**	**Y**	**1.07**	**5,210**	**8759.6**	**0.486**
OCDD-a	43.05		1.0001	1.0002	+0.3	4.65E+07	2.48	Y	0.07	5,200	10699.984	9.61
1368-TCDF	22.46		0.8230	0.8207	-3.1	4.18E+05	0.77	Y	0.96	1.02	9986.934	0.269
1468-TCDF	23.06		0.8443	0.8425	-2.5	2.54E+06	0.71	Y	0.96	6.18	9986.934	0.269
2468-TCDF	23.69		0.8672	0.8657	-2.1	2.04E+06	0.73	Y	0.96	4.96	9986.934	0.269
1346/1246-TCDF	24.11		0.8802	0.8810	+1.2	2.15E+06	0.80	Y	0.96	5.22	9986.934	0.269
1347/1378/1247-TCDF	24.24		0.8855	0.8857	+0.3	1.79E+07	0.77	Y	0.96	43.4	9986.934	0.269
1348-TCDF	24.46		0.8952	0.8937	-2.2	4.24E+06	0.81	Y	0.96	10.3	9986.934	0.269
1248/1367/1379-TCDF	24.57		0.9000	0.8978	-3.2	8.96E+07	0.79	Y	0.96	218	9986.934	0.269
1268-TCDF	24.98		0.9136	0.9128	-1.2	2.85E+07	0.80	Y	0.96	69.3	9986.934	0.269
1467-TCDF	25.12		0.9185	0.9177	-1.2	4.28E+06	0.82	Y	0.96	10.4	9986.934	0.269
1478-TCDF	25.29		0.9247	0.9240	-1.1	7.64E+07	0.79	Y	0.96	186	9986.934	0.269
1369/1237-TCDF	25.67		0.9381	0.9378	-0.5	1.94E+07	0.79	Y	0.96	47.3	9986.934	0.269
2467-TCDF	25.79		0.9427	0.9423	-0.6	2.26E+06	0.82	Y	0.96	5.49	9986.934	0.269
2368-TCDF	25.94		0.9484	0.9477	-1.1	4.56E+07	0.78	Y	0.96	111	9986.934	0.269
1238/1234/1678/1469/1236-TCDF	26.02		0.9517	0.9506	-1.7	9.88E+07	0.80	Y	0.96	240	9986.934	0.269
1278-TCDF	26.48	E	0.9682	0.9677	-0.8	8.58E+08	0.80	Y	0.96	2,080	9986.934	0.269
1349-TCDF	26.60		0.9725	0.9721	-0.6	1.15E+07	0.78	Y	0.96	27.9	9986.934	0.269
1267-TCDF	26.76		0.9782	0.9778	-0.6	4.66E+07	0.79	Y	0.96	113	9986.934	0.269
2346/1249-TCDF	26.94		0.9846	0.9845	-0.2	6.45E+06	0.79	Y	0.96	15.7	9986.934	0.269
2347/1279-TCDF	27.16		0.9926	0.9923	-0.5	2.15E+07	0.81	Y	0.96	52.2	9986.934	0.269
2348-TCDF	27.28		0.9966	0.9969	+0.5	1.64E+08	0.79	Y	0.96	398	9986.934	0.269
2378-TCDF	**27.39**	E	**1.0006**	**1.0008**	**+0.3**	**1.80E+09**	**0.80**	**Y**	**0.96**	**4,370**	**9986.934**	**0.269**
2367/3467-TCDF	27.74		1.0139	1.0137	-0.3	1.47E+08	0.80	Y	0.96	356	9986.934	0.269
1269-TCDF	28.00		1.0226	1.0230	+0.7	3.18E+07	0.78	Y	0.96	77.2	9986.934	0.269
1239-TCDF	28.25		1.0322	1.0323	+0.2	3.14E+06	0.77	Y	0.96	7.62	9986.934	0.269
1289-TCDF	29.40		1.0729	1.0744	+2.6	1.51E+08	0.80	Y	0.96	367	9986.934	0.269
13468/12468-PeCDF	29.35		0.9135	0.9135	0	1.96E+06	1.58	Y	0.94	5.33	7633.958	0.185
13678/13467/12467-PeCDF	30.89	J	0.9612	0.9615	+0.6	7.10E+05	1.67	Y	0.94	1.93	7220.26	0.175
12368/13478/12478-PeCDF	31.06		0.9661	0.9666	+0.9	3.09E+07	1.56	Y	0.94	84.1	7220.26	0.175
14678-PeCDF	31.15	J	0.9693	0.9694	+0.2	8.98E+05	1.67	Y	0.94	2.45	7220.26	0.175
13479-PeCDF	NotFnd		0.9723						0.94		7220.26	0.175
13469/12479-PeCDF	NotFnd		0.9799						0.94		7220.26	0.175
12346-PeCDF	31.60	J	0.9842	0.9835	-1.3	1.51E+05	1.40	Y	0.94	0.411	7220.26	0.175

Lab ID: B5970_18718_DF_004 **Acq'd: 16 Dec 2021 03:14 PSW** **Wt/Vol: 10.03 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-SPS-SW-O-3 **UTP: 16-Dec-2021 11:07:14 PSW** **J-level: 0.499 pg/g** **Split: 1** **Checkcode: 638-179-DXG**

Datafile: 211215R21 **Report: 20 Dec 2021 14:46 gd** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.70	J	0.9868	0.9866	-0.4	8.98E+05	1.51	Y	0.94	2.45	7220.26	0.175
12347-PeCDF	31.78		0.9893	0.9890	-0.6	1.25E+06	1.55	Y	0.94	3.41	7220.26	0.175
12348-PeCDF	31.94		0.9941	0.9940	-0.2	5.52E+06	1.49	Y	0.94	15	7220.26	0.175
12378-PeCDF	**32.15**		**1.0006**	**1.0005**	**-0.2**	**7.75E+07**	**1.55**	**Y**	**0.95**	**205**	**7220.26**	**0.168**
12678/12367-PeCDF	32.44		1.0090	1.0097	+1.4	2.20E+07	1.57	Y	0.94	59.8	7220.26	0.175
12379-PeCDF	NotFnd		1.0143						0.94		7220.26	0.175
12679-PeCDF	NotFnd		0.9929						0.94		7220.26	0.175
23467/12369-PeCDF	33.11	J	0.9966	0.9962	-0.8	7.84E+05	1.41	Y	0.94	2.14	7220.26	0.175
23478-PeCDF	**33.26**		**1.0006**	**1.0007**	**+0.2**	**5.02E+07**	**1.54**	**Y**	**0.94**	**141**	**7220.26**	**0.182**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7220.26	0.175
12349-PeCDF	NotFnd		1.0102						0.94		7220.26	0.175
12389-PeCDF	34.32		1.0325	1.0325	0	2.63E+06	1.46	Y	0.94	7.17	7220.26	0.175
123468-HxCDF	35.10		0.9628	0.9628	0	1.24E+06	1.22	Y	1.16	3.82	32619.14	0.818
124678/134678-HxCDF	35.30		0.9683	0.9681	-0.4	1.24E+07	1.20	Y	1.16	38.1	32619.14	0.818
134679-HxCDF	NotFnd		0.9746						1.16		32619.14	0.818
124679-HxCDF	NotFnd		0.9798						1.16		32619.14	0.818
124689-HxCDF	35.95		0.9859	0.9859	0	4.59E+06	1.22	Y	1.16	14.2	32619.14	0.818
123467-HxCDF	36.36	J	0.9972	0.9973	+0.2	6.03E+05	1.21	Y	1.16	1.86	32619.14	0.818
123478-HxCDF	**36.48**		**1.0004**	**1.0005**	**+0.2**	**1.56E+08**	**1.25**	**Y**	**1.23**	**480**	**32619.14**	**0.818**
123678-HxCDF	**36.61**		**1.0004**	**1.0004**	**0**	**4.30E+07**	**1.27**	**Y**	**1.13**	**115**	**32619.14**	**0.685**
123479-HxCDF	NotFnd		1.0049						1.16		32619.14	0.818
123469-HxCDF	NotFnd		1.0088						1.16		32619.14	0.818
123679-HxCDF	NotFnd		0.9943						1.16		32619.14	0.818
234678-HxCDF	**37.28**		**1.0005**	**1.0005**	**0**	**6.65E+06**	**1.29**	**Y**	**1.15**	**21.4**	**32619.14**	**0.886**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		32619.14	0.818
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**32619.14**	**0.922**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.27		1.0007	1.0010	+0.7	1.02E+07	1.25	Y	1.16	31.5	32619.14	0.818
1234678-HpCDF	**39.61**		**1.0003**	**1.0003**	**0**	**4.59E+07**	**1.04**	**Y**	**1.36**	**128**	**9487.847**	**0.178**
1234679-HpCDF	39.87	**J**	1.0067	1.0068	+0.2	6.97E+05	1.04	Y	1.33	2.33	9487.847	0.22
1234689-HpCDF	40.00		1.0100	1.0101	+0.2	1.09E+07	1.09	Y	1.33	36.5	9487.847	0.22
1234789-HpCDF	**40.96**		**1.0003**	**1.0003**	**0**	**1.43E+07**	**1.07**	**Y**	**1.30**	**58.9**	**9487.847**	**0.279**
OCDF	**43.24**		**1.0002**	**1.0002**	**0**	**1.45E+07**	**0.88**	**Y**	**1.03**	**92.3**	**5945.317**	**0.297**
OCDF-a	43.23		1.0002	1.0001	-0.3	8.05E+05	2.69	Y	0.06	88.7	7598.812	6.56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21.79-30.00
316.9824 Fn1
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0%
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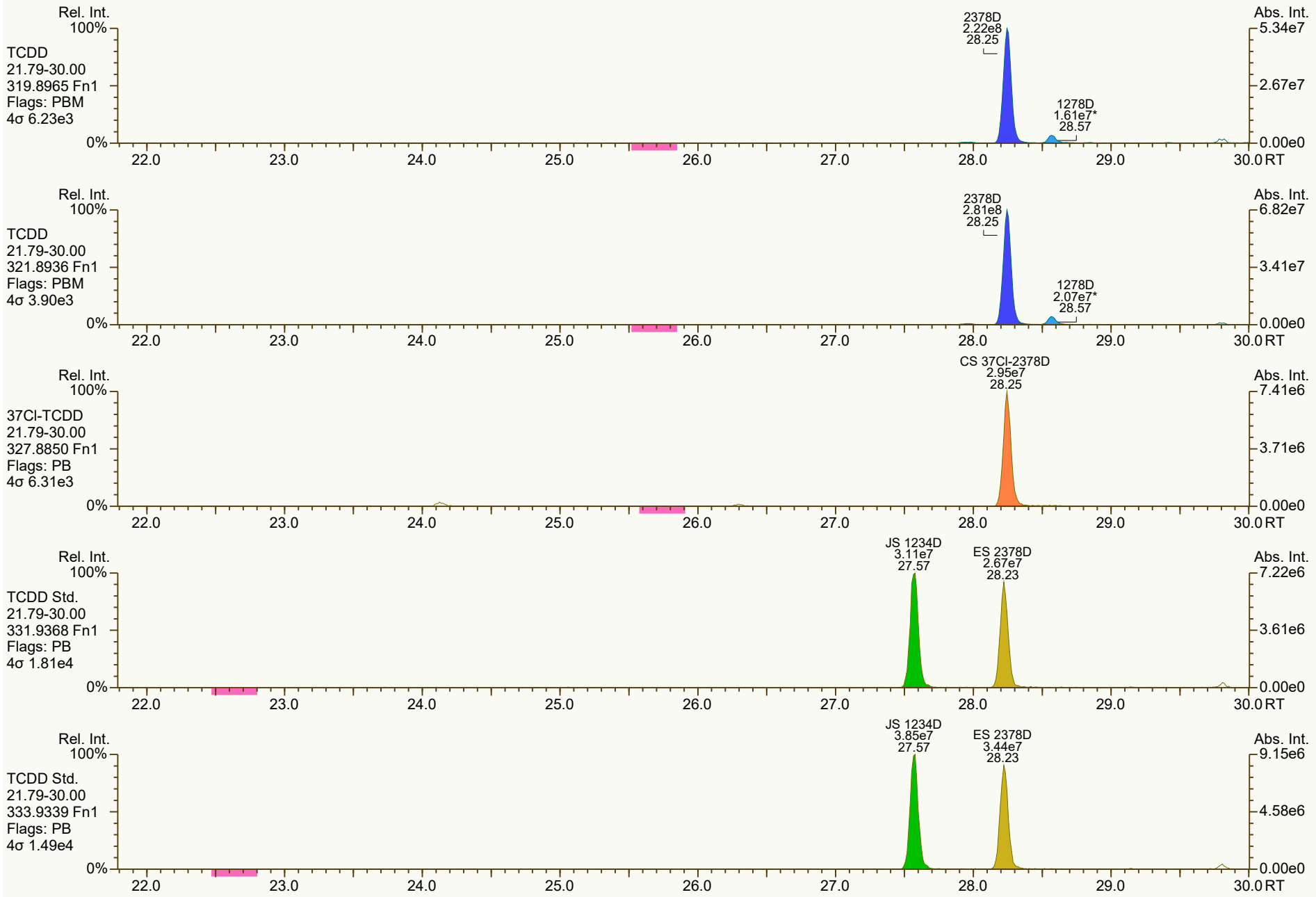
4.14e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.19e6
2.59e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.89e7
1.44e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.84e7
9.19e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.05e7
5.27e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT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TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 6.23e3
0%
2378D
2.22e8
28.25
1278D
1.61e7*
28.57
Abs. Int.
5.34e7
2.67e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.90e3
0%
2378D
2.81e8
28.25
1278D
2.07e7*
28.57
Abs. Int.
6.82e7
3.41e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 6.31e3
0%
CS 37Cl-2378D
2.95e7
28.25
Abs. Int.
7.41e6
3.71e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.81e4
0%
JS 1234D
3.11e7
27.57
ES 2378D
2.67e7
28.23
Abs. Int.
7.22e6
3.61e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.49e4
0%
JS 1234D
3.85e7
27.57
ES 2378D
3.44e7
28.23
Abs. Int.
9.15e6
4.58e6
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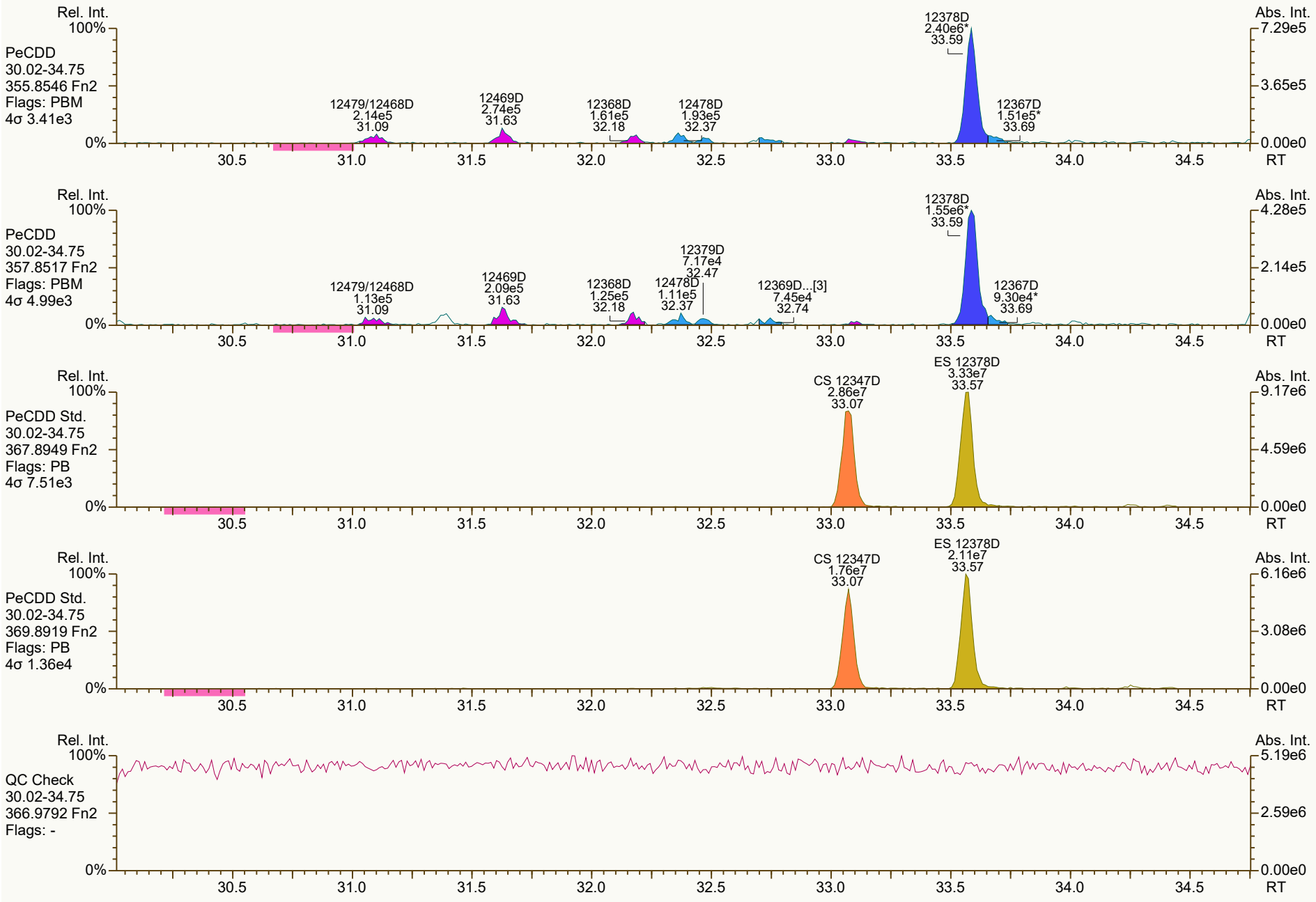
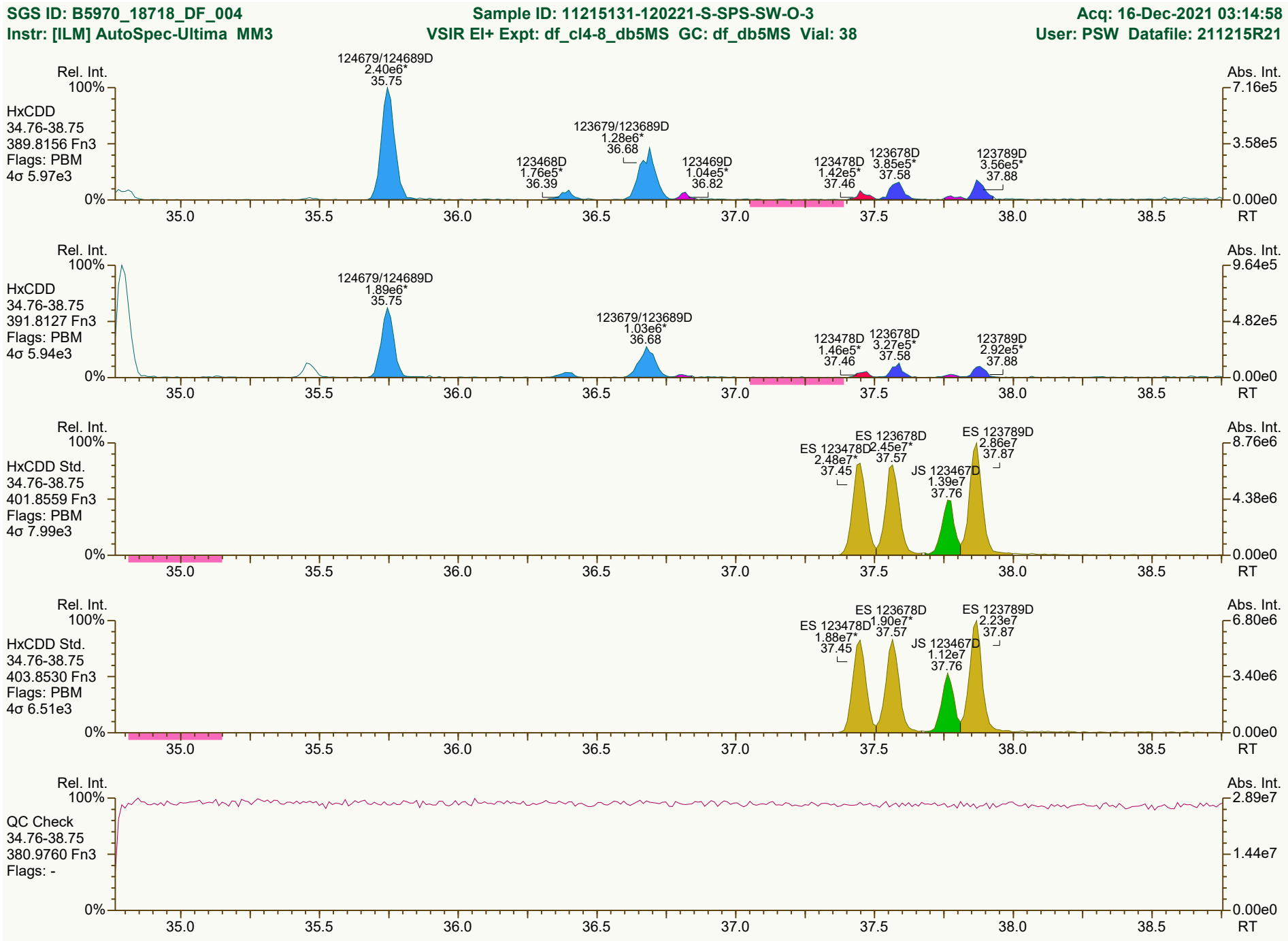
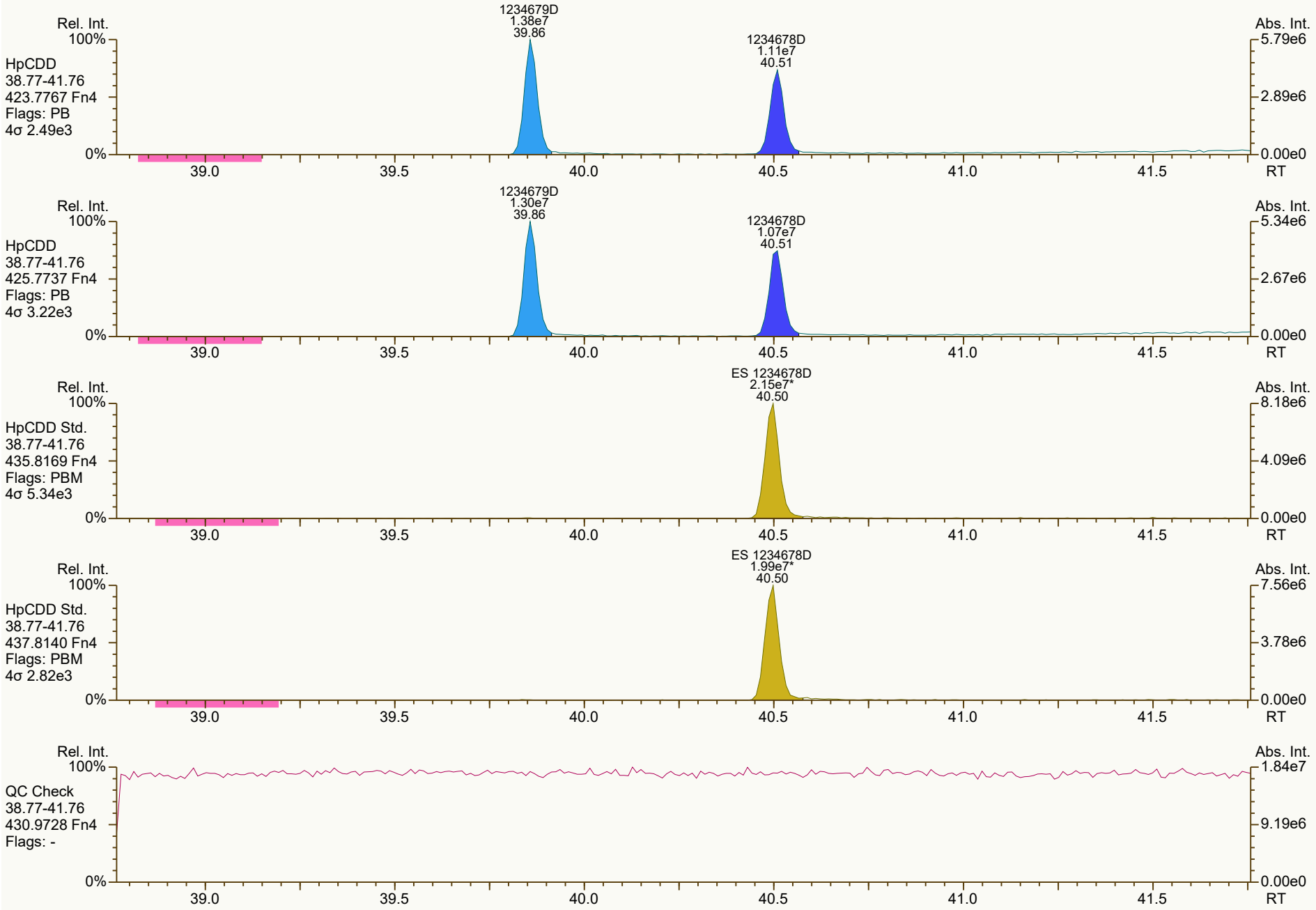
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 3.41e3
12479/12468D
2.14e5
31.09
12469D
2.74e5
31.63
12368D
1.61e5
32.18
12478D
1.93e5
32.37
12378D
2.40e6*
33.59
12367D
1.51e5*
33.69
Abs. Int.
7.29e5
3.65e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 4.99e3
12479/12468D
1.13e5
31.09
12469D
2.09e5
31.63
12368D
1.25e5
32.18
12478D
1.11e5
32.37
12379D
7.17e4
32.47
12369D...[3]
7.45e4
32.74
12378D
1.55e6*
33.59
12367D
9.30e4*
33.69
Abs. Int.
4.28e5
2.14e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 7.51e3
CS 12347D
2.86e7
33.07
ES 12378D
3.33e7
33.57
Abs. Int.
9.17e6
4.59e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 1.36e4
CS 12347D
1.76e7
33.07
ES 12378D
2.11e7
33.57
Abs. Int.
6.16e6
3.08e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
5.19e6
2.59e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

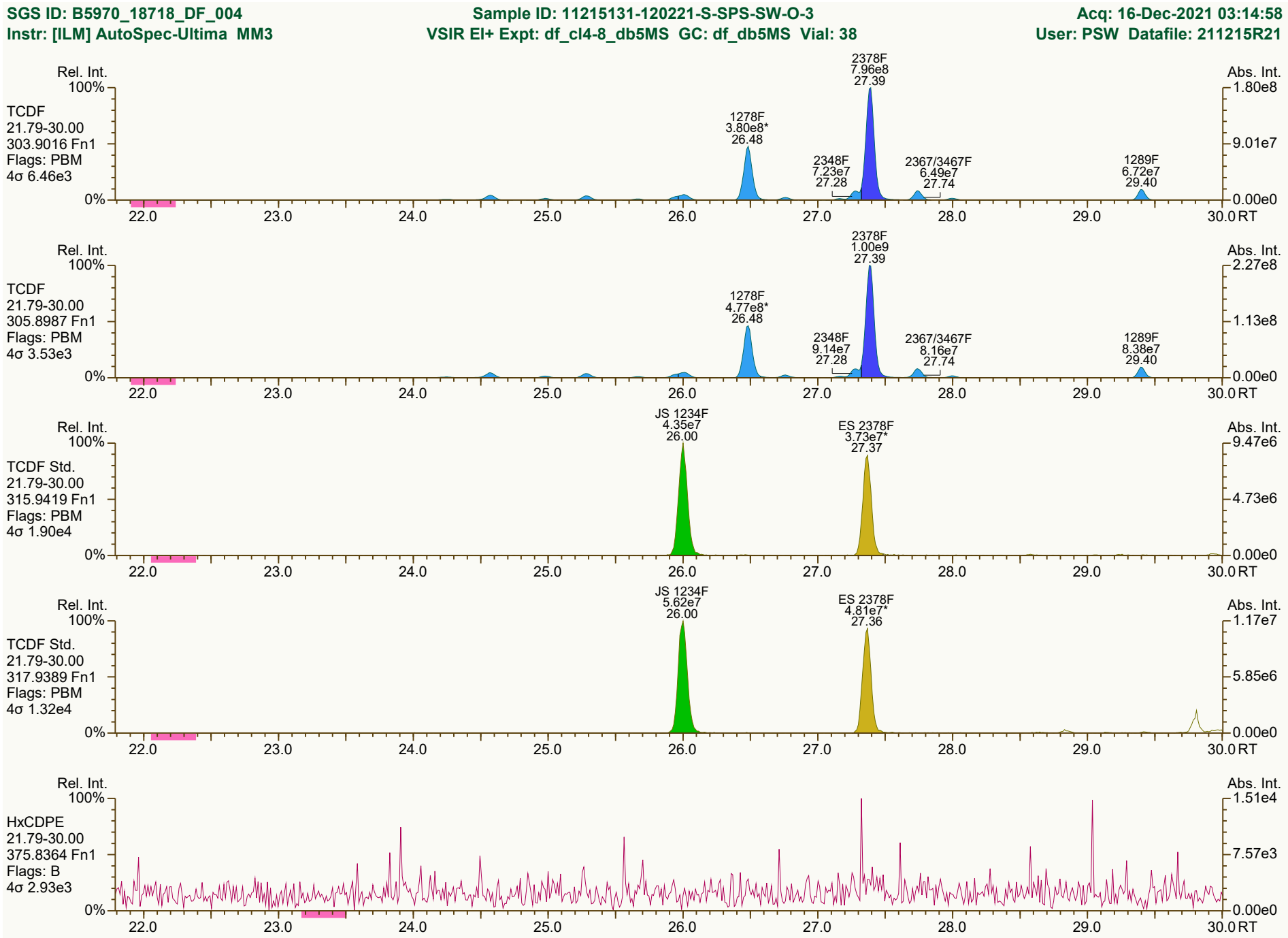
SGS ID: B5970_18718_DF_004 | Sample ID: 11215131-120221-S-SPS-SW-O-3 | Acq: 16-Dec-2021 03:14:58
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 38 | User: PSW Datafile: 211215R21



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_004.utp_res, saved 16-Dec-2021 11:07 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0942, 0924 scc: 638-179 | PKD: 16-Dec-2021 09:18 Printed: 16-Dec-2021 11:16 Page 4 of 12

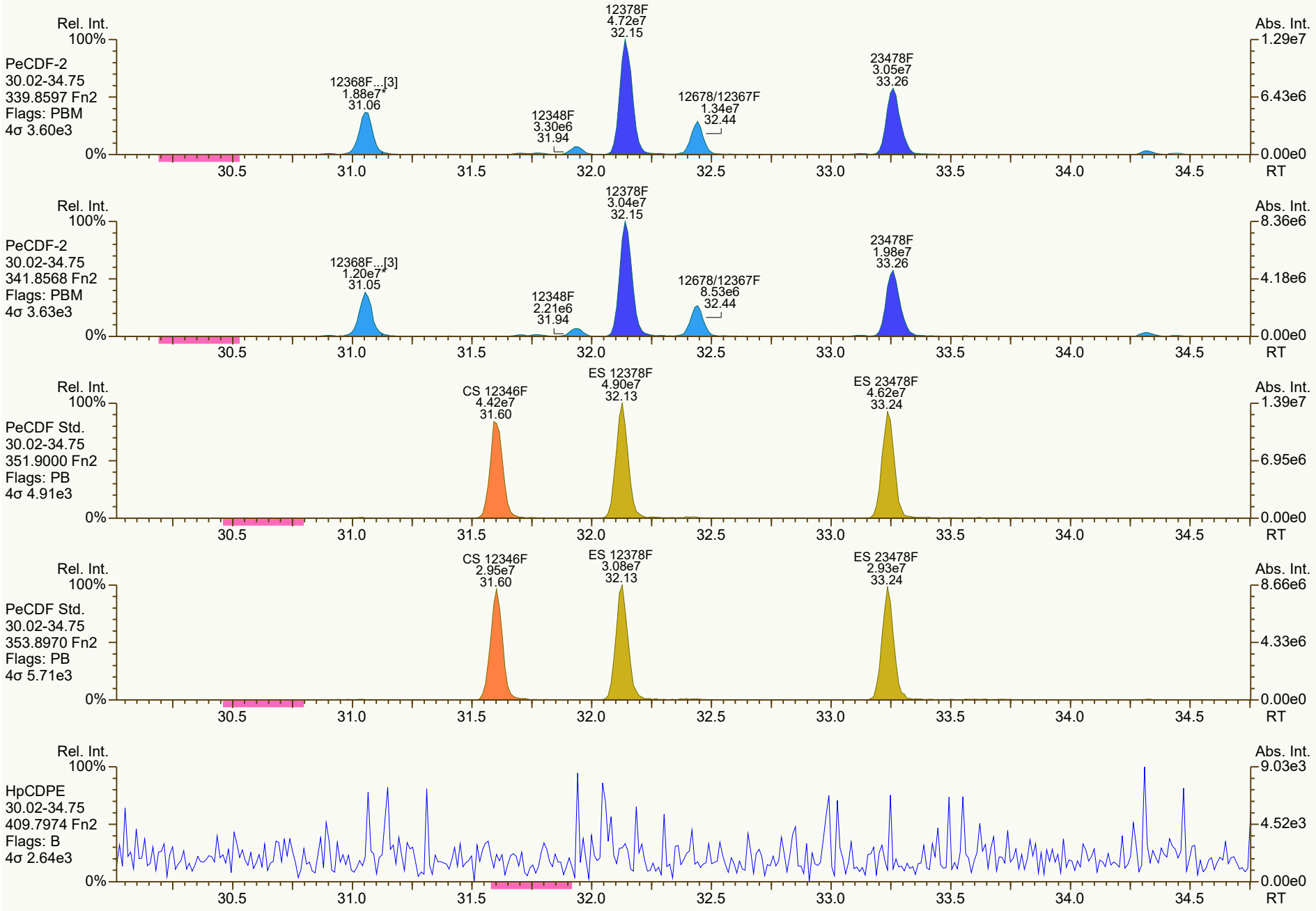

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.49e3
0%
1234679D
1.38e7
39.86
1234678D
1.11e7
40.51
Abs. Int.
5.79e6
2.89e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.22e3
0%
1234679D
1.30e7
39.86
1234678D
1.07e7
40.51
Abs. Int.
5.34e6
2.67e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 5.34e3
0%
ES 1234678D
2.15e7*
40.50
Abs. Int.
8.18e6
4.09e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 2.82e3
0%
ES 1234678D
1.99e7*
40.50
Abs. Int.
7.56e6
3.78e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.84e7
9.19e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

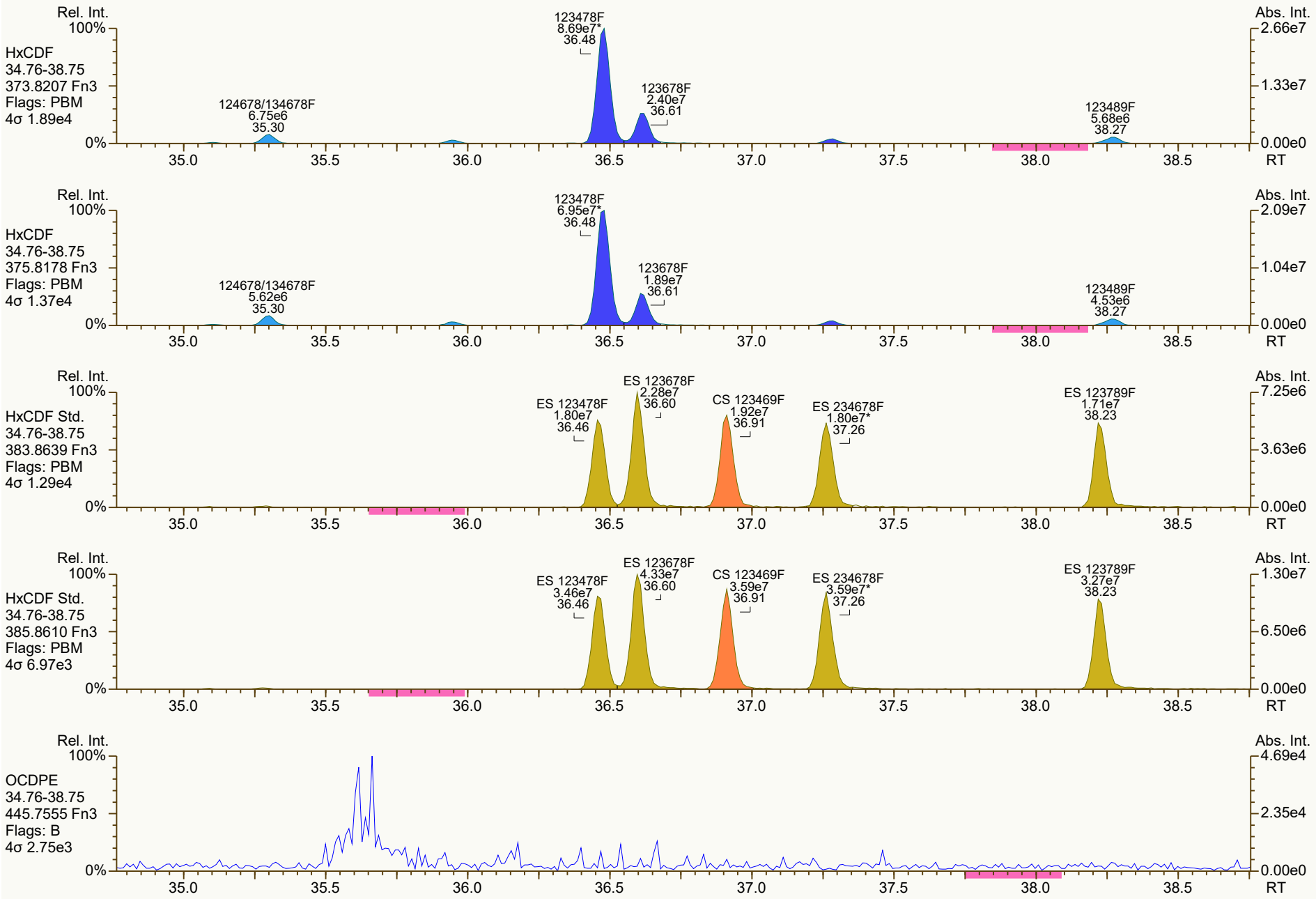

Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 4.16e3
0%
OCDD
3.55e8
43.06
Abs. Int.
1.16e8
5.79e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 4.60e3
0%
OCDD
3.99e8
43.06
Abs. Int.
1.28e8
6.39e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 1.23e4
0%
ES OCDD
2.56e7
43.04
Abs. Int.
7.97e6
3.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.13e3
0%
ES OCDD
2.84e7
43.04
Abs. Int.
9.19e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.05e7
5.27e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

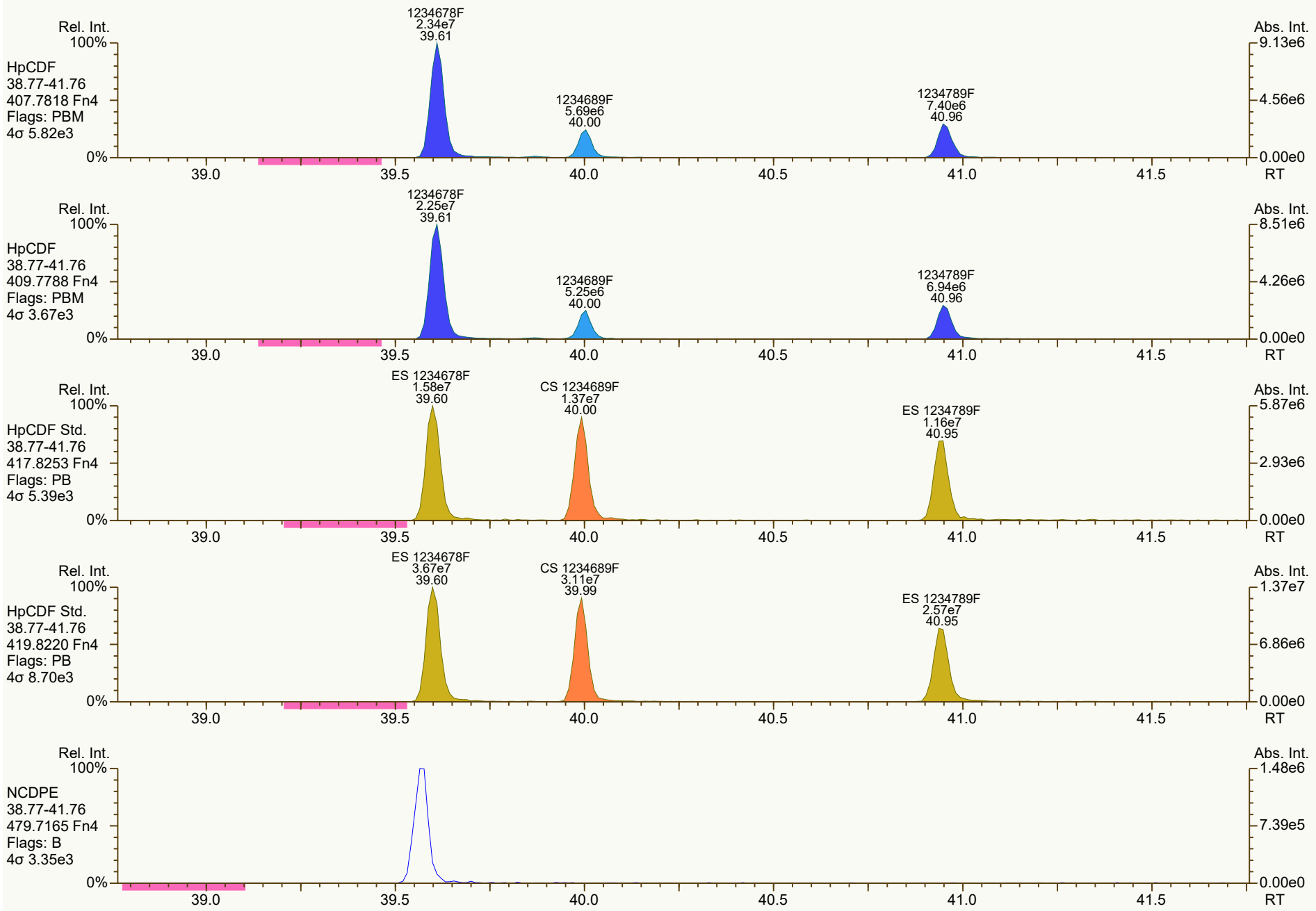


Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_004.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4874, 8404, 0863 scc: 638-179
PKD: 16-Dec-2021 09:18 Printed: 16-Dec-2021 11:16 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
3.15e5
1.57e5
0.00e0
13468/12468F
1.20e6
29.35
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.93e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
7.58e5
29.35
1.89e5
9.44e4
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.70e3
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
8.29e6
4.14e6


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.60e3
0%
12368F...[3]
1.88e7*
31.06
12348F
3.30e6
31.94
12378F
4.72e7
32.15
12678/12367F
1.34e7
32.44
23478F
3.05e7
33.26
Abs. Int.
1.29e7
6.43e6
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.63e3
0%
12368F...[3]
1.20e7*
31.05
12348F
2.21e6
31.94
12378F
3.04e7
32.15
12678/12367F
8.53e6
32.44
23478F
1.98e7
33.26
Abs. Int.
8.36e6
4.18e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.91e3
0%
CS 12346F
4.42e7
31.60
ES 12378F
4.90e7
32.13
ES 23478F
4.62e7
33.24
Abs. Int.
1.39e7
6.95e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 5.71e3
0%
CS 12346F
2.95e7
31.60
ES 12378F
3.08e7
32.13
ES 23478F
2.93e7
33.24
Abs. Int.
8.66e6
4.33e6
0.00e0
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.64e3
0%
Abs. Int.
9.03e3
4.52e3
0.00e0
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 1.89e4
123478F
8.69e7*
36.48
123678F
2.40e7
36.61
124678/134678F
6.75e6
35.30
123489F
5.68e6
38.27
0%
Abs. Int.
2.66e7
1.33e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 1.37e4
123478F
6.95e7*
36.48
123678F
1.89e7
36.61
124678/134678F
5.62e6
35.30
123489F
4.53e6
38.27
0%
Abs. Int.
2.09e7
1.04e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PBM
4σ 1.29e4
ES 123678F
2.28e7
36.60
ES 123478F
1.80e7
36.46
CS 123469F
1.92e7
36.91
ES 234678F
1.80e7*
37.26
ES 123789F
1.71e7
38.23
0%
Abs. Int.
7.25e6
3.63e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PBM
4σ 6.97e3
ES 123678F
4.33e7
36.60
ES 123478F
3.46e7
36.46
CS 123469F
3.59e7
36.91
ES 234678F
3.59e7*
37.26
ES 123789F
3.27e7
38.23
0%
Abs. Int.
1.30e7
6.50e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.75e3
0%
Abs. Int.
4.69e4
2.35e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 5.82e3
0%
1234678F
2.34e7
39.61
1234689F
5.69e6
40.00
1234789F
7.40e6
40.96
Abs. Int.
9.13e6
4.56e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 3.67e3
0%
1234678F
2.25e7
39.61
1234689F
5.25e6
40.00
1234789F
6.94e6
40.96
Abs. Int.
8.51e6
4.26e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 5.39e3
0%
ES 1234678F
1.58e7
39.60
CS 1234689F
1.37e7
40.00
ES 1234789F
1.16e7
40.95
Abs. Int.
5.87e6
2.93e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 8.70e3
0%
ES 1234678F
3.67e7
39.60
CS 1234689F
3.11e7
39.99
ES 1234789F
2.57e7
40.95
Abs. Int.
1.37e7
6.86e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.35e3
0%
Abs. Int.
1.48e6
7.39e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDF
6.80e6
43.24
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 2.48e3
0%
Abs. Int.
2.13e6
1.06e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
7.70e6
43.23
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.47e3
0%
Abs. Int.
2.22e6
1.11e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.86e7
43.23
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.16e3
0%
Abs. Int.
9.14e6
4.57e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.24e7
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 6.46e3
0%
Abs. Int.
9.89e6
4.95e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.75e3
0%
Abs. Int.
8.86e3
4.43e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5970_18718_DF_005 **Acq'd:** 16 Dec 2021 04:02 PSW **Wt/Vol:** 10.13 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-4 **UTP:** 16-Dec-2021 11:07:15 PSW **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 735-325-GBS

Datafile: 211215R22 **Report:** 20 Dec 2021 14:47 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.27	E	1.0008	1.0008	0	6.66E+08	0.80	Y	1.34	2,280	10705.494	0.389
12378-PeCDD	33.61		1.0005	1.0006	+0.2	4.73E+06	1.63	Y	1.06	25.3	11697.529	0.548
123478-HxCDD	37.48	J	1.0003	1.0004	+0.2	3.88E+05	1.14	Y	1.06	2.39	22205.832	1.15
123678-HxCDD	37.60		1.0033	1.0035	+0.5	1.81E+06	1.24	Y	1.08	10.7	22205.832	1.14
123789-HxCDD	37.90	EMPC	1.0110	1.0116	+1.4	8.46E+05	1.52	N	1.02	4.92	22205.832	1.11
1234678-HpCDD	40.52		1.0003	1.0004	+0.2	4.25E+07	1.03	Y	0.97	326	11415.556	0.574
OCDD	43.07		1.0003	1.0003	0	4.08E+08	0.89	Y	1.07	4,780	10750.605	1.03
2378-TCDF	27.41	E	1.0006	1.0008	+0.3	2.32E+09	0.81	Y	0.96	7,980	33443.45	1.37
12378-PeCDF	32.17		1.0006	1.0006	0	5.67E+07	1.54	Y	0.95	235	13508.405	0.518
23478-PeCDF	33.29		1.0006	1.0008	+0.4	4.69E+07	1.57	Y	0.94	205	13508.405	0.528
123478-HxCDF	36.50		1.0004	1.0005	+0.2	8.08E+07	1.25	Y	1.23	359	26152.43	0.986
123678-HxCDF	36.63		1.0004	1.0003	-0.2	2.10E+07	1.25	Y	1.13	84.3	26152.43	0.853
234678-HxCDF	37.30		1.0005	1.0004	-0.2	4.51E+06	1.18	Y	1.15	21.5	26152.43	1.04
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	26152.43	1.03
1234678-HpCDF	39.63		1.0003	1.0002	-0.2	4.67E+07	1.03	Y	1.36	223	7981.386	0.246
1234789-HpCDF	40.97		1.0003	1.0003	0	8.30E+06	1.01	Y	1.30	47.9	7981.386	0.35
OCDF	43.25		1.0002	1.0003	+0.3	2.99E+08	0.89	Y	1.03	2,830	8648.551	0.675

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.25	1.0237	1.0237	0	4.28E+07	0.81	Y	1.03	74.9
ES 12378-PeCDD	33.59	1.2158	1.2173	+3.0	3.49E+07	1.61	Y	1.03	61
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	3.03E+07	1.27	Y	0.99	74.1
ES 123678-HxCDD	37.58	0.9949	0.9947	-0.5	3.08E+07	1.24	Y	0.97	76.8
ES 123789-HxCDD	37.88	1.0026	1.0027	+0.2	3.34E+07	1.26	Y	1.12	72.3
ES 1234678-HpCDD	40.51	1.0713	1.0721	+1.9	2.65E+07	1.09	Y	0.99	64.9
ES OCDD	43.05	1.1385	1.1395	+2.6	3.15E+07	0.87	Y	0.78	49.2
ES 2378-TCDF	27.39	1.0519	1.0525	+1.0	5.98E+07	0.81	Y	1.08	69.7
ES 12378-PeCDF	32.15	1.2331	1.2355	+4.6	5.03E+07	1.54	Y	0.93	68
ES 23478-PeCDF	33.26	1.2754	1.2782	+5.6	4.81E+07	1.59	Y	0.92	65.8
ES 123478-HxCDF	36.48	0.9656	0.9656	0	3.60E+07	0.52	Y	1.14	76.6
ES 123678-HxCDF	36.62	0.9693	0.9693	0	4.35E+07	0.52	Y	1.30	81.4
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	3.59E+07	0.52	Y	1.20	72.6
ES 123789-HxCDF	38.24	1.0121	1.0122	+0.2	3.62E+07	0.55	Y	1.14	77.3
ES 1234678-HpCDF	39.62	1.0478	1.0485	+1.7	3.04E+07	0.45	Y	0.95	77.7
ES 1234789-HpCDF	40.96	1.0832	1.0840	+2.0	2.63E+07	0.46	Y	0.85	75.4
ES OCDF	43.24	1.1434	1.1443	+2.3	4.06E+07	0.92	Y	0.93	53.2

Lab ID: B5970_18718_DF_005 **Acq'd:** 16 Dec 2021 04:02 PSW **Wt/Vol:** 10.13 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-4 **UTP:** 16-Dec-2021 11:07:15 PSW **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 735-325-GBS

Datafile: 211215R22 **Report:** 20 Dec 2021 14:47 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.60		-	-	-	5.52E+07	0.76	Y	-	-	
JS 1234-TCDF	26.02		-	-	-	7.91E+07	0.78	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.06E+07	1.28	Y	-	-	
CS 37Cl-2378-TCDD	28.27		1.0245	1.0245	0	1.89E+07	n/a	-	1.31	65.2	
CS 12347-PeCDD	33.10		1.1978	1.1993	+3.0	3.20E+07	1.58	Y	0.89	64.8	
CS 12346-PeCDF	31.63		1.2130	1.2154	+4.6	4.86E+07	1.52	Y	0.87	70.7	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	3.64E+07	0.53	Y	1.09	81.1	
CS 1234689-HpCDF	40.01		1.0580	1.0588	+1.9	2.81E+07	0.46	Y	0.86	79	
~~SS 37Cl-2378-TCDD~~	~~28.27~~		~~1.0245~~	~~1.0245~~	~~0~~	~~1.89E+07~~	~~n/a~~		~~1.26~~	~~87.4~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.10~~		~~1.1978~~	~~1.1993~~	~~+3.0~~	~~3.20E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~106~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.63~~		~~1.2130~~	~~1.2154~~	~~+4.6~~	~~4.86E+07~~	~~1.52~~	~~Y~~	~~0.93~~	~~104~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~3.64E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~99.6~~	
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0588~~	~~+1.9~~	~~2.81E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~101~~	

Totals	Conc	EMPC
Total TCDD	2500	2530
Total PeCDD	48.6	49.3
Total HxCDD	92.9	105
Total HpCDD	740	740
Total Tetra-Octa Dioxins	8170	8210
Total TCDF	16,000	16000
Total PeCDF	744	744
Total HxCDF	594	594
Total HpCDF	398	398
Total Tetra-Octa Furans	20,600	20600
Total Tetra-Octa Dioxins & Furans	28800	28800

Lab ID: B5970_18718_DF_005 **Acq'd:** 16 Dec 2021 04:02 PSW **Wt/Vol:** 10.13 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-4 **UTP:** 16-Dec-2021 11:07:15 PSW **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 735-325-GBS

Datafile: 211215R22 **Report:** 20 Dec 2021 14:47 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.61		0.8726	0.8712	-2.1	1.33E+06	0.79	Y	1.34	4.55	10705.494	0.389
1379-TCDD	24.97		0.8851	0.8838	-1.9	5.16E+05	0.69	Y	1.34	1.77	10705.494	0.389
1369-TCDD	NotFnd		0.9002						1.34		10705.494	0.389
1469-TCDD	26.18		0.9275	0.9268	-1.1	8.91E+05	0.75	Y	1.34	3.06	10705.494	0.389
1247/1246/1248/1249-TCDD	26.42		0.9361	0.9351	-1.6	1.23E+06	0.87	Y	1.34	4.21	10705.494	0.389
1378-TCDD	26.62		0.9427	0.9421	-1.0	1.93E+06	0.83	Y	1.34	6.61	10705.494	0.389
1268-TCDD	26.82	EMPC	0.9498	0.9492	-1.0	1.78E+05	0.61	N	1.34	0.61	10705.494	0.389
1478-TCDD	27.07	EMPC	0.9584	0.9582	-0.3	1.42E+06	0.65	N	1.34	4.86	10705.494	0.389
1279-TCDD	27.22		0.9644	0.9636	-1.3	1.69E+05	0.72	Y	1.34	0.579	10705.494	0.389
1234/1269-TCDD	27.59		0.9766	0.9767	+0.2	3.86E+05	0.88	Y	1.34	1.33	10705.494	0.389
1236-TCDD	NotFnd		0.9813						1.34		10705.494	0.389
1237/1238-TCDD	27.98		0.9906	0.9904	-0.3	1.01E+07	0.81	Y	1.34	34.6	10705.494	0.389
1239-TCDD	NotFnd		0.9952						1.34		10705.494	0.389
2378-TCDD	**28.27**	E	**1.0008**	1.0008	**0**	6.66E+08	0.80	Y	**1.34**	**2,280**	**10705.494**	**0.389**
1278-TCDD	28.60		1.0122	1.0123	+0.2	4.73E+07	0.78	Y	1.34	162	10705.494	0.389
1267-TCDD	28.73	EMPC	1.0168	1.0171	+0.5	3.16E+06	0.93	N	1.34	10.8	10705.494	0.389
1289-TCDD	29.24	EMPC	1.0349	1.0349	0	2.67E+06	1.03	N	1.34	9.14	10705.494	0.389
12479/12468-PeCDD	31.12		0.9267	0.9264	-0.6	1.20E+06	1.62	Y	1.06	6.4	11697.529	0.548
12469-PeCDD	31.66		0.9425	0.9424	-0.2	7.00E+05	1.35	Y	1.06	3.74	11697.529	0.548
12368-PeCDD	32.20		0.9588	0.9586	-0.4	8.03E+05	1.43	Y	1.06	4.29	11697.529	0.548
12478-PeCDD	32.39	J	0.9643	0.9642	-0.2	4.56E+05	1.48	Y	1.06	2.44	11697.529	0.548
12379-PeCDD	32.49	J	0.9673	0.9673	0	3.69E+05	1.61	Y	1.06	1.97	11697.529	0.548
12369/12467/12489-PeCDD	32.75		0.9750	0.9749	-0.2	4.81E+05	1.57	Y	1.06	2.57	11697.529	0.548
12346/12347-PeCDD	33.12	J EMPC	0.9859	0.9858	-0.2	1.29E+05	1.20	N	1.06	0.687	11697.529	0.548
12378-PeCDD	33.61		**1.0005**	**1.0006**	**+0.2**	**4.73E+06**	**1.63**	**Y**	**1.06**	**25.3**	**11697.529**	**0.548**
12367-PeCDD	33.73	J	1.0032	1.0041	+1.8	3.59E+05	1.46	Y	1.06	1.92	11697.529	0.548
12389-PeCDD	NotFnd		1.0135						1.06		11697.529	0.548
124679/124689-HxCDD	35.77		0.9544	0.9548	+0.9	7.95E+06	1.29	Y	1.05	47.4	22205.832	1.13
123468-HxCDD	36.42	EMPC	0.9716	0.9721	+1.1	9.07E+05	1.48	N	1.05	5.4	22205.832	1.13
123679/123689-HxCDD	36.71		0.9793	0.9797	+0.9	5.45E+06	1.29	Y	1.05	32.5	22205.832	1.13
123469-HxCDD	36.83	J EMPC	0.9829	0.9831	+0.4	2.97E+05	1.73	N	1.05	1.77	22205.832	1.13
123478-HxCDD	37.48	J	**1.0003**	**1.0004**	**+0.2**	**3.88E+05**	**1.14**	**Y**	1.06	**2.39**	**22205.832**	**1.15**
123678-HxCDD	37.60		**1.0033**	**1.0035**	**+0.5**	**1.81E+06**	**1.24**	**Y**	1.08	**10.7**	**22205.832**	**1.14**
123467-HxCDD	NotFnd		1.0084						1.05		22205.832	1.13
123789-HxCDD	37.90	EMPC	**1.0110**	**1.0116**	**+1.4**	**8.46E+05**	**1.52**	**N**	1.02	**4.92**	**22205.832**	**1.11**

Lab ID: B5970_18718_DF_005 **Acq'd:** 16 Dec 2021 04:02 PSW **Wt/Vol:** 10.13 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120221-S-SPS-SW-B-4 **UTP:** 16-Dec-2021 11:07:15 PSW **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 735-325-GBS

Datafile: 211215R22 **Report:** 20 Dec 2021 14:47 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

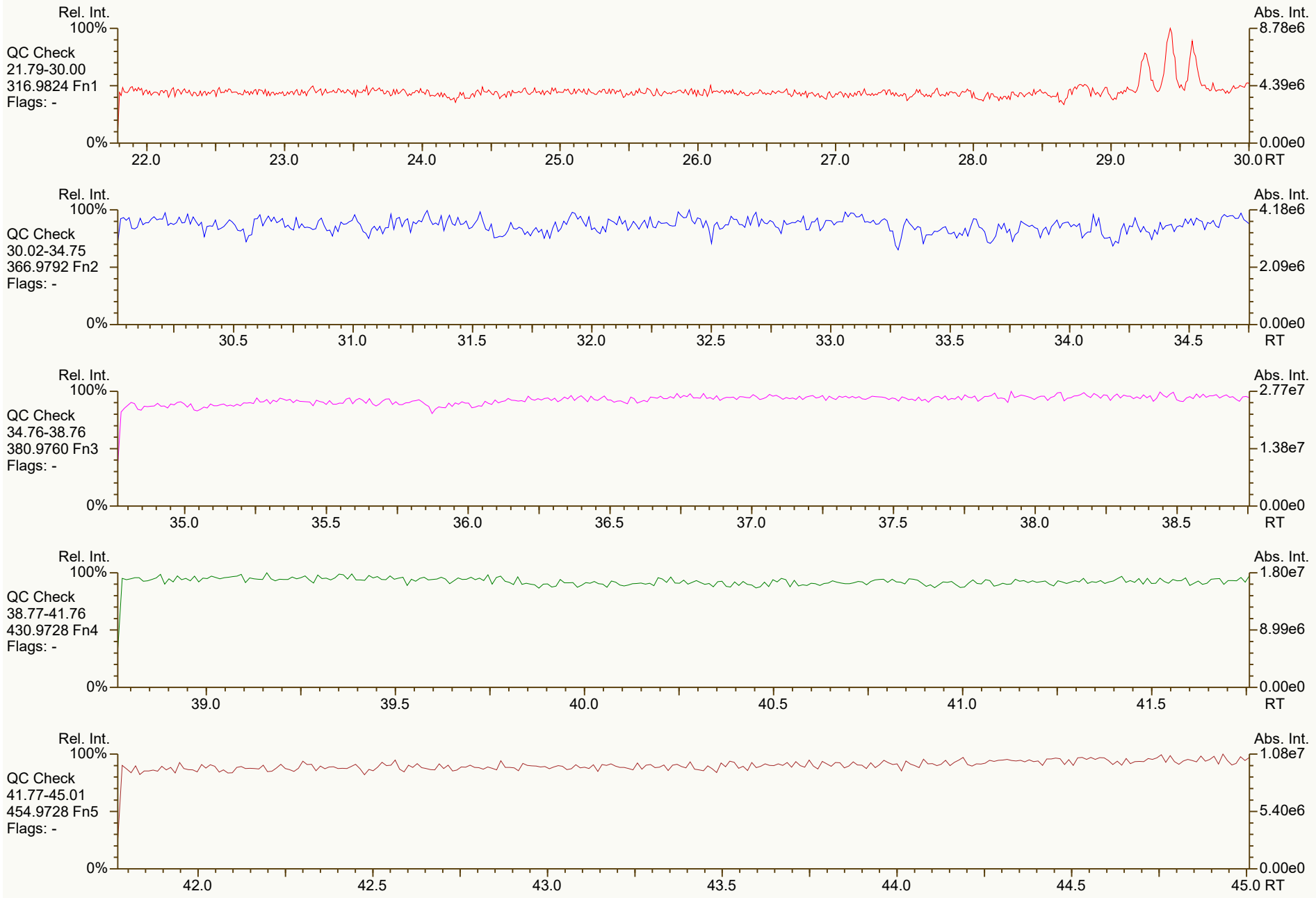
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.88		0.9843	0.9844	+0.2	5.42E+07	1.04	Y	0.97	415	11415.556	0.574
1234678-HpCDD	**40.52**		**1.0003**	**1.0004**	**+0.2**	**4.25E+07**	**1.03**	**Y**	**0.97**	**326**	**11415.556**	**0.574**
OCDD	**43.07**		**1.0003**	**1.0003**	**0**	**4.08E+08**	**0.89**	**Y**	**1.07**	**4,780**	**10750.605**	**1.03**
OCDD-a	43.06		1.0001	1.0002	+0.3	2.40E+07	2.39	Y	0.07	4,570	11590.356	18.1
1368-TCDF	22.47		0.8230	0.8205	-3.4	7.31E+05	0.72	Y	0.96	2.51	33443.45	1.37
1468-TCDF	23.07		0.8443	0.8424	-2.6	3.73E+06	0.78	Y	0.96	12.8	33443.45	1.37
2468-TCDF	23.72		0.8672	0.8659	-1.8	3.74E+06	0.76	Y	0.96	12.9	33443.45	1.37
1346/1246-TCDF	24.12		0.8802	0.8808	+0.9	2.22E+06	0.78	Y	0.96	7.64	33443.45	1.37
1347/1378/1247-TCDF	24.26		0.8855	0.8856	+0.1	2.27E+07	0.78	Y	0.96	77.9	33443.45	1.37
1348-TCDF	24.49		0.8952	0.8941	-1.6	8.32E+06	0.80	Y	0.96	28.6	33443.45	1.37
1248/1367/1379-TCDF	24.59		0.9000	0.8979	-3.1	1.06E+08	0.80	Y	0.96	363	33443.45	1.37
1268-TCDF	25.00		0.9136	0.9128	-1.2	3.81E+07	0.80	Y	0.96	131	33443.45	1.37
1467-TCDF	25.14		0.9185	0.9177	-1.2	5.86E+06	0.80	Y	0.96	20.1	33443.45	1.37
1478-TCDF	25.31		0.9247	0.9240	-1.1	9.87E+07	0.80	Y	0.96	339	33443.45	1.37
1369/1237-TCDF	25.69		0.9381	0.9379	-0.3	2.56E+07	0.78	Y	0.96	88.2	33443.45	1.37
2467-TCDF	25.81		0.9427	0.9423	-0.6	2.50E+06	0.83	Y	0.96	8.59	33443.45	1.37
2368-TCDF	25.95		0.9484	0.9475	-1.4	5.40E+07	0.78	Y	0.96	186	33443.45	1.37
1238/1234/1678/1469/1236-TCDF	26.03		0.9517	0.9505	-1.9	1.42E+08	0.79	Y	0.96	487	33443.45	1.37
1278-TCDF	26.50	E	0.9682	0.9676	-1.0	1.10E+09	0.79	Y	0.96	3,780	33443.45	1.37
1349-TCDF	26.63		0.9725	0.9721	-0.6	1.77E+07	0.77	Y	0.96	61	33443.45	1.37
1267-TCDF	26.78		0.9782	0.9778	-0.6	6.08E+07	0.81	Y	0.96	209	33443.45	1.37
2346/1249-TCDF	26.98		0.9846	0.9850	+0.6	8.95E+06	0.78	Y	0.96	30.8	33443.45	1.37
2347/1279-TCDF	27.18		0.9926	0.9921	-0.8	2.59E+07	0.79	Y	0.96	88.9	33443.45	1.37
2348-TCDF	27.30		0.9966	0.9965	-0.2	1.92E+08	0.78	Y	0.96	660	33443.45	1.37
2378-TCDF	**27.41**	E	**1.0006**	**1.0008**	**+0.3**	**2.32E+09**	**0.81**	**Y**	**0.96**	**7,980**	**33443.45**	**1.37**
2367/3467-TCDF	27.77		1.0139	1.0137	-0.3	1.89E+08	0.80	Y	0.96	651	33443.45	1.37
1269-TCDF	28.02		1.0226	1.0229	+0.5	3.87E+07	0.80	Y	0.96	133	33443.45	1.37
1239-TCDF	28.30		1.0322	1.0331	+1.5	6.40E+06	0.81	Y	0.96	22	33443.45	1.37
1289-TCDF	29.43		1.0729	1.0745	+2.8	1.86E+08	0.79	Y	0.96	639	33443.45	1.37
13468/12468-PeCDF	29.38		0.9135	0.9137	+0.4	6.90E+06	1.65	Y	0.94	29.4	8316.43	0.322
13678/13467/12467-PeCDF	30.92		0.9612	0.9617	+0.9	1.31E+06	1.67	Y	0.94	5.59	13508.405	0.523
12368/13478/12478-PeCDF	31.08		0.9661	0.9666	+0.9	2.83E+07	1.55	Y	0.94	121	13508.405	0.523
14678-PeCDF	31.17		0.9693	0.9694	+0.2	1.07E+06	1.68	Y	0.94	4.56	13508.405	0.523
13479-PeCDF	31.28	J EMPC	0.9723	0.9727	+0.8	1.48E+05	1.79	N	0.94	0.632	13508.405	0.523
13469/12479-PeCDF	31.46	J	0.9799	0.9783	-3.0	5.31E+05	1.57	Y	0.94	2.26	13508.405	0.523
12346-PeCDF	31.64	J	0.9842	0.9841	-0.2	2.91E+05	1.60	Y	0.94	1.24	13508.405	0.523

Lab ID: B5970_18718_DF_005 | **Acq'd: 16 Dec 2021 04:02 PSW** | **Wt/Vol: 10.13 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120221-S-SPS-SW-B-4 | **UTP: 16-Dec-2021 11:07:15 PSW** | **J-level: 0.494 pg/g** | **Split: 1** | **Checkcode: 735-325-GBS**

Datafile: 211215R22 | **Report: 20 Dec 2021 14:47 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.73		0.9868	0.9869	+0.2	2.26E+06	1.62	Y	0.94	9.62	13508.405	0.523
12347-PeCDF	31.81		0.9893	0.9893	0	1.43E+06	1.69	Y	0.94	6.11	13508.405	0.523
12348-PeCDF	31.96		0.9941	0.9941	0	6.60E+06	1.55	Y	0.94	28.1	13508.405	0.523
12378-PeCDF	**32.17**		**1.0006**	**1.0006**	**0**	**5.67E+07**	**1.54**	**Y**	**0.95**	**235**	**13508.405**	**0.518**
12678/12367-PeCDF	32.47		1.0090	1.0097	+1.4	1.88E+07	1.56	Y	0.94	80	13508.405	0.523
12379-PeCDF	NotFnd		1.0143						0.94		13508.405	0.523
12679-PeCDF	NotFnd		0.9929						0.94		13508.405	0.523
23467/12369-PeCDF	33.14		0.9966	0.9963	-0.6	9.98E+05	1.65	Y	0.94	4.25	13508.405	0.523
23478-PeCDF	**33.29**		**1.0006**	**1.0008**	**+0.4**	**4.69E+07**	**1.57**	**Y**	**0.94**	**205**	**13508.405**	**0.528**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		13508.405	0.523
12349-PeCDF	NotFnd		1.0102						0.94		13508.405	0.523
12389-PeCDF	34.35		1.0325	1.0327	+0.4	2.75E+06	1.53	Y	0.94	11.7	13508.405	0.523
123468-HxCDF	35.13		0.9628	0.9630	+0.4	2.24E+06	1.18	Y	1.16	10.1	26152.43	0.971
124678/134678-HxCDF	35.33		0.9683	0.9683	0	1.08E+07	1.27	Y	1.16	48.5	26152.43	0.971
134679-HxCDF	NotFnd		0.9746						1.16		26152.43	0.971
124679-HxCDF	35.75	J	0.9798	0.9799	+0.2	2.55E+05	1.13	Y	1.16	1.14	26152.43	0.971
124689-HxCDF	35.97		0.9859	0.9860	+0.2	8.27E+06	1.23	Y	1.16	37	26152.43	0.971
123467-HxCDF	36.38		0.9972	0.9972	0	7.07E+05	1.40	Y	1.16	3.17	26152.43	0.971
123478-HxCDF	**36.50**		**1.0004**	**1.0005**	**+0.2**	**8.08E+07**	**1.25**	**Y**	**1.23**	**359**	**26152.43**	**0.986**
123678-HxCDF	**36.63**		**1.0004**	**1.0003**	**-0.2**	**2.10E+07**	**1.25**	**Y**	**1.13**	**84.3**	**26152.43**	**0.853**
123479-HxCDF	NotFnd		1.0049						1.16		26152.43	0.971
123469-HxCDF	36.95		1.0088	1.0089	+0.2	6.56E+05	1.22	Y	1.16	2.94	26152.43	0.971
123679-HxCDF	NotFnd		0.9943						1.16		26152.43	0.971
234678-HxCDF	**37.30**		**1.0005**	**1.0004**	**-0.2**	**4.51E+06**	**1.18**	**Y**	**1.15**	**21.5**	**26152.43**	**1.04**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		26152.43	0.971
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**26152.43**	**1.03**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.29		1.0007	1.0011	+0.9	6.05E+06	1.27	Y	1.16	27.1	26152.43	0.971
1234678-HpCDF	**39.63**		**1.0003**	**1.0002**	**-0.2**	**4.67E+07**	**1.03**	**Y**	**1.36**	**223**	**7981.386**	**0.246**
1234679-HpCDF	39.88		1.0067	1.0067	0	1.73E+06	1.04	Y	1.33	9.04	7981.386	0.294
1234689-HpCDF	40.01		1.0100	1.0100	0	2.25E+07	1.07	Y	1.33	118	7981.386	0.294
1234789-HpCDF	**40.97**		**1.0003**	**1.0003**	**0**	**8.30E+06**	**1.01**	**Y**	**1.30**	**47.9**	**7981.386**	**0.35**
OCDF	**43.25**		**1.0002**	**1.0003**	**+0.3**	**2.99E+08**	**0.89**	**Y**	**1.03**	**2,830**	**8648.551**	**0.675**
OCDF-a	43.24		1.0002	1.0002	0	1.79E+07	2.47	Y	0.06	2,930	9974.521	13.5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21.79-30.00
316.9824 Fn1
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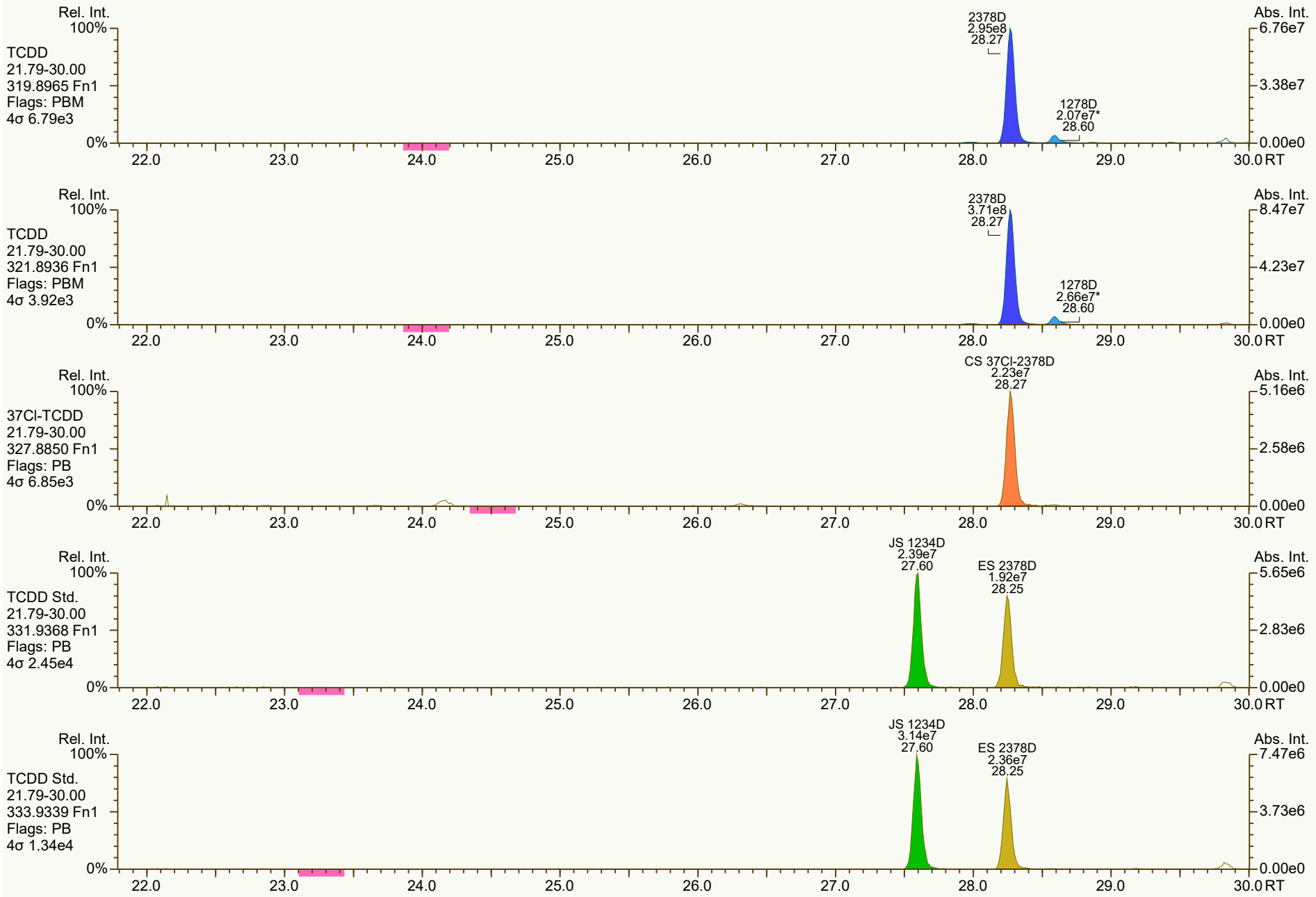
4.39e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.18e6
2.09e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.77e7
1.38e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.80e7
8.99e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.08e7
5.40e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
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4σ 6.79e3
0%
2378D
2.95e8
28.27
1278D
2.07e7*
28.60
Abs. Int.
6.76e7
3.38e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.92e3
0%
2378D
3.71e8
28.27
1278D
2.66e7*
28.60
Abs. Int.
8.47e7
4.23e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 6.85e3
0%
CS 37Cl-2378D
2.23e7
28.27
Abs. Int.
5.16e6
2.58e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 2.45e4
0%
JS 1234D
2.39e7
27.60
ES 2378D
1.92e7
28.25
Abs. Int.
5.65e6
2.83e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.34e4
0%
JS 1234D
3.14e7
27.60
ES 2378D
2.36e7
28.25
Abs. Int.
7.47e6
3.73e6
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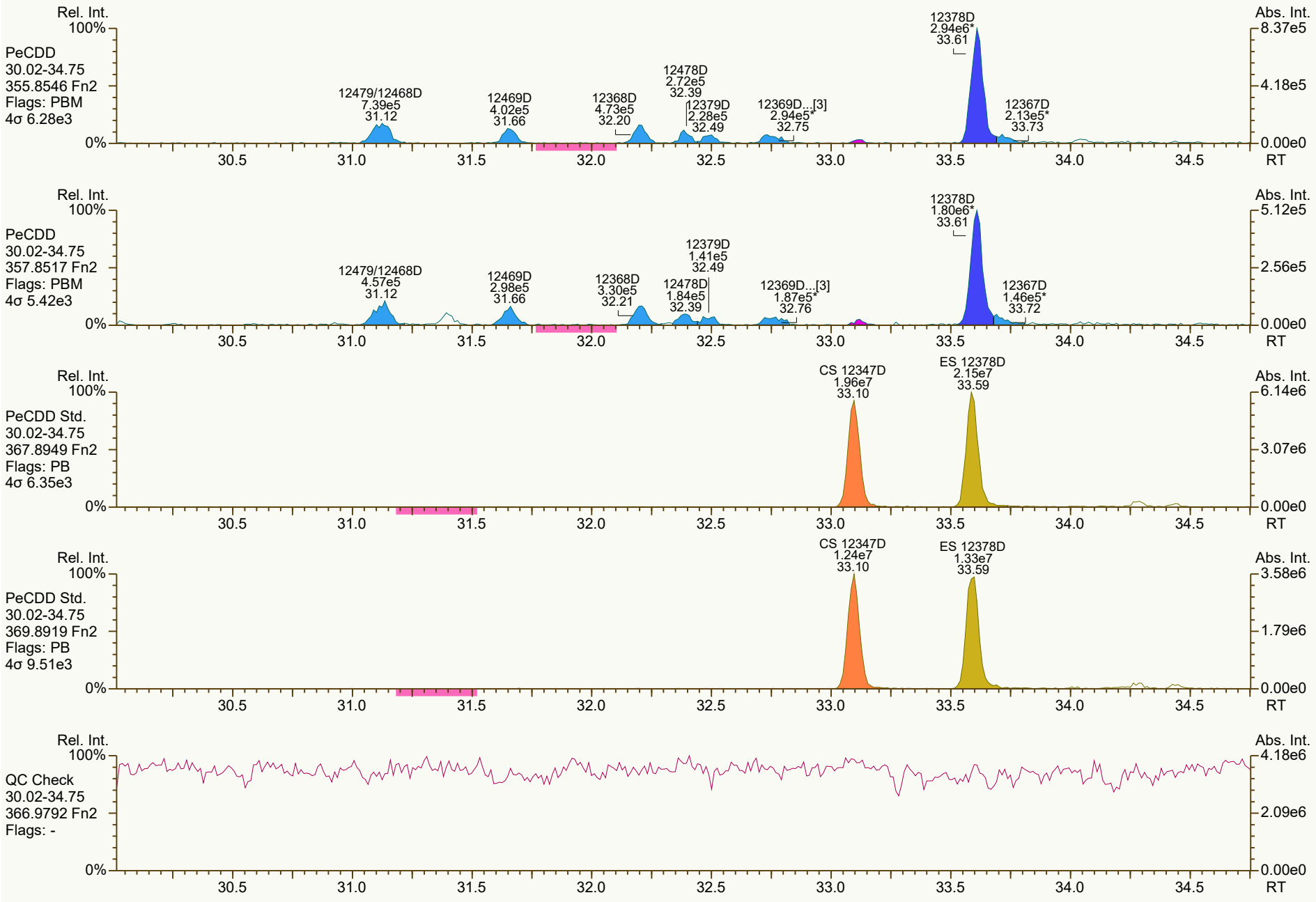
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT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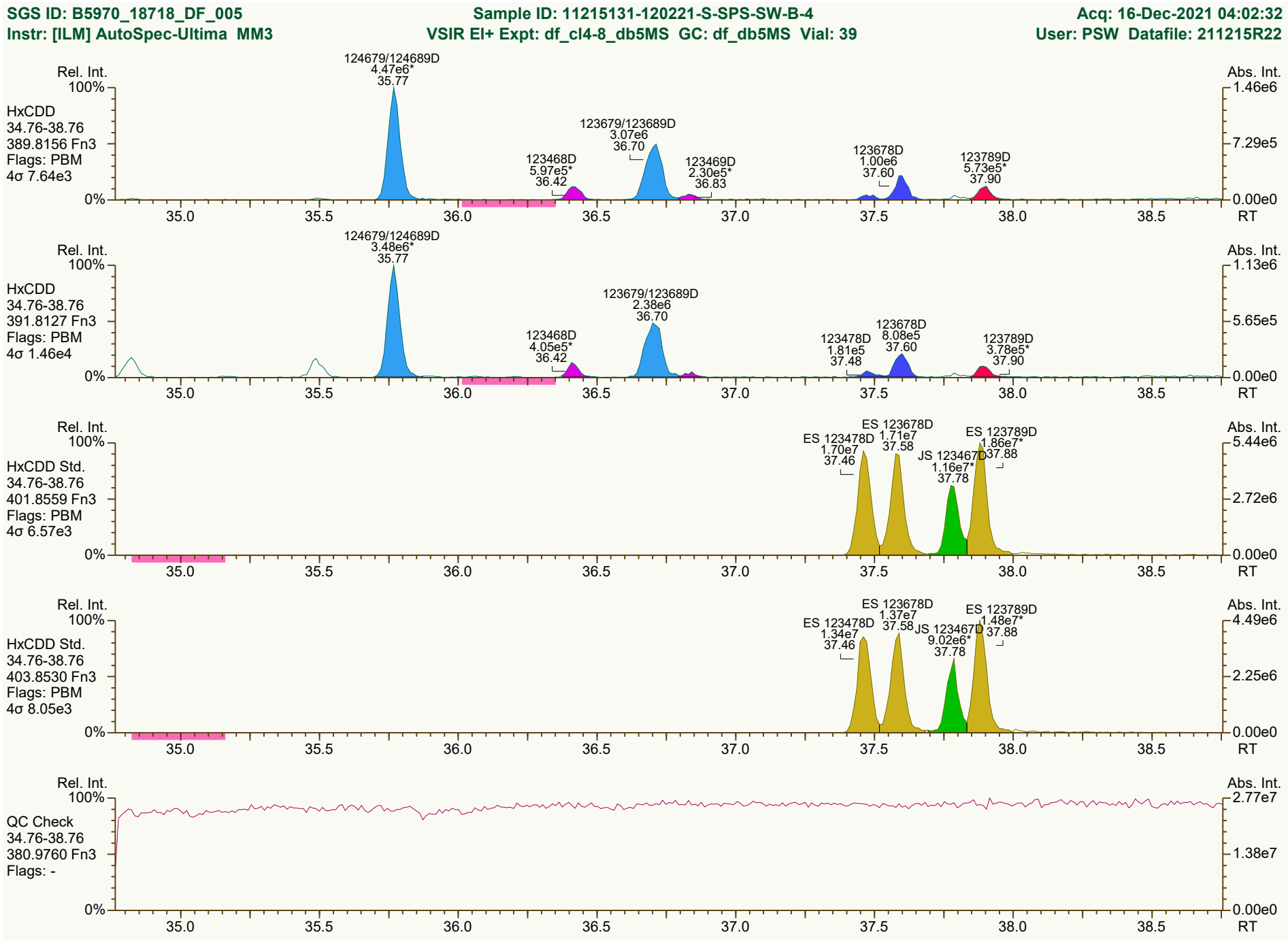
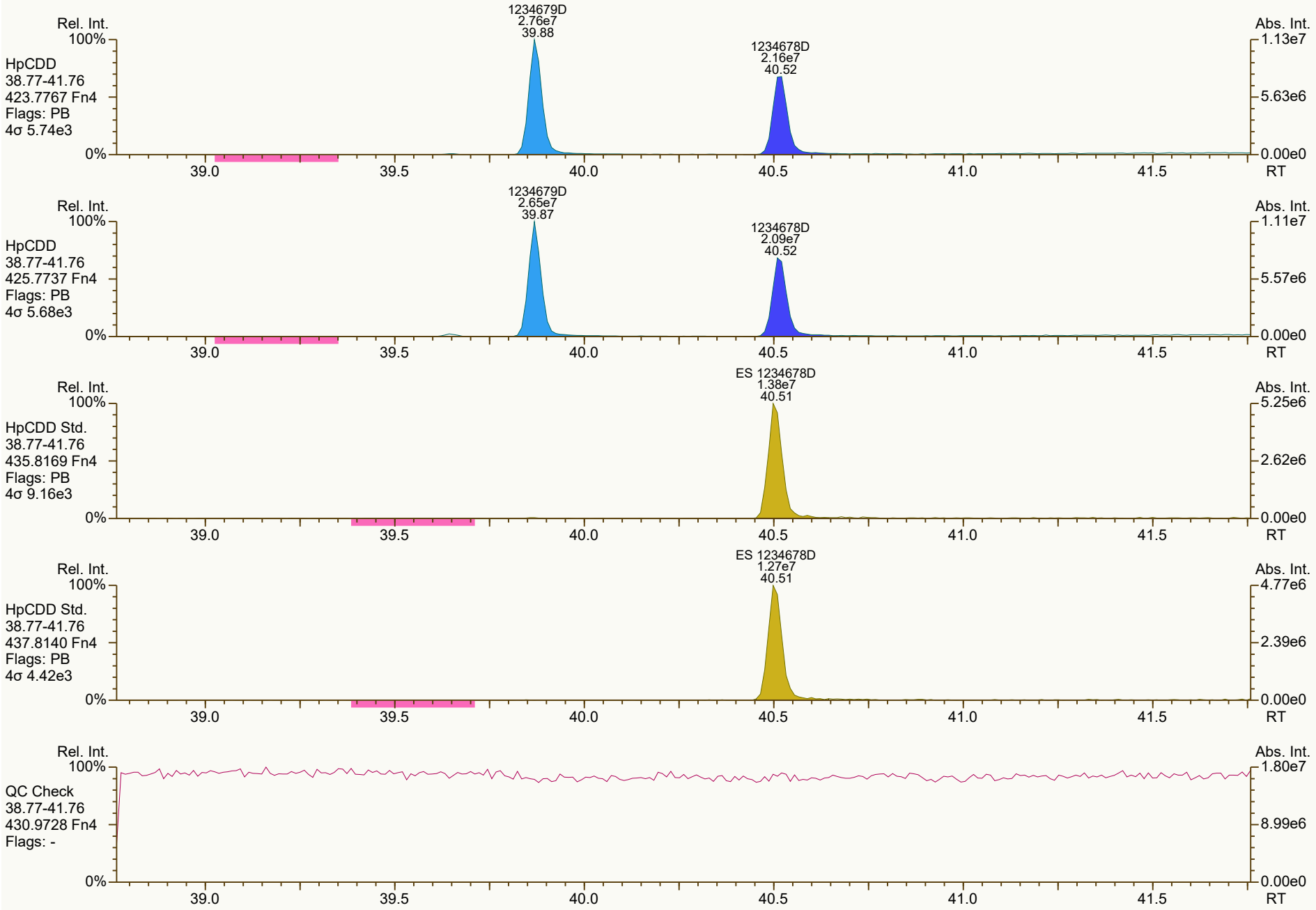
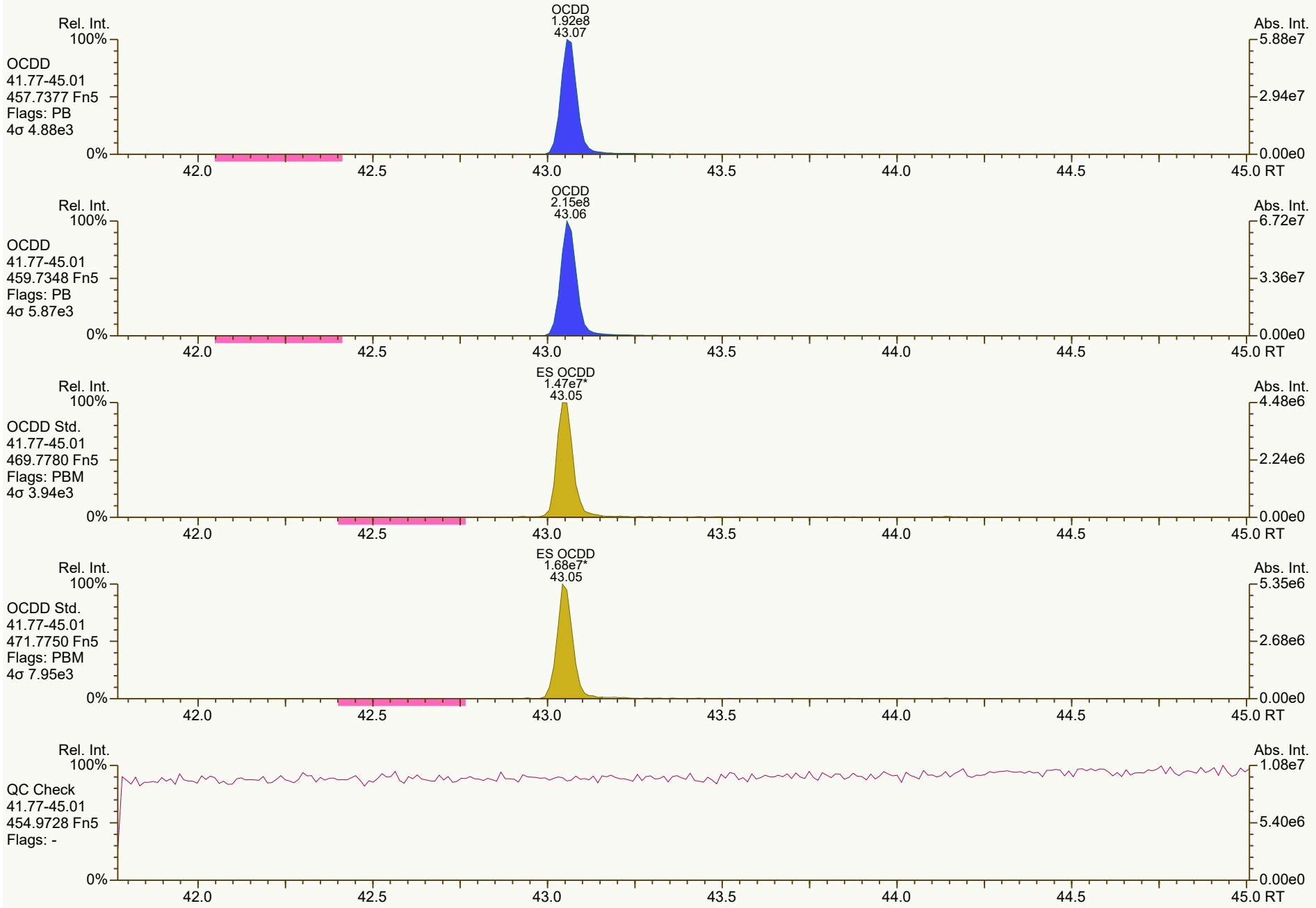
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 6.28e3
0%
12479/12468D
7.39e5
31.12
12469D
4.02e5
31.66
12368D
4.73e5
32.20
12478D
2.72e5
32.39
12379D
2.28e5
32.49
12369D...[3]
2.94e5*
32.75
12378D
2.94e6*
33.61
12367D
2.13e5*
33.73
Abs. Int.
8.37e5
4.18e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 5.42e3
0%
12479/12468D
4.57e5
31.12
12469D
2.98e5
31.66
12368D
3.30e5
32.21
12379D
1.41e5
32.49
12478D
1.84e5
32.39
12369D...[3]
1.87e5*
32.76
12378D
1.80e6*
33.61
12367D
1.46e5*
33.72
Abs. Int.
5.12e5
2.56e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 6.35e3
0%
CS 12347D
1.96e7
33.10
ES 12378D
2.15e7
33.59
Abs. Int.
6.14e6
3.07e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 9.51e3
0%
CS 12347D
1.24e7
33.10
ES 12378D
1.33e7
33.59
Abs. Int.
3.58e6
1.79e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.18e6
2.09e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

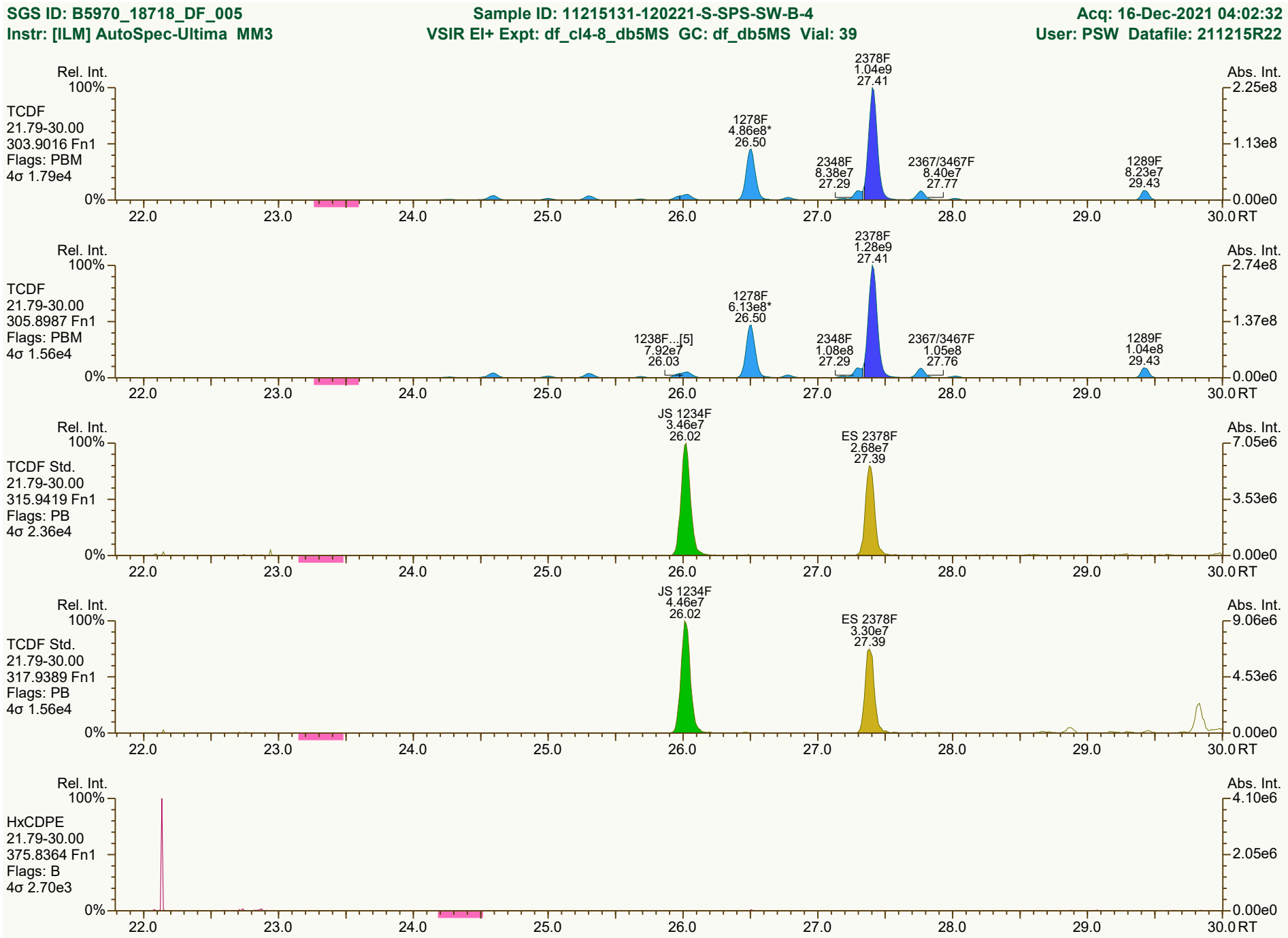
SGS ID: B5970_18718_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-B-4 | Acq: 16-Dec-2021 04:02:32
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39 | User: PSW Datafile: 211215R22

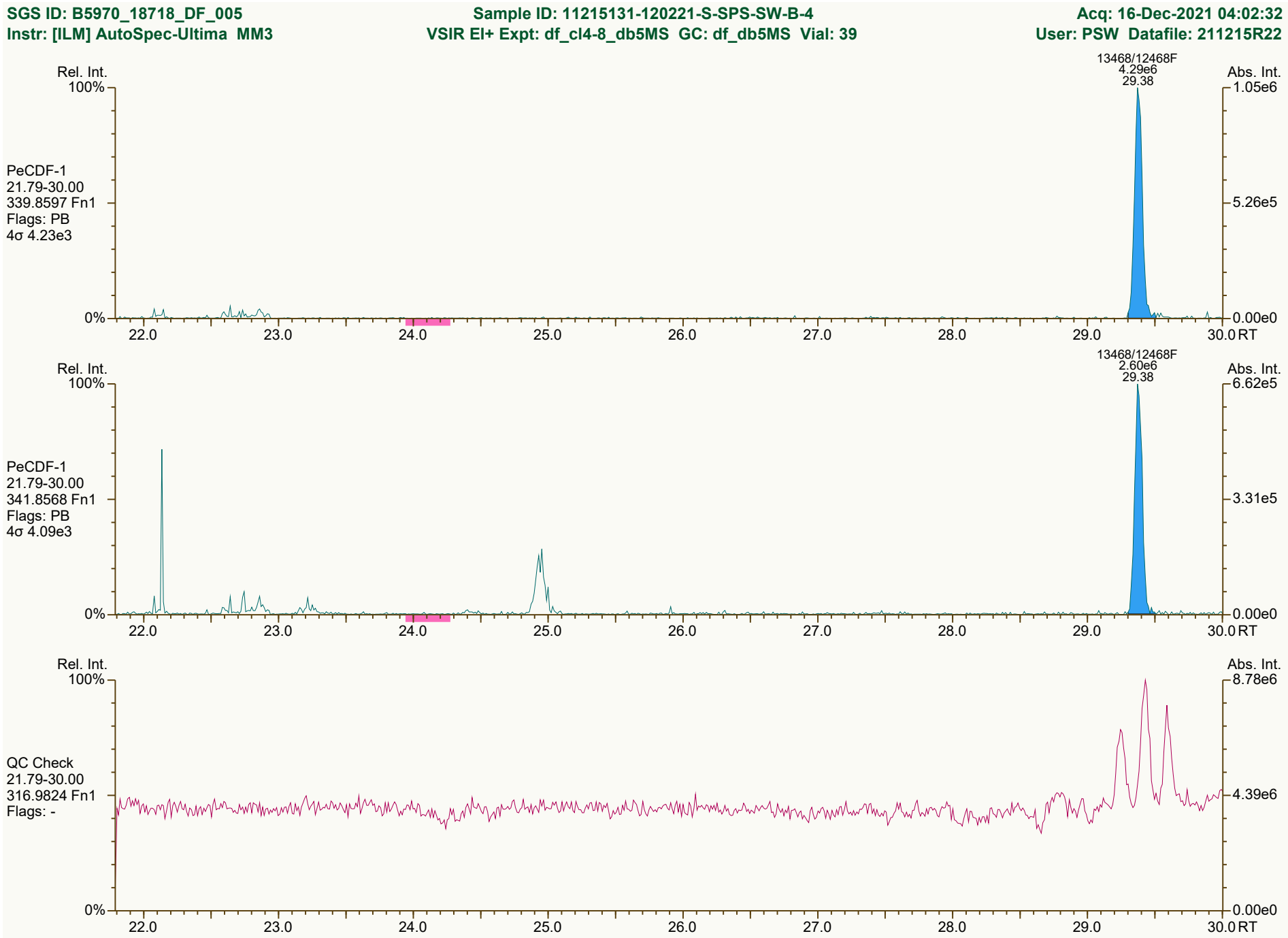


Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_005.utp_res, saved 16-Dec-2021 11:07 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5499, 9945 scc: 735-325 | PKD: 16-Dec-2021 09:22 Printed: 16-Dec-2021 11:16 Page 4 of 12

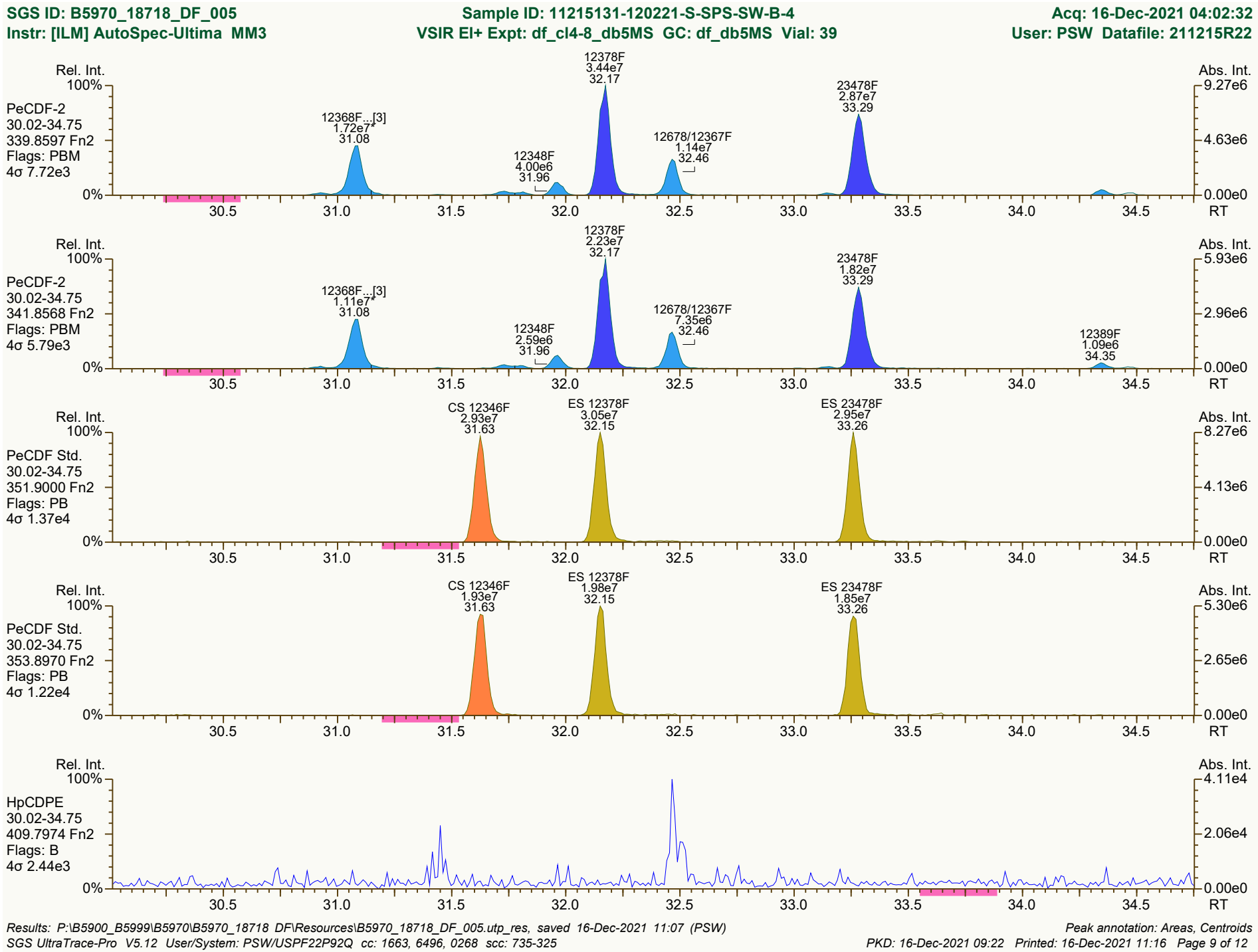

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 5.74e3
1234679D
2.76e7
39.88
1234678D
2.16e7
40.52
Abs. Int.
1.13e7
5.63e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 5.68e3
1234679D
2.65e7
39.87
1234678D
2.09e7
40.52
Abs. Int.
1.11e7
5.57e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 9.16e3
ES 1234678D
1.38e7
40.51
Abs. Int.
5.25e6
2.62e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.42e3
ES 1234678D
1.27e7
40.51
Abs. Int.
4.77e6
2.39e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.80e7
8.99e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
1.92e8
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 4.88e3
0%
Abs. Int.
5.88e7
2.94e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.15e8
43.06
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 5.87e3
0%
Abs. Int.
6.72e7
3.36e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.47e7*
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 3.94e3
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.68e7*
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 7.95e3
0%
Abs. Int.
5.35e6
2.68e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.08e7
5.40e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

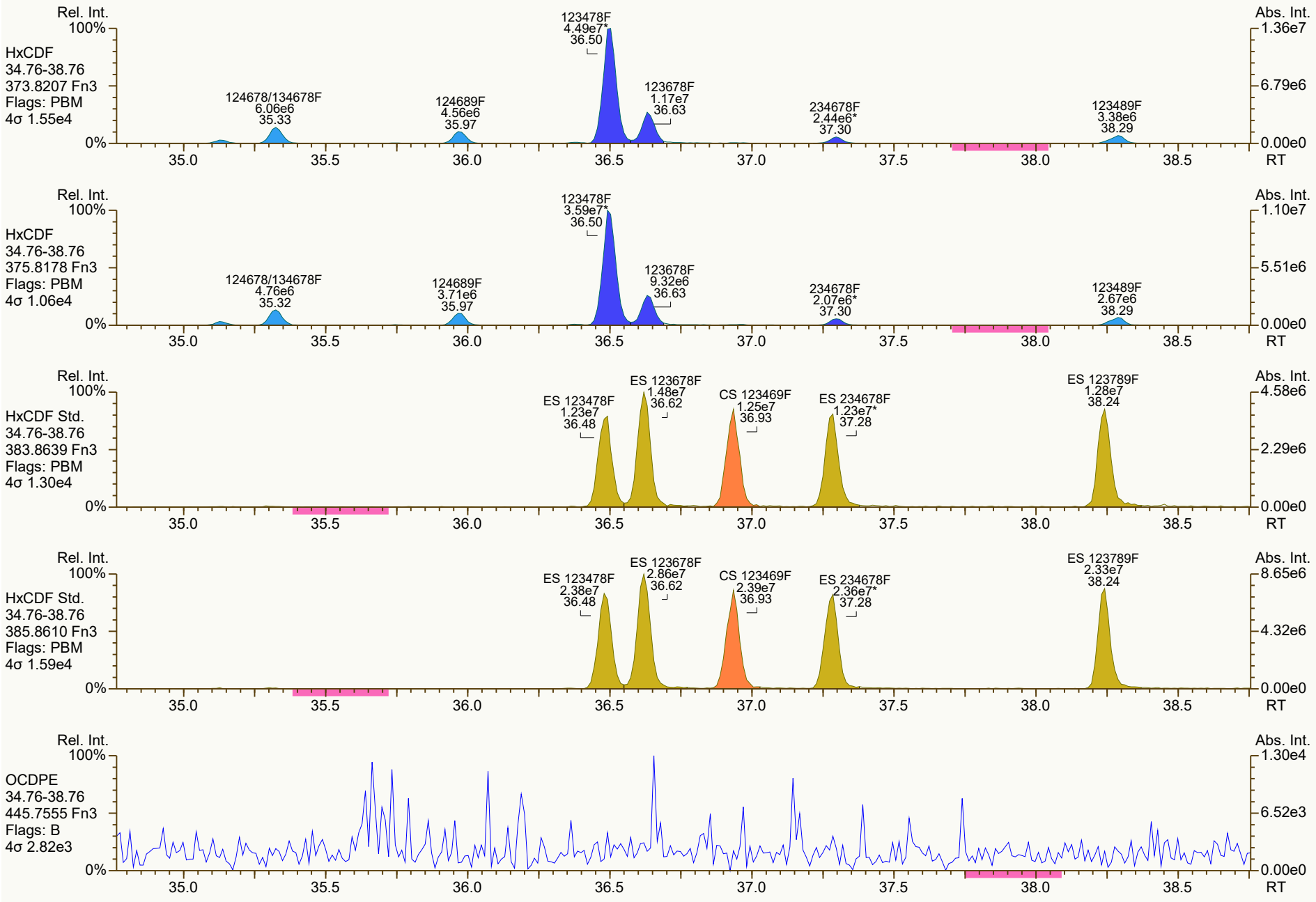

SGS ID: B5970_18718_DF_005
Sample ID: 11215131-120221-S-SPS-SW-B-4
Acq: 16-Dec-2021 04:02:32
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39
User: PSW Datafile: 211215R22
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 1.79e4
2378F
1.04e9
27.41
1278F
4.86e8*
26.50
2348F
8.38e7
27.29
2367/3467F
8.40e7
27.77
1289F
8.23e7
29.43
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 1.56e4
2378F
1.28e9
27.41
1278F
6.13e8*
26.50
1238F...[5]
7.92e7
26.03
2348F
1.08e8
27.29
2367/3467F
1.05e8
27.76
1289F
1.04e8
29.43
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.36e4
JS 1234F
3.46e7
26.02
ES 2378F
2.68e7
27.39
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.56e4
JS 1234F
4.46e7
26.02
ES 2378F
3.30e7
27.39
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.70e3
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
2.25e8
1.13e8
0.00e0
2.74e8
1.37e8
0.00e0
7.05e6
3.53e6
0.00e0
9.06e6
4.53e6
0.00e0
4.10e6
2.05e6
0.00e0
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_005.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0723, 7827, 3649 scc: 735-325
PKD: 16-Dec-2021 09:22 Printed: 16-Dec-2021 11:16 Page 7 of 12

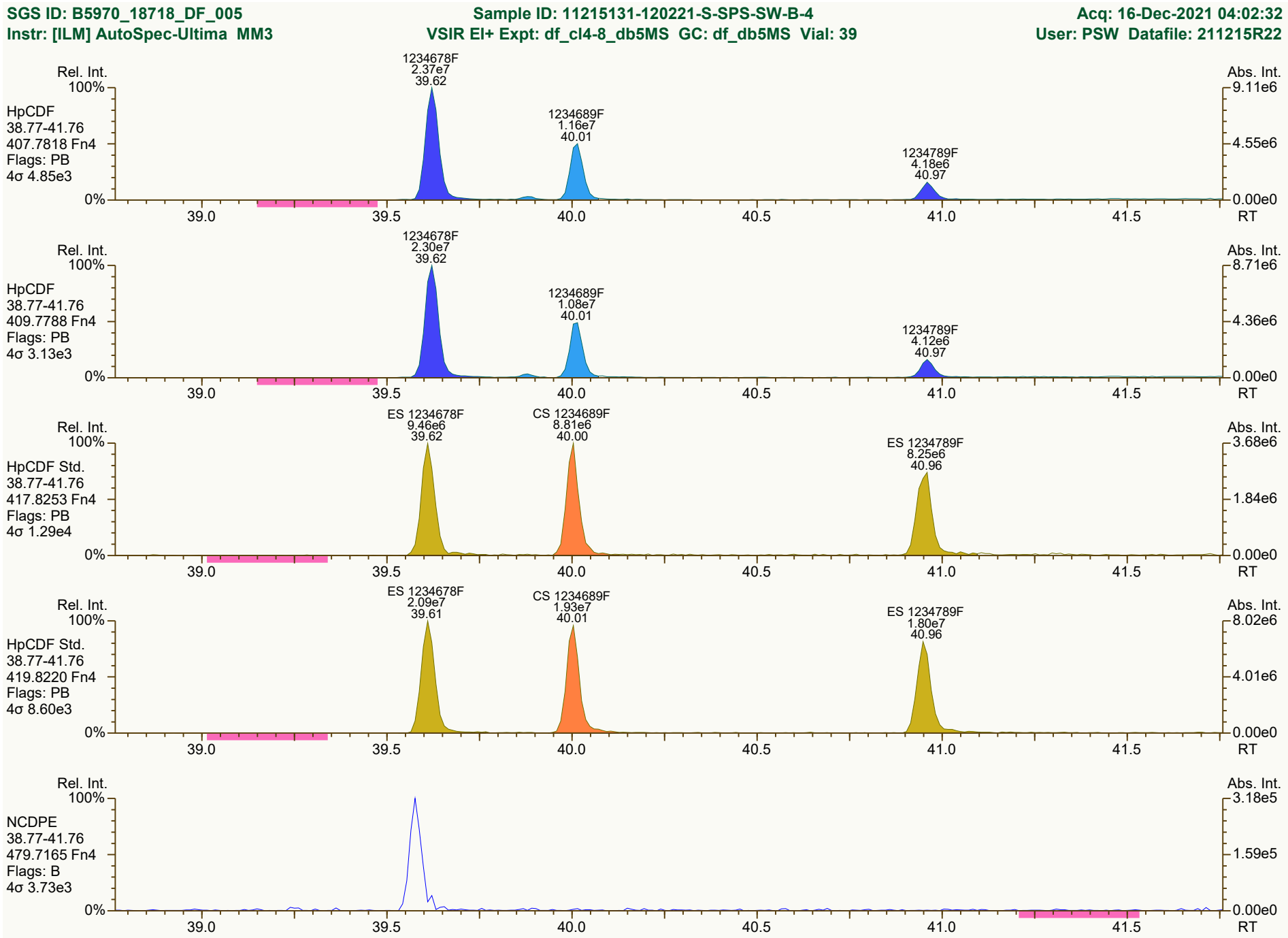

SGS ID: B5970_18718_DF_005
Sample ID: 11215131-120221-S-SPS-SW-B-4
Acq: 16-Dec-2021 04:02:32
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39
User: PSW Datafile: 211215R22
Rel. Int.
100%
0%
Abs. Int.
1.05e6
5.26e5
0.00e0
13468/12468F
4.29e6
29.38
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 4.23e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
2.60e6
29.38
6.62e5
3.31e5
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 4.09e3
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
8.78e6
4.39e6
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_005.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9237 scc: 735-325
PKD: 16-Dec-2021 09:22 Printed: 16-Dec-2021 11:16 Page 8 of 12

SGS ID: B5970_18718_DF_005 | Sample ID: 11215131-120221-S-SPS-SW-B-4 | Acq: 16-Dec-2021 04:02:32
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39 | User: PSW Datafile: 211215R22

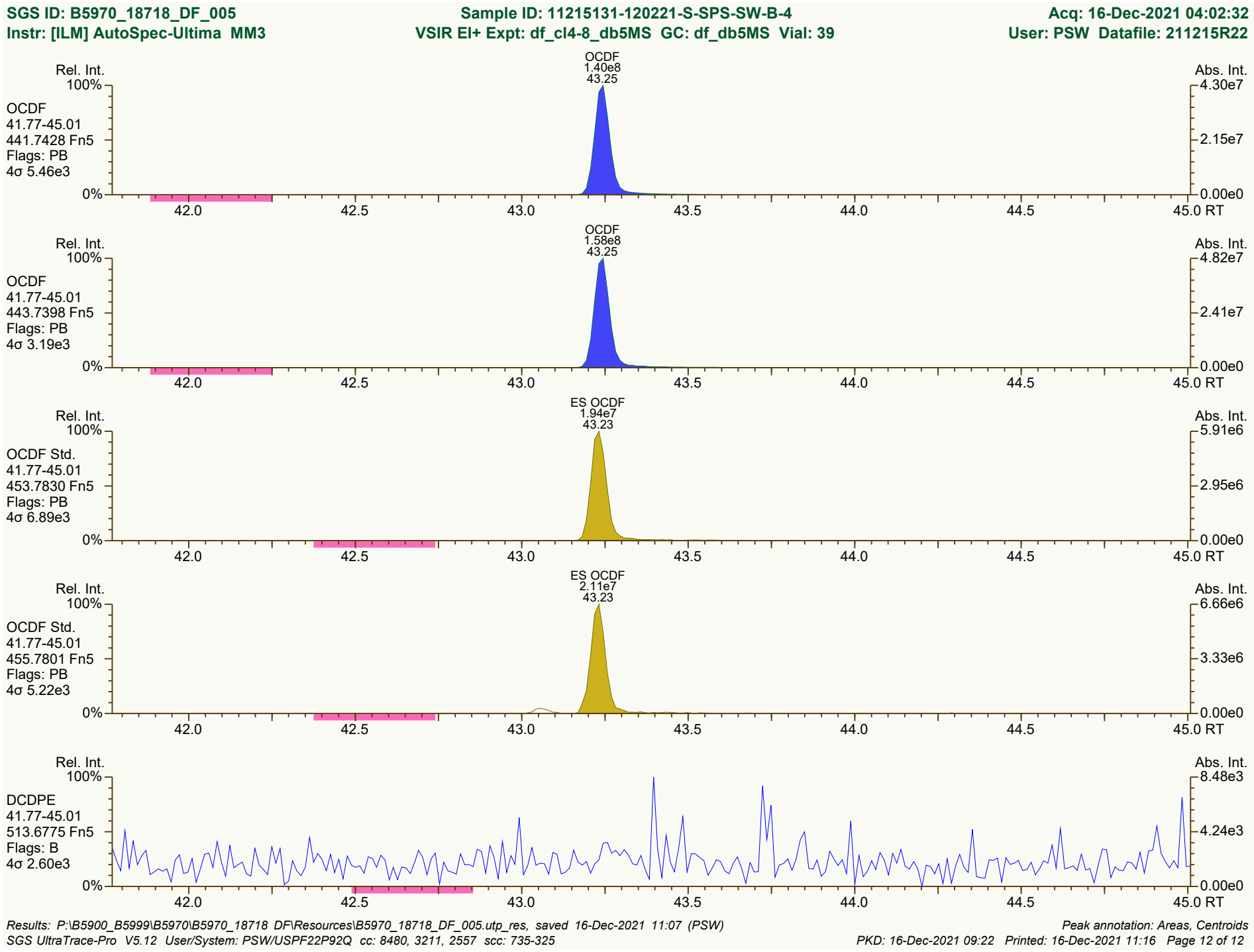


Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_005.utp_res, saved 16-Dec-2021 11:07 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1663, 6496, 0268 scc: 735-325 | PKD: 16-Dec-2021 09:22 Printed: 16-Dec-2021 11:16 Page 9 of 12


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 1.55e4
124678/134678F
6.06e6
35.33
124689F
4.56e6
35.97
123478F
4.49e7*
36.50
123678F
1.17e7
36.63
234678F
2.44e6*
37.30
123489F
3.38e6
38.29
Abs. Int.
1.36e7
6.79e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 1.06e4
124678/134678F
4.76e6
35.32
124689F
3.71e6
35.97
123478F
3.59e7*
36.50
123678F
9.32e6
36.63
234678F
2.07e6*
37.30
123489F
2.67e6
38.29
1.10e7
5.51e6
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PBM
4σ 1.30e4
ES 123478F
1.23e7
36.48
ES 123678F
1.48e7
36.62
CS 123469F
1.25e7
36.93
ES 234678F
1.23e7*
37.28
ES 123789F
1.28e7
38.24
4.58e6
2.29e6
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PBM
4σ 1.59e4
ES 123478F
2.38e7
36.48
ES 123678F
2.86e7
36.62
CS 123469F
2.39e7
36.93
ES 234678F
2.36e7*
37.28
ES 123789F
2.33e7
38.24
8.65e6
4.32e6
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.82e3
1.30e4
6.52e3



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_005.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9354, 8152, 8579 scc: 735-325
PKD: 16-Dec-2021 09:22 Printed: 16-Dec-2021 11:16 Page 11 of 12


SGS ID: B5970_18718_DF_005
Sample ID: 11215131-120221-S-SPS-SW-B-4
Acq: 16-Dec-2021 04:02:32
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 39
User: PSW Datafile: 211215R22
OCDF
1.40e8
43.25
Rel. Int.
Abs. Int.
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 5.46e3
OCDF
1.58e8
43.25
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.19e3
ES OCDF
1.94e7
43.23
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 6.89e3
ES OCDF
2.11e7
43.23
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 5.22e3
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.60e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_005.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8480, 3211, 2557 scc: 735-325
PKD: 16-Dec-2021 09:22 Printed: 16-Dec-2021 11:16 Page 12 of 12

Lab ID: B5970_18718_DF_006 **Acq'd:** 16 Dec 2021 04:50 PSW **Wt/Vol:** 10.16 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-O-5 **UTP:** 16-Dec-2021 11:07:15 PSW **J-level:** 0.492 pg/g **Split:** 1 **Checkcode:** 604-163-RSQ

Datafile: 211215R23 **Report:** 20 Dec 2021 14:47 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26		1.0008	1.0008	0	1.07E+08	0.81	Y	1.34	330	9228.87	0.297
12378-PeCDD	33.61		1.0005	1.0005	0	7.95E+05	1.71	Y	1.06	3.32	9826.79	0.363
123478-HxCDD	37.48	J EMPC	1.0003	1.0005	+0.4	1.30E+05	1.76	N	1.06	0.673	9562.116	0.414
123678-HxCDD	37.60	J	1.0033	1.0037	+0.9	3.72E+05	1.40	Y	1.08	1.79	9562.116	0.425
123789-HxCDD	37.90	J	1.0110	1.0117	+1.6	4.76E+05	1.21	Y	1.02	2.27	9562.116	0.414
1234678-HpCDD	40.52		1.0003	1.0003	0	1.23E+07	1.04	Y	0.97	74.2	8785.981	0.39
OCDD	43.06		1.0003	1.0002	-0.3	2.22E+08	0.89	Y	1.07	2,170	11354.139	0.936
2378-TCDF	27.40	E	1.0006	1.0008	+0.3	3.66E+08	0.80	Y	0.96	1,180	10122.133	0.345
12378-PeCDF	32.16		1.0006	1.0005	-0.2	1.20E+07	1.62	Y	0.95	36.4	8114.465	0.239
23478-PeCDF	33.28		1.0006	1.0007	+0.2	9.05E+06	1.62	Y	0.94	33.8	8114.465	0.267
123478-HxCDF	36.49		1.0004	1.0005	+0.2	1.70E+07	1.26	Y	1.23	65.7	13625.293	0.426
123678-HxCDF	36.63		1.0004	1.0005	+0.2	5.04E+06	1.30	Y	1.13	15.6	13625.293	0.369
234678-HxCDF	37.30		1.0005	1.0006	+0.2	8.10E+05	1.21	Y	1.15	3.26	13625.293	0.487
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	13625.293	0.608
1234678-HpCDF	39.63		1.0003	1.0003	0	4.95E+06	1.03	Y	1.36	15.6	8915.694	0.193
1234789-HpCDF	40.97		1.0003	1.0003	0	1.26E+06	1.02	Y	1.30	7.2	8915.694	0.353
OCDF	43.25		1.0002	1.0002	0	1.44E+06	0.89	Y	1.03	14.6	6886.853	0.605

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.23		1.0237	1.0238	+0.2	4.75E+07	0.80	Y	1.03	75.4
ES 12378-PeCDD	33.59		1.2158	1.2180	+4.4	4.44E+07	1.56	Y	1.03	70.4
ES 123478-HxCDD	37.46		0.9920	0.9916	-0.9	3.60E+07	1.27	Y	0.99	78.7
ES 123678-HxCDD	37.58		0.9949	0.9948	-0.2	3.77E+07	1.30	Y	0.97	84.3
ES 123789-HxCDD	37.88		1.0026	1.0027	+0.2	4.07E+07	1.28	Y	1.12	78.7
ES 1234678-HpCDD	40.51		1.0713	1.0723	+2.4	3.34E+07	1.04	Y	0.99	73.2
ES OCDD	43.05		1.1385	1.1397	+3.1	3.77E+07	0.89	Y	0.78	52.8
ES 2378-TCDF	27.37		1.0519	1.0525	+1.0	6.37E+07	0.79	Y	1.08	64.9
ES 12378-PeCDF	32.14		1.2331	1.2357	+5.0	6.83E+07	1.57	Y	0.93	80.7
ES 23478-PeCDF	33.25		1.2754	1.2785	+6.2	5.61E+07	1.61	Y	0.92	67.1
ES 123478-HxCDF	36.48		0.9656	0.9656	0	4.12E+07	0.54	Y	1.14	78.4
ES 123678-HxCDF	36.62		0.9693	0.9693	0	5.61E+07	0.52	Y	1.30	94.1
ES 234678-HxCDF	37.28		0.9869	0.9868	-0.2	4.24E+07	0.53	Y	1.20	76.8
ES 123789-HxCDF	38.24		1.0121	1.0124	+0.7	3.57E+07	0.54	Y	1.14	68.3
ES 1234678-HpCDF	39.61		1.0478	1.0486	+1.9	4.59E+07	0.44	Y	0.95	105
ES 1234789-HpCDF	40.96		1.0832	1.0842	+2.5	2.64E+07	0.46	Y	0.85	67.9
ES OCDF	43.24		1.1434	1.1445	+2.9	3.80E+07	0.87	Y	0.93	44.7

Lab ID: B5970_18718_DF_006 **Acq'd:** 16 Dec 2021 04:50 PSW **Wt/Vol:** 10.16 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-O-5 **UTP:** 16-Dec-2021 11:07:15 PSW **J-level:** 0.492 pg/g **Split:** 1 **Checkcode:** 604-163-RSQ

Datafile: 211215R23 **Report:** 20 Dec 2021 14:47 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	6.10E+07	0.80	Y	-	-	
JS 1234-TCDF	26.01		-	-	-	9.06E+07	0.78	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.30E+07	1.29	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0246	+0.2	2.24E+07	n/a	-	1.31	70.1	
CS 12347-PeCDD	33.08		1.1978	1.1997	+3.8	4.03E+07	1.61	Y	0.89	74.1	
CS 12346-PeCDF	31.61		1.2130	1.2155	+4.7	6.80E+07	1.61	Y	0.87	86.5	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	5.03E+07	0.52	Y	1.09	100	
CS 1234689-HpCDF	40.01		1.0580	1.0590	+2.4	4.02E+07	0.45	Y	0.86	101	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0246~~	~~+0.2~~	~~2.24E+07~~	~~n/a~~		~~1.26~~	~~93.4~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.08~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~4.03E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~105~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.61~~		~~1.2130~~	~~1.2155~~	~~+4.7~~	~~6.80E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~107~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.03E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~107~~	
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0590~~	~~+2.4~~	~~4.02E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~96~~	

Totals	Conc	EMPC
Total TCDD	371	373
Total PeCDD	8.13	10.6
Total HxCDD	43.9	47
Total HpCDD	203	203
Total Tetra-Octa Dioxins	2790	2800
Total TCDF	2,380	2390
Total PeCDF	109	112
Total HxCDF	99.8	99.8
Total HpCDF	30.6	30.6
Total Tetra-Octa Furans	2,640	2640
Total Tetra-Octa Dioxins & Furans	5430	5450

Lab ID: B5970_18718_DF_006 **Acq'd: 16 Dec 2021 04:50 PSW** **Wt/Vol: 10.16 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-O-5 **UTP: 16-Dec-2021 11:07:15 PSW** **J-level: 0.492 pg/g** **Split: 1** **Checkcode: 604-163-RSQ**

Datafile: 211215R23 **Report: 20 Dec 2021 14:47 gd** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.60	EMPC	0.8726	0.8713	-1.9	2.26E+05	0.93	N	1.34	0.695	9228.87	0.297
1379-TCDD	24.97	J EMPC	0.8851	0.8843	-1.2	9.51E+04	0.63	N	1.34	0.293	9228.87	0.297
1369-TCDD	NotFnd		0.9002						1.34		9228.87	0.297
1469-TCDD	26.17		0.9275	0.9269	-0.9	1.23E+06	0.87	Y	1.34	3.79	9228.87	0.297
1247/1246/1248/1249-TCDD	26.41		0.9361	0.9354	-1.1	2.58E+05	0.81	Y	1.34	0.796	9228.87	0.297
1378-TCDD	26.61	EMPC	0.9427	0.9425	-0.3	2.71E+05	0.93	N	1.34	0.836	9228.87	0.297
1268-TCDD	NotFnd		0.9498						1.34		9228.87	0.297
1478-TCDD	27.06		0.9584	0.9584	0	2.93E+05	0.77	Y	1.34	0.902	9228.87	0.297
1279-TCDD	NotFnd		0.9644						1.34		9228.87	0.297
1234/1269-TCDD	27.56		0.9766	0.9762	-0.7	2.15E+05	0.76	Y	1.34	0.662	9228.87	0.297
1236-TCDD	NotFnd		0.9813						1.34		9228.87	0.297
1237/1238-TCDD	27.96		0.9906	0.9902	-0.7	1.75E+06	0.85	Y	1.34	5.39	9228.87	0.297
1239-TCDD	NotFnd		0.9952						1.34		9228.87	0.297
2378-TCDD	**28.26**		**1.0008**	1.0008	**0**	1.07E+08	0.81	Y	**1.34**	**330**	**9228.87**	**0.297**
1278-TCDD	28.58		1.0122	1.0124	+0.3	9.78E+06	0.80	Y	1.34	30.1	9228.87	0.297
1267-TCDD	NotFnd		1.0168						1.34		9228.87	0.297
1289-TCDD	NotFnd		1.0349						1.34		9228.87	0.297
12479/12468-PeCDD	31.10	J EMPC	0.9267	0.9258	-1.7	2.75E+05	1.88	N	1.06	1.15	9826.79	0.363
12469-PeCDD	31.64		0.9425	0.9419	-1.1	8.22E+05	1.62	Y	1.06	3.44	9826.79	0.363
12368-PeCDD	32.19	J EMPC	0.9588	0.9582	-1.2	1.12E+05	2.47	N	1.06	0.468	9826.79	0.363
12478-PeCDD	32.38	J EMPC	0.9643	0.9640	-0.6	1.14E+05	0.97	N	1.06	0.476	9826.79	0.363
12379-PeCDD	32.49	J EMPC	0.9673	0.9672	-0.2	1.01E+05	1.13	N	1.06	0.421	9826.79	0.363
12369/12467/12489-PeCDD	32.74	J	0.9750	0.9747	-0.6	3.27E+05	1.39	Y	1.06	1.37	9826.79	0.363
12346/12347-PeCDD	NotFnd		0.9859						1.06		9826.79	0.363
12378-PeCDD	33.61		**1.0005**	**1.0005**	**0**	**7.95E+05**	**1.71**	**Y**	**1.06**	**3.32**	**9826.79**	**0.363**
12367-PeCDD	NotFnd		1.0032						1.06		9826.79	0.363
12389-PeCDD	NotFnd		1.0135						1.06		9826.79	0.363
124679/124689-HxCDD	35.76		0.9544	0.9547	+0.6	6.37E+06	1.21	Y	1.05	31.3	9562.116	0.418
123468-HxCDD	36.41	J EMPC	0.9716	0.9719	+0.7	1.65E+05	1.02	N	1.05	0.812	9562.116	0.418
123679/123689-HxCDD	36.69		0.9793	0.9795	+0.4	1.74E+06	1.27	Y	1.05	8.57	9562.116	0.418
123469-HxCDD	36.83	J EMPC	0.9829	0.9831	+0.4	2.00E+05	1.04	N	1.05	0.984	9562.116	0.418
123478-HxCDD	37.48	J EMPC	**1.0003**	**1.0005**	**+0.4**	**1.30E+05**	**1.76**	**N**	1.06	**0.673**	**9562.116**	**0.414**
123678-HxCDD	37.60	J	**1.0033**	**1.0037**	**+0.9**	**3.72E+05**	**1.40**	**Y**	1.08	**1.79**	**9562.116**	**0.425**
123467-HxCDD	37.80	J EMPC	1.0084	1.0089	+1.1	1.23E+05	1.49	N	1.05	0.602	9562.116	0.418
123789-HxCDD	37.90	J	**1.0110**	**1.0117**	**+1.6**	**4.76E+05**	**1.21**	**Y**	1.02	**2.27**	**9562.116**	**0.414**

Lab ID: B5970_18718_DF_006 | **Acq'd: 16 Dec 2021 04:50 PSW** | **Wt/Vol: 10.16 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-O-5 | **UTP: 16-Dec-2021 11:07:15 PSW** | **J-level: 0.492 pg/g** | **Split: 1** | **Checkcode: 604-163-RSQ**

Datafile: 211215R23 | **Report: 20 Dec 2021 14:47 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	2.13E+07	1.04	Y	0.97	129	8785.981	0.39
1234678-HpCDD	**40.52**		**1.0003**	**1.0003**	**0**	**1.23E+07**	**1.04**	**Y**	**0.97**	**74.2**	**8785.981**	**0.39**
OCDD	**43.06**		**1.0003**	**1.0002**	**-0.3**	**2.22E+08**	**0.89**	**Y**	**1.07**	**2,170**	**11354.139**	**0.936**
OCDD-a	43.06		1.0001	1.0001	0	1.36E+07	2.48	Y	0.07	2,160	12631.524	16.9
1368-TCDF	NotFnd		0.8230						0.96		10122.133	0.345
1468-TCDF	23.06		0.8443	0.8423	-2.8	5.61E+05	0.73	Y	0.96	1.8	10122.133	0.345
2468-TCDF	23.70		0.8672	0.8657	-2.1	7.43E+05	0.84	Y	0.96	2.39	10122.133	0.345
1346/1246-TCDF	24.10	EMPC	0.8802	0.8806	+0.6	3.47E+05	0.64	N	0.96	1.12	10122.133	0.345
1347/1378/1247-TCDF	24.23		0.8855	0.8851	-0.6	3.90E+06	0.71	Y	0.96	12.6	10122.133	0.345
1348-TCDF	24.49		0.8952	0.8945	-1.0	2.28E+06	0.73	Y	0.96	7.32	10122.133	0.345
1248/1367/1379-TCDF	24.58		0.9000	0.8978	-3.2	1.74E+07	0.80	Y	0.96	55.9	10122.133	0.345
1268-TCDF	24.99		0.9136	0.9127	-1.3	6.27E+06	0.80	Y	0.96	20.2	10122.133	0.345
1467-TCDF	25.12		0.9185	0.9175	-1.5	1.03E+06	0.76	Y	0.96	3.3	10122.133	0.345
1478-TCDF	25.29		0.9247	0.9239	-1.2	1.58E+07	0.81	Y	0.96	50.9	10122.133	0.345
1369/1237-TCDF	25.67		0.9381	0.9377	-0.6	4.02E+06	0.83	Y	0.96	12.9	10122.133	0.345
2467-TCDF	25.79	EMPC	0.9427	0.9423	-0.6	4.68E+05	0.90	N	0.96	1.5	10122.133	0.345
2368-TCDF	25.95		0.9484	0.9481	-0.5	1.38E+07	0.77	Y	0.96	44.2	10122.133	0.345
1238/1234/1678/1469/1236-TCDF	26.03		0.9517	0.9509	-1.2	1.83E+07	0.79	Y	0.96	58.9	10122.133	0.345
1278-TCDF	26.49		0.9682	0.9678	-0.6	1.76E+08	0.79	Y	0.96	567	10122.133	0.345
1349-TCDF	26.62		0.9725	0.9723	-0.3	2.93E+06	0.87	Y	0.96	9.44	10122.133	0.345
1267-TCDF	26.77		0.9782	0.9779	-0.5	1.01E+07	0.78	Y	0.96	32.4	10122.133	0.345
2346/1249-TCDF	26.96		0.9846	0.9850	+0.6	1.36E+06	0.74	Y	0.96	4.36	10122.133	0.345
2347/1279-TCDF	27.17		0.9926	0.9925	-0.2	4.77E+06	0.73	Y	0.96	15.3	10122.133	0.345
2348-TCDF	27.28		0.9966	0.9965	-0.2	2.72E+07	0.79	Y	0.96	87.4	10122.133	0.345
2378-TCDF	**27.40**	E	**1.0006**	**1.0008**	**+0.3**	**3.66E+08**	**0.80**	**Y**	**0.96**	**1,180**	**10122.133**	**0.345**
2367/3467-TCDF	27.75		1.0139	1.0137	-0.3	3.03E+07	0.77	Y	0.96	97.5	10122.133	0.345
1269-TCDF	28.00		1.0226	1.0229	+0.5	6.52E+06	0.83	Y	0.96	21	10122.133	0.345
1239-TCDF	NotFnd		1.0322						0.96		10122.133	0.345
1289-TCDF	29.41		1.0729	1.0743	+2.5	3.14E+07	0.85	Y	0.96	101	10122.133	0.345
13468/12468-PeCDF	29.35	J EMPC	0.9135	0.9133	-0.4	5.23E+05	1.22	N	0.94	1.76	7727.947	0.24
13678/13467/12467-PeCDF	30.89	J	0.9612	0.9612	0	1.67E+05	1.68	Y	0.94	0.56	8114.465	0.252
12368/13478/12478-PeCDF	31.06		0.9661	0.9664	+0.6	5.58E+06	1.61	Y	0.94	18.7	8114.465	0.252
14678-PeCDF	31.15	J	0.9693	0.9692	-0.2	3.04E+05	1.48	Y	0.94	1.02	8114.465	0.252
13479-PeCDF	NotFnd		0.9723						0.94		8114.465	0.252
13469/12479-PeCDF	NotFnd		0.9799						0.94		8114.465	0.252
12346-PeCDF	NotFnd		0.9842						0.94		8114.465	0.252

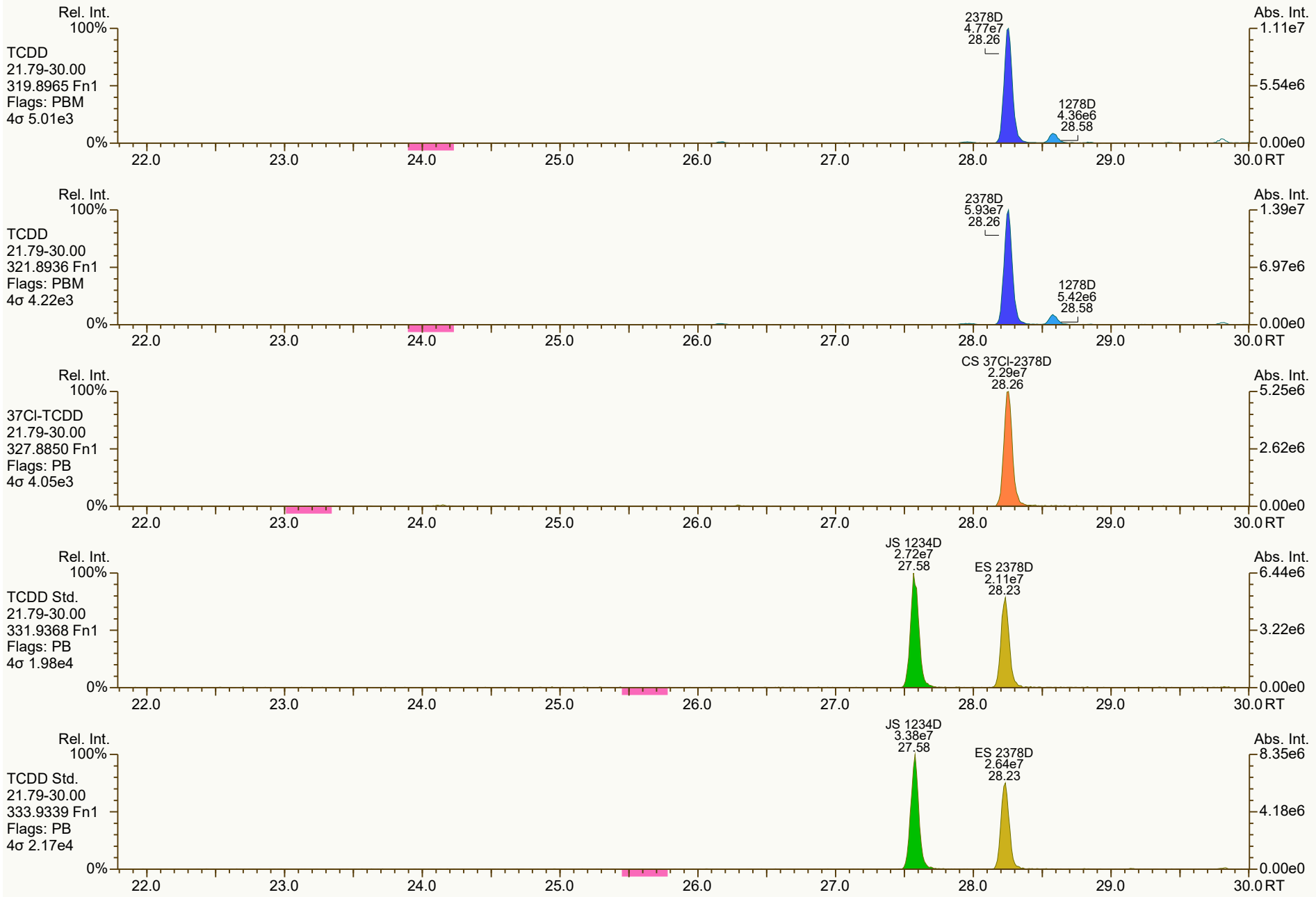
Lab ID: B5970_18718_DF_006 | **Acq'd: 16 Dec 2021 04:50 PSW** | **Wt/Vol: 10.16 g** | **ICAL: MM3_DF_10272021_27JUL2021**

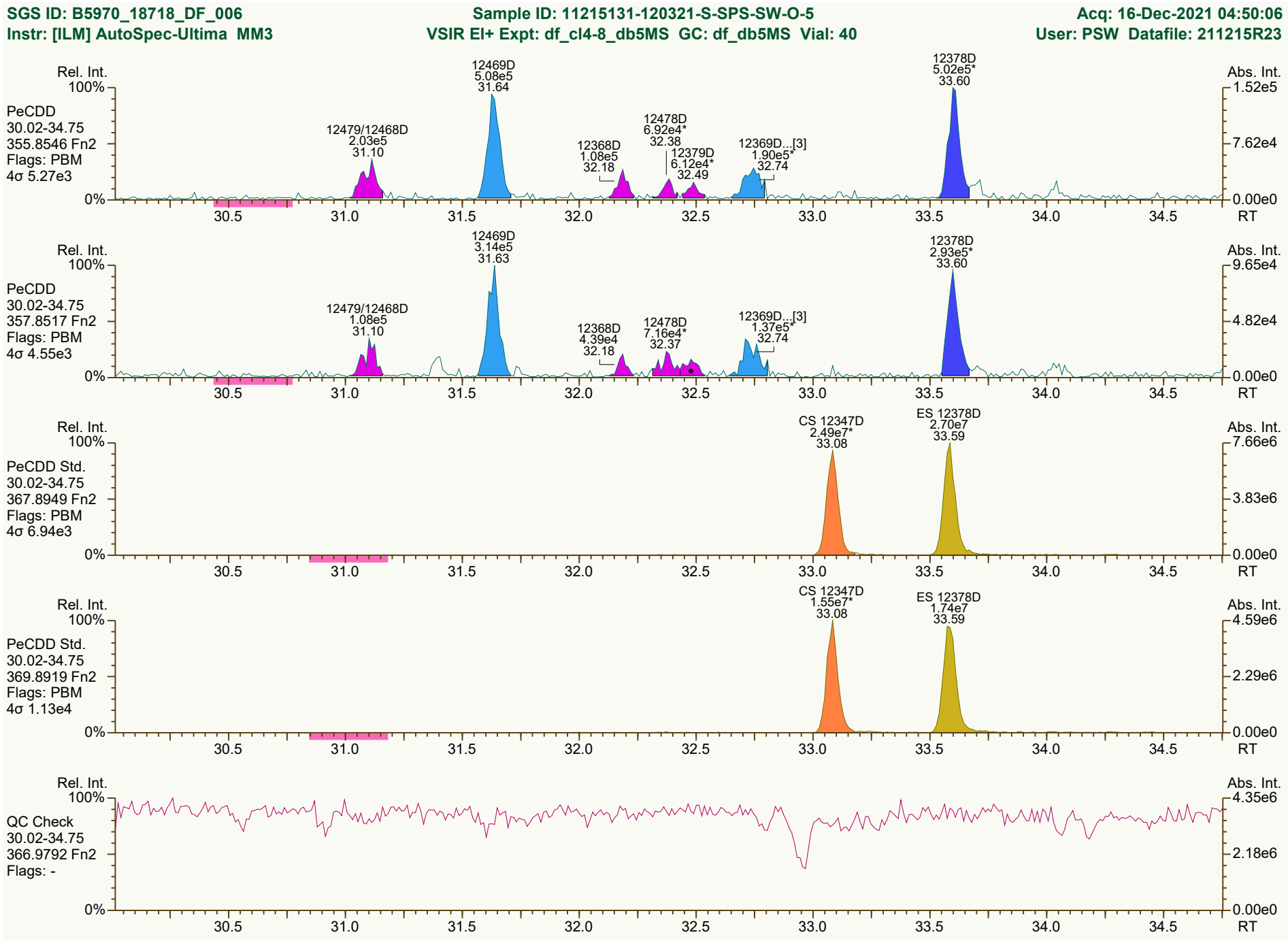
Client ID: 11215131-120321-S-SPS-SW-O-5 | **UTP: 16-Dec-2021 11:07:15 PSW** | **J-level: 0.492 pg/g** | **Split: 1** | **Checkcode: 604-163-RSQ**

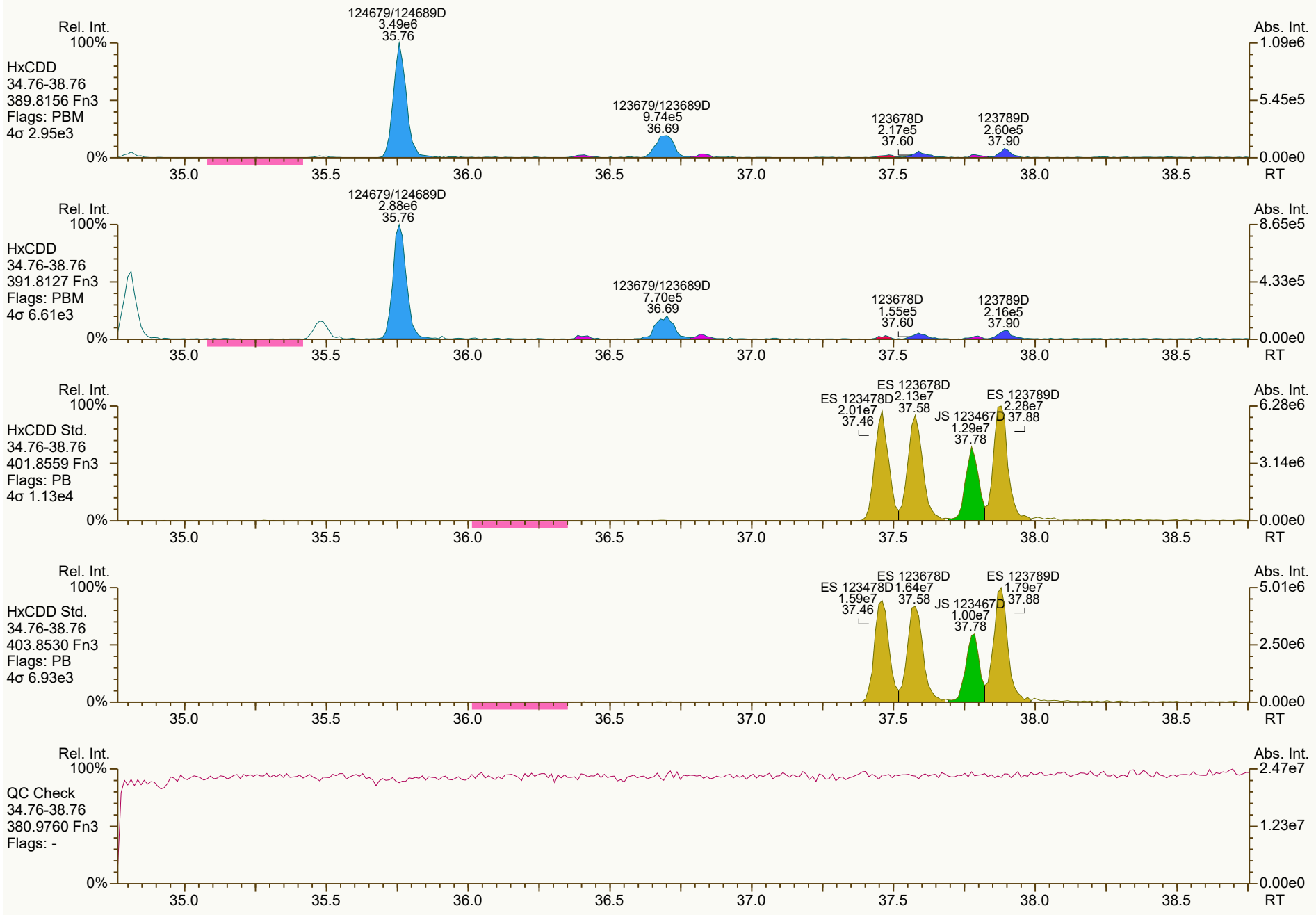
Datafile: 211215R23 | **Report: 20 Dec 2021 14:47 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

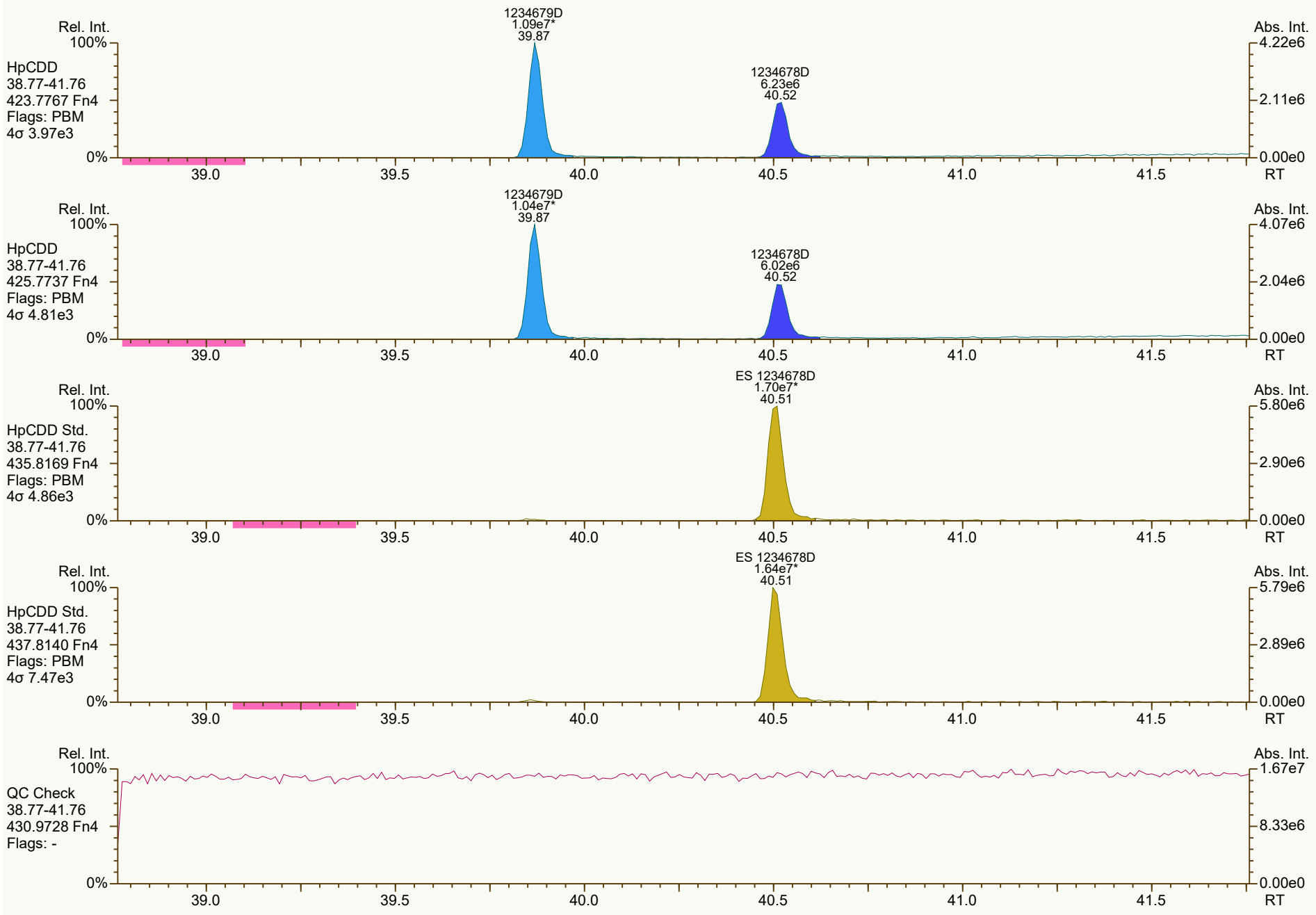
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.70	J	0.9868	0.9864	-0.8	2.96E+05	1.54	Y	0.94	0.994	8114.465	0.252
12347-PeCDF	31.78	J	0.9893	0.9888	-1.0	2.74E+05	1.33	Y	0.94	0.92	8114.465	0.252
12348-PeCDF	31.95		0.9941	0.9940	-0.2	1.16E+06	1.58	Y	0.94	3.9	8114.465	0.252
12378-PeCDF	**32.16**		**1.0006**	**1.0005**	**-0.2**	**1.20E+07**	**1.62**	**Y**	**0.95**	**36.4**	**8114.465**	**0.239**
12678/12367-PeCDF	32.45		1.0090	1.0096	+1.2	3.62E+06	1.63	Y	0.94	12.2	8114.465	0.252
12379-PeCDF	NotFnd		1.0143						0.94		8114.465	0.252
12679-PeCDF	NotFnd		0.9929						0.94		8114.465	0.252
23467/12369-PeCDF	33.12	J EMPC	0.9966	0.9960	-1.2	1.68E+05	1.83	N	0.94	0.563	8114.465	0.252
23478-PeCDF	**33.28**		**1.0006**	**1.0007**	**+0.2**	**9.05E+06**	**1.62**	**Y**	**0.94**	**33.8**	**8114.465**	**0.267**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		8114.465	0.252
12349-PeCDF	NotFnd		1.0102						0.94		8114.465	0.252
12389-PeCDF	34.34	J EMPC	1.0325	1.0326	+0.2	4.56E+05	1.86	N	0.94	1.53	8114.465	0.252
123468-HxCDF	35.12	J	0.9628	0.9629	+0.2	3.31E+05	1.20	Y	1.16	1.28	13625.293	0.459
124678/134678-HxCDF	35.31		0.9683	0.9681	-0.4	1.74E+06	1.17	Y	1.16	6.71	13625.293	0.459
134679-HxCDF	NotFnd		0.9746						1.16		13625.293	0.459
124679-HxCDF	NotFnd		0.9798						1.16		13625.293	0.459
124689-HxCDF	35.96		0.9859	0.9858	-0.2	7.36E+05	1.15	Y	1.16	2.84	13625.293	0.459
123467-HxCDF	NotFnd		0.9972						1.16		13625.293	0.459
123478-HxCDF	**36.49**		**1.0004**	**1.0005**	**+0.2**	**1.70E+07**	**1.26**	**Y**	**1.23**	**65.7**	**13625.293**	**0.426**
123678-HxCDF	**36.63**		**1.0004**	**1.0005**	**+0.2**	**5.04E+06**	**1.30**	**Y**	**1.13**	**15.6**	**13625.293**	**0.369**
123479-HxCDF	NotFnd		1.0049						1.16		13625.293	0.459
123469-HxCDF	NotFnd		1.0088						1.16		13625.293	0.459
123679-HxCDF	NotFnd		0.9943						1.16		13625.293	0.459
234678-HxCDF	**37.30**		**1.0005**	**1.0006**	**+0.2**	**8.10E+05**	**1.21**	**Y**	**1.15**	**3.26**	**13625.293**	**0.487**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		13625.293	0.459
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**13625.293**	**0.608**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.28		1.0007	1.0010	+0.7	1.12E+06	1.24	Y	1.16	4.34	13625.293	0.459
1234678-HpCDF	**39.63**		**1.0003**	**1.0003**	**0**	**4.95E+06**	**1.03**	**Y**	**1.36**	**15.6**	**8915.694**	**0.193**
1234679-HpCDF	39.89	**J**	1.0067	1.0069	+0.5	1.03E+05	1.16	Y	1.33	0.422	8915.694	0.251
1234689-HpCDF	40.01		1.0100	1.0101	+0.2	1.80E+06	1.09	Y	1.33	7.38	8915.694	0.251
1234789-HpCDF	**40.97**		**1.0003**	**1.0003**	**0**	**1.26E+06**	**1.02**	**Y**	**1.30**	**7.2**	**8915.694**	**0.353**
OCDF	**43.25**		**1.0002**	**1.0002**	**0**	**1.44E+06**	**0.89**	**Y**	**1.03**	**14.6**	**6886.853**	**0.605**
OCDF-a	43.24	**EMPC**	1.0002	1.0001	-0.3	9.71E+04	1.79	N	0.06	17	7528.185	11.4

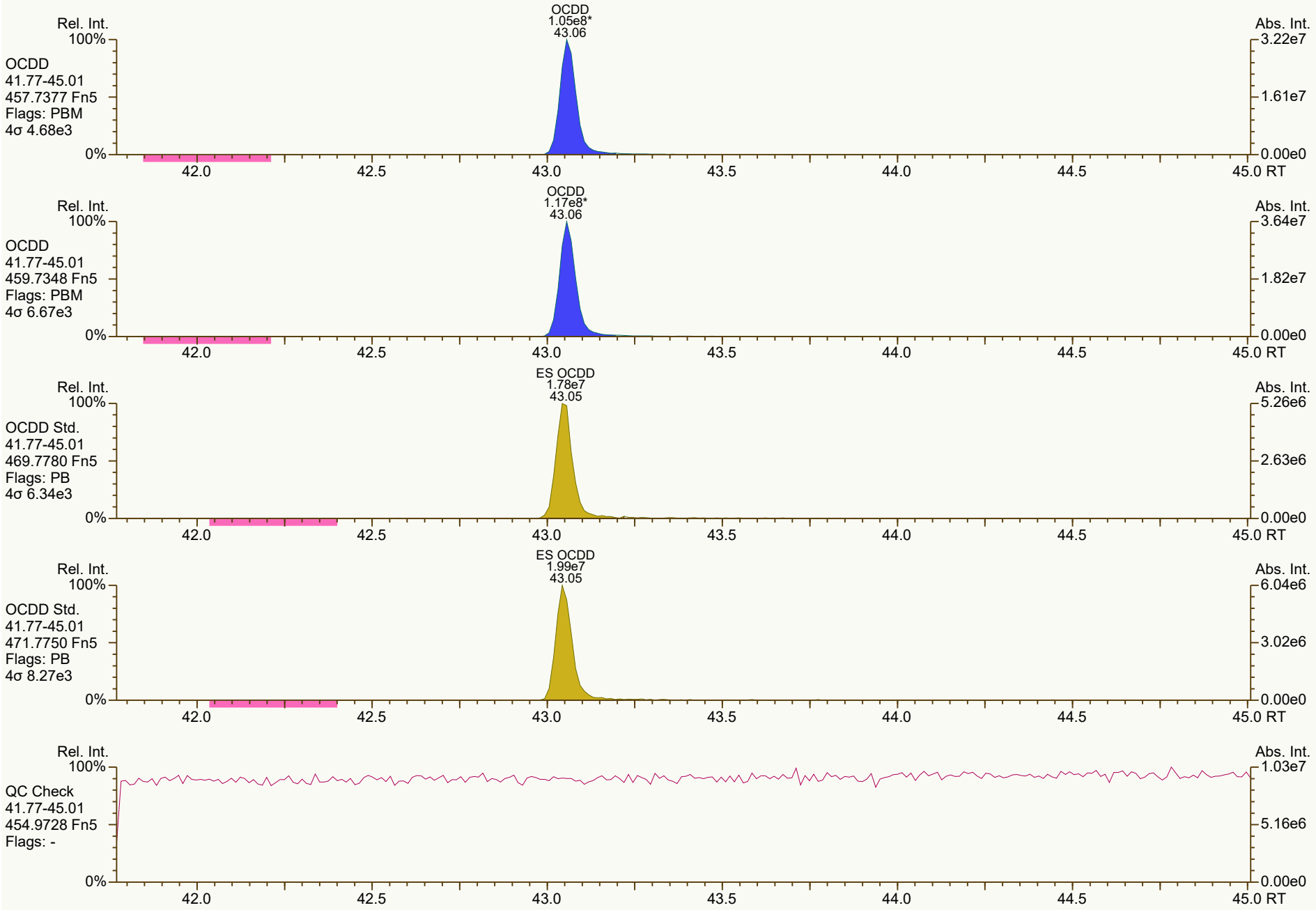

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Abs. Int.
4.97e6
2.48e6
0.00e0
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
4.35e6
2.18e6
0.00e0
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
2.47e7
1.23e7
0.00e0
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.67e7
8.33e6
0.00e0
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.03e7
5.16e6
0.00e0

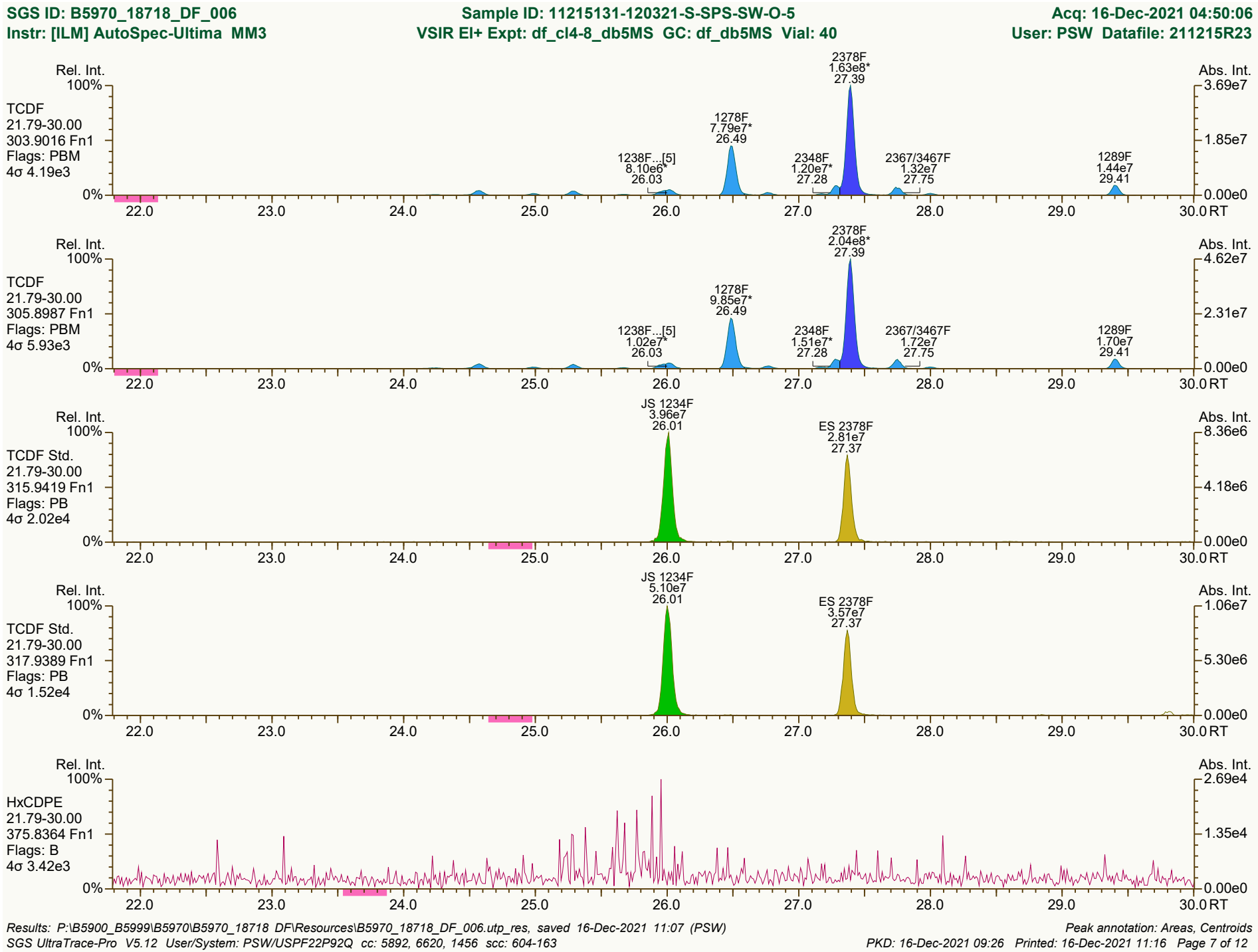

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 5.01e3
0%
2378D
4.77e7
28.26
1278D
4.36e6
28.58
Abs. Int.
1.11e7
5.54e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 4.22e3
0%
2378D
5.93e7
28.26
1278D
5.42e6
28.58
Abs. Int.
1.39e7
6.97e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 4.05e3
0%
CS 37Cl-2378D
2.29e7
28.26
Abs. Int.
5.25e6
2.62e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.98e4
0%
JS 1234D
2.72e7
27.58
ES 2378D
2.11e7
28.23
Abs. Int.
6.44e6
3.22e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 2.17e4
0%
JS 1234D
3.38e7
27.58
ES 2378D
2.64e7
28.23
Abs. Int.
8.35e6
4.18e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


SGS ID: B5970_18718_DF_006
Sample ID: 11215131-120321-S-SPS-SW-O-5
Acq: 16-Dec-2021 04:50:06
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40
User: PSW Datafile: 211215R23
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 5.27e3
12479/12468D
2.03e5
31.10
12469D
5.08e5
31.64
12368D
1.08e5
32.18
12478D
6.92e4*
32.38
12379D
6.12e4*
32.49
12369D...[3]
1.90e5*
32.74
12378D
5.02e5*
33.60
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 4.55e3
12479/12468D
1.08e5
31.10
12469D
3.14e5
31.63
12368D
4.39e4
32.18
12478D
7.16e4*
32.37
12369D...[3]
1.37e5*
32.74
12378D
2.93e5*
33.60
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 6.94e3
CS 12347D
2.49e7*
33.08
ES 12378D
2.70e7
33.59
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 1.13e4
CS 12347D
1.55e7*
33.08
ES 12378D
1.74e7
33.59
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_006.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5021, 2936 scc: 604-163
PKD: 16-Dec-2021 09:26 Printed: 16-Dec-2021 11:16 Page 3 of 12

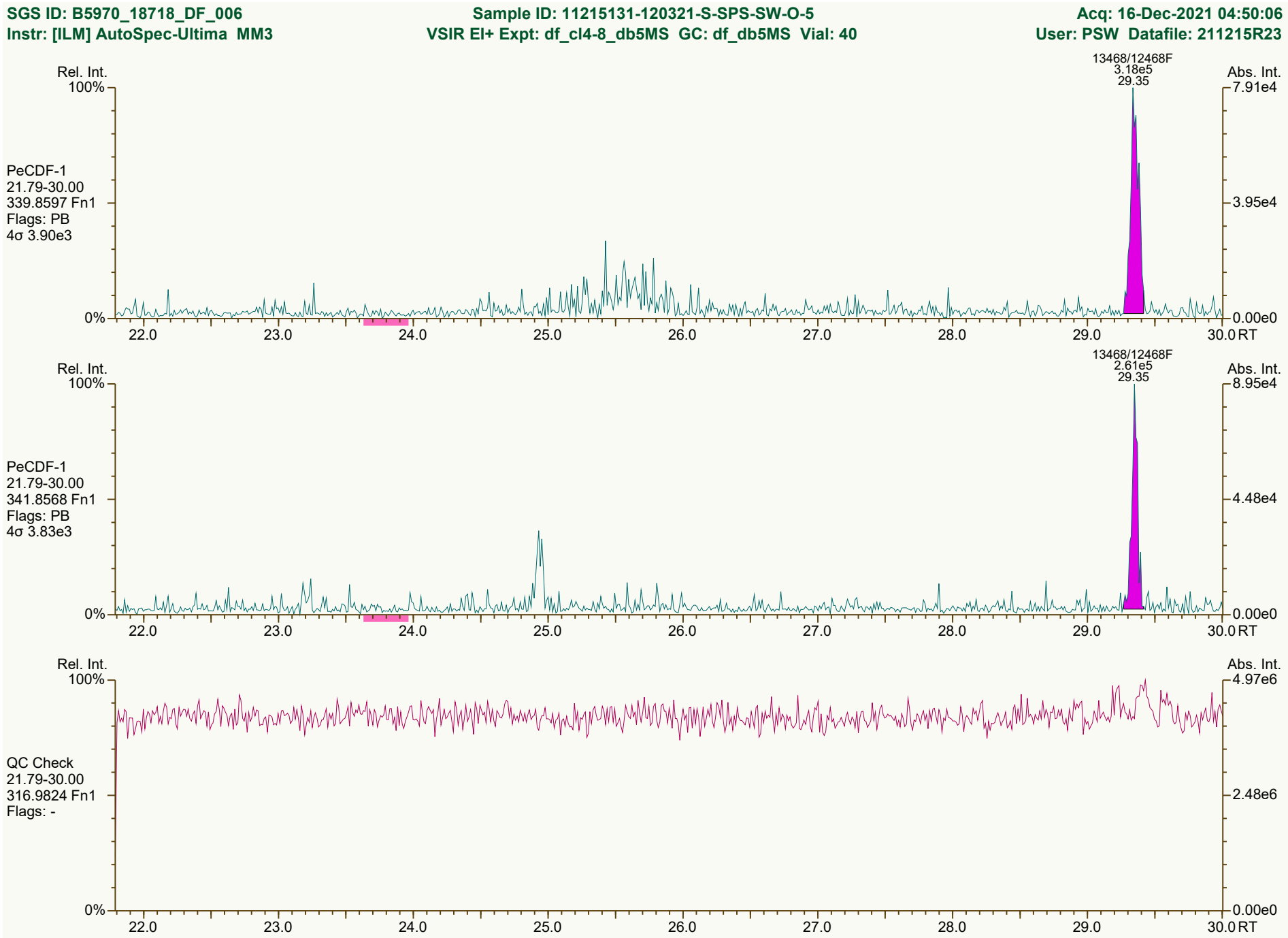

Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 2.95e3
124679/124689D
3.49e6
35.76
123679/123689D
9.74e5
36.69
123678D
2.17e5
37.60
123789D
2.60e5
37.90
Abs. Int.
1.09e6
5.45e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 6.61e3
124679/124689D
2.88e6
35.76
123679/123689D
7.70e5
36.69
123678D
1.55e5
37.60
123789D
2.16e5
37.90
Abs. Int.
8.65e5
4.33e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 1.13e4
ES 123678D
2.13e7
37.58
ES 123478D
2.01e7
37.46
JS 123467D
1.29e7
37.78
ES 123789D
2.28e7
37.88
Abs. Int.
6.28e6
3.14e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 6.93e3
ES 123678D
1.64e7
37.58
ES 123478D
1.59e7
37.46
JS 123467D
1.00e7
37.78
ES 123789D
1.79e7
37.88
Abs. Int.
5.01e6
2.50e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
Abs. Int.
2.47e7
1.23e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 3.97e3
0%
1234679D
1.09e7*
39.87
1234678D
6.23e6
40.52
Abs. Int.
4.22e6
2.11e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 4.81e3
0%
1234679D
1.04e7*
39.87
1234678D
6.02e6
40.52
Abs. Int.
4.07e6
2.04e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 4.86e3
0%
ES 1234678D
1.70e7*
40.51
Abs. Int.
5.80e6
2.90e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 7.47e3
0%
ES 1234678D
1.64e7*
40.51
Abs. Int.
5.79e6
2.89e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.67e7
8.33e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

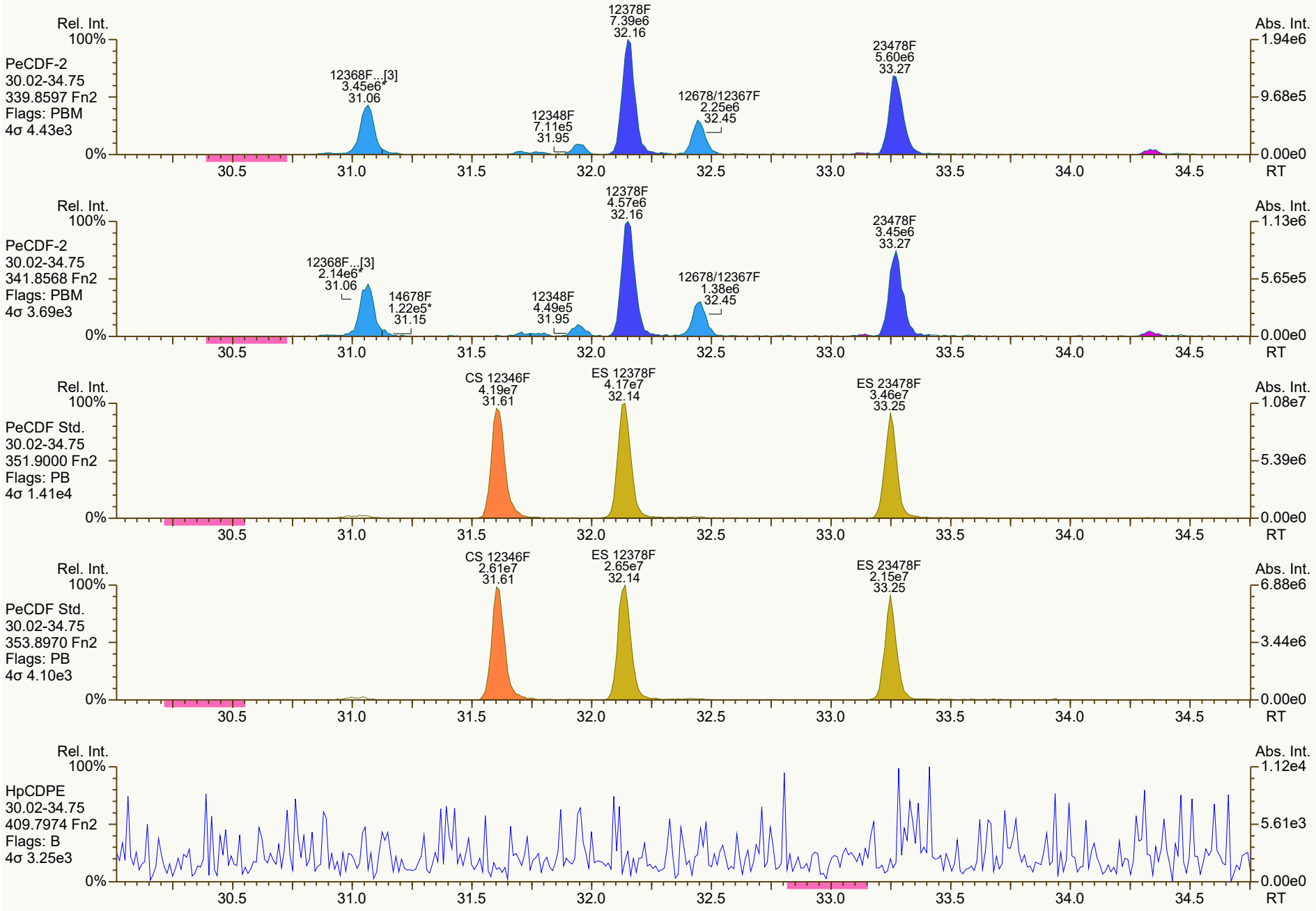

OCDD
1.05e8*
43.06
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 4.68e3
0%
Abs. Int.
3.22e7
1.61e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.17e8*
43.06
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 6.67e3
0%
Abs. Int.
3.64e7
1.82e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.78e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 6.34e3
0%
Abs. Int.
5.26e6
2.63e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.99e7
43.05
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 8.27e3
0%
Abs. Int.
6.04e6
3.02e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.03e7
5.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5970_18718_DF_006
Sample ID: 11215131-120321-S-SPS-SW-O-5
Acq: 16-Dec-2021 04:50:06
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40
User: PSW Datafile: 211215R23
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 4.19e3
2378F
1.63e8*
27.39
1278F
7.79e7*
26.49
1238F...[5]
8.10e6*
26.03
2348F
1.20e7*
27.28
2367/3467F
1.32e7
27.75
1289F
1.44e7
29.41
3.69e7
1.85e7
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 5.93e3
2378F
2.04e8*
27.39
1278F
9.85e7*
26.49
1238F...[5]
1.02e7*
26.03
2348F
1.51e7*
27.28
2367/3467F
1.72e7
27.75
1289F
1.70e7
29.41
4.62e7
2.31e7
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.02e4
JS 1234F
3.96e7
26.01
ES 2378F
2.81e7
27.37
8.36e6
4.18e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.52e4
JS 1234F
5.10e7
26.01
ES 2378F
3.57e7
27.37
1.06e7
5.30e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.42e3
2.69e4
1.35e4
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_006.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5892, 6620, 1456 scc: 604-163
PKD: 16-Dec-2021 09:26 Printed: 16-Dec-2021 11:16 Page 7 of 12

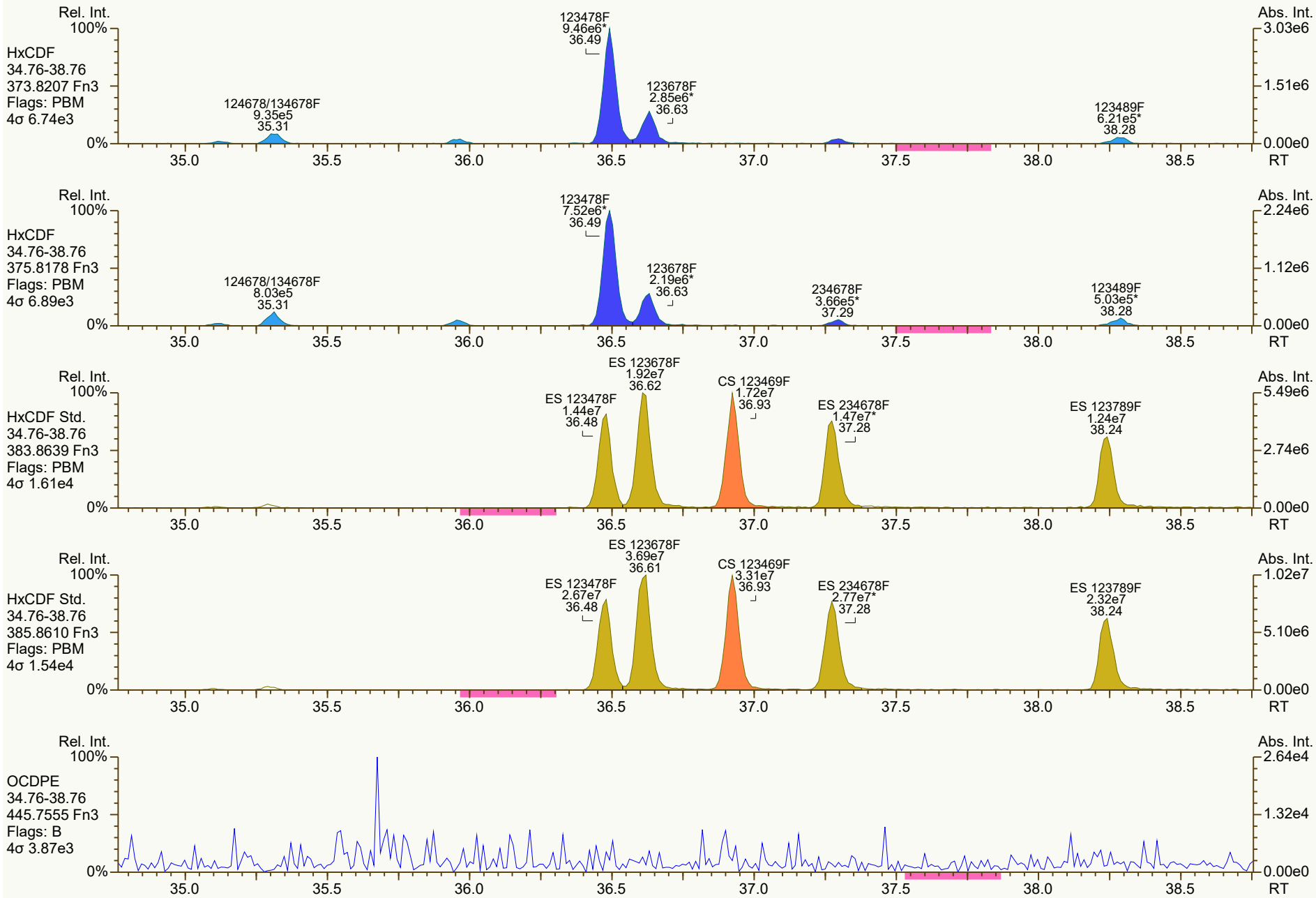
SGS ID: B5970_18718_DF_006 | Sample ID: 11215131-120321-S-SPS-SW-O-5 | Acq: 16-Dec-2021 04:50:06
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40 | User: PSW Datafile: 211215R23



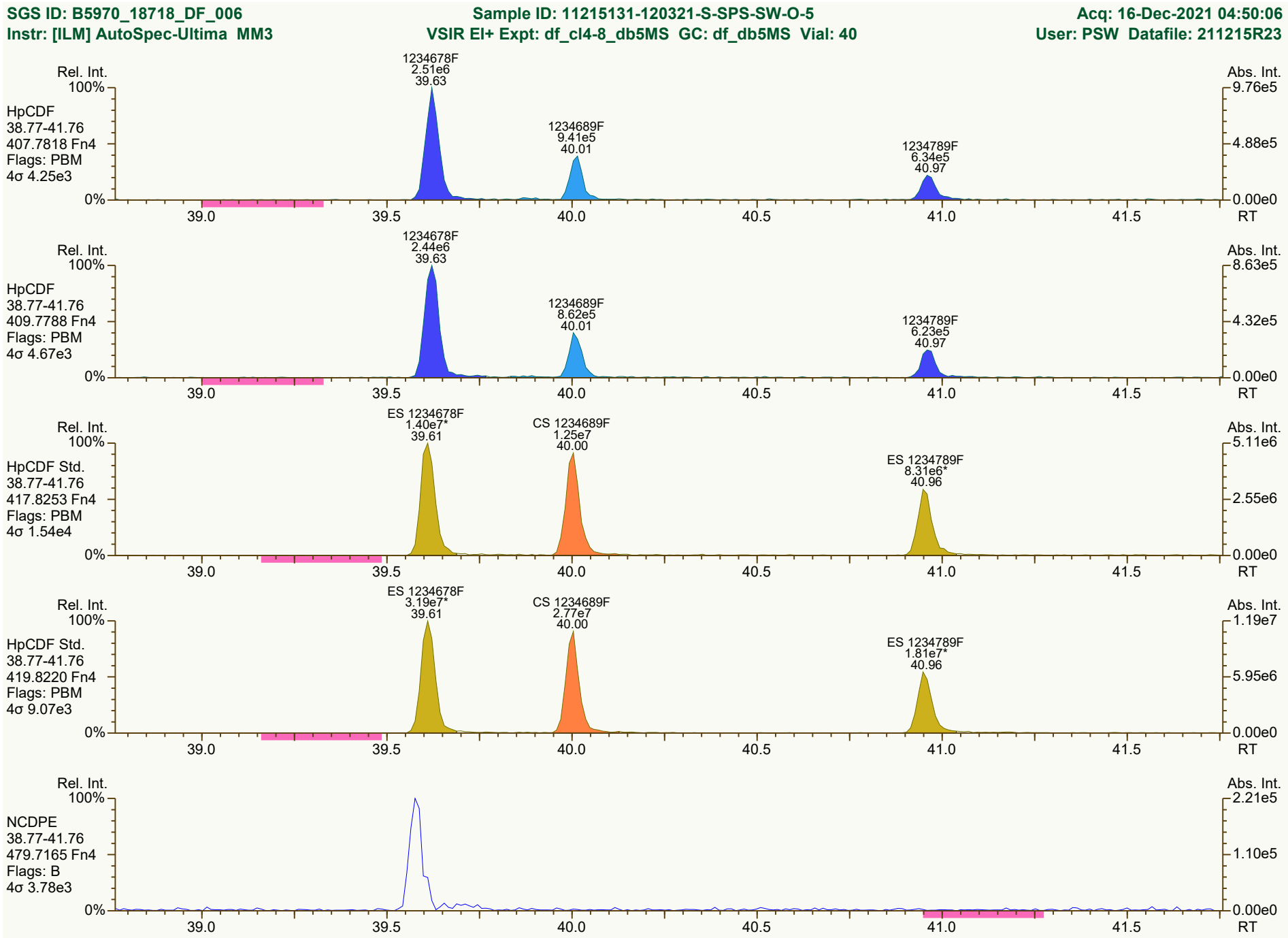
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_006.utp_res, saved 16-Dec-2021 11:07 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0015 scc: 604-163 | *PKD: 16-Dec-2021 09:26 Printed: 16-Dec-2021 11:16 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 4.43e3
0%
12368F...[3]
3.45e6*
31.06
12348F
7.11e5
31.95
12378F
7.39e6
32.16
12678/12367F
2.25e6
32.45
23478F
5.60e6
33.27
Abs. Int.
1.94e6
9.68e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.69e3
0%
12368F...[3]
2.14e6*
31.06
14678F
1.22e5*
31.15
12348F
4.49e5
31.95
12378F
4.57e6
32.16
12678/12367F
1.38e6
32.45
23478F
3.45e6
33.27
Abs. Int.
1.13e6
5.65e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 1.41e4
0%
CS 12346F
4.19e7
31.61
ES 12378F
4.17e7
32.14
ES 23478F
3.46e7
33.25
Abs. Int.
1.08e7
5.39e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.10e3
0%
CS 12346F
2.61e7
31.61
ES 12378F
2.65e7
32.14
ES 23478F
2.15e7
33.25
Abs. Int.
6.88e6
3.44e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.25e3
0%
Abs. Int.
1.12e4
5.61e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

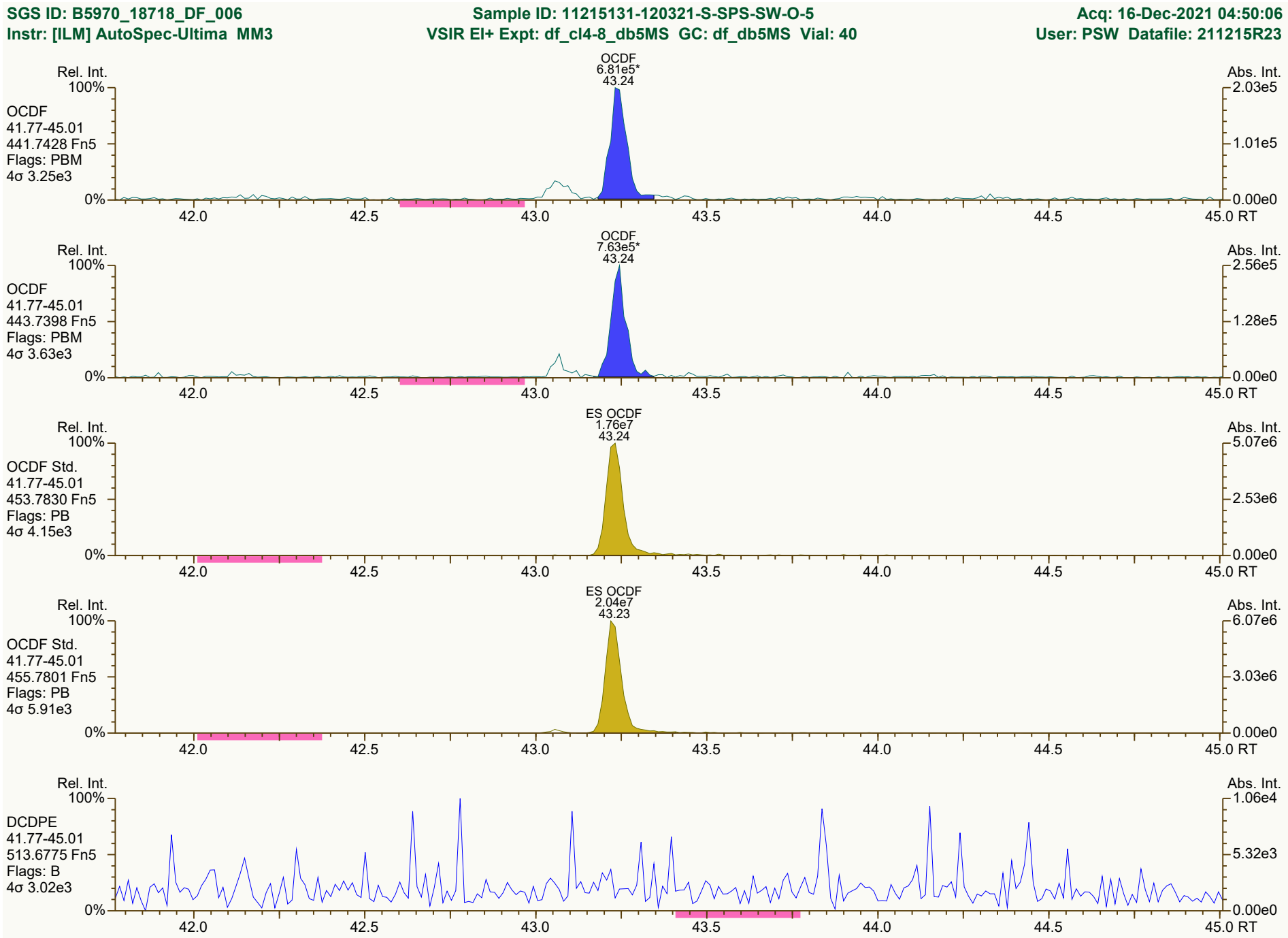
SGS ID: B5970_18718_DF_006 | Sample ID: 11215131-120321-S-SPS-SW-O-5 | Acq: 16-Dec-2021 04:50:06
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40 | User: PSW Datafile: 211215R23



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_006.utp_res, saved 16-Dec-2021 11:07 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5683, 8500, 3089 scc: 604-163 | PKD: 16-Dec-2021 09:26 Printed: 16-Dec-2021 11:16 Page 10 of 12


SGS ID: B5970_18718_DF_006
Sample ID: 11215131-120321-S-SPS-SW-O-5
Acq: 16-Dec-2021 04:50:06
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40
User: PSW Datafile: 211215R23
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 4.25e3
1234678F
2.51e6
39.63
1234689F
9.41e5
40.01
1234789F
6.34e5
40.97
9.76e5
4.88e5
0.00e0
RT
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 4.67e3
1234678F
2.44e6
39.63
1234689F
8.62e5
40.01
1234789F
6.23e5
40.97
8.63e5
4.32e5
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 1.54e4
ES 1234678F
1.40e7*
39.61
CS 1234689F
1.25e7
40.00
ES 1234789F
8.31e6*
40.96
5.11e6
2.55e6
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 9.07e3
ES 1234678F
3.19e7*
39.61
CS 1234689F
2.77e7
40.00
ES 1234789F
1.81e7*
40.96
1.19e7
5.95e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.78e3
2.21e5
1.10e5
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5

SGS ID: B5970_18718_DF_006 | Sample ID: 11215131-120321-S-SPS-SW-O-5 | Acq: 16-Dec-2021 04:50:06
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 40 | User: PSW Datafile: 211215R23



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_006.utp_res, saved 16-Dec-2021 11:07 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0119, 8328, 8435 scc: 604-163 | *PKD: 16-Dec-2021 09:26 Printed: 16-Dec-2021 11:16 Page 12 of 12*

Lab ID: B5970_18718_DF_007 **Acq'd:** 16 Dec 2021 05:37 PSW **Wt/Vol:** 10.03 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-O-4 **UTP:** 16-Dec-2021 11:07:16 PSW **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 121-696-RHZ

Datafile: 211215R24 **Report:** 20 Dec 2021 14:48 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.25	EMPC	1.0008	1.0008	0	9.29E+05	0.90	N	1.34	2.71	8130.711	0.261
12378-PeCDD	33.59	J	1.0005	1.0004	-0.2	1.61E+05	1.36	Y	1.06	0.69	5192.44	0.214
123478-HxCDD	37.46	J EMPC	1.0003	1.0003	0	3.40E+05	1.68	N	1.06	1.78	8670.235	0.4
123678-HxCDD	37.58		1.0033	1.0036	+0.7	9.96E+05	1.30	Y	1.08	4.84	8670.235	0.395
123789-HxCDD	37.88		1.0110	1.0116	+1.4	8.18E+05	1.17	Y	1.02	3.6	8670.235	0.369
1234678-HpCDD	40.52		1.0003	1.0004	+0.2	3.64E+07	1.06	Y	0.97	227	7516.32	0.343
OCDD	43.06		1.0003	1.0003	0	4.85E+08	0.90	Y	1.07	5,000	15732.95	1.34
2378-TCDF	27.39		1.0006	1.0008	+0.3	4.83E+06	0.79	Y	0.96	13.9	7067.356	0.236
12378-PeCDF	32.14	J	1.0006	1.0004	-0.4	3.37E+05	1.58	Y	0.95	1.04	7284.447	0.236
23478-PeCDF	33.27	J	1.0006	1.0008	+0.4	5.38E+05	1.42	Y	0.94	1.77	7284.447	0.229
123478-HxCDF	36.48	J	1.0004	1.0005	+0.2	6.47E+05	1.15	Y	1.23	2.35	12358.896	0.372
123678-HxCDF	36.62	J	1.0004	1.0005	+0.2	4.46E+05	1.37	Y	1.13	1.35	12358.896	0.363
234678-HxCDF	37.28	J	1.0005	1.0004	-0.2	4.81E+05	1.25	Y	1.15	1.79	12358.896	0.429
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	12358.896	0.464
1234678-HpCDF	39.62		1.0003	1.0003	0	7.13E+06	1.06	Y	1.36	27.1	8958.636	0.22
1234789-HpCDF	40.95	J	1.0003	1.0002	-0.2	3.71E+05	1.15	Y	1.30	1.94	8958.636	0.338
OCDF	43.23		1.0002	1.0002	0	9.02E+06	0.92	Y	1.03	83.3	8656.241	0.651

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.22	1.0237	1.0239	+0.3	5.09E+07	0.81	Y	1.03	77.3
ES 12378-PeCDD	33.57	1.2158	1.2180	+4.4	4.39E+07	1.54	Y	1.03	66.6
ES 123478-HxCDD	37.45	0.9920	0.9916	-0.9	3.61E+07	1.19	Y	0.99	78.3
ES 123678-HxCDD	37.57	0.9949	0.9948	-0.2	3.79E+07	1.27	Y	0.97	84.1
ES 123789-HxCDD	37.87	1.0026	1.0029	+0.7	4.46E+07	1.26	Y	1.12	85.6
ES 1234678-HpCDD	40.50	1.0713	1.0724	+2.7	3.28E+07	1.09	Y	0.99	71.4
ES OCDD	43.04	1.1385	1.1398	+3.4	3.61E+07	0.91	Y	0.78	50.1
ES 2378-TCDF	27.36	1.0519	1.0525	+1.0	7.19E+07	0.79	Y	1.08	69.6
ES 12378-PeCDF	32.13	1.2331	1.2359	+5.4	6.86E+07	1.61	Y	0.93	77.1
ES 23478-PeCDF	33.24	1.2754	1.2785	+6.2	6.47E+07	1.61	Y	0.92	73.5
ES 123478-HxCDF	36.46	0.9656	0.9655	-0.2	4.44E+07	0.54	Y	1.14	83.8
ES 123678-HxCDF	36.60	0.9693	0.9692	-0.2	5.81E+07	0.55	Y	1.30	96.5
ES 234678-HxCDF	37.27	0.9869	0.9868	-0.2	4.66E+07	0.51	Y	1.20	83.6
ES 123789-HxCDF	38.23	1.0121	1.0124	+0.7	4.20E+07	0.54	Y	1.14	79.6
ES 1234678-HpCDF	39.61	1.0478	1.0487	+2.1	3.86E+07	0.42	Y	0.95	87.7
ES 1234789-HpCDF	40.95	1.0832	1.0842	+2.5	2.94E+07	0.45	Y	0.85	74.8
ES OCDF	43.22	1.1434	1.1445	+2.9	4.21E+07	0.91	Y	0.93	49

Lab ID: B5970_18718_DF_007 **Acq'd:** 16 Dec 2021 05:37 PSW **Wt/Vol:** 10.03 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-O-4 **UTP:** 16-Dec-2021 11:07:16 PSW **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 121-696-RHZ

Datafile: 211215R24 **Report:** 20 Dec 2021 14:48 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.56		-	-	-	6.37E+07	0.83	Y	-	-	
JS 1234-TCDF	26.00		-	-	-	9.53E+07	0.77	Y	-	-	
JS 123467-HxCDD	37.77		-	-	-	2.32E+07	1.26	Y	-	-	
CS 37Cl-2378-TCDD	28.25		1.0245	1.0247	+0.3	2.35E+07	n/a	-	1.31	70.4	
CS 12347-PeCDD	33.07		1.1978	1.1999	+4.2	4.28E+07	1.59	Y	0.89	75.3	
CS 12346-PeCDF	31.60		1.2130	1.2155	+4.7	6.88E+07	1.61	Y	0.87	83.2	
CS 123469-HxCDF	36.92		0.9775	0.9775	0	5.02E+07	0.52	Y	1.09	99.3	
CS 1234689-HpCDF	40.00		1.0580	1.0591	+2.6	3.84E+07	0.43	Y	0.86	95.9	
~~SS 37Cl-2378-TCDD~~	~~28.25~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.35E+07~~	~~n/a~~		~~1.26~~	~~91.6~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.07~~		~~1.1978~~	~~1.1999~~	~~+4.2~~	~~4.28E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~113~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.60~~		~~1.2130~~	~~1.2155~~	~~+4.7~~	~~6.88E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~108~~	
~~SS 123469-HxCDF~~	~~36.92~~		~~0.9775~~	~~0.9775~~	~~0~~	~~5.02E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~103~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0591~~	~~+2.6~~	~~3.84E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~109~~	

Totals	Conc	EMPC
Total TCDD	0.347	4.64
Total PeCDD	3.02	7.05
Total HxCDD	88.5	90.3
Total HpCDD	730	730
Total Tetra-Octa Dioxins	5830	5840
Total TCDF	27.4	30.7
Total PeCDF	13.7	14.6
Total HxCDF	29.1	29.9
Total HpCDF	73.4	73.4
Total Tetra-Octa Furans	227	232
Total Tetra-Octa Dioxins & Furans	6050	6070

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.877	0.90
Response	1.01E+06	9.98E+05

Lab ID: B5970_18718_DF_007 **Acq'd: 16 Dec 2021 05:37 PSW** **Wt/Vol: 10.03 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-O-4 **UTP: 16-Dec-2021 11:07:16 PSW** **J-level: 0.499 pg/g** **Split: 1** **Checkcode: 121-696-RHZ**

Datafile: 211215R24 **Report: 20 Dec 2021 14:48 gd** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		8130.711	0.261
1379-TCDD	NotFnd		0.8851						1.34		8130.711	0.261
1369-TCDD	NotFnd		0.9002						1.34		8130.711	0.261
1469-TCDD	26.16	EMPC	0.9275	0.9269	-0.9	5.45E+05	0.64	N	1.34	1.59	8130.711	0.261
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		8130.711	0.261
1378-TCDD	NotFnd		0.9427						1.34		8130.711	0.261
1268-TCDD	NotFnd		0.9498						1.34		8130.711	0.261
1478-TCDD	NotFnd		0.9584						1.34		8130.711	0.261
1279-TCDD	NotFnd		0.9644						1.34		8130.711	0.261
1234/1269-TCDD	NotFnd		0.9766						1.34		8130.711	0.261
1236-TCDD	NotFnd		0.9813						1.34		8130.711	0.261
1237/1238-TCDD	NotFnd		0.9906						1.34		8130.711	0.261
1239-TCDD	NotFnd		0.9952						1.34		8130.711	0.261
2378-TCDD	**28.25**	EMPC	**1.0008**	1.0008	**0**	9.29E+05	0.90	N	**1.34**	**2.71**	**8130.711**	**0.261**
1278-TCDD	28.56	J	1.0122	1.0121	-0.2	1.19E+05	0.68	Y	1.34	0.347	8130.711	0.261
1267-TCDD	NotFnd		1.0168						1.34		8130.711	0.261
1289-TCDD	NotFnd		1.0349						1.34		8130.711	0.261
12479/12468-PeCDD	31.09	J	0.9267	0.9261	-1.1	3.70E+05	1.38	Y	1.06	1.58	5192.44	0.214
12469-PeCDD	31.62	J EMPC	0.9425	0.9419	-1.1	5.39E+05	1.30	N	1.06	2.31	5192.44	0.214
12368-PeCDD	32.17	J EMPC	0.9588	0.9582	-1.2	8.04E+04	2.11	N	1.06	0.345	5192.44	0.214
12478-PeCDD	32.36	J	0.9643	0.9639	-0.8	1.74E+05	1.34	Y	1.06	0.748	5192.44	0.214
12379-PeCDD	32.46	J EMPC	0.9673	0.9668	-1.0	8.87E+04	1.29	N	1.06	0.38	5192.44	0.214
12369/12467/12489-PeCDD	32.72	J EMPC	0.9750	0.9747	-0.6	2.32E+05	1.23	N	1.06	0.994	5192.44	0.214
12346/12347-PeCDD	NotFnd		0.9859						1.06		5192.44	0.214
12378-PeCDD	33.59	J	**1.0005**	**1.0004**	**-0.2**	**1.61E+05**	**1.36**	**Y**	**1.06**	**0.69**	**5192.44**	**0.214**
12367-PeCDD	NotFnd		1.0032						1.06		5192.44	0.214
12389-PeCDD	NotFnd		1.0135						1.06		5192.44	0.214
124679/124689-HxCDD	35.75		0.9544	0.9547	+0.6	8.63E+06	1.27	Y	1.05	41.4	8670.235	0.386
123468-HxCDD	36.40		0.9716	0.9719	+0.7	1.23E+06	1.28	Y	1.05	5.91	8670.235	0.386
123679/123689-HxCDD	36.68		0.9793	0.9795	+0.4	4.60E+06	1.30	Y	1.05	22.1	8670.235	0.386
123469-HxCDD	36.82		0.9829	0.9832	+0.7	1.72E+06	1.17	Y	1.05	8.24	8670.235	0.386
123478-HxCDD	37.46	J EMPC	**1.0003**	**1.0003**	**0**	**3.40E+05**	**1.68**	**N**	1.06	**1.78**	**8670.235**	**0.4**
123678-HxCDD	37.58		**1.0033**	**1.0036**	**+0.7**	**9.96E+05**	**1.30**	**Y**	1.08	**4.84**	**8670.235**	**0.395**
123467-HxCDD	37.78		1.0084	1.0088	+0.9	5.30E+05	1.19	Y	1.05	2.54	8670.235	0.386
123789-HxCDD	37.88		**1.0110**	**1.0116**	**+1.4**	**8.18E+05**	**1.17**	**Y**	1.02	**3.6**	**8670.235**	**0.369**

Lab ID: B5970_18718_DF_007 | **Acq'd: 16 Dec 2021 05:37 PSW** | **Wt/Vol: 10.03 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-O-4 | **UTP: 16-Dec-2021 11:07:16 PSW** | **J-level: 0.499 pg/g** | **Split: 1** | **Checkcode: 121-696-RHZ**

Datafile: 211215R24 | **Report: 20 Dec 2021 14:48 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

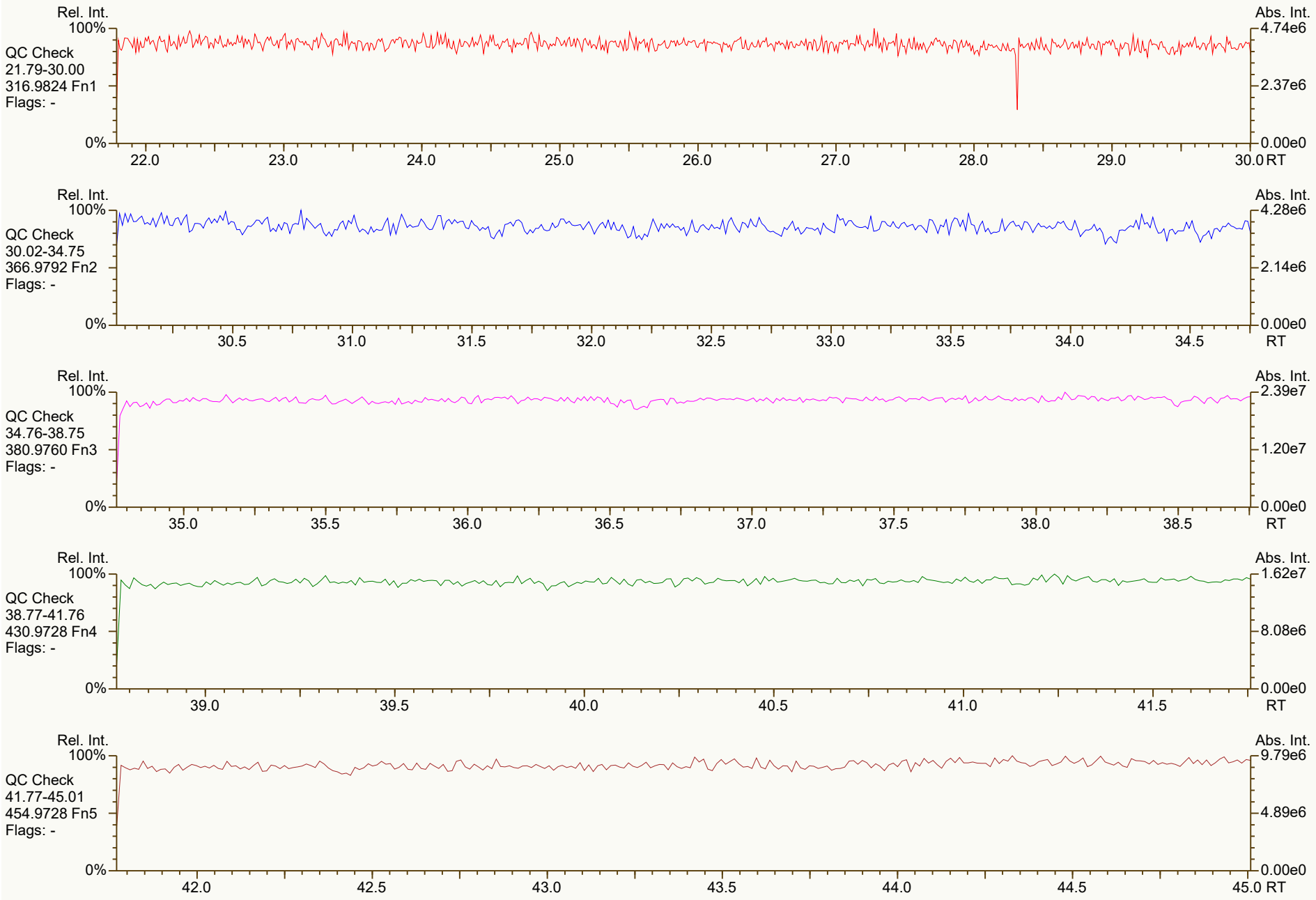
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	8.07E+07	1.05	Y	0.97	503	7516.32	0.343
1234678-HpCDD	**40.52**		**1.0003**	**1.0004**	**+0.2**	**3.64E+07**	**1.06**	**Y**	**0.97**	**227**	**7516.32**	**0.343**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**4.85E+08**	**0.90**	**Y**	**1.07**	**5,000**	**15732.95**	**1.34**
OCDD-a	43.05		1.0001	1.0002	+0.3	2.96E+07	2.50	Y	0.07	4,950	12343.601	17
1368-TCDF	NotFnd		0.8230						0.96		7067.356	0.236
1468-TCDF	NotFnd		0.8443						0.96		7067.356	0.236
2468-TCDF	23.69	EMPC	0.8672	0.8656	-2.3	3.05E+05	0.91	N	0.96	0.88	7067.356	0.236
1346/1246-TCDF	NotFnd		0.8802						0.96		7067.356	0.236
1347/1378/1247-TCDF	24.20		0.8855	0.8845	-1.5	3.38E+05	0.73	Y	0.96	0.976	7067.356	0.236
1348-TCDF	24.56		0.8952	0.8974	+3.2	2.96E+05	0.87	Y	0.96	0.855	7067.356	0.236
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		7067.356	0.236
1268-TCDF	24.98		0.9136	0.9127	-1.3	1.87E+05	0.73	Y	0.96	0.542	7067.356	0.236
1467-TCDF	25.10	J EMPC	0.9185	0.9173	-1.8	5.68E+04	1.21	N	0.96	0.164	7067.356	0.236
1478-TCDF	25.27	EMPC	0.9247	0.9235	-1.8	2.15E+05	0.60	N	0.96	0.621	7067.356	0.236
1369/1237-TCDF	25.66	J	0.9381	0.9377	-0.6	1.60E+05	0.84	Y	0.96	0.462	7067.356	0.236
2467-TCDF	NotFnd		0.9427						0.96		7067.356	0.236
2368-TCDF	25.94		0.9484	0.9480	-0.6	4.13E+05	0.72	Y	0.96	1.19	7067.356	0.236
1238/1234/1678/1469/1236-TCDF	26.03	EMPC	0.9517	0.9514	-0.5	1.93E+05	1.03	N	0.96	0.558	7067.356	0.236
1278-TCDF	26.49		0.9682	0.9680	-0.3	1.74E+06	0.72	Y	0.96	5.02	7067.356	0.236
1349-TCDF	NotFnd		0.9725						0.96		7067.356	0.236
1267-TCDF	26.75		0.9782	0.9775	-1.1	2.51E+05	0.75	Y	0.96	0.725	7067.356	0.236
2346/1249-TCDF	NotFnd		0.9846						0.96		7067.356	0.236
2347/1279-TCDF	27.15	J	0.9926	0.9922	-0.7	1.03E+05	0.67	Y	0.96	0.297	7067.356	0.236
2348-TCDF	27.25		0.9966	0.9959	-1.1	3.11E+05	0.78	Y	0.96	0.899	7067.356	0.236
2378-TCDF	**27.39**		**1.0006**	**1.0008**	**+0.3**	**4.83E+06**	**0.79**	**Y**	**0.96**	**13.9**	**7067.356**	**0.236**
2367/3467-TCDF	27.74		1.0139	1.0137	-0.3	7.25E+05	0.82	Y	0.96	2.09	7067.356	0.236
1269-TCDF	27.98	J	1.0226	1.0227	+0.2	1.23E+05	0.76	Y	0.96	0.356	7067.356	0.236
1239-TCDF	NotFnd		1.0322						0.96		7067.356	0.236
1289-TCDF	29.39	EMPC	1.0729	1.0741	+2.1	3.95E+05	0.97	N	0.96	1.14	7067.356	0.236
13468/12468-PeCDF	29.34		0.9135	0.9133	-0.4	1.34E+06	1.56	Y	0.94	4.26	7222.935	0.231
13678/13467/12467-PeCDF	30.88	J	0.9612	0.9612	0	3.06E+05	1.44	Y	0.94	0.971	7284.447	0.232
12368/13478/12478-PeCDF	31.04		0.9661	0.9661	0	1.07E+06	1.59	Y	0.94	3.4	7284.447	0.232
14678-PeCDF	31.14	J EMPC	0.9693	0.9693	0	6.49E+04	0.58	N	0.94	0.206	7284.447	0.232
13479-PeCDF	NotFnd		0.9723						0.94		7284.447	0.232
13469/12479-PeCDF	NotFnd		0.9799						0.94		7284.447	0.232
12346-PeCDF	31.62	J	0.9842	0.9841	-0.2	6.51E+04	1.51	Y	0.94	0.207	7284.447	0.232

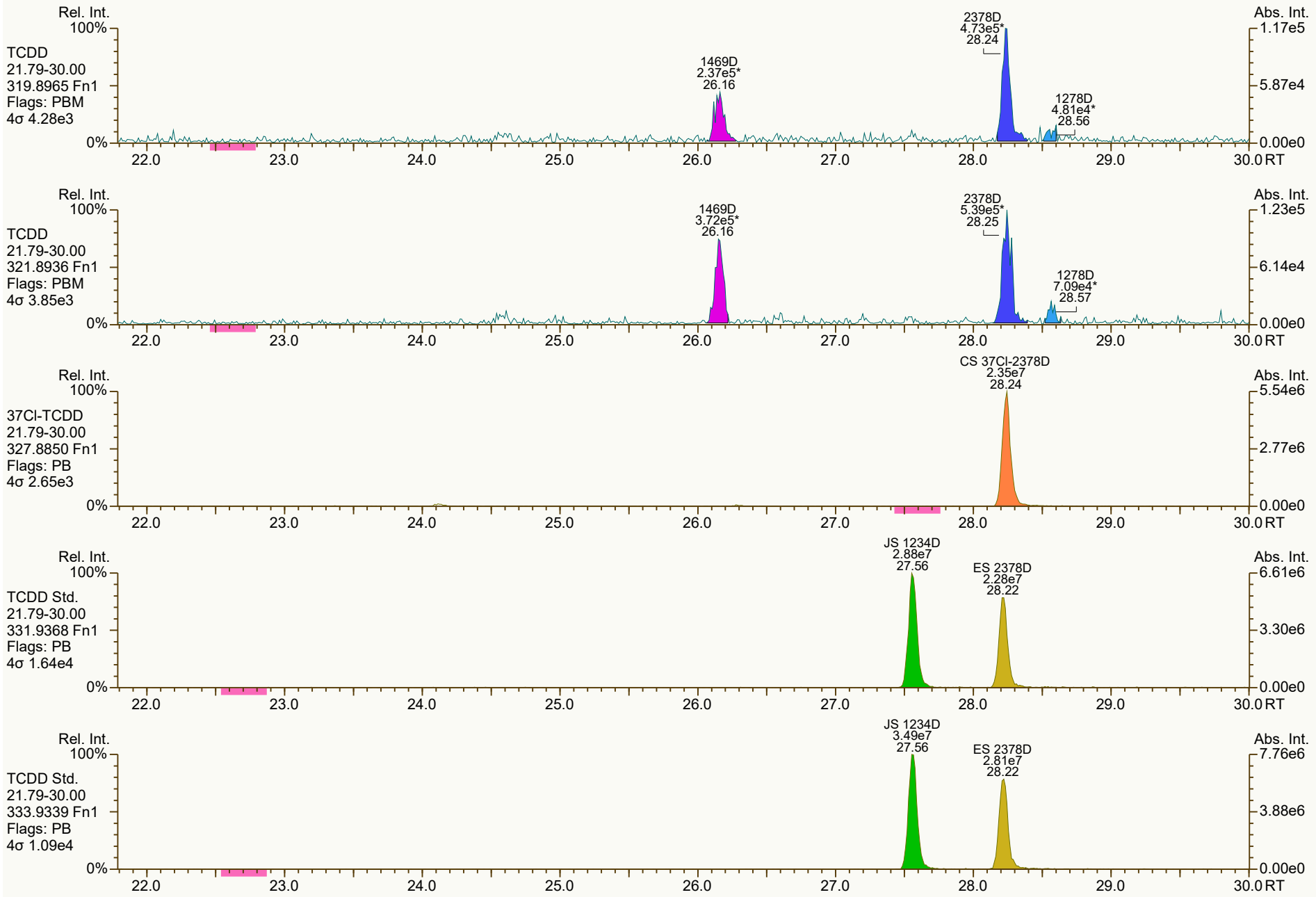
Lab ID: B5970_18718_DF_007 | **Acq'd: 16 Dec 2021 05:37 PSW** | **Wt/Vol: 10.03 g** | **ICAL: MM3_DF_10272021_27JUL2021**

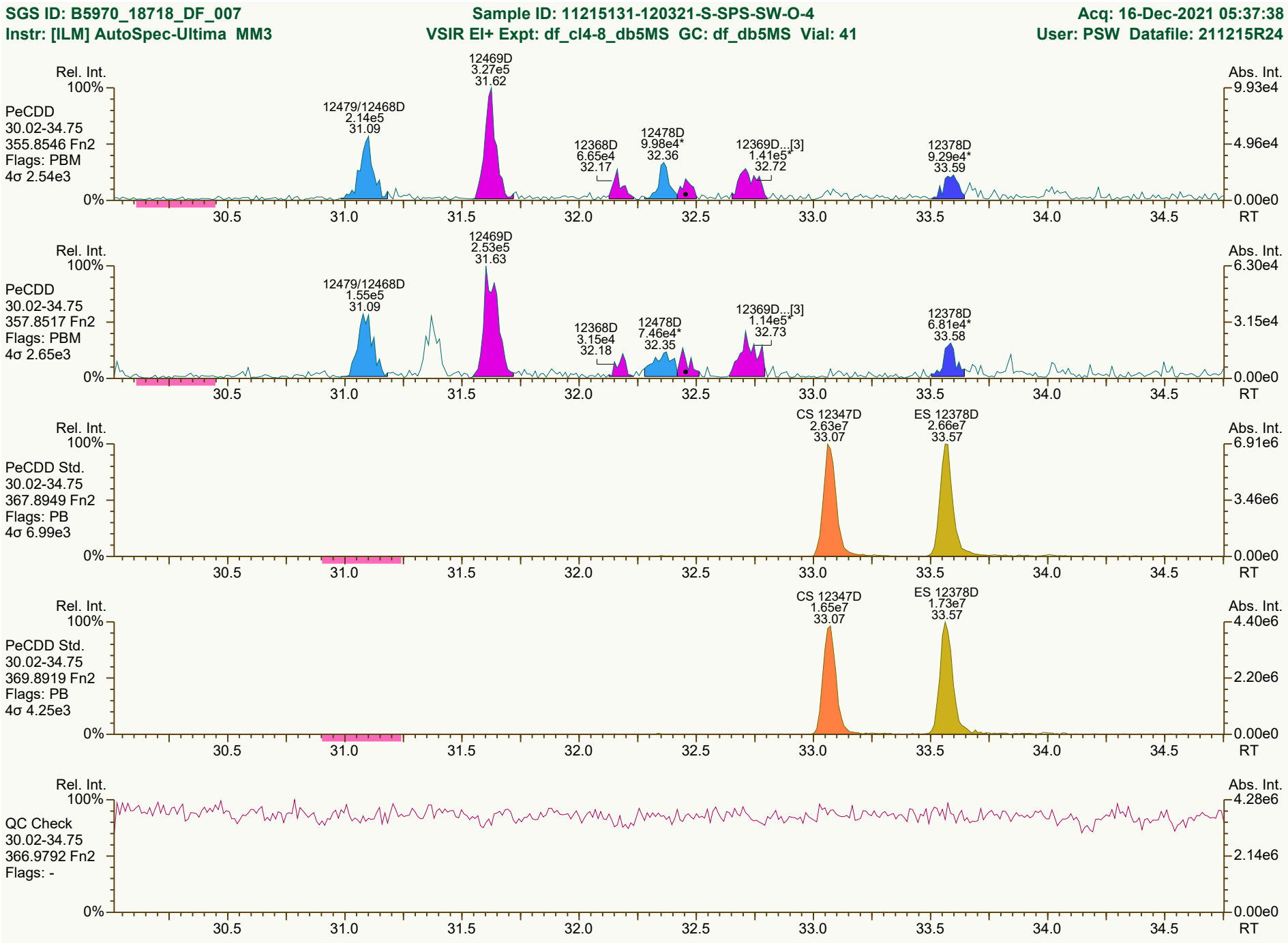
Client ID: 11215131-120321-S-SPS-SW-O-4 | **UTP: 16-Dec-2021 11:07:16 PSW** | **J-level: 0.499 pg/g** | **Split: 1** | **Checkcode: 121-696-RHZ**

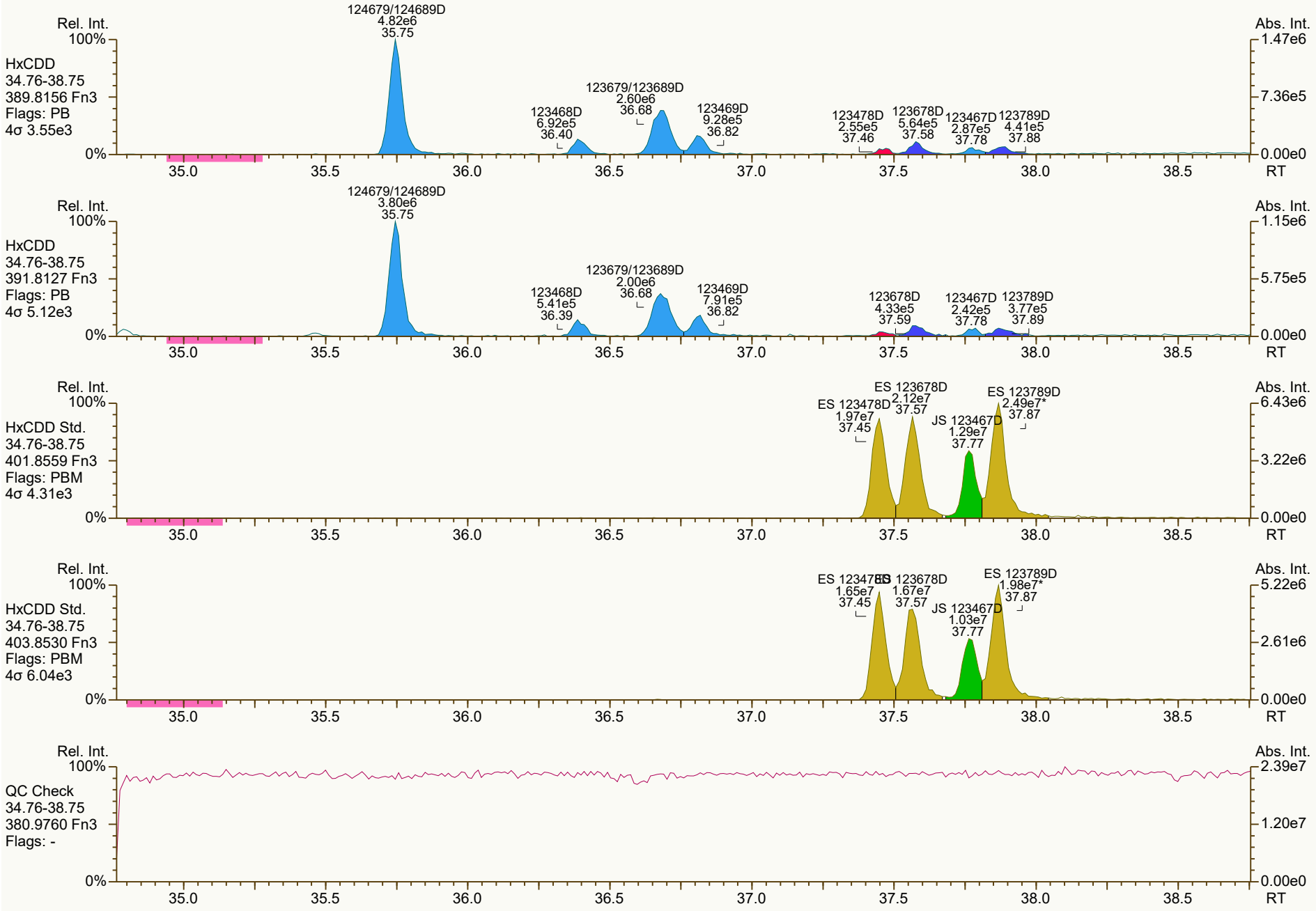
Datafile: 211215R24 | **Report: 20 Dec 2021 14:48 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.69	J	0.9868	0.9864	-0.8	2.40E+05	1.34	Y	0.94	0.763	7284.447	0.232
12347-PeCDF	31.76	J	0.9893	0.9886	-1.3	1.04E+05	1.32	Y	0.94	0.331	7284.447	0.232
12348-PeCDF	31.92	J EMPC	0.9941	0.9935	-1.1	7.65E+04	0.94	N	0.94	0.243	7284.447	0.232
12378-PeCDF	**32.14**	J	**1.0006**	**1.0004**	**-0.4**	**3.37E+05**	**1.58**	**Y**	**0.95**	**1.04**	**7284.447**	**0.236**
12678/12367-PeCDF	32.42	J	1.0090	1.0092	+0.4	3.04E+05	1.53	Y	0.94	0.965	7284.447	0.232
12379-PeCDF	NotFnd		1.0143						0.94		7284.447	0.232
12679-PeCDF	NotFnd		0.9929						0.94		7284.447	0.232
23467/12369-PeCDF	33.13	J EMPC	0.9966	0.9967	+0.2	1.53E+05	2.14	N	0.94	0.486	7284.447	0.232
23478-PeCDF	**33.27**	J	**1.0006**	**1.0008**	**+0.4**	**5.38E+05**	**1.42**	**Y**	**0.94**	**1.77**	**7284.447**	**0.229**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7284.447	0.232
12349-PeCDF	NotFnd		1.0102						0.94		7284.447	0.232
12389-PeCDF	NotFnd		1.0325						0.94		7284.447	0.232
123468-HxCDF	35.11		0.9628	0.9627	-0.2	9.56E+05	1.26	Y	1.16	3.43	12358.896	0.402
124678/134678-HxCDF	35.30		0.9683	0.9682	-0.2	3.50E+06	1.25	Y	1.16	12.6	12358.896	0.402
134679-HxCDF	NotFnd		0.9746						1.16		12358.896	0.402
124679-HxCDF	NotFnd		0.9798						1.16		12358.896	0.402
124689-HxCDF	35.95		0.9859	0.9859	0	2.12E+06	1.20	Y	1.16	7.61	12358.896	0.402
123467-HxCDF	36.37	J EMPC	0.9972	0.9974	+0.4	2.08E+05	1.51	N	1.16	0.748	12358.896	0.402
123478-HxCDF	**36.48**	J	**1.0004**	**1.0005**	**+0.2**	**6.47E+05**	**1.15**	**Y**	**1.23**	**2.35**	**12358.896**	**0.372**
123678-HxCDF	**36.62**	J	**1.0004**	**1.0005**	**+0.2**	**4.46E+05**	**1.37**	**Y**	**1.13**	**1.35**	**12358.896**	**0.363**
123479-HxCDF	NotFnd		1.0049						1.16		12358.896	0.402
123469-HxCDF	NotFnd		1.0088						1.16		12358.896	0.402
123679-HxCDF	NotFnd		0.9943						1.16		12358.896	0.402
234678-HxCDF	**37.28**	J	**1.0005**	**1.0004**	**-0.2**	**4.81E+05**	**1.25**	**Y**	**1.15**	**1.79**	**12358.896**	**0.429**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		12358.896	0.402
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**12358.896**	**0.464**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		12358.896	0.402
1234678-HpCDF	**39.62**		**1.0003**	**1.0003**	**0**	**7.13E+06**	**1.06**	**Y**	**1.36**	**27.1**	**8958.636**	**0.22**
1234679-HpCDF	39.87	**J**	1.0067	1.0066	-0.2	3.72E+05	0.93	Y	1.33	1.64	8958.636	0.271
1234689-HpCDF	40.01		1.0100	1.0101	+0.2	9.70E+06	1.03	Y	1.33	42.8	8958.636	0.271
1234789-HpCDF	**40.95**	**J**	**1.0003**	**1.0002**	**-0.2**	**3.71E+05**	**1.15**	**Y**	**1.30**	**1.94**	**8958.636**	**0.338**
OCDF	**43.23**		**1.0002**	**1.0002**	**0**	**9.02E+06**	**0.92**	**Y**	**1.03**	**83.3**	**8656.241**	**0.651**
OCDF-a	43.23		1.0002	1.0001	-0.3	4.77E+05	2.76	Y	0.06	76.3	11513.042	15

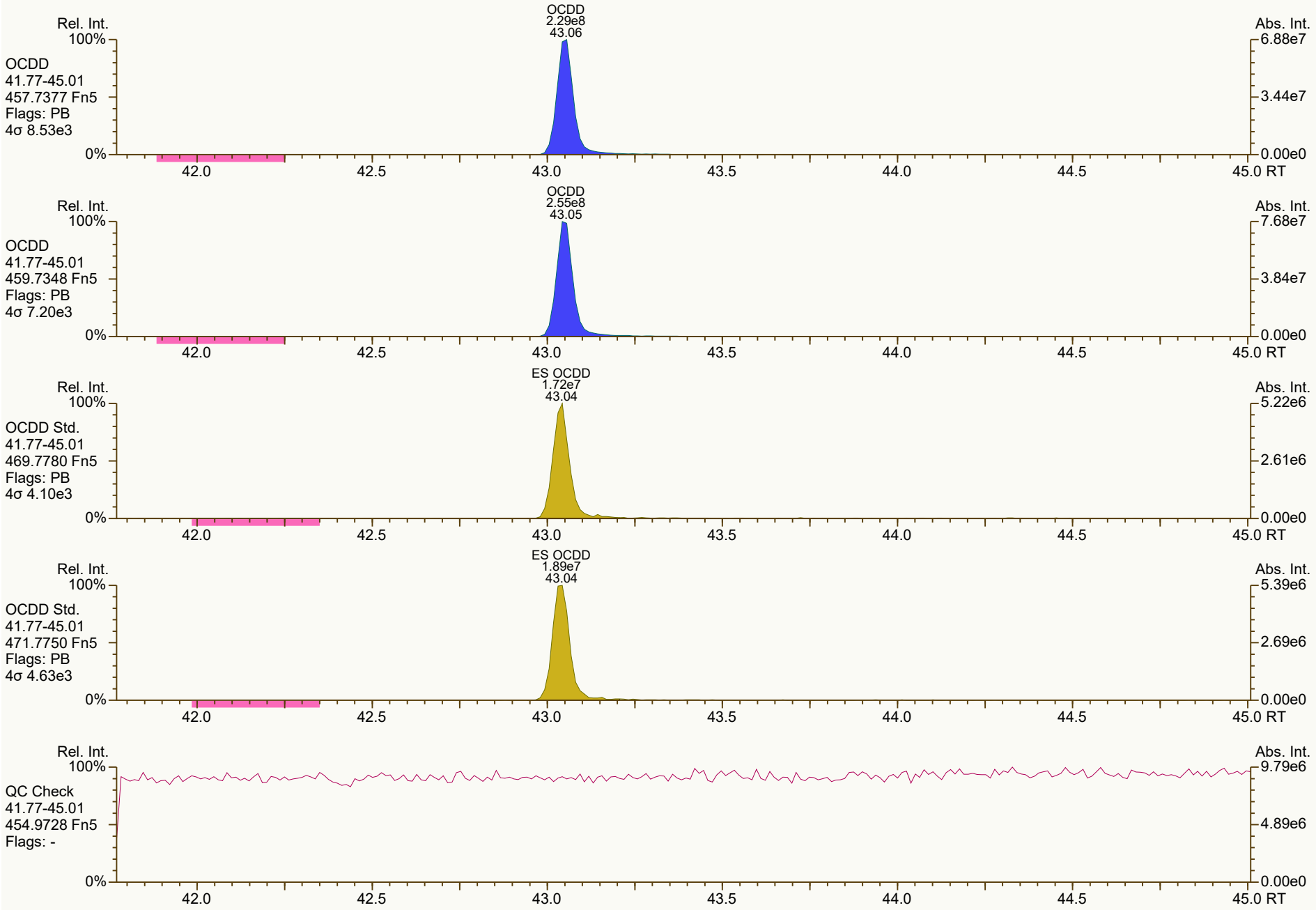

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.74e6
2.37e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.28e6
2.14e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.39e7
1.20e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.08e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.79e6
4.89e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

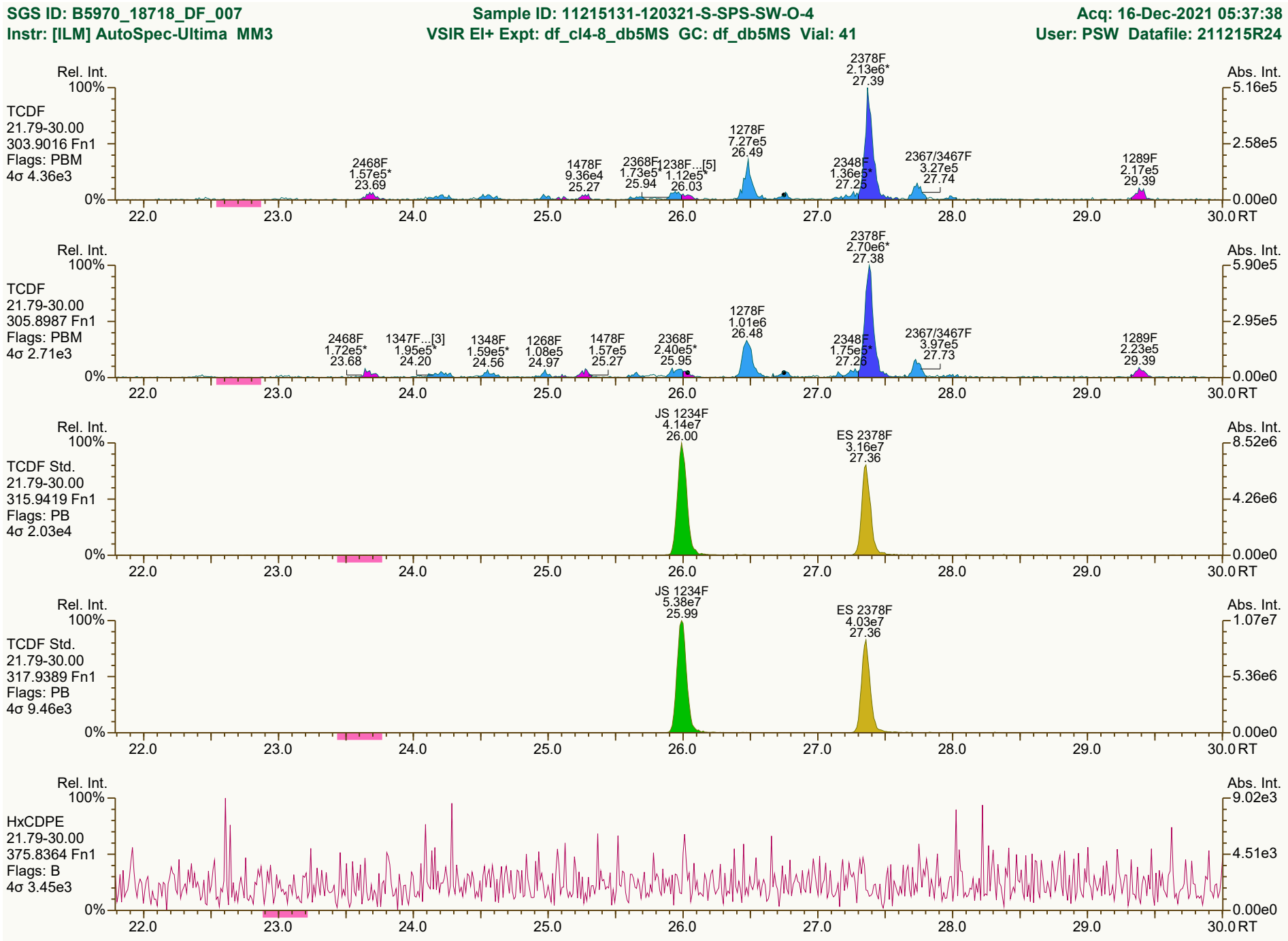

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 4.28e3
1469D
2.37e5*
26.16
2378D
4.73e5*
28.24
1278D
4.81e4*
28.56
Abs. Int.
1.17e5
5.87e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.85e3
1469D
3.72e5*
26.16
2378D
5.39e5*
28.25
1278D
7.09e4*
28.57
Abs. Int.
1.23e5
6.14e4
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.65e3
CS 37Cl-2378D
2.35e7
28.24
Abs. Int.
5.54e6
2.77e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.64e4
JS 1234D
2.88e7
27.56
ES 2378D
2.28e7
28.22
Abs. Int.
6.61e6
3.30e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.09e4
JS 1234D
3.49e7
27.56
ES 2378D
2.81e7
28.22
Abs. Int.
7.76e6
3.88e6
0.00e0
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


SGS ID: B5970_18718_DF_007
Sample ID: 11215131-120321-S-SPS-SW-O-4
Acq: 16-Dec-2021 05:37:38
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41
User: PSW Datafile: 211215R24
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 2.54e3
12479/12468D
2.14e5
31.09
12469D
3.27e5
31.62
12368D
6.65e4
32.17
12478D
9.98e4*
32.36
12369D...[3]
1.41e5*
32.72
12378D
9.29e4*
33.59
9.93e4
4.96e4
0.00e0
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 2.65e3
12479/12468D
1.55e5
31.09
12469D
2.53e5
31.63
12368D
3.15e4
32.18
12478D
7.46e4*
32.35
12369D...[3]
1.14e5*
32.73
12378D
6.81e4*
33.58
6.30e4
3.15e4
0.00e0
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 6.99e3
CS 12347D
2.63e7
33.07
ES 12378D
2.66e7
33.57
6.91e6
3.46e6
0.00e0
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 4.25e3
CS 12347D
1.65e7
33.07
ES 12378D
1.73e7
33.57
4.40e6
2.20e6
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
4.28e6
2.14e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_007.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4121, 3242 scc: 121-696
PKD: 16-Dec-2021 09:31 Printed: 16-Dec-2021 11:17 Page 3 of 12


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 3.55e3
0%
124679/124689D
4.82e6
35.75
123468D
6.92e5
36.40
123679/123689D
2.60e6
36.68
123469D
9.28e5
36.82
123478D
2.55e5
37.46
123678D
5.64e5
37.58
123467D
2.87e5
37.78
123789D
4.41e5
37.88
Abs. Int.
1.47e6
7.36e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 5.12e3
0%
124679/124689D
3.80e6
35.75
123468D
5.41e5
36.39
123679/123689D
2.00e6
36.68
123469D
7.91e5
36.82
123678D
4.33e5
37.59
123467D
2.42e5
37.78
123789D
3.77e5
37.89
Abs. Int.
1.15e6
5.75e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 4.31e3
0%
ES 123478D
1.97e7
37.45
ES 123678D
2.12e7
37.57
JS 123467D
1.29e7
37.77
ES 123789D
2.49e7*
37.87
Abs. Int.
6.43e6
3.22e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 6.04e3
0%
ES 123478D
1.65e7
37.45
ES 123678D
1.67e7
37.57
JS 123467D
1.03e7
37.77
ES 123789D
1.98e7*
37.87
Abs. Int.
5.22e6
2.61e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.39e7
1.20e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 3.97e3
1234679D
4.13e7
39.87
1234678D
1.87e7
40.52
Abs. Int.
1.51e7
7.53e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.54e3
1234679D
3.94e7
39.86
1234678D
1.77e7
40.51
Abs. Int.
1.50e7
7.52e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 8.73e3
ES 1234678D
1.71e7
40.50
Abs. Int.
5.84e6
2.92e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.44e3
ES 1234678D
1.57e7
40.50
Abs. Int.
5.37e6
2.69e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.62e7
8.08e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
2.29e8
43.06
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 8.53e3
0%
Abs. Int.
6.88e7
3.44e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.55e8
43.05
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 7.20e3
0%
Abs. Int.
7.68e7
3.84e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.72e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.10e3
0%
Abs. Int.
5.22e6
2.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.89e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.63e3
0%
Abs. Int.
5.39e6
2.69e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
9.79e6
4.89e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5970_18718_DF_007
Sample ID: 11215131-120321-S-SPS-SW-O-4
Acq: 16-Dec-2021 05:37:38
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41
User: PSW Datafile: 211215R24
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 4.36e3
2468F 1.57e5* 23.69
1478F 9.36e4 25.27
2368F 1.73e5* 25.94
1238F...[5] 1.12e5* 26.03
1278F 7.27e5 26.49
2378F 2.13e6* 27.39
2348F 1.36e5* 27.25
2367/3467F 3.27e5 27.74
1289F 2.17e5 29.39
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 2.71e3
2468F 1.72e5* 23.68
1347F...[3] 1.95e5* 24.20
1348F 1.59e5* 24.56
1268F 1.08e5 24.97
1478F 1.57e5 25.27
2368F 2.40e5* 25.95
1278F 1.01e6 26.48
2378F 2.70e6* 27.38
2348F 1.75e5* 27.26
2367/3467F 3.97e5 27.73
1289F 2.23e5 29.39
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.03e4
JS 1234F 4.14e7 26.00
ES 2378F 3.16e7 27.36
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 9.46e3
JS 1234F 5.38e7 25.99
ES 2378F 4.03e7 27.36
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.45e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_007.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7291, 9788, 1055 scc: 121-696
PKD: 16-Dec-2021 09:31 Printed: 16-Dec-2021 11:17 Page 7 of 12

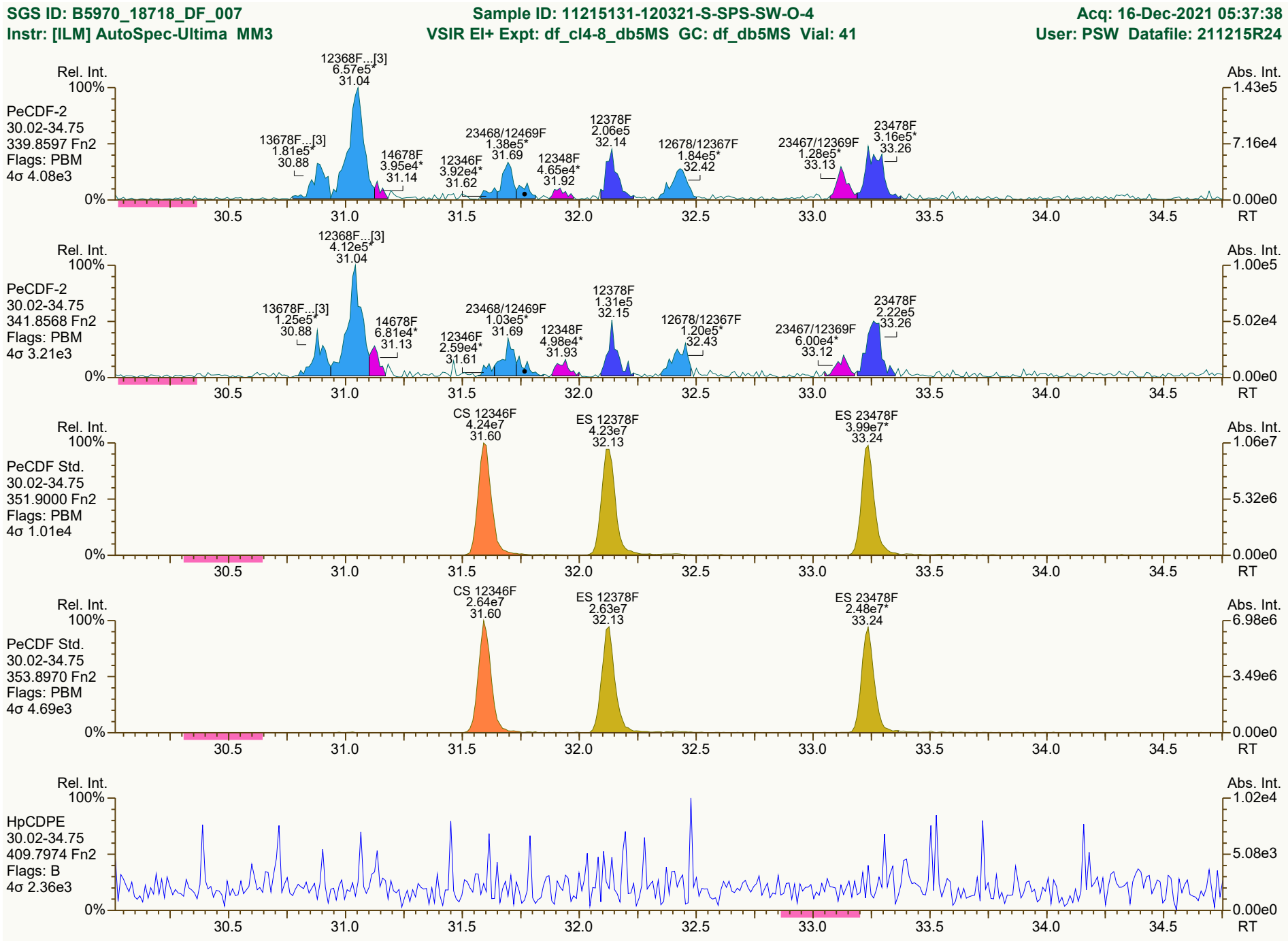
SGS ID: B5970_18718_DF_007 | Sample ID: 11215131-120321-S-SPS-SW-O-4 | Acq: 16-Dec-2021 05:37:38

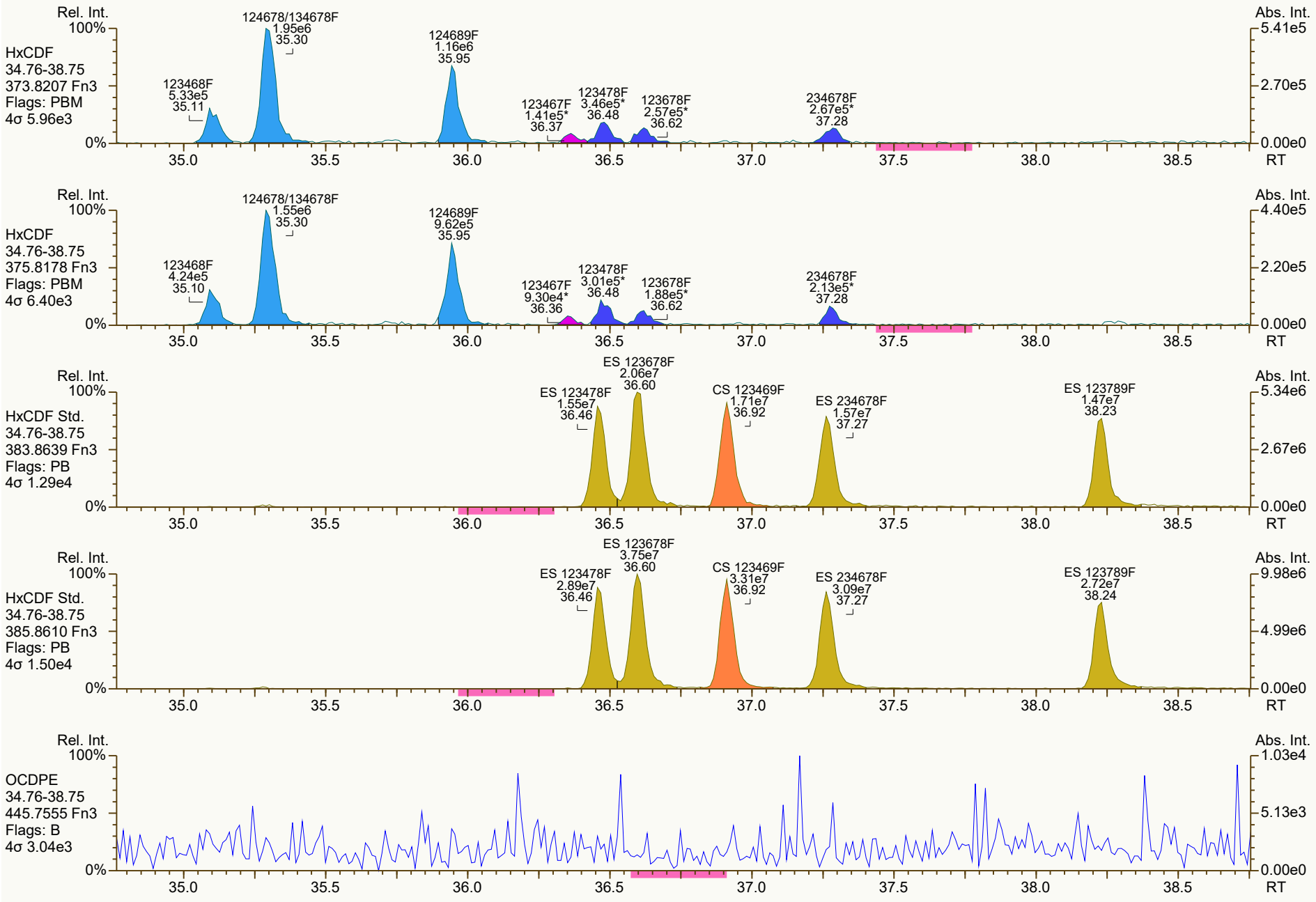
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41 | User: PSW Datafile: 211215R24

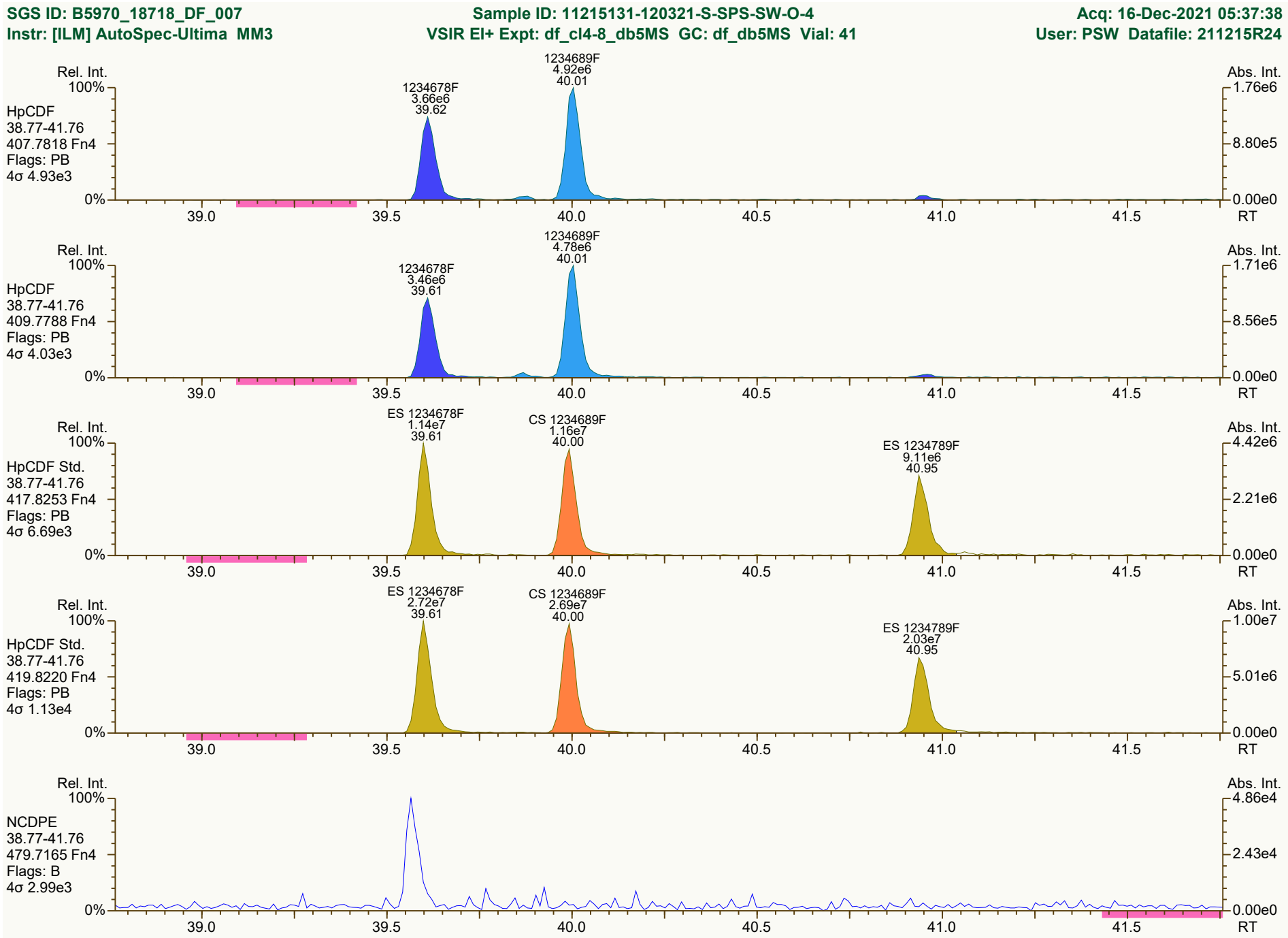


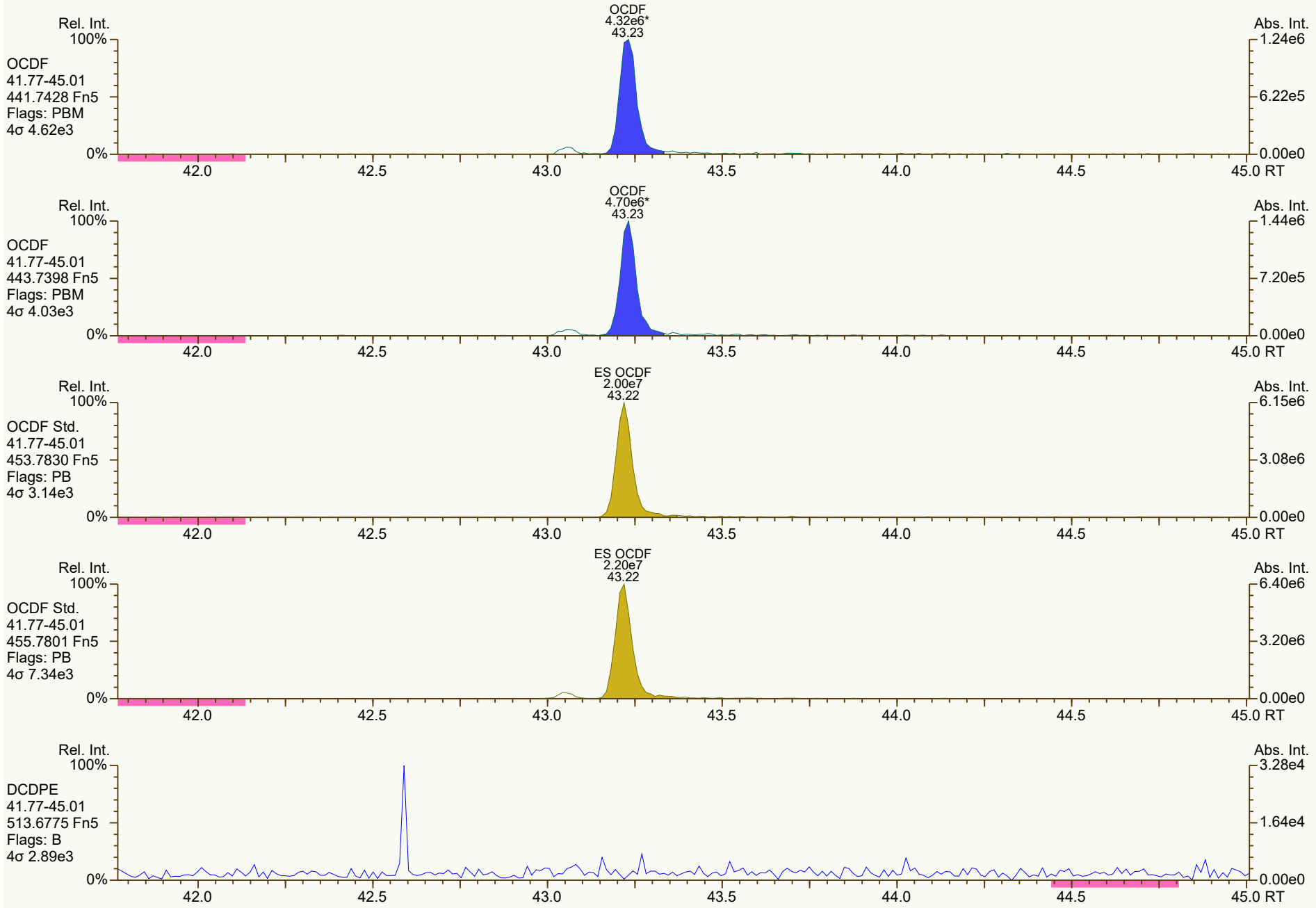
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_007.utp_res, saved 16-Dec-2021 11:07 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2234 scc: 121-696 | *PKD: 16-Dec-2021 09:31 Printed: 16-Dec-2021 11:17 Page 8 of 12*


SGS ID: B5970_18718_DF_007
Sample ID: 11215131-120321-S-SPS-SW-O-4
Acq: 16-Dec-2021 05:37:38
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41
User: PSW Datafile: 211215R24
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 4.08e3
12368F...[3] 6.57e5* 31.04
13678F...[3] 1.81e5* 30.88
14678F 3.95e4* 31.14
12346F 3.92e4* 31.62
23468/12469F 1.38e5* 31.69
12348F 4.65e4* 31.92
12378F 2.06e5 32.14
12678/12367F 1.84e5* 32.42
23467/12369F 1.28e5* 33.13
23478F 3.16e5* 33.26
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.21e3
12368F...[3] 4.12e5* 31.04
13678F...[3] 1.25e5* 30.88
14678F 6.81e4* 31.13
12346F 2.59e4* 31.61
23468/12469F 1.03e5* 31.69
12348F 4.98e4* 31.93
12378F 1.31e5 32.15
12678/12367F 1.20e5* 32.43
23467/12369F 6.00e4* 33.12
23478F 2.22e5 33.26
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 1.01e4
CS 12346F 4.24e7 31.60
ES 12378F 4.23e7 32.13
ES 23478F 3.99e7* 33.24
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 4.69e3
CS 12346F 2.64e7 31.60
ES 12378F 2.63e7 32.13
ES 23478F 2.48e7* 33.24
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.36e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_007.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0464, 5397, 2996 scc: 121-696
PKD: 16-Dec-2021 09:31 Printed: 16-Dec-2021 11:17 Page 9 of 12


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 5.96e3
124678/134678F
1.95e6
35.30
124689F
1.16e6
35.95
123468F
5.33e5
35.11
123467F
1.41e5*
36.37
123478F
3.46e5*
36.48
123678F
2.57e5*
36.62
234678F
2.67e5*
37.28
0%
Abs. Int.
5.41e5
2.70e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 6.40e3
124678/134678F
1.55e6
35.30
124689F
9.62e5
35.95
123468F
4.24e5
35.10
123467F
9.30e4*
36.36
123478F
3.01e5*
36.48
123678F
1.88e5*
36.62
234678F
2.13e5*
37.28
0%
Abs. Int.
4.40e5
2.20e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 1.29e4
ES 123678F
2.06e7
36.60
ES 123478F
1.55e7
36.46
CS 123469F
1.71e7
36.92
ES 234678F
1.57e7
37.27
ES 123789F
1.47e7
38.23
0%
Abs. Int.
5.34e6
2.67e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 1.50e4
ES 123678F
3.75e7
36.60
ES 123478F
2.89e7
36.46
CS 123469F
3.31e7
36.92
ES 234678F
3.09e7
37.27
ES 123789F
2.72e7
38.24
0%
Abs. Int.
9.98e6
4.99e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 3.04e3
0%
Abs. Int.
1.03e4
5.13e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: B5970_18718_DF_007
Sample ID: 11215131-120321-S-SPS-SW-O-4
Acq: 16-Dec-2021 05:37:38
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 41
User: PSW Datafile: 211215R24
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.93e3
1234678F
3.66e6
39.62
1234689F
4.92e6
40.01
1.76e6
8.80e5
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 4.03e3
1234678F
3.46e6
39.61
1234689F
4.78e6
40.01
1.71e6
8.56e5
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 6.69e3
ES 1234678F
1.14e7
39.61
CS 1234689F
1.16e7
40.00
ES 1234789F
9.11e6
40.95
4.42e6
2.21e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 1.13e4
ES 1234678F
2.72e7
39.61
CS 1234689F
2.69e7
40.00
ES 1234789F
2.03e7
40.95
1.00e7
5.01e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.99e3
4.86e4
2.43e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_007.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6352, 3683, 5565 scc: 121-696
PKD: 16-Dec-2021 09:31 Printed: 16-Dec-2021 11:17 Page 11 of 12


OCDF
4.32e6*
43.23
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PBM
4σ 4.62e3
0%
Abs. Int.
1.24e6
6.22e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.70e6*
43.23
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PBM
4σ 4.03e3
0%
Abs. Int.
1.44e6
7.20e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.00e7
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.14e3
0%
Abs. Int.
6.15e6
3.08e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.20e7
43.22
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 7.34e3
0%
Abs. Int.
6.40e6
3.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.89e3
0%
Abs. Int.
3.28e4
1.64e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5970_18718_DF_008 **Acq'd:** 16 Dec 2021 06:25 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-B-5 **UTP:** 16-Dec-2021 11:07:16 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 801-470-KXN

Datafile: 211215R25 **Report:** 20 Dec 2021 14:48 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.28	E	1.0008	1.0008	0	9.46E+08	0.80	Y	1.34	2,900	9051.928	0.305
12378-PeCDD	33.62		1.0005	1.0006	+0.2	7.15E+06	1.73	Y	1.06	33	16352.809	0.678
123478-HxCDD	37.49		1.0003	1.0004	+0.2	7.20E+05	1.19	Y	1.06	3.79	28119.87	1.21
123678-HxCDD	37.61		1.0033	1.0036	+0.7	3.12E+06	1.22	Y	1.08	15.9	28119.87	1.24
123789-HxCDD	37.91		1.0110	1.0115	+1.1	1.57E+06	1.37	Y	1.02	7.42	28119.87	1.13
1234678-HpCDD	40.53		1.0003	1.0003	0	6.54E+07	1.05	Y	0.97	436	11580.786	0.555
OCDD	43.08		1.0003	1.0003	0	6.75E+08	0.89	Y	1.07	6,510	13759.838	1.06
2378-TCDF	27.42	E	1.0006	1.0009	+0.5	3.54E+09	0.80	Y	0.96	10,600	10898.198	0.378
12378-PeCDF	32.18		1.0006	1.0005	-0.2	1.21E+08	1.55	Y	0.95	424	13796.036	0.455
23478-PeCDF	33.30		1.0006	1.0008	+0.4	8.05E+07	1.58	Y	0.94	302	13796.036	0.51
123478-HxCDF	36.51		1.0004	1.0005	+0.2	1.87E+08	1.25	Y	1.23	684	44284.17	1.33
123678-HxCDF	36.65		1.0004	1.0005	+0.2	4.94E+07	1.29	Y	1.13	175	44284.17	1.31
234678-HxCDF	37.31		1.0005	1.0004	-0.2	9.93E+06	1.23	Y	1.15	38.1	44284.17	1.51
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	44284.17	1.47
1234678-HpCDF	39.64		1.0003	1.0003	0	9.04E+07	1.04	Y	1.36	390	9762.332	0.266
1234789-HpCDF	40.98		1.0003	1.0003	0	1.78E+07	1.03	Y	1.30	91.1	9762.332	0.353
OCDF	43.26		1.0002	1.0002	0	7.63E+08	0.89	Y	1.03	5,830	12549.912	0.791

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.26	1.0237	1.0236	-0.2	4.83E+07	0.81	Y	1.03	81.7
ES 12378-PeCDD	33.60	1.2158	1.2170	+2.4	4.07E+07	1.64	Y	1.03	68.8
ES 123478-HxCDD	37.47	0.9920	0.9916	-0.9	3.58E+07	1.26	Y	0.99	86.9
ES 123678-HxCDD	37.59	0.9949	0.9948	-0.2	3.60E+07	1.26	Y	0.97	89.4
ES 123789-HxCDD	37.90	1.0026	1.0028	+0.5	4.13E+07	1.22	Y	1.12	88.7
ES 1234678-HpCDD	40.52	1.0713	1.0722	+2.2	3.06E+07	1.06	Y	0.99	74.5
ES OCDD	43.07	1.1385	1.1396	+2.8	3.85E+07	0.91	Y	0.78	59.8
ES 2378-TCDF	27.40	1.0519	1.0523	+0.7	6.92E+07	0.78	Y	1.08	76.7
ES 12378-PeCDF	32.16	1.2331	1.2354	+4.4	6.00E+07	1.56	Y	0.93	77.3
ES 23478-PeCDF	33.27	1.2754	1.2779	+5.0	5.63E+07	1.60	Y	0.92	73.4
ES 123478-HxCDF	36.49	0.9656	0.9656	0	4.41E+07	0.52	Y	1.14	93.2
ES 123678-HxCDF	36.63	0.9693	0.9693	0	4.94E+07	0.53	Y	1.30	92
ES 234678-HxCDF	37.29	0.9869	0.9868	-0.2	4.50E+07	0.52	Y	1.20	90.4
ES 123789-HxCDF	38.25	1.0121	1.0122	+0.2	4.10E+07	0.53	Y	1.14	87.2
ES 1234678-HpCDF	39.62	1.0478	1.0485	+1.7	3.39E+07	0.46	Y	0.95	86.1
ES 1234789-HpCDF	40.97	1.0832	1.0840	+2.0	2.98E+07	0.46	Y	0.85	84.9
ES OCDF	43.25	1.1434	1.1444	+2.6	5.07E+07	0.94	Y	0.93	66.1

Lab ID: B5970_18718_DF_008 **Acq'd:** 16 Dec 2021 06:25 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-B-5 **UTP:** 16-Dec-2021 11:07:16 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 801-470-KXN

Datafile: 211215R25 **Report:** 20 Dec 2021 14:48 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.61		-	-	-	5.72E+07	0.80	Y	-	-	
JS 1234-TCDF	26.04		-	-	-	8.31E+07	0.81	Y	-	-	
JS 123467-HxCDD	37.79		-	-	-	2.07E+07	1.24	Y	-	-	
CS 37Cl-2378-TCDD	28.28		1.0245	1.0245	0	2.16E+07	n/a	-	1.31	72.2	
CS 12347-PeCDD	33.11		1.1978	1.1991	+2.6	3.80E+07	1.65	Y	0.89	74.4	
CS 12346-PeCDF	31.64		1.2130	1.2152	+4.2	5.73E+07	1.62	Y	0.87	79.4	
CS 123469-HxCDF	36.94		0.9775	0.9775	0	4.37E+07	0.52	Y	1.09	96.7	
CS 1234689-HpCDF	40.02		1.0580	1.0589	+2.2	3.37E+07	0.46	Y	0.86	94	
~~SS 37Cl-2378-TCDD~~	~~28.28~~		~~1.0245~~	~~1.0245~~	~~0~~	~~2.16E+07~~	~~n/a~~		~~1.26~~	~~88.9~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.11~~		~~1.1978~~	~~1.1991~~	~~+2.6~~	~~3.80E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~108~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.64~~		~~1.2130~~	~~1.2152~~	~~+4.2~~	~~5.73E+07~~	~~1.62~~	~~Y~~	~~0.93~~	~~103~~	
~~SS 123469-HxCDF~~	~~36.94~~		~~0.9775~~	~~0.9775~~	~~0~~	~~4.37E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~105~~	
~~SS 1234689-HpCDF~~	~~40.02~~		~~1.0580~~	~~1.0589~~	~~+2.2~~	~~3.37E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~109~~	

Totals	Conc	EMPC
Total TCDD	3200	3220
Total PeCDD	68	70.3
Total HxCDD	162	166
Total HpCDD	1040	1040
Total Tetra-Octa Dioxins	11000	11000
Total TCDF	21,000	21000
Total PeCDF	1,210	1210
Total HxCDF	1,140	1140
Total HpCDF	702	702
Total Tetra-Octa Furans	29,900	29900
Total Tetra-Octa Dioxins & Furans	40800	40900

Lab ID: B5970_18718_DF_008 **Acq'd:** 16 Dec 2021 06:25 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-B-5 **UTP:** 16-Dec-2021 11:07:16 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 801-470-KXN

Datafile: 211215R25 **Report:** 20 Dec 2021 14:48 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.63		0.8726	0.8714	-1.8	1.83E+06	0.84	Y	1.34	5.61	9051.928	0.305
1379-TCDD	24.98		0.8851	0.8840	-1.6	5.55E+05	0.81	Y	1.34	1.7	9051.928	0.305
1369-TCDD	25.42		0.9002	0.8994	-1.2	1.96E+05	0.78	Y	1.34	0.6	9051.928	0.305
1469-TCDD	26.20		0.9275	0.9270	-0.8	1.28E+06	0.84	Y	1.34	3.91	9051.928	0.305
1247/1246/1248/1249-TCDD	26.43		0.9361	0.9352	-1.4	1.89E+06	0.85	Y	1.34	5.8	9051.928	0.305
1378-TCDD	26.62		0.9427	0.9420	-1.1	2.81E+06	0.84	Y	1.34	8.61	9051.928	0.305
1268-TCDD	26.81	EMPC	0.9498	0.9487	-1.8	2.80E+05	1.00	N	1.34	0.858	9051.928	0.305
1478-TCDD	27.08		0.9584	0.9581	-0.5	2.29E+06	0.81	Y	1.34	7.02	9051.928	0.305
1279-TCDD	27.21	J	0.9644	0.9628	-2.6	1.15E+05	0.71	Y	1.34	0.351	9051.928	0.305
1234/1269-TCDD	27.60		0.9766	0.9765	-0.2	5.89E+05	0.82	Y	1.34	1.8	9051.928	0.305
1236-TCDD	27.74		0.9813	0.9816	+0.5	1.86E+05	0.86	Y	1.34	0.571	9051.928	0.305
1237/1238-TCDD	27.99		0.9906	0.9905	-0.2	1.39E+07	0.80	Y	1.34	42.5	9051.928	0.305
1239-TCDD	NotFnd		0.9952						1.34		9051.928	0.305
2378-TCDD	**28.28**	E	**1.0008**	1.0008	**0**	9.46E+08	0.80	Y	**1.34**	**2,900**	**9051.928**	**0.305**
1278-TCDD	28.61		1.0122	1.0123	+0.2	7.36E+07	0.79	Y	1.34	225	9051.928	0.305
1267-TCDD	28.76	EMPC	1.0168	1.0175	+1.2	4.17E+06	0.89	N	1.34	12.8	9051.928	0.305
1289-TCDD	29.24	EMPC	1.0349	1.0346	-0.5	3.37E+06	1.03	N	1.34	10.3	9051.928	0.305
12479/12468-PeCDD	31.13		0.9267	0.9266	-0.2	2.08E+06	1.64	Y	1.06	9.59	16352.809	0.678
12469-PeCDD	31.67		0.9425	0.9425	0	1.21E+06	1.37	Y	1.06	5.59	16352.809	0.678
12368-PeCDD	32.22		0.9588	0.9588	0	1.19E+06	1.36	Y	1.06	5.47	16352.809	0.678
12478-PeCDD	32.41		0.9643	0.9645	+0.4	9.48E+05	1.55	Y	1.06	4.37	16352.809	0.678
12379-PeCDD	32.51	J	0.9673	0.9675	+0.4	4.43E+05	1.59	Y	1.06	2.04	16352.809	0.678
12369/12467/12489-PeCDD	32.76		0.9750	0.9751	+0.2	1.14E+06	1.58	Y	1.06	5.25	16352.809	0.678
12346/12347-PeCDD	33.13	J	0.9859	0.9859	0	2.89E+05	1.59	Y	1.06	1.33	16352.809	0.678
12378-PeCDD	33.62		**1.0005**	**1.0006**	**+0.2**	**7.15E+06**	**1.73**	**Y**	**1.06**	**33**	**16352.809**	**0.678**
12367-PeCDD	33.72	J EMPC	1.0032	1.0035	+0.6	4.95E+05	2.12	N	1.06	2.28	16352.809	0.678
12389-PeCDD	34.06	J	1.0135	1.0137	+0.4	3.02E+05	1.67	Y	1.06	1.39	16352.809	0.678
124679/124689-HxCDD	35.78		0.9544	0.9548	+0.9	1.44E+07	1.31	Y	1.05	72	28119.87	1.19
123468-HxCDD	36.42		0.9716	0.9719	+0.7	1.93E+06	1.29	Y	1.05	9.68	28119.87	1.19
123679/123689-HxCDD	36.71		0.9793	0.9797	+0.9	1.01E+07	1.24	Y	1.05	50.7	28119.87	1.19
123469-HxCDD	36.85	EMPC	0.9829	0.9832	+0.7	7.77E+05	1.44	N	1.05	3.89	28119.87	1.19
123478-HxCDD	37.49		**1.0003**	**1.0004**	**+0.2**	**7.20E+05**	**1.19**	**Y**	1.06	**3.79**	**28119.87**	**1.21**
123678-HxCDD	37.61		**1.0033**	**1.0036**	**+0.7**	**3.12E+06**	**1.22**	**Y**	1.08	**15.9**	**28119.87**	**1.24**
123467-HxCDD	37.80		1.0084	1.0088	+0.9	5.74E+05	1.39	Y	1.05	2.88	28119.87	1.19
123789-HxCDD	37.91		**1.0110**	**1.0115**	**+1.1**	**1.57E+06**	**1.37**	**Y**	1.02	**7.42**	**28119.87**	**1.13**

Lab ID: B5970_18718_DF_008 **Acq'd:** 16 Dec 2021 06:25 PSW **Wt/Vol:** 10.07 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-SPS-SW-B-5 **UTP:** 16-Dec-2021 11:07:16 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 801-470-KXN

Datafile: 211215R25 **Report:** 20 Dec 2021 14:48 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

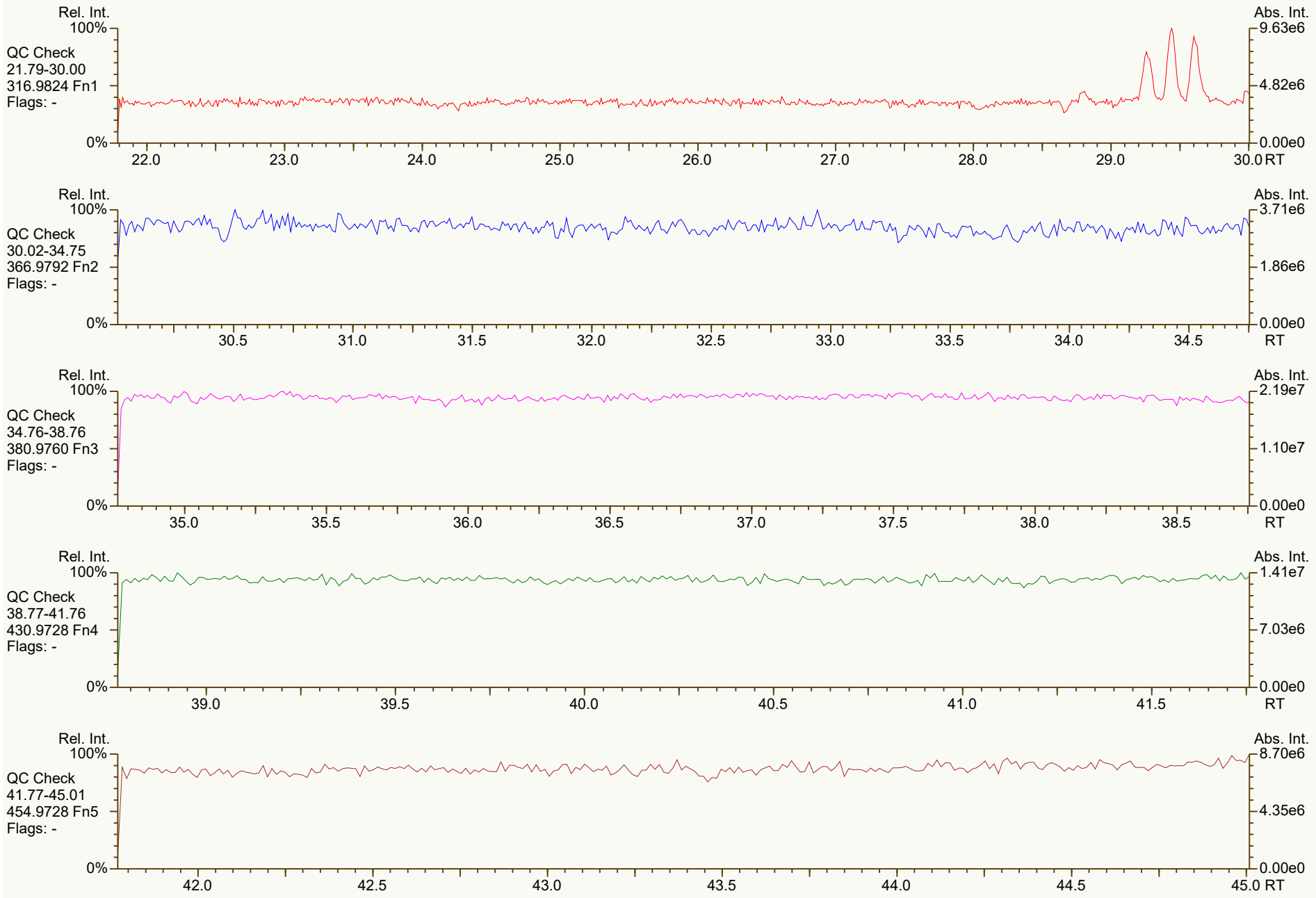
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.88		0.9843	0.9843	0	9.11E+07	1.06	Y	0.97	607	11580.786	0.555
1234678-HpCDD	**40.53**		**1.0003**	**1.0003**	**0**	**6.54E+07**	**1.05**	**Y**	**0.97**	**436**	**11580.786**	**0.555**
OCDD	**43.08**		**1.0003**	**1.0003**	**0**	**6.75E+08**	**0.89**	**Y**	**1.07**	**6,510**	**13759.838**	**1.06**
OCDD-a	43.07		1.0001	1.0002	+0.3	4.07E+07	2.55	Y	0.07	6,360	14397.871	18
1368-TCDF	22.49		0.8230	0.8207	-3.1	1.09E+06	0.76	Y	0.96	3.26	10898.198	0.378
1468-TCDF	23.09		0.8443	0.8426	-2.4	5.98E+06	0.80	Y	0.96	17.9	10898.198	0.378
2468-TCDF	23.73		0.8672	0.8661	-1.6	7.41E+06	0.81	Y	0.96	22.2	10898.198	0.378
1346/1246-TCDF	24.14		0.8802	0.8812	+1.4	3.55E+06	0.81	Y	0.96	10.6	10898.198	0.378
1347/1378/1247-TCDF	24.28		0.8855	0.8861	+0.9	3.13E+07	0.78	Y	0.96	93.6	10898.198	0.378
1348-TCDF	24.50		0.8952	0.8942	-1.5	1.05E+07	0.77	Y	0.96	31.4	10898.198	0.378
1248/1367/1379-TCDF	24.61		0.9000	0.8982	-2.7	1.50E+08	0.80	Y	0.96	448	10898.198	0.378
1268-TCDF	25.02		0.9136	0.9130	-0.9	5.52E+07	0.78	Y	0.96	165	10898.198	0.378
1467-TCDF	25.15		0.9185	0.9178	-1.1	8.99E+06	0.78	Y	0.96	26.9	10898.198	0.378
1478-TCDF	25.32		0.9247	0.9242	-0.8	1.43E+08	0.79	Y	0.96	428	10898.198	0.378
1369/1237-TCDF	25.70		0.9381	0.9382	+0.2	3.61E+07	0.79	Y	0.96	108	10898.198	0.378
2467-TCDF	25.82		0.9427	0.9423	-0.6	4.37E+06	0.81	Y	0.96	13.1	10898.198	0.378
2368-TCDF	25.96		0.9484	0.9473	-1.7	5.92E+07	0.78	Y	0.96	177	10898.198	0.378
1238/1234/1678/1469/1236-TCDF	26.04		0.9517	0.9504	-2.0	2.21E+08	0.80	Y	0.96	659	10898.198	0.378
1278-TCDF	26.51	E	0.9682	0.9677	-0.8	1.66E+09	0.81	Y	0.96	4,980	10898.198	0.378
1349-TCDF	26.63		0.9725	0.9721	-0.6	2.54E+07	0.83	Y	0.96	75.9	10898.198	0.378
1267-TCDF	26.79		0.9782	0.9778	-0.6	9.01E+07	0.80	Y	0.96	269	10898.198	0.378
2346/1249-TCDF	26.98		0.9846	0.9847	+0.2	1.45E+07	0.81	Y	0.96	43.3	10898.198	0.378
2347/1279-TCDF	27.19		0.9926	0.9922	-0.7	3.74E+07	0.79	Y	0.96	112	10898.198	0.378
2348-TCDF	27.31		0.9966	0.9967	+0.2	2.85E+08	0.79	Y	0.96	852	10898.198	0.378
2378-TCDF	**27.42**	E	**1.0006**	**1.0009**	**+0.5**	**3.54E+09**	**0.80**	**Y**	**0.96**	**10,600**	**10898.198**	**0.378**
2367/3467-TCDF	27.78		1.0139	1.0138	-0.2	2.88E+08	0.80	Y	0.96	861	10898.198	0.378
1269-TCDF	28.03		1.0226	1.0232	+1.0	5.57E+07	0.80	Y	0.96	167	10898.198	0.378
1239-TCDF	NotFnd		1.0322						0.96		10898.198	0.378
1289-TCDF	29.44		1.0729	1.0746	+3.0	2.80E+08	0.79	Y	0.96	839	10898.198	0.378
13468/12468-PeCDF	29.39		0.9135	0.9139	+0.7	1.53E+07	1.61	Y	0.94	55.3	7907.505	0.276
13678/13467/12467-PeCDF	30.93		0.9612	0.9616	+0.7	2.15E+06	1.54	Y	0.94	7.8	13796.036	0.482
12368/13478/12478-PeCDF	31.09		0.9661	0.9666	+0.9	5.54E+07	1.59	Y	0.94	201	13796.036	0.482
14678-PeCDF	31.18		0.9693	0.9694	+0.2	2.11E+06	1.60	Y	0.94	7.63	13796.036	0.482
13479-PeCDF	31.28	J	0.9723	0.9724	+0.2	3.29E+05	1.77	Y	0.94	1.19	13796.036	0.482
13469/12479-PeCDF	31.47		0.9799	0.9784	-2.8	8.50E+05	1.61	Y	0.94	3.08	13796.036	0.482
12346-PeCDF	31.65	J EMPC	0.9842	0.9839	-0.6	4.67E+05	1.92	N	0.94	1.69	13796.036	0.482

Lab ID: B5970_18718_DF_008 | **Acq'd: 16 Dec 2021 06:25 PSW** | **Wt/Vol: 10.07 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-SPS-SW-B-5 | **UTP: 16-Dec-2021 11:07:16 PSW** | **J-level: 0.497 pg/g** | **Split: 1** | **Checkcode: 801-470-KXN**

Datafile: 211215R25 | **Report: 20 Dec 2021 14:48 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.74		0.9868	0.9869	+0.2	4.01E+06	1.61	Y	0.94	14.5	13796.036	0.482
12347-PeCDF	31.82		0.9893	0.9893	0	2.24E+06	1.61	Y	0.94	8.11	13796.036	0.482
12348-PeCDF	31.98		0.9941	0.9941	0	1.07E+07	1.66	Y	0.94	38.8	13796.036	0.482
12378-PeCDF	**32.18**		**1.0006**	**1.0005**	**-0.2**	**1.21E+08**	**1.55**	**Y**	**0.95**	**424**	**13796.036**	**0.455**
12678/12367-PeCDF	32.48		1.0090	1.0097	+1.4	3.48E+07	1.56	Y	0.94	126	13796.036	0.482
12379-PeCDF	NotFnd		1.0143						0.94		13796.036	0.482
12679-PeCDF	33.02	J	0.9929	0.9925	-0.8	2.87E+05	1.38	Y	0.94	1.04	13796.036	0.482
23467/12369-PeCDF	33.15		0.9966	0.9964	-0.4	1.66E+06	1.61	Y	0.94	6.02	13796.036	0.482
23478-PeCDF	**33.30**		**1.0006**	**1.0008**	**+0.4**	**8.05E+07**	**1.58**	**Y**	**0.94**	**302**	**13796.036**	**0.51**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		13796.036	0.482
12349-PeCDF	NotFnd		1.0102						0.94		13796.036	0.482
12389-PeCDF	34.35		1.0325	1.0325	0	4.65E+06	1.54	Y	0.94	16.9	13796.036	0.482
123468-HxCDF	35.14		0.9628	0.9630	+0.4	4.52E+06	1.27	Y	1.16	17.2	44284.17	1.4
124678/134678-HxCDF	35.33		0.9683	0.9683	0	2.43E+07	1.26	Y	1.16	92.6	44284.17	1.4
134679-HxCDF	NotFnd		0.9746						1.16		44284.17	1.4
124679-HxCDF	35.76	J	0.9798	0.9799	+0.2	5.83E+05	1.15	Y	1.16	2.22	44284.17	1.4
124689-HxCDF	35.98		0.9859	0.9860	+0.2	1.76E+07	1.26	Y	1.16	67.1	44284.17	1.4
123467-HxCDF	36.39		0.9972	0.9971	-0.2	1.30E+06	1.28	Y	1.16	4.95	44284.17	1.4
123478-HxCDF	**36.51**		**1.0004**	**1.0005**	**+0.2**	**1.87E+08**	**1.25**	**Y**	**1.23**	**684**	**44284.17**	**1.33**
123678-HxCDF	**36.65**		**1.0004**	**1.0005**	**+0.2**	**4.94E+07**	**1.29**	**Y**	**1.13**	**175**	**44284.17**	**1.31**
123479-HxCDF	NotFnd		1.0049						1.16		44284.17	1.4
123469-HxCDF	36.96		1.0088	1.0091	+0.7	1.58E+06	1.23	Y	1.16	6.01	44284.17	1.4
123679-HxCDF	NotFnd		0.9943						1.16		44284.17	1.4
234678-HxCDF	**37.31**		**1.0005**	**1.0004**	**-0.2**	**9.93E+06**	**1.23**	**Y**	**1.15**	**38.1**	**44284.17**	**1.51**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		44284.17	1.4
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**44284.17**	**1.47**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.29		1.0007	1.0011	+0.9	1.38E+07	1.25	Y	1.16	52.4	44284.17	1.4
1234678-HpCDF	**39.64**		**1.0003**	**1.0003**	**0**	**9.04E+07**	**1.04**	**Y**	**1.36**	**390**	**9762.332**	**0.266**
1234679-HpCDF	39.89		1.0067	1.0066	-0.2	3.46E+06	0.99	Y	1.33	16.2	9762.332	0.306
1234689-HpCDF	40.03		1.0100	1.0101	+0.2	4.37E+07	1.06	Y	1.33	205	9762.332	0.306
1234789-HpCDF	**40.98**		**1.0003**	**1.0003**	**0**	**1.78E+07**	**1.03**	**Y**	**1.30**	**91.1**	**9762.332**	**0.353**
OCDF	**43.26**		**1.0002**	**1.0002**	**0**	**7.63E+08**	**0.89**	**Y**	**1.03**	**5,830**	**12549.912**	**0.791**
OCDF-a	43.26		1.0002	1.0002	0	4.70E+07	2.44	Y	0.06	6,210	12291.795	13.4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4.82e6
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22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.71e6
1.86e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.19e7
1.10e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
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7.03e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
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0%
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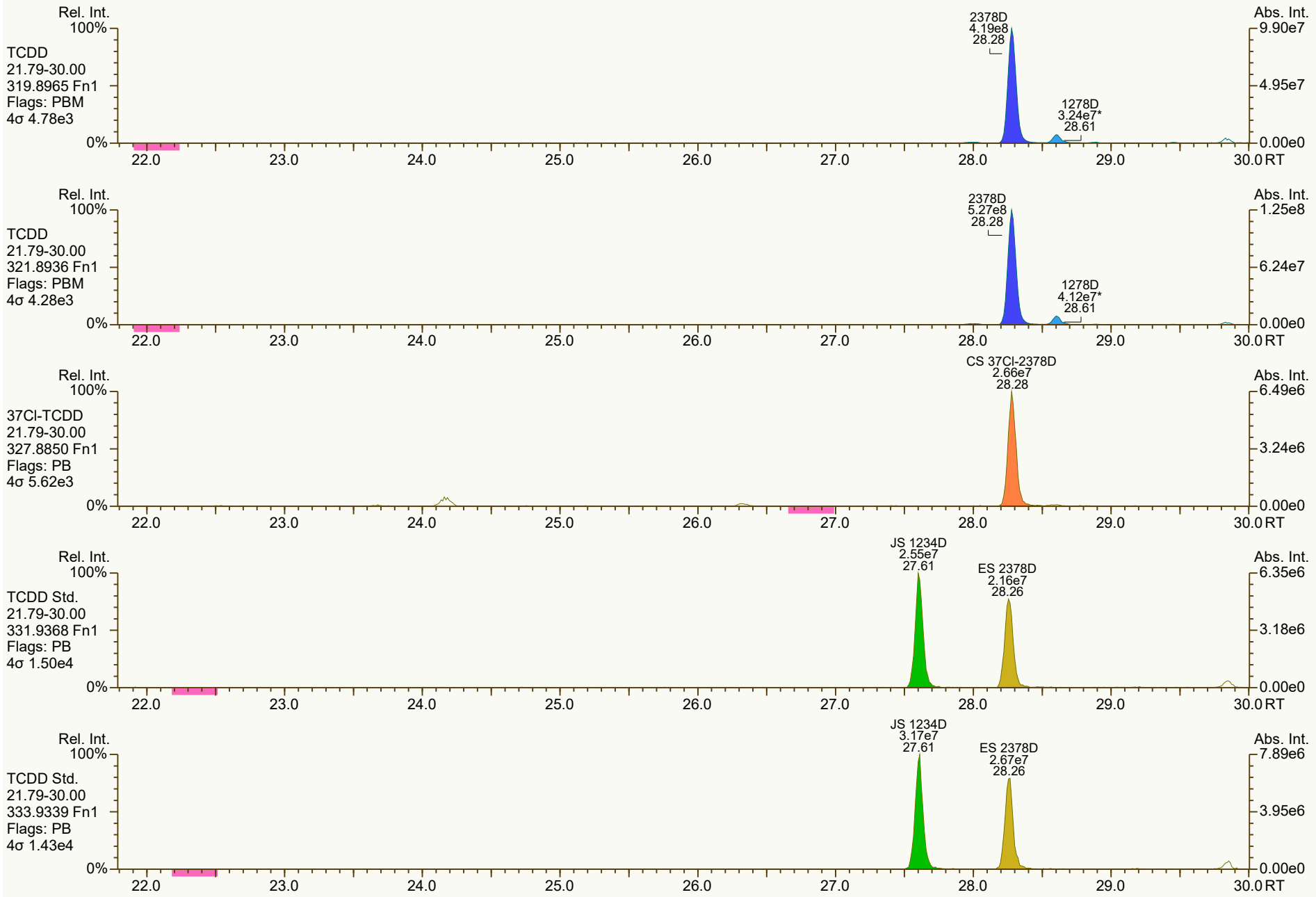
45.0 RT



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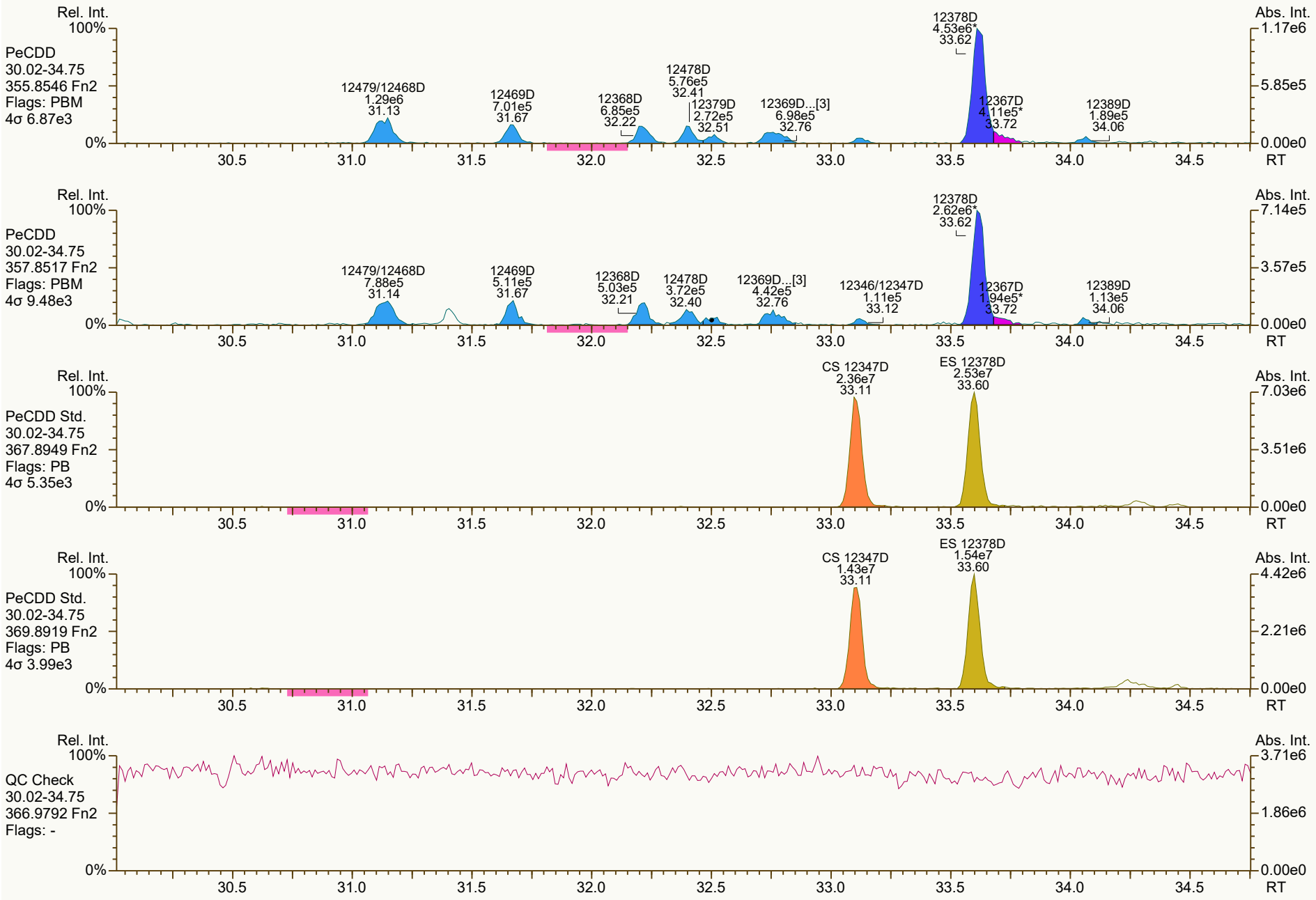
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3113, 5313, 0465 scc: 801-470 *PKD: 16-Dec-2021 09:45 Printed: 16-Dec-2021 11:17 Page 2 of 12*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100%
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30.02-34.75
355.8546 Fn2
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4σ 6.87e3
12479/12468D
1.29e6
31.13
12469D
7.01e5
31.67
12368D
6.85e5
32.22
12478D
5.76e5
32.41
12379D
2.72e5
32.51
12369D...[3]
6.98e5
32.76
12378D
4.53e6*
33.62
12367D
4.11e5*
33.72
12389D
1.89e5
34.06
Abs. Int.
1.17e6
5.85e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 9.48e3
12479/12468D
7.88e5
31.14
12469D
5.11e5
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12368D
5.03e5
32.21
12478D
3.72e5
32.40
12369D...[3]
4.42e5
32.76
12346/12347D
1.11e5
33.12
12378D
2.62e6*
33.62
12367D
1.94e5*
33.72
12389D
1.13e5
34.06
Abs. Int.
7.14e5
3.57e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.35e3
CS 12347D
2.36e7
33.11
ES 12378D
2.53e7
33.60
Abs. Int.
7.03e6
3.51e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 3.99e3
CS 12347D
1.43e7
33.11
ES 12378D
1.54e7
33.60
Abs. Int.
4.42e6
2.21e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
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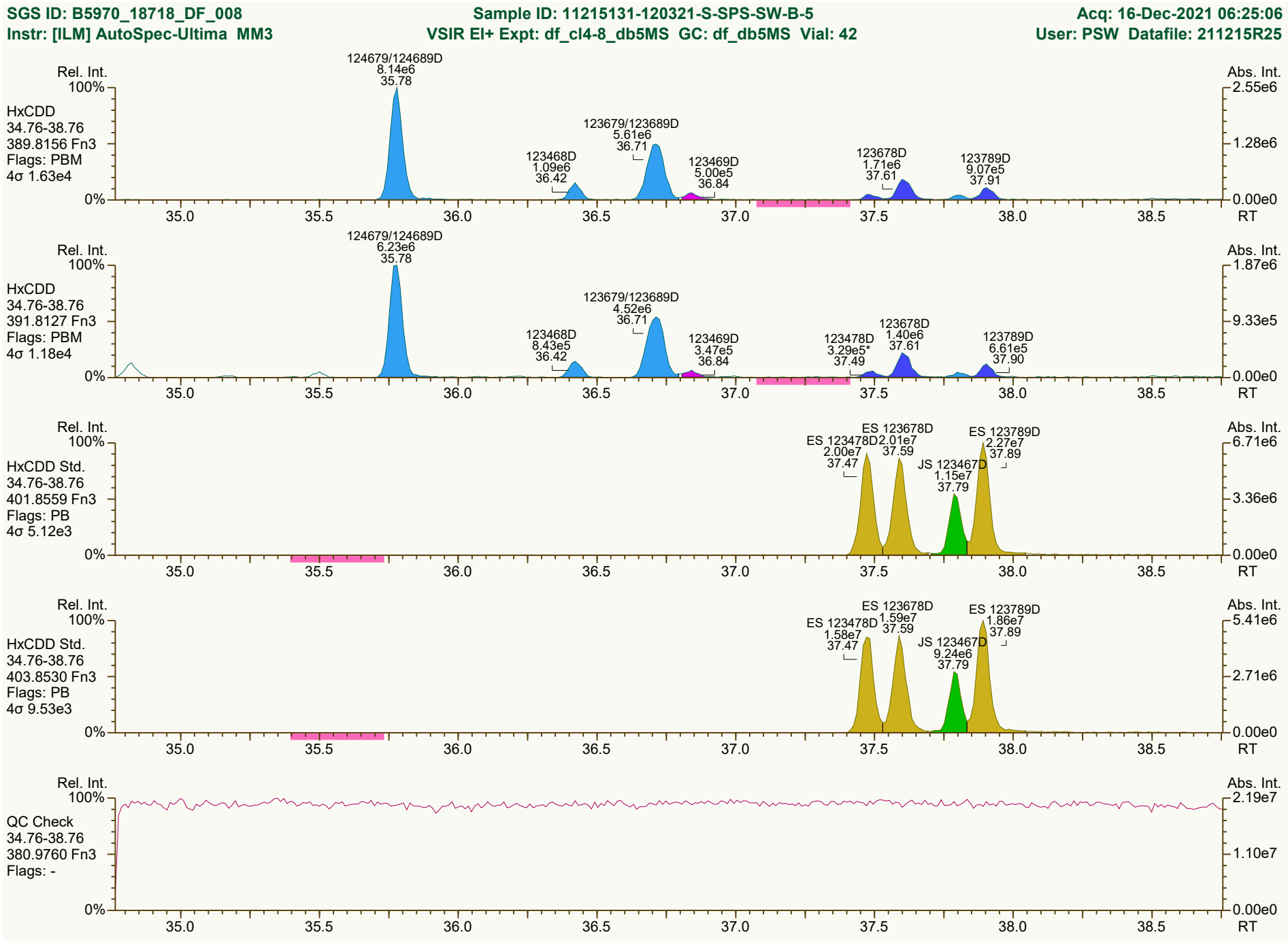
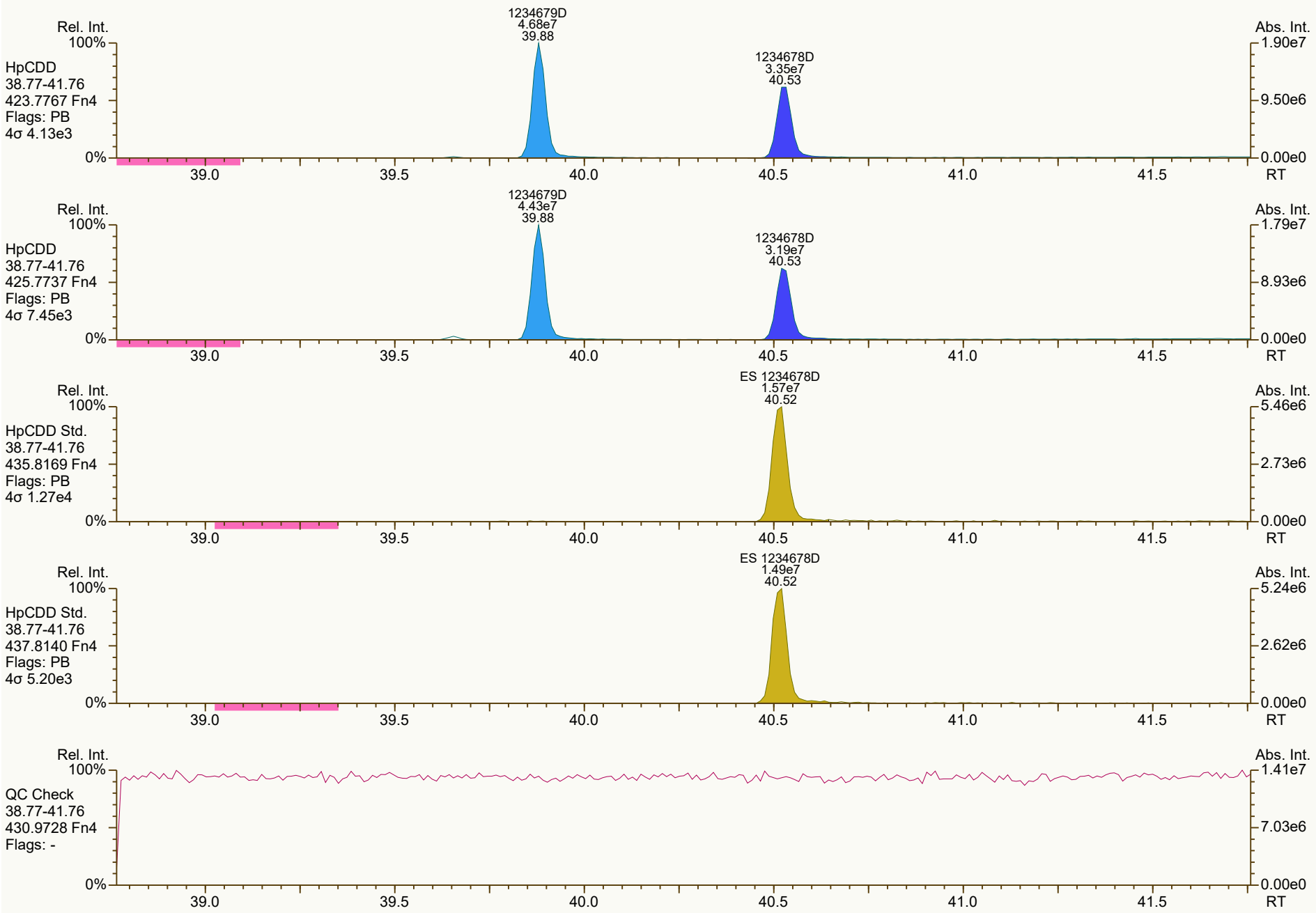
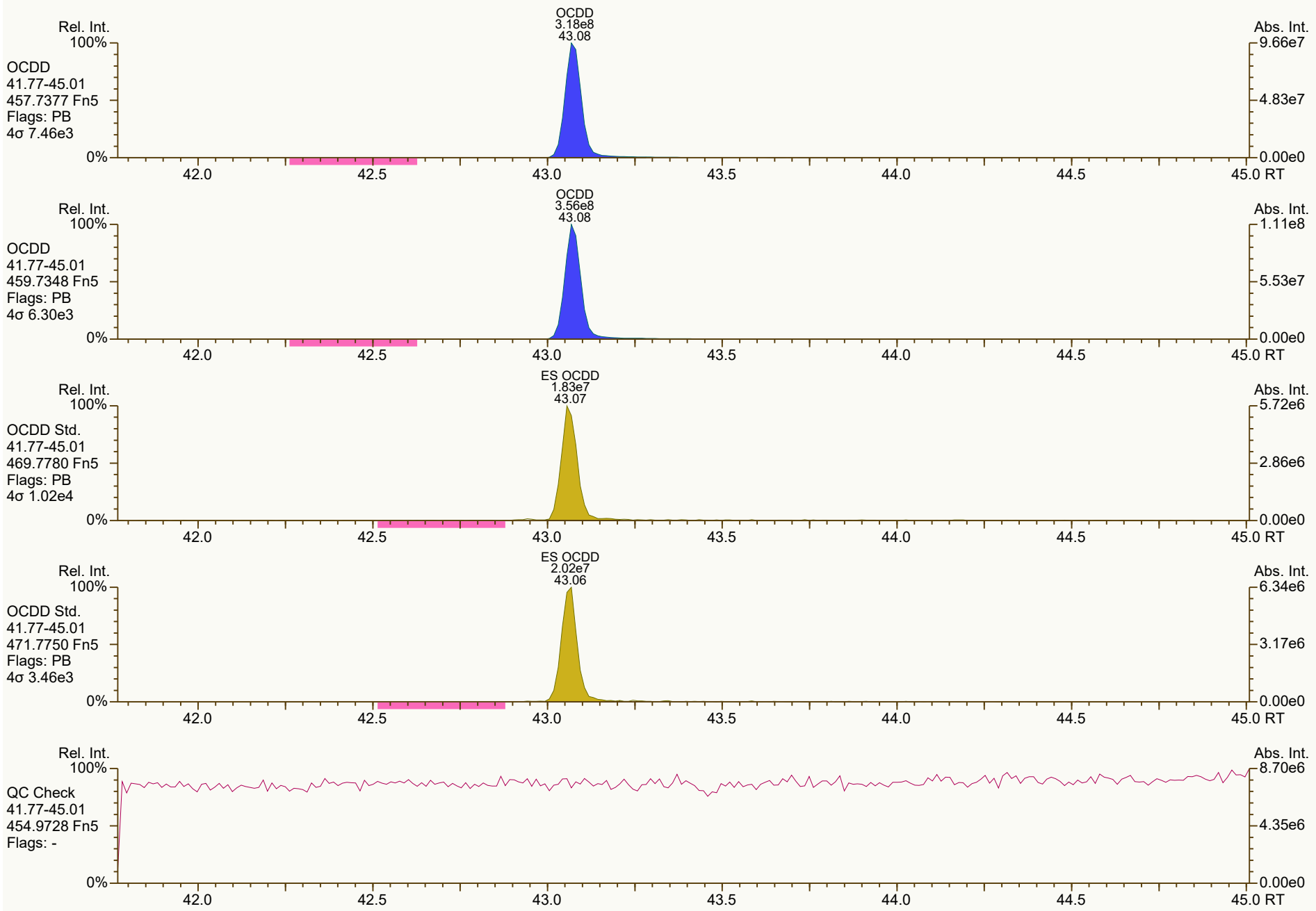
1.86e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

SGS ID: B5970_18718_DF_008 | Sample ID: 11215131-120321-S-SPS-SW-B-5 | Acq: 16-Dec-2021 06:25:06
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 42 | User: PSW Datafile: 211215R25

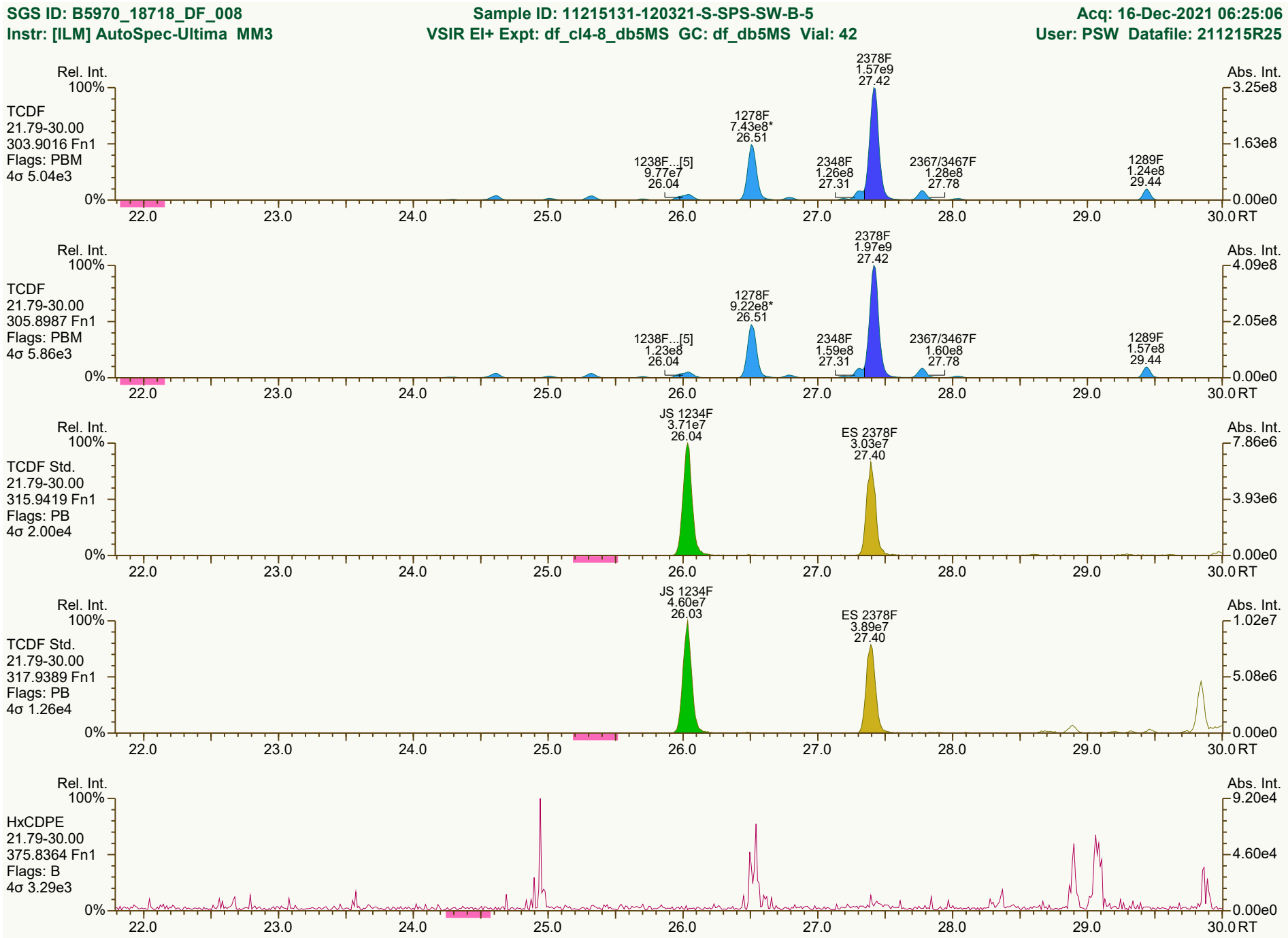


Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_008.utp_res, saved 16-Dec-2021 11:12 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6645, 0519 scc: 801-470 | PKD: 16-Dec-2021 09:45 Printed: 16-Dec-2021 11:17 Page 4 of 12


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.13e3
1234679D
4.68e7
39.88
1234678D
3.35e7
40.53
Abs. Int.
1.90e7
9.50e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 7.45e3
1234679D
4.43e7
39.88
1234678D
3.19e7
40.53
Abs. Int.
1.79e7
8.93e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 1.27e4
ES 1234678D
1.57e7
40.52
Abs. Int.
5.46e6
2.73e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 5.20e3
ES 1234678D
1.49e7
40.52
Abs. Int.
5.24e6
2.62e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.41e7
7.03e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
3.18e8
43.08
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 7.46e3
0%
Abs. Int.
9.66e7
4.83e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.56e8
43.08
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 6.30e3
0%
Abs. Int.
1.11e8
5.53e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.83e7
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 1.02e4
0%
Abs. Int.
5.72e6
2.86e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.02e7
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 3.46e3
0%
Abs. Int.
6.34e6
3.17e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
8.70e6
4.35e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

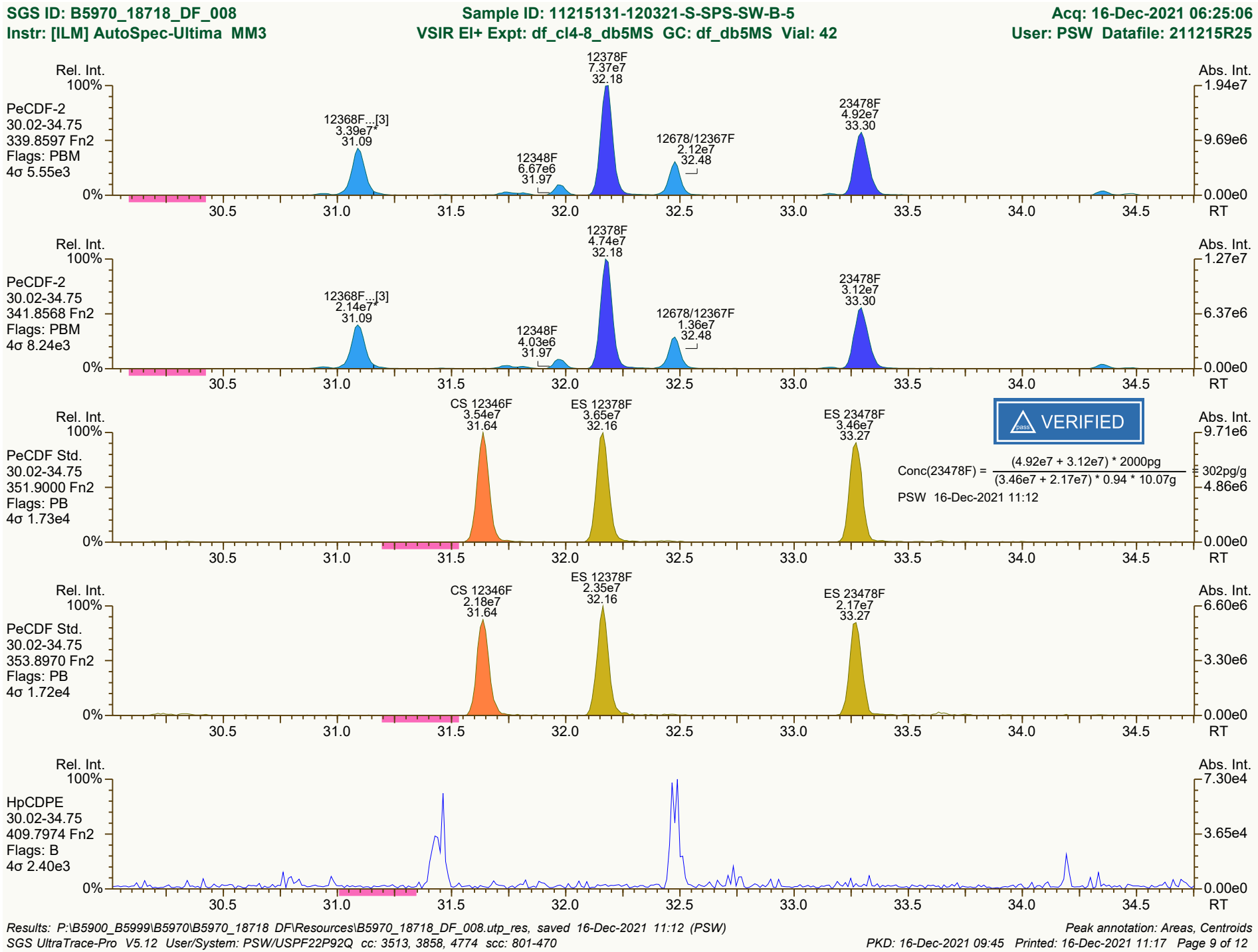
SGS ID: B5970_18718_DF_008 | Sample ID: 11215131-120321-S-SPS-SW-B-5 | Acq: 16-Dec-2021 06:25:06
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 42 | User: PSW Datafile: 211215R25



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_008.utp_res, saved 16-Dec-2021 11:12 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4911, 8291, 1175 scc: 801-470 | PKD: 16-Dec-2021 09:45 Printed: 16-Dec-2021 11:17 Page 7 of 12


13468/12468F
9.40e6
29.39
Rel. Int.
100%
0%
Abs. Int.
2.33e6
1.16e6
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 4.49e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
5.85e6
29.39
Rel. Int.
100%
0%
Abs. Int.
1.52e6
7.60e5
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.41e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
9.63e6
4.82e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

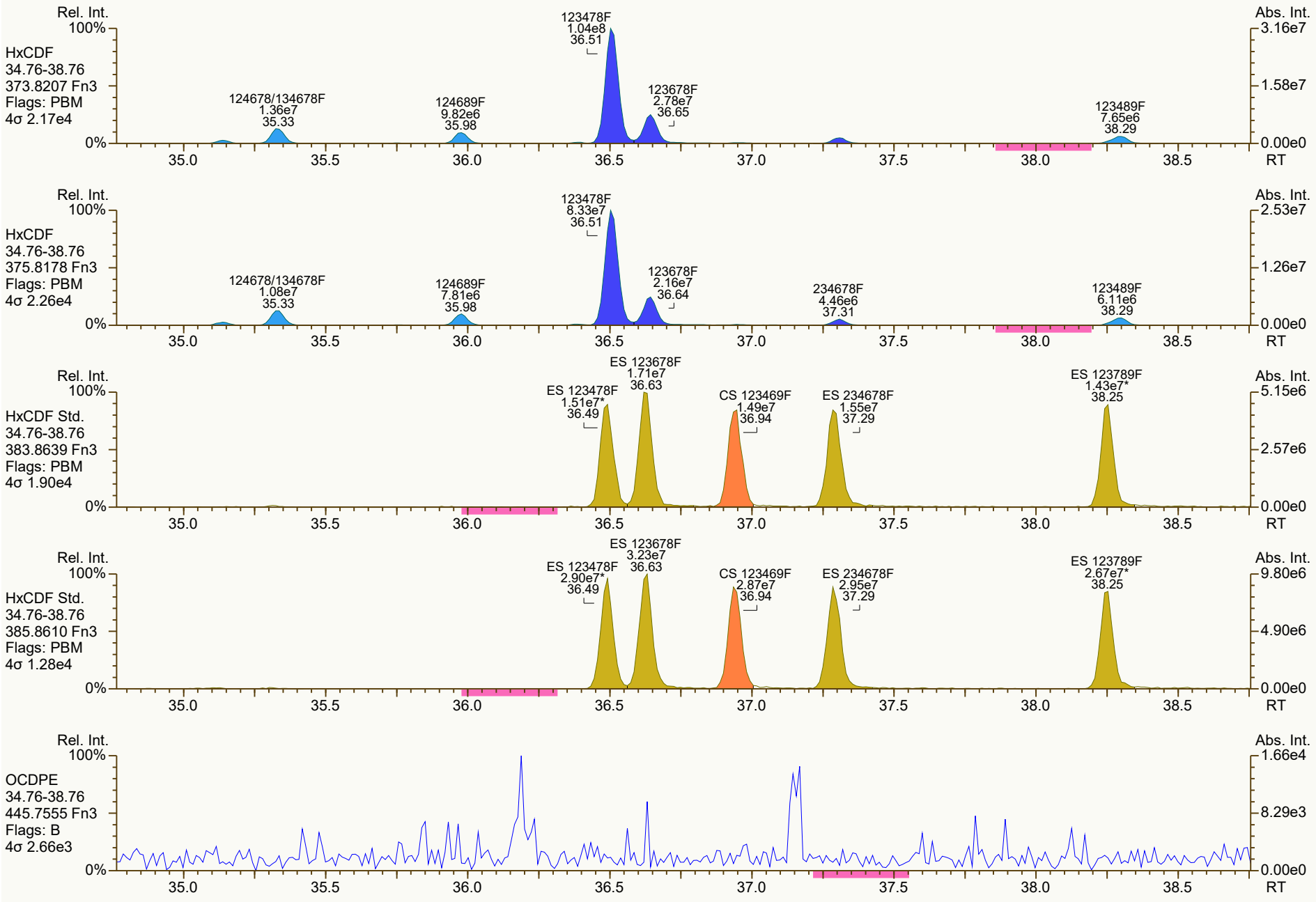
SGS ID: B5970_18718_DF_008 | Sample ID: 11215131-120321-S-SPS-SW-B-5 | Acq: 16-Dec-2021 06:25:06
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 42 | User: PSW Datafile: 211215R25



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_008.utp_res, saved 16-Dec-2021 11:12 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3513, 3858, 4774 scc: 801-470 | PKD: 16-Dec-2021 09:45 Printed: 16-Dec-2021 11:17 Page 9 of 12

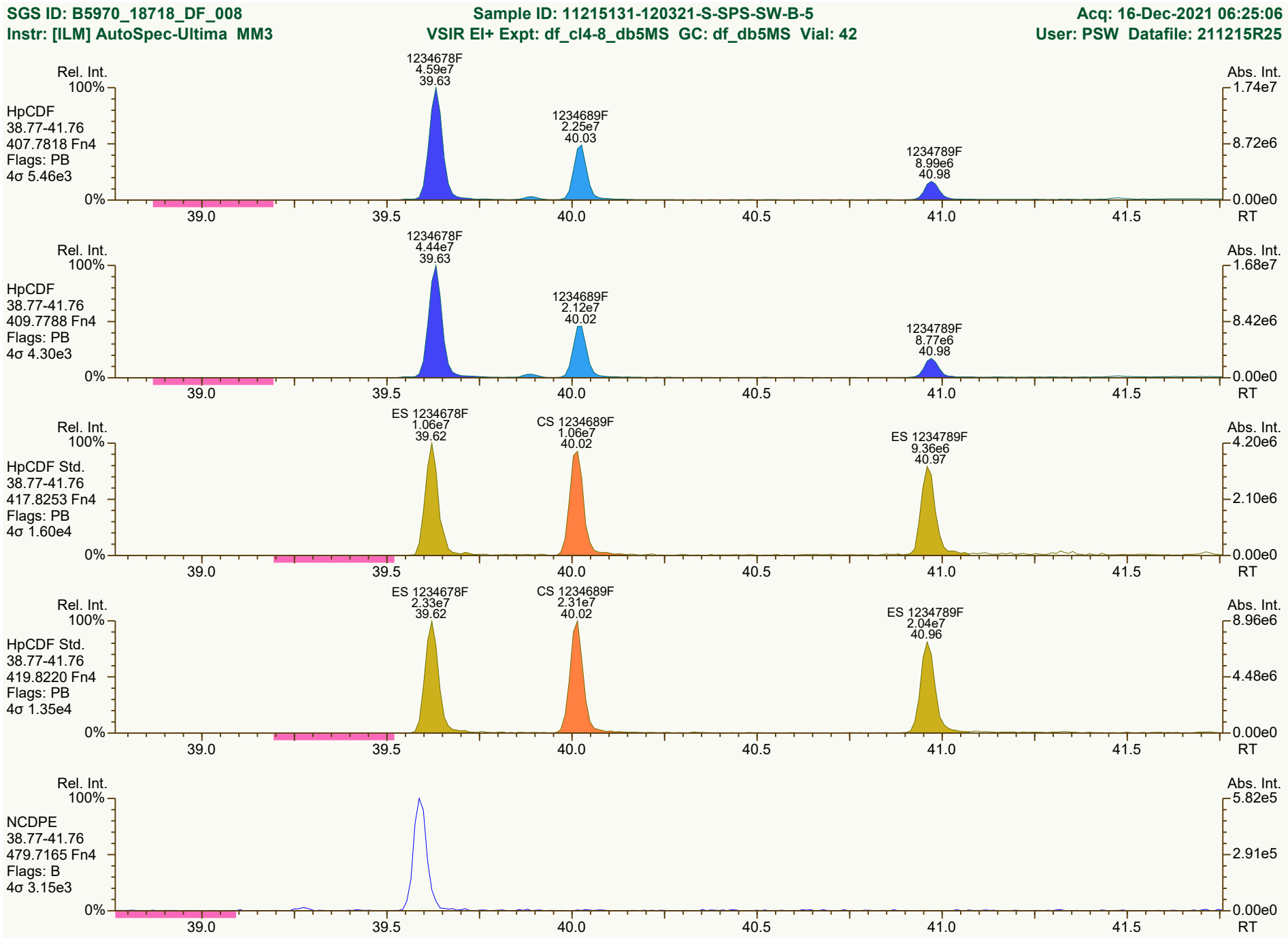
SGS ID: B5970_18718_DF_008 | Sample ID: 11215131-120321-S-SPS-SW-B-5 | Acq: 16-Dec-2021 06:25:06

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 42 | User: PSW Datafile: 211215R25



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_008.utp_res, saved 16-Dec-2021 11:12 (PSW) | *Peak annotation: Areas, Centroids*

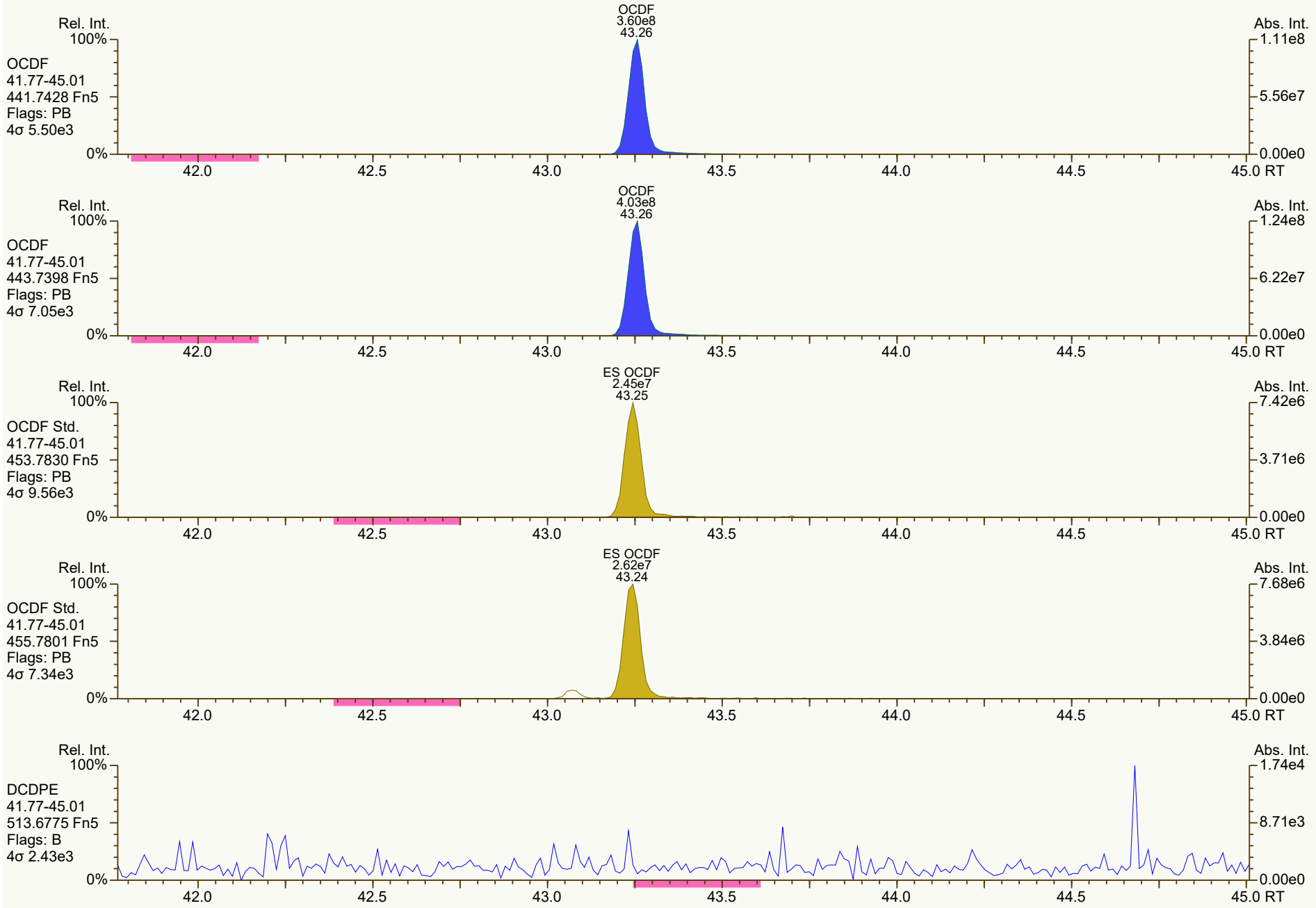
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3360, 5703, 8796 scc: 801-470 | *PKD: 16-Dec-2021 09:45 Printed: 16-Dec-2021 11:17 Page 10 of 12*



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_008.utp_res, saved 16-Dec-2021 11:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4211, 7014, 3813 scc: 801-470
PKD: 16-Dec-2021 09:45 Printed: 16-Dec-2021 11:17 Page 11 of 12

SGS ID: B5970_18718_DF_008 | Sample ID: 11215131-120321-S-SPS-SW-B-5 | Acq: 16-Dec-2021 06:25:06

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 42 | User: PSW Datafile: 211215R25



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\B5970_18718_DF_008.utp_res, saved 16-Dec-2021 11:12 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1126, 0711, 6945 scc: 801-470 | *PKD: 16-Dec-2021 09:45 Printed: 16-Dec-2021 11:17 Page 12 of 12*

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
5	211215R05	3	CS3_211215_DF_RB ✓	1.00	SIL 25-347-1	PSW	171-983	15-Dec-2021	14:15:21
6	211215R06	28	OPR1_18718_DF	1.00	0_18718_OPR001	PSW	364-859	15-Dec-2021	15:15:44
7	211215R07	29	OPR2_18718_DF	1.00	0_18718_OPR002	PSW	062-626	15-Dec-2021	16:02:28
8	211215R08	2	SBS_211215_DF_RB	1.00	SIL 20-61-1	PSW	291-279	15-Dec-2021	16:50:02
9	211215R09	27	MB1_18718_DF_SDS	10.00	Method Blank	PSW	204-041	15-Dec-2021	17:37:36
15	211215R15	35	B5970_18718_DF_001	10.06	11215131-120221-S-JC-SW-O-2	PSW	338-761	15-Dec-2021	22:22:44
16	211215R16	36	B5970_18718_DF_002	10.14	11215131-120221-S-JC-SW-B-2	PSW	802-511	15-Dec-2021	23:10:18
17	211215R17	3	CS3_211215_DF_RC	1.00	SIL 25-347-1	PSW	305-552	15-Dec-2021	23:57:52
18	211215R18	28	OPR1_18718_DF-RJ	1.00	0_18718_OPR001 CPSM only	PSW	926-429	16-Dec-2021	00:53:23
19	211215R19	2	SBS_211215_DF_RC	1.00	SIL 20-61-1 CL 20Dec21	PSW	460-089	16-Dec-2021	01:40:02
20	211215R20	37	B5970_18718_DF_003	10.01	11215131-120321-S-JC-SW-B-3	PSW	140-373	16-Dec-2021	02:27:31
21	211215R21	38	B5970_18718_DF_004	10.03	11215131-120221-S-SPS-SW-O-3	PSW	638-179	16-Dec-2021	03:14:58
22	211215R22	39	B5970_18718_DF_005	10.13	11215131-120221-S-SPS-SW-B-4	PSW	735-325	16-Dec-2021	04:02:32
23	211215R23	40	B5970_18718_DF_006	10.16	11215131-120321-S-SPS-SW-O-5	PSW	604-163	16-Dec-2021	04:50:06
24	211215R24	41	B5970_18718_DF_007	10.03	11215131-120321-S-SPS-SW-O-4	PSW	121-696	16-Dec-2021	05:37:38
25	211215R25	42	B5970_18718_DF_008 ✓	10.07	11215131-120321-S-SPS-SW-B-5	PSW	801-470	16-Dec-2021	06:25:06

REVIEWED
paul_walton , 12/16/2021, 11:22:10 AM

APPROVED
Carla_Lyon , 12/20/2021, 9:47:50 AM

Dioxin/Furan QC Summary	Acq'd: 15 Dec 2021 14:15 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211215_DF_RB	UTP: 16-Dec-2021 11:07:08 PSW	Checkcode: 171-983-NRF
Sample ID: SIL 25-347-1	Report: 16 Dec 2021 11:08 pw	Datafile: 211215R05

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.27	8.94E+06	0.83	Y	1.34	1.16	-14%
12378-PeCDD	33.61	3.31E+07	1.56	Y	1.06	1.00	-5%
123478-HxCDD	37.48	2.72E+07	1.27	Y	1.06	1.08	3%
123678-HxCDD	37.61	3.04E+07	1.27	Y	1.08	1.13	5%
123789-HxCDD	37.91	3.04E+07	1.26	Y	1.02	0.97	-5%
1234678-HpCDD	40.53	2.45E+07	1.02	Y	0.97	1.00	3%
OCDD	43.08	2.93E+07	0.92	Y	1.07	1.05	-2%
2378-TCDF	27.41	1.24E+07	0.80	Y	0.96	1.07	11%
12378-PeCDF	32.16	5.05E+07	1.56	Y	0.95	1.02	8%
23478-PeCDF	33.27	4.96E+07	1.57	Y	0.94	1.05	12%
123478-HxCDF	36.50	4.22E+07	1.26	Y	1.23	1.28	4%
123678-HxCDF	36.64	4.77E+07	1.28	Y	1.13	1.19	5%
234678-HxCDF	37.30	4.19E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.27	3.71E+07	1.26	Y	1.14	1.18	4%
1234678-HpCDF	39.63	3.84E+07	1.05	Y	1.36	1.39	2%
1234789-HpCDF	40.98	3.14E+07	1.04	Y	1.30	1.38	6%
OCDF	43.26	3.74E+07	0.93	Y	1.03	1.04	1%
ES 2378-TCDD	28.24	7.71E+07	0.82	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.588	6.61E+07	1.58	Y	1.03	0.88	-15%
ES 123478-HxCDD	37.466	5.03E+07	1.26	Y	0.99	0.99	0%
ES 123678-HxCDD	37.589	5.37E+07	1.30	Y	0.97	1.06	9%
ES 123789-HxCDD	37.893	6.27E+07	1.25	Y	1.12	1.24	10%
ES 1234678-HpCDD	40.518	4.91E+07	1.08	Y	0.99	0.97	-2%
ES OCDD	43.069	5.61E+07	0.90	Y	0.78	0.55	-29%
ES 2378-TCDF	27.385	1.16E+08	0.80	Y	1.08	1.06	-3%
ES 12378-PeCDF	32.146	9.86E+07	1.60	Y	0.93	0.90	-4%
ES 23478-PeCDF	33.255	9.47E+07	1.60	Y	0.92	0.86	-7%
ES 123478-HxCDF	36.48	6.60E+07	0.53	Y	1.14	1.30	14%
ES 123678-HxCDF	36.619	8.00E+07	0.54	Y	1.30	1.58	22%
ES 234678-HxCDF	37.288	7.11E+07	0.54	Y	1.20	1.40	17%
ES 123789-HxCDF	38.253	6.26E+07	0.53	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.623	5.52E+07	0.44	Y	0.95	1.09	15%
ES 1234789-HpCDF	40.967	4.55E+07	0.45	Y	0.85	0.90	6%
ES OCDF	43.253	7.21E+07	0.90	Y	0.93	0.71	-23%

Dioxin/Furan QC Summary	Acq'd: 15 Dec 2021 14:15 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211215_DF_RB	UTP: 16-Dec-2021 11:07:08 PSW	Checkcode: 171-983-NRF
Sample ID: SIL 25-347-1	Report: 16 Dec 2021 11:08 pw	Datafile: 211215R05

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.59	7.51E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.02	1.10E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.78	2.53E+07	1.29	Y	-	-	-
CS 37Cl-2378-TCDD	28.27	8.74E+06	n/a	-	1.31	1.16	-11%
CS 12347-PeCDD	33.09	5.65E+07	1.65	Y	0.89	0.75	-16%
CS 12346-PeCDF	31.62	9.40E+07	1.59	Y	0.87	0.85	-2%
CS 123469-HxCDF	36.93	6.64E+07	0.55	Y	1.09	1.31	21%
CS 1234689-HpCDF	40.01	5.01E+07	0.46	Y	0.86	0.99	15%
~~SS 37Cl-2378-TCDD~~	~~28.27~~	~~8.74E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.13~~	~~-10%~~
~~SS 12347-PeCDD~~	~~33.09~~	~~5.65E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~0.86~~	~~-1%~~
~~SS 12346-PeCDF~~	~~31.62~~	~~9.40E+07~~	~~1.59~~	~~Y~~	~~0.93~~	~~0.95~~	~~2%~~
~~SS 123469-HxCDF~~	~~36.93~~	~~6.64E+07~~	~~0.55~~	~~Y~~	~~0.84~~	~~0.83~~	~~-1%~~
~~SS 1234689-HpCDF~~	~~40.01~~	~~5.01E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~0.91~~	~~0%~~
Not used in this project.							
CL 20Dec21							
~~OCDD-a~~	~~43.07~~	~~1.67E+06~~	~~2.49~~	~~Y~~	~~0.07~~	~~0.06~~	~~-10%~~
~~OCDF-a~~	~~43.25~~	~~1.77E+06~~	~~3.18~~	~~N~~	~~0.06~~	~~0.05~~	~~-17%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211215R05 Analysis Date: 15-DEC-2021 14:15:21

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.83	0.65 - 0.89	Y	8.62	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32 - 1.78	Y	47.3	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	51.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	52.3	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	47.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.02	0.88 - 1.20	Y	51.3	43 - 58	Y
OCDD	M+2/M+4	0.92	0.76 - 1.02	Y	97.7	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	11.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	54.1	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	55.8	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	51.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	52.7	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.2	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	52.1	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	51.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	53.1	43 - 58	Y
OCDF	M+2/M+4	0.93	0.76 - 1.02	Y	101	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 16 Dec 2021 11:08 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

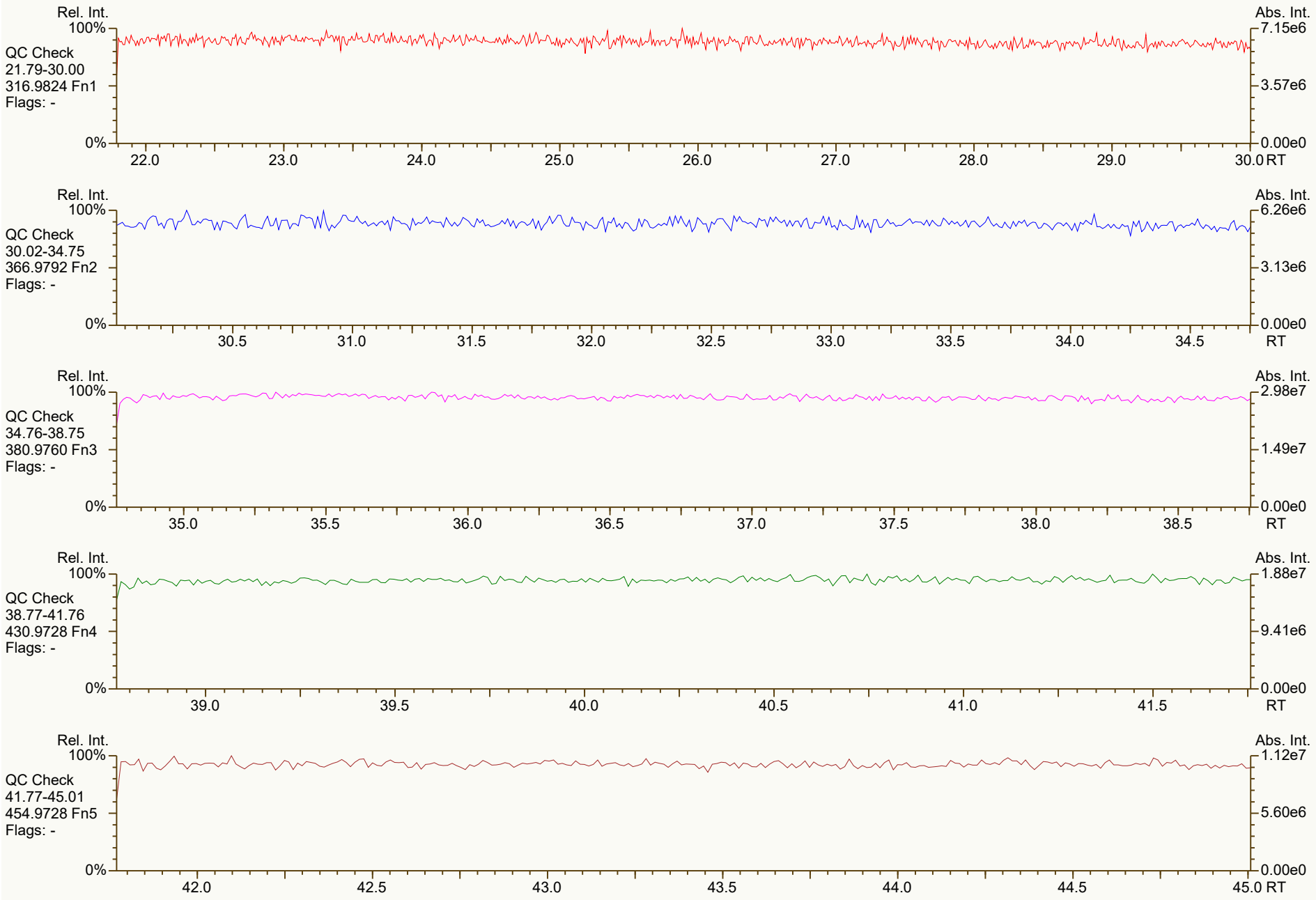
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

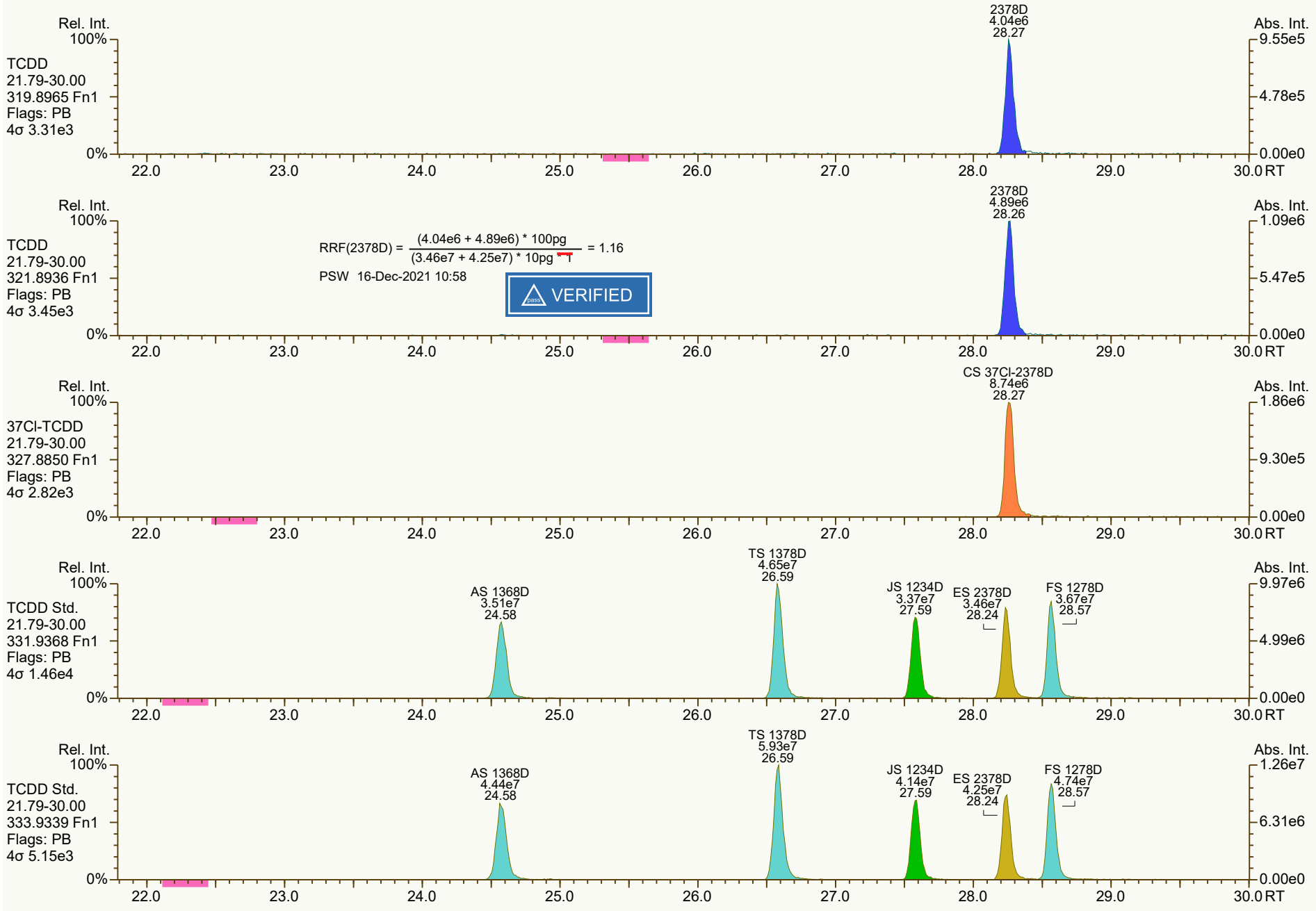
Instrument ID: MM3 GC Column ID: ZB-5ms

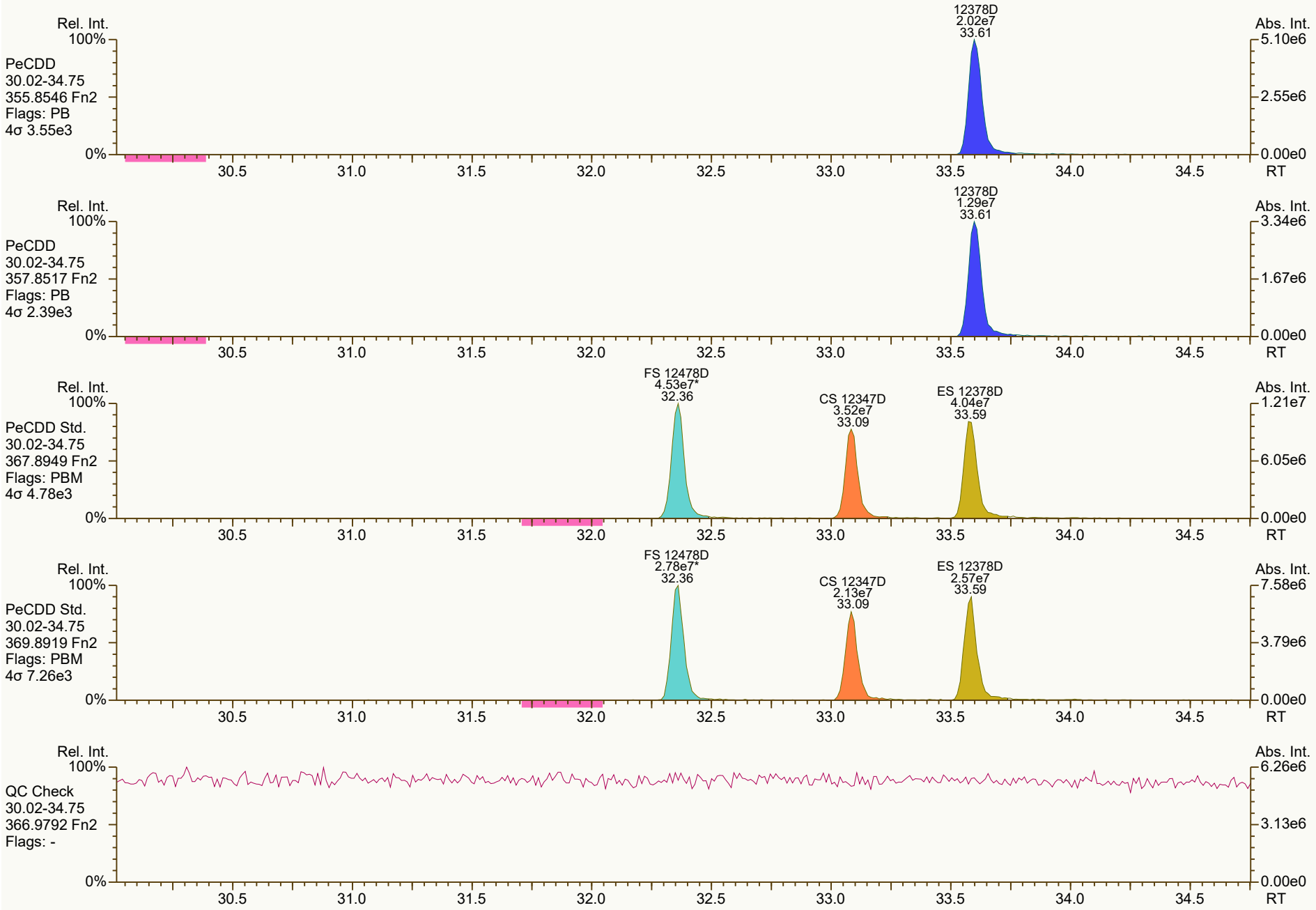
VER Data Filename: 211215R05 Analysis Date: 15-DEC-2021 14:15:21

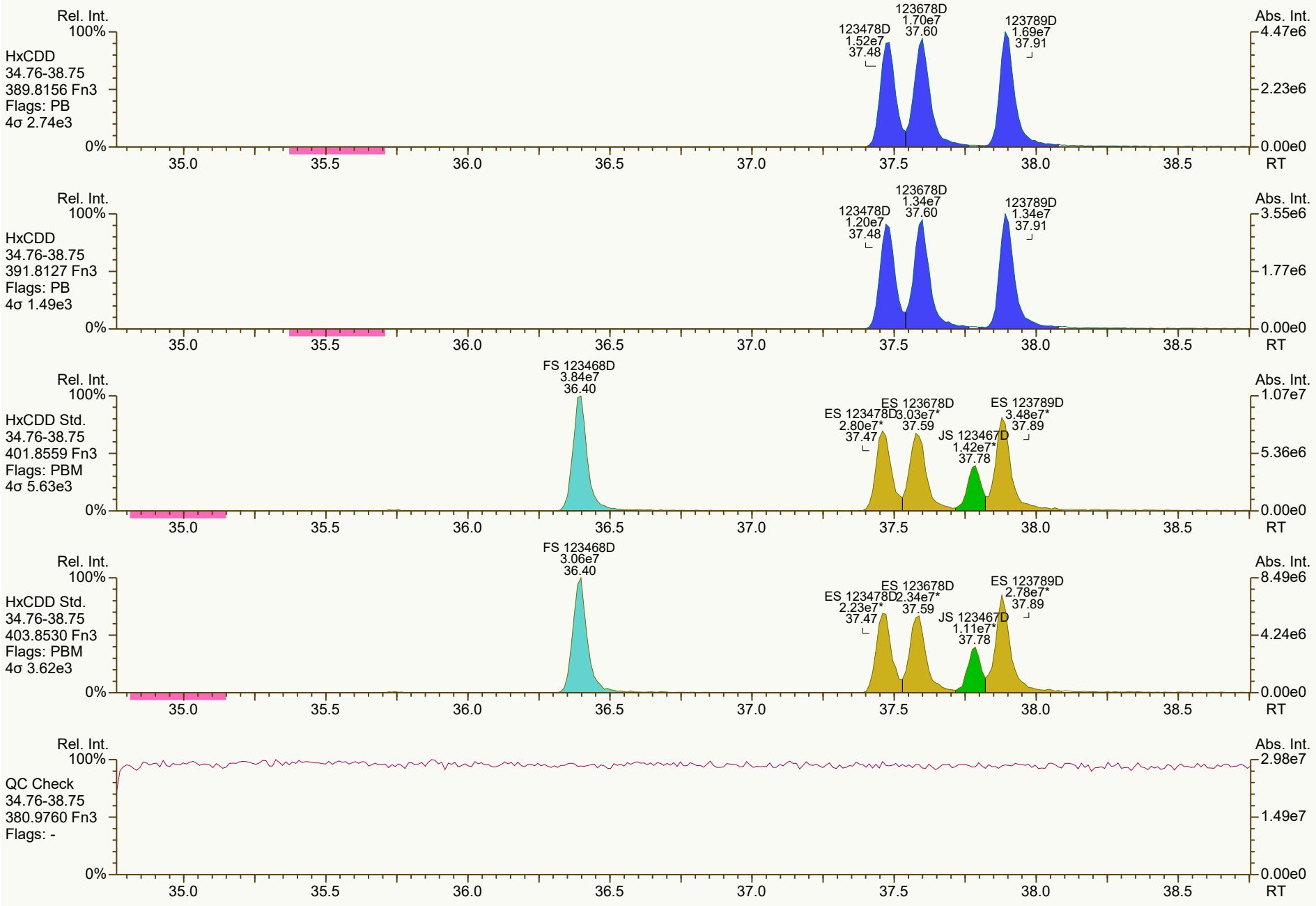
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65	-	0.89	Y	99.3	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	85	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	100	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.30	1.05	-	1.43	Y	109	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	110	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88	-	1.20	Y	97.9	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	143	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	97.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	95.9	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	93.1	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	114	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	122	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	117	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	109	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	115	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	106	77	-	129	Y
13C-OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	154	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						8.88	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	84.3	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.59	1.32	-	1.78	Y	98.3	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	121	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	115	70	-	130	Y

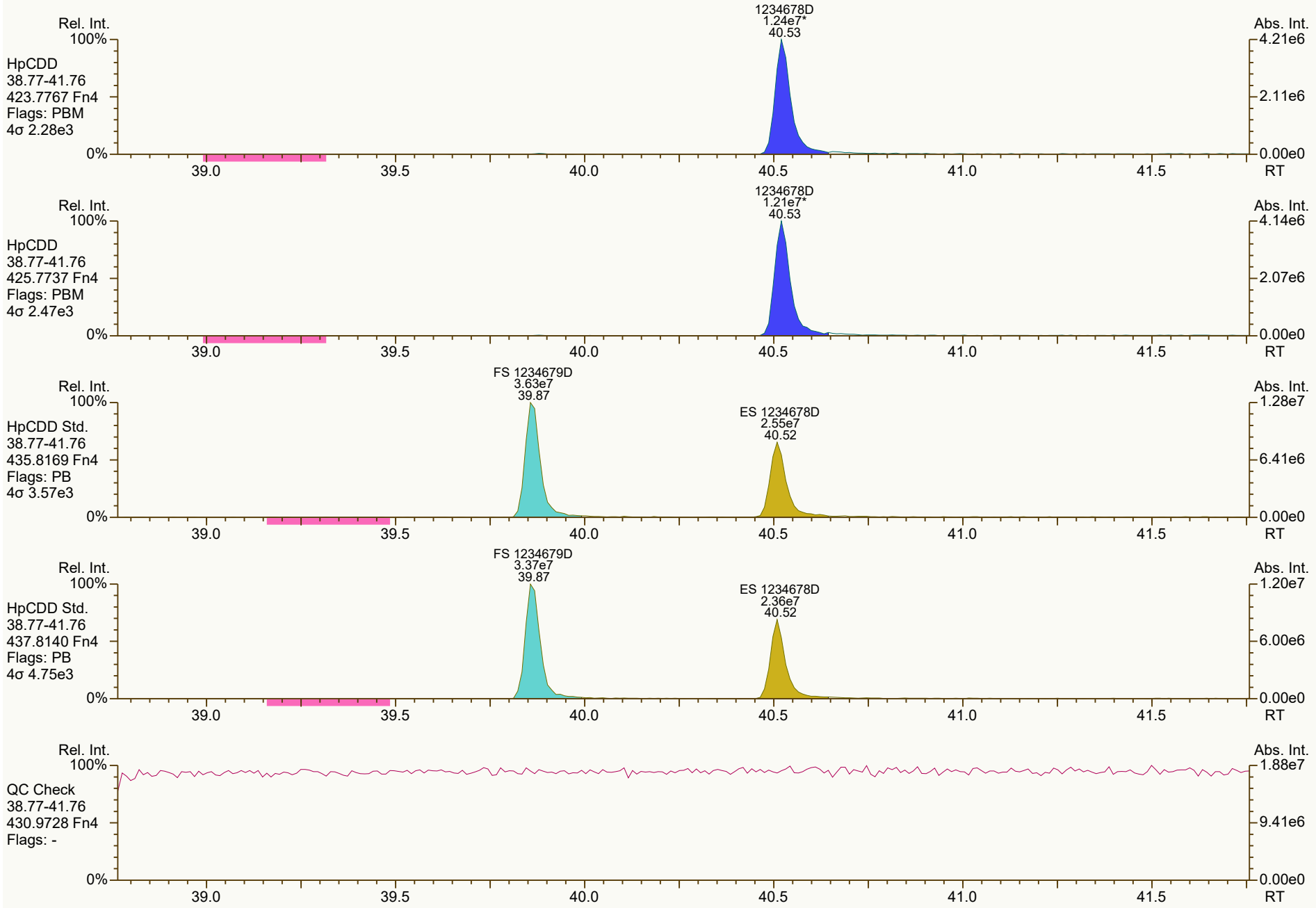
Processed: 16 Dec 2021 11:08 Analyst: pw

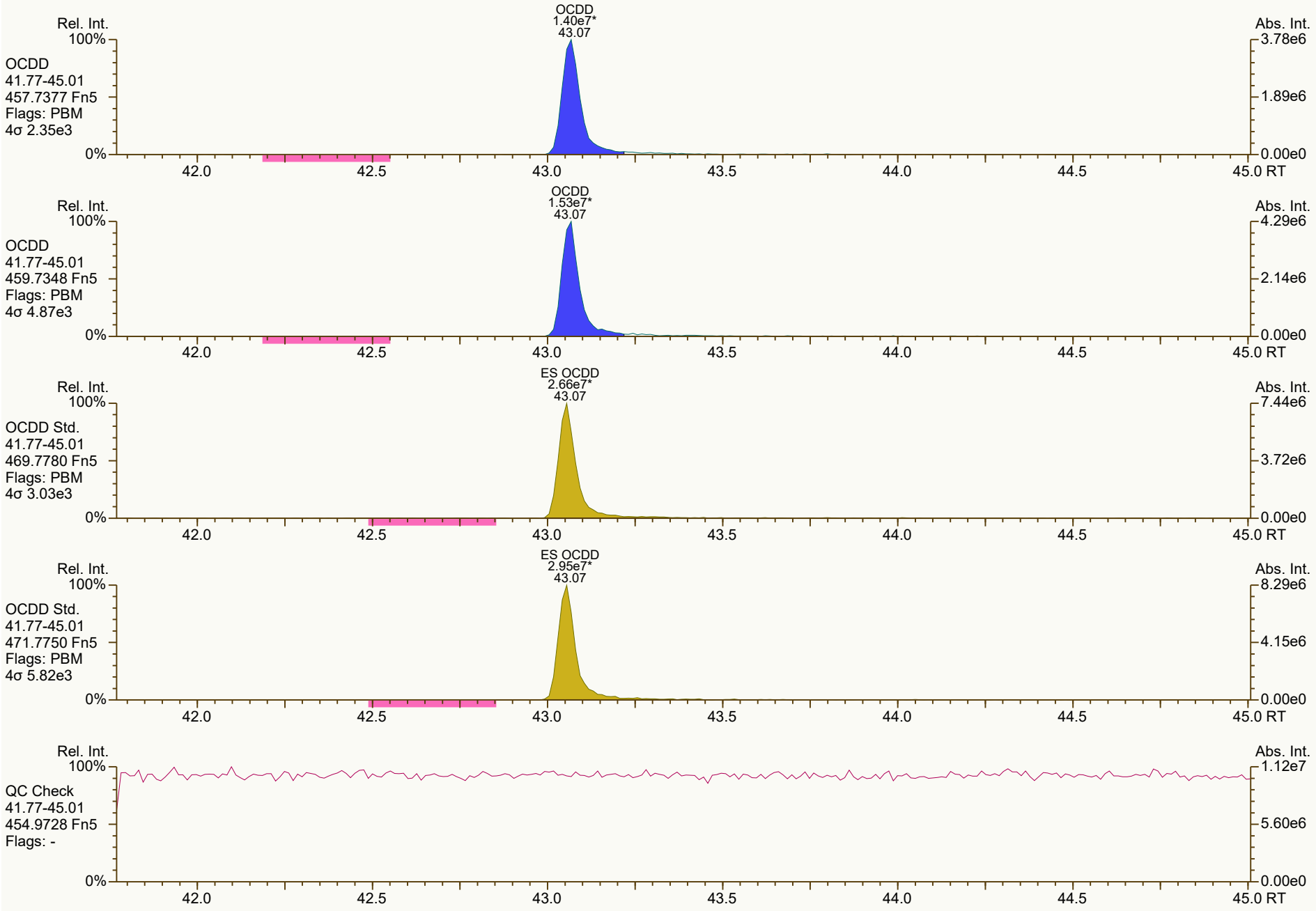

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
7.15e6
3.57e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.26e6
3.13e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.98e7
1.49e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.88e7
9.41e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.12e7
5.60e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PB
4σ 3.31e3
0%
2378D
4.04e6
28.27
Abs. Int.
9.55e5
4.78e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PB
4σ 3.45e3
0%
RRF(2378D) = (4.04e6 + 4.89e6) * 100pg / (3.46e7 + 4.25e7) * 10pg = 1.16
PSW 16-Dec-2021 10:58
VERIFIED
2378D
4.89e6
28.26
Abs. Int.
1.09e6
5.47e5
0.00e0
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.82e3
0%
CS 37Cl-2378D
8.74e6
28.27
Abs. Int.
1.86e6
9.30e5
0.00e0
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.46e4
0%
AS 1368D
3.51e7
24.58
TS 1378D
4.65e7
26.59
JS 1234D
3.37e7
27.59
ES 2378D
3.46e7
28.24
FS 1278D
3.67e7
28.57
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 5.15e3
0%
AS 1368D
4.44e7
24.58
TS 1378D
5.93e7
26.59
JS 1234D
4.14e7
27.59
ES 2378D
4.25e7
28.24
FS 1278D
4.74e7
28.57
Abs. Int.
1.26e7
6.31e6
0.00e0


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PB
4σ 3.55e3
0%
12378D
2.02e7
33.61
Abs. Int.
5.10e6
2.55e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 2.39e3
0%
12378D
1.29e7
33.61
Abs. Int.
3.34e6
1.67e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 4.78e3
0%
FS 12478D
4.53e7*
32.36
CS 12347D
3.52e7
33.09
ES 12378D
4.04e7
33.59
Abs. Int.
1.21e7
6.05e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 7.26e3
0%
FS 12478D
2.78e7*
32.36
CS 12347D
2.13e7
33.09
ES 12378D
2.57e7
33.59
Abs. Int.
7.58e6
3.79e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.26e6
3.13e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 2.74e3
123478D
1.52e7
37.48
123678D
1.70e7
37.60
123789D
1.69e7
37.91
Abs. Int.
4.47e6
2.23e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 1.49e3
123478D
1.20e7
37.48
123678D
1.34e7
37.60
123789D
1.34e7
37.91
Abs. Int.
3.55e6
1.77e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 5.63e3
FS 123468D
3.84e7
36.40
ES 123478D
2.80e7*
37.47
ES 123678D
3.03e7*
37.59
JS 123467D
1.42e7*
37.78
ES 123789D
3.48e7*
37.89
Abs. Int.
1.07e7
5.36e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 3.62e3
FS 123468D
3.06e7
36.40
ES 123478D
2.23e7*
37.47
ES 123678D
2.34e7*
37.59
JS 123467D
1.11e7*
37.78
ES 123789D
2.78e7*
37.89
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
Abs. Int.
2.98e7
1.49e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 2.28e3
1234678D
1.24e7*
40.53
Abs. Int.
4.21e6
2.11e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 2.47e3
1234678D
1.21e7*
40.53
Abs. Int.
4.14e6
2.07e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 3.57e3
FS 1234679D
3.63e7
39.87
ES 1234678D
2.55e7
40.52
Abs. Int.
1.28e7
6.41e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.75e3
FS 1234679D
3.37e7
39.87
ES 1234678D
2.36e7
40.52
Abs. Int.
1.20e7
6.00e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.88e7
9.41e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

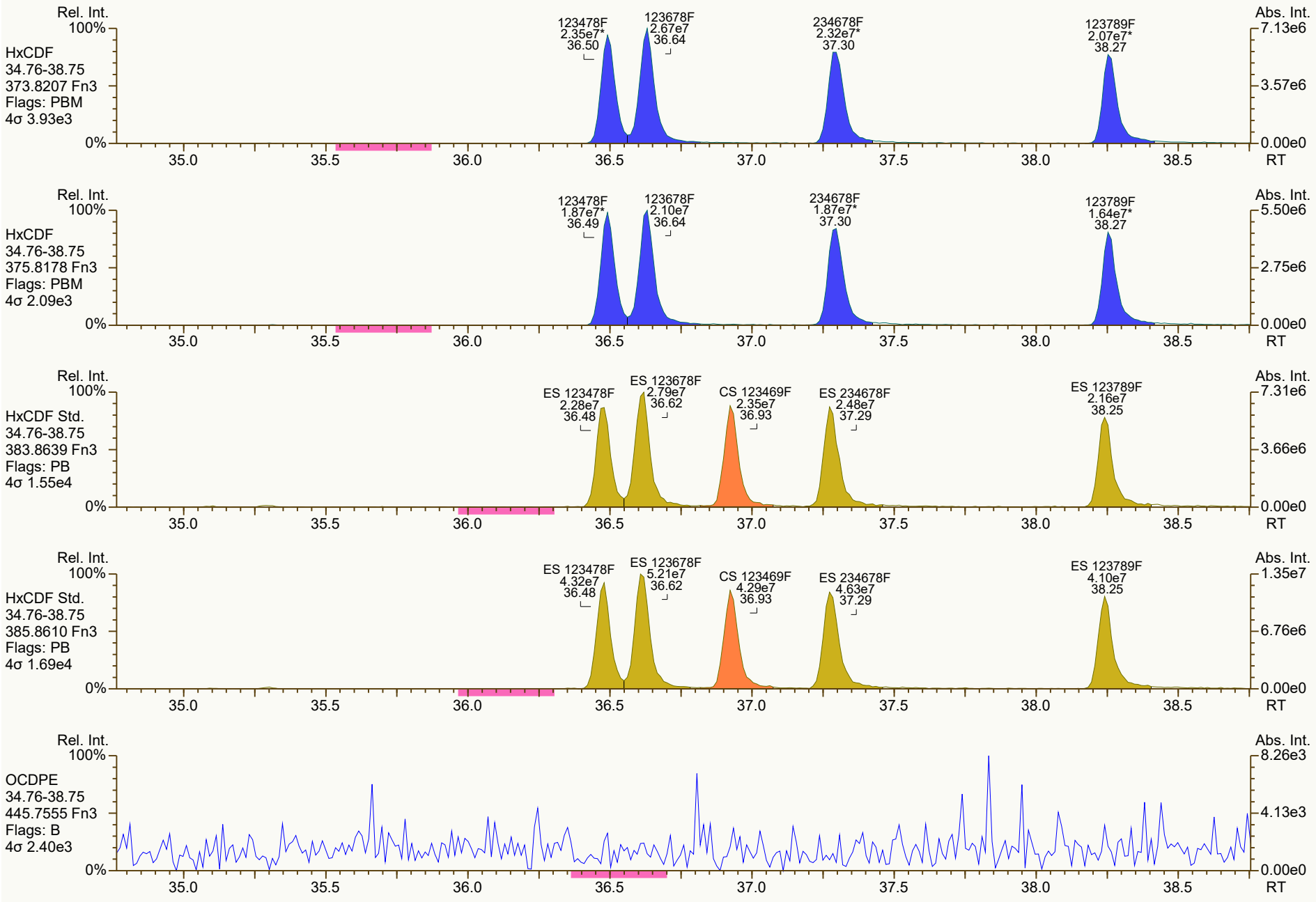

OCDD
1.40e7*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 2.35e3
0%
Abs. Int.
3.78e6
1.89e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.53e7*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 4.87e3
0%
Abs. Int.
4.29e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.66e7*
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 3.03e3
0%
Abs. Int.
7.44e6
3.72e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.95e7*
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 5.82e3
0%
Abs. Int.
8.29e6
4.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.12e7
5.60e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 3.27e3
0%
2378F
5.53e6
27.41
Abs. Int.
1.16e6
5.79e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 2.55e3
0%
2378F
6.88e6
27.41
Abs. Int.
1.44e6
7.21e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PBM
4σ 2.43e4
0%
AS 1368F
5.68e7
22.44
JS 1234F
4.81e7
26.02
ES 2378F
5.18e7*
27.38
Abs. Int.
1.06e7
5.29e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PBM
4σ 1.68e4
0%
AS 1368F
7.07e7
22.44
JS 1234F
6.22e7
26.02
ES 2378F
6.47e7*
27.38
Abs. Int.
1.37e7
6.86e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.20e3
0%
Abs. Int.
1.10e4
5.52e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

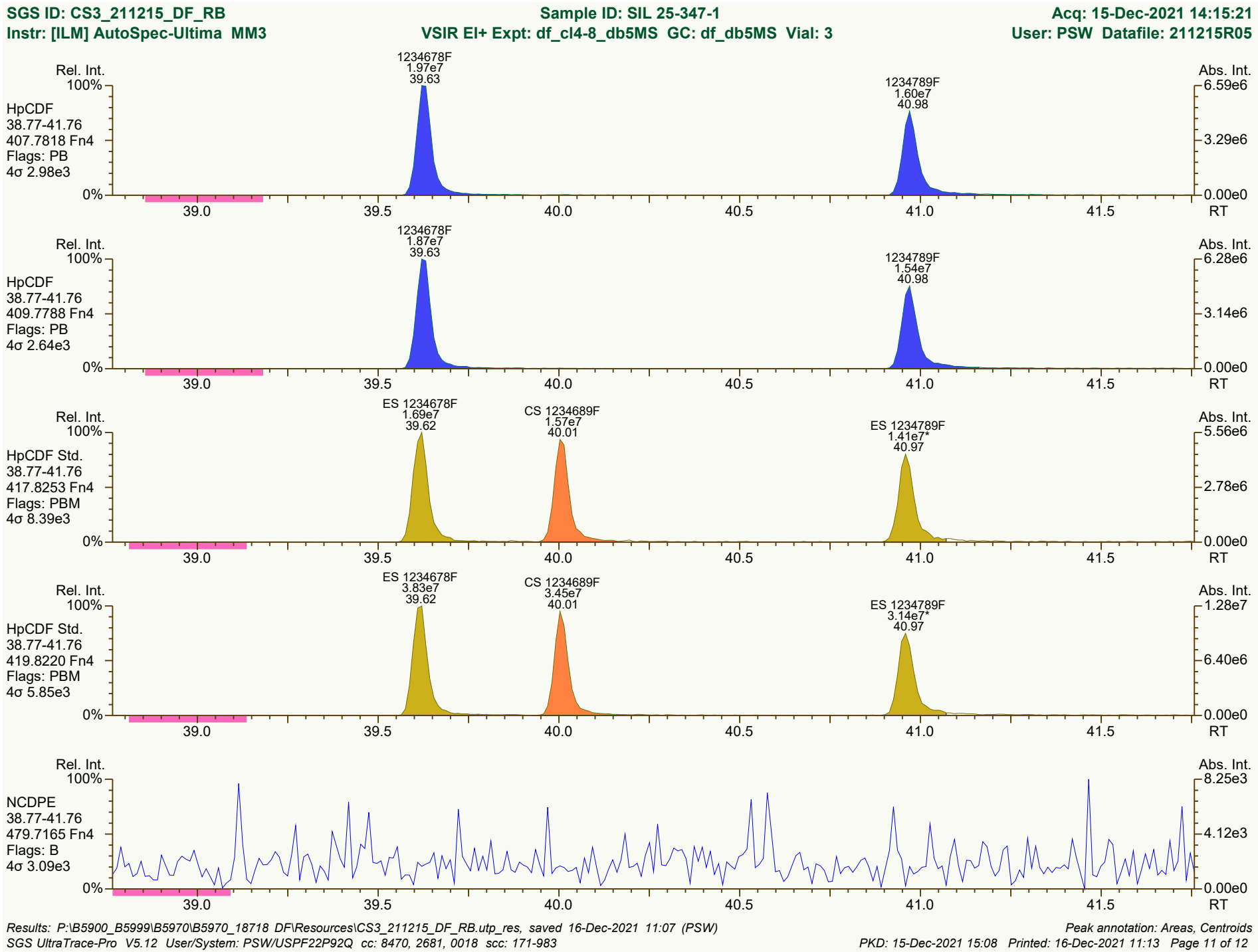

Rel. Int.
100%
0%
Abs. Int.
8.52e3
4.26e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 3.20e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
3.68e4
1.84e4
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.03e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
7.15e6
3.57e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 2.36e3
0%
12378F
3.08e7
32.16
23478F
3.03e7
33.27
Abs. Int.
7.90e6
3.95e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 2.51e3
0%
12378F
1.97e7
32.16
23478F
1.93e7
33.27
Abs. Int.
5.09e6
2.54e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 4.03e3
0%
CS 12346F
5.77e7
31.62
ES 12378F
6.07e7*
32.15
ES 23478F
5.82e7
33.25
Abs. Int.
1.55e7
7.76e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 8.91e3
0%
CS 12346F
3.64e7
31.62
ES 12378F
3.79e7*
32.15
ES 23478F
3.65e7
33.26
Abs. Int.
9.81e6
4.90e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.14e3
0%
Abs. Int.
9.78e3
4.89e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

SGS ID: CS3_211215_DF_RB
Sample ID: SIL 25-347-1
Acq: 15-Dec-2021 14:15:21
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211215R05



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\CS3_211215_DF_RB.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6697, 7628, 3470 scc: 171-983
PKD: 15-Dec-2021 15:08 Printed: 16-Dec-2021 11:13 Page 10 of 12


SGS ID: CS3_211215_DF_RB
Sample ID: SIL 25-347-1
Acq: 15-Dec-2021 14:15:21
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211215R05
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 2.98e3
1234678F
1.97e7
39.63
1234789F
1.60e7
40.98
6.59e6
3.29e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 2.64e3
1234678F
1.87e7
39.63
1234789F
1.54e7
40.98
6.28e6
3.14e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 8.39e3
ES 1234678F
1.69e7
39.62
CS 1234689F
1.57e7
40.01
ES 1234789F
1.41e7*
40.97
5.56e6
2.78e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 5.85e3
ES 1234678F
3.83e7
39.62
CS 1234689F
3.45e7
40.01
ES 1234789F
3.14e7*
40.97
1.28e7
6.40e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.09e3
8.25e3
4.12e3
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\CS3_211215_DF_RB.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8470, 2681, 0018 scc: 171-983
PKD: 15-Dec-2021 15:08 Printed: 16-Dec-2021 11:13 Page 11 of 12


OCDF
1.80e7
43.26
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 2.98e3
0%
Abs. Int.
5.01e6
2.50e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.93e7
43.26
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.70e3
5.09e6
2.54e6
ES OCDF
3.43e7*
43.25
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PBM
4σ 4.15e3
9.06e6
4.53e6
ES OCDF
3.79e7*
43.25
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PBM
4σ 4.34e3
1.01e7
5.06e6
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.02e3
1.04e4
5.18e3

Dioxin/Furan QC Summary	Acq'd: 15 Dec 2021 23:57 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211215_DF_RC	UTP: 16-Dec-2021 11:07:12 PSW	Checkcode: 305-552-YHW
Sample ID: SIL 25-347-1	Report: 16 Dec 2021 11:08 pw	Datafile: 211215R17

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.25	8.48E+06	0.79	Y	1.34	1.11	-17%
12378-PeCDD	33.59	3.37E+07	1.57	Y	1.06	1.01	-5%
123478-HxCDD	37.47	3.05E+07	1.26	Y	1.06	1.08	3%
123678-HxCDD	37.59	3.42E+07	1.25	Y	1.08	1.12	3%
123789-HxCDD	37.89	3.46E+07	1.26	Y	1.02	1.01	-1%
1234678-HpCDD	40.52	2.93E+07	1.05	Y	0.97	1.03	5%
OCDD	43.07	3.73E+07	0.90	Y	1.07	1.06	-1%
2378-TCDF	27.39	1.21E+07	0.80	Y	0.96	1.07	11%
12378-PeCDF	32.15	5.00E+07	1.55	Y	0.95	1.01	7%
23478-PeCDF	33.26	4.98E+07	1.58	Y	0.94	1.02	8%
123478-HxCDF	36.48	4.56E+07	1.21	Y	1.23	1.26	2%
123678-HxCDF	36.63	5.14E+07	1.26	Y	1.13	1.18	4%
234678-HxCDF	37.29	4.70E+07	1.27	Y	1.15	1.22	6%
123789-HxCDF	38.26	4.34E+07	1.26	Y	1.14	1.20	6%
1234678-HpCDF	39.62	4.35E+07	1.05	Y	1.36	1.38	2%
1234789-HpCDF	40.97	3.70E+07	1.04	Y	1.30	1.37	5%
OCDF	43.25	4.66E+07	0.91	Y	1.03	1.05	3%
ES 2378-TCDD	28.23	7.61E+07	0.79	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.574	6.65E+07	1.53	Y	1.03	0.90	-13%
ES 123478-HxCDD	37.453	5.64E+07	1.31	Y	0.99	0.92	-7%
ES 123678-HxCDD	37.573	6.13E+07	1.25	Y	0.97	1.01	3%
ES 123789-HxCDD	37.881	6.88E+07	1.25	Y	1.12	1.13	0%
ES 1234678-HpCDD	40.507	5.71E+07	1.06	Y	0.99	0.94	-6%
ES OCDD	43.065	7.03E+07	0.88	Y	0.78	0.58	-26%
ES 2378-TCDF	27.369	1.14E+08	0.79	Y	1.08	1.09	1%
ES 12378-PeCDF	32.131	9.85E+07	1.57	Y	0.93	0.95	1%
ES 23478-PeCDF	33.243	9.78E+07	1.59	Y	0.92	0.94	2%
ES 123478-HxCDF	36.468	7.24E+07	0.54	Y	1.14	1.19	4%
ES 123678-HxCDF	36.609	8.72E+07	0.52	Y	1.30	1.43	10%
ES 234678-HxCDF	37.274	7.69E+07	0.53	Y	1.20	1.26	5%
ES 123789-HxCDF	38.24	7.21E+07	0.53	Y	1.14	1.18	4%
ES 1234678-HpCDF	39.612	6.28E+07	0.46	Y	0.95	1.03	8%
ES 1234789-HpCDF	40.96	5.42E+07	0.44	Y	0.85	0.89	5%
ES OCDF	43.244	8.84E+07	0.90	Y	0.93	0.73	-22%

Dioxin/Furan QC Summary	Acq'd: 15 Dec 2021 23:57 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211215_DF_RC	UTP: 16-Dec-2021 11:07:12 PSW	Checkcode: 305-552-YHW
Sample ID: SIL 25-347-1	Report: 16 Dec 2021 11:08 pw	Datafile: 211215R17

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.57	7.41E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.00	1.04E+08	0.78	Y	-	-	-
JS 123467-HxCDD	37.77	3.05E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	28.25	8.22E+06	n/a	-	1.31	1.11	-15%
CS 12347-PeCDD	33.08	5.84E+07	1.65	Y	0.89	0.79	-12%
CS 12346-PeCDF	31.60	9.14E+07	1.59	Y	0.87	0.88	1%
CS 123469-HxCDF	36.92	7.21E+07	0.53	Y	1.09	1.18	9%
CS 1234689-HpCDF	40.00	5.76E+07	0.47	Y	0.86	0.95	9%
~~SS 37Cl-2378-TCDD~~	~~28.25~~	~~8.22E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.08~~	~~-14%~~
~~SS 12347-PeCDD~~	~~33.08~~	~~5.84E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~0.88~~	~~2%~~
~~SS 12346-PeCDF~~	~~31.60~~	~~9.14E+07~~	~~1.59~~	~~Y~~	~~0.93~~	~~0.93~~	~~0%~~
~~SS 123469-HxCDF~~	~~36.92~~	~~7.21E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~0.83~~	~~-2%~~
~~SS 1234689-HpCDF~~	~~40.00~~	~~5.76E+07~~	~~0.47~~	~~Y~~	~~0.91~~	~~0.92~~	~~1%~~
Not used in this project.							
CL 20Dec21							
~~OCDD-a~~	~~43.06~~	~~2.27E+06~~	~~2.80~~	~~Y~~	~~0.07~~	~~0.06~~	~~-2%~~
~~OCDF-a~~	~~43.25~~	~~2.52E+06~~	~~2.23~~	~~Y~~	~~0.06~~	~~0.06~~	~~-4%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211215R17 Analysis Date: 15-DEC-2021 23:57:52

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	8.29	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32 - 1.78	Y	47.7	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	51.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	51.6	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	49.5	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88 - 1.20	Y	52.6	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	99.1	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	11.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	53.6	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	54.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.21	1.05 - 1.43	Y	51	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	52.1	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	53.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	53.1	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	50.9	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	52.5	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 16 Dec 2021 11:08 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

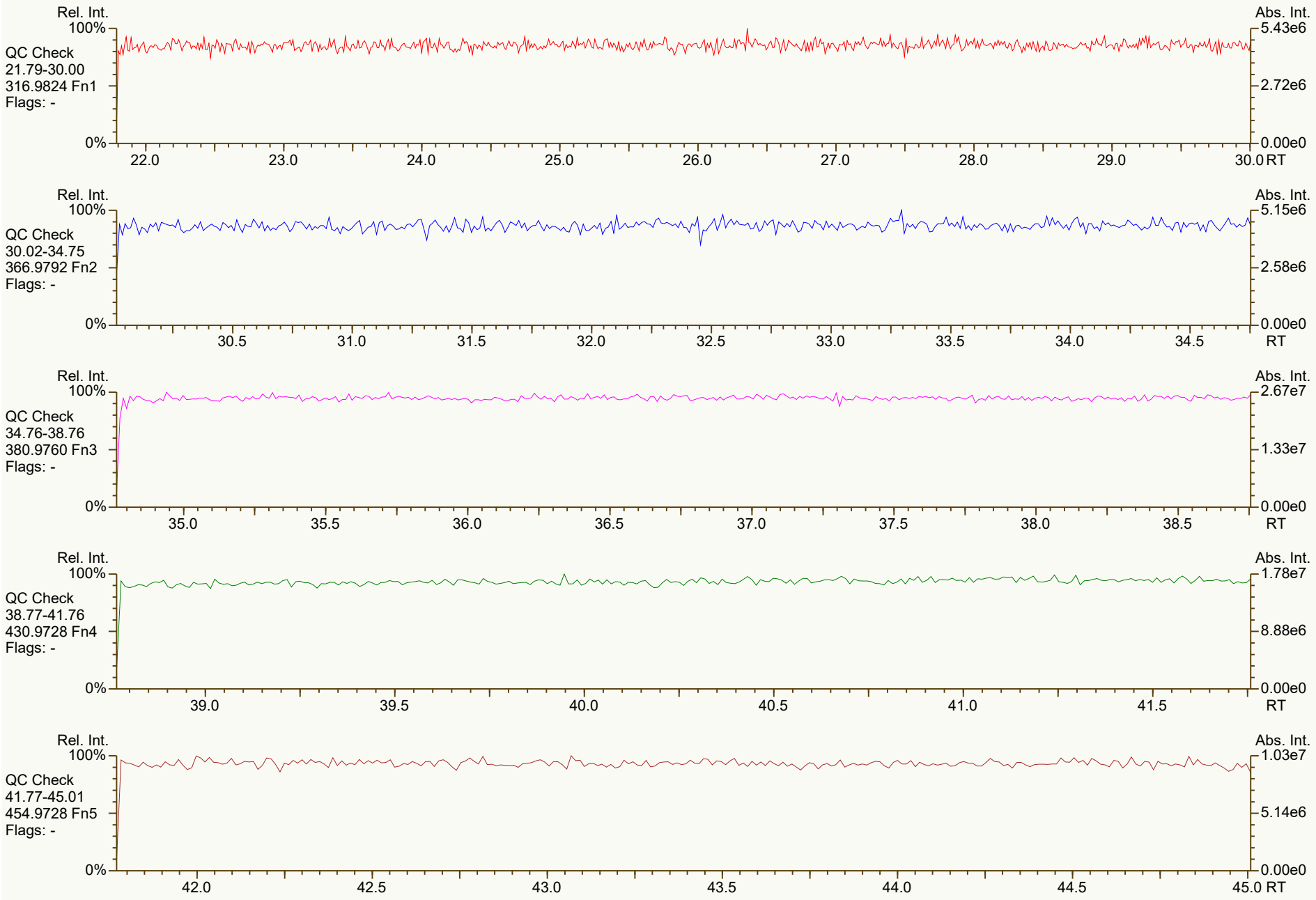
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211215R17 Analysis Date: 15-DEC-2021 23:57:52

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	99.2	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32	-	1.78	Y	86.8	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	93	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	103	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	100	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	94.5	72	-	138	Y
13C-OCDD	M+2/M+4	0.88	0.76	-	1.02	Y	148	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.79	0.65	-	0.89	Y	101	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	101	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32	-	1.78	Y	102	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	110	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	105	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	104	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	108	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	105	77	-	129	Y
13C-OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	157	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						8.47	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.2	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.59	1.32	-	1.78	Y	101	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	109	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	109	70	-	130	Y

Processed: 16 Dec 2021 11:08 Analyst: pw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316.9824 Fn1
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0%
Abs. Int.
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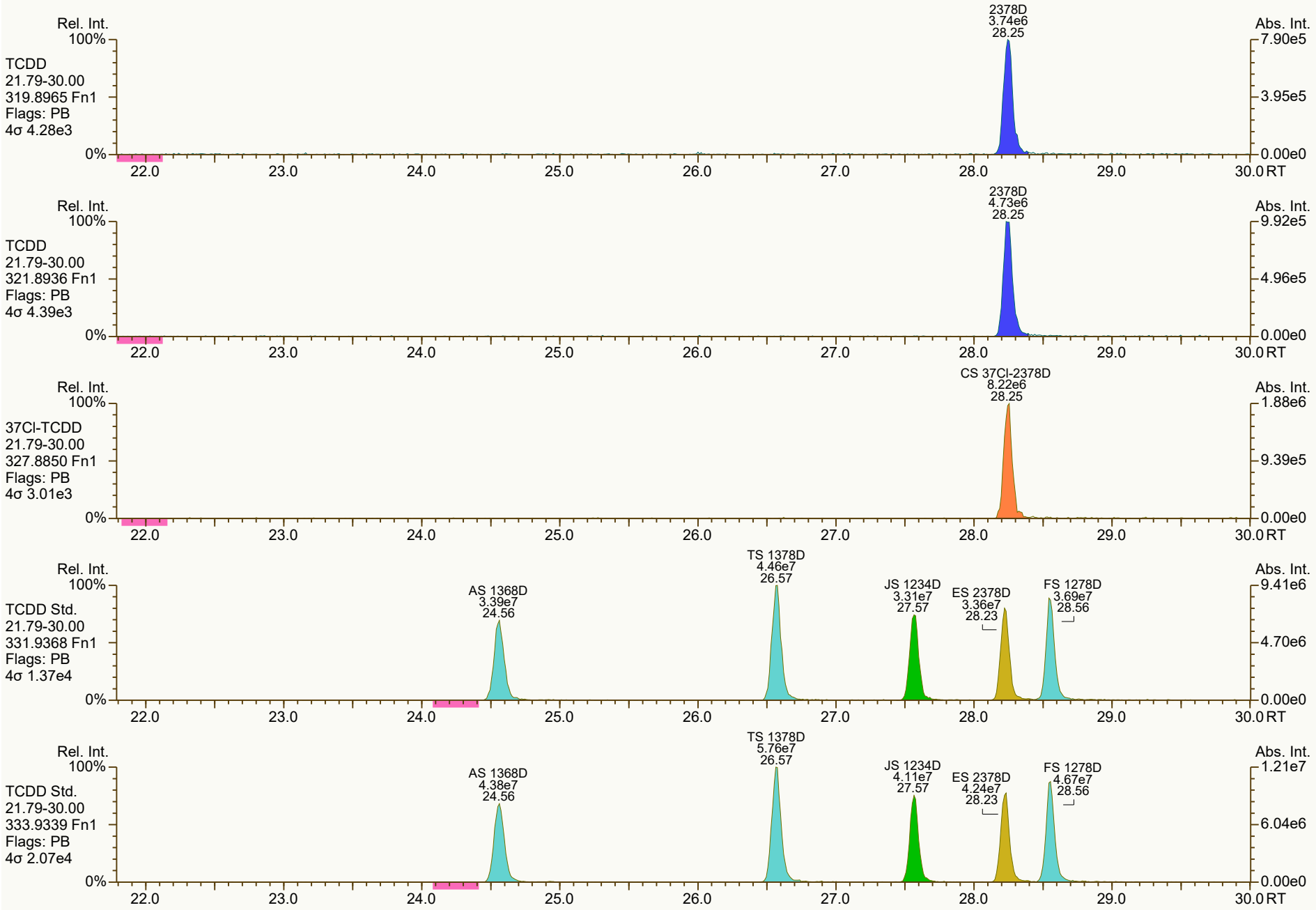
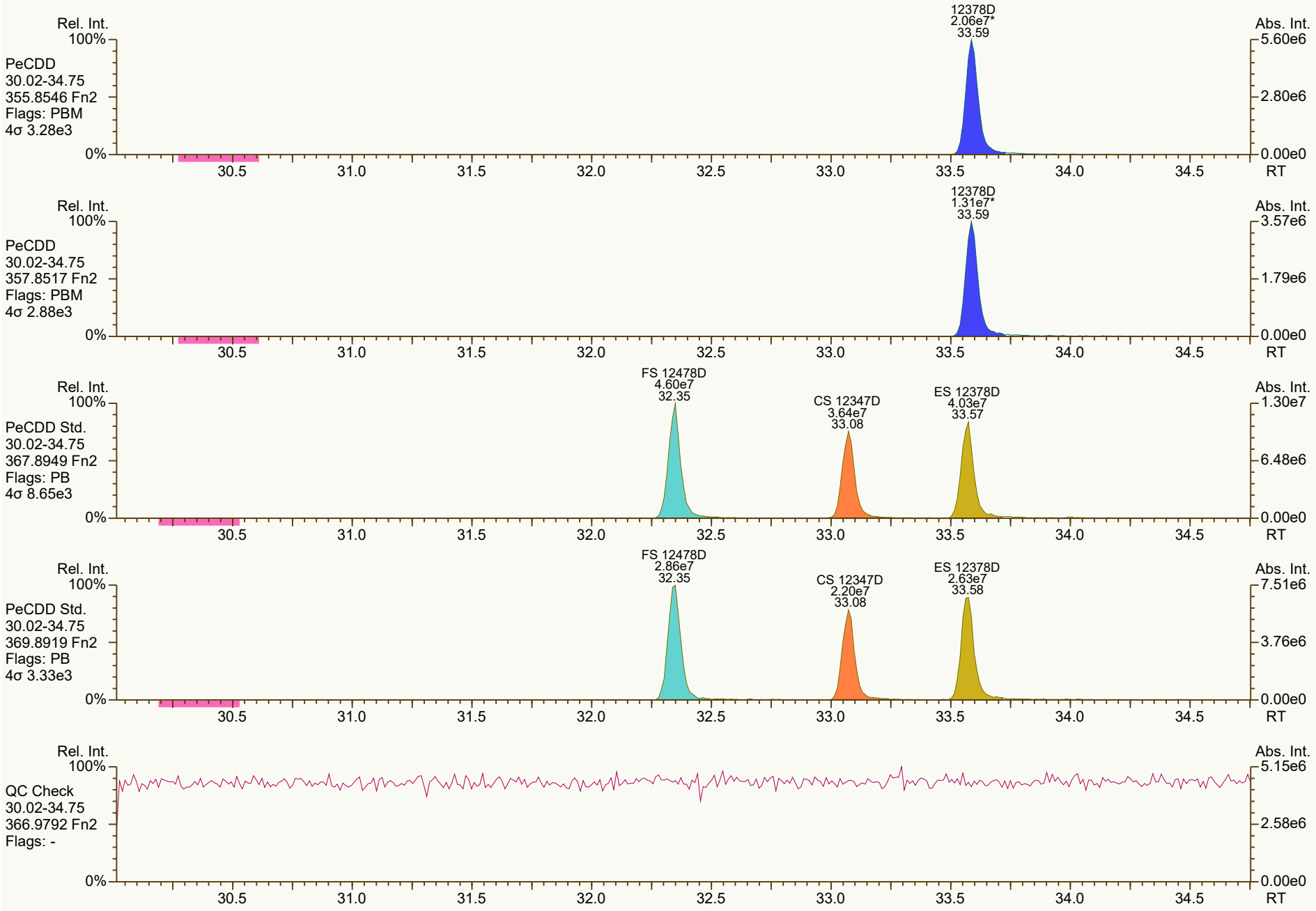
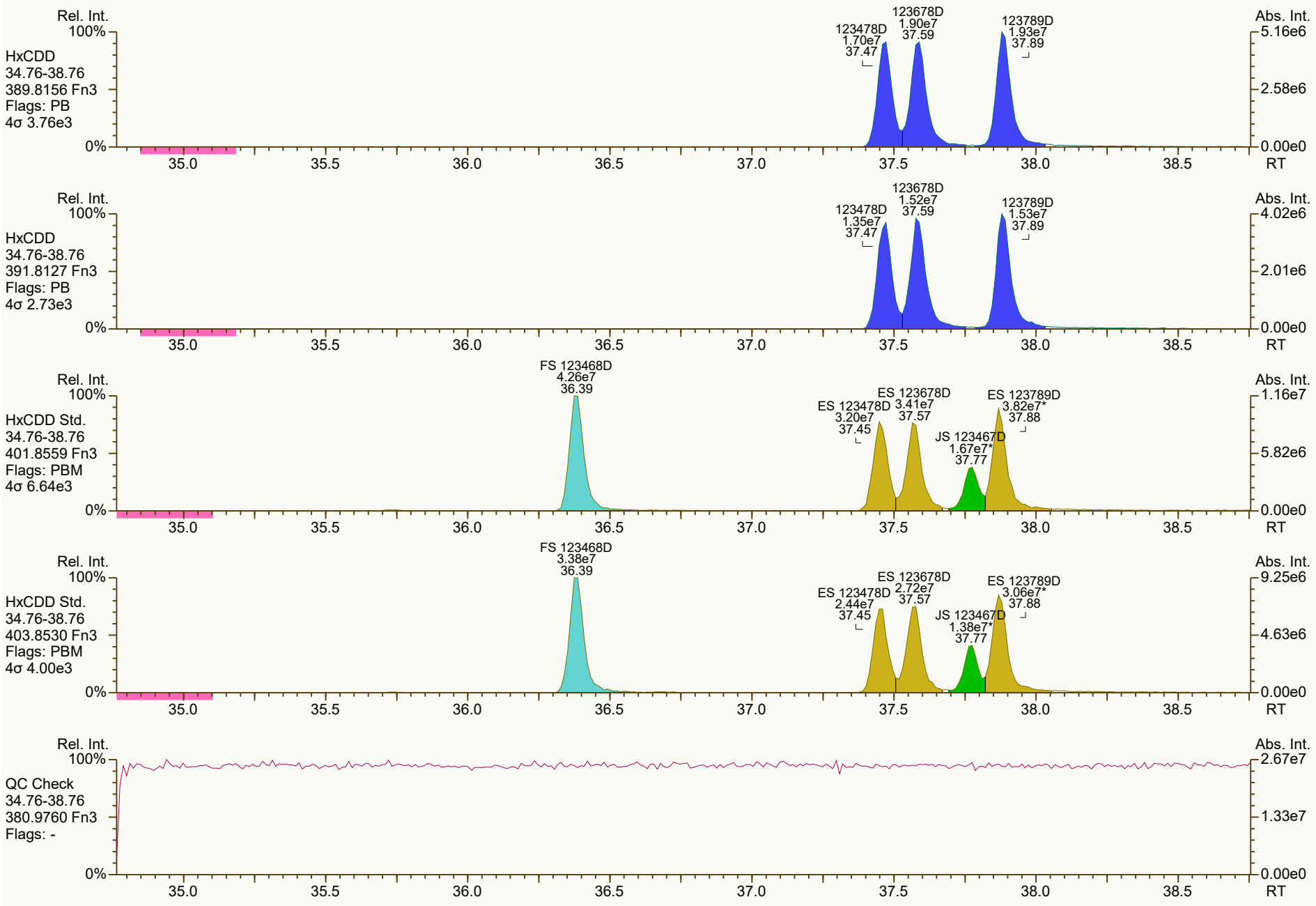
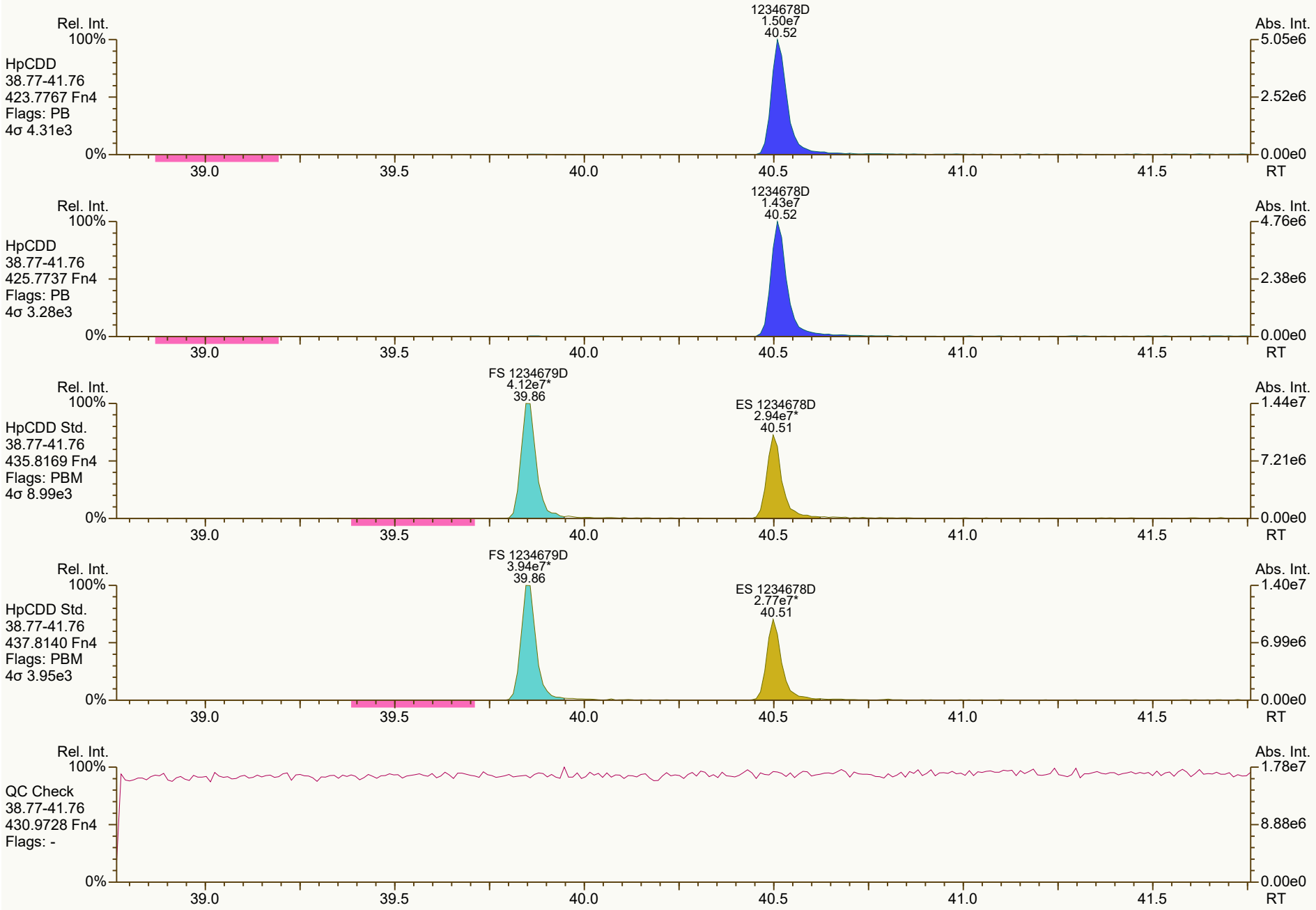
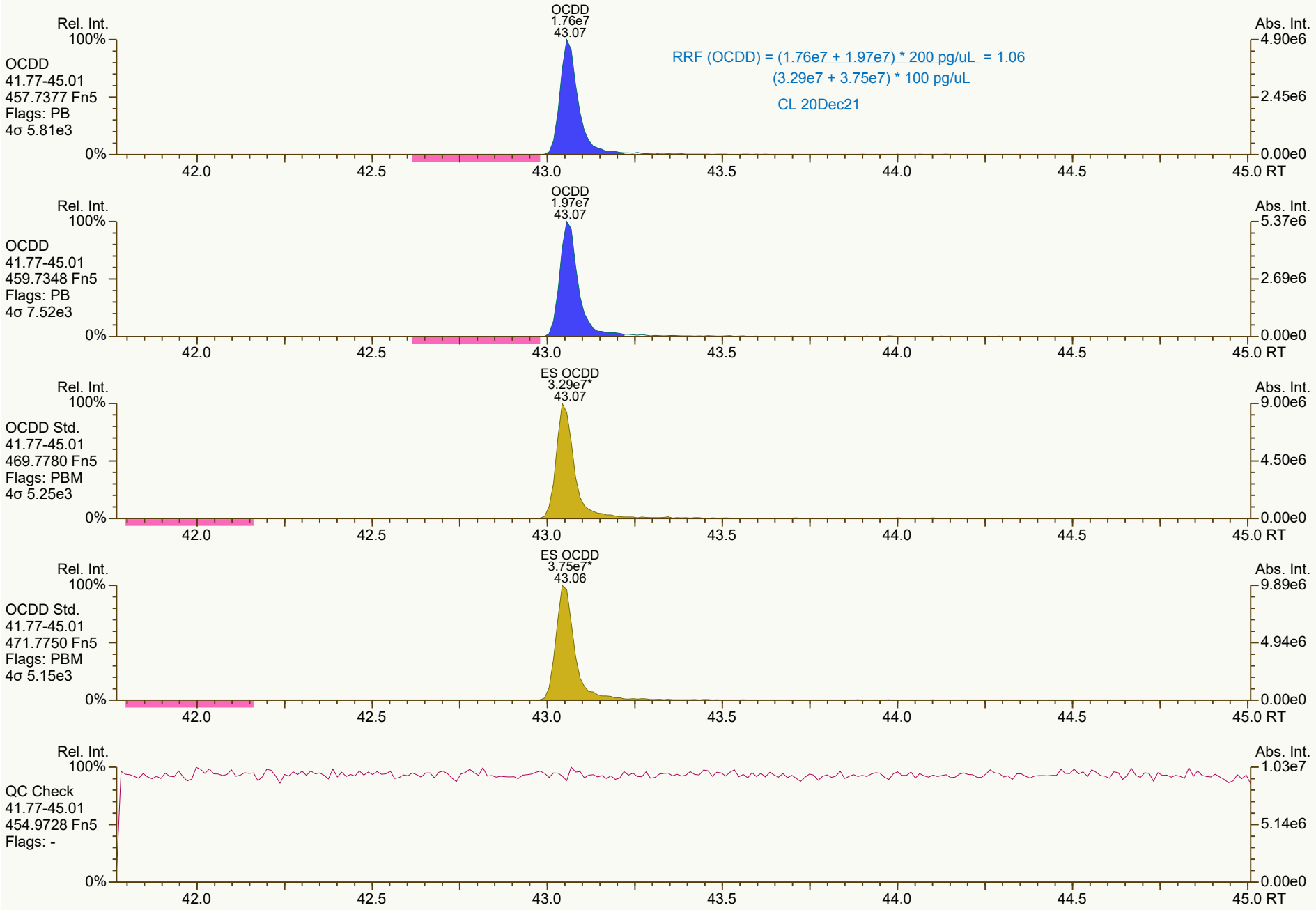
2.72e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.15e6
2.58e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.67e7
1.33e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.78e7
8.88e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.03e7
5.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

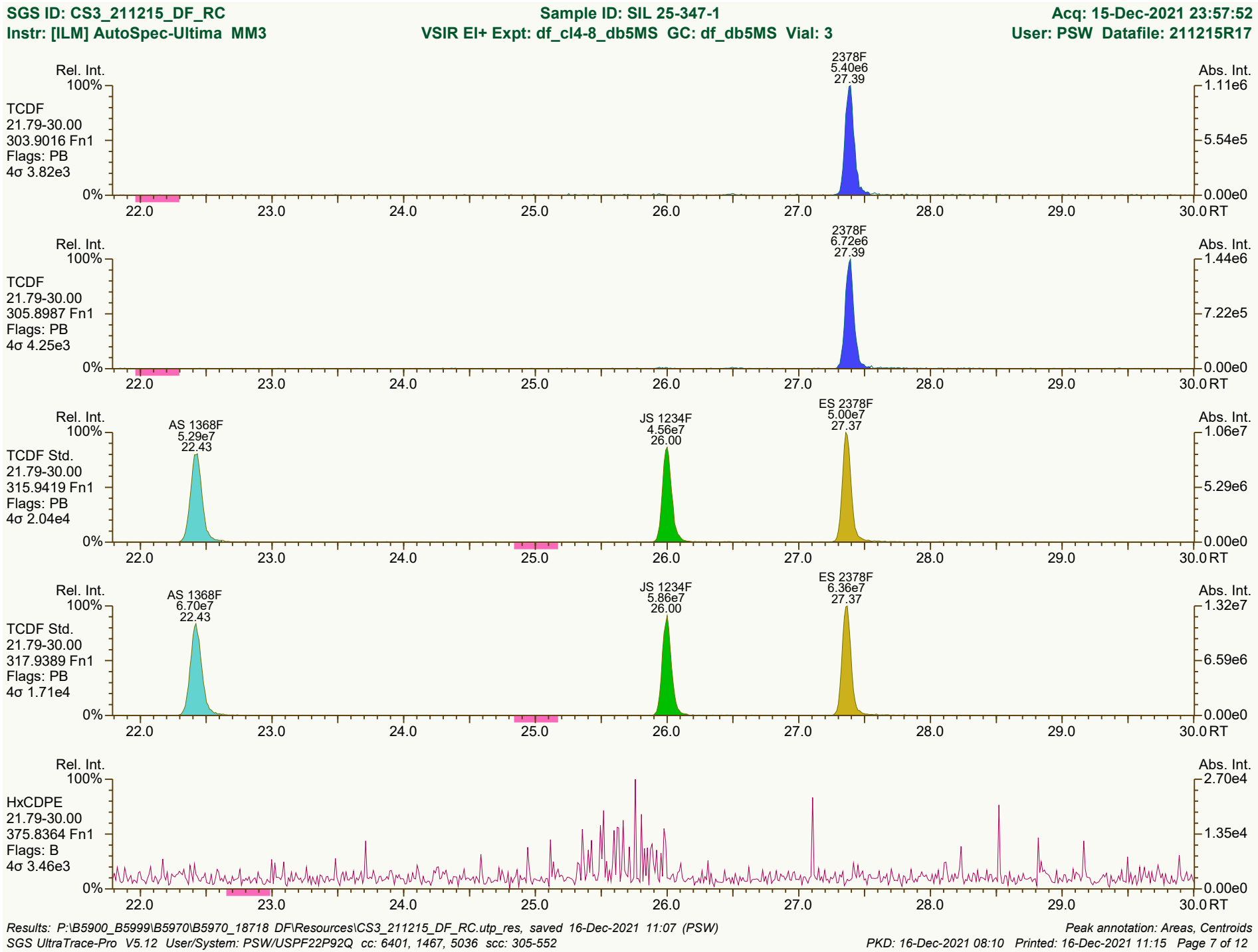

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PB
4σ 4.28e3
0%
2378D
3.74e6
28.25
Abs. Int.
7.90e5
3.95e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PB
4σ 4.39e3
0%
2378D
4.73e6
28.25
Abs. Int.
9.92e5
4.96e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.01e3
0%
CS 37Cl-2378D
8.22e6
28.25
Abs. Int.
1.88e6
9.39e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.37e4
0%
AS 1368D
3.39e7
24.56
TS 1378D
4.46e7
26.57
JS 1234D
3.31e7
27.57
ES 2378D
3.36e7
28.23
FS 1278D
3.69e7
28.56
Abs. Int.
9.41e6
4.70e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 2.07e4
0%
AS 1368D
4.38e7
24.56
TS 1378D
5.76e7
26.57
JS 1234D
4.11e7
27.57
ES 2378D
4.24e7
28.23
FS 1278D
4.67e7
28.56
Abs. Int.
1.21e7
6.04e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 3.28e3
12378D
2.06e7*
33.59
Abs. Int.
5.60e6
2.80e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 2.88e3
12378D
1.31e7*
33.59
Abs. Int.
3.57e6
1.79e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 8.65e3
FS 12478D
4.60e7
32.35
CS 12347D
3.64e7
33.08
ES 12378D
4.03e7
33.57
Abs. Int.
1.30e7
6.48e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 3.33e3
FS 12478D
2.86e7
32.35
CS 12347D
2.20e7
33.08
ES 12378D
2.63e7
33.58
Abs. Int.
7.51e6
3.76e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
5.15e6
2.58e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

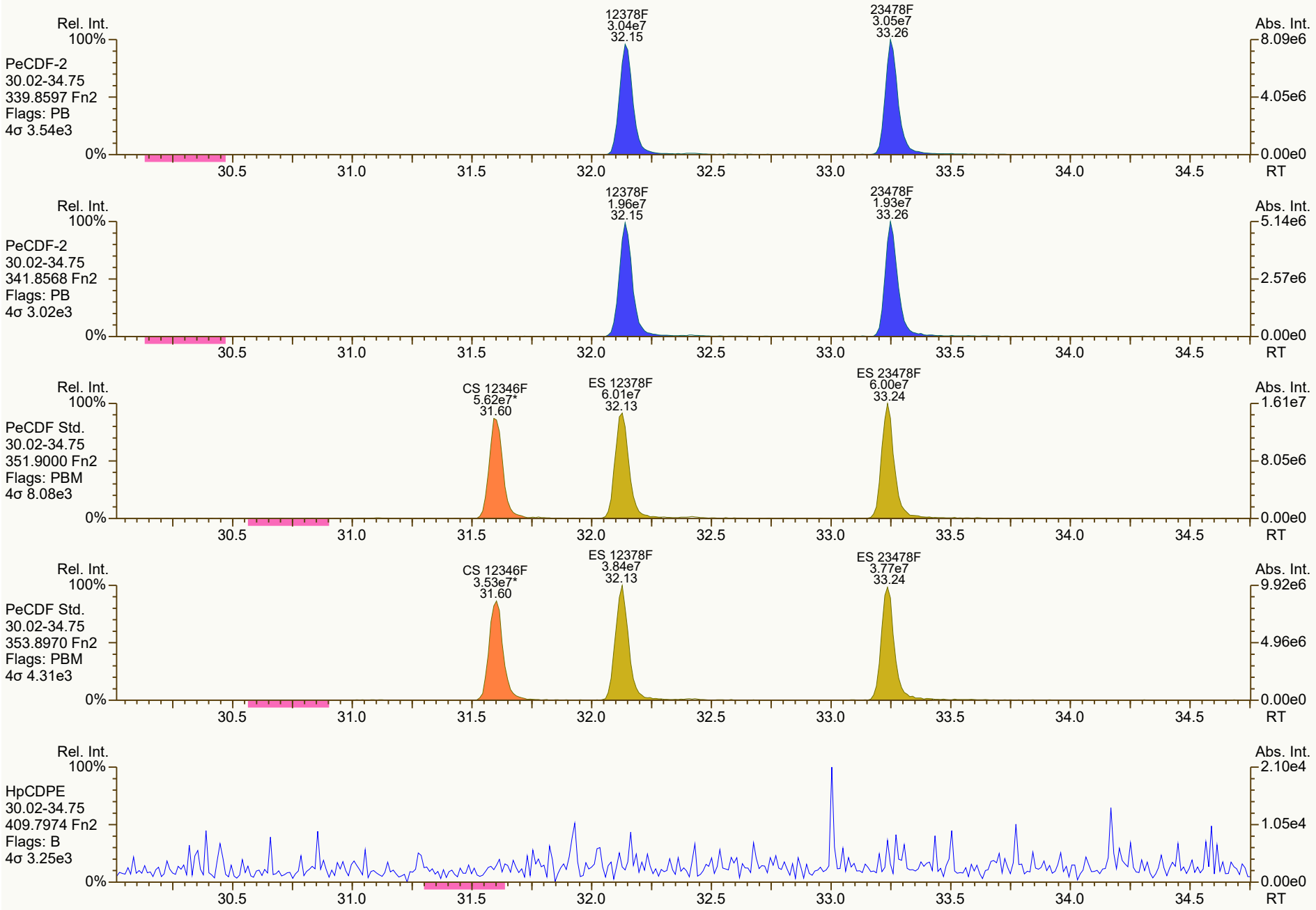

Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PB
4σ 3.76e3
123478D 1.70e7 37.47
123678D 1.90e7 37.59
123789D 1.93e7 37.89
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PB
4σ 2.73e3
123478D 1.35e7 37.47
123678D 1.52e7 37.59
123789D 1.53e7 37.89
Abs. Int.
4.02e6
2.01e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 6.64e3
FS 123468D 4.26e7 36.39
ES 123478D 3.20e7 37.45
ES 123678D 3.41e7 37.57
JS 123467D 1.67e7* 37.77
ES 123789D 3.82e7* 37.88
Abs. Int.
1.16e7
5.82e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 4.00e3
FS 123468D 3.38e7 36.39
ES 123478D 2.44e7 37.45
ES 123678D 2.72e7 37.57
JS 123467D 1.38e7* 37.77
ES 123789D 3.06e7* 37.88
Abs. Int.
9.25e6
4.63e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
Abs. Int.
2.67e7
1.33e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

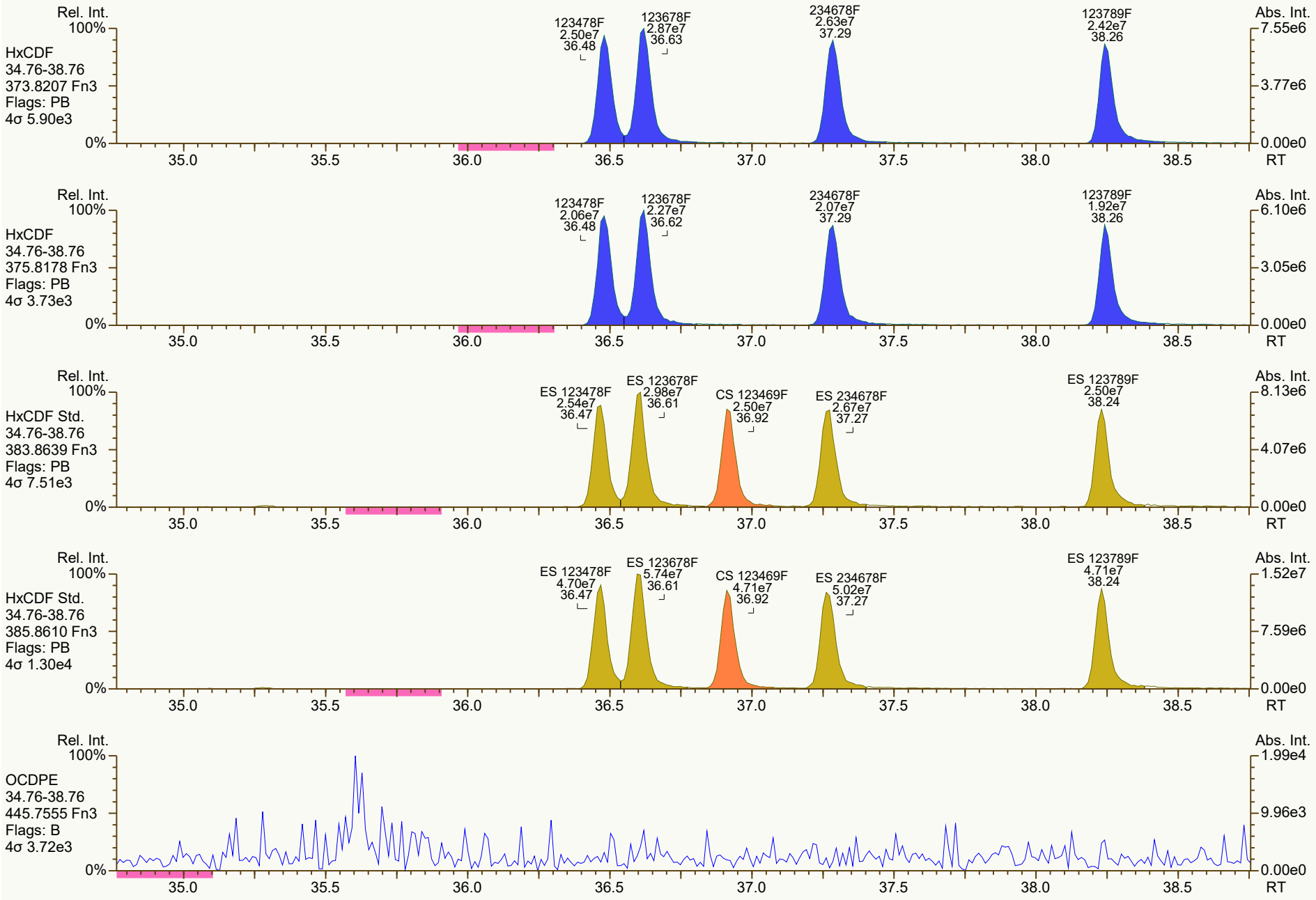

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.31e3
1234678D
1.50e7
40.52
Abs. Int.
5.05e6
2.52e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.28e3
1234678D
1.43e7
40.52
Abs. Int.
4.76e6
2.38e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 8.99e3
FS 1234679D
4.12e7*
39.86
ES 1234678D
2.94e7*
40.51
Abs. Int.
1.44e7
7.21e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 3.95e3
FS 1234679D
3.94e7*
39.86
ES 1234678D
2.77e7*
40.51
Abs. Int.
1.40e7
6.99e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
1.78e7
8.88e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

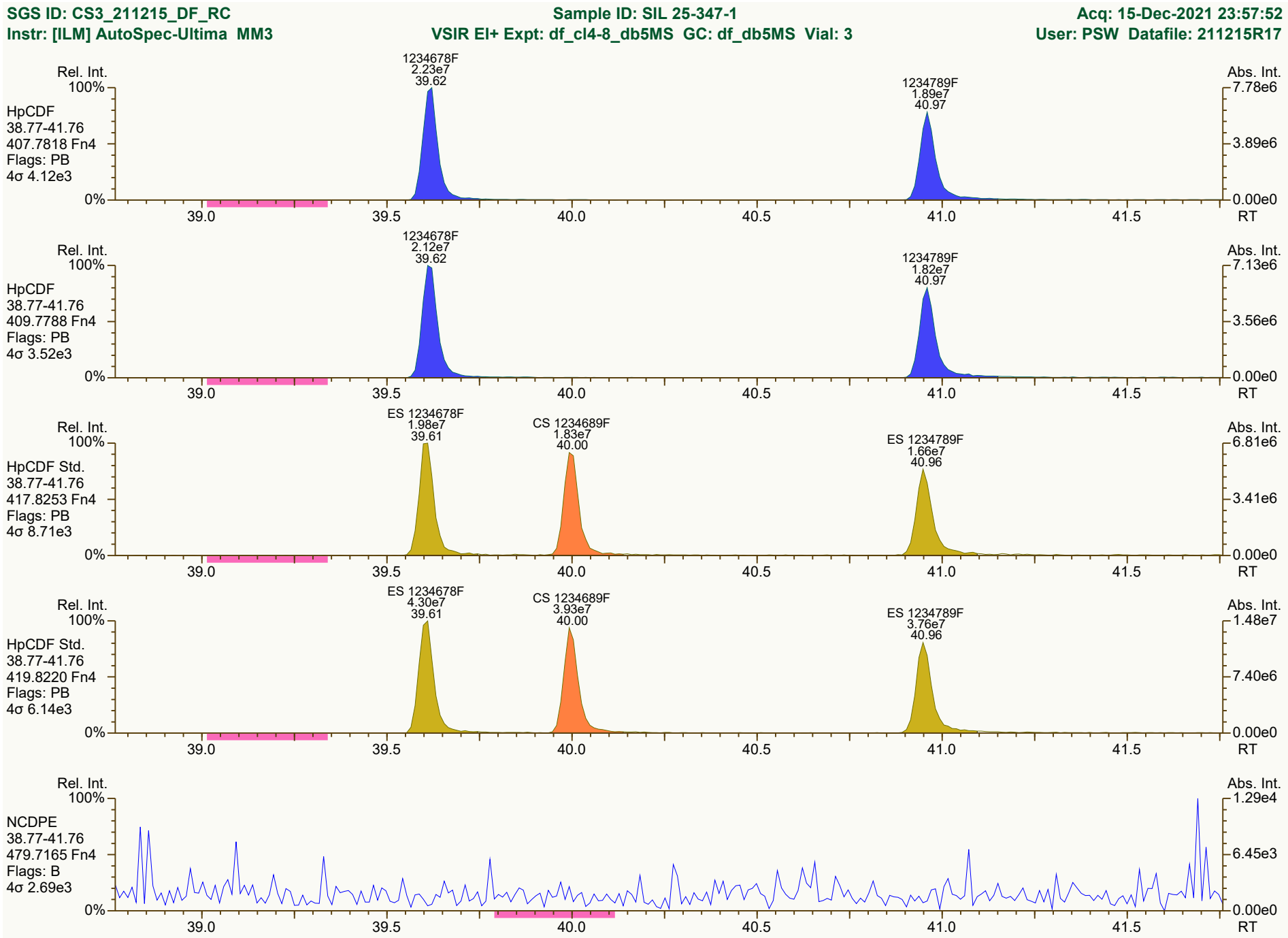

OCDD
1.76e7
43.07
RRF (OCDD) = (1.76e7 + 1.97e7) * 200 pg/uL = 1.06
(3.29e7 + 3.75e7) * 100 pg/uL
CL 20Dec21
Rel. Int.
Abs. Int.
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 5.81e3
OCDD
1.97e7
43.07
459.7348 Fn5
Flags: PB
4σ 7.52e3
ES OCDD
3.29e7*
43.07
OCDD Std.
469.7780 Fn5
Flags: PBM
4σ 5.25e3
ES OCDD
3.75e7*
43.06
471.7750 Fn5
Flags: PBM
4σ 5.15e3
QC Check
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: CS3_211215_DF_RC
Sample ID: SIL 25-347-1
Acq: 15-Dec-2021 23:57:52
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211215R17
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 3.82e3
2378F
5.40e6
27.39
1.11e6
5.54e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 4.25e3
2378F
6.72e6
27.39
1.44e6
7.22e5
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 2.04e4
AS 1368F
5.29e7
22.43
JS 1234F
4.56e7
26.00
ES 2378F
5.00e7
27.37
1.06e7
5.29e6
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.71e4
AS 1368F
6.70e7
22.43
JS 1234F
5.86e7
26.00
ES 2378F
6.36e7
27.37
1.32e7
6.59e6
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.46e3
2.70e4
1.35e4
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\CS3_211215_DF_RC.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6401, 1467, 5036 scc: 305-552
PKD: 16-Dec-2021 08:10 Printed: 16-Dec-2021 11:15 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
2.99e4
1.49e4
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 3.17e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.16e4
5.81e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 2.98e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
5.43e6
2.72e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 3.54e3
12378F
3.04e7
32.15
23478F
3.05e7
33.26
Abs. Int.
8.09e6
4.05e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 3.02e3
12378F
1.96e7
32.15
23478F
1.93e7
33.26
Abs. Int.
5.14e6
2.57e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 8.08e3
CS 12346F
5.62e7*
31.60
ES 12378F
6.01e7
32.13
ES 23478F
6.00e7
33.24
Abs. Int.
1.61e7
8.05e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 4.31e3
CS 12346F
3.53e7*
31.60
ES 12378F
3.84e7
32.13
ES 23478F
3.77e7
33.24
Abs. Int.
9.92e6
4.96e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.25e3
Abs. Int.
2.10e4
1.05e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

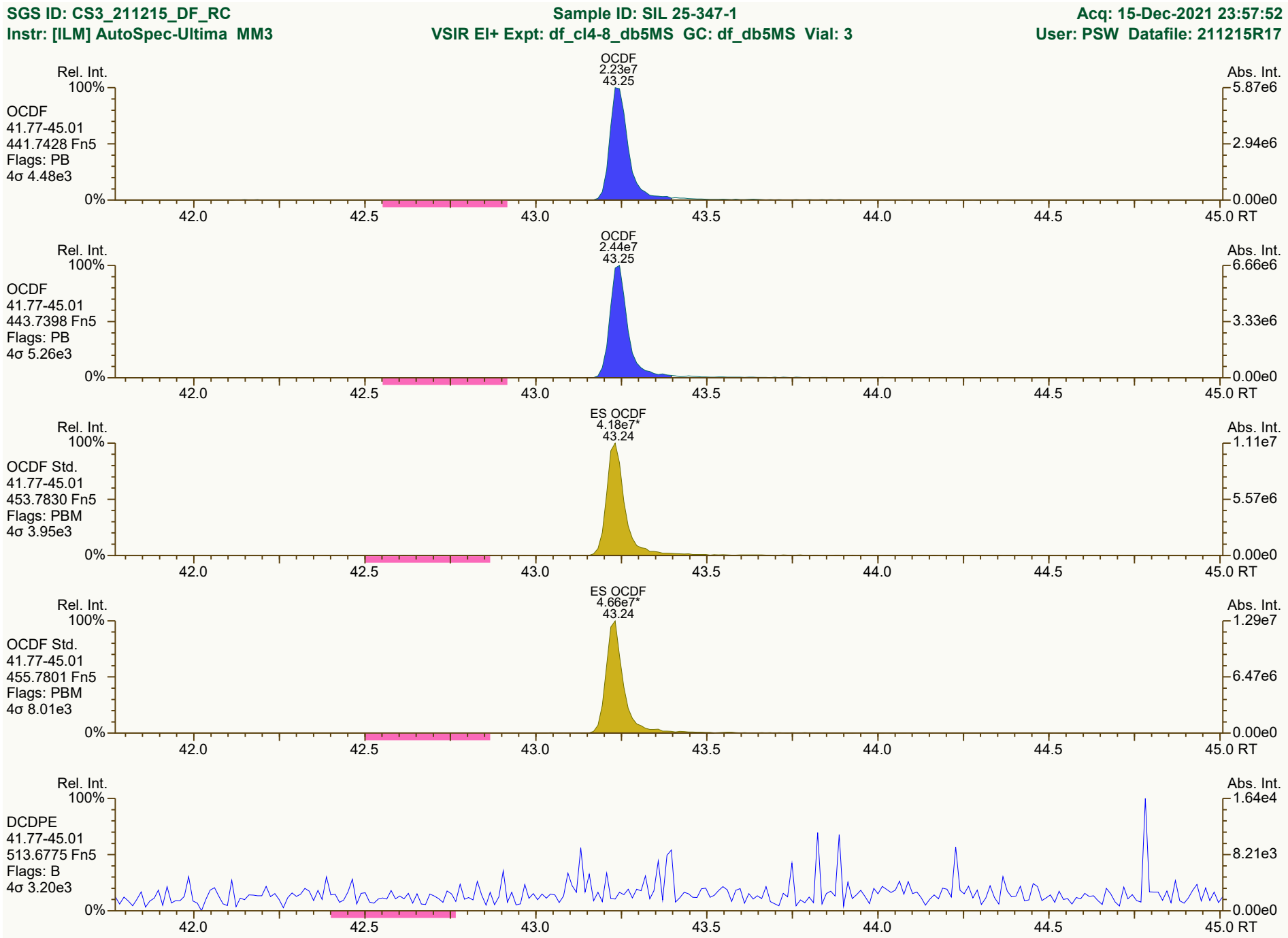

Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PB
4σ 5.90e3
0%
123478F
2.50e7
36.48
123678F
2.87e7
36.63
234678F
2.63e7
37.29
123789F
2.42e7
38.26
Abs. Int.
7.55e6
3.77e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PB
4σ 3.73e3
0%
123478F
2.06e7
36.48
123678F
2.27e7
36.62
234678F
2.07e7
37.29
123789F
1.92e7
38.26
Abs. Int.
6.10e6
3.05e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 7.51e3
0%
ES 123478F
2.54e7
36.47
ES 123678F
2.98e7
36.61
CS 123469F
2.50e7
36.92
ES 234678F
2.67e7
37.27
ES 123789F
2.50e7
38.24
Abs. Int.
8.13e6
4.07e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 1.30e4
0%
ES 123478F
4.70e7
36.47
ES 123678F
5.74e7
36.61
CS 123469F
4.71e7
36.92
ES 234678F
5.02e7
37.27
ES 123789F
4.71e7
38.24
Abs. Int.
1.52e7
7.59e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.72e3
0%
Abs. Int.
1.99e4
9.96e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: CS3_211215_DF_RC
Sample ID: SIL 25-347-1
Acq: 15-Dec-2021 23:57:52
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211215R17
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.12e3
1234678F
2.23e7
39.62
1234789F
1.89e7
40.97
7.78e6
3.89e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.52e3
1234678F
2.12e7
39.62
1234789F
1.82e7
40.97
7.13e6
3.56e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 8.71e3
ES 1234678F
1.98e7
39.61
CS 1234689F
1.83e7
40.00
ES 1234789F
1.66e7
40.96
6.81e6
3.41e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 6.14e3
ES 1234678F
4.30e7
39.61
CS 1234689F
3.93e7
40.00
ES 1234789F
3.76e7
40.96
1.48e7
7.40e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.69e3
1.29e4
6.45e3
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\CS3_211215_DF_RC.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8767, 4672, 3280 scc: 305-552
PKD: 16-Dec-2021 08:10 Printed: 16-Dec-2021 11:15 Page 11 of 12

SGS ID: CS3_211215_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

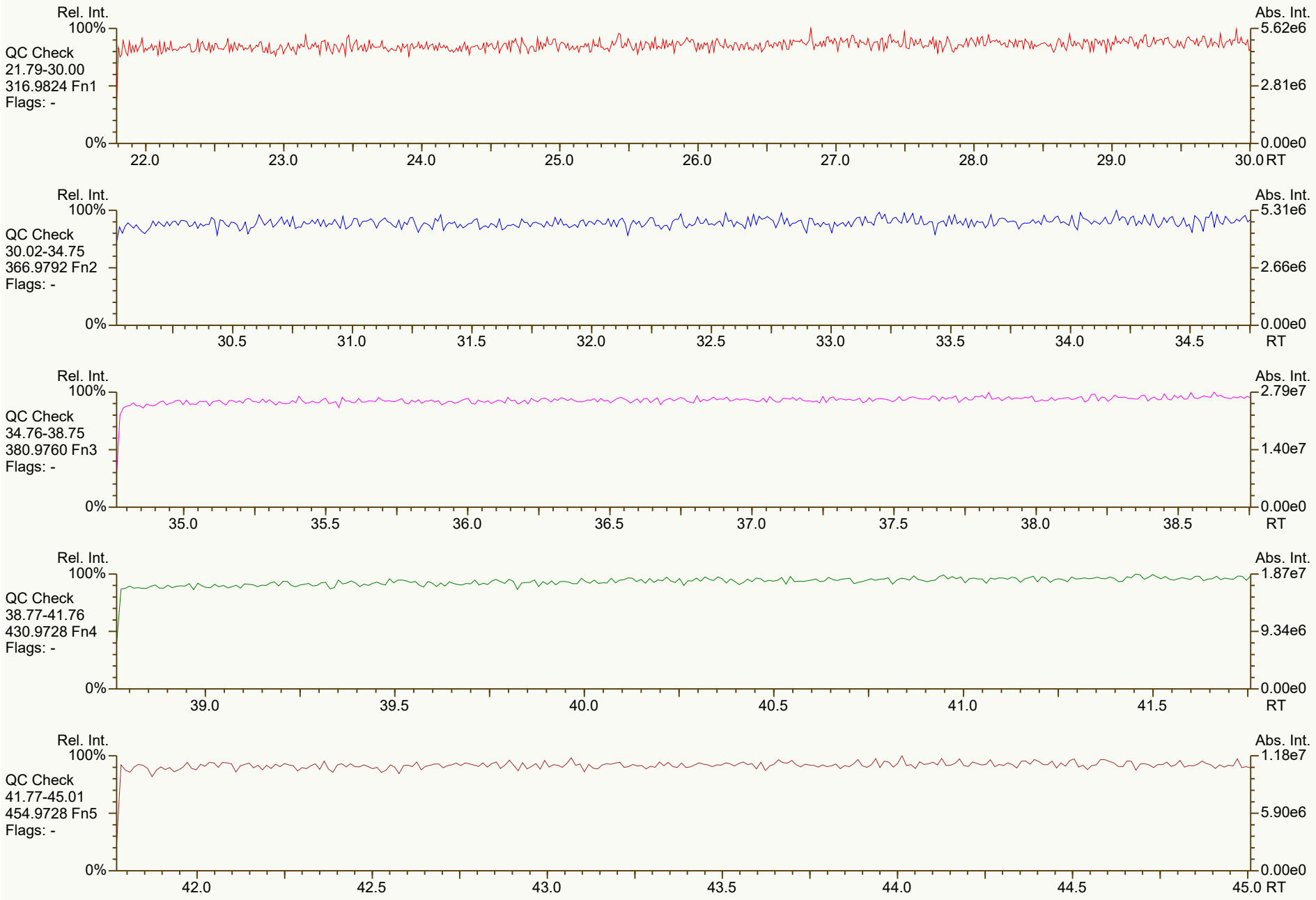
Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 15-Dec-2021 23:57:52
User: PSW Datafile: 211215R17



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\CS3_211215_DF_RC.utp_res, saved 16-Dec-2021 11:07 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5176, 5162, 8964 scc: 305-552

Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 08:10 Printed: 16-Dec-2021 11:15 Page 12 of 12

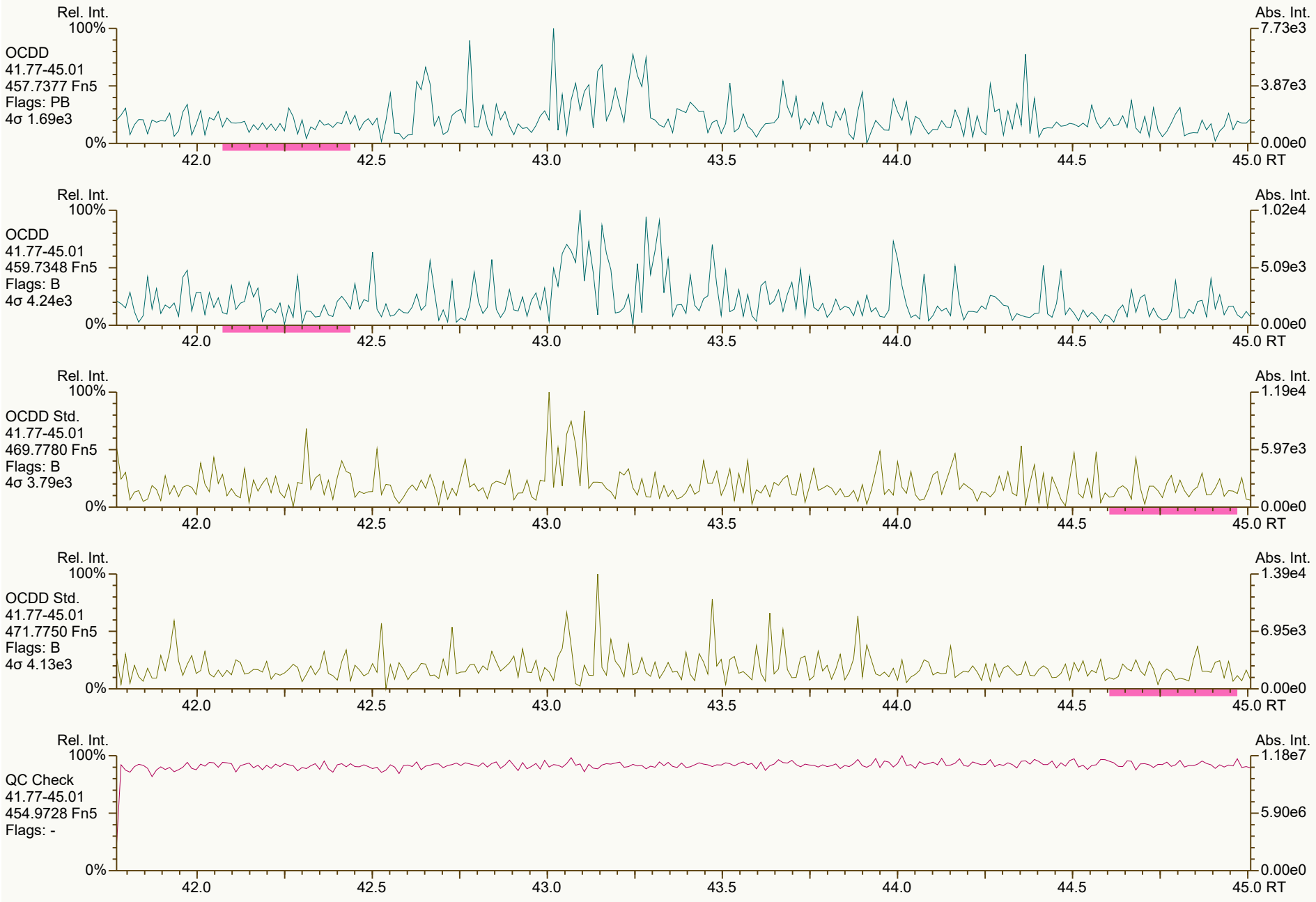

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.62e6
2.81e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.31e6
2.66e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.79e7
1.40e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.87e7
9.34e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 3.18e3
0%
Abs. Int.
8.33e3
4.17e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 2.05e3
0%
Abs. Int.
1.43e4
7.17e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: B
4σ 2.25e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: B
4σ 1.07e4
0%
Abs. Int.
2.64e4
1.32e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: B
4σ 6.92e3
0%
Abs. Int.
2.13e4
1.07e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: B
4σ 3.42e3
0%
Abs. Int.
9.97e3
4.99e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 2.32e3
0%
Abs. Int.
6.86e3
3.43e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: B
4σ 5.10e3
0%
Abs. Int.
1.28e4
6.42e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: B
4σ 3.76e3
0%
Abs. Int.
2.04e4
1.02e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.31e6
2.66e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 2.36e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: B
4σ 1.94e3
0%
Abs. Int.
6.99e3
3.50e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: B
4σ 5.09e3
0%
Abs. Int.
1.86e4
9.30e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: B
4σ 6.21e3
0%
Abs. Int.
1.58e4
7.90e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.79e7
1.40e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

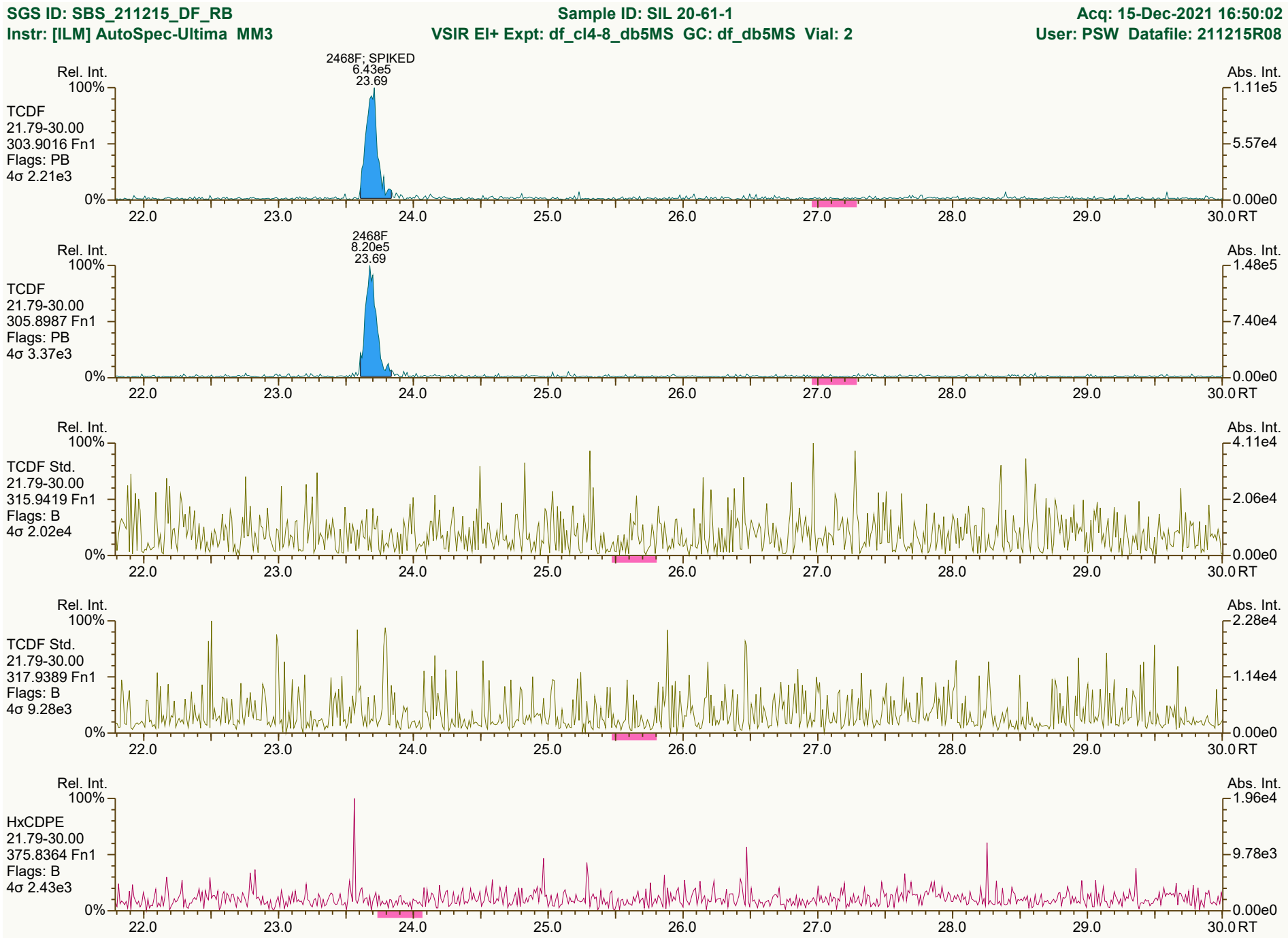

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.16e3
0%
Abs. Int.
4.24e3
2.12e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 2.09e3
0%
Abs. Int.
4.40e3
2.20e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: B
4σ 2.70e3
0%
Abs. Int.
1.95e4
9.77e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: B
4σ 3.21e3
0%
Abs. Int.
1.17e4
5.84e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.87e7
9.34e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 1.69e3
0%
Abs. Int.
7.73e3
3.87e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 4.24e3
0%
Abs. Int.
1.02e4
5.09e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: B
4σ 3.79e3
0%
Abs. Int.
1.19e4
5.97e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: B
4σ 4.13e3
0%
Abs. Int.
1.39e4
6.95e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.18e7
5.90e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_211215_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 15-Dec-2021 16:50:02
User: PSW Datafile: 211215R08

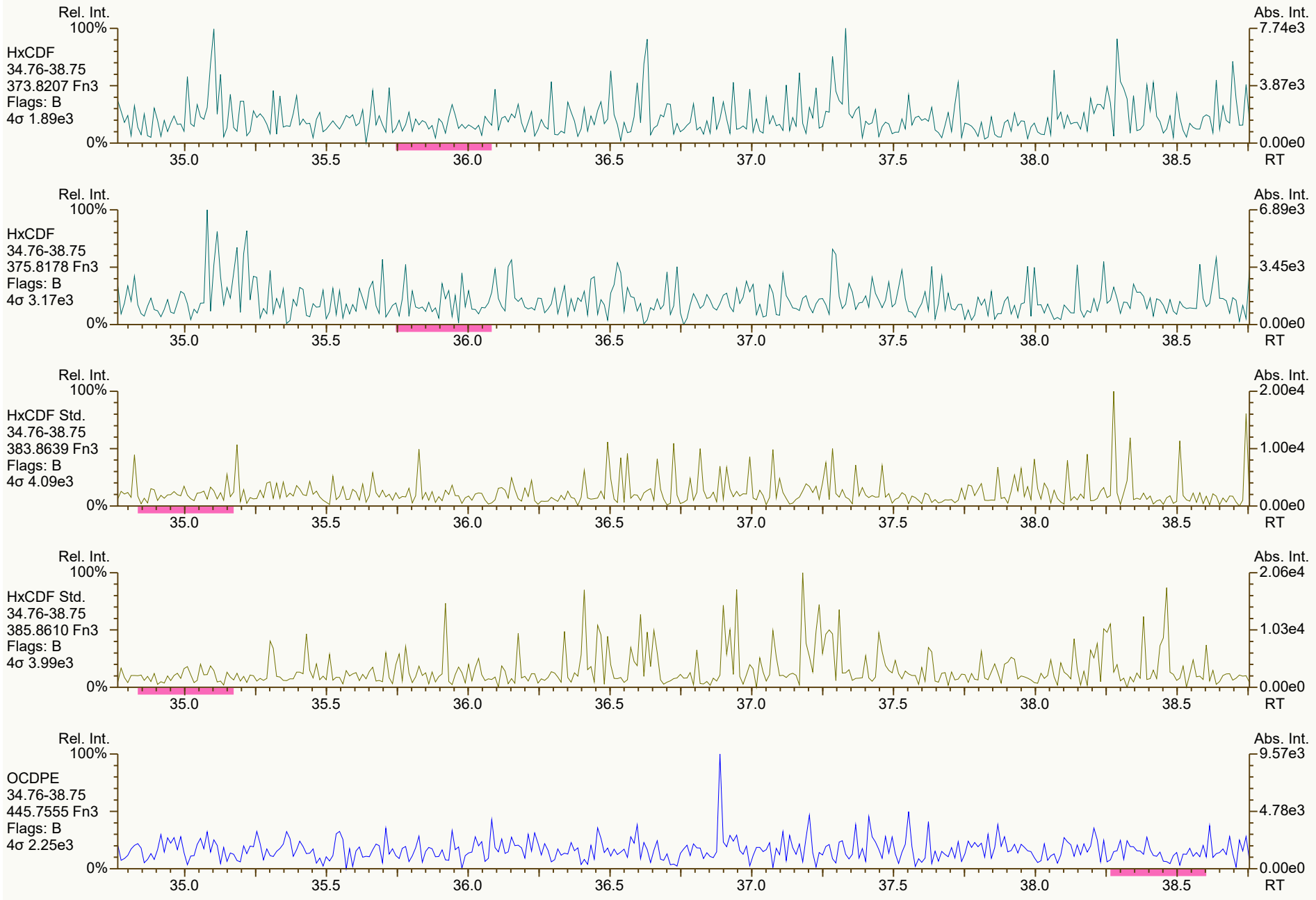


Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\SBS_211215_DF_RB.utp_res, saved 16-Dec-2021 08:09 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9611, 7201, 7735 scc: 291-279

Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:14 Page 7 of 12

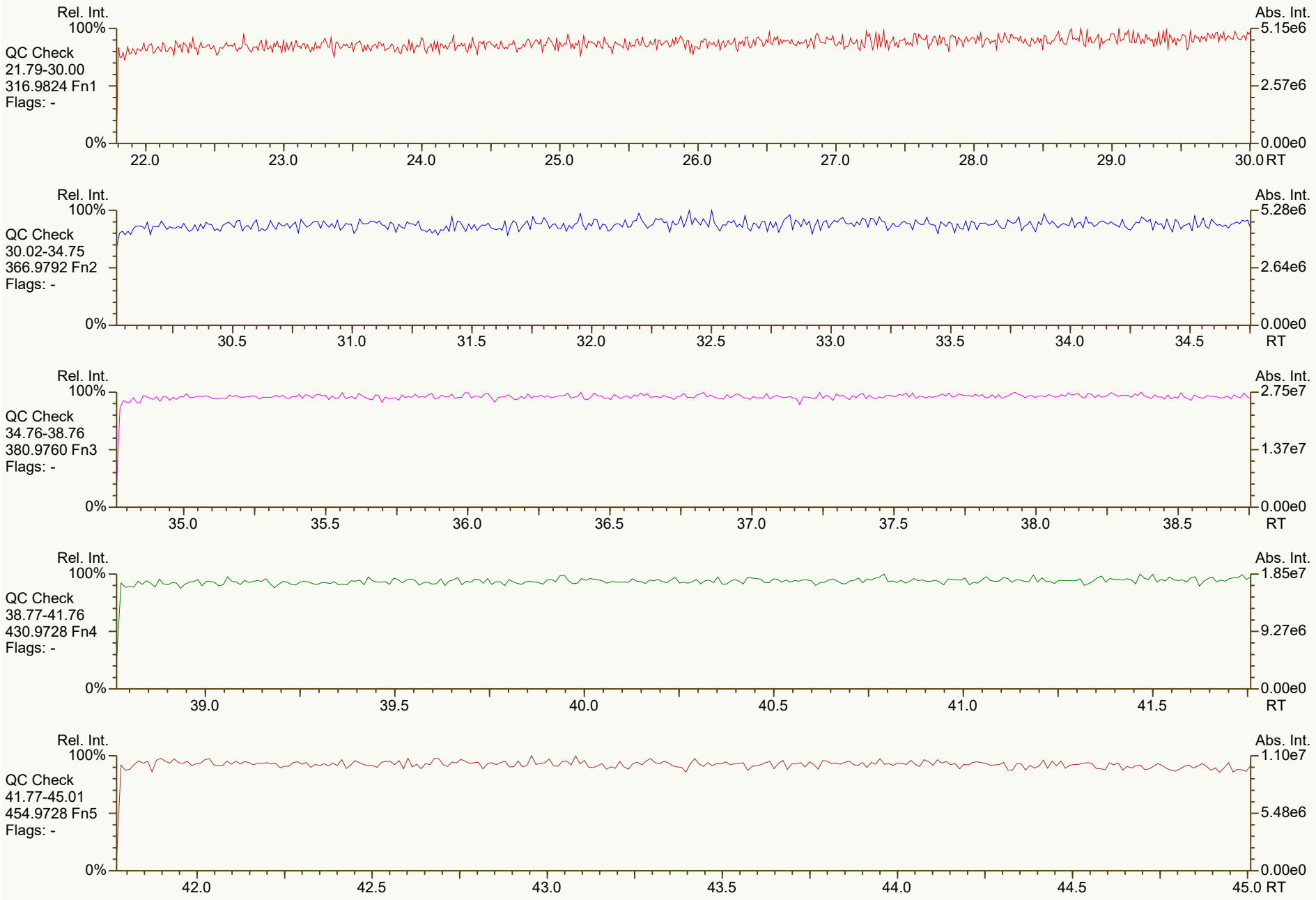

Rel. Int.
100%
0%
Abs. Int.
1.51e4
7.57e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 2.66e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.40e4
6.98e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.92e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
5.62e6
2.81e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
5.51e3
2.75e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: B
4σ 3.03e3
0%
Abs. Int.
9.81e3
4.90e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: B
4σ 3.41e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: B
4σ 3.80e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.81e3
0%
Abs. Int.
8.44e3
4.22e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

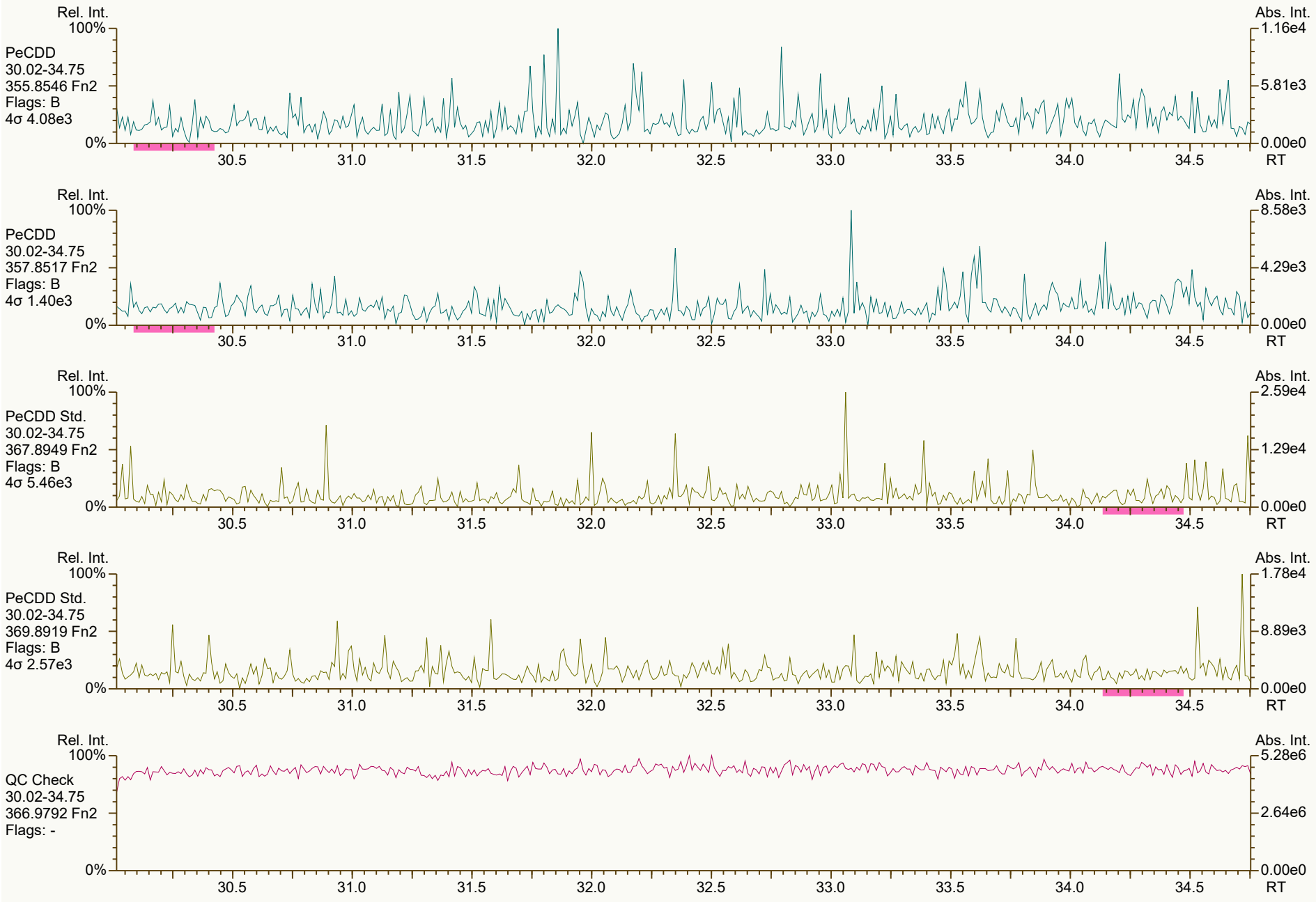

Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: B
4σ 1.89e3
0%
Abs. Int.
7.74e3
3.87e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: B
4σ 3.17e3
0%
Abs. Int.
6.89e3
3.45e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: B
4σ 4.09e3
0%
Abs. Int.
2.00e4
1.00e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: B
4σ 3.99e3
0%
Abs. Int.
2.06e4
1.03e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.25e3
0%
Abs. Int.
9.57e3
4.78e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: B
4σ 2.31e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: B
4σ 2.15e3
0%
Abs. Int.
7.76e3
3.88e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: B
4σ 5.41e3
0%
Abs. Int.
2.14e4
1.07e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: B
4σ 6.12e3
0%
Abs. Int.
2.55e4
1.28e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.05e3
0%
Abs. Int.
8.77e3
4.39e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: B
4σ 2.73e3
0%
Abs. Int.
6.69e3
3.35e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 2.70e3
0%
Abs. Int.
7.52e3
3.76e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: B
4σ 2.72e3
0%
Abs. Int.
2.11e4
1.05e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: B
4σ 4.38e3
0%
Abs. Int.
1.12e4
5.59e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

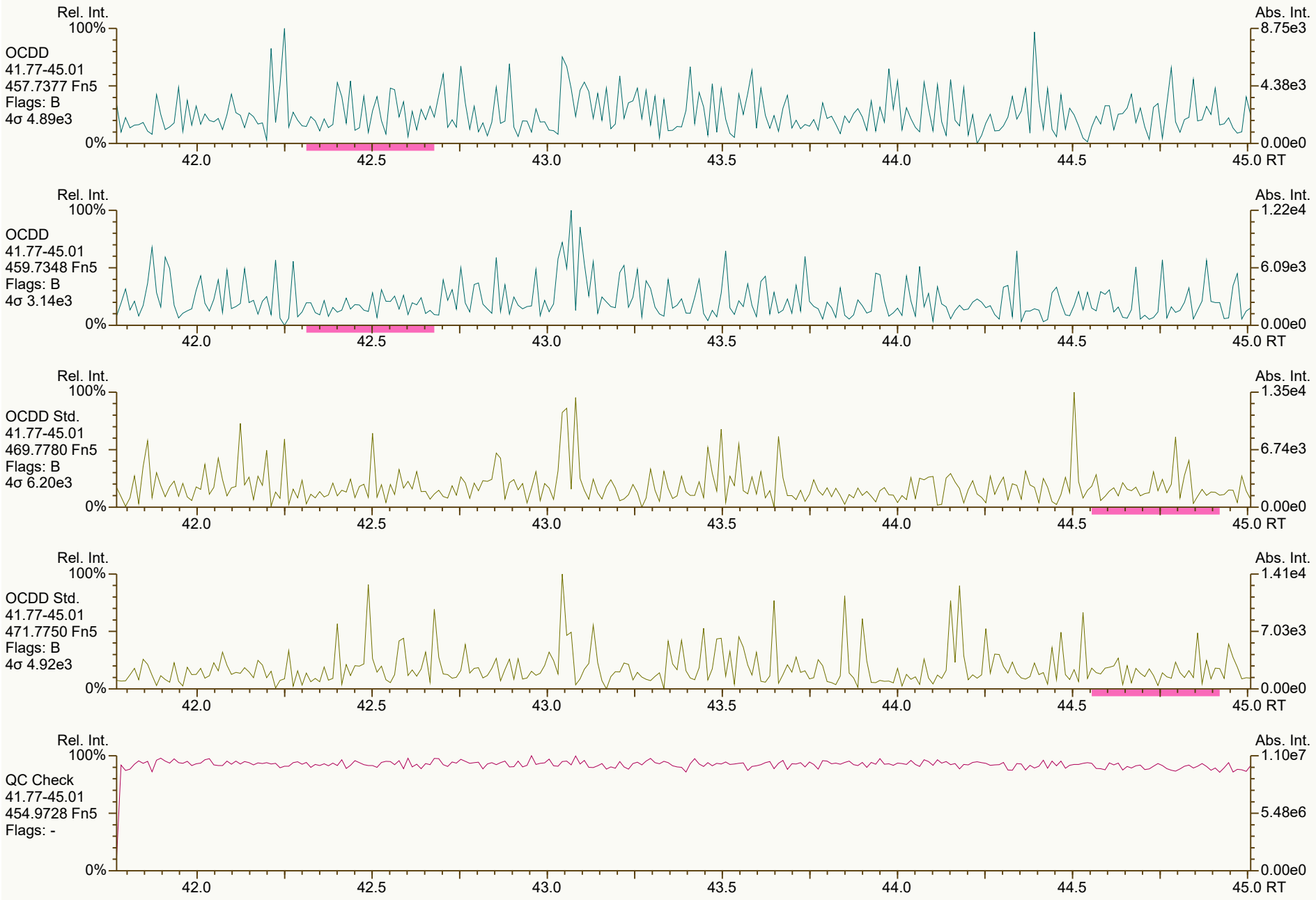

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.15e6
2.57e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.28e6
2.64e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.75e7
1.37e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.85e7
9.27e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.10e7
5.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

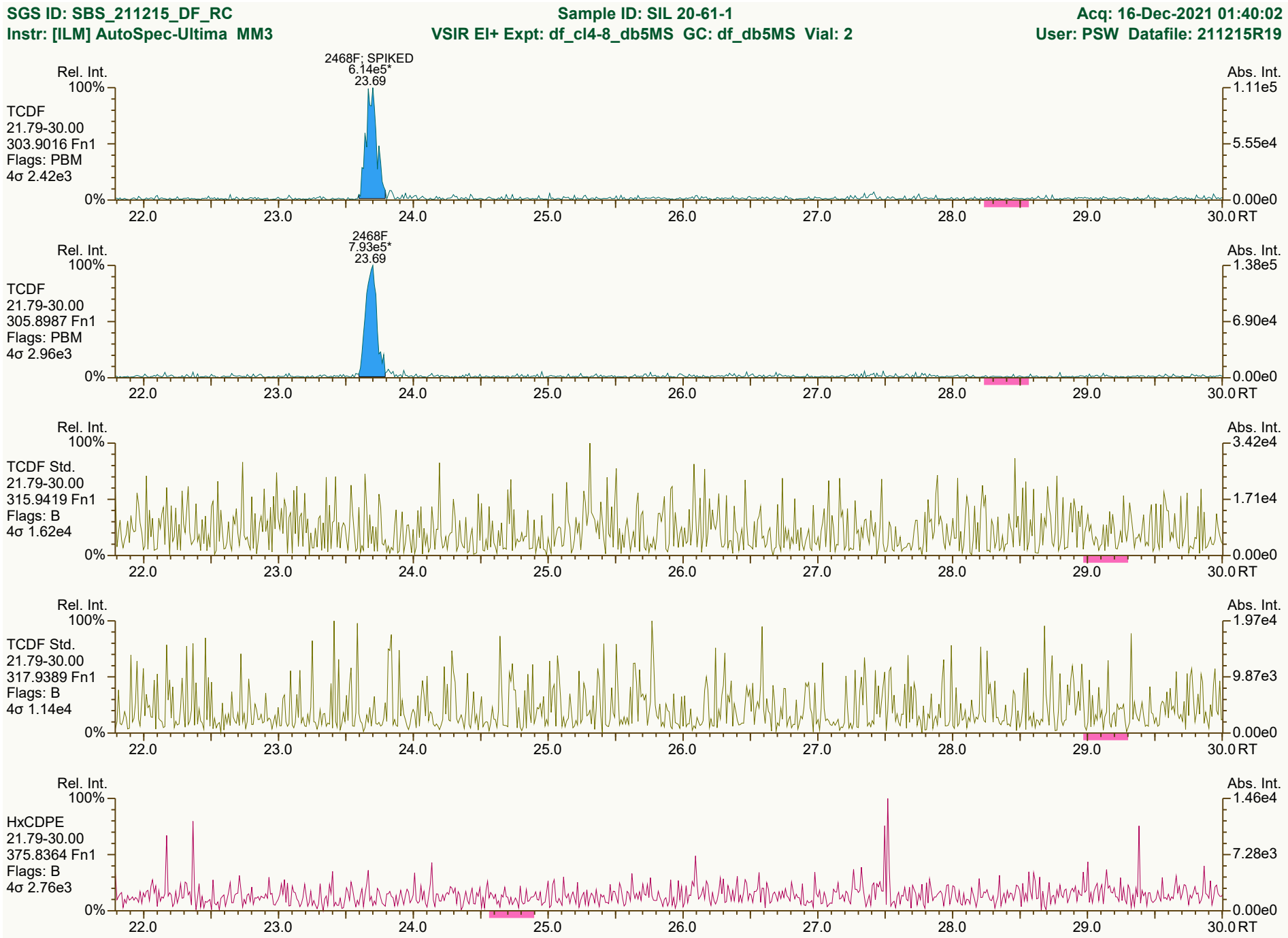

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 3.89e3
0%
Abs. Int.
9.92e3
4.96e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 2.37e3
0%
Abs. Int.
8.04e3
4.02e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: B
4σ 2.84e3
0%
Abs. Int.
1.24e4
6.20e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: B
4σ 1.40e4
0%
Abs. Int.
3.92e4
1.96e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: B
4σ 3.69e3
0%
Abs. Int.
1.89e4
9.43e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: B
4σ 4.08e3
0%
Abs. Int.
1.16e4
5.81e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: B
4σ 1.40e3
0%
Abs. Int.
8.58e3
4.29e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: B
4σ 5.46e3
0%
Abs. Int.
2.59e4
1.29e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: B
4σ 2.57e3
0%
Abs. Int.
1.78e4
8.89e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.28e6
2.64e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: B
4σ 2.22e3
0%
Abs. Int.
7.98e3
3.99e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: B
4σ 2.81e3
0%
Abs. Int.
9.32e3
4.66e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
1.86e4
9.32e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: B
4σ 4.81e3
0%
Abs. Int.
1.46e4
7.32e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.75e7
1.37e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: B
4σ 2.52e3
0%
Abs. Int.
6.75e3
3.37e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: B
4σ 2.68e3
0%
Abs. Int.
5.70e3
2.85e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: B
4σ 3.90e3
0%
Abs. Int.
1.25e4
6.24e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: B
4σ 3.52e3
0%
Abs. Int.
1.52e4
7.62e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.85e7
9.27e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: B
4σ 4.89e3
0%
Abs. Int.
8.75e3
4.38e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 3.14e3
0%
Abs. Int.
1.22e4
6.09e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: B
4σ 6.20e3
0%
Abs. Int.
1.35e4
6.74e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: B
4σ 4.92e3
0%
Abs. Int.
1.41e4
7.03e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.10e7
5.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: SBS_211215_DF_RC
Sample ID: SIL 20-61-1
Acq: 16-Dec-2021 01:40:02
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2
User: PSW Datafile: 211215R19
2468F; SPIKED
6.14e5*
23.69
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.42e3
2468F
7.93e5*
23.69
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 2.96e3
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: B
4σ 1.62e4
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: B
4σ 1.14e4
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 2.76e3
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\SBS_211215_DF_RC.utp_res, saved 16-Dec-2021 08:13 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2442, 9414, 2455 scc: 460-089
PKD: 16-Dec-2021 08:13 Printed: 16-Dec-2021 11:15 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 2.88e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.07e4
5.33e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.79e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
5.15e6
2.57e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: B
4σ 2.24e3
0%
Abs. Int.
7.31e3
3.66e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: B
4σ 2.98e3
0%
Abs. Int.
7.13e3
3.57e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: B
4σ 3.99e3
0%
Abs. Int.
2.74e4
1.37e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: B
4σ 4.03e3
0%
Abs. Int.
1.71e4
8.57e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.02e3
0%
Abs. Int.
2.92e4
1.46e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: B
4σ 2.20e3
0%
Abs. Int.
6.23e3
3.11e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
7.01e3
3.51e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: B
4σ 5.77e3
0%
Abs. Int.
1.41e4
7.07e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: B
4σ 5.01e3
0%
Abs. Int.
2.02e4
1.01e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.85e3
0%
Abs. Int.
1.88e4
9.39e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

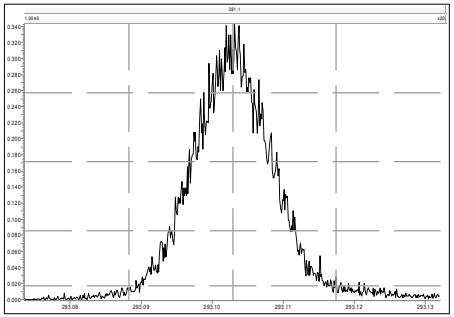

Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: B
4σ 2.79e3
0%
Abs. Int.
1.18e4
5.88e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: B
4σ 2.85e3
0%
Abs. Int.
5.16e3
2.58e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: B
4σ 4.96e3
0%
Abs. Int.
2.01e4
1.01e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: B
4σ 7.55e3
0%
Abs. Int.
2.42e4
1.21e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.68e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: B
4σ 3.06e3
0%
Abs. Int.
8.05e3
4.02e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 3.59e3
0%
Abs. Int.
9.05e3
4.52e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: B
4σ 4.77e3
0%
Abs. Int.
9.48e3
4.74e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: B
4σ 3.26e3
0%
Abs. Int.
1.10e4
5.51e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.06e3
0%
Abs. Int.
1.14e4
5.70e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

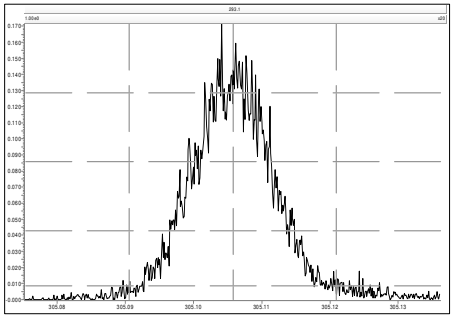
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:57:00 Eastern Standard Time

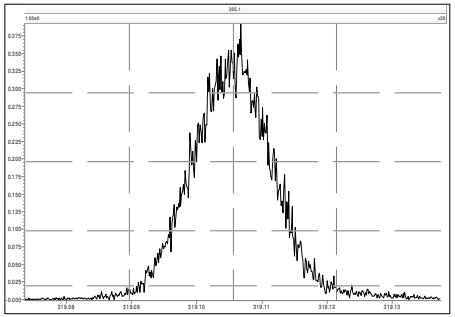
M 292.9824 R 10821



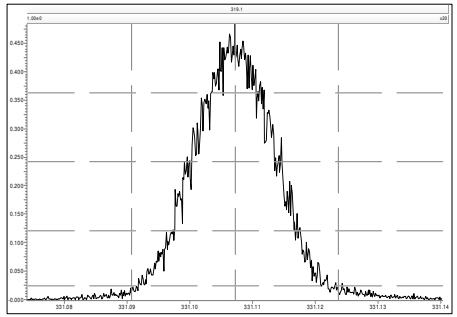
M 304.9824 R 11523



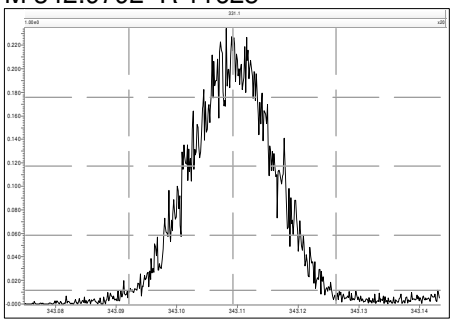
M 318.9792 R 11570



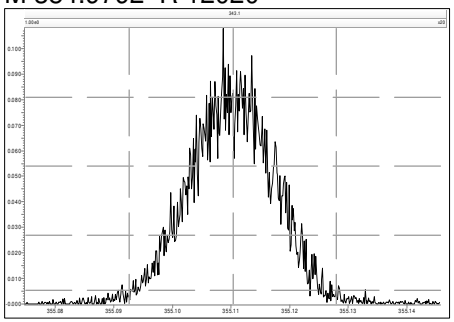
M 330.9792 R 10964



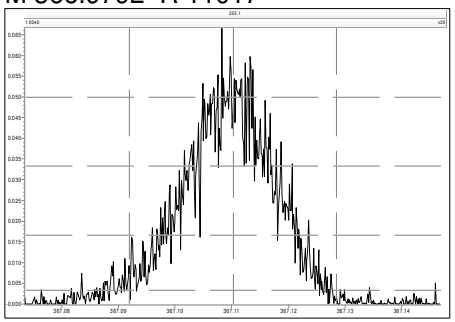
M 342.9792 R 11625



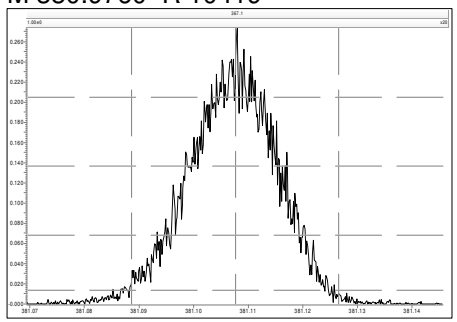
M 354.9792 R 12020



M 366.9792 R 11017



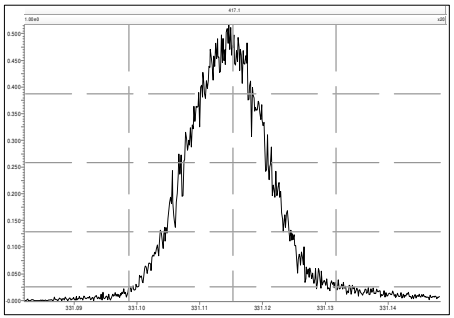
M 380.9760 R 10419



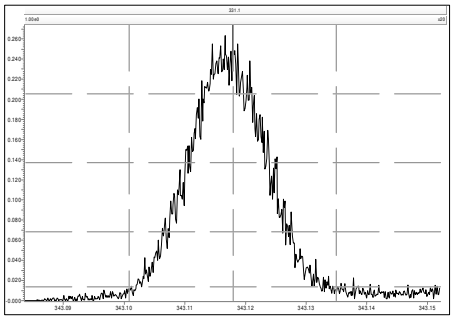
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:57:17 Eastern Standard Time

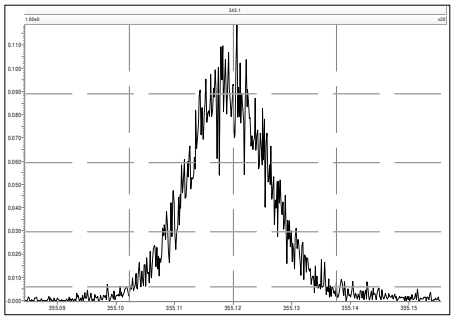
M 330.9792 R 11520



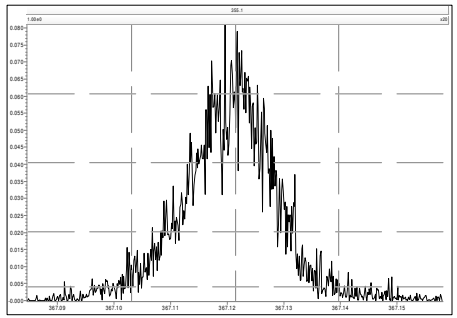
M 342.9792 R 11163



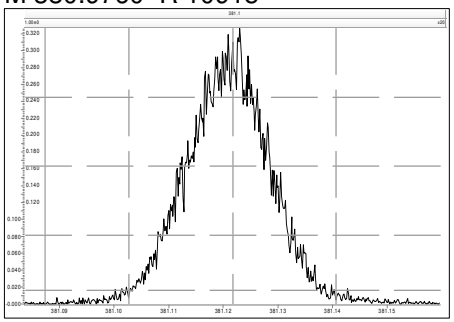
M 354.9792 R 11522



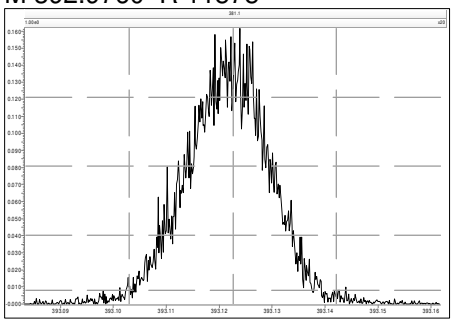
M 366.9792 R 11904



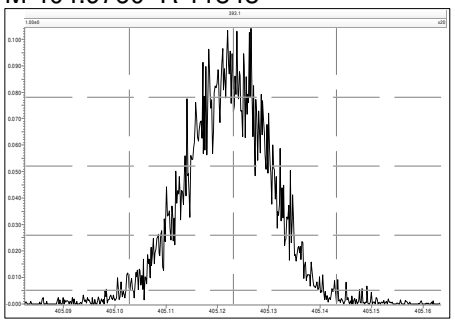
M 380.9760 R 10915



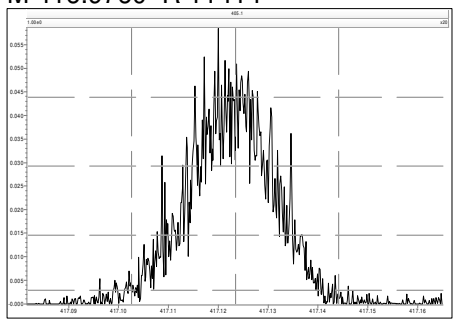
M 392.9760 R 11575



M 404.9760 R 11848



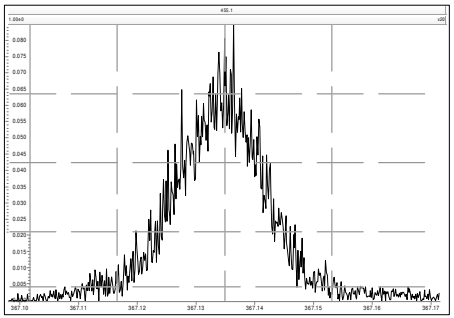
M 416.9760 R 11414



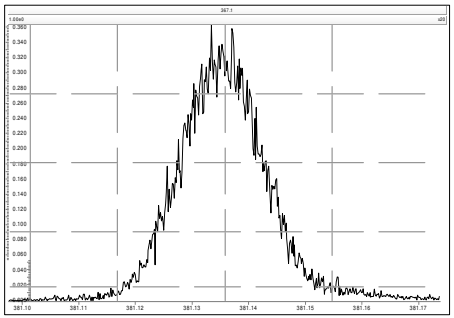
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:57:38 Eastern Standard Time

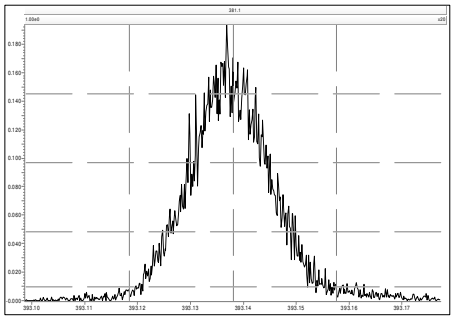
M 366.9792 R 11516



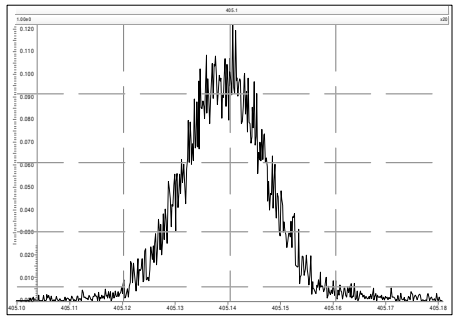
M 380.9760 R 11681



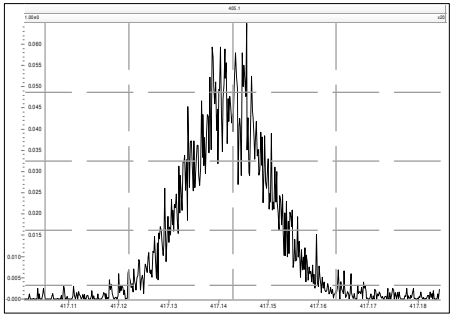
M 392.9760 R 12016



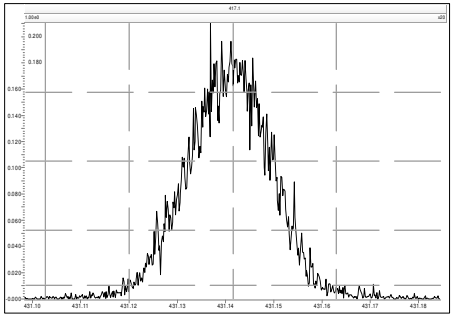
M 404.9760 R 12195



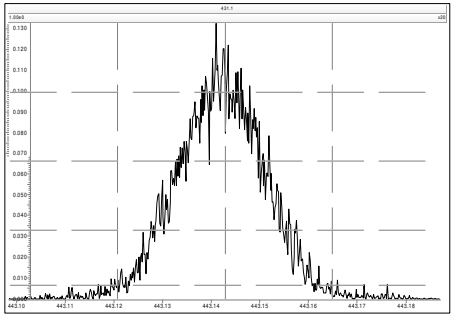
M 416.9760 R 11736



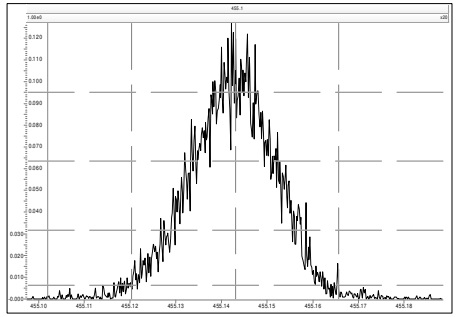
M 430.9728 R 11469



M 442.9728 R 11624



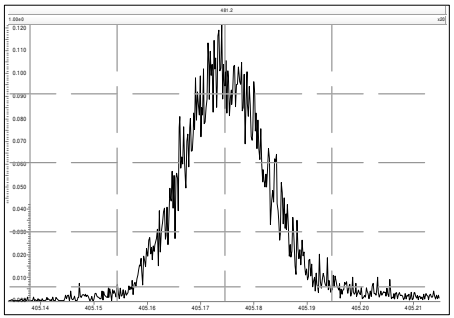
M 454.9728 R 10416



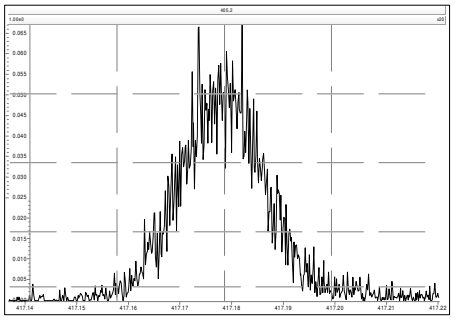
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:58:04 Eastern Standard Time

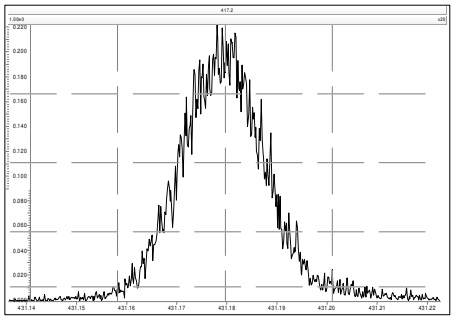
M 404.9760 R 11906



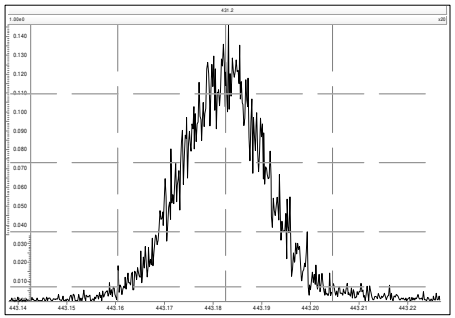
M 416.9760 R 12376



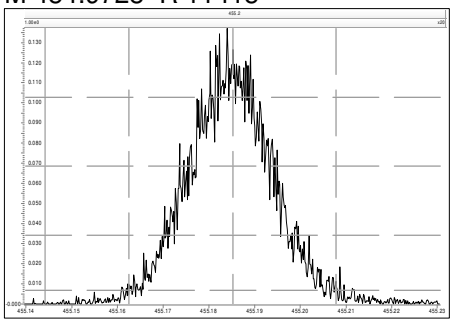
M 430.9728 R 11847



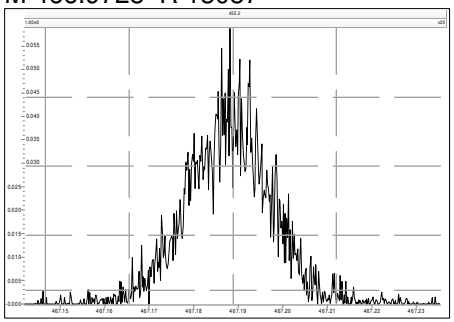
M 442.9728 R 12378



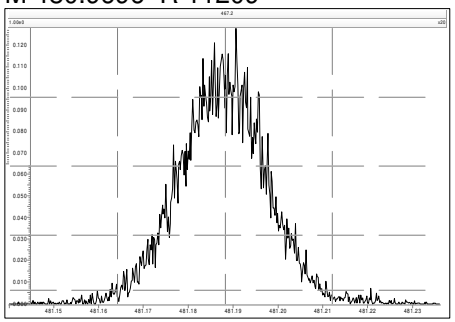
M 454.9728 R 11415



M 466.9728 R 13087



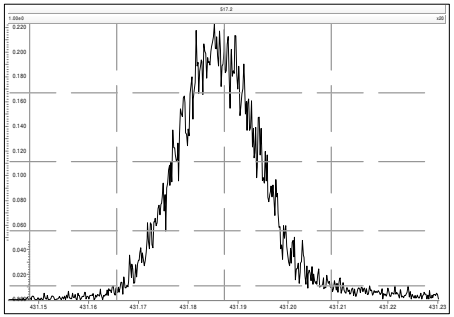
M 480.9696 R 11209



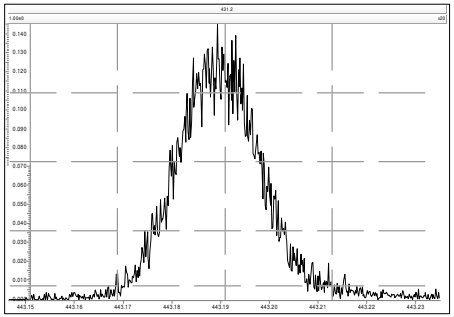
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, December 15, 2021 10:58:20 Eastern Standard Time

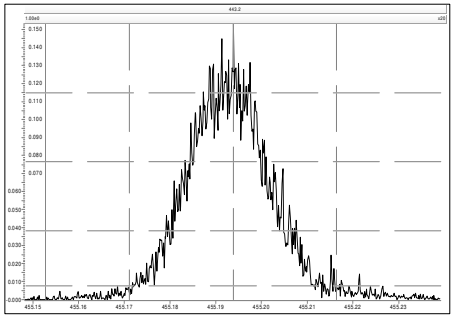
M 430.9728 R 11903



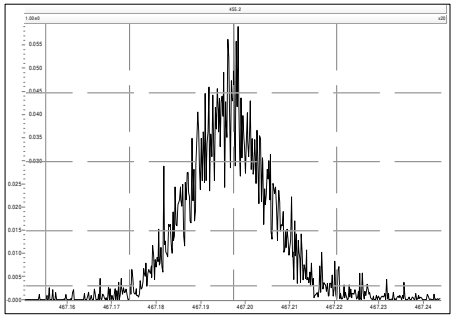
M 442.9728 R 12079



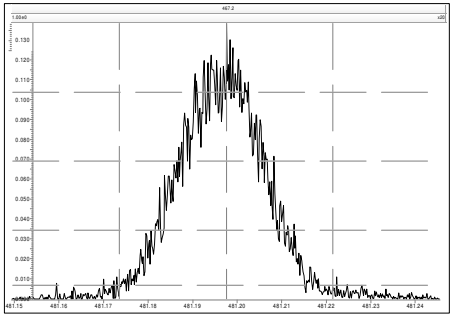
M 454.9728 R 10965



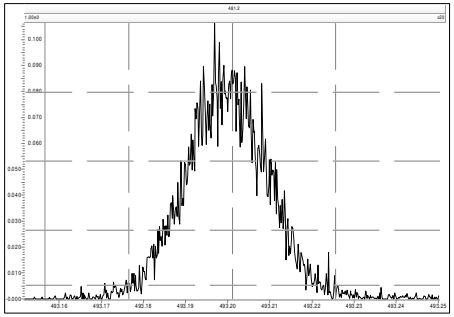
M 466.9728 R 12135



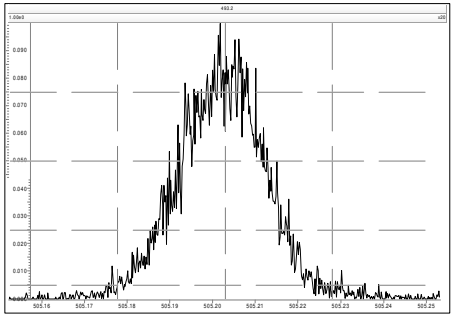
M 480.9696 R 12138



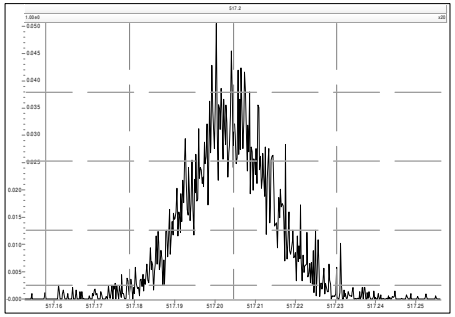
M 492.9696 R 12627



M 504.9696 R 11415



M 516.9697 R 11960



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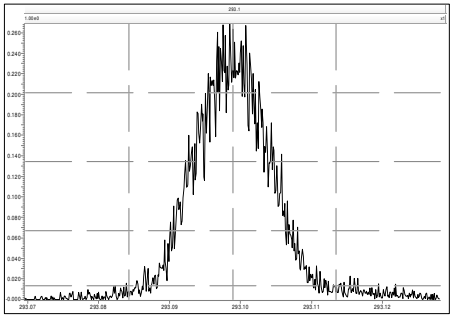
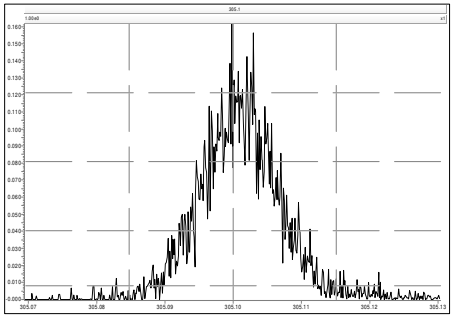
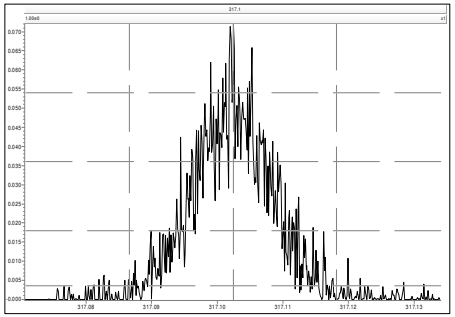
M 292.9824 R 12440



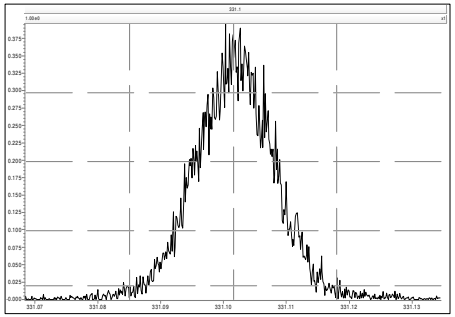
M 304.9824 R 13822



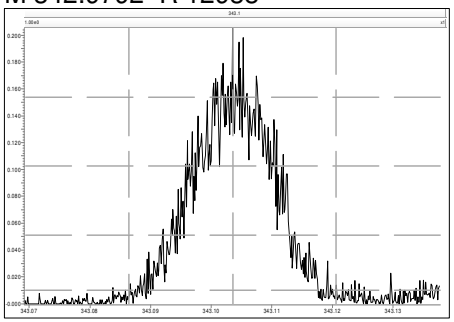
M 316.9824 R 13930



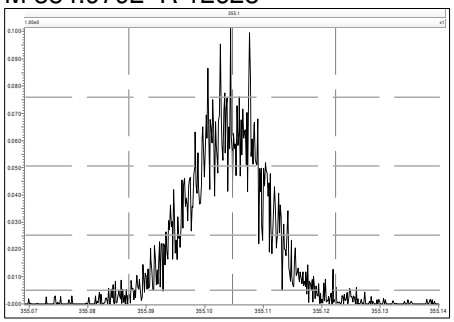
M 330.9792 R 12472



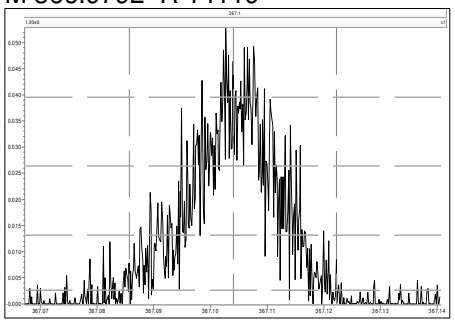
M 342.9792 R 12938



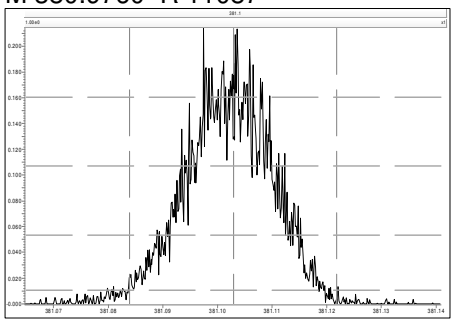
M 354.9792 R 12628



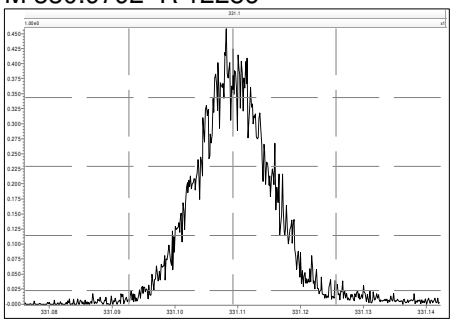
M 366.9792 R 14119



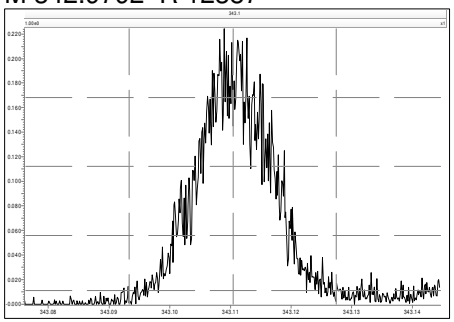
M 380.9760 R 11087



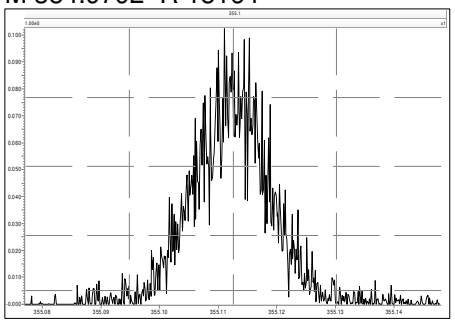
M 330.9792 R 12286



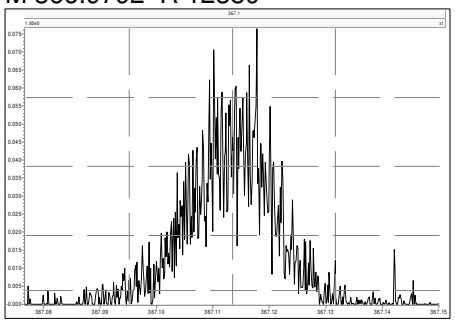
M 342.9792 R 12387



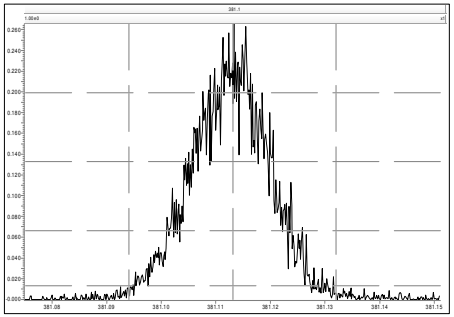
M 354.9792 R 15164



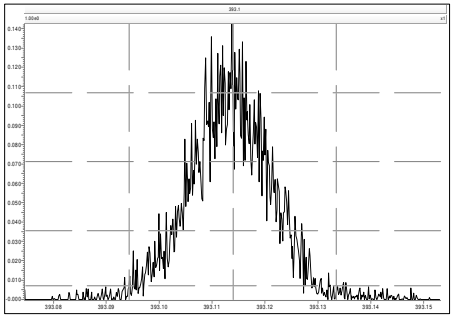
M 366.9792 R 12380



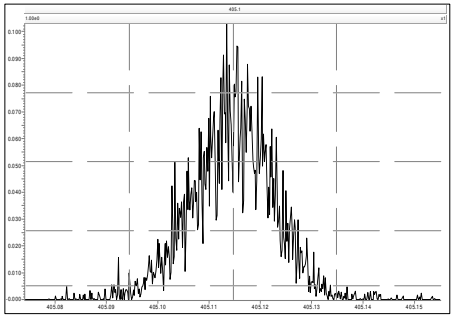
M 380.9760 R 12278



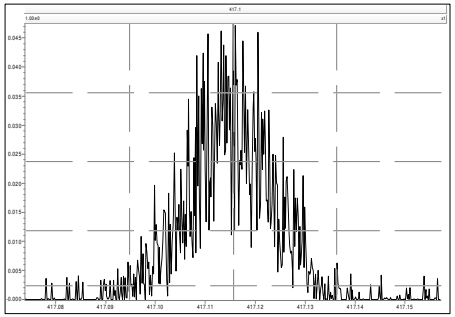
M 392.9760 R 12577



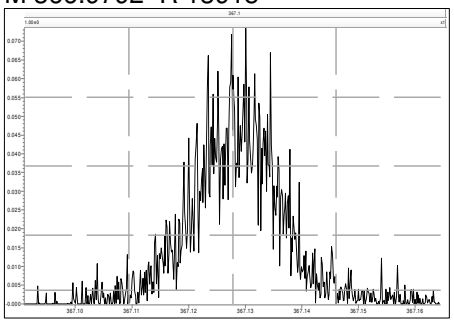
M 404.9760 R 12173



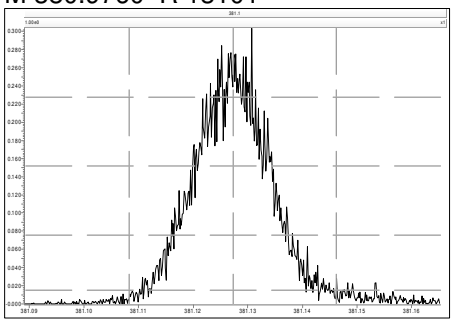
M 416.9760 R 14970



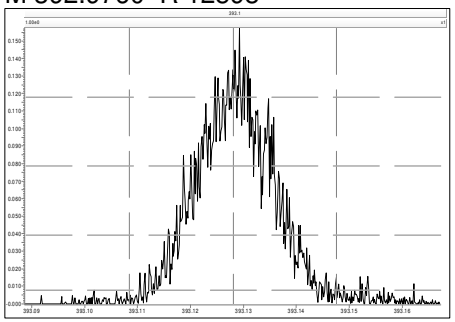
M 366.9792 R 13915



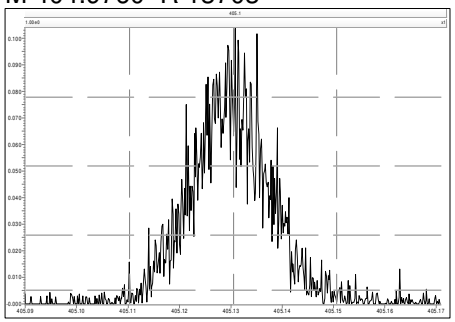
M 380.9760 R 13101



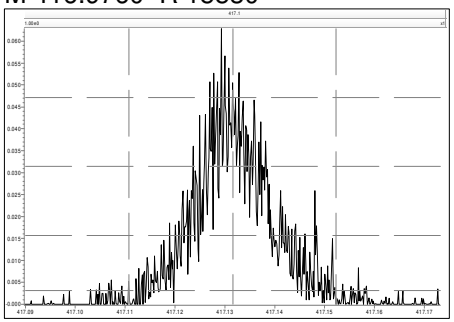
M 392.9760 R 12598



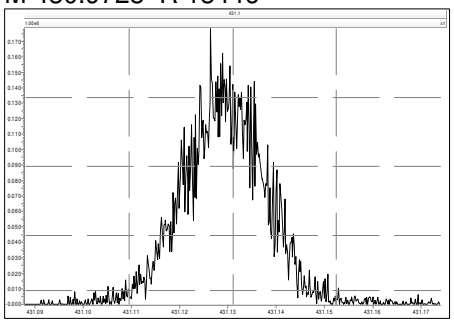
M 404.9760 R 13703



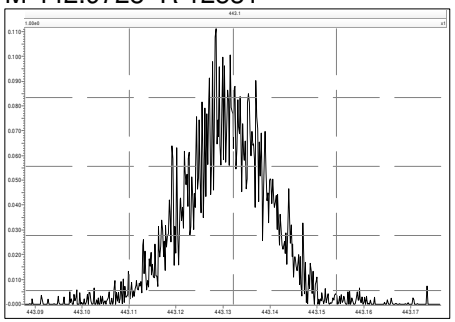
M 416.9760 R 15530



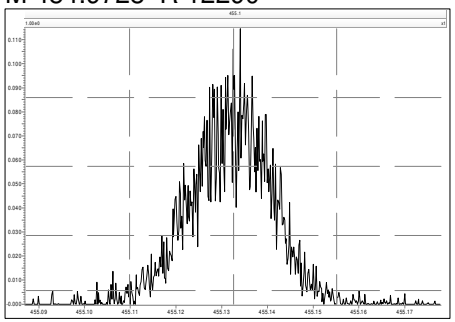
M 430.9728 R 13446



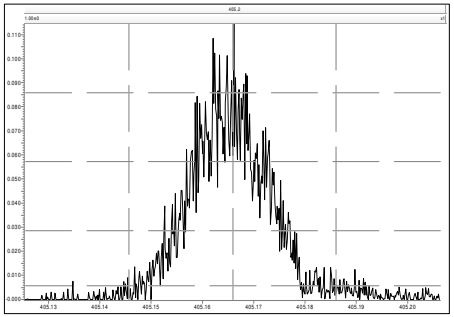
M 442.9728 R 12531



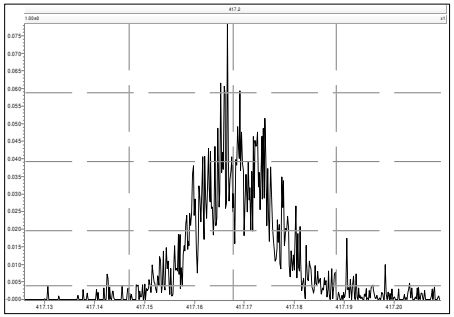
M 454.9728 R 12290



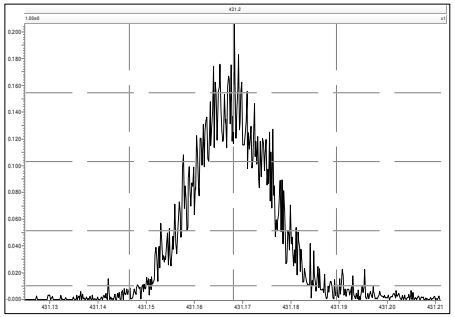
M 404.9760 R 13063



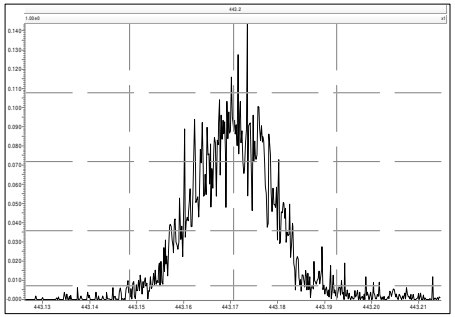
M 416.9760 R 14631



M 430.9728 R 12481



M 442.9728 R 13130



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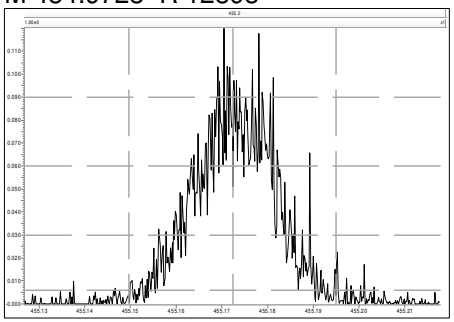

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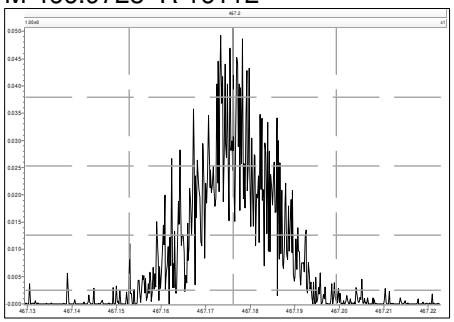
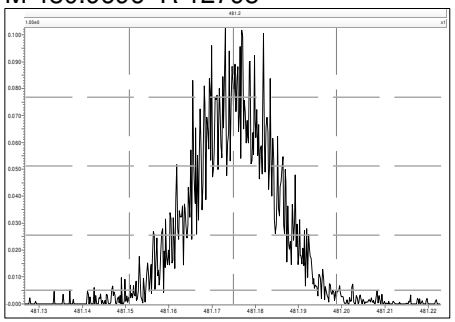


M 480.9696 R 12795



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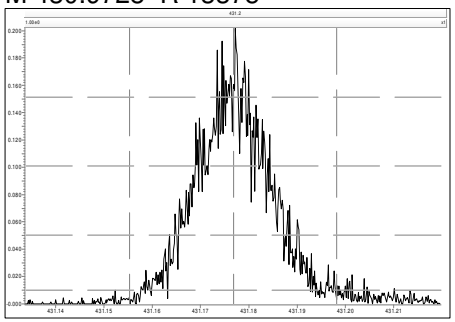

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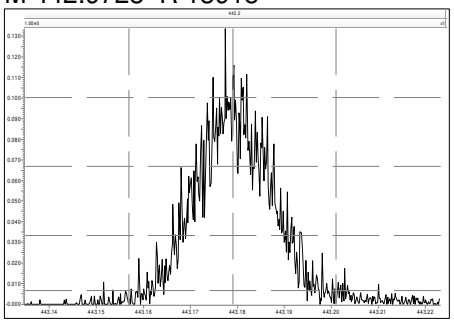
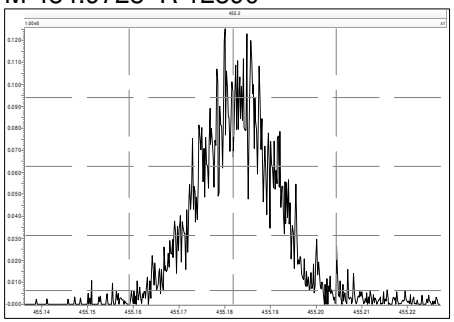


M 454.9728 R 12890



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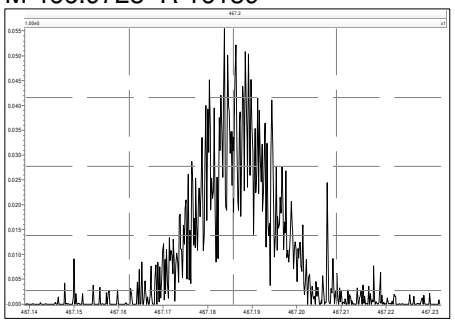

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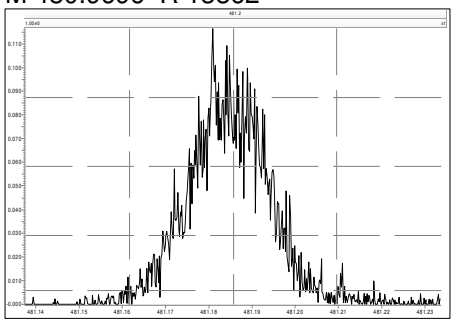
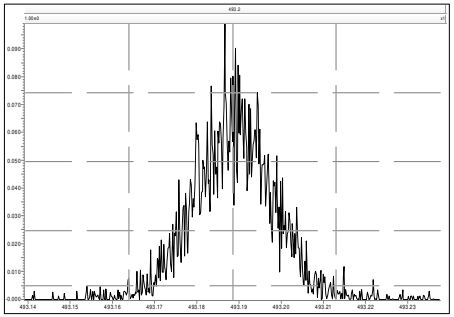
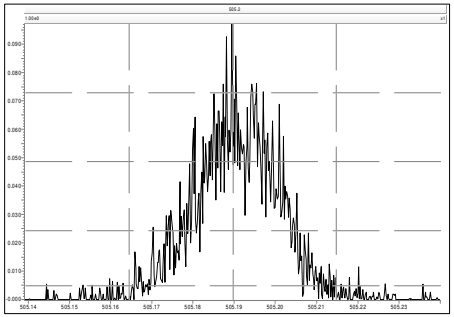


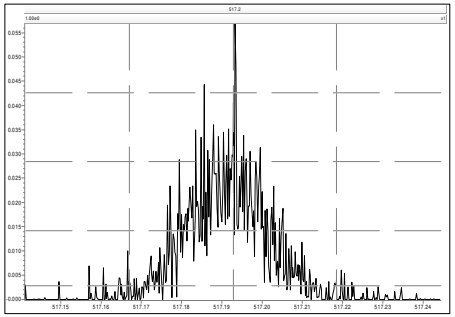
M 492.9696 R 13328



M 504.9696 R 13240



M 516.9697 R 15832



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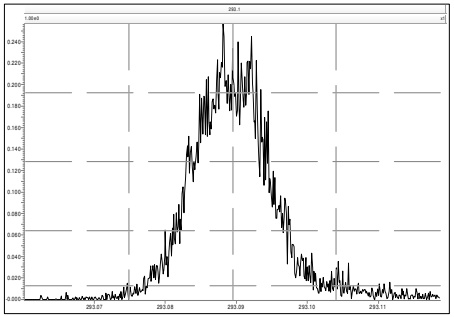
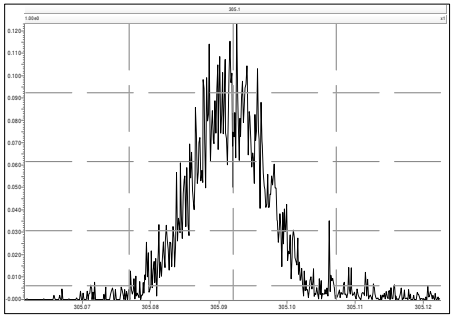
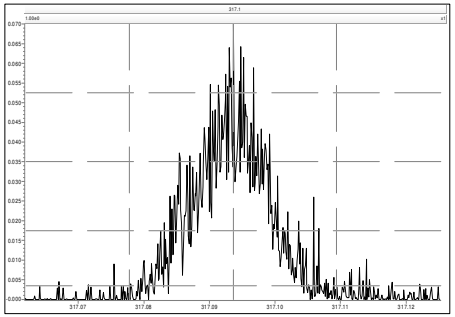


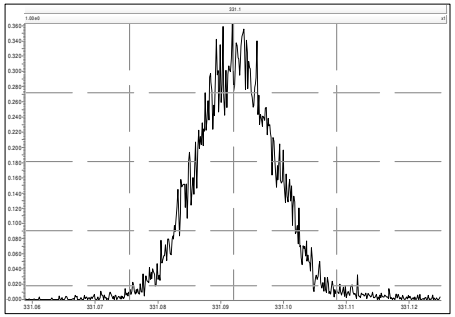
M 304.9824 R 13545



M 316.9824 R 14329



M 330.9792 R 12168



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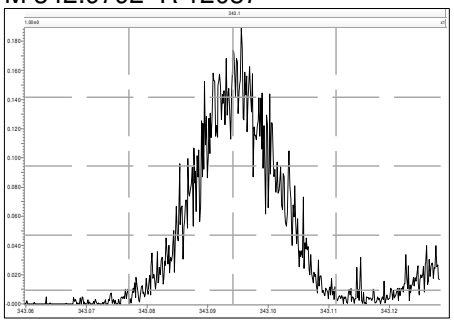

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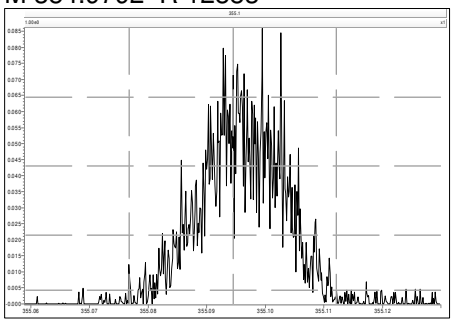
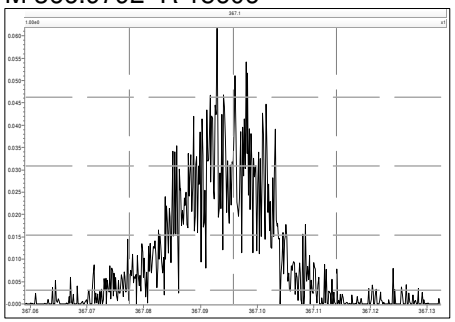
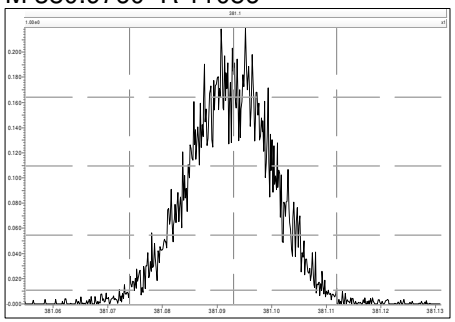


M 366.9792 R 15606



M 380.9760 R 11056



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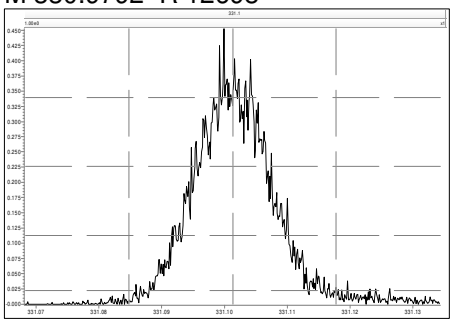
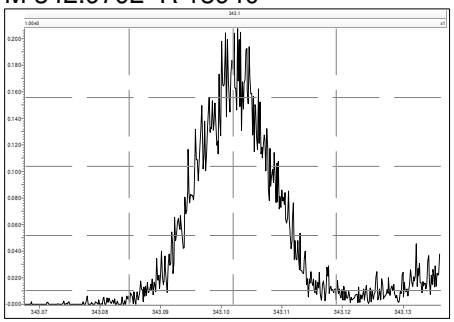


M 342.9792 R 13940



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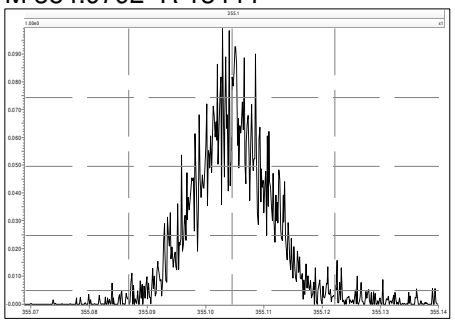
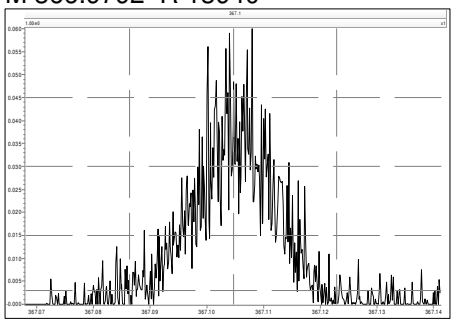
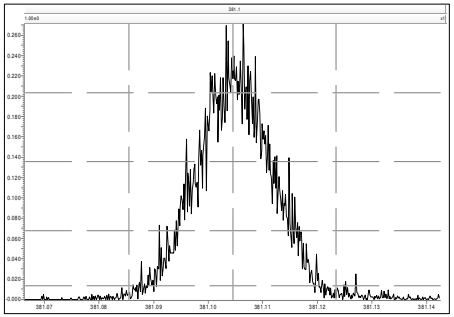


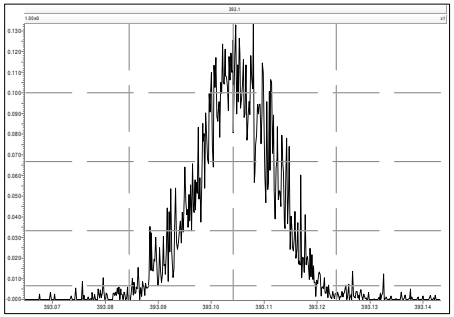
M 366.9792 R 13940



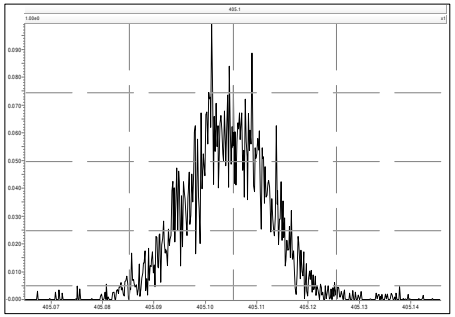
M 380.9760 R 12634



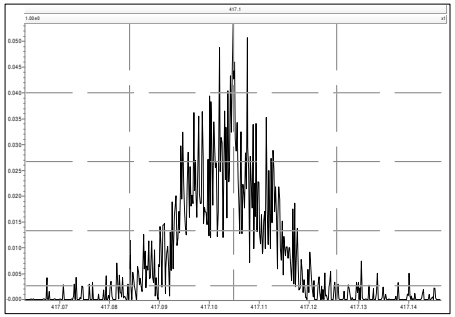
M 392.9760 R 12642



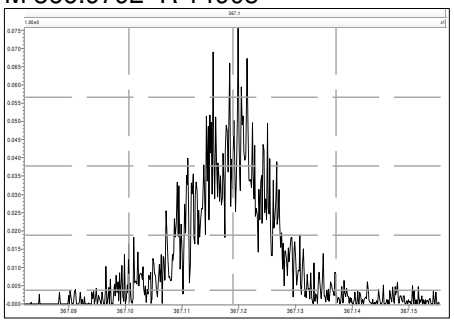
M 404.9760 R 13966



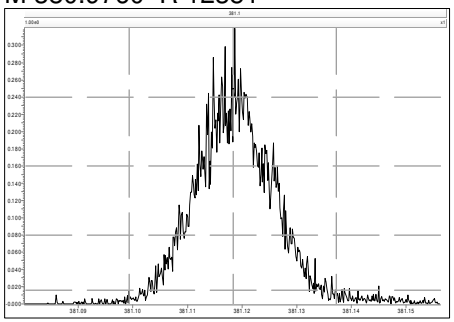
M 416.9760 R 17210



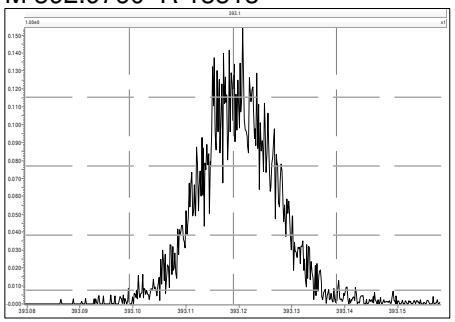
M 366.9792 R 14905



M 380.9760 R 12351



M 392.9760 R 13513



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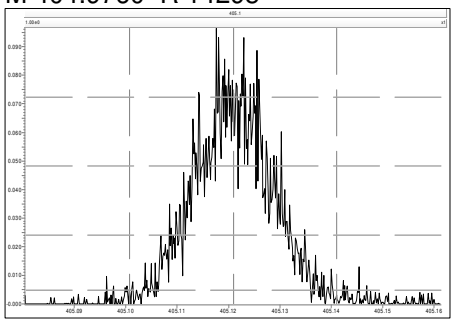
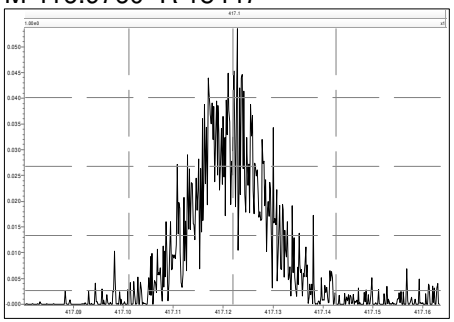
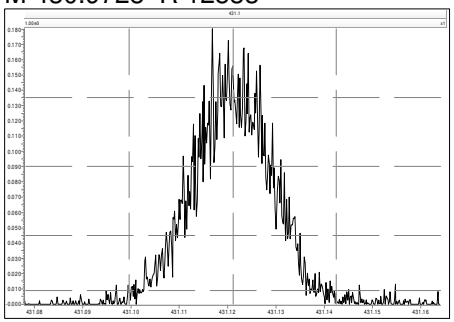


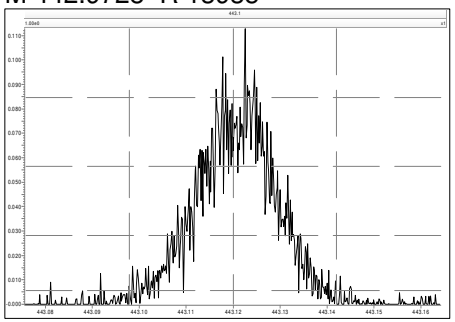
M 416.9760 R 15447



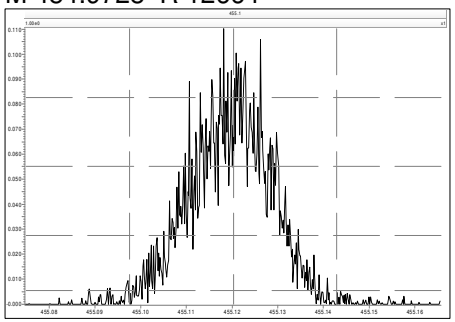
M 430.9728 R 12533



M 442.9728 R 13935



M 454.9728 R 12664



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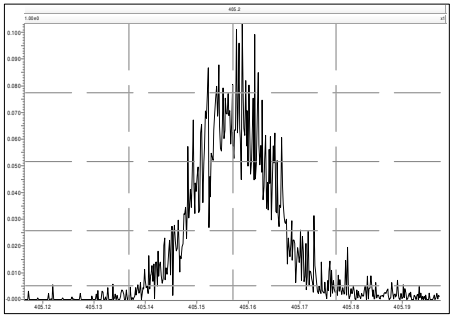
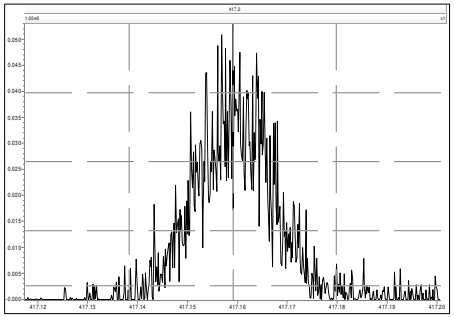
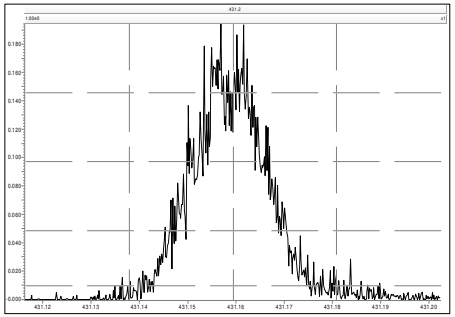
M 404.9760 R 14493



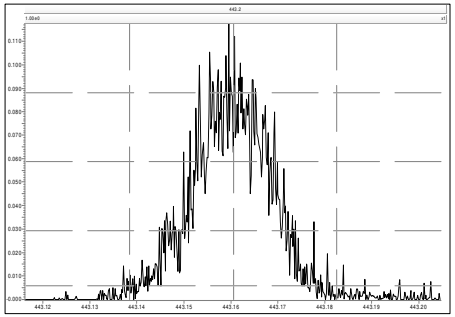
M 416.9760 R 14008



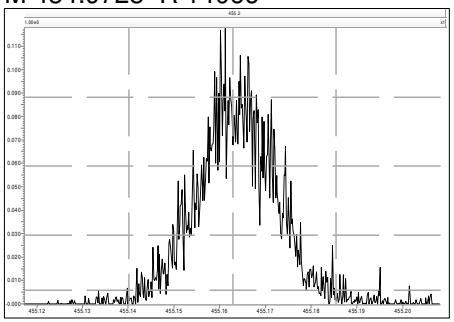
M 430.9728 R 13061



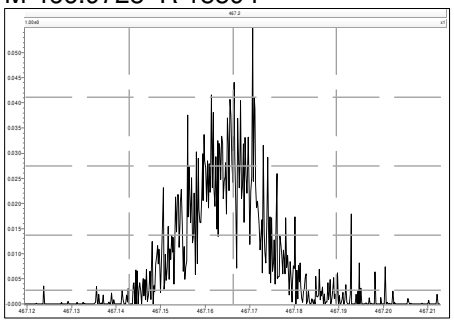
M 442.9728 R 13163



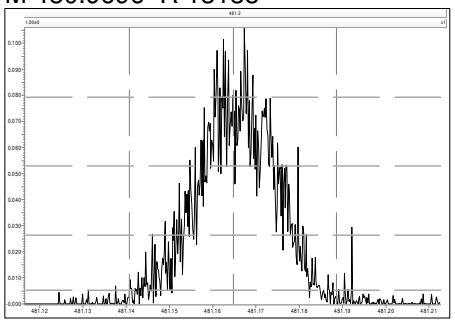
M 454.9728 R 14066



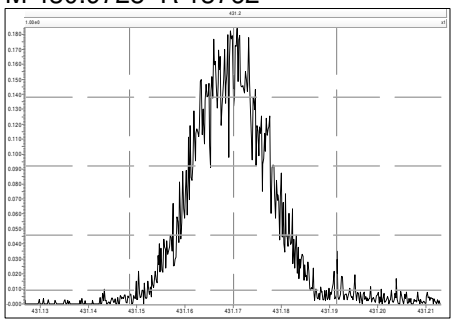
M 466.9728 R 15594



M 480.9696 R 13138



M 430.9728 R 13762



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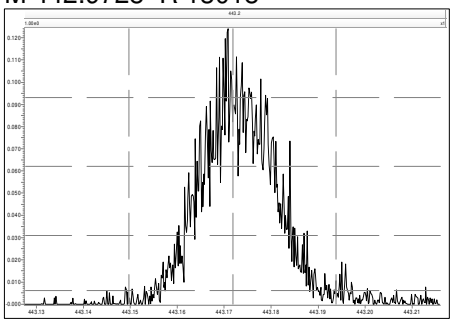
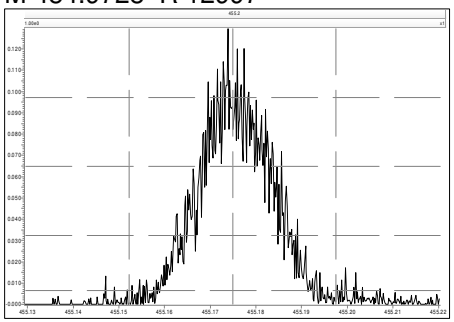
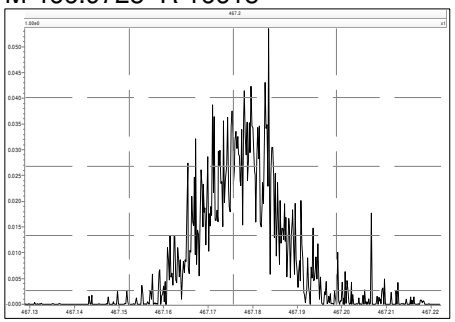


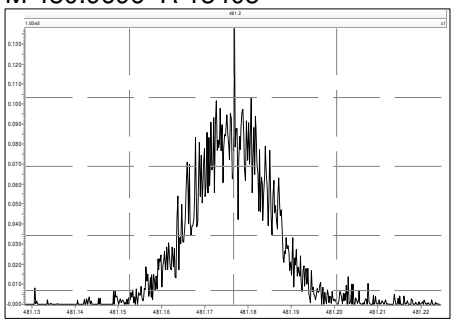
M 454.9728 R 12997



M 466.9728 R 16615



M 480.9696 R 13405



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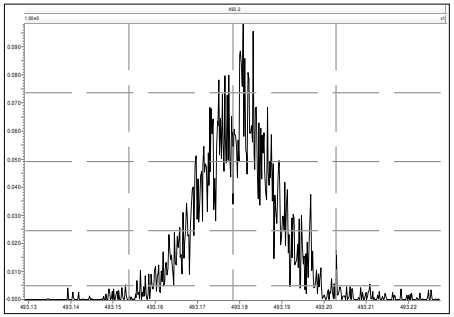
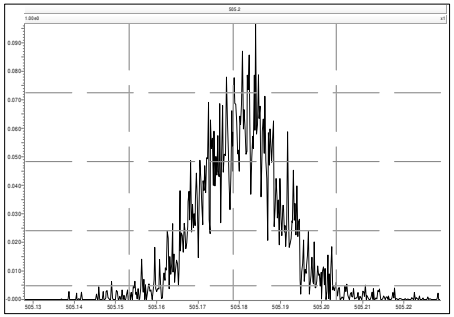
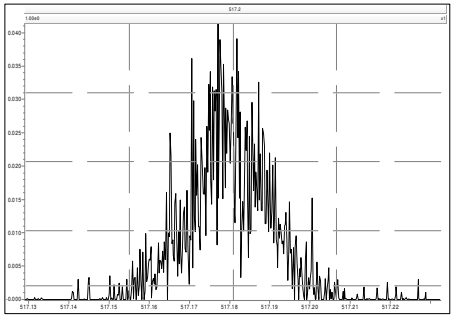
M 492.9696 R 14180



M 504.9696 R 14632



M 516.9697 R 15619



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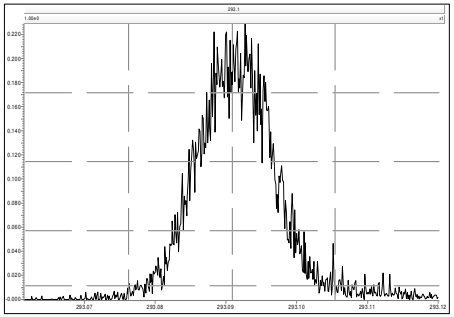
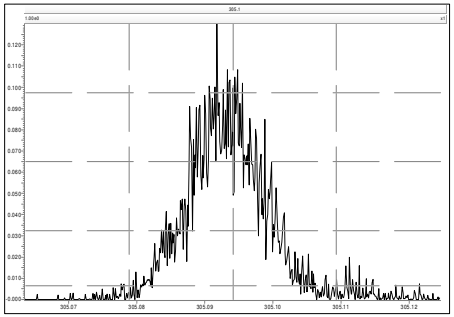
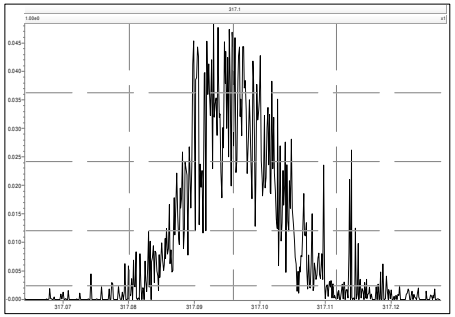


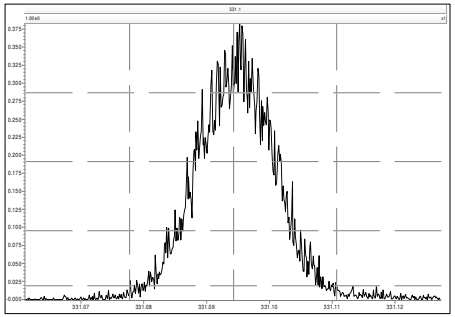
M 304.9824 R 13538



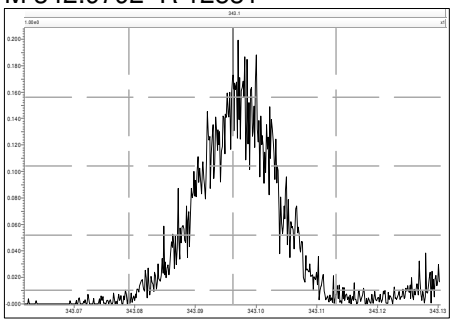
M 316.9824 R 15919



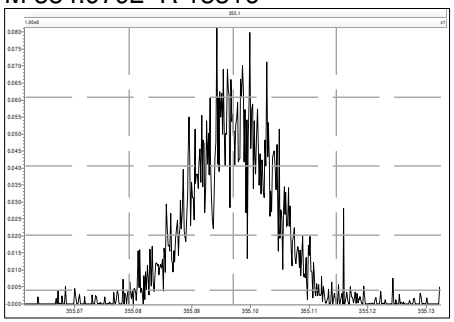
M 330.9792 R 12059



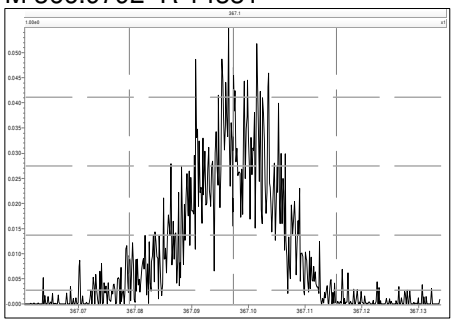
M 342.9792 R 12531



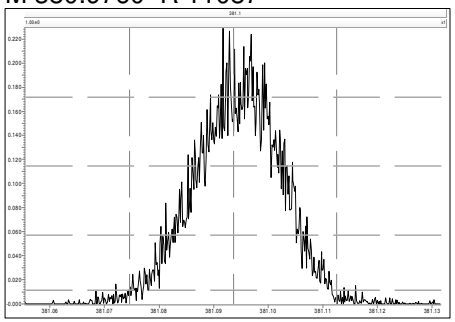
M 354.9792 R 13316



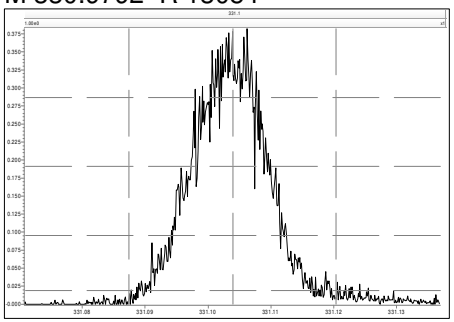
M 366.9792 R 14331



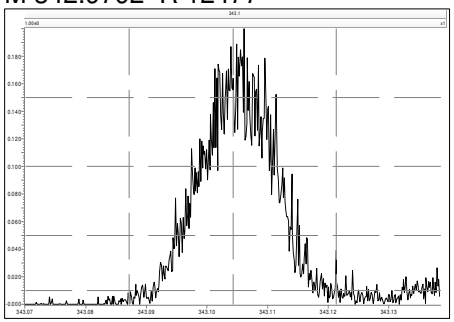
M 380.9760 R 11087



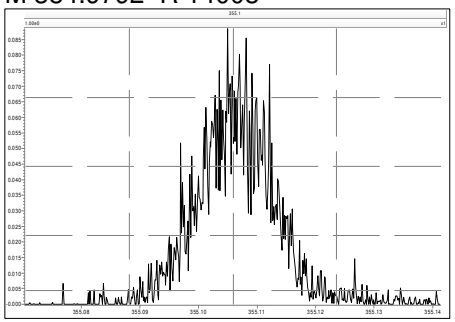
M 330.9792 R 13054



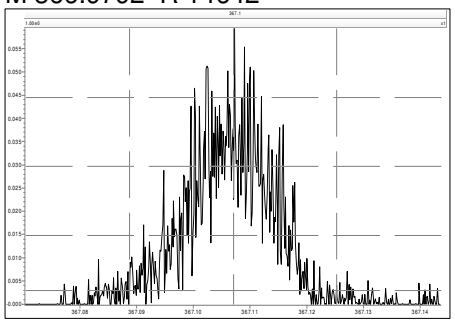
M 342.9792 R 12477



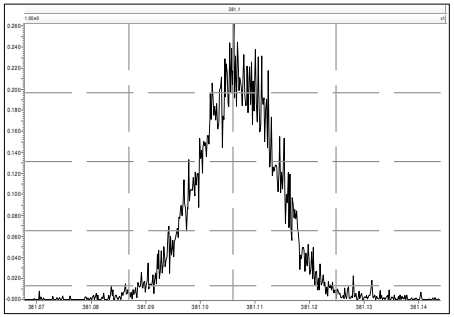
M 354.9792 R 14008



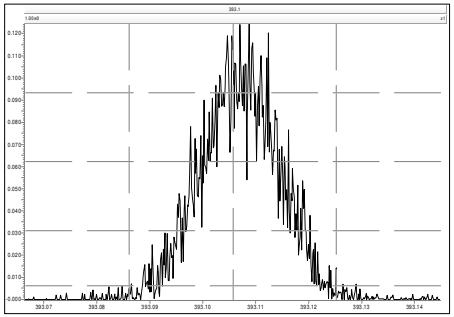
M 366.9792 R 14642



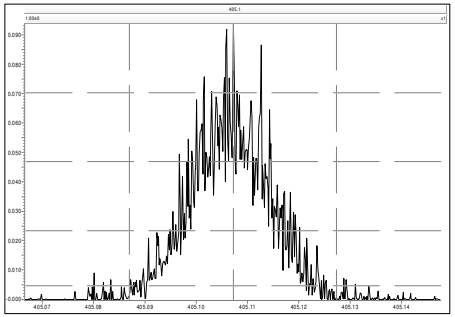
M 380.9760 R 12565



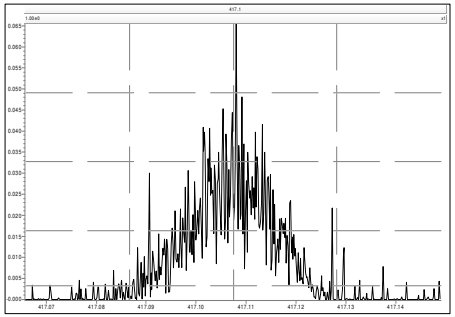
M 392.9760 R 13370



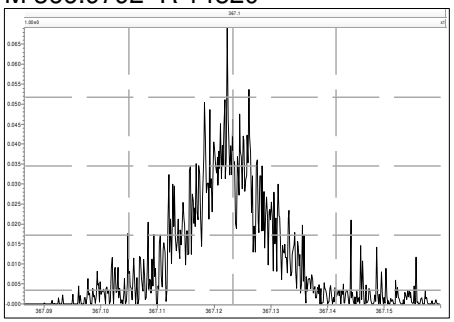
M 404.9760 R 12886



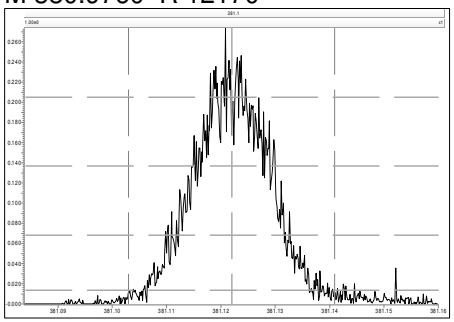
M 416.9760 R 15426



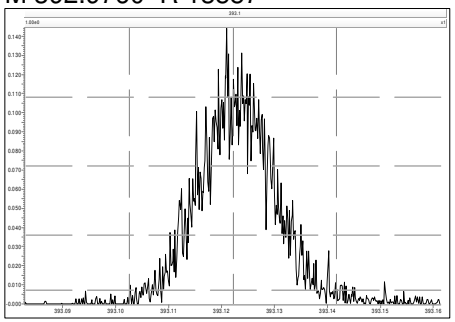
M 366.9792 R 14520



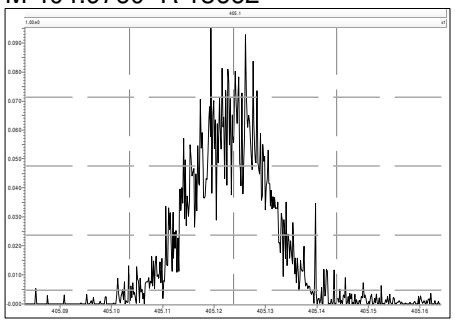
M 380.9760 R 12170



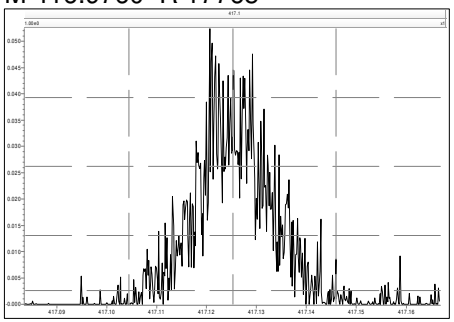
M 392.9760 R 13557



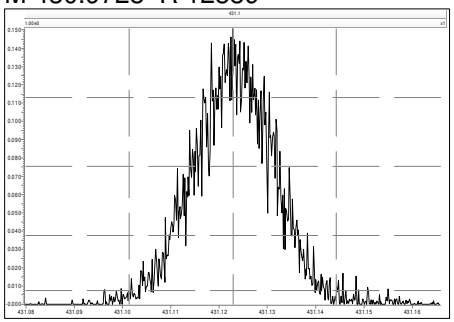
M 404.9760 R 13662



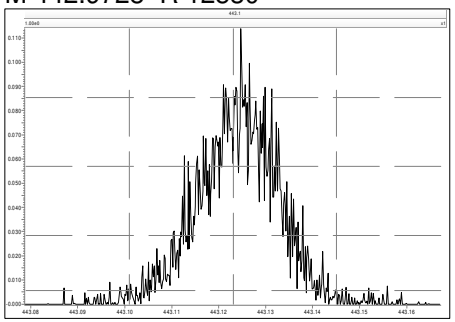
M 416.9760 R 17765



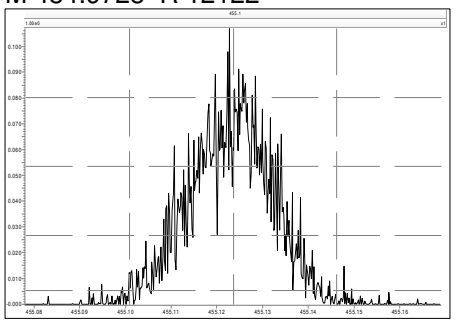
M 430.9728 R 12889



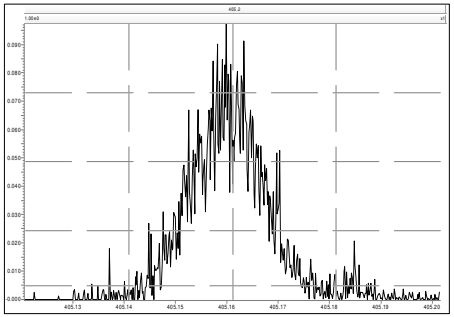
M 442.9728 R 12530



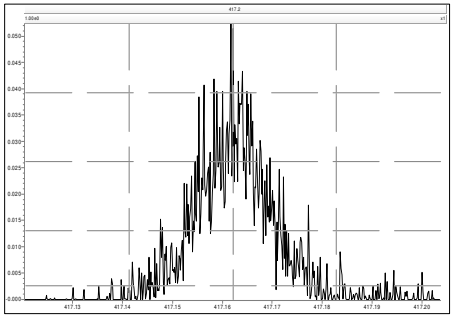
M 454.9728 R 12122



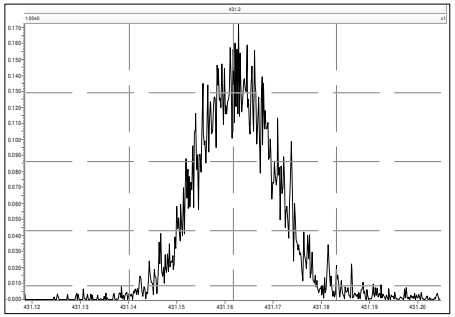
M 404.9760 R 15061



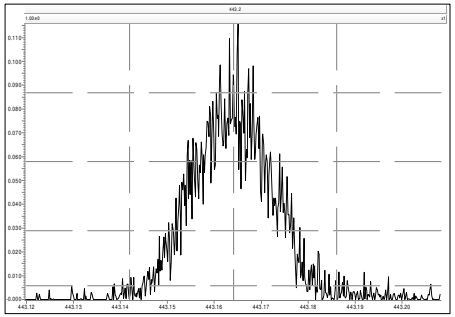
M 416.9760 R 14619



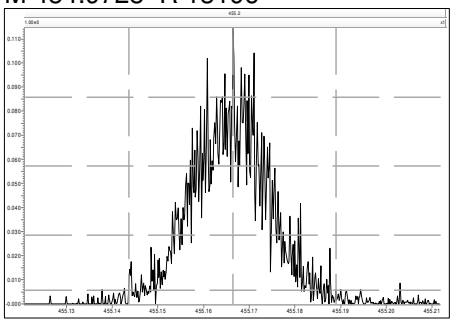
M 430.9728 R 13021



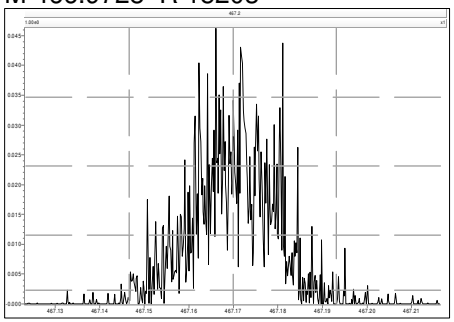
M 442.9728 R 14226



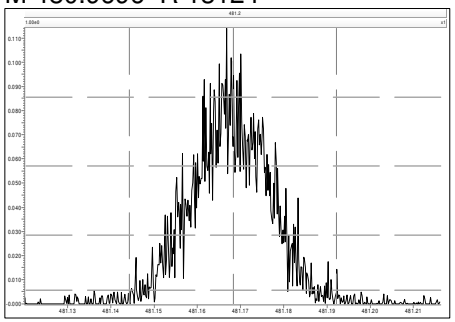
M 454.9728 R 13196



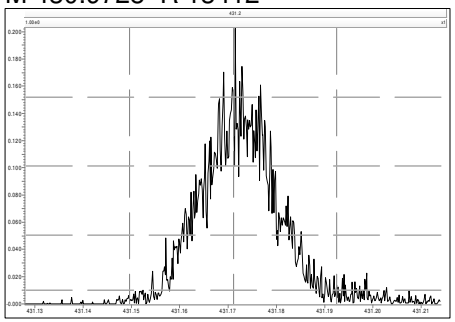
M 466.9728 R 15203



M 480.9696 R 13124



M 430.9728 R 13412



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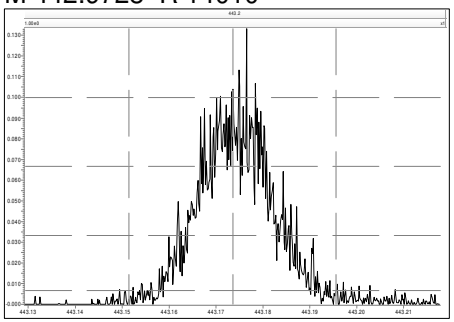
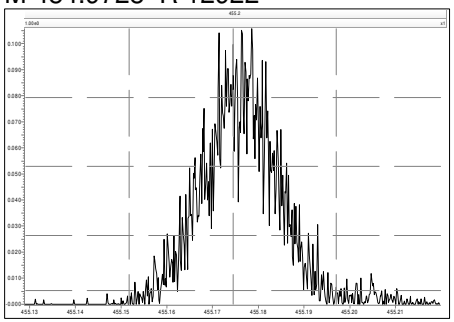
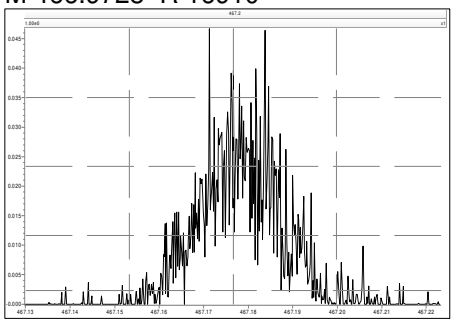


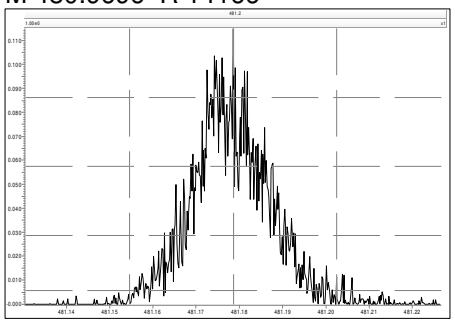
M 454.9728 R 12922



M 466.9728 R 16910

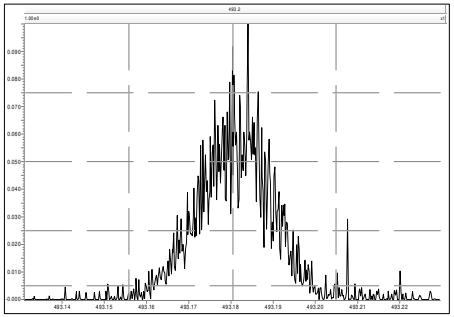


M 480.9696 R 14166

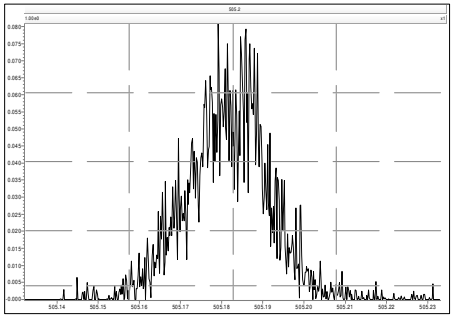


Printed: Thursday, December 16, 2021 08:08:04 Eastern Standard Time

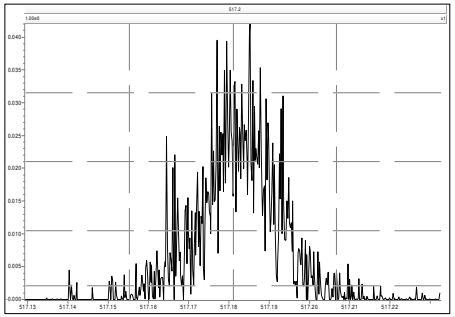
M 492.9696 R 13412



M 504.9696 R 14597



M 516.9697 R 18966



Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 0.25 pg/uL CS0	210727R03 0.5 pg/uL CS1	210727R04 2 pg/uL CS2	210727R05 10 pg/uL CS3	210727R06 40 pg/uL CS4	210727R07 200 pg/uL CS5	210727R08 500 pg/uL CS6
2378-TCDD	1.34	4.7%	1.45 ✓	1.34	1.26	1.32	1.30	1.35	1.39
12378-PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
123478-HxCDD	1.06	3.3%	1.10	1.10	0.99	1.05	1.05	1.06	1.05
123678-HxCDD	1.08	2.9%	1.12	1.07	1.02 ✓	1.08	1.10	1.10	1.09
123789-HxCDD	1.02	4.8%	1.10	1.05	0.95	0.99	0.99	1.01	1.00
1234678-HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
OCDD	1.07	4.2%	1.15	1.04	1.01	1.07	1.08 ✓	1.06	1.08
2378-TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
12378-PeCDF	0.95	3.2%	1.00	0.94	0.90	0.94	0.95	0.93	0.96
23478-PeCDF	0.94	3.7%	0.99	0.90 ✓	0.90	0.92	0.93	0.96	0.96
123478-HxCDF	1.23	3.3%	1.32	1.23	1.19	1.22	1.24	1.24	1.22
123678-HxCDF	1.13	3.0%	1.17	1.16	1.07	1.10	1.13	1.14	1.14
234678-HxCDF	1.15	4.2%	1.23	1.19	1.08	1.14	1.13	1.15	1.15
123789-HxCDF	1.14	3.5%	1.19	1.08	1.09	1.14	1.14	1.15	1.16 ✓
1234678-HpCDF	1.36	3.6%	1.46	1.35	1.31	1.34 ✓	1.33	1.37	1.36
1234789-HpCDF	1.30	4.0%	1.34	1.20	1.26	1.34	1.30	1.35	1.33
OCDF	1.03	4.1%	1.01	1.01	0.95	1.03	1.05	1.06 ✓	1.08
ES 2378-TCDD	1.03	1.7%	1.02	1.02	1.02	1.05	1.06	1.04	1.02
ES 12378-PeCDD	1.03	3.5%	1.01	1.02	0.99	1.01	1.03	1.07	1.10
ES 123478-HxCDD	0.99	4.4%	0.97	0.93	0.99	1.00	0.98	1.03	1.07
ES 123678-HxCDD	0.97	5.2%	0.94	0.91	0.95	1.01	0.94	1.02	1.05
ES 123789-HxCDD	1.12	5.1%	1.09	1.04	1.12	1.14	1.09	1.17	1.22
ES 1234678-HpCDD	0.99	5.2%	0.95	0.92	0.98	1.02	0.97	1.05	1.06
ES OCDD	0.78	8.4%	0.73	0.71	0.74	0.77	0.75	0.85	0.89
ES 2378-TCDF	1.08	1.2%	1.06	1.08	1.07 ✓	1.09	1.09	1.08	1.10
ES 12378-PeCDF	0.93	2.7%	0.91	0.91	0.92	0.93	0.95	0.95	0.98
ES 23478-PeCDF	0.92	2.4%	0.90	0.91	0.90	0.93	0.93	0.93	0.96
ES 123478-HxCDF	1.14	5.9%	1.09	1.04	1.13	1.18	1.12	1.21	1.23
ES 123678-HxCDF	1.30	4.9%	1.24	1.21	1.27	1.35	1.27	1.36	1.37
ES 234678-HxCDF	1.20	4.9%	1.14	1.12	1.18	1.23	1.20	1.27	1.27
ES 123789-HxCDF	1.14	5.9%	1.06	1.07	1.11	1.16	1.12	1.20	1.24
ES 1234678-HpCDF	0.95	5.7%	0.90	0.88	0.92	0.98	0.94	1.00	1.03
ES 1234789-HpCDF	0.85	7.0%	0.79	0.78	0.82	0.86	0.83	0.90	0.94
ES OCDF	0.93	8.9%	0.86	0.83	0.88	0.93	0.90	1.01	1.06

APPROVED
Carla_Lyon , 7/28/2021, 12:24:59 PM

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 **0.25 pg/uL CS0**	210727R03 **0.5 pg/uL CS1**	210727R04 **2 pg/uL CS2**	210727R05 **10 pg/uL CS3**	210727R06 **40 pg/uL CS4**	210727R07 **200 pg/uL CS5**	210727R08 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.31	2.3%	-	1.32	1.27	1.30	1.31	1.35	-
CS 12347-PeCDD	0.89	2.1%	0.89	0.91	0.88	0.87	0.93	0.88	0.89
CS 12346-PeCDF	0.87	1.7%	0.86	0.88	0.86	0.89	0.88	0.86	0.85
CS 123469-HxCDF	1.09	2.8%	1.06	1.04	1.08	1.14	1.09	1.12	1.09
CS 1234689-HpCDF	0.86	3.3%	0.86	0.84	0.86	0.92	0.86	0.86	0.84
SS 37Cl-2378-TCDD	1.26	2.3%	-	1.29	1.25	1.24	1.23	1.29	-
SS 12347-PeCDD	0.86	4.0%	0.88	0.89	0.89	0.86	0.90	0.82 ✓	0.81
SS 12346-PeCDF	0.93	3.5%	0.94	0.97	0.93	0.96	0.93	0.91	0.87
SS 123469-HxCDF	0.84	2.8%	0.86	0.86	0.85	0.84	0.86	0.82	0.80
SS 1234689-HpCDF	0.91	6.0%	0.96	0.96	0.94	0.94	0.92	0.86	0.81
AS 1368-TCDD	1.02	0.7%	1.01	1.03	1.02	1.02 ✓	1.02	1.04	1.02
AS 1368-TCDF	1.08	1.9%	1.05	1.06	1.07	1.10	1.09	1.10	1.07
~~OCDD-a~~	~~0.07~~	~~7.2%~~	~~0.06~~	~~0.08~~	~~0.07~~	~~0.07~~	~~0.07~~	~~0.06~~	~~0.07~~
~~OCDF-a~~	~~0.06~~	~~7.0%~~	~~0.05~~	~~0.06~~	~~0.05~~	~~0.06~~	~~0.06~~	~~0.06~~	~~0.06~~
Not reported from this ICAL - CL 28Jul21									
Totals									
Total TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
Total PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
Total HxCDD	1.05	3.3%	1.11	1.07	0.99	1.04	1.05	1.06	1.05
Total HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
Total TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
Total PeCDF	0.94	3.3%	1.00	0.92	0.90	0.93	0.94	0.95	0.96
Total HxCDF	1.16	3.1%	1.23	1.16	1.11	1.15	1.16	1.17	1.17
Total HpCDF	1.33	3.2%	1.40	1.28	1.28	1.34	1.32	1.36	1.34
FS 1278-TCDD	1.08	0.7%	1.08	1.08	1.09	1.08	1.08	1.08	1.10
FS 12478-PeCDD	1.09	3.7%	1.10	1.10 ✓	1.12	1.13	1.13	1.07	1.01
FS 123468-HxCDD	1.26	4.2%	1.27	1.30	1.28	1.32	1.28	1.24	1.16
FS 1234679-HpCDD	1.36	5.0%	1.41	1.37	1.38	1.42	1.38 ✓	1.30	1.23
TS 1378-TCDD	1.35	2.3%	1.36 ✓	1.38	1.36	1.31	1.30	1.35	1.37

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	210727R01	2	SBS_210727_DF_RA	1.00	SIL 20-61-1	PSW	638-037	27-Jul-2021	08:17:39
2	210727R02	85	CS0_210727_DF_RA	1.00	SIL 25-6-3	PSW	693-472	27-Jul-2021	09:04:23
3	210727R03	86	CS1_210727_DF_RA	1.00	SIL 25-6-2	PSW	554-132	27-Jul-2021	09:54:34
4	210727R04	87	CS2_210727_DF_RA	1.00	SIL 25-6-1	PSW	377-233	27-Jul-2021	10:44:24
5	210727R05	3	CS3_210727_DF_RA	1.00	SIL 23-672-1	PSW	230-891	27-Jul-2021	11:32:33
6	210727R06	88	CS4_210727_DF_RA	1.00	SIL 25-5-4	PSW	602-590	27-Jul-2021	12:19:16
7	210727R07	89	CS5_210727_DF_RA	1.00	SIL 25-5-3	PSW	147-553	27-Jul-2021	13:09:36
8	210727R08	90	CS6_210727_DF_RA	1.00	SIL 25-5-2	PSW	783-472	27-Jul-2021	13:58:27

Alternate OCDD/OCDF - NR in this ICAL. CL 28Jul21

REVIEWED
paul_walton , 7/28/2021, 8:31:00 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:08 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan STD Association	SGS Environmental Services

Individual Native Standards

2378-TCDD	ES 2378-TCDD
12378-PeCDD	ES 12378-PeCDD
123478-HxCDD	ES 123478-HxCDD
123678-HxCDD	ES 123678-HxCDD
123789-HxCDD	ES 123789-HxCDD
1234678-HpCDD	ES 1234678-HpCDD
OCDD	ES OCDD
2378-TCDF	ES 2378-TCDF
12378-PeCDF	ES 12378-PeCDF
23478-PeCDF	ES 23478-PeCDF
123478-HxCDF	ES 123478-HxCDF
123678-HxCDF	ES 123678-HxCDF
234678-HxCDF	ES 234678-HxCDF
123789-HxCDF	ES 123789-HxCDF
1234678-HpCDF	ES 1234678-HpCDF
1234789-HpCDF	ES 1234789-HpCDF
OCDF	ES OCDF

Cleanup/Sampling Standards

CS 37Cl-2378-TCDD	1234 TCDD 13C12
CS 12347-PeCDD	1234 TCDD 13C12
CS 12346-PeCDF	1234 TCDF 13C12
CS 123469-HxCDF	123467 HxCDD 13C12
CS 1234689-HpCDF	123467 HxCDD 13C12

Alternate Standards

AS 1368-TCDD	1234 TCDD 13C12
AS 1368-TCDF	1234 TCDF 13C12

Shipping Standards

FS 1278-TCDD	ES 2378-TCDD
FS 12478-PeCDD	ES 12378-PeCDD
FS 123468-HxCDD	ES 123478-HxCDD
FS 1234679-HpCDD	ES 1234678-HpCDD
TS 1378-TCDD	ES 2378-TCDD

Extraction Standards

ES 2378-TCDD	1234 TCDD 13C12
ES 12378-PeCDD	1234 TCDD 13C12
ES 123478-HxCDD	123467 HxCDD 13C12
ES 123678-HxCDD	123467 HxCDD 13C12
ES 123789-HxCDD	123467 HxCDD 13C12
ES 1234678-HpCDD	123467 HxCDD 13C12
ES OCDD	123467 HxCDD 13C12
ES 2378-TCDF	1234 TCDF 13C12
ES 12378-PeCDF	1234 TCDF 13C12
ES 23478-PeCDF	1234 TCDF 13C12
ES 123478-HxCDF	123467 HxCDD 13C12
ES 123678-HxCDF	123467 HxCDD 13C12
ES 234678-HxCDF	123467 HxCDD 13C12
ES 123789-HxCDF	123467 HxCDD 13C12
ES 1234678-HpCDF	123467 HxCDD 13C12
ES 1234789-HpCDF	123467 HxCDD 13C12
ES OCDF	123467 HxCDD 13C12

Injection Standards

1234 TCDD 13C12
1234 TCDF 13C12
123467 HxCDD 13C12

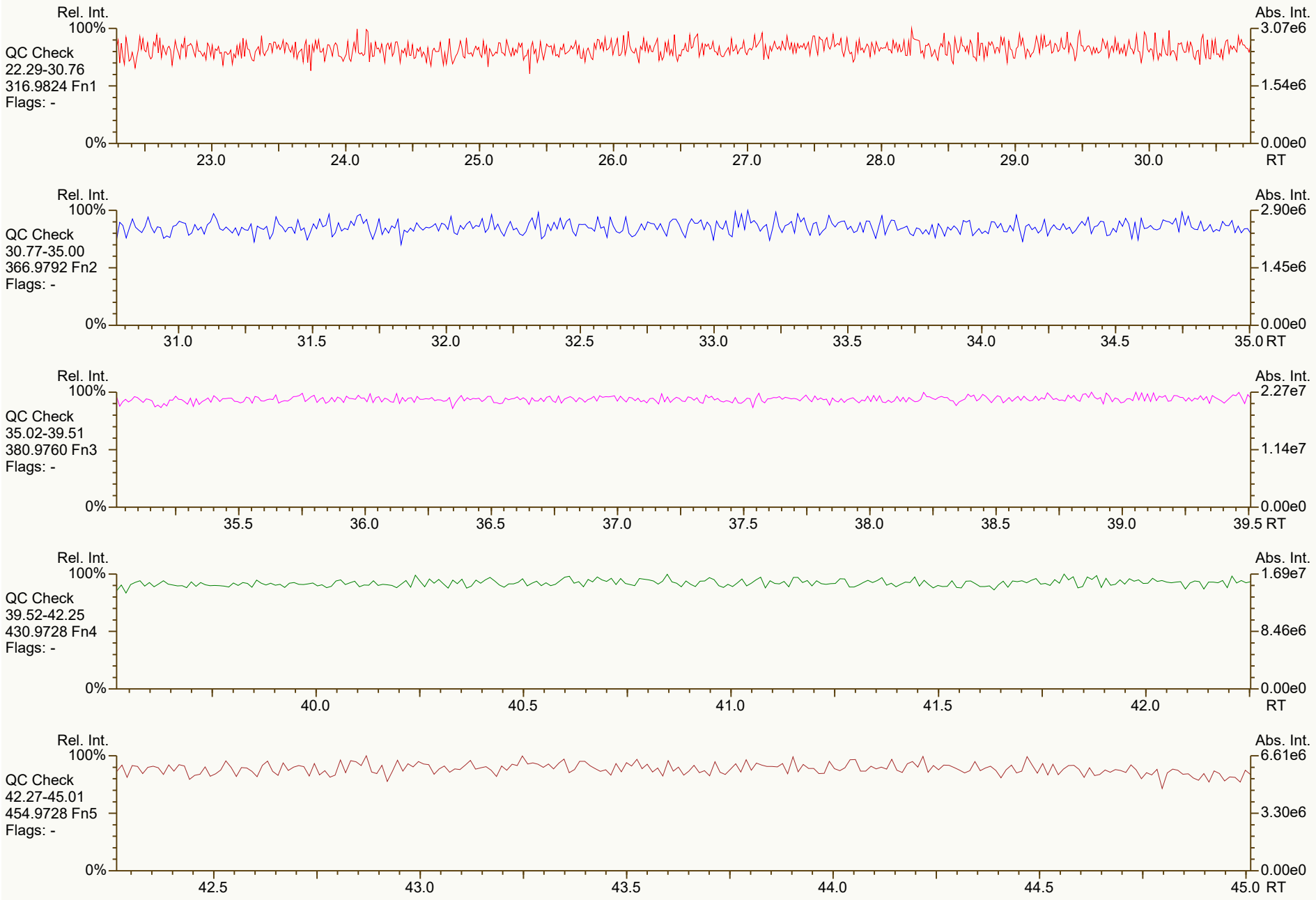
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	6.43E+05	0.73	Y	1.34	1.45	8%
12378-PeCDD	33.80	2.41E+06	1.48	Y	1.06	1.09	3%
123478-HxCDD	37.67	2.24E+06	1.35	Y	1.06	1.10	4%
123678-HxCDD	37.78	2.20E+06	1.31	Y	1.08	1.12	3%
123789-HxCDD	38.07	2.52E+06	1.21	Y	1.02	1.10	9%
1234678-HpCDD	40.66	2.08E+06	0.99	Y	0.97	1.05	7%
OCDD	43.22	3.52E+06	0.85	Y	1.07	1.15	8%
2378-TCDF	27.66	7.49E+05	0.72	Y	0.96	1.01	5%
12378-PeCDF	32.38	3.19E+06	1.44	Y	0.95	1.00	5%
23478-PeCDF	33.46	3.11E+06	1.57	Y	0.94	0.99	6%
123478-HxCDF	36.68	3.00E+06	1.23	Y	1.23	1.32	7%
123678-HxCDF	36.82	3.05E+06	1.18	Y	1.13	1.17	4%
234678-HxCDF	37.49	2.95E+06	1.17	Y	1.15	1.23	7%
123789-HxCDF	38.42	2.65E+06	1.30	Y	1.14	1.19	5%
1234678-HpCDF	39.76	2.75E+06	1.00	Y	1.36	1.46	7%
1234789-HpCDF	41.10	2.20E+06	1.11	Y	1.30	1.34	3%
OCDF	43.40	3.66E+06	0.85	Y	1.03	1.01	-1%
ES 2378-TCDD	28.50	1.77E+08	0.79	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.781	1.77E+08	1.63	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.653	1.63E+08	1.26	Y	0.99	0.97	-2%
ES 123678-HxCDD	37.766	1.57E+08	1.27	Y	0.97	0.94	-3%
ES 123789-HxCDD	38.056	1.82E+08	1.26	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.643	1.59E+08	1.05	Y	0.99	0.95	-4%
ES OCDD	43.205	2.44E+08	0.92	Y	0.78	0.73	-6%
ES 2378-TCDF	27.645	2.97E+08	0.78	Y	1.08	1.06	-2%
ES 12378-PeCDF	32.355	2.55E+08	1.55	Y	0.93	0.91	-2%
ES 23478-PeCDF	33.445	2.50E+08	1.56	Y	0.92	0.90	-3%
ES 123478-HxCDF	36.661	1.82E+08	0.53	Y	1.14	1.09	-5%
ES 123678-HxCDF	36.801	2.08E+08	0.53	Y	1.30	1.24	-4%
ES 234678-HxCDF	37.466	1.92E+08	0.53	Y	1.20	1.14	-5%
ES 123789-HxCDF	38.399	1.78E+08	0.52	Y	1.14	1.06	-7%
ES 1234678-HpCDF	39.748	1.51E+08	0.44	Y	0.95	0.90	-5%
ES 1234789-HpCDF	41.09	1.32E+08	0.45	Y	0.85	0.79	-7%
ES OCDF	43.389	2.89E+08	0.89	Y	0.93	0.86	-7%

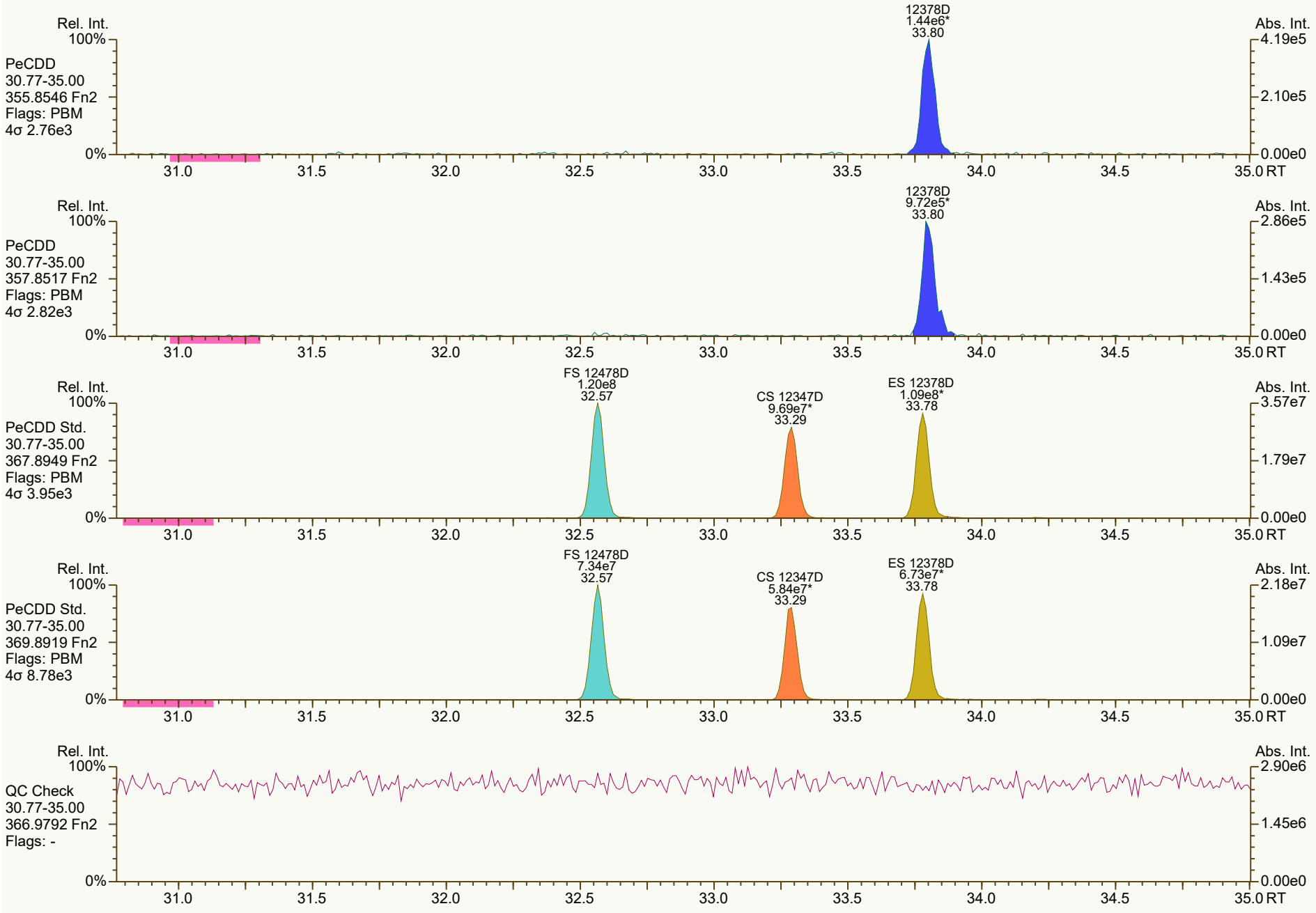
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

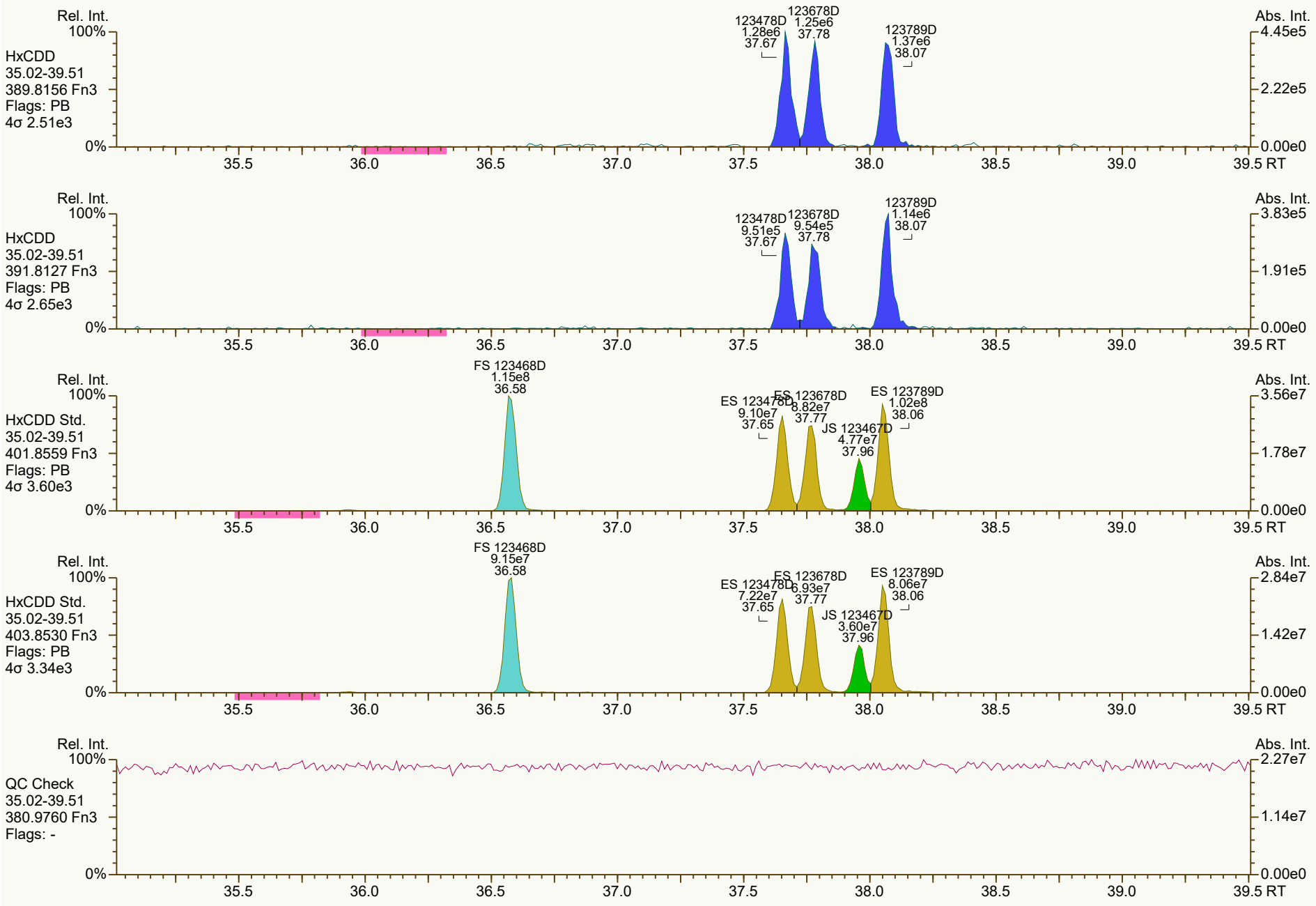
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.74E+08	0.80	Y	-	-	-
JS 1234-TCDF	26.33	2.80E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	8.38E+07	1.33	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.89	0.89	0%
CS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.78E+08	0.52	Y	1.09	1.06	-2%
CS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.86	0.88	2%
SS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.93	0.94	2%
SS 123469-HxCDF	37.12	1.78E+08	0.52	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.91	0.96	5%
AS 1368-TCDD	24.91	1.76E+08	0.79	Y	1.02	1.01	-1%
AS 1368-TCDF	22.86	2.95E+08	0.78	Y	1.08	1.05	-2%
FS 1278-TCDD	28.82	1.91E+08	0.78	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.94E+08	1.64	Y	1.09	1.10	0%
FS 123468-HxCDD	36.58	2.07E+08	1.26	Y	1.26	1.27	0%
FS 1234679-HpCDD	39.99	2.24E+08	1.06	Y	1.36	1.41	4%
TS 1378-TCDD	26.87	2.41E+08	0.79	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.22~~	~~1.80E+05~~	~~0.99~~	~~N~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.41~~	~~1.98E+05~~	~~2.81~~	~~Y~~	~~0.06~~	~~0.05~~	~~-7%~~

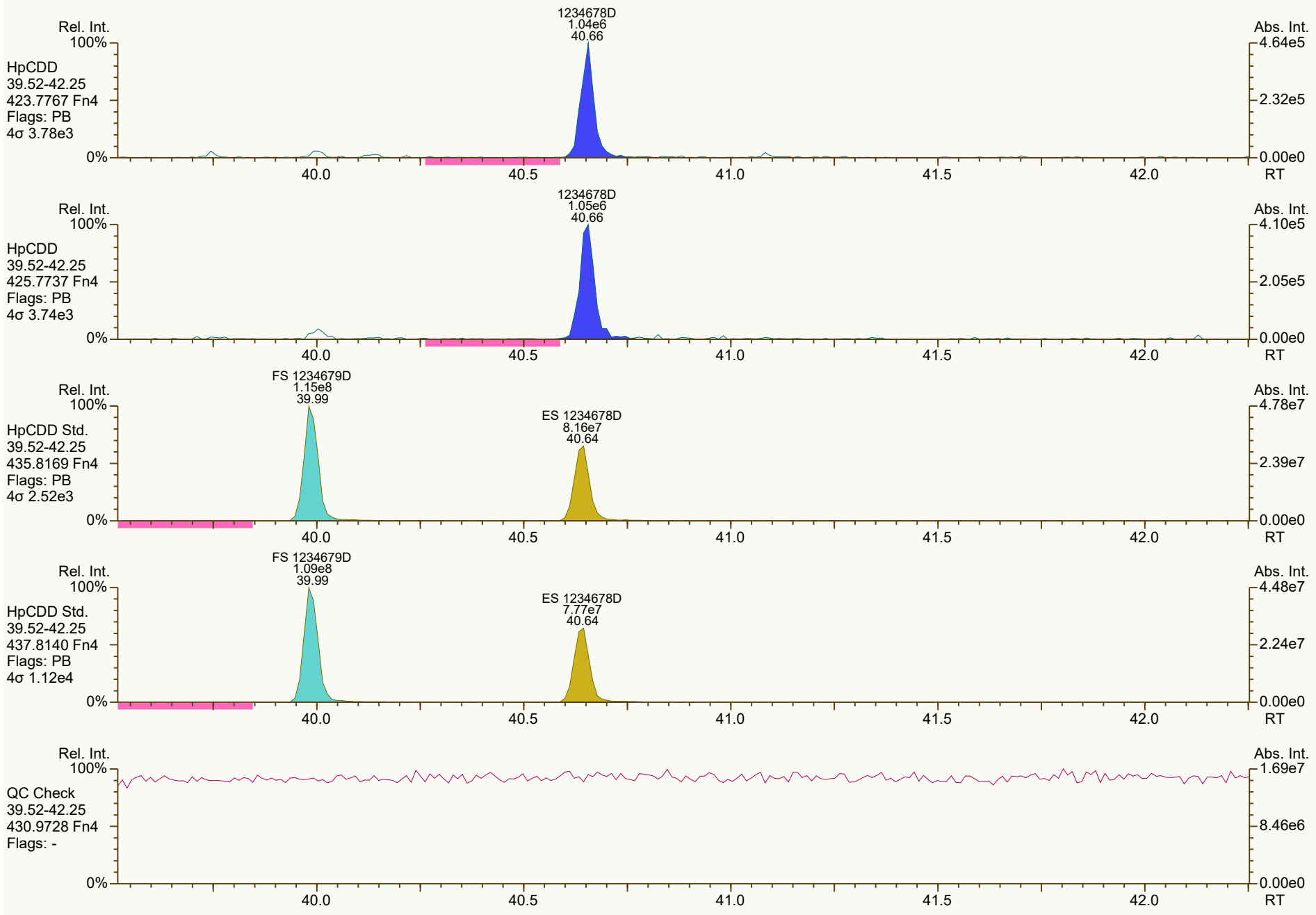
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.07e6
1.54e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.69e7
8.46e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 2.21e3
0%
2378D
2.70e5*
28.52
Abs. Int.
6.87e4
3.43e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.34e3
RRF(2378D) = (2.70e5 + 3.73e5) * 100pg / (7.81e7 + 9.89e7) * 0.25pg = 1.45
PSW 27-Jul-2021 15:08
OK
CL 28Jul21
2378D
3.73e5*
28.52
9.52e4
4.76e4
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.84e3
1.43e4
7.14e3
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.61e3
AS 1368D
7.76e7
24.91
TS 1378D
1.07e8
26.87
JS 1234D
7.74e7
27.86
ES 2378D
7.81e7
28.50
FS 1278D
8.37e7
28.82
2.55e7
1.28e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.86e3
RRF(TS 1378D) = (1.07e8 + 1.34e8) * 100pg / (7.81e7 + 9.89e7) * 100pg = 1.36
PSW 27-Jul-2021 15:11
OK - CL 28Jul21
AS 1368D
9.87e7
24.91
TS 1378D
1.34e8
26.87
JS 1234D
9.66e7
27.86
ES 2378D
9.89e7
28.50
FS 1278D
1.08e8
28.82
3.19e7
1.59e7


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 2.76e3
0%
12378D
1.44e6*
33.80
Abs. Int.
4.19e5
2.10e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.82e3
0%
12378D
9.72e5*
33.80
Abs. Int.
2.86e5
1.43e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.95e3
0%
FS 12478D
1.20e8
32.57
CS 12347D
9.69e7*
33.29
ES 12378D
1.09e8*
33.78
Abs. Int.
3.57e7
1.79e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 8.78e3
0%
FS 12478D
7.34e7
32.57
CS 12347D
5.84e7*
33.29
ES 12378D
6.73e7*
33.78
Abs. Int.
2.18e7
1.09e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

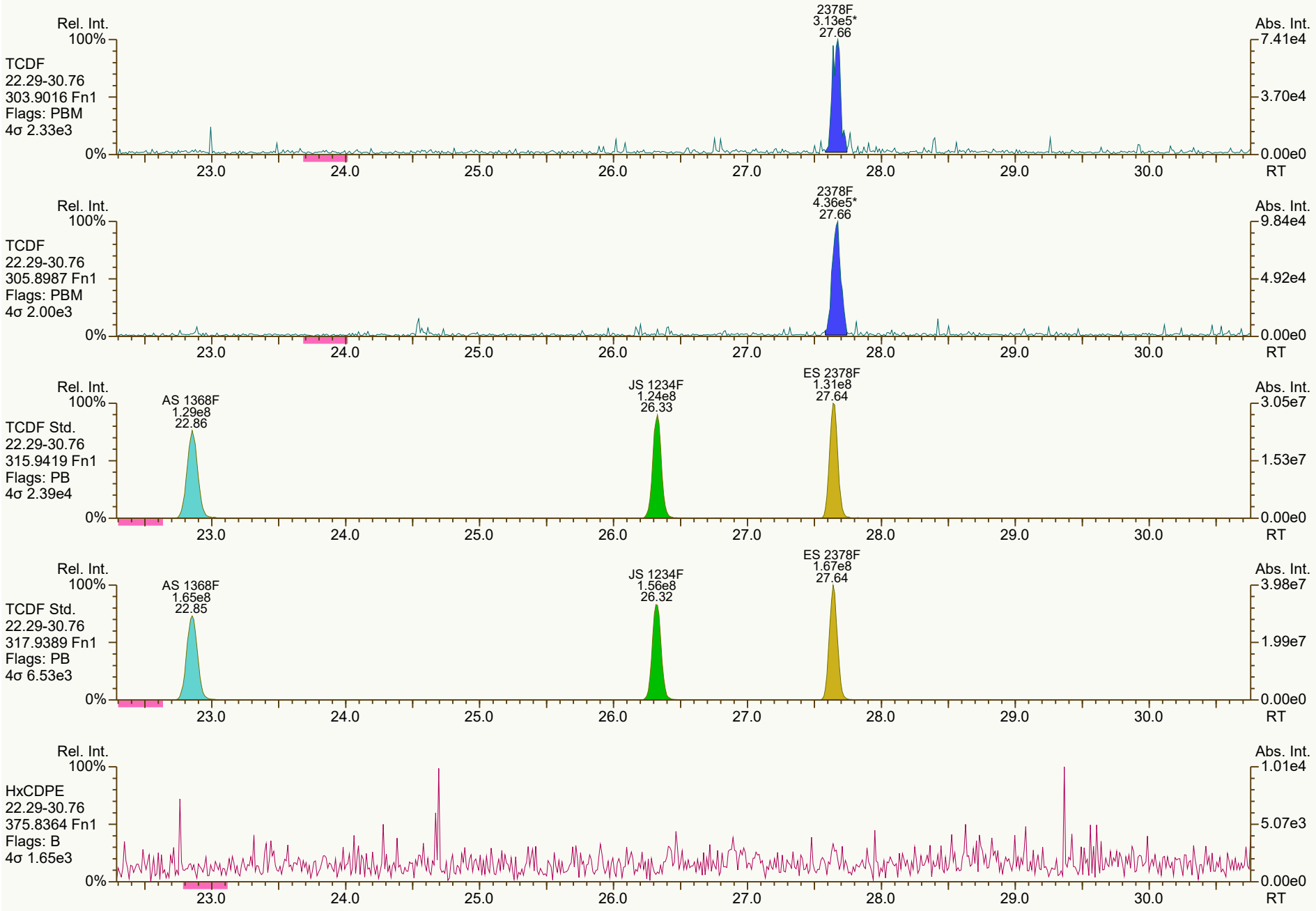

Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.51e3
123478D 1.28e6 37.67
123678D 1.25e6 37.78
123789D 1.37e6 38.07
4.45e5
2.22e5
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.65e3
123478D 9.51e5 37.67
123678D 9.54e5 37.78
123789D 1.14e6 38.07
3.83e5
1.91e5
0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.60e3
FS 123468D 1.15e8 36.58
ES 123478D 9.10e7 37.65
ES 123678D 8.82e7 37.77
JS 123467D 4.77e7 37.96
ES 123789D 1.02e8 38.06
3.56e7
1.78e7
0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.34e3
FS 123468D 9.15e7 36.58
ES 123478D 7.22e7 37.65
ES 123678D 6.93e7 37.77
JS 123467D 3.60e7 37.96
ES 123789D 8.06e7 38.06
2.84e7
1.42e7
0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.27e7
1.14e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 3.78e3
1234678D
1.04e6
40.66
Abs. Int.
4.64e5
2.32e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.74e3
1234678D
1.05e6
40.66
Abs. Int.
4.10e5
2.05e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.52e3
FS 1234679D
1.15e8
39.99
ES 1234678D
8.16e7
40.64
Abs. Int.
4.78e7
2.39e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.12e4
FS 1234679D
1.09e8
39.99
ES 1234678D
7.77e7
40.64
Abs. Int.
4.48e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.69e7
8.46e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDD
1.61e6
43.21
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.80e3
0%
Abs. Int.
5.57e5
2.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
5.93e5
2.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.17e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PBM
4σ 3.76e3
0%
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.27e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PBM
4σ 3.92e3
0%
Abs. Int.
4.10e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: CS0_210727_DF_RA | Sample ID: SIL 25-6-3 | Acq: 27-Jul-2021 09:04:23

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85 | User: PSW Datafile: 210727R02



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3692, 2809, 0990 scc: 693-472 *PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 7 of 12*

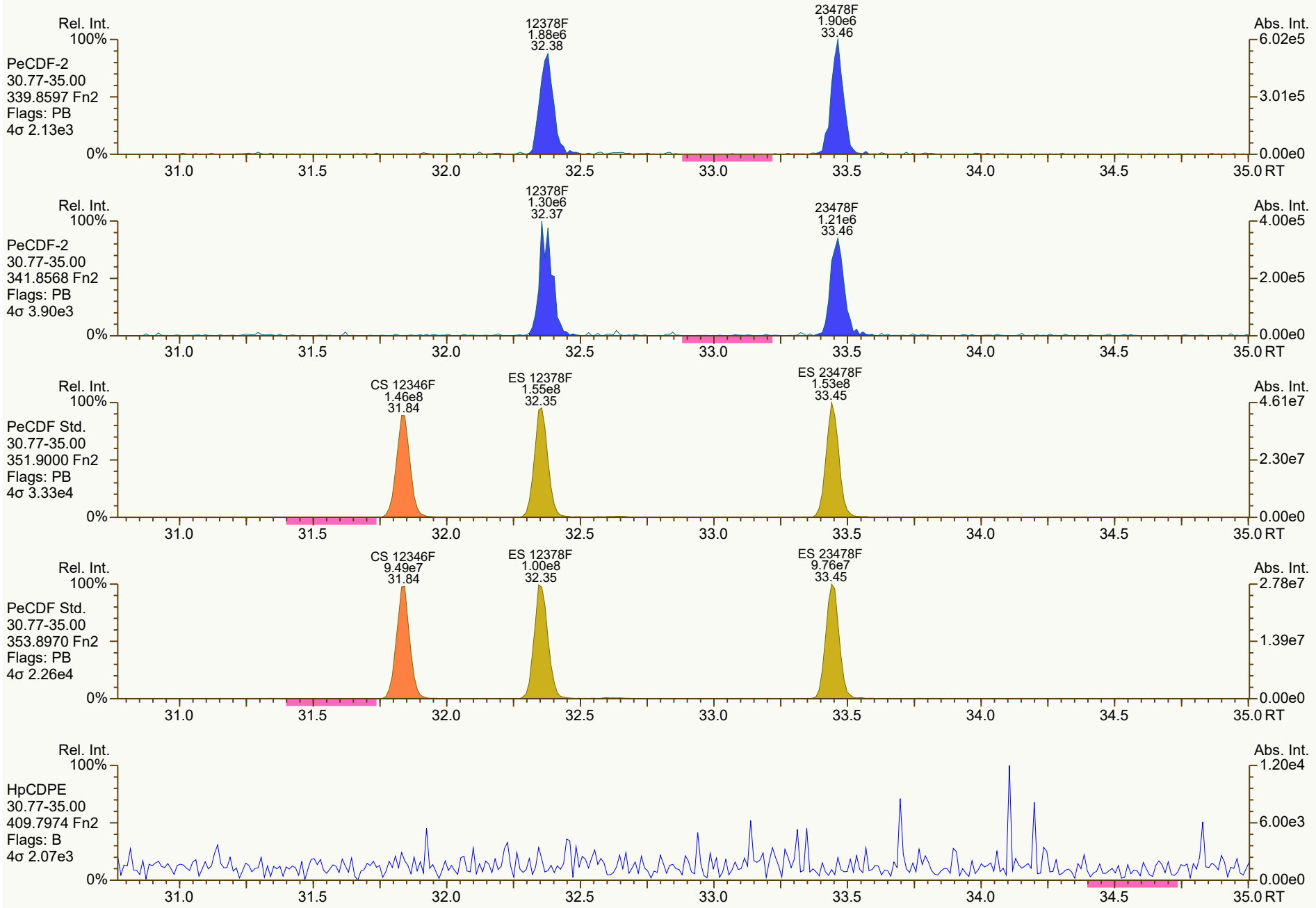
SGS ID: CS0_210727_DF_RA | Sample ID: SIL 25-6-3 | Acq: 27-Jul-2021 09:04:23

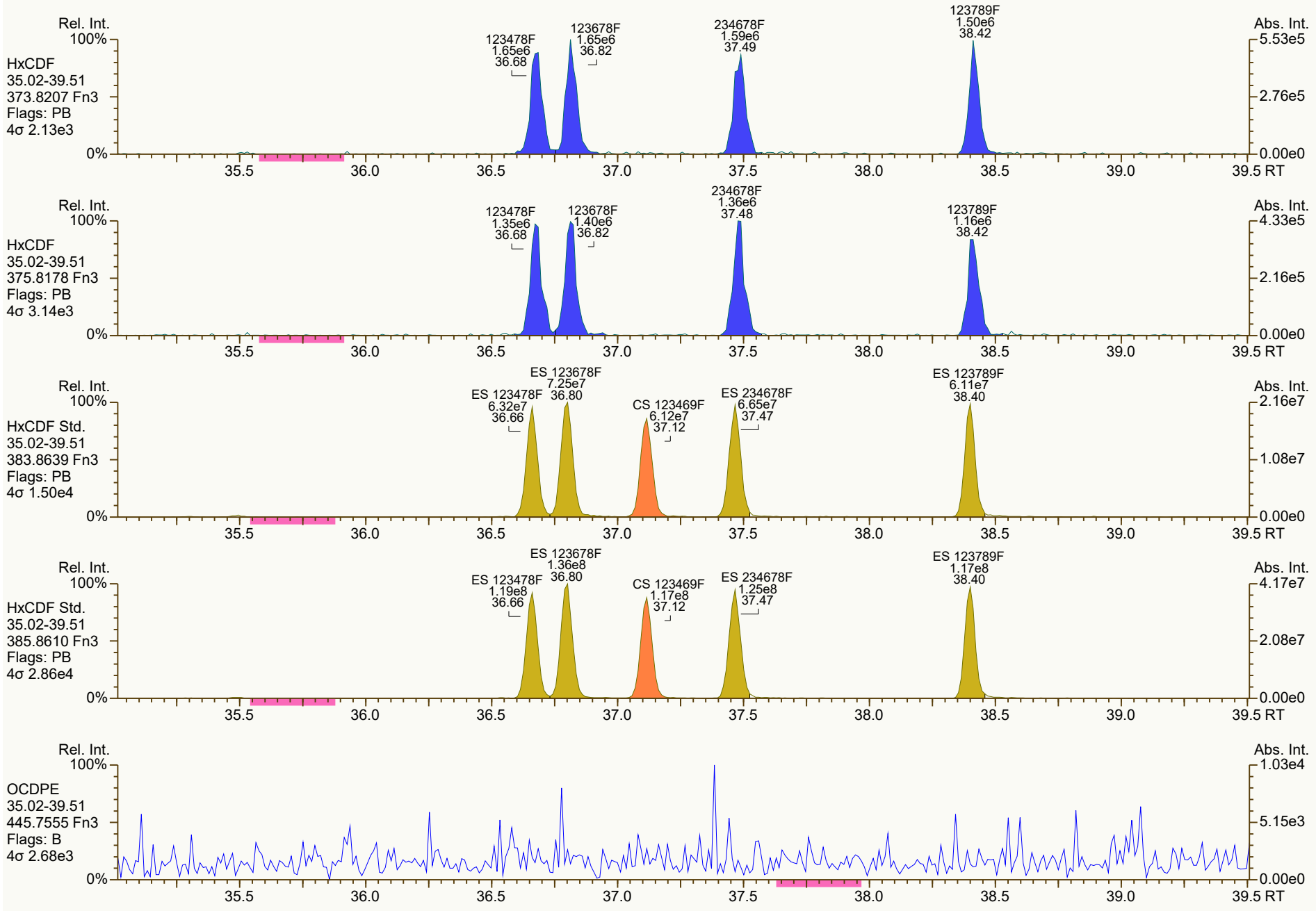
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85 | User: PSW Datafile: 210727R02

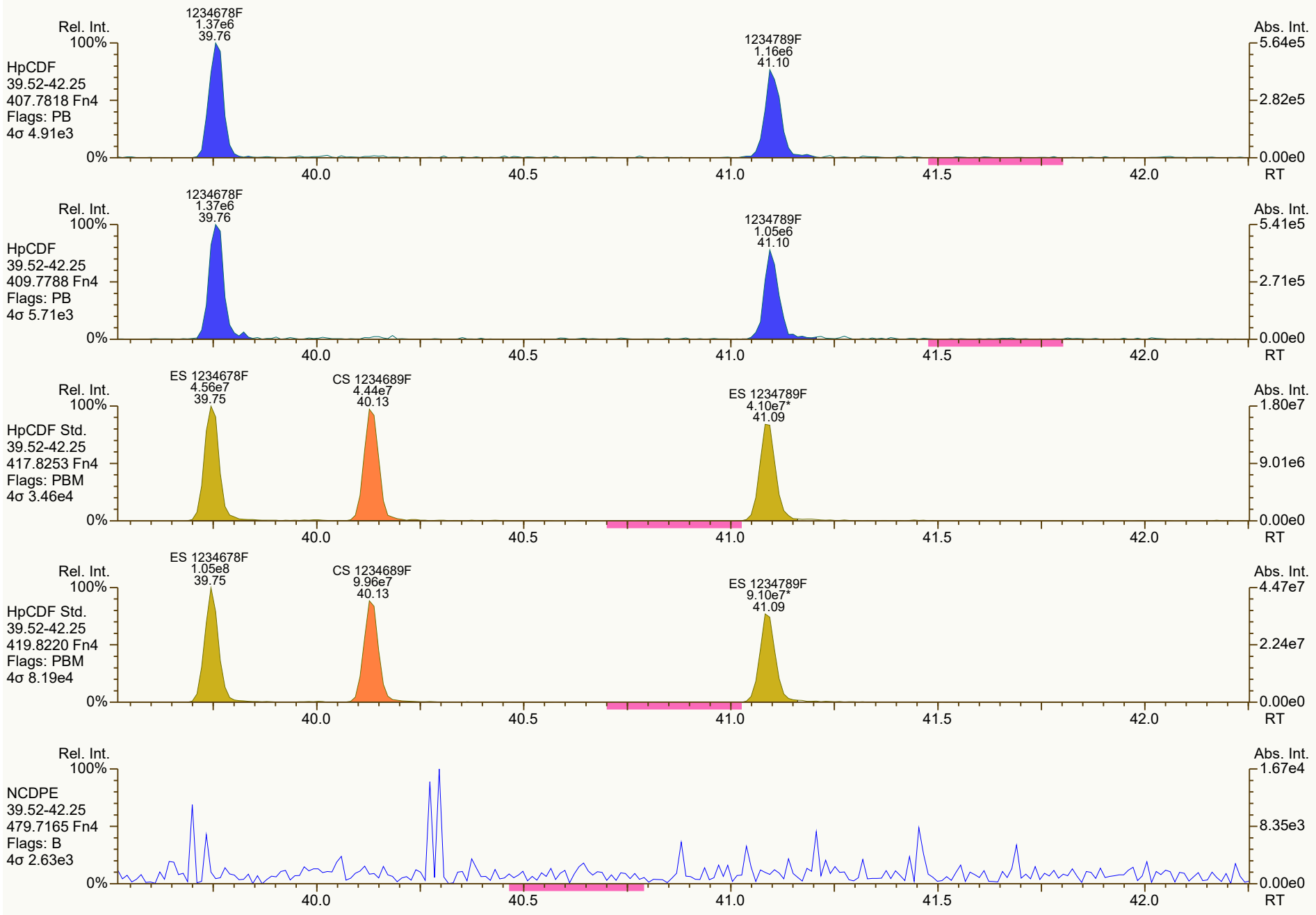


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1474 scc: 693-472 *PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.13e3
0%
12378F
1.88e6
32.38
23478F
1.90e6
33.46
Abs. Int.
6.02e5
3.01e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.90e3
0%
12378F
1.30e6
32.37
23478F
1.21e6
33.46
Abs. Int.
4.00e5
2.00e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 3.33e4
0%
CS 12346F
1.46e8
31.84
ES 12378F
1.55e8
32.35
ES 23478F
1.53e8
33.45
Abs. Int.
4.61e7
2.30e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.26e4
0%
CS 12346F
9.49e7
31.84
ES 12378F
1.00e8
32.35
ES 23478F
9.76e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
1.20e4
6.00e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

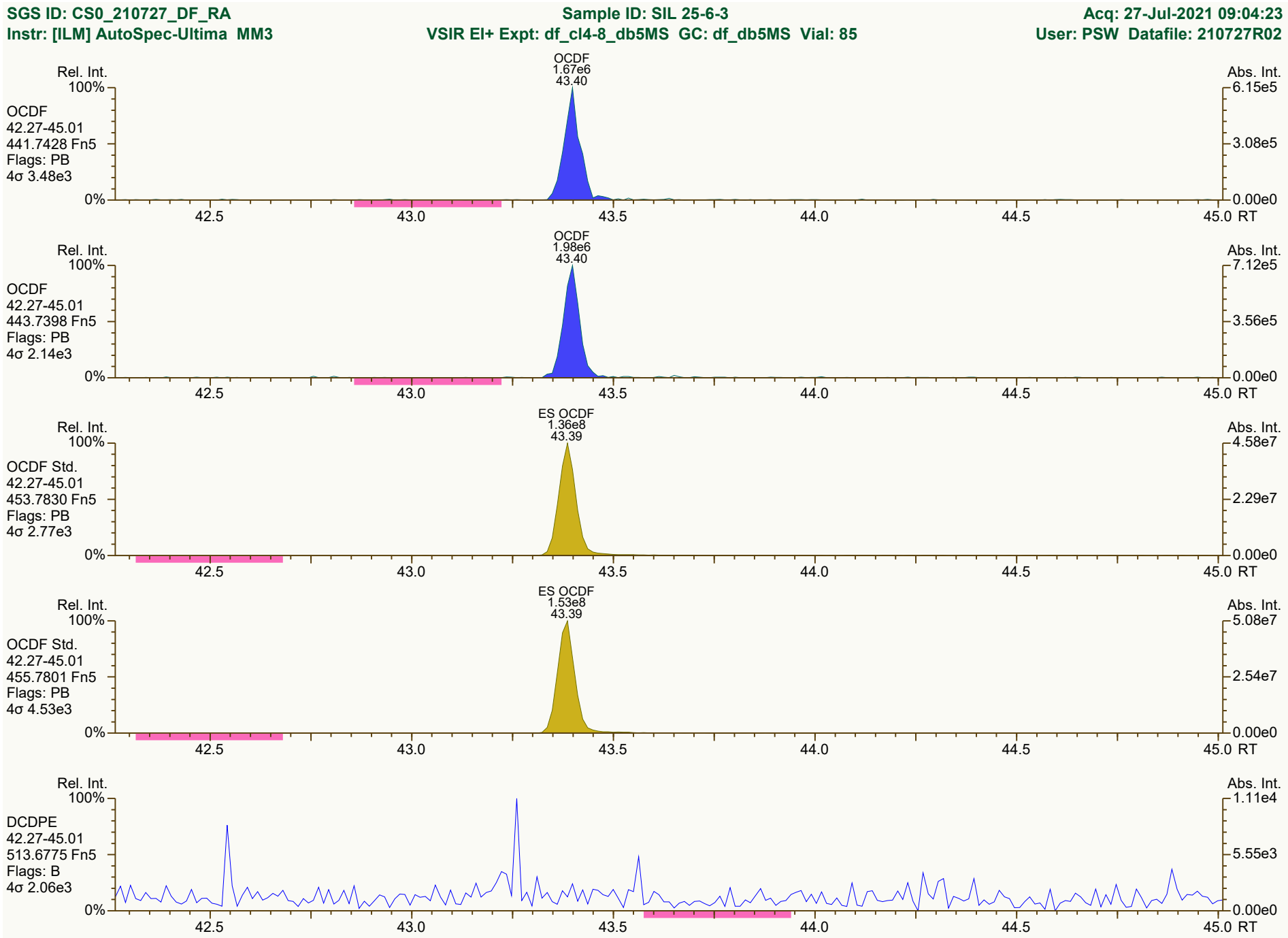

Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.13e3
0%
123478F
1.65e6
36.68
123678F
1.65e6
36.82
234678F
1.59e6
37.49
123789F
1.50e6
38.42
Abs. Int.
5.53e5
2.76e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 3.14e3
0%
123478F
1.35e6
36.68
123678F
1.40e6
36.82
234678F
1.36e6
37.48
123789F
1.16e6
38.42
Abs. Int.
4.33e5
2.16e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.50e4
0%
ES 123478F
6.32e7
36.66
ES 123678F
7.25e7
36.80
CS 123469F
6.12e7
37.12
ES 234678F
6.65e7
37.47
ES 123789F
6.11e7
38.40
Abs. Int.
2.16e7
1.08e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.86e4
0%
ES 123478F
1.19e8
36.66
ES 123678F
1.36e8
36.80
CS 123469F
1.17e8
37.12
ES 234678F
1.25e8
37.47
ES 123789F
1.17e8
38.40
Abs. Int.
4.17e7
2.08e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.68e3
0%
Abs. Int.
1.03e4
5.15e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e3
1234678F
1.37e6
39.76
1234789F
1.16e6
41.10
Abs. Int.
5.64e5
2.82e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.71e3
1234678F
1.37e6
39.76
1234789F
1.05e6
41.10
Abs. Int.
5.41e5
2.71e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.46e4
ES 1234678F
4.56e7
39.75
CS 1234689F
4.44e7
40.13
ES 1234789F
4.10e7*
41.09
Abs. Int.
1.80e7
9.01e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 8.19e4
ES 1234678F
1.05e8
39.75
CS 1234689F
9.96e7
40.13
ES 1234789F
9.10e7*
41.09
Abs. Int.
4.47e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
Abs. Int.
1.67e4
8.35e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT

SGS ID: CS0_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85

Acq: 27-Jul-2021 09:04:23
User: PSW Datafile: 210727R02



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2212, 1649, 1411 scc: 693-472
PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 12 of 12

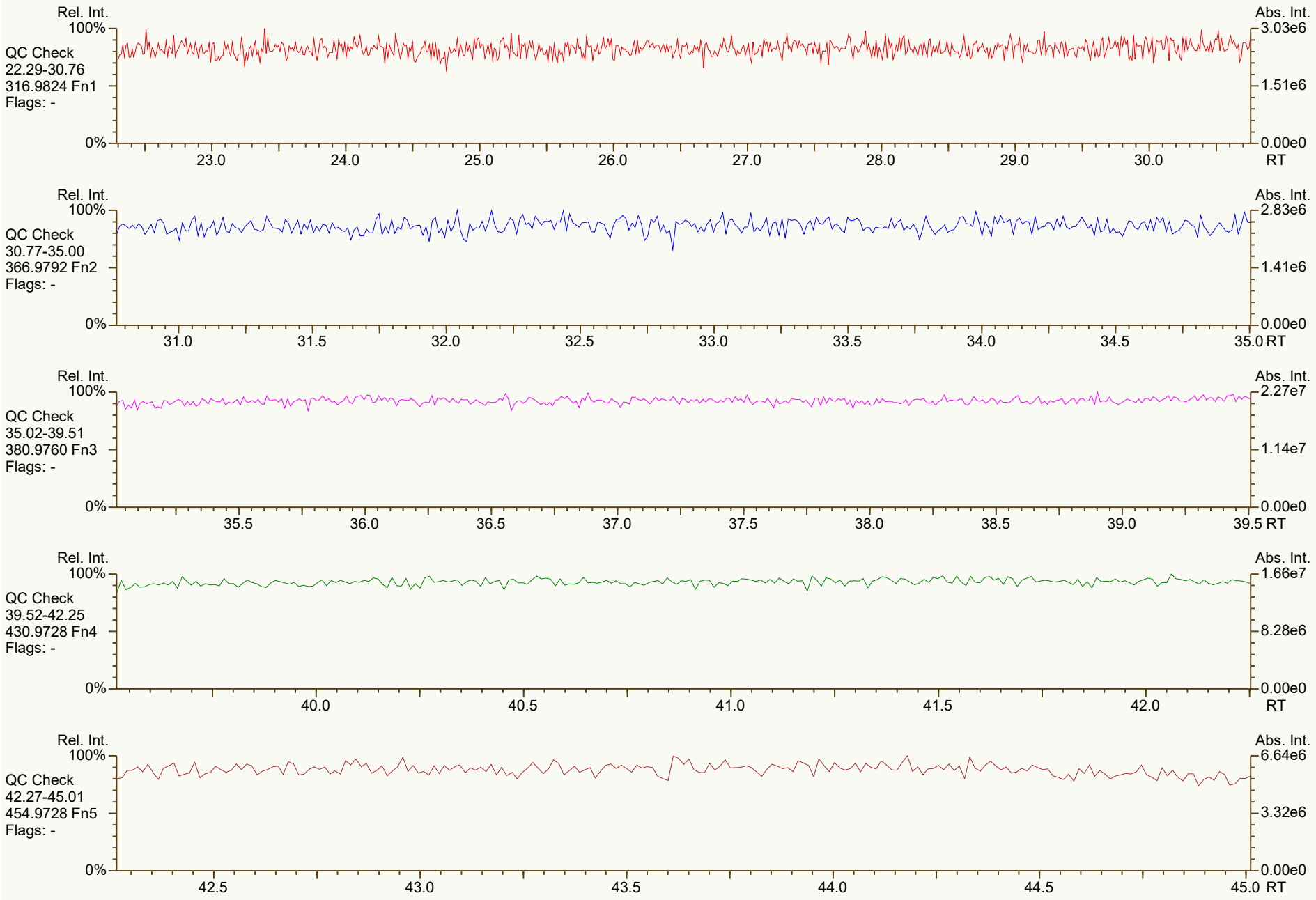
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

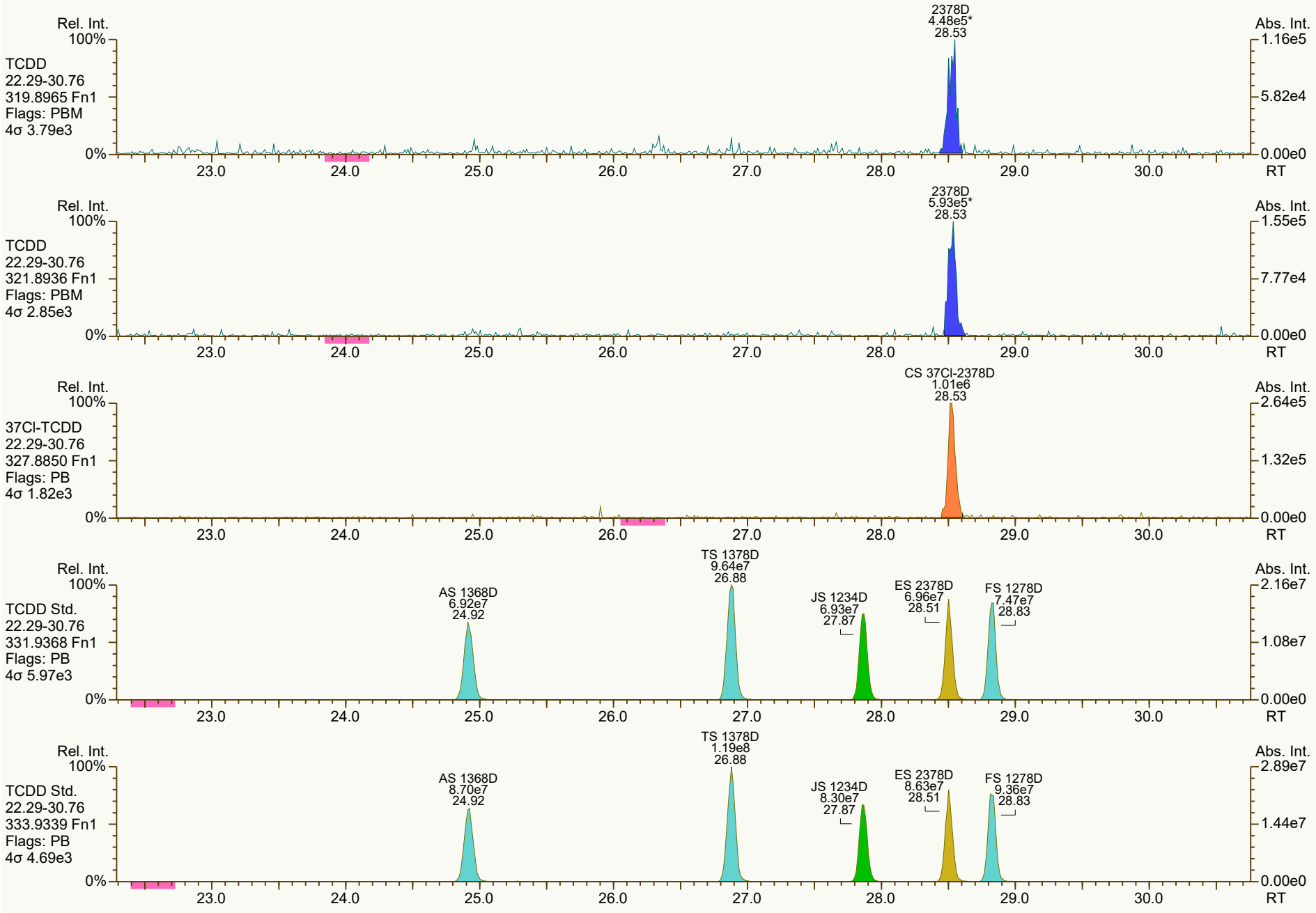
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.04E+06	0.76	Y	1.34	1.34	-1%
12378-PeCDD	33.81	4.16E+06	1.48	Y	1.06	1.07	1%
123478-HxCDD	37.68	3.92E+06	1.22	Y	1.06	1.10	4%
123678-HxCDD	37.79	3.74E+06	1.22	Y	1.08	1.07	-1%
123789-HxCDD	38.08	4.22E+06	1.33	Y	1.02	1.05	4%
1234678-HpCDD	40.66	3.34E+06	1.16	Y	0.97	0.95	-3%
OCDD	43.23	5.66E+06	0.85	Y	1.07	1.04	-3%
2378-TCDF	27.67	1.25E+06	0.72	Y	0.96	0.94	-2%
12378-PeCDF	32.38	5.24E+06	1.54	Y	0.95	0.94	0%
23478-PeCDF	33.47	5.06E+06	1.63	Y	0.94	0.90	-4%
123478-HxCDF	36.69	4.92E+06	1.14	Y	1.23	1.23	-1%
123678-HxCDF	36.83	5.41E+06	1.33	Y	1.13	1.16	3%
234678-HxCDF	37.49	5.10E+06	1.23	Y	1.15	1.19	3%
123789-HxCDF	38.42	4.41E+06	1.28	Y	1.14	1.08	-5%
1234678-HpCDF	39.76	4.59E+06	0.97	Y	1.36	1.35	0%
1234789-HpCDF	41.11	3.63E+06	1.08	Y	1.30	1.20	-7%
OCDF	43.41	6.46E+06	0.90	Y	1.03	1.01	-2%
ES 2378-TCDD	28.51	1.56E+08	0.81	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.789	1.56E+08	1.63	Y	1.03	1.02	-1%
ES 123478-HxCDD	37.66	1.43E+08	1.26	Y	0.99	0.93	-6%
ES 123678-HxCDD	37.773	1.40E+08	1.27	Y	0.97	0.91	-6%
ES 123789-HxCDD	38.062	1.60E+08	1.24	Y	1.12	1.04	-7%
ES 1234678-HpCDD	40.65	1.41E+08	1.06	Y	0.99	0.92	-8%
ES OCDD	43.215	2.18E+08	0.91	Y	0.78	0.71	-9%
ES 2378-TCDF	27.651	2.66E+08	0.77	Y	1.08	1.08	0%
ES 12378-PeCDF	32.362	2.22E+08	1.59	Y	0.93	0.91	-3%
ES 23478-PeCDF	33.454	2.24E+08	1.55	Y	0.92	0.91	-1%
ES 123478-HxCDF	36.667	1.60E+08	0.52	Y	1.14	1.04	-9%
ES 123678-HxCDF	36.807	1.86E+08	0.54	Y	1.30	1.21	-7%
ES 234678-HxCDF	37.474	1.72E+08	0.53	Y	1.20	1.12	-7%
ES 123789-HxCDF	38.407	1.64E+08	0.51	Y	1.14	1.07	-6%
ES 1234678-HpCDF	39.755	1.36E+08	0.46	Y	0.95	0.88	-7%
ES 1234789-HpCDF	41.099	1.21E+08	0.45	Y	0.85	0.78	-7%
ES OCDF	43.396	2.56E+08	0.88	Y	0.93	0.83	-10%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.52E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.33	2.45E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	7.69E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.31	1.32	1%
CS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.89	0.91	2%
CS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.87	0.88	1%
CS 123469-HxCDF	37.12	1.61E+08	0.52	Y	1.09	1.04	-4%
CS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.86	0.84	-2%
SS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.26	1.29	2%
SS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.86	0.89	2%
SS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.61E+08	0.52	Y	0.84	0.86	3%
SS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.91	0.96	5%
AS 1368-TCDD	24.92	1.56E+08	0.80	Y	1.02	1.03	0%
AS 1368-TCDF	22.86	2.59E+08	0.77	Y	1.08	1.06	-2%
FS 1278-TCDD	28.83	1.68E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.72E+08	1.63	Y	1.09	1.10	1%
FS 123468-HxCDD	36.59	1.86E+08	1.29	Y	1.26	1.30	3%
FS 1234679-HpCDD	39.99	1.93E+08	1.05	Y	1.36	1.37	1%
TS 1378-TCDD	26.88	2.16E+08	0.81	Y	1.35	1.38	3%
~~OCDD-a~~	~~43.23~~	~~4.10E+05~~	~~2.91~~	~~N~~	~~0.07~~	~~0.08~~	~~14%~~
~~OCDF-a~~	~~43.40~~	~~3.79E+05~~	~~1.92~~	~~N~~	~~0.06~~	~~0.06~~	~~0%~~

Not reported from this ICAL - CL 28Jul21

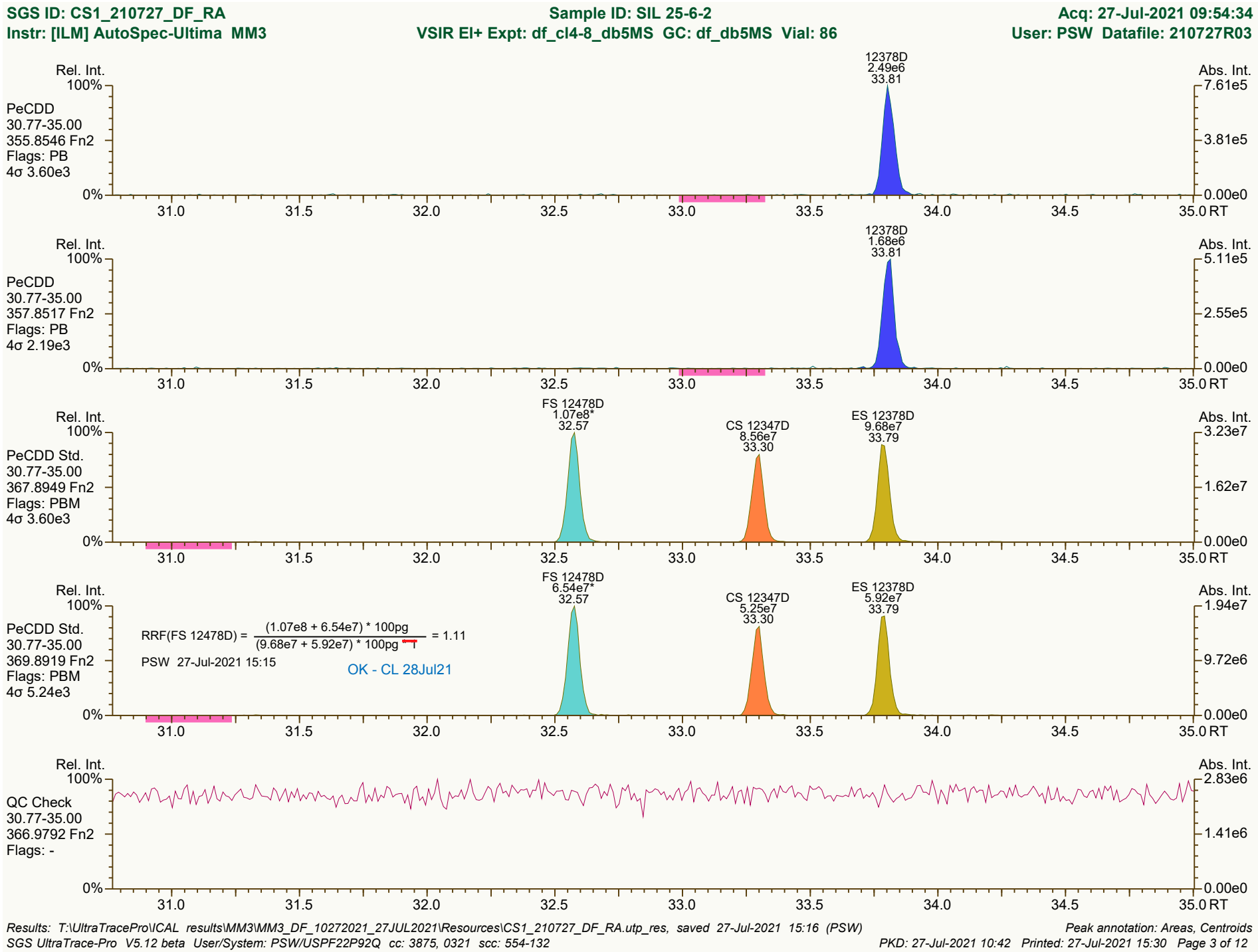

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 3.79e3
0%
2378D
4.48e5*
28.53
Abs. Int.
1.16e5
5.82e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.85e3
0%
2378D
5.93e5*
28.53
Abs. Int.
1.55e5
7.77e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.82e3
0%
CS 37Cl-2378D
1.01e6
28.53
Abs. Int.
2.64e5
1.32e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.97e3
0%
AS 1368D
6.92e7
24.92
TS 1378D
9.64e7
26.88
JS 1234D
6.93e7
27.87
ES 2378D
6.96e7
28.51
FS 1278D
7.47e7
28.83
Abs. Int.
2.16e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.69e3
0%
AS 1368D
8.70e7
24.92
TS 1378D
1.19e8
26.88
JS 1234D
8.30e7
27.87
ES 2378D
8.63e7
28.51
FS 1278D
9.36e7
28.83
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

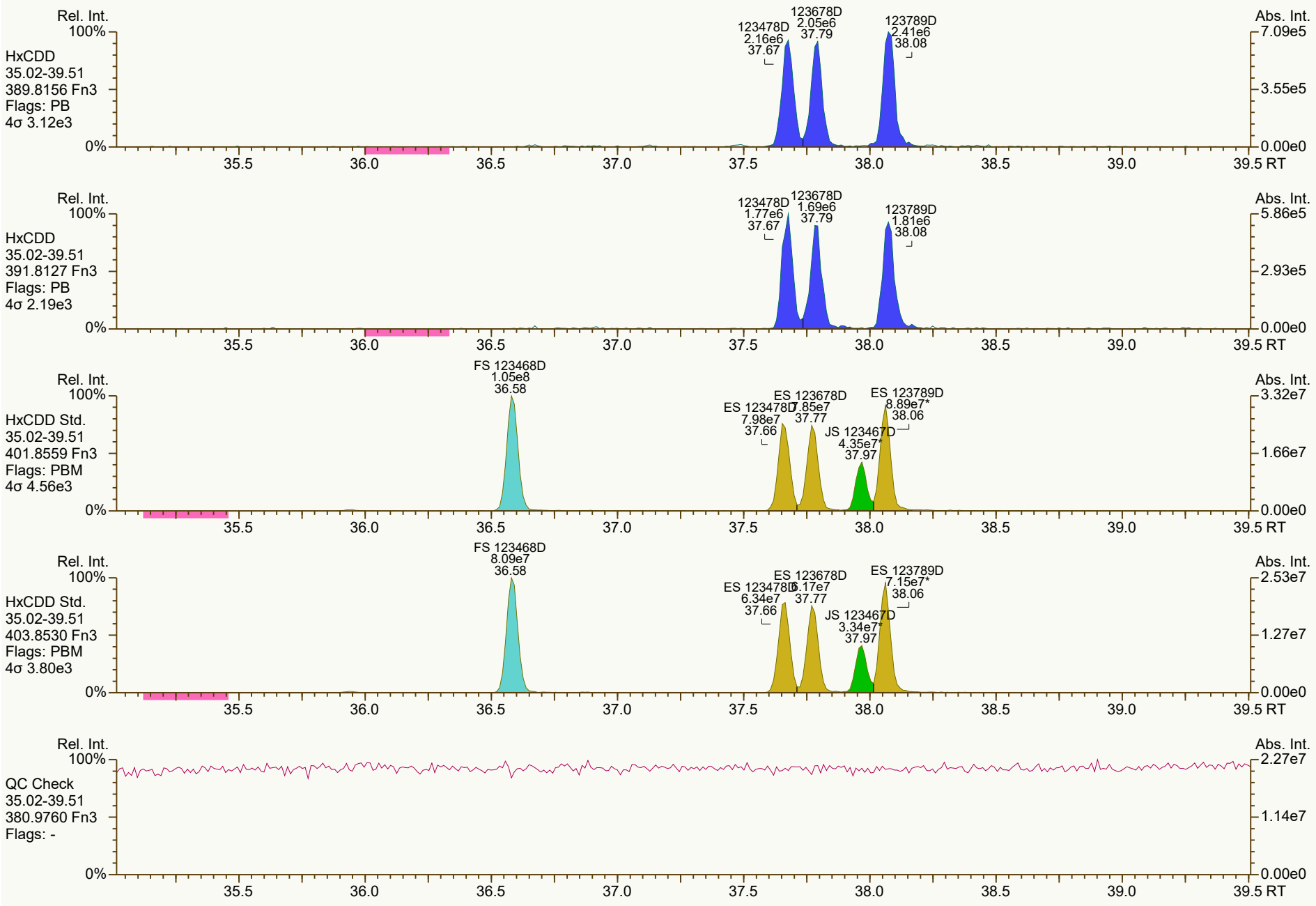
SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

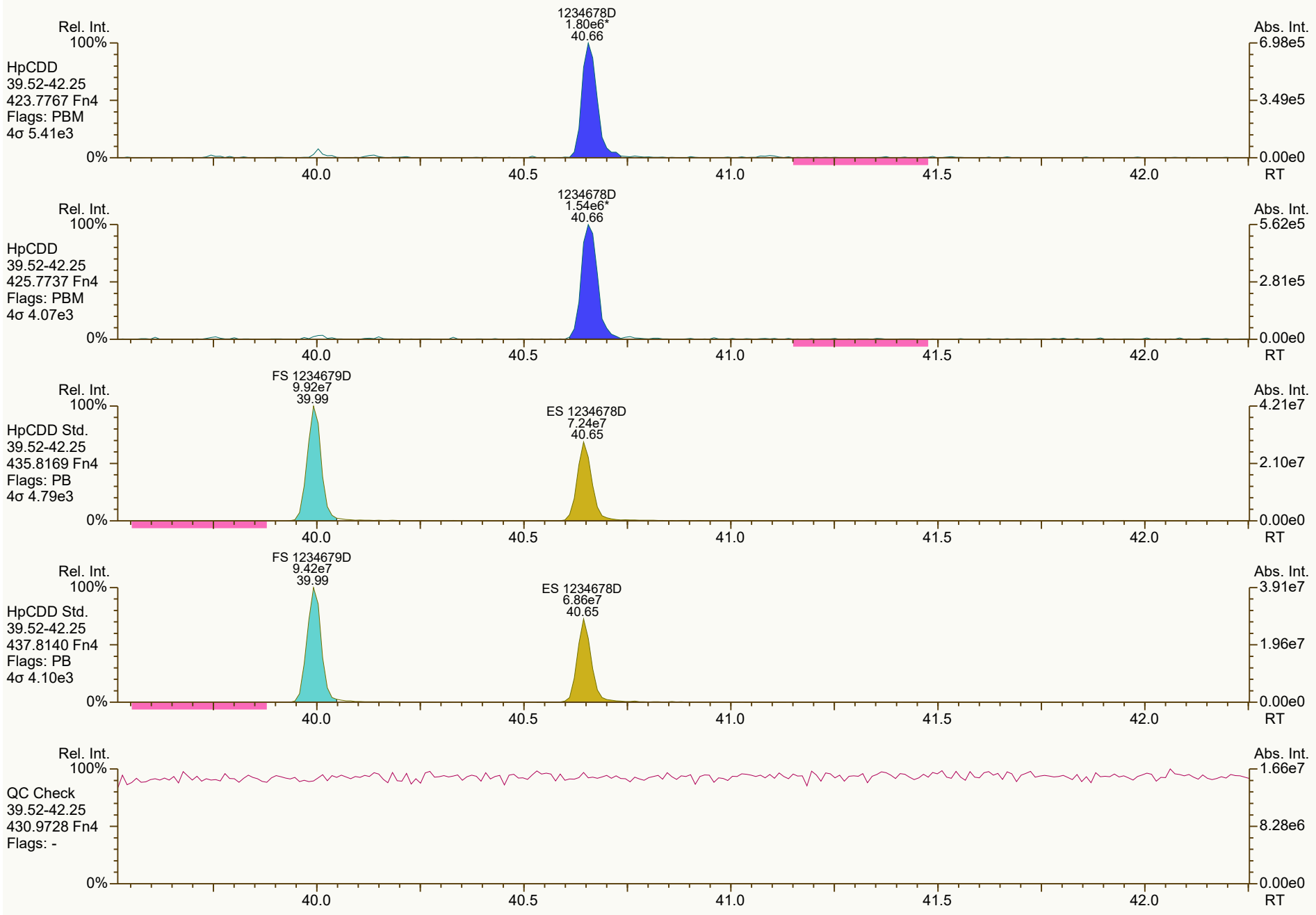
Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3875, 0321 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 3 of 12


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.12e3
123478D
2.16e6
37.67
123678D
2.05e6
37.79
123789D
2.41e6
38.08
Abs. Int.
7.09e5
3.55e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.19e3
123478D
1.77e6
37.67
123678D
1.69e6
37.79
123789D
1.81e6
38.08
Abs. Int.
5.86e5
2.93e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.56e3
FS 123468D
1.05e8
36.58
ES 123478D
7.98e7
37.66
ES 123678D
7.85e7
37.77
JS 123467D
4.35e7*
37.97
ES 123789D
8.89e7*
38.06
Abs. Int.
3.32e7
1.66e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.80e3
FS 123468D
8.09e7
36.58
ES 123478D
6.34e7
37.66
ES 123678D
6.17e7
37.77
JS 123467D
3.34e7*
37.97
ES 123789D
7.15e7*
38.06
Abs. Int.
2.53e7
1.27e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

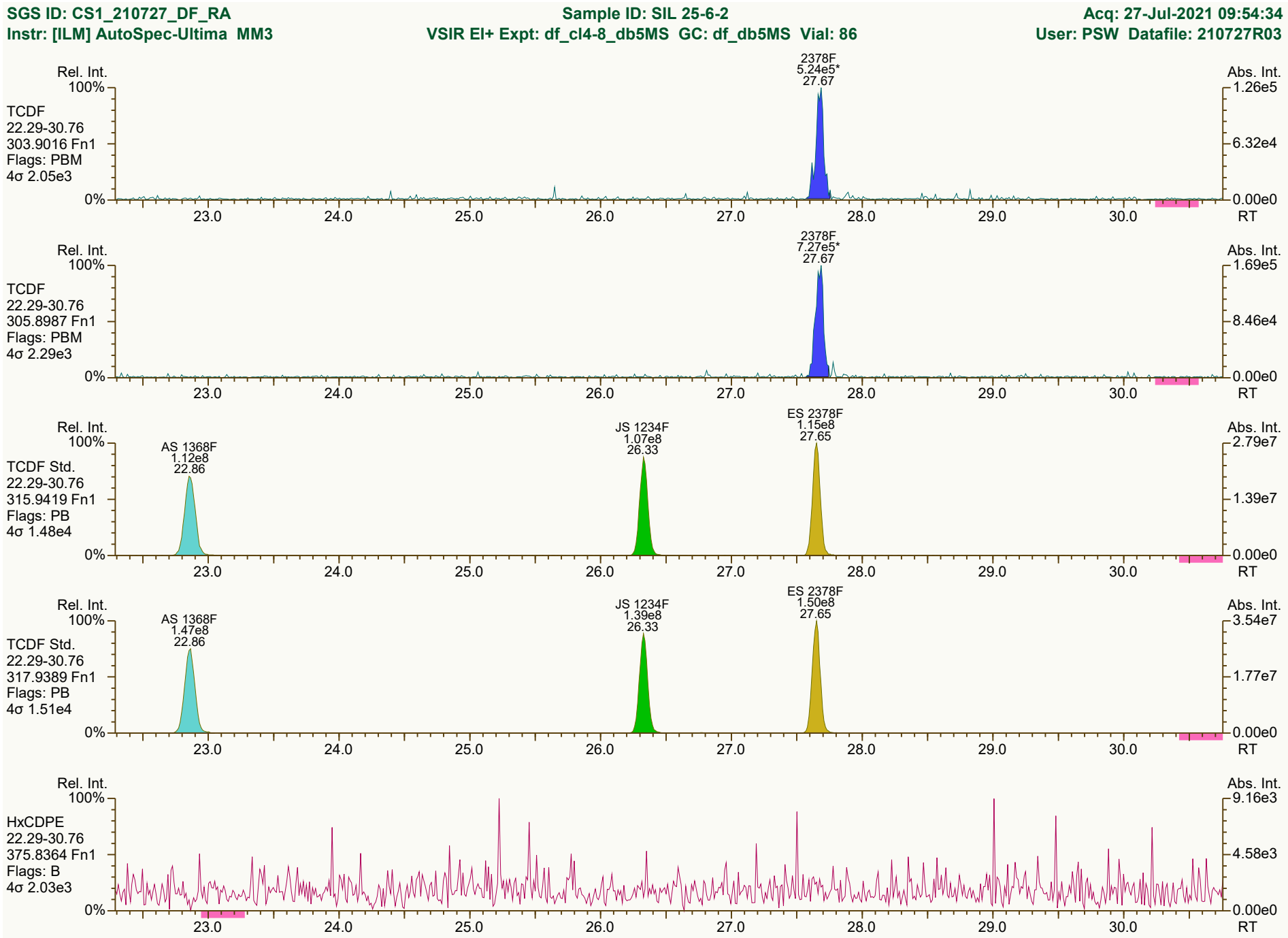

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 5.41e3
0%
1234678D
1.80e6*
40.66
Abs. Int.
6.98e5
3.49e5
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 4.07e3
0%
1234678D
1.54e6*
40.66
Abs. Int.
5.62e5
2.81e5
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 4.79e3
0%
FS 1234679D
9.92e7
39.99
ES 1234678D
7.24e7
40.65
Abs. Int.
4.21e7
2.10e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.10e3
0%
FS 1234679D
9.42e7
39.99
ES 1234678D
6.86e7
40.65
Abs. Int.
3.91e7
1.96e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.60e3
0%
OCDD
2.61e6
43.23
Abs. Int.
8.02e5
4.01e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.89e3
0%
OCDD
3.05e6
43.22
Abs. Int.
1.09e6
5.45e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 2.94e3
0%
ES OCDD
1.04e8
43.22
Abs. Int.
3.50e7
1.75e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 3.15e3
0%
ES OCDD
1.14e8
43.22
Abs. Int.
3.84e7
1.92e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

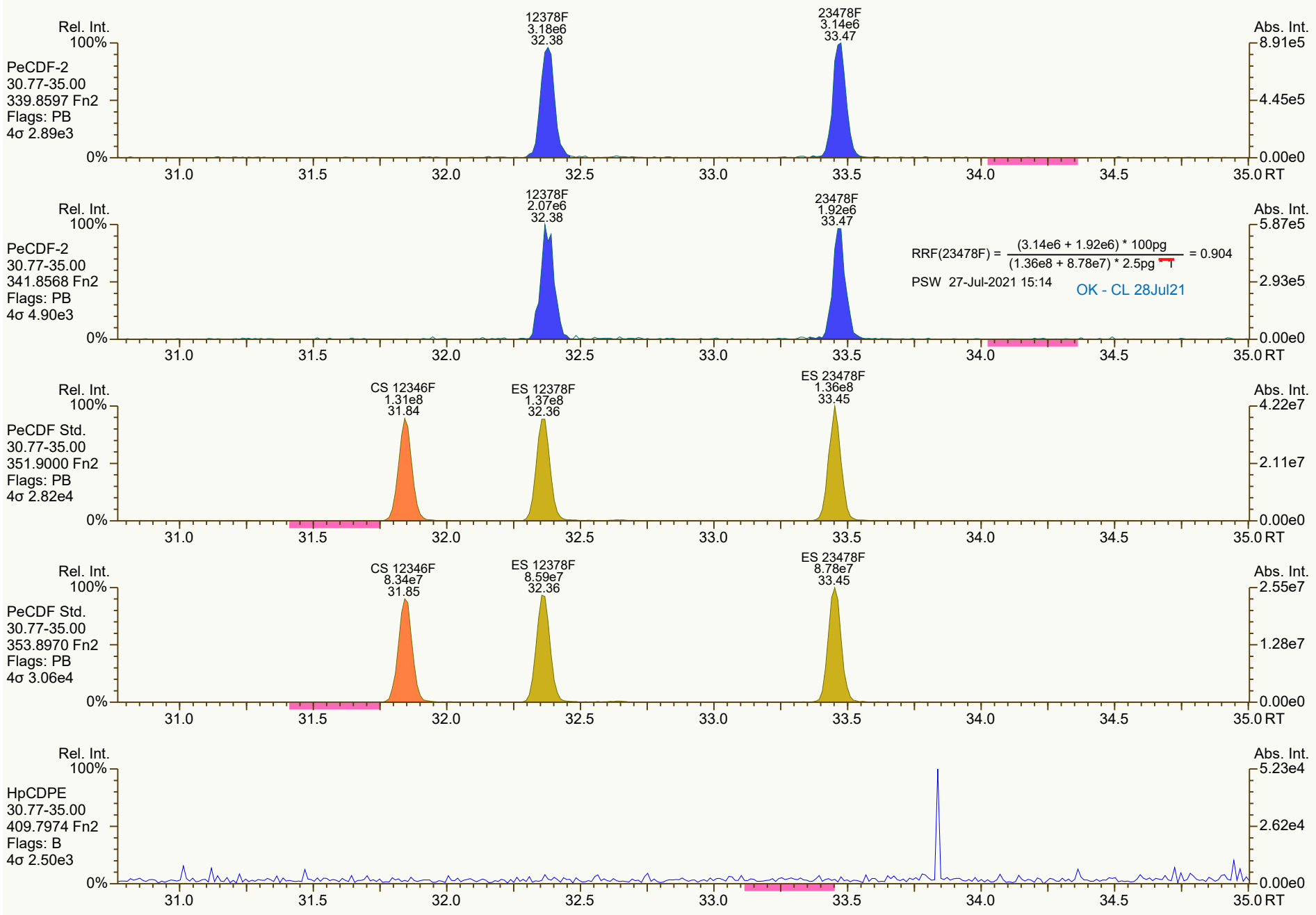
Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0890, 2579, 1486 scc: 554-132

Peak annotation: Areas, Centroids
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 7 of 12

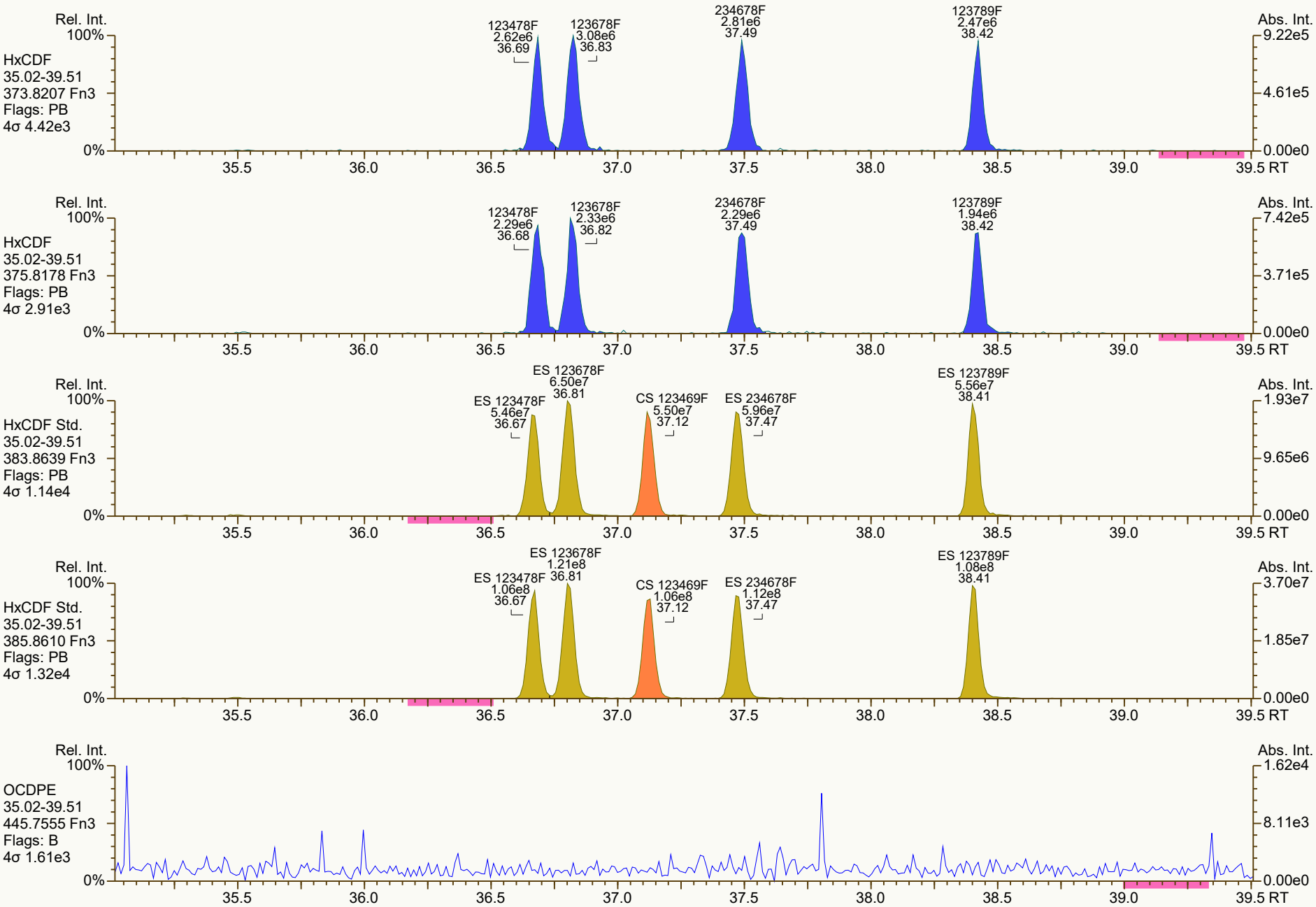

Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.43e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.60e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.89e3
12378F
3.18e6
32.38
23478F
3.14e6
33.47
Abs. Int.
8.91e5
4.45e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 4.90e3
12378F
2.07e6
32.38
23478F
1.92e6
33.47
RRF(23478F) = (3.14e6 + 1.92e6) * 100pg / (1.36e8 + 8.78e7) * 2.5pg * T = 0.904
PSW 27-Jul-2021 15:14
OK - CL 28Jul21
Abs. Int.
5.87e5
2.93e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.82e4
CS 12346F
1.31e8
31.84
ES 12378F
1.37e8
32.36
ES 23478F
1.36e8
33.45
Abs. Int.
4.22e7
2.11e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 3.06e4
CS 12346F
8.34e7
31.85
ES 12378F
8.59e7
32.36
ES 23478F
8.78e7
33.45
Abs. Int.
2.55e7
1.28e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.50e3
Abs. Int.
5.23e4
2.62e4
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

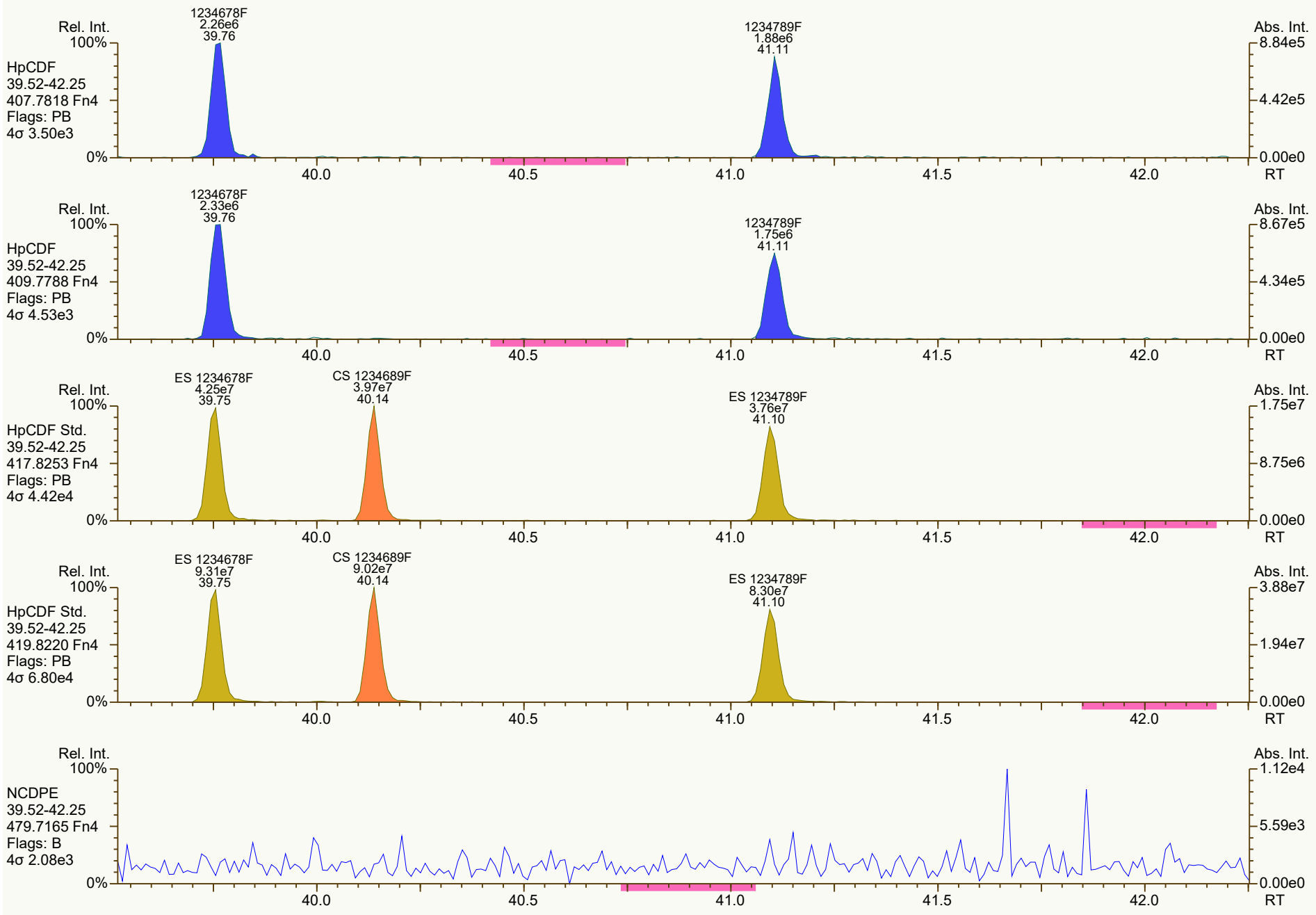
SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

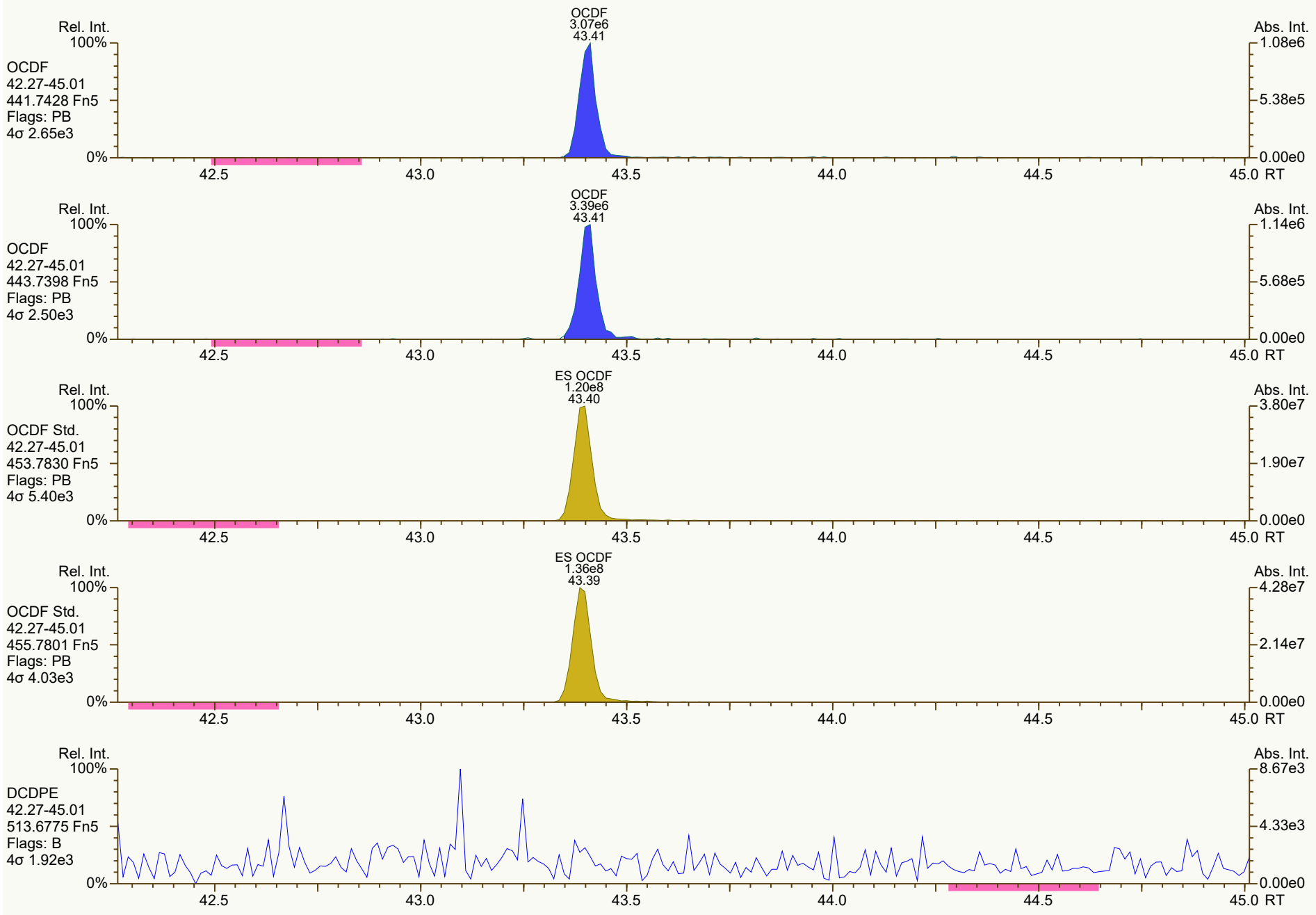
Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6555, 5794, 9510 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 3.50e3
1234678F
2.26e6
39.76
1234789F
1.88e6
41.11
Abs. Int.
8.84e5
4.42e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 4.53e3
1234678F
2.33e6
39.76
1234789F
1.75e6
41.11
Abs. Int.
8.67e5
4.34e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 4.42e4
ES 1234678F
4.25e7
39.75
CS 1234689F
3.97e7
40.14
ES 1234789F
3.76e7
41.10
Abs. Int.
1.75e7
8.75e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 6.80e4
ES 1234678F
9.31e7
39.75
CS 1234689F
9.02e7
40.14
ES 1234789F
8.30e7
41.10
Abs. Int.
3.88e7
1.94e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.08e3
Abs. Int.
1.12e4
5.59e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 2.65e3
0%
OCDF
3.07e6
43.41
Abs. Int.
1.08e6
5.38e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.50e3
0%
OCDF
3.39e6
43.41
Abs. Int.
1.14e6
5.68e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.40e3
0%
ES OCDF
1.20e8
43.40
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.03e3
0%
ES OCDF
1.36e8
43.39
Abs. Int.
4.28e7
2.14e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.67e3
4.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

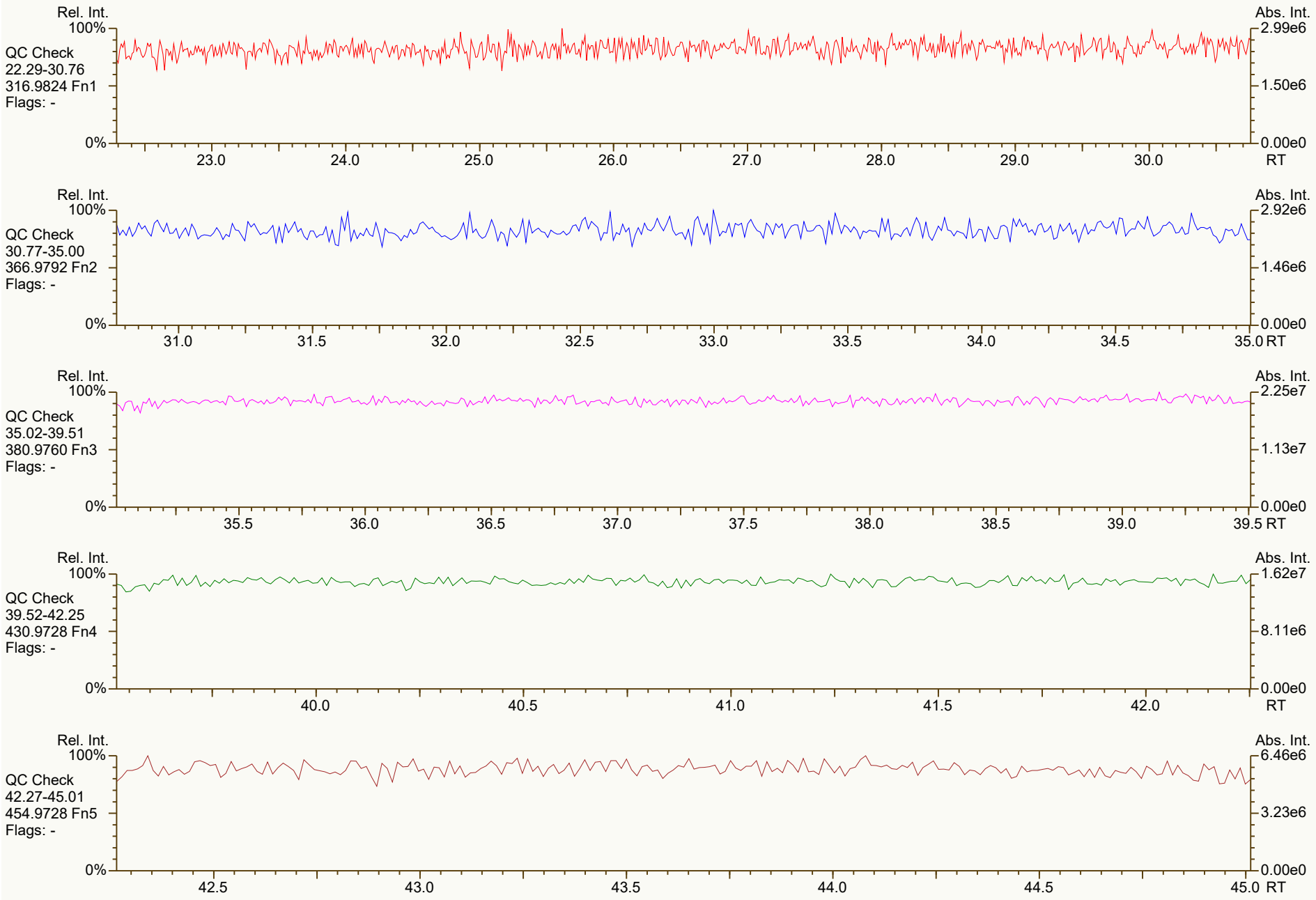
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

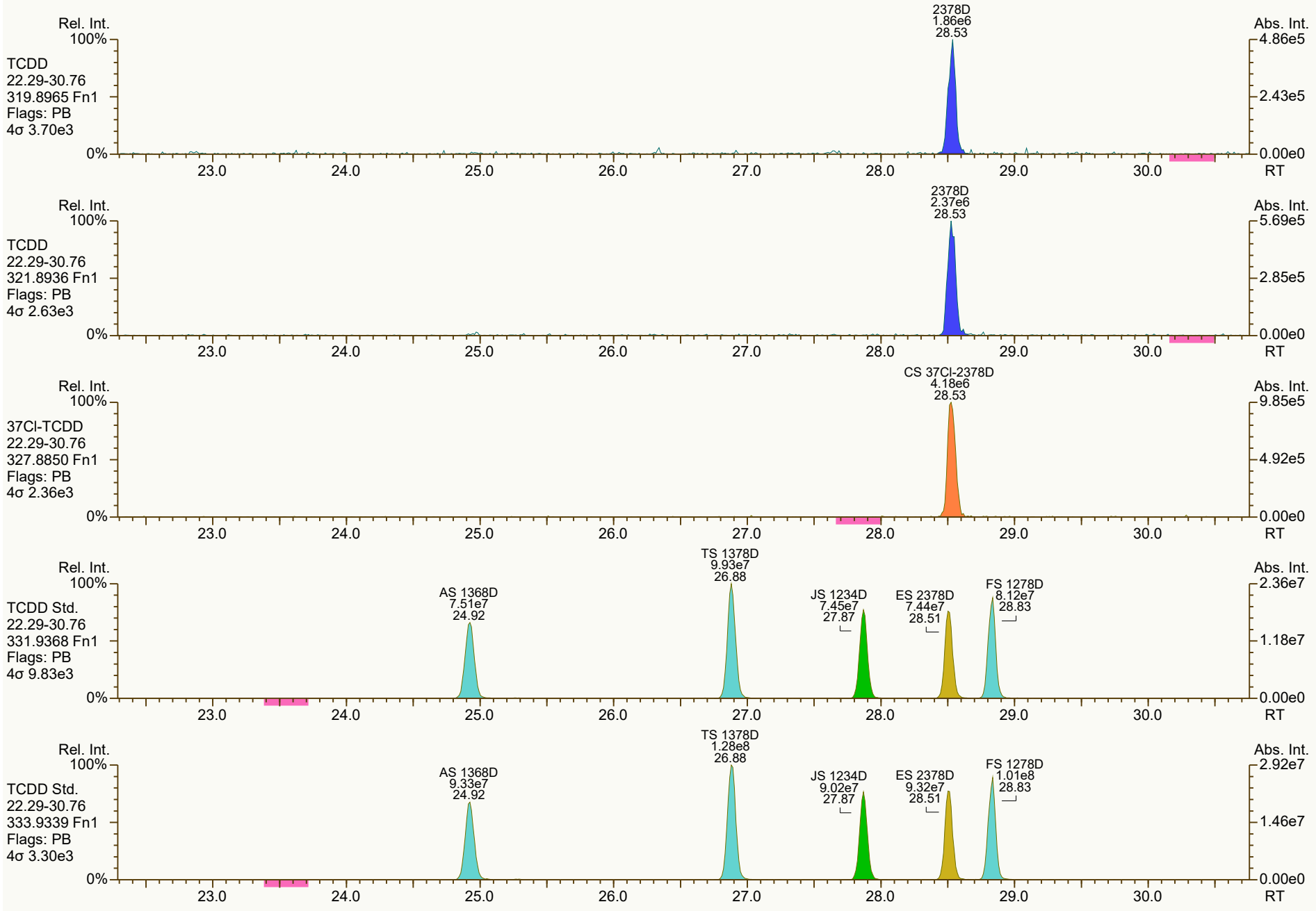
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	4.23E+06	0.79	Y	1.34	1.26	-6%
12378-PeCDD	33.81	1.67E+07	1.63	Y	1.06	1.02	-4%
123478-HxCDD	37.68	1.53E+07	1.32	Y	1.06	0.99	-6%
123678-HxCDD	37.80	1.52E+07	1.22	Y	1.08	1.02	-5%
123789-HxCDD	38.08	1.66E+07	1.25	Y	1.02	0.95	-6%
1234678-HpCDD	40.67	1.41E+07	1.01	Y	0.97	0.92	-6%
OCDD	43.23	2.33E+07	0.88	Y	1.07	1.01	-6%
2378-TCDF	27.68	5.04E+06	0.83	Y	0.96	0.90	-6%
12378-PeCDF	32.39	2.16E+07	1.63	Y	0.95	0.90	-5%
23478-PeCDF	33.48	2.12E+07	1.52	Y	0.94	0.90	-4%
123478-HxCDF	36.69	2.09E+07	1.25	Y	1.23	1.19	-4%
123678-HxCDF	36.83	2.13E+07	1.24	Y	1.13	1.07	-5%
234678-HxCDF	37.50	1.98E+07	1.20	Y	1.15	1.08	-6%
123789-HxCDF	38.43	1.89E+07	1.24	Y	1.14	1.09	-4%
1234678-HpCDF	39.77	1.87E+07	1.01	Y	1.36	1.31	-4%
1234789-HpCDF	41.12	1.60E+07	1.02	Y	1.30	1.26	-3%
OCDF	43.41	2.61E+07	0.92	Y	1.03	0.95	-7%
ES 2378-TCDD	28.51	1.68E+08	0.80	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.794	1.63E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.667	1.54E+08	1.28	Y	0.99	0.99	-1%
ES 123678-HxCDD	37.781	1.49E+08	1.24	Y	0.97	0.95	-2%
ES 123789-HxCDD	38.07	1.75E+08	1.26	Y	1.12	1.12	0%
ES 1234678-HpCDD	40.658	1.53E+08	1.06	Y	0.99	0.98	-1%
ES OCDD	43.222	2.31E+08	0.90	Y	0.78	0.74	-5%
ES 2378-TCDF	27.656	2.80E+08	0.80	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.368	2.40E+08	1.55	Y	0.93	0.92	-2%
ES 23478-PeCDF	33.459	2.36E+08	1.59	Y	0.92	0.90	-2%
ES 123478-HxCDF	36.674	1.76E+08	0.52	Y	1.14	1.13	-1%
ES 123678-HxCDF	36.814	1.99E+08	0.52	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.481	1.84E+08	0.52	Y	1.20	1.18	-2%
ES 123789-HxCDF	38.416	1.73E+08	0.52	Y	1.14	1.11	-2%
ES 1234678-HpCDF	39.761	1.43E+08	0.44	Y	0.95	0.92	-3%
ES 1234789-HpCDF	41.105	1.28E+08	0.46	Y	0.85	0.82	-3%
ES OCDF	43.404	2.74E+08	0.87	Y	0.93	0.88	-5%

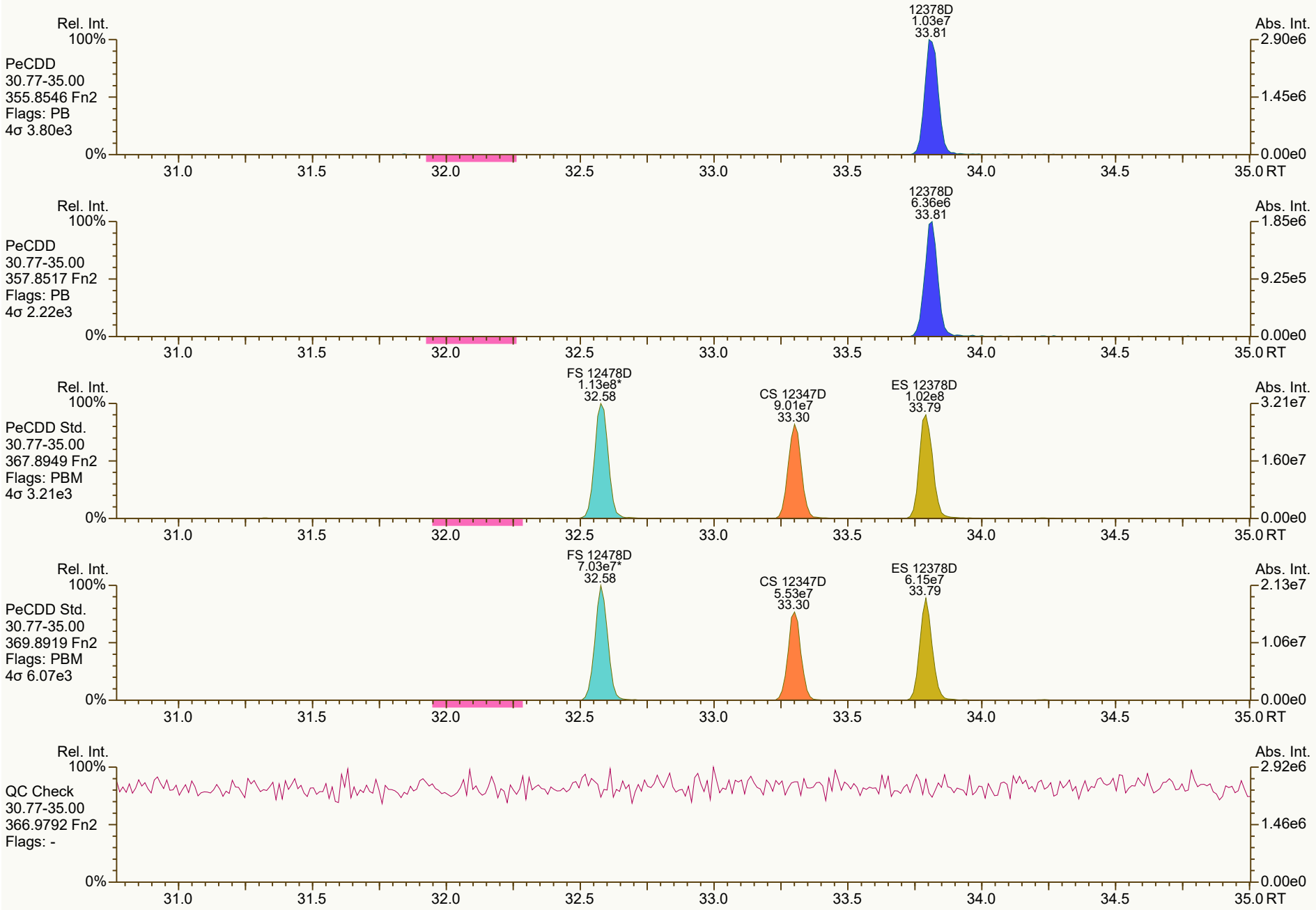
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

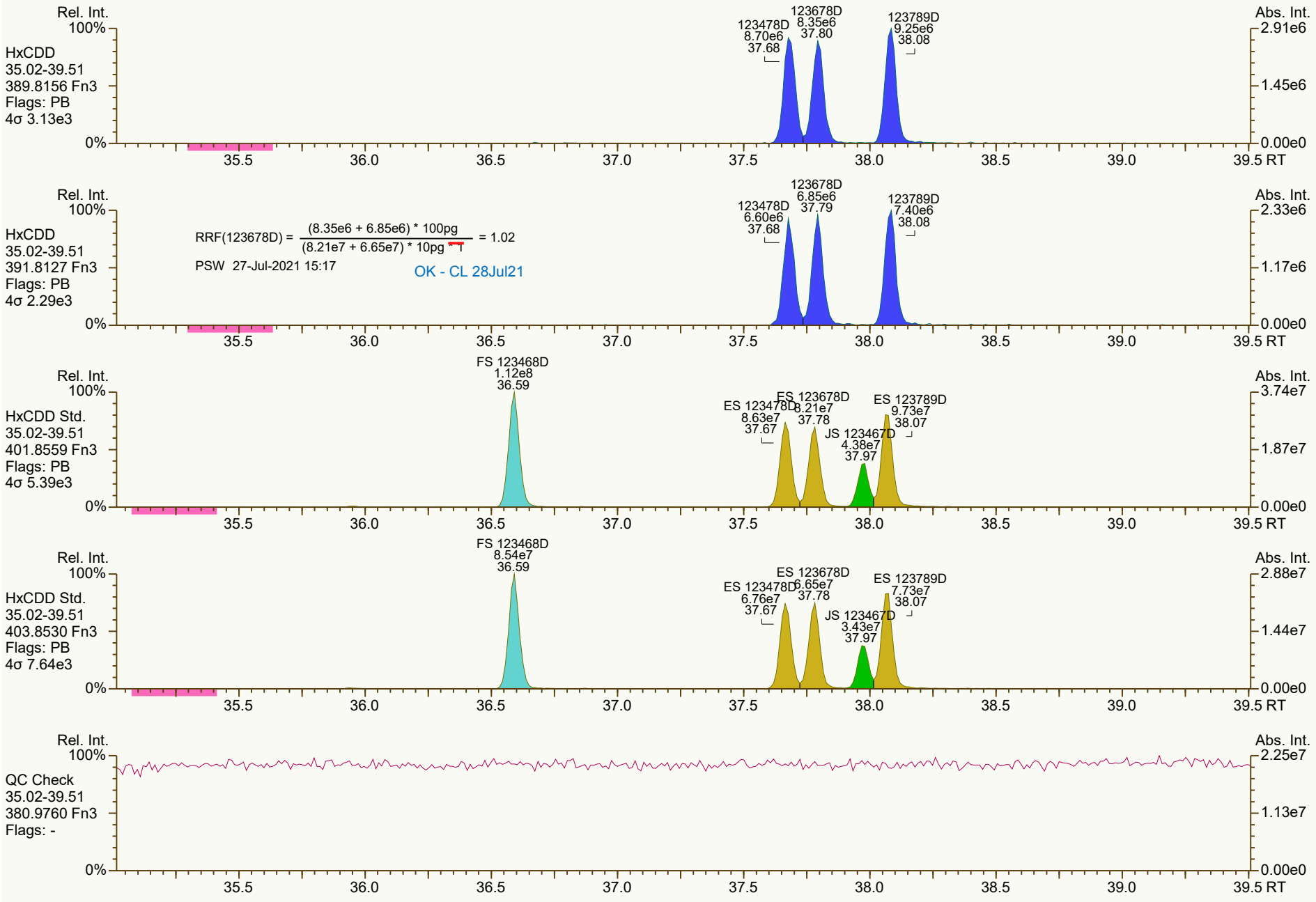
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.65E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.34	2.62E+08	0.75	Y	-	-	-
JS 123467-HxCDD	37.97	7.80E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.31	1.27	-3%
CS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.13	1.69E+08	0.52	Y	1.09	1.08	-1%
CS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.86	0.89	3%
SS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.13	1.69E+08	0.52	Y	0.84	0.85	1%
SS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.92	1.68E+08	0.81	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.81E+08	0.77	Y	1.08	1.07	-1%
FS 1278-TCDD	28.83	1.83E+08	0.80	Y	1.08	1.09	0%
FS 12478-PeCDD	32.58	1.83E+08	1.61	Y	1.09	1.12	3%
FS 123468-HxCDD	36.59	1.97E+08	1.31	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	2.12E+08	1.04	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	2.27E+08	0.78	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.23~~	~~1.51E+06~~	~~2.07~~	~~N~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.41~~	~~1.45E+06~~	~~3.13~~	~~N~~	~~0.06~~	~~0.05~~	~~-11%~~

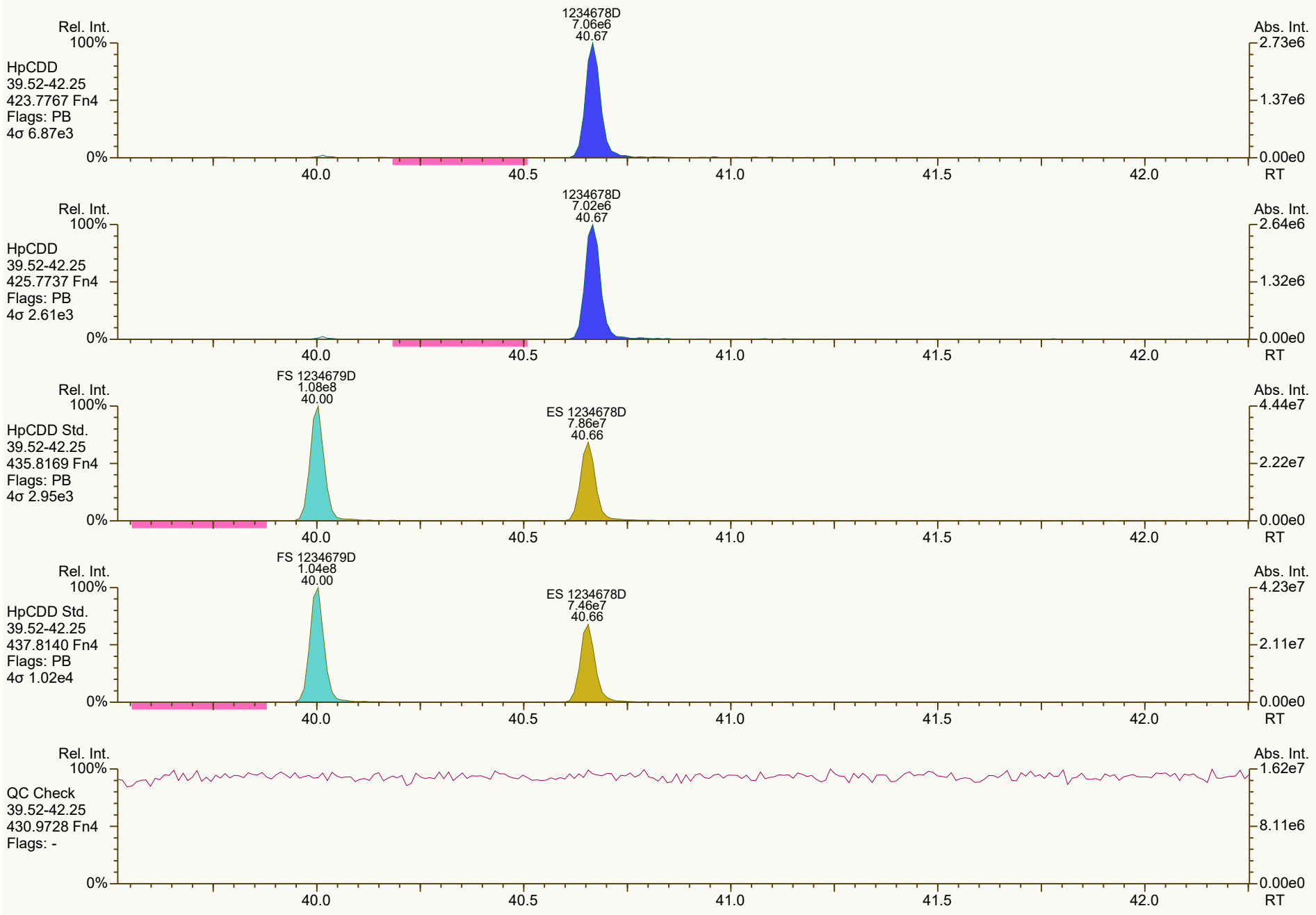
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.99e6
1.50e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.46e6
3.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

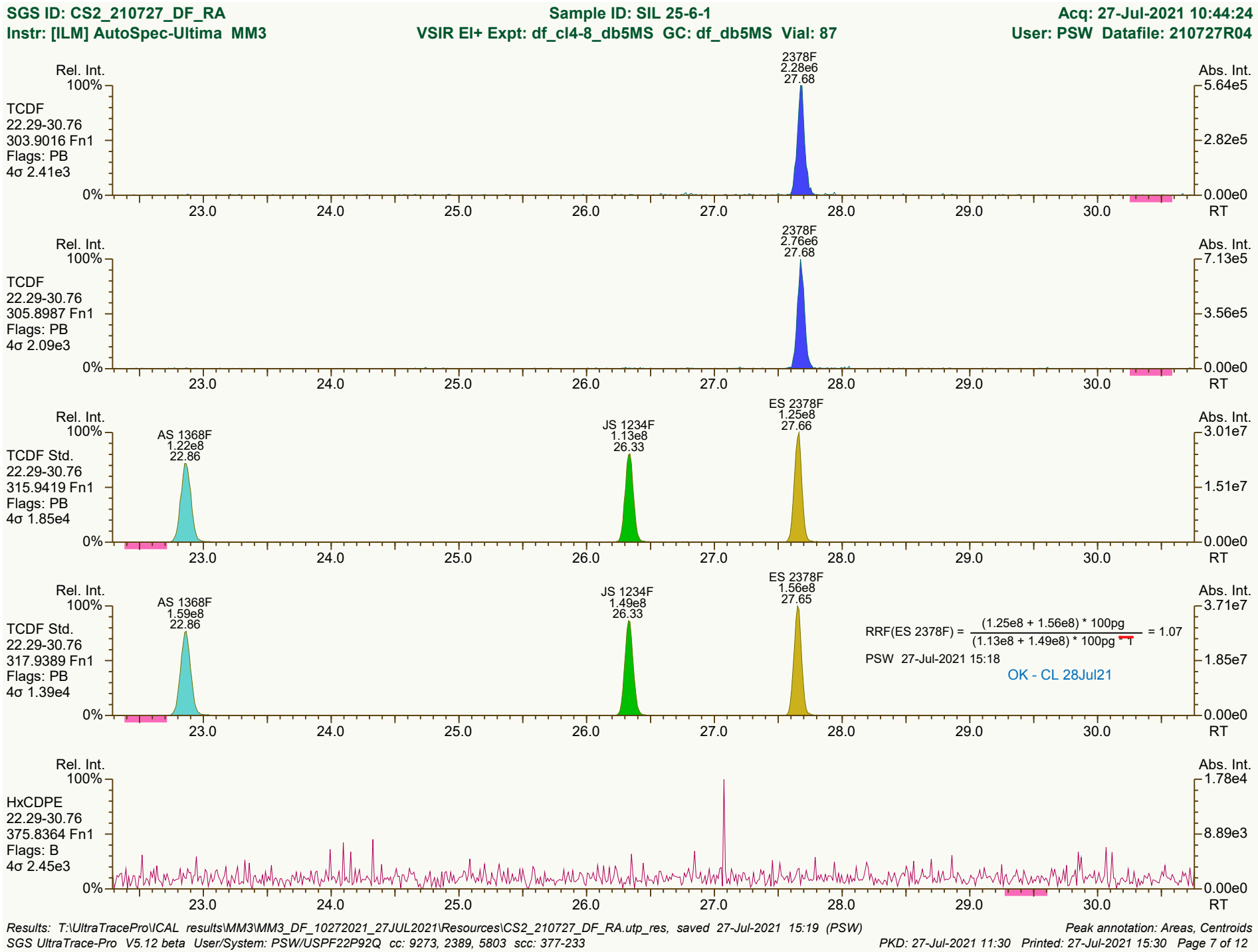

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.70e3
0%
2378D
1.86e6
28.53
Abs. Int.
4.86e5
2.43e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.63e3
0%
2378D
2.37e6
28.53
Abs. Int.
5.69e5
2.85e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.36e3
0%
CS 37Cl-2378D
4.18e6
28.53
Abs. Int.
9.85e5
4.92e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 9.83e3
0%
AS 1368D
7.51e7
24.92
TS 1378D
9.93e7
26.88
JS 1234D
7.45e7
27.87
ES 2378D
7.44e7
28.51
FS 1278D
8.12e7
28.83
Abs. Int.
2.36e7
1.18e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.30e3
0%
AS 1368D
9.33e7
24.92
TS 1378D
1.28e8
26.88
JS 1234D
9.02e7
27.87
ES 2378D
9.32e7
28.51
FS 1278D
1.01e8
28.83
Abs. Int.
2.92e7
1.46e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.80e3
0%
12378D
1.03e7
33.81
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.22e3
0%
12378D
6.36e6
33.81
Abs. Int.
1.85e6
9.25e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.21e3
0%
FS 12478D
1.13e8*
32.58
CS 12347D
9.01e7
33.30
ES 12378D
1.02e8
33.79
Abs. Int.
3.21e7
1.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 6.07e3
0%
FS 12478D
7.03e7*
32.58
CS 12347D
5.53e7
33.30
ES 12378D
6.15e7
33.79
Abs. Int.
2.13e7
1.06e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.13e3
123478D 8.70e6 37.68
123678D 8.35e6 37.80
123789D 9.25e6 38.08
Abs. Int.
2.91e6
1.45e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.29e3
RRF(123678D) = (8.35e6 + 6.85e6) * 100pg / (8.21e7 + 6.65e7) * 10pg = 1.02
PSW 27-Jul-2021 15:17
OK - CL 28Jul21
123478D 6.60e6 37.68
123678D 6.85e6 37.79
123789D 7.40e6 38.08
2.33e6
1.17e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 5.39e3
FS 123468D 1.12e8 36.59
ES 123478D 8.63e7 37.67
ES 123678D 8.21e7 37.78
JS 123467D 4.38e7 37.97
ES 123789D 9.73e7 38.07
3.74e7
1.87e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 7.64e3
FS 123468D 8.54e7 36.59
ES 123478D 6.76e7 37.67
ES 123678D 6.65e7 37.78
JS 123467D 3.43e7 37.97
ES 123789D 7.73e7 38.07
2.88e7
1.44e7
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.25e7
1.13e7


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 6.87e3
0%
1234678D
7.06e6
40.67
Abs. Int.
2.73e6
1.37e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 2.61e3
0%
1234678D
7.02e6
40.67
Abs. Int.
2.64e6
1.32e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.95e3
0%
FS 1234679D
1.08e8
40.00
ES 1234678D
7.86e7
40.66
Abs. Int.
4.44e7
2.22e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.02e4
0%
FS 1234679D
1.04e8
40.00
ES 1234678D
7.46e7
40.66
Abs. Int.
4.23e7
2.11e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0


OCDD
1.09e7
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 3.62e3
0%
Abs. Int.
3.54e6
1.77e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.24e7
43.23
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 1.67e3
4.01e6
2.00e6
ES OCDD
1.10e8
43.22
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 3.79e3
3.53e7
1.77e7
ES OCDD
1.22e8
43.22
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 7.59e3
3.84e7
1.92e7
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
6.46e6
3.23e6

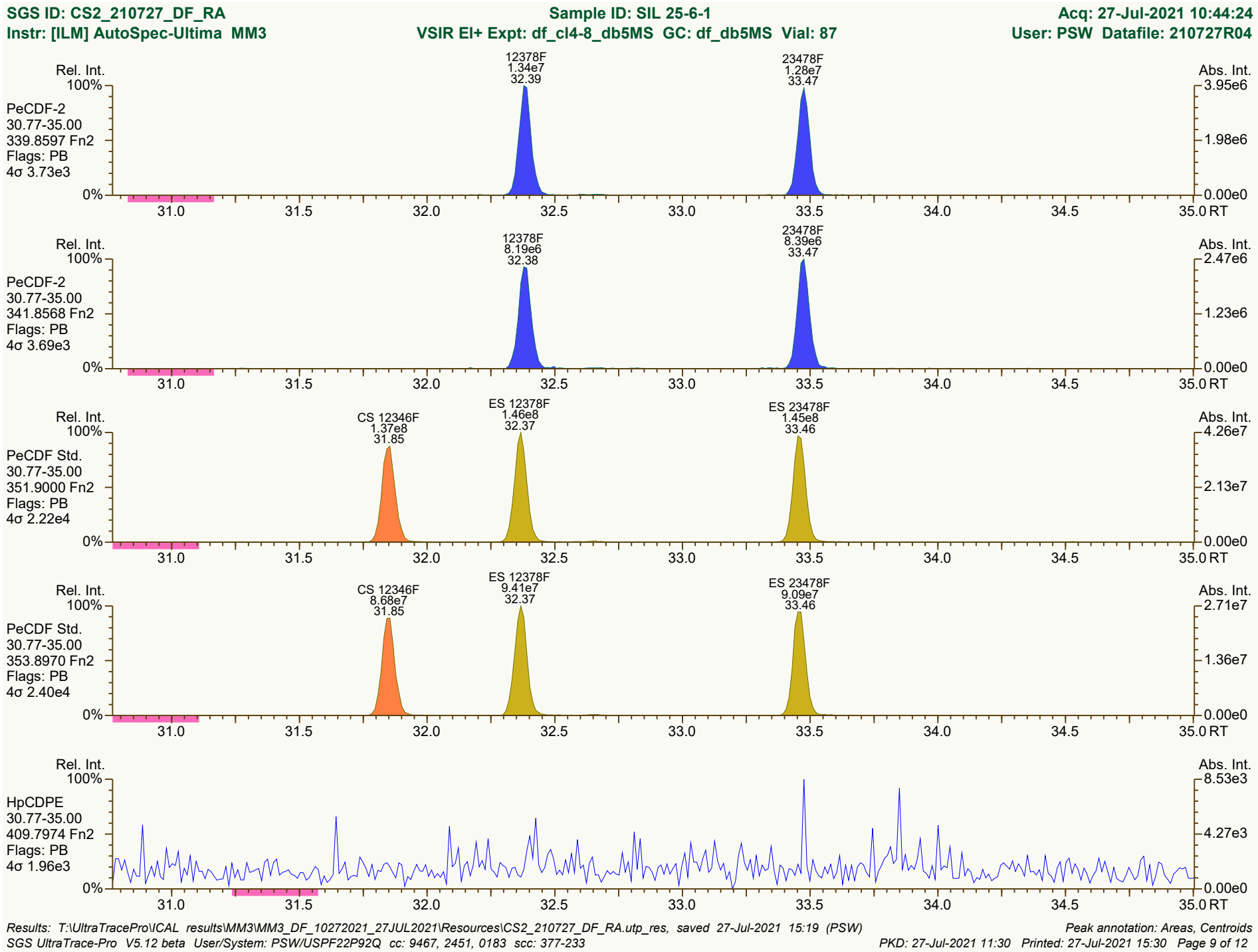

SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04
Rel. Int.
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.41e3
2378F
2.28e6
27.68
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.09e3
2378F
2.76e6
27.68
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.85e4
AS 1368F
1.22e8
22.86
JS 1234F
1.13e8
26.33
ES 2378F
1.25e8
27.66
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.39e4
AS 1368F
1.59e8
22.86
JS 1234F
1.49e8
26.33
ES 2378F
1.56e8
27.65
RRF(ES 2378F) = (1.25e8 + 1.56e8) * 100pg / (1.13e8 + 1.49e8) * 100pg * T = 1.07
PSW 27-Jul-2021 15:18
OK - CL 28Jul21
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.45e3
RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9273, 2389, 5803 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.66e4
8.28e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.30e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.23e3
2.64e4
1.32e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.99e6
1.50e6

SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

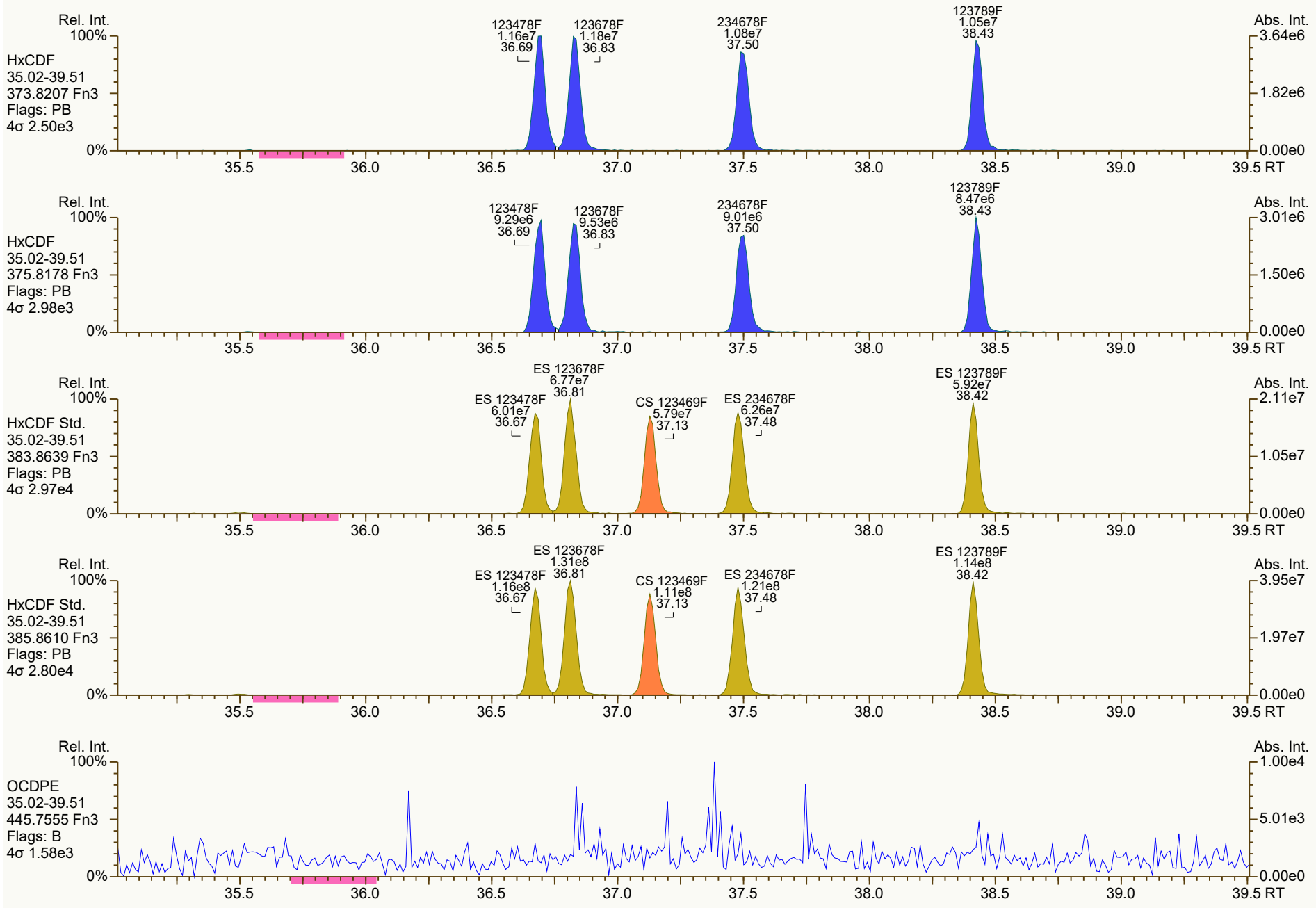
Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87

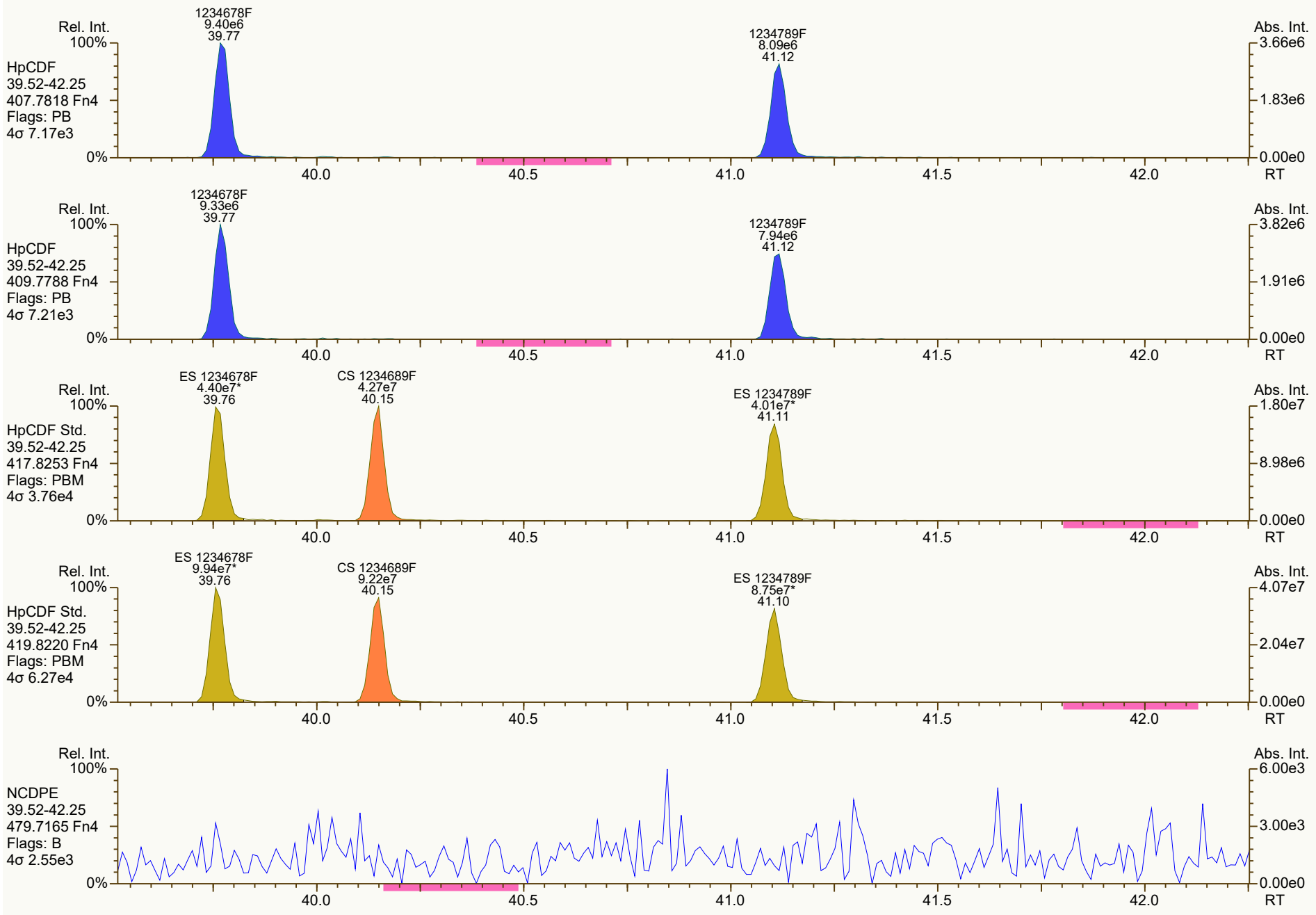
Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04

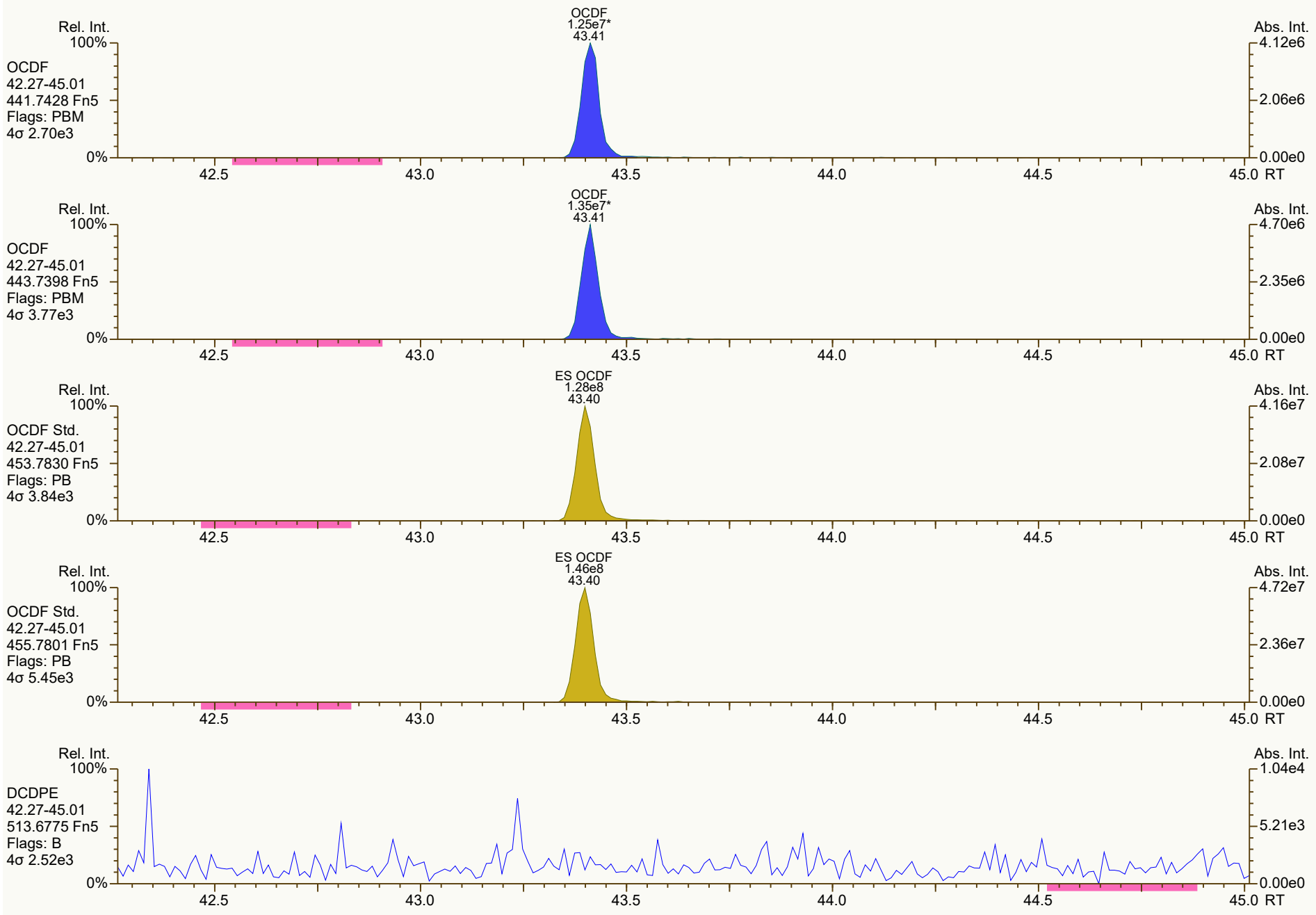


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9467, 2451, 0183 scc: 377-233

Peak annotation: Areas, Centroids
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.50e3
0%
123478F
1.16e7
36.69
123678F
1.18e7
36.83
234678F
1.08e7
37.50
123789F
1.05e7
38.43
Abs. Int.
3.64e6
1.82e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 2.98e3
0%
123478F
9.29e6
36.69
123678F
9.53e6
36.83
234678F
9.01e6
37.50
123789F
8.47e6
38.43
Abs. Int.
3.01e6
1.50e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 2.97e4
0%
ES 123478F
6.01e7
36.67
ES 123678F
6.77e7
36.81
CS 123469F
5.79e7
37.13
ES 234678F
6.26e7
37.48
ES 123789F
5.92e7
38.42
Abs. Int.
2.11e7
1.05e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.80e4
0%
ES 123478F
1.16e8
36.67
ES 123678F
1.31e8
36.81
CS 123469F
1.11e8
37.13
ES 234678F
1.21e8
37.48
ES 123789F
1.14e8
38.42
Abs. Int.
3.95e7
1.97e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.00e4
5.01e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 7.17e3
1234678F
9.40e6
39.77
1234789F
8.09e6
41.12
Abs. Int.
3.66e6
1.83e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 7.21e3
1234678F
9.33e6
39.77
1234789F
7.94e6
41.12
Abs. Int.
3.82e6
1.91e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.76e4
ES 1234678F
4.40e7*
39.76
CS 1234689F
4.27e7
40.15
ES 1234789F
4.01e7*
41.11
Abs. Int.
1.80e7
8.98e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 6.27e4
ES 1234678F
9.94e7*
39.76
CS 1234689F
9.22e7
40.15
ES 1234789F
8.75e7*
41.10
Abs. Int.
4.07e7
2.04e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.55e3
Abs. Int.
6.00e3
3.00e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PBM
4σ 2.70e3
0%
OCDF
1.25e7*
43.41
Abs. Int.
4.12e6
2.06e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PBM
4σ 3.77e3
0%
OCDF
1.35e7*
43.41
Abs. Int.
4.70e6
2.35e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 3.84e3
0%
ES OCDF
1.28e8
43.40
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 5.45e3
0%
ES OCDF
1.46e8
43.40
Abs. Int.
4.72e7
2.36e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.52e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

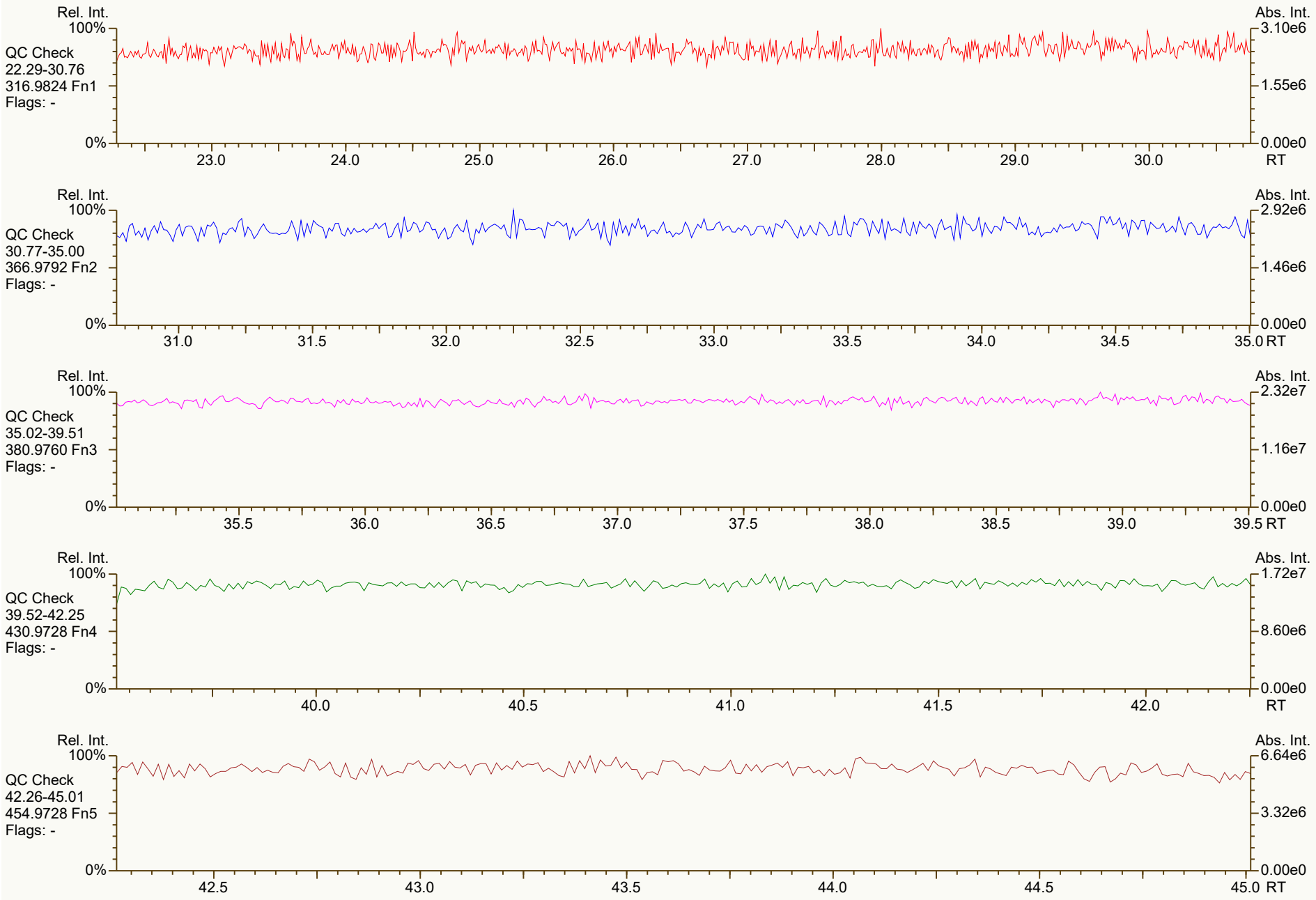
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

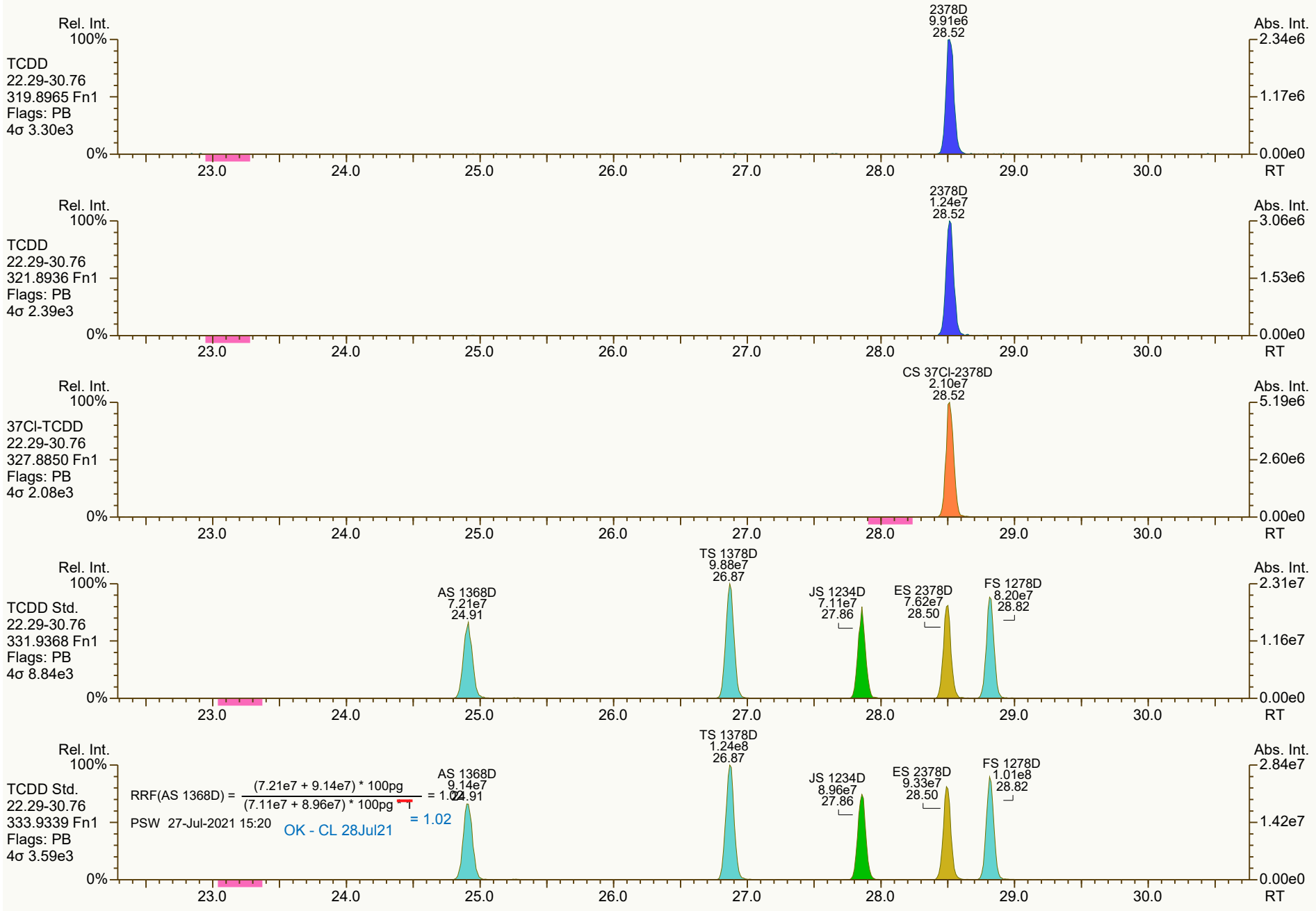
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.23E+07	0.80	Y	1.34	1.32	-2%
12378-PeCDD	33.80	8.56E+07	1.57	Y	1.06	1.05	-1%
123478-HxCDD	37.67	7.63E+07	1.25	Y	1.06	1.05	-1%
123678-HxCDD	37.78	7.89E+07	1.25	Y	1.08	1.08	0%
123789-HxCDD	38.07	8.22E+07	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.66	7.06E+07	1.03	Y	0.97	0.95	-2%
OCDD	43.22	1.21E+08	0.89	Y	1.07	1.07	0%
2378-TCDF	27.66	2.66E+07	0.80	Y	0.96	0.95	-1%
12378-PeCDF	32.37	1.11E+08	1.56	Y	0.95	0.94	-1%
23478-PeCDF	33.46	1.09E+08	1.56	Y	0.94	0.92	-2%
123478-HxCDF	36.68	1.05E+08	1.22	Y	1.23	1.22	-2%
123678-HxCDF	36.82	1.08E+08	1.25	Y	1.13	1.10	-2%
234678-HxCDF	37.49	1.02E+08	1.24	Y	1.15	1.14	-1%
123789-HxCDF	38.42	9.59E+07	1.23	Y	1.14	1.14	0%
1234678-HpCDF	39.76	9.62E+07	1.03	Y	1.36	1.34	-1%
1234789-HpCDF	41.10	8.35E+07	1.03	Y	1.30	1.34	3%
OCDF	43.41	1.40E+08	0.89	Y	1.03	1.03	0%
ES 2378-TCDD	28.50	1.70E+08	0.82	Y	1.03	1.05	2%
ES 12378-PeCDD	33.782	1.63E+08	1.65	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.654	1.45E+08	1.26	Y	0.99	1.00	0%
ES 123678-HxCDD	37.768	1.46E+08	1.27	Y	0.97	1.01	3%
ES 123789-HxCDD	38.057	1.66E+08	1.23	Y	1.12	1.14	1%
ES 1234678-HpCDD	40.644	1.48E+08	1.08	Y	0.99	1.02	3%
ES OCDD	43.211	2.25E+08	0.88	Y	0.78	0.77	-1%
ES 2378-TCDF	27.643	2.80E+08	0.79	Y	1.08	1.09	1%
ES 12378-PeCDF	32.354	2.37E+08	1.58	Y	0.93	0.93	-1%
ES 23478-PeCDF	33.446	2.37E+08	1.53	Y	0.92	0.93	0%
ES 123478-HxCDF	36.661	1.72E+08	0.52	Y	1.14	1.18	4%
ES 123678-HxCDF	36.801	1.96E+08	0.52	Y	1.30	1.35	4%
ES 234678-HxCDF	37.469	1.79E+08	0.54	Y	1.20	1.23	2%
ES 123789-HxCDF	38.404	1.68E+08	0.52	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.75	1.43E+08	0.45	Y	0.95	0.98	4%
ES 1234789-HpCDF	41.092	1.25E+08	0.44	Y	0.85	0.86	1%
ES OCDF	43.395	2.71E+08	0.89	Y	0.93	0.93	1%

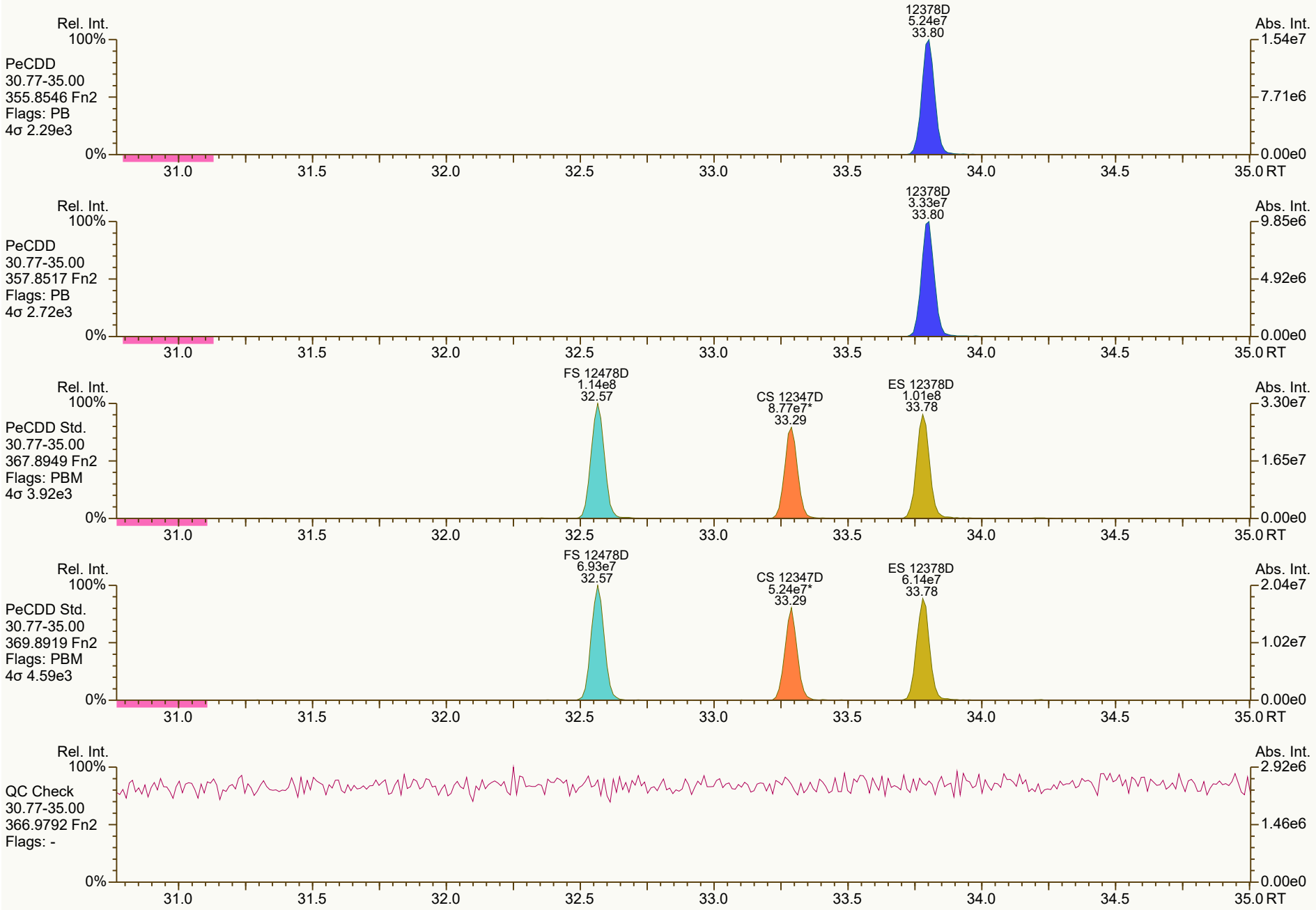
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

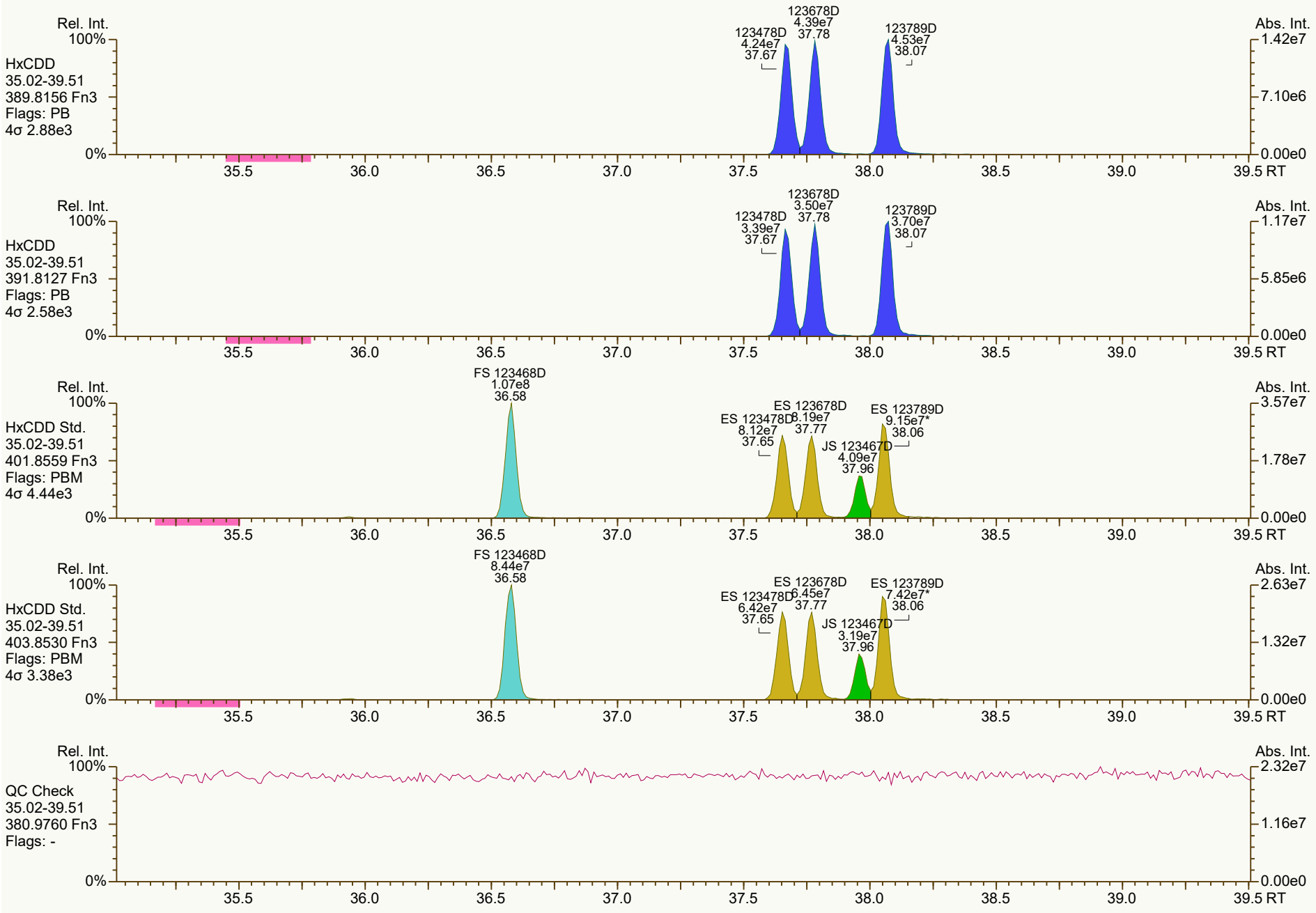
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.61E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.32	2.56E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.96	7.28E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.31	1.30	0%
CS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.89	0.87	-2%
CS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.87	0.89	2%
CS 123469-HxCDF	37.12	1.65E+08	0.52	Y	1.09	1.14	4%
CS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.86	0.92	7%
SS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.26	1.24	-2%
SS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.86	0.86	0%
SS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.93	0.96	3%
SS 123469-HxCDF	37.12	1.65E+08	0.52	Y	0.84	0.84	0%
SS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.91	1.64E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.85	2.82E+08	0.79	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.83E+08	0.81	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.84E+08	1.65	Y	1.09	1.13	3%
FS 123468-HxCDD	36.58	1.91E+08	1.27	Y	1.26	1.32	4%
FS 1234679-HpCDD	39.99	2.10E+08	1.06	Y	1.36	1.42	5%
TS 1378-TCDD	26.87	2.23E+08	0.80	Y	1.35	1.31	-3%
~~OCDD-a~~	~~43.22~~	~~7.32E+06~~	~~2.45~~	~~Y~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.40~~	~~8.14E+06~~	~~2.47~~	~~Y~~	~~0.06~~	~~0.06~~	~~1%~~

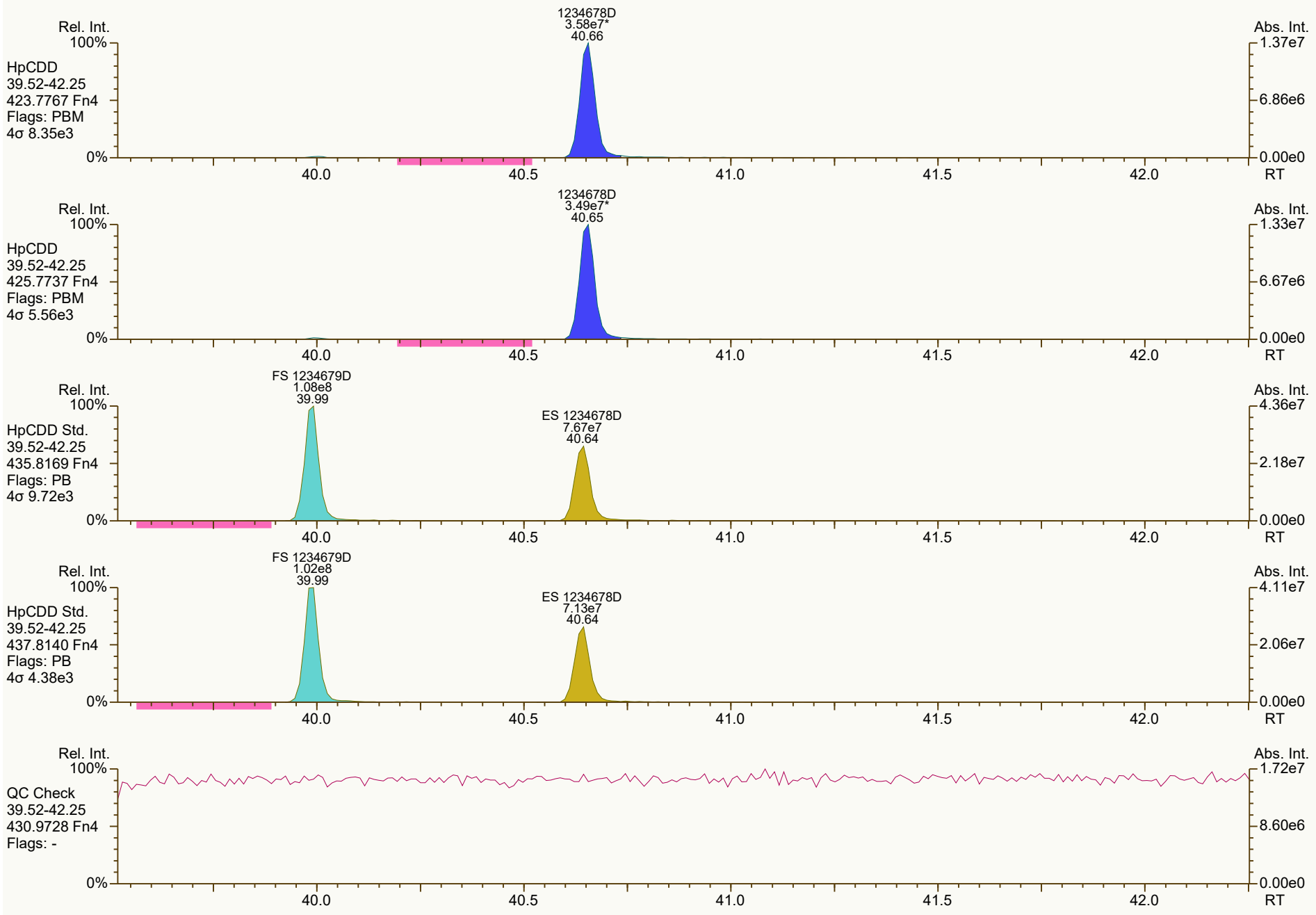
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.32e7
1.16e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.72e7
8.60e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

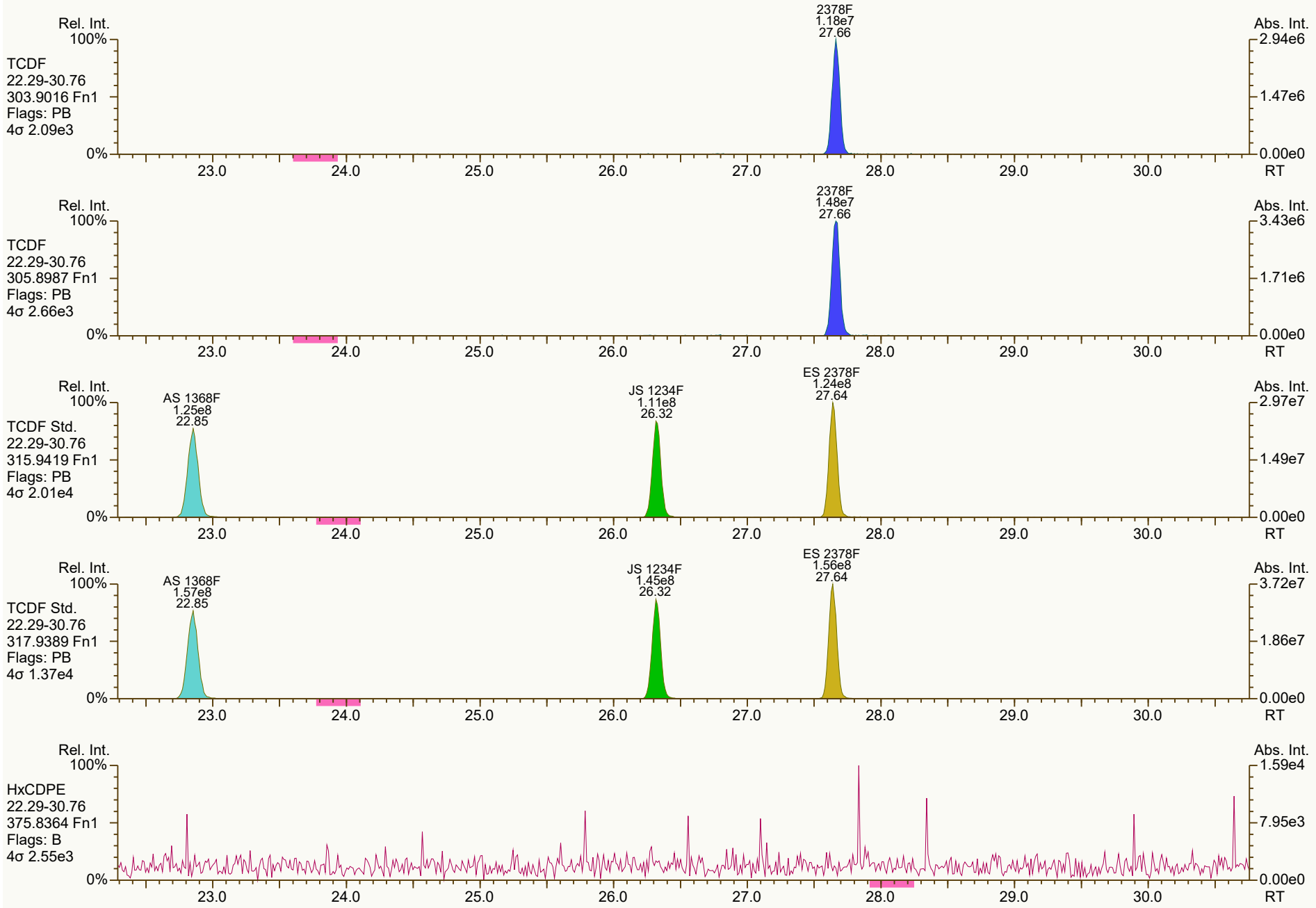

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.30e3
0%
2378D
9.91e6
28.52
Abs. Int.
2.34e6
1.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.39e3
0%
2378D
1.24e7
28.52
Abs. Int.
3.06e6
1.53e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.08e3
0%
CS 37Cl-2378D
2.10e7
28.52
Abs. Int.
5.19e6
2.60e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 8.84e3
0%
AS 1368D
7.21e7
24.91
TS 1378D
9.88e7
26.87
JS 1234D
7.11e7
27.86
ES 2378D
7.62e7
28.50
FS 1278D
8.20e7
28.82
Abs. Int.
2.31e7
1.16e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.59e3
0%
RRF(AS 1368D) = (7.21e7 + 9.14e7) * 100pg / (7.11e7 + 8.96e7) * 100pg = 1.02
PSW 27-Jul-2021 15:20
OK - CL 28Jul21
= 1.02
AS 1368D
9.14e7
24.91
TS 1378D
1.24e8
26.87
JS 1234D
8.96e7
27.86
ES 2378D
9.33e7
28.50
FS 1278D
1.01e8
28.82
Abs. Int.
2.84e7
1.42e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.29e3
0%
12378D
5.24e7
33.80
Abs. Int.
1.54e7
7.71e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.72e3
0%
12378D
3.33e7
33.80
Abs. Int.
9.85e6
4.92e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.92e3
0%
FS 12478D
1.14e8
32.57
CS 12347D
8.77e7*
33.29
ES 12378D
1.01e8
33.78
Abs. Int.
3.30e7
1.65e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 4.59e3
0%
FS 12478D
6.93e7
32.57
CS 12347D
5.24e7*
33.29
ES 12378D
6.14e7
33.78
Abs. Int.
2.04e7
1.02e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

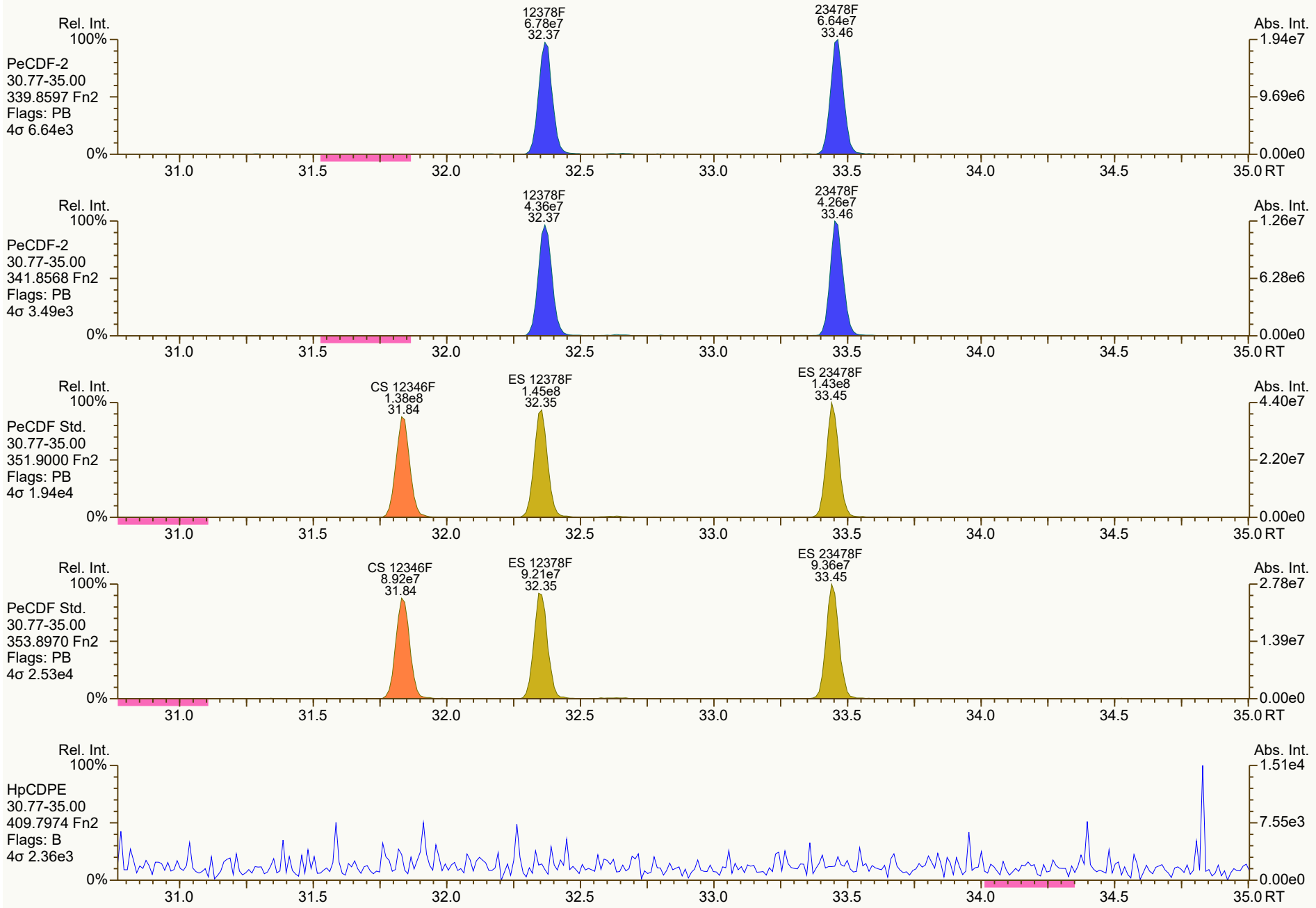

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.88e3
123678D
4.39e7
37.78
123478D
4.24e7
37.67
123789D
4.53e7
38.07
Abs. Int.
1.42e7
7.10e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.58e3
123678D
3.50e7
37.78
123478D
3.39e7
37.67
123789D
3.70e7
38.07
Abs. Int.
1.17e7
5.85e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.44e3
FS 123468D
1.07e8
36.58
ES 123678D
8.19e7
37.77
ES 123478D
8.12e7
37.65
ES 123789D
9.15e7*
38.06
JS 123467D
4.09e7
37.96
Abs. Int.
3.57e7
1.78e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.38e3
FS 123468D
8.44e7
36.58
ES 123678D
6.45e7
37.77
ES 123478D
6.42e7
37.65
ES 123789D
7.42e7*
38.06
JS 123467D
3.19e7
37.96
Abs. Int.
2.63e7
1.32e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.32e7
1.16e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 8.35e3
0%
1234678D
3.58e7*
40.66
Abs. Int.
1.37e7
6.86e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 5.56e3
0%
1234678D
3.49e7*
40.65
Abs. Int.
1.33e7
6.67e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 9.72e3
0%
FS 1234679D
1.08e8
39.99
ES 1234678D
7.67e7
40.64
Abs. Int.
4.36e7
2.18e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.38e3
0%
FS 1234679D
1.02e8
39.99
ES 1234678D
7.13e7
40.64
Abs. Int.
4.11e7
2.06e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.72e7
8.60e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0


OCDD
5.68e7*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.46e3
0%
Abs. Int.
2.00e7
1.00e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.38e7*
43.22
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 3.66e3
2.18e7
1.09e7
ES OCDD
1.05e8*
43.21
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 6.38e3
3.38e7
1.69e7
ES OCDD
1.20e8*
43.21
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.59e3
3.96e7
1.98e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
6.64e6
3.32e6


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.09e3
0%
2378F
1.18e7
27.66
Abs. Int.
2.94e6
1.47e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.66e3
0%
2378F
1.48e7
27.66
Abs. Int.
3.43e6
1.71e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.01e4
0%
AS 1368F
1.25e8
22.85
JS 1234F
1.11e8
26.32
ES 2378F
1.24e8
27.64
Abs. Int.
2.97e7
1.49e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.37e4
0%
AS 1368F
1.57e8
22.85
JS 1234F
1.45e8
26.32
ES 2378F
1.56e8
27.64
Abs. Int.
3.72e7
1.86e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.55e3
0%
Abs. Int.
1.59e4
7.95e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

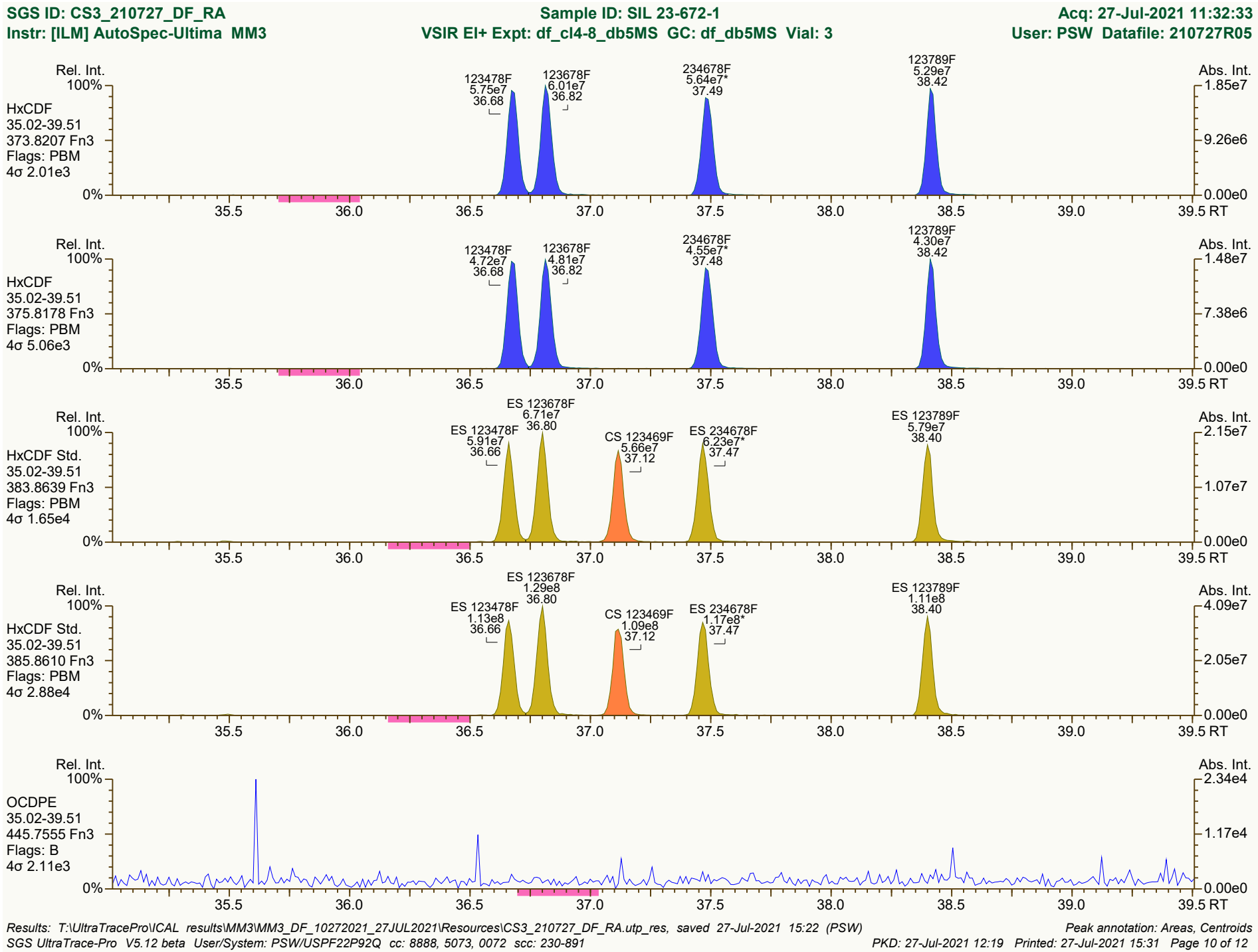

Rel. Int.
100%
0%
Abs. Int.
1.52e4
7.61e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.35e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.57e4
7.83e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.27e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 6.64e3
0%
12378F
6.78e7
32.37
23478F
6.64e7
33.46
Abs. Int.
1.94e7
9.69e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.49e3
0%
12378F
4.36e7
32.37
23478F
4.26e7
33.46
Abs. Int.
1.26e7
6.28e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 1.94e4
0%
CS 12346F
1.38e8
31.84
ES 12378F
1.45e8
32.35
ES 23478F
1.43e8
33.45
Abs. Int.
4.40e7
2.20e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.53e4
0%
CS 12346F
8.92e7
31.84
ES 12378F
9.21e7
32.35
ES 23478F
9.36e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.36e3
0%
Abs. Int.
1.51e4
7.55e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

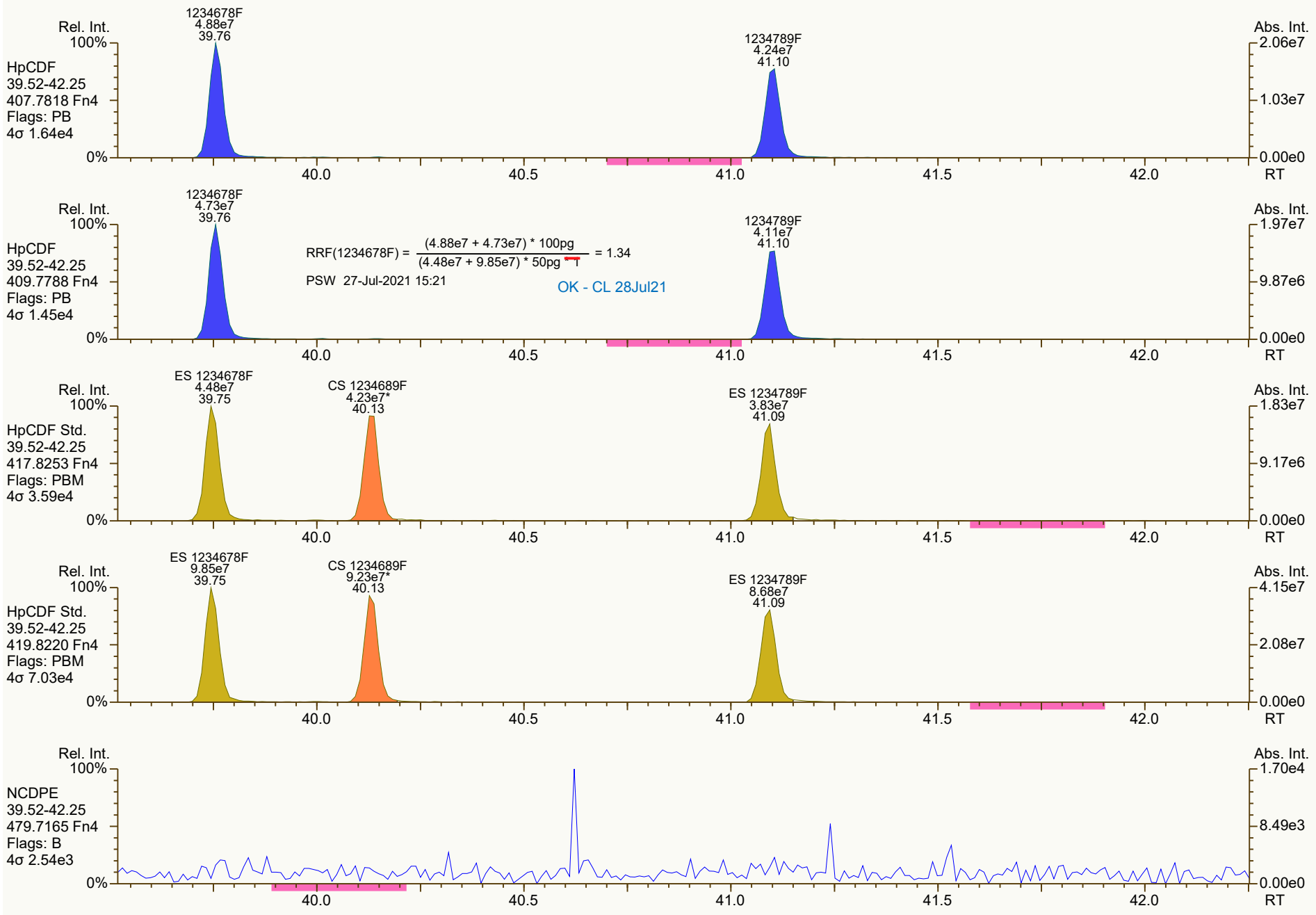
SGS ID: CS3_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

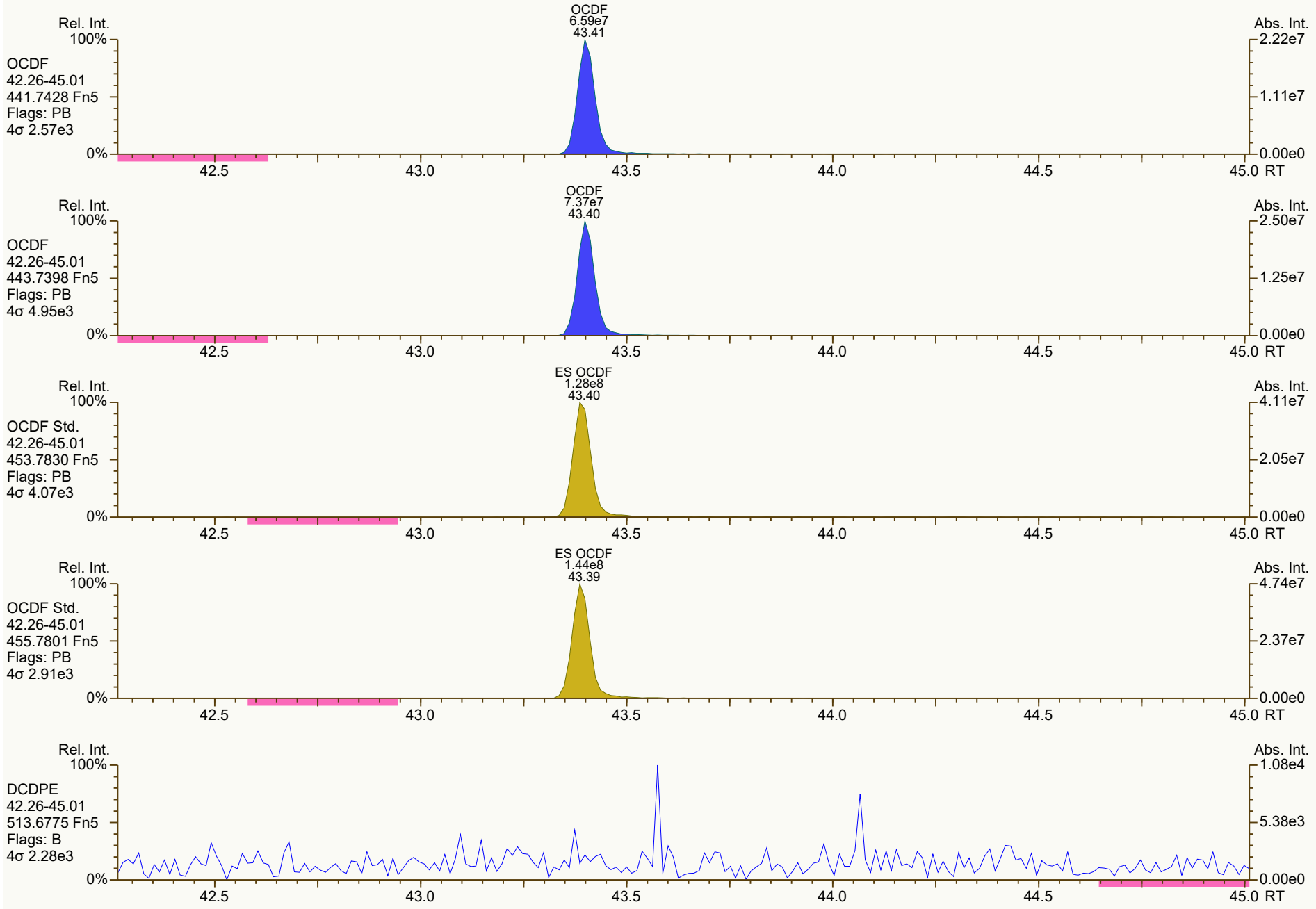
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 27-Jul-2021 11:32:33
User: PSW Datafile: 210727R05



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8888, 5073, 0072 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.64e4
1234678F
4.88e7
39.76
1234789F
4.24e7
41.10
Abs. Int.
2.06e7
1.03e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.45e4
1234678F
4.73e7
39.76
RRF(1234678F) = (4.88e7 + 4.73e7) * 100pg / (4.48e7 + 9.85e7) * 50pg = 1.34
PSW 27-Jul-2021 15:21
OK - CL 28Jul21
1234789F
4.11e7
41.10
1.97e7
9.87e6
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.59e4
ES 1234678F
4.48e7
39.75
CS 1234689F
4.23e7*
40.13
ES 1234789F
3.83e7
41.09
1.83e7
9.17e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 7.03e4
ES 1234678F
9.85e7
39.75
CS 1234689F
9.23e7*
40.13
ES 1234789F
8.68e7
41.09
4.15e7
2.08e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.54e3
1.70e4
8.49e3


OCDF
6.59e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.57e3
0%
Abs. Int.
2.22e7
1.11e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
7.37e7
43.40
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 4.95e3
0%
Abs. Int.
2.50e7
1.25e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.28e8
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 4.07e3
0%
Abs. Int.
4.11e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.44e8
43.39
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.91e3
0%
Abs. Int.
4.74e7
2.37e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.28e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

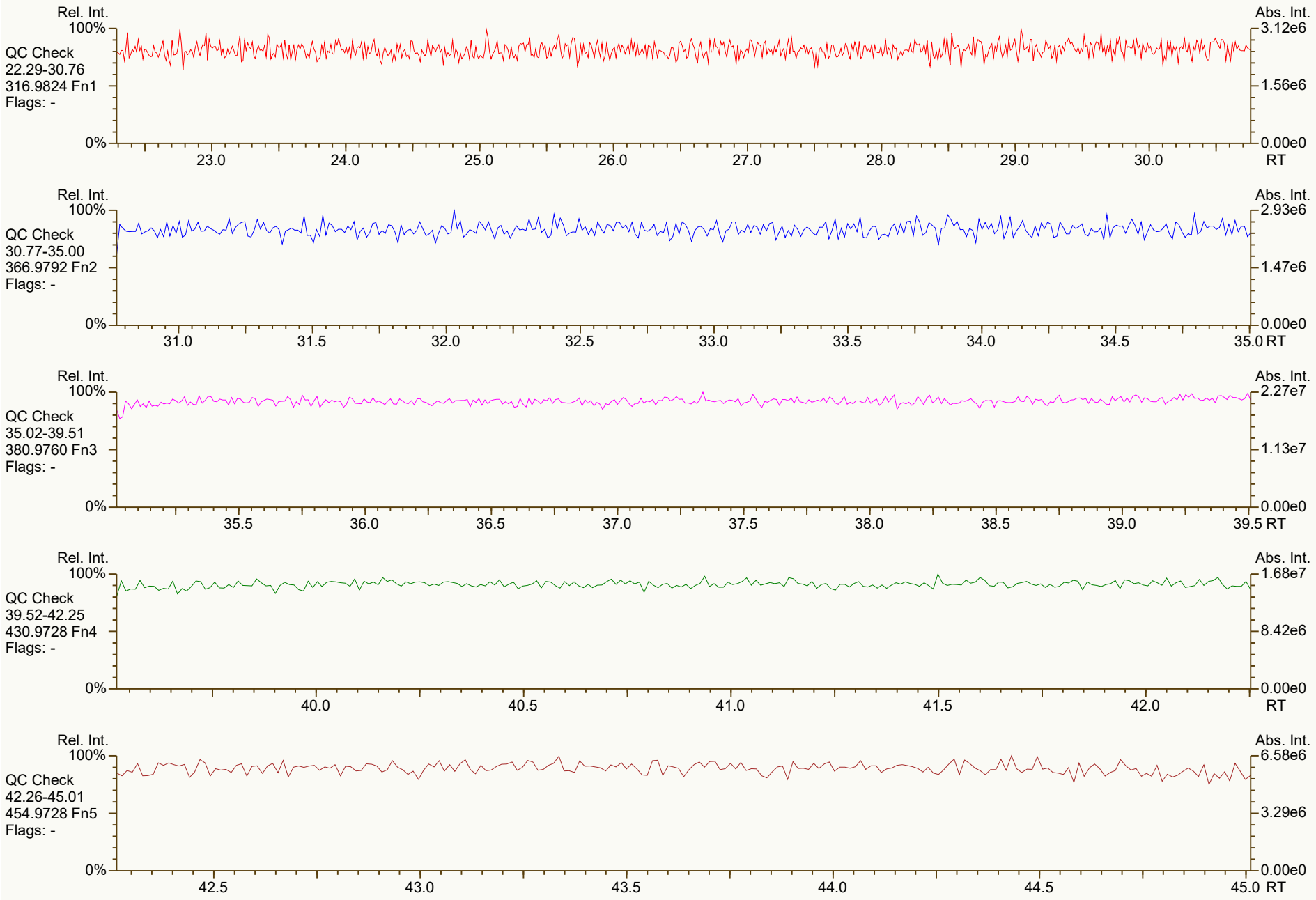
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

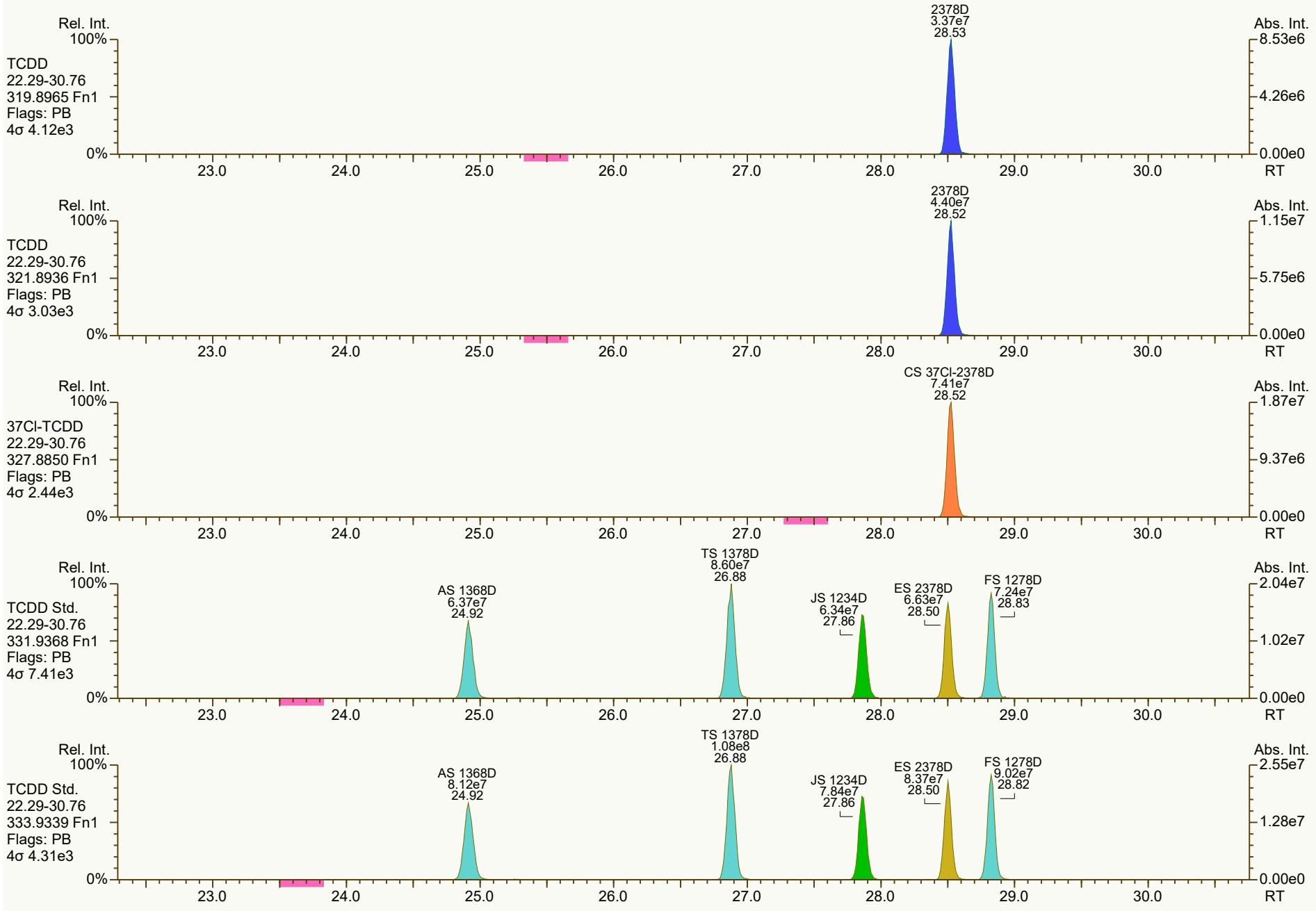
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	7.77E+07	0.76	Y	1.34	1.30	-4%
12378-PeCDD	33.81	3.10E+08	1.55	Y	1.06	1.06	0%
123478-HxCDD	37.68	2.82E+08	1.23	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.84E+08	1.24	Y	1.08	1.10	2%
123789-HxCDD	38.08	2.99E+08	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.67	2.61E+08	1.03	Y	0.97	0.98	0%
OCDD	43.23	4.49E+08	0.90	Y	1.07	1.08	1%
2378-TCDF	27.67	9.59E+07	0.77	Y	0.96	0.96	0%
12378-PeCDF	32.38	4.09E+08	1.58	Y	0.95	0.95	0%
23478-PeCDF	33.47	3.96E+08	1.56	Y	0.94	0.93	-1%
123478-HxCDF	36.69	3.82E+08	1.23	Y	1.23	1.24	0%
123678-HxCDF	36.83	3.97E+08	1.25	Y	1.13	1.13	0%
234678-HxCDF	37.49	3.75E+08	1.25	Y	1.15	1.13	-2%
123789-HxCDF	38.43	3.51E+08	1.24	Y	1.14	1.14	0%
1234678-HpCDF	39.77	3.45E+08	1.03	Y	1.36	1.33	-2%
1234789-HpCDF	41.11	2.99E+08	1.04	Y	1.30	1.30	0%
OCDF	43.41	5.22E+08	0.91	Y	1.03	1.05	2%
ES 2378-TCDD	28.50	1.50E+08	0.79	Y	1.03	1.06	2%
ES 12378-PeCDD	33.789	1.46E+08	1.59	Y	1.03	1.03	0%
ES 123478-HxCDD	37.662	1.34E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.775	1.29E+08	1.28	Y	0.97	0.94	-4%
ES 123789-HxCDD	38.064	1.51E+08	1.27	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.654	1.33E+08	1.06	Y	0.99	0.97	-2%
ES OCDD	43.216	2.07E+08	0.92	Y	0.78	0.75	-3%
ES 2378-TCDF	27.649	2.49E+08	0.80	Y	1.08	1.09	1%
ES 12378-PeCDF	32.362	2.16E+08	1.57	Y	0.93	0.95	2%
ES 23478-PeCDF	33.454	2.12E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.668	1.54E+08	0.51	Y	1.14	1.12	-2%
ES 123678-HxCDF	36.808	1.75E+08	0.53	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.477	1.66E+08	0.53	Y	1.20	1.20	0%
ES 123789-HxCDF	38.409	1.54E+08	0.52	Y	1.14	1.12	-1%
ES 1234678-HpCDF	39.757	1.30E+08	0.45	Y	0.95	0.94	-1%
ES 1234789-HpCDF	41.102	1.15E+08	0.45	Y	0.85	0.83	-2%
ES OCDF	43.398	2.49E+08	0.90	Y	0.93	0.90	-2%

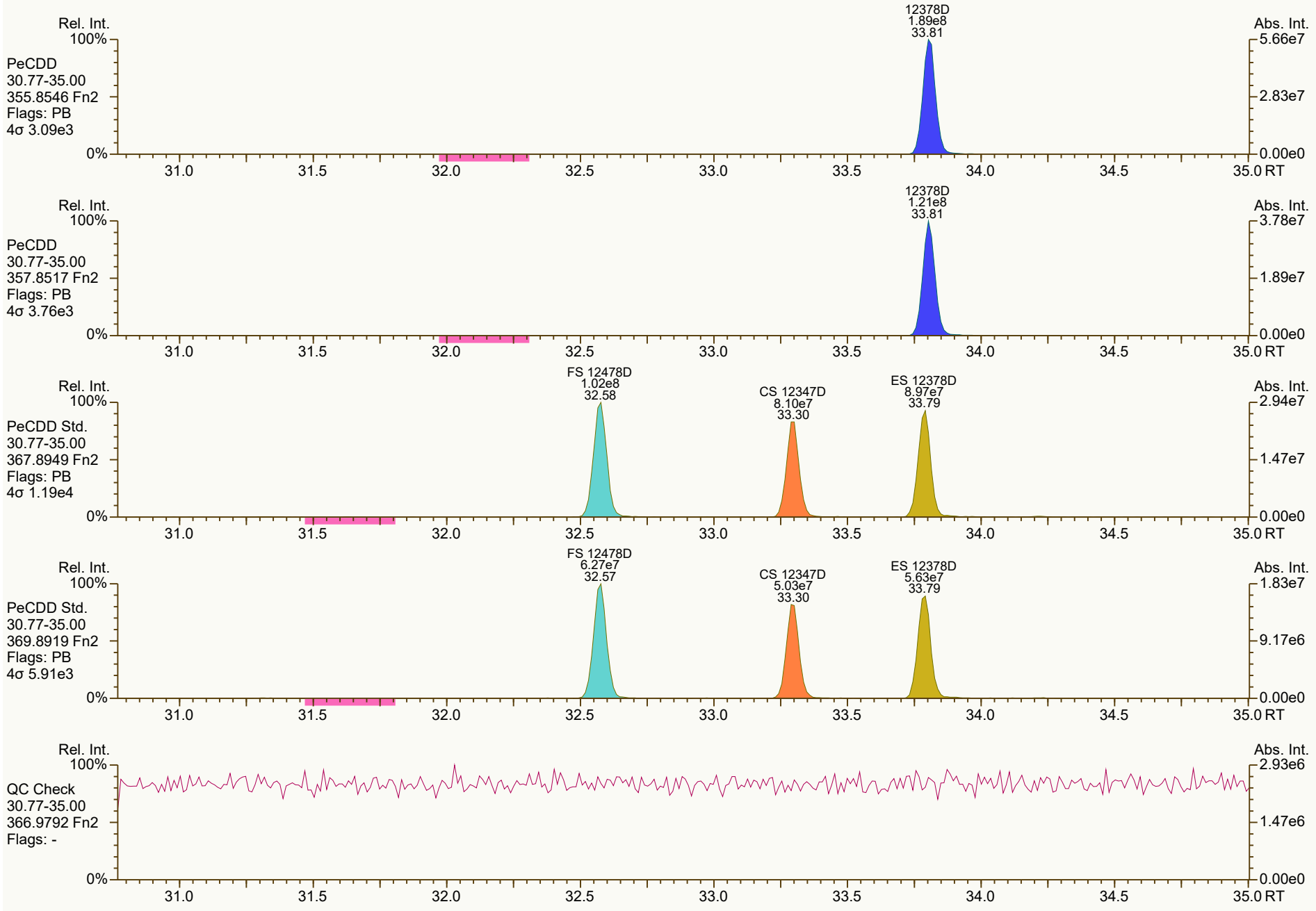
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

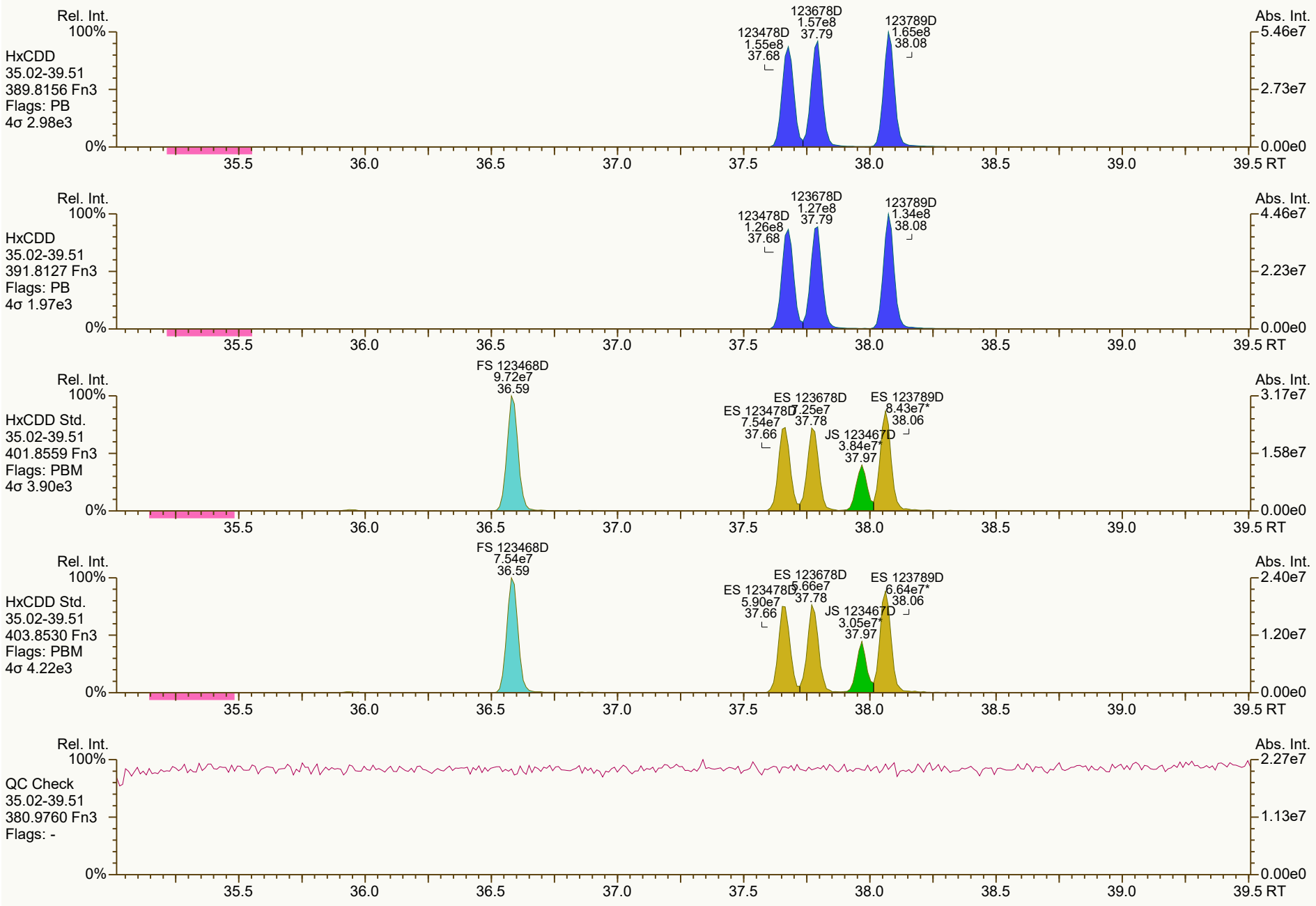
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.42E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	2.27E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	6.89E+07	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.31	1.31	0%
CS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.89	0.93	4%
CS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.87	0.88	2%
CS 123469-HxCDF	37.12	1.50E+08	0.54	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.26	1.23	-2%
SS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.86	0.90	4%
SS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.12	1.50E+08	0.54	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.91	0.92	1%
AS 1368-TCDD	24.92	1.45E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.49E+08	0.79	Y	1.08	1.09	1%
FS 1278-TCDD	28.83	1.63E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.64E+08	1.62	Y	1.09	1.13	3%
FS 123468-HxCDD	36.59	1.73E+08	1.29	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	1.84E+08	1.07	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	1.94E+08	0.79	Y	1.35	1.30	-4%
~~OCDD-a~~	~~43.22~~	~~2.77E+07~~	~~2.50~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~
~~OCDF-a~~	~~43.41~~	~~3.08E+07~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~4%~~

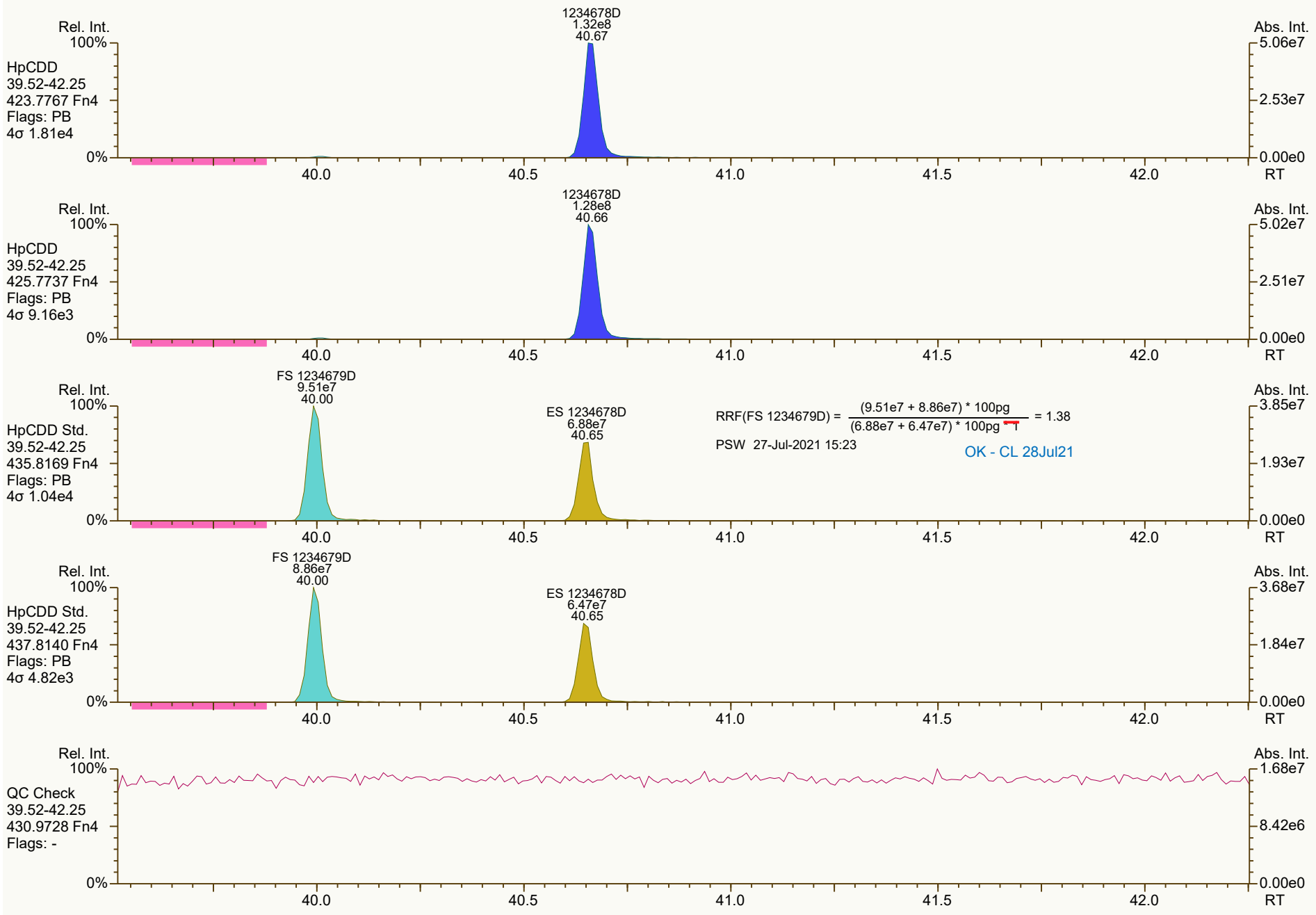
Not reported from this ICAL - CL 28Jul21

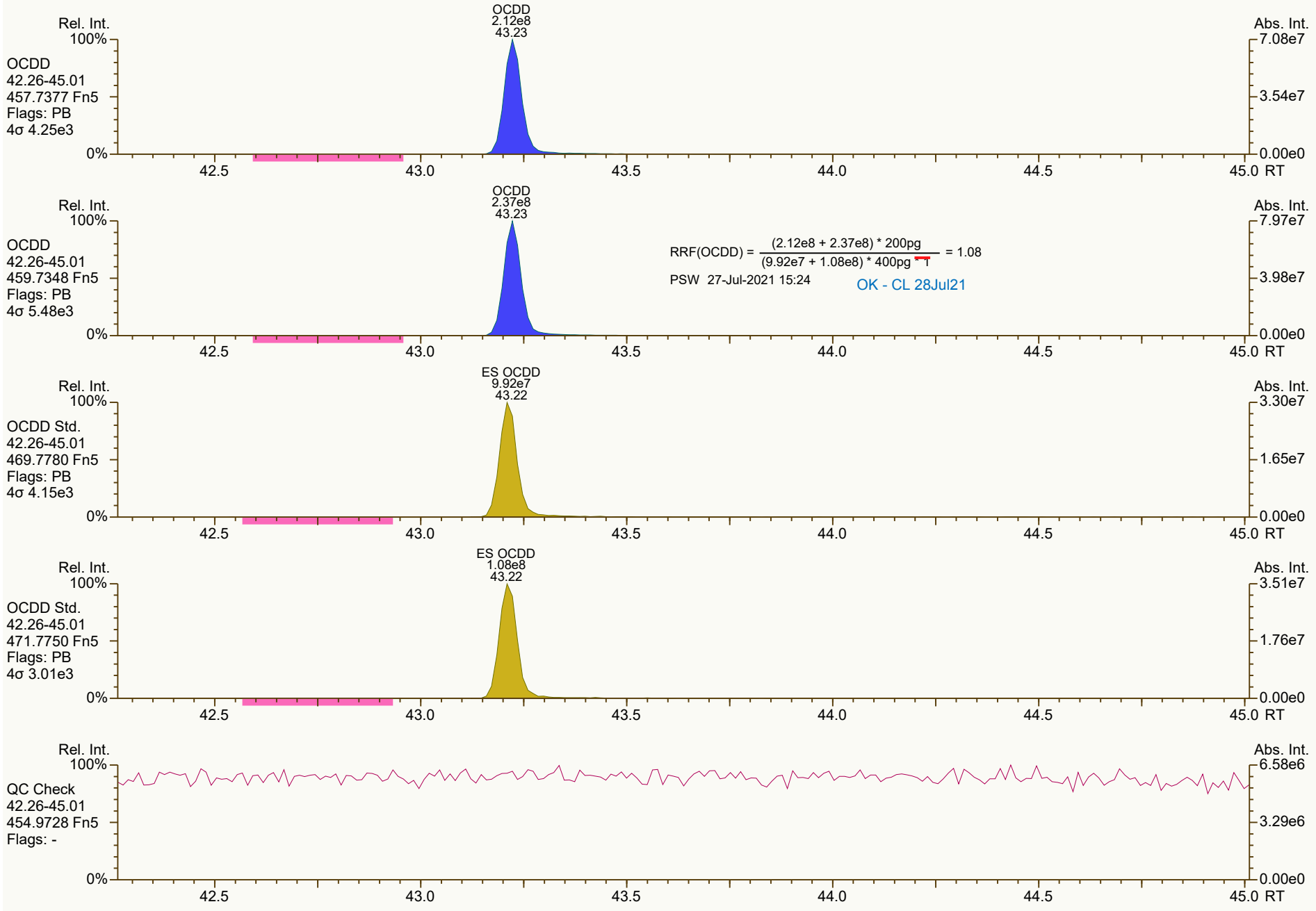

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.68e7
8.42e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 4.12e3
2378D
3.37e7
28.53
8.53e6
4.26e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 3.03e3
2378D
4.40e7
28.52
1.15e7
5.75e6
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.44e3
CS 37Cl-2378D
7.41e7
28.52
1.87e7
9.37e6
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.41e3
AS 1368D
6.37e7
24.92
TS 1378D
8.60e7
26.88
JS 1234D
6.34e7
27.86
ES 2378D
6.63e7
28.50
FS 1278D
7.24e7
28.83
2.04e7
1.02e7
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.31e3
AS 1368D
8.12e7
24.92
TS 1378D
1.08e8
26.88
JS 1234D
7.84e7
27.86
ES 2378D
8.37e7
28.50
FS 1278D
9.02e7
28.82
2.55e7
1.28e7
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.09e3
0%
12378D
1.89e8
33.81
Abs. Int.
5.66e7
2.83e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 3.76e3
0%
12378D
1.21e8
33.81
Abs. Int.
3.78e7
1.89e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 1.19e4
0%
FS 12478D
1.02e8
32.58
CS 12347D
8.10e7
33.30
ES 12378D
8.97e7
33.79
Abs. Int.
2.94e7
1.47e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 5.91e3
0%
FS 12478D
6.27e7
32.57
CS 12347D
5.03e7
33.30
ES 12378D
5.63e7
33.79
Abs. Int.
1.83e7
9.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

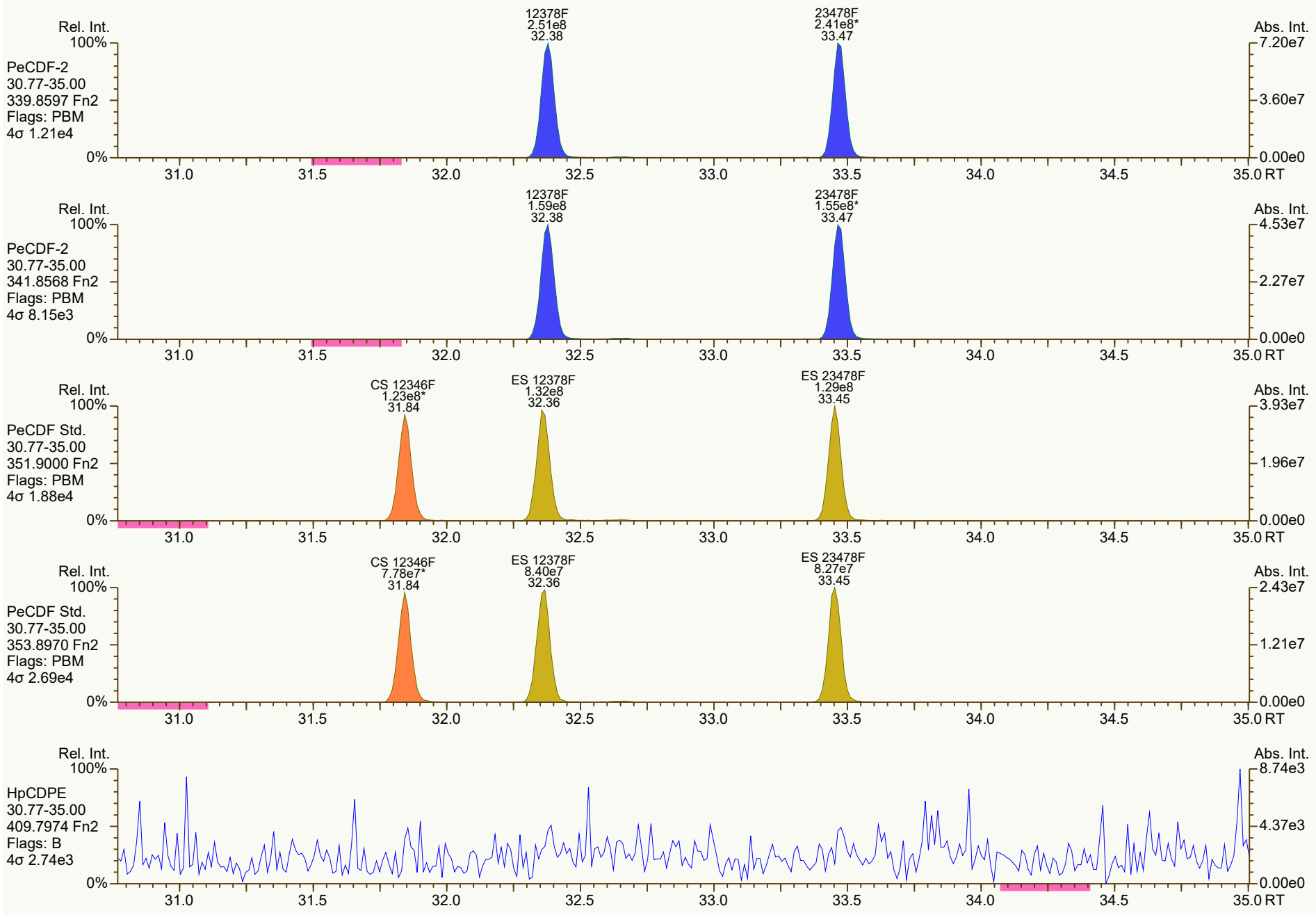

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.98e3
123678D
1.57e8
37.79
123478D
1.55e8
37.68
123789D
1.65e8
38.08
Abs. Int.
5.46e7
2.73e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.97e3
123678D
1.27e8
37.79
123478D
1.26e8
37.68
123789D
1.34e8
38.08
Abs. Int.
4.46e7
2.23e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.90e3
FS 123468D
9.72e7
36.59
ES 123678D
7.25e7
37.78
ES 123478D
7.54e7
37.66
ES 123789D
8.43e7*
38.06
JS 123467D
3.84e7*
37.97
Abs. Int.
3.17e7
1.58e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 4.22e3
FS 123468D
7.54e7
36.59
ES 123678D
5.66e7
37.78
ES 123478D
5.90e7
37.66
ES 123789D
6.64e7*
38.06
JS 123467D
3.05e7*
37.97
Abs. Int.
2.40e7
1.20e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.13e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

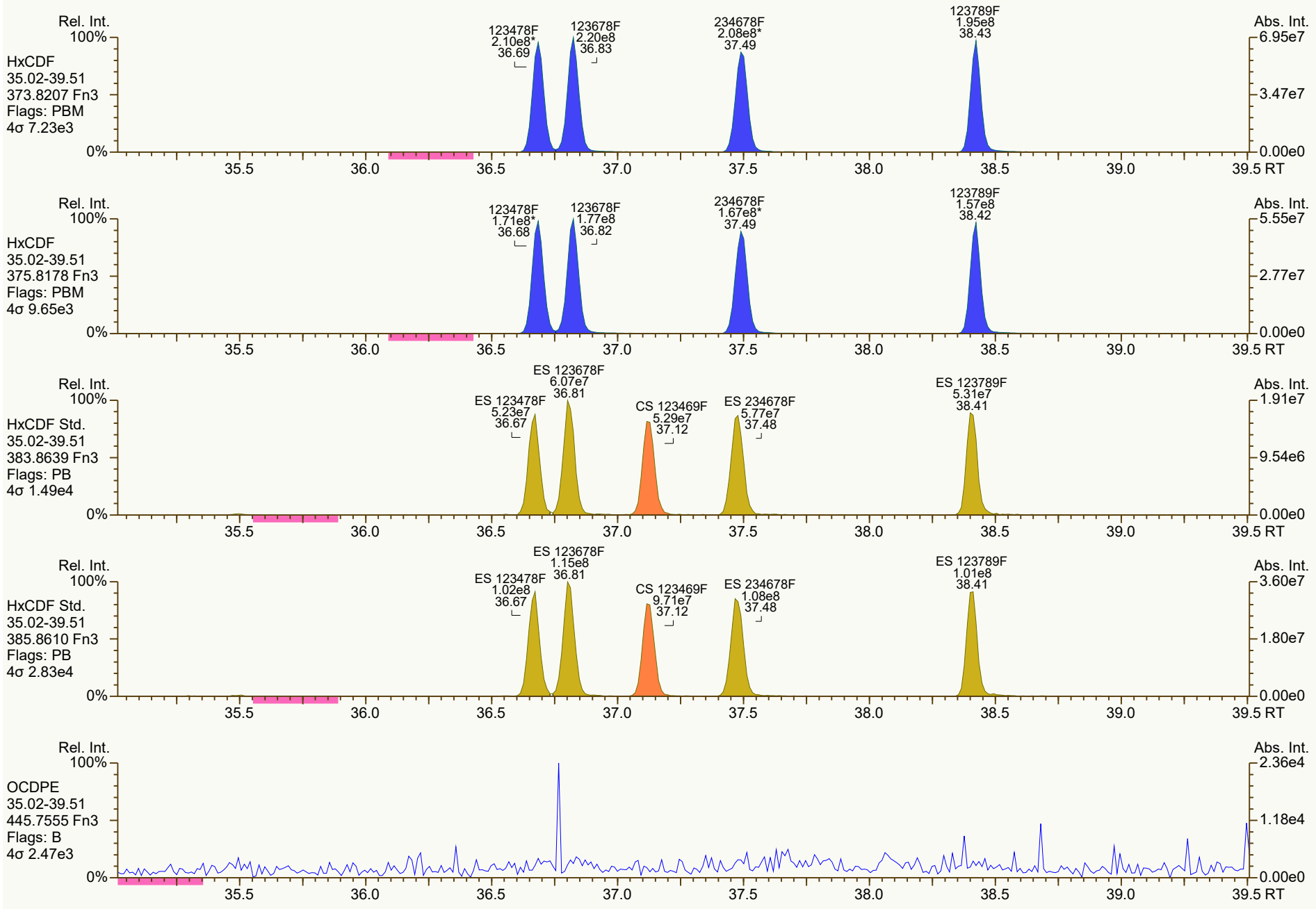

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.81e4
1234678D
1.32e8
40.67
Abs. Int.
5.06e7
2.53e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 9.16e3
1234678D
1.28e8
40.66
5.02e7
2.51e7
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.04e4
FS 1234679D
9.51e7
40.00
ES 1234678D
6.88e7
40.65
3.85e7
1.93e7
RRF(FS 1234679D) = (9.51e7 + 8.86e7) * 100pg / (6.88e7 + 6.47e7) * 100pg = 1.38
PSW 27-Jul-2021 15:23
OK - CL 28Jul21
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.82e3
FS 1234679D
8.86e7
40.00
ES 1234678D
6.47e7
40.65
3.68e7
1.84e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.68e7
8.42e6

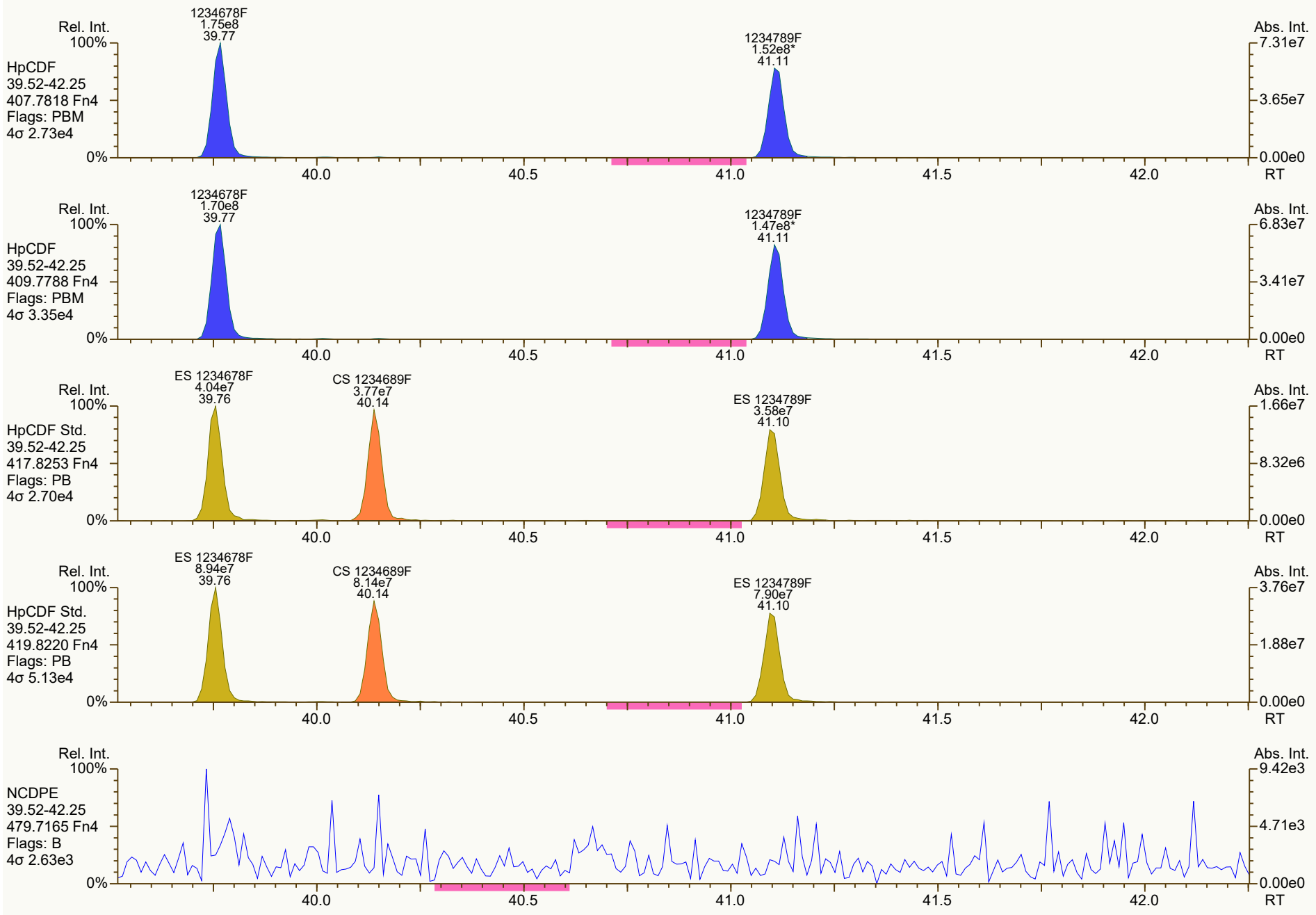

Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PB
4σ 4.25e3
0%
OCDD
2.12e8
43.23
Abs. Int.
7.08e7
3.54e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PB
4σ 5.48e3
0%
OCDD
2.37e8
43.23
RRF(OCDD) = (2.12e8 + 2.37e8) * 200pg / (9.92e7 + 1.08e8) * 400pg = 1.08
PSW 27-Jul-2021 15:24
OK - CL 28Jul21
Abs. Int.
7.97e7
3.98e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.15e3
0%
ES OCDD
9.92e7
43.22
Abs. Int.
3.30e7
1.65e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.01e3
0%
ES OCDD
1.08e8
43.22
Abs. Int.
3.51e7
1.76e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.95e3
0%
2378F
4.17e7
27.67
Abs. Int.
9.81e6
4.91e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.51e3
0%
2378F
5.43e7
27.67
Abs. Int.
1.28e7
6.42e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.36e4
0%
AS 1368F
1.10e8
22.86
JS 1234F
9.87e7
26.33
ES 2378F
1.10e8
27.65
Abs. Int.
2.69e7
1.34e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.34e4
0%
AS 1368F
1.39e8
22.85
JS 1234F
1.29e8
26.33
ES 2378F
1.38e8
27.65
Abs. Int.
3.21e7
1.60e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.81e3
0%
Abs. Int.
9.37e3
4.68e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.32e4
6.61e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.55e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.28e3
2.14e4
1.07e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
3.12e6
1.56e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PBM
4σ 1.21e4
0%
12378F
2.51e8
32.38
23478F
2.41e8*
33.47
Abs. Int.
7.20e7
3.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PBM
4σ 8.15e3
0%
12378F
1.59e8
32.38
23478F
1.55e8*
33.47
Abs. Int.
4.53e7
2.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 1.88e4
0%
CS 12346F
1.23e8*
31.84
ES 12378F
1.32e8
32.36
ES 23478F
1.29e8
33.45
Abs. Int.
3.93e7
1.96e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.69e4
0%
CS 12346F
7.78e7*
31.84
ES 12378F
8.40e7
32.36
ES 23478F
8.27e7
33.45
Abs. Int.
2.43e7
1.21e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.74e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 7.23e3
123478F
2.10e8*
36.69
123678F
2.20e8
36.83
234678F
2.08e8*
37.49
123789F
1.95e8
38.43
Abs. Int.
6.95e7
3.47e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.65e3
123478F
1.71e8*
36.68
123678F
1.77e8
36.82
234678F
1.67e8*
37.49
123789F
1.57e8
38.42
Abs. Int.
5.55e7
2.77e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.49e4
ES 123678F
6.07e7
36.81
ES 123478F
5.23e7
36.67
CS 123469F
5.29e7
37.12
ES 234678F
5.77e7
37.48
ES 123789F
5.31e7
38.41
Abs. Int.
1.91e7
9.54e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.83e4
ES 123678F
1.15e8
36.81
ES 123478F
1.02e8
36.67
CS 123469F
9.71e7
37.12
ES 234678F
1.08e8
37.48
ES 123789F
1.01e8
38.41
Abs. Int.
3.60e7
1.80e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.47e3
Abs. Int.
2.36e4
1.18e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
0%
Abs. Int.
RT
40.0
40.5
41.0
41.5
42.0
1234678F
1.75e8
39.77
1234789F
1.52e8*
41.11
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PBM
4σ 2.73e4
7.31e7
3.65e7
0.00e0
1234678F
1.70e8
39.77
1234789F
1.47e8*
41.11
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PBM
4σ 3.35e4
6.83e7
3.41e7
0.00e0
ES 1234678F
4.04e7
39.76
CS 1234689F
3.77e7
40.14
ES 1234789F
3.58e7
41.10
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.70e4
1.66e7
8.32e6
0.00e0
ES 1234678F
8.94e7
39.76
CS 1234689F
8.14e7
40.14
ES 1234789F
7.90e7
41.10
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.13e4
3.76e7
1.88e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
9.42e3
4.71e3
0.00e0


OCDF
2.49e8
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.68e3
0%
Abs. Int.
8.08e7
4.04e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.73e8
43.41
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.81e3
8.85e7
4.43e7
ES OCDF
1.18e8
43.40
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.20e3
3.94e7
1.97e7
ES OCDF
1.31e8
43.40
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 5.23e3
4.16e7
2.08e7
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
4.05e3
2.02e3

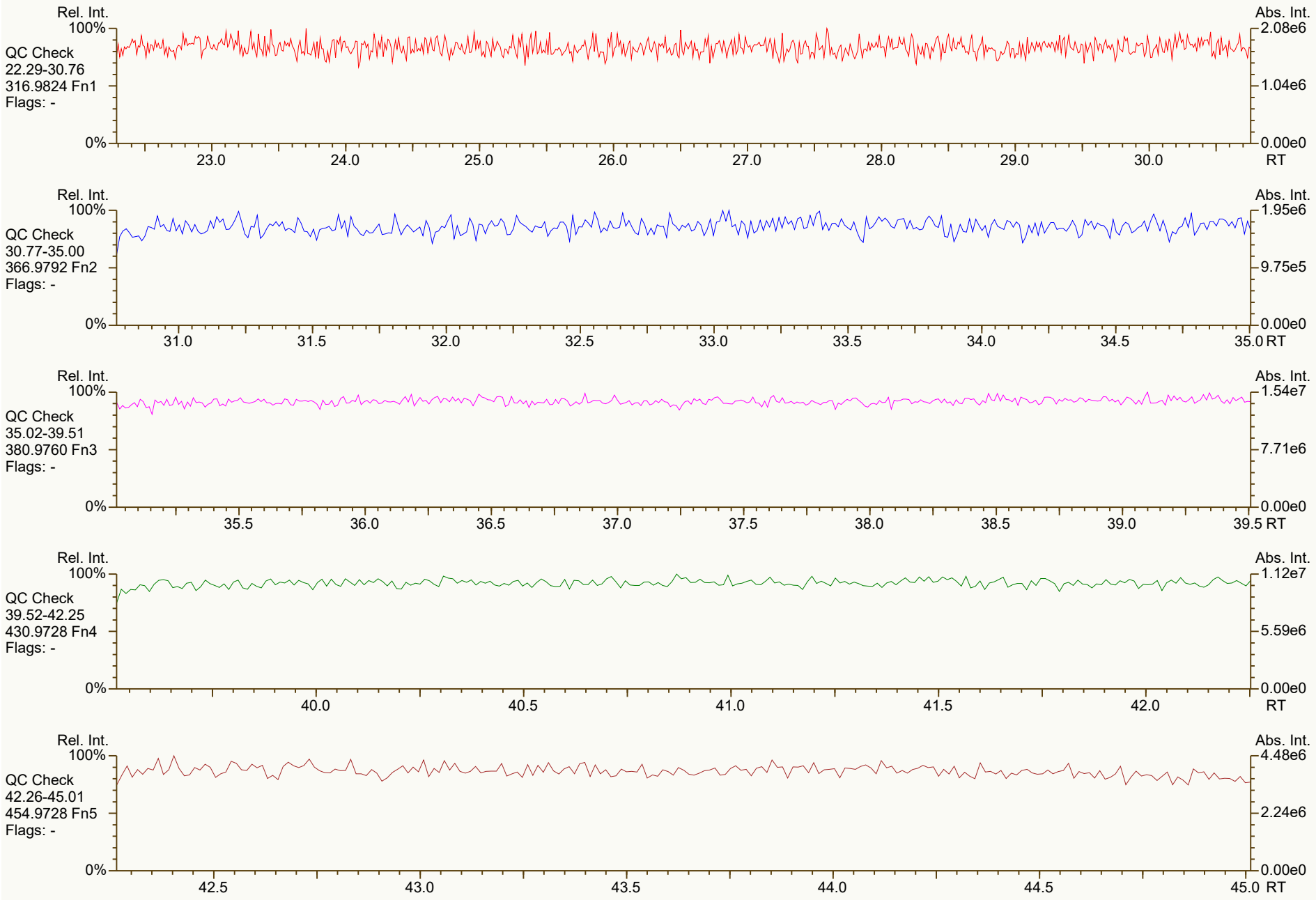
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

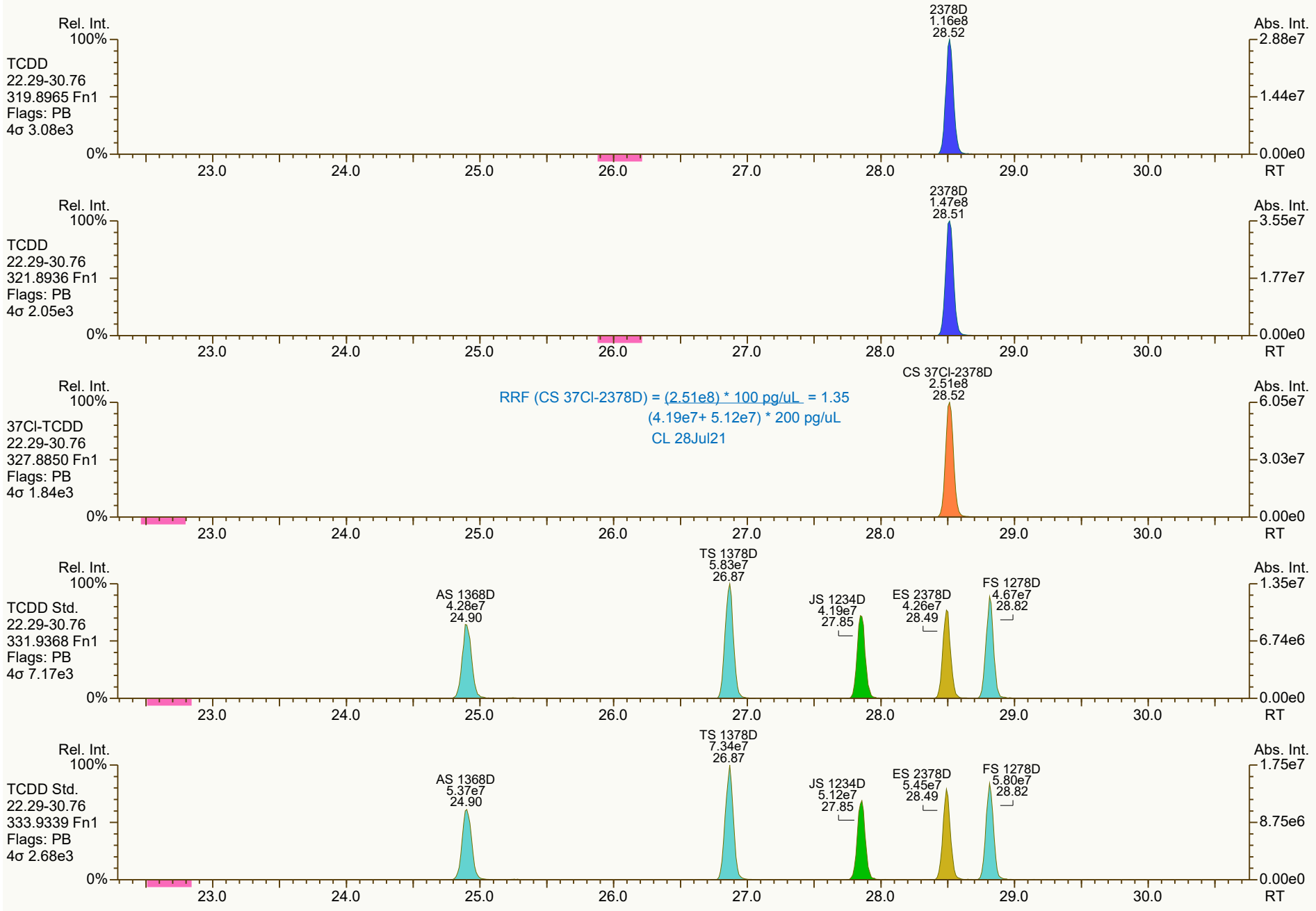
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.63E+08	0.78	Y	1.34	1.35	1%
12378-PeCDD	33.80	1.06E+09	1.56	Y	1.06	1.07	1%
123478-HxCDD	37.67	9.52E+08	1.24	Y	1.06	1.06	0%
123678-HxCDD	37.78	9.75E+08	1.25	Y	1.08	1.10	1%
123789-HxCDD	38.07	1.03E+09	1.25	Y	1.02	1.01	-1%
1234678-HpCDD	40.66	8.94E+08	1.04	Y	0.97	0.98	1%
OCDD	43.22	1.57E+09	0.88	Y	1.07	1.06	-1%
2378-TCDF	27.66	3.19E+08	0.77	Y	0.96	0.97	1%
12378-PeCDF	32.37	1.33E+09	1.51	Y	0.95	0.93	-1%
23478-PeCDF	33.46	1.36E+09	1.58	Y	0.94	0.96	3%
123478-HxCDF	36.68	1.30E+09	1.25	Y	1.23	1.24	0%
123678-HxCDF	36.82	1.35E+09	1.25	Y	1.13	1.14	1%
234678-HxCDF	37.49	1.27E+09	1.24	Y	1.15	1.15	0%
123789-HxCDF	38.42	1.20E+09	1.24	Y	1.14	1.15	2%
1234678-HpCDF	39.76	1.19E+09	1.03	Y	1.36	1.37	1%
1234789-HpCDF	41.10	1.06E+09	1.03	Y	1.30	1.35	4%
OCDF	43.40	1.87E+09	0.90	Y	1.03	1.06	3%
ES 2378-TCDD	28.49	9.72E+07	0.78	Y	1.03	1.04	1%
ES 12378-PeCDD	33.782	9.96E+07	1.62	Y	1.03	1.07	3%
ES 123478-HxCDD	37.654	8.99E+07	1.27	Y	0.99	1.03	4%
ES 123678-HxCDD	37.768	8.89E+07	1.27	Y	0.97	1.02	5%
ES 123789-HxCDD	38.058	1.02E+08	1.27	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.644	9.11E+07	1.06	Y	0.99	1.05	6%
ES OCDD	43.21	1.48E+08	0.89	Y	0.78	0.85	9%
ES 2378-TCDF	27.639	1.64E+08	0.80	Y	1.08	1.08	0%
ES 12378-PeCDF	32.354	1.43E+08	1.61	Y	0.93	0.95	1%
ES 23478-PeCDF	33.446	1.41E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.662	1.05E+08	0.52	Y	1.14	1.21	6%
ES 123678-HxCDF	36.801	1.19E+08	0.53	Y	1.30	1.36	5%
ES 234678-HxCDF	37.468	1.11E+08	0.51	Y	1.20	1.27	6%
ES 123789-HxCDF	38.402	1.04E+08	0.54	Y	1.14	1.20	5%
ES 1234678-HpCDF	39.749	8.70E+07	0.46	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.092	7.84E+07	0.46	Y	0.85	0.90	6%
ES OCDF	43.392	1.76E+08	0.89	Y	0.93	1.01	9%

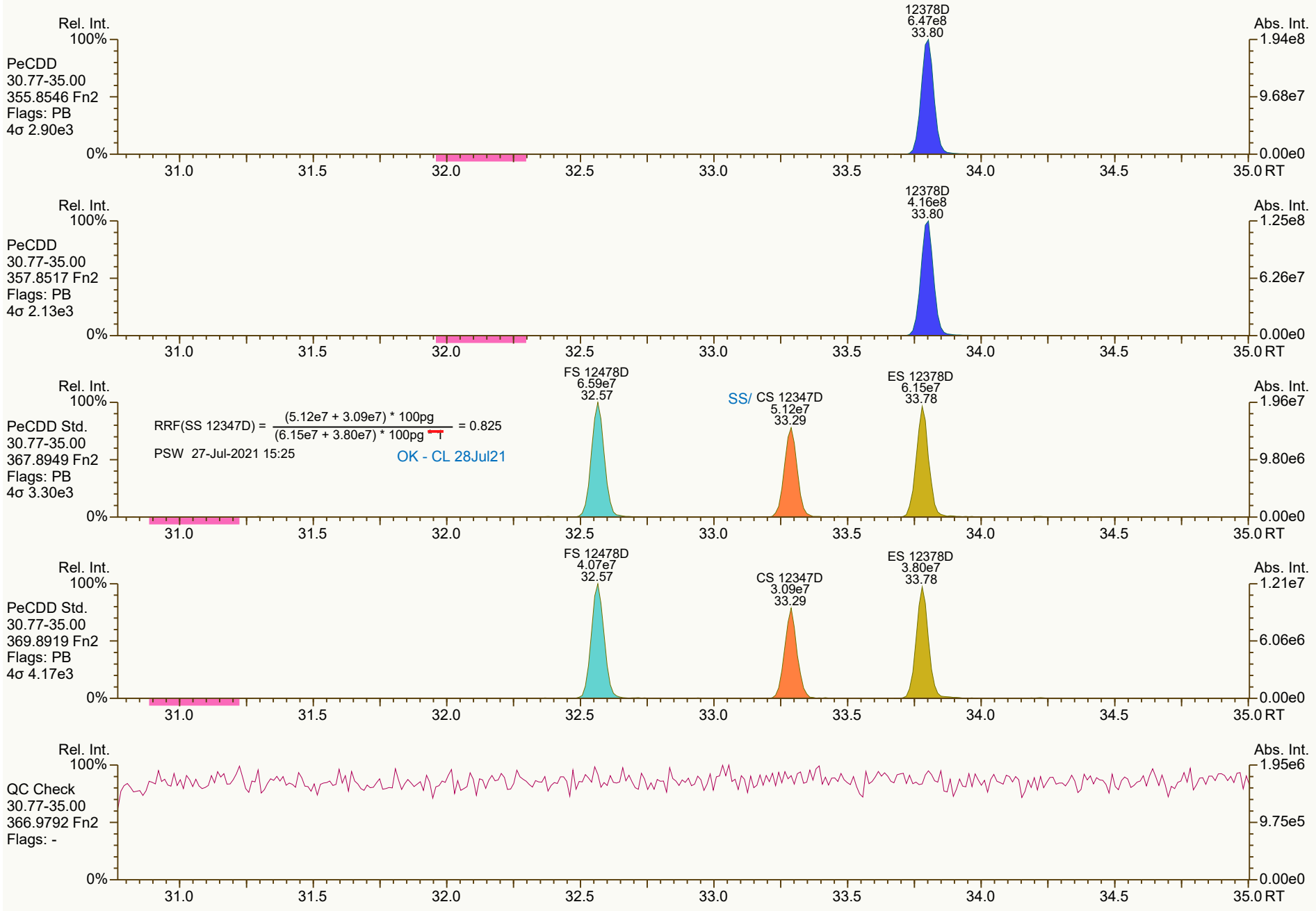
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

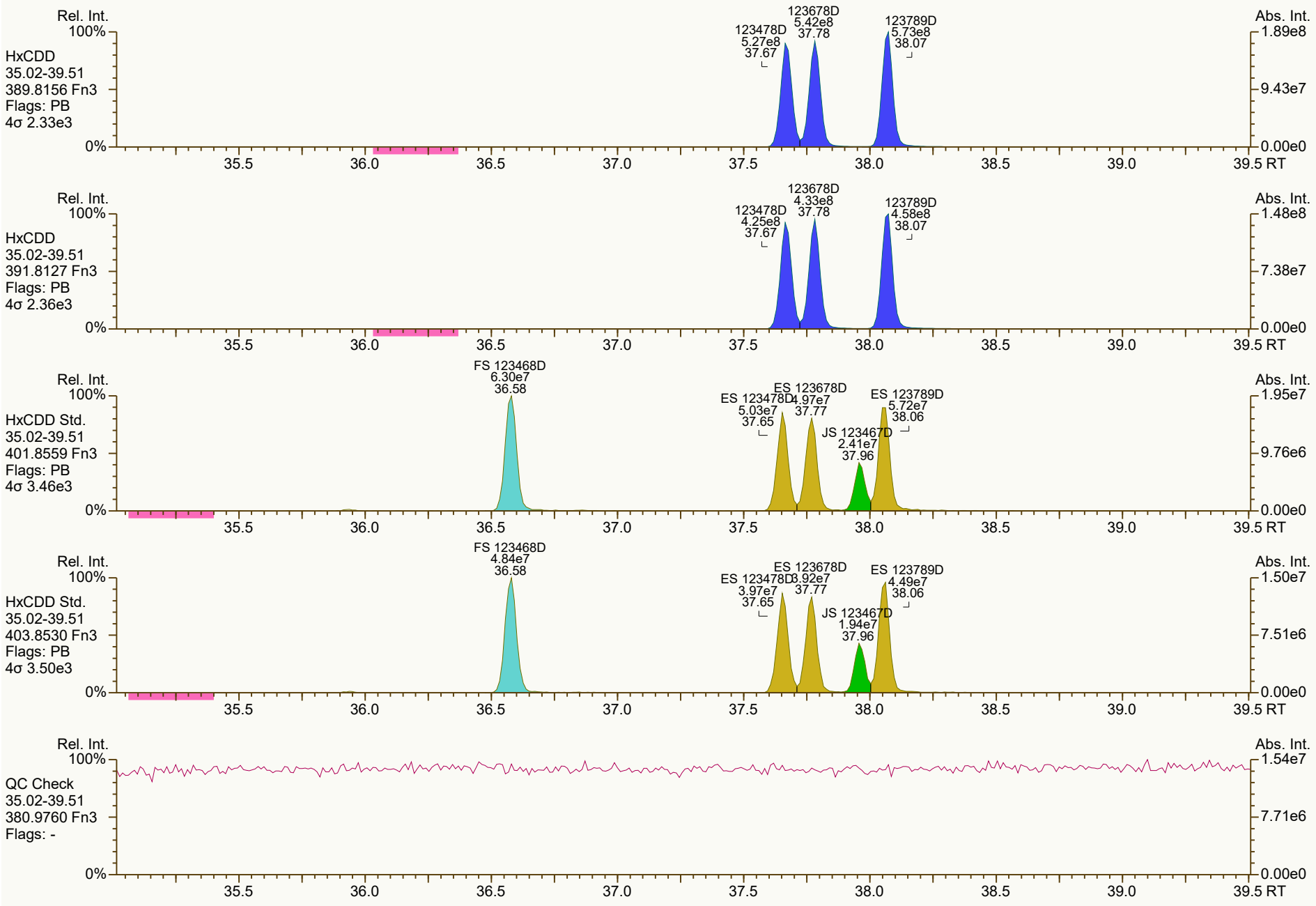
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.85	9.31E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.32	1.51E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	4.35E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.31	1.35	3%
CS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.11	9.75E+07	0.53	Y	1.09	1.12	3%
CS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.26	1.29	3%
SS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.86	0.82	-5%
SS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.93	0.91	-2%
SS 123469-HxCDF	37.11	9.75E+07	0.53	Y	0.84	0.82	-2%
SS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.91	0.86	-6%
AS 1368-TCDD	24.90	9.65E+07	0.80	Y	1.02	1.04	1%
AS 1368-TCDF	22.84	1.66E+08	0.78	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.05E+08	0.81	Y	1.08	1.08	-1%
FS 12478-PeCDD	32.57	1.07E+08	1.62	Y	1.09	1.07	-2%
FS 123468-HxCDD	36.58	1.11E+08	1.30	Y	1.26	1.24	-2%
FS 1234679-HpCDD	39.99	1.18E+08	1.06	Y	1.36	1.30	-4%
TS 1378-TCDD	26.87	1.32E+08	0.79	Y	1.35	1.35	1%
~~OCDD-a~~	~~43.22~~	~~9.57E+07~~	~~2.52~~	~~Y~~	~~0.07~~	~~0.06~~	~~-2%~~
~~OCDF-a~~	~~43.40~~	~~1.10E+08~~	~~2.51~~	~~Y~~	~~0.06~~	~~0.06~~	~~5%~~

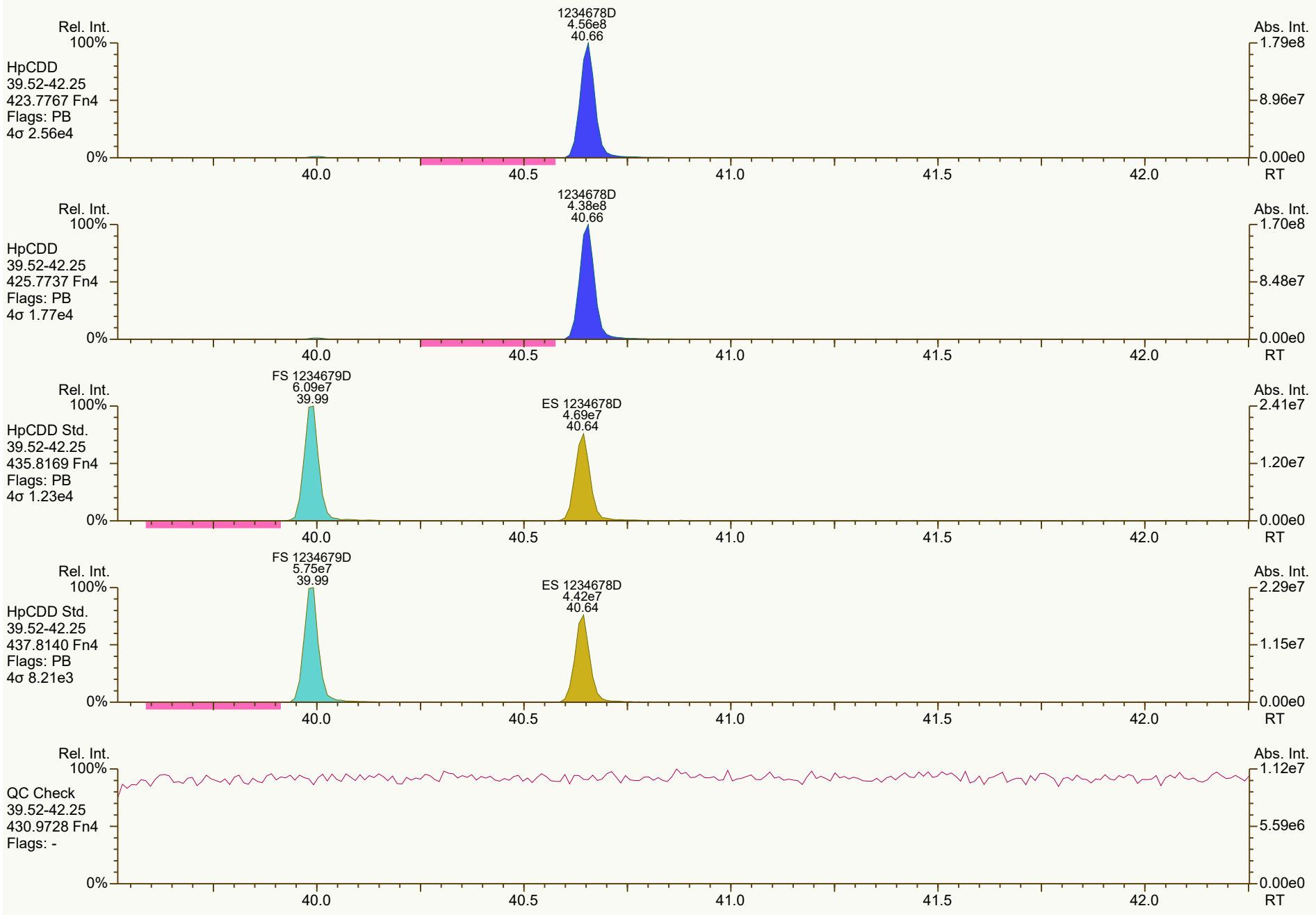
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.08e6
1.04e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.54e7
7.71e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.12e7
5.59e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.08e3
2378D
1.16e8
28.52
2.88e7
1.44e7
0.00e0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.05e3
2378D
1.47e8
28.51
3.55e7
1.77e7
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.84e3
CS 37Cl-2378D
2.51e8
28.52
RRF (CS 37Cl-2378D) = (2.51e8) * 100 pg/uL = 1.35
(4.19e7+ 5.12e7) * 200 pg/uL
CL 28Jul21
6.05e7
3.03e7
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.17e3
AS 1368D
4.28e7
24.90
TS 1378D
5.83e7
26.87
JS 1234D
4.19e7
27.85
ES 2378D
4.26e7
28.49
FS 1278D
4.67e7
28.82
1.35e7
6.74e6
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.68e3
AS 1368D
5.37e7
24.90
TS 1378D
7.34e7
26.87
JS 1234D
5.12e7
27.85
ES 2378D
5.45e7
28.49
FS 1278D
5.80e7
28.82
1.75e7
8.75e6
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.90e3
0%
12378D
6.47e8
33.80
Abs. Int.
1.94e8
9.68e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.13e3
0%
12378D
4.16e8
33.80
Abs. Int.
1.25e8
6.26e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.30e3
0%
RRF(SS 12347D) = (5.12e7 + 3.09e7) * 100pg / (6.15e7 + 3.80e7) * 100pg = 0.825
PSW 27-Jul-2021 15:25
OK - CL 28Jul21
FS 12478D
6.59e7
32.57
SS/ CS 12347D
5.12e7
33.29
ES 12378D
6.15e7
33.78
Abs. Int.
1.96e7
9.80e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.17e3
0%
FS 12478D
4.07e7
32.57
CS 12347D
3.09e7
33.29
ES 12378D
3.80e7
33.78
Abs. Int.
1.21e7
6.06e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.33e3
123478D
5.27e8
37.67
123678D
5.42e8
37.78
123789D
5.73e8
38.07
Abs. Int.
1.89e8
9.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.36e3
123478D
4.25e8
37.67
123678D
4.33e8
37.78
123789D
4.58e8
38.07
Abs. Int.
1.48e8
7.38e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.46e3
FS 123468D
6.30e7
36.58
ES 123478D
5.03e7
37.65
ES 123678D
4.97e7
37.77
JS 123467D
2.41e7
37.96
ES 123789D
5.72e7
38.06
Abs. Int.
1.95e7
9.76e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.50e3
FS 123468D
4.84e7
36.58
ES 123478D
3.97e7
37.65
ES 123678D
3.92e7
37.77
JS 123467D
1.94e7
37.96
ES 123789D
4.49e7
38.06
Abs. Int.
1.50e7
7.51e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.54e7
7.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

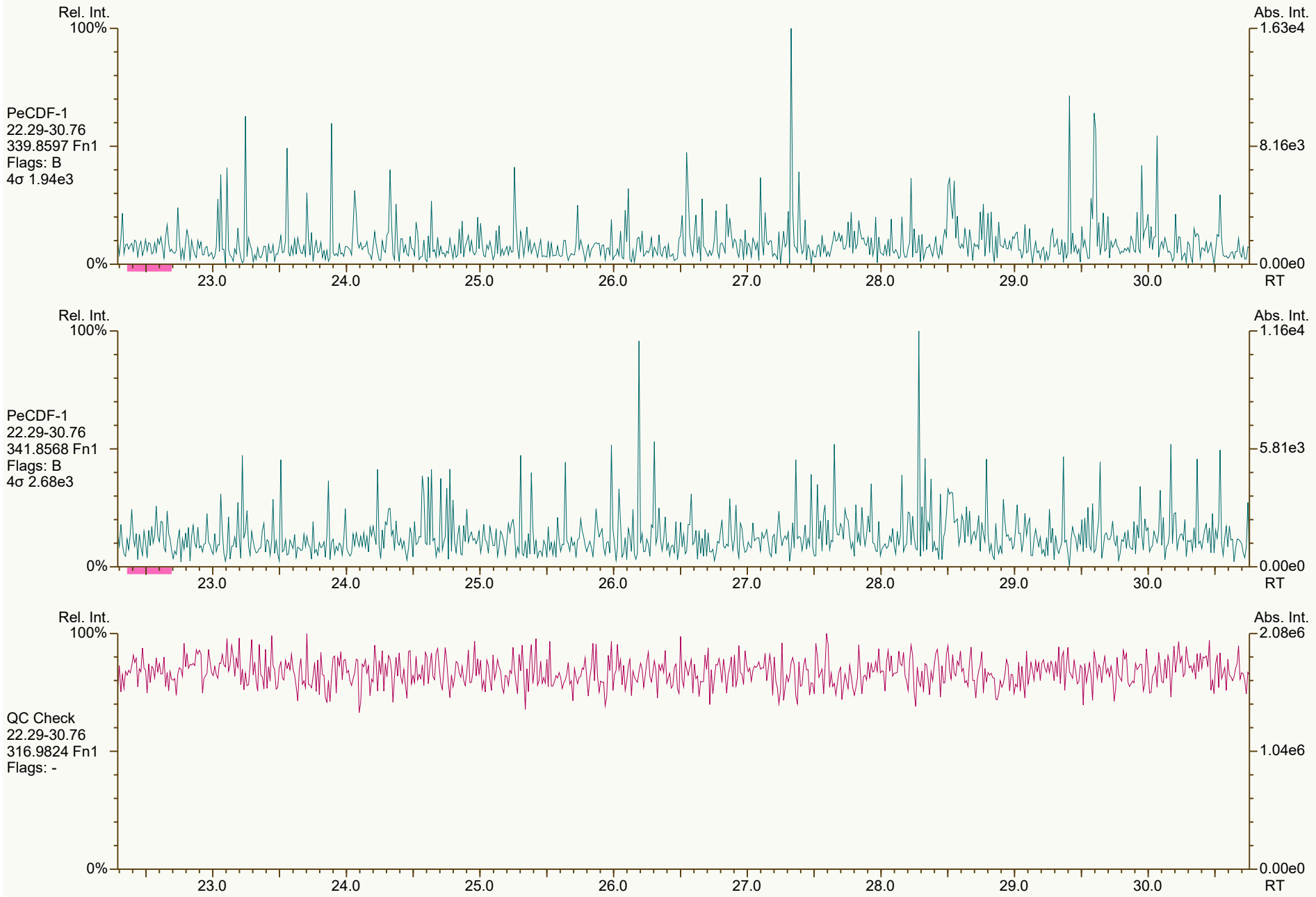

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.56e4
1234678D
4.56e8
40.66
Abs. Int.
1.79e8
8.96e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.77e4
1234678D
4.38e8
40.66
Abs. Int.
1.70e8
8.48e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.23e4
FS 1234679D
6.09e7
39.99
ES 1234678D
4.69e7
40.64
Abs. Int.
2.41e7
1.20e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 8.21e3
FS 1234679D
5.75e7
39.99
ES 1234678D
4.42e7
40.64
Abs. Int.
2.29e7
1.15e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.12e7
5.59e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDD
7.34e8*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
2.52e8
1.26e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
8.31e8*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
Abs. Int.
2.81e8
1.40e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.94e7
43.21
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 3.01e3
0%
Abs. Int.
2.31e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.81e7
43.21
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.23e3
0%
Abs. Int.
2.71e7
1.35e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.39e3
0%
2378F
1.39e8
27.66
Abs. Int.
3.30e7
1.65e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 1.93e3
0%
2378F
1.81e8
27.66
Abs. Int.
4.26e7
2.13e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.93e4
0%
AS 1368F
7.29e7
22.84
JS 1234F
6.68e7
26.32
ES 2378F
7.29e7
27.64
Abs. Int.
1.72e7
8.58e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 9.59e3
0%
AS 1368F
9.33e7
22.84
JS 1234F
8.44e7
26.31
ES 2378F
9.11e7
27.64
Abs. Int.
2.15e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.69e3
0%
Abs. Int.
1.28e4
6.39e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS5_210727_DF_RA | Sample ID: SIL 25-5-3 | Acq: 27-Jul-2021 13:09:36

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89 | User: PSW Datafile: 210727R07



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)

Peak annotation: Areas, Centroids

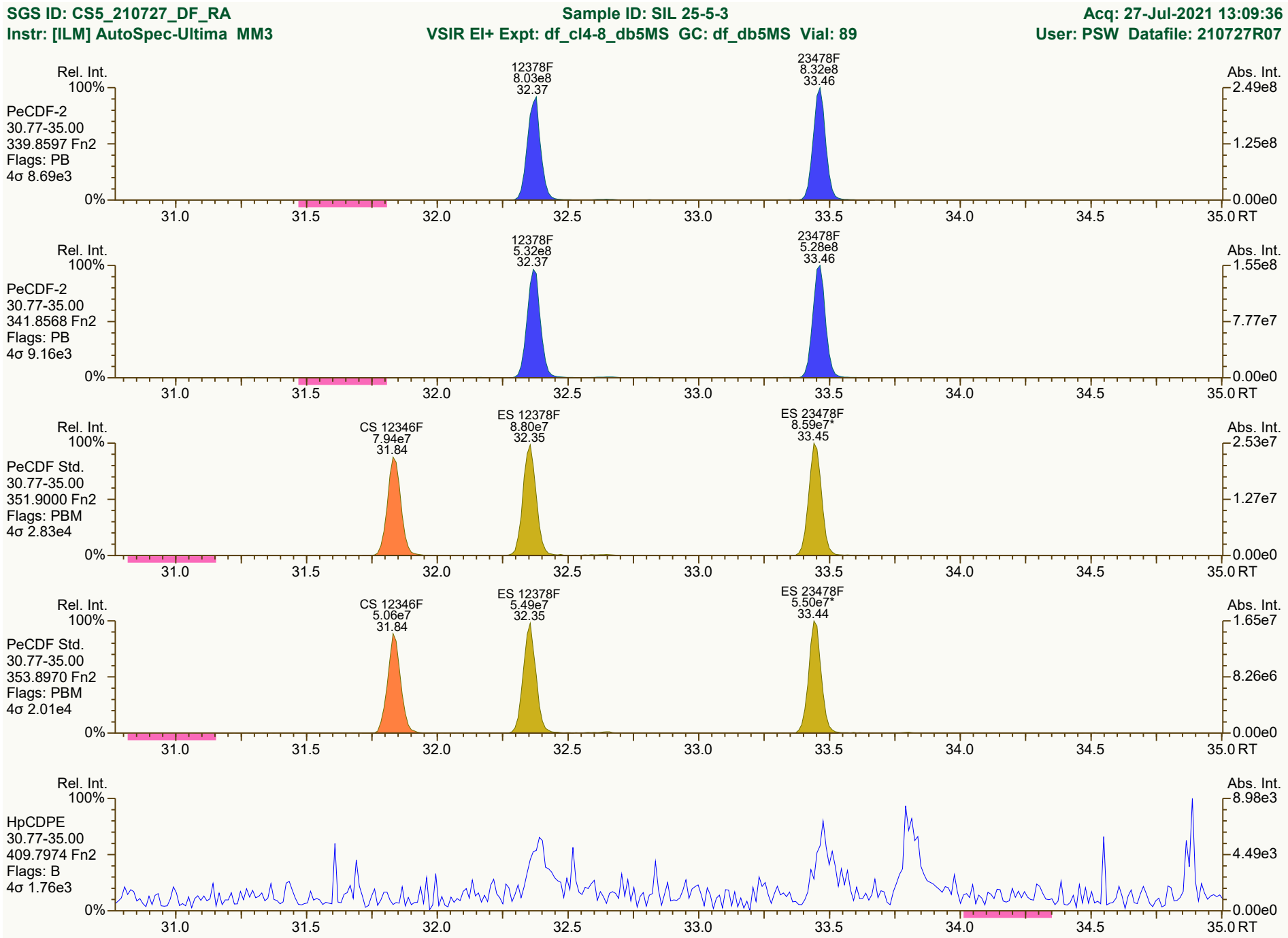
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 7511 scc: 147-553

PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 8 of 12

SGS ID: CS5_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

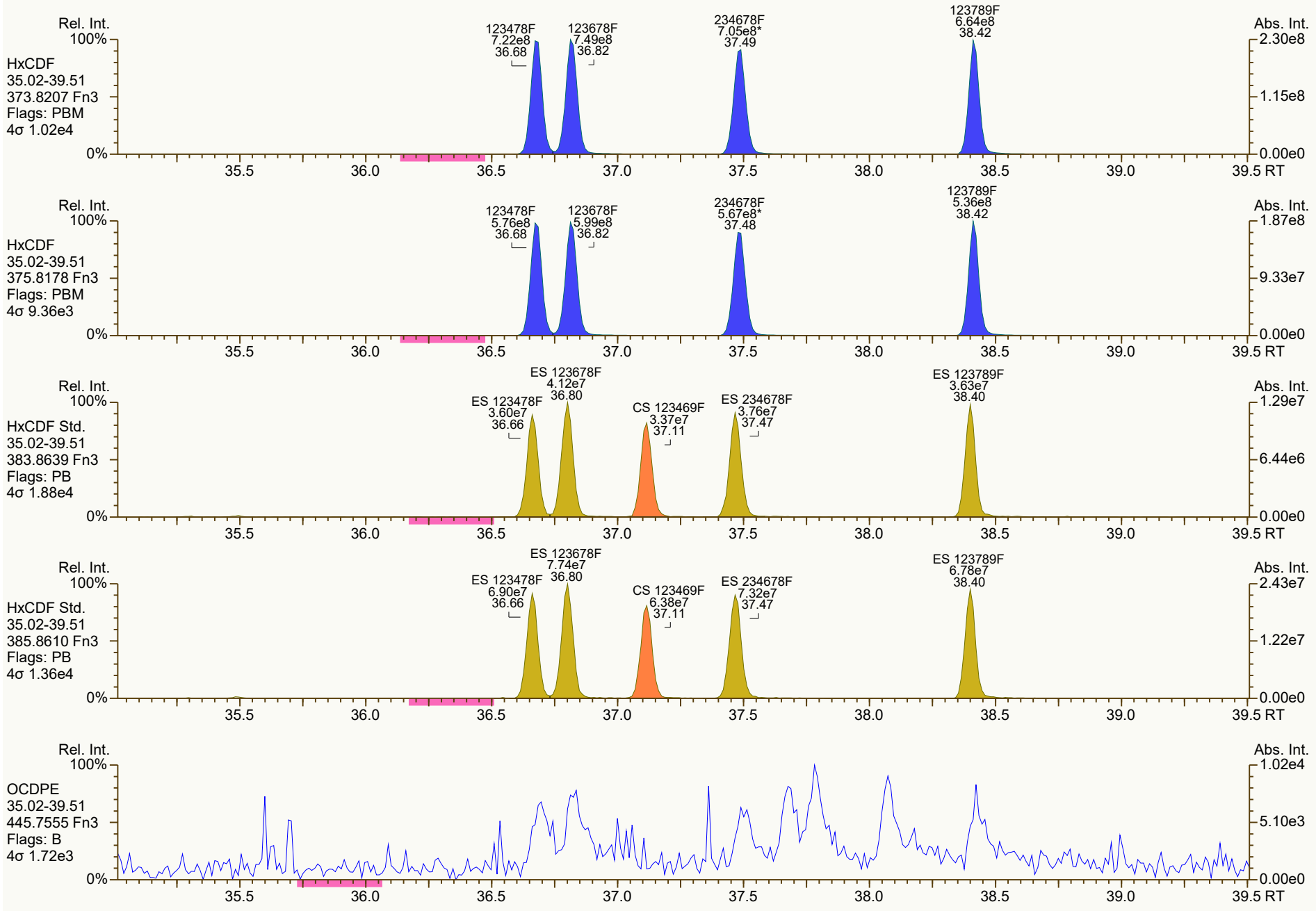
Sample ID: SIL 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89

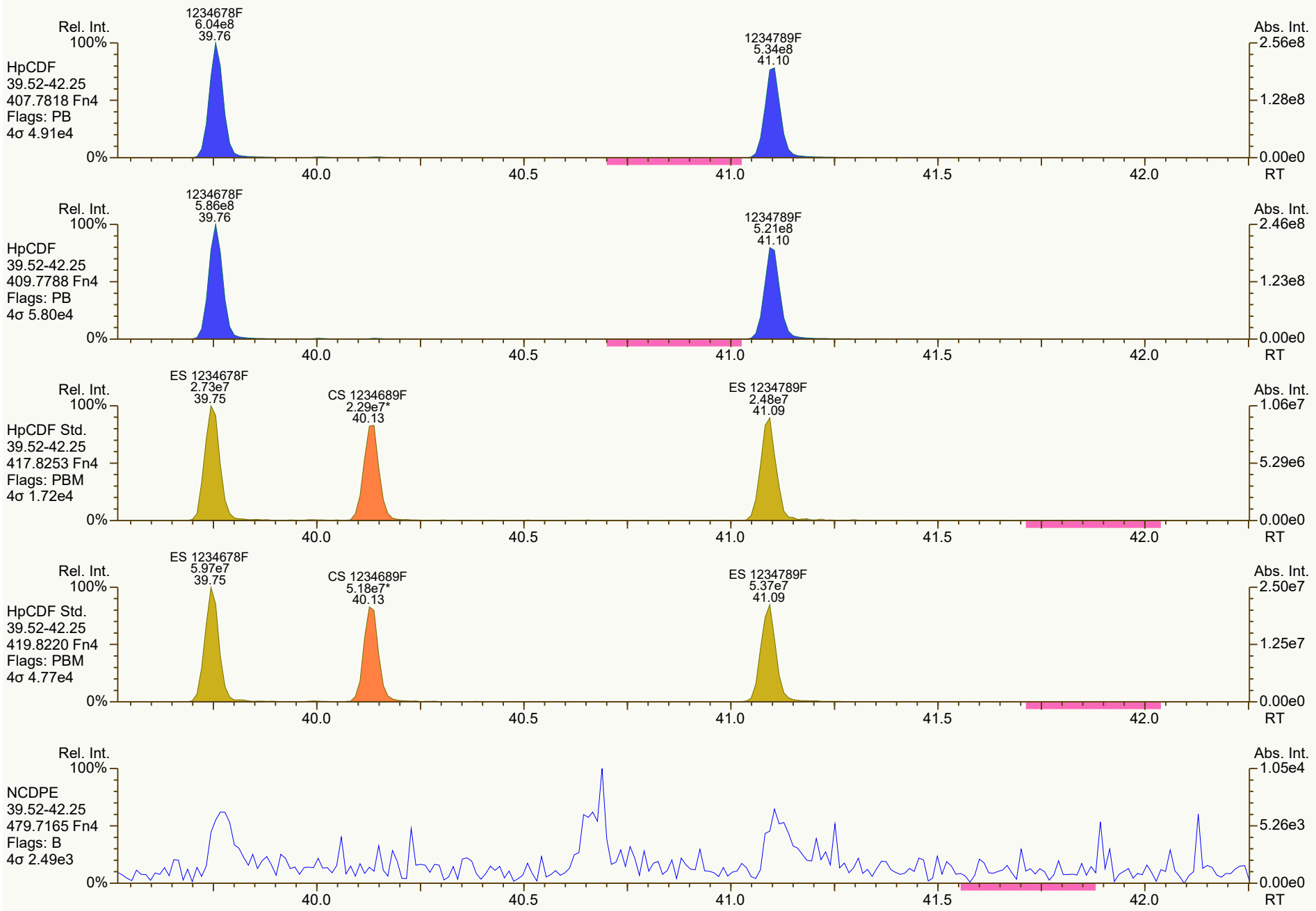
Acq: 27-Jul-2021 13:09:36
User: PSW Datafile: 210727R07

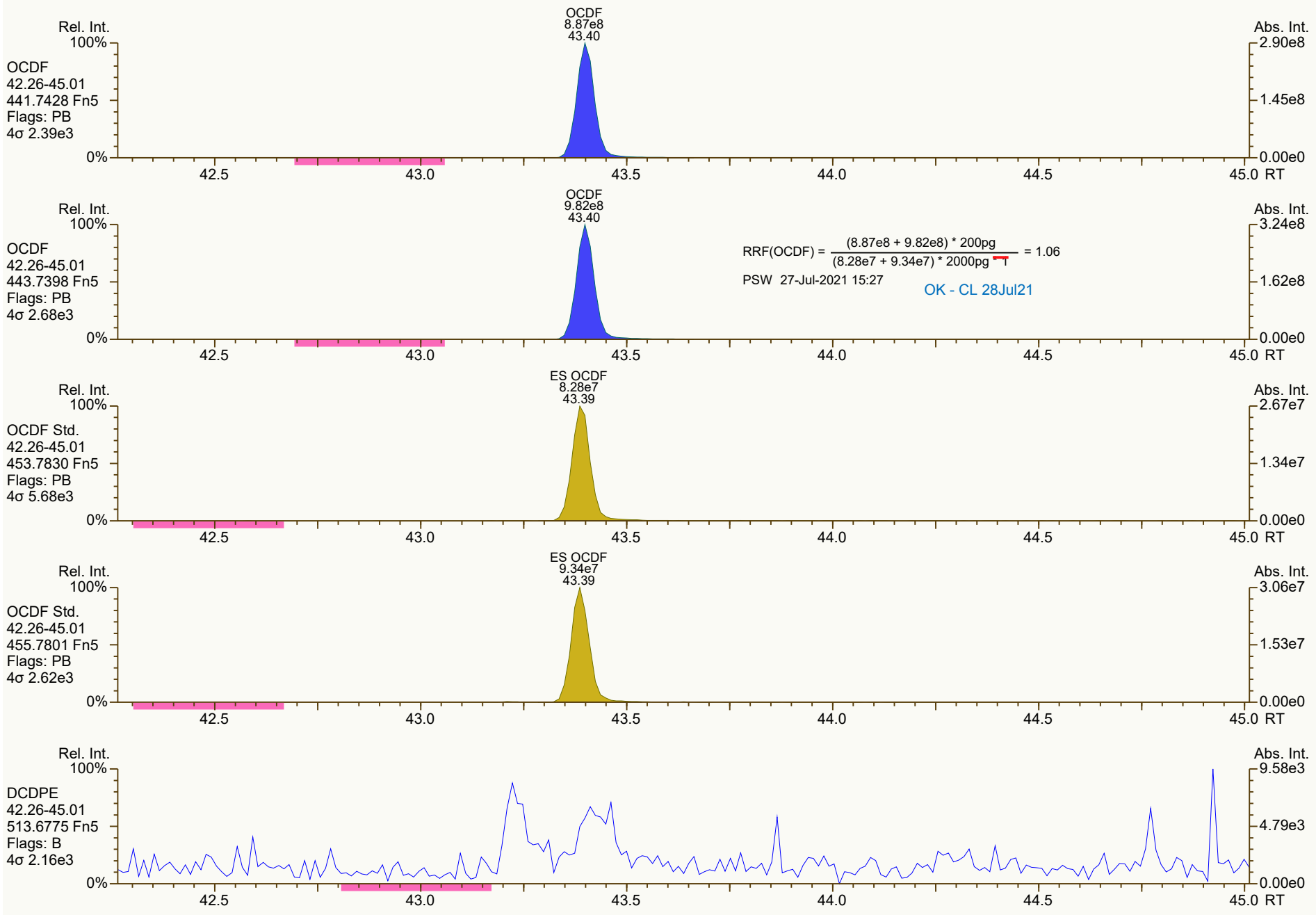


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1570, 9623, 3877 scc: 147-553

Peak annotation: Areas, Centroids
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.02e4
0%
123478F
7.22e8
36.68
123678F
7.49e8
36.82
234678F
7.05e8*
37.49
123789F
6.64e8
38.42
Abs. Int.
2.30e8
1.15e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.36e3
0%
123478F
5.76e8
36.68
123678F
5.99e8
36.82
234678F
5.67e8*
37.48
123789F
5.36e8
38.42
Abs. Int.
1.87e8
9.33e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.88e4
0%
ES 123478F
3.60e7
36.66
ES 123678F
4.12e7
36.80
CS 123469F
3.37e7
37.11
ES 234678F
3.76e7
37.47
ES 123789F
3.63e7
38.40
Abs. Int.
1.29e7
6.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.36e4
0%
ES 123478F
6.90e7
36.66
ES 123678F
7.74e7
36.80
CS 123469F
6.38e7
37.11
ES 234678F
7.32e7
37.47
ES 123789F
6.78e7
38.40
Abs. Int.
2.43e7
1.22e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.72e3
0%
Abs. Int.
1.02e4
5.10e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

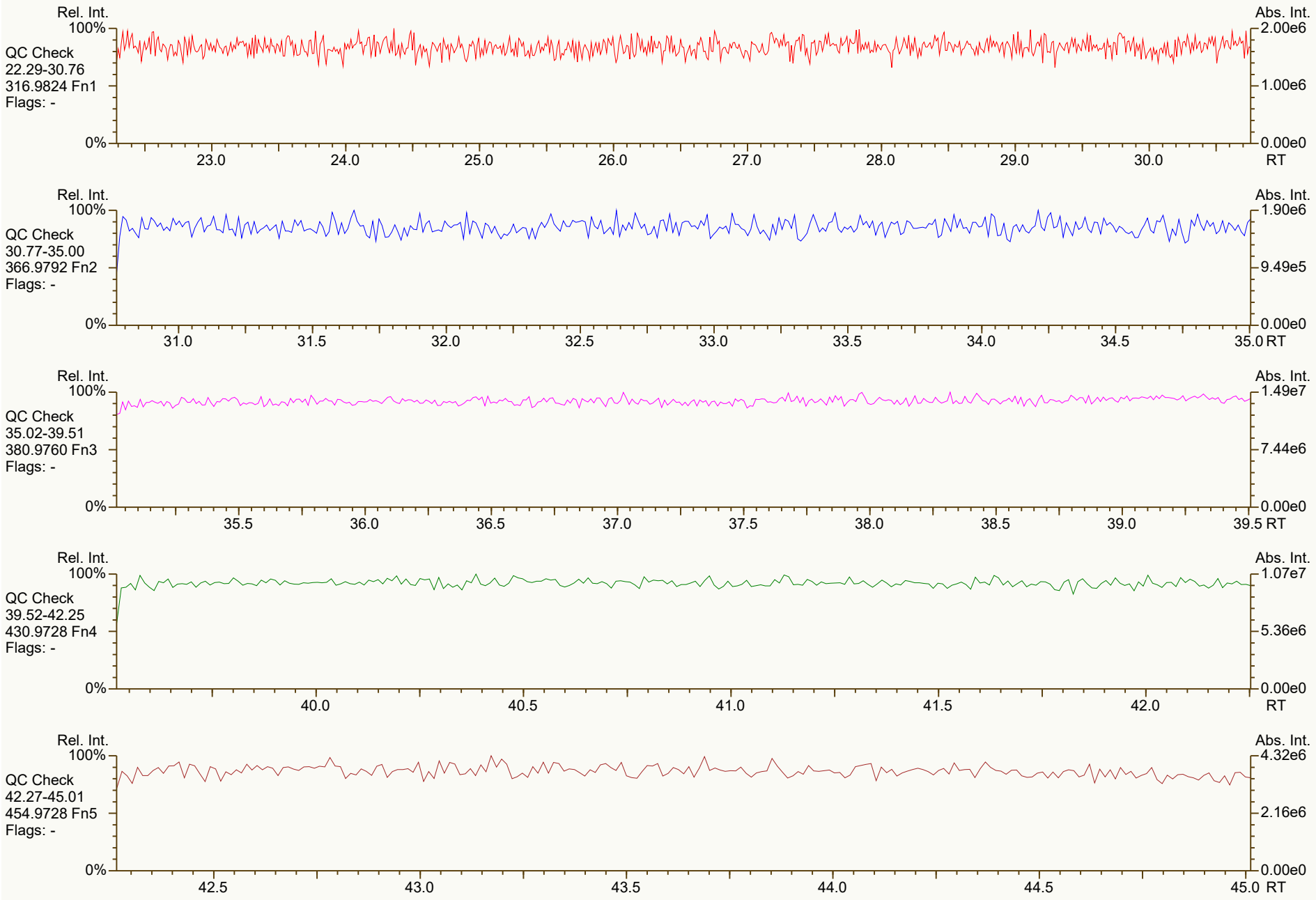

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e4
1234678F
6.04e8
39.76
1234789F
5.34e8
41.10
Abs. Int.
2.56e8
1.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.80e4
1234678F
5.86e8
39.76
1234789F
5.21e8
41.10
2.46e8
1.23e8
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 1.72e4
ES 1234678F
2.73e7
39.75
CS 1234689F
2.29e7*
40.13
ES 1234789F
2.48e7
41.09
1.06e7
5.29e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 4.77e4
ES 1234678F
5.97e7
39.75
CS 1234689F
5.18e7*
40.13
ES 1234789F
5.37e7
41.09
2.50e7
1.25e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.49e3
1.05e4
5.26e3

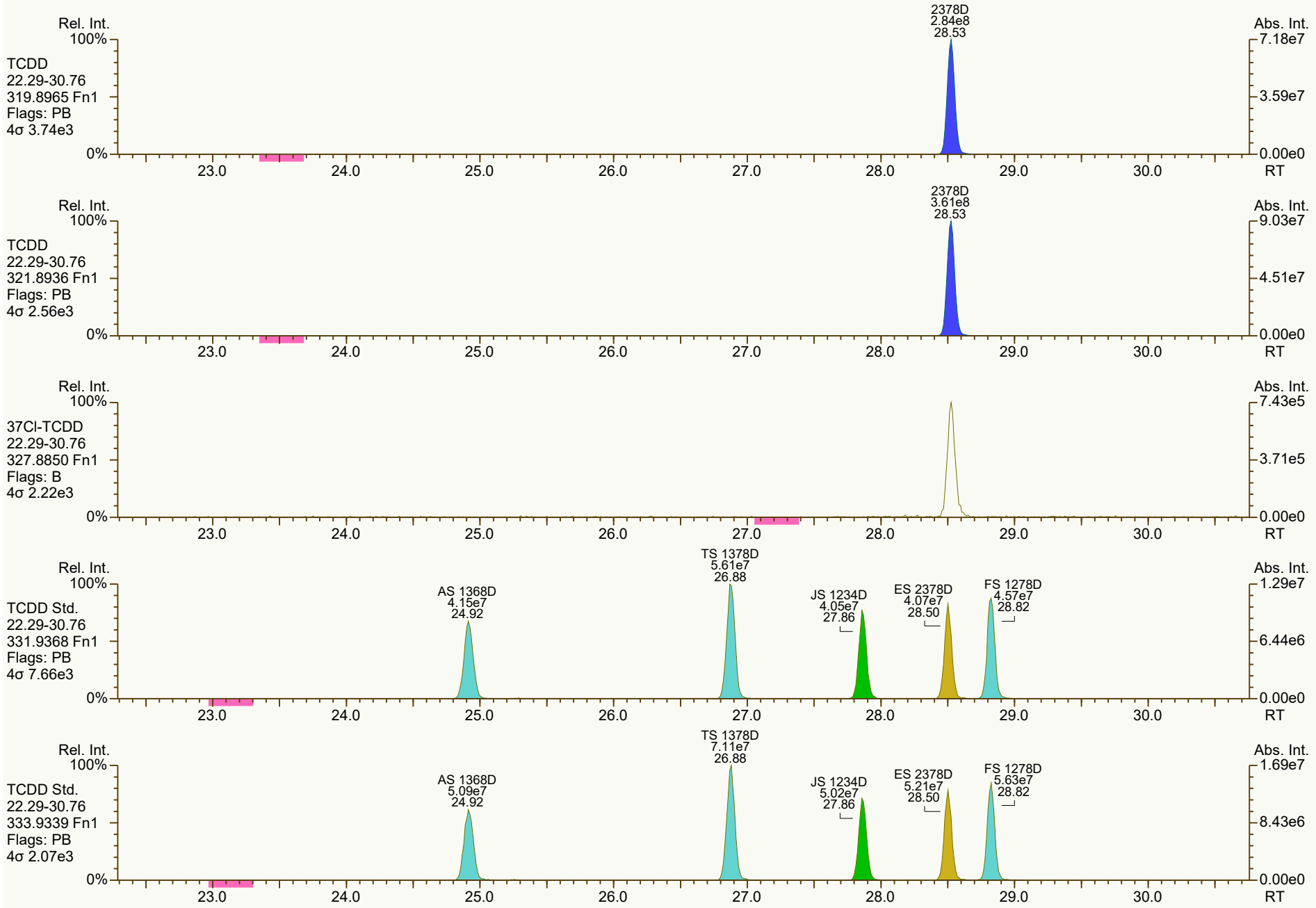

Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.39e3
0%
OCDF
8.87e8
43.40
Abs. Int.
2.90e8
1.45e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.68e3
0%
OCDF
9.82e8
43.40
RRF(OCDF) = (8.87e8 + 9.82e8) * 200pg / (8.28e7 + 9.34e7) * 2000pg = 1.06
PSW 27-Jul-2021 15:27
OK - CL 28Jul21
Abs. Int.
3.24e8
1.62e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.68e3
0%
ES OCDF
8.28e7
43.39
Abs. Int.
2.67e7
1.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.62e3
0%
ES OCDF
9.34e7
43.39
Abs. Int.
3.06e7
1.53e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.16e3
0%
Abs. Int.
9.58e3
4.79e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

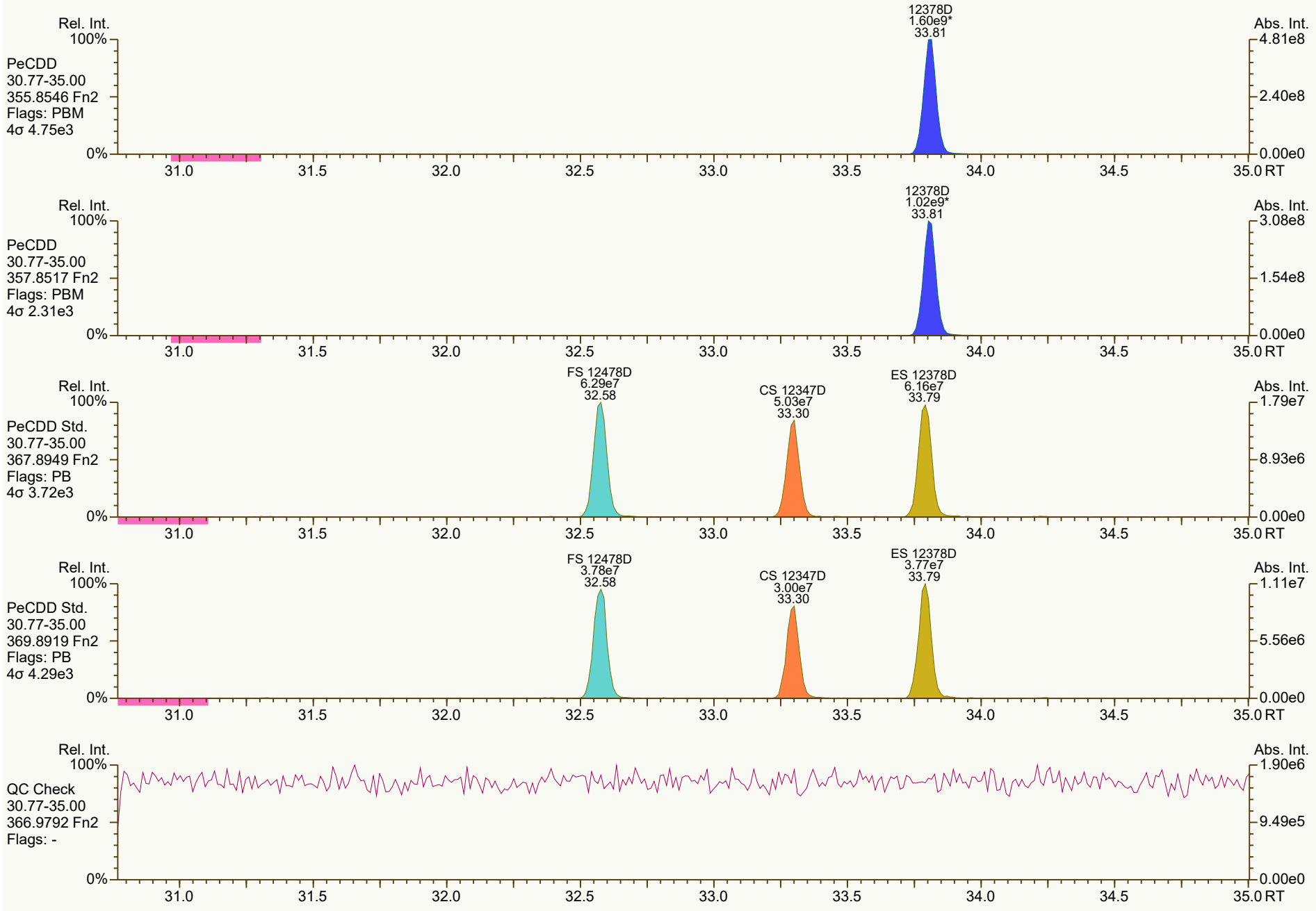
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

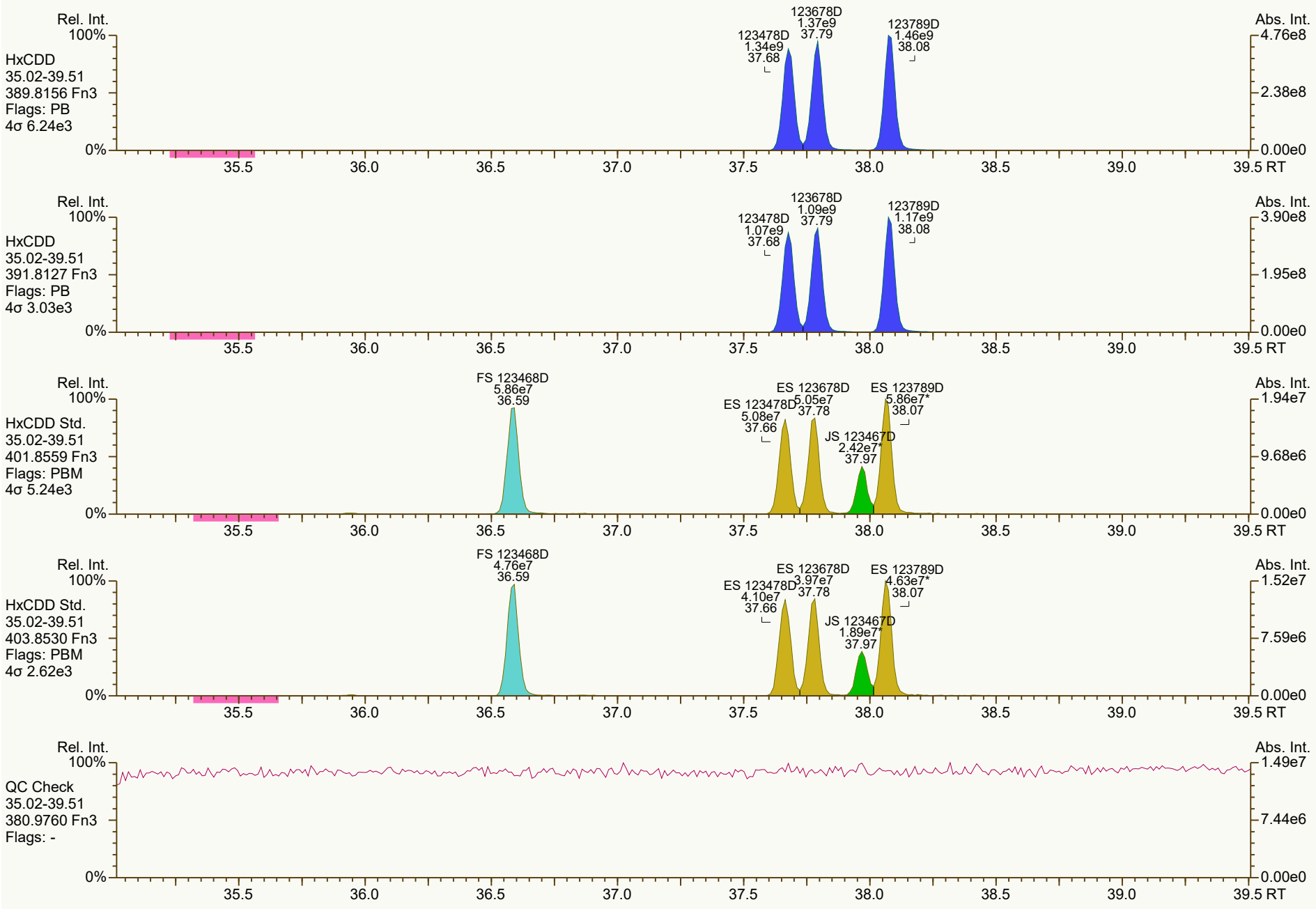
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	6.45E+08	0.79	Y	1.34	1.39	3%
12378-PeCDD	33.81	2.62E+09	1.57	Y	1.06	1.05	0%
123478-HxCDD	37.68	2.41E+09	1.26	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.46E+09	1.25	Y	1.08	1.09	1%
123789-HxCDD	38.08	2.63E+09	1.25	Y	1.02	1.00	-1%
1234678-HpCDD	40.66	2.28E+09	1.03	Y	0.97	1.00	2%
OCDD	43.24	4.13E+09	0.89	Y	1.07	1.08	1%
2378-TCDF	27.67	7.99E+08	0.77	Y	0.96	0.99	3%
12378-PeCDF	32.38	3.47E+09	1.57	Y	0.95	0.96	2%
23478-PeCDF	33.47	3.38E+09	1.55	Y	0.94	0.96	2%
123478-HxCDF	36.69	3.24E+09	1.24	Y	1.23	1.22	-1%
123678-HxCDF	36.83	3.36E+09	1.24	Y	1.13	1.14	0%
234678-HxCDF	37.49	3.14E+09	1.25	Y	1.15	1.15	0%
123789-HxCDF	38.43	3.10E+09	1.25	Y	1.14	1.16	2%
1234678-HpCDF	39.77	3.01E+09	1.04	Y	1.36	1.36	0%
1234789-HpCDF	41.11	2.70E+09	1.03	Y	1.30	1.33	2%
OCDF	43.42	4.91E+09	0.91	Y	1.03	1.08	5%
ES 2378-TCDD	28.50	9.29E+07	0.78	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.791	9.93E+07	1.63	Y	1.03	1.10	6%
ES 123478-HxCDD	37.663	9.19E+07	1.24	Y	0.99	1.07	7%
ES 123678-HxCDD	37.778	9.02E+07	1.27	Y	0.97	1.05	7%
ES 123789-HxCDD	38.067	1.05E+08	1.27	Y	1.12	1.22	8%
ES 1234678-HpCDD	40.65	9.14E+07	1.03	Y	0.99	1.06	7%
ES OCDD	43.227	1.53E+08	0.91	Y	0.78	0.89	14%
ES 2378-TCDF	27.65	1.62E+08	0.78	Y	1.08	1.10	2%
ES 12378-PeCDF	32.365	1.44E+08	1.56	Y	0.93	0.98	5%
ES 23478-PeCDF	33.455	1.42E+08	1.59	Y	0.92	0.96	4%
ES 123478-HxCDF	36.671	1.06E+08	0.53	Y	1.14	1.23	8%
ES 123678-HxCDF	36.81	1.18E+08	0.53	Y	1.30	1.37	6%
ES 234678-HxCDF	37.477	1.09E+08	0.52	Y	1.20	1.27	5%
ES 123789-HxCDF	38.411	1.07E+08	0.52	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.757	8.85E+07	0.45	Y	0.95	1.03	8%
ES 1234789-HpCDF	41.1	8.15E+07	0.45	Y	0.85	0.94	12%
ES OCDF	43.407	1.83E+08	0.90	Y	0.93	1.06	14%

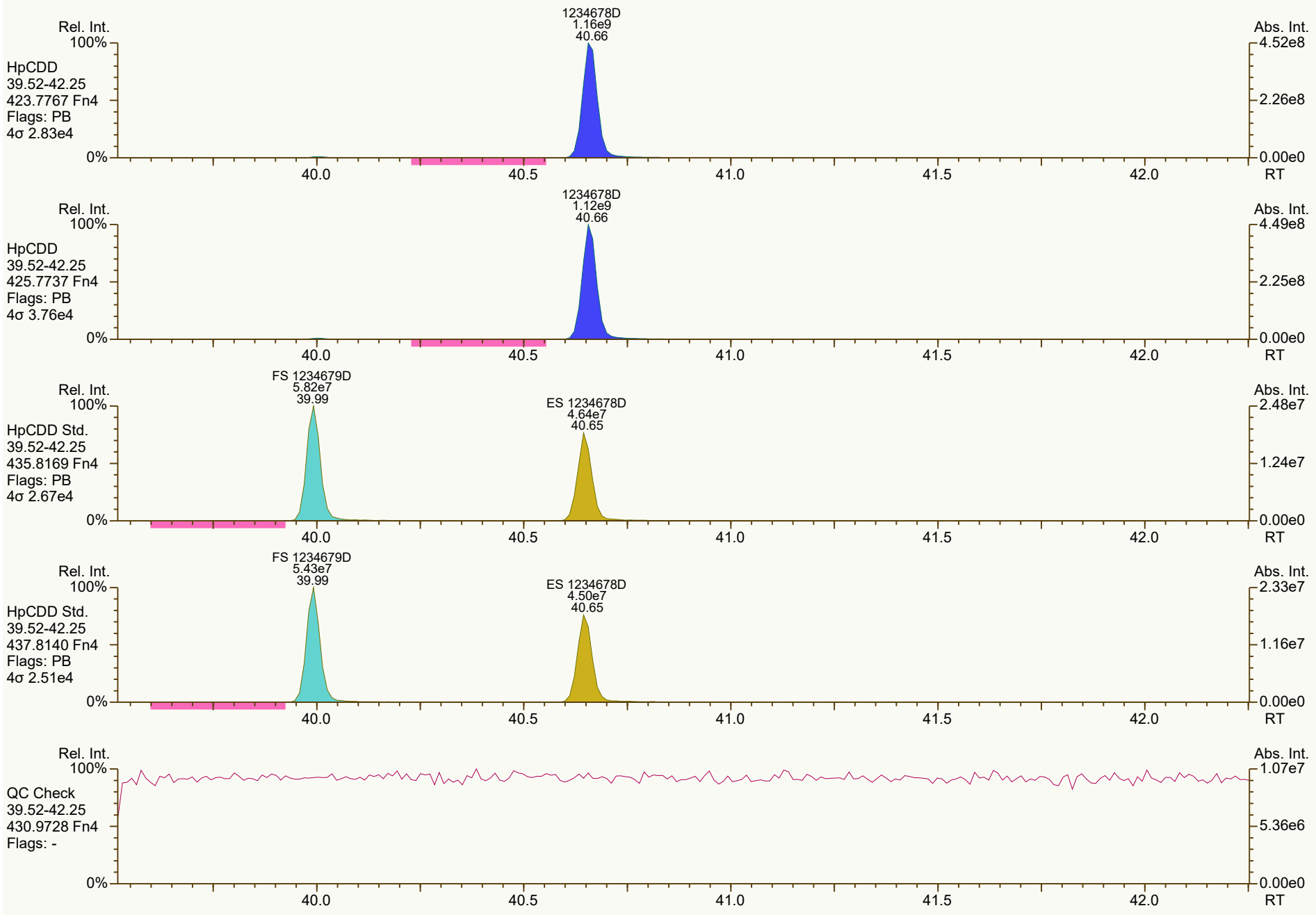
Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 13:58 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS6_210727_DF_RA		UTP: 27-Jul-2021 15:00:22 PSW				Checkcode: 783-472-ZXK	
Sample ID: SIL 25-5-2		Report: 27 Jul 2021 15:02 pw				Datafile: 210727R08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	27.86	9.07E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.33	1.47E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	4.31E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.89	0.89	-1%
CS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.87	0.85	-2%
CS 123469-HxCDF	37.12	9.43E+07	0.51	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.86	0.84	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.86	0.81	-6%
SS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.93	0.87	-7%
SS 123469-HxCDF	37.12	9.43E+07	0.51	Y	0.84	0.80	-5%
SS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.91	0.81	-11%
AS 1368-TCDD	24.92	9.24E+07	0.82	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	1.58E+08	0.79	Y	1.08	1.07	0%
FS 1278-TCDD	28.83	1.02E+08	0.81	Y	1.08	1.10	1%
FS 12478-PeCDD	32.58	1.01E+08	1.67	Y	1.09	1.01	-7%
FS 123468-HxCDD	36.59	1.06E+08	1.23	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.99	1.12E+08	1.07	Y	1.36	1.23	-9%
TS 1378-TCDD	26.88	1.27E+08	0.79	Y	1.35	1.37	2%
~~OCDD-a~~	~~43.23~~	~~2.53E+08~~	~~2.47~~	~~Y~~	~~0.07~~	~~0.07~~	~~0%~~
~~OCDF-a~~	~~43.42~~	~~2.93E+08~~	~~2.57~~	~~Y~~	~~0.06~~	~~0.06~~	~~8%~~
Not reported from this ICAL - CL 28Jul21							

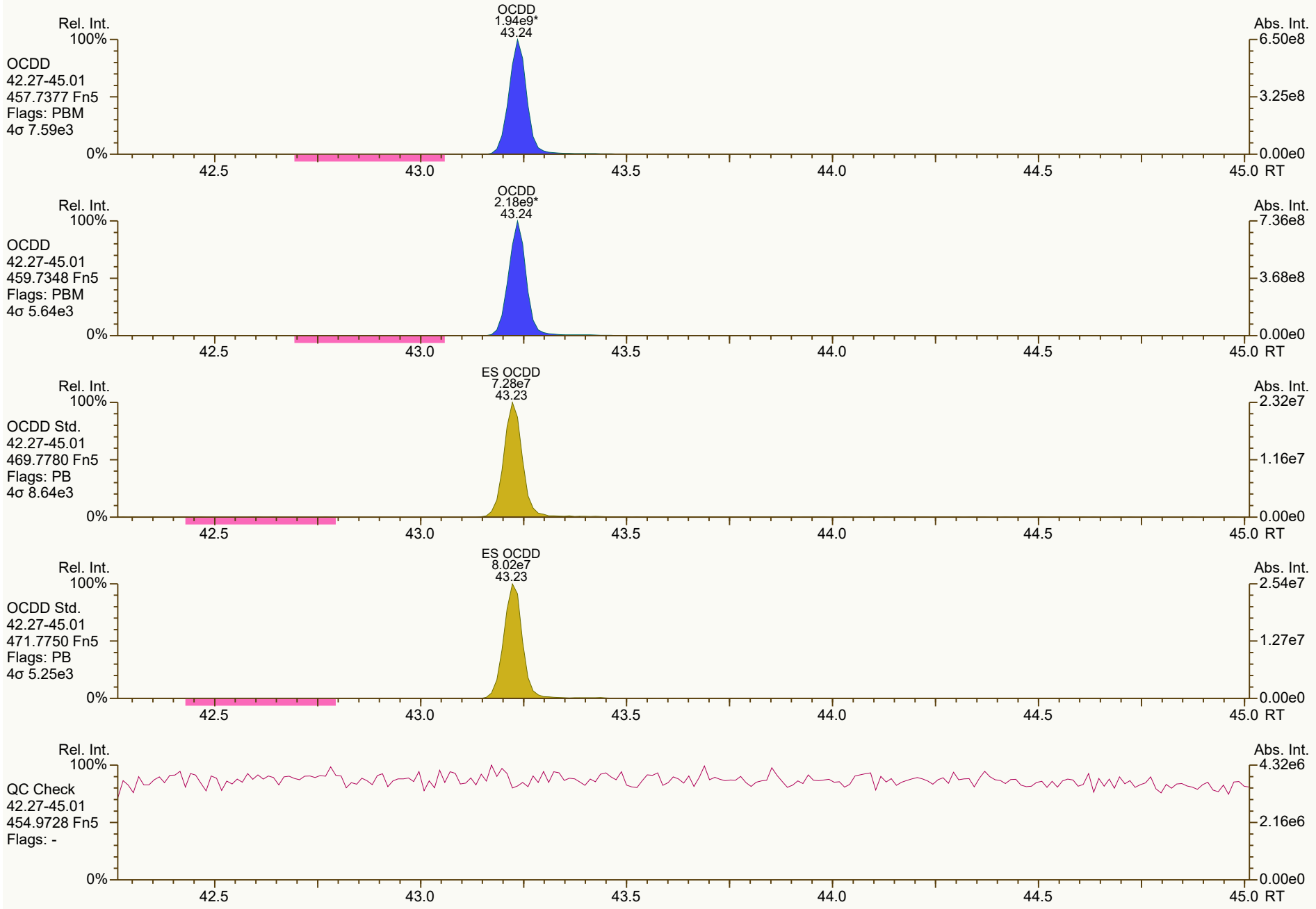

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.00e6
1.00e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.49e7
7.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.74e3
0%
2378D
2.84e8
28.53
Abs. Int.
7.18e7
3.59e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.56e3
0%
2378D
3.61e8
28.53
Abs. Int.
9.03e7
4.51e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.22e3
0%
Abs. Int.
7.43e5
3.71e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.66e3
0%
AS 1368D
4.15e7
24.92
TS 1378D
5.61e7
26.88
JS 1234D
4.05e7
27.86
ES 2378D
4.07e7
28.50
FS 1278D
4.57e7
28.82
Abs. Int.
1.29e7
6.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.07e3
0%
AS 1368D
5.09e7
24.92
TS 1378D
7.11e7
26.88
JS 1234D
5.02e7
27.86
ES 2378D
5.21e7
28.50
FS 1278D
5.63e7
28.82
Abs. Int.
1.69e7
8.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 4.75e3
0%
12378D
1.60e9*
33.81
Abs. Int.
4.81e8
2.40e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.31e3
0%
12378D
1.02e9*
33.81
Abs. Int.
3.08e8
1.54e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.72e3
0%
FS 12478D
6.29e7
32.58
CS 12347D
5.03e7
33.30
ES 12378D
6.16e7
33.79
Abs. Int.
1.79e7
8.93e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.29e3
0%
FS 12478D
3.78e7
32.58
CS 12347D
3.00e7
33.30
ES 12378D
3.77e7
33.79
Abs. Int.
1.11e7
5.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

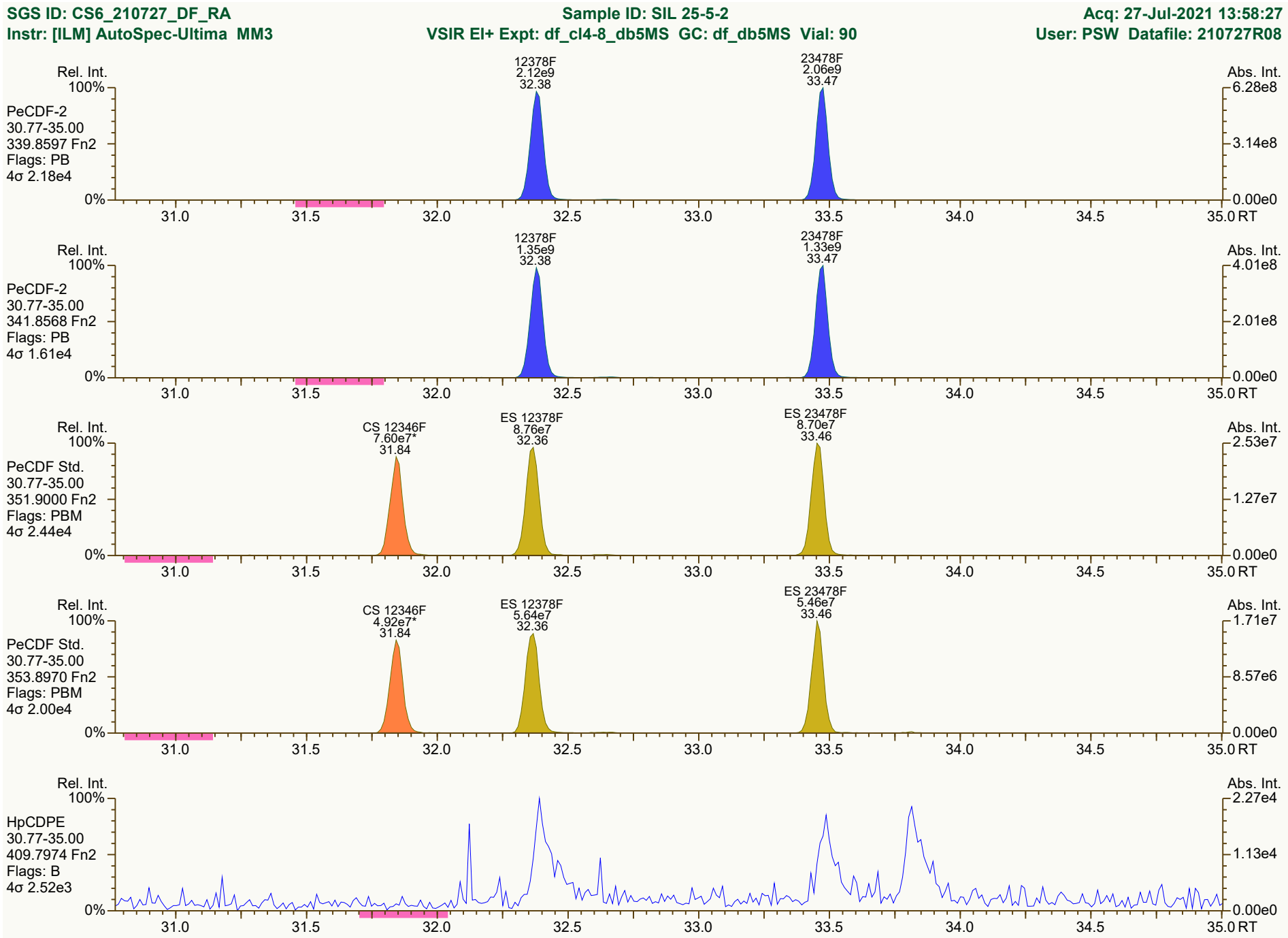

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 6.24e3
123478D
1.34e9
37.68
123678D
1.37e9
37.79
123789D
1.46e9
38.08
Abs. Int.
4.76e8
2.38e8
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 3.03e3
123478D
1.07e9
37.68
123678D
1.09e9
37.79
123789D
1.17e9
38.08
Abs. Int.
3.90e8
1.95e8
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 5.24e3
FS 123468D
5.86e7
36.59
ES 123478D
5.08e7
37.66
ES 123678D
5.05e7
37.78
JS 123467D
2.42e7*
37.97
ES 123789D
5.86e7*
38.07
Abs. Int.
1.94e7
9.68e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.62e3
FS 123468D
4.76e7
36.59
ES 123478D
4.10e7
37.66
ES 123678D
3.97e7
37.78
JS 123467D
1.89e7*
37.97
ES 123789D
4.63e7*
38.07
Abs. Int.
1.52e7
7.59e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.49e7
7.44e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

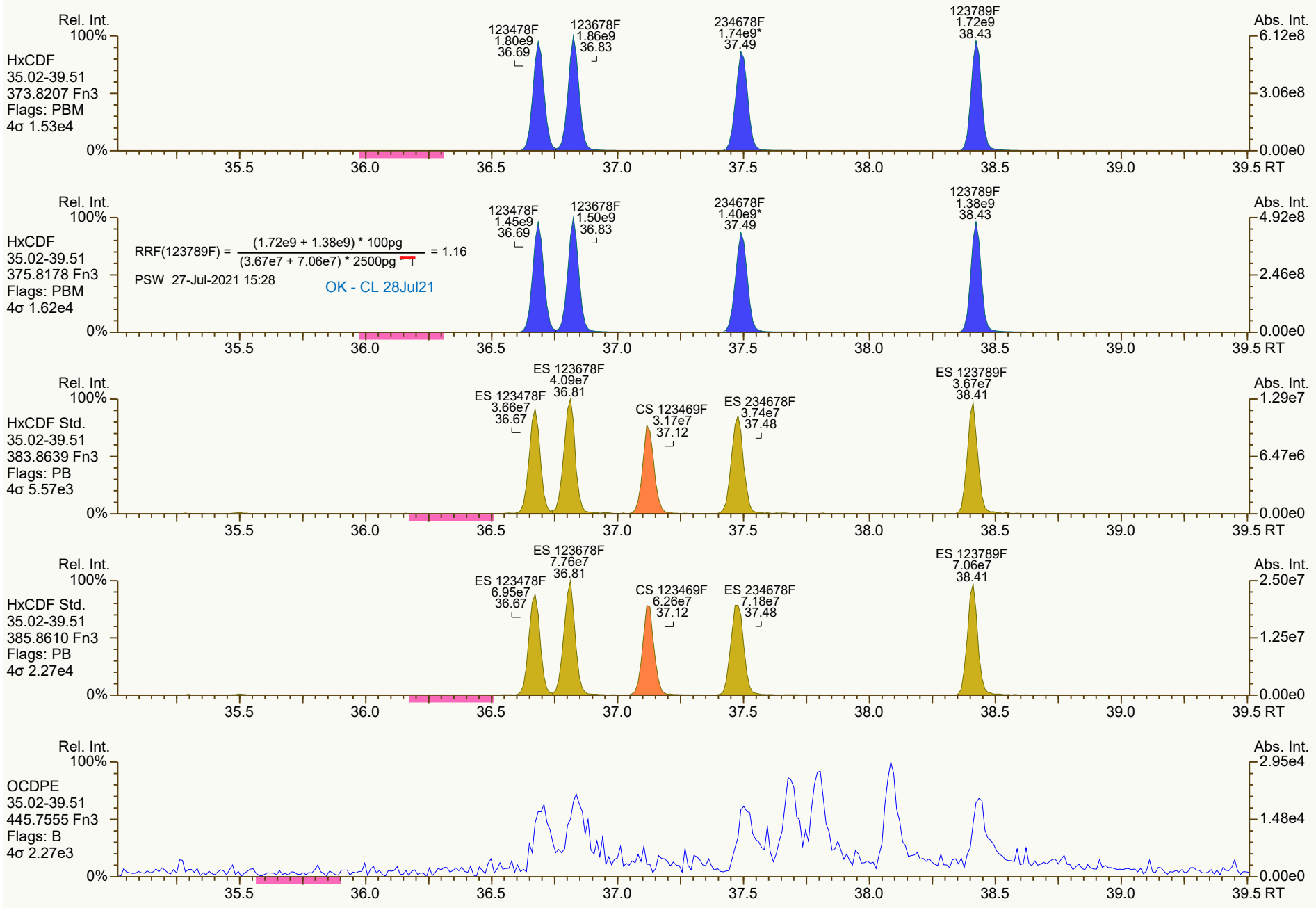

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.83e4
0%
1234678D
1.16e9
40.66
Abs. Int.
4.52e8
2.26e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.76e4
0%
1234678D
1.12e9
40.66
Abs. Int.
4.49e8
2.25e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.67e4
0%
FS 1234679D
5.82e7
39.99
ES 1234678D
4.64e7
40.65
Abs. Int.
2.48e7
1.24e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 2.51e4
0%
FS 1234679D
5.43e7
39.99
ES 1234678D
4.50e7
40.65
Abs. Int.
2.33e7
1.16e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0

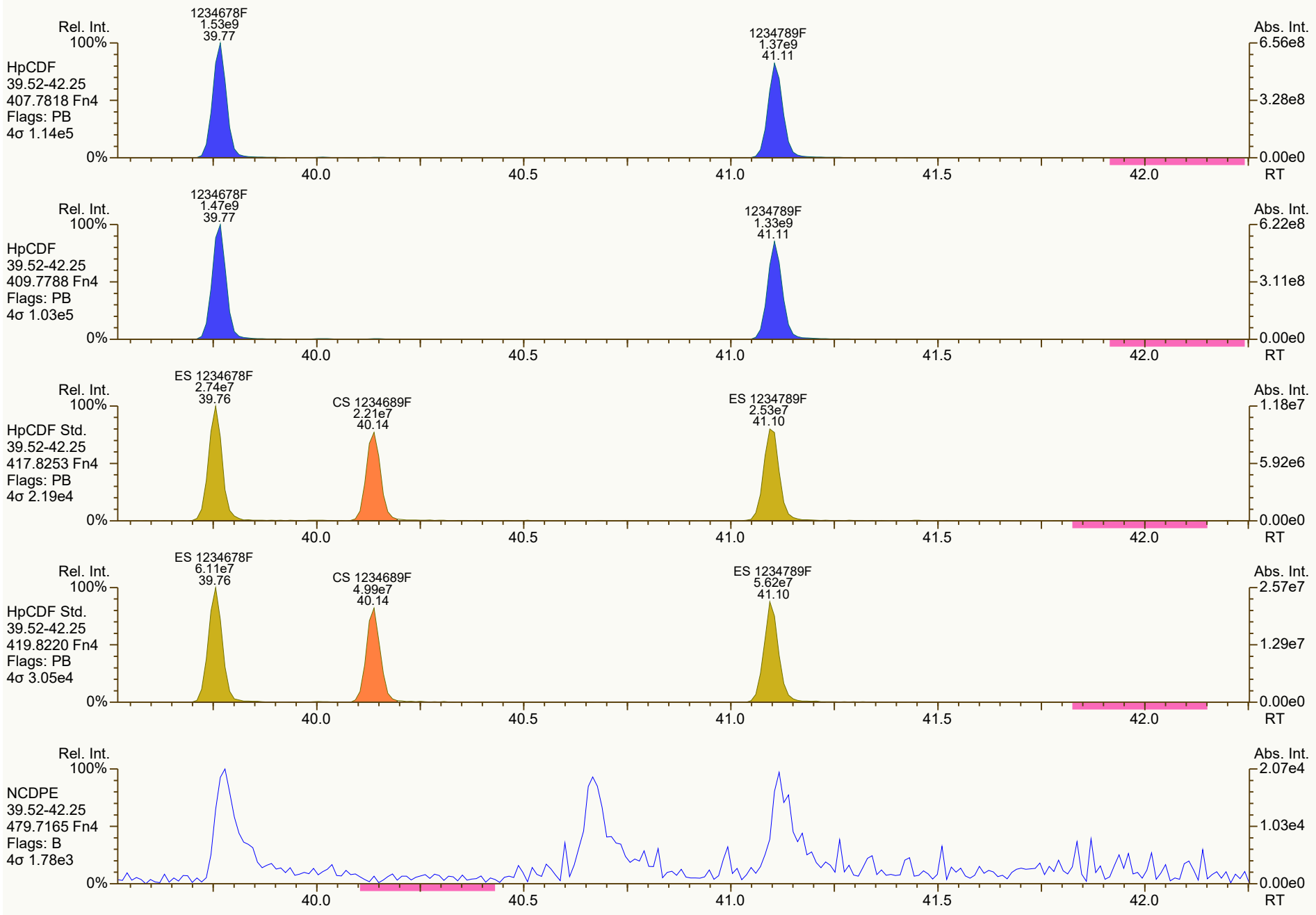

OCDD
1.94e9*
43.24
Rel. Int.
Abs. Int.
OCDD
42.27-45.01
457.7377 Fn5
Flags: PBM
4σ 7.59e3
OCDD
2.18e9*
43.24
OCDD
42.27-45.01
459.7348 Fn5
Flags: PBM
4σ 5.64e3
ES OCDD
7.28e7
43.23
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 8.64e3
ES OCDD
8.02e7
43.23
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 5.25e3
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
6.50e8
3.25e8
0.00e0
7.36e8
3.68e8
2.32e7
1.16e7
2.54e7
1.27e7
4.32e6
2.16e6

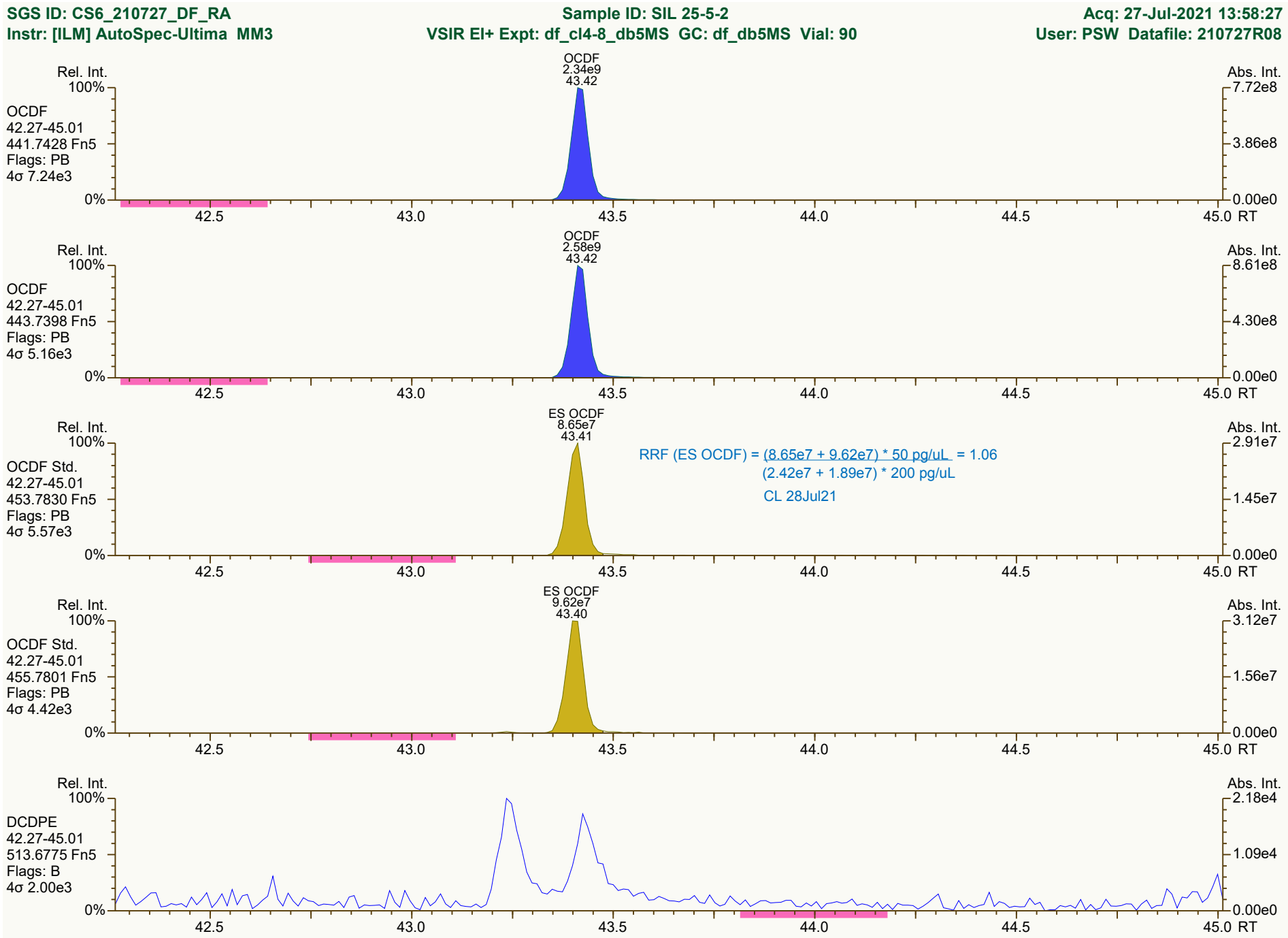

Rel. Int.
100%
0%
Abs. Int.
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.81e3
2378F
3.47e8
27.67
8.18e7
4.09e7
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.63e3
2378F
4.52e8
27.67
1.06e8
5.31e7
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.51e4
AS 1368F
6.97e7
22.86
JS 1234F
6.51e7
26.33
ES 2378F
7.12e7
27.65
1.73e7
8.65e6
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 8.59e3
AS 1368F
8.87e7
22.85
JS 1234F
8.23e7
26.33
ES 2378F
9.09e7
27.65
2.19e7
1.09e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.16e3
1.85e4
9.24e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.81e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 4.96e3
1.40e4
7.01e3
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.00e6
1.00e6


SGS ID: CS6_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-5-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
Acq: 27-Jul-2021 13:58:27
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.18e4
12378F
2.12e9
32.38
23478F
2.06e9
33.47
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 1.61e4
12378F
1.35e9
32.38
23478F
1.33e9
33.47
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.44e4
CS 12346F
7.60e7*
31.84
ES 12378F
8.76e7
32.36
ES 23478F
8.70e7
33.46
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.00e4
CS 12346F
4.92e7*
31.84
ES 12378F
5.64e7
32.36
ES 23478F
5.46e7
33.46
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.52e3
RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5183, 3073, 9003 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.53e4
0%
123478F
1.80e9
36.69
123678F
1.86e9
36.83
234678F
1.74e9*
37.49
123789F
1.72e9
38.43
Abs. Int.
6.12e8
3.06e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 1.62e4
RRF(123789F) = (1.72e9 + 1.38e9) * 100pg / (3.67e7 + 7.06e7) * 2500pg = 1.16
PSW 27-Jul-2021 15:28
OK - CL 28Jul21
123478F
1.45e9
36.69
123678F
1.50e9
36.83
234678F
1.40e9*
37.49
123789F
1.38e9
38.43
4.92e8
2.46e8
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.57e3
ES 123678F
4.09e7
36.81
ES 123478F
3.66e7
36.67
CS 123469F
3.17e7
37.12
ES 234678F
3.74e7
37.48
ES 123789F
3.67e7
38.41
1.29e7
6.47e6
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.27e4
ES 123678F
7.76e7
36.81
ES 123478F
6.95e7
36.67
CS 123469F
6.26e7
37.12
ES 234678F
7.18e7
37.48
ES 123789F
7.06e7
38.41
2.50e7
1.25e7
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.27e3
2.95e4
1.48e4


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.14e5
1234678F
1.53e9
39.77
1234789F
1.37e9
41.11
Abs. Int.
6.56e8
3.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.03e5
1234678F
1.47e9
39.77
1234789F
1.33e9
41.11
Abs. Int.
6.22e8
3.11e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.19e4
ES 1234678F
2.74e7
39.76
CS 1234689F
2.21e7
40.14
ES 1234789F
2.53e7
41.10
Abs. Int.
1.18e7
5.92e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 3.05e4
ES 1234678F
6.11e7
39.76
CS 1234689F
4.99e7
40.14
ES 1234789F
5.62e7
41.10
Abs. Int.
2.57e7
1.29e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 1.78e3
Abs. Int.
2.07e4
1.03e4
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
OCDF
2.34e9
43.42
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 7.24e3
0%
Abs. Int.
7.72e8
3.86e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.58e9
43.42
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 5.16e3
8.61e8
4.30e8
ES OCDF
8.65e7
43.41
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.57e3
RRF (ES OCDF) = (8.65e7 + 9.62e7) * 50 pg/uL = 1.06
(2.42e7 + 1.89e7) * 200 pg/uL
CL 28Jul21
2.91e7
1.45e7
ES OCDF
9.62e7
43.40
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.42e3
3.12e7
1.56e7
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.00e3
2.18e4
1.09e4
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8670, 9652, 4309 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:32 Page 12 of 12

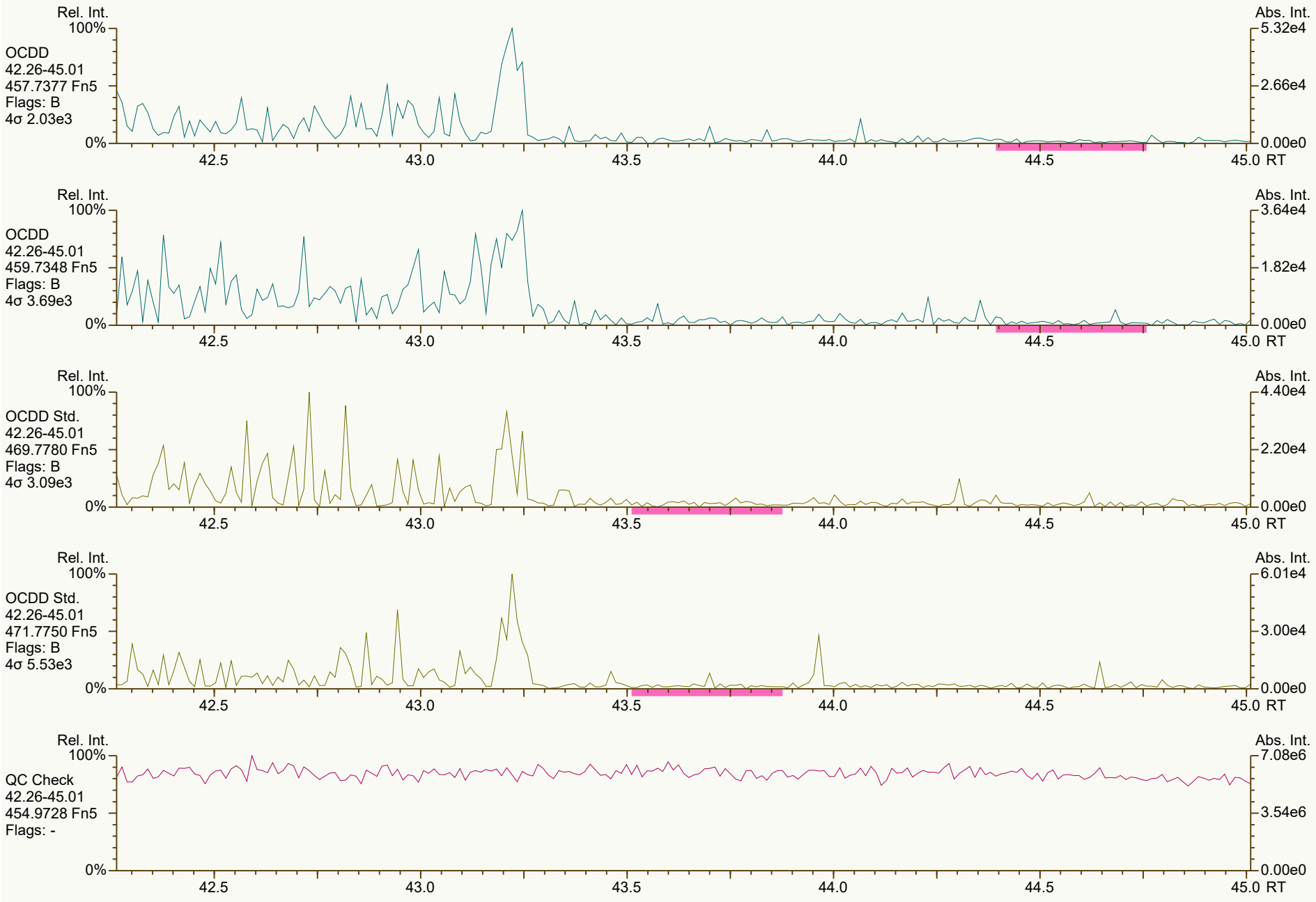

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: B
4σ 5.46e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: B
4σ 3.81e3
0%
Abs. Int.
1.72e4
8.58e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.57e4
7.86e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: B
4σ 1.19e4
0%
Abs. Int.
4.60e4
2.30e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: B
4σ 4.18e3
0%
Abs. Int.
4.81e4
2.40e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: B
4σ 9.54e3
0%
Abs. Int.
3.89e4
1.94e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: B
4σ 5.05e3
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: B
4σ 5.45e3
0%
Abs. Int.
6.36e4
3.18e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: B
4σ 4.94e3
0%
Abs. Int.
2.95e4
1.48e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: B
4σ 4.48e3
0%
Abs. Int.
4.12e4
2.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: B
4σ 3.42e3
0%
Abs. Int.
3.84e4
1.92e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: B
4σ 5.33e3
0%
Abs. Int.
4.48e4
2.24e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: B
4σ 6.09e3
0%
Abs. Int.
7.66e4
3.83e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

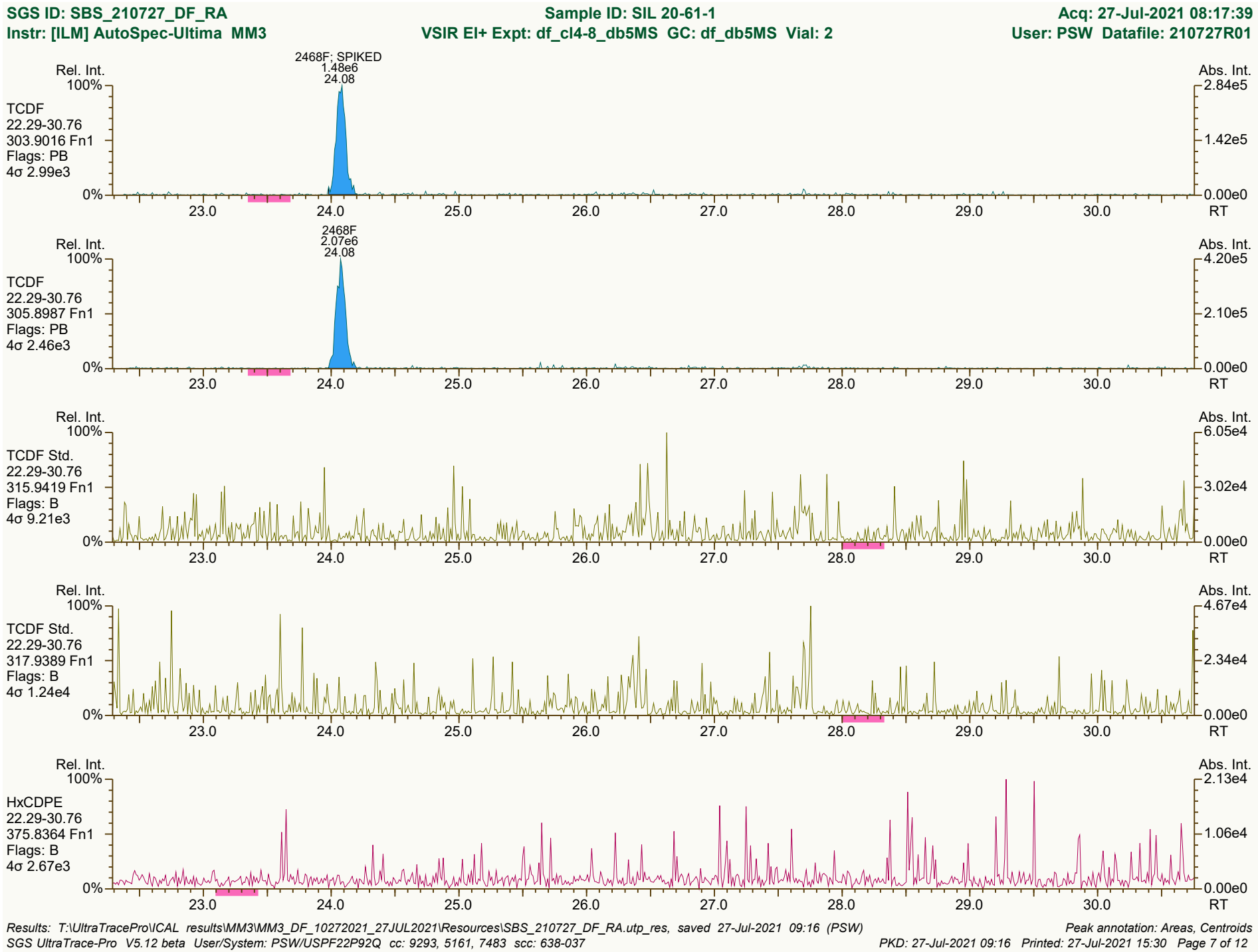

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: B
4σ 8.10e3
0%
Abs. Int.
5.65e4
2.82e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: B
4σ 9.20e3
0%
Abs. Int.
3.29e4
1.64e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: B
4σ 7.86e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: B
4σ 3.02e3
0%
Abs. Int.
6.85e4
3.43e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: B
4σ 2.03e3
0%
Abs. Int.
5.32e4
2.66e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: B
4σ 3.69e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: B
4σ 3.09e3
0%
Abs. Int.
4.40e4
2.20e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: B
4σ 5.53e3
0%
Abs. Int.
6.01e4
3.00e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 27-Jul-2021 08:17:39
User: PSW Datafile: 210727R01

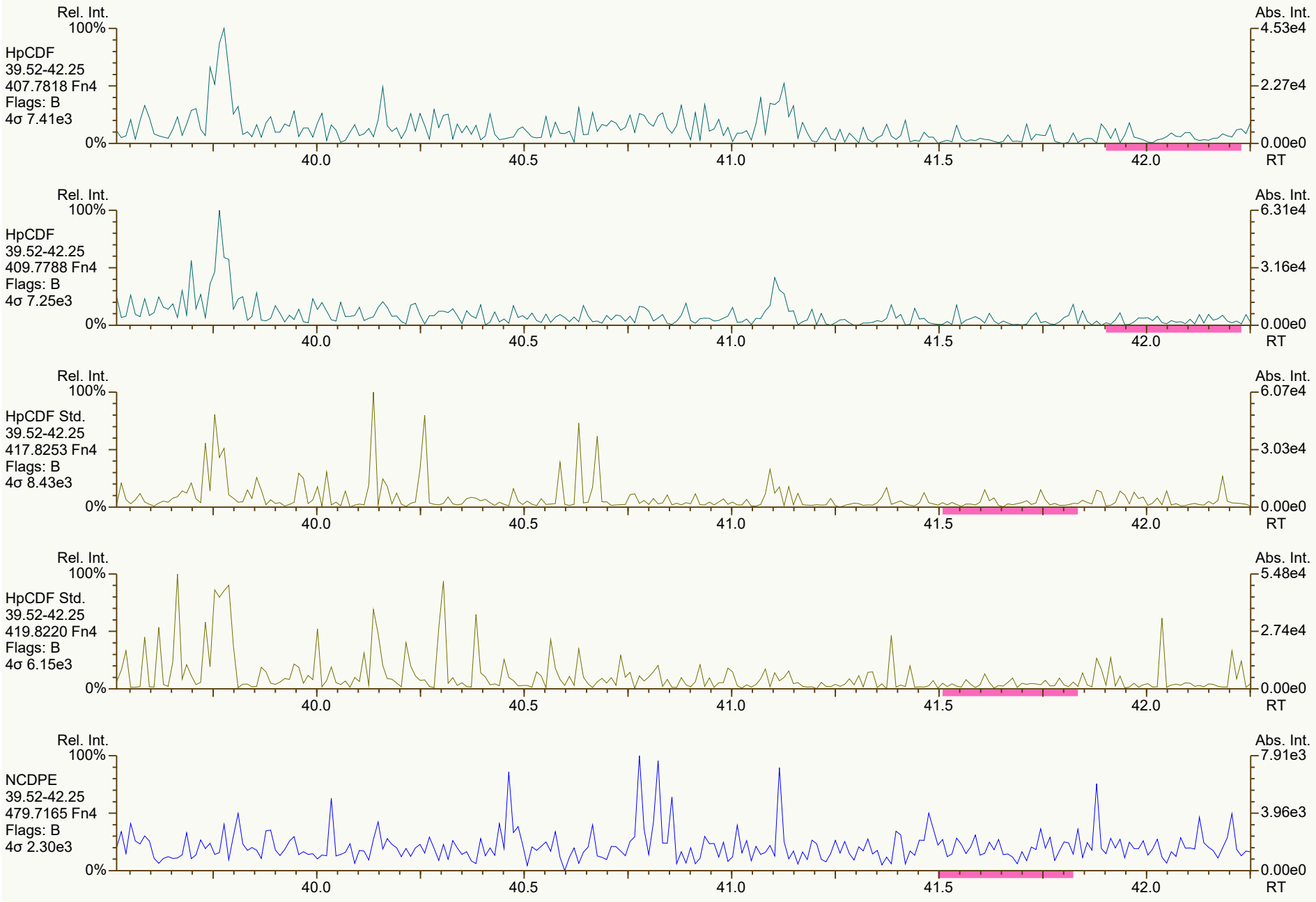


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9293, 5161, 7483 scc: 638-037
PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
3.87e4
1.94e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 6.47e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 6.41e3
3.57e4
1.78e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
3.23e6
1.61e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: B
4σ 6.52e3
0%
Abs. Int.
4.88e4
2.44e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: B
4σ 6.57e3
0%
Abs. Int.
3.28e4
1.64e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: B
4σ 2.11e3
0%
Abs. Int.
6.19e4
3.10e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: B
4σ 3.42e3
0%
Abs. Int.
5.42e4
2.71e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: B
4σ 6.81e3
0%
Abs. Int.
5.46e4
2.73e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: B
4σ 4.05e3
0%
Abs. Int.
3.51e4
1.76e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: B
4σ 6.70e3
0%
Abs. Int.
4.23e4
2.11e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: B
4σ 1.33e4
0%
Abs. Int.
8.19e4
4.10e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.51e3
0%
Abs. Int.
2.13e4
1.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: B
4σ 7.41e3
0%
Abs. Int.
4.53e4
2.27e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: B
4σ 7.25e3
0%
Abs. Int.
6.31e4
3.16e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: B
4σ 8.43e3
0%
Abs. Int.
6.07e4
3.03e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: B
4σ 6.15e3
0%
Abs. Int.
5.48e4
2.74e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.30e3
0%
Abs. Int.
7.91e3
3.96e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: B
4σ 2.18e3
0%
Abs. Int.
4.13e4
2.06e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: B
4σ 1.96e3
0%
Abs. Int.
5.82e4
2.91e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: B
4σ 3.42e3
0%
Abs. Int.
6.44e4
3.22e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: B
4σ 2.75e3
0%
Abs. Int.
6.15e4
3.08e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 2.12e3
0%
Abs. Int.
5.85e3
2.93e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
15	210727R15	3	CS3_210727_DF_RB ✓	1.00	SIL 23-672-1	PSW	320-816	27-Jul-2021	19:43:55
16	210727R16	92	CS3_210727_DF_RC	1.00	ICV SIL 24-11-9 ✓	PSW	537-883	27-Jul-2021	20:31:28

REVIEWED
paul_walton , 7/28/2021, 8:29:53 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:21 PM

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.67E+07	0.81	Y	1.34	1.35	0%
12378-PeCDD	33.81	6.38E+07	1.58	Y	1.06	1.06	0%
123478-HxCDD	37.68	5.49E+07	1.25	Y	1.06	1.06	1%
123678-HxCDD	37.79	5.63E+07	1.26	Y	1.08	1.10	2%
123789-HxCDD	38.08	5.86E+07	1.24	Y	1.02	1.00	-2%
1234678-HpCDD	40.66	4.96E+07	1.04	Y	0.97	0.98	0%
OCDD	43.23	8.27E+07	0.89	Y	1.07	1.07	0%
2378-TCDF	27.67	2.12E+07	0.80	Y	0.96	0.97	1%
12378-PeCDF	32.38	8.71E+07	1.57	Y	0.95	0.97	2%
23478-PeCDF	33.47	7.79E+07	1.46	Y	0.94	0.92	-2%
123478-HxCDF	36.69	7.88E+07	1.25	Y	1.23	1.25	2%
123678-HxCDF	36.83	8.26E+07	1.26	Y	1.13	1.13	0%
234678-HxCDF	37.49	7.73E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.43	6.95E+07	1.26	Y	1.14	1.13	0%
1234678-HpCDF	39.77	7.02E+07	1.03	Y	1.36	1.34	-2%
1234789-HpCDF	41.11	5.97E+07	1.05	Y	1.30	1.36	5%
OCDF	43.41	9.92E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.50	1.24E+08	0.80	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.788	1.20E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.661	1.03E+08	1.29	Y	0.99	0.98	-1%
ES 123678-HxCDD	37.775	1.02E+08	1.32	Y	0.97	0.97	0%
ES 123789-HxCDD	38.065	1.17E+08	1.31	Y	1.12	1.12	-1%
ES 1234678-HpCDD	40.653	1.01E+08	1.07	Y	0.99	0.96	-3%
ES OCDD	43.218	1.54E+08	0.91	Y	0.78	0.73	-6%
ES 2378-TCDF	27.65	2.18E+08	0.77	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.362	1.80E+08	1.58	Y	0.93	0.89	-5%
ES 23478-PeCDF	33.452	1.68E+08	1.62	Y	0.92	0.83	-10%
ES 123478-HxCDF	36.669	1.26E+08	0.54	Y	1.14	1.19	4%
ES 123678-HxCDF	36.809	1.47E+08	0.50	Y	1.30	1.39	7%
ES 234678-HxCDF	37.476	1.31E+08	0.52	Y	1.20	1.25	4%
ES 123789-HxCDF	38.411	1.23E+08	0.52	Y	1.14	1.17	3%
ES 1234678-HpCDF	39.758	1.05E+08	0.47	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.102	8.75E+07	0.45	Y	0.85	0.83	-2%
ES OCDF	43.399	1.88E+08	0.89	Y	0.93	0.89	-4%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.21E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.33	2.03E+08	0.78	Y	-	-	-
JS 123467-HxCDD	37.97	5.27E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.31	1.28	-2%
CS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.89	0.87	-3%
CS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.22E+08	0.52	Y	1.09	1.16	7%
CS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.86	0.90	4%
SS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.86	0.87	1%
SS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.22E+08	0.52	Y	0.84	0.83	-1%
SS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.91	0.90	-1%
~~OCDD-a~~	~~43.22~~	~~4.70E+06~~	~~2.62~~	~~Y~~	~~0.07~~	~~0.06~~	~~-8%~~
~~OCDF-a~~	~~43.41~~	~~5.40E+06~~	~~2.31~~	~~Y~~	~~0.06~~	~~0.06~~	~~-3%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	10	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	50.1	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	50.3	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	50.9	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	49.1	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88	-	1.20	Y	50.1	40	-	60	Y
OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	10.1	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	51.2	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32	-	1.78	Y	49.2	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	50.8	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	51.1	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.1	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88	-	1.20	Y	52.4	40	-	60	Y
OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	103	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	70	-	130	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	70	-	130	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	140	-	260	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	10	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.1	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.1	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32 - 1.78	Y	49.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	52.4	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

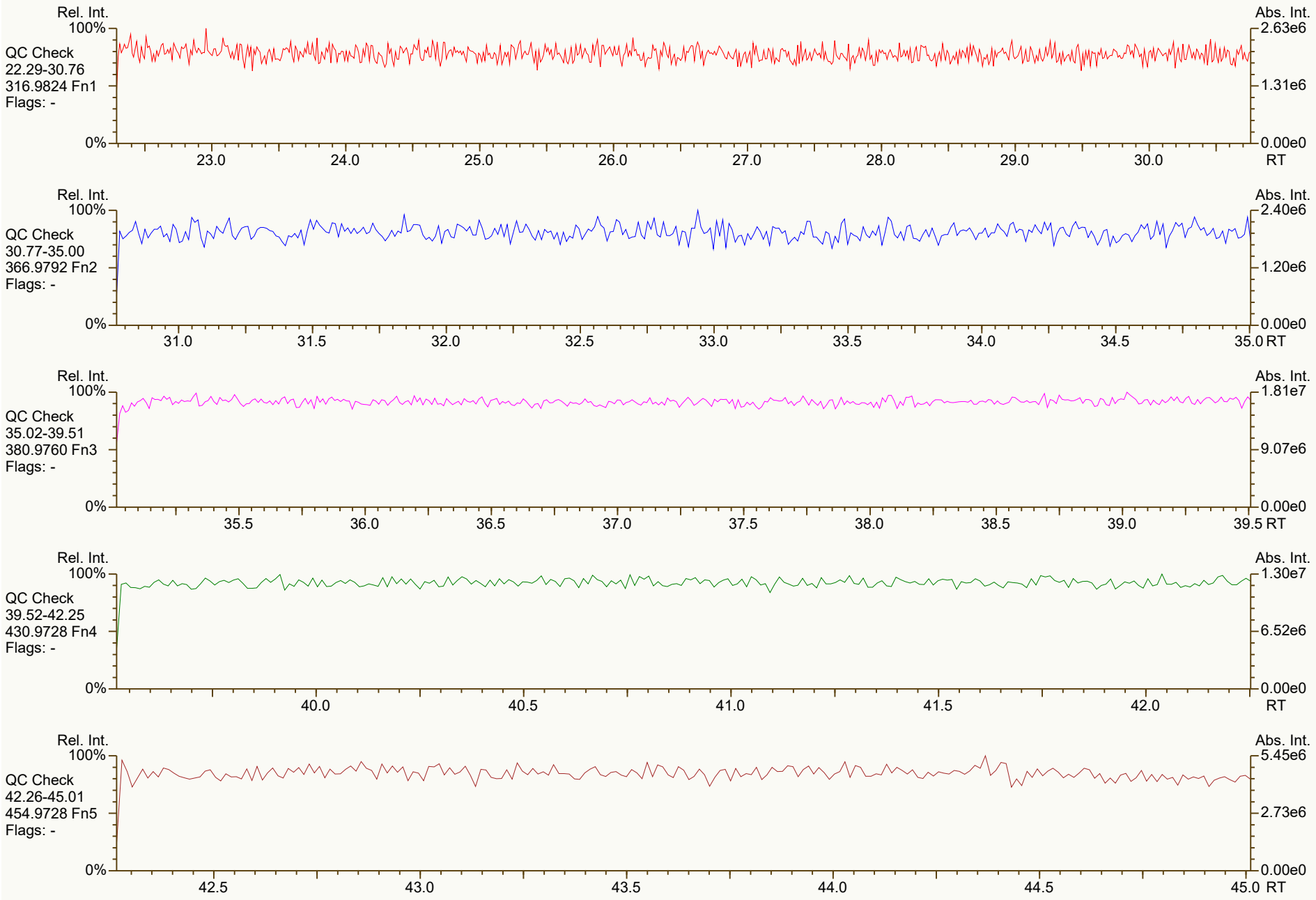
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	72	-	138	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	77	-	129	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:18 Analyst: pw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100%
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
RT
QC Check
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316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
2.40e6
1.20e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.81e7
9.07e6
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.30e7
6.52e6
40.0
40.5
41.0
41.5
42.0
QC Check
42.26-45.01
454.9728 Fn5
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44.0
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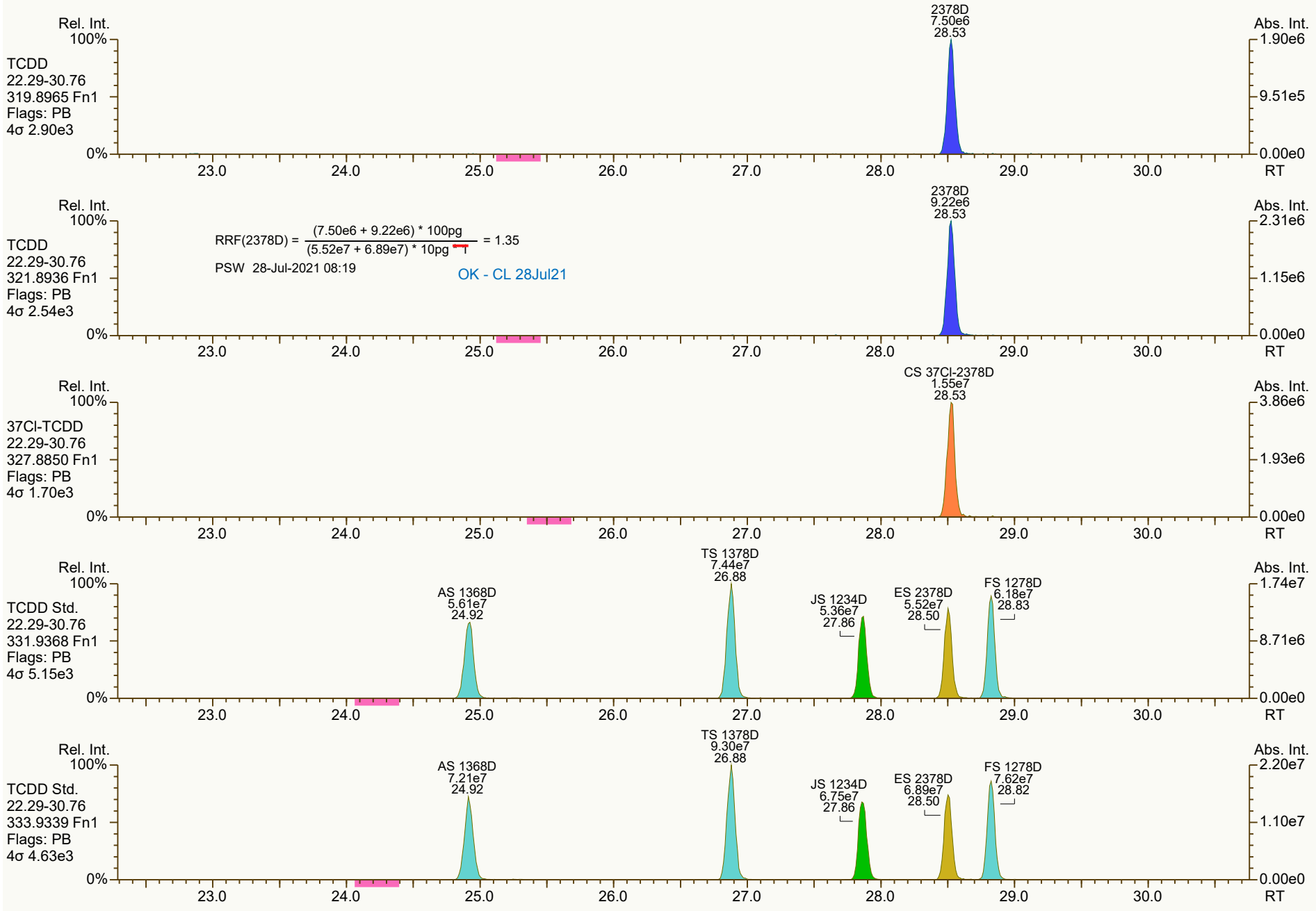
45.0


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.90e3
0%
2378D
7.50e6
28.53
Abs. Int.
1.90e6
9.51e5
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.54e3
RRF(2378D) = (7.50e6 + 9.22e6) * 100pg / (5.52e7 + 6.89e7) * 10pg = 1.35
PSW 28-Jul-2021 08:19
OK - CL 28Jul21
2378D
9.22e6
28.53
2.31e6
1.15e6
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.70e3
CS 37Cl-2378D
1.55e7
28.53
3.86e6
1.93e6
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.15e3
AS 1368D
5.61e7
24.92
TS 1378D
7.44e7
26.88
JS 1234D
5.36e7
27.86
ES 2378D
5.52e7
28.50
FS 1278D
6.18e7
28.83
1.74e7
8.71e6
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.63e3
AS 1368D
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24.92
TS 1378D
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28.50
FS 1278D
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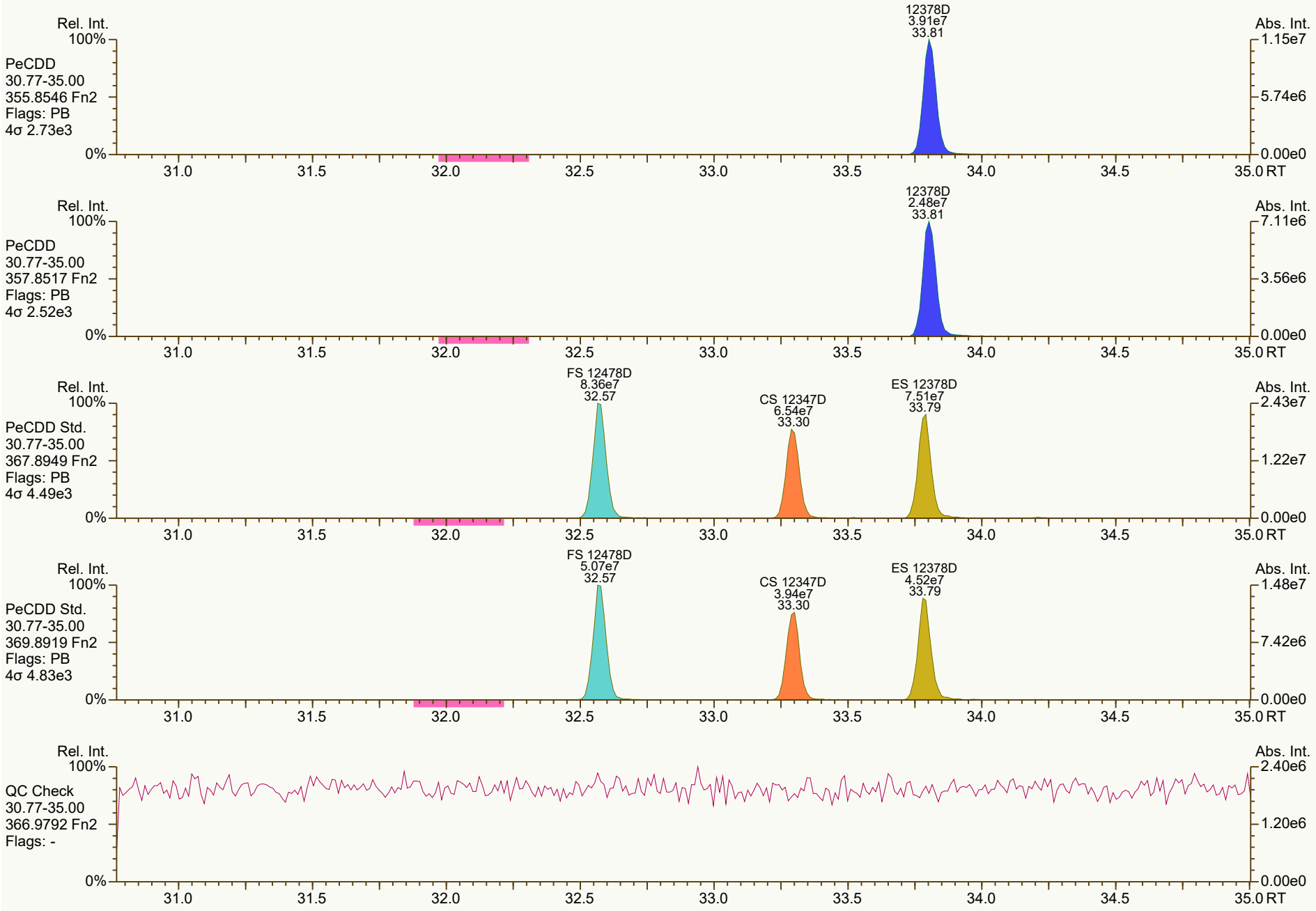
1.10e7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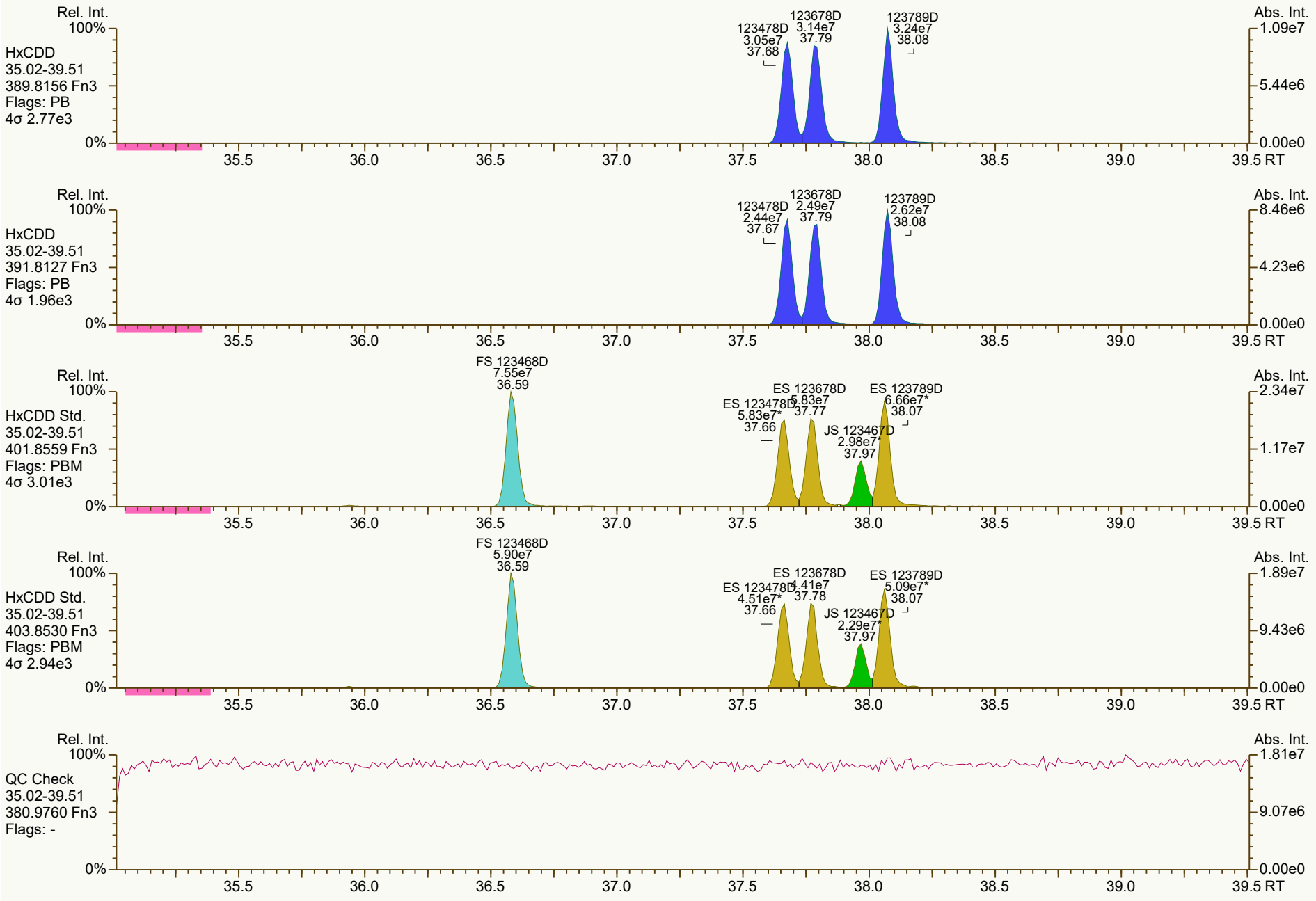
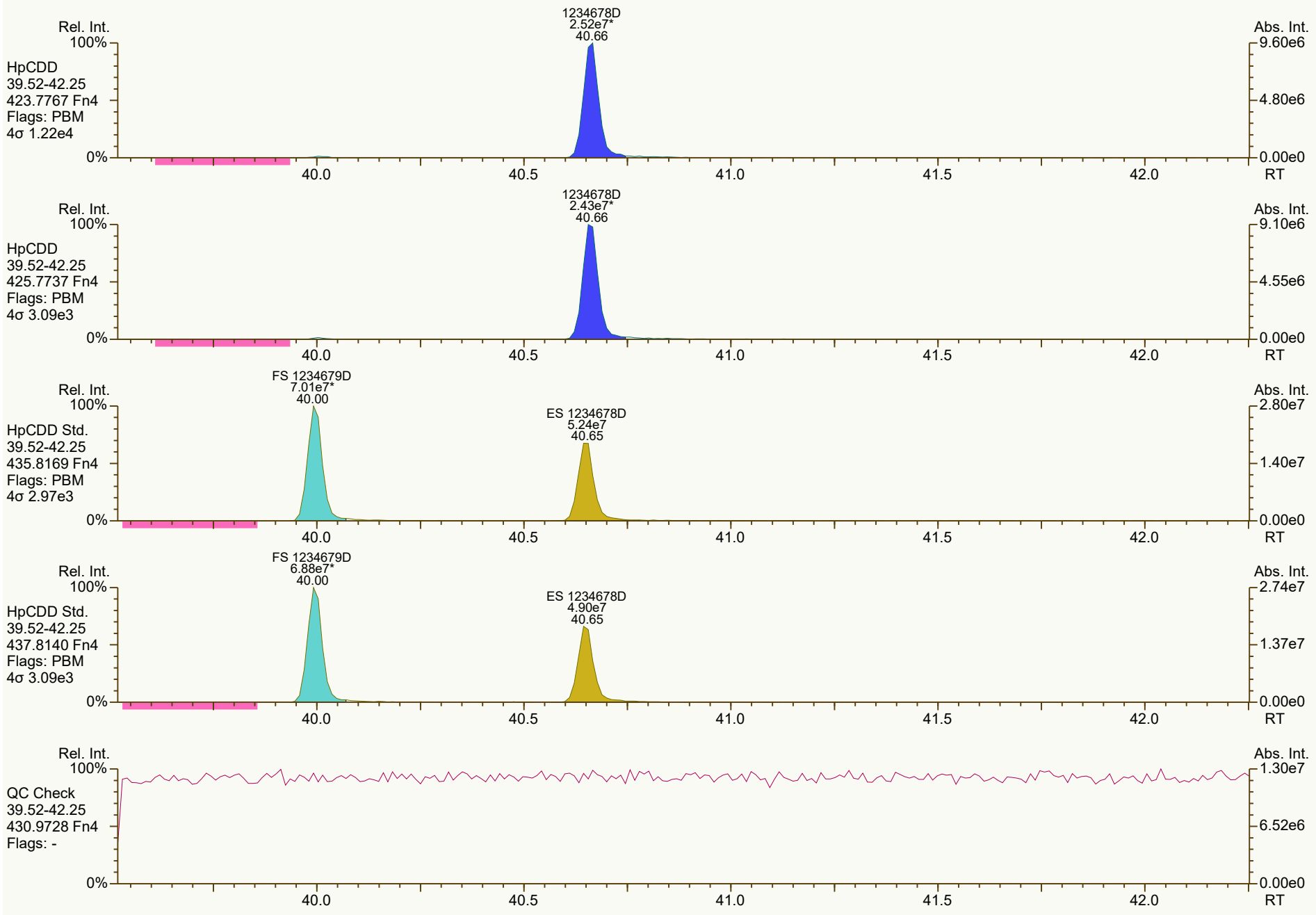
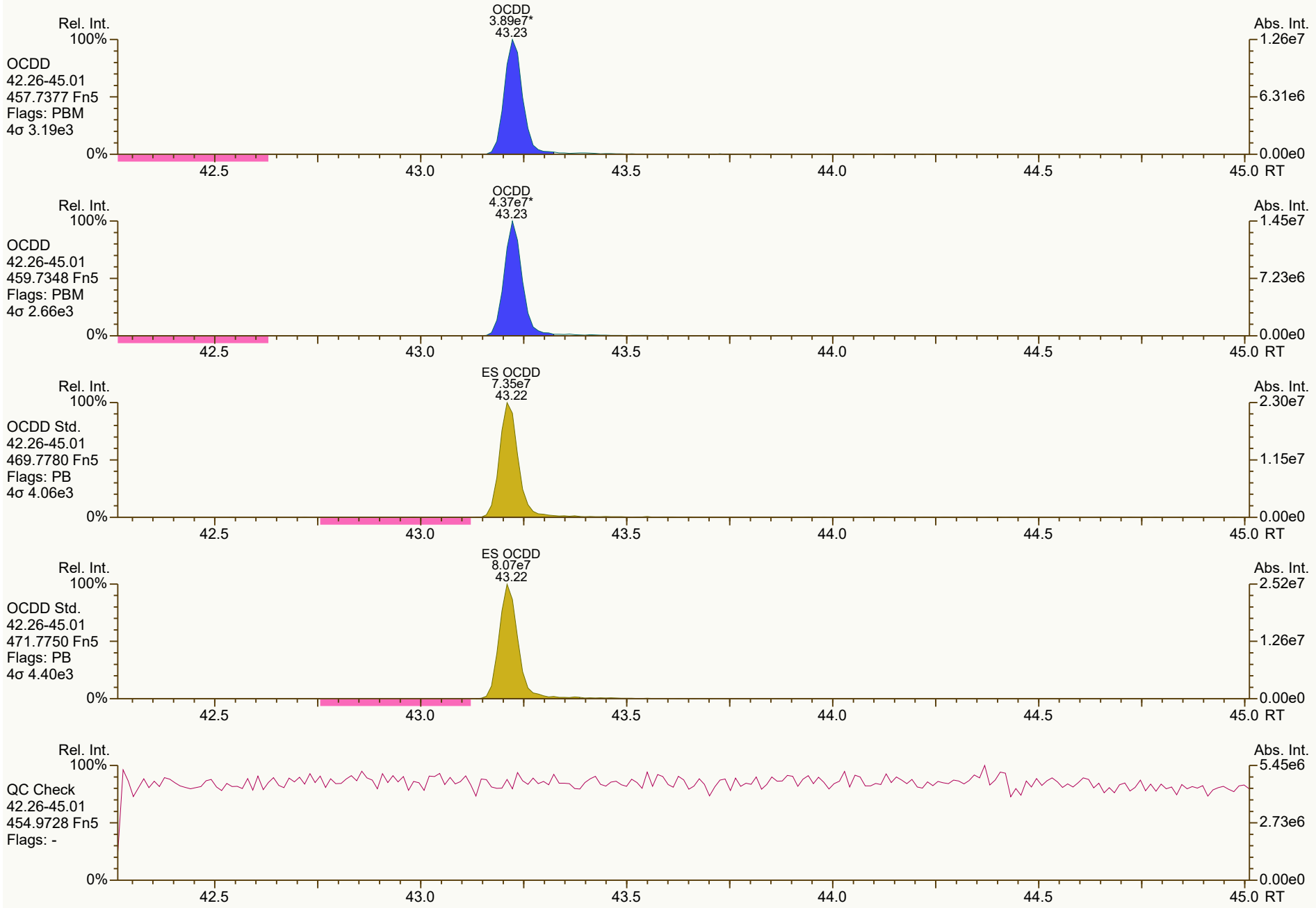
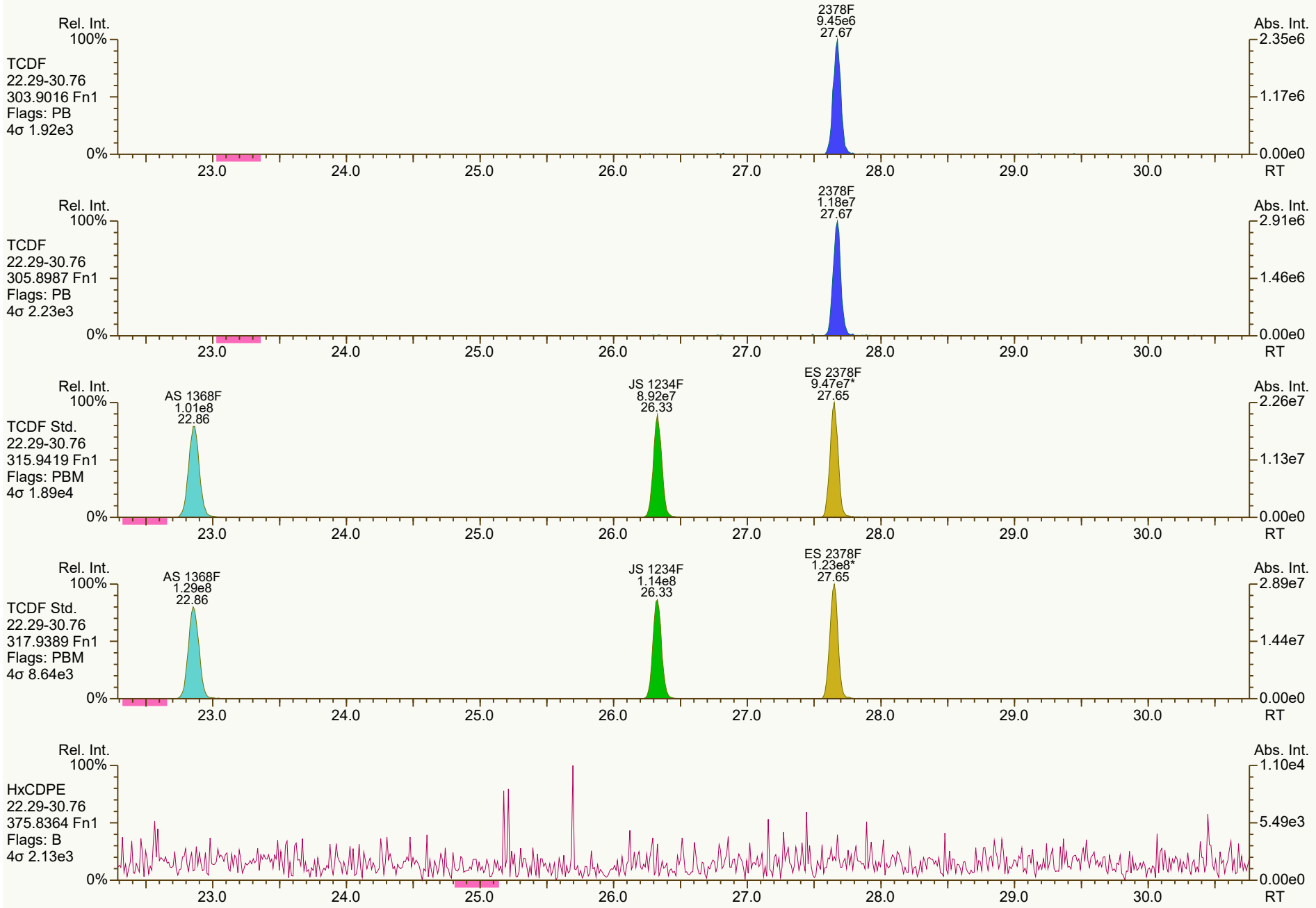
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.73e3
12378D
3.91e7
33.81
Abs. Int.
1.15e7
5.74e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.52e3
12378D
2.48e7
33.81
Abs. Int.
7.11e6
3.56e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 4.49e3
FS 12478D
8.36e7
32.57
CS 12347D
6.54e7
33.30
ES 12378D
7.51e7
33.79
Abs. Int.
2.43e7
1.22e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.83e3
FS 12478D
5.07e7
32.57
CS 12347D
3.94e7
33.30
ES 12378D
4.52e7
33.79
Abs. Int.
1.48e7
7.42e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
Abs. Int.
2.40e6
1.20e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.77e3
123478D 3.05e7 37.68
123678D 3.14e7 37.79
123789D 3.24e7 38.08
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.96e3
123478D 2.44e7 37.67
123678D 2.49e7 37.79
123789D 2.62e7 38.08
8.46e6
4.23e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.01e3
FS 123468D 7.55e7 36.59
ES 123478D 5.83e7* 37.66
ES 123678D 5.83e7 37.77
JS 123467D 2.98e7* 37.97
ES 123789D 6.66e7* 38.07
2.34e7
1.17e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.94e3
FS 123468D 5.90e7 36.59
ES 123478D 4.51e7* 37.66
ES 123678D 4.41e7 37.78
JS 123467D 2.29e7* 37.97
ES 123789D 5.09e7* 38.07
1.89e7
9.43e6
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.81e7
9.07e6


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 1.22e4
0%
1234678D
2.52e7*
40.66
Abs. Int.
9.60e6
4.80e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 3.09e3
0%
1234678D
2.43e7*
40.66
Abs. Int.
9.10e6
4.55e6
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 2.97e3
0%
FS 1234679D
7.01e7*
40.00
ES 1234678D
5.24e7
40.65
Abs. Int.
2.80e7
1.40e7
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 3.09e3
0%
FS 1234679D
6.88e7*
40.00
ES 1234678D
4.90e7
40.65
Abs. Int.
2.74e7
1.37e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.52e6
0.00e0
RT


OCDD
3.89e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.19e3
0%
Abs. Int.
1.26e7
6.31e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.37e7*
43.23
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.66e3
1.45e7
7.23e6
ES OCDD
7.35e7
43.22
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.06e3
2.30e7
1.15e7
ES OCDD
8.07e7
43.22
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 4.40e3
2.52e7
1.26e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
5.45e6
2.73e6


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 1.92e3
0%
2378F
9.45e6
27.67
Abs. Int.
2.35e6
1.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.23e3
0%
2378F
1.18e7
27.67
Abs. Int.
2.91e6
1.46e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PBM
4σ 1.89e4
0%
AS 1368F
1.01e8
22.86
JS 1234F
8.92e7
26.33
ES 2378F
9.47e7*
27.65
Abs. Int.
2.26e7
1.13e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PBM
4σ 8.64e3
0%
AS 1368F
1.29e8
22.86
JS 1234F
1.14e8
26.33
ES 2378F
1.23e8*
27.65
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.13e3
0%
Abs. Int.
1.10e4
5.49e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15

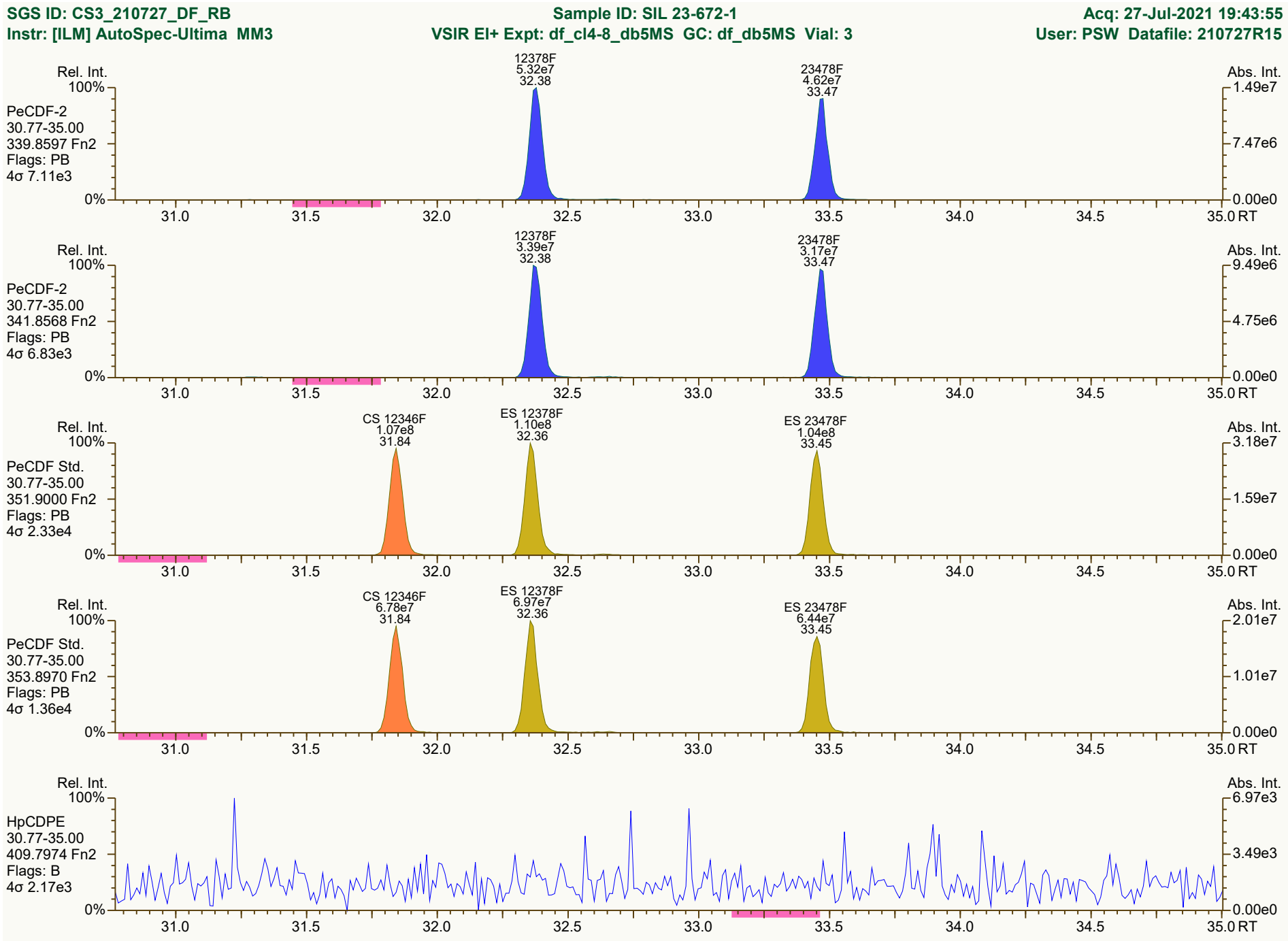


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5181 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 8 of 12

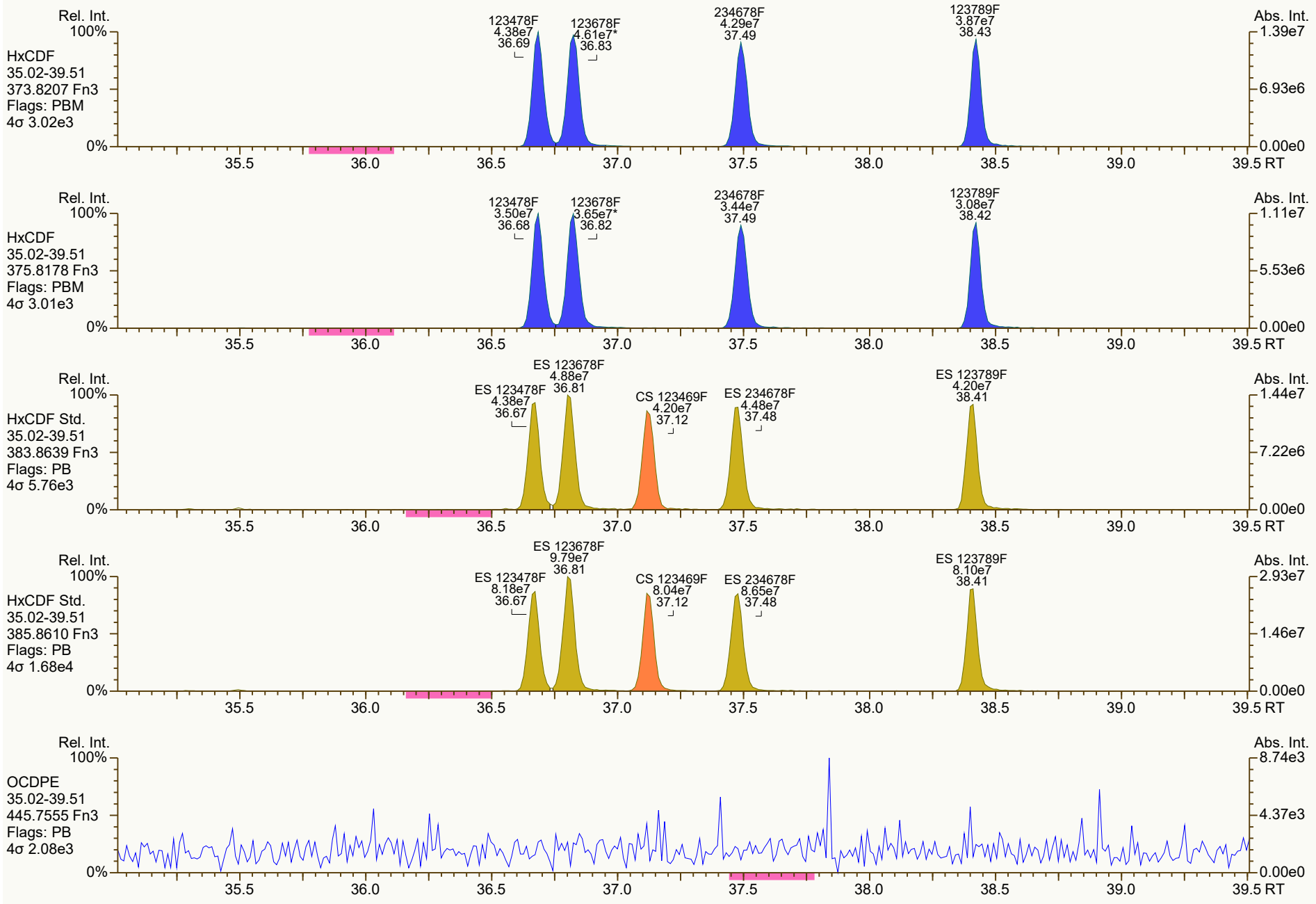
SGS ID: CS3_210727_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

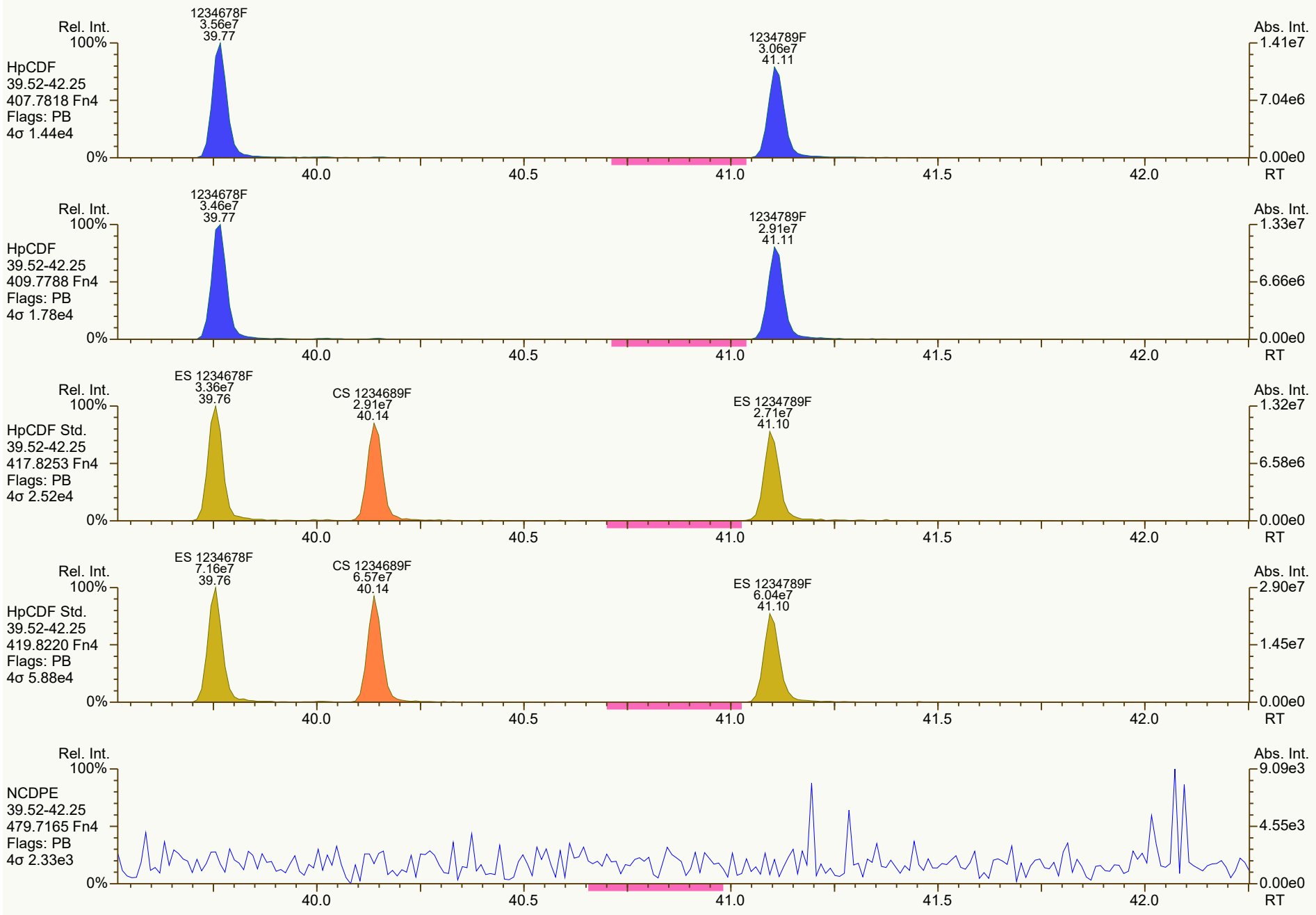
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

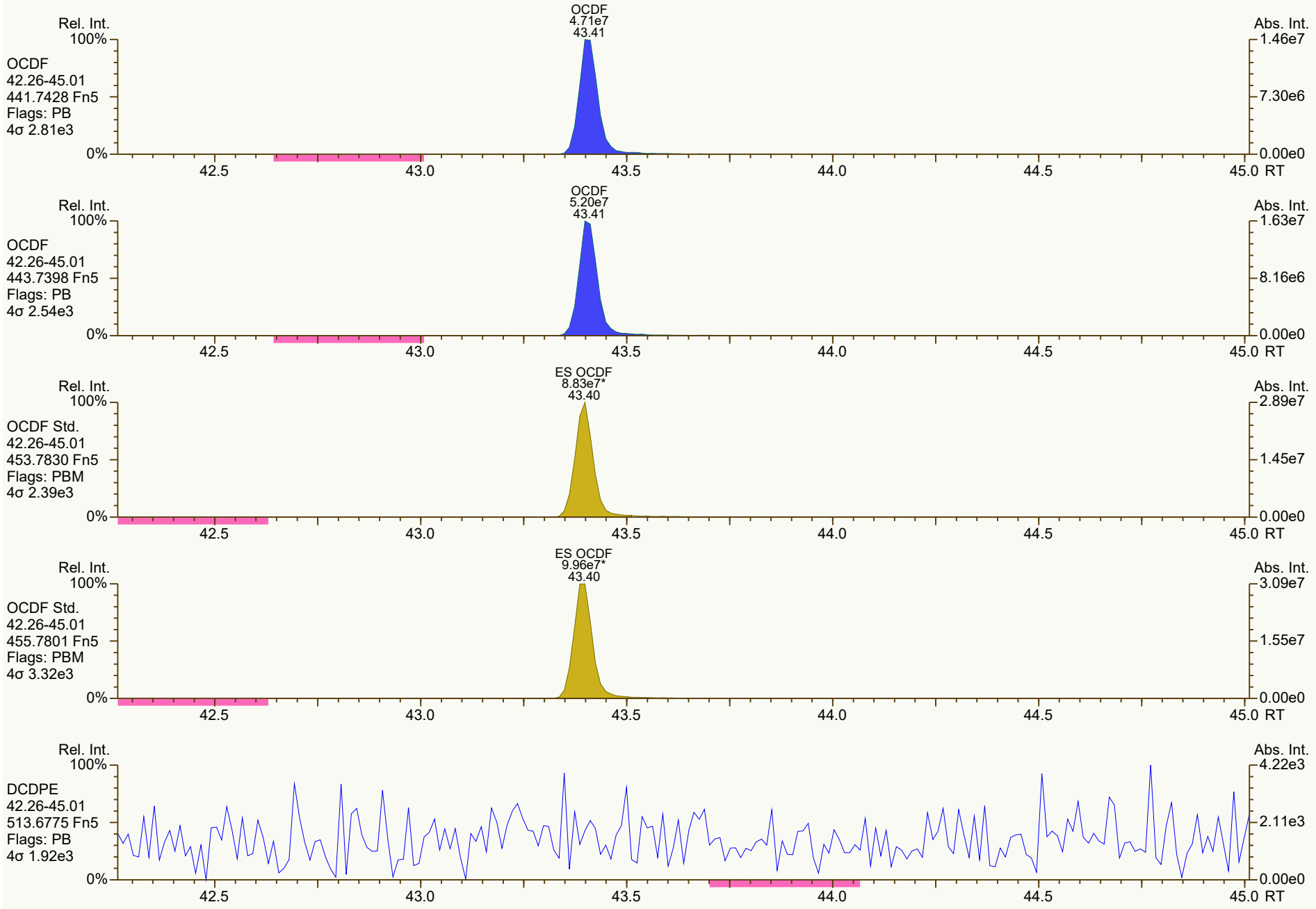
Acq: 27-Jul-2021 19:43:55
User: PSW Datafile: 210727R15



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1037, 5263, 2332 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 3.02e3
0%
123478F
4.38e7
36.69
123678F
4.61e7*
36.83
234678F
4.29e7
37.49
123789F
3.87e7
38.43
Abs. Int.
1.39e7
6.93e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 3.01e3
0%
123478F
3.50e7
36.68
123678F
3.65e7*
36.82
234678F
3.44e7
37.49
123789F
3.08e7
38.42
Abs. Int.
1.11e7
5.53e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.76e3
0%
ES 123478F
4.38e7
36.67
ES 123678F
4.88e7
36.81
CS 123469F
4.20e7
37.12
ES 234678F
4.48e7
37.48
ES 123789F
4.20e7
38.41
Abs. Int.
1.44e7
7.22e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.68e4
0%
ES 123478F
8.18e7
36.67
ES 123678F
9.79e7
36.81
CS 123469F
8.04e7
37.12
ES 234678F
8.65e7
37.48
ES 123789F
8.10e7
38.41
Abs. Int.
2.93e7
1.46e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: PB
4σ 2.08e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
0%
Abs. Int.
RT
40.0
40.5
41.0
41.5
42.0
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.44e4
1234678F
3.56e7
39.77
1234789F
3.06e7
41.11
1.41e7
7.04e6
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.78e4
1234678F
3.46e7
39.77
1234789F
2.91e7
41.11
1.33e7
6.66e6
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.52e4
ES 1234678F
3.36e7
39.76
CS 1234689F
2.91e7
40.14
ES 1234789F
2.71e7
41.10
1.32e7
6.58e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.88e4
ES 1234678F
7.16e7
39.76
CS 1234689F
6.57e7
40.14
ES 1234789F
6.04e7
41.10
2.90e7
1.45e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.33e3
9.09e3
4.55e3
0.00e0


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.81e3
0%
OCDF
4.71e7
43.41
Abs. Int.
1.46e7
7.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.54e3
0%
OCDF
5.20e7
43.41
Abs. Int.
1.63e7
8.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PBM
4σ 2.39e3
0%
ES OCDF
8.83e7*
43.40
Abs. Int.
2.89e7
1.45e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PBM
4σ 3.32e3
0%
ES OCDF
9.96e7*
43.40
Abs. Int.
3.09e7
1.55e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 1.92e3
0%
Abs. Int.
4.22e3
2.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	2.48E+07	0.79	Y	1.34	1.22	-9%
12378-PeCDD	33.81	9.55E+07	1.55	Y	1.06	0.98	-8%
123478-HxCDD	37.68	8.89E+07	1.25	Y	1.06	1.04	-1%
123678-HxCDD	37.80	9.70E+07	1.25	Y	1.08	1.14	5%
123789-HxCDD	38.09	9.52E+07	1.24	Y	1.02	0.95	-7%
1234678-HpCDD	40.67	8.40E+07	1.03	Y	0.97	0.99	1%
OCDD	43.24	1.45E+08	0.90	Y	1.07	1.07	0%
2378-TCDF	27.68	3.32E+07	0.79	Y	0.96	0.95	-1%
12378-PeCDF	32.38	1.28E+08	1.52	Y	0.95	0.87	-8%
23478-PeCDF	33.48	1.47E+08	1.58	Y	0.94	1.00	6%
123478-HxCDF	36.69	1.27E+08	1.27	Y	1.23	1.25	1%
123678-HxCDF	36.83	1.34E+08	1.26	Y	1.13	1.11	-2%
234678-HxCDF	37.50	1.26E+08	1.24	Y	1.15	1.17	1%
123789-HxCDF	38.43	1.13E+08	1.25	Y	1.14	1.10	-3%
1234678-HpCDF	39.77	1.18E+08	1.02	Y	1.36	1.34	-2%
1234789-HpCDF	41.12	9.93E+07	1.03	Y	1.30	1.29	-1%
OCDF	43.42	1.67E+08	0.90	Y	1.03	1.02	-1%
ES 2378-TCDD	28.51	2.04E+08	0.81	Y	1.03	0.96	-7%
ES 12378-PeCDD	33.795	1.95E+08	1.65	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.667	1.70E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.781	1.70E+08	1.29	Y	0.97	0.97	0%
ES 123789-HxCDD	38.071	2.01E+08	1.25	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.656	1.70E+08	1.05	Y	0.99	0.97	-2%
ES OCDD	43.225	2.69E+08	0.90	Y	0.78	0.77	-1%
ES 2378-TCDF	27.654	3.51E+08	0.77	Y	1.08	0.99	-9%
ES 12378-PeCDF	32.366	2.97E+08	1.58	Y	0.93	0.84	-10%
ES 23478-PeCDF	33.459	2.95E+08	1.56	Y	0.92	0.84	-9%
ES 123478-HxCDF	36.673	2.04E+08	0.52	Y	1.14	1.17	2%
ES 123678-HxCDF	36.814	2.41E+08	0.53	Y	1.30	1.38	7%
ES 234678-HxCDF	37.481	2.17E+08	0.52	Y	1.20	1.24	3%
ES 123789-HxCDF	38.414	2.06E+08	0.52	Y	1.14	1.18	4%
ES 1234678-HpCDF	39.764	1.76E+08	0.46	Y	0.95	1.01	6%
ES 1234789-HpCDF	41.106	1.54E+08	0.45	Y	0.85	0.88	4%
ES OCDF	43.408	3.28E+08	0.88	Y	0.93	0.94	2%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	2.13E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	3.53E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	8.73E+07	1.21	Y	-	-	-
~~OCDD-a~~	~~43.23~~	~~9.07E+06~~	~~2.21~~	~~Y~~	~~0.07~~	~~0.07~~	~~2%~~
~~OCDF-a~~	~~43.42~~	~~9.95E+06~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~2%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	9.05	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	46.2	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	49.4	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	52.7	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	46.7	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88	-	1.20	Y	50.7	40	-	60	Y
OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65	-	0.89	Y	9.87	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	45.8	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	53.1	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05	-	1.43	Y	50.5	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.2	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05	-	1.43	Y	50.6	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	48.4	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88	-	1.20	Y	49.2	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.7	40	-	60	Y
OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	99.5	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	70	-	130	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	70	-	130	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	140	-	260	Y
CLEANUP STANDARDS n/a - CL 28Jul21											
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	9.05	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	52.7	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	46.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	50.7	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.87	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	45.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	53.1	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.5	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.2	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.4	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	49.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.7	43 - 58	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.5	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

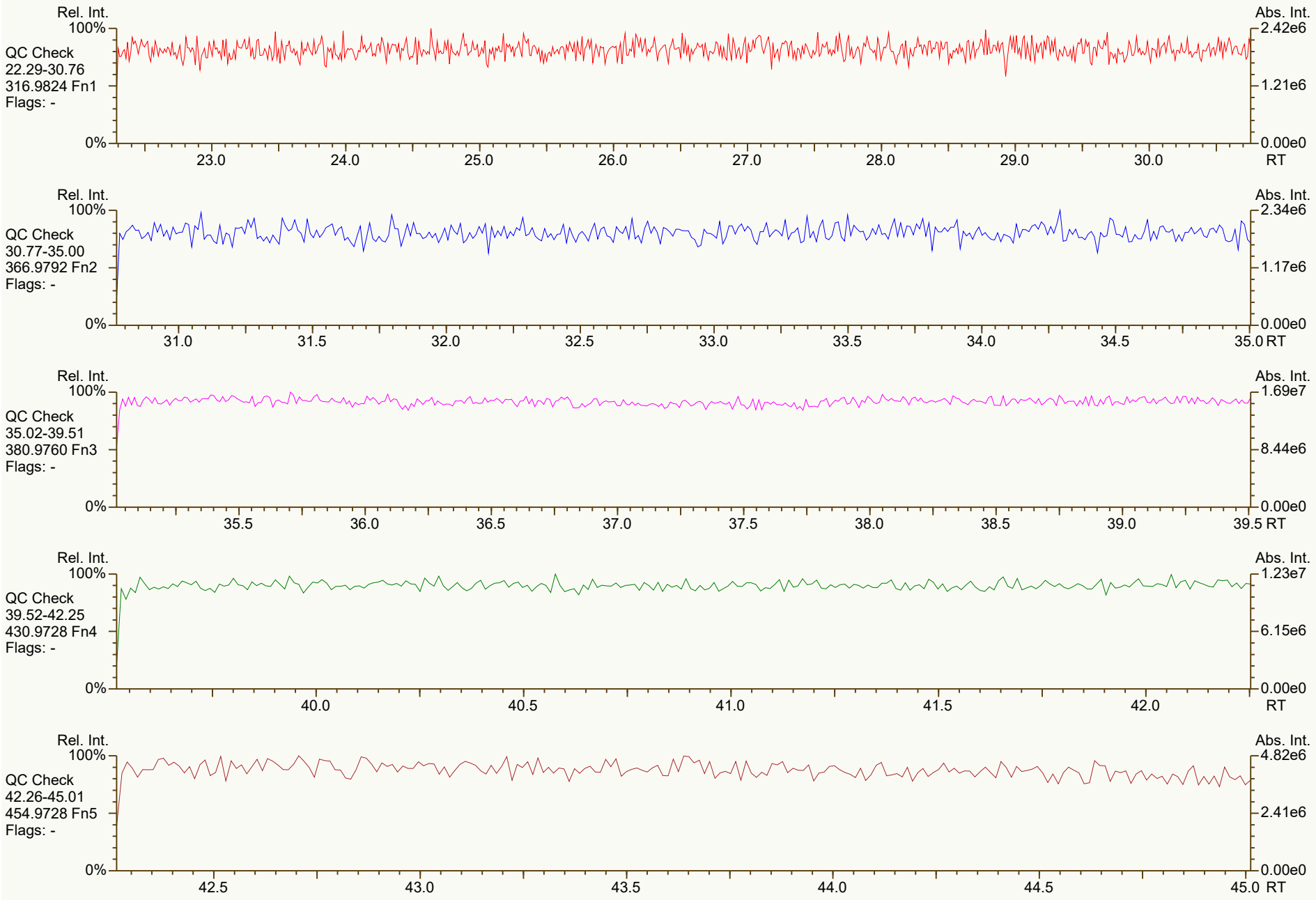
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	77	-	129	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	96	-	415	Y
CLEANUP STANDARDS	n/a - CL 28Jul21										
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:18 Analyst: pw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0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.69e7
8.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.23e7
6.15e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
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0%
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42.5
43.0
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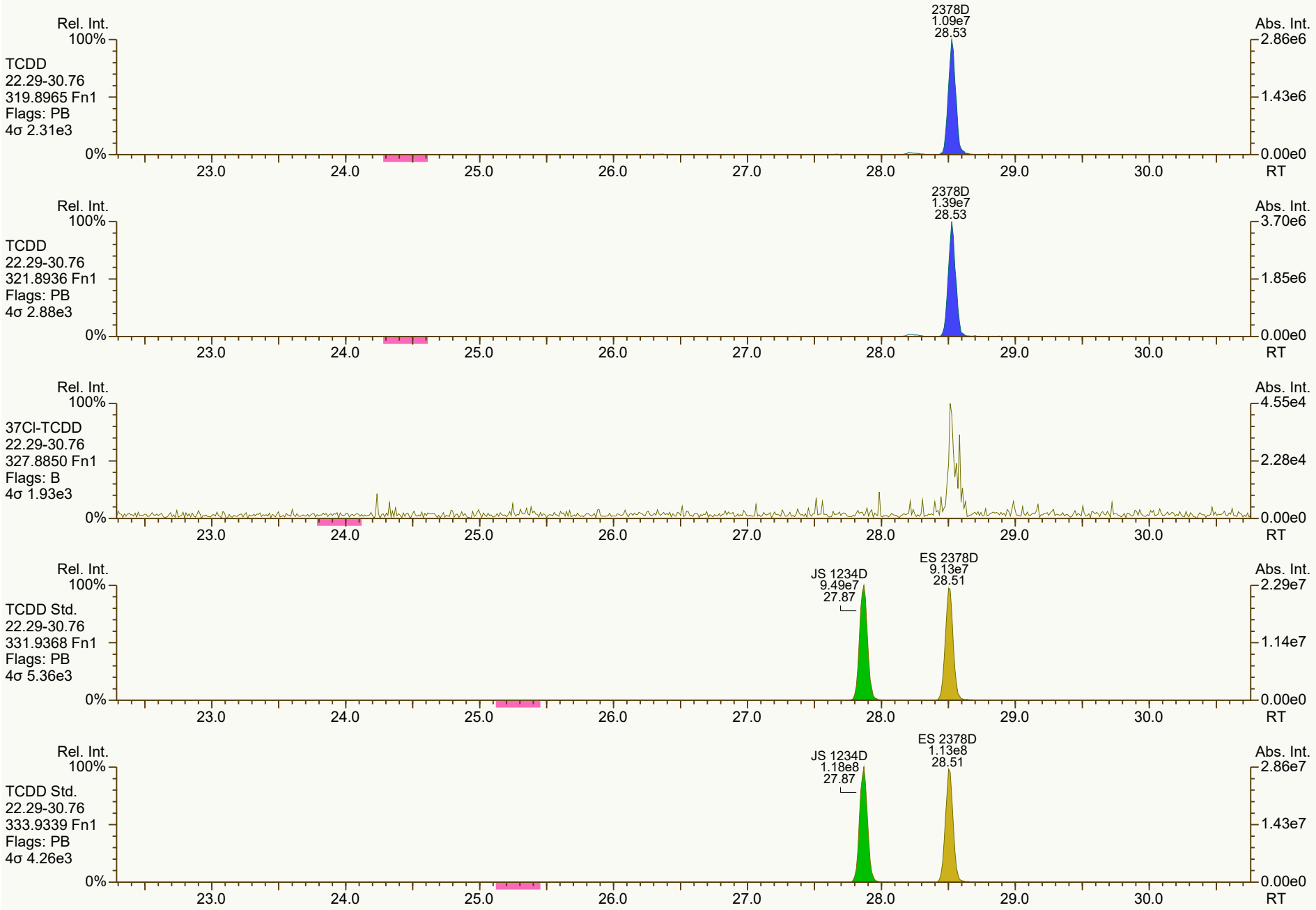
44.0
44.5
45.0 RT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0%
2378D
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28.53
Abs. Int.
2.86e6
1.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.88e3
0%
2378D
1.39e7
28.53
Abs. Int.
3.70e6
1.85e6
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23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.93e3
0%
Abs. Int.
4.55e4
2.28e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.36e3
0%
JS 1234D
9.49e7
27.87
ES 2378D
9.13e7
28.51
Abs. Int.
2.29e7
1.14e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.26e3
0%
JS 1234D
1.18e8
27.87
ES 2378D
1.13e8
28.51
Abs. Int.
2.86e7
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27.0
28.0
29.0
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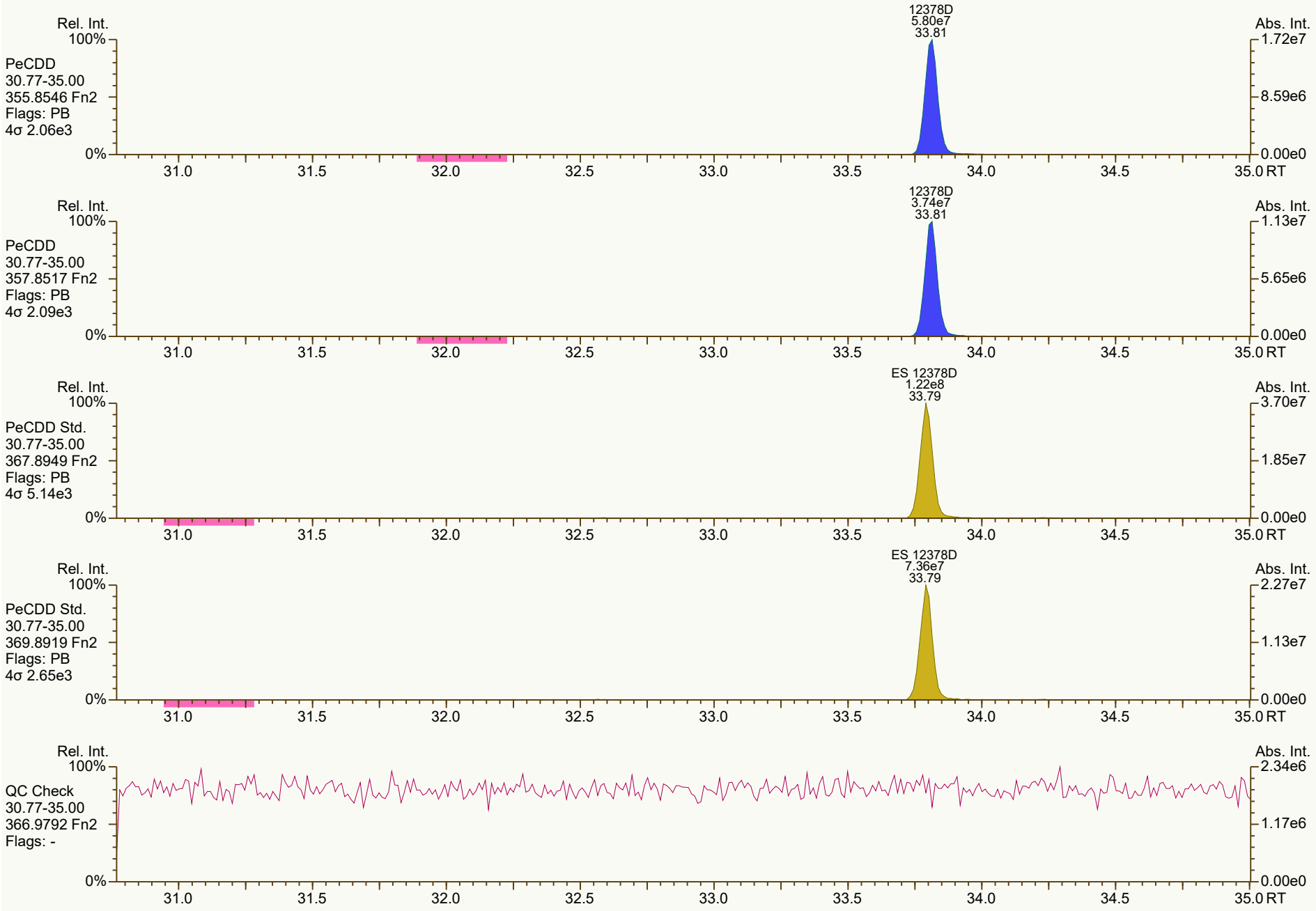
RT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33.81
Abs. Int.
1.72e7
8.59e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.09e3
0%
12378D
3.74e7
33.81
Abs. Int.
1.13e7
5.65e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 5.14e3
0%
ES 12378D
1.22e8
33.79
Abs. Int.
3.70e7
1.85e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 2.65e3
0%
ES 12378D
7.36e7
33.79
Abs. Int.
2.27e7
1.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.34e6
1.17e6
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31.5
32.0
32.5
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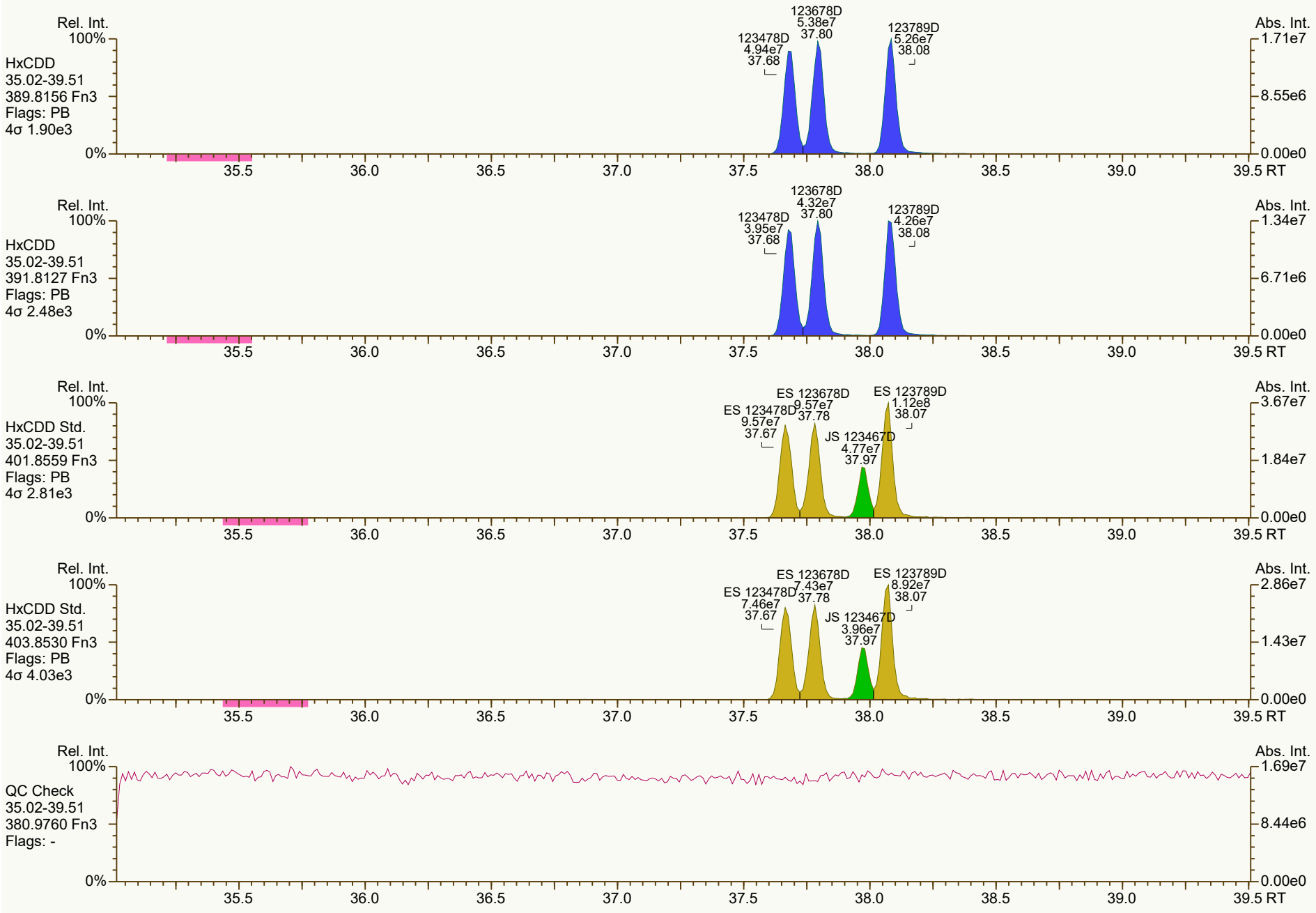
33.5
34.0
34.5
35.0 RT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HxCDD
35.02-39.51
389.8156 Fn3
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123478D
4.94e7
37.68
123789D
5.26e7
38.08
Abs. Int.
1.71e7
8.55e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.48e3
123678D
4.32e7
37.80
123478D
3.95e7
37.68
123789D
4.26e7
38.08
Abs. Int.
1.34e7
6.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 2.81e3
ES 123678D
9.57e7
37.78
ES 123478D
9.57e7
37.67
ES 123789D
1.12e8
38.07
JS 123467D
4.77e7
37.97
Abs. Int.
3.67e7
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0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 4.03e3
ES 123678D
7.43e7
37.78
ES 123478D
7.46e7
37.67
ES 123789D
8.92e7
38.07
JS 123467D
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37.97
Abs. Int.
2.86e7
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0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.69e7
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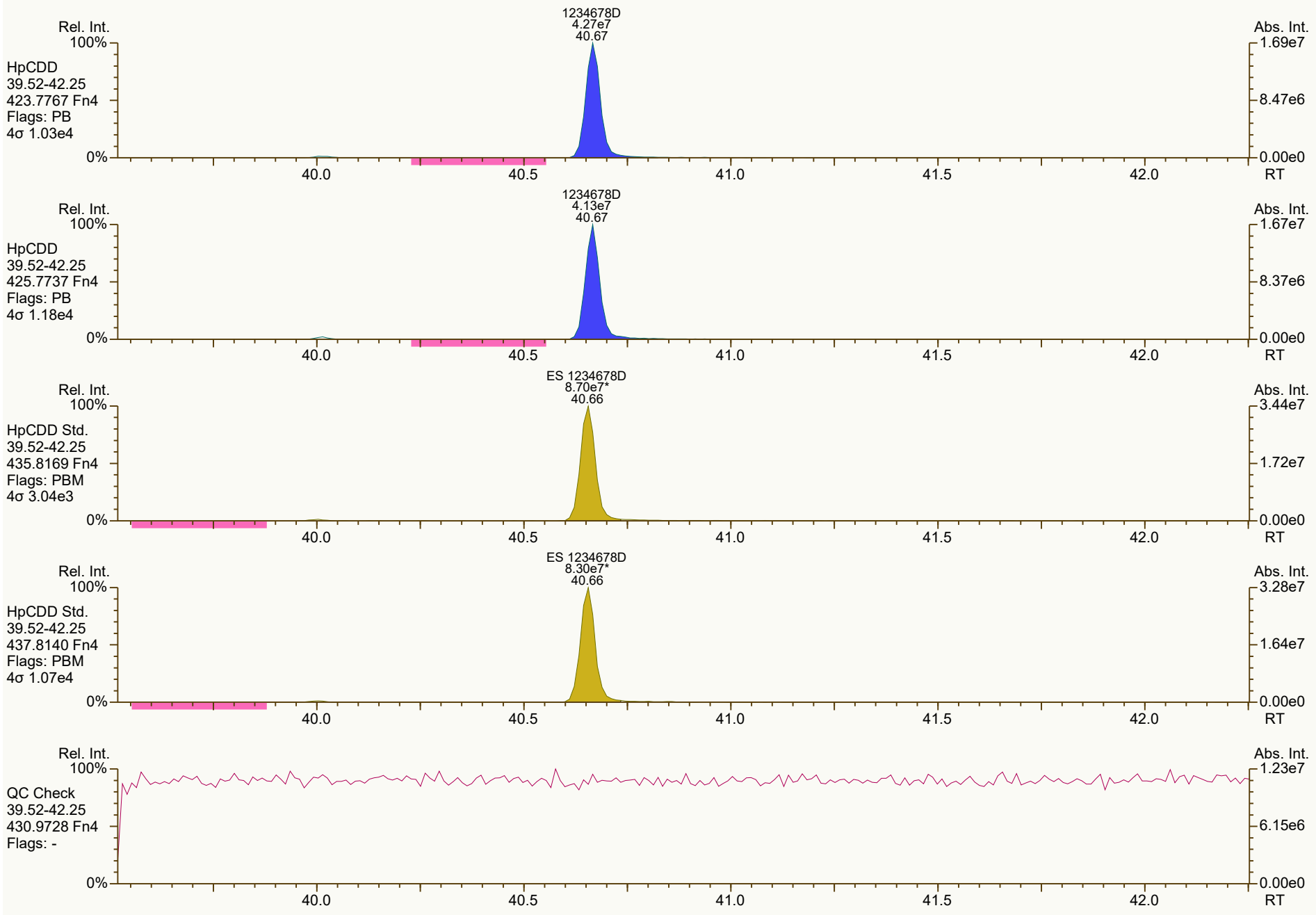
39.5 RT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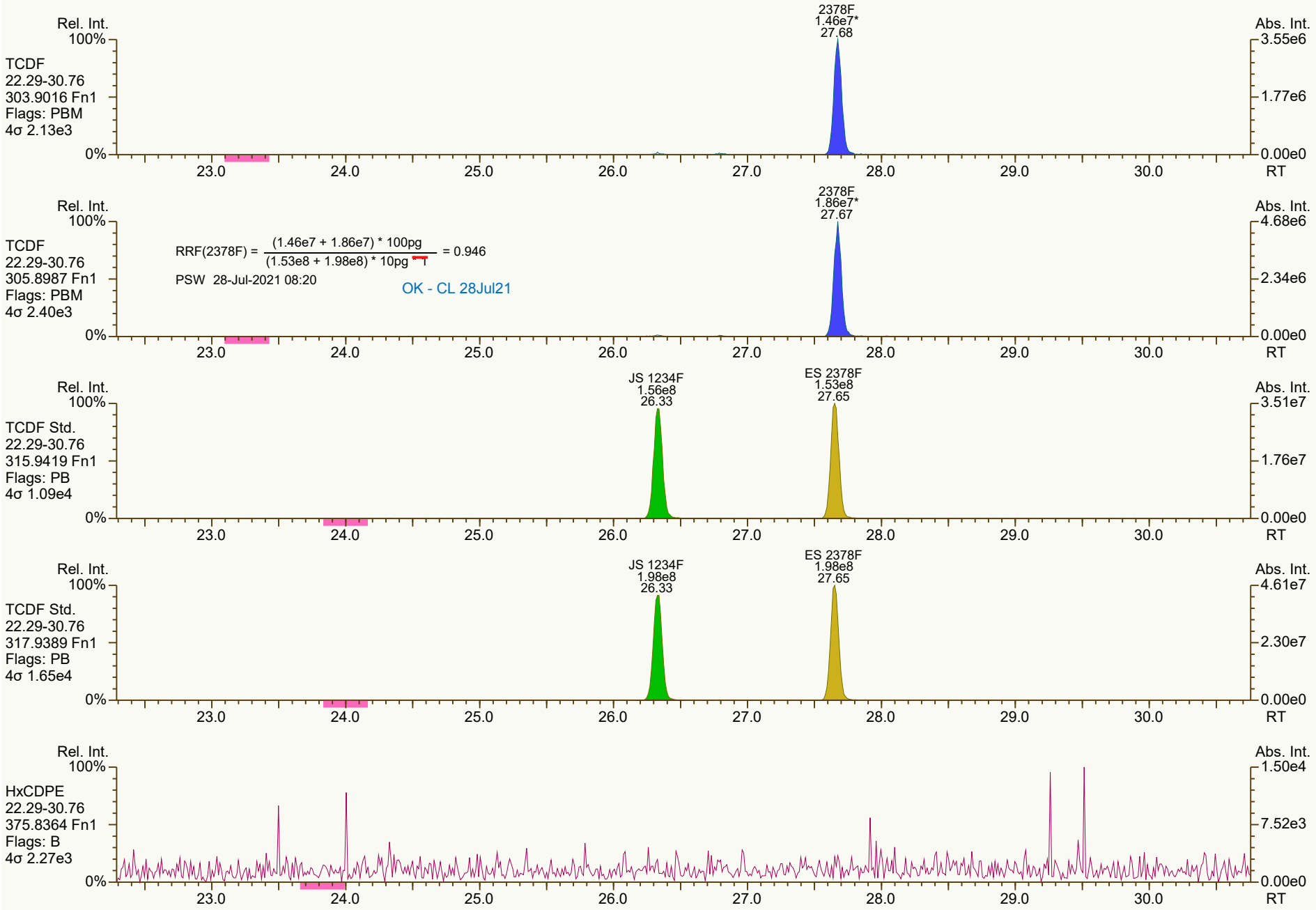
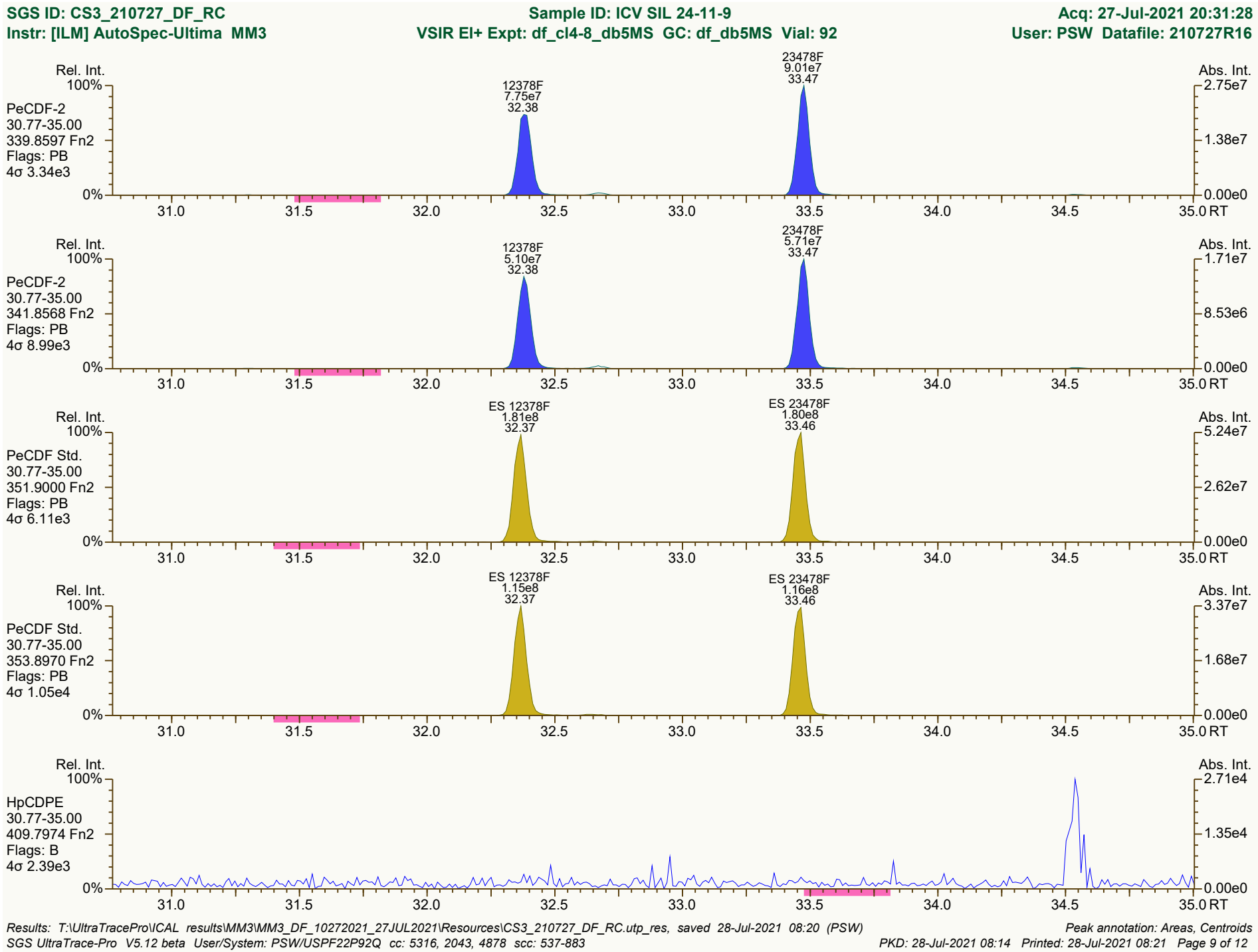
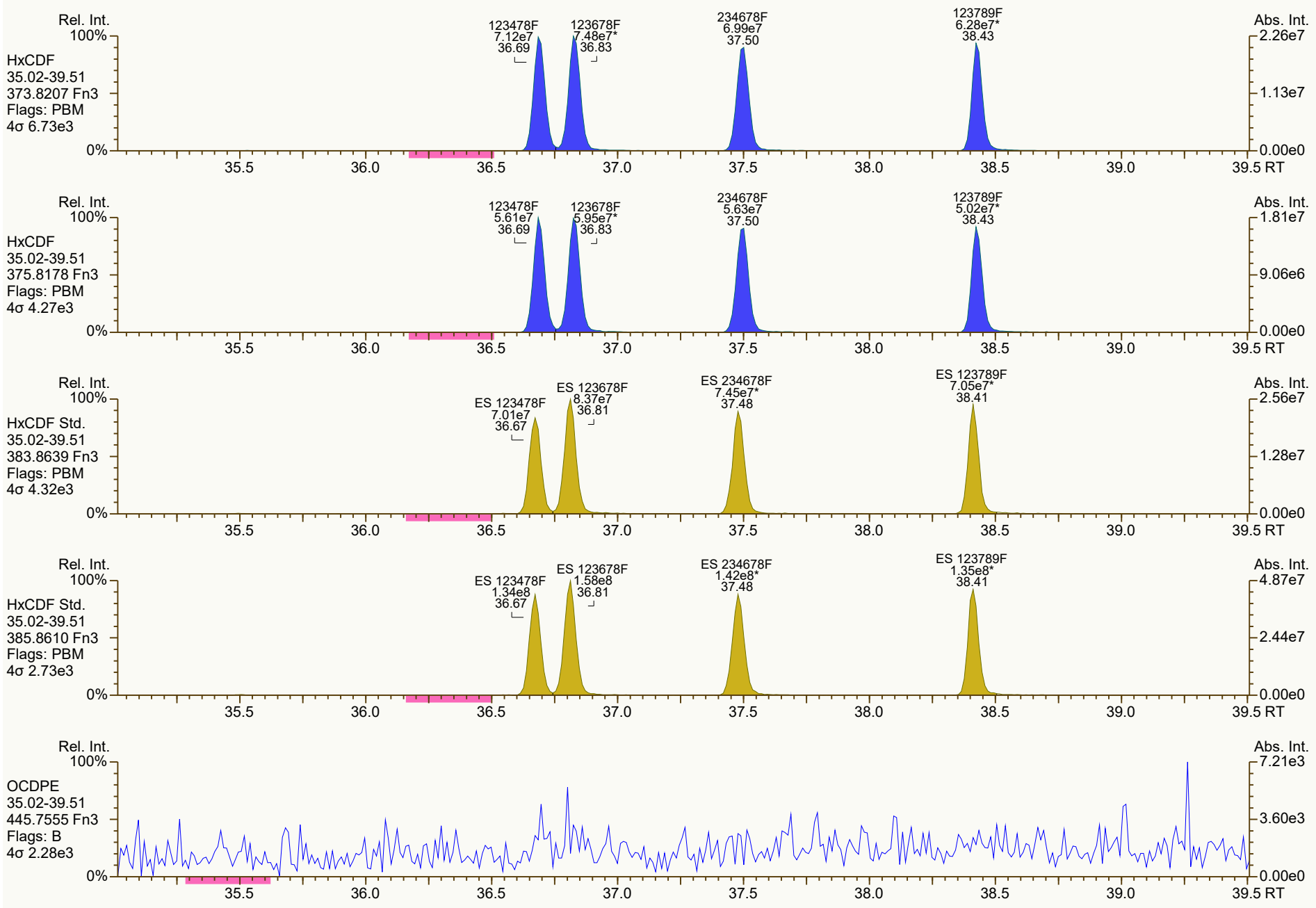
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.03e4
0%
Abs. Int.
1.69e7
8.47e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
1234678D
4.13e7
40.67
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.18e4
1.67e7
8.37e6
ES 1234678D
8.70e7*
40.66
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 3.04e3
3.44e7
1.72e7
ES 1234678D
8.30e7*
40.66
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 1.07e4
3.28e7
1.64e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.23e7
6.15e6


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.37e3
0%
OCDD
6.83e7*
43.24
Abs. Int.
2.30e7
1.15e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 4.65e3
0%
OCDD
7.63e7*
43.23
Abs. Int.
2.58e7
1.29e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 3.40e3
0%
ES OCDD
1.28e8*
43.22
Abs. Int.
4.34e7
2.17e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.30e3
0%
ES OCDD
1.41e8*
43.22
Abs. Int.
4.68e7
2.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.82e6
2.41e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.13e3
0%
2378F
1.46e7*
27.68
Abs. Int.
3.55e6
1.77e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.40e3
0%
RRF(2378F) = (1.46e7 + 1.86e7) * 100pg / (1.53e8 + 1.98e8) * 10pg = 0.946
PSW 28-Jul-2021 08:20
OK - CL 28Jul21
2378F
1.86e7*
27.67
Abs. Int.
4.68e6
2.34e6
0.00e0
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.09e4
0%
JS 1234F
1.56e8
26.33
ES 2378F
1.53e8
27.65
Abs. Int.
3.51e7
1.76e7
0.00e0
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.65e4
0%
JS 1234F
1.98e8
26.33
ES 2378F
1.98e8
27.65
Abs. Int.
4.61e7
2.30e7
0.00e0
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.27e3
0%
Abs. Int.
1.50e4
7.52e3
0.00e0


Rel. Int.
100%
0%
Abs. Int.
1.31e4
6.54e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.61e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.73e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.05e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.42e6
1.21e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

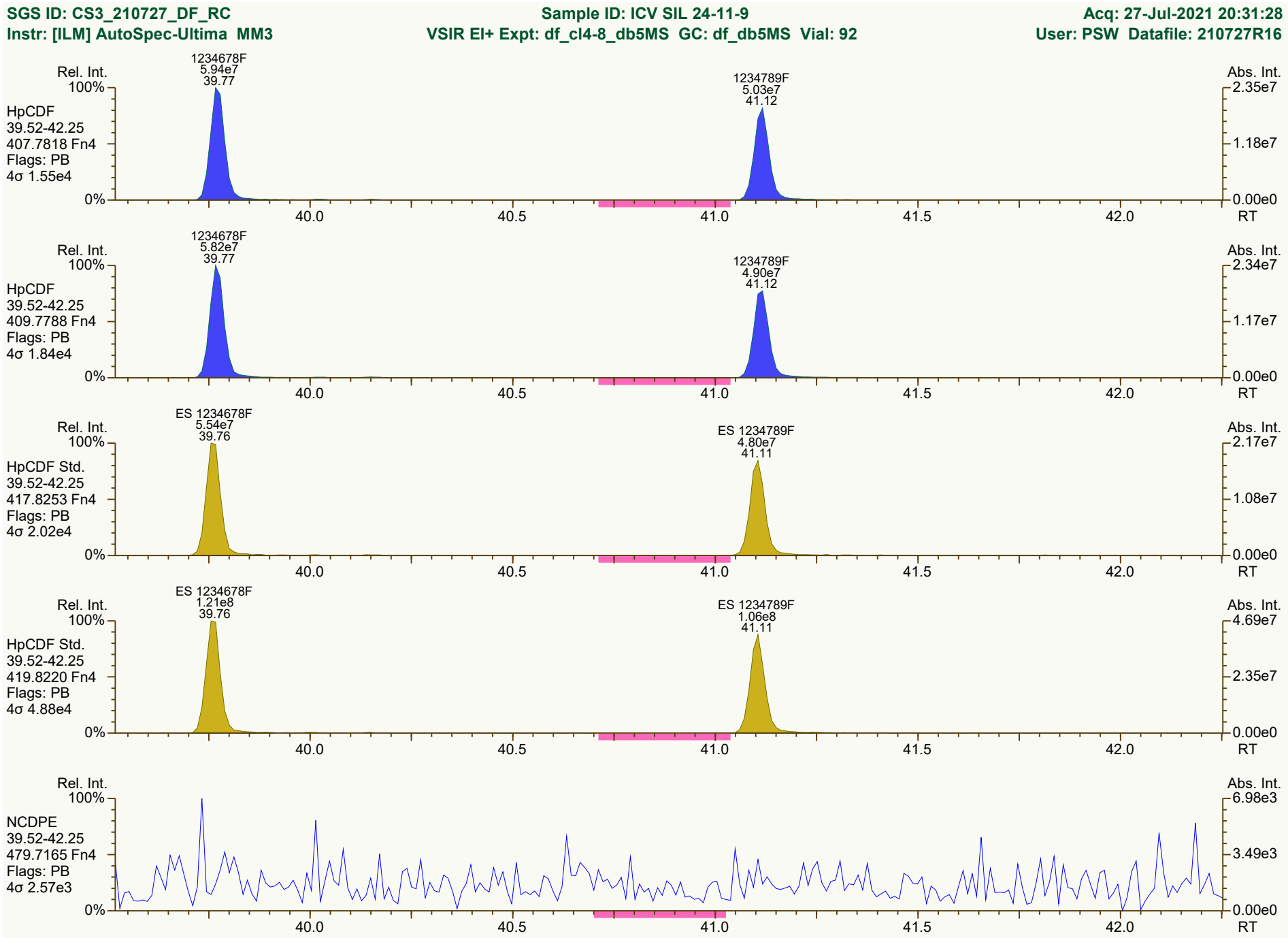

SGS ID: CS3_210727_DF_RC
Sample ID: ICV SIL 24-11-9
Acq: 27-Jul-2021 20:31:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92
User: PSW Datafile: 210727R16
Rel. Int.
Abs. Int.
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 3.34e3
12378F
7.75e7
32.38
23478F
9.01e7
33.47
2.75e7
1.38e7
0.00e0
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 8.99e3
12378F
5.10e7
32.38
23478F
5.71e7
33.47
1.71e7
8.53e6
0.00e0
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 6.11e3
ES 12378F
1.81e8
32.37
ES 23478F
1.80e8
33.46
5.24e7
2.62e7
0.00e0
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 1.05e4
ES 12378F
1.15e8
32.37
ES 23478F
1.16e8
33.46
3.37e7
1.68e7
0.00e0
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.39e3
2.71e4
1.35e4
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5316, 2043, 4878 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 6.73e3
0%
123478F
7.12e7
36.69
123678F
7.48e7*
36.83
234678F
6.99e7
37.50
123789F
6.28e7*
38.43
Abs. Int.
2.26e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 4.27e3
0%
123478F
5.61e7
36.69
123678F
5.95e7*
36.83
234678F
5.63e7
37.50
123789F
5.02e7*
38.43
Abs. Int.
1.81e7
9.06e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 4.32e3
0%
ES 123478F
7.01e7
36.67
ES 123678F
8.37e7
36.81
ES 234678F
7.45e7*
37.48
ES 123789F
7.05e7*
38.41
Abs. Int.
2.56e7
1.28e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.73e3
0%
ES 123478F
1.34e8
36.67
ES 123678F
1.58e8
36.81
ES 234678F
1.42e8*
37.48
ES 123789F
1.35e8*
38.41
Abs. Int.
4.87e7
2.44e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.28e3
0%
Abs. Int.
7.21e3
3.60e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

SGS ID: CS3_210727_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

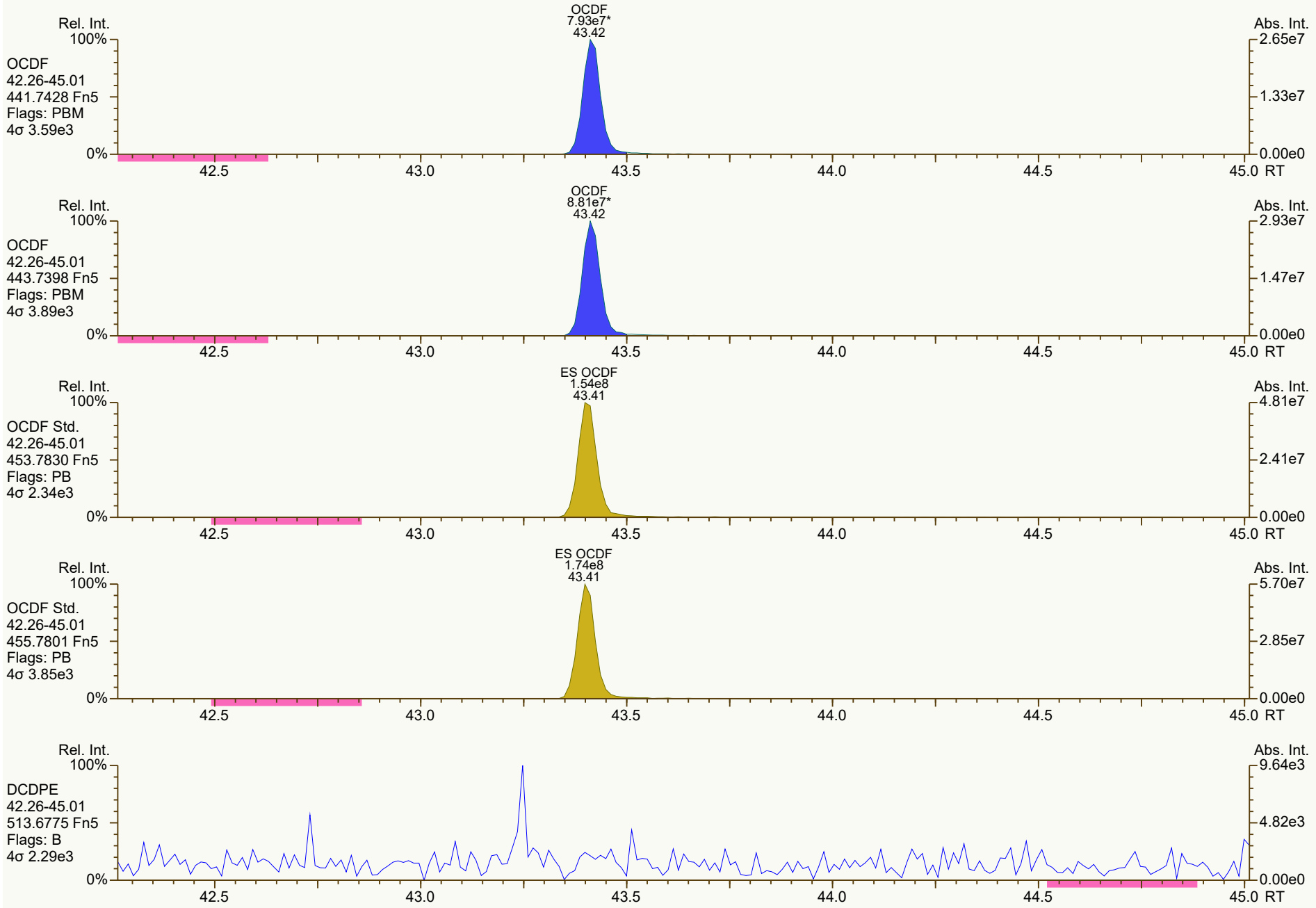
Sample ID: ICV SIL 24-11-9
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92

Acq: 27-Jul-2021 20:31:28
User: PSW Datafile: 210727R16



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6305, 0778, 6253 scc: 537-883

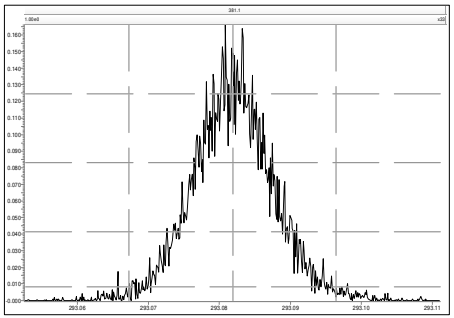
Peak annotation: Areas, Centroids
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 11 of 12


OCDF
7.93e7*
43.42
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PBM
4σ 3.59e3
0%
Abs. Int.
2.65e7
1.33e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
8.81e7*
43.42
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PBM
4σ 3.89e3
0%
Abs. Int.
2.93e7
1.47e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.54e8
43.41
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 2.34e3
0%
Abs. Int.
4.81e7
2.41e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.74e8
43.41
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 3.85e3
0%
Abs. Int.
5.70e7
2.85e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.29e3
0%
Abs. Int.
9.64e3
4.82e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

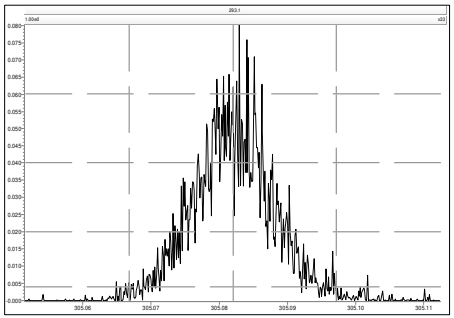
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:15:38 Eastern Daylight Time

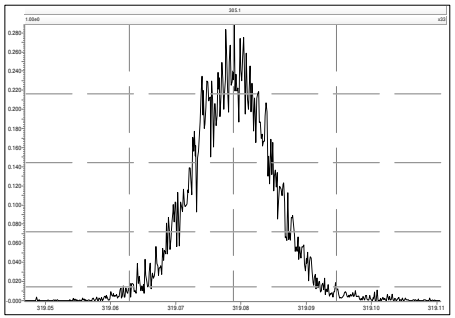
M 292.9824 R 12951



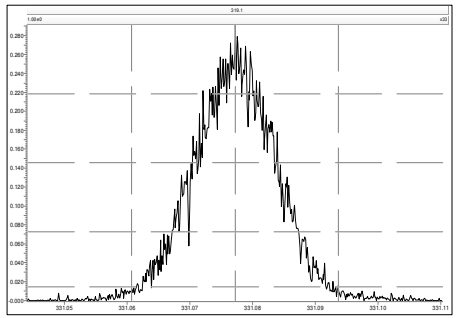
M 304.9824 R 13589



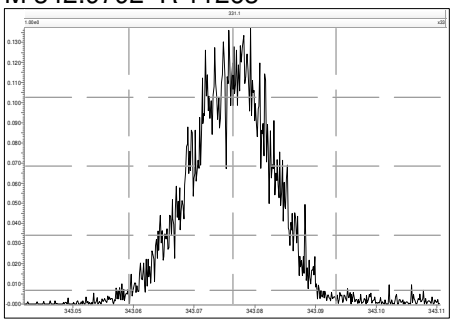
M 318.9792 R 11848



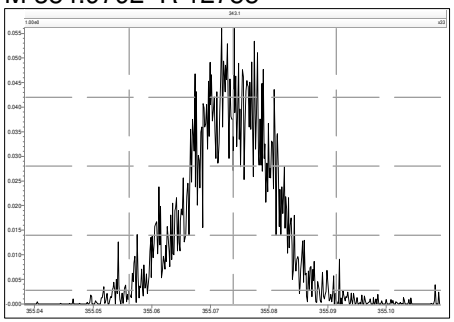
M 330.9792 R 11310



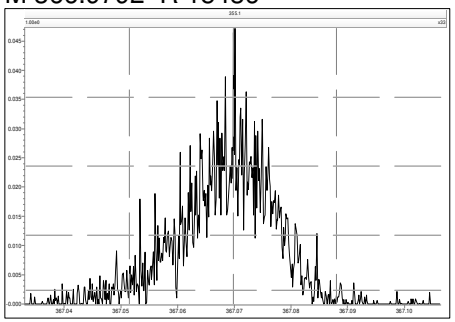
M 342.9792 R 11263



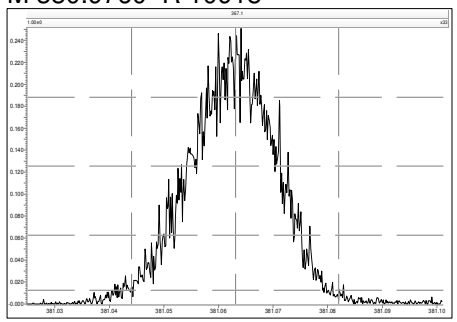
M 354.9792 R 12755



M 366.9792 R 15436



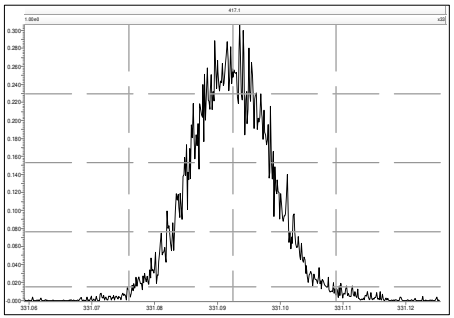
M 380.9760 R 10918



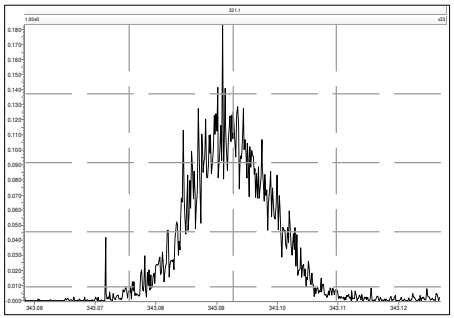
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:03 Eastern Daylight Time

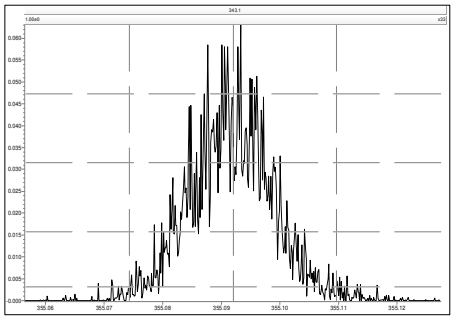
M 330.9792 R 11165



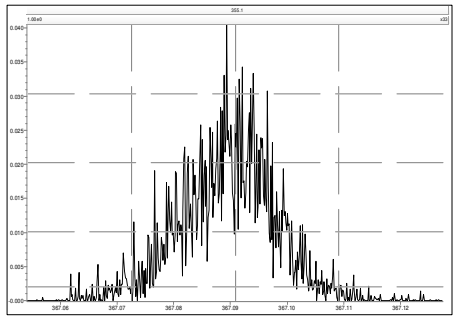
M 342.9792 R 12440



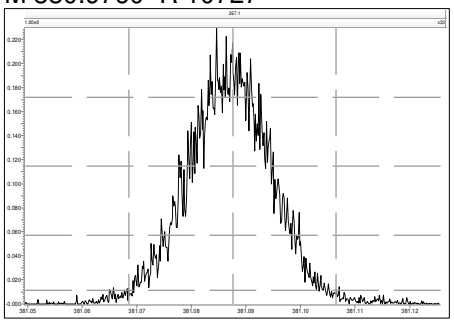
M 354.9792 R 12626



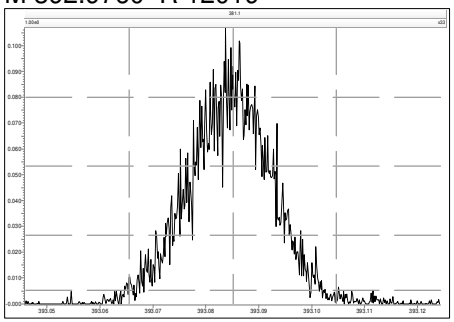
M 366.9792 R 12134



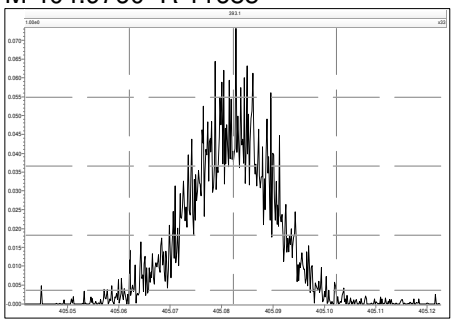
M 380.9760 R 10727



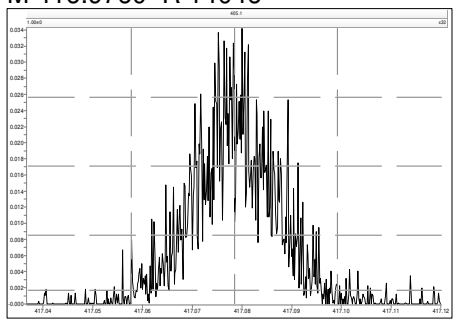
M 392.9760 R 12019



M 404.9760 R 11685



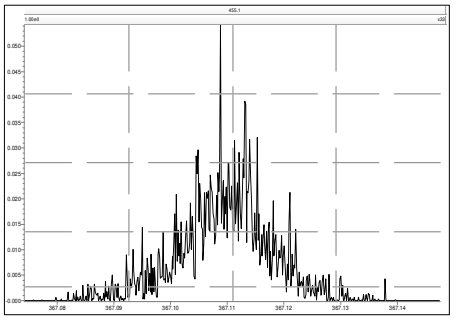
M 416.9760 R 14046



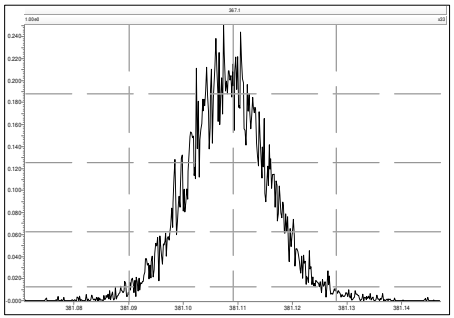
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:24 Eastern Daylight Time

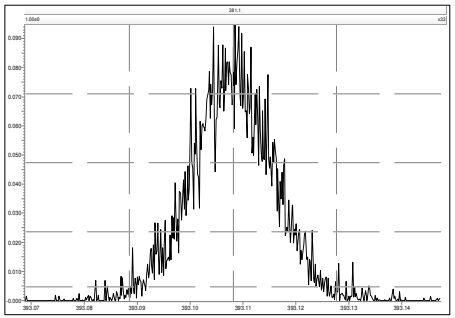
M 366.9792 R 13020



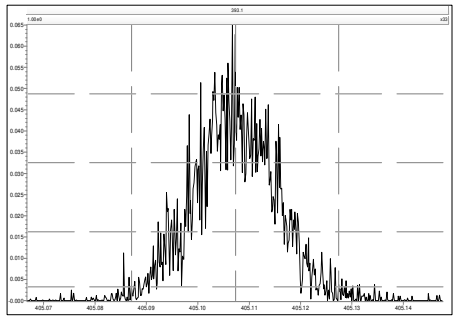
M 380.9760 R 11361



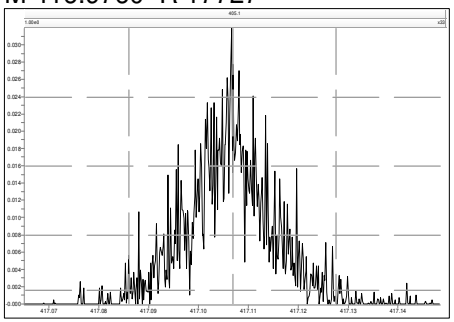
M 392.9760 R 11464



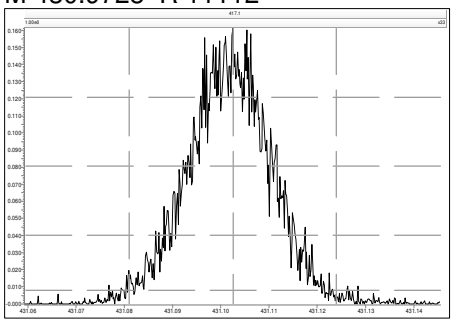
M 404.9760 R 12314



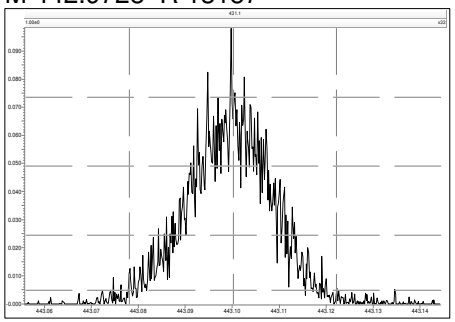
M 416.9760 R 17727



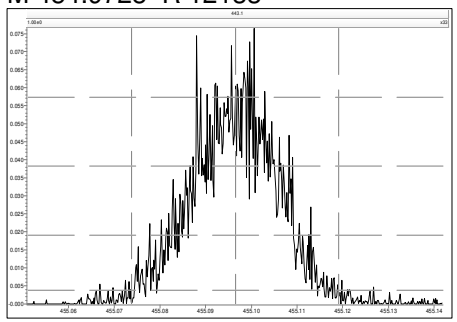
M 430.9728 R 11112



M 442.9728 R 13157



M 454.9728 R 12133



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

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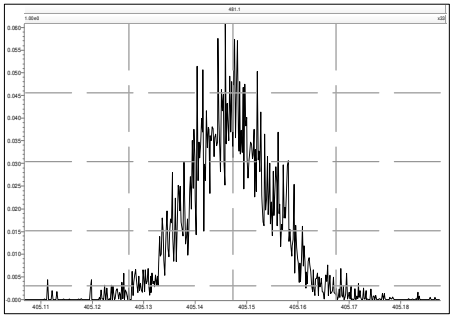
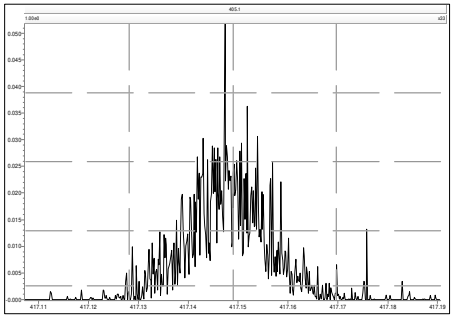
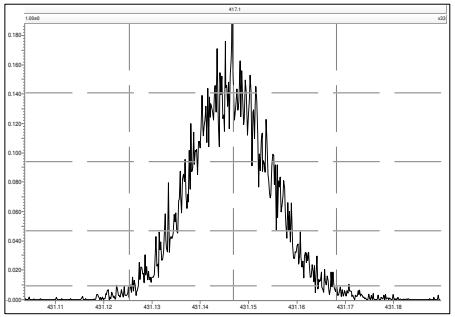
M 404.9760 R 12954



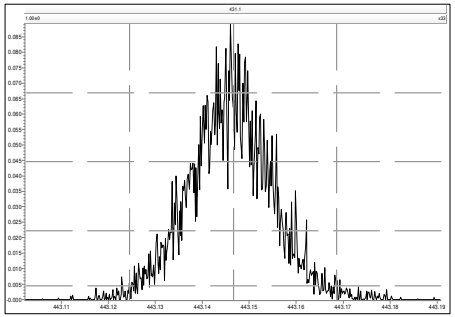
M 416.9760 R 17005



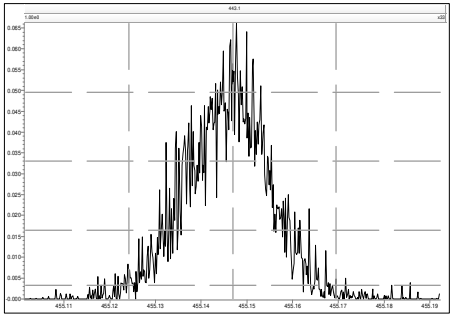
M 430.9728 R 11739



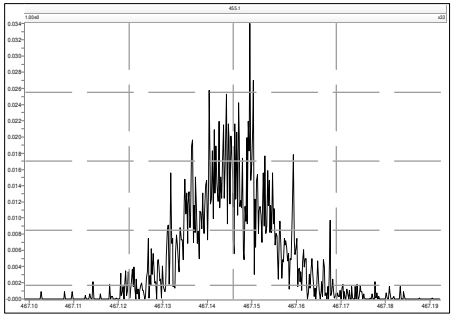
M 442.9728 R 11849



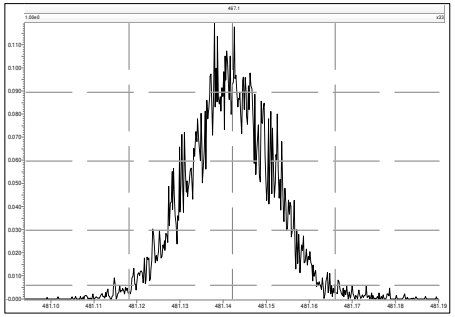
M 454.9728 R 12562



M 466.9728 R 14617



M 480.9696 R 11211



File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

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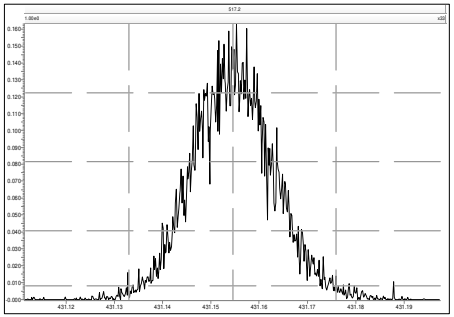
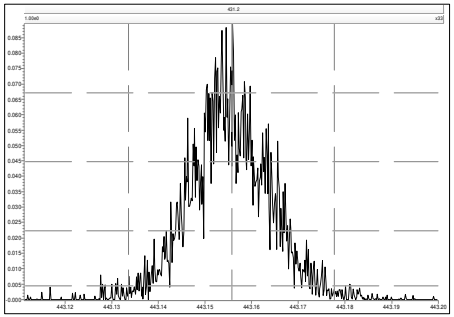
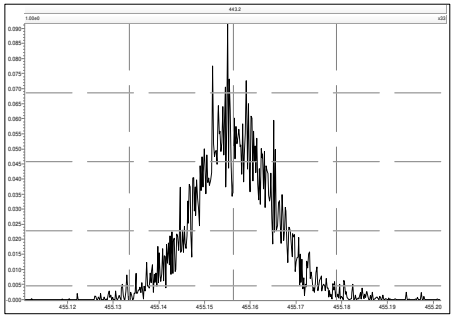
M 430.9728 R 11739



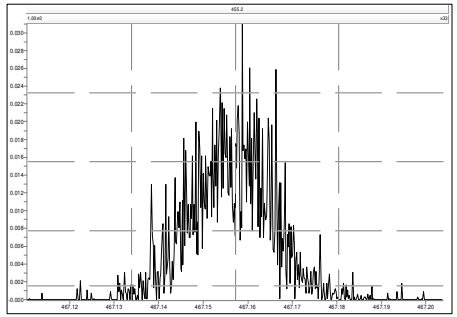
M 442.9728 R 12623



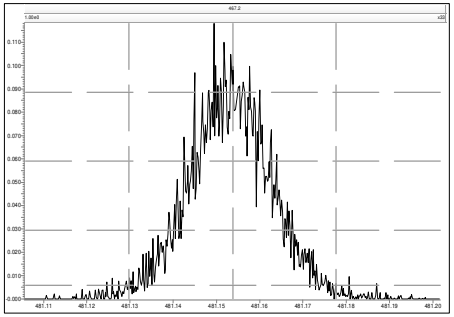
M 454.9728 R 12952



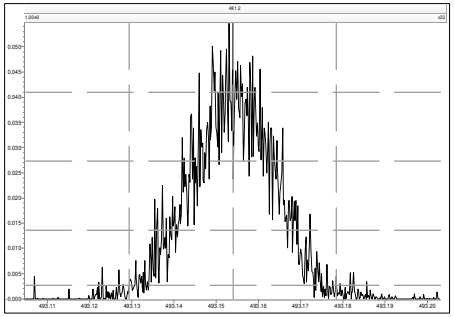
M 466.9728 R 17238



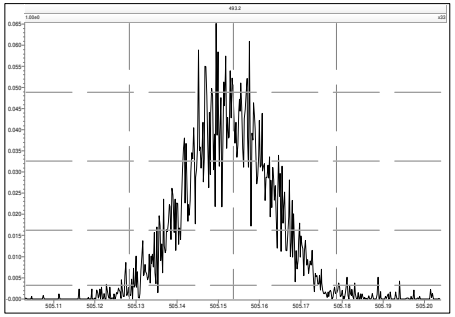
M 480.9696 R 11416



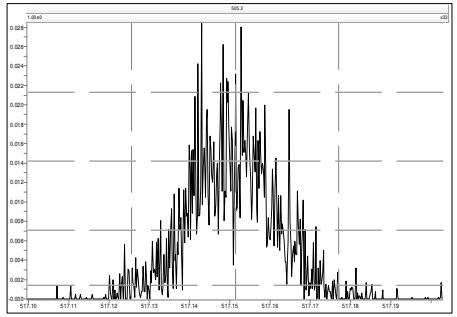
M 492.9696 R 12562



M 504.9696 R 13300



M 516.9697 R 15342



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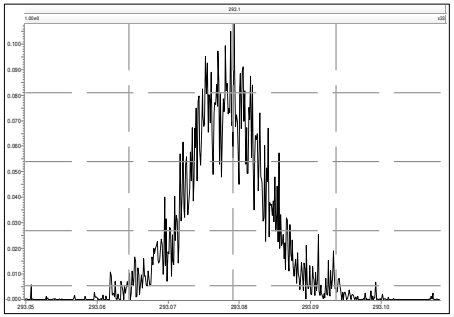
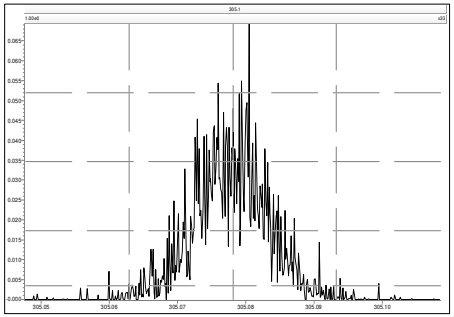


M 304.9824 R 14839



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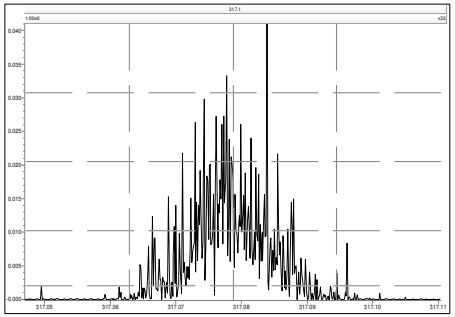
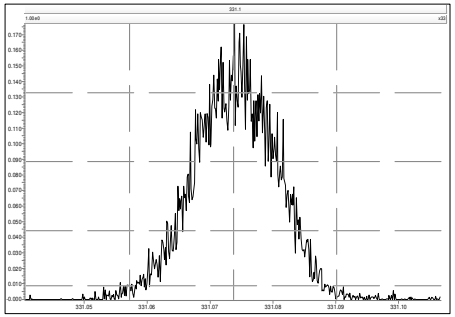
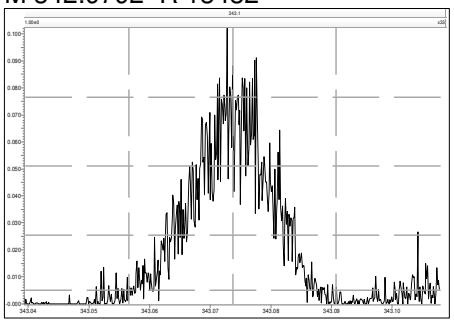


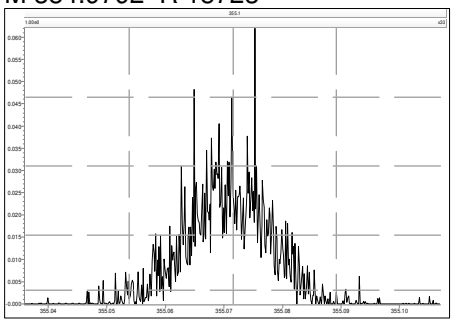
M 330.9792 R 11836



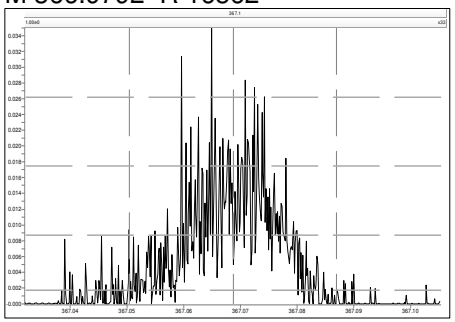
M 342.9792 R 13432



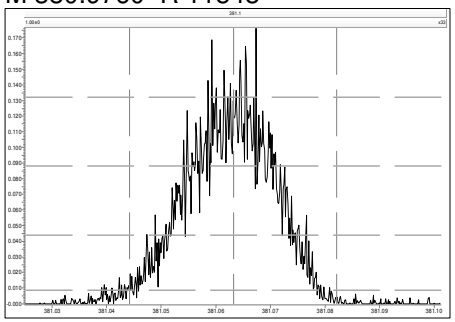
M 354.9792 R 15723



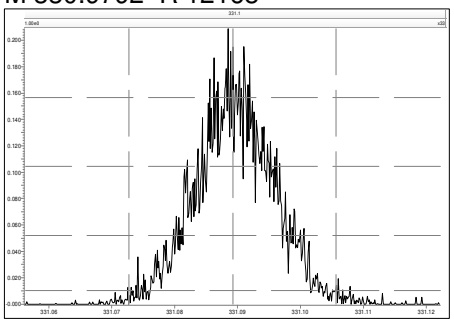
M 366.9792 R 16562



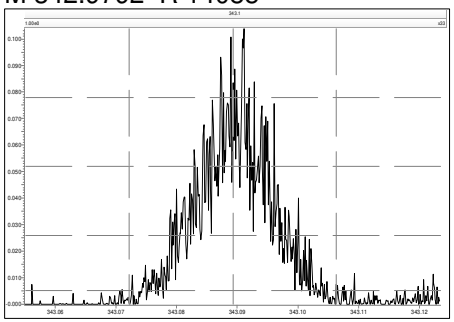
M 380.9760 R 11548



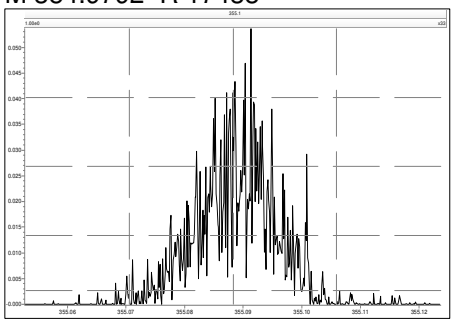
M 330.9792 R 12168



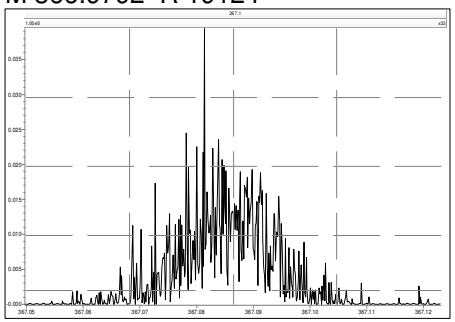
M 342.9792 R 14085



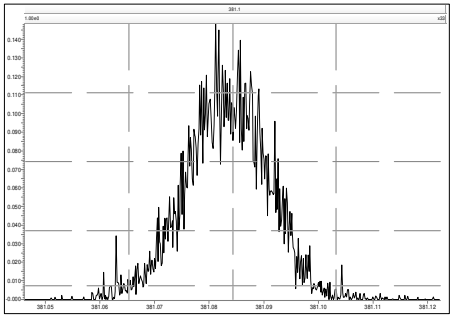
M 354.9792 R 17438



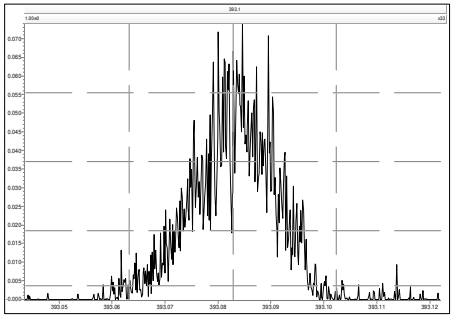
M 366.9792 R 19124



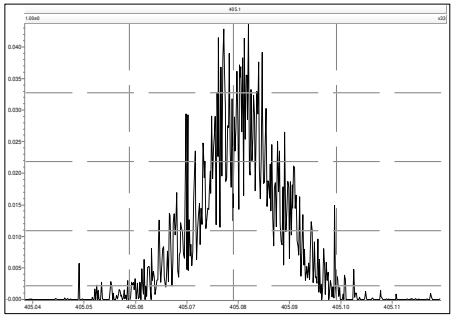
M 380.9760 R 12109



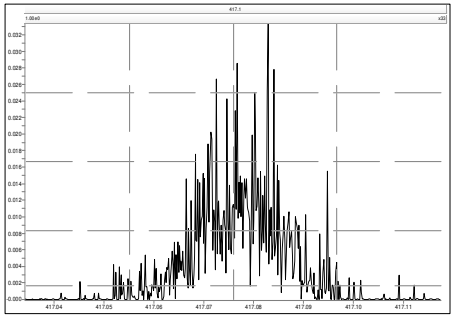
M 392.9760 R 12919



M 404.9760 R 13512



M 416.9760 R 18043



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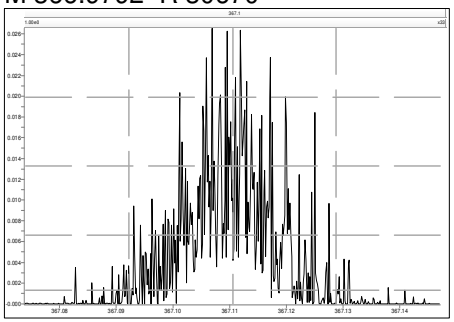
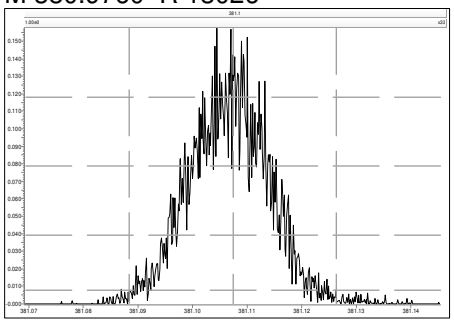
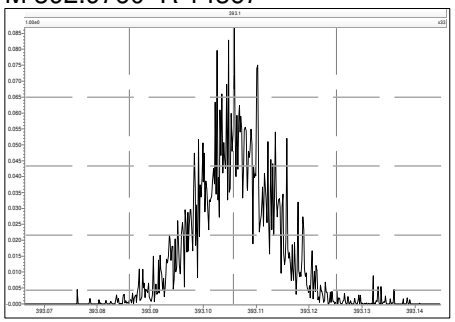


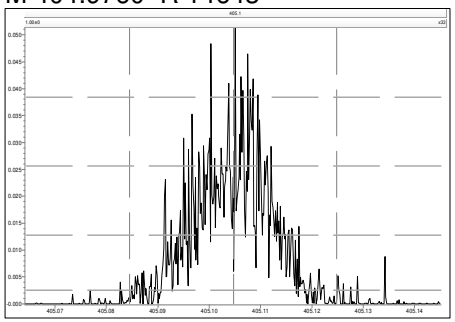
M 380.9760 R 13026



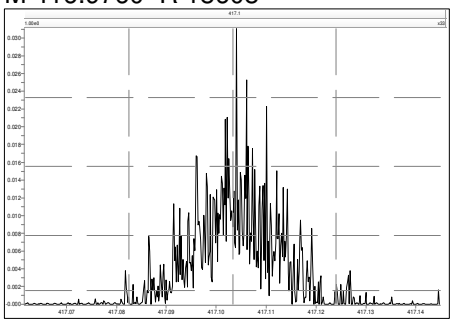
M 392.9760 R 14367



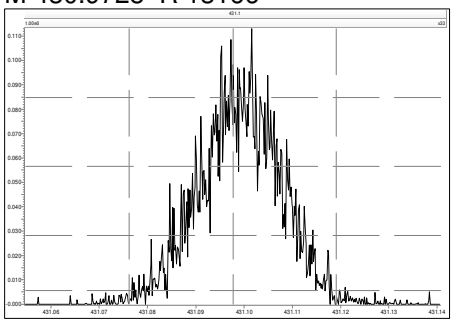
M 404.9760 R 14643



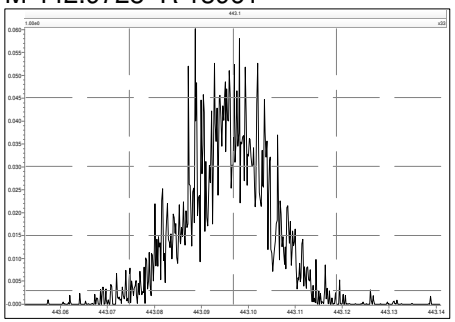
M 416.9760 R 18608



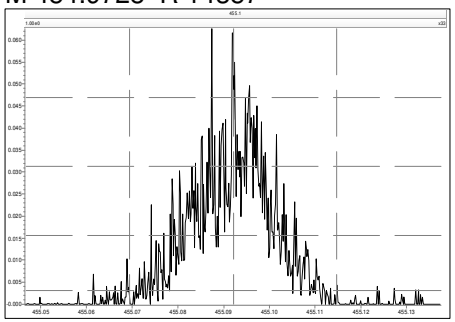
M 430.9728 R 13166



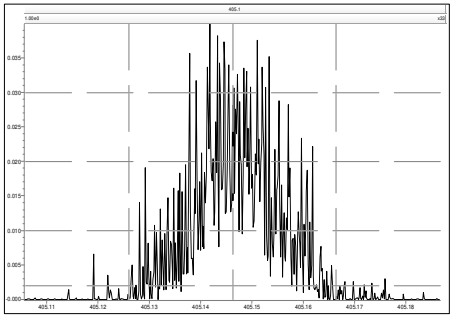
M 442.9728 R 13961



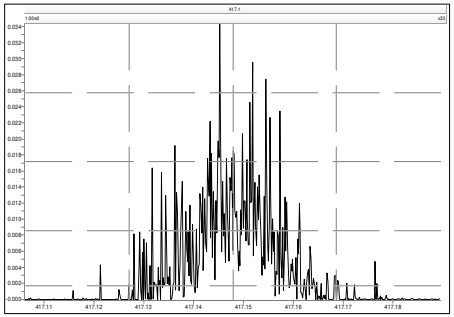
M 454.9728 R 14357



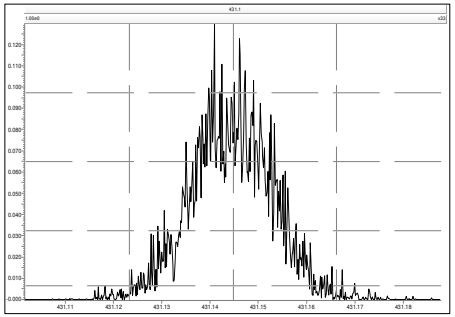
M 404.9760 R 17503



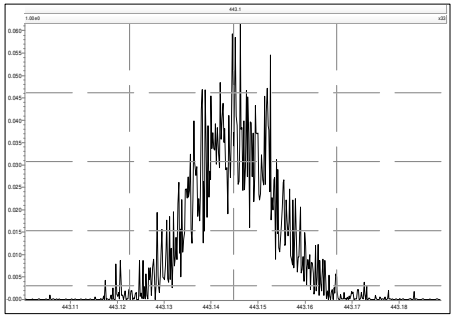
M 416.9760 R 20591



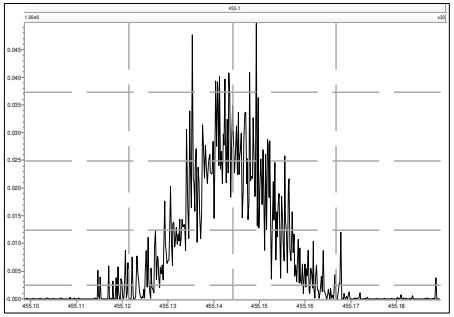
M 430.9728 R 12961



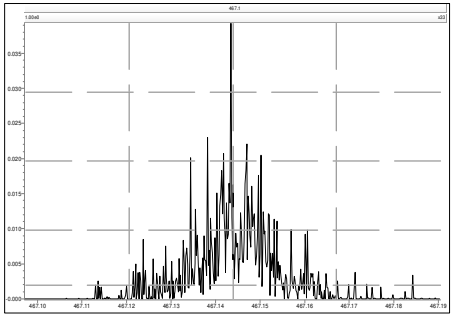
M 442.9728 R 13157



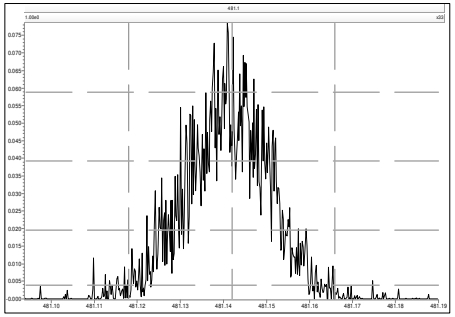
M 454.9728 R 12755



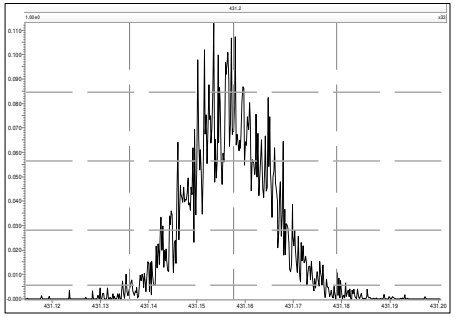
M 466.9728 R 22417



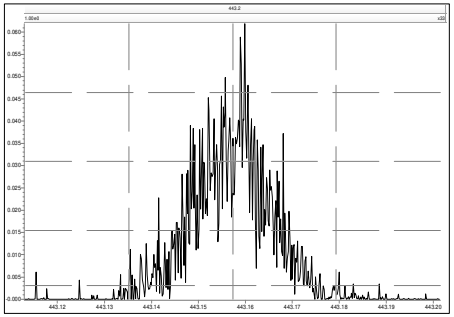
M 480.9696 R 13192



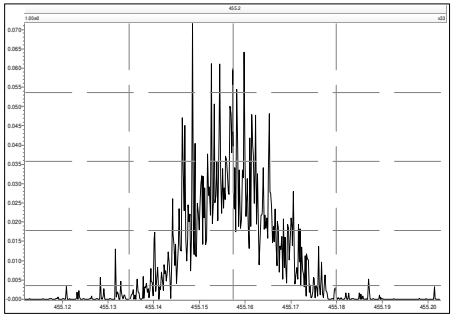
M 430.9728 R 12048



M 442.9728 R 15729



M 454.9728 R 15627



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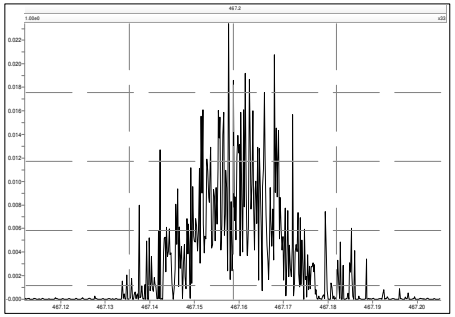

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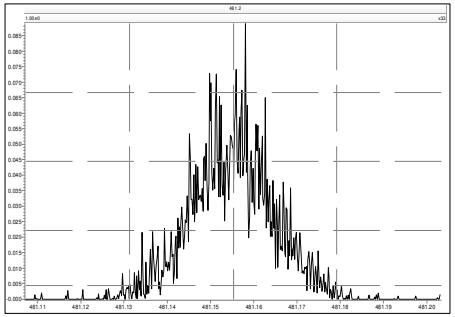

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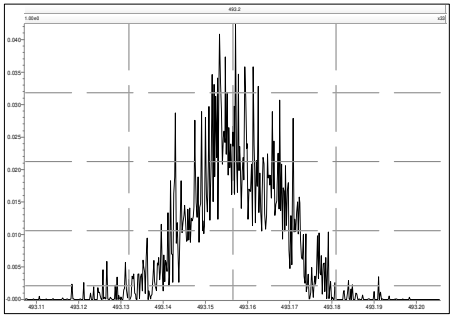

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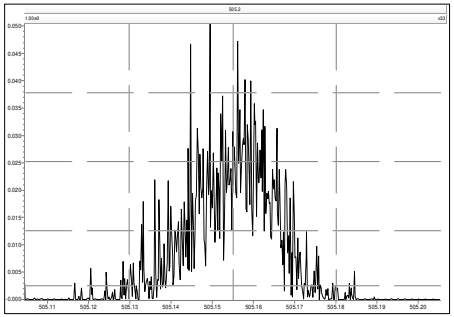

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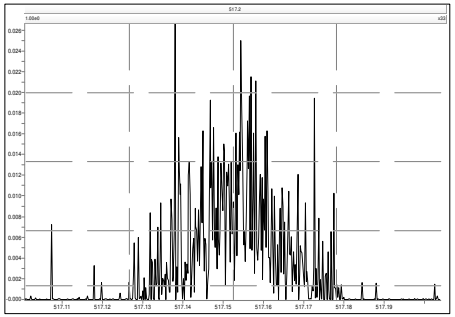

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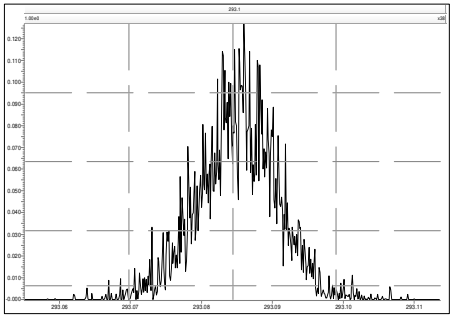

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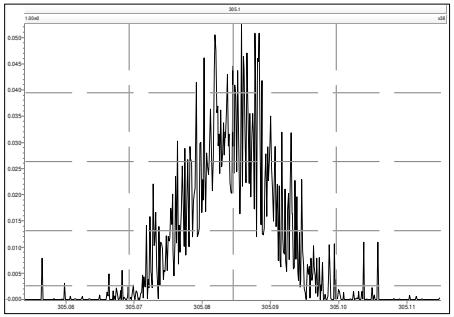

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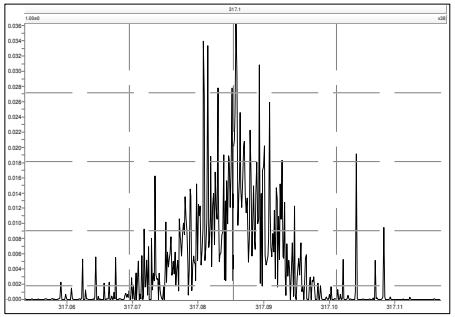

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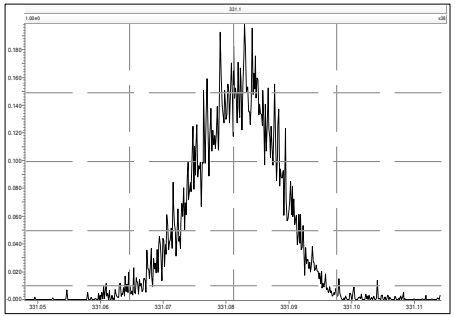

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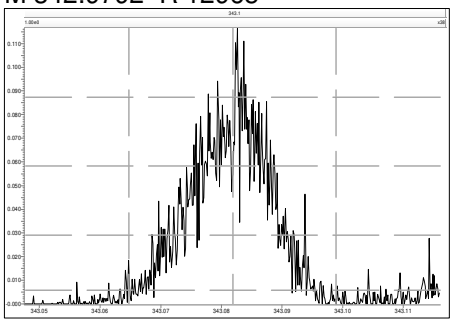

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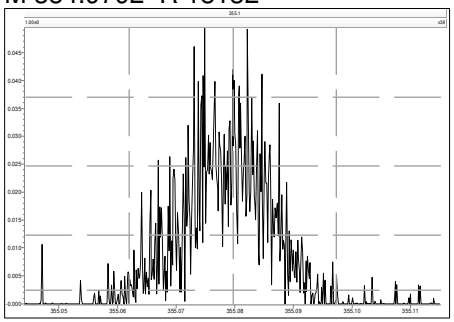

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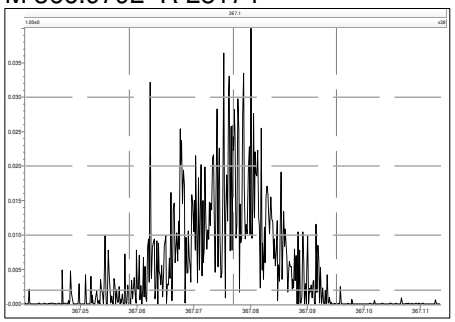

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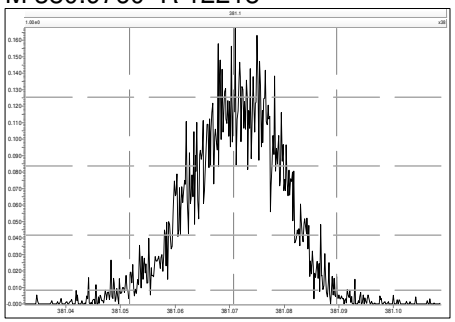

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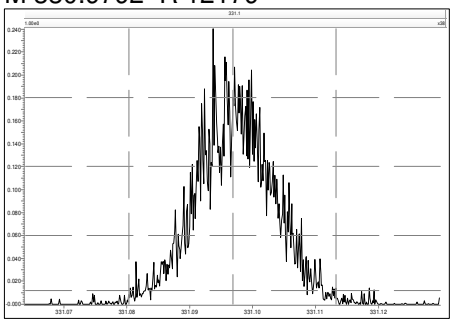

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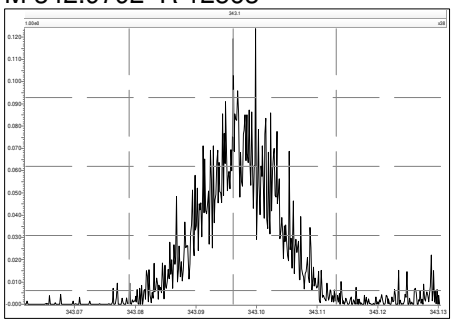

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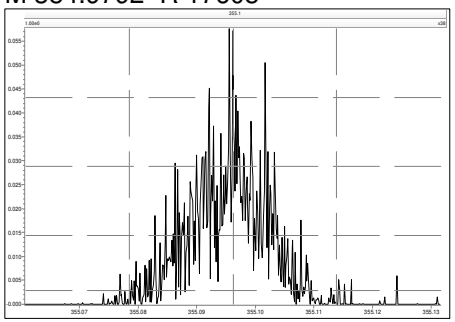

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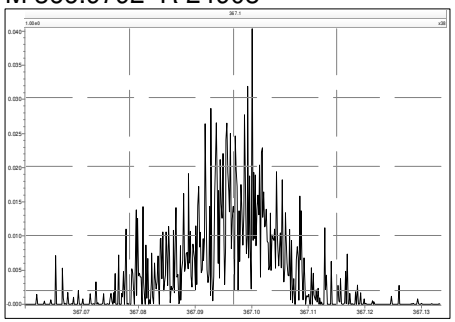

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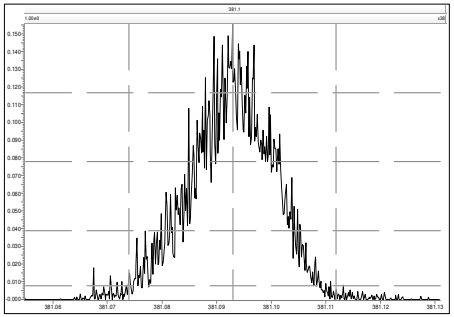

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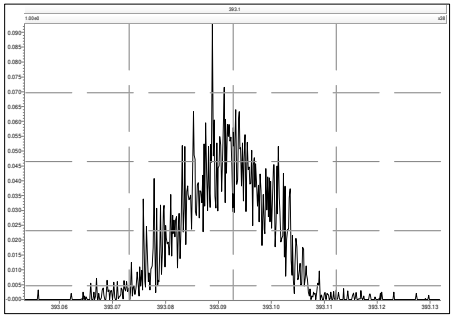

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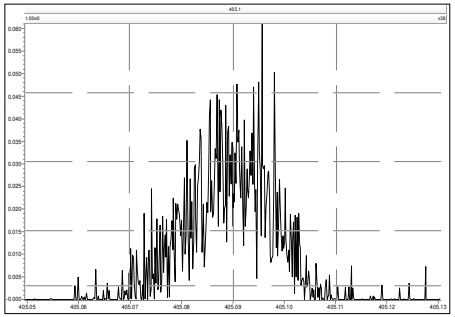

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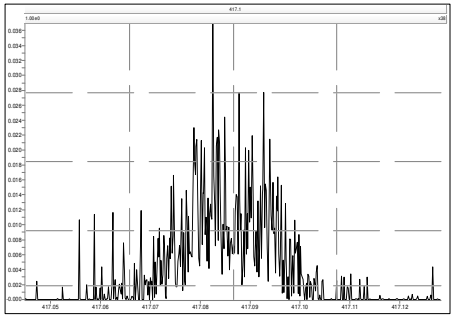

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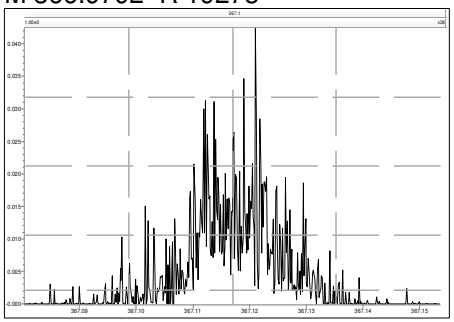

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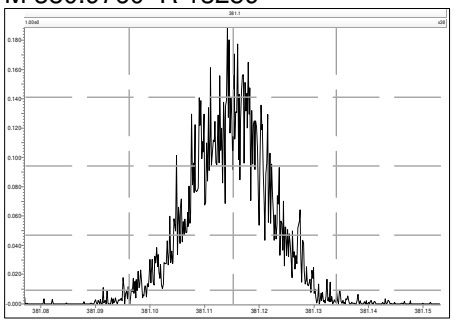

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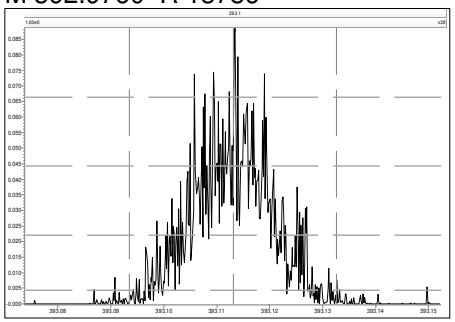

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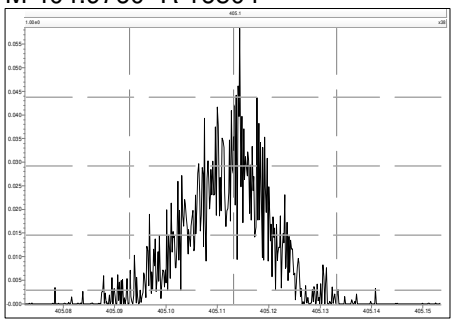

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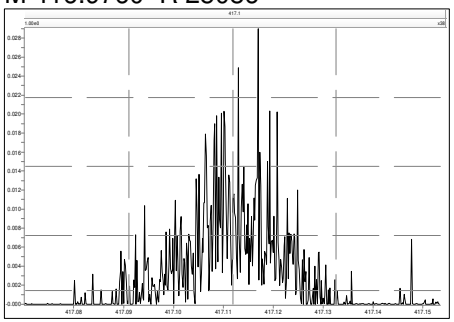

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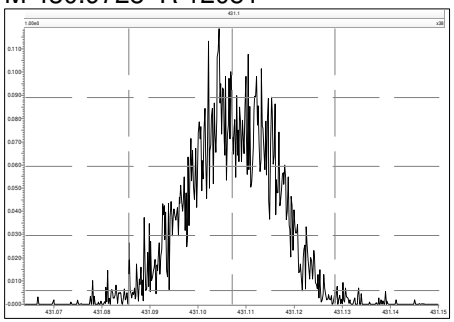

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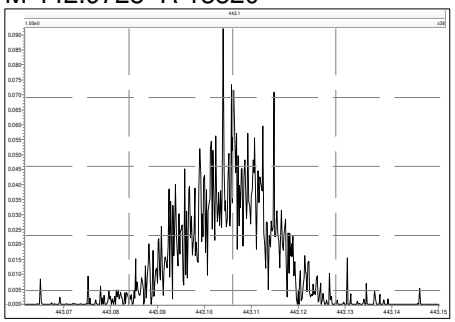

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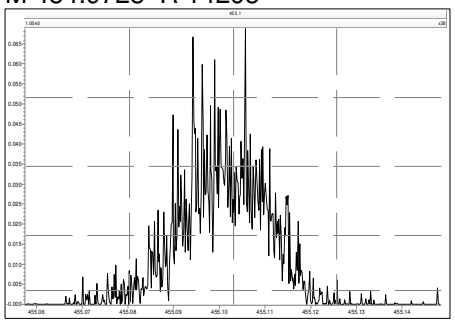

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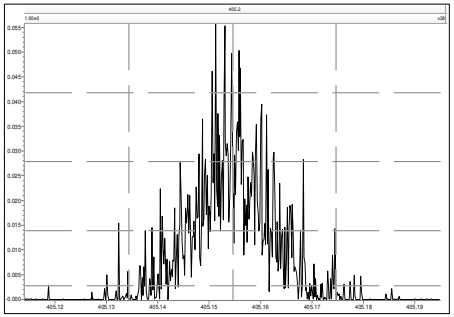

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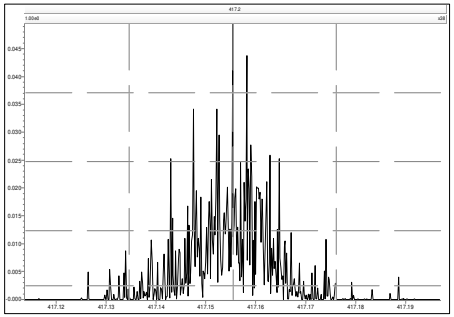

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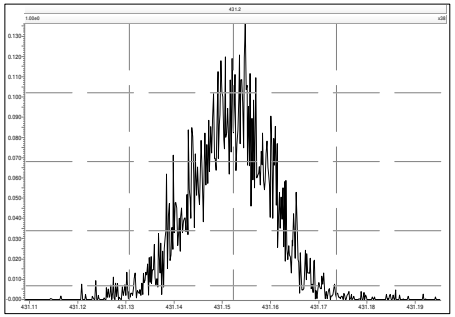

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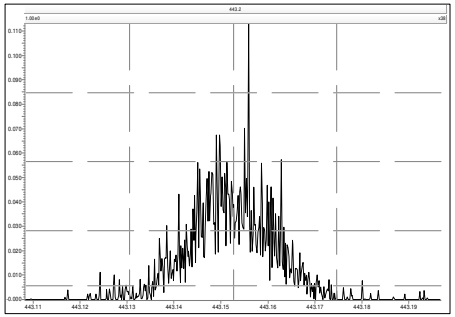

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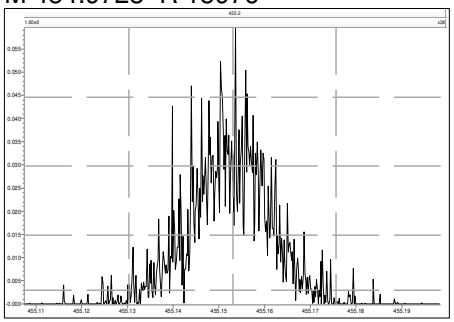

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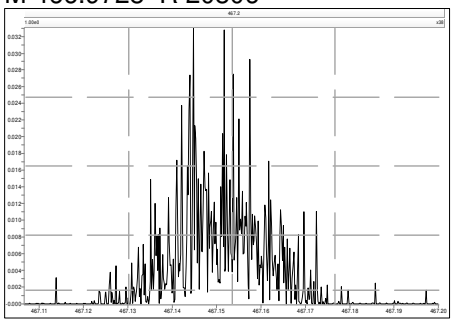

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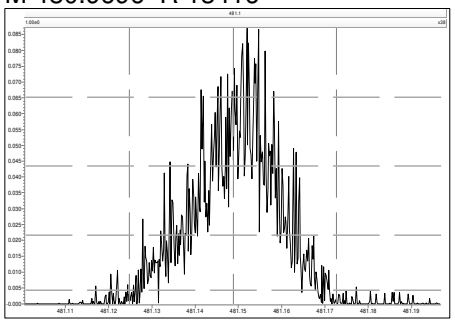

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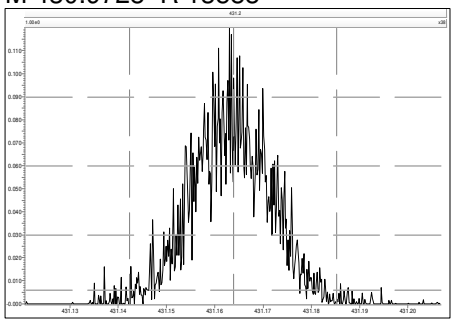

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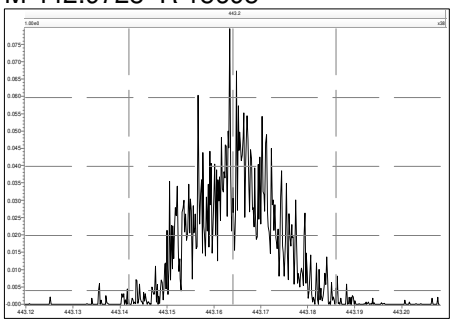

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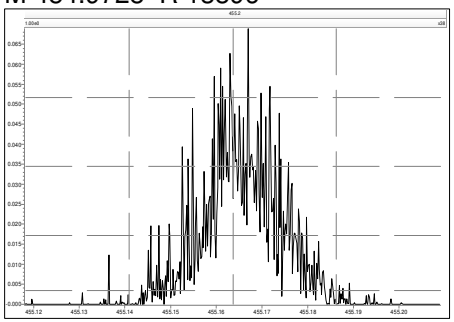

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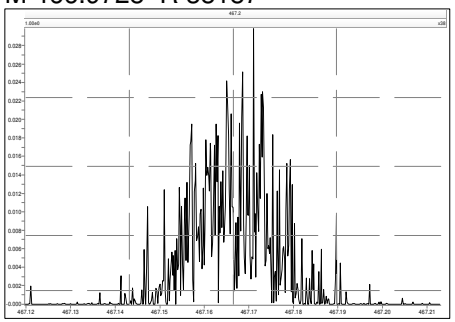

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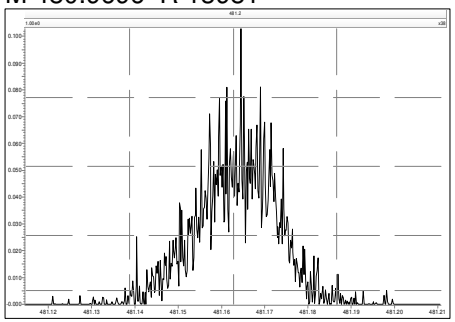

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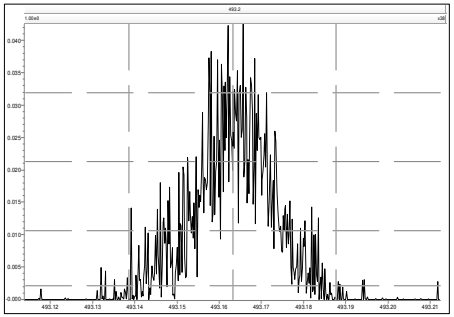

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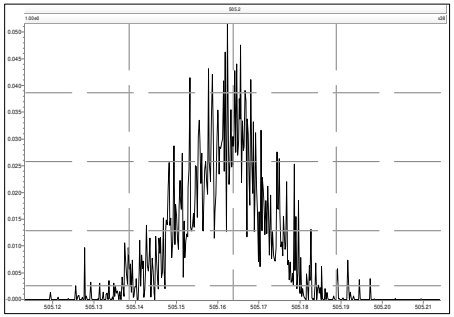

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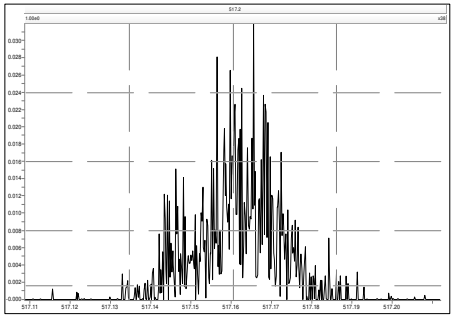


Lab ID: OPR1_18718_DF | APPROVED Carla_Lyon , 12/20/2021, 3:37:39 PM | **Acq'd:** 15 Dec 2021 15:15 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18718_OPR001 | **UTP:** 16-Dec-2021 11:07:08 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 364-859-NLF

Datafile: 211215R06 | **Report:** 20 Dec 2021 14:42 gd | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26		1.0008	1.0008	0	7.60E+06	0.82	Y	1.34	9.58	13972.259	0.197
12378-PeCDD	33.62		1.0005	1.0006	+0.2	2.69E+07	1.52	Y	1.06	47.1	10835.958	0.196
123478-HxCDD	37.47		1.0003	1.0004	+0.2	2.59E+07	1.25	Y	1.06	53.7	9271.165	0.162
123678-HxCDD	37.60		1.0033	1.0036	+0.7	2.80E+07	1.25	Y	1.08	57.7	9271.165	0.171
123789-HxCDD	37.90		1.0110	1.0116	+1.4	2.74E+07	1.26	Y	1.02	50.4	9271.165	0.149
1234678-HpCDD	40.52		1.0003	1.0003	0	1.97E+07	1.04	Y	0.97	55.4	5458.621	0.0996
OCDD	43.06		1.0003	1.0003	0	1.91E+07	0.88	Y	1.07	107	8789.311	0.408
2378-TCDF	27.40		1.0006	1.0008	+0.3	1.03E+07	0.79	Y	0.96	13	8582.035	0.125
12378-PeCDF	32.16		1.0006	1.0006	0	4.43E+07	1.56	Y	0.95	54.5	16461.076	0.194
23478-PeCDF	33.27		1.0006	1.0005	-0.2	4.10E+07	1.57	Y	0.94	58.9	16461.076	0.229
123478-HxCDF	36.49		1.0004	1.0005	+0.2	3.63E+07	1.21	Y	1.23	56.4	23917.11	0.304
123678-HxCDF	36.63		1.0004	1.0005	+0.2	4.36E+07	1.25	Y	1.13	53.7	23917.11	0.236
234678-HxCDF	37.30		1.0005	1.0005	0	3.71E+07	1.26	Y	1.15	55.2	23917.11	0.327
123789-HxCDF	38.26		1.0005	1.0004	-0.2	2.90E+07	1.27	Y	1.14	53.2	23917.11	0.371
1234678-HpCDF	39.62		1.0003	1.0003	0	3.95E+07	1.06	Y	1.36	53.2	9373.179	0.082
1234789-HpCDF	40.96		1.0003	1.0002	-0.2	2.05E+07	1.04	Y	1.30	53.9	9373.179	0.171
OCDF	43.24		1.0002	1.0003	+0.3	1.90E+07	0.91	Y	1.03	108	8272.486	0.415

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0238	+0.2	5.90E+07	0.80	Y	1.03	81.1
ES 12378-PeCDD	33.60	1.2158	1.2181	+4.6	5.39E+07	1.57	Y	1.03	74
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	4.57E+07	1.26	Y	0.99	90.3
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	4.49E+07	1.24	Y	0.97	90.7
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	5.35E+07	1.27	Y	1.12	93.6
ES 1234678-HpCDD	40.51	1.0713	1.0723	+2.4	3.65E+07	1.05	Y	0.99	72.4
ES OCDD	43.05	1.1385	1.1396	+2.8	3.34E+07	0.92	Y	0.78	42.3
ES 2378-TCDF	27.38	1.0519	1.0524	+0.8	8.24E+07	0.79	Y	1.08	70.7
ES 12378-PeCDF	32.14	1.2331	1.2355	+4.6	8.59E+07	1.63	Y	0.93	85.6
ES 23478-PeCDF	33.26	1.2754	1.2783	+5.8	7.43E+07	1.60	Y	0.92	74.9
ES 123478-HxCDF	36.48	0.9656	0.9656	0	5.20E+07	0.52	Y	1.14	89.5
ES 123678-HxCDF	36.61	0.9693	0.9692	-0.2	7.18E+07	0.54	Y	1.30	109
ES 234678-HxCDF	37.28	0.9869	0.9868	-0.2	5.84E+07	0.52	Y	1.20	95.4
ES 123789-HxCDF	38.24	1.0121	1.0123	+0.5	4.81E+07	0.51	Y	1.14	83.2
ES 1234678-HpCDF	39.61	1.0478	1.0486	+1.9	5.46E+07	0.45	Y	0.95	113
ES 1234789-HpCDF	40.96	1.0832	1.0841	+2.2	2.93E+07	0.44	Y	0.85	68
ES OCDF	43.23	1.1434	1.1444	+2.6	3.44E+07	0.92	Y	0.93	36.5

Lab ID: OPR1_18718_DF **Acq'd:** 15 Dec 2021 15:15 PSW **Wt/Vol:** 1 uL **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18718_OPR001 **UTP:** 16-Dec-2021 11:07:08 PSW **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 364-859-NLF

Datafile: 211215R06 **Report:** 20 Dec 2021 14:42 gd **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	7.04E+07	0.79	Y	-	-	
JS 1234-TCDF	26.02		-	-	-	1.08E+08	0.79	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.54E+07	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0246	+0.2	3.09E+07	n/a	-	1.31	83.9	
CS 12347-PeCDD	33.09		1.1978	1.1997	+3.8	5.63E+07	1.64	Y	0.89	89.7	
CS 12346-PeCDF	31.62		1.2130	1.2153	+4.4	8.95E+07	1.56	Y	0.87	95.9	
CS 123469-HxCDF	36.93		0.9775	0.9775	0	6.54E+07	0.51	Y	1.09	118	
CS 1234689-HpCDF	40.00		1.0580	1.0589	+2.2	4.68E+07	0.46	Y	0.86	106	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0246~~	~~+0.2~~	~~3.09E+07~~	~~n/a~~		~~1.26~~	~~104~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~5.63E+07~~	~~1.64~~	~~Y~~	~~0.86~~	~~121~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2153~~	~~+4.4~~	~~8.95E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~112~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9775~~	~~0~~	~~6.54E+07~~	~~0.51~~	~~Y~~	~~0.84~~	~~100~~	
~~SS 1234689-HpCDF~~	~~40.00~~		~~1.0580~~	~~1.0589~~	~~+2.2~~	~~4.68E+07~~	~~0.46~~	~~Y~~	~~0.91~~	~~94.1~~	

Totals	Conc	EMPC
Total TCDD	43.3	43.3
Total PeCDD	70	70
Total HxCDD	177	177
Total HpCDD	69	69
Total Tetra-Octa Dioxins	466	466
Total TCDF	65.1	69.2
Total PeCDF	217	217
Total HxCDF	350	350
Total HpCDF	107	107
Total Tetra-Octa Furans	848	852
Total Tetra-Octa Dioxins & Furans	1310	1320

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.814	0.82
Response	7.62E+06	7.60E+06

Lab ID: OPR1_18718_DF **Acq'd: 15 Dec 2021 15:15 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR001 **UTP: 16-Dec-2021 11:07:08 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 364-859-NLF**

Datafile: 211215R06 **Report: 20 Dec 2021 14:42 gd** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.61		0.8726	0.8714	-1.8	9.73E+06	0.78	Y	1.34	12.3	13972.259	0.197
1379-TCDD	NotFnd		0.8851						1.34		13972.259	0.197
1369-TCDD	NotFnd		0.9002						1.34		13972.259	0.197
1469-TCDD	NotFnd		0.9275						1.34		13972.259	0.197
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		13972.259	0.197
1378-TCDD	NotFnd		0.9427						1.34		13972.259	0.197
1268-TCDD	NotFnd		0.9498						1.34		13972.259	0.197
1478-TCDD	NotFnd		0.9584						1.34		13972.259	0.197
1279-TCDD	NotFnd		0.9644						1.34		13972.259	0.197
1234/1269-TCDD	NotFnd		0.9766						1.34		13972.259	0.197
1236-TCDD	NotFnd		0.9813						1.34		13972.259	0.197
1237/1238-TCDD	NotFnd		0.9906						1.34		13972.259	0.197
1239-TCDD	28.11		0.9952	0.9953	+0.2	7.00E+06	0.77	Y	1.34	8.82	13972.259	0.197
2378-TCDD	**28.26**		**1.0008**	1.0008	**0**	7.60E+06	0.82	Y	**1.34**	**9.58**	**13972.259**	**0.197**
1278-TCDD	NotFnd		1.0122						1.34		13972.259	0.197
1267-TCDD	NotFnd		1.0168						1.34		13972.259	0.197
1289-TCDD	29.23		1.0349	1.0352	+0.5	9.99E+06	0.78	Y	1.34	12.6	13972.259	0.197
12479/12468-PeCDD	31.11		0.9267	0.9260	-1.3	6.36E+06	1.53	Y	1.06	11.1	10835.958	0.196
12469-PeCDD	NotFnd		0.9425						1.06		10835.958	0.196
12368-PeCDD	NotFnd		0.9588						1.06		10835.958	0.196
12478-PeCDD	NotFnd		0.9643						1.06		10835.958	0.196
12379-PeCDD	NotFnd		0.9673						1.06		10835.958	0.196
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		10835.958	0.196
12346/12347-PeCDD	NotFnd		0.9859						1.06		10835.958	0.196
12378-PeCDD	33.62		**1.0005**	**1.0006**	**+0.2**	**2.69E+07**	**1.52**	**Y**	**1.06**	**47.1**	**10835.958**	**0.196**
12367-PeCDD	NotFnd		1.0032						1.06		10835.958	0.196
12389-PeCDD	34.06		1.0135	1.0137	+0.4	6.70E+06	1.56	Y	1.06	11.7	10835.958	0.196
124679/124689-HxCDD	35.76		0.9544	0.9547	+0.6	7.54E+06	1.26	Y	1.05	14.9	9271.165	0.16
123468-HxCDD	NotFnd		0.9716						1.05		9271.165	0.16
123679/123689-HxCDD	NotFnd		0.9793						1.05		9271.165	0.16
123469-HxCDD	NotFnd		0.9829						1.05		9271.165	0.16
123478-HxCDD	37.47		**1.0003**	**1.0004**	**+0.2**	**2.59E+07**	**1.25**	**Y**	1.06	**53.7**	**9271.165**	**0.162**
123678-HxCDD	37.60		**1.0033**	**1.0036**	**+0.7**	**2.80E+07**	**1.25**	**Y**	1.08	**57.7**	**9271.165**	**0.171**
123467-HxCDD	NotFnd		1.0084						1.05		9271.165	0.16
123789-HxCDD	37.90		**1.0110**	**1.0116**	**+1.4**	**2.74E+07**	**1.26**	**Y**	1.02	**50.4**	**9271.165**	**0.149**

Lab ID: OPR1_18718_DF **Acq'd: 15 Dec 2021 15:15 PSW** **Wt/Vol: 1 uL** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR001 **UTP: 16-Dec-2021 11:07:08 PSW** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 364-859-NLF**

Datafile: 211215R06 **Report: 20 Dec 2021 14:42 gd** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9843	0	4.84E+06	0.98	Y	0.97	13.6	5458.621	0.0996
1234678-HpCDD	**40.52**		**1.0003**	**1.0003**	**0**	**1.97E+07**	**1.04**	**Y**	**0.97**	**55.4**	**5458.621**	**0.0996**
OCDD	**43.06**		**1.0003**	**1.0003**	**0**	**1.91E+07**	**0.88**	**Y**	**1.07**	**107**	**8789.311**	**0.408**
OCDD-a	43.06	**EMPC**	1.0001	1.0002	+0.3	9.83E+05	3.17	N	0.07	89.1	12645.079	9.51
1368-TCDF	22.48		0.8230	0.8210	-2.7	1.37E+07	0.81	Y	0.96	17.3	8582.035	0.125
1468-TCDF	NotFnd		0.8443						0.96		8582.035	0.125
2468-TCDF	23.71	EMPC	0.8672	0.8659	-1.8	3.22E+06	0.90	N	0.96	4.07	8582.035	0.125
1346/1246-TCDF	NotFnd		0.8802						0.96		8582.035	0.125
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		8582.035	0.125
1348-TCDF	NotFnd		0.8952						0.96		8582.035	0.125
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		8582.035	0.125
1268-TCDF	NotFnd		0.9136						0.96		8582.035	0.125
1467-TCDF	NotFnd		0.9185						0.96		8582.035	0.125
1478-TCDF	NotFnd		0.9247						0.96		8582.035	0.125
1369/1237-TCDF	NotFnd		0.9381						0.96		8582.035	0.125
2467-TCDF	NotFnd		0.9427						0.96		8582.035	0.125
2368-TCDF	NotFnd		0.9484						0.96		8582.035	0.125
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		8582.035	0.125
1278-TCDF	NotFnd		0.9682						0.96		8582.035	0.125
1349-TCDF	NotFnd		0.9725						0.96		8582.035	0.125
1267-TCDF	NotFnd		0.9782						0.96		8582.035	0.125
2346/1249-TCDF	NotFnd		0.9846						0.96		8582.035	0.125
2347/1279-TCDF	NotFnd		0.9926						0.96		8582.035	0.125
2348-TCDF	27.29		0.9966	0.9967	+0.2	1.31E+07	0.79	Y	0.96	16.5	8582.035	0.125
2378-TCDF	**27.40**		**1.0006**	**1.0008**	**+0.3**	**1.03E+07**	**0.79**	**Y**	**0.96**	**13**	**8582.035**	**0.125**
2367/3467-TCDF	NotFnd		1.0139						0.96		8582.035	0.125
1269-TCDF	NotFnd		1.0226						0.96		8582.035	0.125
1239-TCDF	NotFnd		1.0322						0.96		8582.035	0.125
1289-TCDF	29.40		1.0729	1.0739	+1.8	1.46E+07	0.77	Y	0.96	18.4	8582.035	0.125
13468/12468-PeCDF	29.33		0.9135	0.9125	-1.8	7.03E+07	1.56	Y	0.94	93.2	8106.959	0.104
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		16461.076	0.211
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		16461.076	0.211
14678-PeCDF	NotFnd		0.9693						0.94		16461.076	0.211
13479-PeCDF	NotFnd		0.9723						0.94		16461.076	0.211
13469/12479-PeCDF	NotFnd		0.9799						0.94		16461.076	0.211
12346-PeCDF	NotFnd		0.9842						0.94		16461.076	0.211

Lab ID: OPR1_18718_DF | **Acq'd: 15 Dec 2021 15:15 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR001 | **UTP: 16-Dec-2021 11:07:08 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 364-859-NLF**

Datafile: 211215R06 | **Report: 20 Dec 2021 14:42 gd** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		16461.076	0.211
12347-PeCDF	NotFnd		0.9893						0.94		16461.076	0.211
12348-PeCDF	NotFnd		0.9941						0.94		16461.076	0.211
12378-PeCDF	**32.16**		**1.0006**	**1.0006**	**0**	**4.43E+07**	**1.56**	**Y**	**0.95**	**54.5**	**16461.076**	**0.194**
12678/12367-PeCDF	NotFnd		1.0090						0.94		16461.076	0.211
12379-PeCDF	NotFnd		1.0143						0.94		16461.076	0.211
12679-PeCDF	NotFnd		0.9929						0.94		16461.076	0.211
23467/12369-PeCDF	NotFnd		0.9966						0.94		16461.076	0.211
23478-PeCDF	**33.27**		**1.0006**	**1.0005**	**-0.2**	**4.10E+07**	**1.57**	**Y**	**0.94**	**58.9**	**16461.076**	**0.229**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		16461.076	0.211
12349-PeCDF	NotFnd		1.0102						0.94		16461.076	0.211
12389-PeCDF	34.35		1.0325	1.0329	+0.8	8.31E+06	1.56	Y	0.94	11	16461.076	0.211
123468-HxCDF	35.13		0.9628	0.9630	+0.4	8.84E+07	1.25	Y	1.16	132	23917.11	0.302
124678/134678-HxCDF	NotFnd		0.9683						1.16		23917.11	0.302
134679-HxCDF	NotFnd		0.9746						1.16		23917.11	0.302
124679-HxCDF	NotFnd		0.9798						1.16		23917.11	0.302
124689-HxCDF	NotFnd		0.9859						1.16		23917.11	0.302
123467-HxCDF	NotFnd		0.9972						1.16		23917.11	0.302
123478-HxCDF	**36.49**		**1.0004**	**1.0005**	**+0.2**	**3.63E+07**	**1.21**	**Y**	**1.23**	**56.4**	**23917.11**	**0.304**
123678-HxCDF	**36.63**		**1.0004**	**1.0005**	**+0.2**	**4.36E+07**	**1.25**	**Y**	**1.13**	**53.7**	**23917.11**	**0.236**
123479-HxCDF	NotFnd		1.0049						1.16		23917.11	0.302
123469-HxCDF	NotFnd		1.0088						1.16		23917.11	0.302
123679-HxCDF	NotFnd		0.9943						1.16		23917.11	0.302
234678-HxCDF	**37.30**		**1.0005**	**1.0005**	**0**	**3.71E+07**	**1.26**	**Y**	**1.15**	**55.2**	**23917.11**	**0.327**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		23917.11	0.302
123789-HxCDF	**38.26**		**1.0005**	**1.0004**	**-0.2**	**2.90E+07**	**1.27**	**Y**	**1.14**	**53.2**	**23917.11**	**0.371**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		23917.11	0.302
1234678-HpCDF	**39.62**		**1.0003**	**1.0003**	**0**	**3.95E+07**	**1.06**	**Y**	**1.36**	**53.2**	**9373.179**	**0.082**
1234679-HpCDF	NotFnd		1.0067						1.33		9373.179	0.113
1234689-HpCDF	NotFnd		1.0100						1.33		9373.179	0.113
1234789-HpCDF	**40.96**		**1.0003**	**1.0002**	**-0.2**	**2.05E+07**	**1.04**	**Y**	**1.30**	**53.9**	**9373.179**	**0.171**
OCDF	**43.24**		**1.0002**	**1.0003**	**+0.3**	**1.90E+07**	**0.91**	**Y**	**1.03**	**108**	**8272.486**	**0.415**
OCDF-a	43.24		1.0002	1.0003	+0.3	1.19E+06	2.12	Y	0.06	117	11022.096	9.57

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211215R06	Analysis Date:	15-DEC-2021 15:15:44
Lab ID:	OPR1_18718_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.58	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	47.1	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	57.7	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	50.4	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	55.4	35	-	70	Y
OCDD	100	107	78	-	144	Y
2,3,7,8-TCDF	10	13	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.5	40	-	67	Y
2,3,4,7,8-PeCDF	50	58.9	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	56.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53.7	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55.2	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	53.2	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	53.2	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	53.9	39	-	69	Y
OCDF	100	108	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2021 14:42 Analyst: gd

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211215R06 Analysis Date: 15-DEC-2021 15:15:44

Lab ID: OPR1_18718_DF

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	81.1	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	74	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	90.3	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	90.7	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	93.6	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	72.4	26	-	166	Y
13C-OCDD	200	84.6	26	-	397	Y
13C-2,3,7,8-TCDF	100	70.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	85.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	74.9	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	89.5	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	109	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	95.4	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	83.2	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	113	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	68	20	-	186	Y
13C-OCDF	200	73.1	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	33.6	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 20 Dec 2021 14:42 Analyst: gd

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211215R06	Analysis Date:	15-DEC-2021 15:15:44
Lab ID:	OPR1_18718_DF		

Window Defining Standards Results

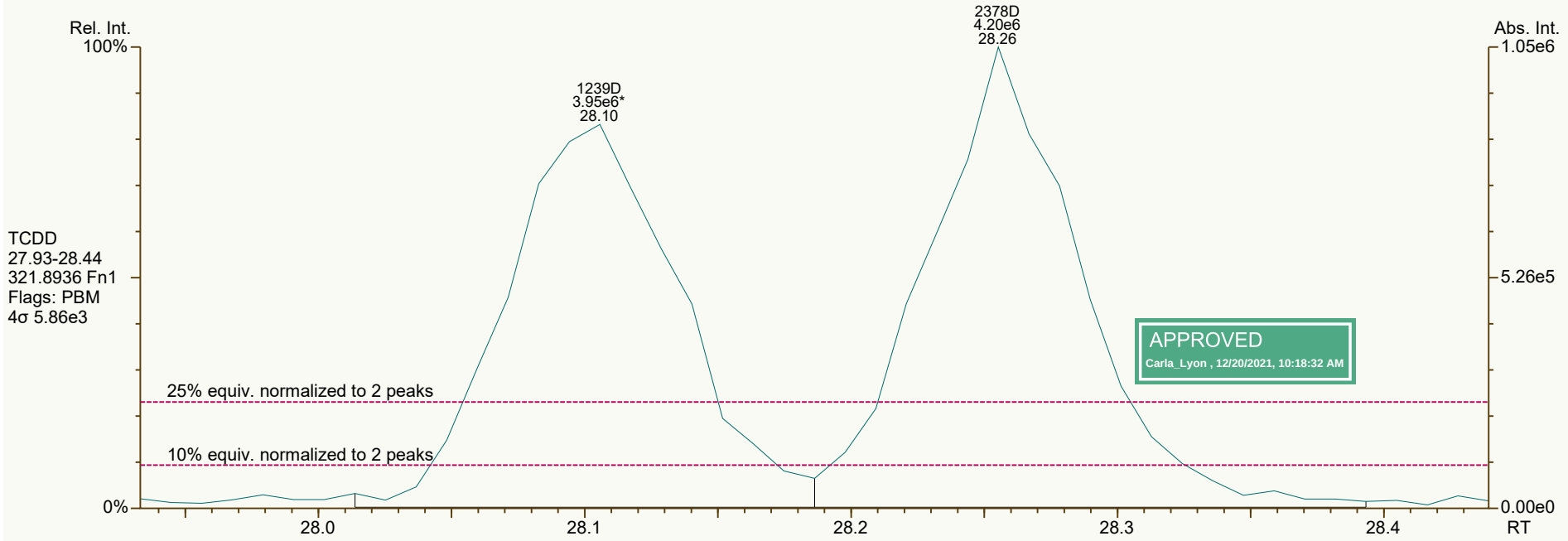
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.61	1289-TCDD	29.23
12479/12468-PeCDD	31.11	12389-PeCDD	34.06
124679/124689-HxCDD	35.76	123789-HxCDD	37.90
1234679-HpCDD	39.87	1234678-HpCDD	40.52
1368-TCDF	22.48	1289-TCDF	29.40
13468/12468-PeCDF	29.33	12389-PeCDF	34.35
123468-HxCDF	35.13	123789-HxCDF	38.26
1234678-HpCDF	39.62	1234789-HpCDF	40.96

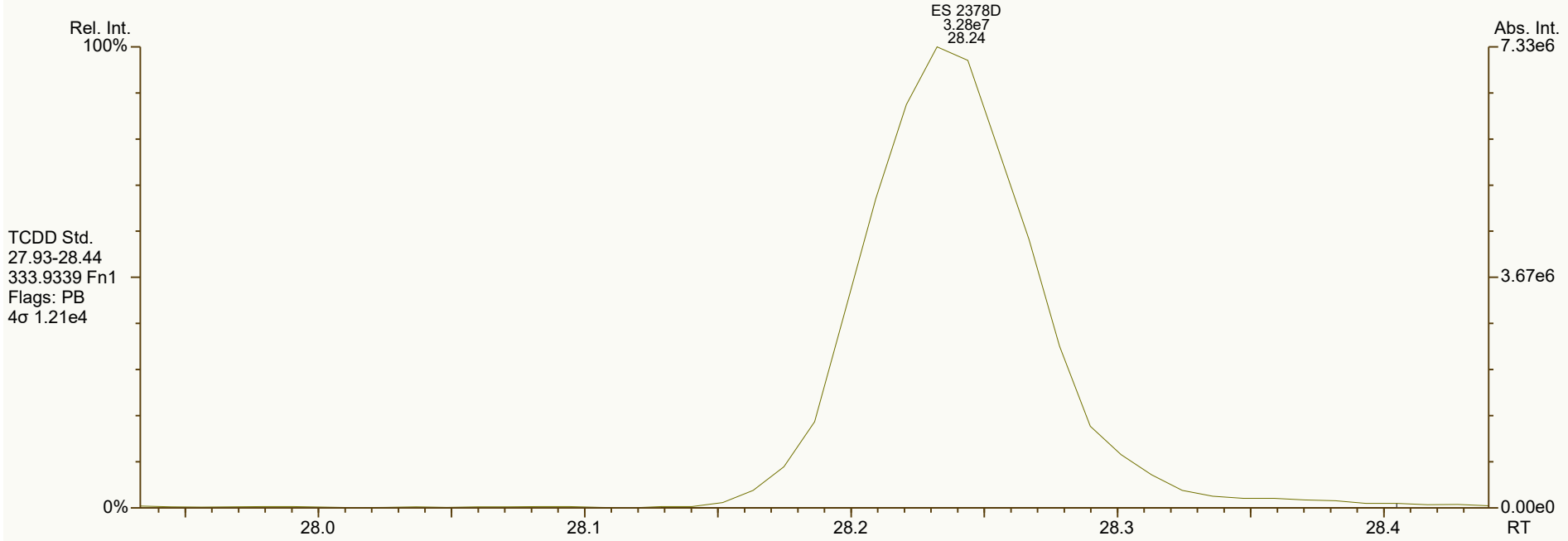
Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.11	2378-TCDD	28.26
2348-TCDF	27.29	2378-TCDF	27.40

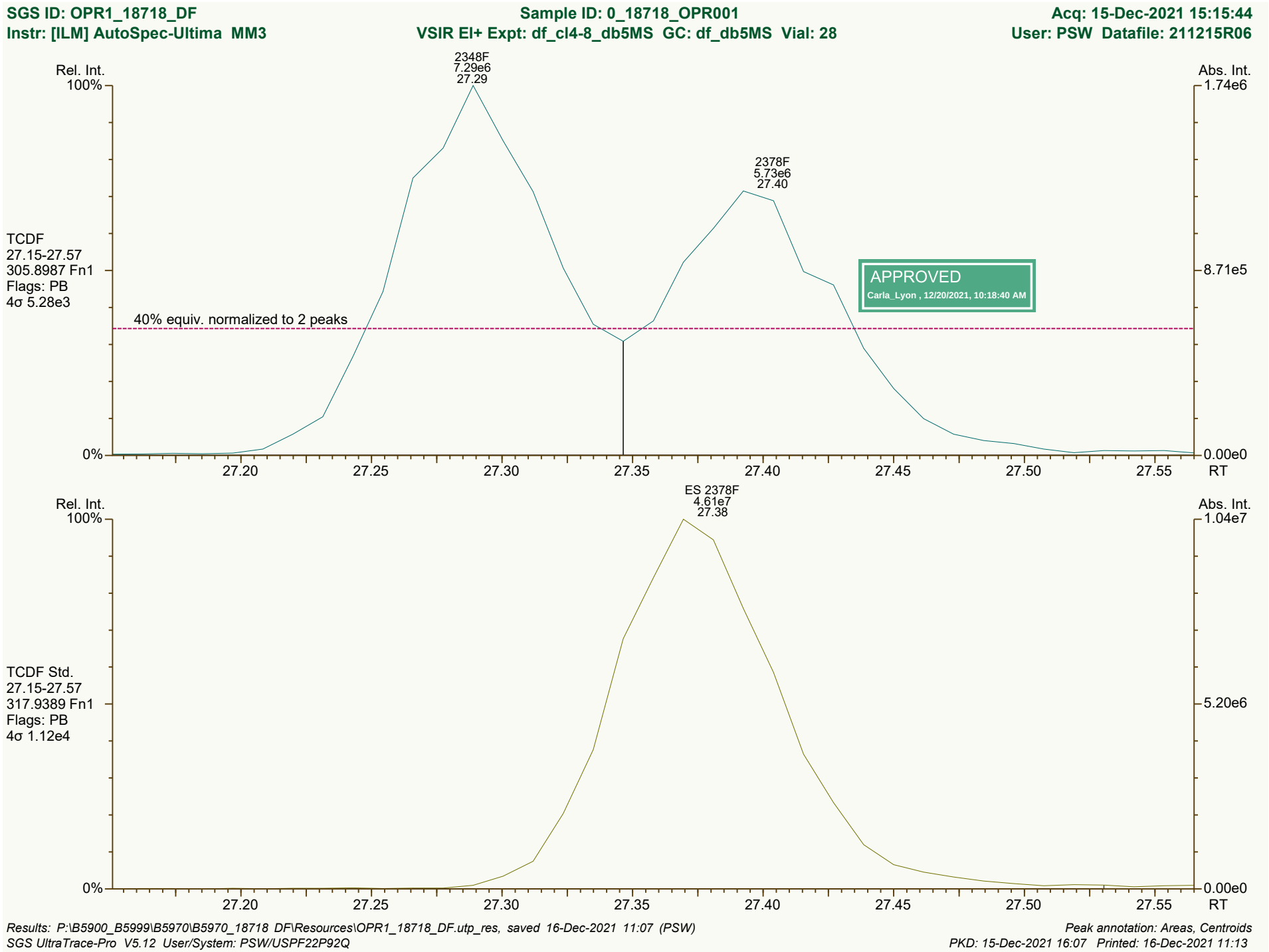
Processed: 20 Dec 2021 14:42 Analyst: gd

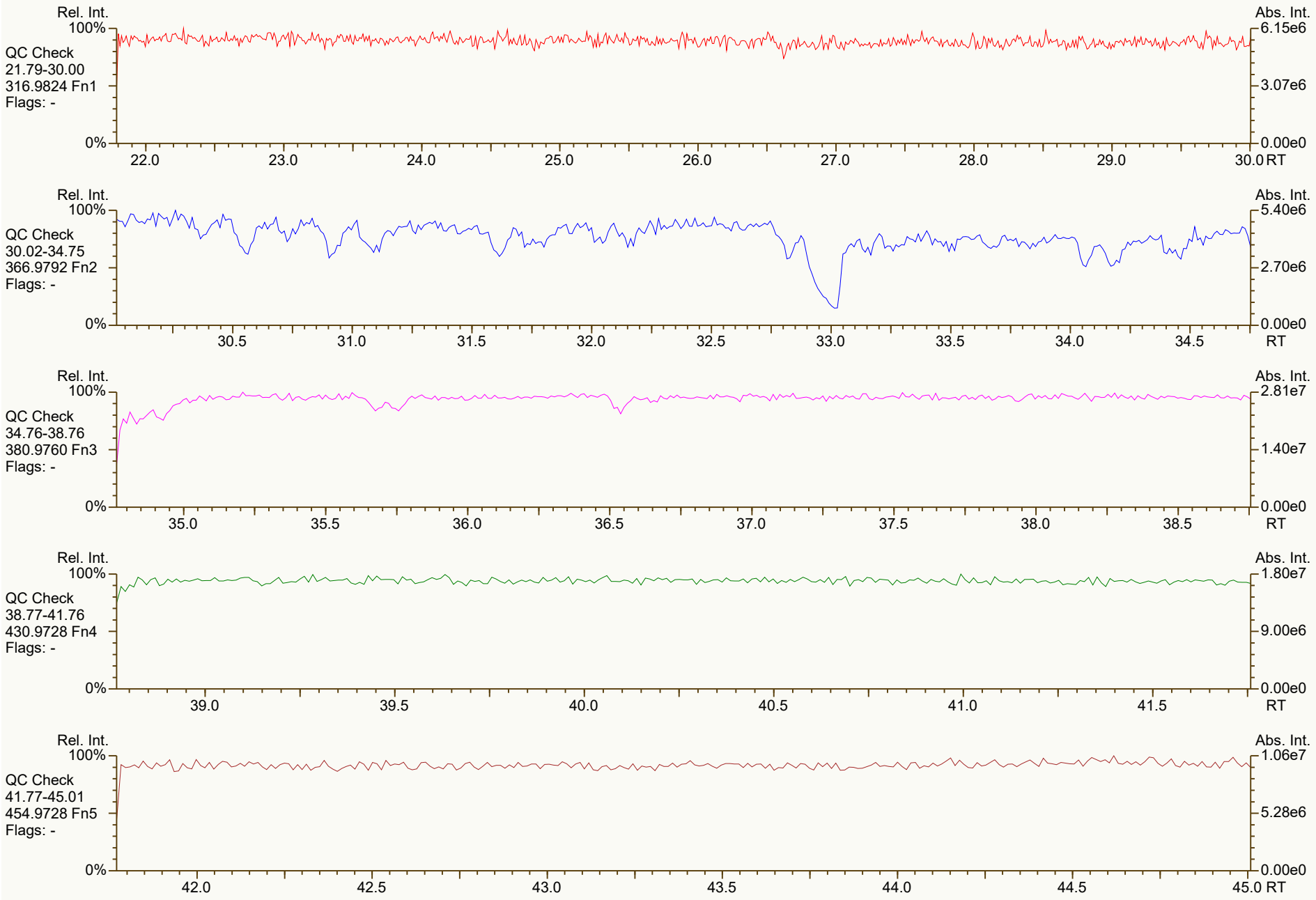
SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06

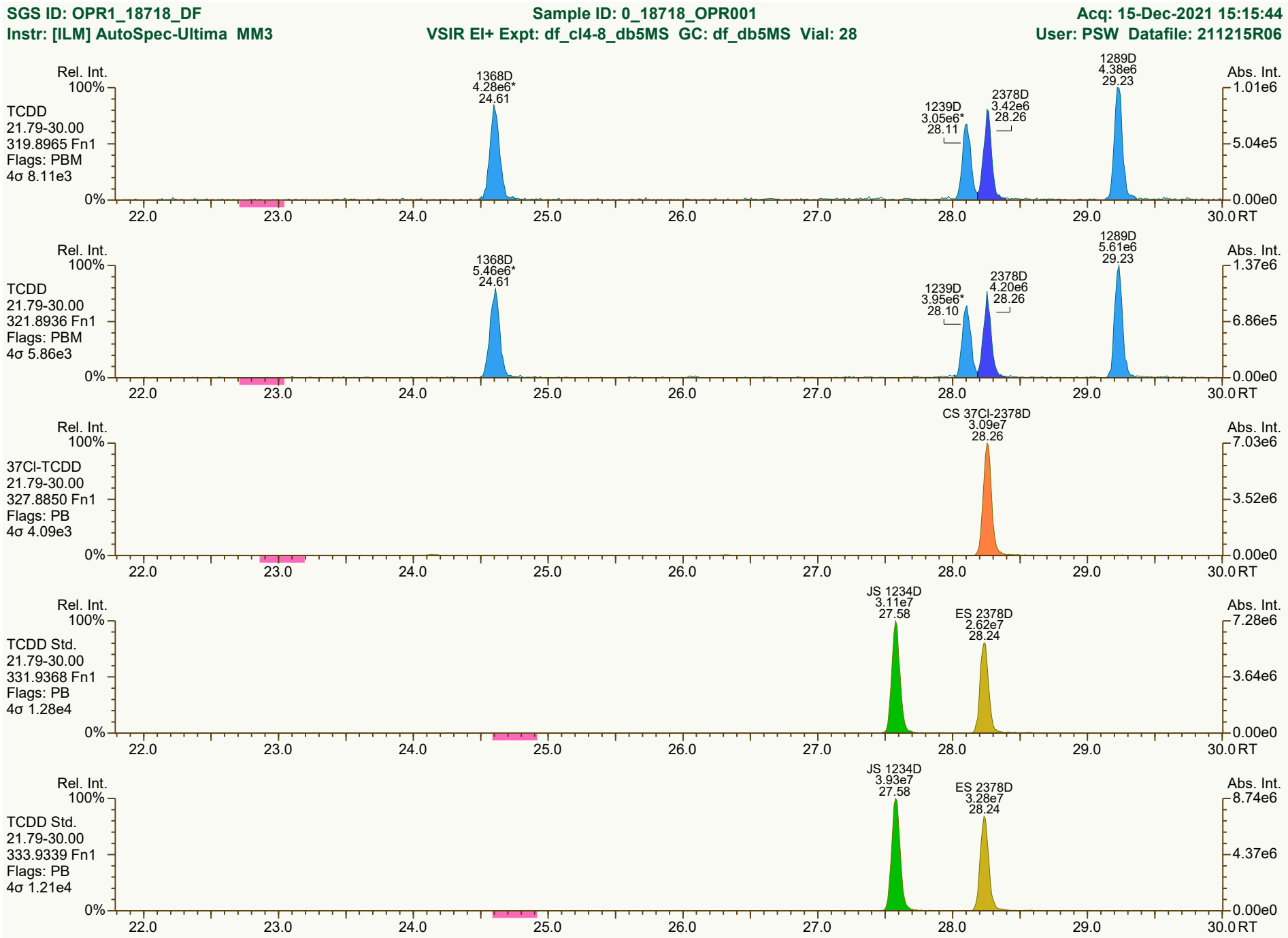




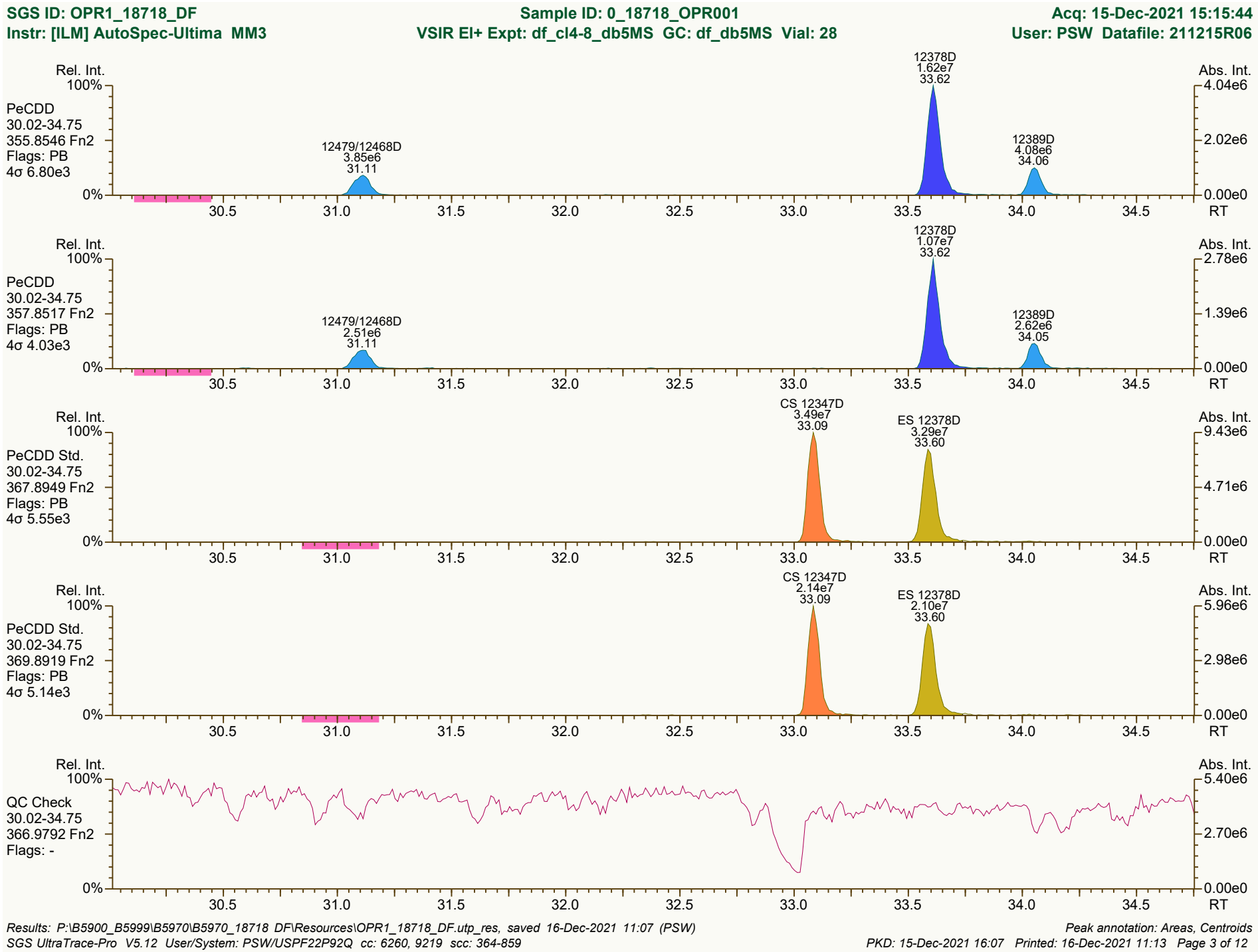
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 11:12

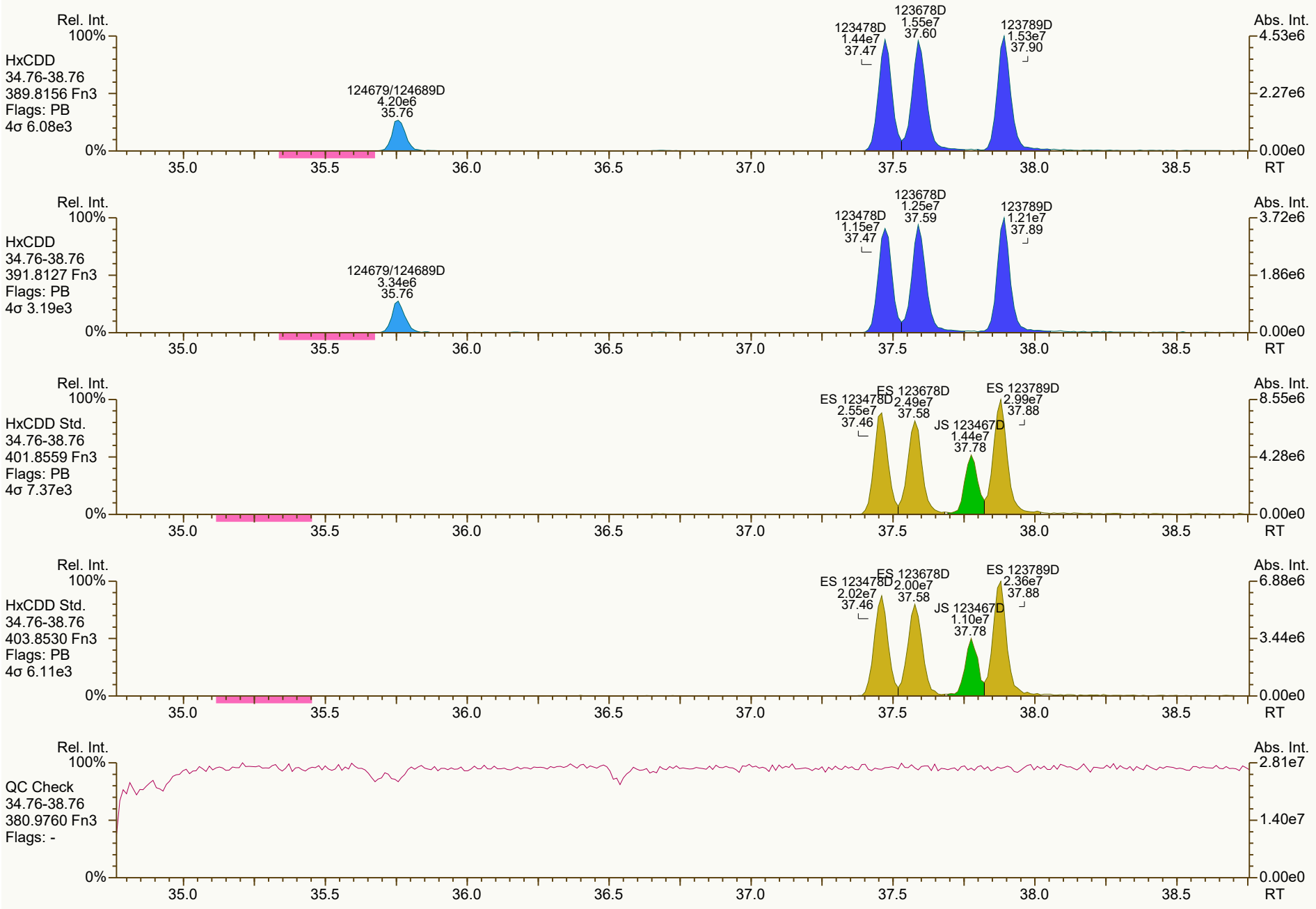

SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06
Rel. Int.
100%
0%
Abs. Int.
1.74e6
8.71e5
0.00e0
2348F
7.29e6
27.29
2378F
5.73e6
27.40
TCDF
27.15-27.57
305.8987 Fn1
Flags: PB
4σ 5.28e3
40% equiv. normalized to 2 peaks
APPROVED
Carla_Lyon , 12/20/2021, 10:18:40 AM
27.20
27.25
27.30
27.35
27.40
27.45
27.50
27.55
RT
ES 2378F
4.61e7
27.38
TCDF Std.
27.15-27.57
317.9389 Fn1
Flags: PB
4σ 1.12e4
5.20e6
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 11:13

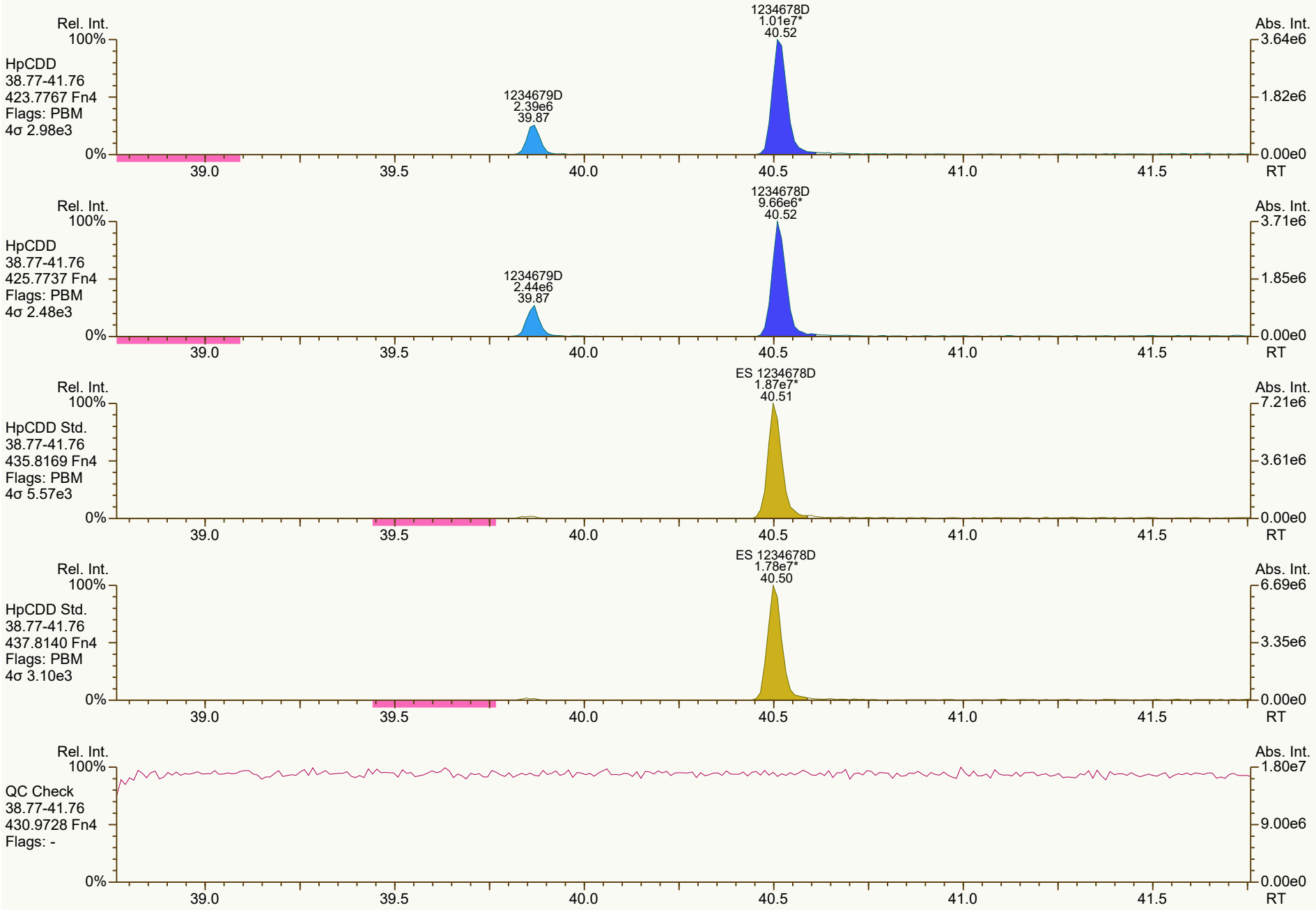

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.15e6
3.07e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.40e6
2.70e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.81e7
1.40e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.80e7
9.00e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.06e7
5.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

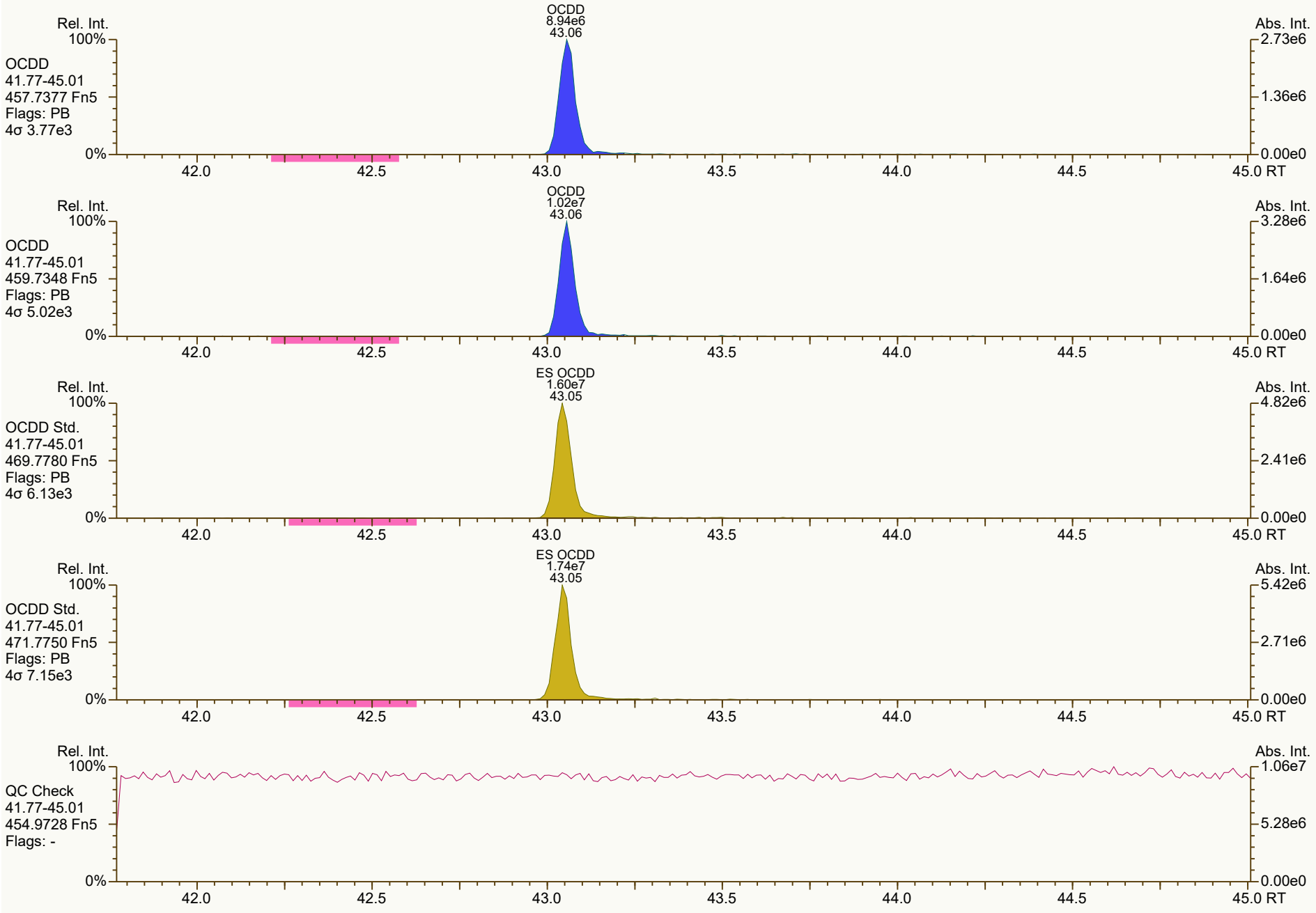


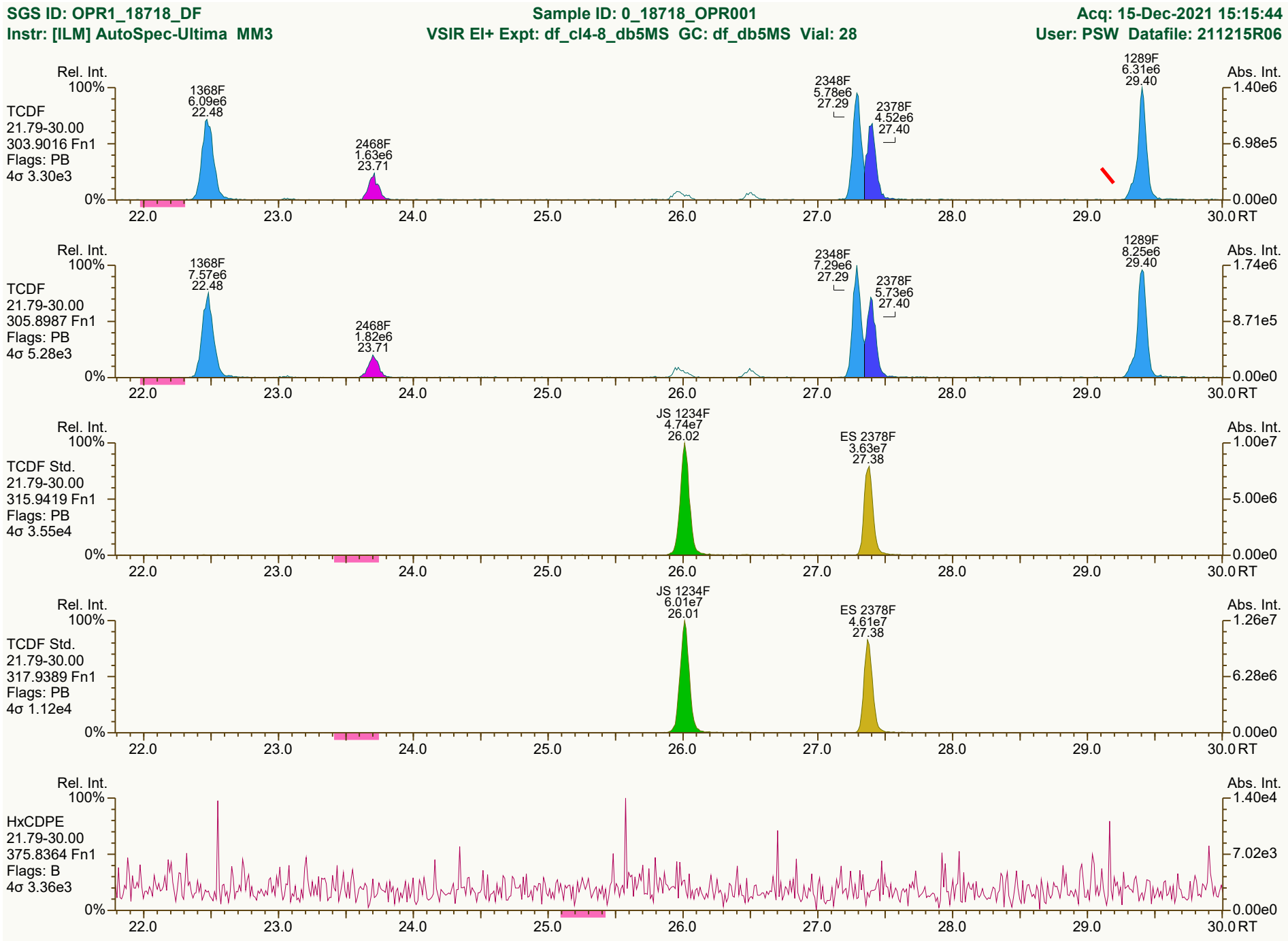
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9720, 6002, 8275 scc: 364-859
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 11:13 Page 2 of 12


SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PB
4σ 6.80e3
12378D
1.62e7
33.62
12479/12468D
3.85e6
31.11
12389D
4.08e6
34.06
4.04e6
2.02e6
0.00e0
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 4.03e3
12378D
1.07e7
33.62
12479/12468D
2.51e6
31.11
12389D
2.62e6
34.05
2.78e6
1.39e6
0.00e0
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.55e3
CS 12347D
3.49e7
33.09
ES 12378D
3.29e7
33.60
9.43e6
4.71e6
0.00e0
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 5.14e3
CS 12347D
2.14e7
33.09
ES 12378D
2.10e7
33.60
5.96e6
2.98e6
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
5.40e6
2.70e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6260, 9219 scc: 364-859
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 11:13 Page 3 of 12

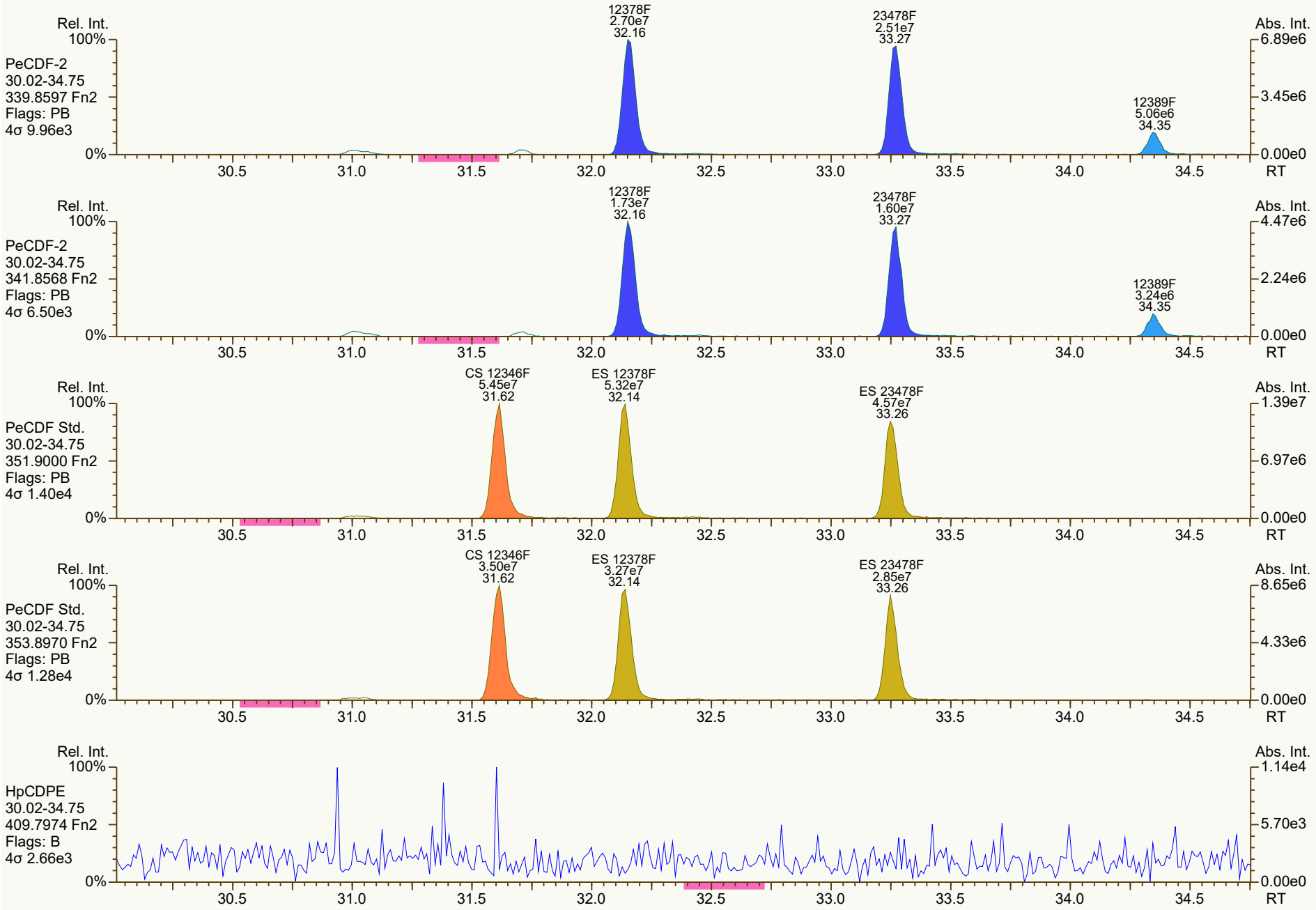

Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PB
4σ 6.08e3
124679/124689D
4.20e6
35.76
123478D
1.44e7
37.47
123678D
1.55e7
37.60
123789D
1.53e7
37.90
Abs. Int.
4.53e6
2.27e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PB
4σ 3.19e3
124679/124689D
3.34e6
35.76
123478D
1.15e7
37.47
123678D
1.25e7
37.59
123789D
1.21e7
37.89
Abs. Int.
3.72e6
1.86e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 7.37e3
ES 123478D
2.55e7
37.46
ES 123678D
2.49e7
37.58
JS 123467D
1.44e7
37.78
ES 123789D
2.99e7
37.88
Abs. Int.
8.55e6
4.28e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 6.11e3
ES 123478D
2.02e7
37.46
ES 123678D
2.00e7
37.58
JS 123467D
1.10e7
37.78
ES 123789D
2.36e7
37.88
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
Abs. Int.
2.81e7
1.40e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

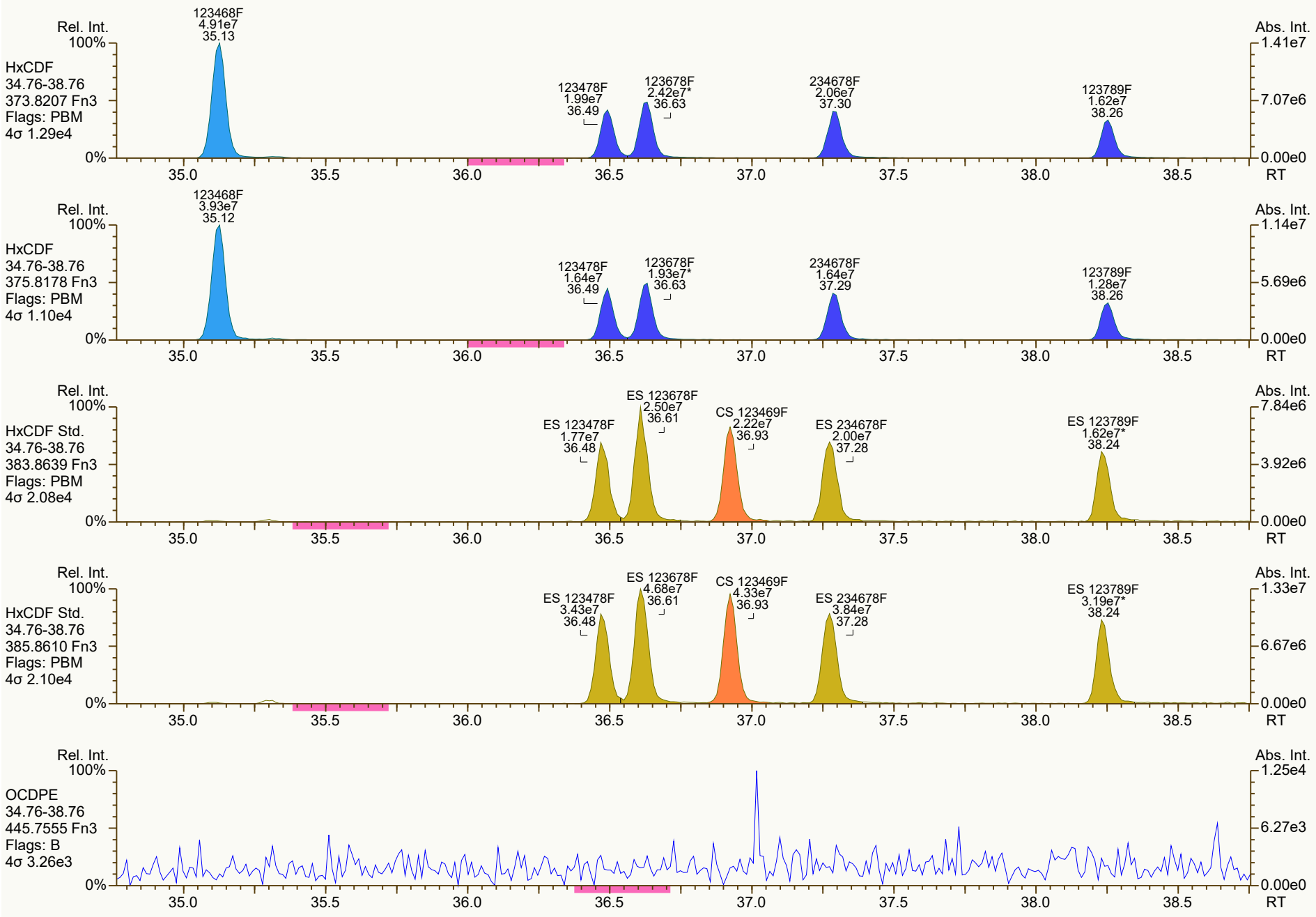

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 2.98e3
0%
1234678D
1.01e7*
40.52
1234679D
2.39e6
39.87
Abs. Int.
3.64e6
1.82e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 2.48e3
0%
1234678D
9.66e6*
40.52
1234679D
2.44e6
39.87
Abs. Int.
3.71e6
1.85e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 5.57e3
0%
ES 1234678D
1.87e7*
40.51
Abs. Int.
7.21e6
3.61e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 3.10e3
0%
ES 1234678D
1.78e7*
40.50
Abs. Int.
6.69e6
3.35e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.80e7
9.00e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 3.77e3
0%
OCDD
8.94e6
43.06
Abs. Int.
2.73e6
1.36e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 5.02e3
0%
OCDD
1.02e7
43.06
Abs. Int.
3.28e6
1.64e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 6.13e3
0%
ES OCDD
1.60e7
43.05
Abs. Int.
4.82e6
2.41e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 7.15e3
0%
ES OCDD
1.74e7
43.05
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.06e7
5.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 3.30e3
1368F 6.09e6 22.48
2468F 1.63e6 23.71
2348F 5.78e6 27.29
2378F 4.52e6 27.40
1289F 6.31e6 29.40
1.40e6
6.98e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 5.28e3
1368F 7.57e6 22.48
2468F 1.82e6 23.71
2348F 7.29e6 27.29
2378F 5.73e6 27.40
1289F 8.25e6 29.40
1.74e6
8.71e5
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 3.55e4
JS 1234F 4.74e7 26.02
ES 2378F 3.63e7 27.38
1.00e7
5.00e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.12e4
JS 1234F 6.01e7 26.01
ES 2378F 4.61e7 27.38
1.26e7
6.28e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.36e3
1.40e4
7.02e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5077, 6987, 7137 scc: 364-859
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 11:13 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.20e3
13468/12468F
4.29e7
29.33
Abs. Int.
1.03e7
5.13e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 4.90e3
13468/12468F
2.74e7
29.33
Abs. Int.
6.65e6
3.33e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
6.15e6
3.07e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 9.96e3
0%
12378F
2.70e7
32.16
23478F
2.51e7
33.27
12389F
5.06e6
34.35
Abs. Int.
6.89e6
3.45e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 6.50e3
0%
12378F
1.73e7
32.16
23478F
1.60e7
33.27
12389F
3.24e6
34.35
Abs. Int.
4.47e6
2.24e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 1.40e4
0%
CS 12346F
5.45e7
31.62
ES 12378F
5.32e7
32.14
ES 23478F
4.57e7
33.26
Abs. Int.
1.39e7
6.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 1.28e4
0%
CS 12346F
3.50e7
31.62
ES 12378F
3.27e7
32.14
ES 23478F
2.85e7
33.26
Abs. Int.
8.65e6
4.33e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.66e3
0%
Abs. Int.
1.14e4
5.70e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 1.29e4
123468F
4.91e7
35.13
123478F
1.99e7
36.49
123678F
2.42e7*
36.63
234678F
2.06e7
37.30
123789F
1.62e7
38.26
Abs. Int.
1.41e7
7.07e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 1.10e4
123468F
3.93e7
35.12
123478F
1.64e7
36.49
123678F
1.93e7*
36.63
234678F
1.64e7
37.29
123789F
1.28e7
38.26
Abs. Int.
1.14e7
5.69e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PBM
4σ 2.08e4
ES 123478F
1.77e7
36.48
ES 123678F
2.50e7
36.61
CS 123469F
2.22e7
36.93
ES 234678F
2.00e7
37.28
ES 123789F
1.62e7*
38.24
Abs. Int.
7.84e6
3.92e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PBM
4σ 2.10e4
ES 123478F
3.43e7
36.48
ES 123678F
4.68e7
36.61
CS 123469F
4.33e7
36.93
ES 234678F
3.84e7
37.28
ES 123789F
3.19e7*
38.24
Abs. Int.
1.33e7
6.67e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.26e3
Abs. Int.
1.25e4
6.27e3
0.00e0
0%
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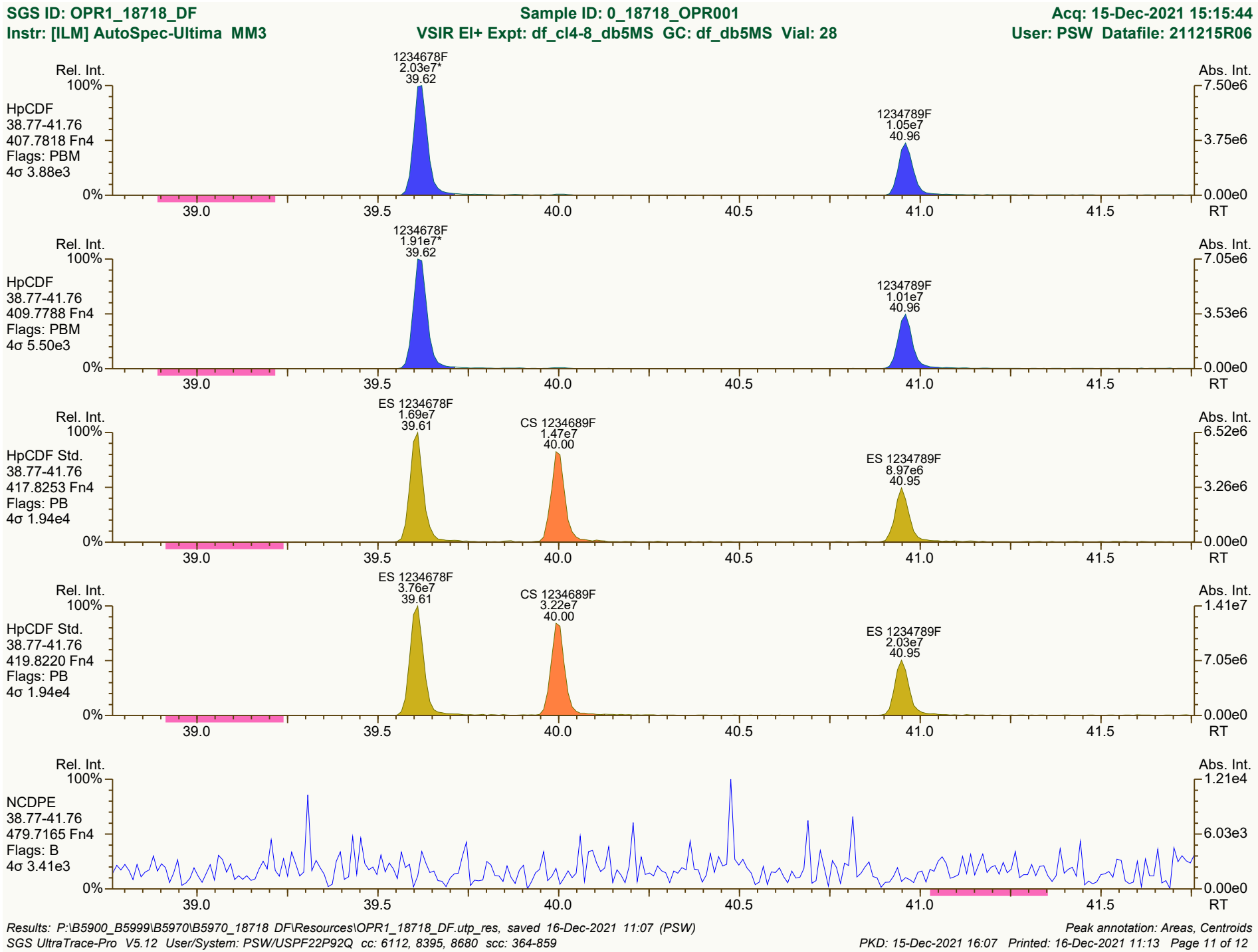
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: OPR1_18718_DF
Sample ID: 0_18718_OPR001
Acq: 15-Dec-2021 15:15:44
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R06
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 3.88e3
1234678F
2.03e7*
39.62
1234789F
1.05e7
40.96
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 5.50e3
1234678F
1.91e7*
39.62
1234789F
1.01e7
40.96
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 1.94e4
ES 1234678F
1.69e7
39.61
CS 1234689F
1.47e7
40.00
ES 1234789F
8.97e6
40.95
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 1.94e4
ES 1234678F
3.76e7
39.61
CS 1234689F
3.22e7
40.00
ES 1234789F
2.03e7
40.95
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.41e3
RT
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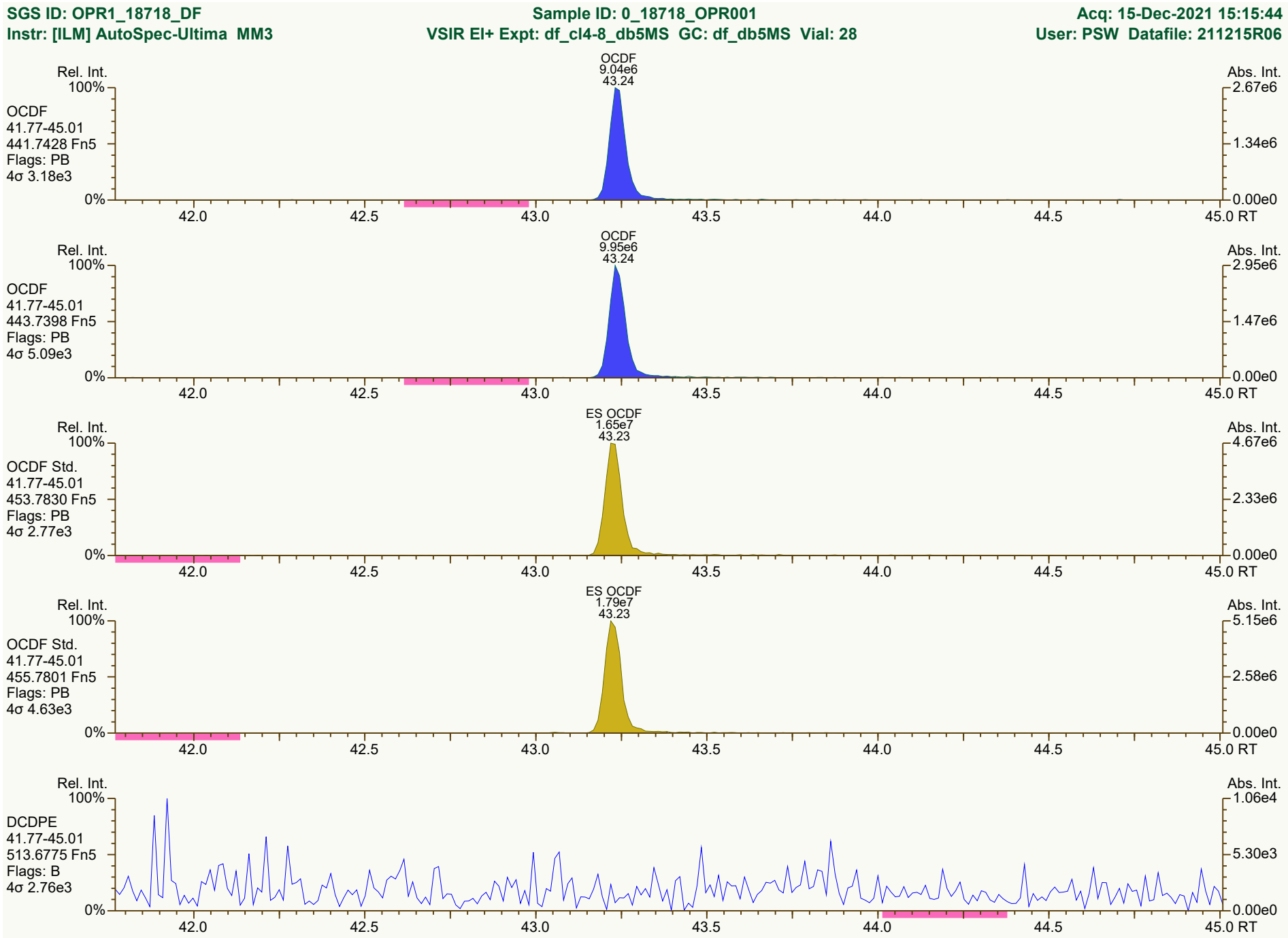
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6112, 8395, 8680 scc: 364-859
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 11:13 Page 11 of 12

SGS ID: OPR1_18718_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18718_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28

Acq: 15-Dec-2021 15:15:44
User: PSW Datafile: 211215R06



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5993, 2599, 3912 scc: 364-859

Peak annotation: Areas, Centroids
PKD: 15-Dec-2021 16:07 Printed: 16-Dec-2021 11:13 Page 12 of 12

Lab ID: OPR2_18718_DF | **Acq'd:** 15 Dec 2021 16:02 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18718_OPR002 | **UTP:** 16-Dec-2021 11:07:09 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 062-626-VHB

Datafile: 211215R07 | **Report:** 20 Dec 2021 14:42 gd | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.26		1.0008	1.0008	0	7.02E+06	0.81	Y	1.34	8.92	7676.713	0.104
12378-PeCDD	33.61		1.0005	1.0006	+0.2	2.48E+07	1.61	Y	1.06	43.8	6083.517	0.1
123478-HxCDD	37.48		1.0003	1.0004	+0.2	2.21E+07	1.27	Y	1.06	50.7	5113.987	0.0991
123678-HxCDD	37.60		1.0033	1.0036	+0.7	2.52E+07	1.30	Y	1.08	54.3	5113.987	0.106
123789-HxCDD	37.90		1.0110	1.0117	+1.6	2.42E+07	1.26	Y	1.02	47.8	5113.987	0.0909
1234678-HpCDD	40.53		1.0003	1.0004	+0.2	1.85E+07	1.03	Y	0.97	52.7	4696.105	0.0984
OCDD	43.07		1.0003	1.0003	0	1.76E+07	0.91	Y	1.07	102	8433.338	0.417
2378-TCDF	27.40		1.0006	1.0007	+0.2	9.35E+06	0.79	Y	0.96	12	6379.315	0.0968
12378-PeCDF	32.16		1.0006	1.0005	-0.2	4.27E+07	1.56	Y	0.95	51.8	17822.561	0.224
23478-PeCDF	33.27		1.0006	1.0005	-0.2	4.03E+07	1.57	Y	0.94	56.3	17822.561	0.234
123478-HxCDF	36.50		1.0004	1.0004	0	3.28E+07	1.27	Y	1.23	51.4	31253.65	0.411
123678-HxCDF	36.63		1.0004	1.0004	0	4.14E+07	1.28	Y	1.13	50.3	31253.65	0.343
234678-HxCDF	37.30		1.0005	1.0004	-0.2	3.26E+07	1.24	Y	1.15	51.8	31253.65	0.498
123789-HxCDF	38.26		1.0005	1.0004	-0.2	2.43E+07	1.25	Y	1.14	48.8	31253.65	0.541
1234678-HpCDF	39.63		1.0003	1.0003	0	3.64E+07	1.03	Y	1.36	50.6	5974.399	0.0587
1234789-HpCDF	40.97		1.0003	1.0003	0	1.80E+07	1.02	Y	1.30	51.4	5974.399	0.136
OCDF	43.25		1.0002	1.0003	+0.3	1.78E+07	0.92	Y	1.03	104	7843.348	0.378

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.24	1.0237	1.0239	+0.3	5.86E+07	0.79	Y	1.03	78.3
ES 12378-PeCDD	33.59	1.2158	1.2178	+4.0	5.34E+07	1.57	Y	1.03	71.3
ES 123478-HxCDD	37.46	0.9920	0.9916	-0.9	4.13E+07	1.24	Y	0.99	83.2
ES 123678-HxCDD	37.58	0.9949	0.9948	-0.2	4.29E+07	1.30	Y	0.97	88.3
ES 123789-HxCDD	37.88	1.0026	1.0028	+0.5	4.99E+07	1.30	Y	1.12	88.8
ES 1234678-HpCDD	40.52	1.0713	1.0725	+2.9	3.60E+07	1.08	Y	0.99	72.7
ES OCDD	43.06	1.1385	1.1398	+3.4	3.22E+07	0.88	Y	0.78	41.5
ES 2378-TCDF	27.38	1.0519	1.0524	+0.8	8.13E+07	0.79	Y	1.08	64.5
ES 12378-PeCDF	32.15	1.2331	1.2356	+4.8	8.72E+07	1.57	Y	0.93	80.3
ES 23478-PeCDF	33.26	1.2754	1.2783	+5.8	7.62E+07	1.55	Y	0.92	71.1
ES 123478-HxCDF	36.48	0.9656	0.9656	0	5.17E+07	0.51	Y	1.14	90.6
ES 123678-HxCDF	36.62	0.9693	0.9693	0	7.28E+07	0.52	Y	1.30	112
ES 234678-HxCDF	37.28	0.9869	0.9869	0	5.46E+07	0.54	Y	1.20	90.9
ES 123789-HxCDF	38.25	1.0121	1.0124	+0.7	4.39E+07	0.51	Y	1.14	77.3
ES 1234678-HpCDF	39.62	1.0478	1.0487	+2.1	5.29E+07	0.45	Y	0.95	111
ES 1234789-HpCDF	40.96	1.0832	1.0843	+2.7	2.69E+07	0.45	Y	0.85	63.6
ES OCDF	43.24	1.1434	1.1446	+3.1	3.33E+07	0.91	Y	0.93	36

Lab ID: OPR2_18718_DF | **Acq'd:** 15 Dec 2021 16:02 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18718_OPR002 | **UTP:** 16-Dec-2021 11:07:09 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 062-626-VHB

Datafile: 211215R07 | **Report:** 20 Dec 2021 14:42 gd | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.58		-	-	-	7.24E+07	0.80	Y	-	-	
JS 1234-TCDF	26.02		-	-	-	1.16E+08	0.80	Y	-	-	
JS 123467-HxCDD	37.78		-	-	-	2.50E+07	1.25	Y	-	-	
CS 37Cl-2378-TCDD	28.26		1.0245	1.0247	+0.3	2.77E+07	n/a	-	1.31	72.9	
CS 12347-PeCDD	33.09		1.1978	1.1997	+3.8	5.18E+07	1.62	Y	0.89	80.2	
CS 12346-PeCDF	31.62		1.2130	1.2154	+4.6	8.64E+07	1.57	Y	0.87	85.7	
CS 123469-HxCDF	36.93		0.9775	0.9776	+0.2	5.93E+07	0.50	Y	1.09	109	
CS 1234689-HpCDF	40.01		1.0580	1.0591	+2.6	4.33E+07	0.45	Y	0.86	100	
~~SS 37Cl-2378-TCDD~~	~~28.26~~		~~1.0245~~	~~1.0247~~	~~+0.3~~	~~2.77E+07~~	~~n/a~~		~~1.26~~	~~93.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.09~~		~~1.1978~~	~~1.1997~~	~~+3.8~~	~~5.18E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~112~~	CL 20Dec21
~~SS 12346-PeCDF~~	~~31.62~~		~~1.2130~~	~~1.2154~~	~~+4.6~~	~~8.64E+07~~	~~1.57~~	~~Y~~	~~0.93~~	~~107~~	
~~SS 123469-HxCDF~~	~~36.93~~		~~0.9775~~	~~0.9776~~	~~+0.2~~	~~5.93E+07~~	~~0.50~~	~~Y~~	~~0.84~~	~~96.9~~	
~~SS 1234689-HpCDF~~	~~40.01~~		~~1.0580~~	~~1.0591~~	~~+2.6~~	~~4.33E+07~~	~~0.45~~	~~Y~~	~~0.91~~	~~89.8~~	

Totals	Conc	EMPC
Total TCDD	42.6	42.6
Total PeCDD	67.2	67.2
Total HxCDD	169	169
Total HpCDD	65.8	65.8
Total Tetra-Octa Dioxins	446	446
Total TCDF	67.3	67.3
Total PeCDF	211	211
Total HxCDF	333	333
Total HpCDF	102	102
Total Tetra-Octa Furans	818	818
Total Tetra-Octa Dioxins & Furans	1260	1260

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.805	0.81
Response	7.04E+06	7.02E+06

Lab ID: OPR2_18718_DF | **Acq'd: 15 Dec 2021 16:02 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR002 | **UTP: 16-Dec-2021 11:07:09 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 062-626-VHB**

Datafile: 211215R07 | **Report: 20 Dec 2021 14:42 gd** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.61		0.8726	0.8713	-1.9	1.02E+07	0.77	Y	1.34	12.9	7676.713	0.104
1379-TCDD	NotFnd		0.8851						1.34		7676.713	0.104
1369-TCDD	NotFnd		0.9002						1.34		7676.713	0.104
1469-TCDD	NotFnd		0.9275						1.34		7676.713	0.104
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		7676.713	0.104
1378-TCDD	NotFnd		0.9427						1.34		7676.713	0.104
1268-TCDD	NotFnd		0.9498						1.34		7676.713	0.104
1478-TCDD	NotFnd		0.9584						1.34		7676.713	0.104
1279-TCDD	NotFnd		0.9644						1.34		7676.713	0.104
1234/1269-TCDD	NotFnd		0.9766						1.34		7676.713	0.104
1236-TCDD	NotFnd		0.9813						1.34		7676.713	0.104
1237/1238-TCDD	NotFnd		0.9906						1.34		7676.713	0.104
1239-TCDD	28.10		0.9952	0.9951	-0.2	6.73E+06	0.80	Y	1.34	8.55	7676.713	0.104
2378-TCDD	**28.26**		**1.0008**	1.0008	**0**	7.02E+06	0.81	Y	**1.34**	**8.92**	**7676.713**	**0.104**
1278-TCDD	NotFnd		1.0122						1.34		7676.713	0.104
1267-TCDD	NotFnd		1.0168						1.34		7676.713	0.104
1289-TCDD	29.24		1.0349	1.0353	+0.7	9.61E+06	0.77	Y	1.34	12.2	7676.713	0.104
12479/12468-PeCDD	31.11		0.9267	0.9262	-0.9	6.56E+06	1.59	Y	1.06	11.6	6083.517	0.1
12469-PeCDD	NotFnd		0.9425						1.06		6083.517	0.1
12368-PeCDD	NotFnd		0.9588						1.06		6083.517	0.1
12478-PeCDD	NotFnd		0.9643						1.06		6083.517	0.1
12379-PeCDD	NotFnd		0.9673						1.06		6083.517	0.1
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		6083.517	0.1
12346/12347-PeCDD	NotFnd		0.9859						1.06		6083.517	0.1
12378-PeCDD	33.61		**1.0005**	**1.0006**	**+0.2**	**2.48E+07**	**1.61**	**Y**	**1.06**	**43.8**	**6083.517**	**0.1**
12367-PeCDD	NotFnd		1.0032						1.06		6083.517	0.1
12389-PeCDD	34.05		1.0135	1.0136	+0.2	6.68E+06	1.53	Y	1.06	11.8	6083.517	0.1
124679/124689-HxCDD	35.77		0.9544	0.9547	+0.6	7.42E+06	1.31	Y	1.05	15.8	5113.987	0.0983
123468-HxCDD	NotFnd		0.9716						1.05		5113.987	0.0983
123679/123689-HxCDD	NotFnd		0.9793						1.05		5113.987	0.0983
123469-HxCDD	NotFnd		0.9829						1.05		5113.987	0.0983
123478-HxCDD	37.48		**1.0003**	**1.0004**	**+0.2**	**2.21E+07**	**1.27**	**Y**	1.06	**50.7**	**5113.987**	**0.0991**
123678-HxCDD	37.60		**1.0033**	**1.0036**	**+0.7**	**2.52E+07**	**1.30**	**Y**	1.08	**54.3**	**5113.987**	**0.106**
123467-HxCDD	NotFnd		1.0084						1.05		5113.987	0.0983
123789-HxCDD	37.90		**1.0110**	**1.0117**	**+1.6**	**2.42E+07**	**1.26**	**Y**	1.02	**47.8**	**5113.987**	**0.0909**

Lab ID: OPR2_18718_DF | **Acq'd: 15 Dec 2021 16:02 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR002 | **UTP: 16-Dec-2021 11:07:09 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 062-626-VHB**

Datafile: 211215R07 | **Report: 20 Dec 2021 14:42 gd** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.87		0.9843	0.9841	-0.5	4.60E+06	1.12	Y	0.97	13.1	4696.105	0.0984
1234678-HpCDD	**40.53**		**1.0003**	**1.0004**	**+0.2**	**1.85E+07**	**1.03**	**Y**	**0.97**	**52.7**	**4696.105**	**0.0984**
OCDD	**43.07**		**1.0003**	**1.0003**	**0**	**1.76E+07**	**0.91**	**Y**	**1.07**	**102**	**8433.338**	**0.417**
OCDD-a	43.06		1.0001	1.0001	0	1.07E+06	2.66	Y	0.07	101	9351.084	7.49
1368-TCDF	22.48		0.8230	0.8209	-2.8	1.39E+07	0.77	Y	0.96	17.8	6379.315	0.0968
1468-TCDF	NotFnd		0.8443						0.96		6379.315	0.0968
2468-TCDF	23.71		0.8672	0.8658	-2.0	3.37E+06	0.76	Y	0.96	4.32	6379.315	0.0968
1346/1246-TCDF	NotFnd		0.8802						0.96		6379.315	0.0968
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		6379.315	0.0968
1348-TCDF	NotFnd		0.8952						0.96		6379.315	0.0968
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		6379.315	0.0968
1268-TCDF	NotFnd		0.9136						0.96		6379.315	0.0968
1467-TCDF	NotFnd		0.9185						0.96		6379.315	0.0968
1478-TCDF	NotFnd		0.9247						0.96		6379.315	0.0968
1369/1237-TCDF	NotFnd		0.9381						0.96		6379.315	0.0968
2467-TCDF	NotFnd		0.9427						0.96		6379.315	0.0968
2368-TCDF	NotFnd		0.9484						0.96		6379.315	0.0968
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		6379.315	0.0968
1278-TCDF	NotFnd		0.9682						0.96		6379.315	0.0968
1349-TCDF	NotFnd		0.9725						0.96		6379.315	0.0968
1267-TCDF	NotFnd		0.9782						0.96		6379.315	0.0968
2346/1249-TCDF	NotFnd		0.9846						0.96		6379.315	0.0968
2347/1279-TCDF	NotFnd		0.9926						0.96		6379.315	0.0968
2348-TCDF	27.29		0.9966	0.9967	+0.2	1.28E+07	0.80	Y	0.96	16.4	6379.315	0.0968
2378-TCDF	**27.40**		**1.0006**	**1.0007**	**+0.2**	**9.35E+06**	**0.79**	**Y**	**0.96**	**12**	**6379.315**	**0.0968**
2367/3467-TCDF	NotFnd		1.0139						0.96		6379.315	0.0968
1269-TCDF	NotFnd		1.0226						0.96		6379.315	0.0968
1239-TCDF	NotFnd		1.0322						0.96		6379.315	0.0968
1289-TCDF	29.41		1.0729	1.0742	+2.3	1.31E+07	0.78	Y	0.96	16.8	6379.315	0.0968
13468/12468-PeCDF	29.33		0.9135	0.9124	-1.9	7.10E+07	1.61	Y	0.94	92.2	6037.888	0.0774
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		17822.561	0.228
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		17822.561	0.228
14678-PeCDF	NotFnd		0.9693						0.94		17822.561	0.228
13479-PeCDF	NotFnd		0.9723						0.94		17822.561	0.228
13469/12479-PeCDF	NotFnd		0.9799						0.94		17822.561	0.228
12346-PeCDF	NotFnd		0.9842						0.94		17822.561	0.228

Lab ID: OPR2_18718_DF | **Acq'd: 15 Dec 2021 16:02 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18718_OPR002 | **UTP: 16-Dec-2021 11:07:09 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 062-626-VHB**

Datafile: 211215R07 | **Report: 20 Dec 2021 14:42 gd** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		17822.561	0.228
12347-PeCDF	NotFnd		0.9893						0.94		17822.561	0.228
12348-PeCDF	NotFnd		0.9941						0.94		17822.561	0.228
12378-PeCDF	**32.16**		**1.0006**	**1.0005**	**-0.2**	**4.27E+07**	**1.56**	**Y**	**0.95**	**51.8**	**17822.561**	**0.224**
12678/12367-PeCDF	NotFnd		1.0090						0.94		17822.561	0.228
12379-PeCDF	NotFnd		1.0143						0.94		17822.561	0.228
12679-PeCDF	NotFnd		0.9929						0.94		17822.561	0.228
23467/12369-PeCDF	NotFnd		0.9966						0.94		17822.561	0.228
23478-PeCDF	**33.27**		**1.0006**	**1.0005**	**-0.2**	**4.03E+07**	**1.57**	**Y**	**0.94**	**56.3**	**17822.561**	**0.234**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		17822.561	0.228
12349-PeCDF	NotFnd		1.0102						0.94		17822.561	0.228
12389-PeCDF	34.35		1.0325	1.0328	+0.6	8.24E+06	1.53	Y	0.94	10.7	17822.561	0.228
123468-HxCDF	35.12		0.9628	0.9627	-0.2	8.50E+07	1.25	Y	1.16	131	31253.65	0.434
124678/134678-HxCDF	NotFnd		0.9683						1.16		31253.65	0.434
134679-HxCDF	NotFnd		0.9746						1.16		31253.65	0.434
124679-HxCDF	NotFnd		0.9798						1.16		31253.65	0.434
124689-HxCDF	NotFnd		0.9859						1.16		31253.65	0.434
123467-HxCDF	NotFnd		0.9972						1.16		31253.65	0.434
123478-HxCDF	**36.50**		**1.0004**	**1.0004**	**0**	**3.28E+07**	**1.27**	**Y**	**1.23**	**51.4**	**31253.65**	**0.411**
123678-HxCDF	**36.63**		**1.0004**	**1.0004**	**0**	**4.14E+07**	**1.28**	**Y**	**1.13**	**50.3**	**31253.65**	**0.343**
123479-HxCDF	NotFnd		1.0049						1.16		31253.65	0.434
123469-HxCDF	NotFnd		1.0088						1.16		31253.65	0.434
123679-HxCDF	NotFnd		0.9943						1.16		31253.65	0.434
234678-HxCDF	**37.30**		**1.0005**	**1.0004**	**-0.2**	**3.26E+07**	**1.24**	**Y**	**1.15**	**51.8**	**31253.65**	**0.498**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		31253.65	0.434
123789-HxCDF	**38.26**		**1.0005**	**1.0004**	**-0.2**	**2.43E+07**	**1.25**	**Y**	**1.14**	**48.8**	**31253.65**	**0.541**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		31253.65	0.434
1234678-HpCDF	**39.63**		**1.0003**	**1.0003**	**0**	**3.64E+07**	**1.03**	**Y**	**1.36**	**50.6**	**5974.399**	**0.0587**
1234679-HpCDF	NotFnd		1.0067						1.33		5974.399	0.0847
1234689-HpCDF	NotFnd		1.0100						1.33		5974.399	0.0847
1234789-HpCDF	**40.97**		**1.0003**	**1.0003**	**0**	**1.80E+07**	**1.02**	**Y**	**1.30**	**51.4**	**5974.399**	**0.136**
OCDF	**43.25**		**1.0002**	**1.0003**	**+0.3**	**1.78E+07**	**0.92**	**Y**	**1.03**	**104**	**7843.348**	**0.378**
OCDF-a	43.25	**EMPC**	1.0002	1.0001	-0.3	8.43E+05	3.33	N	0.06	85.5	10541.867	8.78

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211215R07	Analysis Date:	15-DEC-2021 16:02:28
Lab ID:	OPR2_18718_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	8.92	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	43.8	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	50.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	54.3	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	47.8	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	52.7	35	-	70	Y
OCDD	100	102	78	-	144	Y
2,3,7,8-TCDF	10	12	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	51.8	40	-	67	Y
2,3,4,7,8-PeCDF	50	56.3	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	51.4	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	50.3	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	51.8	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	48.8	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	50.6	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	51.4	39	-	69	Y
OCDF	100	104	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2021 14:43 Analyst: gd

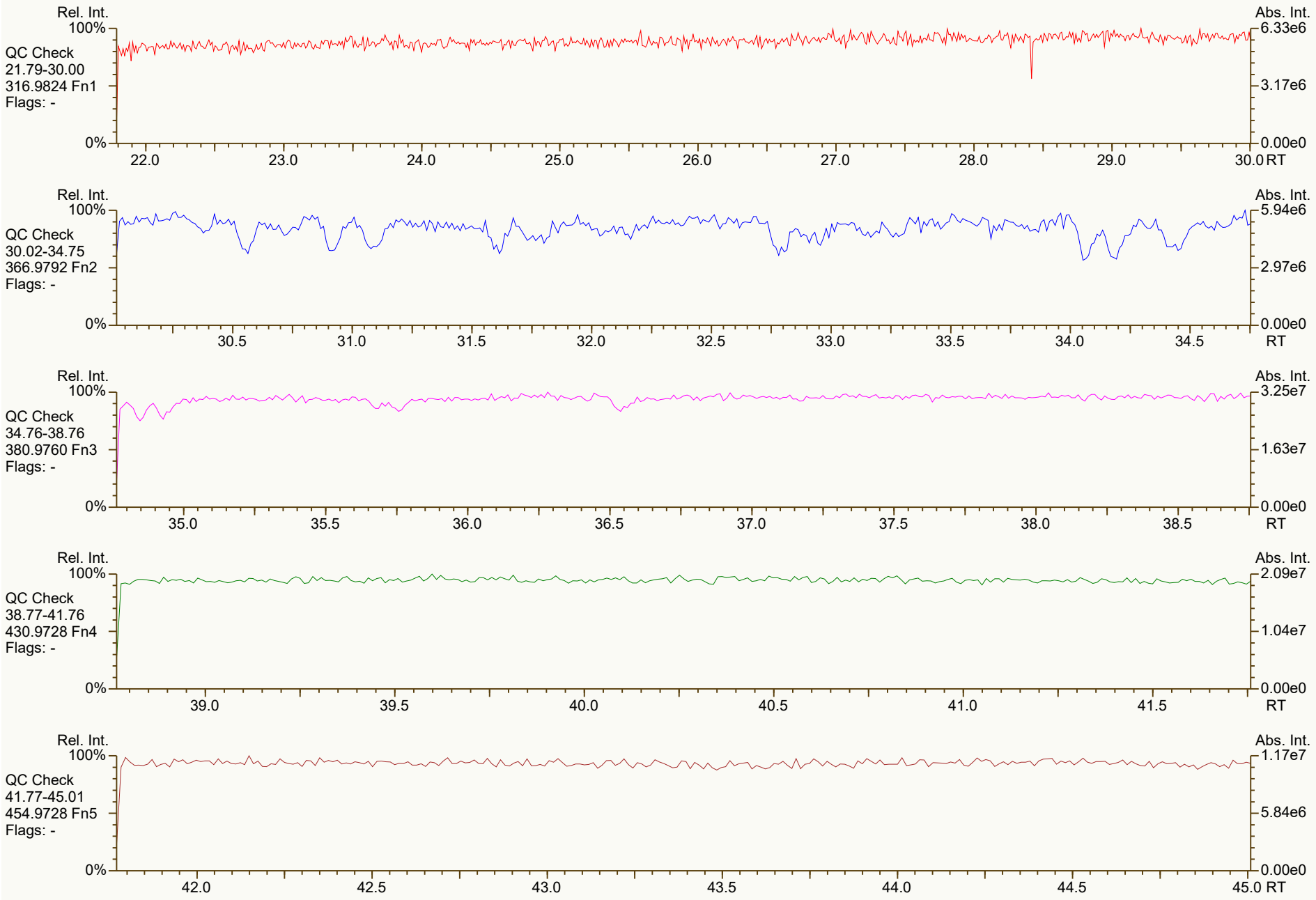
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

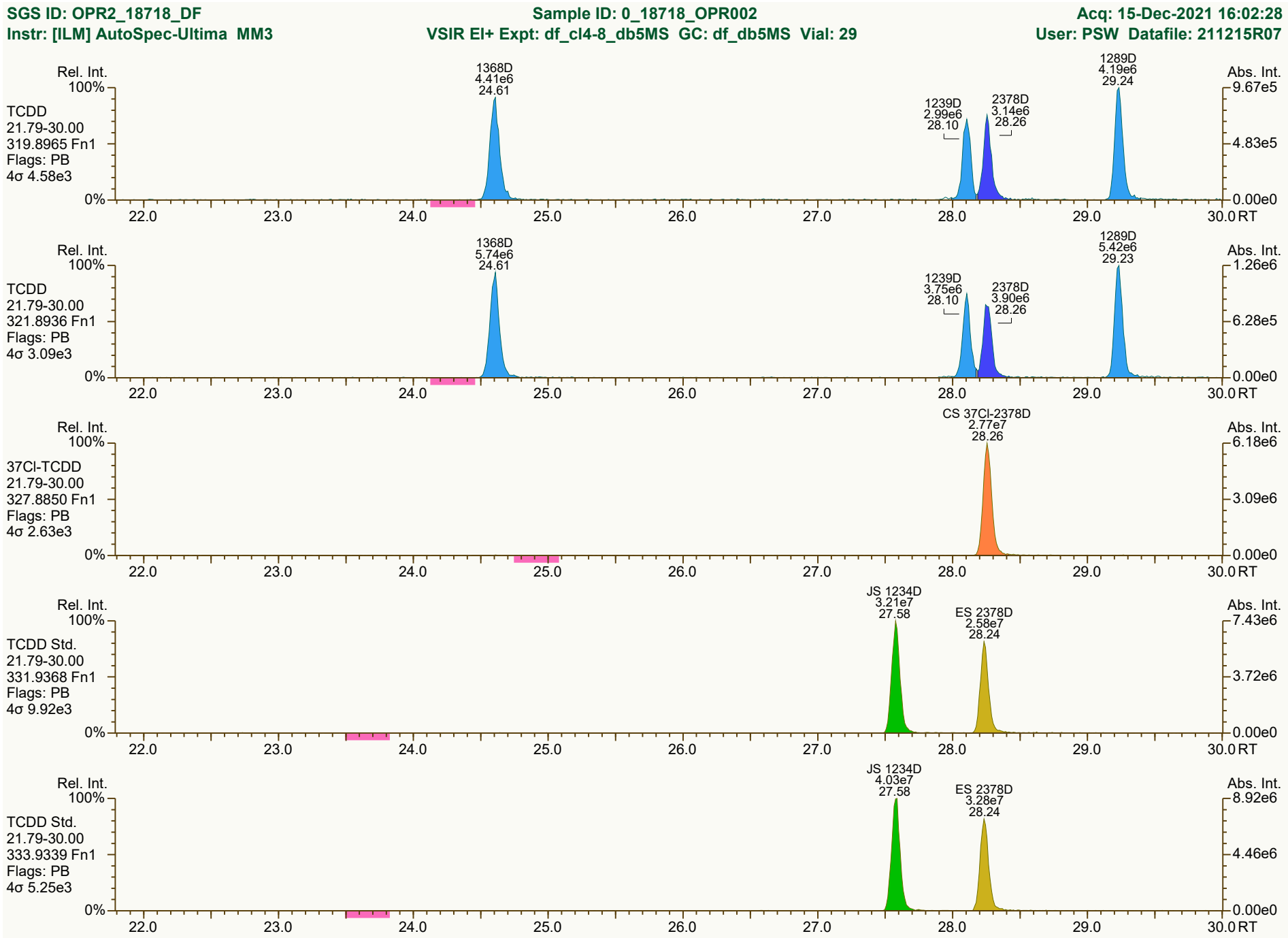
Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211215R07	Analysis Date:	15-DEC-2021 16:02:28
Lab ID:	OPR2_18718_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	78.3	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	71.3	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	83.2	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	88.3	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	88.8	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	72.7	26	-	166	Y
13C-OCDD	200	83	26	-	397	Y
13C-2,3,7,8-TCDF	100	64.5	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	80.3	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	71.1	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	90.6	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	112	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	90.9	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	77.3	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	111	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	63.6	20	-	186	Y
13C-OCDF	200	71.9	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	29.2	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2021 14:43 Analyst: gd


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
6.33e6
3.17e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
5.94e6
2.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.25e7
1.63e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.09e7
1.04e7
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.17e7
5.84e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT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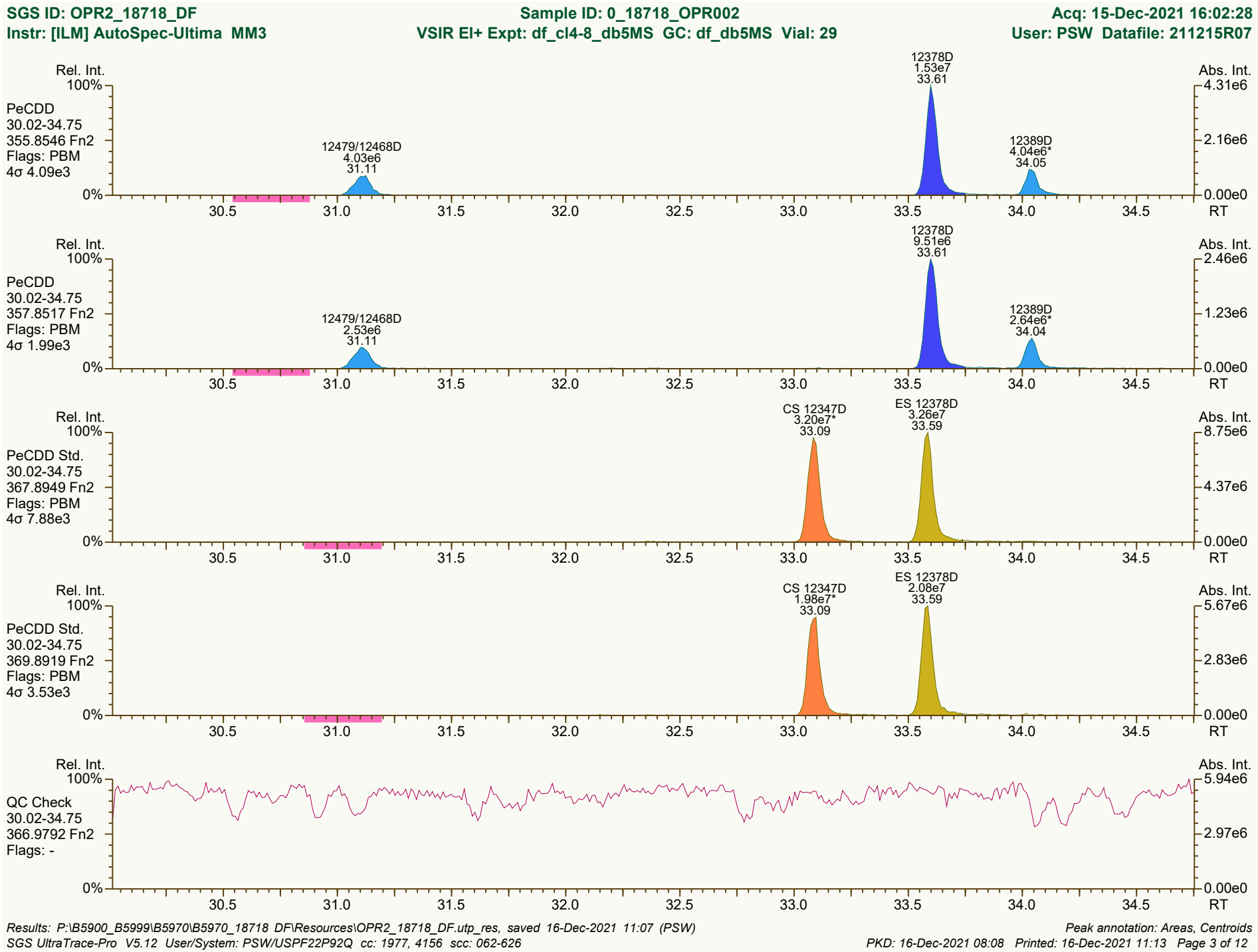
Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
TCDD
21.79-30.00
319.8965 Fn1
Flags: PB
4σ 4.58e3
1368D 4.41e6 24.61
1239D 2.99e6 28.10
2378D 3.14e6 28.26
1289D 4.19e6 29.24
9.67e5
4.83e5
0.00e0
TCDD
21.79-30.00
321.8936 Fn1
Flags: PB
4σ 3.09e3
1368D 5.74e6 24.61
1239D 3.75e6 28.10
2378D 3.90e6 28.26
1289D 5.42e6 29.23
1.26e6
6.28e5
0.00e0
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.63e3
CS 37Cl-2378D 2.77e7 28.26
6.18e6
3.09e6
0.00e0
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 9.92e3
JS 1234D 3.21e7 27.58
ES 2378D 2.58e7 28.24
7.43e6
3.72e6
0.00e0
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 5.25e3
JS 1234D 4.03e7 27.58
ES 2378D 3.28e7 28.24
8.92e6
4.46e6
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0553, 0349, 4264 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:13 Page 2 of 12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Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 4.09e3
12479/12468D
4.03e6
31.11
12378D
1.53e7
33.61
12389D
4.04e6*
34.05
4.31e6
2.16e6
0.00e0
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 1.99e3
12479/12468D
2.53e6
31.11
12378D
9.51e6
33.61
12389D
2.64e6*
34.04
2.46e6
1.23e6
0.00e0
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PBM
4σ 7.88e3
CS 12347D
3.20e7*
33.09
ES 12378D
3.26e7
33.59
8.75e6
4.37e6
0.00e0
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PBM
4σ 3.53e3
CS 12347D
1.98e7*
33.09
ES 12378D
2.08e7
33.59
5.67e6
2.83e6
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
5.94e6
2.97e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
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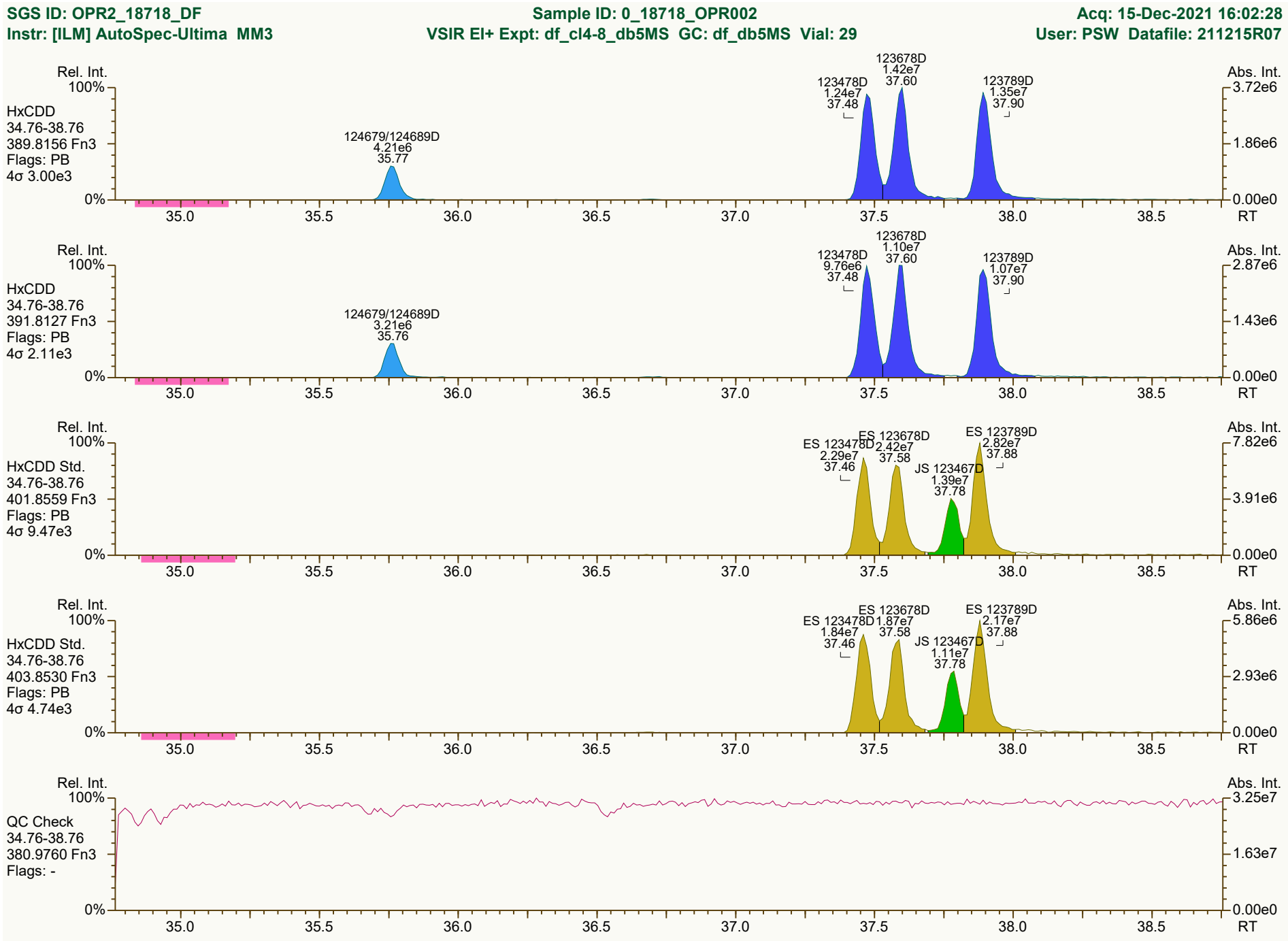
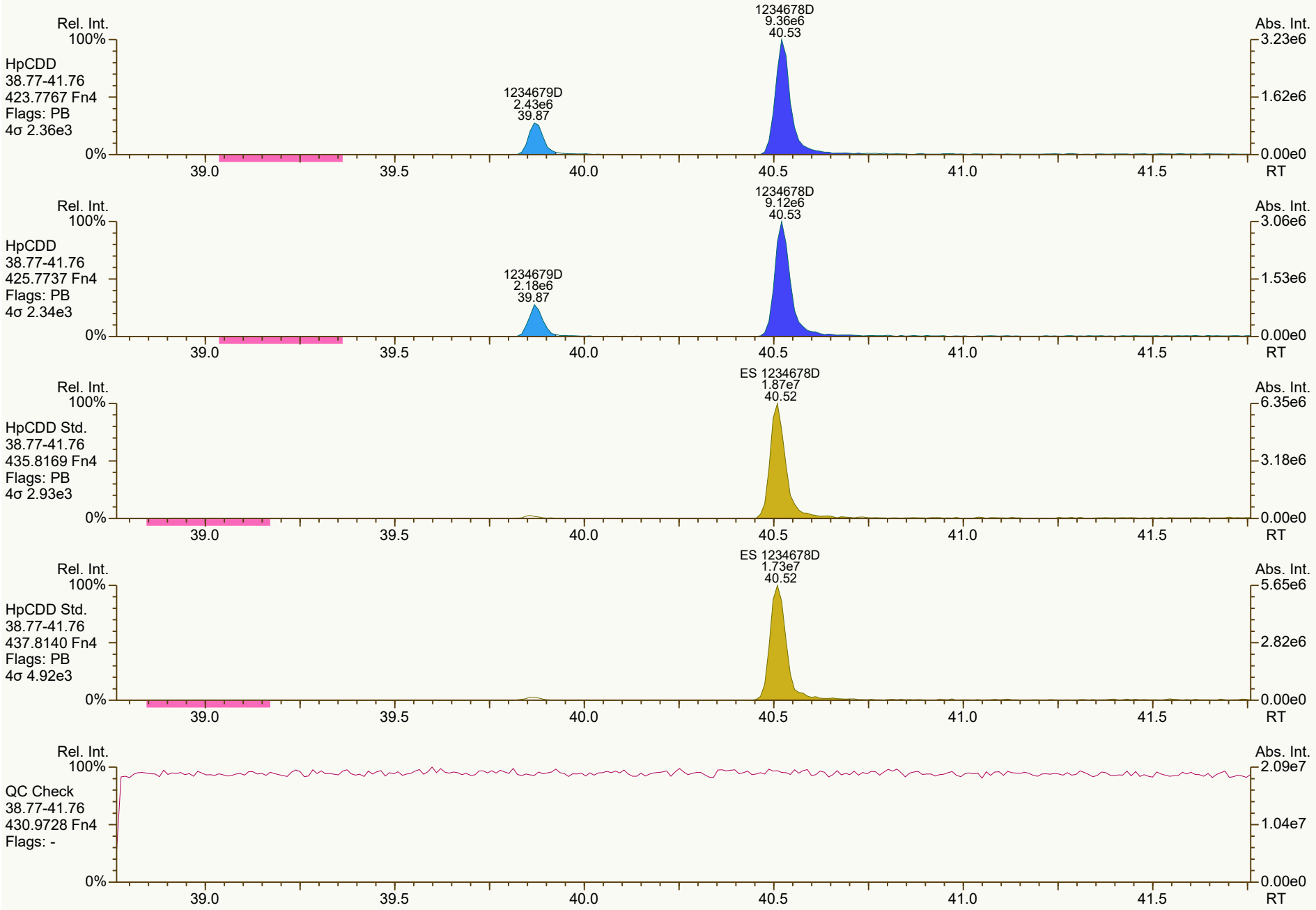
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 1977, 4156 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:13 Page 3 of 12

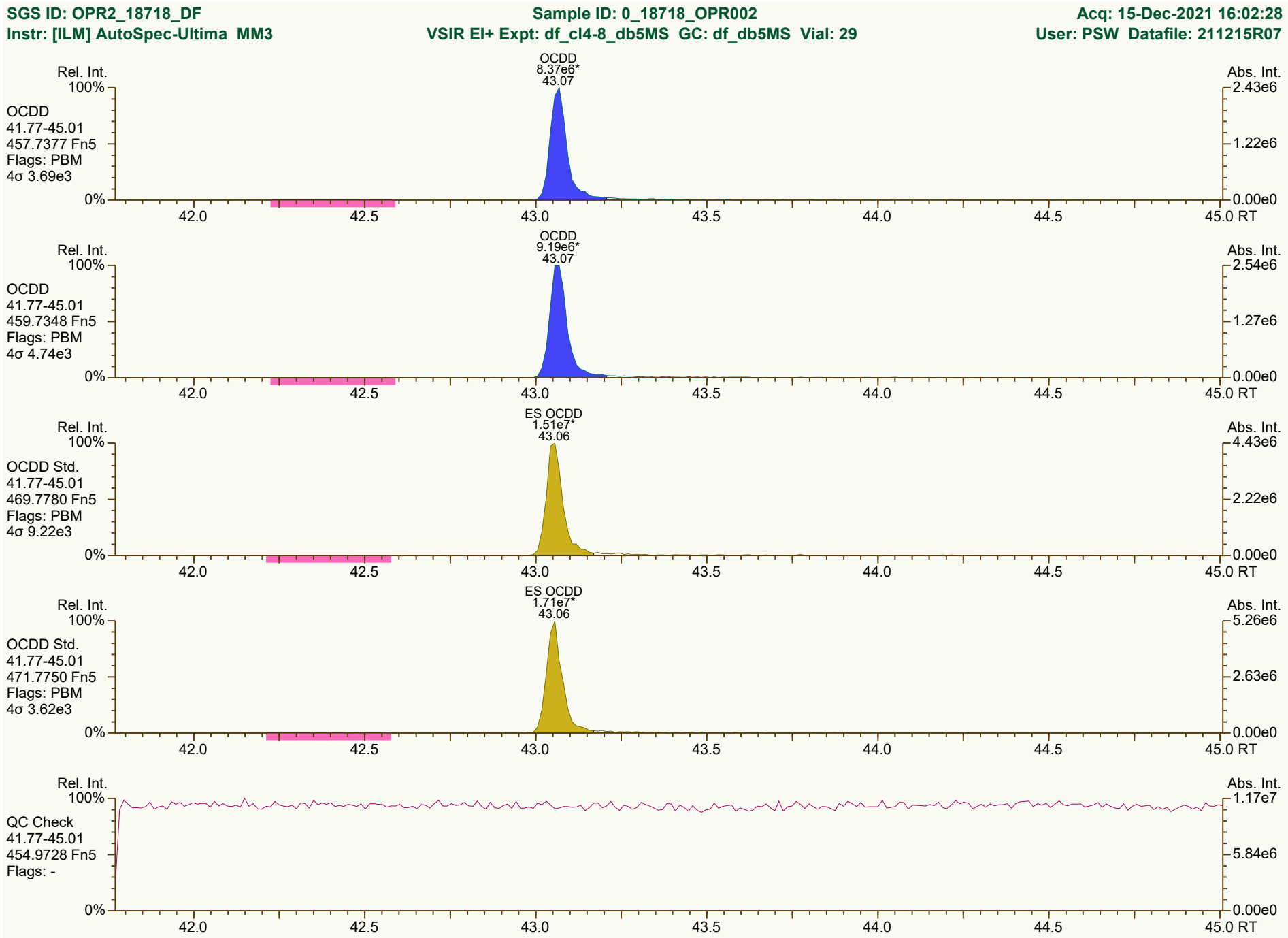

SGS ID: OPR2_18718_DF
Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PB
4σ 3.00e3
124679/124689D
4.21e6
35.77
123478D
1.24e7
37.48
123678D
1.42e7
37.60
123789D
1.35e7
37.90
3.72e6
1.86e6
0.00e0
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PB
4σ 2.11e3
124679/124689D
3.21e6
35.76
123478D
9.76e6
37.48
123678D
1.10e7
37.60
123789D
1.07e7
37.90
2.87e6
1.43e6
0.00e0
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 9.47e3
ES 123478D
2.29e7
37.46
ES 123678D
2.42e7
37.58
JS 123467D
1.39e7
37.78
ES 123789D
2.82e7
37.88
7.82e6
3.91e6
0.00e0
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 4.74e3
ES 123478D
1.84e7
37.46
ES 123678D
1.87e7
37.58
JS 123467D
1.11e7
37.78
ES 123789D
2.17e7
37.88
5.86e6
2.93e6
0.00e0
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
3.25e7
1.63e7
0.00e0
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5977, 2707 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:13 Page 4 of 12


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.36e3
0%
1234678D
9.36e6
40.53
1234679D
2.43e6
39.87
Abs. Int.
3.23e6
1.62e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 2.34e3
0%
1234678D
9.12e6
40.53
1234679D
2.18e6
39.87
Abs. Int.
3.06e6
1.53e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 2.93e3
0%
ES 1234678D
1.87e7
40.52
Abs. Int.
6.35e6
3.18e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.92e3
0%
ES 1234678D
1.73e7
40.52
Abs. Int.
5.65e6
2.82e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.09e7
1.04e7
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

SGS ID: OPR2_18718_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18718_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29

Acq: 15-Dec-2021 16:02:28
User: PSW Datafile: 211215R07



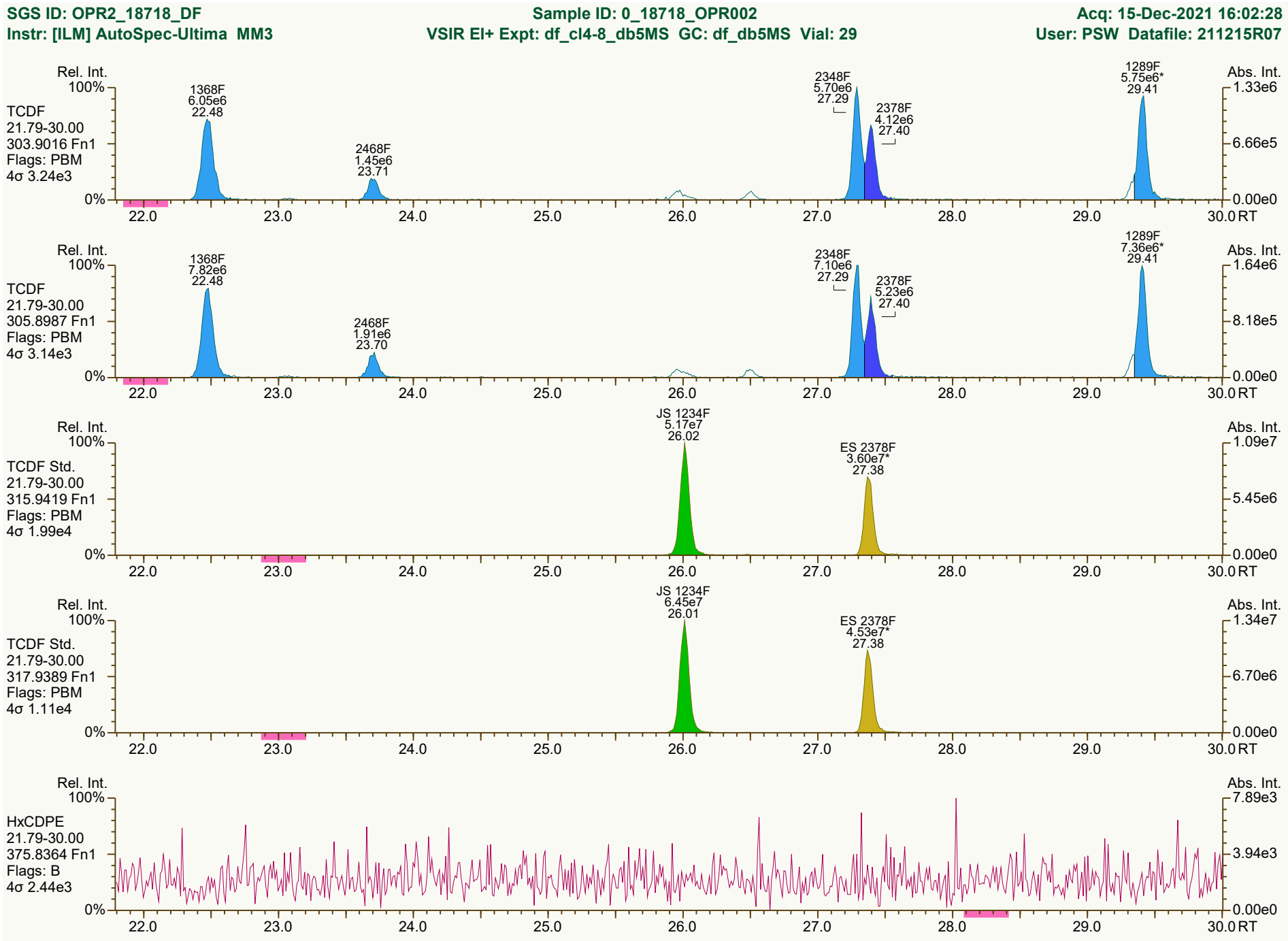
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4418, 0097 scc: 062-626

Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:13 Page 6 of 12

SGS ID: OPR2_18718_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18718_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29

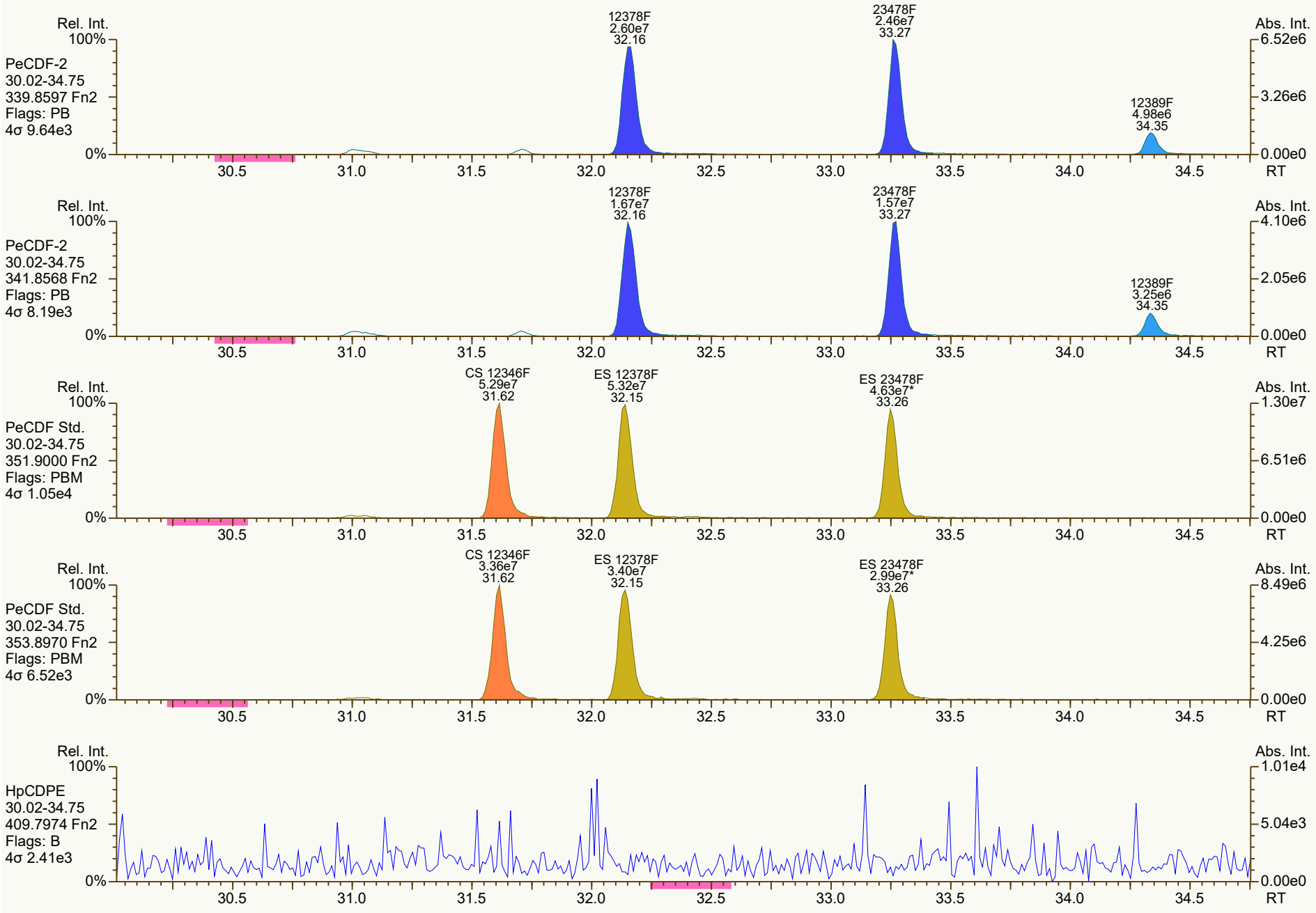
Acq: 15-Dec-2021 16:02:28
User: PSW Datafile: 211215R07



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4102, 3848, 1855 scc: 062-626

Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:13 Page 7 of 12

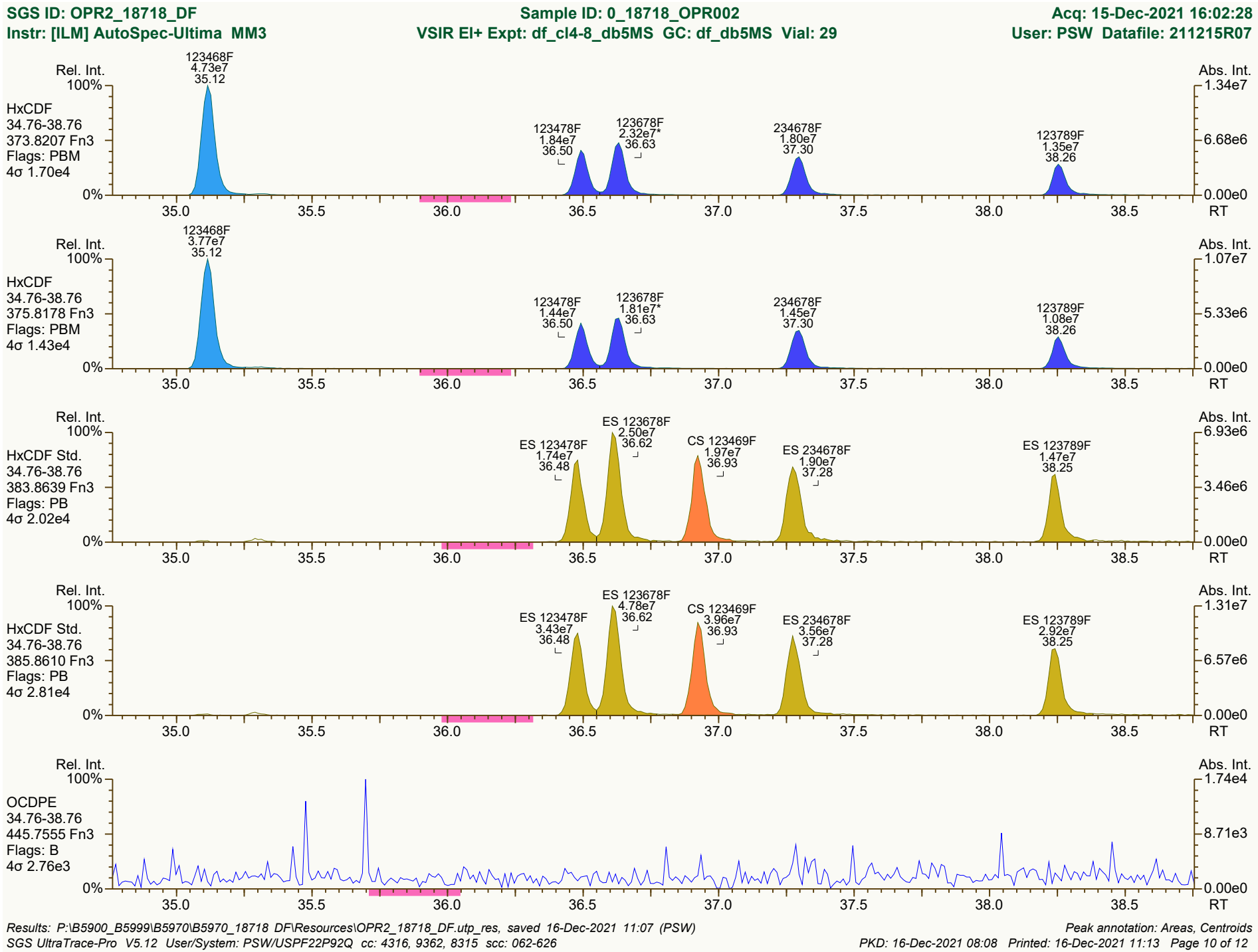

Rel. Int.
100%
0%
Abs. Int.
1.06e7
5.30e6
0.00e0
13468/12468F
4.37e7
29.33
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 2.55e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
2.72e7
29.33
6.40e6
3.20e6
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.49e3
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
6.33e6
3.17e6


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 9.64e3
0%
12378F
2.60e7
32.16
23478F
2.46e7
33.27
12389F
4.98e6
34.35
Abs. Int.
6.52e6
3.26e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 8.19e3
0%
12378F
1.67e7
32.16
23478F
1.57e7
33.27
12389F
3.25e6
34.35
Abs. Int.
4.10e6
2.05e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 1.05e4
0%
CS 12346F
5.29e7
31.62
ES 12378F
5.32e7
32.15
ES 23478F
4.63e7*
33.26
Abs. Int.
1.30e7
6.51e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 6.52e3
0%
CS 12346F
3.36e7
31.62
ES 12378F
3.40e7
32.15
ES 23478F
2.99e7*
33.26
Abs. Int.
8.49e6
4.25e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.41e3
0%
Abs. Int.
1.01e4
5.04e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

SGS ID: OPR2_18718_DF
Instr: [ILM] AutoSpec-Ultima MM3

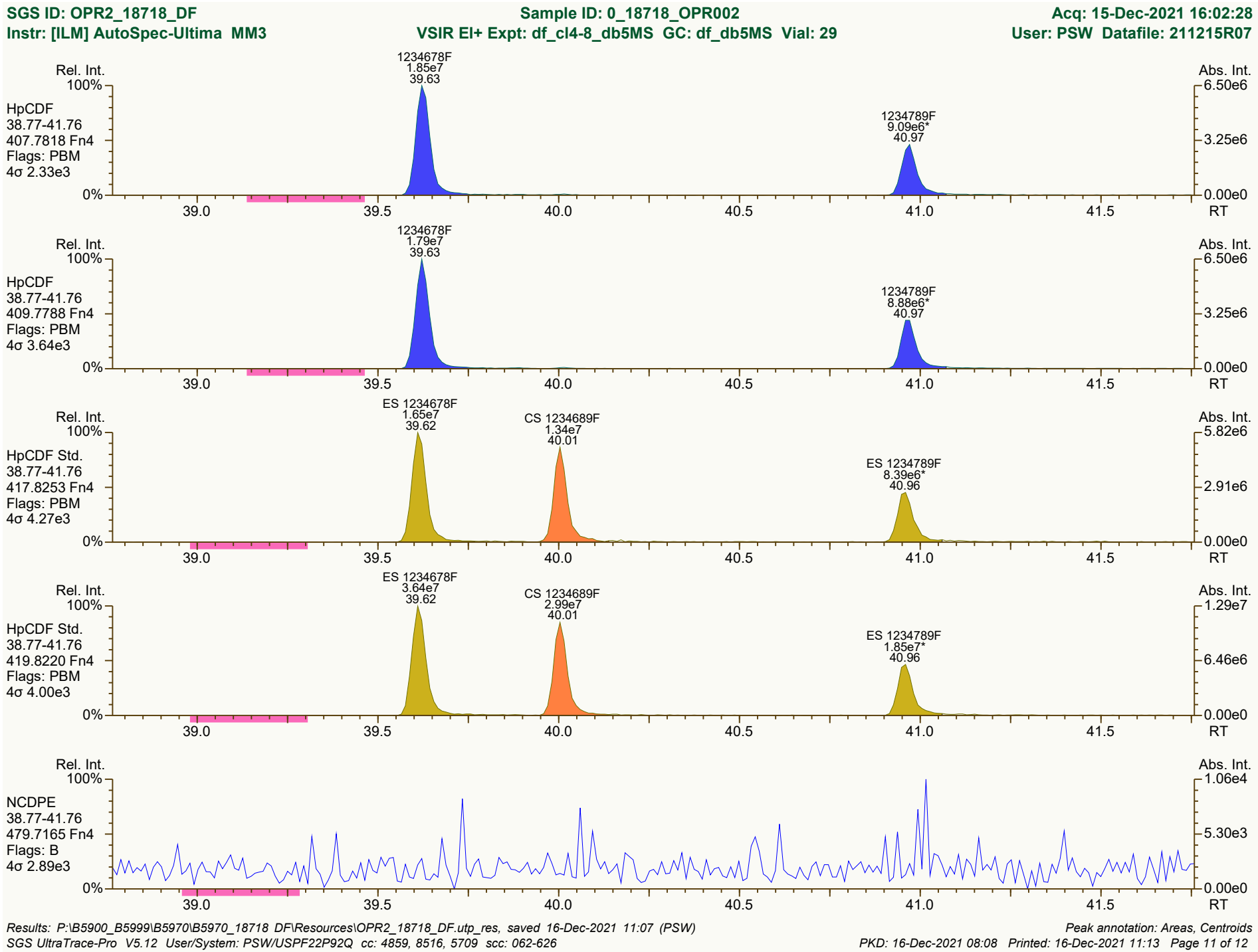
Sample ID: 0_18718_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29

Acq: 15-Dec-2021 16:02:28
User: PSW Datafile: 211215R07



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4316, 9362, 8315 scc: 062-626

Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:13 Page 10 of 12


SGS ID: OPR2_18718_DF
Sample ID: 0_18718_OPR002
Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29
User: PSW Datafile: 211215R07
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.33e3
1234678F
1.85e7
39.63
1234789F
9.09e6*
40.97
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 3.64e3
1234678F
1.79e7
39.63
1234789F
8.88e6*
40.97
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 4.27e3
ES 1234678F
1.65e7
39.62
CS 1234689F
1.34e7
40.01
ES 1234789F
8.39e6*
40.96
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 4.00e3
ES 1234678F
3.64e7
39.62
CS 1234689F
2.99e7
40.01
ES 1234789F
1.85e7*
40.96
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.89e3
RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4859, 8516, 5709 scc: 062-626
PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:13 Page 11 of 12

SGS ID: OPR2_18718_DF | Sample ID: 0_18718_OPR002 | Acq: 15-Dec-2021 16:02:28
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 29 | User: PSW Datafile: 211215R07



Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR2_18718_DF.utp_res, saved 16-Dec-2021 11:07 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8783, 4735, 1460 scc: 062-626 | *PKD: 16-Dec-2021 08:08 Printed: 16-Dec-2021 11:13 Page 12 of 12*

CPSM ONLY

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211215R18	Analysis Date:	16-DEC-2021 00:53:23
Lab ID:	OPR1_18718_DF-RJ		

Window Defining Standards Results

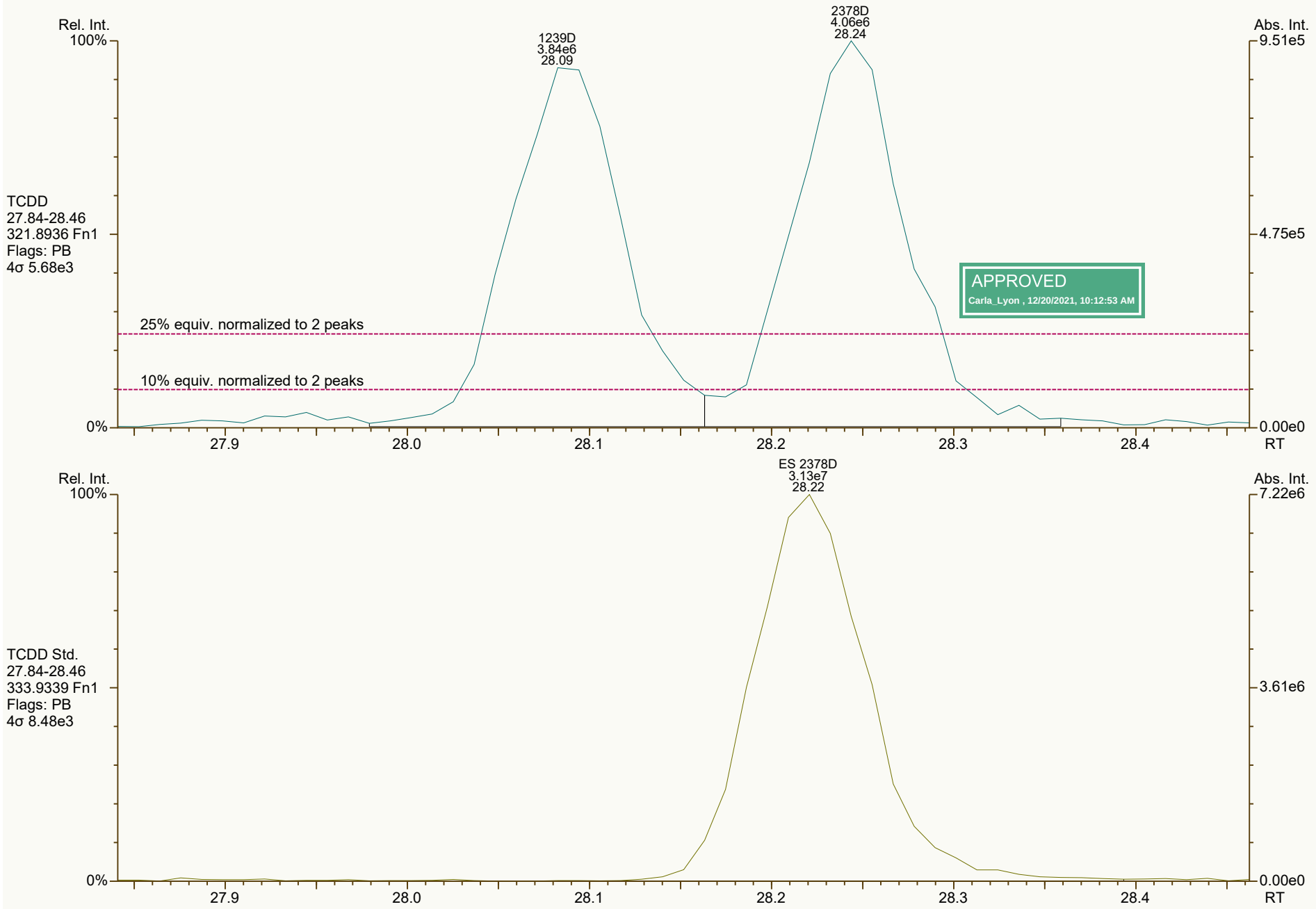
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.59	1289-TCDD	29.22
12479/12468-PeCDD	31.10	12389-PeCDD	34.05
124679/124689-HxCDD	35.75	123789-HxCDD	37.88
1234679-HpCDD	39.86	1234678-HpCDD	40.51
1368-TCDF	22.46	1289-TCDF	29.40
13468/12468-PeCDF	29.32	12389-PeCDF	34.34
123468-HxCDF	35.12	123789-HxCDF	38.25
1234678-HpCDF	39.61	1234789-HpCDF	40.96

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.09	2378-TCDD	28.25
2348-TCDF	27.28	2378-TCDF	27.39

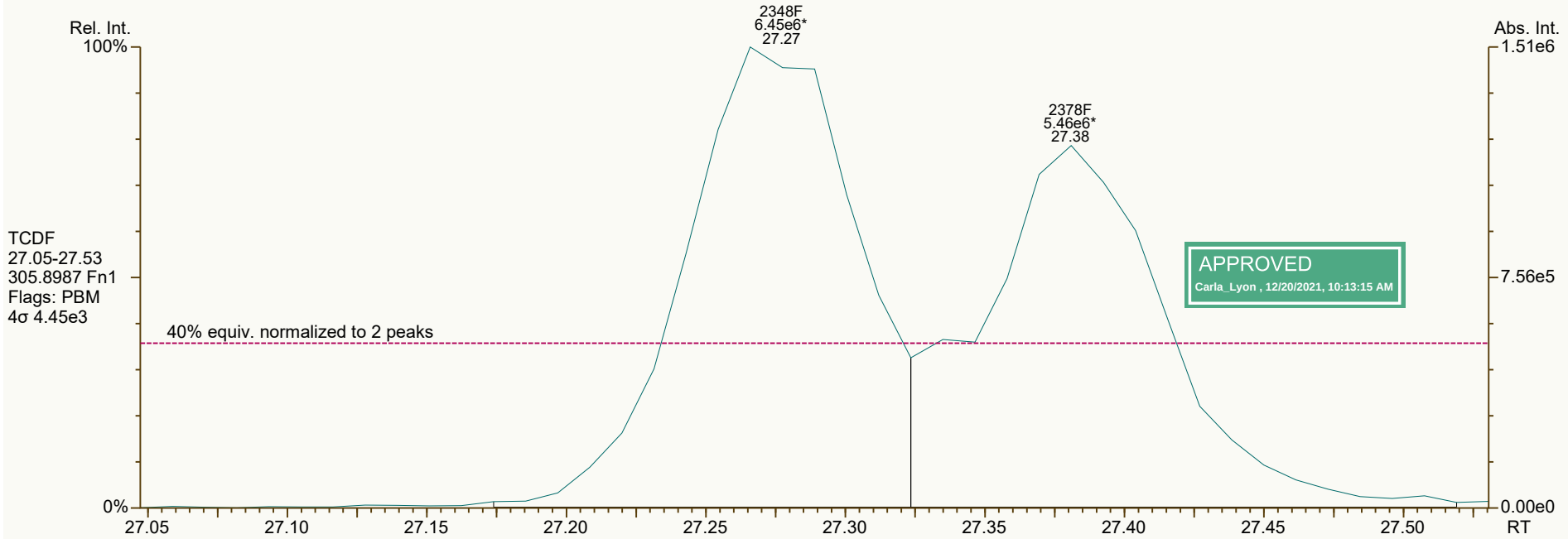
Processed: 20 Dec 2021 14:45 Analyst: gd

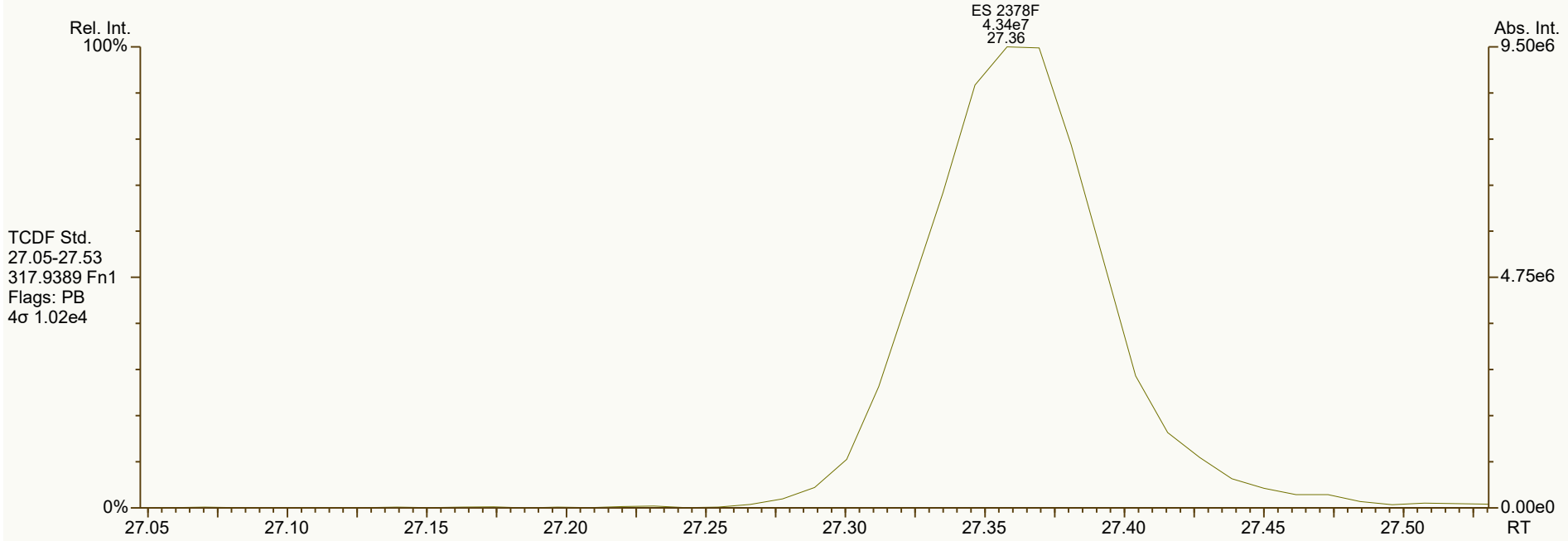
SGS ID: OPR1_18718_DF-RJ
Sample ID: 0_18718_OPR001
Acq: 16-Dec-2021 00:53:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R18



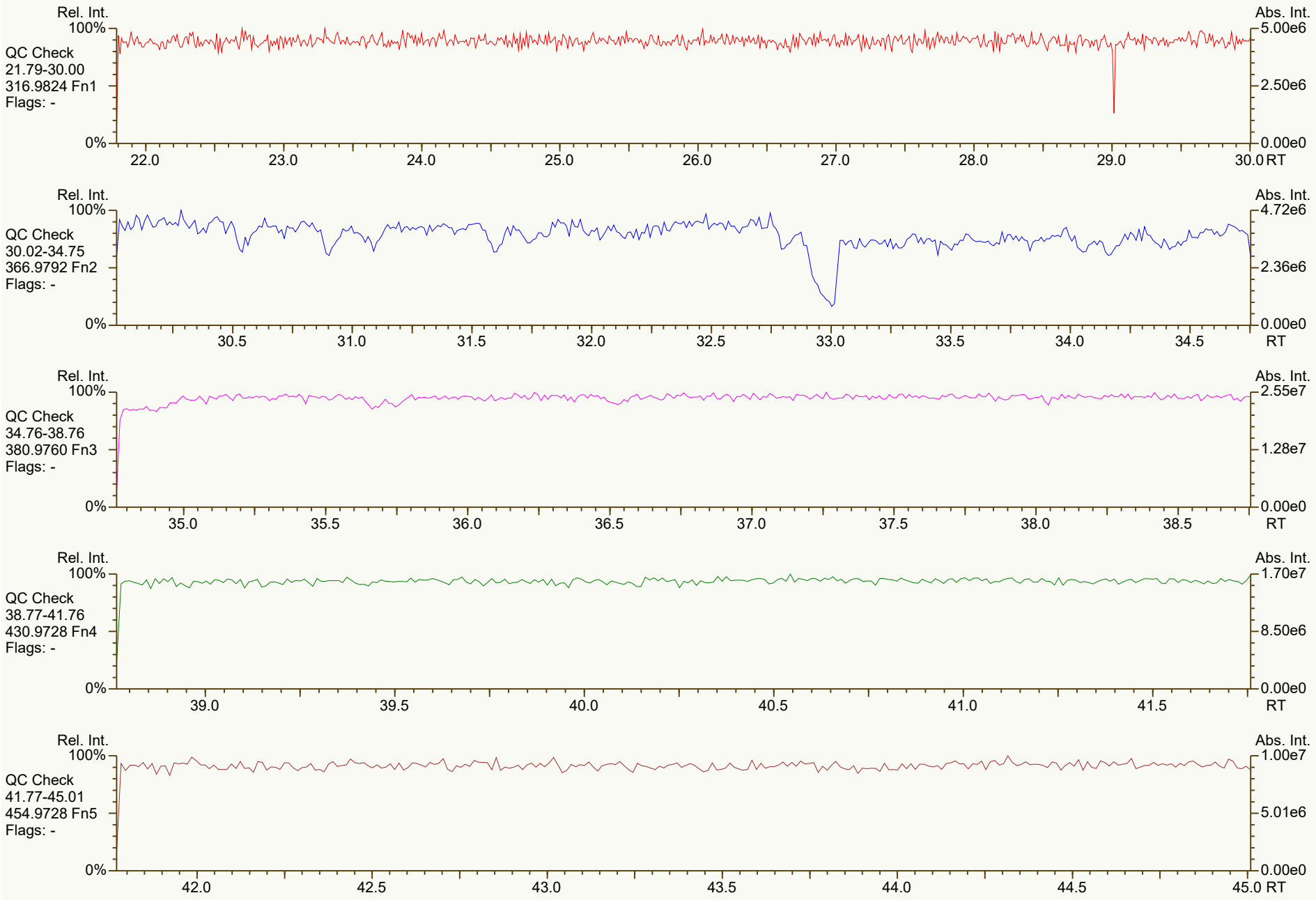
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF-RJ.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 16-Dec-2021 08:12 Printed: 16-Dec-2021 11:12

SGS ID: OPR1_18718_DF-RJ
Sample ID: 0_18718_OPR001
Acq: 16-Dec-2021 00:53:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R18





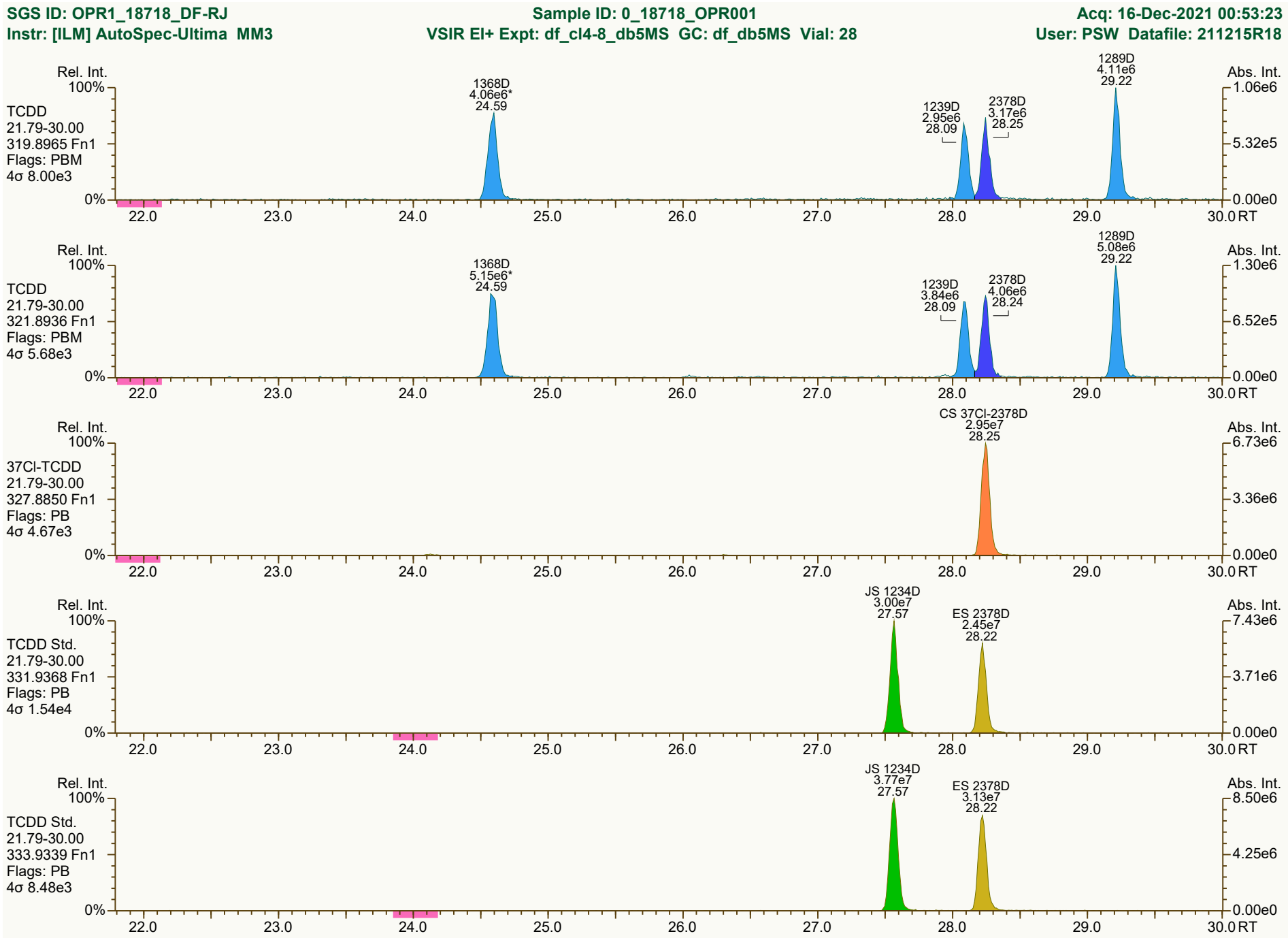
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF-RJ.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 16-Dec-2021 08:12 Printed: 16-Dec-2021 11:12


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.00e6
2.50e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.72e6
2.36e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.55e7
1.28e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.70e7
8.50e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.00e7
5.01e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: OPR1_18718_DF-RJ
Instr: [ILM] AutoSpec-Ultima MM3

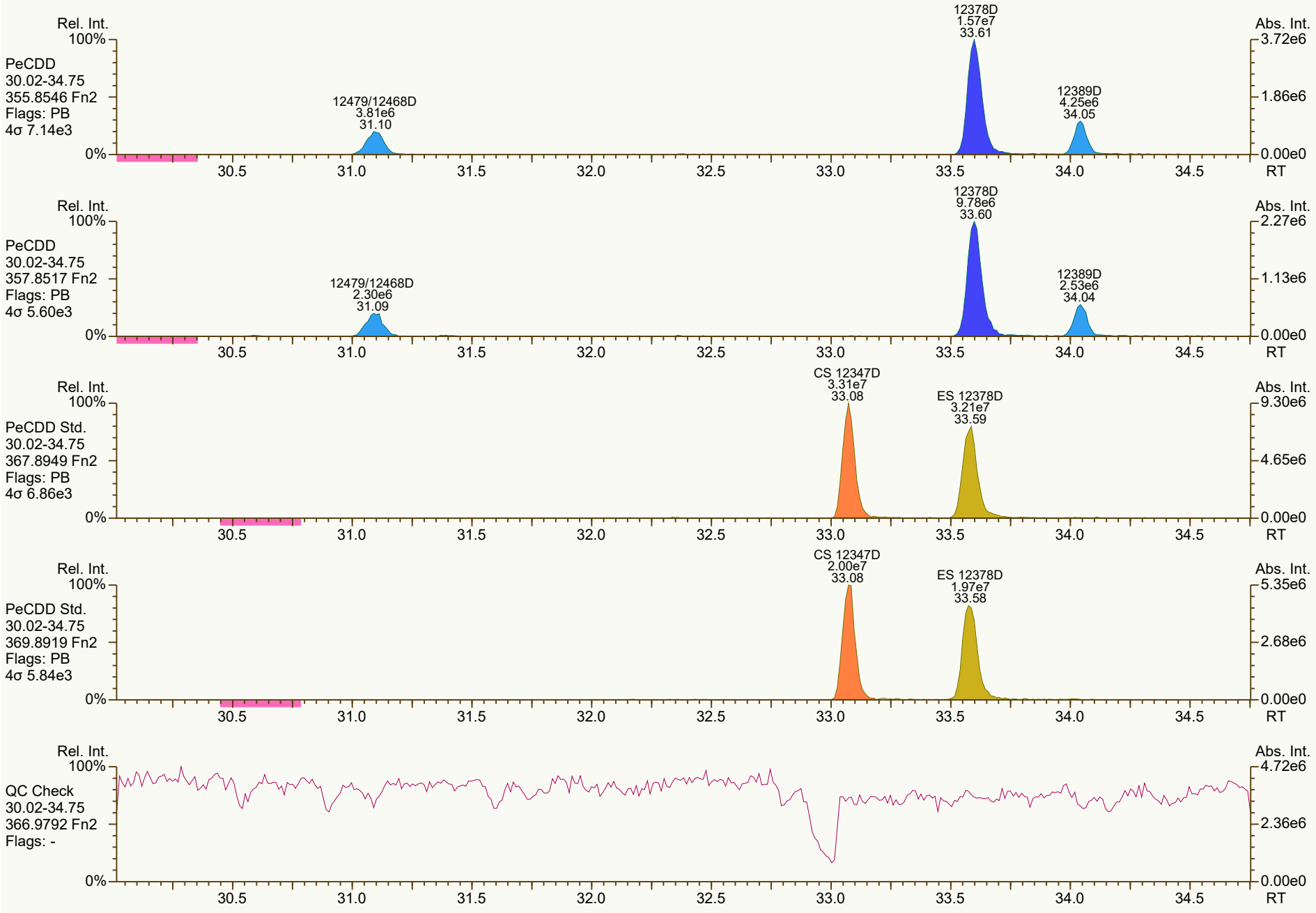
Sample ID: 0_18718_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28

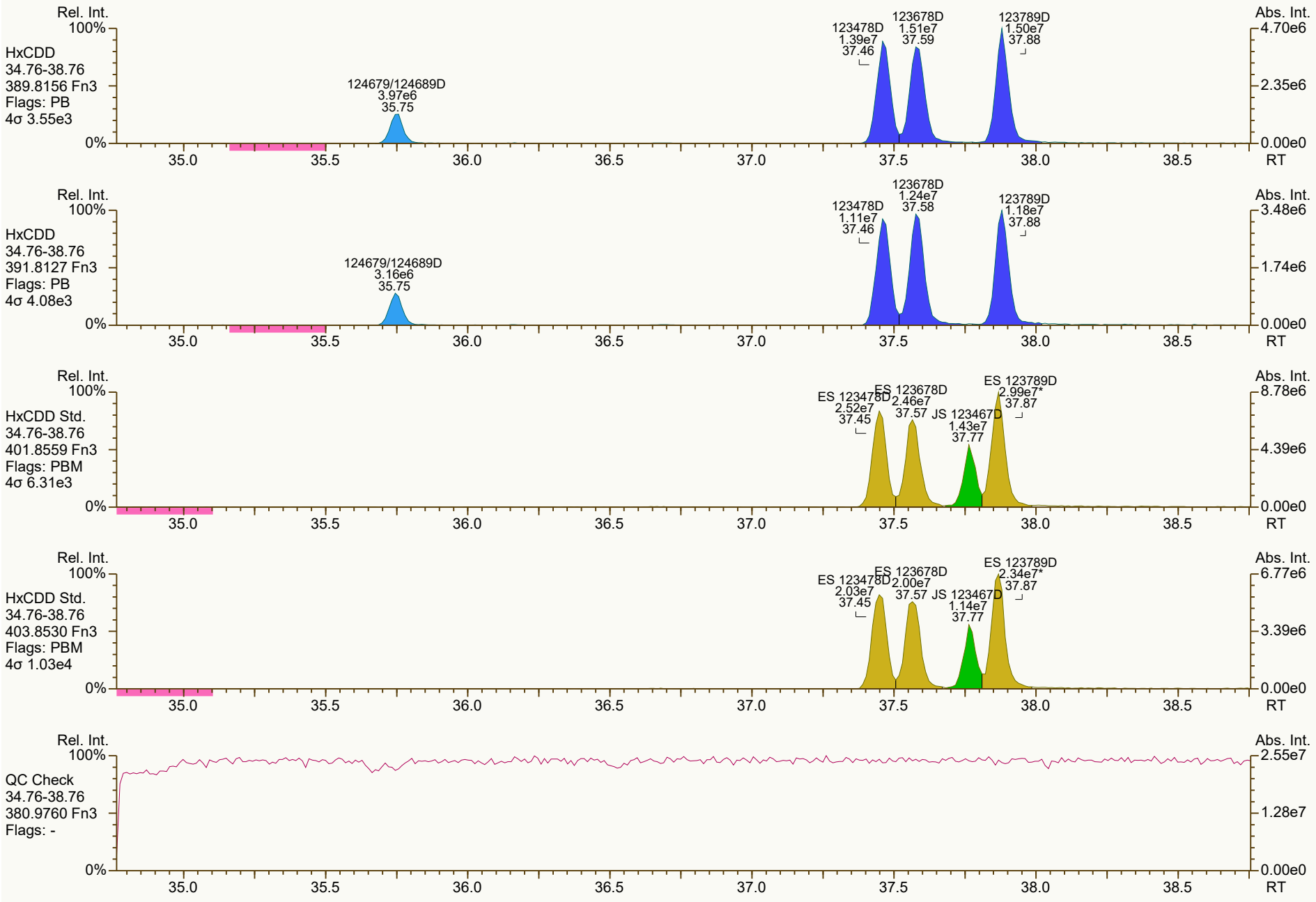
Acq: 16-Dec-2021 00:53:23
User: PSW Datafile: 211215R18

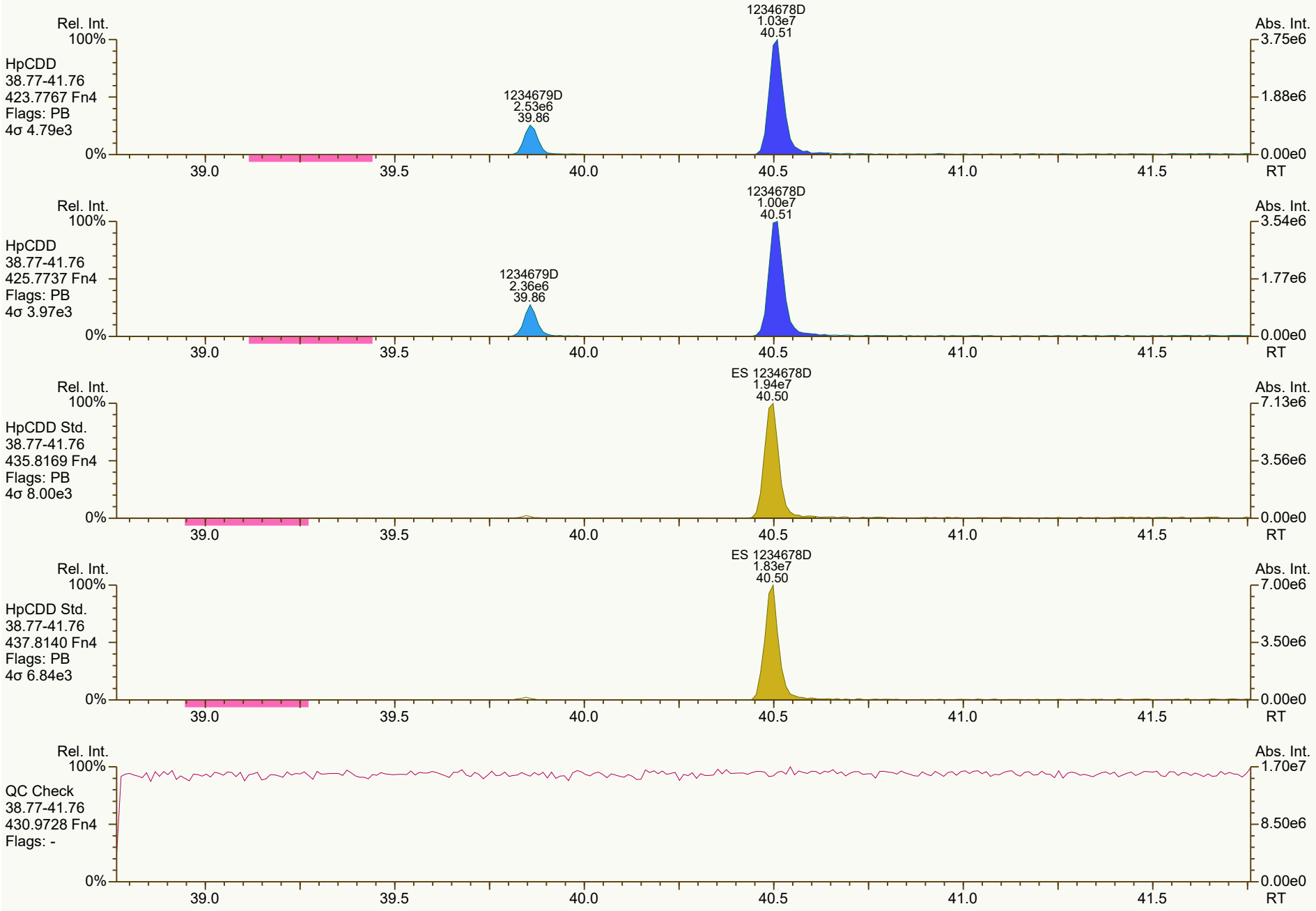


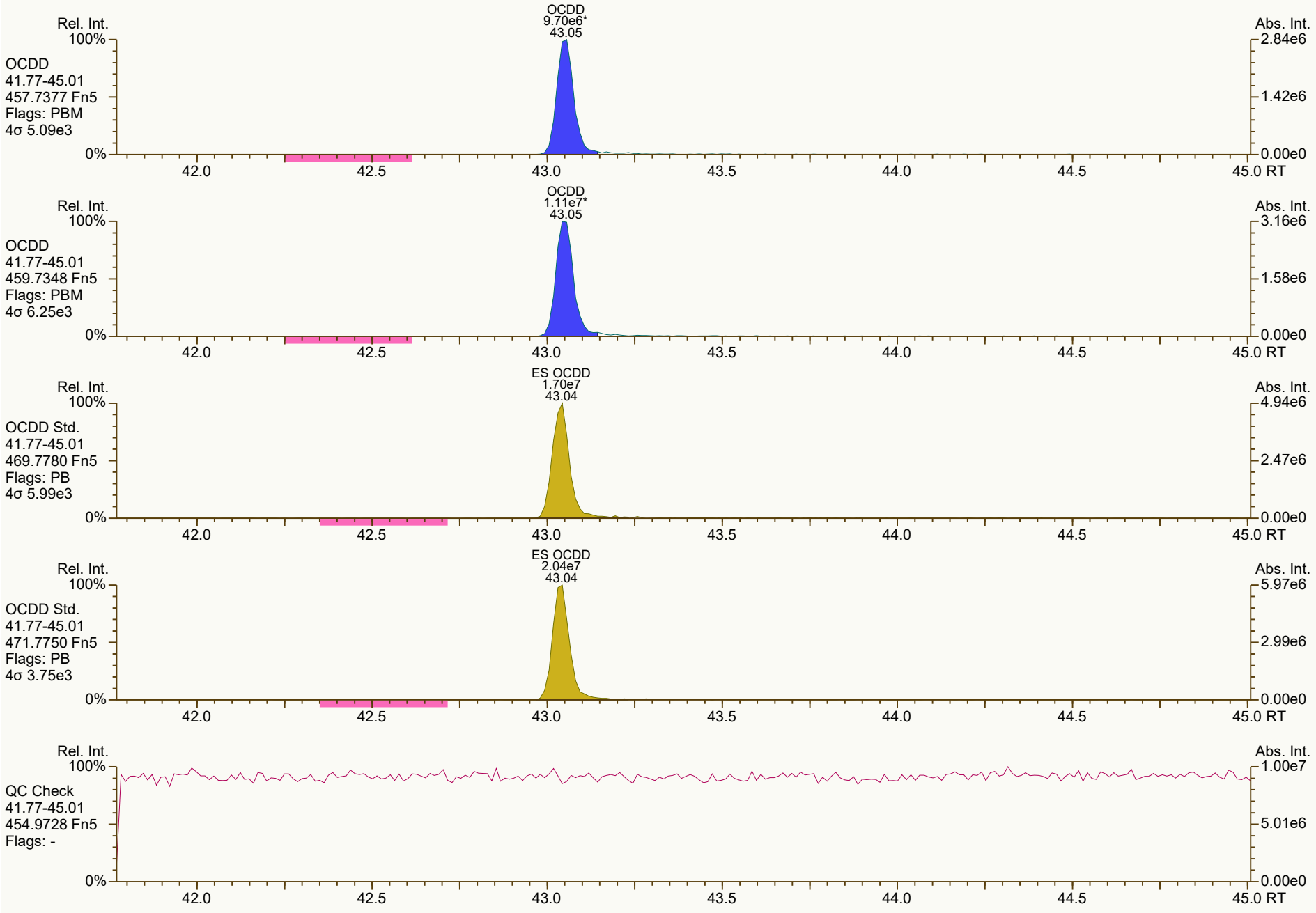
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF-RJ.utp_res, saved 16-Dec-2021 11:07 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8184, 2935, 9227 scc: 926-429

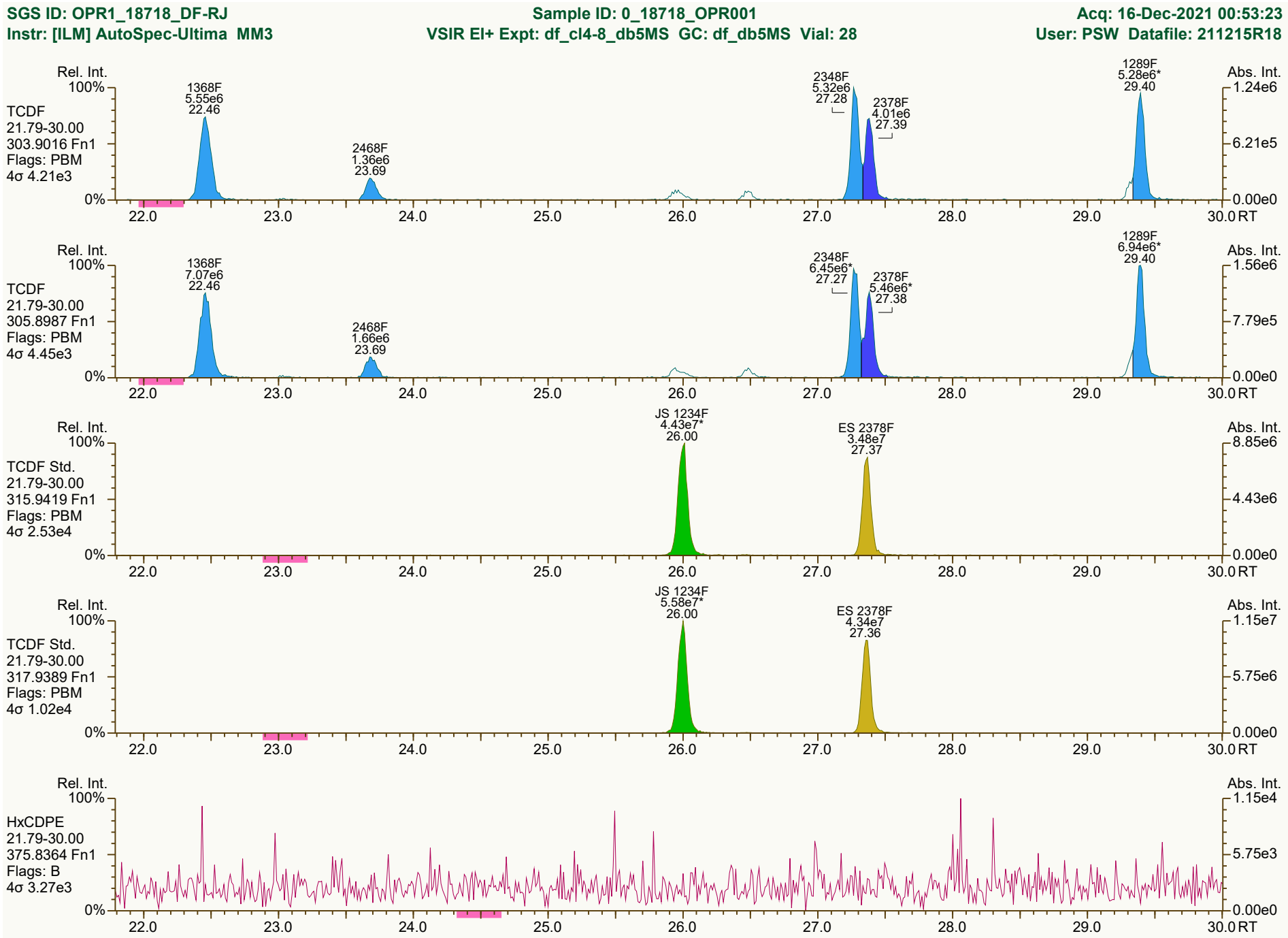
Peak annotation: Areas, Centroids
PKD: 16-Dec-2021 08:12 Printed: 16-Dec-2021 11:15 Page 2 of 12


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PB
4σ 7.14e3
12479/12468D
3.81e6
31.10
12378D
1.57e7
33.61
12389D
4.25e6
34.05
Abs. Int.
3.72e6
1.86e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 5.60e3
12479/12468D
2.30e6
31.09
12378D
9.78e6
33.60
12389D
2.53e6
34.04
Abs. Int.
2.27e6
1.13e6
0.00e0
0%
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 6.86e3
CS 12347D
3.31e7
33.08
ES 12378D
3.21e7
33.59
Abs. Int.
9.30e6
4.65e6
0.00e0
0%
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 5.84e3
CS 12347D
2.00e7
33.08
ES 12378D
1.97e7
33.58
Abs. Int.
5.35e6
2.68e6
0.00e0
0%
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
4.72e6
2.36e6
0.00e0
0%


Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PB
4σ 3.55e3
0%
124679/124689D
3.97e6
35.75
123478D
1.39e7
37.46
123678D
1.51e7
37.59
123789D
1.50e7
37.88
Abs. Int.
4.70e6
2.35e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PB
4σ 4.08e3
0%
124679/124689D
3.16e6
35.75
123478D
1.11e7
37.46
123678D
1.24e7
37.58
123789D
1.18e7
37.88
Abs. Int.
3.48e6
1.74e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PBM
4σ 6.31e3
0%
ES 123478D
2.52e7
37.45
ES 123678D
2.46e7
37.57
JS 123467D
1.43e7
37.77
ES 123789D
2.99e7*
37.87
Abs. Int.
8.78e6
4.39e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PBM
4σ 1.03e4
0%
ES 123478D
2.03e7
37.45
ES 123678D
2.00e7
37.57
JS 123467D
1.14e7
37.77
ES 123789D
2.34e7*
37.87
Abs. Int.
6.77e6
3.39e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.55e7
1.28e7
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.79e3
0%
1234678D
1.03e7
40.51
1234679D
2.53e6
39.86
Abs. Int.
3.75e6
1.88e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.97e3
0%
1234678D
1.00e7
40.51
1234679D
2.36e6
39.86
Abs. Int.
3.54e6
1.77e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 8.00e3
0%
ES 1234678D
1.94e7
40.50
Abs. Int.
7.13e6
3.56e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 6.84e3
0%
ES 1234678D
1.83e7
40.50
Abs. Int.
7.00e6
3.50e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.70e7
8.50e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
9.70e6*
43.05
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 5.09e3
0%
Abs. Int.
2.84e6
1.42e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.11e7*
43.05
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 6.25e3
0%
Abs. Int.
3.16e6
1.58e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.70e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 5.99e3
0%
Abs. Int.
4.94e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.04e7
43.04
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 3.75e3
0%
Abs. Int.
5.97e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.00e7
5.01e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT



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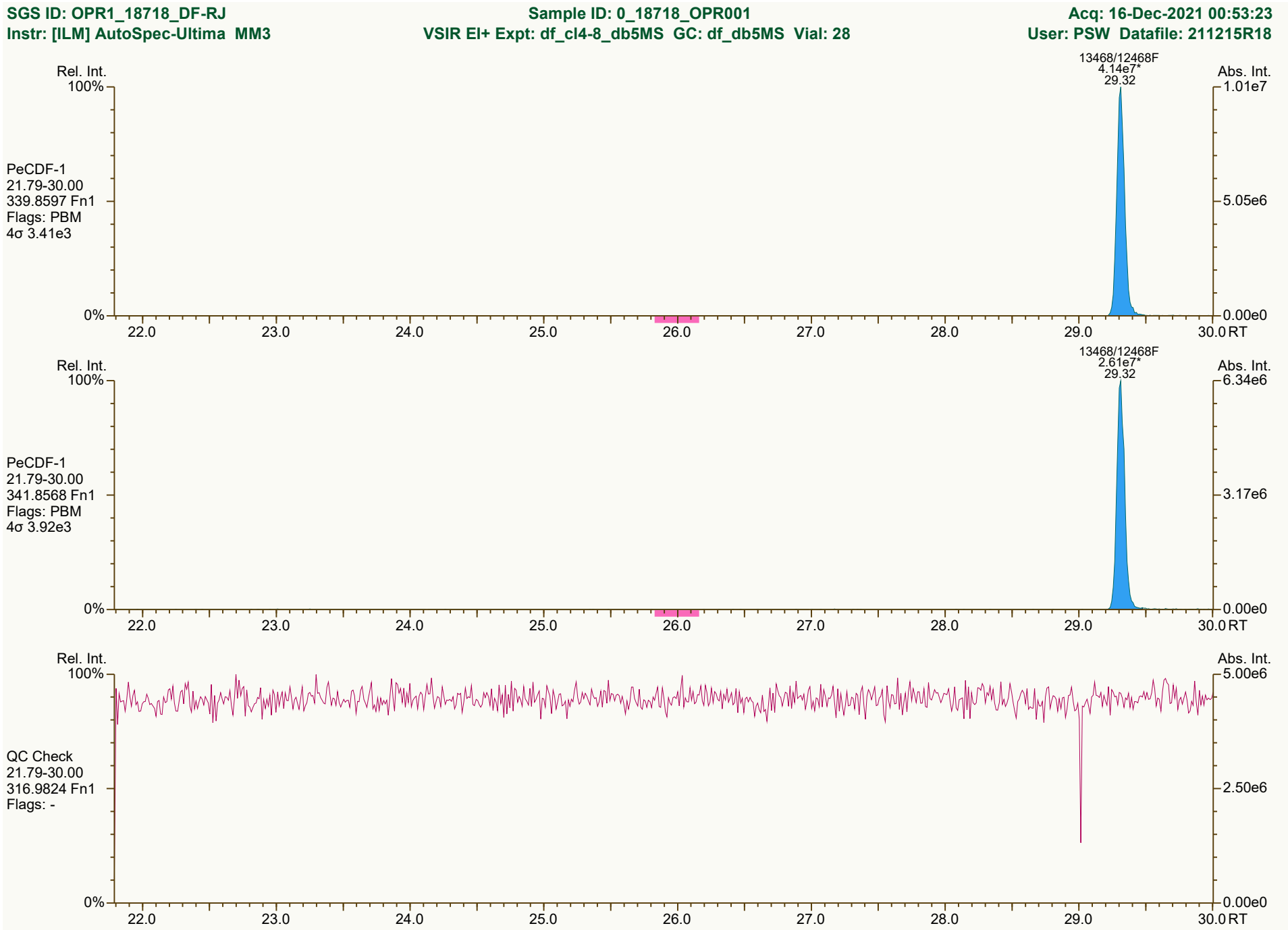
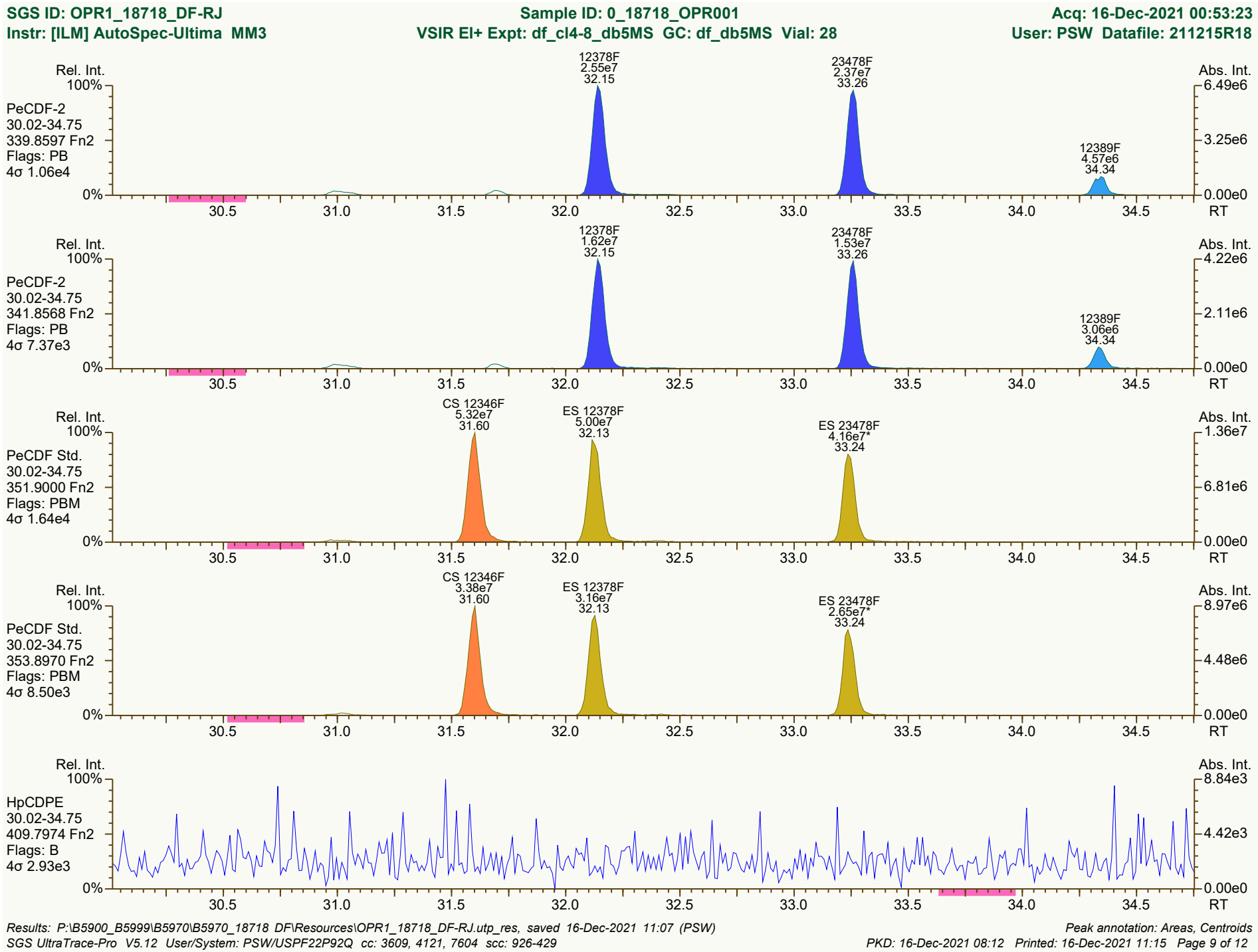
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2824, 7141, 2556 scc: 926-429
PKD: 16-Dec-2021 08:12 Printed: 16-Dec-2021 11:15 Page 7 of 12


SGS ID: OPR1_18718_DF-RJ
Sample ID: 0_18718_OPR001
Acq: 16-Dec-2021 00:53:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R18
Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PBM
4σ 3.41e3
13468/12468F
4.14e7*
29.32
Abs. Int.
1.01e7
5.05e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PBM
4σ 3.92e3
13468/12468F
2.61e7*
29.32
Abs. Int.
6.34e6
3.17e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
5.00e6
2.50e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF-RJ.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4997 scc: 926-429
PKD: 16-Dec-2021 08:12 Printed: 16-Dec-2021 11:15 Page 8 of 12



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Peak annotation: Areas, Centroids
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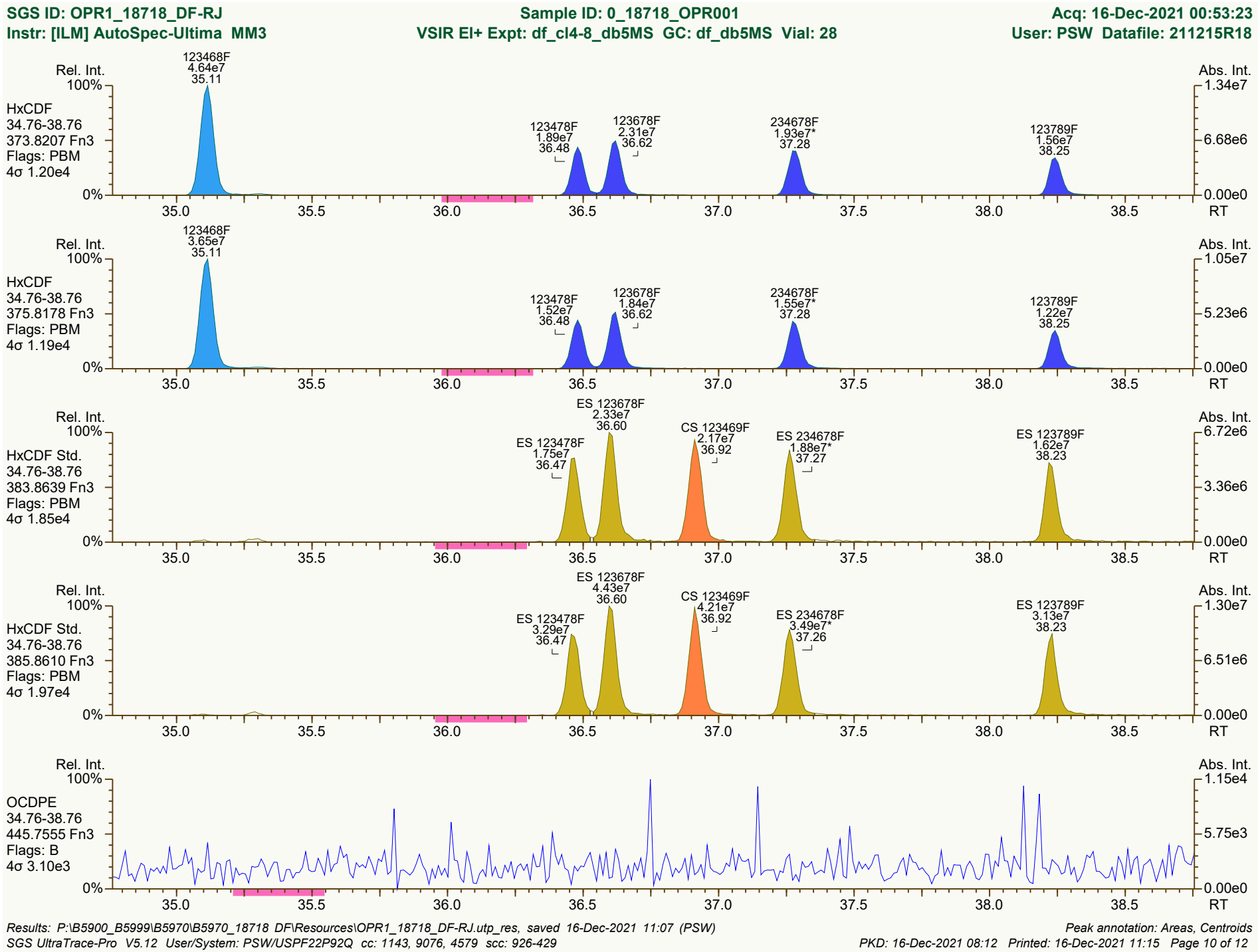
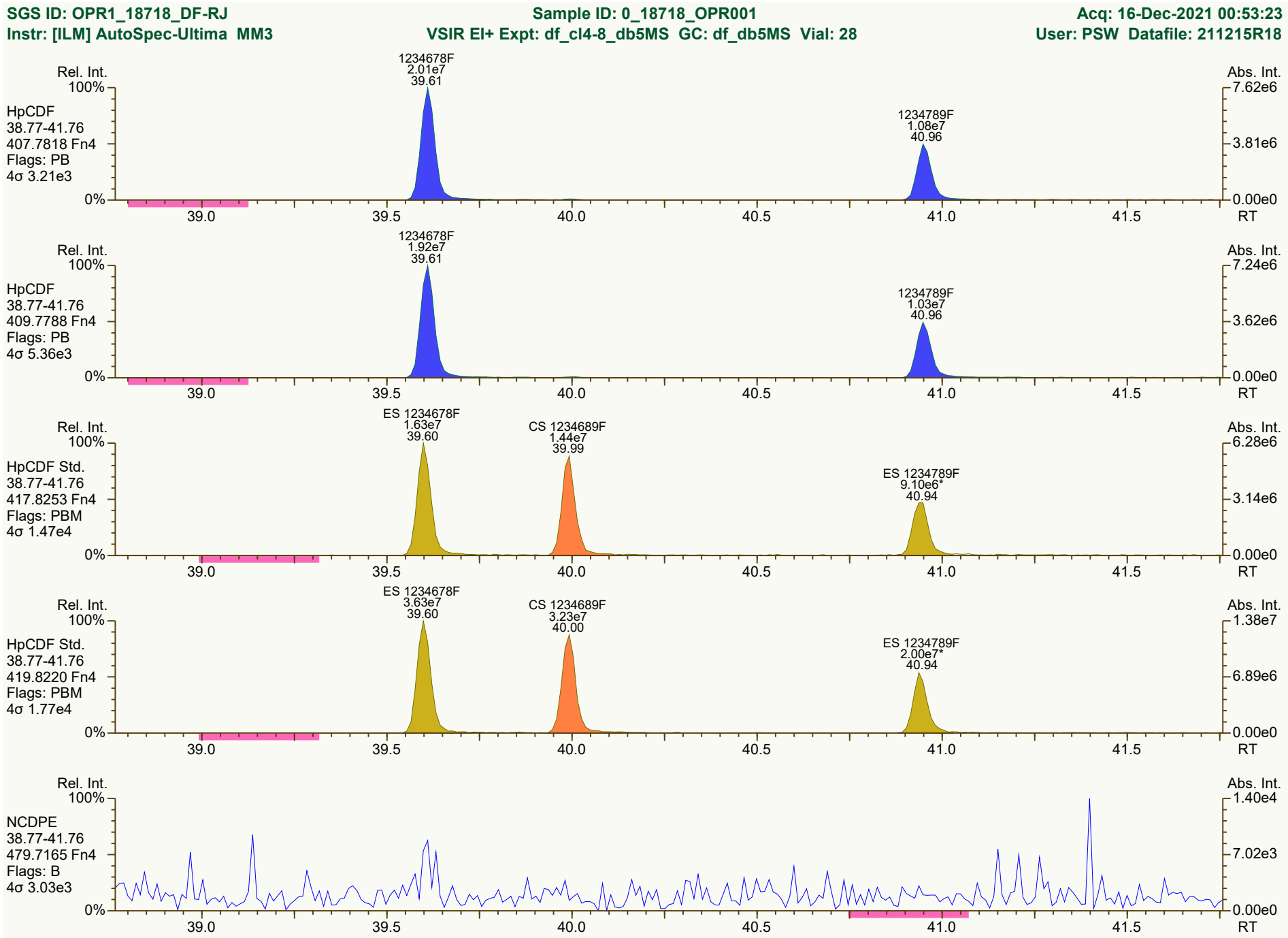
PKD: 16-Dec-2021 08:12 Printed: 16-Dec-2021 11:15 Page 9 of 12


SGS ID: OPR1_18718_DF-RJ
Sample ID: 0_18718_OPR001
Acq: 16-Dec-2021 00:53:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R18
Rel. Int.
Abs. Int.
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 1.20e4
123468F
4.64e7
35.11
123478F
1.89e7
36.48
123678F
2.31e7
36.62
234678F
1.93e7*
37.28
123789F
1.56e7
38.25
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 1.19e4
123468F
3.65e7
35.11
123478F
1.52e7
36.48
123678F
1.84e7
36.62
234678F
1.55e7*
37.28
123789F
1.22e7
38.25
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PBM
4σ 1.85e4
ES 123678F
2.33e7
36.60
ES 123478F
1.75e7
36.47
CS 123469F
2.17e7
36.92
ES 234678F
1.88e7*
37.27
ES 123789F
1.62e7
38.23
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PBM
4σ 1.97e4
ES 123678F
4.43e7
36.60
ES 123478F
3.29e7
36.47
CS 123469F
4.21e7
36.92
ES 234678F
3.49e7*
37.26
ES 123789F
3.13e7
38.23
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.10e3
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
1.34e7
6.68e6
0.00e0
1.05e7
5.23e6
6.72e6
3.36e6
1.30e7
6.51e6
1.15e4
5.75e3


SGS ID: OPR1_18718_DF-RJ
Sample ID: 0_18718_OPR001
Acq: 16-Dec-2021 00:53:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R18
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 3.21e3
1234678F
2.01e7
39.61
1234789F
1.08e7
40.96
7.62e6
3.81e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 5.36e3
1234678F
1.92e7
39.61
1234789F
1.03e7
40.96
7.24e6
3.62e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 1.47e4
ES 1234678F
1.63e7
39.60
CS 1234689F
1.44e7
39.99
ES 1234789F
9.10e6*
40.94
6.28e6
3.14e6
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 1.77e4
ES 1234678F
3.63e7
39.60
CS 1234689F
3.23e7
40.00
ES 1234789F
2.00e7*
40.94
1.38e7
6.89e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.03e3
1.40e4
7.02e3
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
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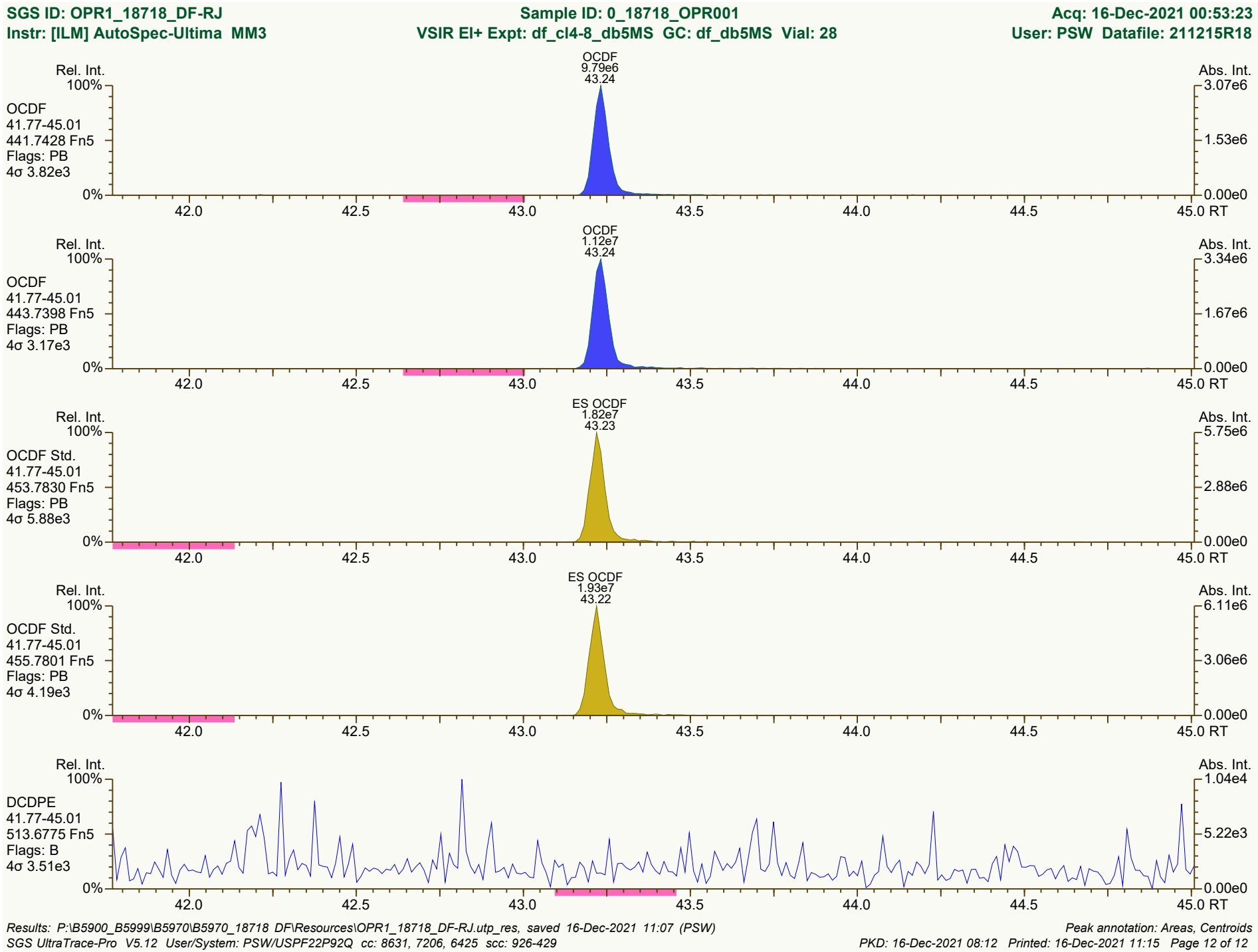
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9404, 6263, 4628 scc: 926-429
PKD: 16-Dec-2021 08:12 Printed: 16-Dec-2021 11:15 Page 11 of 12


SGS ID: OPR1_18718_DF-RJ
Sample ID: 0_18718_OPR001
Acq: 16-Dec-2021 00:53:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 28
User: PSW Datafile: 211215R18
OCDF
9.79e6
43.24
Rel. Int.
Abs. Int.
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.82e3
OCDF
1.12e7
43.24
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.17e3
ES OCDF
1.82e7
43.23
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 5.88e3
ES OCDF
1.93e7
43.22
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.19e3
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.51e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5970\B5970_18718 DF\Resources\OPR1_18718_DF-RJ.utp_res, saved 16-Dec-2021 11:07 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8631, 7206, 6425 scc: 926-429
PKD: 16-Dec-2021 08:12 Printed: 16-Dec-2021 11:15 Page 12 of 12



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120221-S-JC-SW-B-2H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.31 g	Lab Sample ID	B5971_18863_DF_001	Date Extracted:	24-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	78.6 %	QC Batch No:	18863	Date Analyzed:	25-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:03:38

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	18.9				ES 2378-TCDD	88.1	
12378-PeCDD	ND	0.295			ES 12378-PeCDD	95.3	
123478-HxCDD	ND	0.379			ES 123478-HxCDD	97.7	
123678-HxCDD	EMPC		0.998	J	ES 123678-HxCDD	111	
123789-HxCDD	1.15			J	ES 123789-HxCDD	94.3	
1234678-HpCDD	29.7				ES 1234678-HpCDD	86.8	
OCDD	448				ES OCDD	76.1	
2378-TCDF	47.2				ES 2378-TCDF	83.1	
12378-PeCDF	2.2			J	ES 12378-PeCDF	89.7	
23478-PeCDF	1.63			J	ES 23478-PeCDF	88.5	
123478-HxCDF	4.8				ES 123478-HxCDF	93.2	
123678-HxCDF	1.31			J	ES 123678-HxCDF	112	
234678-HxCDF	0.591			J	ES 234678-HxCDF	105	
123789-HxCDF	ND	0.229			ES 123789-HxCDF	84.9	
1234678-HpCDF	6.13				ES 1234678-HpCDF	118	
1234789-HpCDF	1.12			J	ES 1234789-HpCDF	77.1	
OCDF	14.7				ES OCDF	68.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	91.4	
Total TCDD	26.9		28.4		CS 12347-PeCDD	108	
Total PeCDD	6.51		6.51		CS 12346-PeCDF	94.7	
Total HxCDD	32.3		33.3		CS 123469-HxCDF	123	
Total HpCDD	94.2		94.2		CS 1234689-HpCDF	119	
Total TCDF	84.1		96.5				
Total PeCDF	6.56		7.9				
Total HxCDF	13.2		13.5				
Total HpCDF	13.8		13.8				
Total PCDD/Fs	**740**		**757**				
WHO-2005 TEQs							
TEQ: ND=0	25.5		25.6				
TEQ: ND=DL/2	25.7	0.492	25.8				
TEQ: ND=DL	25.9	0.983	26				

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Sample ID: 11215131-120221-S-JC-SW-B-2H Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.31 g	Lab Sample ID:	B5971_18863_DF_001	Date Extracted:	24-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	78.6 %	QC Batch No.:	18863	Date Analyzed:	25-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:03:38

Tetra-Dioxins	Conc. (pg/g)	Qualifiers
1368D	(0.355)	
1379D	(0.355)	
1369D	(0.355)	
1469D	7.13	
1247D...[4]	(0.355)	
1378D	(0.355)	
1268D	(0.355)	
1478D	(0.355)	
1279D	(0.355)	
1234/1269D	0.821	
1236D	(0.355)	
1237/1238D	(0.355)	
1239D	(0.355)	
2378D	18.9	
1278D	[1.47]	
1267D	(0.355)	
1289D	(0.355)	
Conc.	26.9	
EMPC	28.4	

Penta-Dioxins	Conc. (pg/g)	Qualifiers
12479/12468D	1.16	J
12469D	4.37	
12368D	(0.295)	
12478D	(0.295)	
12379D	(0.295)	
12369D...[3]	0.979	J
12346/12347D	(0.295)	
12378D	(0.295)	
12367D	(0.295)	
12389D	(0.295)	
Conc.	6.51	
EMPC	6.51	

Hexa-Dioxins	Conc (pg/g)	Qualifiers
124679/124689D	24.7	
123468D	(0.358)	
123679/123689D	5.66	
123469D	0.861	J
123478D	(0.379)	
123678D	[0.998]	J
123467D	(0.358)	
123789D	1.15	J
Conc.	32.3	
EMPC	33.3	

Hepta-Dioxins	Conc (pg/g)	Qualifiers
1234679D	64.6	
1234678D	29.7	
Conc.	94.2	
EMPC	94.2	

Octa-Dioxin	Conc (pg/g)	Qualifiers
OCDD	448	

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	25.5	25.6
TEQ: ND=DL/2	25.7	25.8
TEQ: ND=DL	25.9	26

	Conc.	EMPC
Total PCDD/Fs	740	757

Checkcode: 109-048-DST

Report Created: 26-Jan-2022 09:42 Analyst: TF

Sample ID: 11215131-120221-S-JC-SW-B-2H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.31 g	Lab Sample ID:	B5971_18863_DF_001	Date Extracted:	24-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	78.6 %	QC Batch No.:	18863	Date Analyzed:	25-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	19:03:38

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.298)		13468/12468F	[1.34]	J	123468F	0.892	J B	1234678F	6.13	
1468F	(0.298)		13678F...[3]	(0.331)		124678/134678F	2.93		1234679F	(0.265)	
2468F	0.68		12368F...[3]	1.94	J	134679F	(0.194)		1234689F	6.6	
1346/1246F	(0.298)		14678F	(0.331)		124679F	(0.194)		1234789F	1.12	J
1347F...[3]	1.39		13479F	(0.331)		124689F	2.65				
1348F	(0.298)		13469/12479F	(0.331)		123467F	[0.355]	J			
1248F...[3]	3.08		12346F	(0.331)		123478F	4.8				
1268F	1.3		23468/12469F	(0.331)		123678F	1.31	J			
1467F	(0.298)		12347F	(0.331)		123479F	(0.194)				
1478F	2.13		12348F	(0.331)		123469F	(0.194)				
1369/1237F	[0.673]		12378F	2.2	J	123679F	(0.194)				
2467F	(0.298)		12678/12367F	0.787	J	234678F	0.591	J	**Conc.**	13.8	
2368F	[5]		12379F	(0.331)		234678/123689F	0		**EMPC**	13.8	
1238F...[5]	(0.298)		12679F	(0.331)		123689F	(0.194)				
1278F	22.6		23467/12369F	(0.331)		123789F	(0.229)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.298)		23478F	1.63	J	123789/123489F	0				
1267F	1.48		23478/12489F	0		123489F	(0.194)		OCDF	14.7	
2346/1249F	(0.298)		12489F	(0.331)							
2347/1279F	(0.298)		12349F	(0.331)							
2348F	[2.62]		12389F	(0.331)							
2378F	47.2										
2367/3467F	4.27										
1269F	[0.779]										
1239F	(0.298)										
1289F	[3.28]										
Conc.	84.1		**Conc.**	6.56		**Conc.**	13.2				
EMPC	96.5		**EMPC**	7.9		**EMPC**	13.5				

Checkcode: 109-048-DST

Report Created: 26-Jan-2022 09:42 Analyst: TF

Sample ID: 11215131-120221-S-JC-SW-B-2H TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5971_18863_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.31 g	QC Batch No.:	18863
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	24-Jan-2022
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	25-Jan-2022 19:03
Lab Project No:	B5971	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	18.9		0.355	18.9	18.9	18.9
12378-PeCDD	(0.295)		0.295	(0.147)	(0.295)	(0.295)
123478-HxCDD	(0.379)		0.379	(0.0379)	(0.0379)	(0.0379)
123678-HxCDD	[0.998]	J	0.327	[0.0998]	[0.0998]	[0.0998]
123789-HxCDD	1.15	J	0.37	0.115	0.115	0.115
1234678-HpCDD	29.7		0.472	0.297	0.297	0.297
OCDD	448		1.14	0.448	0.0448	0.134
2378-TCDF	47.2		0.298	4.72	4.72	4.72
12378-PeCDF	2.2	J	0.344	0.11	0.11	0.0659
23478-PeCDF	1.63	J	0.317	0.817	0.817	0.49
123478-HxCDF	4.8		0.186	0.48	0.48	0.48
123678-HxCDF	1.31	J	0.177	0.131	0.131	0.131
234678-HxCDF	0.591	J	0.198	0.0591	0.0591	0.0591
123789-HxCDF	(0.229)		0.229	(0.0229)	(0.0229)	(0.0229)
1234678-HpCDF	6.13		0.19	0.0613	0.0613	0.0613
1234789-HpCDF	1.12	J	0.397	0.0112	0.0112	0.0112
OCDF	14.7		0.945	0.0147	0.00147	0.00442

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TEQ Summaries			
EMPC = 0, ND = 0	26.2	25.8	25.5
EMPC = 0, ND = DL / 2	26.3	26	25.7
EMPC = 0, ND = DL	26.4	26.1	25.9
EMPC = 0, < J-level = 0	25	24.5	24.6
EMPC = EMPC, ND = 0	26.3	25.9	25.6
EMPC = EMPC, ND = DL / 2	26.4	26.1	25.8
EMPC = EMPC, ND = DL	26.5	26.2	26
EMPC = EMPC, < J-level = 0	25	24.5	24.6

Sample ID: 11215131-120321-S-JC-SW-B-3H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.15 g	Lab Sample ID	B5971_18819_DF_002	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	74.0 %	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	15:25:34

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	43.5				ES 2378-TCDD	78.1	
12378-PeCDD	ND	0.761			ES 12378-PeCDD	80	
123478-HxCDD	ND	0.82			ES 123478-HxCDD	83.6	
123678-HxCDD	ND	0.706			ES 123678-HxCDD	96	
123789-HxCDD	ND	0.71			ES 123789-HxCDD	82.7	
1234678-HpCDD	18.3				ES 1234678-HpCDD	87	
OCDD	352				ES OCDD	86.2	
2378-TCDF	128				ES 2378-TCDF	74.1	
12378-PeCDF	4.91				ES 12378-PeCDF	80.3	
23478-PeCDF	EMPC		3.17		ES 23478-PeCDF	78.7	
123478-HxCDF	7.93				ES 123478-HxCDF	92.3	
123678-HxCDF	2.3			J	ES 123678-HxCDF	104	
234678-HxCDF	ND	0.546			ES 234678-HxCDF	86	
123789-HxCDF	ND	0.604			ES 123789-HxCDF	83.5	
1234678-HpCDF	2.29			J	ES 1234678-HpCDF	103	
1234789-HpCDF	ND	0.485			ES 1234789-HpCDF	92.9	
OCDF	2.45			J	ES OCDF	97	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77	
Total TCDD	50.4		50.4		CS 12347-PeCDD	98	
Total PeCDD	ND		2.28		CS 12346-PeCDF	88.7	
Total HxCDD	18.3		18.3		CS 123469-HxCDF	118	
Total HpCDD	58.3		58.3		CS 1234689-HpCDF	119	
Total TCDF	243		265				
Total PeCDF	7.41		12				
Total HxCDF	11.2		11.2				
Total HpCDF	3.3		3.3				
Total PCDD/Fs	**746**		**775**				
WHO-2005 TEQs							
TEQ: ND=0	57.7		58.7				
TEQ: ND=DL/2	58.3	1.21	59.2				
TEQ: ND=DL	58.8	2.43	59.8				

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Sample ID: 11215131-120321-S-JC-SW-B-3H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.15 g	Lab Sample ID:	B5971_18819_DF_002	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	74.0 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	15:25:34

Tetra-Dioxins	Conc. (pg/g)	Qualifiers
1368D	(0.966)	
1379D	(0.966)	
1369D	(0.966)	
1469D	3.35	
1247D...[4]	(0.966)	
1378D	(0.966)	
1268D	(0.966)	
1478D	(0.966)	
1279D	(0.966)	
1234/1269D	(0.966)	
1236D	(0.966)	
1237/1238D	(0.966)	
1239D	(0.966)	
2378D	43.5	
1278D	3.58	
1267D	(0.966)	
1289D	(0.966)	
Conc.	50.4	
EMPC	50.4	

Penta-Dioxins	Conc. (pg/g)	Qualifiers
12479/12468D	(0.761)	
12469D	[2.28]	J
12368D	(0.761)	
12478D	(0.761)	
12379D	(0.761)	
12369D...[3]	(0.761)	
12346/12347D	(0.761)	
12378D	(0.761)	
12367D	(0.761)	
12389D	(0.761)	
Conc.	0	
EMPC	2.28	

Hexa-Dioxins	Conc (pg/g)	Qualifiers
124679/124689D	14.5	
123468D	(0.743)	
123679/123689D	3.87	
123469D	(0.743)	
123478D	(0.82)	
123678D	(0.706)	
123467D	(0.743)	
123789D	(0.71)	
Conc.	18.3	
EMPC	18.3	

Hepta-Dioxins	Conc (pg/g)	Qualifiers
1234679D	40	
1234678D	18.3	
Conc.	58.3	
EMPC	58.3	

Octa-Dioxin	Conc (pg/g)	Qualifiers
OCDD	352	

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	57.7	58.7
TEQ: ND=DL/2	58.3	59.2
TEQ: ND=DL	58.8	59.8

	Conc.	EMPC
Total PCDD/Fs	746	775

Checkcode: 766-405-TQN

Report Created: 26-Jan-2022 17:06 Analyst: TF

Sample ID: 11215131-120321-S-JC-SW-B-3H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.15 g	Lab Sample ID:	B5971_18819_DF_002	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	74.0 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	15:25:34

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.712)		13468/12468F	(0.521)		123468F	(0.497)		1234678F	2.29	J
1468F	(0.712)		13678F...[3]	(0.576)		124678/134678F	0.974	J	1234679F	(0.374)	
2468F	(0.712)		12368F...[3]	2.5		134679F	(0.497)		1234689F	1.01	J
1346/1246F	(0.712)		14678F	(0.576)		124679F	(0.497)		1234789F	(0.485)	
1347F...[3]	3.77		13479F	(0.576)		124689F	(0.497)				
1348F	0.934		13469/12479F	(0.576)		123467F	(0.497)				
1248F...[3]	[6.54]		12346F	(0.576)		123478F	7.93				
1268F	2.8		23468/12469F	(0.576)		123678F	2.3	J			
1467F	(0.712)		12347F	(0.576)		123479F	(0.497)				
1478F	6.1		12348F	(0.576)		123469F	(0.497)				
1369/1237F	2.07		12378F	4.91		123679F	(0.497)				
2467F	(0.712)		12678/12367F	[1.47]	J	234678F	(0.546)		**Conc.**	3.3	
2368F	3.98		12379F	(0.576)		234678/123689F	0		**EMPC**	3.3	
1238F...[5]	8.42		12679F	(0.576)		123689F	(0.497)				
1278F	61.8		23467/12369F	(0.576)		123789F	(0.604)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.712)		23478F	[3.17]		123789/123489F	0				
1267F	[3.83]		23478/12489F	0		123489F	(0.497)		OCDF	2.45	J
2346/1249F	(0.712)		12489F	(0.576)							
2347/1279F	[2.05]		12349F	(0.576)							
2348F	[9.59]		12389F	(0.576)							
2378F	128										
2367/3467F	11.4										
1269F	2.33										
1239F	(0.712)										
1289F	11.4										
Conc.	243		**Conc.**	7.41		**Conc.**	11.2				
EMPC	265		**EMPC**	12		**EMPC**	11.2				

Checkcode: 766-405-TQN

Report Created: 26-Jan-2022 17:06 Analyst: TF

Sample ID: 11215131-120321-S-JC-SW-B-3H TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5971_18819_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.15 g	QC Batch No.:	18819
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	20-Jan-2022 15:25
Lab Project No:	B5971	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	43.5		0.966	43.5	43.5	43.5
12378-PeCDD	(0.761)		0.761	(0.38)	(0.761)	(0.761)
123478-HxCDD	(0.82)		0.82	(0.082)	(0.082)	(0.082)
123678-HxCDD	(0.706)		0.706	(0.0706)	(0.0706)	(0.0706)
123789-HxCDD	(0.71)		0.71	(0.071)	(0.071)	(0.071)
1234678-HpCDD	18.3		0.53	0.183	0.183	0.183
OCDD	352		1.39	0.352	0.0352	0.106
2378-TCDF	128		0.712	12.8	12.8	12.8
12378-PeCDF	4.91		0.573	0.245	0.245	0.147
23478-PeCDF	[3.17]		0.58	[1.58]	[1.58]	[0.951]
123478-HxCDF	7.93		0.457	0.793	0.793	0.793
123678-HxCDF	2.3	J	0.423	0.23	0.23	0.23
234678-HxCDF	(0.546)		0.546	(0.0546)	(0.0546)	(0.0546)
123789-HxCDF	(0.604)		0.604	(0.0604)	(0.0604)	(0.0604)
1234678-HpCDF	2.29	J	0.288	0.0229	0.0229	0.0229
1234789-HpCDF	(0.485)		0.485	(0.00485)	(0.00485)	(0.00485)
OCDF	2.45	J	0.81	0.00245	0.000245	0.000736

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TEQ Summaries			
EMPC = 0, ND = 0	58.1	57.8	57.7
EMPC = 0, ND = DL / 2	58.4	58.3	58.3
EMPC = 0, ND = DL	58.8	58.9	58.8
EMPC = 0, < J-level = 0	57.8	57.5	57.5
EMPC = EMPC, ND = 0	59.7	59.4	58.7
EMPC = EMPC, ND = DL / 2	60	59.9	59.2
EMPC = EMPC, ND = DL	60.4	60.5	59.8
EMPC = EMPC, < J-level = 0	59.4	59.1	58.4

Checkcode: 766-405-TQN

Sample ID: 11215131-120221-S-SPS-SW-B-4H1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID	B5971_18819_DF_003	Date Extracted:	10-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	79.9 %	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	16:11:53

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	513				ES 2378-TCDD	73.5	
12378-PeCDD	EMPC		4.81		ES 12378-PeCDD	78.7	
123478-HxCDD	1.55			J	ES 123478-HxCDD	79.8	
123678-HxCDD	4.16				ES 123678-HxCDD	87.7	
123789-HxCDD	2.77				ES 123789-HxCDD	77.1	
1234678-HpCDD	93.6				ES 1234678-HpCDD	84.2	
OCDD	1,530				ES OCDD	74.2	
2378-TCDF	1,430			E	ES 2378-TCDF	74.9	
12378-PeCDF	42.5				ES 12378-PeCDF	80.8	
23478-PeCDF	36.7				ES 23478-PeCDF	82.3	
123478-HxCDF	68.1				ES 123478-HxCDF	92.4	
123678-HxCDF	19.1				ES 123678-HxCDF	97.9	
234678-HxCDF	4.04				ES 234678-HxCDF	76.6	
123789-HxCDF	ND	0.559			ES 123789-HxCDF	89.5	
1234678-HpCDF	63.2				ES 1234678-HpCDF	96.2	
1234789-HpCDF	9.46				ES 1234789-HpCDF	92	
OCDF	1,130				ES OCDF	89.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	76.4	
Total TCDD	580		583		CS 12347-PeCDD	88.8	
Total PeCDD	2.34		13.7		CS 12346-PeCDF	89.1	
Total HxCDD	52.8		54.1		CS 123469-HxCDF	110	
Total HpCDD	233		233		CS 1234689-HpCDF	108	
Total TCDF	2,890		2,900	E			
Total PeCDF	140		143				
Total HxCDF	130		130				
Total HpCDF	113		113				
Total PCDD/Fs	**6,800**		**6,820**	E			
WHO-2005 TEQs							
TEQ: ND=0	681		686				
TEQ: ND=DL/2	681	0.914	686				
TEQ: ND=DL	681	1.83	686				

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Sample ID: 11215131-120221-S-SPS-SW-B-4H1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID:	B5971_18819_DF_003	Date Extracted:	10-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	79.9 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	16:11:53

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.83		12479/12468D	[2.34]	J	124679/124689D	27.5		1234679D	139	
1379D	1.03		12469D	[2.59]		123468D	2.82		1234678D	93.6	
1369D	(0.642)		12368D	[1.28]	J	123679/123689D	14				
1469D	3.62		12478D	1.2	J	123469D	[1.34]	J			
1247D...[4]	[1.28]		12379D	[0.38]	J	123478D	1.55	J			
1378D	[1.76]		12369D...[3]	1.14	J	123678D	4.16				
1268D	(0.642)		12346/12347D	(0.562)		123467D	(0.585)				
1478D	1.85		12378D	[4.81]		123789D	2.77		**Conc.**	233	
1279D	(0.642)		12367D	(0.562)					**EMPC**	233	
1234/1269D	(0.642)		12389D	(0.562)							
1236D	(0.642)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	8.28										
1239D	(0.642)								OCDD	1530	
2378D	513										
1278D	48.5										
1267D	(0.642)										
1289D	(0.642)										
Conc.	580		**Conc.**	2.34		**Conc.**	52.8				
EMPC	583		**EMPC**	13.7		**EMPC**	54.1				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	681	686
TEQ: ND=DL/2	681	686
TEQ: ND=DL	681	686

	Conc.	EMPC
Total PCDD/Fs	6,800	6,820

Checkcode: 209-493-PMH

Report Created: 26-Jan-2022 17:09 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-B-4H1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	Lab Sample ID:	B5971_18819_DF_003	Date Extracted:	10-Jan-2022
Date Collected:	02-Dec-2021	% Solid:	79.9 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	16:11:53

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.17		13468/12468F	9.5		123468F	3.76		1234678F	63.2	
1468F	3.42		13678F...[3]	[1.58]	J	124678/134678F	15.4		1234679F	2.94	
2468F	4.75		12368F...[3]	24.2		134679F	(0.503)		1234689F	37.1	
1346/1246F	1.87		14678F	[0.665]	J	124679F	(0.503)		1234789F	9.46	
1347F...[3]	18.5		13479F	(0.561)		124689F	12.7				
1348F	[3.83]		13469/12479F	(0.561)		123467F	1.21	J			
1248F...[3]	77		12346F	(0.561)		123478F	68.1				
1268F	27.4		23468/12469F	2.5		123678F	19.1				
1467F	4.14		12347F	1.72	J	123479F	(0.503)				
1478F	65.3		12348F	5.01		123469F	(0.503)				
1369/1237F	17.7		12378F	42.5		123679F	(0.503)				
2467F	(0.53)		12678/12367F	14.7		234678F	4.04		**Conc.**	113	
2368F	45.8		12379F	(0.561)		234678/123689F	0		**EMPC**	113	
1238F...[5]	77.1		12679F	(0.561)		123689F	(0.503)				
1278F	693		23467/12369F	1.14	J	123789F	(0.559)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.53)		23478F	36.7		123789/123489F	0				
1267F	39		23478/12489F	0		123489F	5.19		OCDF	1130	
2346/1249F	(0.53)		12489F	(0.561)							
2347/1279F	18.7		12349F	(0.561)							
2348F	106		12389F	2.32	J						
2378F	1430	E									
2367/3467F	118										
1269F	23.3										
1239F	(0.53)										
1289F	119										
Conc.	2,890		**Conc.**	140		**Conc.**	130				
EMPC	2,900		**EMPC**	143		**EMPC**	130				

Checkcode: 209-493-PMH

Report Created: 26-Jan-2022 17:09 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-B-4H1 TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5971_18819_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.03 g	QC Batch No.:	18819
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	20-Jan-2022 16:11
Lab Project No:	B5971	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	513		0.642	513	513	513
12378-PeCDD	[4.81]		0.562	[2.41]	[4.81]	[4.81]
123478-HxCDD	1.55	J	0.588	0.155	0.155	0.155
123678-HxCDD	4.16		0.576	0.416	0.416	0.416
123789-HxCDD	2.77		0.593	0.277	0.277	0.277
1234678-HpCDD	93.6		0.65	0.936	0.936	0.936
OCDD	1530		0.816	1.53	0.153	0.458
2378-TCDF	1430	E	0.53	143	143	143
12378-PeCDF	42.5		0.583	2.13	2.13	1.28
23478-PeCDF	36.7		0.538	18.4	18.4	11
123478-HxCDF	68.1		0.45	6.81	6.81	6.81
123678-HxCDF	19.1		0.43	1.91	1.91	1.91
234678-HxCDF	4.04		0.609	0.404	0.404	0.404
123789-HxCDF	(0.559)		0.559	(0.0559)	(0.0559)	(0.0559)
1234678-HpCDF	63.2		0.217	0.632	0.632	0.632
1234789-HpCDF	9.46		0.294	0.0946	0.0946	0.0946
OCDF	1130		0.764	1.13	0.113	0.338

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TEQ Summaries			
EMPC = 0, ND = 0	691	689	681
EMPC = 0, ND = DL / 2	691	689	681
EMPC = 0, ND = DL	691	689	681
EMPC = 0, < J-level = 0	691	689	681
EMPC = EMPC, ND = 0	694	694	686
EMPC = EMPC, ND = DL / 2	694	694	686
EMPC = EMPC, ND = DL	694	694	686
EMPC = EMPC, < J-level = 0	694	694	686

Checkcode: 209-493-PMH

Sample ID: 11215131-120321-S-SPS-SW-B-5H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.12 g	Lab Sample ID	B5971_18819_DF_005	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	76.5 %	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	16:58:11

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	194				ES 2378-TCDD	67.9	
12378-PeCDD	2.76				ES 12378-PeCDD	75.7	
123478-HxCDD	EMPC		1.35	J	ES 123478-HxCDD	78.6	
123678-HxCDD	6.86				ES 123678-HxCDD	82.7	
123789-HxCDD	4.24				ES 123789-HxCDD	78.8	
1234678-HpCDD	162				ES 1234678-HpCDD	79.4	
OCDD	2,560				ES OCDD	79.4	
2378-TCDF	579				ES 2378-TCDF	68.8	
12378-PeCDF	17.9				ES 12378-PeCDF	74.3	
23478-PeCDF	17.6			PR	ES 23478-PeCDF	74.9	
123478-HxCDF	26.9				ES 123478-HxCDF	91.6	
123678-HxCDF	8.21				ES 123678-HxCDF	92.7	
234678-HxCDF	4				ES 234678-HxCDF	70	
123789-HxCDF	ND	0.5			ES 123789-HxCDF	82.8	
1234678-HpCDF	87.7				ES 1234678-HpCDF	93.8	
1234789-HpCDF	8.16				ES 1234789-HpCDF	83.8	
OCDF	2,040				ES OCDF	89.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	76.6	
Total TCDD	228		228		CS 12347-PeCDD	87.2	
Total PeCDD	17.8		23		CS 12346-PeCDF	83.9	
Total HxCDD	96.7		103		CS 123469-HxCDF	108	
Total HpCDD	463		463		CS 1234689-HpCDF	102	
Total TCDF	1,100		1,160				
Total PeCDF	91.1		97.3				
Total HxCDF	94.5		97.3				
Total HpCDF	170		170				
Total PCDD/Fs	**6,860**		**6,940**				
WHO-2005 TEQs							
TEQ: ND=0	269		269				
TEQ: ND=DL/2	269	0.876	269				
TEQ: ND=DL	269	1.75	269				

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Sample ID: 11215131-120321-S-SPS-SW-B-5H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.12 g	Lab Sample ID:	B5971_18819_DF_005	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	76.5 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	16:58:11

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	3.42		12479/12468D	6.58		124679/124689D	54.4		1234679D	301	
1379D	(0.609)		12469D	[4.89]		123468D	5.8		1234678D	162	
1369D	(0.609)		12368D	2.11	J	123679/123689D	25.4				
1469D	7.68		12478D	1.61	J	123469D	[3.33]				
1247D...[4]	(0.609)		12379D	1.32	J	123478D	[1.35]	J			
1378D	(0.609)		12369D...[3]	3.37		123678D	6.86				
1268D	(0.609)		12346/12347D	(0.411)		123467D	[1.67]	J			
1478D	(0.609)		12378D	2.76		123789D	4.24		**Conc.**	463	
1279D	(0.609)		12367D	(0.411)					**EMPC**	463	
1234/1269D	1.71		12389D	[0.373]	J						
1236D	(0.609)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	3.16										
1239D	(0.609)								OCDD	2560	
2378D	194										
1278D	18										
1267D	(0.609)										
1289D	(0.609)										
Conc.	228		**Conc.**	17.8		**Conc.**	96.7				
EMPC	228		**EMPC**	23		**EMPC**	103				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	269	269
TEQ: ND=DL/2	269	269
TEQ: ND=DL	269	269

	Conc.	EMPC
Total PCDD/Fs	6,860	6,940

Checkcode: 972-223-LQZ

Report Created: 26-Jan-2022 17:10 Analyst: TF

Sample ID: 11215131-120321-S-SPS-SW-B-5H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.12 g	Lab Sample ID:	B5971_18819_DF_005	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	76.5 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	16:58:11

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.677]		13468/12468F	18.8		123468F	6.9		1234678F	87.7	
1468F	2.5		13678F...[3]	2.83		124678/134678F	23		1234679F	5.57	
2468F	6.43		12368F...[3]	19.1		134679F	(0.477)		1234689F	68.5	
1346/1246F	[1.27]		14678F	[1.02]	J	124679F	[1.02]	J	1234789F	8.16	
1347F...[3]	8.88		13479F	(0.554)		124689F	21.3				
1348F	[2.59]		13469/12479F	1.17	J	123467F	[1.85]	J			
1248F...[3]	31.4		12346F	0.556	J	123478F	26.9				
1268F	13.4		23468/12469F	[4.18]		123678F	8.21				
1467F	2.07		12347F	0.558	J	123479F	(0.477)				
1478F	26.2		12348F	2.98		123469F	1.22	J			
1369/1237F	[5.86]		12378F	17.9		123679F	(0.477)				
2467F	1.46		12678/12367F	8.55		234678F	4		**Conc.**	170	
2368F	[19.1]		12379F	(0.554)		234678/123689F	0		**EMPC**	170	
1238F...[5]	[27.7]		12679F	(0.554)		123689F	(0.477)				
1278F	270		23467/12369F	1.15	J	123789F	(0.5)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.504)		23478F	17.6	PR	123789/123489F	0			**(pg/g)**	
1267F	15.1		23478/12489F	0		123489F	2.93		OCDF	2040	
2346/1249F	(0.504)		12489F	(0.554)							
2347/1279F	7.18		12349F	(0.554)							
2348F	35.9		12389F	[0.928]	J						
2378F	579										
2367/3467F	48.6										
1269F	9.51										
1239F	(0.504)										
1289F	44.6										
Conc.	1,100		**Conc.**	91.1		**Conc.**	94.5				
EMPC	1,160		**EMPC**	97.3		**EMPC**	97.3				

Checkcode: 972-223-LQZ

Report Created: 26-Jan-2022 17:10 Analyst: TF

Sample ID: 11215131-120321-S-SPS-SW-B-5H TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5971_18819_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.12 g	QC Batch No.:	18819
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	20-Jan-2022 16:58
Lab Project No:	B5971	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	194		0.609	194	194	194
12378-PeCDD	2.76		0.411	1.38	2.76	2.76
123478-HxCDD	[1.35]	J	1.02	[0.135]	[0.135]	[0.135]
123678-HxCDD	6.86		0.948	0.686	0.686	0.686
123789-HxCDD	4.24		0.978	0.424	0.424	0.424
1234678-HpCDD	162		0.583	1.62	1.62	1.62
OCDD	2560		1.04	2.56	0.256	0.767
2378-TCDF	579		0.504	57.9	57.9	57.9
12378-PeCDF	17.9		0.573	0.895	0.895	0.537
23478-PeCDF	17.6	PR	0.535	8.79	8.79	5.27
123478-HxCDF	26.9		0.437	2.69	2.69	2.69
123678-HxCDF	8.21		0.4	0.821	0.821	0.821
234678-HxCDF	4		0.613	0.4	0.4	0.4
123789-HxCDF	(0.5)		0.5	(0.05)	(0.05)	(0.05)
1234678-HpCDF	87.7		0.277	0.877	0.877	0.877
1234789-HpCDF	8.16		0.486	0.0816	0.0816	0.0816
OCDF	2040		1.06	2.04	0.204	0.613

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TEQ Summaries			
EMPC = 0, ND = 0	275	272	269
EMPC = 0, ND = DL / 2	275	272	269
EMPC = 0, ND = DL	275	272	269
EMPC = 0, < J-level = 0	275	272	269
EMPC = EMPC, ND = 0	275	272	269
EMPC = EMPC, ND = DL / 2	275	272	269
EMPC = EMPC, ND = DL	275	272	269
EMPC = EMPC, < J-level = 0	275	272	269

Checkcode: 972-223-LQZ

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Sample ID: Method Blank B5971_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.985			ES 2378-TCDD	77.9	
12378-PeCDD	ND	0.643			ES 12378-PeCDD	91.2	
123478-HxCDD	ND	0.522			ES 123478-HxCDD	78.9	
123678-HxCDD	ND	0.481			ES 123678-HxCDD	90.4	
123789-HxCDD	ND	0.477			ES 123789-HxCDD	78.9	
1234678-HpCDD	ND	0.463			ES 1234678-HpCDD	87.2	
OCDD	ND	1.04			ES OCDD	70.3	
2378-TCDF	ND	0.616			ES 2378-TCDF	86.6	
12378-PeCDF	ND	0.355			ES 12378-PeCDF	90.4	
23478-PeCDF	ND	0.327			ES 23478-PeCDF	93.9	
123478-HxCDF	ND	0.329			ES 123478-HxCDF	91.1	
123678-HxCDF	ND	0.323			ES 123678-HxCDF	100	
234678-HxCDF	ND	0.435			ES 234678-HxCDF	77.9	
123789-HxCDF	ND	0.451			ES 123789-HxCDF	84.9	
1234678-HpCDF	ND	0.226			ES 1234678-HpCDF	111	
1234789-HpCDF	ND	0.351			ES 1234789-HpCDF	92.3	
OCDF	ND	0.657			ES OCDF	83.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	79.4	
Total TCDD	ND	0.985	ND		CS 12347-PeCDD	103	
Total PeCDD	ND	0.643	ND		CS 12346-PeCDF	95.9	
Total HxCDD	ND	0.492	ND		CS 123469-HxCDF	108	
Total HpCDD	ND	0.463	ND		CS 1234689-HpCDF	117	
Total TCDF	ND	0.616	ND				
Total PeCDF	ND	0.341	ND				
Total HxCDF	ND	0.377	ND				
Total HpCDF	ND	0.278	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	1.06	1.06	1.06				
TEQ: ND=DL	2.11	2.11	2.11				

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Sample ID: Method Blank B5971_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.985)		12479/12468D	(0.643)		124679/124689D	(0.492)		1234679D	(0.463)	
1379D	(0.985)		12469D	(0.643)		123468D	(0.492)		1234678D	(0.463)	
1369D	(0.985)		12368D	(0.643)		123679/123689D	(0.492)				
1469D	(0.985)		12478D	(0.643)		123469D	(0.492)				
1247D...[4]	(0.985)		12379D	(0.643)		123478D	(0.522)				
1378D	(0.985)		12369D...[3]	(0.643)		123678D	(0.481)				
1268D	(0.985)		12346/12347D	(0.643)		123467D	(0.492)				
1478D	(0.985)		12378D	(0.643)		123789D	(0.477)		**Conc.**	0	
1279D	(0.985)		12367D	(0.643)					**EMPC**	0	
1234/1269D	(0.985)		12389D	(0.643)							
1236D	(0.985)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.985)										
1239D	(0.985)								OCDD	(1.04)	
2378D	(0.985)										
1278D	(0.985)										
1267D	(0.985)										
1289D	(0.985)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	1.06	1.06
TEQ: ND=DL	2.11	2.11

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 798-286-ZVN

Report Created: 21-Jan-2022 12:47 Analyst: MS

Sample ID: Method Blank B5971_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.616)		13468/12468F	(0.343)		123468F	(0.377)		1234678F	(0.226)	
1468F	(0.616)		13678F...[3]	(0.341)		124678/134678F	(0.377)		1234679F	(0.278)	
2468F	(0.616)		12368F...[3]	(0.341)		134679F	(0.377)		1234689F	(0.278)	
1346/1246F	(0.616)		14678F	(0.341)		124679F	(0.377)		1234789F	(0.351)	
1347F...[3]	(0.616)		13479F	(0.341)		124689F	(0.377)				
1348F	(0.616)		13469/12479F	(0.341)		123467F	(0.377)				
1248F...[3]	(0.616)		12346F	(0.341)		123478F	(0.329)				
1268F	(0.616)		23468/12469F	(0.341)		123678F	(0.323)				
1467F	(0.616)		12347F	(0.341)		123479F	(0.377)				
1478F	(0.616)		12348F	(0.341)		123469F	(0.377)				
1369/1237F	(0.616)		12378F	(0.355)		123679F	(0.377)				
2467F	(0.616)		12678/12367F	(0.341)		234678F	(0.435)		**Conc.**	0	
2368F	(0.616)		12379F	(0.341)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.616)		12679F	(0.341)		123689F	(0.377)				
1278F	(0.616)		23467/12369F	(0.341)		123789F	(0.451)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.616)		23478F	(0.327)		123789/123489F	0				
1267F	(0.616)		23478/12489F	0		123489F	(0.377)		OCDF	(0.657)	
2346/1249F	(0.616)		12489F	(0.341)							
2347/1279F	(0.616)		12349F	(0.341)							
2348F	(0.616)		12389F	(0.341)							
2378F	(0.616)										
2367/3467F	(0.616)										
1269F	(0.616)										
1239F	(0.616)										
1289F	(0.616)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 798-286-ZVN

Report Created: 21-Jan-2022 12:47 Analyst: MS

Sample ID: Method Blank B5971_18819 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18819_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18819
Date Collected:	n/a	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	20-Jan-2022 13:52
Lab Project No:	B5971	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.985)		0.985	(0.985)	(0.985)	(0.985)
12378-PeCDD	(0.643)		0.643	(0.322)	(0.643)	(0.643)
123478-HxCDD	(0.522)		0.522	(0.0522)	(0.0522)	(0.0522)
123678-HxCDD	(0.481)		0.481	(0.0481)	(0.0481)	(0.0481)
123789-HxCDD	(0.477)		0.477	(0.0477)	(0.0477)	(0.0477)
1234678-HpCDD	(0.463)		0.463	(0.00463)	(0.00463)	(0.00463)
OCDD	(1.04)		1.04	(0.00104)	(0.000104)	(0.000311)
2378-TCDF	(0.616)		0.616	(0.0616)	(0.0616)	(0.0616)
12378-PeCDF	(0.355)		0.355	(0.0178)	(0.0178)	(0.0107)
23478-PeCDF	(0.327)		0.327	(0.164)	(0.164)	(0.0981)
123478-HxCDF	(0.329)		0.329	(0.0329)	(0.0329)	(0.0329)
123678-HxCDF	(0.323)		0.323	(0.0323)	(0.0323)	(0.0323)
234678-HxCDF	(0.435)		0.435	(0.0435)	(0.0435)	(0.0435)
123789-HxCDF	(0.451)		0.451	(0.0451)	(0.0451)	(0.0451)
1234678-HpCDF	(0.226)		0.226	(0.00226)	(0.00226)	(0.00226)
1234789-HpCDF	(0.351)		0.351	(0.00351)	(0.00351)	(0.00351)
OCDF	(0.657)		0.657	(0.000657)	(0.0000657)	(0.000197)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.932	1.09	1.06
EMPC = 0, ND = DL	1.86	2.18	2.11
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.932	1.09	1.06
EMPC = EMPC, ND = DL	1.86	2.18	2.11
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 798-286-ZVN

Sample ID: Method Blank B5971_18863 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18863_DF_SDS	Date Extracted:	24-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18863	Date Analyzed:	25-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	18:17:18

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.419			ES 2378-TCDD	90.9	
12378-PeCDD	ND	0.356			ES 12378-PeCDD	96.6	
123478-HxCDD	ND	0.433			ES 123478-HxCDD	93.4	
123678-HxCDD	ND	0.353			ES 123678-HxCDD	119	
123789-HxCDD	ND	0.459			ES 123789-HxCDD	97.2	
1234678-HpCDD	ND	0.51			ES 1234678-HpCDD	85.4	
OCDD	ND	1.35			ES OCDD	66	
2378-TCDF	ND	0.286			ES 2378-TCDF	90.3	
12378-PeCDF	ND	0.309			ES 12378-PeCDF	90.8	
23478-PeCDF	ND	0.303			ES 23478-PeCDF	94.5	
123478-HxCDF	ND	0.296			ES 123478-HxCDF	92.9	
123678-HxCDF	ND	0.277			ES 123678-HxCDF	112	
234678-HxCDF	ND	0.288			ES 234678-HxCDF	112	
123789-HxCDF	ND	0.355			ES 123789-HxCDF	86.5	
1234678-HpCDF	ND	0.229			ES 1234678-HpCDF	106	
1234789-HpCDF	ND	0.433			ES 1234789-HpCDF	73.4	
OCDF	ND	0.884			ES OCDF	68.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	89.7	
Total TCDD	ND	0.419	ND		CS 12347-PeCDD	111	
Total PeCDD	ND	0.356	ND		CS 12346-PeCDF	96.4	
Total HxCDD	ND	0.411	ND		CS 123469-HxCDF	122	
Total HpCDD	ND	0.51	ND		CS 1234689-HpCDF	114	
Total TCDF	ND	0.286	ND				
Total PeCDF	ND	0.306	ND				
Total HxCDF	0.685		0.685				
Total HpCDF	ND	0.305	ND				
Total PCDD/Fs	**0.685**		**0.685**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.581	0.581	0.581				
TEQ: ND=DL	1.16	1.16	1.16				

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Sample ID: Method Blank B5971_18863 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18863_DF_SDS	Date Extracted:	24-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18863	Date Analyzed:	25-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	18:17:18

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.419)		12479/12468D	(0.356)		124679/124689D	(0.411)		1234679D	(0.51)	
1379D	(0.419)		12469D	(0.356)		123468D	(0.411)		1234678D	(0.51)	
1369D	(0.419)		12368D	(0.356)		123679/123689D	(0.411)				
1469D	(0.419)		12478D	(0.356)		123469D	(0.411)				
1247D...[4]	(0.419)		12379D	(0.356)		123478D	(0.433)				
1378D	(0.419)		12369D...[3]	(0.356)		123678D	(0.353)				
1268D	(0.419)		12346/12347D	(0.356)		123467D	(0.411)				
1478D	(0.419)		12378D	(0.356)		123789D	(0.459)		**Conc.**	0	
1279D	(0.419)		12367D	(0.356)					**EMPC**	0	
1234/1269D	(0.419)		12389D	(0.356)							
1236D	(0.419)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.419)										
1239D	(0.419)								OCDD	(1.35)	
2378D	(0.419)										
1278D	(0.419)										
1267D	(0.419)										
1289D	(0.419)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.581	0.581
TEQ: ND=DL	1.16	1.16

	Conc.	EMPC
Total PCDD/Fs	0.685	0.685

Checkcode: 660-125-BZB

Report Created: 26-Jan-2022 09:42 Analyst: TF

Sample ID: Method Blank B5971_18863 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18863_DF_SDS	Date Extracted:	24-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18863	Date Analyzed:	25-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	18:17:18

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.286)		13468/12468F	(0.287)		123468F	0.685	J	1234678F	(0.229)	
1468F	(0.286)		13678F...[3]	(0.306)		124678/134678F	(0.299)		1234679F	(0.305)	
2468F	(0.286)		12368F...[3]	(0.306)		134679F	(0.299)		1234689F	(0.305)	
1346/1246F	(0.286)		14678F	(0.306)		124679F	(0.299)		1234789F	(0.433)	
1347F...[3]	(0.286)		13479F	(0.306)		124689F	(0.299)				
1348F	(0.286)		13469/12479F	(0.306)		123467F	(0.299)				
1248F...[3]	(0.286)		12346F	(0.306)		123478F	(0.296)				
1268F	(0.286)		23468/12469F	(0.306)		123678F	(0.277)				
1467F	(0.286)		12347F	(0.306)		123479F	(0.299)				
1478F	(0.286)		12348F	(0.306)		123469F	(0.299)				
1369/1237F	(0.286)		12378F	(0.309)		123679F	(0.299)				
2467F	(0.286)		12678/12367F	(0.306)		234678F	(0.288)		**Conc.**	0	
2368F	(0.286)		12379F	(0.306)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.286)		12679F	(0.306)		123689F	(0.299)				
1278F	(0.286)		23467/12369F	(0.306)		123789F	(0.355)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.286)		23478F	(0.303)		123789/123489F	0			**(pg/g)**	
1267F	(0.286)		23478/12489F	0		123489F	(0.299)		OCDF	(0.884)	
2346/1249F	(0.286)		12489F	(0.306)							
2347/1279F	(0.286)		12349F	(0.306)							
2348F	(0.286)		12389F	(0.306)							
2378F	(0.286)										
2367/3467F	(0.286)										
1269F	(0.286)										
1239F	(0.286)										
1289F	(0.286)										
Conc.	0		**Conc.**	0		**Conc.**	0.685				
EMPC	0		**EMPC**	0		**EMPC**	0.685				

Checkcode: 660-125-BZB

Report Created: 26-Jan-2022 09:42 Analyst: TF

Sample ID: Method Blank B5971_18863 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18863_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18863
Date Collected:	n/a	Split:	-	Date Extracted:	24-Jan-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	25-Jan-2022 18:17
Lab Project No:	B5971	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.419)		0.419	(0.419)	(0.419)	(0.419)
12378-PeCDD	(0.356)		0.356	(0.178)	(0.356)	(0.356)
123478-HxCDD	(0.433)		0.433	(0.0433)	(0.0433)	(0.0433)
123678-HxCDD	(0.353)		0.353	(0.0353)	(0.0353)	(0.0353)
123789-HxCDD	(0.459)		0.459	(0.0459)	(0.0459)	(0.0459)
1234678-HpCDD	(0.51)		0.51	(0.0051)	(0.0051)	(0.0051)
OCDD	(1.35)		1.35	(0.00135)	(0.000135)	(0.000406)
2378-TCDF	(0.286)		0.286	(0.0286)	(0.0286)	(0.0286)
12378-PeCDF	(0.309)		0.309	(0.0154)	(0.0154)	(0.00927)
23478-PeCDF	(0.303)		0.303	(0.151)	(0.151)	(0.0908)
123478-HxCDF	(0.296)		0.296	(0.0296)	(0.0296)	(0.0296)
123678-HxCDF	(0.277)		0.277	(0.0277)	(0.0277)	(0.0277)
234678-HxCDF	(0.288)		0.288	(0.0288)	(0.0288)	(0.0288)
123789-HxCDF	(0.355)		0.355	(0.0355)	(0.0355)	(0.0355)
1234678-HpCDF	(0.229)		0.229	(0.00229)	(0.00229)	(0.00229)
1234789-HpCDF	(0.433)		0.433	(0.00433)	(0.00433)	(0.00433)
OCDF	(0.884)		0.884	(0.000884)	(0.0000884)	(0.000265)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.526	0.614	0.581
EMPC = 0, ND = DL	1.05	1.23	1.16
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.526	0.614	0.581
EMPC = EMPC, ND = DL	1.05	1.23	1.16
EMPC = EMPC, < J-level = 0	0	0	0

Sample ID: 0_18819_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18819_DF	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	11:32:05

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.1				ES 2378-TCDD	90.8	
12378-PeCDD	52				ES 12378-PeCDD	92.9	
123478-HxCDD	59.9				ES 123478-HxCDD	90.3	
123678-HxCDD	56.9				ES 123678-HxCDD	98	
123789-HxCDD	51.3				ES 123789-HxCDD	99.3	
1234678-HpCDD	56.3				ES 1234678-HpCDD	102	
OCDD	114				ES OCDD	89.1	
2378-TCDF	10.9				ES 2378-TCDF	87.1	
12378-PeCDF	51.3				ES 12378-PeCDF	99.6	
23478-PeCDF	56.6				ES 23478-PeCDF	99.7	
123478-HxCDF	56.5				ES 123478-HxCDF	106	
123678-HxCDF	56.4				ES 123678-HxCDF	116	
234678-HxCDF	57.4				ES 234678-HxCDF	82.7	
123789-HxCDF	52.5				ES 123789-HxCDF	109	
1234678-HpCDF	54.9				ES 1234678-HpCDF	139	
1234789-HpCDF	55.9				ES 1234789-HpCDF	111	
OCDF	115				ES OCDF	94.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	88.2	
Total TCDD	60		60		CS 12347-PeCDD	32.5	
Total PeCDD	82.9		82.9		CS 12346-PeCDF	95.9	
Total HxCDD	186		186		CS 123469-HxCDF	120	
Total HpCDD	71.1		71.1		CS 1234689-HpCDF	126	
Total TCDF	71.1		71.1				
Total PeCDF	206		206				
Total HxCDF	377		377				
Total HpCDF	111		111				
Total PCDD/Fs	**1,390**		**1,390**				
WHO-2005 TEQs							
TEQ: ND=0	125		125				
TEQ: ND=DL/2	125	0.568	125				
TEQ: ND=DL	125	1.14	125				

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Sample ID: 0_18819_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18819_DF	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	12:20:14

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.3				ES 2378-TCDD	80.5	
12378-PeCDD	55.2				ES 12378-PeCDD	87.9	
123478-HxCDD	57.7				ES 123478-HxCDD	87	
123678-HxCDD	61				ES 123678-HxCDD	95.7	
123789-HxCDD	58.5				ES 123789-HxCDD	84	
1234678-HpCDD	56.7				ES 1234678-HpCDD	98.7	
OCDD	120				ES OCDD	91.4	
2378-TCDF	12				ES 2378-TCDF	72.9	
12378-PeCDF	54.5				ES 12378-PeCDF	83.1	
23478-PeCDF	59				ES 23478-PeCDF	80.6	
123478-HxCDF	58.9				ES 123478-HxCDF	94.1	
123678-HxCDF	60.3				ES 123678-HxCDF	103	
234678-HxCDF	55				ES 234678-HxCDF	88.6	
123789-HxCDF	56.7				ES 123789-HxCDF	91.3	
1234678-HpCDF	63.4			V	ES 1234678-HpCDF	113	
1234789-HpCDF	57.3				ES 1234789-HpCDF	111	
OCDF	116				ES OCDF	98.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.3	
Total TCDD	62.7		62.7		CS 12347-PeCDD	96.3	
Total PeCDD	87.1		87.1		CS 12346-PeCDF	82.9	
Total HxCDD	196		196		CS 123469-HxCDF	111	
Total HpCDD	71.8		71.8		CS 1234689-HpCDF	122	
Total TCDF	76.3		76.3				
Total PeCDF	230		230				
Total HxCDF	396		396				
Total HpCDF	121		121				
Total PCDD/Fs	**1,480**		**1,480**				
WHO-2005 TEQs							
TEQ: ND=0	131		131				
TEQ: ND=DL/2	131	0.435	131				
TEQ: ND=DL	131	0.87	131				

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Sample DUP

Method 1613B

Sample ID: 0_18819_OPR001

Analyte	OPR1_18819_DF pg/uL	OPR2_18819_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	12.1	12.3	1.9%
1,2,3,7,8-PeCDD	52	55.2	5.9%
1,2,3,4,7,8-HxCDD	59.9	57.7	3.8%
1,2,3,6,7,8-HxCDD	56.9	61	7.0%
1,2,3,7,8,9-HxCDD	51.3	58.5	13.1%
1,2,3,4,6,7,8-HpCDD	56.3	56.7	0.7%
OCDD	114	120	4.6%
2,3,7,8-TCDF	10.9	12	10.3%
1,2,3,7,8-PeCDF	51.3	54.5	6.0%
2,3,4,7,8-PeCDF	56.6	59	4.2%
1,2,3,4,7,8-HxCDF	56.5	58.9	4.1%
1,2,3,6,7,8-HxCDF	56.4	60.3	6.6%
2,3,4,6,7,8-HxCDF	57.4	55	4.2%
1,2,3,7,8,9-HxCDF	52.5	56.7	7.7%
1,2,3,4,6,7,8-HpCDF	54.9	63.4	14.4%
1,2,3,4,7,8,9-HpCDF	55.9	57.3	2.6%
OCDF	115	116	1.0%
Totals			
Total TCDD	60	62.7	4.3%
Total PeCDD	82.9	87.1	4.9%
Total HxCDD	186	196	5.2%
Total HpCDD	71.1	71.8	1.0%
Total TCDF	71.1	76.3	7.1%
Total PeCDF	206	230	10.9%
Total HxCDF	377	396	5.0%
Total HpCDF	111	121	8.6%

Sample ID: 0_18863_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18863_DF	Date Extracted:	24-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18863	Date Analyzed:	25-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	15:58:21

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.1				ES 2378-TCDD	86.3	
12378-PeCDD	48.7				ES 12378-PeCDD	92.3	
123478-HxCDD	57.2				ES 123478-HxCDD	102	
123678-HxCDD	54.4				ES 123678-HxCDD	125	
123789-HxCDD	49.6				ES 123789-HxCDD	108	
1234678-HpCDD	59.3				ES 1234678-HpCDD	81.7	
OCDD	124				ES OCDD	66.2	
2378-TCDF	11.9				ES 2378-TCDF	85.7	
12378-PeCDF	50.2				ES 12378-PeCDF	85.6	
23478-PeCDF	54.8				ES 23478-PeCDF	85.6	
123478-HxCDF	55.1				ES 123478-HxCDF	94.7	
123678-HxCDF	61.1				ES 123678-HxCDF	112	
234678-HxCDF	54.9				ES 234678-HxCDF	125	
123789-HxCDF	51				ES 123789-HxCDF	98.8	
1234678-HpCDF	54.1				ES 1234678-HpCDF	121	
1234789-HpCDF	50				ES 1234789-HpCDF	79.3	
OCDF	108				ES OCDF	66.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	90.3	
Total TCDD	54.2		54.2		CS 12347-PeCDD	110	
Total PeCDD	71.8		71.8		CS 12346-PeCDF	99.5	
Total HxCDD	175		175		CS 123469-HxCDF	136	
Total HpCDD	73.8		73.8		CS 1234689-HpCDF	128	
Total TCDF	61.9		61.9				
Total PeCDF	212		212				
Total HxCDF	350		350				
Total HpCDF	104		104				
Total PCDD/Fs	**1,330**		**1,330**				
WHO-2005 TEQs							
TEQ: ND=0	120		120				
TEQ: ND=DL/2	120	0.596	120				
TEQ: ND=DL	120	1.19	120				

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Sample ID: 0_18863_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18863_DF	Date Extracted:	24-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18863	Date Analyzed:	25-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	16:44:37

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	11.7				ES 2378-TCDD	89.3	
12378-PeCDD	46.3				ES 12378-PeCDD	97.2	
123478-HxCDD	53.9				ES 123478-HxCDD	98.3	
123678-HxCDD	55.2				ES 123678-HxCDD	120	
123789-HxCDD	51.7				ES 123789-HxCDD	98.5	
1234678-HpCDD	56				ES 1234678-HpCDD	86.2	
OCDD	116				ES OCDD	66.1	
2378-TCDF	10.8				ES 2378-TCDF	84.2	
12378-PeCDF	47.9				ES 12378-PeCDF	88.3	
23478-PeCDF	52.2				ES 23478-PeCDF	89.2	
123478-HxCDF	53.9				ES 123478-HxCDF	91.5	
123678-HxCDF	54.5				ES 123678-HxCDF	113	
234678-HxCDF	53.7				ES 234678-HxCDF	118	
123789-HxCDF	53.4				ES 123789-HxCDF	86	
1234678-HpCDF	52				ES 1234678-HpCDF	118	
1234789-HpCDF	53				ES 1234789-HpCDF	74.6	
OCDF	99.7				ES OCDF	68.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	89.3	
Total TCDD	53.3		53.3		CS 12347-PeCDD	104	
Total PeCDD	68.9		68.9		CS 12346-PeCDF	89.6	
Total HxCDD	174		174		CS 123469-HxCDF	121	
Total HpCDD	68.4		68.4		CS 1234689-HpCDF	108	
Total TCDF	59.6		59.6				
Total PeCDF	201		201				
Total HxCDF	338		338				
Total HpCDF	105		105				
Total PCDD/Fs	**1,280**		**1,280**				
WHO-2005 TEQs							
TEQ: ND=0	116		116				
TEQ: ND=DL/2	116	0.414	116				
TEQ: ND=DL	116	0.829	116				

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Sample DUP

Method 1613B

Sample ID: 0_18863_OPR001

Analyte	OPR1_18863_DF pg/uL	OPR2_18863_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	12.1	11.7	3.1%
1,2,3,7,8-PeCDD	48.7	46.3	5.1%
1,2,3,4,7,8-HxCDD	57.2	53.9	6.0%
1,2,3,6,7,8-HxCDD	54.4	55.2	1.5%
1,2,3,7,8,9-HxCDD	49.6	51.7	4.1%
1,2,3,4,6,7,8-HpCDD	59.3	56	5.8%
OCDD	124	116	6.8%
2,3,7,8-TCDF	11.9	10.8	9.2%
1,2,3,7,8-PeCDF	50.2	47.9	4.8%
2,3,4,7,8-PeCDF	54.8	52.2	4.9%
1,2,3,4,7,8-HxCDF	55.1	53.9	2.2%
1,2,3,6,7,8-HxCDF	61.1	54.5	11.4%
2,3,4,6,7,8-HxCDF	54.9	53.7	2.2%
1,2,3,7,8,9-HxCDF	51	53.4	4.7%
1,2,3,4,6,7,8-HpCDF	54.1	52	3.9%
1,2,3,4,7,8,9-HpCDF	50	53	5.7%
OCDF	108	99.7	7.9%
Totals			
Total TCDD	54.2	53.3	1.8%
Total PeCDD	71.8	68.9	4.0%
Total HxCDD	175	174	0.2%
Total HpCDD	73.8	68.4	7.7%
Total TCDF	61.9	59.6	3.8%
Total PeCDF	212	201	5.2%
Total HxCDF	350	338	3.6%
Total HpCDF	104	105	0.8%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*04-Dec-21 at 11:30*
AP Project name:	*B5971*
Requested TAT:	*10 business days*
Projected due date:	*19-Jan-22*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120221-S-JC-SW-B-2H	B5971_001*	Solid	1	4oz Amber	02-Dec-21	14:10	0.3	1	4905 2704 1992
11215131-120321-S-JC-SW-B-3H	B5971_002*	Solid	1	4oz Amber	03-Dec-21	10:00	0.3	1	4905 2704 1992
11215131-120221-S-SPS-SW-B-4H1	B5971_003*	Solid	1	4oz Amber	02-Dec-21	14:30	0.5	3	4905 2704 2017
11215131-120221-S-SPS-SW-B-4H2	B5971_004	Solid - HOLD	1	4oz Amber	02-Dec-21	14:35	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-B-5H	B5971_005*	Solid	1	4oz Amber	03-Dec-21	11:20	0.5	3	4905 2704 2017

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact *samples taken off HOLD per client email dated 1/5/2022

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Iesha L. Clinton *Logged in by: Ashley Owens* *QC'ed by:* TB 01/05/2022

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SGS CHAIN OF CUSTODY

B5A71 1/3

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remar

REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV

SPECIAL DELIVERABLES:

☐ DoD ■ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-371 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120221-S-JC-SW-S-4	12-2-21	1320	C	S	4 oz	X					1	RUSH
11215131-120221-S-JC-SW-S-4		1240			4 oz	X					1	RUSH
11215131-120221-S-JC-SW-B-2		1350			4 oz	X					1	
11215131-120221-S-JC-SW-B-3		1400			4 oz	X					1	
11215131-120221-S-JC-SW-B-2H		1410			4 oz	X					1	HOLD *
(BN) 11215131-120221-S-JC-RB-1		1500	—	we	4 oz	X					2R	(BN)
11215131-120221-S-JC-SW-S-5	12-3-21	0940	C	S	4 oz	X					1	RUSH
11215131-120321-S-JC-SW-B-3		0950			4 oz	X					1	
11215131-120321-S-JC-SW-B-3H		1000			4 oz	X					1	HOLD *
					4 oz							

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE:	TIME:
Breanna Norsh	12-3-21	1230				
RELINQUISHED BY (2):	DATE:	TIME:	RECEIVED BY:	COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT		
	12-3-21	1325		CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT		
RELINQUISHED BY (3):	DATE:	TIME:	RECEIVED BY:	CARRIER:	TEMP: °C 0.3°C	
	12/3/21	1700		TRACKING #:		

*=samples in this project.

Member of the SGS Group (SGS SA)

SGS CHAIN OF CUSTODY

B59771 2/3

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITEREF: International Paper
TURN AROUND TIME: Refer to Notes and Remar
REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV
SPECIAL DELIVERABLES:
☐ DoD ■ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-371 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None — ANALYSIS & METHOD: M1613B (D/F)	QC: MS	MSD	DUP	QTY	REMARKS
11215131-120321-S-SPS-SW-S-7	12/2/21	1325	C	S	4 oz	X				1	RUSH
11215131-120221-S-SPS-SW-S-6		1400			4 oz	X					RUSH
11215131-120221-S-SPS-SW-O-3		1420			4 oz	X					O is overburden not geo (SW-O)
11215131-120221-S-SPS-SW-B-4		1425			4 oz	X					
11215131-120221-S-SPS-SW-B-4H1		1430			4 oz	X					HOLD *
11215131-120221-S-SPS-SW-B-4H2	↓	1435			4 oz	X					HOLD *
11215131-120321-S-SPS-SW-S-12	12/3/21	845			4 oz	X					RUSH
11215131-120321-S-SPS-SW-S-11		930			4 oz	X					RUSH
11215131-120321-S-SPS-SW-O-5		925			4 oz	X					O is overburden
11215131-120321-S-SPS-SW-S-10		1030	↓	↓	4 oz	X				↓	RUSH

	DATE:	TIME:		
COLLECTED/RELINQUISHED BY (1): Stephen Schuler	12/3/21	1230	RECEIVED BY: Eddie Castro	RECEIVED BY LABORATORY: DATE: TIME: 12/4/21 11:30
RELINQUISHED BY (2): Eddie Castro	12/3/21	1325	RECEIVED BY:	COOLER SEAL: ☑ INTACT ☐ BROKEN ☐ ABSENT
				CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT
RELINQUISHED BY (3):	DATE:	TIME:	RECEIVED BY:	CARRIER: TEMP: °C 0.5 °C
				TRACKING #:

*=samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs
Member of the SGS Group (SGS SA)

SGS CHAIN OF CUSTODY

B5971 3/3

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUNDTIME: Refer to Notes and Remar

REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV

SPECIAL DELIVERABLES:

☐ DoD ■ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-371 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120321-S-SPS-SW-S-9	12/3/21	1055	C	S	4 oz		X					RUSH
11215131-120321-S-SPS-SW-S-8	"	1105	"	"	4 oz		X					RUSH
11215131-120321-S-SPS-SW-O-4	"	1110	"	"	4 oz		X					O is for oneinch SW-O
11215131-120321-S-SPS-SW-B-5	"	1115	"	"	4 oz		X					
11215131-120321-S-SPS-SW-B-5H	↓	1120	↓	↓	4 oz		X					HOLD *
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							

	DATE:	TIME:	
COLLECTED/RELINQUISHED BY (1): Stephen Salter	12/3/21	1230	RECEIVED BY: Eddie Castro
RELINQUISHED BY (2): Eddie Castro	12/3/21	1325	RECEIVED BY:
RELINQUISHED BY (3):	12/3/21	1706	RECEIVED BY:

RECEIVED BY LABORATORY: Josh Clenton DATE: 12/4/21 TIME: 1130

COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT

CARRIER: TEMP: °C 0.5°C

TRACKING #:

*=Samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

B59971 1/2

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 03DEC21
ACTWGT: 45.00 LB MAN
CAD: 0317565/CAFE3313

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/4/2021
11:30
0.3° (T.B.)

FedEx Express

1 of 3

TRK# 0201 4905 2704 1992

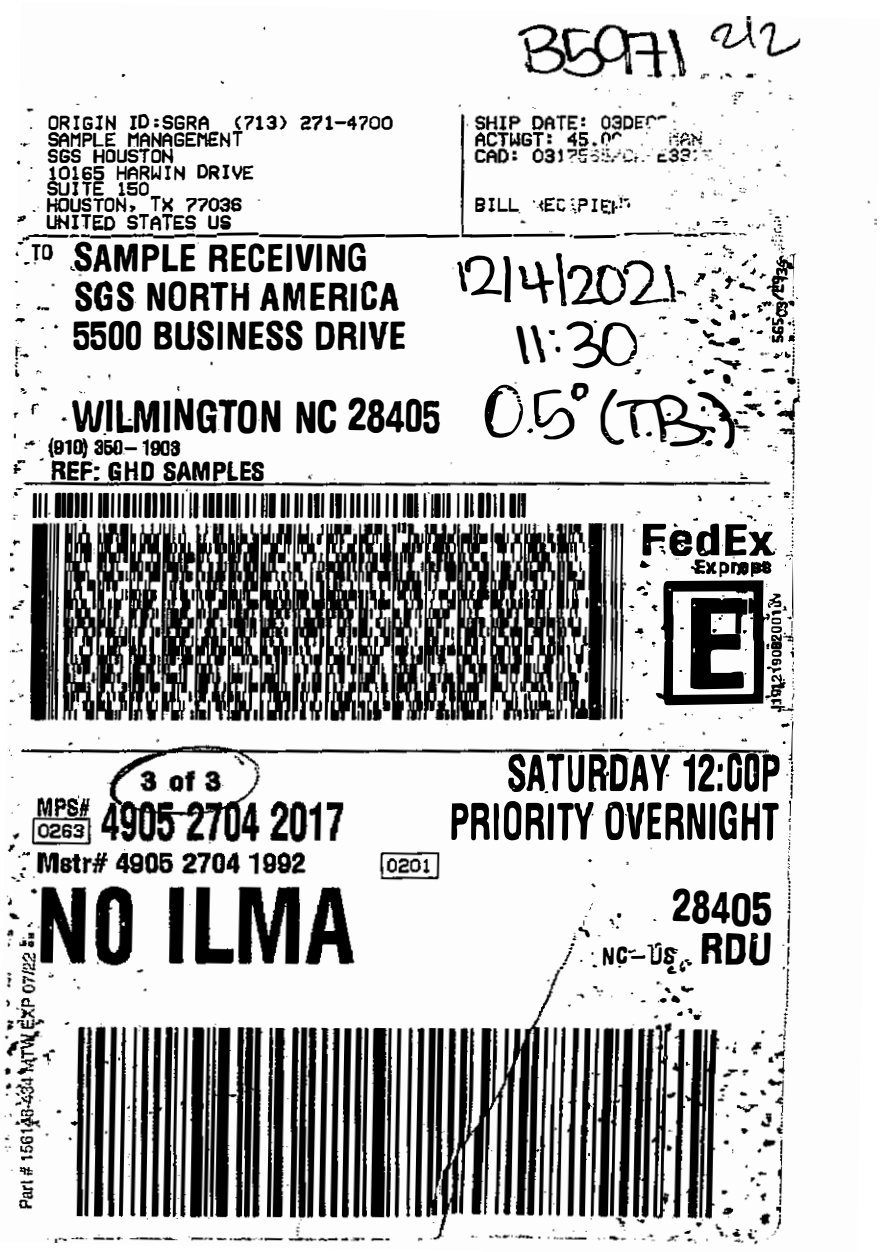
SATURDAY 12:00P
PRIORITY OVERNIGHT

MASTER

NO ILMA

28405
NC-US RDU

Part # 156144-434 MTG EXP 07/22


B59711 2/2

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 03DEC
ACTWGT: 45.0
CAD: 0317

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/4/2021
11:30
0.5° (T.B.)

FedEx Express

3 of 3
MPS# 0263 4905 2704 2017
Mstr# 4905 2704 1992
0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

NO ILMA

28405
NC-US RDU

Part # 156148-204 NITW EXP 07/22

Project Initiation Form

Project Number: B5971

Initiation Date: 05-Jan-22

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Sample 004 on HOLD

Read and understood, initial and date: Prep Lab: KE 1/10/22

HRMS Lab: 1/21/22

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab: 1/21/22

PM Initials: tburkamper Date: 05-Jan-2022

SGS

Methods: PCB / PAH | (PCDD/F) WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Extraction Type: (SDS) CLL | TALEX Carbon SPE | Solid | Final Volume: 2mL

Batch# 18819 | Split: 1/2 ~~1/4~~ | Extract Initial/Date: KF 1/10/22 | Clean-up Initial/Date: JRH 1/13/22 | Transfer Init/Date: JRH 1/14/22

Lab Sample ID	Extraction Position Solvent: TOL	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5964_18819_006	20	13.28				gray, clay-like, oil smell
B5971_18819_002	21	13.73				gray, clay-like, sandy
B5971_18819_003	22	12.56				gray, clay-like
B5971_18819_005	23	13.23				gray, clay-like
B5987_18819_001	24	12.61				gray, clay-like, oil smell
B5987_18819_002	43	20.88				gray, clay-like, oil smell
B5992_18819_001	44	13.73				gray, clay-like, oil smell
B5992_18819_003	45	15.02		TB 1/24/22		brown/gray, clay-like, oil smell
B5992_18819_004	46	12.59				gray-brown, clay-like
B6001_18819_001	47	12.65				gray-brown, clay-like
B6008_18819_002	48	12.69				gray, clay-like
MB1_18819	17	10.00				sodium sulfate
OPR1_18819	18	10.00				sodium sulfate
OPR2_18819	19	10.00				sodium sulfate

BOB 1/14/22

Supply IDs

Toluene	STR 14-23
MeCHL	STR14-21
Florisil	SPLS-77
Hexane	STH4-22
Silica	SPLS-69
S Nitrate	N/A
Base Silica	SPLS-78
HydroMatrix	N/A
Tetradecane	SPLS-73D
H_2SO_4	N/A
A Silica	SPLS-79
Sodium Sulfate	SPLS-28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	TB 1/24/22
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1500
	Stop: 0930
HEX	Start:
	Stop:
DCM	Start:
	Stop:

TB 1/24/22

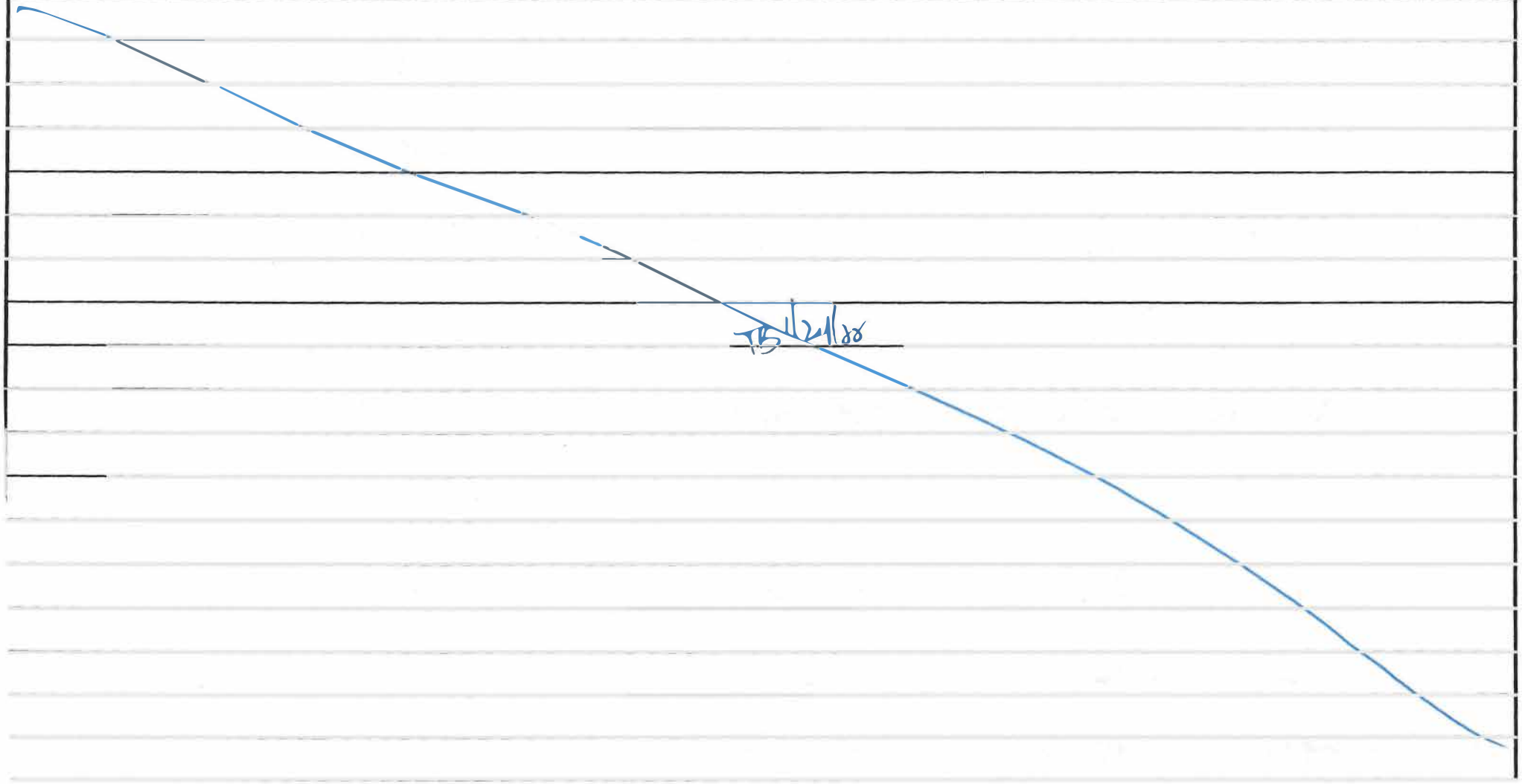
SGS

Methods: PCB PCDD/F QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

Solid

Batch# 18819

Inter-Department Communication Sheet



SGS

Wt. Volume Results

Batch #: 18819

Comments:

AK 11/20/22

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5964_006	0.84	3.95	3.21	76.21%	76.21%			13.12	13.28	10.12
B5971_002	0.85	4.65	3.66	73.95%	73.95%			13.52	13.73	10.15
B5971_003	0.8	4.38	3.66	79.89%	79.89%			12.52	12.56	10.03
B5971_005	0.81	4.21	3.41	76.47%	76.47%			13.08	13.23	10.12
B5987_001	0.8	4.16	3.49	80.06%	80.06%			12.49	12.61	10.1
B5987_002	0.81	4.71	2.68	47.95%	47.95%			20.86	20.88	10.01
B5992_001	0.81	4.49	3.5	73.10%	73.10%			13.68	13.73	10.04
B5992_003	0.81	4.53	3.31	67.20%	67.20%			14.88	15.02	10.09
B5992_004	0.8	4.41	3.68	79.78%	79.78%			12.53	12.59	10.04
B6001_001	0.79	4.76	3.97	80.10%	80.10%			12.48	12.65	10.13
B6008_002	0.8	4.04	3.36	79.01%	79.01%			12.66	12.69	10.03

TB 11/21/22

% Solid Determination WorkSheet

SGS

Batch: 18819

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	10g DWE	Comments
B5964_18819_006	0.84	3.95	3.21	13.12	
B5971_18819_002	0.85	4.05	3.66	13.52	
B5971_18819_003	0.80	4.38	3.66	12.52	
B5971_18819_005	081	4.21	3.41	13.08	
B5987_18819_001	0.80	4.16	3.49	12.49	
B5987_18819_002	0.81	4.11	2.68	20.86	
B5992_18819_001	0.81	4.49	3.50	13.68	
B5992_18819_003	0.81	4.53	3.31	14.88	
B5992_18819_004	0.80	4.41	3.68	12.53	
B6001_18819_001	0.79	4.76	3.97	12.48	
B6008_18819_002	0.80	4.64	3.36	12.66	

1/14/22

Date/Initials: 1/10/22 KE

SGS

Methods: PCB / PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Solid

Batch # 18819

Lab Sample ID	Spiker Initials/Date: JRH 1/10/22	JRH 1/10/22	JRH 1/10/22	JRH 1/13/22	JRH 1/13/22		
	D/F A-A Amount: 20µL	D/F A-B Amount: 20µL	D/F ES Amount: 20µL	D/F CS Amount: 20µL	D/F JS Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5964_18819_006	–	–	KE	RAB	JRH		
B5971_18819_002	–	–	KE	RAB	JRH		
B5971_18819_003	–	–	KE	RAB	JRH		
B5971_18819_005	–	–	KE	RAB	JRH		
B5987_18819_001	–	–	KE	RAB	JRH		
B5987_18819_002	–	–	KE	RAB	JRH		
B5992_18819_001	–	–	KE	RAB	JRH		
B5992_18819_003	–	–	KE	RAB	JRH		
B5992_18819_004	–	–	KE	RAB	JRH		
B6001_18819_001	–	–	KE	RAB	JRH		
B6008_18819_002	–	–	KE	RAB	JRH		
MB1_18819	–	–	KE	RAB	JRH		
OPR1_18819	KE	KE	KE	RAB	JRH		
OPR2_18819	KE	KE	KE	RAB	JRH		

RAB 1/14/22

Standard Information

Pipette ID							JS 1/14/22
Spike ID	D/F A-A	D/F A-B	D/F ES	D/F CS	D/F JS		
SIL #	26-2-8	26-187-2	26-2-9	25.338.1	25.309.1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/25	6/29/22	8/2025	11/16/22	10/8/22		

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Extraction Type: SDS CLL | TALEX Carbon SPE

Solid

Final Volume: 20 µL

Batch# 18863

Split: ~~1/2~~ ~~1/4~~

Extract Initial/Date: JRH 1/24/22

Clean-up Initial/Date: [illegible] 1/25/22

Transfer Init/Date: [illegible] 1/25/22

Lab Sample ID	Extraction Position	Extraction Weight/Volume		(Td)	ASECS #	Observations
	Solvent: DCM	g	mL			
B5971_18863_001	12	13.12				dark gray, soft clay-like
B6206_18863_001	13	12.64				gray, clay like
B6206_18863_002	14	12.94				gray, clay like
B6206_18863_003	15	12.89				gray, clay-like
B6206_18863_004	16	13.03				gray, clay-like
B6206_18863_005	17	13.41				gray, clay-like
MB1_18863	9	10.00				sodium sulfate
OPR1_18863	10	10.00				sodium sulfate
OPR2_18863	11	10.00				sodium sulfate

CL 26 Jan 22

RDB 1/25/22

Supply IDs

Toluene	STL14-2324 JRH 1/24/22
MeCHL	STL4.21
Florisil	SPLS.77
Hexane	STL14-22
Silica	SPLS.69
S Nitrate	N/A
Base Silica	SPLS.78
HydroMatrix	N/A
Tetradecane	SPLS-730
H_2SO_4	N/A
A Silica	SPLS.79
Sodium Sulfate	SPLS-80B

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	
GPC Date/Initial:	CL 26 Jan 22
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1430
	Stop: 0845
HEX	Start:
	Stop:
DCM	Start:
	Stop:

CL 26 Jan 22

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18863

Inter-Department Communication Sheet

26 Jun 22

Page 50 of 443

SGS

Wt. Volume Results

Batch #: 18863 **Comments:**

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5971_001	0.96	4.79	3.97	78.59%	78.59%			12.72	13.12	10.31
B6206_001	0.95	5.19	4.39	81.13%	81.13%			12.33	12.64	10.25
B6206_002	0.62	4.57	3.73	78.73%	78.73%			12.7	12.94	10.19
B6206_003	0.68 0.068	5	4.18	83.37% 81.42	83.37%			11.99	12.89	10.75 10.44
B6206_004	0.92	5.44	4.43	77.65%	77.65%			12.88	13.03	10.12
B6206_005	0.91	5.63	4.54	76.91%	76.91%			13	13.41	10.31

* CL 26 Jun 22

26 Jun 22

CL

% Solid Determination WorkSheet

SGS

Batch: 18863

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	10g ONE	Comments
B5971_18863_001	0.96	4.79 JRH 1/24/22	~~4.39~~ 3.97	12.72	
B6206_18863_001	0.95	5.19	4.39	12.33	
B6206_18863_002	0.62	4.57	3.73	12.70	
B6206_18863_003	0.68	5.00	4.18	11.99	
B6206_18863_004	0.92	5.44	4.43	12.88	
B6206_18863_005	0.91	5.63	4.54	13.00	

1/25/22

Date/Initials: JRH 1/24/22

SGS

Methods: PCB / PAH | PCDD/F / WHO-2 | QUANTICS / USV | DoD PCDD/F / PEST | Solid

Batch # 18863

Spiker Initials/Date:	JRH 1/24/22	JRH 1/24/22	JRH 1/24/22	RAS 1/25/22	RAS 1/25/22		
Lab Sample ID	D/F Ax-H Amount: 20 µL Observer Initials	D/F Ax-B Amount: 20 µL Observer Initials	D/F ES Amount: 20 µL Observer Initials	D/F CS Amount: 20 µL Observer Initials	D/F JS Amount: 20 µL Observer Initials	Amount: Observer Initials	Amount: Observer Initials
B5971_18863_001	—	—	KE	KE	JRH		
B6206_18863_001	—	—	KE	KE	JRH		
B6206_18863_002	—	—	KE	KE	JRH		
B6206_18863_003	—	—	KE	KE	JRH		
B6206_18863_004	—	—	KE	KE	JRH		
B6206_18863_005	—	—	KE	KE	JRH		
MBI_18863	—	—	KE	KE	JRH		
OPR1_18863	KE	KE	KE	KE	JRH		
OPR2_18863	KE	KE	KE	KE	JRH		

1/25/22

Standard Information

Pipette ID						RAS 1/25/22
Spike ID	D/F Ax-H	D/F Ax-B	D/F ES	D/F CS	D/F JS	
SIL #	26-2-8	25-187-2	26-2-9	25-338-1	25-309-1	
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/mL	
Expiration Date	7/9/26	6/20/22	8/2022	11/16/22	10/8/22	

REVIEWED
Megan_Shannahan , 1/21/2022, 1:03:58 PM

SGS Environmental Services — Run Log

Project: B5971_18819_DF

Instrument: HRMS3 (AutoSpec-Ultima)

MS Experiment: df_cl4-8_db5MS

APPROVED
Carla_Lyon , 1/26/2022, 4:44:09 PM

GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	220120C01	3	CS3_220120_DF_CA	1.00	SIL 25-347-1	DTF, MLS	343-977	20-Jan-2022	10:26:30
2	220120C02	50	OPR1_18819_DF	1.00	0_18819_OPR001	DTF, MLS	697-611	20-Jan-2022	11:32:05
3	220120C03	51	OPR2_18819_DF	1.00	0_18819_OPR002	DTF, MLS	751-300	20-Jan-2022	12:20:14
4	220120C04	2	SBS_220120_DF_CA	1.00	20-61-1	DTF	981-901	20-Jan-2022	13:06:33
5	220120C05	49	MB1_18819_DF_SDS	10.00	Method Blank	DTF, MLS	798-286	20-Jan-2022	13:52:51
6	220120C07	53	B5971_18819_DF_002	10.15	11215131-120321-S-JC-SW-B-3H	DTF, MLS	766-405	20-Jan-2022	15:25:34
7	220120C08	54	B5971_18819_DF_003	10.03	11215131-120221-S-SPS-SW-B-4H1	DTF, MLS	209-493	20-Jan-2022	16:11:53
8	220120C09	55	B5971_18819_DF_005	10.12	11215131-120321-S-SPS-SW-B-5H	DTF, MLS	972-223	20-Jan-2022	16:58:11

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
32	220124C32	3	CS3_220124_DF_CD	1.00	SIL 25-347-1	DTF	192-921	25-Jan-2022	13:07:51
33	220125C01	57	OPR1_18863_DF	1.00	0_18863_OPR001	DTF	343-081	25-Jan-2022	15:58:21
34	220125C02	58	OPR2_18863_DF	1.00	0_18863_OPR002	DTF	226-320	25-Jan-2022	16:44:37
35	220125C03	2	SBS_220125_DF_CA	1.00	30-61-1	DTF	475-390	25-Jan-2022	17:30:57
36	220125C04	56	MB1_18863_DF_SDS	10.00	Method Blank	DTF	660-125	25-Jan-2022	18:17:18
37	220125C05	59	B5971_18863_DF_001	10.31	11215131-120221-S-JC-SW-B-2H	DTF	109-048	25-Jan-2022	19:03:38

REVIEWED
Tyler_Fritz , 1/26/2022, 9:51:32 AM

APPROVED
Carla_Lyon , 1/26/2022, 4:44:16 PM

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18819 **UTP:** 21-Jan-2022 12:41:58 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 798-286-ZVN

Datafile: 220120C05 **Report:** 21 Jan 2022 12:47 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	6558.717	0.985
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	4628.235	0.643
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3273.325	0.522
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.15	-	3273.325	0.481
123789-HxCDD	NotFnd		1.0109	-		-	-	-	1.05	-	3273.325	0.477
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	3096.852	0.463
OCDD	NotFnd		1.0002	-		-	-	-	1.13	-	3168.45	1.04
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	6140.069	0.616
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3857.122	0.355
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3857.122	0.327
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	3495.234	0.329
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	3495.234	0.323
234678-HxCDF	NotFnd		1.0004	-		-	-	-	1.19	-	3495.234	0.435
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3495.234	0.451
1234678-HpCDF	NotFnd		1.0002	-		-	-	-	1.37	-	2900.075	0.226
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	2900.075	0.351
OCDF	NotFnd		1.0002	-		-	-	-	1.07	-	3066.141	0.657

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.64	1.0233	1.0235	+0.3	1.25E+07	0.80	Y	1.05	77.9
ES 12378-PeCDD	33.94	1.2121	1.2129	+1.6	1.23E+07	1.63	Y	0.88	91.2
ES 123478-HxCDD	37.84	0.9921	0.9920	-0.2	1.04E+07	1.24	Y	0.97	78.9
ES 123678-HxCDD	37.95	0.9951	0.9950	-0.2	1.16E+07	1.29	Y	0.94	90.4
ES 123789-HxCDD	38.24	1.0025	1.0026	+0.2	1.17E+07	1.28	Y	1.09	78.9
ES 1234678-HpCDD	40.86	1.0709	1.0713	+1.0	1.08E+07	1.17	Y	0.91	87.2
ES OCDD	43.51	1.1403	1.1407	+1.0	1.19E+07	0.93	Y	0.62	70.3
ES 2378-TCDF	27.79	1.0506	1.0511	+0.8	2.20E+07	0.81	Y	1.06	86.6
ES 12378-PeCDF	32.51	1.2281	1.2294	+2.5	1.97E+07	1.64	Y	0.91	90.4
ES 23478-PeCDF	33.61	1.2698	1.2711	+2.6	1.98E+07	1.61	Y	0.88	93.9
ES 123478-HxCDF	36.83	0.9657	0.9657	0	1.48E+07	0.54	Y	1.20	91.1
ES 123678-HxCDF	36.98	0.9695	0.9695	0	1.83E+07	0.54	Y	1.35	100
ES 234678-HxCDF	37.65	0.9874	0.9872	-0.5	1.31E+07	0.57	Y	1.24	77.9
ES 123789-HxCDF	38.59	1.0116	1.0119	+0.7	1.33E+07	0.54	Y	1.16	84.9
ES 1234678-HpCDF	39.93	1.0467	1.0470	+0.7	1.45E+07	0.47	Y	0.97	111
ES 1234789-HpCDF	41.32	1.0830	1.0834	+1.0	1.07E+07	0.45	Y	0.85	92.3
ES OCDF	43.69	1.1451	1.1456	+1.3	1.82E+07	0.90	Y	0.81	83.2

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18819 **UTP:** 21-Jan-2022 12:41:58 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 798-286-ZVN

Datafile: 220120C05 **Report:** 21 Jan 2022 12:47 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.99		-	-	-	1.53E+07	0.83	Y	-	-	
JS 1234-TCDF	26.44		-	-	-	2.39E+07	0.83	Y	-	-	
JS 123467-HxCDD	38.14		-	-	-	6.77E+06	1.24	Y	-	-	
CS 37Cl-2378-TCDD	28.67		1.0241	1.0243	+0.3	5.85E+06	n/a	-	1.20	79.4	
CS 12347-PeCDD	33.44		1.1943	1.1950	+1.4	1.19E+07	1.66	Y	0.75	103	
CS 12346-PeCDF	31.98		1.2083	1.2094	+2.1	1.95E+07	1.64	Y	0.85	95.9	
CS 123469-HxCDF	37.29		0.9778	0.9778	0	1.64E+07	0.53	Y	1.12	108	
CS 1234689-HpCDF	40.33		1.0571	1.0575	+1.0	1.40E+07	0.48	Y	0.89	117	
~~SS 37Cl-2378-TCDD~~	~~28.67~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~5.05E+06~~	~~n/a~~		~~1.15~~	~~102~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.44~~		~~1.1943~~	~~1.1950~~	~~+1.4~~	~~1.19E+07~~	~~1.66~~	~~Y~~	~~0.86~~	~~113~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.98~~		~~1.2083~~	~~1.2094~~	~~+2.1~~	~~1.95E+07~~	~~1.64~~	~~Y~~	~~0.94~~	~~106~~	
~~SS 123469-HxCDF~~	~~37.29~~		~~0.9778~~	~~0.9778~~	~~0~~	~~1.64E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~100~~	
~~SS 1234689-HpCDF~~	~~40.33~~		~~1.0571~~	~~1.0575~~	~~+1.0~~	~~1.40E+07~~	~~0.48~~	~~Y~~	~~0.92~~	~~105~~	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18819 **UTP:** 21-Jan-2022 12:41:58 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 798-286-ZVN

Datafile: 220120C05 **Report:** 21 Jan 2022 12:47 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8755						1.18		6558.717	0.985
1379-TCDD	NotFnd		0.8876						1.18		6558.717	0.985
1369-TCDD	NotFnd		0.9023						1.18		6558.717	0.985
1469-TCDD	NotFnd		0.9291						1.18		6558.717	0.985
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		6558.717	0.985
1378-TCDD	NotFnd		0.9440						1.18		6558.717	0.985
1268-TCDD	NotFnd		0.9506						1.18		6558.717	0.985
1478-TCDD	NotFnd		0.9591						1.18		6558.717	0.985
1279-TCDD	NotFnd		0.9649						1.18		6558.717	0.985
1234/1269-TCDD	NotFnd		0.9771						1.18		6558.717	0.985
1236-TCDD	NotFnd		0.9820						1.18		6558.717	0.985
1237/1238-TCDD	NotFnd		0.9908						1.18		6558.717	0.985
1239-TCDD	NotFnd		0.9954						1.18		6558.717	0.985
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**6558.717**	**0.985**
1278-TCDD	NotFnd		1.0121						1.18		6558.717	0.985
1267-TCDD	NotFnd		1.0167						1.18		6558.717	0.985
1289-TCDD	NotFnd		1.0341						1.18		6558.717	0.985
12479/12468-PeCDD	NotFnd		0.9273						1.04		4628.235	0.643
12469-PeCDD	NotFnd		0.9430						1.04		4628.235	0.643
12368-PeCDD	NotFnd		0.9592						1.04		4628.235	0.643
12478-PeCDD	NotFnd		0.9647						1.04		4628.235	0.643
12379-PeCDD	NotFnd		0.9676						1.04		4628.235	0.643
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		4628.235	0.643
12346/12347-PeCDD	NotFnd		0.9860						1.04		4628.235	0.643
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**4628.235**	**0.643**
12367-PeCDD	NotFnd		1.0034						1.04		4628.235	0.643
12389-PeCDD	NotFnd		1.0134						1.04		4628.235	0.643
124679/124689-HxCDD	NotFnd		0.9545						1.10		3273.325	0.492
123468-HxCDD	NotFnd		0.9715						1.10		3273.325	0.492
123679/123689-HxCDD	NotFnd		0.9793						1.10		3273.325	0.492
123469-HxCDD	NotFnd		0.9829						1.10		3273.325	0.492
123478-HxCDD	NotFnd		**1.0004**						1.09		**3273.325**	**0.522**
123678-HxCDD	NotFnd		**1.0034**						1.15		**3273.325**	**0.481**
123467-HxCDD	NotFnd		1.0082						1.10		3273.325	0.492
123789-HxCDD	NotFnd		**1.0109**						1.05		**3273.325**	**0.477**

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18819 **UTP:** 21-Jan-2022 12:41:58 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 798-286-ZVN

Datafile: 220120C05 **Report:** 21 Jan 2022 12:47 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

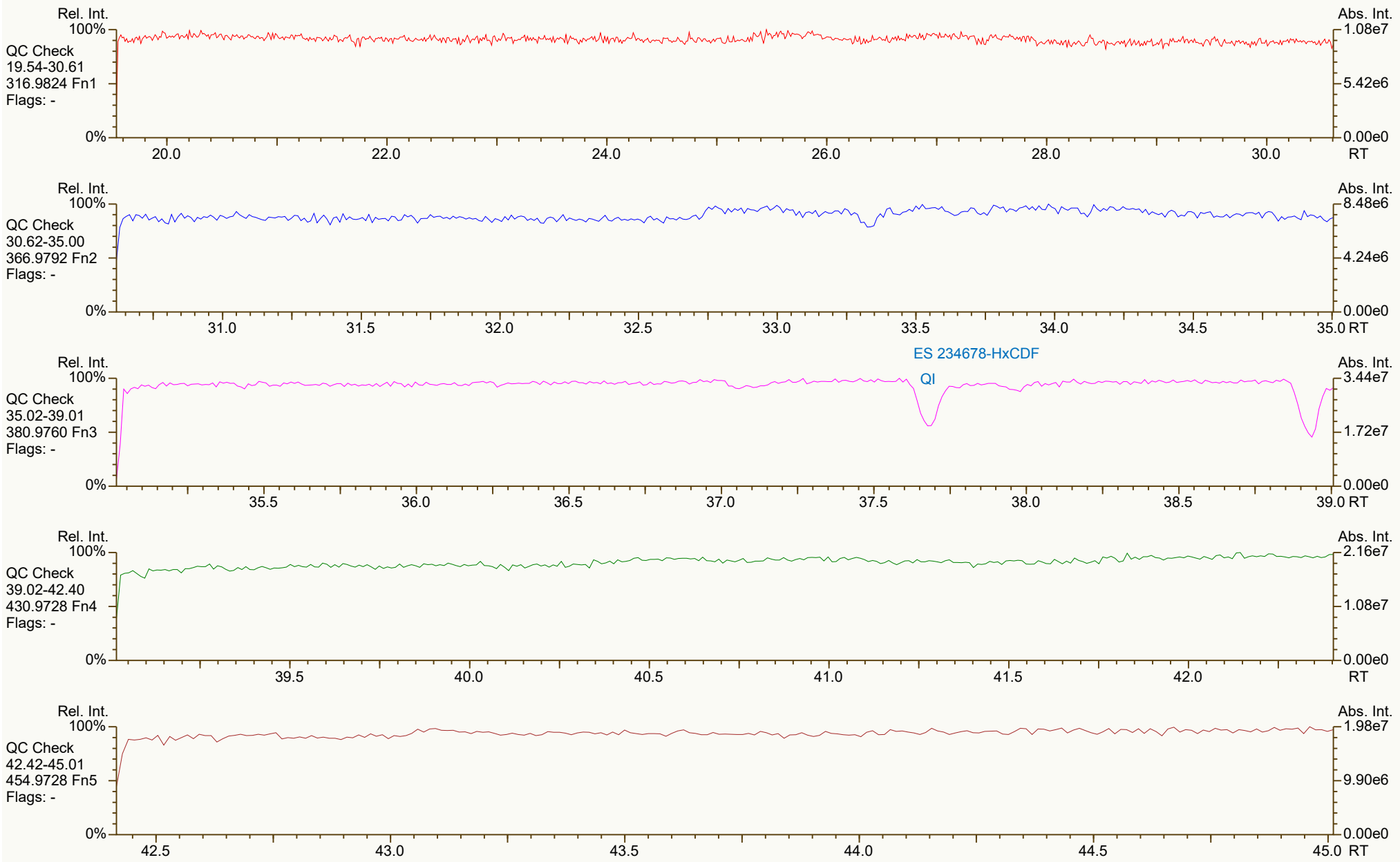
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9838						1.06		3096.852	0.463
1234678-HpCDD	**NotFnd**		**1.0003**						**1.06**		**3096.852**	**0.463**
OCDD	**NotFnd**		**1.0002**						**1.13**		**3168.45**	**1.04**
OCDD-a	NotFnd		1.0002						0.07		4053.297	20.7
1368-TCDF	NotFnd		0.8282						1.08		6140.069	0.616
1468-TCDF	NotFnd		0.8485						1.08		6140.069	0.616
2468-TCDF	NotFnd		0.8709						1.08		6140.069	0.616
1346/1246-TCDF	NotFnd		0.8829						1.08		6140.069	0.616
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		6140.069	0.616
1348-TCDF	NotFnd		0.8980						1.08		6140.069	0.616
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		6140.069	0.616
1268-TCDF	NotFnd		0.9158						1.08		6140.069	0.616
1467-TCDF	NotFnd		0.9206						1.08		6140.069	0.616
1478-TCDF	NotFnd		0.9266						1.08		6140.069	0.616
1369/1237-TCDF	NotFnd		0.9397						1.08		6140.069	0.616
2467-TCDF	NotFnd		0.9440						1.08		6140.069	0.616
2368-TCDF	NotFnd		0.9497						1.08		6140.069	0.616
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		6140.069	0.616
1278-TCDF	NotFnd		0.9690						1.08		6140.069	0.616
1349-TCDF	NotFnd		0.9730						1.08		6140.069	0.616
1267-TCDF	NotFnd		0.9787						1.08		6140.069	0.616
2346/1249-TCDF	NotFnd		0.9850						1.08		6140.069	0.616
2347/1279-TCDF	NotFnd		0.9929						1.08		6140.069	0.616
2348-TCDF	NotFnd		0.9970						1.08		6140.069	0.616
2378-TCDF	**NotFnd**		**1.0008**						**1.08**		**6140.069**	**0.616**
2367/3467-TCDF	NotFnd		1.0136						1.08		6140.069	0.616
1269-TCDF	NotFnd		1.0221						1.08		6140.069	0.616
1239-TCDF	NotFnd		1.0319						1.08		6140.069	0.616
1289-TCDF	NotFnd		1.0740						1.08		6140.069	0.616
13468/12468-PeCDF	NotFnd		0.9145						1.02		3874.537	0.343
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		3857.122	0.341
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		3857.122	0.341
14678-PeCDF	NotFnd		0.9695						1.02		3857.122	0.341
13479-PeCDF	NotFnd		0.9724						1.02		3857.122	0.341
13469/12479-PeCDF	NotFnd		0.9801						1.02		3857.122	0.341
12346-PeCDF	NotFnd		0.9842						1.02		3857.122	0.341

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18819 **UTP:** 21-Jan-2022 12:41:58 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 798-286-ZVN

Datafile: 220120C05 **Report:** 21 Jan 2022 12:47 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		3857.122	0.341
12347-PeCDF	NotFnd		0.9895						1.02		3857.122	0.341
12348-PeCDF	NotFnd		0.9941						1.02		3857.122	0.341
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3857.122**	**0.355**
12678/12367-PeCDF	NotFnd		1.0090						1.02		3857.122	0.341
12379-PeCDF	NotFnd		1.0142						1.02		3857.122	0.341
12679-PeCDF	NotFnd		0.9931						1.02		3857.122	0.341
23467/12369-PeCDF	NotFnd		0.9966						1.02		3857.122	0.341
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3857.122**	**0.327**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3857.122	0.341
12349-PeCDF	NotFnd		1.0101						1.02		3857.122	0.341
12389-PeCDF	NotFnd		1.0322						1.02		3857.122	0.341
123468-HxCDF	NotFnd		0.9627						1.19		3495.234	0.377
124678/134678-HxCDF	NotFnd		0.9684						1.19		3495.234	0.377
134679-HxCDF	NotFnd		0.9747						1.19		3495.234	0.377
124679-HxCDF	NotFnd		0.9802						1.19		3495.234	0.377
124689-HxCDF	NotFnd		0.9858						1.19		3495.234	0.377
123467-HxCDF	NotFnd		0.9972						1.19		3495.234	0.377
123478-HxCDF	**NotFnd**		**1.0004**						**1.27**		**3495.234**	**0.329**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**3495.234**	**0.323**
123479-HxCDF	NotFnd		1.0051						1.19		3495.234	0.377
123469-HxCDF	NotFnd		1.0091						1.19		3495.234	0.377
123679-HxCDF	NotFnd		0.9943						1.19		3495.234	0.377
234678-HxCDF	**NotFnd**		**1.0004**						**1.19**		**3495.234**	**0.435**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3495.234	0.377
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**3495.234**	**0.451**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		3495.234	0.377
1234678-HpCDF	**NotFnd**		**1.0002**						**1.37**		**2900.075**	**0.226**
1234679-HpCDF	NotFnd		1.0067						1.34		2900.075	0.278
1234689-HpCDF	NotFnd		1.0101						1.34		2900.075	0.278
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**2900.075**	**0.351**
OCDF	**NotFnd**		**1.0002**						**1.07**		**3066.141**	**0.657**
OCDF-a	NotFnd		1.0002						0.07		3258.893	11.3


Rel. Int.
100%
QC Check
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20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
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0%
Abs. Int.
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4.24e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
ES 234678-HxCDF
QI
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.44e7
1.72e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.16e7
1.08e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.98e7
9.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: B
4σ 3.85e3
0%
Abs. Int.
1.04e4
5.22e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: B
4σ 2.71e3
0%
Abs. Int.
1.08e4
5.42e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 2.34e3
0%
CS 37Cl-2378D
5.85e6
28.66
Abs. Int.
1.32e6
6.62e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PBM
4σ 7.54e3
0%
JS 1234D
6.96e6
27.99
ES 2378D
5.55e6*
28.64
Abs. Int.
1.64e6
8.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PBM
4σ 6.73e3
0%
JS 1234D
8.36e6
27.98
ES 2378D
6.94e6*
28.64
Abs. Int.
2.04e6
1.02e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.62-35.00
355.8546 Fn2
Flags: B
4σ 2.54e3
0%
Abs. Int.
1.05e4
5.24e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.00
357.8517 Fn2
Flags: B
4σ 2.09e3
0%
Abs. Int.
8.03e3
4.01e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PBM
4σ 4.34e3
CS 12347D
7.42e6*
33.44
ES 12378D
7.62e6*
33.94
0%
Abs. Int.
2.15e6
1.08e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PBM
4σ 1.92e3
CS 12347D
4.46e6*
33.44
ES 12378D
4.67e6*
33.94
0%
Abs. Int.
1.29e6
6.47e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.48e6
4.24e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PB
4σ 1.52e3
6.30e3
3.15e3
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: B
4σ 1.76e3
7.98e3
3.99e3
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.37e3
ES 123678D
6.52e6
37.95
ES 123478D
5.76e6
37.84
JS 123467D
3.74e6*
38.14
ES 123789D
6.54e6*
38.24
1.84e6
9.18e5
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.47e3
ES 123678D
5.05e6
37.95
ES 123478D
4.64e6
37.83
JS 123467D
3.03e6*
38.14
ES 123789D
5.13e6*
38.24
1.46e6
7.30e5
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.44e7
1.72e7
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
0.00e0

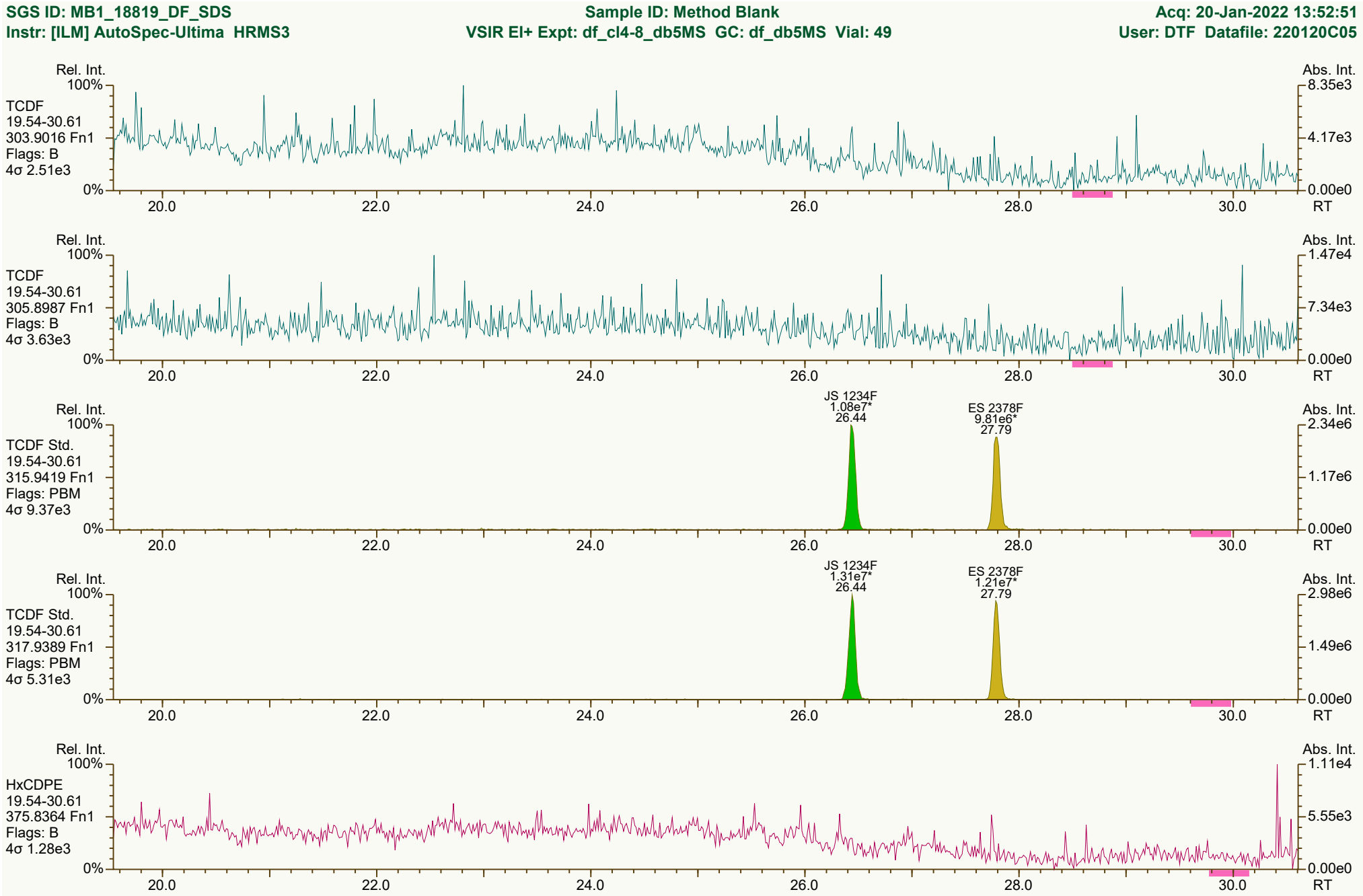

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.70e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: B
4σ 1.40e3
0%
Abs. Int.
5.56e3
2.78e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
ES 1234678D
5.82e6*
40.86
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.48e3
0%
Abs. Int.
1.70e6
8.52e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
ES 1234678D
4.96e6*
40.86
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 2.11e3
0%
Abs. Int.
1.47e6
7.37e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.16e7
1.08e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PB
4σ 1.48e3
0%
Abs. Int.
5.92e3
2.96e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: PB
4σ 1.69e3
0%
Abs. Int.
6.13e3
3.06e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
5.72e6*
43.51
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.84e3
0%
Abs. Int.
1.31e6
6.55e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.16e6*
43.51
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 1.39e3
0%
Abs. Int.
1.44e6
7.22e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.98e7
9.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: MB1_18819_DF_SDS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 49

Acq: 20-Jan-2022 13:52:51
User: DTF Datafile: 220120C05

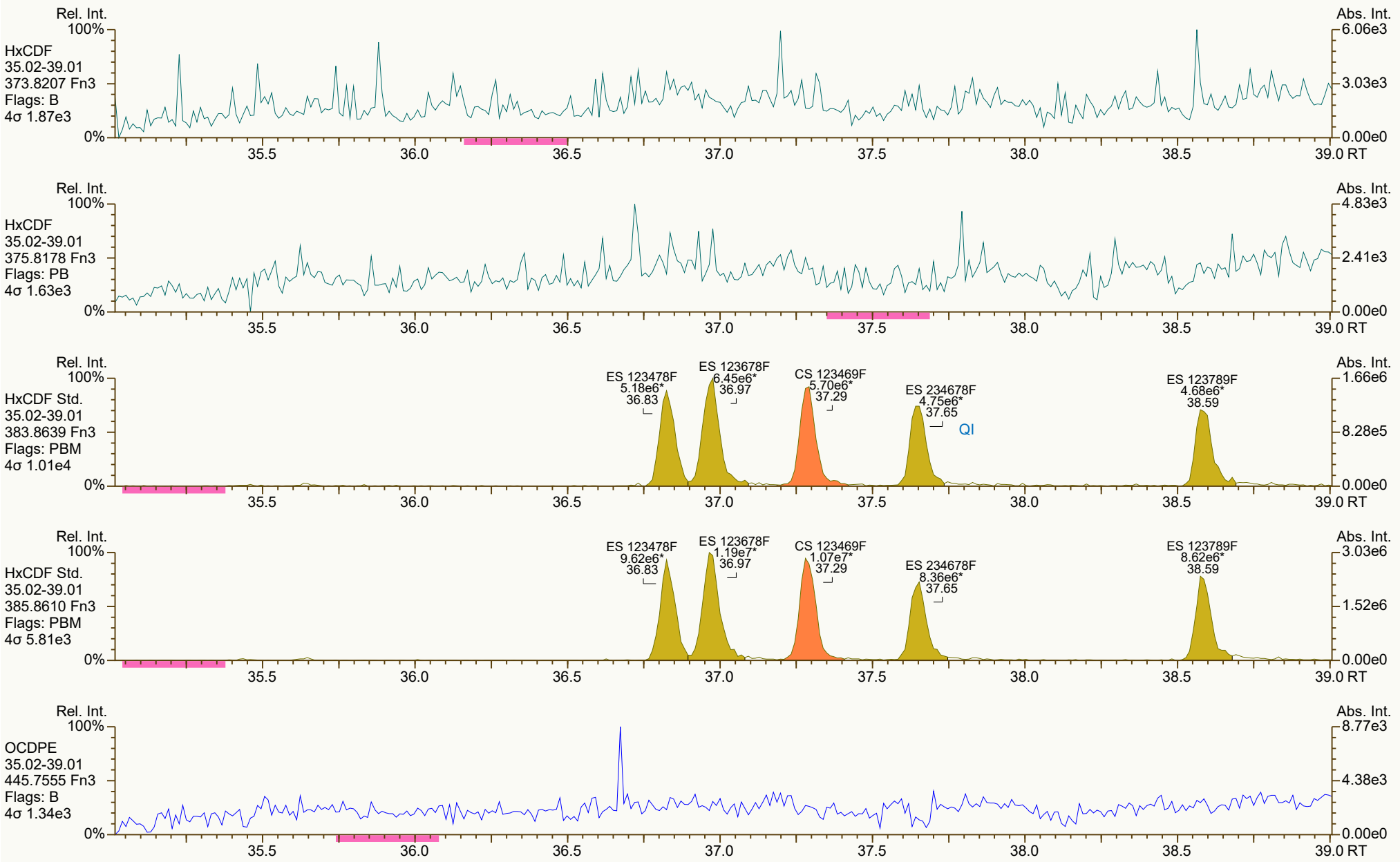


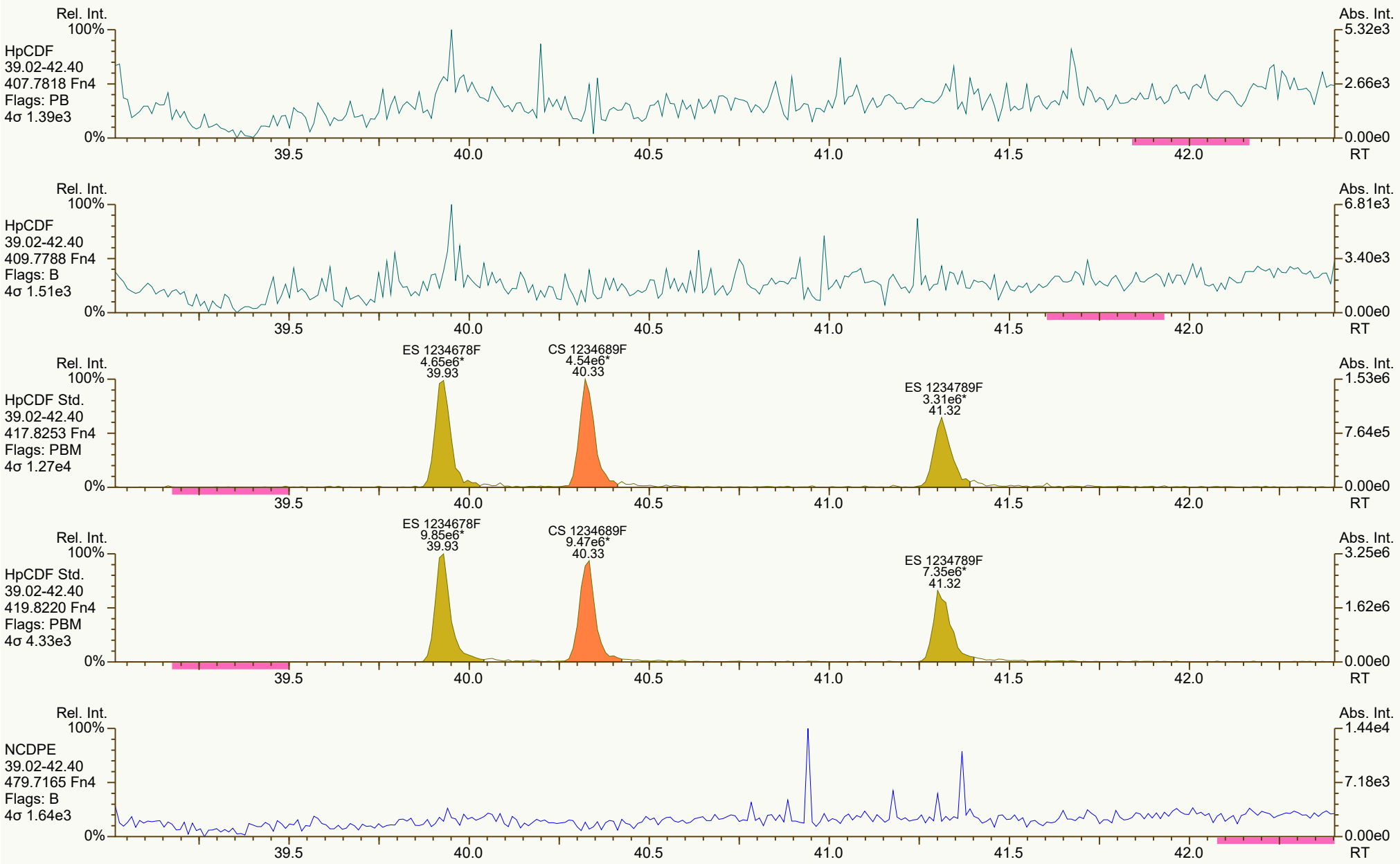
Results: P:\B5900_B5999\B5971\B5971_18819 DF\Resources\MB1_18819_DF_SDS.utp_res, saved 21-Jan-2022 12:41 (MLS)
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 6724, 2531, 9338 scc: 798-286

Peak annotation: Areas, Centroids
PKD: 21-Jan-2022 12:03 Printed: 21-Jan-2022 13:00 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.37e4
6.87e3
0.00e0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.77e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.18e4
5.90e3
0.00e0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 2.11e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.08e7
5.42e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PB
4σ 1.78e3
0%
Abs. Int.
6.18e3
3.09e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
6.27e3
3.13e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PBM
4σ 6.77e3
0%
CS 12346F
1.21e7*
31.98
ES 12378F
1.22e7*
32.51
ES 23478F
1.22e7
33.61
Abs. Int.
3.57e6
1.79e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PBM
4σ 4.03e3
0%
CS 12346F
7.39e6*
31.98
ES 12378F
7.46e6*
32.51
ES 23478F
7.59e6
33.61
Abs. Int.
2.02e6
1.01e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: PB
4σ 1.64e3
0%
Abs. Int.
1.26e4
6.30e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: B
4σ 1.87e3
0%
Abs. Int.
6.06e3
3.03e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PB
4σ 1.63e3
0%
Abs. Int.
4.83e3
2.41e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 1.01e4
0%
ES 123478F
5.18e6*
36.83
ES 123678F
6.45e6*
36.97
CS 123469F
5.70e6*
37.29
ES 234678F
4.75e6*
37.65
QI
ES 123789F
4.68e6*
38.59
Abs. Int.
1.66e6
8.28e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 5.81e3
0%
ES 123478F
9.62e6*
36.83
ES 123678F
1.19e7*
36.97
CS 123469F
1.07e7*
37.29
ES 234678F
8.36e6*
37.65
ES 123789F
8.62e6*
38.59
Abs. Int.
3.03e6
1.52e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.34e3
0%
Abs. Int.
8.77e3
4.38e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PB
4σ 1.39e3
0%
Abs. Int.
5.32e3
2.66e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: B
4σ 1.51e3
0%
Abs. Int.
6.81e3
3.40e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 1.27e4
ES 1234678F
4.65e6*
39.93
CS 1234689F
4.54e6*
40.33
ES 1234789F
3.31e6*
41.32
0%
Abs. Int.
1.53e6
7.64e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 4.33e3
ES 1234678F
9.85e6*
39.93
CS 1234689F
9.47e6*
40.33
ES 1234789F
7.35e6*
41.32
0%
Abs. Int.
3.25e6
1.62e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.44e4
7.18e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 1.48e3
0%
Abs. Int.
4.76e3
2.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.49e3
4.25e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.61e6*
43.69
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 3.78e3
0%
Abs. Int.
2.06e6
1.03e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.61e6*
43.69
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 1.93e3
0%
Abs. Int.
2.16e6
1.08e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.02e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: MB1_18863_DF_SDS **Acq'd:** 25 Jan 2022 18:17 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18863 **UTP:** 26-Jan-2022 09:41:05 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 660-125-BZB

Datafile: 220125C04 **Report:** 26 Jan 2022 09:42 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	3466.044	0.419
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2708.155	0.356
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3248.667	0.433
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.15	-	3248.667	0.353
123789-HxCDD	NotFnd		1.0109	-		-	-	-	1.05	-	3248.667	0.459
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2986.311	0.51
OCDD	NotFnd		1.0002	-		-	-	-	1.13	-	3223.546	1.35
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	3415.544	0.286
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3421.499	0.309
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3421.499	0.303
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2865.065	0.296
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2865.065	0.277
234678-HxCDF	NotFnd		1.0004	-		-	-	-	1.19	-	2865.065	0.288
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2865.065	0.355
1234678-HpCDF	NotFnd		1.0002	-		-	-	-	1.37	-	2837.053	0.229
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	2837.053	0.433
OCDF	NotFnd		1.0002	-		-	-	-	1.07	-	3041.755	0.884

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.63	1.0233	1.0236	+0.5	1.48E+07	0.82	Y	1.05	90.9
ES 12378-PeCDD	33.94	1.2121	1.2135	+2.9	1.33E+07	1.59	Y	0.88	96.6
ES 123478-HxCDD	37.84	0.9921	0.9921	0	1.17E+07	1.28	Y	0.97	93.4
ES 123678-HxCDD	37.95	0.9951	0.9951	0	1.45E+07	1.25	Y	0.94	119
ES 123789-HxCDD	38.24	1.0025	1.0028	+0.7	1.37E+07	1.27	Y	1.09	97.2
ES 1234678-HpCDD	40.87	1.0709	1.0717	+2.0	1.01E+07	1.06	Y	0.91	85.4
ES OCDD	43.53	1.1403	1.1415	+3.1	1.07E+07	0.90	Y	0.62	66
ES 2378-TCDF	27.78	1.0506	1.0512	+1.0	2.34E+07	0.83	Y	1.06	90.3
ES 12378-PeCDF	32.50	1.2281	1.2300	+3.7	2.02E+07	1.57	Y	0.91	90.8
ES 23478-PeCDF	33.61	1.2698	1.2718	+4.0	2.04E+07	1.54	Y	0.88	94.5
ES 123478-HxCDF	36.83	0.9657	0.9657	0	1.44E+07	0.52	Y	1.20	92.9
ES 123678-HxCDF	36.97	0.9695	0.9695	0	1.95E+07	0.52	Y	1.35	112
ES 234678-HxCDF	37.66	0.9874	0.9875	+0.2	1.81E+07	0.54	Y	1.24	112
ES 123789-HxCDF	38.60	1.0116	1.0120	+0.9	1.29E+07	0.51	Y	1.16	86.5
ES 1234678-HpCDF	39.94	1.0467	1.0472	+1.2	1.33E+07	0.43	Y	0.97	106
ES 1234789-HpCDF	41.33	1.0830	1.0838	+2.0	8.08E+06	0.43	Y	0.85	73.4
ES OCDF	43.72	1.1451	1.1464	+3.4	1.43E+07	0.95	Y	0.81	68.3

Lab ID: MB1_18863_DF_SDS | **Acq'd:** 25 Jan 2022 18:17 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18863 | **UTP:** 26-Jan-2022 09:41:05 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 660-125-BZB

Datafile: 220125C04 | **Report:** 26 Jan 2022 09:42 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.97		-	-	-	1.56E+07	0.81	Y	-	-	
JS 1234-TCDF	26.42		-	-	-	2.44E+07	0.79	Y	-	-	
JS 123467-HxCDD	38.14		-	-	-	6.46E+06	1.28	Y	-	-	
CS 37Cl-2378-TCDD	28.65		1.0241	1.0243	+0.3	6.73E+06	n/a	-	1.20	89.7	
CS 12347-PeCDD	33.44		1.1943	1.1956	+2.6	1.30E+07	1.57	Y	0.75	111	
CS 12346-PeCDF	31.97		1.2083	1.2098	+2.9	2.01E+07	1.56	Y	0.85	96.4	
CS 123469-HxCDF	37.29		0.9778	0.9778	0	1.77E+07	0.55	Y	1.12	122	
CS 1234689-HpCDF	40.34		1.0571	1.0578	+1.7	1.31E+07	0.48	Y	0.89	114	
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~6.73E+06~~	~~n/a~~		~~1.15~~	~~98.9~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.44~~		~~1.1943~~	~~1.1956~~	~~+2.6~~	~~1.30E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~114~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.97~~		~~1.2083~~	~~1.2098~~	~~+2.9~~	~~2.01E+07~~	~~1.56~~	~~Y~~	~~0.94~~	~~106~~	
~~SS 123469-HxCDF~~	~~37.29~~		~~0.9778~~	~~0.9778~~	~~0~~	~~1.77E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~109~~	
~~SS 1234689-HpCDF~~	~~40.34~~		~~1.0571~~	~~1.0578~~	~~+1.7~~	~~1.31E+07~~	~~0.48~~	~~Y~~	~~0.92~~	~~107~~	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0.685	0.685
Total HpCDF	0	0
Total Tetra-Octa Furans	0.685	0.685
Total Tetra-Octa Dioxins & Furans	0.685	0.685

Lab ID: MB1_18863_DF_SDS **Acq'd: 25 Jan 2022 18:17 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5971_18863 **UTP: 26-Jan-2022 09:41:05 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 660-125-BZB**

Datafile: 220125C04 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8755						1.18		3466.044	0.419
1379-TCDD	NotFnd		0.8876						1.18		3466.044	0.419
1369-TCDD	NotFnd		0.9023						1.18		3466.044	0.419
1469-TCDD	NotFnd		0.9291						1.18		3466.044	0.419
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		3466.044	0.419
1378-TCDD	NotFnd		0.9440						1.18		3466.044	0.419
1268-TCDD	NotFnd		0.9506						1.18		3466.044	0.419
1478-TCDD	NotFnd		0.9591						1.18		3466.044	0.419
1279-TCDD	NotFnd		0.9649						1.18		3466.044	0.419
1234/1269-TCDD	NotFnd		0.9771						1.18		3466.044	0.419
1236-TCDD	NotFnd		0.9820						1.18		3466.044	0.419
1237/1238-TCDD	NotFnd		0.9908						1.18		3466.044	0.419
1239-TCDD	NotFnd		0.9954						1.18		3466.044	0.419
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**3466.044**	**0.419**
1278-TCDD	NotFnd		1.0121						1.18		3466.044	0.419
1267-TCDD	NotFnd		1.0167						1.18		3466.044	0.419
1289-TCDD	NotFnd		1.0341						1.18		3466.044	0.419
12479/12468-PeCDD	NotFnd		0.9273						1.04		2708.155	0.356
12469-PeCDD	NotFnd		0.9430						1.04		2708.155	0.356
12368-PeCDD	NotFnd		0.9592						1.04		2708.155	0.356
12478-PeCDD	NotFnd		0.9647						1.04		2708.155	0.356
12379-PeCDD	NotFnd		0.9676						1.04		2708.155	0.356
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		2708.155	0.356
12346/12347-PeCDD	NotFnd		0.9860						1.04		2708.155	0.356
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**2708.155**	**0.356**
12367-PeCDD	NotFnd		1.0034						1.04		2708.155	0.356
12389-PeCDD	NotFnd		1.0134						1.04		2708.155	0.356
124679/124689-HxCDD	NotFnd		0.9545						1.10		3248.667	0.411
123468-HxCDD	NotFnd		0.9715						1.10		3248.667	0.411
123679/123689-HxCDD	NotFnd		0.9793						1.10		3248.667	0.411
123469-HxCDD	NotFnd		0.9829						1.10		3248.667	0.411
123478-HxCDD	NotFnd		**1.0004**						1.09		**3248.667**	**0.433**
123678-HxCDD	NotFnd		**1.0034**						1.15		**3248.667**	**0.353**
123467-HxCDD	NotFnd		1.0082						1.10		3248.667	0.411
123789-HxCDD	NotFnd		**1.0109**						1.05		**3248.667**	**0.459**

Lab ID: MB1_18863_DF_SDS | **Acq'd:** 25 Jan 2022 18:17 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18863 | **UTP:** 26-Jan-2022 09:41:05 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 660-125-BZB

Datafile: 220125C04 | **Report:** 26 Jan 2022 09:42 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

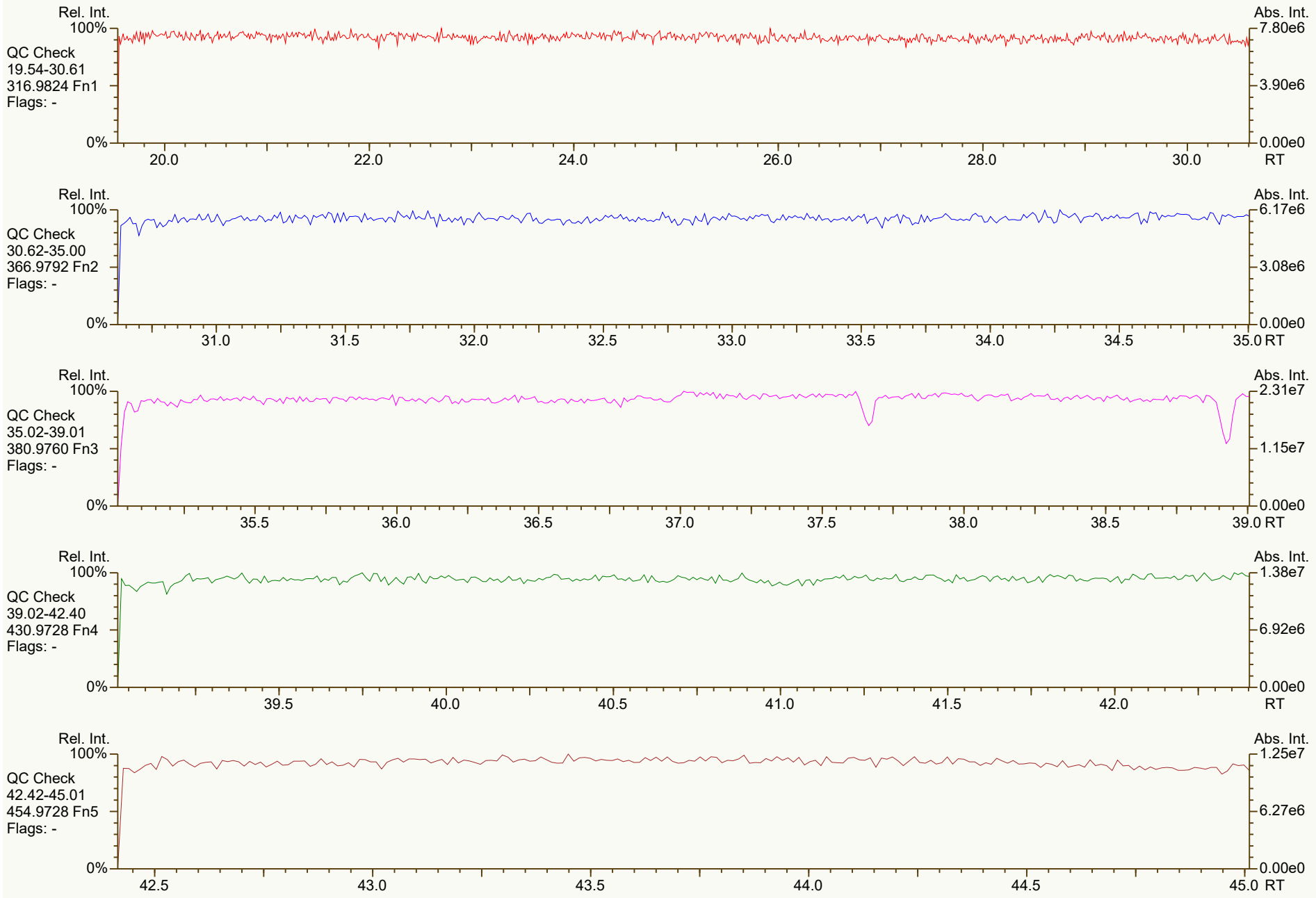
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9838						1.06		2986.311	0.51
1234678-HpCDD	**NotFnd**		**1.0003**						**1.06**		**2986.311**	**0.51**
OCDD	**NotFnd**		**1.0002**						**1.13**		**3223.546**	**1.35**
OCDD-a	NotFnd		1.0002						0.07		3805.351	25
1368-TCDF	NotFnd		0.8282						1.08		3415.544	0.286
1468-TCDF	NotFnd		0.8485						1.08		3415.544	0.286
2468-TCDF	NotFnd		0.8709						1.08		3415.544	0.286
1346/1246-TCDF	NotFnd		0.8829						1.08		3415.544	0.286
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		3415.544	0.286
1348-TCDF	NotFnd		0.8980						1.08		3415.544	0.286
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		3415.544	0.286
1268-TCDF	NotFnd		0.9158						1.08		3415.544	0.286
1467-TCDF	NotFnd		0.9206						1.08		3415.544	0.286
1478-TCDF	NotFnd		0.9266						1.08		3415.544	0.286
1369/1237-TCDF	NotFnd		0.9397						1.08		3415.544	0.286
2467-TCDF	NotFnd		0.9440						1.08		3415.544	0.286
2368-TCDF	NotFnd		0.9497						1.08		3415.544	0.286
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		3415.544	0.286
1278-TCDF	NotFnd		0.9690						1.08		3415.544	0.286
1349-TCDF	NotFnd		0.9730						1.08		3415.544	0.286
1267-TCDF	NotFnd		0.9787						1.08		3415.544	0.286
2346/1249-TCDF	NotFnd		0.9850						1.08		3415.544	0.286
2347/1279-TCDF	NotFnd		0.9929						1.08		3415.544	0.286
2348-TCDF	NotFnd		0.9970						1.08		3415.544	0.286
2378-TCDF	**NotFnd**		**1.0008**						**1.08**		**3415.544**	**0.286**
2367/3467-TCDF	NotFnd		1.0136						1.08		3415.544	0.286
1269-TCDF	NotFnd		1.0221						1.08		3415.544	0.286
1239-TCDF	NotFnd		1.0319						1.08		3415.544	0.286
1289-TCDF	NotFnd		1.0740						1.08		3415.544	0.286
13468/12468-PeCDF	NotFnd		0.9145						1.02		3215.291	0.287
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		3421.499	0.306
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		3421.499	0.306
14678-PeCDF	NotFnd		0.9695						1.02		3421.499	0.306
13479-PeCDF	NotFnd		0.9724						1.02		3421.499	0.306
13469/12479-PeCDF	NotFnd		0.9801						1.02		3421.499	0.306
12346-PeCDF	NotFnd		0.9842						1.02		3421.499	0.306

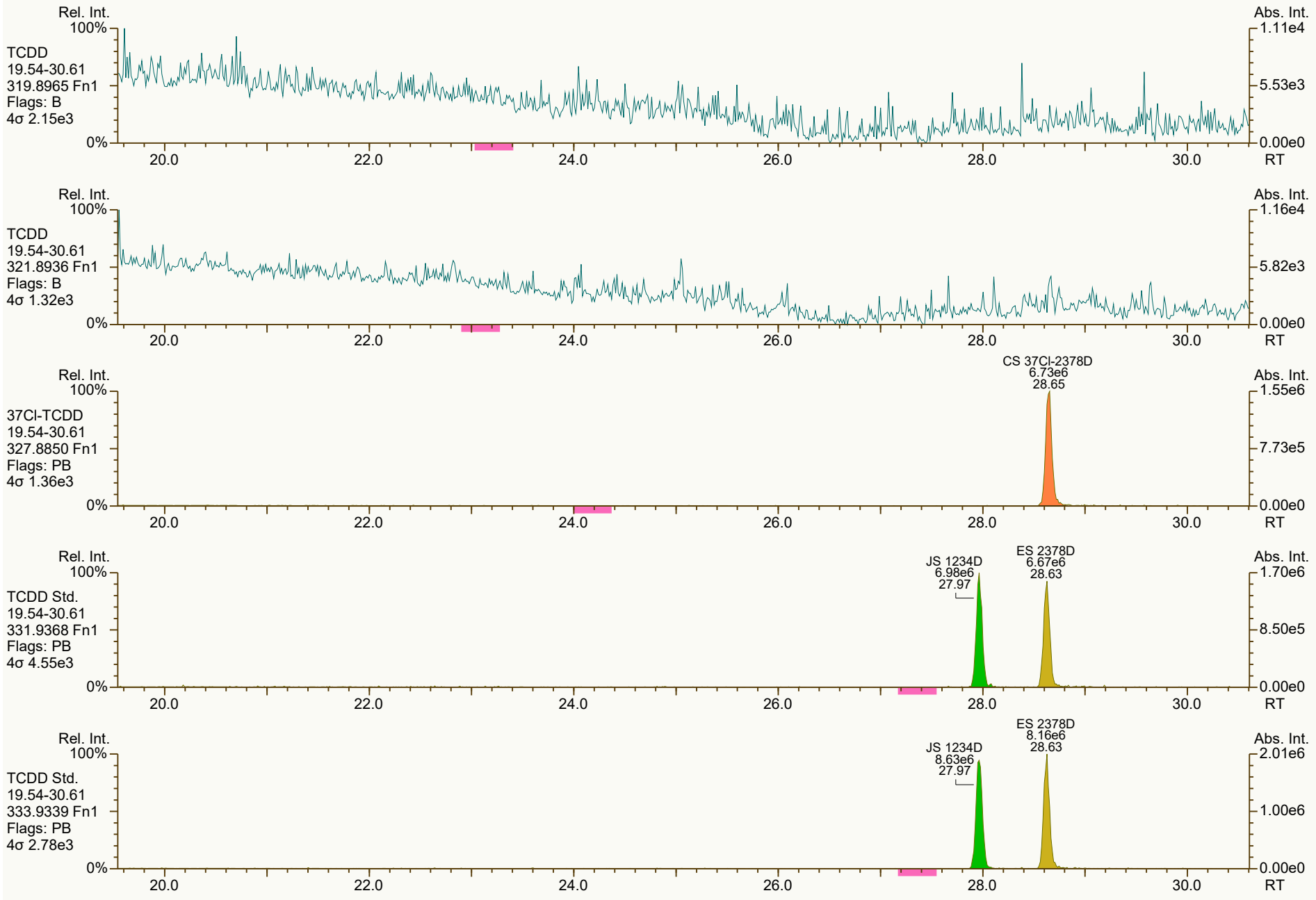
Lab ID: MB1_18863_DF_SDS **Acq'd: 25 Jan 2022 18:17 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5971_18863 **UTP: 26-Jan-2022 09:41:05 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 660-125-BZB**

Datafile: 220125C04 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		3421.499	0.306
12347-PeCDF	NotFnd		0.9895						1.02		3421.499	0.306
12348-PeCDF	NotFnd		0.9941						1.02		3421.499	0.306
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3421.499**	**0.309**
12678/12367-PeCDF	NotFnd		1.0090						1.02		3421.499	0.306
12379-PeCDF	NotFnd		1.0142						1.02		3421.499	0.306
12679-PeCDF	NotFnd		0.9931						1.02		3421.499	0.306
23467/12369-PeCDF	NotFnd		0.9966						1.02		3421.499	0.306
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3421.499**	**0.303**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3421.499	0.306
12349-PeCDF	NotFnd		1.0101						1.02		3421.499	0.306
12389-PeCDF	NotFnd		1.0322						1.02		3421.499	0.306
123468-HxCDF	35.46	J	0.9627	0.9628	+0.2	6.64E+04	1.32	Y	1.19	0.685	2865.065	0.299
124678/134678-HxCDF	NotFnd		0.9684						1.19		2865.065	0.299
134679-HxCDF	NotFnd		0.9747						1.19		2865.065	0.299
124679-HxCDF	NotFnd		0.9802						1.19		2865.065	0.299
124689-HxCDF	NotFnd		0.9858						1.19		2865.065	0.299
123467-HxCDF	NotFnd		0.9972						1.19		2865.065	0.299
123478-HxCDF	**NotFnd**		**1.0004**						**1.27**		**2865.065**	**0.296**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**2865.065**	**0.277**
123479-HxCDF	NotFnd		1.0051						1.19		2865.065	0.299
123469-HxCDF	NotFnd		1.0091						1.19		2865.065	0.299
123679-HxCDF	NotFnd		0.9943						1.19		2865.065	0.299
234678-HxCDF	**NotFnd**		**1.0004**						**1.19**		**2865.065**	**0.288**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2865.065	0.299
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**2865.065**	**0.355**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		2865.065	0.299
1234678-HpCDF	**NotFnd**		**1.0002**						**1.37**		**2837.053**	**0.229**
1234679-HpCDF	NotFnd		1.0067						1.34		2837.053	0.305
1234689-HpCDF	NotFnd		1.0101						1.34		2837.053	0.305
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**2837.053**	**0.433**
OCDF	**NotFnd**		**1.0002**						**1.07**		**3041.755**	**0.884**
OCDF-a	NotFnd		1.0002						0.07		3380.655	15.9

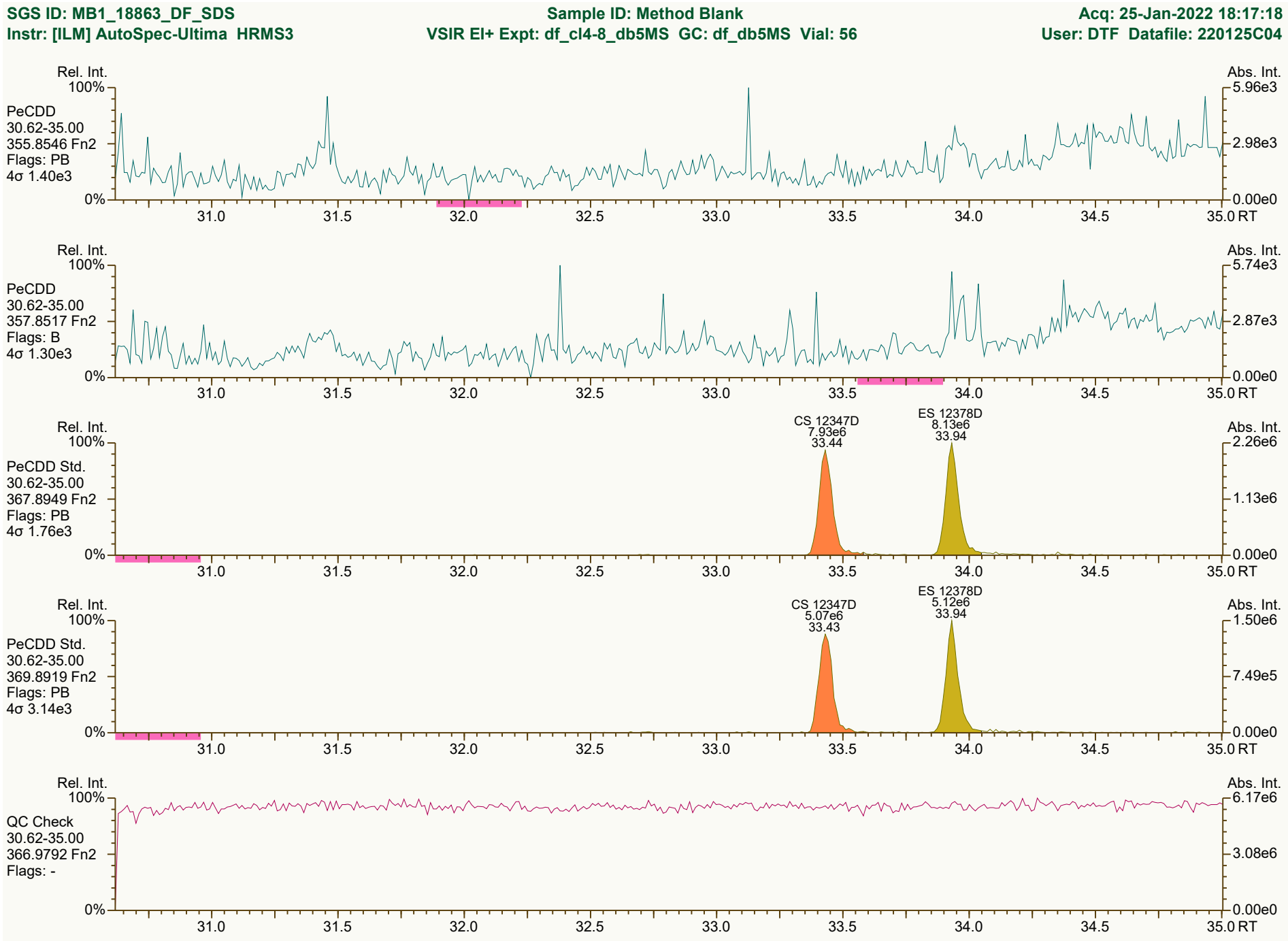

Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
7.80e6
3.90e6
0.00e0
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
6.17e6
3.08e6
0.00e0
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
2.31e7
1.15e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.38e7
6.92e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.25e7
6.27e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: B
4σ 2.15e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: B
4σ 1.32e3
0%
Abs. Int.
1.16e4
5.82e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.36e3
0%
CS 37Cl-2378D
6.73e6
28.65
Abs. Int.
1.55e6
7.73e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 4.55e3
0%
JS 1234D
6.98e6
27.97
ES 2378D
6.67e6
28.63
Abs. Int.
1.70e6
8.50e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 2.78e3
0%
JS 1234D
8.63e6
27.97
ES 2378D
8.16e6
28.63
Abs. Int.
2.01e6
1.00e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

SGS ID: MB1_18863_DF_SDS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56

Acq: 25-Jan-2022 18:17:18
User: DTF Datafile: 220125C04



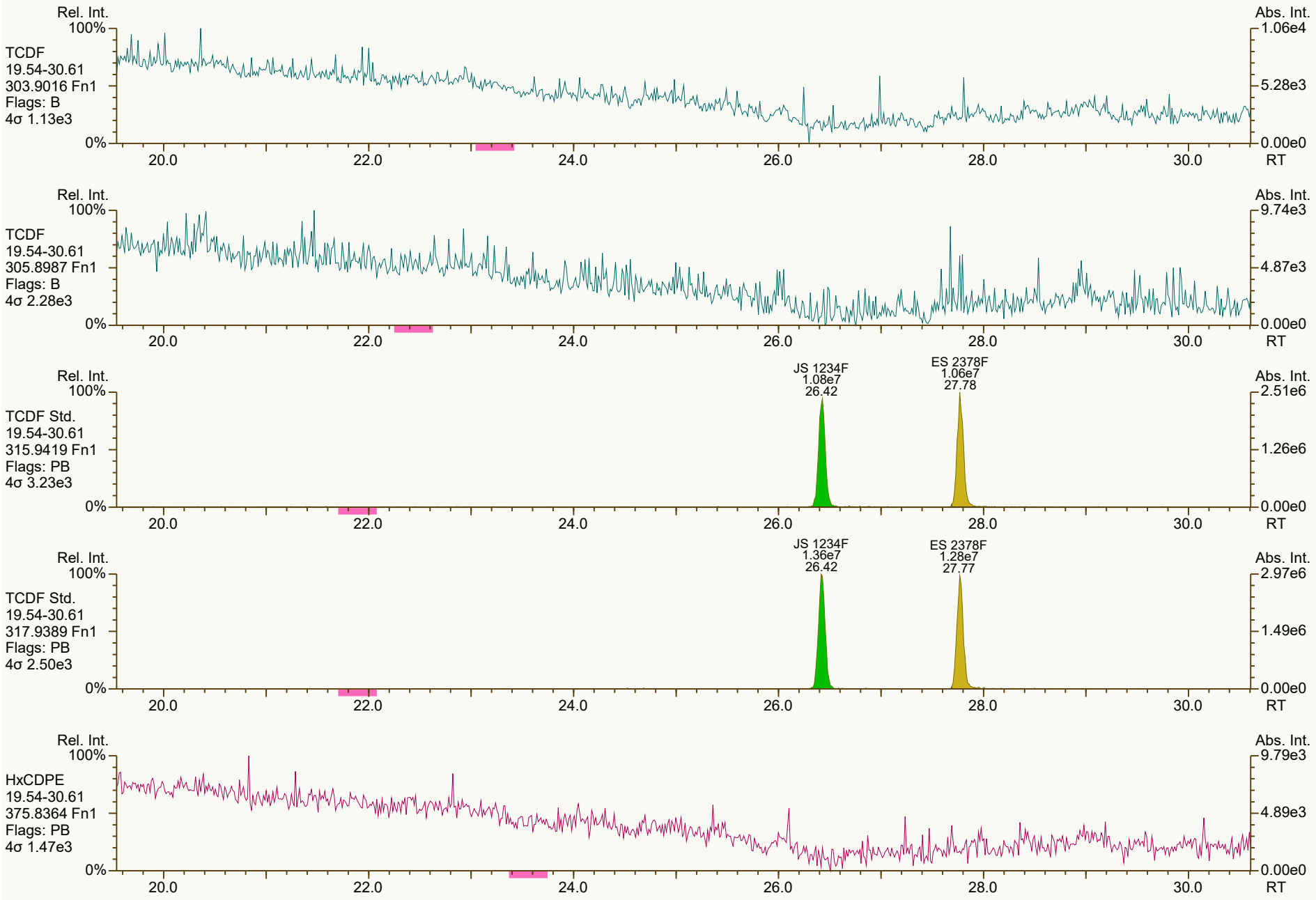
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\MB1_18863_DF_SDS.utp_res, saved 26-Jan-2022 09:41 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3243, 2948 scc: 660-125

Peak annotation: Areas, Centroids
PKD: 26-Jan-2022 08:27 Printed: 26-Jan-2022 09:46 Page 3 of 12

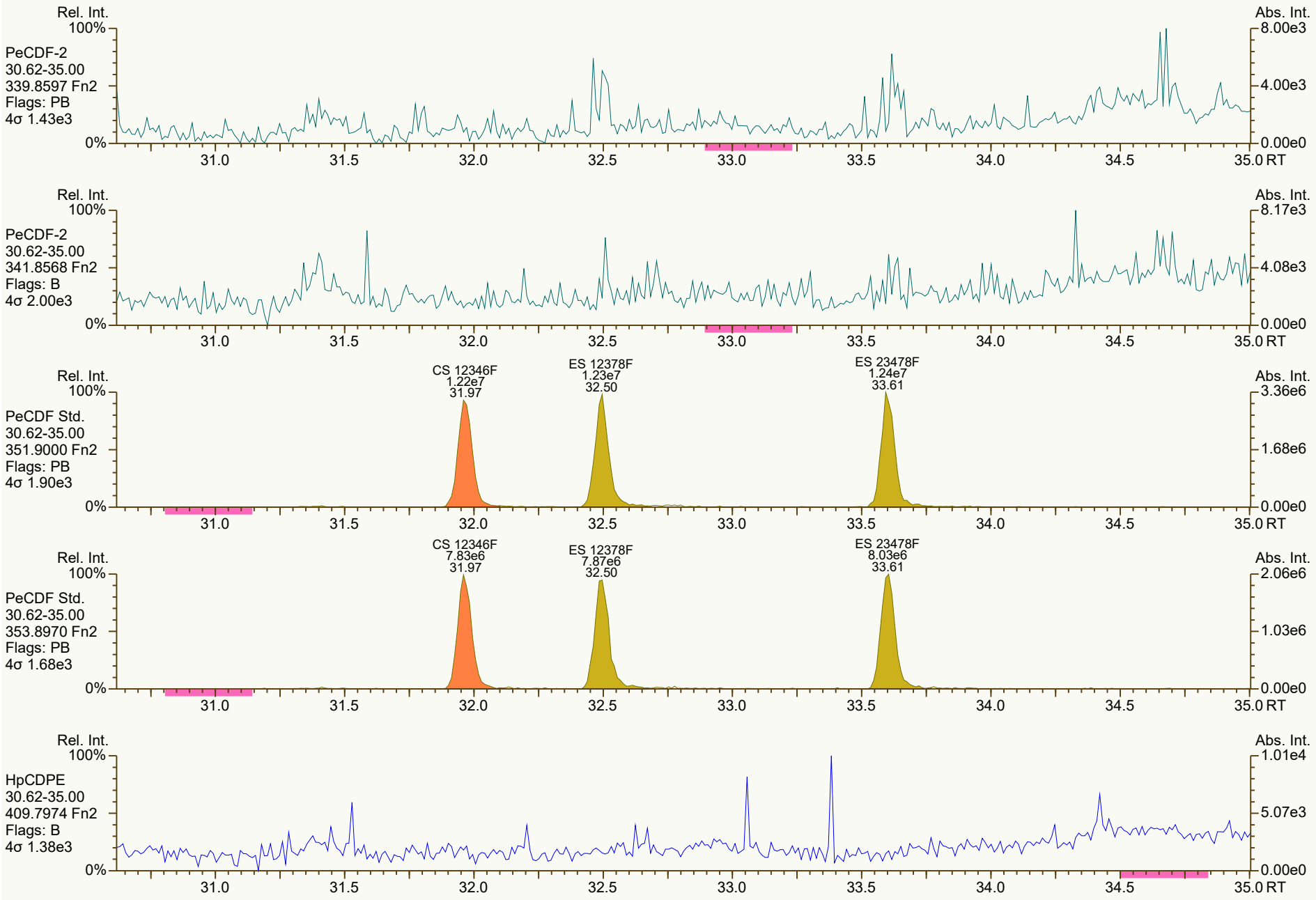

Rel. Int.
100%
HxCDD
35.02-39.01
389.8156 Fn3
Flags: B
4σ 1.46e3
0%
Abs. Int.
1.02e4
5.09e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.02-39.01
391.8127 Fn3
Flags: B
4σ 1.79e3
0%
Abs. Int.
7.04e3
3.52e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 1.32e3
0%
ES 123678D
8.08e6
37.95
ES 123478D
6.59e6
37.83
ES 123789D
7.67e6*
38.24
JS 123467D
3.63e6*
38.14
Abs. Int.
2.23e6
1.12e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.35e3
0%
ES 123678D
6.45e6
37.95
ES 123478D
5.15e6
37.83
ES 123789D
6.05e6*
38.24
JS 123467D
2.83e6*
38.14
Abs. Int.
1.59e6
7.95e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.31e7
1.15e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

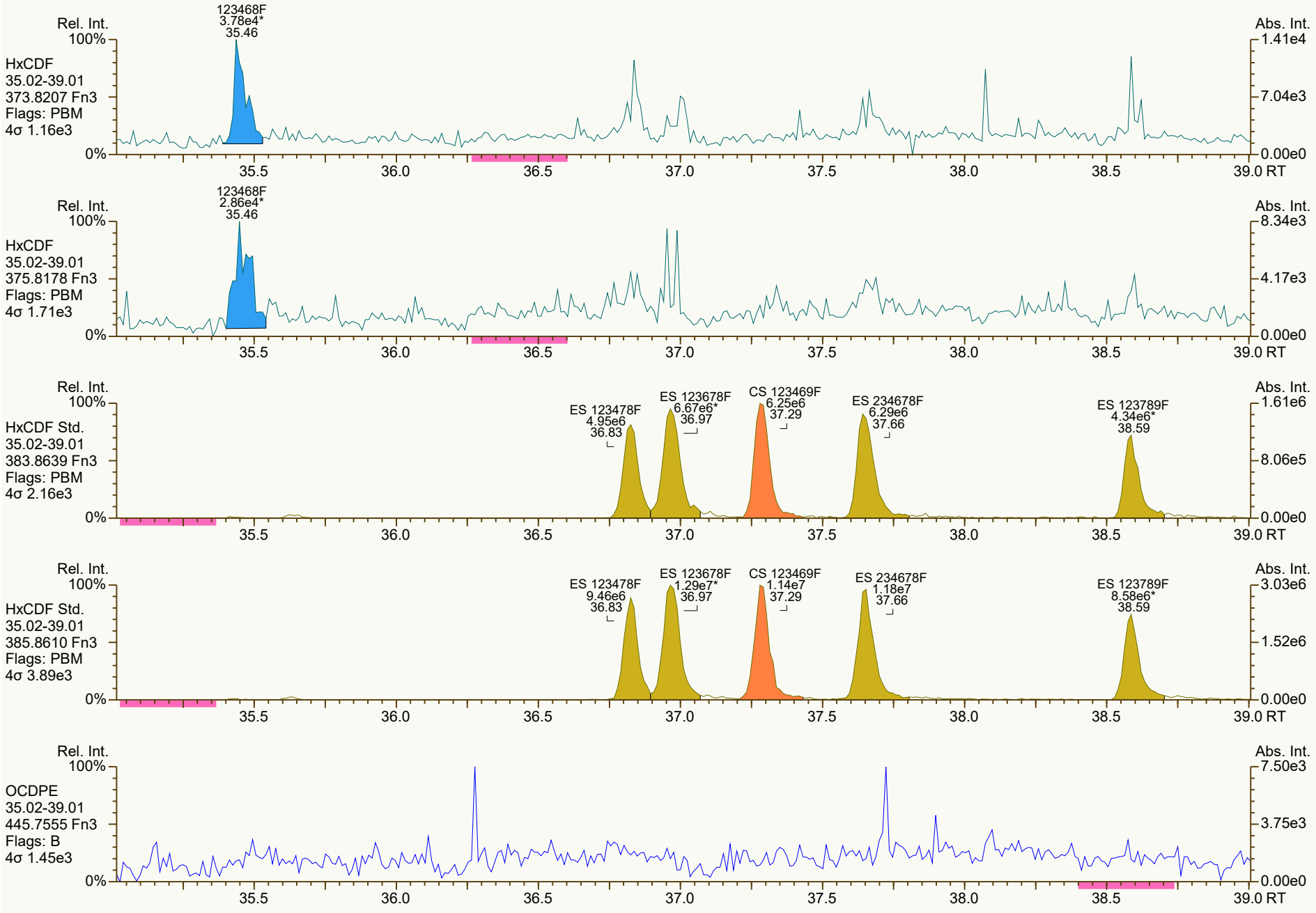

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.23e3
0%
Abs. Int.
4.75e3
2.38e3
0.00e0
RT
39.5
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PB
4σ 1.75e3
0%
Abs. Int.
5.09e3
2.54e3
0.00e0
RT
ES 1234678D
5.18e6*
40.87
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
1.42e6
7.09e5
0.00e0
RT
ES 1234678D
4.91e6*
40.87
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
1.41e6
7.07e5
0.00e0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.38e7
6.92e6
0.00e0
RT


Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: B
4σ 2.02e3
0%
Abs. Int.
9.82e3
4.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: B
4σ 1.20e3
0%
Abs. Int.
5.83e3
2.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
5.04e6*
43.53
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 1.71e3
0%
Abs. Int.
1.00e6
5.02e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
5.61e6*
43.53
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 2.95e3
0%
Abs. Int.
1.19e6
5.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.25e7
6.27e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: B
4σ 1.13e3
0%
Abs. Int.
1.06e4
5.28e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: B
4σ 2.28e3
0%
Abs. Int.
9.74e3
4.87e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 3.23e3
0%
JS 1234F
1.08e7
26.42
ES 2378F
1.06e7
27.78
Abs. Int.
2.51e6
1.26e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 2.50e3
0%
JS 1234F
1.36e7
26.42
ES 2378F
1.28e7
27.77
Abs. Int.
2.97e6
1.49e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: PB
4σ 1.47e3
0%
Abs. Int.
9.79e3
4.89e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.73e4
8.64e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.62e3
Rel. Int.
100%
0%
Abs. Int.
1.94e4
9.70e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 1.60e3
Rel. Int.
100%
0%
Abs. Int.
7.80e6
3.90e6
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -

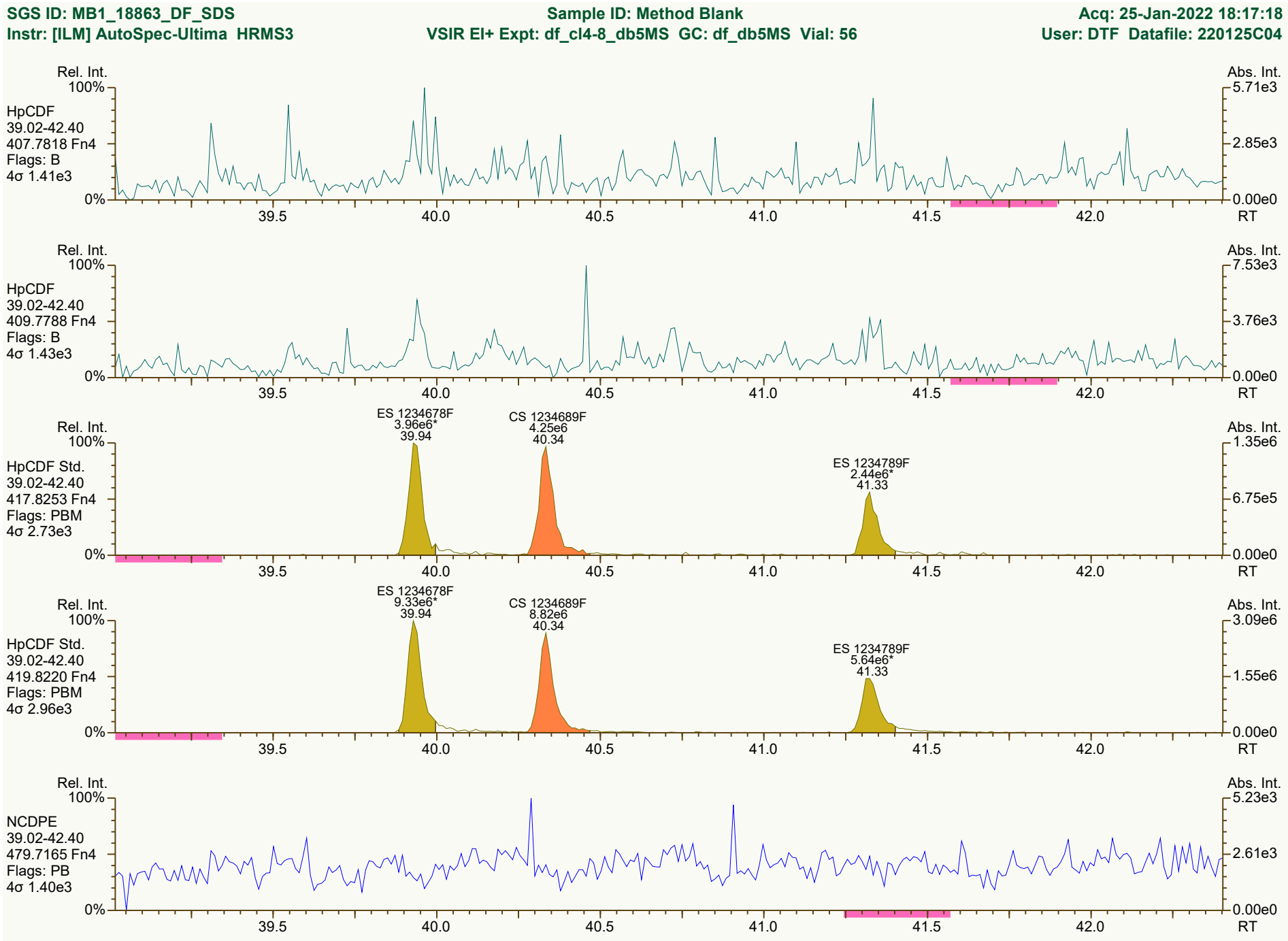

Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PB
4σ 1.43e3
0%
Abs. Int.
8.00e3
4.00e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: B
4σ 2.00e3
0%
Abs. Int.
8.17e3
4.08e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 1.90e3
0%
CS 12346F
1.22e7
31.97
ES 12378F
1.23e7
32.50
ES 23478F
1.24e7
33.61
Abs. Int.
3.36e6
1.68e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 1.68e3
0%
CS 12346F
7.83e6
31.97
ES 12378F
7.87e6
32.50
ES 23478F
8.03e6
33.61
Abs. Int.
2.06e6
1.03e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.38e3
0%
Abs. Int.
1.01e4
5.07e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.16e3
123468F
3.78e4*
35.46
Abs. Int.
1.41e4
7.04e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 1.71e3
123468F
2.86e4*
35.46
Abs. Int.
8.34e3
4.17e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 2.16e3
ES 123478F
4.95e6
36.83
ES 123678F
6.67e6*
36.97
CS 123469F
6.25e6
37.29
ES 234678F
6.29e6
37.66
ES 123789F
4.34e6*
38.59
Abs. Int.
1.61e6
8.06e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 3.89e3
ES 123478F
9.46e6
36.83
ES 123678F
1.29e7*
36.97
CS 123469F
1.14e7
37.29
ES 234678F
1.18e7
37.66
ES 123789F
8.58e6*
38.59
Abs. Int.
3.03e6
1.52e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.45e3
Abs. Int.
7.50e3
3.75e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

SGS ID: MB1_18863_DF_SDS
Instr: [ILM] AutoSpec-Ultima HRMS3

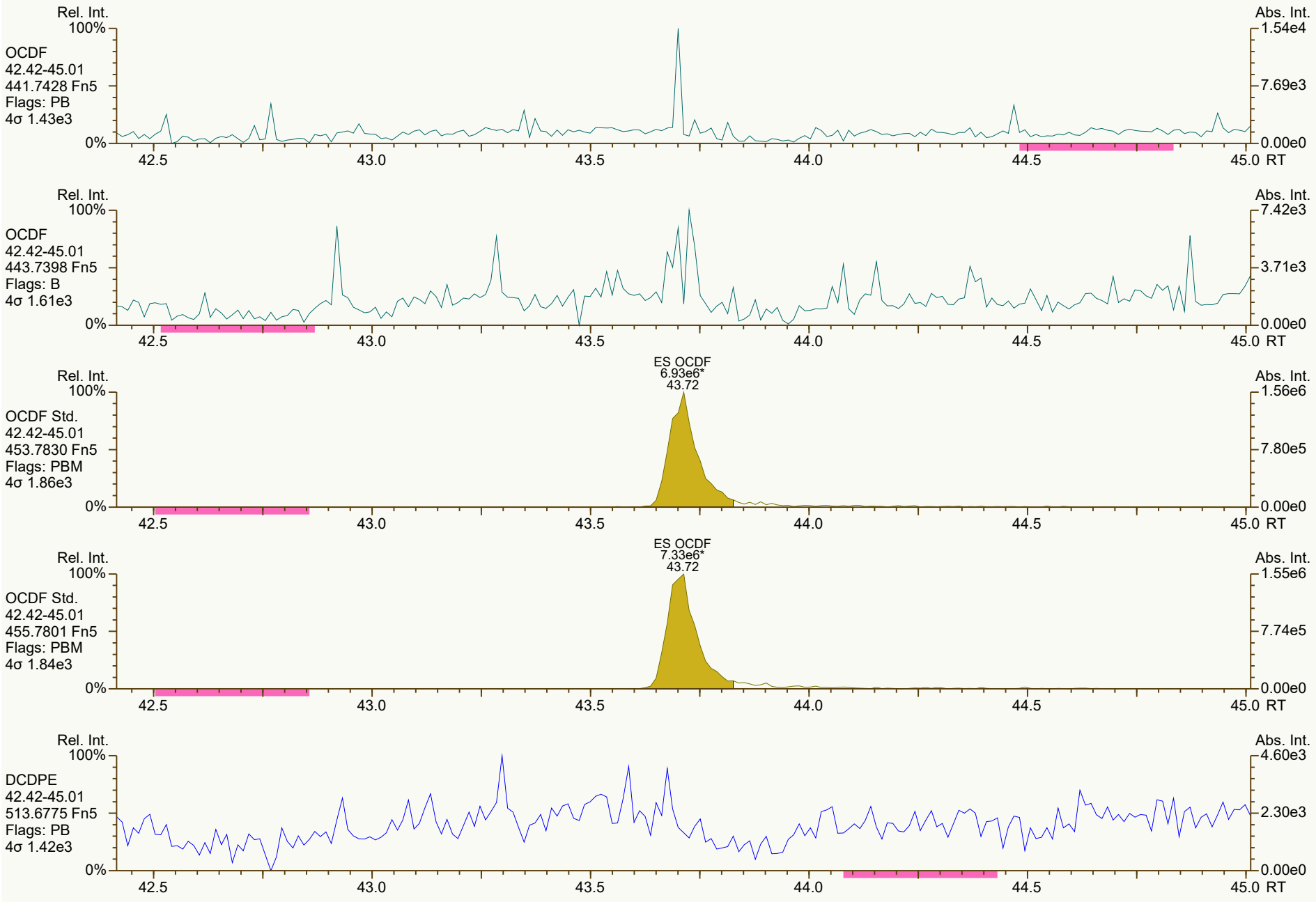
Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56

Acq: 25-Jan-2022 18:17:18
User: DTF Datafile: 220125C04



Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\MB1_18863_DF_SDS.utp_res, saved 26-Jan-2022 09:41 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2367, 4311, 9328 scc: 660-125

Peak annotation: Areas, Centroids
Revised: 26-Jan-2022 08:28 (DTF) Printed: 26-Jan-2022 09:46 Page 11 of 12


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 1.43e3
0%
Abs. Int.
1.54e4
7.69e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: B
4σ 1.61e3
0%
Abs. Int.
7.42e3
3.71e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
6.93e6*
43.72
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 1.86e3
0%
Abs. Int.
1.56e6
7.80e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
7.33e6*
43.72
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 1.84e3
0%
Abs. Int.
1.55e6
7.74e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.42e3
0%
Abs. Int.
4.60e3
2.30e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5971_18863_DF_001 **Acq'd:** 25 Jan 2022 19:03 DTF **Wt/Vol:** 10.31 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-JC-SW-B-2H **UTP:** 26-Jan-2022 09:41:06 DTF **J-level:** 0.485 pg/g **Split:** 1 **Checkcode:** 109-048-DST

Datafile: 220125C05 **Report:** 26 Jan 2022 09:42 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.65		1.0008	1.0007	-0.2	2.23E+06	0.75	Y	1.18	18.9	3880.631	0.355
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2958.628	0.295
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3813.811	0.379
123678-HxCDD	37.97	J EMPC	1.0034	1.0033	-0.2	1.06E+05	1.82	N	1.15	0.998	3813.811	0.327
123789-HxCDD	38.25	J	1.0109	1.0108	-0.2	1.09E+05	1.07	Y	1.05	1.15	3813.811	0.37
1234678-HpCDD	40.88		1.0003	1.0002	-0.2	2.19E+06	1.02	Y	1.06	29.7	3722.332	0.472
OCDD	43.55		1.0002	1.0003	+0.3	2.11E+07	0.91	Y	1.13	448	4694.855	1.14
2378-TCDF	27.80		1.0008	1.0007	-0.2	7.79E+06	0.74	Y	1.08	47.2	4426.474	0.298
12378-PeCDF	32.52	J	1.0005	1.0005	0	3.19E+05	1.44	Y	1.02	2.2	4917.485	0.344
23478-PeCDF	33.63	J	1.0005	1.0006	+0.2	2.26E+05	1.56	Y	1.02	1.63	4917.485	0.317
123478-HxCDF	36.85		1.0004	1.0004	0	6.01E+05	1.11	Y	1.27	4.8	2707.263	0.186
123678-HxCDF	37.00	J	1.0004	1.0006	+0.4	2.02E+05	1.35	Y	1.15	1.31	2707.263	0.177
234678-HxCDF	37.67	J	1.0004	1.0003	-0.2	8.05E+04	1.16	Y	1.19	0.591	2707.263	0.198
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2707.263	0.229
1234678-HpCDF	39.95		1.0002	1.0002	0	8.40E+05	1.07	Y	1.37	6.13	3513.358	0.19
1234789-HpCDF	41.34	J	1.0003	1.0002	-0.2	8.46E+04	0.96	Y	1.31	1.12	3513.358	0.397
OCDF	43.72		1.0002	1.0002	0	7.66E+05	0.91	Y	1.07	14.7	4162.793	0.945

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.63		1.0233	1.0236	+0.5	1.93E+07	0.81	Y	1.05	88.1
ES 12378-PeCDD	33.94		1.2121	1.2134	+2.6	1.76E+07	1.65	Y	0.88	95.3
ES 123478-HxCDD	37.84		0.9921	0.9921	0	1.62E+07	1.28	Y	0.97	97.7
ES 123678-HxCDD	37.96		0.9951	0.9951	0	1.80E+07	1.29	Y	0.94	111
ES 123789-HxCDD	38.25		1.0025	1.0027	+0.5	1.76E+07	1.32	Y	1.09	94.3
ES 1234678-HpCDD	40.87		1.0709	1.0716	+1.7	1.35E+07	1.04	Y	0.91	86.8
ES OCDD	43.53		1.1403	1.1412	+2.4	1.62E+07	0.95	Y	0.62	76.1
ES 2378-TCDF	27.78		1.0506	1.0511	+0.8	2.96E+07	0.79	Y	1.06	83.1
ES 12378-PeCDF	32.50		1.2281	1.2297	+3.1	2.75E+07	1.50	Y	0.91	89.7
ES 23478-PeCDF	33.61		1.2698	1.2716	+3.6	2.63E+07	1.57	Y	0.88	88.5
ES 123478-HxCDF	36.83		0.9657	0.9656	-0.2	1.91E+07	0.55	Y	1.20	93.2
ES 123678-HxCDF	36.98		0.9695	0.9694	-0.2	2.59E+07	0.52	Y	1.35	112
ES 234678-HxCDF	37.66		0.9874	0.9874	0	2.23E+07	0.55	Y	1.24	105
ES 123789-HxCDF	38.60		1.0116	1.0120	+0.9	1.67E+07	0.53	Y	1.16	84.9
ES 1234678-HpCDF	39.94		1.0467	1.0471	+1.0	1.94E+07	0.46	Y	0.97	118
ES 1234789-HpCDF	41.33		1.0830	1.0836	+1.5	1.12E+07	0.46	Y	0.85	77.1
ES OCDF	43.72		1.1451	1.1461	+2.6	1.88E+07	0.88	Y	0.81	68.3

Lab ID: B5971_18863_DF_001 **Acq'd:** 25 Jan 2022 19:03 DTF **Wt/Vol:** 10.31 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-JC-SW-B-2H **UTP:** 26-Jan-2022 09:41:06 DTF **J-level:** 0.485 pg/g **Split:** 1 **Checkcode:** 109-048-DST

Datafile: 220125C05 **Report:** 26 Jan 2022 09:42 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.97		-	-	-	2.10E+07	0.82	Y	-	-	
JS 1234-TCDF	26.43		-	-	-	3.37E+07	0.82	Y	-	-	
JS 123467-HxCDD	38.14		-	-	-	8.53E+06	1.29	Y	-	-	
CS 37Cl-2378-TCDD	28.65		1.0241	1.0244	+0.5	9.21E+06	n/a	-	1.20	91.4	
CS 12347-PeCDD	33.44		1.1943	1.1955	+2.4	1.71E+07	1.59	Y	0.75	108	
CS 12346-PeCDF	31.97		1.2083	1.2097	+2.7	2.72E+07	1.52	Y	0.85	94.7	
CS 123469-HxCDF	37.29		0.9778	0.9777	-0.2	2.34E+07	0.54	Y	1.12	123	
CS 1234689-HpCDF	40.34		1.0571	1.0576	+1.2	1.80E+07	0.44	Y	0.89	119	
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0244~~	~~+0.5~~	~~9.21E+06~~	~~n/a~~		~~1.15~~	~~104~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.44~~		~~1.1943~~	~~1.1955~~	~~+2.4~~	~~1.71E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~113~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.97~~		~~1.2083~~	~~1.2097~~	~~+2.7~~	~~2.72E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~105~~	
~~SS 123469-HxCDF~~	~~37.29~~		~~0.9778~~	~~0.9777~~	~~-0.2~~	~~2.34E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~109~~	
~~SS 1234689-HpCDF~~	~~40.34~~		~~1.0571~~	~~1.0576~~	~~+1.2~~	~~1.80E+07~~	~~0.44~~	~~Y~~	~~0.92~~	~~101~~	

Totals	Conc	EMPC
Total TCDD	26.9	28.4
Total PeCDD	6.51	6.51
Total HxCDD	32.3	33.3
Total HpCDD	94.2	94.2
Total Tetra-Octa Dioxins	608	610
Total TCDF	84.1	96.5
Total PeCDF	6.56	7.9
Total HxCDF	13.2	13.5
Total HpCDF	13.8	13.8
Total Tetra-Octa Furans	132	146
Total Tetra-Octa Dioxins & Furans	740	757

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.742	0.75
Response	2.24E+06	2.23E+06

Lab ID: B5971_18863_DF_001 **Acq'd: 25 Jan 2022 19:03 DTF** **Wt/Vol: 10.31 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-JC-SW-B-2H **UTP: 26-Jan-2022 09:41:06 DTF** **J-level: 0.485 pg/g** **Split: 1** **Checkcode: 109-048-DST**

Datafile: 220125C05 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8755						1.18		3880.631	0.355
1379-TCDD	NotFnd		0.8876						1.18		3880.631	0.355
1369-TCDD	NotFnd		0.9023						1.18		3880.631	0.355
1469-TCDD	26.58		0.9291	0.9285	-1.0	8.41E+05	0.78	Y	1.18	7.13	3880.631	0.355
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		3880.631	0.355
1378-TCDD	NotFnd		0.9440						1.18		3880.631	0.355
1268-TCDD	NotFnd		0.9506						1.18		3880.631	0.355
1478-TCDD	NotFnd		0.9591						1.18		3880.631	0.355
1279-TCDD	NotFnd		0.9649						1.18		3880.631	0.355
1234/1269-TCDD	27.97		0.9771	0.9770	-0.2	9.68E+04	0.78	Y	1.18	0.821	3880.631	0.355
1236-TCDD	NotFnd		0.9820						1.18		3880.631	0.355
1237/1238-TCDD	NotFnd		0.9908						1.18		3880.631	0.355
1239-TCDD	NotFnd		0.9954						1.18		3880.631	0.355
2378-TCDD	**28.65**		**1.0008**	1.0007	**-0.2**	2.23E+06	0.75	Y	**1.18**	**18.9**	**3880.631**	**0.355**
1278-TCDD	28.98	EMPC	1.0121	1.0121	0	1.73E+05	0.61	N	1.18	1.47	3880.631	0.355
1267-TCDD	NotFnd		1.0167						1.18		3880.631	0.355
1289-TCDD	NotFnd		1.0341						1.18		3880.631	0.355
12479/12468-PeCDD	31.45	J	0.9273	0.9268	-0.9	1.09E+05	1.41	Y	1.04	1.16	2958.628	0.295
12469-PeCDD	31.99		0.9430	0.9427	-0.6	4.10E+05	1.59	Y	1.04	4.37	2958.628	0.295
12368-PeCDD	NotFnd		0.9592						1.04		2958.628	0.295
12478-PeCDD	NotFnd		0.9647						1.04		2958.628	0.295
12379-PeCDD	NotFnd		0.9676						1.04		2958.628	0.295
12369/12467/12489-PeCDD	33.10	J	0.9752	0.9752	0	9.19E+04	1.54	Y	1.04	0.979	2958.628	0.295
12346/12347-PeCDD	NotFnd		0.9860						1.04		2958.628	0.295
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**2958.628**	**0.295**
12367-PeCDD	NotFnd		1.0034						1.04		2958.628	0.295
12389-PeCDD	NotFnd		1.0134						1.04		2958.628	0.295
124679/124689-HxCDD	36.11		0.9545	0.9541	-0.9	2.40E+06	1.36	Y	1.10	24.7	3813.811	0.358
123468-HxCDD	NotFnd		0.9715						1.10		3813.811	0.358
123679/123689-HxCDD	37.06		0.9793	0.9793	0	5.51E+05	1.27	Y	1.10	5.66	3813.811	0.358
123469-HxCDD	37.19	J	0.9829	0.9829	0	8.38E+04	1.25	Y	1.10	0.861	3813.811	0.358
123478-HxCDD	NotFnd		**1.0004**						1.09		**3813.811**	**0.379**
123678-HxCDD	37.97	J EMPC	**1.0034**	**1.0033**	**-0.2**	**1.06E+05**	**1.82**	**N**	1.15	**0.998**	**3813.811**	**0.327**
123467-HxCDD	NotFnd		1.0082						1.10		3813.811	0.358
123789-HxCDD	38.25	J	**1.0109**	**1.0108**	**-0.2**	**1.09E+05**	**1.07**	**Y**	1.05	**1.15**	**3813.811**	**0.37**

Lab ID: B5971_18863_DF_001 **Acq'd: 25 Jan 2022 19:03 DTF** **Wt/Vol: 10.31 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-JC-SW-B-2H **UTP: 26-Jan-2022 09:41:06 DTF** **J-level: 0.485 pg/g** **Split: 1** **Checkcode: 109-048-DST**

Datafile: 220125C05 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

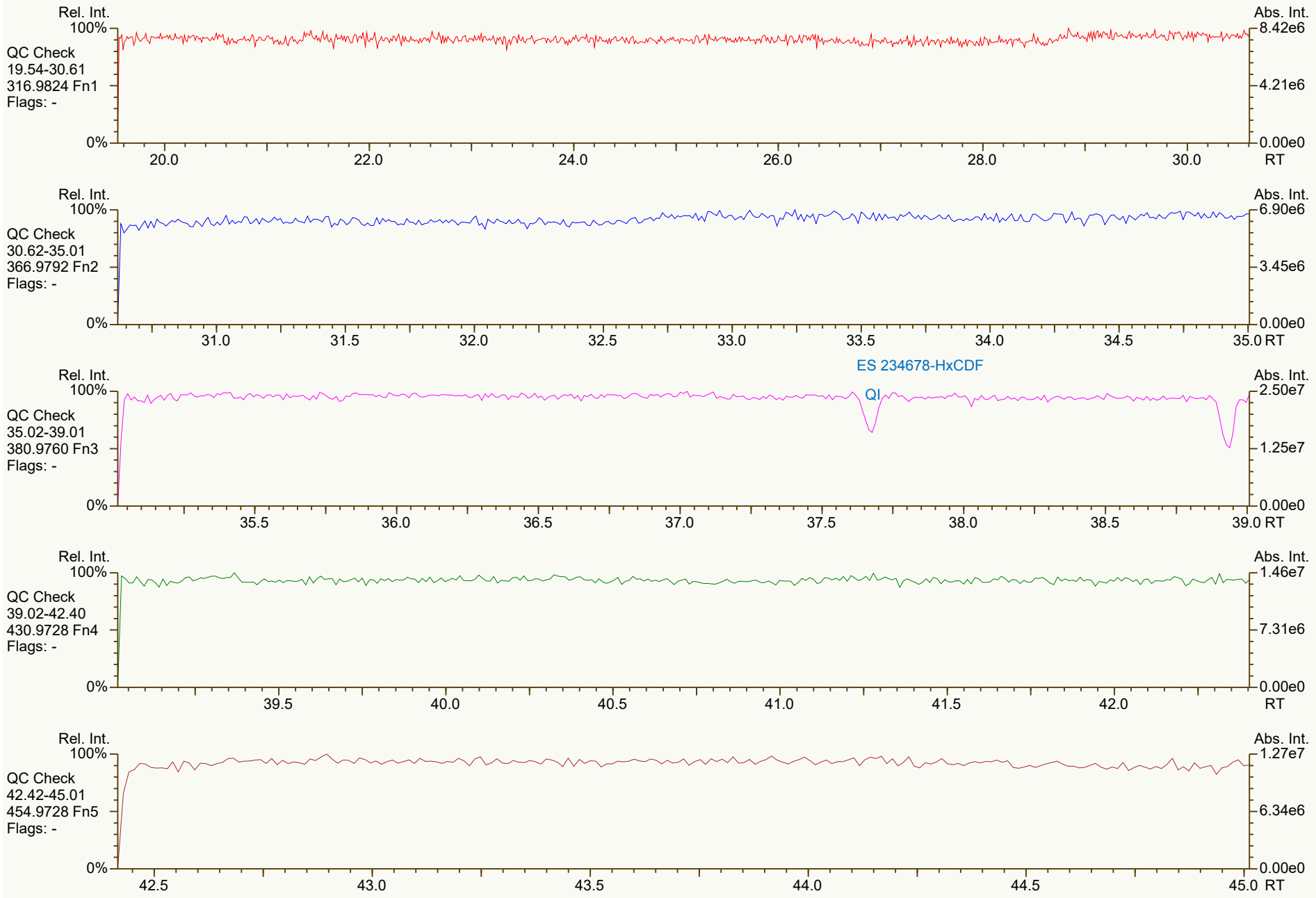
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.21		0.9838	0.9837	-0.2	4.77E+06	1.00	Y	1.06	64.6	3722.332	0.472
1234678-HpCDD	**40.88**		**1.0003**	**1.0002**	**-0.2**	**2.19E+06**	**1.02**	**Y**	**1.06**	**29.7**	**3722.332**	**0.472**
OCDD	**43.55**		**1.0002**	**1.0003**	**+0.3**	**2.11E+07**	**0.91**	**Y**	**1.13**	**448**	**4694.855**	**1.14**
OCDD-a	43.54		1.0002	1.0002	0	1.25E+06	2.30	Y	0.07	416	3624.339	13.8
1368-TCDF	NotFnd		0.8282						1.08		4426.474	0.298
1468-TCDF	NotFnd		0.8485						1.08		4426.474	0.298
2468-TCDF	24.17		0.8709	0.8698	-1.6	1.12E+05	0.84	Y	1.08	0.68	4426.474	0.298
1346/1246-TCDF	NotFnd		0.8829						1.08		4426.474	0.298
1347/1378/1247-TCDF	24.67		0.8884	0.8879	-0.7	2.29E+05	0.84	Y	1.08	1.39	4426.474	0.298
1348-TCDF	NotFnd		0.8980						1.08		4426.474	0.298
1248/1367/1379-TCDF	25.01		0.9026	0.9003	-3.5	5.07E+05	0.76	Y	1.08	3.08	4426.474	0.298
1268-TCDF	25.43		0.9158	0.9152	-0.9	2.15E+05	0.80	Y	1.08	1.3	4426.474	0.298
1467-TCDF	NotFnd		0.9206						1.08		4426.474	0.298
1478-TCDF	25.73		0.9266	0.9263	-0.5	3.51E+05	0.81	Y	1.08	2.13	4426.474	0.298
1369/1237-TCDF	26.09	EMPC	0.9397	0.9391	-0.9	1.11E+05	1.05	N	1.08	0.673	4426.474	0.298
2467-TCDF	NotFnd		0.9440						1.08		4426.474	0.298
2368-TCDF	26.43	EMPC	0.9497	0.9512	+2.4	8.24E+05	0.89	N	1.08	5	4426.474	0.298
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		4426.474	0.298
1278-TCDF	26.91		0.9690	0.9688	-0.3	3.72E+06	0.80	Y	1.08	22.6	4426.474	0.298
1349-TCDF	NotFnd		0.9730						1.08		4426.474	0.298
1267-TCDF	27.18		0.9787	0.9784	-0.5	2.43E+05	0.76	Y	1.08	1.48	4426.474	0.298
2346/1249-TCDF	NotFnd		0.9850						1.08		4426.474	0.298
2347/1279-TCDF	NotFnd		0.9929						1.08		4426.474	0.298
2348-TCDF	27.68	EMPC	0.9970	0.9964	-1.0	4.32E+05	0.89	N	1.08	2.62	4426.474	0.298
2378-TCDF	**27.80**		**1.0008**	**1.0007**	**-0.2**	**7.79E+06**	**0.74**	**Y**	**1.08**	**47.2**	**4426.474**	**0.298**
2367/3467-TCDF	28.15		1.0136	1.0134	-0.3	7.04E+05	0.76	Y	1.08	4.27	4426.474	0.298
1269-TCDF	28.40	EMPC	1.0221	1.0222	+0.2	1.28E+05	0.99	N	1.08	0.779	4426.474	0.298
1239-TCDF	NotFnd		1.0319						1.08		4426.474	0.298
1289-TCDF	29.79	EMPC	1.0740	1.0725	-2.7	5.40E+05	0.91	N	1.08	3.28	4426.474	0.298
13468/12468-PeCDF	29.73	J EMPC	0.9145	0.9145	0	1.91E+05	2.39	N	1.02	1.34	3026.445	0.204
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		4917.485	0.331
12368/13478/12478-PeCDF	31.42	J	0.9665	0.9667	+0.4	2.75E+05	1.57	Y	1.02	1.94	4917.485	0.331
14678-PeCDF	NotFnd		0.9695						1.02		4917.485	0.331
13479-PeCDF	NotFnd		0.9724						1.02		4917.485	0.331
13469/12479-PeCDF	NotFnd		0.9801						1.02		4917.485	0.331
12346-PeCDF	NotFnd		0.9842						1.02		4917.485	0.331

Lab ID: B5971_18863_DF_001 **Acq'd: 25 Jan 2022 19:03 DTF** **Wt/Vol: 10.31 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-JC-SW-B-2H **UTP: 26-Jan-2022 09:41:06 DTF** **J-level: 0.485 pg/g** **Split: 1** **Checkcode: 109-048-DST**

Datafile: 220125C05 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		4917.485	0.331
12347-PeCDF	NotFnd		0.9895						1.02		4917.485	0.331
12348-PeCDF	NotFnd		0.9941						1.02		4917.485	0.331
12378-PeCDF	**32.52**	J	**1.0005**	**1.0005**	**0**	**3.19E+05**	**1.44**	**Y**	**1.02**	**2.2**	**4917.485**	**0.344**
12678/12367-PeCDF	32.80	J	1.0090	1.0092	+0.4	1.12E+05	1.39	Y	1.02	0.787	4917.485	0.331
12379-PeCDF	NotFnd		1.0142						1.02		4917.485	0.331
12679-PeCDF	NotFnd		0.9931						1.02		4917.485	0.331
23467/12369-PeCDF	NotFnd		0.9966						1.02		4917.485	0.331
23478-PeCDF	**33.63**	J	**1.0005**	**1.0006**	**+0.2**	**2.26E+05**	**1.56**	**Y**	**1.02**	**1.63**	**4917.485**	**0.317**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		4917.485	0.331
12349-PeCDF	NotFnd		1.0101						1.02		4917.485	0.331
12389-PeCDF	NotFnd		1.0322						1.02		4917.485	0.331
123468-HxCDF	35.47	J B	0.9627	0.9630	+0.6	1.15E+05	1.40	Y	1.19	0.892	2707.263	0.194
124678/134678-HxCDF	35.66		0.9684	0.9682	-0.4	3.79E+05	1.24	Y	1.19	2.93	2707.263	0.194
134679-HxCDF	NotFnd		0.9747						1.19		2707.263	0.194
124679-HxCDF	NotFnd		0.9802						1.19		2707.263	0.194
124689-HxCDF	36.31		0.9858	0.9857	-0.2	3.42E+05	1.18	Y	1.19	2.65	2707.263	0.194
123467-HxCDF	36.73	J EMPC	0.9972	0.9972	0	4.59E+04	1.49	N	1.19	0.355	2707.263	0.194
123478-HxCDF	**36.85**		**1.0004**	**1.0004**	**0**	**6.01E+05**	**1.11**	**Y**	**1.27**	**4.8**	**2707.263**	**0.186**
123678-HxCDF	**37.00**	J	**1.0004**	**1.0006**	**+0.4**	**2.02E+05**	**1.35**	**Y**	**1.15**	**1.31**	**2707.263**	**0.177**
123479-HxCDF	NotFnd		1.0051						1.19		2707.263	0.194
123469-HxCDF	NotFnd		1.0091						1.19		2707.263	0.194
123679-HxCDF	NotFnd		0.9943						1.19		2707.263	0.194
234678-HxCDF	**37.67**	J	**1.0004**	**1.0003**	**-0.2**	**8.05E+04**	**1.16**	**Y**	**1.19**	**0.591**	**2707.263**	**0.198**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2707.263	0.194
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**2707.263**	**0.229**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		2707.263	0.194
1234678-HpCDF	**39.95**		**1.0002**	**1.0002**	**0**	**8.40E+05**	**1.07**	**Y**	**1.37**	**6.13**	**3513.358**	**0.19**
1234679-HpCDF	NotFnd		1.0067						1.34		3513.358	0.265
1234689-HpCDF	40.35		1.0101	1.0102	+0.2	6.97E+05	1.02	Y	1.34	6.6	3513.358	0.265
1234789-HpCDF	**41.34**	**J**	**1.0003**	**1.0002**	**-0.2**	**8.46E+04**	**0.96**	**Y**	**1.31**	**1.12**	**3513.358**	**0.397**
OCDF	**43.72**		**1.0002**	**1.0002**	**0**	**7.66E+05**	**0.91**	**Y**	**1.07**	**14.7**	**4162.793**	**0.945**
OCDF-a	NotFnd		1.0002						0.07		3016.251	11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QC Check
19.54-30.61
316.9824 Fn1
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Abs. Int.
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4.21e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.90e6
3.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
ES 234678-HxCDF
QI
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.50e7
1.25e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.46e7
7.31e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
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43.0
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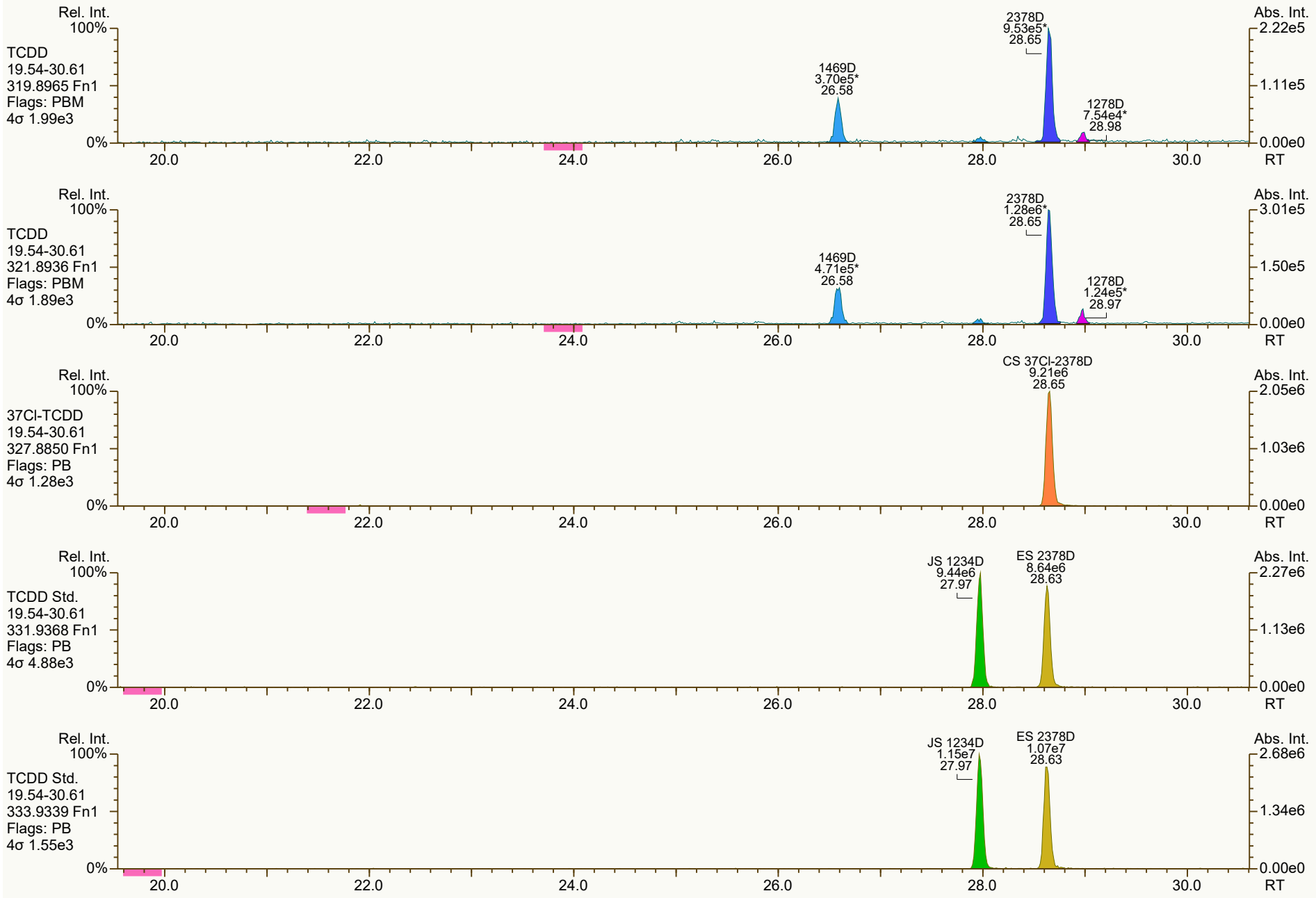
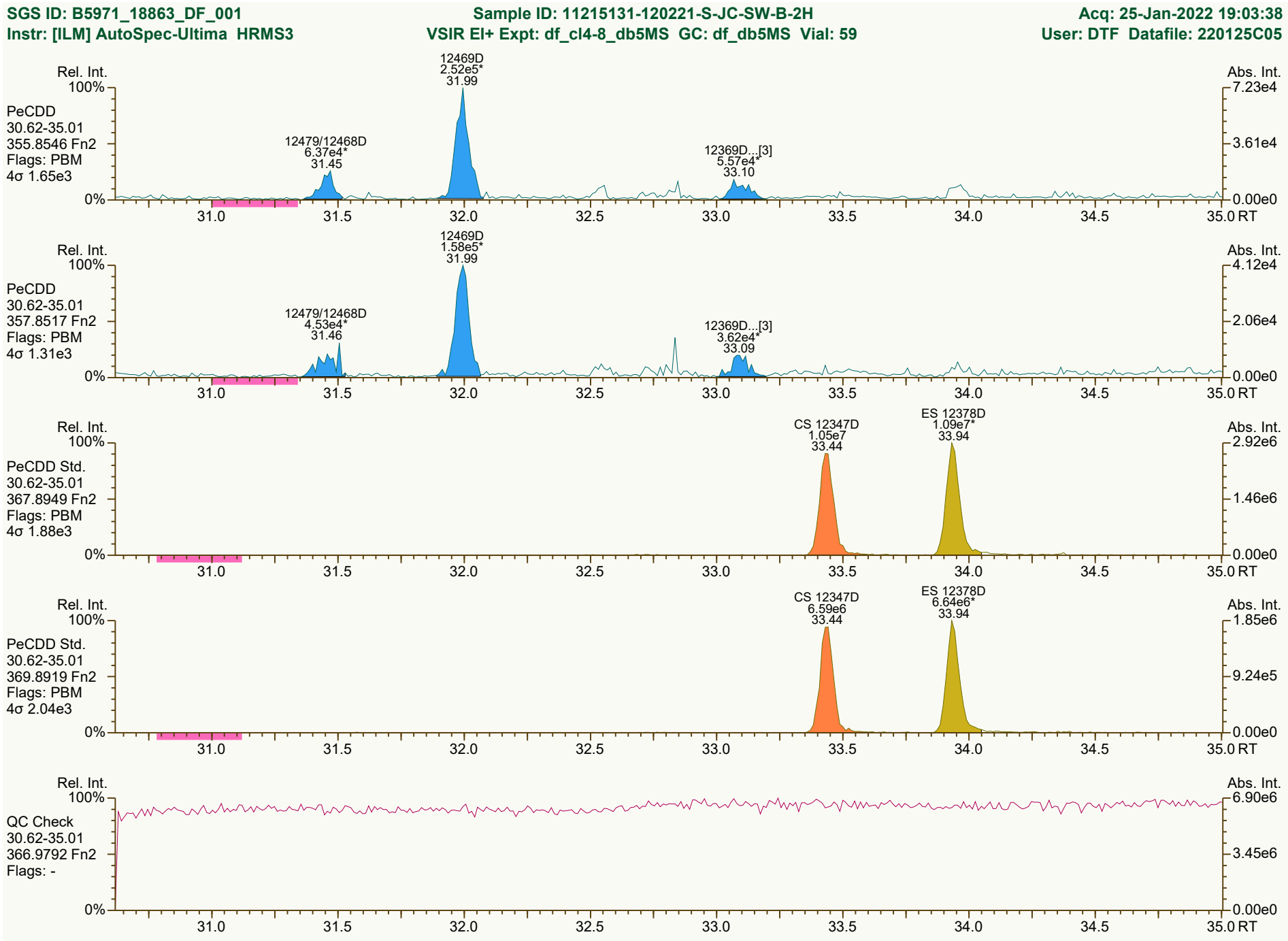
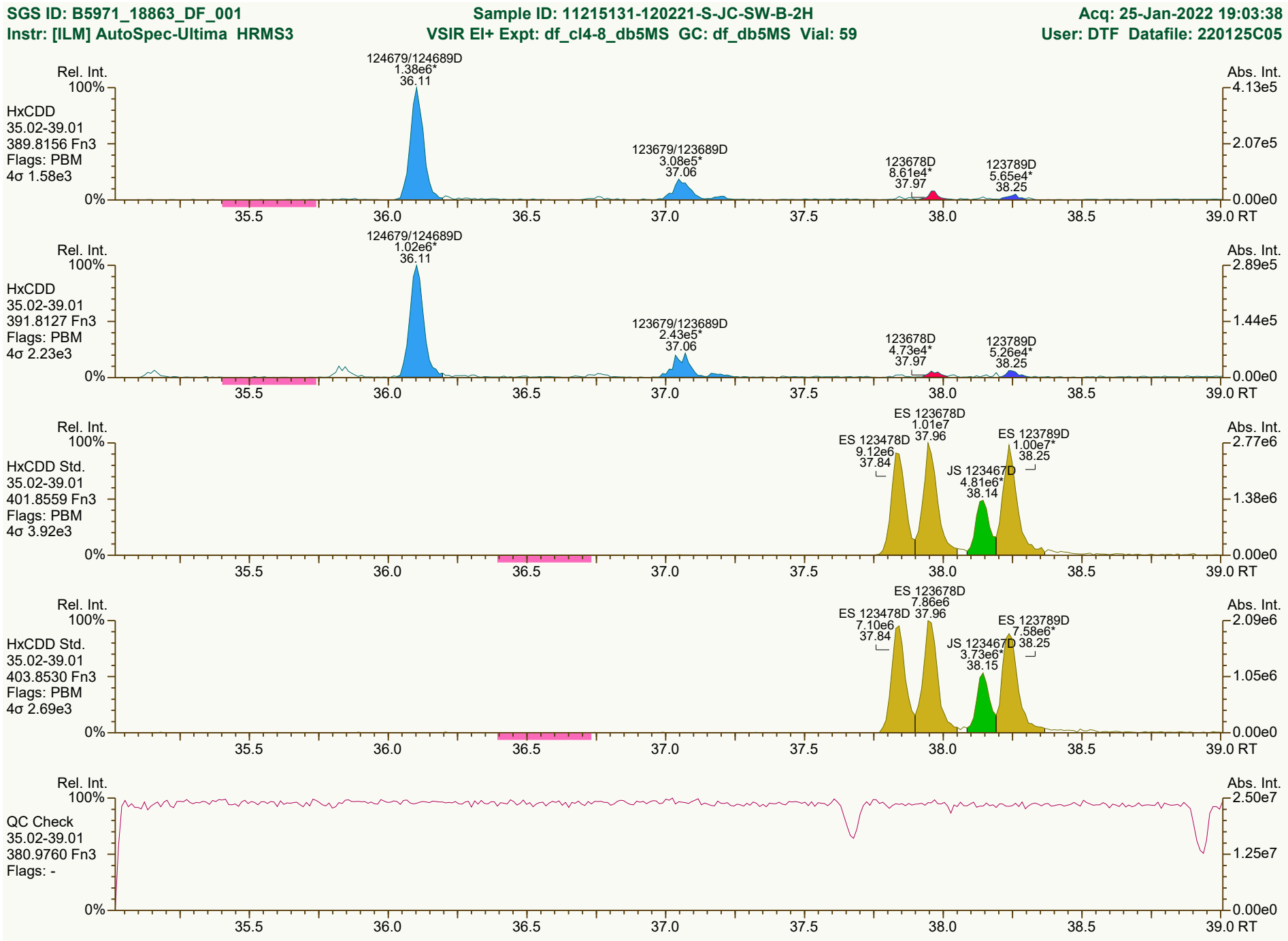
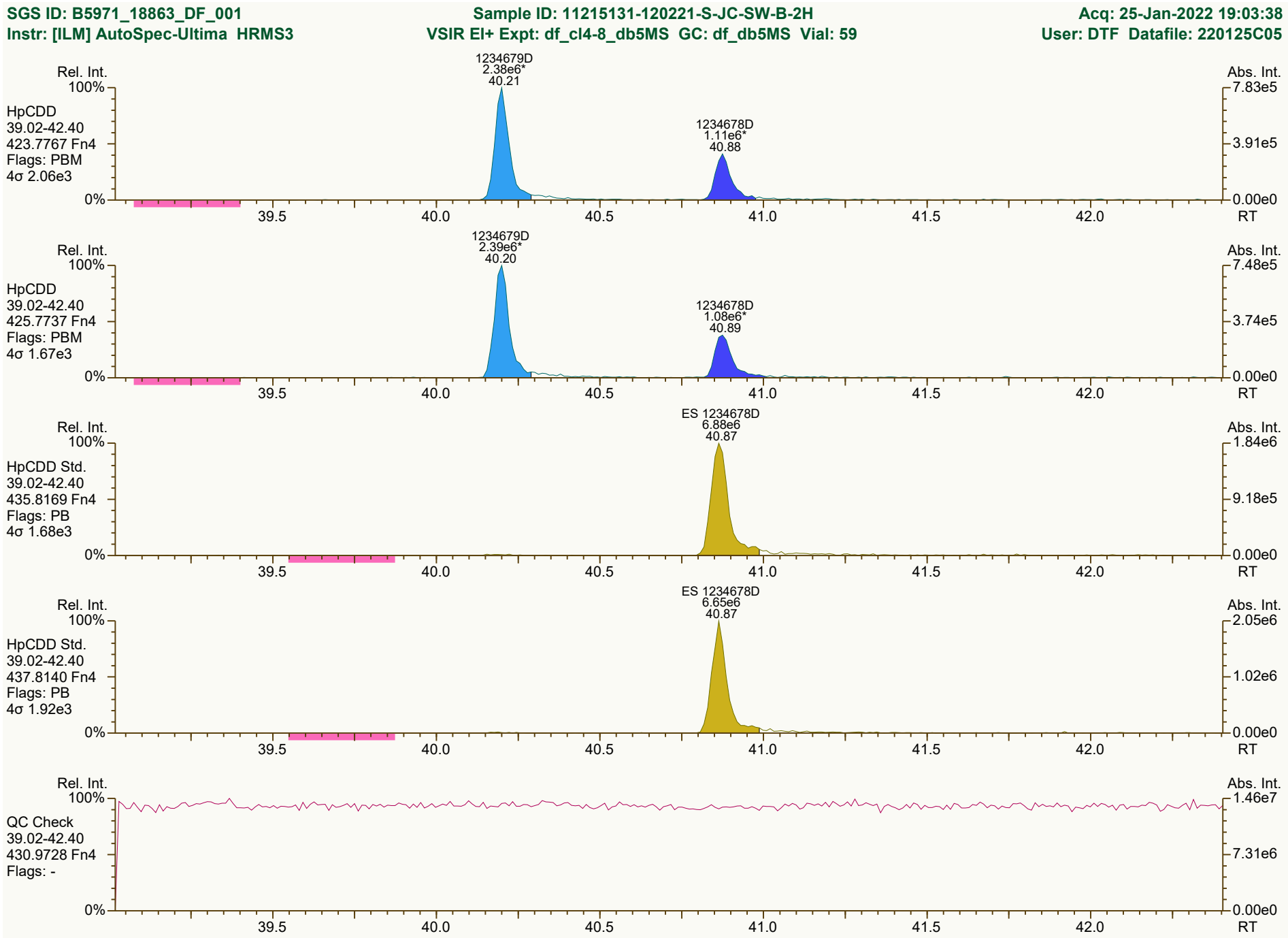
44.0
44.5
45.0 RT

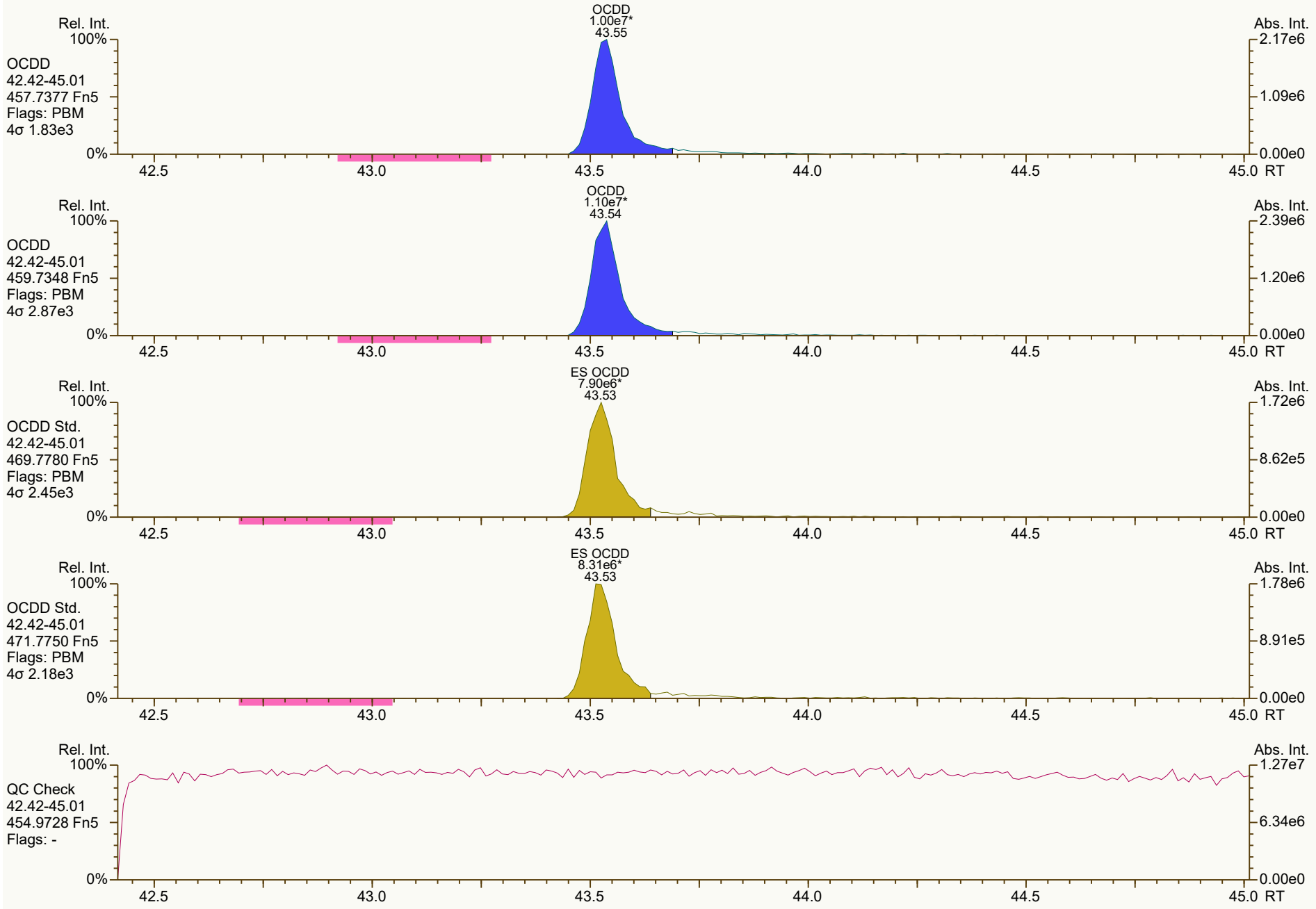

Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 1.99e3
0%
1469D
3.70e5*
26.58
2378D
9.53e5*
28.65
1278D
7.54e4*
28.98
Abs. Int.
2.22e5
1.11e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.89e3
0%
1469D
4.71e5*
26.58
2378D
1.28e6*
28.65
1278D
1.24e5*
28.97
Abs. Int.
3.01e5
1.50e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.28e3
0%
CS 37Cl-2378D
9.21e6
28.65
Abs. Int.
2.05e6
1.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 4.88e3
0%
JS 1234D
9.44e6
27.97
ES 2378D
8.64e6
28.63
Abs. Int.
2.27e6
1.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 1.55e3
0%
JS 1234D
1.15e7
27.97
ES 2378D
1.07e7
28.63
Abs. Int.
2.68e6
1.34e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

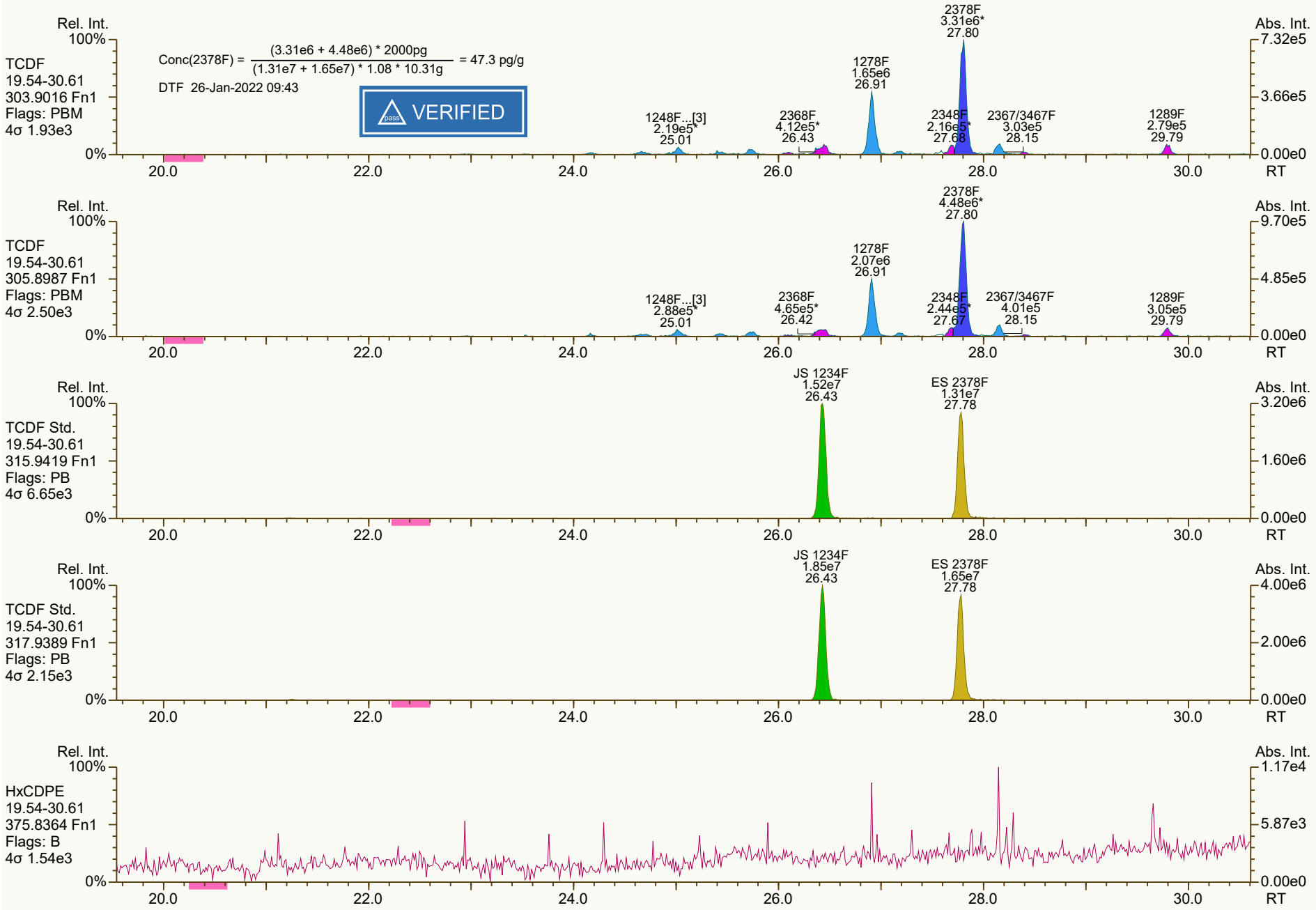

SGS ID: B5971_18863_DF_001
Sample ID: 11215131-120221-S-JC-SW-B-2H
Acq: 25-Jan-2022 19:03:38
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: DTF Datafile: 220125C05
Rel. Int.
Abs. Int.
PeCDD
30.62-35.01
355.8546 Fn2
Flags: PBM
4σ 1.65e3
12469D
2.52e5*
31.99
12479/12468D
6.37e4*
31.45
12369D...[3]
5.57e4*
33.10
7.23e4
3.61e4
0.00e0
PeCDD
30.62-35.01
357.8517 Fn2
Flags: PBM
4σ 1.31e3
12469D
1.58e5*
31.99
12479/12468D
4.53e4*
31.46
12369D...[3]
3.62e4*
33.09
4.12e4
2.06e4
0.00e0
PeCDD Std.
30.62-35.01
367.8949 Fn2
Flags: PBM
4σ 1.88e3
CS 12347D
1.05e7
33.44
ES 12378D
1.09e7*
33.94
2.92e6
1.46e6
0.00e0
PeCDD Std.
30.62-35.01
369.8919 Fn2
Flags: PBM
4σ 2.04e3
CS 12347D
6.59e6
33.44
ES 12378D
6.64e6*
33.94
1.85e6
9.24e5
0.00e0
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
6.90e6
3.45e6
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\B5971_18863_DF_001.utp_res, saved 26-Jan-2022 09:44 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9344, 8081 scc: 109-048
Revised: 26-Jan-2022 09:37 (DTF) Printed: 26-Jan-2022 09:46 Page 3 of 12



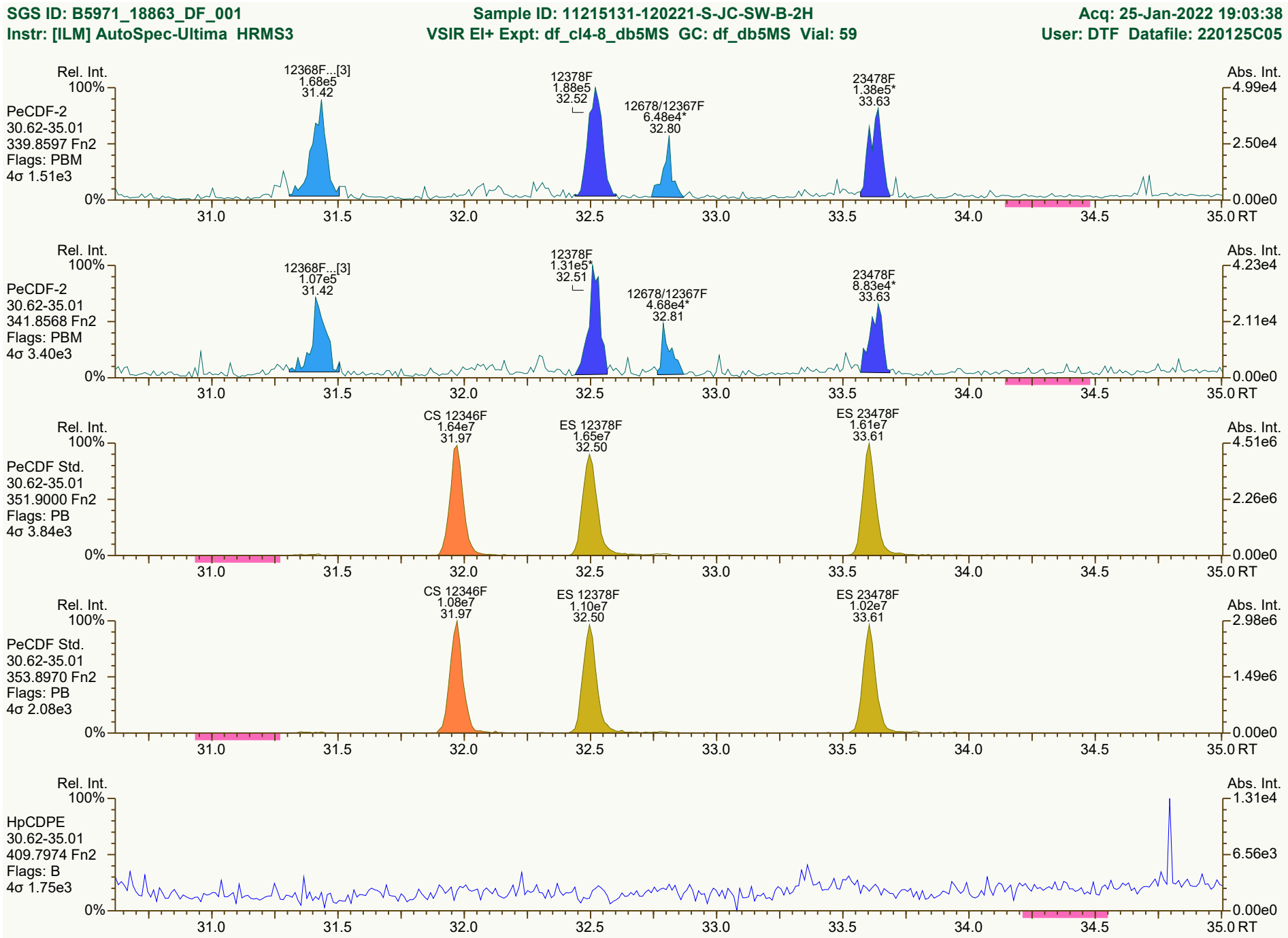
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\B5971_18863_DF_001.utp_res, saved 26-Jan-2022 09:44 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7697, 1362 scc: 109-048
Revised: 26-Jan-2022 09:38 (DTF) Printed: 26-Jan-2022 09:46 Page 4 of 12


SGS ID: B5971_18863_DF_001
Sample ID: 11215131-120221-S-JC-SW-B-2H
Acq: 25-Jan-2022 19:03:38
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: DTF Datafile: 220125C05
Rel. Int.
Abs. Int.
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.06e3
1234679D
2.38e6*
40.21
1234678D
1.11e6*
40.88
7.83e5
3.91e5
0.00e0
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.67e3
1234679D
2.39e6*
40.20
1234678D
1.08e6*
40.89
7.48e5
3.74e5
0.00e0
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PB
4σ 1.68e3
ES 1234678D
6.88e6
40.87
1.84e6
9.18e5
0.00e0
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PB
4σ 1.92e3
ES 1234678D
6.65e6
40.87
2.05e6
1.02e6
0.00e0
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
1.46e7
7.31e6
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\B5971_18863_DF_001.utp_res, saved 26-Jan-2022 09:44 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6961, 1521 scc: 109-048
PKD: 26-Jan-2022 09:40 Printed: 26-Jan-2022 09:46 Page 5 of 12

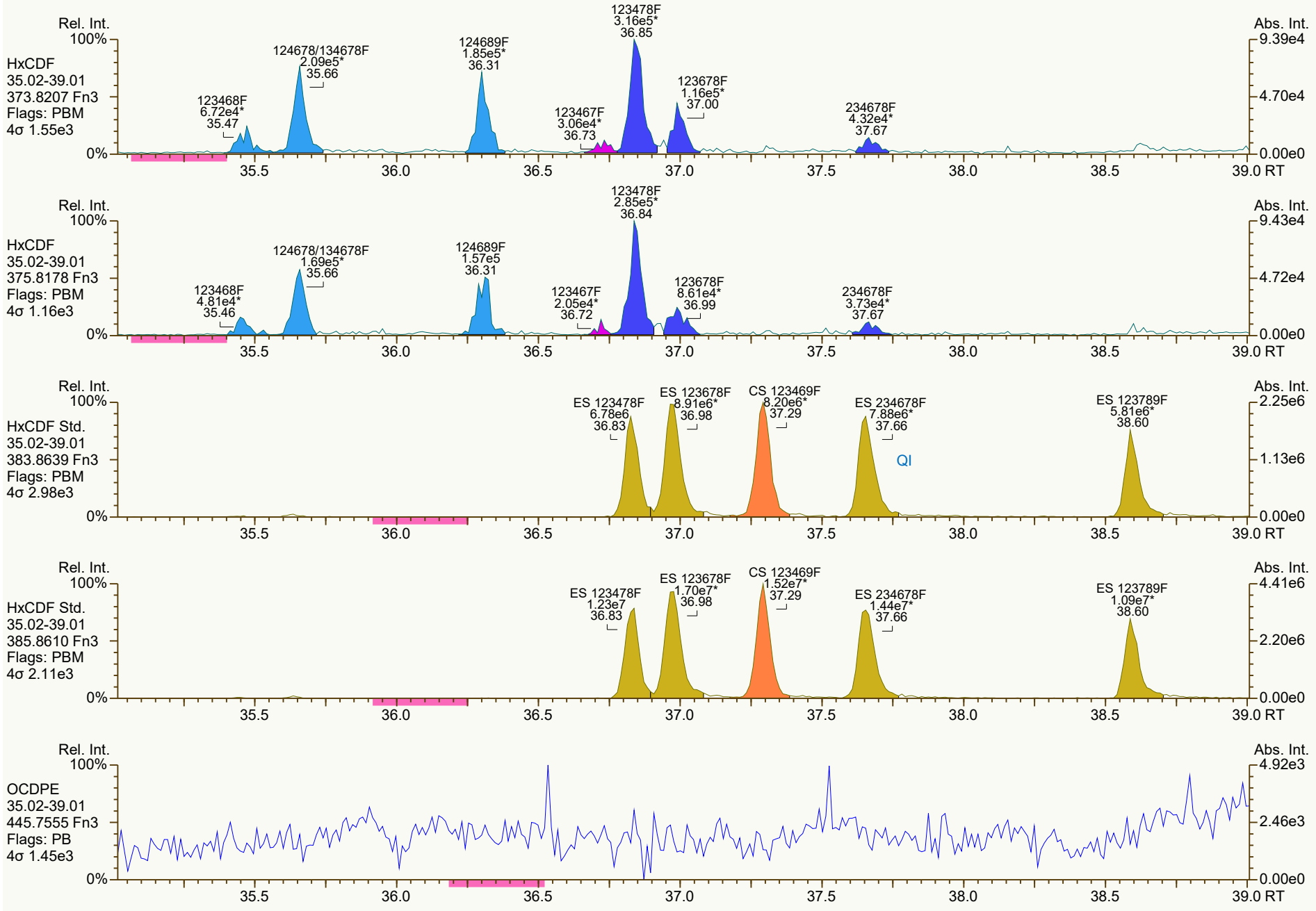

OCDD
1.00e7*
43.55
Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
2.17e6
1.09e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.10e7*
43.54
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 2.87e3
0%
Abs. Int.
2.39e6
1.20e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.90e6*
43.53
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.45e3
0%
Abs. Int.
1.72e6
8.62e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.31e6*
43.53
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 2.18e3
0%
Abs. Int.
1.78e6
8.91e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.27e7
6.34e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

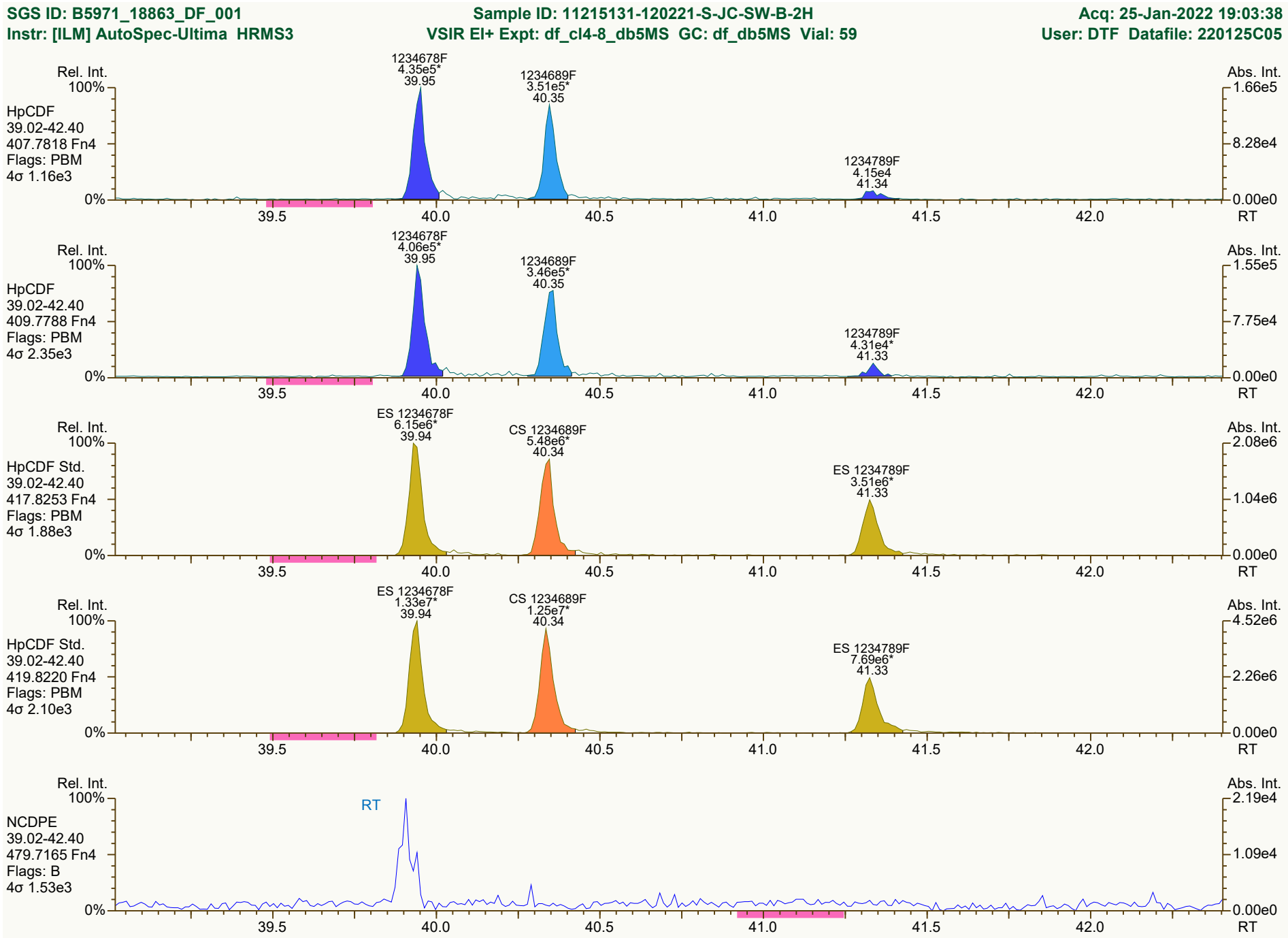

Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.93e3
0%
Conc(2378F) = (3.31e6 + 4.48e6) * 2000pg / (1.31e7 + 1.65e7) * 1.08 * 10.31g = 47.3 pg/g
DTF 26-Jan-2022 09:43
VERIFIED
2378F 3.31e6* 27.80
1278F 1.65e6 26.91
1248F...[3] 2.19e5* 25.01
2368F 4.12e5* 26.43
2348F 2.16e5* 27.68
2367/3467F 3.03e5 28.15
1289F 2.79e5 29.79
Abs. Int.
7.32e5
3.66e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 2.50e3
0%
2378F 4.48e6* 27.80
1278F 2.07e6 26.91
1248F...[3] 2.88e5* 25.01
2368F 4.65e5* 26.42
2348F 2.44e5* 27.67
2367/3467F 4.01e5 28.15
1289F 3.05e5 29.79
Abs. Int.
9.70e5
4.85e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 6.65e3
0%
JS 1234F 1.52e7 26.43
ES 2378F 1.31e7 27.78
Abs. Int.
3.20e6
1.60e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 2.15e3
0%
JS 1234F 1.85e7 26.43
ES 2378F 1.65e7 27.78
Abs. Int.
4.00e6
2.00e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.54e3
0%
Abs. Int.
1.17e4
5.87e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

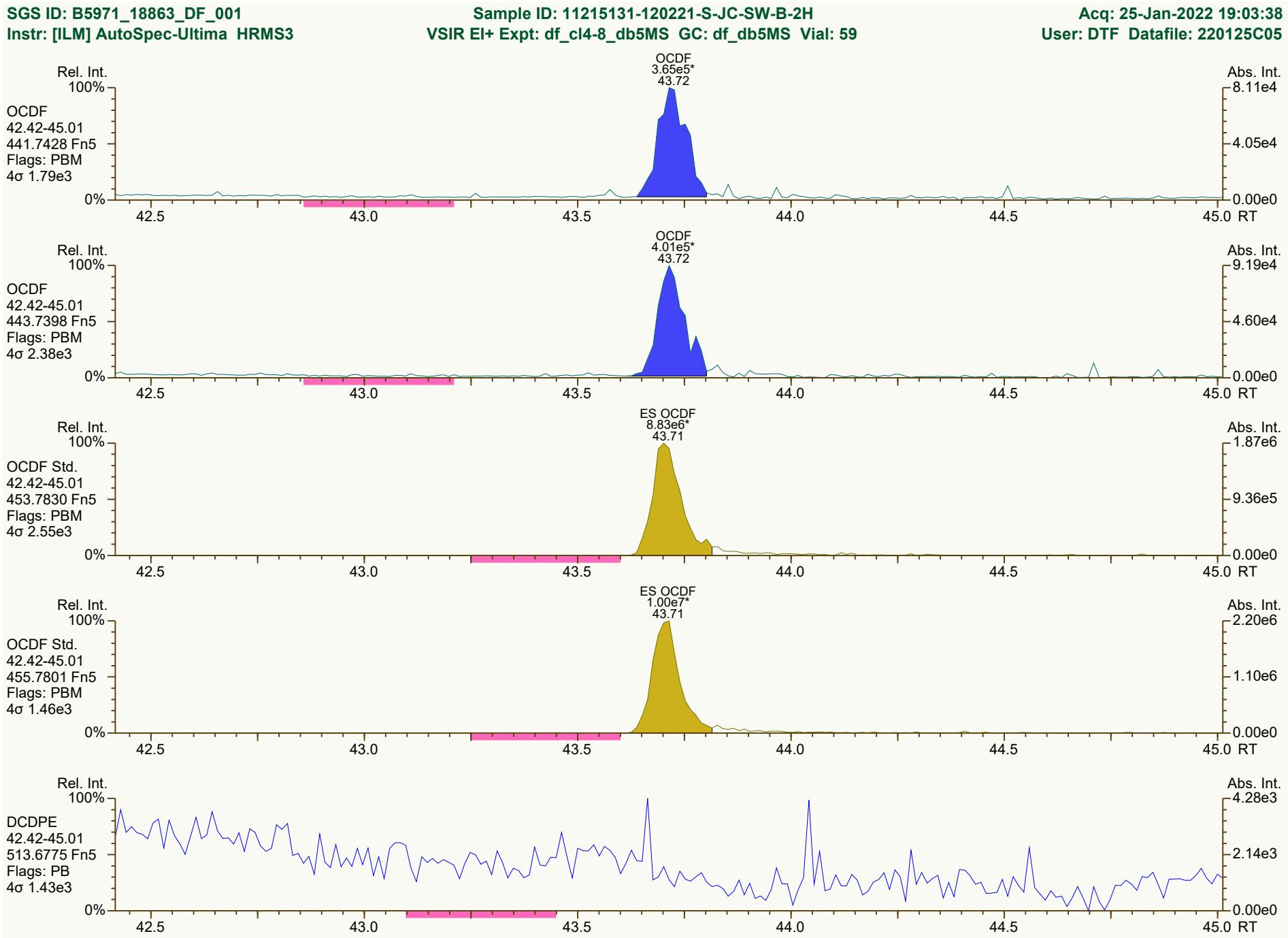

Rel. Int.
100%
0%
Abs. Int.
4.85e4
2.42e4
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
13468/12468F
1.79e5
29.73
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PB
4σ 1.49e3
13468/12468F
7.48e4
29.72
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PB
4σ 1.54e3
Abs. Int.
8.42e6
4.21e6
QC Check
19.54-30.61
316.9824 Fn1
Flags: -



Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\B5971_18863_DF_001.utp_res, saved 26-Jan-2022 09:44 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9471, 5564, 9612 scc: 109-048
Revised: 26-Jan-2022 09:39 (DTF) Printed: 26-Jan-2022 09:47 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.55e3
123468F 6.72e4* 35.47
124678/134678F 2.09e5* 35.66
124689F 1.85e5* 36.31
123467F 3.06e4* 36.73
123478F 3.16e5* 36.85
123678F 1.16e5* 37.00
234678F 4.32e4* 37.67
Abs. Int.
9.39e4
4.70e4
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 1.16e3
123468F 4.81e4* 35.46
124678/134678F 1.69e5* 35.66
124689F 1.57e5 36.31
123467F 2.05e4* 36.72
123478F 2.85e5* 36.84
123678F 8.61e4* 36.99
234678F 3.73e4* 37.67
Abs. Int.
9.43e4
4.72e4
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 2.98e3
ES 123478F 6.78e6 36.83
ES 123678F 8.91e6* 36.98
CS 123469F 8.20e6* 37.29
ES 234678F 7.88e6* 37.66
QI
ES 123789F 5.81e6* 38.60
Abs. Int.
2.25e6
1.13e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 2.11e3
ES 123478F 1.23e7 36.83
ES 123678F 1.70e7* 36.98
CS 123469F 1.52e7* 37.29
ES 234678F 1.44e7* 37.66
ES 123789F 1.09e7* 38.60
Abs. Int.
4.41e6
2.20e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.45e3
Abs. Int.
4.92e3
2.46e3
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT


SGS ID: B5971_18863_DF_001
Sample ID: 11215131-120221-S-JC-SW-B-2H
Acq: 25-Jan-2022 19:03:38
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: DTF Datafile: 220125C05
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 1.16e3
1234678F
4.35e5*
39.95
1234689F
3.51e5*
40.35
1234789F
4.15e4
41.34
1.66e5
8.28e4
0.00e0
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 2.35e3
1234678F
4.06e5*
39.95
1234689F
3.46e5*
40.35
1234789F
4.31e4*
41.33
1.55e5
7.75e4
0.00e0
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 1.88e3
ES 1234678F
6.15e6*
39.94
CS 1234689F
5.48e6*
40.34
ES 1234789F
3.51e6*
41.33
2.08e6
1.04e6
0.00e0
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.10e3
ES 1234678F
1.33e7*
39.94
CS 1234689F
1.25e7*
40.34
ES 1234789F
7.69e6*
41.33
4.52e6
2.26e6
0.00e0
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.53e3
RT
2.19e4
1.09e4
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\B5971_18863_DF_001.utp_res, saved 26-Jan-2022 09:44 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2611, 3233, 8884 scc: 109-048
PKD: 26-Jan-2022 09:40 Printed: 26-Jan-2022 09:47 Page 11 of 12


SGS ID: B5971_18863_DF_001
Sample ID: 11215131-120221-S-JC-SW-B-2H
Acq: 25-Jan-2022 19:03:38
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: DTF Datafile: 220125C05
OCDF
3.65e5*
43.72
Rel. Int.
Abs. Int.
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 1.79e3
OCDF
4.01e5*
43.72
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 2.38e3
ES OCDF
8.83e6*
43.71
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 2.55e3
ES OCDF
1.00e7*
43.71
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 1.46e3
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.43e3
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\B5971_18863_DF_001.utp_res, saved 26-Jan-2022 09:44 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8204, 2502, 2890 scc: 109-048
Revised: 26-Jan-2022 09:40 (DTF) Printed: 26-Jan-2022 09:47 Page 12 of 12

Lab ID: B5971_18819_DF_002 **Acq'd: 20 Jan 2022 15:25 DTF** **Wt/Vol: 10.15 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120321-S-JC-SW-B-3H **UTP: 26-Jan-2022 17:01:34 DTF** **J-level: 0.492 pg/g** **Split: 1** **Checkcode: 766-405-TQN**

Datafile: 220120C07 **Report: 26 Jan 2022 17:06 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.64		1.0008	1.0007	-0.2	2.50E+06	0.83	Y	1.18	43.5	5192.05	0.966
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	3545.8905	0.761
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3930.836	0.82
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.15	-	3930.836	0.706
123789-HxCDD	NotFnd		1.0109	-		-	-	-	1.05	-	3930.836	0.71
1234678-HpCDD	40.86		1.0003	1.0003	0	7.68E+05	0.97	Y	1.06	18.3	2741.7	0.53
OCDD	43.50		1.0002	1.0002	0	1.07E+07	0.89	Y	1.13	352	3806.277	1.39
2378-TCDF	27.80		1.0008	1.0008	0	1.06E+07	0.78	Y	1.08	128	5287.78	0.712
12378-PeCDF	32.50		1.0005	1.0004	-0.2	3.61E+05	1.46	Y	1.02	4.91	4637.52	0.573
23478-PeCDF	33.62	EMPC	1.0005	1.0006	+0.2	2.21E+05	1.97	N	1.02	3.17	4637.52	0.58
123478-HxCDF	36.84		1.0004	1.0005	+0.2	5.57E+05	1.24	Y	1.27	7.93	3913.094	0.457
123678-HxCDF	36.98	J	1.0004	1.0004	0	1.85E+05	1.24	Y	1.15	2.3	3913.094	0.423
234678-HxCDF	NotFnd		1.0004	-		-	-	-	1.19	-	3913.094	0.546
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3913.094	0.604
1234678-HpCDF	39.93	J	1.0002	1.0002	0	1.56E+05	1.01	Y	1.37	2.29	3093.132	0.288
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	3093.132	0.485
OCDF	43.69	J	1.0002	1.0003	+0.3	1.03E+05	0.94	Y	1.07	2.45	3246.5	0.81

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.63	1.0233	1.0236	+0.5	9.54E+06	0.78	Y	1.05	78.1
ES 12378-PeCDD	33.93	1.2121	1.2133	+2.4	8.22E+06	1.62	Y	0.88	80
ES 123478-HxCDD	37.83	0.9921	0.9921	0	8.00E+06	1.30	Y	0.97	83.6
ES 123678-HxCDD	37.94	0.9951	0.9951	0	8.91E+06	1.23	Y	0.94	96
ES 123789-HxCDD	38.23	1.0025	1.0026	+0.2	8.88E+06	1.34	Y	1.09	82.7
ES 1234678-HpCDD	40.84	1.0709	1.0711	+0.5	7.81E+06	1.11	Y	0.91	87
ES OCDD	43.49	1.1403	1.1406	+0.8	1.06E+07	0.91	Y	0.62	86.2
ES 2378-TCDF	27.77	1.0506	1.0510	+0.7	1.52E+07	0.77	Y	1.06	74.1
ES 12378-PeCDF	32.49	1.2281	1.2295	+2.7	1.41E+07	1.56	Y	0.91	80.3
ES 23478-PeCDF	33.60	1.2698	1.2713	+3.0	1.35E+07	1.62	Y	0.88	78.7
ES 123478-HxCDF	36.82	0.9657	0.9655	-0.4	1.09E+07	0.52	Y	1.20	92.3
ES 123678-HxCDF	36.96	0.9695	0.9693	-0.4	1.38E+07	0.56	Y	1.35	104
ES 234678-HxCDF	37.65	0.9874	0.9872	-0.5	1.05E+07	0.56	Y	1.24	86
ES 123789-HxCDF	38.58	1.0116	1.0117	+0.2	9.48E+06	0.53	Y	1.16	83.5
ES 1234678-HpCDF	39.92	1.0467	1.0469	+0.5	9.81E+06	0.47	Y	0.97	103
ES 1234789-HpCDF	41.31	1.0830	1.0832	+0.5	7.78E+06	0.46	Y	0.85	92.9
ES OCDF	43.68	1.1451	1.1455	+1.0	1.54E+07	0.92	Y	0.81	97

Lab ID: B5971_18819_DF_002 **Acq'd:** 20 Jan 2022 15:25 DTF **Wt/Vol:** 10.15 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-3H **UTP:** 26-Jan-2022 17:01:34 DTF **J-level:** 0.492 pg/g **Split:** 1 **Checkcode:** 766-405-TQN

Datafile: 220120C07 **Report:** 26 Jan 2022 17:06 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.97		-	-	-	1.17E+07	0.79	Y	-	-	
JS 1234-TCDF	26.43		-	-	-	1.94E+07	0.78	Y	-	-	
JS 123467-HxCDD	38.13		-	-	-	4.91E+06	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.65		1.0241	1.0243	+0.3	4.33E+06	n/a	-	1.20	77	
CS 12347-PeCDD	33.43		1.1943	1.1953	+2.0	8.62E+06	1.63	Y	0.75	98	
CS 12346-PeCDF	31.96		1.2083	1.2095	+2.3	1.46E+07	1.51	Y	0.85	88.7	
CS 123469-HxCDF	37.28		0.9778	0.9778	0	1.29E+07	0.54	Y	1.12	118	
CS 1234689-HpCDF	40.32		1.0571	1.0573	+0.5	1.04E+07	0.45	Y	0.89	119	
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~4.33E+06~~	~~n/a~~		~~1.15~~	~~98.8~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.43~~		~~1.1943~~	~~1.1953~~	~~+2.0~~	~~8.62E+06~~	~~1.63~~	~~Y~~	~~0.86~~	~~122~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.96~~		~~1.2083~~	~~1.2095~~	~~+2.3~~	~~1.46E+07~~	~~1.51~~	~~Y~~	~~0.94~~	~~110~~	
~~SS 123469-HxCDF~~	~~37.28~~		~~0.9778~~	~~0.9778~~	~~0~~	~~1.29E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~113~~	
~~SS 1234689-HpCDF~~	~~40.32~~		~~1.0571~~	~~1.0573~~	~~+0.5~~	~~1.04E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~116~~	

Totals	Conc	EMPC
Total TCDD	50.4	50.4
Total PeCDD	0	2.28
Total HxCDD	18.3	18.3
Total HpCDD	58.3	58.3
Total Tetra-Octa Dioxins	479	481
Total TCDF	243	265
Total PeCDF	7.41	12
Total HxCDF	11.2	11.2
Total HpCDF	3.3	3.3
Total Tetra-Octa Furans	267	294
Total Tetra-Octa Dioxins & Furans	746	775

Lab ID: B5971_18819_DF_002 **Acq'd: 20 Jan 2022 15:25 DTF** **Wt/Vol: 10.15 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120321-S-JC-SW-B-3H **UTP: 26-Jan-2022 17:01:34 DTF** **J-level: 0.492 pg/g** **Split: 1** **Checkcode: 766-405-TQN**

Datafile: 220120C07 **Report: 26 Jan 2022 17:06 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8755						1.18		5192.05	0.966
1379-TCDD	NotFnd		0.8876						1.18		5192.05	0.966
1369-TCDD	NotFnd		0.9023						1.18		5192.05	0.966
1469-TCDD	26.58		0.9291	0.9286	-0.8	1.92E+05	0.75	Y	1.18	3.35	5192.05	0.966
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		5192.05	0.966
1378-TCDD	NotFnd		0.9440						1.18		5192.05	0.966
1268-TCDD	NotFnd		0.9506						1.18		5192.05	0.966
1478-TCDD	NotFnd		0.9591						1.18		5192.05	0.966
1279-TCDD	NotFnd		0.9649						1.18		5192.05	0.966
1234/1269-TCDD	NotFnd		0.9771						1.18		5192.05	0.966
1236-TCDD	NotFnd		0.9820						1.18		5192.05	0.966
1237/1238-TCDD	NotFnd		0.9908						1.18		5192.05	0.966
1239-TCDD	NotFnd		0.9954						1.18		5192.05	0.966
2378-TCDD	**28.64**		**1.0008**	1.0007	**-0.2**	2.50E+06	0.83	Y	**1.18**	**43.5**	**5192.05**	**0.966**
1278-TCDD	28.97		1.0121	1.0119	-0.3	2.05E+05	0.69	Y	1.18	3.58	5192.05	0.966
1267-TCDD	NotFnd		1.0167						1.18		5192.05	0.966
1289-TCDD	NotFnd		1.0341						1.18		5192.05	0.966
12479/12468-PeCDD	NotFnd		0.9273						1.04		3545.8905	0.761
12469-PeCDD	31.98	J EMPC	0.9430	0.9426	-0.8	9.84E+04	1.20	N	1.04	2.28	3545.8905	0.761
12368-PeCDD	NotFnd		0.9592						1.04		3545.8905	0.761
12478-PeCDD	NotFnd		0.9647						1.04		3545.8905	0.761
12379-PeCDD	NotFnd		0.9676						1.04		3545.8905	0.761
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		3545.8905	0.761
12346/12347-PeCDD	NotFnd		0.9860						1.04		3545.8905	0.761
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**3545.8905**	**0.761**
12367-PeCDD	NotFnd		1.0034						1.04		3545.8905	0.761
12389-PeCDD	NotFnd		1.0134						1.04		3545.8905	0.761
124679/124689-HxCDD	36.09		0.9545	0.9541	-0.9	6.92E+05	1.19	Y	1.10	14.5	3930.836	0.743
123468-HxCDD	NotFnd		0.9715						1.10		3930.836	0.743
123679/123689-HxCDD	37.04		0.9793	0.9791	-0.4	1.85E+05	1.26	Y	1.10	3.87	3930.836	0.743
123469-HxCDD	NotFnd		0.9829						1.10		3930.836	0.743
123478-HxCDD	NotFnd		**1.0004**						1.09		**3930.836**	**0.82**
123678-HxCDD	NotFnd		**1.0034**						1.15		**3930.836**	**0.706**
123467-HxCDD	NotFnd		1.0082						1.10		3930.836	0.743
123789-HxCDD	NotFnd		**1.0109**						1.05		**3930.836**	**0.71**

Lab ID: B5971_18819_DF_002 **Acq'd: 20 Jan 2022 15:25 DTF** **Wt/Vol: 10.15 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120321-S-JC-SW-B-3H **UTP: 26-Jan-2022 17:01:34 DTF** **J-level: 0.492 pg/g** **Split: 1** **Checkcode: 766-405-TQN**

Datafile: 220120C07 **Report: 26 Jan 2022 17:06 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

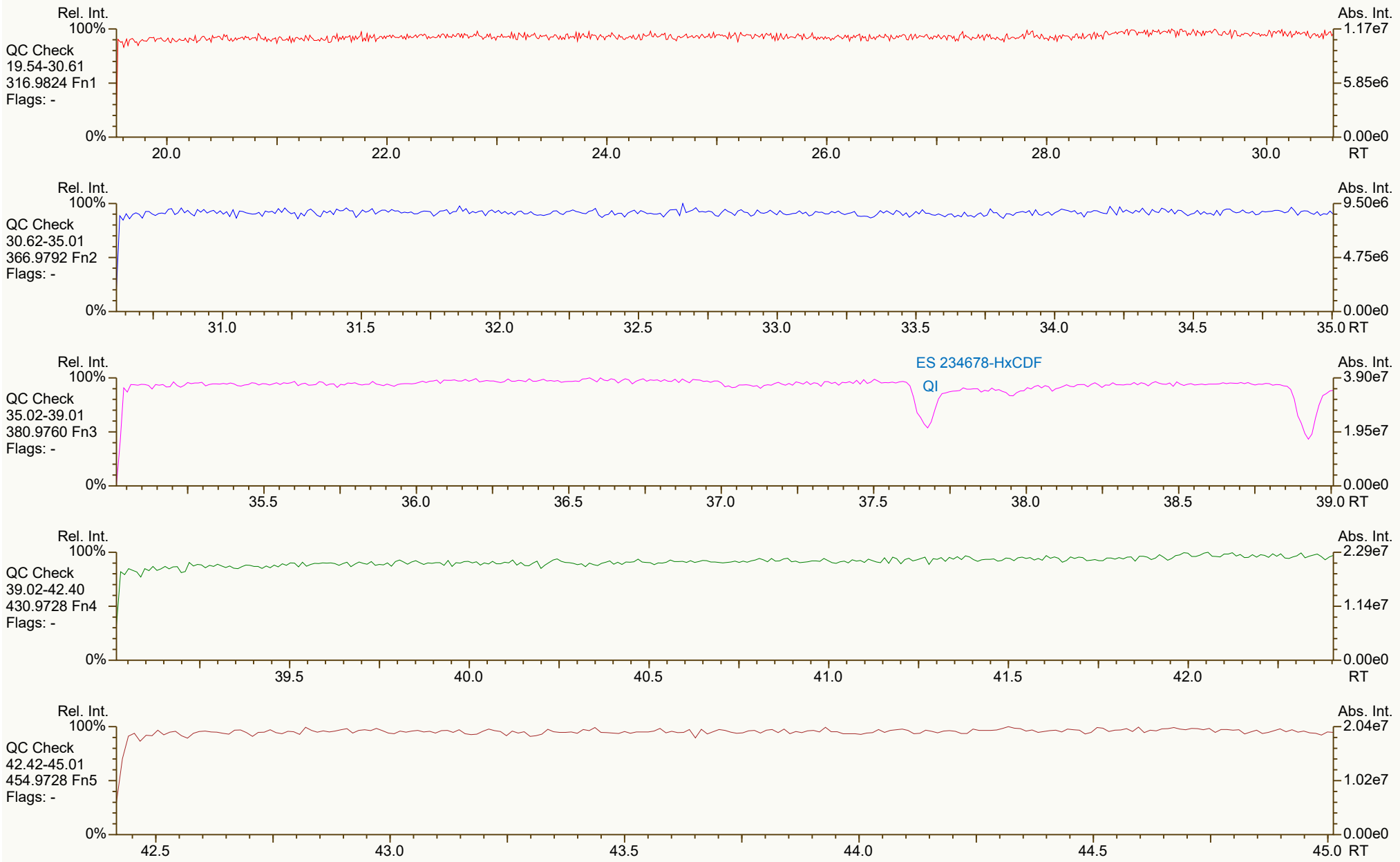
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.18		0.9838	0.9837	-0.2	1.68E+06	1.06	Y	1.06	40	2741.7	0.53
1234678-HpCDD	**40.86**		**1.0003**	**1.0003**	**0**	**7.68E+05**	**0.97**	**Y**	**1.06**	**18.3**	**2741.7**	**0.53**
OCDD	**43.50**		**1.0002**	**1.0002**	**0**	**1.07E+07**	**0.89**	**Y**	**1.13**	**352**	**3806.277**	**1.39**
OCDD-a	43.50	**EMPC**	1.0002	1.0001	-0.3	4.46E+05	3.68	N	0.07	231	5407.427	30.8
1368-TCDF	NotFnd		0.8282						1.08		5287.78	0.712
1468-TCDF	NotFnd		0.8485						1.08		5287.78	0.712
2468-TCDF	NotFnd		0.8709						1.08		5287.78	0.712
1346/1246-TCDF	NotFnd		0.8829						1.08		5287.78	0.712
1347/1378/1247-TCDF	24.67		0.8884	0.8884	0	3.14E+05	0.81	Y	1.08	3.77	5287.78	0.712
1348-TCDF	24.91		0.8980	0.8968	-1.8	7.77E+04	0.88	Y	1.08	0.934	5287.78	0.712
1248/1367/1379-TCDF	25.02	EMPC	0.9026	0.9008	-2.7	5.44E+05	0.97	N	1.08	6.54	5287.78	0.712
1268-TCDF	25.42		0.9158	0.9151	-1.1	2.33E+05	0.67	Y	1.08	2.8	5287.78	0.712
1467-TCDF	NotFnd		0.9206						1.08		5287.78	0.712
1478-TCDF	25.72		0.9266	0.9260	-0.9	5.08E+05	0.80	Y	1.08	6.1	5287.78	0.712
1369/1237-TCDF	26.10		0.9397	0.9396	-0.2	1.72E+05	0.76	Y	1.08	2.07	5287.78	0.712
2467-TCDF	NotFnd		0.9440						1.08		5287.78	0.712
2368-TCDF	26.36		0.9497	0.9490	-1.1	3.31E+05	0.66	Y	1.08	3.98	5287.78	0.712
1238/1234/1678/1469/1236-TCDF	26.44		0.9528	0.9520	-1.3	7.01E+05	0.75	Y	1.08	8.42	5287.78	0.712
1278-TCDF	26.91		0.9690	0.9688	-0.3	5.14E+06	0.79	Y	1.08	61.8	5287.78	0.712
1349-TCDF	NotFnd		0.9730						1.08		5287.78	0.712
1267-TCDF	27.19	EMPC	0.9787	0.9788	+0.2	3.19E+05	0.89	N	1.08	3.83	5287.78	0.712
2346/1249-TCDF	NotFnd		0.9850						1.08		5287.78	0.712
2347/1279-TCDF	27.57	EMPC	0.9929	0.9928	-0.2	1.70E+05	1.03	N	1.08	2.05	5287.78	0.712
2348-TCDF	27.68	EMPC	0.9970	0.9967	-0.5	7.98E+05	0.90	N	1.08	9.59	5287.78	0.712
2378-TCDF	**27.80**		**1.0008**	**1.0008**	**0**	**1.06E+07**	**0.78**	**Y**	**1.08**	**128**	**5287.78**	**0.712**
2367/3467-TCDF	28.15		1.0136	1.0134	-0.3	9.48E+05	0.79	Y	1.08	11.4	5287.78	0.712
1269-TCDF	28.39		1.0221	1.0222	+0.2	1.94E+05	0.77	Y	1.08	2.33	5287.78	0.712
1239-TCDF	NotFnd		1.0319						1.08		5287.78	0.712
1289-TCDF	29.79		1.0740	1.0726	-2.5	9.49E+05	0.77	Y	1.08	11.4	5287.78	0.712
13468/12468-PeCDF	NotFnd		0.9145						1.02		4190.669	0.521
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		4637.52	0.576
12368/13478/12478-PeCDF	31.41		0.9665	0.9668	+0.6	1.79E+05	1.56	Y	1.02	2.5	4637.52	0.576
14678-PeCDF	NotFnd		0.9695						1.02		4637.52	0.576
13479-PeCDF	NotFnd		0.9724						1.02		4637.52	0.576
13469/12479-PeCDF	NotFnd		0.9801						1.02		4637.52	0.576
12346-PeCDF	NotFnd		0.9842						1.02		4637.52	0.576

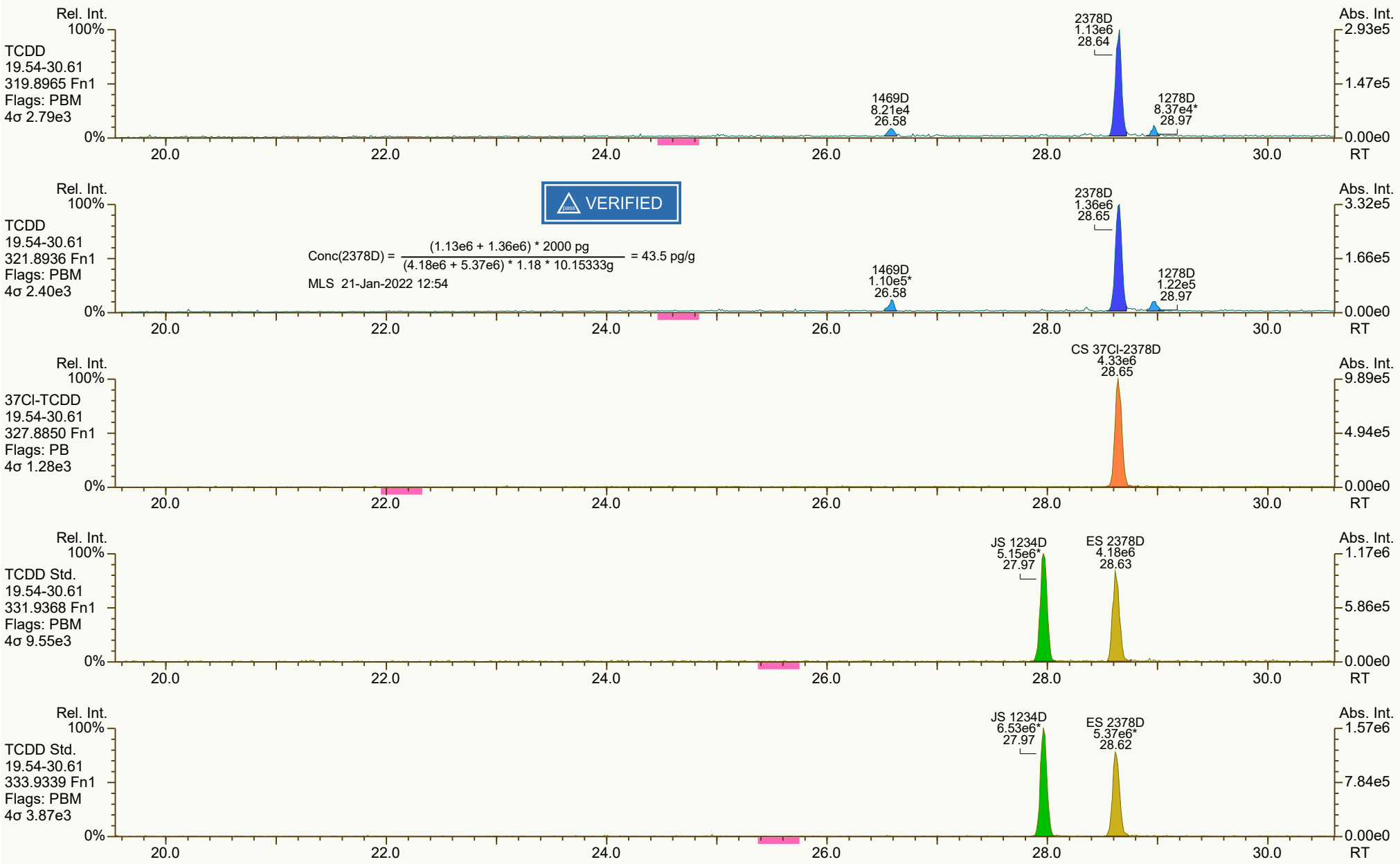
Lab ID: B5971_18819_DF_002 **Acq'd: 20 Jan 2022 15:25 DTF** **Wt/Vol: 10.15 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120321-S-JC-SW-B-3H **UTP: 26-Jan-2022 17:01:34 DTF** **J-level: 0.492 pg/g** **Split: 1** **Checkcode: 766-405-TQN**

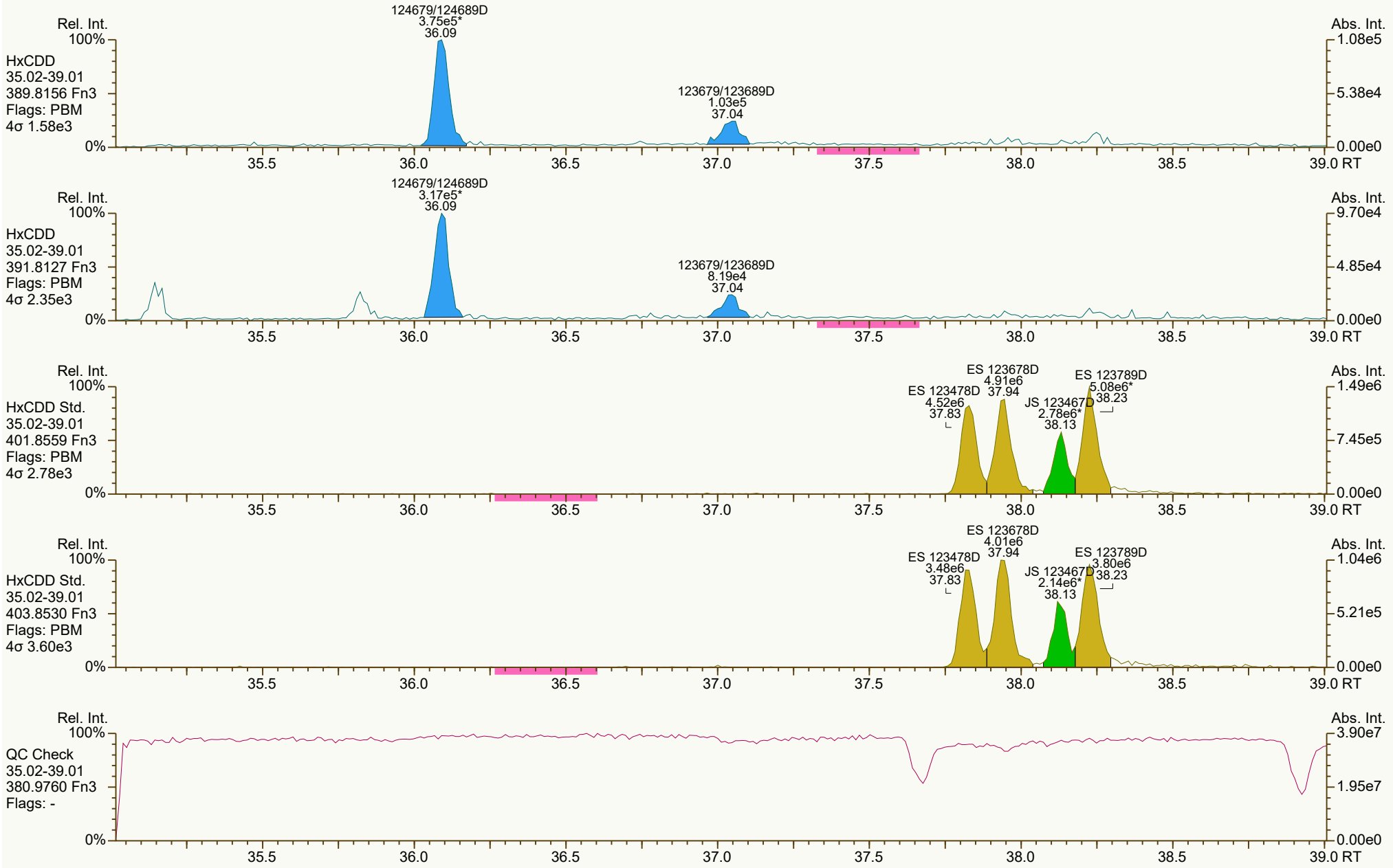
Datafile: 220120C07 **Report: 26 Jan 2022 17:06 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

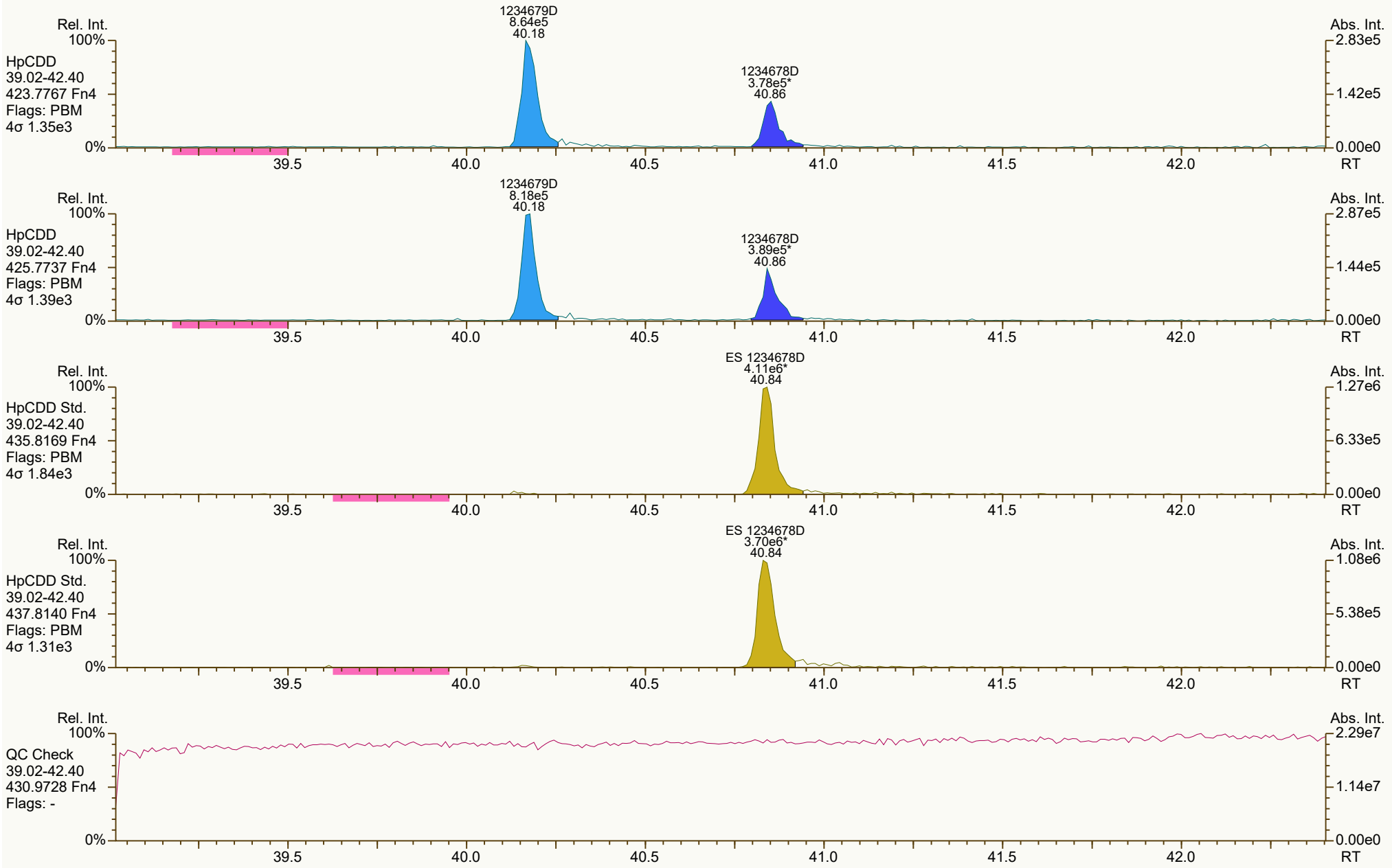
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		4637.52	0.576
12347-PeCDF	NotFnd		0.9895						1.02		4637.52	0.576
12348-PeCDF	NotFnd		0.9941						1.02		4637.52	0.576
12378-PeCDF	**32.50**		**1.0005**	**1.0004**	**-0.2**	**3.61E+05**	**1.46**	**Y**	**1.02**	**4.91**	**4637.52**	**0.573**
12678/12367-PeCDF	32.80	J EMPC	1.0090	1.0094	+0.8	1.05E+05	1.25	N	1.02	1.47	4637.52	0.576
12379-PeCDF	NotFnd		1.0142						1.02		4637.52	0.576
12679-PeCDF	NotFnd		0.9931						1.02		4637.52	0.576
23467/12369-PeCDF	NotFnd		0.9966						1.02		4637.52	0.576
23478-PeCDF	**33.62**	EMPC	**1.0005**	**1.0006**	**+0.2**	**2.21E+05**	**1.97**	**N**	**1.02**	**3.17**	**4637.52**	**0.58**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		4637.52	0.576
12349-PeCDF	NotFnd		1.0101						1.02		4637.52	0.576
12389-PeCDF	NotFnd		1.0322						1.02		4637.52	0.576
123468-HxCDF	NotFnd		0.9627						1.19		3913.094	0.497
124678/134678-HxCDF	35.64	J	0.9684	0.9680	-0.9	6.59E+04	1.27	Y	1.19	0.974	3913.094	0.497
134679-HxCDF	NotFnd		0.9747						1.19		3913.094	0.497
124679-HxCDF	NotFnd		0.9802						1.19		3913.094	0.497
124689-HxCDF	NotFnd		0.9858						1.19		3913.094	0.497
123467-HxCDF	NotFnd		0.9972						1.19		3913.094	0.497
123478-HxCDF	**36.84**		**1.0004**	**1.0005**	**+0.2**	**5.57E+05**	**1.24**	**Y**	**1.27**	**7.93**	**3913.094**	**0.457**
123678-HxCDF	**36.98**	J	**1.0004**	**1.0004**	**0**	**1.85E+05**	**1.24**	**Y**	**1.15**	**2.3**	**3913.094**	**0.423**
123479-HxCDF	NotFnd		1.0051						1.19		3913.094	0.497
123469-HxCDF	NotFnd		1.0091						1.19		3913.094	0.497
123679-HxCDF	NotFnd		0.9943						1.19		3913.094	0.497
234678-HxCDF	**NotFnd**		**1.0004**						**1.19**		**3913.094**	**0.546**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3913.094	0.497
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**3913.094**	**0.604**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		3913.094	0.497
1234678-HpCDF	**39.93**	**J**	**1.0002**	**1.0002**	**0**	**1.56E+05**	**1.01**	**Y**	**1.37**	**2.29**	**3093.132**	**0.288**
1234679-HpCDF	NotFnd		1.0067						1.34		3093.132	0.374
1234689-HpCDF	40.32	**J**	1.0101	1.0100	-0.2	6.05E+04	1.07	Y	1.34	1.01	3093.132	0.374
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**3093.132**	**0.485**
OCDF	**43.69**	**J**	**1.0002**	**1.0003**	**+0.3**	**1.03E+05**	**0.94**	**Y**	**1.07**	**2.45**	**3246.5**	**0.81**
OCDF-a	NotFnd		1.0002						0.07		3450.932	13.9

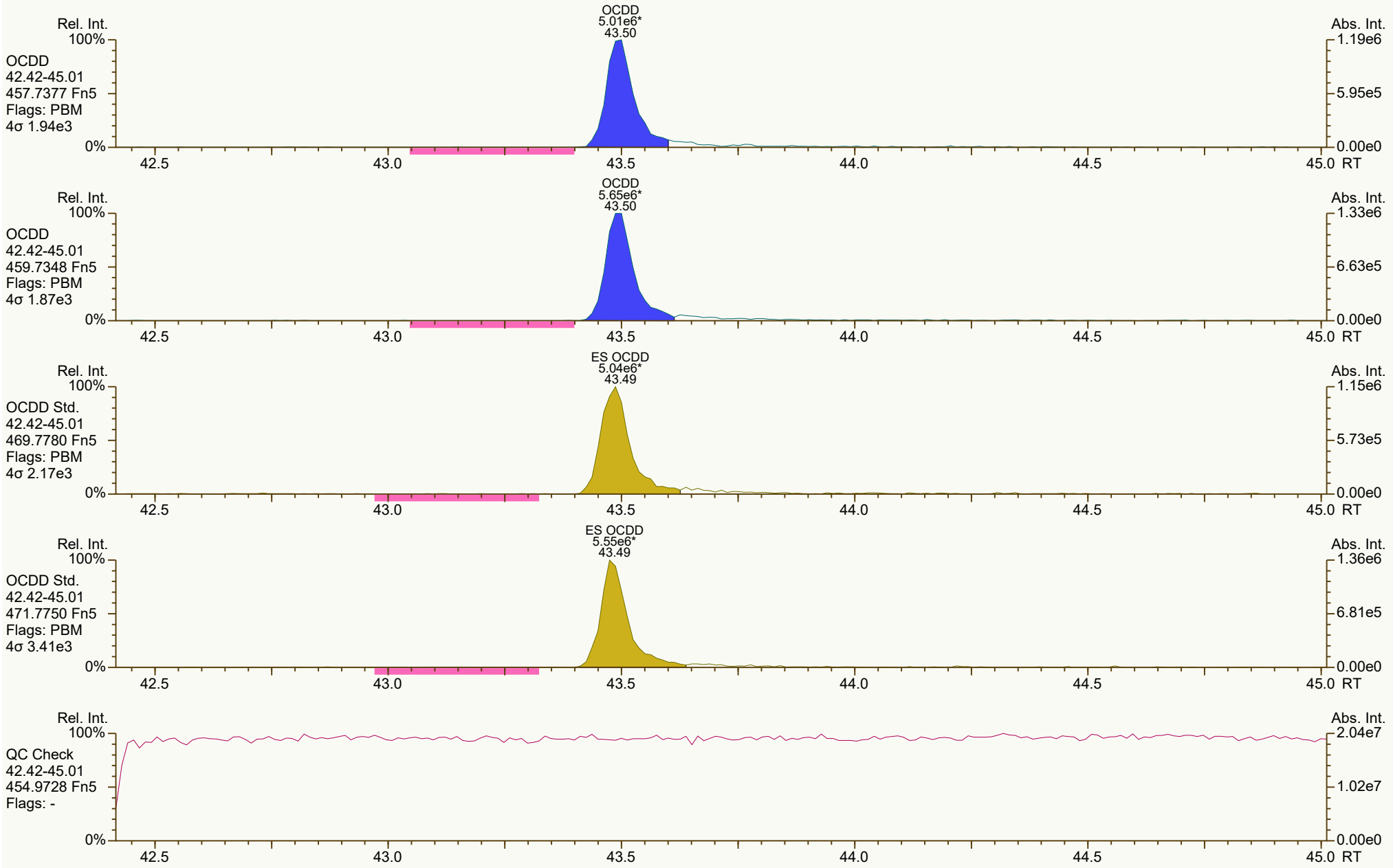

Rel. Int.
100%
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.50e6
4.75e6
0.00e0
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
0%
Abs. Int.
3.90e7
1.95e7
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
ES 234678-HxCDF
QI
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.04e7
1.02e7
0.00e0
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 2.79e3
0%
2378D
1.13e6
28.64
1469D
8.21e4
26.58
1278D
8.37e4*
28.97
Abs. Int.
2.93e5
1.47e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
VERIFIED
Conc(2378D) = (1.13e6 + 1.36e6) * 2000 pg / (4.18e6 + 5.37e6) * 1.18 * 10.15333g = 43.5 pg/g
MLS 21-Jan-2022 12:54
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.40e3
2378D
1.36e6
28.65
1469D
1.10e5*
26.58
1278D
1.22e5
28.97
Abs. Int.
3.32e5
1.66e5
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.28e3
CS 37Cl-2378D
4.33e6
28.65
Abs. Int.
9.89e5
4.94e5
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PBM
4σ 9.55e3
JS 1234D
5.15e6*
27.97
ES 2378D
4.18e6
28.63
Abs. Int.
1.17e6
5.86e5
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PBM
4σ 3.87e3
JS 1234D
6.53e6*
27.97
ES 2378D
5.37e6*
28.62
Abs. Int.
1.57e6
7.84e5


Rel. Int.
100%
PeCDD
30.62-35.01
355.8546 Fn2
Flags: PBM
4σ 2.62e3
12469D
5.98e4*
31.98
Abs. Int.
1.74e4
8.72e3
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.01
357.8517 Fn2
Flags: PBM
4σ 9.27e2
12469D
5.01e4*
31.98
Abs. Int.
2.56e4
1.28e4
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.01
367.8949 Fn2
Flags: PBM
4σ 2.08e3
CS 12347D
5.34e6*
33.43
ES 12378D
5.09e6*
33.93
Abs. Int.
1.59e6
7.93e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.01
369.8919 Fn2
Flags: PBM
4σ 1.69e3
CS 12347D
3.28e6*
33.43
ES 12378D
3.13e6*
33.93
Abs. Int.
9.60e5
4.80e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
Abs. Int.
9.50e6
4.75e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

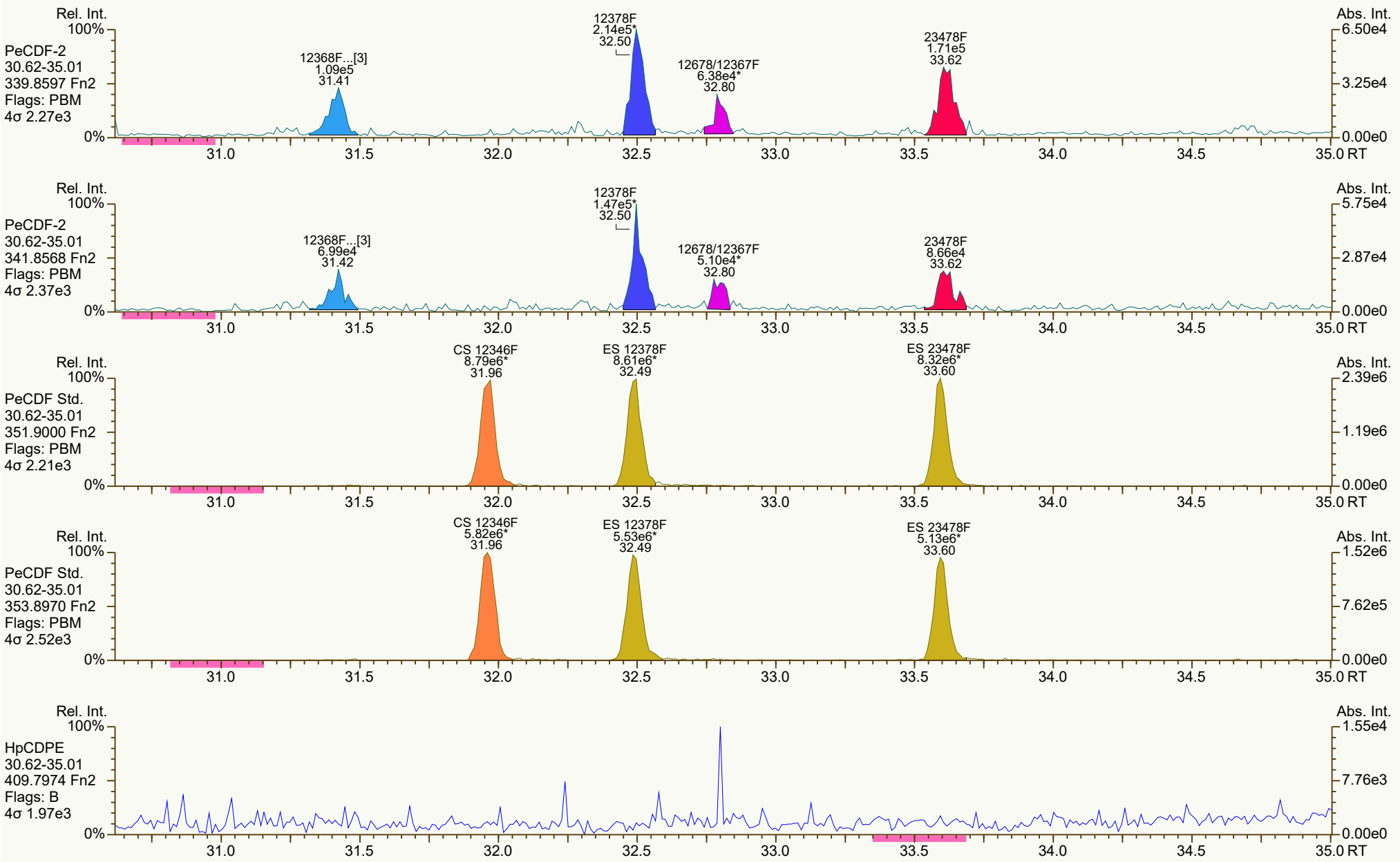

Rel. Int.
100%
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.58e3
124679/124689D
3.75e5*
36.09
123679/123689D
1.03e5
37.04
Abs. Int.
1.08e5
5.38e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 2.35e3
124679/124689D
3.17e5*
36.09
123679/123689D
8.19e4
37.04
Abs. Int.
9.70e4
4.85e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 2.78e3
ES 123678D
4.91e6
37.94
ES 123478D
4.52e6
37.83
ES 123789D
5.08e6*
38.23
JS 123467D
2.78e6*
38.13
Abs. Int.
1.49e6
7.45e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 3.60e3
ES 123678D
4.01e6
37.94
ES 123478D
3.48e6
37.83
ES 123789D
3.80e6
38.23
JS 123467D
2.14e6*
38.13
Abs. Int.
1.04e6
5.21e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
Abs. Int.
3.90e7
1.95e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

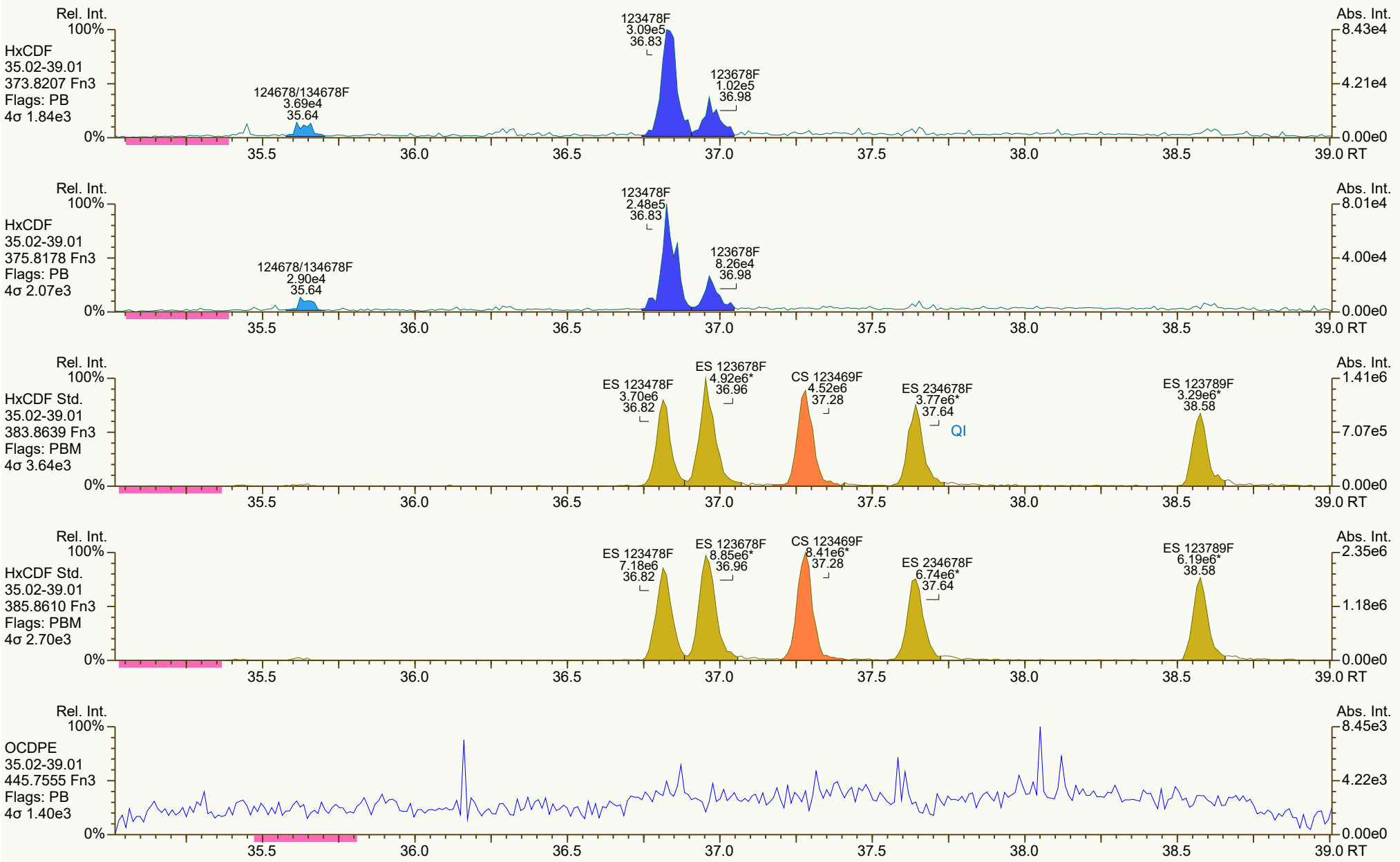

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 1.35e3
1234679D
8.64e5
40.18
1234678D
3.78e5*
40.86
0%
Abs. Int.
2.83e5
1.42e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.39e3
1234679D
8.18e5
40.18
1234678D
3.89e5*
40.86
0%
Abs. Int.
2.87e5
1.44e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 1.84e3
ES 1234678D
4.11e6*
40.84
0%
Abs. Int.
1.27e6
6.33e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.31e3
ES 1234678D
3.70e6*
40.84
0%
Abs. Int.
1.08e6
5.38e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT

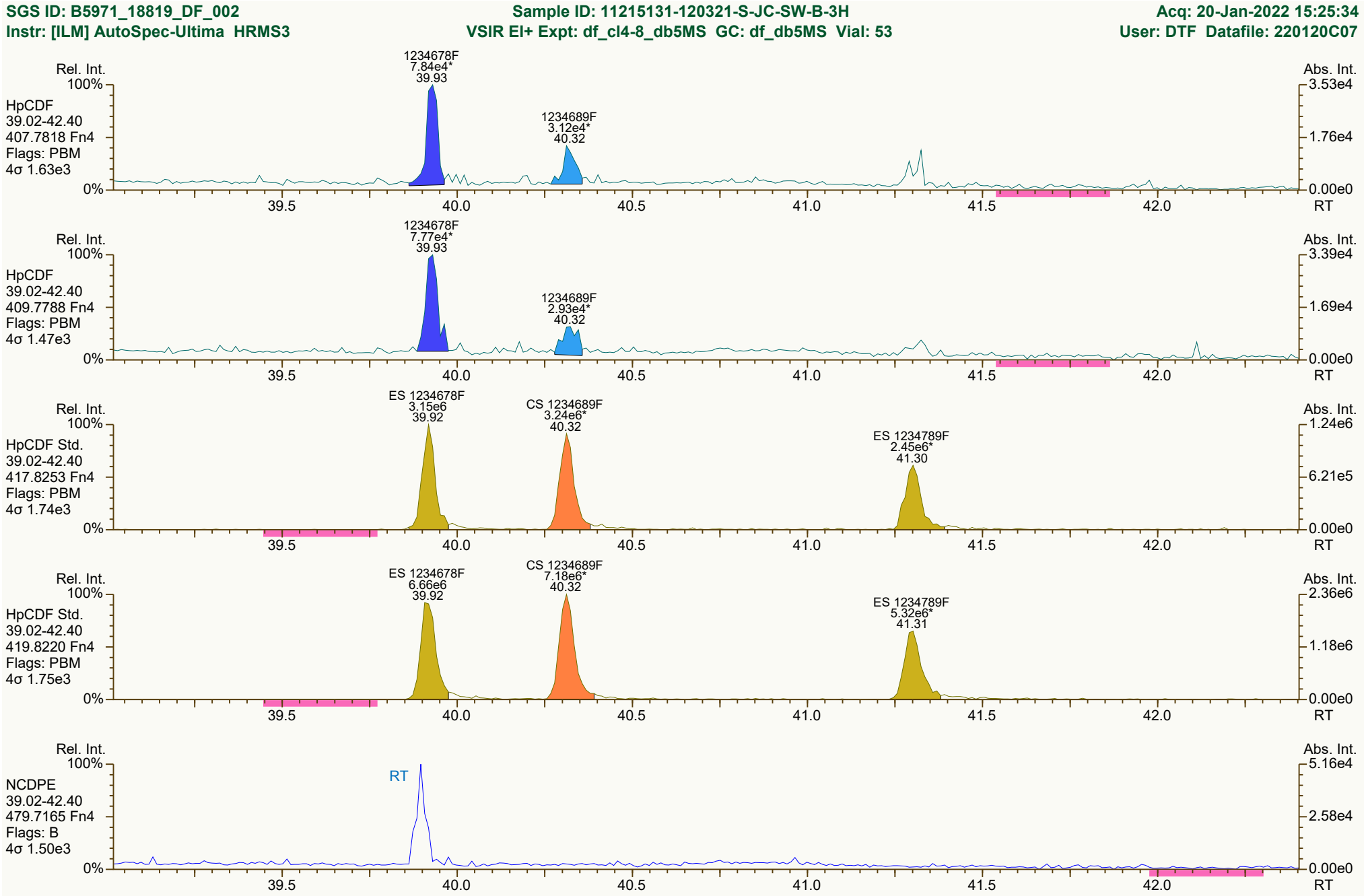

OCDD
5.01e6*
43.50
Rel. Int.
Abs. Int.
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 1.94e3
OCDD
5.65e6*
43.50
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 1.87e3
ES OCDD
5.04e6*
43.49
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.17e3
ES OCDD
5.55e6*
43.49
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 3.41e3
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.36e3
0%
Abs. Int.
1.04e6
5.18e5
0.00e0
RT
2378F
4.66e6*
27.80
1278F
2.28e6*
26.91
1248F...[3]
2.99e5*
25.02
1238F...[5]
3.01e5*
26.44
2348F
4.04e5*
27.68
2367/3467F
4.19e5*
28.15
1289F
4.13e5*
29.79
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 3.92e3
1.42e6
7.08e5
2378F
5.97e6*
27.80
1278F
2.87e6*
26.91
1238F...[5]
4.00e5*
26.44
2348F
4.51e5*
27.68
2367/3467F
5.28e5*
28.14
1289F
5.36e5*
29.79
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 8.73e3
1.73e6
8.66e5
JS 1234F
8.47e6
26.43
ES 2378F
6.62e6*
27.77
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 5.14e3
2.37e6
1.18e6
JS 1234F
1.09e7
26.42
ES 2378F
8.57e6*
27.77
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.68e3
1.43e4
7.16e3
20.0
22.0
24.0
26.0
28.0
30.0


Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.14e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.24e4
6.18e3
0.00e0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 3.05e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
Abs. Int.
PeCDF-2
30.62-35.01
339.8597 Fn2
Flags: PBM
4σ 2.27e3
12368F...[3]
1.09e5
31.41
12378F
2.14e5*
32.50
12678/12367F
6.38e4*
32.80
23478F
1.71e5
33.62
PeCDF-2
30.62-35.01
341.8568 Fn2
Flags: PBM
4σ 2.37e3
12368F...[3]
6.99e4
31.42
12378F
1.47e5*
32.50
12678/12367F
5.10e4*
32.80
23478F
8.66e4
33.62
PeCDF Std.
30.62-35.01
351.9000 Fn2
Flags: PBM
4σ 2.21e3
CS 12346F
8.79e6*
31.96
ES 12378F
8.61e6*
32.49
ES 23478F
8.32e6*
33.60
PeCDF Std.
30.62-35.01
353.8970 Fn2
Flags: PBM
4σ 2.52e3
CS 12346F
5.82e6*
31.96
ES 12378F
5.53e6*
32.49
ES 23478F
5.13e6*
33.60
HpCDPE
30.62-35.01
409.7974 Fn2
Flags: B
4σ 1.97e3
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PB
4σ 1.84e3
123478F
3.09e5
36.83
123678F
1.02e5
36.98
124678/134678F
3.69e4
35.64
Abs. Int.
8.43e4
4.21e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PB
4σ 2.07e3
123478F
2.48e5
36.83
123678F
8.26e4
36.98
124678/134678F
2.90e4
35.64
Abs. Int.
8.01e4
4.00e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 3.64e3
ES 123478F
3.70e6
36.82
ES 123678F
4.92e6*
36.96
CS 123469F
4.52e6
37.28
ES 234678F
3.77e6*
37.64
QI
ES 123789F
3.29e6*
38.58
Abs. Int.
1.41e6
7.07e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 2.70e3
ES 123478F
7.18e6
36.82
ES 123678F
8.85e6*
36.96
CS 123469F
8.41e6*
37.28
ES 234678F
6.74e6*
37.64
ES 123789F
6.19e6*
38.58
Abs. Int.
2.35e6
1.18e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.40e3
Abs. Int.
8.45e3
4.22e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT



Results: P:\B5900_B5999\B5971\B5971_18819 DF\Resources\B5971_18819_DF_002.utp_res, saved 21-Jan-2022 12:55 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 8360, 0186, 5992 scc: 766-405
PKD: 21-Jan-2022 12:13 Printed: 21-Jan-2022 13:00 Page 11 of 12


OCDF
4.98e4*
43.69
Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 1.53e3
0%
Abs. Int.
1.96e4
9.81e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
5.31e4*
43.69
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 1.72e3
0%
Abs. Int.
1.34e4
6.69e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
7.38e6*
43.68
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
1.77e6
8.83e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
8.03e6*
43.68
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 2.07e3
0%
Abs. Int.
1.88e6
9.38e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.68e3
0%
Abs. Int.
4.72e3
2.36e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5971_18819_DF_003 **Acq'd:** 20 Jan 2022 16:11 DTF **Wt/Vol:** 10.03 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-4H1 **UTP:** 21-Jan-2022 12:41:59 MLS **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 209-493-PMH

Datafile: 220120C08 **Report:** 21 Jan 2022 12:48 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.66		1.0008	1.0008	0	3.85E+07	0.79	Y	1.18	513	4496.18	0.642
12378-PeCDD	33.96	EMPC	1.0006	1.0006	0	2.85E+05	1.25	N	1.04	4.81	3626.801	0.562
123478-HxCDD	37.85	J	1.0004	1.0004	0	8.38E+04	1.33	Y	1.09	1.55	3656.305	0.588
123678-HxCDD	37.96		1.0034	1.0034	0	2.54E+05	1.16	Y	1.15	4.16	3656.305	0.576
123789-HxCDD	38.24		1.0109	1.0108	-0.2	1.57E+05	1.26	Y	1.05	2.77	3656.305	0.593
1234678-HpCDD	40.87		1.0003	1.0003	0	4.89E+06	1.06	Y	1.06	93.6	3904.829	0.65
OCDD	43.51		1.0002	1.0003	+0.3	5.11E+07	0.91	Y	1.13	1,530	2619.901	0.816
2378-TCDF	27.81	E	1.0008	1.0008	0	1.58E+08	0.80	Y	1.08	1,430	5543.105	0.53
12378-PeCDF	32.52		1.0005	1.0005	0	4.14E+06	1.53	Y	1.02	42.5	5958.395	0.583
23478-PeCDF	33.63		1.0005	1.0006	+0.2	3.51E+06	1.62	Y	1.02	36.7	5958.395	0.538
123478-HxCDF	36.84		1.0004	1.0005	+0.2	6.15E+06	1.32	Y	1.27	68.1	4829.96	0.45
123678-HxCDF	36.99		1.0004	1.0004	0	1.87E+06	1.25	Y	1.15	19.1	4829.96	0.43
234678-HxCDF	37.67		1.0004	1.0005	+0.2	2.93E+05	1.25	Y	1.19	4.04	4829.96	0.609
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	4829.96	0.559
1234678-HpCDF	39.94		1.0002	1.0003	+0.2	5.17E+06	1.04	Y	1.37	63.2	2225.7	0.217
1234789-HpCDF	41.33		1.0003	1.0002	-0.2	6.21E+05	1.00	Y	1.31	9.46	2225.7	0.294
OCDF	43.70		1.0002	1.0003	+0.3	5.62E+07	0.90	Y	1.07	1,130	3619.787	0.764

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.64		1.0233	1.0235	+0.3	1.26E+07	0.85	Y	1.05	73.5
ES 12378-PeCDD	33.94		1.2121	1.2130	+1.8	1.14E+07	1.68	Y	0.88	78.7
ES 123478-HxCDD	37.83		0.9921	0.9921	0	9.91E+06	1.35	Y	0.97	79.8
ES 123678-HxCDD	37.95		0.9951	0.9951	0	1.06E+07	1.21	Y	0.94	87.7
ES 123789-HxCDD	38.23		1.0025	1.0026	+0.2	1.08E+07	1.31	Y	1.09	77.1
ES 1234678-HpCDD	40.86		1.0709	1.0714	+1.2	9.81E+06	1.04	Y	0.91	84.2
ES OCDD	43.50		1.1403	1.1407	+1.0	1.18E+07	0.94	Y	0.62	74.2
ES 2378-TCDF	27.79		1.0506	1.0509	+0.5	2.04E+07	0.79	Y	1.06	74.9
ES 12378-PeCDF	32.50		1.2281	1.2293	+2.3	1.89E+07	1.56	Y	0.91	80.8
ES 23478-PeCDF	33.61		1.2698	1.2711	+2.6	1.87E+07	1.59	Y	0.88	82.3
ES 123478-HxCDF	36.83		0.9657	0.9657	0	1.42E+07	0.52	Y	1.20	92.4
ES 123678-HxCDF	36.97		0.9695	0.9694	-0.2	1.69E+07	0.55	Y	1.35	97.9
ES 234678-HxCDF	37.65		0.9874	0.9873	-0.2	1.22E+07	0.58	Y	1.24	76.6
ES 123789-HxCDF	38.59		1.0116	1.0119	+0.7	1.32E+07	0.54	Y	1.16	89.5
ES 1234678-HpCDF	39.93		1.0467	1.0471	+1.0	1.19E+07	0.47	Y	0.97	96.2
ES 1234789-HpCDF	41.32		1.0830	1.0835	+1.2	1.00E+07	0.46	Y	0.85	92
ES OCDF	43.69		1.1451	1.1457	+1.6	1.85E+07	0.87	Y	0.81	89.9

Lab ID: B5971_18819_DF_003 | Acq'd: 20 Jan 2022 16:11 DTF | Wt/Vol: 10.03 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-4H1 | UTP: 21-Jan-2022 12:41:59 MLS | J-level: 0.498 pg/g | Split: 1 | Checkcode: 209-493-PMH

Datafile: 220120C08 | Report: 21 Jan 2022 12:48 MS | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.98		-	-	-	1.64E+07	0.82	Y	-	-	
JS 1234-TCDF	26.44		-	-	-	2.57E+07	0.80	Y	-	-	
JS 123467-HxCDD	38.14		-	-	-	6.38E+06	1.28	Y	-	-	
CS 37Cl-2378-TCDD	28.66		1.0241	1.0242	+0.2	6.04E+06	n/a	-	1.20	76.4	
CS 12347-PeCDD	33.44		1.1943	1.1950	+1.4	1.10E+07	1.67	Y	0.75	88.8	
CS 12346-PeCDF	31.97		1.2083	1.2092	+1.7	1.95E+07	1.58	Y	0.85	89.1	
CS 123469-HxCDF	37.29		0.9778	0.9779	+0.2	1.57E+07	0.52	Y	1.12	110	
CS 1234689-HpCDF	40.33		1.0571	1.0575	+1.0	1.23E+07	0.46	Y	0.89	108	
~~SS 37Cl-2378-TCDD~~	~~28.66~~		~~1.0241~~	~~1.0242~~	~~+0.2~~	~~6.04E+06~~	~~n/a~~		~~1.15~~	~~104~~	Not used in this project
~~SS 12347-PeCDD~~	~~33.44~~		~~1.1943~~	~~1.1950~~	~~+1.4~~	~~1.10E+07~~	~~1.67~~	~~Y~~	~~0.86~~	~~113~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.97~~		~~1.2083~~	~~1.2092~~	~~+1.7~~	~~1.95E+07~~	~~1.58~~	~~Y~~	~~0.94~~	~~110~~	
~~SS 123469-HxCDF~~	~~37.29~~		~~0.9778~~	~~0.9779~~	~~+0.2~~	~~1.57E+07~~	~~0.52~~	~~Y~~	~~0.83~~	~~112~~	
~~SS 1234689-HpCDF~~	~~40.33~~		~~1.0571~~	~~1.0575~~	~~+1.0~~	~~1.23E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~112~~	

Totals	Conc	EMPC
Total TCDD	580	583
Total PeCDD	2.34	13.7
Total HxCDD	52.8	54.1
Total HpCDD	233	233
Total Tetra-Octa Dioxins	2400	2410
Total TCDF	2,890	2900
Total PeCDF	140	143
Total HxCDF	130	130
Total HpCDF	113	113
Total Tetra-Octa Furans	4,400	4410
Total Tetra-Octa Dioxins & Furans	6800	6820

Lab ID: B5971_18819_DF_003 **Acq'd:** 20 Jan 2022 16:11 DTF **Wt/Vol:** 10.03 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-4H1 **UTP:** 21-Jan-2022 12:41:59 MLS **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 209-493-PMH

Datafile: 220120C08 **Report:** 21 Jan 2022 12:48 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.05		0.8755	0.8748	-1.1	2.12E+05	0.80	Y	1.18	2.83	4496.18	0.642
1379-TCDD	25.40		0.8876	0.8871	-0.8	7.73E+04	0.77	Y	1.18	1.03	4496.18	0.642
1369-TCDD	NotFnd		0.9023						1.18		4496.18	0.642
1469-TCDD	26.59		0.9291	0.9285	-1.0	2.72E+05	0.86	Y	1.18	3.62	4496.18	0.642
1247/1246/1248/1249-TCDD	26.83	EMPC	0.9373	0.9367	-1.0	9.57E+04	0.99	N	1.18	1.28	4496.18	0.642
1378-TCDD	27.02	EMPC	0.9440	0.9436	-0.6	1.32E+05	0.95	N	1.18	1.76	4496.18	0.642
1268-TCDD	NotFnd		0.9506						1.18		4496.18	0.642
1478-TCDD	27.47		0.9591	0.9591	0	1.39E+05	0.78	Y	1.18	1.85	4496.18	0.642
1279-TCDD	NotFnd		0.9649						1.18		4496.18	0.642
1234/1269-TCDD	NotFnd		0.9771						1.18		4496.18	0.642
1236-TCDD	NotFnd		0.9820						1.18		4496.18	0.642
1237/1238-TCDD	28.37		0.9908	0.9907	-0.2	6.21E+05	0.84	Y	1.18	8.28	4496.18	0.642
1239-TCDD	NotFnd		0.9954						1.18		4496.18	0.642
2378-TCDD	**28.66**		**1.0008**	1.0008	**0**	3.85E+07	0.79	Y	**1.18**	**513**	**4496.18**	**0.642**
1278-TCDD	28.98		1.0121	1.0120	-0.2	3.64E+06	0.83	Y	1.18	48.5	4496.18	0.642
1267-TCDD	NotFnd		1.0167						1.18		4496.18	0.642
1289-TCDD	NotFnd		1.0341						1.18		4496.18	0.642
12479/12468-PeCDD	31.47	J EMPC	0.9273	0.9272	-0.2	1.38E+05	1.22	N	1.04	2.34	3626.801	0.562
12469-PeCDD	32.00	EMPC	0.9430	0.9427	-0.6	1.53E+05	1.24	N	1.04	2.59	3626.801	0.562
12368-PeCDD	32.55	J EMPC	0.9592	0.9589	-0.6	7.54E+04	1.90	N	1.04	1.28	3626.801	0.562
12478-PeCDD	32.73	J	0.9647	0.9644	-0.6	7.10E+04	1.43	Y	1.04	1.2	3626.801	0.562
12379-PeCDD	32.83	J EMPC	0.9676	0.9673	-0.6	2.24E+04	4.20	N	1.04	0.38	3626.801	0.562
12369/12467/12489-PeCDD	33.09	J	0.9752	0.9750	-0.4	6.75E+04	1.34	Y	1.04	1.14	3626.801	0.562
12346/12347-PeCDD	NotFnd		0.9860						1.04		3626.801	0.562
12378-PeCDD	33.96	EMPC	**1.0006**	**1.0006**	**0**	**2.85E+05**	**1.25**	**N**	**1.04**	**4.81**	**3626.801**	**0.562**
12367-PeCDD	NotFnd		1.0034						1.04		3626.801	0.562
12389-PeCDD	NotFnd		1.0134						1.04		3626.801	0.562
124679/124689-HxCDD	36.10		0.9545	0.9542	-0.6	1.57E+06	1.24	Y	1.10	27.5	3656.305	0.585
123468-HxCDD	36.75		0.9715	0.9714	-0.2	1.61E+05	1.16	Y	1.10	2.82	3656.305	0.585
123679/123689-HxCDD	37.05		0.9793	0.9794	+0.2	8.02E+05	1.21	Y	1.10	14	3656.305	0.585
123469-HxCDD	37.17	J EMPC	0.9829	0.9825	-0.9	7.68E+04	1.63	N	1.10	1.34	3656.305	0.585
123478-HxCDD	37.85	J	**1.0004**	**1.0004**	**0**	**8.38E+04**	**1.33**	**Y**	1.09	**1.55**	**3656.305**	**0.588**
123678-HxCDD	37.96		**1.0034**	**1.0034**	**0**	**2.54E+05**	**1.16**	**Y**	1.15	**4.16**	**3656.305**	**0.576**
123467-HxCDD	NotFnd		1.0082						1.10		3656.305	0.585
123789-HxCDD	38.24		**1.0109**	**1.0108**	**-0.2**	**1.57E+05**	**1.26**	**Y**	1.05	**2.77**	**3656.305**	**0.593**

Lab ID: B5971_18819_DF_003 **Acq'd:** 20 Jan 2022 16:11 DTF **Wt/Vol:** 10.03 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-4H1 **UTP:** 21-Jan-2022 12:41:59 MLS **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 209-493-PMH

Datafile: 220120C08 **Report:** 21 Jan 2022 12:48 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

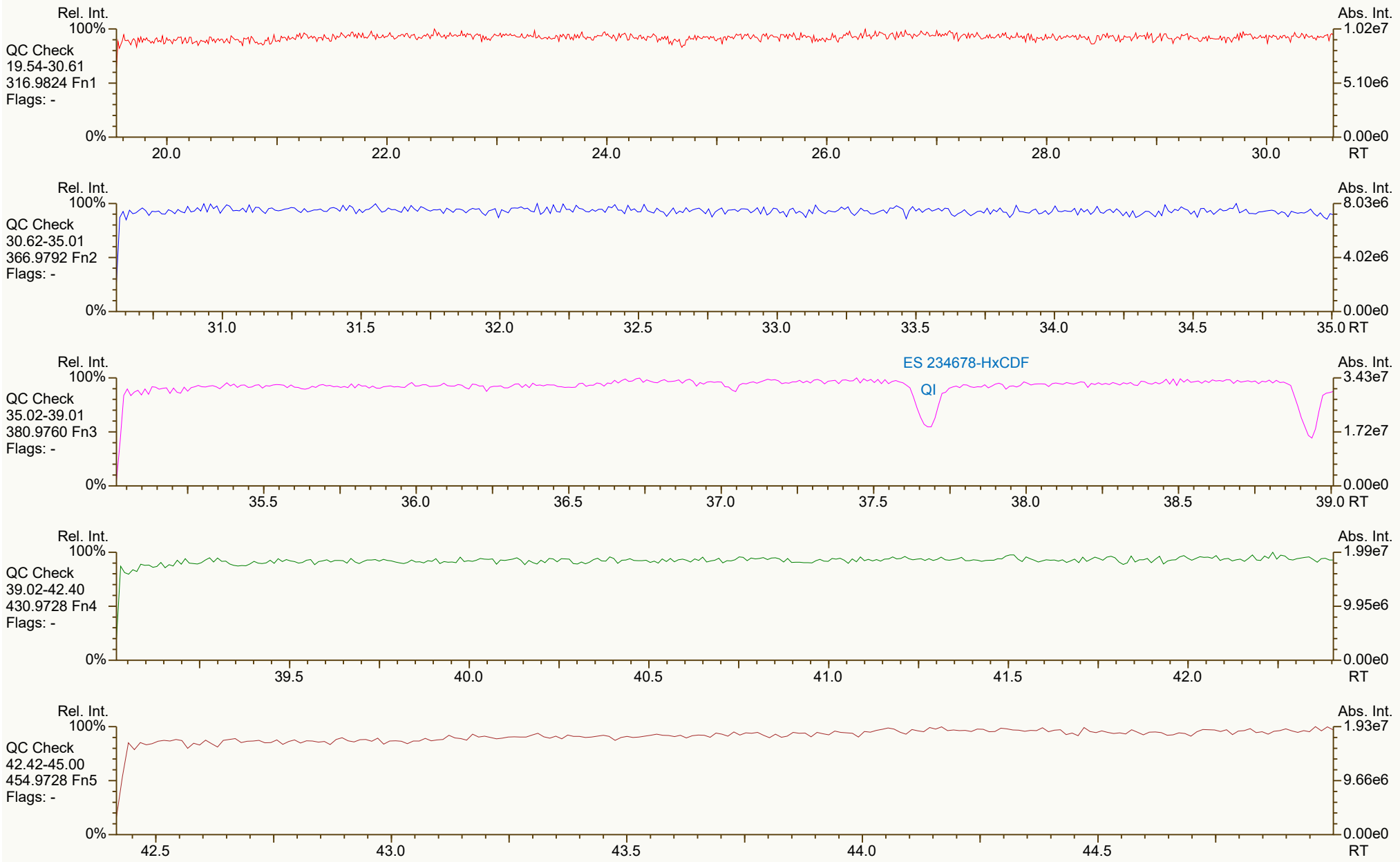
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.19		0.9838	0.9837	-0.2	7.27E+06	1.06	Y	1.06	139	3904.829	0.65
1234678-HpCDD	**40.87**		**1.0003**	**1.0003**	**0**	**4.89E+06**	**1.06**	**Y**	**1.06**	**93.6**	**3904.829**	**0.65**
OCDD	**43.51**		**1.0002**	**1.0003**	**+0.3**	**5.11E+07**	**0.91**	**Y**	**1.13**	**1,530**	**2619.901**	**0.816**
OCDD-a	43.51		1.0002	1.0002	0	3.37E+06	2.35	Y	0.07	1,580	3604.246	17.6
1368-TCDF	22.99		0.8282	0.8273	-1.2	1.29E+05	0.69	Y	1.08	1.17	5543.105	0.53
1468-TCDF	23.56		0.8485	0.8478	-1.0	3.78E+05	0.84	Y	1.08	3.42	5543.105	0.53
2468-TCDF	24.18		0.8709	0.8700	-1.3	5.24E+05	0.81	Y	1.08	4.75	5543.105	0.53
1346/1246-TCDF	24.56		0.8829	0.8837	+1.2	2.06E+05	0.76	Y	1.08	1.87	5543.105	0.53
1347/1378/1247-TCDF	24.70		0.8884	0.8888	+0.6	2.05E+06	0.82	Y	1.08	18.5	5543.105	0.53
1348-TCDF	24.93	EMPC	0.8980	0.8972	-1.2	4.23E+05	1.15	N	1.08	3.83	5543.105	0.53
1248/1367/1379-TCDF	25.03		0.9026	0.9008	-2.7	8.51E+06	0.78	Y	1.08	77	5543.105	0.53
1268-TCDF	25.44		0.9158	0.9154	-0.6	3.03E+06	0.82	Y	1.08	27.4	5543.105	0.53
1467-TCDF	25.57		0.9206	0.9203	-0.5	4.58E+05	0.88	Y	1.08	4.14	5543.105	0.53
1478-TCDF	25.74		0.9266	0.9263	-0.5	7.21E+06	0.77	Y	1.08	65.3	5543.105	0.53
1369/1237-TCDF	26.11		0.9397	0.9397	0	1.96E+06	0.84	Y	1.08	17.7	5543.105	0.53
2467-TCDF	NotFnd		0.9440						1.08		5543.105	0.53
2368-TCDF	26.38		0.9497	0.9494	-0.5	5.06E+06	0.80	Y	1.08	45.8	5543.105	0.53
1238/1234/1678/1469/1236-TCDF	26.46		0.9528	0.9521	-1.1	8.51E+06	0.78	Y	1.08	77.1	5543.105	0.53
1278-TCDF	26.92		0.9690	0.9688	-0.3	7.66E+07	0.80	Y	1.08	693	5543.105	0.53
1349-TCDF	NotFnd		0.9730						1.08		5543.105	0.53
1267-TCDF	27.19		0.9787	0.9785	-0.3	4.31E+06	0.77	Y	1.08	39	5543.105	0.53
2346/1249-TCDF	NotFnd		0.9850						1.08		5543.105	0.53
2347/1279-TCDF	27.59		0.9929	0.9927	-0.3	2.07E+06	0.76	Y	1.08	18.7	5543.105	0.53
2348-TCDF	27.70		0.9970	0.9966	-0.7	1.17E+07	0.77	Y	1.08	106	5543.105	0.53
2378-TCDF	**27.81**	E	**1.0008**	**1.0008**	**0**	**1.58E+08**	**0.80**	**Y**	**1.08**	**1,430**	**5543.105**	**0.53**
2367/3467-TCDF	28.16		1.0136	1.0134	-0.3	1.31E+07	0.80	Y	1.08	118	5543.105	0.53
1269-TCDF	28.41		1.0221	1.0222	+0.2	2.58E+06	0.78	Y	1.08	23.3	5543.105	0.53
1239-TCDF	NotFnd		1.0319						1.08		5543.105	0.53
1289-TCDF	29.80		1.0740	1.0724	-2.9	1.32E+07	0.80	Y	1.08	119	5543.105	0.53
13468/12468-PeCDF	29.73		0.9145	0.9148	+0.5	9.17E+05	1.58	Y	1.02	9.5	3730.383	0.351
13678/13467/12467-PeCDF	31.27	J EMPC	0.9619	0.9620	+0.2	1.52E+05	1.84	N	1.02	1.58	5958.395	0.561
12368/13478/12478-PeCDF	31.43		0.9665	0.9669	+0.8	2.34E+06	1.62	Y	1.02	24.2	5958.395	0.561
14678-PeCDF	31.53	J EMPC	0.9695	0.9699	+0.8	6.42E+04	0.98	N	1.02	0.665	5958.395	0.561
13479-PeCDF	NotFnd		0.9724						1.02		5958.395	0.561
13469/12479-PeCDF	NotFnd		0.9801						1.02		5958.395	0.561
12346-PeCDF	NotFnd		0.9842						1.02		5958.395	0.561

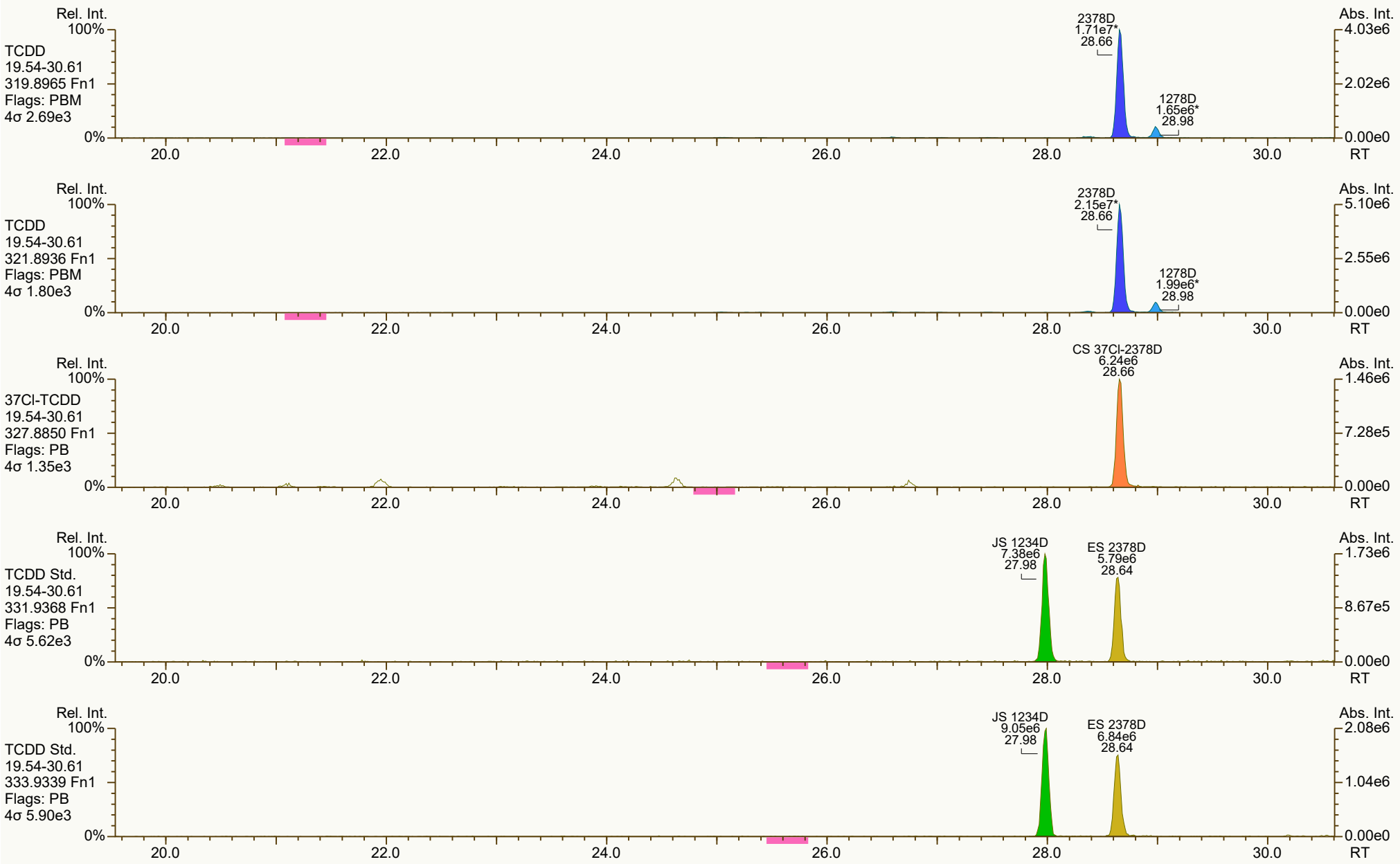
Lab ID: B5971_18819_DF_003 **Acq'd: 20 Jan 2022 16:11 DTF** **Wt/Vol: 10.03 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-SPS-SW-B-4H1 **UTP: 21-Jan-2022 12:41:59 MLS** **J-level: 0.498 pg/g** **Split: 1** **Checkcode: 209-493-PMH**

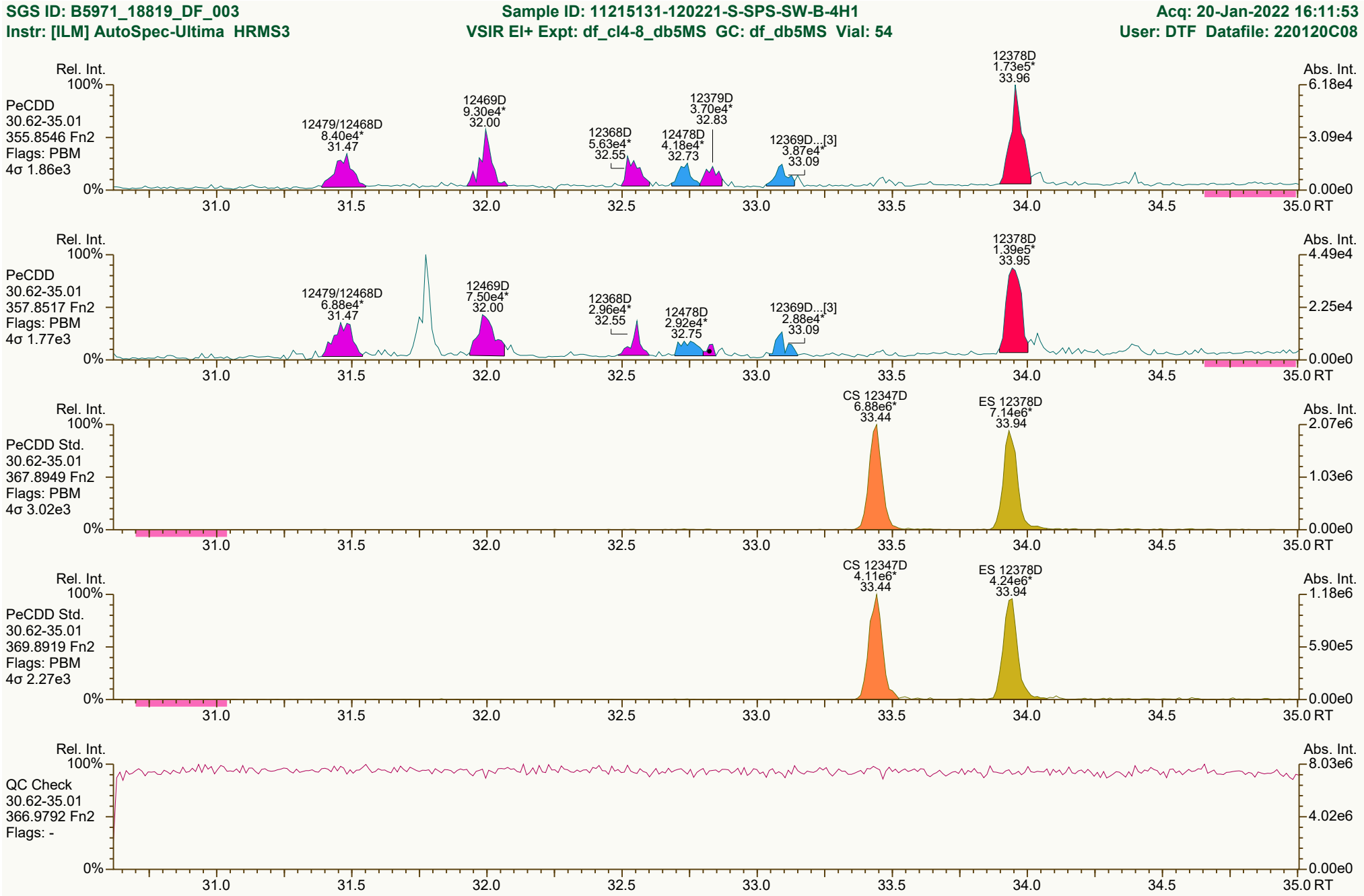
Datafile: 220120C08 **Report: 21 Jan 2022 12:48 MS** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.07		0.9868	0.9868	0	2.41E+05	1.45	Y	1.02	2.5	5958.395	0.561
12347-PeCDF	32.15	J	0.9895	0.9891	-0.8	1.66E+05	1.77	Y	1.02	1.72	5958.395	0.561
12348-PeCDF	32.31		0.9941	0.9940	-0.2	4.84E+05	1.52	Y	1.02	5.01	5958.395	0.561
12378-PeCDF	**32.52**		**1.0005**	**1.0005**	**0**	**4.14E+06**	**1.53**	**Y**	**1.02**	**42.5**	**5958.395**	**0.583**
12678/12367-PeCDF	32.81		1.0090	1.0095	+1.0	1.42E+06	1.64	Y	1.02	14.7	5958.395	0.561
12379-PeCDF	NotFnd		1.0142						1.02		5958.395	0.561
12679-PeCDF	NotFnd		0.9931						1.02		5958.395	0.561
23467/12369-PeCDF	33.49	J	0.9966	0.9965	-0.2	1.10E+05	1.38	Y	1.02	1.14	5958.395	0.561
23478-PeCDF	**33.63**		**1.0005**	**1.0006**	**+0.2**	**3.51E+06**	**1.62**	**Y**	**1.02**	**36.7**	**5958.395**	**0.538**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		5958.395	0.561
12349-PeCDF	NotFnd		1.0101						1.02		5958.395	0.561
12389-PeCDF	34.69	J	1.0322	1.0322	0	2.24E+05	1.77	Y	1.02	2.32	5958.395	0.561
123468-HxCDF	35.46		0.9627	0.9629	+0.4	3.18E+05	1.28	Y	1.19	3.76	4829.96	0.503
124678/134678-HxCDF	35.65		0.9684	0.9682	-0.4	1.30E+06	1.33	Y	1.19	15.4	4829.96	0.503
134679-HxCDF	NotFnd		0.9747						1.19		4829.96	0.503
124679-HxCDF	NotFnd		0.9802						1.19		4829.96	0.503
124689-HxCDF	36.30		0.9858	0.9858	0	1.07E+06	1.24	Y	1.19	12.7	4829.96	0.503
123467-HxCDF	36.72	J	0.9972	0.9971	-0.2	1.02E+05	1.35	Y	1.19	1.21	4829.96	0.503
123478-HxCDF	**36.84**		**1.0004**	**1.0005**	**+0.2**	**6.15E+06**	**1.32**	**Y**	**1.27**	**68.1**	**4829.96**	**0.45**
123678-HxCDF	**36.99**		**1.0004**	**1.0004**	**0**	**1.87E+06**	**1.25**	**Y**	**1.15**	**19.1**	**4829.96**	**0.43**
123479-HxCDF	NotFnd		1.0051						1.19		4829.96	0.503
123469-HxCDF	NotFnd		1.0091						1.19		4829.96	0.503
123679-HxCDF	NotFnd		0.9943						1.19		4829.96	0.503
234678-HxCDF	**37.67**		**1.0004**	**1.0005**	**+0.2**	**2.93E+05**	**1.25**	**Y**	**1.19**	**4.04**	**4829.96**	**0.609**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4829.96	0.503
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**4829.96**	**0.559**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.62		1.0007	1.0009	+0.5	4.39E+05	1.20	Y	1.19	5.19	4829.96	0.503
1234678-HpCDF	**39.94**		**1.0002**	**1.0003**	**+0.2**	**5.17E+06**	**1.04**	**Y**	**1.37**	**63.2**	**2225.7**	**0.217**
1234679-HpCDF	40.20		1.0067	1.0067	0	2.16E+05	0.93	Y	1.34	2.94	2225.7	0.252
1234689-HpCDF	40.34		1.0101	1.0102	+0.2	2.73E+06	1.03	Y	1.34	37.1	2225.7	0.252
1234789-HpCDF	**41.33**		**1.0003**	**1.0002**	**-0.2**	**6.21E+05**	**1.00**	**Y**	**1.31**	**9.46**	**2225.7**	**0.294**
OCDF	**43.70**		**1.0002**	**1.0003**	**+0.3**	**5.62E+07**	**0.90**	**Y**	**1.07**	**1,130**	**3619.787**	**0.764**
OCDF-a	43.70		1.0002	1.0002	0	3.65E+06	2.44	Y	0.07	1,180	3504.842	11.9

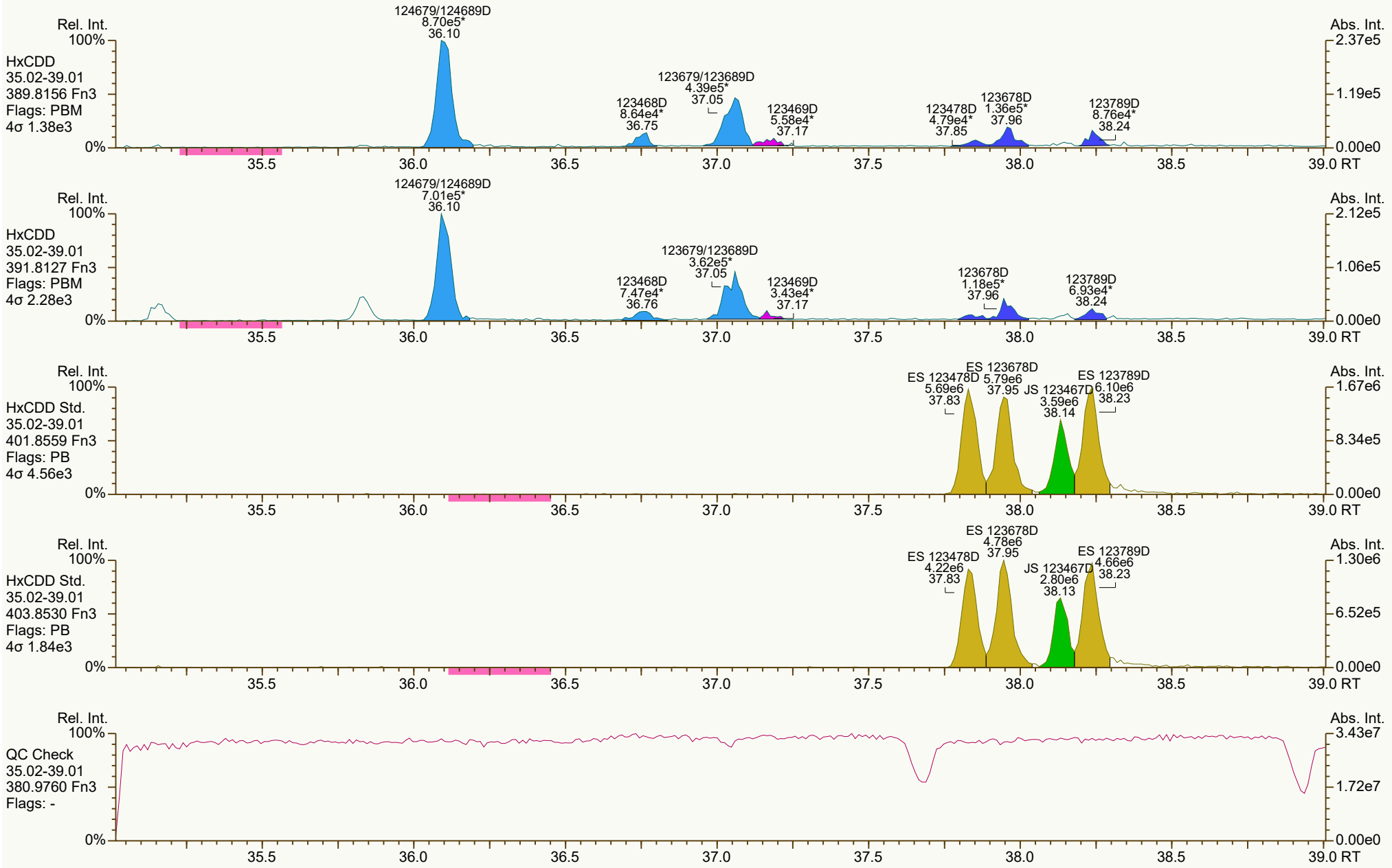

Rel. Int.
100%
0%
Abs. Int.
1.02e7
5.10e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.03e6
4.02e6
0.00e0
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.43e7
1.72e7
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
ES 234678-HxCDF
QI
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.99e7
9.95e6
0.00e0
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.93e7
9.66e6
0.00e0
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
42.5
43.0
43.5
44.0
44.5
RT

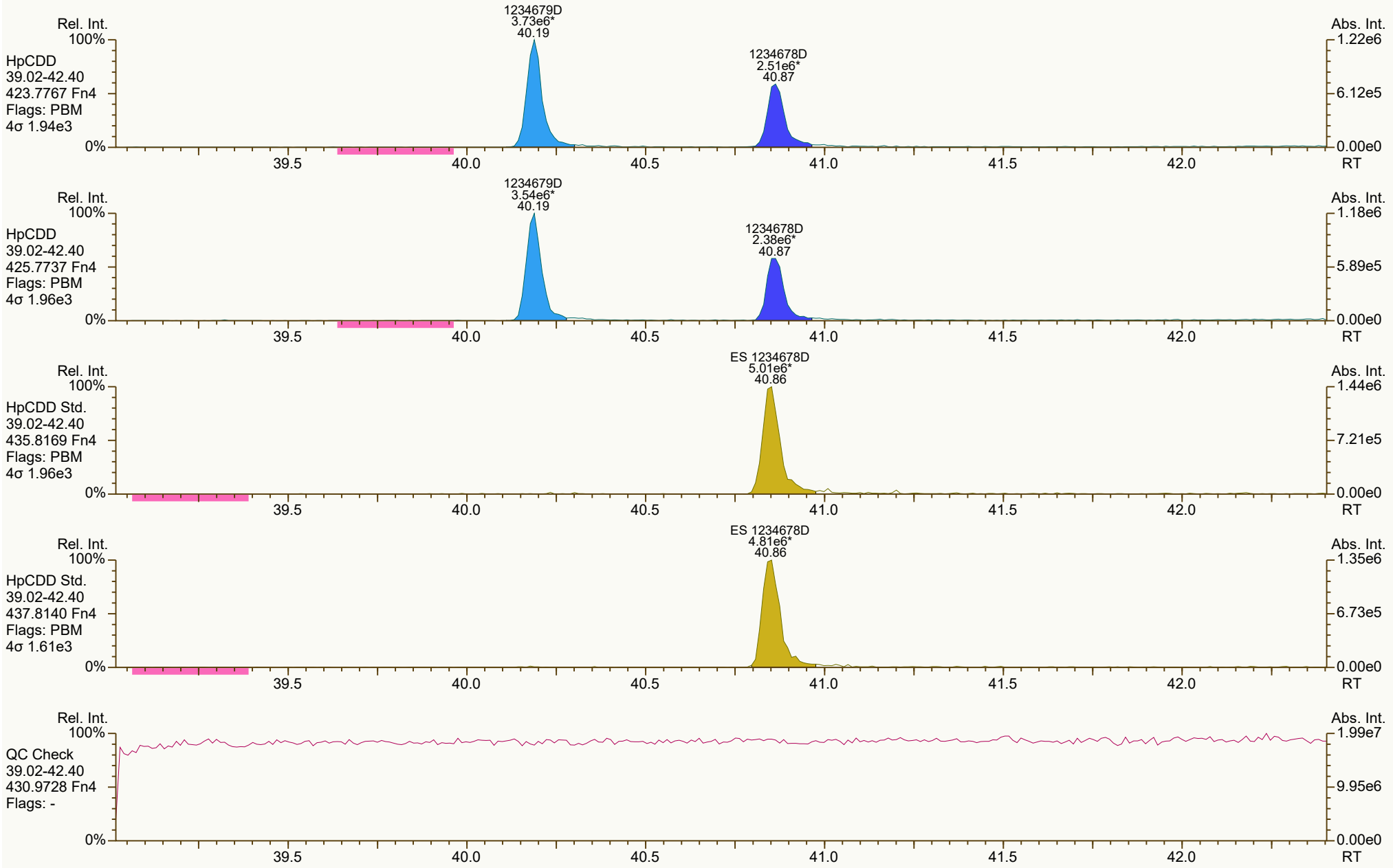

Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 2.69e3
0%
2378D
1.71e7*
28.66
1278D
1.65e6*
28.98
Abs. Int.
4.03e6
2.02e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.80e3
0%
2378D
2.15e7*
28.66
1278D
1.99e6*
28.98
Abs. Int.
5.10e6
2.55e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.35e3
0%
CS 37Cl-2378D
6.24e6
28.66
Abs. Int.
1.46e6
7.28e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 5.62e3
0%
JS 1234D
7.38e6
27.98
ES 2378D
5.79e6
28.64
Abs. Int.
1.73e6
8.67e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 5.90e3
0%
JS 1234D
9.05e6
27.98
ES 2378D
6.84e6
28.64
Abs. Int.
2.08e6
1.04e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

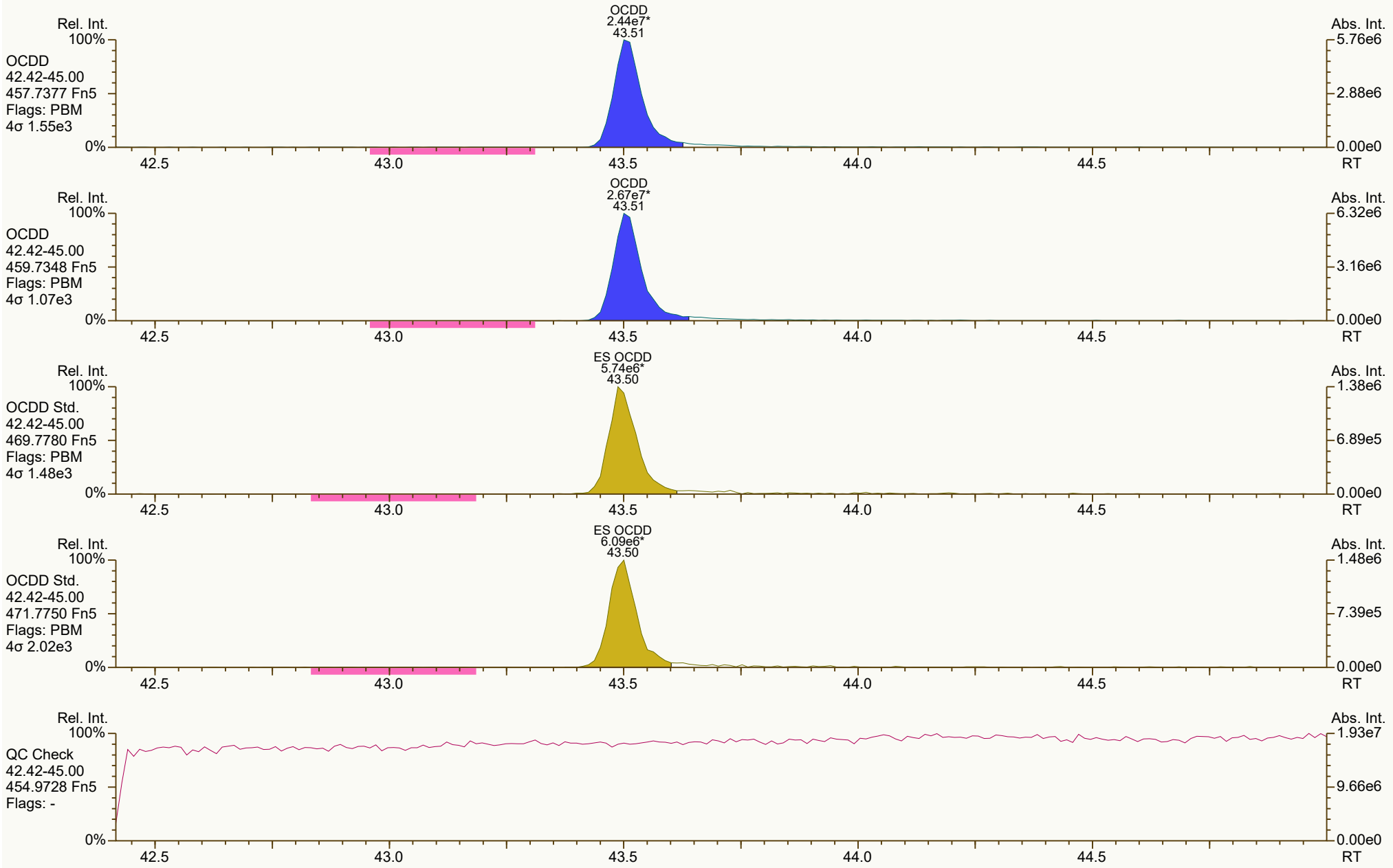
SGS ID: B5971_18819_DF_003 | Sample ID: 11215131-120221-S-SPS-SW-B-4H1 | Acq: 20-Jan-2022 16:11:53
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54 | User: DTF Datafile: 220120C08

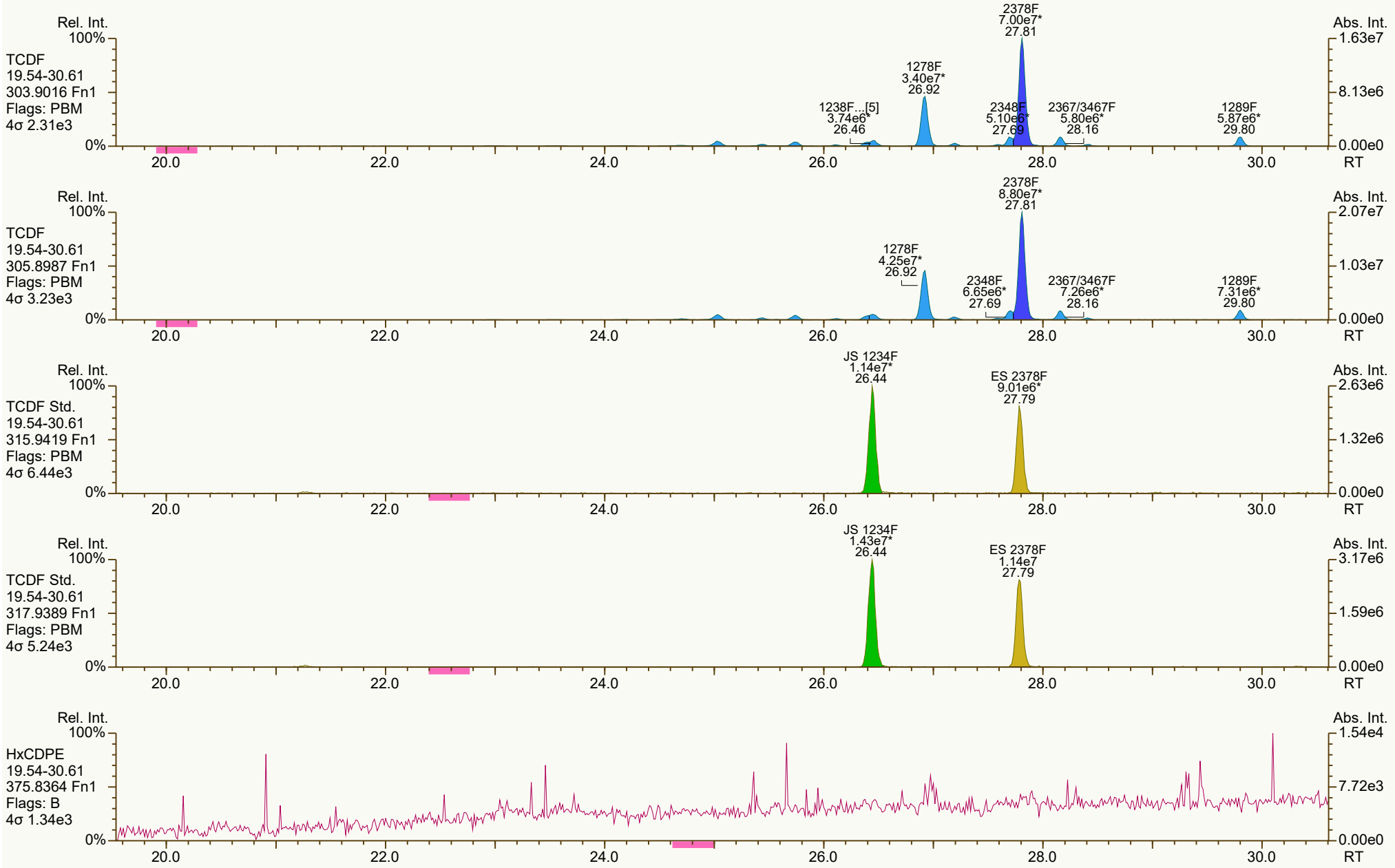


Results: P:\B5900_B5999\B5971\B5971_18819 DF\Resources\B5971_18819_DF_003.utp_res, saved 21-Jan-2022 12:41 (MLS) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 8746, 1663 scc: 209-493 | PKD: 21-Jan-2022 12:28 Printed: 21-Jan-2022 13:00 Page 3 of 12


Rel. Int.
100%
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.38e3
124679/124689D
8.70e5*
36.10
123468D
8.64e4*
36.75
123679/123689D
4.39e5*
37.05
123469D
5.58e4*
37.17
123478D
4.79e4*
37.85
123678D
1.36e5*
37.96
123789D
8.76e4*
38.24
Abs. Int.
2.37e5
1.19e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 2.28e3
124679/124689D
7.01e5*
36.10
123468D
7.47e4*
36.76
123679/123689D
3.62e5*
37.05
123469D
3.43e4*
37.17
123678D
1.18e5*
37.96
123789D
6.93e4*
38.24
Abs. Int.
2.12e5
1.06e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PB
4σ 4.56e3
ES 123478D
5.69e6
37.83
ES 123678D
5.79e6
37.95
JS 123467D
3.59e6
38.14
ES 123789D
6.10e6
38.23
Abs. Int.
1.67e6
8.34e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PB
4σ 1.84e3
ES 123478D
4.22e6
37.83
ES 123678D
4.78e6
37.95
JS 123467D
2.80e6
38.13
ES 123789D
4.66e6
38.23
Abs. Int.
1.30e6
6.52e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
Abs. Int.
3.43e7
1.72e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

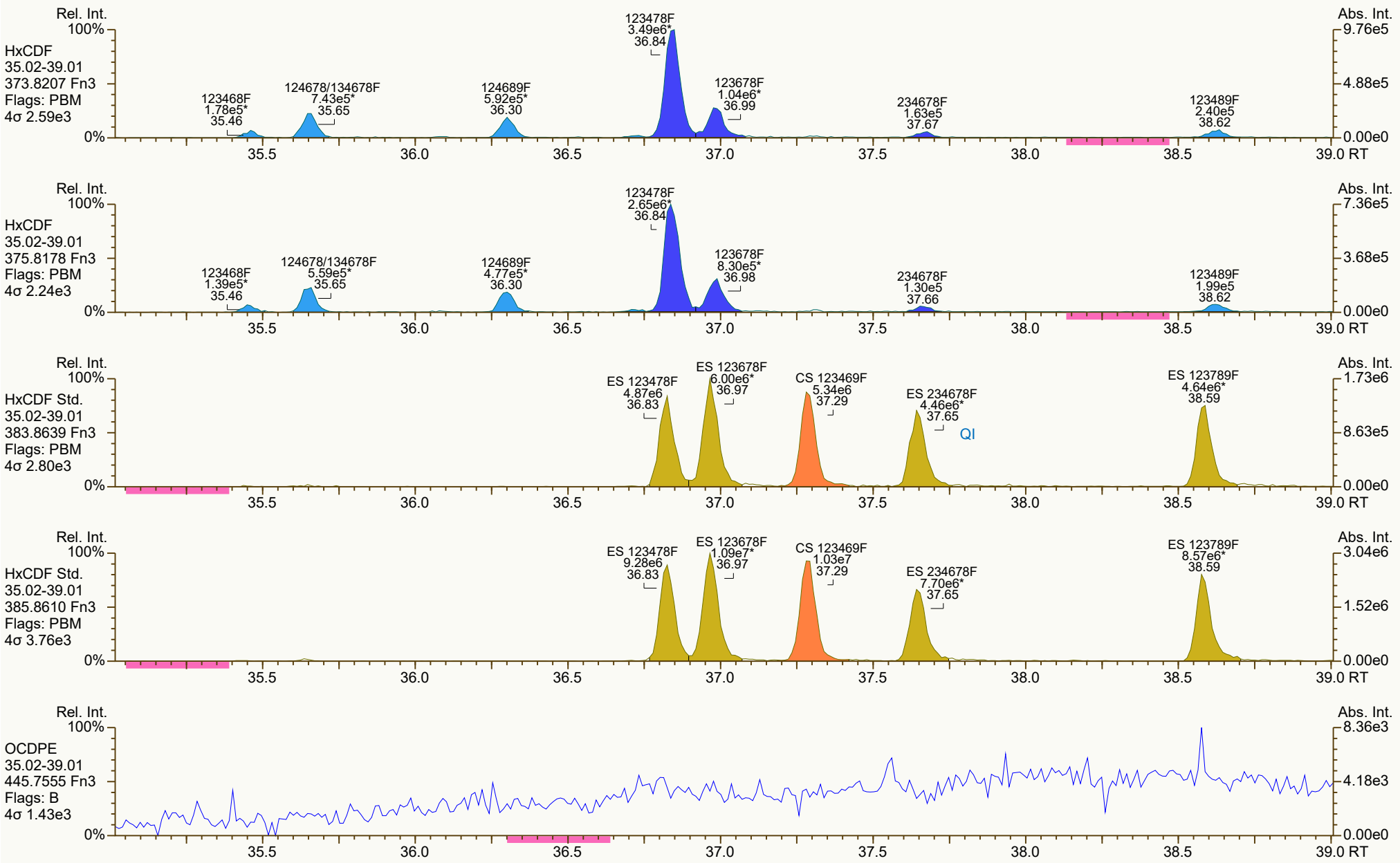

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 1.94e3
1234679D
3.73e6*
40.19
1234678D
2.51e6*
40.87
Abs. Int.
1.22e6
6.12e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.96e3
1234679D
3.54e6*
40.19
1234678D
2.38e6*
40.87
Abs. Int.
1.18e6
5.89e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 1.96e3
ES 1234678D
5.01e6*
40.86
Abs. Int.
1.44e6
7.21e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.61e3
ES 1234678D
4.81e6*
40.86
Abs. Int.
1.35e6
6.73e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.99e7
9.95e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

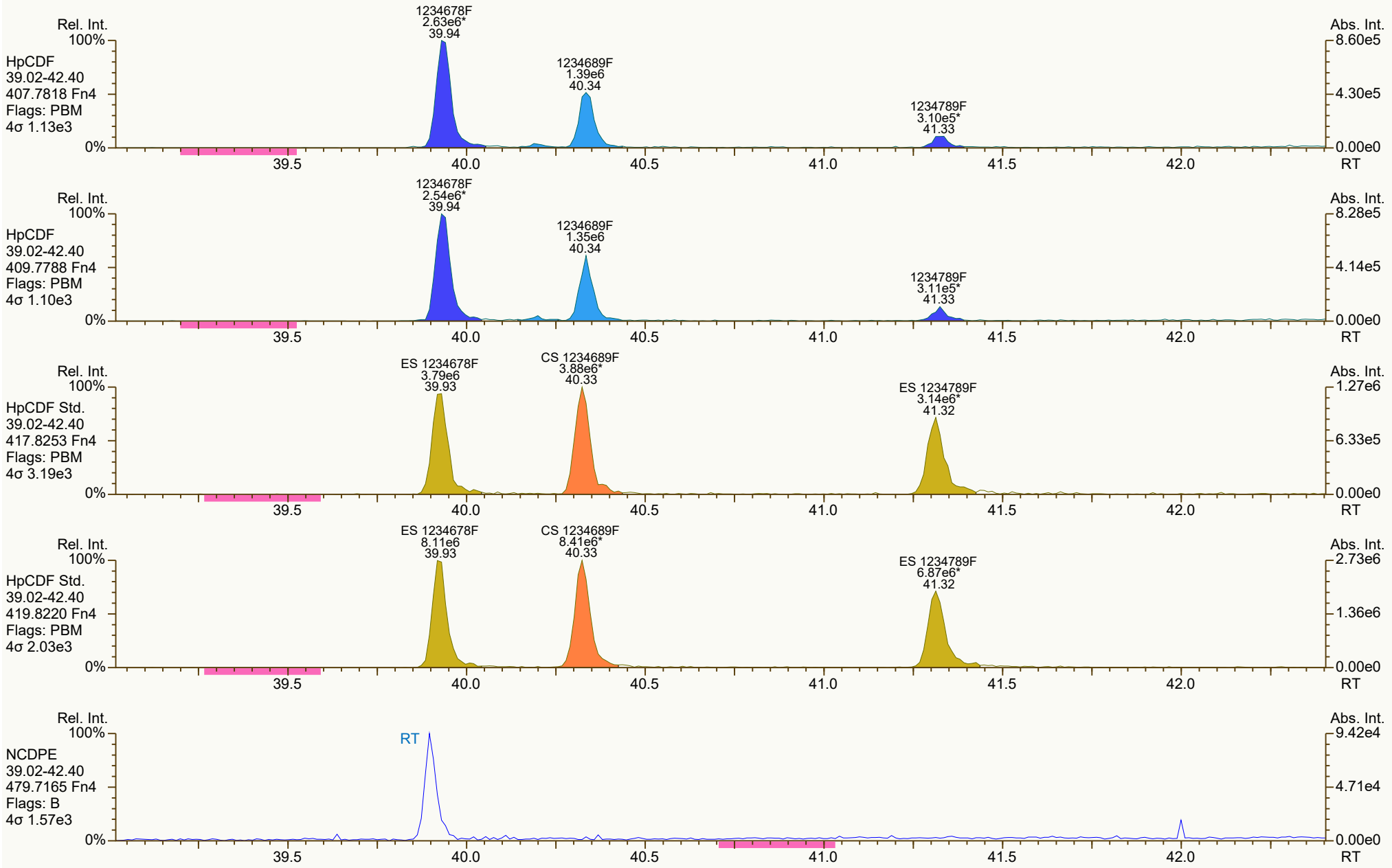

OCDD
2.44e7*
43.51
Rel. Int.
100%
OCDD
42.42-45.00
457.7377 Fn5
Flags: PBM
4σ 1.55e3
0%
Abs. Int.
5.76e6
2.88e6
0.00e0
42.5
43.0
43.5
44.0
44.5
RT
OCDD
2.67e7*
43.51
OCDD
42.42-45.00
459.7348 Fn5
Flags: PBM
4σ 1.07e3
6.32e6
3.16e6
ES OCDD
5.74e6*
43.50
OCDD Std.
42.42-45.00
469.7780 Fn5
Flags: PBM
4σ 1.48e3
1.38e6
6.89e5
ES OCDD
6.09e6*
43.50
OCDD Std.
42.42-45.00
471.7750 Fn5
Flags: PBM
4σ 2.02e3
1.48e6
7.39e5
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
1.93e7
9.66e6

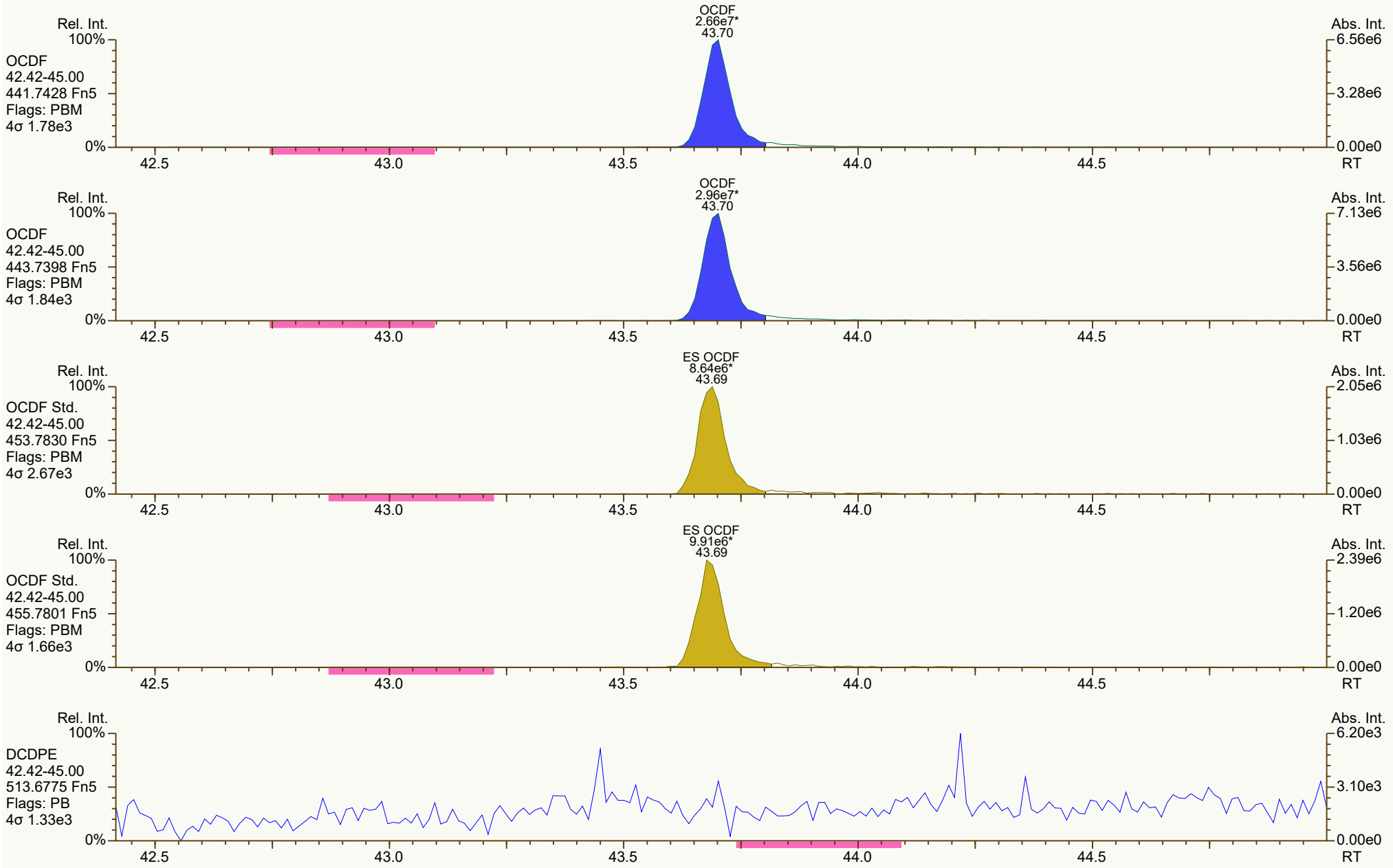

Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 2.31e3
0%
2378F
7.00e7*
27.81
1278F
3.40e7*
26.92
1238F...[5]
3.74e6*
26.46
2348F
5.10e6*
27.69
2367/3467F
5.80e6*
28.16
1289F
5.87e6*
29.80
Abs. Int.
1.63e7
8.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 3.23e3
0%
2378F
8.80e7*
27.81
1278F
4.25e7*
26.92
2348F
6.65e6*
27.69
2367/3467F
7.26e6*
28.16
1289F
7.31e6*
29.80
Abs. Int.
2.07e7
1.03e7
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 6.44e3
0%
JS 1234F
1.14e7*
26.44
ES 2378F
9.01e6*
27.79
Abs. Int.
2.63e6
1.32e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 5.24e3
0%
JS 1234F
1.43e7*
26.44
ES 2378F
1.14e7
27.79
Abs. Int.
3.17e6
1.59e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.34e3
0%
Abs. Int.
1.54e4
7.72e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.59e5
7.94e4
0.00e0
13468/12468F
5.61e5*
29.73
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PBM
4σ 1.77e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.68e4
4.84e4
0.00e0
13468/12468F
3.56e5
29.73
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PB
4σ 1.96e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.02e7
5.10e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
Abs. Int.
PeCDF-2
30.62-35.01
339.8597 Fn2
Flags: PBM
4σ 2.61e3
12368F...[3] 1.45e6* 31.43
23468/12469F 1.42e5* 32.07
12348F 2.91e5 32.31
12378F 2.50e6 32.52
12678/12367F 8.80e5 32.81
23478F 2.17e6* 33.63
12389F 1.43e5 34.69
6.94e5
3.47e5
0.00e0
PeCDF-2
30.62-35.01
341.8568 Fn2
Flags: PBM
4σ 3.35e3
12368F...[3] 8.92e5* 31.43
14678F 4.00e4* 31.52
23468/12469F 9.84e4* 32.07
12348F 1.92e5 32.31
12378F 1.63e6 32.52
12678/12367F 5.36e5 32.81
23478F 1.34e6* 33.63
4.38e5
2.19e5
0.00e0
PeCDF Std.
30.62-35.01
351.9000 Fn2
Flags: PBM
4σ 2.93e3
CS 12346F 1.20e7* 31.97
ES 12378F 1.15e7* 32.50
ES 23478F 1.15e7 33.61
3.32e6
1.66e6
0.00e0
PeCDF Std.
30.62-35.01
353.8970 Fn2
Flags: PBM
4σ 2.17e3
CS 12346F 7.57e6* 31.97
ES 12378F 7.40e6* 32.50
ES 23478F 7.21e6 33.61
2.06e6
1.03e6
0.00e0
HpCDPE
30.62-35.01
409.7974 Fn2
Flags: PB
4σ 1.27e3
1.03e4
5.14e3
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 2.59e3
123468F 1.78e5* 35.46
124678/134678F 7.43e5* 35.65
124689F 5.92e5* 36.30
123478F 3.49e6* 36.84
123678F 1.04e6* 36.99
234678F 1.63e5 37.67
123489F 2.40e5 38.62
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.24e3
123468F 1.39e5* 35.46
124678/134678F 5.59e5* 35.65
124689F 4.77e5* 36.30
123478F 2.65e6* 36.84
123678F 8.30e5* 36.98
234678F 1.30e5 37.66
123489F 1.99e5 38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 2.80e3
ES 123478F 4.87e6 36.83
ES 123678F 6.00e6* 36.97
CS 123469F 5.34e6 37.29
ES 234678F 4.46e6* 37.65
QI
ES 123789F 4.64e6* 38.59
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 3.76e3
ES 123478F 9.28e6 36.83
ES 123678F 1.09e7* 36.97
CS 123469F 1.03e7 37.29
ES 234678F 7.70e6* 37.65
ES 123789F 8.57e6* 38.59
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.43e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
9.76e5
4.88e5
0.00e0
7.36e5
3.68e5
1.73e6
8.63e5
3.04e6
1.52e6
8.36e3
4.18e3


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 1.13e3
1234678F
2.63e6*
39.94
1234689F
1.39e6
40.34
1234789F
3.10e5*
41.33
Abs. Int.
8.60e5
4.30e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.10e3
1234678F
2.54e6*
39.94
1234689F
1.35e6
40.34
1234789F
3.11e5*
41.33
Abs. Int.
8.28e5
4.14e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 3.19e3
ES 1234678F
3.79e6
39.93
CS 1234689F
3.88e6*
40.33
ES 1234789F
3.14e6*
41.32
Abs. Int.
1.27e6
6.33e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.03e3
ES 1234678F
8.11e6
39.93
CS 1234689F
8.41e6*
40.33
ES 1234789F
6.87e6*
41.32
Abs. Int.
2.73e6
1.36e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.57e3
RT
Abs. Int.
9.42e4
4.71e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.00
441.7428 Fn5
Flags: PBM
4σ 1.78e3
0%
OCDF
2.66e7*
43.70
Abs. Int.
6.56e6
3.28e6
0.00e0
42.5
43.0
43.5
44.0
44.5
RT
Rel. Int.
100%
OCDF
42.42-45.00
443.7398 Fn5
Flags: PBM
4σ 1.84e3
0%
OCDF
2.96e7*
43.70
Abs. Int.
7.13e6
3.56e6
0.00e0
42.5
43.0
43.5
44.0
44.5
RT
Rel. Int.
100%
OCDF Std.
42.42-45.00
453.7830 Fn5
Flags: PBM
4σ 2.67e3
0%
ES OCDF
8.64e6*
43.69
Abs. Int.
2.05e6
1.03e6
0.00e0
42.5
43.0
43.5
44.0
44.5
RT
Rel. Int.
100%
OCDF Std.
42.42-45.00
455.7801 Fn5
Flags: PBM
4σ 1.66e3
0%
ES OCDF
9.91e6*
43.69
Abs. Int.
2.39e6
1.20e6
0.00e0
42.5
43.0
43.5
44.0
44.5
RT
Rel. Int.
100%
DCDPE
42.42-45.00
513.6775 Fn5
Flags: PB
4σ 1.33e3
0%
Abs. Int.
6.20e3
3.10e3
0.00e0
42.5
43.0
43.5
44.0
44.5
RT

Lab ID: B5971_18819_DF_005 **Acq'd:** 20 Jan 2022 16:58 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-SPS-SW-B-5H **UTP:** 21-Jan-2022 12:42:00 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 972-223-LQZ

Datafile: 220120C09 **Report:** 21 Jan 2022 12:48 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.65		1.0008	1.0008	0	1.58E+07	0.82	Y	1.18	194	4822.069	0.609
12378-PeCDD	33.95		1.0006	1.0004	-0.4	1.85E+05	1.61	Y	1.04	2.76	3030.886	0.411
123478-HxCDD	37.83	J EMPC	1.0004	1.0002	-0.5	8.08E+04	2.16	N	1.09	1.35	6700.823	1.02
123678-HxCDD	37.95		1.0034	1.0033	-0.2	4.42E+05	1.32	Y	1.15	6.86	6700.823	0.948
123789-HxCDD	38.23		1.0109	1.0108	-0.2	2.75E+05	1.30	Y	1.05	4.24	6700.823	0.978
1234678-HpCDD	40.86		1.0003	1.0003	0	8.97E+06	1.05	Y	1.06	162	4033.144	0.583
OCDD	43.51		1.0002	1.0003	+0.3	1.03E+08	0.91	Y	1.13	2,560	4271.051	1.04
2378-TCDF	27.80		1.0008	1.0008	0	7.02E+07	0.80	Y	1.08	579	5654.439	0.504
12378-PeCDF	32.51		1.0005	1.0005	0	1.91E+06	1.52	Y	1.02	17.9	6367.939	0.573
23478-PeCDF	33.63	PR	1.0005	1.0008	+0.6	1.83E+06	1.63	Y	1.02	17.6	6367.939	0.535
123478-HxCDF	36.84		1.0004	1.0004	0	2.69E+06	1.34	Y	1.27	26.9	4847.818	0.437
123678-HxCDF	36.97		1.0004	1.0004	0	8.52E+05	1.22	Y	1.15	8.21	4847.818	0.4
234678-HxCDF	37.66		1.0004	1.0005	+0.2	2.97E+05	1.32	Y	1.19	4	4847.818	0.613
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	4847.818	0.5
1234678-HpCDF	39.93		1.0002	1.0003	+0.2	7.83E+06	1.05	Y	1.37	87.7	3434.15	0.277
1234789-HpCDF	41.32		1.0003	1.0001	-0.5	5.47E+05	1.07	Y	1.31	8.16	3434.15	0.486
OCDF	43.70		1.0002	1.0003	+0.3	1.14E+08	0.88	Y	1.07	2,040	5361.099	1.06

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.63		1.0233	1.0234	+0.2	1.37E+07	0.82	Y	1.05	67.9
ES 12378-PeCDD	33.93		1.2121	1.2129	+1.6	1.28E+07	1.55	Y	0.88	75.7
ES 123478-HxCDD	37.83		0.9921	0.9922	+0.2	1.09E+07	1.29	Y	0.97	78.6
ES 123678-HxCDD	37.94		0.9951	0.9952	+0.2	1.11E+07	1.24	Y	0.94	82.7
ES 123789-HxCDD	38.23		1.0025	1.0026	+0.2	1.22E+07	1.28	Y	1.09	78.8
ES 1234678-HpCDD	40.85		1.0709	1.0714	+1.2	1.03E+07	1.08	Y	0.91	79.4
ES OCDD	43.50		1.1403	1.1409	+1.6	1.41E+07	0.93	Y	0.62	79.4
ES 2378-TCDF	27.78		1.0506	1.0510	+0.7	2.22E+07	0.79	Y	1.06	68.8
ES 12378-PeCDF	32.50		1.2281	1.2293	+2.3	2.06E+07	1.57	Y	0.91	74.3
ES 23478-PeCDF	33.60		1.2698	1.2710	+2.4	2.02E+07	1.54	Y	0.88	74.9
ES 123478-HxCDF	36.82		0.9657	0.9658	+0.2	1.56E+07	0.54	Y	1.20	91.6
ES 123678-HxCDF	36.96		0.9695	0.9694	-0.2	1.78E+07	0.53	Y	1.35	92.7
ES 234678-HxCDF	37.64		0.9874	0.9873	-0.2	1.24E+07	0.54	Y	1.24	70
ES 123789-HxCDF	38.58		1.0116	1.0119	+0.7	1.36E+07	0.52	Y	1.16	82.8
ES 1234678-HpCDF	39.92		1.0467	1.0471	+1.0	1.29E+07	0.43	Y	0.97	93.8
ES 1234789-HpCDF	41.31		1.0830	1.0836	+1.5	1.01E+07	0.45	Y	0.85	83.8
ES OCDF	43.69		1.1451	1.1459	+2.1	2.05E+07	0.92	Y	0.81	89.5

Lab ID: B5971_18819_DF_005 **Acq'd:** 20 Jan 2022 16:58 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-SPS-SW-B-5H **UTP:** 21-Jan-2022 12:42:00 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 972-223-LQZ

Datafile: 220120C09 **Report:** 21 Jan 2022 12:48 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.98		-	-	-	1.93E+07	0.80	Y	-	-	
JS 1234-TCDF	26.43		-	-	-	3.05E+07	0.83	Y	-	-	
JS 123467-HxCDD	38.13		-	-	-	7.10E+06	1.25	Y	-	-	
CS 37Cl-2378-TCDD	28.65		1.0241	1.0242	+0.2	7.09E+06	n/a	-	1.20	76.6	
CS 12347-PeCDD	33.43		1.1943	1.1951	+1.6	1.26E+07	1.64	Y	0.75	87.2	
CS 12346-PeCDF	31.97		1.2083	1.2093	+1.9	2.18E+07	1.64	Y	0.85	83.9	
CS 123469-HxCDF	37.28		0.9778	0.9778	0	1.71E+07	0.53	Y	1.12	108	
CS 1234689-HpCDF	40.32		1.0571	1.0576	+1.2	1.29E+07	0.49	Y	0.89	102	
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0242~~	~~+0.2~~	~~7.09E+06~~	~~n/a~~		~~1.15~~	~~113~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.43~~		~~1.1943~~	~~1.1951~~	~~+1.6~~	~~1.26E+07~~	~~1.64~~	~~Y~~	~~0.86~~	~~115~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.97~~		~~1.2083~~	~~1.2093~~	~~+1.9~~	~~2.18E+07~~	~~1.64~~	~~Y~~	~~0.94~~	~~113~~	
~~SS 123469-HxCDF~~	~~37.28~~		~~0.9778~~	~~0.9778~~	~~0~~	~~1.71E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~116~~	
~~SS 1234689-HpCDF~~	~~40.32~~		~~1.0571~~	~~1.0576~~	~~+1.2~~	~~1.29E+07~~	~~0.49~~	~~Y~~	~~0.92~~	~~109~~	

Totals	Conc	EMPC
Total TCDD	228	228
Total PeCDD	17.8	23
Total HxCDD	96.7	103
Total HpCDD	463	463
Total Tetra-Octa Dioxins	3360	3370
Total TCDF	1,100	1160
Total PeCDF	91.1	97.3
Total HxCDF	94.5	97.3
Total HpCDF	170	170
Total Tetra-Octa Furans	3,500	3570
Total Tetra-Octa Dioxins & Furans	6860	6940

Lab ID: B5971_18819_DF_005 **Acq'd:** 20 Jan 2022 16:58 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-SPS-SW-B-5H **UTP:** 21-Jan-2022 12:42:00 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 972-223-LQZ

Datafile: 220120C09 **Report:** 21 Jan 2022 12:48 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.05		0.8755	0.8749	-0.9	2.80E+05	0.72	Y	1.18	3.42	4822.069	0.609
1379-TCDD	NotFnd		0.8876						1.18		4822.069	0.609
1369-TCDD	NotFnd		0.9023						1.18		4822.069	0.609
1469-TCDD	26.59		0.9291	0.9287	-0.6	6.29E+05	0.85	Y	1.18	7.68	4822.069	0.609
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		4822.069	0.609
1378-TCDD	NotFnd		0.9440						1.18		4822.069	0.609
1268-TCDD	NotFnd		0.9506						1.18		4822.069	0.609
1478-TCDD	NotFnd		0.9591						1.18		4822.069	0.609
1279-TCDD	NotFnd		0.9649						1.18		4822.069	0.609
1234/1269-TCDD	27.97		0.9771	0.9770	-0.2	1.40E+05	0.74	Y	1.18	1.71	4822.069	0.609
1236-TCDD	NotFnd		0.9820						1.18		4822.069	0.609
1237/1238-TCDD	28.36		0.9908	0.9907	-0.2	2.59E+05	0.75	Y	1.18	3.16	4822.069	0.609
1239-TCDD	NotFnd		0.9954						1.18		4822.069	0.609
2378-TCDD	**28.65**		**1.0008**	1.0008	**0**	1.58E+07	0.82	Y	**1.18**	**194**	**4822.069**	**0.609**
1278-TCDD	28.97		1.0121	1.0120	-0.2	1.48E+06	0.78	Y	1.18	18	4822.069	0.609
1267-TCDD	NotFnd		1.0167						1.18		4822.069	0.609
1289-TCDD	NotFnd		1.0341						1.18		4822.069	0.609
12479/12468-PeCDD	31.45		0.9273	0.9270	-0.6	4.42E+05	1.61	Y	1.04	6.58	3030.886	0.411
12469-PeCDD	31.99	EMPC	0.9430	0.9428	-0.4	3.28E+05	1.26	N	1.04	4.89	3030.886	0.411
12368-PeCDD	32.54	J	0.9592	0.9589	-0.6	1.42E+05	1.42	Y	1.04	2.11	3030.886	0.411
12478-PeCDD	32.72	J	0.9647	0.9644	-0.6	1.08E+05	1.51	Y	1.04	1.61	3030.886	0.411
12379-PeCDD	32.82	J	0.9676	0.9673	-0.6	8.84E+04	1.53	Y	1.04	1.32	3030.886	0.411
12369/12467/12489-PeCDD	33.08		0.9752	0.9750	-0.4	2.26E+05	1.32	Y	1.04	3.37	3030.886	0.411
12346/12347-PeCDD	NotFnd		0.9860						1.04		3030.886	0.411
12378-PeCDD	33.95		**1.0006**	**1.0004**	**-0.4**	**1.85E+05**	**1.61**	**Y**	**1.04**	**2.76**	**3030.886**	**0.411**
12367-PeCDD	NotFnd		1.0034						1.04		3030.886	0.411
12389-PeCDD	34.39	J EMPC	1.0134	1.0134	0	2.51E+04	1.25	N	1.04	0.373	3030.886	0.411
124679/124689-HxCDD	36.09		0.9545	0.9542	-0.6	3.43E+06	1.25	Y	1.10	54.4	6700.823	0.979
123468-HxCDD	36.74		0.9715	0.9713	-0.4	3.66E+05	1.36	Y	1.10	5.8	6700.823	0.979
123679/123689-HxCDD	37.05		0.9793	0.9793	0	1.60E+06	1.30	Y	1.10	25.4	6700.823	0.979
123469-HxCDD	37.17	EMPC	0.9829	0.9827	-0.4	2.10E+05	1.65	N	1.10	3.33	6700.823	0.979
123478-HxCDD	37.83	J EMPC	**1.0004**	**1.0002**	**-0.5**	**8.08E+04**	**2.16**	**N**	1.09	**1.35**	**6700.823**	**1.02**
123678-HxCDD	37.95		**1.0034**	**1.0033**	**-0.2**	**4.42E+05**	**1.32**	**Y**	1.15	**6.86**	**6700.823**	**0.948**
123467-HxCDD	38.14	J EMPC	1.0082	1.0082	0	1.06E+05	1.03	N	1.10	1.67	6700.823	0.979
123789-HxCDD	38.23		**1.0109**	**1.0108**	**-0.2**	**2.75E+05**	**1.30**	**Y**	1.05	**4.24**	**6700.823**	**0.978**

Lab ID: B5971_18819_DF_005 **Acq'd:** 20 Jan 2022 16:58 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-SPS-SW-B-5H **UTP:** 21-Jan-2022 12:42:00 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 972-223-LQZ

Datafile: 220120C09 **Report:** 21 Jan 2022 12:48 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

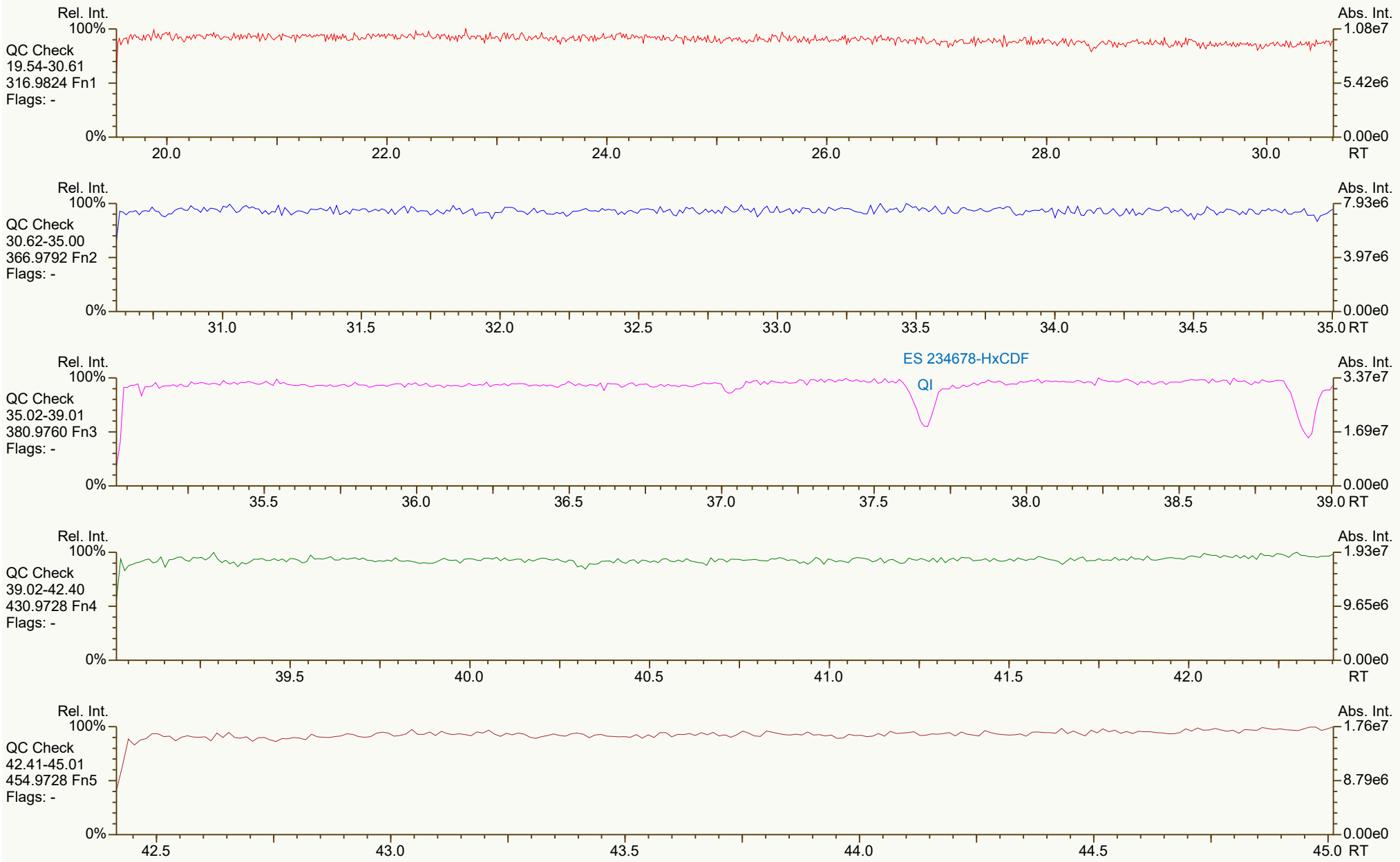
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.18		0.9838	0.9837	-0.2	1.66E+07	1.02	Y	1.06	301	4033.144	0.583
1234678-HpCDD	**40.86**		**1.0003**	**1.0003**	**0**	**8.97E+06**	**1.05**	**Y**	**1.06**	**162**	**4033.144**	**0.583**
OCDD	**43.51**		**1.0002**	**1.0003**	**+0.3**	**1.03E+08**	**0.91**	**Y**	**1.13**	**2,560**	**4271.051**	**1.04**
OCDD-a	43.51		1.0002	1.0002	0	6.39E+06	2.38	Y	0.07	2,490	4195.581	15.9
1368-TCDF	22.98	EMPC	0.8282	0.8271	-1.5	8.22E+04	0.54	N	1.08	0.677	5654.439	0.504
1468-TCDF	23.54		0.8485	0.8473	-1.7	3.03E+05	0.77	Y	1.08	2.5	5654.439	0.504
2468-TCDF	24.17		0.8709	0.8700	-1.3	7.80E+05	0.75	Y	1.08	6.43	5654.439	0.504
1346/1246-TCDF	24.57	EMPC	0.8829	0.8845	+2.4	1.54E+05	1.24	N	1.08	1.27	5654.439	0.504
1347/1378/1247-TCDF	24.69		0.8884	0.8888	+0.6	1.08E+06	0.72	Y	1.08	8.88	5654.439	0.504
1348-TCDF	24.95	EMPC	0.8980	0.8979	-0.1	3.15E+05	1.10	N	1.08	2.59	5654.439	0.504
1248/1367/1379-TCDF	25.03		0.9026	0.9009	-2.6	3.81E+06	0.74	Y	1.08	31.4	5654.439	0.504
1268-TCDF	25.44		0.9158	0.9155	-0.5	1.63E+06	0.77	Y	1.08	13.4	5654.439	0.504
1467-TCDF	25.57		0.9206	0.9204	-0.3	2.52E+05	0.82	Y	1.08	2.07	5654.439	0.504
1478-TCDF	25.73		0.9266	0.9262	-0.6	3.18E+06	0.80	Y	1.08	26.2	5654.439	0.504
1369/1237-TCDF	26.10	EMPC	0.9397	0.9396	-0.2	7.11E+05	0.89	N	1.08	5.86	5654.439	0.504
2467-TCDF	26.21		0.9440	0.9436	-0.6	1.77E+05	0.71	Y	1.08	1.46	5654.439	0.504
2368-TCDF	26.37	EMPC	0.9497	0.9493	-0.6	2.32E+06	0.64	N	1.08	19.1	5654.439	0.504
1238/1234/1678/1469/1236-TCDF	26.45	EMPC	0.9528	0.9520	-1.3	3.37E+06	0.93	N	1.08	27.7	5654.439	0.504
1278-TCDF	26.91		0.9690	0.9688	-0.3	3.27E+07	0.80	Y	1.08	270	5654.439	0.504
1349-TCDF	NotFnd		0.9730						1.08		5654.439	0.504
1267-TCDF	27.18		0.9787	0.9785	-0.3	1.83E+06	0.83	Y	1.08	15.1	5654.439	0.504
2346/1249-TCDF	NotFnd		0.9850						1.08		5654.439	0.504
2347/1279-TCDF	27.58		0.9929	0.9929	0	8.70E+05	0.84	Y	1.08	7.18	5654.439	0.504
2348-TCDF	27.69		0.9970	0.9965	-0.8	4.36E+06	0.73	Y	1.08	35.9	5654.439	0.504
2378-TCDF	**27.80**		**1.0008**	**1.0008**	**0**	**7.02E+07**	**0.80**	**Y**	**1.08**	**579**	**5654.439**	**0.504**
2367/3467-TCDF	28.15		1.0136	1.0134	-0.3	5.90E+06	0.80	Y	1.08	48.6	5654.439	0.504
1269-TCDF	28.40		1.0221	1.0223	+0.3	1.15E+06	0.82	Y	1.08	9.51	5654.439	0.504
1239-TCDF	NotFnd		1.0319						1.08		5654.439	0.504
1289-TCDF	29.79		1.0740	1.0724	-2.9	5.41E+06	0.78	Y	1.08	44.6	5654.439	0.504
13468/12468-PeCDF	29.72		0.9145	0.9147	+0.4	1.98E+06	1.77	Y	1.02	18.8	3998.308	0.348
13678/13467/12467-PeCDF	31.25		0.9619	0.9618	-0.2	2.98E+05	1.78	Y	1.02	2.83	6367.939	0.554
12368/13478/12478-PeCDF	31.42		0.9665	0.9668	+0.6	2.01E+06	1.61	Y	1.02	19.1	6367.939	0.554
14678-PeCDF	31.51	J EMPC	0.9695	0.9696	+0.2	1.08E+05	1.02	N	1.02	1.02	6367.939	0.554
13479-PeCDF	NotFnd		0.9724						1.02		6367.939	0.554
13469/12479-PeCDF	31.81	J	0.9801	0.9790	-2.1	1.23E+05	1.77	Y	1.02	1.17	6367.939	0.554
12346-PeCDF	31.97	J	0.9842	0.9839	-0.6	5.86E+04	1.40	Y	1.02	0.556	6367.939	0.554

Lab ID: B5971_18819_DF_005 **Acq'd:** 20 Jan 2022 16:58 DTF **Wt/Vol:** 10.12 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-SPS-SW-B-5H **UTP:** 21-Jan-2022 12:42:00 MLS **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 972-223-LQZ

Datafile: 220120C09 **Report:** 21 Jan 2022 12:48 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.07	EMPC	0.9868	0.9870	+0.4	4.41E+05	1.80	N	1.02	4.18	6367.939	0.554
12347-PeCDF	32.16	J	0.9895	0.9898	+0.6	5.88E+04	1.62	Y	1.02	0.558	6367.939	0.554
12348-PeCDF	32.30		0.9941	0.9939	-0.4	3.14E+05	1.57	Y	1.02	2.98	6367.939	0.554
12378-PeCDF	**32.51**		**1.0005**	**1.0005**	**0**	**1.91E+06**	**1.52**	**Y**	**1.02**	**17.9**	**6367.939**	**0.573**
12678/12367-PeCDF	32.81		1.0090	1.0096	+1.2	9.02E+05	1.55	Y	1.02	8.55	6367.939	0.554
12379-PeCDF	NotFnd		1.0142						1.02		6367.939	0.554
12679-PeCDF	NotFnd		0.9931						1.02		6367.939	0.554
23467/12369-PeCDF	33.49	J	0.9966	0.9967	+0.2	1.21E+05	1.43	Y	1.02	1.15	6367.939	0.554
23478-PeCDF	**33.63**	PR	**1.0005**	**1.0008**	**+0.6**	**1.83E+06**	**1.63**	**Y**	**1.02**	**17.6**	**6367.939**	**0.535**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6367.939	0.554
12349-PeCDF	NotFnd		1.0101						1.02		6367.939	0.554
12389-PeCDF	34.69	J EMPC	1.0322	1.0324	+0.4	9.78E+04	1.23	N	1.02	0.928	6367.939	0.554
123468-HxCDF	35.45		0.9627	0.9628	+0.2	6.18E+05	1.15	Y	1.19	6.9	4847.818	0.477
124678/134678-HxCDF	35.65		0.9684	0.9682	-0.4	2.06E+06	1.30	Y	1.19	23	4847.818	0.477
134679-HxCDF	NotFnd		0.9747						1.19		4847.818	0.477
124679-HxCDF	36.07	J EMPC	0.9802	0.9796	-1.3	9.12E+04	1.05	N	1.19	1.02	4847.818	0.477
124689-HxCDF	36.29		0.9858	0.9857	-0.2	1.91E+06	1.29	Y	1.19	21.3	4847.818	0.477
123467-HxCDF	36.71	J EMPC	0.9972	0.9970	-0.4	1.65E+05	1.47	N	1.19	1.85	4847.818	0.477
123478-HxCDF	**36.84**		**1.0004**	**1.0004**	**0**	**2.69E+06**	**1.34**	**Y**	**1.27**	**26.9**	**4847.818**	**0.437**
123678-HxCDF	**36.97**		**1.0004**	**1.0004**	**0**	**8.52E+05**	**1.22**	**Y**	**1.15**	**8.21**	**4847.818**	**0.4**
123479-HxCDF	NotFnd		1.0051						1.19		4847.818	0.477
123469-HxCDF	37.29	J	1.0091	1.0091	0	1.10E+05	1.09	Y	1.19	1.22	4847.818	0.477
123679-HxCDF	NotFnd		0.9943						1.19		4847.818	0.477
234678-HxCDF	**37.66**		**1.0004**	**1.0005**	**+0.2**	**2.97E+05**	**1.32**	**Y**	**1.19**	**4**	**4847.818**	**0.613**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4847.818	0.477
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**4847.818**	**0.5**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.61		1.0007	1.0009	+0.5	2.63E+05	1.35	Y	1.19	2.93	4847.818	0.477
1234678-HpCDF	**39.93**		**1.0002**	**1.0003**	**+0.2**	**7.83E+06**	**1.05**	**Y**	**1.37**	**87.7**	**3434.15**	**0.277**
1234679-HpCDF	40.19		1.0067	1.0067	0	4.34E+05	1.05	Y	1.34	5.57	3434.15	0.367
1234689-HpCDF	40.33		1.0101	1.0103	+0.5	5.34E+06	1.03	Y	1.34	68.5	3434.15	0.367
1234789-HpCDF	**41.32**		**1.0003**	**1.0001**	**-0.5**	**5.47E+05**	**1.07**	**Y**	**1.31**	**8.16**	**3434.15**	**0.486**
OCDF	**43.70**		**1.0002**	**1.0003**	**+0.3**	**1.14E+08**	**0.88**	**Y**	**1.07**	**2,040**	**5361.099**	**1.06**
OCDF-a	43.70		1.0002	1.0002	0	7.14E+06	2.31	Y	0.07	2,070	3201.504	10.2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19.54-30.61
316.9824 Fn1
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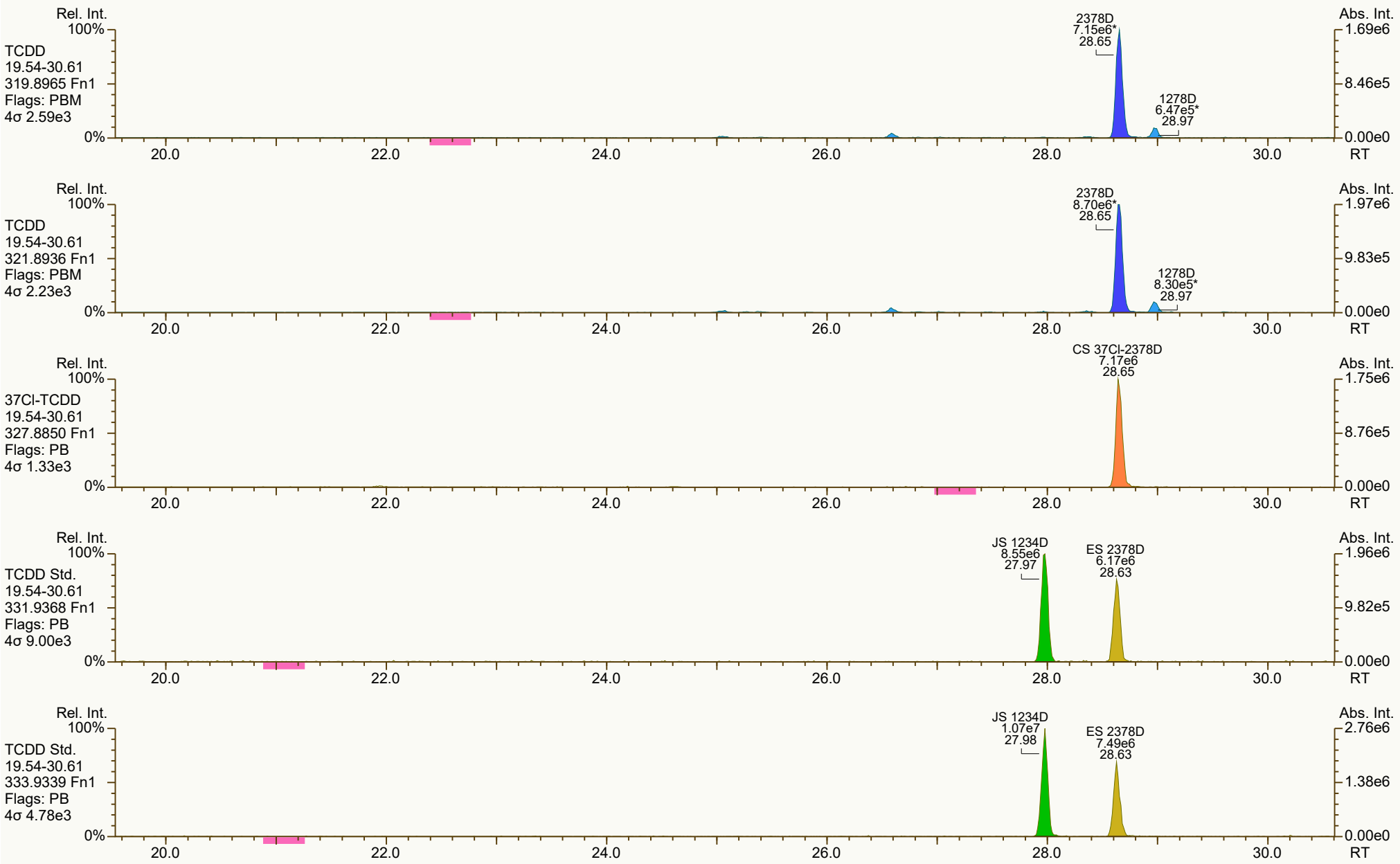
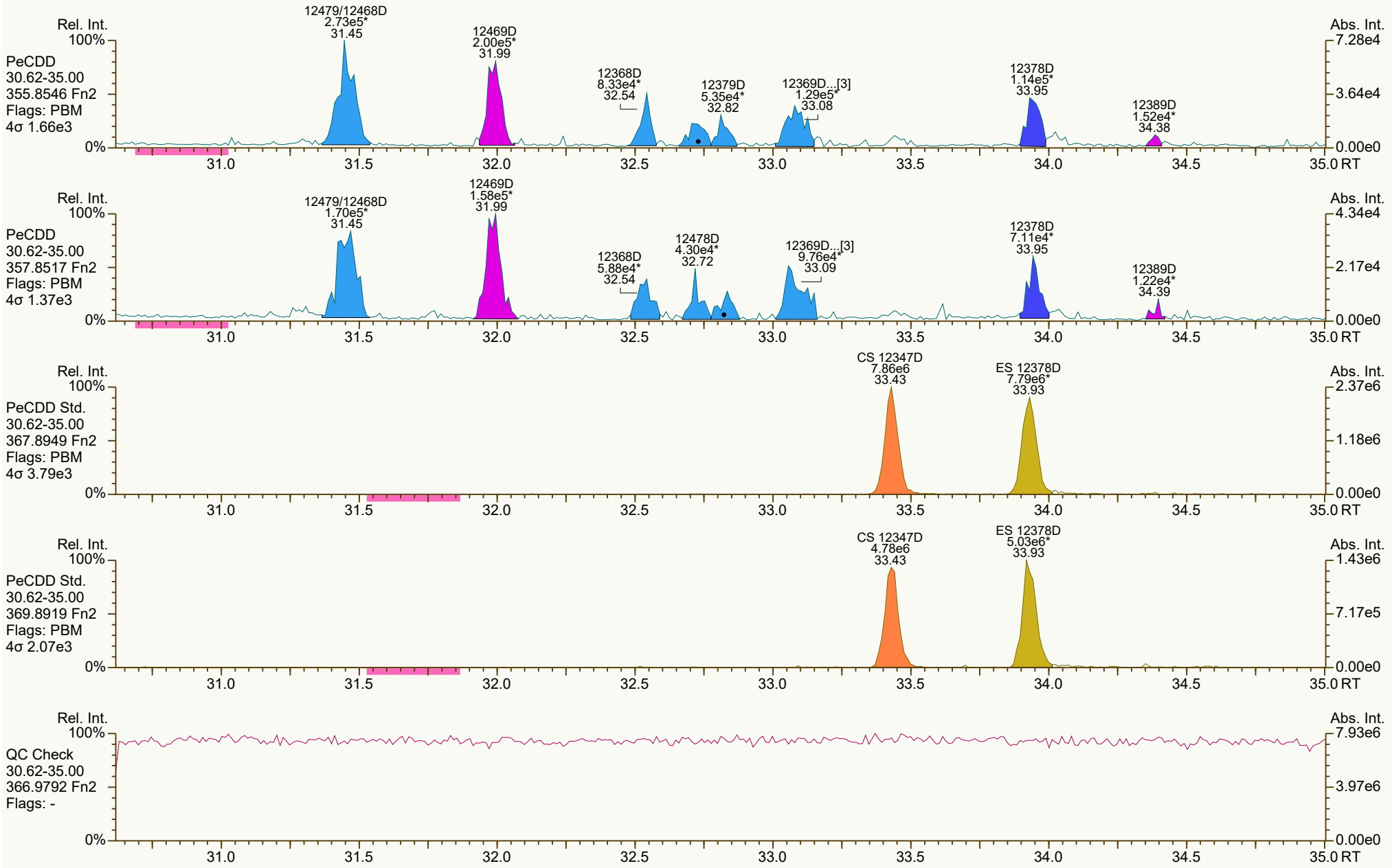
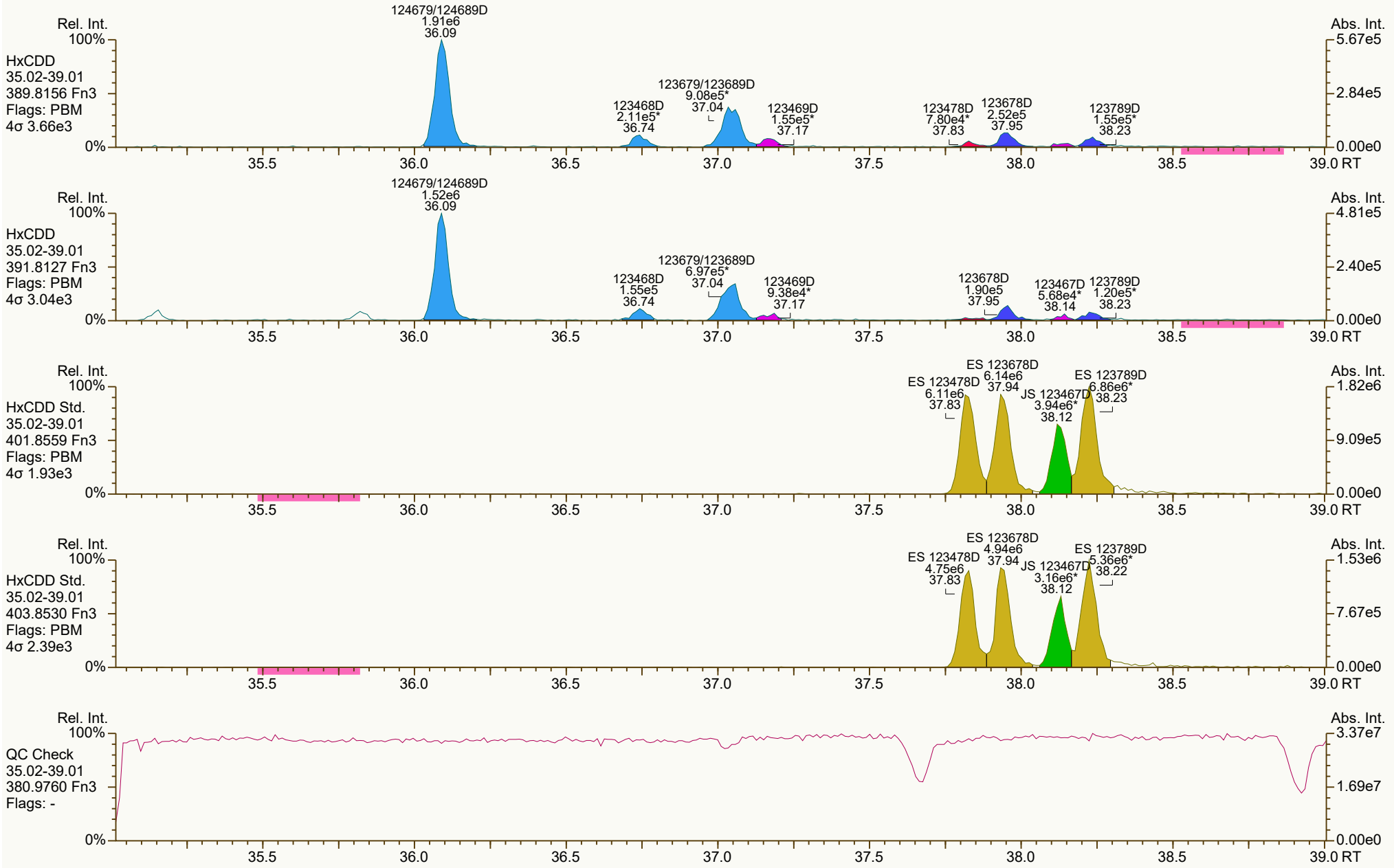
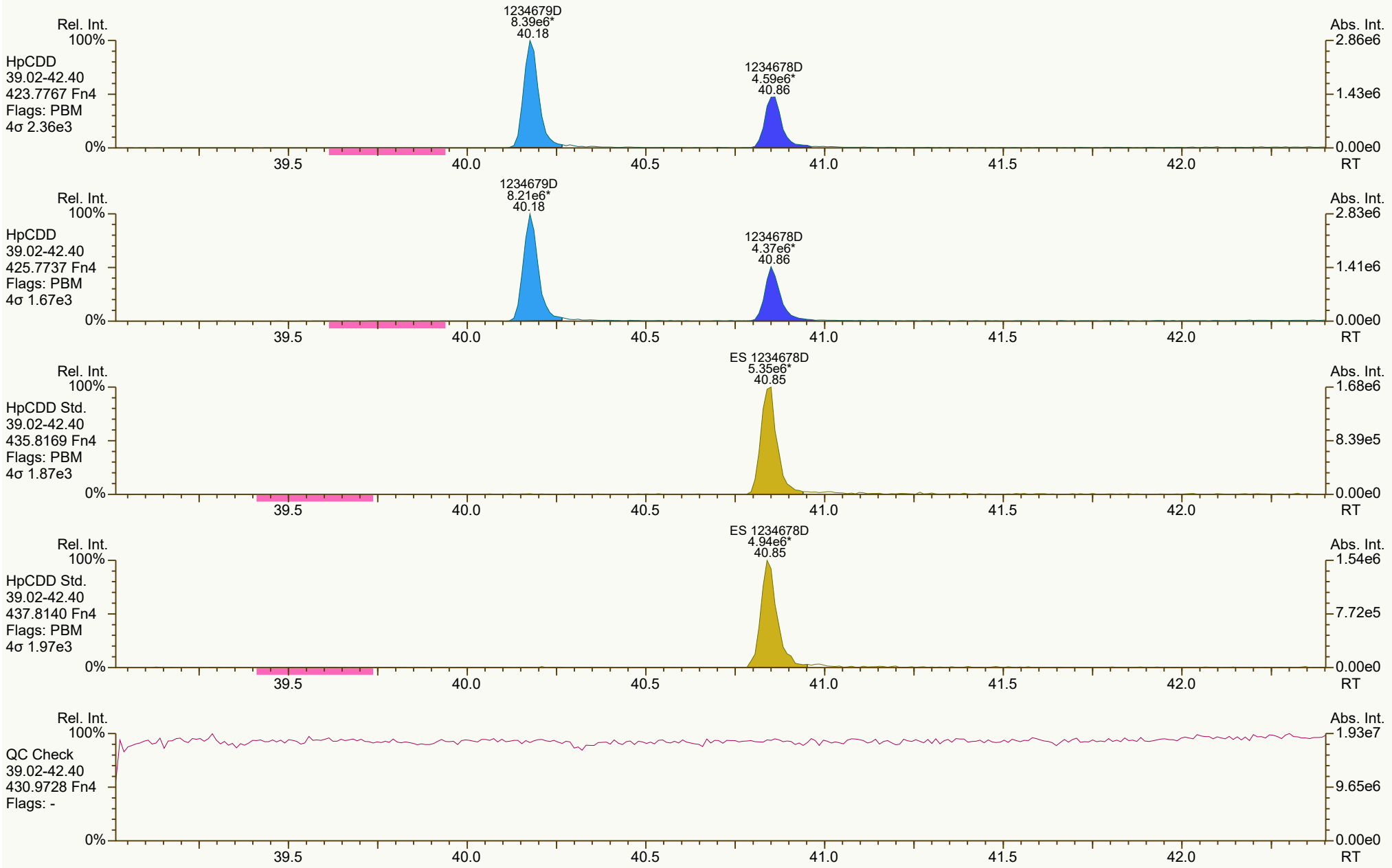
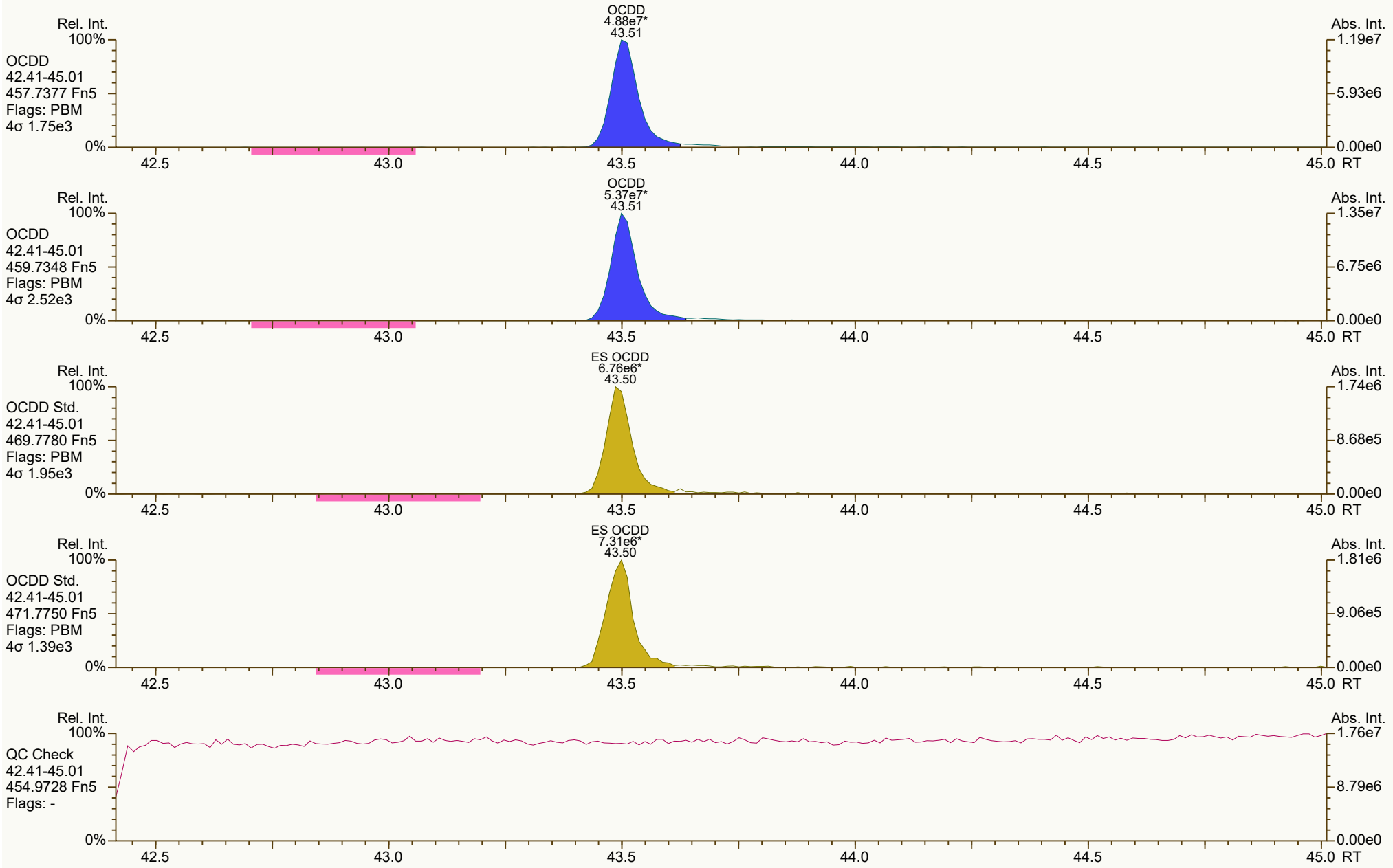
0%
Abs. Int.
1.08e7
5.42e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.93e6
3.97e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
ES 234678-HxCDF
QI
Abs. Int.
3.37e7
1.69e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.93e7
9.65e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.76e7
8.79e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 2.59e3
0%
2378D
7.15e6*
28.65
1278D
6.47e5*
28.97
Abs. Int.
1.69e6
8.46e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.23e3
0%
2378D
8.70e6*
28.65
1278D
8.30e5*
28.97
Abs. Int.
1.97e6
9.83e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.33e3
0%
CS 37Cl-2378D
7.17e6
28.65
Abs. Int.
1.75e6
8.76e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 9.00e3
0%
JS 1234D
8.55e6
27.97
ES 2378D
6.17e6
28.63
Abs. Int.
1.96e6
9.82e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 4.78e3
0%
JS 1234D
1.07e7
27.98
ES 2378D
7.49e6
28.63
Abs. Int.
2.76e6
1.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.62-35.00
355.8546 Fn2
Flags: PBM
4σ 1.66e3
12479/12468D
2.73e5*
31.45
12469D
2.00e5*
31.99
12368D
8.33e4*
32.54
12379D
5.35e4*
32.82
12369D...[3]
1.29e5*
33.08
12378D
1.14e5*
33.95
12389D
1.52e4*
34.38
Abs. Int.
7.28e4
3.64e4
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PBM
4σ 1.37e3
12479/12468D
1.70e5*
31.45
12469D
1.58e5*
31.99
12368D
5.88e4*
32.54
12478D
4.30e4*
32.72
12369D...[3]
9.76e4*
33.09
12378D
7.11e4*
33.95
12389D
1.22e4*
34.39
Abs. Int.
4.34e4
2.17e4
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PBM
4σ 3.79e3
CS 12347D
7.86e6
33.43
ES 12378D
7.79e6*
33.93
Abs. Int.
2.37e6
1.18e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PBM
4σ 2.07e3
CS 12347D
4.78e6
33.43
ES 12378D
5.03e6*
33.93
Abs. Int.
1.43e6
7.17e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
Abs. Int.
7.93e6
3.97e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 3.66e3
124679/124689D 1.91e6 36.09
123468D 2.11e5* 36.74
123679/123689D 9.08e5* 37.04
123469D 1.55e5* 37.17
123478D 7.80e4* 37.83
123678D 2.52e5 37.95
123789D 1.55e5* 38.23
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 3.04e3
124679/124689D 1.52e6 36.09
123468D 1.55e5 36.74
123679/123689D 6.97e5* 37.04
123469D 9.38e4* 37.17
123678D 1.90e5 37.95
123467D 5.68e4* 38.14
123789D 1.20e5* 38.23
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 1.93e3
ES 123678D 6.14e6 37.94
ES 123478D 6.11e6 37.83
JS 123467D 3.94e6* 38.12
ES 123789D 6.86e6* 38.23
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.39e3
ES 123678D 4.94e6 37.94
ES 123478D 4.75e6 37.83
JS 123467D 3.16e6* 38.12
ES 123789D 5.36e6* 38.22
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.36e3
1234679D
8.39e6*
40.18
1234678D
4.59e6*
40.86
Abs. Int.
2.86e6
1.43e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.67e3
1234679D
8.21e6*
40.18
1234678D
4.37e6*
40.86
Abs. Int.
2.83e6
1.41e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 1.87e3
ES 1234678D
5.35e6*
40.85
Abs. Int.
1.68e6
8.39e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.97e3
ES 1234678D
4.94e6*
40.85
Abs. Int.
1.54e6
7.72e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.93e7
9.65e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDD
4.88e7*
43.51
Rel. Int.
100%
OCDD
42.41-45.01
457.7377 Fn5
Flags: PBM
4σ 1.75e3
0%
Abs. Int.
1.19e7
5.93e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.37e7*
43.51
Rel. Int.
100%
OCDD
42.41-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
Abs. Int.
1.35e7
6.75e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.76e6*
43.50
Rel. Int.
100%
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PBM
4σ 1.95e3
0%
Abs. Int.
1.74e6
8.68e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.31e6*
43.50
Rel. Int.
100%
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PBM
4σ 1.39e3
0%
Abs. Int.
1.81e6
9.06e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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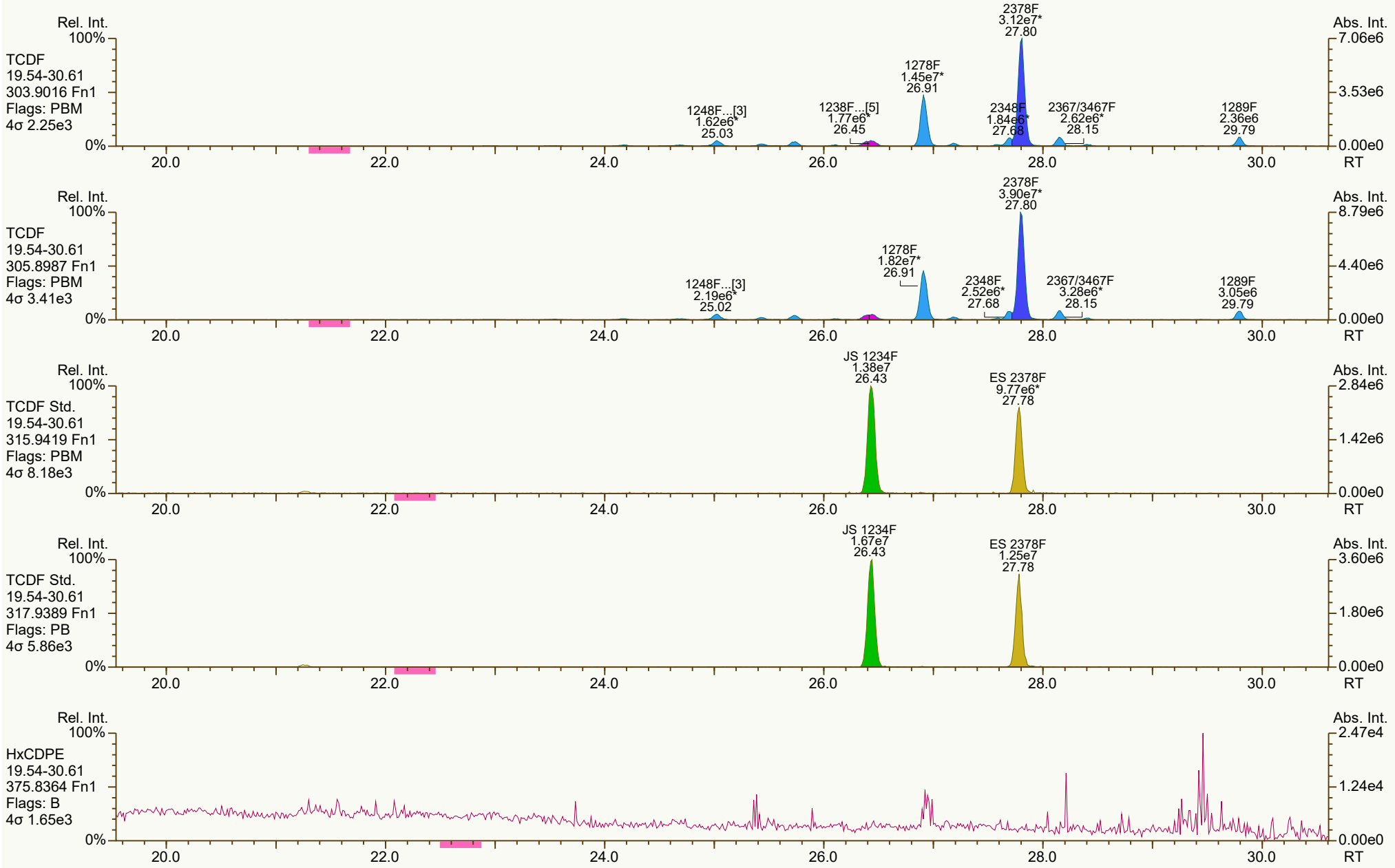
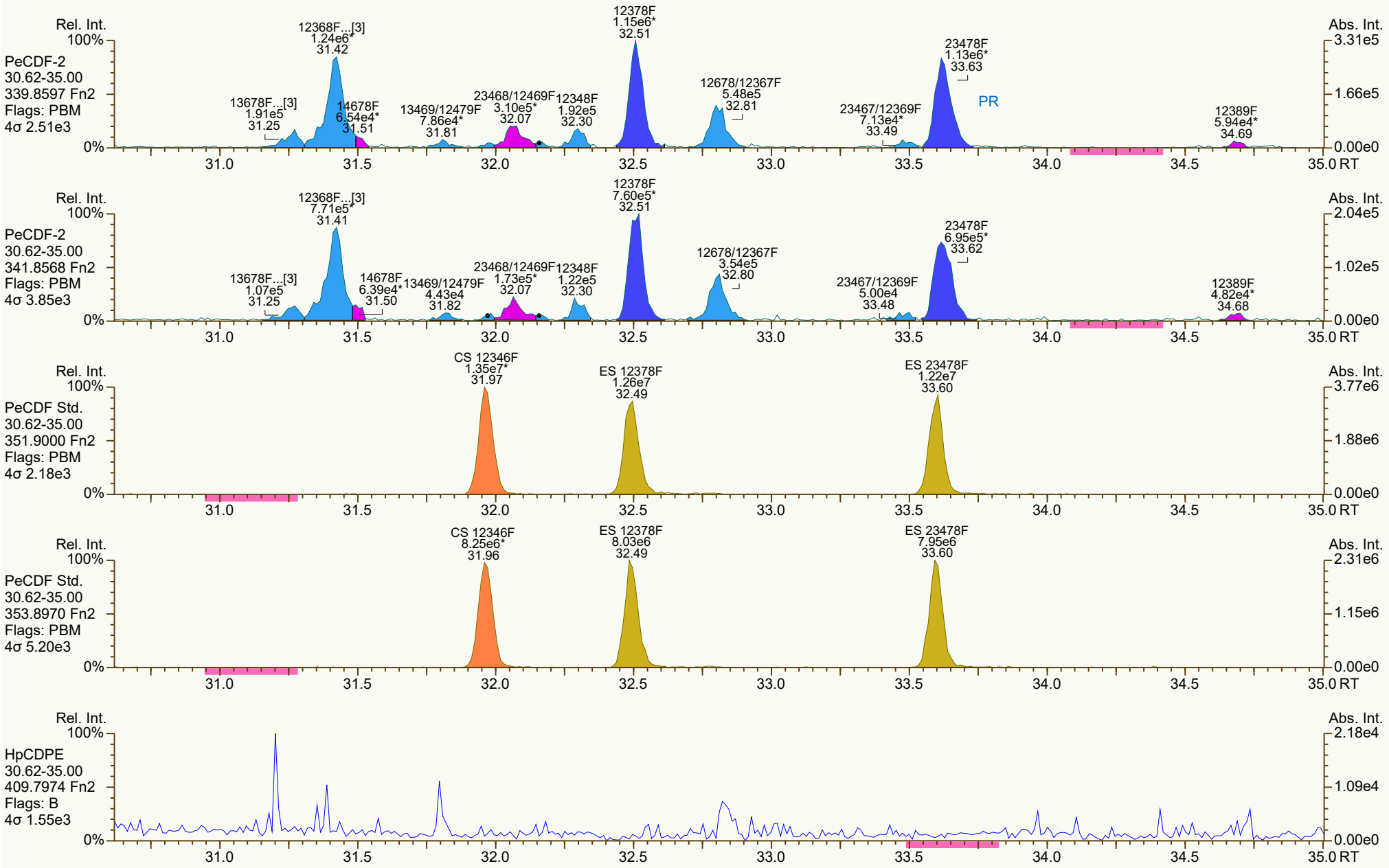
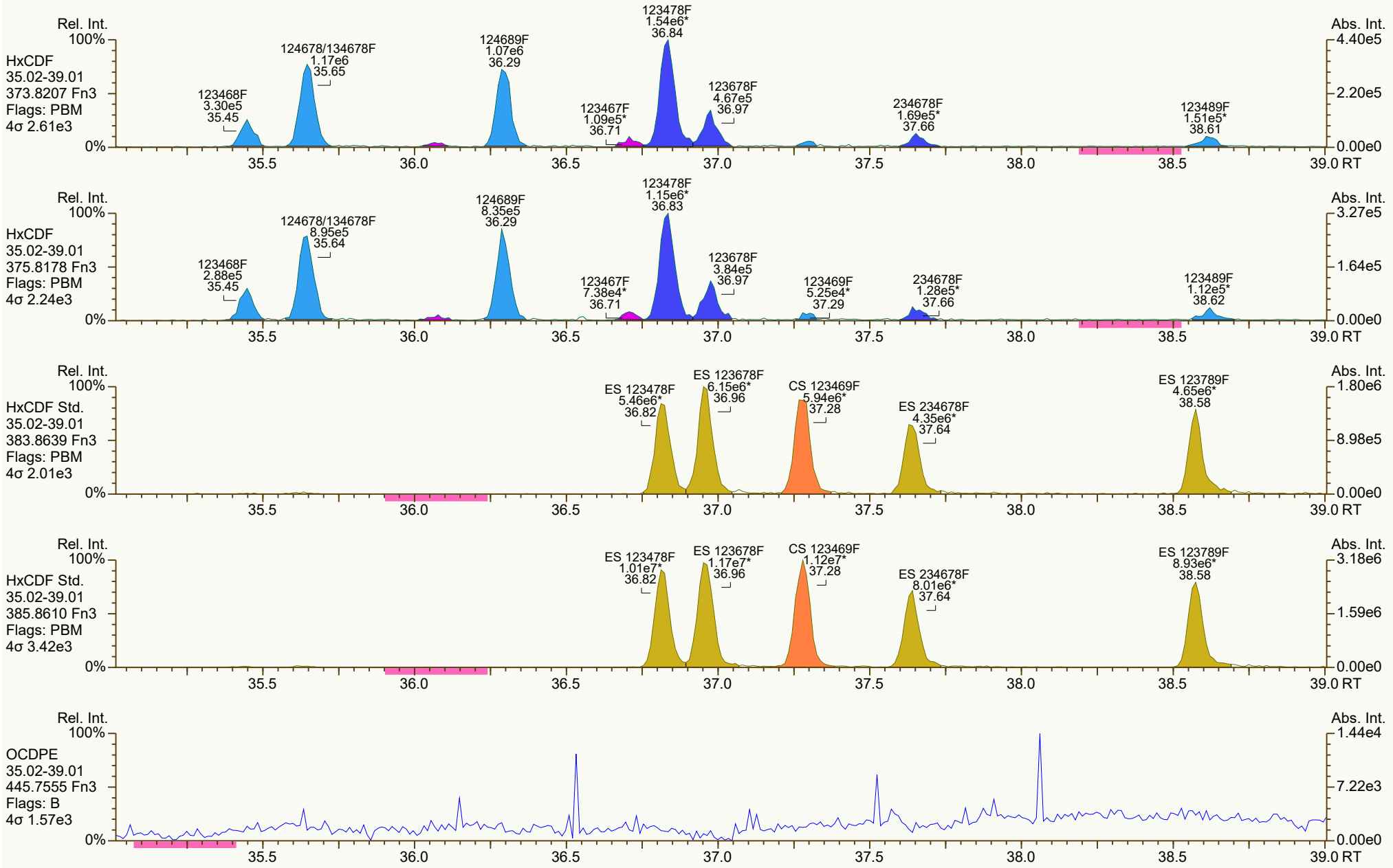
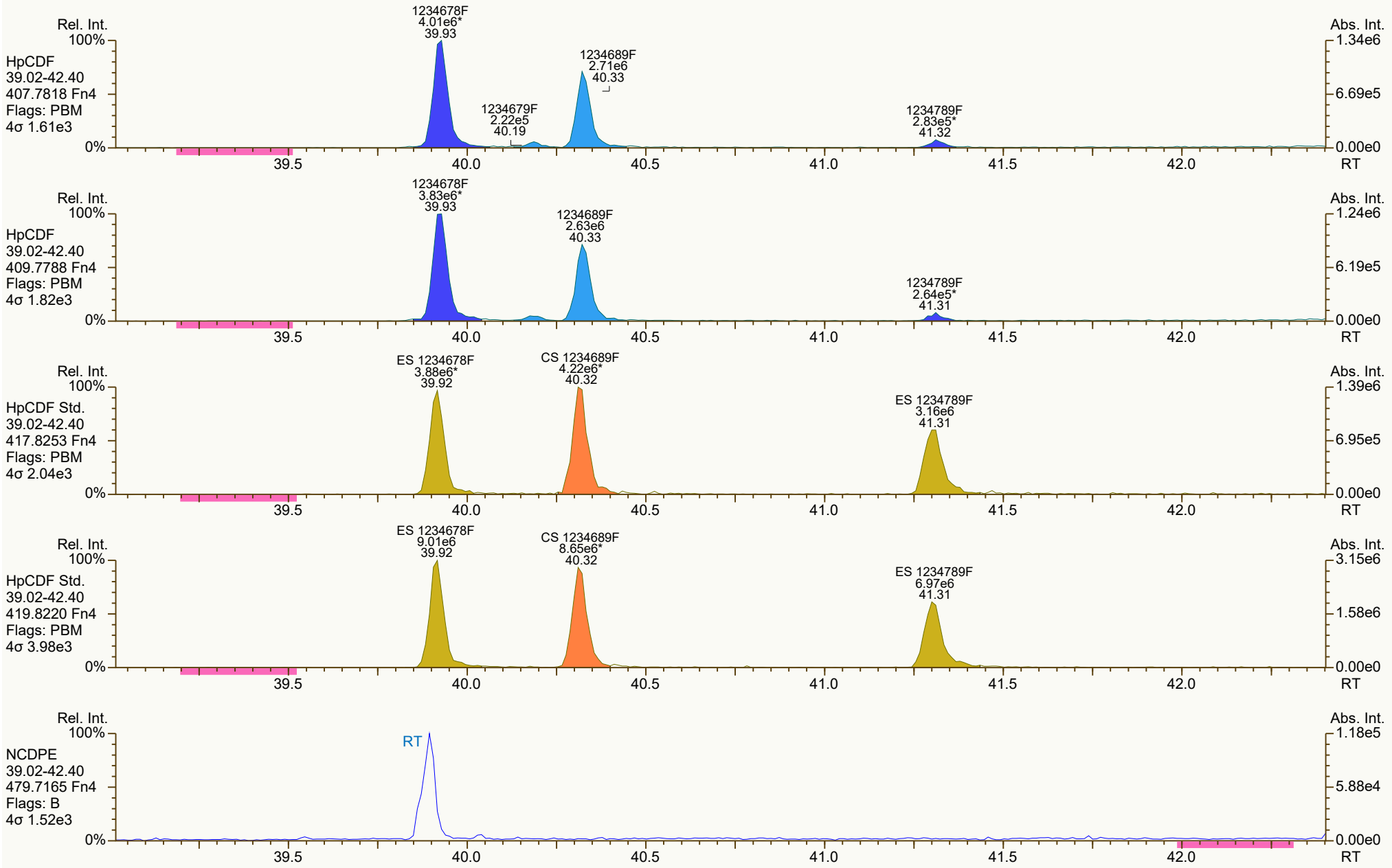
8.79e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

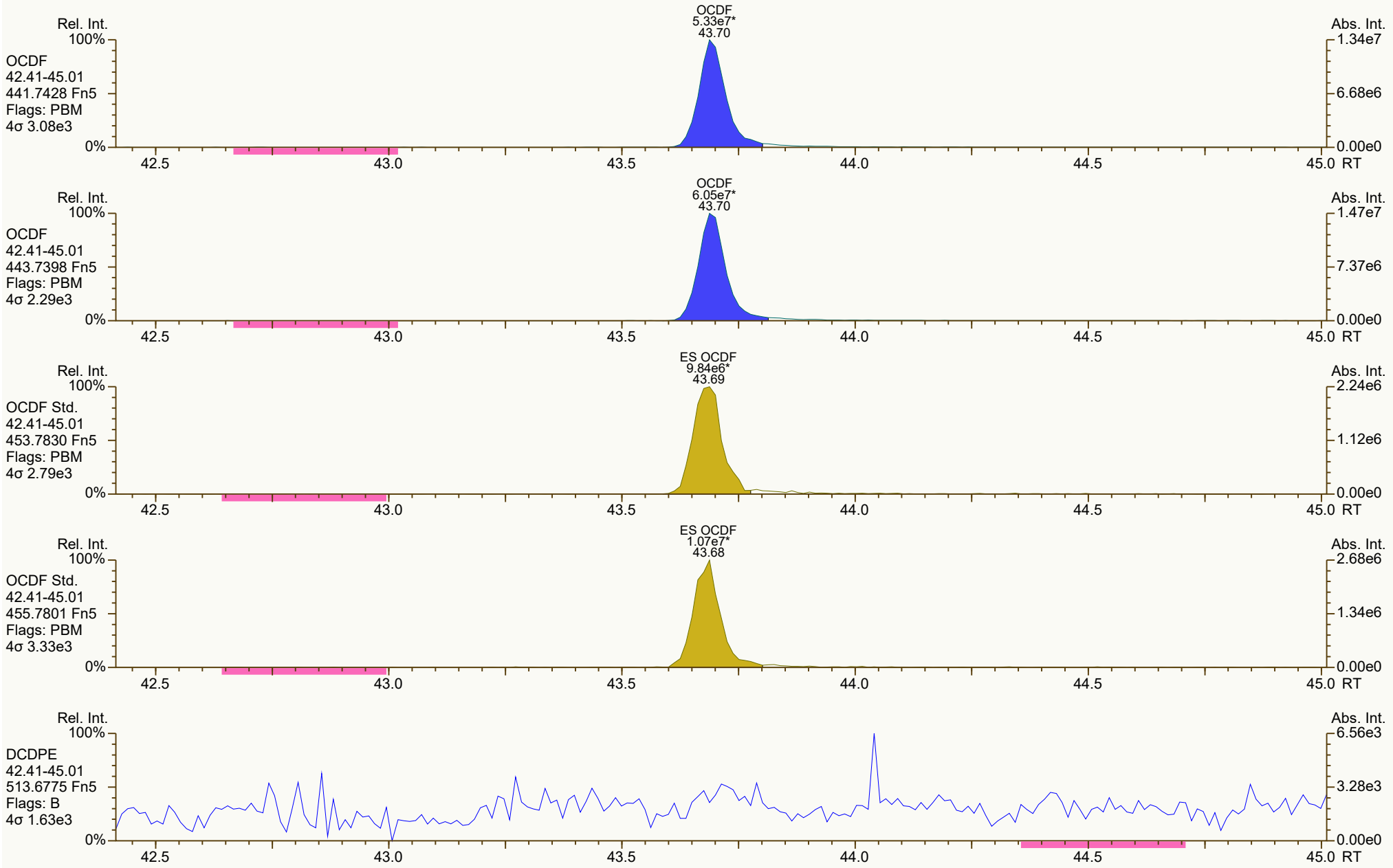

Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 2.25e3
0%
1248F...[3]
1.62e6*
25.03
1238F...[5]
1.77e6*
26.45
1278F
1.45e7*
26.91
2378F
3.12e7*
27.80
2348F
1.84e6*
27.68
2367/3467F
2.62e6*
28.15
1289F
2.36e6
29.79
Abs. Int.
7.06e6
3.53e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 3.41e3
0%
1248F...[3]
2.19e6*
25.02
1278F
1.82e7*
26.91
2378F
3.90e7*
27.80
2348F
2.52e6*
27.68
2367/3467F
3.28e6*
28.15
1289F
3.05e6
29.79
Abs. Int.
8.79e6
4.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 8.18e3
0%
JS 1234F
1.38e7
26.43
ES 2378F
9.77e6*
27.78
Abs. Int.
2.84e6
1.42e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 5.86e3
0%
JS 1234F
1.67e7
26.43
ES 2378F
1.25e7
27.78
Abs. Int.
3.60e6
1.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.65e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
3.61e5
1.81e5
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
13468/12468F
1.27e6*
29.72
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PBM
4σ 1.75e3
13468/12468F
7.15e5*
29.72
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PBM
4σ 2.25e3
1.92e5
9.59e4
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
1.08e7
5.42e6


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PBM
4σ 2.51e3
12368F...[3] 1.24e6* 31.42
13678F...[3] 1.91e5 31.25
14678F 6.54e4* 31.51
13469/12479F 7.86e4* 31.81
23468/12469F 3.10e5* 32.07
12348F 1.92e5 32.30
12378F 1.15e6* 32.51
12678/12367F 5.48e5 32.81
23467/12369F 7.13e4* 33.49
23478F 1.13e6* 33.63
PR
12389F 5.94e4* 34.69
Abs. Int.
3.31e5
1.66e5
0.00e0
0%
31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: PBM
4σ 3.85e3
12368F...[3] 7.71e5* 31.41
13678F...[3] 1.07e5 31.25
14678F 6.39e4* 31.50
13469/12479F 4.43e4 31.82
23468/12469F 1.73e5* 32.07
12348F 1.22e5 32.30
12378F 7.60e5* 32.51
12678/12367F 3.54e5 32.80
23467/12369F 5.00e4 33.48
23478F 6.95e5* 33.62
12389F 4.82e4* 34.68
Abs. Int.
2.04e5
1.02e5
0.00e0
0%
31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PBM
4σ 2.18e3
CS 12346F 1.35e7* 31.97
ES 12378F 1.26e7 32.49
ES 23478F 1.22e7 33.60
Abs. Int.
3.77e6
1.88e6
0.00e0
0%
31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PBM
4σ 5.20e3
CS 12346F 8.25e6* 31.96
ES 12378F 8.03e6 32.49
ES 23478F 7.95e6 33.60
Abs. Int.
2.31e6
1.15e6
0.00e0
0%
31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.55e3
Abs. Int.
2.18e4
1.09e4
0.00e0
0%
31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 2.61e3
123468F 3.30e5 35.45
124678/134678F 1.17e6 35.65
124689F 1.07e6 36.29
123467F 1.09e5* 36.71
123478F 1.54e6* 36.84
123678F 4.67e5 36.97
234678F 1.69e5* 37.66
123489F 1.51e5* 38.61
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.24e3
123468F 2.88e5 35.45
124678/134678F 8.95e5 35.64
124689F 8.35e5 36.29
123467F 7.38e4* 36.71
123478F 1.15e6* 36.83
123678F 3.84e5 36.97
123469F 5.25e4* 37.29
234678F 1.28e5* 37.66
123489F 1.12e5* 38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 2.01e3
ES 123478F 5.46e6* 36.82
ES 123678F 6.15e6* 36.96
CS 123469F 5.94e6* 37.28
ES 234678F 4.35e6* 37.64
ES 123789F 4.65e6* 38.58
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 3.42e3
ES 123478F 1.01e7* 36.82
ES 123678F 1.17e7* 36.96
CS 123469F 1.12e7* 37.28
ES 234678F 8.01e6* 37.64
ES 123789F 8.93e6* 38.58
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.57e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
4.40e5
2.20e5
0.00e0
3.27e5
1.64e5
1.80e6
8.98e5
3.18e6
1.59e6
1.44e4
7.22e3


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 1.61e3
1234678F
4.01e6*
39.93
1234679F
2.22e5
40.19
1234689F
2.71e6
40.33
1234789F
2.83e5*
41.32
Abs. Int.
1.34e6
6.69e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.82e3
1234678F
3.83e6*
39.93
1234689F
2.63e6
40.33
1234789F
2.64e5*
41.31
Abs. Int.
1.24e6
6.19e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 2.04e3
ES 1234678F
3.88e6*
39.92
CS 1234689F
4.22e6*
40.32
ES 1234789F
3.16e6
41.31
Abs. Int.
1.39e6
6.95e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 3.98e3
ES 1234678F
9.01e6
39.92
CS 1234689F
8.65e6*
40.32
ES 1234789F
6.97e6
41.31
Abs. Int.
3.15e6
1.58e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.52e3
RT
Abs. Int.
1.18e5
5.88e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.41-45.01
441.7428 Fn5
Flags: PBM
4σ 3.08e3
0%
OCDF
5.33e7*
43.70
Abs. Int.
1.34e7
6.68e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.41-45.01
443.7398 Fn5
Flags: PBM
4σ 2.29e3
0%
OCDF
6.05e7*
43.70
Abs. Int.
1.47e7
7.37e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: PBM
4σ 2.79e3
0%
ES OCDF
9.84e6*
43.69
Abs. Int.
2.24e6
1.12e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: PBM
4σ 3.33e3
0%
ES OCDF
1.07e7*
43.68
Abs. Int.
2.68e6
1.34e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.41-45.01
513.6775 Fn5
Flags: B
4σ 1.63e3
0%
Abs. Int.
6.56e3
3.28e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

REVIEWED
Megan_Shannahan , 1/21/2022, 1:03:58 PM

SGS Environmental Services — Run Log **Project: B5971_18819_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

APPROVED
Carla_Lyon , 1/26/2022, 3:37:46 PM

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	220120C01	3	CS3_220120_DF_CA	1.00	SIL 25-347-1	DTF, MLS	343-977	20-Jan-2022	10:26:30
2	220120C02	50	OPR1_18819_DF	1.00	0_18819_OPR001	DTF, MLS	697-611	20-Jan-2022	11:32:05
3	220120C03	51	OPR2_18819_DF	1.00	0_18819_OPR002	DTF, MLS	751-300	20-Jan-2022	12:20:14
4	220120C04	2	SBS_220120_DF_CA	1.00	20-61-1	DTF	981-901	20-Jan-2022	13:06:33
5	220120C05	49	MB1_18819_DF_SDS	10.00	Method Blank	DTF, MLS	798-286	20-Jan-2022	13:52:51
6	220120C07	53	B5971_18819_DF_002	10.15	11215131-120321-S-JC-SW-B-3H	DTF, MLS	766-405	20-Jan-2022	15:25:34
7	220120C08	54	B5971_18819_DF_003	10.03	11215131-120221-S-SPS-SW-B-4H1	DTF, MLS	209-493	20-Jan-2022	16:11:53
8	220120C09	55	B5971_18819_DF_005	10.12	11215131-120321-S-SPS-SW-B-5H	DTF, MLS	972-223	20-Jan-2022	16:58:11

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
32	220124C32	3	CS3_220124_DF_CD	1.00	SIL 25-347-1	DTF	192-921	25-Jan-2022	13:07:51
33	220125C01	57	OPR1_18863_DF	1.00	0_18863_OPR001	DTF	343-081	25-Jan-2022	15:58:21
34	220125C02	58	OPR2_18863_DF	1.00	0_18863_OPR002	DTF	226-320	25-Jan-2022	16:44:37
35	220125C03	2	SBS_220125_DF_CA	1.00	30-61-1	DTF	475-390	25-Jan-2022	17:30:57
36	220125C04	56	MB1_18863_DF_SDS	10.00	Method Blank	DTF	660-125	25-Jan-2022	18:17:18
37	220125C05	59	B5971_18863_DF_001	10.31	11215131-120221-S-JC-SW-B-2H	DTF	109-048	25-Jan-2022	19:03:38

REVIEWED
Tyler_Fritz , 1/26/2022, 9:51:32 AM

APPROVED
Carla_Lyon , 1/26/2022, 3:37:55 PM

Dioxin/Furan QC Summary	Acq'd: 20 Jan 2022 10:26 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220120_DF_CA	UTP: 21-Jan-2022 12:41:56 MLS	Checkcode: 343-977-NFN
Sample ID: SIL 25-347-1	Report: 24 Jan 2022 11:01 MS	Datafile: 220120C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.65	1.80E+06	0.84	Y	1.18	1.29	9%
12378-PeCDD	33.95	7.00E+06	1.54	Y	1.04	1.07	3%
123478-HxCDD	37.84	6.03E+06	1.27	Y	1.09	1.16	7%
123678-HxCDD	37.96	6.80E+06	1.19	Y	1.15	1.23	7%
123789-HxCDD	38.24	6.39E+06	1.29	Y	1.05	1.02	-2%
1234678-HpCDD	40.86	5.82E+06	1.01	Y	1.06	1.10	3%
OCDD	43.50	8.90E+06	0.91	Y	1.13	1.19	6%
2378-TCDF	27.80	2.80E+06	0.78	Y	1.08	1.15	6%
12378-PeCDF	32.51	1.18E+07	1.56	Y	1.02	1.10	7%
23478-PeCDF	33.62	1.13E+07	1.58	Y	1.02	1.05	3%
123478-HxCDF	36.83	1.06E+07	1.22	Y	1.27	1.34	6%
123678-HxCDF	36.98	1.14E+07	1.27	Y	1.15	1.19	3%
234678-HxCDF	37.66	1.09E+07	1.31	Y	1.19	1.27	7%
123789-HxCDF	38.60	9.04E+06	1.28	Y	1.16	1.26	8%
1234678-HpCDF	39.93	9.31E+06	1.01	Y	1.37	1.39	1%
1234789-HpCDF	41.32	7.60E+06	1.02	Y	1.31	1.37	5%
OCDF	43.70	1.34E+07	0.92	Y	1.07	1.17	9%
ES 2378-TCDD	28.63	1.39E+07	0.82	Y	1.05	1.00	-4%
ES 12378-PeCDD	33.932	1.31E+07	1.55	Y	0.88	0.94	7%
ES 123478-HxCDD	37.822	1.04E+07	1.27	Y	0.97	0.95	-2%
ES 123678-HxCDD	37.938	1.11E+07	1.21	Y	0.94	1.02	8%
ES 123789-HxCDD	38.227	1.25E+07	1.33	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.846	1.06E+07	1.06	Y	0.91	0.97	7%
ES OCDD	43.494	1.49E+07	0.89	Y	0.62	0.68	10%
ES 2378-TCDF	27.78	2.44E+07	0.80	Y	1.06	0.99	-7%
ES 12378-PeCDF	32.493	2.14E+07	1.56	Y	0.91	0.87	-5%
ES 23478-PeCDF	33.598	2.16E+07	1.58	Y	0.88	0.87	-1%
ES 123478-HxCDF	36.817	1.57E+07	0.55	Y	1.20	1.44	20%
ES 123678-HxCDF	36.961	1.92E+07	0.54	Y	1.35	1.76	30% *
ES 234678-HxCDF	37.644	1.71E+07	0.54	Y	1.24	1.57	27%
ES 123789-HxCDF	38.576	1.44E+07	0.53	Y	1.16	1.32	14%
ES 1234678-HpCDF	39.914	1.34E+07	0.47	Y	0.97	1.23	27%
ES 1234789-HpCDF	41.307	1.11E+07	0.45	Y	0.85	1.02	20%
ES OCDF	43.683	2.29E+07	0.92	Y	0.81	1.05	30% *

* ok 1613B
CL 26Jan22

Dioxin/Furan QC Summary	Acq'd: 20 Jan 2022 10:26 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220120_DF_CA	UTP: 21-Jan-2022 12:41:56 MLS	Checkcode: 343-977-NFN
Sample ID: SIL 25-347-1	Report: 24 Jan 2022 11:01 MS	Datafile: 220120C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.97	1.39E+07	0.85	Y	-	-	-
JS 1234-TCDF	26.43	2.47E+07	0.81	Y	-	-	-
JS 123467-HxCDD	38.12	5.44E+06	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.65	1.89E+06	n/a	-	1.20	1.36	13%
CS 12347-PeCDD	33.43	1.20E+07	1.57	Y	0.75	0.86	15%
CS 12346-PeCDF	31.96	2.09E+07	1.65	Y	0.85	0.85	0%
CS 123469-HxCDF	37.28	1.70E+07	0.55	Y	1.12	1.56	40% **
CS 1234689-HpCDF	40.31	1.45E+07	0.46	Y	0.89	1.33	50% **
~~SS 37Cl-2378-TCDD~~	~~28.65~~	~~1.09E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.36~~	~~10%~~
~~SS 12347-PeCDD~~	~~33.43~~	~~1.20E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~0.92~~	~~7%~~
~~SS 12346-PeCDF~~	~~31.96~~	~~2.09E+07~~	~~1.65~~	~~Y~~	~~0.94~~	~~0.98~~	~~5%~~
~~SS 123469-HxCDF~~	~~37.28~~	~~1.70E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~0.89~~	~~7%~~
~~SS 1234689-HpCDF~~	~~40.31~~	~~1.45E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~1.08~~	~~17%~~
Not used in this project.						** No criteria specified in M1613B	
CL 26Jan22						CL 26Jan22	
~~OCDD-a~~	~~43.50~~	~~5.10E+05~~	~~1.77~~	~~N~~	~~0.07~~	~~0.07~~	~~-4%~~
~~OCDF-a~~	~~43.69~~	~~8.65E+05~~	~~2.71~~	~~Y~~	~~0.07~~	~~0.08~~	~~14%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220120C01 Analysis Date: 20-JAN-2022 10:26:30

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.84	0.65 - 0.89	Y	10.9	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32 - 1.78	Y	51.7	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	53.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.19	1.05 - 1.43	Y	53.4	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	48.9	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.01	0.88 - 1.20	Y	51.7	43 - 58	Y
OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	106	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.78	0.65 - 0.89	Y	10.6	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	53.7	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	51.5	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	52.9	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	51.7	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.31	1.05 - 1.43	Y	53.4	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	54	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	50.6	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	52.5	43 - 58	Y
OCDF	M+2/M+4	0.92	0.76 - 1.02	Y	109	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 24 Jan 2022 11:01 Analyst: MS

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

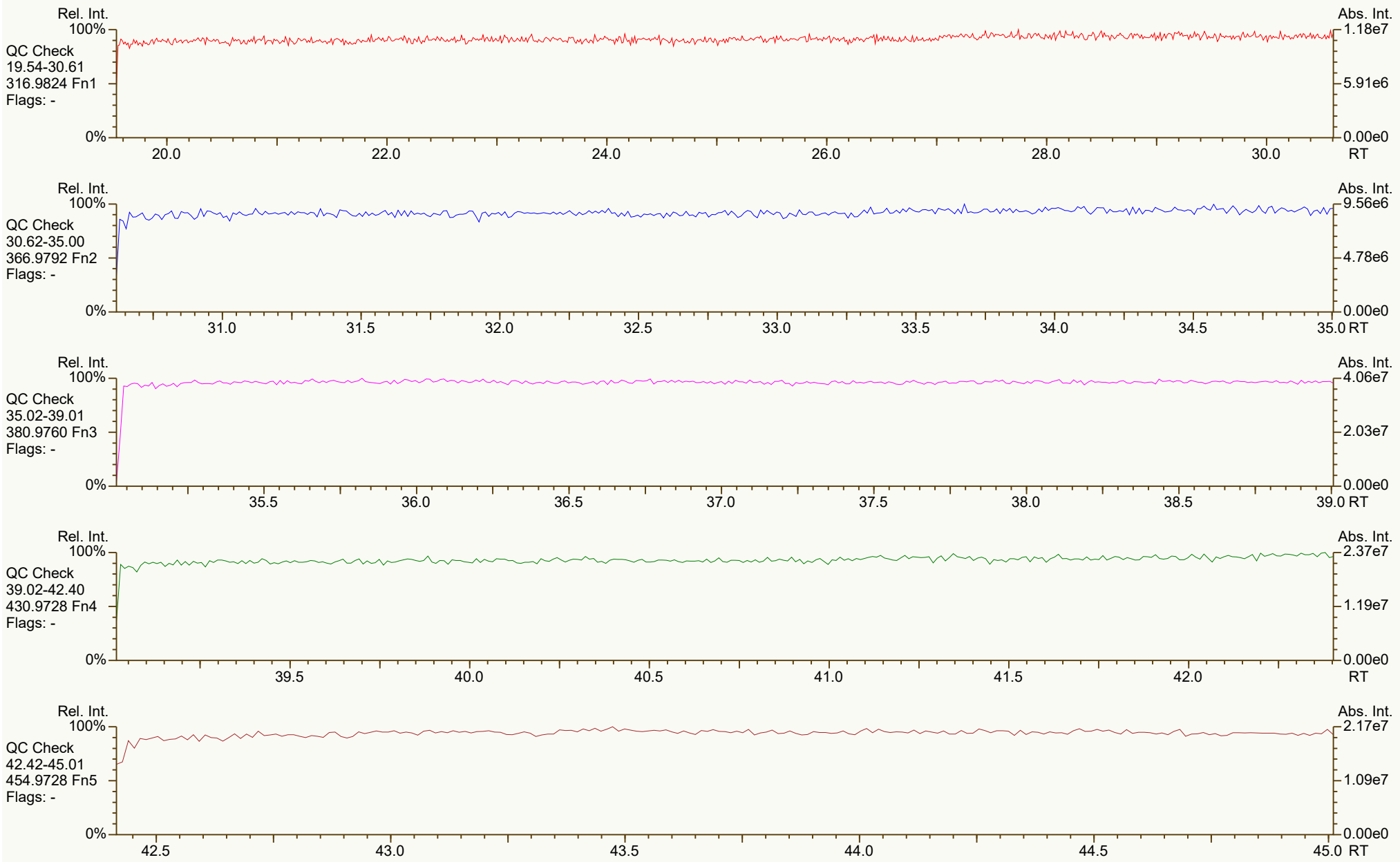
VER Data Filename: 220120C01 Analysis Date: 20-JAN-2022 10:26:30

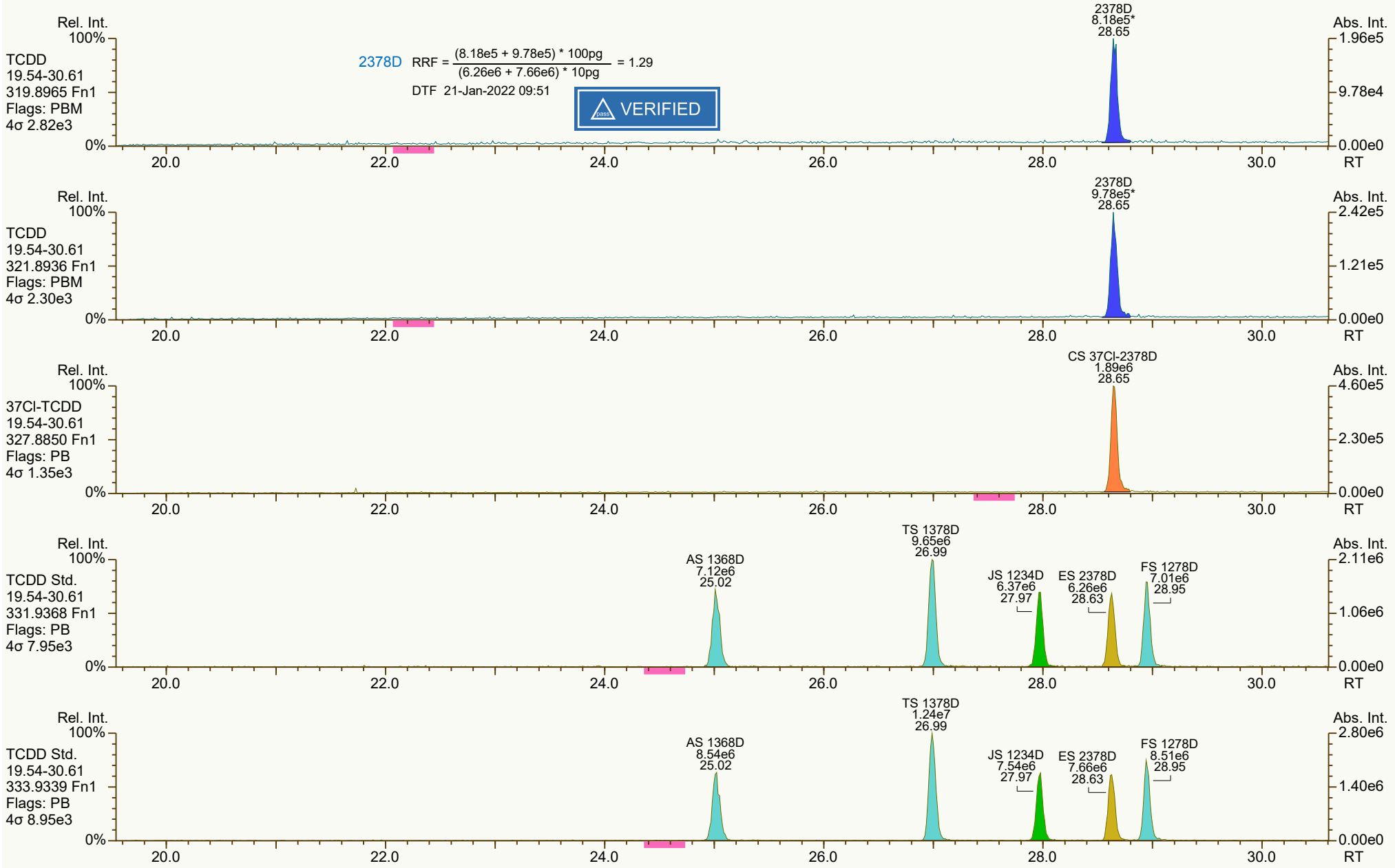
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65	-	0.89	Y	95.7	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	107	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	98	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.21	1.05	-	1.43	Y	108	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.33	1.05	-	1.43	Y	105	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	107	72	-	138	Y
13C-OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	219	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	93.4	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	95.1	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	120	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	130	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	127	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	114	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	127	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	120	77	-	129	Y
13C-OCDF	M+2/M+4	0.92	0.76	-	1.02	Y	260	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						11.3	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.57	1.32	-	1.78	Y	115	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.65	1.32	-	1.78	Y	99.6	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	140 *	70	-	130	N
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	150 *	70	-	130	N

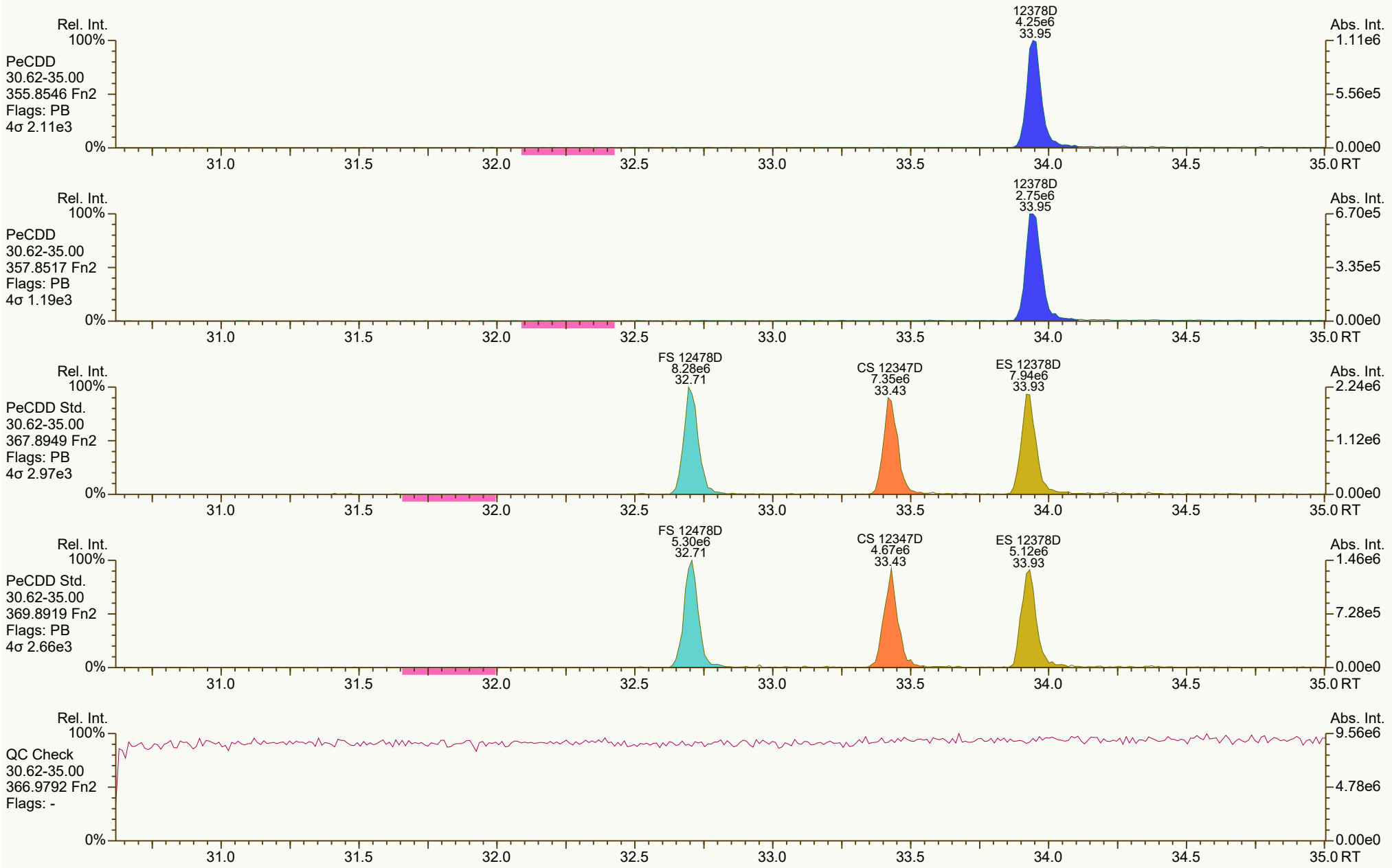
* No criteria specified in M1613B

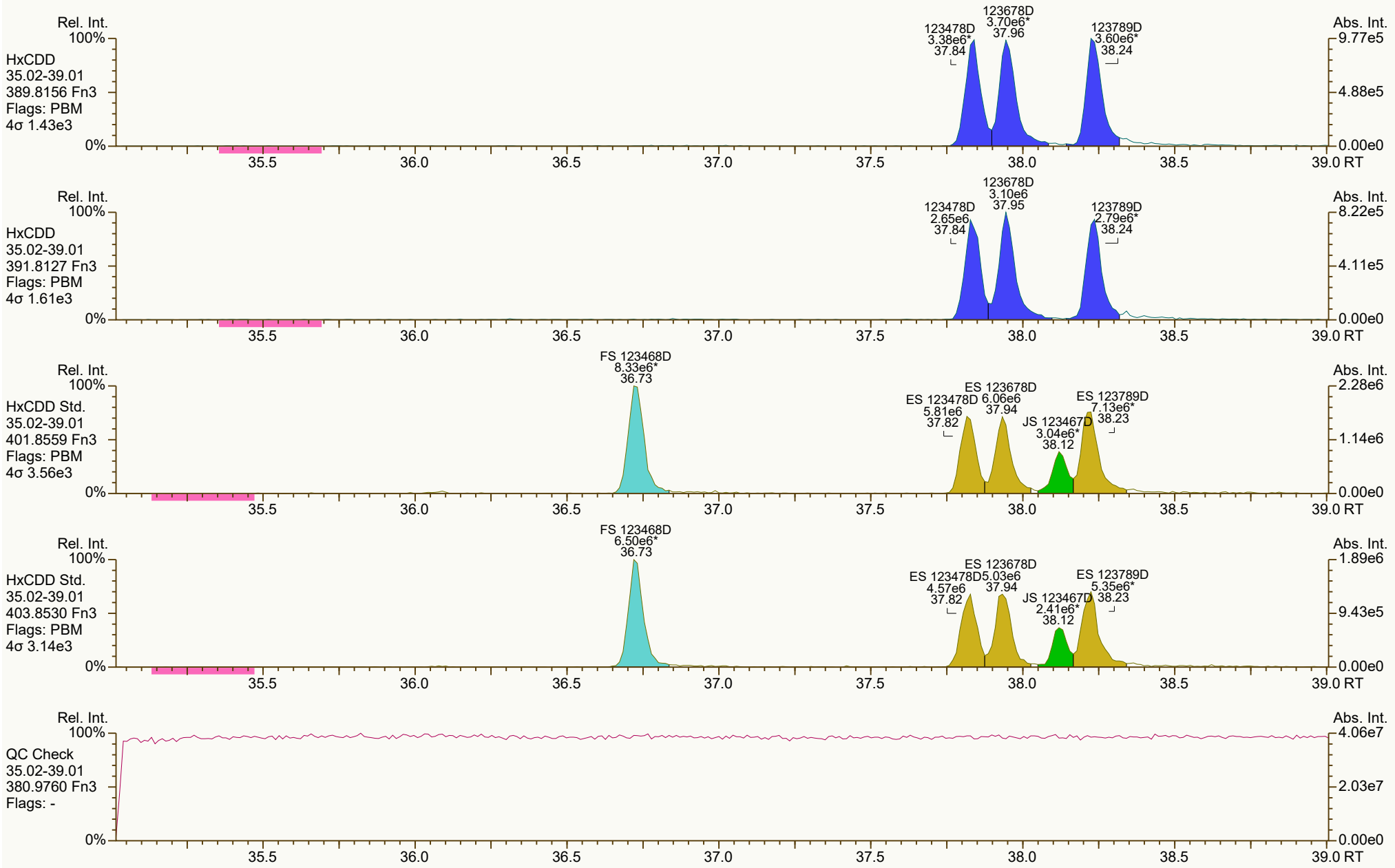
CL 26Jan22

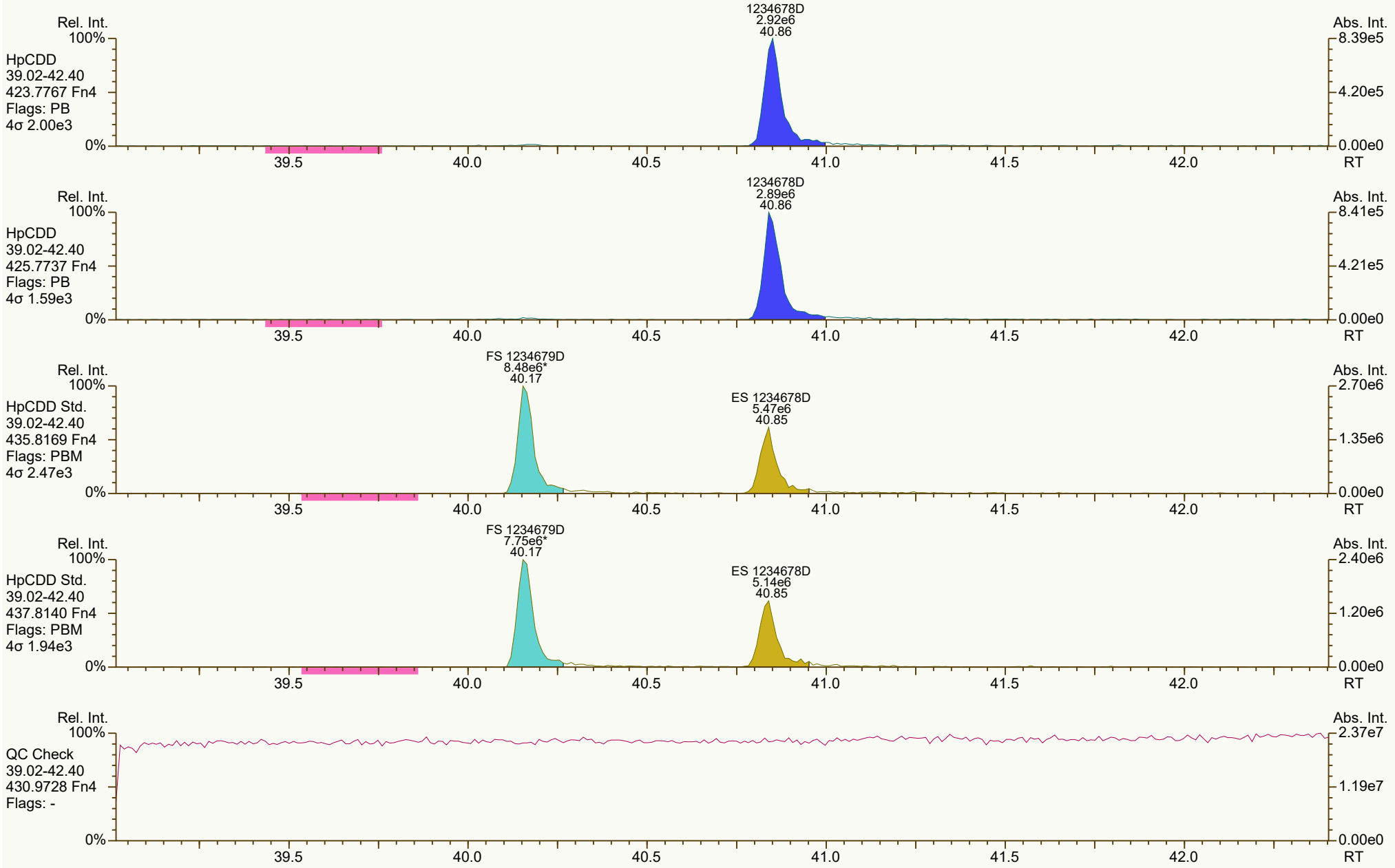
Processed: 24 Jan 2022 11:01 Analyst: MS

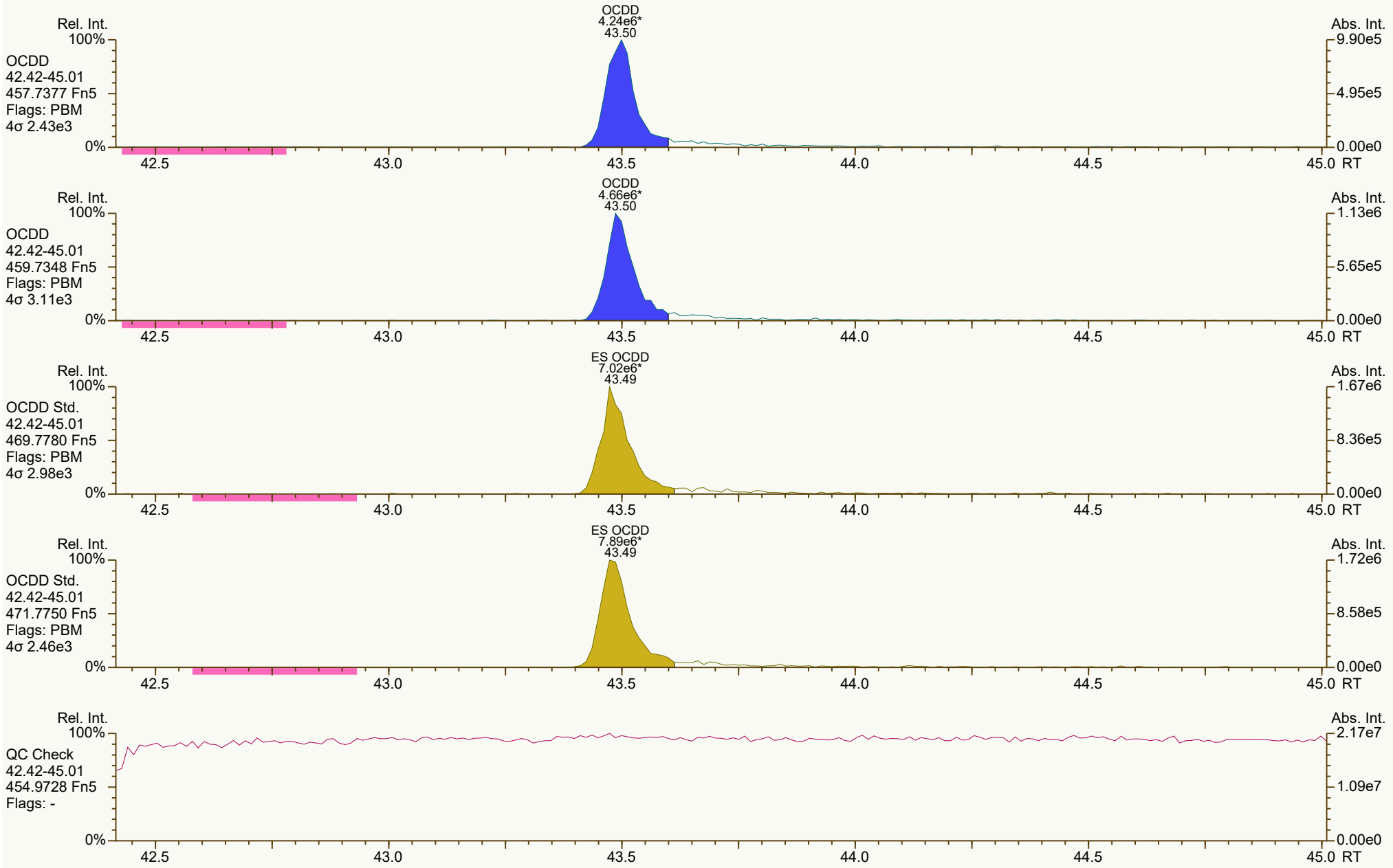

Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.56e6
4.78e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.06e7
2.03e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.37e7
1.19e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.17e7
1.09e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

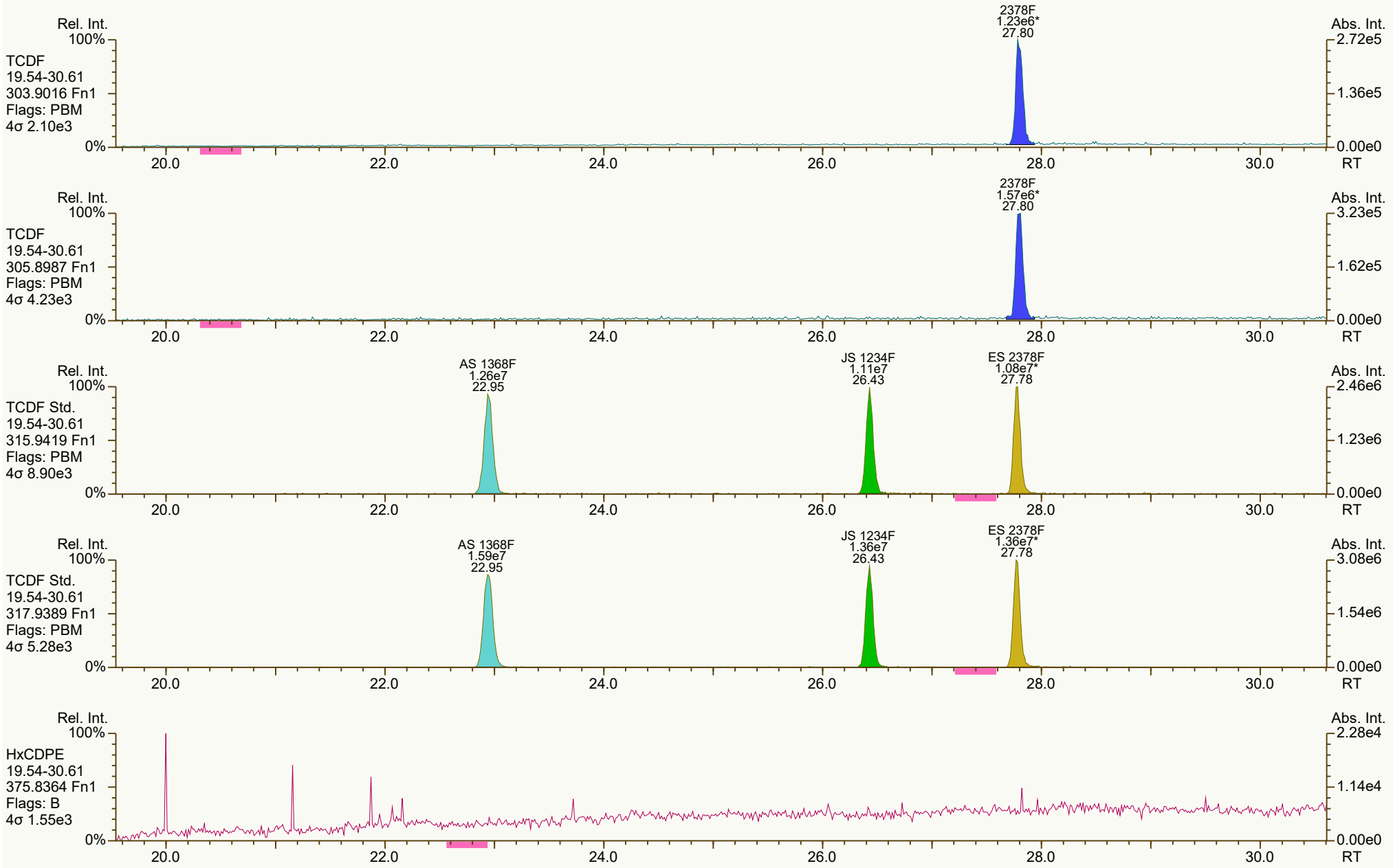

Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 2.82e3
0%
2378D RRF = (8.18e5 + 9.78e5) * 100pg / (6.26e6 + 7.66e6) * 10pg = 1.29
DTF 21-Jan-2022 09:51
VERIFIED
2378D
8.18e5*
28.65
Abs. Int.
1.96e5
9.78e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.30e3
0%
2378D
9.78e5*
28.65
Abs. Int.
2.42e5
1.21e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.35e3
0%
CS 37Cl-2378D
1.89e6
28.65
Abs. Int.
4.60e5
2.30e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 7.95e3
0%
AS 1368D
7.12e6
25.02
TS 1378D
9.65e6
26.99
JS 1234D
6.37e6
27.97
ES 2378D
6.26e6
28.63
FS 1278D
7.01e6
28.95
Abs. Int.
2.11e6
1.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 8.95e3
0%
AS 1368D
8.54e6
25.02
TS 1378D
1.24e7
26.99
JS 1234D
7.54e6
27.97
ES 2378D
7.66e6
28.63
FS 1278D
8.51e6
28.95
Abs. Int.
2.80e6
1.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
Abs. Int.
PeCDD
30.62-35.00
355.8546 Fn2
Flags: PB
4σ 2.11e3
12378D
4.25e6
33.95
1.11e6
5.56e5
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.19e3
12378D
2.75e6
33.95
6.70e5
3.35e5
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PB
4σ 2.97e3
FS 12478D
8.28e6
32.71
CS 12347D
7.35e6
33.43
ES 12378D
7.94e6
33.93
2.24e6
1.12e6
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PB
4σ 2.66e3
FS 12478D
5.30e6
32.71
CS 12347D
4.67e6
33.43
ES 12378D
5.12e6
33.93
1.46e6
7.28e5
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
9.56e6
4.78e6
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.43e3
123478D 3.38e6* 37.84
123678D 3.70e6* 37.96
123789D 3.60e6* 38.24
9.77e5
4.88e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 1.61e3
123478D 2.65e6 37.84
123678D 3.10e6 37.95
123789D 2.79e6* 38.24
8.22e5
4.11e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.56e3
FS 123468D 8.33e6* 36.73
ES 123478D 5.81e6 37.82
ES 123678D 6.06e6 37.94
JS 123467D 3.04e6* 38.12
ES 123789D 7.13e6* 38.23
2.28e6
1.14e6
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 3.14e3
FS 123468D 6.50e6* 36.73
ES 123478D 4.57e6 37.82
ES 123678D 5.03e6 37.94
JS 123467D 2.41e6* 38.12
ES 123789D 5.35e6* 38.23
1.89e6
9.43e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
4.06e7
2.03e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

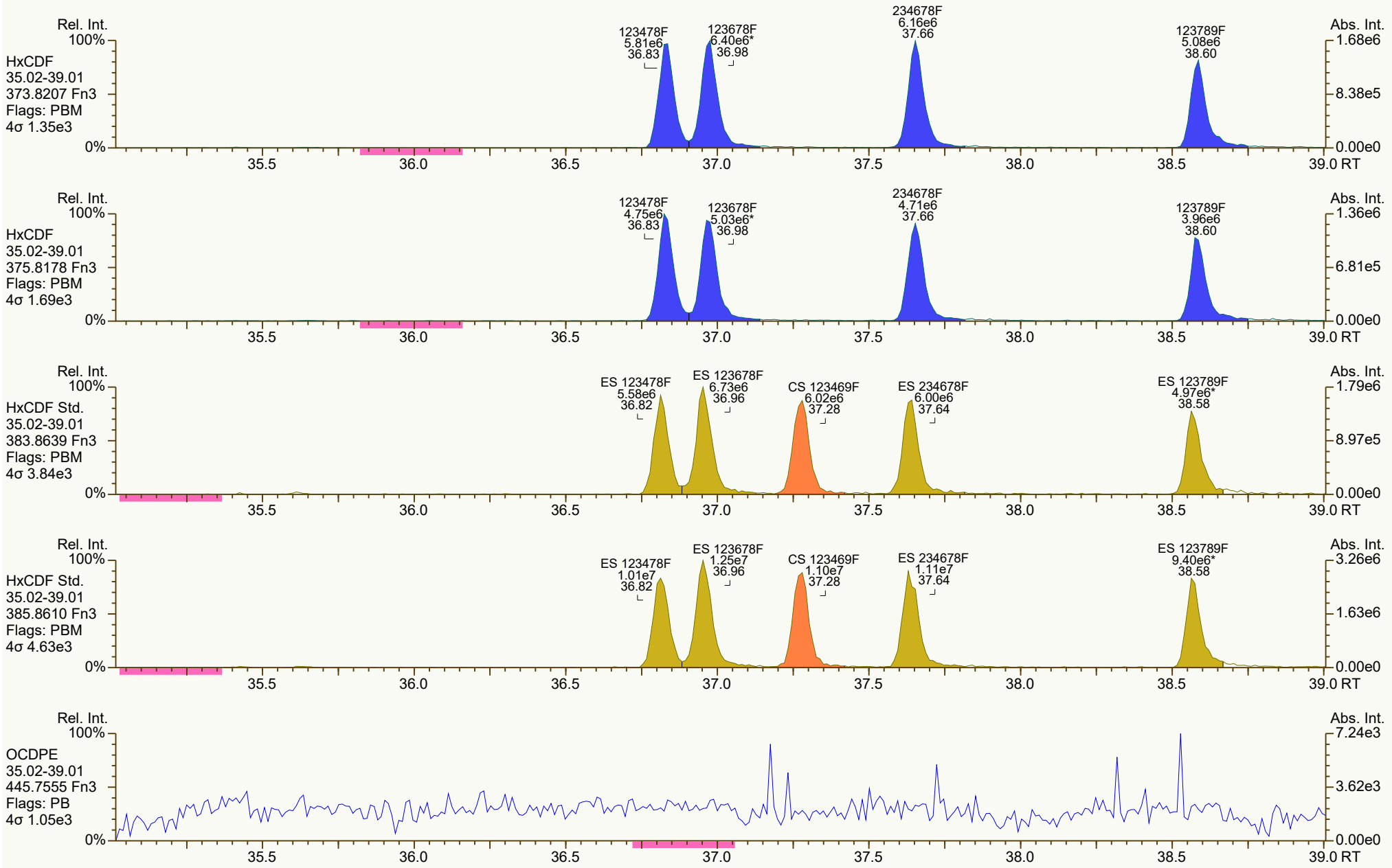

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 2.00e3
1234678D
2.92e6
40.86
Abs. Int.
8.39e5
4.20e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PB
4σ 1.59e3
1234678D
2.89e6
40.86
Abs. Int.
8.41e5
4.21e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.47e3
FS 1234679D
8.48e6*
40.17
ES 1234678D
5.47e6
40.85
Abs. Int.
2.70e6
1.35e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.94e3
FS 1234679D
7.75e6*
40.17
ES 1234678D
5.14e6
40.85
Abs. Int.
2.40e6
1.20e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
2.37e7
1.19e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

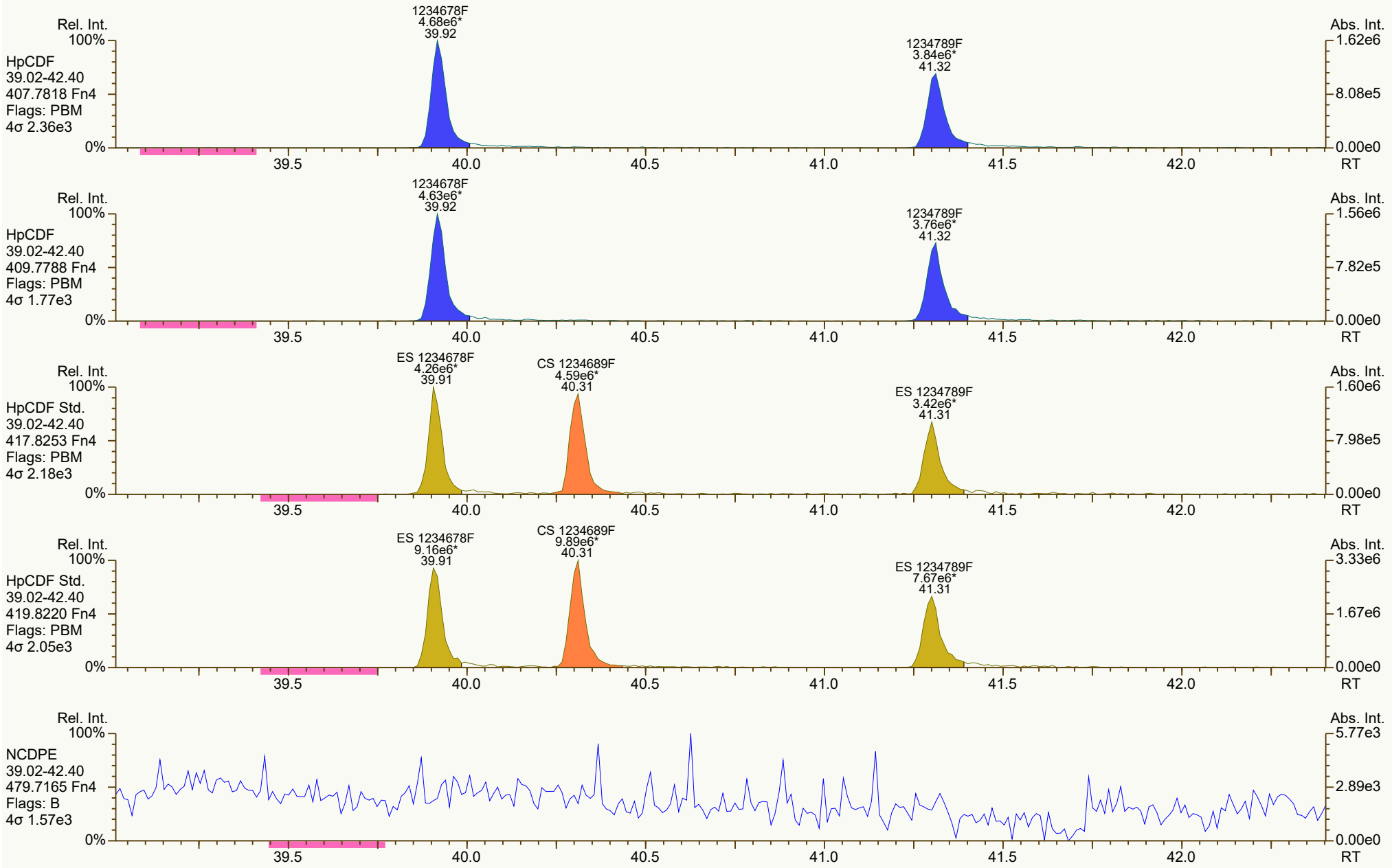

OCDD
4.24e6*
43.50
Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 2.43e3
0%
Abs. Int.
9.90e5
4.95e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.66e6*
43.50
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 3.11e3
0%
Abs. Int.
1.13e6
5.65e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.02e6*
43.49
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.98e3
0%
Abs. Int.
1.67e6
8.36e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.89e6*
43.49
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 2.46e3
0%
Abs. Int.
1.72e6
8.58e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.17e7
1.09e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

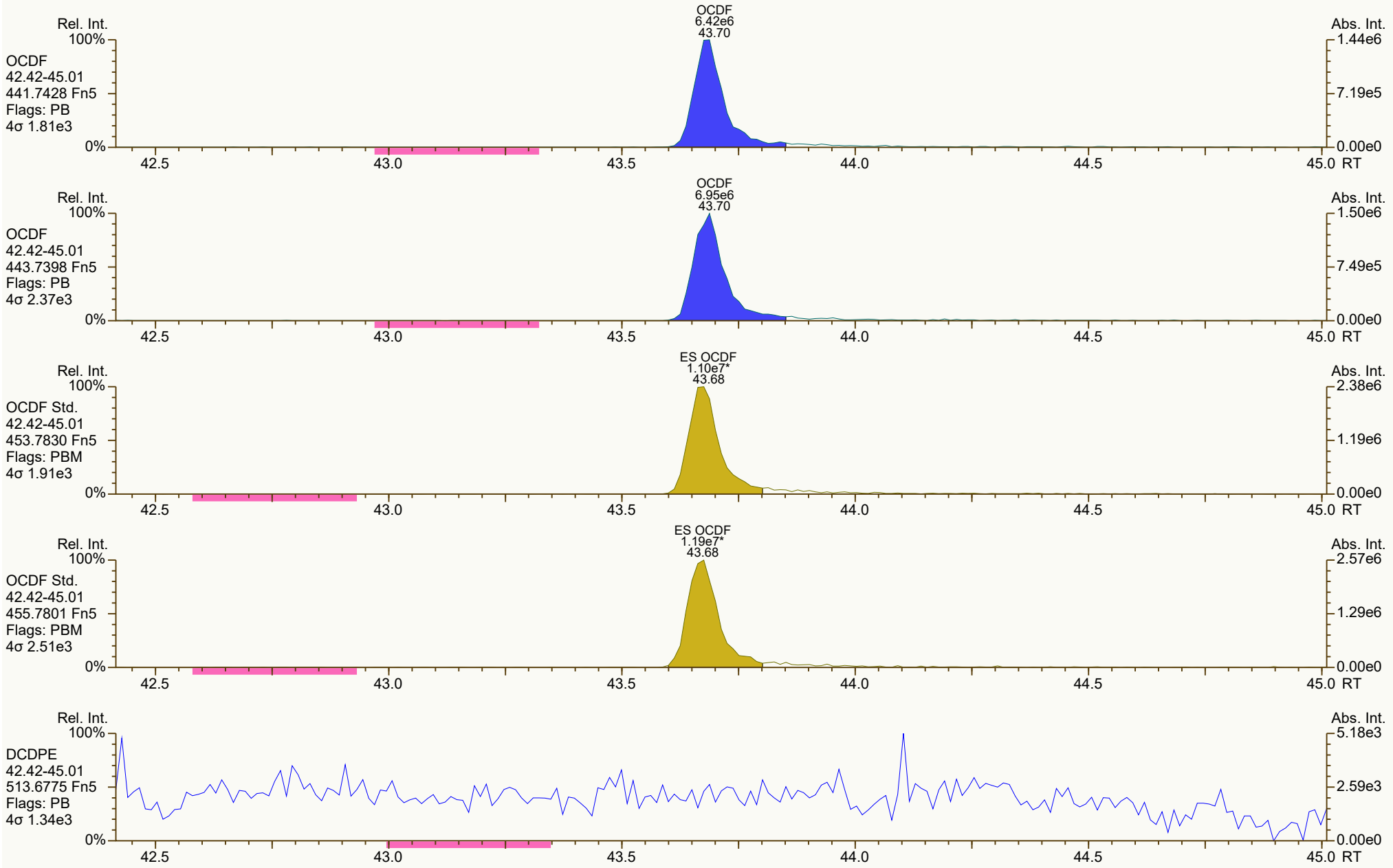

Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 2.10e3
0%
2378F
1.23e6*
27.80
Abs. Int.
2.72e5
1.36e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.23e3
0%
2378F
1.57e6*
27.80
Abs. Int.
3.23e5
1.62e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 8.90e3
0%
AS 1368F
1.26e7
22.95
JS 1234F
1.11e7
26.43
ES 2378F
1.08e7*
27.78
Abs. Int.
2.46e6
1.23e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 5.28e3
0%
AS 1368F
1.59e7
22.95
JS 1234F
1.36e7
26.43
ES 2378F
1.36e7*
27.78
Abs. Int.
3.08e6
1.54e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.55e3
0%
Abs. Int.
2.28e4
1.14e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.11e4
5.57e3
0.00e0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.42e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.74e3
0.00e0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 2.52e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PB
4σ 2.17e3
0%
12378F
7.17e6
32.51
23478F
6.94e6
33.62
Abs. Int.
1.90e6
9.52e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: PB
4σ 4.29e3
0%
12378F
4.59e6
32.51
23478F
4.38e6
33.61
Abs. Int.
1.16e6
5.80e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 3.31e3
0%
CS 12346F
1.30e7
31.96
ES 12378F
1.30e7
32.49
ES 23478F
1.32e7
33.60
Abs. Int.
3.55e6
1.78e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 3.64e3
0%
CS 12346F
7.90e6
31.96
ES 12378F
8.34e6
32.49
ES 23478F
8.35e6
33.60
Abs. Int.
2.38e6
1.19e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.71e3
0%
Abs. Int.
8.23e3
4.12e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.35e3
0%
123478F
5.81e6
36.83
123678F
6.40e6*
36.98
234678F
6.16e6
37.66
123789F
5.08e6
38.60
Abs. Int.
1.68e6
8.38e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 1.69e3
0%
123478F
4.75e6
36.83
123678F
5.03e6*
36.98
234678F
4.71e6
37.66
123789F
3.96e6
38.60
Abs. Int.
1.36e6
6.81e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 3.84e3
0%
ES 123478F
5.58e6
36.82
ES 123678F
6.73e6
36.96
CS 123469F
6.02e6
37.28
ES 234678F
6.00e6
37.64
ES 123789F
4.97e6*
38.58
Abs. Int.
1.79e6
8.97e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 4.63e3
0%
ES 123478F
1.01e7
36.82
ES 123678F
1.25e7
36.96
CS 123469F
1.10e7
37.28
ES 234678F
1.11e7
37.64
ES 123789F
9.40e6*
38.58
Abs. Int.
3.26e6
1.63e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.05e3
0%
Abs. Int.
7.24e3
3.62e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
0%
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.36e3
1234678F
4.68e6*
39.92
1234789F
3.84e6*
41.32
1.62e6
8.08e5
0.00e0
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.77e3
1234678F
4.63e6*
39.92
1234789F
3.76e6*
41.32
1.56e6
7.82e5
0.00e0
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 2.18e3
ES 1234678F
4.26e6*
39.91
CS 1234689F
4.59e6*
40.31
ES 1234789F
3.42e6*
41.31
1.60e6
7.98e5
0.00e0
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.05e3
ES 1234678F
9.16e6*
39.91
CS 1234689F
9.89e6*
40.31
ES 1234789F
7.67e6*
41.31
3.33e6
1.67e6
0.00e0
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.57e3
5.77e3
2.89e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 1.81e3
0%
OCDF
6.42e6
43.70
Abs. Int.
1.44e6
7.19e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PB
4σ 2.37e3
0%
OCDF
6.95e6
43.70
Abs. Int.
1.50e6
7.49e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 1.91e3
0%
ES OCDF
1.10e7*
43.68
Abs. Int.
2.38e6
1.19e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 2.51e3
0%
ES OCDF
1.19e7*
43.68
Abs. Int.
2.57e6
1.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.34e3
0%
Abs. Int.
5.18e3
2.59e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 25 Jan 2022 13:07 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220124_DF_CD	UTP: 26-Jan-2022 09:41:04 DTF	Checkcode: 192-921-CQN
Sample ID: SIL 25-347-1	Report: 26 Jan 2022 09:41 TF	Datafile: 220124C32

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.64	2.51E+06	0.80	Y	1.18	1.16	-2%
12378-PeCDD	33.95	9.05E+06	1.54	Y	1.04	0.99	-4%
123478-HxCDD	37.84	8.45E+06	1.26	Y	1.09	1.13	4%
123678-HxCDD	37.95	9.18E+06	1.24	Y	1.15	1.16	1%
123789-HxCDD	38.25	9.12E+06	1.27	Y	1.05	1.03	-2%
1234678-HpCDD	40.87	7.28E+06	1.04	Y	1.06	1.00	-6%
OCDD	43.54	1.15E+07	0.93	Y	1.13	1.17	4%
2378-TCDF	27.79	3.53E+06	0.77	Y	1.08	1.02	-5%
12378-PeCDF	32.50	1.34E+07	1.55	Y	1.02	0.96	-6%
23478-PeCDF	33.61	1.29E+07	1.58	Y	1.02	0.94	-7%
123478-HxCDF	36.83	1.35E+07	1.27	Y	1.27	1.26	-1%
123678-HxCDF	36.98	1.47E+07	1.25	Y	1.15	1.13	-2%
234678-HxCDF	37.66	1.29E+07	1.20	Y	1.19	1.15	-3%
123789-HxCDF	38.60	1.11E+07	1.24	Y	1.16	1.15	-2%
1234678-HpCDF	39.94	1.10E+07	1.01	Y	1.37	1.32	-4%
1234789-HpCDF	41.34	8.85E+06	1.00	Y	1.31	1.33	2%
OCDF	43.72	1.46E+07	0.89	Y	1.07	1.06	-1%
ES 2378-TCDD	28.61	2.17E+07	0.82	Y	1.05	0.98	-7%
ES 12378-PeCDD	33.925	1.83E+07	1.57	Y	0.88	0.82	-6%
ES 123478-HxCDD	37.823	1.49E+07	1.25	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.938	1.58E+07	1.23	Y	0.94	1.01	7%
ES 123789-HxCDD	38.229	1.77E+07	1.32	Y	1.09	1.13	4%
ES 1234678-HpCDD	40.858	1.45E+07	1.15	Y	0.91	0.93	2%
ES OCDD	43.523	1.97E+07	0.93	Y	0.62	0.63	1%
ES 2378-TCDF	27.766	3.45E+07	0.81	Y	1.06	0.99	-6%
ES 12378-PeCDF	32.487	2.78E+07	1.48	Y	0.91	0.80	-12%
ES 23478-PeCDF	33.592	2.73E+07	1.55	Y	0.88	0.79	-11%
ES 123478-HxCDF	36.817	2.14E+07	0.53	Y	1.20	1.37	14%
ES 123678-HxCDF	36.963	2.60E+07	0.54	Y	1.35	1.67	24%
ES 234678-HxCDF	37.646	2.23E+07	0.51	Y	1.24	1.43	15%
ES 123789-HxCDF	38.583	1.93E+07	0.54	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.927	1.68E+07	0.46	Y	0.97	1.08	11%
ES 1234789-HpCDF	41.321	1.33E+07	0.45	Y	0.85	0.85	0%
ES OCDF	43.713	2.75E+07	0.90	Y	0.81	0.88	9%

Dioxin/Furan QC Summary	Acq'd: 25 Jan 2022 13:07 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220124_DF_CD	UTP: 26-Jan-2022 09:41:04 DTF	Checkcode: 192-921-CQN
Sample ID: SIL 25-347-1	Report: 26 Jan 2022 09:41 TF	Datafile: 220124C32

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.96	2.22E+07	0.83	Y	-	-	-
JS 1234-TCDF	26.42	3.48E+07	0.80	Y	-	-	-
JS 123467-HxCDD	38.13	7.79E+06	1.24	Y	-	-	-
CS 37Cl-2378-TCDD	28.63	2.71E+06	n/a	-	1.20	1.22	2%
CS 12347-PeCDD	33.42	1.67E+07	1.54	Y	0.75	0.75	0%
CS 12346-PeCDF	31.96	2.74E+07	1.62	Y	0.85	0.79	-7%
CS 123469-HxCDF	37.28	2.20E+07	0.54	Y	1.12	1.41	27%
CS 1234689-HpCDF	40.33	1.77E+07	0.49	Y	0.89	1.14	28%
~~SS 37Cl-2378-TCDD~~	~~28.63~~	~~2.71E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.25~~	~~9%~~
~~SS 12347-PeCDD~~	~~33.42~~	~~1.67E+07~~	~~1.54~~	~~Y~~	~~0.86~~	~~0.91~~	~~6%~~
~~SS 12346-PeCDF~~	~~31.96~~	~~2.74E+07~~	~~1.62~~	~~Y~~	~~0.94~~	~~0.98~~	~~5%~~
~~SS 123469-HxCDF~~	~~37.28~~	~~2.20E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~0.85~~	~~2%~~
~~SS 1234689-HpCDF~~	~~40.33~~	~~1.77E+07~~	~~0.49~~	~~Y~~	~~0.92~~	~~1.06~~	~~15%~~
Not used in this project.							
CL 26Jan22							
~~OCDD-a~~	~~43.53~~	~~3.30E+05~~	~~4.62~~	~~N~~	~~0.07~~	~~0.03~~	~~-53%~~
~~OCDF-a~~	~~43.70~~	~~5.86E+05~~	~~1.98~~	~~N~~	~~0.07~~	~~0.04~~	~~-36%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220124C32 Analysis Date: 25-JAN-2022 13:07:51

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.80	0.65 - 0.89	Y	9.76	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32 - 1.78	Y	47.8	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	52	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	50.6	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	49.2	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	47.2	43 - 58	Y
OCDD	M+2/M+4	0.93	0.76 - 1.02	Y	104	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.77	0.65 - 0.89	Y	9.46	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	47.1	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	46.3	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	49.5	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	49.1	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05 - 1.43	Y	48.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	49.2	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	48.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.00	0.88 - 1.20	Y	50.9	43 - 58	Y
OCDF	M+2/M+4	0.89	0.76 - 1.02	Y	99.3	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 26 Jan 2022 09:41 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

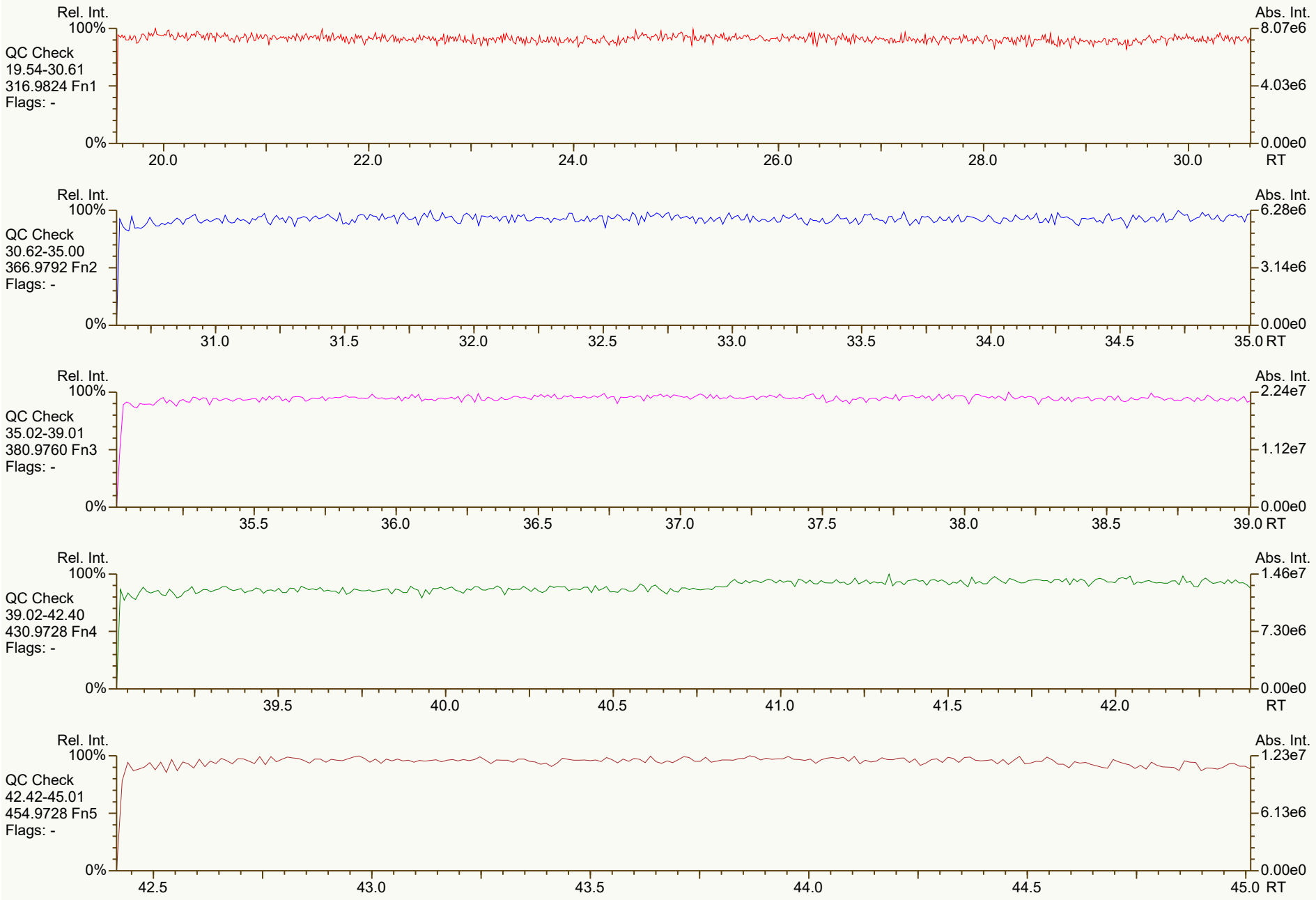
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

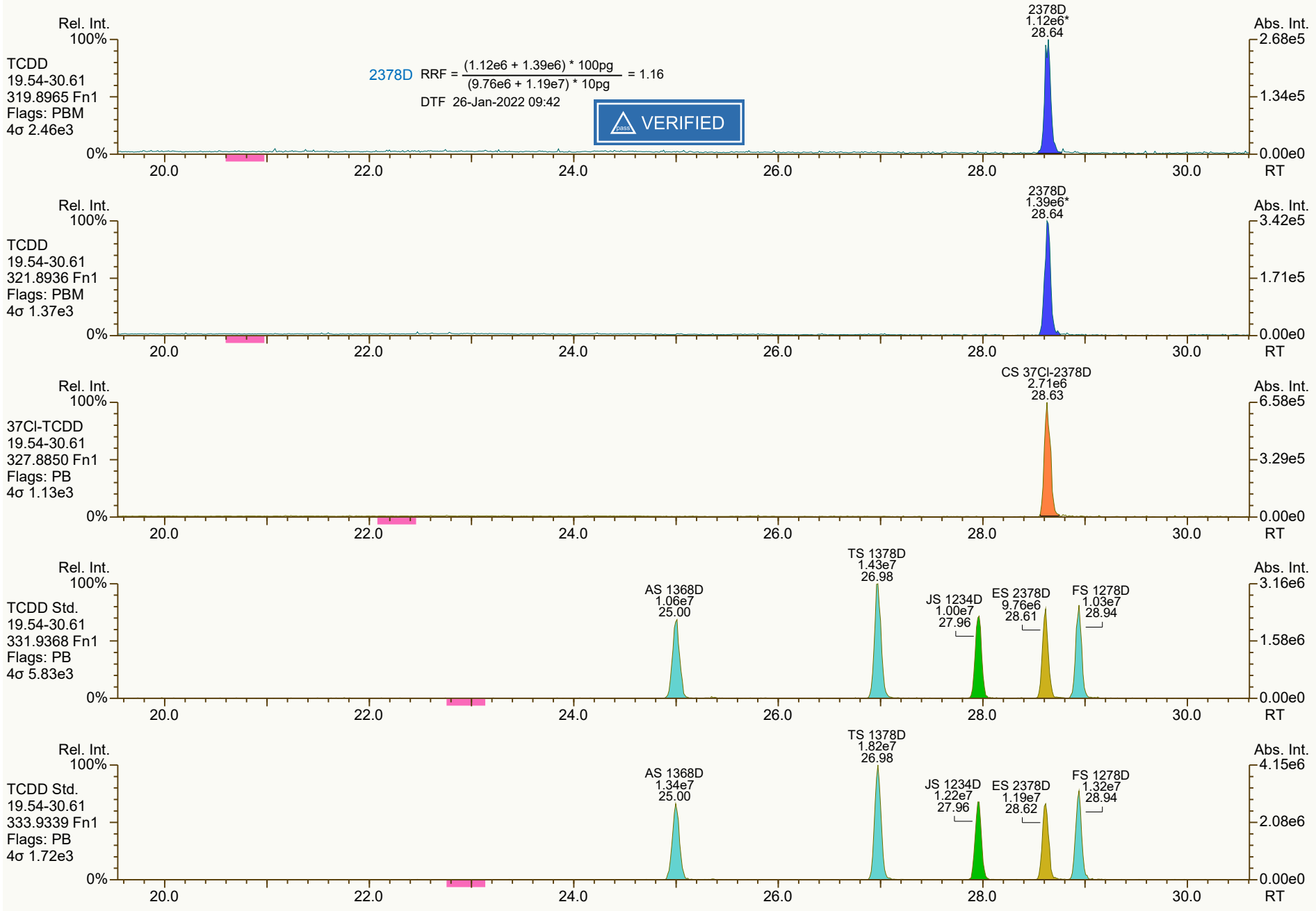
Instrument ID: HRMS3 GC Column ID: ZB-5ms

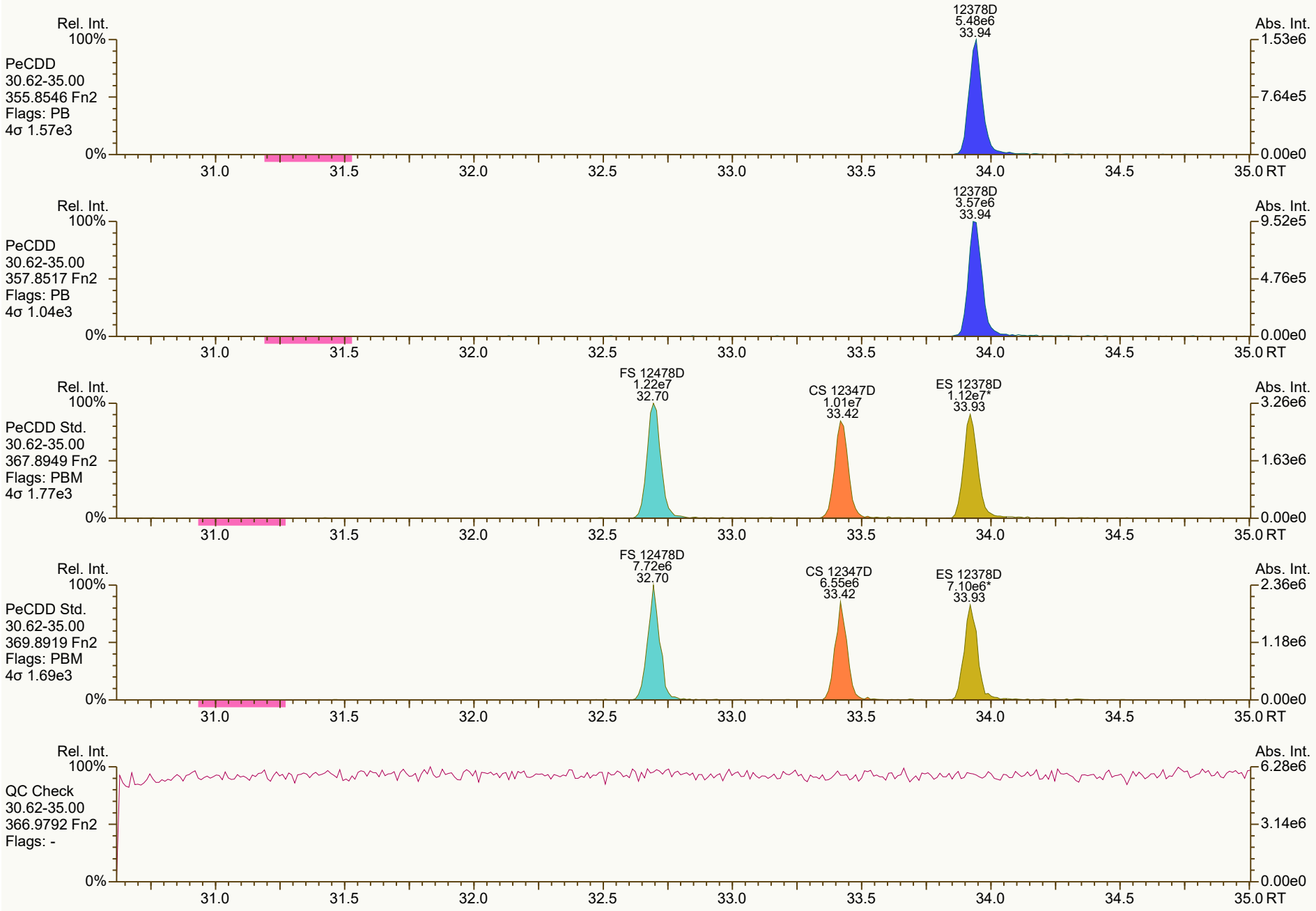
VER Data Filename: 220124C32 Analysis Date: 25-JAN-2022 13:07:51

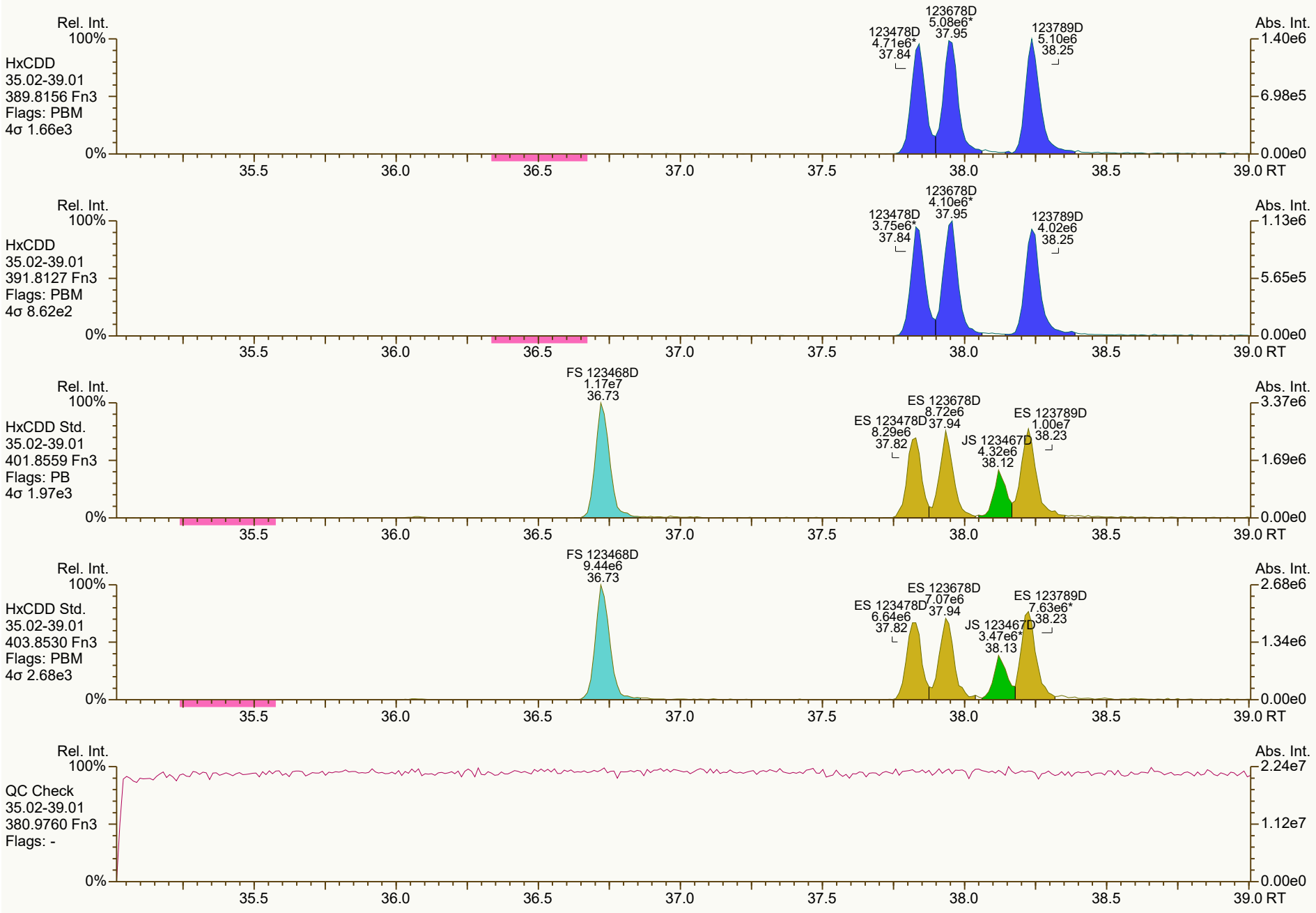
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65	-	0.89	Y	93.3	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32	-	1.78	Y	93.6	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	98.6	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05	-	1.43	Y	107	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	104	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.15	0.88	-	1.20	Y	102	72	-	138	Y
13C-OCDD	M+2/M+4	0.93	0.76	-	1.02	Y	202	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.81	0.65	-	0.89	Y	93.8	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.48	1.32	-	1.78	Y	88	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32	-	1.78	Y	89	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	114	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	124	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	115	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	107	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	111	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	100	77	-	129	Y
13C-OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	219	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						10.2	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.54	1.32	-	1.78	Y	99.5	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	92.6	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	127	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.49	0.37	-	0.51	Y	128	70	-	130	Y

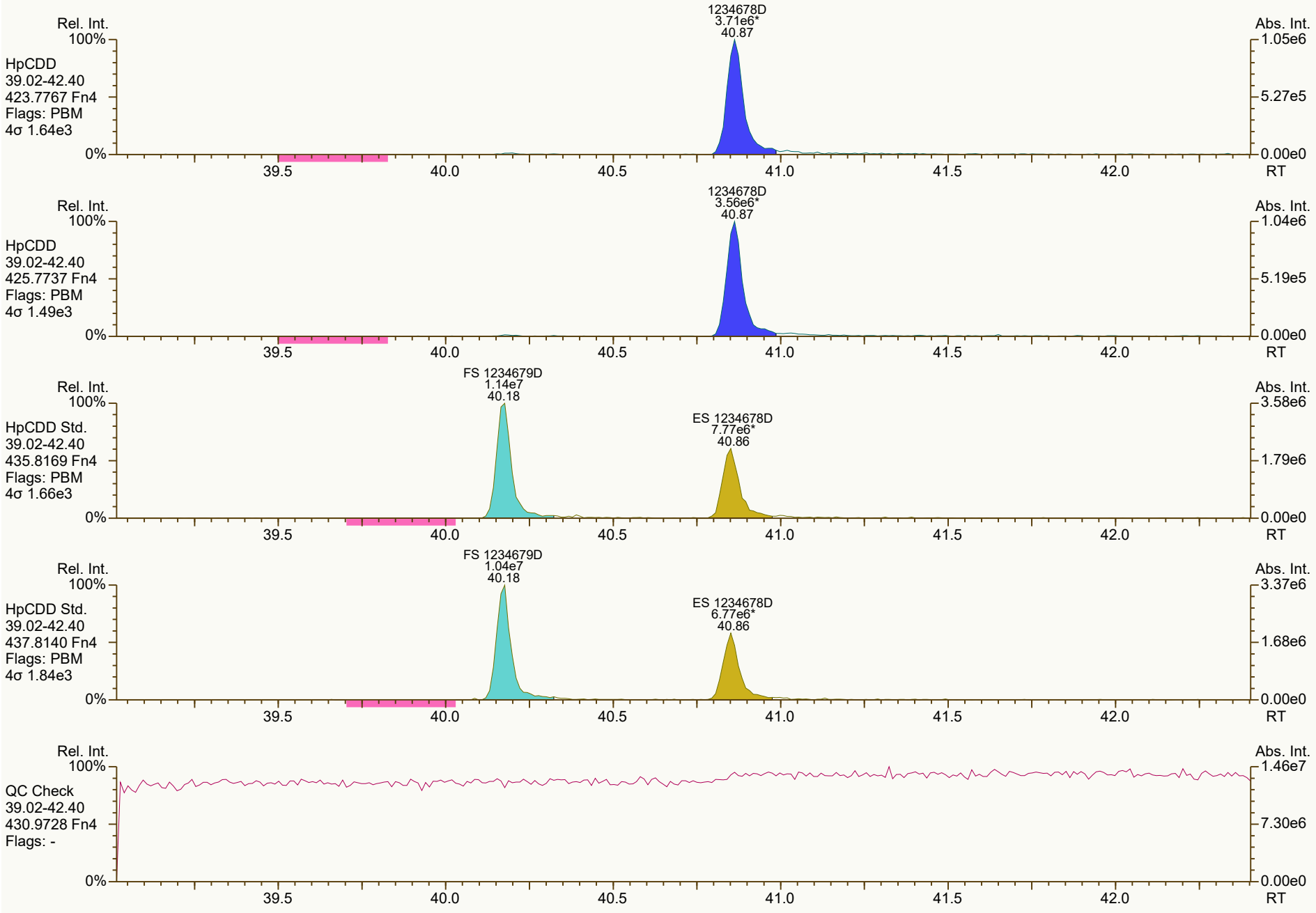
Processed: 26 Jan 2022 09:41 Analyst: TF

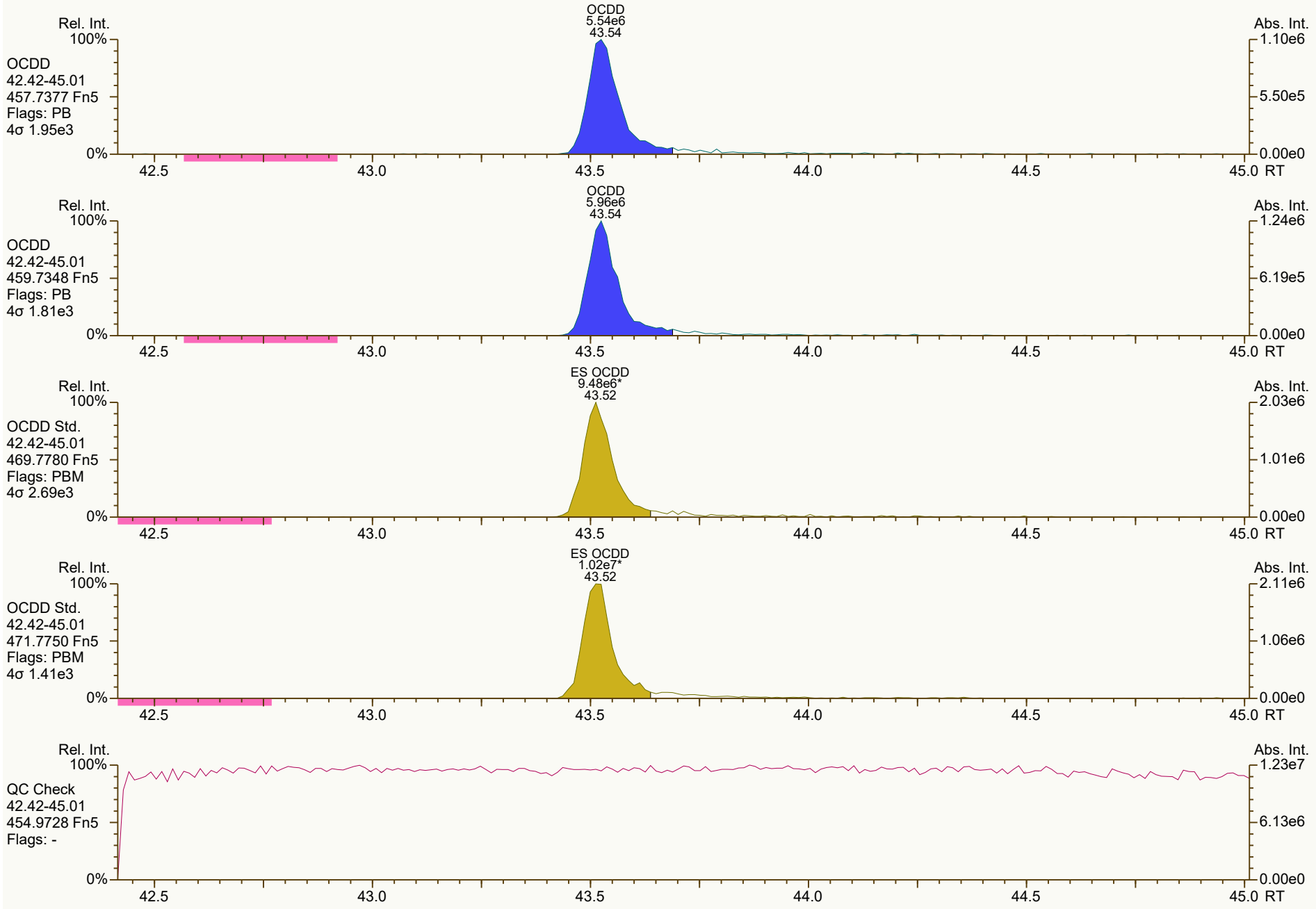

Rel. Int.
100%
0%
Abs. Int.
8.07e6
4.03e6
0.00e0
RT
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
6.28e6
3.14e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
2.24e7
1.12e7
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
1.46e7
7.30e6
39.5
40.0
40.5
41.0
41.5
42.0
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
1.23e7
6.13e6
42.5
43.0
43.5
44.0
44.5
45.0

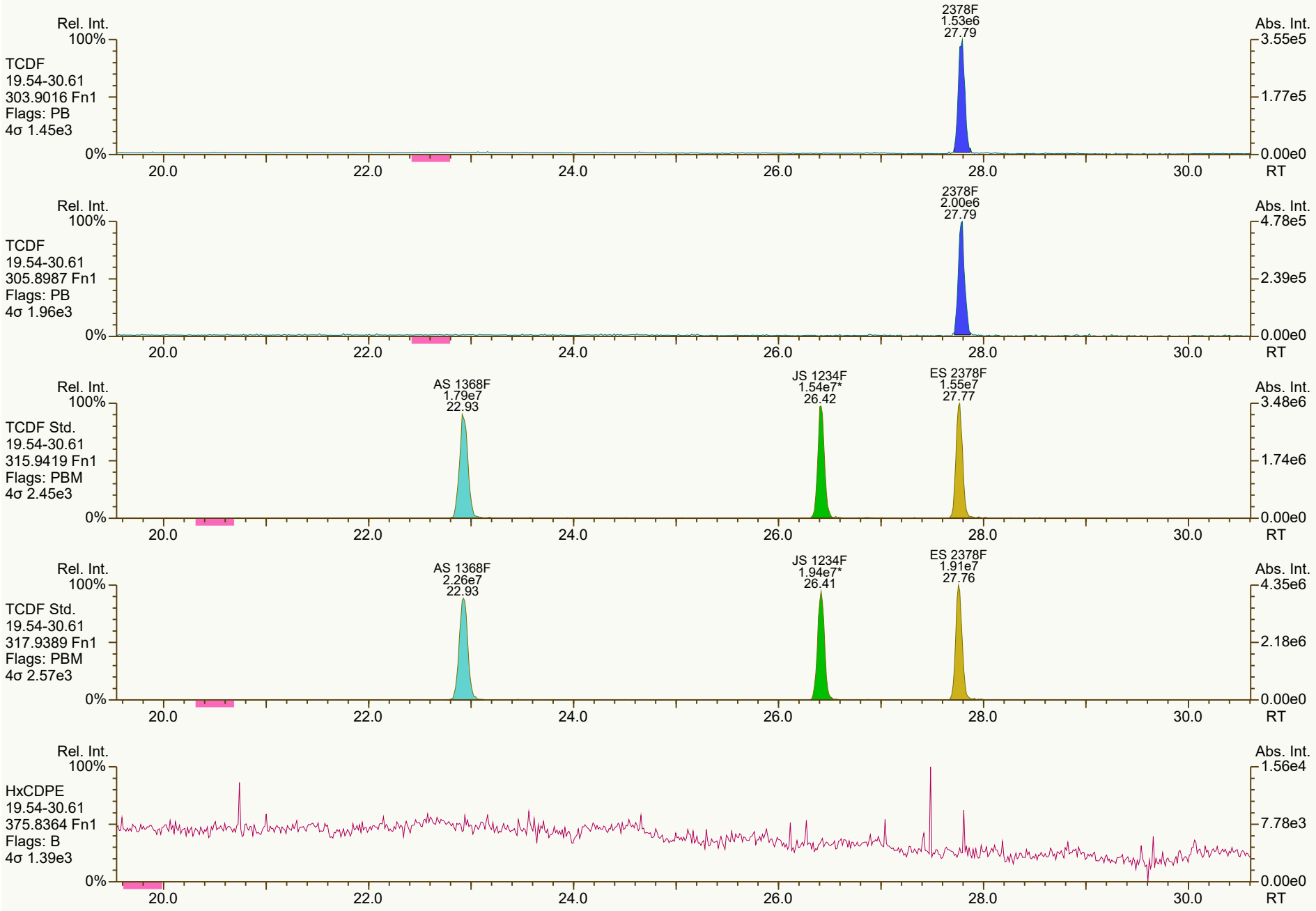

Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 2.46e3
0%
2378D RRF = (1.12e6 + 1.39e6) * 100pg / (9.76e6 + 1.19e7) * 10pg = 1.16
DTF 26-Jan-2022 09:42
VERIFIED
2378D
1.12e6*
28.64
Abs. Int.
2.68e5
1.34e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.37e3
0%
2378D
1.39e6*
28.64
Abs. Int.
3.42e5
1.71e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.13e3
0%
CS 37Cl-2378D
2.71e6
28.63
Abs. Int.
6.58e5
3.29e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 5.83e3
0%
AS 1368D
1.06e7
25.00
TS 1378D
1.43e7
26.98
JS 1234D
1.00e7
27.96
ES 2378D
9.76e6
28.61
FS 1278D
1.03e7
28.94
Abs. Int.
3.16e6
1.58e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 1.72e3
0%
AS 1368D
1.34e7
25.00
TS 1378D
1.82e7
26.98
JS 1234D
1.22e7
27.96
ES 2378D
1.19e7
28.62
FS 1278D
1.32e7
28.94
Abs. Int.
4.15e6
2.08e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.62-35.00
355.8546 Fn2
Flags: PB
4σ 1.57e3
0%
12378D
5.48e6
33.94
Abs. Int.
1.53e6
7.64e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.04e3
0%
12378D
3.57e6
33.94
Abs. Int.
9.52e5
4.76e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PBM
4σ 1.77e3
0%
FS 12478D
1.22e7
32.70
CS 12347D
1.01e7
33.42
ES 12378D
1.12e7*
33.93
Abs. Int.
3.26e6
1.63e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PBM
4σ 1.69e3
0%
FS 12478D
7.72e6
32.70
CS 12347D
6.55e6
33.42
ES 12378D
7.10e6*
33.93
Abs. Int.
2.36e6
1.18e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.28e6
3.14e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

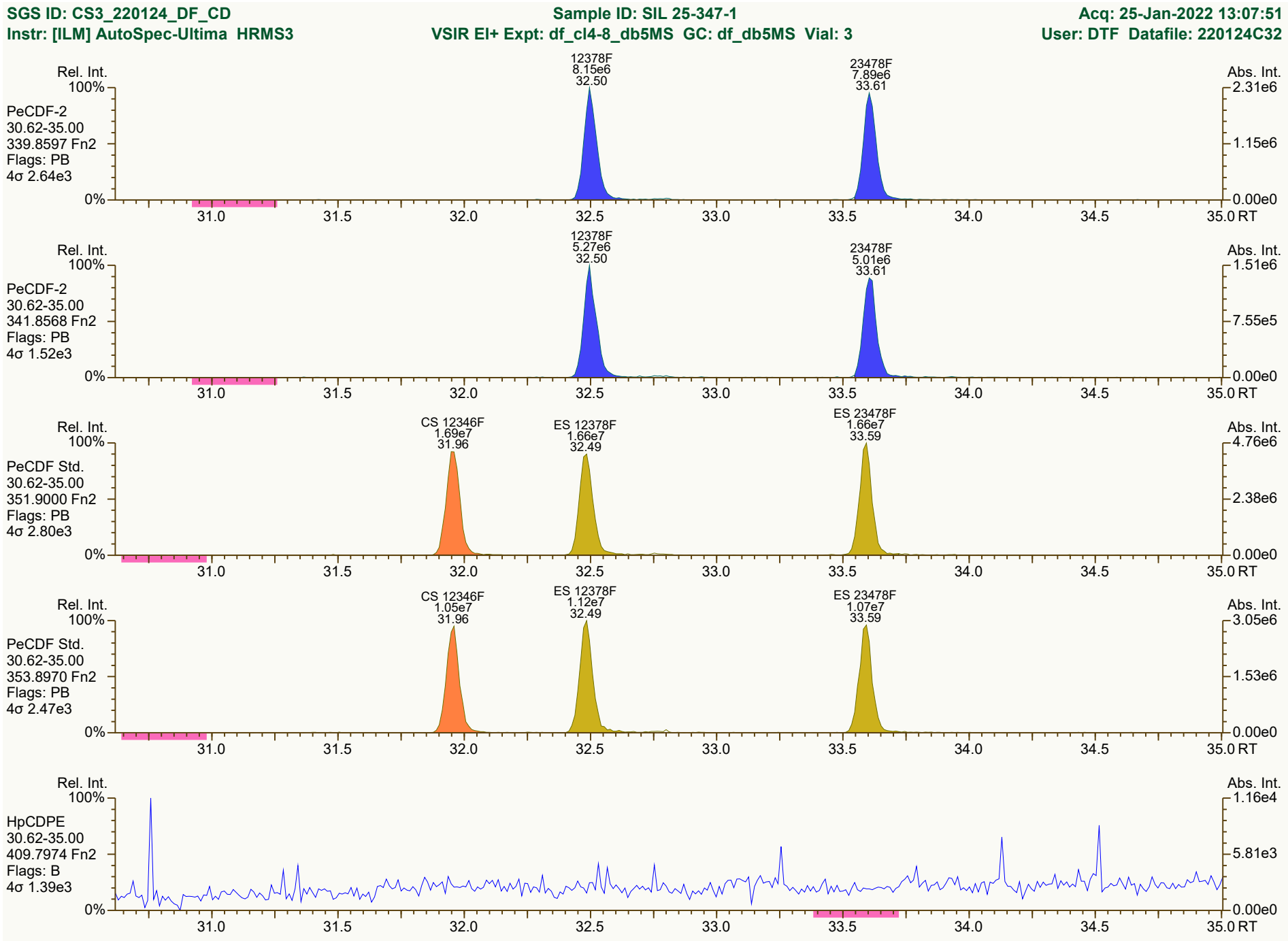

Rel. Int.
100%
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.66e3
123678D
5.08e6*
37.95
123478D
4.71e6*
37.84
123789D
5.10e6
38.25
Abs. Int.
1.40e6
6.98e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 8.62e2
123678D
4.10e6*
37.95
123478D
3.75e6*
37.84
123789D
4.02e6
38.25
Abs. Int.
1.13e6
5.65e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PB
4σ 1.97e3
FS 123468D
1.17e7
36.73
ES 123678D
8.72e6
37.94
ES 123478D
8.29e6
37.82
ES 123789D
1.00e7
38.23
JS 123467D
4.32e6
38.12
Abs. Int.
3.37e6
1.69e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
9.44e6
36.73
ES 123678D
7.07e6
37.94
ES 123478D
6.64e6
37.82
ES 123789D
7.63e6*
38.23
JS 123467D
3.47e6*
38.13
Abs. Int.
2.68e6
1.34e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
Abs. Int.
2.24e7
1.12e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

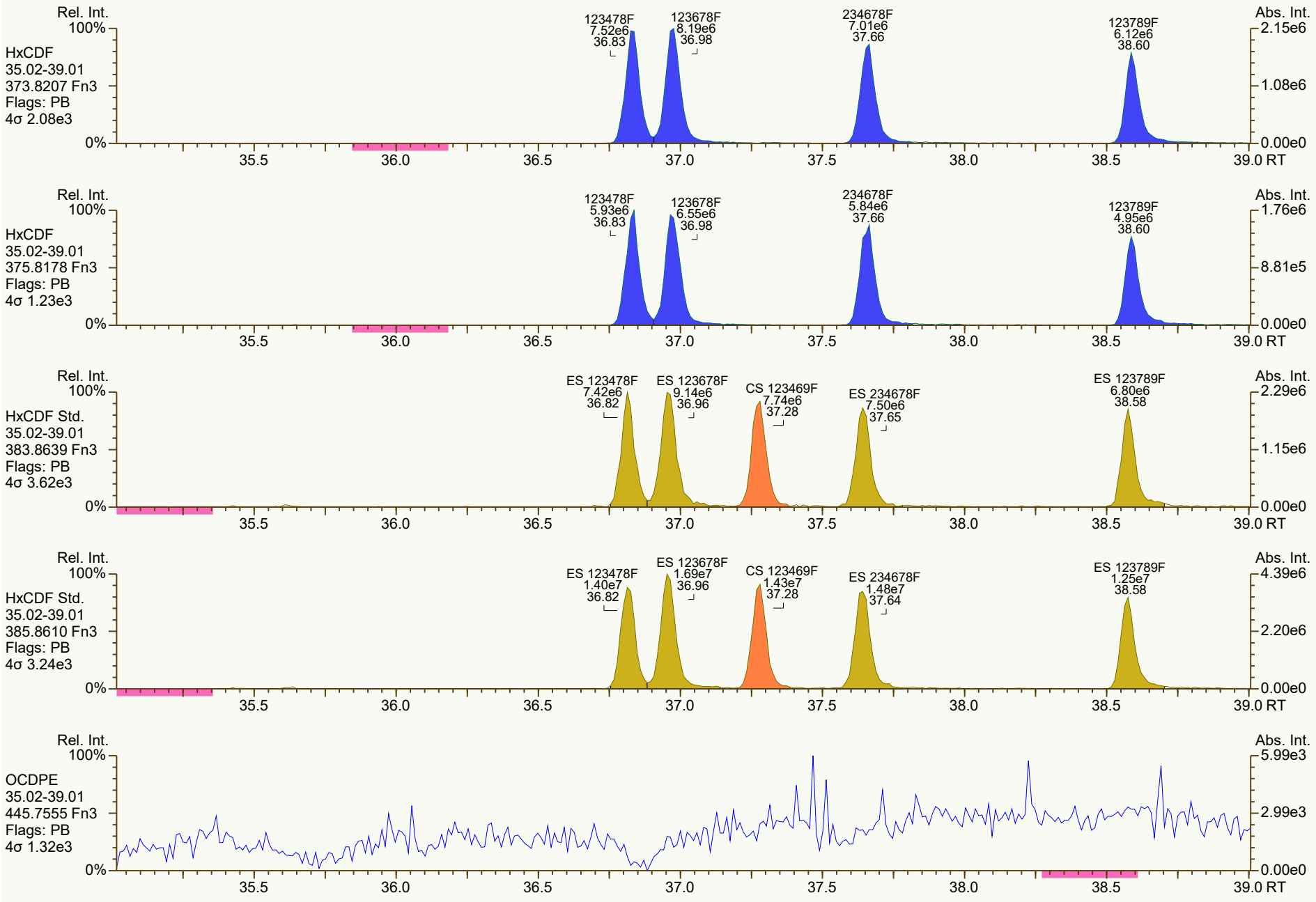

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 1.64e3
1234678D
3.71e6*
40.87
Abs. Int.
1.05e6
5.27e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.49e3
1234678D
3.56e6*
40.87
Abs. Int.
1.04e6
5.19e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 1.66e3
FS 1234679D
1.14e7
40.18
ES 1234678D
7.77e6*
40.86
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.84e3
FS 1234679D
1.04e7
40.18
ES 1234678D
6.77e6*
40.86
Abs. Int.
3.37e6
1.68e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.46e7
7.30e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

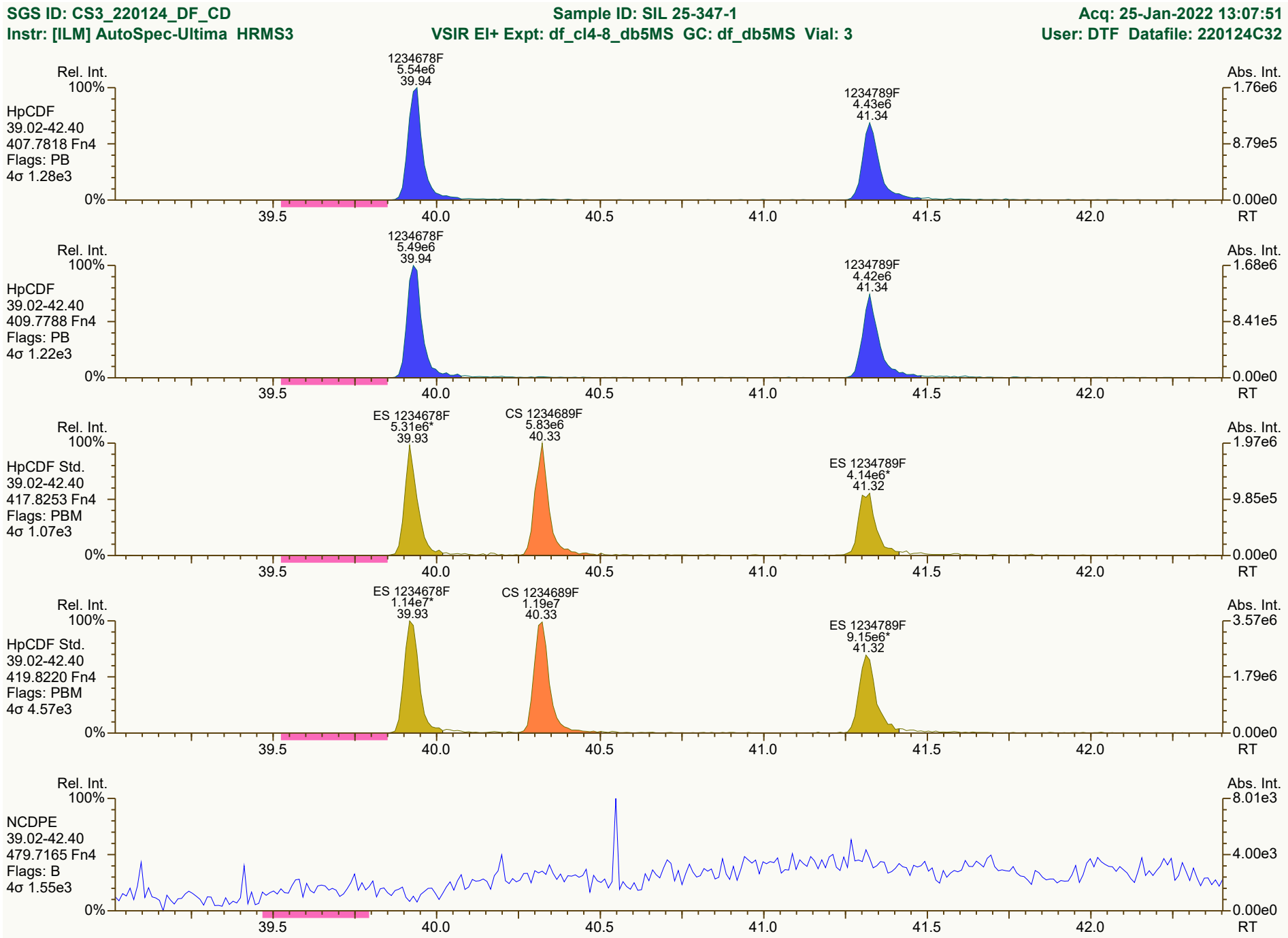

OCDD
5.54e6
43.54
Rel. Int.
Abs. Int.
OCDD
42.42-45.01
457.7377 Fn5
Flags: PB
4σ 1.95e3
OCDD
5.96e6
43.54
OCDD
42.42-45.01
459.7348 Fn5
Flags: PB
4σ 1.81e3
ES OCDD
9.48e6*
43.52
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.69e3
ES OCDD
1.02e7*
43.52
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 1.41e3
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
1.10e6
5.50e5
0.00e0
1.24e6
6.19e5
2.03e6
1.01e6
2.11e6
1.06e6
1.23e7
6.13e6


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PB
4σ 1.45e3
0%
2378F
1.53e6
27.79
Abs. Int.
3.55e5
1.77e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PB
4σ 1.96e3
0%
2378F
2.00e6
27.79
Abs. Int.
4.78e5
2.39e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 2.45e3
0%
AS 1368F
1.79e7
22.93
JS 1234F
1.54e7*
26.42
ES 2378F
1.55e7
27.77
Abs. Int.
3.48e6
1.74e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 2.57e3
0%
AS 1368F
2.26e7
22.93
JS 1234F
1.94e7*
26.41
ES 2378F
1.91e7
27.76
Abs. Int.
4.35e6
2.18e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.39e3
0%
Abs. Int.
1.56e4
7.78e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.40e4
7.01e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.40e3
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 1.67e3
1.56e4
7.82e3
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
8.07e6
4.03e6


SGS ID: CS3_220124_DF_CD
Sample ID: SIL 25-347-1
Acq: 25-Jan-2022 13:07:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220124C32
Rel. Int.
Abs. Int.
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PB
4σ 2.64e3
12378F
8.15e6
32.50
23478F
7.89e6
33.61
2.31e6
1.15e6
0.00e0
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: PB
4σ 1.52e3
12378F
5.27e6
32.50
23478F
5.01e6
33.61
1.51e6
7.55e5
0.00e0
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 2.80e3
CS 12346F
1.69e7
31.96
ES 12378F
1.66e7
32.49
ES 23478F
1.66e7
33.59
4.76e6
2.38e6
0.00e0
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 2.47e3
CS 12346F
1.05e7
31.96
ES 12378F
1.12e7
32.49
ES 23478F
1.07e7
33.59
3.05e6
1.53e6
0.00e0
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.39e3
1.16e4
5.81e3
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\CS3_220124_DF_CD.utp_res, saved 26-Jan-2022 09:44 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9460, 2525, 1891 scc: 192-921
PKD: 25-Jan-2022 14:08 Printed: 26-Jan-2022 09:45 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PB
4σ 2.08e3
123478F 7.52e6 36.83
123678F 8.19e6 36.98
234678F 7.01e6 37.66
123789F 6.12e6 38.60
Abs. Int.
2.15e6
1.08e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PB
4σ 1.23e3
123478F 5.93e6 36.83
123678F 6.55e6 36.98
234678F 5.84e6 37.66
123789F 4.95e6 38.60
Abs. Int.
1.76e6
8.81e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PB
4σ 3.62e3
ES 123478F 7.42e6 36.82
ES 123678F 9.14e6 36.96
CS 123469F 7.74e6 37.28
ES 234678F 7.50e6 37.65
ES 123789F 6.80e6 38.58
Abs. Int.
2.29e6
1.15e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PB
4σ 3.24e3
ES 123478F 1.40e7 36.82
ES 123678F 1.69e7 36.96
CS 123469F 1.43e7 37.28
ES 234678F 1.48e7 37.64
ES 123789F 1.25e7 38.58
Abs. Int.
4.39e6
2.20e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.32e3
Abs. Int.
5.99e3
2.99e3
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

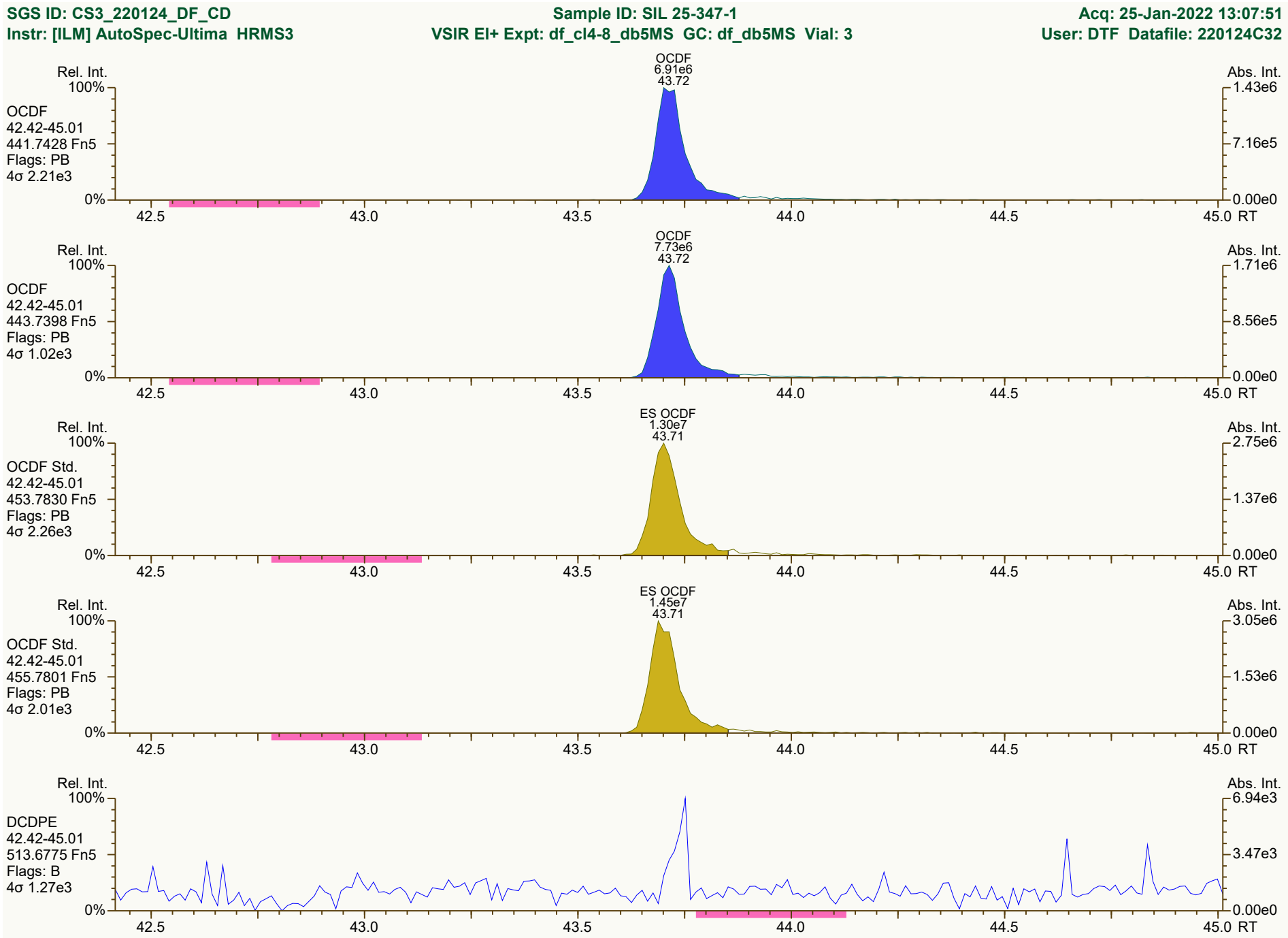


Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\CS3_220124_DF_CD.utp_res, saved 26-Jan-2022 09:44 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6768, 6508, 8736 scc: 192-921
Revised: 25-Jan-2022 14:07 (DTF) Printed: 26-Jan-2022 09:45 Page 11 of 12

SGS ID: CS3_220124_DF_CD
Instr: [ILM] AutoSpec-Ultima HRMS3

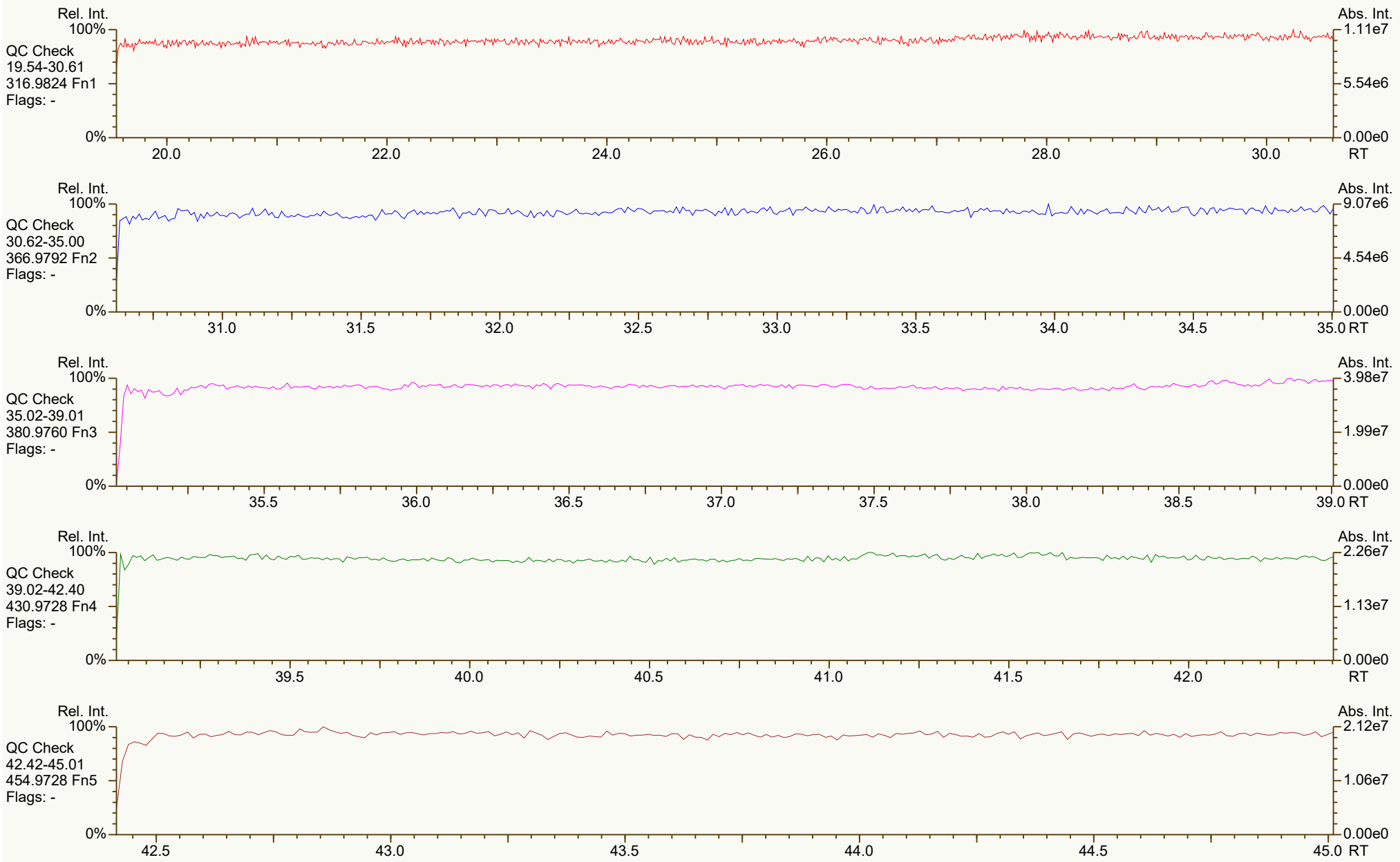
Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 25-Jan-2022 13:07:51
User: DTF Datafile: 220124C32



Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\CS3_220124_DF_CD.utp_res, saved 26-Jan-2022 09:44 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7031, 3513, 7936 scc: 192-921

Peak annotation: Areas, Centroids
PKD: 25-Jan-2022 14:06 Printed: 26-Jan-2022 09:45 Page 12 of 12


Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.11e7
5.54e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.07e6
4.54e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.98e7
1.99e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.26e7
1.13e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.12e7
1.06e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

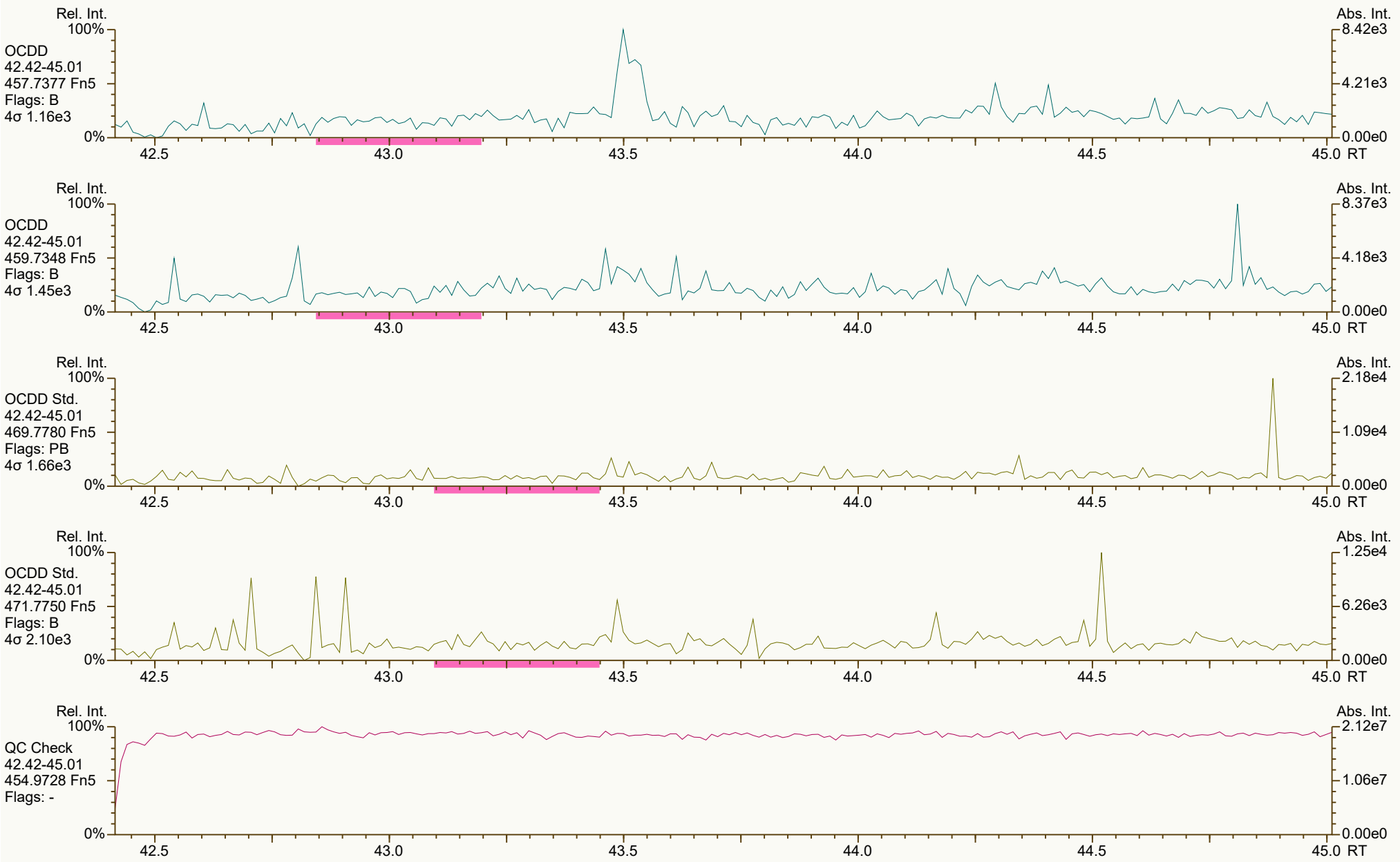

Rel. Int.
100%
0%
Abs. Int.
TCDD
19.54-30.61
319.8965 Fn1
Flags: B
4σ 2.38e3
1.37e4
6.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
TCDD
19.54-30.61
321.8936 Fn1
Flags: B
4σ 1.44e3
1.26e4
6.31e3
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: B
4σ 1.05e3
1.29e4
6.46e3
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: B
4σ 8.82e3
2.87e4
1.43e4
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: B
4σ 4.45e3
3.71e4
1.86e4

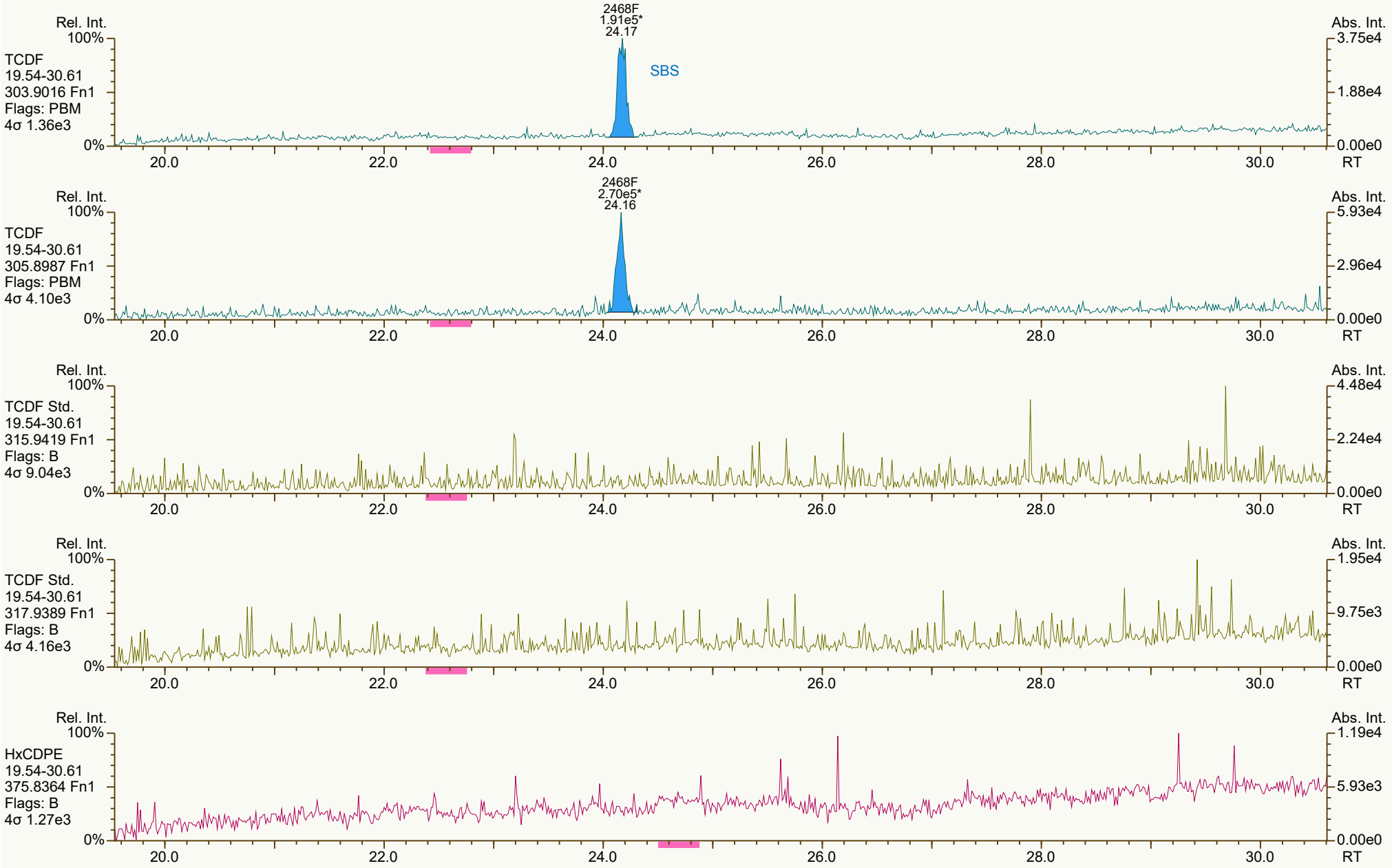

Rel. Int.
Abs. Int.
100%
0%
PeCDD
30.62-35.00
355.8546 Fn2
Flags: B
4σ 9.21e2
1.11e4
5.54e3
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.61e3
8.11e3
4.06e3
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: B
4σ 2.06e3
1.94e4
9.69e3
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: B
4σ 2.45e3
1.39e4
6.96e3
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
9.07e6
4.54e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT



Results: P:\B5900_B5999\B5971\B5971_18819 DF\Resources\SBS_220120_DF_CA.utp_res, saved 21-Jan-2022 10:05 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 6216, 3641 scc: 981-901
PKD: 21-Jan-2022 10:04 Printed: 21-Jan-2022 13:00 Page 4 of 12

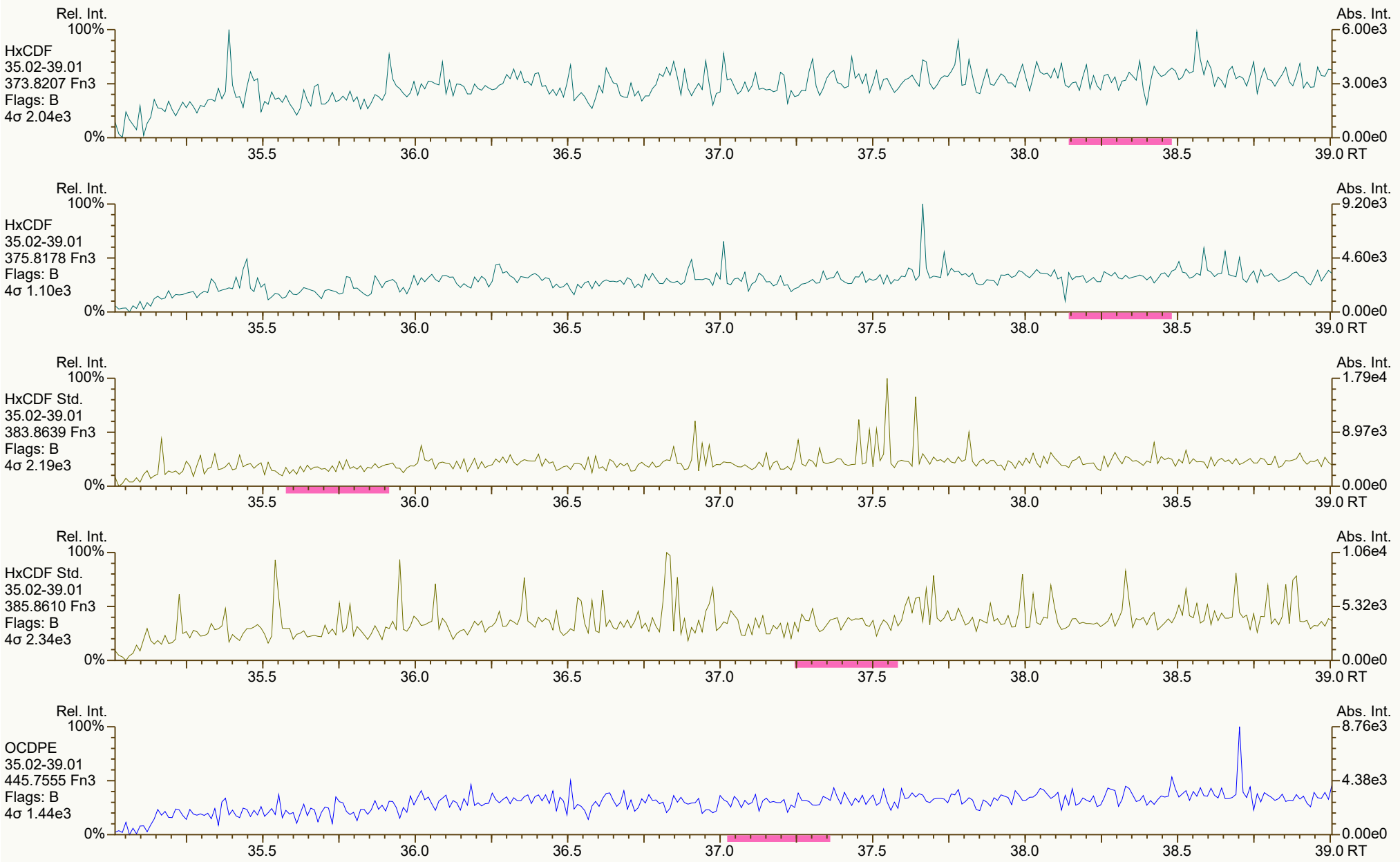

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.82e3
0%
Abs. Int.
4.47e3
2.24e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: B
4σ 1.06e3
0%
Abs. Int.
3.92e3
1.96e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: B
4σ 1.43e3
0%
Abs. Int.
1.20e4
6.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: B
4σ 1.50e3
0%
Abs. Int.
5.87e3
2.94e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.26e7
1.13e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: B
4σ 1.16e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.37e3
4.18e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PB
4σ 1.66e3
0%
Abs. Int.
2.18e4
1.09e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: B
4σ 2.10e3
0%
Abs. Int.
1.25e4
6.26e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.12e7
1.06e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.36e3
2468F
1.91e5*
24.17
SBS
Abs. Int.
3.75e4
1.88e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.10e3
2468F
2.70e5*
24.16
Abs. Int.
5.93e4
2.96e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: B
4σ 9.04e3
Abs. Int.
4.48e4
2.24e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: B
4σ 4.16e3
Abs. Int.
1.95e4
9.75e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.27e3
Abs. Int.
1.19e4
5.93e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT

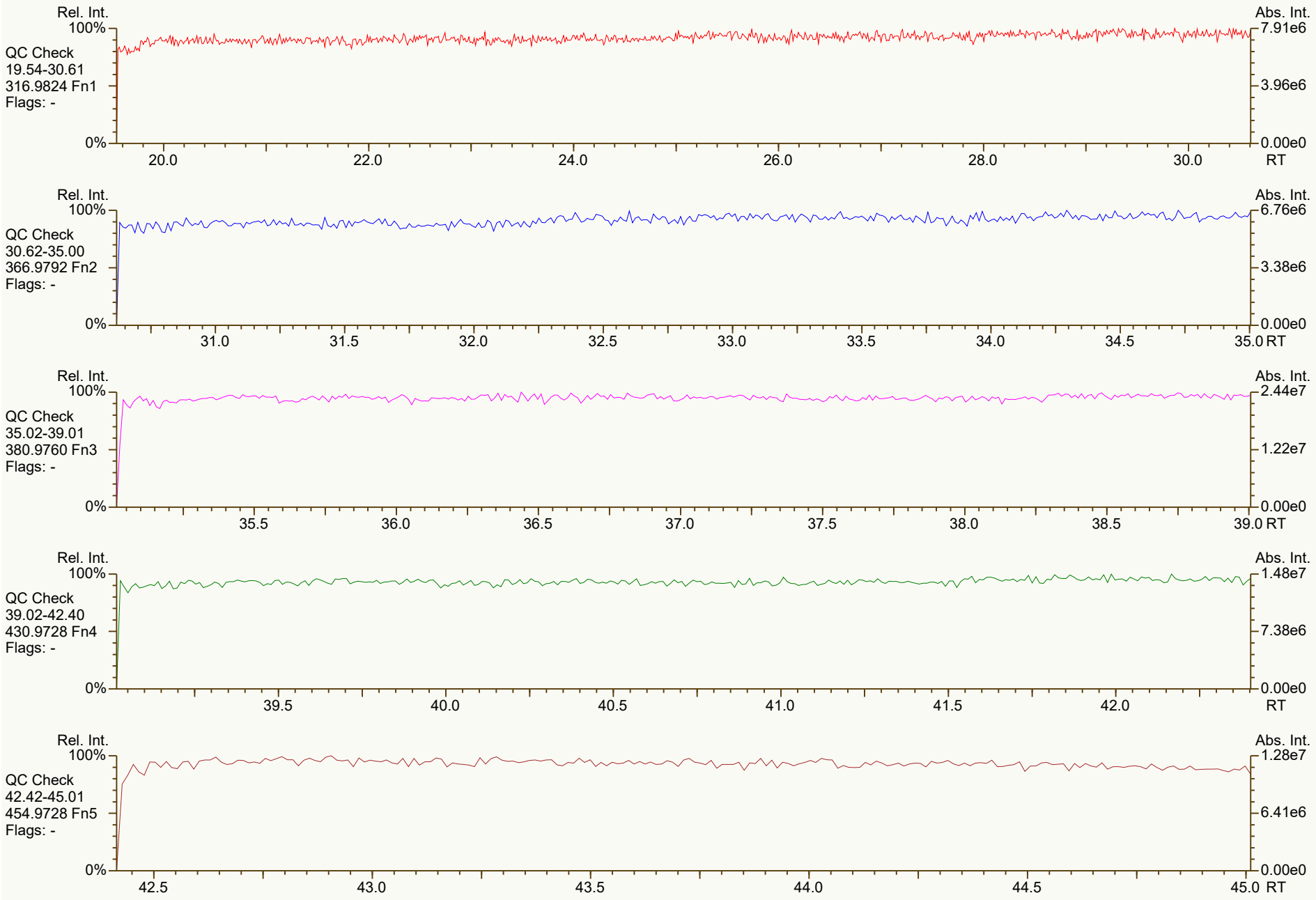

Rel. Int.
100%
0%
Abs. Int.
1.13e4
5.64e3
0.00e0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.73e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.85e4
1.43e4
0.00e0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 1.53e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.11e7
5.54e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: B
4σ 1.25e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: B
4σ 2.29e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: B
4σ 1.31e3
0%
Abs. Int.
1.42e4
7.12e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: B
4σ 2.35e3
0%
Abs. Int.
1.75e4
8.75e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.65e3
0%
Abs. Int.
1.50e4
7.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: B
4σ 2.04e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: B
4σ 1.10e3
0%
Abs. Int.
9.20e3
4.60e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: B
4σ 2.19e3
0%
Abs. Int.
1.79e4
8.97e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: B
4σ 2.34e3
0%
Abs. Int.
1.06e4
5.32e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.44e3
0%
Abs. Int.
8.76e3
4.38e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.03e3
4.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: B
4σ 1.36e3
0%
Abs. Int.
6.09e3
3.04e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PB
4σ 1.48e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: B
4σ 1.94e3
0%
Abs. Int.
8.51e3
4.26e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.41e3
0%
Abs. Int.
2.94e3
1.47e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: B
4σ 1.88e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PB
4σ 1.84e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: B
4σ 2.14e3
0%
Abs. Int.
2.56e4
1.28e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: B
4σ 1.90e3
0%
Abs. Int.
1.19e4
5.95e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.24e3
0%
Abs. Int.
6.85e3
3.42e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
7.91e6
3.96e6
0.00e0
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
6.76e6
3.38e6
0.00e0
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
2.44e7
1.22e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.48e7
7.38e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.28e7
6.41e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: B
4σ 2.39e3
0%
Abs. Int.
1.23e4
6.14e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: B
4σ 1.16e3
0%
Abs. Int.
8.38e3
4.19e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: B
4σ 1.42e3
0%
Abs. Int.
2.66e4
1.33e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: B
4σ 4.70e3
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: B
4σ 2.27e3
0%
Abs. Int.
2.35e4
1.17e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.62-35.00
355.8546 Fn2
Flags: PB
4σ 1.17e3
0%
Abs. Int.
6.19e3
3.10e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.26e3
0%
Abs. Int.
6.15e3
3.07e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: B
4σ 2.01e3
0%
Abs. Int.
9.86e3
4.93e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: B
4σ 2.15e3
0%
Abs. Int.
1.60e4
8.02e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.76e6
3.38e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.01
389.8156 Fn3
Flags: B
4σ 1.46e3
0%
Abs. Int.
6.56e3
3.28e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PB
4σ 1.67e3
0%
Abs. Int.
6.46e3
3.23e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: B
4σ 2.34e3
0%
Abs. Int.
1.11e4
5.57e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: B
4σ 1.57e3
0%
Abs. Int.
1.45e4
7.24e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.44e7
1.22e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

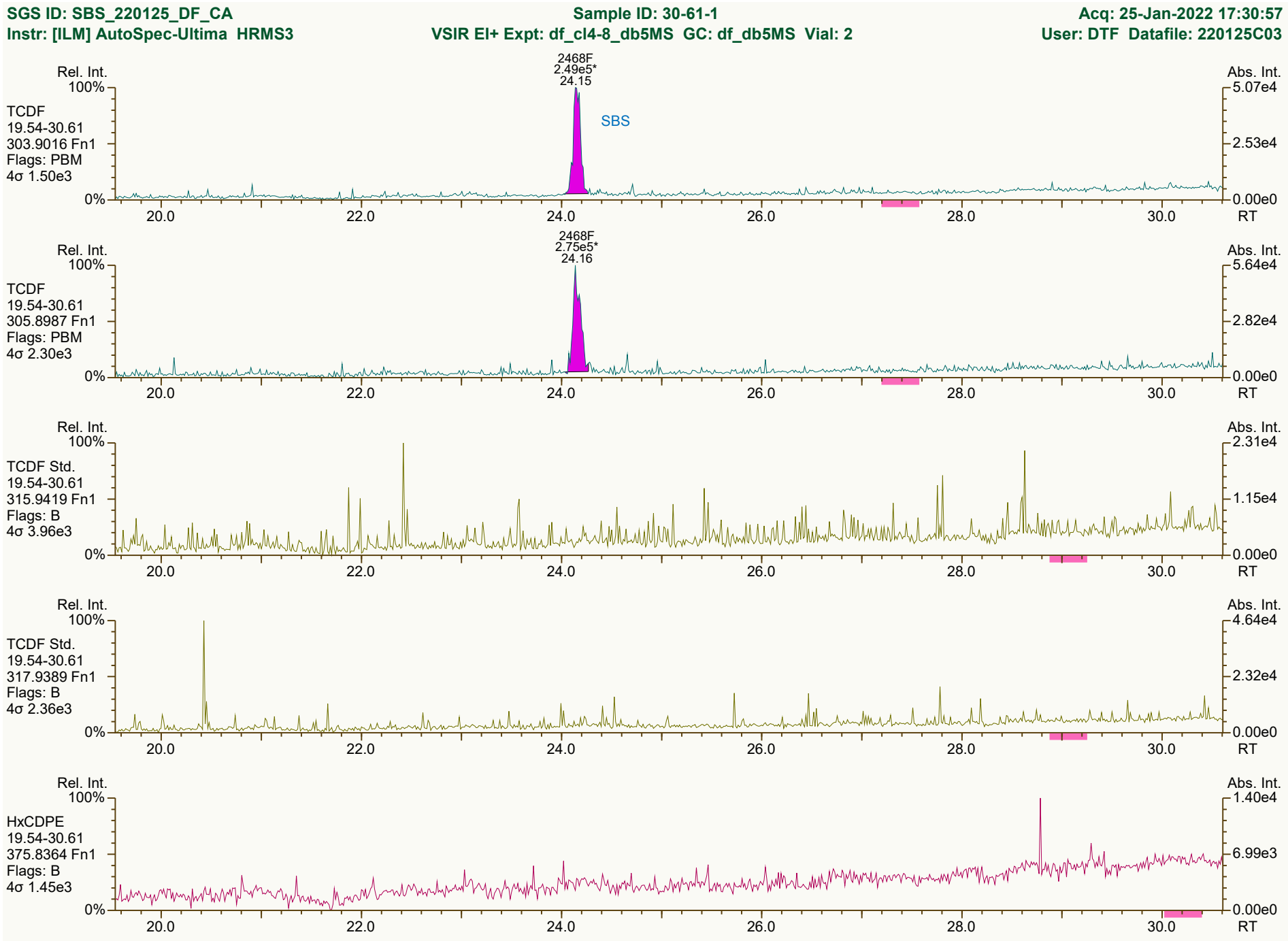

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.56e3
0%
Abs. Int.
3.85e3
1.92e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: B
4σ 1.17e3
0%
Abs. Int.
7.21e3
3.61e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: B
4σ 1.59e3
0%
Abs. Int.
1.31e4
6.57e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: B
4σ 1.41e3
0%
Abs. Int.
9.68e3
4.84e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.48e7
7.38e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PB
4σ 1.23e3
0%
Abs. Int.
5.11e3
2.56e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: B
4σ 1.09e3
0%
Abs. Int.
6.77e3
3.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.01e4
5.07e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: B
4σ 1.96e3
0%
Abs. Int.
4.27e4
2.14e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.28e7
6.41e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_220125_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 30-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

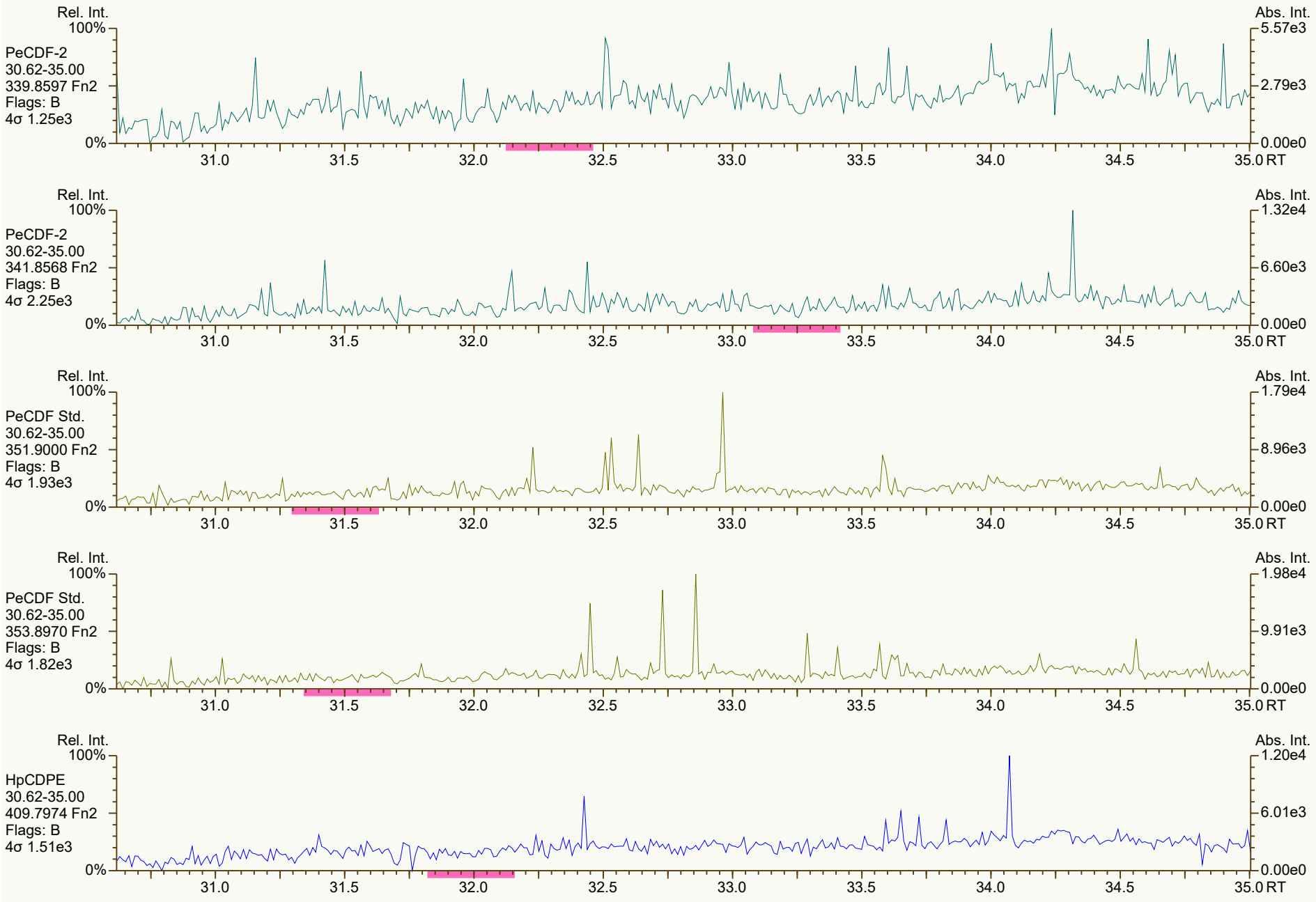
Acq: 25-Jan-2022 17:30:57
User: DTF Datafile: 220125C03

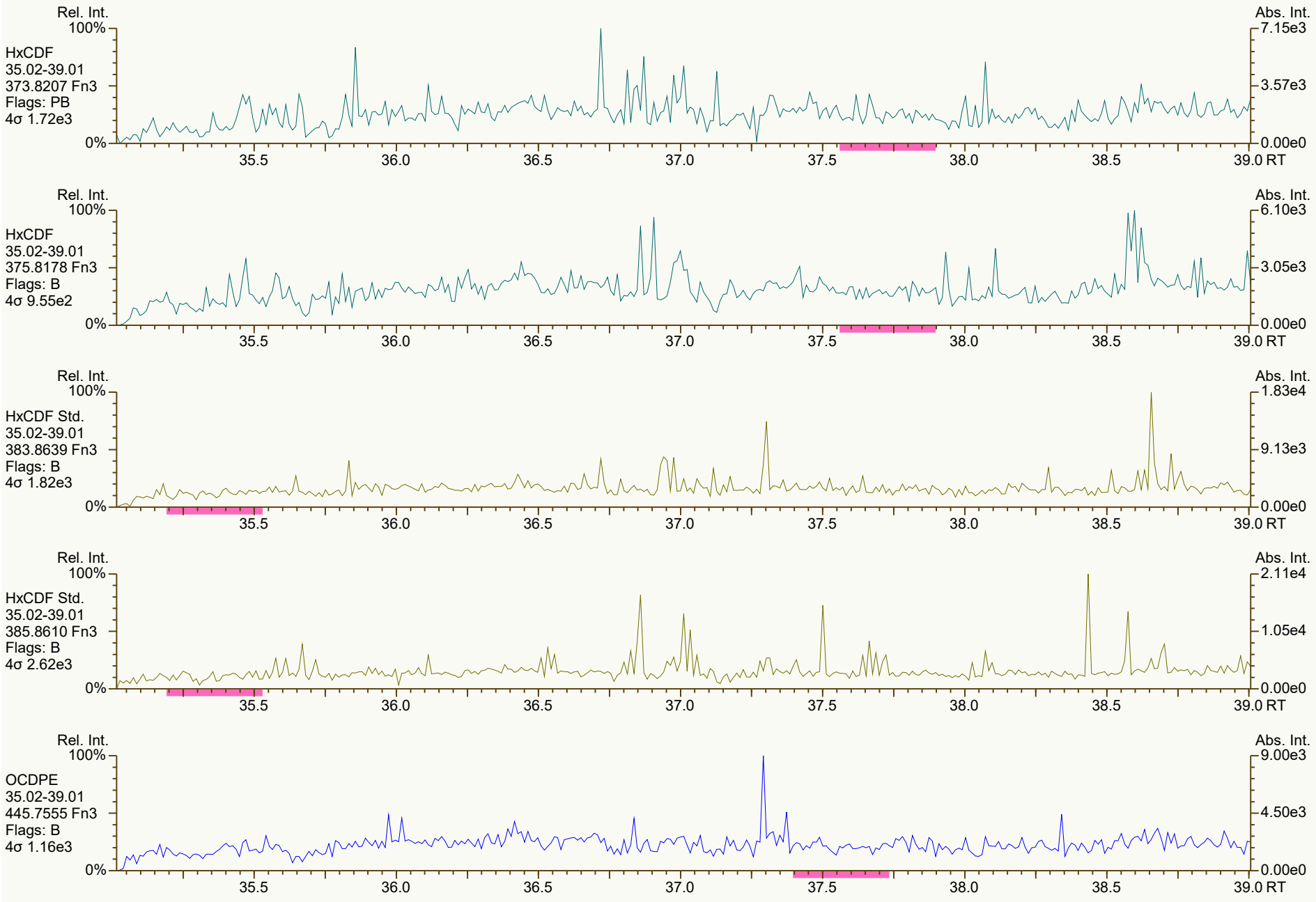


Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\SBS_220125_DF_CA.utp_res, saved 26-Jan-2022 08:27 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9435, 4669, 0824 scc: 475-390

Peak annotation: Areas, Centroids
Revised: 26-Jan-2022 08:27 (DTF) Printed: 26-Jan-2022 09:46 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.46e3
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 1.62e3
1.22e4
6.08e3
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
7.91e6
3.96e6


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: B
4σ 1.25e3
0%
Abs. Int.
5.57e3
2.79e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: B
4σ 2.25e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: B
4σ 1.93e3
0%
Abs. Int.
1.79e4
8.96e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: B
4σ 1.82e3
0%
Abs. Int.
1.98e4
9.91e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.51e3
0%
Abs. Int.
1.20e4
6.01e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PB
4σ 1.72e3
0%
Abs. Int.
7.15e3
3.57e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: B
4σ 9.55e2
0%
Abs. Int.
6.10e3
3.05e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: B
4σ 1.82e3
0%
Abs. Int.
1.83e4
9.13e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.11e4
1.05e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.16e3
0%
Abs. Int.
9.00e3
4.50e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

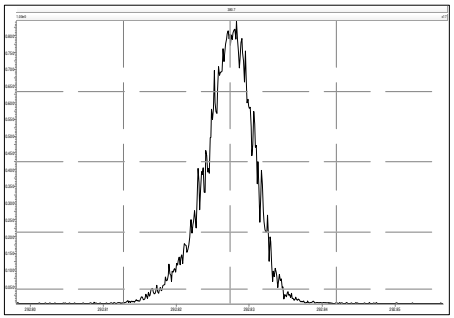

Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PB
4σ 1.29e3
0%
Abs. Int.
6.33e3
3.16e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PB
4σ 1.68e3
0%
Abs. Int.
1.26e4
6.32e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: B
4σ 1.36e3
0%
Abs. Int.
1.12e4
5.61e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: B
4σ 1.69e3
0%
Abs. Int.
2.18e4
1.09e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.24e3
0%
Abs. Int.
9.30e3
4.65e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 1.84e3
0%
Abs. Int.
6.74e3
3.37e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: B
4σ 1.21e3
0%
Abs. Int.
6.69e3
3.35e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: B
4σ 1.84e3
0%
Abs. Int.
1.51e4
7.54e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: B
4σ 1.77e3
0%
Abs. Int.
1.09e4
5.44e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.55e3
0%
Abs. Int.
6.11e3
3.05e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

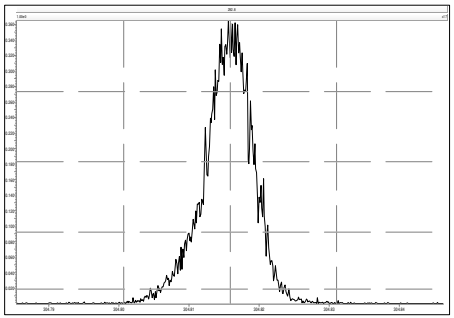
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:23:58 Eastern Standard Time

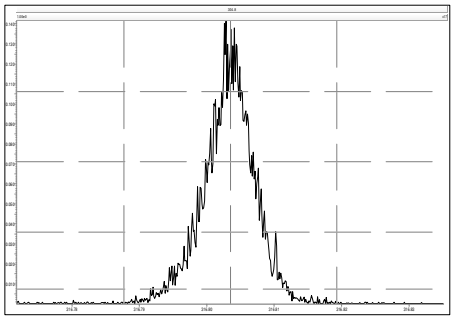
M 292.9824 R 17483



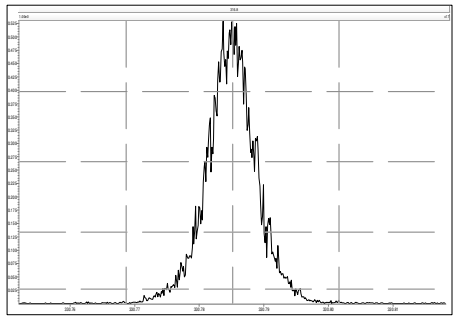
M 304.9824 R 17991



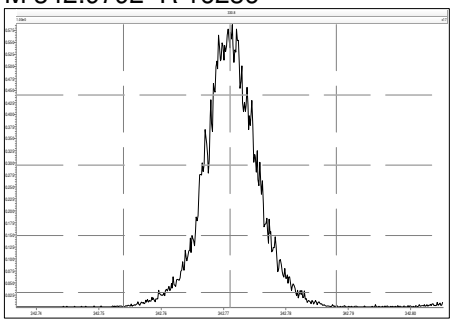
M 316.9824 R 17598



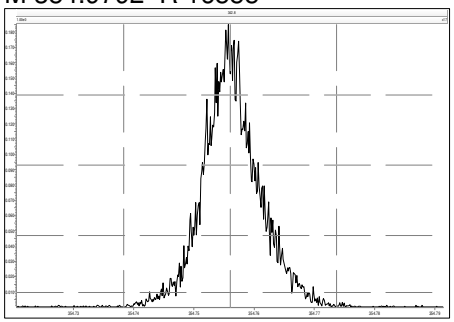
M 330.9792 R 17481



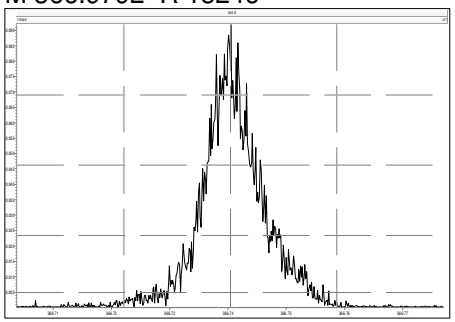
M 342.9792 R 16236



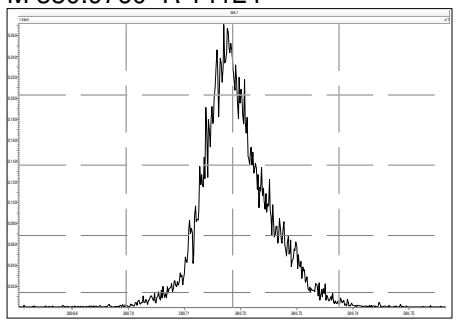
M 354.9792 R 16555



M 366.9792 R 15246



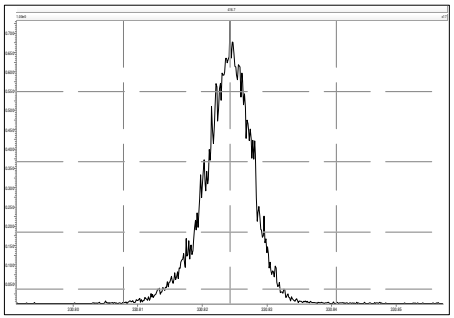
M 380.9760 R 14124



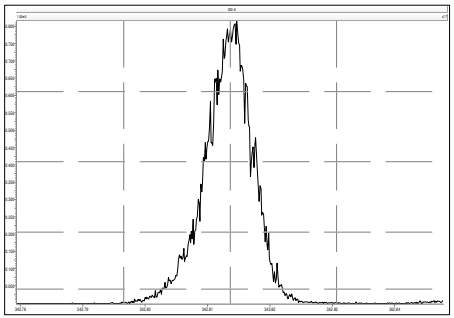
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:24:19 Eastern Standard Time

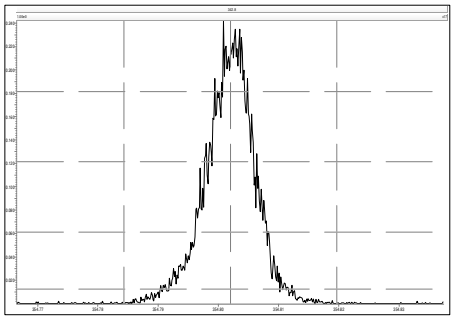
M 330.9792 R 18519



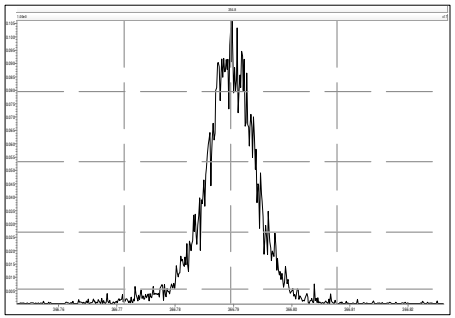
M 342.9792 R 17610



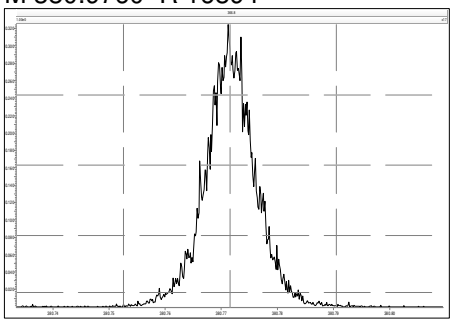
M 354.9792 R 18249



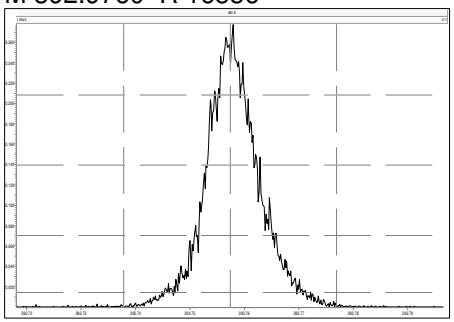
M 366.9792 R 17728



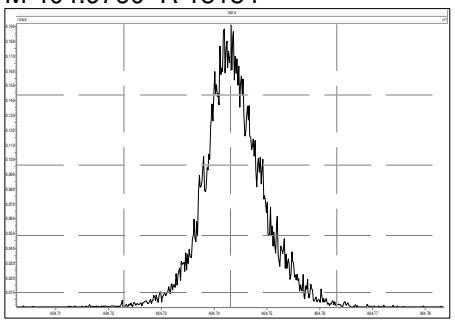
M 380.9760 R 16894



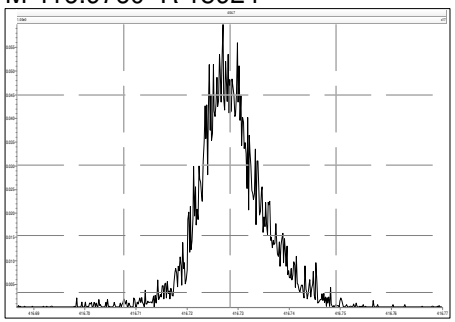
M 392.9760 R 16556



M 404.9760 R 15154



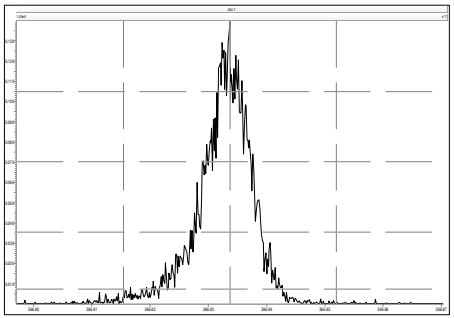
M 416.9760 R 15924



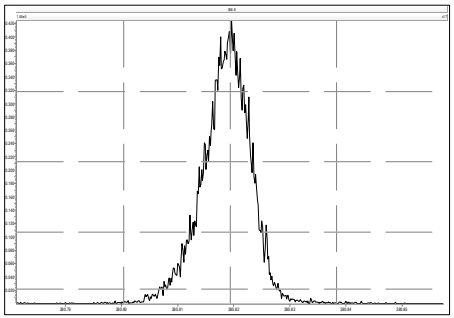
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:24:53 Eastern Standard Time

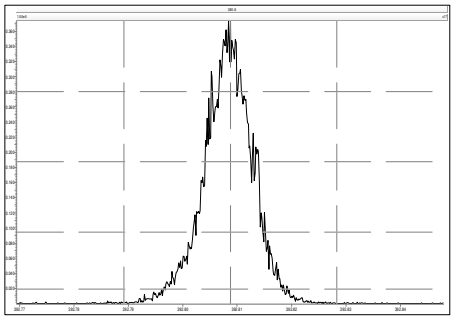
M 366.9792 R 17241



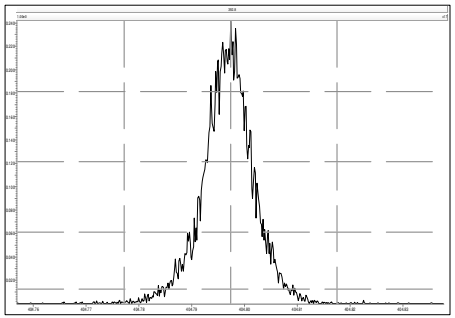
M 380.9760 R 18387



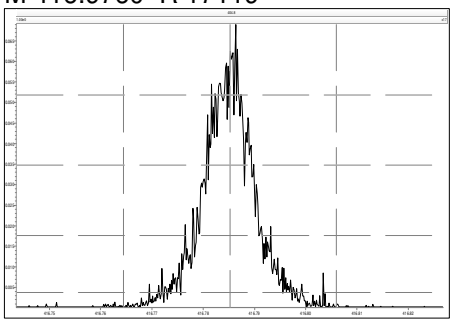
M 392.9760 R 17484



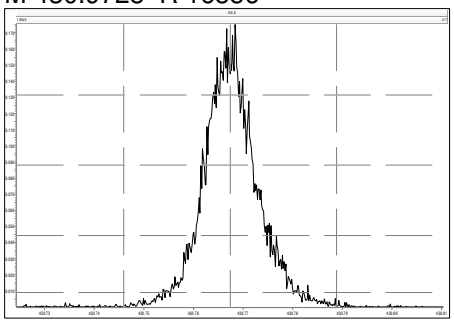
M 404.9760 R 17128



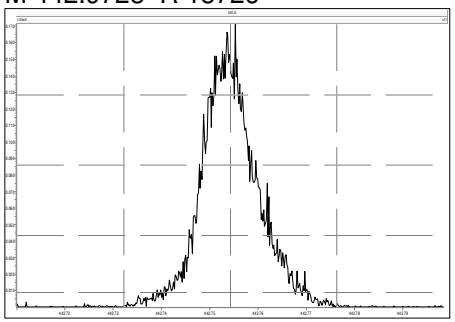
M 416.9760 R 17119



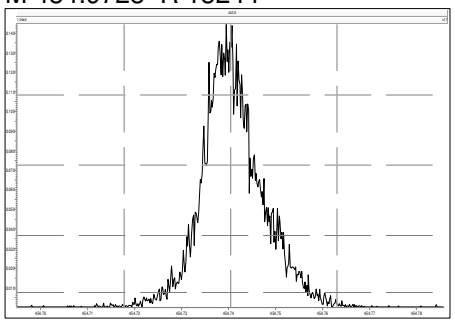
M 430.9728 R 16556



M 442.9728 R 15726



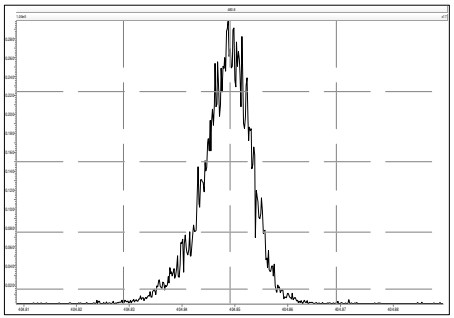
M 454.9728 R 15244



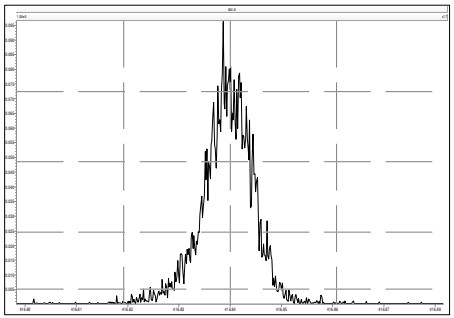
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:25:19 Eastern Standard Time

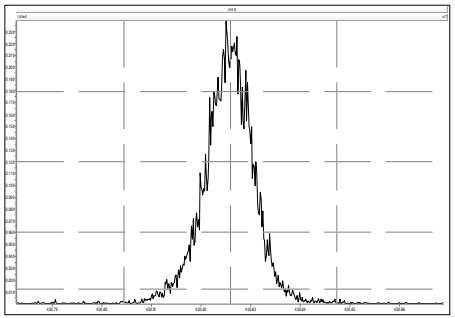
M 404.9760 R 17725



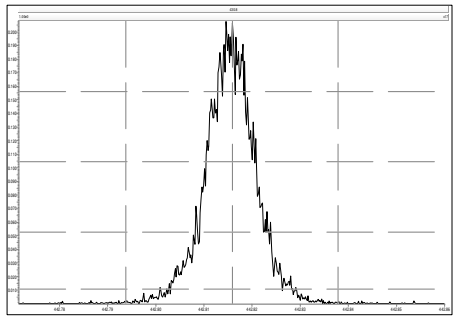
M 416.9760 R 18517



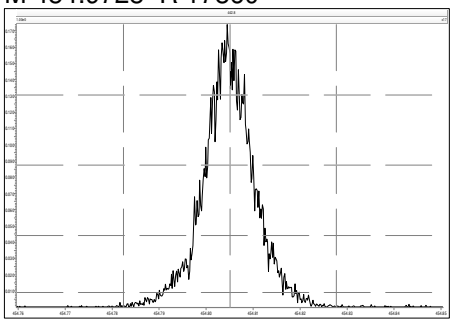
M 430.9728 R 18521



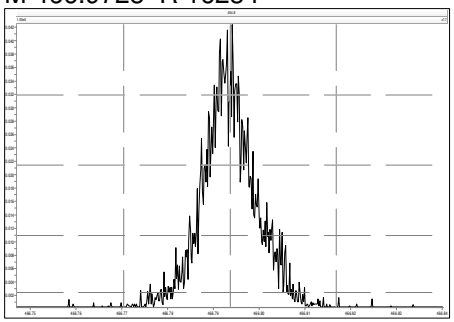
M 442.9728 R 17361



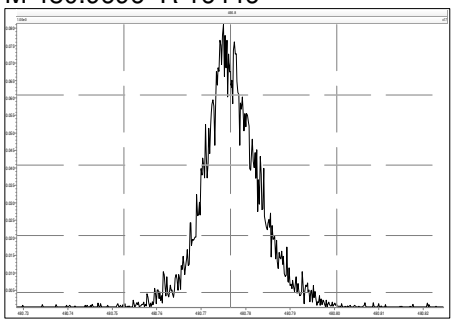
M 454.9728 R 17860



M 466.9728 R 16234



M 480.9696 R 16446



File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

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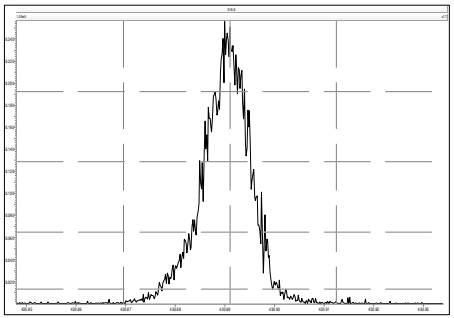
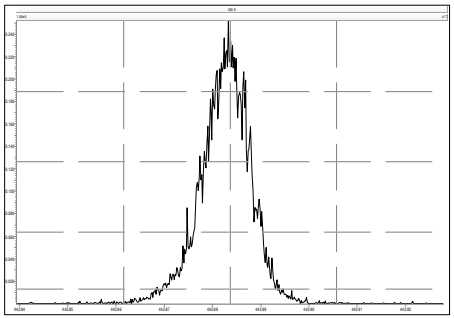
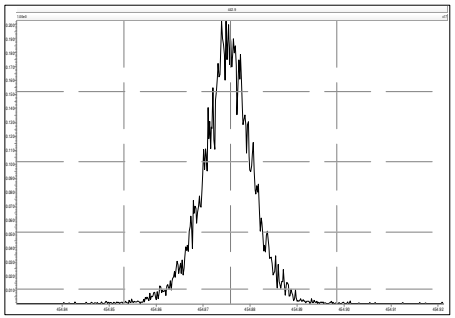
M 430.9728 R 18115



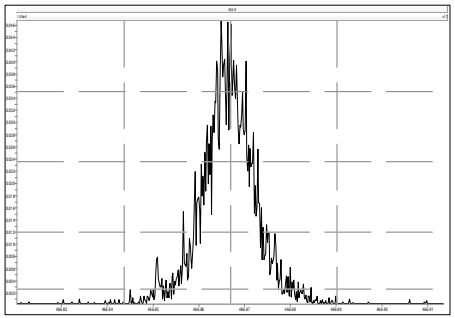
M 442.9728 R 17853



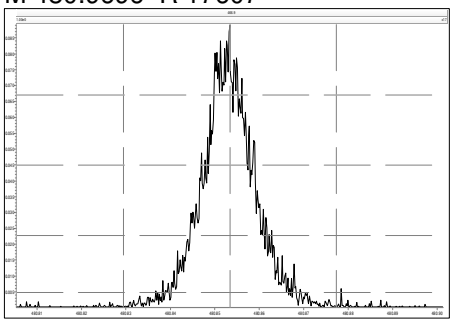
M 454.9728 R 17986



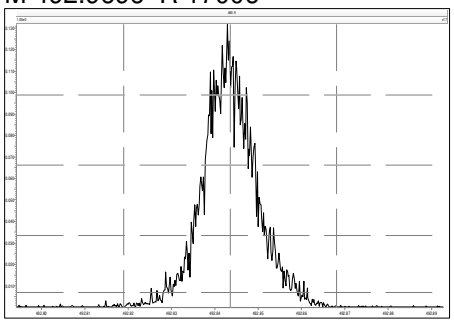
M 466.9728 R 19845



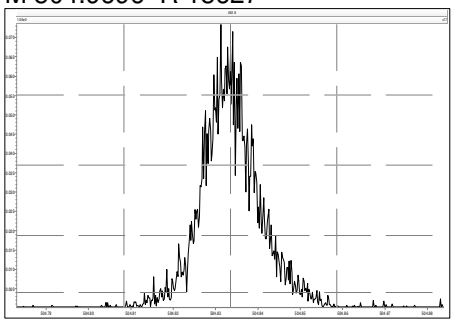
M 480.9696 R 17607



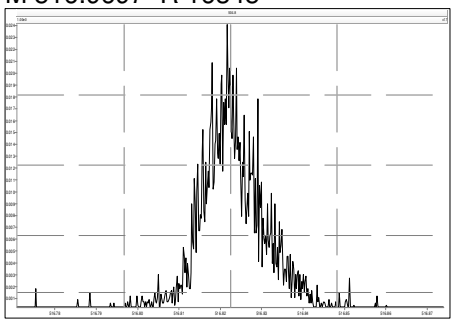
M 492.9696 R 17006



M 504.9696 R 15627



M 516.9697 R 16345



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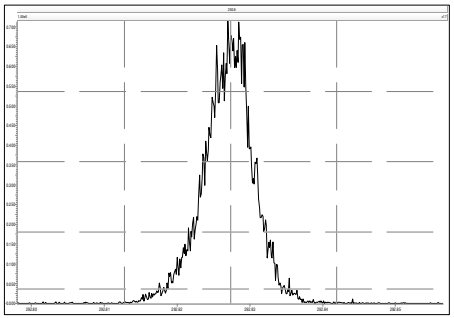
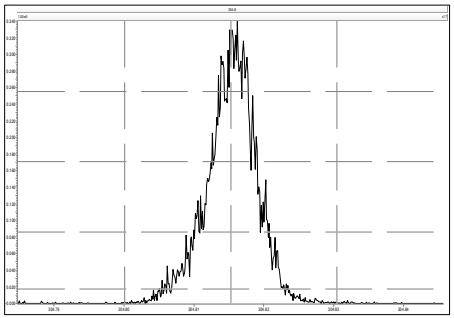
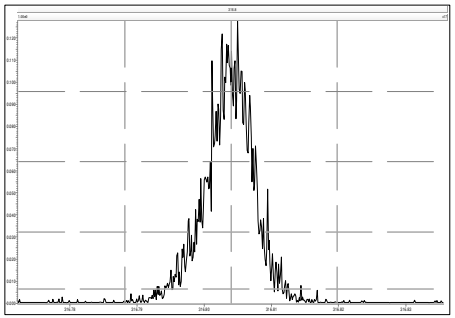
M 292.9824 R 17811



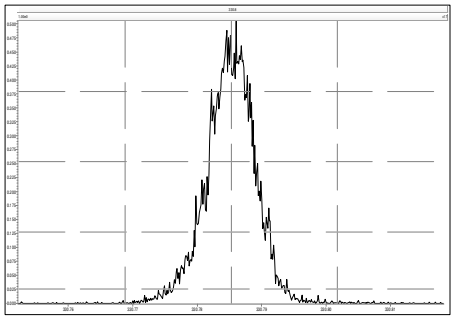
M 304.9824 R 19170



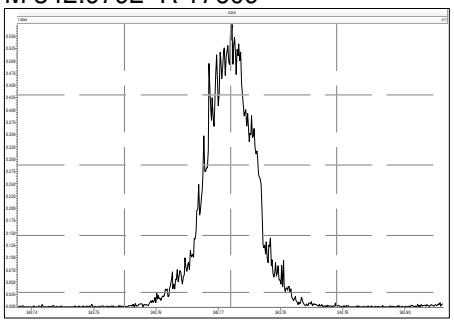
M 316.9824 R 20020



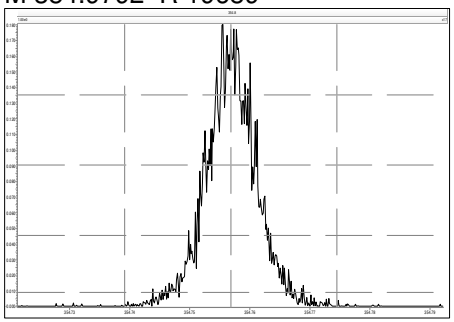
M 330.9792 R 19087



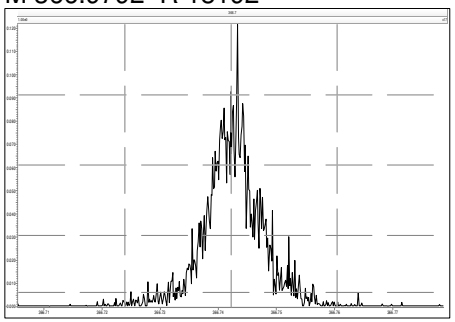
M 342.9792 R 17609



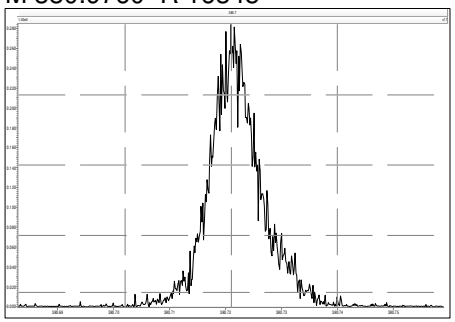
M 354.9792 R 19689



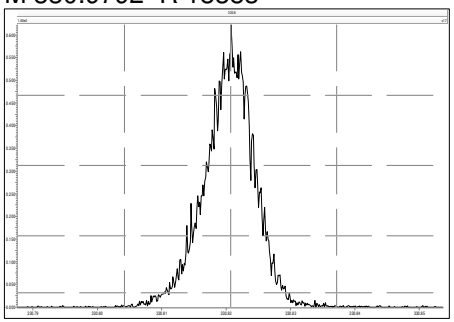
M 366.9792 R 18192



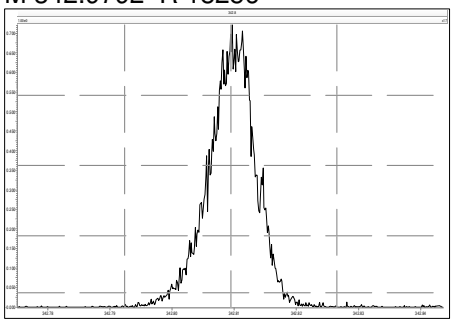
M 380.9760 R 16345



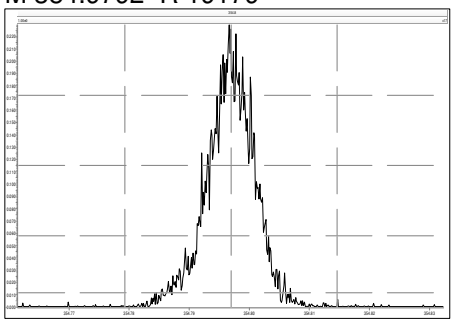
M 330.9792 R 18383



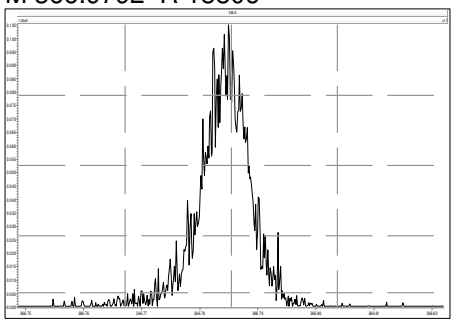
M 342.9792 R 18256



M 354.9792 R 19179



M 366.9792 R 18806



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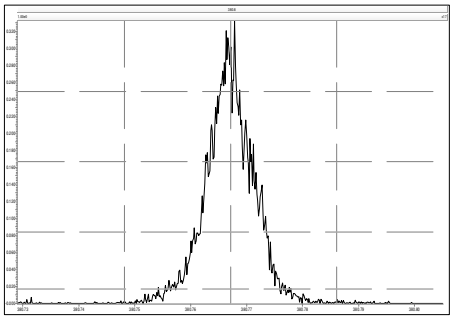
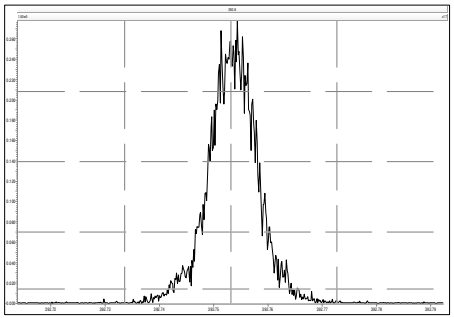
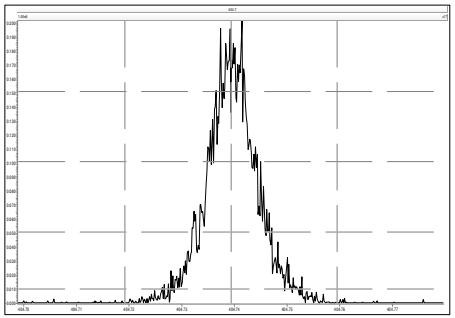
M 380.9760 R 19231



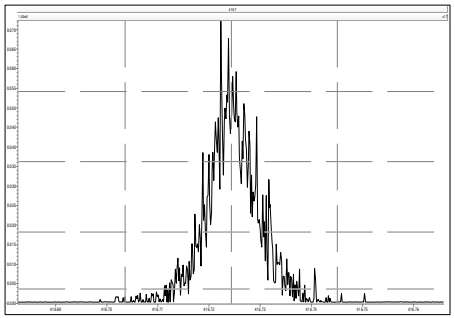
M 392.9760 R 18801



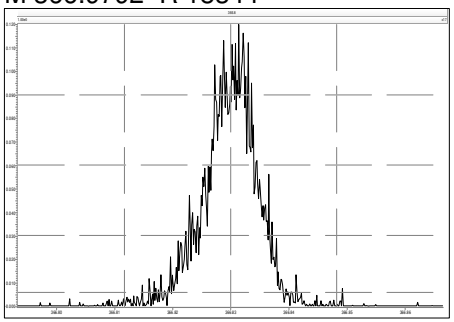
M 404.9760 R 19057



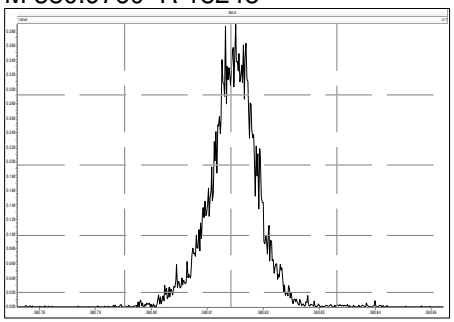
M 416.9760 R 23130



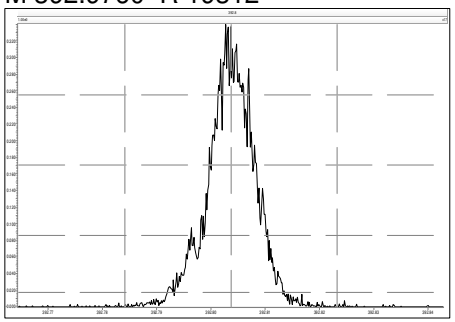
M 366.9792 R 18344



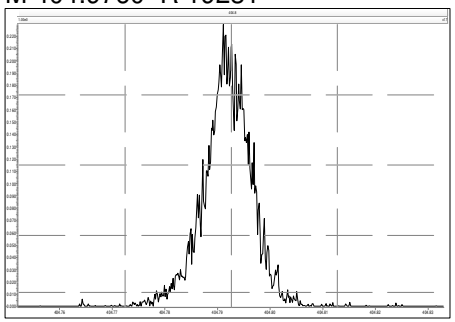
M 380.9760 R 18248



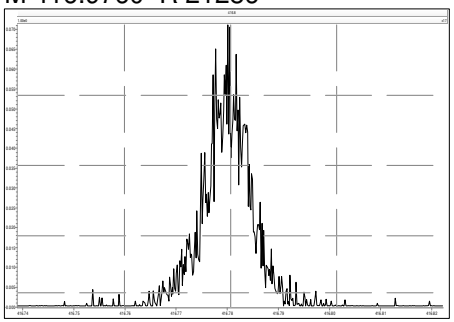
M 392.9760 R 19312



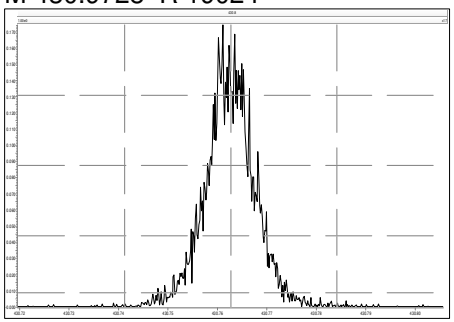
M 404.9760 R 19231



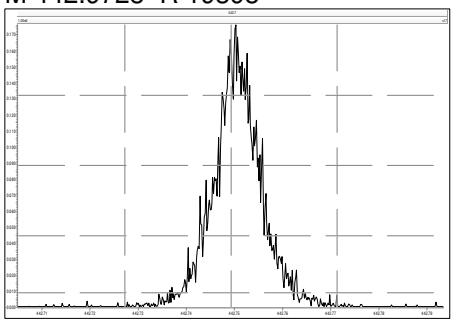
M 416.9760 R 21286



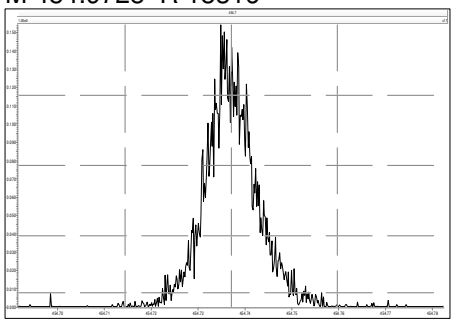
M 430.9728 R 19024



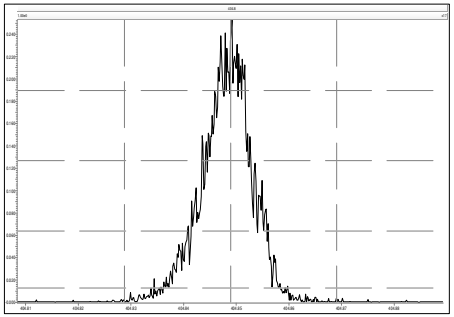
M 442.9728 R 19398



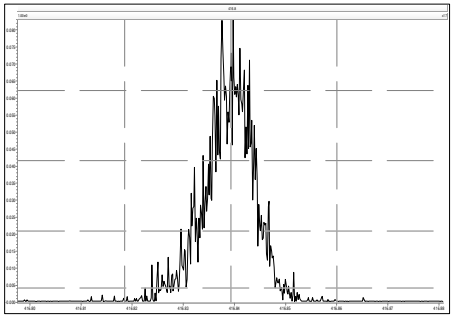
M 454.9728 R 18316



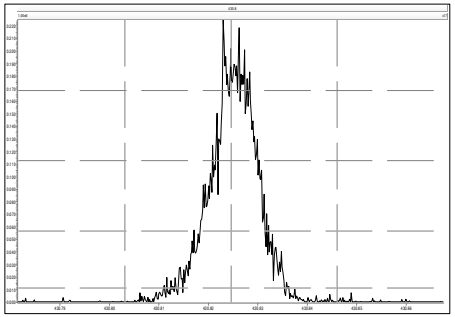
M 404.9760 R 18256



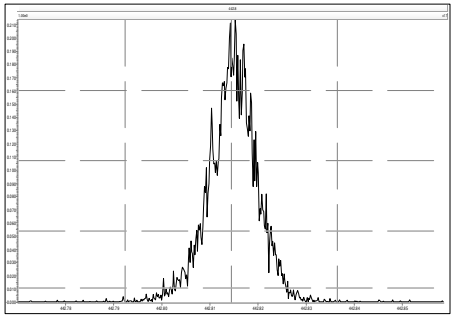
M 416.9760 R 20749



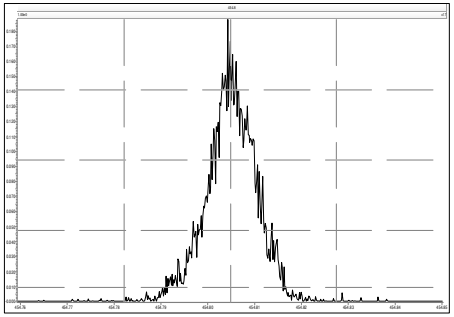
M 430.9728 R 20166



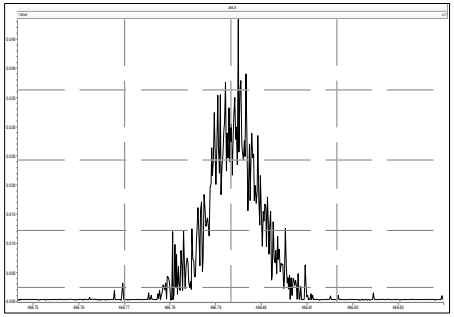
M 442.9728 R 19832



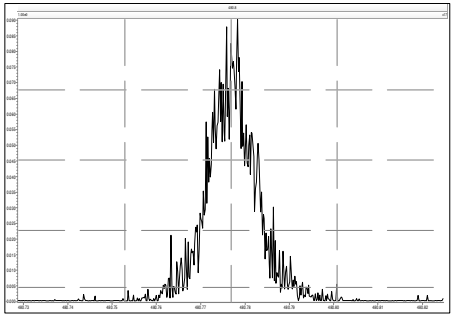
M 454.9728 R 18733



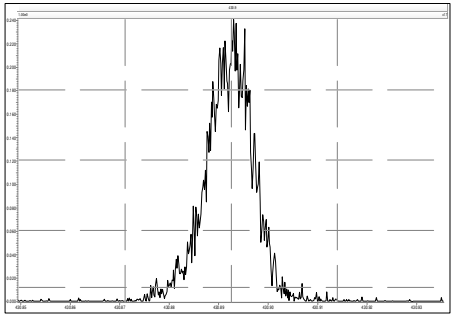
M 466.9728 R 21605



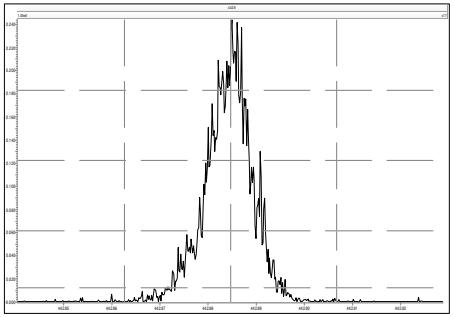
M 480.9696 R 19467



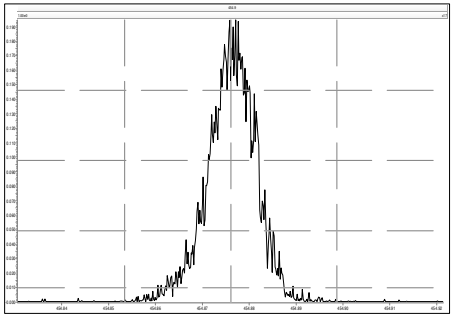
M 430.9728 R 18813



M 442.9728 R 19852



M 454.9728 R 18939



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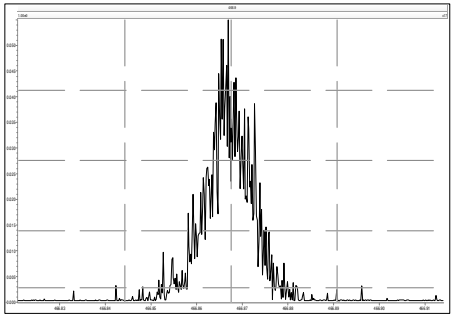

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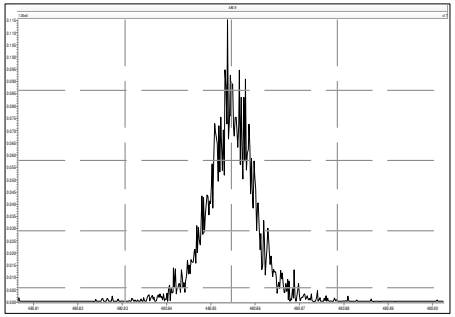

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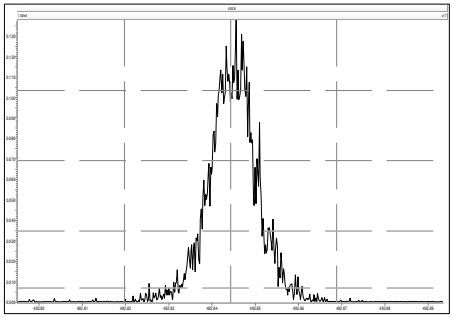

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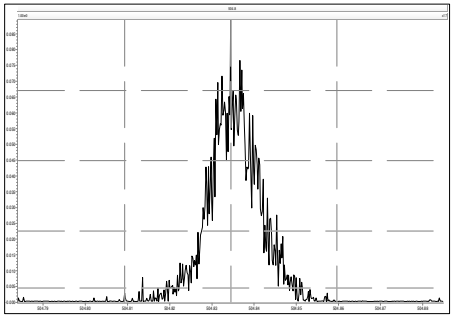

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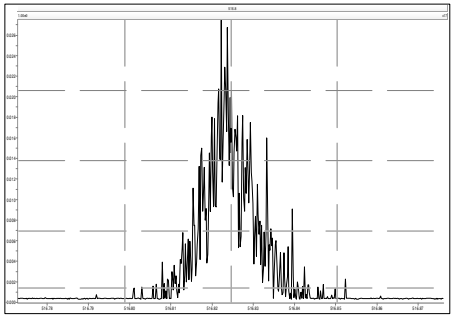

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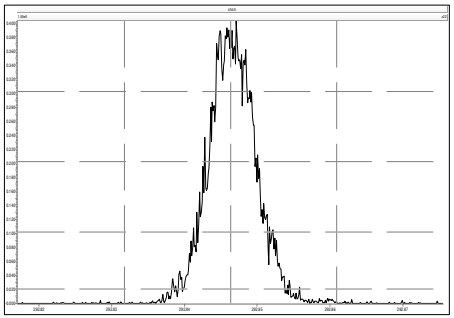

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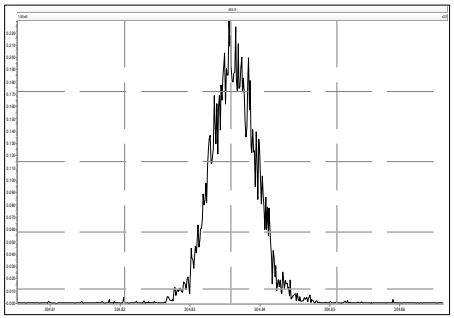

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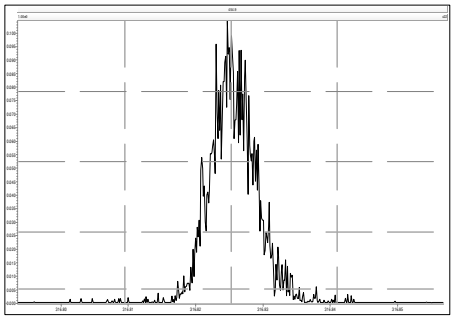

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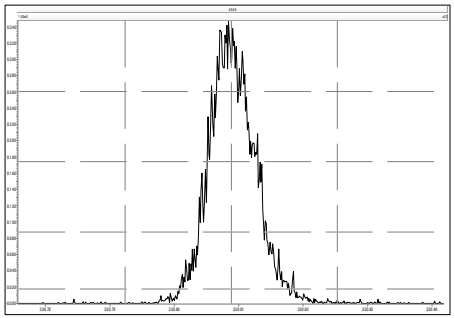

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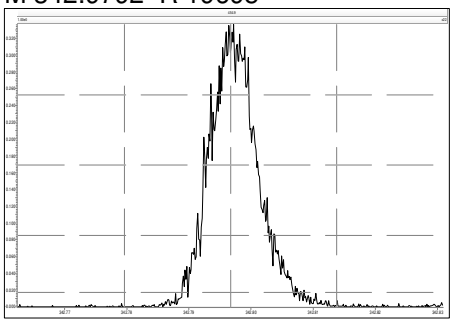

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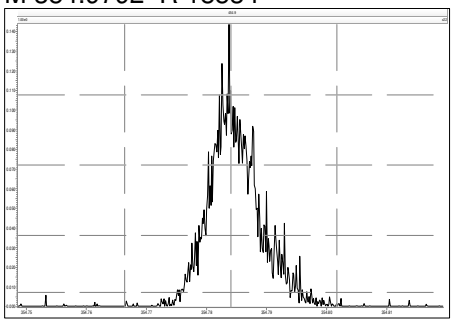

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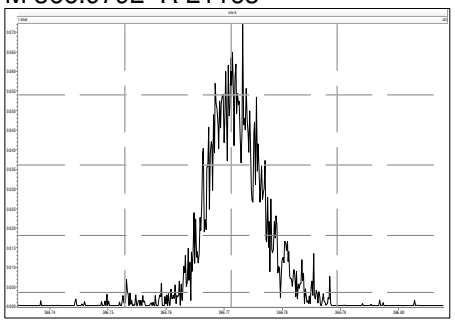

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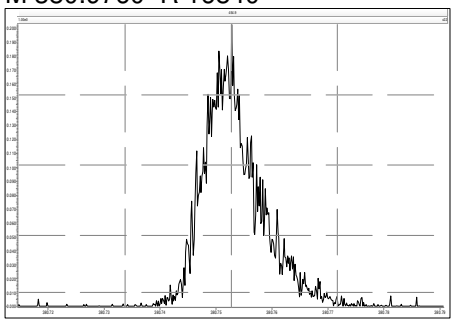

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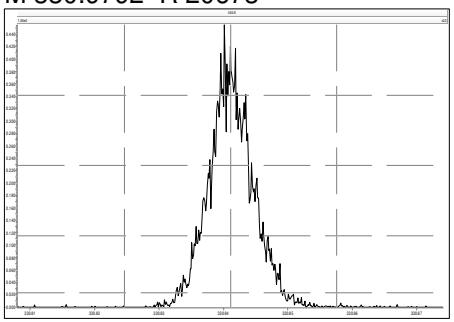

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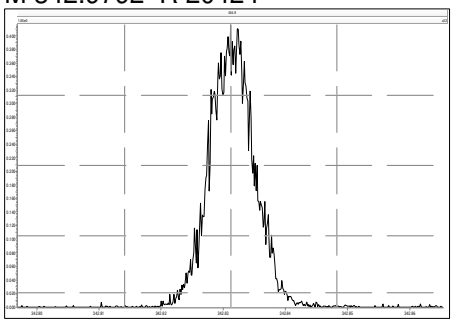

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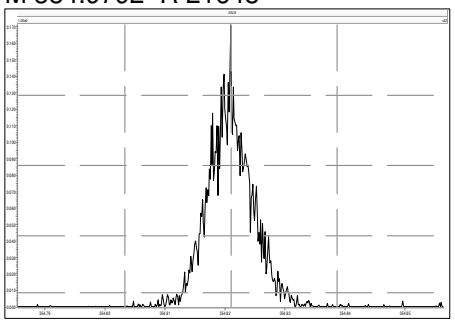

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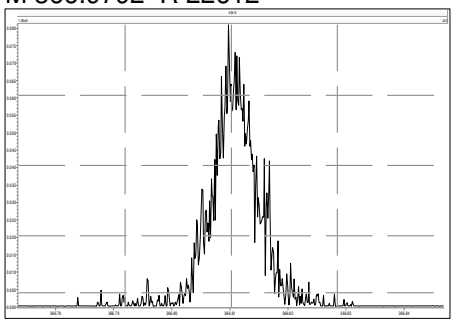

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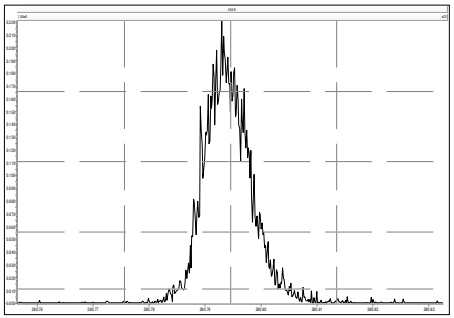

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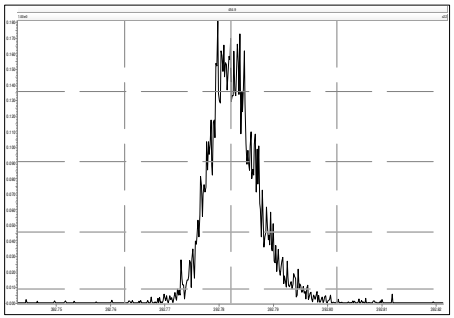

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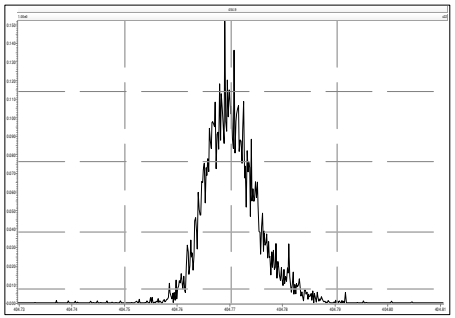

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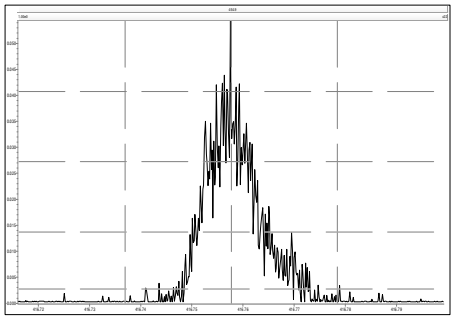

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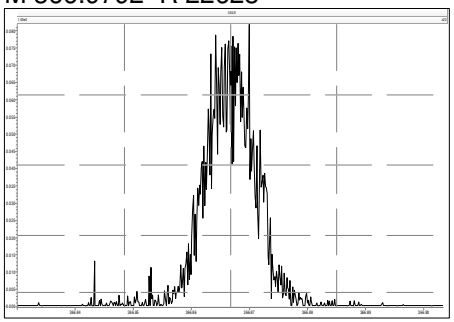

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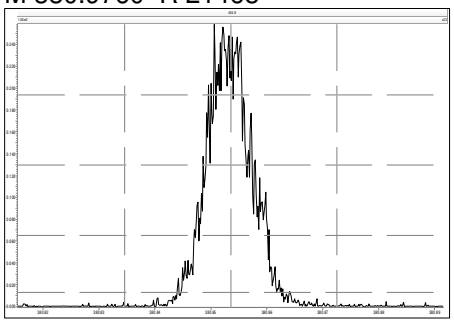

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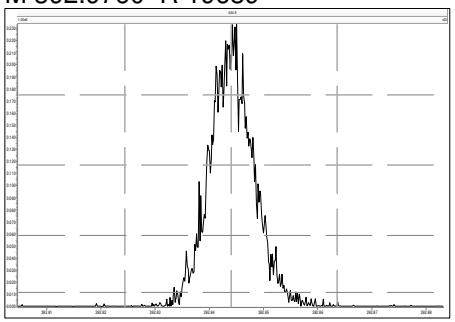

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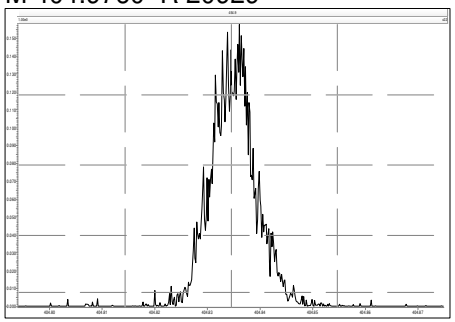

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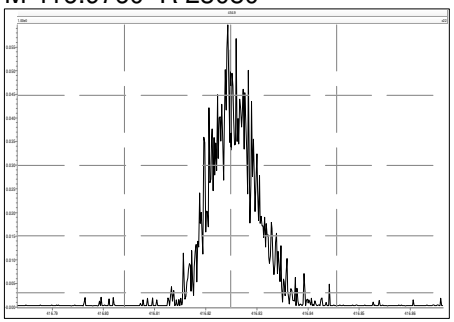

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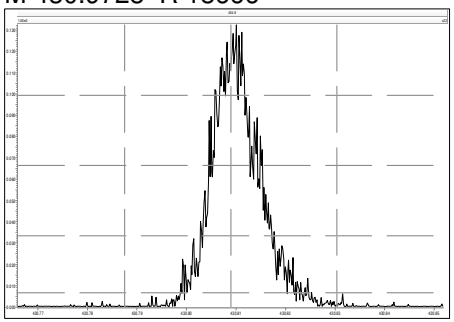

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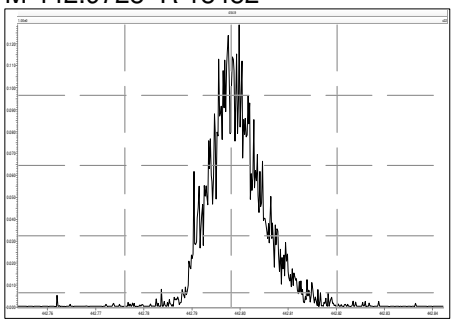

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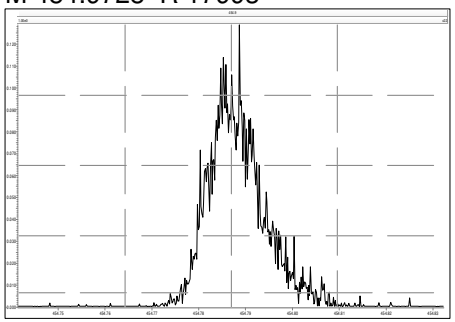

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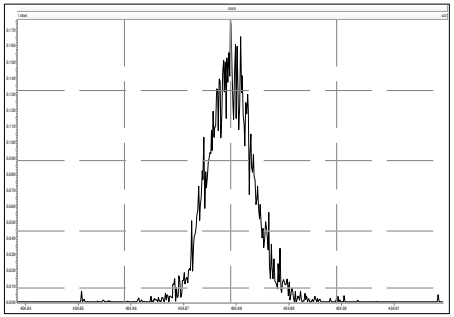

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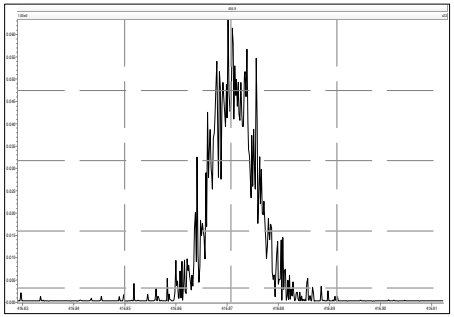

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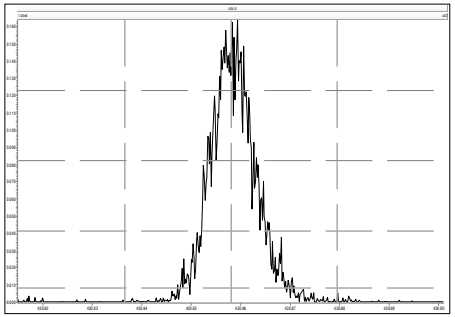

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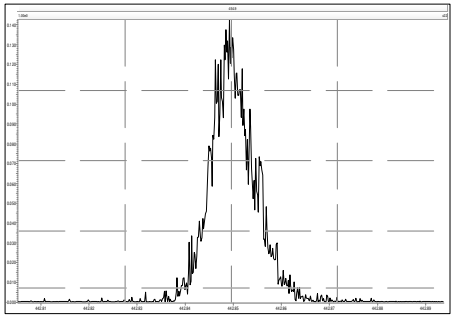

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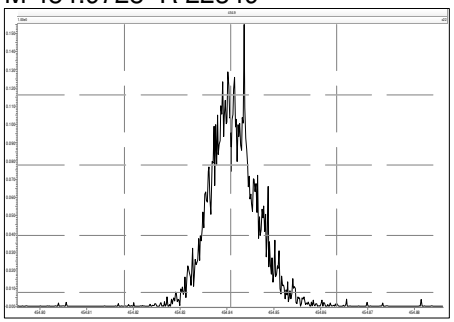

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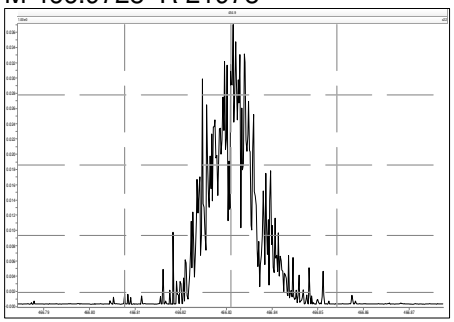

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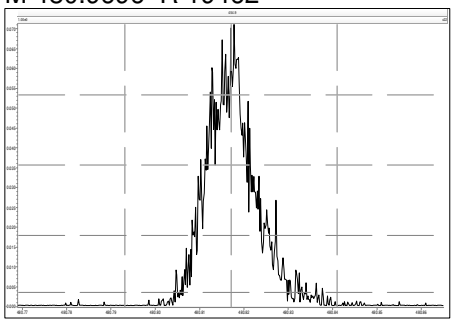

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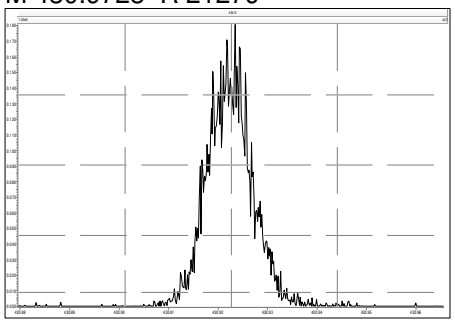

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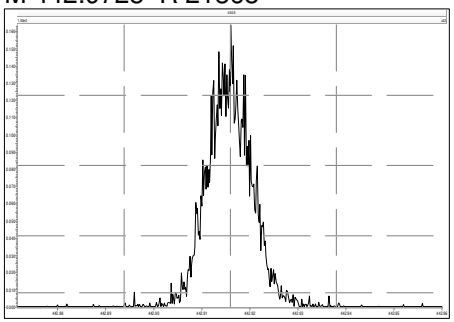

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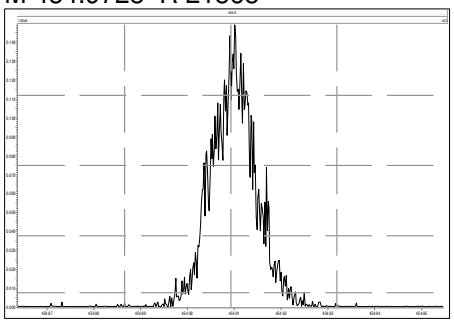

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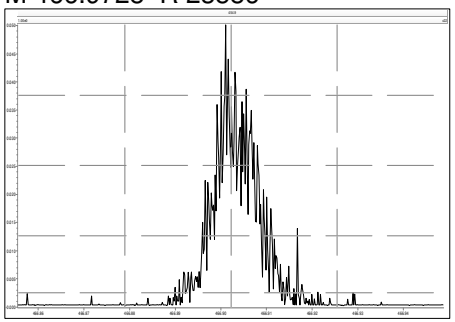

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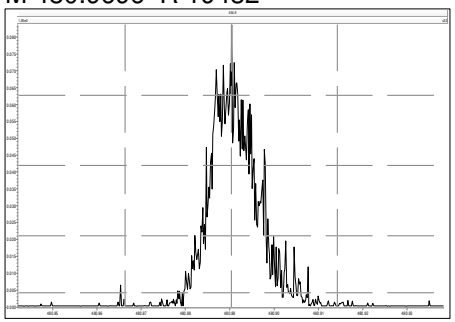

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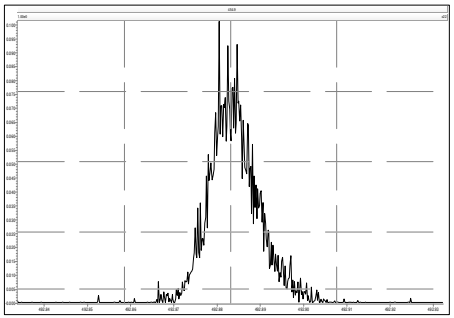

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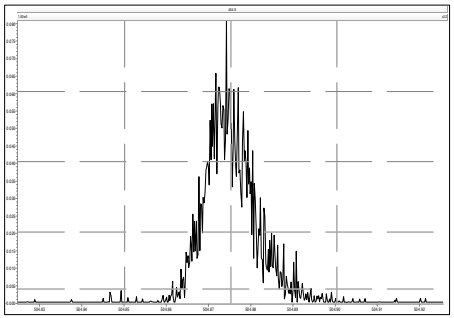

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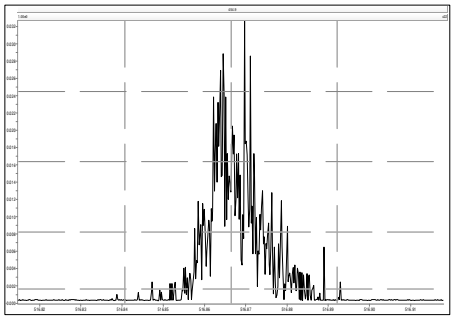

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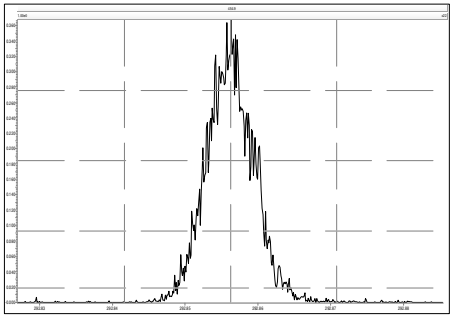

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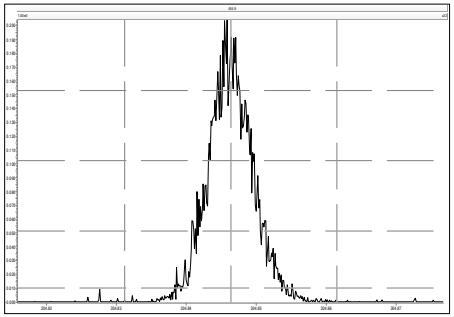

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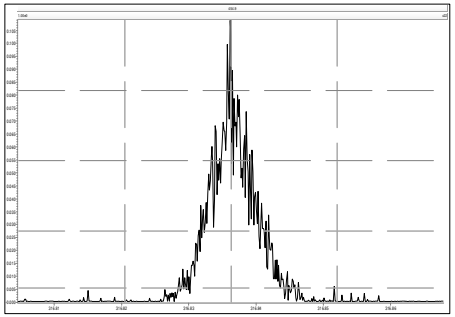

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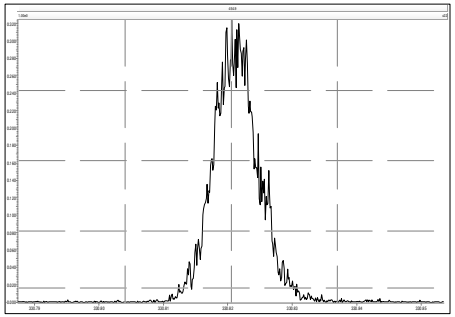

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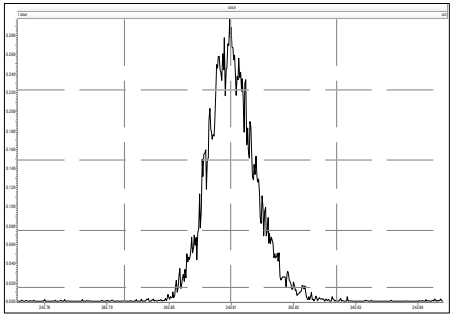

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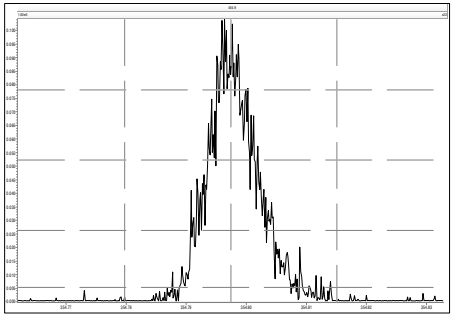

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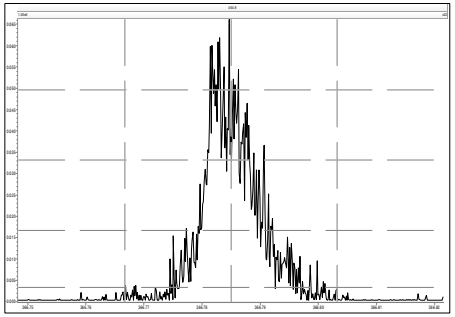

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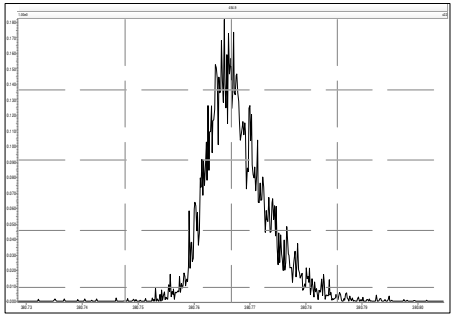

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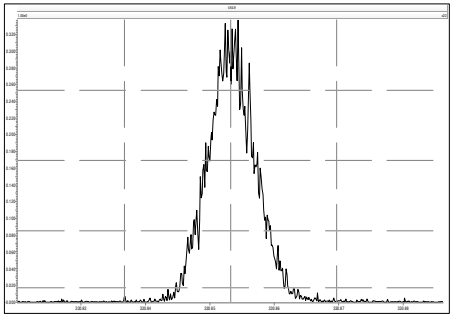
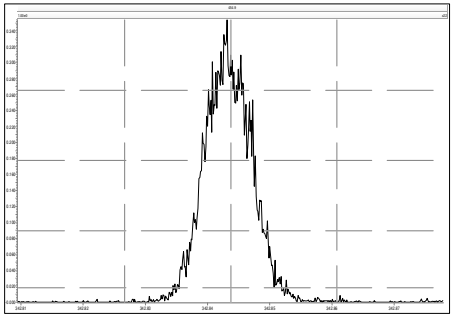


M 342.9792 R 19928



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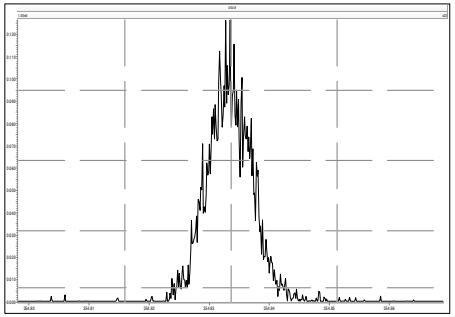

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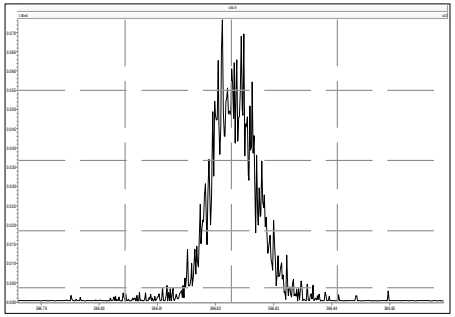

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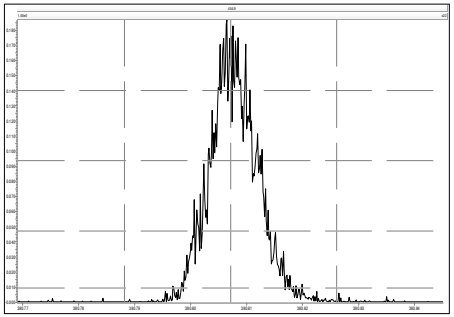

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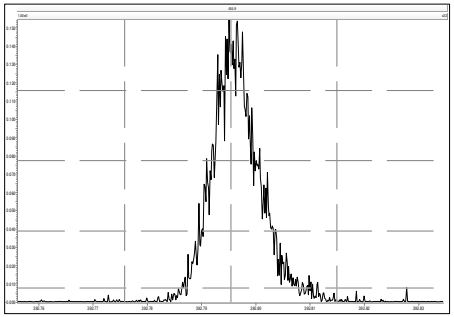

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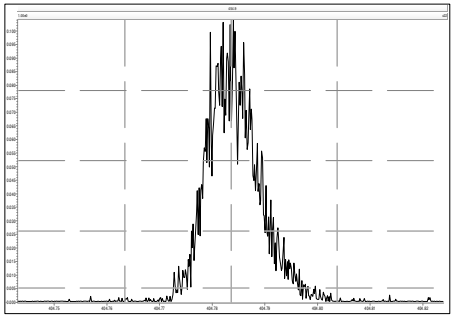

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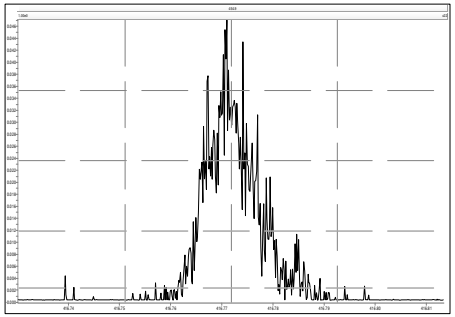

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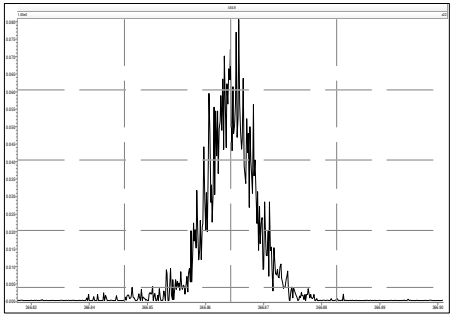

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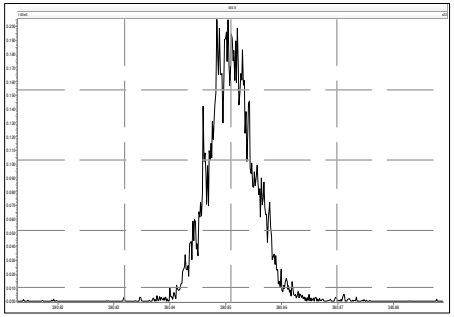

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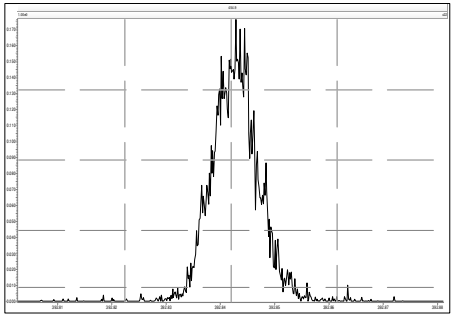
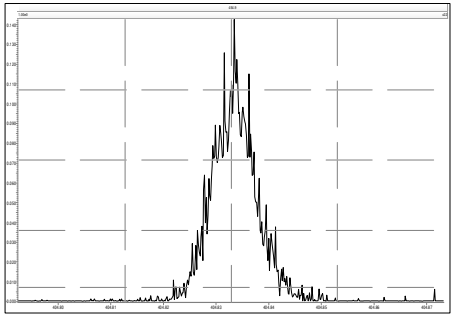
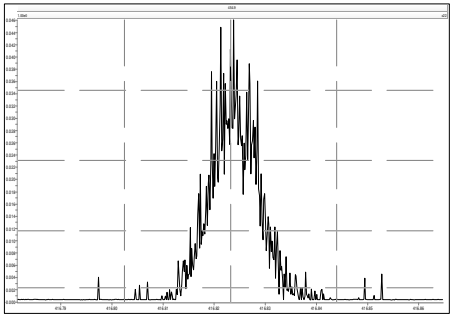


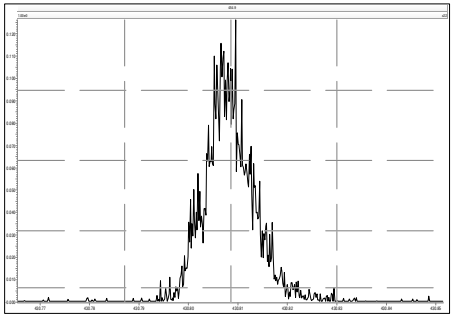
M 404.9760 R 22457



M 416.9760 R 22628



M 430.9728 R 19923



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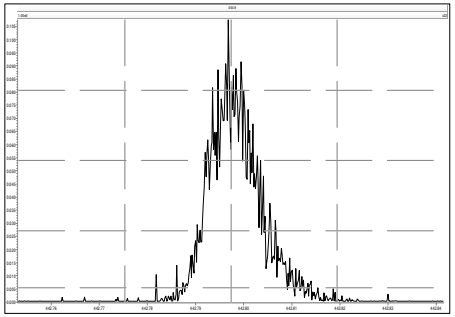

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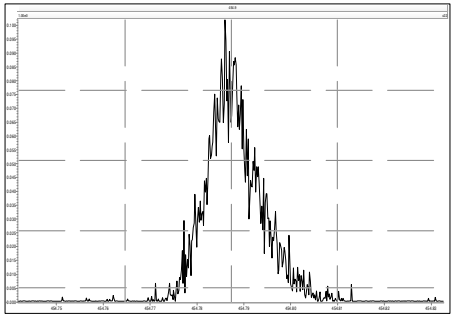

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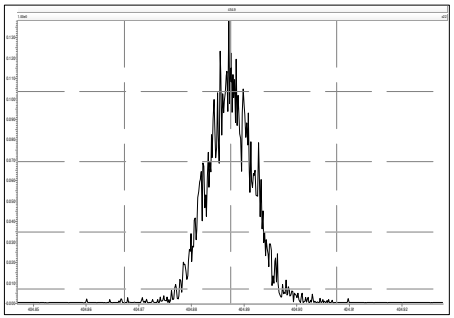

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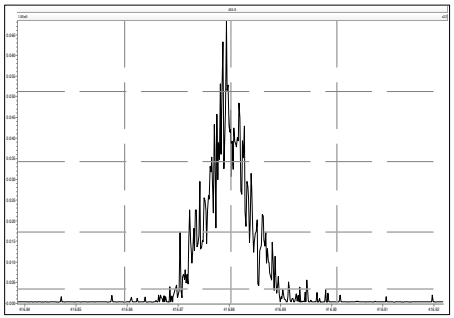

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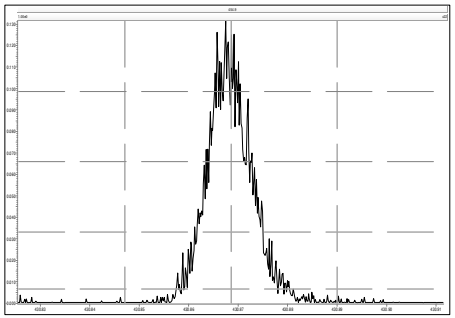

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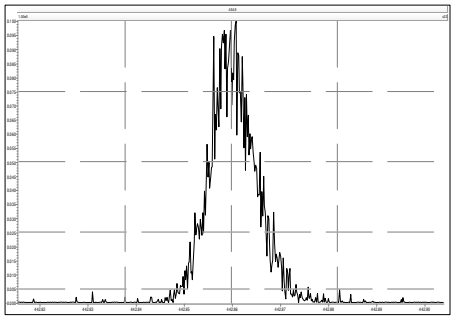

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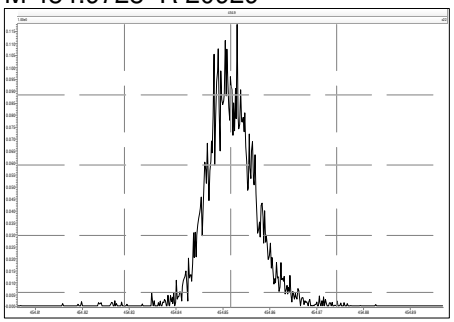

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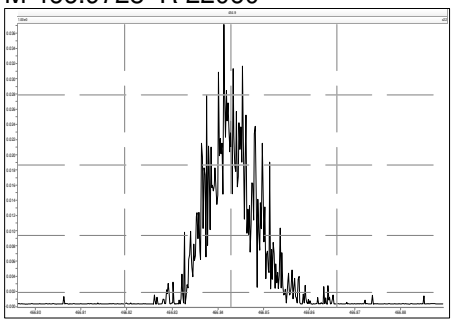

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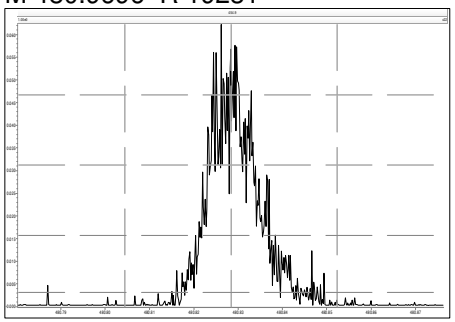

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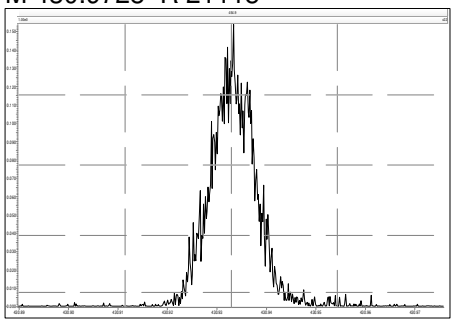

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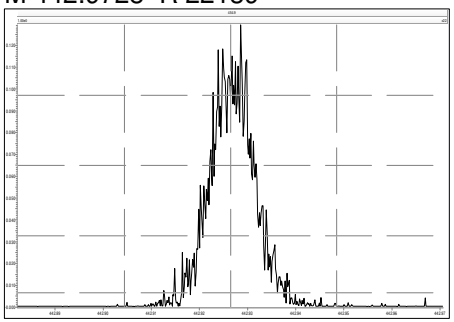

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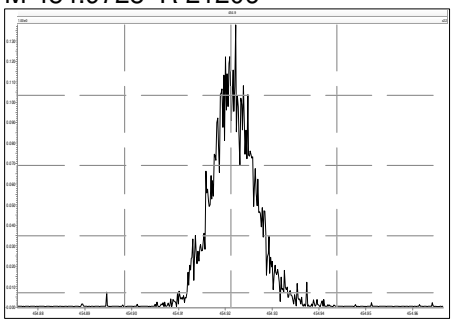

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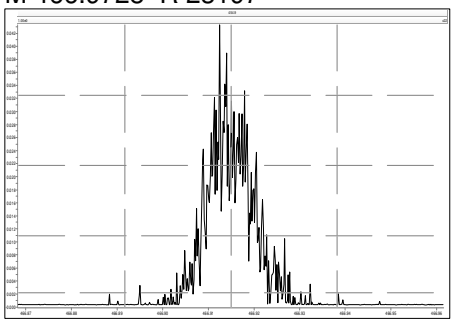

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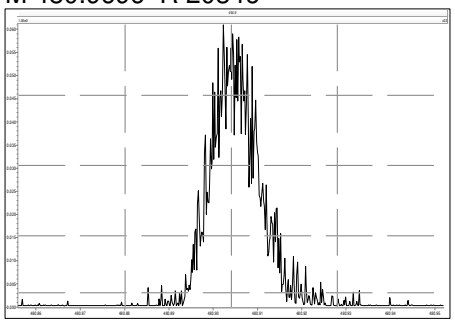

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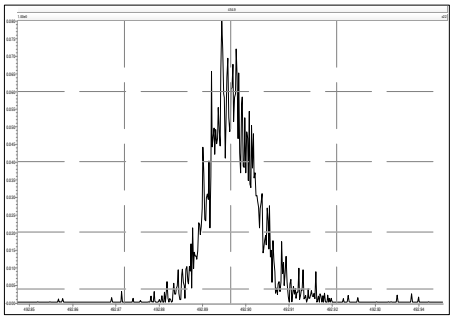

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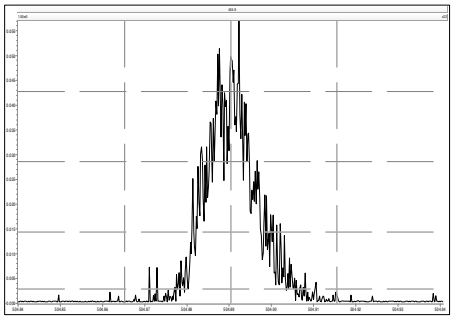

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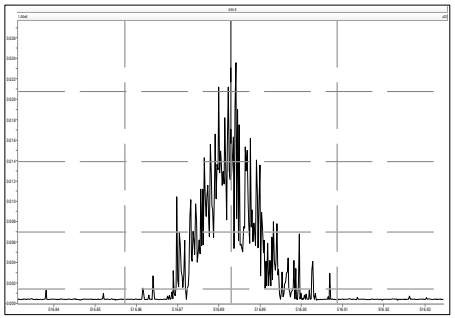

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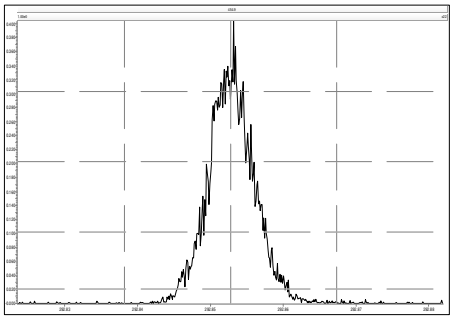

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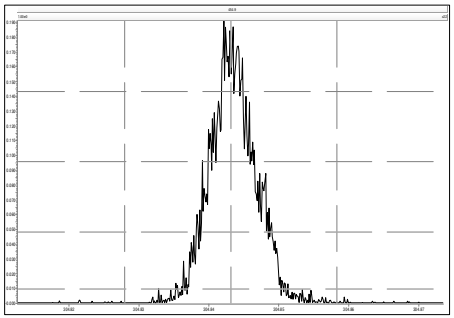

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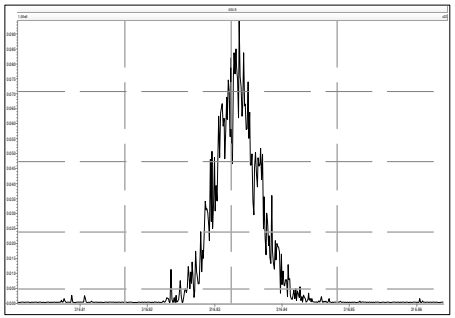
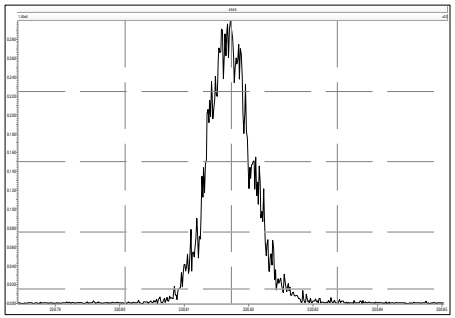


M 330.9792 R 21200



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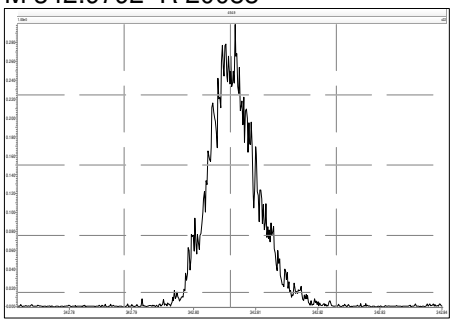
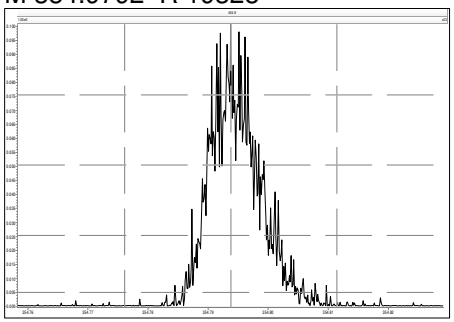


M 354.9792 R 19328



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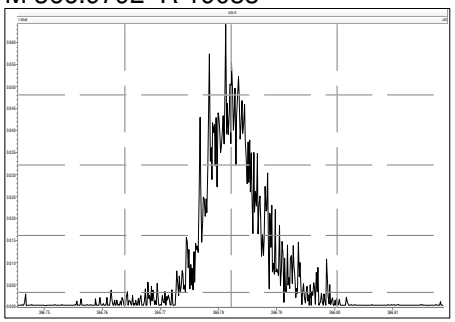

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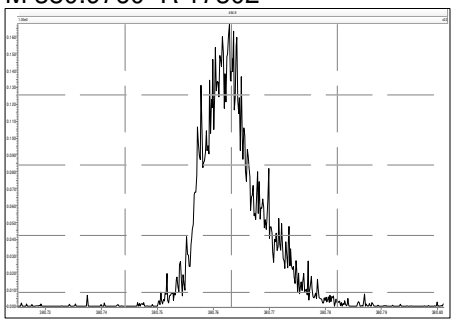

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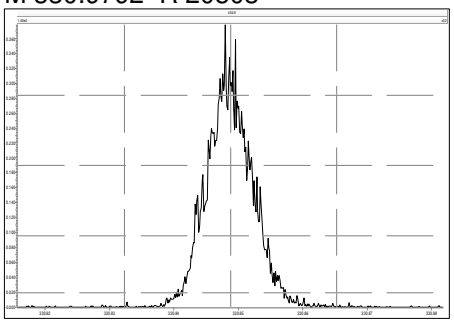

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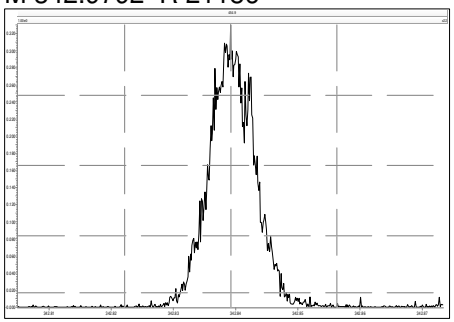

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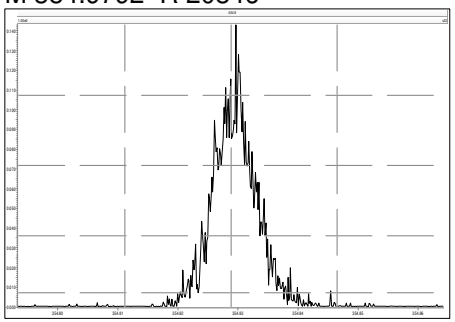

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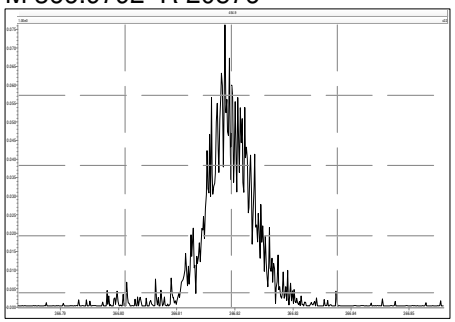

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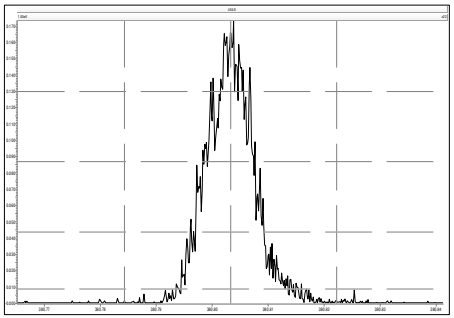
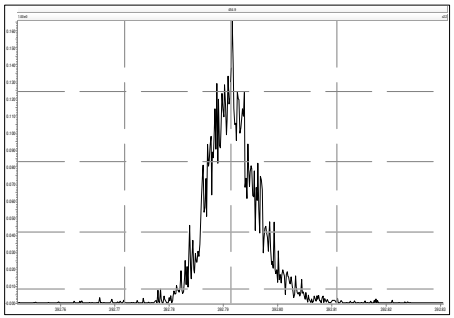
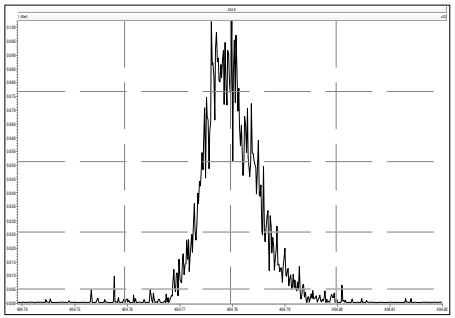


M 392.9760 R 20747



M 404.9760 R 18682



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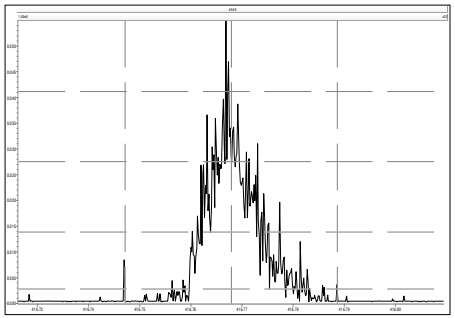

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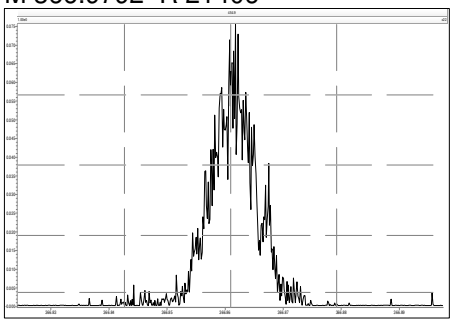

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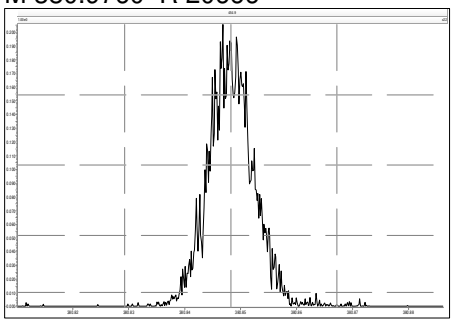

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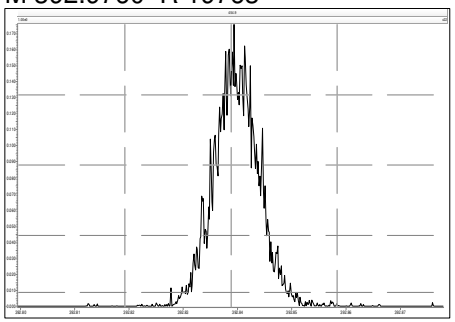

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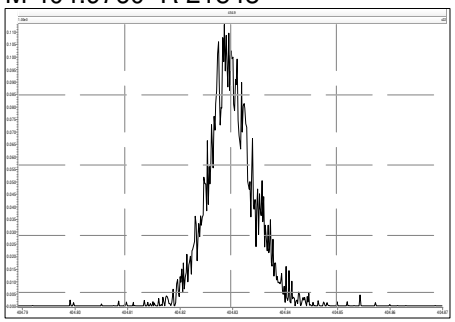
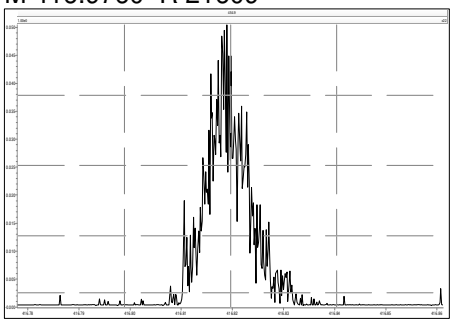


M 416.9760 R 21609



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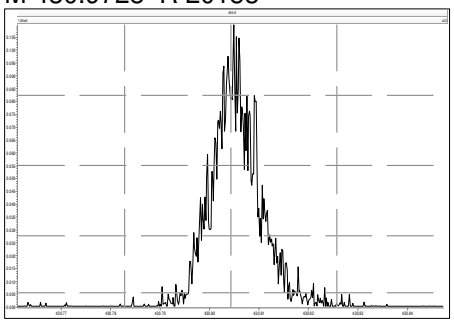
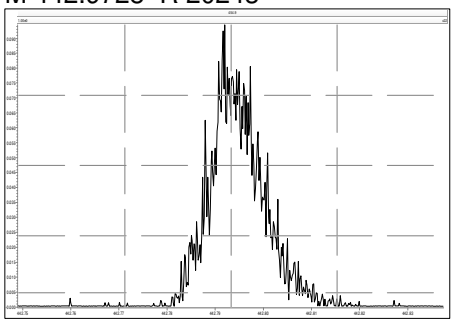


M 442.9728 R 20243



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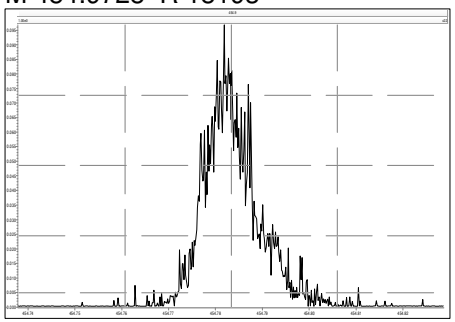
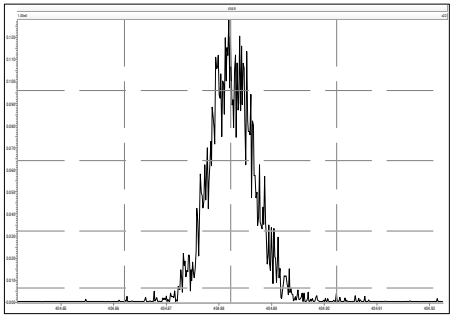
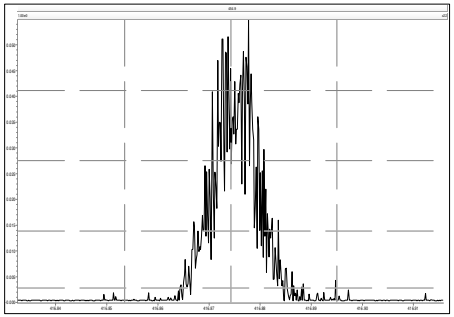


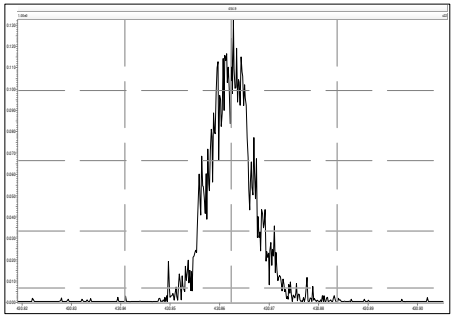
M 404.9760 R 23474



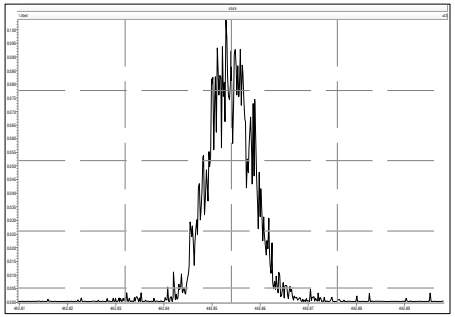
M 416.9760 R 23372



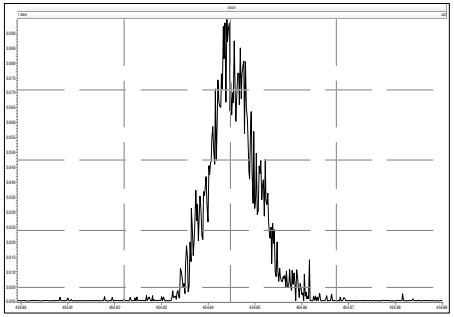
M 430.9728 R 20938



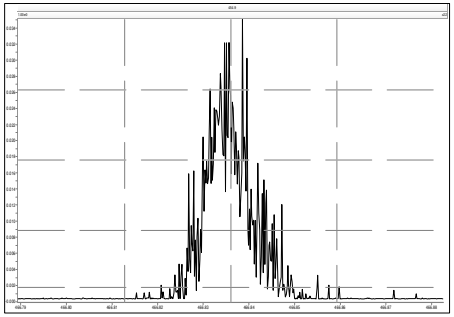
M 442.9728 R 23041



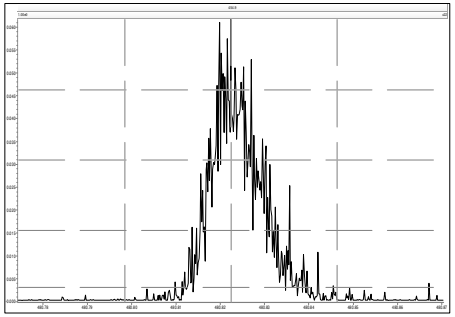
M 454.9728 R 19945



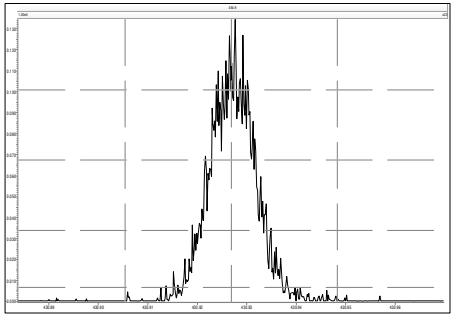
M 466.9728 R 25778



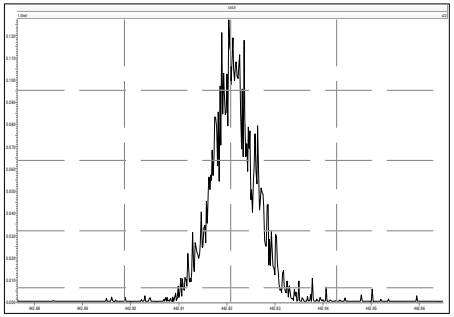
M 480.9696 R 20902



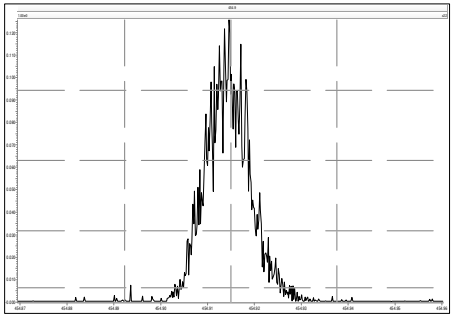
M 430.9728 R 22060



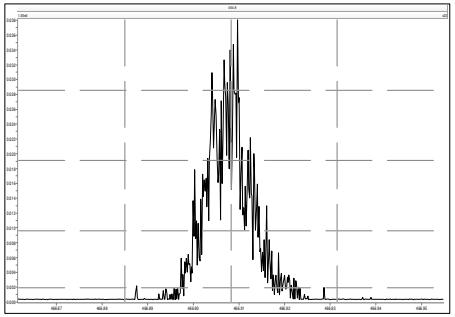
M 442.9728 R 21944



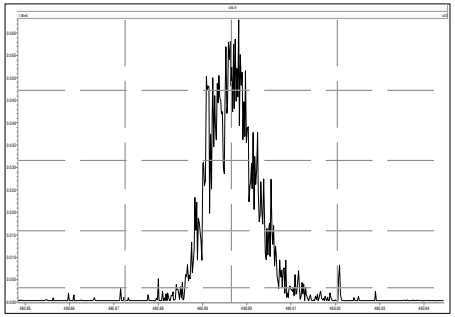
M 454.9728 R 21187



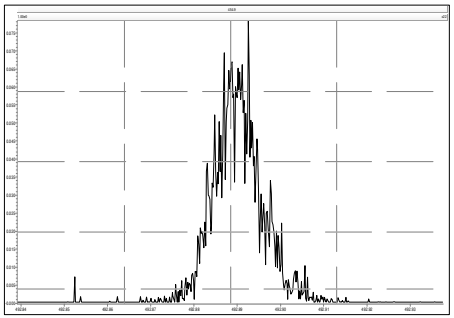
M 466.9728 R 24678



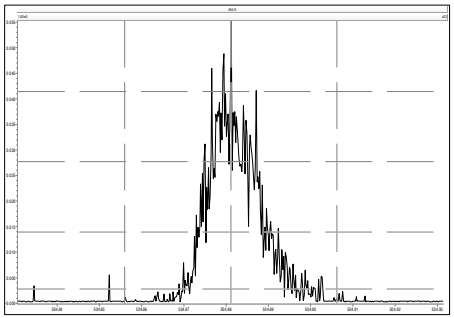
M 480.9696 R 21368



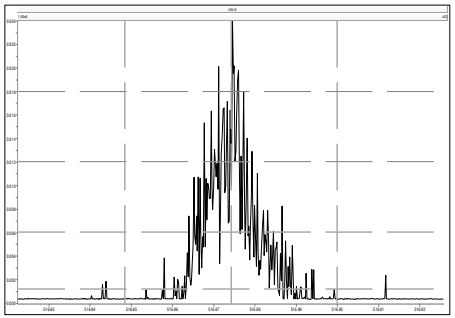
M 492.9696 R 21082



M 504.9696 R 20292



M 516.9697 R 19809



Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 0.25 pg/uL CS0	211110C05 0.5 pg/uL CS1	211110C06 2 pg/uL CS2	211110C07 10 pg/uL CS3	211110C08 40 pg/uL CS4	211110C09 200 pg/uL CS5	211110C10 500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34 ✓	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98 ✓
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84 ✓	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 **0.25 pg/uL CS0**	211110C05 **0.5 pg/uL CS1**	211110C06 **2 pg/uL CS2**	211110C07 **10 pg/uL CS3**	211110C08 **40 pg/uL CS4**	211110C09 **200 pg/uL CS5**	211110C10 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86 ✓	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07 ✓	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10 ✓	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28 ✓	1.33

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

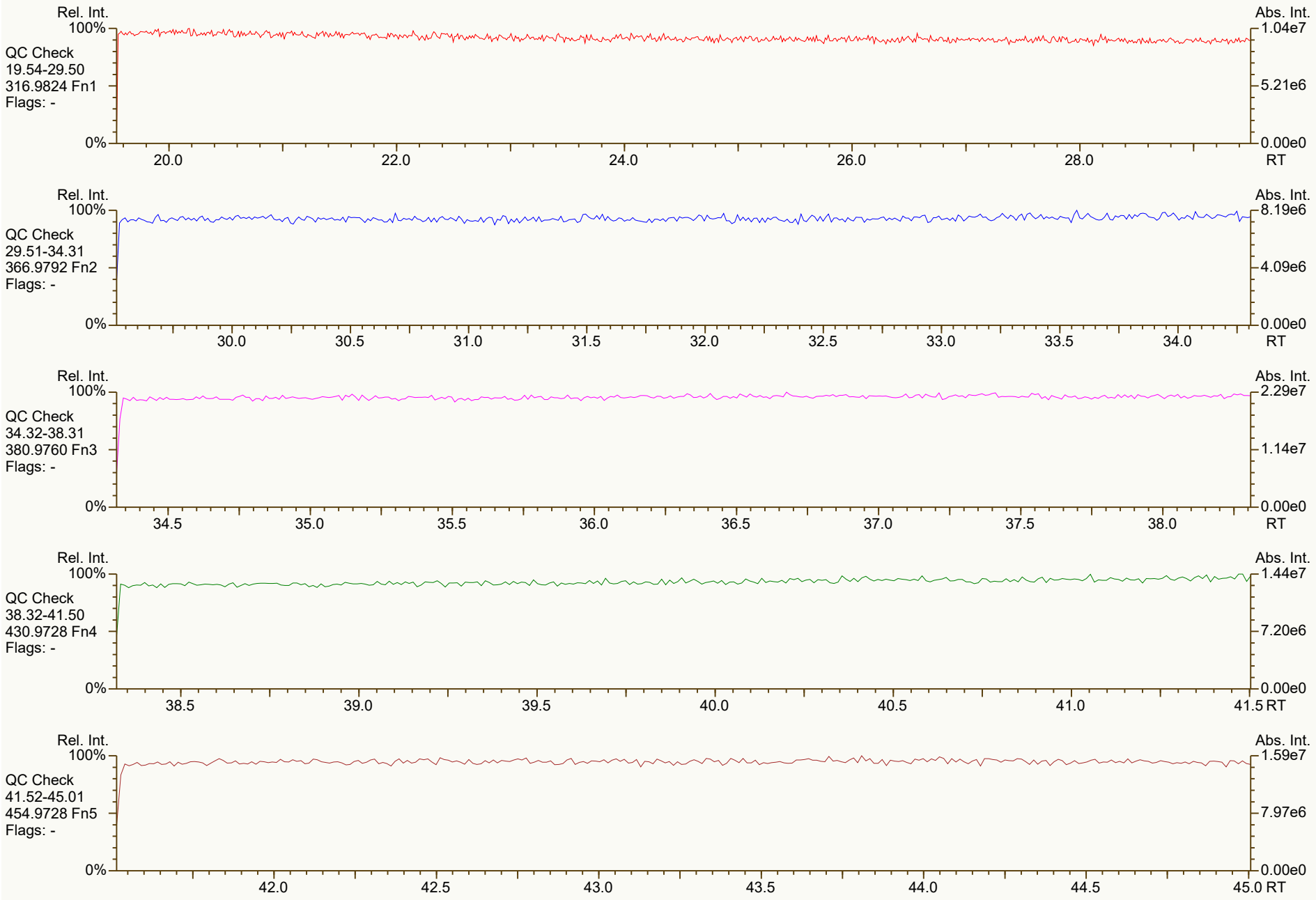
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:02 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA	UTP: 11-Nov-2021 16:23:33 DTF	Checkcode: 245-007-QLD
Sample ID: 25-6-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C04

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:02 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA	UTP: 11-Nov-2021 16:23:33 DTF	Checkcode: 245-007-QLD
Sample ID: 25-6-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C04

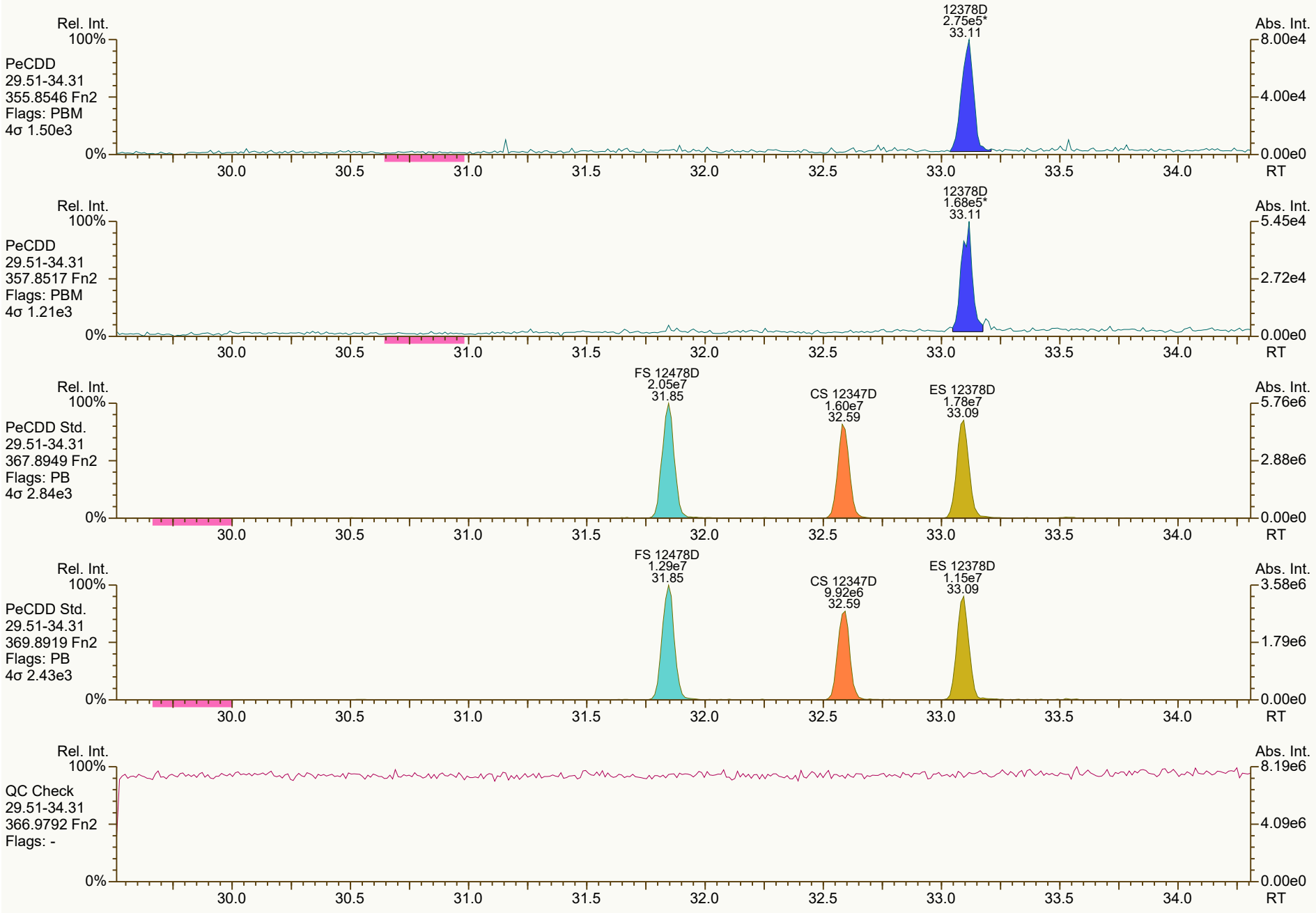
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%

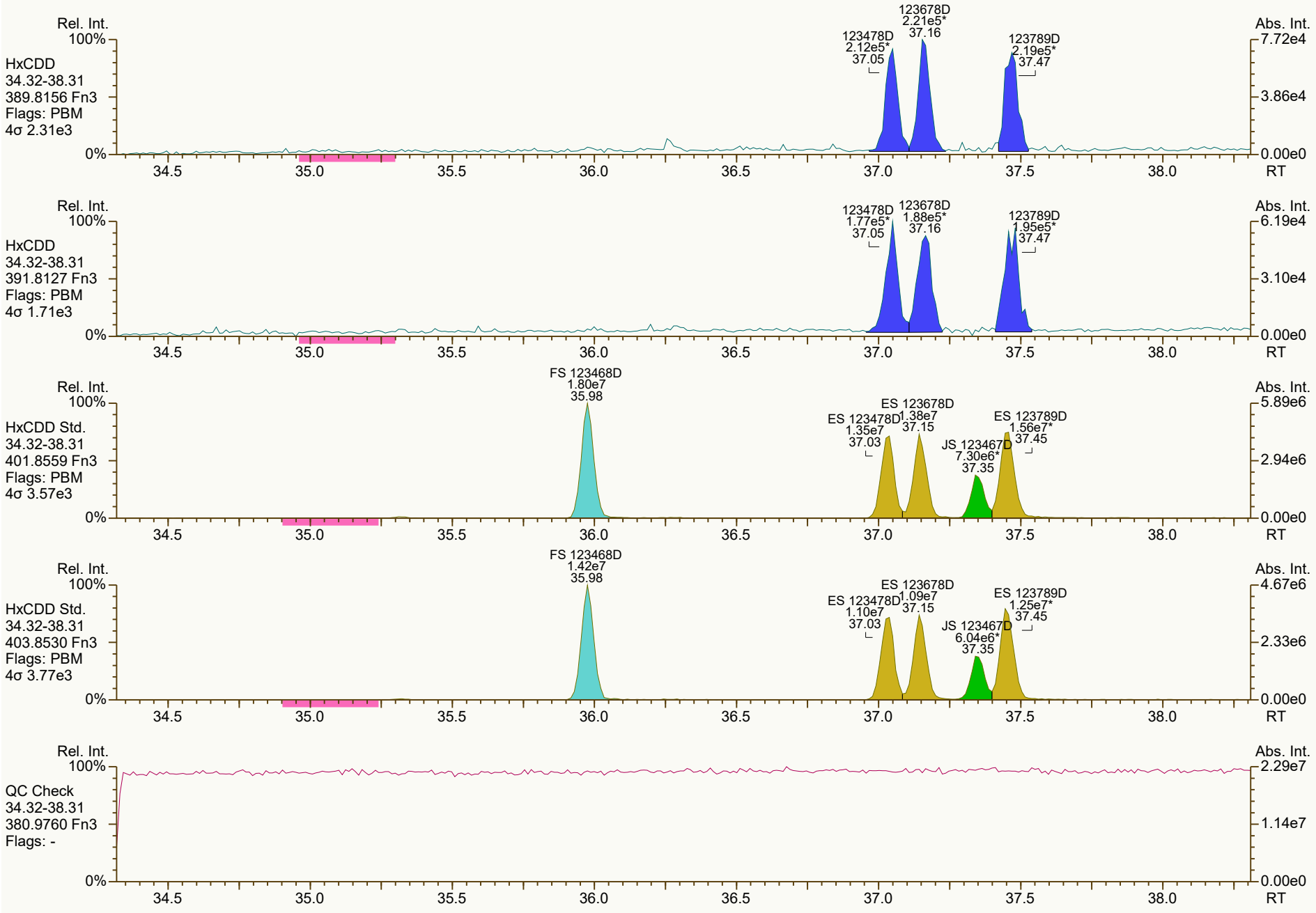
SGS ID: CS0_211110_DF_CA **Sample ID: 25-6-3** **Acq: 10-Nov-2021 11:02:13**
Instr: [ILM] AutoSpec-Ultima HRMS3 **VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65** **User: DTF Datafile: 211110C04**

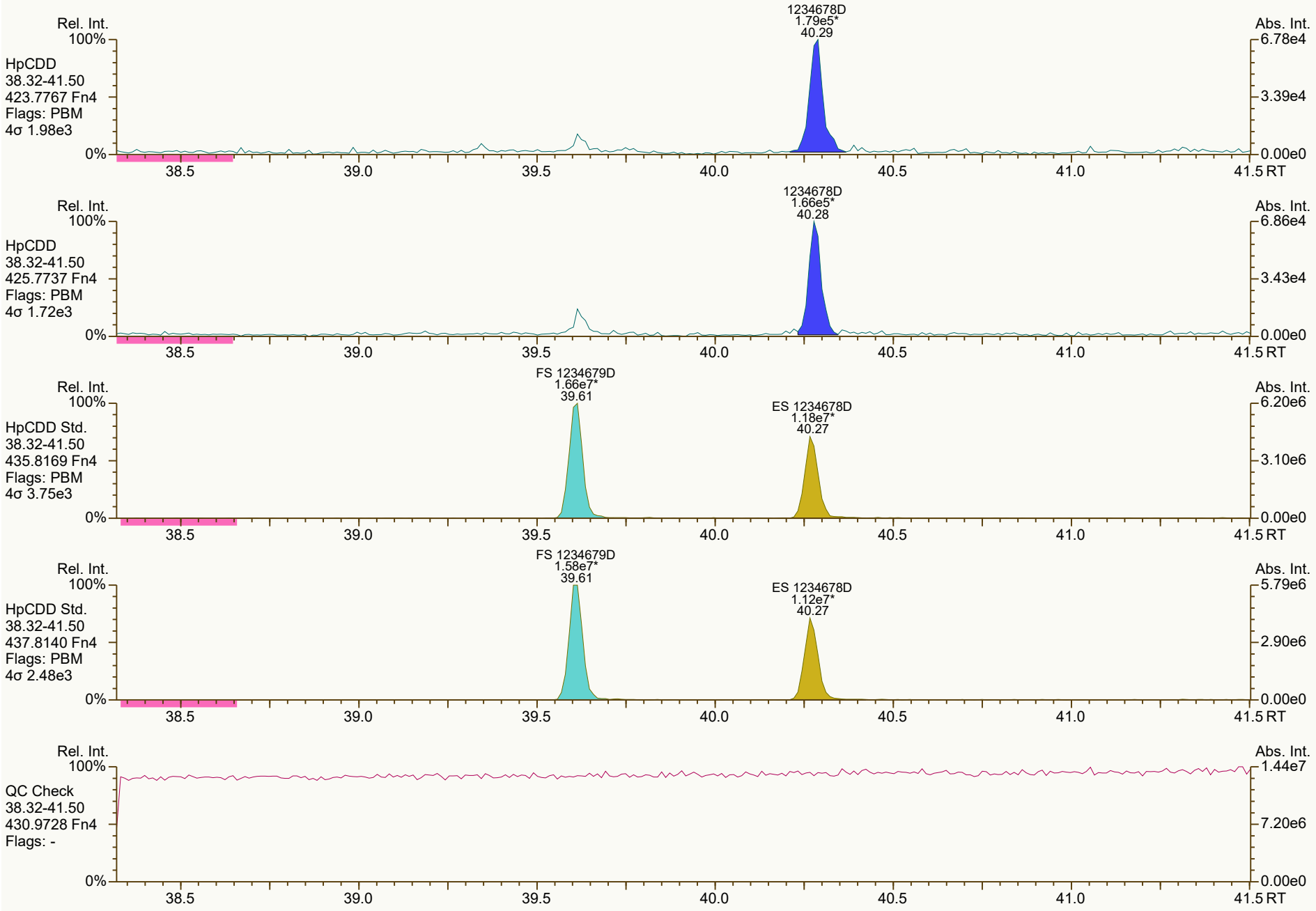


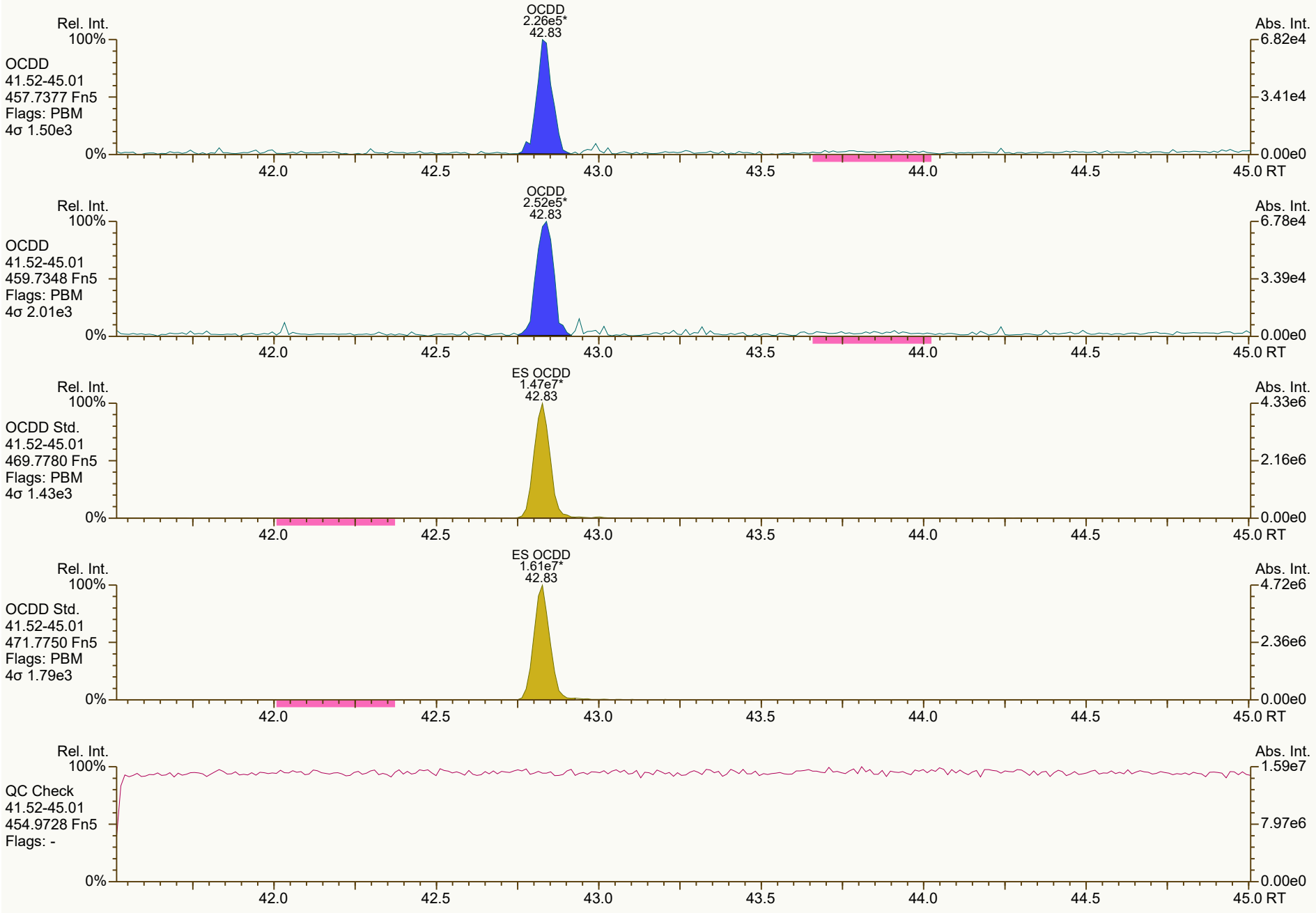
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 scc: 245-007 *PKD: n/a Printed: 11-Nov-2021 16:32 Page 1 of 12*

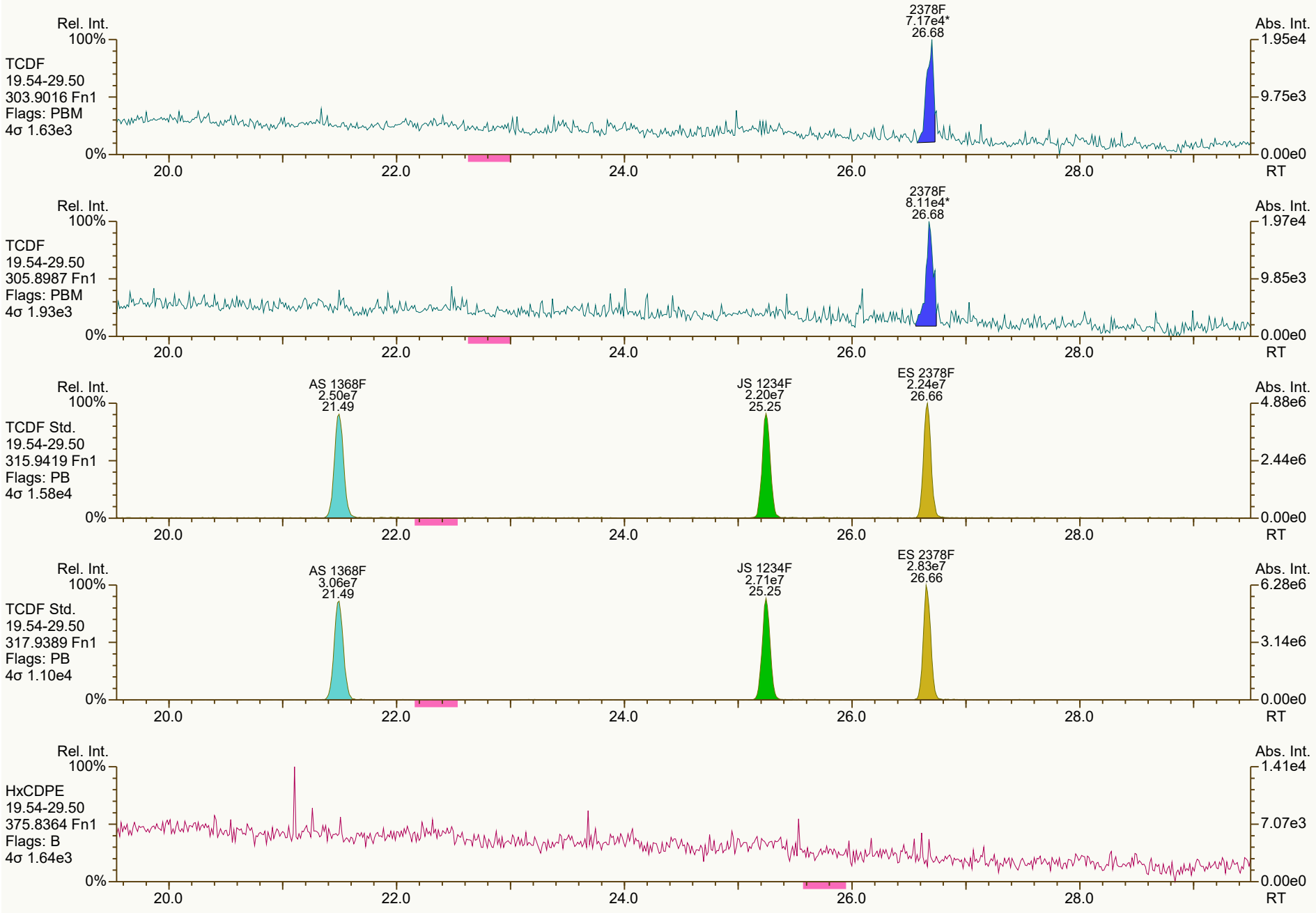

SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
TCDD
19.54-29.50
319.8965 Fn1
Flags: PBM
4σ 2.61e3
RRF = (5.29e4 + 6.64e4) * 100pg / (1.59e7 + 1.97e7) * .25pg = 1.34
DTF 11-Nov-2021 16:30
2378D
5.29e4*
27.60
APPROVED
Amy_Boehm , 11/11/2021, 5:12:33 PM
TCDD
19.54-29.50
321.8936 Fn1
Flags: PBM
4σ 2.27e3
2378D
6.64e4*
27.59
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.48e3
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 9.73e3
AS 1368D
1.64e7
23.73
TS 1378D
2.18e7
25.85
JS 1234D
1.56e7
26.90
ES 2378D
1.59e7
27.57
FS 1278D
1.73e7
27.92
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.27e3
AS 1368D
2.03e7
23.73
TS 1378D
2.73e7
25.85
JS 1234D
1.90e7
26.90
ES 2378D
1.97e7
27.57
FS 1278D
2.17e7
27.92
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3504, 1483, 2998 scc: 245-007
Revised: 11-Nov-2021 16:18 (DTF) Printed: 11-Nov-2021 16:32 Page 2 of 12


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
Abs. Int.
8.00e4
4.00e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.68e5*
33.11
Abs. Int.
5.45e4
2.72e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
Abs. Int.
5.76e6
2.88e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

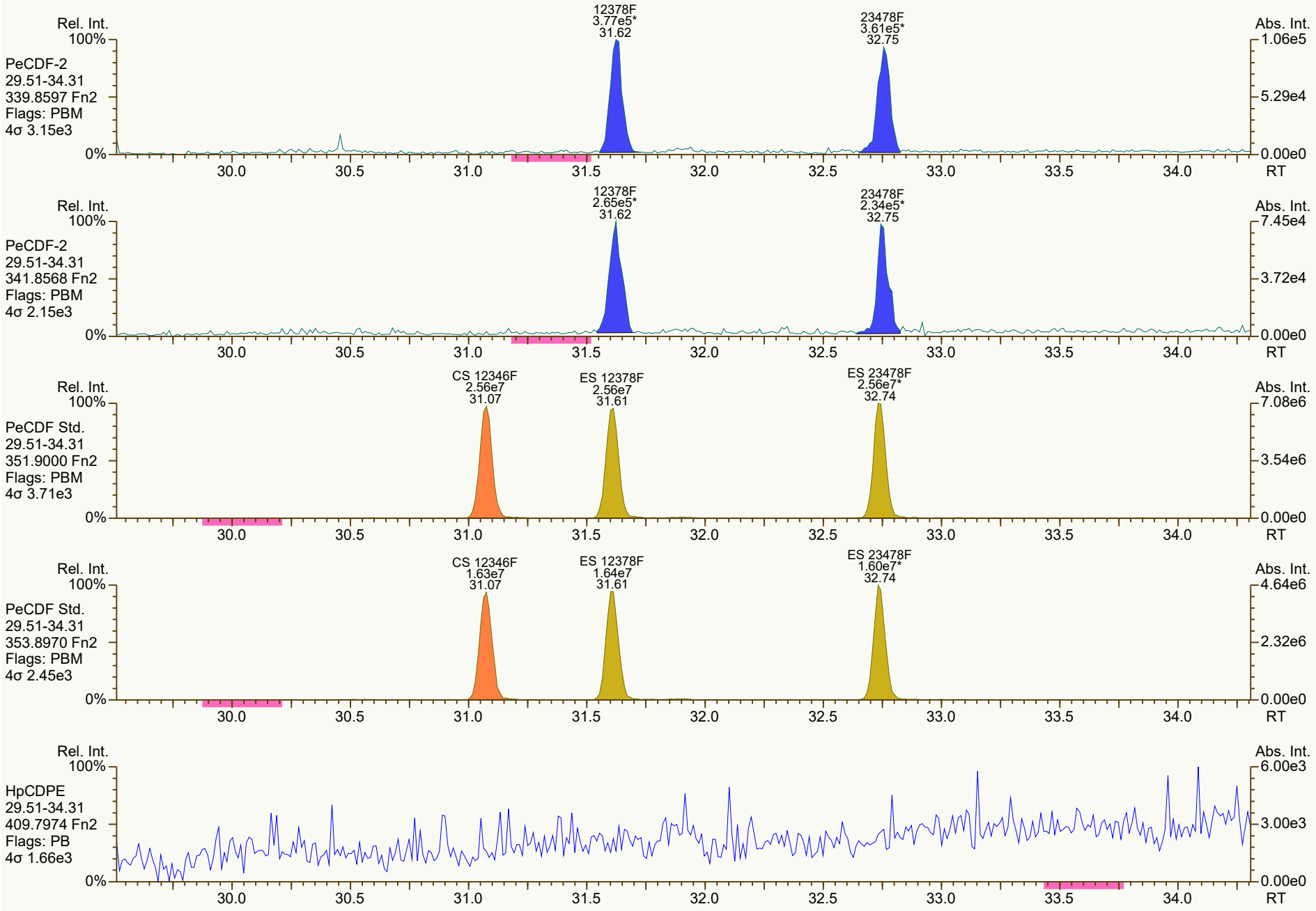

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
0%
123478D
2.12e5*
37.05
123678D
2.21e5*
37.16
123789D
2.19e5*
37.47
Abs. Int.
7.72e4
3.86e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
0%
123478D
1.77e5*
37.05
123678D
1.88e5*
37.16
123789D
1.95e5*
37.47
Abs. Int.
6.19e4
3.10e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
0%
FS 123468D
1.80e7
35.98
ES 123478D
1.35e7
37.03
ES 123678D
1.38e7
37.15
JS 123467D
7.30e6*
37.35
ES 123789D
1.56e7*
37.45
Abs. Int.
5.89e6
2.94e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
0%
FS 123468D
1.42e7
35.98
ES 123478D
1.10e7
37.03
ES 123678D
1.09e7
37.15
JS 123467D
6.04e6*
37.35
ES 123789D
1.25e7*
37.45
Abs. Int.
4.67e6
2.33e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

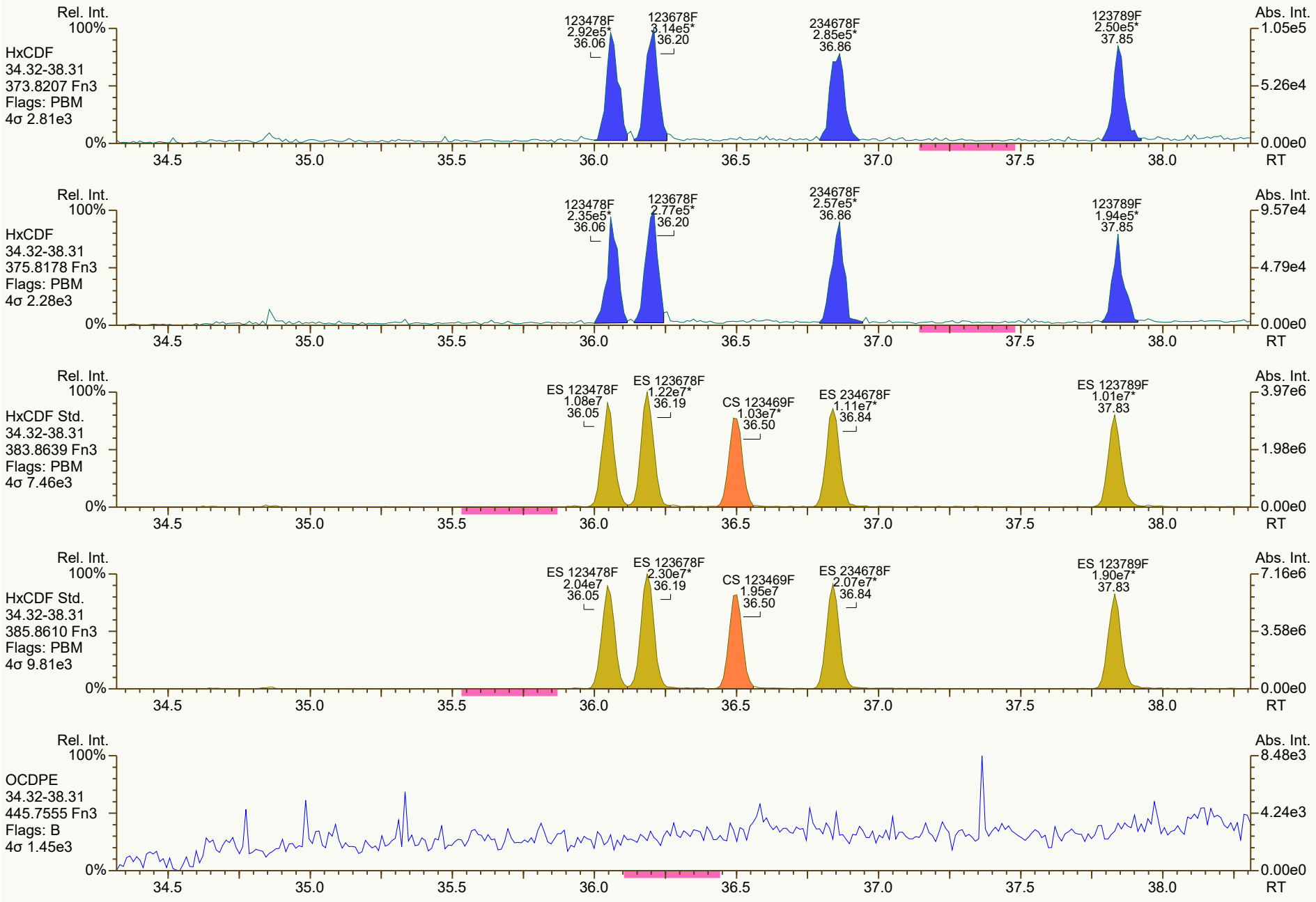

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
0%
1234678D
1.79e5*
40.29
Abs. Int.
6.78e4
3.39e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
0%
1234678D
1.66e5*
40.28
Abs. Int.
6.86e4
3.43e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
0%
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
Abs. Int.
6.20e6
3.10e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
0%
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
Abs. Int.
5.79e6
2.90e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

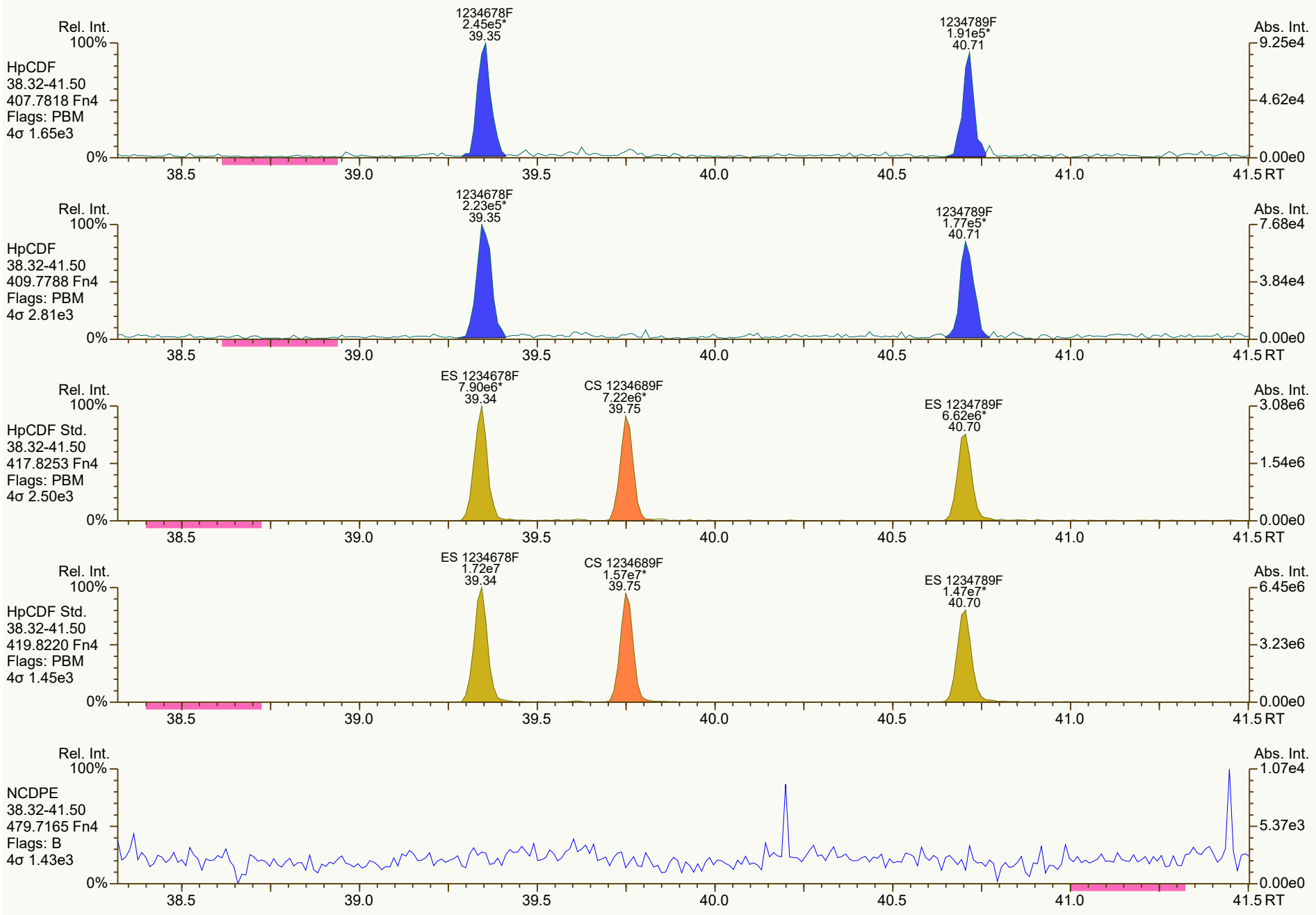

OCDD
2.26e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
6.82e4
3.41e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.52e5*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
ES OCDD
1.47e7*
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
4.33e6
2.16e6
ES OCDD
1.61e7*
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
4.72e6
2.36e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.59e7
7.97e6


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
0%
2378F
7.17e4*
26.68
Abs. Int.
1.95e4
9.75e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
0%
2378F
8.11e4*
26.68
Abs. Int.
1.97e4
9.85e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
Abs. Int.
4.88e6
2.44e6
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
0%
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
26.66
Abs. Int.
6.28e6
3.14e6
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.41e4
7.07e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0


Rel. Int.
100%
0%
Abs. Int.
1.25e4
6.27e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: PB
4σ 2.44e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.40e4
7.01e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 1.85e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.04e7
5.21e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12378F
3.77e5*
31.62
23478F
3.61e5*
32.75
Abs. Int.
1.06e5
5.29e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
0%
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
Abs. Int.
7.45e4
3.72e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
0%
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
Abs. Int.
7.08e6
3.54e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
0%
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

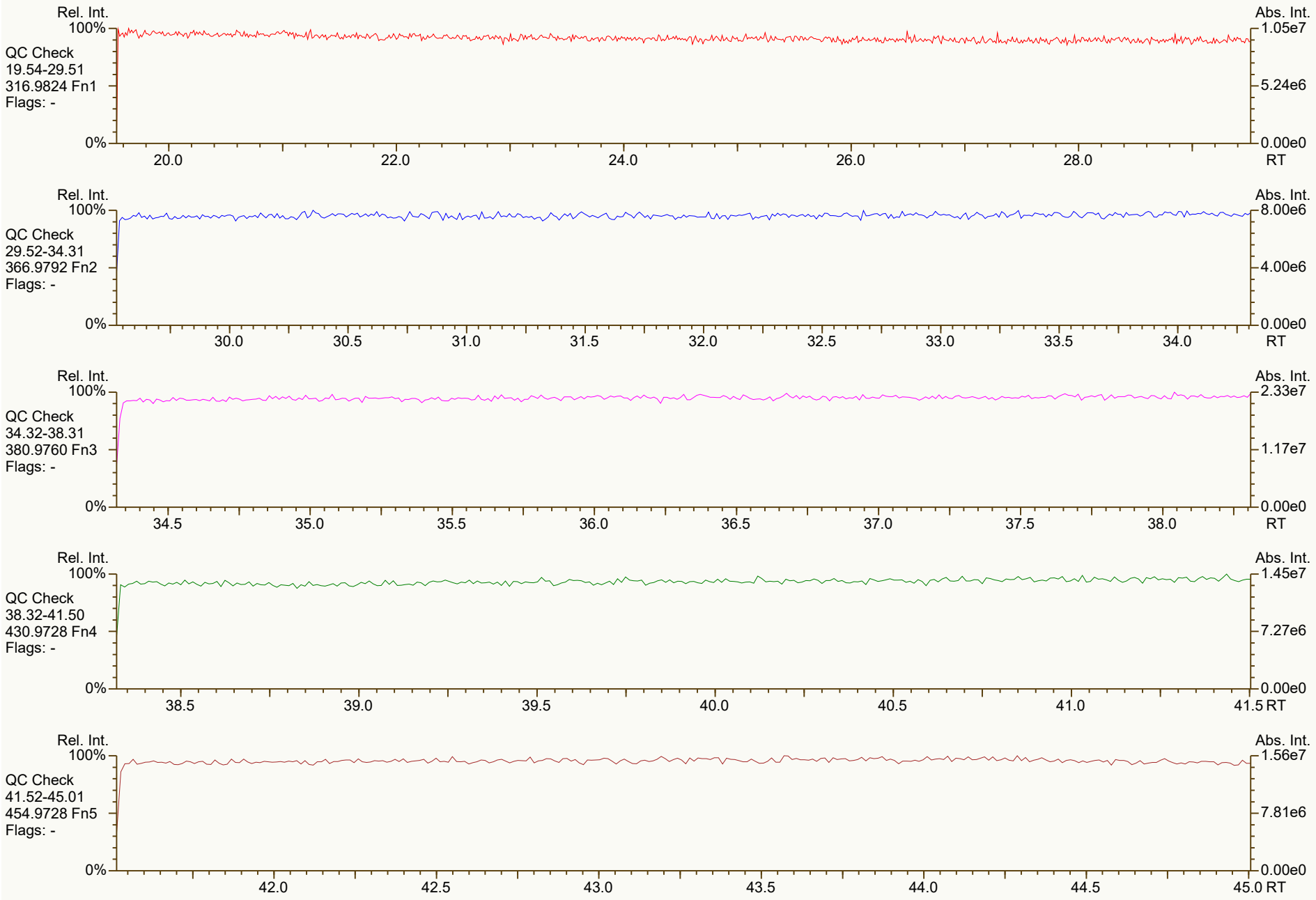

Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.81e3
0%
123478F
2.92e5*
36.06
123678F
3.14e5*
36.20
234678F
2.85e5*
36.86
123789F
2.50e5*
37.85
Abs. Int.
1.05e5
5.26e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.28e3
0%
123478F
2.35e5*
36.06
123678F
2.77e5*
36.20
234678F
2.57e5*
36.86
123789F
1.94e5*
37.85
Abs. Int.
9.57e4
4.79e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.46e3
0%
ES 123478F
1.08e7
36.05
ES 123678F
1.22e7*
36.19
CS 123469F
1.03e7*
36.50
ES 234678F
1.11e7*
36.84
ES 123789F
1.01e7*
37.83
Abs. Int.
3.97e6
1.98e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.81e3
0%
ES 123478F
2.04e7
36.05
ES 123678F
2.30e7*
36.19
CS 123469F
1.95e7
36.50
ES 234678F
2.07e7*
36.84
ES 123789F
1.90e7*
37.83
Abs. Int.
7.16e6
3.58e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
Abs. Int.
9.25e4
4.62e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
Abs. Int.
7.68e4
3.84e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
Abs. Int.
3.08e6
1.54e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
Abs. Int.
6.45e6
3.23e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
Abs. Int.
1.07e4
5.37e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

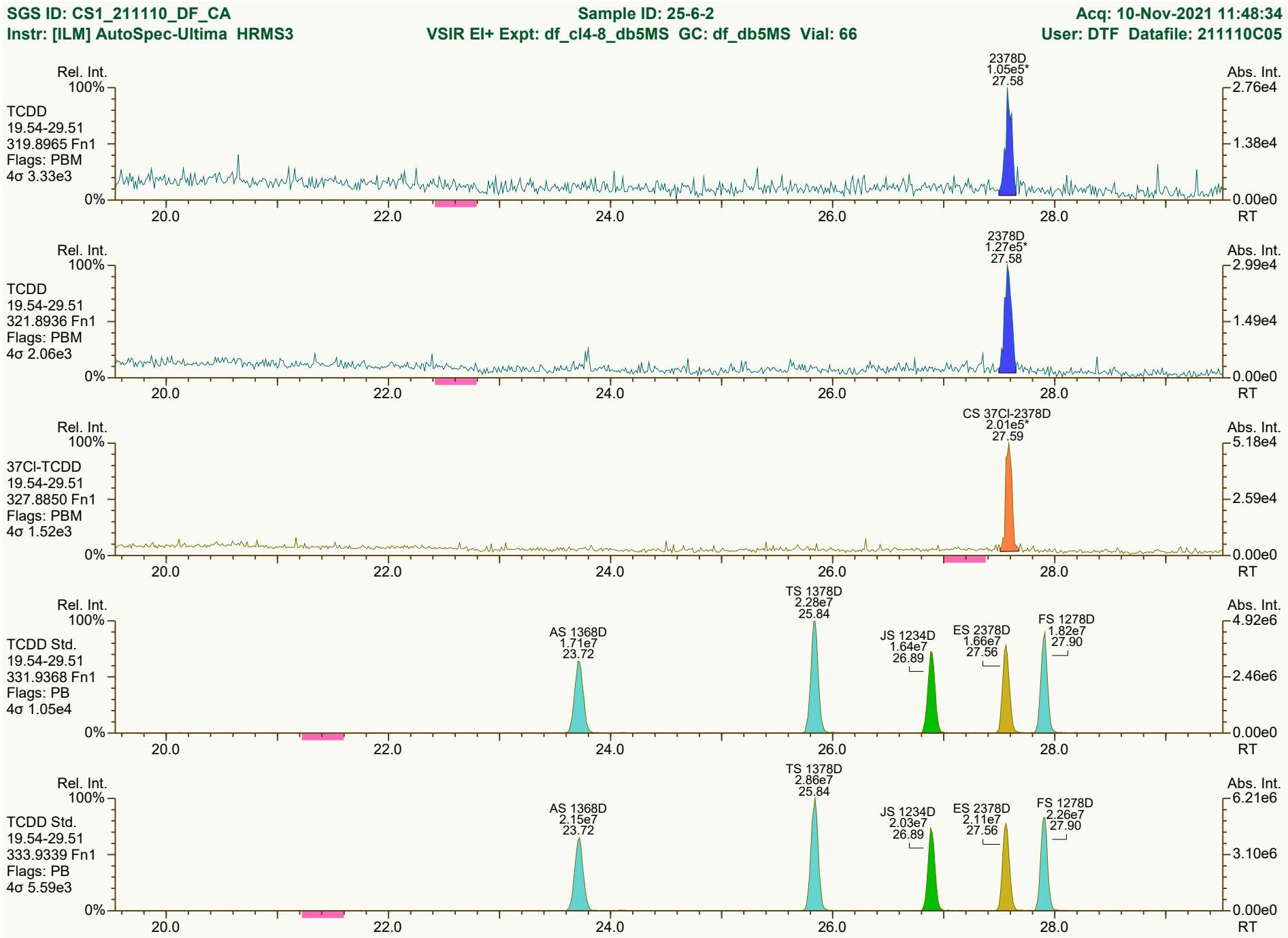

OCDF
2.83e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.07e3
0%
Abs. Int.
9.68e4
4.84e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.12e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.63e3
0%
Abs. Int.
8.96e4
4.48e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.88e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.90e3
0%
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.08e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.27e3
0%
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.52e3
0%
Abs. Int.
5.12e3
2.56e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

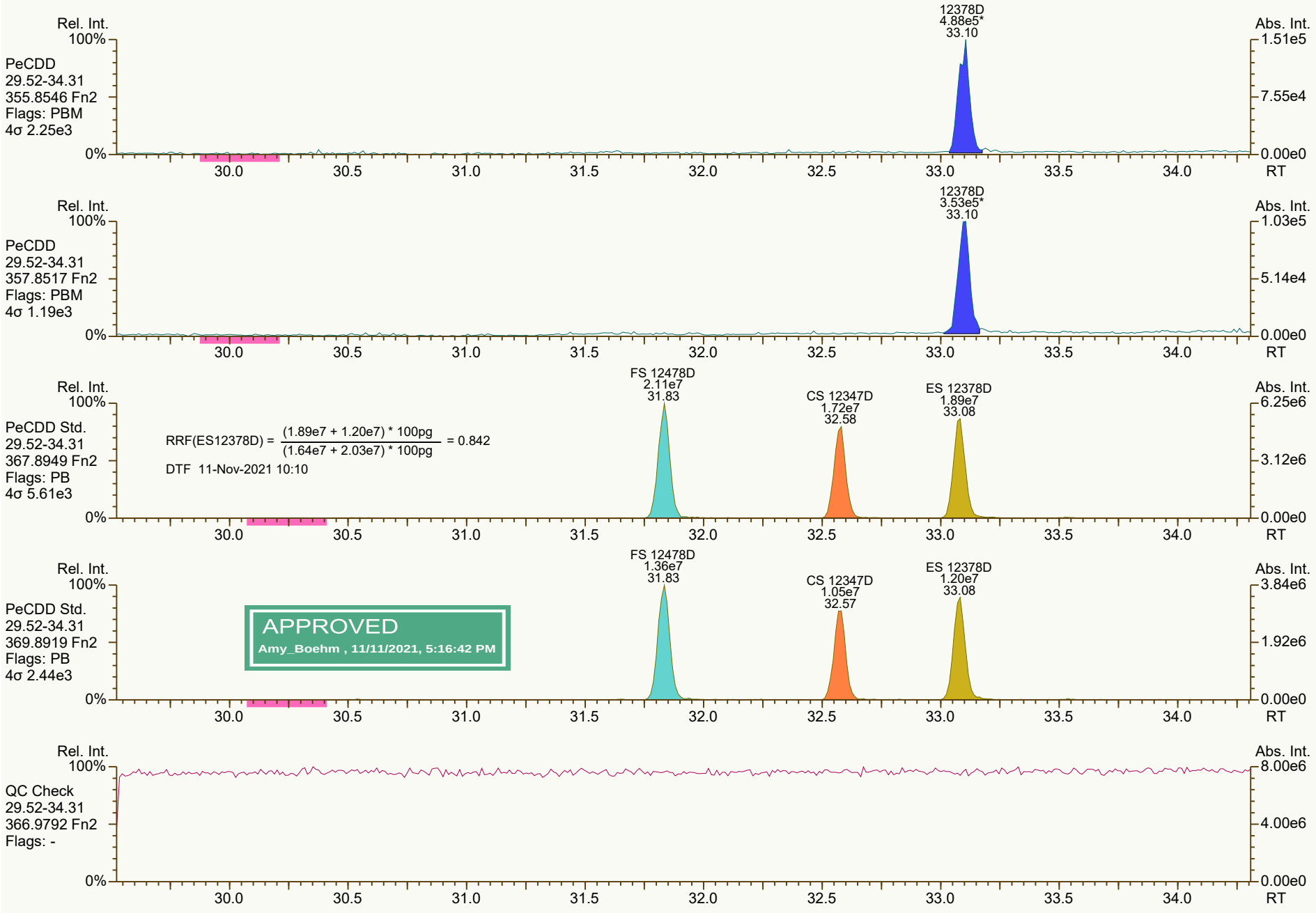
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

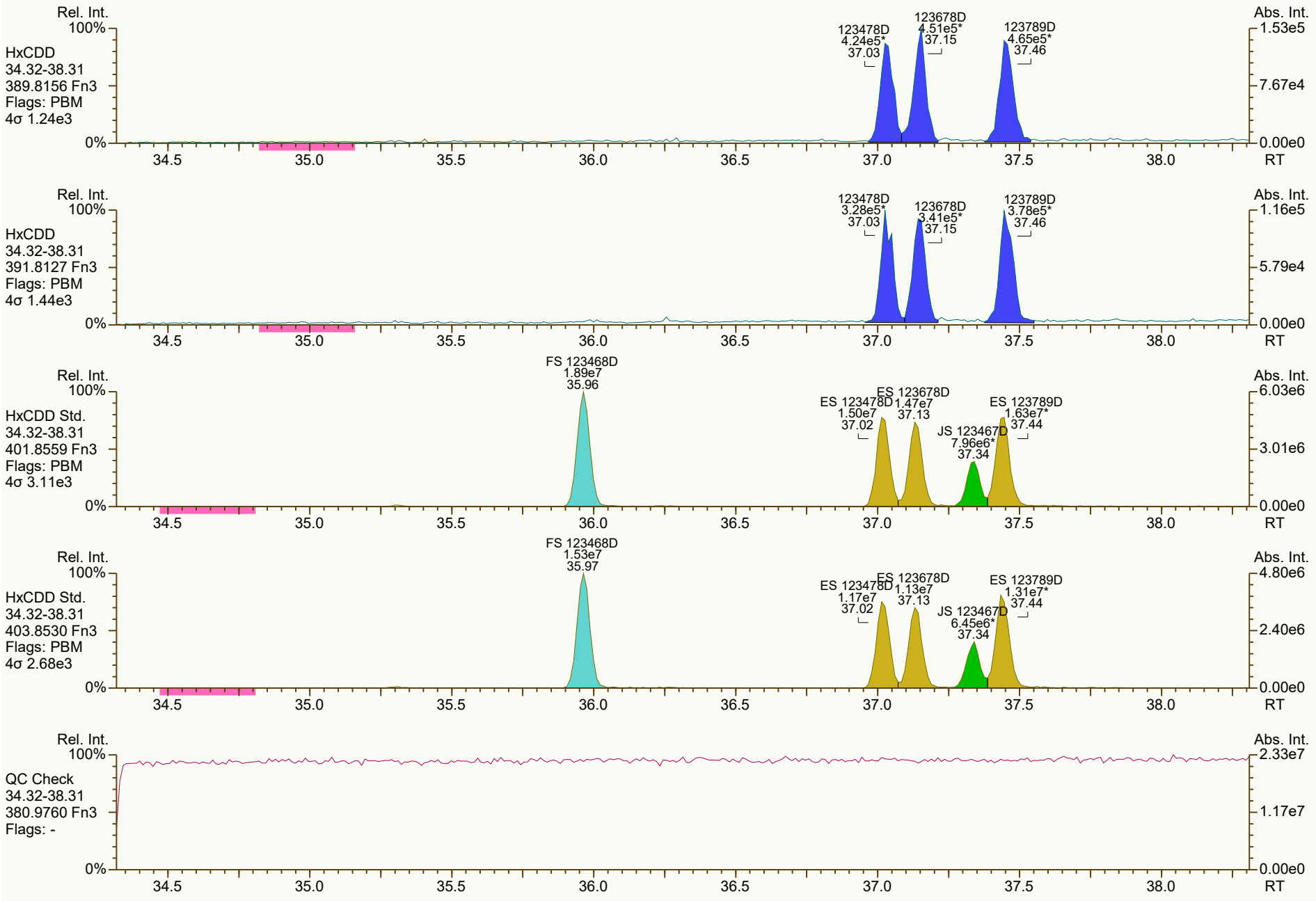
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF					ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF					Checkcode: 419-111-CRN
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF					Datafile: 211110C05
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

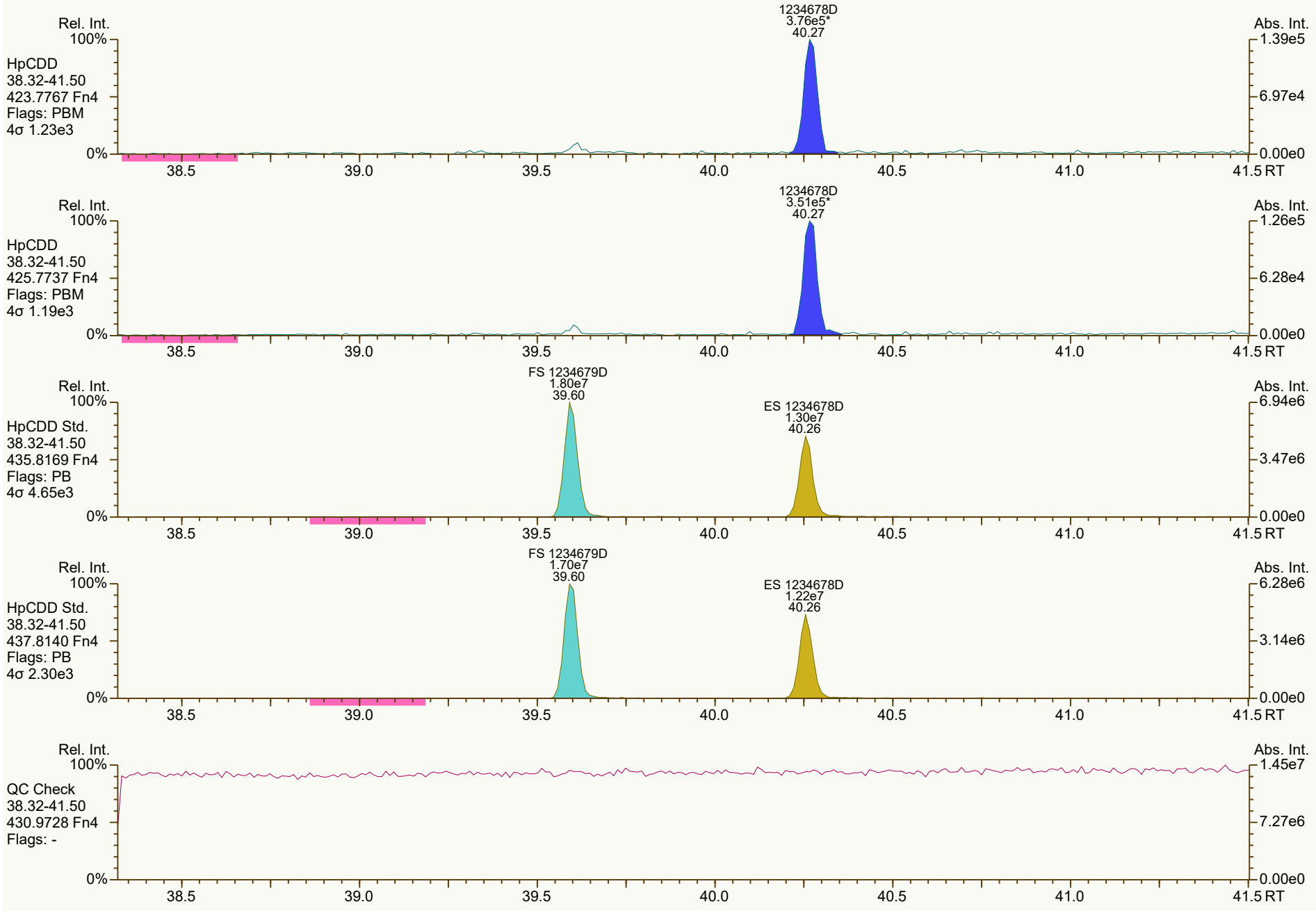

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.05e7
5.24e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.00e6
4.00e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.45e7
7.27e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.56e7
7.81e6
0.00e0

SGS ID: CS1_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
Acq: 10-Nov-2021 11:48:34
User: DTF Datafile: 211110C05

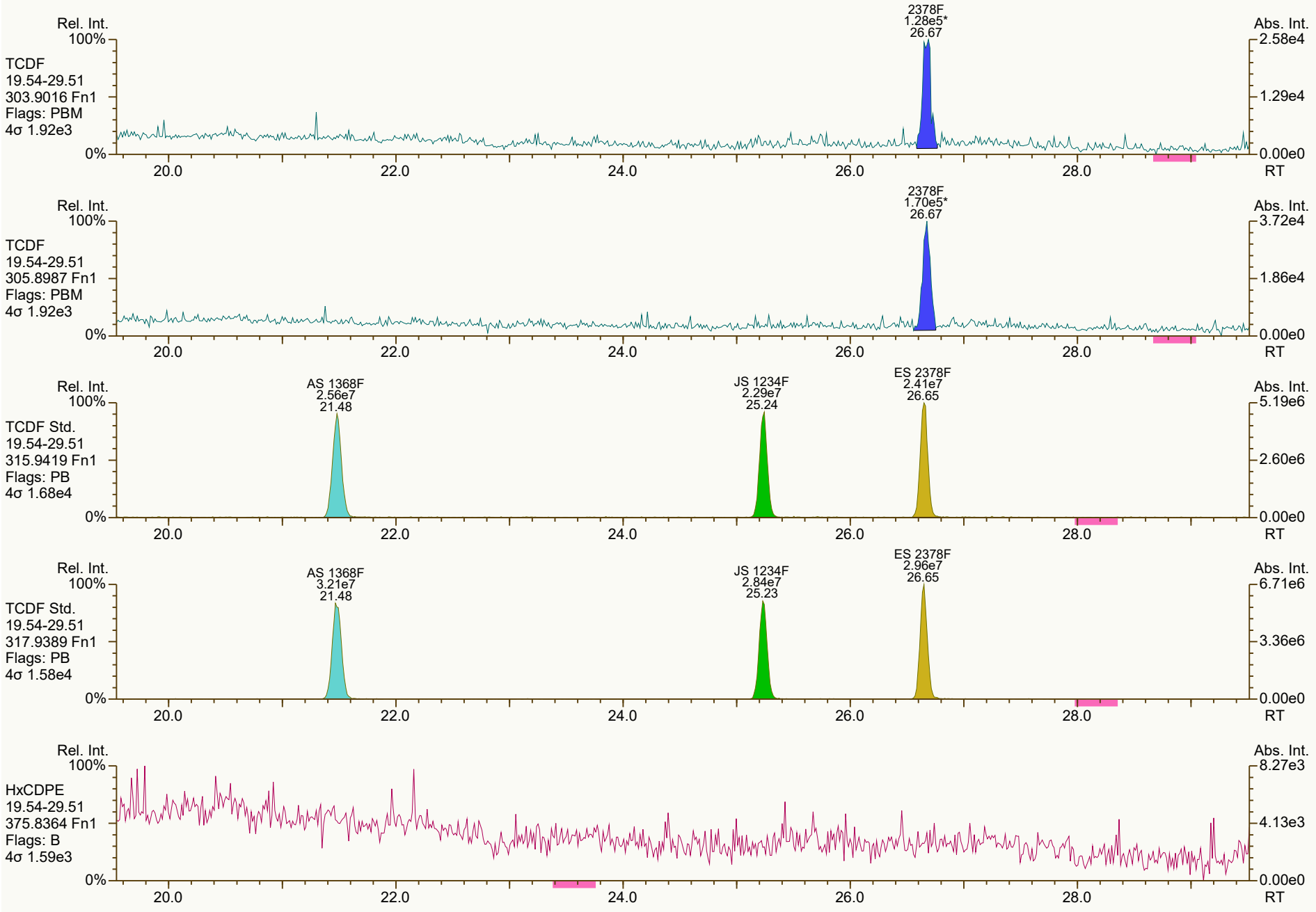


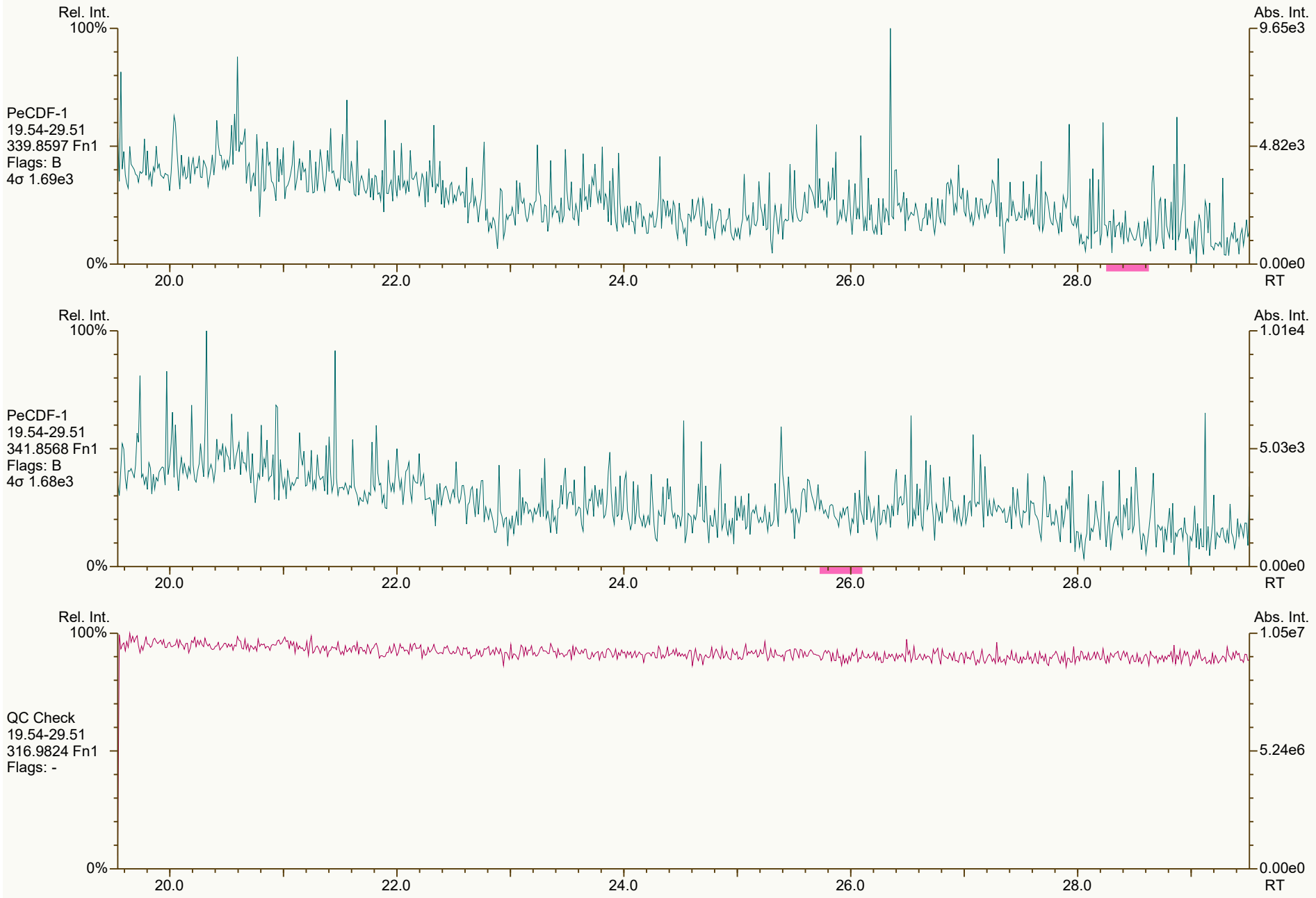

Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.25e3
12378D
4.88e5*
33.10
Abs. Int.
1.51e5
7.55e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.19e3
12378D
3.53e5*
33.10
1.03e5
5.14e4
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 5.61e3
RRF(ES12378D) = (1.89e7 + 1.20e7) * 100pg / (1.64e7 + 2.03e7) * 100pg = 0.842
DTF 11-Nov-2021 10:10
FS 12478D
2.11e7
31.83
CS 12347D
1.72e7
32.58
ES 12378D
1.89e7
33.08
6.25e6
3.12e6
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 2.44e3
APPROVED
Amy_Boehm , 11/11/2021, 5:16:42 PM
FS 12478D
1.36e7
31.83
CS 12347D
1.05e7
32.57
ES 12378D
1.20e7
33.08
3.84e6
1.92e6
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
8.00e6
4.00e6


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D
4.24e5*
37.03
123678D
4.51e5*
37.15
123789D
4.65e5*
37.46
Abs. Int.
1.53e5
7.67e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D
3.28e5*
37.03
123678D
3.41e5*
37.15
123789D
3.78e5*
37.46
Abs. Int.
1.16e5
5.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D
1.89e7
35.96
ES 123478D
1.50e7
37.02
ES 123678D
1.47e7
37.13
JS 123467D
7.96e6*
37.34
ES 123789D
1.63e7*
37.44
Abs. Int.
6.03e6
3.01e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
1.53e7
35.97
ES 123478D
1.17e7
37.02
ES 123678D
1.13e7
37.13
JS 123467D
6.45e6*
37.34
ES 123789D
1.31e7*
37.44
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

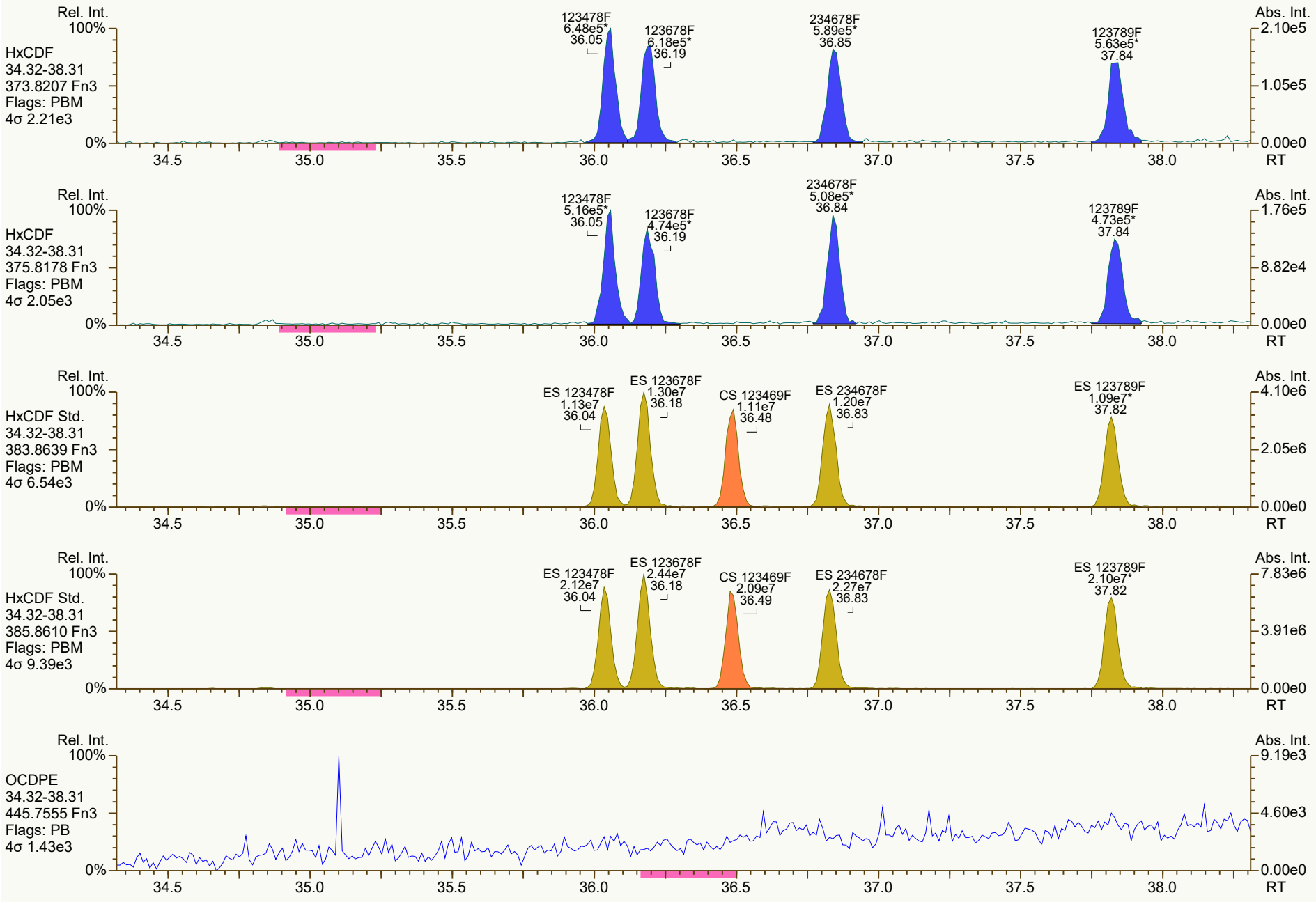

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
0%
1234678D
3.76e5*
40.27
Abs. Int.
1.39e5
6.97e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
0%
1234678D
3.51e5*
40.27
Abs. Int.
1.26e5
6.28e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
0%
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
Abs. Int.
6.94e6
3.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
0%
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
Abs. Int.
6.28e6
3.14e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.45e7
7.27e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

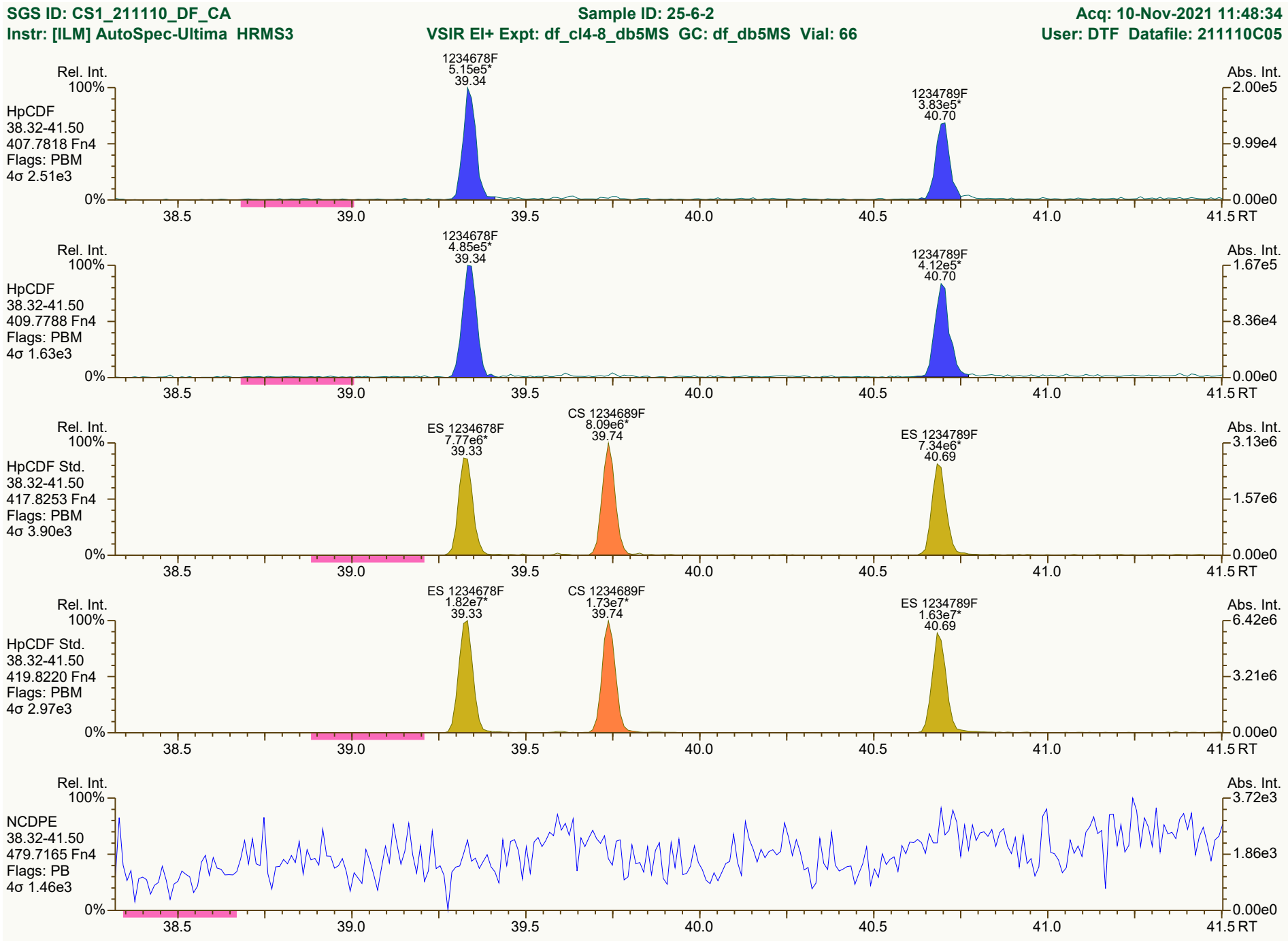

OCDD
4.71e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
1.34e5
6.72e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
Abs. Int.
1.71e5
8.53e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
Abs. Int.
4.93e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.56e7
7.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

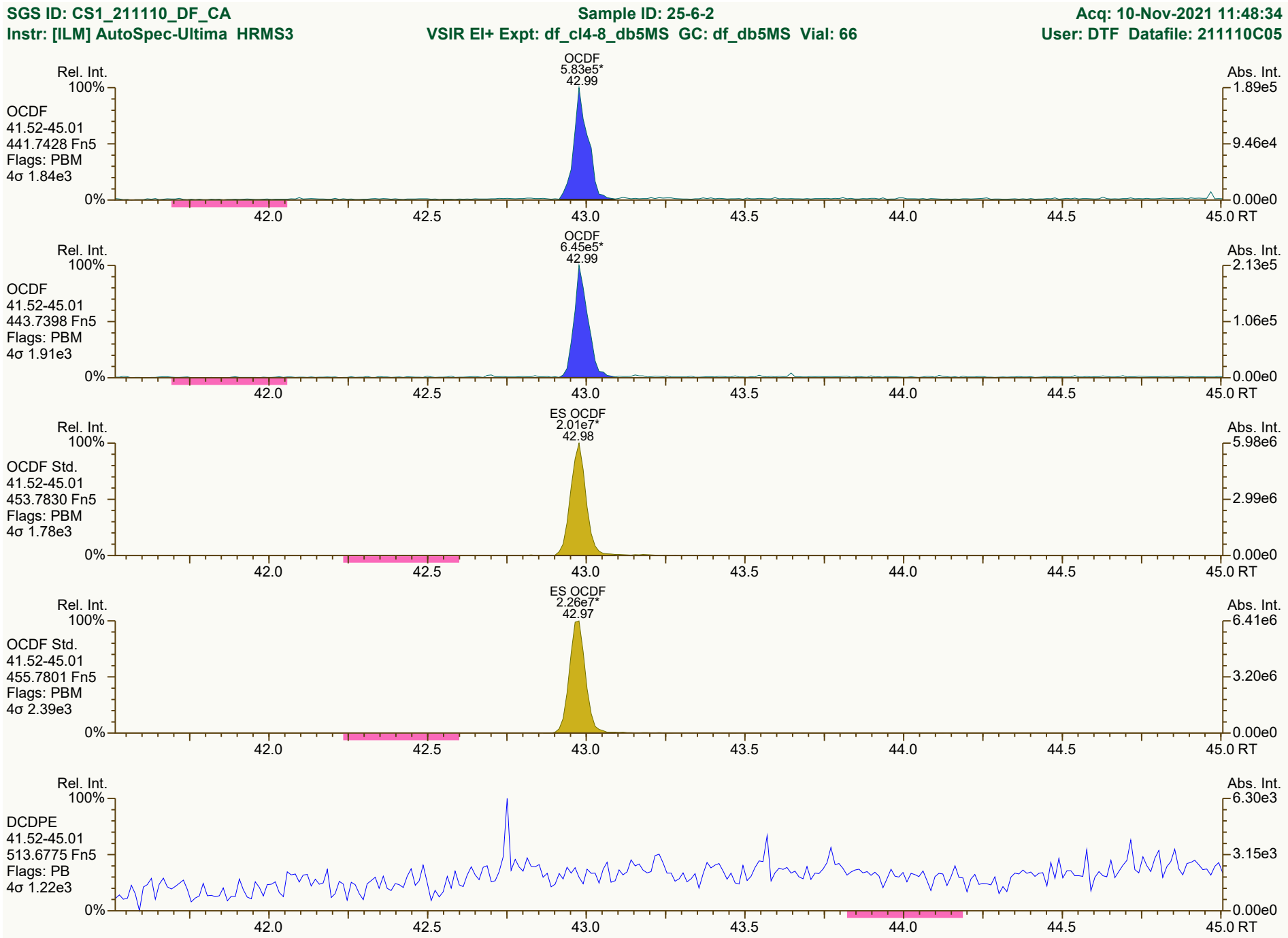

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.28e5*
26.67
Abs. Int.
2.58e4
1.29e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.70e5*
26.67
Abs. Int.
3.72e4
1.86e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.68e4
0%
AS 1368F
2.56e7
21.48
JS 1234F
2.29e7
25.24
ES 2378F
2.41e7
26.65
Abs. Int.
5.19e6
2.60e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
3.21e7
21.48
JS 1234F
2.84e7
25.23
ES 2378F
2.96e7
26.65
Abs. Int.
6.71e6
3.36e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.65e3
4.82e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.69e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.01e4
5.03e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.68e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
0%
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
Abs. Int.
2.10e5
1.05e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
0%
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
Abs. Int.
1.40e5
7.02e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
0%
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.63e7
32.73
Abs. Int.
7.54e6
3.77e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
0%
CS 12346F
1.69e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
Abs. Int.
4.85e6
2.42e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
0%
Abs. Int.
1.10e4
5.51e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.21e3
0%
123478F
6.48e5*
36.05
123678F
6.18e5*
36.19
234678F
5.89e5*
36.85
123789F
5.63e5*
37.84
Abs. Int.
2.10e5
1.05e5
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.05e3
0%
123478F
5.16e5*
36.05
123678F
4.74e5*
36.19
234678F
5.08e5*
36.84
123789F
4.73e5*
37.84
Abs. Int.
1.76e5
8.82e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 6.54e3
0%
ES 123478F
1.13e7
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.11e7
36.48
ES 234678F
1.20e7
36.83
ES 123789F
1.09e7*
37.82
Abs. Int.
4.10e6
2.05e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.39e3
0%
ES 123478F
2.12e7
36.04
ES 123678F
2.44e7
36.18
CS 123469F
2.09e7
36.49
ES 234678F
2.27e7
36.83
ES 123789F
2.10e7*
37.82
Abs. Int.
7.83e6
3.91e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.43e3
0%
Abs. Int.
9.19e3
4.60e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.51e3
1234678F
5.15e5*
39.34
1234789F
3.83e5*
40.70
2.00e5
9.99e4
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.63e3
1234678F
4.85e5*
39.34
1234789F
4.12e5*
40.70
1.67e5
8.36e4
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 3.90e3
ES 1234678F
7.77e6*
39.33
CS 1234689F
8.09e6*
39.74
ES 1234789F
7.34e6*
40.69
3.13e6
1.57e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.97e3
ES 1234678F
1.82e7*
39.33
CS 1234689F
1.73e7*
39.74
ES 1234789F
1.63e7*
40.69
6.42e6
3.21e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.46e3
3.72e3
1.86e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3913, 8502, 2889 scc: 419-111
Revised: 10-Nov-2021 13:39 (DTF) Printed: 11-Nov-2021 10:40 Page 11 of 12


SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05
Rel. Int.
Abs. Int.
OCDF
5.83e5*
42.99
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
1.89e5
9.46e4
0.00e0
OCDF
6.45e5*
42.99
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
2.13e5
1.06e5
0.00e0
ES OCDF
2.01e7*
42.98
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
5.98e6
2.99e6
0.00e0
ES OCDF
2.26e7*
42.97
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
6.41e6
3.20e6
0.00e0
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
6.30e3
3.15e3
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1506, 2210, 2191 scc: 419-111
Revised: 10-Nov-2021 13:39 (DTF) Printed: 11-Nov-2021 10:40 Page 12 of 12

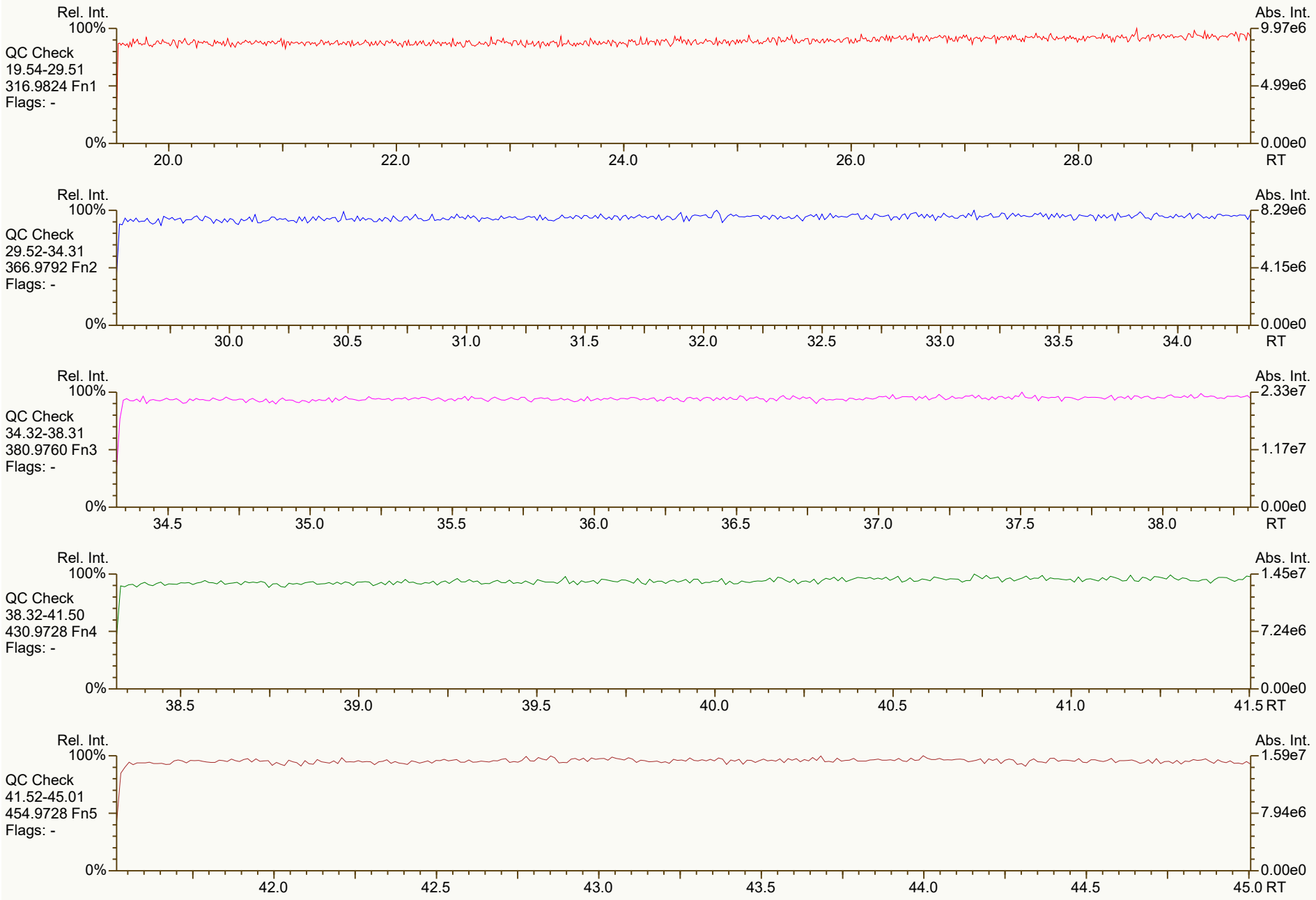
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

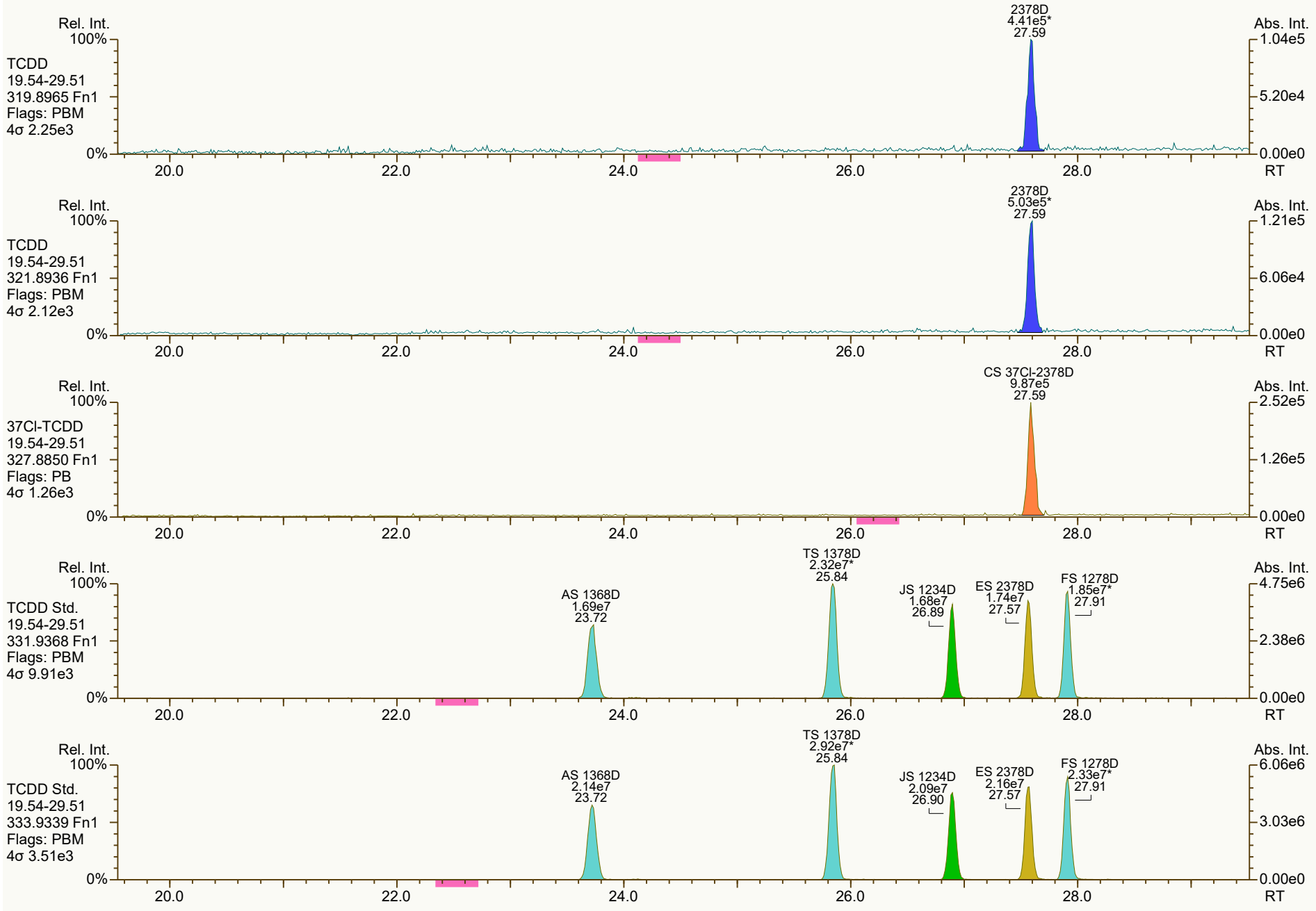
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

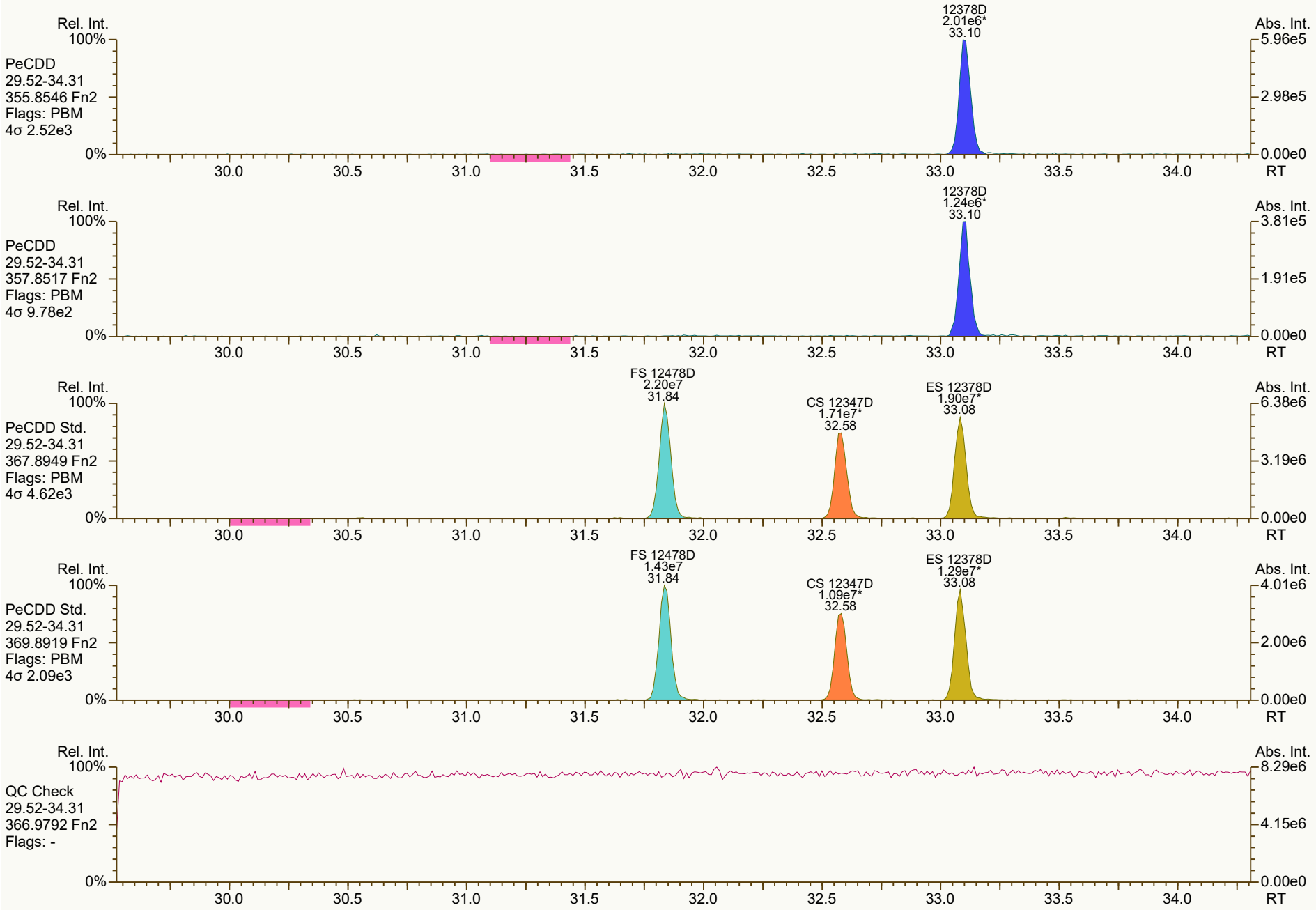
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%

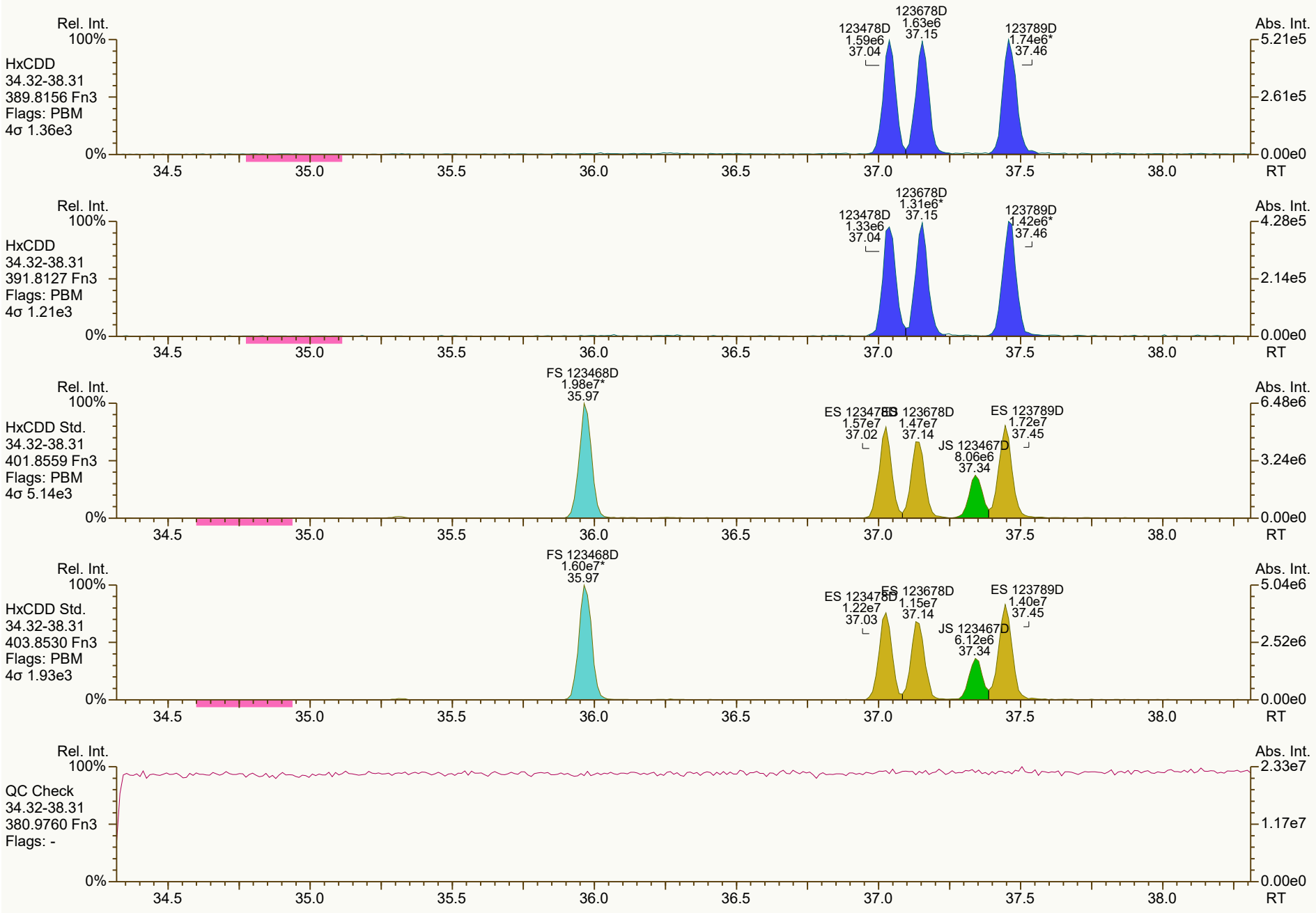
SGS ID: CS2_211110_DF_CA **Sample ID: 25-6-1** **Acq: 10-Nov-2021 12:34:54**
Instr: [ILM] AutoSpec-Ultima HRMS3 **VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67** **User: DTF Datafile: 211110C06**

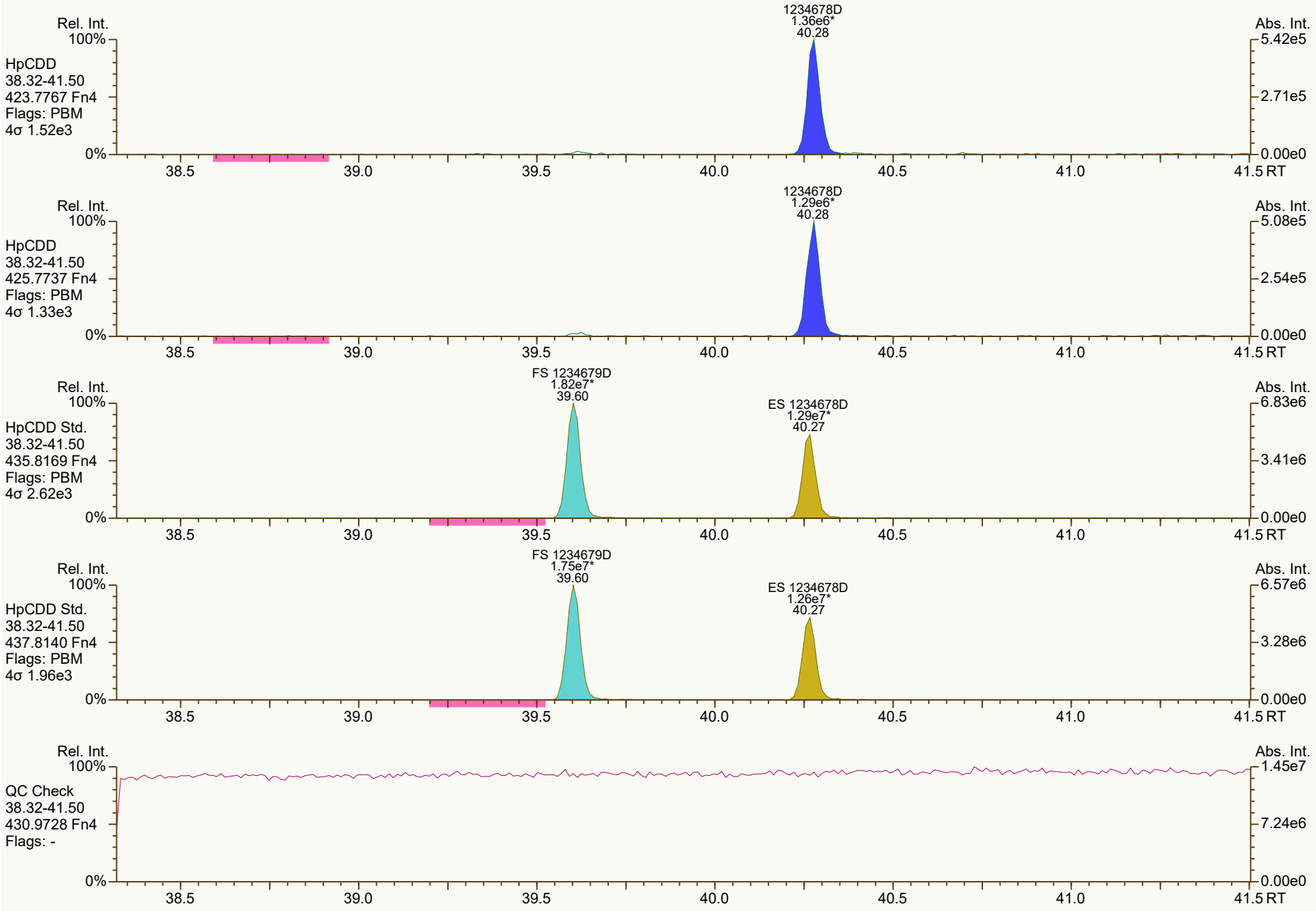


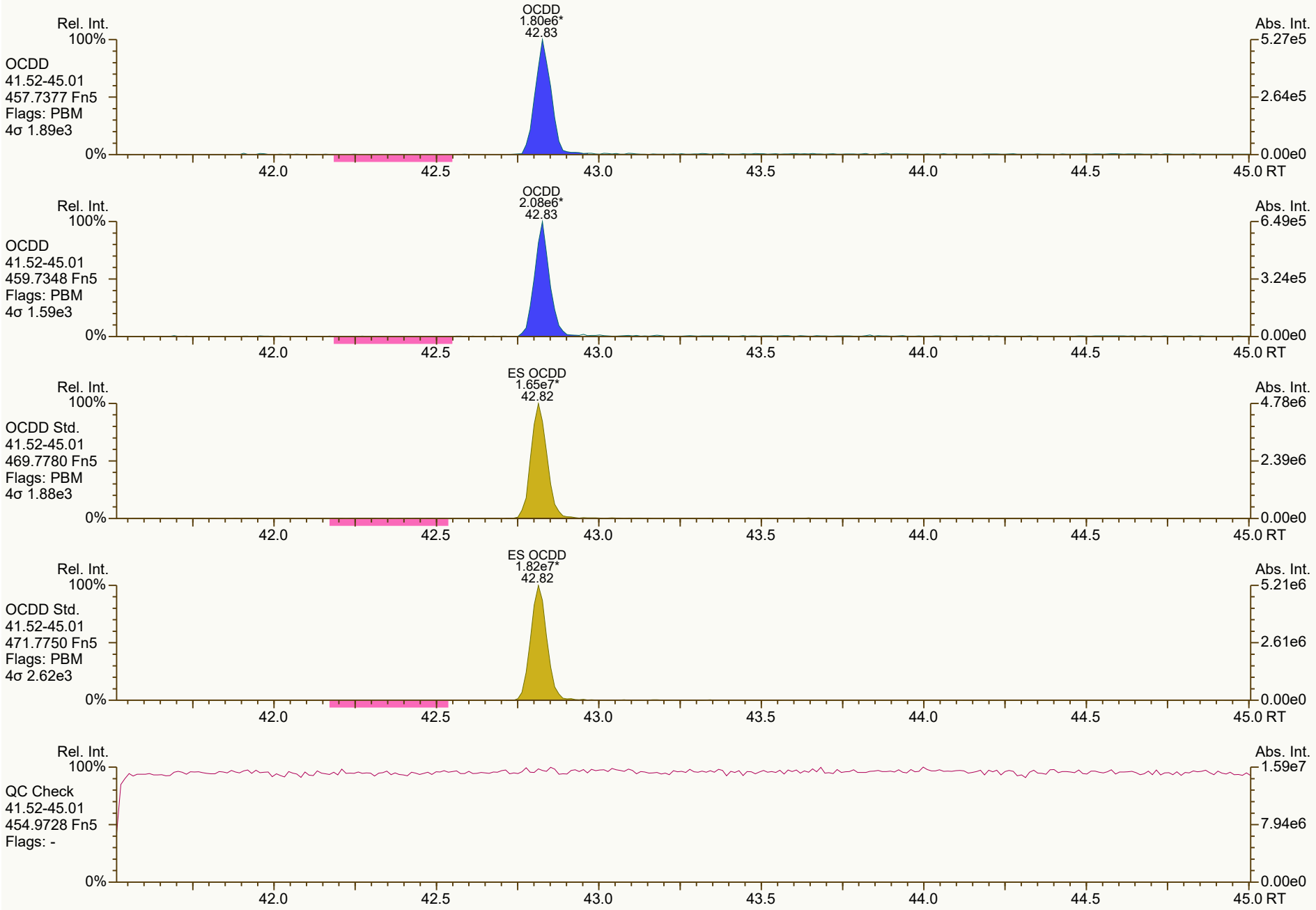
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 scc: 385-758 *PKD: n/a Printed: 11-Nov-2021 10:40 Page 1 of 12*


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
0%
2378D
4.41e5*
27.59
Abs. Int.
1.04e5
5.20e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
0%
2378D
5.03e5*
27.59
Abs. Int.
1.21e5
6.06e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
0%
CS 37Cl-2378D
9.87e5
27.59
Abs. Int.
2.52e5
1.26e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
0%
AS 1368D
1.69e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.85e7*
27.91
Abs. Int.
4.75e6
2.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
0%
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.52e3
12378D
2.01e6*
33.10
Abs. Int.
5.96e5
2.98e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 9.78e2
12378D
1.24e6*
33.10
Abs. Int.
3.81e5
1.91e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 4.62e3
FS 12478D
2.20e7
31.84
CS 12347D
1.71e7*
32.58
ES 12378D
1.90e7*
33.08
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 2.09e3
FS 12478D
1.43e7
31.84
CS 12347D
1.09e7*
32.58
ES 12378D
1.29e7*
33.08
Abs. Int.
4.01e6
2.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.29e6
4.15e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

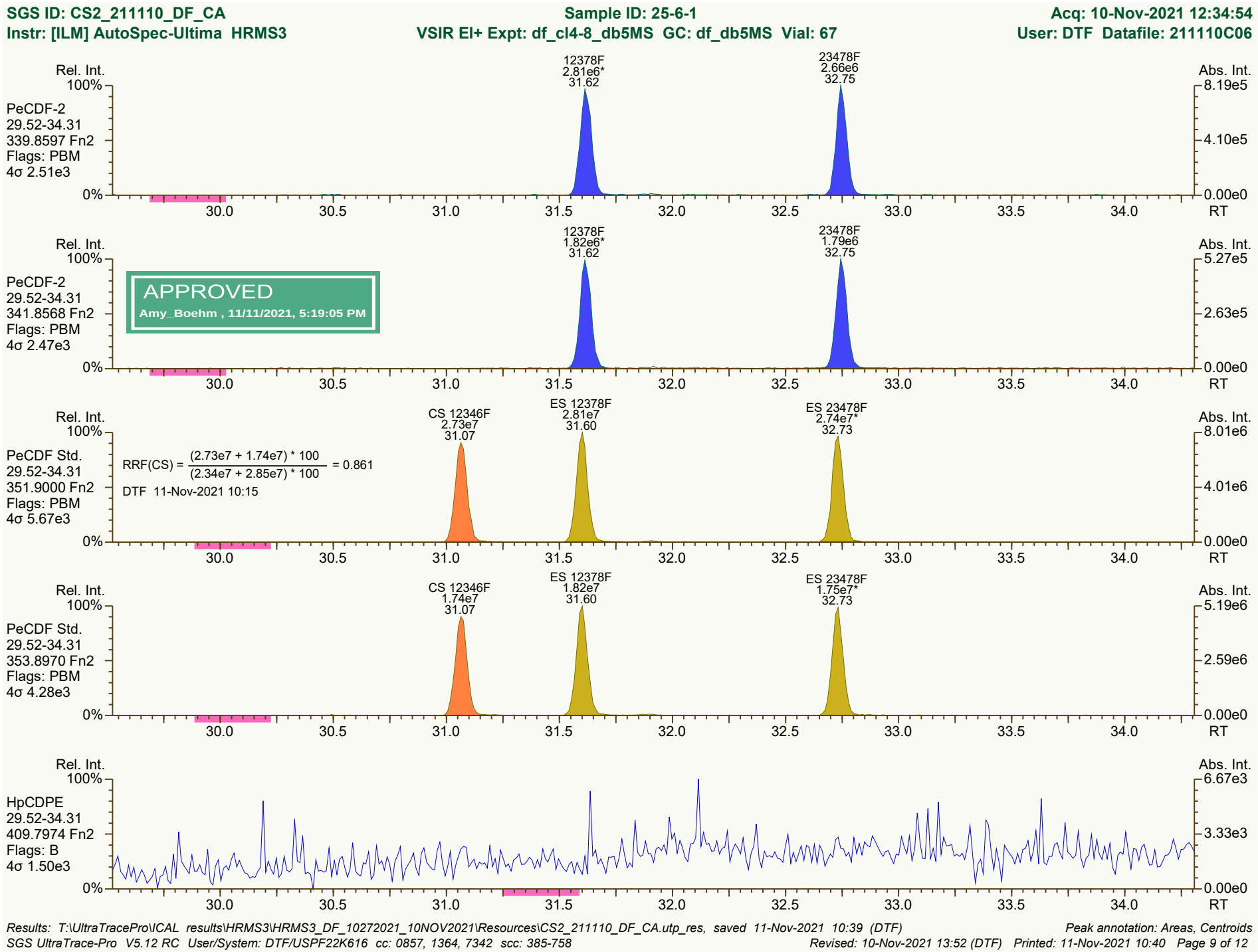

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123478D
1.59e6
37.04
123678D
1.63e6
37.15
123789D
1.74e6*
37.46
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123478D
1.33e6
37.04
123678D
1.31e6*
37.15
123789D
1.42e6*
37.46
4.28e5
2.14e5
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D
1.98e7*
35.97
ES 123478D
1.57e7
37.02
ES 123678D
1.47e7
37.14
JS 123467D
8.06e6
37.34
ES 123789D
1.72e7
37.45
6.48e6
3.24e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D
1.60e7*
35.97
ES 123478D
1.22e7
37.03
ES 123678D
1.15e7
37.14
JS 123467D
6.12e6
37.34
ES 123789D
1.40e7
37.45
5.04e6
2.52e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.33e7
1.17e7

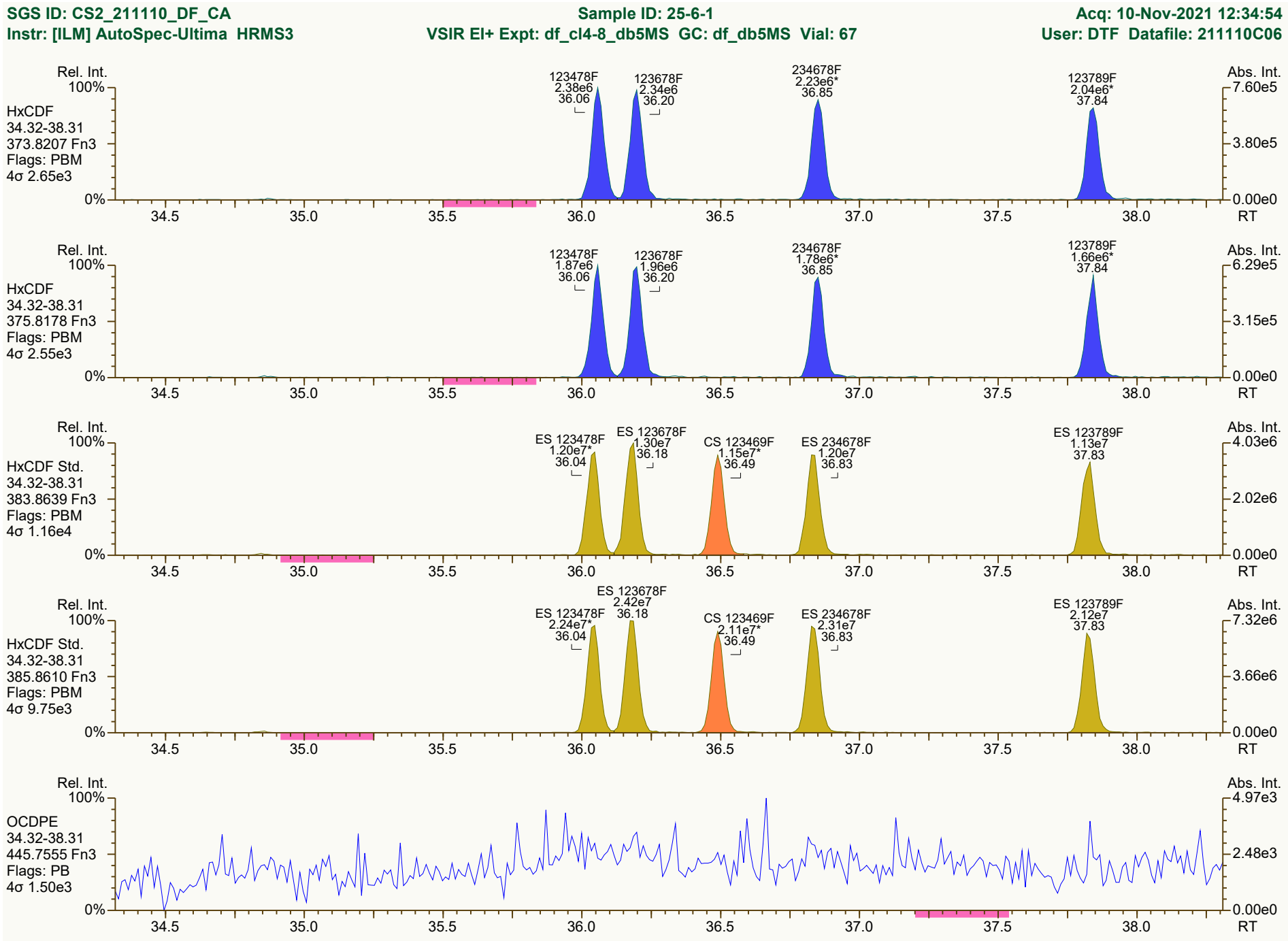

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.36e6*
40.28
Abs. Int.
5.42e5
2.71e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
Abs. Int.
5.08e5
2.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
Abs. Int.
6.83e6
3.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.96e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
Abs. Int.
6.57e6
3.28e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.45e7
7.24e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.80e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
5.27e5
2.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.08e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
0%
Abs. Int.
6.49e5
3.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.65e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.82e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
5.21e6
2.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
0%
2378F
5.70e5*
26.68
Abs. Int.
1.27e5
6.37e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
0%
2378F
6.77e5*
26.68
Abs. Int.
1.62e5
8.11e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
0%
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
26.65
Abs. Int.
5.72e6
2.86e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
0%
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
26.65
Abs. Int.
7.12e6
3.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.23e3
4.62e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.32e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.97e6
4.99e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
8.19e5
4.10e5
0.00e0
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
5.27e5
2.63e5
0.00e0
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
8.01e6
4.01e6
0.00e0
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
5.19e6
2.59e6
0.00e0
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
6.67e3
3.33e3
0.00e0
100%
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0857, 1364, 7342 scc: 385-758
Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 9 of 12



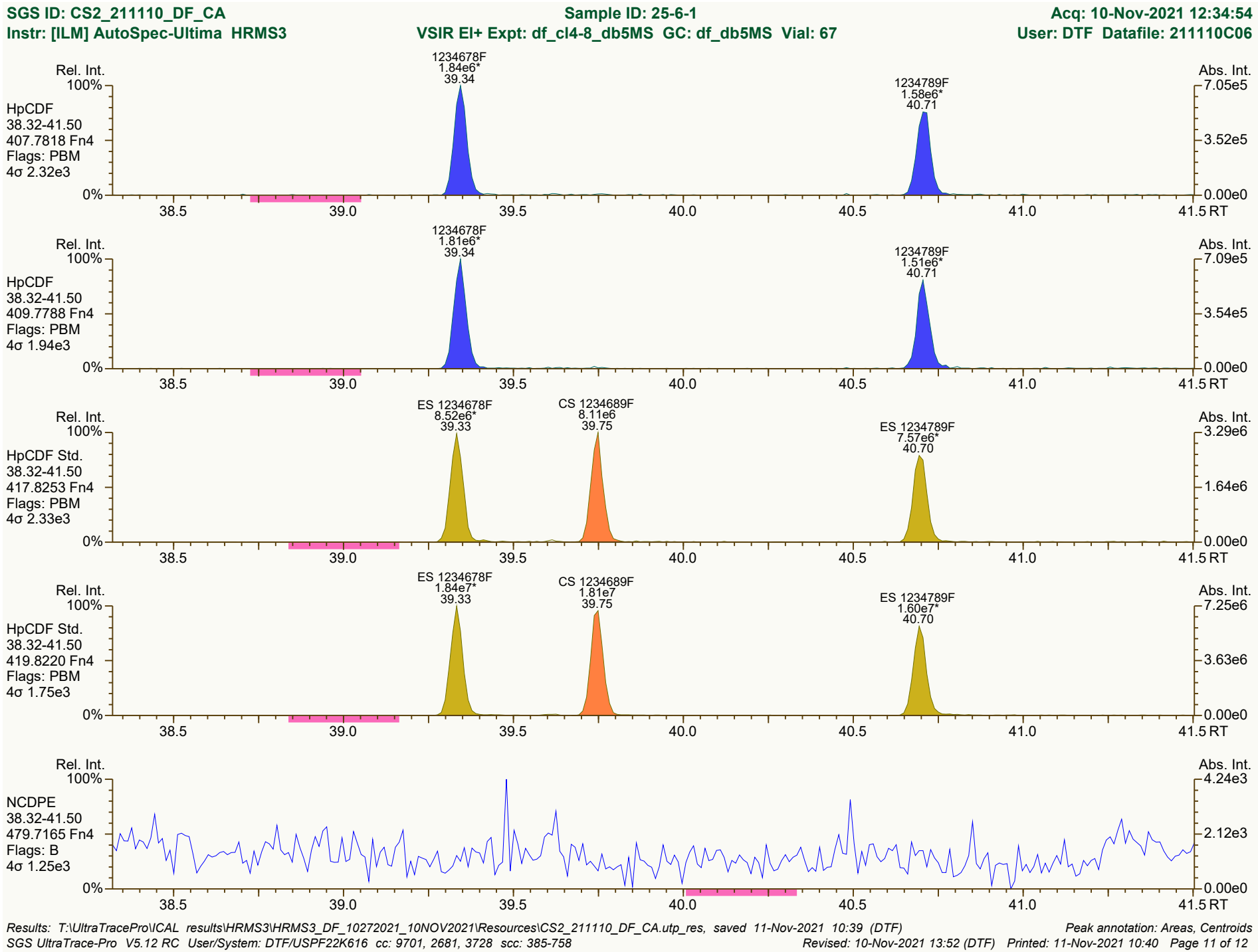
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7496, 9123, 5141 scc: 385-758 *Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 10 of 12*

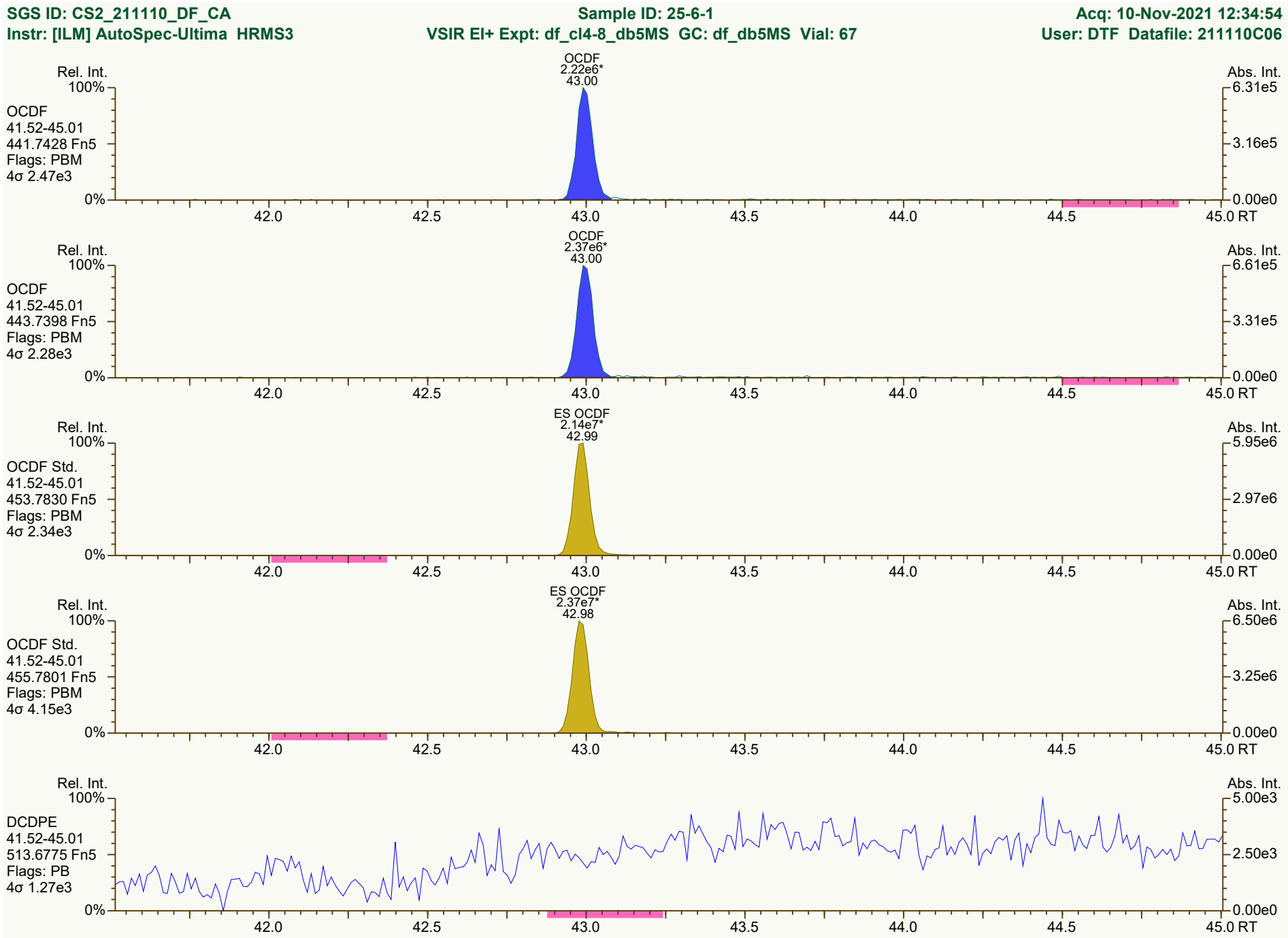
SGS ID: CS2_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67

Acq: 10-Nov-2021 12:34:54
User: DTF Datafile: 211110C06



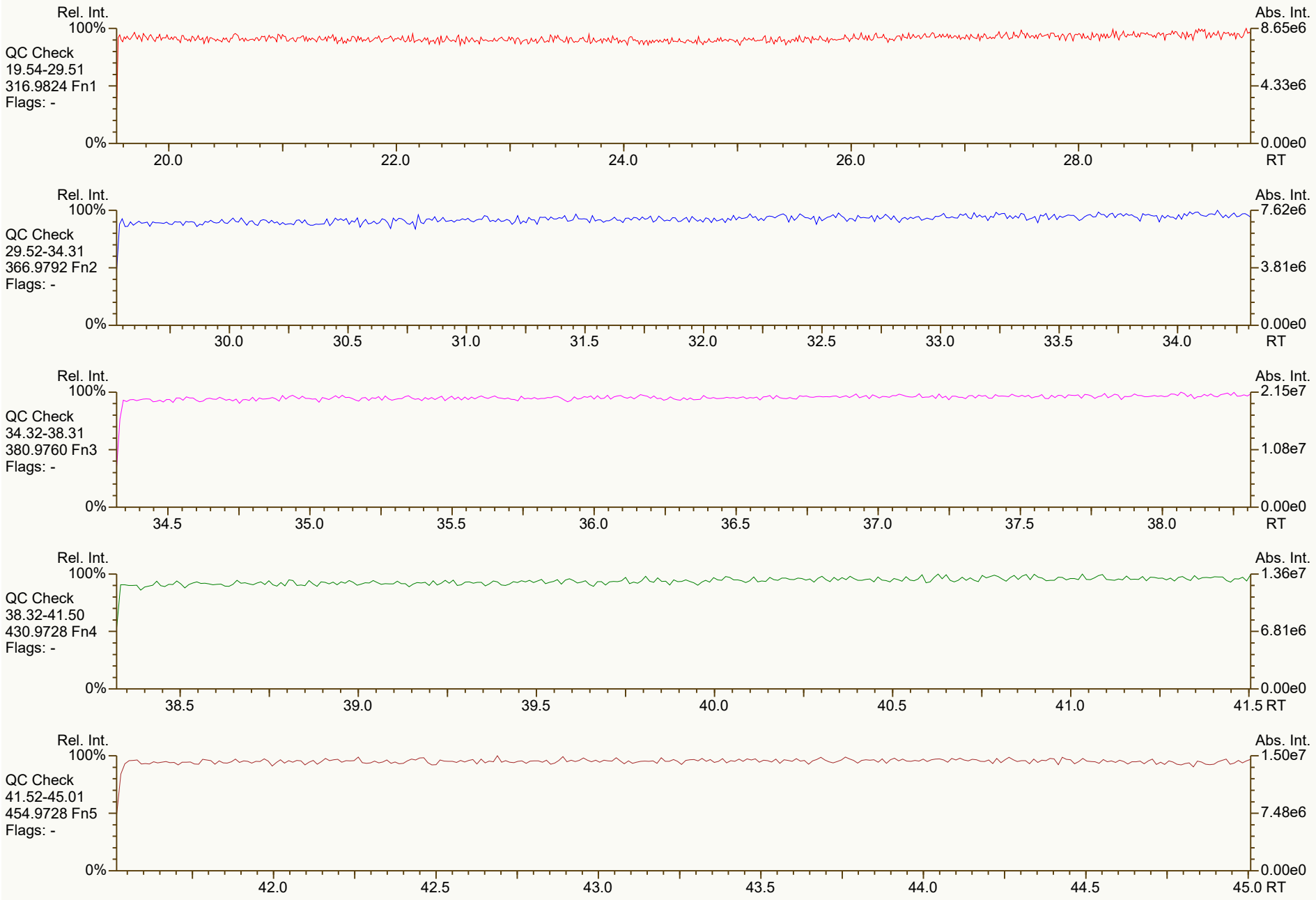
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9701, 2681, 3728 scc: 385-758
Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 11 of 12


SGS ID: CS2_211110_DF_CA
Sample ID: 25-6-1
Acq: 10-Nov-2021 12:34:54
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: DTF Datafile: 211110C06
Rel. Int.
Abs. Int.
OCDF
2.22e6*
43.00
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
6.31e5
3.16e5
0.00e0
OCDF
2.37e6*
43.00
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
6.61e5
3.31e5
0.00e0
ES OCDF
2.14e7*
42.99
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
5.95e6
2.97e6
0.00e0
ES OCDF
2.37e7*
42.98
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
6.50e6
3.25e6
0.00e0
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
5.00e3
2.50e3
0.00e0
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5547, 1929, 8450 scc: 385-758
Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 12 of 12

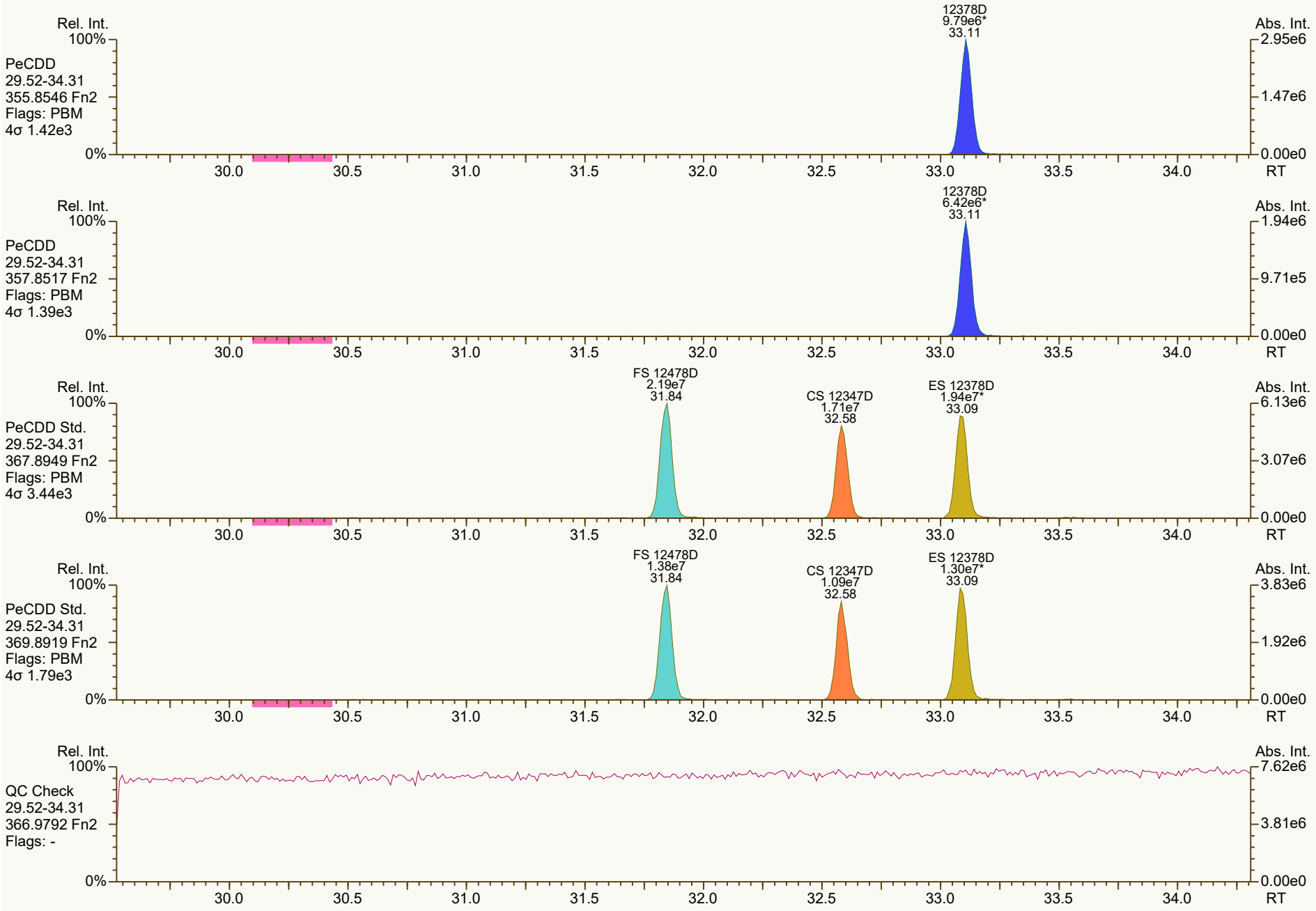
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

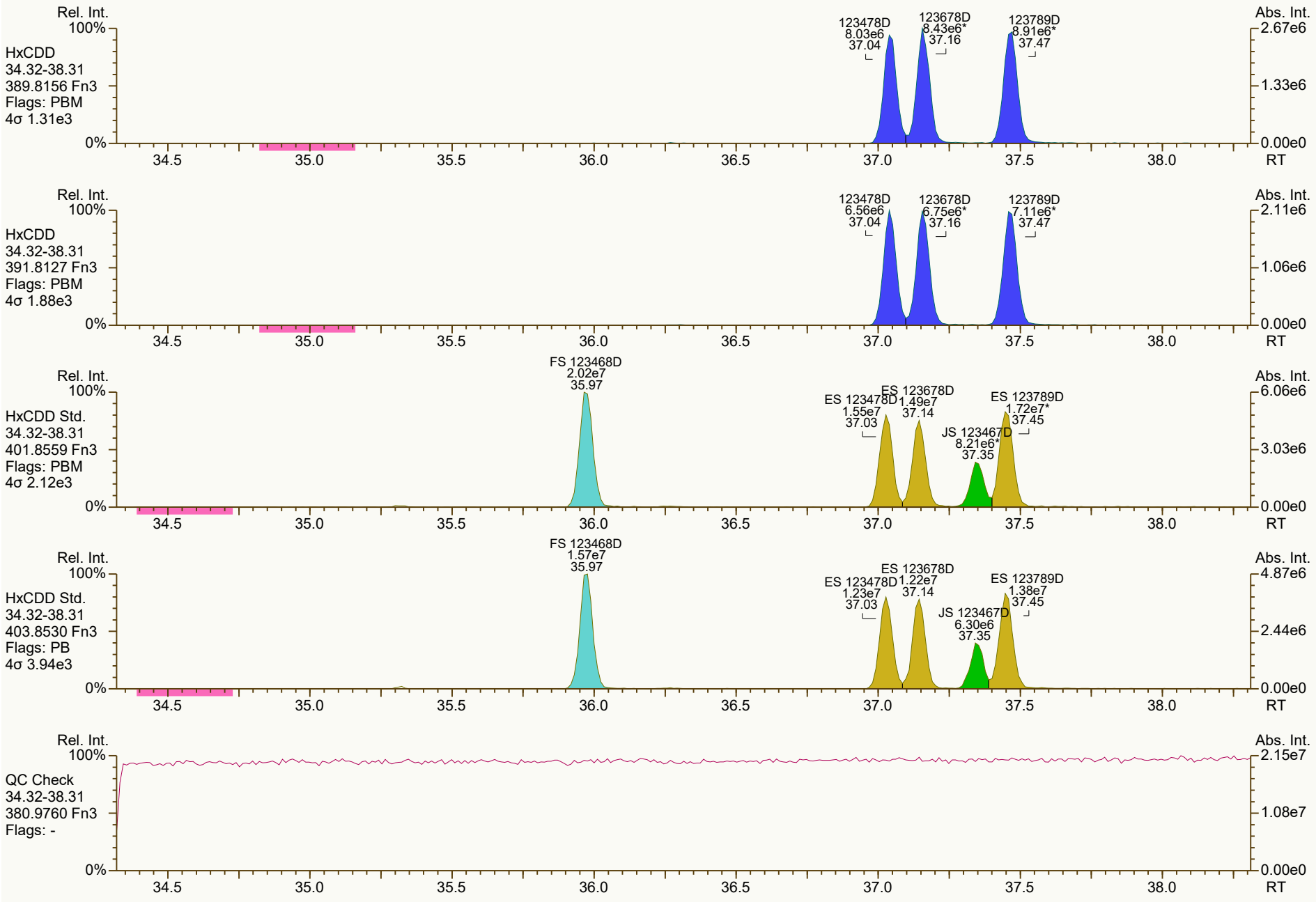
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 13:21 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211110_DF_CB	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 507-474-MKW
Sample ID: 23-672-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C07

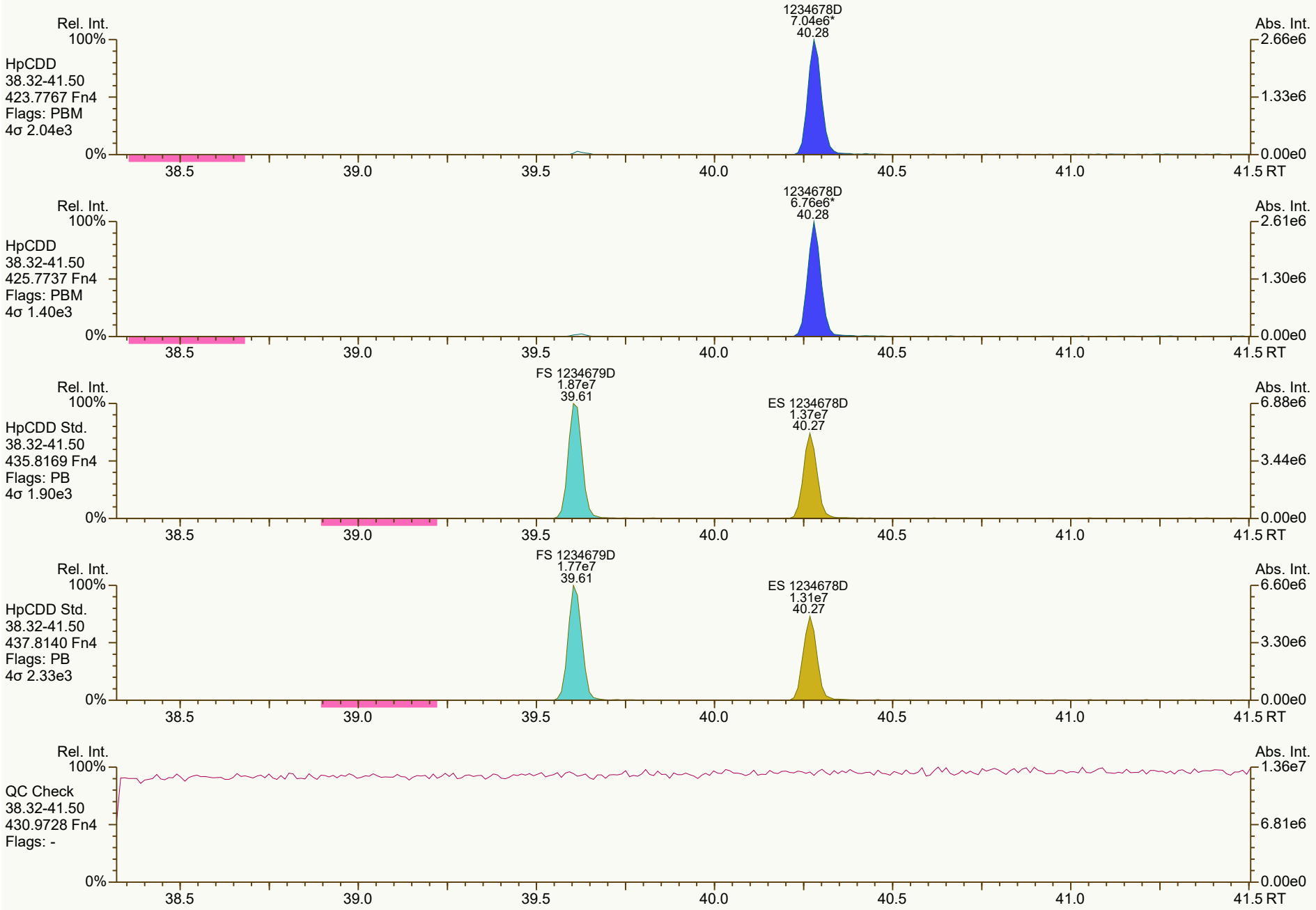
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%


Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.65e6
4.33e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.62e6
3.81e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.15e7
1.08e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.36e7
6.81e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.50e7
7.48e6
0.00e0

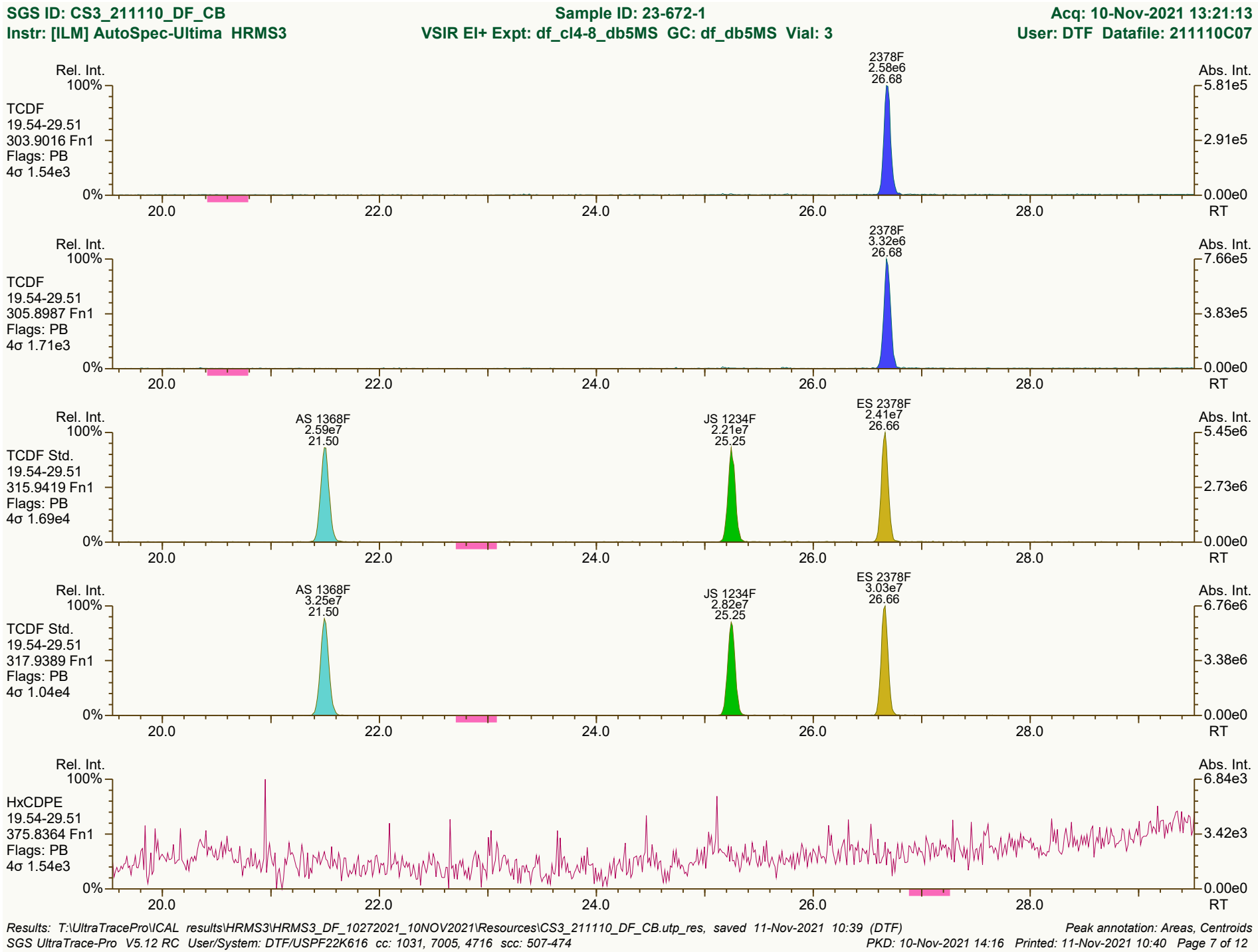

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
0%
2378D
1.99e6
27.60
Abs. Int.
4.35e5
2.17e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
0%
2378D
2.55e6
27.60
Abs. Int.
5.98e5
2.99e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
Abs. Int.
1.03e6
5.16e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
0%
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
Abs. Int.
4.80e6
2.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
0%
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.42e3
12378D
9.79e6*
33.11
Abs. Int.
2.95e6
1.47e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.39e3
12378D
6.42e6*
33.11
Abs. Int.
1.94e6
9.71e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 3.44e3
FS 12478D
2.19e7
31.84
CS 12347D
1.71e7
32.58
ES 12378D
1.94e7*
33.09
Abs. Int.
6.13e6
3.07e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 1.79e3
FS 12478D
1.38e7
31.84
CS 12347D
1.09e7
32.58
ES 12378D
1.30e7*
33.09
Abs. Int.
3.83e6
1.92e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
7.62e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.31e3
123478D
8.03e6
37.04
123678D
8.43e6*
37.16
123789D
8.91e6*
37.47
Abs. Int.
2.67e6
1.33e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.88e3
123478D
6.56e6
37.04
123678D
6.75e6*
37.16
123789D
7.11e6*
37.47
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.12e3
FS 123468D
2.02e7
35.97
ES 123478D
1.55e7
37.03
ES 123678D
1.49e7
37.14
JS 123467D
8.21e6*
37.35
ES 123789D
1.72e7*
37.45
Abs. Int.
6.06e6
3.03e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.94e3
FS 123468D
1.57e7
35.97
ES 123478D
1.23e7
37.03
ES 123678D
1.22e7
37.14
JS 123467D
6.30e6
37.35
ES 123789D
1.38e7
37.45
Abs. Int.
4.87e6
2.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.15e7
1.08e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.61
ES 1234678D
1.37e7
40.27
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.61
ES 1234678D
1.31e7
40.27
Abs. Int.
6.60e6
3.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
9.25e6*
42.83
Rel. Int.
Abs. Int.
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 9.43e2
OCDD
1.02e7*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.14e3
ES OCDD
1.70e7
42.82
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.74e3
ES OCDD
1.86e7
42.82
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.08e3
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
100%
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

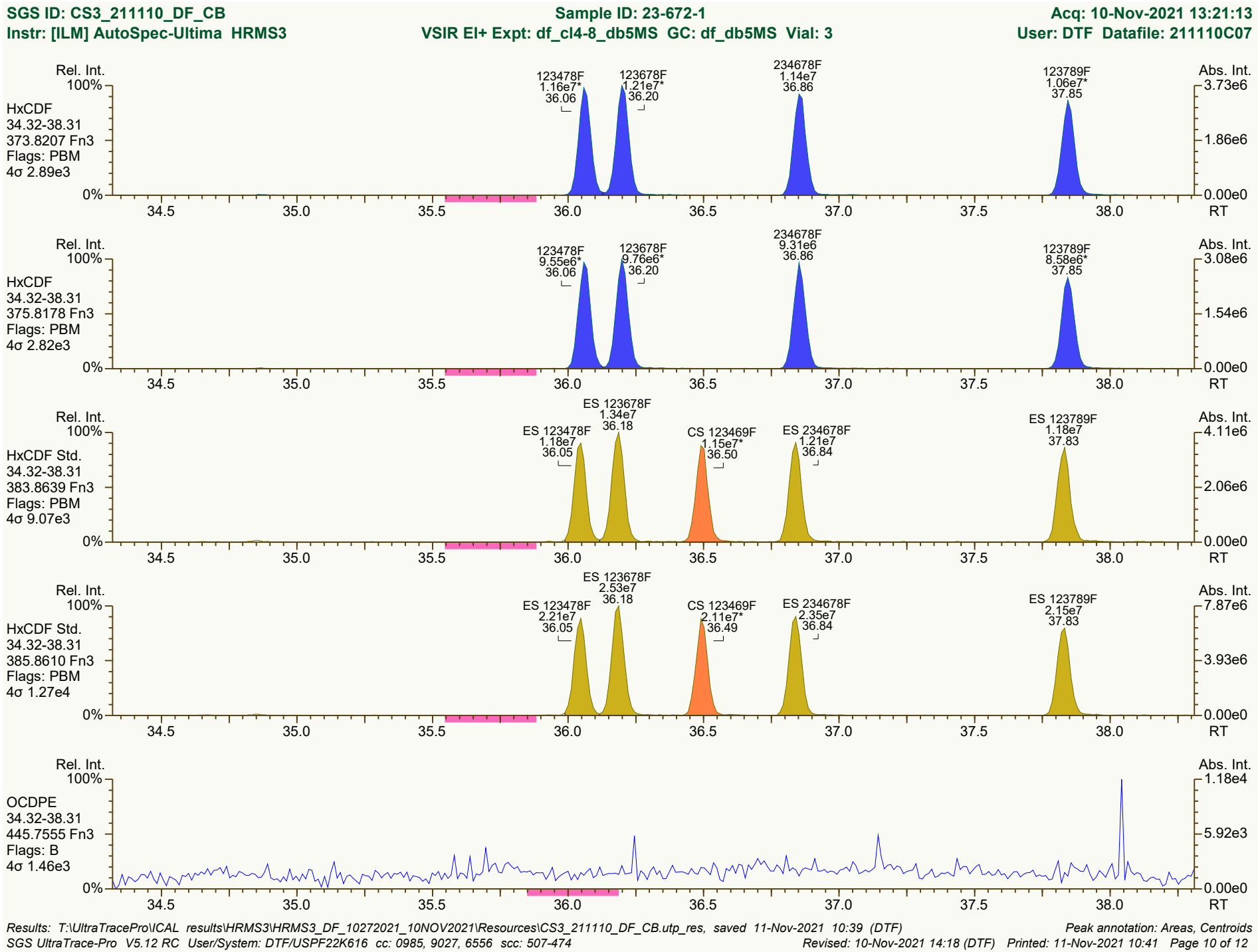


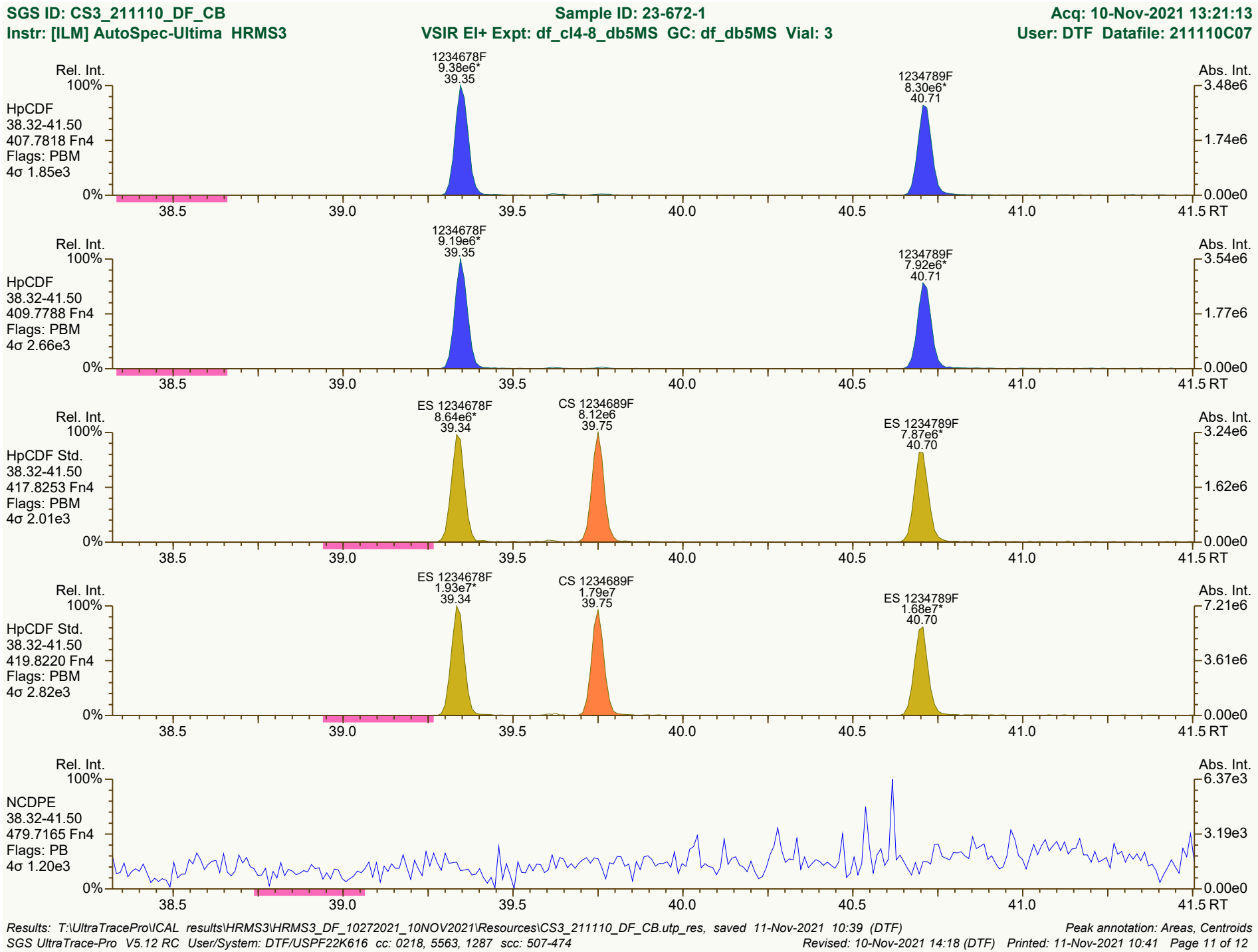
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 1031, 7005, 4716 scc: 507-474 *PKD: 10-Nov-2021 14:16 Printed: 11-Nov-2021 10:40 Page 7 of 12*


Rel. Int.
100%
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.76e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.65e6
4.33e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.86e3
12378F
1.38e7*
31.62
23478F
1.36e7
32.75
Abs. Int.
3.85e6
1.93e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.34e3
12378F
8.95e6*
31.62
23478F
9.01e6
32.75
Abs. Int.
2.59e6
1.29e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 5.91e3
CS 12346F
2.68e7
31.07
ES 12378F
2.82e7
31.61
ES 23478F
2.73e7
32.74
Abs. Int.
7.61e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 5.66e3
CS 12346F
1.70e7
31.07
ES 12378F
1.80e7
31.61
ES 23478F
1.77e7
32.74
Abs. Int.
5.00e6
2.50e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.57e3
Abs. Int.
1.17e4
5.86e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.89e3
123478F 1.16e7* 36.06
123678F 1.21e7* 36.20
234678F 1.14e7 36.86
123789F 1.06e7* 37.85
3.73e6
1.86e6
0.00e0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.82e3
123478F 9.55e6* 36.06
123678F 9.76e6* 36.20
234678F 9.31e6 36.86
123789F 8.58e6* 37.85
3.08e6
1.54e6
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 9.07e3
ES 123478F 1.18e7 36.05
ES 123678F 1.34e7 36.18
CS 123469F 1.15e7* 36.50
ES 234678F 1.21e7 36.84
ES 123789F 1.18e7 37.83
4.11e6
2.06e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 1.27e4
ES 123478F 2.21e7 36.05
ES 123678F 2.53e7 36.18
CS 123469F 2.11e7* 36.49
ES 234678F 2.35e7 36.84
ES 123789F 2.15e7 37.83
7.87e6
3.93e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.46e3
1.18e4
5.92e3
0%
100%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0985, 9027, 6556 scc: 507-474
Revised: 10-Nov-2021 14:18 (DTF) Printed: 11-Nov-2021 10:41 Page 10 of 12

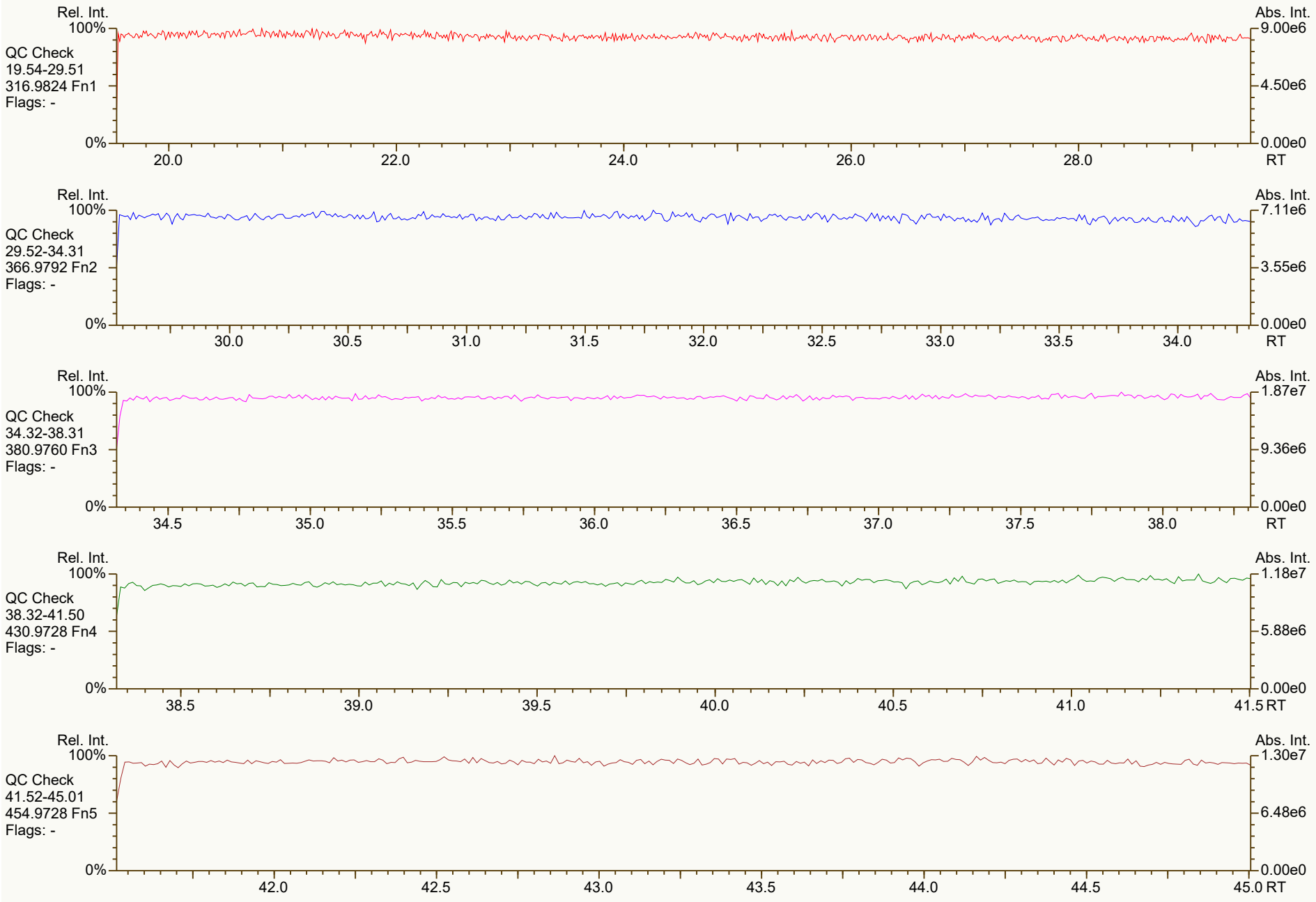

SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.85e3
1234678F
9.38e6*
39.35
1234789F
8.30e6*
40.71
3.48e6
1.74e6
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.66e3
1234678F
9.19e6*
39.35
1234789F
7.92e6*
40.71
3.54e6
1.77e6
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.01e3
ES 1234678F
8.64e6*
39.34
CS 1234689F
8.12e6
39.75
ES 1234789F
7.87e6*
40.70
3.24e6
1.62e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.82e3
ES 1234678F
1.93e7*
39.34
CS 1234689F
1.79e7
39.75
ES 1234789F
1.68e7*
40.70
7.21e6
3.61e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.20e3
6.37e3
3.19e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0218, 5563, 1287 scc: 507-474
Revised: 10-Nov-2021 14:18 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

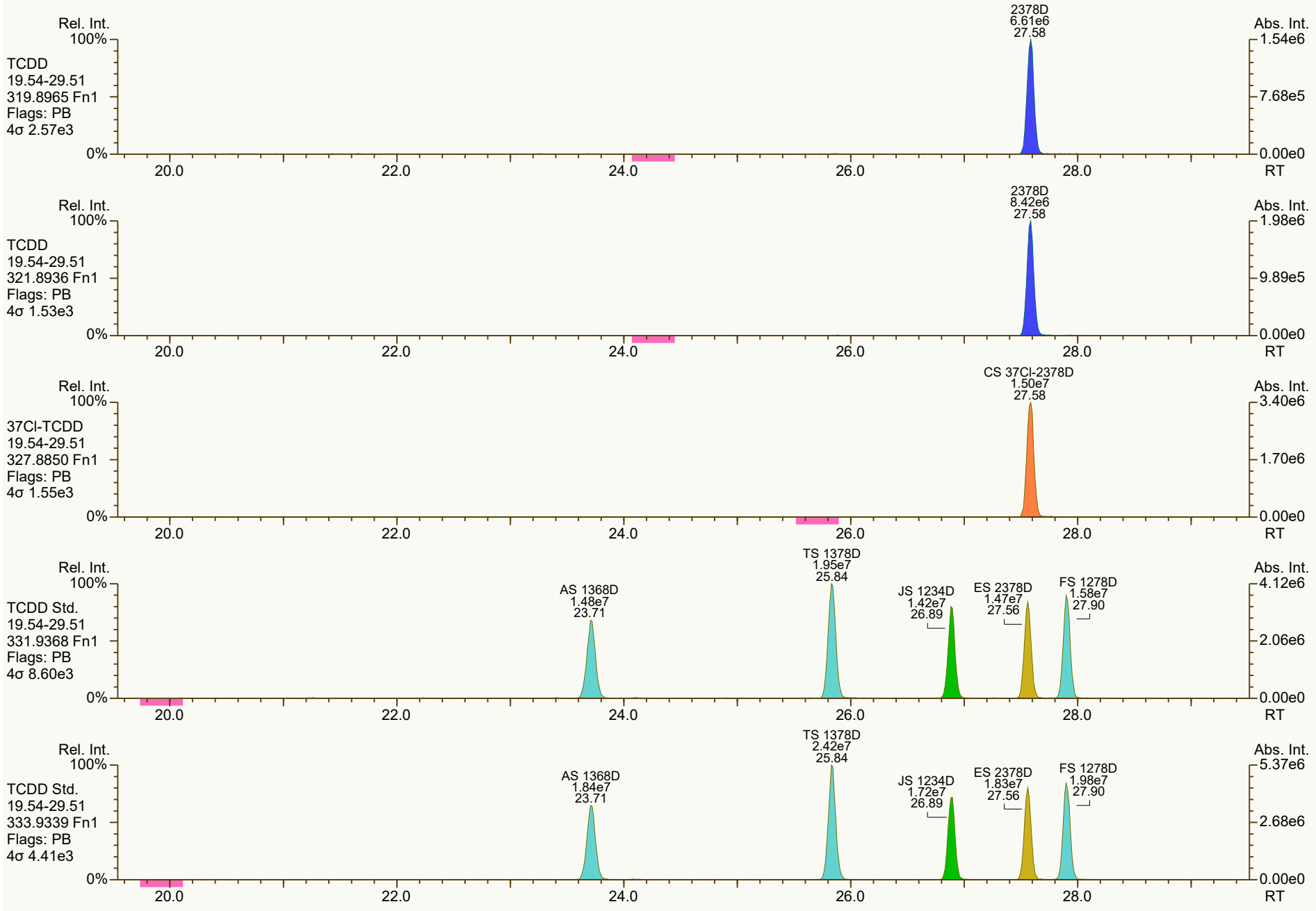

OCDF
1.15e7*
43.00
Rel. Int.
Abs. Int.
100%
3.25e6
1.62e6
0%
0.00e0
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.28e7*
43.00
Rel. Int.
Abs. Int.
100%
3.53e6
1.76e6
0%
0.00e0
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.21e7*
42.99
Rel. Int.
Abs. Int.
100%
6.08e6
3.04e6
0%
0.00e0
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.39e7*
42.99
Rel. Int.
Abs. Int.
100%
6.65e6
3.32e6
0%
0.00e0
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
Abs. Int.
100%
4.82e3
2.41e3
0%
0.00e0
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

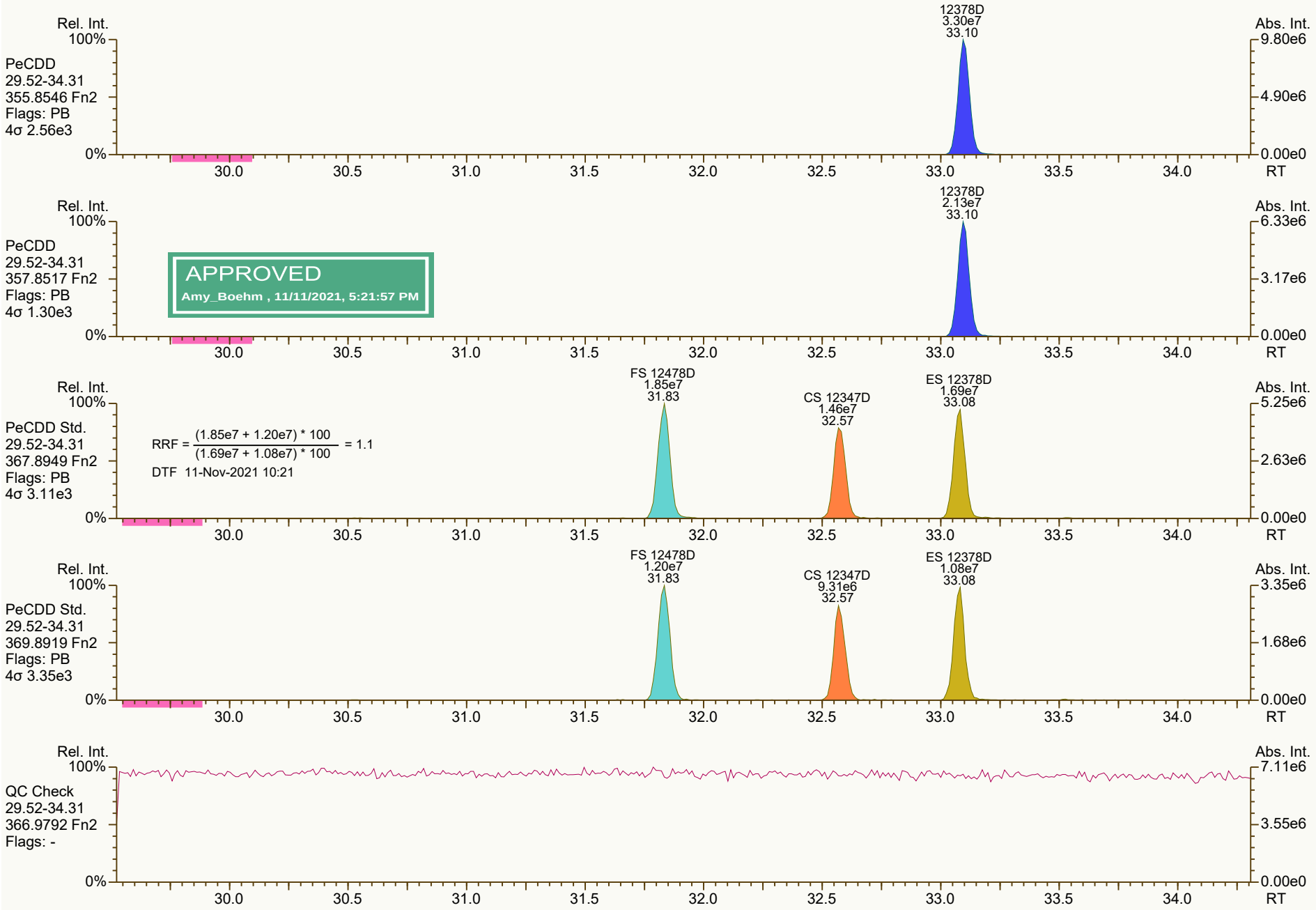
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

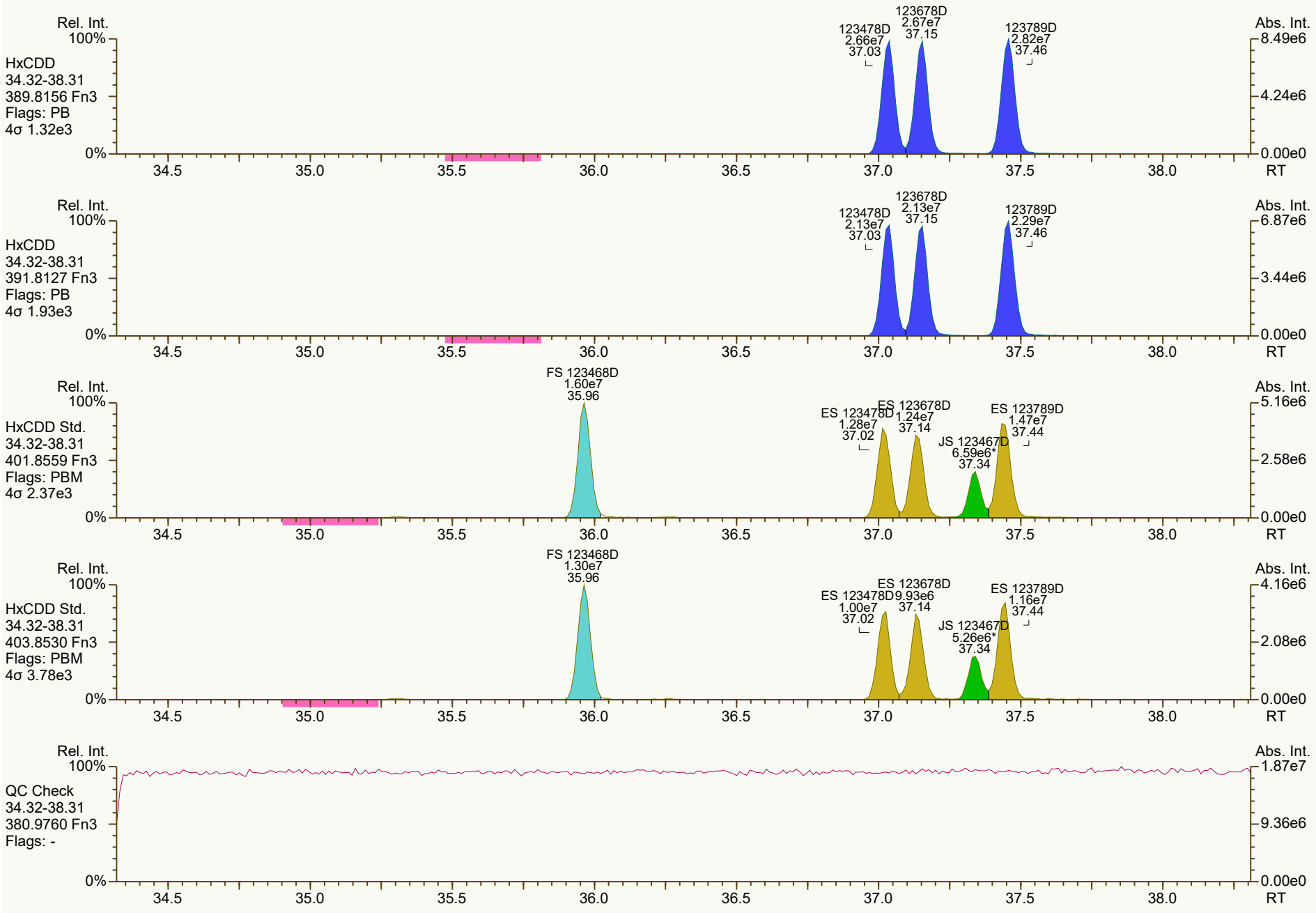
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:07 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS4_211110_DF_CA	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 855-576-PGM
Sample ID: 25-5-4	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C08

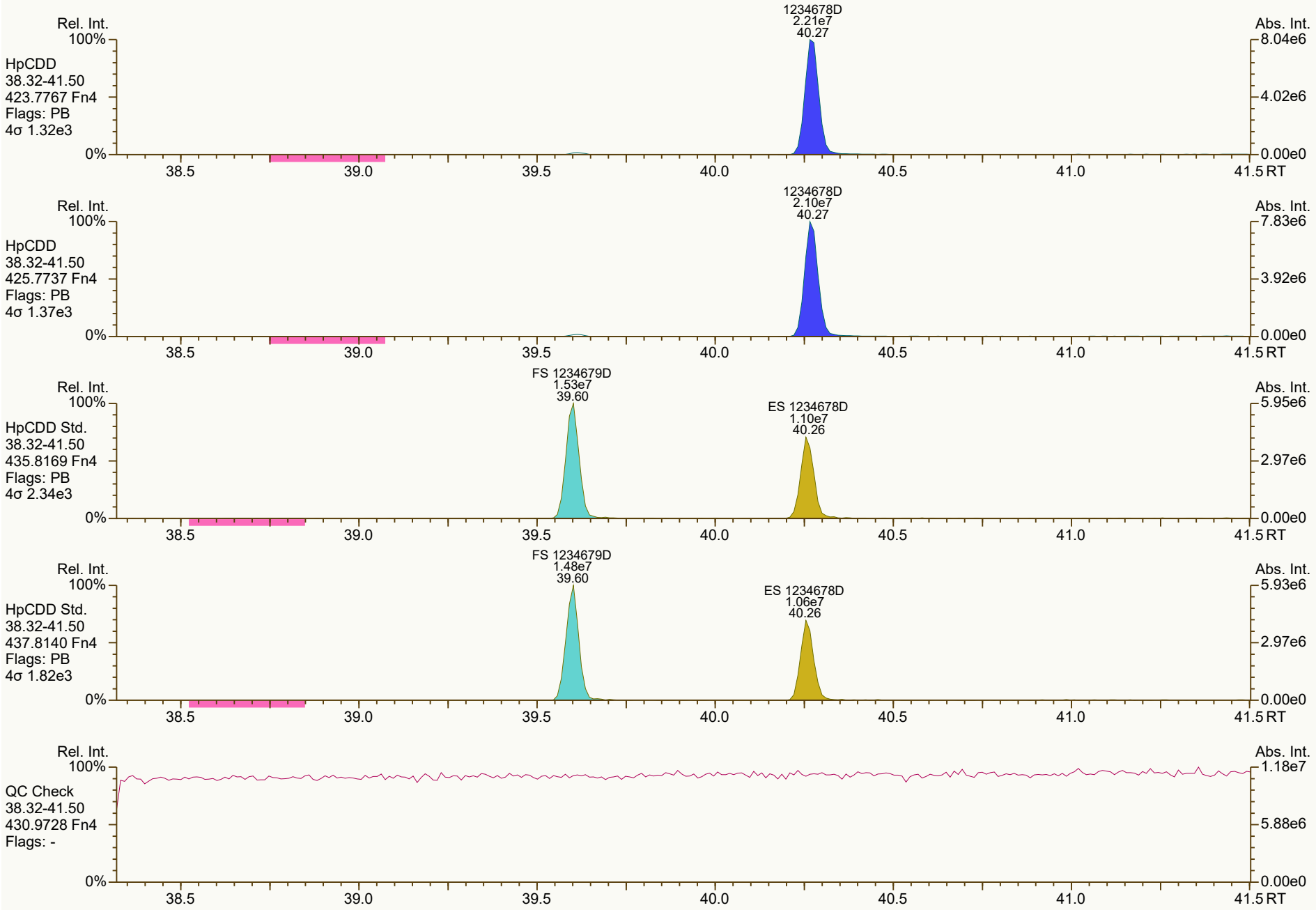
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

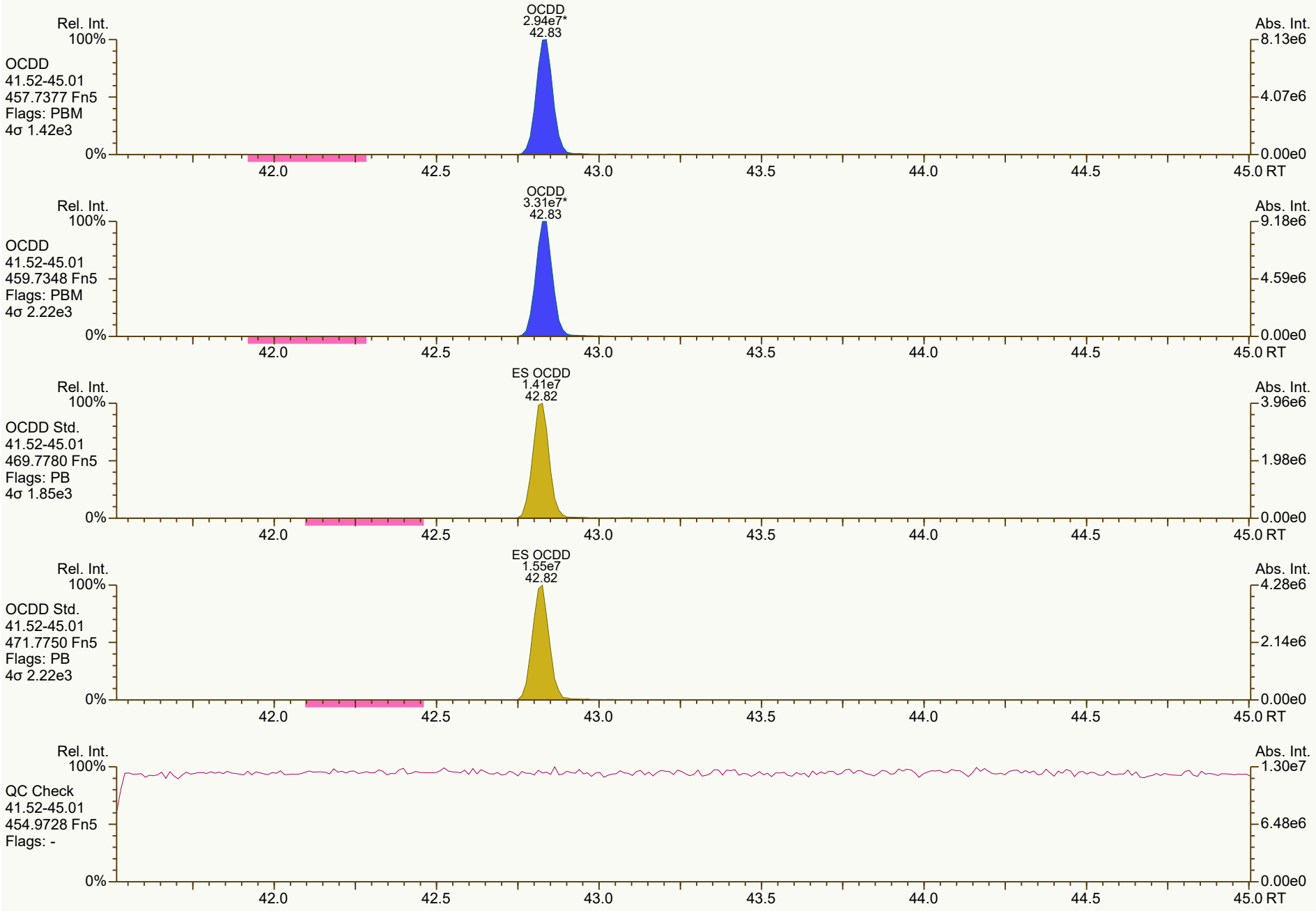

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.00e6
4.50e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.11e6
3.55e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.87e7
9.36e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.18e7
5.88e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.30e7
6.48e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
0%
2378D
6.61e6
27.58
Abs. Int.
1.54e6
7.68e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
0%
2378D
8.42e6
27.58
Abs. Int.
1.98e6
9.89e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
0%
CS 37Cl-2378D
1.50e7
27.58
Abs. Int.
3.40e6
1.70e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
0%
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
Abs. Int.
4.12e6
2.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
0%
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
Abs. Int.
5.37e6
2.68e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PB
4σ 2.56e3
0%
12378D
3.30e7
33.10
Abs. Int.
9.80e6
4.90e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PB
4σ 1.30e3
APPROVED
Amy_Boehm , 11/11/2021, 5:21:57 PM
0%
12378D
2.13e7
33.10
Abs. Int.
6.33e6
3.17e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 3.11e3
RRF = (1.85e7 + 1.20e7) * 100 / (1.69e7 + 1.08e7) * 100 = 1.1
DTF 11-Nov-2021 10:21
0%
FS 12478D
1.85e7
31.83
CS 12347D
1.46e7
32.57
ES 12378D
1.69e7
33.08
Abs. Int.
5.25e6
2.63e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 3.35e3
0%
FS 12478D
1.20e7
31.83
CS 12347D
9.31e6
32.57
ES 12378D
1.08e7
33.08
Abs. Int.
3.35e6
1.68e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.11e6
3.55e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123478D
2.66e7
37.03
123678D
2.67e7
37.15
123789D
2.82e7
37.46
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123478D
2.13e7
37.03
123678D
2.13e7
37.15
123789D
2.29e7
37.46
Abs. Int.
6.87e6
3.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D
1.60e7
35.96
ES 123478D
1.28e7
37.02
ES 123678D
1.24e7
37.14
JS 123467D
6.59e6*
37.34
ES 123789D
1.47e7
37.44
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D
1.30e7
35.96
ES 123478D
1.00e7
37.02
ES 123678D
9.93e6
37.14
JS 123467D
5.26e6*
37.34
ES 123789D
1.16e7
37.44
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.87e7
9.36e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
0%
1234678D
2.21e7
40.27
Abs. Int.
8.04e6
4.02e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
0%
1234678D
2.10e7
40.27
Abs. Int.
7.83e6
3.92e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
0%
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
Abs. Int.
5.95e6
2.97e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
0%
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
Abs. Int.
5.93e6
2.97e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.18e7
5.88e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
2.94e7*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
8.13e6
4.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.31e7*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.22e3
0%
Abs. Int.
9.18e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.41e7
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
Abs. Int.
3.96e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.55e7
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.22e3
0%
Abs. Int.
4.28e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
0%
2378F
8.36e6
26.67
Abs. Int.
1.89e6
9.43e5
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
0%
2378F
1.07e7
26.67
Abs. Int.
2.41e6
1.20e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
0%
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7*
25.23
ES 2378F
2.05e7
26.65
Abs. Int.
4.47e6
2.23e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
0%
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7*
25.23
ES 2378F
2.57e7
26.65
Abs. Int.
5.68e6
2.84e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
0%
Abs. Int.
9.44e3
4.72e3
0.00e0
RT

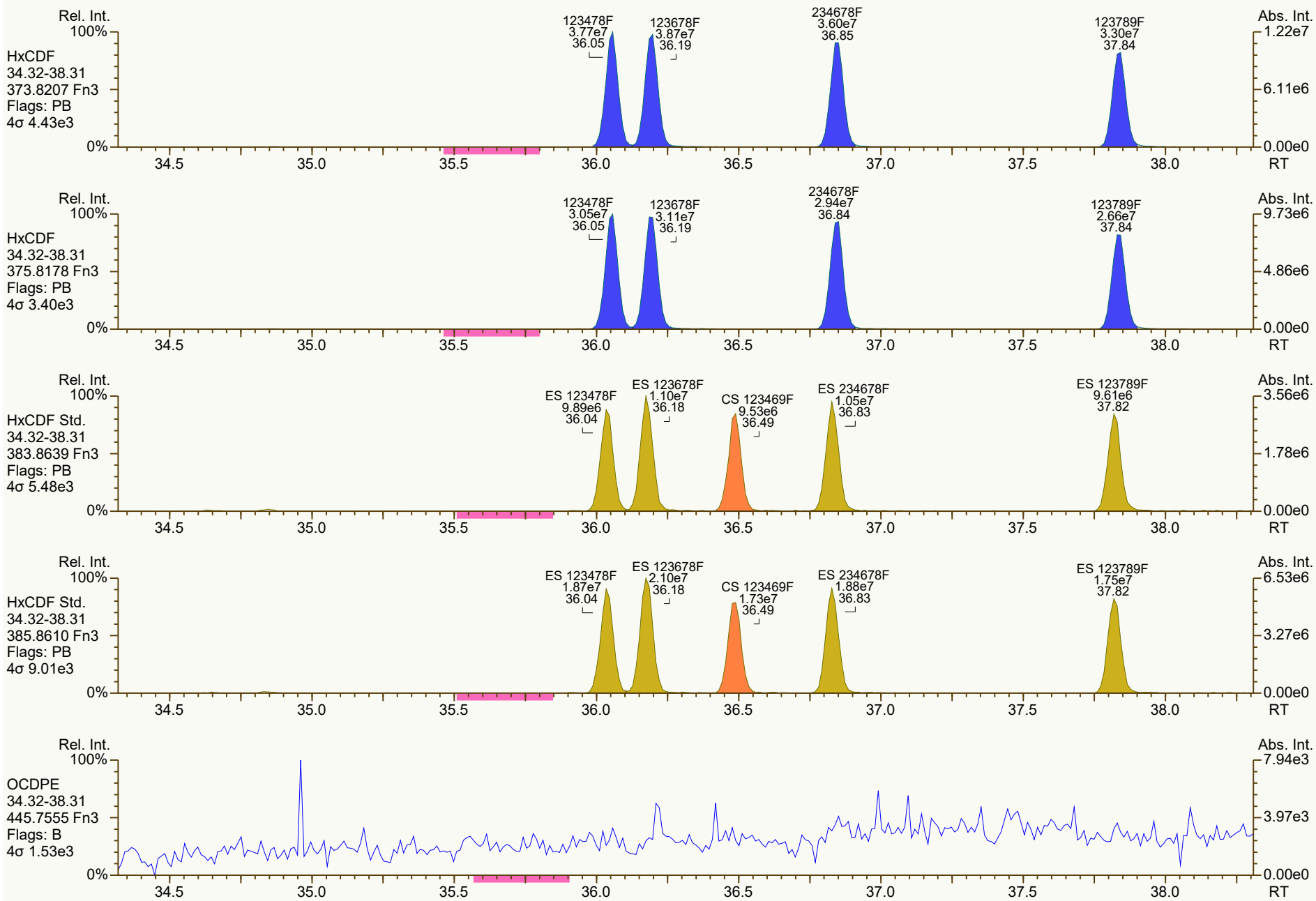

Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.83e3
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
8.94e3
4.47e3
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
9.00e6
4.50e6


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
Abs. Int.
1.30e7
6.48e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
Abs. Int.
8.36e6
4.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12346F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
Abs. Int.
6.66e6
3.33e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12346F
1.46e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
Abs. Int.
4.36e6
2.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
Abs. Int.
7.51e3
3.76e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

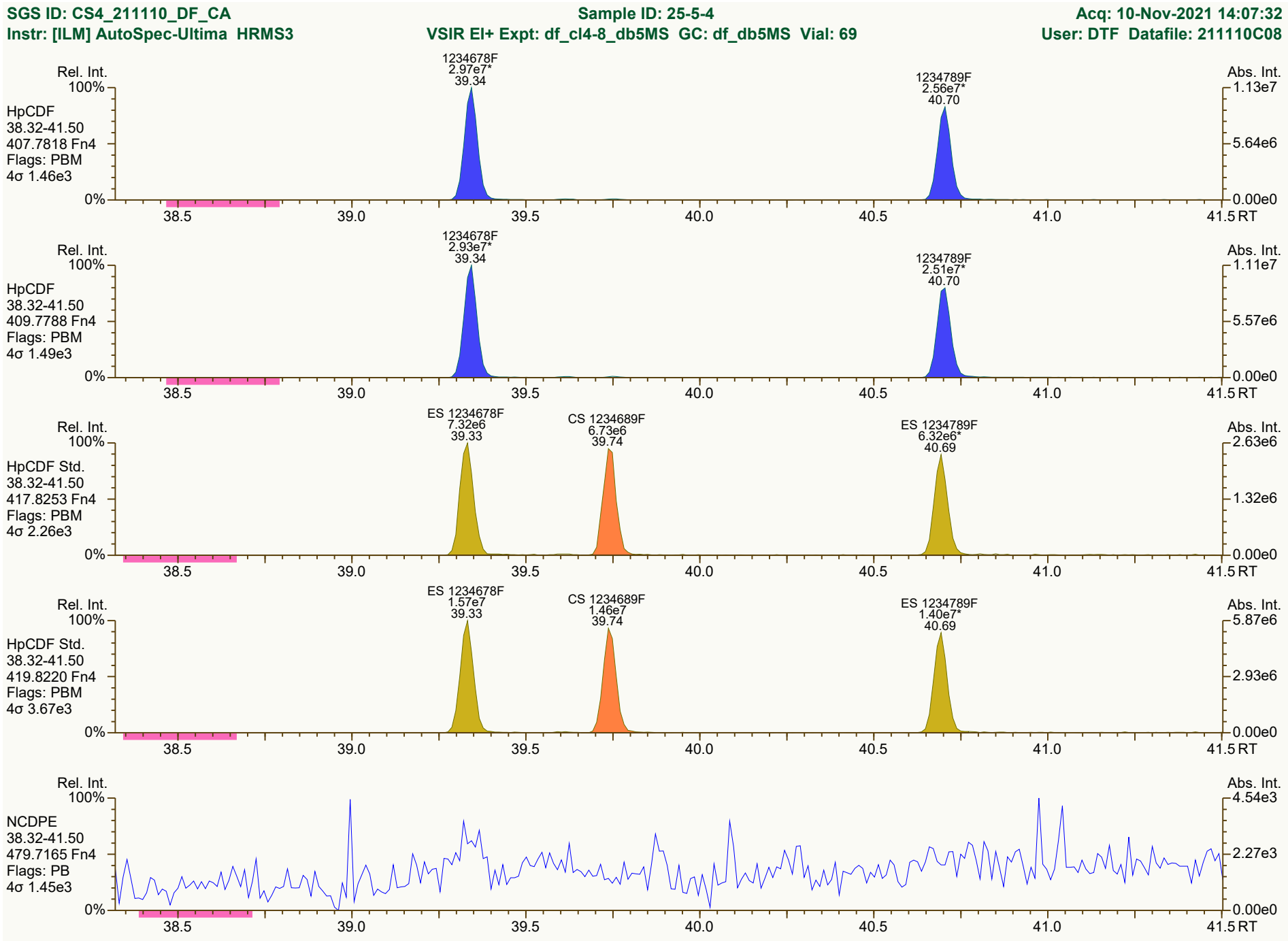
SGS ID: CS4_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

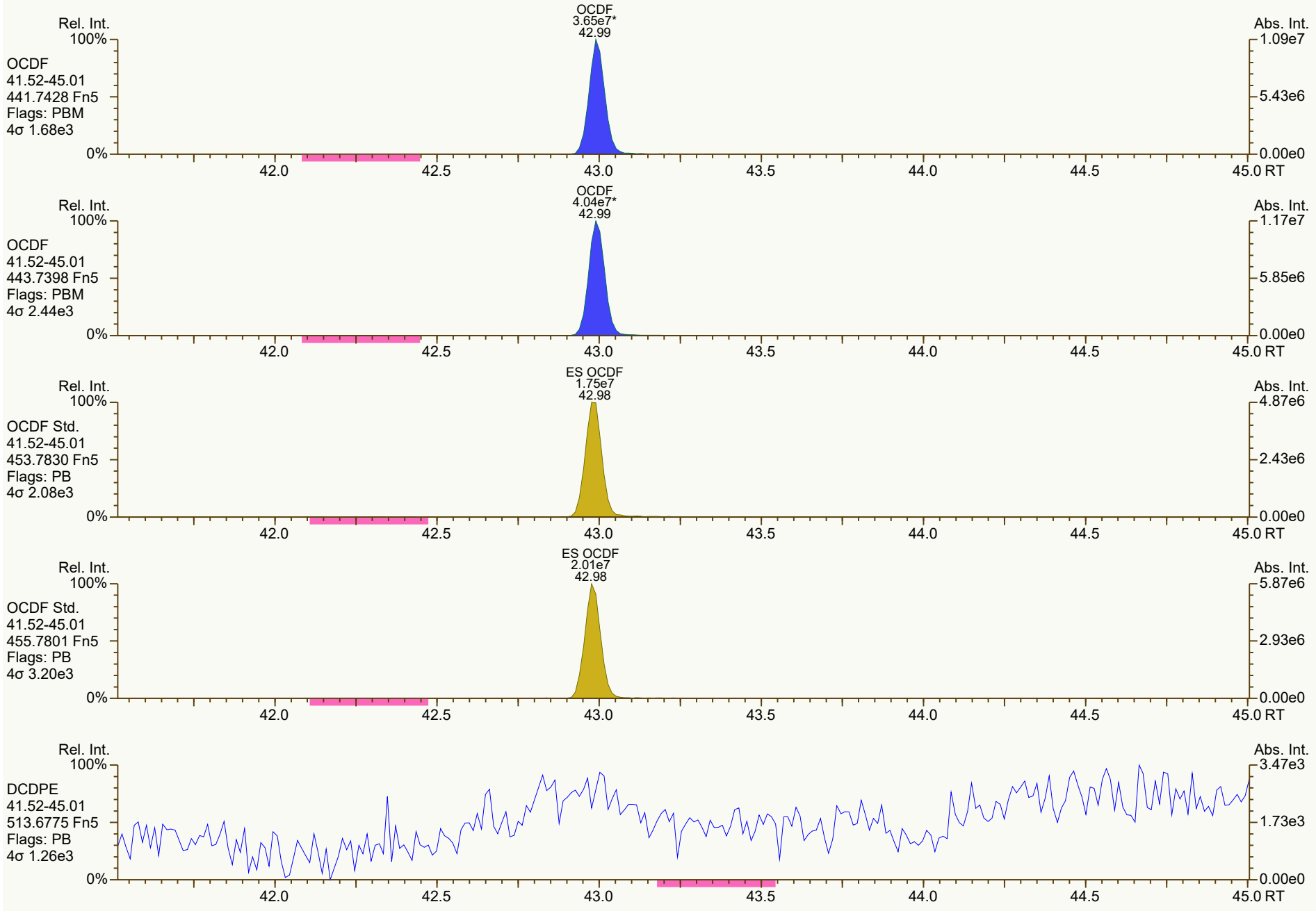
Sample ID: 25-5-4
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69

Acq: 10-Nov-2021 14:07:32
User: DTF Datafile: 211110C08



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0495, 2507, 5312 scc: 855-576
PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 10 of 12


SGS ID: CS4_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-5-4
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
Acq: 10-Nov-2021 14:07:32
User: DTF Datafile: 211110C08
Rel. Int.
100%
0%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
1234678F
2.97e7*
39.34
1234789F
2.56e7*
40.70
Abs. Int.
1.13e7
5.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
1.11e7
5.57e6
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
2.63e6
1.32e6
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
ES 1234678F
1.57e7
39.33
CS 1234689F
1.46e7
39.74
ES 1234789F
1.40e7*
40.69
5.87e6
2.93e6
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
4.54e3
2.27e3
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2764, 9565, 4492 scc: 855-576
Revised: 10-Nov-2021 15:17 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

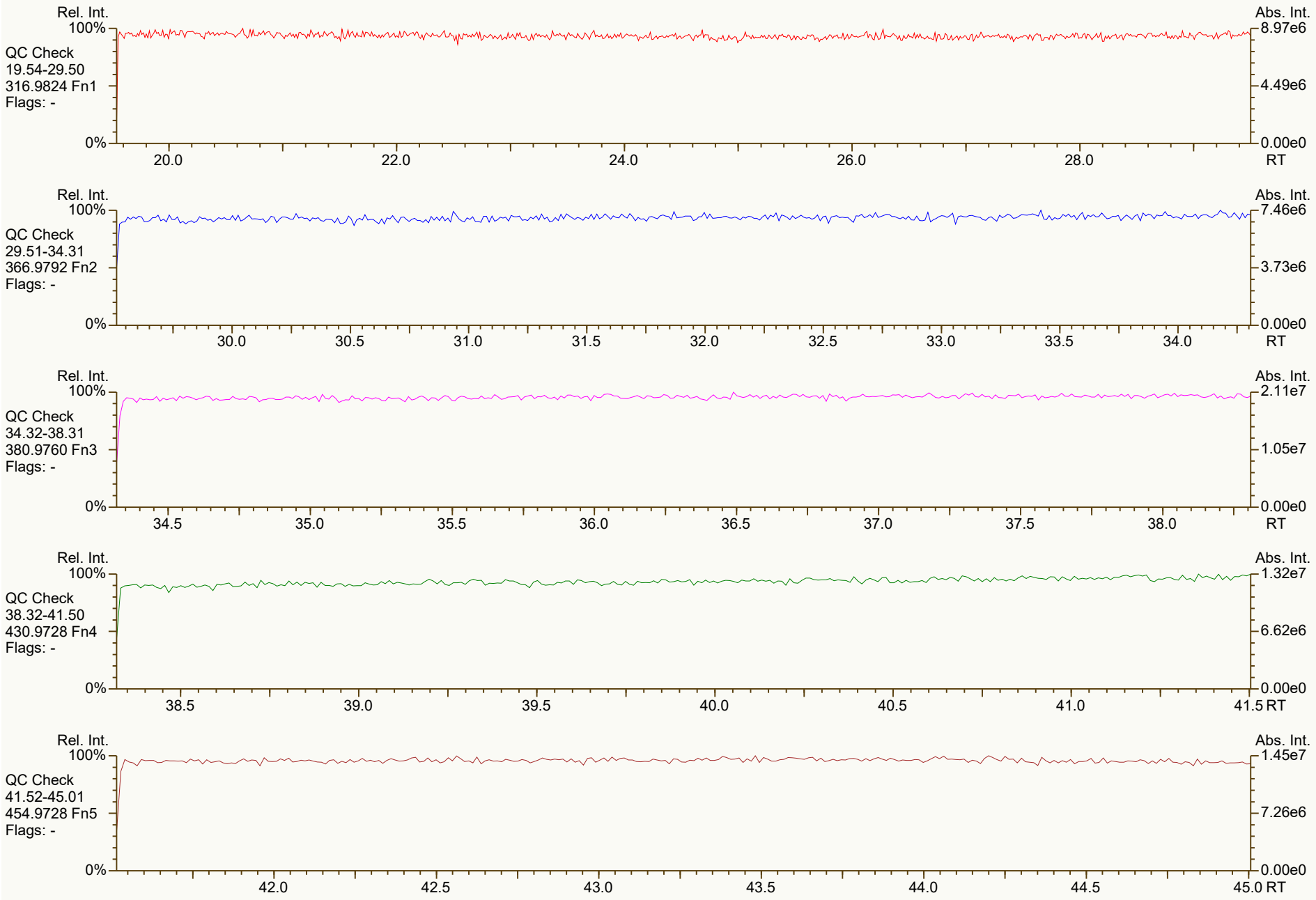

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
OCDF
3.65e7*
42.99
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
OCDF
4.04e7*
42.99
Abs. Int.
1.17e7
5.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
0%
ES OCDF
1.75e7
42.98
Abs. Int.
4.87e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
0%
ES OCDF
2.01e7
42.98
Abs. Int.
5.87e6
2.93e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
0%
Abs. Int.
3.47e3
1.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

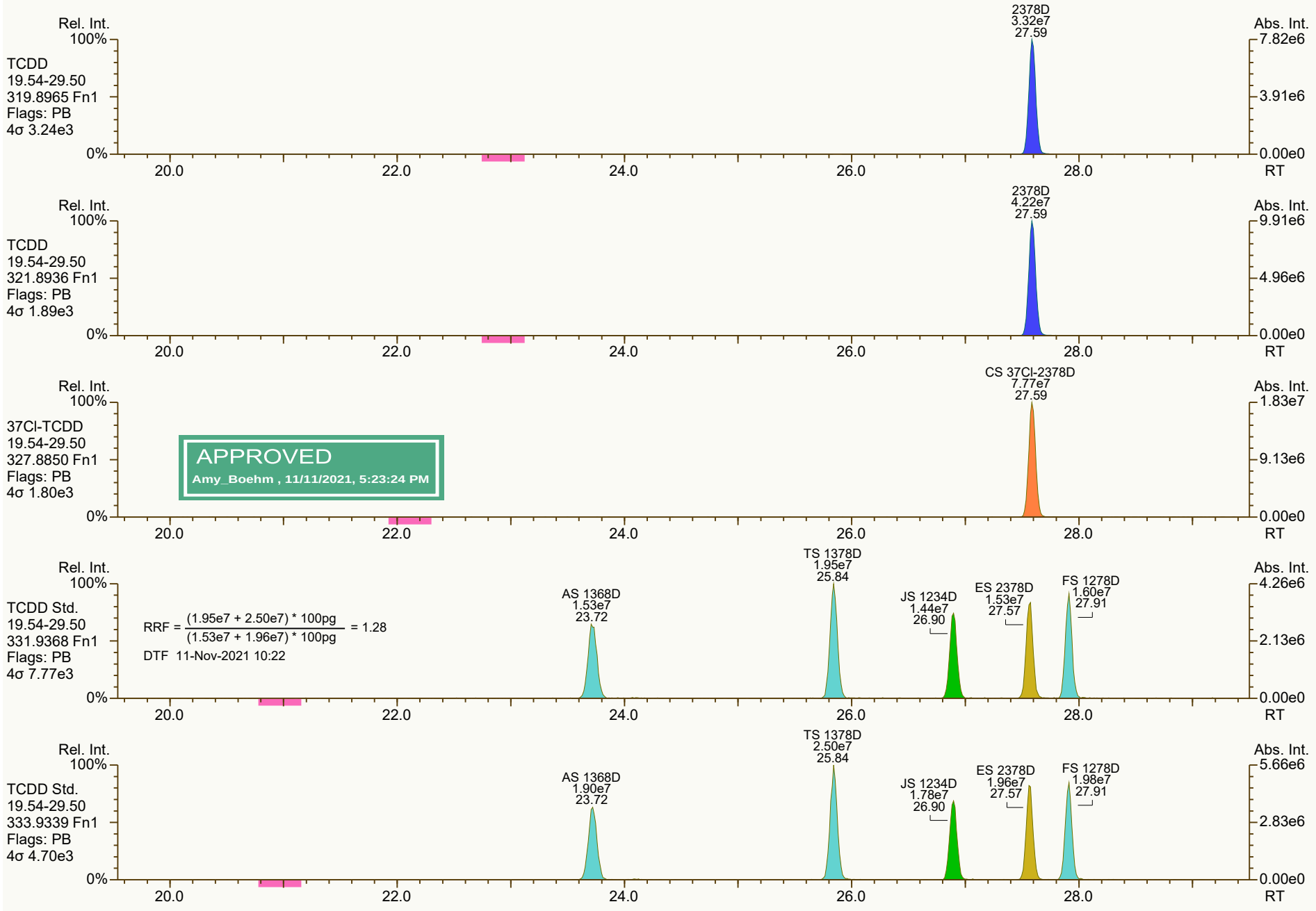
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

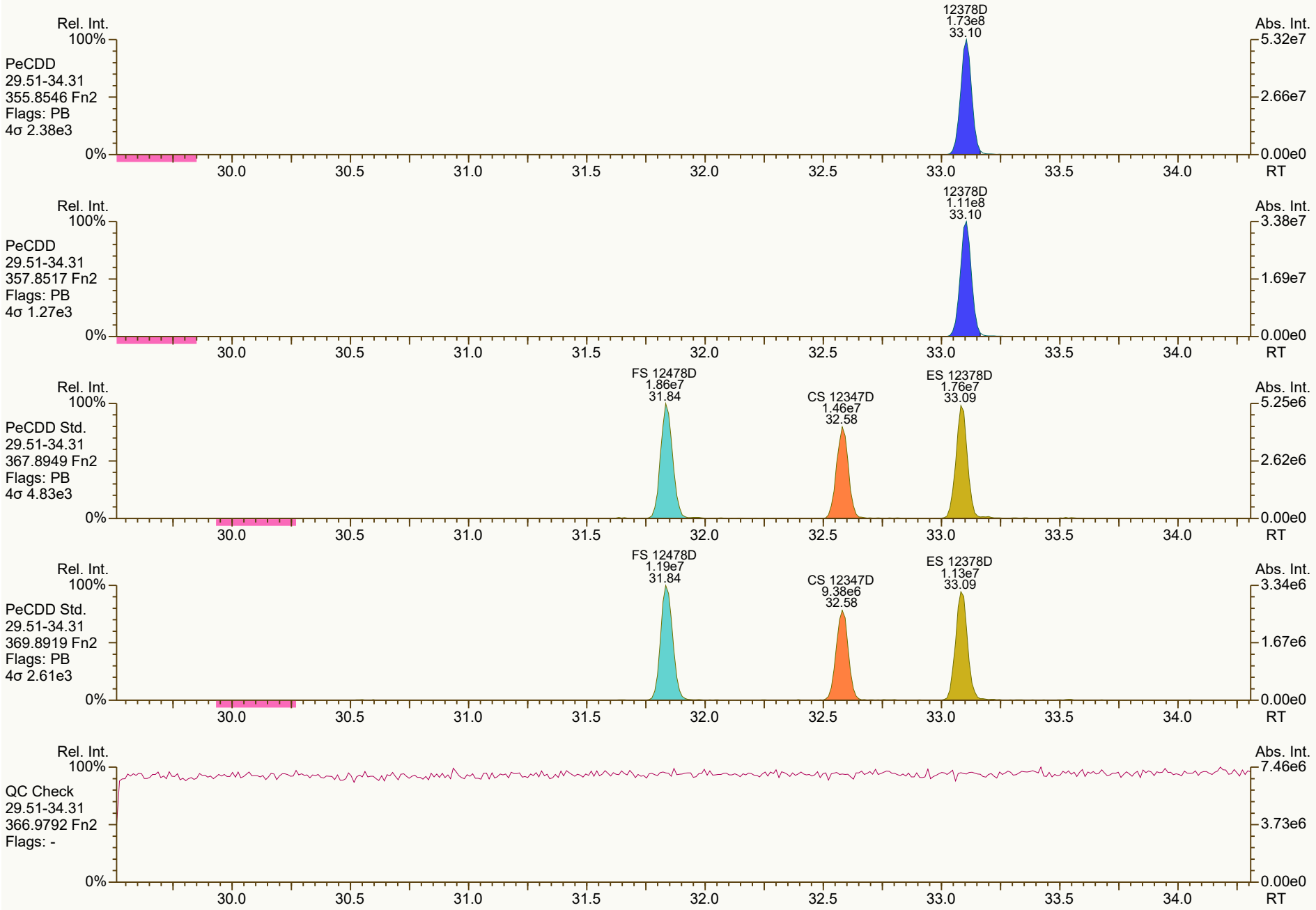
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

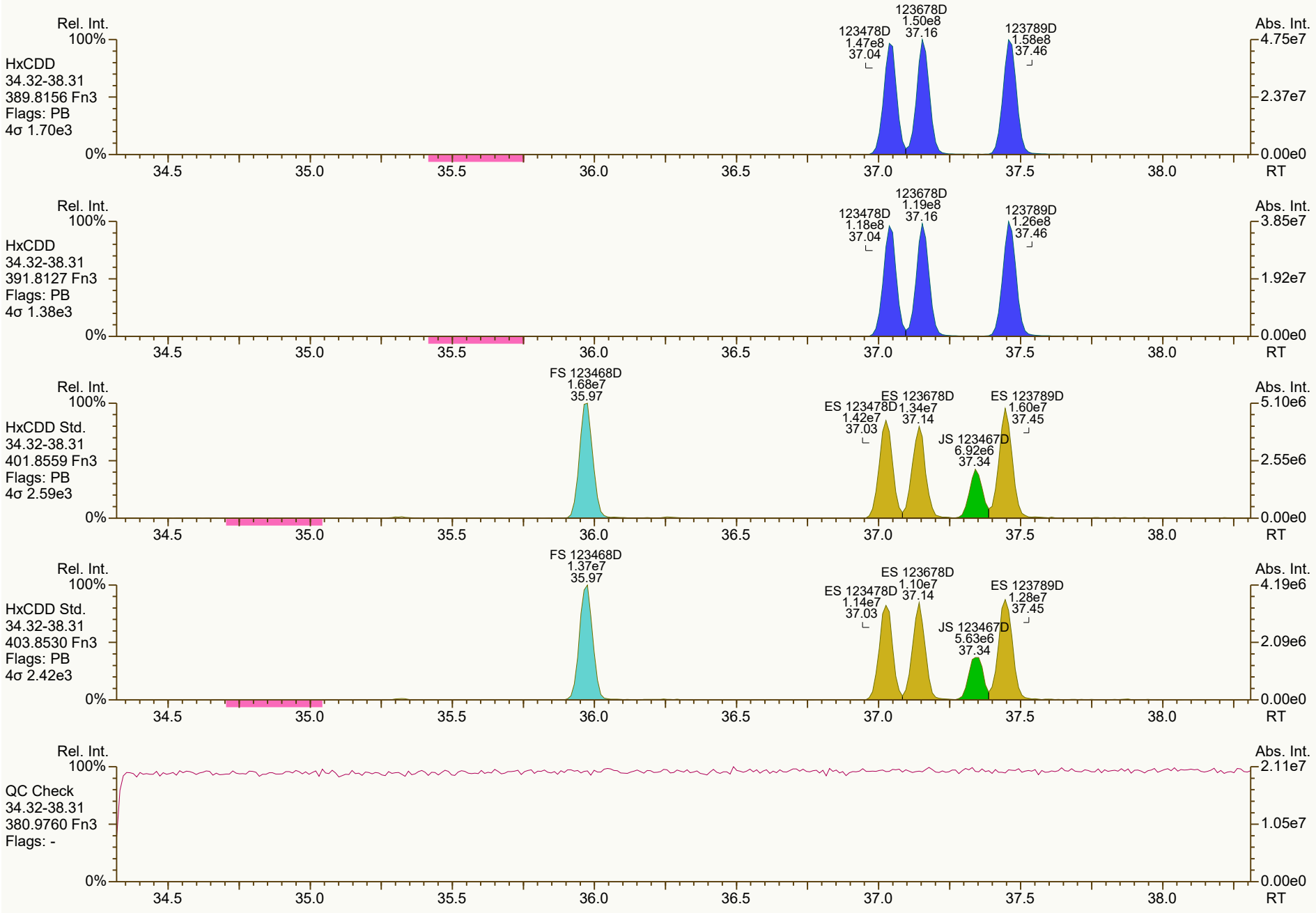
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

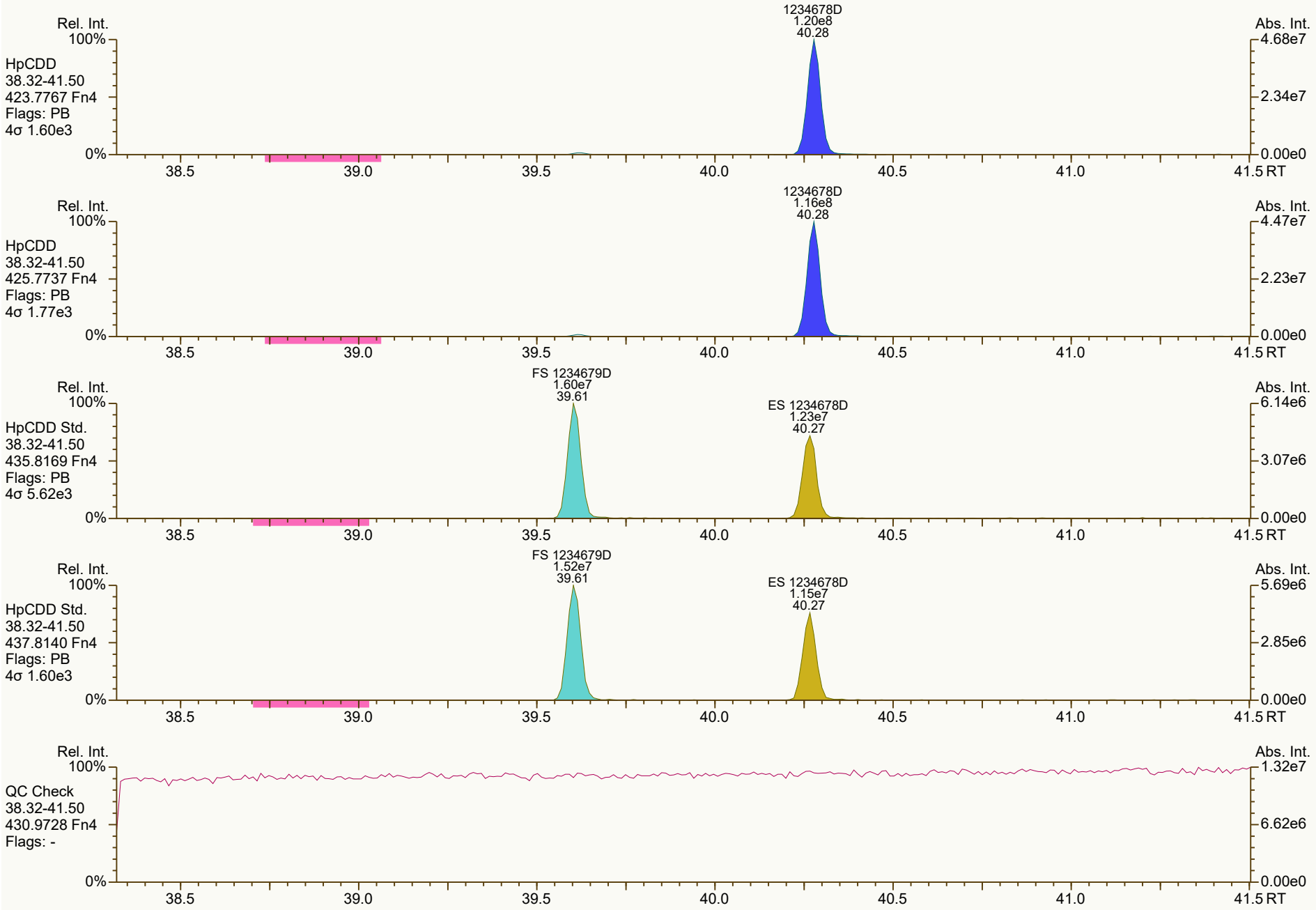
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

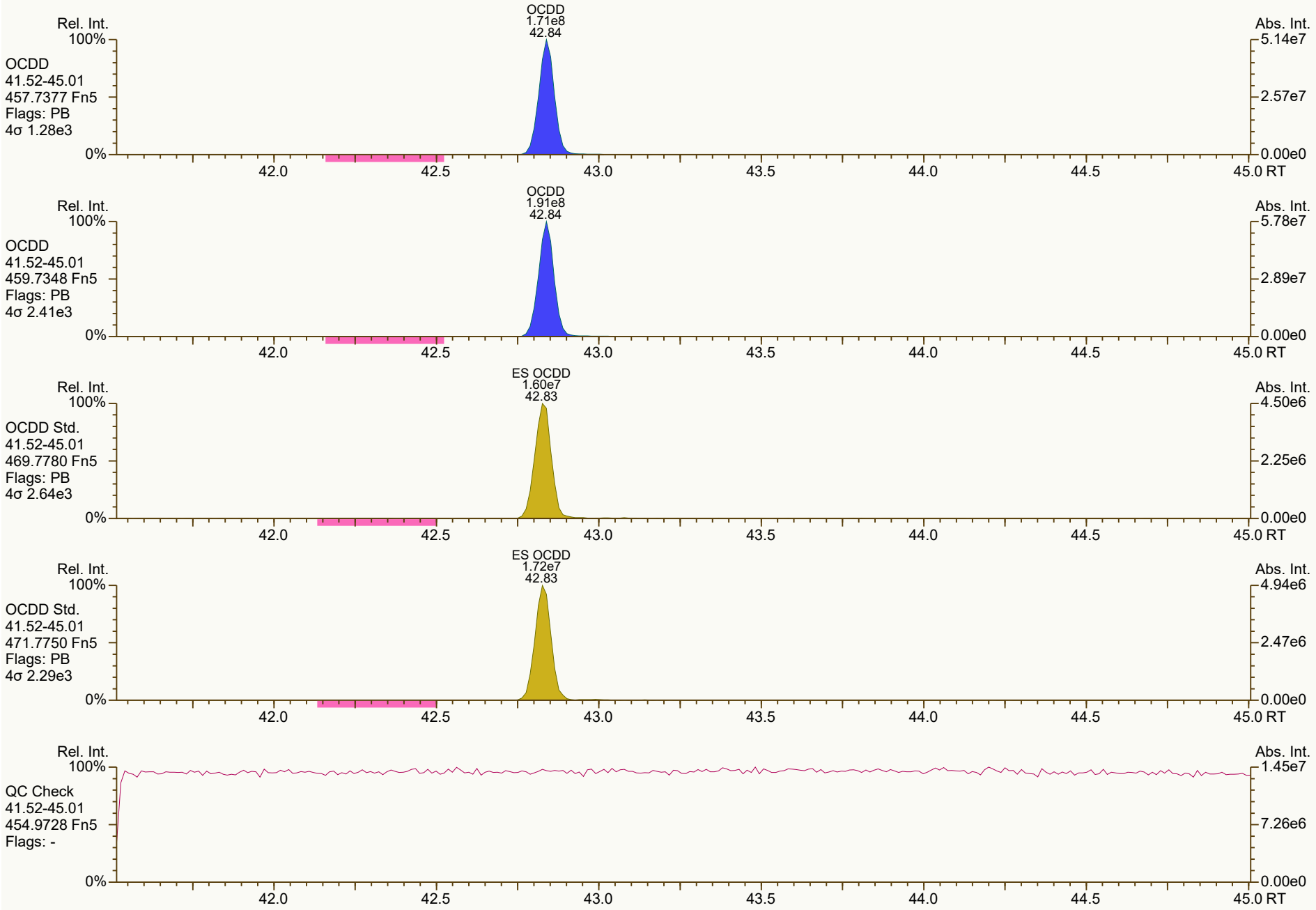

Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.97e6
4.49e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.46e6
3.73e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.11e7
1.05e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.32e7
6.62e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.45e7
7.26e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PB
4σ 3.24e3
0%
2378D
3.32e7
27.59
Abs. Int.
7.82e6
3.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: PB
4σ 1.89e3
0%
2378D
4.22e7
27.59
Abs. Int.
9.91e6
4.96e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: PB
4σ 1.80e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:23:24 PM
CS 37Cl-2378D
7.77e7
27.59
Abs. Int.
1.83e7
9.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 7.77e3
0%
RRF = (1.95e7 + 2.50e7) * 100pg / (1.53e7 + 1.96e7) * 100pg = 1.28
DTF 11-Nov-2021 10:22
AS 1368D
1.53e7
23.72
TS 1378D
1.95e7
25.84
JS 1234D
1.44e7
26.90
ES 2378D
1.53e7
27.57
FS 1278D
1.60e7
27.91
Abs. Int.
4.26e6
2.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.70e3
0%
AS 1368D
1.90e7
23.72
TS 1378D
2.50e7
25.84
JS 1234D
1.78e7
26.90
ES 2378D
1.96e7
27.57
FS 1278D
1.98e7
27.91
Abs. Int.
5.66e6
2.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
0%
12378D
1.73e8
33.10
Abs. Int.
5.32e7
2.66e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
0%
12378D
1.11e8
33.10
Abs. Int.
3.38e7
1.69e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
1.86e7
31.84
CS 12347D
1.46e7
32.58
ES 12378D
1.76e7
33.09
Abs. Int.
5.25e6
2.62e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
0%
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
Abs. Int.
3.34e6
1.67e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.46e6
3.73e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

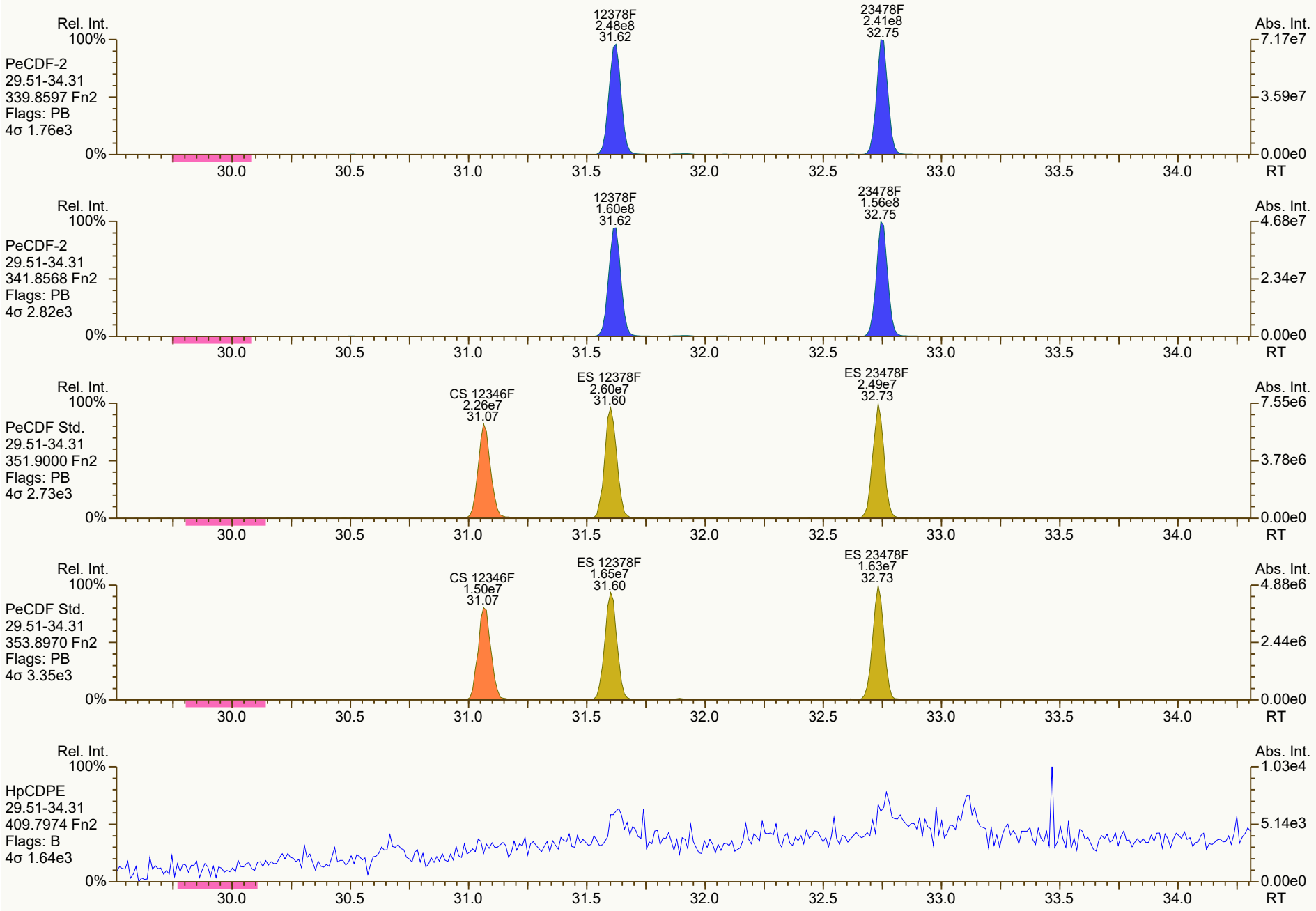

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
0%
123478D
1.47e8
37.04
123678D
1.50e8
37.16
123789D
1.58e8
37.46
Abs. Int.
4.75e7
2.37e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
0%
123478D
1.18e8
37.04
123678D
1.19e8
37.16
123789D
1.26e8
37.46
Abs. Int.
3.85e7
1.92e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
0%
FS 123468D
1.68e7
35.97
ES 123478D
1.42e7
37.03
ES 123678D
1.34e7
37.14
JS 123467D
6.92e6
37.34
ES 123789D
1.60e7
37.45
Abs. Int.
5.10e6
2.55e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
0%
FS 123468D
1.37e7
35.97
ES 123478D
1.14e7
37.03
ES 123678D
1.10e7
37.14
JS 123467D
5.63e6
37.34
ES 123789D
1.28e7
37.45
Abs. Int.
4.19e6
2.09e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.11e7
1.05e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

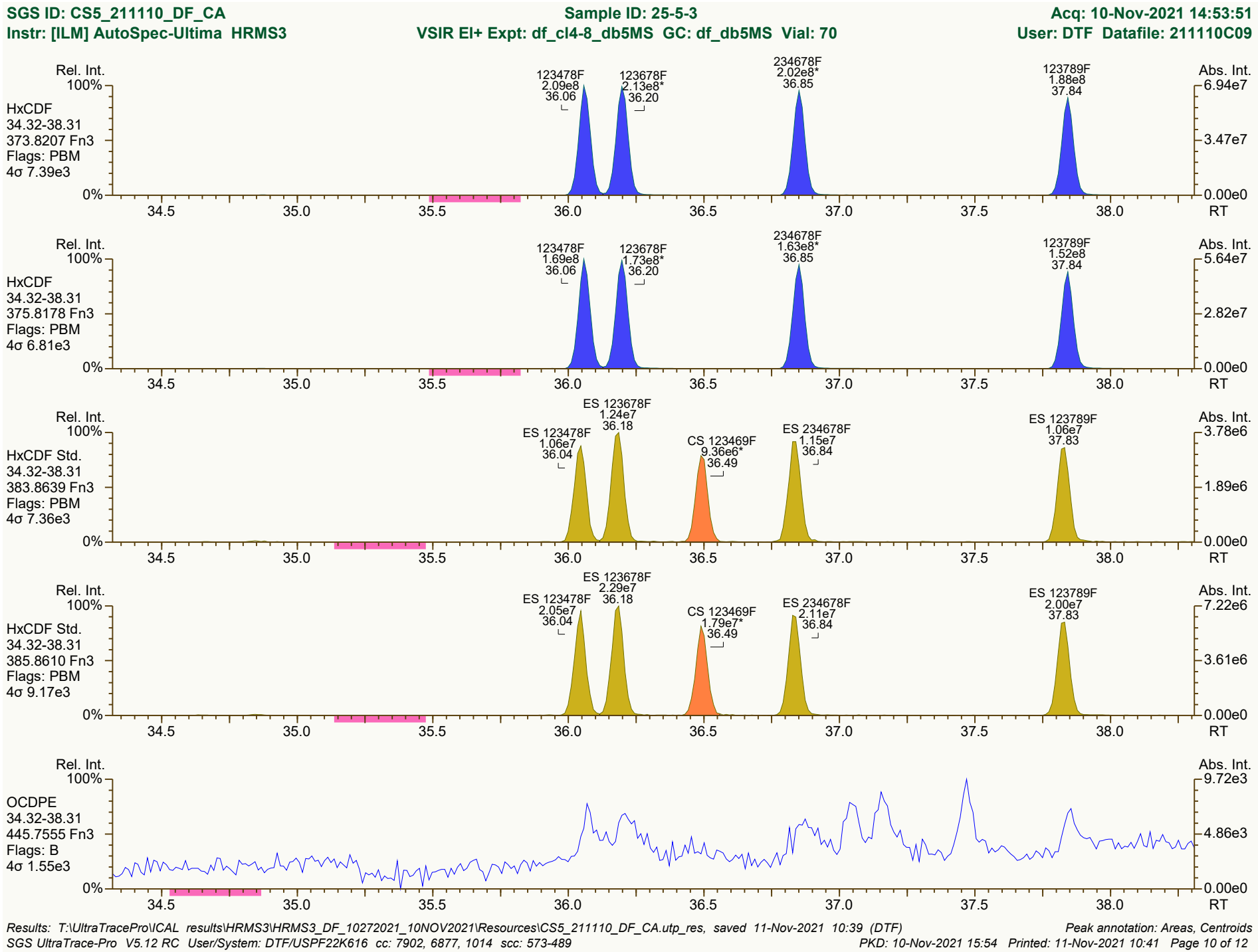

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
1.20e8
40.28
Abs. Int.
4.68e7
2.34e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.77e3
1234678D
1.16e8
40.28
Abs. Int.
4.47e7
2.23e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 5.62e3
FS 1234679D
1.60e7
39.61
ES 1234678D
1.23e7
40.27
Abs. Int.
6.14e6
3.07e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.60e3
FS 1234679D
1.52e7
39.61
ES 1234678D
1.15e7
40.27
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.32e7
6.62e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

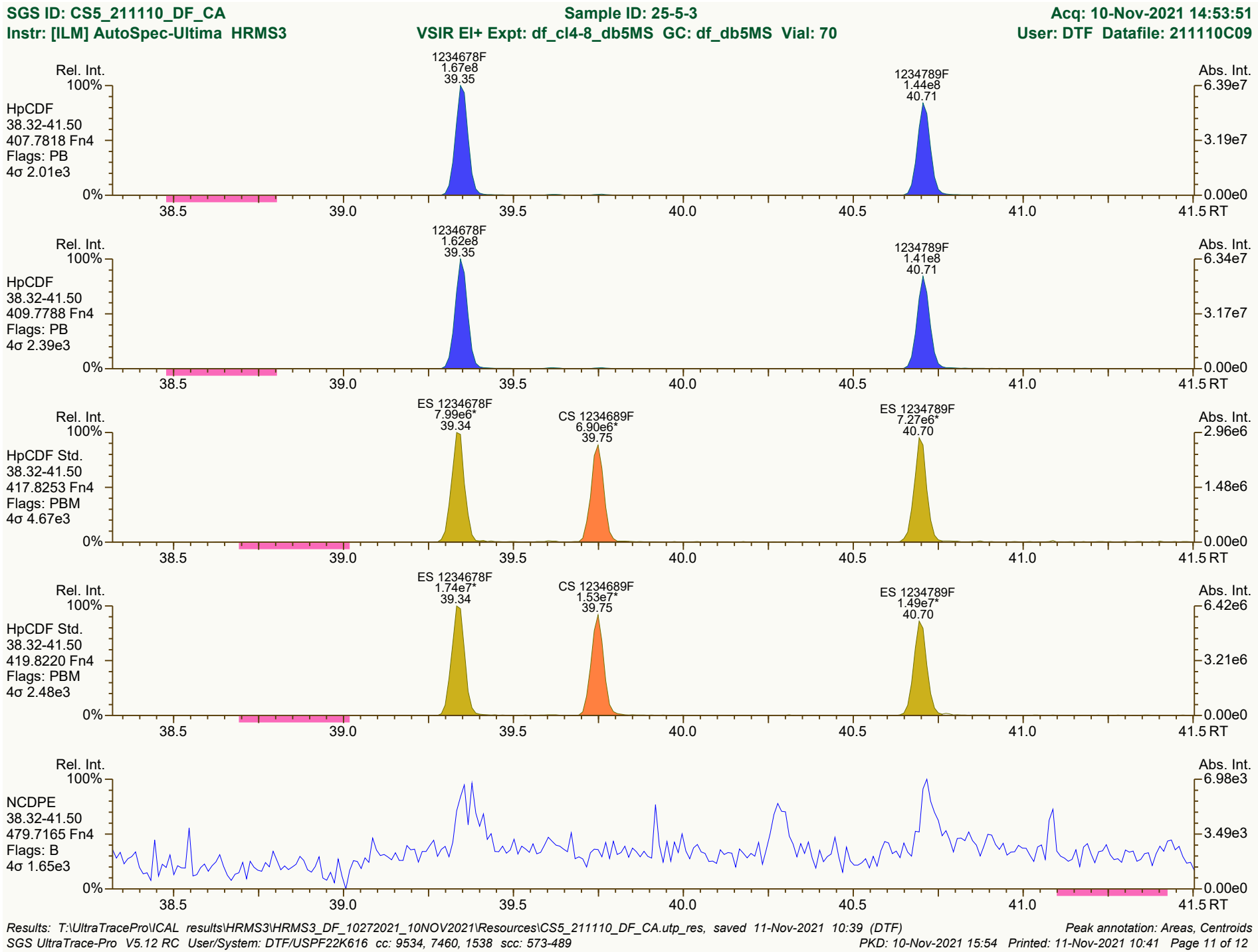

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
OCDD
1.71e8
42.84
Abs. Int.
5.14e7
2.57e7
0.00e0
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
OCDD
1.91e8
42.84
Abs. Int.
5.78e7
2.89e7
0.00e0
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
ES OCDD
1.60e7
42.83
Abs. Int.
4.50e6
2.25e6
0.00e0
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
ES OCDD
1.72e7
42.83
Abs. Int.
4.94e6
2.47e6
0.00e0
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
Abs. Int.
1.45e7
7.26e6
0.00e0
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

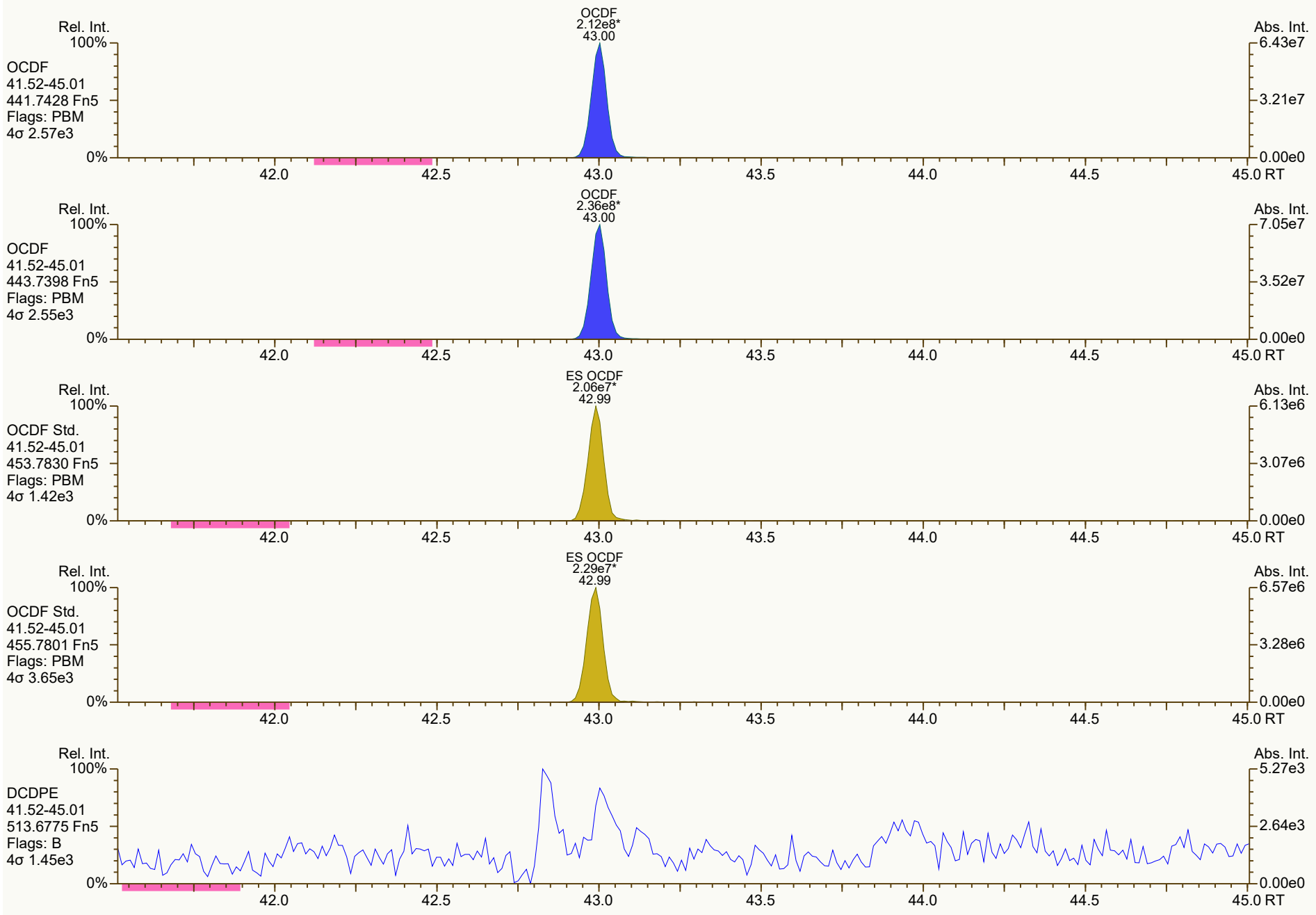

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
0%
2378F
4.22e7
26.68
Abs. Int.
9.59e6
4.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
0%
2378F
5.40e7
26.68
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
0%
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
Abs. Int.
4.70e6
2.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
Abs. Int.
5.78e6
2.89e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
0%
Abs. Int.
7.47e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.43e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 2.08e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
0%
12378F
2.48e8
31.62
23478F
2.41e8
32.75
Abs. Int.
7.17e7
3.59e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
0%
12378F
1.60e8
31.62
23478F
1.56e8
32.75
Abs. Int.
4.68e7
2.34e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
0%
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
Abs. Int.
7.55e6
3.78e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
0%
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.63e7
32.73
Abs. Int.
4.88e6
2.44e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 7.39e3
123478F 2.09e8 36.06
123678F 2.13e8* 36.20
234678F 2.02e8* 36.85
123789F 1.88e8 37.84
6.94e7
3.47e7
0.00e0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 6.81e3
123478F 1.69e8 36.06
123678F 1.73e8* 36.20
234678F 1.63e8* 36.85
123789F 1.52e8 37.84
5.64e7
2.82e7
0.00e0
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.36e3
ES 123478F 1.06e7 36.04
ES 123678F 1.24e7 36.18
CS 123469F 9.36e6* 36.49
ES 234678F 1.15e7 36.84
ES 123789F 1.06e7 37.83
3.78e6
1.89e6
0.00e0
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.17e3
ES 123478F 2.05e7 36.04
ES 123678F 2.29e7 36.18
CS 123469F 1.79e7* 36.49
ES 234678F 2.11e7 36.84
ES 123789F 2.00e7 37.83
7.22e6
3.61e6
0.00e0
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.55e3
9.72e3
4.86e3
0.00e0
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7902, 6877, 1014 scc: 573-489
PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 10 of 12

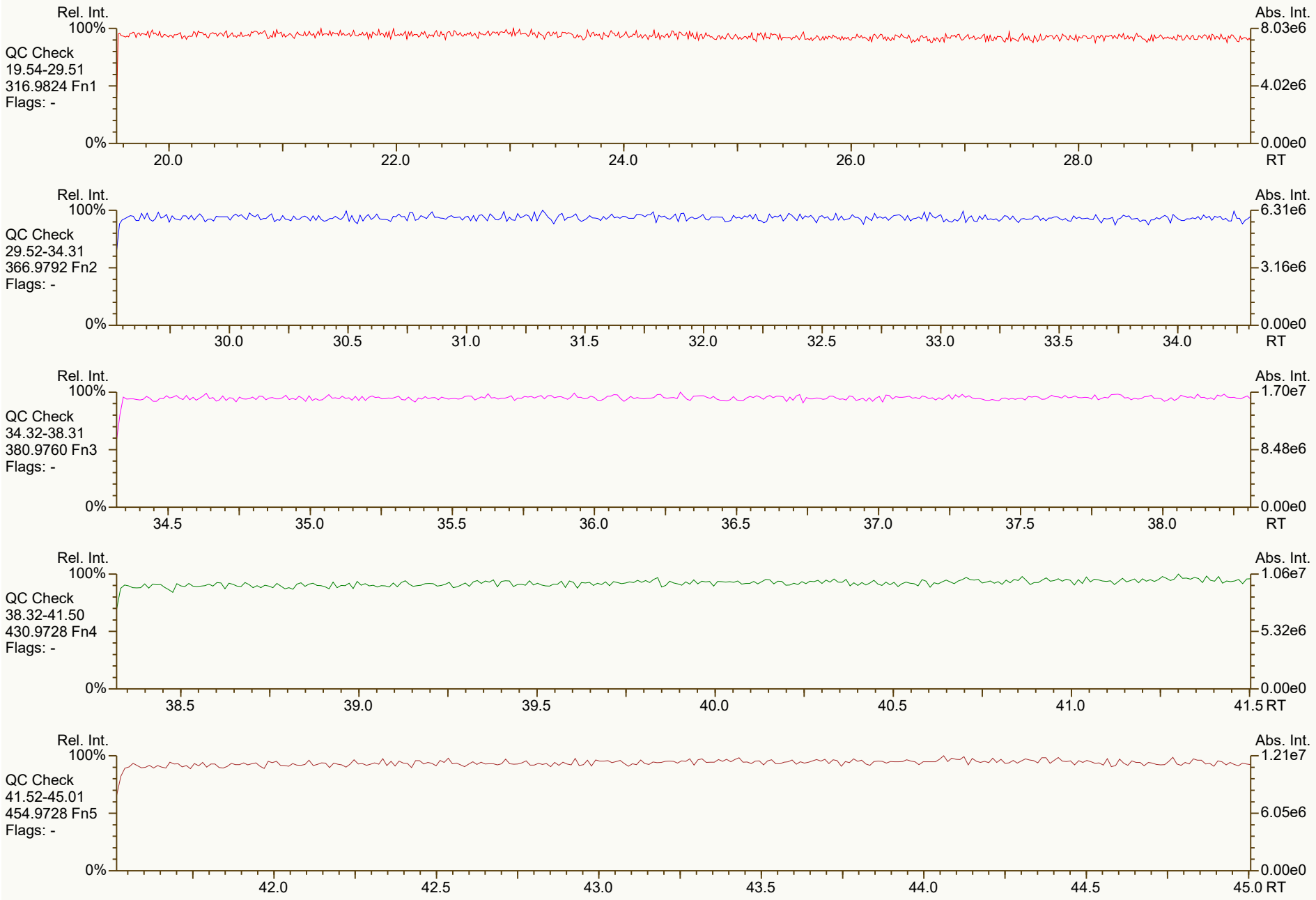

SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 2.01e3
1234678F
1.67e8
39.35
1234789F
1.44e8
40.71
6.39e7
3.19e7
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 2.39e3
1234678F
1.62e8
39.35
1234789F
1.41e8
40.71
6.34e7
3.17e7
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.67e3
ES 1234678F
7.99e6*
39.34
CS 1234689F
6.90e6*
39.75
ES 1234789F
7.27e6*
40.70
2.96e6
1.48e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.48e3
ES 1234678F
1.74e7*
39.34
CS 1234689F
1.53e7*
39.75
ES 1234789F
1.49e7*
40.70
6.42e6
3.21e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.65e3
6.98e3
3.49e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9534, 7460, 1538 scc: 573-489
PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 11 of 12

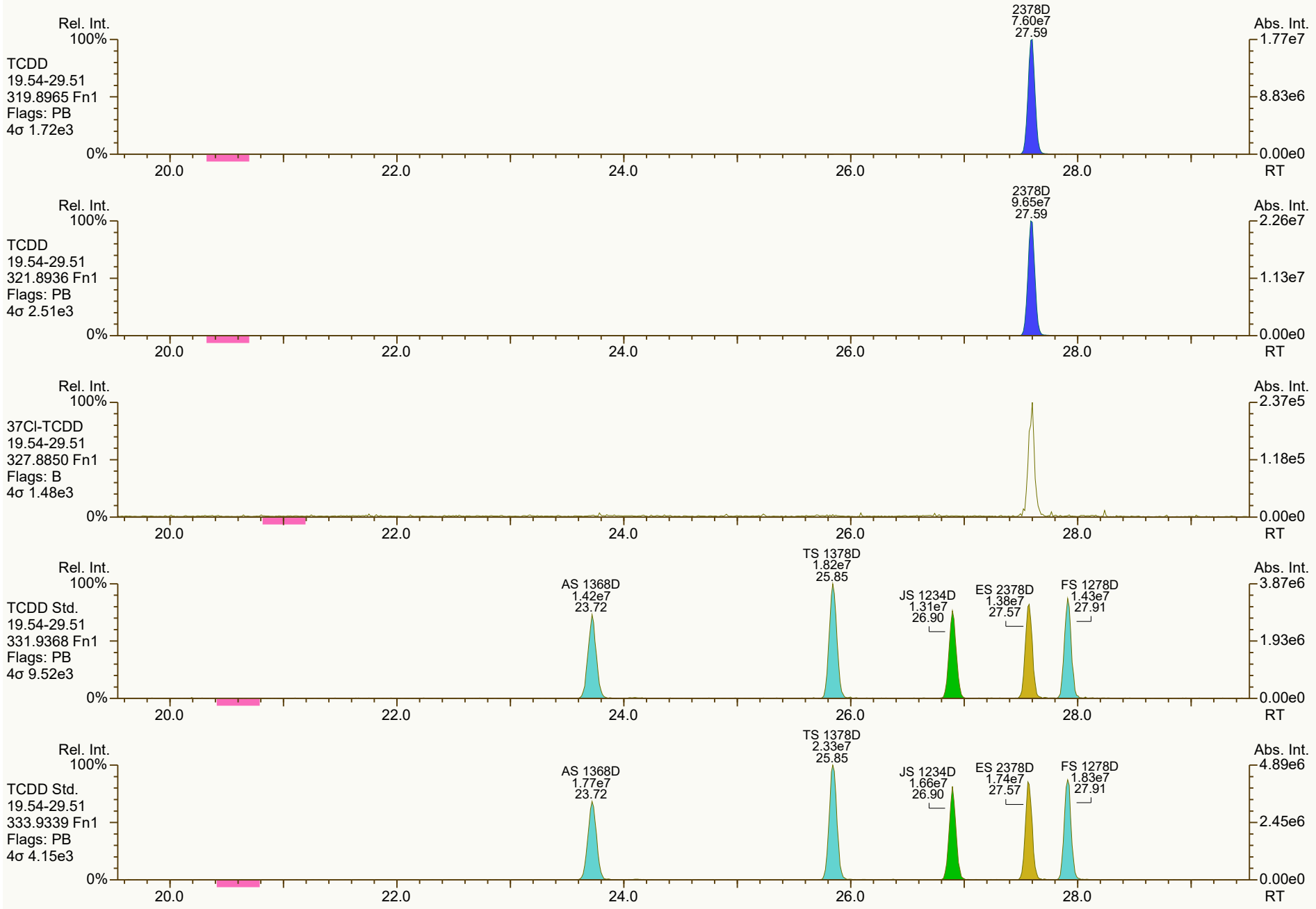

OCDF
2.12e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
6.43e7
3.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.36e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
0%
Abs. Int.
7.05e7
3.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
6.13e6
3.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
6.57e6
3.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
5.27e3
2.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

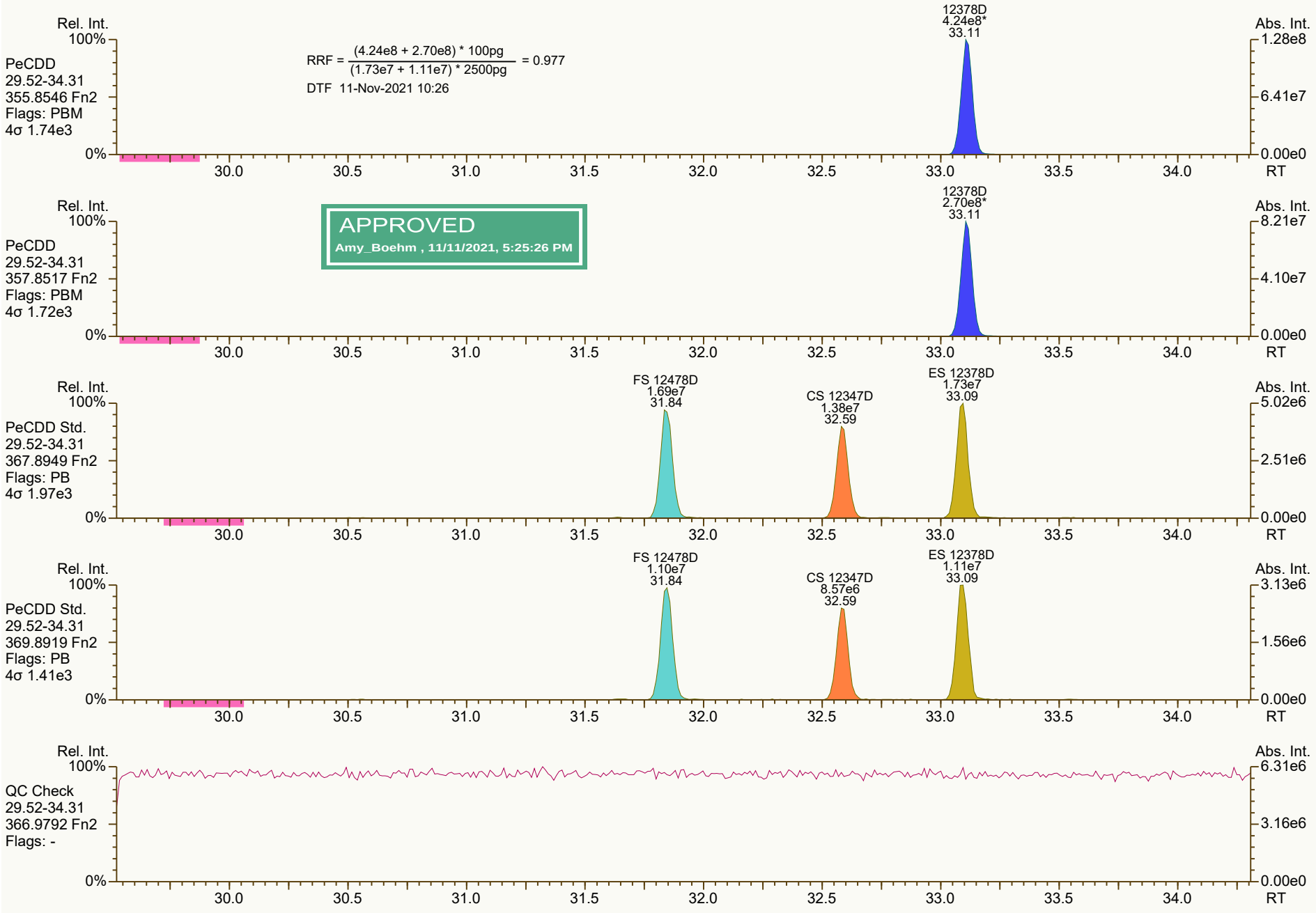
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

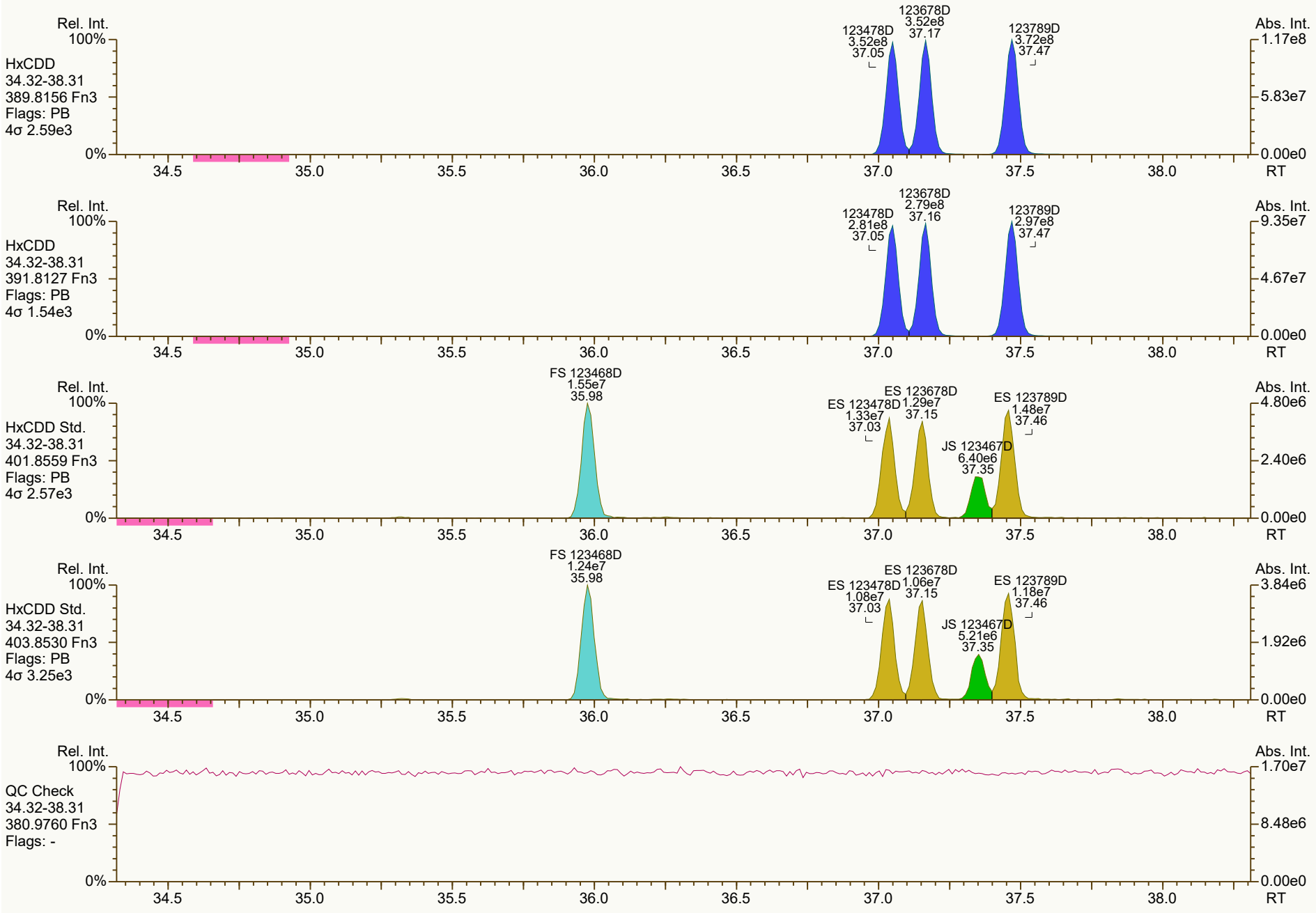
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

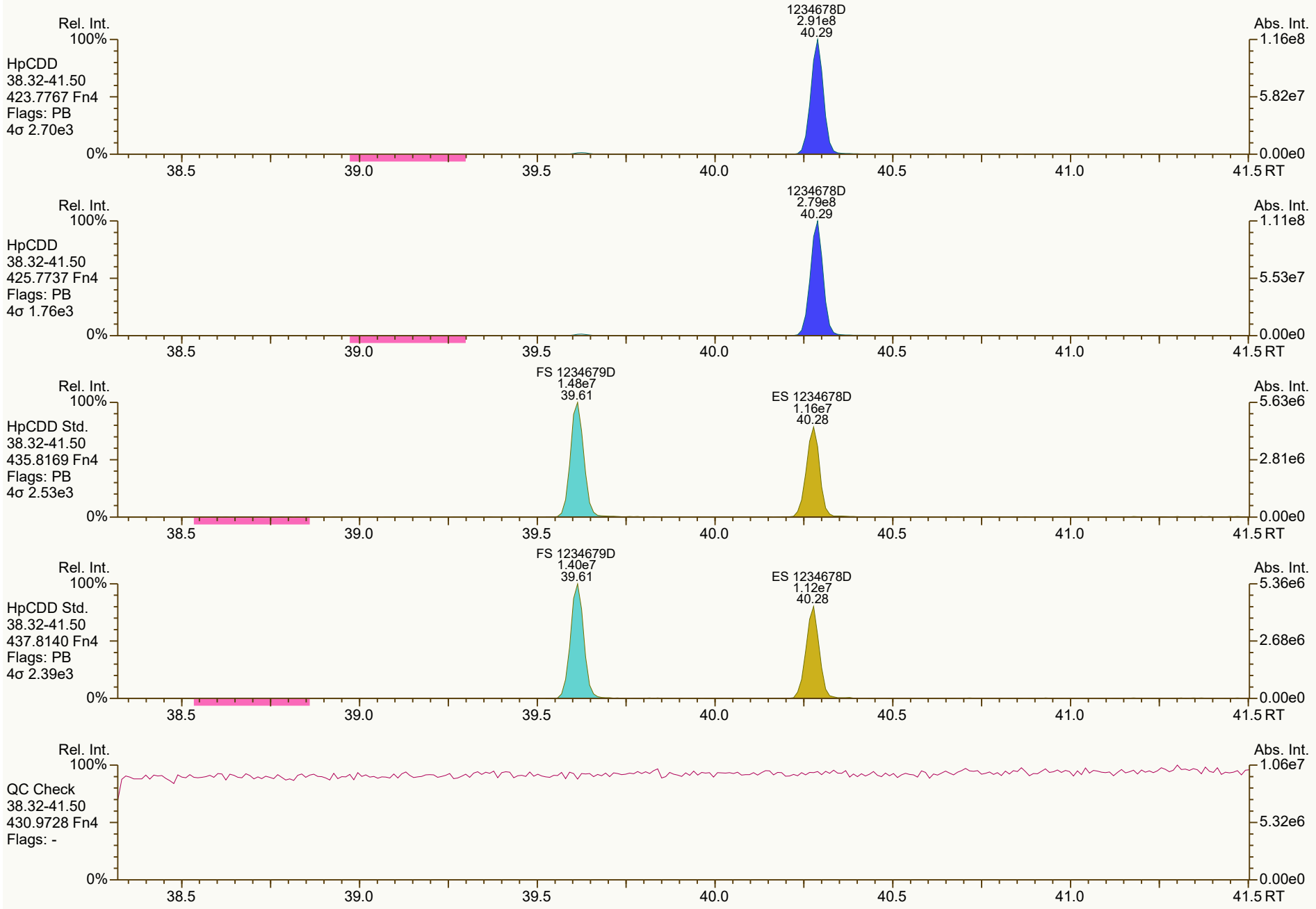
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 15:40 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS6_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF				Checkcode: 172-736-WQL	
Sample ID: 25-5-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C10	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

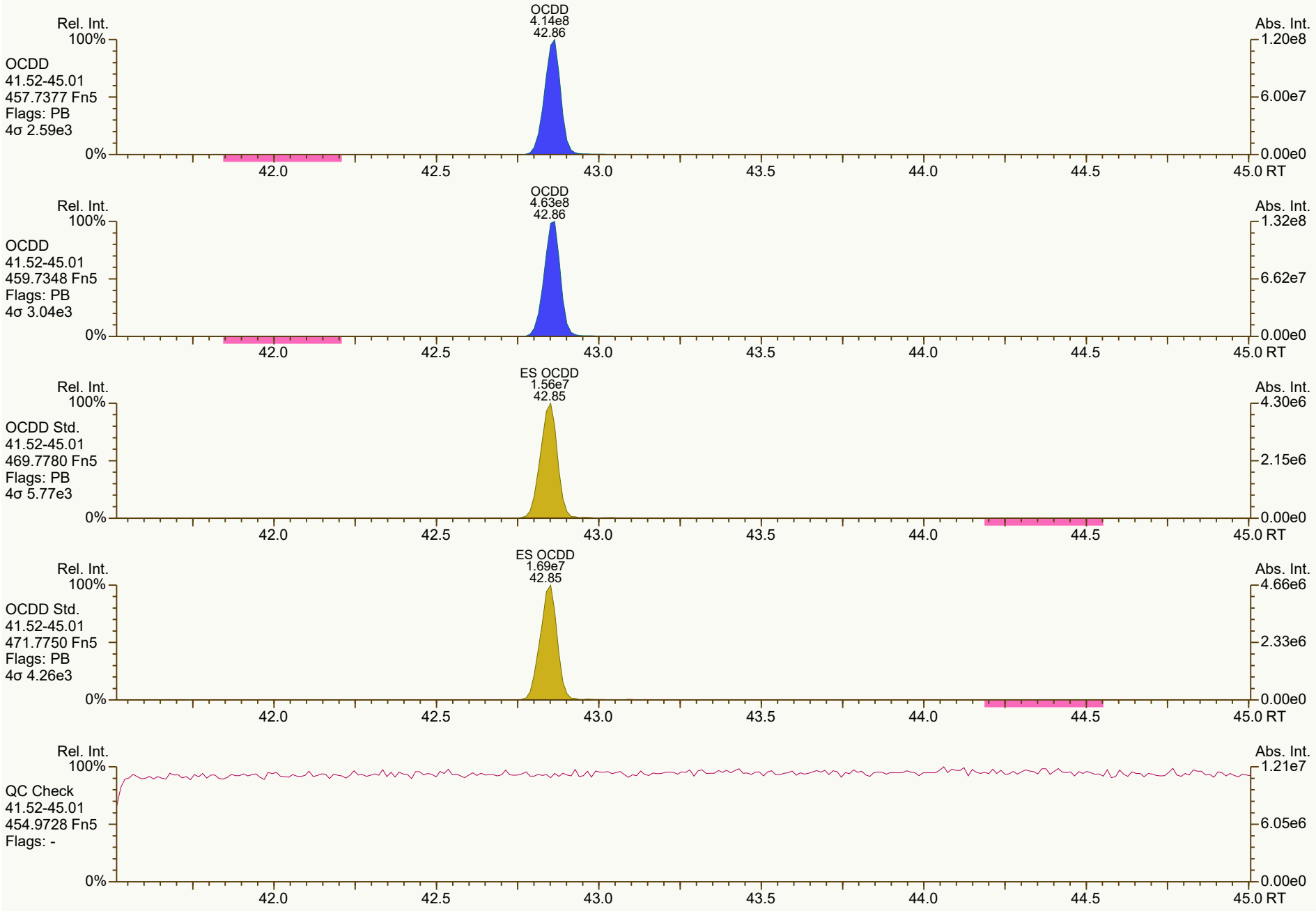

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.03e6
4.02e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
6.31e6
3.16e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.70e7
8.48e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.06e7
5.32e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.21e7
6.05e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
0%
2378D
7.60e7
27.59
Abs. Int.
1.77e7
8.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
0%
2378D
9.65e7
27.59
Abs. Int.
2.26e7
1.13e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
2.37e5
1.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
0%
AS 1368D
1.42e7
23.72
TS 1378D
1.82e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
Abs. Int.
3.87e6
1.93e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
0%
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.83e7
27.91
Abs. Int.
4.89e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.74e3
0%
RRF = (4.24e8 + 2.70e8) * 100pg / (1.73e7 + 1.11e7) * 2500pg = 0.977
DTF 11-Nov-2021 10:26
12378D
4.24e8*
33.11
Abs. Int.
1.28e8
6.41e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.72e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:25:26 PM
12378D
2.70e8*
33.11
Abs. Int.
8.21e7
4.10e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 1.97e3
0%
FS 12478D
1.69e7
31.84
CS 12347D
1.38e7
32.59
ES 12378D
1.73e7
33.09
Abs. Int.
5.02e6
2.51e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 1.41e3
0%
FS 12478D
1.10e7
31.84
CS 12347D
8.57e6
32.59
ES 12378D
1.11e7
33.09
Abs. Int.
3.13e6
1.56e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.31e6
3.16e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

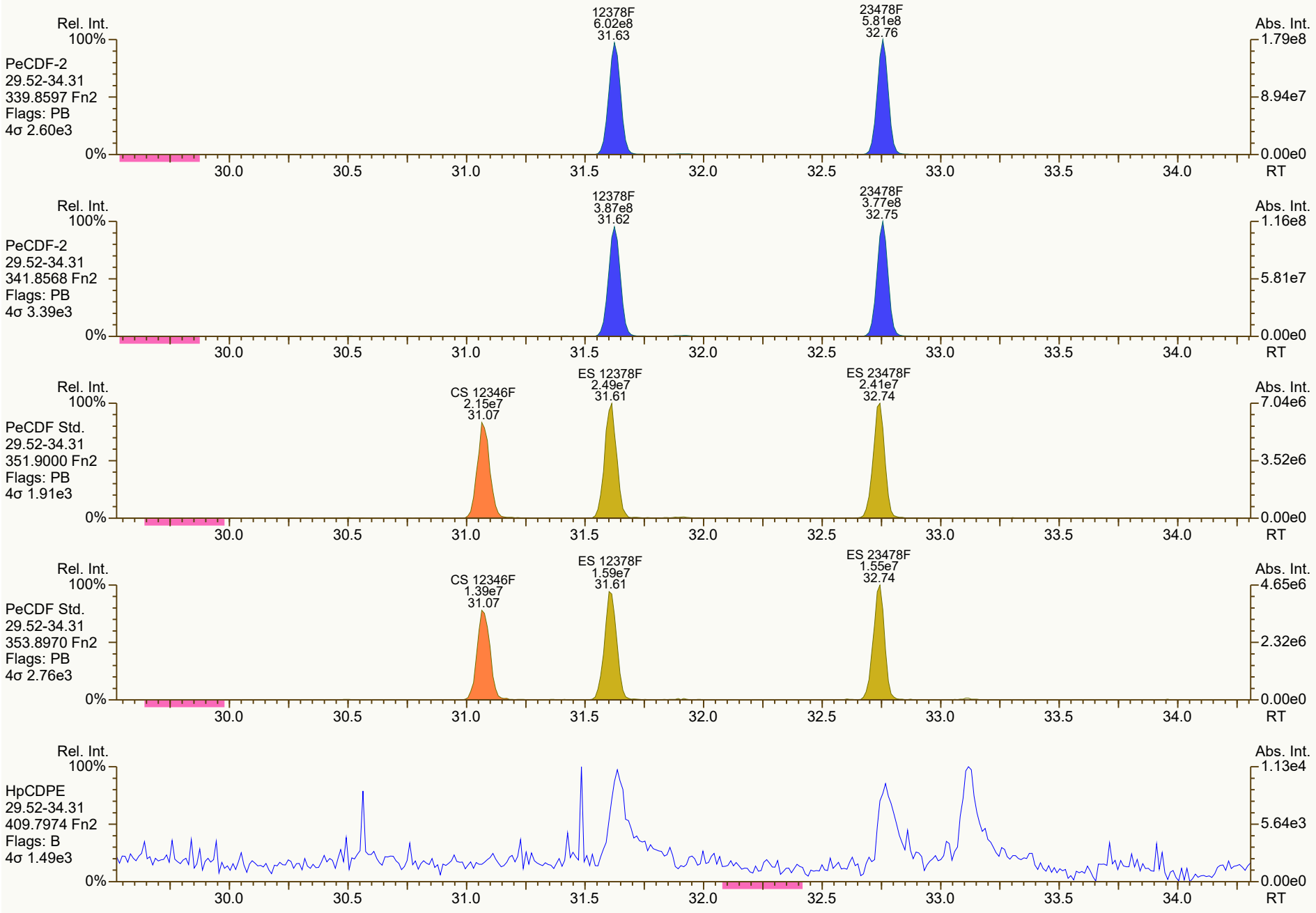

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
0%
123478D
3.52e8
37.05
123678D
3.52e8
37.17
123789D
3.72e8
37.47
Abs. Int.
1.17e8
5.83e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
0%
123478D
2.81e8
37.05
123678D
2.79e8
37.16
123789D
2.97e8
37.47
Abs. Int.
9.35e7
4.67e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
0%
FS 123468D
1.55e7
35.98
ES 123478D
1.33e7
37.03
ES 123678D
1.29e7
37.15
JS 123467D
6.40e6
37.35
ES 123789D
1.48e7
37.46
Abs. Int.
4.80e6
2.40e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
0%
FS 123468D
1.24e7
35.98
ES 123478D
1.08e7
37.03
ES 123678D
1.06e7
37.15
JS 123467D
5.21e6
37.35
ES 123789D
1.18e7
37.46
Abs. Int.
3.84e6
1.92e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.70e7
8.48e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
1234678D
2.91e8
40.29
Abs. Int.
1.16e8
5.82e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
1234678D
2.79e8
40.29
Abs. Int.
1.11e8
5.53e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
FS 1234679D
1.48e7
39.61
ES 1234678D
1.16e7
40.28
Abs. Int.
5.63e6
2.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
FS 1234679D
1.40e7
39.61
ES 1234678D
1.12e7
40.28
Abs. Int.
5.36e6
2.68e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.06e7
5.32e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.59e3
0%
OCDD
4.14e8
42.86
Abs. Int.
1.20e8
6.00e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
OCDD
4.63e8
42.86
Abs. Int.
1.32e8
6.62e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.77e3
0%
ES OCDD
1.56e7
42.85
Abs. Int.
4.30e6
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.26e3
0%
ES OCDD
1.69e7
42.85
Abs. Int.
4.66e6
2.33e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.21e7
6.05e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 2.26e3
0%
2378F
9.73e7
26.68
Abs. Int.
2.17e7
1.08e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 2.01e3
0%
2378F
1.26e8
26.68
Abs. Int.
2.85e7
1.42e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.95e4
0%
AS 1368F
2.07e7
21.49
JS 1234F
1.84e7
25.24
ES 2378F
1.95e7
26.66
Abs. Int.
4.38e6
2.19e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 7.53e3
0%
AS 1368F
2.62e7
21.49
JS 1234F
2.32e7
25.24
ES 2378F
2.51e7
26.65
Abs. Int.
5.43e6
2.72e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.55e3
0%
Abs. Int.
6.34e3
3.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

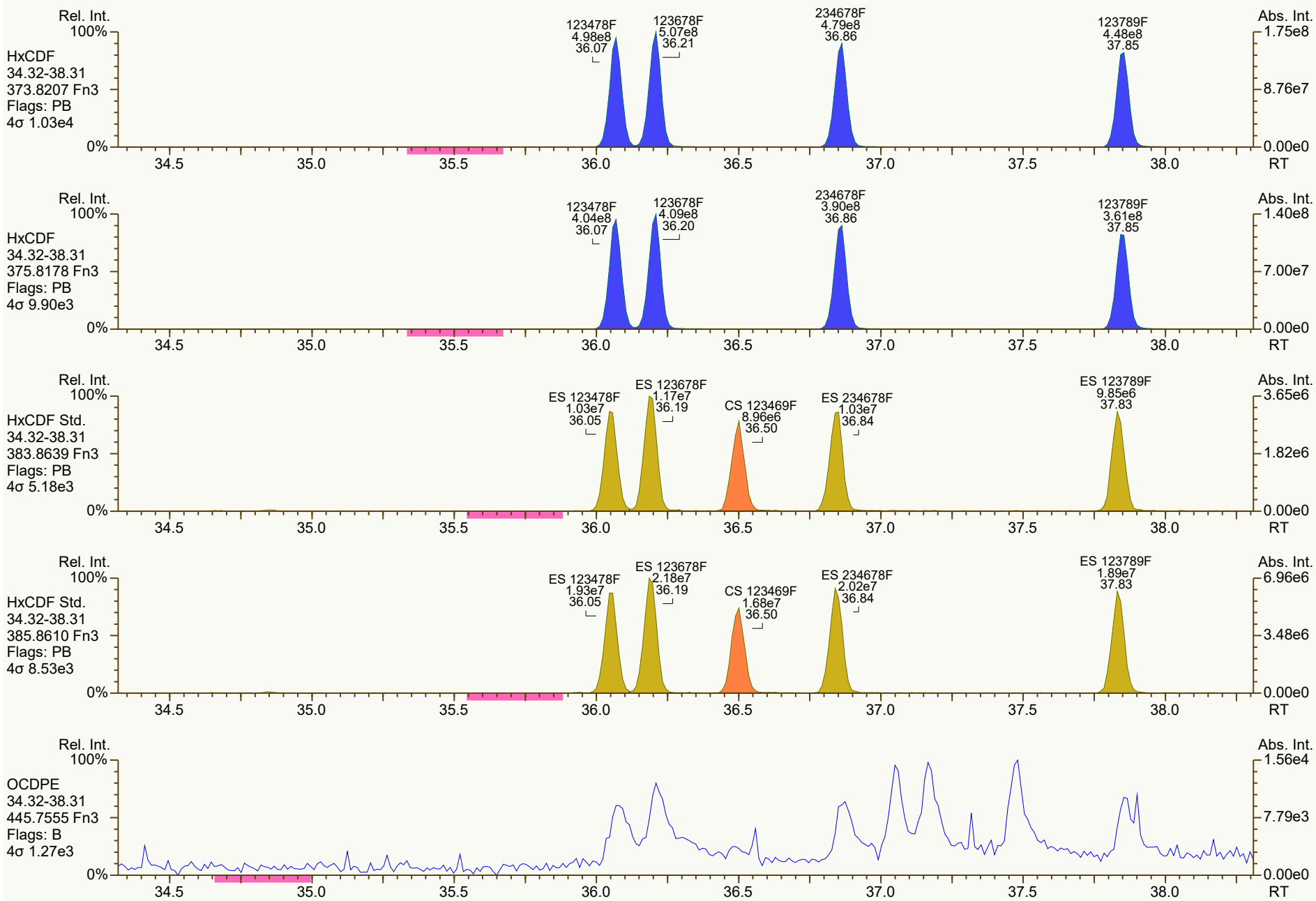

Rel. Int.
100%
0%
Abs. Int.
9.54e3
4.77e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 2.51e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.38e4
6.90e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.99e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.03e6
4.02e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PB
4σ 2.60e3
12378F
6.02e8
31.63
23478F
5.81e8
32.76
Abs. Int.
1.79e8
8.94e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PB
4σ 3.39e3
12378F
3.87e8
31.62
23478F
3.77e8
32.75
Abs. Int.
1.16e8
5.81e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 1.91e3
CS 12346F
2.15e7
31.07
ES 12378F
2.49e7
31.61
ES 23478F
2.41e7
32.74
Abs. Int.
7.04e6
3.52e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.76e3
CS 12346F
1.39e7
31.07
ES 12378F
1.59e7
31.61
ES 23478F
1.55e7
32.74
Abs. Int.
4.65e6
2.32e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.49e3
Abs. Int.
1.13e4
5.64e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

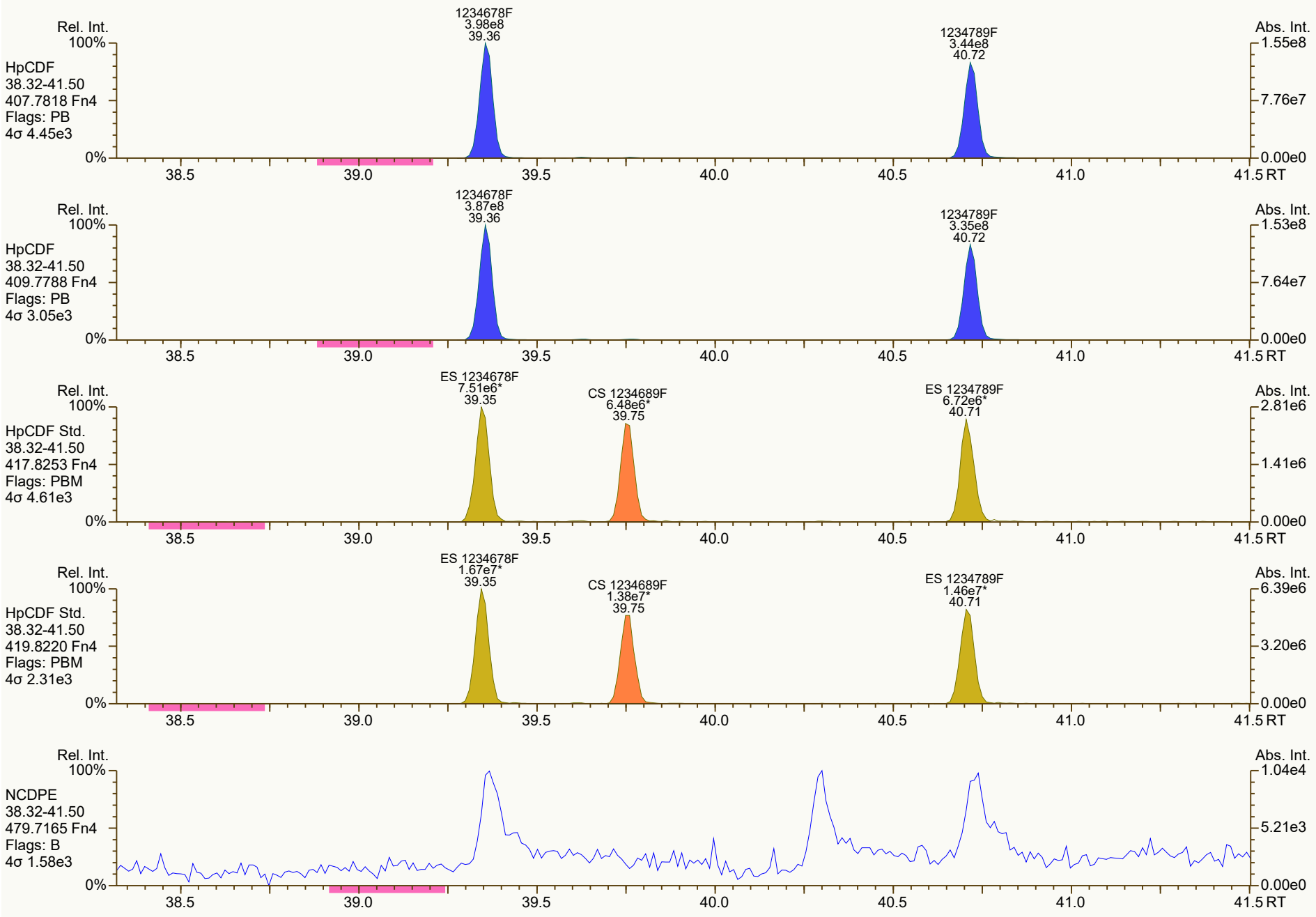
SGS ID: CS6_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

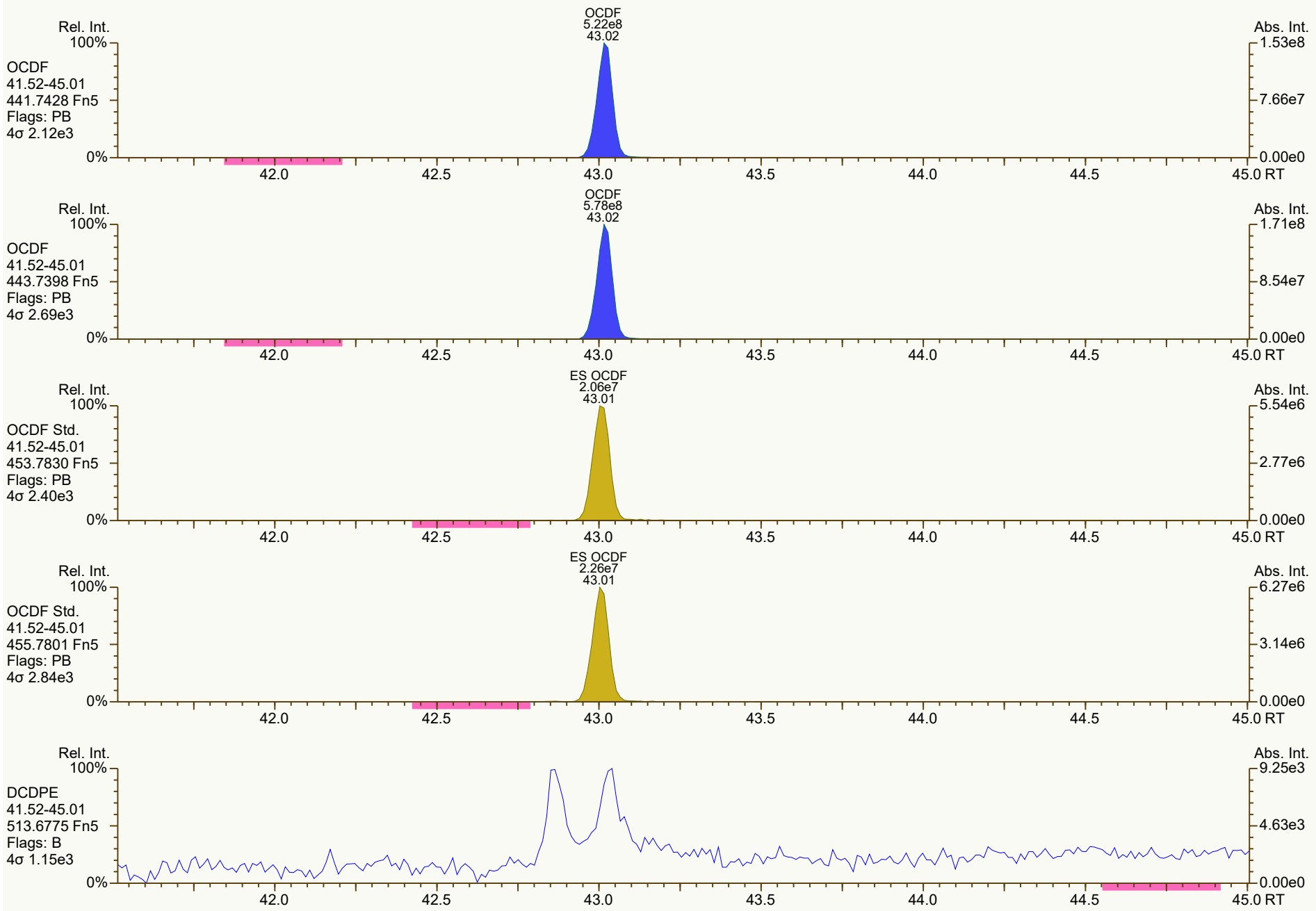
Sample ID: 25-5-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71

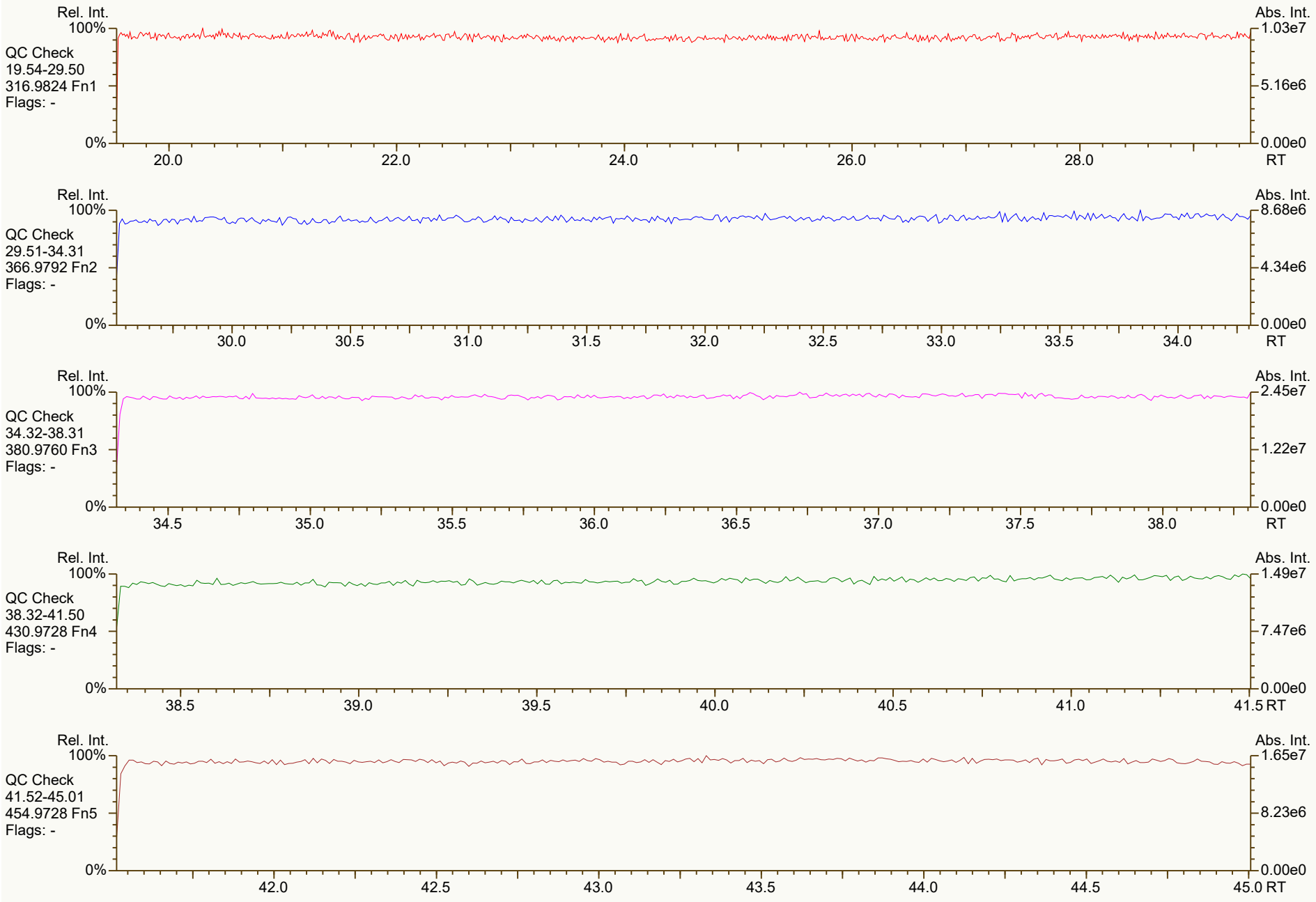
Acq: 10-Nov-2021 15:40:10
User: DTF Datafile: 211110C10



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3049, 4880, 9677 scc: 172-736
PKD: 10-Nov-2021 16:47 Printed: 11-Nov-2021 10:41 Page 10 of 12


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e8
39.36
1234789F
3.44e8
40.72
Abs. Int.
1.55e8
7.76e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e8
39.36
1234789F
3.35e8
40.72
Abs. Int.
1.53e8
7.64e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
Abs. Int.
2.81e6
1.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
Abs. Int.
1.04e4
5.21e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

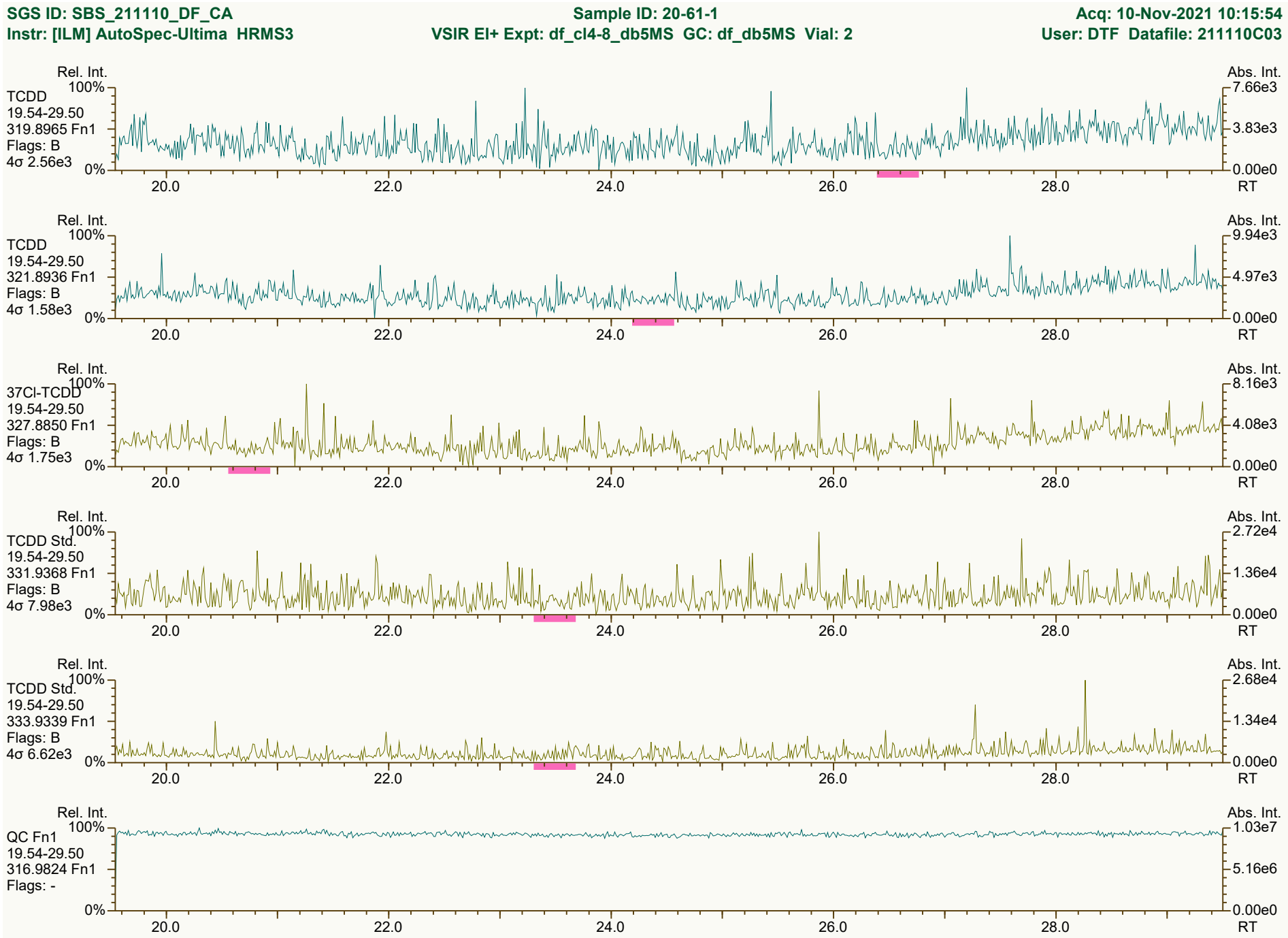

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
OCDF
5.22e8
43.02
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
OCDF
5.78e8
43.02
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
ES OCDF
2.06e7
43.01
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDF
2.26e7
43.01
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.03e7
5.16e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.68e6
4.34e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.45e7
1.22e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.49e7
7.47e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.65e7
8.23e6
0.00e0

SGS ID: SBS_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

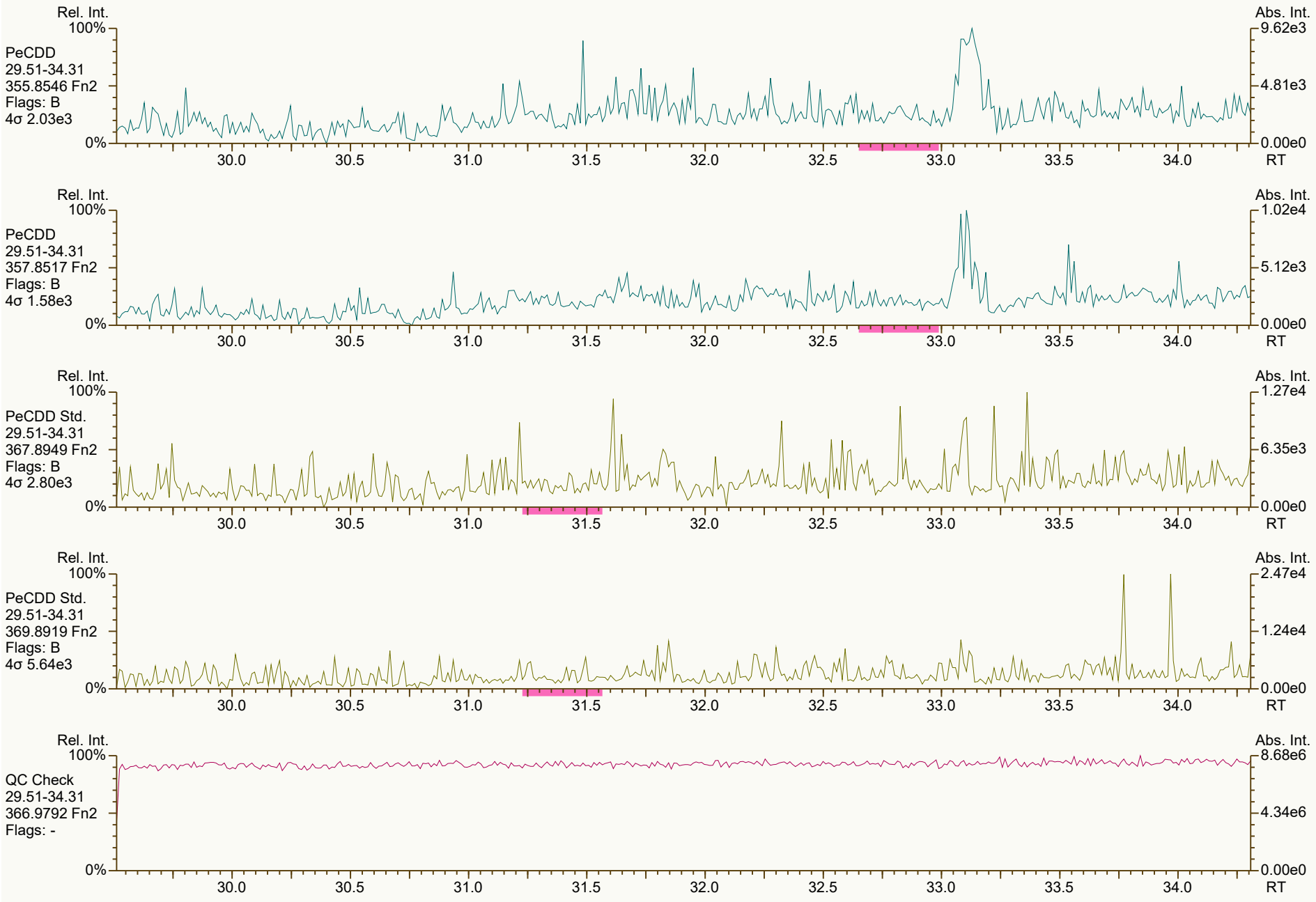
Sample ID: 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 10-Nov-2021 10:15:54
User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4939, 4247, 1318 scc: 876-647
PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: B
4σ 2.56e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.75e3
0%
Abs. Int.
8.16e3
4.08e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: B
4σ 7.98e3
0%
Abs. Int.
2.72e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: B
4σ 6.62e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: B
4σ 2.80e3
0%
Abs. Int.
1.27e4
6.35e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: B
4σ 5.64e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.68e6
4.34e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

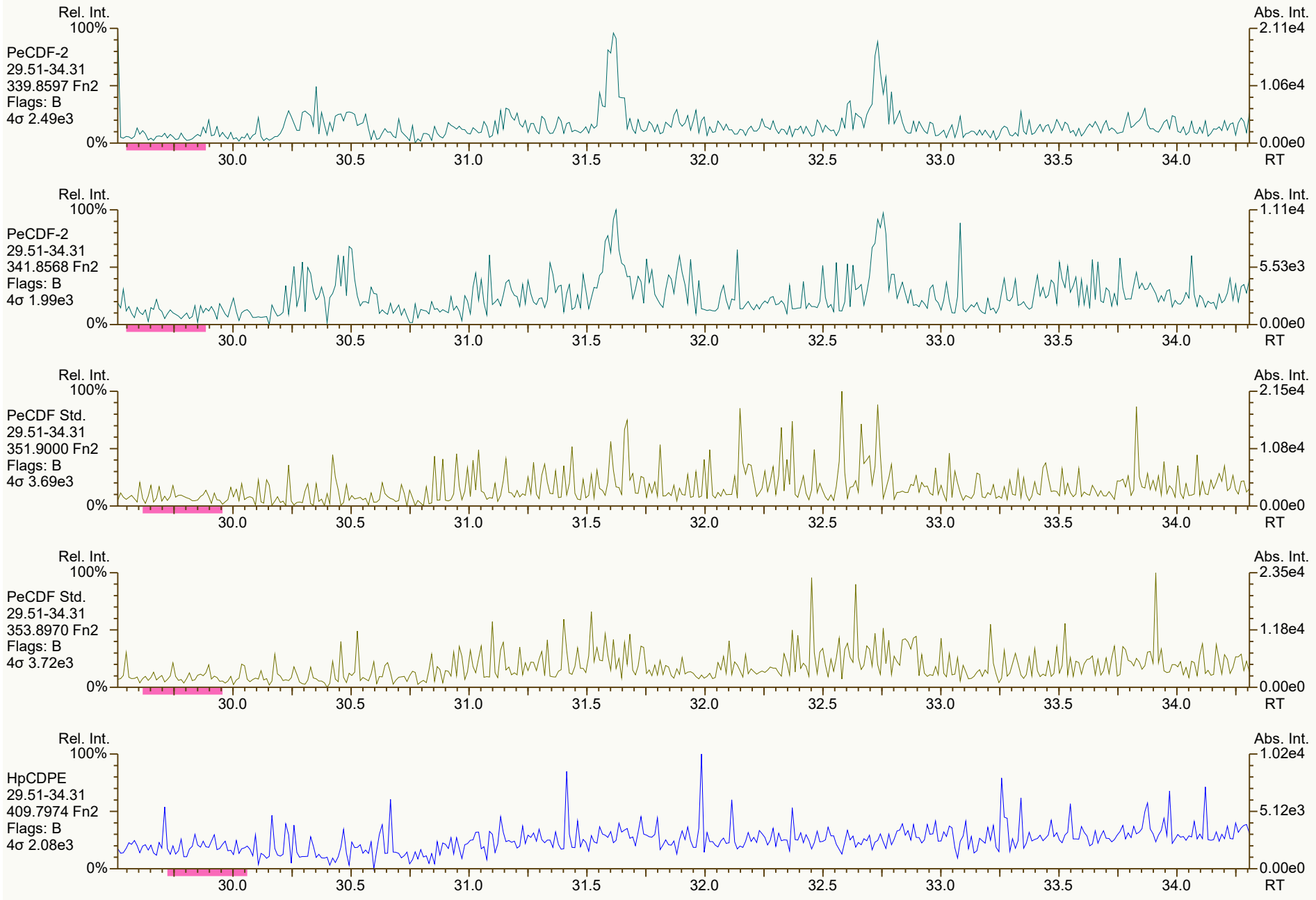

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: B
4σ 5.99e3
0%
Abs. Int.
1.61e4
8.05e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.45e7
1.22e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

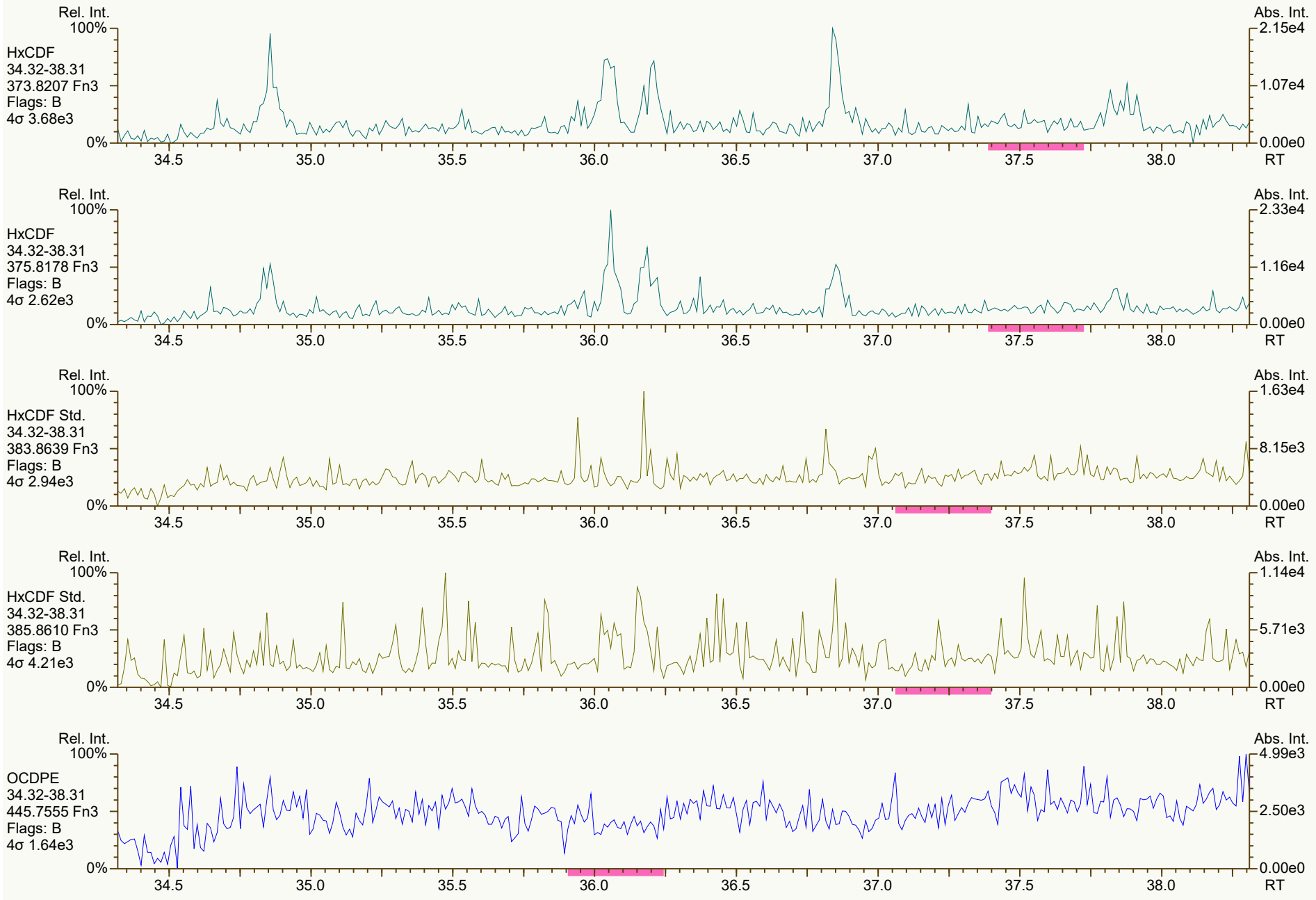

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.62e4
8.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: B
4σ 2.39e3
0%
Abs. Int.
2.45e4
1.23e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: B
4σ 2.97e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.49e7
7.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.07e4
5.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.42e4
7.11e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.65e7
8.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
2468F
3.48e5*
22.78
Abs. Int.
7.07e4
3.53e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
2468F
5.04e5*
22.78
Abs. Int.
1.06e5
5.32e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
Abs. Int.
5.11e4
2.56e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
Abs. Int.
2.83e4
1.42e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
9.47e3
4.73e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
8.70e3
4.35e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.84e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.49e3
4.75e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 3.09e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.03e7
5.16e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: B
4σ 2.49e3
0%
Abs. Int.
2.11e4
1.06e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: B
4σ 3.69e3
0%
Abs. Int.
2.15e4
1.08e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: B
4σ 3.72e3
0%
Abs. Int.
2.35e4
1.18e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
2.15e4
1.07e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.33e4
1.16e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: B
4σ 4.21e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.64e3
0%
Abs. Int.
4.99e3
2.50e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

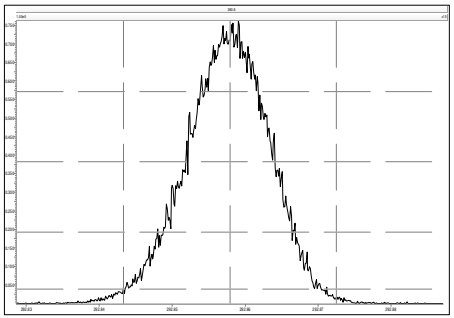

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: B
4σ 2.83e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: B
4σ 5.26e3
0%
Abs. Int.
2.80e4
1.40e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.49e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.02e4
5.08e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
6.88e3
3.44e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.40e3
0%
Abs. Int.
4.10e3
2.05e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

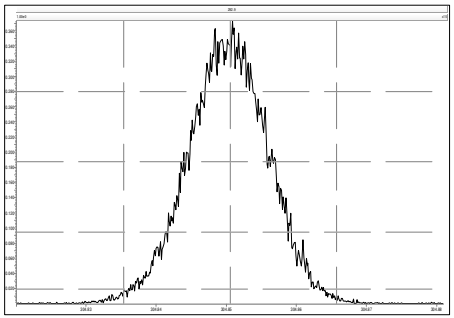
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

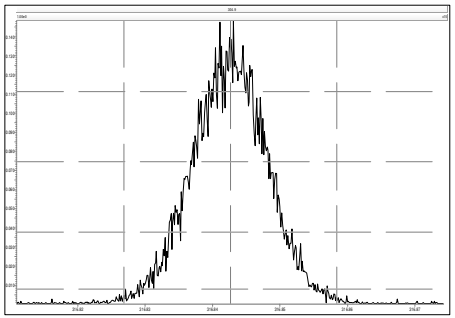
M 292.9824 R 10731



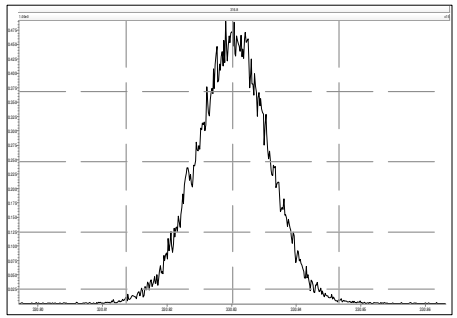
M 304.9824 R 11311



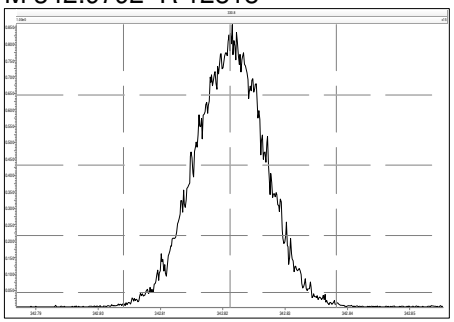
M 316.9824 R 12373



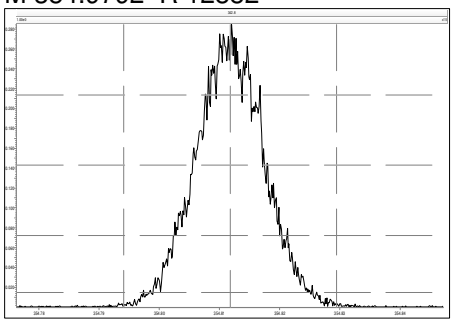
M 330.9792 R 12887



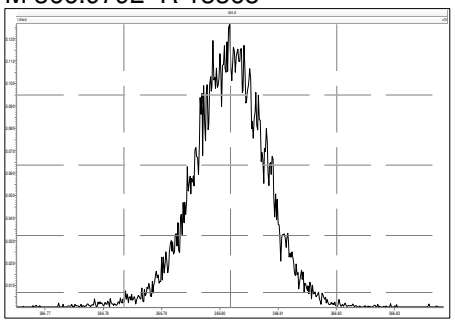
M 342.9792 R 12818



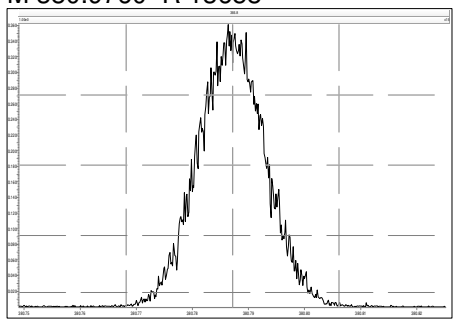
M 354.9792 R 12882



M 366.9792 R 13368



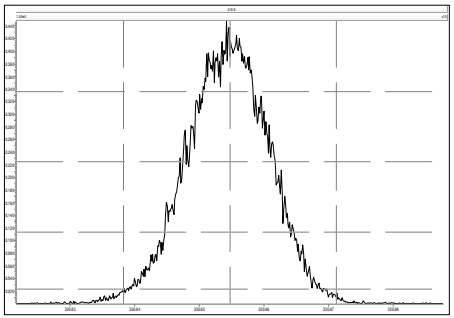
M 380.9760 R 13658



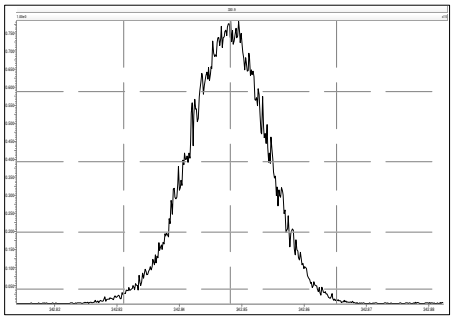
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

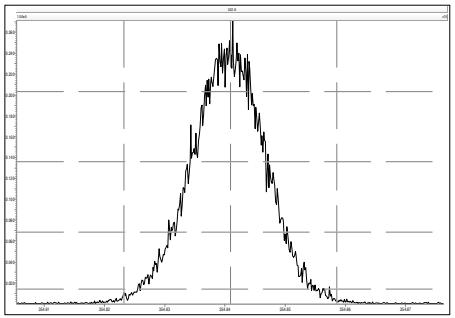
M 330.9792 R 11112



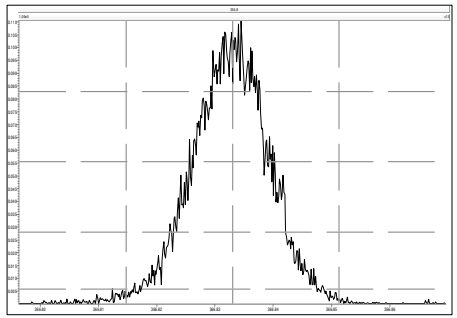
M 342.9792 R 11909



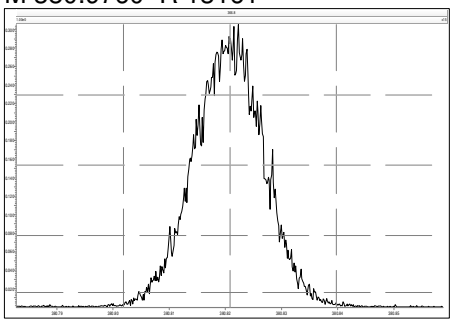
M 354.9792 R 11684



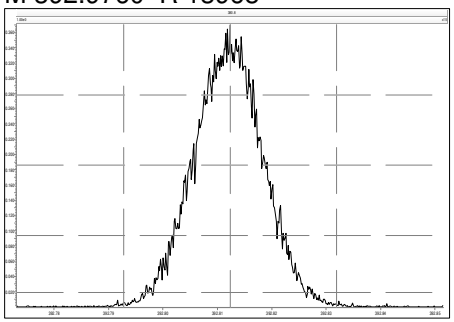
M 366.9792 R 11962



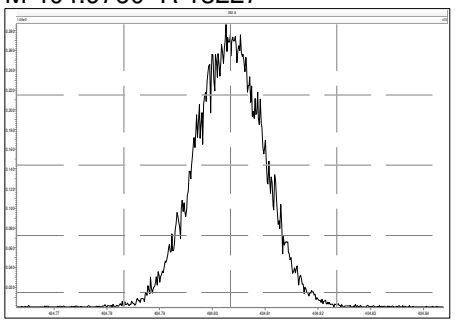
M 380.9760 R 13161



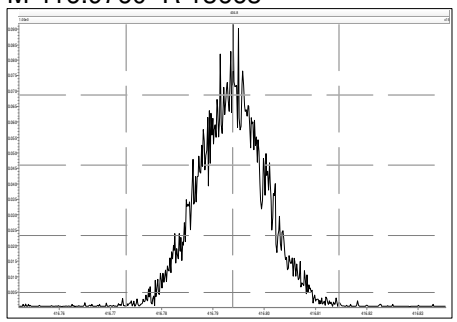
M 392.9760 R 13968



M 404.9760 R 13227



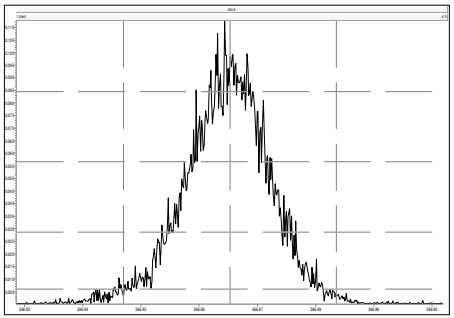
M 416.9760 R 13663



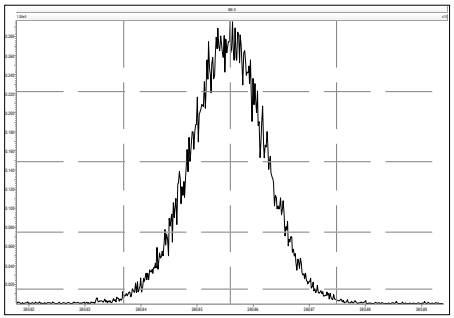
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

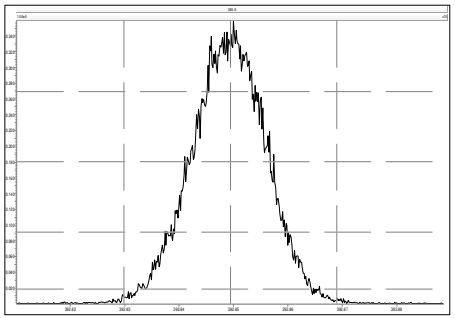
M 366.9792 R 10680



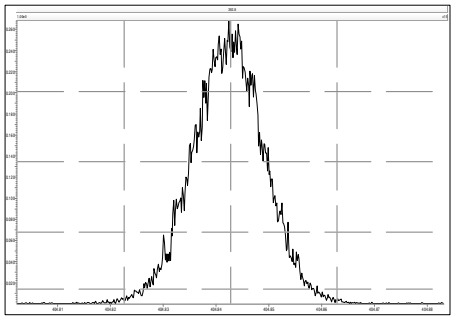
M 380.9760 R 12315



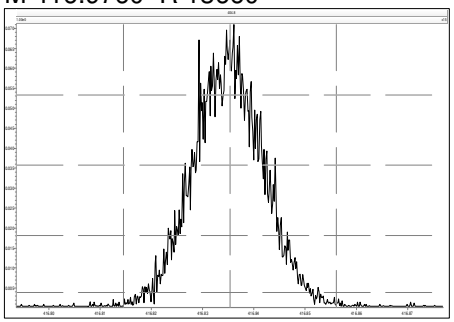
M 392.9760 R 12197



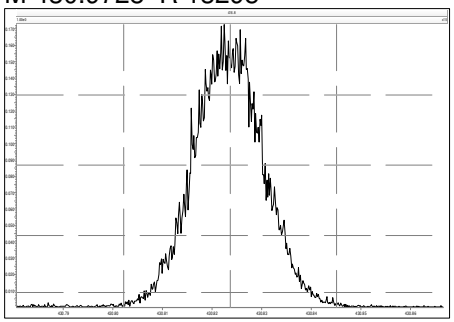
M 404.9760 R 12433



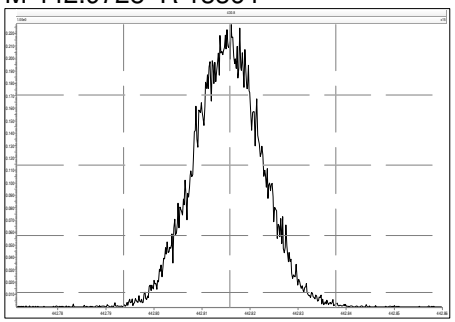
M 416.9760 R 13660



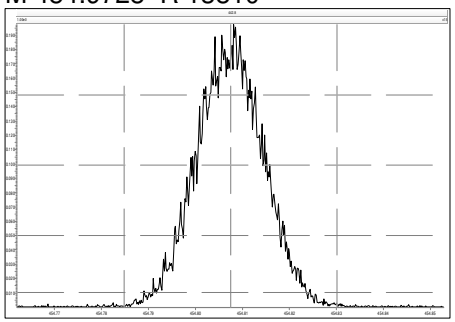
M 430.9728 R 13295



M 442.9728 R 13364



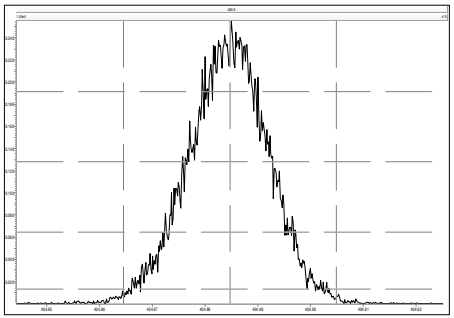
M 454.9728 R 13810



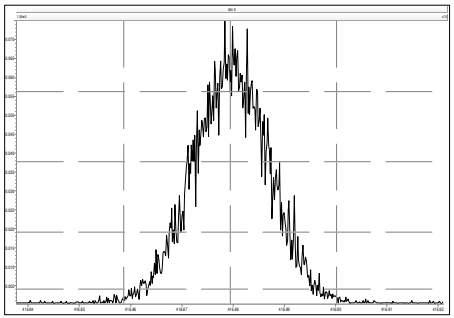
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

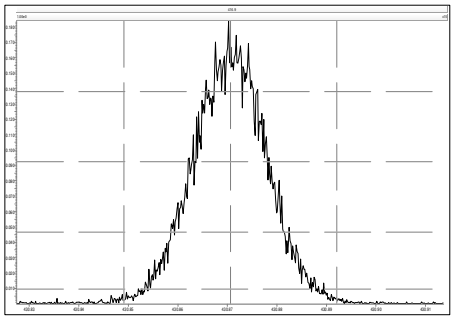
M 404.9760 R 11679



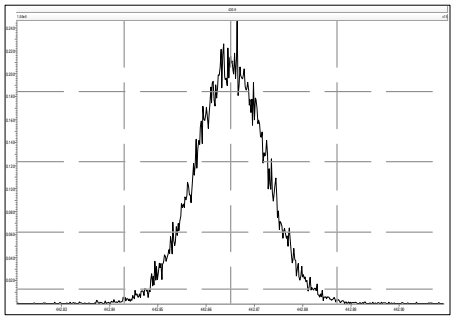
M 416.9760 R 12886



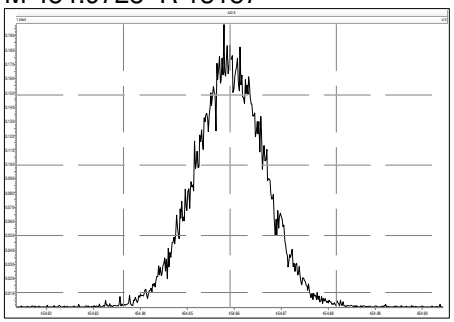
M 430.9728 R 12253



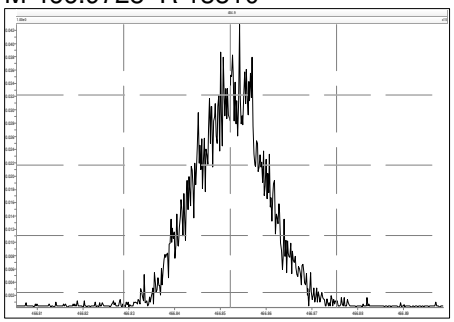
M 442.9728 R 12756



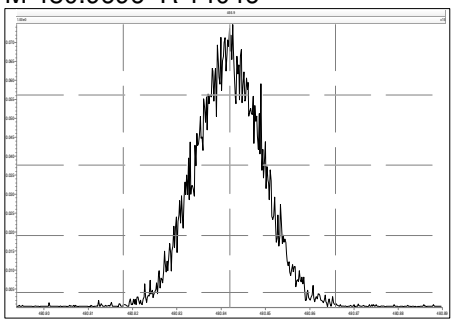
M 454.9728 R 13157



M 466.9728 R 13810



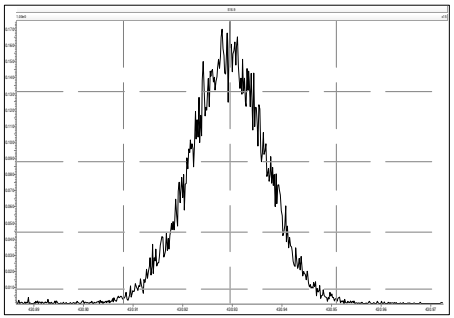
M 480.9696 R 14046



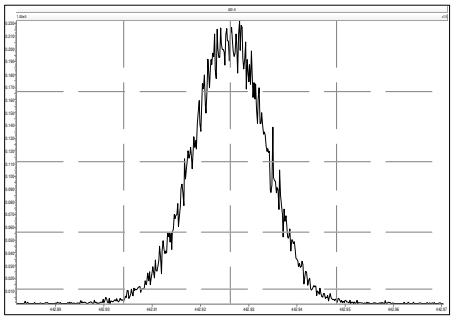
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

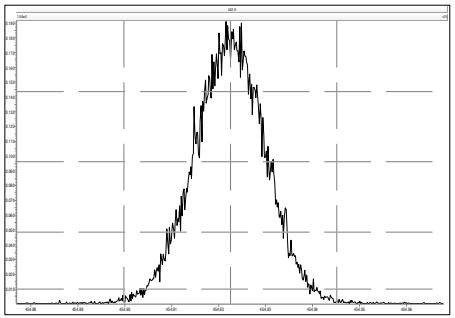
M 430.9728 R 11574



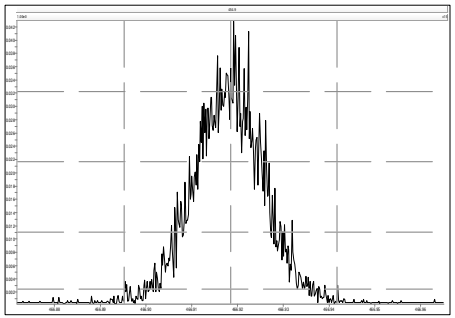
M 442.9728 R 12198



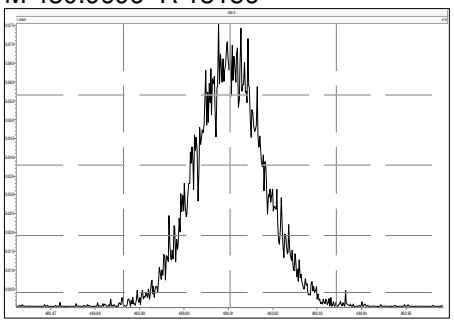
M 454.9728 R 12950



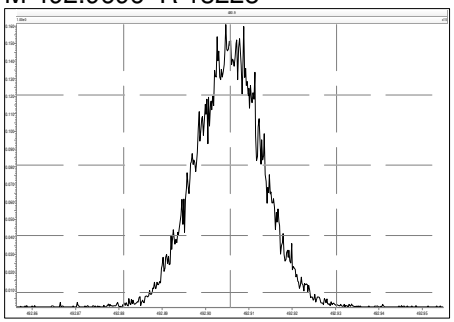
M 466.9728 R 13088



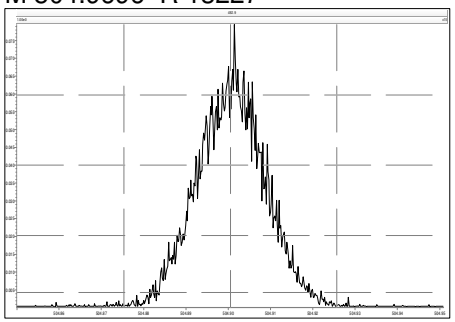
M 480.9696 R 13156



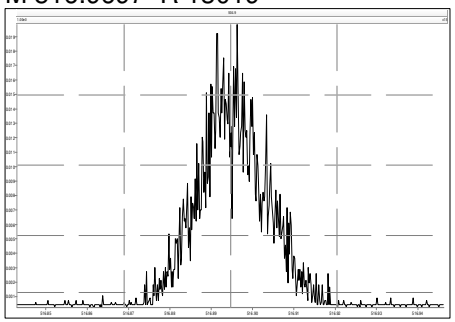
M 492.9696 R 13228



M 504.9696 R 13227



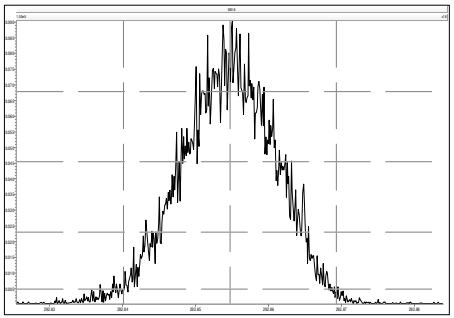
M 516.9697 R 13019



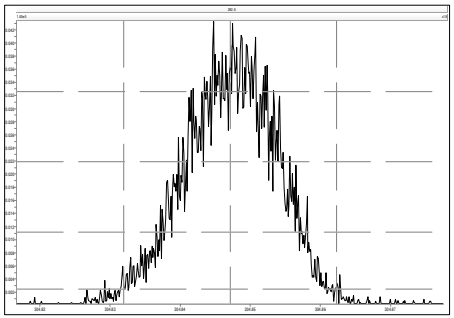
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

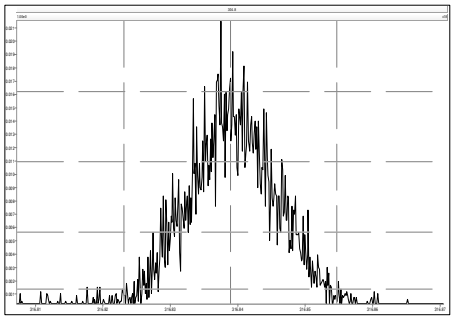
M 292.9824 R 10122



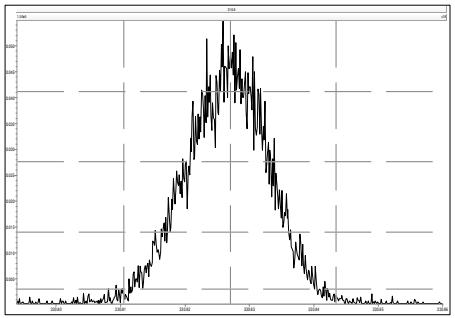
M 304.9824 R 10329



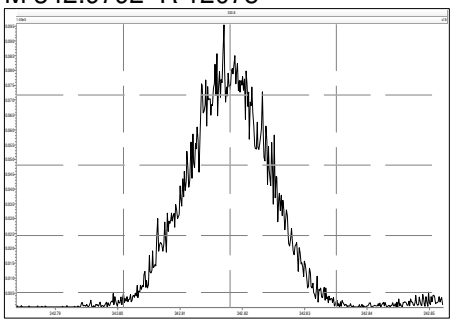
M 316.9824 R 11964



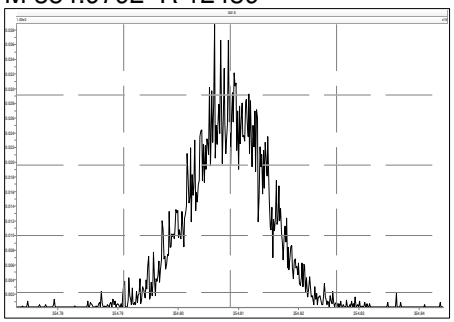
M 330.9792 R 11062



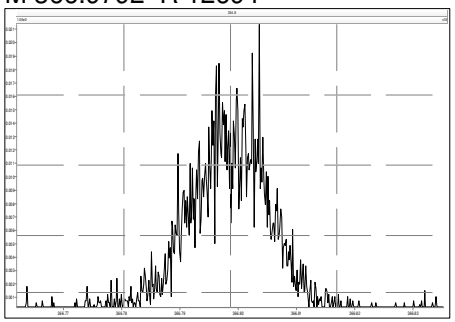
M 342.9792 R 12075



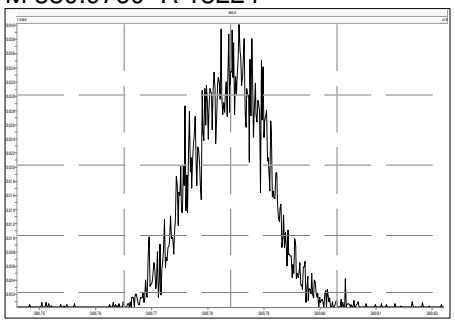
M 354.9792 R 12439



M 366.9792 R 12694



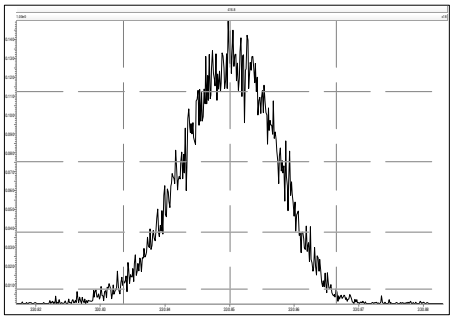
M 380.9760 R 13224



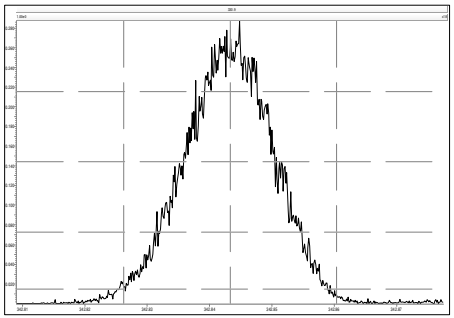
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

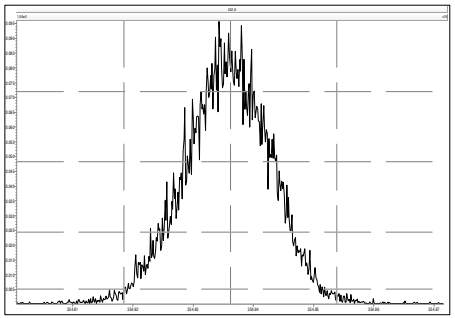
M 330.9792 R 10730



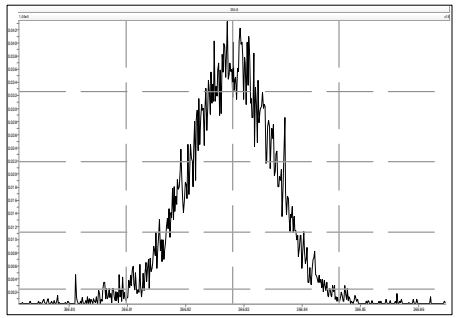
M 342.9792 R 10039



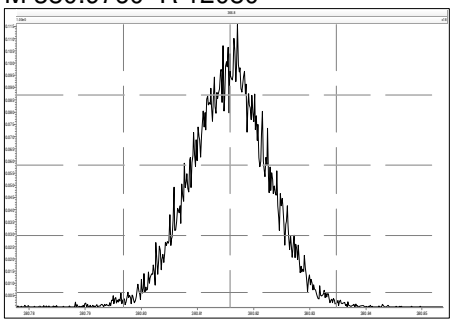
M 354.9792 R 11108



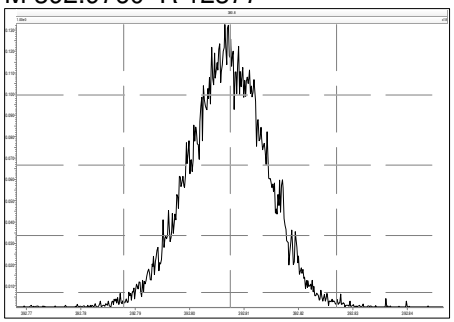
M 366.9792 R 11520



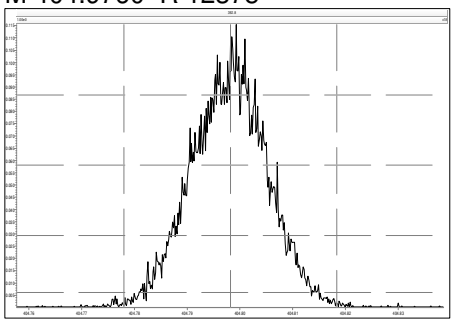
M 380.9760 R 12080



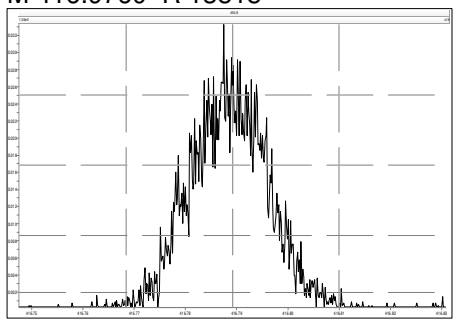
M 392.9760 R 12377



M 404.9760 R 12375



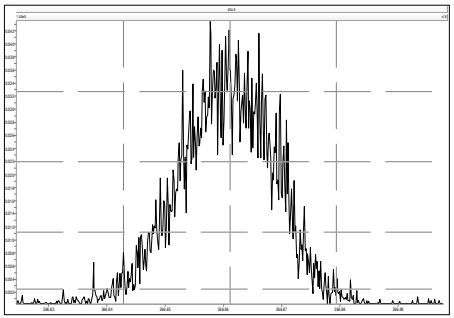
M 416.9760 R 13515



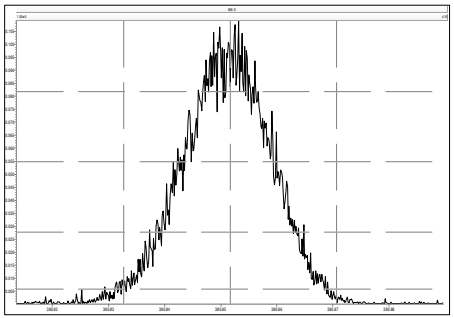
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

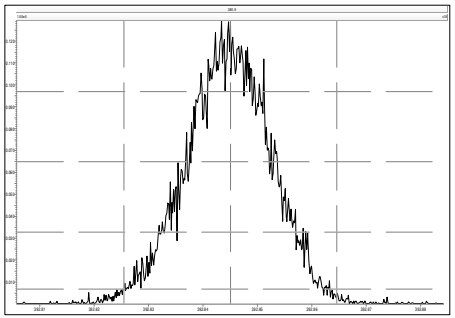
M 366.9792 R 10866



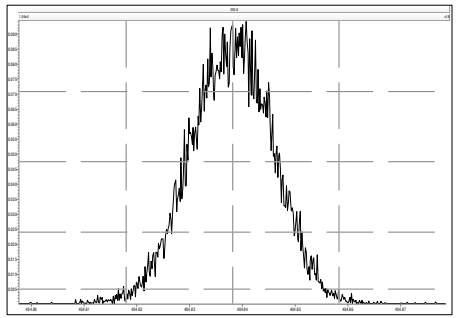
M 380.9760 R 10416



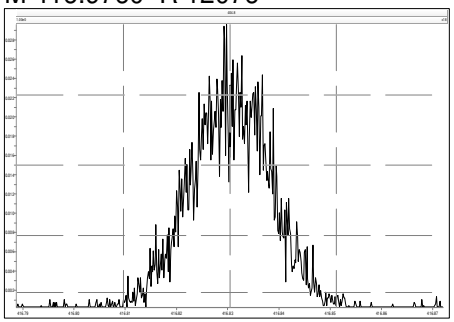
M 392.9760 R 10640



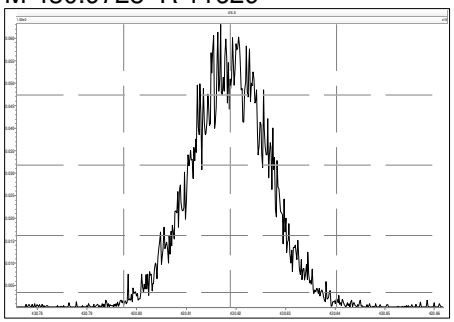
M 404.9760 R 11957



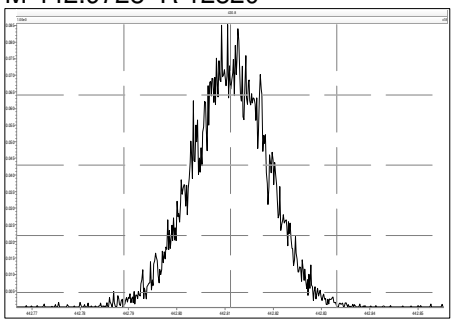
M 416.9760 R 12076



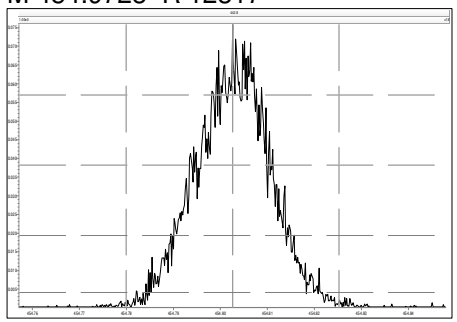
M 430.9728 R 11629



M 442.9728 R 12820



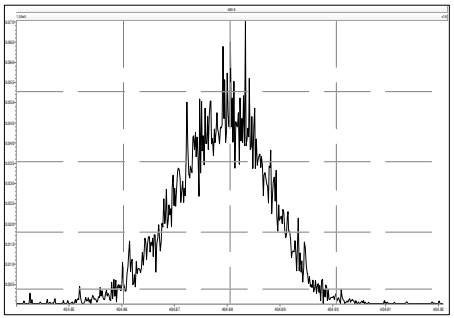
M 454.9728 R 12317



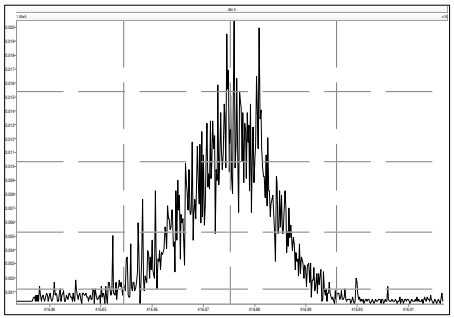
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

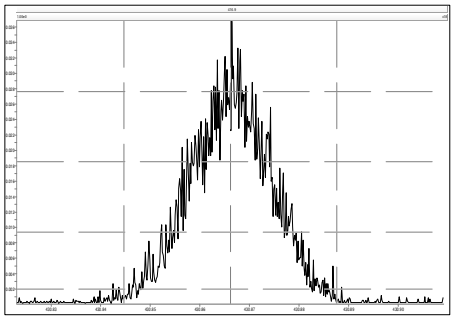
M 404.9760 R 10505



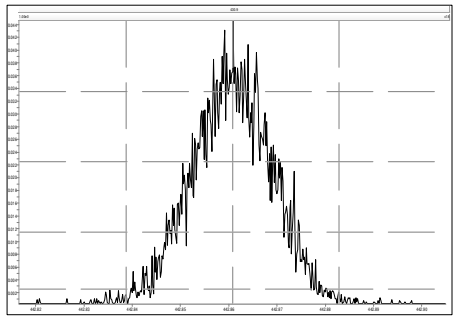
M 416.9760 R 12500



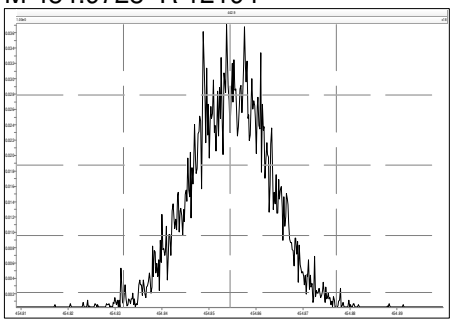
M 430.9728 R 11362



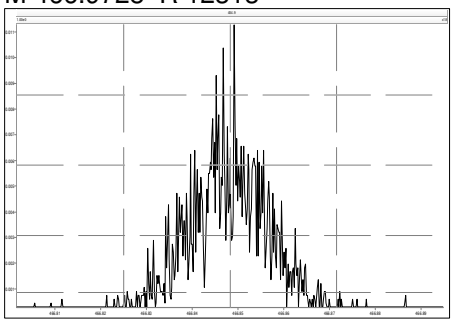
M 442.9728 R 12756



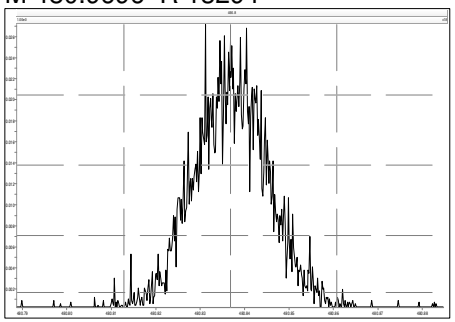
M 454.9728 R 12194



M 466.9728 R 12313



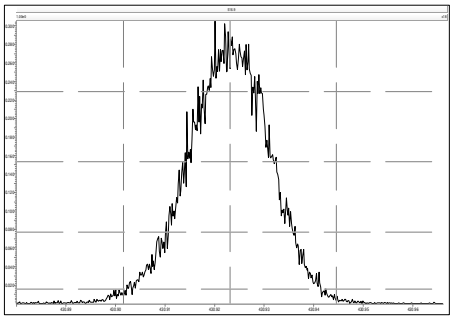
M 480.9696 R 13294



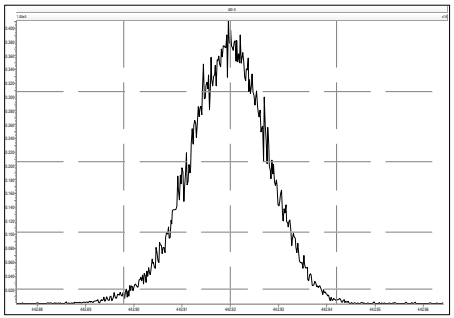
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

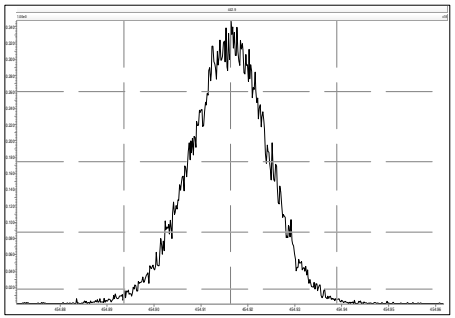
M 430.9728 R 11312



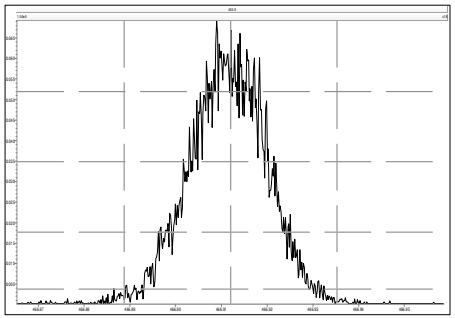
M 442.9728 R 11110



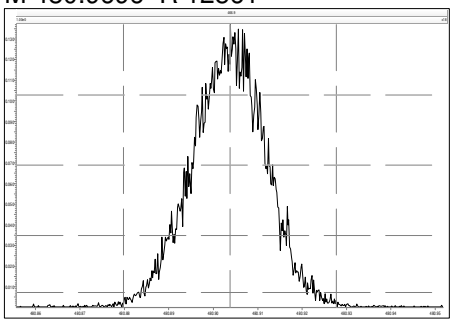
M 454.9728 R 11906



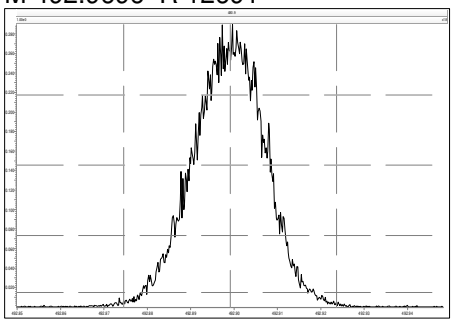
M 466.9728 R 12562



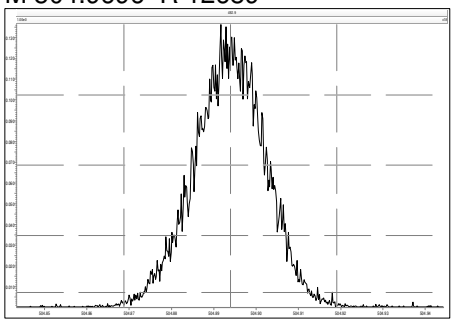
M 480.9696 R 12561



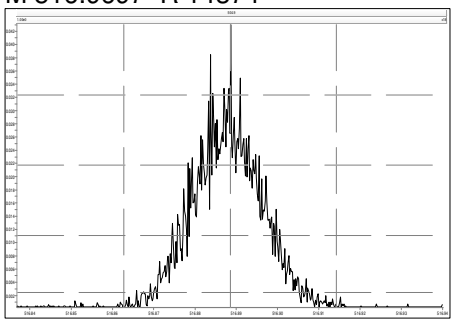
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



APPROVED
Carla_Lyon , 1/26/2022, 3:57:02 PM

Lab ID: OPR1_18819_DF **Acq'd:** 20 Jan 2022 11:32 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 **UTP:** 21-Jan-2022 12:41:57 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 697-611-TLV

Datafile: 220120C02 **Report:** 21 Jan 2022 12:45 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.68		1.0008	1.0007	-0.2	2.12E+06	0.81	Y	1.18	12.1	5655.871	0.321
12378-PeCDD	34.00		1.0006	1.0006	0	6.85E+06	1.65	Y	1.04	52	6070.623	0.483
123478-HxCDD	37.86		1.0004	1.0004	0	7.78E+06	1.28	Y	1.09	59.9	4977.852	0.336
123678-HxCDD	37.98		1.0034	1.0034	0	8.21E+06	1.27	Y	1.15	56.9	4977.852	0.327
123789-HxCDD	38.26		1.0109	1.0109	0	7.91E+06	1.24	Y	1.05	51.3	4977.852	0.31
1234678-HpCDD	40.88		1.0003	1.0003	0	7.52E+06	1.06	Y	1.06	56.3	4678.282	0.284
OCDD	43.53		1.0002	1.0003	+0.3	9.74E+06	0.94	Y	1.13	114	3010.956	0.402
2378-TCDF	27.84		1.0008	1.0009	+0.2	2.82E+06	0.82	Y	1.08	10.9	6908.662	0.297
12378-PeCDF	32.54		1.0005	1.0005	0	1.24E+07	1.53	Y	1.02	51.3	9493.019	0.387
23478-PeCDF	33.65		1.0005	1.0005	0	1.33E+07	1.58	Y	1.02	56.6	9493.019	0.403
123478-HxCDF	36.86		1.0004	1.0004	0	1.24E+07	1.24	Y	1.27	56.5	3655.327	0.153
123678-HxCDF	37.01		1.0004	1.0005	+0.2	1.38E+07	1.25	Y	1.15	56.4	3655.327	0.139
234678-HxCDF	37.69		1.0004	1.0005	+0.2	9.51E+06	1.23	Y	1.19	57.4	3655.327	0.208
123789-HxCDF	38.62		1.0004	1.0004	0	1.04E+07	1.27	Y	1.16	52.5	3655.327	0.161
1234678-HpCDF	39.95		1.0002	1.0003	+0.2	1.37E+07	1.04	Y	1.37	54.9	3595.802	0.104
1234789-HpCDF	41.34		1.0003	1.0003	0	9.41E+06	1.07	Y	1.31	55.9	3595.802	0.181
OCDF	43.71		1.0002	1.0003	+0.3	1.28E+07	0.89	Y	1.07	115	3429.035	0.3

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.66	1.0233	1.0234	+0.2	1.48E+07	0.79	Y	1.05	90.8
ES 12378-PeCDD	33.98	1.2121	1.2133	+2.4	1.27E+07	1.59	Y	0.88	92.9
ES 123478-HxCDD	37.85	0.9921	0.9922	+0.2	1.19E+07	1.26	Y	0.97	90.3
ES 123678-HxCDD	37.97	0.9951	0.9952	+0.2	1.26E+07	1.19	Y	0.94	98
ES 123789-HxCDD	38.25	1.0025	1.0027	+0.5	1.47E+07	1.26	Y	1.09	99.3
ES 1234678-HpCDD	40.87	1.0709	1.0712	+0.7	1.26E+07	1.12	Y	0.91	102
ES OCDD	43.51	1.1403	1.1407	+1.0	1.51E+07	0.90	Y	0.62	89.1
ES 2378-TCDF	27.82	1.0506	1.0512	+1.0	2.41E+07	0.82	Y	1.06	87.1
ES 12378-PeCDF	32.53	1.2281	1.2292	+2.1	2.37E+07	1.49	Y	0.91	99.6
ES 23478-PeCDF	33.64	1.2698	1.2712	+2.8	2.30E+07	1.56	Y	0.88	99.7
ES 123478-HxCDF	36.85	0.9657	0.9659	+0.4	1.73E+07	0.52	Y	1.20	106
ES 123678-HxCDF	36.99	0.9695	0.9696	+0.2	2.13E+07	0.53	Y	1.35	116
ES 234678-HxCDF	37.67	0.9874	0.9874	0	1.40E+07	0.56	Y	1.24	82.7
ES 123789-HxCDF	38.60	1.0116	1.0120	+0.9	1.71E+07	0.53	Y	1.16	109
ES 1234678-HpCDF	39.94	1.0467	1.0470	+0.7	1.83E+07	0.49	Y	0.97	139
ES 1234789-HpCDF	41.33	1.0830	1.0833	+0.7	1.29E+07	0.48	Y	0.85	111
ES OCDF	43.70	1.1451	1.1455	+1.0	2.07E+07	0.93	Y	0.81	94.2

Lab ID: OPR1_18819_DF **Acq'd:** 20 Jan 2022 11:32 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 **UTP:** 21-Jan-2022 12:41:57 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 697-611-TLV

Datafile: 220120C02 **Report:** 21 Jan 2022 12:45 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.01		-	-	-	1.56E+07	0.82	Y	-	-	
JS 1234-TCDF	26.46		-	-	-	2.61E+07	0.83	Y	-	-	
JS 123467-HxCDD	38.15		-	-	-	6.79E+06	1.32	Y	-	-	
CS 37Cl-2378-TCDD	28.69		1.0241	1.0242	+0.2	6.60E+06	n/a	-	1.20	88.2	
CS 12347-PeCDD	33.46		1.1943	1.1947	+0.8	3.81E+06	1.69	Y	0.75	32.5	
CS 12346-PeCDF	32.00		1.2083	1.2091	+1.5	2.13E+07	1.52	Y	0.85	95.9	
CS 123469-HxCDF	37.30		0.9778	0.9779	+0.2	1.82E+07	0.54	Y	1.12	120	
CS 1234689-HpCDF	40.34		1.0571	1.0574	+0.7	1.52E+07	0.47	Y	0.89	126	
~~SS 37Cl-2378-TCDD~~	~~28.69~~		~~1.0241~~	~~1.0242~~	~~+0.2~~	~~6.60E+06~~	~~n/a~~		~~1.15~~	~~97.3~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.46~~		~~1.1943~~	~~1.1947~~	~~+0.8~~	~~3.81E+06~~	~~1.69~~	~~Y~~	~~0.86~~	~~34.9~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~32.00~~		~~1.2083~~	~~1.2091~~	~~+1.5~~	~~2.13E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~96.1~~	
~~SS 123469-HxCDF~~	~~37.30~~		~~0.9778~~	~~0.9779~~	~~+0.2~~	~~1.82E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~104~~	
~~SS 1234689-HpCDF~~	~~40.34~~		~~1.0571~~	~~1.0574~~	~~+0.7~~	~~1.52E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~90.4~~	

Totals	Conc	EMPC
Total TCDD	60	60
Total PeCDD	82.9	82.9
Total HxCDD	186	186
Total HpCDD	71.1	71.1
Total Tetra-Octa Dioxins	514	514
Total TCDF	71.1	71.1
Total PeCDF	206	206
Total HxCDF	377	377
Total HpCDF	111	111
Total Tetra-Octa Furans	880	880
Total Tetra-Octa Dioxins & Furans	1390	1390

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.811	0.81
Response	2.12E+06	2.12E+06

Lab ID: OPR1_18819_DF **Acq'd: 20 Jan 2022 11:32 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18819_OPR001 **UTP: 21-Jan-2022 12:41:57 MLS** **J-level: 0.25 pg/uL Split: 1** **Checkcode: 697-611-TLV**

Datafile: 220120C02 **Report: 21 Jan 2022 12:45 MS** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.08		0.8755	0.8751	-0.6	3.10E+06	0.82	Y	1.18	17.7	5655.871	0.321
1379-TCDD	NotFnd		0.8876						1.18		5655.871	0.321
1369-TCDD	NotFnd		0.9023						1.18		5655.871	0.321
1469-TCDD	NotFnd		0.9291						1.18		5655.871	0.321
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		5655.871	0.321
1378-TCDD	NotFnd		0.9440						1.18		5655.871	0.321
1268-TCDD	NotFnd		0.9506						1.18		5655.871	0.321
1478-TCDD	NotFnd		0.9591						1.18		5655.871	0.321
1279-TCDD	NotFnd		0.9649						1.18		5655.871	0.321
1234/1269-TCDD	NotFnd		0.9771						1.18		5655.871	0.321
1236-TCDD	NotFnd		0.9820						1.18		5655.871	0.321
1237/1238-TCDD	NotFnd		0.9908						1.18		5655.871	0.321
1239-TCDD	28.52		0.9954	0.9952	-0.3	2.17E+06	0.80	Y	1.18	12.4	5655.871	0.321
2378-TCDD	**28.68**		**1.0008**	1.0007	**-0.2**	2.12E+06	0.81	Y	**1.18**	**12.1**	**5655.871**	**0.321**
1278-TCDD	NotFnd		1.0121						1.18		5655.871	0.321
1267-TCDD	NotFnd		1.0167						1.18		5655.871	0.321
1289-TCDD	29.64		1.0341	1.0343	+0.4	3.12E+06	0.85	Y	1.18	17.8	5655.871	0.321
12479/12468-PeCDD	31.49		0.9273	0.9267	-1.1	2.01E+06	1.56	Y	1.04	15.3	6070.623	0.483
12469-PeCDD	NotFnd		0.9430						1.04		6070.623	0.483
12368-PeCDD	NotFnd		0.9592						1.04		6070.623	0.483
12478-PeCDD	NotFnd		0.9647						1.04		6070.623	0.483
12379-PeCDD	NotFnd		0.9676						1.04		6070.623	0.483
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		6070.623	0.483
12346/12347-PeCDD	NotFnd		0.9860						1.04		6070.623	0.483
12378-PeCDD	34.00		**1.0006**	**1.0006**	**0**	**6.85E+06**	**1.65**	**Y**	**1.04**	**52**	**6070.623**	**0.483**
12367-PeCDD	NotFnd		1.0034						1.04		6070.623	0.483
12389-PeCDD	34.46		1.0134	1.0142	+1.7	2.05E+06	1.71	Y	1.04	15.6	6070.623	0.483
124679/124689-HxCDD	36.13		0.9545	0.9545	0	2.52E+06	1.24	Y	1.10	17.6	4977.852	0.323
123468-HxCDD	NotFnd		0.9715						1.10		4977.852	0.323
123679/123689-HxCDD	NotFnd		0.9793						1.10		4977.852	0.323
123469-HxCDD	NotFnd		0.9829						1.10		4977.852	0.323
123478-HxCDD	37.86		**1.0004**	**1.0004**	**0**	**7.78E+06**	**1.28**	**Y**	1.09	**59.9**	**4977.852**	**0.336**
123678-HxCDD	37.98		**1.0034**	**1.0034**	**0**	**8.21E+06**	**1.27**	**Y**	1.15	**56.9**	**4977.852**	**0.327**
123467-HxCDD	NotFnd		1.0082						1.10		4977.852	0.323
123789-HxCDD	38.26		**1.0109**	**1.0109**	**0**	**7.91E+06**	**1.24**	**Y**	1.05	**51.3**	**4977.852**	**0.31**

Lab ID: OPR1_18819_DF | **Acq'd:** 20 Jan 2022 11:32 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 | **UTP:** 21-Jan-2022 12:41:57 MLS | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 697-611-TLV

Datafile: 220120C02 | **Report:** 21 Jan 2022 12:45 MS | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.21		0.9838	0.9839	+0.2	1.97E+06	1.06	Y	1.06	14.8	4678.282	0.284
1234678-HpCDD	**40.88**		**1.0003**	**1.0003**	**0**	**7.52E+06**	**1.06**	**Y**	**1.06**	**56.3**	**4678.282**	**0.284**
OCDD	**43.53**		**1.0002**	**1.0003**	**+0.3**	**9.74E+06**	**0.94**	**Y**	**1.13**	**114**	**3010.956**	**0.402**
OCDD-a	NotFnd		1.0002						0.07		3401.432	7.11
1368-TCDF	23.02		0.8282	0.8274	-1.1	4.64E+06	0.80	Y	1.08	17.9	6908.662	0.297
1468-TCDF	NotFnd		0.8485						1.08		6908.662	0.297
2468-TCDF	24.20		0.8709	0.8701	-1.2	1.23E+06	0.80	Y	1.08	4.74	6908.662	0.297
1346/1246-TCDF	NotFnd		0.8829						1.08		6908.662	0.297
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		6908.662	0.297
1348-TCDF	NotFnd		0.8980						1.08		6908.662	0.297
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		6908.662	0.297
1268-TCDF	NotFnd		0.9158						1.08		6908.662	0.297
1467-TCDF	NotFnd		0.9206						1.08		6908.662	0.297
1478-TCDF	NotFnd		0.9266						1.08		6908.662	0.297
1369/1237-TCDF	NotFnd		0.9397						1.08		6908.662	0.297
2467-TCDF	NotFnd		0.9440						1.08		6908.662	0.297
2368-TCDF	NotFnd		0.9497						1.08		6908.662	0.297
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		6908.662	0.297
1278-TCDF	NotFnd		0.9690						1.08		6908.662	0.297
1349-TCDF	NotFnd		0.9730						1.08		6908.662	0.297
1267-TCDF	NotFnd		0.9787						1.08		6908.662	0.297
2346/1249-TCDF	NotFnd		0.9850						1.08		6908.662	0.297
2347/1279-TCDF	NotFnd		0.9929						1.08		6908.662	0.297
2348-TCDF	27.73		0.9970	0.9969	-0.2	5.04E+06	0.78	Y	1.08	19.4	6908.662	0.297
2378-TCDF	**27.84**		**1.0008**	**1.0009**	**+0.2**	**2.82E+06**	**0.82**	**Y**	**1.08**	**10.9**	**6908.662**	**0.297**
2367/3467-TCDF	NotFnd		1.0136						1.08		6908.662	0.297
1269-TCDF	NotFnd		1.0221						1.08		6908.662	0.297
1239-TCDF	NotFnd		1.0319						1.08		6908.662	0.297
1289-TCDF	29.82		1.0740	1.0719	-3.8	4.74E+06	0.79	Y	1.08	18.2	6908.662	0.297
13468/12468-PeCDF	29.72		0.9145	0.9137	-1.4	2.05E+07	1.56	Y	1.02	86	3957.628	0.165
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		9493.019	0.395
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		9493.019	0.395
14678-PeCDF	NotFnd		0.9695						1.02		9493.019	0.395
13479-PeCDF	NotFnd		0.9724						1.02		9493.019	0.395
13469/12479-PeCDF	NotFnd		0.9801						1.02		9493.019	0.395
12346-PeCDF	NotFnd		0.9842						1.02		9493.019	0.395

Lab ID: OPR1_18819_DF | **Acq'd: 20 Jan 2022 11:32 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18819_OPR001 | **UTP: 21-Jan-2022 12:41:57 MLS** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 697-611-TLV**

Datafile: 220120C02 | **Report: 21 Jan 2022 12:45 MS** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		9493.019	0.395
12347-PeCDF	NotFnd		0.9895						1.02		9493.019	0.395
12348-PeCDF	NotFnd		0.9941						1.02		9493.019	0.395
12378-PeCDF	**32.54**		**1.0005**	**1.0005**	**0**	**1.24E+07**	**1.53**	**Y**	**1.02**	**51.3**	**9493.019**	**0.387**
12678/12367-PeCDF	NotFnd		1.0090						1.02		9493.019	0.395
12379-PeCDF	NotFnd		1.0142						1.02		9493.019	0.395
12679-PeCDF	NotFnd		0.9931						1.02		9493.019	0.395
23467/12369-PeCDF	NotFnd		0.9966						1.02		9493.019	0.395
23478-PeCDF	**33.65**		**1.0005**	**1.0005**	**0**	**1.33E+07**	**1.58**	**Y**	**1.02**	**56.6**	**9493.019**	**0.403**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		9493.019	0.395
12349-PeCDF	NotFnd		1.0101						1.02		9493.019	0.395
12389-PeCDF	34.75		1.0322	1.0331	+1.9	2.96E+06	1.70	Y	1.02	12.4	9493.019	0.395
123468-HxCDF	35.50		0.9627	0.9635	+1.7	3.20E+07	1.22	Y	1.19	154	3655.327	0.162
124678/134678-HxCDF	NotFnd		0.9684						1.19		3655.327	0.162
134679-HxCDF	NotFnd		0.9747						1.19		3655.327	0.162
124679-HxCDF	NotFnd		0.9802						1.19		3655.327	0.162
124689-HxCDF	NotFnd		0.9858						1.19		3655.327	0.162
123467-HxCDF	NotFnd		0.9972						1.19		3655.327	0.162
123478-HxCDF	**36.86**		**1.0004**	**1.0004**	**0**	**1.24E+07**	**1.24**	**Y**	**1.27**	**56.5**	**3655.327**	**0.153**
123678-HxCDF	**37.01**		**1.0004**	**1.0005**	**+0.2**	**1.38E+07**	**1.25**	**Y**	**1.15**	**56.4**	**3655.327**	**0.139**
123479-HxCDF	NotFnd		1.0051						1.19		3655.327	0.162
123469-HxCDF	NotFnd		1.0091						1.19		3655.327	0.162
123679-HxCDF	NotFnd		0.9943						1.19		3655.327	0.162
234678-HxCDF	**37.69**		**1.0004**	**1.0005**	**+0.2**	**9.51E+06**	**1.23**	**Y**	**1.19**	**57.4**	**3655.327**	**0.208**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3655.327	0.162
123789-HxCDF	**38.62**		**1.0004**	**1.0004**	**0**	**1.04E+07**	**1.27**	**Y**	**1.16**	**52.5**	**3655.327**	**0.161**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		3655.327	0.162
1234678-HpCDF	**39.95**		**1.0002**	**1.0003**	**+0.2**	**1.37E+07**	**1.04**	**Y**	**1.37**	**54.9**	**3595.802**	**0.104**
1234679-HpCDF	NotFnd		1.0067						1.34		3595.802	0.136
1234689-HpCDF	NotFnd		1.0101						1.34		3595.802	0.136
1234789-HpCDF	**41.34**		**1.0003**	**1.0003**	**0**	**9.41E+06**	**1.07**	**Y**	**1.31**	**55.9**	**3595.802**	**0.181**
OCDF	**43.71**		**1.0002**	**1.0003**	**+0.3**	**1.28E+07**	**0.89**	**Y**	**1.07**	**115**	**3429.035**	**0.3**
OCDF-a	43.71		1.0002	1.0003	+0.3	7.09E+05	2.71	Y	0.07	103	3550.28	5.02

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.1	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	52	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	59.9	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	56.9	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.3	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.3	35	-	70	Y
OCDD	100	114	78	-	144	Y
2,3,7,8-TCDF	10	10.9	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	51.3	40	-	67	Y
2,3,4,7,8-PeCDF	50	56.6	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	56.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	56.4	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	57.4	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	52.5	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	54.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	55.9	39	-	69	Y
OCDF	100	115	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Jan 2022 12:45 Analyst: MS

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	90.8	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	92.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	90.3	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	98	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	99.3	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	102	26	-	166	Y
13C-OCDD	200	178	26	-	397	Y
13C-2,3,7,8-TCDF	100	87.1	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	99.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	99.7	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	106	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	116	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	82.7	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	109	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	139	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	111	20	-	186	Y
13C-OCDF	200	188	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	35.3	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Jan 2022 12:45 Analyst: MS

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

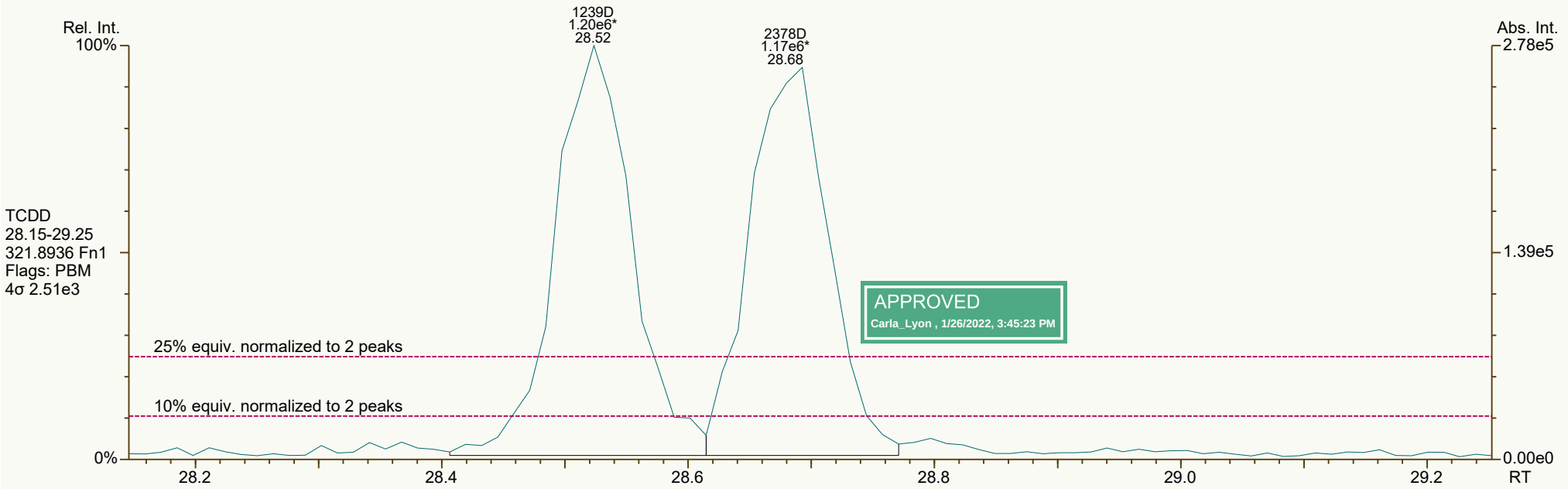
Window Defining Standards Results

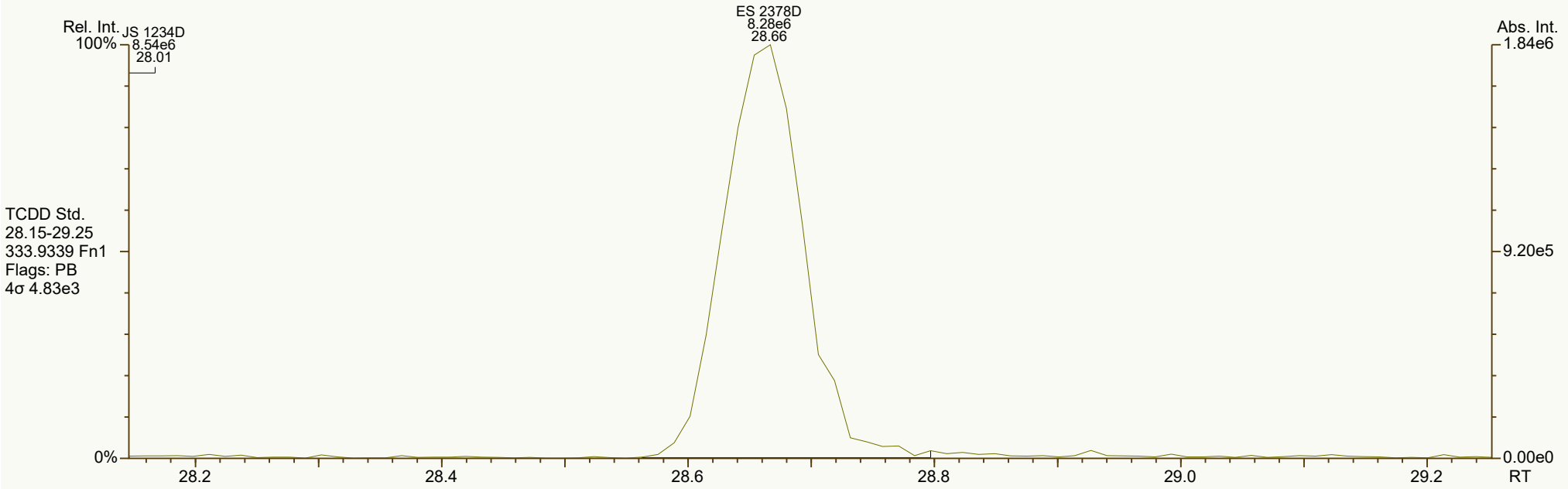
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.08	1289-TCDD	29.64
12479/12468-PeCDD	31.49	12389-PeCDD	34.46
124679/124689-HxCDD	36.13	123789-HxCDD	38.26
1234679-HpCDD	40.21	1234678-HpCDD	40.88
1368-TCDF	23.02	1289-TCDF	29.82
13468/12468-PeCDF	29.72	12389-PeCDF	34.75
123468-HxCDF	35.50	123789-HxCDF	38.62
1234678-HpCDF	39.95	1234789-HpCDF	41.34

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.52	2378-TCDD	28.68
2348-TCDF	27.73	2378-TCDF	27.84

Processed: 21 Jan 2022 12:45 Analyst: MS





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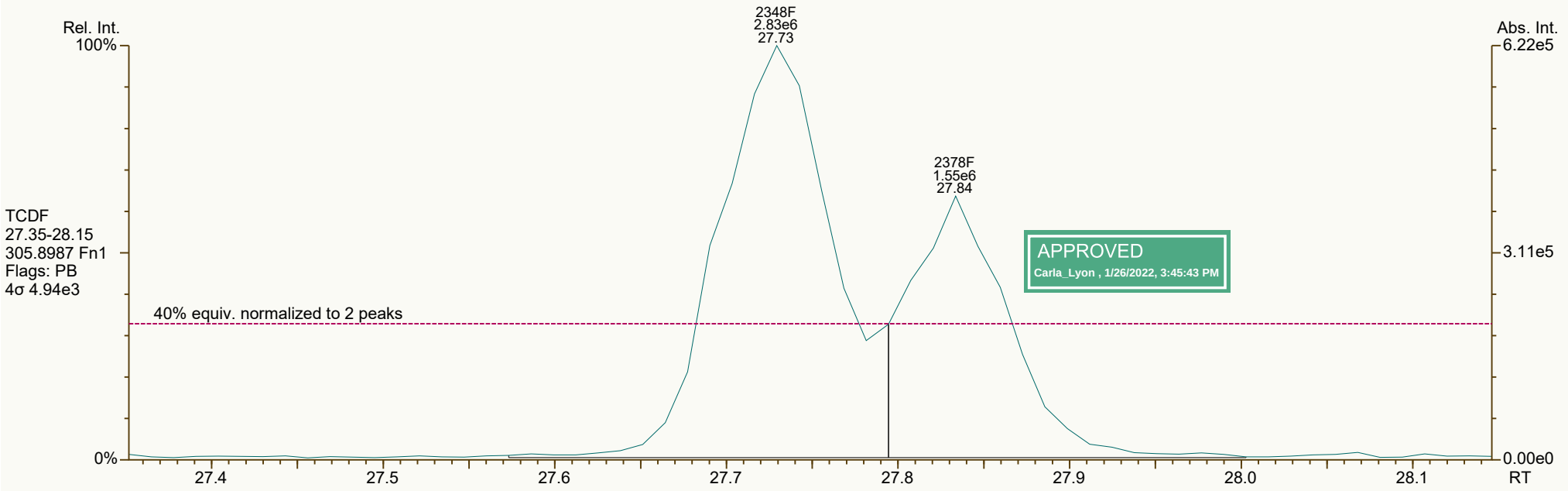
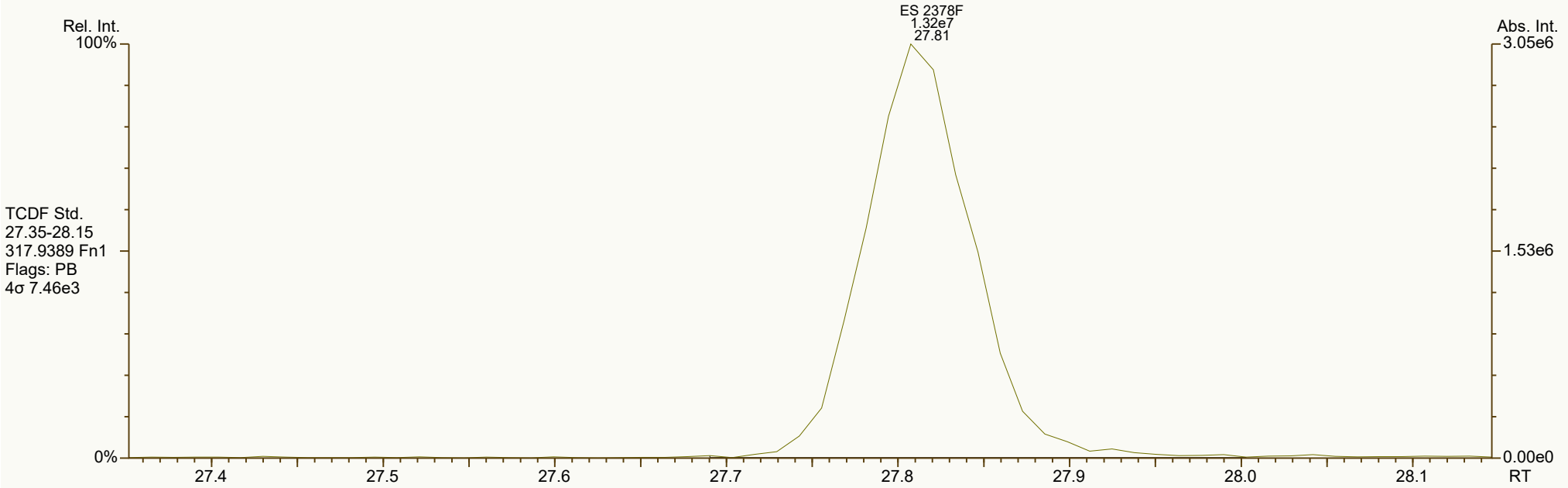
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW
Peak annotation: Areas, Centroids
Revised: 21-Jan-2022 09:59 (DTF) Printed: 21-Jan-2022 13:02

SGS ID: OPR1_18819_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18819_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 50

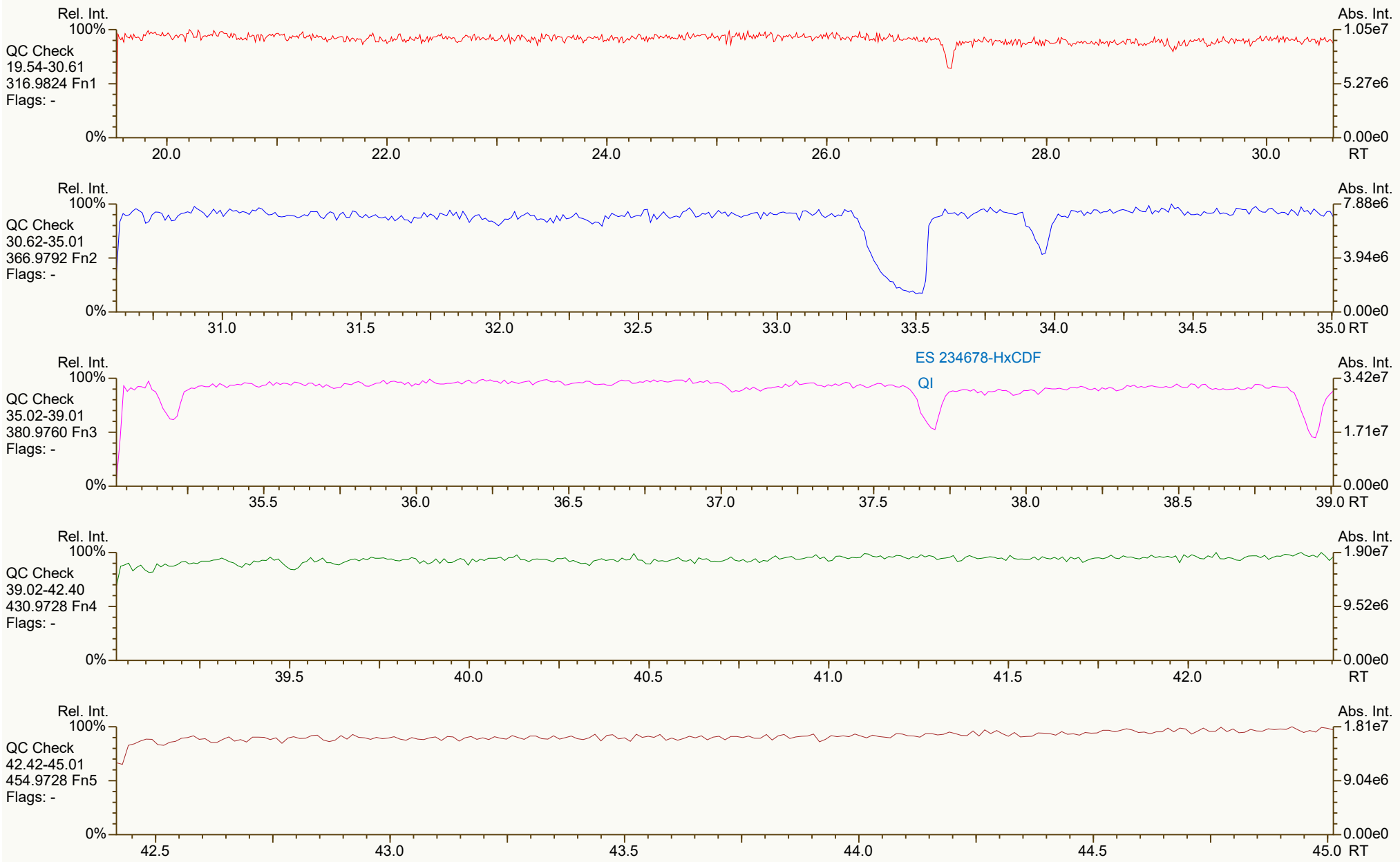
Acq: 20-Jan-2022 11:32:05
User: DTF Datafile: 220120C02





Results: P:\B5900_B5999\B5971\B5971_18819 DF\Resources\OPR1_18819_DF.utp_res, saved 21-Jan-2022 12:41 (MLS)
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW

Peak annotation: Areas, Centroids
Revised: 21-Jan-2022 10:00 (DTF) Printed: 21-Jan-2022 13:02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22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
1.05e7
5.27e6
0.00e0
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
7.88e6
3.94e6
0.00e0
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
ES 234678-HxCDF
QI
Abs. Int.
3.42e7
1.71e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.90e7
9.52e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
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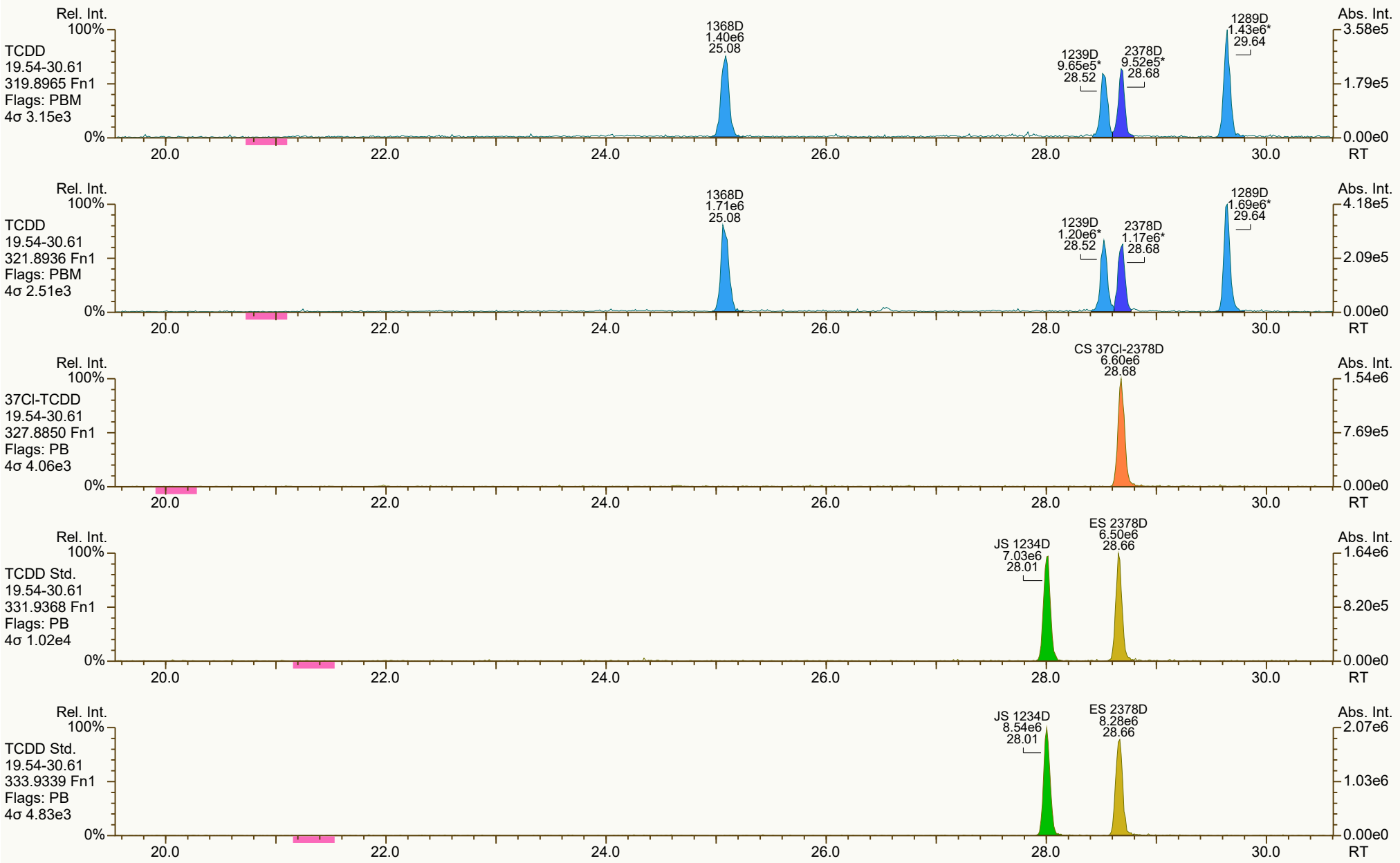
Rel. Int.
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TCDD
19.54-30.61
319.8965 Fn1
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1368D
1.40e6
25.08
1239D
9.65e5*
28.52
2378D
9.52e5*
28.68
1289D
1.43e6*
29.64
Abs. Int.
3.58e5
1.79e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.51e3
1368D
1.71e6
25.08
1239D
1.20e6*
28.52
2378D
1.17e6*
28.68
1289D
1.69e6*
29.64
Abs. Int.
4.18e5
2.09e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 4.06e3
CS 37Cl-2378D
6.60e6
28.68
Abs. Int.
1.54e6
7.69e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 1.02e4
JS 1234D
7.03e6
28.01
ES 2378D
6.50e6
28.66
Abs. Int.
1.64e6
8.20e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 4.83e3
JS 1234D
8.54e6
28.01
ES 2378D
8.28e6
28.66
Abs. Int.
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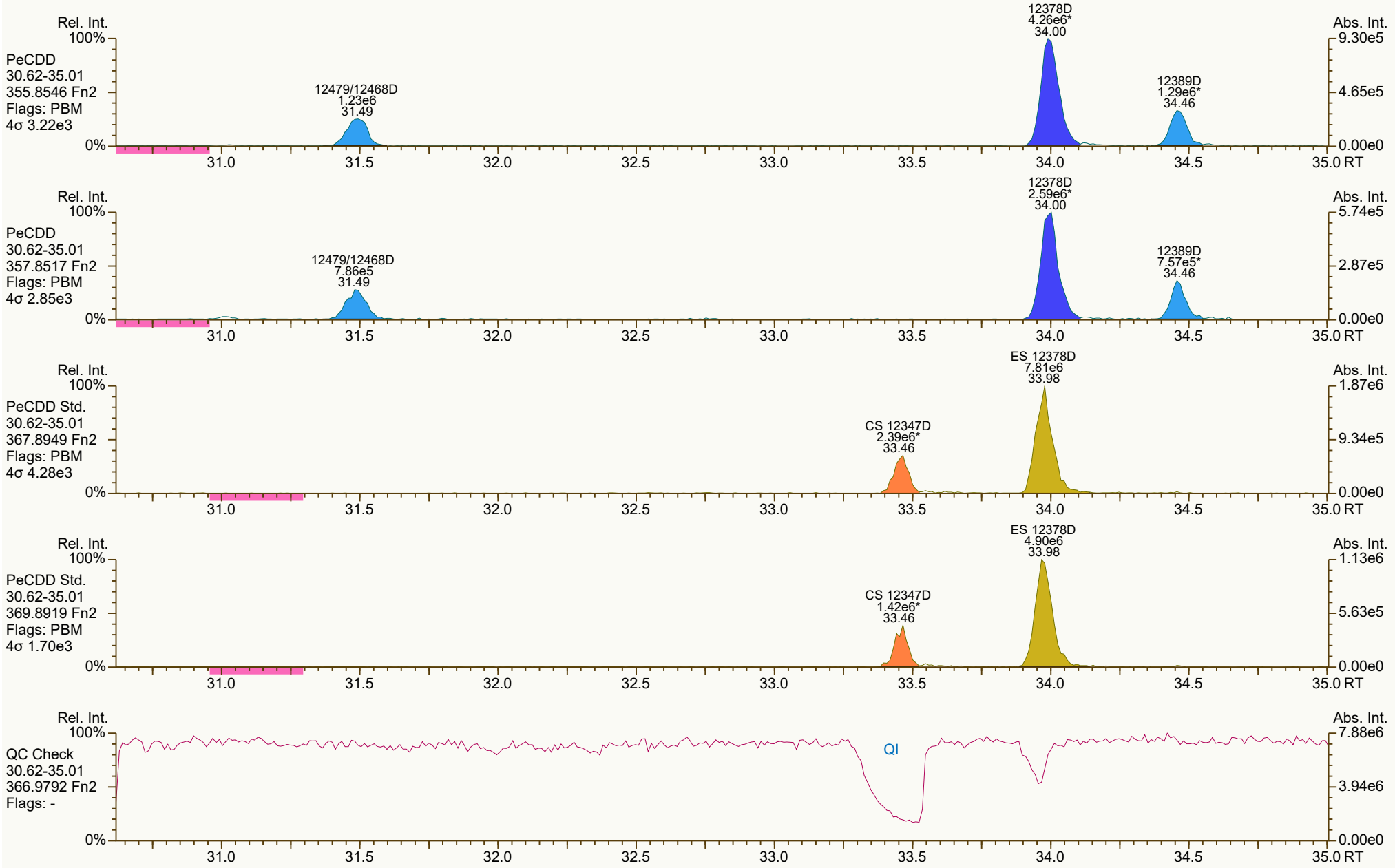
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.62-35.01
355.8546 Fn2
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4σ 3.22e3
12479/12468D
1.23e6
31.49
12378D
4.26e6*
34.00
12389D
1.29e6*
34.46
Abs. Int.
9.30e5
4.65e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.01
357.8517 Fn2
Flags: PBM
4σ 2.85e3
12479/12468D
7.86e5
31.49
12378D
2.59e6*
34.00
12389D
7.57e5*
34.46
Abs. Int.
5.74e5
2.87e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.01
367.8949 Fn2
Flags: PBM
4σ 4.28e3
CS 12347D
2.39e6*
33.46
ES 12378D
7.81e6
33.98
Abs. Int.
1.87e6
9.34e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.01
369.8919 Fn2
Flags: PBM
4σ 1.70e3
CS 12347D
1.42e6*
33.46
ES 12378D
4.90e6
33.98
Abs. Int.
1.13e6
5.63e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
QI
Abs. Int.
7.88e6
3.94e6
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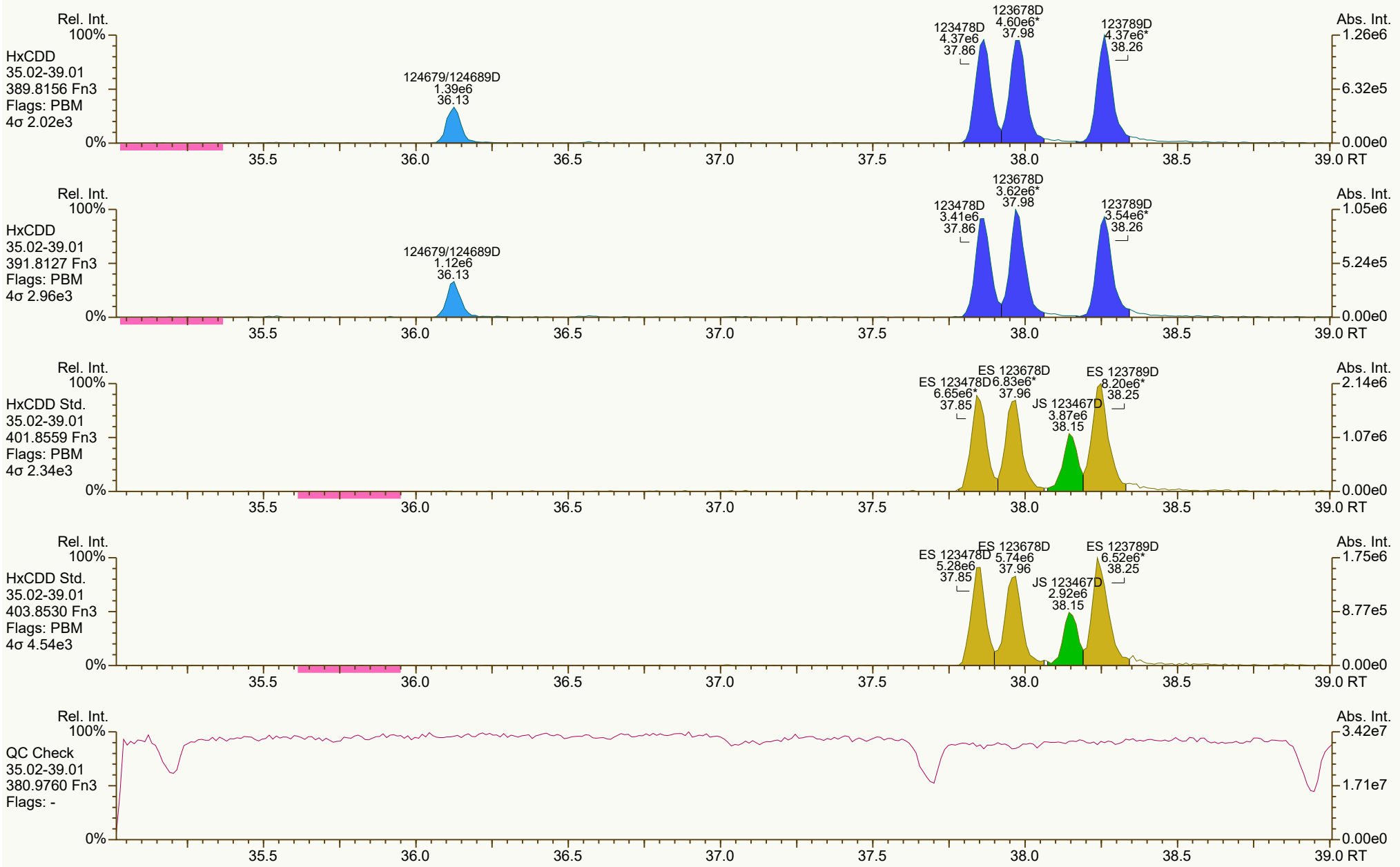
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 2.02e3
124679/124689D
1.39e6
36.13
123478D
4.37e6
37.86
123678D
4.60e6*
37.98
123789D
4.37e6*
38.26
1.26e6
6.32e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 2.96e3
124679/124689D
1.12e6
36.13
123478D
3.41e6
37.86
123678D
3.62e6*
37.98
123789D
3.54e6*
38.26
1.05e6
5.24e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 2.34e3
ES 123478D
6.65e6*
37.85
ES 123678D
6.83e6*
37.96
JS 123467D
3.87e6
38.15
ES 123789D
8.20e6*
38.25
2.14e6
1.07e6
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 4.54e3
ES 123478D
5.28e6
37.85
ES 123678D
5.74e6
37.96
JS 123467D
2.92e6
38.15
ES 123789D
6.52e6*
38.25
1.75e6
8.77e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.42e7
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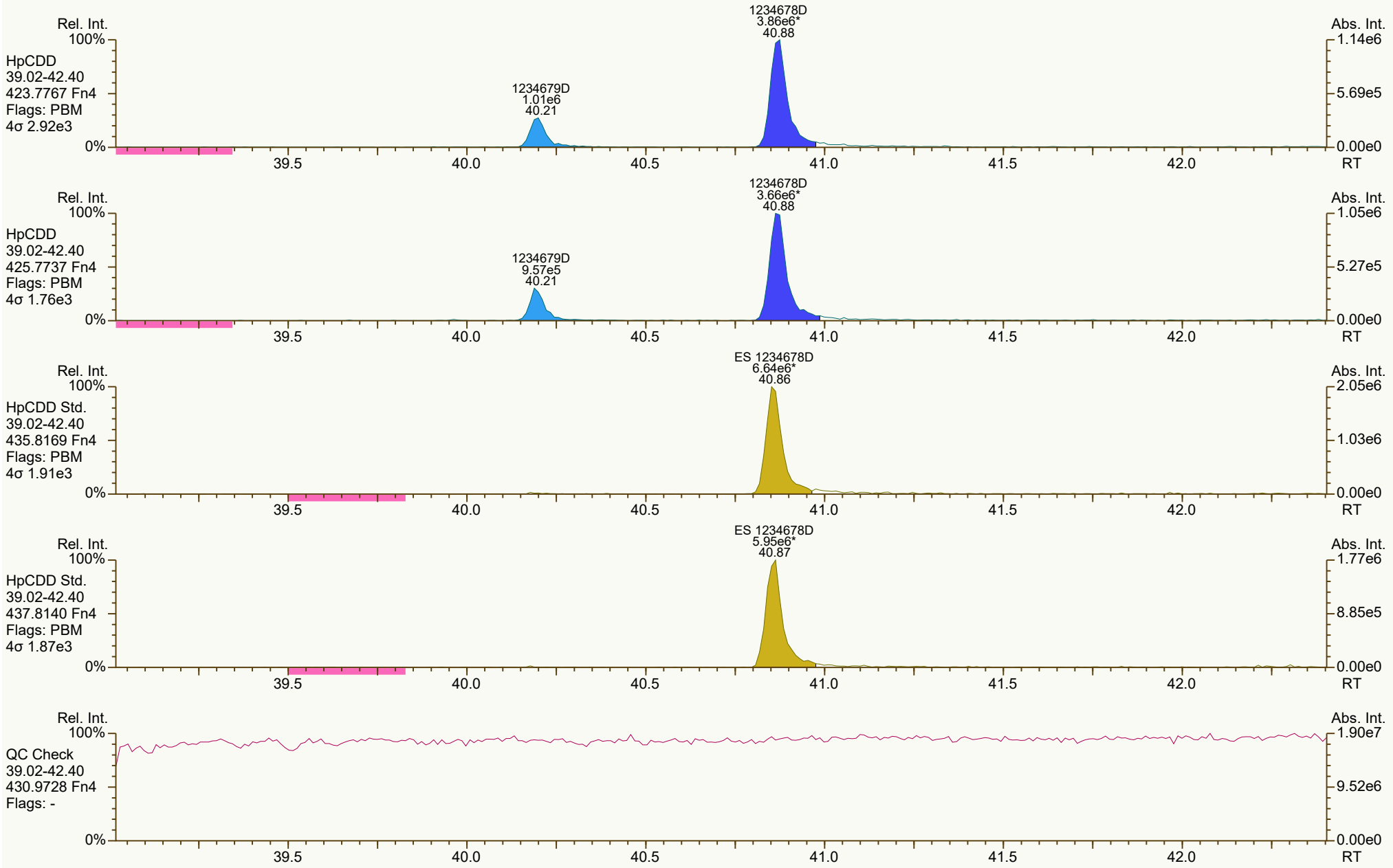
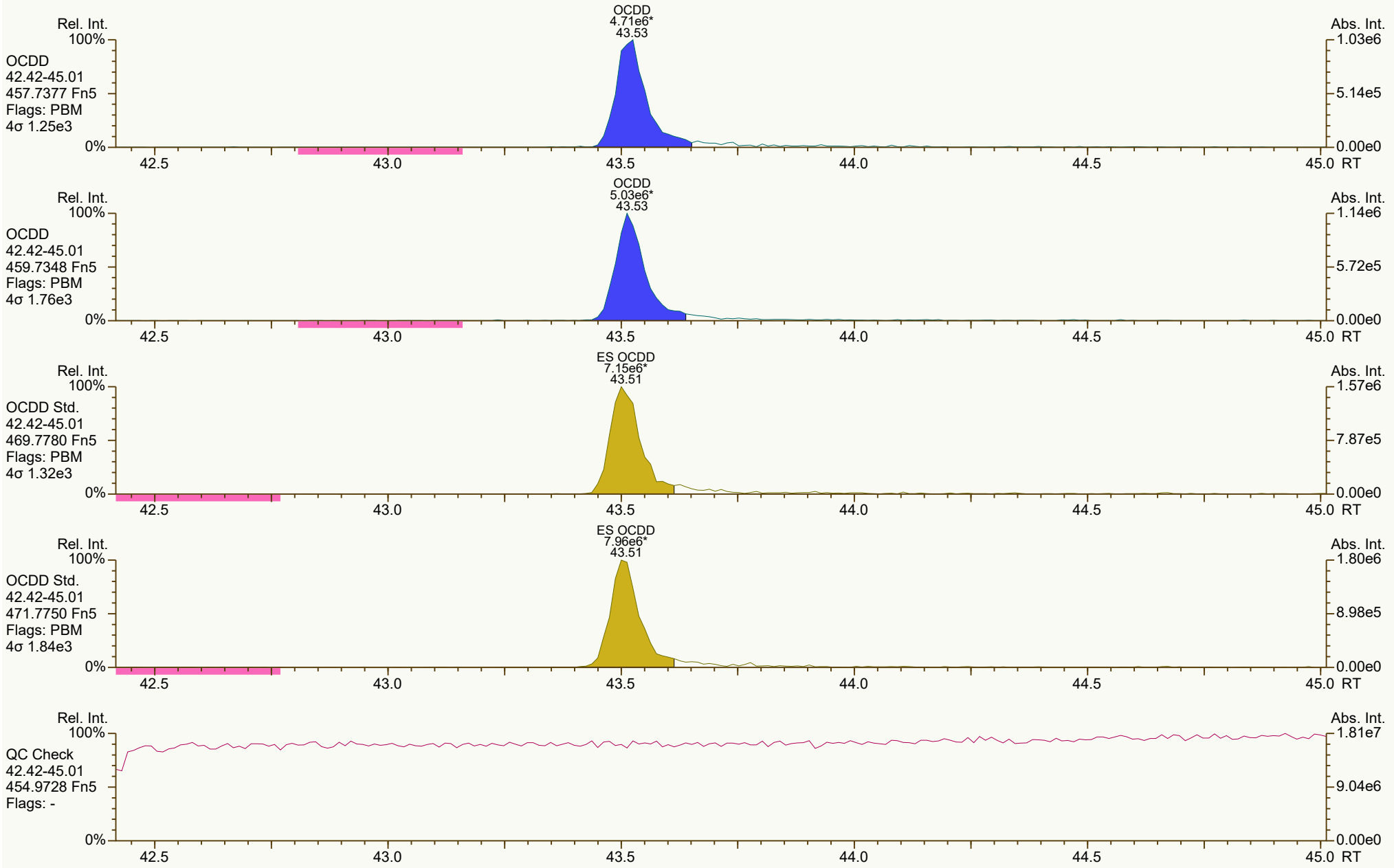
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

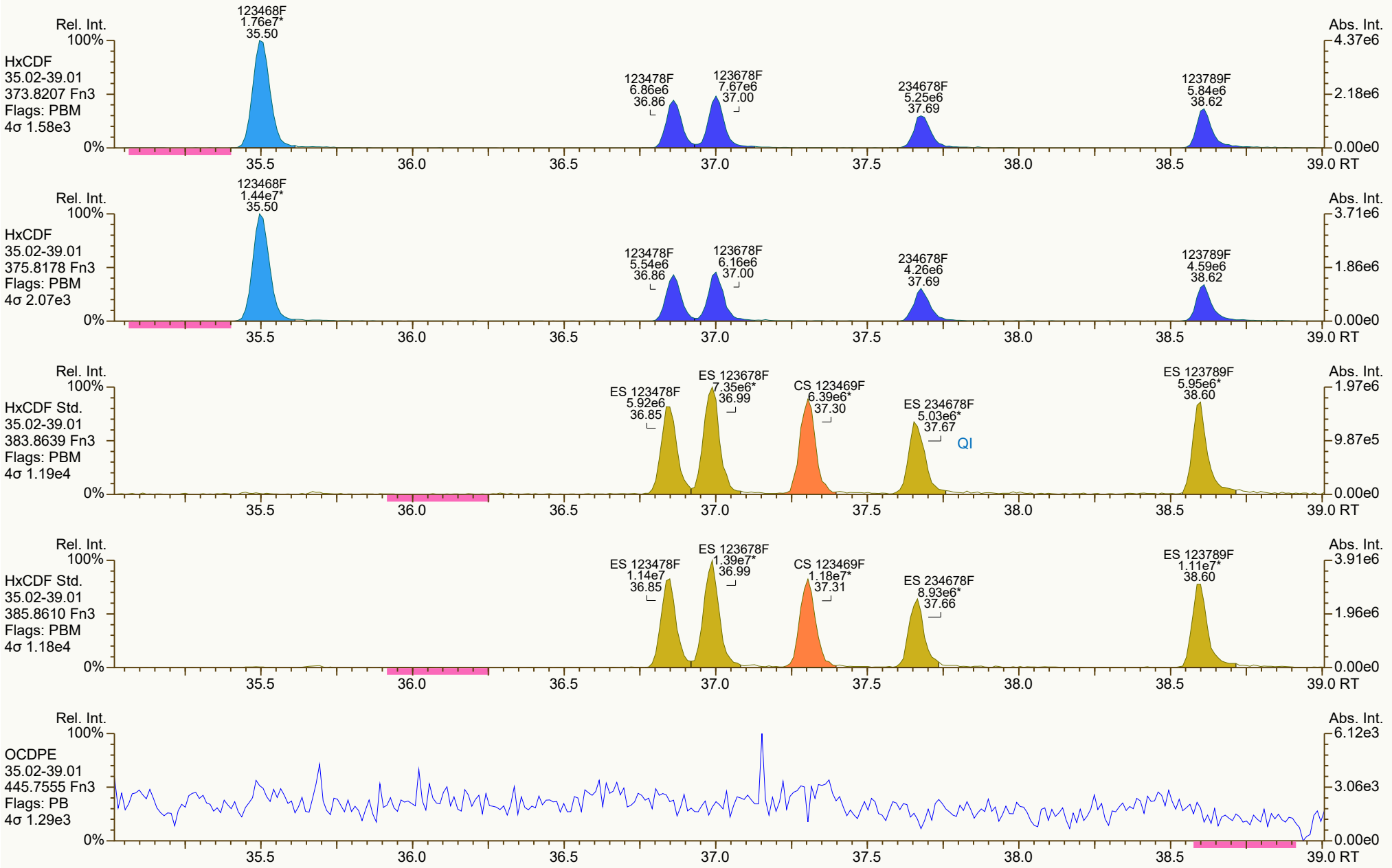

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.92e3
1234678D
3.86e6*
40.88
1234679D
1.01e6
40.21
Abs. Int.
1.14e6
5.69e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.76e3
1234678D
3.66e6*
40.88
1234679D
9.57e5
40.21
Abs. Int.
1.05e6
5.27e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 1.91e3
ES 1234678D
6.64e6*
40.86
Abs. Int.
2.05e6
1.03e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.87e3
ES 1234678D
5.95e6*
40.87
Abs. Int.
1.77e6
8.85e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.90e7
9.52e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

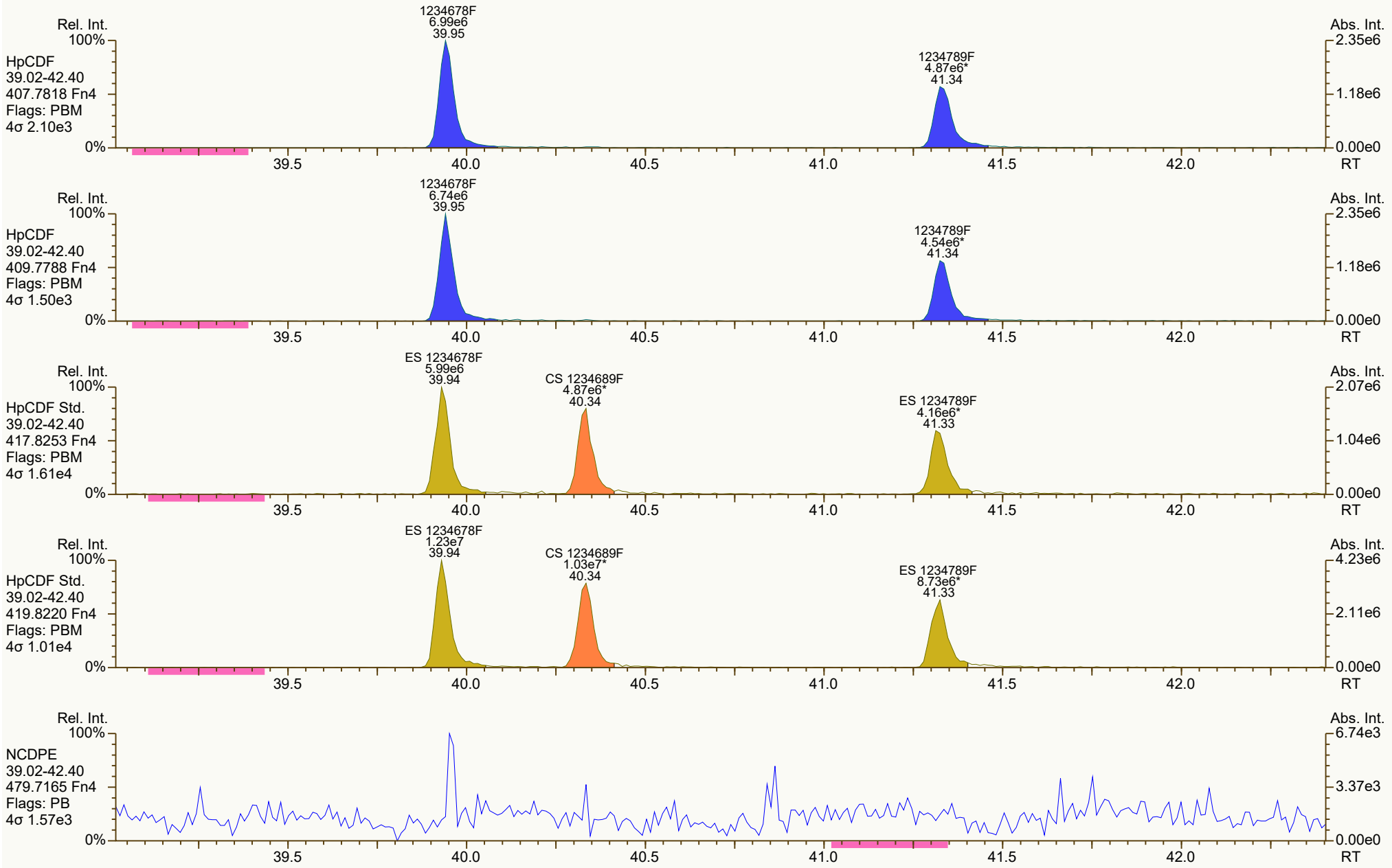

Rel. Int.
Abs. Int.
OCDD
4.71e6*
43.53
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 1.25e3
1.03e6
5.14e5
0.00e0
OCDD
5.03e6*
43.53
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 1.76e3
1.14e6
5.72e5
ES OCDD
7.15e6*
43.51
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 1.32e3
1.57e6
7.87e5
ES OCDD
7.96e6*
43.51
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 1.84e3
1.80e6
8.98e5
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
1.81e7
9.04e6
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT


Rel. Int.
100%
0%
Abs. Int.
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.97e3
1368F
2.06e6
23.02
2468F
5.49e5
24.20
2348F
2.21e6
27.73
2378F
1.27e6
27.84
1289F
2.10e6*
29.82
5.09e5
2.55e5
0.00e0
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.94e3
1368F
2.58e6
23.02
2468F
6.83e5
24.20
2348F
2.83e6
27.73
2378F
1.55e6
27.84
1289F
2.65e6*
29.82
6.22e5
3.11e5
0.00e0
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 1.29e4
JS 1234F
1.18e7
26.46
ES 2378F
1.09e7
27.82
2.46e6
1.23e6
0.00e0
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 7.46e3
JS 1234F
1.43e7
26.46
ES 2378F
1.32e7
27.81
3.10e6
1.55e6
0.00e0
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.46e3
1.22e4
6.09e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PB
4σ 1.52e3
13468/12468F
1.25e7
29.72
Abs. Int.
3.11e6
1.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PB
4σ 2.44e3
13468/12468F
8.00e6
29.72
Abs. Int.
1.99e6
9.97e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
Abs. Int.
1.05e7
5.27e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.62-35.01
339.8597 Fn2
Flags: PB
4σ 2.99e3
0%
12378F
7.52e6
32.54
23478F
8.11e6
33.65
12389F
1.86e6
34.75
Abs. Int.
2.02e6
1.01e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.01
341.8568 Fn2
Flags: PB
4σ 6.50e3
0%
12378F
4.93e6
32.54
23478F
5.15e6
33.65
12389F
1.10e6
34.75
Abs. Int.
1.39e6
6.96e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.01
351.9000 Fn2
Flags: PB
4σ 8.93e3
0%
CS 12346F
1.28e7
32.00
ES 12378F
1.42e7
32.53
ES 23478F
1.40e7
33.64
Abs. Int.
3.58e6
1.79e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.01
353.8970 Fn2
Flags: PB
4σ 1.00e4
0%
CS 12346F
8.46e6
32.00
ES 12378F
9.49e6
32.53
ES 23478F
8.98e6
33.64
Abs. Int.
2.42e6
1.21e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.01
409.7974 Fn2
Flags: PB
4σ 1.64e3
0%
Abs. Int.
8.51e3
4.25e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.58e3
123468F 1.76e7* 35.50
123478F 6.86e6 36.86
123678F 7.67e6 37.00
234678F 5.25e6 37.69
123789F 5.84e6 38.62
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.07e3
123468F 1.44e7* 35.50
123478F 5.54e6 36.86
123678F 6.16e6 37.00
234678F 4.26e6 37.69
123789F 4.59e6 38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 1.19e4
ES 123478F 5.92e6 36.85
ES 123678F 7.35e6* 36.99
CS 123469F 6.39e6* 37.30
ES 234678F 5.03e6* 37.67
QI
ES 123789F 5.95e6* 38.60
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 1.18e4
ES 123478F 1.14e7 36.85
ES 123678F 1.39e7* 36.99
CS 123469F 1.18e7* 37.31
ES 234678F 8.93e6* 37.66
ES 123789F 1.11e7* 38.60
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.29e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.10e3
1234678F
6.99e6
39.95
1234789F
4.87e6*
41.34
Abs. Int.
2.35e6
1.18e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.50e3
1234678F
6.74e6
39.95
1234789F
4.54e6*
41.34
Abs. Int.
2.35e6
1.18e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 1.61e4
ES 1234678F
5.99e6
39.94
CS 1234689F
4.87e6*
40.34
ES 1234789F
4.16e6*
41.33
Abs. Int.
2.07e6
1.04e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 1.01e4
ES 1234678F
1.23e7
39.94
CS 1234689F
1.03e7*
40.34
ES 1234789F
8.73e6*
41.33
Abs. Int.
4.23e6
2.11e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: PB
4σ 1.57e3
Abs. Int.
6.74e3
3.37e3
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 1.69e3
0%
OCDF
6.00e6*
43.71
Abs. Int.
1.37e6
6.85e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 1.74e3
0%
OCDF
6.76e6*
43.71
Abs. Int.
1.53e6
7.67e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 2.26e3
0%
ES OCDF
9.95e6*
43.70
Abs. Int.
2.57e6
1.28e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 3.70e3
0%
ES OCDF
1.07e7*
43.70
Abs. Int.
2.53e6
1.26e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: B
4σ 1.39e3
0%
Abs. Int.
6.69e3
3.34e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: OPR2_18819_DF **Acq'd:** 20 Jan 2022 12:20 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 **UTP:** 21-Jan-2022 12:41:58 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 751-300-QNZ

Datafile: 220120C03 **Report:** 21 Jan 2022 12:45 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.64		1.0008	1.0007	-0.2	1.77E+06	0.83	Y	1.18	12.3	4131.919	0.33
12378-PeCDD	33.95		1.0006	1.0006	0	6.35E+06	1.58	Y	1.04	55.2	2666.107	0.204
123478-HxCDD	37.84		1.0004	1.0004	0	6.59E+06	1.28	Y	1.09	57.7	3320.354	0.245
123678-HxCDD	37.95		1.0034	1.0035	+0.2	7.85E+06	1.27	Y	1.15	61	3320.354	0.246
123789-HxCDD	38.24		1.0109	1.0110	+0.2	6.97E+06	1.24	Y	1.05	58.5	3320.354	0.243
1234678-HpCDD	40.85		1.0003	1.0003	0	6.71E+06	1.03	Y	1.06	56.7	3097.87	0.213
OCDD	43.50		1.0002	1.0003	+0.3	9.54E+06	0.92	Y	1.13	120	4377.598	0.608
2378-TCDF	27.79		1.0008	1.0007	-0.2	2.51E+06	0.80	Y	1.08	12	5324.253	0.27
12378-PeCDF	32.51		1.0005	1.0005	0	1.06E+07	1.54	Y	1.02	54.5	6761.989	0.322
23478-PeCDF	33.61		1.0005	1.0005	0	1.07E+07	1.57	Y	1.02	59	6761.989	0.333
123478-HxCDF	36.83		1.0004	1.0004	0	1.05E+07	1.27	Y	1.27	58.9	5856.549	0.279
123678-HxCDF	36.97		1.0004	1.0004	0	1.20E+07	1.27	Y	1.15	60.3	5856.549	0.242
234678-HxCDF	37.66		1.0004	1.0005	+0.2	8.92E+06	1.26	Y	1.19	55	5856.549	0.335
123789-HxCDF	38.59		1.0004	1.0004	0	8.64E+06	1.25	Y	1.16	56.7	5856.549	0.34
1234678-HpCDF	39.93	V	1.0002	1.0004	+0.5	1.18E+07	1.04	Y	1.37	63.4	4496.819	0.169
1234789-HpCDF	41.31		1.0003	1.0002	-0.2	8.79E+06	1.05	Y	1.31	57.3	4496.819	0.256
OCDF	43.68		1.0002	1.0002	0	1.23E+07	0.89	Y	1.07	116	4554.276	0.462

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.62		1.0233	1.0235	+0.3	1.21E+07	0.84	Y	1.05	80.5
ES 12378-PeCDD	33.92		1.2121	1.2131	+2.0	1.11E+07	1.49	Y	0.88	87.9
ES 123478-HxCDD	37.82		0.9921	0.9920	-0.2	1.05E+07	1.32	Y	0.97	87
ES 123678-HxCDD	37.94		0.9951	0.9951	0	1.12E+07	1.28	Y	0.94	95.7
ES 123789-HxCDD	38.22		1.0025	1.0025	0	1.14E+07	1.32	Y	1.09	84
ES 1234678-HpCDD	40.84		1.0709	1.0713	+1.0	1.12E+07	1.05	Y	0.91	98.7
ES OCDD	43.49		1.1403	1.1408	+1.3	1.41E+07	0.90	Y	0.62	91.4
ES 2378-TCDF	27.77		1.0506	1.0510	+0.7	1.93E+07	0.78	Y	1.06	72.9
ES 12378-PeCDF	32.49		1.2281	1.2294	+2.5	1.89E+07	1.57	Y	0.91	83.1
ES 23478-PeCDF	33.59		1.2698	1.2712	+2.8	1.78E+07	1.57	Y	0.88	80.6
ES 123478-HxCDF	36.81		0.9657	0.9657	0	1.40E+07	0.55	Y	1.20	94.1
ES 123678-HxCDF	36.96		0.9695	0.9694	-0.2	1.72E+07	0.54	Y	1.35	103
ES 234678-HxCDF	37.64		0.9874	0.9872	-0.5	1.37E+07	0.52	Y	1.24	88.6
ES 123789-HxCDF	38.57		1.0116	1.0118	+0.5	1.31E+07	0.57	Y	1.16	91.3
ES 1234678-HpCDF	39.91		1.0467	1.0469	+0.5	1.35E+07	0.49	Y	0.97	113
ES 1234789-HpCDF	41.30		1.0830	1.0834	+1.0	1.17E+07	0.47	Y	0.85	111
ES OCDF	43.67		1.1451	1.1455	+1.0	1.97E+07	0.88	Y	0.81	98.6

Lab ID: OPR2_18819_DF **Acq'd:** 20 Jan 2022 12:20 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 **UTP:** 21-Jan-2022 12:41:58 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 751-300-QNZ

Datafile: 220120C03 **Report:** 21 Jan 2022 12:45 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.97		-	-	-	1.44E+07	0.87	Y	-	-	
JS 1234-TCDF	26.43		-	-	-	2.50E+07	0.82	Y	-	-	
JS 123467-HxCDD	38.12		-	-	-	6.20E+06	1.30	Y	-	-	
CS 37Cl-2378-TCDD	28.65		1.0241	1.0243	+0.3	5.55E+06	n/a	-	1.20	80.3	
CS 12347-PeCDD	33.42		1.1943	1.1952	+1.8	1.04E+07	1.61	Y	0.75	96.3	
CS 12346-PeCDF	31.96		1.2083	1.2094	+2.1	1.76E+07	1.56	Y	0.85	82.9	
CS 123469-HxCDF	37.27		0.9778	0.9777	-0.2	1.53E+07	0.52	Y	1.12	111	
CS 1234689-HpCDF	40.31		1.0571	1.0575	+1.0	1.34E+07	0.43	Y	0.89	122	
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~5.55E+06~~	~~n/a~~		~~1.15~~	~~100~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.42~~		~~1.1943~~	~~1.1952~~	~~+1.8~~	~~1.04E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~109~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.96~~		~~1.2083~~	~~1.2094~~	~~+2.1~~	~~1.76E+07~~	~~1.56~~	~~Y~~	~~0.94~~	~~99.5~~	
~~SS 123469-HxCDF~~	~~37.27~~		~~0.9778~~	~~0.9777~~	~~-0.2~~	~~1.53E+07~~	~~0.52~~	~~Y~~	~~0.83~~	~~107~~	
~~SS 1234689-HpCDF~~	~~40.31~~		~~1.0571~~	~~1.0575~~	~~+1.0~~	~~1.34E+07~~	~~0.43~~	~~Y~~	~~0.92~~	~~108~~	

Totals	Conc	EMPC
Total TCDD	62.7	62.7
Total PeCDD	87.1	87.1
Total HxCDD	196	196
Total HpCDD	71.8	71.8
Total Tetra-Octa Dioxins	537	537
Total TCDF	76.3	76.3
Total PeCDF	230	230
Total HxCDF	396	396
Total HpCDF	121	121
Total Tetra-Octa Furans	940	940
Total Tetra-Octa Dioxins & Furans	1480	1480

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.829	0.83
Response	1.77E+06	1.77E+06

Lab ID: OPR2_18819_DF **Acq'd: 20 Jan 2022 12:20 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18819_OPR002 **UTP: 21-Jan-2022 12:41:58 MLS** **J-level: 0.25 pg/uL Split: 1** **Checkcode: 751-300-QNZ**

Datafile: 220120C03 **Report: 21 Jan 2022 12:45 MS** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8755	0.8748	-1.1	2.84E+06	0.77	Y	1.18	19.9	4131.919	0.33
1379-TCDD	NotFnd		0.8876						1.18		4131.919	0.33
1369-TCDD	NotFnd		0.9023						1.18		4131.919	0.33
1469-TCDD	NotFnd		0.9291						1.18		4131.919	0.33
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		4131.919	0.33
1378-TCDD	NotFnd		0.9440						1.18		4131.919	0.33
1268-TCDD	NotFnd		0.9506						1.18		4131.919	0.33
1478-TCDD	NotFnd		0.9591						1.18		4131.919	0.33
1279-TCDD	NotFnd		0.9649						1.18		4131.919	0.33
1234/1269-TCDD	NotFnd		0.9771						1.18		4131.919	0.33
1236-TCDD	NotFnd		0.9820						1.18		4131.919	0.33
1237/1238-TCDD	NotFnd		0.9908						1.18		4131.919	0.33
1239-TCDD	28.49		0.9954	0.9952	-0.3	1.90E+06	0.80	Y	1.18	13.3	4131.919	0.33
2378-TCDD	**28.64**		**1.0008**	1.0007	**-0.2**	1.77E+06	0.83	Y	**1.18**	**12.3**	**4131.919**	**0.33**
1278-TCDD	NotFnd		1.0121						1.18		4131.919	0.33
1267-TCDD	NotFnd		1.0167						1.18		4131.919	0.33
1289-TCDD	29.60		1.0341	1.0343	+0.4	2.47E+06	0.78	Y	1.18	17.2	4131.919	0.33
12479/12468-PeCDD	31.45		0.9273	0.9271	-0.4	1.73E+06	1.60	Y	1.04	15	2666.107	0.204
12469-PeCDD	NotFnd		0.9430						1.04		2666.107	0.204
12368-PeCDD	NotFnd		0.9592						1.04		2666.107	0.204
12478-PeCDD	NotFnd		0.9647						1.04		2666.107	0.204
12379-PeCDD	NotFnd		0.9676						1.04		2666.107	0.204
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		2666.107	0.204
12346/12347-PeCDD	NotFnd		0.9860						1.04		2666.107	0.204
12378-PeCDD	33.95		**1.0006**	**1.0006**	**0**	**6.35E+06**	**1.58**	**Y**	**1.04**	**55.2**	**2666.107**	**0.204**
12367-PeCDD	NotFnd		1.0034						1.04		2666.107	0.204
12389-PeCDD	34.38		1.0134	1.0135	+0.2	1.94E+06	1.45	Y	1.04	16.8	2666.107	0.204
124679/124689-HxCDD	36.09		0.9545	0.9542	-0.6	2.21E+06	1.20	Y	1.10	18.3	3320.354	0.245
123468-HxCDD	NotFnd		0.9715						1.10		3320.354	0.245
123679/123689-HxCDD	NotFnd		0.9793						1.10		3320.354	0.245
123469-HxCDD	NotFnd		0.9829						1.10		3320.354	0.245
123478-HxCDD	37.84		**1.0004**	**1.0004**	**0**	**6.59E+06**	**1.28**	**Y**	1.09	**57.7**	**3320.354**	**0.245**
123678-HxCDD	37.95		**1.0034**	**1.0035**	**+0.2**	**7.85E+06**	**1.27**	**Y**	1.15	**61**	**3320.354**	**0.246**
123467-HxCDD	NotFnd		1.0082						1.10		3320.354	0.245
123789-HxCDD	38.24		**1.0109**	**1.0110**	**+0.2**	**6.97E+06**	**1.24**	**Y**	1.05	**58.5**	**3320.354**	**0.243**

Lab ID: OPR2_18819_DF | **Acq'd: 20 Jan 2022 12:20 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18819_OPR002 | **UTP: 21-Jan-2022 12:41:58 MLS** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 751-300-QNZ**

Datafile: 220120C03 | **Report: 21 Jan 2022 12:45 MS** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.17		0.9838	0.9837	-0.2	1.78E+06	1.03	Y	1.06	15.1	3097.87	0.213
1234678-HpCDD	**40.85**		**1.0003**	**1.0003**	**0**	**6.71E+06**	**1.03**	**Y**	**1.06**	**56.7**	**3097.87**	**0.213**
OCDD	**43.50**		**1.0002**	**1.0003**	**+0.3**	**9.54E+06**	**0.92**	**Y**	**1.13**	**120**	**4377.598**	**0.608**
OCDD-a	43.50		1.0002	1.0001	-0.3	6.00E+05	2.32	Y	0.07	118	3306.42	7.18
1368-TCDF	22.97		0.8282	0.8270	-1.7	4.24E+06	0.82	Y	1.08	20.4	5324.253	0.27
1468-TCDF	NotFnd		0.8485						1.08		5324.253	0.27
2468-TCDF	24.16		0.8709	0.8698	-1.6	1.04E+06	0.86	Y	1.08	4.98	5324.253	0.27
1346/1246-TCDF	NotFnd		0.8829						1.08		5324.253	0.27
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		5324.253	0.27
1348-TCDF	NotFnd		0.8980						1.08		5324.253	0.27
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		5324.253	0.27
1268-TCDF	NotFnd		0.9158						1.08		5324.253	0.27
1467-TCDF	NotFnd		0.9206						1.08		5324.253	0.27
1478-TCDF	NotFnd		0.9266						1.08		5324.253	0.27
1369/1237-TCDF	NotFnd		0.9397						1.08		5324.253	0.27
2467-TCDF	NotFnd		0.9440						1.08		5324.253	0.27
2368-TCDF	NotFnd		0.9497						1.08		5324.253	0.27
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		5324.253	0.27
1278-TCDF	NotFnd		0.9690						1.08		5324.253	0.27
1349-TCDF	NotFnd		0.9730						1.08		5324.253	0.27
1267-TCDF	NotFnd		0.9787						1.08		5324.253	0.27
2346/1249-TCDF	NotFnd		0.9850						1.08		5324.253	0.27
2347/1279-TCDF	NotFnd		0.9929						1.08		5324.253	0.27
2348-TCDF	27.69		0.9970	0.9968	-0.3	4.01E+06	0.79	Y	1.08	19.3	5324.253	0.27
2378-TCDF	**27.79**		**1.0008**	**1.0007**	**-0.2**	**2.51E+06**	**0.80**	**Y**	**1.08**	**12**	**5324.253**	**0.27**
2367/3467-TCDF	NotFnd		1.0136						1.08		5324.253	0.27
1269-TCDF	NotFnd		1.0221						1.08		5324.253	0.27
1239-TCDF	NotFnd		1.0319						1.08		5324.253	0.27
1289-TCDF	29.78		1.0740	1.0721	-3.4	4.08E+06	0.79	Y	1.08	19.6	5324.253	0.27
13468/12468-PeCDF	29.69		0.9145	0.9137	-1.4	1.92E+07	1.63	Y	1.02	102	3756.146	0.182
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		6761.989	0.327
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		6761.989	0.327
14678-PeCDF	NotFnd		0.9695						1.02		6761.989	0.327
13479-PeCDF	NotFnd		0.9724						1.02		6761.989	0.327
13469/12479-PeCDF	NotFnd		0.9801						1.02		6761.989	0.327
12346-PeCDF	NotFnd		0.9842						1.02		6761.989	0.327

Lab ID: OPR2_18819_DF | **Acq'd: 20 Jan 2022 12:20 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18819_OPR002 | **UTP: 21-Jan-2022 12:41:58 MLS** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 751-300-QNZ**

Datafile: 220120C03 | **Report: 21 Jan 2022 12:45 MS** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		6761.989	0.327
12347-PeCDF	NotFnd		0.9895						1.02		6761.989	0.327
12348-PeCDF	NotFnd		0.9941						1.02		6761.989	0.327
12378-PeCDF	**32.51**		**1.0005**	**1.0005**	**0**	**1.06E+07**	**1.54**	**Y**	**1.02**	**54.5**	**6761.989**	**0.322**
12678/12367-PeCDF	NotFnd		1.0090						1.02		6761.989	0.327
12379-PeCDF	NotFnd		1.0142						1.02		6761.989	0.327
12679-PeCDF	NotFnd		0.9931						1.02		6761.989	0.327
23467/12369-PeCDF	NotFnd		0.9966						1.02		6761.989	0.327
23478-PeCDF	**33.61**		**1.0005**	**1.0005**	**0**	**1.07E+07**	**1.57**	**Y**	**1.02**	**59**	**6761.989**	**0.333**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6761.989	0.327
12349-PeCDF	NotFnd		1.0101						1.02		6761.989	0.327
12389-PeCDF	34.68		1.0322	1.0324	+0.4	2.62E+06	1.55	Y	1.02	14	6761.989	0.327
123468-HxCDF	35.44		0.9627	0.9628	+0.2	2.86E+07	1.25	Y	1.19	165	5856.549	0.294
124678/134678-HxCDF	NotFnd		0.9684						1.19		5856.549	0.294
134679-HxCDF	NotFnd		0.9747						1.19		5856.549	0.294
124679-HxCDF	NotFnd		0.9802						1.19		5856.549	0.294
124689-HxCDF	NotFnd		0.9858						1.19		5856.549	0.294
123467-HxCDF	NotFnd		0.9972						1.19		5856.549	0.294
123478-HxCDF	**36.83**		**1.0004**	**1.0004**	**0**	**1.05E+07**	**1.27**	**Y**	**1.27**	**58.9**	**5856.549**	**0.279**
123678-HxCDF	**36.97**		**1.0004**	**1.0004**	**0**	**1.20E+07**	**1.27**	**Y**	**1.15**	**60.3**	**5856.549**	**0.242**
123479-HxCDF	NotFnd		1.0051						1.19		5856.549	0.294
123469-HxCDF	NotFnd		1.0091						1.19		5856.549	0.294
123679-HxCDF	NotFnd		0.9943						1.19		5856.549	0.294
234678-HxCDF	**37.66**		**1.0004**	**1.0005**	**+0.2**	**8.92E+06**	**1.26**	**Y**	**1.19**	**55**	**5856.549**	**0.335**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		5856.549	0.294
123789-HxCDF	**38.59**		**1.0004**	**1.0004**	**0**	**8.64E+06**	**1.25**	**Y**	**1.16**	**56.7**	**5856.549**	**0.34**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		5856.549	0.294
1234678-HpCDF	**39.93**		**1.0002**	**1.0004**	**+0.5**	**1.18E+07**	**1.04**	**Y**	**1.37**	**63.4**	**4496.819**	**0.169**
1234679-HpCDF	NotFnd		1.0067						1.34		4496.819	0.209
1234689-HpCDF	NotFnd		1.0101						1.34		4496.819	0.209
1234789-HpCDF	**41.31**		**1.0003**	**1.0002**	**-0.2**	**8.79E+06**	**1.05**	**Y**	**1.31**	**57.3**	**4496.819**	**0.256**
OCDF	**43.68**		**1.0002**	**1.0002**	**0**	**1.23E+07**	**0.89**	**Y**	**1.07**	**116**	**4554.276**	**0.462**
OCDF-a	43.68		1.0002	1.0001	-0.3	7.47E+05	2.33	Y	0.07	114	3100.175	5.08

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C03	Analysis Date:	20-JAN-2022 12:20:14
Lab ID:	OPR2_18819_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.3	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	55.2	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	57.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	61	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	58.5	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.7	35	-	70	Y
OCDD	100	120	78	-	144	Y
2,3,7,8-TCDF	10	12	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.5	40	-	67	Y
2,3,4,7,8-PeCDF	50	59	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	58.9	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	60.3	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	56.7	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	63.4 *	41	-	61	N
1,2,3,4,7,8,9-HpCDF	50	57.3	39	-	69	Y
OCDF	100	116	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

* OPR1 meets accuracy criteria; OPR/OPRD meets precision criteri
CL 26Jan22

Processed: 21 Jan 2022 12:45 Analyst: MS

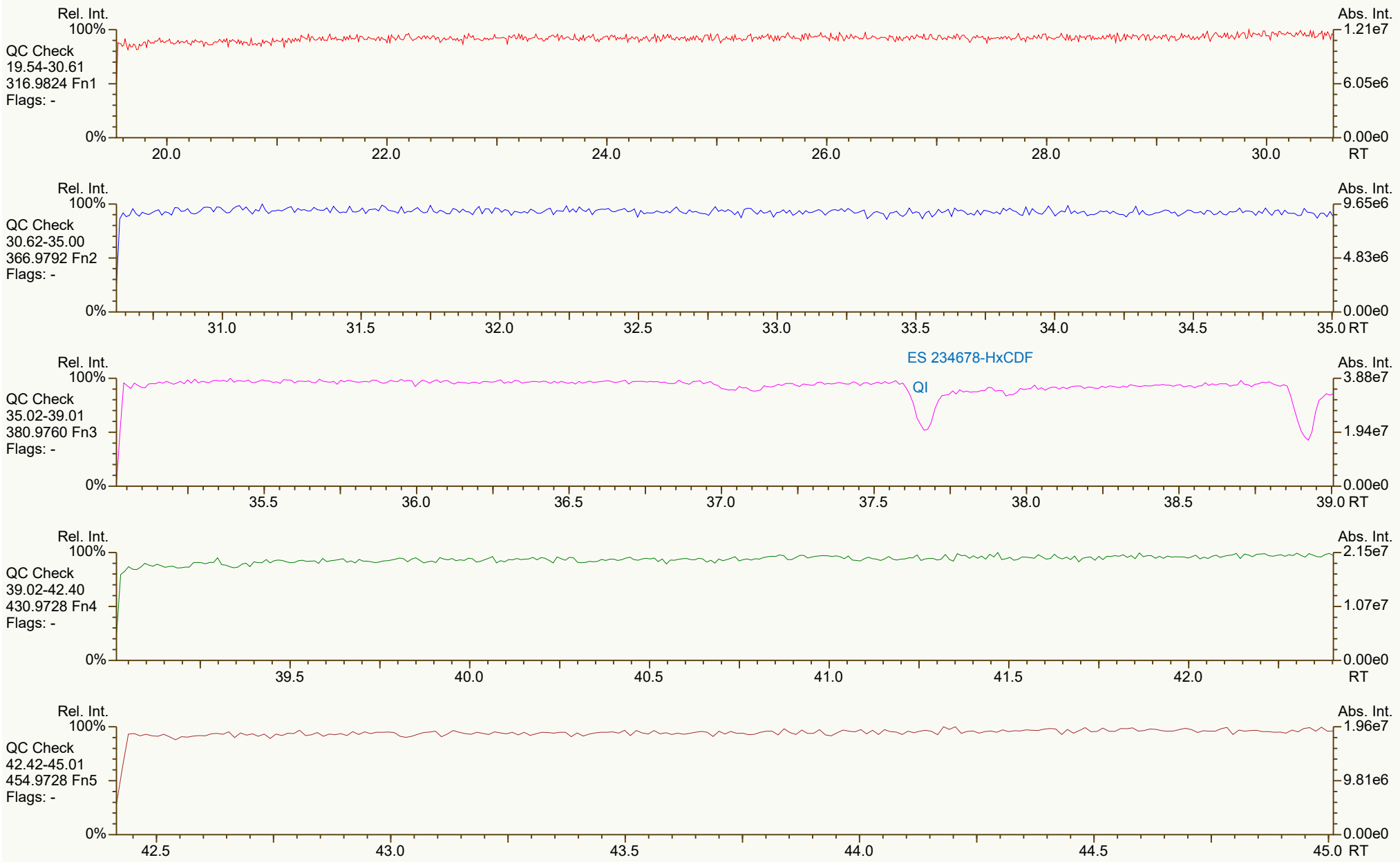
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C03	Analysis Date:	20-JAN-2022 12:20:14
Lab ID:	OPR2_18819_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	80.5	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	87.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	87	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	95.7	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	84	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	98.7	26	-	166	Y
13C-OCDD	200	183	26	-	397	Y
13C-2,3,7,8-TCDF	100	72.9	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	83.1	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	80.6	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	94.1	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	103	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	88.6	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	91.3	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	113	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	111	20	-	186	Y
13C-OCDF	200	197	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	32.1	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 21 Jan 2022 12:45 Analyst: MS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19.54-30.61
316.9824 Fn1
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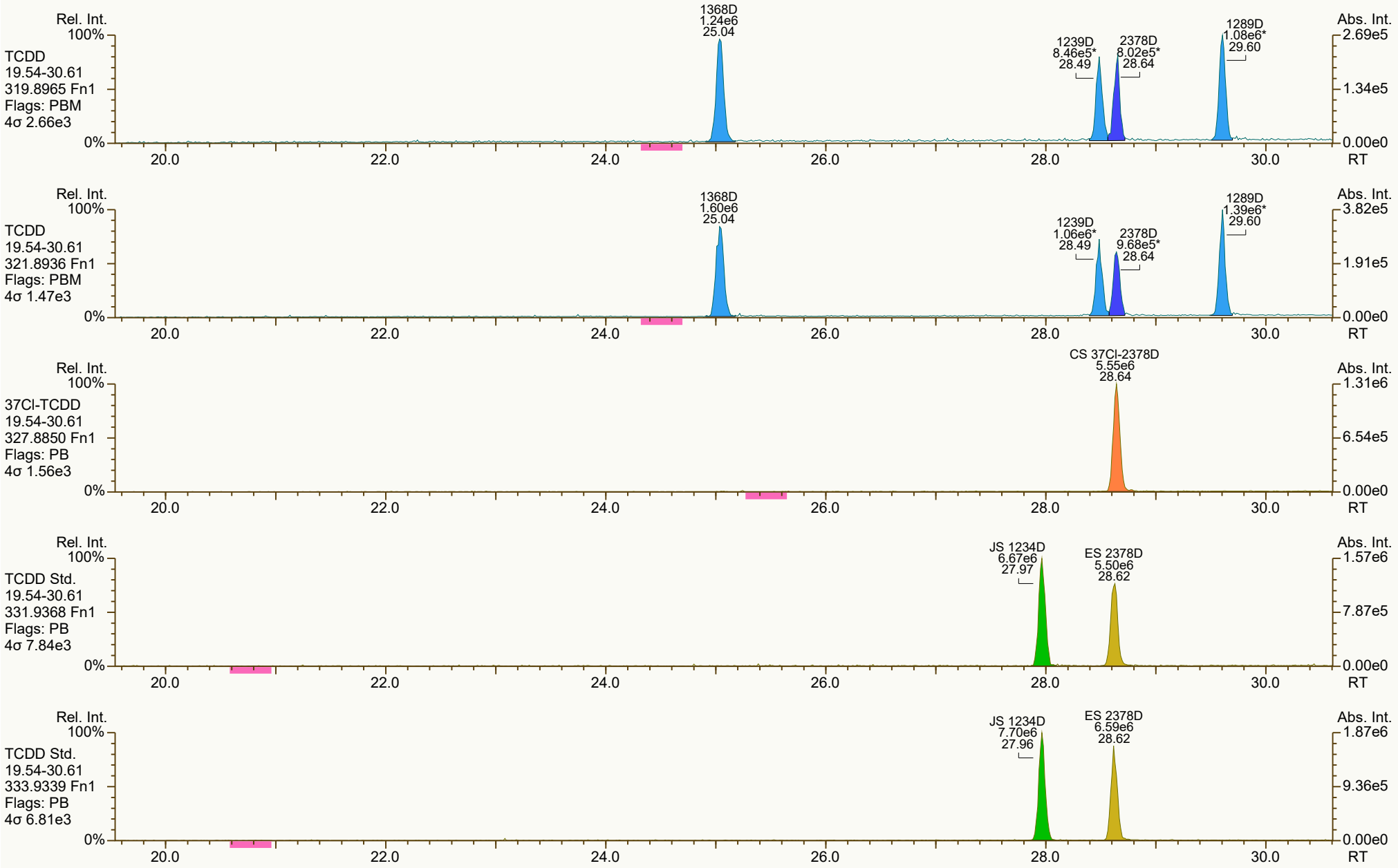
6.05e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.65e6
4.83e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
ES 234678-HxCDF
QI
Abs. Int.
3.88e7
1.94e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.15e7
1.07e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.96e7
9.81e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT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100%
TCDD
19.54-30.61
319.8965 Fn1
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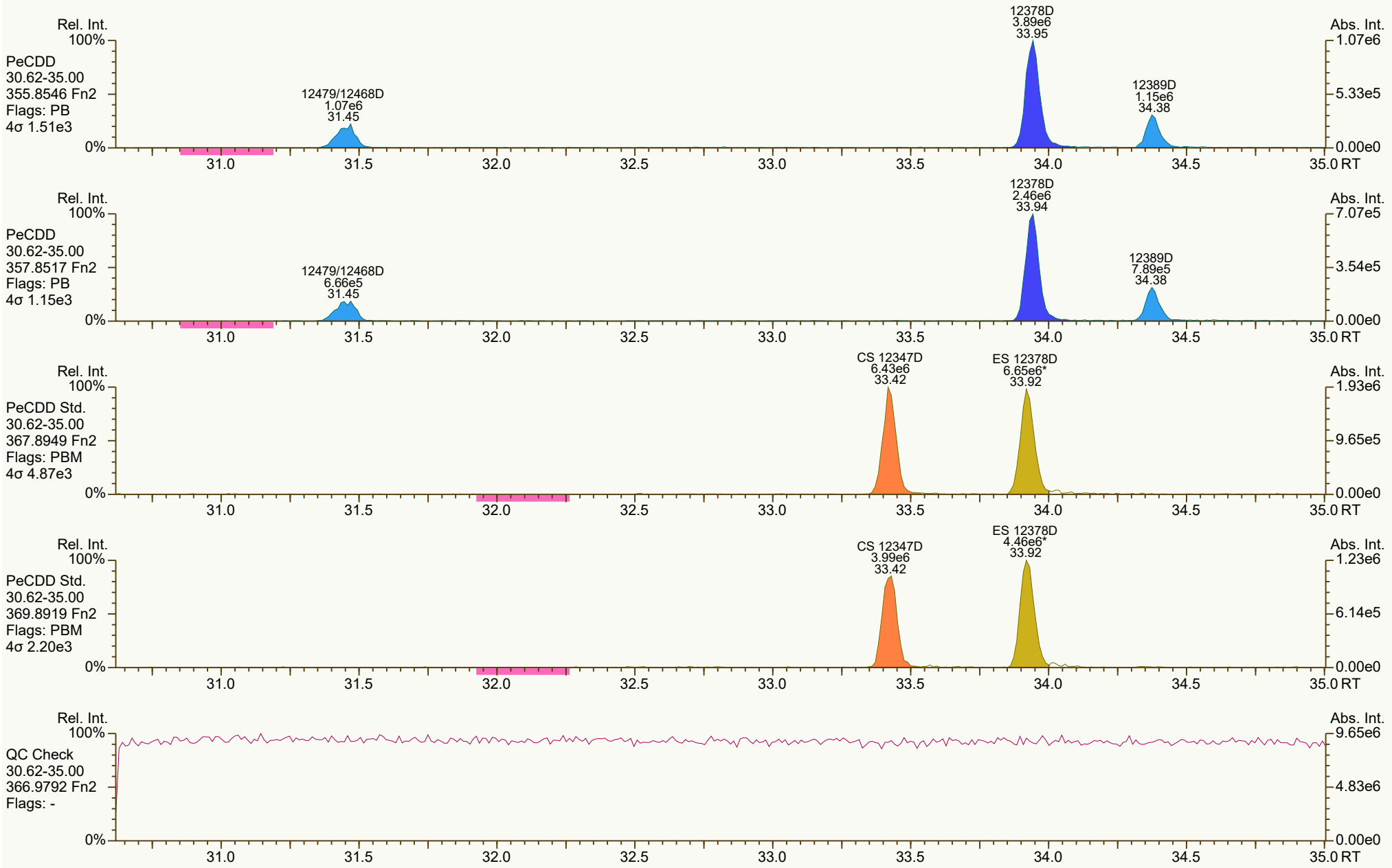
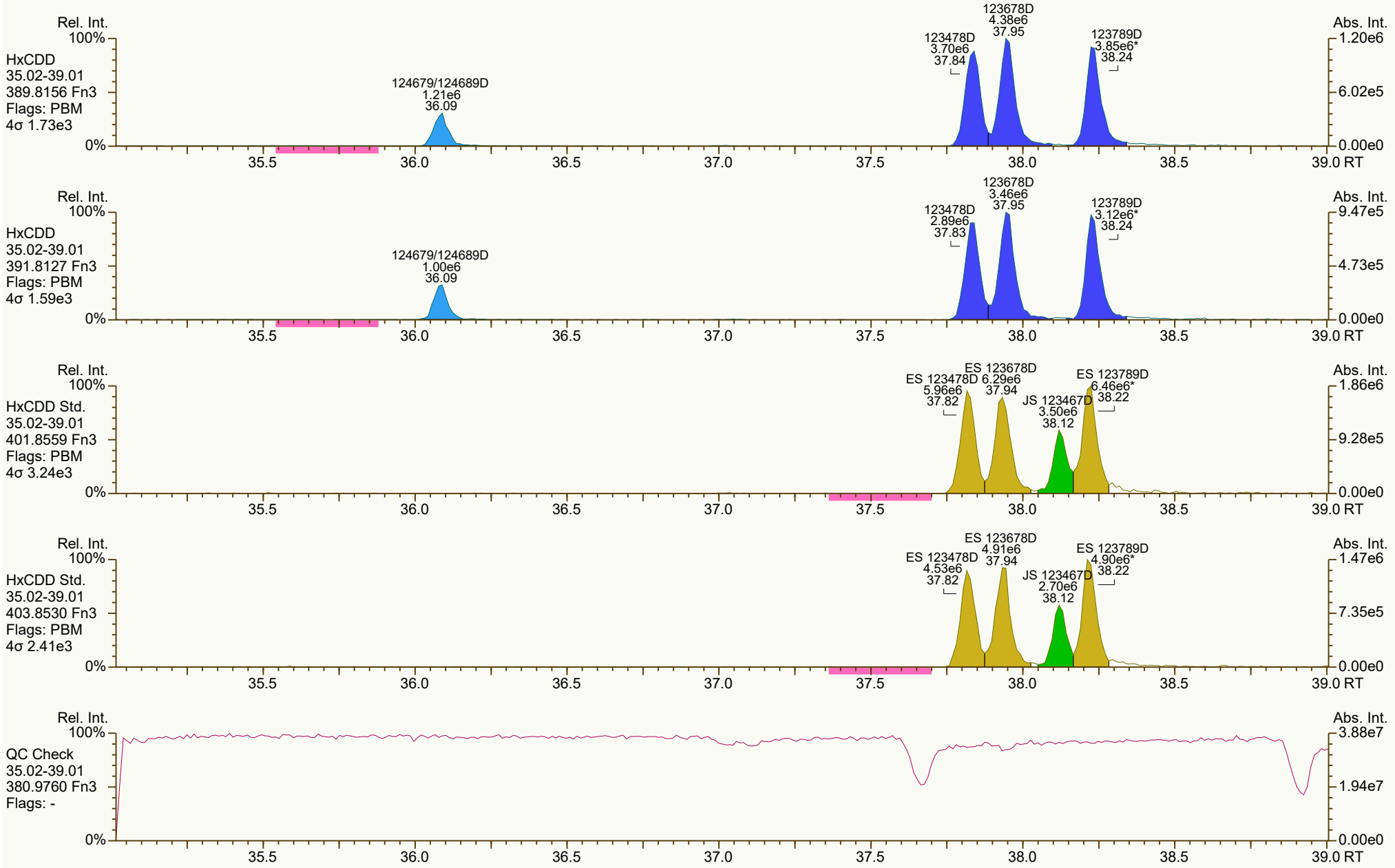
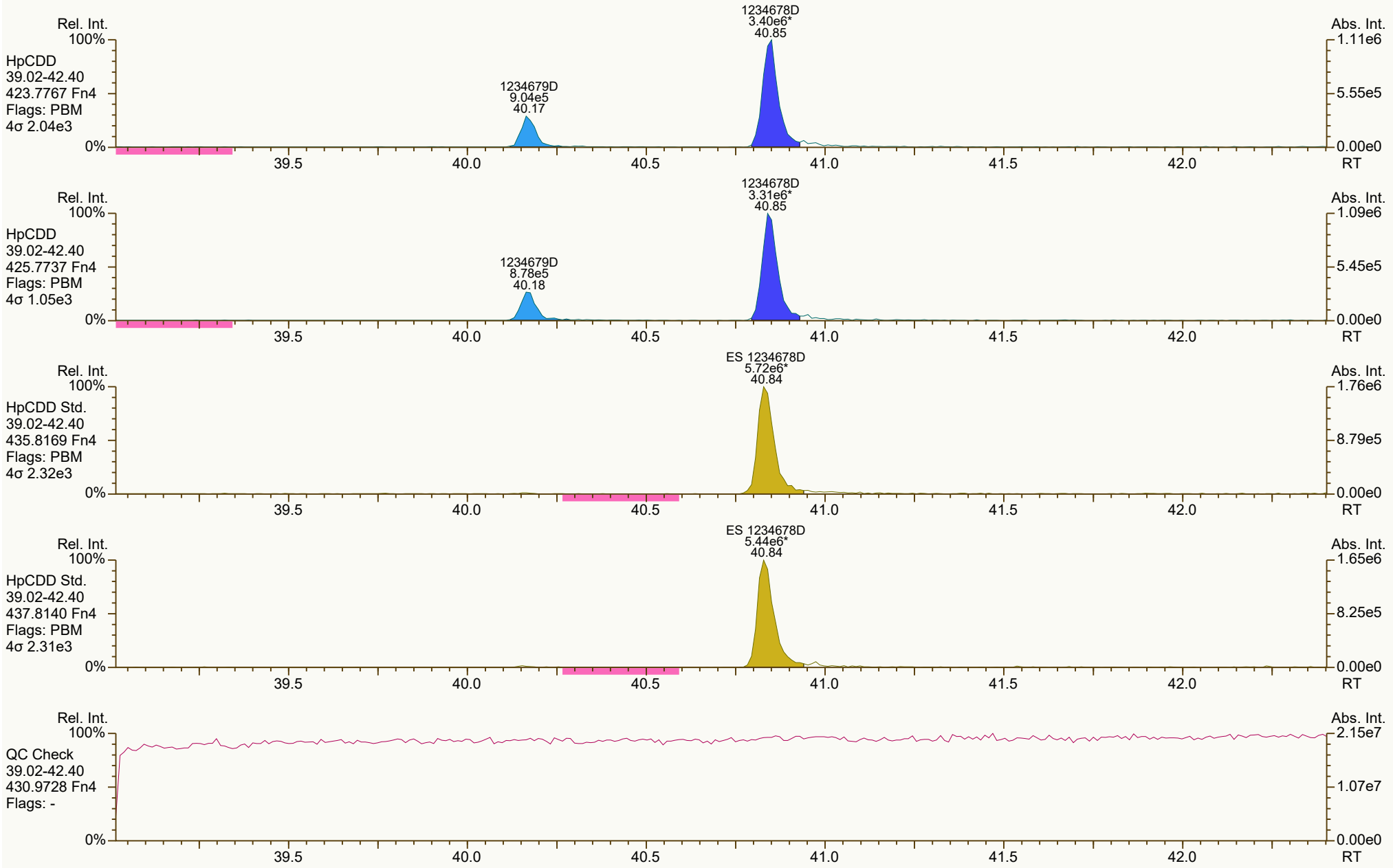
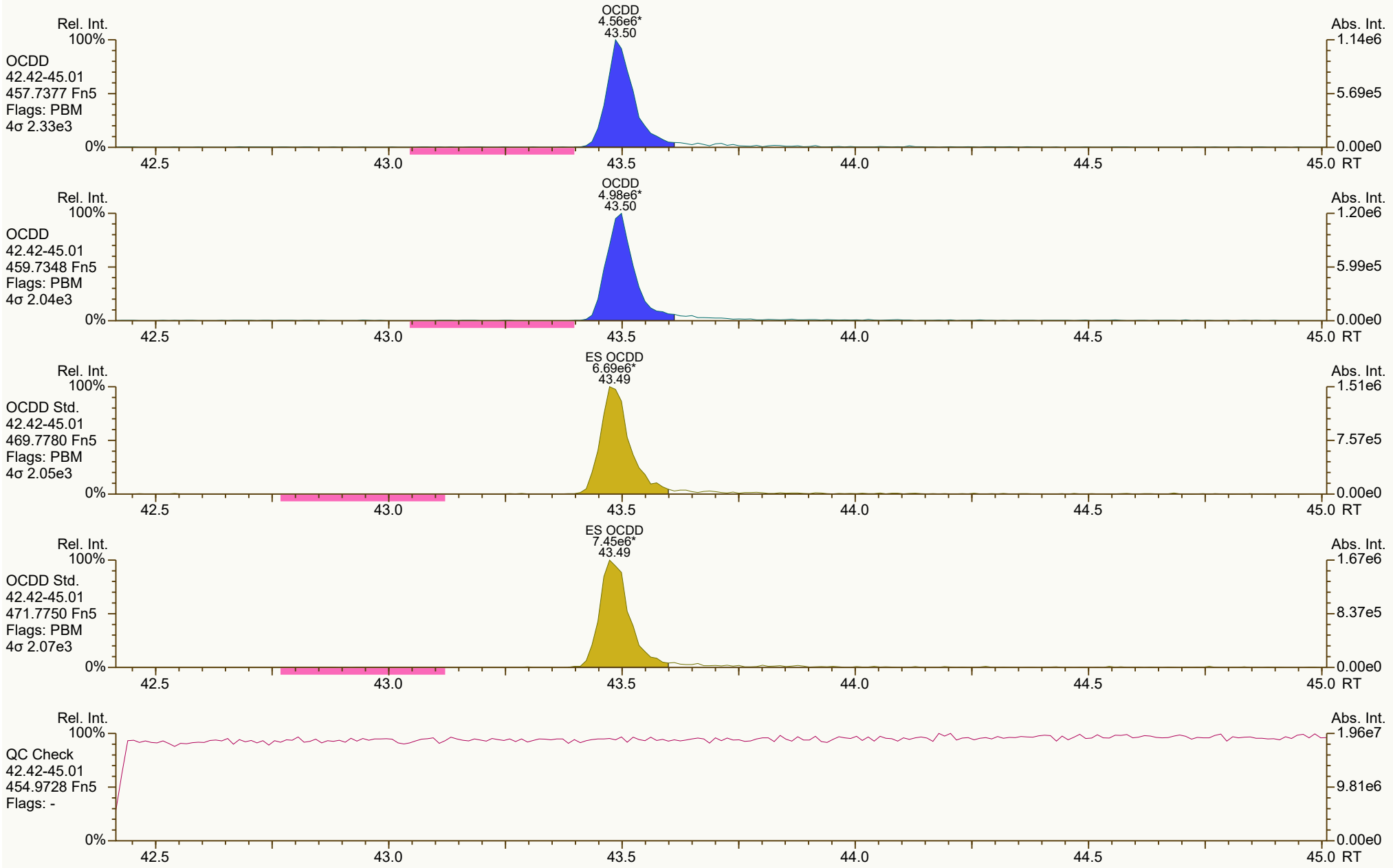
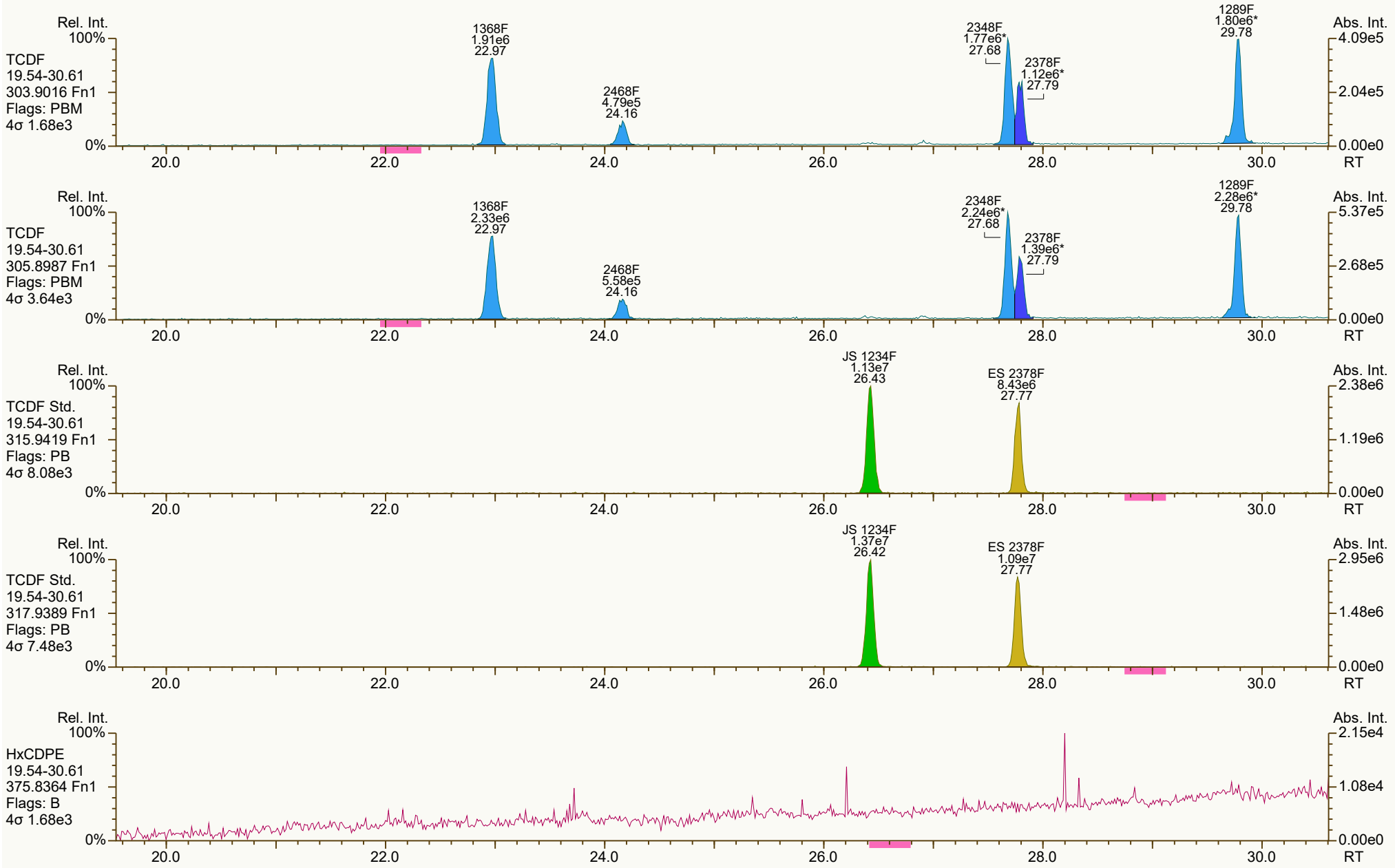
4σ 2.66e3
1368D
1.24e6
25.04
1239D
8.46e5*
28.49
2378D
8.02e5*
28.64
1289D
1.08e6*
29.60
Abs. Int.
2.69e5
1.34e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.47e3
1368D
1.60e6
25.04
1239D
1.06e6*
28.49
2378D
9.68e5*
28.64
1289D
1.39e6*
29.60
Abs. Int.
3.82e5
1.91e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.56e3
CS 37Cl-2378D
5.55e6
28.64
Abs. Int.
1.31e6
6.54e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 7.84e3
JS 1234D
6.67e6
27.97
ES 2378D
5.50e6
28.62
Abs. Int.
1.57e6
7.87e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 6.81e3
JS 1234D
7.70e6
27.96
ES 2378D
6.59e6
28.62
Abs. Int.
1.87e6
9.36e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
Abs. Int.
PeCDD
30.62-35.00
355.8546 Fn2
Flags: PB
4σ 1.51e3
12479/12468D
1.07e6
31.45
12378D
3.89e6
33.95
12389D
1.15e6
34.38
1.07e6
5.33e5
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.15e3
12479/12468D
6.66e5
31.45
12378D
2.46e6
33.94
12389D
7.89e5
34.38
7.07e5
3.54e5
0.00e0
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PBM
4σ 4.87e3
CS 12347D
6.43e6
33.42
ES 12378D
6.65e6*
33.92
1.93e6
9.65e5
0.00e0
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PBM
4σ 2.20e3
CS 12347D
3.99e6
33.42
ES 12378D
4.46e6*
33.92
1.23e6
6.14e5
0.00e0
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
9.65e6
4.83e6
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

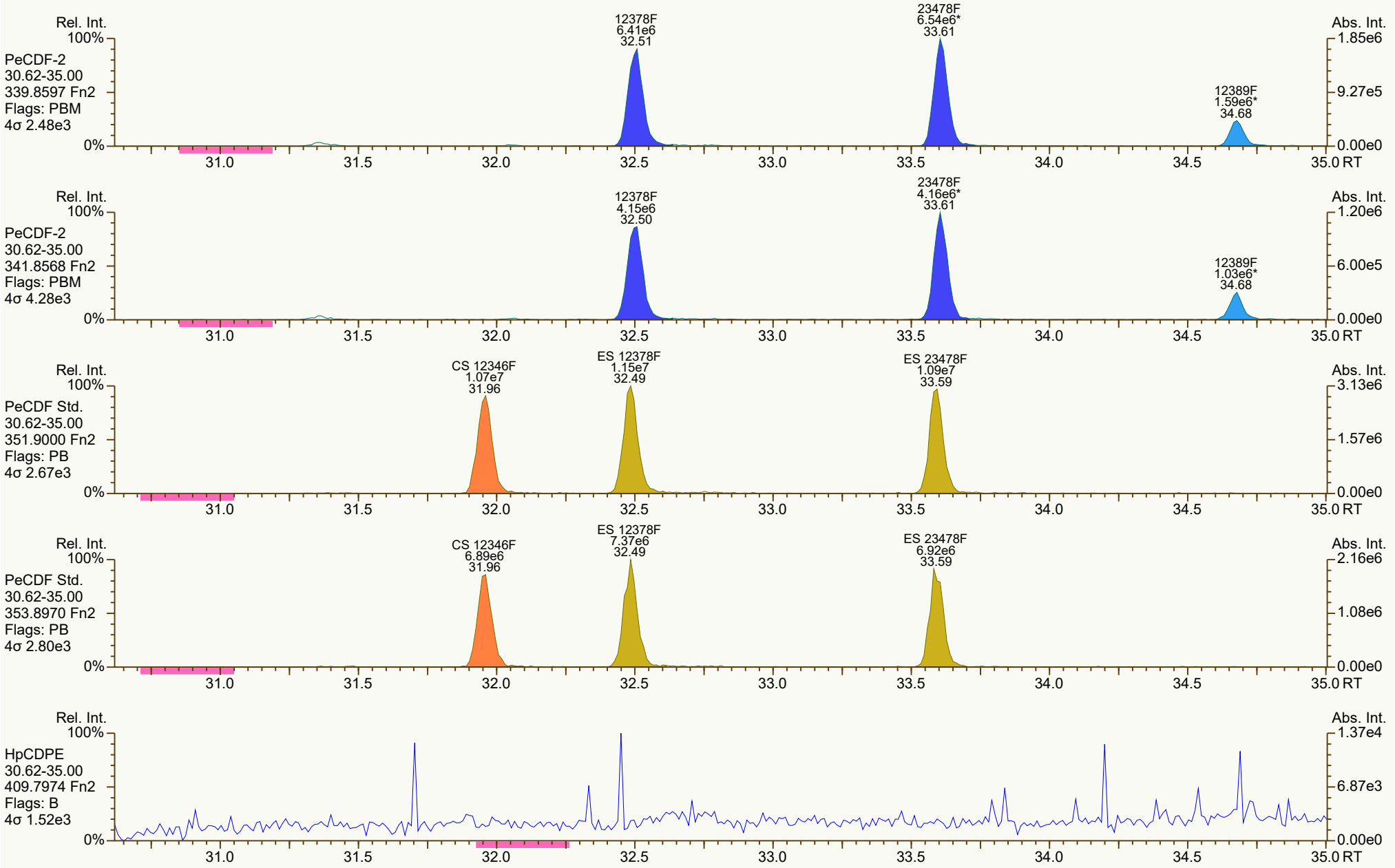

Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.73e3
124679/124689D
1.21e6
36.09
123478D
3.70e6
37.84
123678D
4.38e6
37.95
123789D
3.85e6*
38.24
1.20e6
6.02e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 1.59e3
124679/124689D
1.00e6
36.09
123478D
2.89e6
37.83
123678D
3.46e6
37.95
123789D
3.12e6*
38.24
9.47e5
4.73e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.24e3
ES 123478D
5.96e6
37.82
ES 123678D
6.29e6
37.94
JS 123467D
3.50e6
38.12
ES 123789D
6.46e6*
38.22
1.86e6
9.28e5
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.41e3
ES 123478D
4.53e6
37.82
ES 123678D
4.91e6
37.94
JS 123467D
2.70e6
38.12
ES 123789D
4.90e6*
38.22
1.47e6
7.35e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.88e7
1.94e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

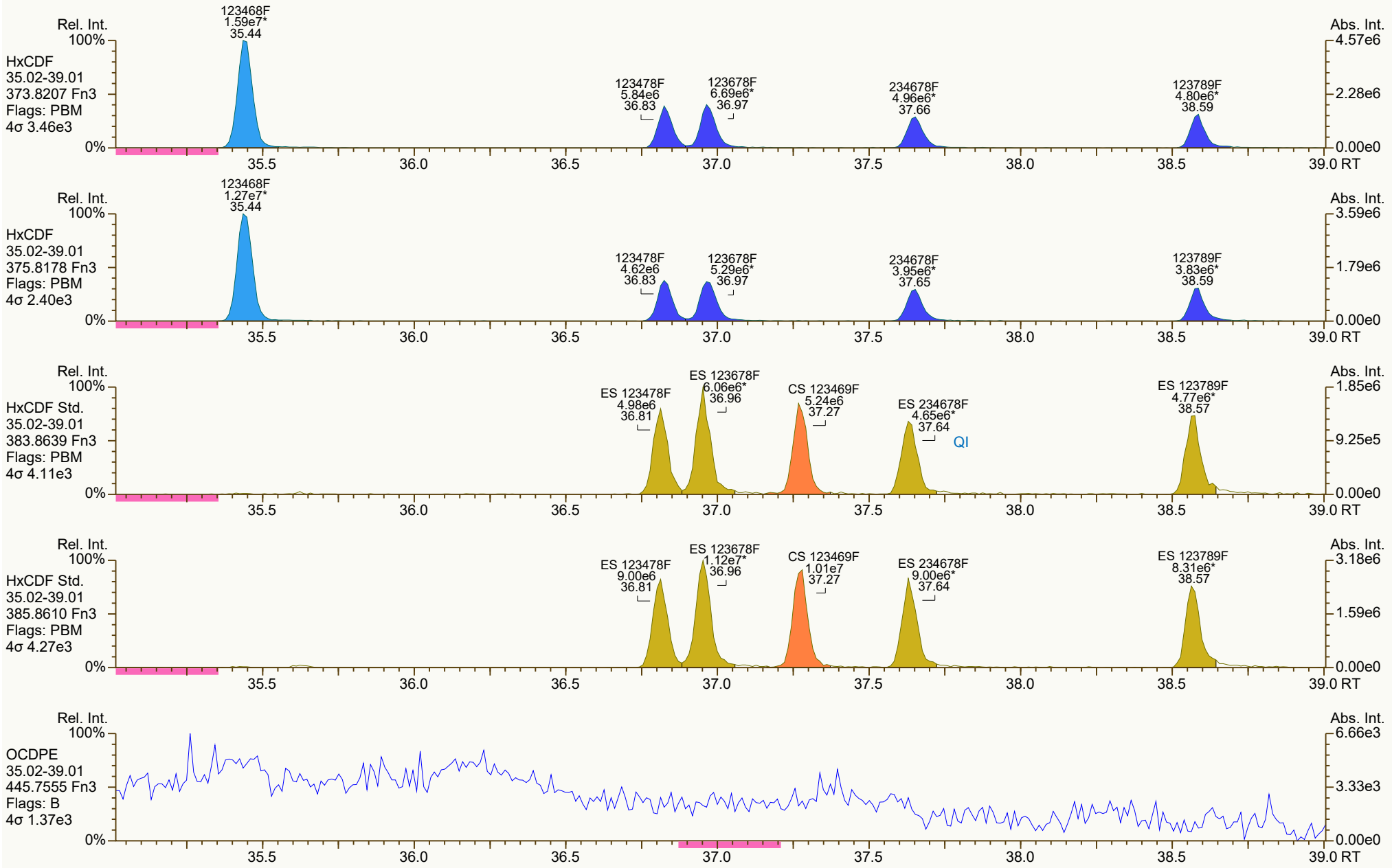

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
3.40e6*
40.85
1234679D
9.04e5
40.17
Abs. Int.
1.11e6
5.55e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.05e3
1234678D
3.31e6*
40.85
1234679D
8.78e5
40.18
Abs. Int.
1.09e6
5.45e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.32e3
ES 1234678D
5.72e6*
40.84
Abs. Int.
1.76e6
8.79e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678D
5.44e6*
40.84
Abs. Int.
1.65e6
8.25e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
2.15e7
1.07e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

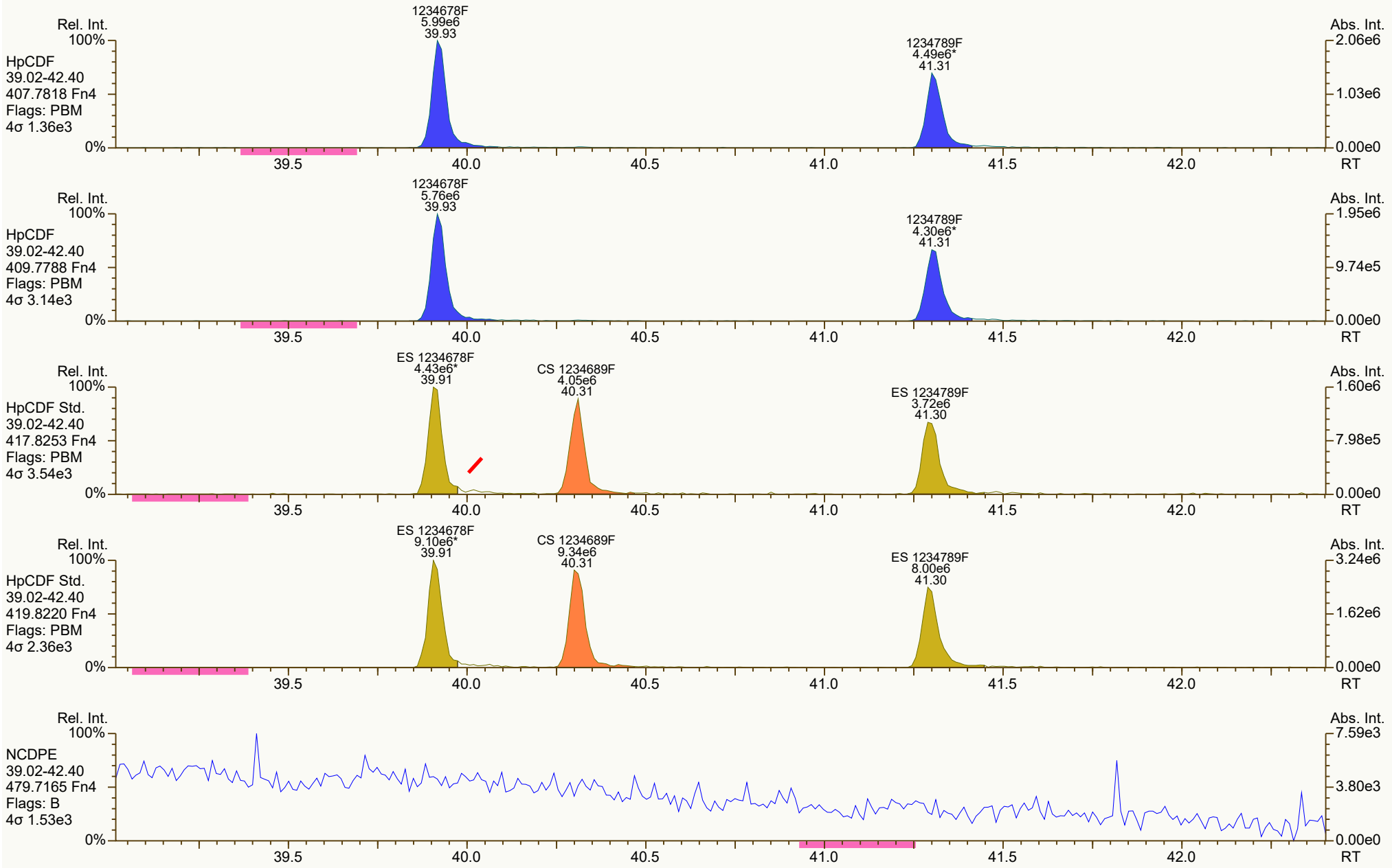

Rel. Int.
Abs. Int.
OCDD
4.56e6*
43.50
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 2.33e3
1.14e6
5.69e5
0.00e0
OCDD
4.98e6*
43.50
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 2.04e3
1.20e6
5.99e5
ES OCDD
6.69e6*
43.49
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.05e3
1.51e6
7.57e5
ES OCDD
7.45e6*
43.49
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 2.07e3
1.67e6
8.37e5
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
1.96e7
9.81e6
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT

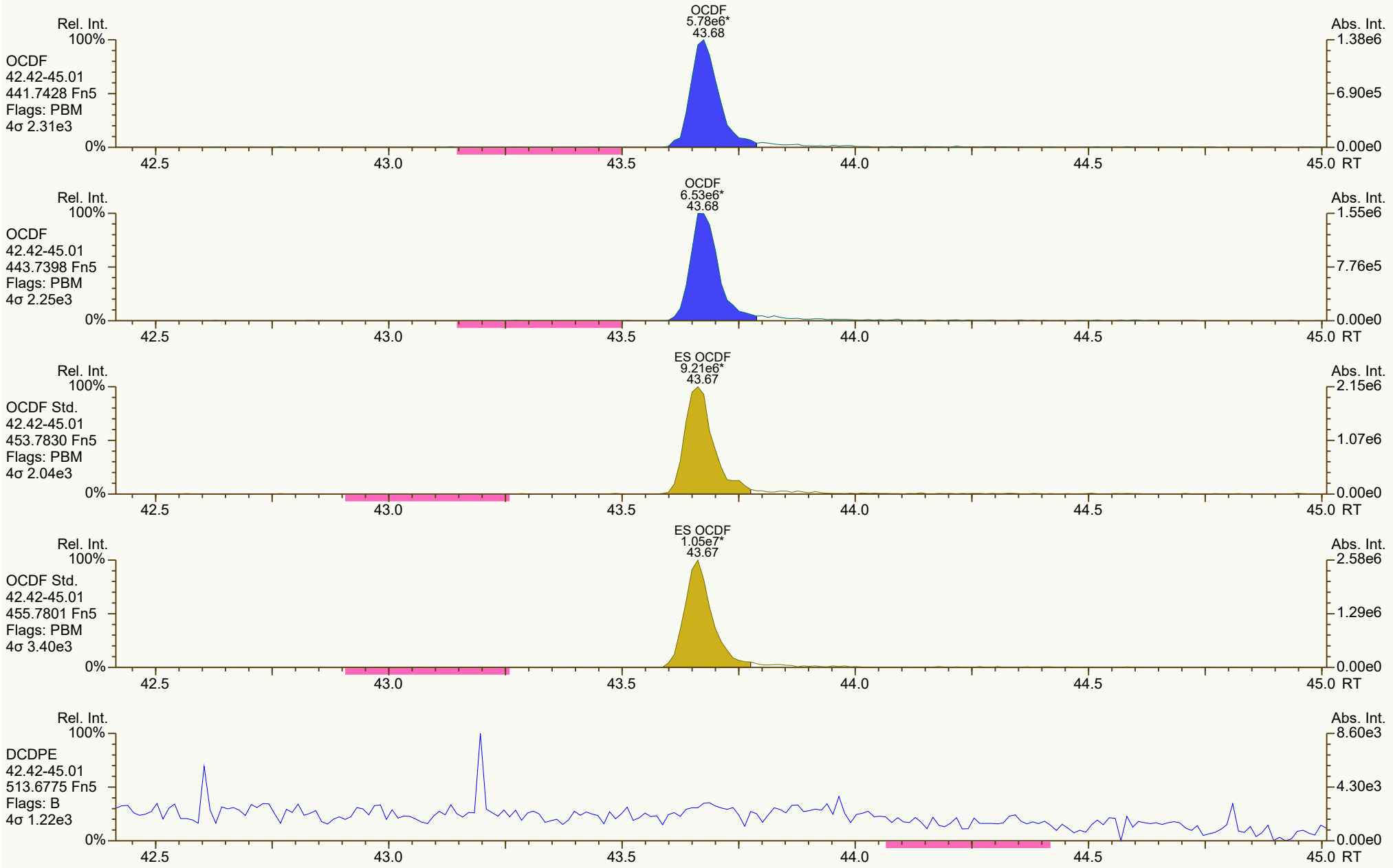

Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.68e3
1368F
1.91e6
22.97
2468F
4.79e5
24.16
2348F
1.77e6*
27.68
2378F
1.12e6*
27.79
1289F
1.80e6*
29.78
Abs. Int.
4.09e5
2.04e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 3.64e3
1368F
2.33e6
22.97
2468F
5.58e5
24.16
2348F
2.24e6*
27.68
2378F
1.39e6*
27.79
1289F
2.28e6*
29.78
Abs. Int.
5.37e5
2.68e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 8.08e3
JS 1234F
1.13e7
26.43
ES 2378F
8.43e6
27.77
Abs. Int.
2.38e6
1.19e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 7.48e3
JS 1234F
1.37e7
26.42
ES 2378F
1.09e7
27.77
Abs. Int.
2.95e6
1.48e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.68e3
Abs. Int.
2.15e4
1.08e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.93e6
1.46e6
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PB
4σ 1.76e3
13468/12468F
1.19e7
29.68
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PB
4σ 1.99e3
13468/12468F
7.31e6
29.69
1.68e6
8.40e5
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
1.21e7
6.05e6


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PBM
4σ 2.48e3
12378F
6.41e6
32.51
23478F
6.54e6*
33.61
12389F
1.59e6*
34.68
Abs. Int.
1.85e6
9.27e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: PBM
4σ 4.28e3
12378F
4.15e6
32.50
23478F
4.16e6*
33.61
12389F
1.03e6*
34.68
Abs. Int.
1.20e6
6.00e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 2.67e3
CS 12346F
1.07e7
31.96
ES 12378F
1.15e7
32.49
ES 23478F
1.09e7
33.59
Abs. Int.
3.13e6
1.57e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 2.80e3
CS 12346F
6.89e6
31.96
ES 12378F
7.37e6
32.49
ES 23478F
6.92e6
33.59
Abs. Int.
2.16e6
1.08e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.52e3
Abs. Int.
1.37e4
6.87e3
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 3.46e3
123468F 1.59e7* 35.44
123478F 5.84e6 36.83
123678F 6.69e6* 36.97
234678F 4.96e6* 37.66
123789F 4.80e6* 38.59
4.57e6
2.28e6
0.00e0
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.40e3
123468F 1.27e7* 35.44
123478F 4.62e6 36.83
123678F 5.29e6* 36.97
234678F 3.95e6* 37.65
123789F 3.83e6* 38.59
3.59e6
1.79e6
0.00e0
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 4.11e3
ES 123478F 4.98e6 36.81
ES 123678F 6.06e6* 36.96
CS 123469F 5.24e6 37.27
ES 234678F 4.65e6* 37.64
QI
ES 123789F 4.77e6* 38.57
1.85e6
9.25e5
0.00e0
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 4.27e3
ES 123478F 9.00e6 36.81
ES 123678F 1.12e7* 36.96
CS 123469F 1.01e7 37.27
ES 234678F 9.00e6* 37.64
ES 123789F 8.31e6* 38.57
3.18e6
1.59e6
0.00e0
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.37e3
6.66e3
3.33e3
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 1.36e3
1234678F
5.99e6
39.93
1234789F
4.49e6*
41.31
2.06e6
1.03e6
0.00e0
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 3.14e3
1234678F
5.76e6
39.93
1234789F
4.30e6*
41.31
1.95e6
9.74e5
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 3.54e3
ES 1234678F
4.43e6*
39.91
CS 1234689F
4.05e6
40.31
ES 1234789F
3.72e6
41.30
1.60e6
7.98e5
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.36e3
ES 1234678F
9.10e6*
39.91
CS 1234689F
9.34e6
40.31
ES 1234789F
8.00e6
41.30
3.24e6
1.62e6
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.53e3
7.59e3
3.80e3
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDF
5.78e6*
43.68
Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 2.31e3
0%
Abs. Int.
1.38e6
6.90e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.53e6*
43.68
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 2.25e3
0%
Abs. Int.
1.55e6
7.76e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.21e6*
43.67
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 2.04e3
0%
Abs. Int.
2.15e6
1.07e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.05e7*
43.67
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 3.40e3
0%
Abs. Int.
2.58e6
1.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: B
4σ 1.22e3
0%
Abs. Int.
8.60e3
4.30e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: OPR1_18863_DF **Acq'd: 25 Jan 2022 15:58 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18863_OPR001 **UTP: 26-Jan-2022 09:41:04 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 343-081-LKQ**

Datafile: 220125C01 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.66		1.0008	1.0008	0	1.71E+06	0.79	Y	1.18	12.1	4934.788	0.389
12378-PeCDD	33.97		1.0006	1.0006	0	5.42E+06	1.58	Y	1.04	48.7	3571.229	0.327
123478-HxCDD	37.86		1.0004	1.0004	0	5.87E+06	1.25	Y	1.09	57.2	4302.672	0.357
123678-HxCDD	37.97		1.0034	1.0034	0	7.02E+06	1.25	Y	1.15	54.4	4302.672	0.352
123789-HxCDD	38.26		1.0109	1.0112	+0.7	5.84E+06	1.27	Y	1.05	49.6	4302.672	0.418
1234678-HpCDD	40.88		1.0003	1.0004	+0.2	4.47E+06	1.03	Y	1.06	59.3	7056.663	0.853
OCDD	43.54		1.0002	1.0002	0	5.49E+06	0.92	Y	1.13	124	11977.562	3.23
2378-TCDF	27.81		1.0008	1.0009	+0.2	2.39E+06	0.67	Y	1.08	11.9	4309.85	0.239
12378-PeCDF	32.53		1.0005	1.0005	0	8.24E+06	1.58	Y	1.02	50.2	7089.949	0.473
23478-PeCDF	33.63		1.0005	1.0005	0	8.68E+06	1.51	Y	1.02	54.8	7089.949	0.453
123478-HxCDF	36.85		1.0004	1.0004	0	7.57E+06	1.28	Y	1.27	55.1	6576.314	0.439
123678-HxCDF	37.00		1.0004	1.0006	+0.4	1.01E+07	1.25	Y	1.15	61.1	6576.314	0.371
234678-HxCDF	37.68		1.0004	1.0004	0	9.65E+06	1.20	Y	1.19	54.9	6576.314	0.375
123789-HxCDF	38.62		1.0004	1.0005	+0.2	6.44E+06	1.29	Y	1.16	51	6576.314	0.523
1234678-HpCDF	39.96		1.0002	1.0004	+0.5	8.26E+06	0.99	Y	1.37	54.1	5414.425	0.271
1234789-HpCDF	41.34		1.0003	1.0002	-0.2	4.21E+06	0.99	Y	1.31	50	5414.425	0.562
OCDF	43.72		1.0002	1.0002	0	5.91E+06	0.85	Y	1.07	108	8851.459	1.9

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.64	1.0233	1.0236	+0.5	1.19E+07	0.78	Y	1.05	86.3
ES 12378-PeCDD	33.95	1.2121	1.2134	+2.6	1.07E+07	1.59	Y	0.88	92.3
ES 123478-HxCDD	37.84	0.9921	0.9922	+0.2	9.42E+06	1.25	Y	0.97	102
ES 123678-HxCDD	37.96	0.9951	0.9953	+0.5	1.12E+07	1.27	Y	0.94	125
ES 123789-HxCDD	38.25	1.0025	1.0029	+0.9	1.12E+07	1.24	Y	1.09	108
ES 1234678-HpCDD	40.87	1.0709	1.0715	+1.5	7.10E+06	1.04	Y	0.91	81.7
ES OCDD	43.53	1.1403	1.1412	+2.4	7.87E+06	0.91	Y	0.62	66.2
ES 2378-TCDF	27.78	1.0506	1.0511	+0.8	1.87E+07	0.83	Y	1.06	85.7
ES 12378-PeCDF	32.51	1.2281	1.2299	+3.5	1.60E+07	1.59	Y	0.91	85.6
ES 23478-PeCDF	33.61	1.2698	1.2718	+4.0	1.55E+07	1.51	Y	0.88	85.6
ES 123478-HxCDF	36.84	0.9657	0.9658	+0.2	1.08E+07	0.55	Y	1.20	94.7
ES 123678-HxCDF	36.98	0.9695	0.9695	0	1.44E+07	0.52	Y	1.35	112
ES 234678-HxCDF	37.67	0.9874	0.9876	+0.5	1.48E+07	0.54	Y	1.24	125
ES 123789-HxCDF	38.60	1.0116	1.0121	+1.2	1.09E+07	0.53	Y	1.16	98.8
ES 1234678-HpCDF	39.94	1.0467	1.0473	+1.4	1.12E+07	0.42	Y	0.97	121
ES 1234789-HpCDF	41.33	1.0830	1.0837	+1.7	6.43E+06	0.39	Y	0.85	79.3
ES OCDF	43.71	1.1451	1.1461	+2.6	1.02E+07	0.91	Y	0.81	66.4

Lab ID: OPR1_18863_DF | **Acq'd:** 25 Jan 2022 15:58 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18863_OPR001 | **UTP:** 26-Jan-2022 09:41:04 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 343-081-LKQ

Datafile: 220125C01 | **Report:** 26 Jan 2022 09:42 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.98		-	-	-	1.32E+07	0.77	Y	-	-	
JS 1234-TCDF	26.43		-	-	-	2.06E+07	0.78	Y	-	-	
JS 123467-HxCDD	38.14		-	-	-	4.76E+06	1.24	Y	-	-	
CS 37Cl-2378-TCDD	28.66		1.0241	1.0244	+0.5	5.74E+06	n/a	-	1.20	90.3	
CS 12347-PeCDD	33.44		1.1943	1.1955	+2.4	1.10E+07	1.49	Y	0.75	110	
CS 12346-PeCDF	31.98		1.2083	1.2099	+3.1	1.74E+07	1.50	Y	0.85	99.5	
CS 123469-HxCDF	37.30		0.9778	0.9779	+0.2	1.45E+07	0.55	Y	1.12	136	
CS 1234689-HpCDF	40.34		1.0571	1.0578	+1.7	1.08E+07	0.42	Y	0.89	128	
~~SS 37Cl-2378-TCDD~~	~~28.66~~		~~1.0241~~	~~1.0244~~	~~+0.5~~	~~5.74E+06~~	~~n/a~~		~~1.15~~	~~105~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.44~~		~~1.1943~~	~~1.1955~~	~~+2.4~~	~~1.10E+07~~	~~1.49~~	~~Y~~	~~0.86~~	~~119~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.98~~		~~1.2083~~	~~1.2099~~	~~+3.1~~	~~1.74E+07~~	~~1.50~~	~~Y~~	~~0.94~~	~~116~~	
~~SS 123469-HxCDF~~	~~37.30~~		~~0.9778~~	~~0.9779~~	~~+0.2~~	~~1.45E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~122~~	
~~SS 1234689-HpCDF~~	~~40.34~~		~~1.0571~~	~~1.0578~~	~~+1.7~~	~~1.08E+07~~	~~0.42~~	~~Y~~	~~0.92~~	~~106~~	

Totals	Conc	EMPC
Total TCDD	54.2	54.2
Total PeCDD	71.8	71.8
Total HxCDD	175	175
Total HpCDD	73.8	73.8
Total Tetra-Octa Dioxins	498	498
Total TCDF	61.9	61.9
Total PeCDF	212	212
Total HxCDF	350	350
Total HpCDF	104	104
Total Tetra-Octa Furans	836	836
Total Tetra-Octa Dioxins & Furans	1330	1330

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.785	0.79
Response	1.71E+06	1.71E+06

Lab ID: OPR1_18863_DF **Acq'd: 25 Jan 2022 15:58 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18863_OPR001 **UTP: 26-Jan-2022 09:41:04 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 343-081-LKQ**

Datafile: 220125C01 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8755	0.8746	-1.4	2.10E+06	0.80	Y	1.18	14.8	4934.788	0.389
1379-TCDD	NotFnd		0.8876						1.18		4934.788	0.389
1369-TCDD	NotFnd		0.9023						1.18		4934.788	0.389
1469-TCDD	NotFnd		0.9291						1.18		4934.788	0.389
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		4934.788	0.389
1378-TCDD	NotFnd		0.9440						1.18		4934.788	0.389
1268-TCDD	NotFnd		0.9506						1.18		4934.788	0.389
1478-TCDD	NotFnd		0.9591						1.18		4934.788	0.389
1279-TCDD	NotFnd		0.9649						1.18		4934.788	0.389
1234/1269-TCDD	NotFnd		0.9771						1.18		4934.788	0.389
1236-TCDD	NotFnd		0.9820						1.18		4934.788	0.389
1237/1238-TCDD	NotFnd		0.9908						1.18		4934.788	0.389
1239-TCDD	28.50		0.9954	0.9952	-0.3	1.59E+06	0.80	Y	1.18	11.3	4934.788	0.389
2378-TCDD	**28.66**		**1.0008**	1.0008	**0**	1.71E+06	0.79	Y	**1.18**	**12.1**	**4934.788**	**0.389**
1278-TCDD	NotFnd		1.0121						1.18		4934.788	0.389
1267-TCDD	NotFnd		1.0167						1.18		4934.788	0.389
1289-TCDD	29.62		1.0341	1.0343	+0.4	2.27E+06	0.83	Y	1.18	16.1	4934.788	0.389
12479/12468-PeCDD	31.47		0.9273	0.9271	-0.4	1.23E+06	1.59	Y	1.04	11.1	3571.229	0.327
12469-PeCDD	NotFnd		0.9430						1.04		3571.229	0.327
12368-PeCDD	NotFnd		0.9592						1.04		3571.229	0.327
12478-PeCDD	NotFnd		0.9647						1.04		3571.229	0.327
12379-PeCDD	NotFnd		0.9676						1.04		3571.229	0.327
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		3571.229	0.327
12346/12347-PeCDD	NotFnd		0.9860						1.04		3571.229	0.327
12378-PeCDD	33.97		**1.0006**	**1.0006**	**0**	**5.42E+06**	**1.58**	**Y**	**1.04**	**48.7**	**3571.229**	**0.327**
12367-PeCDD	NotFnd		1.0034						1.04		3571.229	0.327
12389-PeCDD	34.40		1.0134	1.0135	+0.2	1.33E+06	1.45	Y	1.04	12	3571.229	0.327
124679/124689-HxCDD	36.11		0.9545	0.9543	-0.4	1.58E+06	1.22	Y	1.10	13.6	4302.672	0.376
123468-HxCDD	NotFnd		0.9715						1.10		4302.672	0.376
123679/123689-HxCDD	NotFnd		0.9793						1.10		4302.672	0.376
123469-HxCDD	NotFnd		0.9829						1.10		4302.672	0.376
123478-HxCDD	37.86		**1.0004**	**1.0004**	**0**	**5.87E+06**	**1.25**	**Y**	1.09	**57.2**	**4302.672**	**0.357**
123678-HxCDD	37.97		**1.0034**	**1.0034**	**0**	**7.02E+06**	**1.25**	**Y**	1.15	**54.4**	**4302.672**	**0.352**
123467-HxCDD	NotFnd		1.0082						1.10		4302.672	0.376
123789-HxCDD	38.26		**1.0109**	**1.0112**	**+0.7**	**5.84E+06**	**1.27**	**Y**	1.05	**49.6**	**4302.672**	**0.418**

Lab ID: OPR1_18863_DF **Acq'd: 25 Jan 2022 15:58 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18863_OPR001 **UTP: 26-Jan-2022 09:41:04 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 343-081-LKQ**

Datafile: 220125C01 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.20		0.9838	0.9837	-0.2	1.09E+06	1.01	Y	1.06	14.5	7056.663	0.853
1234678-HpCDD	**40.88**		**1.0003**	**1.0004**	**+0.2**	**4.47E+06**	**1.03**	**Y**	**1.06**	**59.3**	**7056.663**	**0.853**
OCDD	**43.54**		**1.0002**	**1.0002**	**0**	**5.49E+06**	**0.92**	**Y**	**1.13**	**124**	**11977.562**	**3.23**
OCDD-a	43.51		1.0002	0.9995	-1.8	2.21E+05	2.35	Y	0.07	78	3514.844	14.8
1368-TCDF	22.97		0.8282	0.8268	-1.9	3.05E+06	0.76	Y	1.08	15.2	4309.85	0.239
1468-TCDF	NotFnd		0.8485						1.08		4309.85	0.239
2468-TCDF	24.16		0.8709	0.8696	-1.9	7.74E+05	0.78	Y	1.08	3.84	4309.85	0.239
1346/1246-TCDF	NotFnd		0.8829						1.08		4309.85	0.239
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		4309.85	0.239
1348-TCDF	NotFnd		0.8980						1.08		4309.85	0.239
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		4309.85	0.239
1268-TCDF	NotFnd		0.9158						1.08		4309.85	0.239
1467-TCDF	NotFnd		0.9206						1.08		4309.85	0.239
1478-TCDF	NotFnd		0.9266						1.08		4309.85	0.239
1369/1237-TCDF	NotFnd		0.9397						1.08		4309.85	0.239
2467-TCDF	NotFnd		0.9440						1.08		4309.85	0.239
2368-TCDF	NotFnd		0.9497						1.08		4309.85	0.239
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		4309.85	0.239
1278-TCDF	NotFnd		0.9690						1.08		4309.85	0.239
1349-TCDF	NotFnd		0.9730						1.08		4309.85	0.239
1267-TCDF	NotFnd		0.9787						1.08		4309.85	0.239
2346/1249-TCDF	NotFnd		0.9850						1.08		4309.85	0.239
2347/1279-TCDF	NotFnd		0.9929						1.08		4309.85	0.239
2348-TCDF	27.69		0.9970	0.9968	-0.3	2.93E+06	0.83	Y	1.08	14.6	4309.85	0.239
2378-TCDF	**27.81**		**1.0008**	**1.0009**	**+0.2**	**2.39E+06**	**0.67**	**Y**	**1.08**	**11.9**	**4309.85**	**0.239**
2367/3467-TCDF	NotFnd		1.0136						1.08		4309.85	0.239
1269-TCDF	NotFnd		1.0221						1.08		4309.85	0.239
1239-TCDF	NotFnd		1.0319						1.08		4309.85	0.239
1289-TCDF	29.79		1.0740	1.0724	-2.9	3.31E+06	0.80	Y	1.08	16.5	4309.85	0.239
13468/12468-PeCDF	29.70		0.9145	0.9136	-1.6	1.56E+07	1.56	Y	1.02	96.6	3555.024	0.232
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		7089.949	0.463
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		7089.949	0.463
14678-PeCDF	NotFnd		0.9695						1.02		7089.949	0.463
13479-PeCDF	NotFnd		0.9724						1.02		7089.949	0.463
13469/12479-PeCDF	NotFnd		0.9801						1.02		7089.949	0.463
12346-PeCDF	NotFnd		0.9842						1.02		7089.949	0.463

Lab ID: OPR1_18863_DF **Acq'd: 25 Jan 2022 15:58 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18863_OPR001 **UTP: 26-Jan-2022 09:41:04 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 343-081-LKQ**

Datafile: 220125C01 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		7089.949	0.463
12347-PeCDF	NotFnd		0.9895						1.02		7089.949	0.463
12348-PeCDF	NotFnd		0.9941						1.02		7089.949	0.463
12378-PeCDF	**32.53**		**1.0005**	**1.0005**	**0**	**8.24E+06**	**1.58**	**Y**	**1.02**	**50.2**	**7089.949**	**0.473**
12678/12367-PeCDF	NotFnd		1.0090						1.02		7089.949	0.463
12379-PeCDF	NotFnd		1.0142						1.02		7089.949	0.463
12679-PeCDF	NotFnd		0.9931						1.02		7089.949	0.463
23467/12369-PeCDF	NotFnd		0.9966						1.02		7089.949	0.463
23478-PeCDF	**33.63**		**1.0005**	**1.0005**	**0**	**8.68E+06**	**1.51**	**Y**	**1.02**	**54.8**	**7089.949**	**0.453**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		7089.949	0.463
12349-PeCDF	NotFnd		1.0101						1.02		7089.949	0.463
12389-PeCDF	34.70		1.0322	1.0324	+0.4	1.63E+06	1.57	Y	1.02	10.1	7089.949	0.463
123468-HxCDF	35.47		0.9627	0.9628	+0.2	1.94E+07	1.23	Y	1.19	128	6576.314	0.418
124678/134678-HxCDF	NotFnd		0.9684						1.19		6576.314	0.418
134679-HxCDF	NotFnd		0.9747						1.19		6576.314	0.418
124679-HxCDF	NotFnd		0.9802						1.19		6576.314	0.418
124689-HxCDF	NotFnd		0.9858						1.19		6576.314	0.418
123467-HxCDF	NotFnd		0.9972						1.19		6576.314	0.418
123478-HxCDF	**36.85**		**1.0004**	**1.0004**	**0**	**7.57E+06**	**1.28**	**Y**	**1.27**	**55.1**	**6576.314**	**0.439**
123678-HxCDF	**37.00**		**1.0004**	**1.0006**	**+0.4**	**1.01E+07**	**1.25**	**Y**	**1.15**	**61.1**	**6576.314**	**0.371**
123479-HxCDF	NotFnd		1.0051						1.19		6576.314	0.418
123469-HxCDF	NotFnd		1.0091						1.19		6576.314	0.418
123679-HxCDF	NotFnd		0.9943						1.19		6576.314	0.418
234678-HxCDF	**37.68**		**1.0004**	**1.0004**	**0**	**9.65E+06**	**1.20**	**Y**	**1.19**	**54.9**	**6576.314**	**0.375**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6576.314	0.418
123789-HxCDF	**38.62**		**1.0004**	**1.0005**	**+0.2**	**6.44E+06**	**1.29**	**Y**	**1.16**	**51**	**6576.314**	**0.523**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		6576.314	0.418
1234678-HpCDF	**39.96**		**1.0002**	**1.0004**	**+0.5**	**8.26E+06**	**0.99**	**Y**	**1.37**	**54.1**	**5414.425**	**0.271**
1234679-HpCDF	NotFnd		1.0067						1.34		5414.425	0.377
1234689-HpCDF	NotFnd		1.0101						1.34		5414.425	0.377
1234789-HpCDF	**41.34**		**1.0003**	**1.0002**	**-0.2**	**4.21E+06**	**0.99**	**Y**	**1.31**	**50**	**5414.425**	**0.562**
OCDF	**43.72**		**1.0002**	**1.0002**	**0**	**5.91E+06**	**0.85**	**Y**	**1.07**	**108**	**8851.459**	**1.9**
OCDF-a	43.71	**EMPC**	1.0002	1.0000	-0.5	2.68E+05	3.05	N	0.07	79	3559.558	12.3

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220125C01	Analysis Date:	25-JAN-2022 15:58:21
Lab ID:	OPR1_18863_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.1	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	48.7	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	57.2	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	54.4	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	49.6	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	59.3	35	-	70	Y
OCDD	100	124	78	-	144	Y
2,3,7,8-TCDF	10	11.9	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	50.2	40	-	67	Y
2,3,4,7,8-PeCDF	50	54.8	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	55.1	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	61.1	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	54.9	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	51	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	54.1	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	50	39	-	69	Y
OCDF	100	108	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 26 Jan 2022 09:42 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220125C01 Analysis Date: 25-JAN-2022 15:58:21

Lab ID: OPR1_18863_DF

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	86.3	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	92.3	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	102	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	125	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	108	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	81.7	26	-	166	Y
13C-OCDD	200	132	26	-	397	Y
13C-2,3,7,8-TCDF	100	85.7	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	85.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	85.6	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	94.7	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	112	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	125	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	98.8	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	121	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	79.3	20	-	186	Y
13C-OCDF	200	133	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	36.1	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 26 Jan 2022 09:42 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220125C01	Analysis Date:	25-JAN-2022 15:58:21
Lab ID:	OPR1_18863_DF		

Window Defining Standards Results

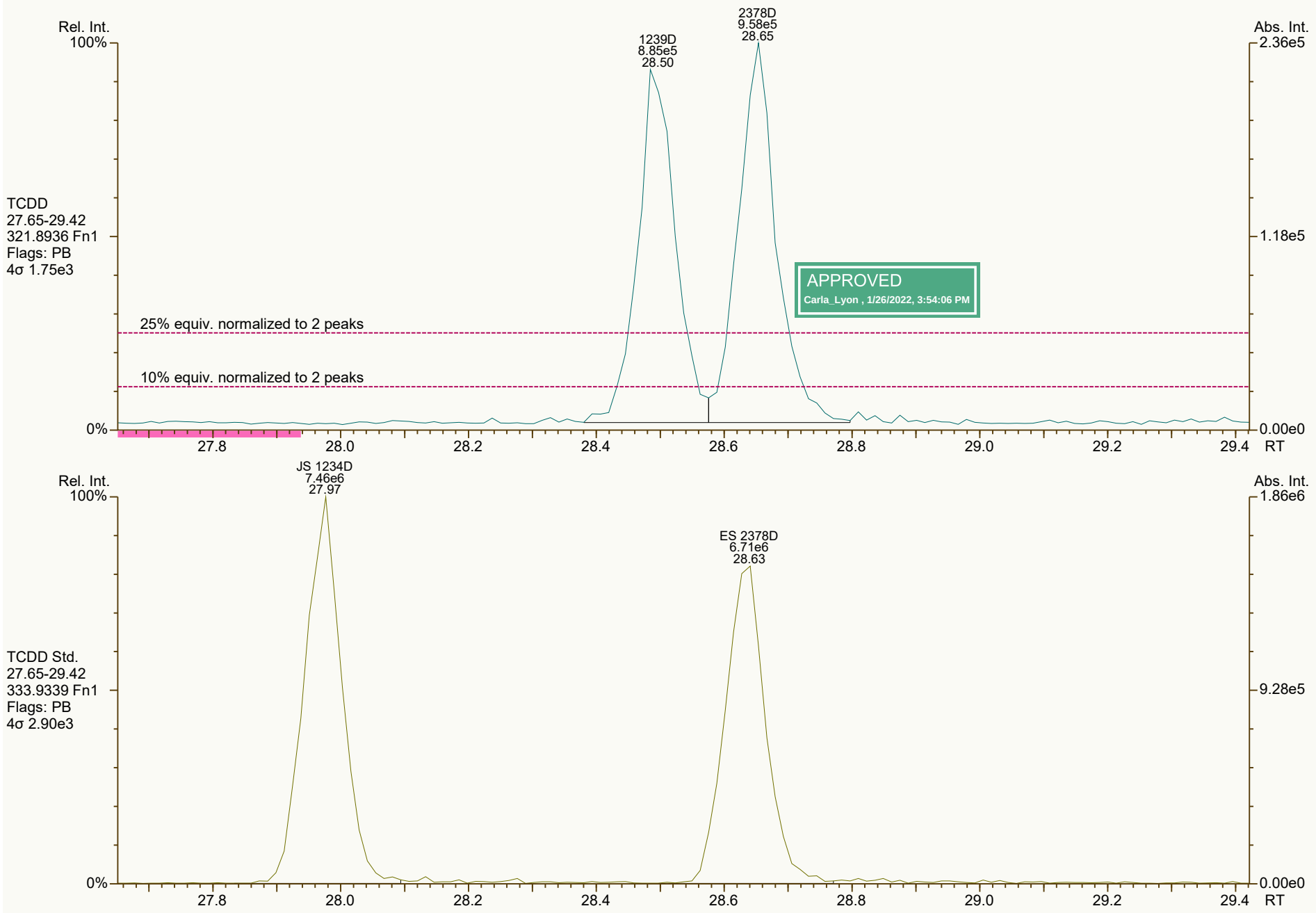
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.04	1289-TCDD	29.62
12479/12468-PeCDD	31.47	12389-PeCDD	34.40
124679/124689-HxCDD	36.11	123789-HxCDD	38.26
1234679-HpCDD	40.20	1234678-HpCDD	40.88
1368-TCDF	22.97	1289-TCDF	29.79
13468/12468-PeCDF	29.70	12389-PeCDF	34.70
123468-HxCDF	35.47	123789-HxCDF	38.62
1234678-HpCDF	39.96	1234789-HpCDF	41.34

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.50	2378-TCDD	28.66
2348-TCDF	27.69	2378-TCDF	27.81

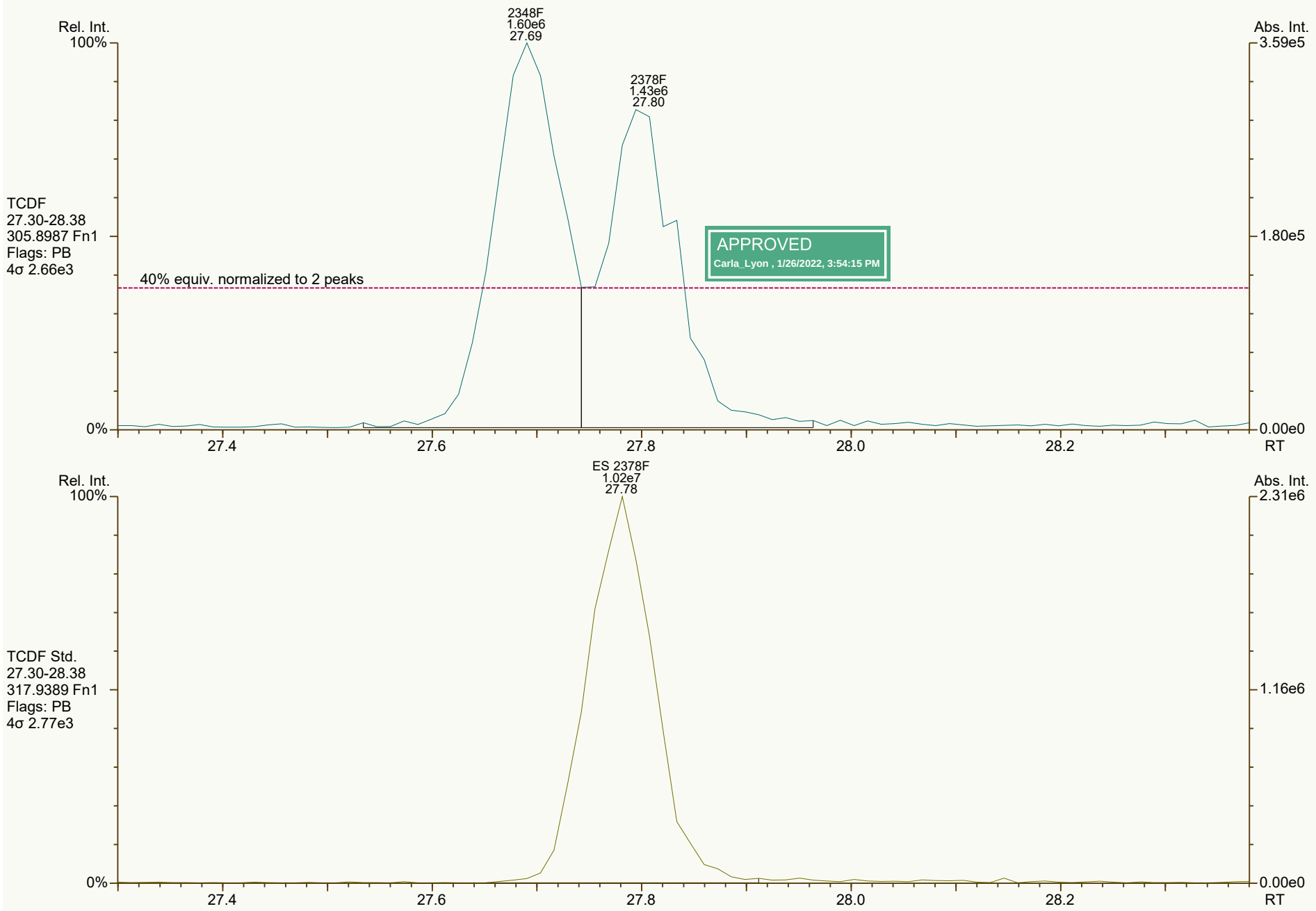
Processed: 26 Jan 2022 09:42 Analyst: TF

SGS ID: OPR1_18863_DF
Sample ID: 0_18863_OPR001
Acq: 25-Jan-2022 15:58:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220125C01



Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR1_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
Revised: 26-Jan-2022 08:24 (DTF) Printed: 26-Jan-2022 09:44

SGS ID: OPR1_18863_DF
Sample ID: 0_18863_OPR001
Acq: 25-Jan-2022 15:58:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220125C01



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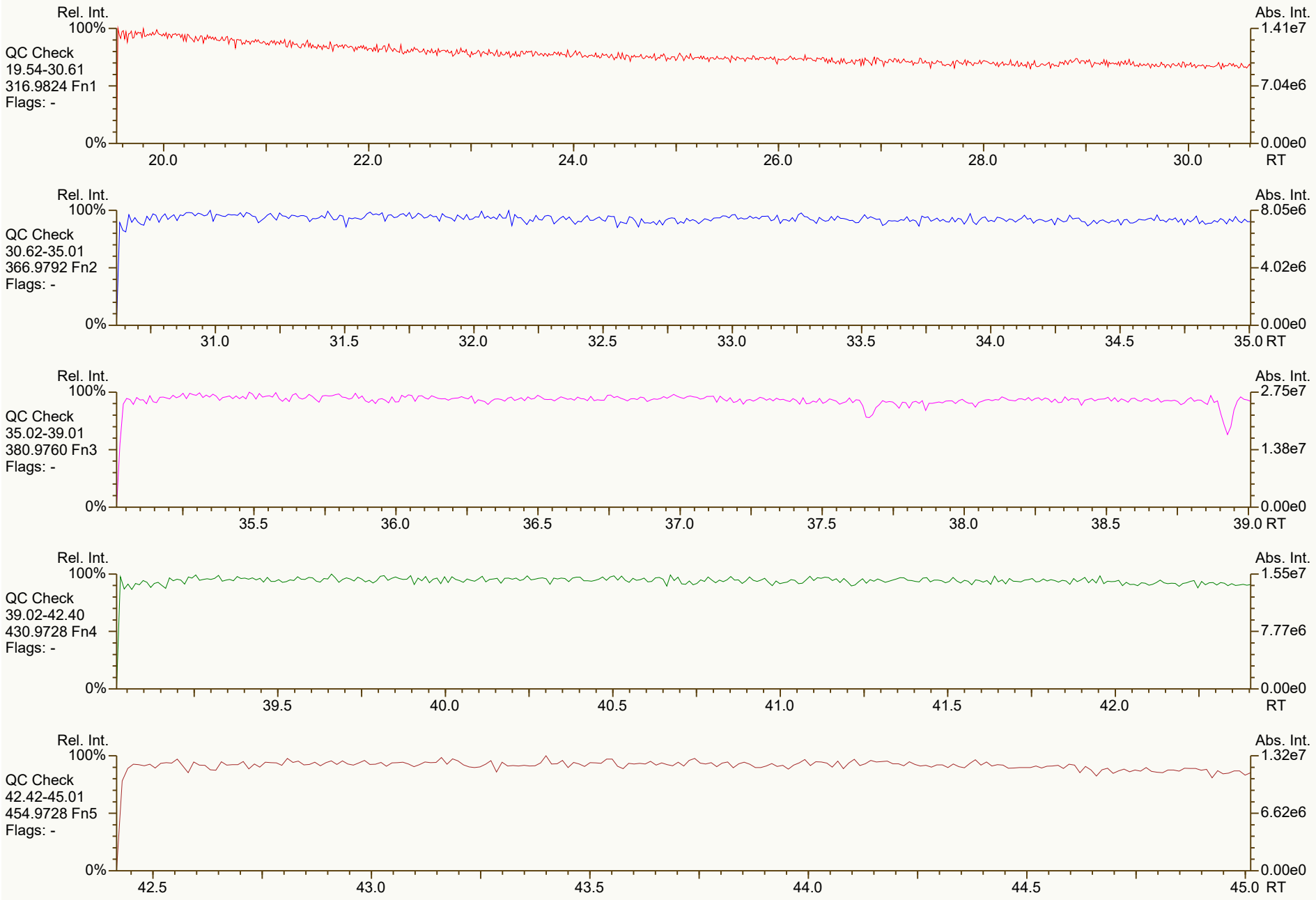
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
Revised: 26-Jan-2022 08:24 (DTF) Printed: 26-Jan-2022 09:44


Rel. Int.
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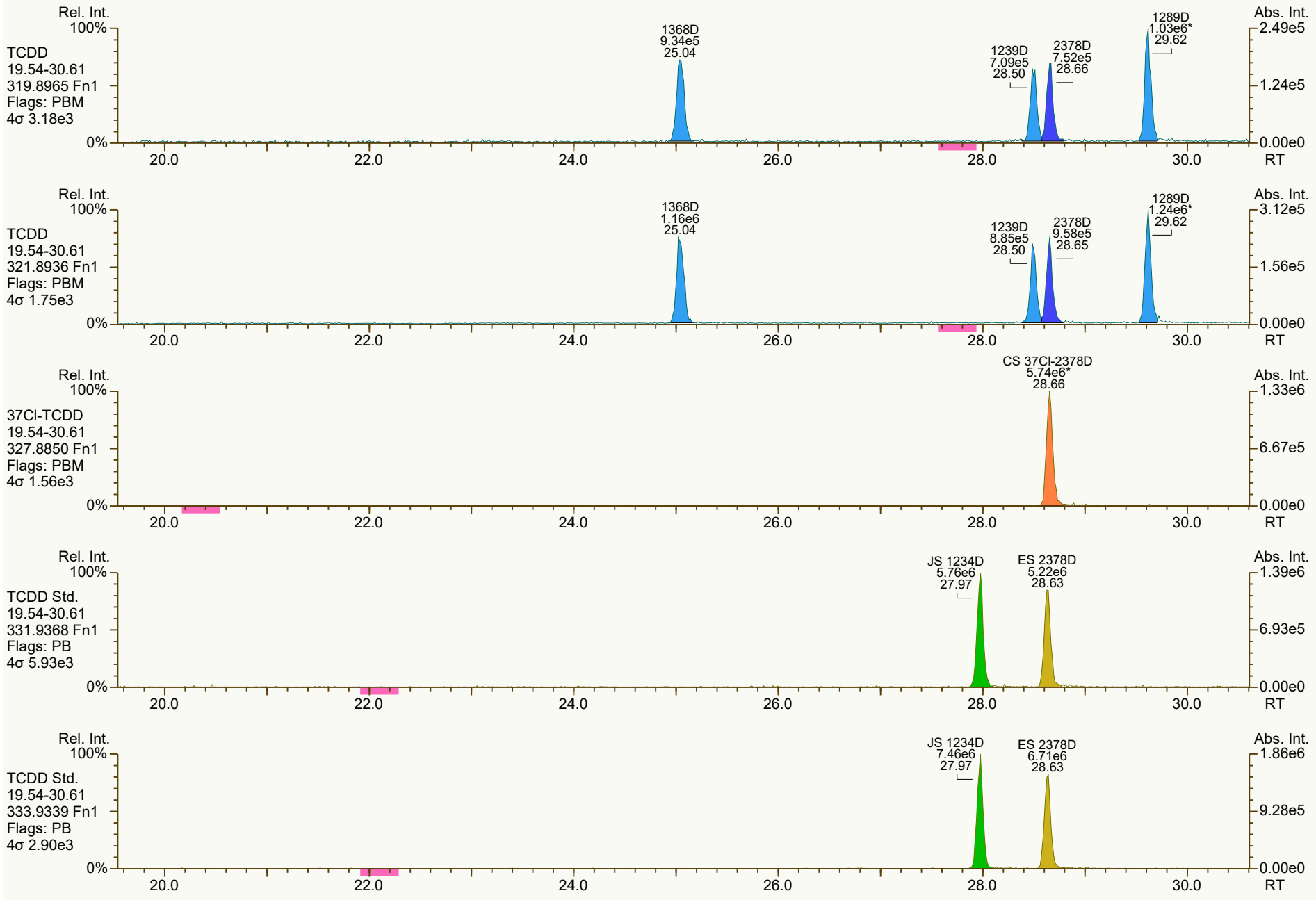
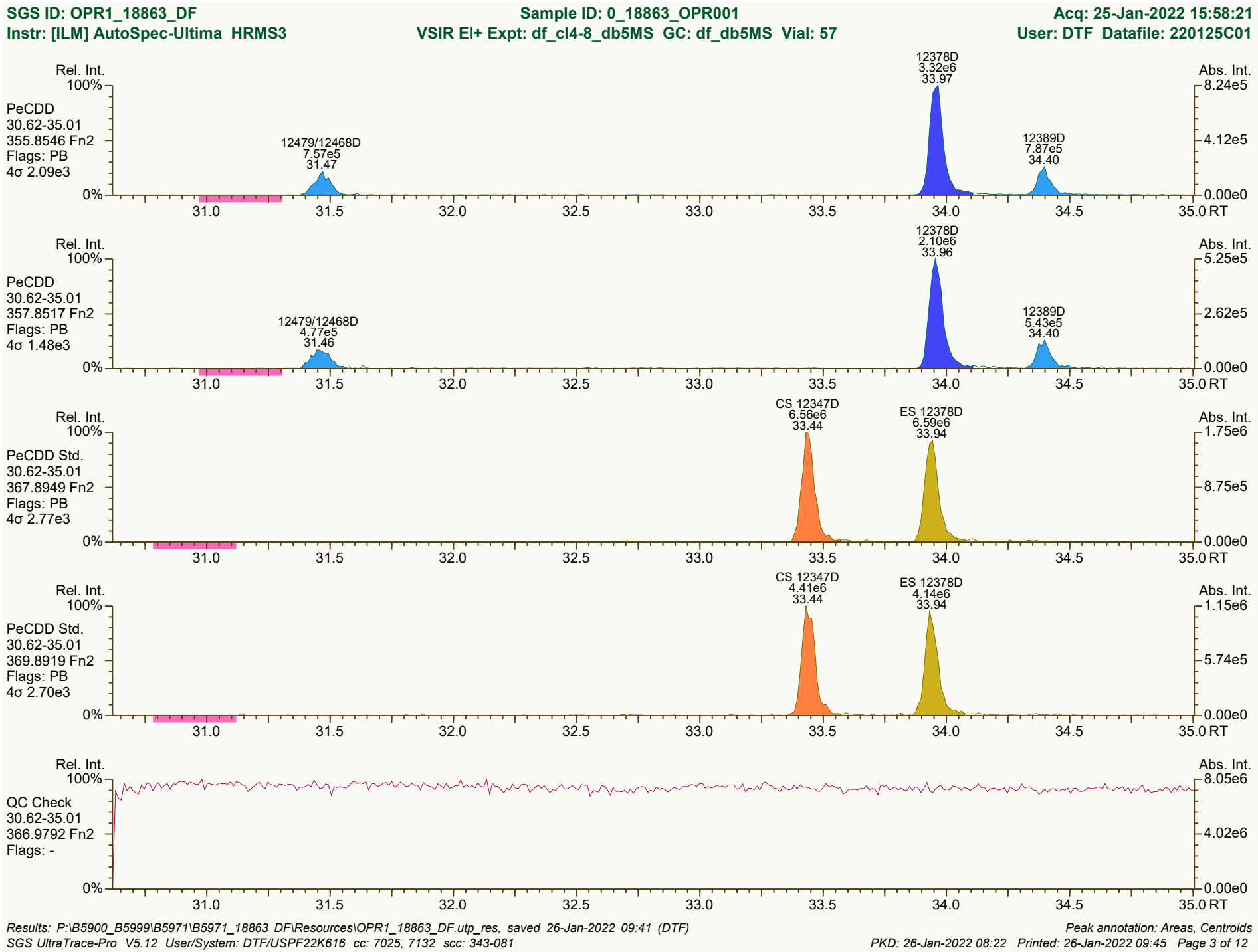
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
1.41e7
7.04e6
0.00e0
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
8.05e6
4.02e6
0.00e0
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
2.75e7
1.38e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.55e7
7.77e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.32e7
6.62e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 3.18e3
0%
1368D
9.34e5
25.04
1239D
7.09e5
28.50
2378D
7.52e5
28.66
1289D
1.03e6*
29.62
Abs. Int.
2.49e5
1.24e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.75e3
0%
1368D
1.16e6
25.04
1239D
8.85e5
28.50
2378D
9.58e5
28.65
1289D
1.24e6*
29.62
Abs. Int.
3.12e5
1.56e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PBM
4σ 1.56e3
0%
CS 37Cl-2378D
5.74e6*
28.66
Abs. Int.
1.33e6
6.67e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 5.93e3
0%
JS 1234D
5.76e6
27.97
ES 2378D
5.22e6
28.63
Abs. Int.
1.39e6
6.93e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 2.90e3
0%
JS 1234D
7.46e6
27.97
ES 2378D
6.71e6
28.63
Abs. Int.
1.86e6
9.28e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT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Sample ID: 0_18863_OPR001
Acq: 25-Jan-2022 15:58:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220125C01
Rel. Int.
Abs. Int.
PeCDD
30.62-35.01
355.8546 Fn2
Flags: PB
4σ 2.09e3
12479/12468D
7.57e5
31.47
12378D
3.32e6
33.97
12389D
7.87e5
34.40
PeCDD
30.62-35.01
357.8517 Fn2
Flags: PB
4σ 1.48e3
12479/12468D
4.77e5
31.46
12378D
2.10e6
33.96
12389D
5.43e5
34.40
PeCDD Std.
30.62-35.01
367.8949 Fn2
Flags: PB
4σ 2.77e3
CS 12347D
6.56e6
33.44
ES 12378D
6.59e6
33.94
PeCDD Std.
30.62-35.01
369.8919 Fn2
Flags: PB
4σ 2.70e3
CS 12347D
4.41e6
33.44
ES 12378D
4.14e6
33.94
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
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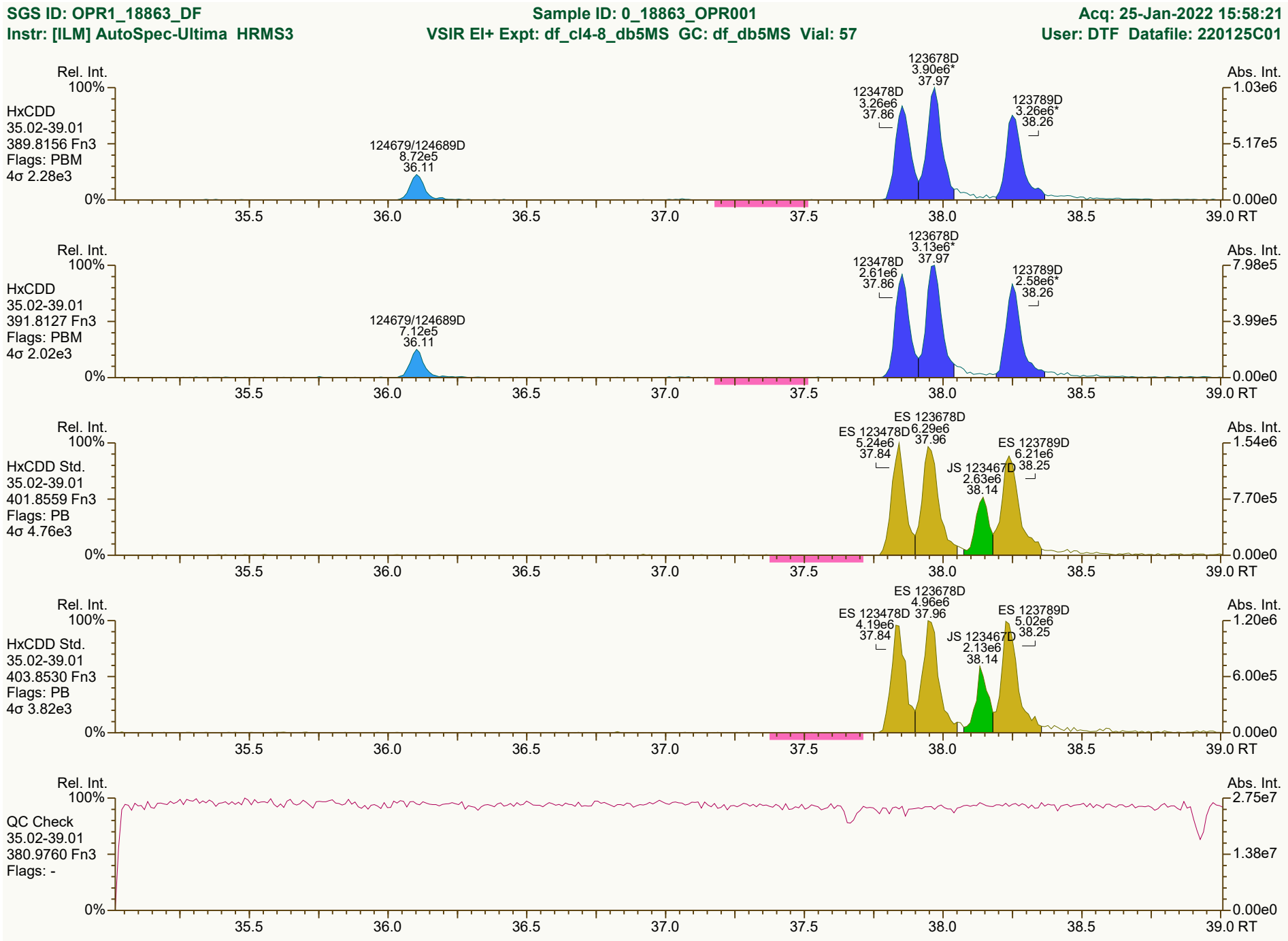
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7025, 7132 scc: 343-081
PKD: 26-Jan-2022 08:22 Printed: 26-Jan-2022 09:45 Page 3 of 12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Sample ID: 0_18863_OPR001
Acq: 25-Jan-2022 15:58:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220125C01
Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 2.28e3
124679/124689D
8.72e5
36.11
123478D
3.26e6
37.86
123678D
3.90e6*
37.97
123789D
3.26e6*
38.26
1.03e6
5.17e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 2.02e3
124679/124689D
7.12e5
36.11
123478D
2.61e6
37.86
123678D
3.13e6*
37.97
123789D
2.58e6*
38.26
7.98e5
3.99e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PB
4σ 4.76e3
ES 123478D
5.24e6
37.84
ES 123678D
6.29e6
37.96
JS 123467D
2.63e6
38.14
ES 123789D
6.21e6
38.25
1.54e6
7.70e5
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PB
4σ 3.82e3
ES 123478D
4.19e6
37.84
ES 123678D
4.96e6
37.96
JS 123467D
2.13e6
38.14
ES 123789D
5.02e6
38.25
1.20e6
6.00e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
2.75e7
1.38e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
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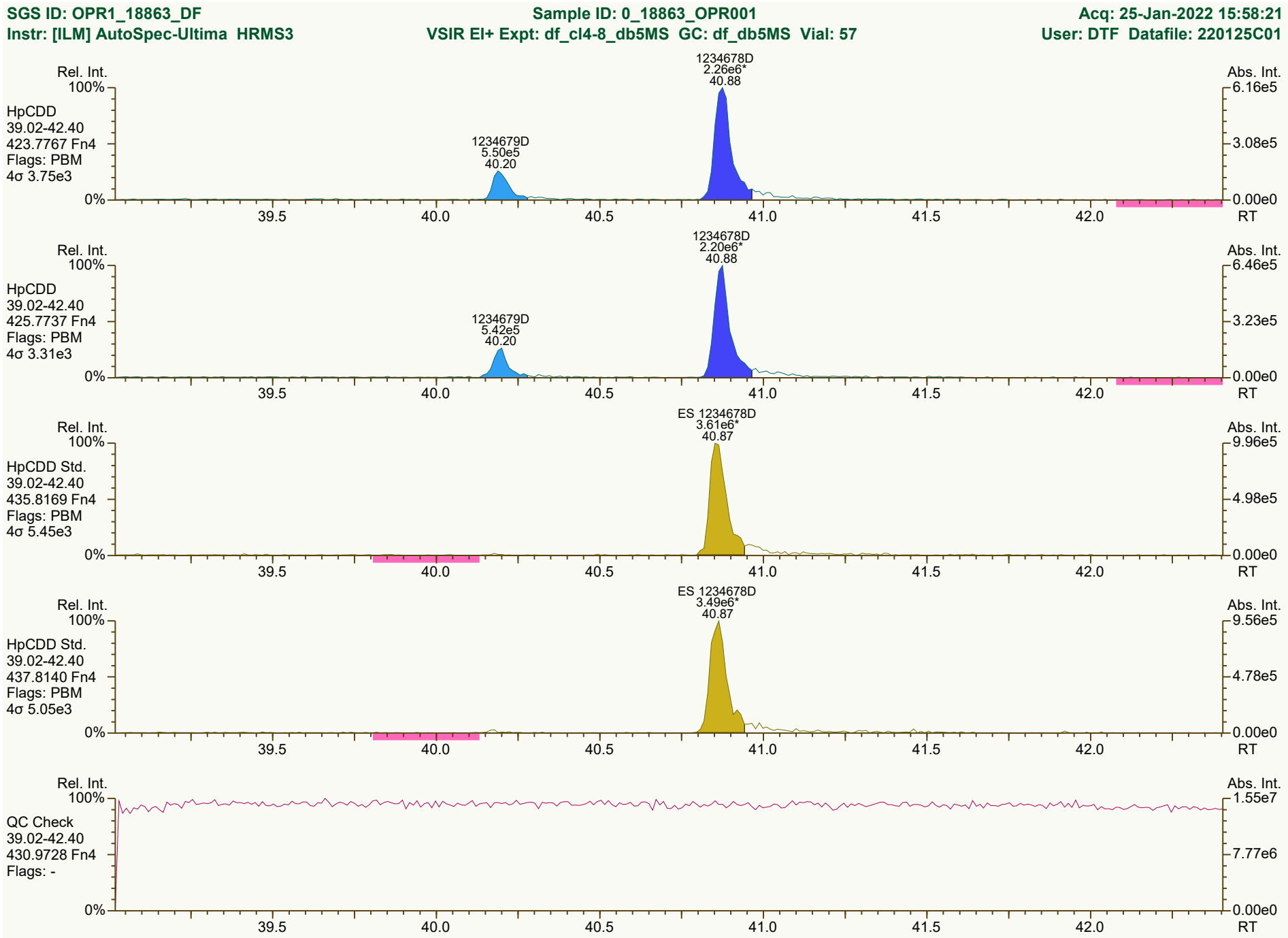
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1582, 5279 scc: 343-081
Revised: 26-Jan-2022 08:24 (DTF) Printed: 26-Jan-2022 09:45 Page 4 of 12

SGS ID: OPR1_18863_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18863_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57

Acq: 25-Jan-2022 15:58:21
User: DTF Datafile: 220125C01



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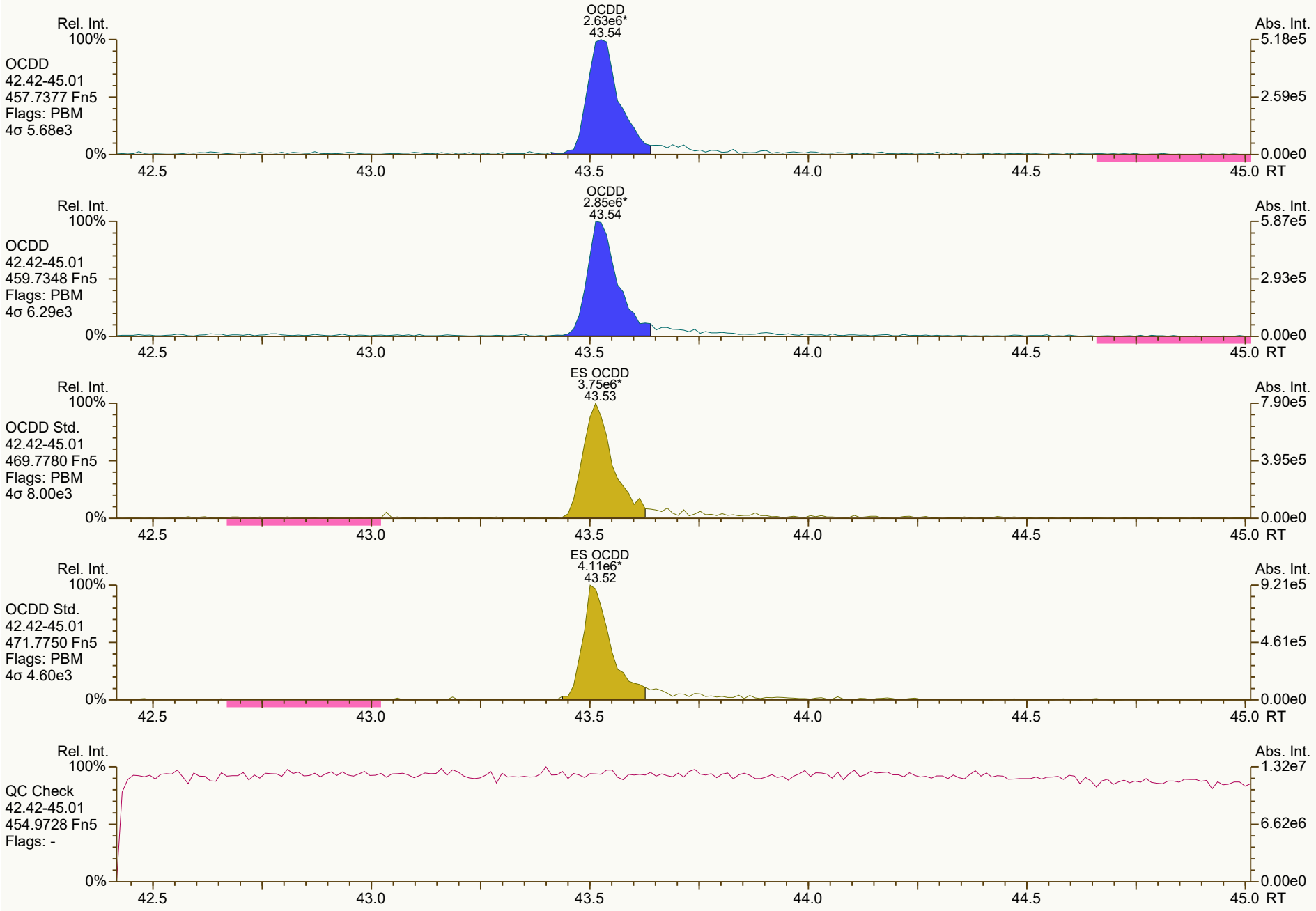
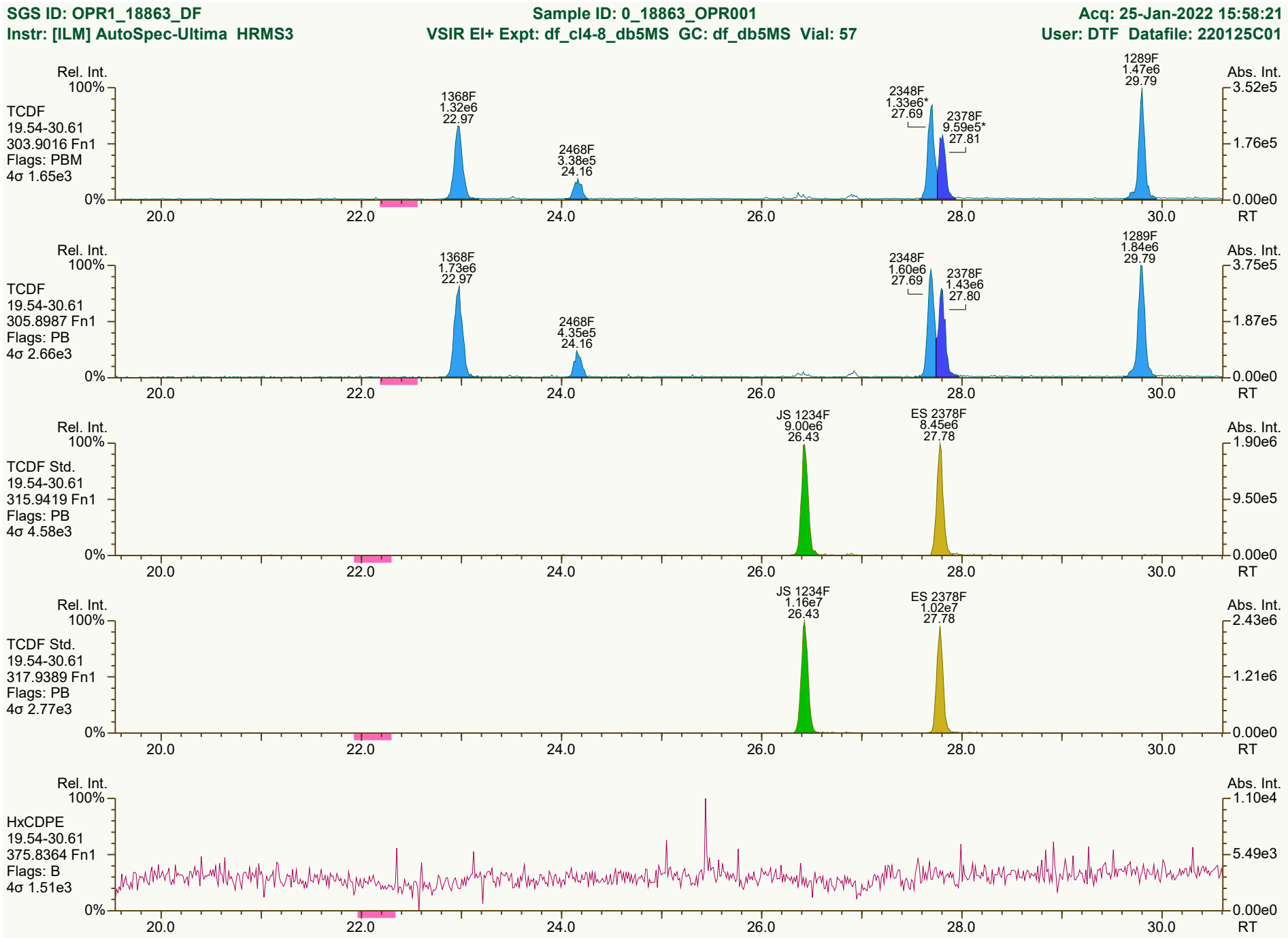
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9887, 6777 scc: 343-081

Peak annotation: Areas, Centroids
Revised: 26-Jan-2022 08:24 (DTF) Printed: 26-Jan-2022 09:45 Page 5 of 12


OCDD
2.63e6*
43.54
Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 5.68e3
0%
Abs. Int.
5.18e5
2.59e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.85e6*
43.54
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 6.29e3
5.87e5
2.93e5
ES OCDD
3.75e6*
43.53
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 8.00e3
7.90e5
3.95e5
ES OCDD
4.11e6*
43.52
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 4.60e3
9.21e5
4.61e5
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
1.32e7
6.62e6



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Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8574, 9771, 0596 scc: 343-081
Revised: 26-Jan-2022 08:24 (DTF) Printed: 26-Jan-2022 09:45 Page 7 of 12

SGS ID: OPR1_18863_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18863_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57

Acq: 25-Jan-2022 15:58:21
User: DTF Datafile: 220125C01

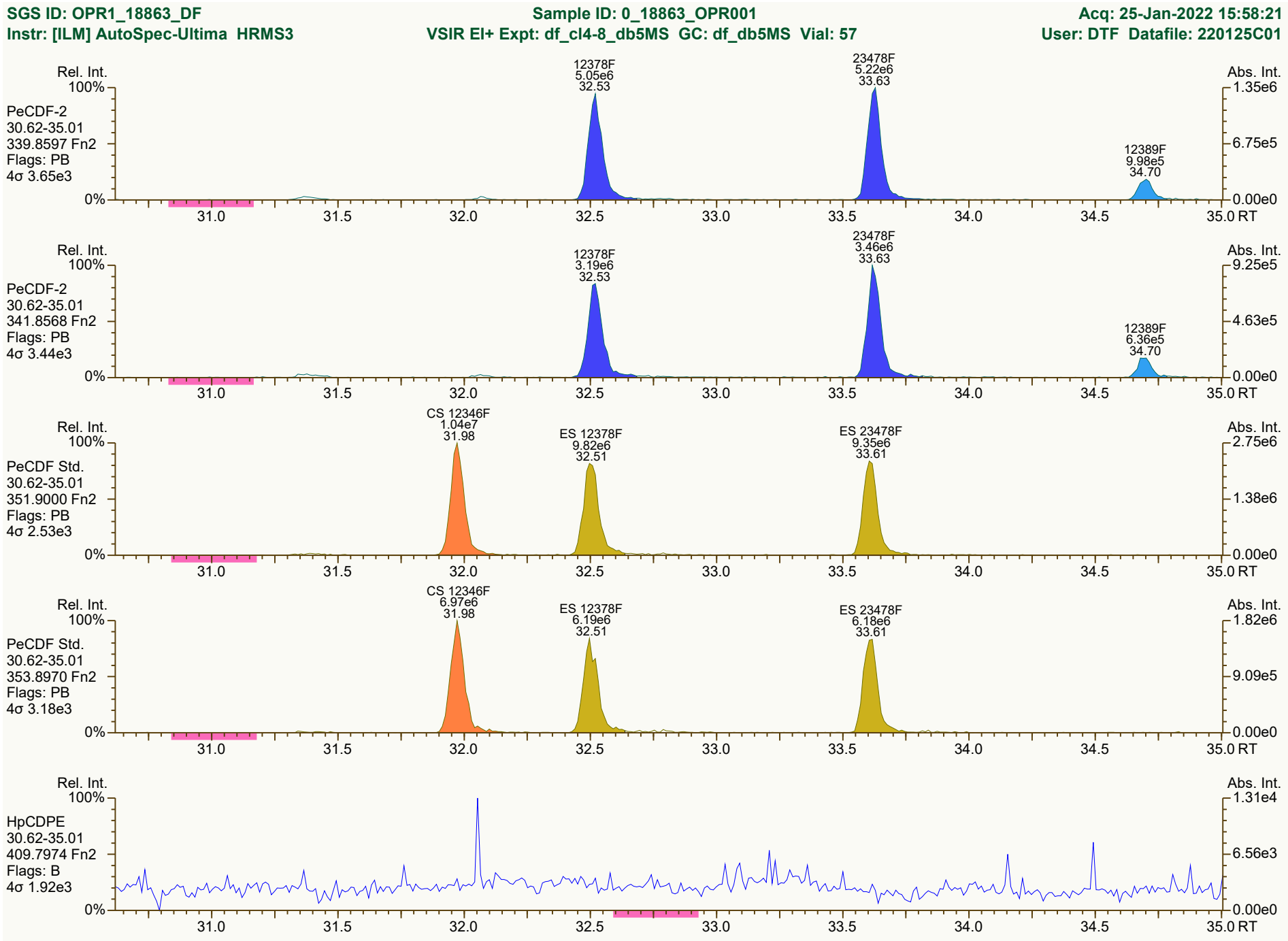


Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR1_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)

Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 7378 scc: 343-081

Revised: 26-Jan-2022 08:22 (DTF) Printed: 26-Jan-2022 09:45 Page 8 of 12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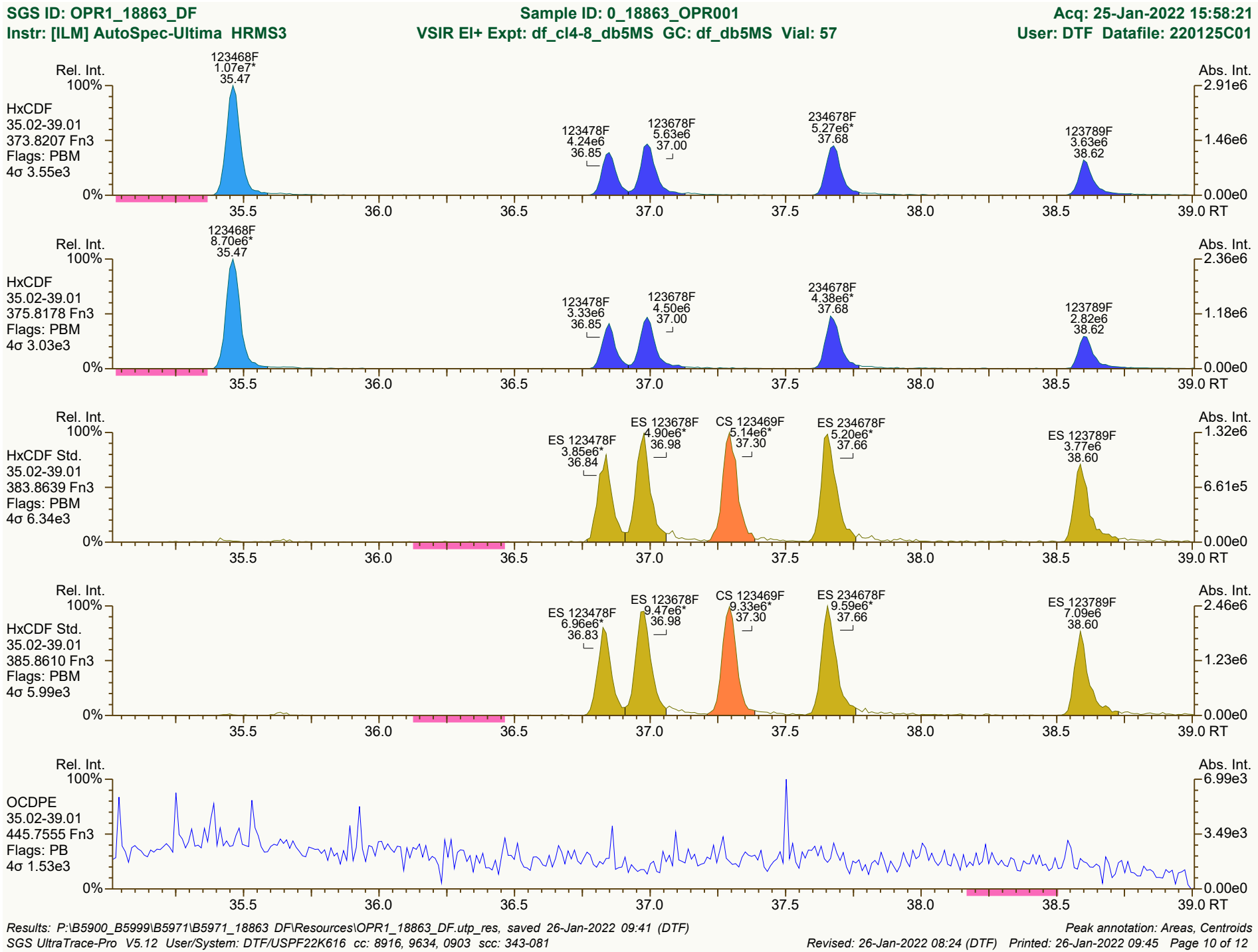
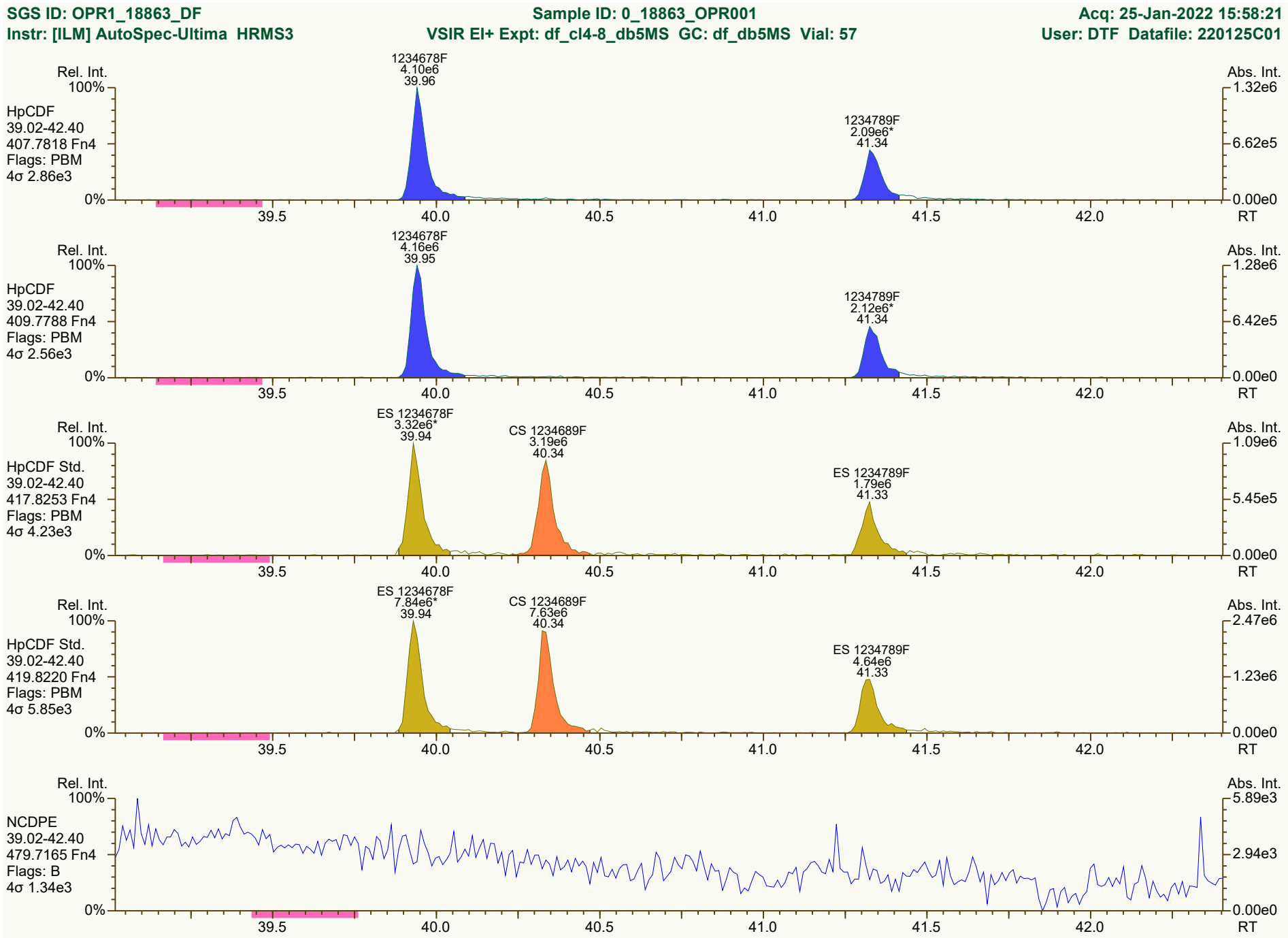
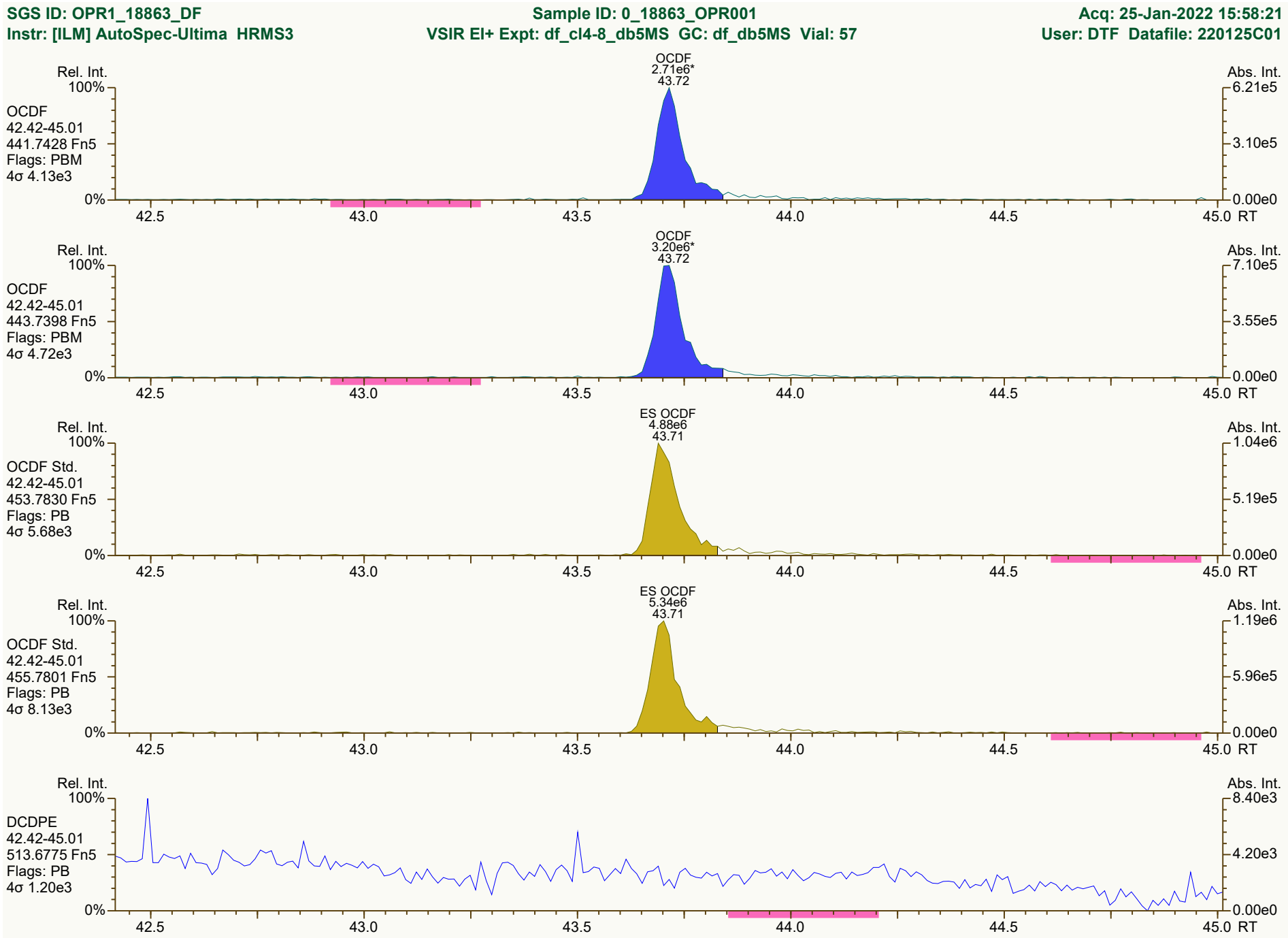
Sample ID: 0_18863_OPR001
Acq: 25-Jan-2022 15:58:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220125C01
Rel. Int.
Abs. Int.
PeCDF-2
30.62-35.01
339.8597 Fn2
Flags: PB
4σ 3.65e3
12378F
5.05e6
32.53
23478F
5.22e6
33.63
12389F
9.98e5
34.70
PeCDF-2
30.62-35.01
341.8568 Fn2
Flags: PB
4σ 3.44e3
12378F
3.19e6
32.53
23478F
3.46e6
33.63
12389F
6.36e5
34.70
PeCDF Std.
30.62-35.01
351.9000 Fn2
Flags: PB
4σ 2.53e3
CS 12346F
1.04e7
31.98
ES 12378F
9.82e6
32.51
ES 23478F
9.35e6
33.61
PeCDF Std.
30.62-35.01
353.8970 Fn2
Flags: PB
4σ 3.18e3
CS 12346F
6.97e6
31.98
ES 12378F
6.19e6
32.51
ES 23478F
6.18e6
33.61
HpCDPE
30.62-35.01
409.7974 Fn2
Flags: B
4σ 1.92e3
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


SGS ID: OPR1_18863_DF
Sample ID: 0_18863_OPR001
Acq: 25-Jan-2022 15:58:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220125C01
Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 3.55e3
123468F 1.07e7* 35.47
123478F 4.24e6 36.85
123678F 5.63e6 37.00
234678F 5.27e6* 37.68
123789F 3.63e6 38.62
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 3.03e3
123468F 8.70e6* 35.47
123478F 3.33e6 36.85
123678F 4.50e6 37.00
234678F 4.38e6* 37.68
123789F 2.82e6 38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 6.34e3
ES 123478F 3.85e6* 36.84
ES 123678F 4.90e6* 36.98
CS 123469F 5.14e6* 37.30
ES 234678F 5.20e6* 37.66
ES 123789F 3.77e6 38.60
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 5.99e3
ES 123478F 6.96e6* 36.83
ES 123678F 9.47e6* 36.98
CS 123469F 9.33e6* 37.30
ES 234678F 9.59e6* 37.66
ES 123789F 7.09e6 38.60
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.53e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
2.91e6
1.46e6
0.00e0
2.36e6
1.18e6
1.32e6
6.61e5
2.46e6
1.23e6
6.99e3
3.49e3
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR1_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8916, 9634, 0903 scc: 343-081
Revised: 26-Jan-2022 08:24 (DTF) Printed: 26-Jan-2022 09:45 Page 10 of 12


SGS ID: OPR1_18863_DF
Sample ID: 0_18863_OPR001
Acq: 25-Jan-2022 15:58:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220125C01
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.86e3
1234678F
4.10e6
39.96
1234789F
2.09e6*
41.34
1.32e6
6.62e5
0.00e0
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 2.56e3
1234678F
4.16e6
39.95
1234789F
2.12e6*
41.34
1.28e6
6.42e5
0.00e0
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 4.23e3
ES 1234678F
3.32e6*
39.94
CS 1234689F
3.19e6
40.34
ES 1234789F
1.79e6
41.33
1.09e6
5.45e5
0.00e0
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 5.85e3
ES 1234678F
7.84e6*
39.94
CS 1234689F
7.63e6
40.34
ES 1234789F
4.64e6
41.33
2.47e6
1.23e6
0.00e0
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.34e3
5.89e3
2.94e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR1_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6108, 6278, 3890 scc: 343-081
Revised: 26-Jan-2022 08:24 (DTF) Printed: 26-Jan-2022 09:45 Page 11 of 12


SGS ID: OPR1_18863_DF
Sample ID: 0_18863_OPR001
Acq: 25-Jan-2022 15:58:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220125C01
OCDF
2.71e6*
43.72
Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 4.13e3
0%
Abs. Int.
6.21e5
3.10e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.20e6*
43.72
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 4.72e3
0%
Abs. Int.
7.10e5
3.55e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
4.88e6
43.71
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PB
4σ 5.68e3
0%
Abs. Int.
1.04e6
5.19e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
5.34e6
43.71
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PB
4σ 8.13e3
0%
Abs. Int.
1.19e6
5.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.20e3
0%
Abs. Int.
8.40e3
4.20e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR1_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 5125, 1814, 9930 scc: 343-081
Revised: 26-Jan-2022 08:24 (DTF) Printed: 26-Jan-2022 09:46 Page 12 of 12

Lab ID: OPR2_18863_DF **Acq'd: 25 Jan 2022 16:44 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18863_OPR002 **UTP: 26-Jan-2022 09:41:05 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 226-320-TSN**

Datafile: 220125C02 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.66		1.0008	1.0007	-0.2	1.99E+06	0.85	Y	1.18	11.7	4670.341	0.295
12378-PeCDD	33.97		1.0006	1.0006	0	6.29E+06	1.52	Y	1.04	46.3	4173.01	0.288
123478-HxCDD	37.86		1.0004	1.0004	0	6.80E+06	1.24	Y	1.09	53.9	3657.544	0.263
123678-HxCDD	37.98		1.0034	1.0034	0	8.69E+06	1.29	Y	1.15	55.2	3657.544	0.228
123789-HxCDD	38.27		1.0109	1.0112	+0.7	7.06E+06	1.29	Y	1.05	51.7	3657.544	0.254
1234678-HpCDD	40.89		1.0003	1.0004	+0.2	5.66E+06	1.01	Y	1.06	56	3182.649	0.273
OCDD	43.56		1.0002	1.0003	+0.3	6.52E+06	0.92	Y	1.13	116	3561.534	0.709
2378-TCDF	27.81		1.0008	1.0008	0	2.59E+06	0.78	Y	1.08	10.8	3710.756	0.179
12378-PeCDF	32.53		1.0005	1.0006	+0.2	9.77E+06	1.50	Y	1.02	47.9	5975.775	0.306
23478-PeCDF	33.64		1.0005	1.0006	+0.2	1.04E+07	1.54	Y	1.02	52.2	5975.775	0.279
123478-HxCDF	36.85		1.0004	1.0004	0	9.11E+06	1.25	Y	1.27	53.9	2556.909	0.139
123678-HxCDF	37.00		1.0004	1.0004	0	1.16E+07	1.25	Y	1.15	54.5	2556.909	0.121
234678-HxCDF	37.69		1.0004	1.0006	+0.5	1.13E+07	1.23	Y	1.19	53.7	2556.909	0.108
123789-HxCDF	38.63		1.0004	1.0005	+0.2	7.49E+06	1.27	Y	1.16	53.4	2556.909	0.162
1234678-HpCDF	39.96		1.0002	1.0003	+0.2	9.87E+06	0.99	Y	1.37	52	3799.385	0.163
1234789-HpCDF	41.36		1.0003	1.0004	+0.2	5.34E+06	0.94	Y	1.31	53	3799.385	0.359
OCDF	43.74		1.0002	1.0003	+0.3	7.14E+06	0.83	Y	1.07	99.7	3493.966	0.537

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.64	1.0233	1.0236	+0.5	1.43E+07	0.82	Y	1.05	89.3
ES 12378-PeCDD	33.95	1.2121	1.2135	+2.9	1.31E+07	1.60	Y	0.88	97.2
ES 123478-HxCDD	37.85	0.9921	0.9921	0	1.16E+07	1.27	Y	0.97	98.3
ES 123678-HxCDD	37.96	0.9951	0.9952	+0.2	1.37E+07	1.29	Y	0.94	120
ES 123789-HxCDD	38.25	1.0025	1.0028	+0.7	1.30E+07	1.32	Y	1.09	98.5
ES 1234678-HpCDD	40.88	1.0709	1.0717	+2.0	9.55E+06	1.04	Y	0.91	86.2
ES OCDD	43.55	1.1403	1.1415	+3.1	1.00E+07	1.00	Y	0.62	66.1
ES 2378-TCDF	27.79	1.0506	1.0513	+1.2	2.21E+07	0.79	Y	1.06	84.2
ES 12378-PeCDF	32.51	1.2281	1.2299	+3.5	1.99E+07	1.55	Y	0.91	88.3
ES 23478-PeCDF	33.61	1.2698	1.2717	+3.8	1.95E+07	1.55	Y	0.88	89.2
ES 123478-HxCDF	36.84	0.9657	0.9657	0	1.33E+07	0.50	Y	1.20	91.5
ES 123678-HxCDF	36.99	0.9695	0.9696	+0.2	1.85E+07	0.56	Y	1.35	113
ES 234678-HxCDF	37.67	0.9874	0.9875	+0.2	1.77E+07	0.58	Y	1.24	118
ES 123789-HxCDF	38.61	1.0116	1.0121	+1.2	1.20E+07	0.55	Y	1.16	86
ES 1234678-HpCDF	39.95	1.0467	1.0473	+1.4	1.39E+07	0.46	Y	0.97	118
ES 1234789-HpCDF	41.34	1.0830	1.0838	+2.0	7.71E+06	0.46	Y	0.85	74.6
ES OCDF	43.73	1.1451	1.1463	+3.1	1.34E+07	0.93	Y	0.81	68.2

Lab ID: OPR2_18863_DF | **Acq'd:** 25 Jan 2022 16:44 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18863_OPR002 | **UTP:** 26-Jan-2022 09:41:05 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 226-320-TSN

Datafile: 220125C02 | **Report:** 26 Jan 2022 09:42 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.98		-	-	-	1.53E+07	0.77	Y	-	-	
JS 1234-TCDF	26.43		-	-	-	2.48E+07	0.80	Y	-	-	
JS 123467-HxCDD	38.15		-	-	-	6.06E+06	1.23	Y	-	-	
CS 37Cl-2378-TCDD	28.66		1.0241	1.0244	+0.5	6.58E+06	n/a	-	1.20	89.3	
CS 12347-PeCDD	33.45		1.1943	1.1955	+2.4	1.20E+07	1.55	Y	0.75	104	
CS 12346-PeCDF	31.98		1.2083	1.2098	+2.9	1.89E+07	1.60	Y	0.85	89.6	
CS 123469-HxCDF	37.30		0.9778	0.9778	0	1.64E+07	0.54	Y	1.12	121	
CS 1234689-HpCDF	40.34		1.0571	1.0576	+1.2	1.16E+07	0.46	Y	0.89	108	
~~SS 37Cl-2378-TCDD~~	~~28.66~~		~~1.0241~~	~~1.0244~~	~~+0.5~~	~~6.58E+06~~	~~n/a~~		~~1.15~~	~~100~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.45~~		~~1.1943~~	~~1.1955~~	~~+2.4~~	~~1.20E+07~~	~~1.55~~	~~Y~~	~~0.86~~	~~107~~	CL 26Jan22
~~SS 12346-PeCDF~~	~~31.98~~		~~1.2083~~	~~1.2098~~	~~+2.9~~	~~1.89E+07~~	~~1.60~~	~~Y~~	~~0.94~~	~~101~~	
~~SS 123469-HxCDF~~	~~37.30~~		~~0.9778~~	~~0.9778~~	~~0~~	~~1.64E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~108~~	
~~SS 1234689-HpCDF~~	~~40.34~~		~~1.0571~~	~~1.0576~~	~~+1.2~~	~~1.16E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~91.1~~	

Totals	Conc	EMPC
Total TCDD	53.3	53.3
Total PeCDD	68.9	68.9
Total HxCDD	174	174
Total HpCDD	68.4	68.4
Total Tetra-Octa Dioxins	481	481
Total TCDF	59.6	59.6
Total PeCDF	201	201
Total HxCDF	338	338
Total HpCDF	105	105
Total Tetra-Octa Furans	803	803
Total Tetra-Octa Dioxins & Furans	1280	1280

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.848	0.85
Response	1.99E+06	1.99E+06

Lab ID: OPR2_18863_DF **Acq'd: 25 Jan 2022 16:44 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18863_OPR002 **UTP: 26-Jan-2022 09:41:05 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 226-320-TSN**

Datafile: 220125C02 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.05		0.8755	0.8746	-1.4	2.55E+06	0.79	Y	1.18	15	4670.341	0.295
1379-TCDD	NotFnd		0.8876						1.18		4670.341	0.295
1369-TCDD	NotFnd		0.9023						1.18		4670.341	0.295
1469-TCDD	NotFnd		0.9291						1.18		4670.341	0.295
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		4670.341	0.295
1378-TCDD	NotFnd		0.9440						1.18		4670.341	0.295
1268-TCDD	NotFnd		0.9506						1.18		4670.341	0.295
1478-TCDD	NotFnd		0.9591						1.18		4670.341	0.295
1279-TCDD	NotFnd		0.9649						1.18		4670.341	0.295
1234/1269-TCDD	NotFnd		0.9771						1.18		4670.341	0.295
1236-TCDD	NotFnd		0.9820						1.18		4670.341	0.295
1237/1238-TCDD	NotFnd		0.9908						1.18		4670.341	0.295
1239-TCDD	28.50		0.9954	0.9952	-0.3	1.81E+06	0.81	Y	1.18	10.7	4670.341	0.295
2378-TCDD	**28.66**		**1.0008**	1.0007	**-0.2**	1.99E+06	0.85	Y	**1.18**	**11.7**	**4670.341**	**0.295**
1278-TCDD	NotFnd		1.0121						1.18		4670.341	0.295
1267-TCDD	NotFnd		1.0167						1.18		4670.341	0.295
1289-TCDD	29.62		1.0341	1.0344	+0.5	2.69E+06	0.79	Y	1.18	15.9	4670.341	0.295
12479/12468-PeCDD	31.47		0.9273	0.9269	-0.8	1.47E+06	1.49	Y	1.04	10.8	4173.01	0.288
12469-PeCDD	NotFnd		0.9430						1.04		4173.01	0.288
12368-PeCDD	NotFnd		0.9592						1.04		4173.01	0.288
12478-PeCDD	NotFnd		0.9647						1.04		4173.01	0.288
12379-PeCDD	NotFnd		0.9676						1.04		4173.01	0.288
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		4173.01	0.288
12346/12347-PeCDD	NotFnd		0.9860						1.04		4173.01	0.288
12378-PeCDD	33.97		**1.0006**	**1.0006**	**0**	**6.29E+06**	**1.52**	**Y**	**1.04**	**46.3**	**4173.01**	**0.288**
12367-PeCDD	NotFnd		1.0034						1.04		4173.01	0.288
12389-PeCDD	34.40		1.0134	1.0134	0	1.61E+06	1.54	Y	1.04	11.8	4173.01	0.288
124679/124689-HxCDD	36.11		0.9545	0.9542	-0.7	1.92E+06	1.24	Y	1.10	13.7	3657.544	0.247
123468-HxCDD	NotFnd		0.9715						1.10		3657.544	0.247
123679/123689-HxCDD	NotFnd		0.9793						1.10		3657.544	0.247
123469-HxCDD	NotFnd		0.9829						1.10		3657.544	0.247
123478-HxCDD	37.86		**1.0004**	**1.0004**	**0**	**6.80E+06**	**1.24**	**Y**	1.09	**53.9**	**3657.544**	**0.263**
123678-HxCDD	37.98		**1.0034**	**1.0034**	**0**	**8.69E+06**	**1.29**	**Y**	1.15	**55.2**	**3657.544**	**0.228**
123467-HxCDD	NotFnd		1.0082						1.10		3657.544	0.247
123789-HxCDD	38.27		**1.0109**	**1.0112**	**+0.7**	**7.06E+06**	**1.29**	**Y**	1.05	**51.7**	**3657.544**	**0.254**

Lab ID: OPR2_18863_DF **Acq'd: 25 Jan 2022 16:44 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18863_OPR002 **UTP: 26-Jan-2022 09:41:05 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 226-320-TSN**

Datafile: 220125C02 **Report: 26 Jan 2022 09:42 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.22		0.9838	0.9837	-0.2	1.26E+06	1.01	Y	1.06	12.4	3182.649	0.273
1234678-HpCDD	**40.89**		**1.0003**	**1.0004**	**+0.2**	**5.66E+06**	**1.01**	**Y**	**1.06**	**56**	**3182.649**	**0.273**
OCDD	**43.56**		**1.0002**	**1.0003**	**+0.3**	**6.52E+06**	**0.92**	**Y**	**1.13**	**116**	**3561.534**	**0.709**
OCDD-a	NotFnd		1.0002						0.07		3883.188	12.1
1368-TCDF	22.97		0.8282	0.8267	-2.1	3.37E+06	0.78	Y	1.08	14.1	3710.756	0.179
1468-TCDF	NotFnd		0.8485						1.08		3710.756	0.179
2468-TCDF	24.17		0.8709	0.8697	-1.7	9.29E+05	0.73	Y	1.08	3.89	3710.756	0.179
1346/1246-TCDF	NotFnd		0.8829						1.08		3710.756	0.179
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		3710.756	0.179
1348-TCDF	NotFnd		0.8980						1.08		3710.756	0.179
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		3710.756	0.179
1268-TCDF	NotFnd		0.9158						1.08		3710.756	0.179
1467-TCDF	NotFnd		0.9206						1.08		3710.756	0.179
1478-TCDF	NotFnd		0.9266						1.08		3710.756	0.179
1369/1237-TCDF	NotFnd		0.9397						1.08		3710.756	0.179
2467-TCDF	NotFnd		0.9440						1.08		3710.756	0.179
2368-TCDF	NotFnd		0.9497						1.08		3710.756	0.179
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		3710.756	0.179
1278-TCDF	NotFnd		0.9690						1.08		3710.756	0.179
1349-TCDF	NotFnd		0.9730						1.08		3710.756	0.179
1267-TCDF	NotFnd		0.9787						1.08		3710.756	0.179
2346/1249-TCDF	NotFnd		0.9850						1.08		3710.756	0.179
2347/1279-TCDF	NotFnd		0.9929						1.08		3710.756	0.179
2348-TCDF	27.70		0.9970	0.9967	-0.5	3.47E+06	0.75	Y	1.08	14.6	3710.756	0.179
2378-TCDF	**27.81**		**1.0008**	**1.0008**	**0**	**2.59E+06**	**0.78**	**Y**	**1.08**	**10.8**	**3710.756**	**0.179**
2367/3467-TCDF	NotFnd		1.0136						1.08		3710.756	0.179
1269-TCDF	NotFnd		1.0221						1.08		3710.756	0.179
1239-TCDF	NotFnd		1.0319						1.08		3710.756	0.179
1289-TCDF	29.79		1.0740	1.0720	-3.6	3.86E+06	0.81	Y	1.08	16.2	3710.756	0.179
13468/12468-PeCDF	29.70		0.9145	0.9136	-1.6	1.84E+07	1.55	Y	1.02	91.3	3711.644	0.182
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		5975.775	0.293
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		5975.775	0.293
14678-PeCDF	NotFnd		0.9695						1.02		5975.775	0.293
13479-PeCDF	NotFnd		0.9724						1.02		5975.775	0.293
13469/12479-PeCDF	NotFnd		0.9801						1.02		5975.775	0.293
12346-PeCDF	NotFnd		0.9842						1.02		5975.775	0.293

Lab ID: OPR2_18863_DF | **Acq'd: 25 Jan 2022 16:44 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18863_OPR002 | **UTP: 26-Jan-2022 09:41:05 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 226-320-TSN**

Datafile: 220125C02 | **Report: 26 Jan 2022 09:42 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		5975.775	0.293
12347-PeCDF	NotFnd		0.9895						1.02		5975.775	0.293
12348-PeCDF	NotFnd		0.9941						1.02		5975.775	0.293
12378-PeCDF	**32.53**		**1.0005**	**1.0006**	**+0.2**	**9.77E+06**	**1.50**	**Y**	**1.02**	**47.9**	**5975.775**	**0.306**
12678/12367-PeCDF	NotFnd		1.0090						1.02		5975.775	0.293
12379-PeCDF	NotFnd		1.0142						1.02		5975.775	0.293
12679-PeCDF	NotFnd		0.9931						1.02		5975.775	0.293
23467/12369-PeCDF	NotFnd		0.9966						1.02		5975.775	0.293
23478-PeCDF	**33.64**		**1.0005**	**1.0006**	**+0.2**	**1.04E+07**	**1.54**	**Y**	**1.02**	**52.2**	**5975.775**	**0.279**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		5975.775	0.293
12349-PeCDF	NotFnd		1.0101						1.02		5975.775	0.293
12389-PeCDF	34.71		1.0322	1.0325	+0.6	1.95E+06	1.41	Y	1.02	9.66	5975.775	0.293
123468-HxCDF	35.47		0.9627	0.9629	+0.4	2.24E+07	1.25	Y	1.19	122	2556.909	0.129
124678/134678-HxCDF	NotFnd		0.9684						1.19		2556.909	0.129
134679-HxCDF	NotFnd		0.9747						1.19		2556.909	0.129
124679-HxCDF	NotFnd		0.9802						1.19		2556.909	0.129
124689-HxCDF	NotFnd		0.9858						1.19		2556.909	0.129
123467-HxCDF	NotFnd		0.9972						1.19		2556.909	0.129
123478-HxCDF	**36.85**		**1.0004**	**1.0004**	**0**	**9.11E+06**	**1.25**	**Y**	**1.27**	**53.9**	**2556.909**	**0.139**
123678-HxCDF	**37.00**		**1.0004**	**1.0004**	**0**	**1.16E+07**	**1.25**	**Y**	**1.15**	**54.5**	**2556.909**	**0.121**
123479-HxCDF	NotFnd		1.0051						1.19		2556.909	0.129
123469-HxCDF	NotFnd		1.0091						1.19		2556.909	0.129
123679-HxCDF	NotFnd		0.9943						1.19		2556.909	0.129
234678-HxCDF	**37.69**		**1.0004**	**1.0006**	**+0.5**	**1.13E+07**	**1.23**	**Y**	**1.19**	**53.7**	**2556.909**	**0.108**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2556.909	0.129
123789-HxCDF	**38.63**		**1.0004**	**1.0005**	**+0.2**	**7.49E+06**	**1.27**	**Y**	**1.16**	**53.4**	**2556.909**	**0.162**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		2556.909	0.129
1234678-HpCDF	**39.96**		**1.0002**	**1.0003**	**+0.2**	**9.87E+06**	**0.99**	**Y**	**1.37**	**52**	**3799.385**	**0.163**
1234679-HpCDF	NotFnd		1.0067						1.34		3799.385	0.232
1234689-HpCDF	NotFnd		1.0101						1.34		3799.385	0.232
1234789-HpCDF	**41.36**		**1.0003**	**1.0004**	**+0.2**	**5.34E+06**	**0.94**	**Y**	**1.31**	**53**	**3799.385**	**0.359**
OCDF	**43.74**		**1.0002**	**1.0003**	**+0.3**	**7.14E+06**	**0.83**	**Y**	**1.07**	**99.7**	**3493.966**	**0.537**
OCDF-a	43.72		1.0002	0.9998	-1.0	2.47E+05	2.39	Y	0.07	55.6	4001.537	9.93

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220125C02	Analysis Date:	25-JAN-2022 16:44:37
Lab ID:	OPR2_18863_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11.7	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	46.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.9	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	55.2	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.7	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56	35	-	70	Y
OCDD	100	116	78	-	144	Y
2,3,7,8-TCDF	10	10.8	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	47.9	40	-	67	Y
2,3,4,7,8-PeCDF	50	52.2	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	53.9	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	54.5	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	53.7	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	53.4	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	52	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	53	39	-	69	Y
OCDF	100	99.7	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 26 Jan 2022 09:42 Analyst: TF

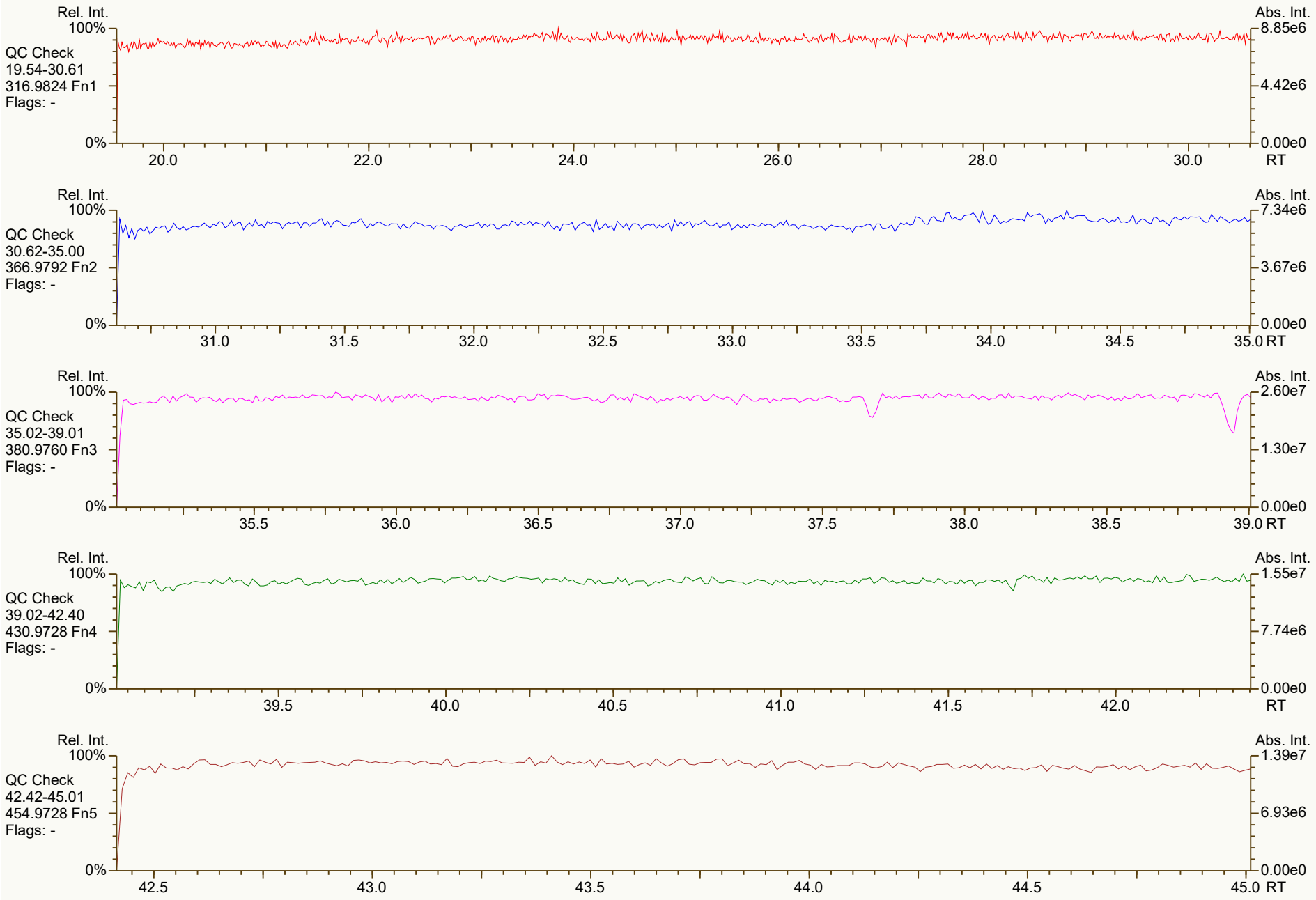
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220125C02	Analysis Date:	25-JAN-2022 16:44:37
Lab ID:	OPR2_18863_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	89.3	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	97.2	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	98.3	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	120	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	98.5	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	86.2	26	-	166	Y
13C-OCDD	200	132	26	-	397	Y
13C-2,3,7,8-TCDF	100	84.2	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	88.3	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	89.2	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	91.5	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	113	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	118	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	86	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	118	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	74.6	20	-	186	Y
13C-OCDF	200	136	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	35.7	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 26 Jan 2022 09:42 Analyst: TF


Rel. Int.
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QC Check
19.54-30.61
316.9824 Fn1
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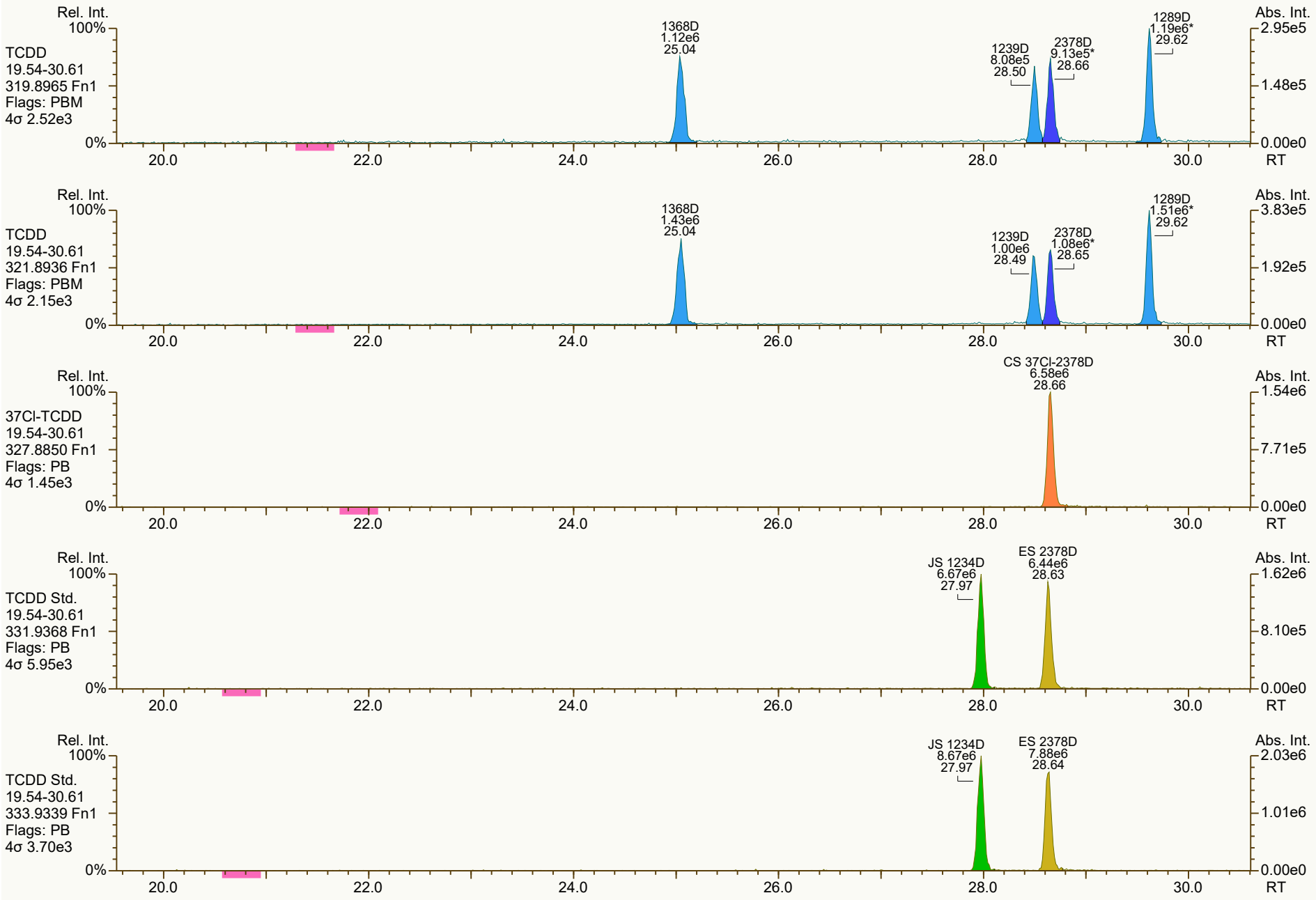
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
8.85e6
4.42e6
0.00e0
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Abs. Int.
7.34e6
3.67e6
0.00e0
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Abs. Int.
2.60e7
1.30e7
0.00e0
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.55e7
7.74e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.39e7
6.93e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 2.52e3
1368D
1.12e6
25.04
1239D
8.08e5
28.50
2378D
9.13e5*
28.66
1289D
1.19e6*
29.62
Abs. Int.
2.95e5
1.48e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.15e3
1368D
1.43e6
25.04
1239D
1.00e6
28.49
2378D
1.08e6*
28.65
1289D
1.51e6*
29.62
Abs. Int.
3.83e5
1.92e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.45e3
CS 37Cl-2378D
6.58e6
28.66
Abs. Int.
1.54e6
7.71e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 5.95e3
JS 1234D
6.67e6
27.97
ES 2378D
6.44e6
28.63
Abs. Int.
1.62e6
8.10e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 3.70e3
JS 1234D
8.67e6
27.97
ES 2378D
7.88e6
28.64
Abs. Int.
2.03e6
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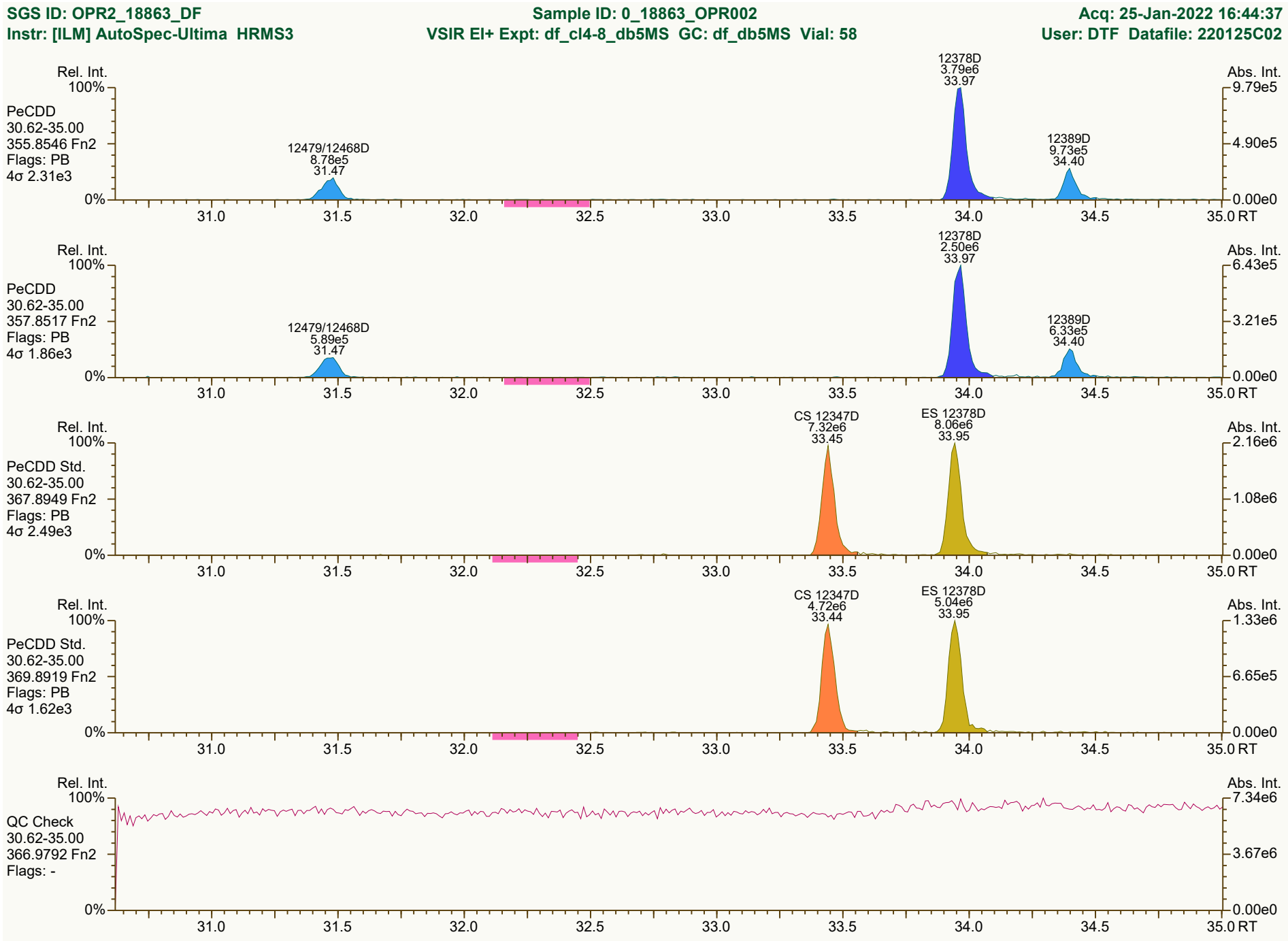
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT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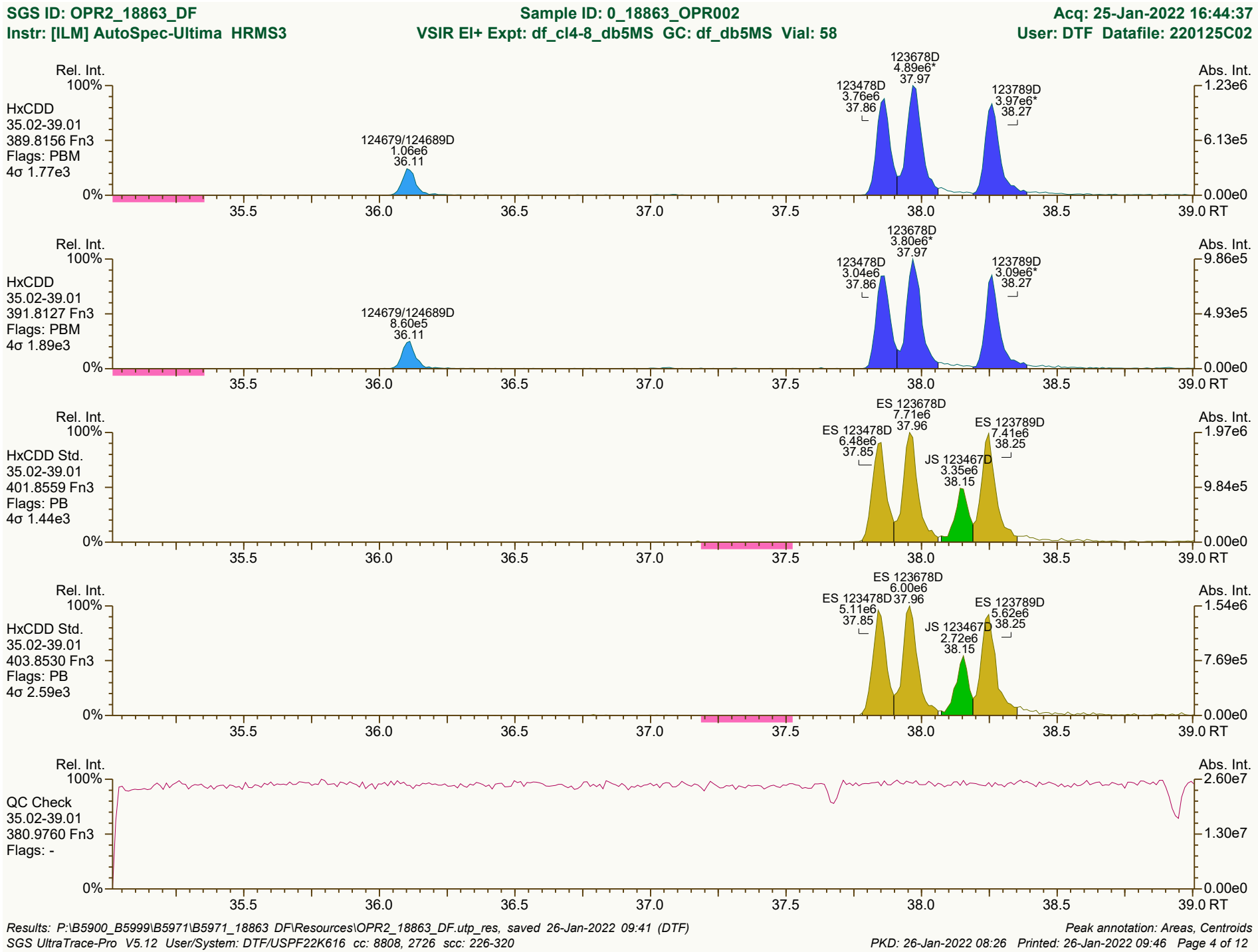
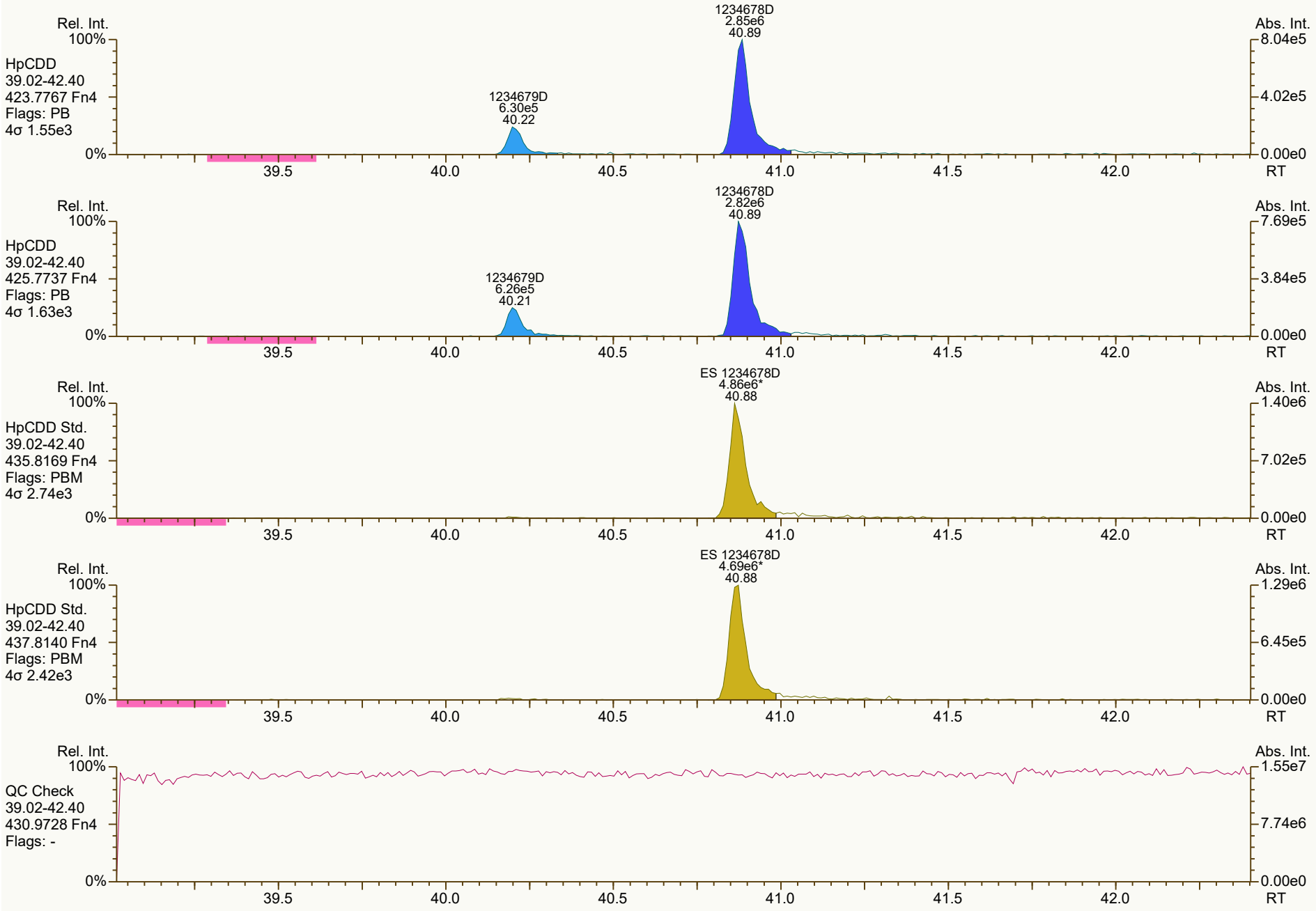
Sample ID: 0_18863_OPR002
Acq: 25-Jan-2022 16:44:37
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: DTF Datafile: 220125C02
Rel. Int.
Abs. Int.
PeCDD
30.62-35.00
355.8546 Fn2
Flags: PB
4σ 2.31e3
12479/12468D
8.78e5
31.47
12378D
3.79e6
33.97
12389D
9.73e5
34.40
9.79e5
4.90e5
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.86e3
12479/12468D
5.89e5
31.47
12378D
2.50e6
33.97
12389D
6.33e5
34.40
6.43e5
3.21e5
0.00e0
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PB
4σ 2.49e3
CS 12347D
7.32e6
33.45
ES 12378D
8.06e6
33.95
2.16e6
1.08e6
0.00e0
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PB
4σ 1.62e3
CS 12347D
4.72e6
33.44
ES 12378D
5.04e6
33.95
1.33e6
6.65e5
0.00e0
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
7.34e6
3.67e6
0.00e0
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR2_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9673, 3033 scc: 226-320
PKD: 26-Jan-2022 08:25 Printed: 26-Jan-2022 09:46 Page 3 of 12



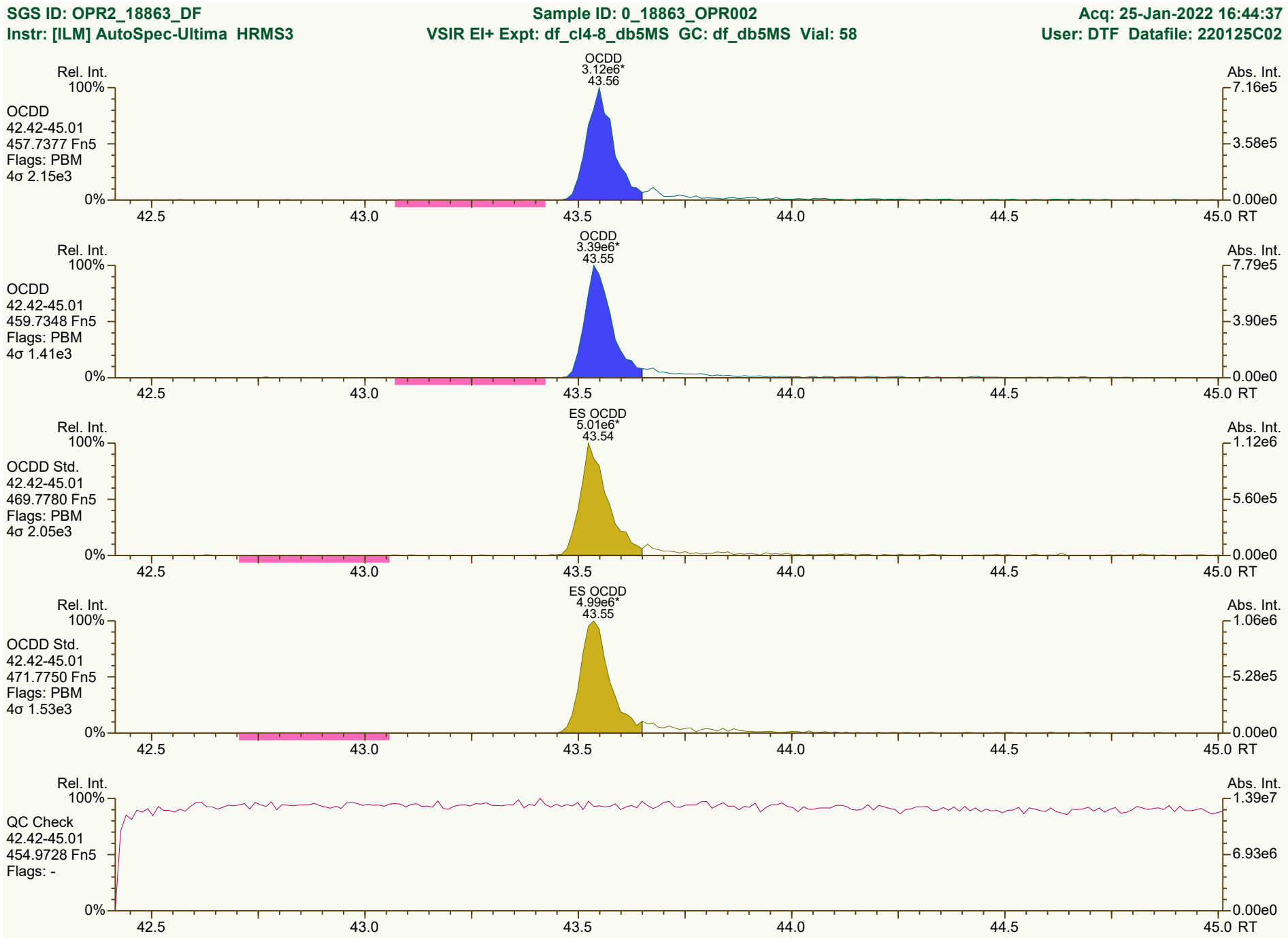
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR2_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8808, 2726 scc: 226-320
PKD: 26-Jan-2022 08:26 Printed: 26-Jan-2022 09:46 Page 4 of 12


Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.55e3
1234678D
2.85e6
40.89
1234679D
6.30e5
40.22
Abs. Int.
8.04e5
4.02e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PB
4σ 1.63e3
1234678D
2.82e6
40.89
1234679D
6.26e5
40.21
Abs. Int.
7.69e5
3.84e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.74e3
ES 1234678D
4.86e6*
40.88
Abs. Int.
1.40e6
7.02e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 2.42e3
ES 1234678D
4.69e6*
40.88
Abs. Int.
1.29e6
6.45e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.55e7
7.74e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

SGS ID: OPR2_18863_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18863_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58

Acq: 25-Jan-2022 16:44:37
User: DTF Datafile: 220125C02



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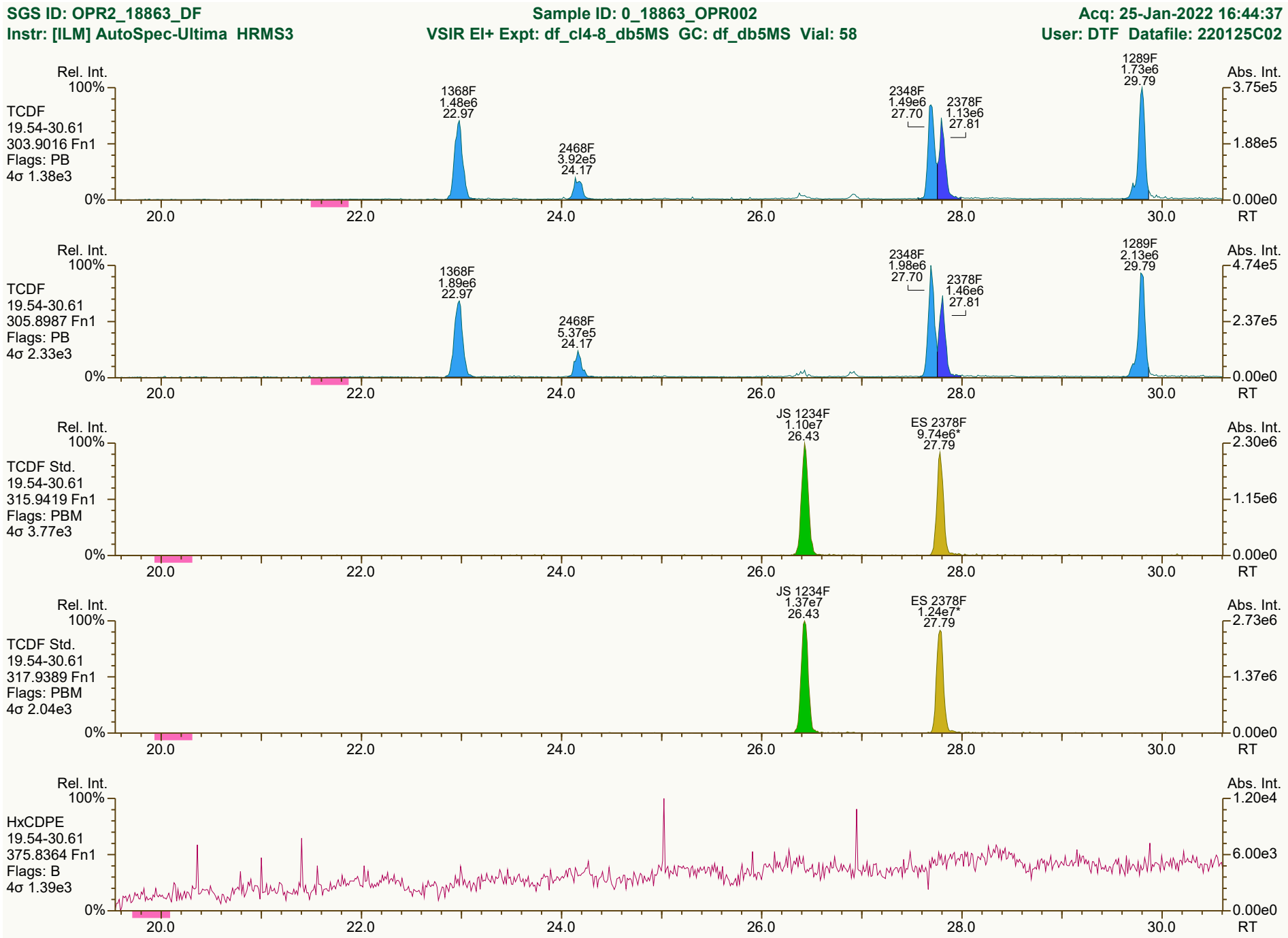
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1664, 1392 scc: 226-320

Peak annotation: Areas, Centroids
Revised: 26-Jan-2022 08:26 (DTF) Printed: 26-Jan-2022 09:46 Page 6 of 12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Sample ID: 0_18863_OPR002
Acq: 25-Jan-2022 16:44:37
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: DTF Datafile: 220125C02
Rel. Int.
Abs. Int.
TCDF
19.54-30.61
303.9016 Fn1
Flags: PB
4σ 1.38e3
1368F 1.48e6 22.97
2468F 3.92e5 24.17
2348F 1.49e6 27.70
2378F 1.13e6 27.81
1289F 1.73e6 29.79
3.75e5
1.88e5
0.00e0
TCDF
19.54-30.61
305.8987 Fn1
Flags: PB
4σ 2.33e3
1368F 1.89e6 22.97
2468F 5.37e5 24.17
2348F 1.98e6 27.70
2378F 1.46e6 27.81
1289F 2.13e6 29.79
4.74e5
2.37e5
0.00e0
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 3.77e3
JS 1234F 1.10e7 26.43
ES 2378F 9.74e6* 27.79
2.30e6
1.15e6
0.00e0
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 2.04e3
JS 1234F 1.37e7 26.43
ES 2378F 1.24e7* 27.79
2.73e6
1.37e6
0.00e0
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.39e3
1.20e4
6.00e3
0.00e0
100%
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
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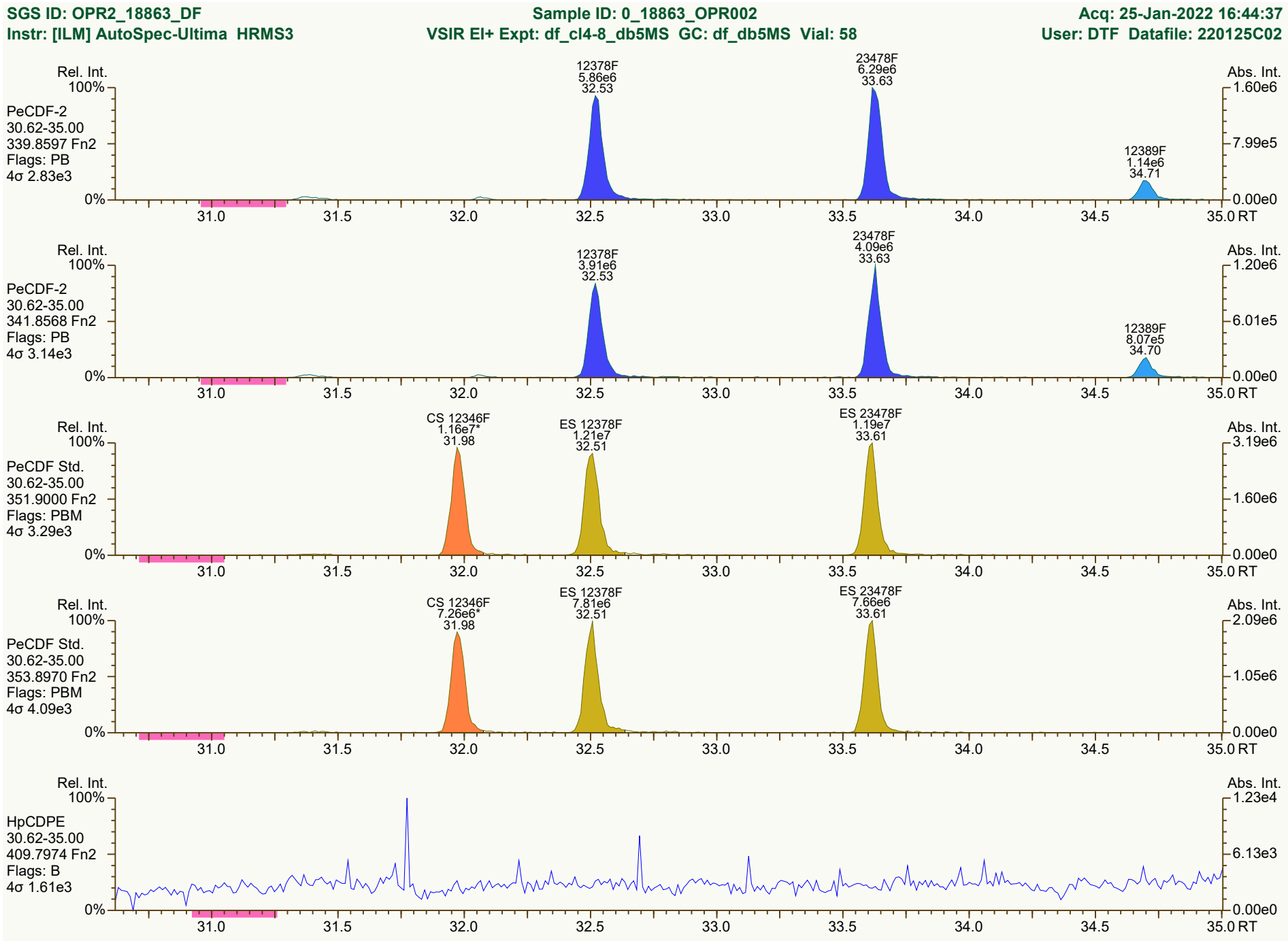
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8666, 4527, 5964 scc: 226-320
Revised: 26-Jan-2022 08:26 (DTF) Printed: 26-Jan-2022 09:46 Page 7 of 12

SGS ID: OPR2_18863_DF
Sample ID: 0_18863_OPR002
Acq: 25-Jan-2022 16:44:37
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: DTF Datafile: 220125C02



Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR2_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3480 scc: 226-320
PKD: 26-Jan-2022 08:25 Printed: 26-Jan-2022 09:46 Page 8 of 12



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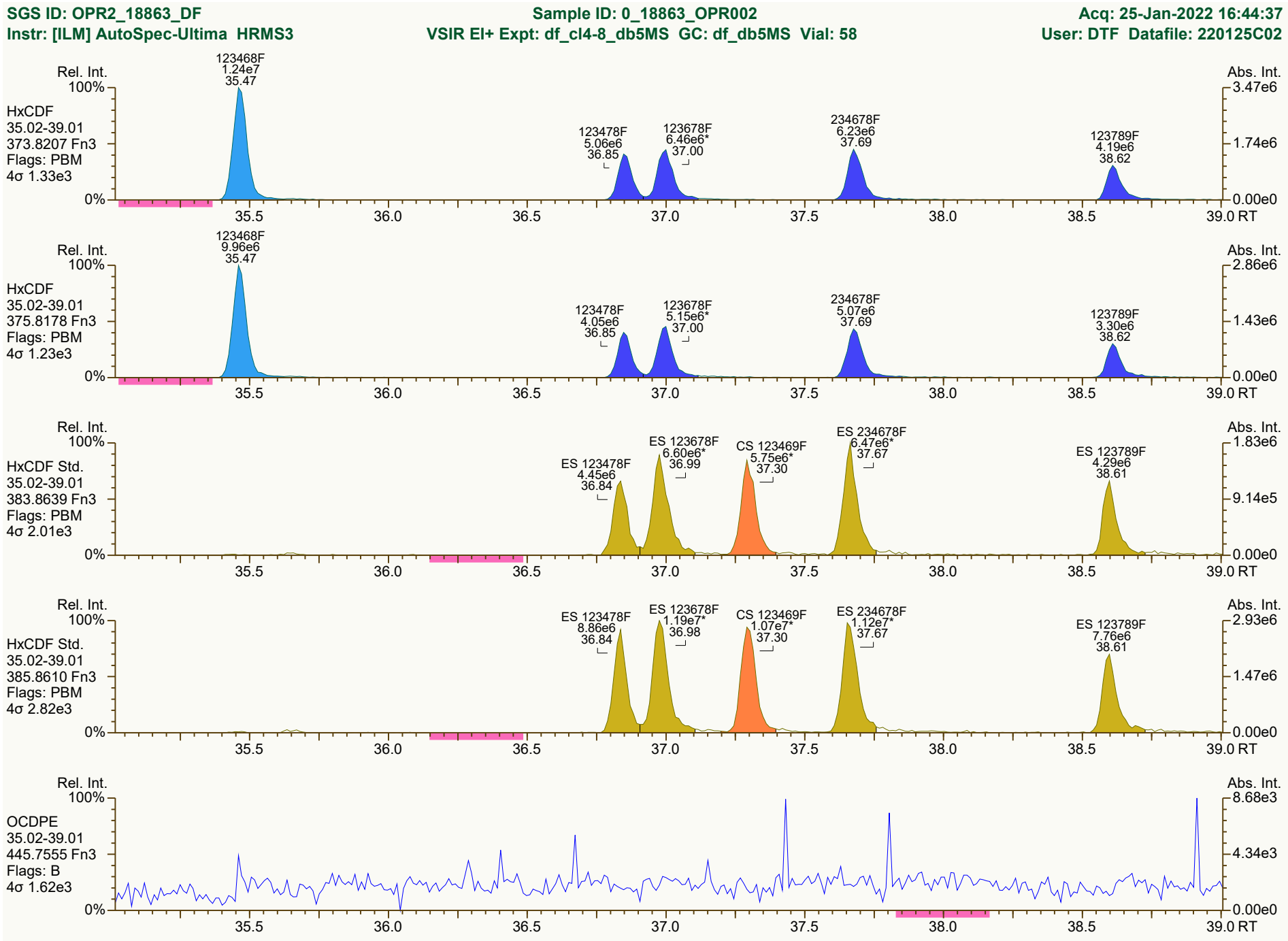
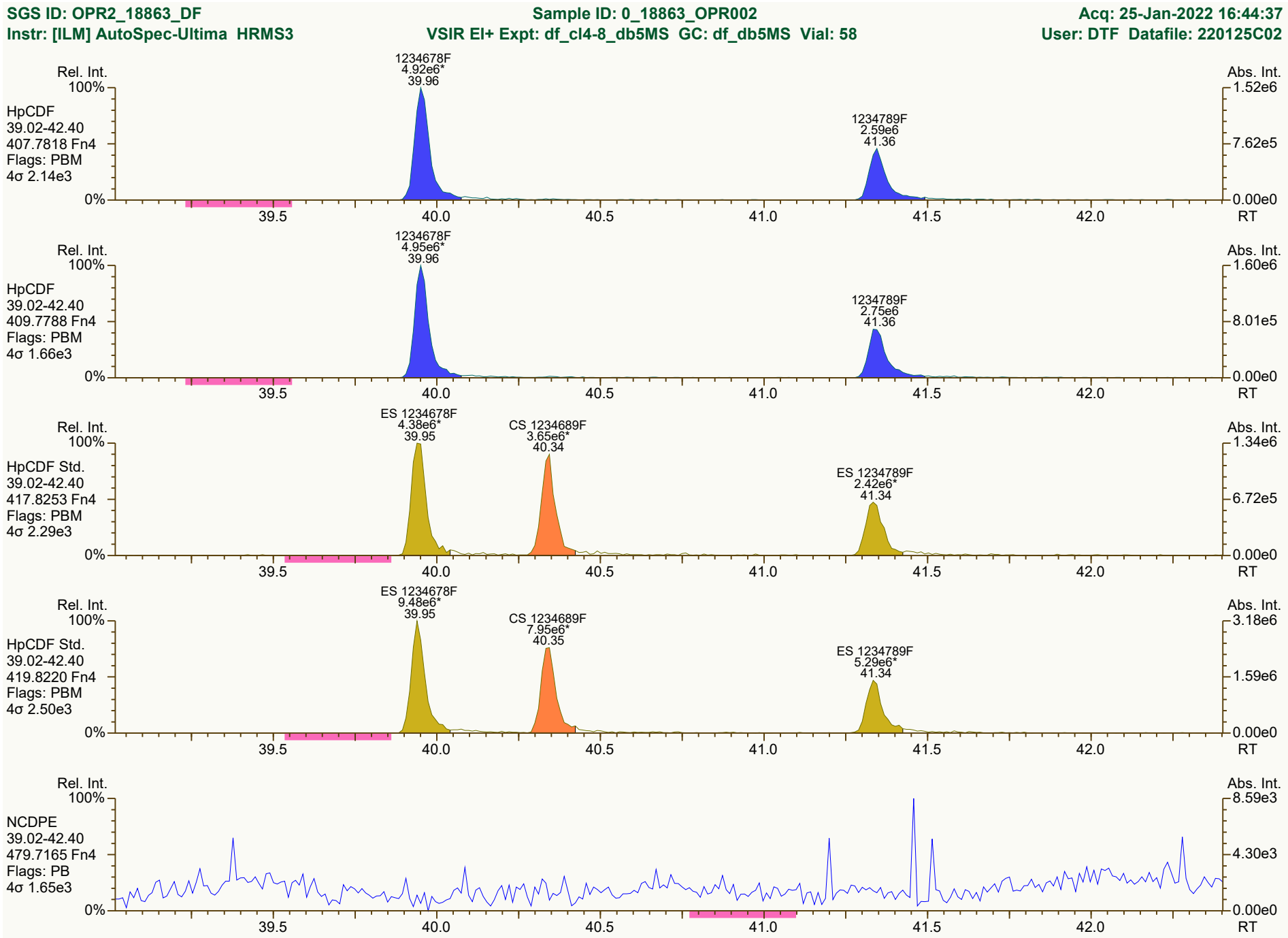
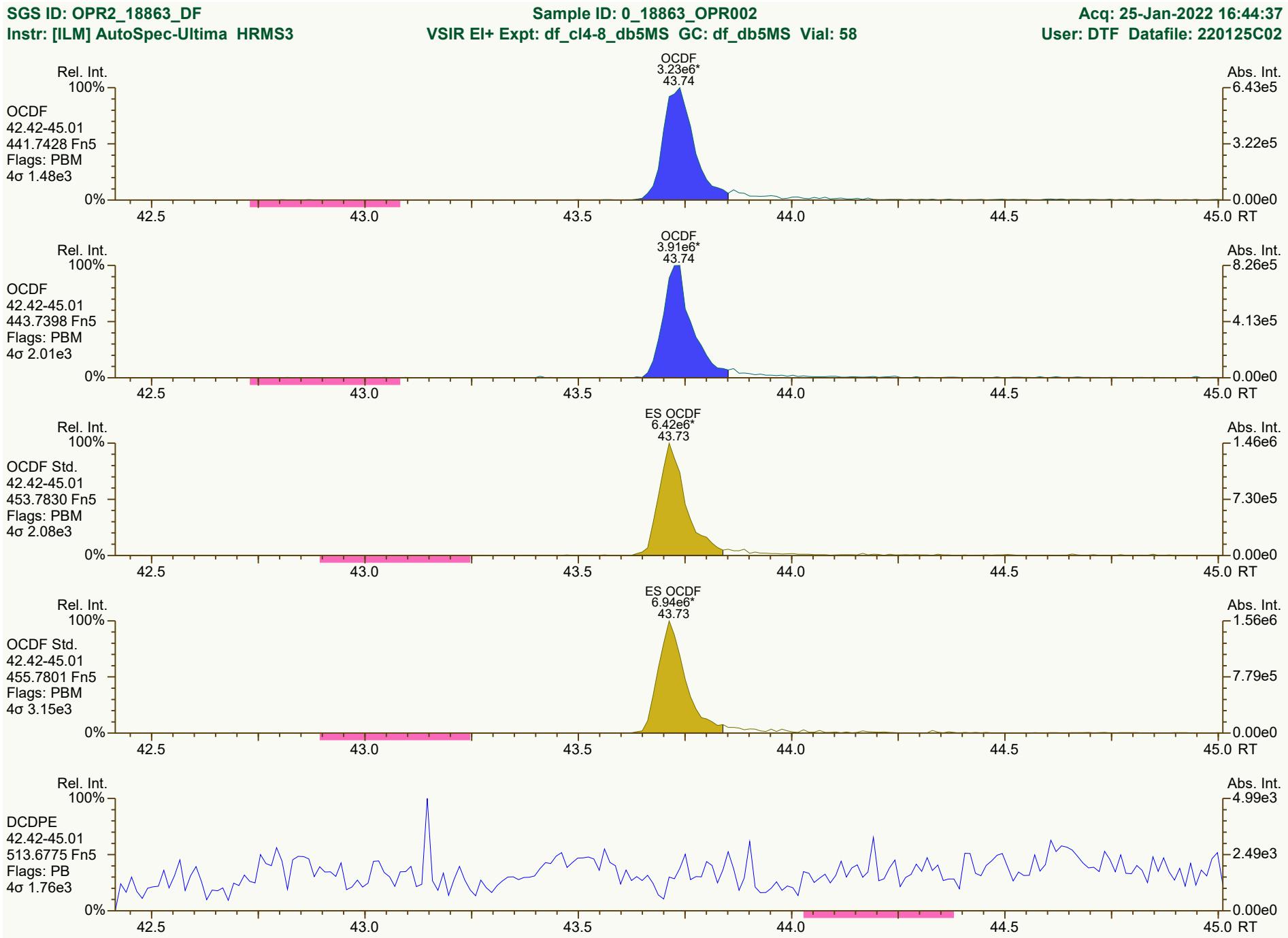
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1468, 0563, 1927 scc: 226-320
PKD: 26-Jan-2022 08:26 Printed: 26-Jan-2022 09:46 Page 9 of 12


SGS ID: OPR2_18863_DF
Sample ID: 0_18863_OPR002
Acq: 25-Jan-2022 16:44:37
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: DTF Datafile: 220125C02
Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.33e3
123468F
1.24e7
35.47
123478F
5.06e6
36.85
123678F
6.46e6*
37.00
234678F
6.23e6
37.69
123789F
4.19e6
38.62
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 1.23e3
123468F
9.96e6
35.47
123478F
4.05e6
36.85
123678F
5.15e6*
37.00
234678F
5.07e6
37.69
123789F
3.30e6
38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 2.01e3
ES 123478F
4.45e6
36.84
ES 123678F
6.60e6*
36.99
CS 123469F
5.75e6*
37.30
ES 234678F
6.47e6*
37.67
ES 123789F
4.29e6
38.61
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 2.82e3
ES 123478F
8.86e6
36.84
ES 123678F
1.19e7*
36.98
CS 123469F
1.07e7*
37.30
ES 234678F
1.12e7*
37.67
ES 123789F
7.76e6
38.61
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.62e3
0%
100%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR2_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0391, 9246, 7166 scc: 226-320
PKD: 26-Jan-2022 08:26 Printed: 26-Jan-2022 09:46 Page 10 of 12


SGS ID: OPR2_18863_DF
Sample ID: 0_18863_OPR002
Acq: 25-Jan-2022 16:44:37
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
User: DTF Datafile: 220125C02
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.14e3
1234678F
4.92e6*
39.96
1234789F
2.59e6
41.36
1.52e6
7.62e5
0.00e0
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.66e3
1234678F
4.95e6*
39.96
1234789F
2.75e6
41.36
1.60e6
8.01e5
0.00e0
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 2.29e3
ES 1234678F
4.38e6*
39.95
CS 1234689F
3.65e6*
40.34
ES 1234789F
2.42e6*
41.34
1.34e6
6.72e5
0.00e0
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
9.48e6*
39.95
CS 1234689F
7.95e6*
40.35
ES 1234789F
5.29e6*
41.34
3.18e6
1.59e6
0.00e0
NCDPE
39.02-42.40
479.7165 Fn4
Flags: PB
4σ 1.65e3
8.59e3
4.30e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5971\B5971_18863 DF\Resources\OPR2_18863_DF.utp_res, saved 26-Jan-2022 09:41 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 5694, 0933, 4055 scc: 226-320
Revised: 26-Jan-2022 08:26 (DTF) Printed: 26-Jan-2022 09:46 Page 11 of 12

SGS ID: OPR2_18863_DF
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 0_18863_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58
Acq: 25-Jan-2022 16:44:37
User: DTF Datafile: 220125C02





FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120221-S-SPS-SW-B-4H2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.09 g	Lab Sample ID	B5971_18876_DF_004	Date Extracted:	01-Feb-2022
Date Collected:	02-Dec-2021	% Solid:	76.5 %	QC Batch No:	18876	Date Analyzed:	05-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	2:43:40

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	20.4				ES 2378-TCDD	90.3	
12378-PeCDD	0.82			J	ES 12378-PeCDD	96.7	
123478-HxCDD	0.913			J	ES 123478-HxCDD	94.8	
123678-HxCDD	1.77			J	ES 123678-HxCDD	102	
123789-HxCDD	EMPC		1.62	J	ES 123789-HxCDD	89.3	
1234678-HpCDD	44.2				ES 1234678-HpCDD	91.6	
OCDD	725				ES OCDD	91.6	
2378-TCDF	68.9				ES 2378-TCDF	88.5	
12378-PeCDF	1.56			J	ES 12378-PeCDF	96.1	
23478-PeCDF	2.21			J	ES 23478-PeCDF	94.3	
123478-HxCDF	2.28			J	ES 123478-HxCDF	92.3	
123678-HxCDF	EMPC		0.794	J	ES 123678-HxCDF	101	
234678-HxCDF	0.71			J	ES 234678-HxCDF	120	
123789-HxCDF	ND	0.233			ES 123789-HxCDF	90.8	
1234678-HpCDF	43.3				ES 1234678-HpCDF	117	
1234789-HpCDF	EMPC		1.67	J	ES 1234789-HpCDF	92.1	
OCDF	593				ES OCDF	90.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	92.4	
Total TCDD	27.2		28.5		CS 12347-PeCDD	106	
Total PeCDD	4.39		7.39		CS 12346-PeCDF	99.8	
Total HxCDD	30.1		33.2		CS 123469-HxCDF	112	
Total HpCDD	136		136		CS 1234689-HpCDF	116	
Total TCDF	135		145				
Total PeCDF	7.7		13.8				
Total HxCDF	12.8		14.4				
Total HpCDF	56.1		57.8				
Total PCDD/Fs	**1,730**		**1,750**				
WHO-2005 TEQs							
TEQ: ND=0	30.7		31				
TEQ: ND=DL/2	30.7	0.435	31				
TEQ: ND=DL	30.7	0.871	31				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: 11215131-120221-S-SPS-SW-B-4H2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.09 g	Lab Sample ID:	B5971_18876_DF_004	Date Extracted:	01-Feb-2022
Date Collected:	02-Dec-2021	% Solid:	76.5 %	QC Batch No.:	18876	Date Analyzed:	05-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	2:43:40

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	1.02		12479/12468D	1.46	J	124679/124689D	18.1		1234679D	91.3	
1379D	0.47	J	12469D	[1.94]	J	123468D	[0.925]	J	1234678D	44.2	
1369D	(0.244)		12368D	[0.447]	J	123679/123689D	8.25				
1469D	3.25		12478D	0.555	J	123469D	1.04	J			
1247D...[4]	(0.244)		12379D	[0.607]	J	123478D	0.913	J			
1378D	(0.244)		12369D...[3]	1.56	J	123678D	1.77	J			
1268D	(0.244)		12346/12347D	(0.335)		123467D	[0.605]	J			
1478D	(0.244)		12378D	0.82	J	123789D	[1.62]	J	**Conc.**	136	
1279D	(0.244)		12367D	(0.335)					**EMPC**	136	
1234/1269D	[0.482]	J	12389D	(0.335)							
1236D	(0.244)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[0.822]										
1239D	(0.244)								OCDD	725	
2378D	20.4										
1278D	1.97										
1267D	(0.244)										
1289D	(0.244)										
Conc.	27.2		**Conc.**	4.39		**Conc.**	30.1				
EMPC	28.5		**EMPC**	7.39		**EMPC**	33.2				

5500 Business Drive
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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	30.7	31
TEQ: ND=DL/2	30.7	31
TEQ: ND=DL	30.7	31

	Conc.	EMPC
Total PCDD/Fs	1,730	1,750

Checkcode: 544-812-SSB

Report Created: 08-Feb-2022 09:58 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-B-4H2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	04-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.09 g	Lab Sample ID:	B5971_18876_DF_004	Date Extracted:	01-Feb-2022
Date Collected:	02-Dec-2021	% Solid:	76.5 %	QC Batch No.:	18876	Date Analyzed:	05-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	2:43:40

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[0.565]		13468/12468F	[3.53]		123468F	1.59	J	1234678F	43.3	
1468F	0.783		13678F...[3]	[0.606]	J	124678/134678F	4.4		1234679F	(0.144)	
2468F	2.22		12368F...[3]	3.46		134679F	(0.199)		1234689F	12.9	
1346/1246F	(0.176)		14678F	(0.239)		124679F	(0.199)		1234789F	[1.67]	J
1347F...[3]	3.03		13479F	(0.239)		124689F	3.49				
1348F	(0.176)		13469/12479F	(0.239)		123467F	[0.379]	J			
1248F...[3]	5		12346F	(0.239)		123478F	2.28	J			
1268F	2.51		23468/12469F	[0.747]	J	123678F	[0.794]	J			
1467F	0.556		12347F	(0.239)		123479F	(0.199)				
1478F	[3.04]		12348F	0.467	J	123469F	0.298	J			
1369/1237F	1.36		12378F	1.56	J	123679F	(0.199)				
2467F	0.502		12678/12367F	[1.19]	J	234678F	0.71	J	**Conc.**	56.1	
2368F	3.34		12379F	(0.239)		234678/123689F	0		**EMPC**	57.8	
1238F...[5]	[3.2]		12679F	(0.239)		123689F	(0.199)				
1278F	30.9		23467/12369F	(0.239)		123789F	(0.233)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.176)		23478F	2.21	J	123789/123489F	0				
1267F	2.15		23478/12489F	0		123489F	[0.417]	J	OCDF	593	
2346/1249F	(0.176)		12489F	(0.239)							
2347/1279F	1.17		12349F	(0.239)							
2348F	[3.3]		12389F	(0.239)							
2378F	68.9										
2367/3467F	6.36										
1269F	1.12										
1239F	(0.176)										
1289F	5.17										
Conc.	135		**Conc.**	7.7		**Conc.**	12.8				
EMPC	145		**EMPC**	13.8		**EMPC**	14.4				

Checkcode: 544-812-SSB

Report Created: 08-Feb-2022 09:58 Analyst: TF

Sample ID: 11215131-120221-S-SPS-SW-B-4H2 TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5971_18876_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.09 g	QC Batch No.:	18876
Date Collected:	02-Dec-2021	Split:	-	Date Extracted:	01-Feb-2022
Date Received:	04-Dec-2021	Dilution:	-	Date Analyzed:	05-Feb-2022 02:43
Lab Project No:	B5971	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	20.4		0.244	20.4	20.4	20.4
12378-PeCDD	0.82	J	0.335	0.41	0.82	0.82
123478-HxCDD	0.913	J	0.385	0.0913	0.0913	0.0913
123678-HxCDD	1.77	J	0.346	0.177	0.177	0.177
123789-HxCDD	[1.62]	J	0.363	[0.162]	[0.162]	[0.162]
1234678-HpCDD	44.2		0.429	0.442	0.442	0.442
OCDD	725		0.524	0.725	0.0725	0.217
2378-TCDF	68.9		0.176	6.89	6.89	6.89
12378-PeCDF	1.56	J	0.247	0.0781	0.0781	0.0468
23478-PeCDF	2.21	J	0.229	1.11	1.11	0.663
123478-HxCDF	2.28	J	0.209	0.228	0.228	0.228
123678-HxCDF	[0.794]	J	0.205	[0.0794]	[0.0794]	[0.0794]
234678-HxCDF	0.71	J	0.163	0.071	0.071	0.071
123789-HxCDF	(0.233)		0.233	(0.0233)	(0.0233)	(0.0233)
1234678-HpCDF	43.3		0.114	0.433	0.433	0.433
1234789-HpCDF	[1.67]	J	0.187	[0.0167]	[0.0167]	[0.0167]
OCDF	593		0.396	0.593	0.0593	0.178

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TEQ Summaries			
EMPC = 0, ND = 0	31.7	30.9	30.7
EMPC = 0, ND = DL / 2	31.7	30.9	30.7
EMPC = 0, ND = DL	31.7	30.9	30.7
EMPC = 0, < J-level = 0	29.5	28.3	28.6
EMPC = EMPC, ND = 0	31.9	31.2	31
EMPC = EMPC, ND = DL / 2	32	31.2	31
EMPC = EMPC, ND = DL	32	31.2	31
EMPC = EMPC, < J-level = 0	29.5	28.3	28.6

Checkcode: 544-812-SSB

Sample ID: Method Blank B5971_18876 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18876_DF_SDS	Date Extracted:	01-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18876	Date Analyzed:	05-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	1:57:20

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.192			ES 2378-TCDD	89.3	
12378-PeCDD	ND	0.202			ES 12378-PeCDD	101	
123478-HxCDD	ND	0.174			ES 123478-HxCDD	97.6	
123678-HxCDD	ND	0.142			ES 123678-HxCDD	113	
123789-HxCDD	ND	0.158			ES 123789-HxCDD	92.1	
1234678-HpCDD	ND	0.18			ES 1234678-HpCDD	94.2	
OCDD	EMPC		0.902	J	ES OCDD	92.9	
2378-TCDF	ND	0.127			ES 2378-TCDF	81.8	
12378-PeCDF	ND	0.187			ES 12378-PeCDF	97	
23478-PeCDF	ND	0.189			ES 23478-PeCDF	90	
123478-HxCDF	ND	0.129			ES 123478-HxCDF	81.8	
123678-HxCDF	ND	0.118			ES 123678-HxCDF	96.6	
234678-HxCDF	ND	0.0974			ES 234678-HxCDF	116	
123789-HxCDF	ND	0.146			ES 123789-HxCDF	79.7	
1234678-HpCDF	ND	0.182			ES 1234678-HpCDF	127	
1234789-HpCDF	ND	0.397			ES 1234789-HpCDF	81.3	
OCDF	ND	0.351			ES OCDF	76.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	97.4	
Total TCDD	ND	0.192	ND		CS 12347-PeCDD	120	
Total PeCDD	ND	0.202	ND		CS 12346-PeCDF	109	
Total HxCDD	ND	0.157	ND		CS 123469-HxCDF	114	
Total HpCDD	ND	0.18	ND		CS 1234689-HpCDF	124	
Total TCDF	ND	0.127	ND				
Total PeCDF	ND	0.188	ND				
Total HxCDF	ND	0.119	ND				
Total HpCDF	ND	0.259	ND				
Total PCDD/Fs	**ND**		**0.902**				
WHO-2005 TEQs							
TEQ: ND=0	0		0.000271				
TEQ: ND=DL/2	0.287	0.287	0.287				
TEQ: ND=DL	0.573	0.574	0.574				

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Sample ID: Method Blank B5971_18876 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18876_DF_SDS	Date Extracted:	01-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18876	Date Analyzed:	05-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	1:57:20

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.192)		12479/12468D	(0.202)		124679/124689D	(0.157)		1234679D	(0.18)	
1379D	(0.192)		12469D	(0.202)		123468D	(0.157)		1234678D	(0.18)	
1369D	(0.192)		12368D	(0.202)		123679/123689D	(0.157)				
1469D	(0.192)		12478D	(0.202)		123469D	(0.157)				
1247D...[4]	(0.192)		12379D	(0.202)		123478D	(0.174)				
1378D	(0.192)		12369D...[3]	(0.202)		123678D	(0.142)				
1268D	(0.192)		12346/12347D	(0.202)		123467D	(0.157)				
1478D	(0.192)		12378D	(0.202)		123789D	(0.158)		**Conc.**	0	
1279D	(0.192)		12367D	(0.202)					**EMPC**	0	
1234/1269D	(0.192)		12389D	(0.202)							
1236D	(0.192)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.192)										
1239D	(0.192)								OCDD	[0.902]	J
2378D	(0.192)										
1278D	(0.192)										
1267D	(0.192)										
1289D	(0.192)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0.000271
TEQ: ND=DL/2	0.287	0.287
TEQ: ND=DL	0.573	0.574

	Conc.	EMPC
Total PCDD/Fs	0	0.902

Checkcode: 264-158-GYL

Report Created: 08-Feb-2022 09:58 Analyst: TF

Sample ID: Method Blank B5971_18876 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18876_DF_SDS	Date Extracted:	01-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18876	Date Analyzed:	05-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	1:57:20

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.127)		13468/12468F	(0.157)		123468F	(0.119)		1234678F	(0.182)	
1468F	(0.127)		13678F...[3]	(0.188)		124678/134678F	(0.119)		1234679F	(0.259)	
2468F	(0.127)		12368F...[3]	(0.188)		134679F	(0.119)		1234689F	(0.259)	
1346/1246F	(0.127)		14678F	(0.188)		124679F	(0.119)		1234789F	(0.397)	
1347F...[3]	(0.127)		13479F	(0.188)		124689F	(0.119)				
1348F	(0.127)		13469/12479F	(0.188)		123467F	(0.119)				
1248F...[3]	(0.127)		12346F	(0.188)		123478F	(0.129)				
1268F	(0.127)		23468/12469F	(0.188)		123678F	(0.118)				
1467F	(0.127)		12347F	(0.188)		123479F	(0.119)				
1478F	(0.127)		12348F	(0.188)		123469F	(0.119)				
1369/1237F	(0.127)		12378F	(0.187)		123679F	(0.119)				
2467F	(0.127)		12678/12367F	(0.188)		234678F	(0.0974)		**Conc.**	0	
2368F	(0.127)		12379F	(0.188)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.127)		12679F	(0.188)		123689F	(0.119)				
1278F	(0.127)		23467/12369F	(0.188)		123789F	(0.146)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.127)		23478F	(0.189)		123789/123489F	0				
1267F	(0.127)		23478/12489F	0		123489F	(0.119)		OCDF	(0.351)	
2346/1249F	(0.127)		12489F	(0.188)							
2347/1279F	(0.127)		12349F	(0.188)							
2348F	(0.127)		12389F	(0.188)							
2378F	(0.127)										
2367/3467F	(0.127)										
1269F	(0.127)										
1239F	(0.127)										
1289F	(0.127)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 264-158-GYL

Report Created: 08-Feb-2022 09:58 Analyst: TF

Sample ID: Method Blank B5971_18876 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18876_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18876
Date Collected:	n/a	Split:	-	Date Extracted:	01-Feb-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	05-Feb-2022 01:57
Lab Project No:	B5971	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.192)		0.192	(0.192)	(0.192)	(0.192)
12378-PeCDD	(0.202)		0.202	(0.101)	(0.202)	(0.202)
123478-HxCDD	(0.174)		0.174	(0.0174)	(0.0174)	(0.0174)
123678-HxCDD	(0.142)		0.142	(0.0142)	(0.0142)	(0.0142)
123789-HxCDD	(0.158)		0.158	(0.0158)	(0.0158)	(0.0158)
1234678-HpCDD	(0.18)		0.18	(0.0018)	(0.0018)	(0.0018)
OCDD	[0.902]	J	0.556	[0.000902]	[0.0000902]	[0.000271]
2378-TCDF	(0.127)		0.127	(0.0127)	(0.0127)	(0.0127)
12378-PeCDF	(0.187)		0.187	(0.00936)	(0.00936)	(0.00562)
23478-PeCDF	(0.189)		0.189	(0.0945)	(0.0945)	(0.0567)
123478-HxCDF	(0.129)		0.129	(0.0129)	(0.0129)	(0.0129)
123678-HxCDF	(0.118)		0.118	(0.0118)	(0.0118)	(0.0118)
234678-HxCDF	(0.0974)		0.0974	(0.00974)	(0.00974)	(0.00974)
123789-HxCDF	(0.146)		0.146	(0.0146)	(0.0146)	(0.0146)
1234678-HpCDF	(0.182)		0.182	(0.00182)	(0.00182)	(0.00182)
1234789-HpCDF	(0.397)		0.397	(0.00397)	(0.00397)	(0.00397)
OCDF	(0.351)		0.351	(0.000351)	(0.0000351)	(0.000105)

TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.257	0.307	0.287
EMPC = 0, ND = DL	0.514	0.615	0.573
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0.000902	0.0000902	0.000271
EMPC = EMPC, ND = DL / 2	0.258	0.308	0.287
EMPC = EMPC, ND = DL	0.515	0.615	0.574
EMPC = EMPC, < J-level = 0	0	0	0

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Checkcode: 264-158-GYL

Sample ID: 0_18876_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18876_DF	Date Extracted:	01-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18876	Date Analyzed:	04-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	23:38:21

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.1				ES 2378-TCDD	73.9	
12378-PeCDD	50.7				ES 12378-PeCDD	87.1	
123478-HxCDD	56.8				ES 123478-HxCDD	81.4	
123678-HxCDD	58.8				ES 123678-HxCDD	90.4	
123789-HxCDD	55				ES 123789-HxCDD	77.2	
1234678-HpCDD	56.4				ES 1234678-HpCDD	80	
OCDD	113				ES OCDD	77.7	
2378-TCDF	13.1				ES 2378-TCDF	71.2	
12378-PeCDF	54.7				ES 12378-PeCDF	83.1	
23478-PeCDF	57.9				ES 23478-PeCDF	82.8	
123478-HxCDF	53.9				ES 123478-HxCDF	71.3	
123678-HxCDF	56.1				ES 123678-HxCDF	82.1	
234678-HxCDF	54.3				ES 234678-HxCDF	101	
123789-HxCDF	54.1				ES 123789-HxCDF	71.9	
1234678-HpCDF	57				ES 1234678-HpCDF	103	
1234789-HpCDF	54.2				ES 1234789-HpCDF	74.9	
OCDF	108				ES OCDF	68.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	85.7	
Total TCDD	52.3		52.3		CS 12347-PeCDD	116	
Total PeCDD	74.6		74.6		CS 12346-PeCDF	98	
Total HxCDD	183		183		CS 123469-HxCDF	101	
Total HpCDD	68.7		68.7		CS 1234689-HpCDF	113	
Total TCDF	65.4		65.4				
Total PeCDF	207		207				
Total HxCDF	334		334				
Total HpCDF	111		111				
Total PCDD/Fs	**1,320**		**1,320**				
WHO-2005 TEQs							
TEQ: ND=0	124		124				
TEQ: ND=DL/2	124	0.227	124				
TEQ: ND=DL	124	0.455	124				

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Sample ID: 0_18876_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5971	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18876_DF	Date Extracted:	01-Feb-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18876	Date Analyzed:	05-Feb-2022
		Split:	-	Dilution:	-	Time Analyzed:	0:24:41

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	10.7				ES 2378-TCDD	89.2	
12378-PeCDD	47				ES 12378-PeCDD	93.2	
123478-HxCDD	50.8				ES 123478-HxCDD	100	
123678-HxCDD	51.7				ES 123678-HxCDD	115	
123789-HxCDD	49.2				ES 123789-HxCDD	90.3	
1234678-HpCDD	51.3				ES 1234678-HpCDD	97.4	
OCDD	106				ES OCDD	92.4	
2378-TCDF	10.8				ES 2378-TCDF	79.8	
12378-PeCDF	47.9				ES 12378-PeCDF	89.3	
23478-PeCDF	51.4				ES 23478-PeCDF	85.3	
123478-HxCDF	49.5				ES 123478-HxCDF	83.5	
123678-HxCDF	51.6				ES 123678-HxCDF	95.2	
234678-HxCDF	48.6				ES 234678-HxCDF	124	
123789-HxCDF	47.8				ES 123789-HxCDF	87.1	
1234678-HpCDF	48.7				ES 1234678-HpCDF	123	
1234789-HpCDF	48.9				ES 1234789-HpCDF	93	
OCDF	104				ES OCDF	84.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	95.6	
Total TCDD	52.3		52.3		CS 12347-PeCDD	113	
Total PeCDD	71.5		71.5		CS 12346-PeCDF	96.7	
Total HxCDD	163		163		CS 123469-HxCDF	113	
Total HpCDD	63.2		63.2		CS 1234689-HpCDF	122	
Total TCDF	64.2		64.2				
Total PeCDF	201		201				
Total HxCDF	306		306				
Total HpCDF	97.7		97.7				
Total PCDD/Fs	**1,230**		**1,230**				
WHO-2005 TEQs							
TEQ: ND=0	112		112				
TEQ: ND=DL/2	112	0.189	112				
TEQ: ND=DL	112	0.378	112				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample DUP

Method 1613B

Sample ID: 0_18876_OPR001

Analyte	OPR1_18876_DF pg/uL	OPR2_18876_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	12.1	10.7	12.9%
1,2,3,7,8-PeCDD	50.7	47	7.6%
1,2,3,4,7,8-HxCDD	56.8	50.8	11.1%
1,2,3,6,7,8-HxCDD	58.8	51.7	12.9%
1,2,3,7,8,9-HxCDD	55	49.2	11.1%
1,2,3,4,6,7,8-HpCDD	56.4	51.3	9.5%
OCDD	113	106	6.8%
2,3,7,8-TCDF	13.1	10.8	18.7%
1,2,3,7,8-PeCDF	54.7	47.9	13.2%
2,3,4,7,8-PeCDF	57.9	51.4	12.0%
1,2,3,4,7,8-HxCDF	53.9	49.5	8.5%
1,2,3,6,7,8-HxCDF	56.1	51.6	8.5%
2,3,4,6,7,8-HxCDF	54.3	48.6	11.1%
1,2,3,7,8,9-HxCDF	54.1	47.8	12.3%
1,2,3,4,6,7,8-HpCDF	57	48.7	15.7%
1,2,3,4,7,8,9-HpCDF	54.2	48.9	10.2%
OCDF	108	104	3.3%
Totals			
Total TCDD	52.3	52.3	0.1%
Total PeCDD	74.6	71.5	4.2%
Total HxCDD	183	163	11.3%
Total HpCDD	68.7	63.2	8.4%
Total TCDF	65.4	64.2	1.8%
Total PeCDF	207	201	3.0%
Total HxCDF	334	306	8.7%
Total HpCDF	111	97.7	13.0%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*04-Dec-21 at 11:30*
AP Project name:	*B5971*
Requested TAT:	*10 business days*
Projected due date:	*10-Feb-22*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120221-S-JC-SW-B-2H	B5971_001*	Solid	1	4oz Amber	02-Dec-21	14:10	0.3	1	4905 2704 1992
11215131-120321-S-JC-SW-B-3H	B5971_002*	Solid	1	4oz Amber	03-Dec-21	10:00	0.3	1	4905 2704 1992
11215131-120221-S-SPS-SW-B-4H1	B5971_003*	Solid	1	4oz Amber	02-Dec-21	14:30	0.5	3	4905 2704 2017
11215131-120221-S-SPS-SW-B-4H2	B5971_004**	Solid	1	4oz Amber	02-Dec-21	14:35	0.5	3	4905 2704 2017
11215131-120321-S-SPS-SW-B-5H	B5971_005*	Solid	1	4oz Amber	03-Dec-21	11:20	0.5	3	4905 2704 2017

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact *samples taken off HOLD per client email dated 1/5/2022**sample taken off HOLD per client email 1/27/2022.

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Iesha L. Clinton *Logged in by: Ashley Owens* *QC'ed by:* AK 27 Jan 22

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B5A71 1/3

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remar

REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV

SPECIAL DELIVERABLES:

☐ DoD ■ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-371 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

SAMPLE ID / DESCRIPTION (BN)	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120221-S-JC-SW-S-4	12-2-21	1320	C	S	4 oz	X					1	RUSH
11215131-120221-S-JC-SW-S-4		1240			4 oz	X					1	RUSH
11215131-120221-S-JC-SW-B-2		1350			4 oz	X					1	
11215131-120221-S-JC-SW-B-3		1400			4 oz	X					1	
11215131-120221-S-JC-SW-B-2H		1410			4 oz	X					1	HOLD *
(BN) 11215131-120221-S-JC-RB-1		1500	—	we	4 oz	*					2R	(BN)
11215131-120221-S-JC-SW-S-5	12-3-21	0940	C	S	4 oz	X					1	RUSH
11215131-120321-S-JC-SW-B-3		0950			4 oz	X					1	
11215131-120321-S-JC-SW-B-3H		1000			4 oz	X					1	HOLD *
					4 oz							

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:	RECEIVED BY LABORATORY:	DATE:	TIME:
Breanna Norsh	12-3-21	1230				
RELINQUISHED BY (2):	DATE:	TIME:	RECEIVED BY:	COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT		
	12-3-21	1325		CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT		
RELINQUISHED BY (3):	DATE:	TIME:	RECEIVED BY:	CARRIER:	TEMP: °C 0.3°C	
	12/3/21	1700		TRACKING #:		

*=samples in this project.

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SGS CHAIN OF CUSTODY

B59771 2/3

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITEREF: International Paper
TURN AROUND TIME: Refer to Notes and Remar
REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV
SPECIAL DELIVERABLES:
☐ DoD ■ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-371 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120321-S-SPS-SW-S-7	12/2/21	1325	C	S	4 oz	X					1	RUSH
11215131-120221-S-SPS-SW-S-6		1400			4 oz	X						RUSH
11215131-120221-S-SPS-SW-O-3		1420			4 oz	X						O is overburden not basic (SW-C)
11215131-120221-S-SPS-SW-B-4		1425			4 oz	X						
11215131-120221-S-SPS-SW-B-4H1		1430			4 oz	X						HOLD *
11215131-120221-S-SPS-SW-B-4H2	↓	1435			4 oz	X						HOLD *
11215131-120321-S-SPS-SW-S-12	12/3/21	845			4 oz	X						RUSH
11215131-120321-S-SPS-SW-S-11		930			4 oz	X						RUSH
11215131-120321-S-SPS-SW-O-5		925			4 oz	X						O is overburden
11215131-120321-S-SPS-SW-S-10		1030	↓	↓	4 oz	X					↓	RUSH

	DATE:	TIME:		
COLLECTED/RELINQUISHED BY (1): Stephen Schuler	12/3/21	1230	RECEIVED BY: Eddie Castro	RECEIVED BY LABORATORY: DATE: TIME: Josh Clista 12/4/21 11:30
RELINQUISHED BY (2): Eddie Castro	12/3/21	1325	RECEIVED BY:	COOLER SEAL: ☑ INTACT ☐ BROKEN ☐ ABSENT
				CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT
RELINQUISHED BY (3):	DATE:	TIME:	RECEIVED BY:	CARRIER: TEMP: °C 0.5 °C
				TRACKING #:

*=samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs
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20 of 268

SGS CHAIN OF CUSTODY

B5971 3/3

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUNDTIME: Refer to Notes and Remar

REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV

SPECIAL DELIVERABLES:

☐ DoD ■ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-371 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	QC: MSD	QC: DUP	QTY	REMARKS
11215131-120321-S-SPS-SW-S-9	12/3/21	1055	C	S	4 oz		X					RUSH
11215131-120321-S-SPS-SW-S-8	"	1105	"	"	4 oz		X					RUSH
11215131-120321-S-SPS-SW-O-4	"	1110	"	"	4 oz		X					O is for oneinch SW-O
11215131-120321-S-SPS-SW-B-5	"	1115	"	"	4 oz		X					
11215131-120321-S-SPS-SW-B-5H	↓	1120	↓	↓	4 oz		X					HOLD *
					4 oz							
					4 oz							
					4 oz							
					4 oz							
					4 oz							

	DATE:	TIME:	
COLLECTED/RELINQUISHED BY (1): Stephen Salter	12/3/21	1230	RECEIVED BY:
RELINQUISHED BY (2):	12/3/21	1325	RECEIVED BY:
RELINQUISHED BY (3):	12/3/21	1706	RECEIVED BY:

RECEIVED BY LABORATORY: DATE: 12/4/21 TIME: 1130

COOLER SEAL: ☐ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☐ ABSENT

CARRIER: TEMP: °C 0.5°C

TRACKING #:

*=Samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

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B59971 1/2

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
=SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 03DEC21
ACTWGT: 45.00 LB MAN
CAD: 0317565/CAFE3313

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/4/2021
11:30
0.3° (T.B.)

FedEx Express

1 of 3

TRK# 0201 4905 2704 1992

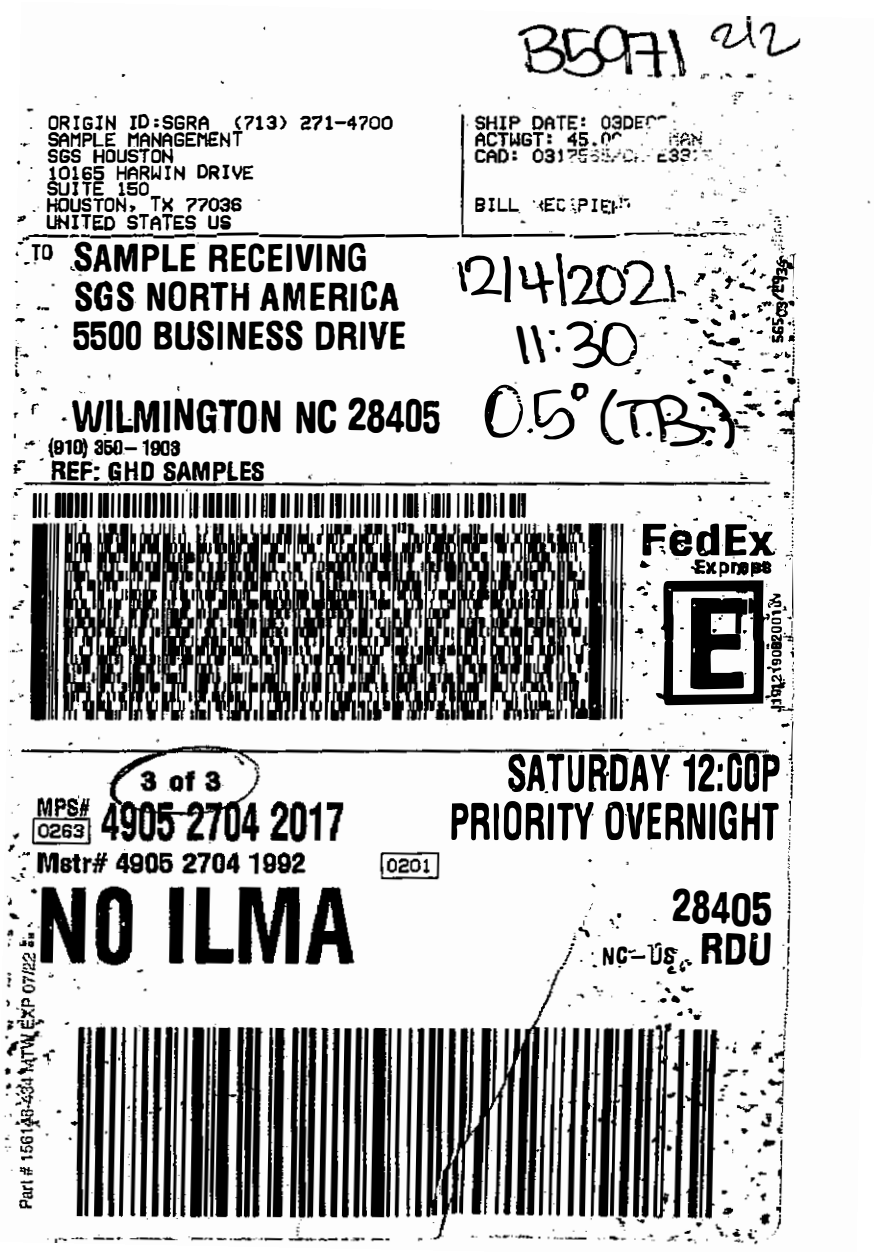
SATURDAY 12:00P
PRIORITY OVERNIGHT

MASTER

NO ILMA

28405
NC-US RDU

Part # 156144-434 MTG EXP 07/22


B59711 2/2

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 03DEC
ACTWGT: 45.0
CAD: 0317

BILL RECIPIENT

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903
REF: GHD SAMPLES

12/4/2021
11:30
0.5° (T.B.)

FedEx Express

3 of 3
MPS# 0263 4905 2704 2017
Mstr# 4905 2704 1992
0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

NO ILMA

28405
NC-US RDU

Part # 156148-204 NITW EXP 07/22

Project Initiation Form

Project Number: B5971

Initiation Date: 05-Jan-22

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Sample 004 on ~~HOLD~~ Sample taken off HOLD 1/27/2022 GB 2/10/22

Read and understood, initial and date: Prep Lab: KE 1/10/22 HRMS Lab: MH 1/24/22

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab: MH 1/24/22

PM Initials: tburkamper Date: 05-Jan-2022

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Extraction Type: SDS CLL | TALEX Carbon SPE

Solid

Final Volume: 20 µL

Batch# 18876 | Split: 1/2 1/4 | Extract Initial/Date: JRH 2/1/22 | Clean-up Initial/Date: KAB 2/3/22 | Transfer Init/Date: KAB 2/4/22

LabSampleID	Extraction Position Solvent: TOL	Extraction Weight/Volume g mL	(Td)	ASECS#	Observations
B5971_18876_004	15	13.18			black, moist, clay-like, fuel smell
B6080_18876_001	16	11.33			black, moist, clay-like, fuel smell
B6110_18876_001	17	16.65			black, wet, ~~clay-like~~, muddy JRH 2/1/22
B6148_18876_001	18	12.42			black, clay-like
B6148_18876_003	19	13.89			black, clay-like, fuel smell
MB1_18876	12	10.00			sodium sulfate
OPR1_18876	13	10.00			sodium sulfate
OPR2_18876	14	10.00			sodium sulfate

TB 2/1/22

KAB 2/4/22

Supply IDs

Toluene	STL 14-24
MeCHL	STL14.17
Florisil	SPL5.77
Hexane	STL14.22
Silica	SPL5.69
S Nitrate	N/A
Base Silica	SPL5.83
HydroMatrix	N/A
Tetradecane	SPL5-730
H_2SO_4	N/A
A Silica	SPL5.82
Sodium Sulfate	SPL5-808

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	
Carbon Column Date/Initial:	
GPC Date/Initial:	
Bond-Elute Date/Initial:	

TB 2/1/22

Cycle Time

TOL	Start: 1430 Stop: 0845
HEX	Start: Stop
DCM	Start:

YB 2/1/22

SGS

Methods: PCB PCDD/F QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

Solid

Batch# 18876

Inter-Department Communication Sheet

TB 2/10/23

SGS

Wt. Volume Results

Batch #: 18876

Comments:

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	%Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5971_004	2.34	6.77	5.73	76.52%	76.52%			13.07	13.18	10.09
B6080_001	2.37	5.98	5.01	73.13%	73.13%			13.67	14.32	10.47
B6110_001	2.37	6.78	5.31	66.67%	66.67%			15	16.65	11.1
B6148_001	2.33	6.12	5.41	81.27%	81.27%			12.31	12.42	10.09
B6148_003	2.44	6.76	5.69	75.23%	75.23%			13.29	13.89	10.45

% Solid Determination WorkSheet

SGS

Batch: 18876

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Dry ONE	Comments
B5971_18876_004	2.34	6.77	5.73	13.07	
B6080_18876_001	2.37	5.98	5.01	13.67	
B6110_18876_001	2.37	6.78	5.31	15.00	
B6148_18876_001	2.33	6.12	5.41	12.31	
B6148_18876_003	2.44	6.76	5.69	13.29	

2/4/22

Date/Initials: JAH 2/4/22

SGS

Methods: PCB / PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Solid

Batch # 18876

Lab Sample ID	Spiker Initials/Date: JRH 2/1/22	JRH 2/1/22	JRH 2/1/22	2/3/22	2/3/22		
	DIF A2-A	DIF A2-B	DIF ES	DIF CS	DIF JS		
	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5971_18876_004	—	—	KE	KE	KE		
B6080_18876_001	—	—	KE	KE	KE		
B6110_18876_001	—	—	KE	KE	KE		
B6148_18876_001	—	—	KE	KE	KE		
B6148_18876_003	—	—	KE	KE	KE		
MB1_18876	—	—	KE	KE	KE		
OPR1_18876	KE	KE	KE	KE	KE		
OPR2_18876	KE	KE	KE	KE	KE		

2/4/22

Standard Information

Pipette ID							
Spike ID	DIF A2-A	DIF A2-B	DIF ES	DIF CS	DIF JS		
SIL#	26-2-8	AS-187-2	A6-2-9	25.338.1	25.384.1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/19/28	6/20/27	8/2028	11/16/22	1/28/23		

2/4/22

Burkamper, Tamara (Wilmington)

From: Nate Reece <Nate.Reece@ghd.com>
Sent: Thursday, January 27, 2022 12:00 AM
To: Burkamper, Tamara (Wilmington)
Cc: Kathleen Shaw; Meagan Willis
Subject: [EXTERNAL] Run Hold Sample

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Good evening,

Please take sample 11215131-120221-S-SPS-SW-B-4H2 off hold and analyze for D/F on standard 10 day TAT. SDG: B5971

Thank you,

Nate Reece
Environmental Scientist

GHD
Proudly employee-owned | ghd.com
11451 Katy Fwy #400, Houston, TX 77079 United States
M +1 281 386 7158 | **E** nate.reece@ghd.com

The Power of Commitment
Connect

Please consider the environment before printing this email

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REVIEWED
Tamara Burkamper , 2/10/2022, 12:41:38 PM

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
18	220204C18	3	CS3_220204_DF_CC	1.00	25-347-1	DTF	398-419	04-Feb-2022	22:52:01
19	220204C19	53	OPR1_18876_DF	1.00	0_18876_OPR001	DTF	002-289	04-Feb-2022	23:38:21
20	220204C20	54	OPR2_18876_DF	1.00	0_18876_OPR002	DTF	462-483	05-Feb-2022	00:24:41
21	220204C21	2	SBS_220204_DF_CC	1.00	20-61-1	DTF	855-476	05-Feb-2022	01:11:00
22	220204C22	52	MB1_18876_DF_SDS	10.00	Method Blank	DTF	264-158	05-Feb-2022	01:57:20
23	220204C23	55	B5971_18876_DF_004	10.09	11215131-120221-S-SPS-SW-B-4H2	DTF	544-812	05-Feb-2022	02:43:40

REVIEWED
Tyler_Fritz , 2/8/2022, 10:20:28 AM

Lab ID: MB1_18876_DF_SDS **Acq'd:** 05 Feb 2022 01:57 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18876 **UTP:** 08-Feb-2022 09:56:52 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 264-158-GYL

Datafile: 220204C22 **Report:** 08 Feb 2022 09:58 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	2754.999	0.192
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	2949.078	0.202
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2856.96	0.174
123678-HxCDD	NotFnd		1.0035	-		-	-	-	1.15	-	2856.96	0.142
123789-HxCDD	NotFnd		1.0112	-		-	-	-	1.05	-	2856.96	0.158
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	2874.94	0.18
OCDD	43.51	J EMPC	1.0004	1.0000	-1.0	8.09E+04	1.31	N	1.13	0.902	4492.875	0.556
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	2367.7956	0.127
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3828.065	0.187
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3828.065	0.189
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	2700.344	0.129
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	2700.344	0.118
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.19	-	2700.344	0.0974
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	2700.344	0.146
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	5840.422	0.182
1234789-HpCDF	NotFnd		1.0002	-		-	-	-	1.31	-	5840.422	0.397
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	2914.512	0.351

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.51	1.0236	1.0237	+0.2	2.58E+07	0.83	Y	1.05	89.3
ES 12378-PeCDD	33.84	1.2144	1.2153	+1.8	2.46E+07	1.53	Y	0.88	101
ES 123478-HxCDD	37.76	0.9920	0.9919	-0.2	2.61E+07	1.28	Y	0.97	97.6
ES 123678-HxCDD	37.88	0.9951	0.9950	-0.2	2.94E+07	1.27	Y	0.94	113
ES 123789-HxCDD	38.17	1.0027	1.0026	-0.2	2.76E+07	1.25	Y	1.09	92.1
ES 1234678-HpCDD	40.83	1.0724	1.0725	+0.2	2.36E+07	1.08	Y	0.91	94.2
ES OCDD	43.51	1.1428	1.1429	+0.3	3.18E+07	0.89	Y	0.62	92.9
ES 2378-TCDF	27.65	1.0516	1.0517	+0.2	3.83E+07	0.82	Y	1.06	81.8
ES 12378-PeCDF	32.40	1.2312	1.2321	+1.7	3.91E+07	1.57	Y	0.91	97
ES 23478-PeCDF	33.51	1.2733	1.2744	+2.2	3.51E+07	1.62	Y	0.88	90
ES 123478-HxCDF	36.75	0.9655	0.9654	-0.2	2.69E+07	0.54	Y	1.20	81.8
ES 123678-HxCDF	36.89	0.9692	0.9692	0	3.59E+07	0.55	Y	1.35	96.6
ES 234678-HxCDF	37.58	0.9871	0.9871	0	3.96E+07	0.53	Y	1.24	116
ES 123789-HxCDF	38.52	1.0121	1.0120	-0.2	2.53E+07	0.54	Y	1.16	79.7
ES 1234678-HpCDF	39.90	1.0479	1.0481	+0.5	3.39E+07	0.47	Y	0.97	127
ES 1234789-HpCDF	41.28	1.0845	1.0846	+0.2	1.90E+07	0.48	Y	0.85	81.3
ES OCDF	43.69	1.1477	1.1478	+0.3	3.38E+07	0.90	Y	0.81	76.1

Lab ID: MB1_18876_DF_SDS | **Acq'd:** 05 Feb 2022 01:57 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18876 | **UTP:** 08-Feb-2022 09:56:52 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 264-158-GYL

Datafile: 220204C22 | **Report:** 08 Feb 2022 09:58 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.85		-	-	-	2.76E+07	0.81	Y	-	-
JS 1234-TCDF	26.29		-	-	-	4.42E+07	0.80	Y	-	-
JS 123467-HxCDD	38.07		-	-	-	1.37E+07	1.21	Y	-	-
CS 37Cl-2378-TCDD	28.53		1.0244	1.0245	+0.2	1.29E+07	n/a	-	1.20	97.4
CS 12347-PeCDD	33.34		1.1964	1.1972	+1.6	2.50E+07	1.55	Y	0.75	120
CS 12346-PeCDF	31.87		1.2112	1.2121	+1.7	4.10E+07	1.57	Y	0.85	109
CS 123469-HxCDF	37.21		0.9775	0.9775	0	3.50E+07	0.54	Y	1.12	114
CS 1234689-HpCDF	40.30		1.0584	1.0586	+0.5	3.01E+07	0.46	Y	0.89	124
~~SS 37Cl-2378-TCDD~~	~~28.53~~		~~1.0244~~	~~1.0245~~	~~+0.2~~	~~1.29E+07~~	~~n/a~~		~~1.15~~	~~109~~
~~SS 12347-PeCDD~~	~~33.34~~		~~1.1964~~	~~1.1972~~	~~+1.6~~	~~2.50E+07~~	~~1.55~~	~~Y~~	~~0.86~~	~~110~~
~~SS 12346-PeCDF~~	~~31.87~~		~~1.2112~~	~~1.2121~~	~~+1.7~~	~~4.10E+07~~	~~1.57~~	~~Y~~	~~0.94~~	~~112~~
~~SS 123469-HxCDF~~	~~37.21~~		~~0.9775~~	~~0.9775~~	~~0~~	~~3.50E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~110~~
~~SS 1234689-HpCDF~~	~~40.30~~		~~1.0584~~	~~1.0586~~	~~+0.5~~	~~3.01E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~96.8~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0.902
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0.902

Lab ID: MB1_18876_DF_SDS **Acq'd: 05 Feb 2022 01:57 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5971_18876 **UTP: 08-Feb-2022 09:56:52 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 264-158-GYL**

Datafile: 220204C22 **Report: 08 Feb 2022 09:58 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8737						1.18		2754.999	0.192
1379-TCDD	NotFnd		0.8860						1.18		2754.999	0.192
1369-TCDD	NotFnd		0.9009						1.18		2754.999	0.192
1469-TCDD	NotFnd		0.9281						1.18		2754.999	0.192
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		2754.999	0.192
1378-TCDD	NotFnd		0.9432						1.18		2754.999	0.192
1268-TCDD	NotFnd		0.9500						1.18		2754.999	0.192
1478-TCDD	NotFnd		0.9586						1.18		2754.999	0.192
1279-TCDD	NotFnd		0.9645						1.18		2754.999	0.192
1234/1269-TCDD	NotFnd		0.9770						1.18		2754.999	0.192
1236-TCDD	NotFnd		0.9817						1.18		2754.999	0.192
1237/1238-TCDD	NotFnd		0.9905						1.18		2754.999	0.192
1239-TCDD	NotFnd		0.9952						1.18		2754.999	0.192
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**2754.999**	**0.192**
1278-TCDD	NotFnd		1.0121						1.18		2754.999	0.192
1267-TCDD	NotFnd		1.0167						1.18		2754.999	0.192
1289-TCDD	NotFnd		1.0345						1.18		2754.999	0.192
12479/12468-PeCDD	NotFnd		0.9267						1.04		2949.078	0.202
12469-PeCDD	NotFnd		0.9425						1.04		2949.078	0.202
12368-PeCDD	NotFnd		0.9588						1.04		2949.078	0.202
12478-PeCDD	NotFnd		0.9643						1.04		2949.078	0.202
12379-PeCDD	NotFnd		0.9673						1.04		2949.078	0.202
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2949.078	0.202
12346/12347-PeCDD	NotFnd		0.9858						1.04		2949.078	0.202
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**2949.078**	**0.202**
12367-PeCDD	NotFnd		1.0033						1.04		2949.078	0.202
12389-PeCDD	NotFnd		1.0134						1.04		2949.078	0.202
124679/124689-HxCDD	NotFnd		0.9542						1.10		2856.96	0.157
123468-HxCDD	NotFnd		0.9715						1.10		2856.96	0.157
123679/123689-HxCDD	NotFnd		0.9793						1.10		2856.96	0.157
123469-HxCDD	NotFnd		0.9828						1.10		2856.96	0.157
123478-HxCDD	NotFnd		**1.0004**						1.09		**2856.96**	**0.174**
123678-HxCDD	NotFnd		**1.0035**						1.15		**2856.96**	**0.142**
123467-HxCDD	NotFnd		1.0085						1.10		2856.96	0.157
123789-HxCDD	NotFnd		**1.0112**						1.05		**2856.96**	**0.158**

Lab ID: MB1_18876_DF_SDS | **Acq'd:** 05 Feb 2022 01:57 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18876 | **UTP:** 08-Feb-2022 09:56:52 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 264-158-GYL

Datafile: 220204C22 | **Report:** 08 Feb 2022 09:58 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

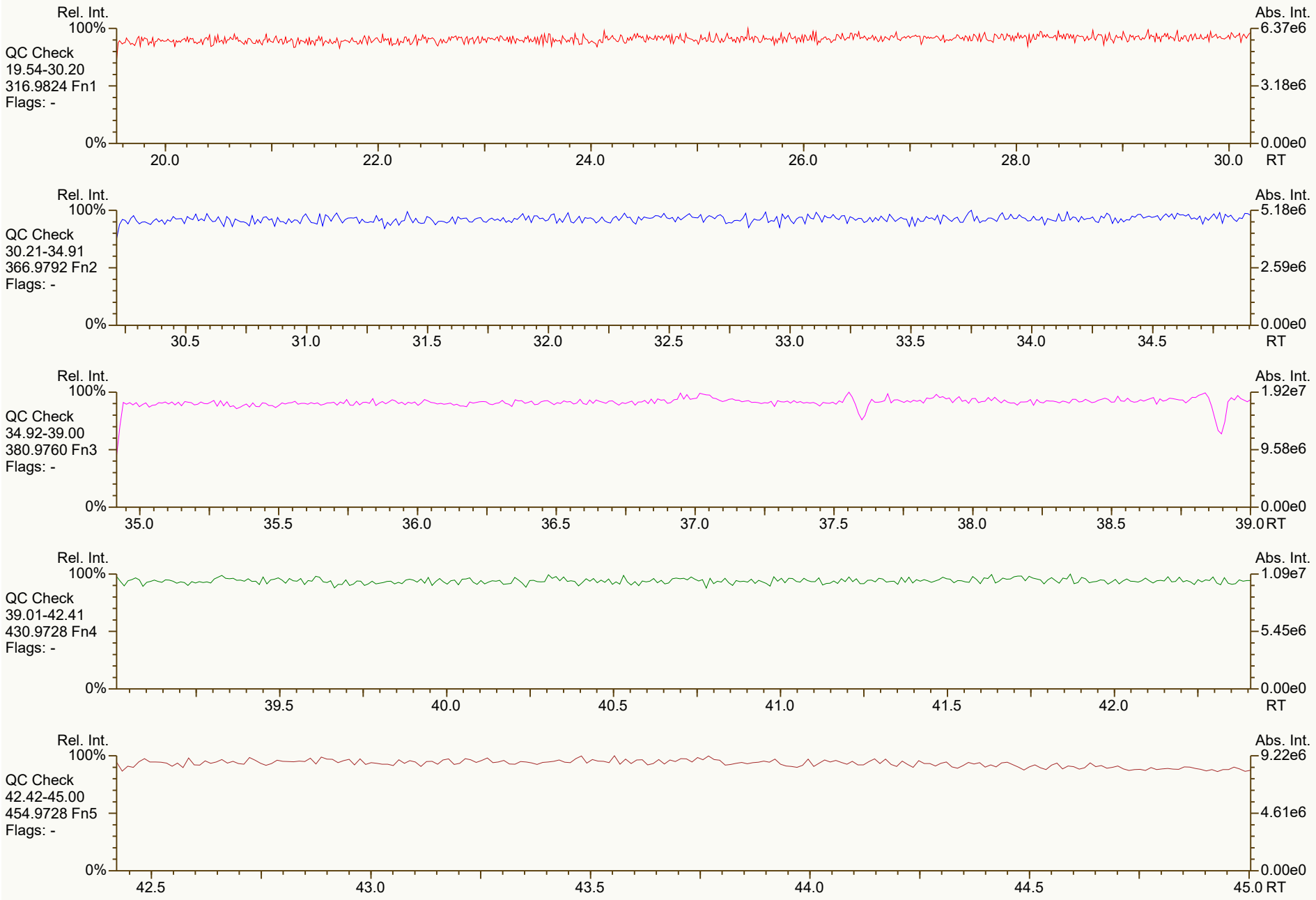
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		2874.94	0.18
1234678-HpCDD	**NotFnd**		**1.0003**						**1.06**		**2874.94**	**0.18**
OCDD	**43.51**	**J EMPC**	**1.0004**	**1.0000**	**-1.0**	**8.09E+04**	**1.31**	**N**	**1.13**	**0.902**	**4492.875**	**0.556**
OCDD-a	NotFnd		1.0003						0.07		2868.057	5.55
1368-TCDF	NotFnd		0.8251						1.08		2367.7956	0.127
1468-TCDF	NotFnd		0.8458						1.08		2367.7956	0.127
2468-TCDF	NotFnd		0.8686						1.08		2367.7956	0.127
1346/1246-TCDF	NotFnd		0.8814						1.08		2367.7956	0.127
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		2367.7956	0.127
1348-TCDF	NotFnd		0.8962						1.08		2367.7956	0.127
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		2367.7956	0.127
1268-TCDF	NotFnd		0.9145						1.08		2367.7956	0.127
1467-TCDF	NotFnd		0.9193						1.08		2367.7956	0.127
1478-TCDF	NotFnd		0.9254						1.08		2367.7956	0.127
1369/1237-TCDF	NotFnd		0.9387						1.08		2367.7956	0.127
2467-TCDF	NotFnd		0.9433						1.08		2367.7956	0.127
2368-TCDF	NotFnd		0.9489						1.08		2367.7956	0.127
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		2367.7956	0.127
1278-TCDF	NotFnd		0.9683						1.08		2367.7956	0.127
1349-TCDF	NotFnd		0.9722						1.08		2367.7956	0.127
1267-TCDF	NotFnd		0.9783						1.08		2367.7956	0.127
2346/1249-TCDF	NotFnd		0.9850						1.08		2367.7956	0.127
2347/1279-TCDF	NotFnd		0.9926						1.08		2367.7956	0.127
2348-TCDF	NotFnd		0.9967						1.08		2367.7956	0.127
2378-TCDF	**NotFnd**		**1.0008**						**1.08**		**2367.7956**	**0.127**
2367/3467-TCDF	NotFnd		1.0137						1.08		2367.7956	0.127
1269-TCDF	NotFnd		1.0223						1.08		2367.7956	0.127
1239-TCDF	NotFnd		1.0321						1.08		2367.7956	0.127
1289-TCDF	NotFnd		1.0722						1.08		2367.7956	0.127
13468/12468-PeCDF	NotFnd		0.9139						1.02		3194.2	0.157
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		3828.065	0.188
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		3828.065	0.188
14678-PeCDF	NotFnd		0.9692						1.02		3828.065	0.188
13479-PeCDF	NotFnd		0.9723						1.02		3828.065	0.188
13469/12479-PeCDF	NotFnd		0.9797						1.02		3828.065	0.188
12346-PeCDF	NotFnd		0.9840						1.02		3828.065	0.188

Lab ID: MB1_18876_DF_SDS **Acq'd:** 05 Feb 2022 01:57 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5971_18876 **UTP:** 08-Feb-2022 09:56:52 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 264-158-GYL

Datafile: 220204C22 **Report:** 08 Feb 2022 09:58 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		3828.065	0.188
12347-PeCDF	NotFnd		0.9894						1.02		3828.065	0.188
12348-PeCDF	NotFnd		0.9940						1.02		3828.065	0.188
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3828.065**	**0.187**
12678/12367-PeCDF	NotFnd		1.0089						1.02		3828.065	0.188
12379-PeCDF	NotFnd		1.0142						1.02		3828.065	0.188
12679-PeCDF	NotFnd		0.9929						1.02		3828.065	0.188
23467/12369-PeCDF	NotFnd		0.9967						1.02		3828.065	0.188
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3828.065**	**0.189**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3828.065	0.188
12349-PeCDF	NotFnd		1.0100						1.02		3828.065	0.188
12389-PeCDF	NotFnd		1.0324						1.02		3828.065	0.188
123468-HxCDF	NotFnd		0.9627						1.19		2700.344	0.119
124678/134678-HxCDF	NotFnd		0.9682						1.19		2700.344	0.119
134679-HxCDF	NotFnd		0.9744						1.19		2700.344	0.119
124679-HxCDF	NotFnd		0.9798						1.19		2700.344	0.119
124689-HxCDF	NotFnd		0.9858						1.19		2700.344	0.119
123467-HxCDF	NotFnd		0.9972						1.19		2700.344	0.119
123478-HxCDF	**NotFnd**		**1.0004**						**1.27**		**2700.344**	**0.129**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**2700.344**	**0.118**
123479-HxCDF	NotFnd		1.0049						1.19		2700.344	0.119
123469-HxCDF	NotFnd		1.0090						1.19		2700.344	0.119
123679-HxCDF	NotFnd		0.9942						1.19		2700.344	0.119
234678-HxCDF	**NotFnd**		**1.0005**						**1.19**		**2700.344**	**0.0974**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		2700.344	0.119
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**2700.344**	**0.146**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		2700.344	0.119
1234678-HpCDF	**NotFnd**		**1.0003**						**1.37**		**5840.422**	**0.182**
1234679-HpCDF	NotFnd		1.0068						1.34		5840.422	0.259
1234689-HpCDF	NotFnd		1.0103						1.34		5840.422	0.259
1234789-HpCDF	**NotFnd**		**1.0002**						**1.31**		**5840.422**	**0.397**
OCDF	**NotFnd**		**1.0003**						**1.07**		**2914.512**	**0.351**
OCDF-a	NotFnd		1.0002						0.07		3374.897	6.56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100%
QC Check
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2.59e6
0.00e0
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
0%
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35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
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9.58e6
0.00e0
Rel. Int.
100%
QC Check
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430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
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5.45e6
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Rel. Int.
100%
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
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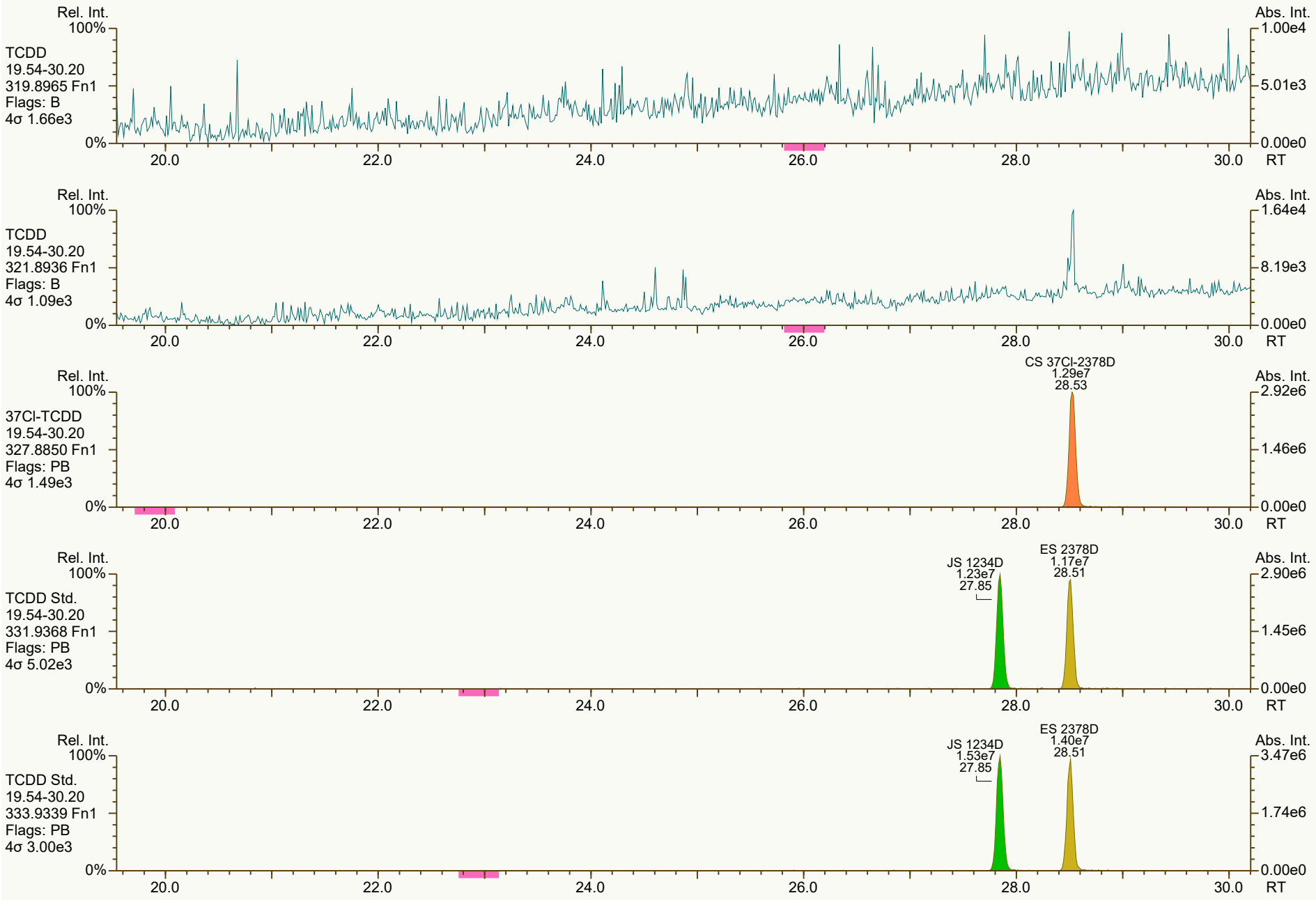
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TCDD
19.54-30.20
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0%
Abs. Int.
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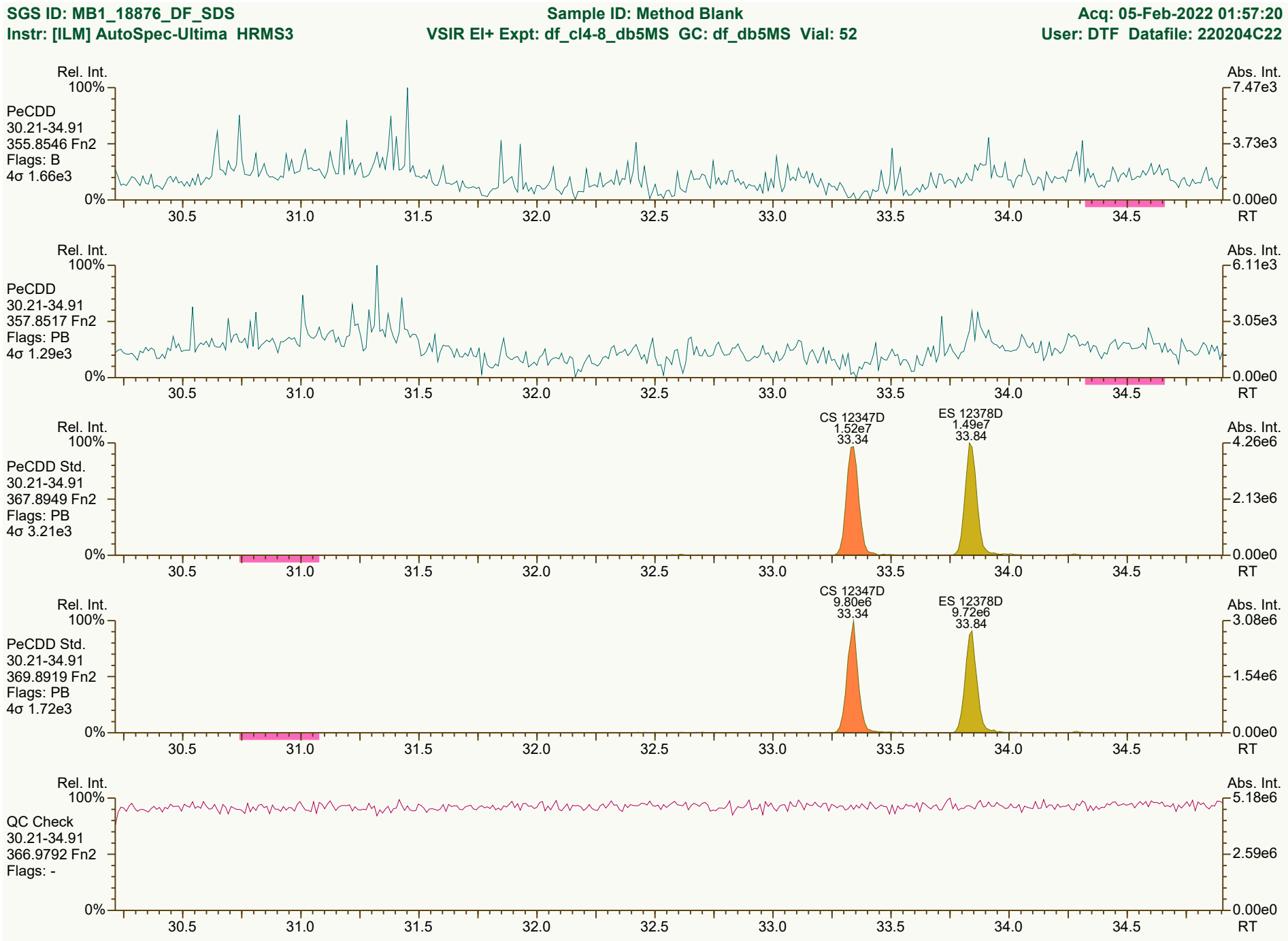
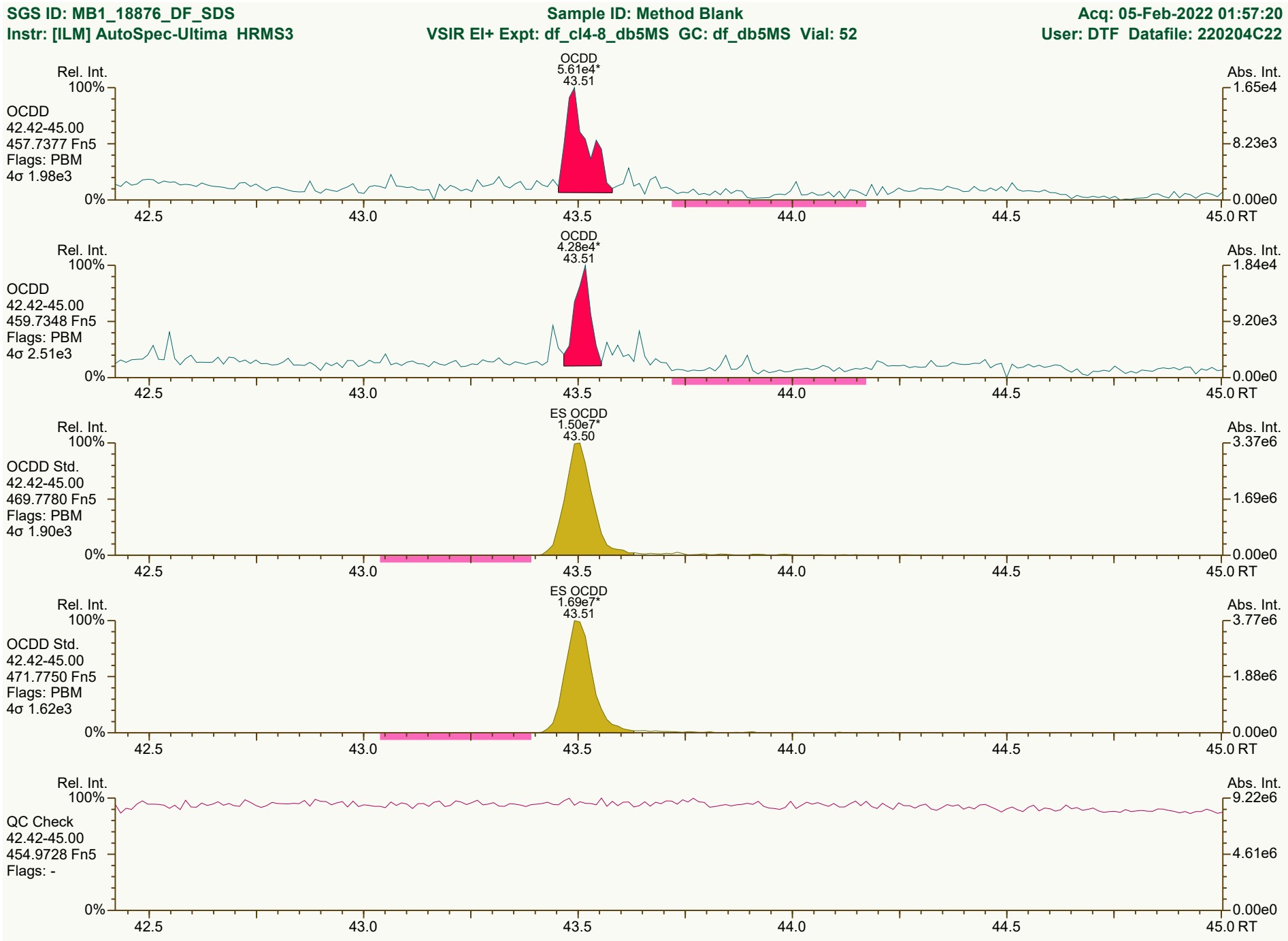
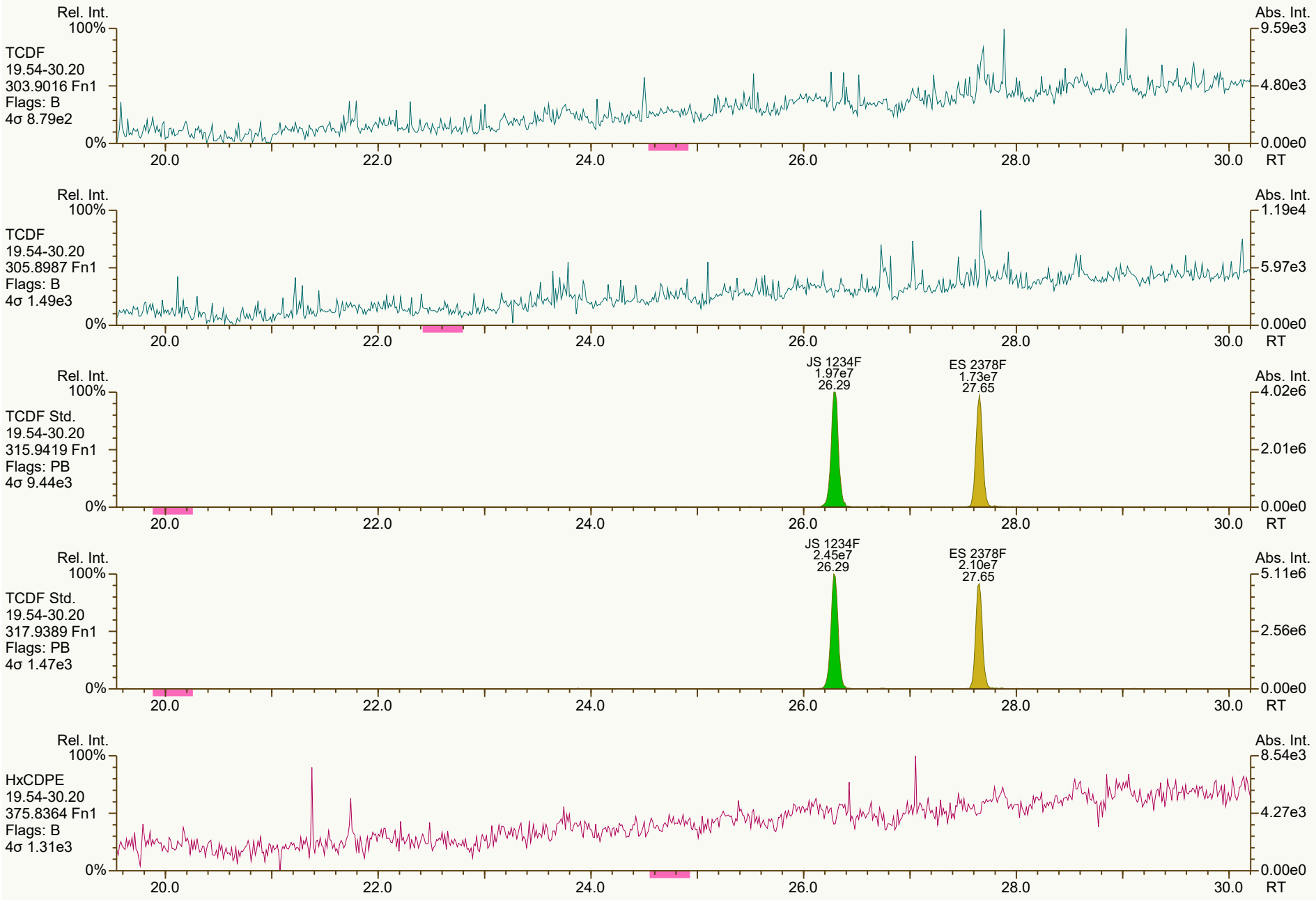
5.01e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: B
4σ 1.09e3
0%
Abs. Int.
1.64e4
8.19e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.49e3
0%
CS 37Cl-2378D
1.29e7
28.53
Abs. Int.
2.92e6
1.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 5.02e3
0%
JS 1234D
1.23e7
27.85
ES 2378D
1.17e7
28.51
Abs. Int.
2.90e6
1.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 3.00e3
0%
JS 1234D
1.53e7
27.85
ES 2378D
1.40e7
28.51
Abs. Int.
3.47e6
1.74e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


SGS ID: MB1_18876_DF_SDS
Sample ID: Method Blank
Acq: 05-Feb-2022 01:57:20
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 52
User: DTF Datafile: 220204C22
Rel. Int.
Abs. Int.
PeCDD
30.21-34.91
355.8546 Fn2
Flags: B
4σ 1.66e3
7.47e3
3.73e3
0.00e0
PeCDD
30.21-34.91
357.8517 Fn2
Flags: PB
4σ 1.29e3
6.11e3
3.05e3
PeCDD Std.
30.21-34.91
367.8949 Fn2
Flags: PB
4σ 3.21e3
CS 12347D
1.52e7
33.34
ES 12378D
1.49e7
33.84
4.26e6
2.13e6
PeCDD Std.
30.21-34.91
369.8919 Fn2
Flags: PB
4σ 1.72e3
CS 12347D
9.80e6
33.34
ES 12378D
9.72e6
33.84
3.08e6
1.54e6
QC Check
30.21-34.91
366.9792 Fn2
Flags: -
5.18e6
2.59e6
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\MB1_18876_DF_SDS.utp_res, saved 08-Feb-2022 09:56 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2623, 1785 scc: 264-158
PKD: 07-Feb-2022 08:52 Printed: 08-Feb-2022 10:03 Page 3 of 12

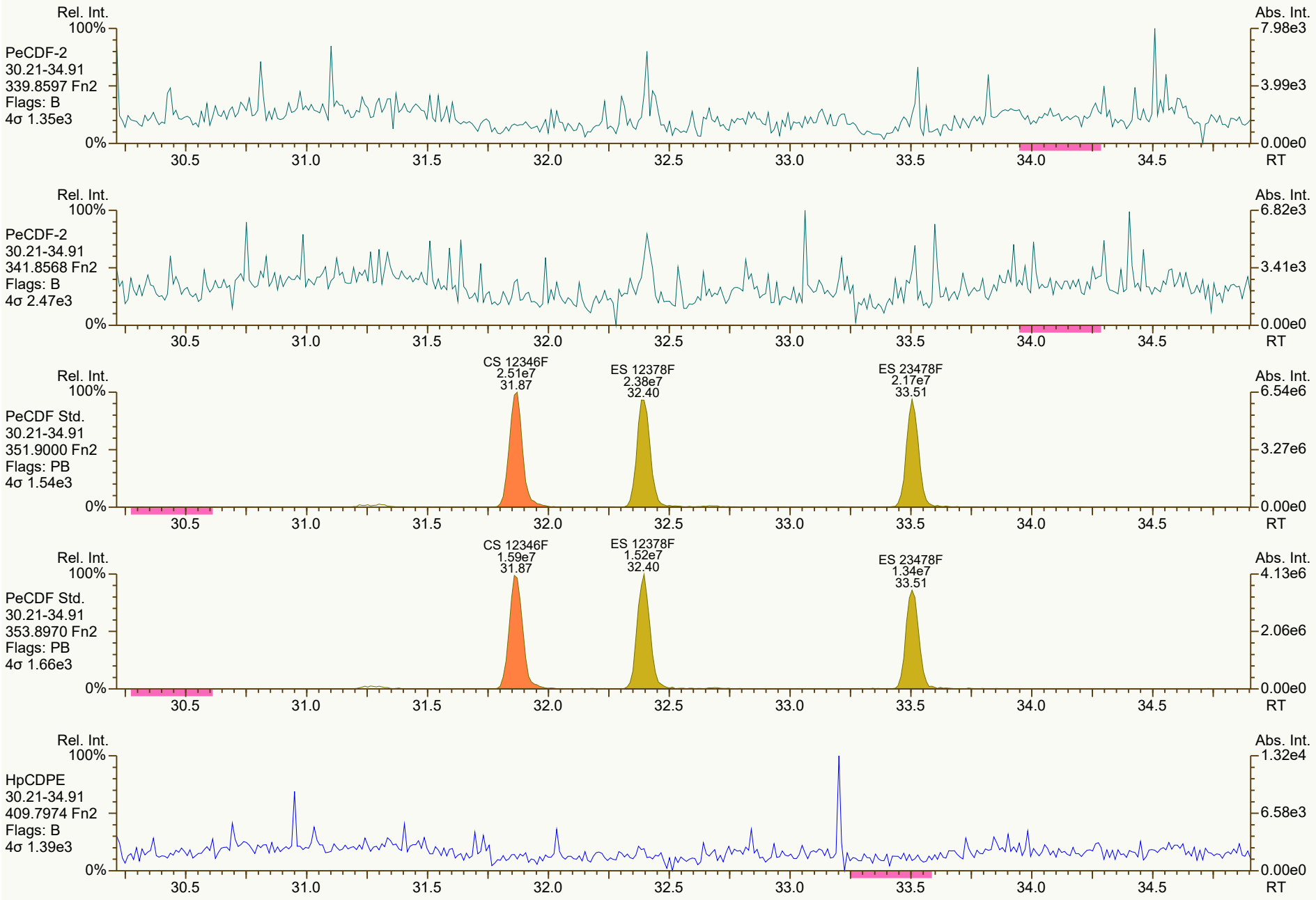

Rel. Int.
100%
HxCDD
34.92-39.00
389.8156 Fn3
Flags: B
4σ 1.32e3
0%
Abs. Int.
5.66e3
2.83e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
34.92-39.00
391.8127 Fn3
Flags: B
4σ 1.54e3
0%
Abs. Int.
5.24e3
2.62e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
34.92-39.00
401.8559 Fn3
Flags: PBM
4σ 2.81e3
0%
ES 123678D
1.64e7
37.88
ES 123478D
1.46e7
37.76
ES 123789D
1.54e7*
38.17
JS 123467D
7.51e6*
38.06
Abs. Int.
4.90e6
2.45e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
34.92-39.00
403.8530 Fn3
Flags: PBM
4σ 1.91e3
0%
ES 123678D
1.29e7
37.87
ES 123478D
1.14e7
37.76
ES 123789D
1.23e7*
38.17
JS 123467D
6.21e6*
38.06
Abs. Int.
3.85e6
1.92e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.92e7
9.58e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

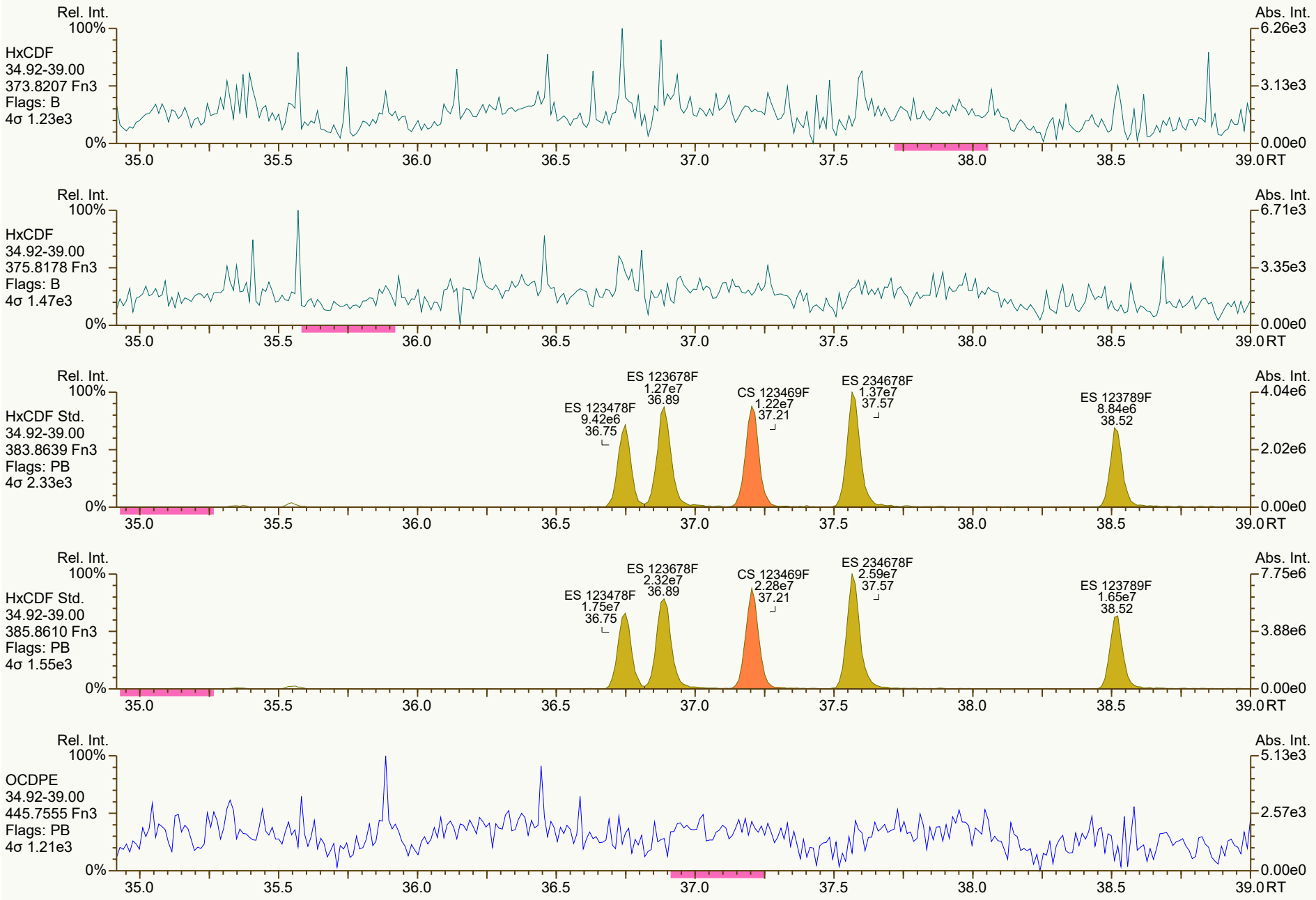

Rel. Int.
100%
HpCDD
39.01-42.41
423.7767 Fn4
Flags: B
4σ 1.66e3
0%
Abs. Int.
8.21e3
4.11e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.01-42.41
425.7737 Fn4
Flags: B
4σ 1.22e3
0%
Abs. Int.
8.11e3
4.05e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
ES 1234678D
1.23e7*
40.83
Rel. Int.
100%
HpCDD Std.
39.01-42.41
435.8169 Fn4
Flags: PBM
4σ 1.51e3
0%
Abs. Int.
3.92e6
1.96e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
ES 1234678D
1.14e7*
40.83
Rel. Int.
100%
HpCDD Std.
39.01-42.41
437.8140 Fn4
Flags: PBM
4σ 2.18e3
0%
Abs. Int.
3.64e6
1.82e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.09e7
5.45e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT

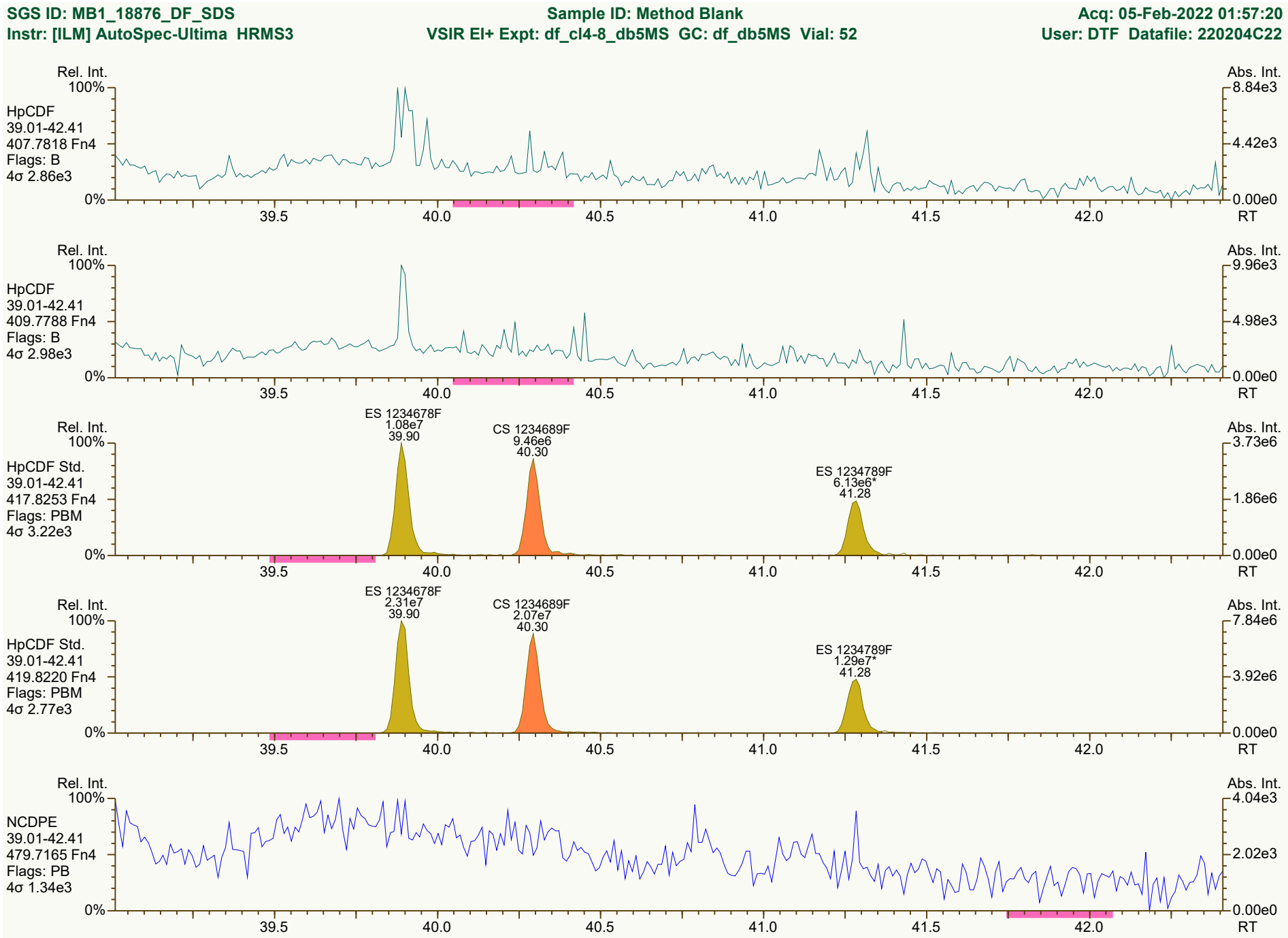

SGS ID: MB1_18876_DF_SDS
Sample ID: Method Blank
Acq: 05-Feb-2022 01:57:20
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 52
User: DTF Datafile: 220204C22
Rel. Int.
Abs. Int.
OCDD
5.61e4*
43.51
OCDD
42.42-45.00
457.7377 Fn5
Flags: PBM
4σ 1.98e3
1.65e4
8.23e3
0.00e0
OCDD
4.28e4*
43.51
OCDD
42.42-45.00
459.7348 Fn5
Flags: PBM
4σ 2.51e3
1.84e4
9.20e3
ES OCDD
1.50e7*
43.50
OCDD Std.
42.42-45.00
469.7780 Fn5
Flags: PBM
4σ 1.90e3
3.37e6
1.69e6
ES OCDD
1.69e7*
43.51
OCDD Std.
42.42-45.00
471.7750 Fn5
Flags: PBM
4σ 1.62e3
3.77e6
1.88e6
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
9.22e6
4.61e6
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\MB1_18876_DF_SDS.utp_res, saved 08-Feb-2022 09:56 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 5663, 2011 scc: 264-158
Revised: 07-Feb-2022 08:54 (DTF) Printed: 08-Feb-2022 10:03 Page 6 of 12


Rel. Int.
100%
TCDF
19.54-30.20
303.9016 Fn1
Flags: B
4σ 8.79e2
0%
Abs. Int.
9.59e3
4.80e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.20
305.8987 Fn1
Flags: B
4σ 1.49e3
0%
Abs. Int.
1.19e4
5.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 9.44e3
0%
JS 1234F
1.97e7
26.29
ES 2378F
1.73e7
27.65
Abs. Int.
4.02e6
2.01e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 1.47e3
0%
JS 1234F
2.45e7
26.29
ES 2378F
2.10e7
27.65
Abs. Int.
5.11e6
2.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.31e3
0%
Abs. Int.
8.54e3
4.27e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
8.92e3
4.46e3
0.00e0
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: B
4σ 1.73e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.87e4
9.34e3
0.00e0
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: B
4σ 1.47e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
6.37e6
3.18e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.21-34.91
339.8597 Fn2
Flags: B
4σ 1.35e3
0%
Abs. Int.
7.98e3
3.99e3
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
PeCDF-2
30.21-34.91
341.8568 Fn2
Flags: B
4σ 2.47e3
6.82e3
3.41e3
PeCDF Std.
30.21-34.91
351.9000 Fn2
Flags: PB
4σ 1.54e3
CS 12346F
2.51e7
31.87
ES 12378F
2.38e7
32.40
ES 23478F
2.17e7
33.51
6.54e6
3.27e6
PeCDF Std.
30.21-34.91
353.8970 Fn2
Flags: PB
4σ 1.66e3
CS 12346F
1.59e7
31.87
ES 12378F
1.52e7
32.40
ES 23478F
1.34e7
33.51
4.13e6
2.06e6
HpCDPE
30.21-34.91
409.7974 Fn2
Flags: B
4σ 1.39e3
1.32e4
6.58e3


Rel. Int.
100%
HxCDF
34.92-39.00
373.8207 Fn3
Flags: B
4σ 1.23e3
0%
Abs. Int.
6.26e3
3.13e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
34.92-39.00
375.8178 Fn3
Flags: B
4σ 1.47e3
0%
Abs. Int.
6.71e3
3.35e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
34.92-39.00
383.8639 Fn3
Flags: PB
4σ 2.33e3
0%
ES 123478F
9.42e6
36.75
ES 123678F
1.27e7
36.89
CS 123469F
1.22e7
37.21
ES 234678F
1.37e7
37.57
ES 123789F
8.84e6
38.52
Abs. Int.
4.04e6
2.02e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
34.92-39.00
385.8610 Fn3
Flags: PB
4σ 1.55e3
0%
ES 123478F
1.75e7
36.75
ES 123678F
2.32e7
36.89
CS 123469F
2.28e7
37.21
ES 234678F
2.59e7
37.57
ES 123789F
1.65e7
38.52
Abs. Int.
7.75e6
3.88e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
34.92-39.00
445.7555 Fn3
Flags: PB
4σ 1.21e3
0%
Abs. Int.
5.13e3
2.57e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


SGS ID: MB1_18876_DF_SDS
Sample ID: Method Blank
Acq: 05-Feb-2022 01:57:20
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 52
User: DTF Datafile: 220204C22
Rel. Int.
Abs. Int.
HpCDF
39.01-42.41
407.7818 Fn4
Flags: B
4σ 2.86e3
8.84e3
4.42e3
0.00e0
HpCDF
39.01-42.41
409.7788 Fn4
Flags: B
4σ 2.98e3
9.96e3
4.98e3
HpCDF Std.
39.01-42.41
417.8253 Fn4
Flags: PBM
4σ 3.22e3
ES 1234678F
1.08e7
39.90
CS 1234689F
9.46e6
40.30
ES 1234789F
6.13e6*
41.28
3.73e6
1.86e6
HpCDF Std.
39.01-42.41
419.8220 Fn4
Flags: PBM
4σ 2.77e3
ES 1234678F
2.31e7
39.90
CS 1234689F
2.07e7
40.30
ES 1234789F
1.29e7*
41.28
7.84e6
3.92e6
NCDPE
39.01-42.41
479.7165 Fn4
Flags: PB
4σ 1.34e3
4.04e3
2.02e3
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\MB1_18876_DF_SDS.utp_res, saved 08-Feb-2022 09:56 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9056, 3290, 9219 scc: 264-158
Revised: 07-Feb-2022 08:54 (DTF) Printed: 08-Feb-2022 10:03 Page 11 of 12


Rel. Int.
100%
OCDF
42.42-45.00
441.7428 Fn5
Flags: PB
4σ 1.40e3
0%
Abs. Int.
6.70e3
3.35e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.00
443.7398 Fn5
Flags: PB
4σ 1.52e3
0%
Abs. Int.
4.36e3
2.18e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.60e7
43.69
Rel. Int.
100%
OCDF Std.
42.42-45.00
453.7830 Fn5
Flags: PB
4σ 1.43e3
0%
Abs. Int.
3.67e6
1.84e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.77e7
43.69
Rel. Int.
100%
OCDF Std.
42.42-45.00
455.7801 Fn5
Flags: PB
4σ 2.30e3
0%
Abs. Int.
3.77e6
1.88e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.00
513.6775 Fn5
Flags: PB
4σ 1.23e3
0%
Abs. Int.
5.74e3
2.87e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5971_18876_DF_004 **Acq'd:** 05 Feb 2022 02:43 DTF **Wt/Vol:** 10.09 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-4H2 **UTP:** 08-Feb-2022 09:56:53 DTF **J-level:** 0.496 pg/g **Split:** 1 **Checkcode:** 544-812-SSB

Datafile: 220204C23 **Report:** 08 Feb 2022 09:58 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.54		1.0008	1.0008	0	3.02E+06	0.79	Y	1.18	20.4	3375.841	0.244
12378-PeCDD	33.87	J	1.0006	1.0006	0	9.55E+04	1.37	Y	1.04	0.82	4430.606	0.335
123478-HxCDD	37.78	J	1.0004	1.0003	-0.2	1.09E+05	1.12	Y	1.09	0.913	5046.259	0.385
123678-HxCDD	37.90	J	1.0035	1.0036	+0.2	2.32E+05	1.11	Y	1.15	1.77	5046.259	0.346
123789-HxCDD	38.19	J EMPC	1.0112	1.0112	0	1.96E+05	1.49	N	1.05	1.62	5046.259	0.363
1234678-HpCDD	40.85		1.0003	1.0003	0	4.65E+06	1.05	Y	1.06	44.2	5386.478	0.429
OCDD	43.54		1.0004	1.0004	0	5.55E+07	0.91	Y	1.13	725	3256.508	0.524
2378-TCDF	27.69		1.0008	1.0008	0	1.46E+07	0.77	Y	1.08	68.9	3277.133	0.176
12378-PeCDF	32.42	J	1.0005	1.0005	0	2.93E+05	1.56	Y	1.02	1.56	4941.488	0.247
23478-PeCDF	33.54	J	1.0005	1.0008	+0.6	3.93E+05	1.63	Y	1.02	2.21	4941.488	0.229
123478-HxCDF	36.77	J	1.0004	1.0005	+0.2	3.82E+05	1.32	Y	1.27	2.28	4099.419	0.209
123678-HxCDF	36.91	J EMPC	1.0004	1.0004	0	1.48E+05	1.55	N	1.15	0.794	4099.419	0.205
234678-HxCDF	37.60	J	1.0005	1.0004	-0.2	1.50E+05	1.20	Y	1.19	0.71	4099.419	0.163
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	4099.419	0.233
1234678-HpCDF	39.92		1.0003	1.0003	0	7.95E+06	1.04	Y	1.37	43.3	2697.154	0.114
1234789-HpCDF	41.31	J EMPC	1.0002	1.0003	+0.2	2.04E+05	1.31	N	1.31	1.67	2697.154	0.187
OCDF	43.72		1.0003	1.0003	0	5.54E+07	0.90	Y	1.07	593	3475.161	0.396

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.52		1.0236	1.0238	+0.3	2.47E+07	0.87	Y	1.05	90.3
ES 12378-PeCDD	33.85		1.2144	1.2153	+1.8	2.23E+07	1.56	Y	0.88	96.7
ES 123478-HxCDD	37.77		0.9920	0.9918	-0.5	2.17E+07	1.24	Y	0.97	94.8
ES 123678-HxCDD	37.88		0.9951	0.9950	-0.2	2.26E+07	1.28	Y	0.94	102
ES 123789-HxCDD	38.18		1.0027	1.0027	0	2.30E+07	1.29	Y	1.09	89.3
ES 1234678-HpCDD	40.84		1.0724	1.0726	+0.5	1.97E+07	1.07	Y	0.91	91.6
ES OCDD	43.53		1.1428	1.1431	+0.8	2.69E+07	0.89	Y	0.62	91.6
ES 2378-TCDF	27.66		1.0516	1.0516	0	3.89E+07	0.81	Y	1.06	88.5
ES 12378-PeCDF	32.41		1.2312	1.2320	+1.6	3.63E+07	1.59	Y	0.91	96.1
ES 23478-PeCDF	33.52		1.2733	1.2741	+1.6	3.45E+07	1.57	Y	0.88	94.3
ES 123478-HxCDF	36.76		0.9655	0.9653	-0.4	2.61E+07	0.57	Y	1.20	92.3
ES 123678-HxCDF	36.90		0.9692	0.9691	-0.2	3.21E+07	0.52	Y	1.35	101
ES 234678-HxCDF	37.58		0.9871	0.9871	0	3.53E+07	0.53	Y	1.24	120
ES 123789-HxCDF	38.53		1.0121	1.0120	-0.2	2.47E+07	0.56	Y	1.16	90.8
ES 1234678-HpCDF	39.91		1.0479	1.0481	+0.5	2.66E+07	0.46	Y	0.97	117
ES 1234789-HpCDF	41.30		1.0845	1.0847	+0.5	1.85E+07	0.47	Y	0.85	92.1
ES OCDF	43.71		1.1477	1.1480	+0.8	3.45E+07	0.93	Y	0.81	90.8

Lab ID: B5971_18876_DF_004 **Acq'd:** 05 Feb 2022 02:43 DTF **Wt/Vol:** 10.09 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-4H2 **UTP:** 08-Feb-2022 09:56:53 DTF **J-level:** 0.496 pg/g **Split:** 1 **Checkcode:** 544-812-SSB

Datafile: 220204C23 **Report:** 08 Feb 2022 09:58 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.86		-	-	-	2.62E+07	0.84	Y	-	-
JS 1234-TCDF	26.31		-	-	-	4.15E+07	0.81	Y	-	-
JS 123467-HxCDD	38.08		-	-	-	1.18E+07	1.30	Y	-	-
CS 37Cl-2378-TCDD	28.54		1.0244	1.0246	+0.3	1.16E+07	n/a	-	1.20	92.4
CS 12347-PeCDD	33.35		1.1964	1.1972	+1.6	2.09E+07	1.55	Y	0.75	106
CS 12346-PeCDF	31.88		1.2112	1.2118	+1.1	3.52E+07	1.61	Y	0.85	99.8
CS 123469-HxCDF	37.22		0.9775	0.9774	-0.2	2.96E+07	0.51	Y	1.12	112
CS 1234689-HpCDF	40.31		1.0584	1.0586	+0.5	2.42E+07	0.44	Y	0.89	116
~~SS 37Cl-2378-TCDD~~	~~28.54~~		~~1.0244~~	~~1.0246~~	~~+0.3~~	~~1.16E+07~~	~~n/a~~		~~1.15~~	~~103~~
~~SS 12347-PeCDD~~	~~33.35~~		~~1.1964~~	~~1.1972~~	~~+1.6~~	~~2.09E+07~~	~~1.55~~	~~Y~~	~~0.86~~	~~109~~
~~SS 12346-PeCDF~~	~~31.88~~		~~1.2112~~	~~1.2118~~	~~+1.1~~	~~3.52E+07~~	~~1.61~~	~~Y~~	~~0.94~~	~~104~~
~~SS 123469-HxCDF~~	~~37.22~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~2.96E+07~~	~~0.51~~	~~Y~~	~~0.83~~	~~111~~
~~SS 1234689-HpCDF~~	~~40.31~~		~~1.0584~~	~~1.0586~~	~~+0.5~~	~~2.42E+07~~	~~0.44~~	~~Y~~	~~0.92~~	~~99.1~~

Totals	Conc	EMPC
Total TCDD	27.2	28.5
Total PeCDD	4.39	7.39
Total HxCDD	30.1	33.2
Total HpCDD	136	136
Total Tetra-Octa Dioxins	922	929
Total TCDF	135	145
Total PeCDF	7.7	13.8
Total HxCDF	12.8	14.4
Total HpCDF	56.1	57.8
Total Tetra-Octa Furans	804	824
Total Tetra-Octa Dioxins & Furans	1730	1750

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.788	0.79
Response	3.03E+06	3.02E+06

Lab ID: B5971_18876_DF_004 **Acq'd: 05 Feb 2022 02:43 DTF** **Wt/Vol: 10.09 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120221-S-SPS-SW-B-4H2 **UTP: 08-Feb-2022 09:56:53 DTF** **J-level: 0.496 pg/g** **Split: 1** **Checkcode: 544-812-SSB**

Datafile: 220204C23 **Report: 08 Feb 2022 09:58 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.90		0.8737	0.8733	-0.6	1.51E+05	0.72	Y	1.18	1.02	3375.841	0.244
1379-TCDD	25.27	J	0.8860	0.8859	-0.2	6.95E+04	0.85	Y	1.18	0.47	3375.841	0.244
1369-TCDD	NotFnd		0.9009						1.18		3375.841	0.244
1469-TCDD	26.47		0.9281	0.9281	0	4.81E+05	0.73	Y	1.18	3.25	3375.841	0.244
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3375.841	0.244
1378-TCDD	NotFnd		0.9432						1.18		3375.841	0.244
1268-TCDD	NotFnd		0.9500						1.18		3375.841	0.244
1478-TCDD	NotFnd		0.9586						1.18		3375.841	0.244
1279-TCDD	NotFnd		0.9645						1.18		3375.841	0.244
1234/1269-TCDD	27.85	J EMPC	0.9770	0.9767	-0.5	7.13E+04	0.96	N	1.18	0.482	3375.841	0.244
1236-TCDD	NotFnd		0.9817						1.18		3375.841	0.244
1237/1238-TCDD	28.24	EMPC	0.9905	0.9901	-0.7	1.21E+05	1.20	N	1.18	0.822	3375.841	0.244
1239-TCDD	NotFnd		0.9952						1.18		3375.841	0.244
2378-TCDD	**28.54**		**1.0008**	1.0008	**0**	3.02E+06	0.79	Y	**1.18**	**20.4**	**3375.841**	**0.244**
1278-TCDD	28.87		1.0121	1.0124	+0.5	2.92E+05	0.76	Y	1.18	1.97	3375.841	0.244
1267-TCDD	NotFnd		1.0167						1.18		3375.841	0.244
1289-TCDD	NotFnd		1.0345						1.18		3375.841	0.244
12479/12468-PeCDD	31.36	J	0.9267	0.9265	-0.4	1.70E+05	1.50	Y	1.04	1.46	4430.606	0.335
12469-PeCDD	31.90	J EMPC	0.9425	0.9423	-0.4	2.26E+05	1.89	N	1.04	1.94	4430.606	0.335
12368-PeCDD	32.45	J EMPC	0.9588	0.9586	-0.4	5.20E+04	1.27	N	1.04	0.447	4430.606	0.335
12478-PeCDD	32.64	J	0.9643	0.9642	-0.2	6.47E+04	1.73	Y	1.04	0.555	4430.606	0.335
12379-PeCDD	32.74	J EMPC	0.9673	0.9672	-0.2	7.08E+04	2.02	N	1.04	0.607	4430.606	0.335
12369/12467/12489-PeCDD	33.01	J	0.9750	0.9750	0	1.82E+05	1.62	Y	1.04	1.56	4430.606	0.335
12346/12347-PeCDD	NotFnd		0.9858						1.04		4430.606	0.335
12378-PeCDD	33.87	J	**1.0006**	**1.0006**	**0**	**9.55E+04**	**1.37**	**Y**	**1.04**	**0.82**	**4430.606**	**0.335**
12367-PeCDD	NotFnd		1.0033						1.04		4430.606	0.335
12389-PeCDD	NotFnd		1.0134						1.04		4430.606	0.335
124679/124689-HxCDD	36.03		0.9542	0.9541	-0.2	2.24E+06	1.23	Y	1.10	18.1	5046.259	0.364
123468-HxCDD	36.68	J EMPC	0.9715	0.9713	-0.4	1.15E+05	1.54	N	1.10	0.925	5046.259	0.364
123679/123689-HxCDD	36.98		0.9793	0.9793	0	1.02E+06	1.19	Y	1.10	8.25	5046.259	0.364
123469-HxCDD	37.11	J	0.9828	0.9827	-0.2	1.29E+05	1.23	Y	1.10	1.04	5046.259	0.364
123478-HxCDD	37.78	J	**1.0004**	**1.0003**	**-0.2**	**1.09E+05**	**1.12**	**Y**	1.09	**0.913**	**5046.259**	**0.385**
123678-HxCDD	37.90	J	**1.0035**	**1.0036**	**+0.2**	**2.32E+05**	**1.11**	**Y**	1.15	**1.77**	**5046.259**	**0.346**
123467-HxCDD	38.08	J EMPC	1.0085	1.0084	-0.2	7.50E+04	1.04	N	1.10	0.605	5046.259	0.364
123789-HxCDD	38.19	J EMPC	**1.0112**	**1.0112**	**0**	**1.96E+05**	**1.49**	**N**	1.05	**1.62**	**5046.259**	**0.363**

Lab ID: B5971_18876_DF_004 **Acq'd:** 05 Feb 2022 02:43 DTF **Wt/Vol:** 10.09 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120221-S-SPS-SW-B-4H2 **UTP:** 08-Feb-2022 09:56:53 DTF **J-level:** 0.496 pg/g **Split:** 1 **Checkcode:** 544-812-SSB

Datafile: 220204C23 **Report:** 08 Feb 2022 09:58 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

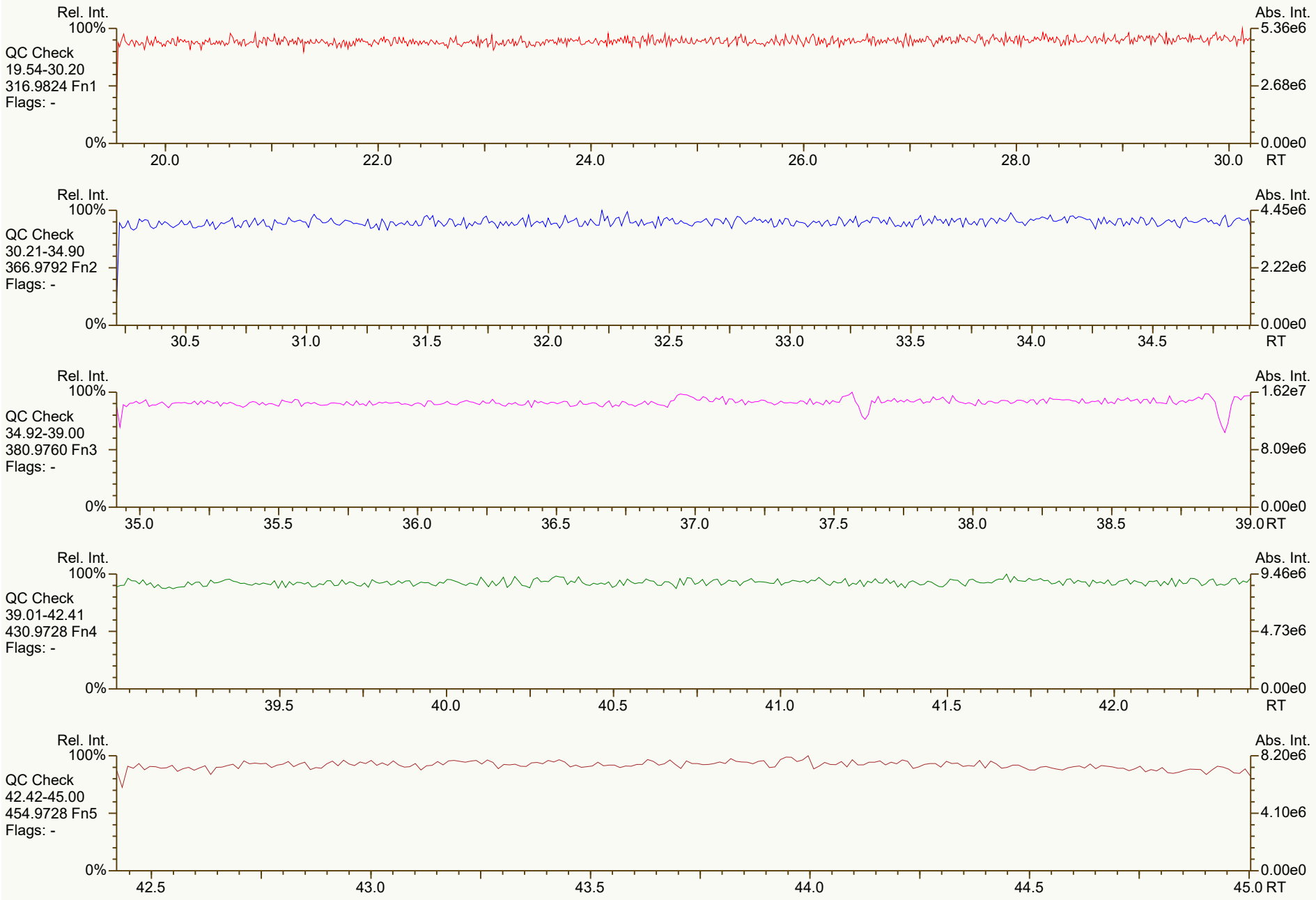
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.17		0.9837	0.9837	0	9.62E+06	1.05	Y	1.06	91.3	5386.478	0.429
1234678-HpCDD	**40.85**		**1.0003**	**1.0003**	**0**	**4.65E+06**	**1.05**	**Y**	**1.06**	**44.2**	**5386.478**	**0.429**
OCDD	**43.54**		**1.0004**	**1.0004**	**0**	**5.55E+07**	**0.91**	**Y**	**1.13**	**725**	**3256.508**	**0.524**
OCDD-a	43.53		1.0003	1.0002	-0.3	3.55E+06	2.33	Y	0.07	725	4274.08	10.7
1368-TCDF	22.81	EMPC	0.8251	0.8246	-0.7	1.20E+05	1.09	N	1.08	0.565	3277.133	0.176
1468-TCDF	23.38		0.8458	0.8452	-0.8	1.66E+05	0.72	Y	1.08	0.783	3277.133	0.176
2468-TCDF	24.01		0.8686	0.8681	-0.7	4.71E+05	0.82	Y	1.08	2.22	3277.133	0.176
1346/1246-TCDF	NotFnd		0.8814						1.08		3277.133	0.176
1347/1378/1247-TCDF	24.52		0.8867	0.8863	-0.6	6.42E+05	0.82	Y	1.08	3.03	3277.133	0.176
1348-TCDF	NotFnd		0.8962						1.08		3277.133	0.176
1248/1367/1379-TCDF	24.88		0.9009	0.8994	-2.2	1.06E+06	0.83	Y	1.08	5	3277.133	0.176
1268-TCDF	25.29		0.9145	0.9143	-0.3	5.31E+05	0.80	Y	1.08	2.51	3277.133	0.176
1467-TCDF	25.43		0.9193	0.9192	-0.2	1.18E+05	0.70	Y	1.08	0.556	3277.133	0.176
1478-TCDF	25.59	EMPC	0.9254	0.9252	-0.3	6.44E+05	0.96	N	1.08	3.04	3277.133	0.176
1369/1237-TCDF	25.97		0.9387	0.9389	+0.3	2.89E+05	0.68	Y	1.08	1.36	3277.133	0.176
2467-TCDF	26.10		0.9433	0.9435	+0.3	1.06E+05	0.84	Y	1.08	0.502	3277.133	0.176
2368-TCDF	26.25		0.9489	0.9489	0	7.08E+05	0.85	Y	1.08	3.34	3277.133	0.176
1238/1234/1678/1469/1236-TCDF	26.33	EMPC	0.9523	0.9517	-0.9	6.79E+05	0.93	N	1.08	3.2	3277.133	0.176
1278-TCDF	26.79		0.9683	0.9684	+0.2	6.55E+06	0.81	Y	1.08	30.9	3277.133	0.176
1349-TCDF	NotFnd		0.9722						1.08		3277.133	0.176
1267-TCDF	27.07		0.9783	0.9785	+0.3	4.55E+05	0.82	Y	1.08	2.15	3277.133	0.176
2346/1249-TCDF	NotFnd		0.9850						1.08		3277.133	0.176
2347/1279-TCDF	27.46		0.9926	0.9925	-0.2	2.48E+05	0.80	Y	1.08	1.17	3277.133	0.176
2348-TCDF	27.58	EMPC	0.9967	0.9968	+0.2	6.98E+05	0.99	N	1.08	3.3	3277.133	0.176
2378-TCDF	**27.69**		**1.0008**	**1.0008**	**0**	**1.46E+07**	**0.77**	**Y**	**1.08**	**68.9**	**3277.133**	**0.176**
2367/3467-TCDF	28.04		1.0137	1.0135	-0.3	1.35E+06	0.78	Y	1.08	6.36	3277.133	0.176
1269-TCDF	28.28		1.0223	1.0222	-0.2	2.37E+05	0.82	Y	1.08	1.12	3277.133	0.176
1239-TCDF	NotFnd		1.0321						1.08		3277.133	0.176
1289-TCDF	29.68		1.0722	1.0730	+1.4	1.09E+06	0.87	Y	1.08	5.17	3277.133	0.176
13468/12468-PeCDF	29.62	EMPC	0.9139	0.9140	+0.2	6.46E+05	1.84	N	1.02	3.53	3272.711	0.158
13678/13467/12467-PeCDF	31.15	J EMPC	0.9613	0.9614	+0.2	1.11E+05	1.27	N	1.02	0.606	4941.488	0.239
12368/13478/12478-PeCDF	31.33		0.9662	0.9666	+0.8	6.31E+05	1.54	Y	1.02	3.46	4941.488	0.239
14678-PeCDF	NotFnd		0.9692						1.02		4941.488	0.239
13479-PeCDF	NotFnd		0.9723						1.02		4941.488	0.239
13469/12479-PeCDF	NotFnd		0.9797						1.02		4941.488	0.239
12346-PeCDF	NotFnd		0.9840						1.02		4941.488	0.239

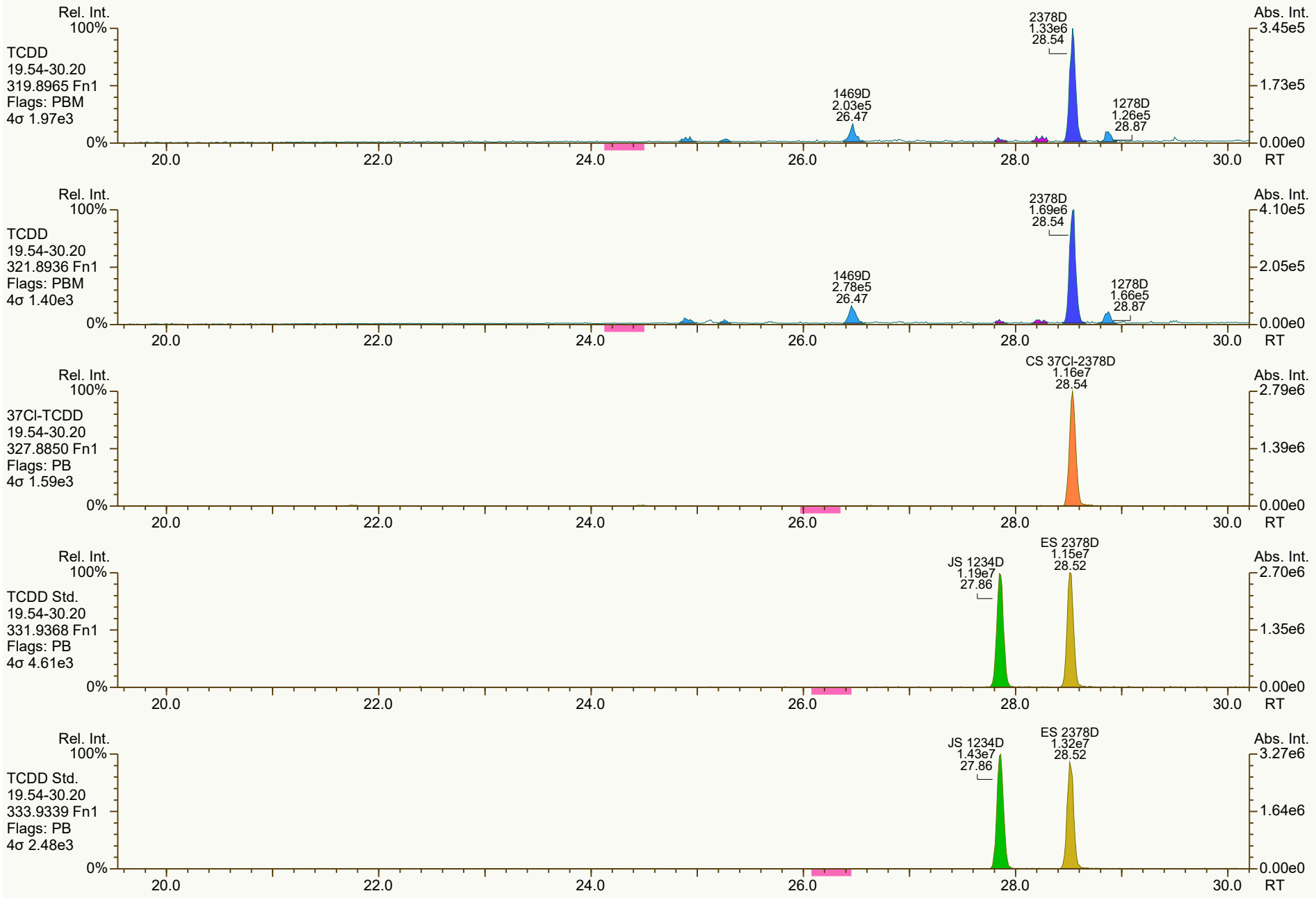
Lab ID: B5971_18876_DF_004 **Acq'd: 05 Feb 2022 02:43 DTF** **Wt/Vol: 10.09 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

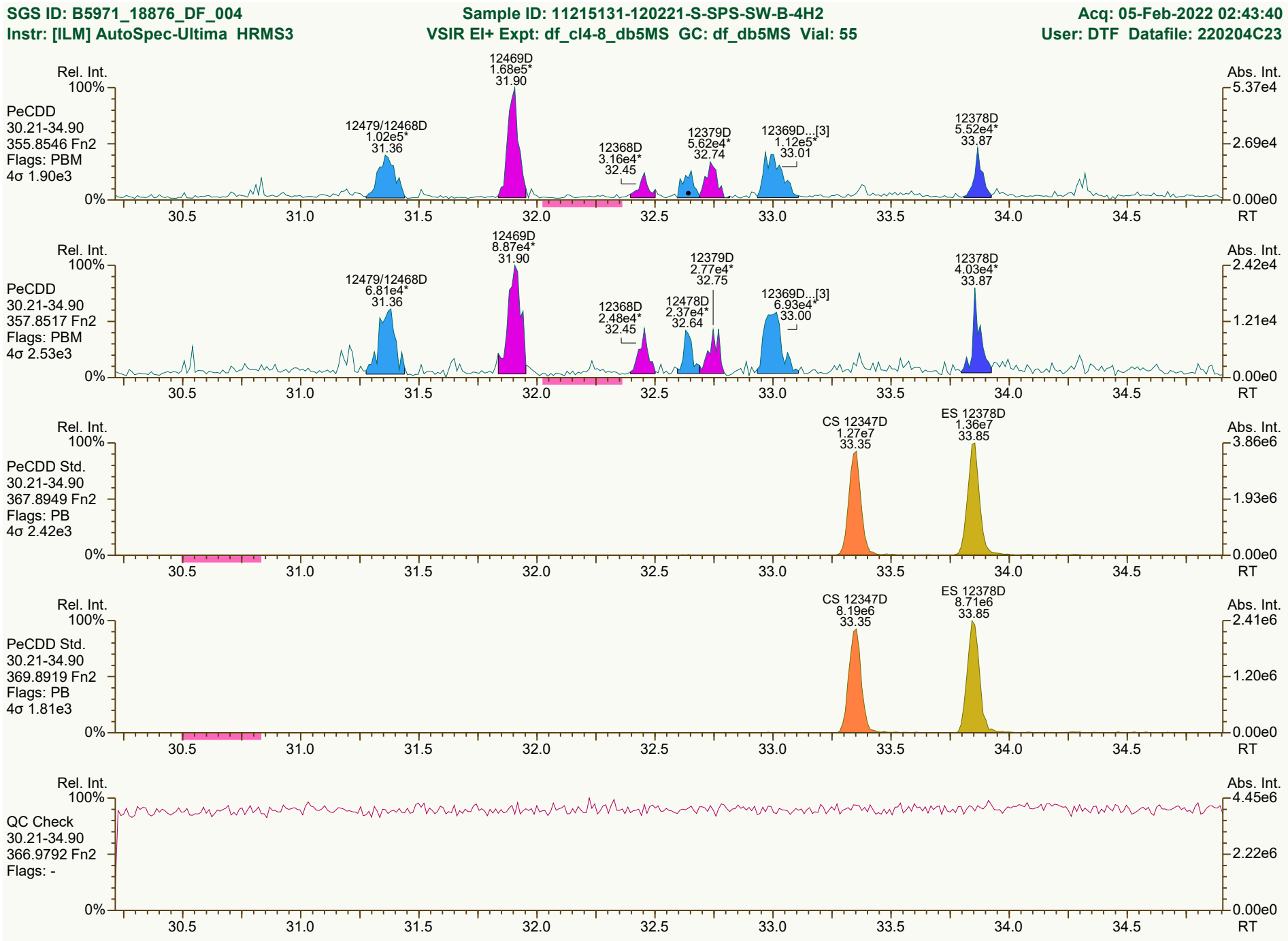
Client ID: 11215131-120221-S-SPS-SW-B-4H2 **UTP: 08-Feb-2022 09:56:53 DTF** **J-level: 0.496 pg/g** **Split: 1** **Checkcode: 544-812-SSB**

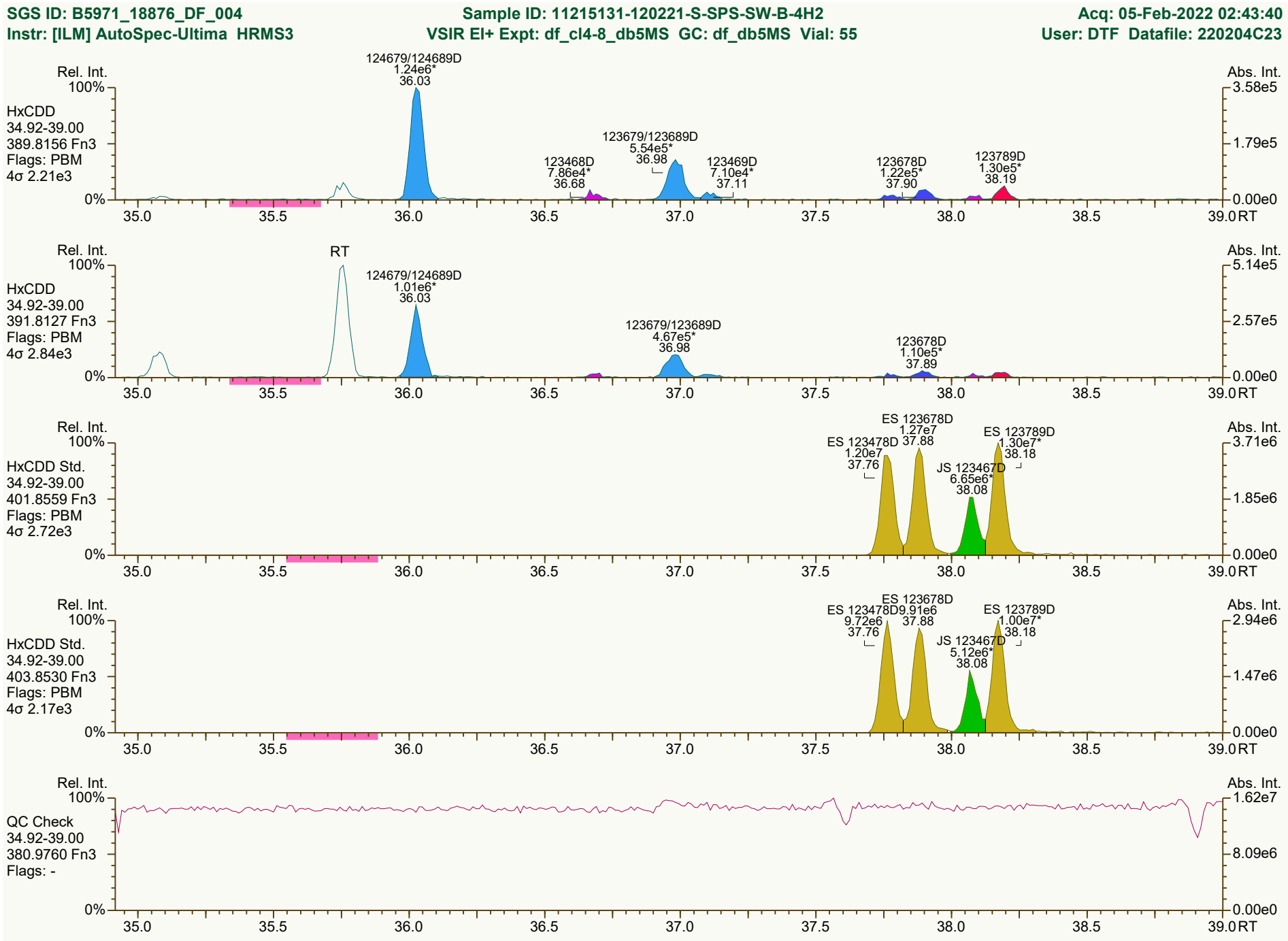
Datafile: 220204C23 **Report: 08 Feb 2022 09:58 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.98	J EMPC	0.9868	0.9870	+0.4	1.37E+05	1.01	N	1.02	0.747	4941.488	0.239
12347-PeCDF	NotFnd		0.9894						1.02		4941.488	0.239
12348-PeCDF	32.21	J	0.9940	0.9940	0	8.54E+04	1.61	Y	1.02	0.467	4941.488	0.239
12378-PeCDF	**32.42**	J	**1.0005**	**1.0005**	**0**	**2.93E+05**	**1.56**	**Y**	**1.02**	**1.56**	**4941.488**	**0.247**
12678/12367-PeCDF	32.72	J EMPC	1.0089	1.0097	+1.6	2.17E+05	1.82	N	1.02	1.19	4941.488	0.239
12379-PeCDF	NotFnd		1.0142						1.02		4941.488	0.239
12679-PeCDF	NotFnd		0.9929						1.02		4941.488	0.239
23467/12369-PeCDF	NotFnd		0.9967						1.02		4941.488	0.239
23478-PeCDF	**33.54**	J	**1.0005**	**1.0008**	**+0.6**	**3.93E+05**	**1.63**	**Y**	**1.02**	**2.21**	**4941.488**	**0.229**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		4941.488	0.239
12349-PeCDF	NotFnd		1.0100						1.02		4941.488	0.239
12389-PeCDF	NotFnd		1.0324						1.02		4941.488	0.239
123468-HxCDF	35.38	J	0.9627	0.9627	0	2.83E+05	1.25	Y	1.19	1.59	4099.419	0.199
124678/134678-HxCDF	35.58		0.9682	0.9680	-0.4	7.83E+05	1.07	Y	1.19	4.4	4099.419	0.199
134679-HxCDF	NotFnd		0.9744						1.19		4099.419	0.199
124679-HxCDF	NotFnd		0.9798						1.19		4099.419	0.199
124689-HxCDF	36.23		0.9858	0.9857	-0.2	6.20E+05	1.13	Y	1.19	3.49	4099.419	0.199
123467-HxCDF	36.65	J EMPC	0.9972	0.9971	-0.2	6.74E+04	1.49	N	1.19	0.379	4099.419	0.199
123478-HxCDF	**36.77**	J	**1.0004**	**1.0005**	**+0.2**	**3.82E+05**	**1.32**	**Y**	**1.27**	**2.28**	**4099.419**	**0.209**
123678-HxCDF	**36.91**	J EMPC	**1.0004**	**1.0004**	**0**	**1.48E+05**	**1.55**	**N**	**1.15**	**0.794**	**4099.419**	**0.205**
123479-HxCDF	NotFnd		1.0049						1.19		4099.419	0.199
123469-HxCDF	37.23	J	1.0090	1.0089	-0.2	5.31E+04	1.37	Y	1.19	0.298	4099.419	0.199
123679-HxCDF	NotFnd		0.9942						1.19		4099.419	0.199
234678-HxCDF	**37.60**	J	**1.0005**	**1.0004**	**-0.2**	**1.50E+05**	**1.20**	**Y**	**1.19**	**0.71**	**4099.419**	**0.163**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4099.419	0.199
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**4099.419**	**0.233**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.57	J EMPC	1.0009	1.0011	+0.5	7.42E+04	1.51	N	1.19	0.417	4099.419	0.199
1234678-HpCDF	**39.92**		**1.0003**	**1.0003**	**0**	**7.95E+06**	**1.04**	**Y**	**1.37**	**43.3**	**2697.154**	**0.114**
1234679-HpCDF	NotFnd		1.0068						1.34		2697.154	0.144
1234689-HpCDF	40.32		1.0103	1.0103	0	1.96E+06	1.00	Y	1.34	12.9	2697.154	0.144
1234789-HpCDF	**41.31**	**J EMPC**	**1.0002**	**1.0003**	**+0.2**	**2.04E+05**	**1.31**	**N**	**1.31**	**1.67**	**2697.154**	**0.187**
OCDF	**43.72**		**1.0003**	**1.0003**	**0**	**5.54E+07**	**0.90**	**Y**	**1.07**	**593**	**3475.161**	**0.396**
OCDF-a	43.72		1.0002	1.0002	0	3.49E+06	2.19	Y	0.07	604	3335.264	6.13

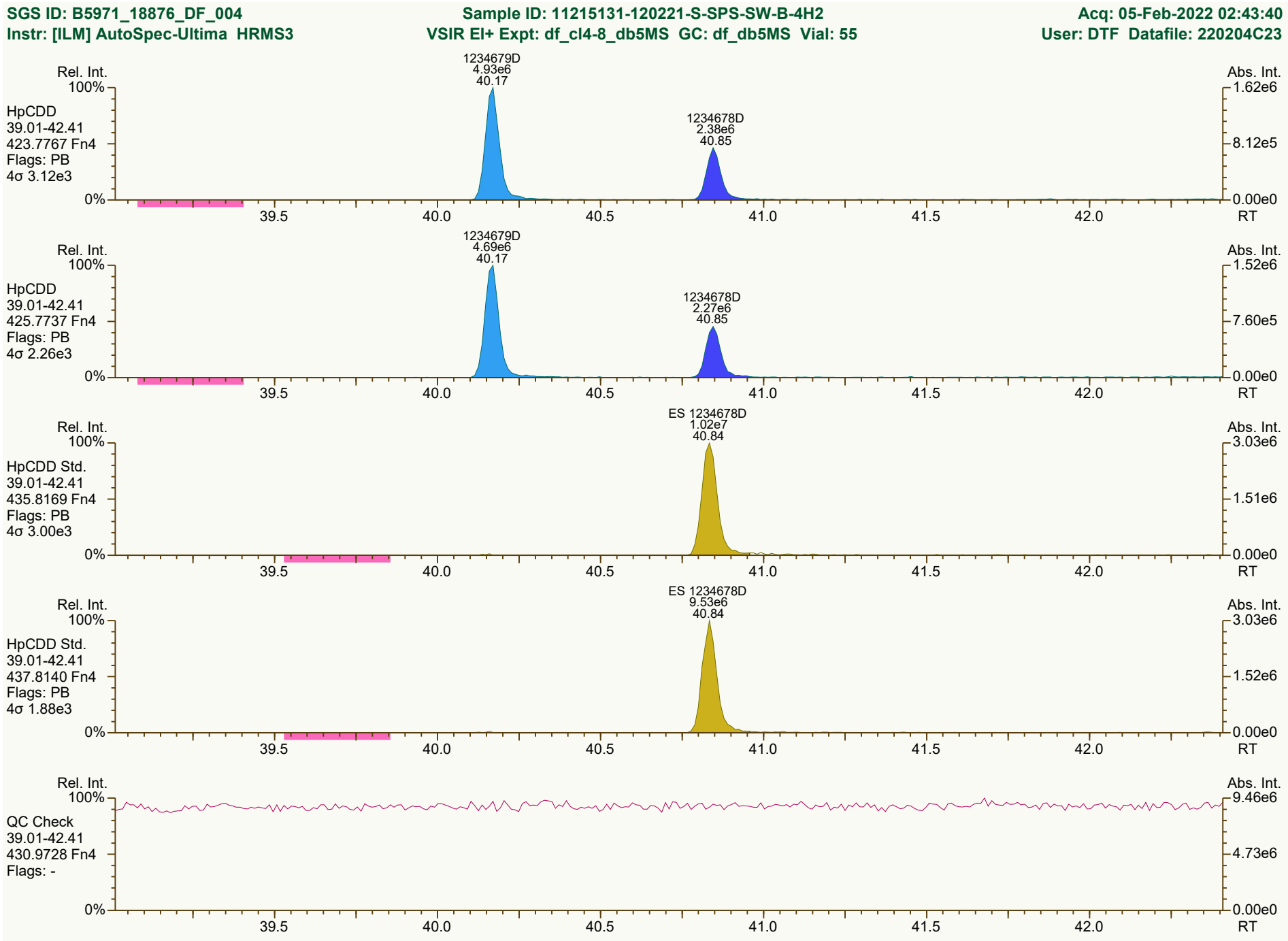

Rel. Int.
100%
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
5.36e6
2.68e6
0.00e0
Rel. Int.
100%
QC Check
30.21-34.90
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
4.45e6
2.22e6
0.00e0
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Abs. Int.
1.62e7
8.09e6
0.00e0
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
9.46e6
4.73e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
8.20e6
4.10e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: PBM
4σ 1.97e3
0%
2378D
1.33e6
28.54
1469D
2.03e5
26.47
1278D
1.26e5
28.87
Abs. Int.
3.45e5
1.73e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: PBM
4σ 1.40e3
0%
2378D
1.69e6
28.54
1469D
2.78e5
26.47
1278D
1.66e5
28.87
Abs. Int.
4.10e5
2.05e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.59e3
0%
CS 37Cl-2378D
1.16e7
28.54
Abs. Int.
2.79e6
1.39e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 4.61e3
0%
JS 1234D
1.19e7
27.86
ES 2378D
1.15e7
28.52
Abs. Int.
2.70e6
1.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 2.48e3
0%
JS 1234D
1.43e7
27.86
ES 2378D
1.32e7
28.52
Abs. Int.
3.27e6
1.64e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

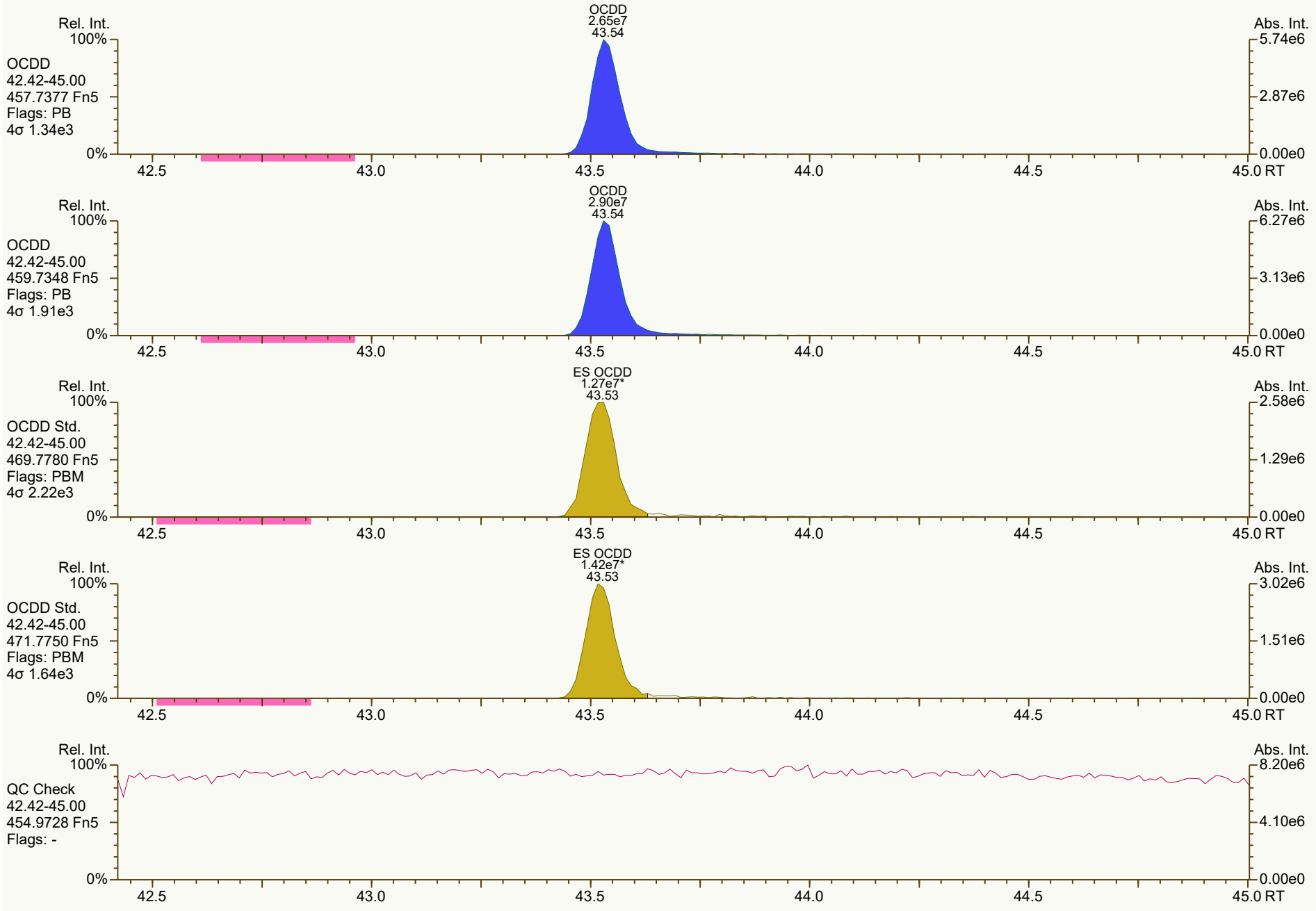

SGS ID: B5971_18876_DF_004
Sample ID: 11215131-120221-S-SPS-SW-B-4H2
Acq: 05-Feb-2022 02:43:40
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
User: DTF Datafile: 220204C23
Rel. Int.
Abs. Int.
PeCDD
30.21-34.90
355.8546 Fn2
Flags: PBM
4σ 1.90e3
12469D
1.68e5*
31.90
12479/12468D
1.02e5*
31.36
12368D
3.16e4*
32.45
12379D
5.62e4*
32.74
12369D...[3]
1.12e5*
33.01
12378D
5.52e4*
33.87
PeCDD
30.21-34.90
357.8517 Fn2
Flags: PBM
4σ 2.53e3
12469D
8.87e4*
31.90
12479/12468D
6.81e4*
31.36
12368D
2.48e4*
32.45
12379D
2.77e4*
32.75
12478D
2.37e4*
32.64
12369D...[3]
6.93e4*
33.00
12378D
4.03e4*
33.87
PeCDD Std.
30.21-34.90
367.8949 Fn2
Flags: PB
4σ 2.42e3
CS 12347D
1.27e7
33.35
ES 12378D
1.36e7
33.85
PeCDD Std.
30.21-34.90
369.8919 Fn2
Flags: PB
4σ 1.81e3
CS 12347D
8.19e6
33.35
ES 12378D
8.71e6
33.85
QC Check
30.21-34.90
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\B5971_18876_DF_004.utp_res, saved 08-Feb-2022 10:00 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9728, 3999 scc: 544-812
Revised: 08-Feb-2022 09:52 (DTF) Printed: 08-Feb-2022 10:03 Page 3 of 12


SGS ID: B5971_18876_DF_004
Sample ID: 11215131-120221-S-SPS-SW-B-4H2
Acq: 05-Feb-2022 02:43:40
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
User: DTF Datafile: 220204C23
Rel. Int.
Abs. Int.
HxCDD
34.92-39.00
389.8156 Fn3
Flags: PBM
4σ 2.21e3
124679/124689D
1.24e6*
36.03
123468D
7.86e4*
36.68
123679/123689D
5.54e5*
36.98
123469D
7.10e4*
37.11
123678D
1.22e5*
37.90
123789D
1.30e5*
38.19
HxCDD
34.92-39.00
391.8127 Fn3
Flags: PBM
4σ 2.84e3
RT
124679/124689D
1.01e6*
36.03
123679/123689D
4.67e5*
36.98
123678D
1.10e5*
37.89
HxCDD Std.
34.92-39.00
401.8559 Fn3
Flags: PBM
4σ 2.72e3
ES 123678D
1.27e7
37.88
ES 123478D
1.20e7
37.76
ES 123789D
1.30e7*
38.18
JS 123467D
6.65e6*
38.08
HxCDD Std.
34.92-39.00
403.8530 Fn3
Flags: PBM
4σ 2.17e3
ES 123678D
9.91e6
37.88
ES 123478D
9.72e6
37.76
ES 123789D
1.00e7*
38.18
JS 123467D
5.12e6*
38.08
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
3.58e5
1.79e5
0.00e0
5.14e5
2.57e5
3.71e6
1.85e6
2.94e6
1.47e6
1.62e7
8.09e6
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\B5971_18876_DF_004.utp_res, saved 08-Feb-2022 10:00 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9070, 4062 scc: 544-812
Revised: 08-Feb-2022 09:53 (DTF) Printed: 08-Feb-2022 10:03 Page 4 of 12

SGS ID: B5971_18876_DF_004 | Sample ID: 11215131-120221-S-SPS-SW-B-4H2 | Acq: 05-Feb-2022 02:43:40
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55 | User: DTF Datafile: 220204C23



Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\B5971_18876_DF_004.utp_res, saved 08-Feb-2022 10:00 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 0787, 2480 scc: 544-812 | Revised: 08-Feb-2022 09:51 (DTF) Printed: 08-Feb-2022 10:03 Page 5 of 12

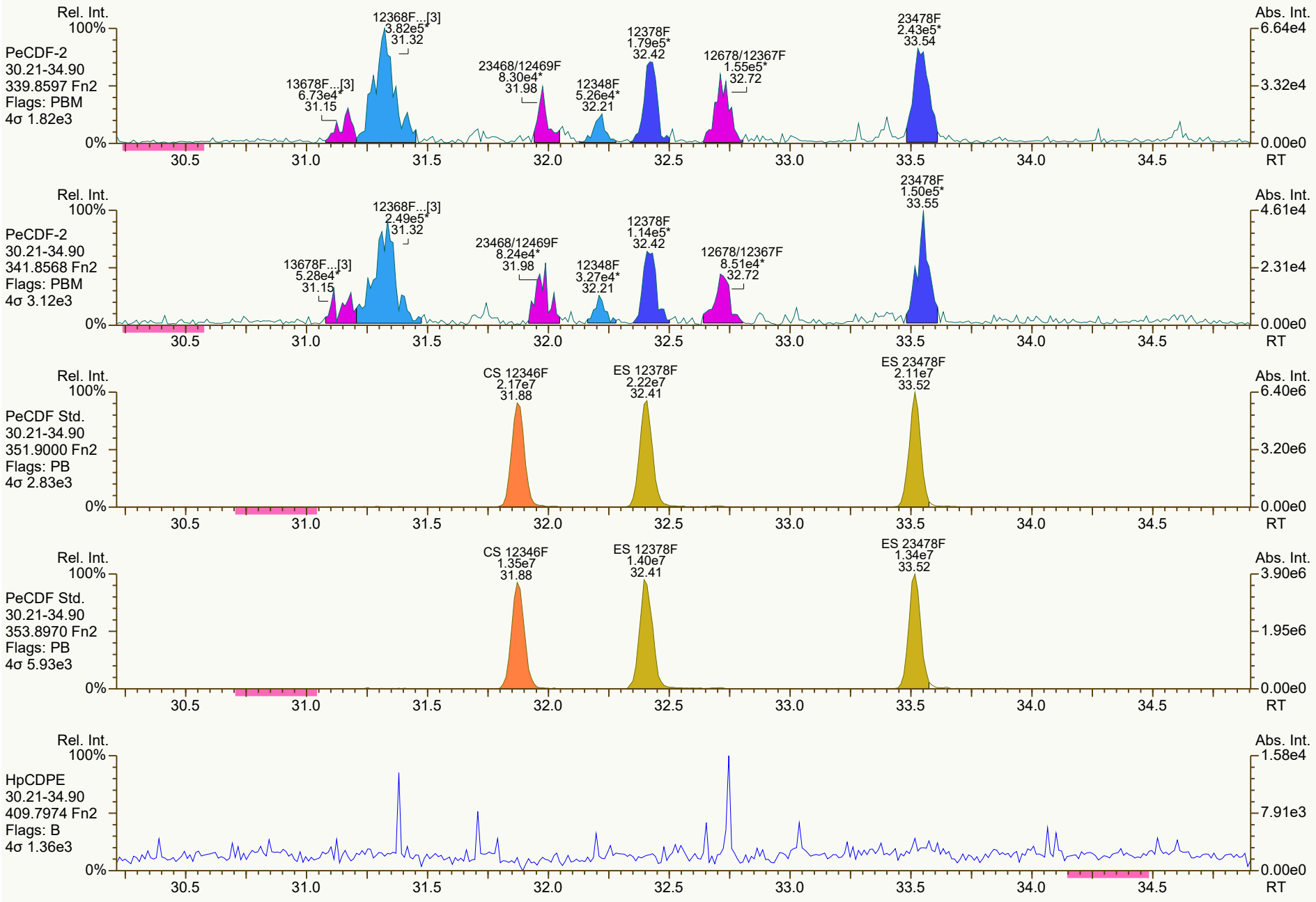

OCDD
2.65e7
43.54
Rel. Int.
100%
OCDD
42.42-45.00
457.7377 Fn5
Flags: PB
4σ 1.34e3
0%
Abs. Int.
5.74e6
2.87e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.90e7
43.54
OCDD
42.42-45.00
459.7348 Fn5
Flags: PB
4σ 1.91e3
6.27e6
3.13e6
ES OCDD
1.27e7*
43.53
OCDD Std.
42.42-45.00
469.7780 Fn5
Flags: PBM
4σ 2.22e3
2.58e6
1.29e6
ES OCDD
1.42e7*
43.53
OCDD Std.
42.42-45.00
471.7750 Fn5
Flags: PBM
4σ 1.64e3
3.02e6
1.51e6
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
8.20e6
4.10e6

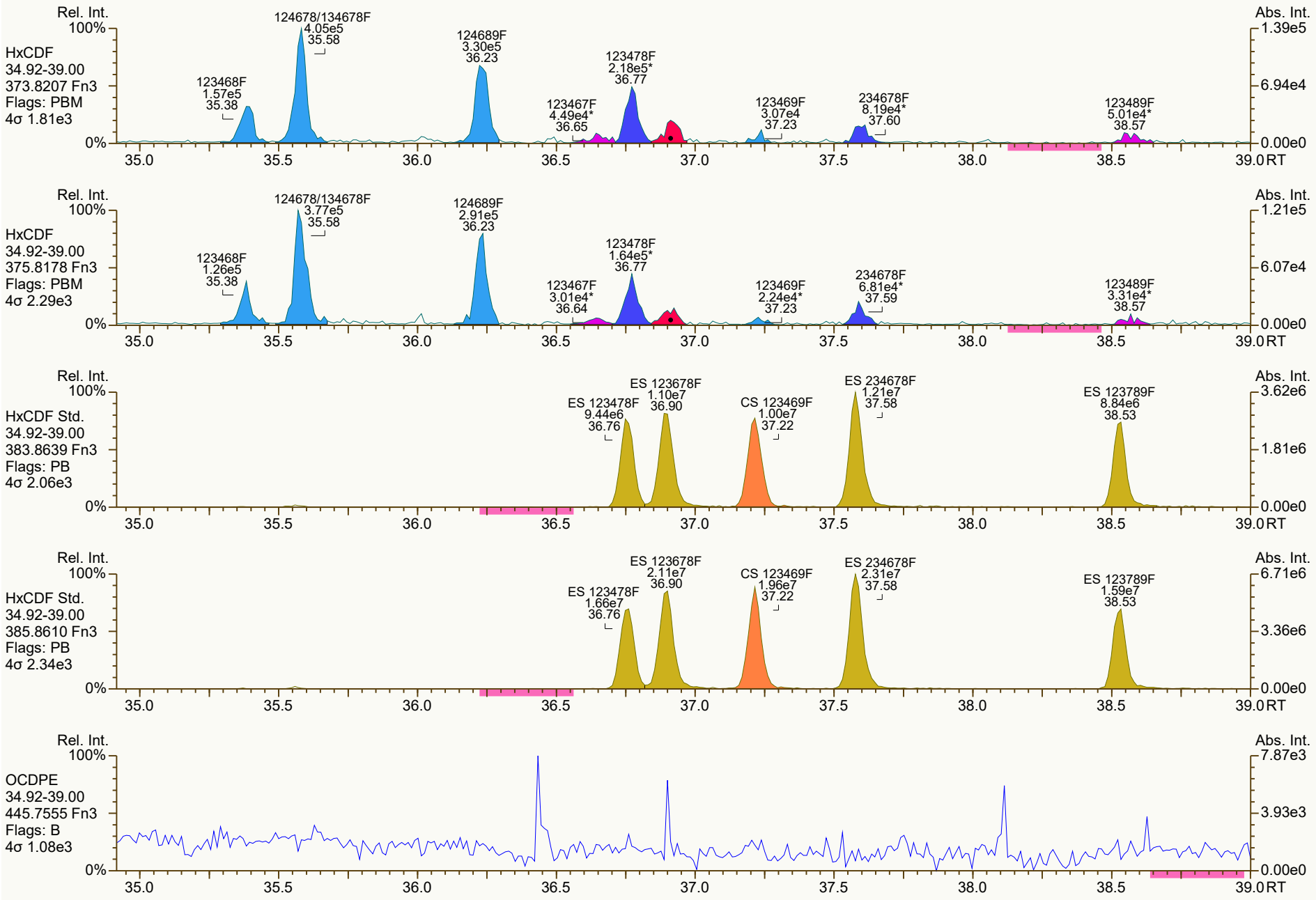

Rel. Int.
100%
TCDF
19.54-30.20
303.9016 Fn1
Flags: PBM
4σ 1.25e3
0%
Abs. Int.
1.46e6
7.31e5
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
2378F 6.35e6* 27.68
1278F 2.92e6* 26.79
1248F...[3] 4.80e5* 24.88
1478F 3.50e5* 25.59
2368F 3.26e5* 26.25
1238F...[5] 3.56e5* 26.33
2348F 3.91e5* 27.58
2367/3467F 5.89e5* 28.04
1289F 5.08e5* 29.68
TCDF
19.54-30.20
305.8987 Fn1
Flags: PBM
4σ 2.02e3
1.85e6
9.25e5
2378F 8.25e6* 27.68
1278F 3.63e6* 26.79
1248F...[3] 5.78e5* 24.88
2368F 3.82e5* 26.25
2348F 3.94e5* 27.57
2367/3467F 7.59e5* 28.03
1289F 5.86e5* 29.69
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 3.46e3
4.31e6
2.16e6
JS 1234F 1.86e7 26.30
ES 2378F 1.74e7 27.66
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 3.39e3
5.11e6
2.55e6
JS 1234F 2.29e7 26.30
ES 2378F 2.15e7 27.66
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.33e3
2.99e4
1.50e4

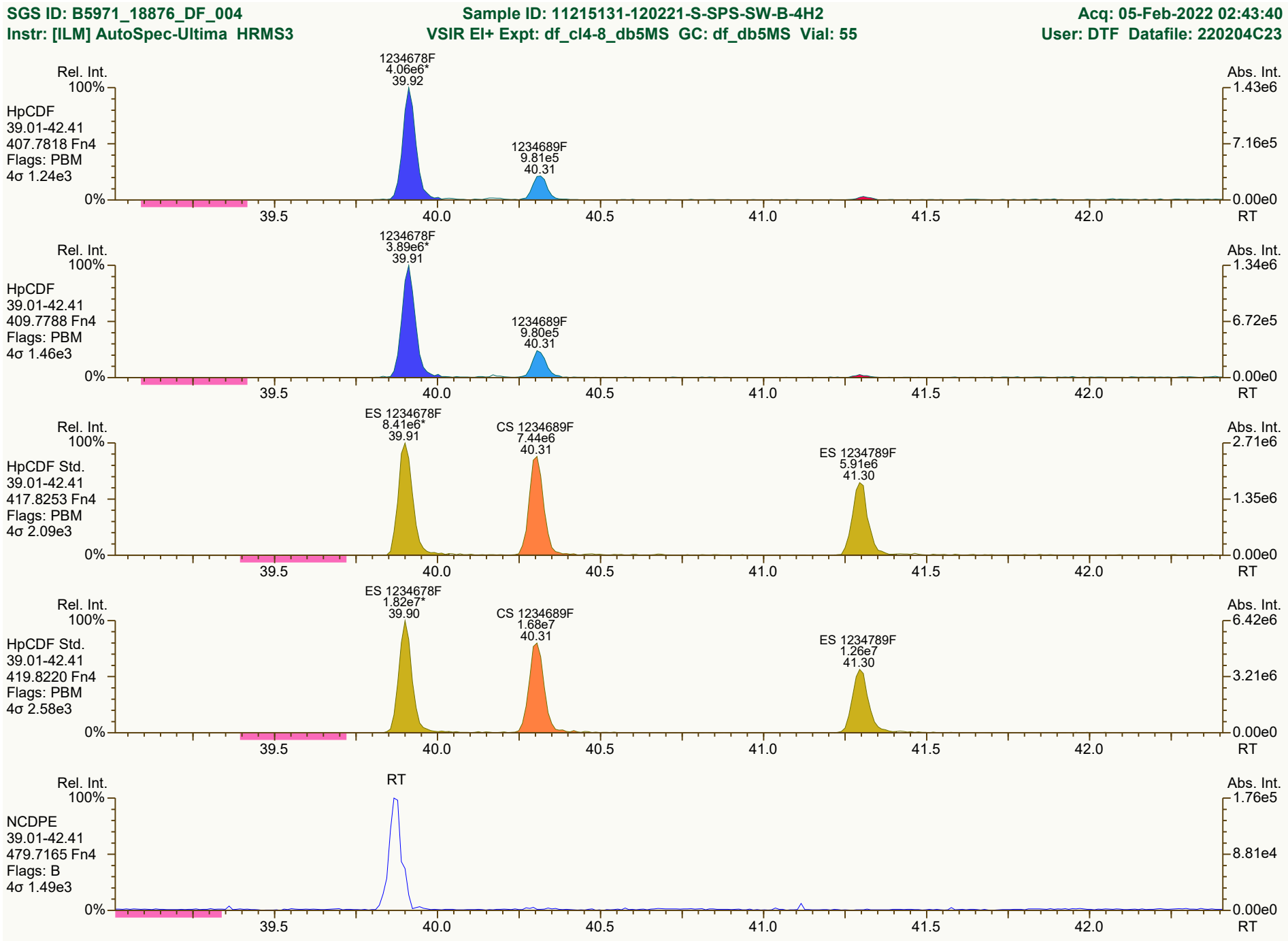
SGS ID: B5971_18876_DF_004
Sample ID: 11215131-120221-S-SPS-SW-B-4H2
Acq: 05-Feb-2022 02:43:40
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
User: DTF Datafile: 220204C23



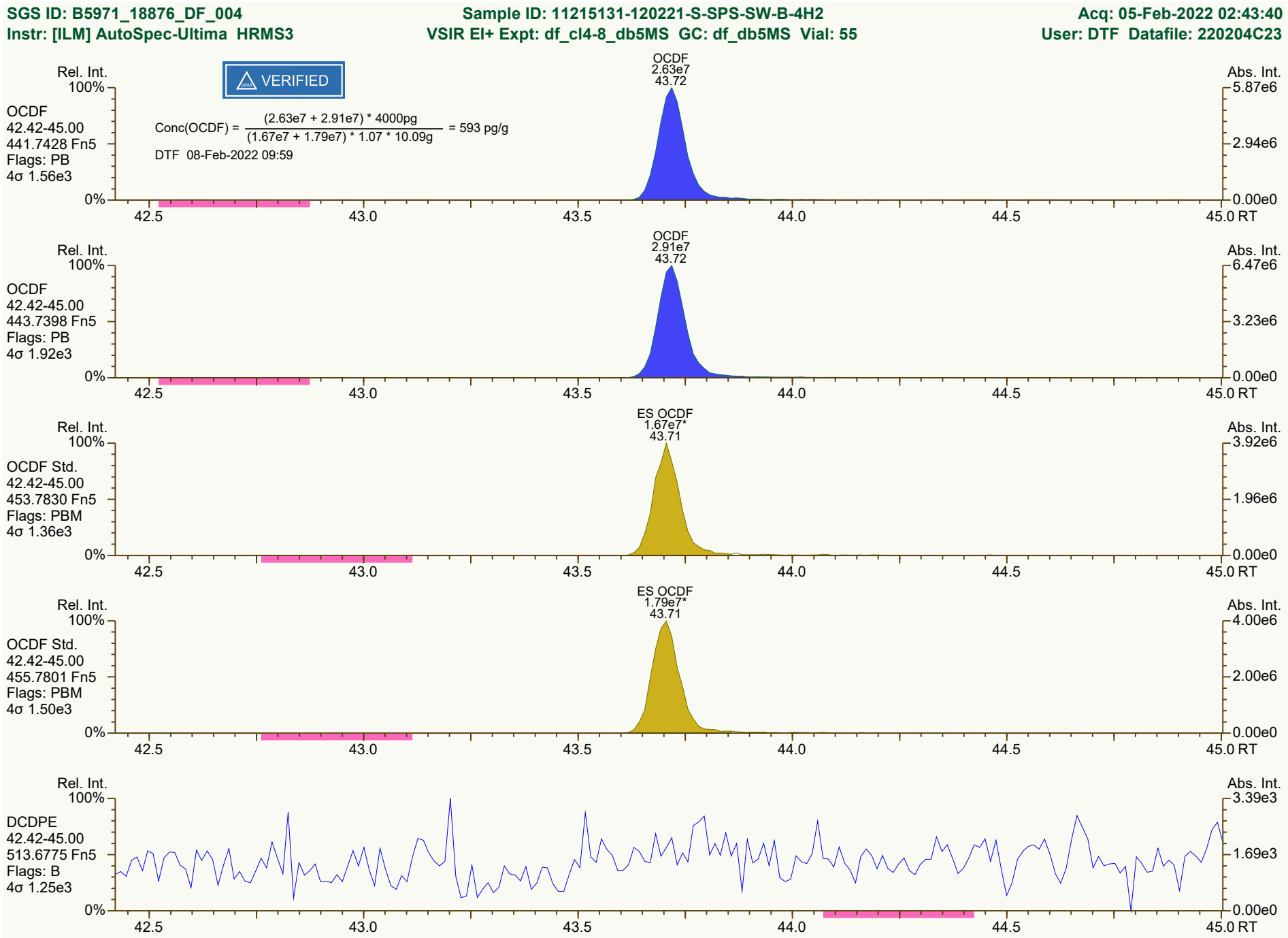
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\B5971_18876_DF_004.utp_res, saved 08-Feb-2022 10:00 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9440 scc: 544-812
PKD: 08-Feb-2022 09:51 Printed: 08-Feb-2022 10:03 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.21-34.90
339.8597 Fn2
Flags: PBM
4σ 1.82e3
0%
12368F...[3]
3.82e5*
31.32
13678F...[3]
6.73e4*
31.15
23468/12469F
8.30e4*
31.98
12348F
5.26e4*
32.21
12378F
1.79e5*
32.42
12678/12367F
1.55e5*
32.72
23478F
2.43e5*
33.54
Abs. Int.
6.64e4
3.32e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.21-34.90
341.8568 Fn2
Flags: PBM
4σ 3.12e3
0%
12368F...[3]
2.49e5*
31.32
13678F...[3]
5.28e4*
31.15
23468/12469F
8.24e4*
31.98
12348F
3.27e4*
32.21
12378F
1.14e5*
32.42
12678/12367F
8.51e4*
32.72
23478F
1.50e5*
33.55
Abs. Int.
4.61e4
2.31e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.90
351.9000 Fn2
Flags: PB
4σ 2.83e3
0%
CS 12346F
2.17e7
31.88
ES 12378F
2.22e7
32.41
ES 23478F
2.11e7
33.52
Abs. Int.
6.40e6
3.20e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.90
353.8970 Fn2
Flags: PB
4σ 5.93e3
0%
CS 12346F
1.35e7
31.88
ES 12378F
1.40e7
32.41
ES 23478F
1.34e7
33.52
Abs. Int.
3.90e6
1.95e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.21-34.90
409.7974 Fn2
Flags: B
4σ 1.36e3
0%
Abs. Int.
1.58e4
7.91e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.92-39.00
373.8207 Fn3
Flags: PBM
4σ 1.81e3
123468F 1.57e5 35.38
124678/134678F 4.05e5 35.58
124689F 3.30e5 36.23
123467F 4.49e4* 36.65
123478F 2.18e5* 36.77
123469F 3.07e4 37.23
234678F 8.19e4* 37.60
123489F 5.01e4* 38.57
Abs. Int.
1.39e5
6.94e4
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF
34.92-39.00
375.8178 Fn3
Flags: PBM
4σ 2.29e3
123468F 1.26e5 35.38
124678/134678F 3.77e5 35.58
124689F 2.91e5 36.23
123467F 3.01e4* 36.64
123478F 1.64e5* 36.77
123469F 2.24e4* 37.23
234678F 6.81e4* 37.59
123489F 3.31e4* 38.57
Abs. Int.
1.21e5
6.07e4
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
34.92-39.00
383.8639 Fn3
Flags: PB
4σ 2.06e3
ES 123478F 9.44e6 36.76
ES 123678F 1.10e7 36.90
CS 123469F 1.00e7 37.22
ES 234678F 1.21e7 37.58
ES 123789F 8.84e6 38.53
Abs. Int.
3.62e6
1.81e6
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
34.92-39.00
385.8610 Fn3
Flags: PB
4σ 2.34e3
ES 123478F 1.66e7 36.76
ES 123678F 2.11e7 36.90
CS 123469F 1.96e7 37.22
ES 234678F 2.31e7 37.58
ES 123789F 1.59e7 38.53
Abs. Int.
6.71e6
3.36e6
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
OCDPE
34.92-39.00
445.7555 Fn3
Flags: B
4σ 1.08e3
Abs. Int.
7.87e3
3.93e3
0.00e0
0%
35.0 35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT


SGS ID: B5971_18876_DF_004
Sample ID: 11215131-120221-S-SPS-SW-B-4H2
Acq: 05-Feb-2022 02:43:40
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55
User: DTF Datafile: 220204C23
Rel. Int.
Abs. Int.
HpCDF
39.01-42.41
407.7818 Fn4
Flags: PBM
4σ 1.24e3
1234678F
4.06e6*
39.92
1234689F
9.81e5
40.31
1.43e6
7.16e5
0.00e0
HpCDF
39.01-42.41
409.7788 Fn4
Flags: PBM
4σ 1.46e3
1234678F
3.89e6*
39.91
1234689F
9.80e5
40.31
1.34e6
6.72e5
HpCDF Std.
39.01-42.41
417.8253 Fn4
Flags: PBM
4σ 2.09e3
ES 1234678F
8.41e6*
39.91
CS 1234689F
7.44e6
40.31
ES 1234789F
5.91e6
41.30
2.71e6
1.35e6
HpCDF Std.
39.01-42.41
419.8220 Fn4
Flags: PBM
4σ 2.58e3
ES 1234678F
1.82e7*
39.90
CS 1234689F
1.68e7
40.31
ES 1234789F
1.26e7
41.30
6.42e6
3.21e6
NCDPE
39.01-42.41
479.7165 Fn4
Flags: B
4σ 1.49e3
RT
1.76e5
8.81e4
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\B5971_18876_DF_004.utp_res, saved 08-Feb-2022 10:00 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3672, 4094, 1576 scc: 544-812
PKD: 08-Feb-2022 09:56 Printed: 08-Feb-2022 10:03 Page 11 of 12

SGS ID: B5971_18876_DF_004 | Sample ID: 11215131-120221-S-SPS-SW-B-4H2 | Acq: 05-Feb-2022 02:43:40
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 55 | User: DTF Datafile: 220204C23



Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\B5971_18876_DF_004.utp_res, saved 08-Feb-2022 10:00 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8517, 1525, 8835 scc: 544-812 | PKD: 08-Feb-2022 09:56 Printed: 08-Feb-2022 10:03 Page 12 of 12

REVIEWED
Tamara Burkamper , 2/10/2022, 12:34:08 PM

SGS Environmental Services — Run Log **Project: B5971_18876_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
18	220204C18	3	CS3_220204_DF_CC	1.00	25-347-1	DTF	398-419	04-Feb-2022	22:52:01
19	220204C19	53	OPR1_18876_DF	1.00	0_18876_OPR001	DTF	002-289	04-Feb-2022	23:38:21
20	220204C20	54	OPR2_18876_DF	1.00	0_18876_OPR002	DTF	462-483	05-Feb-2022	00:24:41
21	220204C21	2	SBS_220204_DF_CC	1.00	20-61-1	DTF	855-476	05-Feb-2022	01:11:00
22	220204C22	52	MB1_18876_DF_SDS	10.00	Method Blank	DTF	264-158	05-Feb-2022	01:57:20
23	220204C23	55	B5971_18876_DF_004	10.09	11215131-120221-S-SPS-SW-B-4H2	DTF	544-812	05-Feb-2022	02:43:40

REVIEWED
Tyler_Fritz , 2/8/2022, 10:20:28 AM

Dioxin/Furan QC Summary	Acq'd: 04 Feb 2022 22:52 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220204_DF_CC	UTP: 08-Feb-2022 09:56:49 DTF	Checkcode: 398-419-KFM
Sample ID: 25-347-1	Report: 08 Feb 2022 09:58 TF	Datafile: 220204C18

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	3.04E+06	0.78	Y	1.18	1.23	4%
12378-PeCDD	33.86	1.16E+07	1.53	Y	1.04	1.07	3%
123478-HxCDD	37.77	1.07E+07	1.25	Y	1.09	1.09	0%
123678-HxCDD	37.88	1.12E+07	1.27	Y	1.15	1.20	4%
123789-HxCDD	38.17	1.15E+07	1.23	Y	1.05	1.06	1%
1234678-HpCDD	40.83	1.03E+07	1.04	Y	1.06	1.08	2%
OCDD	43.51	1.65E+07	0.90	Y	1.13	1.14	1%
2378-TCDF	27.67	4.81E+06	0.84	Y	1.08	1.16	7%
12378-PeCDF	32.41	1.87E+07	1.54	Y	1.02	1.06	4%
23478-PeCDF	33.52	1.87E+07	1.57	Y	1.02	1.03	1%
123478-HxCDF	36.76	1.75E+07	1.25	Y	1.27	1.29	2%
123678-HxCDF	36.90	1.77E+07	1.24	Y	1.15	1.15	0%
234678-HxCDF	37.58	1.69E+07	1.24	Y	1.19	1.18	-1%
123789-HxCDF	38.53	1.53E+07	1.24	Y	1.16	1.19	2%
1234678-HpCDF	39.89	1.55E+07	1.04	Y	1.37	1.39	2%
1234789-HpCDF	41.29	1.37E+07	1.04	Y	1.31	1.36	4%
OCDF	43.69	2.25E+07	0.92	Y	1.07	1.08	1%
ES 2378-TCDD	28.51	2.48E+07	0.83	Y	1.05	0.98	-6%
ES 12378-PeCDD	33.834	2.17E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDD	37.75	1.97E+07	1.27	Y	0.97	1.02	5%
ES 123678-HxCDD	37.866	1.87E+07	1.23	Y	0.94	0.97	3%
ES 123789-HxCDD	38.158	2.17E+07	1.31	Y	1.09	1.13	3%
ES 1234678-HpCDD	40.813	1.90E+07	1.10	Y	0.91	0.99	8%
ES OCDD	43.499	2.91E+07	0.90	Y	0.62	0.76	21%
ES 2378-TCDF	27.653	4.15E+07	0.84	Y	1.06	1.00	-5%
ES 12378-PeCDF	32.392	3.53E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	33.503	3.62E+07	1.60	Y	0.88	0.87	-1%
ES 123478-HxCDF	36.741	2.71E+07	0.57	Y	1.20	1.41	18%
ES 123678-HxCDF	36.882	3.08E+07	0.54	Y	1.35	1.60	18%
ES 234678-HxCDF	37.565	2.86E+07	0.54	Y	1.24	1.49	20%
ES 123789-HxCDF	38.512	2.58E+07	0.55	Y	1.16	1.34	16%
ES 1234678-HpCDF	39.882	2.23E+07	0.44	Y	0.97	1.16	20%
ES 1234789-HpCDF	41.276	2.01E+07	0.43	Y	0.85	1.04	23%
ES OCDF	43.678	4.17E+07	0.92	Y	0.81	1.08	34% *

*meets M1613B criteria
TB 2/10/2022

Dioxin/Furan QC Summary	Acq'd: 04 Feb 2022 22:52 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220204_DF_CC	UTP: 08-Feb-2022 09:56:49 DTF	Checkcode: 398-419-KFM
Sample ID: 25-347-1	Report: 08 Feb 2022 09:58 TF	Datafile: 220204C18

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.85	2.52E+07	0.80	Y	-	-	-
JS 1234-TCDF	26.29	4.14E+07	0.81	Y	-	-	-
JS 123467-HxCDD	38.06	9.63E+06	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	3.77E+06	n/a	-	1.20	1.50	25%
CS 12347-PeCDD	33.33	2.03E+07	1.56	Y	0.75	0.81	7%
CS 12346-PeCDF	31.86	3.48E+07	1.59	Y	0.85	0.84	-1%
CS 123469-HxCDF	37.20	2.84E+07	0.53	Y	1.12	1.47	32% **
CS 1234689-HpCDF	40.28	2.26E+07	0.44	Y	0.89	1.17	32% **
~~SS 37Cl-2378-TCDD~~	~~28.53~~	~~3.77E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.52~~	~~33%~~
~~SS 12347-PeCDD~~	~~33.33~~	~~2.03E+07~~	~~1.56~~	~~Y~~	~~0.86~~	~~0.94~~	~~9%~~
~~SS 12346-PeCDF~~	~~31.86~~	~~3.48E+07~~	~~1.59~~	~~Y~~	~~0.94~~	~~0.99~~	~~5%~~
~~SS 123469-HxCDF~~	~~37.20~~	~~2.84E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~0.92~~	~~11%~~
~~SS 1234689-HpCDF~~	~~40.28~~	~~2.26E+07~~	~~0.44~~	~~Y~~	~~0.92~~	~~1.01~~	~~10%~~
					**no M1613B criteria TB 2/10/2022		
~~OCDD-a~~	~~43.51~~	~~9.84E+05~~	~~2.40~~	~~Y~~	~~0.07~~	~~0.07~~	~~-6%~~
~~OCDF-a~~	~~43.69~~	~~1.43E+06~~	~~2.27~~	~~Y~~	~~0.07~~	~~0.07~~	~~3%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220204C18 Analysis Date: 04-FEB-2022 22:52:01

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.78	0.65 - 0.89	Y	10.4	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.53	1.32 - 1.78	Y	51.5	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.8	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	52.2	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05 - 1.43	Y	50.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	51	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	101	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.84	0.65 - 0.89	Y	10.7	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32 - 1.78	Y	51.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	50.7	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	49.7	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	51.1	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	50.8	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.04	0.88 - 1.20	Y	51.9	43 - 58	Y
OCDF	M+2/M+4	0.92	0.76 - 1.02	Y	101	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 08 Feb 2022 09:58 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

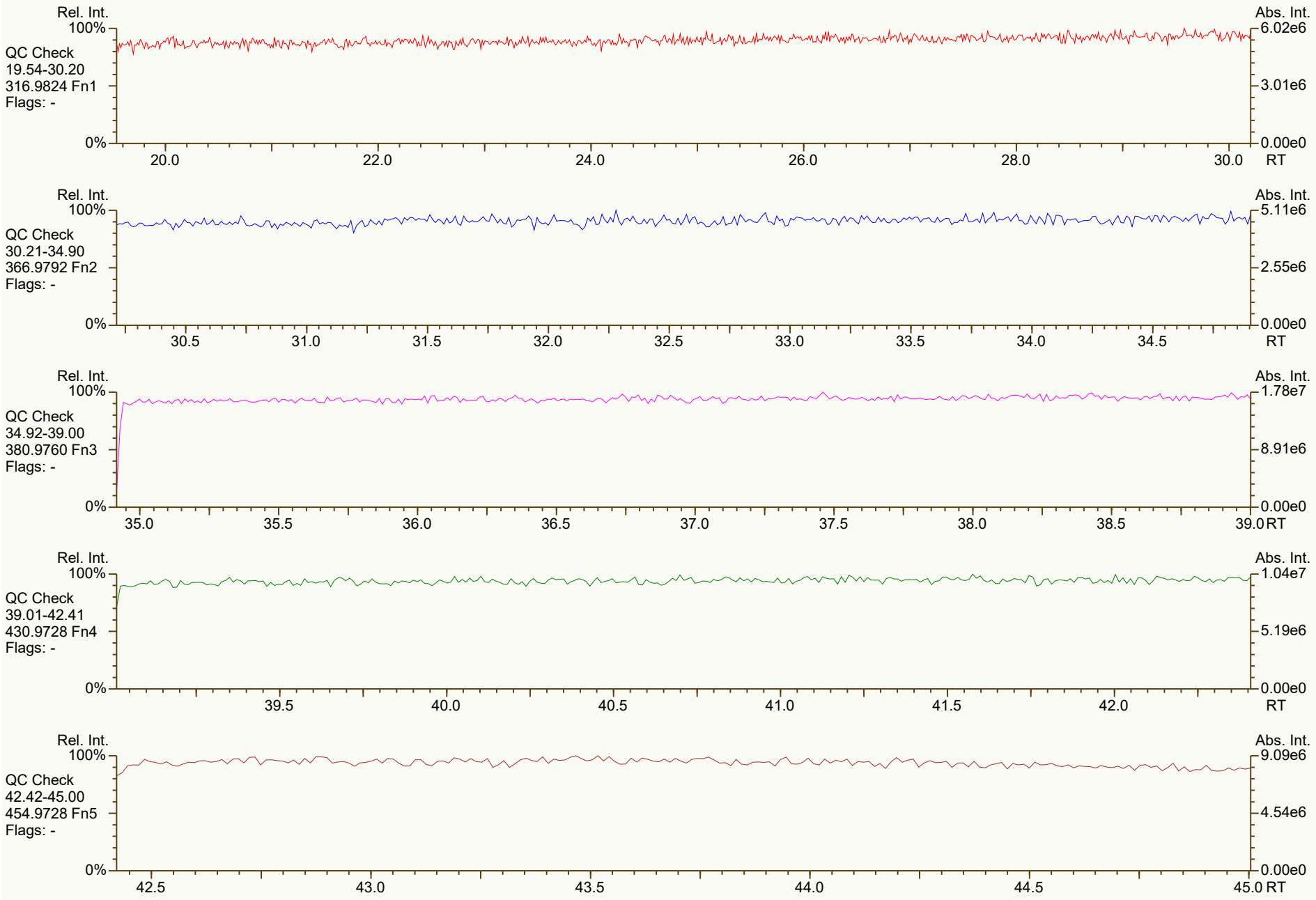
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220204C18 Analysis Date: 04-FEB-2022 22:52:01

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.83	0.65	-	0.89	Y	94.1	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	97.9	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	105	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05	-	1.43	Y	103	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	103	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.10	0.88	-	1.20	Y	108	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	242	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.84	0.65	-	0.89	Y	94.6	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	93.6	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	98.9	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.57	0.43	-	0.59	Y	118	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	118	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	120	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	116	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	120	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.43	0.37	-	0.51	Y	123	77	-	129	Y
13C-OCDF	M+2/M+4	0.92	0.76	-	1.02	Y	268	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						12.5	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.56	1.32	-	1.78	Y	107	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.59	1.32	-	1.78	Y	98.8	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	132	70	-	130	N
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	132	70	-	130	N

Processed: 08 Feb 2022 09:58 Analyst: TF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316.9824 Fn1
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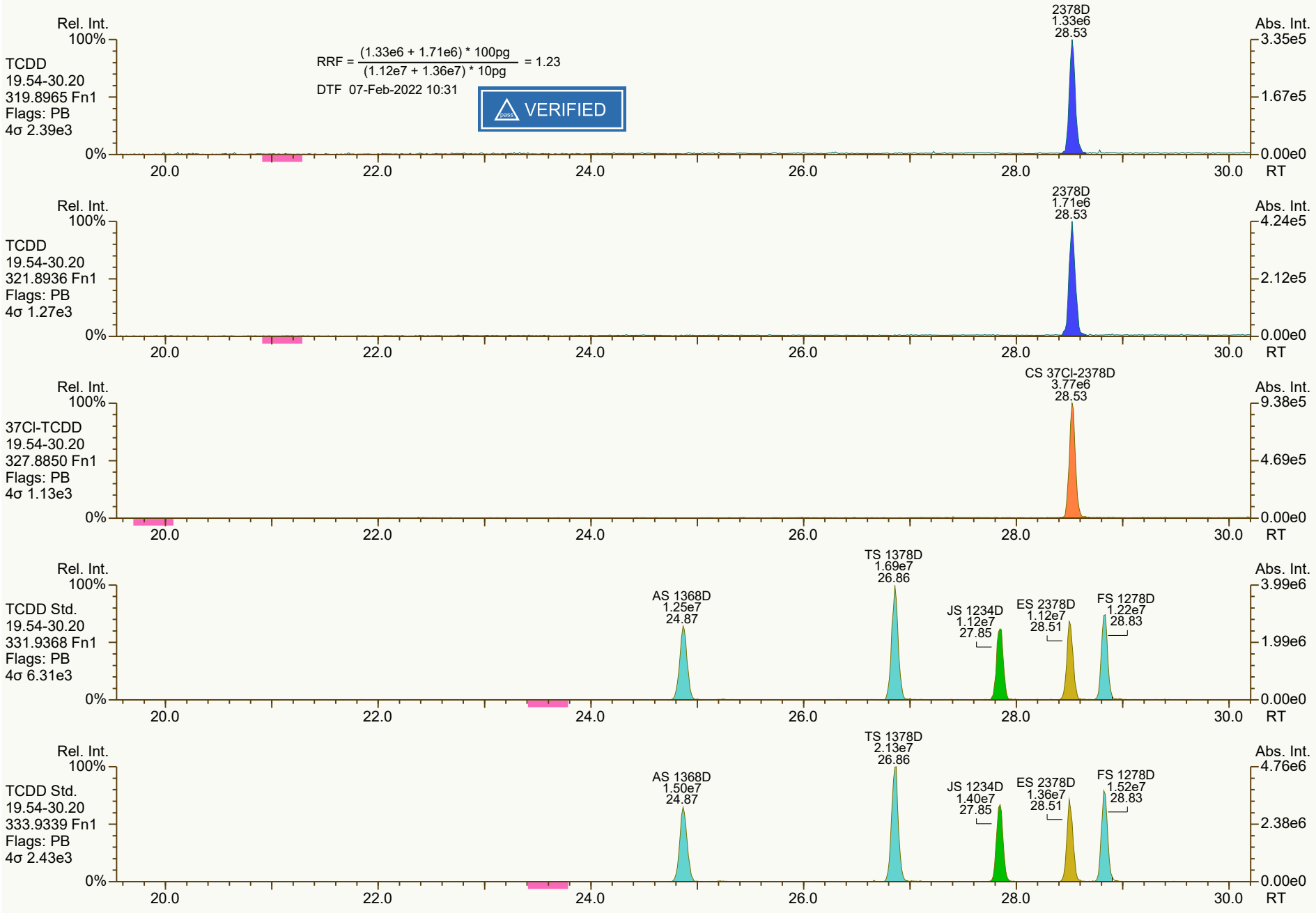
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
6.02e6
3.01e6
0.00e0
Rel. Int.
100%
QC Check
30.21-34.90
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
5.11e6
2.55e6
0.00e0
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Abs. Int.
1.78e7
8.91e6
0.00e0
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.04e7
5.19e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
9.09e6
4.54e6
0.00e0



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Peak annotation: Areas, Centroids
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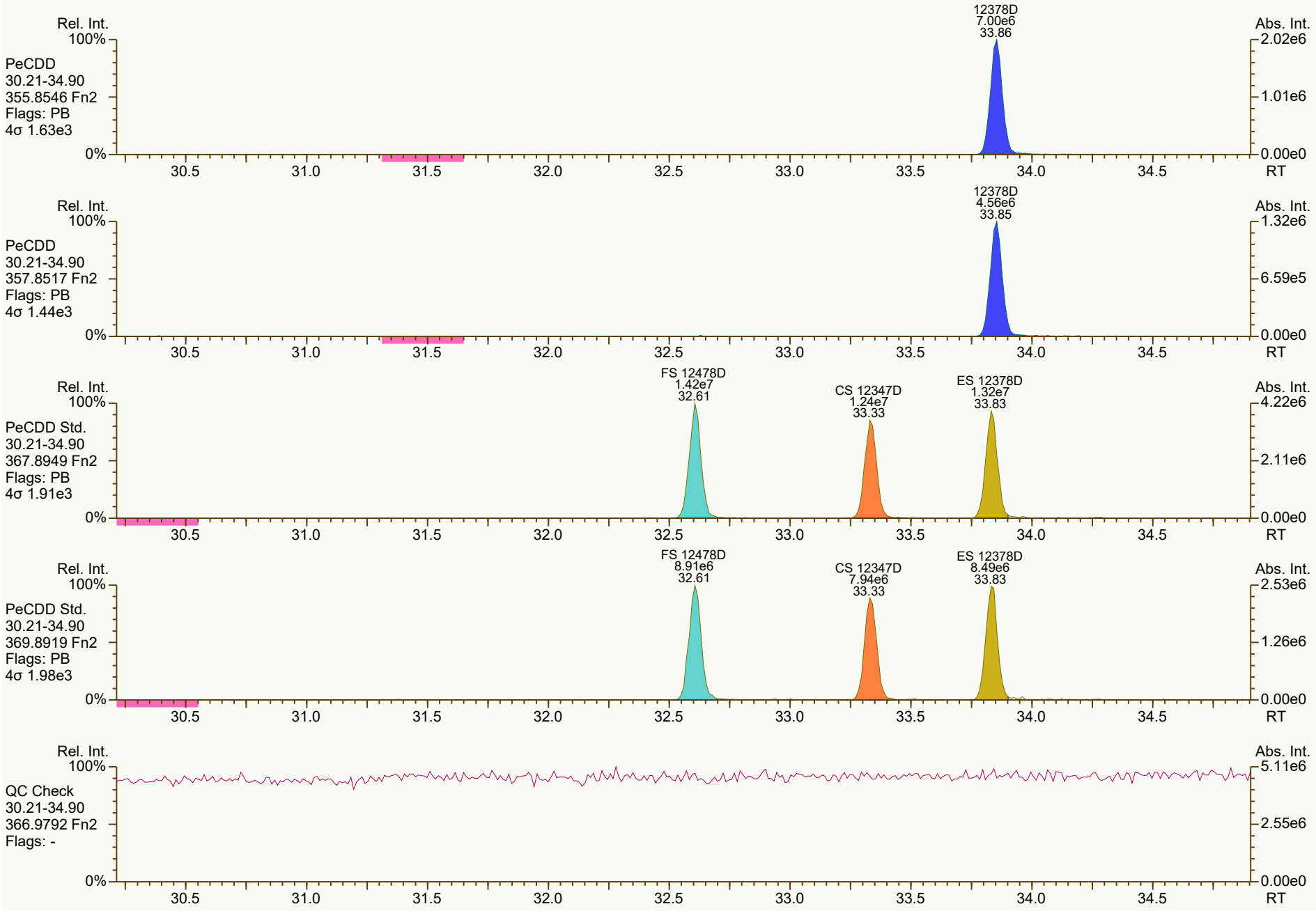
PKD: 07-Feb-2022 08:24 Printed: 08-Feb-2022 10:15 Page 2 of 12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100%
PeCDD
30.21-34.90
355.8546 Fn2
Flags: PB
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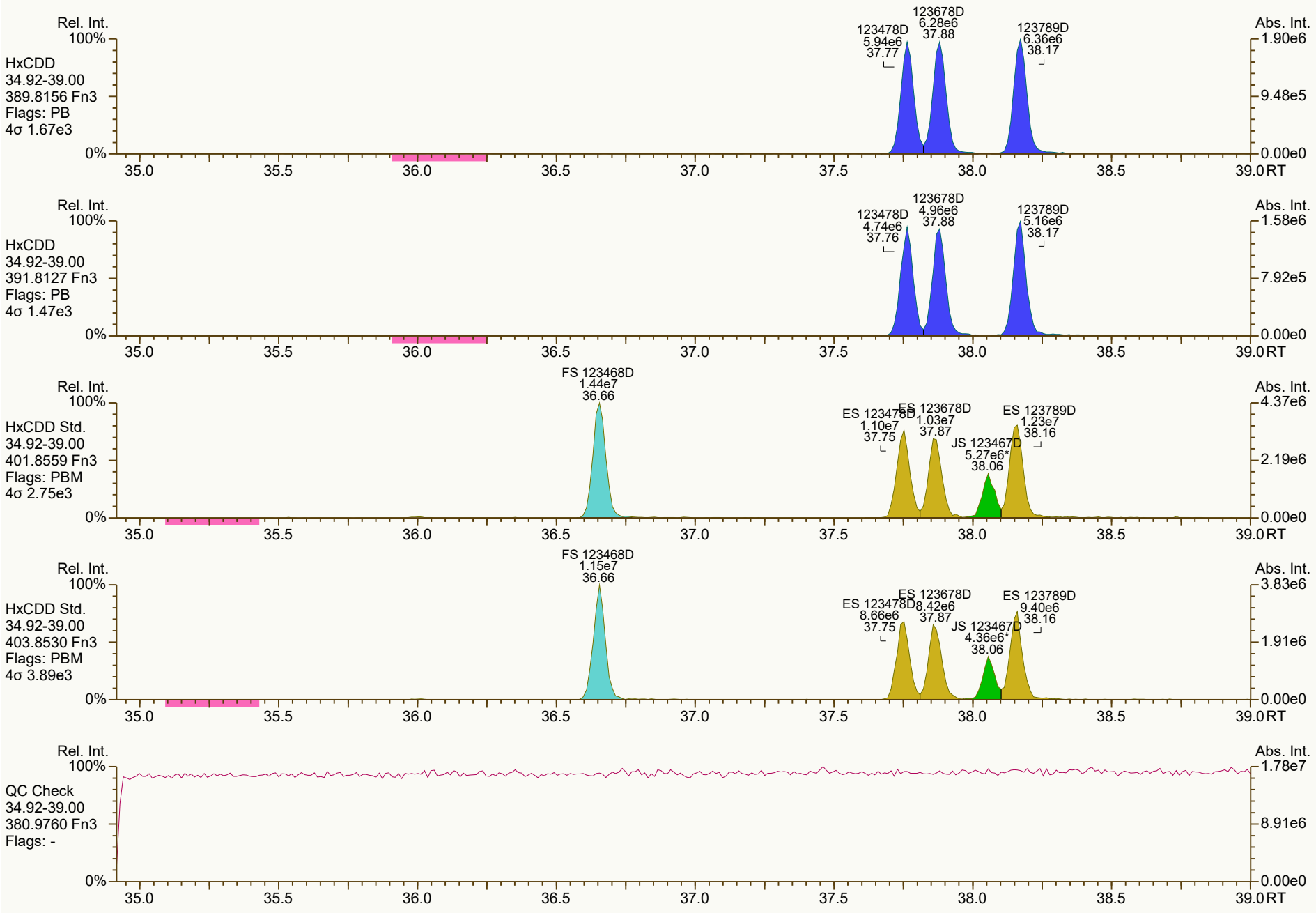
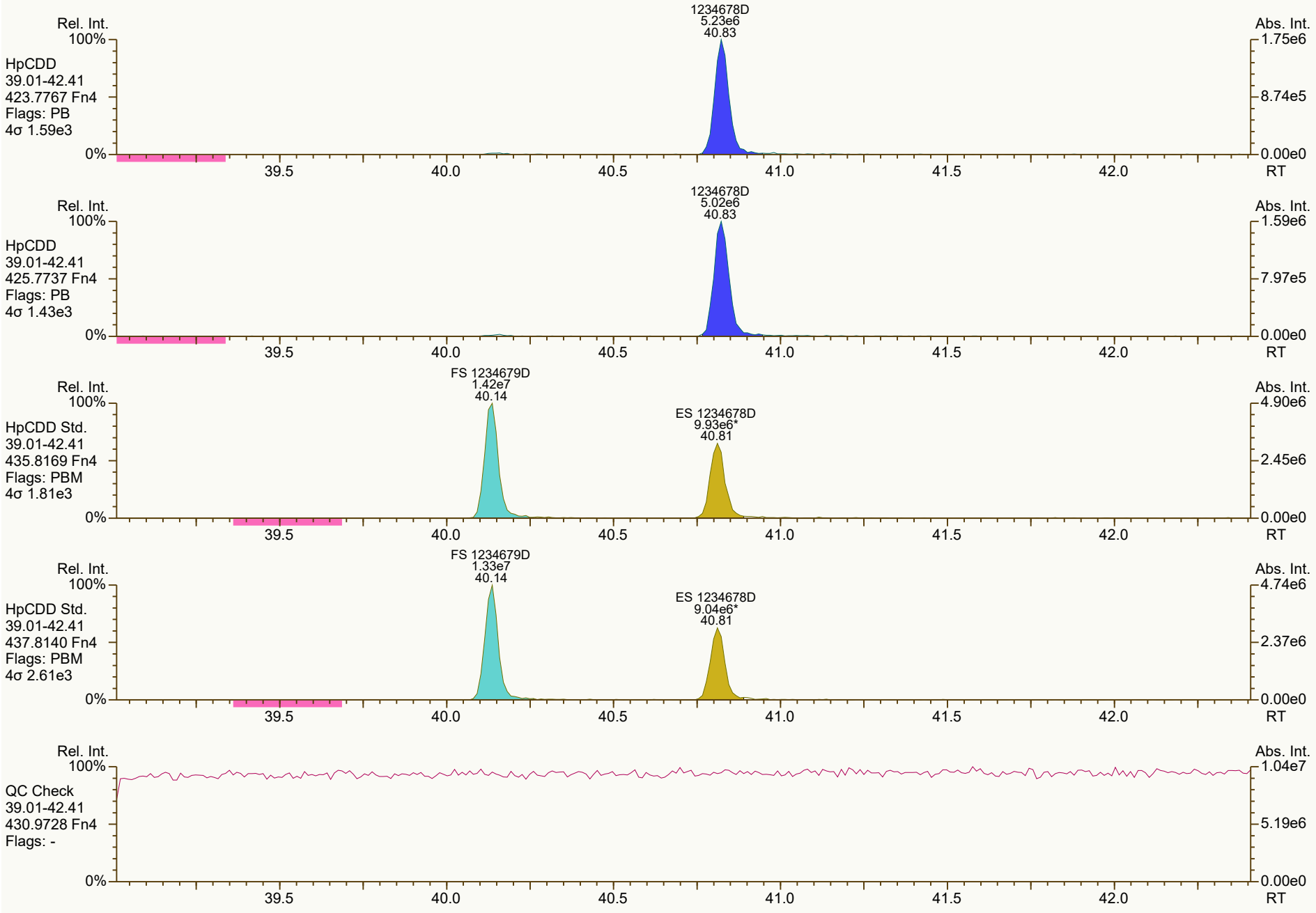
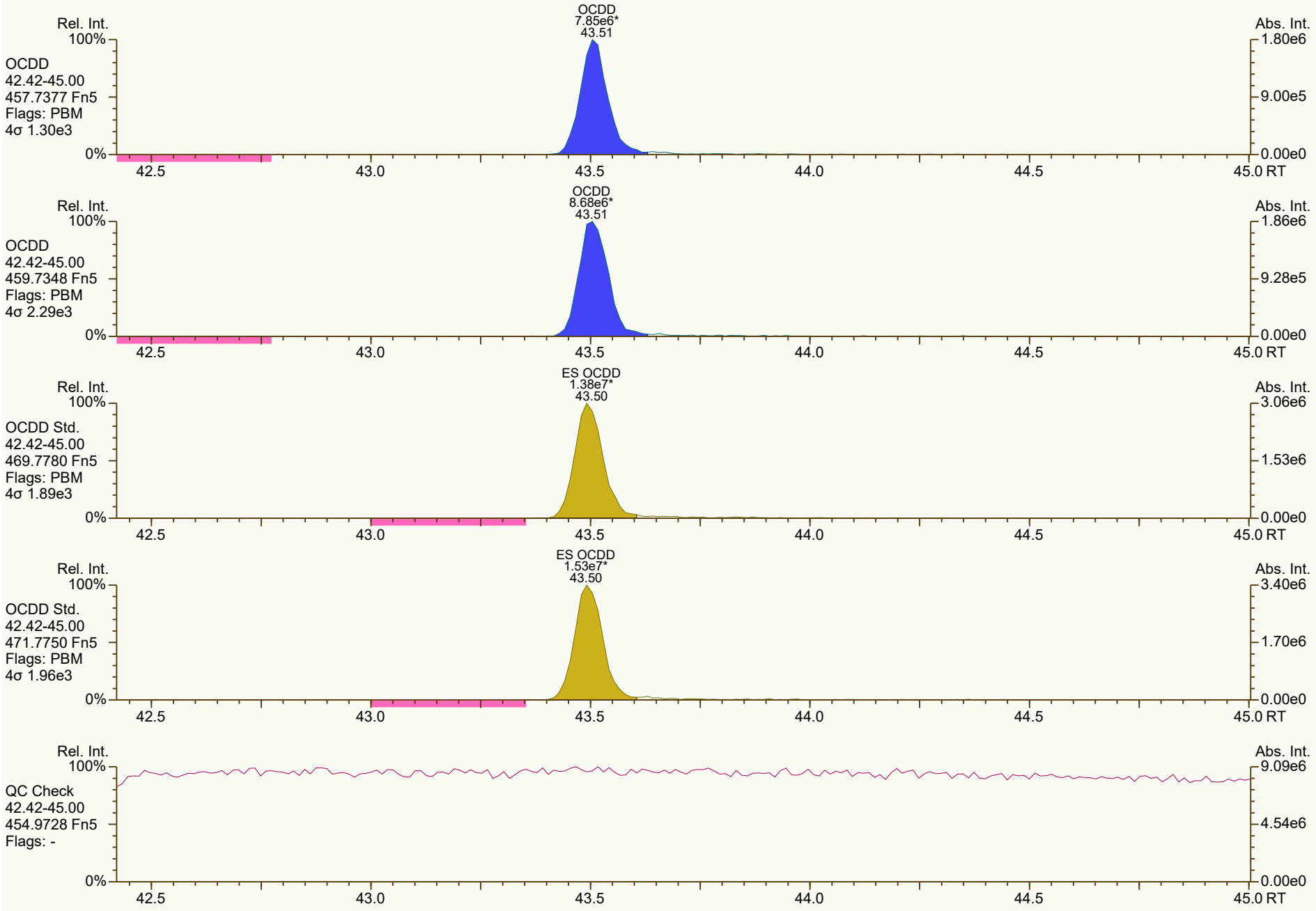
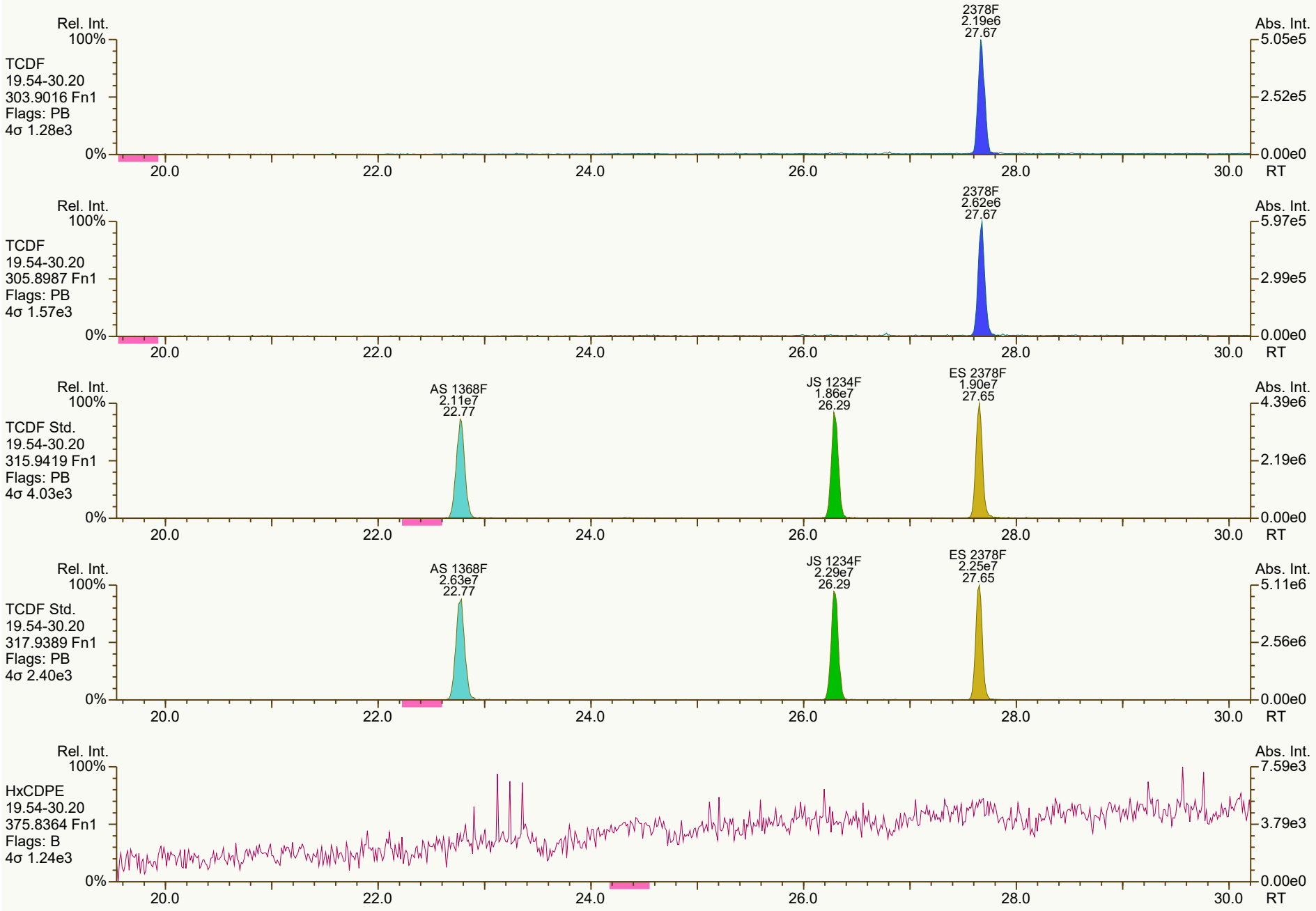
12378D
7.00e6
33.86
Abs. Int.
2.02e6
1.01e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.21-34.90
357.8517 Fn2
Flags: PB
4σ 1.44e3
12378D
4.56e6
33.85
Abs. Int.
1.32e6
6.59e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.90
367.8949 Fn2
Flags: PB
4σ 1.91e3
FS 12478D
1.42e7
32.61
CS 12347D
1.24e7
33.33
ES 12378D
1.32e7
33.83
Abs. Int.
4.22e6
2.11e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.90
369.8919 Fn2
Flags: PB
4σ 1.98e3
FS 12478D
8.91e6
32.61
CS 12347D
7.94e6
33.33
ES 12378D
8.49e6
33.83
Abs. Int.
2.53e6
1.26e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.21-34.90
366.9792 Fn2
Flags: -
Abs. Int.
5.11e6
2.55e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

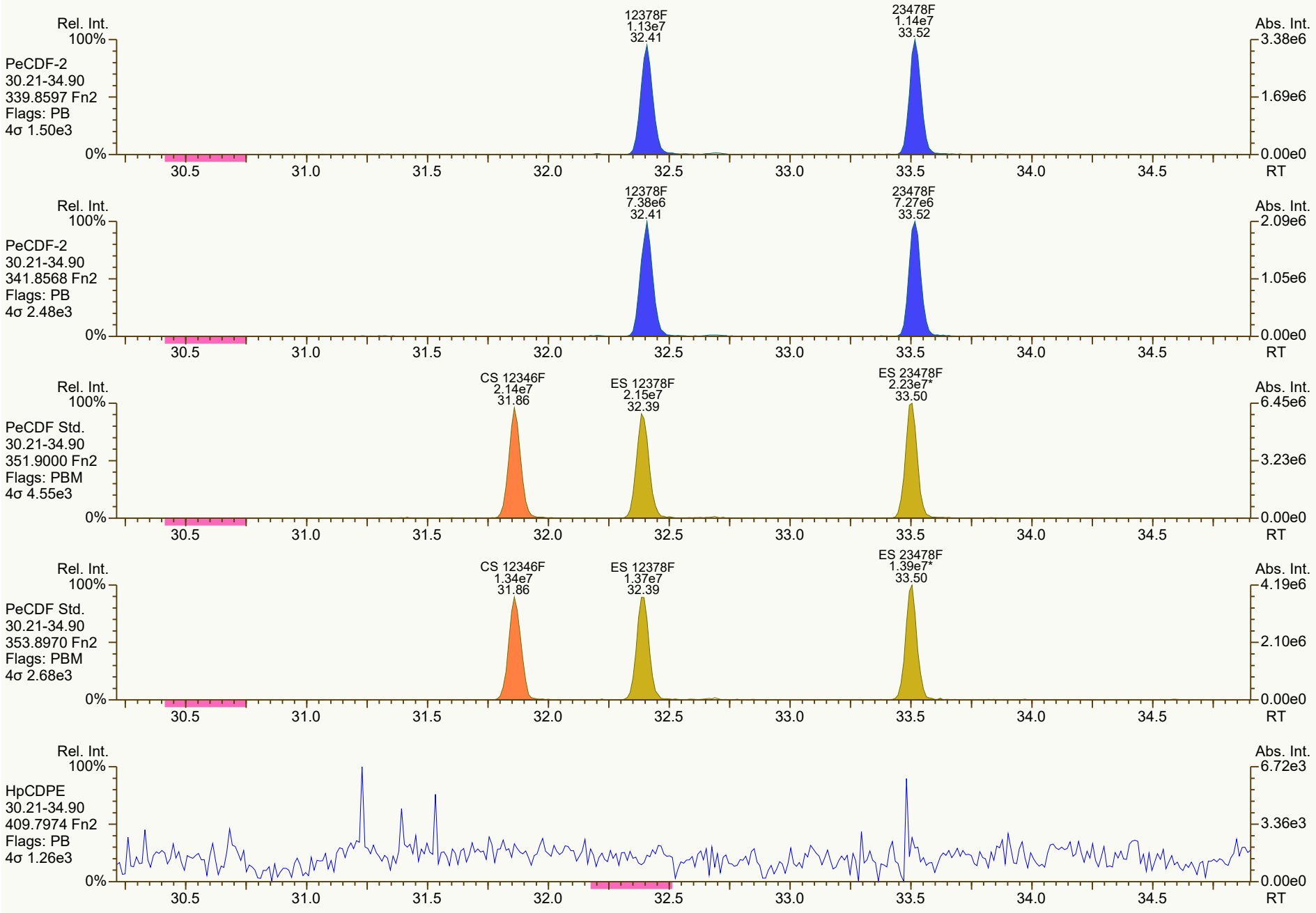

Rel. Int.
100%
HxCDD
34.92-39.00
389.8156 Fn3
Flags: PB
4σ 1.67e3
123478D
5.94e6
37.77
123678D
6.28e6
37.88
123789D
6.36e6
38.17
Abs. Int.
1.90e6
9.48e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
34.92-39.00
391.8127 Fn3
Flags: PB
4σ 1.47e3
123478D
4.74e6
37.76
123678D
4.96e6
37.88
123789D
5.16e6
38.17
Abs. Int.
1.58e6
7.92e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
34.92-39.00
401.8559 Fn3
Flags: PBM
4σ 2.75e3
FS 123468D
1.44e7
36.66
ES 123478D
1.10e7
37.75
ES 123678D
1.03e7
37.87
JS 123467D
5.27e6*
38.06
ES 123789D
1.23e7
38.16
Abs. Int.
4.37e6
2.19e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
34.92-39.00
403.8530 Fn3
Flags: PBM
4σ 3.89e3
FS 123468D
1.15e7
36.66
ES 123478D
8.66e6
37.75
ES 123678D
8.42e6
37.87
JS 123467D
4.36e6*
38.06
ES 123789D
9.40e6
38.16
Abs. Int.
3.83e6
1.91e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
Abs. Int.
1.78e7
8.91e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

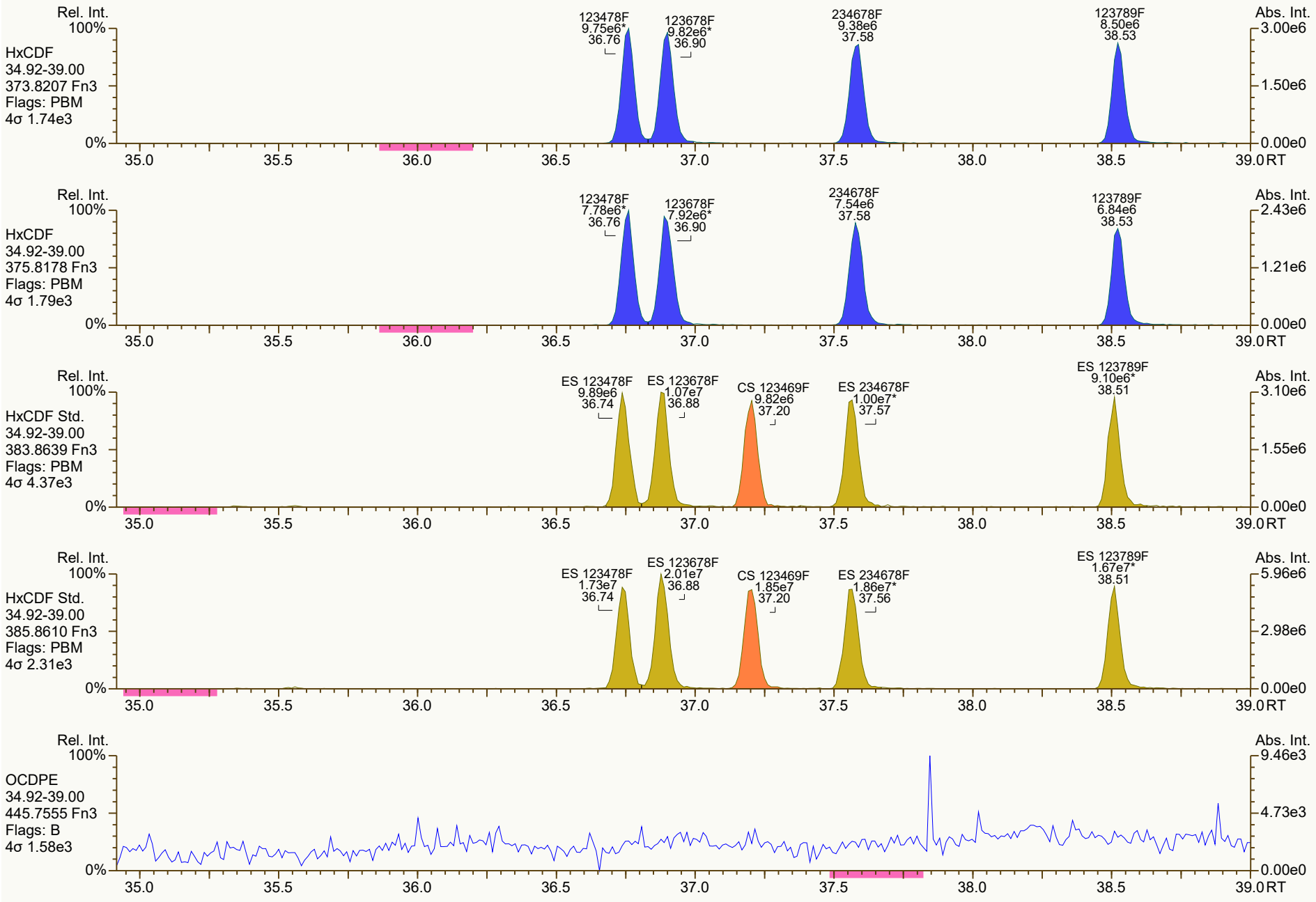

Rel. Int.
100%
HpCDD
39.01-42.41
423.7767 Fn4
Flags: PB
4σ 1.59e3
1234678D
5.23e6
40.83
Abs. Int.
1.75e6
8.74e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.01-42.41
425.7737 Fn4
Flags: PB
4σ 1.43e3
1234678D
5.02e6
40.83
Abs. Int.
1.59e6
7.97e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.01-42.41
435.8169 Fn4
Flags: PBM
4σ 1.81e3
FS 1234679D
1.42e7
40.14
ES 1234678D
9.93e6*
40.81
Abs. Int.
4.90e6
2.45e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.01-42.41
437.8140 Fn4
Flags: PBM
4σ 2.61e3
FS 1234679D
1.33e7
40.14
ES 1234678D
9.04e6*
40.81
Abs. Int.
4.74e6
2.37e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
Abs. Int.
1.04e7
5.19e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

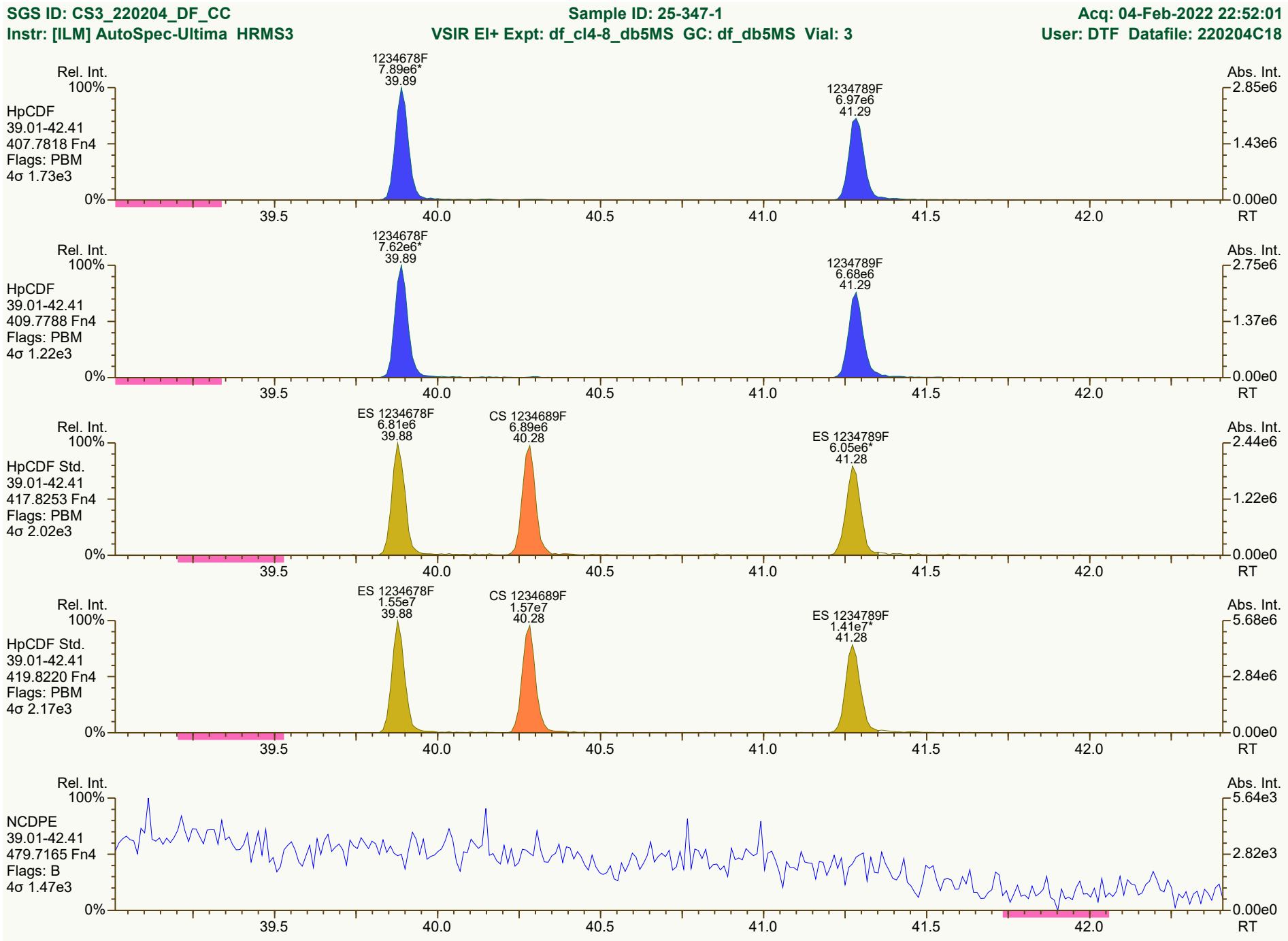

OCDD
7.85e6*
43.51
Rel. Int.
Abs. Int.
OCDD
42.42-45.00
457.7377 Fn5
Flags: PBM
4σ 1.30e3
OCDD
8.68e6*
43.51
OCDD
42.42-45.00
459.7348 Fn5
Flags: PBM
4σ 2.29e3
ES OCDD
1.38e7*
43.50
OCDD Std.
42.42-45.00
469.7780 Fn5
Flags: PBM
4σ 1.89e3
ES OCDD
1.53e7*
43.50
OCDD Std.
42.42-45.00
471.7750 Fn5
Flags: PBM
4σ 1.96e3
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.20
303.9016 Fn1
Flags: PB
4σ 1.28e3
0%
2378F
2.19e6
27.67
Abs. Int.
5.05e5
2.52e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.20
305.8987 Fn1
Flags: PB
4σ 1.57e3
0%
2378F
2.62e6
27.67
Abs. Int.
5.97e5
2.99e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 4.03e3
0%
AS 1368F
2.11e7
22.77
JS 1234F
1.86e7
26.29
ES 2378F
1.90e7
27.65
Abs. Int.
4.39e6
2.19e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 2.40e3
0%
AS 1368F
2.63e7
22.77
JS 1234F
2.29e7
26.29
ES 2378F
2.25e7
27.65
Abs. Int.
5.11e6
2.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.24e3
0%
Abs. Int.
7.59e3
3.79e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

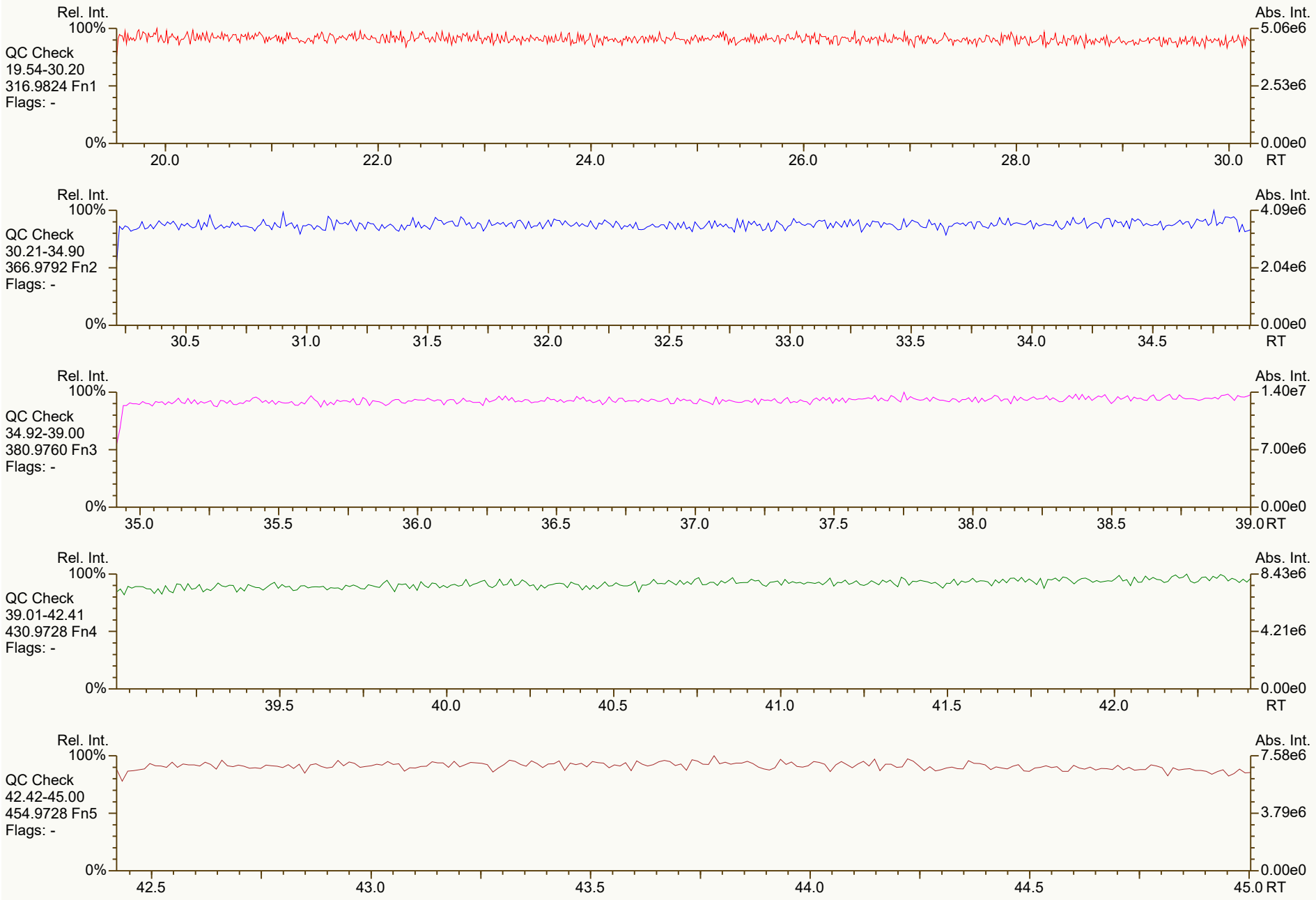

Rel. Int.
100%
0%
Abs. Int.
2.01e4
1.01e4
0.00e0
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: PB
4σ 1.12e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.16e4
5.82e3
0.00e0
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: B
4σ 1.60e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
6.02e6
3.01e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.21-34.90
339.8597 Fn2
Flags: PB
4σ 1.50e3
0%
12378F
1.13e7
32.41
23478F
1.14e7
33.52
Abs. Int.
3.38e6
1.69e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.21-34.90
341.8568 Fn2
Flags: PB
4σ 2.48e3
0%
12378F
7.38e6
32.41
23478F
7.27e6
33.52
Abs. Int.
2.09e6
1.05e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.90
351.9000 Fn2
Flags: PBM
4σ 4.55e3
0%
CS 12346F
2.14e7
31.86
ES 12378F
2.15e7
32.39
ES 23478F
2.23e7*
33.50
Abs. Int.
6.45e6
3.23e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.90
353.8970 Fn2
Flags: PBM
4σ 2.68e3
0%
CS 12346F
1.34e7
31.86
ES 12378F
1.37e7
32.39
ES 23478F
1.39e7*
33.50
Abs. Int.
4.19e6
2.10e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.21-34.90
409.7974 Fn2
Flags: PB
4σ 1.26e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.92-39.00
373.8207 Fn3
Flags: PBM
4σ 1.74e3
0%
123478F
9.75e6*
36.76
123678F
9.82e6*
36.90
234678F
9.38e6
37.58
123789F
8.50e6
38.53
Abs. Int.
3.00e6
1.50e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
34.92-39.00
375.8178 Fn3
Flags: PBM
4σ 1.79e3
0%
123478F
7.78e6*
36.76
123678F
7.92e6*
36.90
234678F
7.54e6
37.58
123789F
6.84e6
38.53
Abs. Int.
2.43e6
1.21e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
34.92-39.00
383.8639 Fn3
Flags: PBM
4σ 4.37e3
0%
ES 123478F
9.89e6
36.74
ES 123678F
1.07e7
36.88
CS 123469F
9.82e6
37.20
ES 234678F
1.00e7*
37.57
ES 123789F
9.10e6*
38.51
Abs. Int.
3.10e6
1.55e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
34.92-39.00
385.8610 Fn3
Flags: PBM
4σ 2.31e3
0%
ES 123478F
1.73e7
36.74
ES 123678F
2.01e7
36.88
CS 123469F
1.85e7
37.20
ES 234678F
1.86e7*
37.56
ES 123789F
1.67e7*
38.51
Abs. Int.
5.96e6
2.98e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
34.92-39.00
445.7555 Fn3
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.46e3
4.73e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


SGS ID: CS3_220204_DF_CC
Sample ID: 25-347-1
Acq: 04-Feb-2022 22:52:01
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220204C18
Rel. Int.
Abs. Int.
HpCDF
39.01-42.41
407.7818 Fn4
Flags: PBM
4σ 1.73e3
1234678F
7.89e6*
39.89
1234789F
6.97e6
41.29
2.85e6
1.43e6
0.00e0
HpCDF
39.01-42.41
409.7788 Fn4
Flags: PBM
4σ 1.22e3
1234678F
7.62e6*
39.89
1234789F
6.68e6
41.29
2.75e6
1.37e6
0.00e0
HpCDF Std.
39.01-42.41
417.8253 Fn4
Flags: PBM
4σ 2.02e3
ES 1234678F
6.81e6
39.88
CS 1234689F
6.89e6
40.28
ES 1234789F
6.05e6*
41.28
2.44e6
1.22e6
0.00e0
HpCDF Std.
39.01-42.41
419.8220 Fn4
Flags: PBM
4σ 2.17e3
ES 1234678F
1.55e7
39.88
CS 1234689F
1.57e7
40.28
ES 1234789F
1.41e7*
41.28
5.68e6
2.84e6
0.00e0
NCDPE
39.01-42.41
479.7165 Fn4
Flags: B
4σ 1.47e3
5.64e3
2.82e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\CS3_220204_DF_CC.utp_res, saved 08-Feb-2022 10:15 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 6986, 8244, 5434 scc: 398-419
PKD: 07-Feb-2022 08:25 Printed: 08-Feb-2022 10:16 Page 11 of 12

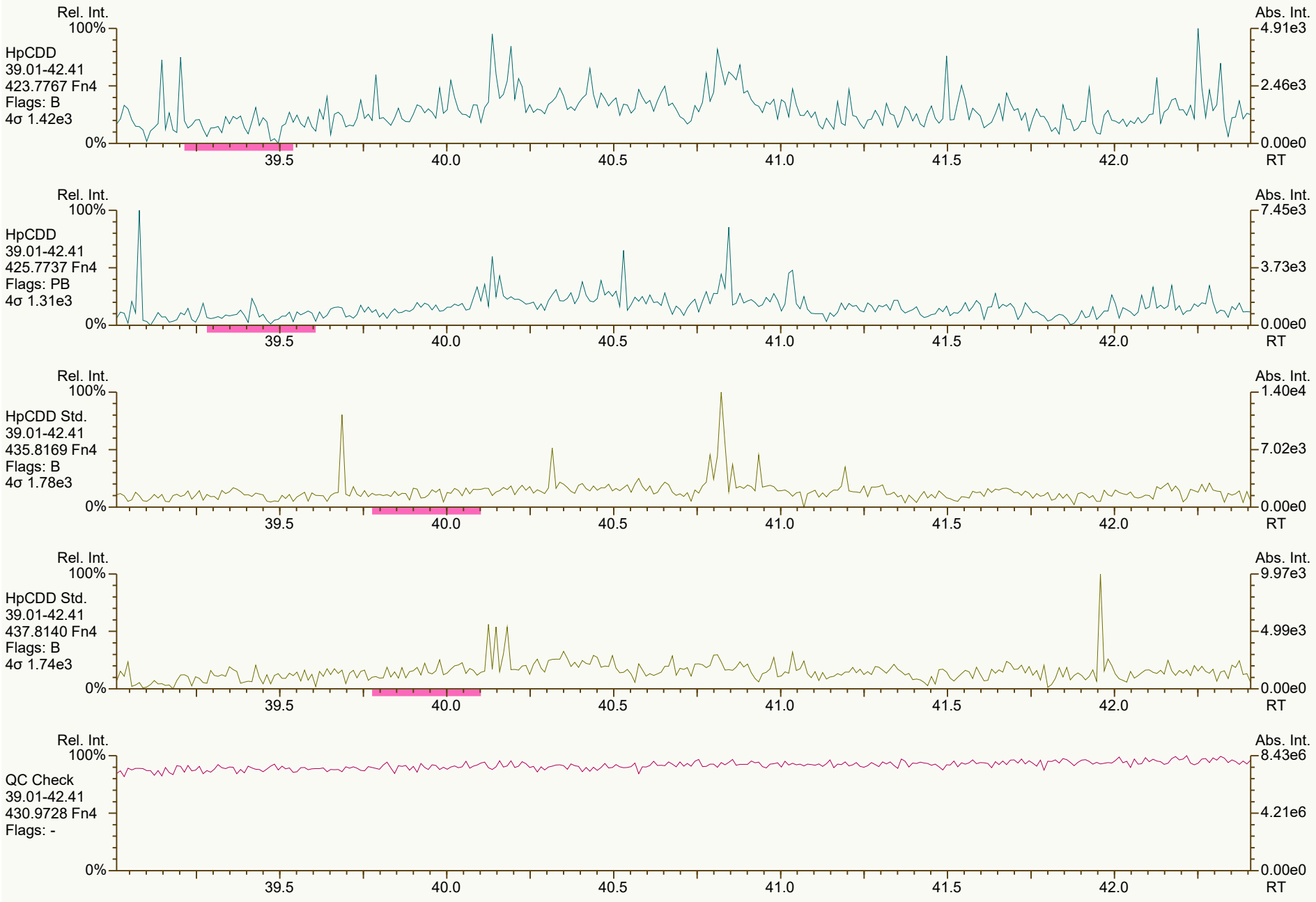

OCDF
1.08e7*
43.69
Rel. Int.
Abs. Int.
OCDF
42.42-45.00
441.7428 Fn5
Flags: PBM
4σ 1.55e3
OCDF
1.17e7*
43.69
OCDF
42.42-45.00
443.7398 Fn5
Flags: PBM
4σ 1.26e3
ES OCDF
1.99e7*
43.68
OCDF Std.
42.42-45.00
453.7830 Fn5
Flags: PBM
4σ 1.94e3
ES OCDF
2.18e7*
43.67
OCDF Std.
42.42-45.00
455.7801 Fn5
Flags: PBM
4σ 1.78e3
DCDPE
42.42-45.00
513.6775 Fn5
Flags: PB
4σ 1.31e3
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
0%
Abs. Int.
5.06e6
2.53e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.21-34.90
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.09e6
2.04e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.40e7
7.00e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
0%
Abs. Int.
8.43e6
4.21e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.58e6
3.79e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0
RT

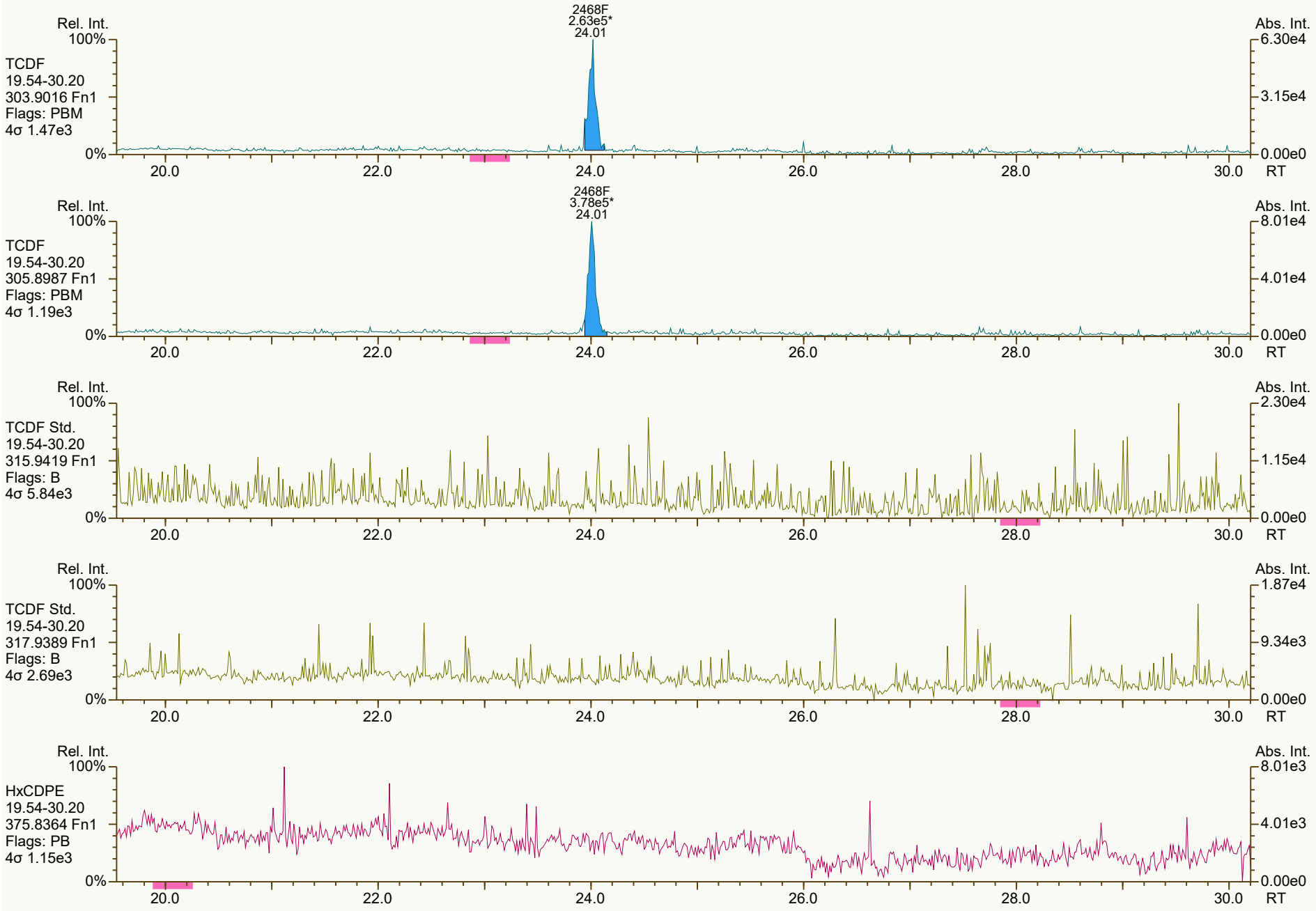

Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: PB
4σ 2.14e3
0%
Abs. Int.
7.46e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: B
4σ 1.15e3
0%
Abs. Int.
7.41e3
3.71e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: B
4σ 1.10e3
0%
Abs. Int.
1.28e4
6.42e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: B
4σ 6.10e3
0%
Abs. Int.
1.86e4
9.30e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: B
4σ 2.37e3
0%
Abs. Int.
1.74e4
8.69e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.21-34.90
355.8546 Fn2
Flags: B
4σ 1.13e3
0%
Abs. Int.
7.59e3
3.79e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.21-34.90
357.8517 Fn2
Flags: PB
4σ 1.25e3
0%
Abs. Int.
5.64e3
2.82e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.90
367.8949 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.84e4
9.19e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.21-34.90
369.8919 Fn2
Flags: PB
4σ 1.62e3
0%
Abs. Int.
1.02e4
5.10e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.21-34.90
366.9792 Fn2
Flags: -
0%
Abs. Int.
4.09e6
2.04e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.92-39.00
389.8156 Fn3
Flags: PB
4σ 1.23e3
0%
Abs. Int.
7.95e3
3.97e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
34.92-39.00
391.8127 Fn3
Flags: PB
4σ 1.04e3
0%
Abs. Int.
6.28e3
3.14e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
34.92-39.00
401.8559 Fn3
Flags: B
4σ 1.86e3
0%
Abs. Int.
8.07e3
4.03e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
34.92-39.00
403.8530 Fn3
Flags: B
4σ 2.08e3
0%
Abs. Int.
8.88e3
4.44e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.40e7
7.00e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

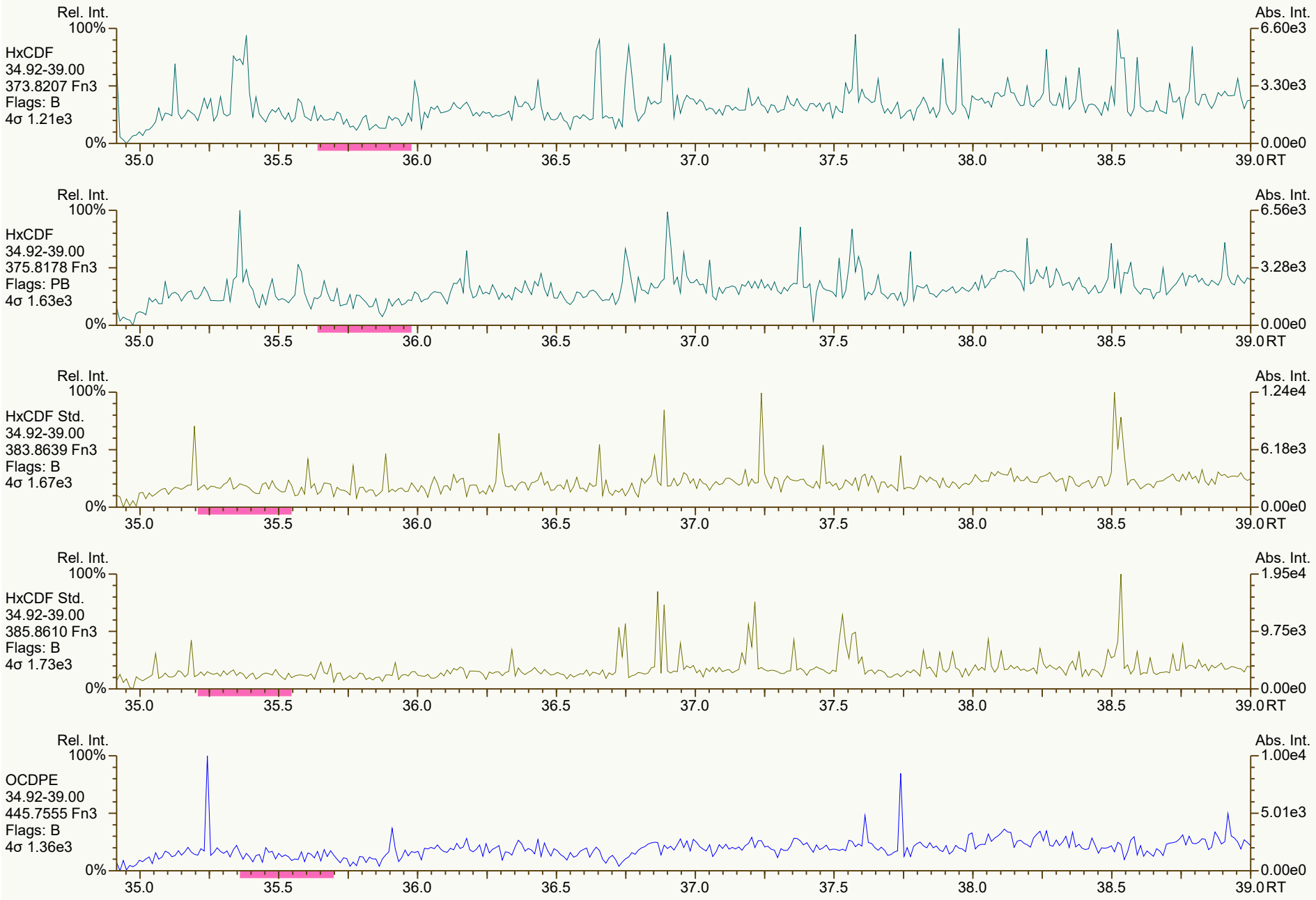

Rel. Int.
100%
HpCDD
39.01-42.41
423.7767 Fn4
Flags: B
4σ 1.42e3
0%
Abs. Int.
4.91e3
2.46e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.01-42.41
425.7737 Fn4
Flags: PB
4σ 1.31e3
0%
Abs. Int.
7.45e3
3.73e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.01-42.41
435.8169 Fn4
Flags: B
4σ 1.78e3
0%
Abs. Int.
1.40e4
7.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.01-42.41
437.8140 Fn4
Flags: B
4σ 1.74e3
0%
Abs. Int.
9.97e3
4.99e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
0%
Abs. Int.
8.43e6
4.21e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.42-45.00
457.7377 Fn5
Flags: PB
4σ 1.35e3
0%
Abs. Int.
6.21e3
3.11e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.00
459.7348 Fn5
Flags: B
4σ 1.33e3
0%
Abs. Int.
1.35e4
6.75e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.00
469.7780 Fn5
Flags: B
4σ 1.60e3
0%
Abs. Int.
1.21e4
6.03e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.00
471.7750 Fn5
Flags: B
4σ 1.55e3
0%
Abs. Int.
8.24e3
4.12e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.58e6
3.79e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.20
303.9016 Fn1
Flags: PBM
4σ 1.47e3
2468F
2.63e5*
24.01
Abs. Int.
6.30e4
3.15e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.20
305.8987 Fn1
Flags: PBM
4σ 1.19e3
2468F
3.78e5*
24.01
Abs. Int.
8.01e4
4.01e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: B
4σ 5.84e3
Abs. Int.
2.30e4
1.15e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: B
4σ 2.69e3
Abs. Int.
1.87e4
9.34e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: PB
4σ 1.15e3
Abs. Int.
8.01e3
4.01e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
7.09e3
3.55e3
0.00e0
PeCDF-1
19.54-30.20
339.8597 Fn1
Flags: B
4σ 1.32e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.51e4
1.25e4
0.00e0
PeCDF-1
19.54-30.20
341.8568 Fn1
Flags: B
4σ 1.39e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
5.06e6
2.53e6
0.00e0
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.21-34.90
339.8597 Fn2
Flags: B
4σ 1.23e3
0%
Abs. Int.
7.62e3
3.81e3
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
Rel. Int.
100%
PeCDF-2
30.21-34.90
341.8568 Fn2
Flags: B
4σ 1.54e3
0%
Abs. Int.
6.38e3
3.19e3
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.90
351.9000 Fn2
Flags: B
4σ 2.01e3
0%
Abs. Int.
2.84e4
1.42e4
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.90
353.8970 Fn2
Flags: B
4σ 1.42e3
0%
Abs. Int.
1.36e4
6.80e3
0.00e0
RT
Rel. Int.
100%
HpCDPE
30.21-34.90
409.7974 Fn2
Flags: PB
4σ 1.22e3
0%
Abs. Int.
3.94e3
1.97e3
0.00e0
RT

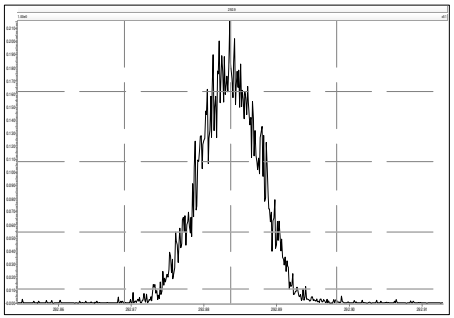

Rel. Int.
100%
HxCDF
34.92-39.00
373.8207 Fn3
Flags: B
4σ 1.21e3
0%
Abs. Int.
6.60e3
3.30e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
34.92-39.00
375.8178 Fn3
Flags: PB
4σ 1.63e3
0%
Abs. Int.
6.56e3
3.28e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
34.92-39.00
383.8639 Fn3
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.24e4
6.18e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
34.92-39.00
385.8610 Fn3
Flags: B
4σ 1.73e3
0%
Abs. Int.
1.95e4
9.75e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
34.92-39.00
445.7555 Fn3
Flags: B
4σ 1.36e3
0%
Abs. Int.
1.00e4
5.01e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.01-42.41
407.7818 Fn4
Flags: PB
4σ 1.34e3
0%
Abs. Int.
6.28e3
3.14e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.01-42.41
409.7788 Fn4
Flags: B
4σ 1.35e3
0%
Abs. Int.
8.89e3
4.44e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.01-42.41
417.8253 Fn4
Flags: B
4σ 1.98e3
0%
Abs. Int.
1.05e4
5.23e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.01-42.41
419.8220 Fn4
Flags: B
4σ 1.55e3
0%
Abs. Int.
1.65e4
8.25e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.01-42.41
479.7165 Fn4
Flags: PB
4σ 1.39e3
0%
Abs. Int.
4.97e3
2.48e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT

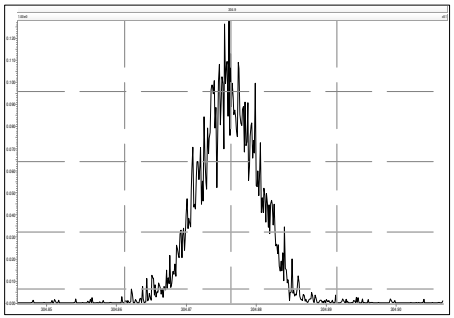

Rel. Int.
100%
OCDF
42.42-45.00
441.7428 Fn5
Flags: B
4σ 1.21e3
0%
Abs. Int.
6.71e3
3.36e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.00
443.7398 Fn5
Flags: B
4σ 1.24e3
0%
Abs. Int.
5.66e3
2.83e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.00
453.7830 Fn5
Flags: B
4σ 1.70e3
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.00
455.7801 Fn5
Flags: B
4σ 1.39e3
0%
Abs. Int.
1.46e4
7.31e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.00
513.6775 Fn5
Flags: B
4σ 1.19e3
0%
Abs. Int.
7.48e3
3.74e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Printed: Friday, February 04, 2022 21:57:38 Eastern Standard Time

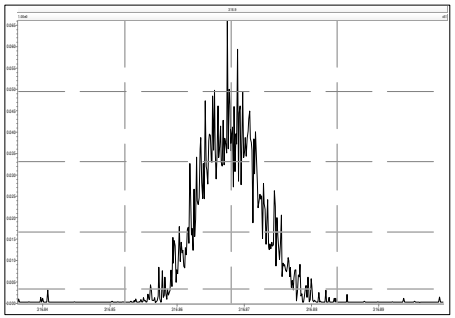
M 292.9824 R 16678



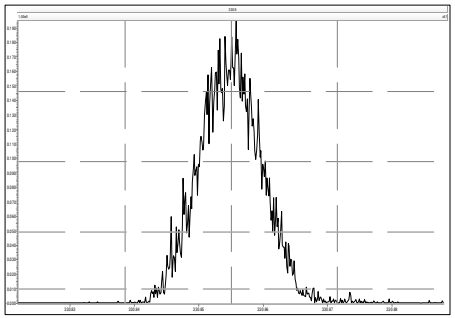
M 304.9824 R 17485



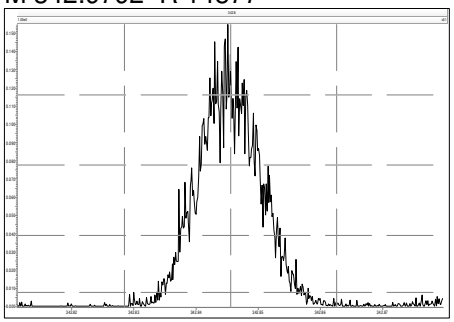
M 316.9824 R 17524



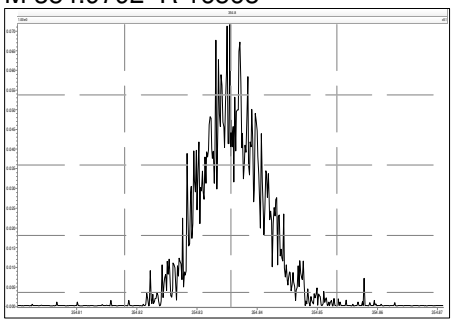
M 330.9792 R 15923



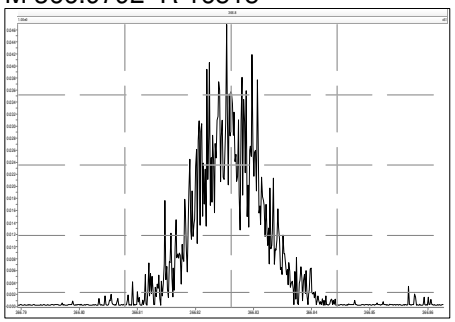
M 342.9792 R 14577



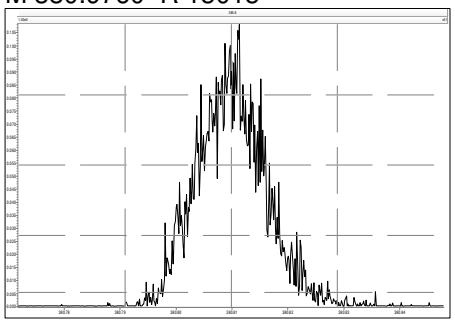
M 354.9792 R 16568



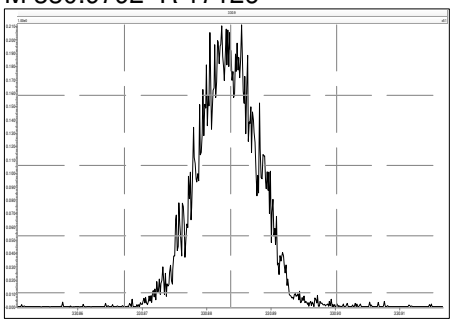
M 366.9792 R 16515



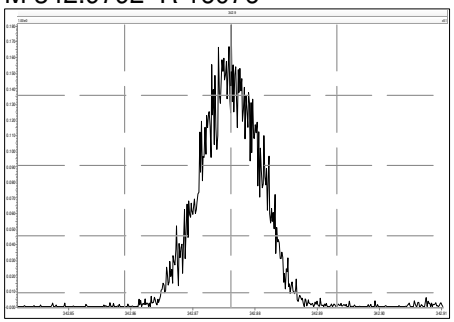
M 380.9760 R 15015



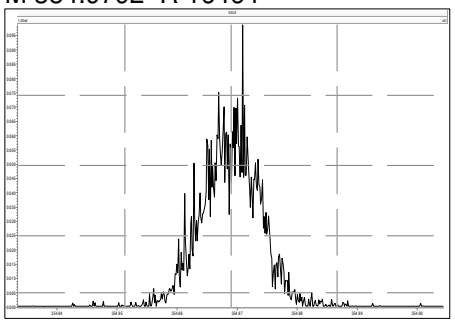
M 330.9792 R 17126



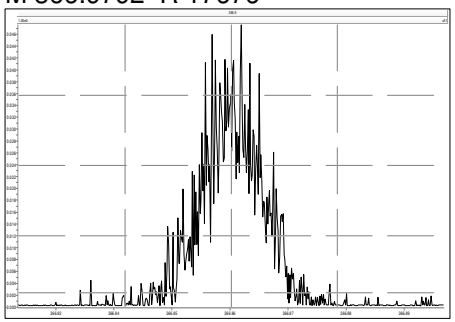
M 342.9792 R 16076



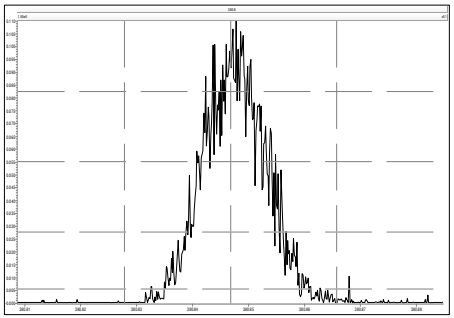
M 354.9792 R 16464



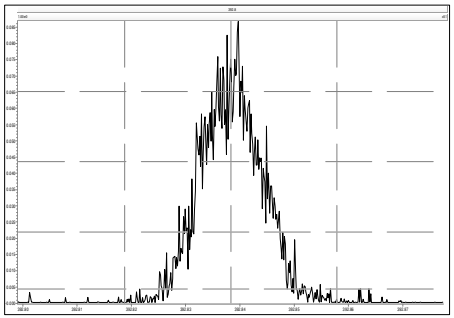
M 366.9792 R 17676



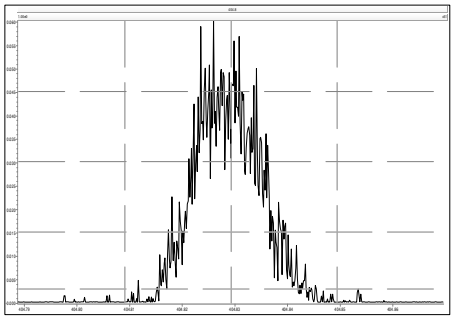
M 380.9760 R 16139



M 392.9760 R 16953



M 404.9760 R 15899



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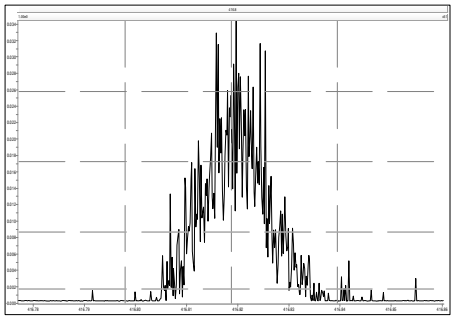

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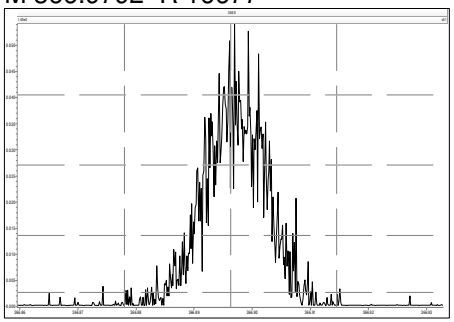

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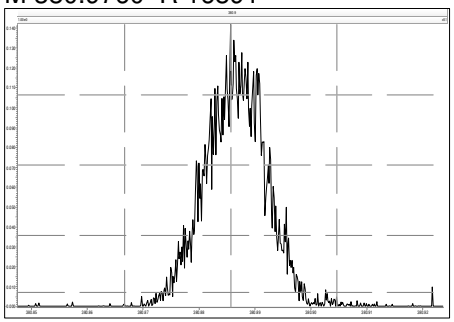

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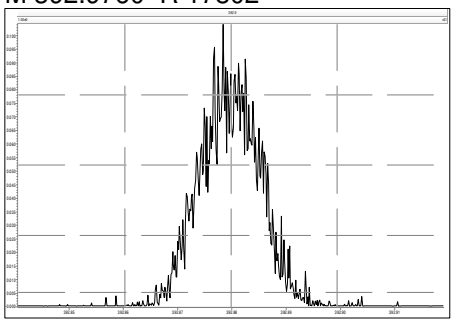

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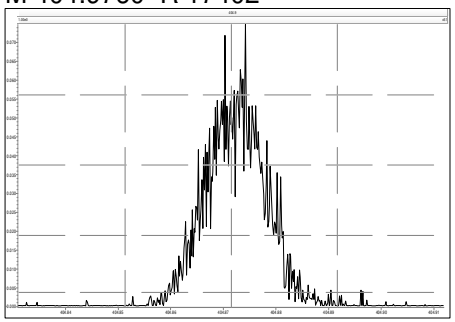

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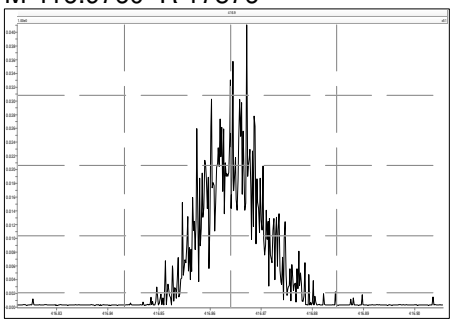

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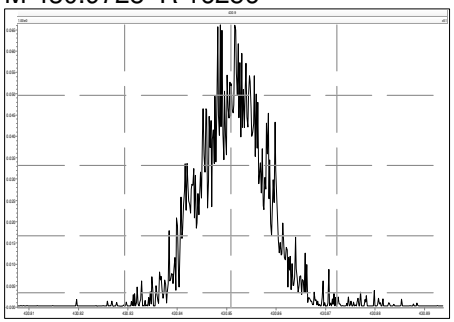
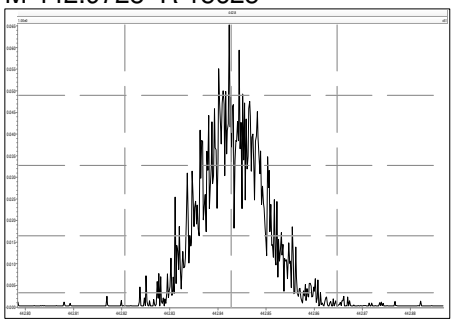


M 442.9728 R 15625



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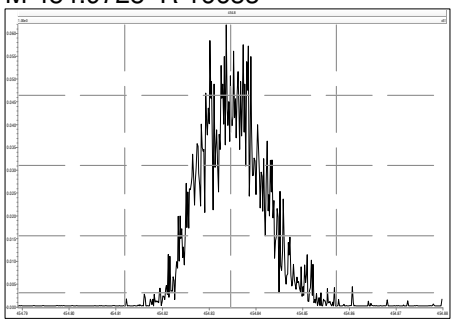

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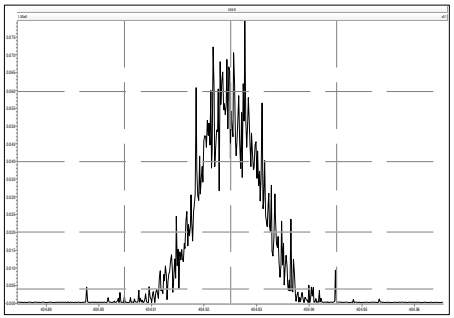

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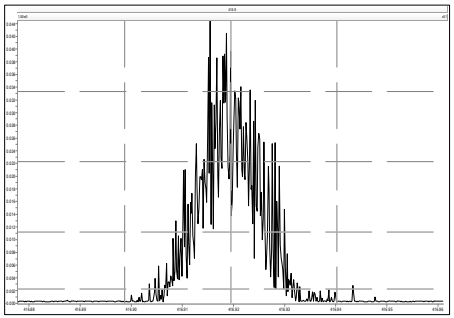

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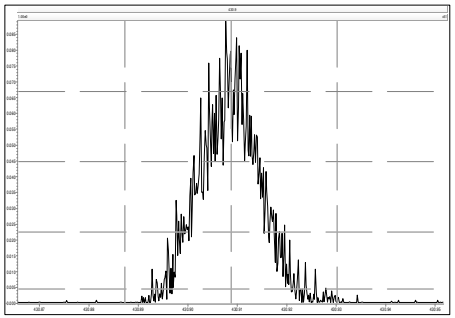

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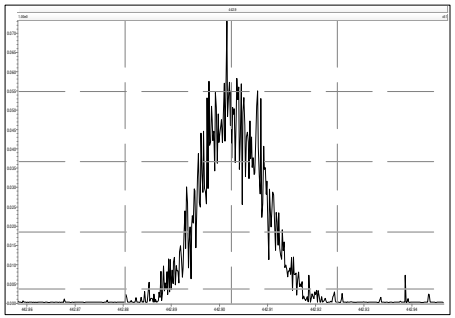

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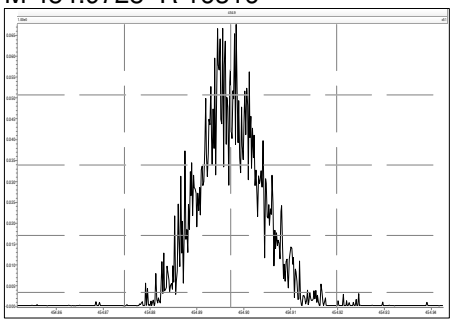

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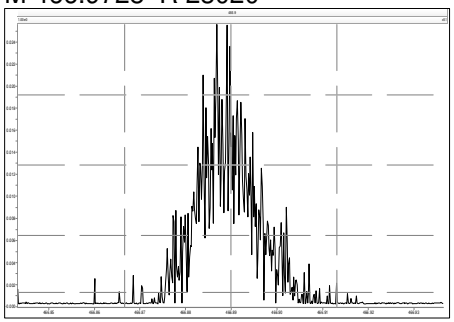

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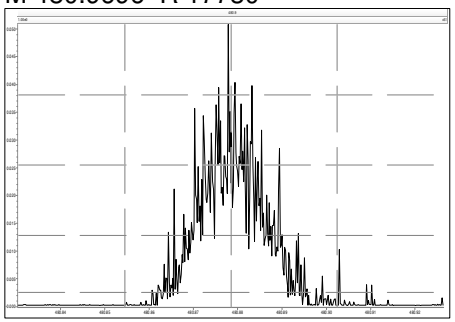

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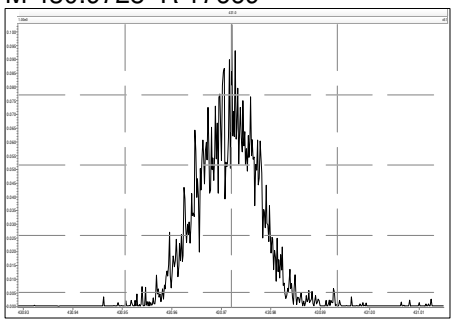

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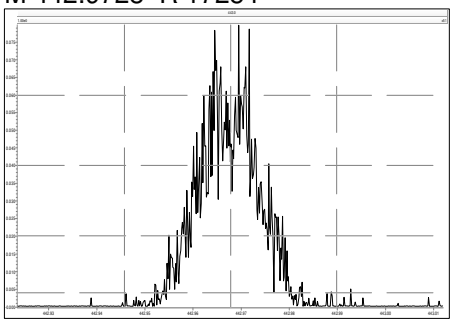

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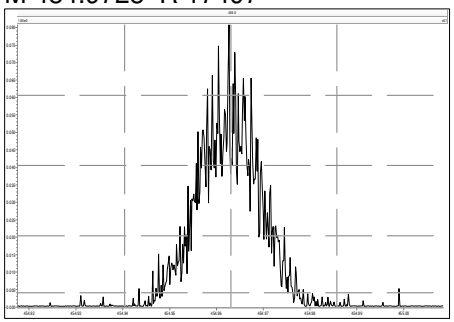

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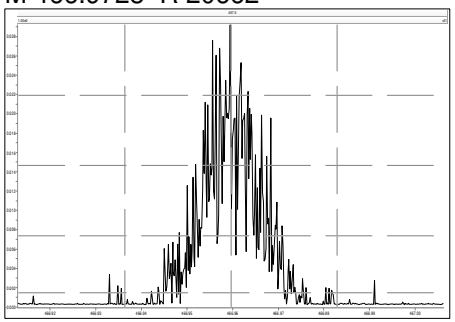

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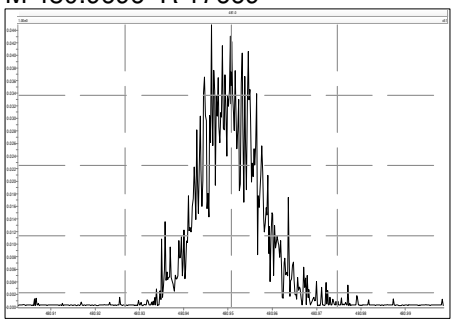

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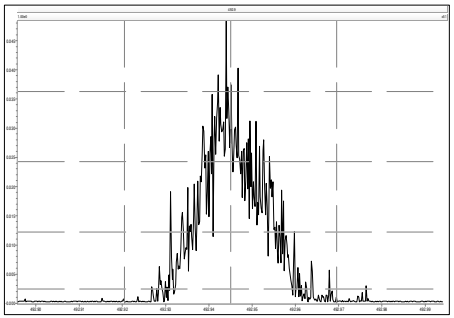

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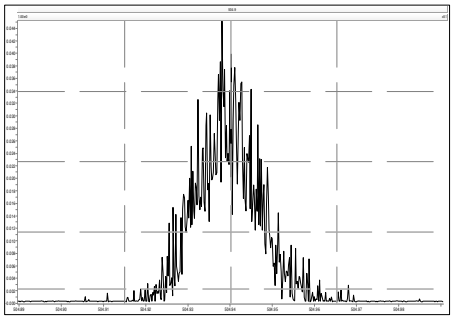

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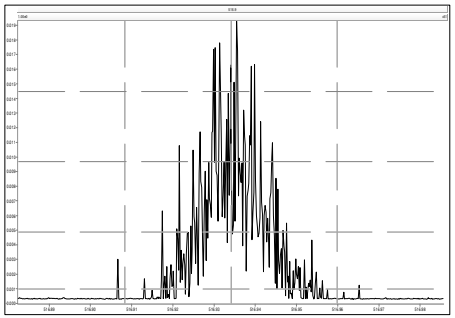

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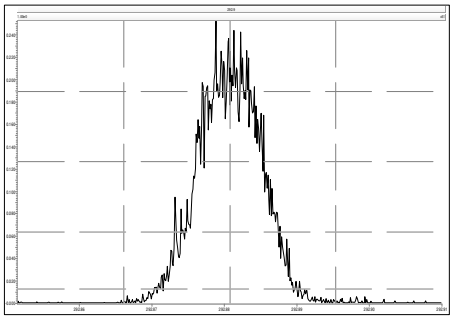

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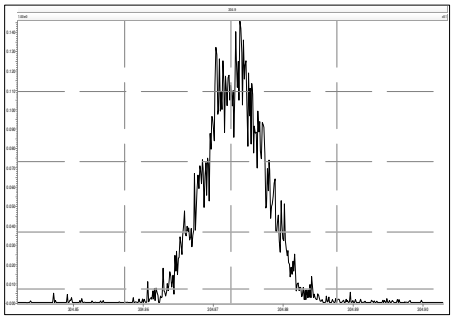

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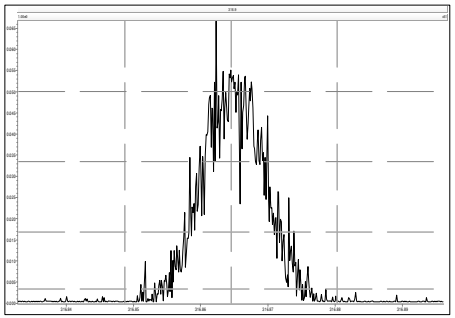

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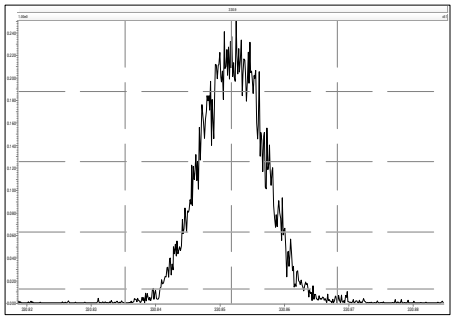

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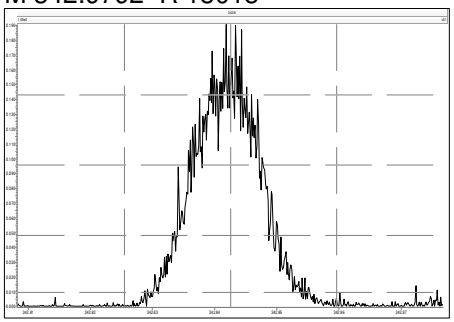

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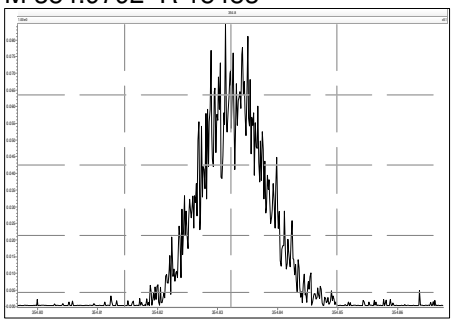
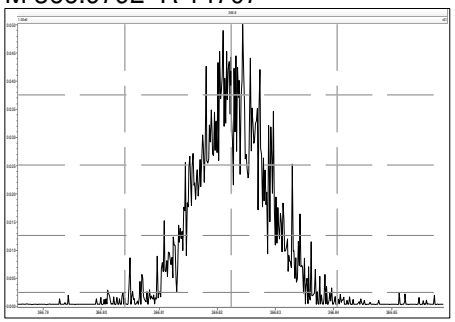
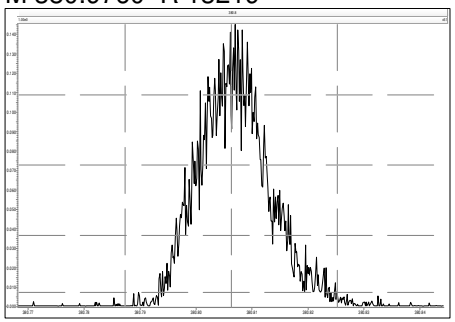


M 366.9792 R 14707



M 380.9760 R 13219



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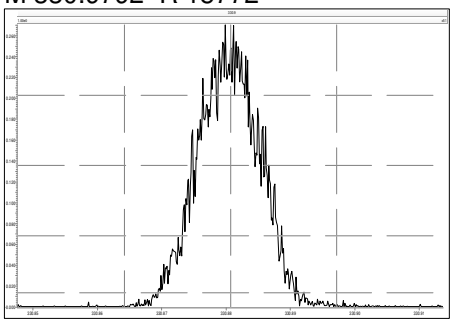

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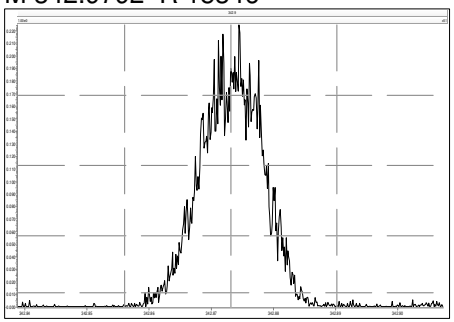

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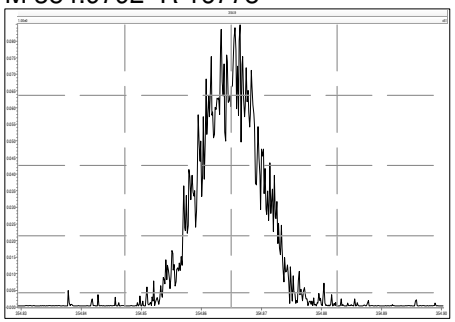

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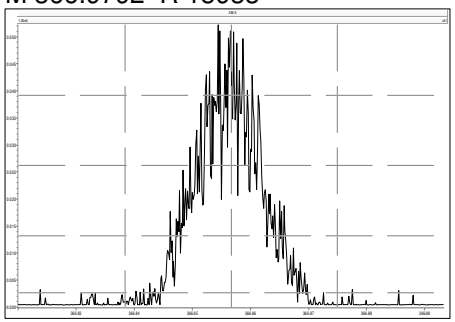

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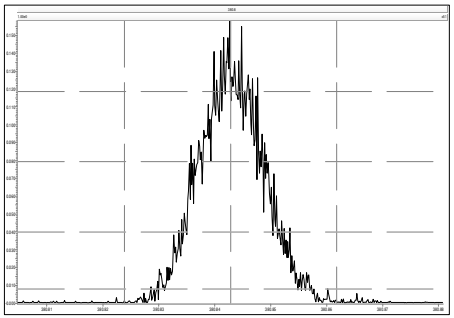

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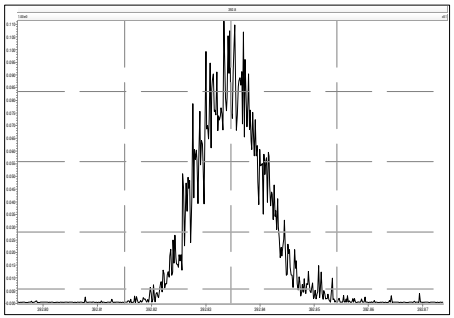

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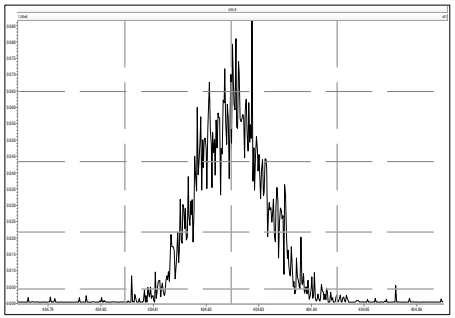

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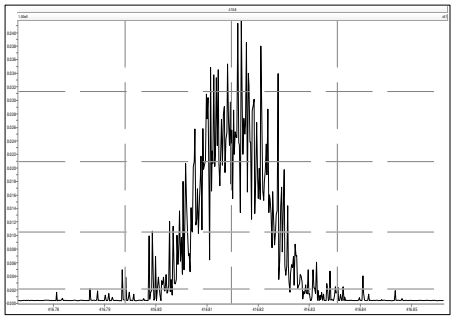

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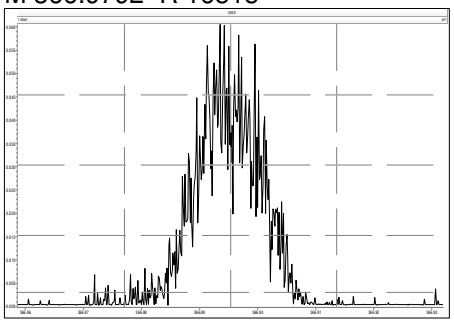

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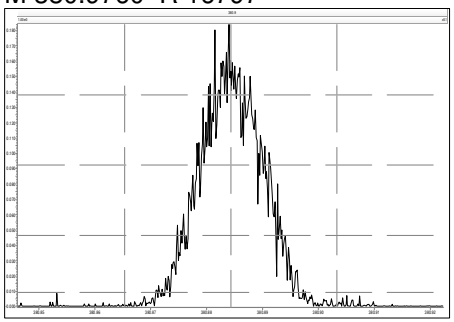

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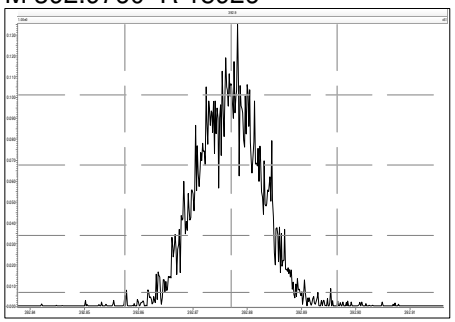

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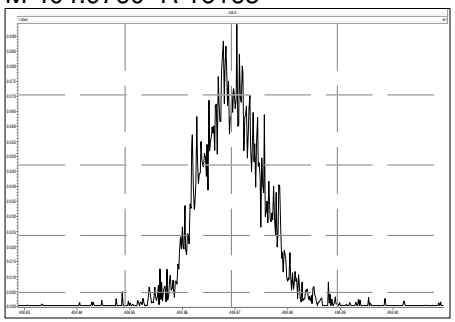
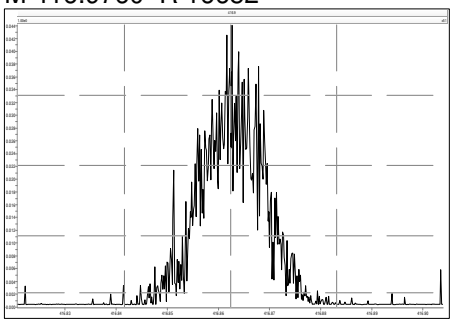
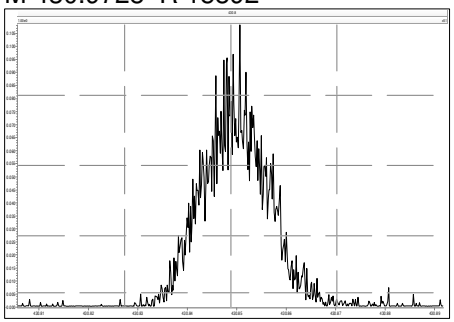


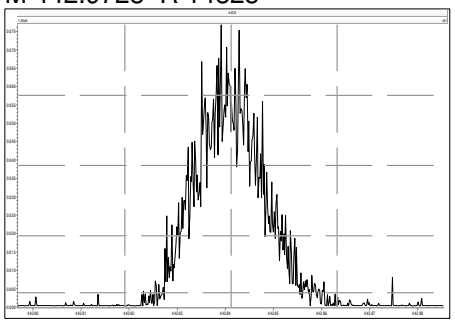
M 416.9760 R 16652



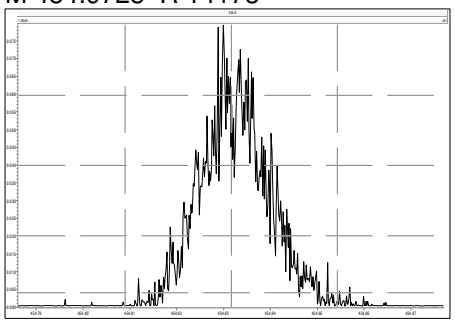
M 430.9728 R 15892



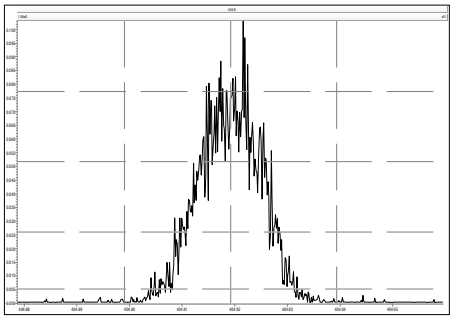
M 442.9728 R 14825



M 454.9728 R 14173



M 404.9760 R 15575



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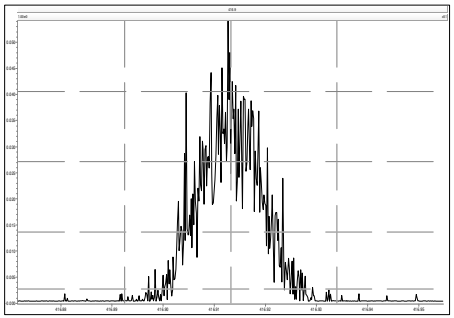

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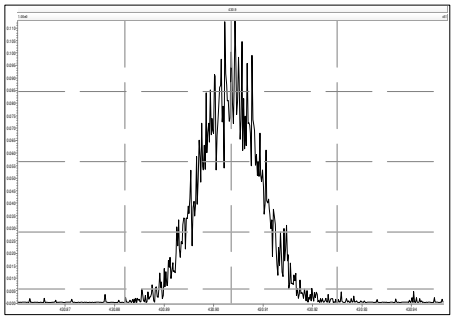
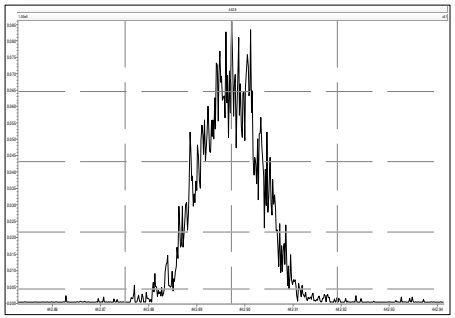


M 442.9728 R 16890



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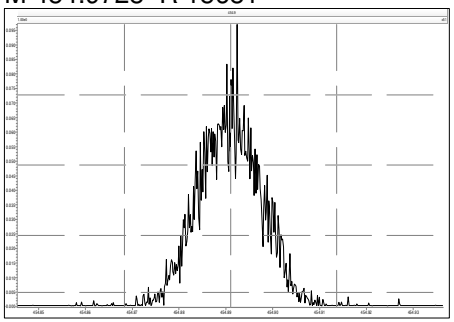
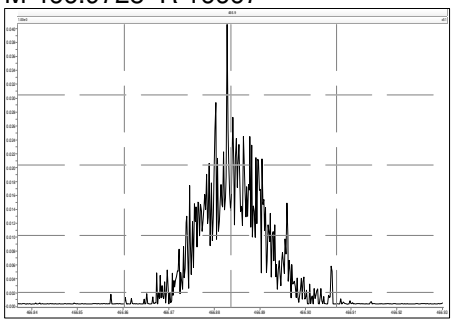
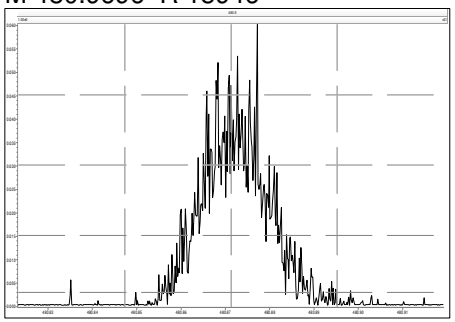


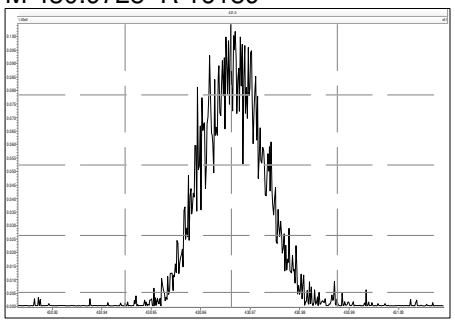
M 466.9728 R 16667



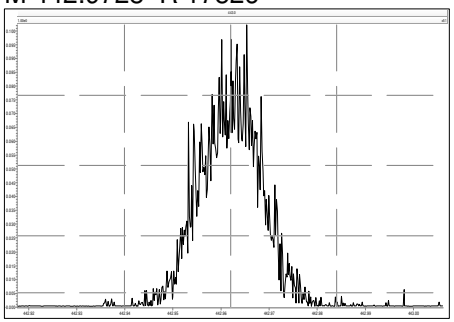
M 480.9696 R 15946



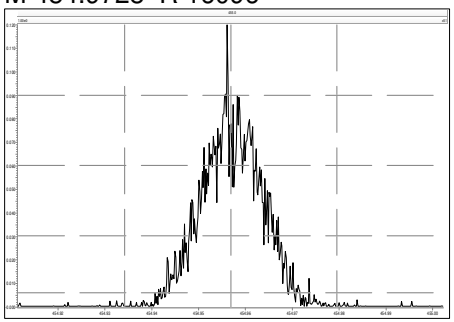
M 430.9728 R 16189



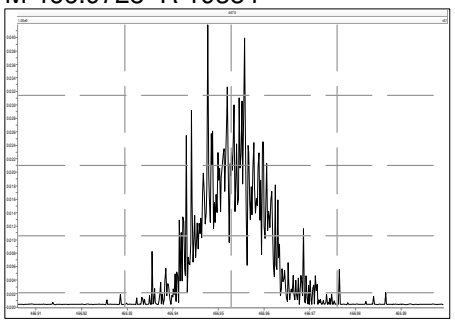
M 442.9728 R 17526



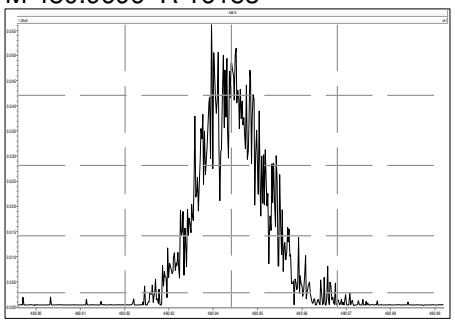
M 454.9728 R 16096



M 466.9728 R 19384

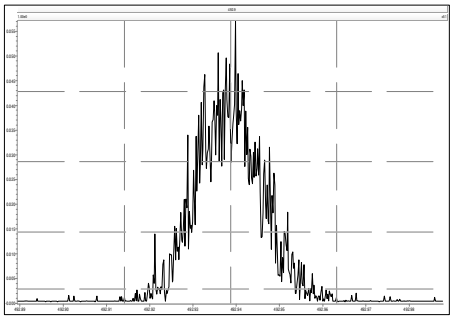


M 480.9696 R 16153

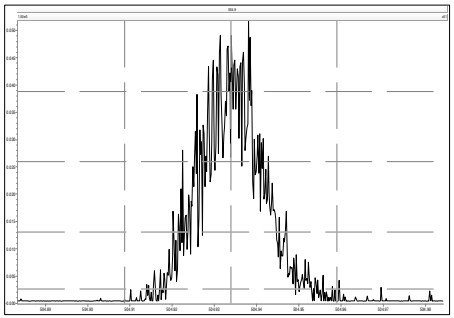


Printed: Saturday, February 05, 2022 06:43:23 Eastern Standard Time

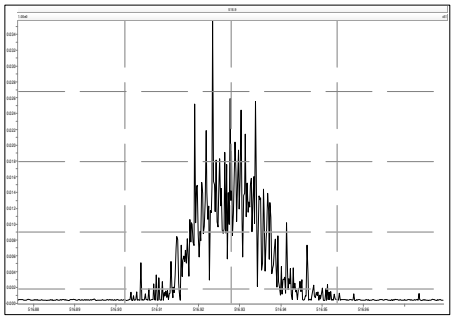
M 492.9696 R 16523



M 504.9696 R 15892



M 516.9697 R 19548



Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 0.25 pg/uL CS0	211110C05 0.5 pg/uL CS1	211110C06 2 pg/uL CS2	211110C07 10 pg/uL CS3	211110C08 40 pg/uL CS4	211110C09 200 pg/uL CS5	211110C10 500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 **0.25 pg/uL CS0**	211110C05 **0.5 pg/uL CS1**	211110C06 **2 pg/uL CS2**	211110C07 **10 pg/uL CS3**	211110C08 **40 pg/uL CS4**	211110C09 **200 pg/uL CS5**	211110C10 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28	1.33

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

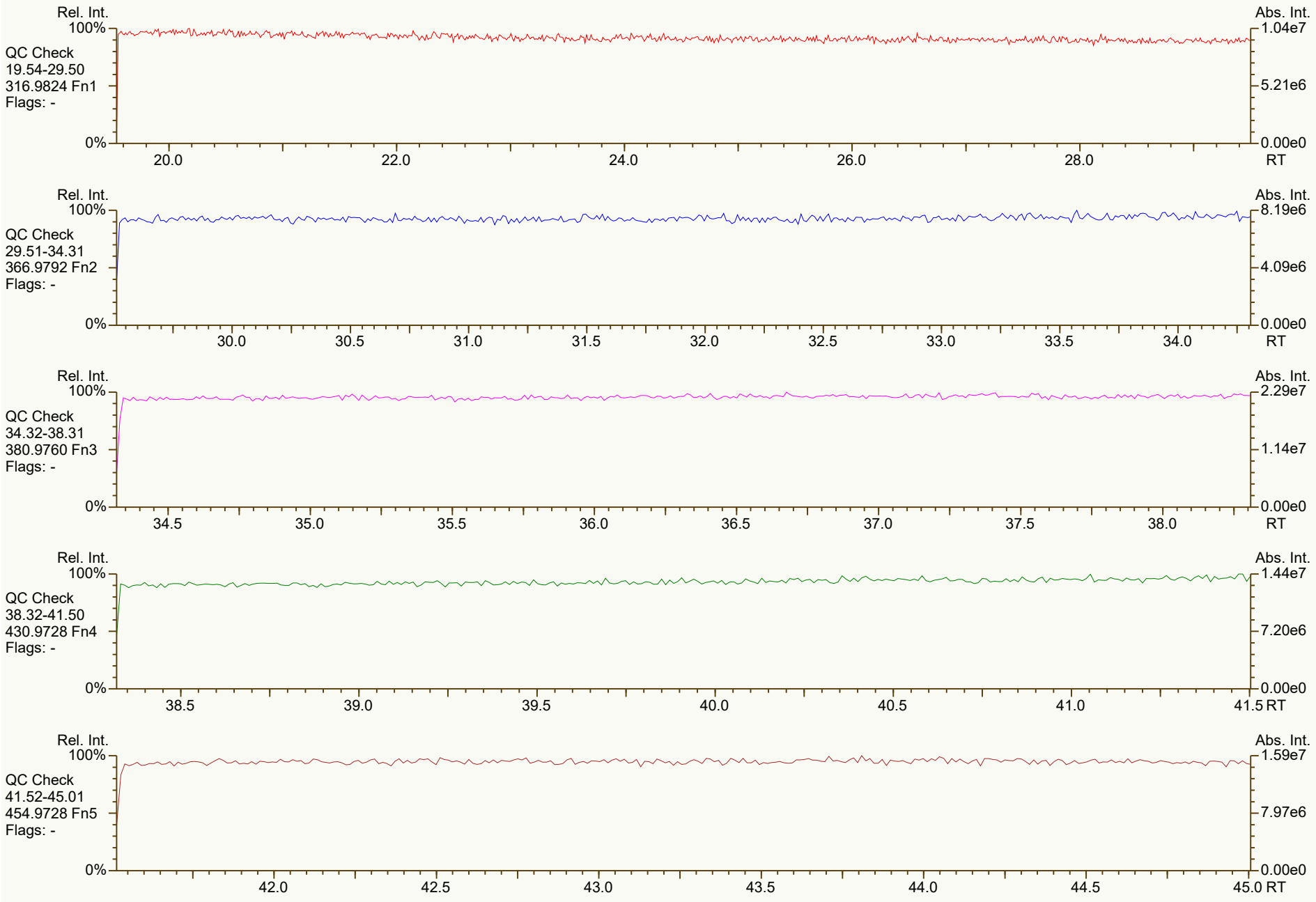
APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

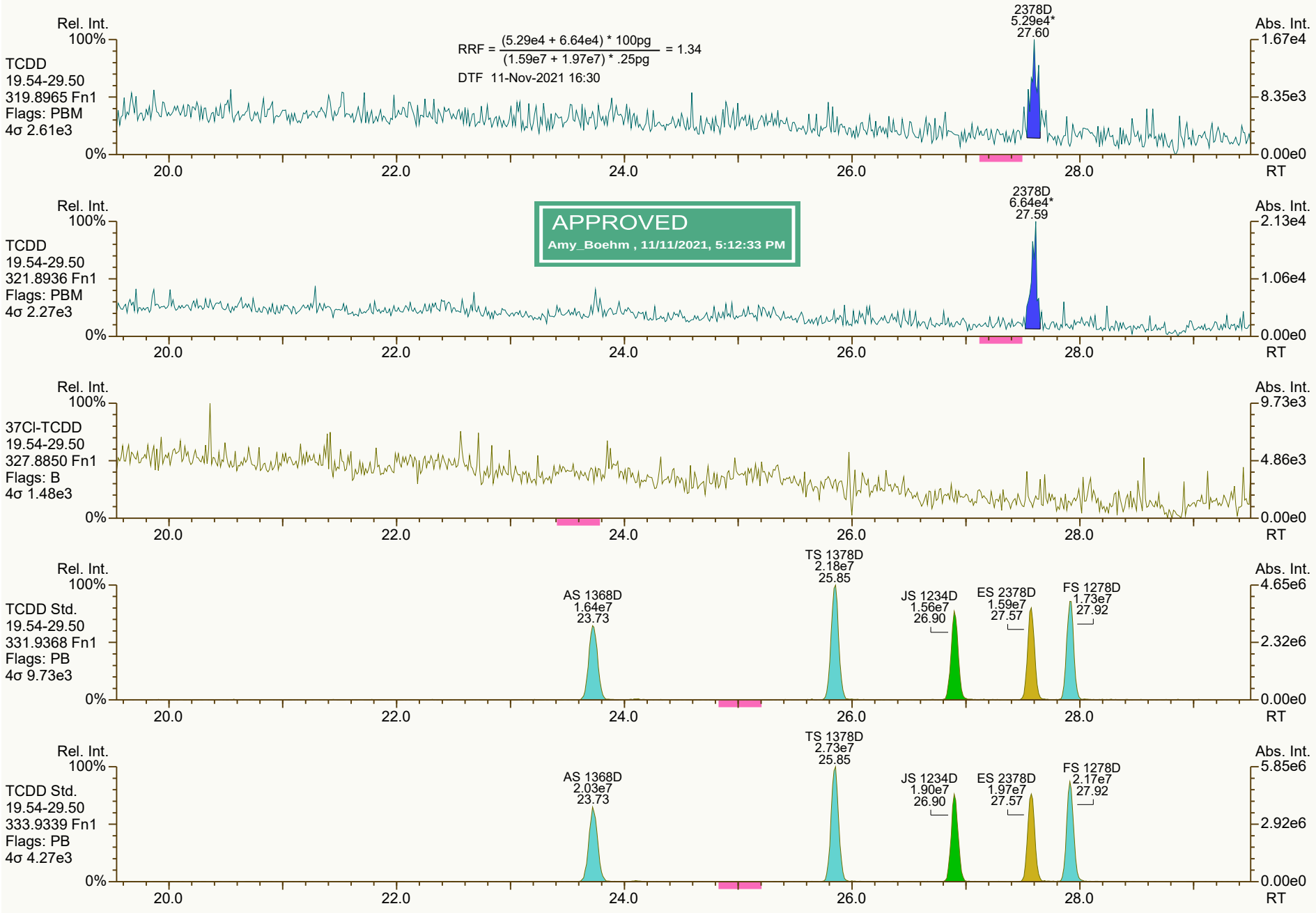
Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

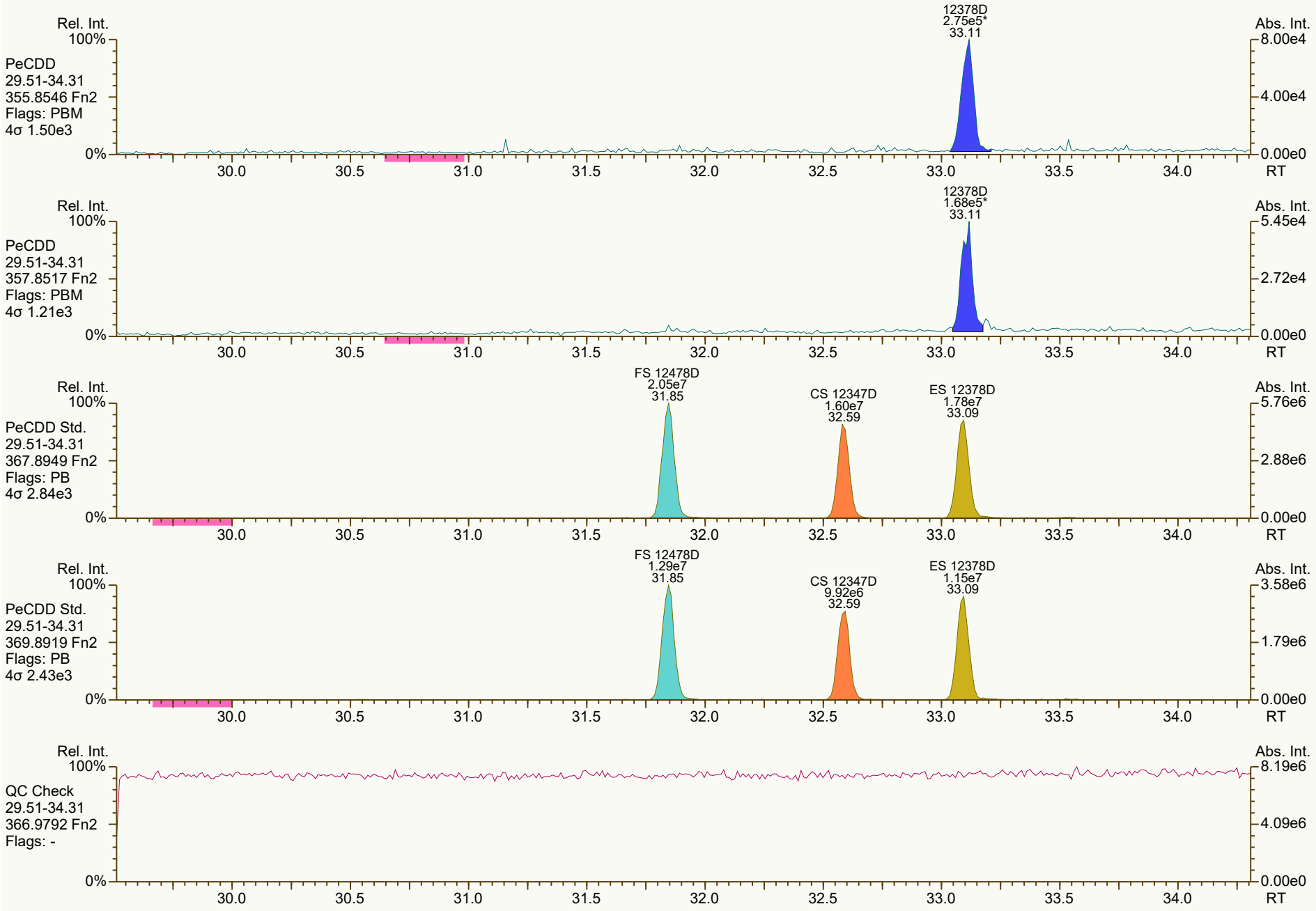
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:02 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA	UTP: 11-Nov-2021 16:23:33 DTF	Checkcode: 245-007-QLD
Sample ID: 25-6-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C04

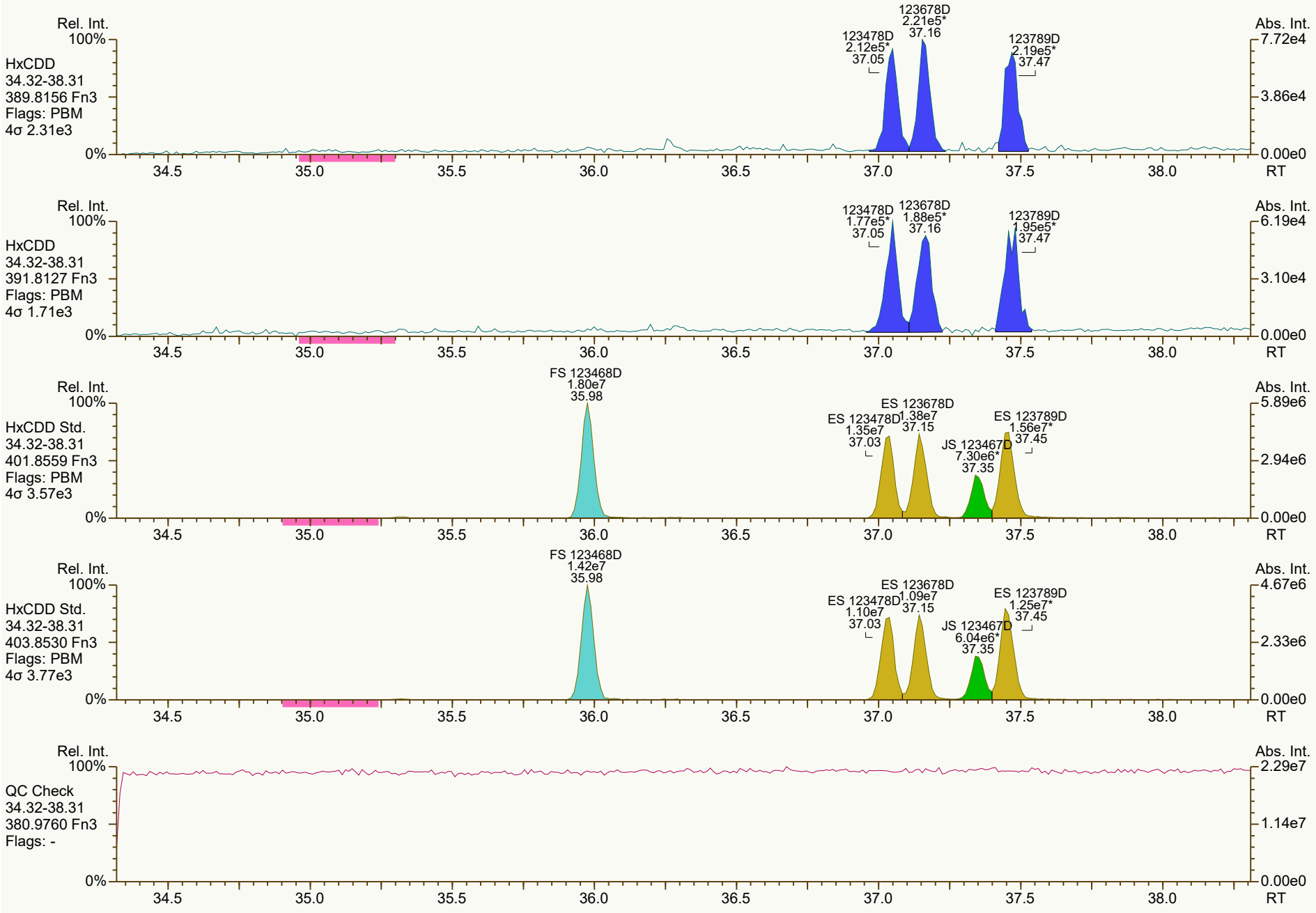
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

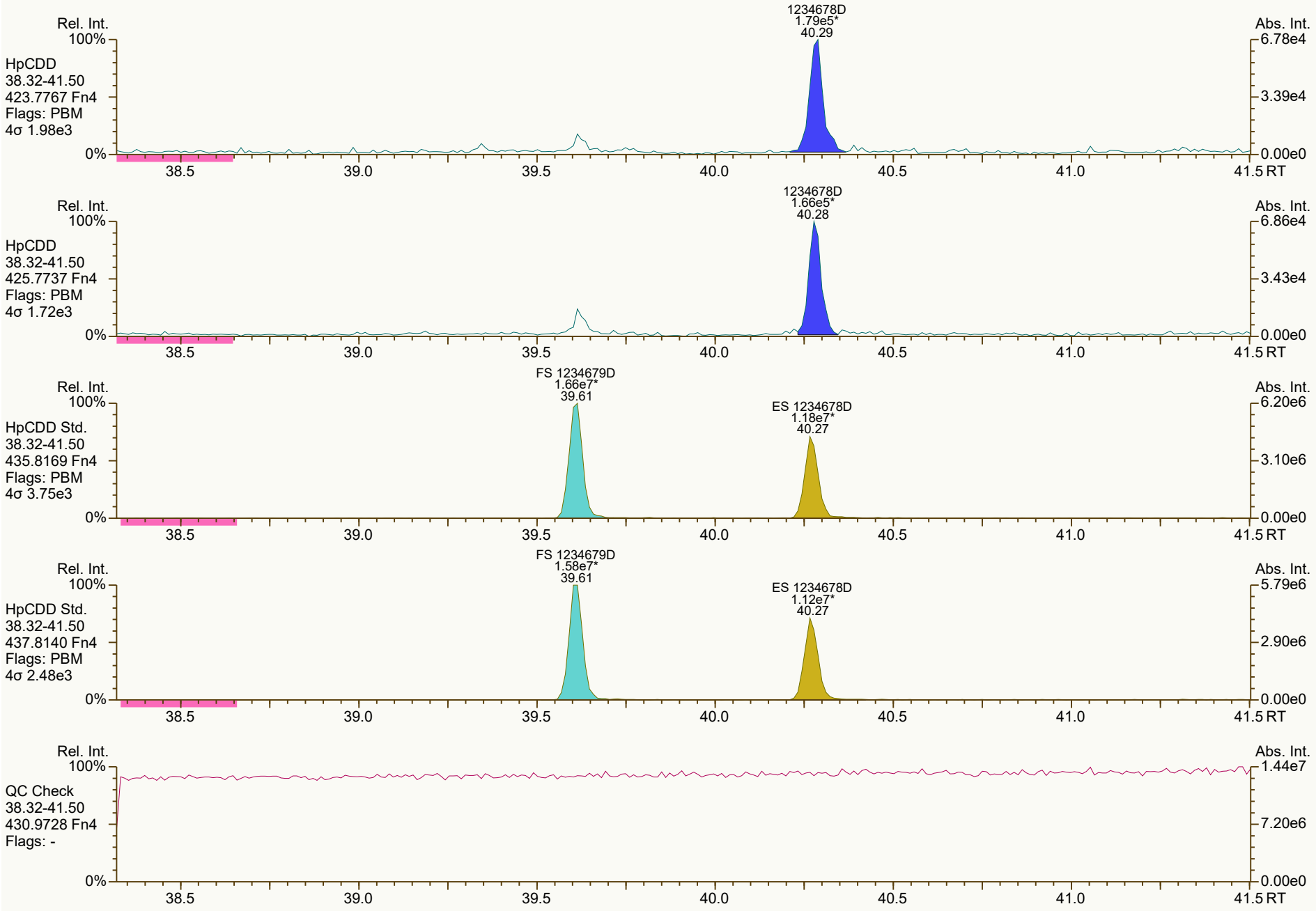
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF					ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF					Checkcode: 245-007-QLD
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF					Datafile: 211110C04
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%

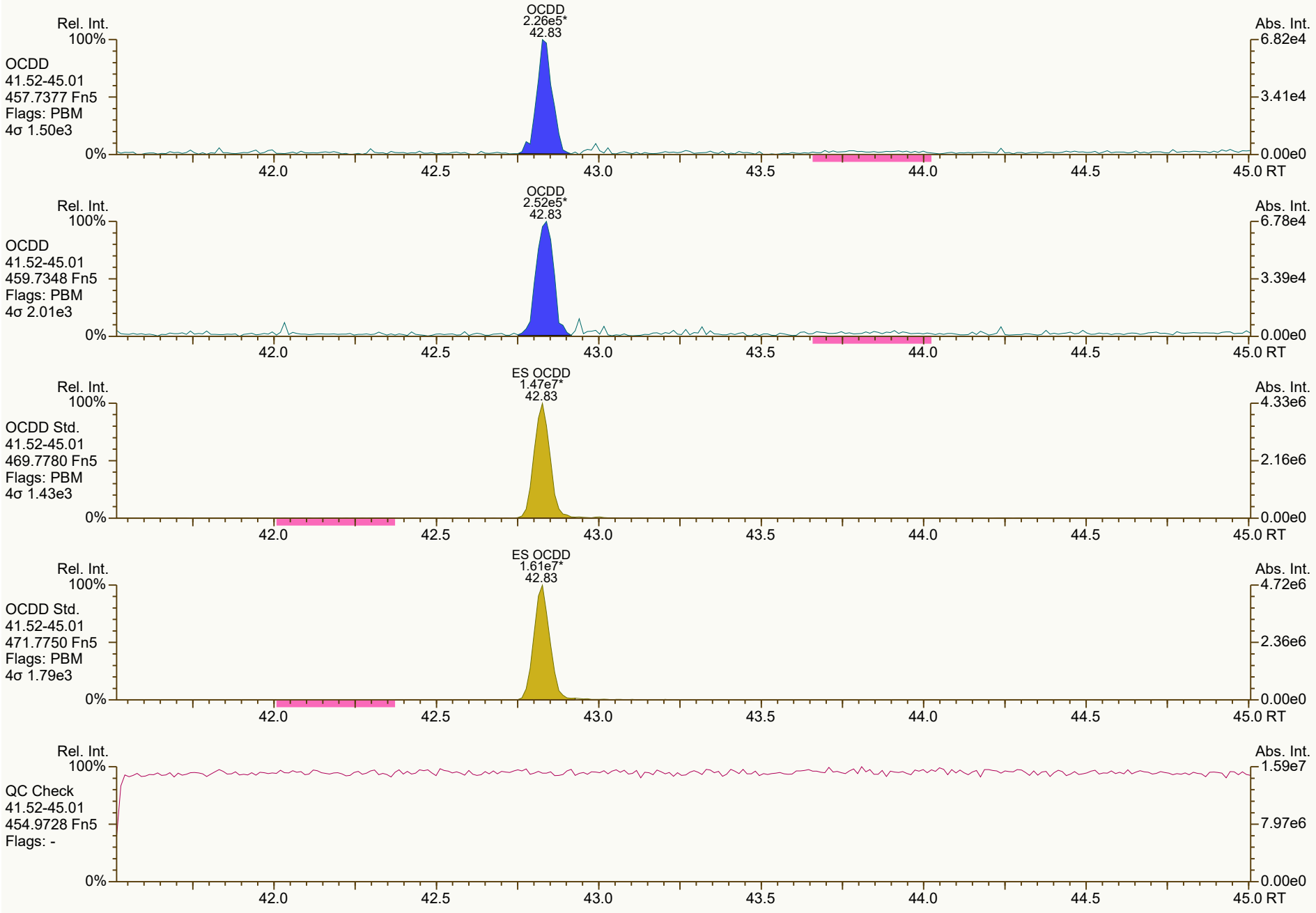

Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.04e7
5.21e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.19e6
4.09e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.29e7
1.14e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.44e7
7.20e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.97e6
0.00e0

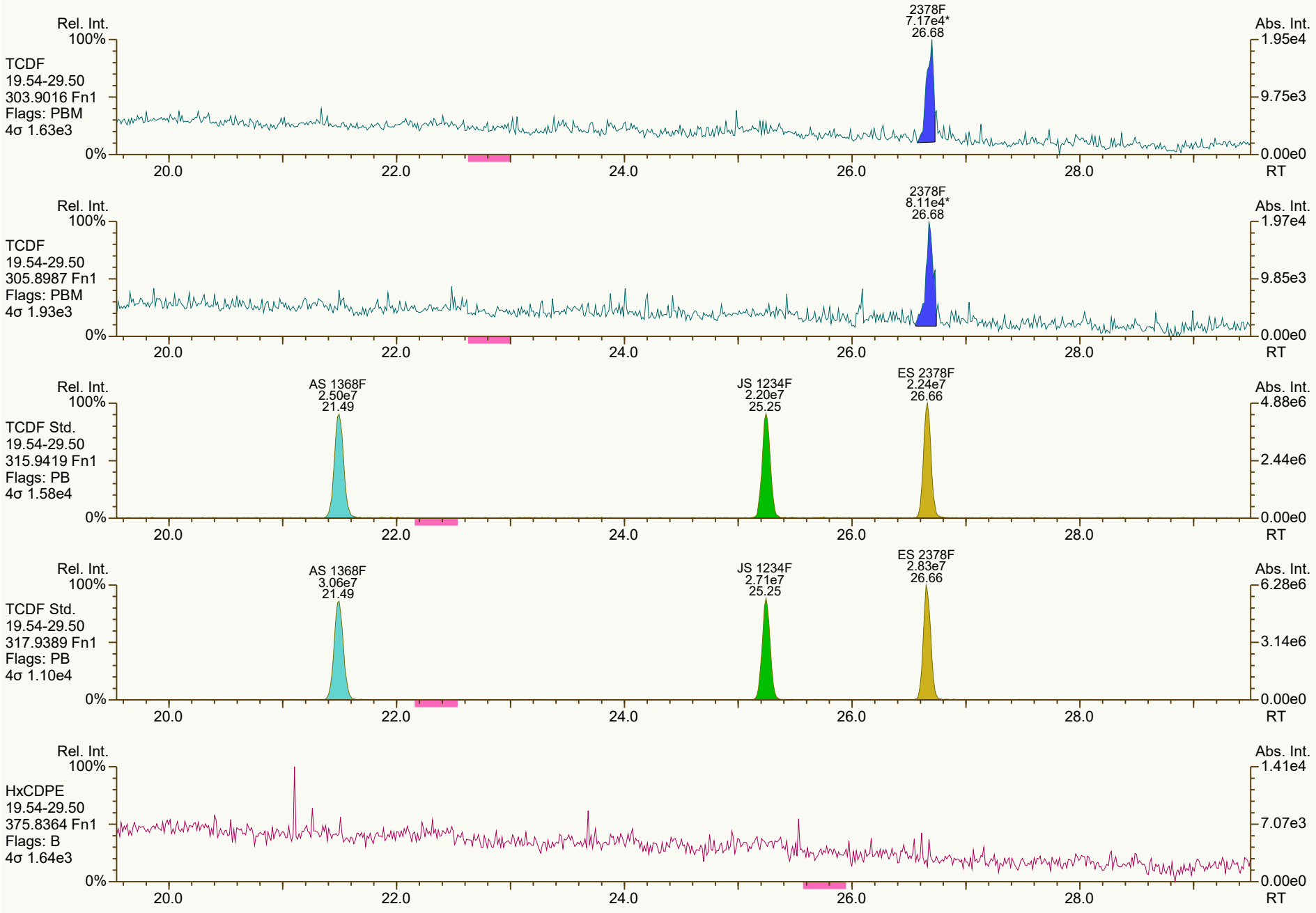

Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PBM
4σ 2.61e3
0%
RRF = (5.29e4 + 6.64e4) * 100pg / (1.59e7 + 1.97e7) * .25pg = 1.34
DTF 11-Nov-2021 16:30
2378D
5.29e4*
27.60
Abs. Int.
1.67e4
8.35e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
APPROVED
Amy_Boehm , 11/11/2021, 5:12:33 PM
TCDD
19.54-29.50
321.8936 Fn1
Flags: PBM
4σ 2.27e3
2378D
6.64e4*
27.59
2.13e4
1.06e4
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.48e3
9.73e3
4.86e3
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 9.73e3
AS 1368D
1.64e7
23.73
TS 1378D
2.18e7
25.85
JS 1234D
1.56e7
26.90
ES 2378D
1.59e7
27.57
FS 1278D
1.73e7
27.92
4.65e6
2.32e6
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.27e3
AS 1368D
2.03e7
23.73
TS 1378D
2.73e7
25.85
JS 1234D
1.90e7
26.90
ES 2378D
1.97e7
27.57
FS 1278D
2.17e7
27.92
5.85e6
2.92e6


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
Abs. Int.
8.00e4
4.00e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.68e5*
33.11
Abs. Int.
5.45e4
2.72e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
Abs. Int.
5.76e6
2.88e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

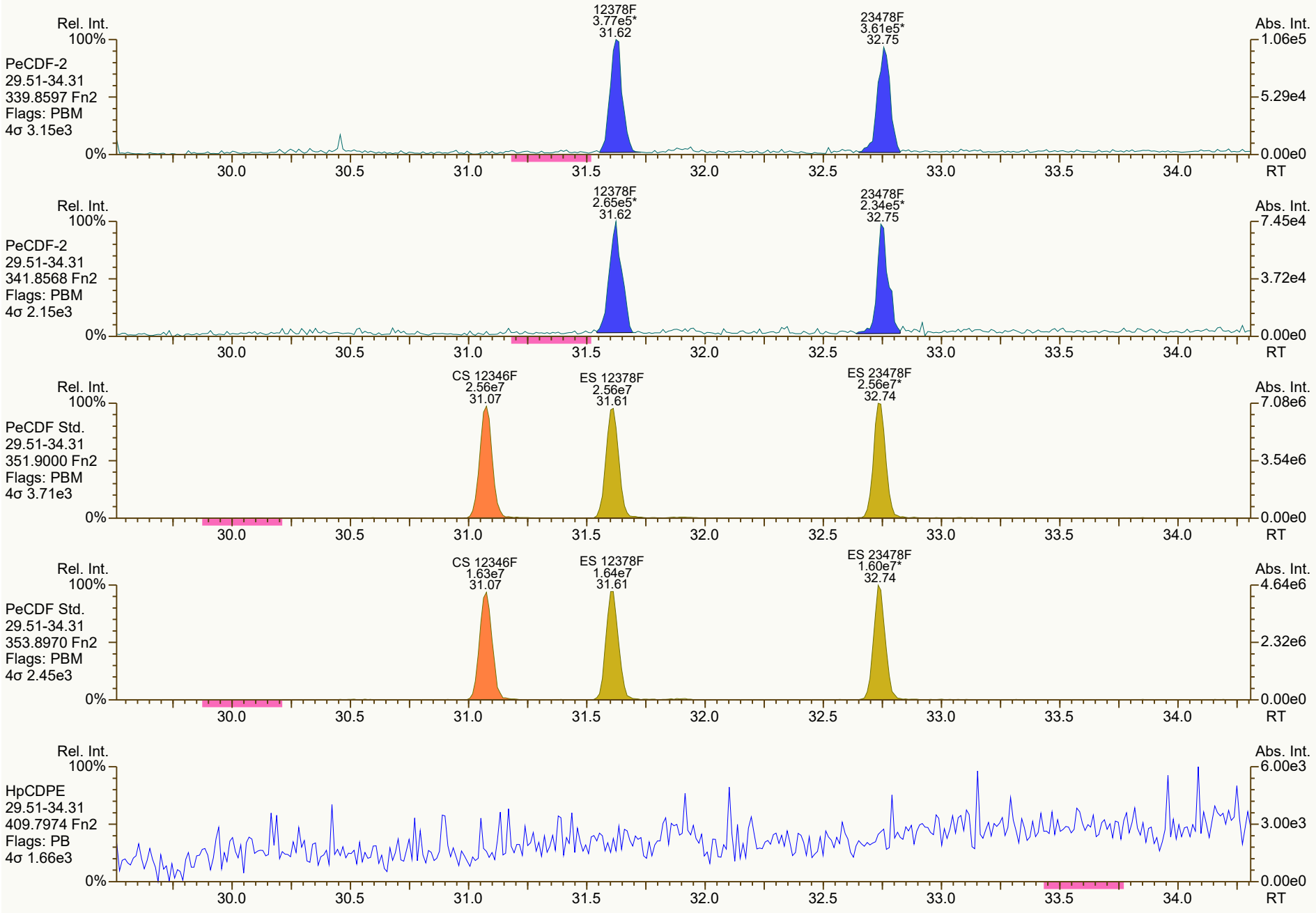

Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
123478D 2.12e5* 37.05
123678D 2.21e5* 37.16
123789D 2.19e5* 37.47
7.72e4
3.86e4
0.00e0
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
123478D 1.77e5* 37.05
123678D 1.88e5* 37.16
123789D 1.95e5* 37.47
6.19e4
3.10e4
0.00e0
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
FS 123468D 1.80e7 35.98
ES 123478D 1.35e7 37.03
ES 123678D 1.38e7 37.15
JS 123467D 7.30e6* 37.35
ES 123789D 1.56e7* 37.45
5.89e6
2.94e6
0.00e0
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
FS 123468D 1.42e7 35.98
ES 123478D 1.10e7 37.03
ES 123678D 1.09e7 37.15
JS 123467D 6.04e6* 37.35
ES 123789D 1.25e7* 37.45
4.67e6
2.33e6
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.29e7
1.14e7
0.00e0
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

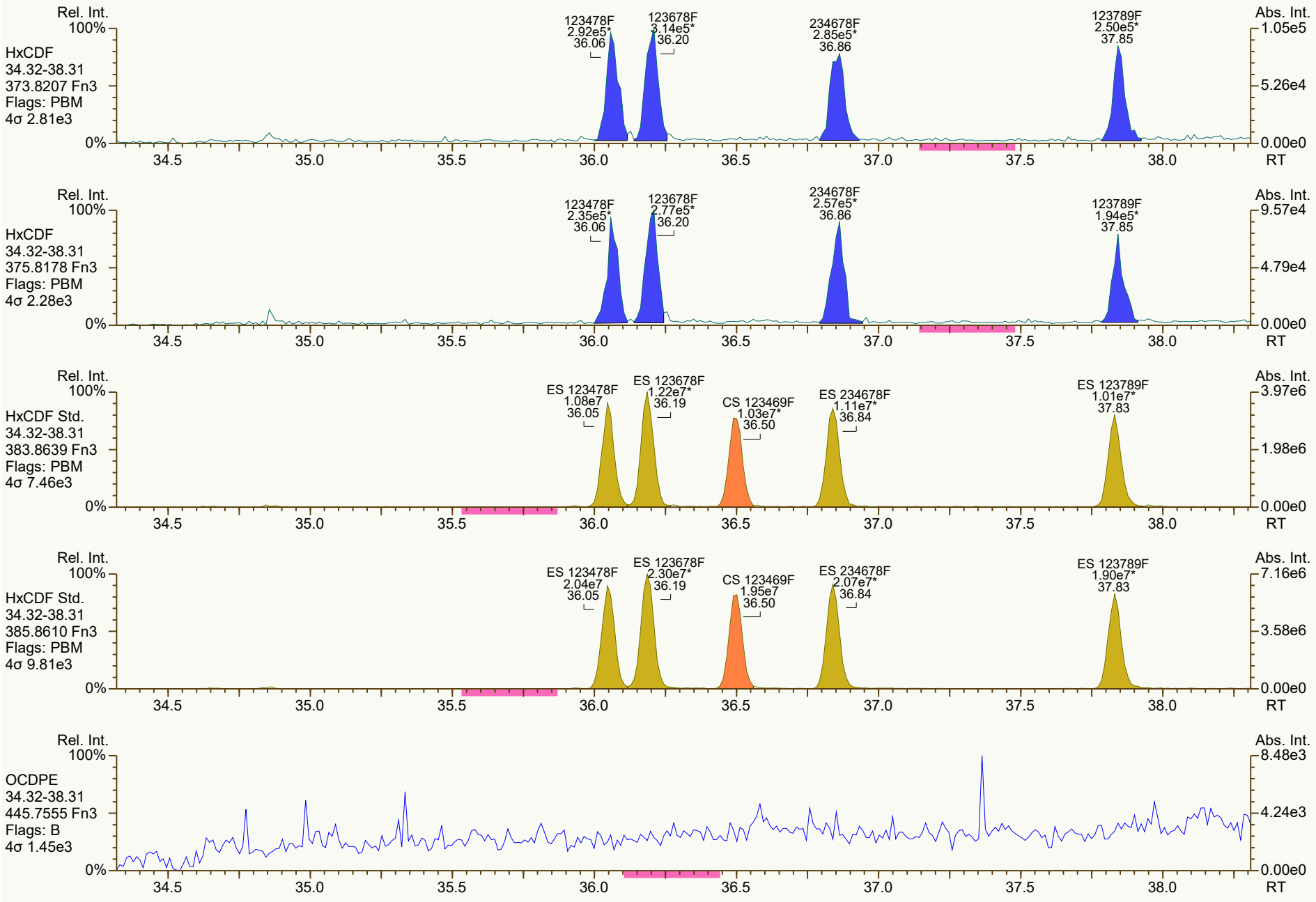

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
0%
1234678D
1.79e5*
40.29
Abs. Int.
6.78e4
3.39e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
0%
1234678D
1.66e5*
40.28
Abs. Int.
6.86e4
3.43e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
0%
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
Abs. Int.
6.20e6
3.10e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
0%
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
Abs. Int.
5.79e6
2.90e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

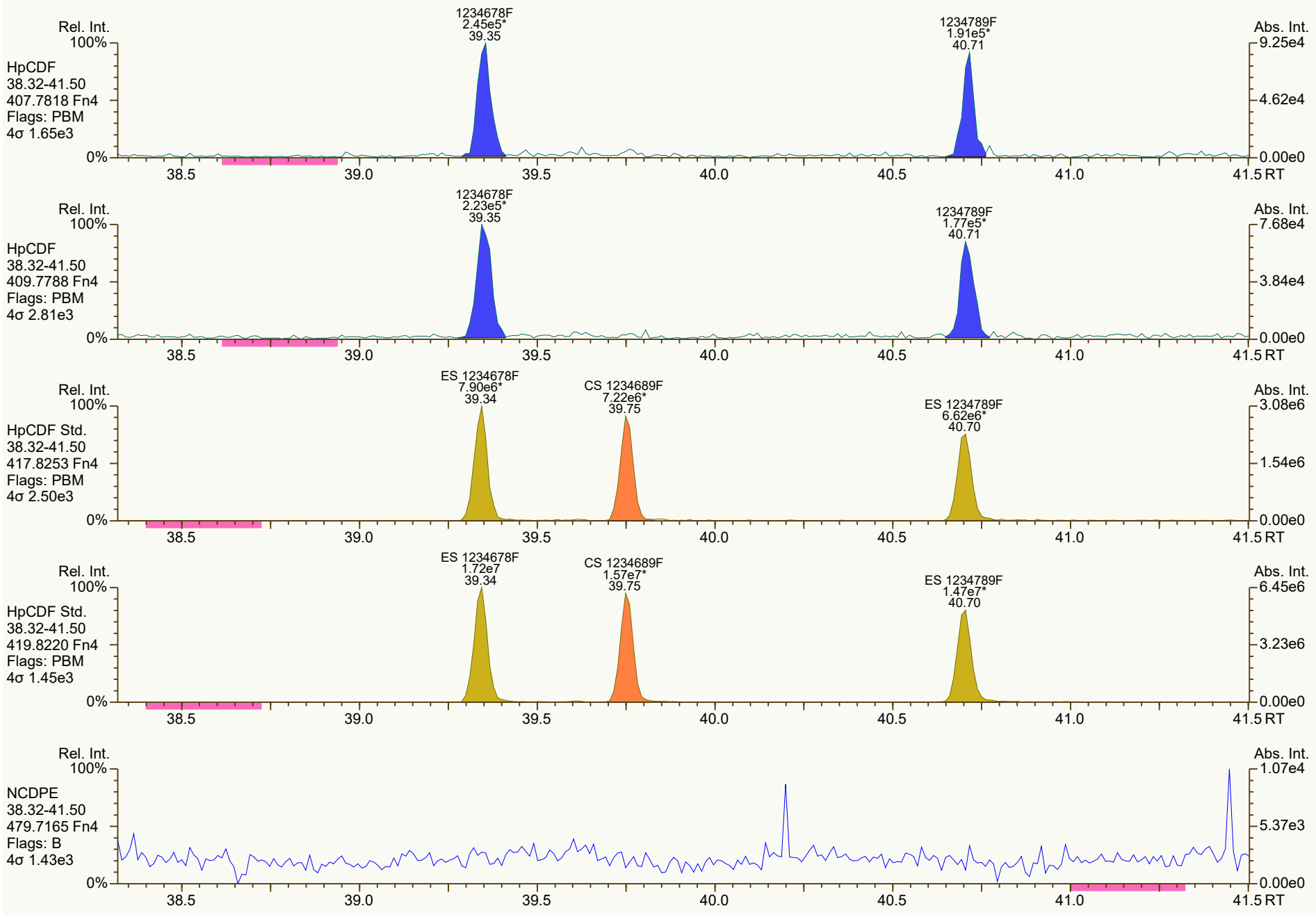

OCDD
2.26e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
6.82e4
3.41e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.52e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.47e7*
42.83
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
0%
Abs. Int.
4.33e6
2.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7*
42.83
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
0%
Abs. Int.
4.72e6
2.36e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
0%
2378F
7.17e4*
26.68
Abs. Int.
1.95e4
9.75e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
0%
2378F
8.11e4*
26.68
Abs. Int.
1.97e4
9.85e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
Abs. Int.
4.88e6
2.44e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
0%
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
26.66
Abs. Int.
6.28e6
3.14e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.41e4
7.07e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.25e4
6.27e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: PB
4σ 2.44e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.40e4
7.01e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 1.85e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.04e7
5.21e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12378F
3.77e5*
31.62
23478F
3.61e5*
32.75
Abs. Int.
1.06e5
5.29e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
0%
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
Abs. Int.
7.45e4
3.72e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
0%
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
Abs. Int.
7.08e6
3.54e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
0%
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

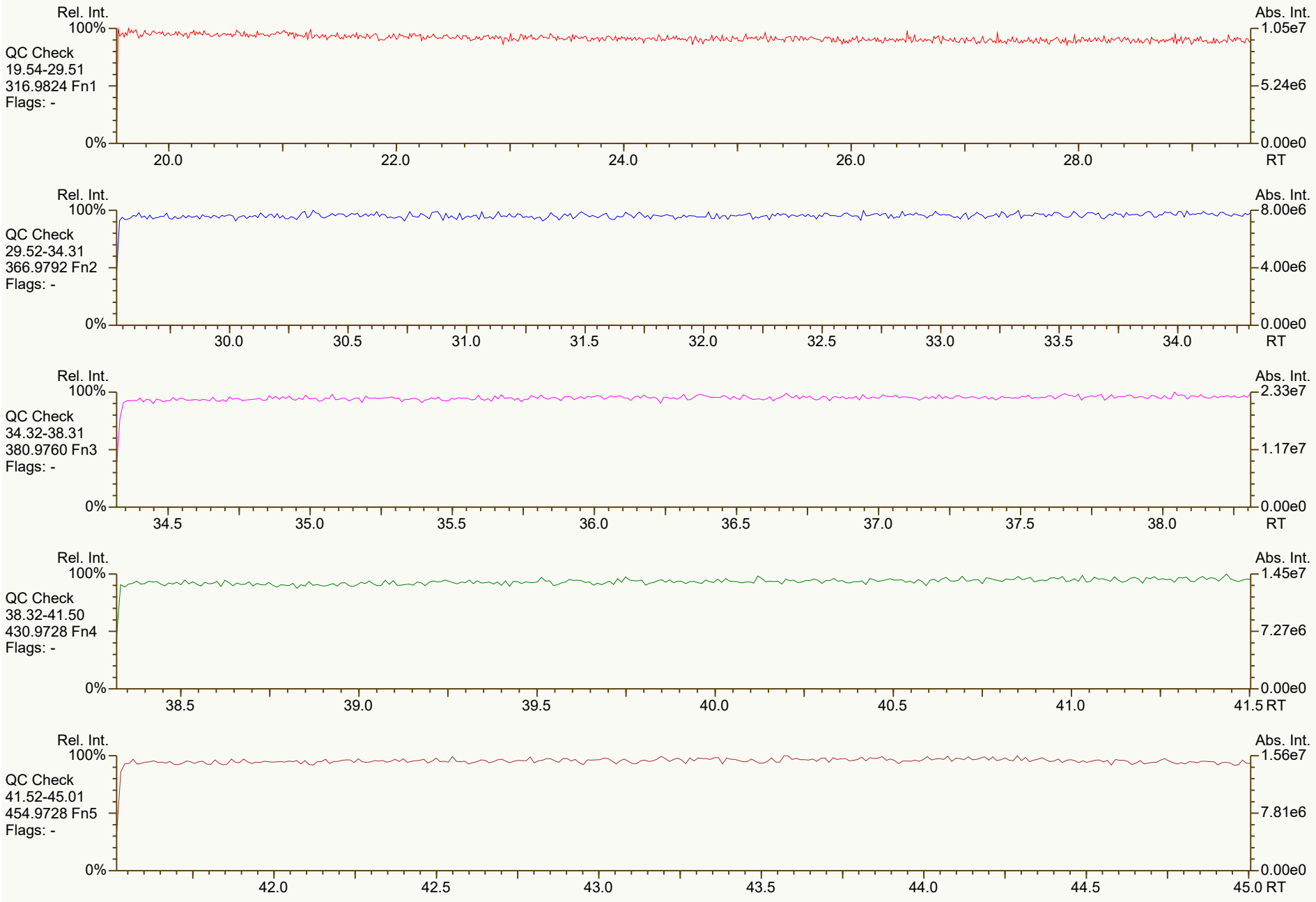

Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.81e3
0%
123478F
2.92e5*
36.06
123678F
3.14e5*
36.20
234678F
2.85e5*
36.86
123789F
2.50e5*
37.85
Abs. Int.
1.05e5
5.26e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.28e3
0%
123478F
2.35e5*
36.06
123678F
2.77e5*
36.20
234678F
2.57e5*
36.86
123789F
1.94e5*
37.85
Abs. Int.
9.57e4
4.79e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.46e3
0%
ES 123478F
1.08e7
36.05
ES 123678F
1.22e7*
36.19
CS 123469F
1.03e7*
36.50
ES 234678F
1.11e7*
36.84
ES 123789F
1.01e7*
37.83
Abs. Int.
3.97e6
1.98e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.81e3
0%
ES 123478F
2.04e7
36.05
ES 123678F
2.30e7*
36.19
CS 123469F
1.95e7
36.50
ES 234678F
2.07e7*
36.84
ES 123789F
1.90e7*
37.83
Abs. Int.
7.16e6
3.58e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
Abs. Int.
9.25e4
4.62e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
Abs. Int.
7.68e4
3.84e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
Abs. Int.
3.08e6
1.54e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
Abs. Int.
6.45e6
3.23e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
Abs. Int.
1.07e4
5.37e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

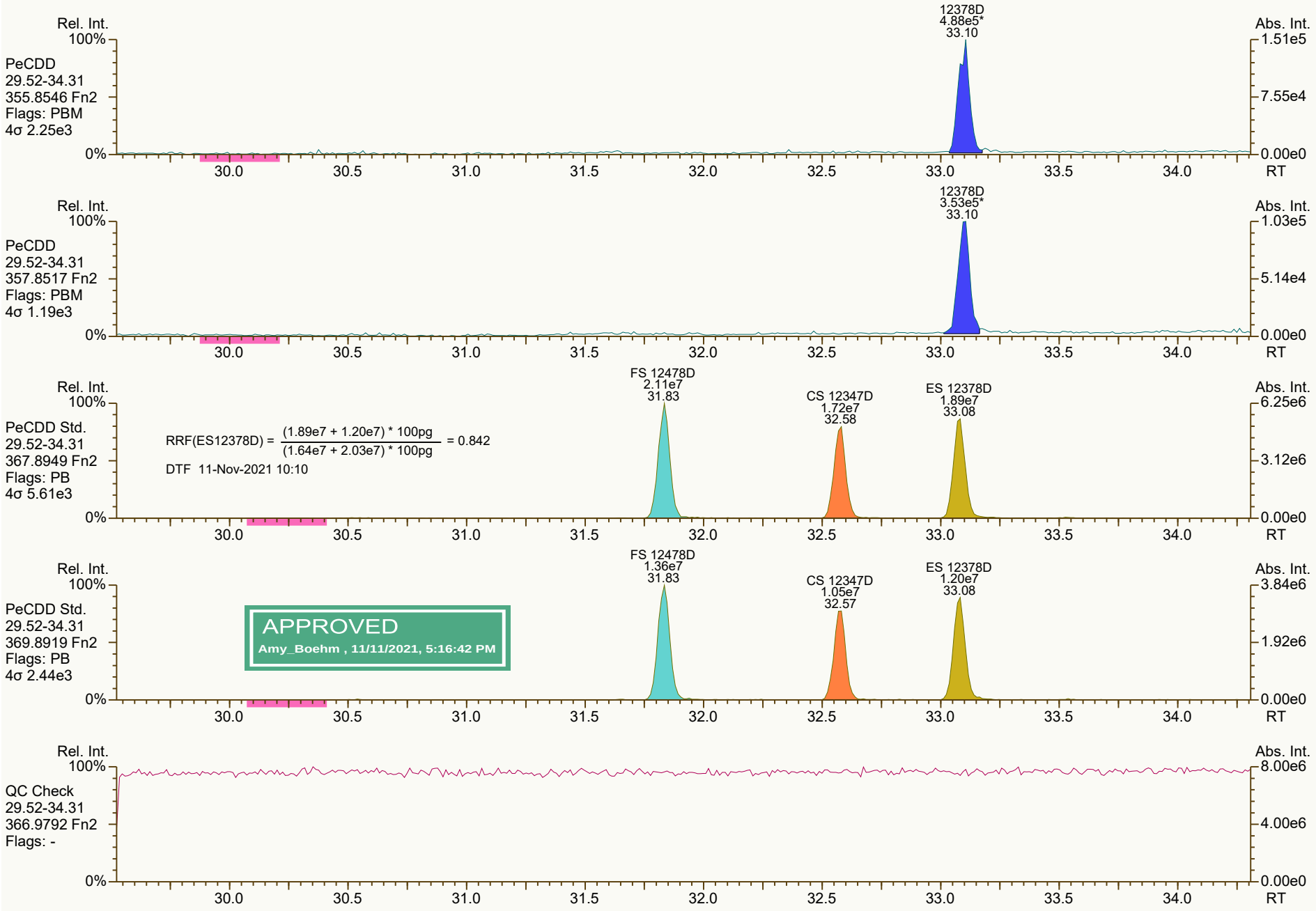

OCDF
2.83e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.07e3
0%
Abs. Int.
9.68e4
4.84e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.12e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.63e3
0%
Abs. Int.
8.96e4
4.48e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.88e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.90e3
0%
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.08e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.27e3
0%
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.52e3
0%
Abs. Int.
5.12e3
2.56e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

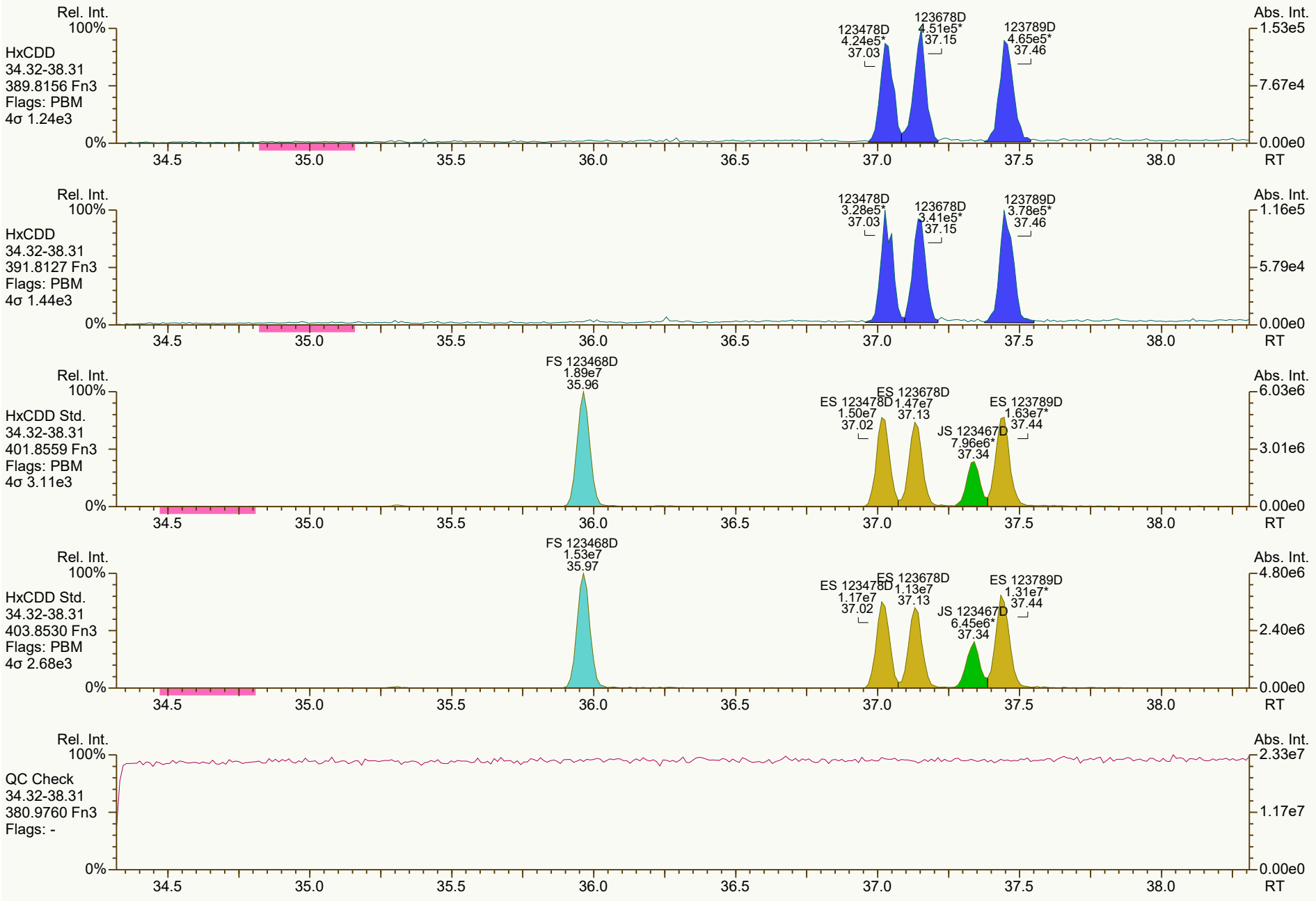
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

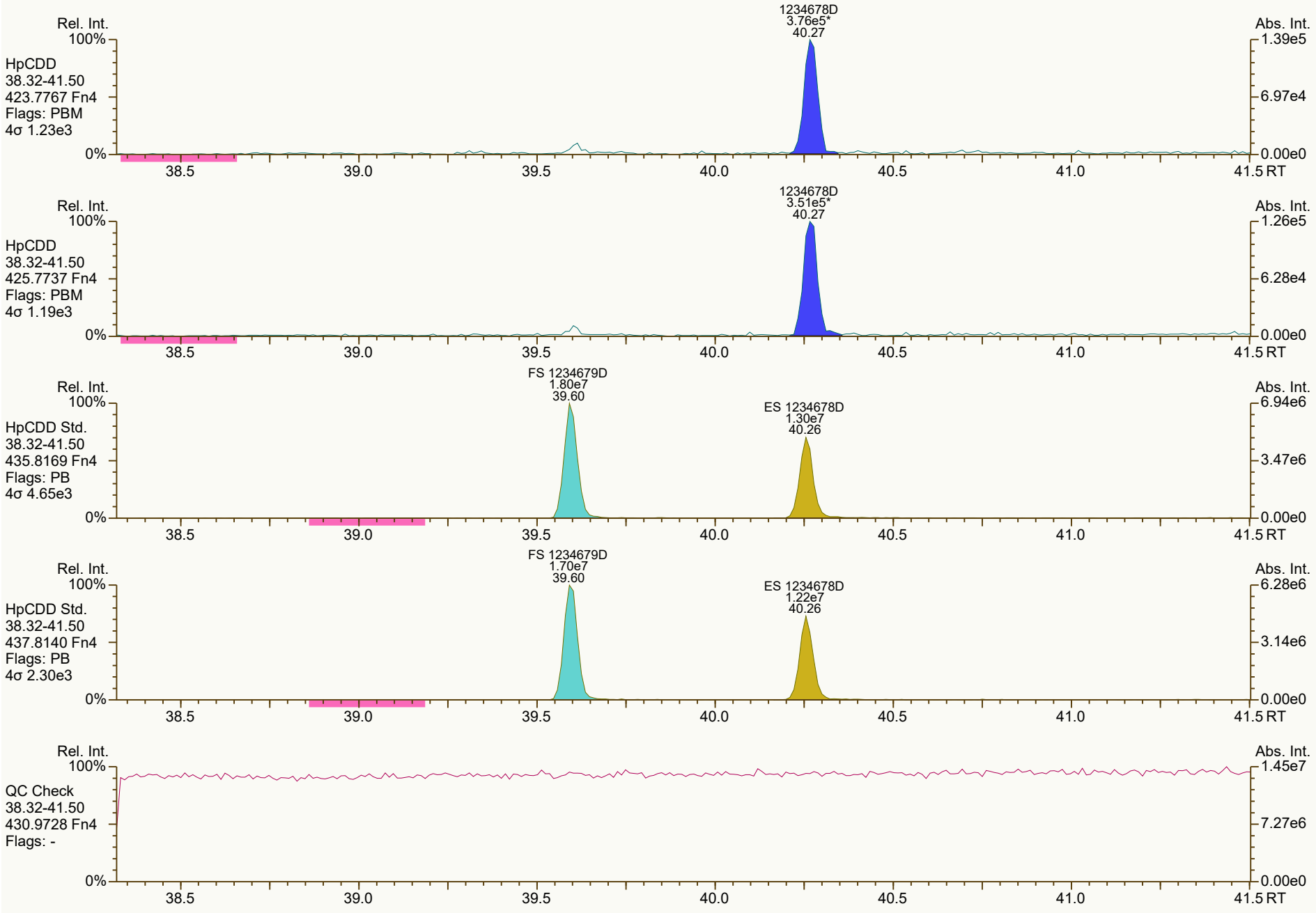
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

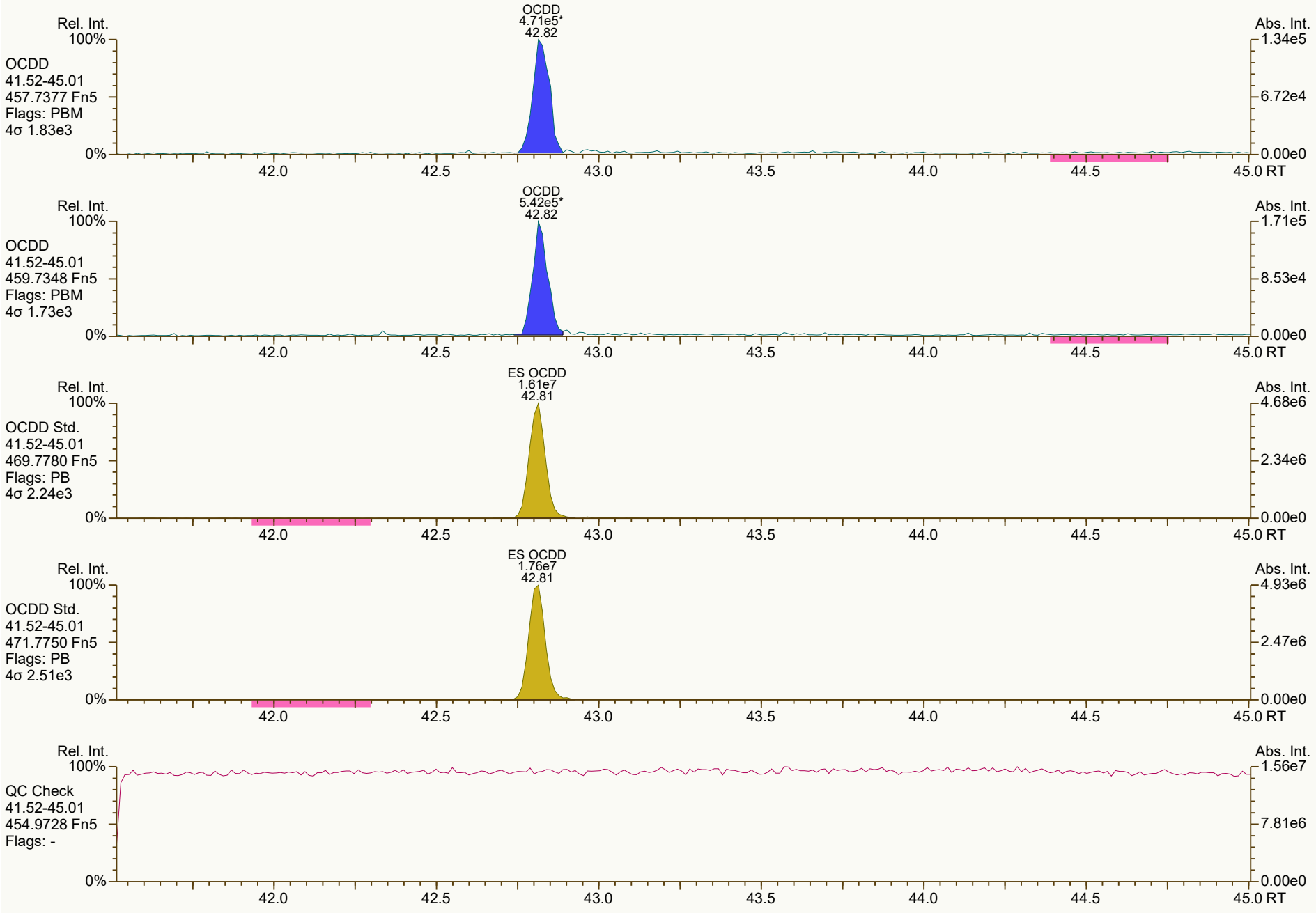

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.05e7
5.24e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.00e6
4.00e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.45e7
7.27e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.56e7
7.81e6
0.00e0

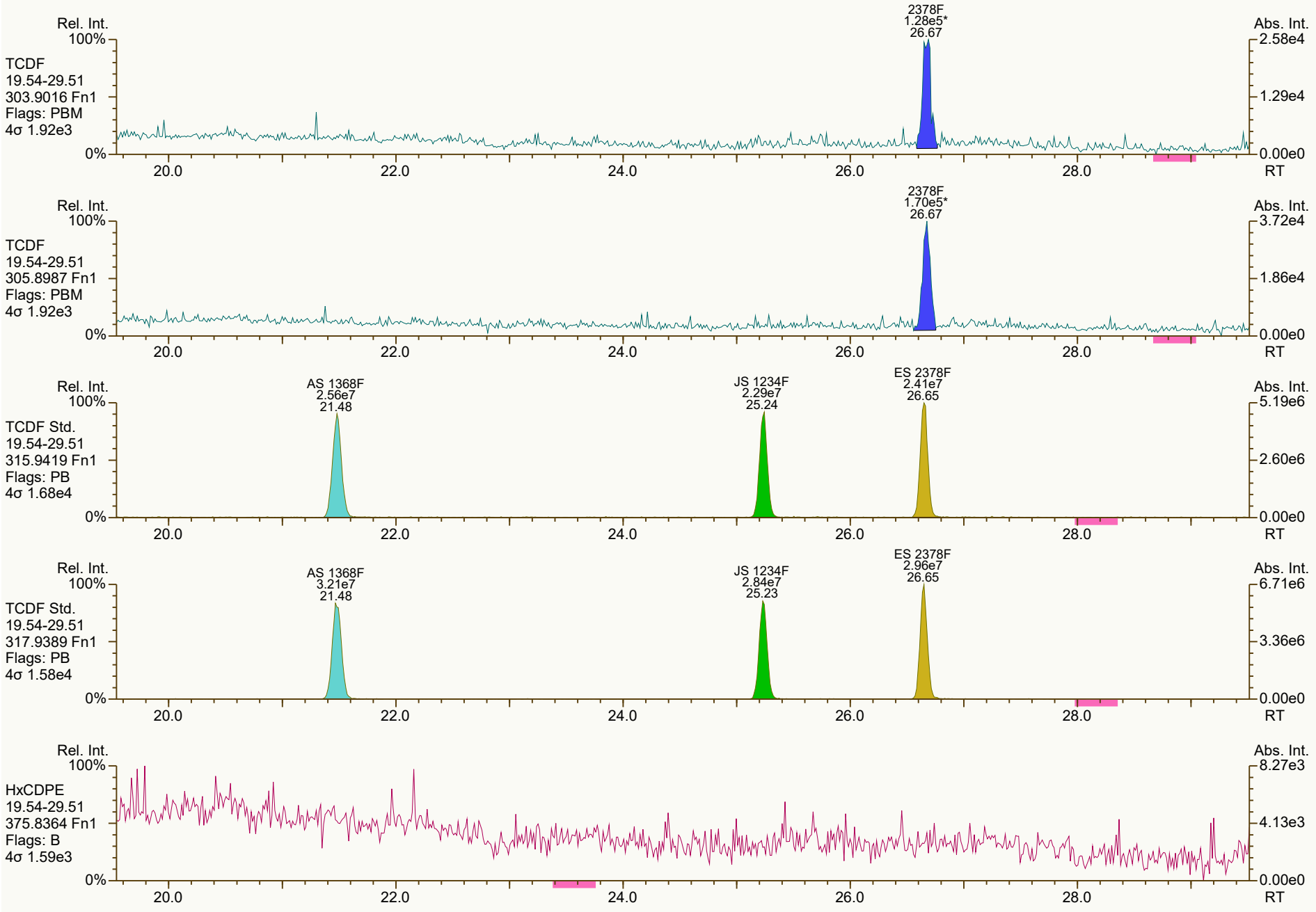

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 3.33e3
0%
2378D
1.05e5*
27.58
Abs. Int.
2.76e4
1.38e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.06e3
0%
2378D
1.27e5*
27.58
Abs. Int.
2.99e4
1.49e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.52e3
0%
CS 37Cl-2378D
2.01e5*
27.59
Abs. Int.
5.18e4
2.59e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 1.05e4
0%
AS 1368D
1.71e7
23.72
TS 1378D
2.28e7
25.84
JS 1234D
1.64e7
26.89
ES 2378D
1.66e7
27.56
FS 1278D
1.82e7
27.90
Abs. Int.
4.92e6
2.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 5.59e3
0%
AS 1368D
2.15e7
23.72
TS 1378D
2.86e7
25.84
JS 1234D
2.03e7
26.89
ES 2378D
2.11e7
27.56
FS 1278D
2.26e7
27.90
Abs. Int.
6.21e6
3.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

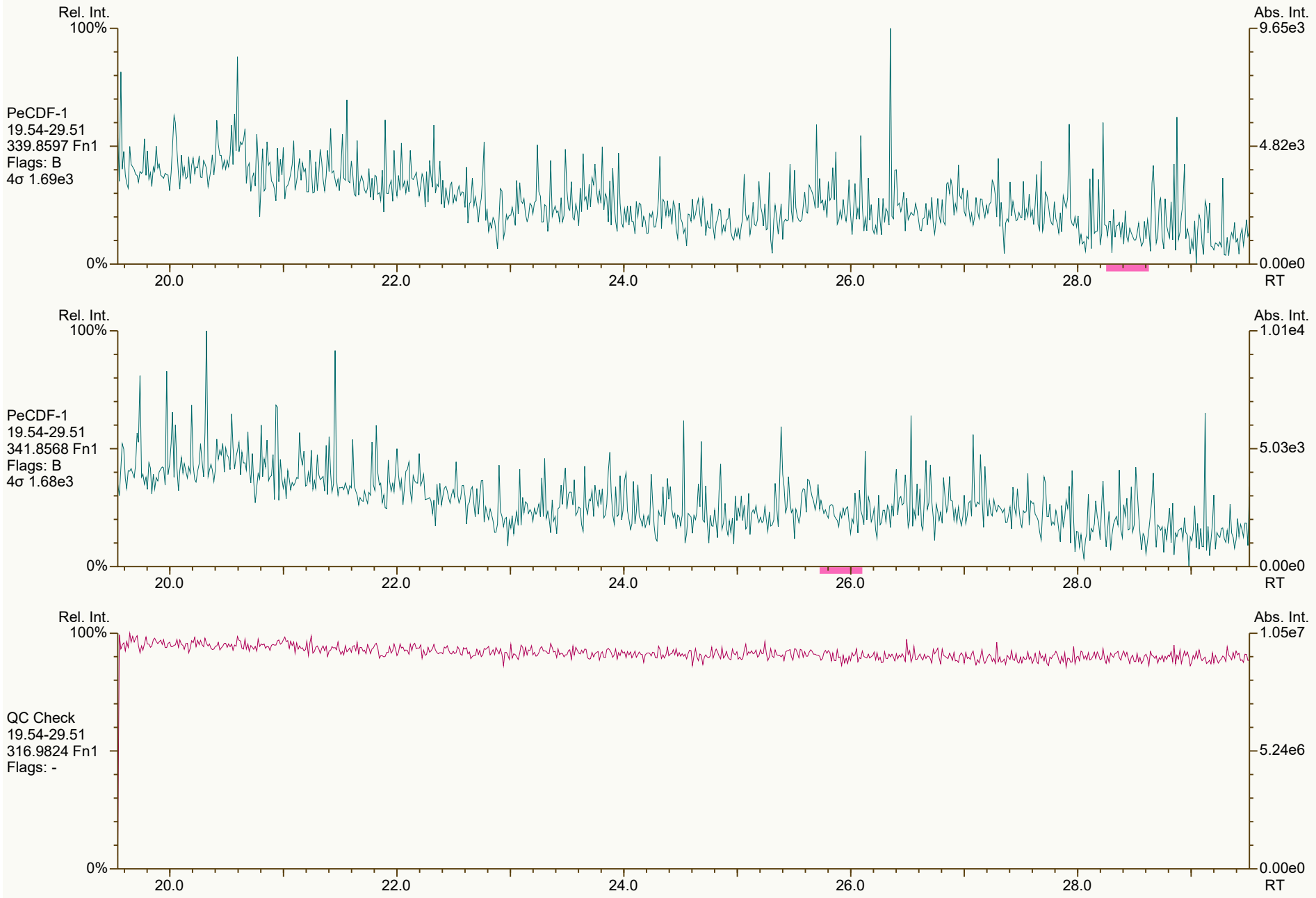

Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.25e3
12378D
4.88e5*
33.10
Abs. Int.
1.51e5
7.55e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.19e3
12378D
3.53e5*
33.10
Abs. Int.
1.03e5
5.14e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 5.61e3
RRF(ES12378D) = (1.89e7 + 1.20e7) * 100pg / (1.64e7 + 2.03e7) * 100pg = 0.842
DTF 11-Nov-2021 10:10
FS 12478D
2.11e7
31.83
CS 12347D
1.72e7
32.58
ES 12378D
1.89e7
33.08
Abs. Int.
6.25e6
3.12e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 2.44e3
APPROVED
Amy_Boehm , 11/11/2021, 5:16:42 PM
FS 12478D
1.36e7
31.83
CS 12347D
1.05e7
32.57
ES 12378D
1.20e7
33.08
Abs. Int.
3.84e6
1.92e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.00e6
4.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D
4.24e5*
37.03
123678D
4.51e5*
37.15
123789D
4.65e5*
37.46
Abs. Int.
1.53e5
7.67e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D
3.28e5*
37.03
123678D
3.41e5*
37.15
123789D
3.78e5*
37.46
Abs. Int.
1.16e5
5.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D
1.89e7
35.96
ES 123478D
1.50e7
37.02
ES 123678D
1.47e7
37.13
JS 123467D
7.96e6*
37.34
ES 123789D
1.63e7*
37.44
Abs. Int.
6.03e6
3.01e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
1.53e7
35.97
ES 123478D
1.17e7
37.02
ES 123678D
1.13e7
37.13
JS 123467D
6.45e6*
37.34
ES 123789D
1.31e7*
37.44
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

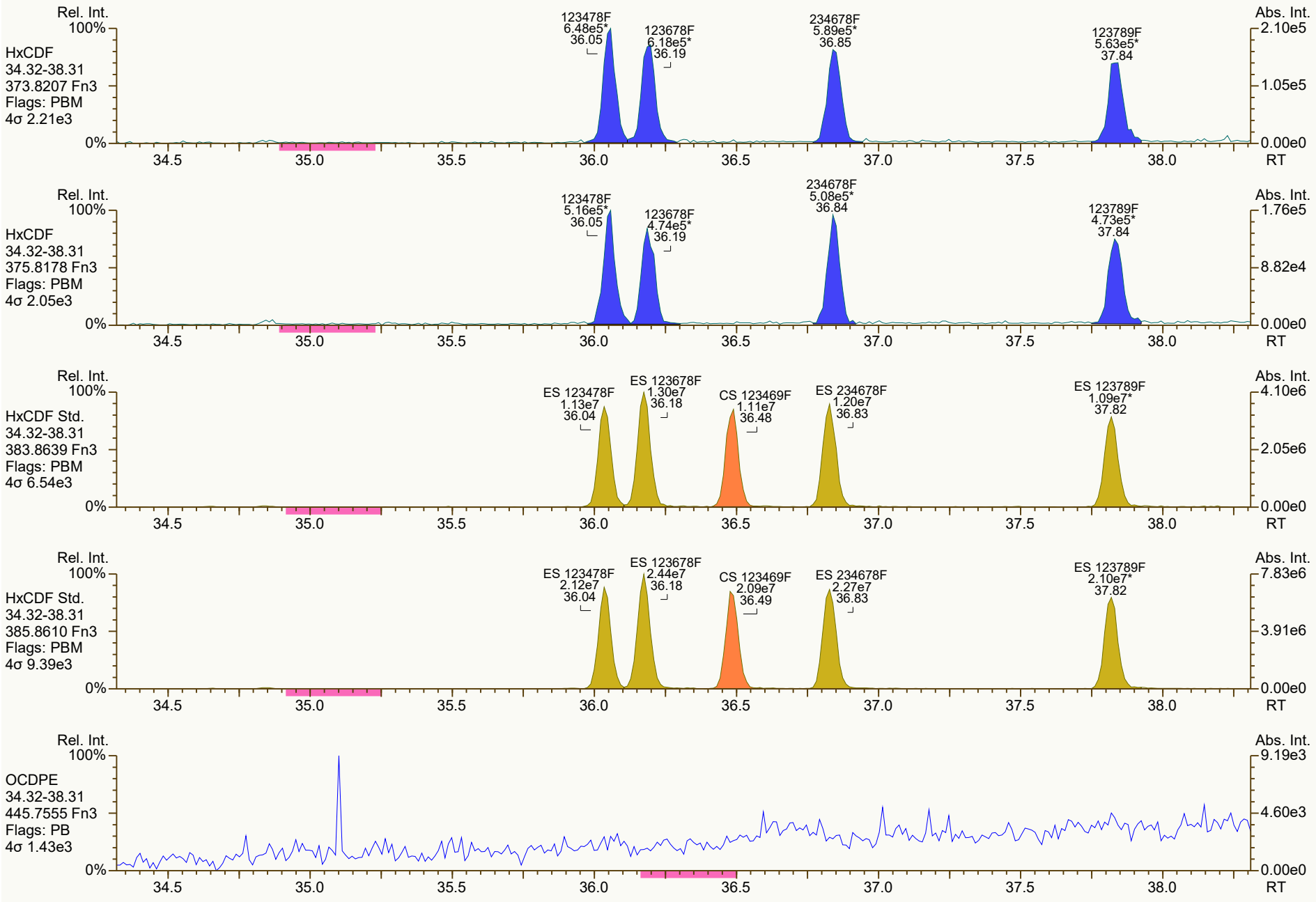

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
0%
1234678D
3.76e5*
40.27
Abs. Int.
1.39e5
6.97e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
0%
1234678D
3.51e5*
40.27
Abs. Int.
1.26e5
6.28e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
0%
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
Abs. Int.
6.94e6
3.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
0%
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
Abs. Int.
6.28e6
3.14e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.45e7
7.27e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
4.71e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
1.34e5
6.72e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
Abs. Int.
1.71e5
8.53e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
Abs. Int.
4.93e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.56e7
7.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

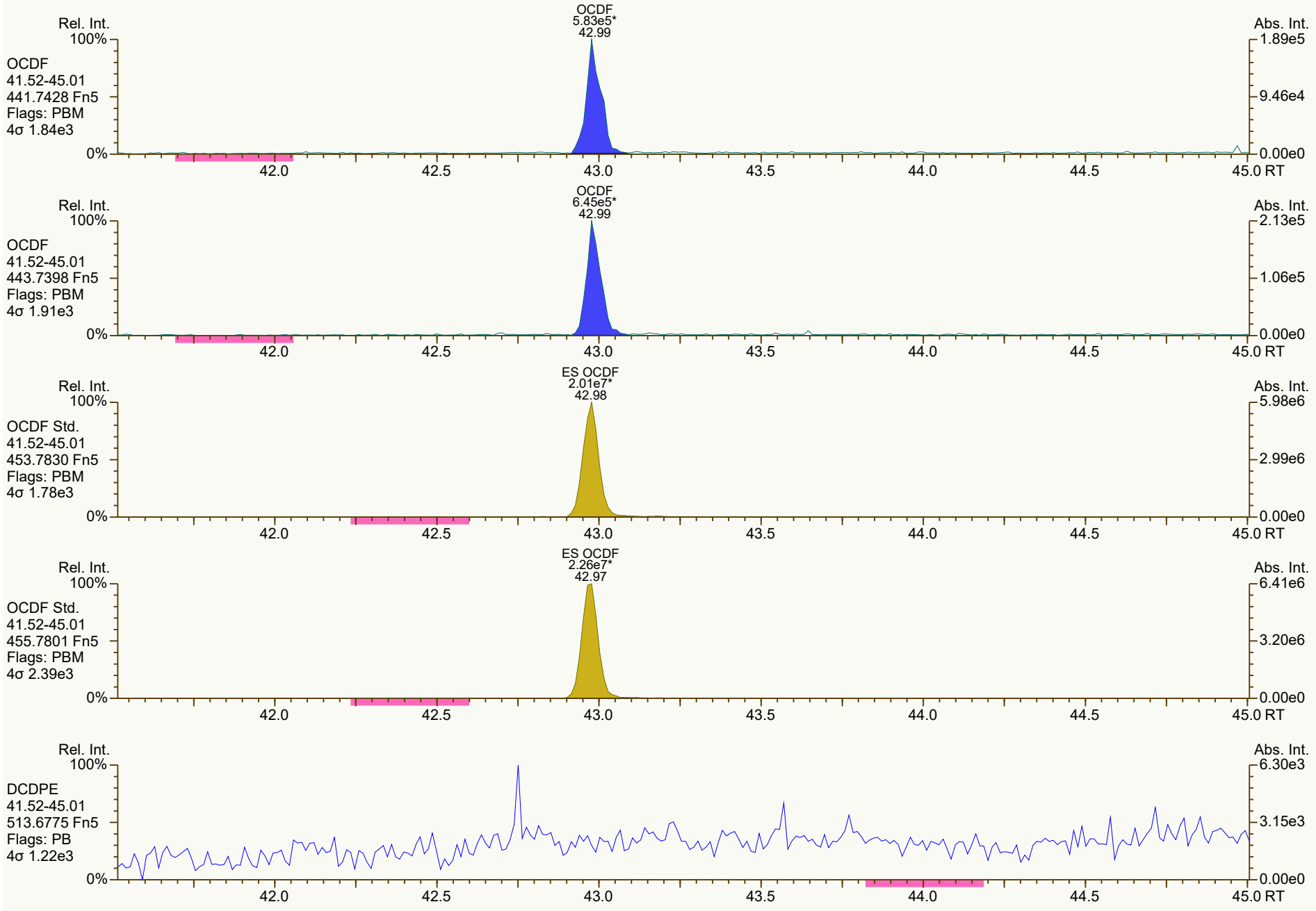

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.28e5*
26.67
Abs. Int.
2.58e4
1.29e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.70e5*
26.67
Abs. Int.
3.72e4
1.86e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.68e4
0%
AS 1368F
2.56e7
21.48
JS 1234F
2.29e7
25.24
ES 2378F
2.41e7
26.65
Abs. Int.
5.19e6
2.60e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
3.21e7
21.48
JS 1234F
2.84e7
25.23
ES 2378F
2.96e7
26.65
Abs. Int.
6.71e6
3.36e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.65e3
4.82e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.69e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.01e4
5.03e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.68e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
0%
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
Abs. Int.
2.10e5
1.05e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
0%
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
Abs. Int.
1.40e5
7.02e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
0%
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.63e7
32.73
Abs. Int.
7.54e6
3.77e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
0%
CS 12346F
1.69e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
Abs. Int.
4.85e6
2.42e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
0%
Abs. Int.
1.10e4
5.51e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.21e3
0%
123478F
6.48e5*
36.05
123678F
6.18e5*
36.19
234678F
5.89e5*
36.85
123789F
5.63e5*
37.84
Abs. Int.
2.10e5
1.05e5
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.05e3
123478F
5.16e5*
36.05
123678F
4.74e5*
36.19
234678F
5.08e5*
36.84
123789F
4.73e5*
37.84
1.76e5
8.82e4
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 6.54e3
ES 123478F
1.13e7
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.11e7
36.48
ES 234678F
1.20e7
36.83
ES 123789F
1.09e7*
37.82
4.10e6
2.05e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.39e3
ES 123478F
2.12e7
36.04
ES 123678F
2.44e7
36.18
CS 123469F
2.09e7
36.49
ES 234678F
2.27e7
36.83
ES 123789F
2.10e7*
37.82
7.83e6
3.91e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.43e3
9.19e3
4.60e3

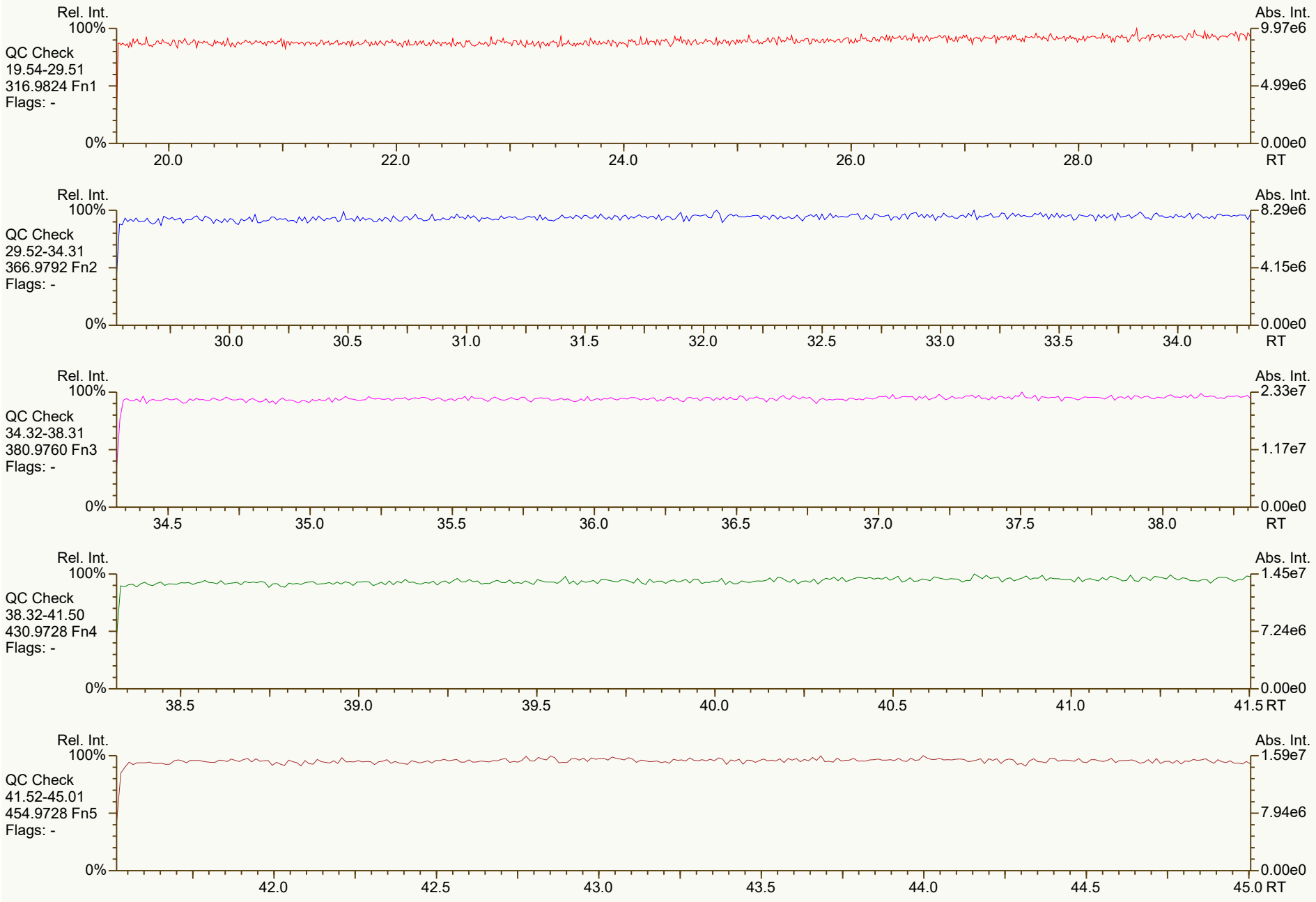

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.51e3
0%
1234678F
5.15e5*
39.34
1234789F
3.83e5*
40.70
Abs. Int.
2.00e5
9.99e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.63e3
0%
1234678F
4.85e5*
39.34
1234789F
4.12e5*
40.70
Abs. Int.
1.67e5
8.36e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 3.90e3
0%
ES 1234678F
7.77e6*
39.33
CS 1234689F
8.09e6*
39.74
ES 1234789F
7.34e6*
40.69
Abs. Int.
3.13e6
1.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.97e3
0%
ES 1234678F
1.82e7*
39.33
CS 1234689F
1.73e7*
39.74
ES 1234789F
1.63e7*
40.69
Abs. Int.
6.42e6
3.21e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.46e3
0%
Abs. Int.
3.72e3
1.86e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

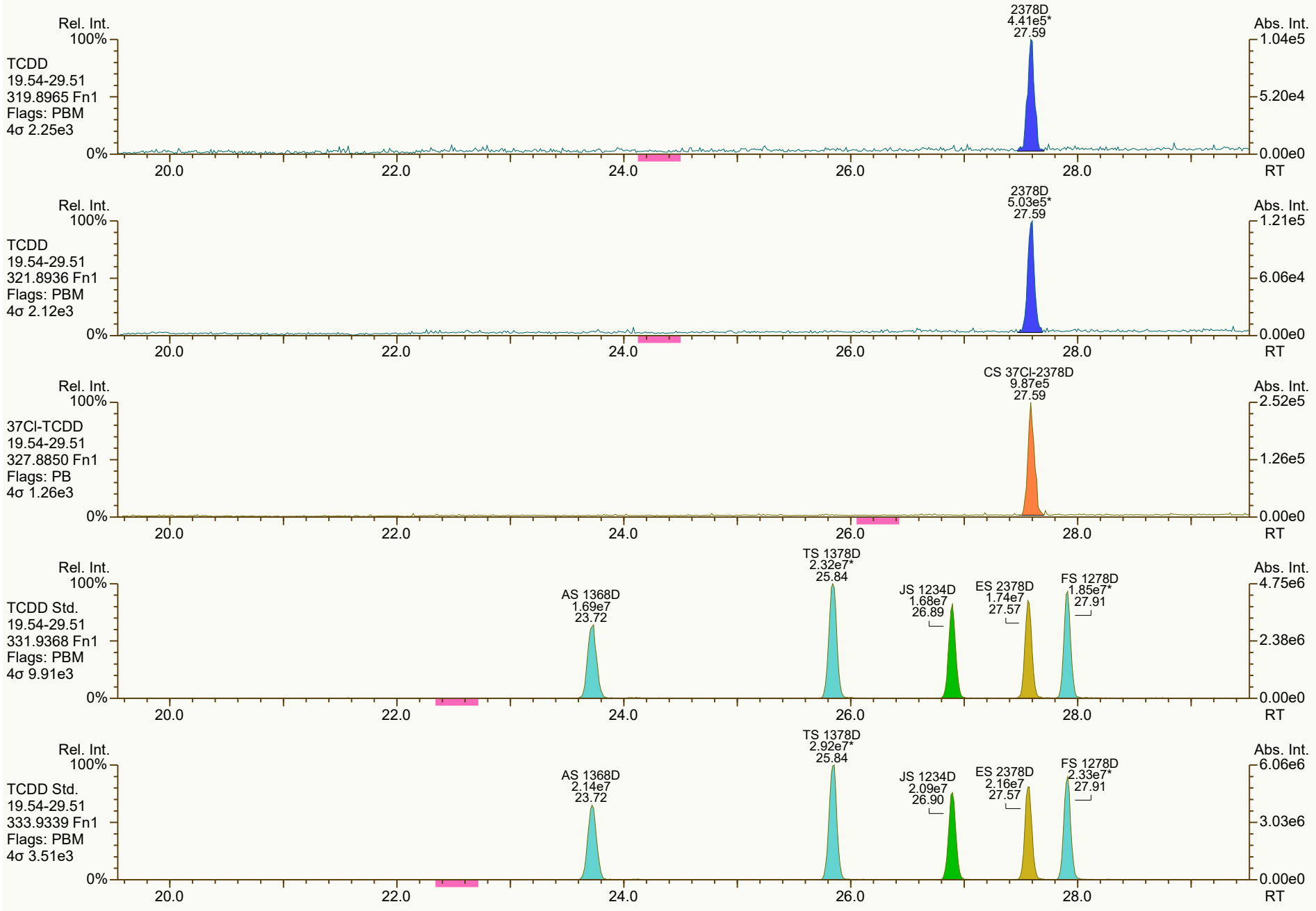

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
0%
OCDF
5.83e5*
42.99
Abs. Int.
1.89e5
9.46e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
0%
OCDF
6.45e5*
42.99
Abs. Int.
2.13e5
1.06e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
0%
ES OCDF
2.01e7*
42.98
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
0%
ES OCDF
2.26e7*
42.97
Abs. Int.
6.41e6
3.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

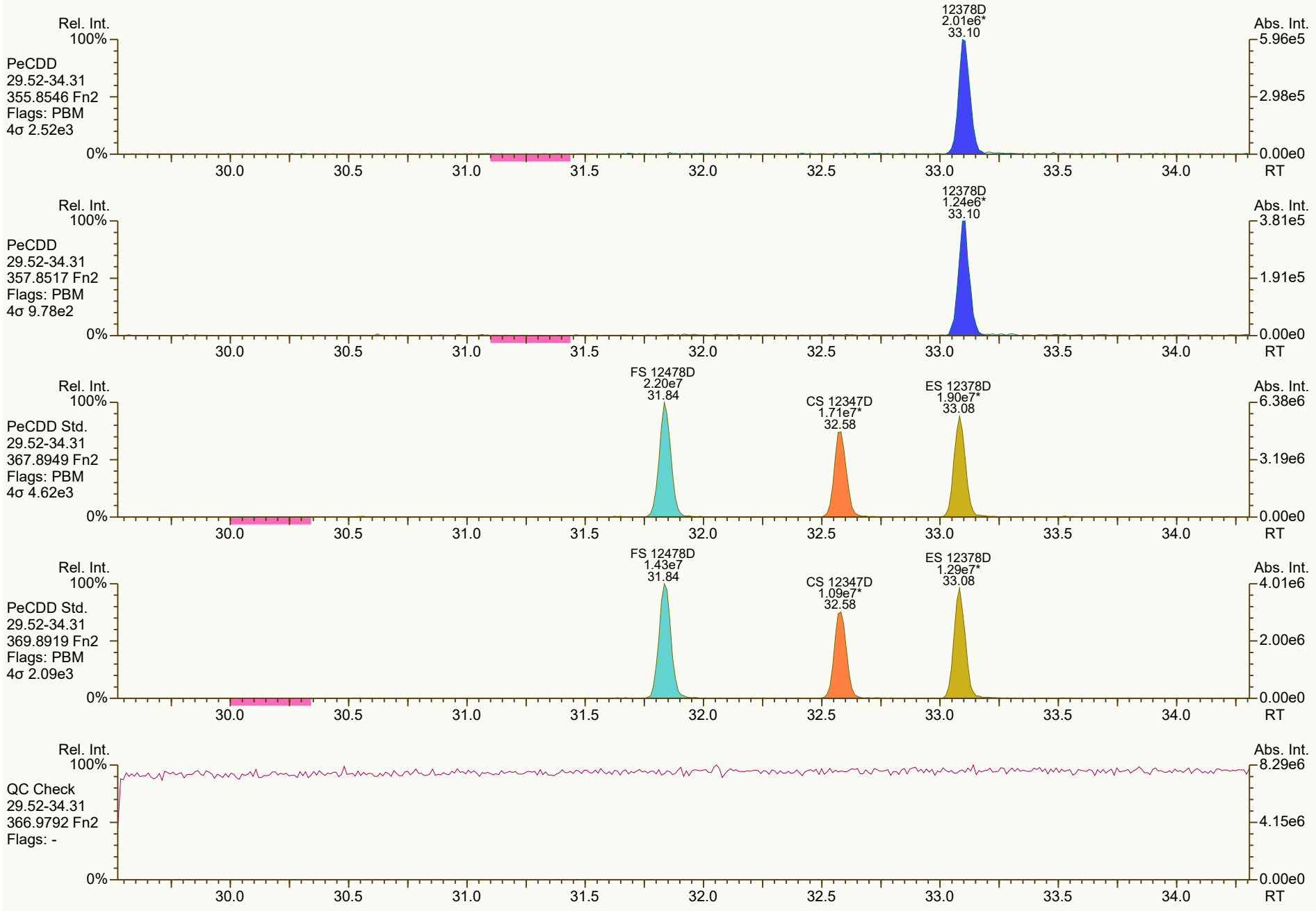
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 12:34 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS2_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 385-758-WQN	
Sample ID: 25-6-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C06	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

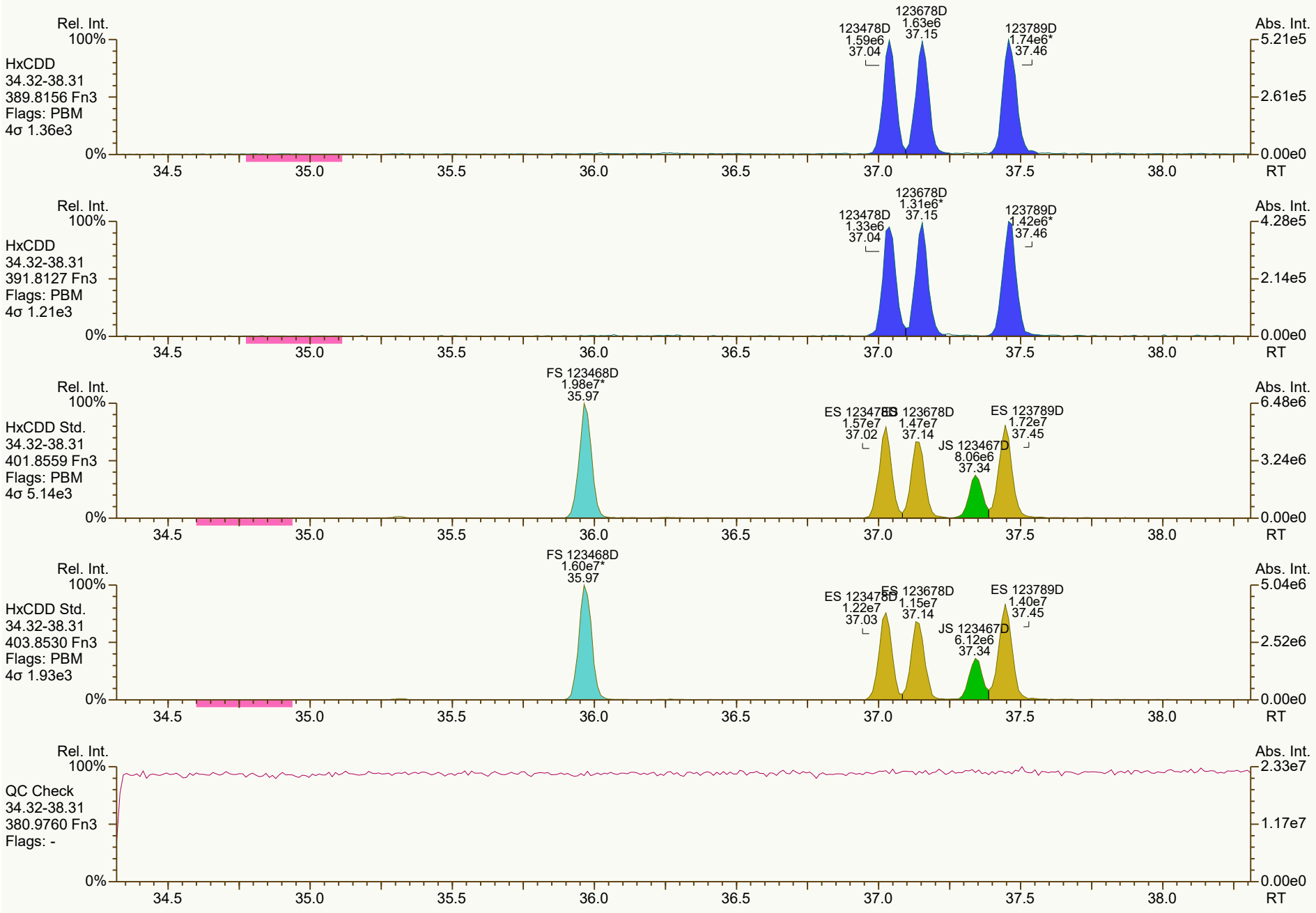
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

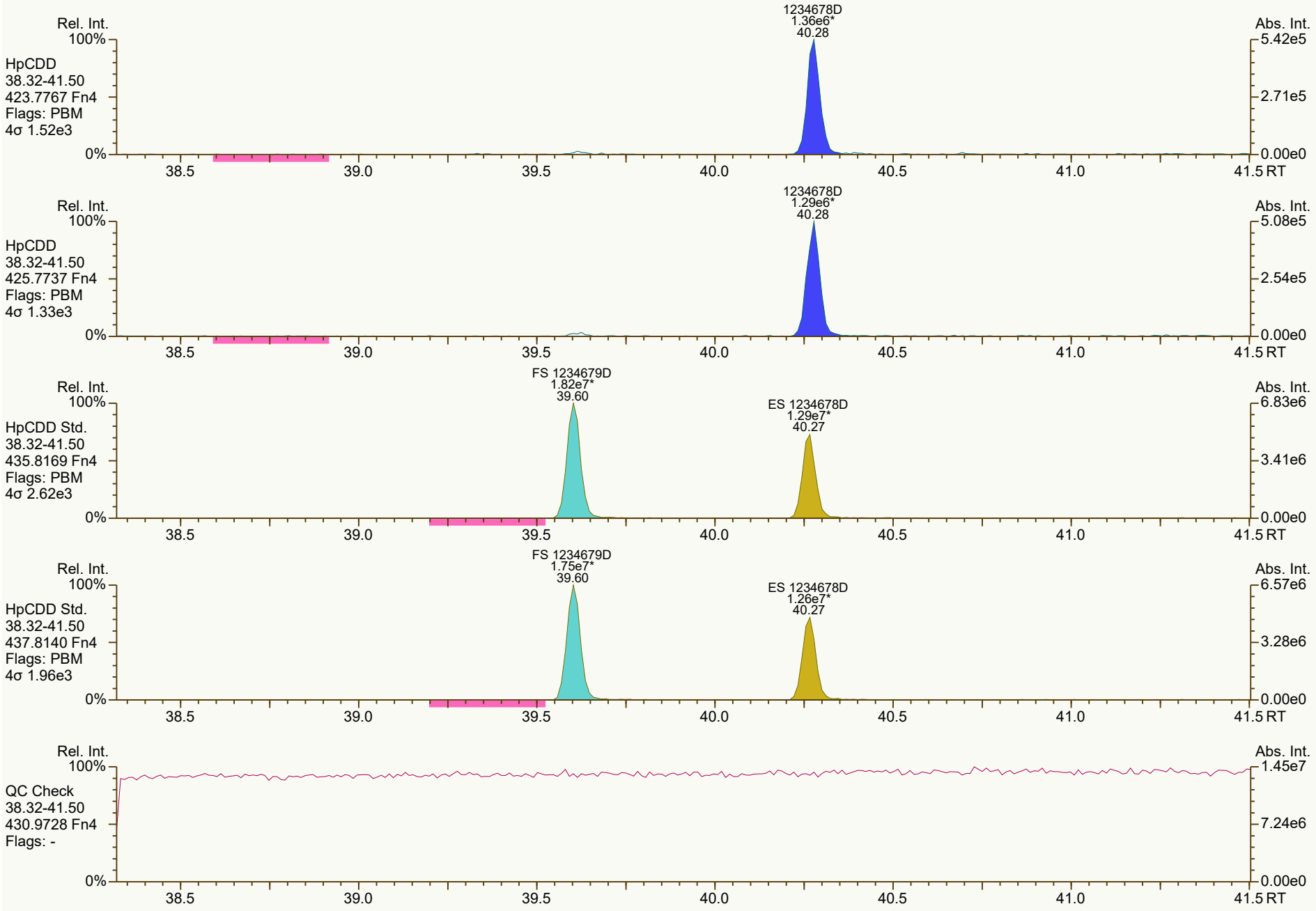
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%

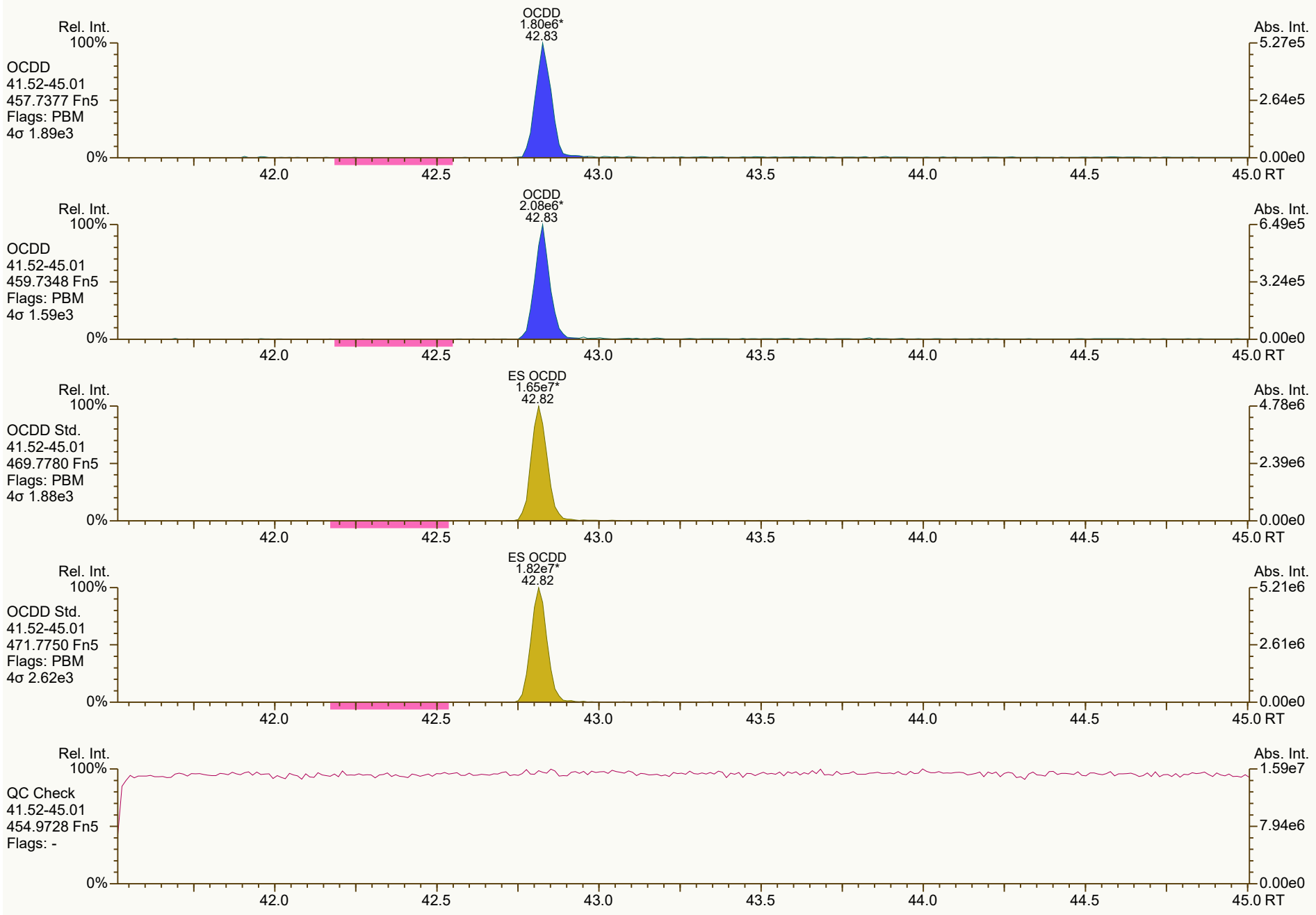

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.29e6
4.15e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.45e7
7.24e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.94e6
0.00e0

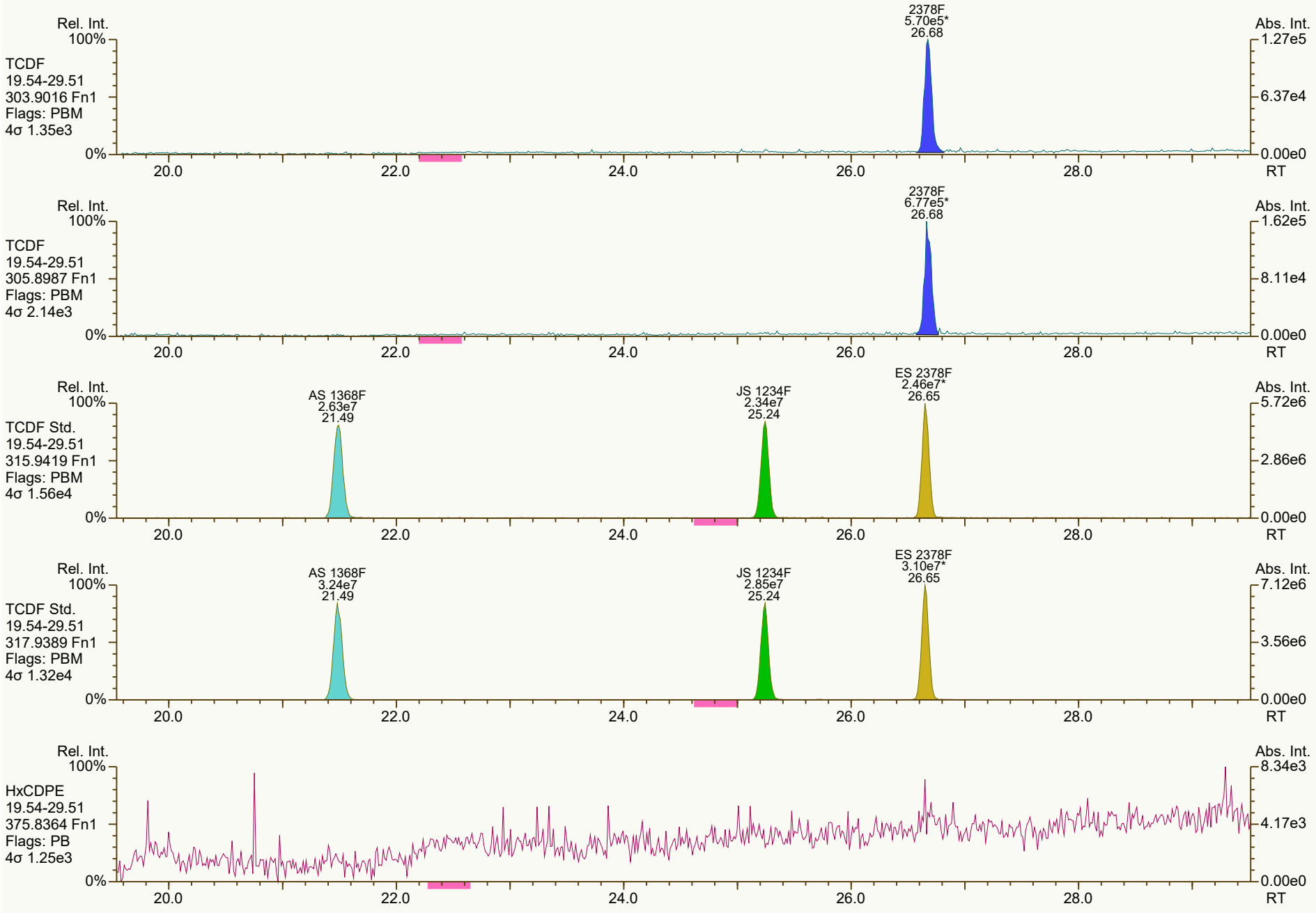

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
0%
2378D
4.41e5*
27.59
Abs. Int.
1.04e5
5.20e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
0%
2378D
5.03e5*
27.59
Abs. Int.
1.21e5
6.06e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
0%
CS 37Cl-2378D
9.87e5
27.59
Abs. Int.
2.52e5
1.26e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
0%
AS 1368D
1.69e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.85e7*
27.91
Abs. Int.
4.75e6
2.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
0%
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.52e3
12378D
2.01e6*
33.10
Abs. Int.
5.96e5
2.98e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 9.78e2
12378D
1.24e6*
33.10
Abs. Int.
3.81e5
1.91e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 4.62e3
FS 12478D
2.20e7
31.84
CS 12347D
1.71e7*
32.58
ES 12378D
1.90e7*
33.08
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 2.09e3
FS 12478D
1.43e7
31.84
CS 12347D
1.09e7*
32.58
ES 12378D
1.29e7*
33.08
Abs. Int.
4.01e6
2.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.29e6
4.15e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123478D
1.59e6
37.04
123678D
1.63e6
37.15
123789D
1.74e6*
37.46
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123478D
1.33e6
37.04
123678D
1.31e6*
37.15
123789D
1.42e6*
37.46
Abs. Int.
4.28e5
2.14e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D
1.98e7*
35.97
ES 123478D
1.57e7
37.02
ES 123678D
1.47e7
37.14
JS 123467D
8.06e6
37.34
ES 123789D
1.72e7
37.45
Abs. Int.
6.48e6
3.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D
1.60e7*
35.97
ES 123478D
1.22e7
37.03
ES 123678D
1.15e7
37.14
JS 123467D
6.12e6
37.34
ES 123789D
1.40e7
37.45
Abs. Int.
5.04e6
2.52e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.36e6*
40.28
Abs. Int.
5.42e5
2.71e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
Abs. Int.
5.08e5
2.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
Abs. Int.
6.83e6
3.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.96e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
Abs. Int.
6.57e6
3.28e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.45e7
7.24e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.80e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
5.27e5
2.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.08e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
0%
Abs. Int.
6.49e5
3.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.65e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.82e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
5.21e6
2.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
0%
2378F
5.70e5*
26.68
Abs. Int.
1.27e5
6.37e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
0%
2378F
6.77e5*
26.68
Abs. Int.
1.62e5
8.11e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
0%
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
26.65
Abs. Int.
5.72e6
2.86e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
0%
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
26.65
Abs. Int.
7.12e6
3.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

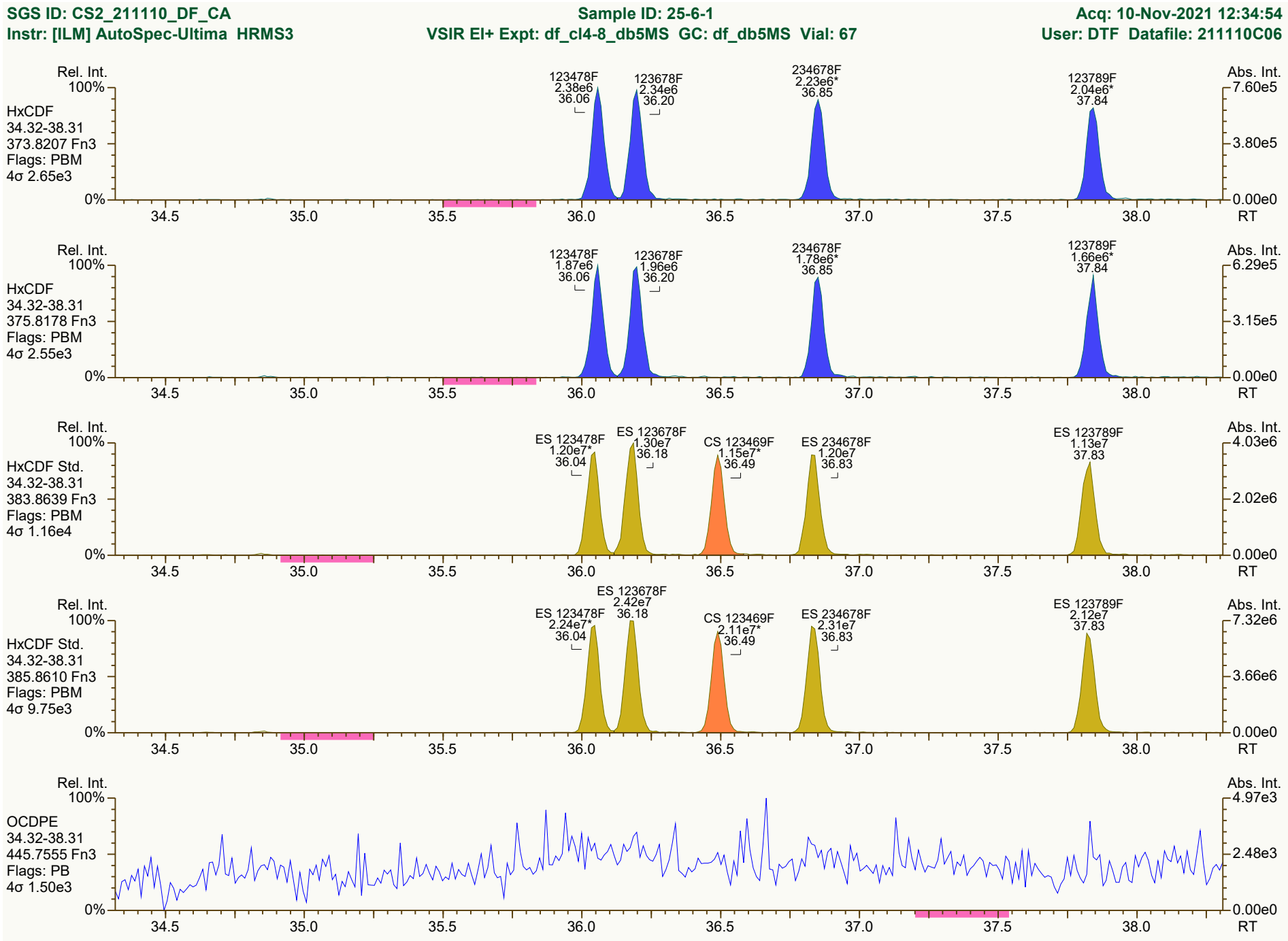

Rel. Int.
100%
0%
Abs. Int.
9.23e3
4.62e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.32e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.97e6
4.99e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
0%
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
Abs. Int.
8.19e5
4.10e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
Abs. Int.
5.27e5
2.63e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
0%
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
Abs. Int.
8.01e6
4.01e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
0%
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
Abs. Int.
5.19e6
2.59e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
0%
Abs. Int.
6.67e3
3.33e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

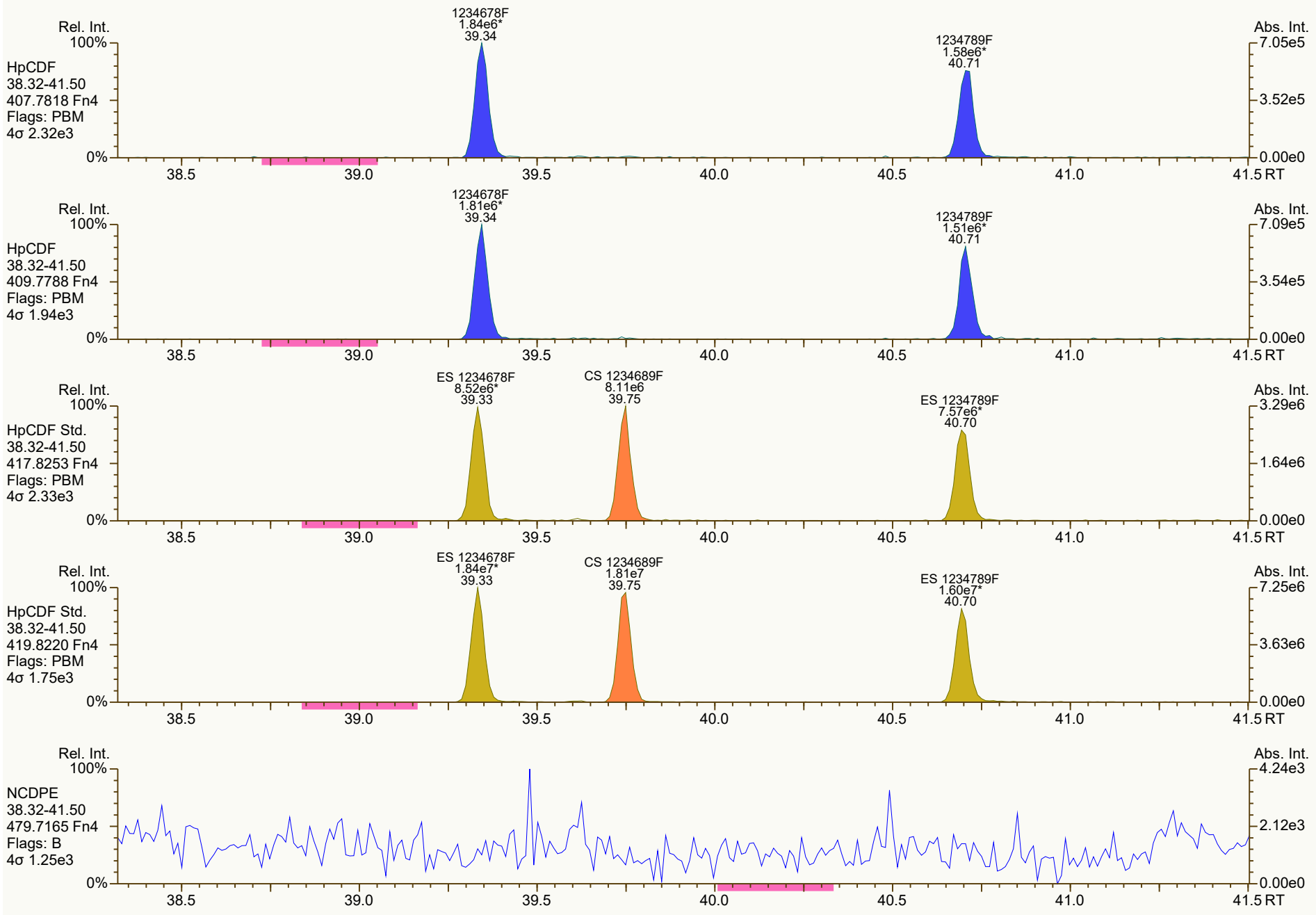
SGS ID: CS2_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

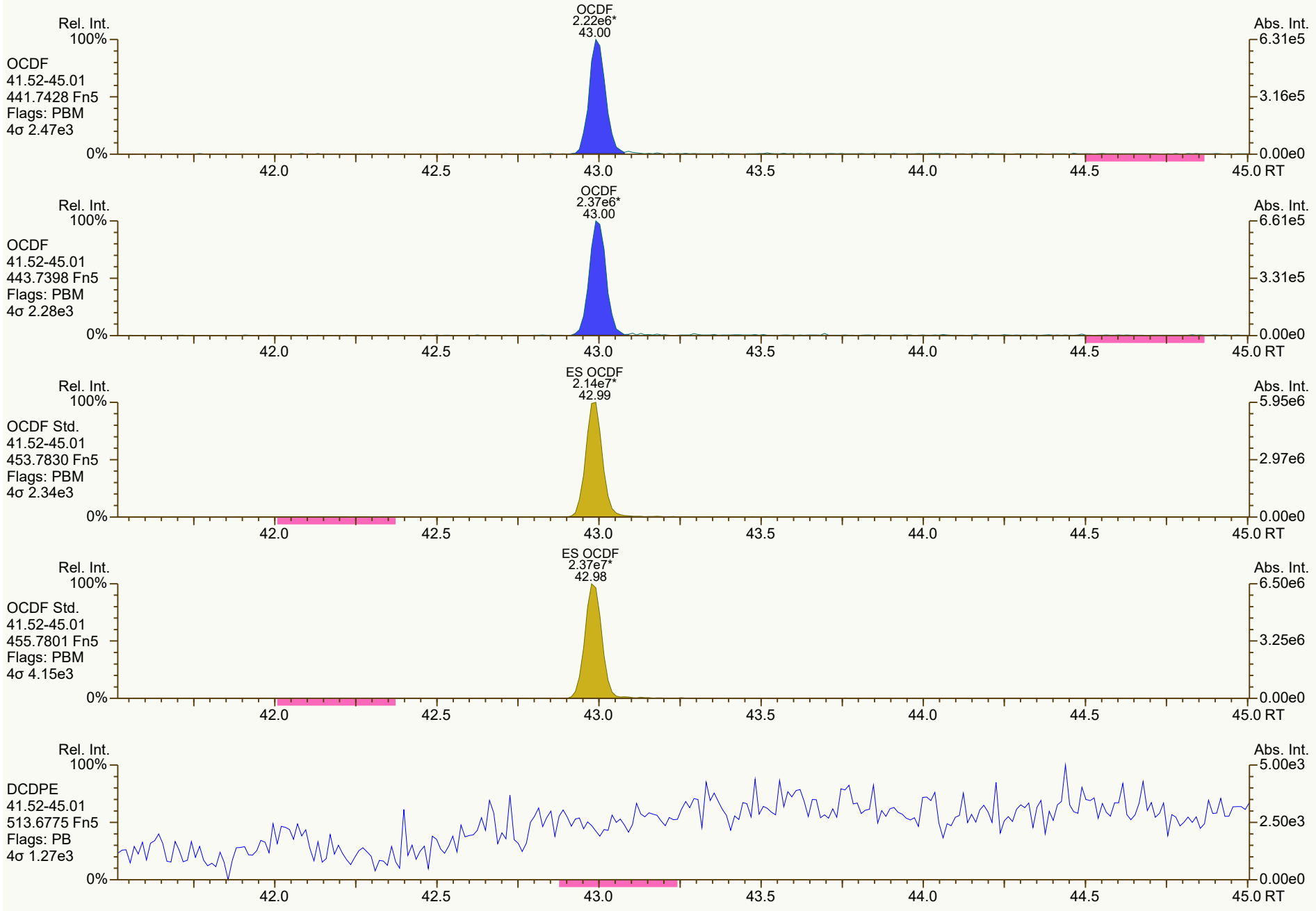
Sample ID: 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67

Acq: 10-Nov-2021 12:34:54
User: DTF Datafile: 211110C06



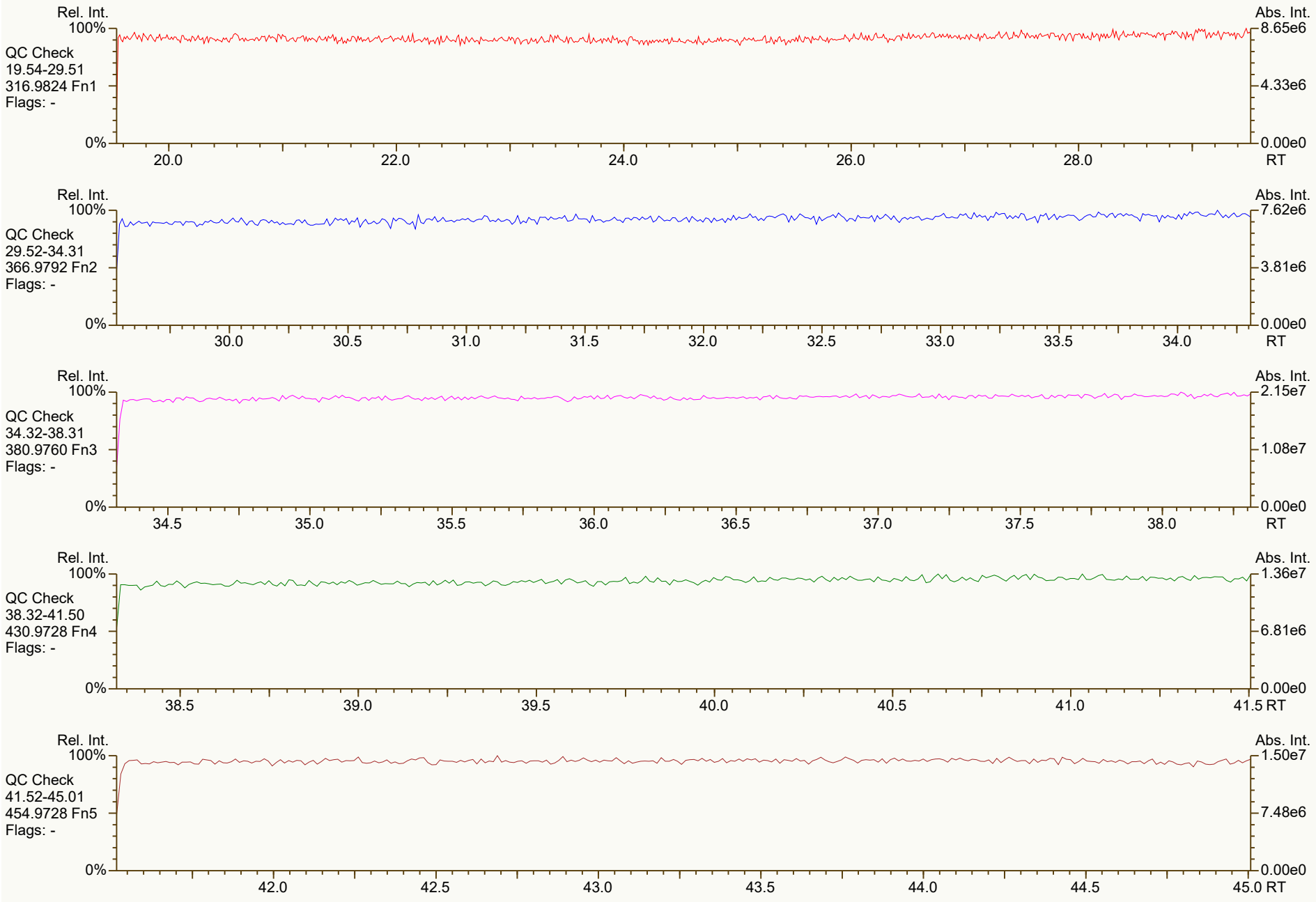
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7496, 9123, 5141 scc: 385-758
Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 10 of 12


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.32e3
0%
1234678F
1.84e6*
39.34
1234789F
1.58e6*
40.71
Abs. Int.
7.05e5
3.52e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.94e3
0%
1234678F
1.81e6*
39.34
1234789F
1.51e6*
40.71
Abs. Int.
7.09e5
3.54e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.33e3
0%
ES 1234678F
8.52e6*
39.33
CS 1234689F
8.11e6
39.75
ES 1234789F
7.57e6*
40.70
Abs. Int.
3.29e6
1.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.75e3
0%
ES 1234678F
1.84e7*
39.33
CS 1234689F
1.81e7
39.75
ES 1234789F
1.60e7*
40.70
Abs. Int.
7.25e6
3.63e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.25e3
0%
Abs. Int.
4.24e3
2.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

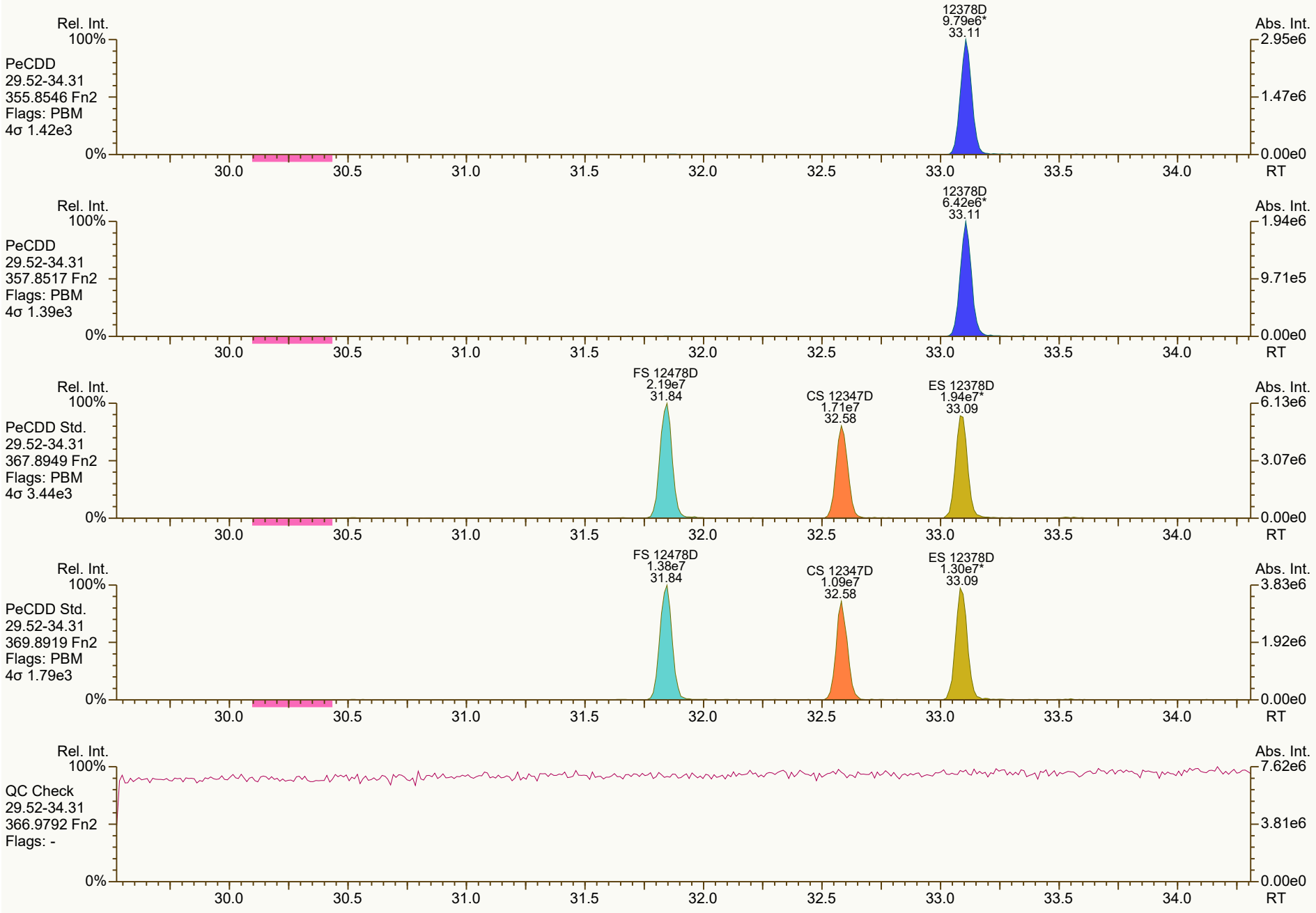

OCDF
2.22e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
0%
Abs. Int.
6.31e5
3.16e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.37e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
0%
Abs. Int.
6.61e5
3.31e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.37e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
6.50e6
3.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.00e3
2.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

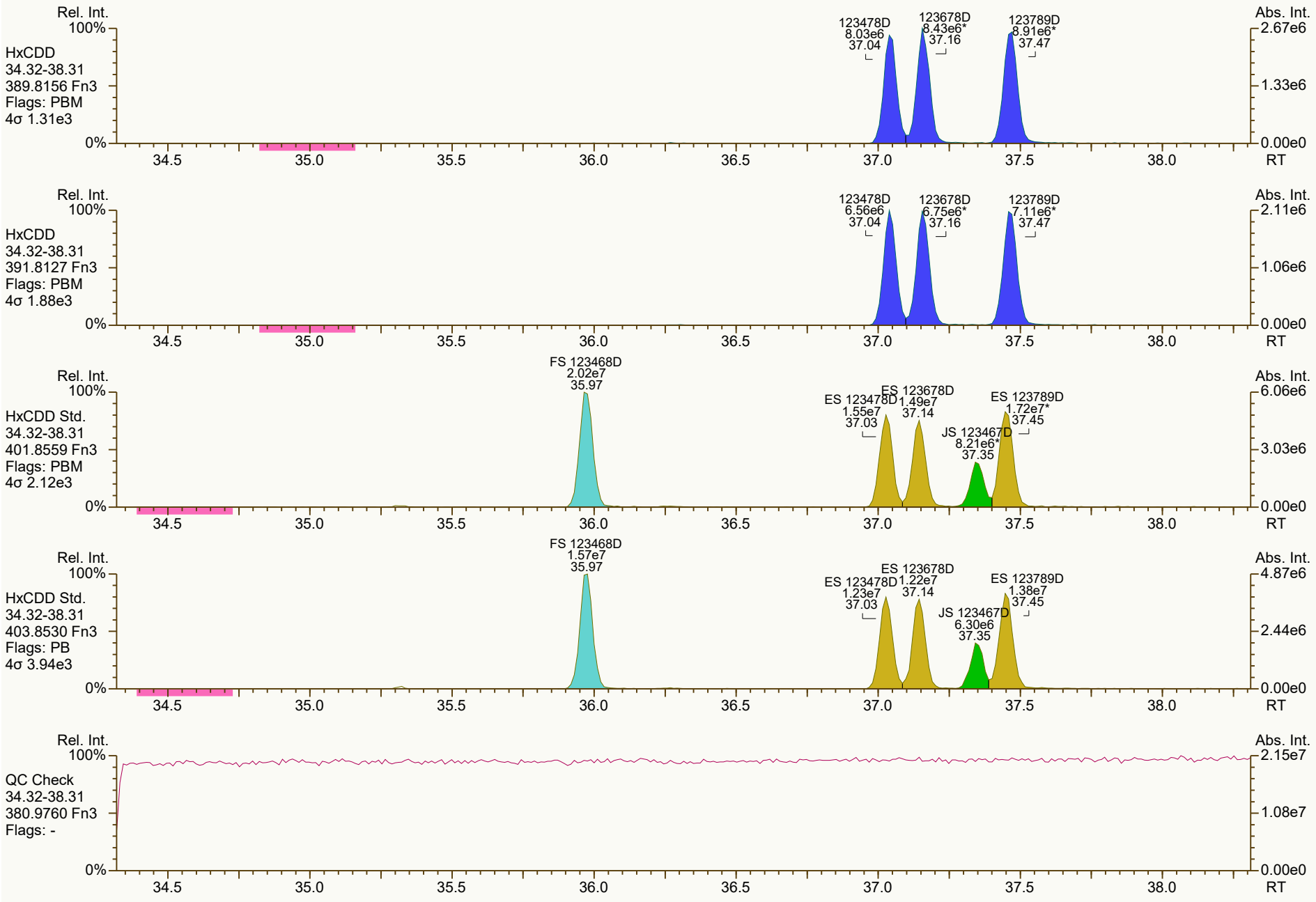
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

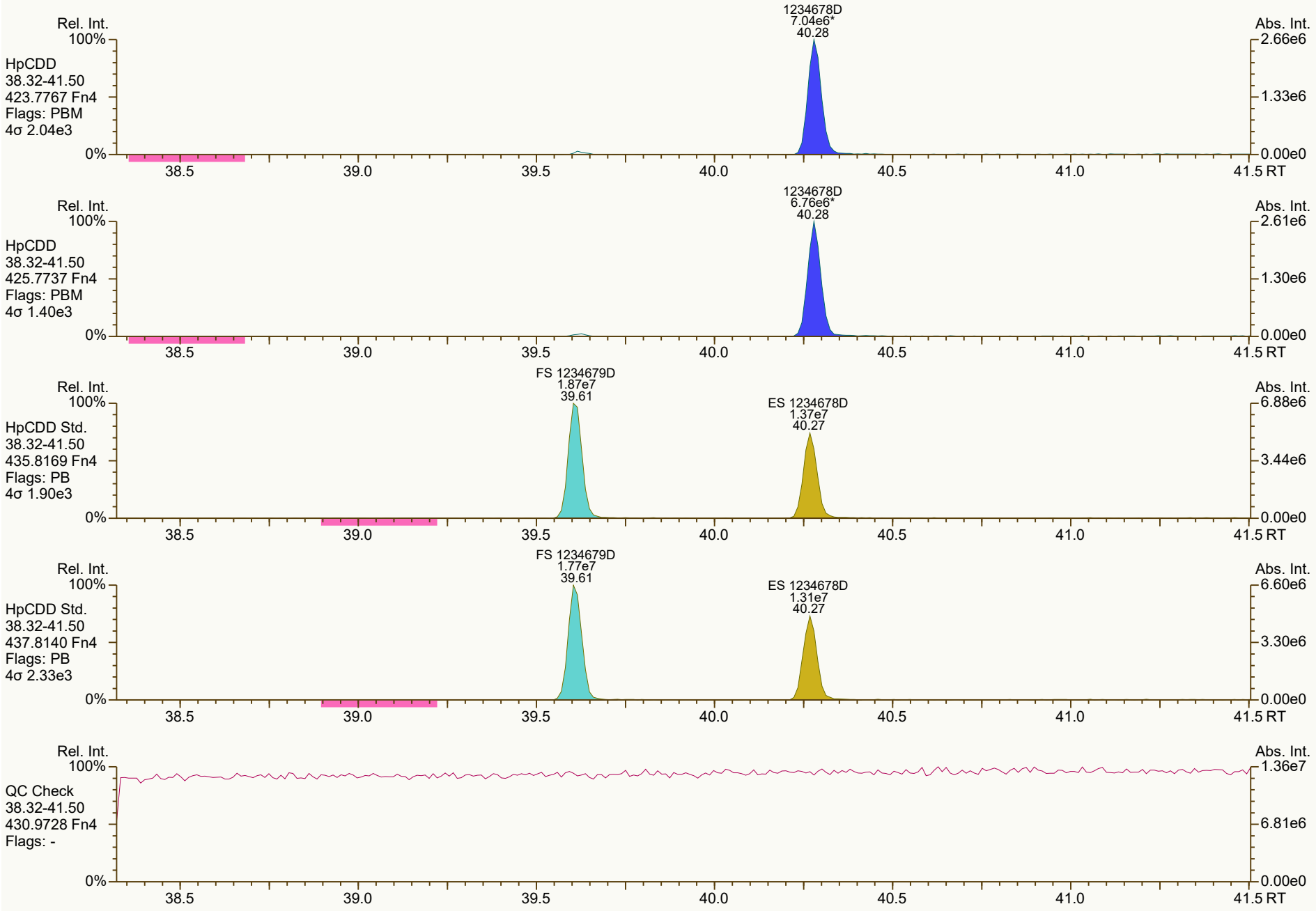
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%

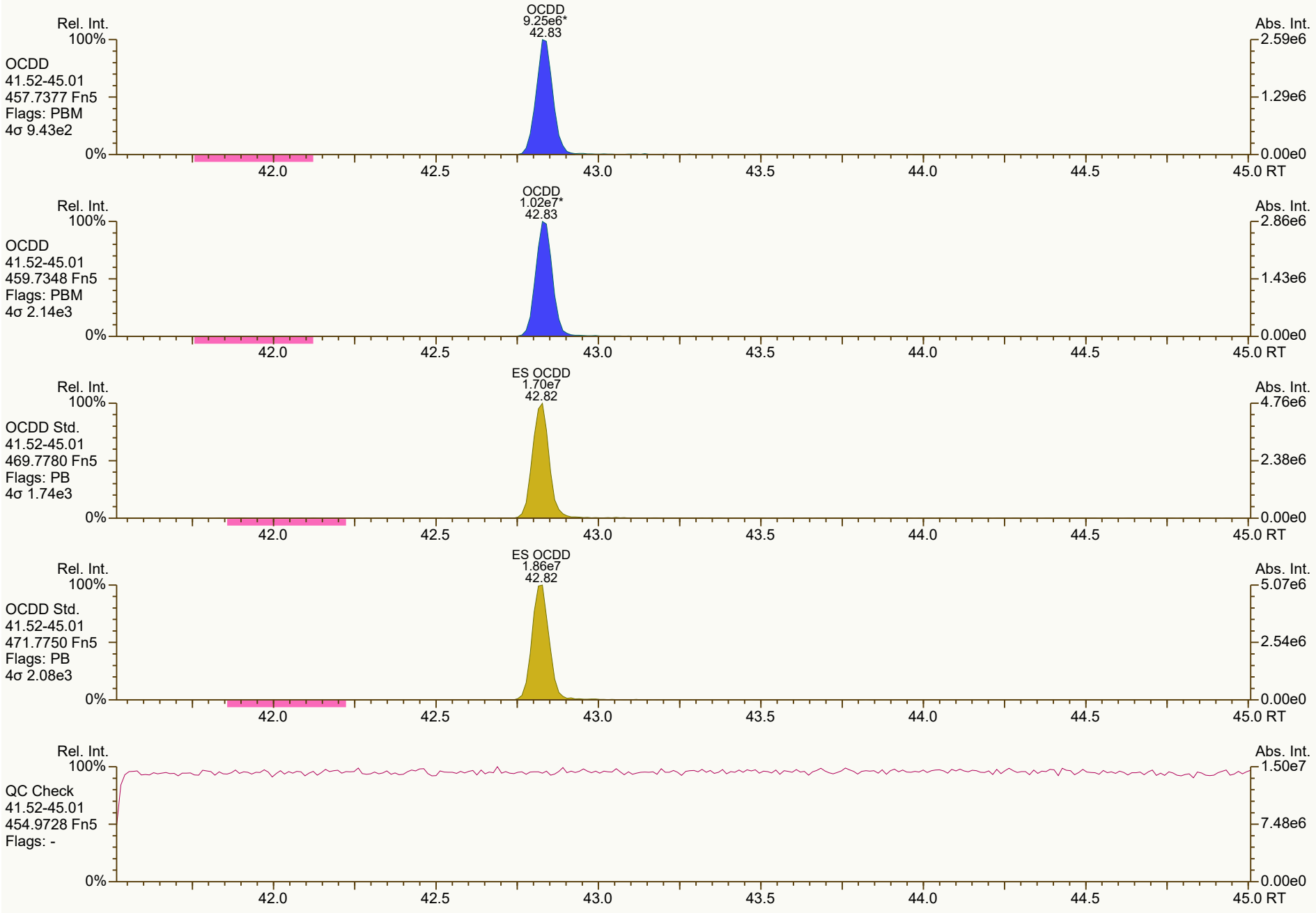

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.65e6
4.33e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.62e6
3.81e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.15e7
1.08e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.36e7
6.81e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.50e7
7.48e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
0%
2378D
1.99e6
27.60
Abs. Int.
4.35e5
2.17e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
0%
2378D
2.55e6
27.60
Abs. Int.
5.98e5
2.99e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
Abs. Int.
1.03e6
5.16e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
0%
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
Abs. Int.
4.80e6
2.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
0%
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.42e3
12378D
9.79e6*
33.11
Abs. Int.
2.95e6
1.47e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.39e3
12378D
6.42e6*
33.11
Abs. Int.
1.94e6
9.71e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 3.44e3
FS 12478D
2.19e7
31.84
CS 12347D
1.71e7
32.58
ES 12378D
1.94e7*
33.09
Abs. Int.
6.13e6
3.07e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 1.79e3
FS 12478D
1.38e7
31.84
CS 12347D
1.09e7
32.58
ES 12378D
1.30e7*
33.09
Abs. Int.
3.83e6
1.92e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
7.62e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

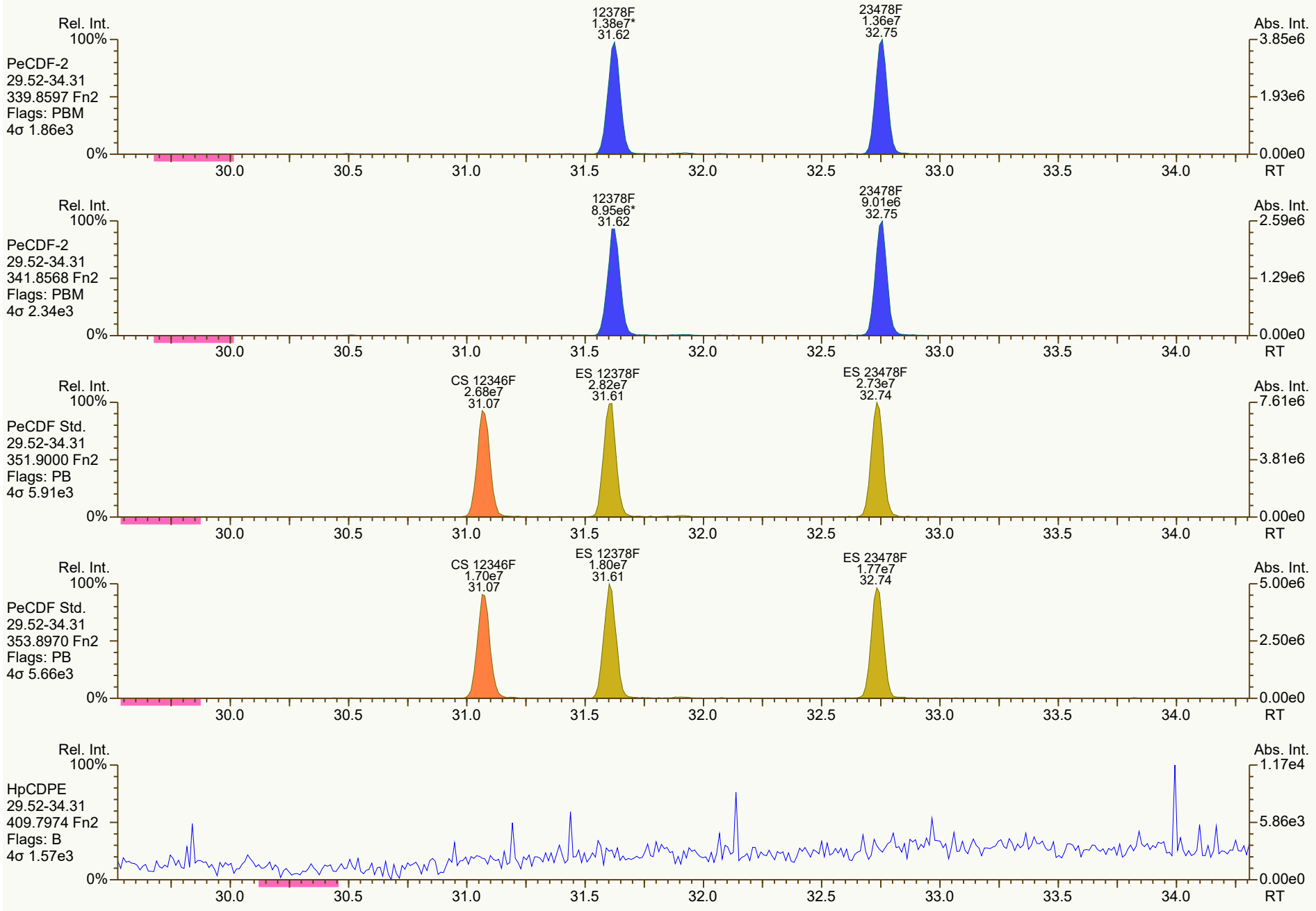

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.31e3
0%
123478D
8.03e6
37.04
123678D
8.43e6*
37.16
123789D
8.91e6*
37.47
Abs. Int.
2.67e6
1.33e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.88e3
0%
123478D
6.56e6
37.04
123678D
6.75e6*
37.16
123789D
7.11e6*
37.47
Abs. Int.
2.11e6
1.06e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.12e3
0%
FS 123468D
2.02e7
35.97
ES 123478D
1.55e7
37.03
ES 123678D
1.49e7
37.14
JS 123467D
8.21e6*
37.35
ES 123789D
1.72e7*
37.45
Abs. Int.
6.06e6
3.03e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.94e3
0%
FS 123468D
1.57e7
35.97
ES 123478D
1.23e7
37.03
ES 123678D
1.22e7
37.14
JS 123467D
6.30e6
37.35
ES 123789D
1.38e7
37.45
Abs. Int.
4.87e6
2.44e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.15e7
1.08e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

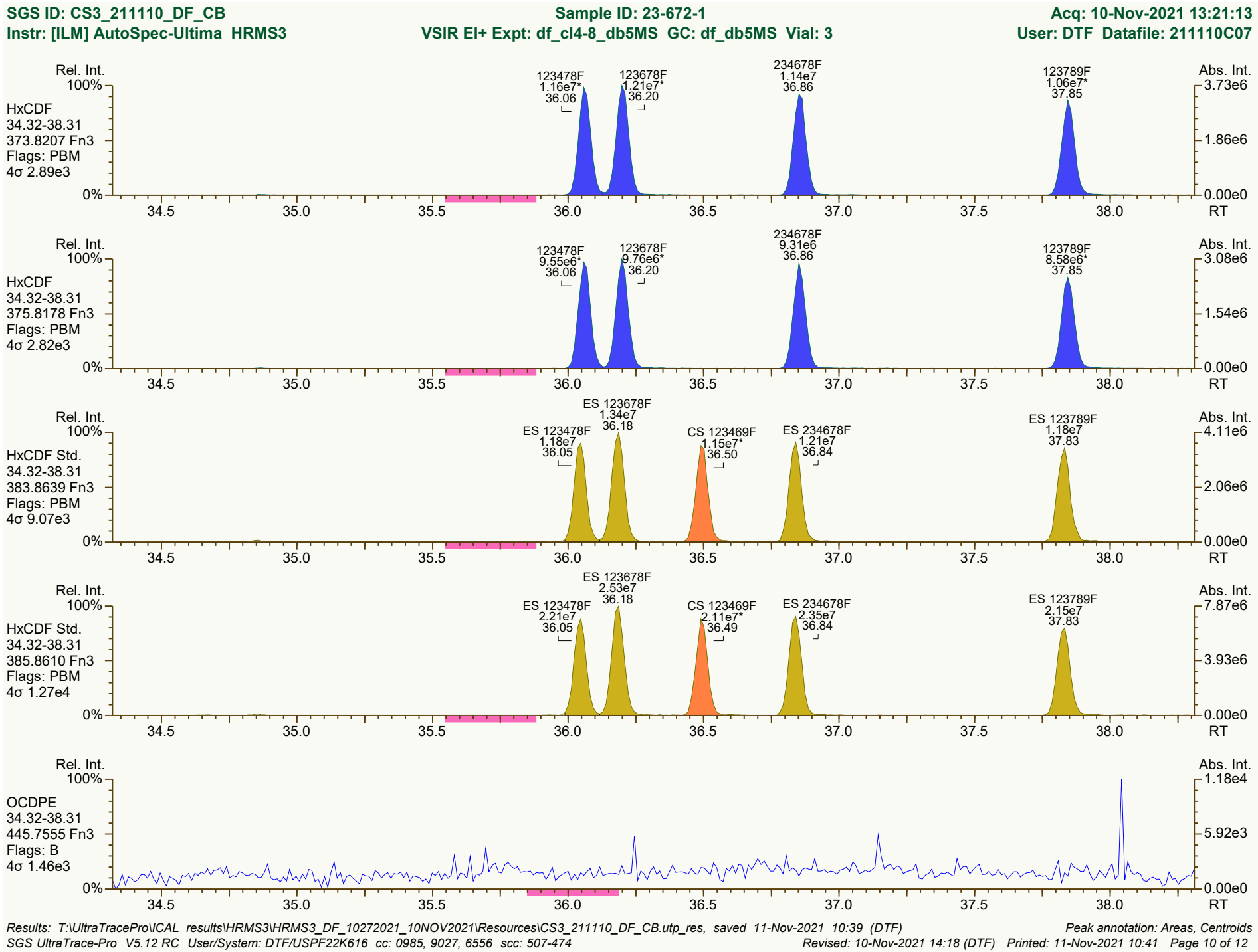

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.61
ES 1234678D
1.37e7
40.27
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.61
ES 1234678D
1.31e7
40.27
Abs. Int.
6.60e6
3.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

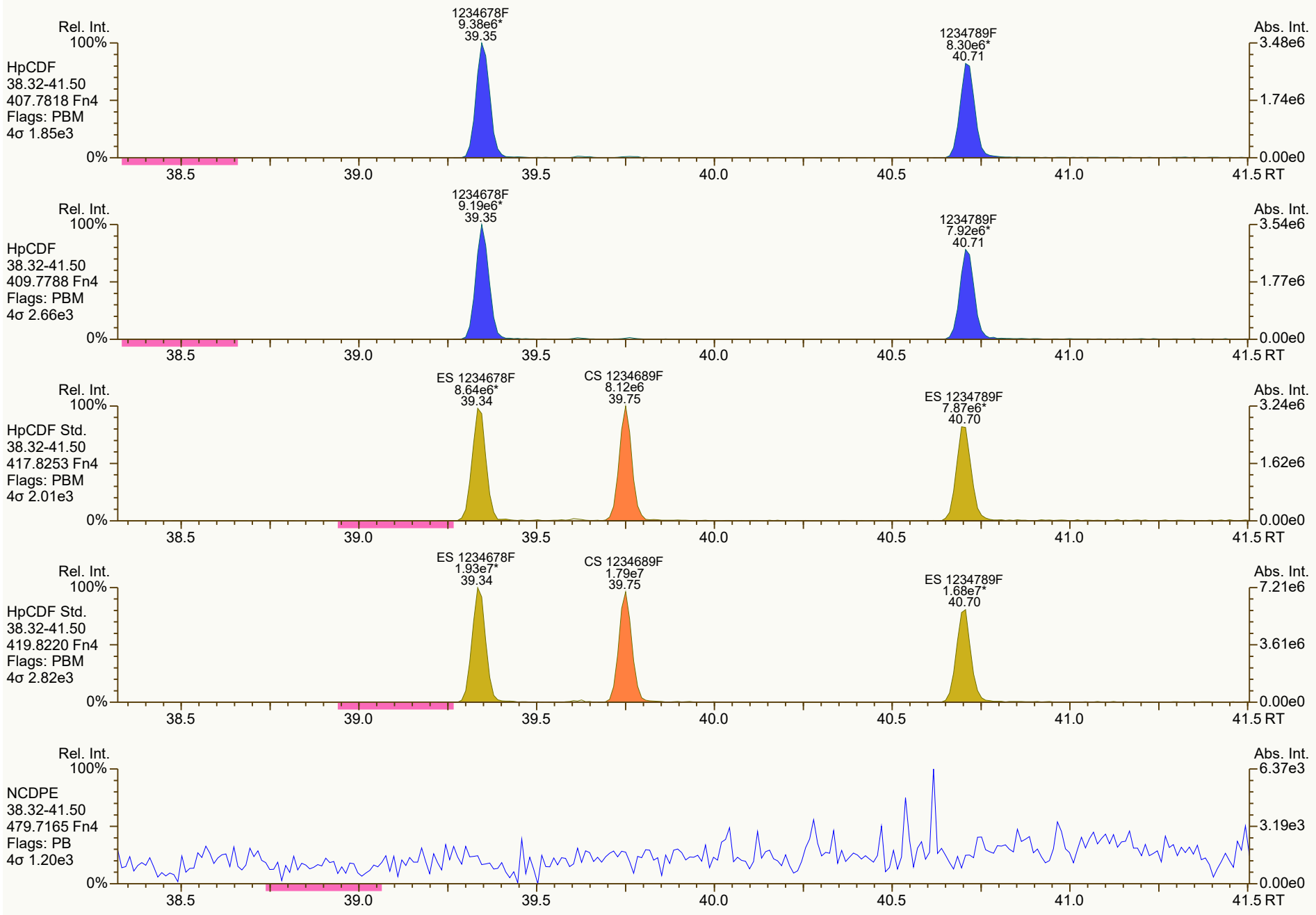

OCDD
9.25e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 9.43e2
0%
Abs. Int.
2.59e6
1.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.02e7*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.14e3
2.86e6
1.43e6
ES OCDD
1.70e7
42.82
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.74e3
4.76e6
2.38e6
ES OCDD
1.86e7
42.82
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.08e3
5.07e6
2.54e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.50e7
7.48e6


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.54e3
0%
2378F
2.58e6
26.68
Abs. Int.
5.81e5
2.91e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.71e3
0%
2378F
3.32e6
26.68
Abs. Int.
7.66e5
3.83e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.69e4
0%
AS 1368F
2.59e7
21.50
JS 1234F
2.21e7
25.25
ES 2378F
2.41e7
26.66
Abs. Int.
5.45e6
2.73e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.04e4
0%
AS 1368F
3.25e7
21.50
JS 1234F
2.82e7
25.25
ES 2378F
3.03e7
26.66
Abs. Int.
6.76e6
3.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.54e3
0%
Abs. Int.
6.84e3
3.42e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.76e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.65e6
4.33e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.86e3
12378F
1.38e7*
31.62
23478F
1.36e7
32.75
Abs. Int.
3.85e6
1.93e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.34e3
12378F
8.95e6*
31.62
23478F
9.01e6
32.75
Abs. Int.
2.59e6
1.29e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 5.91e3
CS 12346F
2.68e7
31.07
ES 12378F
2.82e7
31.61
ES 23478F
2.73e7
32.74
Abs. Int.
7.61e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 5.66e3
CS 12346F
1.70e7
31.07
ES 12378F
1.80e7
31.61
ES 23478F
1.77e7
32.74
Abs. Int.
5.00e6
2.50e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.57e3
Abs. Int.
1.17e4
5.86e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

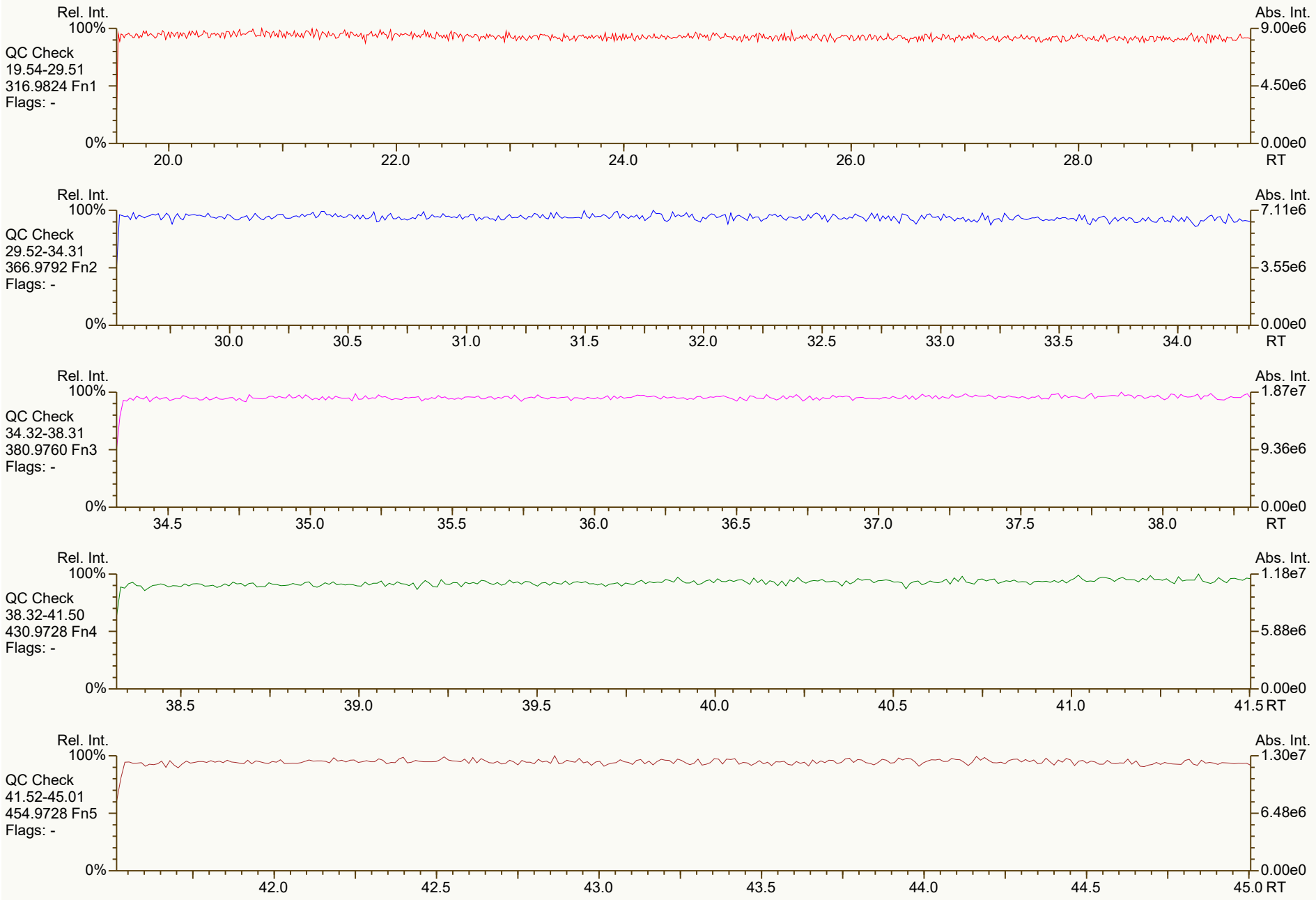

SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.89e3
123478F 1.16e7* 36.06
123678F 1.21e7* 36.20
234678F 1.14e7 36.86
123789F 1.06e7* 37.85
3.73e6
1.86e6
0.00e0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.82e3
123478F 9.55e6* 36.06
123678F 9.76e6* 36.20
234678F 9.31e6 36.86
123789F 8.58e6* 37.85
3.08e6
1.54e6
0.00e0
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 9.07e3
ES 123478F 1.18e7 36.05
ES 123678F 1.34e7 36.18
CS 123469F 1.15e7* 36.50
ES 234678F 1.21e7 36.84
ES 123789F 1.18e7 37.83
4.11e6
2.06e6
0.00e0
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 1.27e4
ES 123478F 2.21e7 36.05
ES 123678F 2.53e7 36.18
CS 123469F 2.11e7* 36.49
ES 234678F 2.35e7 36.84
ES 123789F 2.15e7 37.83
7.87e6
3.93e6
0.00e0
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.46e3
1.18e4
5.92e3
0.00e0
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0985, 9027, 6556 scc: 507-474
Revised: 10-Nov-2021 14:18 (DTF) Printed: 11-Nov-2021 10:41 Page 10 of 12

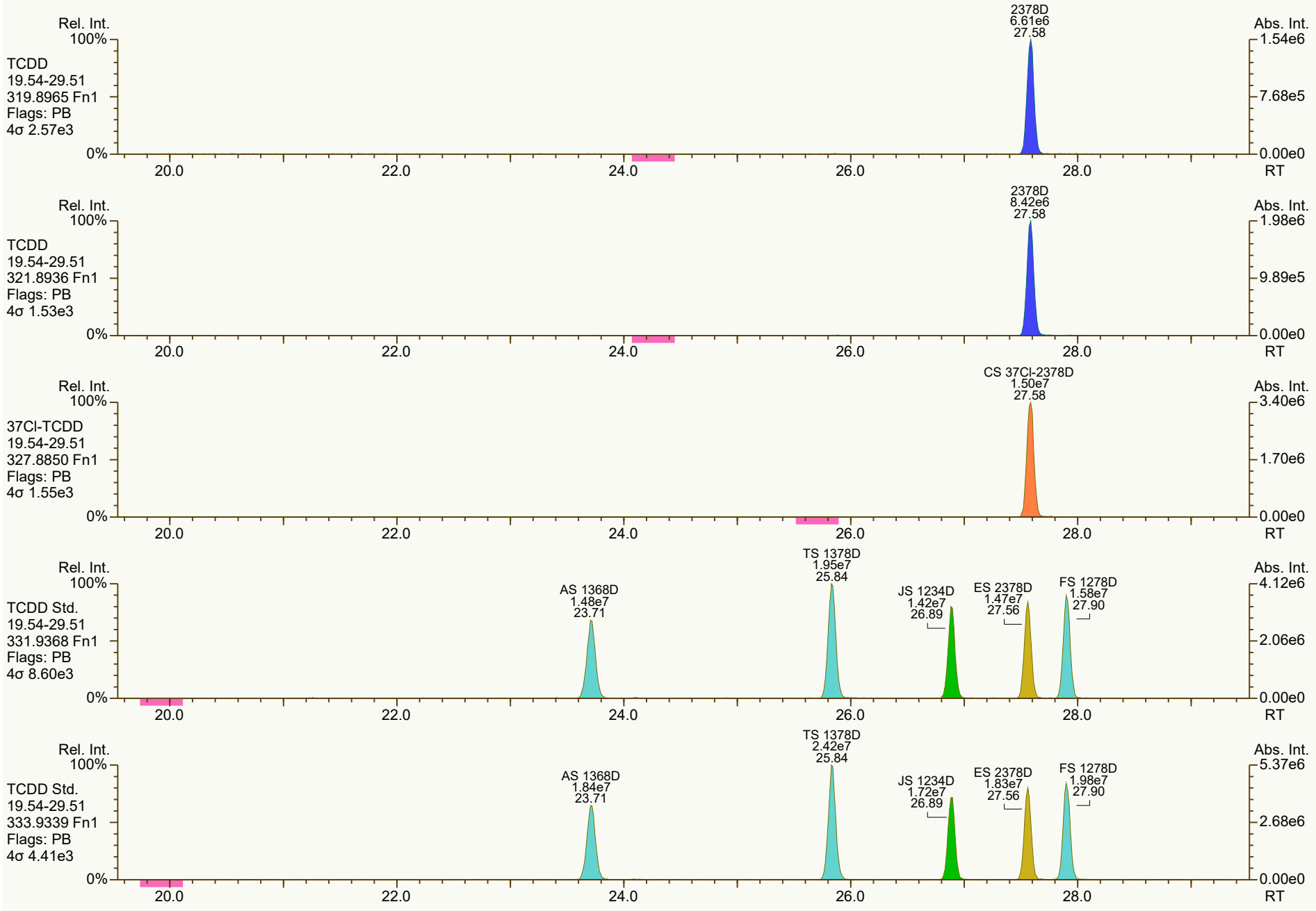

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.85e3
0%
1234678F
9.38e6*
39.35
1234789F
8.30e6*
40.71
Abs. Int.
3.48e6
1.74e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.66e3
0%
1234678F
9.19e6*
39.35
1234789F
7.92e6*
40.71
Abs. Int.
3.54e6
1.77e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.01e3
0%
ES 1234678F
8.64e6*
39.34
CS 1234689F
8.12e6
39.75
ES 1234789F
7.87e6*
40.70
Abs. Int.
3.24e6
1.62e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.82e3
0%
ES 1234678F
1.93e7*
39.34
CS 1234689F
1.79e7
39.75
ES 1234789F
1.68e7*
40.70
Abs. Int.
7.21e6
3.61e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.20e3
0%
Abs. Int.
6.37e3
3.19e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

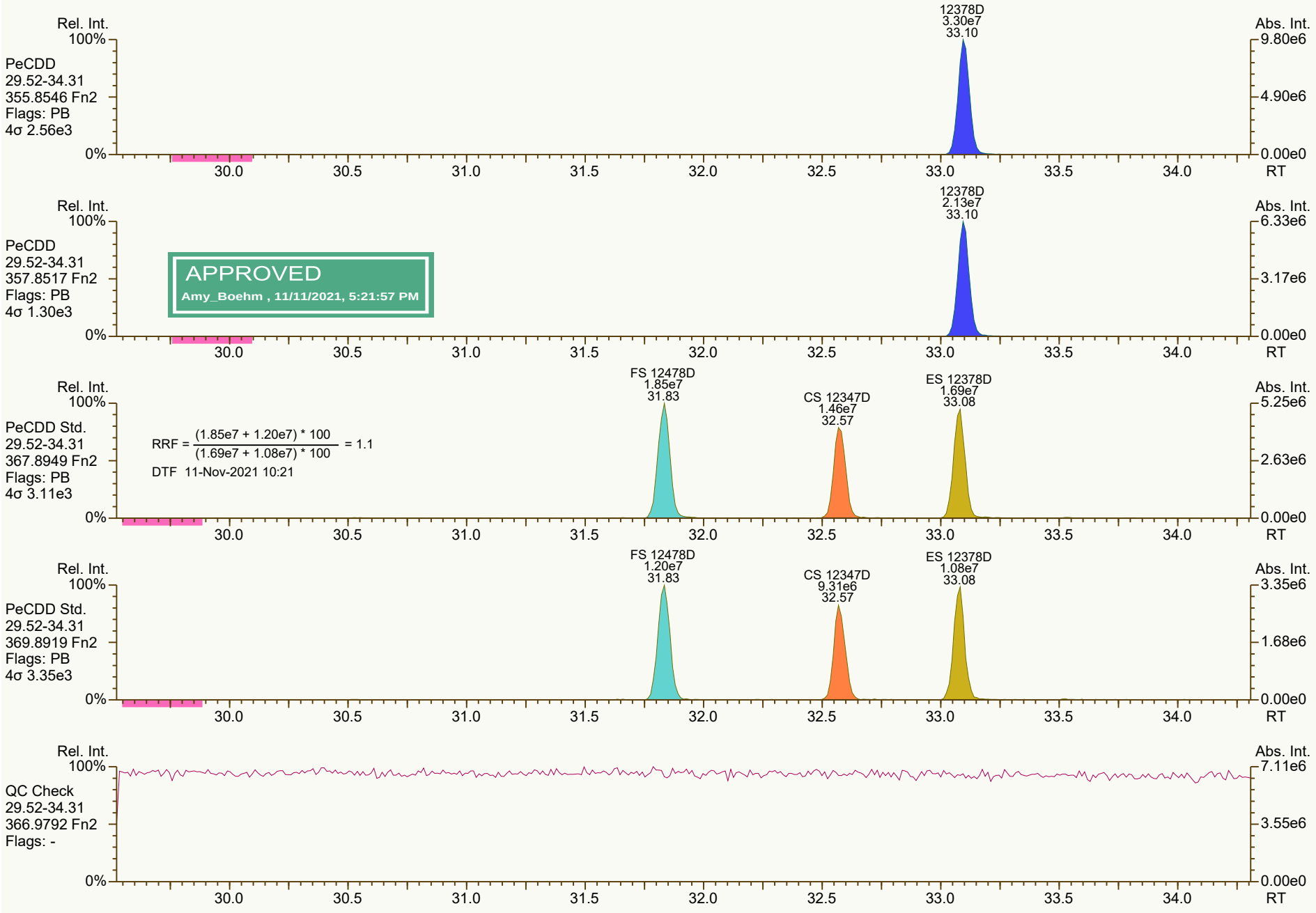

OCDF
1.15e7*
43.00
Rel. Int.
Abs. Int.
100%
0%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
3.25e6
1.62e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.28e7*
43.00
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
3.53e6
1.76e6
ES OCDF
2.21e7*
42.99
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
6.08e6
3.04e6
ES OCDF
2.39e7*
42.99
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
6.65e6
3.32e6
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3
4.82e3
2.41e3

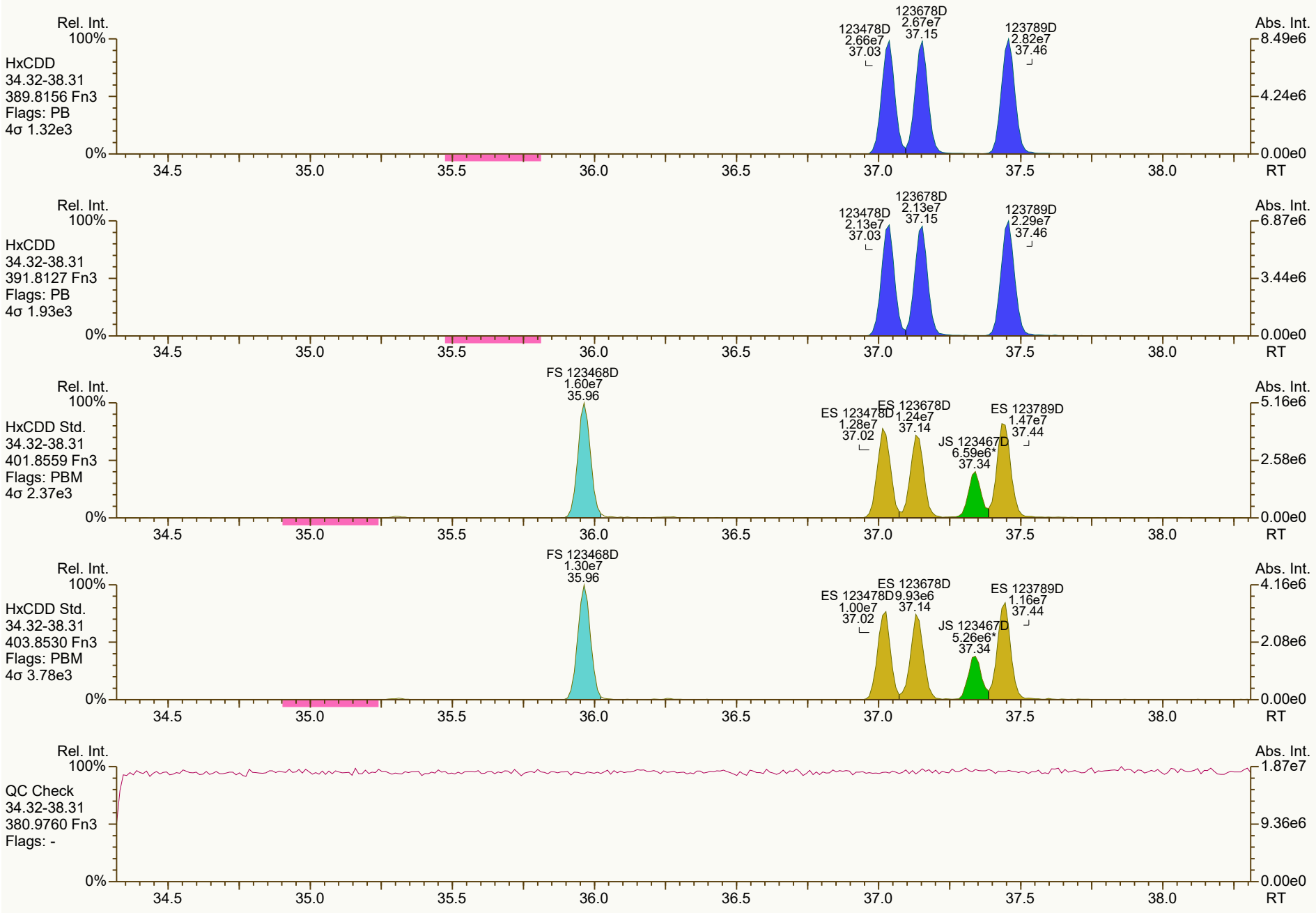
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

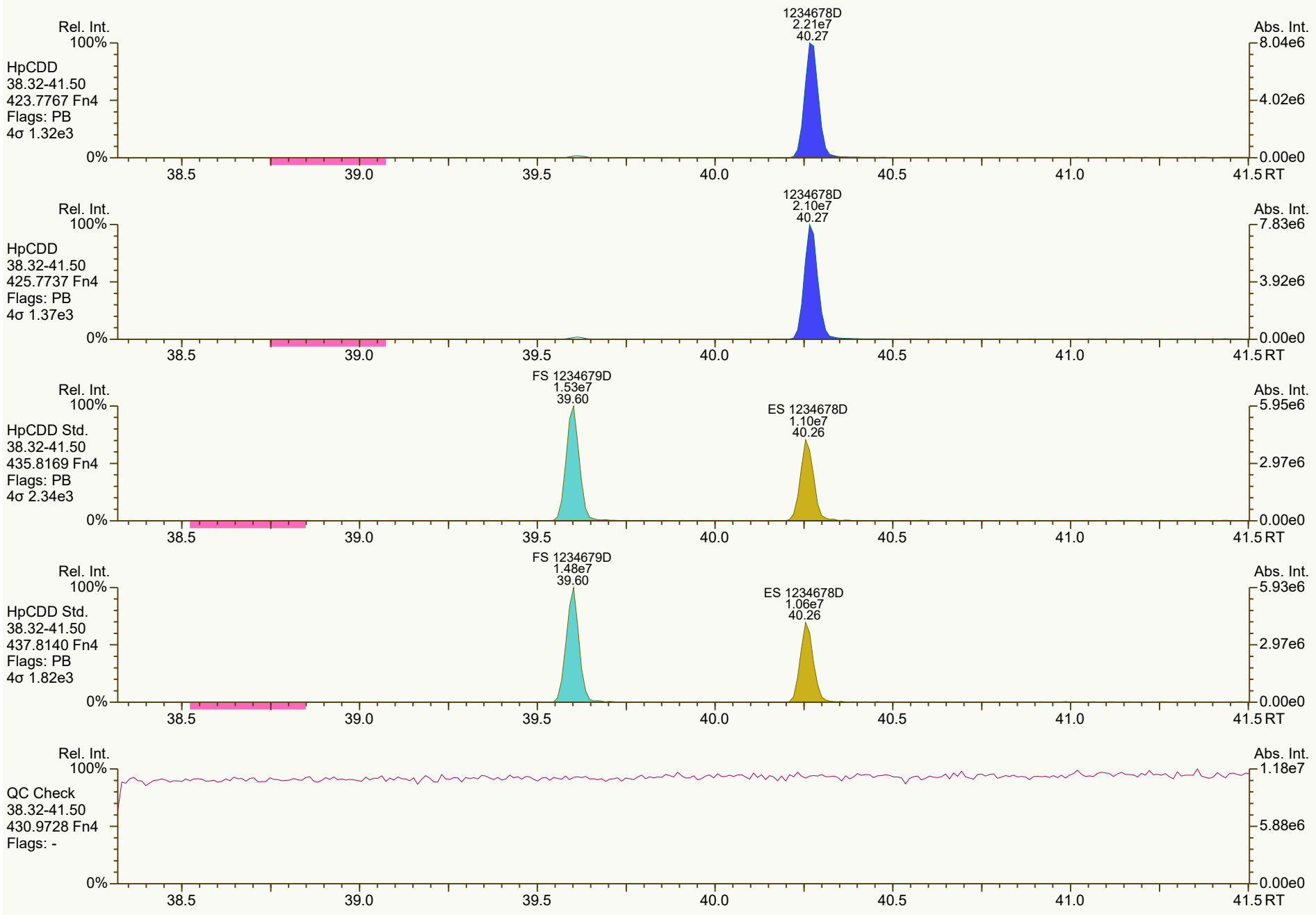
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

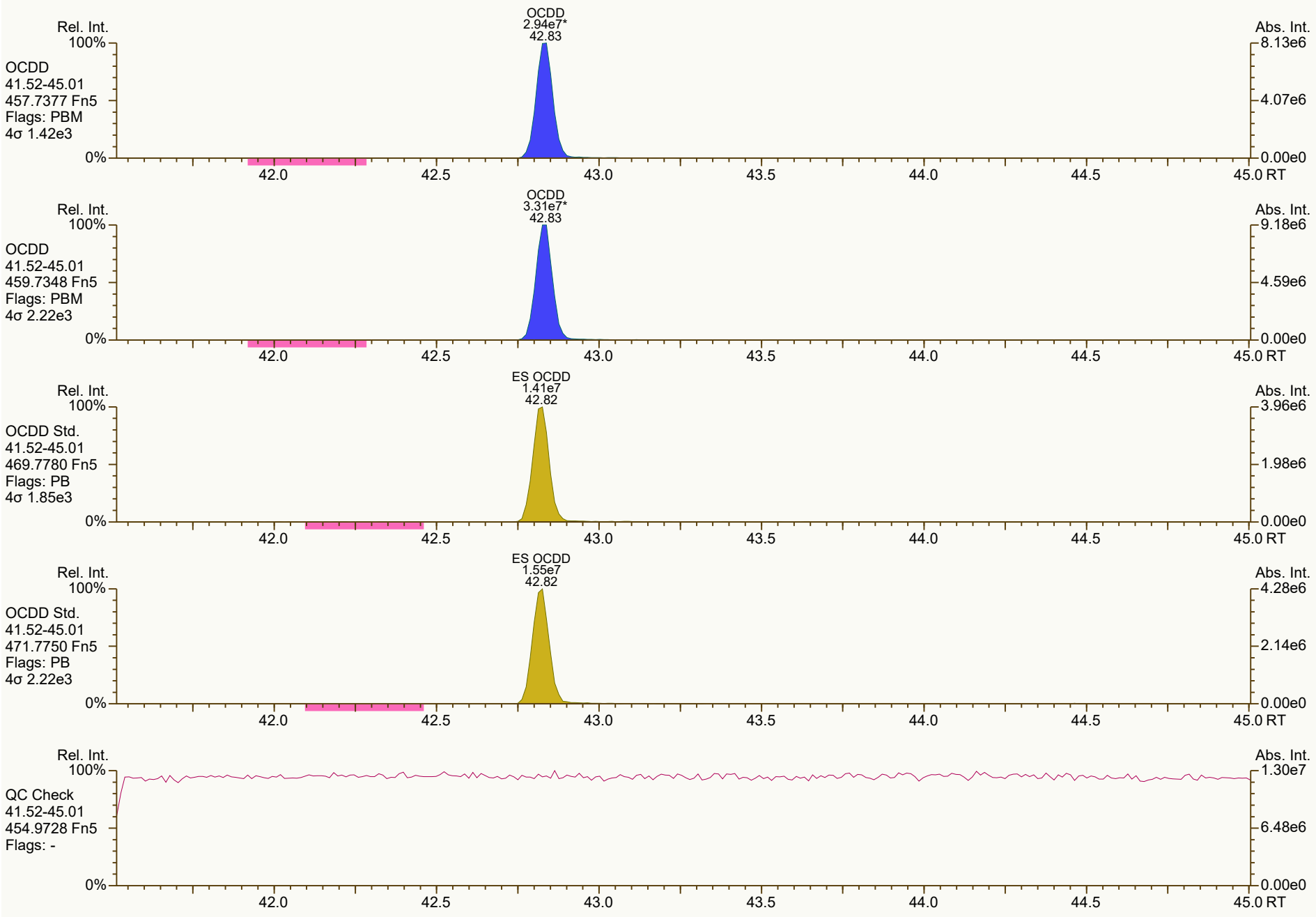

Rel. Int.
100%
0%
Abs. Int.
9.00e6
4.50e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
7.11e6
3.55e6
0.00e0
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.87e7
9.36e6
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.18e7
5.88e6
0.00e0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT


Rel. Int.
100%
0%
Abs. Int.
RT
20.0
22.0
24.0
26.0
28.0
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
2378D
6.61e6
27.58
1.54e6
7.68e5
0.00e0
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
2378D
8.42e6
27.58
1.98e6
9.89e5
0.00e0
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
CS 37Cl-2378D
1.50e7
27.58
3.40e6
1.70e6
0.00e0
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
4.12e6
2.06e6
0.00e0
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
5.37e6
2.68e6
0.00e0


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PB
4σ 2.56e3
0%
12378D
3.30e7
33.10
Abs. Int.
9.80e6
4.90e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PB
4σ 1.30e3
12378D
2.13e7
33.10
6.33e6
3.17e6
APPROVED
Amy_Boehm , 11/11/2021, 5:21:57 PM
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 3.11e3
RRF = (1.85e7 + 1.20e7) * 100 / (1.69e7 + 1.08e7) * 100 = 1.1
DTF 11-Nov-2021 10:21
FS 12478D
1.85e7
31.83
CS 12347D
1.46e7
32.57
ES 12378D
1.69e7
33.08
5.25e6
2.63e6
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 3.35e3
FS 12478D
1.20e7
31.83
CS 12347D
9.31e6
32.57
ES 12378D
1.08e7
33.08
3.35e6
1.68e6
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
7.11e6
3.55e6

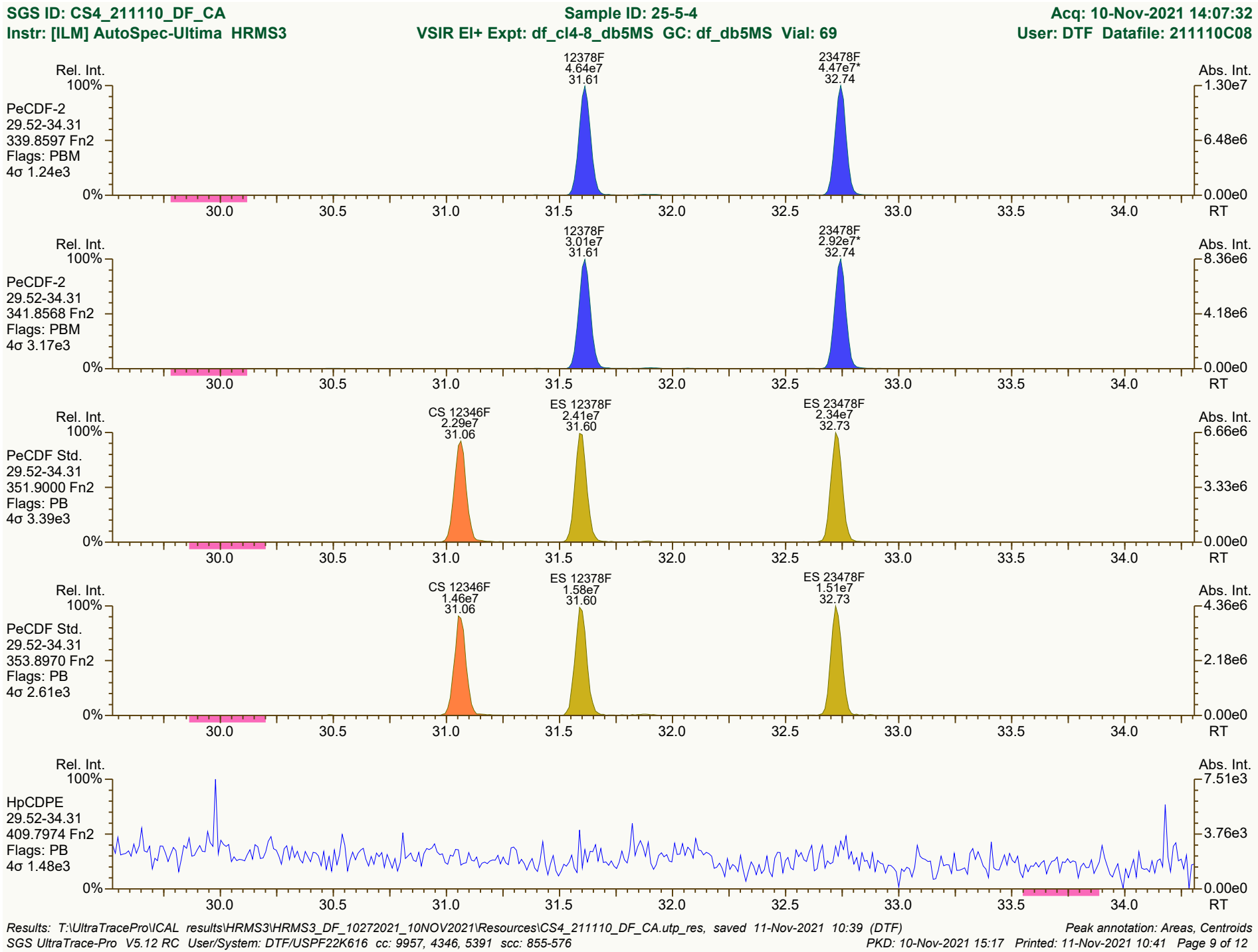

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123478D
2.66e7
37.03
123678D
2.67e7
37.15
123789D
2.82e7
37.46
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123478D
2.13e7
37.03
123678D
2.13e7
37.15
123789D
2.29e7
37.46
Abs. Int.
6.87e6
3.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D
1.60e7
35.96
ES 123478D
1.28e7
37.02
ES 123678D
1.24e7
37.14
JS 123467D
6.59e6*
37.34
ES 123789D
1.47e7
37.44
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D
1.30e7
35.96
ES 123478D
1.00e7
37.02
ES 123678D
9.93e6
37.14
JS 123467D
5.26e6*
37.34
ES 123789D
1.16e7
37.44
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.87e7
9.36e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

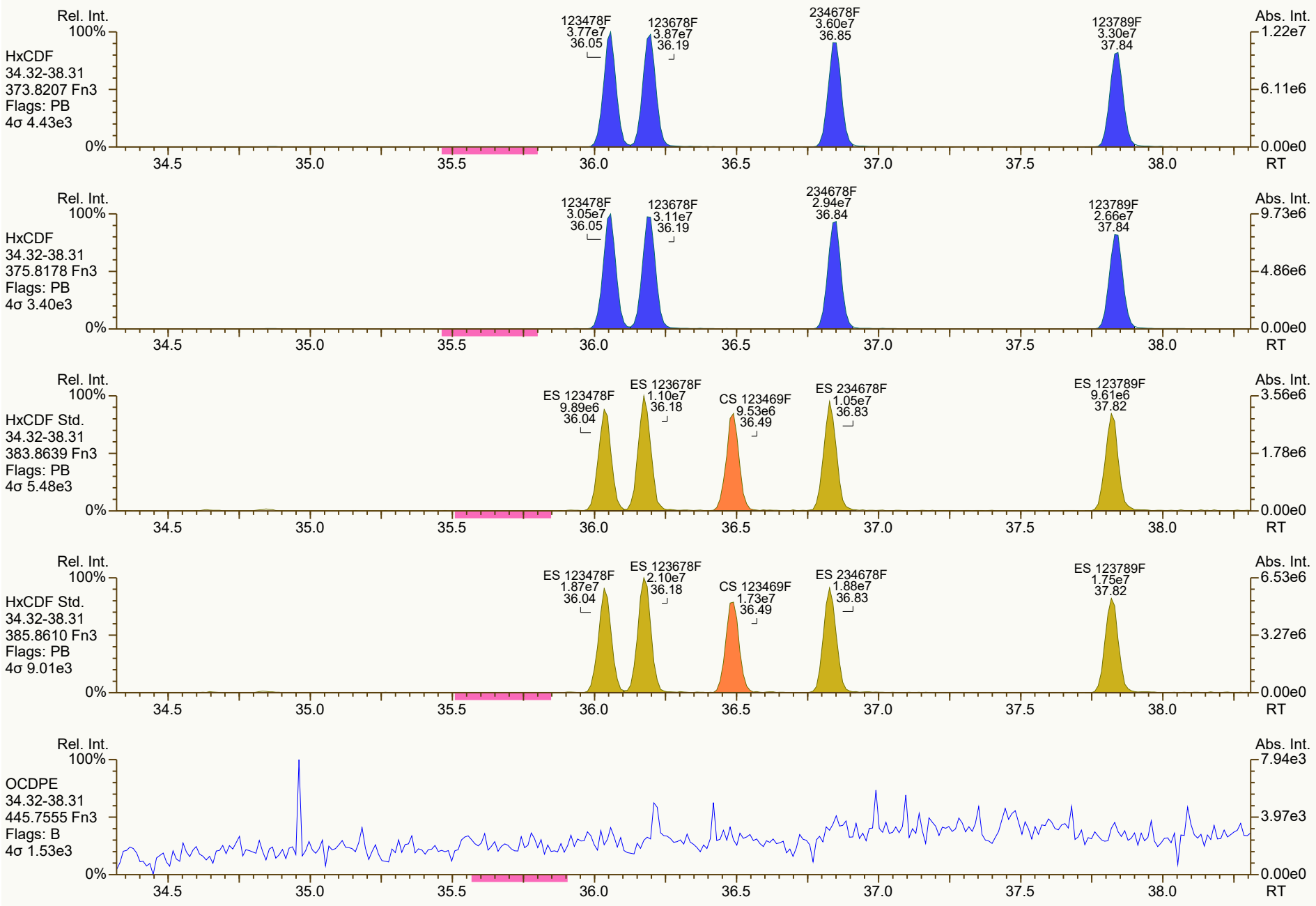

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
0%
1234678D
2.21e7
40.27
Abs. Int.
8.04e6
4.02e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
0%
1234678D
2.10e7
40.27
Abs. Int.
7.83e6
3.92e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
0%
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
Abs. Int.
5.95e6
2.97e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
0%
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
Abs. Int.
5.93e6
2.97e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.18e7
5.88e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

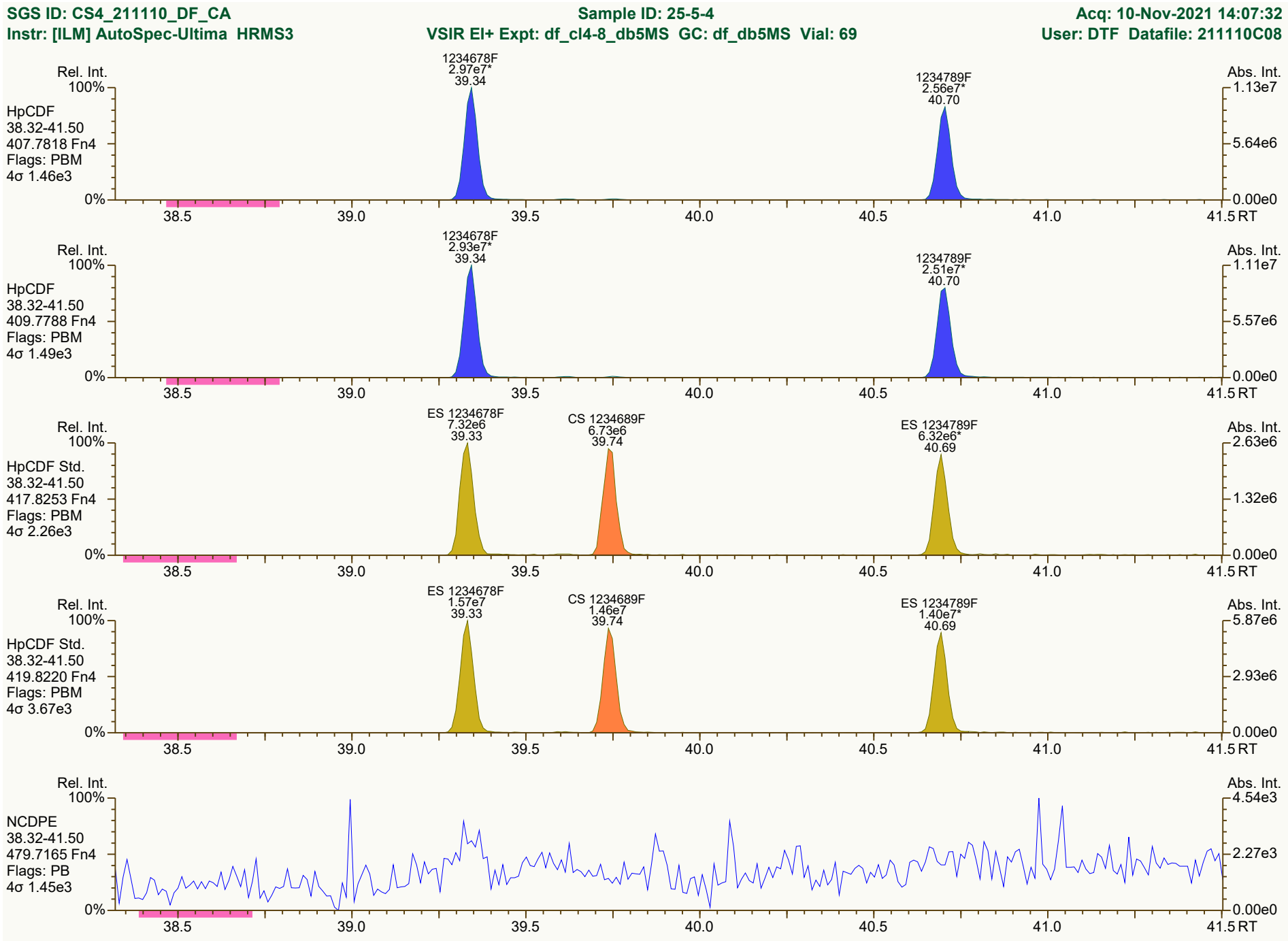

OCDD
2.94e7*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
8.13e6
4.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.31e7*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.22e3
0%
Abs. Int.
9.18e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.41e7
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
Abs. Int.
3.96e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.55e7
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.22e3
0%
Abs. Int.
4.28e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

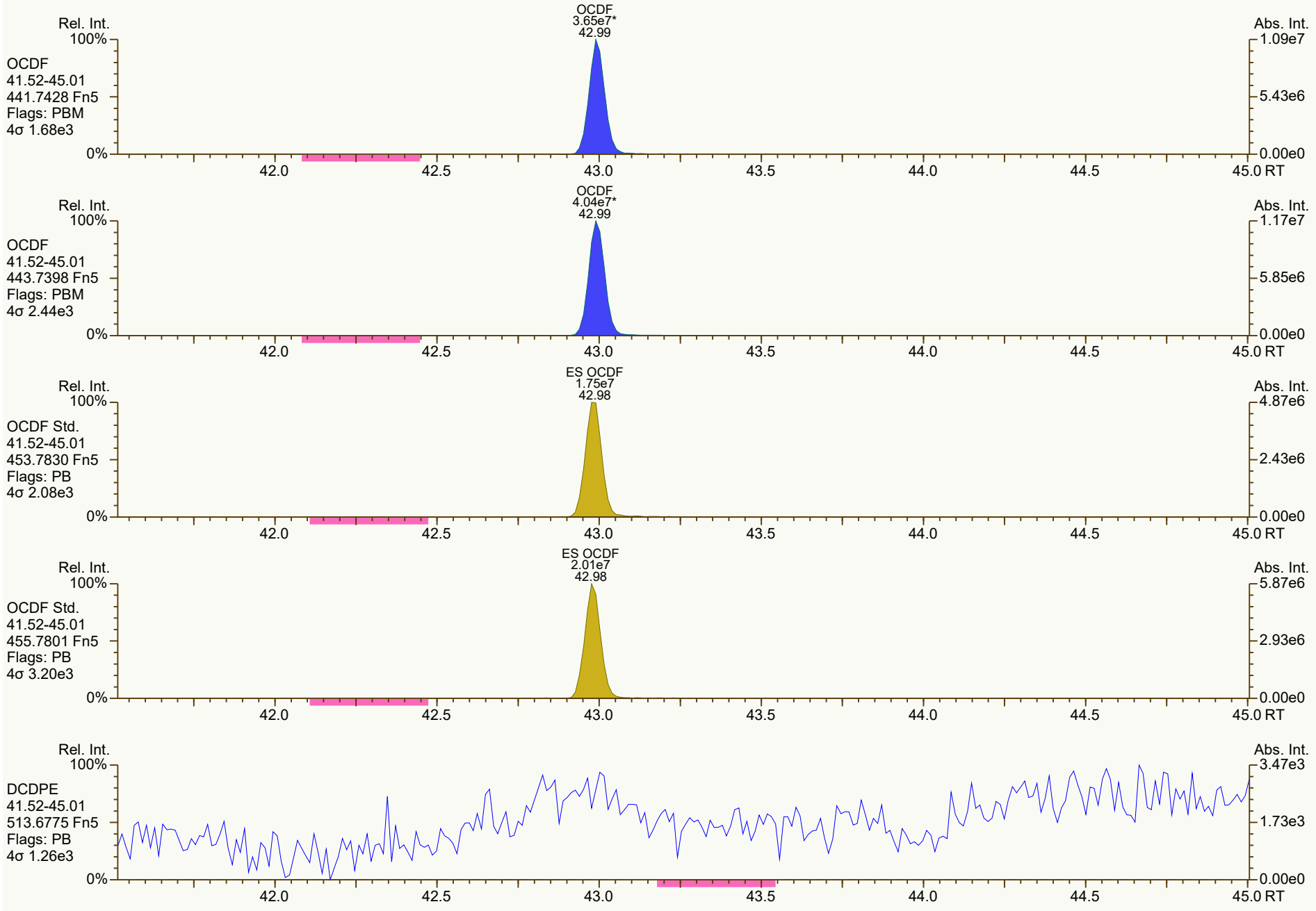

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
0%
2378F
8.36e6
26.67
Abs. Int.
1.89e6
9.43e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
2378F
1.07e7
26.67
2.41e6
1.20e6
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7*
25.23
ES 2378F
2.05e7
26.65
4.47e6
2.23e6
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7*
25.23
ES 2378F
2.57e7
26.65
5.68e6
2.84e6
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
9.44e3
4.72e3


Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.83e3
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
8.94e3
4.47e3
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
9.00e6
4.50e6


SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
1.30e7
6.48e6
0.00e0
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
8.36e6
4.18e6
0.00e0
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12346F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
6.66e6
3.33e6
0.00e0
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12346F
1.46e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
4.36e6
2.18e6
0.00e0
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
7.51e3
3.76e3
0.00e0
100%
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9957, 4346, 5391 scc: 855-576
PKD: 10-Nov-2021 15:17 Printed: 11-Nov-2021 10:41 Page 9 of 12


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 4.43e3
0%
123478F
3.77e7
36.05
123678F
3.87e7
36.19
234678F
3.60e7
36.85
123789F
3.30e7
37.84
Abs. Int.
1.22e7
6.11e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 3.40e3
123478F
3.05e7
36.05
123678F
3.11e7
36.19
234678F
2.94e7
36.84
123789F
2.66e7
37.84
9.73e6
4.86e6
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.48e3
ES 123478F
9.89e6
36.04
ES 123678F
1.10e7
36.18
CS 123469F
9.53e6
36.49
ES 234678F
1.05e7
36.83
ES 123789F
9.61e6
37.82
3.56e6
1.78e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 9.01e3
ES 123478F
1.87e7
36.04
ES 123678F
2.10e7
36.18
CS 123469F
1.73e7
36.49
ES 234678F
1.88e7
36.83
ES 123789F
1.75e7
37.82
6.53e6
3.27e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.53e3
7.94e3
3.97e3


SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
1234678F
2.97e7*
39.34
1234789F
2.56e7*
40.70
1.13e7
5.64e6
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
1.11e7
5.57e6
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
2.63e6
1.32e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
ES 1234678F
1.57e7
39.33
CS 1234689F
1.46e7
39.74
ES 1234789F
1.40e7*
40.69
5.87e6
2.93e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
4.54e3
2.27e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2764, 9565, 4492 scc: 855-576
Revised: 10-Nov-2021 15:17 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

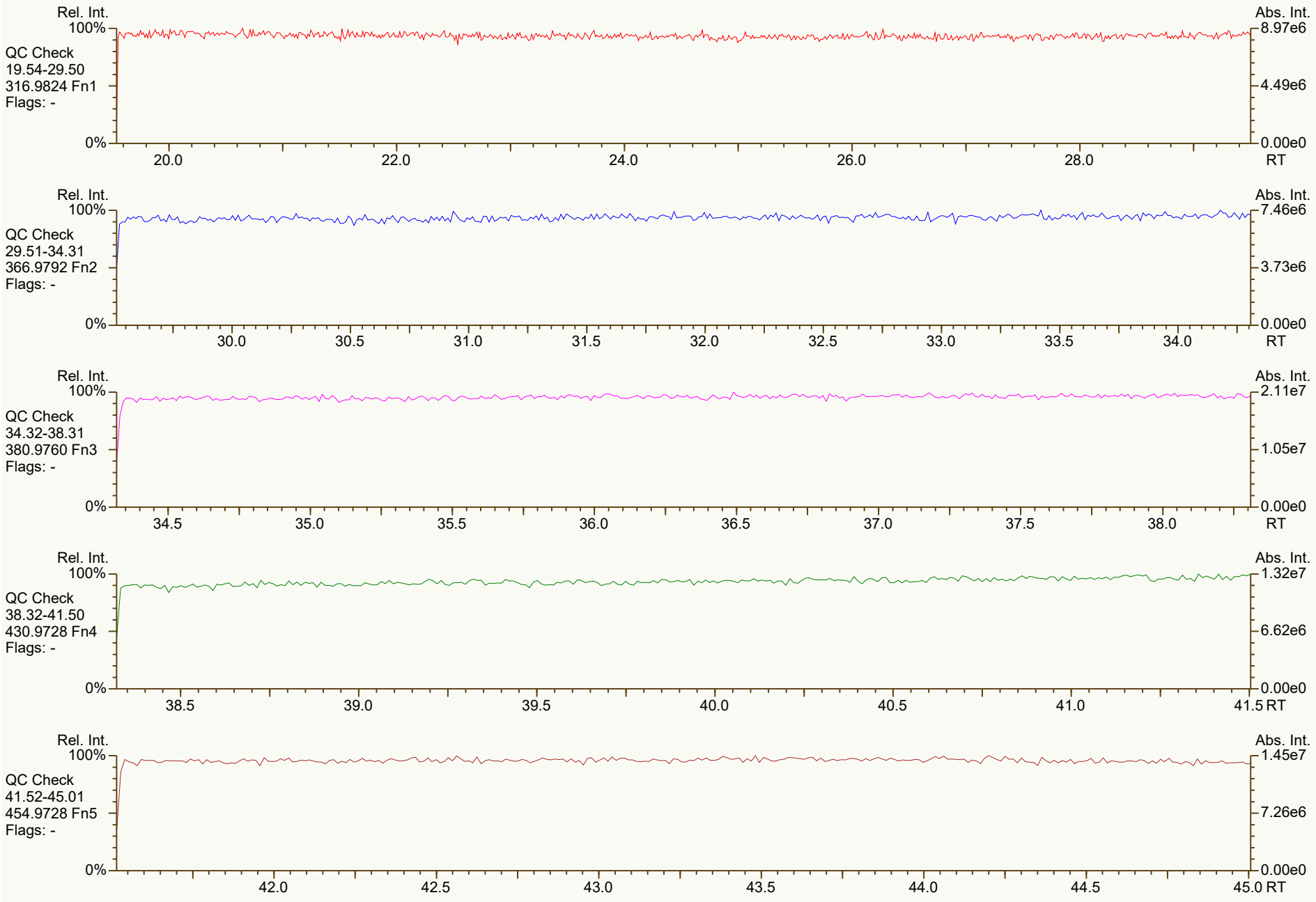

OCDF
3.65e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.04e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.75e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
0%
Abs. Int.
4.87e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
0%
Abs. Int.
5.87e6
2.93e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
0%
Abs. Int.
3.47e3
1.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

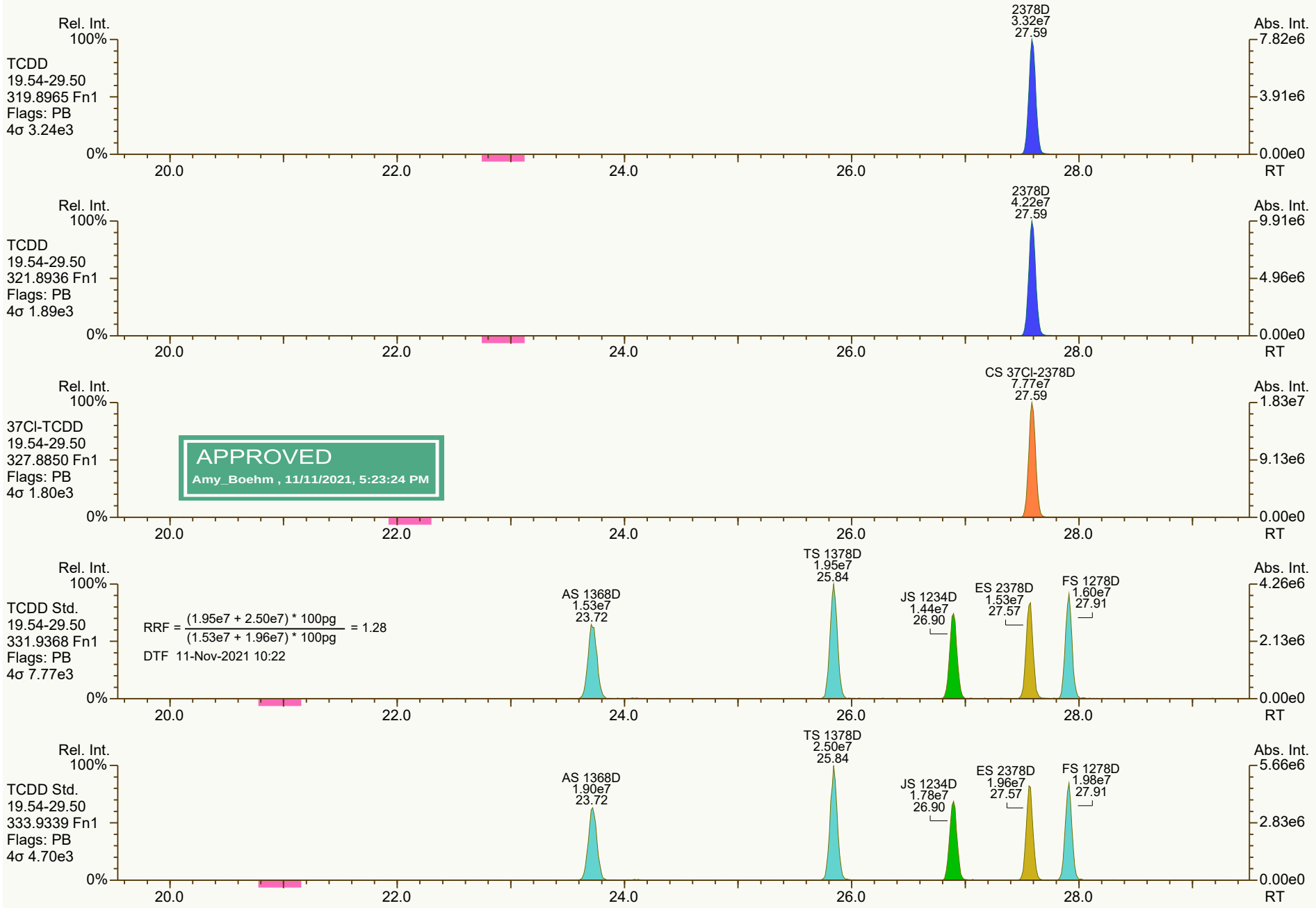
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

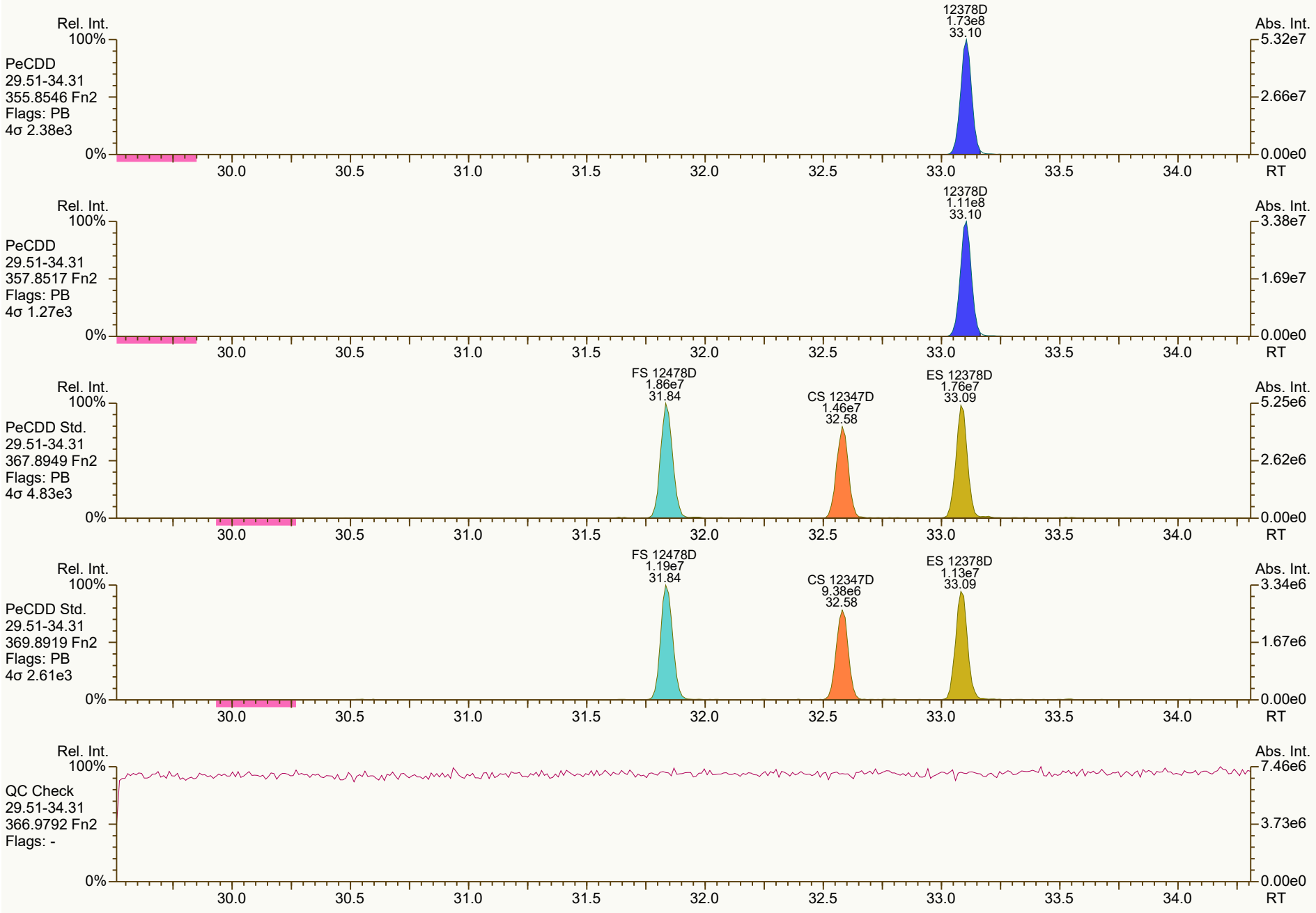
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

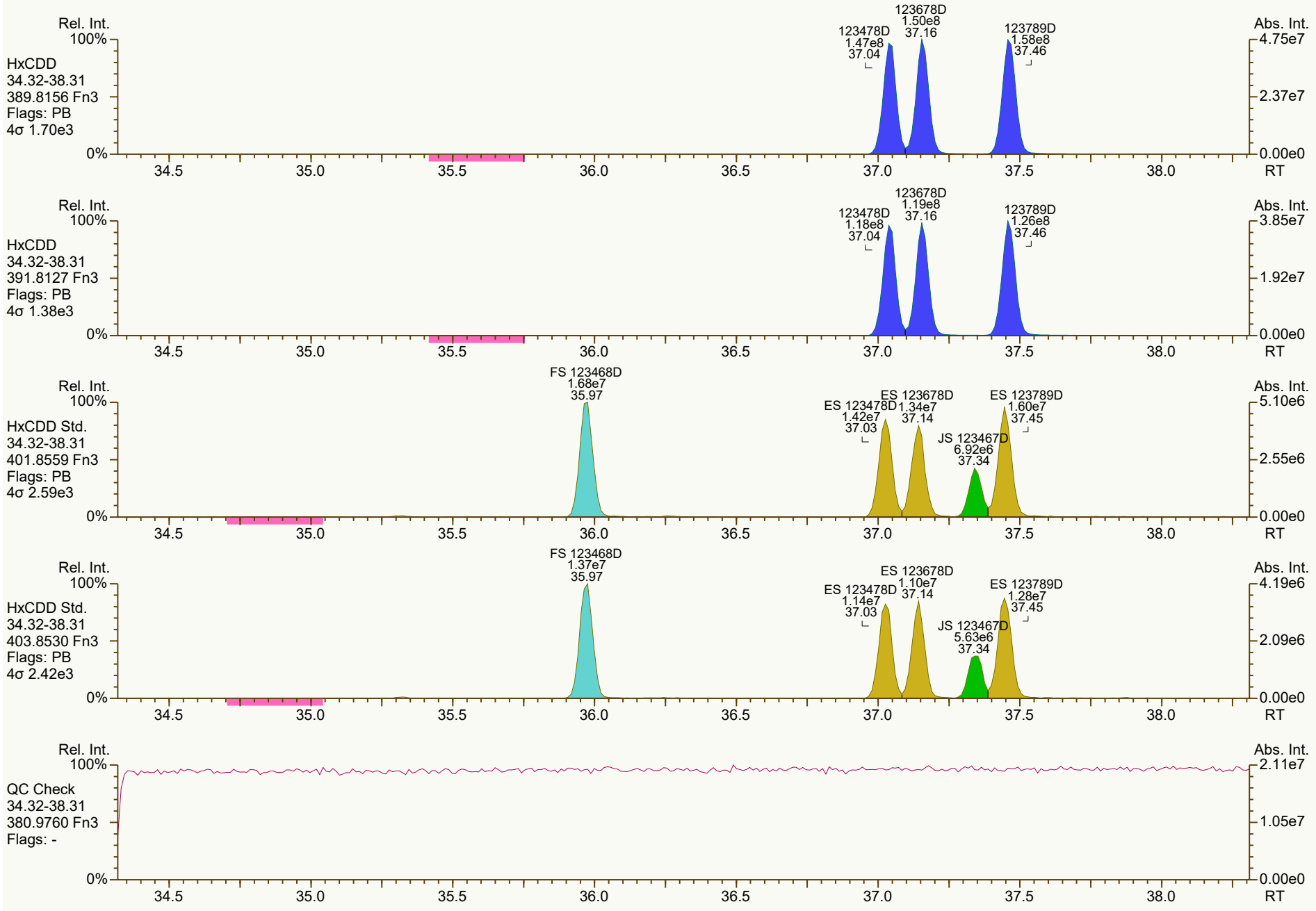
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

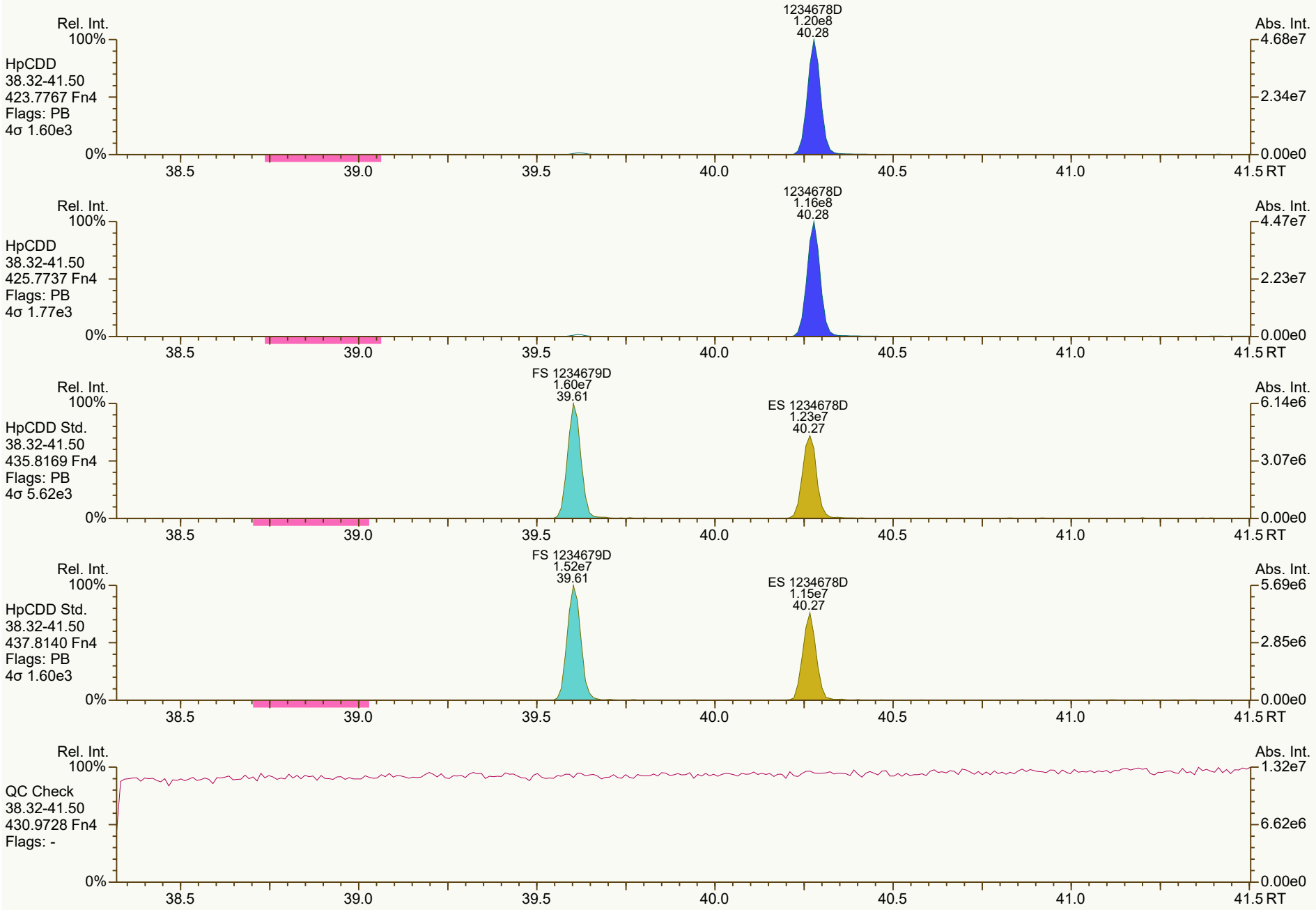
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

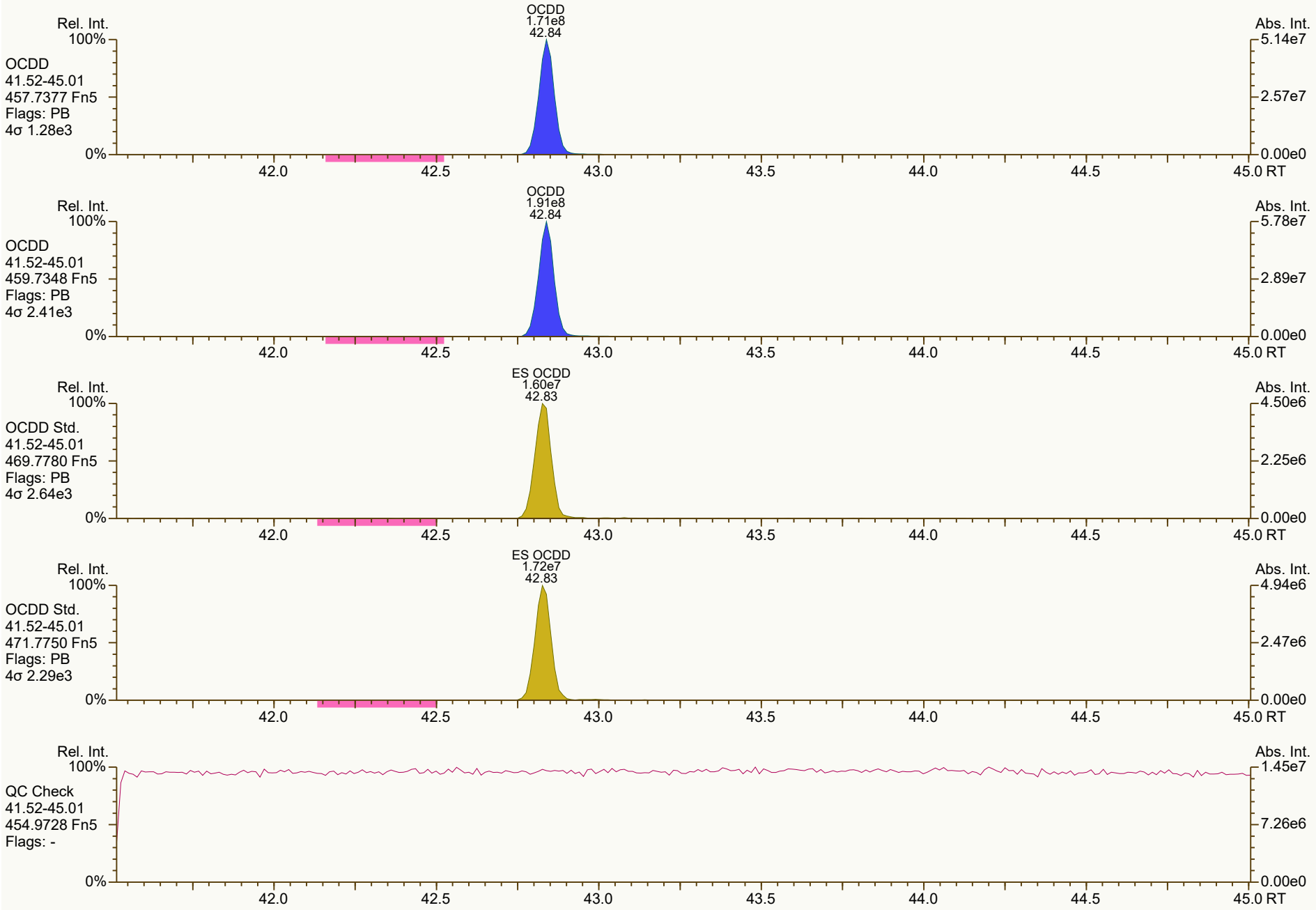

Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.97e6
4.49e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.46e6
3.73e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.11e7
1.05e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.32e7
6.62e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.45e7
7.26e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PB
4σ 3.24e3
0%
2378D
3.32e7
27.59
Abs. Int.
7.82e6
3.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
TCDD
19.54-29.50
321.8936 Fn1
Flags: PB
4σ 1.89e3
2378D
4.22e7
27.59
9.91e6
4.96e6
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: PB
4σ 1.80e3
APPROVED
Amy_Boehm , 11/11/2021, 5:23:24 PM
CS 37Cl-2378D
7.77e7
27.59
1.83e7
9.13e6
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 7.77e3
RRF = (1.95e7 + 2.50e7) * 100pg / (1.53e7 + 1.96e7) * 100pg = 1.28
DTF 11-Nov-2021 10:22
AS 1368D
1.53e7
23.72
TS 1378D
1.95e7
25.84
JS 1234D
1.44e7
26.90
ES 2378D
1.53e7
27.57
FS 1278D
1.60e7
27.91
4.26e6
2.13e6
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.70e3
AS 1368D
1.90e7
23.72
TS 1378D
2.50e7
25.84
JS 1234D
1.78e7
26.90
ES 2378D
1.96e7
27.57
FS 1278D
1.98e7
27.91
5.66e6
2.83e6


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
0%
12378D
1.73e8
33.10
Abs. Int.
5.32e7
2.66e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
0%
12378D
1.11e8
33.10
Abs. Int.
3.38e7
1.69e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
1.86e7
31.84
CS 12347D
1.46e7
32.58
ES 12378D
1.76e7
33.09
Abs. Int.
5.25e6
2.62e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
0%
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
Abs. Int.
3.34e6
1.67e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.46e6
3.73e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

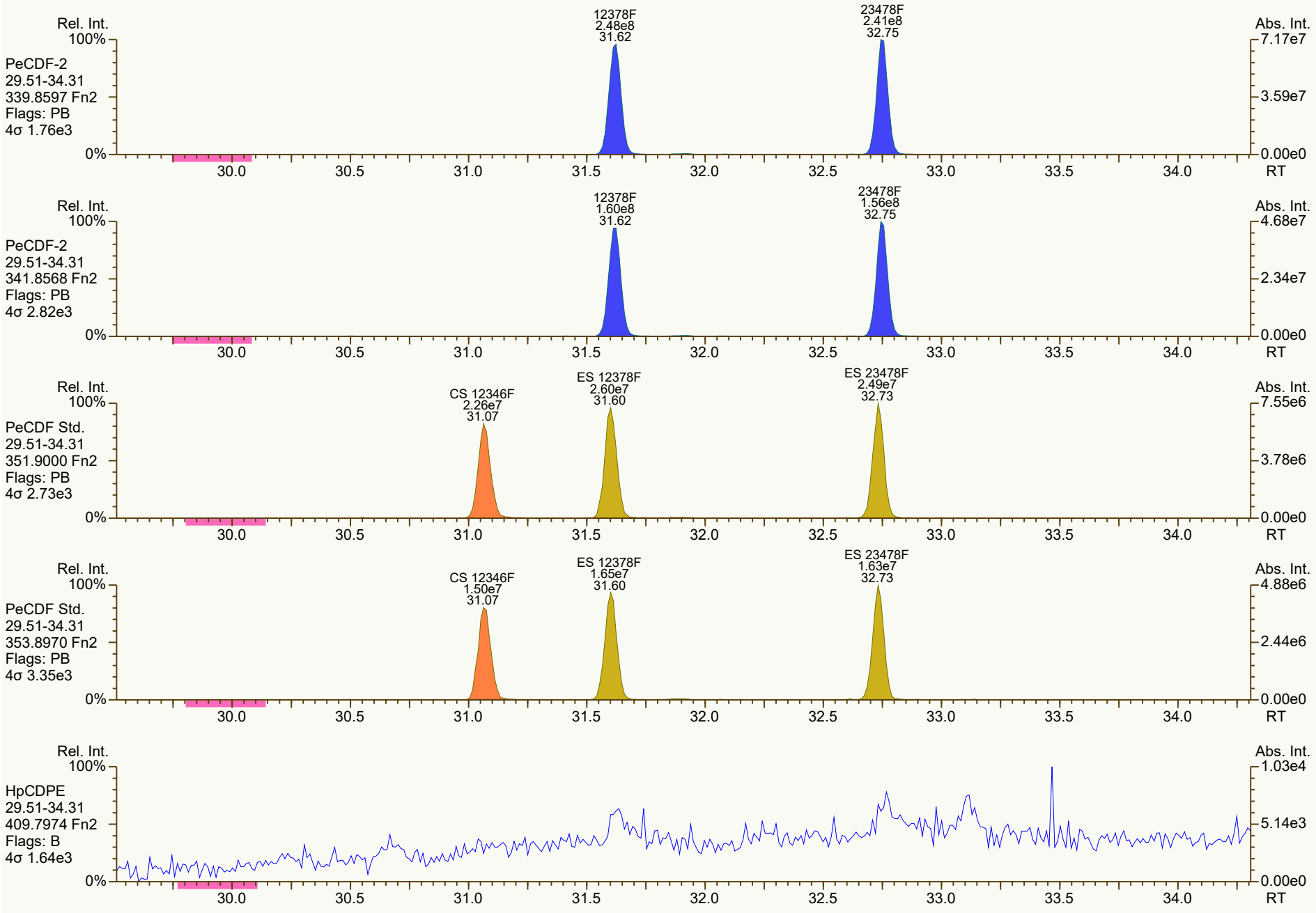

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
123478D
1.47e8
37.04
123678D
1.50e8
37.16
123789D
1.58e8
37.46
Abs. Int.
4.75e7
2.37e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
123478D
1.18e8
37.04
123678D
1.19e8
37.16
123789D
1.26e8
37.46
Abs. Int.
3.85e7
1.92e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
FS 123468D
1.68e7
35.97
ES 123478D
1.42e7
37.03
ES 123678D
1.34e7
37.14
JS 123467D
6.92e6
37.34
ES 123789D
1.60e7
37.45
Abs. Int.
5.10e6
2.55e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
FS 123468D
1.37e7
35.97
ES 123478D
1.14e7
37.03
ES 123678D
1.10e7
37.14
JS 123467D
5.63e6
37.34
ES 123789D
1.28e7
37.45
Abs. Int.
4.19e6
2.09e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.11e7
1.05e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

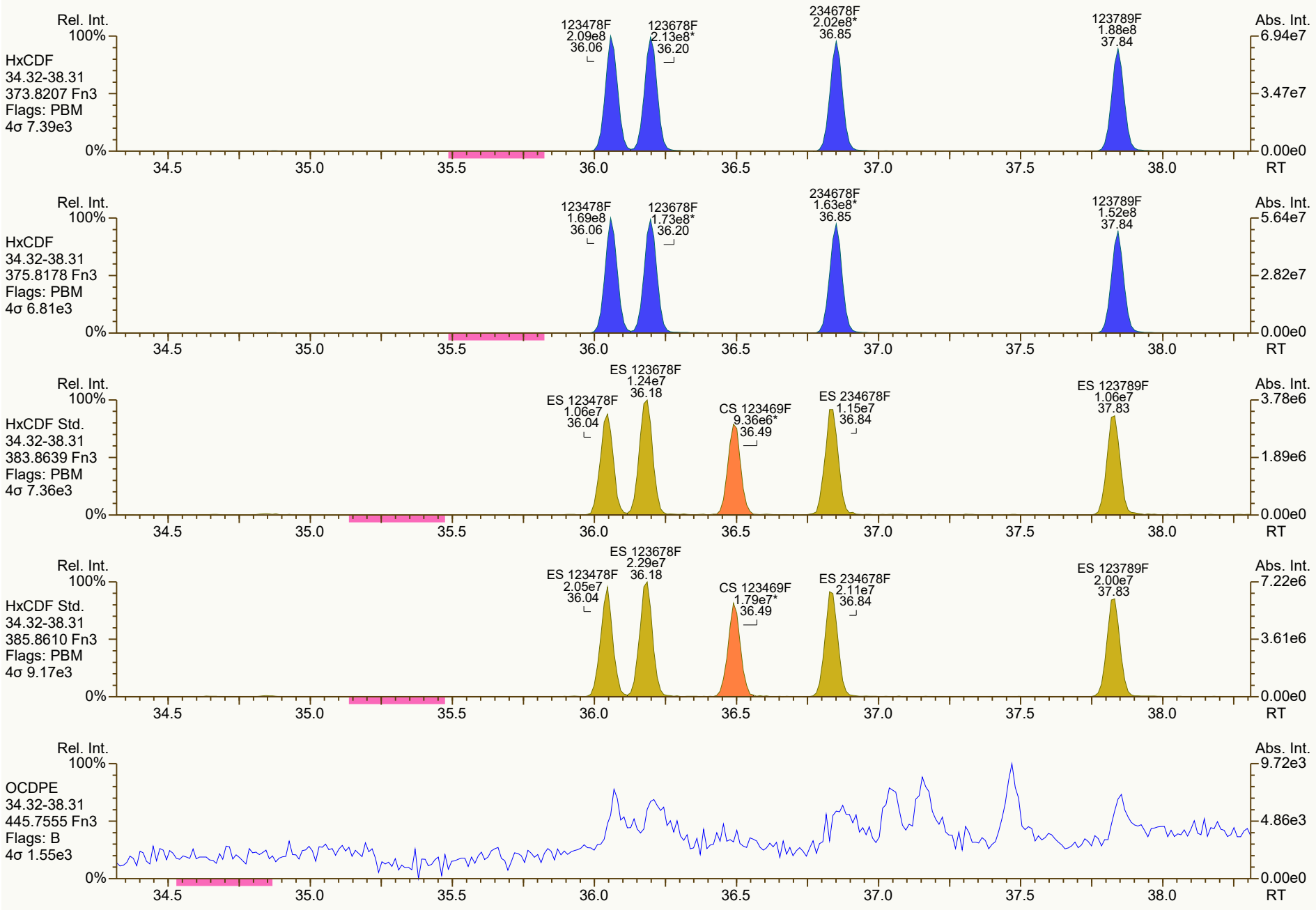

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
1.20e8
40.28
Abs. Int.
4.68e7
2.34e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.77e3
1234678D
1.16e8
40.28
Abs. Int.
4.47e7
2.23e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 5.62e3
FS 1234679D
1.60e7
39.61
ES 1234678D
1.23e7
40.27
Abs. Int.
6.14e6
3.07e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.60e3
FS 1234679D
1.52e7
39.61
ES 1234678D
1.15e7
40.27
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.32e7
6.62e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

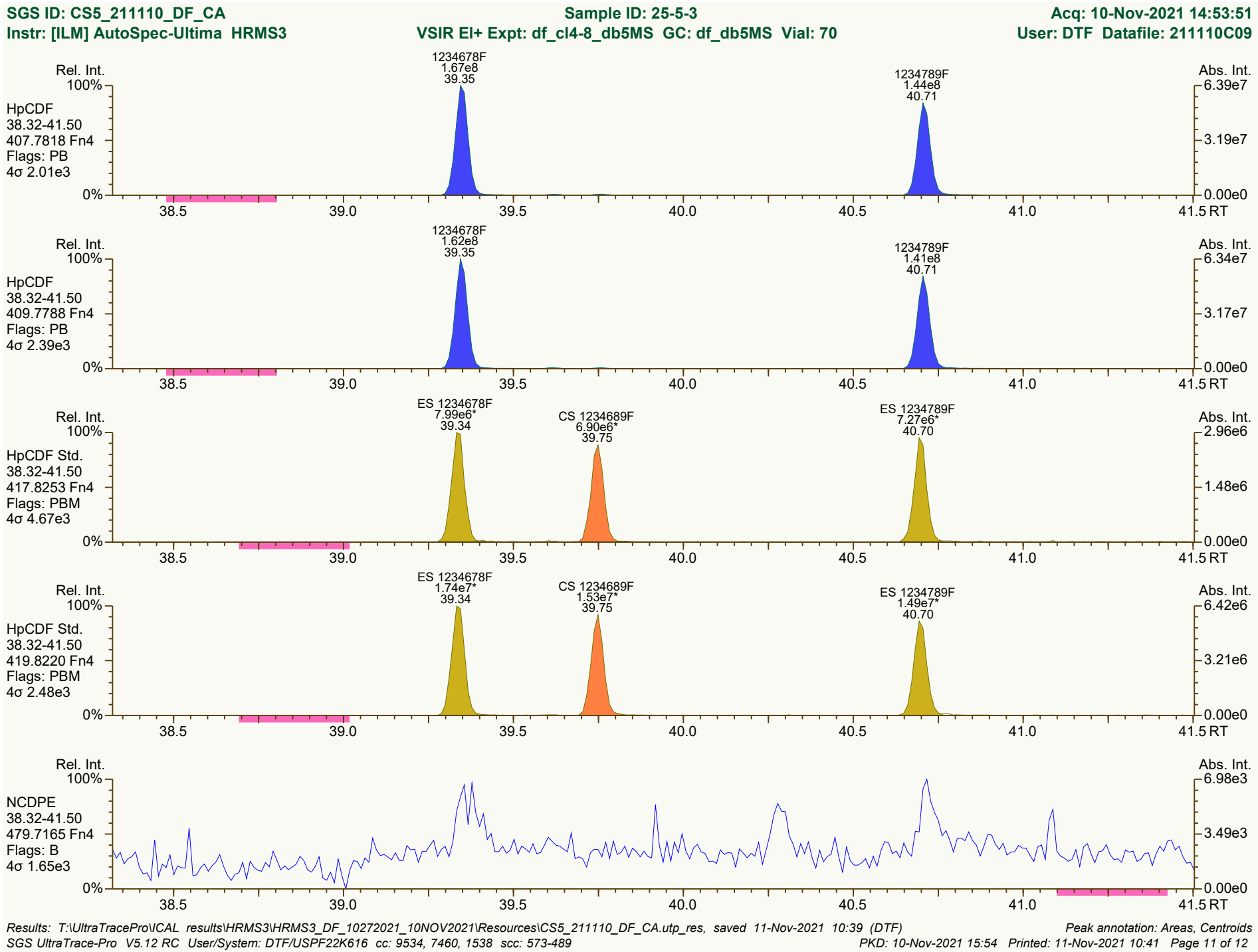

OCDD
1.71e8
42.84
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
0%
Abs. Int.
5.14e7
2.57e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e8
42.84
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
5.78e7
2.89e7
ES OCDD
1.60e7
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
4.50e6
2.25e6
ES OCDD
1.72e7
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
4.94e6
2.47e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6

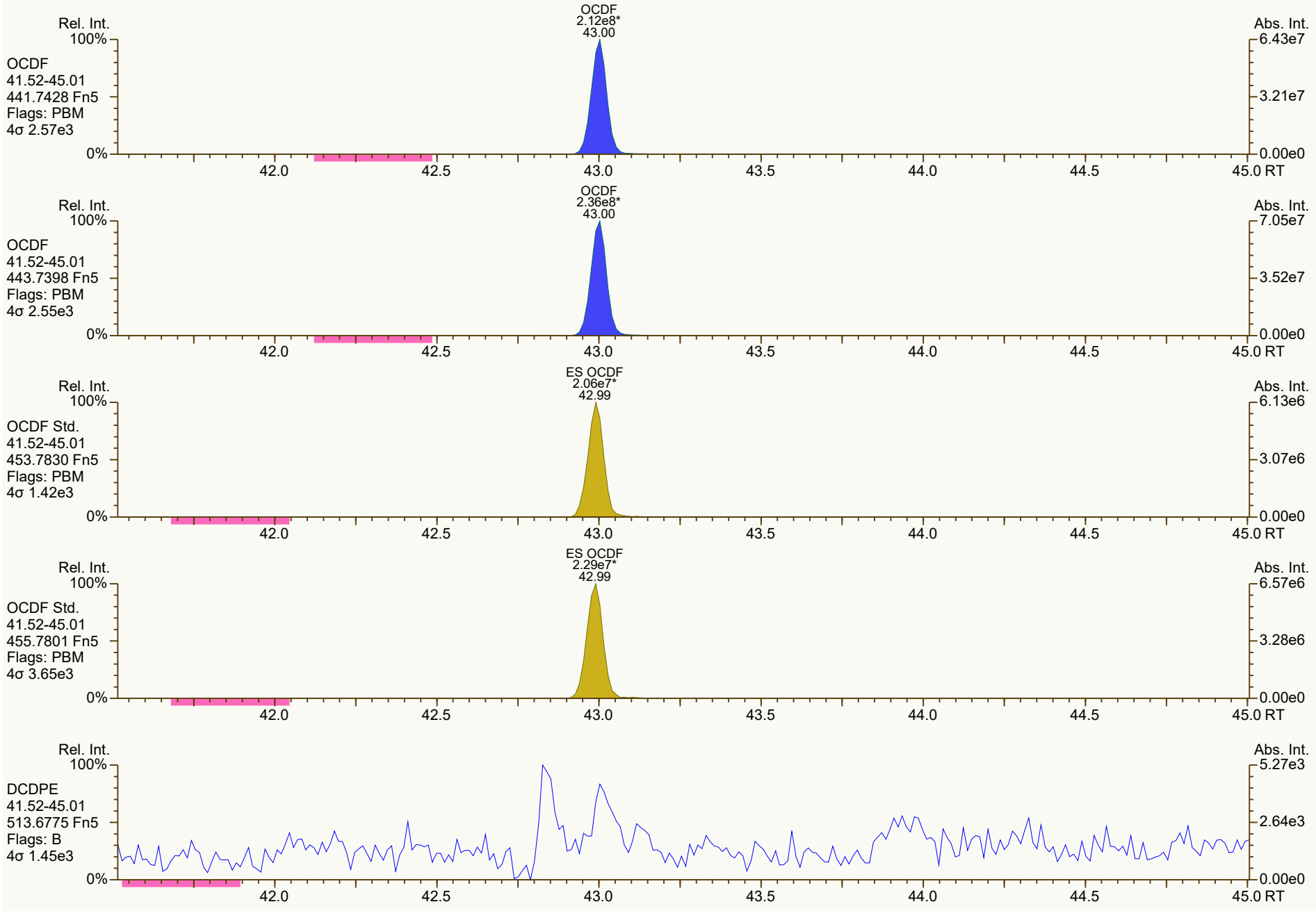

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
0%
2378F
4.22e7
26.68
Abs. Int.
9.59e6
4.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
0%
2378F
5.40e7
26.68
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
0%
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
Abs. Int.
4.70e6
2.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
Abs. Int.
5.78e6
2.89e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
0%
Abs. Int.
7.47e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.43e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 2.08e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
0%
12378F
2.48e8
31.62
23478F
2.41e8
32.75
Abs. Int.
7.17e7
3.59e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
0%
12378F
1.60e8
31.62
23478F
1.56e8
32.75
Abs. Int.
4.68e7
2.34e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
0%
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
Abs. Int.
7.55e6
3.78e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
0%
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.63e7
32.73
Abs. Int.
4.88e6
2.44e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 7.39e3
123478F
2.09e8
36.06
123678F
2.13e8*
36.20
234678F
2.02e8*
36.85
123789F
1.88e8
37.84
Abs. Int.
6.94e7
3.47e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 6.81e3
123478F
1.69e8
36.06
123678F
1.73e8*
36.20
234678F
1.63e8*
36.85
123789F
1.52e8
37.84
Abs. Int.
5.64e7
2.82e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.36e3
ES 123678F
1.24e7
36.18
ES 123478F
1.06e7
36.04
CS 123469F
9.36e6*
36.49
ES 234678F
1.15e7
36.84
ES 123789F
1.06e7
37.83
Abs. Int.
3.78e6
1.89e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.17e3
ES 123678F
2.29e7
36.18
ES 123478F
2.05e7
36.04
CS 123469F
1.79e7*
36.49
ES 234678F
2.11e7
36.84
ES 123789F
2.00e7
37.83
Abs. Int.
7.22e6
3.61e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.55e3
Abs. Int.
9.72e3
4.86e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 2.01e3
1234678F
1.67e8
39.35
1234789F
1.44e8
40.71
6.39e7
3.19e7
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 2.39e3
1234678F
1.62e8
39.35
1234789F
1.41e8
40.71
6.34e7
3.17e7
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.67e3
ES 1234678F
7.99e6*
39.34
CS 1234689F
6.90e6*
39.75
ES 1234789F
7.27e6*
40.70
2.96e6
1.48e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.48e3
ES 1234678F
1.74e7*
39.34
CS 1234689F
1.53e7*
39.75
ES 1234789F
1.49e7*
40.70
6.42e6
3.21e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.65e3
6.98e3
3.49e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9534, 7460, 1538 scc: 573-489
PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 11 of 12

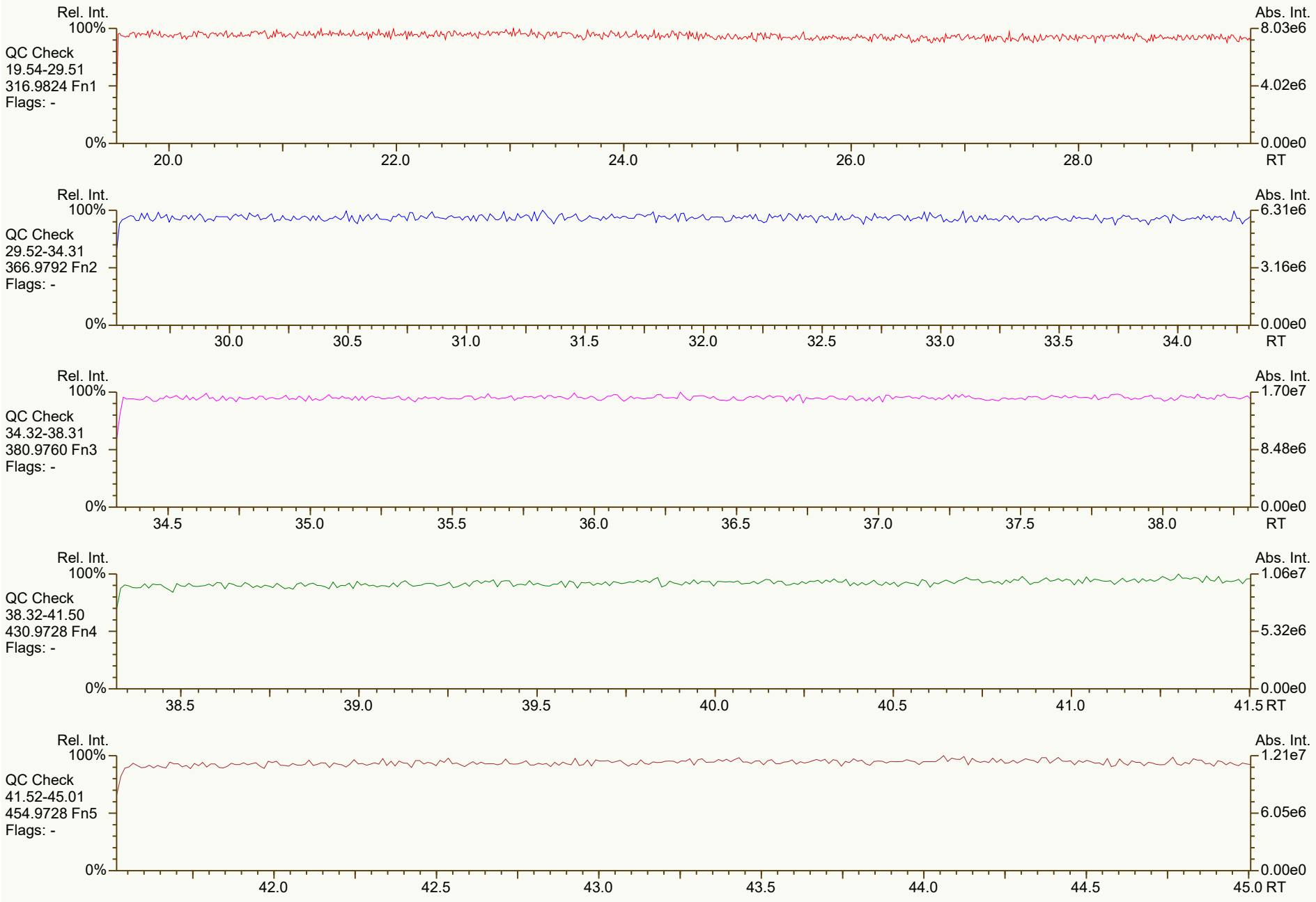

OCDF
2.12e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
6.43e7
3.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.36e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
0%
Abs. Int.
7.05e7
3.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
6.13e6
3.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
6.57e6
3.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
5.27e3
2.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

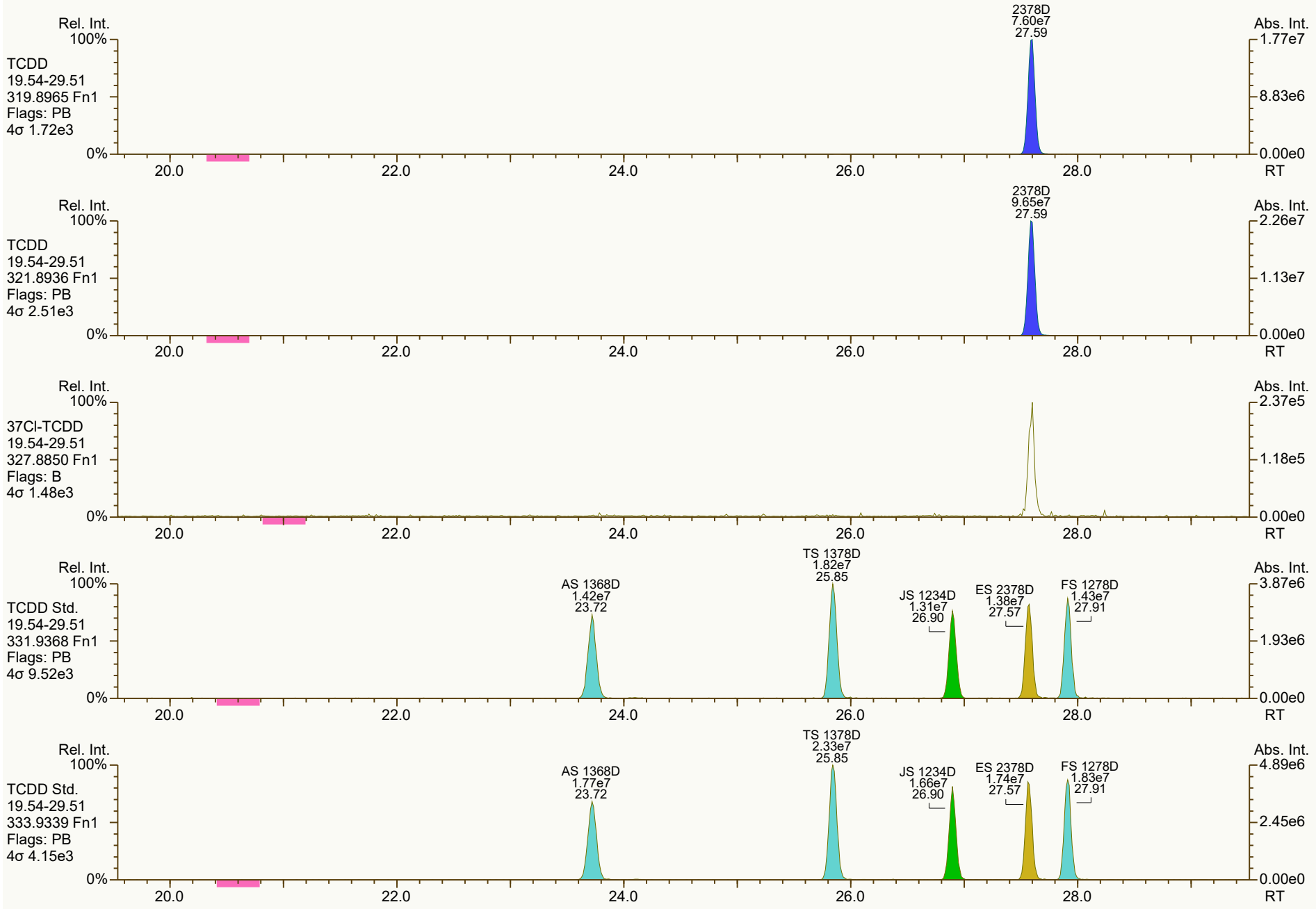
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

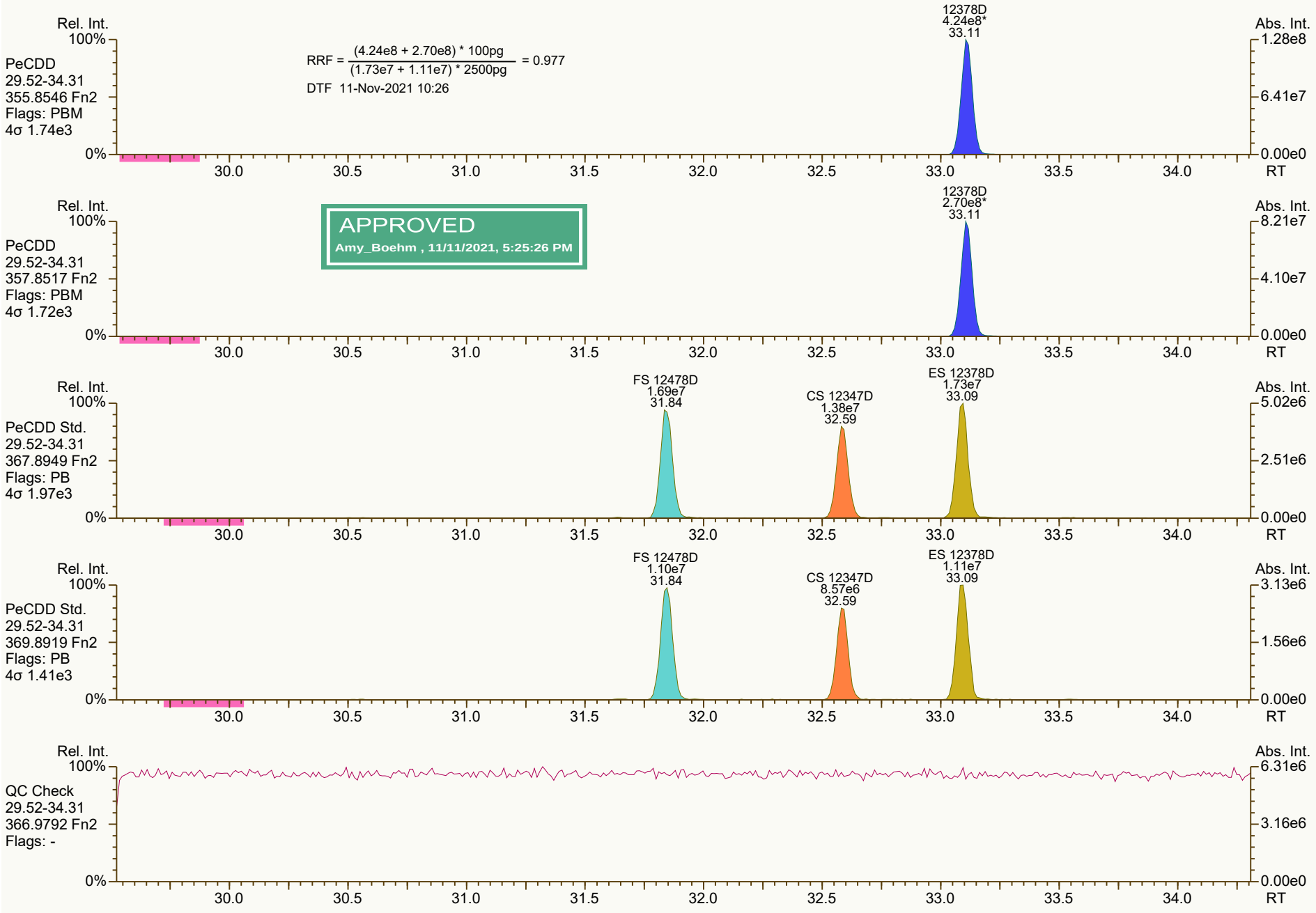
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

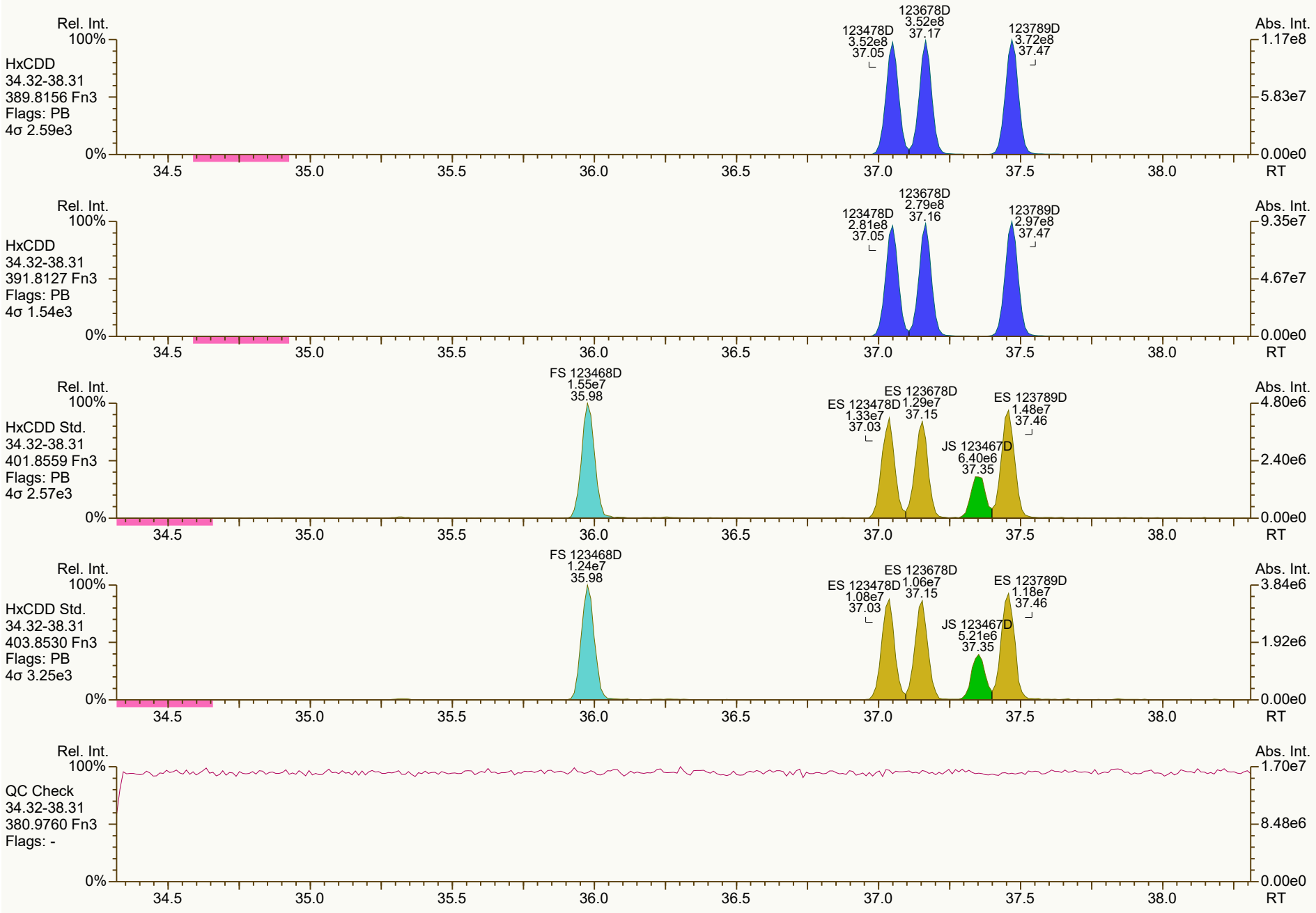
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

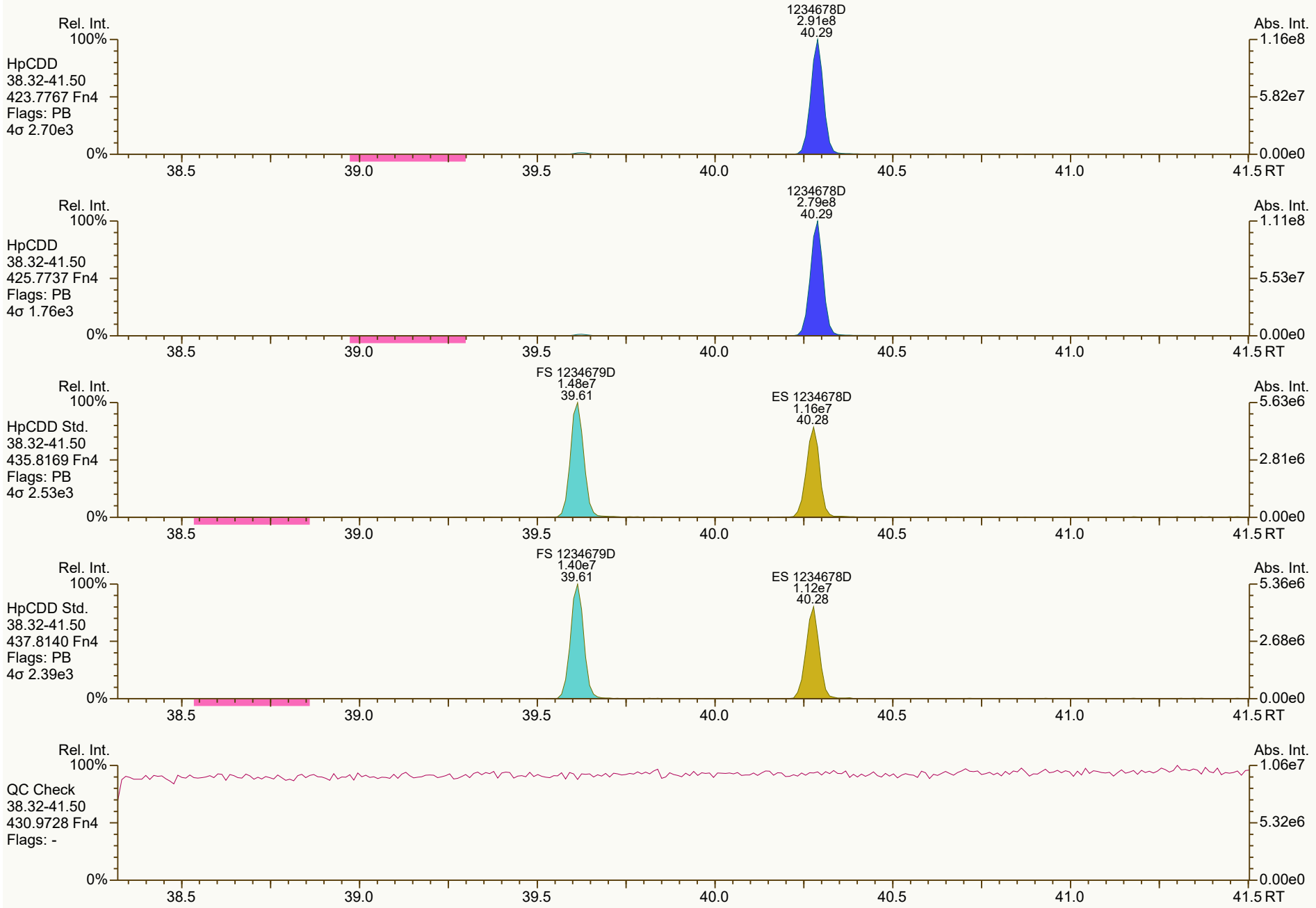
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

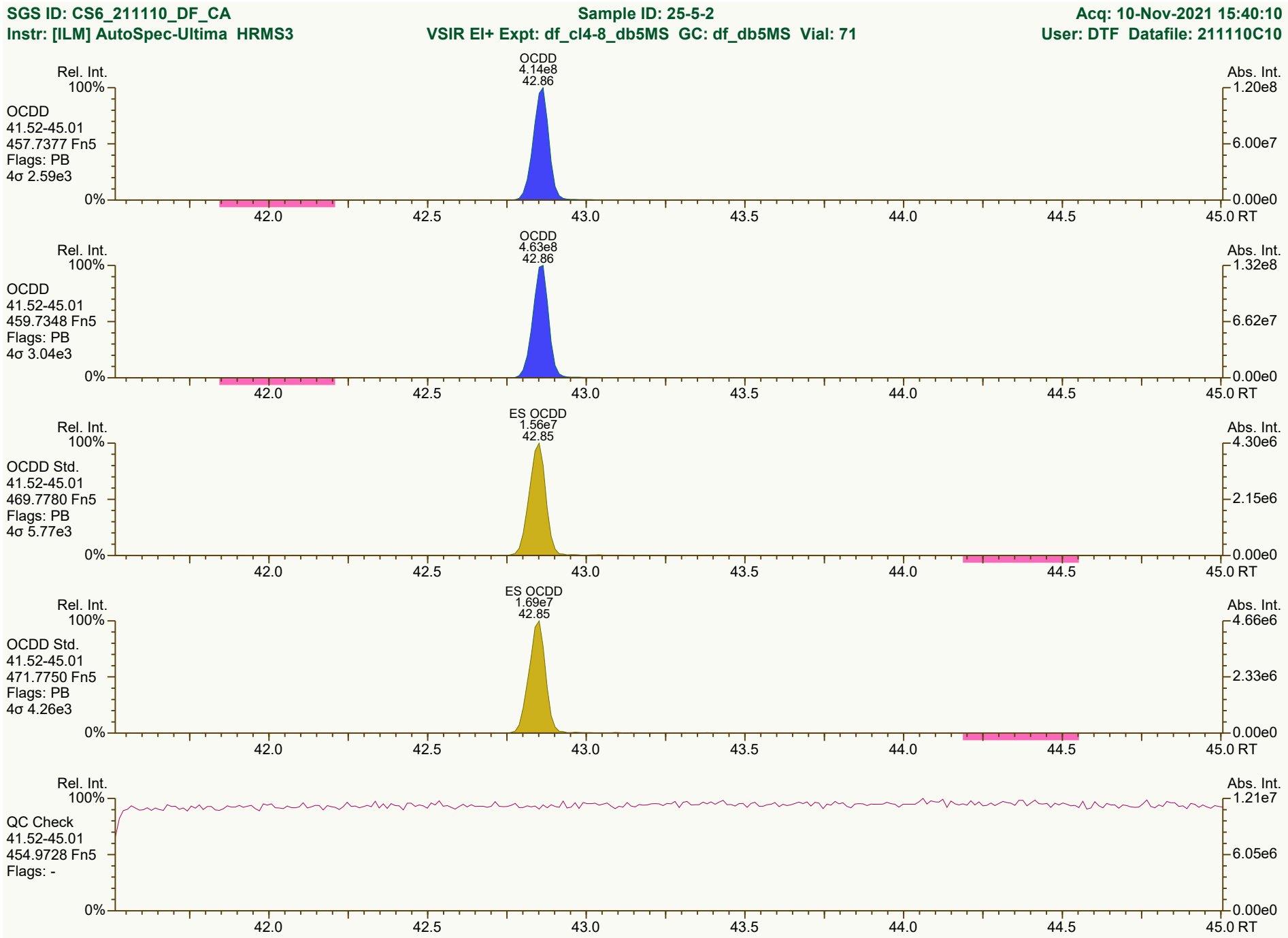

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.03e6
4.02e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
6.31e6
3.16e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.70e7
8.48e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.06e7
5.32e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.21e7
6.05e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
0%
2378D
7.60e7
27.59
Abs. Int.
1.77e7
8.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
0%
2378D
9.65e7
27.59
Abs. Int.
2.26e7
1.13e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
2.37e5
1.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
0%
AS 1368D
1.42e7
23.72
TS 1378D
1.82e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
Abs. Int.
3.87e6
1.93e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
0%
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.83e7
27.91
Abs. Int.
4.89e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.74e3
0%
RRF = (4.24e8 + 2.70e8) * 100pg / (1.73e7 + 1.11e7) * 2500pg = 0.977
DTF 11-Nov-2021 10:26
12378D
4.24e8*
33.11
Abs. Int.
1.28e8
6.41e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.72e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:25:26 PM
12378D
2.70e8*
33.11
Abs. Int.
8.21e7
4.10e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 1.97e3
0%
FS 12478D
1.69e7
31.84
CS 12347D
1.38e7
32.59
ES 12378D
1.73e7
33.09
Abs. Int.
5.02e6
2.51e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 1.41e3
0%
FS 12478D
1.10e7
31.84
CS 12347D
8.57e6
32.59
ES 12378D
1.11e7
33.09
Abs. Int.
3.13e6
1.56e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.31e6
3.16e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

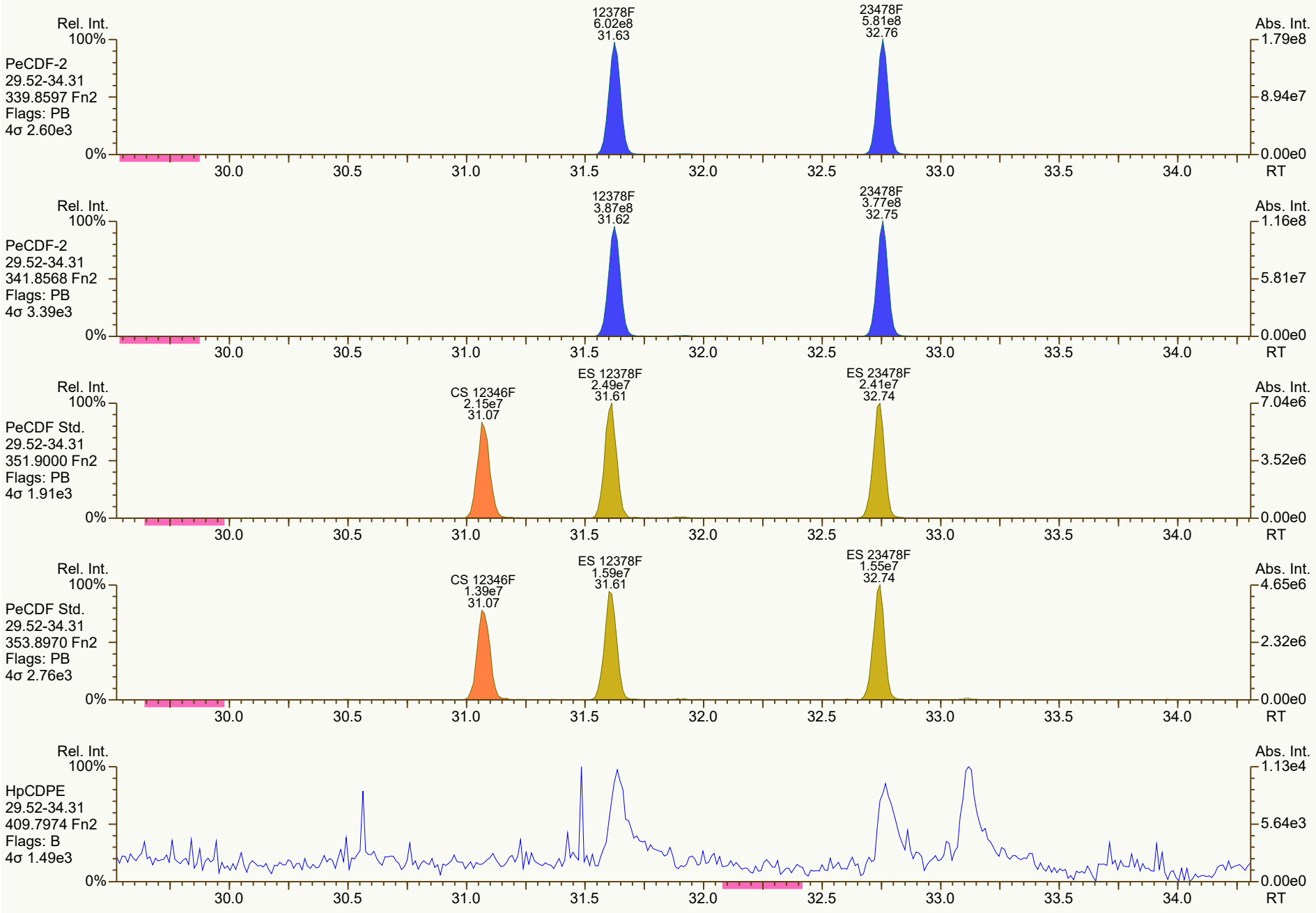

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
0%
123478D
3.52e8
37.05
123678D
3.52e8
37.17
123789D
3.72e8
37.47
Abs. Int.
1.17e8
5.83e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
0%
123478D
2.81e8
37.05
123678D
2.79e8
37.16
123789D
2.97e8
37.47
Abs. Int.
9.35e7
4.67e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
0%
FS 123468D
1.55e7
35.98
ES 123478D
1.33e7
37.03
ES 123678D
1.29e7
37.15
JS 123467D
6.40e6
37.35
ES 123789D
1.48e7
37.46
Abs. Int.
4.80e6
2.40e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
0%
FS 123468D
1.24e7
35.98
ES 123478D
1.08e7
37.03
ES 123678D
1.06e7
37.15
JS 123467D
5.21e6
37.35
ES 123789D
1.18e7
37.46
Abs. Int.
3.84e6
1.92e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.70e7
8.48e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

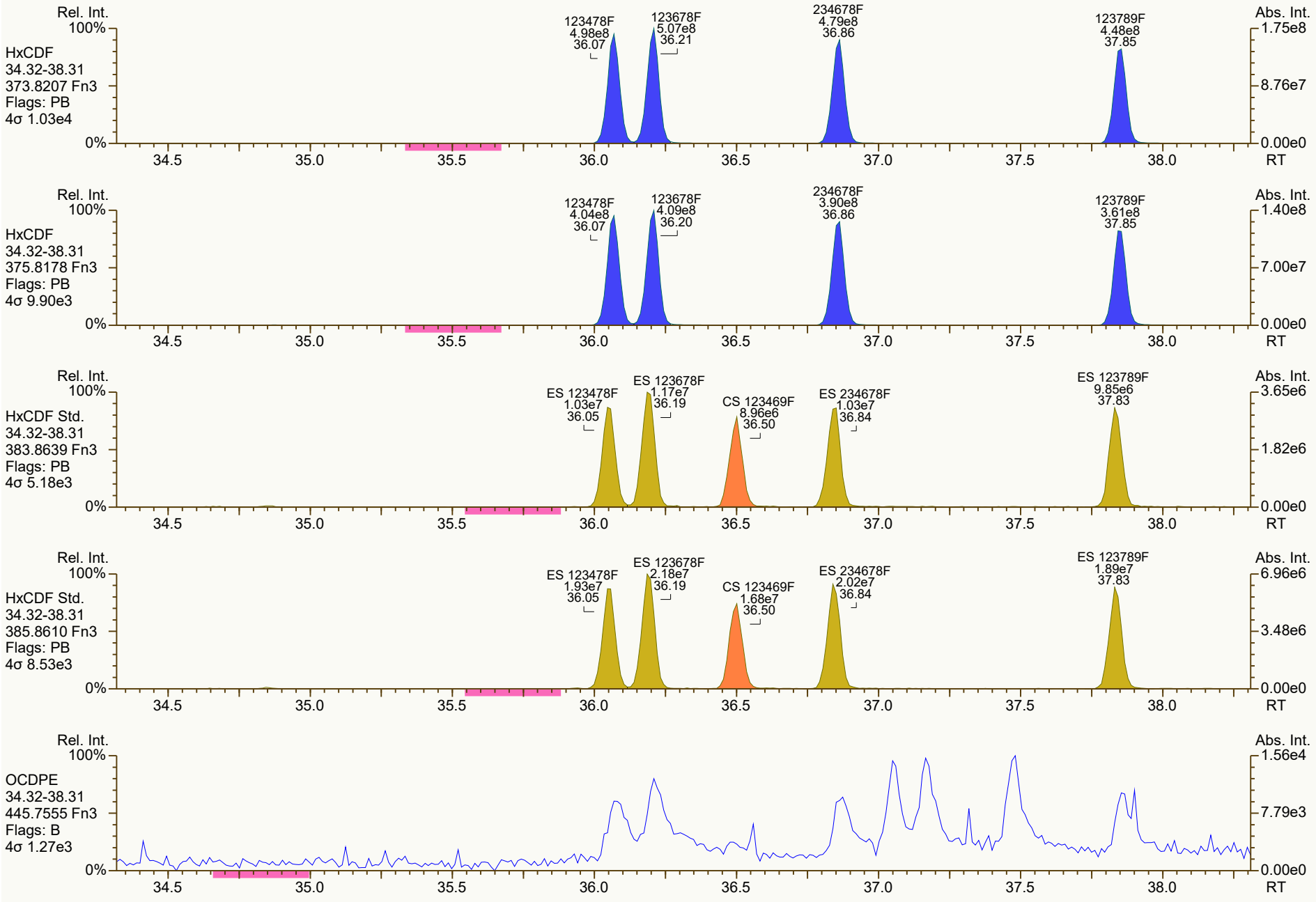

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
1234678D
2.91e8
40.29
Abs. Int.
1.16e8
5.82e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
1234678D
2.79e8
40.29
Abs. Int.
1.11e8
5.53e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
FS 1234679D
1.48e7
39.61
ES 1234678D
1.16e7
40.28
Abs. Int.
5.63e6
2.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
FS 1234679D
1.40e7
39.61
ES 1234678D
1.12e7
40.28
Abs. Int.
5.36e6
2.68e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.06e7
5.32e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

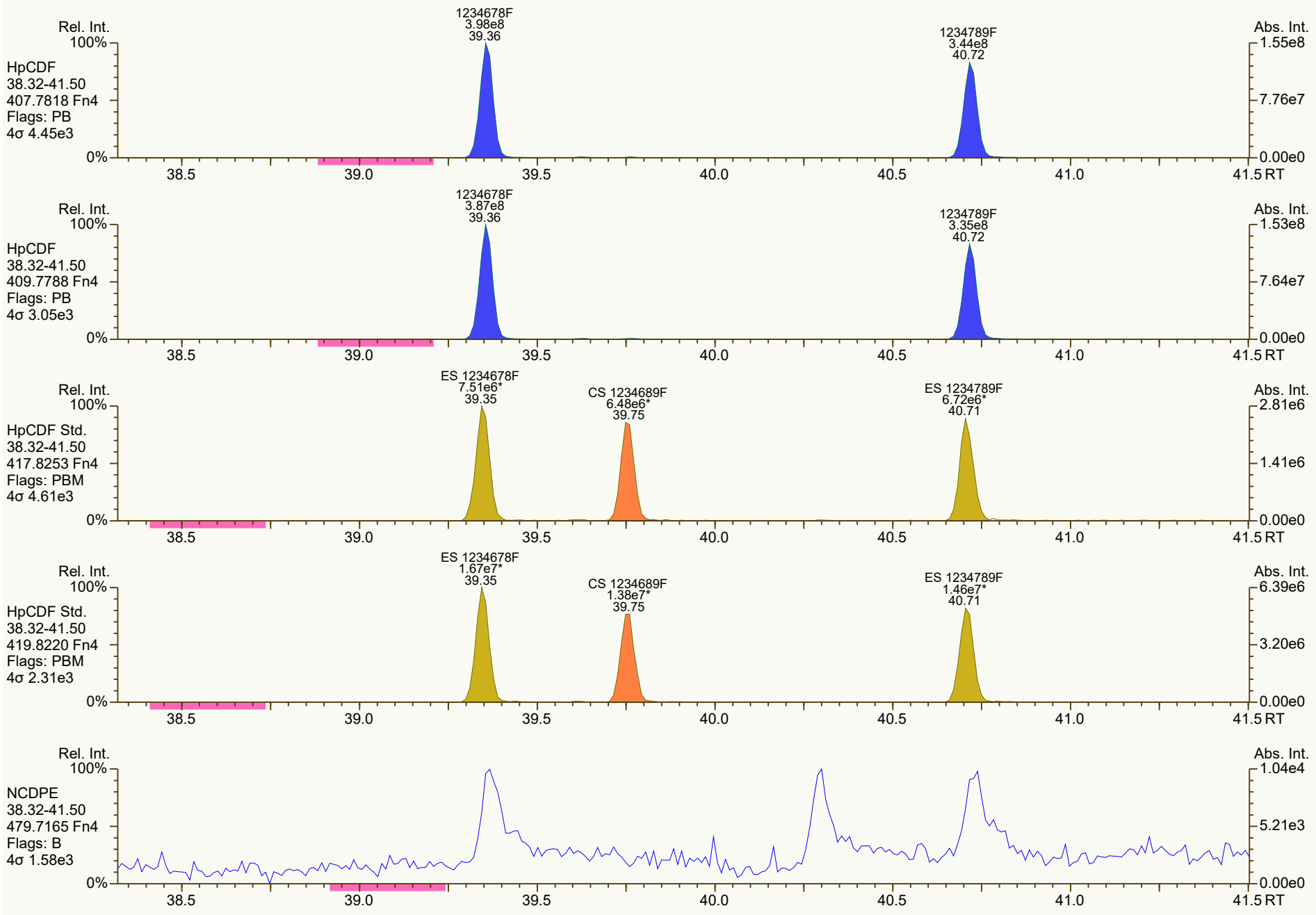

SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.59e3
OCDD
4.14e8
42.86
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
OCDD
4.63e8
42.86
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.77e3
ES OCDD
1.56e7
42.85
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.26e3
ES OCDD
1.69e7
42.85
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
Rel. Int.
100%
0%
Abs. Int.
1.20e8
6.00e7
0.00e0
1.32e8
6.62e7
4.30e6
2.15e6
4.66e6
2.33e6
1.21e7
6.05e6
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6614, 8805 scc: 172-736
PKD: 10-Nov-2021 16:46 Printed: 11-Nov-2021 10:41 Page 6 of 12

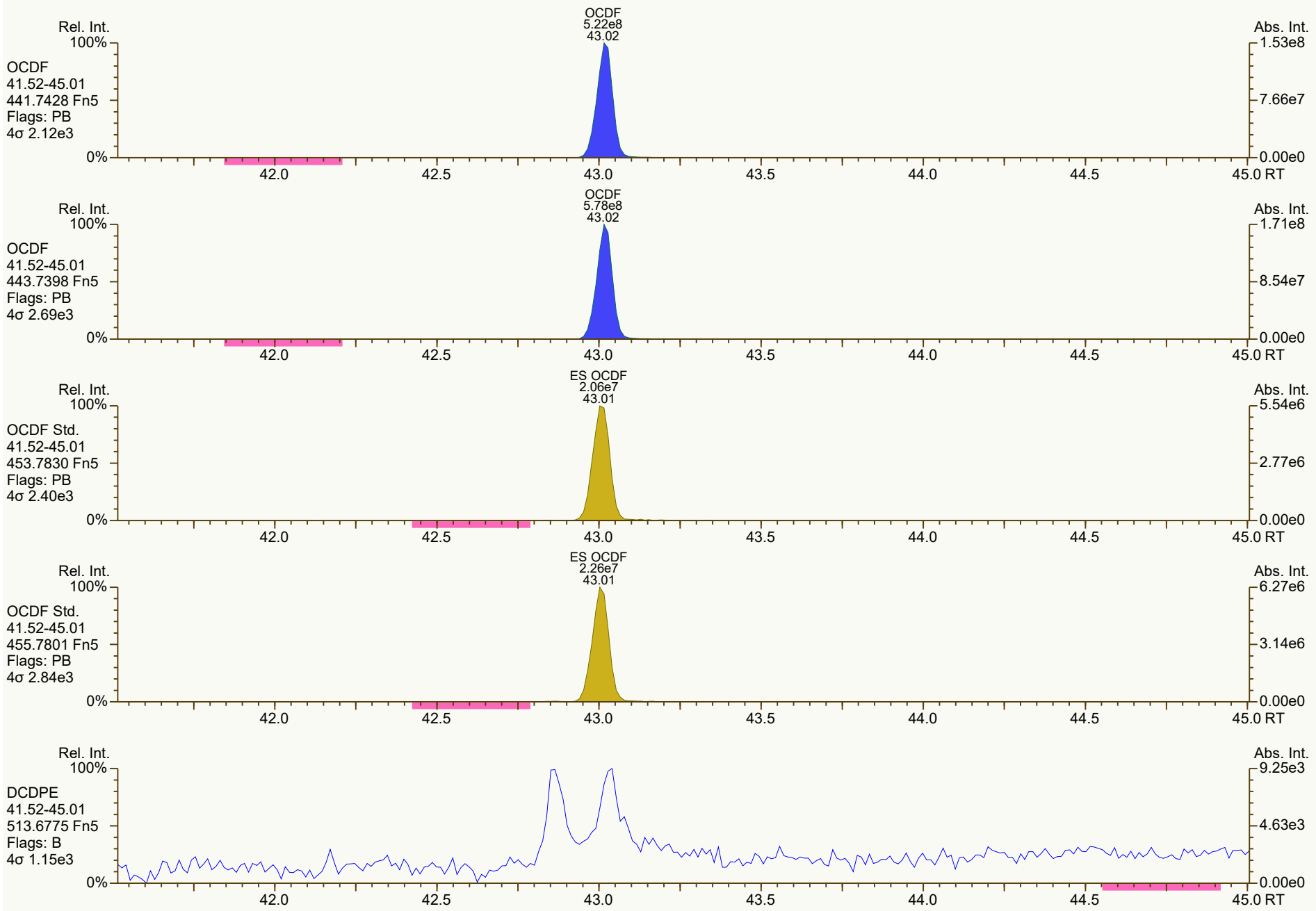

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 2.26e3
0%
2378F
9.73e7
26.68
Abs. Int.
2.17e7
1.08e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 2.01e3
2378F
1.26e8
26.68
2.85e7
1.42e7
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.95e4
AS 1368F
2.07e7
21.49
JS 1234F
1.84e7
25.24
ES 2378F
1.95e7
26.66
4.38e6
2.19e6
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 7.53e3
AS 1368F
2.62e7
21.49
JS 1234F
2.32e7
25.24
ES 2378F
2.51e7
26.65
5.43e6
2.72e6
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.55e3
6.34e3
3.17e3

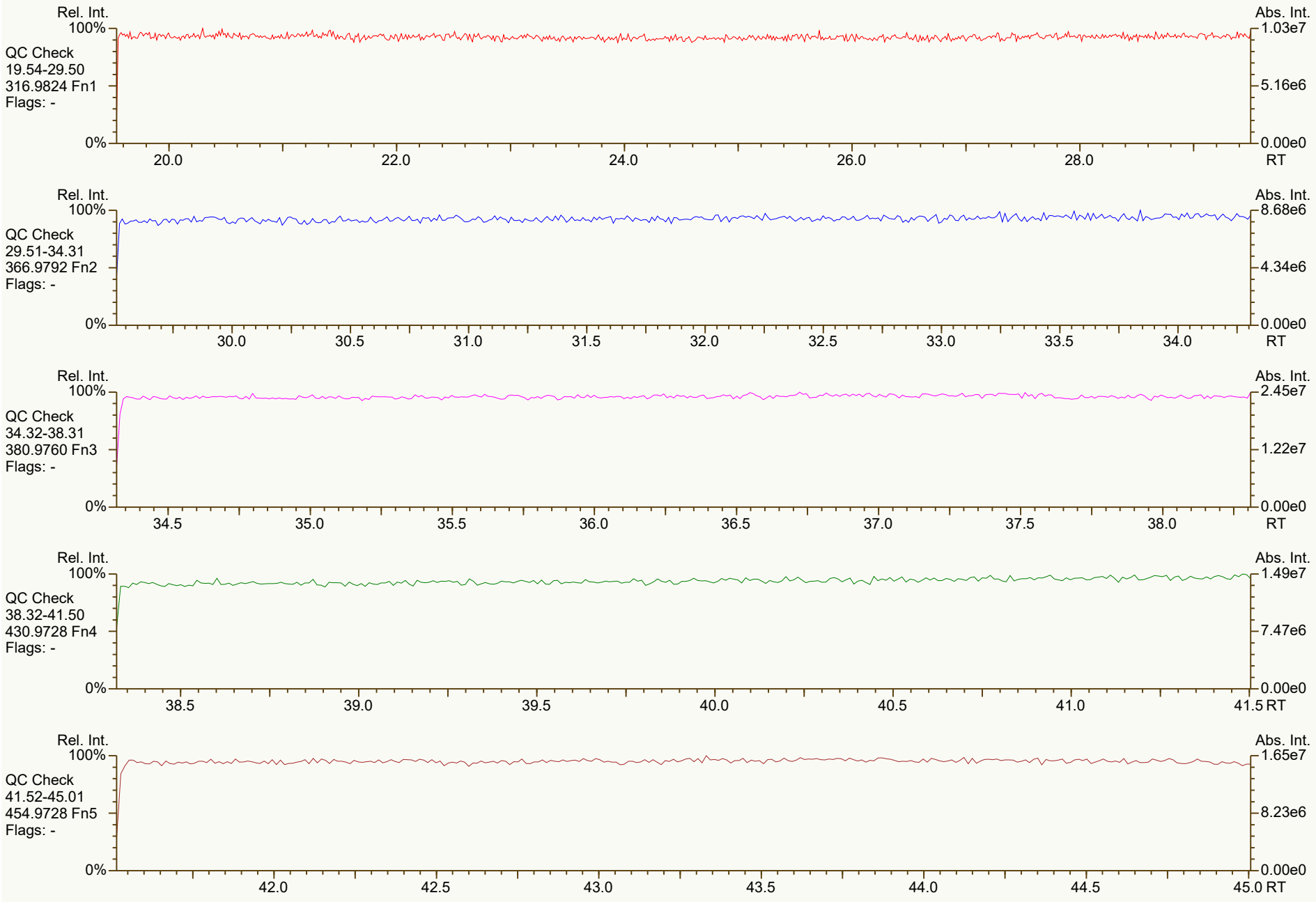

Rel. Int.
100%
0%
Abs. Int.
9.54e3
4.77e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 2.51e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.38e4
6.90e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.99e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.03e6
4.02e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PB
4σ 2.60e3
12378F
6.02e8
31.63
23478F
5.81e8
32.76
Abs. Int.
1.79e8
8.94e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PB
4σ 3.39e3
12378F
3.87e8
31.62
23478F
3.77e8
32.75
Abs. Int.
1.16e8
5.81e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 1.91e3
CS 12346F
2.15e7
31.07
ES 12378F
2.49e7
31.61
ES 23478F
2.41e7
32.74
Abs. Int.
7.04e6
3.52e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.76e3
CS 12346F
1.39e7
31.07
ES 12378F
1.59e7
31.61
ES 23478F
1.55e7
32.74
Abs. Int.
4.65e6
2.32e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.49e3
Abs. Int.
1.13e4
5.64e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 1.03e4
123478F
4.98e8
36.07
123678F
5.07e8
36.21
234678F
4.79e8
36.86
123789F
4.48e8
37.85
Abs. Int.
1.75e8
8.76e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 9.90e3
123478F
4.04e8
36.07
123678F
4.09e8
36.20
234678F
3.90e8
36.86
123789F
3.61e8
37.85
Abs. Int.
1.40e8
7.00e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.18e3
ES 123478F
1.03e7
36.05
ES 123678F
1.17e7
36.19
CS 123469F
8.96e6
36.50
ES 234678F
1.03e7
36.84
ES 123789F
9.85e6
37.83
Abs. Int.
3.65e6
1.82e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 8.53e3
ES 123478F
1.93e7
36.05
ES 123678F
2.18e7
36.19
CS 123469F
1.68e7
36.50
ES 234678F
2.02e7
36.84
ES 123789F
1.89e7
37.83
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.27e3
Abs. Int.
1.56e4
7.79e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e8
39.36
1234789F
3.44e8
40.72
Abs. Int.
1.55e8
7.76e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e8
39.36
1234789F
3.35e8
40.72
Abs. Int.
1.53e8
7.64e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
Abs. Int.
2.81e6
1.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
Abs. Int.
1.04e4
5.21e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
OCDF
5.22e8
43.02
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
OCDF
5.78e8
43.02
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
ES OCDF
2.06e7
43.01
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDF
2.26e7
43.01
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.03e7
5.16e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.68e6
4.34e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.45e7
1.22e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.49e7
7.47e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.65e7
8.23e6
0.00e0

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

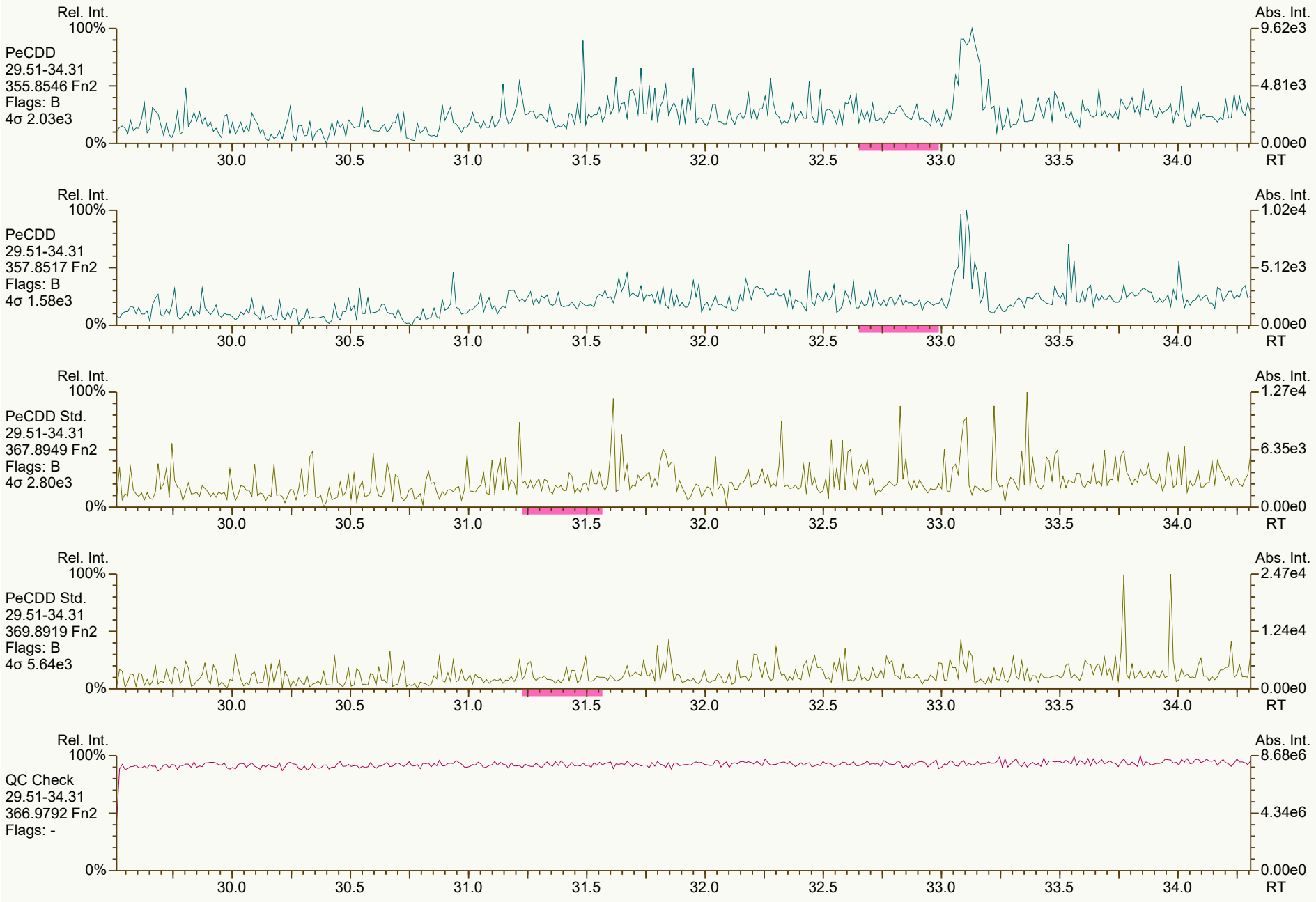
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4939, 4247, 1318 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1*


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: B
4σ 2.56e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.75e3
0%
Abs. Int.
8.16e3
4.08e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: B
4σ 7.98e3
0%
Abs. Int.
2.72e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: B
4σ 6.62e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: B
4σ 2.80e3
0%
Abs. Int.
1.27e4
6.35e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: B
4σ 5.64e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.68e6
4.34e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

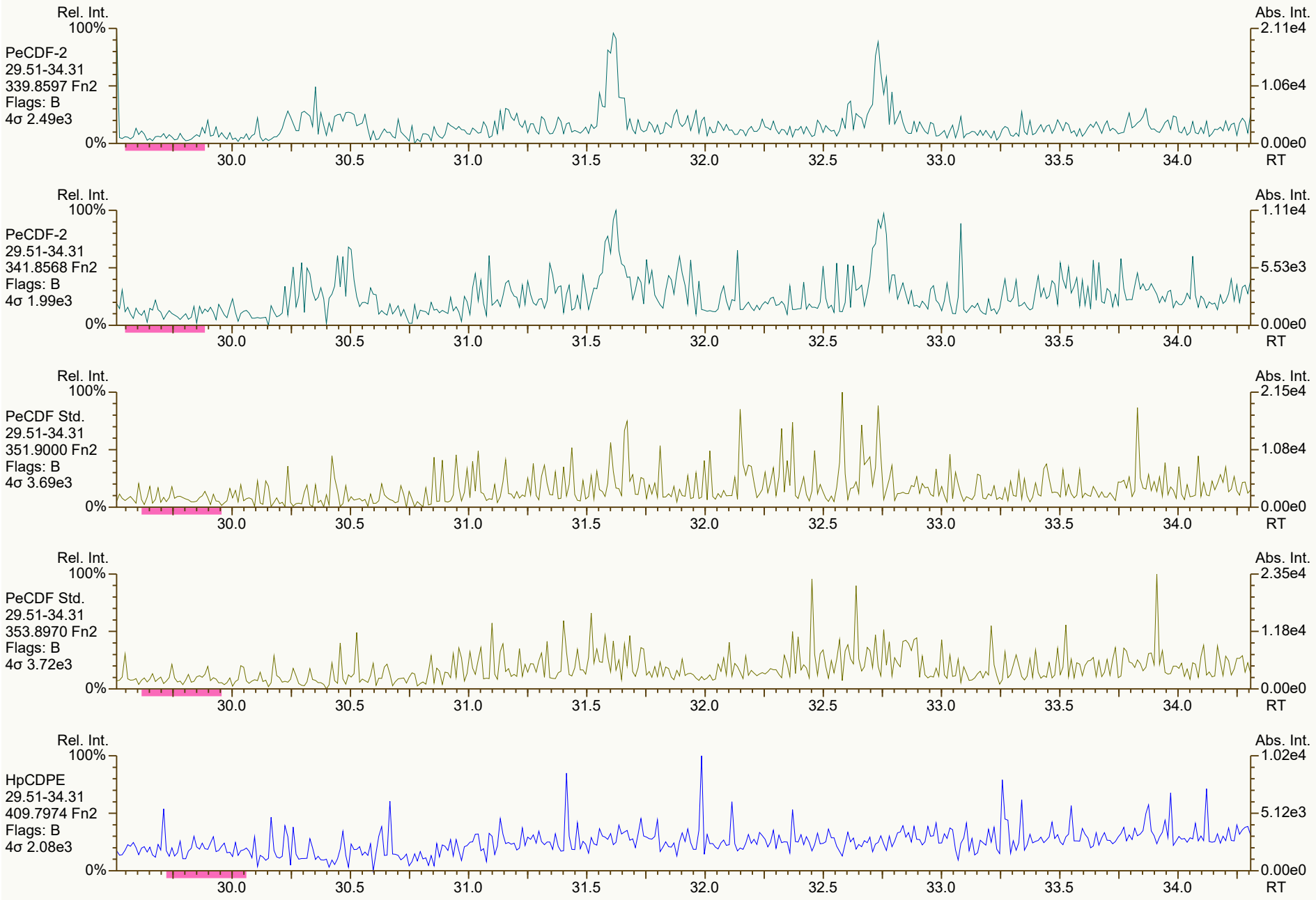

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: B
4σ 5.99e3
0%
Abs. Int.
1.61e4
8.05e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.45e7
1.22e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

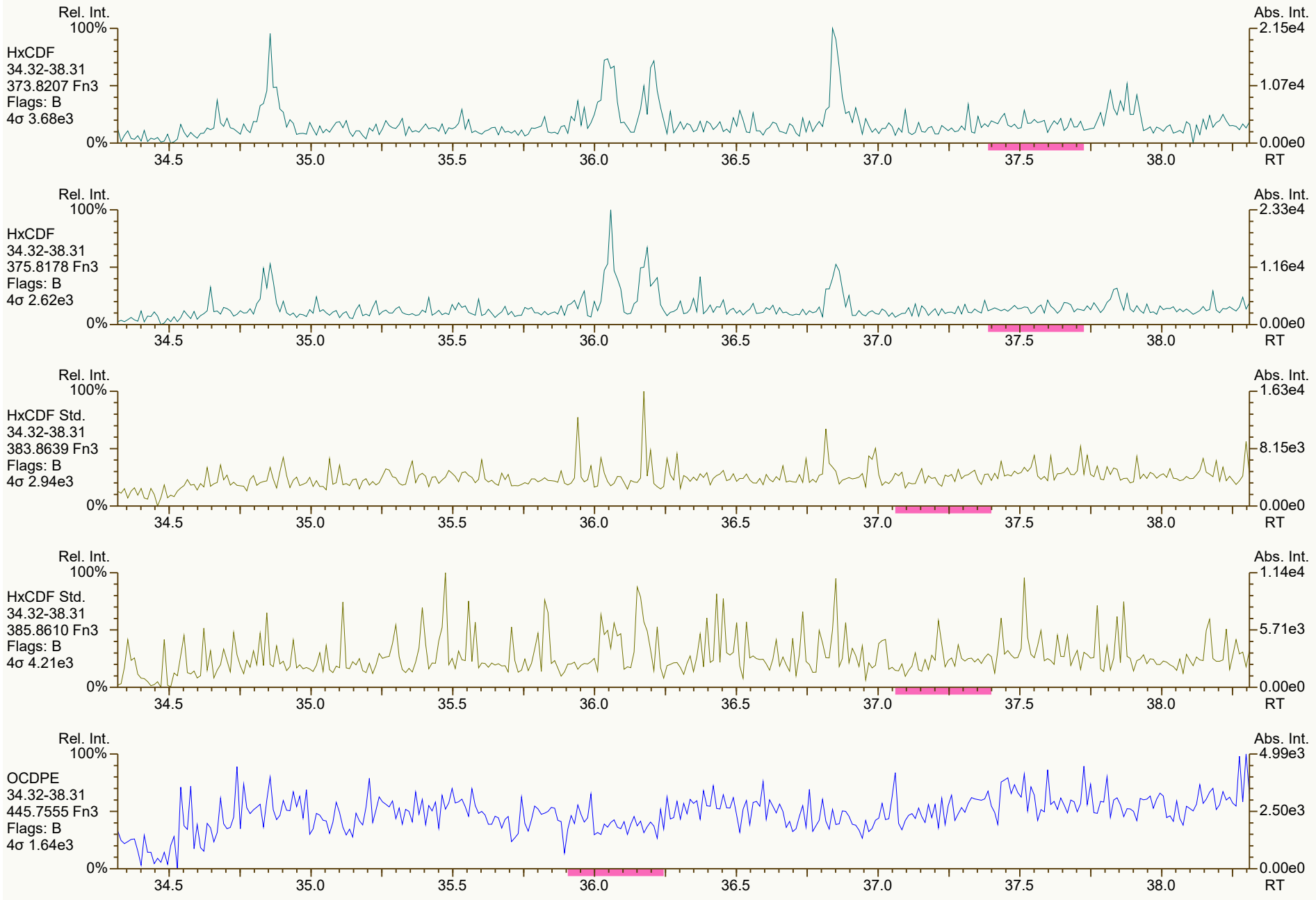

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.62e4
8.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: B
4σ 2.39e3
0%
Abs. Int.
2.45e4
1.23e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: B
4σ 2.97e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.49e7
7.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.07e4
5.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.42e4
7.11e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.65e7
8.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
2468F
3.48e5*
22.78
Abs. Int.
7.07e4
3.53e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
2468F
5.04e5*
22.78
Abs. Int.
1.06e5
5.32e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
Abs. Int.
5.11e4
2.56e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
Abs. Int.
2.83e4
1.42e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
9.47e3
4.73e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
8.70e3
4.35e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.84e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.49e3
4.75e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 3.09e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.03e7
5.16e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: B
4σ 2.49e3
0%
Abs. Int.
2.11e4
1.06e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: B
4σ 3.69e3
0%
Abs. Int.
2.15e4
1.08e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: B
4σ 3.72e3
0%
Abs. Int.
2.35e4
1.18e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
2.15e4
1.07e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.33e4
1.16e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: B
4σ 4.21e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.64e3
0%
Abs. Int.
4.99e3
2.50e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

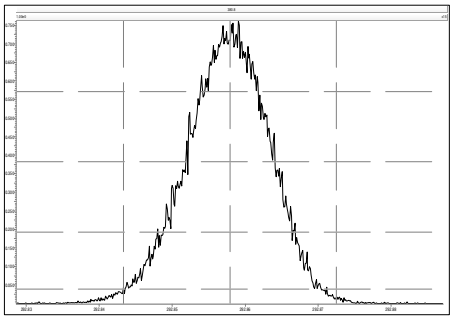

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: B
4σ 2.83e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: B
4σ 5.26e3
0%
Abs. Int.
2.80e4
1.40e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.49e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.02e4
5.08e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
6.88e3
3.44e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.40e3
0%
Abs. Int.
4.10e3
2.05e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

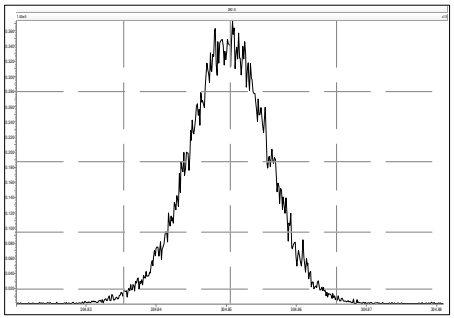
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

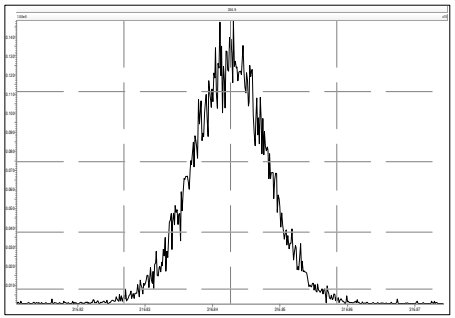
M 292.9824 R 10731



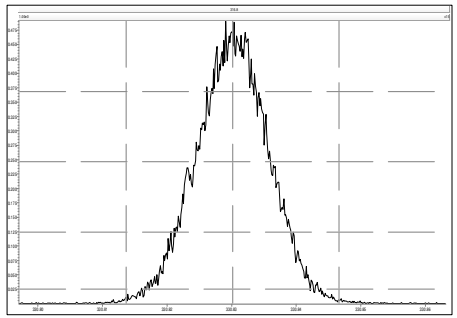
M 304.9824 R 11311



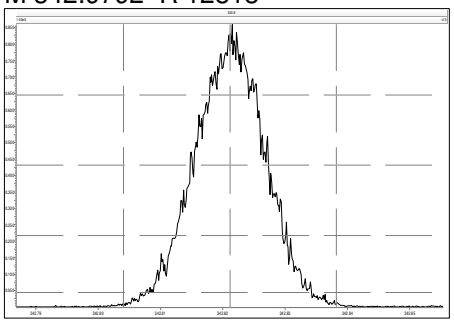
M 316.9824 R 12373



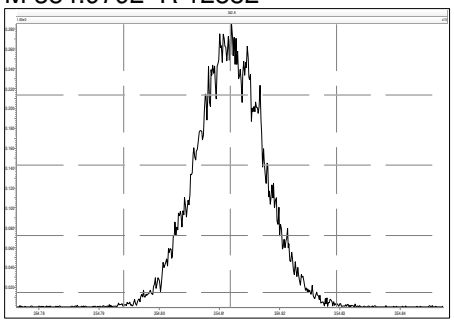
M 330.9792 R 12887



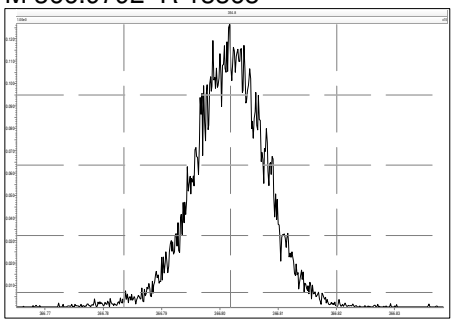
M 342.9792 R 12818



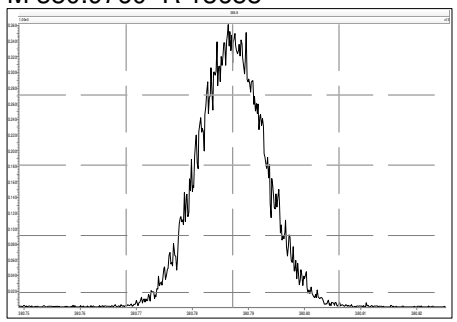
M 354.9792 R 12882



M 366.9792 R 13368



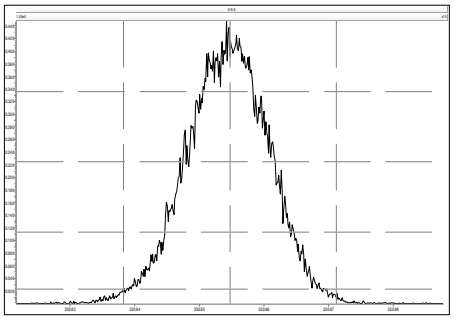
M 380.9760 R 13658



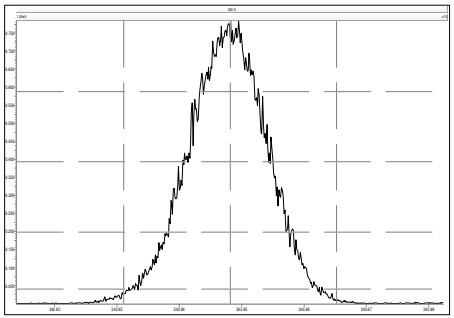
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

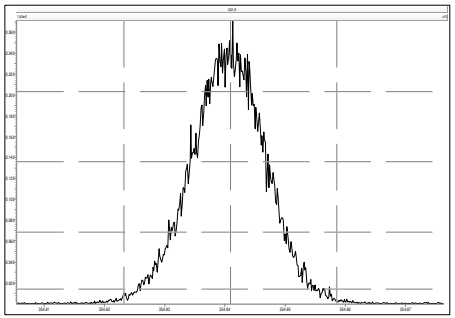
M 330.9792 R 11112



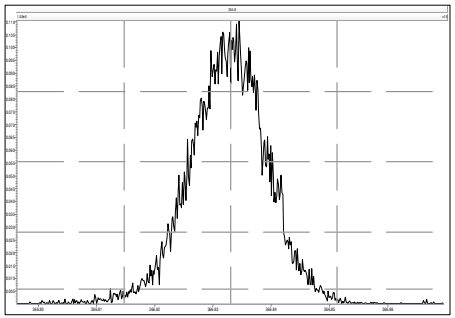
M 342.9792 R 11909



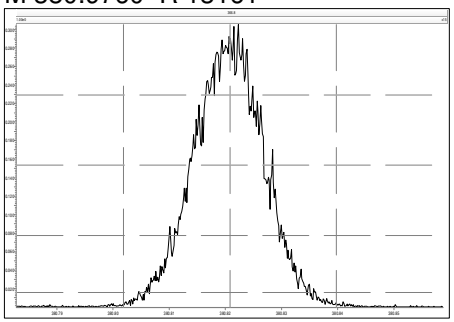
M 354.9792 R 11684



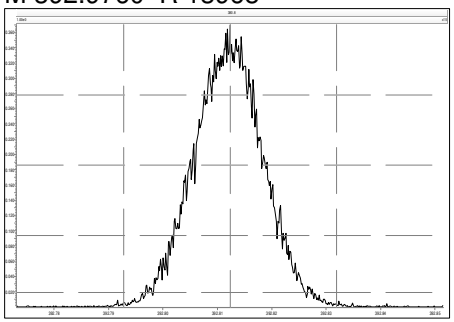
M 366.9792 R 11962



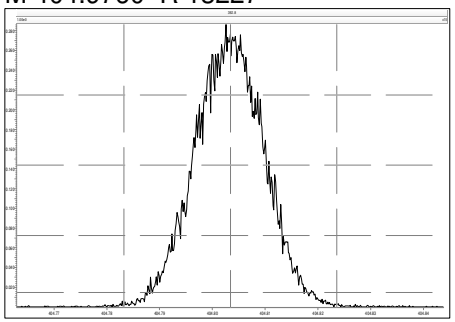
M 380.9760 R 13161



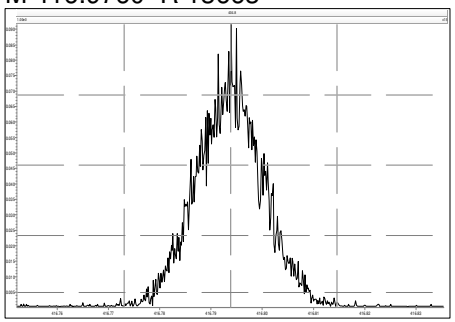
M 392.9760 R 13968



M 404.9760 R 13227



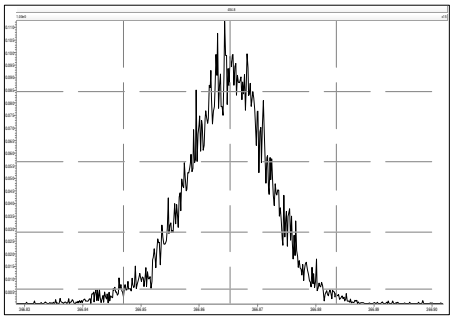
M 416.9760 R 13663



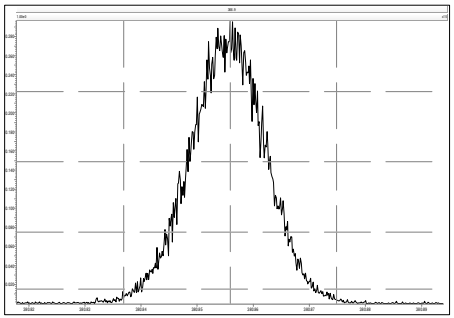
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

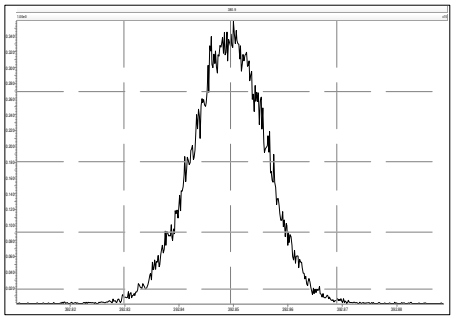
M 366.9792 R 10680



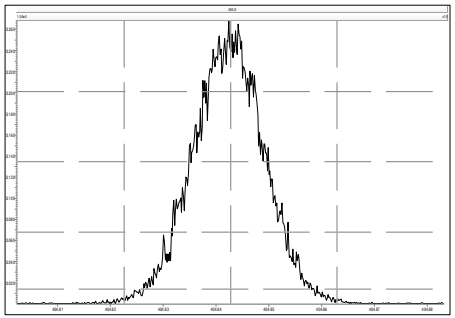
M 380.9760 R 12315



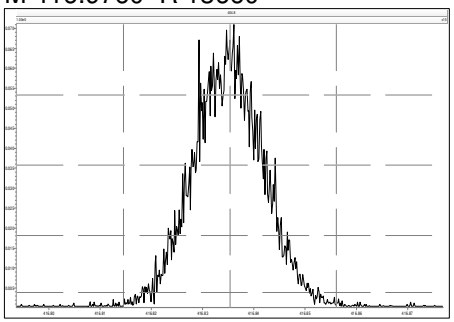
M 392.9760 R 12197



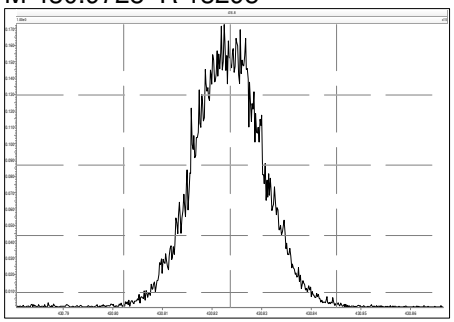
M 404.9760 R 12433



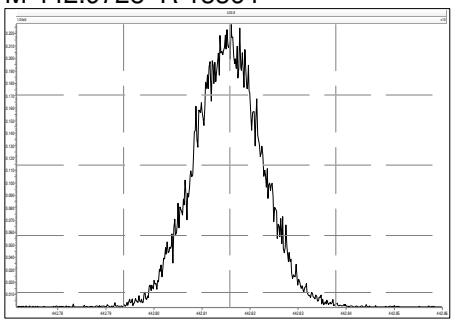
M 416.9760 R 13660



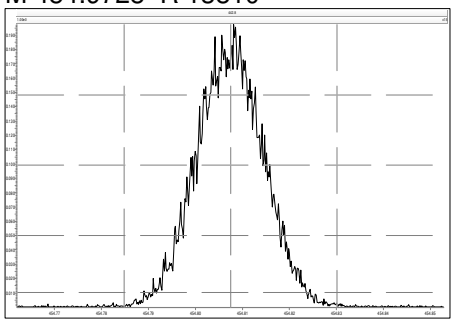
M 430.9728 R 13295



M 442.9728 R 13364



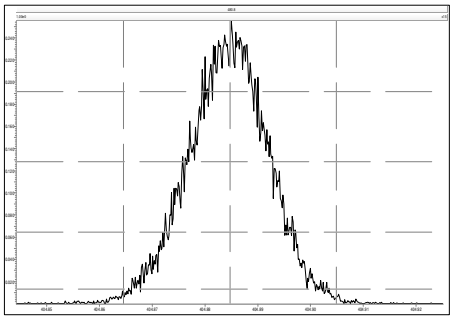
M 454.9728 R 13810



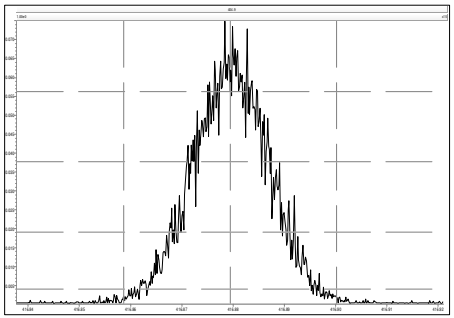
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

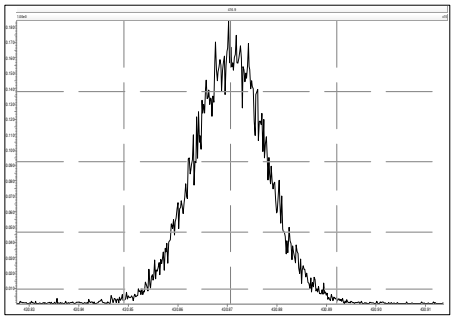
M 404.9760 R 11679



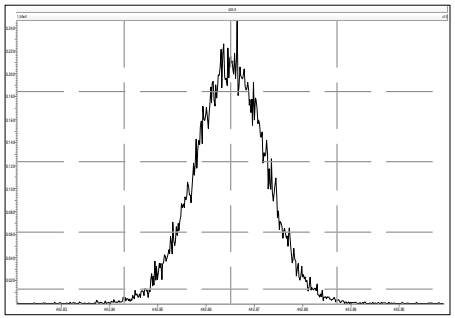
M 416.9760 R 12886



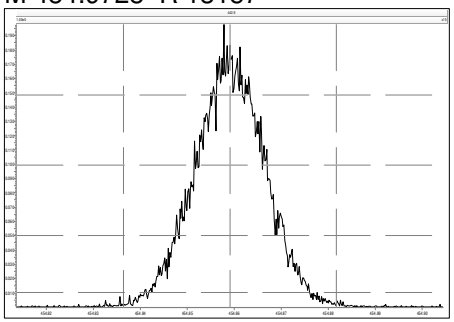
M 430.9728 R 12253



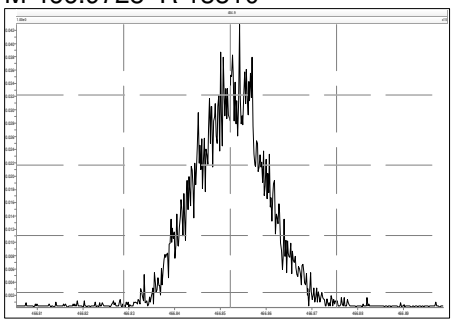
M 442.9728 R 12756



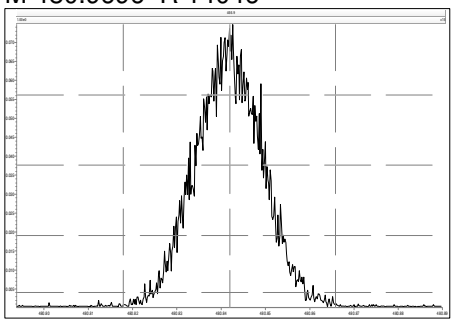
M 454.9728 R 13157



M 466.9728 R 13810



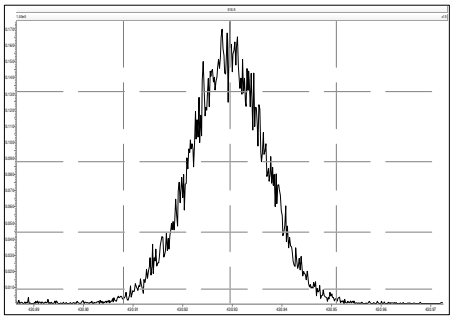
M 480.9696 R 14046



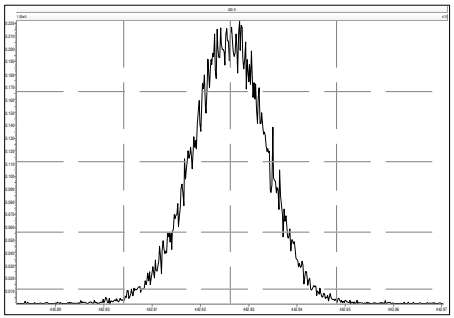
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

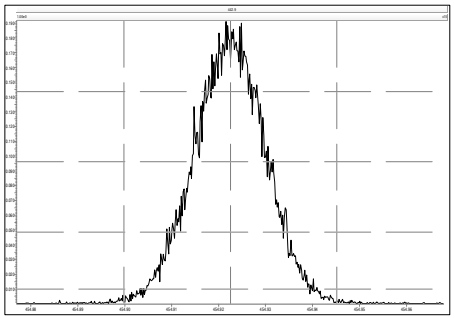
M 430.9728 R 11574



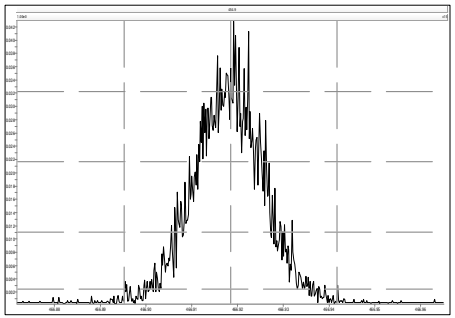
M 442.9728 R 12198



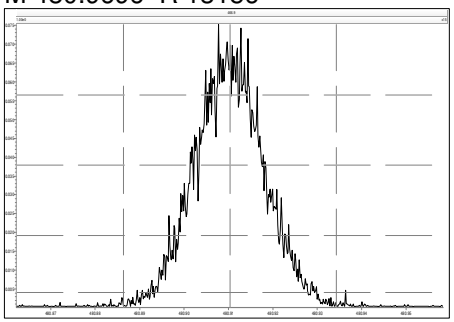
M 454.9728 R 12950



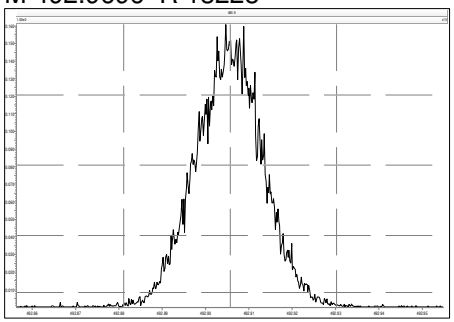
M 466.9728 R 13088



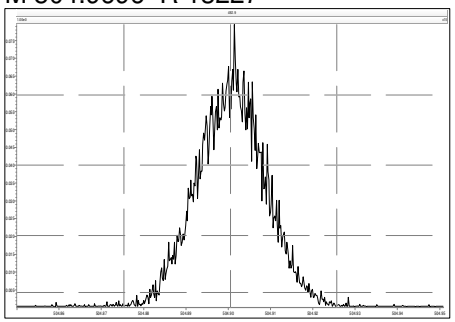
M 480.9696 R 13156



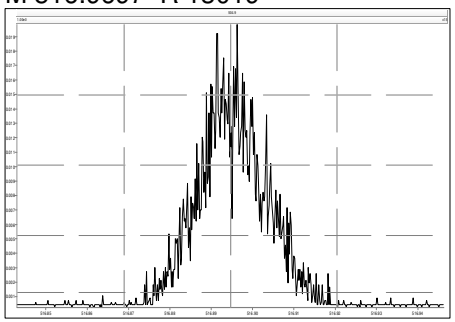
M 492.9696 R 13228



M 504.9696 R 13227



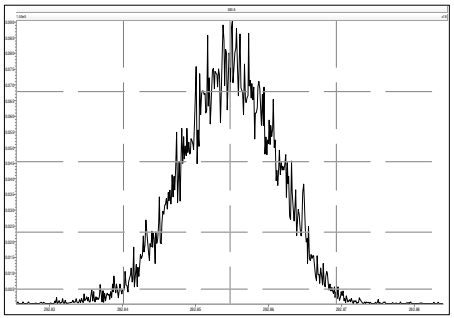
M 516.9697 R 13019



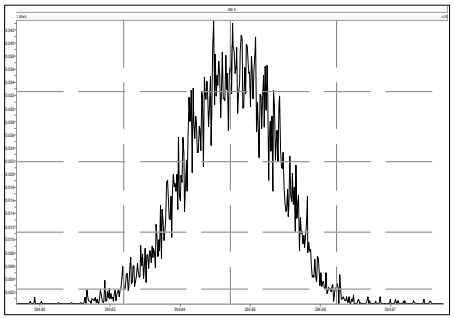
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

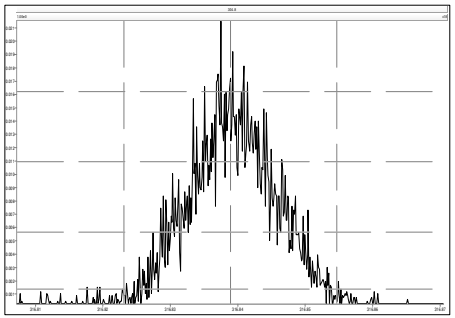
M 292.9824 R 10122



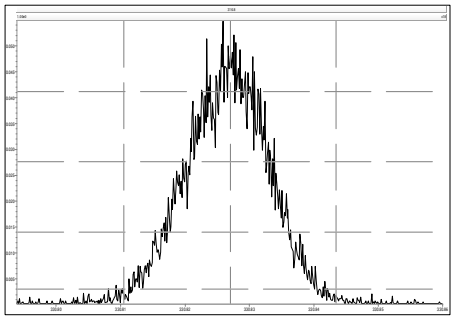
M 304.9824 R 10329



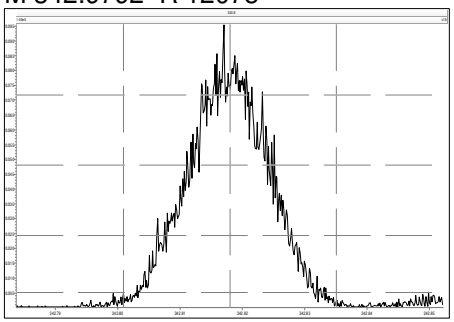
M 316.9824 R 11964



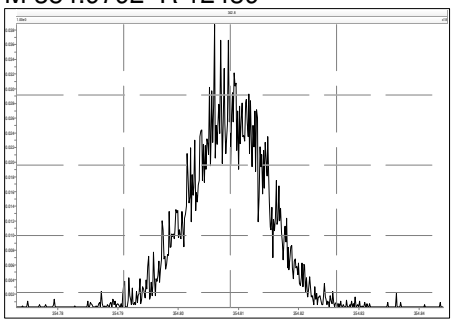
M 330.9792 R 11062



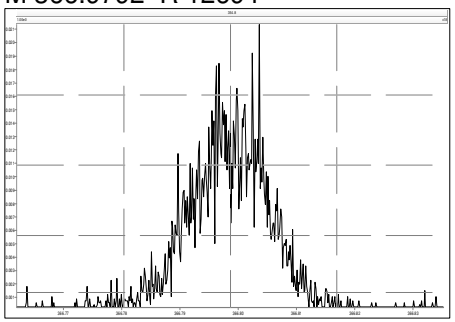
M 342.9792 R 12075



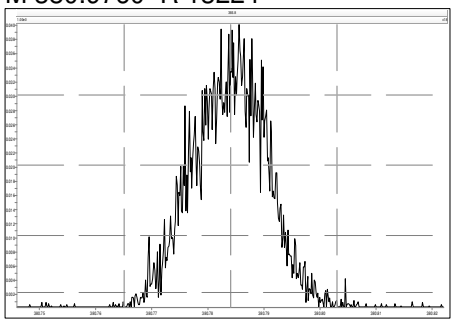
M 354.9792 R 12439



M 366.9792 R 12694



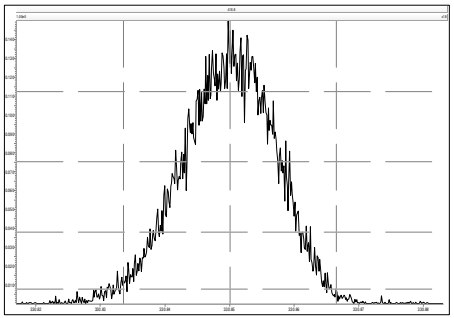
M 380.9760 R 13224



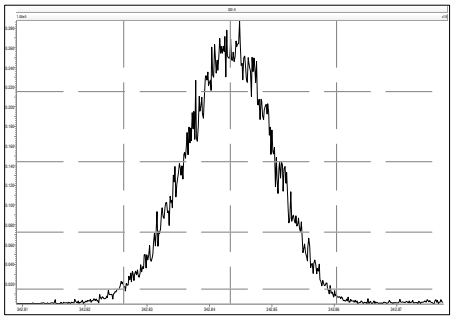
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

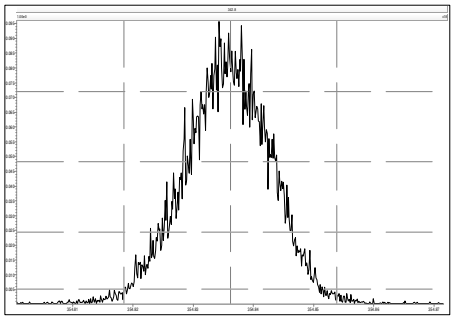
M 330.9792 R 10730



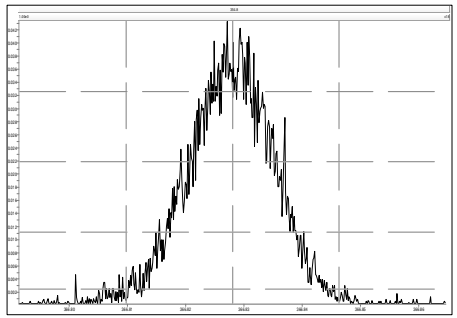
M 342.9792 R 10039



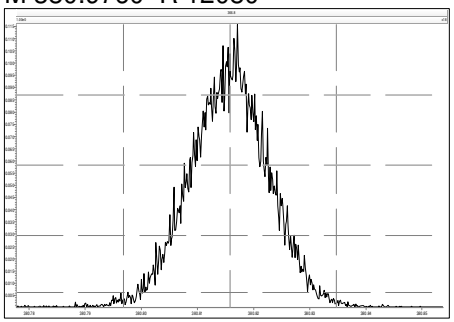
M 354.9792 R 11108



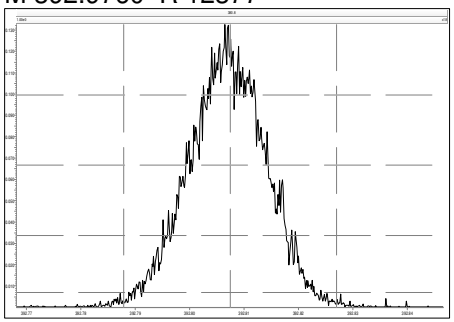
M 366.9792 R 11520



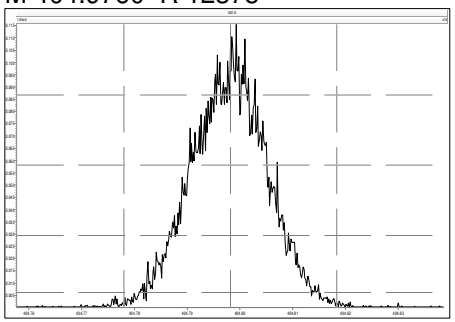
M 380.9760 R 12080



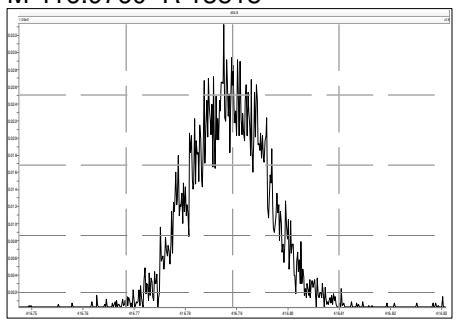
M 392.9760 R 12377



M 404.9760 R 12375



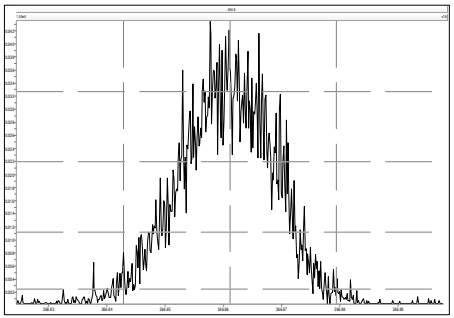
M 416.9760 R 13515



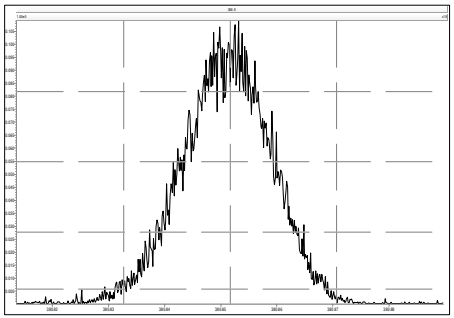
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

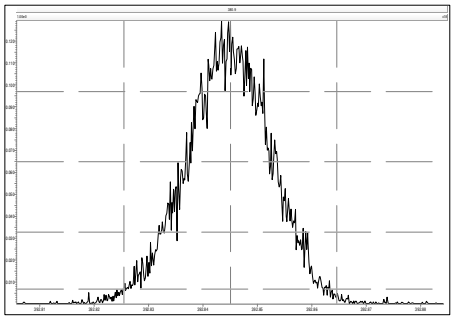
M 366.9792 R 10866



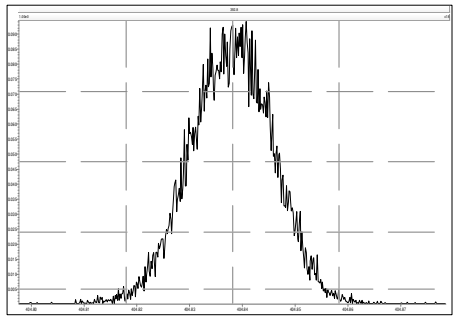
M 380.9760 R 10416



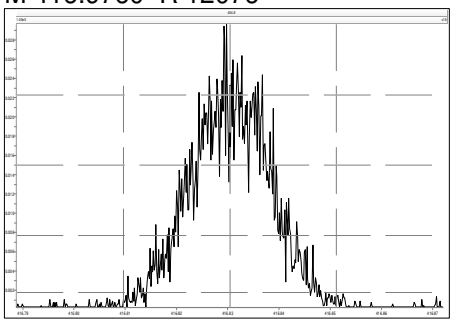
M 392.9760 R 10640



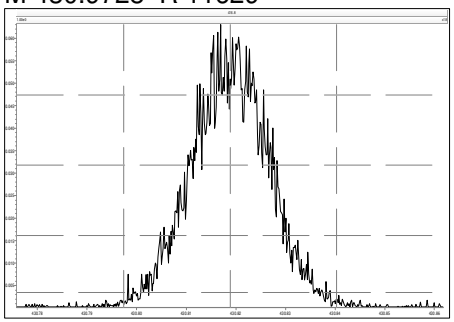
M 404.9760 R 11957



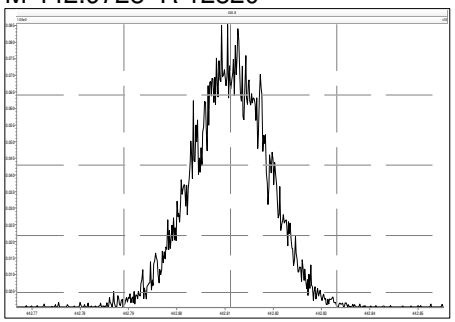
M 416.9760 R 12076



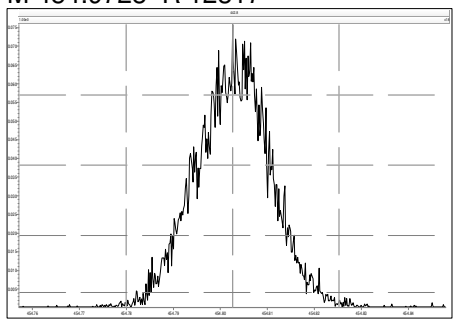
M 430.9728 R 11629



M 442.9728 R 12820



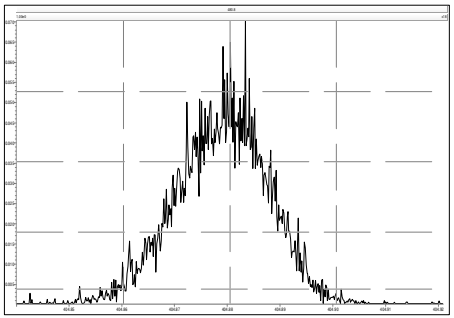
M 454.9728 R 12317



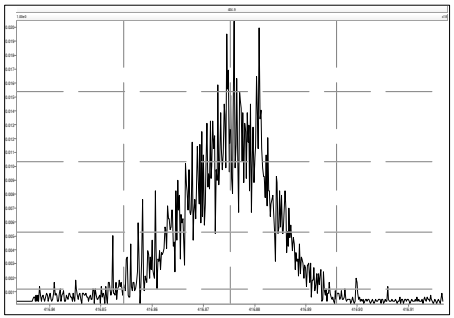
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

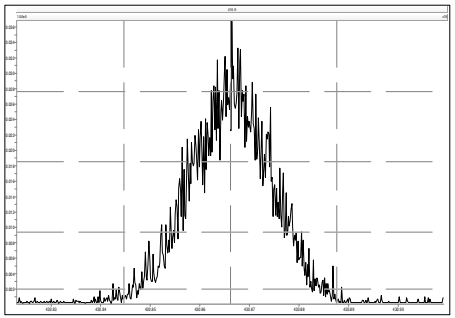
M 404.9760 R 10505



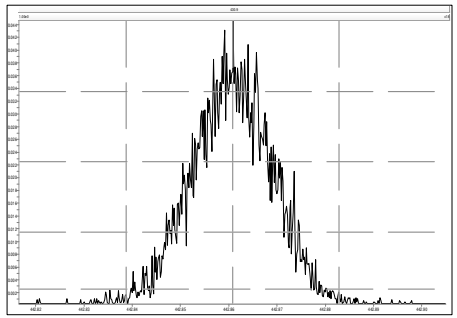
M 416.9760 R 12500



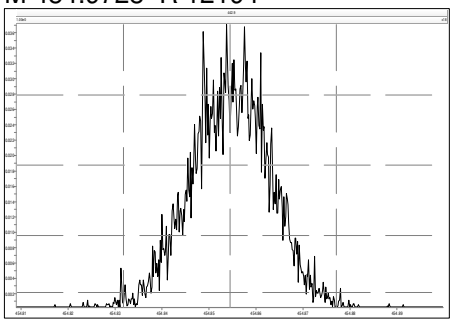
M 430.9728 R 11362



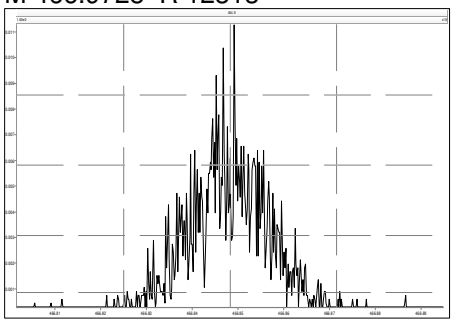
M 442.9728 R 12756



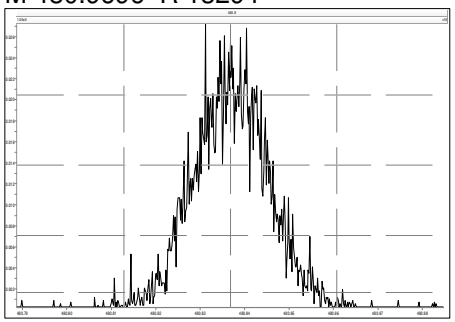
M 454.9728 R 12194



M 466.9728 R 12313



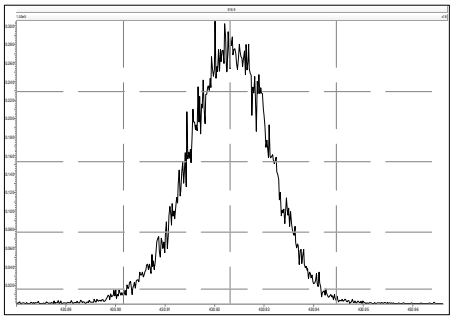
M 480.9696 R 13294



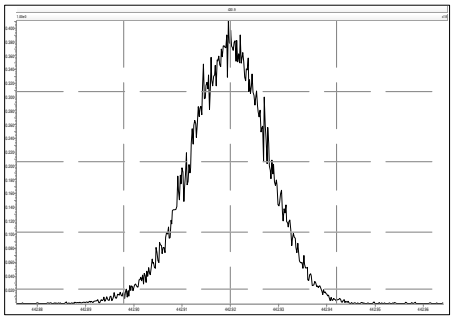
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

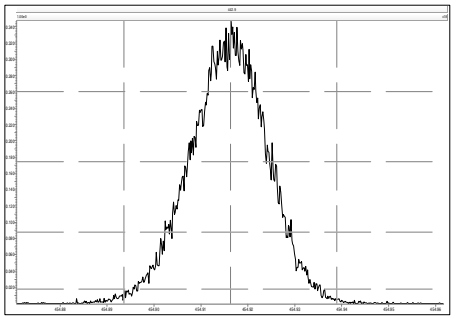
M 430.9728 R 11312



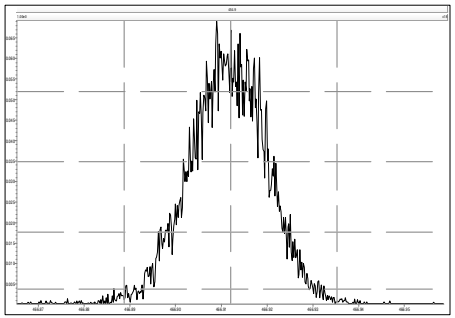
M 442.9728 R 11110



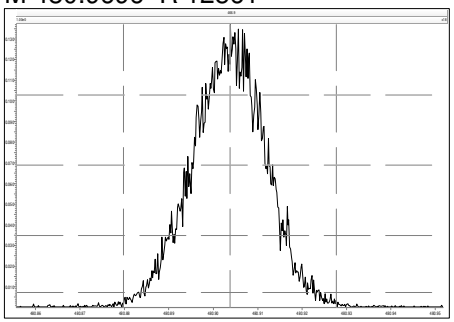
M 454.9728 R 11906



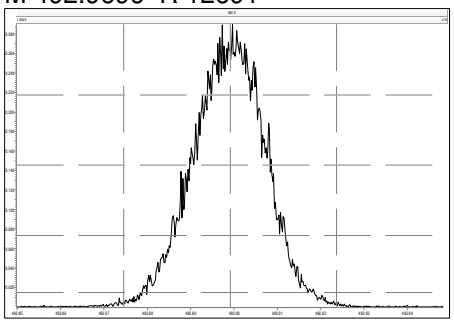
M 466.9728 R 12562



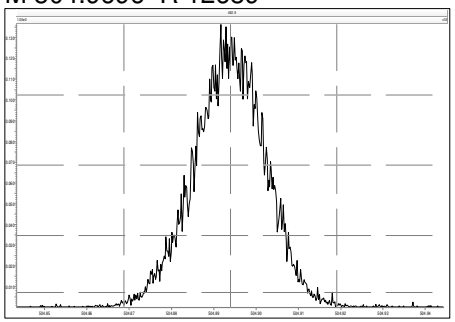
M 480.9696 R 12561



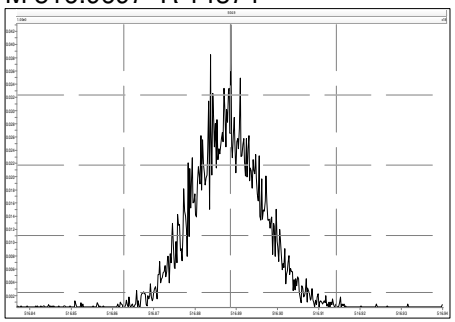
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



Lab ID: OPR1_18876_DF

REVIEWED
Tamara Burkamper , 2/10/2022, 12:37:13 PM

Acq'd: 04 Feb 2022 23:38 DTF

Wt/Vol: 1 uL

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18876_OPR001

UTP: 08-Feb-2022 09:56:50 DTF

J-level: 0.25 pg/uL **Split:** 1

Checkcode: 002-289-RNM

Datafile: 220204C19

Report: 08 Feb 2022 09:58 TF

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.53		1.0008	1.0007	-0.2	2.97E+06	0.79	Y	1.18	12.1	4052.496	0.162
12378-PeCDD	33.87		1.0006	1.0006	0	1.08E+07	1.62	Y	1.04	50.7	3117.598	0.135
123478-HxCDD	37.78		1.0004	1.0004	0	1.33E+07	1.30	Y	1.09	56.8	3275.145	0.116
123678-HxCDD	37.90		1.0035	1.0035	0	1.56E+07	1.27	Y	1.15	58.8	3275.145	0.111
123789-HxCDD	38.19		1.0112	1.0112	0	1.32E+07	1.30	Y	1.05	55	3275.145	0.119
1234678-HpCDD	40.84		1.0003	1.0003	0	1.18E+07	1.05	Y	1.06	56.4	3346.953	0.138
OCDD	43.53		1.0004	1.0003	-0.3	1.68E+07	0.94	Y	1.13	113	3007.423	0.237
2378-TCDF	27.68		1.0008	1.0007	-0.2	4.53E+06	0.82	Y	1.08	13.1	3187.2	0.101
12378-PeCDF	32.42		1.0005	1.0005	0	1.80E+07	1.58	Y	1.02	54.7	6939.317	0.196
23478-PeCDF	33.53		1.0005	1.0005	0	1.84E+07	1.54	Y	1.02	57.9	6939.317	0.193
123478-HxCDF	36.77		1.0004	1.0005	+0.2	1.59E+07	1.25	Y	1.27	53.9	4145.676	0.122
123678-HxCDF	36.91		1.0004	1.0005	+0.2	1.95E+07	1.21	Y	1.15	56.1	4145.676	0.105
234678-HxCDF	37.59		1.0005	1.0004	-0.2	2.19E+07	1.25	Y	1.19	54.3	4145.676	0.0943
123789-HxCDF	38.54		1.0004	1.0005	+0.2	1.42E+07	1.29	Y	1.16	54.1	4145.676	0.14
1234678-HpCDF	39.91		1.0003	1.0004	+0.2	2.11E+07	1.05	Y	1.37	57	3072.539	0.061
1234789-HpCDF	41.30		1.0002	1.0003	+0.2	1.23E+07	1.06	Y	1.31	54.2	3072.539	0.118
OCDF	43.70		1.0003	1.0002	-0.3	1.73E+07	0.92	Y	1.07	108	3798.125	0.271

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.51	1.0236	1.0237	+0.2	2.06E+07	0.78	Y	1.05	73.9
ES 12378-PeCDD	33.85	1.2144	1.2154	+2.0	2.05E+07	1.63	Y	0.88	87.1
ES 123478-HxCDD	37.76	0.9920	0.9920	0	2.15E+07	1.28	Y	0.97	81.4
ES 123678-HxCDD	37.88	0.9951	0.9950	-0.2	2.31E+07	1.23	Y	0.94	90.4
ES 123789-HxCDD	38.17	1.0027	1.0027	0	2.29E+07	1.24	Y	1.09	77.2
ES 1234678-HpCDD	40.83	1.0724	1.0726	+0.5	1.98E+07	1.08	Y	0.91	80
ES OCDD	43.52	1.1428	1.1432	+1.0	2.63E+07	0.88	Y	0.62	77.7
ES 2378-TCDF	27.66	1.0516	1.0518	+0.3	3.21E+07	0.81	Y	1.06	71.2
ES 12378-PeCDF	32.40	1.2312	1.2321	+1.7	3.22E+07	1.61	Y	0.91	83.1
ES 23478-PeCDF	33.52	1.2733	1.2744	+2.2	3.11E+07	1.60	Y	0.88	82.8
ES 123478-HxCDF	36.75	0.9655	0.9654	-0.2	2.32E+07	0.53	Y	1.20	71.3
ES 123678-HxCDF	36.90	0.9692	0.9692	0	3.01E+07	0.53	Y	1.35	82.1
ES 234678-HxCDF	37.58	0.9871	0.9871	0	3.39E+07	0.52	Y	1.24	101
ES 123789-HxCDF	38.53	1.0121	1.0120	-0.2	2.25E+07	0.53	Y	1.16	71.9
ES 1234678-HpCDF	39.90	1.0479	1.0480	+0.2	2.71E+07	0.45	Y	0.97	103
ES 1234789-HpCDF	41.29	1.0845	1.0847	+0.5	1.73E+07	0.45	Y	0.85	74.9
ES OCDF	43.69	1.1477	1.1478	+0.3	2.99E+07	0.91	Y	0.81	68.3

Lab ID: OPR1_18876_DF **Acq'd:** 04 Feb 2022 23:38 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18876_OPR001 **UTP:** 08-Feb-2022 09:56:50 DTF **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 002-289-RNM

Datafile: 220204C19 **Report:** 08 Feb 2022 09:58 TF **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.85		-	-	-	2.67E+07	0.80	Y	-	-
JS 1234-TCDF	26.30		-	-	-	4.25E+07	0.82	Y	-	-
JS 123467-HxCDD	38.07		-	-	-	1.36E+07	1.27	Y	-	-
CS 37Cl-2378-TCDD	28.53		1.0244	1.0245	+0.2	1.10E+07	n/a	-	1.20	85.7
CS 12347-PeCDD	33.35		1.1964	1.1973	+1.8	2.35E+07	1.62	Y	0.75	116
CS 12346-PeCDF	31.87		1.2112	1.2120	+1.5	3.55E+07	1.54	Y	0.85	98
CS 123469-HxCDF	37.21		0.9775	0.9775	0	3.06E+07	0.53	Y	1.12	101
CS 1234689-HpCDF	40.30		1.0584	1.0587	+0.7	2.72E+07	0.45	Y	0.89	113
~~SS 37Cl-2378-TCDD~~	~~28.53~~		~~1.0244~~	~~1.0245~~	~~+0.2~~	~~1.10E+07~~	~~n/a~~		~~1.15~~	~~116~~
~~SS 12347-PeCDD~~	~~33.35~~		~~1.1964~~	~~1.1973~~	~~+1.8~~	~~2.35E+07~~	~~1.62~~	~~Y~~	~~0.86~~	~~133~~
~~SS 12346-PeCDF~~	~~31.87~~		~~1.2112~~	~~1.2120~~	~~+1.5~~	~~3.55E+07~~	~~1.54~~	~~Y~~	~~0.94~~	~~110~~
~~SS 123469-HxCDF~~	~~37.21~~		~~0.9775~~	~~0.9775~~	~~0~~	~~3.06E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~123~~
~~SS 1234689-HpCDF~~	~~40.30~~		~~1.0584~~	~~1.0587~~	~~+0.7~~	~~2.72E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~109~~

Totals	Conc	EMPC
Total TCDD	52.3	52.3
Total PeCDD	74.6	74.6
Total HxCDD	183	183
Total HpCDD	68.7	68.7
Total Tetra-Octa Dioxins	492	492
Total TCDF	65.4	65.4
Total PeCDF	207	207
Total HxCDF	334	334
Total HpCDF	111	111
Total Tetra-Octa Furans	825	825
Total Tetra-Octa Dioxins & Furans	1320	1320

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.79	0.79
Response	2.97E+06	2.97E+06

Lab ID: OPR1_18876_DF **Acq'd: 04 Feb 2022 23:38 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18876_OPR001 **UTP: 08-Feb-2022 09:56:50 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 002-289-RNM**

Datafile: 220204C19 **Report: 08 Feb 2022 09:58 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.90		0.8737	0.8733	-0.6	3.44E+06	0.78	Y	1.18	14.1	4052.496	0.162
1379-TCDD	NotFnd		0.8860						1.18		4052.496	0.162
1369-TCDD	NotFnd		0.9009						1.18		4052.496	0.162
1469-TCDD	NotFnd		0.9281						1.18		4052.496	0.162
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		4052.496	0.162
1378-TCDD	NotFnd		0.9432						1.18		4052.496	0.162
1268-TCDD	NotFnd		0.9500						1.18		4052.496	0.162
1478-TCDD	NotFnd		0.9586						1.18		4052.496	0.162
1279-TCDD	NotFnd		0.9645						1.18		4052.496	0.162
1234/1269-TCDD	NotFnd		0.9770						1.18		4052.496	0.162
1236-TCDD	NotFnd		0.9817						1.18		4052.496	0.162
1237/1238-TCDD	NotFnd		0.9905						1.18		4052.496	0.162
1239-TCDD	28.37		0.9952	0.9952	0	2.59E+06	0.85	Y	1.18	10.6	4052.496	0.162
2378-TCDD	**28.53**		**1.0008**	1.0007	**-0.2**	2.97E+06	0.79	Y	**1.18**	**12.1**	**4052.496**	**0.162**
1278-TCDD	NotFnd		1.0121						1.18		4052.496	0.162
1267-TCDD	NotFnd		1.0167						1.18		4052.496	0.162
1289-TCDD	29.50		1.0345	1.0347	+0.4	3.81E+06	0.85	Y	1.18	15.6	4052.496	0.162
12479/12468-PeCDD	31.37		0.9267	0.9266	-0.2	2.32E+06	1.52	Y	1.04	11	3117.598	0.135
12469-PeCDD	NotFnd		0.9425						1.04		3117.598	0.135
12368-PeCDD	NotFnd		0.9588						1.04		3117.598	0.135
12478-PeCDD	NotFnd		0.9643						1.04		3117.598	0.135
12379-PeCDD	NotFnd		0.9673						1.04		3117.598	0.135
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		3117.598	0.135
12346/12347-PeCDD	NotFnd		0.9858						1.04		3117.598	0.135
12378-PeCDD	33.87		**1.0006**	**1.0006**	**0**	**1.08E+07**	**1.62**	**Y**	**1.04**	**50.7**	**3117.598**	**0.135**
12367-PeCDD	NotFnd		1.0033						1.04		3117.598	0.135
12389-PeCDD	34.31		1.0134	1.0135	+0.2	2.73E+06	1.60	Y	1.04	12.9	3117.598	0.135
124679/124689-HxCDD	36.03		0.9542	0.9541	-0.2	3.07E+06	1.31	Y	1.10	12.5	3275.145	0.115
123468-HxCDD	NotFnd		0.9715						1.10		3275.145	0.115
123679/123689-HxCDD	NotFnd		0.9793						1.10		3275.145	0.115
123469-HxCDD	NotFnd		0.9828						1.10		3275.145	0.115
123478-HxCDD	37.78		**1.0004**	**1.0004**	**0**	**1.33E+07**	**1.30**	**Y**	1.09	**56.8**	**3275.145**	**0.116**
123678-HxCDD	37.90		**1.0035**	**1.0035**	**0**	**1.56E+07**	**1.27**	**Y**	1.15	**58.8**	**3275.145**	**0.111**
123467-HxCDD	NotFnd		1.0085						1.10		3275.145	0.115
123789-HxCDD	38.19		**1.0112**	**1.0112**	**0**	**1.32E+07**	**1.30**	**Y**	1.05	**55**	**3275.145**	**0.119**

Lab ID: OPR1_18876_DF | **Acq'd: 04 Feb 2022 23:38 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18876_OPR001 | **UTP: 08-Feb-2022 09:56:50 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 002-289-RNM**

Datafile: 220204C19 | **Report: 08 Feb 2022 09:58 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.16		0.9837	0.9836	-0.2	2.59E+06	0.97	Y	1.06	12.3	3346.953	0.138
1234678-HpCDD	**40.84**		**1.0003**	**1.0003**	**0**	**1.18E+07**	**1.05**	**Y**	**1.06**	**56.4**	**3346.953**	**0.138**
OCDD	**43.53**		**1.0004**	**1.0003**	**-0.3**	**1.68E+07**	**0.94**	**Y**	**1.13**	**113**	**3007.423**	**0.237**
OCDD-a	43.53		1.0003	1.0002	-0.3	1.02E+06	2.73	Y	0.07	108	3013.093	3.71
1368-TCDF	22.81		0.8251	0.8245	-0.8	5.37E+06	0.80	Y	1.08	15.5	3187.2	0.101
1468-TCDF	NotFnd		0.8458						1.08		3187.2	0.101
2468-TCDF	24.01		0.8686	0.8682	-0.6	1.42E+06	0.70	Y	1.08	4.1	3187.2	0.101
1346/1246-TCDF	NotFnd		0.8814						1.08		3187.2	0.101
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		3187.2	0.101
1348-TCDF	NotFnd		0.8962						1.08		3187.2	0.101
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		3187.2	0.101
1268-TCDF	NotFnd		0.9145						1.08		3187.2	0.101
1467-TCDF	NotFnd		0.9193						1.08		3187.2	0.101
1478-TCDF	NotFnd		0.9254						1.08		3187.2	0.101
1369/1237-TCDF	NotFnd		0.9387						1.08		3187.2	0.101
2467-TCDF	NotFnd		0.9433						1.08		3187.2	0.101
2368-TCDF	NotFnd		0.9489						1.08		3187.2	0.101
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		3187.2	0.101
1278-TCDF	NotFnd		0.9683						1.08		3187.2	0.101
1349-TCDF	NotFnd		0.9722						1.08		3187.2	0.101
1267-TCDF	NotFnd		0.9783						1.08		3187.2	0.101
2346/1249-TCDF	NotFnd		0.9850						1.08		3187.2	0.101
2347/1279-TCDF	NotFnd		0.9926						1.08		3187.2	0.101
2348-TCDF	27.57		0.9967	0.9968	+0.2	5.45E+06	0.78	Y	1.08	15.7	3187.2	0.101
2378-TCDF	**27.68**		**1.0008**	**1.0007**	**-0.2**	**4.53E+06**	**0.82**	**Y**	**1.08**	**13.1**	**3187.2**	**0.101**
2367/3467-TCDF	NotFnd		1.0137						1.08		3187.2	0.101
1269-TCDF	NotFnd		1.0223						1.08		3187.2	0.101
1239-TCDF	NotFnd		1.0321						1.08		3187.2	0.101
1289-TCDF	29.67		1.0722	1.0728	+1.1	5.86E+06	0.81	Y	1.08	16.9	3187.2	0.101
13468/12468-PeCDF	29.59		0.9139	0.9132	-1.2	2.71E+07	1.54	Y	1.02	83.7	2709.265	0.0759
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		6939.317	0.195
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		6939.317	0.195
14678-PeCDF	NotFnd		0.9692						1.02		6939.317	0.195
13479-PeCDF	NotFnd		0.9723						1.02		6939.317	0.195
13469/12479-PeCDF	NotFnd		0.9797						1.02		6939.317	0.195
12346-PeCDF	NotFnd		0.9840						1.02		6939.317	0.195

Lab ID: OPR1_18876_DF | **Acq'd: 04 Feb 2022 23:38 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18876_OPR001 | **UTP: 08-Feb-2022 09:56:50 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 002-289-RNM**

Datafile: 220204C19 | **Report: 08 Feb 2022 09:58 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		6939.317	0.195
12347-PeCDF	NotFnd		0.9894						1.02		6939.317	0.195
12348-PeCDF	NotFnd		0.9940						1.02		6939.317	0.195
12378-PeCDF	**32.42**		**1.0005**	**1.0005**	**0**	**1.80E+07**	**1.58**	**Y**	**1.02**	**54.7**	**6939.317**	**0.196**
12678/12367-PeCDF	NotFnd		1.0089						1.02		6939.317	0.195
12379-PeCDF	NotFnd		1.0142						1.02		6939.317	0.195
12679-PeCDF	NotFnd		0.9929						1.02		6939.317	0.195
23467/12369-PeCDF	NotFnd		0.9967						1.02		6939.317	0.195
23478-PeCDF	**33.53**		**1.0005**	**1.0005**	**0**	**1.84E+07**	**1.54**	**Y**	**1.02**	**57.9**	**6939.317**	**0.193**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6939.317	0.195
12349-PeCDF	NotFnd		1.0100						1.02		6939.317	0.195
12389-PeCDF	34.61		1.0324	1.0326	+0.4	3.54E+06	1.54	Y	1.02	11	6939.317	0.195
123468-HxCDF	35.38		0.9627	0.9627	0	3.78E+07	1.26	Y	1.19	115	4145.676	0.112
124678/134678-HxCDF	NotFnd		0.9682						1.19		4145.676	0.112
134679-HxCDF	NotFnd		0.9744						1.19		4145.676	0.112
124679-HxCDF	NotFnd		0.9798						1.19		4145.676	0.112
124689-HxCDF	NotFnd		0.9858						1.19		4145.676	0.112
123467-HxCDF	NotFnd		0.9972						1.19		4145.676	0.112
123478-HxCDF	**36.77**		**1.0004**	**1.0005**	**+0.2**	**1.59E+07**	**1.25**	**Y**	**1.27**	**53.9**	**4145.676**	**0.122**
123678-HxCDF	**36.91**		**1.0004**	**1.0005**	**+0.2**	**1.95E+07**	**1.21**	**Y**	**1.15**	**56.1**	**4145.676**	**0.105**
123479-HxCDF	NotFnd		1.0049						1.19		4145.676	0.112
123469-HxCDF	NotFnd		1.0090						1.19		4145.676	0.112
123679-HxCDF	NotFnd		0.9942						1.19		4145.676	0.112
234678-HxCDF	**37.59**		**1.0005**	**1.0004**	**-0.2**	**2.19E+07**	**1.25**	**Y**	**1.19**	**54.3**	**4145.676**	**0.0943**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4145.676	0.112
123789-HxCDF	**38.54**		**1.0004**	**1.0005**	**+0.2**	**1.42E+07**	**1.29**	**Y**	**1.16**	**54.1**	**4145.676**	**0.14**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		4145.676	0.112
1234678-HpCDF	**39.91**		**1.0003**	**1.0004**	**+0.2**	**2.11E+07**	**1.05**	**Y**	**1.37**	**57**	**3072.539**	**0.061**
1234679-HpCDF	NotFnd		1.0068						1.34		3072.539	0.0828
1234689-HpCDF	NotFnd		1.0103						1.34		3072.539	0.0828
1234789-HpCDF	**41.30**		**1.0002**	**1.0003**	**+0.2**	**1.23E+07**	**1.06**	**Y**	**1.31**	**54.2**	**3072.539**	**0.118**
OCDF	**43.70**		**1.0003**	**1.0002**	**-0.3**	**1.73E+07**	**0.92**	**Y**	**1.07**	**108**	**3798.125**	**0.271**
OCDF-a	43.70		1.0002	1.0001	-0.3	1.02E+06	2.16	Y	0.07	102	3843.009	4.43

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220204C19	Analysis Date:	04-FEB-2022 23:38:21
Lab ID:	OPR1_18876_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.1	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	50.7	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	56.8	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	58.8	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	55	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.4	35	-	70	Y
OCDD	100	113	78	-	144	Y
2,3,7,8-TCDF	10	13.1	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.7	40	-	67	Y
2,3,4,7,8-PeCDF	50	57.9	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	53.9	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	56.1	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	54.3	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	54.1	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	57	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	54.2	39	-	69	Y
OCDF	100	108	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Feb 2022 09:58 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name: SGS North America
Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021
Instrument ID: HRMS3 GC Column ID: ZB-5ms
VER Data Filename: 220204C19 Analysis Date: 04-FEB-2022 23:38:21
Lab ID: OPR1_18876_DF

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	73.9	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	87.1	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	81.4	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	90.4	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	77.2	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	80	26	-	166	Y
13C-OCDD	200	155	26	-	397	Y
13C-2,3,7,8-TCDF	100	71.2	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	83.1	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	82.8	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	71.3	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	82.1	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	101	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	71.9	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	103	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	74.9	20	-	186	Y
13C-OCDF	200	137	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	34.3	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 08 Feb 2022 09:58 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220204C19	Analysis Date:	04-FEB-2022 23:38:21
Lab ID:	OPR1_18876_DF		

Window Defining Standards Results

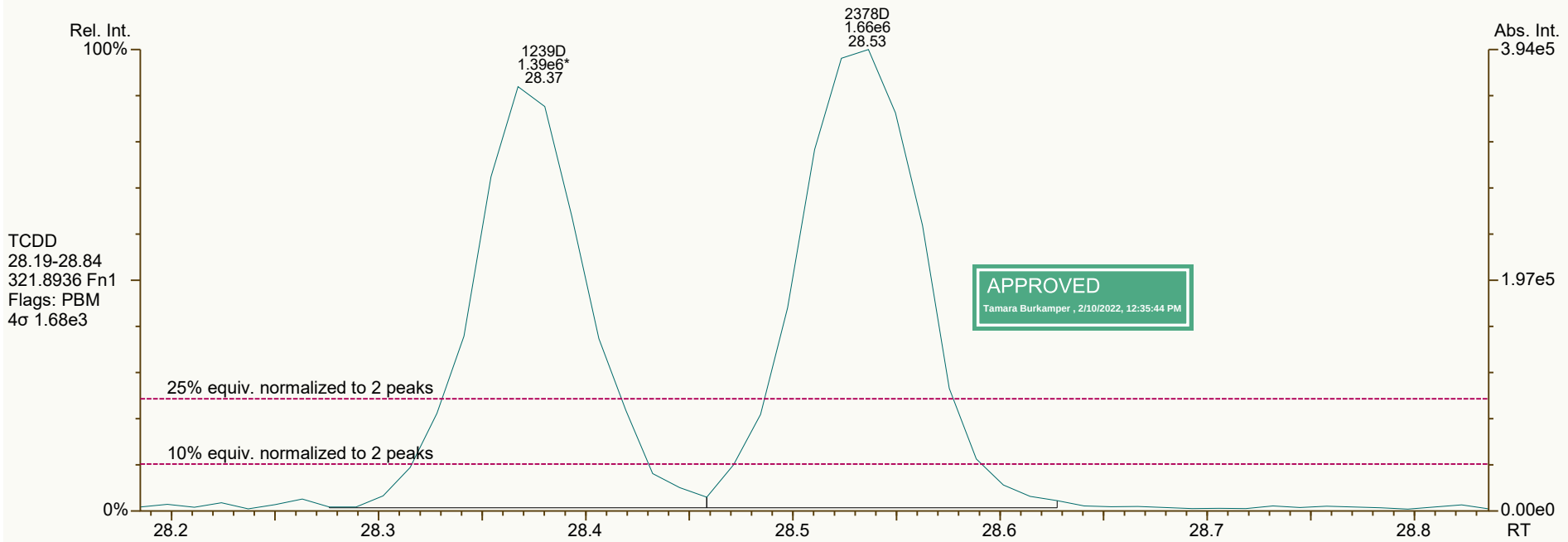
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.90	1289-TCDD	29.50
12479/12468-PeCDD	31.37	12389-PeCDD	34.31
124679/124689-HxCDD	36.03	123789-HxCDD	38.19
1234679-HpCDD	40.16	1234678-HpCDD	40.84
1368-TCDF	22.81	1289-TCDF	29.67
13468/12468-PeCDF	29.59	12389-PeCDF	34.61
123468-HxCDF	35.38	123789-HxCDF	38.54
1234678-HpCDF	39.91	1234789-HpCDF	41.30

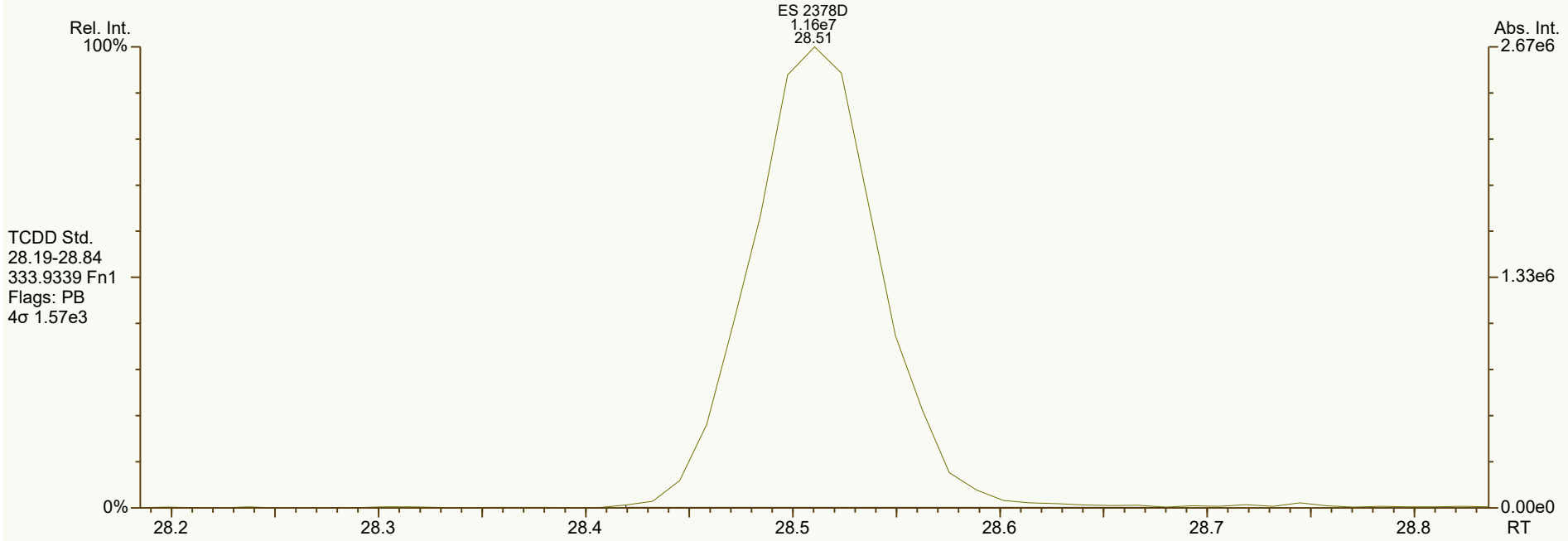
Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.37	2378-TCDD	28.53
2348-TCDF	27.57	2378-TCDF	27.68

Processed: 08 Feb 2022 09:58 Analyst: TF

SGS ID: OPR1_18876_DF
Sample ID: 0_18876_OPR001
Acq: 04-Feb-2022 23:38:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53
User: DTF Datafile: 220204C19





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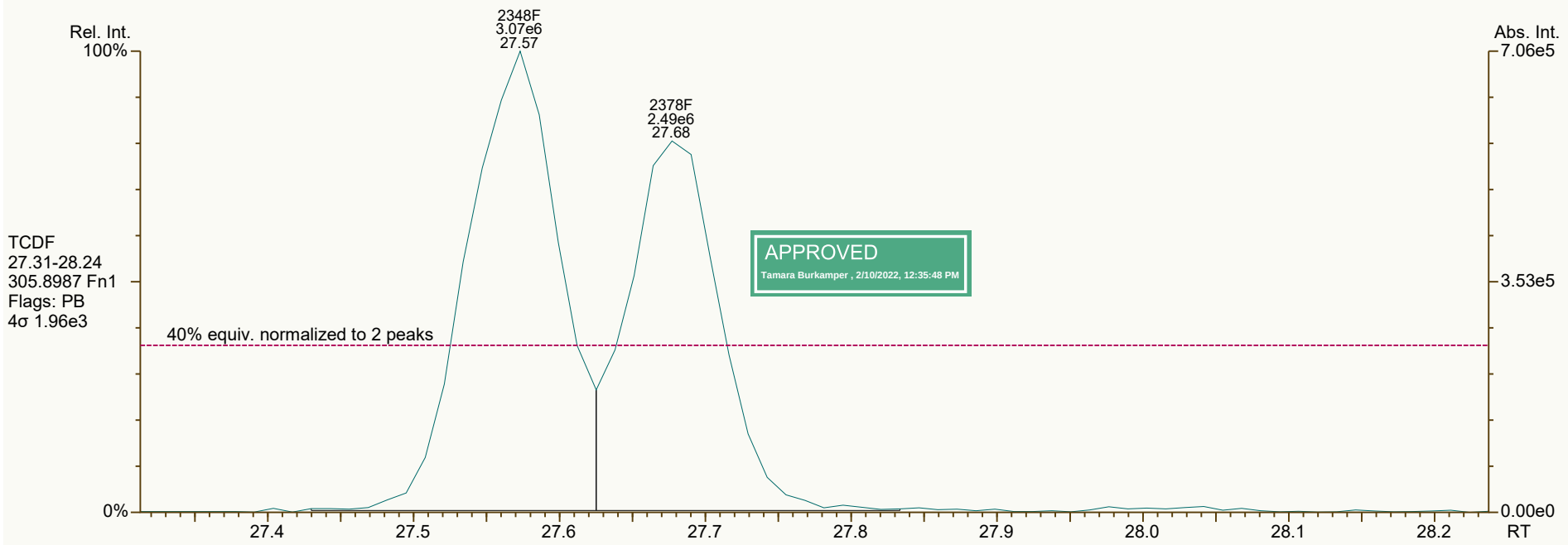
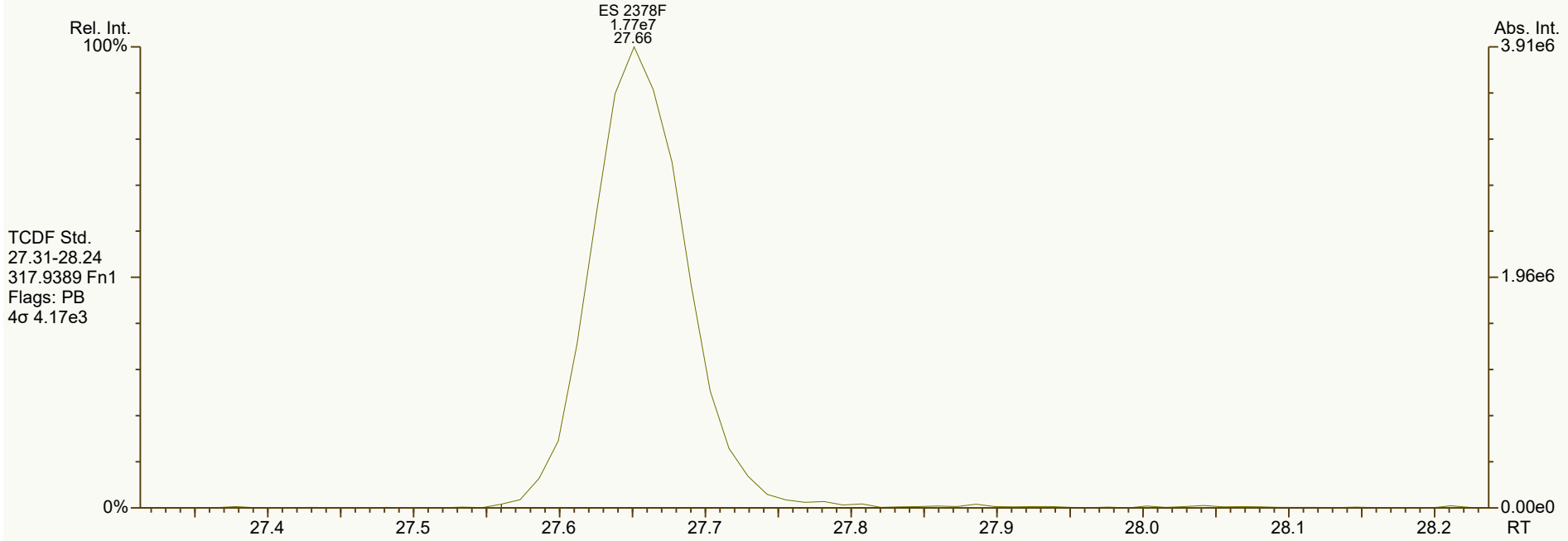
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
Revised: 07-Feb-2022 08:49 (DTF) Printed: 08-Feb-2022 10:01

SGS ID: OPR1_18876_DF
Sample ID: 0_18876_OPR001
Acq: 04-Feb-2022 23:38:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53
User: DTF Datafile: 220204C19





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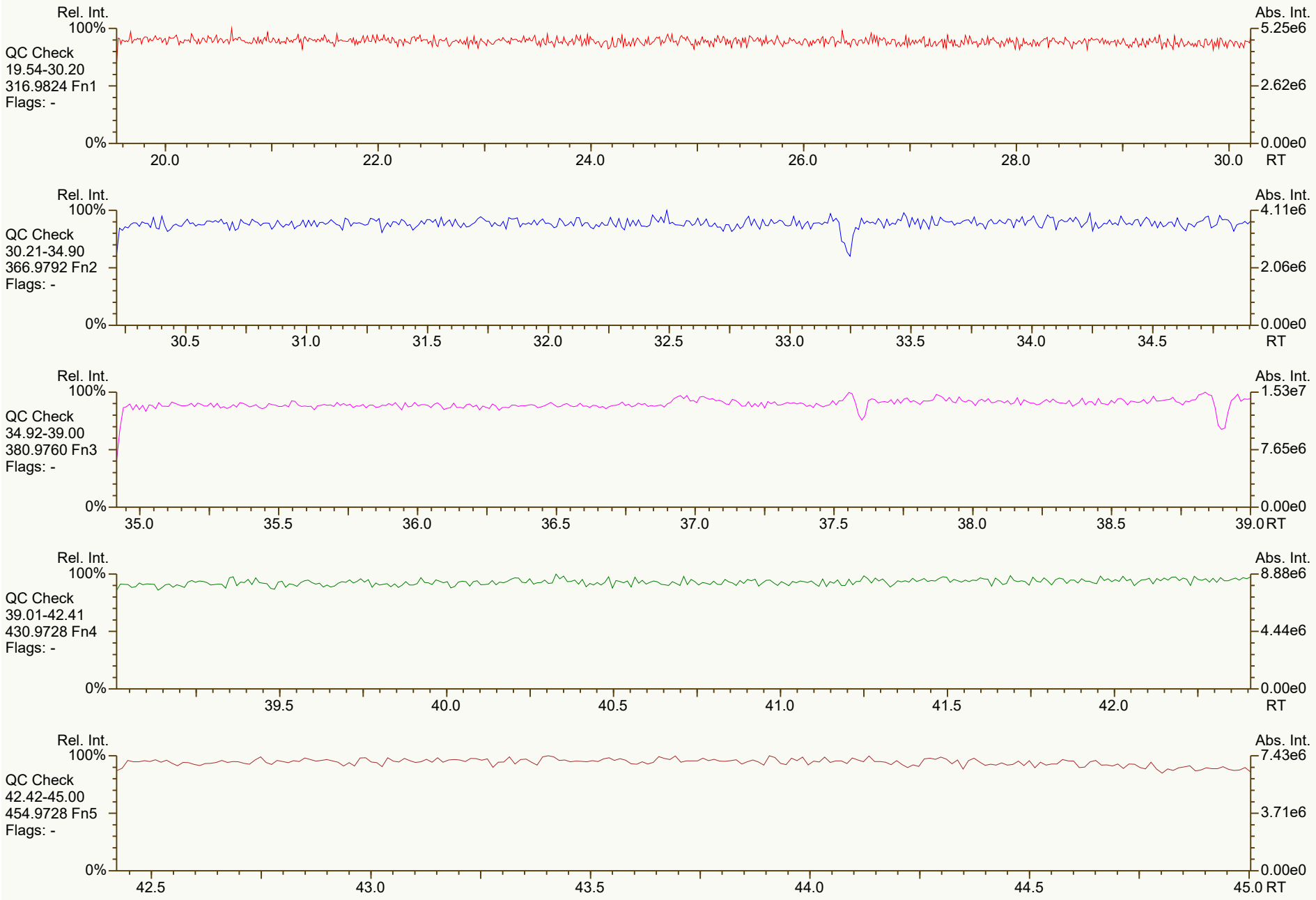
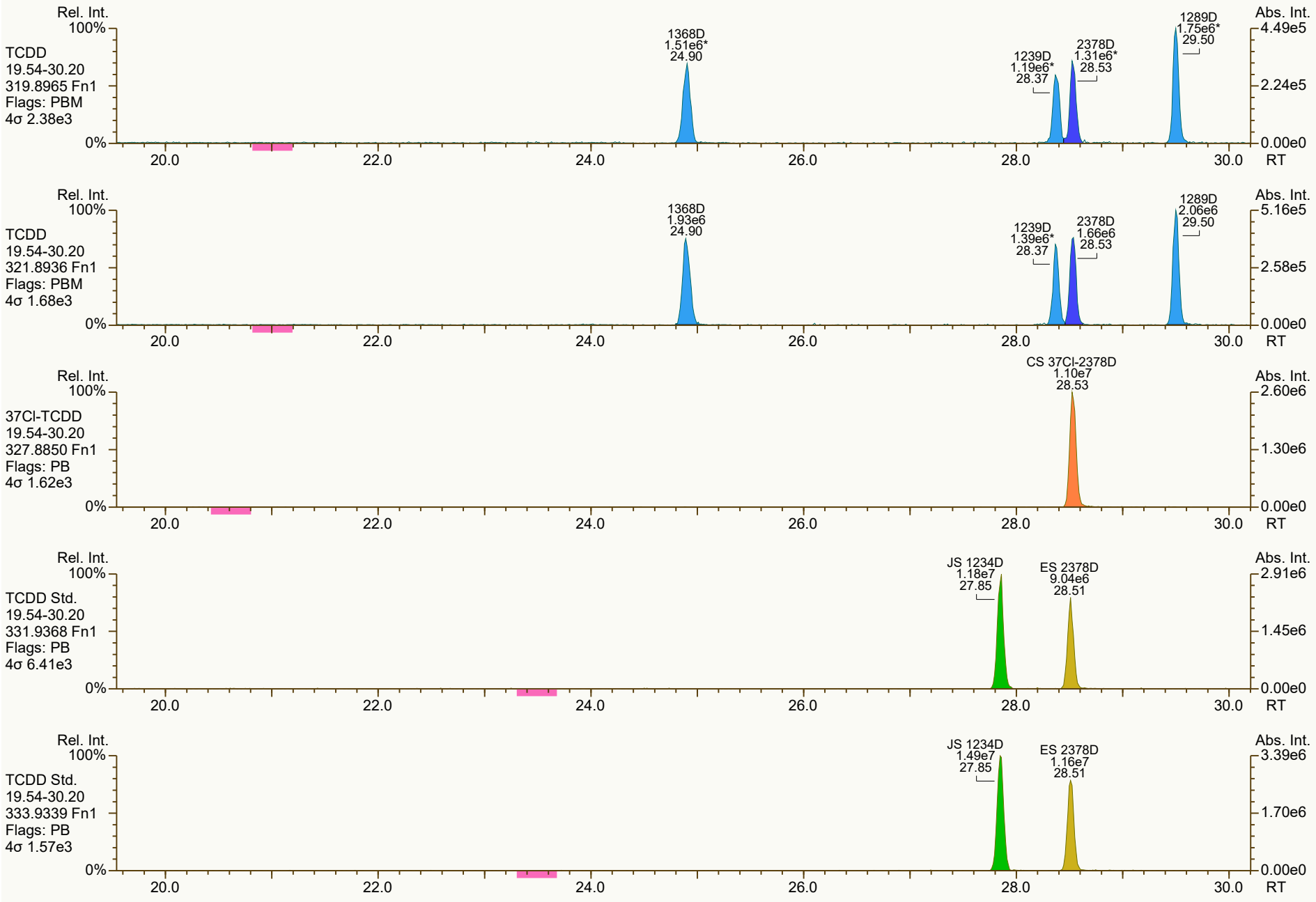
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616
PKD: 07-Feb-2022 08:50 Printed: 08-Feb-2022 10:01


Rel. Int.
100%
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
5.25e6
2.62e6
0.00e0
Rel. Int.
100%
QC Check
30.21-34.90
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
4.11e6
2.06e6
0.00e0
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Abs. Int.
1.53e7
7.65e6
0.00e0
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
8.88e6
4.44e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
7.43e6
3.71e6
0.00e0


Rel. Int.
100%
TCDD
19.54-30.20
319.8965 Fn1
Flags: PBM
4σ 2.38e3
0%
1368D
1.51e6*
24.90
1239D
1.19e6*
28.37
2378D
1.31e6*
28.53
1289D
1.75e6*
29.50
Abs. Int.
4.49e5
2.24e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.20
321.8936 Fn1
Flags: PBM
4σ 1.68e3
0%
1368D
1.93e6
24.90
1239D
1.39e6*
28.37
2378D
1.66e6
28.53
1289D
2.06e6
29.50
Abs. Int.
5.16e5
2.58e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.20
327.8850 Fn1
Flags: PB
4σ 1.62e3
0%
CS 37Cl-2378D
1.10e7
28.53
Abs. Int.
2.60e6
1.30e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
331.9368 Fn1
Flags: PB
4σ 6.41e3
0%
JS 1234D
1.18e7
27.85
ES 2378D
9.04e6
28.51
Abs. Int.
2.91e6
1.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.20
333.9339 Fn1
Flags: PB
4σ 1.57e3
0%
JS 1234D
1.49e7
27.85
ES 2378D
1.16e7
28.51
Abs. Int.
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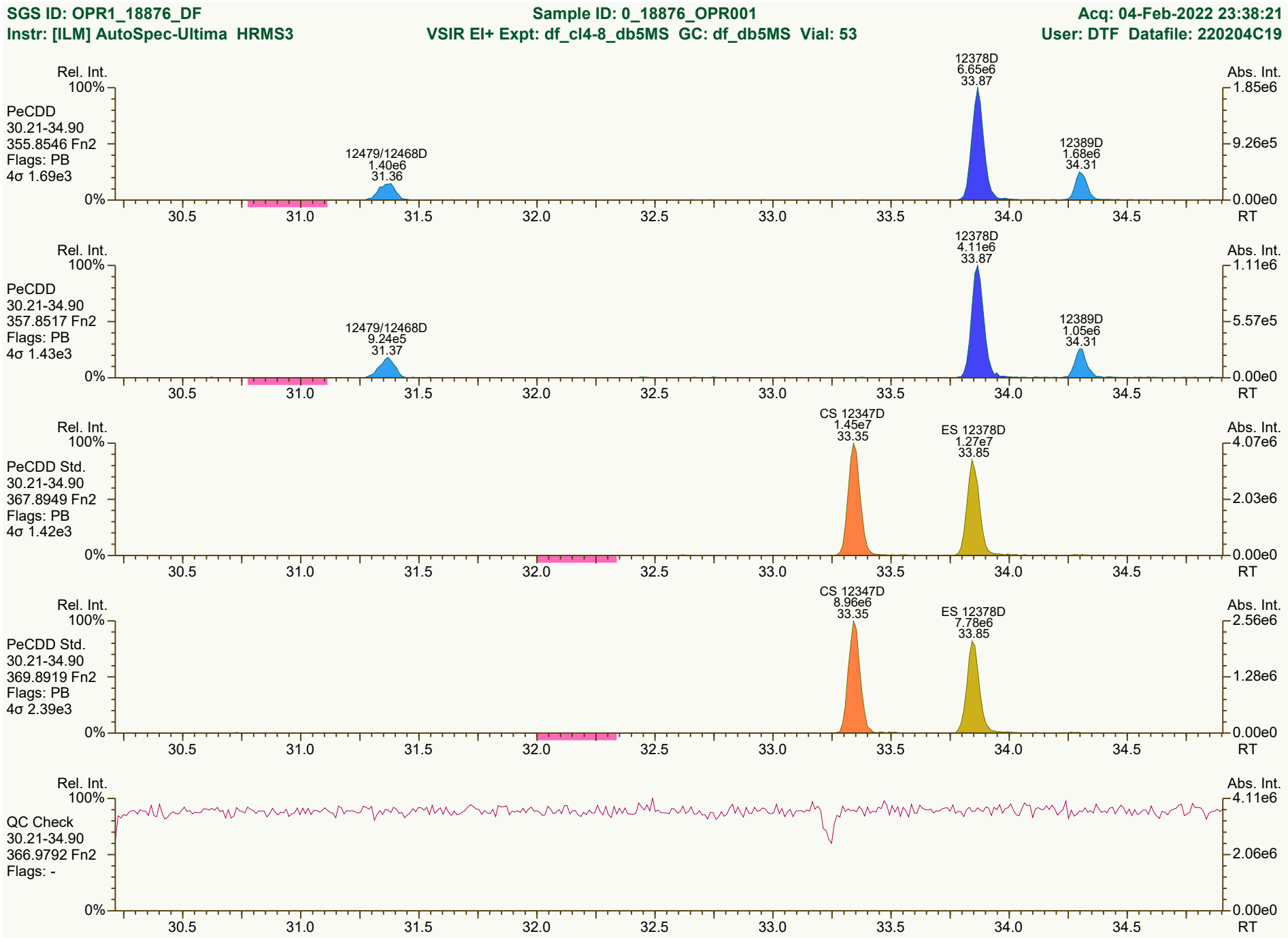
1.70e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT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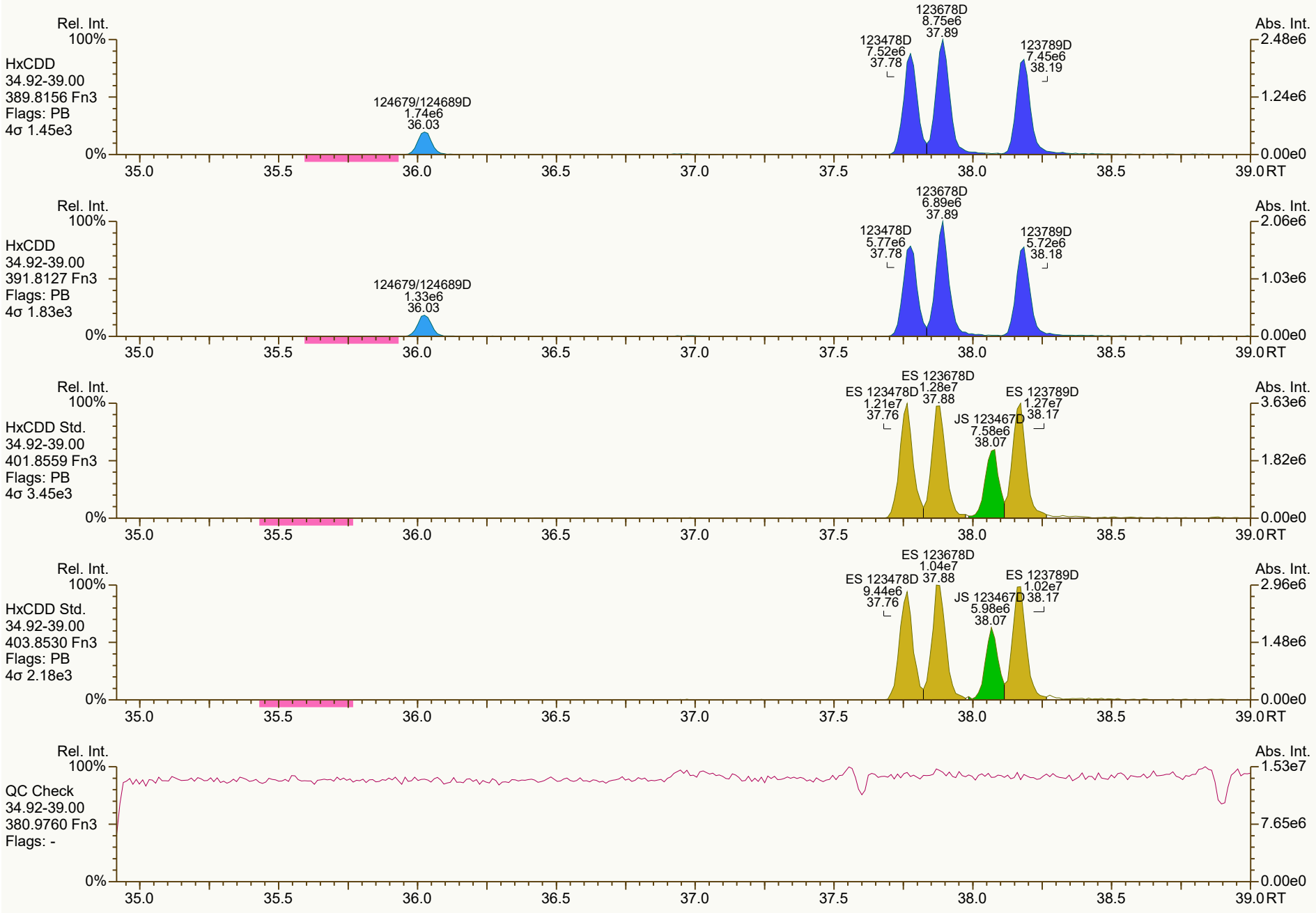
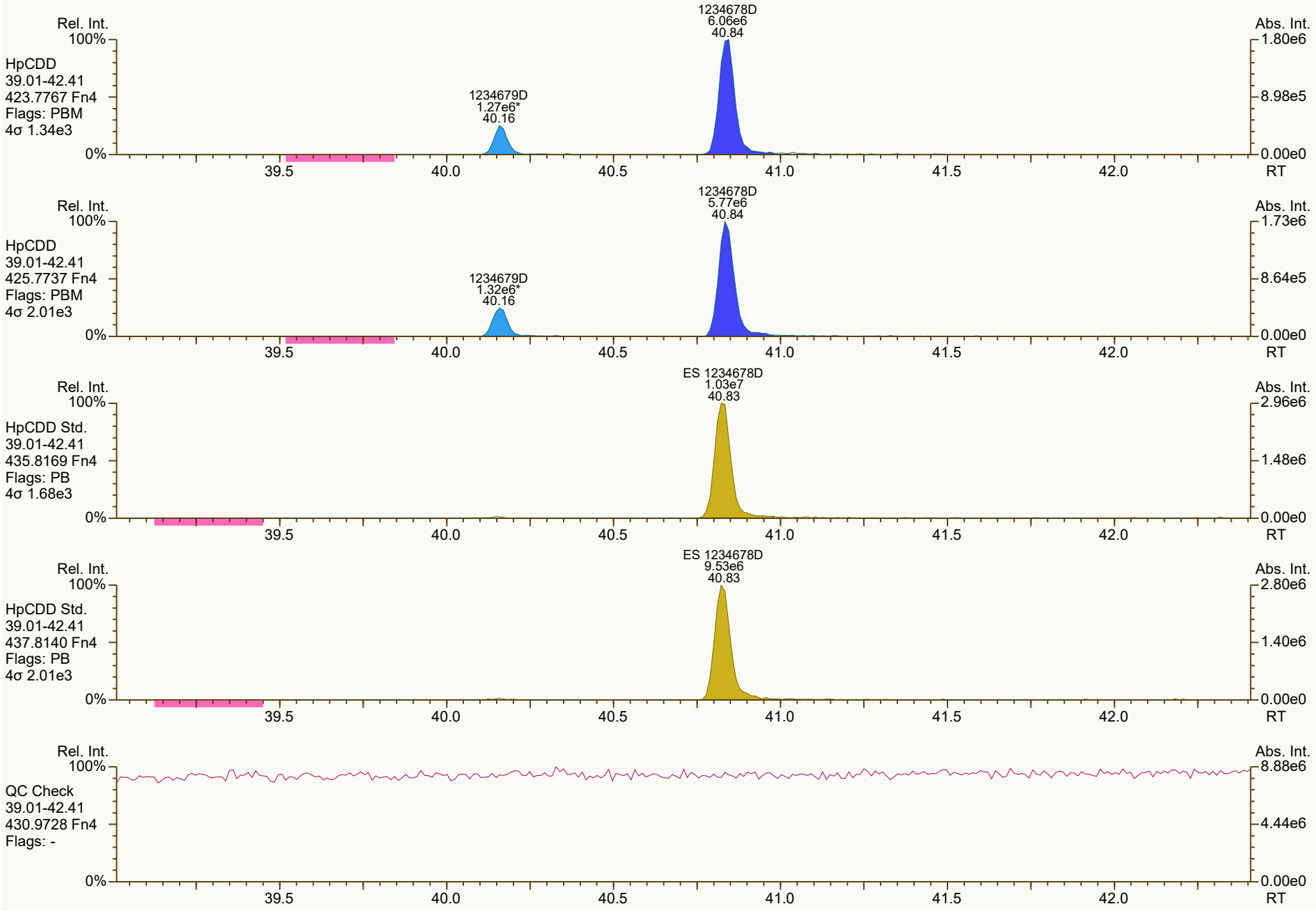
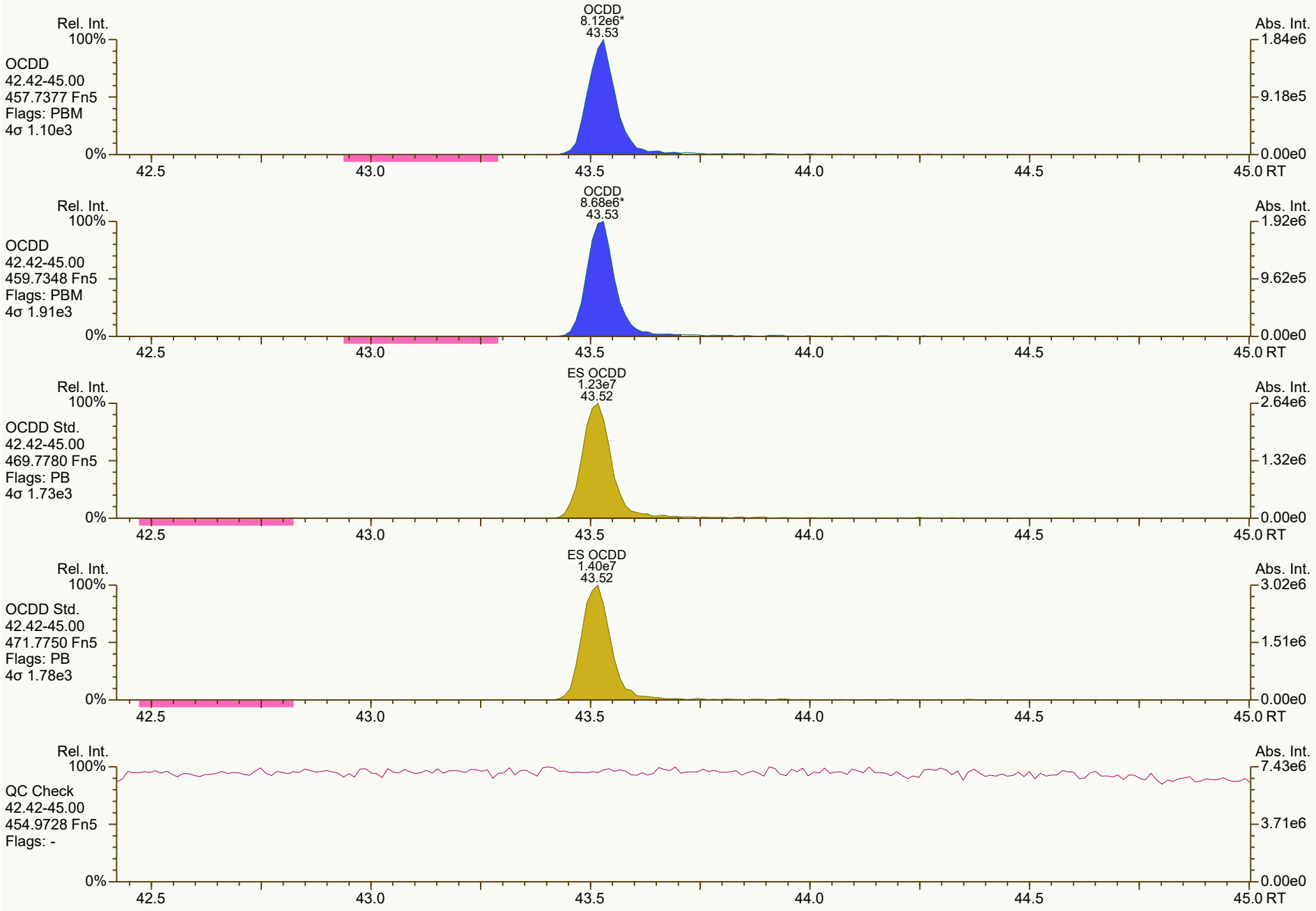
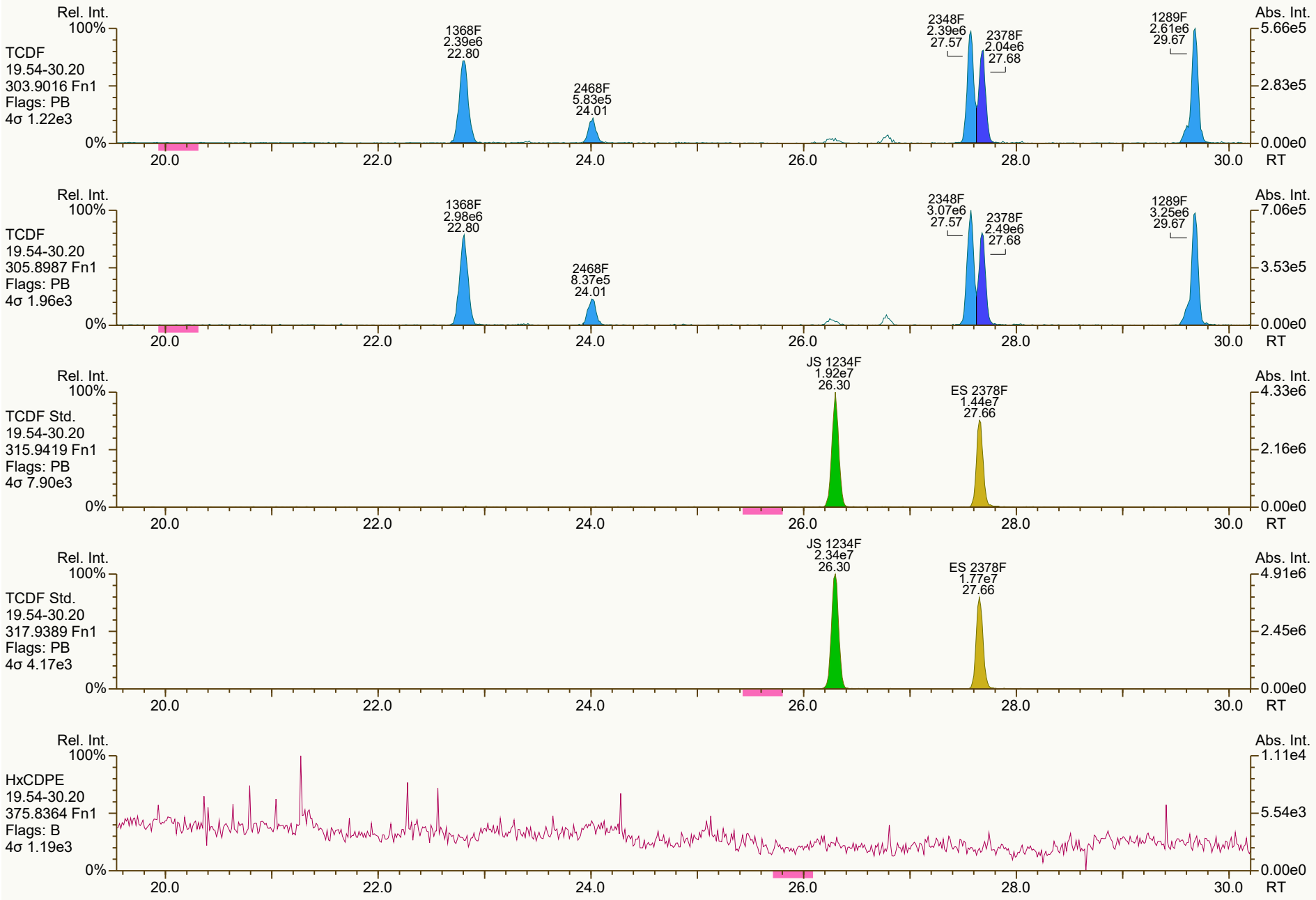
Sample ID: 0_18876_OPR001
Acq: 04-Feb-2022 23:38:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53
User: DTF Datafile: 220204C19
Rel. Int.
Abs. Int.
PeCDD
30.21-34.90
355.8546 Fn2
Flags: PB
4σ 1.69e3
12479/12468D
1.40e6
31.36
12378D
6.65e6
33.87
12389D
1.68e6
34.31
1.85e6
9.26e5
0.00e0
PeCDD
30.21-34.90
357.8517 Fn2
Flags: PB
4σ 1.43e3
12479/12468D
9.24e5
31.37
12378D
4.11e6
33.87
12389D
1.05e6
34.31
1.11e6
5.57e5
0.00e0
PeCDD Std.
30.21-34.90
367.8949 Fn2
Flags: PB
4σ 1.42e3
CS 12347D
1.45e7
33.35
ES 12378D
1.27e7
33.85
4.07e6
2.03e6
0.00e0
PeCDD Std.
30.21-34.90
369.8919 Fn2
Flags: PB
4σ 2.39e3
CS 12347D
8.96e6
33.35
ES 12378D
7.78e6
33.85
2.56e6
1.28e6
0.00e0
QC Check
30.21-34.90
366.9792 Fn2
Flags: -
4.11e6
2.06e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\OPR1_18876_DF.utp_res, saved 08-Feb-2022 09:56 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9361, 9388 scc: 002-289
PKD: 07-Feb-2022 08:50 Printed: 08-Feb-2022 10:02 Page 3 of 12


Rel. Int.
100%
HxCDD
34.92-39.00
389.8156 Fn3
Flags: PB
4σ 1.45e3
124679/124689D
1.74e6
36.03
123478D
7.52e6
37.78
123678D
8.75e6
37.89
123789D
7.45e6
38.19
Abs. Int.
2.48e6
1.24e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD
34.92-39.00
391.8127 Fn3
Flags: PB
4σ 1.83e3
124679/124689D
1.33e6
36.03
123478D
5.77e6
37.78
123678D
6.89e6
37.89
123789D
5.72e6
38.18
Abs. Int.
2.06e6
1.03e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
34.92-39.00
401.8559 Fn3
Flags: PB
4σ 3.45e3
ES 123478D
1.21e7
37.76
ES 123678D
1.28e7
37.88
JS 123467D
7.58e6
38.07
ES 123789D
1.27e7
38.17
Abs. Int.
3.63e6
1.82e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDD Std.
34.92-39.00
403.8530 Fn3
Flags: PB
4σ 2.18e3
ES 123478D
9.44e6
37.76
ES 123678D
1.04e7
37.88
JS 123467D
5.98e6
38.07
ES 123789D
1.02e7
38.17
Abs. Int.
2.96e6
1.48e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
Abs. Int.
1.53e7
7.65e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.01-42.41
423.7767 Fn4
Flags: PBM
4σ 1.34e3
1234678D
6.06e6
40.84
1234679D
1.27e6*
40.16
Abs. Int.
1.80e6
8.98e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.01-42.41
425.7737 Fn4
Flags: PBM
4σ 2.01e3
1234678D
5.77e6
40.84
1234679D
1.32e6*
40.16
Abs. Int.
1.73e6
8.64e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.01-42.41
435.8169 Fn4
Flags: PB
4σ 1.68e3
ES 1234678D
1.03e7
40.83
Abs. Int.
2.96e6
1.48e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.01-42.41
437.8140 Fn4
Flags: PB
4σ 2.01e3
ES 1234678D
9.53e6
40.83
Abs. Int.
2.80e6
1.40e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
Abs. Int.
8.88e6
4.44e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

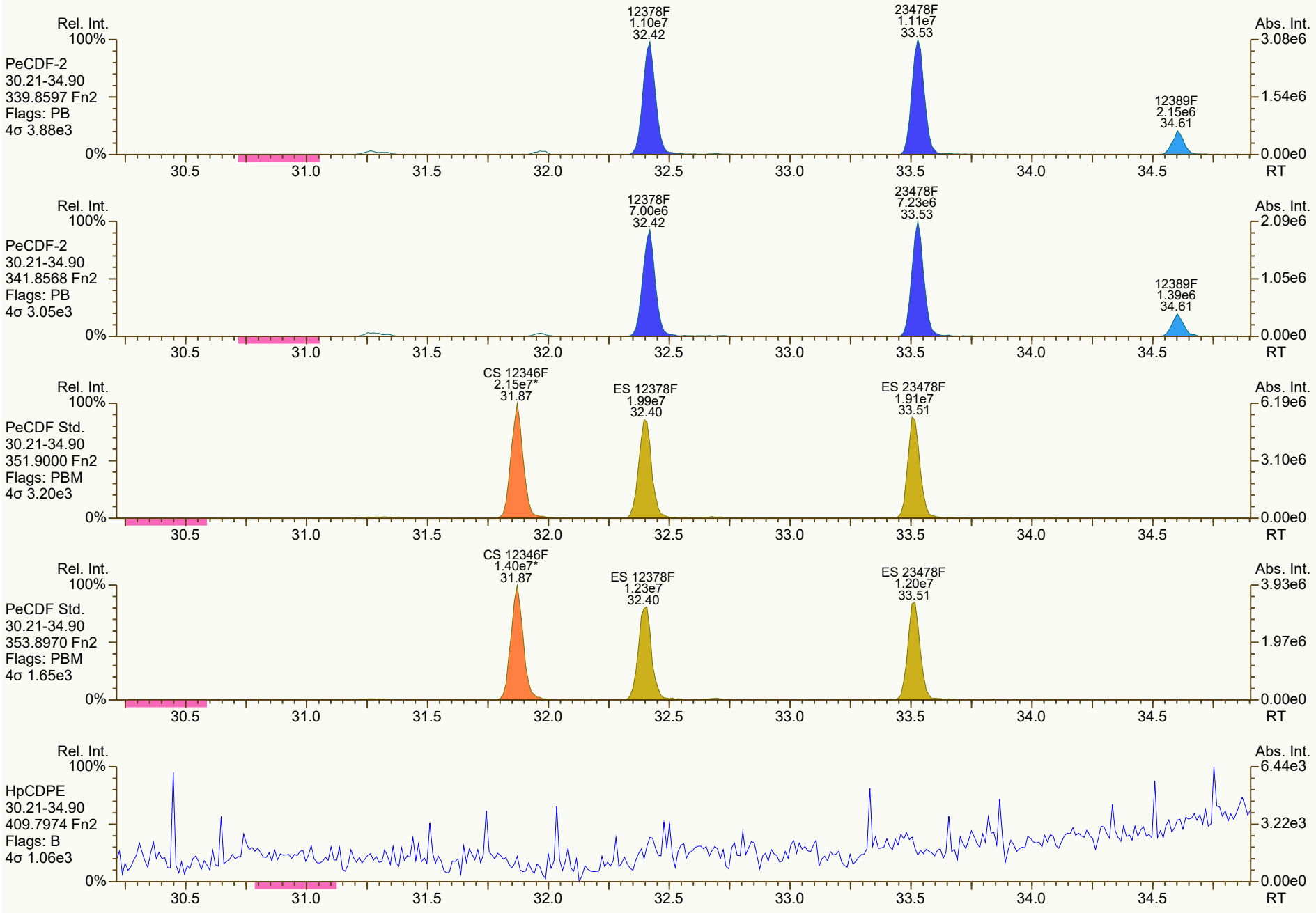

OCDD
8.12e6*
43.53
Rel. Int.
100%
OCDD
42.42-45.00
457.7377 Fn5
Flags: PBM
4σ 1.10e3
0%
Abs. Int.
1.84e6
9.18e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
8.68e6*
43.53
OCDD
42.42-45.00
459.7348 Fn5
Flags: PBM
4σ 1.91e3
1.92e6
9.62e5
ES OCDD
1.23e7
43.52
OCDD Std.
42.42-45.00
469.7780 Fn5
Flags: PB
4σ 1.73e3
2.64e6
1.32e6
ES OCDD
1.40e7
43.52
OCDD Std.
42.42-45.00
471.7750 Fn5
Flags: PB
4σ 1.78e3
3.02e6
1.51e6
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
7.43e6
3.71e6


Rel. Int.
100%
TCDF
19.54-30.20
303.9016 Fn1
Flags: PB
4σ 1.22e3
0%
1368F
2.39e6
22.80
2468F
5.83e5
24.01
2348F
2.39e6
27.57
2378F
2.04e6
27.68
1289F
2.61e6
29.67
Abs. Int.
5.66e5
2.83e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.20
305.8987 Fn1
Flags: PB
4σ 1.96e3
0%
1368F
2.98e6
22.80
2468F
8.37e5
24.01
2348F
3.07e6
27.57
2378F
2.49e6
27.68
1289F
3.25e6
29.67
Abs. Int.
7.06e5
3.53e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
315.9419 Fn1
Flags: PB
4σ 7.90e3
0%
JS 1234F
1.92e7
26.30
ES 2378F
1.44e7
27.66
Abs. Int.
4.33e6
2.16e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.20
317.9389 Fn1
Flags: PB
4σ 4.17e3
0%
JS 1234F
2.34e7
26.30
ES 2378F
1.77e7
27.66
Abs. Int.
4.91e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.20
375.8364 Fn1
Flags: B
4σ 1.19e3
0%
Abs. Int.
1.11e4
5.54e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

SGS ID: OPR1_18876_DF
Sample ID: 0_18876_OPR001
Acq: 04-Feb-2022 23:38:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53
User: DTF Datafile: 220204C19



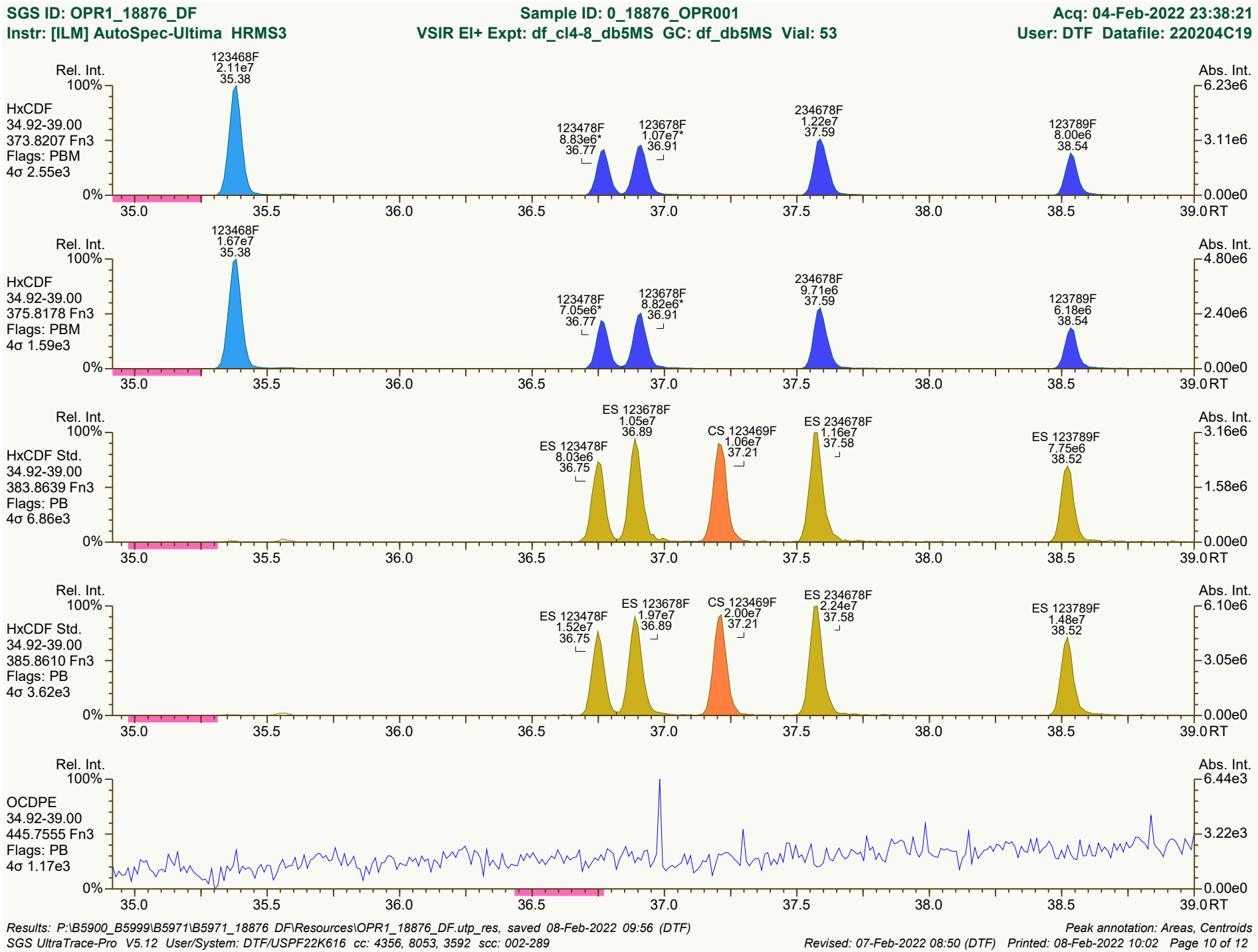
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\OPR1_18876_DF.utp_res, saved 08-Feb-2022 09:56 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 8056 scc: 002-289
Revised: 07-Feb-2022 08:49 (DTF) Printed: 08-Feb-2022 10:02 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.21-34.90
339.8597 Fn2
Flags: PB
4σ 3.88e3
0%
12378F
1.10e7
32.42
23478F
1.11e7
33.53
12389F
2.15e6
34.61
Abs. Int.
3.08e6
1.54e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.21-34.90
341.8568 Fn2
Flags: PB
4σ 3.05e3
0%
12378F
7.00e6
32.42
23478F
7.23e6
33.53
12389F
1.39e6
34.61
Abs. Int.
2.09e6
1.05e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.90
351.9000 Fn2
Flags: PBM
4σ 3.20e3
0%
CS 12346F
2.15e7*
31.87
ES 12378F
1.99e7
32.40
ES 23478F
1.91e7
33.51
Abs. Int.
6.19e6
3.10e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.21-34.90
353.8970 Fn2
Flags: PBM
4σ 1.65e3
0%
CS 12346F
1.40e7*
31.87
ES 12378F
1.23e7
32.40
ES 23478F
1.20e7
33.51
Abs. Int.
3.93e6
1.97e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.21-34.90
409.7974 Fn2
Flags: B
4σ 1.06e3
0%
Abs. Int.
6.44e3
3.22e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

SGS ID: OPR1_18876_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

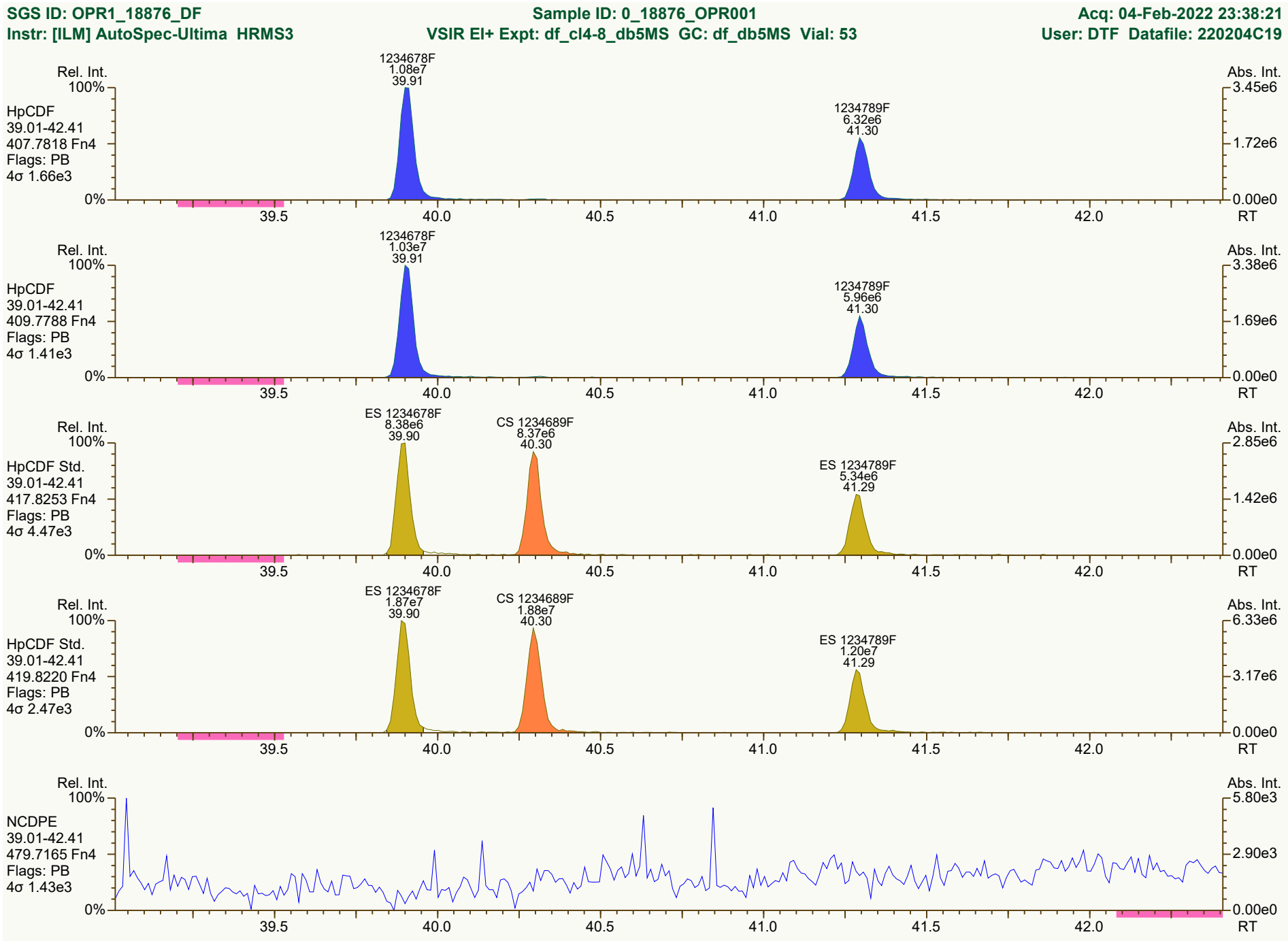
Sample ID: 0_18876_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53

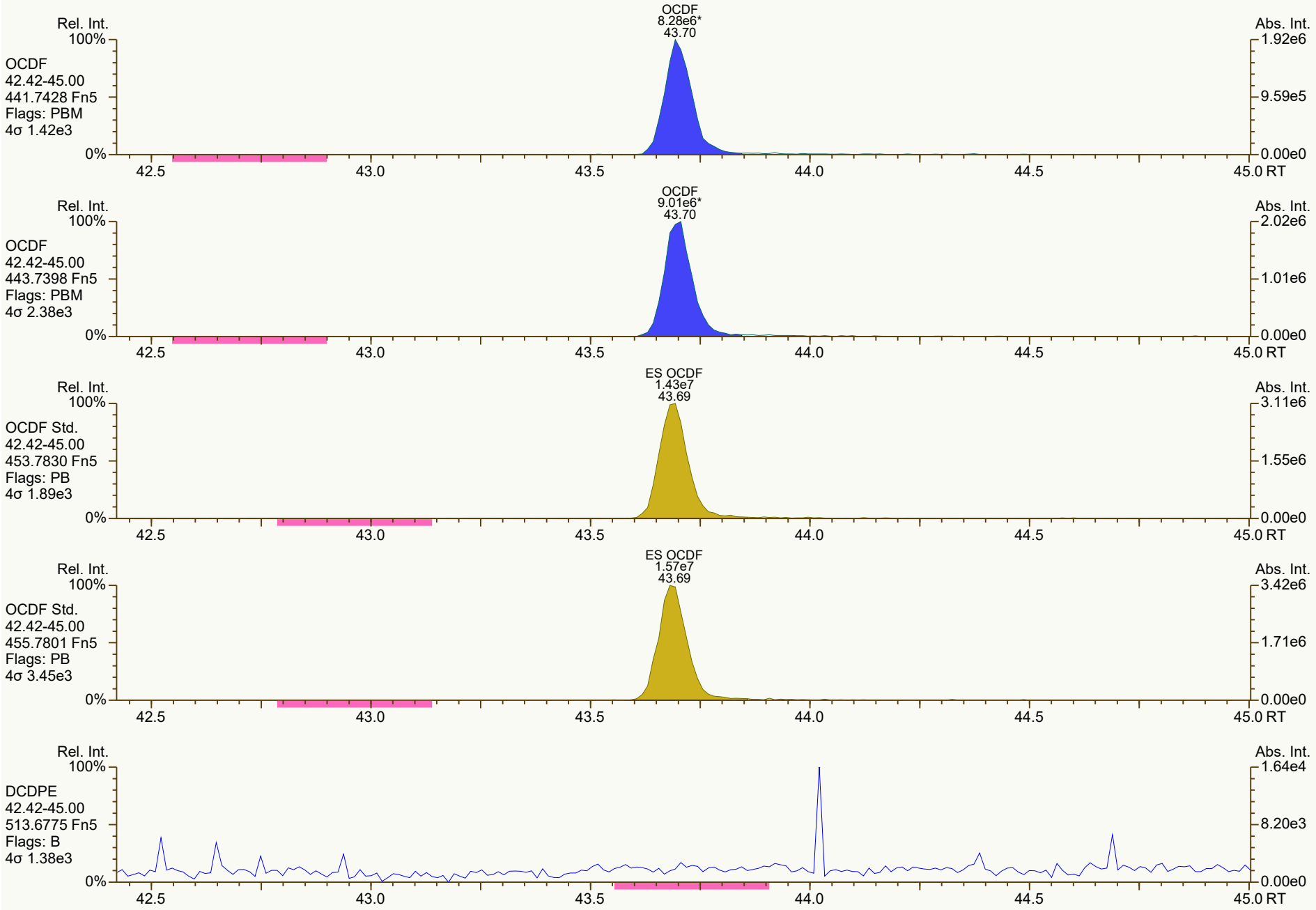
Acq: 04-Feb-2022 23:38:21
User: DTF Datafile: 220204C19



Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\OPR1_18876_DF.utp_res, saved 08-Feb-2022 09:56 (DTF)
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4356, 8053, 3592 scc: 002-289

Peak annotation: Areas, Centroids
Revised: 07-Feb-2022 08:50 (DTF) Printed: 08-Feb-2022 10:02 Page 10 of 12


SGS ID: OPR1_18876_DF
Sample ID: 0_18876_OPR001
Acq: 04-Feb-2022 23:38:21
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 53
User: DTF Datafile: 220204C19
Rel. Int.
Abs. Int.
HpCDF
39.01-42.41
407.7818 Fn4
Flags: PB
4σ 1.66e3
1234678F
1.08e7
39.91
1234789F
6.32e6
41.30
3.45e6
1.72e6
0.00e0
HpCDF
39.01-42.41
409.7788 Fn4
Flags: PB
4σ 1.41e3
1234678F
1.03e7
39.91
1234789F
5.96e6
41.30
3.38e6
1.69e6
0.00e0
HpCDF Std.
39.01-42.41
417.8253 Fn4
Flags: PB
4σ 4.47e3
ES 1234678F
8.38e6
39.90
CS 1234689F
8.37e6
40.30
ES 1234789F
5.34e6
41.29
2.85e6
1.42e6
0.00e0
HpCDF Std.
39.01-42.41
419.8220 Fn4
Flags: PB
4σ 2.47e3
ES 1234678F
1.87e7
39.90
CS 1234689F
1.88e7
40.30
ES 1234789F
1.20e7
41.29
6.33e6
3.17e6
0.00e0
NCDPE
39.01-42.41
479.7165 Fn4
Flags: PB
4σ 1.43e3
5.80e3
2.90e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\OPR1_18876_DF.utp_res, saved 08-Feb-2022 09:56 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 2051, 9145, 9939 scc: 002-289
Revised: 07-Feb-2022 08:50 (DTF) Printed: 08-Feb-2022 10:02 Page 11 of 12


OCDF
8.28e6*
43.70
Rel. Int.
100%
OCDF
42.42-45.00
441.7428 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
1.92e6
9.59e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
9.01e6*
43.70
Rel. Int.
100%
OCDF
42.42-45.00
443.7398 Fn5
Flags: PBM
4σ 2.38e3
0%
Abs. Int.
2.02e6
1.01e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.43e7
43.69
Rel. Int.
100%
OCDF Std.
42.42-45.00
453.7830 Fn5
Flags: PB
4σ 1.89e3
0%
Abs. Int.
3.11e6
1.55e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.57e7
43.69
Rel. Int.
100%
OCDF Std.
42.42-45.00
455.7801 Fn5
Flags: PB
4σ 3.45e3
0%
Abs. Int.
3.42e6
1.71e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.00
513.6775 Fn5
Flags: B
4σ 1.38e3
0%
Abs. Int.
1.64e4
8.20e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: OPR2_18876_DF **Acq'd: 05 Feb 2022 00:24 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18876_OPR002 **UTP: 08-Feb-2022 09:56:51 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 462-483-GJJ**

Datafile: 220204C20 **Report: 08 Feb 2022 09:58 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.54		1.0008	1.0008	0	3.33E+06	0.81	Y	1.18	10.7	3483.355	0.113
12378-PeCDD	33.87		1.0006	1.0006	0	1.13E+07	1.54	Y	1.04	47	2871.3876	0.107
123478-HxCDD	37.78		1.0004	1.0004	0	1.43E+07	1.26	Y	1.09	50.8	4029.816	0.12
123678-HxCDD	37.89		1.0035	1.0035	0	1.71E+07	1.23	Y	1.15	51.7	4029.816	0.102
123789-HxCDD	38.19		1.0112	1.0112	0	1.35E+07	1.27	Y	1.05	49.2	4029.816	0.128
1234678-HpCDD	40.85		1.0003	1.0003	0	1.28E+07	1.06	Y	1.06	51.3	3296.499	0.107
OCDD	43.53		1.0004	1.0003	-0.3	1.83E+07	0.93	Y	1.13	106	3149.174	0.205
2378-TCDF	27.68		1.0008	1.0007	-0.2	4.70E+06	0.80	Y	1.08	10.8	3225.212	0.0823
12378-PeCDF	32.42		1.0005	1.0005	0	1.90E+07	1.53	Y	1.02	47.9	6712.673	0.154
23478-PeCDF	33.53		1.0005	1.0005	0	1.88E+07	1.57	Y	1.02	51.4	6712.673	0.17
123478-HxCDF	36.77		1.0004	1.0005	+0.2	1.68E+07	1.25	Y	1.27	49.5	6298.061	0.146
123678-HxCDF	36.91		1.0004	1.0005	+0.2	2.03E+07	1.26	Y	1.15	51.6	6298.061	0.152
234678-HxCDF	37.60		1.0005	1.0005	0	2.37E+07	1.23	Y	1.19	48.6	6298.061	0.111
123789-HxCDF	38.54		1.0004	1.0004	0	1.49E+07	1.27	Y	1.16	47.8	6298.061	0.16
1234678-HpCDF	39.91		1.0003	1.0003	0	2.11E+07	1.03	Y	1.37	48.7	2585.514	0.0438
1234789-HpCDF	41.31		1.0002	1.0003	+0.2	1.35E+07	1.03	Y	1.31	48.9	2585.514	0.088
OCDF	43.71		1.0003	1.0003	0	2.02E+07	0.92	Y	1.07	104	3401.317	0.195

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.51	1.0236	1.0237	+0.2	2.64E+07	0.82	Y	1.05	89.2
ES 12378-PeCDD	33.85	1.2144	1.2153	+1.8	2.32E+07	1.63	Y	0.88	93.2
ES 123478-HxCDD	37.76	0.9920	0.9920	0	2.59E+07	1.26	Y	0.97	100
ES 123678-HxCDD	37.88	0.9951	0.9950	-0.2	2.88E+07	1.25	Y	0.94	115
ES 123789-HxCDD	38.17	1.0027	1.0026	-0.2	2.62E+07	1.30	Y	1.09	90.3
ES 1234678-HpCDD	40.83	1.0724	1.0726	+0.5	2.36E+07	1.06	Y	0.91	97.4
ES OCDD	43.51	1.1428	1.1430	+0.5	3.07E+07	0.92	Y	0.62	92.4
ES 2378-TCDF	27.66	1.0516	1.0517	+0.2	4.02E+07	0.81	Y	1.06	79.8
ES 12378-PeCDF	32.40	1.2312	1.2320	+1.6	3.86E+07	1.57	Y	0.91	89.3
ES 23478-PeCDF	33.51	1.2733	1.2743	+2.0	3.58E+07	1.55	Y	0.88	85.3
ES 123478-HxCDF	36.75	0.9655	0.9654	-0.2	2.66E+07	0.54	Y	1.20	83.5
ES 123678-HxCDF	36.90	0.9692	0.9692	0	3.42E+07	0.54	Y	1.35	95.2
ES 234678-HxCDF	37.58	0.9871	0.9871	0	4.11E+07	0.54	Y	1.24	124
ES 123789-HxCDF	38.53	1.0121	1.0120	-0.2	2.67E+07	0.54	Y	1.16	87.1
ES 1234678-HpCDF	39.90	1.0479	1.0481	+0.5	3.16E+07	0.47	Y	0.97	123
ES 1234789-HpCDF	41.29	1.0845	1.0847	+0.5	2.11E+07	0.44	Y	0.85	93
ES OCDF	43.70	1.1477	1.1479	+0.5	3.61E+07	0.93	Y	0.81	84.1

Lab ID: OPR2_18876_DF | **Acq'd:** 05 Feb 2022 00:24 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18876_OPR002 | **UTP:** 08-Feb-2022 09:56:51 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 462-483-GJJ

Datafile: 220204C20 | **Report:** 08 Feb 2022 09:58 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.85		-	-	-	2.83E+07	0.83	Y	-	-
JS 1234-TCDF	26.30		-	-	-	4.75E+07	0.80	Y	-	-
JS 123467-HxCDD	38.07		-	-	-	1.33E+07	1.27	Y	-	-
CS 37Cl-2378-TCDD	28.53		1.0244	1.0245	+0.2	1.30E+07	n/a	-	1.20	95.6
CS 12347-PeCDD	33.34		1.1964	1.1972	+1.6	2.41E+07	1.59	Y	0.75	113
CS 12346-PeCDF	31.87		1.2112	1.2119	+1.3	3.91E+07	1.61	Y	0.85	96.7
CS 123469-HxCDF	37.21		0.9775	0.9775	0	3.35E+07	0.53	Y	1.12	113
CS 1234689-HpCDF	40.30		1.0584	1.0586	+0.5	2.89E+07	0.47	Y	0.89	122
~~SS 37Cl-2378-TCDD~~	~~28.53~~		~~1.0244~~	~~1.0245~~	~~+0.2~~	~~1.30E+07~~	~~n/a~~		~~1.15~~	~~107~~
~~SS 12347-PeCDD~~	~~33.34~~		~~1.1964~~	~~1.1972~~	~~+1.6~~	~~2.41E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~121~~
~~SS 12346-PeCDF~~	~~31.87~~		~~1.2112~~	~~1.2119~~	~~+1.3~~	~~3.91E+07~~	~~1.61~~	~~Y~~	~~0.94~~	~~100~~
~~SS 123469-HxCDF~~	~~37.21~~		~~0.9775~~	~~0.9775~~	~~0~~	~~3.35E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~110~~
~~SS 1234689-HpCDF~~	~~40.30~~		~~1.0584~~	~~1.0586~~	~~+0.5~~	~~2.89E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~99.6~~

Totals	Conc	EMPC
Total TCDD	52.3	52.3
Total PeCDD	71.5	71.5
Total HxCDD	163	163
Total HpCDD	63.2	63.2
Total Tetra-Octa Dioxins	456	456
Total TCDF	64.2	64.2
Total PeCDF	201	201
Total HxCDF	306	306
Total HpCDF	97.7	97.7
Total Tetra-Octa Furans	773	773
Total Tetra-Octa Dioxins & Furans	1230	1230

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.803	0.81
Response	3.34E+06	3.33E+06

Lab ID: OPR2_18876_DF **Acq'd: 05 Feb 2022 00:24 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18876_OPR002 **UTP: 08-Feb-2022 09:56:51 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 462-483-GJJ**

Datafile: 220204C20 **Report: 08 Feb 2022 09:58 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.90		0.8737	0.8734	-0.4	4.77E+06	0.77	Y	1.18	15.3	3483.355	0.113
1379-TCDD	NotFnd		0.8860						1.18		3483.355	0.113
1369-TCDD	NotFnd		0.9009						1.18		3483.355	0.113
1469-TCDD	NotFnd		0.9281						1.18		3483.355	0.113
1247/1246/1248/1249-TCDD	NotFnd		0.9362						1.18		3483.355	0.113
1378-TCDD	NotFnd		0.9432						1.18		3483.355	0.113
1268-TCDD	NotFnd		0.9500						1.18		3483.355	0.113
1478-TCDD	NotFnd		0.9586						1.18		3483.355	0.113
1279-TCDD	NotFnd		0.9645						1.18		3483.355	0.113
1234/1269-TCDD	NotFnd		0.9770						1.18		3483.355	0.113
1236-TCDD	NotFnd		0.9817						1.18		3483.355	0.113
1237/1238-TCDD	NotFnd		0.9905						1.18		3483.355	0.113
1239-TCDD	28.38		0.9952	0.9952	0	3.26E+06	0.79	Y	1.18	10.5	3483.355	0.113
2378-TCDD	**28.54**		**1.0008**	1.0008	**0**	3.33E+06	0.81	Y	**1.18**	**10.7**	**3483.355**	**0.113**
1278-TCDD	NotFnd		1.0121						1.18		3483.355	0.113
1267-TCDD	NotFnd		1.0167						1.18		3483.355	0.113
1289-TCDD	29.50		1.0345	1.0348	+0.5	4.96E+06	0.80	Y	1.18	15.9	3483.355	0.113
12479/12468-PeCDD	31.36		0.9267	0.9267	0	2.71E+06	1.59	Y	1.04	11.3	2871.3876	0.107
12469-PeCDD	NotFnd		0.9425						1.04		2871.3876	0.107
12368-PeCDD	NotFnd		0.9588						1.04		2871.3876	0.107
12478-PeCDD	NotFnd		0.9643						1.04		2871.3876	0.107
12379-PeCDD	NotFnd		0.9673						1.04		2871.3876	0.107
12369/12467/12489-PeCDD	NotFnd		0.9750						1.04		2871.3876	0.107
12346/12347-PeCDD	NotFnd		0.9858						1.04		2871.3876	0.107
12378-PeCDD	33.87		**1.0006**	**1.0006**	**0**	**1.13E+07**	**1.54**	**Y**	**1.04**	**47**	**2871.3876**	**0.107**
12367-PeCDD	NotFnd		1.0033						1.04		2871.3876	0.107
12389-PeCDD	34.30		1.0134	1.0135	+0.2	3.16E+06	1.57	Y	1.04	13.2	2871.3876	0.107
124679/124689-HxCDD	36.03		0.9542	0.9540	-0.4	3.46E+06	1.29	Y	1.10	11.7	4029.816	0.116
123468-HxCDD	NotFnd		0.9715						1.10		4029.816	0.116
123679/123689-HxCDD	NotFnd		0.9793						1.10		4029.816	0.116
123469-HxCDD	NotFnd		0.9828						1.10		4029.816	0.116
123478-HxCDD	37.78		**1.0004**	**1.0004**	**0**	**1.43E+07**	**1.26**	**Y**	1.09	**50.8**	**4029.816**	**0.12**
123678-HxCDD	37.89		**1.0035**	**1.0035**	**0**	**1.71E+07**	**1.23**	**Y**	1.15	**51.7**	**4029.816**	**0.102**
123467-HxCDD	NotFnd		1.0085						1.10		4029.816	0.116
123789-HxCDD	38.19		**1.0112**	**1.0112**	**0**	**1.35E+07**	**1.27**	**Y**	1.05	**49.2**	**4029.816**	**0.128**

Lab ID: OPR2_18876_DF | **Acq'd: 05 Feb 2022 00:24 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18876_OPR002 | **UTP: 08-Feb-2022 09:56:51 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 462-483-GJJ**

Datafile: 220204C20 | **Report: 08 Feb 2022 09:58 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.17		0.9837	0.9836	-0.2	2.98E+06	1.11	Y	1.06	11.9	3296.499	0.107
1234678-HpCDD	**40.85**		**1.0003**	**1.0003**	**0**	**1.28E+07**	**1.06**	**Y**	**1.06**	**51.3**	**3296.499**	**0.107**
OCDD	**43.53**		**1.0004**	**1.0003**	**-0.3**	**1.83E+07**	**0.93**	**Y**	**1.13**	**106**	**3149.174**	**0.205**
OCDD-a	43.52		1.0003	1.0002	-0.3	9.70E+05	2.26	Y	0.07	87.8	3432.209	3.49
1368-TCDF	22.81		0.8251	0.8246	-0.7	6.98E+06	0.79	Y	1.08	16.1	3225.212	0.0823
1468-TCDF	NotFnd		0.8458						1.08		3225.212	0.0823
2468-TCDF	24.01		0.8686	0.8682	-0.6	1.71E+06	0.81	Y	1.08	3.95	3225.212	0.0823
1346/1246-TCDF	NotFnd		0.8814						1.08		3225.212	0.0823
1347/1378/1247-TCDF	NotFnd		0.8867						1.08		3225.212	0.0823
1348-TCDF	NotFnd		0.8962						1.08		3225.212	0.0823
1248/1367/1379-TCDF	NotFnd		0.9009						1.08		3225.212	0.0823
1268-TCDF	NotFnd		0.9145						1.08		3225.212	0.0823
1467-TCDF	NotFnd		0.9193						1.08		3225.212	0.0823
1478-TCDF	NotFnd		0.9254						1.08		3225.212	0.0823
1369/1237-TCDF	NotFnd		0.9387						1.08		3225.212	0.0823
2467-TCDF	NotFnd		0.9433						1.08		3225.212	0.0823
2368-TCDF	NotFnd		0.9489						1.08		3225.212	0.0823
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9523						1.08		3225.212	0.0823
1278-TCDF	NotFnd		0.9683						1.08		3225.212	0.0823
1349-TCDF	NotFnd		0.9722						1.08		3225.212	0.0823
1267-TCDF	NotFnd		0.9783						1.08		3225.212	0.0823
2346/1249-TCDF	NotFnd		0.9850						1.08		3225.212	0.0823
2347/1279-TCDF	NotFnd		0.9926						1.08		3225.212	0.0823
2348-TCDF	27.57		0.9967	0.9968	+0.2	6.78E+06	0.81	Y	1.08	15.6	3225.212	0.0823
2378-TCDF	**27.68**		**1.0008**	**1.0007**	**-0.2**	**4.70E+06**	**0.80**	**Y**	**1.08**	**10.8**	**3225.212**	**0.0823**
2367/3467-TCDF	NotFnd		1.0137						1.08		3225.212	0.0823
1269-TCDF	NotFnd		1.0223						1.08		3225.212	0.0823
1239-TCDF	NotFnd		1.0321						1.08		3225.212	0.0823
1289-TCDF	29.67		1.0722	1.0728	+1.1	7.67E+06	0.79	Y	1.08	17.7	3225.212	0.0823
13468/12468-PeCDF	29.59		0.9139	0.9132	-1.2	3.47E+07	1.54	Y	1.02	91.2	2981.878	0.072
13678/13467/12467-PeCDF	NotFnd		0.9613						1.02		6712.673	0.162
12368/13478/12478-PeCDF	NotFnd		0.9662						1.02		6712.673	0.162
14678-PeCDF	NotFnd		0.9692						1.02		6712.673	0.162
13479-PeCDF	NotFnd		0.9723						1.02		6712.673	0.162
13469/12479-PeCDF	NotFnd		0.9797						1.02		6712.673	0.162
12346-PeCDF	NotFnd		0.9840						1.02		6712.673	0.162

Lab ID: OPR2_18876_DF | **Acq'd: 05 Feb 2022 00:24 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18876_OPR002 | **UTP: 08-Feb-2022 09:56:51 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 462-483-GJJ**

Datafile: 220204C20 | **Report: 08 Feb 2022 09:58 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		6712.673	0.162
12347-PeCDF	NotFnd		0.9894						1.02		6712.673	0.162
12348-PeCDF	NotFnd		0.9940						1.02		6712.673	0.162
12378-PeCDF	**32.42**		**1.0005**	**1.0005**	**0**	**1.90E+07**	**1.53**	**Y**	**1.02**	**47.9**	**6712.673**	**0.154**
12678/12367-PeCDF	NotFnd		1.0089						1.02		6712.673	0.162
12379-PeCDF	NotFnd		1.0142						1.02		6712.673	0.162
12679-PeCDF	NotFnd		0.9929						1.02		6712.673	0.162
23467/12369-PeCDF	NotFnd		0.9967						1.02		6712.673	0.162
23478-PeCDF	**33.53**		**1.0005**	**1.0005**	**0**	**1.88E+07**	**1.57**	**Y**	**1.02**	**51.4**	**6712.673**	**0.17**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6712.673	0.162
12349-PeCDF	NotFnd		1.0100						1.02		6712.673	0.162
12389-PeCDF	34.60		1.0324	1.0325	+0.2	4.00E+06	1.50	Y	1.02	10.5	6712.673	0.162
123468-HxCDF	35.38		0.9627	0.9627	0	4.17E+07	1.22	Y	1.19	109	6298.061	0.139
124678/134678-HxCDF	NotFnd		0.9682						1.19		6298.061	0.139
134679-HxCDF	NotFnd		0.9744						1.19		6298.061	0.139
124679-HxCDF	NotFnd		0.9798						1.19		6298.061	0.139
124689-HxCDF	NotFnd		0.9858						1.19		6298.061	0.139
123467-HxCDF	NotFnd		0.9972						1.19		6298.061	0.139
123478-HxCDF	**36.77**		**1.0004**	**1.0005**	**+0.2**	**1.68E+07**	**1.25**	**Y**	**1.27**	**49.5**	**6298.061**	**0.146**
123678-HxCDF	**36.91**		**1.0004**	**1.0005**	**+0.2**	**2.03E+07**	**1.26**	**Y**	**1.15**	**51.6**	**6298.061**	**0.152**
123479-HxCDF	NotFnd		1.0049						1.19		6298.061	0.139
123469-HxCDF	NotFnd		1.0090						1.19		6298.061	0.139
123679-HxCDF	NotFnd		0.9942						1.19		6298.061	0.139
234678-HxCDF	**37.60**		**1.0005**	**1.0005**	**0**	**2.37E+07**	**1.23**	**Y**	**1.19**	**48.6**	**6298.061**	**0.111**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		6298.061	0.139
123789-HxCDF	**38.54**		**1.0004**	**1.0004**	**0**	**1.49E+07**	**1.27**	**Y**	**1.16**	**47.8**	**6298.061**	**0.16**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0009						1.19		6298.061	0.139
1234678-HpCDF	**39.91**		**1.0003**	**1.0003**	**0**	**2.11E+07**	**1.03**	**Y**	**1.37**	**48.7**	**2585.514**	**0.0438**
1234679-HpCDF	NotFnd		1.0068						1.34		2585.514	0.0613
1234689-HpCDF	NotFnd		1.0103						1.34		2585.514	0.0613
1234789-HpCDF	**41.31**		**1.0002**	**1.0003**	**+0.2**	**1.35E+07**	**1.03**	**Y**	**1.31**	**48.9**	**2585.514**	**0.088**
OCDF	**43.71**		**1.0003**	**1.0003**	**0**	**2.02E+07**	**0.92**	**Y**	**1.07**	**104**	**3401.317**	**0.195**
OCDF-a	43.71		1.0002	1.0003	+0.3	1.26E+06	2.58	Y	0.07	105	3927.283	3.63

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220204C20	Analysis Date:	05-FEB-2022 00:24:41
Lab ID:	OPR2_18876_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	10.7	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	47	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	50.8	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	51.7	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	49.2	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	51.3	35	-	70	Y
OCDD	100	106	78	-	144	Y
2,3,7,8-TCDF	10	10.8	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	47.9	40	-	67	Y
2,3,4,7,8-PeCDF	50	51.4	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	49.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	51.6	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	48.6	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	47.8	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	48.7	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	48.9	39	-	69	Y
OCDF	100	104	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 08 Feb 2022 09:58 Analyst: TF

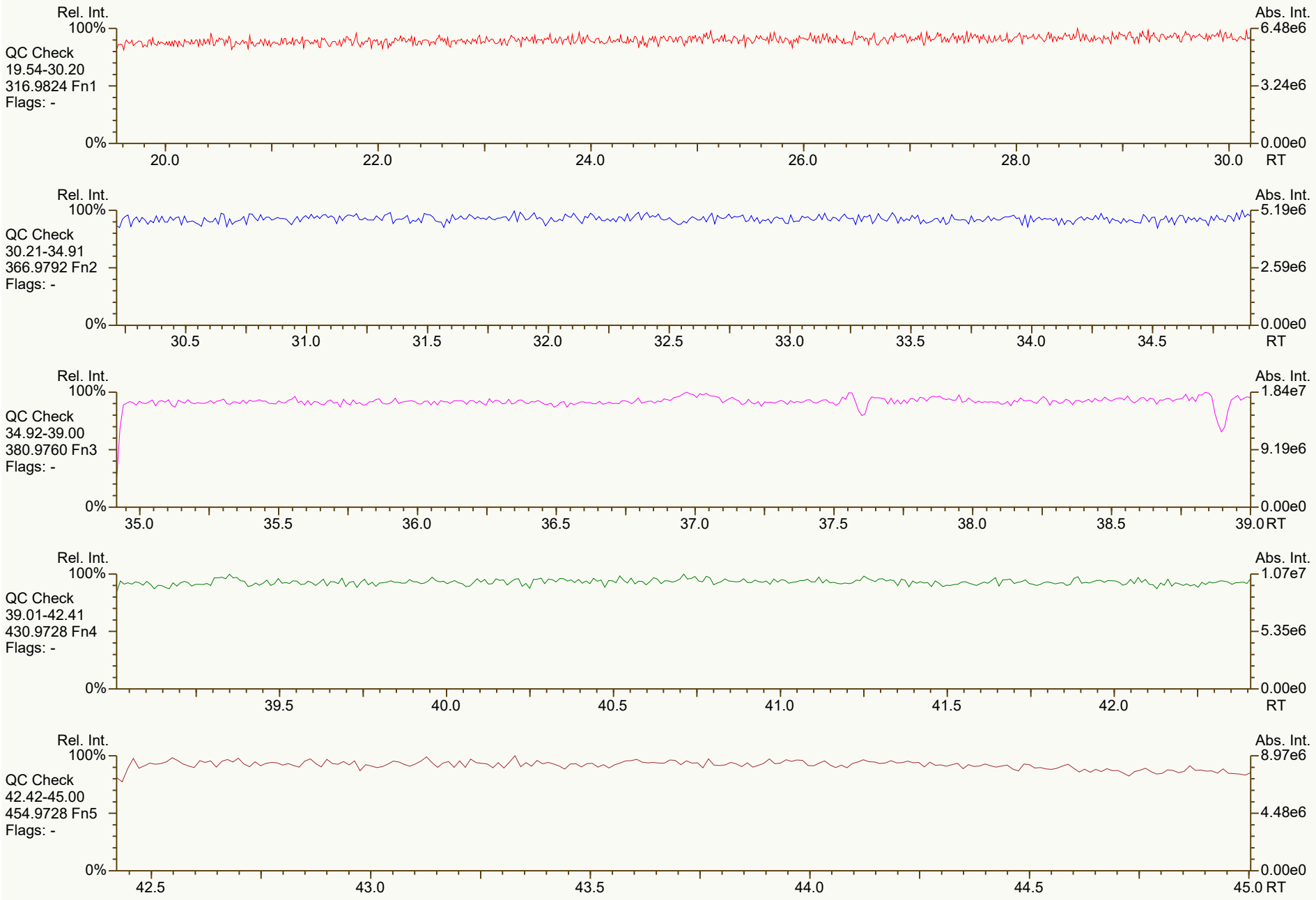
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220204C20	Analysis Date:	05-FEB-2022 00:24:41
Lab ID:	OPR2_18876_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	89.2	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	93.2	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	100	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	115	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	90.3	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	97.4	26	-	166	Y
13C-OCDD	200	185	26	-	397	Y
13C-2,3,7,8-TCDF	100	79.8	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	89.3	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	85.3	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	83.5	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	95.2	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	124	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	87.1	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	123	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	93	20	-	186	Y
13C-OCDF	200	168	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	38.2	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

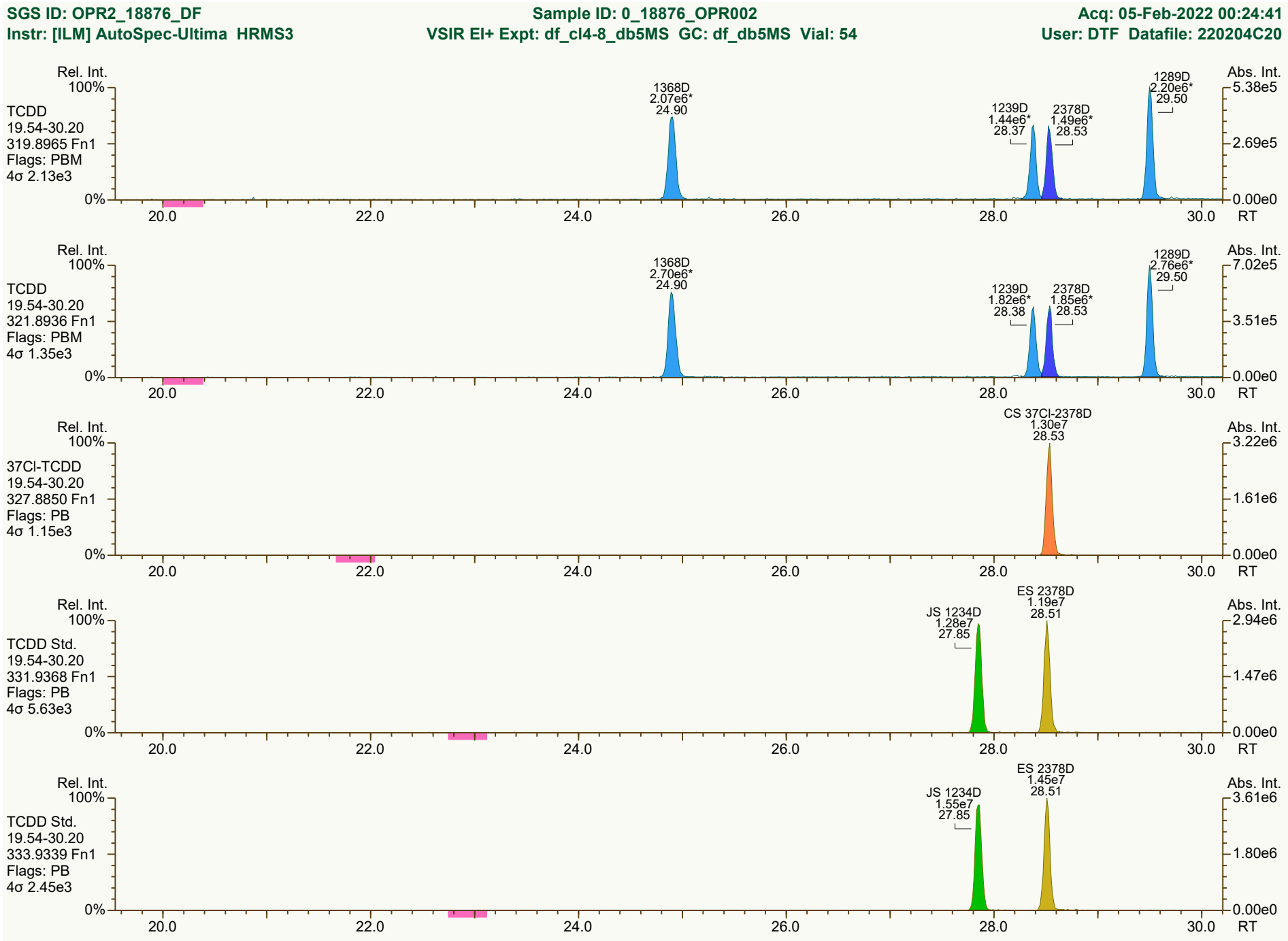
Processed: 08 Feb 2022 09:58 Analyst: TF


Rel. Int.
100%
QC Check
19.54-30.20
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
6.48e6
3.24e6
0.00e0
Rel. Int.
100%
QC Check
30.21-34.91
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
5.19e6
2.59e6
0.00e0
Rel. Int.
100%
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Abs. Int.
1.84e7
9.19e6
0.00e0
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Abs. Int.
1.07e7
5.35e6
0.00e0
Rel. Int.
100%
QC Check
42.42-45.00
454.9728 Fn5
Flags: -
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
8.97e6
4.48e6
0.00e0

SGS ID: OPR2_18876_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18876_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54

Acq: 05-Feb-2022 00:24:41
User: DTF Datafile: 220204C20



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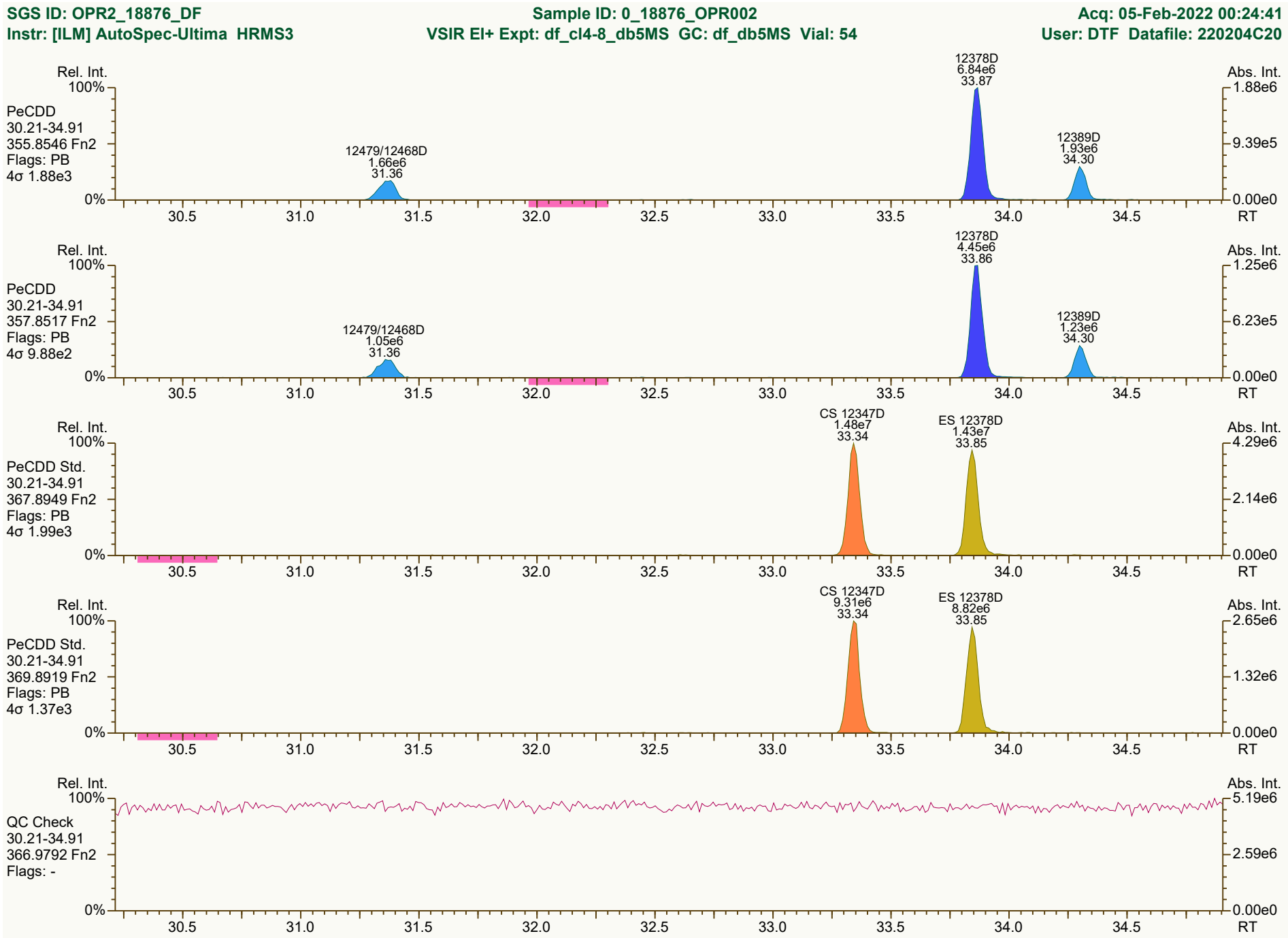
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 4391, 0142, 5560 scc: 462-483

Peak annotation: Areas, Centroids
PKD: 07-Feb-2022 08:52 Printed: 08-Feb-2022 10:02 Page 2 of 12



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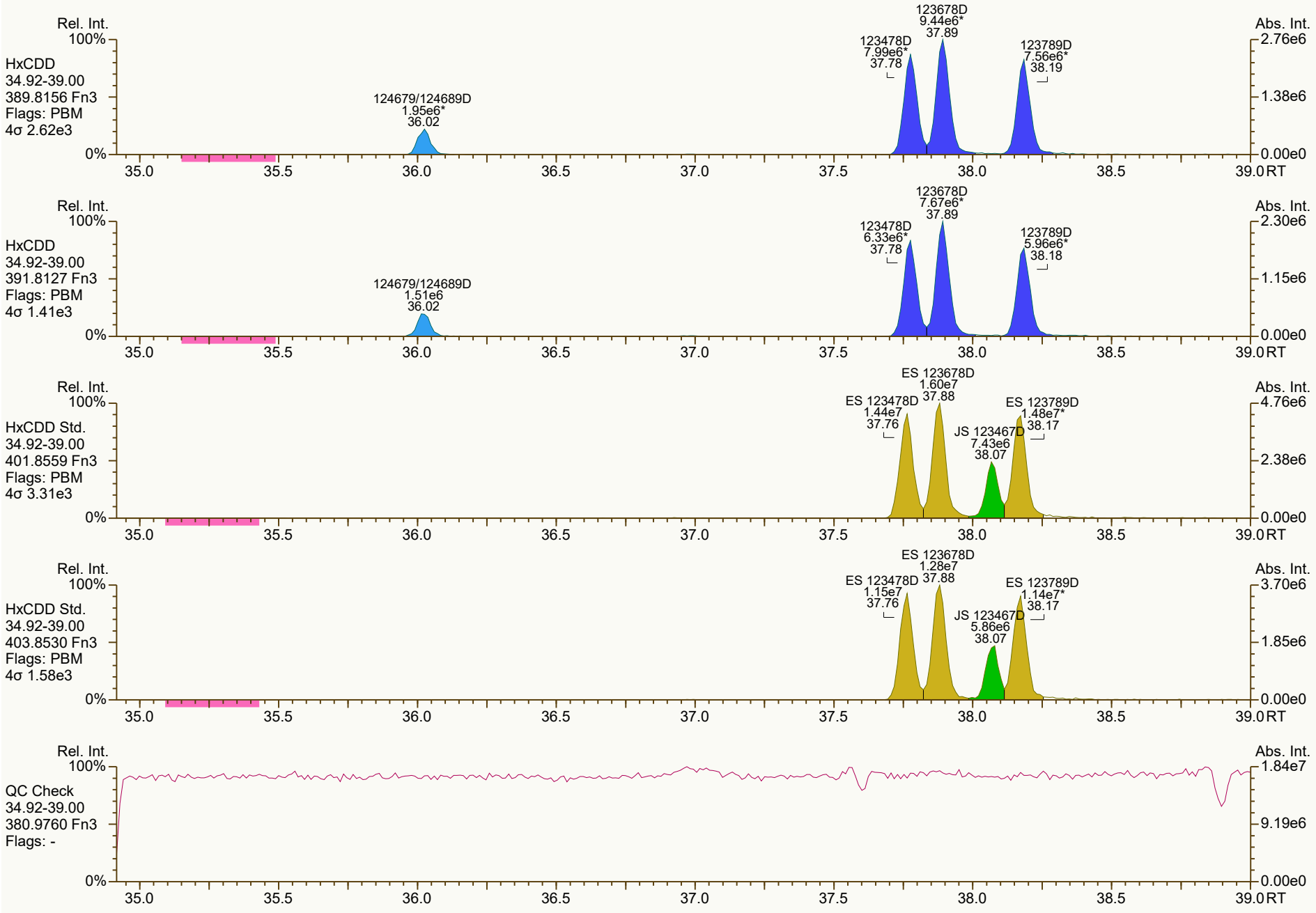
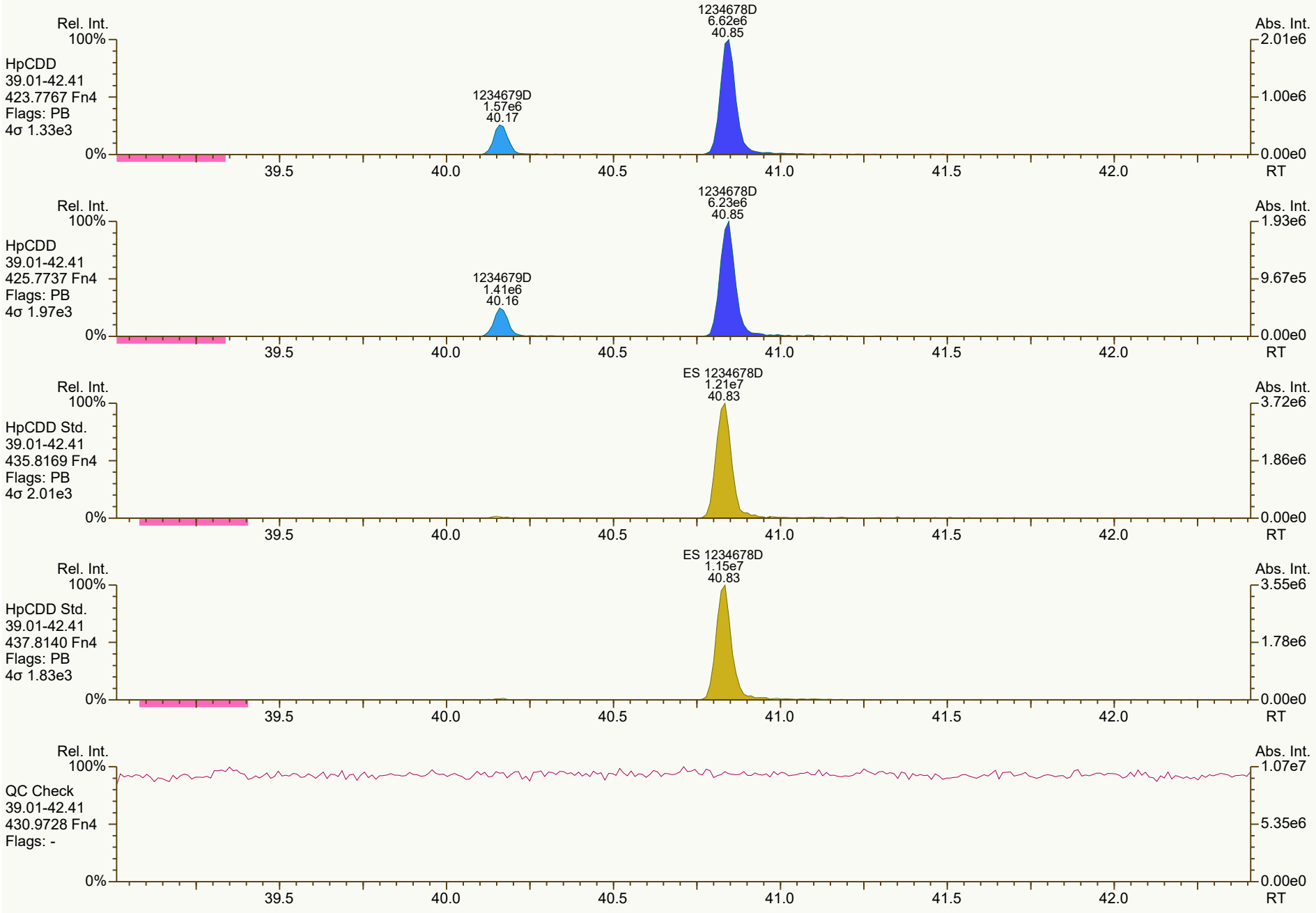
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 9841, 4184 scc: 462-483
PKD: 07-Feb-2022 08:50 Printed: 08-Feb-2022 10:02 Page 3 of 12

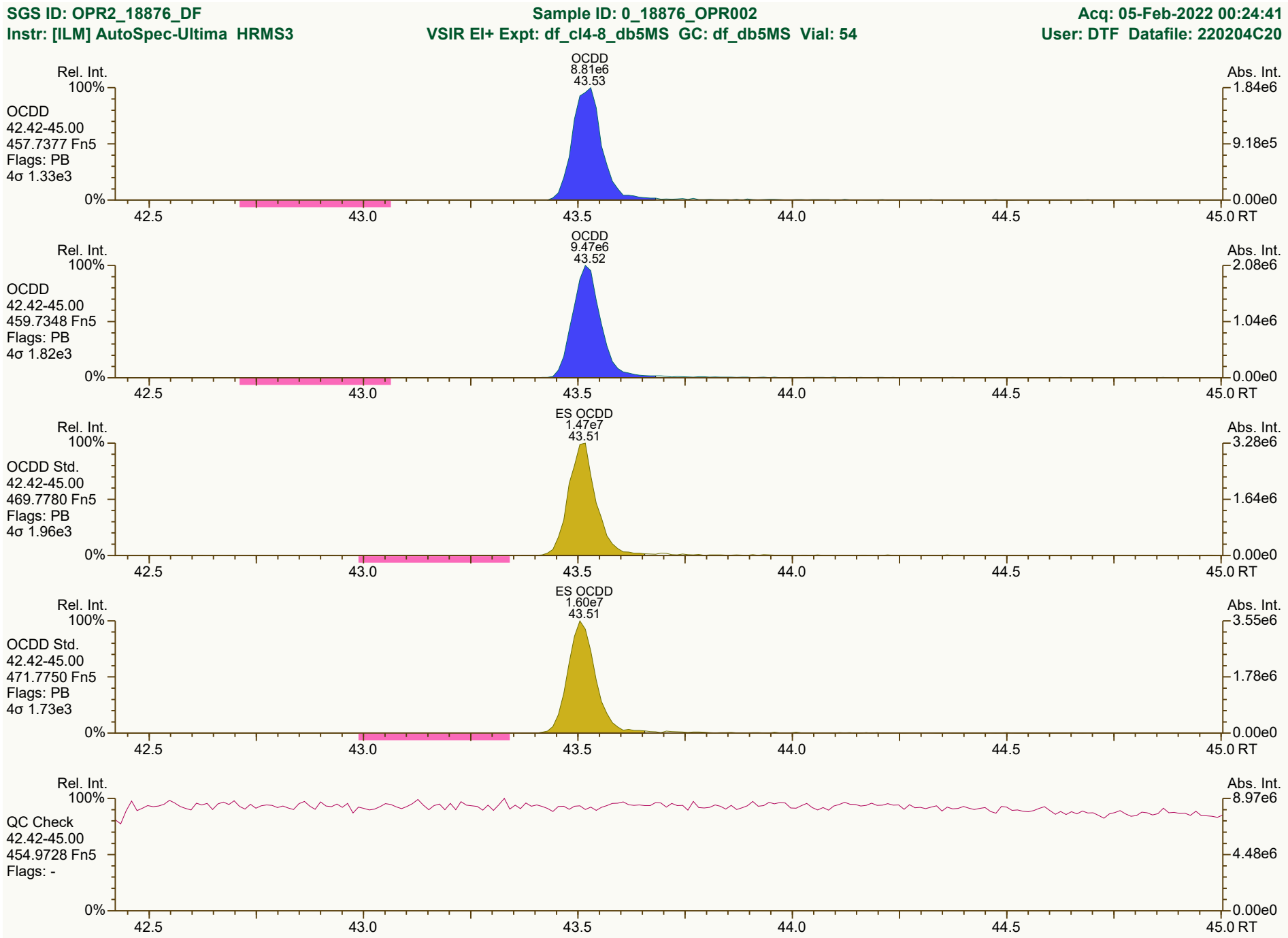

Rel. Int.
Abs. Int.
HxCDD
34.92-39.00
389.8156 Fn3
Flags: PBM
4σ 2.62e3
124679/124689D
1.95e6*
36.02
123478D
7.99e6*
37.78
123678D
9.44e6*
37.89
123789D
7.56e6*
38.19
HxCDD
34.92-39.00
391.8127 Fn3
Flags: PBM
4σ 1.41e3
124679/124689D
1.51e6
36.02
123478D
6.33e6*
37.78
123678D
7.67e6*
37.89
123789D
5.96e6*
38.18
HxCDD Std.
34.92-39.00
401.8559 Fn3
Flags: PBM
4σ 3.31e3
ES 123478D
1.44e7
37.76
ES 123678D
1.60e7
37.88
JS 123467D
7.43e6
38.07
ES 123789D
1.48e7*
38.17
HxCDD Std.
34.92-39.00
403.8530 Fn3
Flags: PBM
4σ 1.58e3
ES 123478D
1.15e7
37.76
ES 123678D
1.28e7
37.88
JS 123467D
5.86e6
38.07
ES 123789D
1.14e7*
38.17
QC Check
34.92-39.00
380.9760 Fn3
Flags: -
RT


Rel. Int.
100%
HpCDD
39.01-42.41
423.7767 Fn4
Flags: PB
4σ 1.33e3
1234678D
6.62e6
40.85
1234679D
1.57e6
40.17
Abs. Int.
2.01e6
1.00e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.01-42.41
425.7737 Fn4
Flags: PB
4σ 1.97e3
1234678D
6.23e6
40.85
1234679D
1.41e6
40.16
Abs. Int.
1.93e6
9.67e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.01-42.41
435.8169 Fn4
Flags: PB
4σ 2.01e3
ES 1234678D
1.21e7
40.83
Abs. Int.
3.72e6
1.86e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.01-42.41
437.8140 Fn4
Flags: PB
4σ 1.83e3
ES 1234678D
1.15e7
40.83
Abs. Int.
3.55e6
1.78e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.01-42.41
430.9728 Fn4
Flags: -
Abs. Int.
1.07e7
5.35e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

SGS ID: OPR2_18876_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18876_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54

Acq: 05-Feb-2022 00:24:41
User: DTF Datafile: 220204C20



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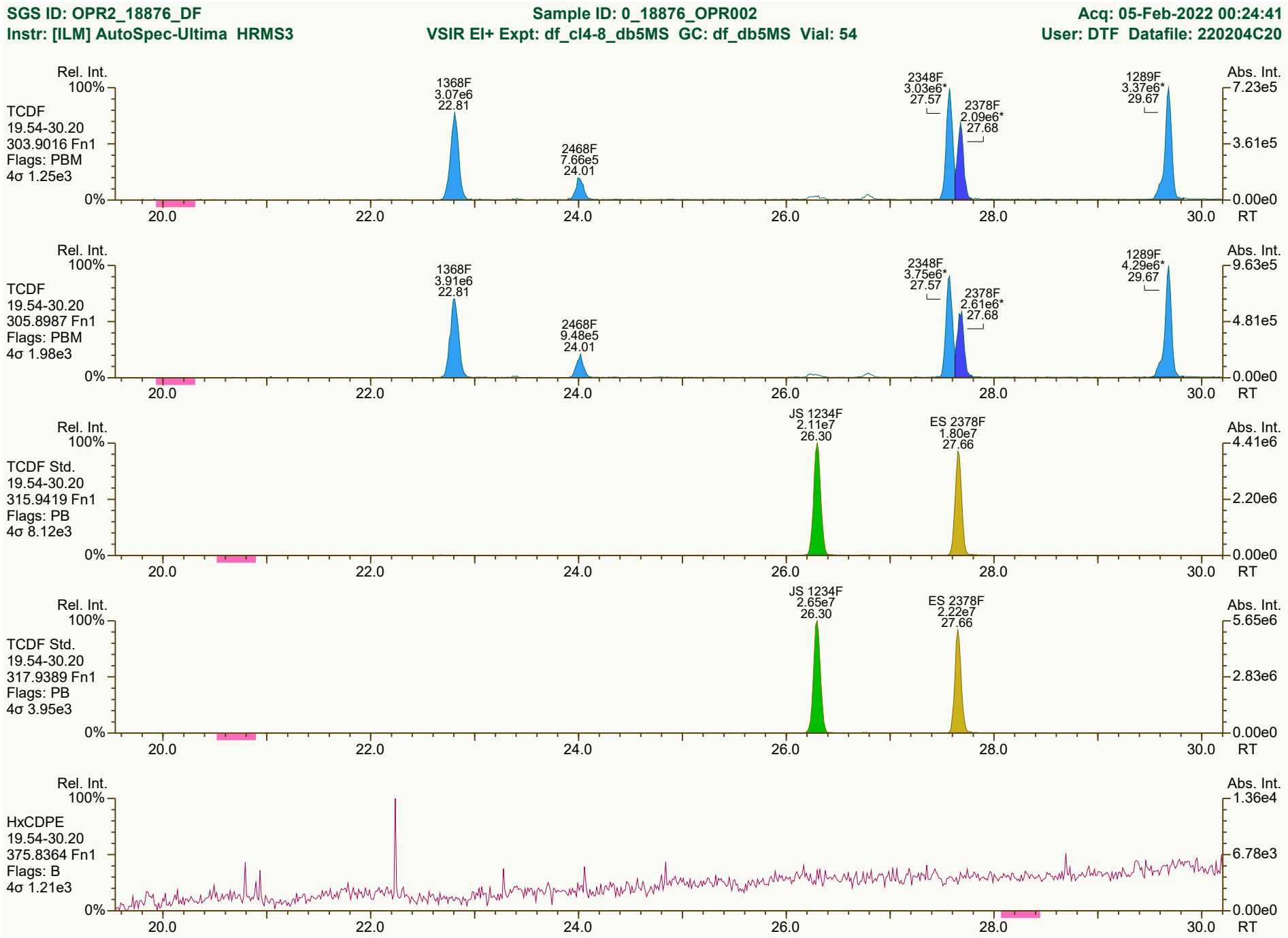
Peak annotation: Areas, Centroids
PKD: 07-Feb-2022 08:50 Printed: 08-Feb-2022 10:03 Page 6 of 12

SGS ID: OPR2_18876_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18876_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54

Acq: 05-Feb-2022 00:24:41
User: DTF Datafile: 220204C20



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SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 1024, 8591, 3570 scc: 462-483

Peak annotation: Areas, Centroids
Revised: 07-Feb-2022 08:51 (DTF) Printed: 08-Feb-2022 10:03 Page 7 of 12

SGS ID: OPR2_18876_DF | Sample ID: 0_18876_OPR002 | Acq: 05-Feb-2022 00:24:41

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54 | User: DTF Datafile: 220204C20



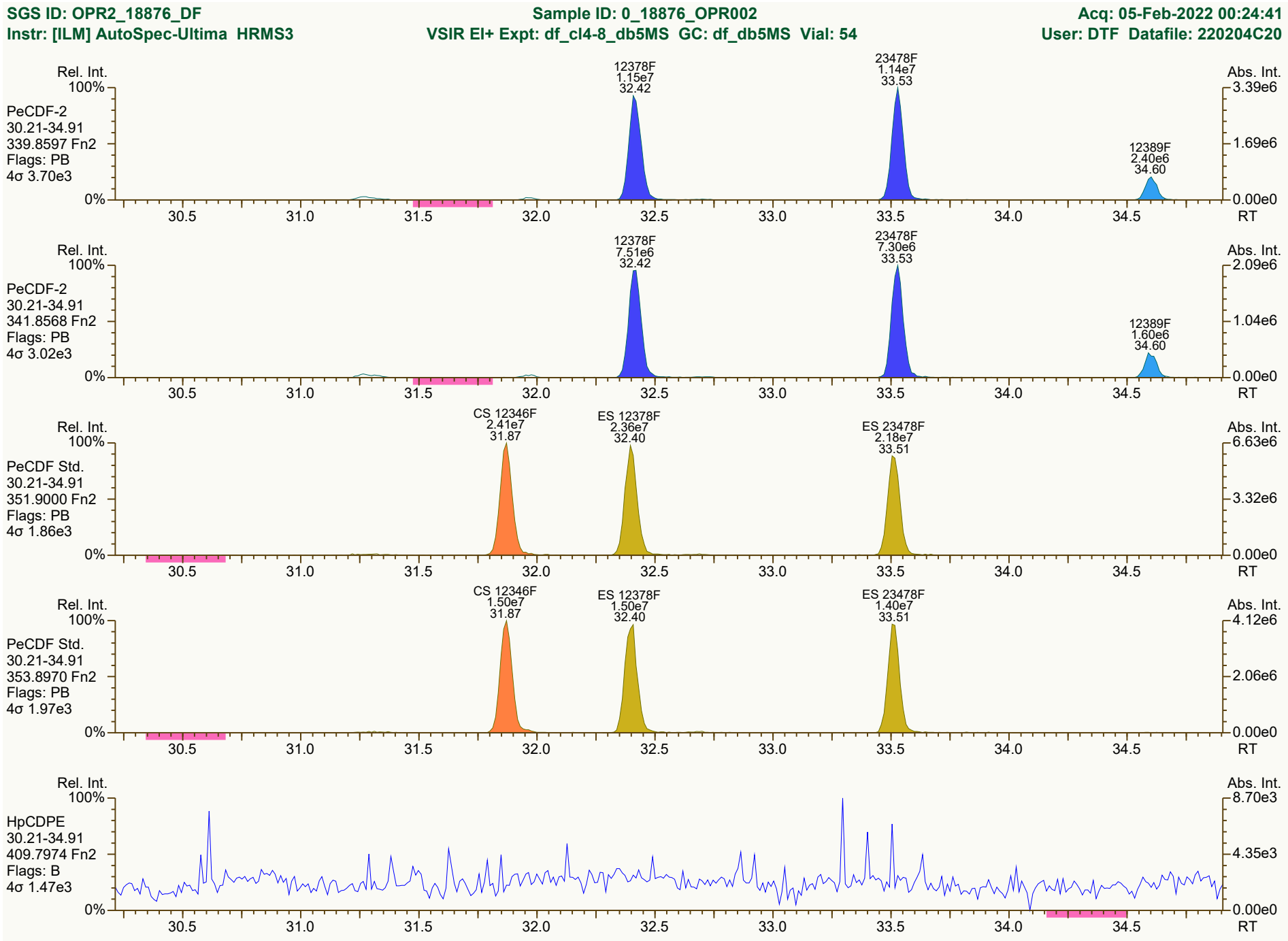
Results: P:\B5900_B5999\B5971\B5971_18876 DF\Resources\OPR2_18876_DF.utp_res, saved 08-Feb-2022 09:56 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: DTF/USPF22K616 cc: 3628 scc: 462-483 | *PKD: 07-Feb-2022 08:50 Printed: 08-Feb-2022 10:03 Page 8 of 12*

SGS ID: OPR2_18876_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18876_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 54

Acq: 05-Feb-2022 00:24:41
User: DTF Datafile: 220204C20



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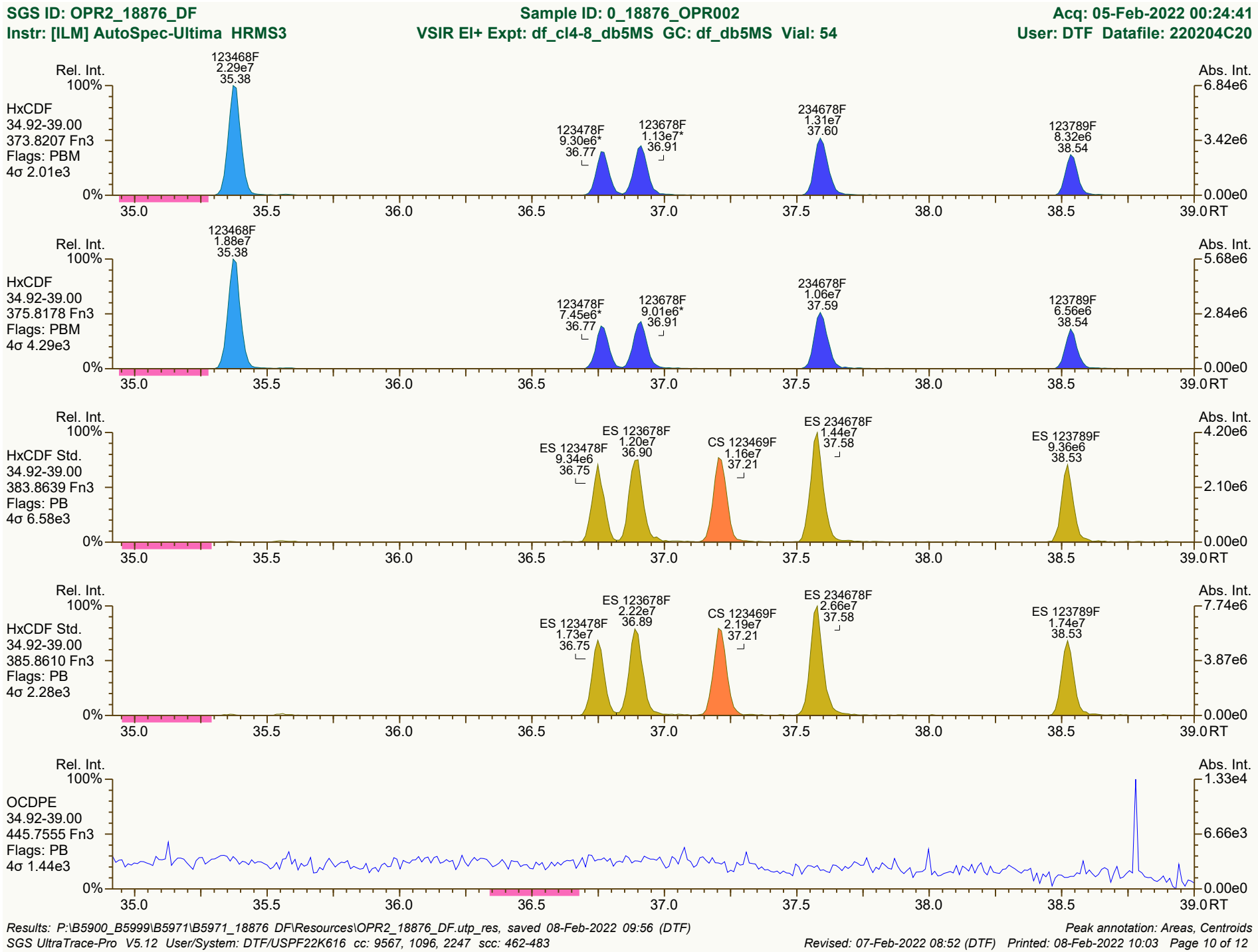
Peak annotation: Areas, Centroids
PKD: 07-Feb-2022 08:52 Printed: 08-Feb-2022 10:03 Page 9 of 12



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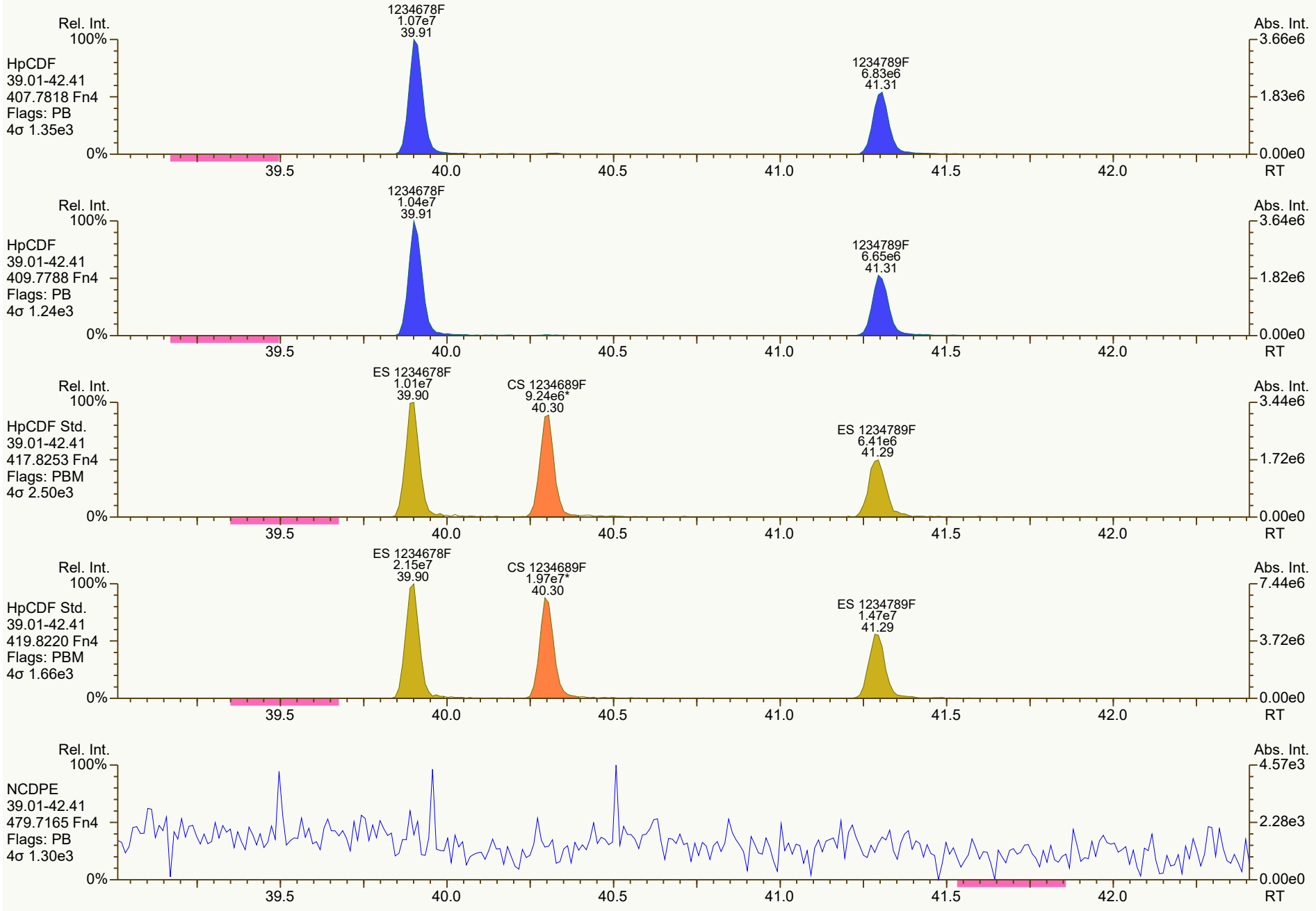
Revised: 07-Feb-2022 08:52 (DTF) Printed: 08-Feb-2022 10:03 Page 10 of 12


Rel. Int.
100%
HpCDF
39.01-42.41
407.7818 Fn4
Flags: PB
4σ 1.35e3
1234678F
1.07e7
39.91
1234789F
6.83e6
41.31
Abs. Int.
3.66e6
1.83e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.01-42.41
409.7788 Fn4
Flags: PB
4σ 1.24e3
1234678F
1.04e7
39.91
1234789F
6.65e6
41.31
Abs. Int.
3.64e6
1.82e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.01-42.41
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
1.01e7
39.90
CS 1234689F
9.24e6*
40.30
ES 1234789F
6.41e6
41.29
Abs. Int.
3.44e6
1.72e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.01-42.41
419.8220 Fn4
Flags: PBM
4σ 1.66e3
ES 1234678F
2.15e7
39.90
CS 1234689F
1.97e7*
40.30
ES 1234789F
1.47e7
41.29
Abs. Int.
7.44e6
3.72e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.01-42.41
479.7165 Fn4
Flags: PB
4σ 1.30e3
Abs. Int.
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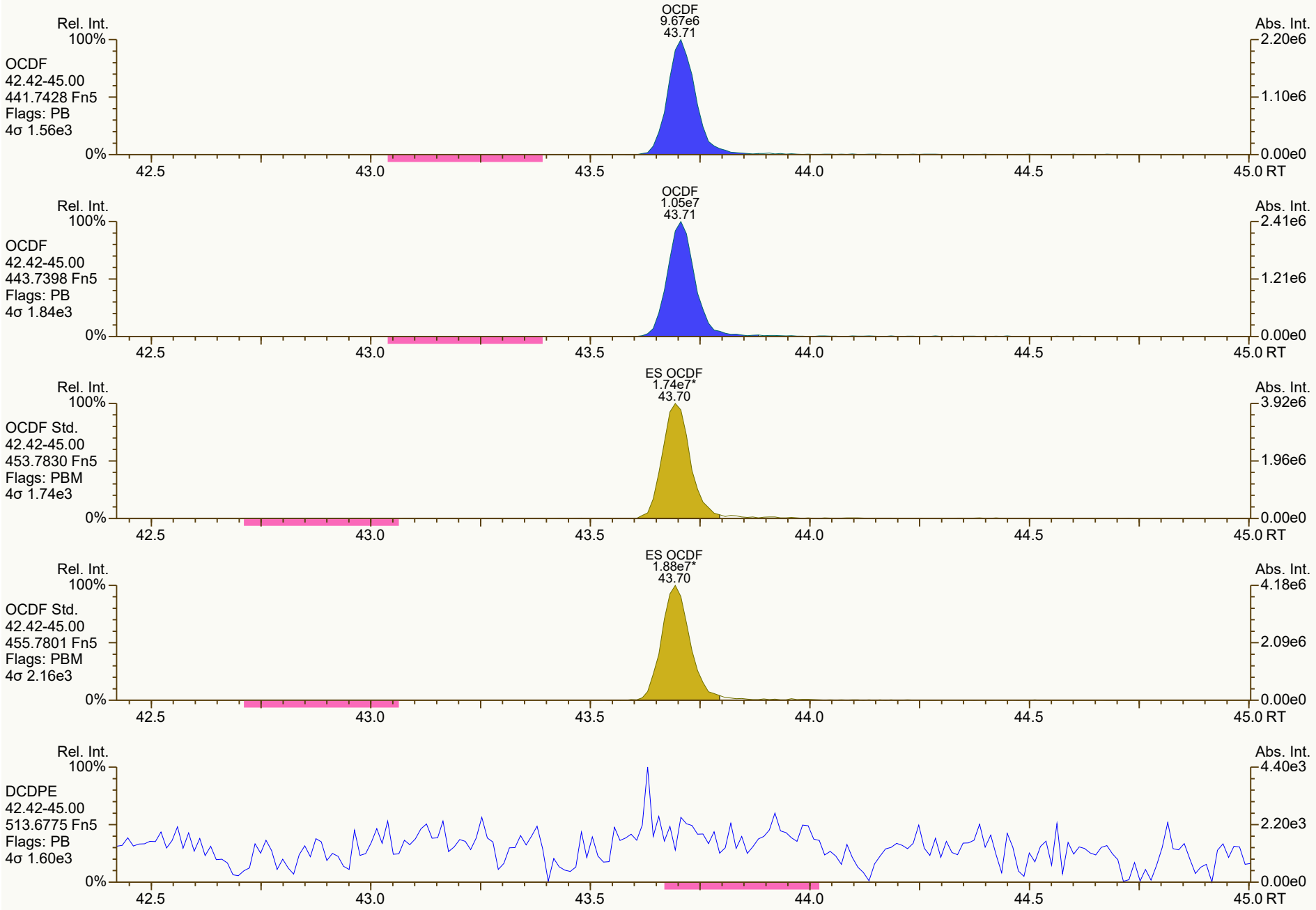
RT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43.71
Rel. Int.
Abs. Int.
OCDF
42.42-45.00
441.7428 Fn5
Flags: PB
4σ 1.56e3
OCDF
1.05e7
43.71
OCDF
42.42-45.00
443.7398 Fn5
Flags: PB
4σ 1.84e3
ES OCDF
1.74e7*
43.70
OCDF Std.
42.42-45.00
453.7830 Fn5
Flags: PBM
4σ 1.74e3
ES OCDF
1.88e7*
43.70
OCDF Std.
42.42-45.00
455.7801 Fn5
Flags: PBM
4σ 2.16e3
DCDPE
42.42-45.00
513.6775 Fn5
Flags: PB
4σ 1.60e3
42.5
43.0
43.5
44.0
44.5
45.0 RT



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996. and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.13.

Soil samples are reported on “dry weight” basis.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18724 2378-TCDD & 2378-TCDF EDLs > RL

OPR1 18724 meets accuracy criteria.

11215131-120621-JC-SC-S-1 MS/MSD meet recovery & precision criteria for analytes near the RL. 123789 recovery is elevated due to 123489-HxCDF in parent sample.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120321-S-JC-SW-S-13 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.18 g	Lab Sample ID	B5985_18724_DF_001	Date Extracted:	08-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.9 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:04:38

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	87.6				ES 2378-TCDD	81.4	
12378-PeCDD	1.36			J	ES 12378-PeCDD	77	
123478-HxCDD	ND	1.22			ES 123478-HxCDD	84.9	
123678-HxCDD	ND	1.11			ES 123678-HxCDD	80.4	
123789-HxCDD	ND	1.08			ES 123789-HxCDD	83.6	
1234678-HpCDD	32.5				ES 1234678-HpCDD	73.4	
OCDD	628				ES OCDD	46.6	
2378-TCDF	302				ES 2378-TCDF	74.6	
12378-PeCDF	9.87				ES 12378-PeCDF	83.6	
23478-PeCDF	7.98				ES 23478-PeCDF	82.1	
123478-HxCDF	14.4				ES 123478-HxCDF	95.5	
123678-HxCDF	3.39				ES 123678-HxCDF	96.1	
234678-HxCDF	EMPC		0.696	J	ES 234678-HxCDF	90.3	
123789-HxCDF	ND	0.716			ES 123789-HxCDF	84.8	
1234678-HpCDF	EMPC		4.89		ES 1234678-HpCDF	87.5	
1234789-HpCDF	EMPC		1.04	J	ES 1234789-HpCDF	77	
OCDF	EMPC		4.47	J	ES OCDF	49.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77.5	
Total TCDD	99.6		99.6		CS 12347-PeCDD	84.8	
Total PeCDD	7.48		7.48		CS 12346-PeCDF	92.1	
Total HxCDD	36.8		36.8		CS 123469-HxCDF	106	
Total HpCDD	109		109		CS 1234689-HpCDF	97.4	
Total TCDF	559		591				
Total PeCDF	23.3		25.8				
Total HxCDF	21.6		22.3				
Total HpCDF	3.06		8.99				
Total PCDD/Fs	**1,490**		**1,530**				
WHO-2005 TEQs							
TEQ: ND=0	124		124				
TEQ: ND=DL/2	124	1.31	124				
TEQ: ND=DL	125	2.62	125				

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Sample ID: 11215131-120321-S-JC-SW-S-13 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.18 g	Lab Sample ID:	B5985_18724_DF_001	Date Extracted:	08-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.9 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:04:38

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.893)		12479/12468D	(0.796)		124679/124689D	30.3		1234679D	76.6	
1379D	(0.893)		12469D	4.91		123468D	(1.13)		1234678D	32.5	
1369D	(0.893)		12368D	(0.796)		123679/123689D	6.52				
1469D	4.99		12478D	(0.796)		123469D	(1.13)				
1247D...[4]	(0.893)		12379D	(0.796)		123478D	(1.22)				
1378D	(0.893)		12369D...[3]	1.21	J	123678D	(1.11)				
1268D	(0.893)		12346/12347D	(0.796)		123467D	(1.13)				
1478D	(0.893)		12378D	1.36	J	123789D	(1.08)		**Conc.**	109	
1279D	(0.893)		12367D	(0.796)					**EMPC**	109	
1234/1269D	(0.893)		12389D	(0.796)							
1236D	(0.893)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.893)										
1239D	(0.893)								OCDD	628	
2378D	87.6										
1278D	7										
1267D	(0.893)										
1289D	(0.893)										
Conc.	99.6		**Conc.**	7.48		**Conc.**	36.8				
EMPC	99.6		**EMPC**	7.48		**EMPC**	36.8				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	124	124
TEQ: ND=DL/2	124	124
TEQ: ND=DL	125	125

	Conc.	EMPC
Total PCDD/Fs	1,490	1,530

Checkcode: 333-858-SXQ

Report Created: 10-Dec-2021 12:48 Analyst: pw

Sample ID: 11215131-120321-S-JC-SW-S-13 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.18 g	Lab Sample ID:	B5985_18724_DF_001	Date Extracted:	08-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	78.9 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:04:38

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.754)		13468/12468F	(0.745)		123468F	(0.654)		1234678F	[4.89]	
1468F	(0.754)		13678F...[3]	(0.672)		124678/134678F	1.41	J	1234679F	(0.646)	
2468F	[0.941]		12368F...[3]	4.37		134679F	(0.654)		1234689F	3.06	
1346/1246F	0.801		14678F	(0.672)		124679F	(0.654)		1234789F	[1.04]	J
1347F...[3]	3.2		13479F	(0.672)		124689F	0.818	J			
1348F	1.56		13469/12479F	(0.672)		123467F	(0.654)				
1248F...[3]	15		12346F	(0.672)		123478F	14.4				
1268F	5.56		23468/12469F	(0.672)		123678F	3.39				
1467F	(0.754)		12347F	(0.672)		123479F	(0.654)				
1478F	12.5		12348F	1.06	J	123469F	(0.654)				
1369/1237F	3.09		12378F	9.87		123679F	(0.654)				
2467F	(0.754)		12678/12367F	[2.55]		234678F	[0.696]	J	**Conc.**	3.06	
2368F	[9.09]		12379F	(0.672)		234678/123689F	0		**EMPC**	8.99	
1238F...[5]	[10.5]		12679F	(0.672)		123689F	(0.654)				
1278F	140		23467/12369F	(0.672)		123789F	(0.716)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.754)		23478F	7.98		123789/123489F	0			**(pg/g)**	
1267F	[8.01]		23478/12489F	0		123489F	1.59	J	OCDF	[4.47]	J
2346/1249F	(0.754)		12489F	(0.672)							
2347/1279F	4.45		12349F	(0.672)							
2348F	22.1		12389F	(0.672)							
2378F	302										
2367/3467F	24.5										
1269F	[4.1]										
1239F	(0.754)										
1289F	23.9										
Conc.	559		**Conc.**	23.3		**Conc.**	21.6				
EMPC	591		**EMPC**	25.8		**EMPC**	22.3				

Checkcode: 333-858-SXQ

Report Created: 10-Dec-2021 12:48 Analyst: pw

Sample ID: 11215131-120321-S-JC-SW-S-13 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.18 g	QC Batch No.:	18724
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 04:04
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	87.6		0.893	87.6	87.6	87.6
12378-PeCDD	1.36	J	0.796	0.678	1.36	1.36
123478-HxCDD	(1.22)		1.22	(0.122)	(0.122)	(0.122)
123678-HxCDD	(1.11)		1.11	(0.111)	(0.111)	(0.111)
123789-HxCDD	(1.08)		1.08	(0.108)	(0.108)	(0.108)
1234678-HpCDD	32.5		1.08	0.325	0.325	0.325
OCDD	628		2.66	0.628	0.0628	0.188
2378-TCDF	302		0.754	30.2	30.2	30.2
12378-PeCDF	9.87		0.649	0.493	0.493	0.296
23478-PeCDF	7.98		0.696	3.99	3.99	2.39
123478-HxCDF	14.4		0.652	1.44	1.44	1.44
123678-HxCDF	3.39		0.607	0.339	0.339	0.339
234678-HxCDF	[0.696]	J	0.654	[0.0696]	[0.0696]	[0.0696]
123789-HxCDF	(0.716)		0.716	(0.0716)	(0.0716)	(0.0716)
1234678-HpCDF	[4.89]		0.558	[0.0489]	[0.0489]	[0.0489]
1234789-HpCDF	[1.04]	J	0.76	[0.0104]	[0.0104]	[0.0104]
OCDF	[4.47]	J	1.64	[0.00447]	[0.000447]	[0.00134]

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TEQ Summaries			
EMPC = 0, ND = 0	126	126	124
EMPC = 0, ND = DL / 2	126	126	124
EMPC = 0, ND = DL	126	126	125
EMPC = 0, < J-level = 0	125	124	123
EMPC = EMPC, ND = 0	126	126	124
EMPC = EMPC, ND = DL / 2	126	126	124
EMPC = EMPC, ND = DL	126	126	125
EMPC = EMPC, < J-level = 0	125	125	123

Checkcode: 333-858-SXQ

Sample ID: 11215131-120421-S-JC-SC-S-10 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID	B5985_18724_DF_002	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	82.6 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:52:12

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	1.33				ES 2378-TCDD	82.2	
12378-PeCDD	ND	0.723			ES 12378-PeCDD	75.3	
123478-HxCDD	ND	1.5			ES 123478-HxCDD	84.5	
123678-HxCDD	3.72				ES 123678-HxCDD	88	
123789-HxCDD	EMPC		2.23	J	ES 123789-HxCDD	86.9	
1234678-HpCDD	135				ES 1234678-HpCDD	68.3	
OCDD	1,550				ES OCDD	45.2	
2378-TCDF	5.35				ES 2378-TCDF	68.7	
12378-PeCDF	ND	0.874			ES 12378-PeCDF	79.2	
23478-PeCDF	2.05			J	ES 23478-PeCDF	73.5	
123478-HxCDF	2.03			J	ES 123478-HxCDF	94.3	
123678-HxCDF	1.2			J	ES 123678-HxCDF	102	
234678-HxCDF	1.98			J	ES 234678-HxCDF	88.9	
123789-HxCDF	ND	0.708			ES 123789-HxCDF	85.8	
1234678-HpCDF	13.9				ES 1234678-HpCDF	89.9	
1234789-HpCDF	EMPC		1.19	J	ES 1234789-HpCDF	75	
OCDF	18.6				ES OCDF	44.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	75	
Total TCDD	3.47		3.47		CS 12347-PeCDD	83.8	
Total PeCDD	ND	0.723	ND		CS 12346-PeCDF	88.6	
Total HxCDD	39.5		41.7		CS 123469-HxCDF	100	
Total HpCDD	314		314		CS 1234689-HpCDF	92	
Total TCDF	5.35		13.3				
Total PeCDF	17.9		18.5				
Total HxCDF	26		26				
Total HpCDF	34.3		35.5				
Total PCDD/Fs	**2,010**		**2,020**				
WHO-2005 TEQs							
TEQ: ND=0	5.33		5.57				
TEQ: ND=DL/2	5.82	1.42	6.05				
TEQ: ND=DL	6.3	2.84	6.54				

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Sample ID: 11215131-120421-S-JC-SC-S-10 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID:	B5985_18724_DF_002	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	82.6 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:52:12

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(1.02)		12479/12468D	(0.723)		124679/124689D	19		1234679D	179	
1379D	(1.02)		12469D	(0.723)		123468D	1.5	J	1234678D	135	
1369D	(1.02)		12368D	(0.723)		123679/123689D	15.2				
1469D	2.14		12478D	(0.723)		123469D	(1.38)				
1247D...[4]	(1.02)		12379D	(0.723)		123478D	(1.5)				
1378D	(1.02)		12369D...[3]	(0.723)		123678D	3.72				
1268D	(1.02)		12346/12347D	(0.723)		123467D	(1.38)				
1478D	(1.02)		12378D	(0.723)		123789D	[2.23]	J	**Conc.**	314	
1279D	(1.02)		12367D	(0.723)					**EMPC**	314	
1234/1269D	(1.02)		12389D	(0.723)							
1236D	(1.02)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(1.02)										
1239D	(1.02)								OCDD	1550	
2378D	1.33										
1278D	(1.02)										
1267D	(1.02)										
1289D	(1.02)										
Conc.	3.47		**Conc.**	0		**Conc.**	39.5				
EMPC	3.47		**EMPC**	0		**EMPC**	41.7				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	5.33	5.57
TEQ: ND=DL/2	5.82	6.05
TEQ: ND=DL	6.3	6.54

	Conc.	EMPC
Total PCDD/Fs	2,010	2,020

Checkcode: 723-731-NYW

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120421-S-JC-SC-S-10 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID:	B5985_18724_DF_002	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	82.6 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	4:52:12

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.95)		13468/12468F	9.62		123468F	2.37	J	1234678F	13.9	
1468F	(0.95)		13678F...[3]	[0.649]	J	124678/134678F	9.88		1234679F	(0.708)	
2468F	[1.75]		12368F...[3]	4.87		134679F	(0.67)		1234689F	20.4	
1346/1246F	(0.95)		14678F	(0.872)		124679F	(0.67)		1234789F	[1.19]	J
1347F...[3]	(0.95)		13479F	(0.872)		124689F	8.52				
1348F	(0.95)		13469/12479F	(0.872)		123467F	(0.67)				
1248F...[3]	[1.33]		12346F	(0.872)		123478F	2.03	J			
1268F	[0.701]		23468/12469F	1.32	J	123678F	1.2	J			
1467F	(0.95)		12347F	(0.872)		123479F	(0.67)				
1478F	(0.95)		12348F	(0.872)		123469F	(0.67)				
1369/1237F	(0.95)		12378F	(0.874)		123679F	(0.67)				
2467F	(0.95)		12678/12367F	(0.872)		234678F	1.98	J	**Conc.**	34.3	
2368F	[1.89]		12379F	(0.872)		234678/123689F	0		**EMPC**	35.5	
1238F...[5]	(0.95)		12679F	(0.872)		123689F	(0.67)				
1278F	[2.32]		23467/12369F	(0.872)		123789F	(0.708)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.95)		23478F	2.05	J	123789/123489F	0			**(pg/g)**	
1267F	(0.95)		23478/12489F	0		123489F	(0.67)		OCDF	18.6	
2346/1249F	(0.95)		12489F	(0.872)							
2347/1279F	(0.95)		12349F	(0.872)							
2348F	(0.95)		12389F	(0.872)							
2378F	5.35										
2367/3467F	(0.95)										
1269F	(0.95)										
1239F	(0.95)										
1289F	(0.95)										
Conc.	5.35		**Conc.**	17.9		**Conc.**	26				
EMPC	13.3		**EMPC**	18.5		**EMPC**	26				

Checkcode: 723-731-NYW

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120421-S-JC-SC-S-10 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	QC Batch No.:	18724
Date Collected:	04-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 04:52
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	1.33		1.02	1.33	1.33	1.33
12378-PeCDD	(0.723)		0.723	(0.362)	(0.723)	(0.723)
123478-HxCDD	(1.5)		1.5	(0.15)	(0.15)	(0.15)
123678-HxCDD	3.72		1.44	0.372	0.372	0.372
123789-HxCDD	[2.23]	J	1.23	[0.223]	[0.223]	[0.223]
1234678-HpCDD	135		1.34	1.35	1.35	1.35
OCDD	1550		3.51	1.55	0.155	0.464
2378-TCDF	5.35		0.95	0.535	0.535	0.535
12378-PeCDF	(0.874)		0.874	(0.0437)	(0.0437)	(0.0262)
23478-PeCDF	2.05	J	0.869	1.02	1.02	0.615
123478-HxCDF	2.03	J	0.661	0.203	0.203	0.203
123678-HxCDF	1.2	J	0.626	0.12	0.12	0.12
234678-HxCDF	1.98	J	0.701	0.198	0.198	0.198
123789-HxCDF	(0.708)		0.708	(0.0708)	(0.0708)	(0.0708)
1234678-HpCDF	13.9		0.604	0.139	0.139	0.139
1234789-HpCDF	[1.19]	J	0.849	[0.0119]	[0.0119]	[0.0119]
OCDF	18.6		2.54	0.0186	0.00186	0.00557

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TEQ Summaries			
EMPC = 0, ND = 0	6.84	5.43	5.33
EMPC = 0, ND = DL / 2	7.15	5.92	5.82
EMPC = 0, ND = DL	7.47	6.42	6.3
EMPC = 0, < J-level = 0	5.29	3.88	4.2
EMPC = EMPC, ND = 0	7.07	5.66	5.57
EMPC = EMPC, ND = DL / 2	7.39	6.16	6.05
EMPC = EMPC, ND = DL	7.7	6.65	6.54
EMPC = EMPC, < J-level = 0	5.29	3.88	4.2

Checkcode: 723-731-NYW

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Sample ID: 11215131-120421-S-JC-SC-S-11 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID	B5985_18724_DF_003	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	77.4 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	5:39:45

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	281				ES 2378-TCDD	80.9	
12378-PeCDD	4.39				ES 12378-PeCDD	70.7	
123478-HxCDD	EMPC		0.994	J	ES 123478-HxCDD	84.3	
123678-HxCDD	5.03				ES 123678-HxCDD	82.1	
123789-HxCDD	EMPC		2.34	J	ES 123789-HxCDD	86.5	
1234678-HpCDD	156				ES 1234678-HpCDD	69.7	
OCDD	2,020				ES OCDD	42.7	
2378-TCDF	1,080			E	ES 2378-TCDF	74.4	
12378-PeCDF	43.9				ES 12378-PeCDF	80.1	
23478-PeCDF	34.9				ES 23478-PeCDF	77.6	
123478-HxCDF	70.6				ES 123478-HxCDF	92.3	
123678-HxCDF	17.2				ES 123678-HxCDF	103	
234678-HxCDF	5.62				ES 234678-HxCDF	88.4	
123789-HxCDF	ND	0.729			ES 123789-HxCDF	90.2	
1234678-HpCDF	33.9				ES 1234678-HpCDF	87.6	
1234789-HpCDF	8.07				ES 1234789-HpCDF	73.9	
OCDF	25.5				ES OCDF	44.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77	
Total TCDD	311		314		CS 12347-PeCDD	78.2	
Total PeCDD	5.29		9.05		CS 12346-PeCDF	88.2	
Total HxCDD	51.3		56		CS 123469-HxCDF	109	
Total HpCDD	366		366		CS 1234689-HpCDF	99.3	
Total TCDF	2,120		2,150	E			
Total PeCDF	124		131				
Total HxCDF	124		124				
Total HpCDF	59.2		59.6				
Total PCDD/Fs	**5,210**		**5,250**	E			
WHO-2005 TEQs							
TEQ: ND=0	418		418				
TEQ: ND=DL/2	418	1.31	418				
TEQ: ND=DL	418	2.63	418				

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Sample ID: 11215131-120421-S-JC-SC-S-11 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID:	B5985_18724_DF_003	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	77.4 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	5:39:45

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	[0.567]		12479/12468D	0.901	J	124679/124689D	26.5		1234679D	210	
1379D	(0.877)		12469D	[1.9]	J	123468D	2.11	J	1234678D	156	
1369D	(0.877)		12368D	[0.874]	J	123679/123689D	17.7				
1469D	[2.22]		12478D	(0.857)		123469D	[1.36]	J			
1247D...[4]	(0.877)		12379D	(0.857)		123478D	[0.994]	J			
1378D	(0.877)		12369D...[3]	[0.99]	J	123678D	5.03				
1268D	(0.877)		12346/12347D	(0.857)		123467D	(0.87)				
1478D	(0.877)		12378D	4.39		123789D	[2.34]	J	**Conc.**	366	
1279D	(0.877)		12367D	(0.857)					**EMPC**	366	
1234/1269D	(0.877)		12389D	(0.857)							
1236D	(0.877)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	4.14										
1239D	(0.877)								OCDD	2020	
2378D	281										
1278D	25.6										
1267D	(0.877)										
1289D	(0.877)										
Conc.	311		**Conc.**	5.29		**Conc.**	51.3				
EMPC	314		**EMPC**	9.05		**EMPC**	56				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	418	418
TEQ: ND=DL/2	418	418
TEQ: ND=DL	418	418

	Conc.	EMPC
Total PCDD/Fs	5,210	5,250

Checkcode: 478-740-NQL

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120421-S-JC-SC-S-11 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID:	B5985_18724_DF_003	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	77.4 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	5:39:45

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.758)		13468/12468F	7.14		123468F	2.47	J	1234678F	33.9	
1468F	2.19		13678F...[3]	[1.11]	J	124678/134678F	13.2		1234679F	[0.378]	J
2468F	[2.51]		12368F...[3]	22.5		134679F	(0.705)		1234689F	17.2	
1346/1246F	[0.834]		14678F	[0.652]	J	124679F	(0.705)		1234789F	8.07	
1347F...[3]	11.6		13479F	(0.721)		124689F	9.42				
1348F	2.62		13469/12479F	(0.721)		123467F	[0.74]	J			
1248F...[3]	50.7		12346F	(0.721)		123478F	70.6				
1268F	[17]		23468/12469F	2.02	J	123678F	17.2				
1467F	[2.24]		12347F	1.1	J	123479F	(0.705)				
1478F	44.4		12348F	[3.71]		123469F	(0.705)				
1369/1237F	10.8		12378F	43.9		123679F	(0.705)				
2467F	[1.68]		12678/12367F	12.9		234678F	5.62		**Conc.**	59.2	
2368F	31.8		12379F	(0.721)		234678/123689F	0		**EMPC**	59.6	
1238F...[5]	58.4		12679F	(0.721)		123689F	(0.705)				
1278F	507		23467/12369F	(0.721)		123789F	(0.729)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.758)		23478F	34.9		123789/123489F	0			**(pg/g)**	
1267F	26.8		23478/12489F	0		123489F	5.24		OCDF	25.5	
2346/1249F	(0.758)		12489F	(0.721)							
2347/1279F	12.9		12349F	(0.721)							
2348F	99.4		12389F	[1.39]	J						
2378F	1080	E									
2367/3467F	85.5										
1269F	17.7										
1239F	(0.758)										
1289F	81.5										
Conc.	2,120		**Conc.**	124		**Conc.**	124				
EMPC	2,150		**EMPC**	131		**EMPC**	124				

Checkcode: 478-740-NQL

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120421-S-JC-SC-S-11 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	QC Batch No.:	18724
Date Collected:	04-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 05:39
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	281		0.877	281	281	281
12378-PeCDD	4.39		0.857	2.19	4.39	4.39
123478-HxCDD	[0.994]	J	0.939	[0.0994]	[0.0994]	[0.0994]
123678-HxCDD	5.03		0.916	0.503	0.503	0.503
123789-HxCDD	[2.34]	J	0.774	[0.234]	[0.234]	[0.234]
1234678-HpCDD	156		1.17	1.56	1.56	1.56
OCDD	2020		3.47	2.02	0.202	0.606
2378-TCDF	1080	E	0.758	108	108	108
12378-PeCDF	43.9		0.721	2.19	2.19	1.32
23478-PeCDF	34.9		0.72	17.4	17.4	10.5
123478-HxCDF	70.6		0.689	7.06	7.06	7.06
123678-HxCDF	17.2		0.584	1.72	1.72	1.72
234678-HxCDF	5.62		0.854	0.562	0.562	0.562
123789-HxCDF	(0.729)		0.729	(0.0729)	(0.0729)	(0.0729)
1234678-HpCDF	33.9		0.641	0.339	0.339	0.339
1234789-HpCDF	8.07		0.968	0.0807	0.0807	0.0807
OCDF	25.5		2.35	0.0255	0.00255	0.00764

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TEQ Summaries			
EMPC = 0, ND = 0	425	425	418
EMPC = 0, ND = DL / 2	425	425	418
EMPC = 0, ND = DL	425	425	418
EMPC = 0, < J-level = 0	425	425	418
EMPC = EMPC, ND = 0	425	425	418
EMPC = EMPC, ND = DL / 2	425	425	418
EMPC = EMPC, ND = DL	425	426	418
EMPC = EMPC, < J-level = 0	425	425	418

Checkcode: 478-740-NQL

Sample ID: 11215131-120421-S-JC-SC-S-12 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.02 g	Lab Sample ID	B5985_18724_DF_004	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	64.2 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:27:19

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	1,870			E	ES 2378-TCDD	85.9	
12378-PeCDD	23.6				ES 12378-PeCDD	71.7	
123478-HxCDD	3.45				ES 123478-HxCDD	81.6	
123678-HxCDD	20.6				ES 123678-HxCDD	78.3	
123789-HxCDD	6.3				ES 123789-HxCDD	85.5	
1234678-HpCDD	439				ES 1234678-HpCDD	69.2	
OCDD	5,260				ES OCDD	45.2	
2378-TCDF	7,130			E	ES 2378-TCDF	80.5	
12378-PeCDF	384				ES 12378-PeCDF	82.2	
23478-PeCDF	220				ES 23478-PeCDF	80.7	
123478-HxCDF	925				ES 123478-HxCDF	86.3	
123678-HxCDF	226				ES 123678-HxCDF	92.3	
234678-HxCDF	51.5				ES 234678-HxCDF	82.1	
123789-HxCDF	ND	1.32			ES 123789-HxCDF	84.7	
1234678-HpCDF	285				ES 1234678-HpCDF	84.7	
1234789-HpCDF	88.9				ES 1234789-HpCDF	81.2	
OCDF	1,050				ES OCDF	46.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	71.6	
Total TCDD	2,080		2,090	E	CS 12347-PeCDD	73.5	
Total PeCDD	33.4		43.8		CS 12346-PeCDF	82.5	
Total HxCDD	166		172		CS 123469-HxCDF	90.6	
Total HpCDD	929		929		CS 1234689-HpCDF	85.1	
Total TCDF	13,800		13,800	E			
Total PeCDF	961		963				
Total HxCDF	1,480		1,490				
Total HpCDF	591		601				
Total PCDD/Fs	**26,300**		**26,400**	E			
WHO-2005 TEQs							
TEQ: ND=0	2820		2820				
TEQ: ND=DL/2	2820	1.73	2820				
TEQ: ND=DL	2820	3.47	2820				

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Sample ID: 11215131-120421-S-JC-SC-S-12 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.02 g	Lab Sample ID:	B5985_18724_DF_004	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	64.2 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:27:19

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.6		12479/12468D	5.14		124679/124689D	55		1234679D	490	
1379D	(1.03)		12469D	[2.23]	J	123468D	[5.64]		1234678D	439	
1369D	(1.03)		12368D	[3.05]		123679/123689D	74.7				
1469D	[0.659]		12478D	2.5		123469D	3.21				
1247D...[4]	[3.23]		12379D	[1.68]	J	123478D	3.45				
1378D	4.86		12369D...[3]	2.13	J	123678D	20.6				
1268D	(1.03)		12346/12347D	[1.05]	J	123467D	2.67				
1478D	4.43		12378D	23.6		123789D	6.3		**Conc.**	929	
1279D	(1.03)		12367D	[2.42]	J				**EMPC**	929	
1234/1269D	(1.03)		12389D	(1.05)							
1236D	(1.03)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	29.9										
1239D	(1.03)								OCDD	5260	
2378D	1870	E									
1278D	166										
1267D	(1.03)										
1289D	[1.41]										
Conc.	2,080		**Conc.**	33.4		**Conc.**	166				
EMPC	2,090		**EMPC**	43.8		**EMPC**	172				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	2,820	2,820
TEQ: ND=DL/2	2,820	2,820
TEQ: ND=DL	2,820	2,820

	Conc.	EMPC
Total PCDD/Fs	26,300	26,400

Checkcode: 786-451-HLV

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120421-S-JC-SC-S-12 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.02 g	Lab Sample ID:	B5985_18724_DF_004	Date Extracted:	08-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	64.2 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	6:27:19

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.994)		13468/12468F	20.8		123468F	12.8		1234678F	285	
1468F	11.5		13678F...[3]	8.46		124678/134678F	105		1234679F	[10.2]	
2468F	8.92		12368F...[3]	160		134679F	(1.34)		1234689F	217	
1346/1246F	8.05		14678F	6.87		124679F	[1.92]	J	1234789F	88.9	
1347F...[3]	72.6		13479F	(1.14)		124689F	91.8				
1348F	17.5		13469/12479F	1.72	J	123467F	4.88				
1248F...[3]	321		12346F	[1.37]	J	123478F	925				
1268F	106		23468/12469F	7.5		123678F	226				
1467F	20		12347F	5.37		123479F	(1.34)				
1478F	292		12348F	25.2		123469F	(1.34)				
1369/1237F	72.5		12378F	384		123679F	(1.34)				
2467F	9.14		12678/12367F	104		234678F	51.5		**Conc.**	591	
2368F	199		12379F	(1.14)		234678/123689F	0		**EMPC**	601	
1238F...[5]	344		12679F	(1.14)		123689F	(1.34)				
1278F	3210	E	23467/12369F	5.98		123789F	(1.32)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.994)		23478F	220		123789/123489F	0			**(pg/g)**	
1267F	174		23478/12489F	0		123489F	67.1		OCDF	1050	
2346/1249F	(0.994)		12489F	(1.14)							
2347/1279F	73.6		12349F	(1.14)							
2348F	464		12389F	11.9							
2378F	7130	E									
2367/3467F	573										
1269F	112										
1239F	(0.994)										
1289F	550										
Conc.	13,800		**Conc.**	961		**Conc.**	1,480				
EMPC	13,800		**EMPC**	963		**EMPC**	1,490				

Checkcode: 786-451-HLV

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120421-S-JC-SC-S-12 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.02 g	QC Batch No.:	18724
Date Collected:	04-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 06:27
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	1870	E	1.03	1870	1870	1870
12378-PeCDD	23.6		1.05	11.8	23.6	23.6
123478-HxCDD	3.45		1.04	0.345	0.345	0.345
123678-HxCDD	20.6		1.11	2.06	2.06	2.06
123789-HxCDD	6.3		1.12	0.63	0.63	0.63
1234678-HpCDD	439		1.14	4.39	4.39	4.39
OCDD	5260		2.68	5.26	0.526	1.58
2378-TCDF	7130	E	0.994	713	713	713
12378-PeCDF	384		1.08	19.2	19.2	11.5
23478-PeCDF	220		1.2	110	110	65.9
123478-HxCDF	925		1.44	92.5	92.5	92.5
123678-HxCDF	226		1.21	22.6	22.6	22.6
234678-HxCDF	51.5		1.42	5.15	5.15	5.15
123789-HxCDF	(1.32)		1.32	(0.132)	(0.132)	(0.132)
1234678-HpCDF	285		0.607	2.85	2.85	2.85
1234789-HpCDF	88.9		0.965	0.889	0.889	0.889
OCDF	1050		2.88	1.05	0.105	0.315

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TEQ Summaries			
EMPC = 0, ND = 0	2870	2870	2820
EMPC = 0, ND = DL / 2	2870	2870	2820
EMPC = 0, ND = DL	2870	2870	2820
EMPC = 0, < J-level = 0	2870	2870	2820
EMPC = EMPC, ND = 0	2870	2870	2820
EMPC = EMPC, ND = DL / 2	2870	2870	2820
EMPC = EMPC, ND = DL	2870	2870	2820
EMPC = EMPC, < J-level = 0	2870	2870	2820

Checkcode: 786-451-HLV

Sample ID: 11215131-120621-S-JC-SC-S-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.04 g	Lab Sample ID	B5985_18724_DF_005	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	7:14:47

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	5,890			E	ES 2378-TCDD	84	
12378-PeCDD	69.6				ES 12378-PeCDD	72.2	
123478-HxCDD	4.66				ES 123478-HxCDD	87.5	
123678-HxCDD	30.7				ES 123678-HxCDD	85.1	
123789-HxCDD	11.3				ES 123789-HxCDD	84.2	
1234678-HpCDD	1,130				ES 1234678-HpCDD	74.3	
OCDD	19,900			E	ES OCDD	69.8	
2378-TCDF	20,800			E	ES 2378-TCDF	78.5	
12378-PeCDF	965				ES 12378-PeCDF	79.8	
23478-PeCDF	804				ES 23478-PeCDF	66.6	
123478-HxCDF	1,520				ES 123478-HxCDF	87.2	
123678-HxCDF	408				ES 123678-HxCDF	84.5	
234678-HxCDF	91.5				ES 234678-HxCDF	87.6	
123789-HxCDF	ND	1.04			ES 123789-HxCDF	87.4	
1234678-HpCDF	557				ES 1234678-HpCDF	88.2	
1234789-HpCDF	162				ES 1234789-HpCDF	88.7	
OCDF	1,030				ES OCDF	67.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	77.5	
Total TCDD	6,580		6,600	E	CS 12347-PeCDD	77.1	
Total PeCDD	88		109		CS 12346-PeCDF	85	
Total HxCDD	228		228		CS 123469-HxCDF	96.9	
Total HpCDD	2,350		2,350		CS 1234689-HpCDF	103	
Total TCDF	40,400		40,500	E			
Total PeCDF	2,810		2,820				
Total HxCDF	2,480		2,480				
Total HpCDF	1,080		1,080				
Total PCDD/Fs	**77,000**		**77,100**	E			
WHO-2005 TEQs							
TEQ: ND=0	8540		8540				
TEQ: ND=DL/2	8540	1.76	8540				
TEQ: ND=DL	8540	3.51	8540				

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Sample ID: 11215131-120621-S-JC-SC-S-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.04 g	Lab Sample ID:	B5985_18724_DF_005	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	7:14:47

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	11.5		12479/12468D	7.83		124679/124689D	77		1234679D	1220	
1379D	4.42		12469D	[3.78]		123468D	9.75		1234678D	1130	
1369D	(0.701)		12368D	8.62		123679/123689D	85.5				
1469D	(0.701)		12478D	[6.04]		123469D	6.22				
1247D...[4]	10.7		12379D	[2.9]		123478D	4.66				
1378D	16.2		12369D...[3]	[2.83]		123678D	30.7				
1268D	[1.47]		12346/12347D	1.97	J	123467D	2.76				
1478D	13.4		12378D	69.6		123789D	11.3		**Conc.**	2,350	
1279D	(0.701)		12367D	[3.83]					**EMPC**	2,350	
1234/1269D	[2.2]		12389D	[1.65]	J						
1236D	[1.09]								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	89.4										
1239D	(0.701)								OCDD	19900	E
2378D	5890	E									
1278D	541										
1267D	(0.701)										
1289D	[19]										
Conc.	6,580		**Conc.**	88		**Conc.**	228				
EMPC	6,600		**EMPC**	109		**EMPC**	228				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	8,540	8,540
TEQ: ND=DL/2	8,540	8,540
TEQ: ND=DL	8,540	8,540

	Conc.	EMPC
Total PCDD/Fs	77,000	77,100

Checkcode: 925-994-NQM

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-SC-S-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.04 g	Lab Sample ID:	B5985_18724_DF_005	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	7:14:47

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	1.08		13468/12468F	57.5		123468F	26.1		1234678F	557	
1468F	26.2		13678F...[3]	15.6		124678/134678F	176		1234679F	11.6	
2468F	[22.6]		12368F...[3]	454		134679F	1.42	J	1234689F	355	
1346/1246F	[2.76]		14678F	(1.27)		124679F	3.9		1234789F	162	
1347F...[3]	139		13479F	(1.27)		124689F	120				
1348F	37.4		13469/12479F	[4.23]		123467F	11.7				
1248F...[3]	517		12346F	1.9	J	123478F	1520				
1268F	235		23468/12469F	18.9		123678F	408				
1467F	46.2		12347F	19.3		123479F	(0.981)				
1478F	604		12348F	96.2		123469F	(0.981)				
1369/1237F	191		12378F	965		123679F	(0.981)				
2467F	28.4		12678/12367F	325		234678F	91.5		**Conc.**	1,080	
2368F	439		12379F	(1.27)		234678/123689F	0		**EMPC**	1,080	
1238F...[5]	1150	E	12679F	(1.27)		123689F	(0.981)				
1278F	9900	E	23467/12369F	13.7		123789F	(1.04)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.826)		23478F	804		123789/123489F	0				
1267F	442		23478/12489F	0		123489F	128		OCDF	1030	
2346/1249F	56		12489F	(1.27)							
2347/1279F	272		12349F	(1.27)							
2348F	1850	E	12389F	42							
2378F	20800	E									
2367/3467F	1710	E									
1269F	274										
1239F	42.2										
1289F	1660	E									
Conc.	40,400		**Conc.**	2,810		**Conc.**	2,480				
EMPC	40,500		**EMPC**	2,820		**EMPC**	2,480				

Checkcode: 925-994-NQM

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-SC-S-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.04 g	QC Batch No.:	18724
Date Collected:	06-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 07:14
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	5890	E	0.701	5890	5890	5890
12378-PeCDD	69.6		1.11	34.8	69.6	69.6
123478-HxCDD	4.66		2.31	0.466	0.466	0.466
123678-HxCDD	30.7		2.57	3.07	3.07	3.07
123789-HxCDD	11.3		2.35	1.13	1.13	1.13
1234678-HpCDD	1130		1.23	11.3	11.3	11.3
OCDD	19900	E	1.56	19.9	1.99	5.97
2378-TCDF	20800	E	0.826	2080	2080	2080
12378-PeCDF	965		1.11	48.2	48.2	28.9
23478-PeCDF	804		1.46	402	402	241
123478-HxCDF	1520		0.938	152	152	152
123678-HxCDF	408		0.904	40.8	40.8	40.8
234678-HxCDF	91.5		1.05	9.15	9.15	9.15
123789-HxCDF	(1.04)		1.04	(0.104)	(0.104)	(0.104)
1234678-HpCDF	557		0.578	5.57	5.57	5.57
1234789-HpCDF	162		0.816	1.62	1.62	1.62
OCDF	1030		1.46	1.03	0.103	0.31

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TEQ Summaries			
EMPC = 0, ND = 0	8700	8720	8540
EMPC = 0, ND = DL / 2	8700	8720	8540
EMPC = 0, ND = DL	8700	8720	8540
EMPC = 0, < J-level = 0	8700	8720	8540
EMPC = EMPC, ND = 0	8700	8720	8540
EMPC = EMPC, ND = DL / 2	8700	8720	8540
EMPC = EMPC, ND = DL	8700	8720	8540
EMPC = EMPC, < J-level = 0	8700	8720	8540

Checkcode: 925-994-NQM

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MS/MSD Comparison

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Method 1613B

Sample ID: 11215131-120621-S-JC-SC-S-1

Analyte	Native Conc.	MS Spike	MS Conc.	MS Rec.	MSD Spike	MSD Conc.	MSD Rec.	RPD
	(pg/g)	(pg/g)	(pg/g)	%	(pg/g)	(pg/g)	%	
2,3,7,8-TCDD	5890	19.7	6750	4370	19.9	7780	9500	74%
1,2,3,7,8-PeCDD	69.6	98.6	156	87.9	99.5	178	109	21%
1,2,3,4,7,8-HxCDD	4.66	98.6	111	107	99.5	112	108	1%
1,2,3,6,7,8-HxCDD	30.7	98.6	137	107	99.5	148	118	10%
1,2,3,7,8,9-HxCDD	11.3	98.6	112	102	99.5	116	105	3%
1,2,3,4,6,7,8-HpCDD	1130	98.6	1290	166	99.5	1650	522	103%
OCDD	19900	197	22100	1130	199	29500	4840	124%
2,3,7,8-TCDF	20800	19.7	22900	10700	19.9	27800	35100	107%
1,2,3,7,8-PeCDF	965	98.6	1040	75.5	99.5	1420	455	143%
2,3,4,7,8-PeCDF	804	98.6	792	-11.4	99.5	1030	229	*
1,2,3,4,7,8-HxCDF	1520	98.6	1790	274	99.5	2250	732	91%
1,2,3,6,7,8-HxCDF	408	98.6	520	115	99.5	639	233	68%
2,3,4,6,7,8-HxCDF	91.5	98.6	199	109	99.5	235	144	28%
1,2,3,7,8,9-HxCDF	ND	98.6	237	240	99.5	281	283	16%
1,2,3,4,6,7,8-HpCDF	557	98.6	674	119	99.5	814	258	74%
1,2,3,4,7,8,9-HpCDF	162	98.6	280	119	99.5	332	171	36%
OCDF	1030	197	1160	62	199	1340	151	84%

* % Recovery limits for MS and MSD: 70-130% of expected value, if native < RL
* RPD limit for MS vs. MSD recoveries: +/- 20%, if native < RL

Precision meets MS/MSD criteria for analytes near RL with the exception of 123789-HxCDF - recovery elevated due to 123489-HxCDF in parent sample.
CL 10Dec21

Sample ID: 11215131-120621-S-JC-SC-S-1-MS

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID	B5985_18724_DF_005MS	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	8:02:20

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	6,750			E	ES 2378-TCDD	75.1	
12378-PeCDD	156				ES 12378-PeCDD	72.4	
123478-HxCDD	111				ES 123478-HxCDD	78.7	
123678-HxCDD	137				ES 123678-HxCDD	80.9	
123789-HxCDD	112				ES 123789-HxCDD	77.8	
1234678-HpCDD	1,290				ES 1234678-HpCDD	76	
OCDD	22,100			E	ES OCDD	69.9	
2378-TCDF	22,900			E	ES 2378-TCDF	76.3	
12378-PeCDF	1,040				ES 12378-PeCDF	75.3	
23478-PeCDF	792				ES 23478-PeCDF	73.1	
123478-HxCDF	1,790				ES 123478-HxCDF	76.4	
123678-HxCDF	520				ES 123678-HxCDF	81.4	
234678-HxCDF	199				ES 234678-HxCDF	79.7	
123789-HxCDF	237				ES 123789-HxCDF	79.9	
1234678-HpCDF	674				ES 1234678-HpCDF	86.2	
1234789-HpCDF	280				ES 1234789-HpCDF	84	
OCDF	1,160				ES OCDF	68.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	67.8	
Total TCDD	7,590		7,630	E	CS 12347-PeCDD	77.3	
Total PeCDD	222		241		CS 12346-PeCDF	81.9	
Total HxCDD	578		584		CS 123469-HxCDF	85	
Total HpCDD	2,520		2,520		CS 1234689-HpCDF	94.7	
Total TCDF	44,600		44,600	E			
Total PeCDF	3,020		3,020				
Total HxCDF	3,350		3,350				
Total HpCDF	1,340		1,340				
Total PCDD/Fs	**86,500**		**86,600**	E			
WHO-2005 TEQs							
TEQ: ND=0	9810		9810				
TEQ: ND=DL/2	9810	1.97	9810				
TEQ: ND=DL	9810	3.94	9810				

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Sample ID: 11215131-120621-S-JC-SC-S-1-MS — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID:	B5985_18724_DF_005MS	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	8:02:20

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	33.6		12479/12468D	27.9		124679/124689D	105		1234679D	1230	
1379D	[3.89]		12469D	[3.59]		123468D	10.2		1234678D	1290	
1369D	(1.02)		12368D	9.75		123679/123689D	98.8				
1469D	(1.02)		12478D	[6.86]		123469D	[5.56]				
1247D...[4]	[11.4]		12379D	3.44		123478D	111				
1378D	17.5		12369D...[3]	[3.04]		123678D	137				
1268D	[1.22]		12346/12347D	2.38	J	123467D	5.53				
1478D	13.8		12378D	156		123789D	112		**Conc.**	2,520	
1279D	(1.02)		12367D	[5.95]					**EMPC**	2,520	
1234/1269D	[1.8]		12389D	22.1							
1236D	(1.02)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	102										
1239D	[18.6]								OCDD	22100	E
2378D	6750	E									
1278D	633										
1267D	(1.02)										
1289D	36.4										
Conc.	7,590		**Conc.**	222		**Conc.**	578				
EMPC	7,630		**EMPC**	241		**EMPC**	584				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	9,810	9,810
TEQ: ND=DL/2	9,810	9,810
TEQ: ND=DL	9,810	9,810

	Conc.	EMPC
Total PCDD/Fs	86,500	86,600

Checkcode: 649-648-BZR

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-SC-S-1-MS — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID:	B5985_18724_DF_005MS	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	8:02:20

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	28.2		13468/12468F	255		123468F	285		1234678F	674	
1468F	30		13678F...[3]	17.4		124678/134678F	179		1234679F	12.4	
2468F	33		12368F...[3]	408		134679F	(1.38)		1234689F	373	
1346/1246F	[10.6]		14678F	18.1		124679F	5.77		1234789F	280	
1347F...[3]	141		13479F	[1.18]	J	124689F	129				
1348F	55		13469/12479F	6.28		123467F	9.7				
1248F...[3]	529		12346F	[1.39]	J	123478F	1790				
1268F	249		23468/12469F	20.4		123678F	520				
1467F	55.7		12347F	18.6		123479F	(1.38)				
1478F	634		12348F	87.5		123469F	(1.38)				
1369/1237F	210		12378F	1040		123679F	(1.38)				
2467F	26.4		12678/12367F	281		234678F	199		**Conc.**	1,340	
2368F	474		12379F	(1.33)		234678/123689F	0		**EMPC**	1,340	
1238F...[5]	1270	E	12679F	(1.33)		123689F	(1.38)				
1278F	11000	E	23467/12369F	12.9		123789F	237		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(1.31)		23478F	792		123789/123489F	0				
1267F	494		23478/12489F	0		123489F	(1.38)		OCDF	1160	
2346/1249F	73.4		12489F	(1.33)							
2347/1279F	243		12349F	(1.33)							
2348F	2120	E	12389F	62							
2378F	22900	E									
2367/3467F	1880	E									
1269F	298										
1239F	42										
1289F	1850	E									
Conc.	44,600		**Conc.**	3,020		**Conc.**	3,350				
EMPC	44,600		**EMPC**	3,020		**EMPC**	3,350				

Checkcode: 649-648-BZR

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-SC-S-1-MS TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_005MS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	QC Batch No.:	18724
Date Collected:	06-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 08:02
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	6750	E	1.02	6750	6750	6750
12378-PeCDD	156		1.11	78.1	156	156
123478-HxCDD	111		2.15	11.1	11.1	11.1
123678-HxCDD	137		2.07	13.7	13.7	13.7
123789-HxCDD	112		2.02	11.2	11.2	11.2
1234678-HpCDD	1290		1.2	12.9	12.9	12.9
OCDD	22100	E	3.25	22.1	2.21	6.63
2378-TCDF	22900	E	1.31	2290	2290	2290
12378-PeCDF	1040		1.21	52	52	31.2
23478-PeCDF	792		1.47	396	396	238
123478-HxCDF	1790		1.44	179	179	179
123678-HxCDF	520		1.31	52	52	52
234678-HxCDF	199		1.49	19.9	19.9	19.9
123789-HxCDF	237		1.27	23.7	23.7	23.7
1234678-HpCDF	674		0.565	6.74	6.74	6.74
1234789-HpCDF	280		0.721	2.8	2.8	2.8
OCDF	1160		1.54	1.16	0.116	0.347

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TEQ Summaries			
EMPC = 0, ND = 0	9930	9990	9810
EMPC = 0, ND = DL / 2	9930	9990	9810
EMPC = 0, ND = DL	9930	9990	9810
EMPC = 0, < J-level = 0	9930	9990	9810
EMPC = EMPC, ND = 0	9930	9990	9810
EMPC = EMPC, ND = DL / 2	9930	9990	9810
EMPC = EMPC, ND = DL	9930	9990	9810
EMPC = EMPC, < J-level = 0	9930	9990	9810

Checkcode: 649-648-BZR

Sample ID: 11215131-120621-S-JC-SC-S-1-MSD — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.05 g	Lab Sample ID	B5985_18724_DF_005MSD	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	8:49:54

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	7,780			E	ES 2378-TCDD	77.6	
12378-PeCDD	178				ES 12378-PeCDD	68.9	
123478-HxCDD	112				ES 123478-HxCDD	78.8	
123678-HxCDD	148				ES 123678-HxCDD	82.1	
123789-HxCDD	116				ES 123789-HxCDD	81.8	
1234678-HpCDD	1,650				ES 1234678-HpCDD	76.6	
OCDD	29,500			E	ES OCDD	74.3	
2378-TCDF	27,800			E	ES 2378-TCDF	72.9	
12378-PeCDF	1,420				ES 12378-PeCDF	75.9	
23478-PeCDF	1,030				ES 23478-PeCDF	71.3	
123478-HxCDF	2,250				ES 123478-HxCDF	82.5	
123678-HxCDF	639				ES 123678-HxCDF	84.5	
234678-HxCDF	235				ES 234678-HxCDF	80.7	
123789-HxCDF	281				ES 123789-HxCDF	85.6	
1234678-HpCDF	814				ES 1234678-HpCDF	90.6	
1234789-HpCDF	332				ES 1234789-HpCDF	86	
OCDF	1,340				ES OCDF	71.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	65.5	
Total TCDD	8,730		8,780	E	CS 12347-PeCDD	74.7	
Total PeCDD	256		283		CS 12346-PeCDF	79.4	
Total HxCDD	668		668		CS 123469-HxCDF	89	
Total HpCDD	3,210		3,210		CS 1234689-HpCDF	93.1	
Total TCDF	52,800		52,900	E			
Total PeCDF	4,000		4,000				
Total HxCDF	4,120		4,130				
Total HpCDF	1,640		1,640				
Total PCDD/Fs	**106,000**		**106,000**	E			
WHO-2005 TEQs							
TEQ: ND=0	11500		11500				
TEQ: ND=DL/2	11500	1.92	11500				
TEQ: ND=DL	11500	3.83	11500				

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Sample ID: 11215131-120621-S-JC-SC-S-1-MSD — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.05 g	Lab Sample ID:	B5985_18724_DF_005MSD	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	8:49:54

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	29.7		12479/12468D	32.1		124679/124689D	131		1234679D	1560	
1379D	5.81		12469D	[4.42]		123468D	12.7		1234678D	1650	
1369D	(0.905)		12368D	12		123679/123689D	133				
1469D	(0.905)		12478D	[8.52]		123469D	8				
1247D...[4]	13.9		12379D	4.03		123478D	112				
1378D	20.1		12369D...[3]	[3.83]		123678D	148				
1268D	[1.96]		12346/12347D	3.65		123467D	6.34				
1478D	15.6		12378D	178		123789D	116		**Conc.**	3,210	
1279D	(0.905)		12367D	[9.55]					**EMPC**	3,210	
1234/1269D	2.31		12389D	26.3							
1236D	[1.56]								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	119										
1239D	18.8								OCDD	29500	E
2378D	7780	E									
1278D	723										
1267D	(0.905)										
1289D	[46.3]										
Conc.	8,730		**Conc.**	256		**Conc.**	668				
EMPC	8,780		**EMPC**	283		**EMPC**	668				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	11,500	11,500
TEQ: ND=DL/2	11,500	11,500
TEQ: ND=DL	11,500	11,500

	Conc.	EMPC
Total PCDD/Fs	106,000	106,000

Checkcode: 775-448-HSG

Report Created: 10-Dec-2021 16:24 Analyst: gd

Sample ID: 11215131-120621-S-JC-SC-S-1-MSD — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.05 g	Lab Sample ID:	B5985_18724_DF_005MSD	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.6 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	8:49:54

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	24.5		13468/12468F	268		123468F	291		1234678F	814	
1468F	[31.9]		13678F...[3]	21.7		124678/134678F	244		1234679F	20.9	
2468F	40.5		12368F...[3]	582		134679F	(1.29)		1234689F	469	
1346/1246F	3.09		14678F	17.7		124679F	[6.49]		1234789F	332	
1347F...[3]	158		13479F	2.39	J	124689F	168				
1348F	95		13469/12479F	7.13		123467F	16.2				
1248F...[3]	464		12346F	3.33		123478F	2250				
1268F	250		23468/12469F	26.4		123678F	639				
1467F	66.5		12347F	20.4		123479F	(1.29)				
1478F	645		12348F	112		123469F	(1.29)				
1369/1237F	229		12378F	1420		123679F	(1.29)				
2467F	33		12678/12367F	399		234678F	235		**Conc.**	1,640	
2368F	495		12379F	(1.57)		234678/123689F	0		**EMPC**	1,640	
1238F...[5]	1500	E	12679F	3.62		123689F	(1.29)				
1278F	13000	E	23467/12369F	17		123789F	281		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(1.1)		23478F	1030		123789/123489F	0				
1267F	525		23478/12489F	0		123489F	(1.29)		OCDF	1340	
2346/1249F	85.7		12489F	(1.57)							
2347/1279F	318		12349F	(1.57)							
2348F	2250	E	12389F	74.6							
2378F	27800	E									
2367/3467F	2270	E									
1269F	324										
1239F	51.6										
1289F	2230	E									
Conc.	52,800		**Conc.**	4,000		**Conc.**	4,120				
EMPC	52,900		**EMPC**	4,000		**EMPC**	4,130				

Checkcode: 775-448-HSG

Report Created: 10-Dec-2021 16:24 Analyst: gd

Sample ID: 11215131-120621-S-JC-SC-S-1-MSD TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_005MSD
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.05 g	QC Batch No.:	18724
Date Collected:	06-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 08:49
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	7780	E	0.905	7780	7780	7780
12378-PeCDD	178		1.13	89.1	178	178
123478-HxCDD	112		1.97	11.2	11.2	11.2
123678-HxCDD	148		2.14	14.8	14.8	14.8
123789-HxCDD	116		1.69	11.6	11.6	11.6
1234678-HpCDD	1650		1.1	16.5	16.5	16.5
OCDD	29500	E	2.49	29.5	2.95	8.86
2378-TCDF	27800	E	1.1	2780	2780	2780
12378-PeCDF	1420		1.41	70.9	70.9	42.5
23478-PeCDF	1030		1.75	516	516	309
123478-HxCDF	2250		1.31	225	225	225
123678-HxCDF	639		1.32	63.9	63.9	63.9
234678-HxCDF	235		1.33	23.5	23.5	23.5
123789-HxCDF	281		1.21	28.1	28.1	28.1
1234678-HpCDF	814		0.599	8.14	8.14	8.14
1234789-HpCDF	332		0.702	3.32	3.32	3.32
OCDF	1340		1.02	1.34	0.134	0.401

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TEQ Summaries			
EMPC = 0, ND = 0	11700	11700	11500
EMPC = 0, ND = DL / 2	11700	11700	11500
EMPC = 0, ND = DL	11700	11700	11500
EMPC = 0, < J-level = 0	11700	11700	11500
EMPC = EMPC, ND = 0	11700	11700	11500
EMPC = EMPC, ND = DL / 2	11700	11700	11500
EMPC = EMPC, ND = DL	11700	11700	11500
EMPC = EMPC, < J-level = 0	11700	11700	11500

Checkcode: 775-448-HSG

Sample ID: 11215131-120621-S-JC-SC-S-2 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	B5985_18724_DF_006	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.4 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	9:37:23

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	1,640			E	ES 2378-TCDD	77.9	
12378-PeCDD	22.7				ES 12378-PeCDD	69.2	
123478-HxCDD	5.22				ES 123478-HxCDD	89.8	
123678-HxCDD	23.3				ES 123678-HxCDD	94	
123789-HxCDD	EMPC		8.5		ES 123789-HxCDD	92.5	
1234678-HpCDD	705				ES 1234678-HpCDD	88.4	
OCDD	10,900			E	ES OCDD	69.8	
2378-TCDF	6,290			E	ES 2378-TCDF	78.8	
12378-PeCDF	237				ES 12378-PeCDF	82.7	
23478-PeCDF	197				ES 23478-PeCDF	79	
123478-HxCDF	383				ES 123478-HxCDF	97.4	
123678-HxCDF	105				ES 123678-HxCDF	96.8	
234678-HxCDF	30				ES 234678-HxCDF	92.5	
123789-HxCDF	ND	1.06			ES 123789-HxCDF	91.9	
1234678-HpCDF	304				ES 1234678-HpCDF	97.4	
1234789-HpCDF	62.7				ES 1234789-HpCDF	93	
OCDF	2,370				ES OCDF	69.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	69.6	
Total TCDD	1,840		1,860	E	CS 12347-PeCDD	73.8	
Total PeCDD	37.5		46.4		CS 12346-PeCDF	89.6	
Total HxCDD	173		181		CS 123469-HxCDF	103	
Total HpCDD	1,510		1,510		CS 1234689-HpCDF	101	
Total TCDF	12,500		12,500	E			
Total PeCDF	727		754				
Total HxCDF	743		743				
Total HpCDF	642		642				
Total PCDD/Fs	**31,400**		**31,500**	E			
WHO-2005 TEQs							
TEQ: ND=0	2430		2430				
TEQ: ND=DL/2	2430	2.55	2430				
TEQ: ND=DL	2430	5.1	2430				

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Sample ID: 11215131-120621-S-JC-SC-S-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	B5985_18724_DF_006	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.4 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	9:37:23

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	7.69		12479/12468D	6.85		124679/124689D	55.3		1234679D	808	
1379D	[1.92]		12469D	[2.36]	J	123468D	8.55		1234678D	705	
1369D	(1.64)		12368D	5.56		123679/123689D	76.2				
1469D	(1.64)		12478D	[4.23]		123469D	3.89				
1247D...[4]	[2.33]		12379D	2.41	J	123478D	5.22				
1378D	[4.27]		12369D...[3]	[2.35]	J	123678D	23.3				
1268D	(1.64)		12346/12347D	(1.65)		123467D	(2.29)				
1478D	[4.47]		12378D	22.7		123789D	[8.5]		**Conc.**	1,510	
1279D	(1.64)		12367D	(1.65)					**EMPC**	1,510	
1234/1269D	(1.64)		12389D	(1.65)							
1236D	(1.64)								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	29.5									**(pg/g)**	
1239D	(1.64)								OCDD	10900	E
2378D	1640	E									
1278D	163										
1267D	(1.64)										
1289D	[7.05]										
Conc.	1,840		**Conc.**	37.5		**Conc.**	173				
EMPC	1,860		**EMPC**	46.4		**EMPC**	181				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	2,430	2,430
TEQ: ND=DL/2	2,430	2,430
TEQ: ND=DL	2,430	2,430

	Conc.	EMPC
Total PCDD/Fs	31,400	31,500

Checkcode: 612-606-CJZ

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-SC-S-2 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	B5985_18724_DF_006	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	76.4 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	9:37:23

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(1.58)		13468/12468F	50.7		123468F	17.2		1234678F	304	
1468F	10.2		13678F...[3]	8.08		124678/134678F	86.7		1234679F	10.4	
2468F	15.7		12368F...[3]	117		134679F	(1.08)		1234689F	265	
1346/1246F	8.86		14678F	7.68		124679F	3.9		1234789F	62.7	
1347F...[3]	55.9		13479F	(1.41)		124689F	76.1				
1348F	14.3		13469/12479F	(1.41)		123467F	4.09				
1248F...[3]	299		12346F	(1.41)		123478F	383				
1268F	101		23468/12469F	10.3		123678F	105				
1467F	18.4		12347F	[4.85]		123479F	3.69				
1478F	263		12348F	[22]		123469F	2.62				
1369/1237F	66		12378F	237		123679F	(1.08)				
2467F	[7.47]		12678/12367F	84.3		234678F	30		**Conc.**	642	
2368F	157		12379F	(1.41)		234678/123689F	0		**EMPC**	642	
1238F...[5]	353		12679F	(1.41)		123689F	(1.08)				
1278F	2960	E	23467/12369F	4.96		123789F	(1.06)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(1.58)		23478F	197		123789/123489F	0				
1267F	155		23478/12489F	0		123489F	30.7		OCDF	2370	
2346/1249F	23.4		12489F	(1.41)							
2347/1279F	68.1		12349F	(1.41)							
2348F	507		12389F	11.1							
2378F	6290	E									
2367/3467F	507										
1269F	100										
1239F	(1.58)										
1289F	512										
Conc.	12,500		**Conc.**	727		**Conc.**	743				
EMPC	12,500		**EMPC**	754		**EMPC**	743				

Checkcode: 612-606-CJZ

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-SC-S-2 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_006
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18724
Date Collected:	06-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 09:37
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	1640	E	1.64	1640	1640	1640
12378-PeCDD	22.7		1.65	11.3	22.7	22.7
123478-HxCDD	5.22		2.51	0.522	0.522	0.522
123678-HxCDD	23.3		2.24	2.33	2.33	2.33
123789-HxCDD	[8.5]		2.15	[0.85]	[0.85]	[0.85]
1234678-HpCDD	705		1.58	7.05	7.05	7.05
OCDD	10900	E	4.23	10.9	1.09	3.27
2378-TCDF	6290	E	1.58	629	629	629
12378-PeCDF	237		1.31	11.8	11.8	7.1
23478-PeCDF	197		1.51	98.3	98.3	59
123478-HxCDF	383		1.01	38.3	38.3	38.3
123678-HxCDF	105		1.09	10.5	10.5	10.5
234678-HxCDF	30		1.16	3	3	3
123789-HxCDF	(1.06)		1.06	(0.106)	(0.106)	(0.106)
1234678-HpCDF	304		0.91	3.04	3.04	3.04
1234789-HpCDF	62.7		1.26	0.627	0.627	0.627
OCDF	2370		1.84	2.37	0.237	0.711

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TEQ Summaries			
EMPC = 0, ND = 0	2470	2470	2430
EMPC = 0, ND = DL / 2	2470	2470	2430
EMPC = 0, ND = DL	2470	2470	2430
EMPC = 0, < J-level = 0	2470	2470	2430
EMPC = EMPC, ND = 0	2470	2470	2430
EMPC = EMPC, ND = DL / 2	2470	2470	2430
EMPC = EMPC, ND = DL	2470	2470	2430
EMPC = EMPC, < J-level = 0	2470	2470	2430

Checkcode: 612-606-CJZ

Sample ID: 11215131-120621-S-JC-SC-S-3 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID	B5985_18724_DF_007	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	70.2 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	10:24:51

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	5,840			E	ES 2378-TCDD	80	
12378-PeCDD	69.7				ES 12378-PeCDD	69.1	
123478-HxCDD	9.76				ES 123478-HxCDD	79.3	
123678-HxCDD	54.1				ES 123678-HxCDD	82.2	
123789-HxCDD	20.8				ES 123789-HxCDD	80.7	
1234678-HpCDD	1,770				ES 1234678-HpCDD	77.4	
OCDD	27,600			E	ES OCDD	75.6	
2378-TCDF	20,600			E	ES 2378-TCDF	75.6	
12378-PeCDF	978				ES 12378-PeCDF	75.1	
23478-PeCDF	688				ES 23478-PeCDF	71.9	
123478-HxCDF	1,660				ES 123478-HxCDF	81.8	
123678-HxCDF	417				ES 123678-HxCDF	83.3	
234678-HxCDF	93.4				ES 234678-HxCDF	80.8	
123789-HxCDF	ND	1.41			ES 123789-HxCDF	81	
1234678-HpCDF	686				ES 1234678-HpCDF	84.5	
1234789-HpCDF	190				ES 1234789-HpCDF	83.4	
OCDF	778				ES OCDF	72.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	66	
Total TCDD	6,530		6,550	E	CS 12347-PeCDD	69.8	
Total PeCDD	89.4		118		CS 12346-PeCDF	76.3	
Total HxCDD	435		435		CS 123469-HxCDF	90.1	
Total HpCDD	3,870		3,870		CS 1234689-HpCDF	87.8	
Total TCDF	40,400		40,400	E			
Total PeCDF	2,770		2,770				
Total HxCDF	2,780		2,780				
Total HpCDF	1,440		1,440				
Total PCDD/Fs	**86,600**		**86,700**	E			
WHO-2005 TEQs							
TEQ: ND=0	8470		8470				
TEQ: ND=DL/2	8470	1.88	8470				
TEQ: ND=DL	8470	3.77	8470				

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Sample ID: 11215131-120621-S-JC-SC-S-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID:	B5985_18724_DF_007	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	70.2 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	10:24:51

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	13.6		12479/12468D	[12.1]		124679/124689D	132		1234679D	2100	
1379D	4.98		12469D	[4.23]		123468D	20.7		1234678D	1770	
1369D	(0.889)		12368D	10.1		123679/123689D	173				
1469D	(0.889)		12478D	[10.2]		123469D	17.2				
1247D...[4]	[10.3]		12379D	4.49		123478D	9.76				
1378D	16.4		12369D...[3]	2.38	J	123678D	54.1				
1268D	(0.889)		12346/12347D	2.79		123467D	7.73				
1478D	13.1		12378D	69.7		123789D	20.8		**Conc.**	3,870	
1279D	(0.889)		12367D	(1.36)					**EMPC**	3,870	
1234/1269D	1.87		12389D	[2.48]							
1236D	1.58								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	91.1										
1239D	(0.889)								OCDD	27600	E
2378D	5840	E									
1278D	538										
1267D	(0.889)										
1289D	[18.7]										
Conc.	6,530		**Conc.**	89.4		**Conc.**	435				
EMPC	6,550		**EMPC**	118		**EMPC**	435				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	8,470	8,470
TEQ: ND=DL/2	8,470	8,470
TEQ: ND=DL	8,470	8,470

	Conc.	EMPC
Total PCDD/Fs	86,600	86,700

Checkcode: 123-415-VMJ

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-SC-S-3 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID:	B5985_18724_DF_007	Date Extracted:	08-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	70.2 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	10:24:51

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	3.92		13468/12468F	109		123468F	40.4		1234678F	686	
1468F	28.7		13678F...[3]	22.1		124678/134678F	240		1234679F	12.4	
2468F	35.6		12368F...[3]	458		134679F	(1.33)		1234689F	557	
1346/1246F	27		14678F	12.5		124679F	6.72		1234789F	190	
1347F...[3]	132		13479F	(1.14)		124689F	186				
1348F	45.4		13469/12479F	11.2		123467F	11.7				
1248F...[3]	593		12346F	2.17	J	123478F	1660				
1268F	247		23468/12469F	29		123678F	417				
1467F	52.2		12347F	14.7		123479F	(1.33)				
1478F	637		12348F	89.5		123469F	(1.33)				
1369/1237F	190		12378F	978		123679F	(1.33)				
2467F	30.3		12678/12367F	300		234678F	93.4		**Conc.**	1,440	
2368F	367		12379F	(1.14)		234678/123689F	0		**EMPC**	1,440	
1238F...[5]	1240	E	12679F	(1.14)		123689F	(1.33)				
1278F	10000	E	23467/12369F	14.6		123789F	(1.41)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(1.23)		23478F	688		123789/123489F	0			**(pg/g)**	
1267F	458		23478/12489F	0		123489F	123		OCDF	778	
2346/1249F	66.4		12489F	(1.14)							
2347/1279F	225		12349F	(1.14)							
2348F	1670	E	12389F	38.1							
2378F	20600	E									
2367/3467F	1720	E									
1269F	272										
1239F	39										
1289F	1700	E									
Conc.	40,400		**Conc.**	2,770		**Conc.**	2,780				
EMPC	40,400		**EMPC**	2,770		**EMPC**	2,780				

Checkcode: 123-415-VMJ

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-SC-S-3 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_007
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	QC Batch No.:	18724
Date Collected:	06-Dec-2021	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 10:24
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	5840	E	0.889	5840	5840	5840
12378-PeCDD	69.7		1.36	34.8	69.7	69.7
123478-HxCDD	9.76		1.55	0.976	0.976	0.976
123678-HxCDD	54.1		1.4	5.41	5.41	5.41
123789-HxCDD	20.8		1.31	2.08	2.08	2.08
1234678-HpCDD	1770		1.5	17.7	17.7	17.7
OCDD	27600	E	3.34	27.6	2.76	8.28
2378-TCDF	20600	E	1.23	2060	2060	2060
12378-PeCDF	978		1.06	48.9	48.9	29.3
23478-PeCDF	688		1.23	344	344	207
123478-HxCDF	1660		1.36	166	166	166
123678-HxCDF	417		1.19	41.7	41.7	41.7
234678-HxCDF	93.4		1.39	9.34	9.34	9.34
123789-HxCDF	(1.41)		1.41	(0.141)	(0.141)	(0.141)
1234678-HpCDF	686		0.844	6.86	6.86	6.86
1234789-HpCDF	190		1.08	1.9	1.9	1.9
OCDF	778		2.13	0.778	0.0778	0.233

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TEQ Summaries			
EMPC = 0, ND = 0	8610	8620	8470
EMPC = 0, ND = DL / 2	8610	8620	8470
EMPC = 0, ND = DL	8610	8620	8470
EMPC = 0, < J-level = 0	8610	8620	8470
EMPC = EMPC, ND = 0	8610	8620	8470
EMPC = EMPC, ND = DL / 2	8610	8620	8470
EMPC = EMPC, ND = DL	8610	8620	8470
EMPC = EMPC, < J-level = 0	8610	8620	8470

Checkcode: 123-415-VMJ

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Sample ID: 11215131-120621-S-JC-DUP-4 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.16 g	Lab Sample ID	B5985_18724_DF_008	Date Extracted:	08-Dec-2021
Date Collected:	n/a	% Solid:	74.5 %	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	11:12:19

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	8,810			E	ES 2378-TCDD	79.4	
12378-PeCDD	101				ES 12378-PeCDD	69.7	
123478-HxCDD	7.21				ES 123478-HxCDD	88.3	
123678-HxCDD	46				ES 123678-HxCDD	81.6	
123789-HxCDD	14.9				ES 123789-HxCDD	88.7	
1234678-HpCDD	1,560				ES 1234678-HpCDD	78.4	
OCDD	28,300			E	ES OCDD	67	
2378-TCDF	30,300			E	ES 2378-TCDF	78	
12378-PeCDF	1,240				ES 12378-PeCDF	77.7	
23478-PeCDF	898				ES 23478-PeCDF	76	
123478-HxCDF	1,960				ES 123478-HxCDF	87.7	
123678-HxCDF	501				ES 123678-HxCDF	87.3	
234678-HxCDF	106				ES 234678-HxCDF	90	
123789-HxCDF	ND	1.38			ES 123789-HxCDF	83.9	
1234678-HpCDF	731				ES 1234678-HpCDF	88.4	
1234789-HpCDF	220				ES 1234789-HpCDF	81.2	
OCDF	1,030				ES OCDF	65.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	68.4	
Total TCDD	9,800		9,840	E	CS 12347-PeCDD	72.5	
Total PeCDD	128		160		CS 12346-PeCDF	77.5	
Total HxCDD	304		325		CS 123469-HxCDF	99.3	
Total HpCDD	3,170		3,170		CS 1234689-HpCDF	93.7	
Total TCDF	58,900		58,900	E			
Total PeCDF	3,390		3,390				
Total HxCDF	3,140		3,150				
Total HpCDF	1,440		1,440				
Total PCDD/Fs	**110,000**		**110,000**	E			
WHO-2005 TEQs							
TEQ: ND=0	12600		12600				
TEQ: ND=DL/2	12600	2.26	12600				
TEQ: ND=DL	12600	4.52	12600				

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Sample ID: 11215131-120621-S-JC-DUP-4 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.16 g	Lab Sample ID:	B5985_18724_DF_008	Date Extracted:	08-Dec-2021
Date Collected:	n/a	% Solid:	74.5 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	11:12:19

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	16.2		12479/12468D	[11.8]		124679/124689D	106		1234679D	1600	
1379D	[6.28]		12469D	[5.42]		123468D	[11.7]		1234678D	1560	
1369D	(1.13)		12368D	12		123679/123689D	126				
1469D	(1.13)		12478D	[8.36]		123469D	[9.15]				
1247D...[4]	[14.6]		12379D	4.36		123478D	7.21				
1378D	24.5		12369D...[3]	4.23		123678D	46				
1268D	(1.13)		12346/12347D	3.58		123467D	3.92				
1478D	19.9		12378D	101		123789D	14.9		**Conc.**	3,170	
1279D	(1.13)		12367D	[6.65]					**EMPC**	3,170	
1234/1269D	[2.39]		12389D	2.55							
1236D	[1.81]								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	144									**(pg/g)**	
1239D	(1.13)								OCDD	28300	E
2378D	8810	E									
1278D	782										
1267D	(1.13)										
1289D	[14.2]										
Conc.	9,800		**Conc.**	128		**Conc.**	304				
EMPC	9,840		**EMPC**	160		**EMPC**	325				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	12,600	12,600
TEQ: ND=DL/2	12,600	12,600
TEQ: ND=DL	12,600	12,600

	Conc.	EMPC
Total PCDD/Fs	110,000	110,000

Checkcode: 858-821-LMQ

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-DUP-4 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.16 g	Lab Sample ID:	B5985_18724_DF_008	Date Extracted:	08-Dec-2021
Date Collected:	n/a	% Solid:	74.5 %	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	11:12:19

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	4.44		13468/12468F	75.5		123468F	34.8		1234678F	731	
1468F	39		13678F...[3]	20.3		124678/134678F	226		1234679F	19.7	
2468F	35.3		12368F...[3]	538		134679F	(1.42)		1234689F	467	
1346/1246F	28.1		14678F	22.9		124679F	(1.42)		1234789F	220	
1347F...[3]	185		13479F	(1.76)		124689F	162				
1348F	61.6		13469/12479F	(1.76)		123467F	[12.1]				
1248F...[3]	763		12346F	3.58		123478F	1960				
1268F	331		23468/12469F	25.3		123678F	501				
1467F	73.1		12347F	23.2		123479F	(1.42)				
1478F	891		12348F	112		123469F	(1.42)				
1369/1237F	272		12378F	1240		123679F	(1.42)				
2467F	37.3		12678/12367F	370		234678F	106		**Conc.**	1,440	
2368F	838		12379F	(1.76)		234678/123689F	0		**EMPC**	1,440	
1238F...[5]	1440	E	12679F	(1.76)		123689F	(1.42)				
1278F	14500	E	23467/12369F	17.5		123789F	(1.38)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(1.57)		23478F	898		123789/123489F	0			**(pg/g)**	
1267F	626		23478/12489F	0		123489F	150		OCDF	1030	
2346/1249F	84.8		12489F	(1.76)							
2347/1279F	319		12349F	(1.76)							
2348F	2780	E	12389F	46.7							
2378F	30300	E									
2367/3467F	2460	E									
1269F	390										
1239F	(1.57)										
1289F	2420	E									
Conc.	58,900		**Conc.**	3,390		**Conc.**	3,140				
EMPC	58,900		**EMPC**	3,390		**EMPC**	3,150				

Checkcode: 858-821-LMQ

Report Created: 10-Dec-2021 12:49 Analyst: pw

Sample ID: 11215131-120621-S-JC-DUP-4 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5985_18724_DF_008
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.16 g	QC Batch No.:	18724
Date Collected:	n/a	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	10-Dec-2021 11:12
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	8810	E	1.13	8810	8810	8810
12378-PeCDD	101		1.36	50.6	101	101
123478-HxCDD	7.21		2.07	0.721	0.721	0.721
123678-HxCDD	46		2.41	4.6	4.6	4.6
123789-HxCDD	14.9		1.94	1.49	1.49	1.49
1234678-HpCDD	1560		1.84	15.6	15.6	15.6
OCDD	28300	E	4.41	28.3	2.83	8.49
2378-TCDF	30300	E	1.57	3030	3030	3030
12378-PeCDF	1240		1.63	62.1	62.1	37.3
23478-PeCDF	898		1.9	449	449	269
123478-HxCDF	1960		1.49	196	196	196
123678-HxCDF	501		1.4	50.1	50.1	50.1
234678-HxCDF	106		1.42	10.6	10.6	10.6
123789-HxCDF	(1.38)		1.38	(0.138)	(0.138)	(0.138)
1234678-HpCDF	731		1.12	7.31	7.31	7.31
1234789-HpCDF	220		1.36	2.2	2.2	2.2
OCDF	1030		2.06	1.03	0.103	0.309

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TEQ Summaries			
EMPC = 0, ND = 0	12700	12700	12600
EMPC = 0, ND = DL / 2	12700	12700	12600
EMPC = 0, ND = DL	12700	12700	12600
EMPC = 0, < J-level = 0	12700	12700	12600
EMPC = EMPC, ND = 0	12700	12700	12600
EMPC = EMPC, ND = DL / 2	12700	12700	12600
EMPC = EMPC, ND = DL	12700	12700	12600
EMPC = EMPC, < J-level = 0	12700	12700	12600

Checkcode: 858-821-LMQ

Sample ID: Method Blank B5985_18724 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18724_DF_SDS	Date Extracted:	08-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:17:09

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.775			ES 2378-TCDD	90.1	
12378-PeCDD	ND	0.882			ES 12378-PeCDD	74.6	
123478-HxCDD	ND	0.971			ES 123478-HxCDD	89.5	
123678-HxCDD	ND	1.01			ES 123678-HxCDD	87.6	
123789-HxCDD	ND	0.867			ES 123789-HxCDD	86.5	
1234678-HpCDD	ND	0.996			ES 1234678-HpCDD	78.4	
OCDD	ND	2.4			ES OCDD	53.1	
2378-TCDF	ND	0.765			ES 2378-TCDF	76.7	
12378-PeCDF	ND	0.684			ES 12378-PeCDF	88	
23478-PeCDF	ND	0.759			ES 23478-PeCDF	85.3	
123478-HxCDF	ND	0.71			ES 123478-HxCDF	93.6	
123678-HxCDF	ND	0.614			ES 123678-HxCDF	108	
234678-HxCDF	ND	0.741			ES 234678-HxCDF	99.7	
123789-HxCDF	ND	0.693			ES 123789-HxCDF	86.3	
1234678-HpCDF	ND	0.602			ES 1234678-HpCDF	95.5	
1234789-HpCDF	ND	0.829			ES 1234789-HpCDF	84.9	
OCDF	ND	2.48			ES OCDF	52.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	81.2	
Total TCDD	ND	0.775	ND		CS 12347-PeCDD	90.4	
Total PeCDD	ND	0.882	ND		CS 12346-PeCDF	94.2	
Total HxCDD	ND	0.947	ND		CS 123469-HxCDF	110	
Total HpCDD	ND	0.996	ND		CS 1234689-HpCDF	102	
Total TCDF	ND	0.765	ND				
Total PeCDF	ND	0.72	ND				
Total HxCDF	ND	0.685	ND				
Total HpCDF	ND	0.702	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	1.28	1.28	1.28				
TEQ: ND=DL	2.57	2.57	2.57				

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Sample ID: Method Blank B5985_18724 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18724_DF_SDS	Date Extracted:	08-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:17:09

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.775)		12479/12468D	(0.882)		124679/124689D	(0.947)		1234679D	(0.996)	
1379D	(0.775)		12469D	(0.882)		123468D	(0.947)		1234678D	(0.996)	
1369D	(0.775)		12368D	(0.882)		123679/123689D	(0.947)				
1469D	(0.775)		12478D	(0.882)		123469D	(0.947)				
1247D...[4]	(0.775)		12379D	(0.882)		123478D	(0.971)				
1378D	(0.775)		12369D...[3]	(0.882)		123678D	(1.01)				
1268D	(0.775)		12346/12347D	(0.882)		123467D	(0.947)				
1478D	(0.775)		12378D	(0.882)		123789D	(0.867)		**Conc.**	0	
1279D	(0.775)		12367D	(0.882)					**EMPC**	0	
1234/1269D	(0.775)		12389D	(0.882)							
1236D	(0.775)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.775)										
1239D	(0.775)								OCDD	(2.4)	
2378D	(0.775)										
1278D	(0.775)										
1267D	(0.775)										
1289D	(0.775)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	1.28	1.28
TEQ: ND=DL	2.57	2.57

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 702-371-YBZ

Report Created: 10-Dec-2021 12:48 Analyst: pw

Sample ID: Method Blank B5985_18724 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18724_DF_SDS	Date Extracted:	08-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:17:09

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.765)		13468/12468F	(1.01)		123468F	(0.685)		1234678F	(0.602)	
1468F	(0.765)		13678F...[3]	(0.72)		124678/134678F	(0.685)		1234679F	(0.702)	
2468F	(0.765)		12368F...[3]	(0.72)		134679F	(0.685)		1234689F	(0.702)	
1346/1246F	(0.765)		14678F	(0.72)		124679F	(0.685)		1234789F	(0.829)	
1347F...[3]	(0.765)		13479F	(0.72)		124689F	(0.685)				
1348F	(0.765)		13469/12479F	(0.72)		123467F	(0.685)				
1248F...[3]	(0.765)		12346F	(0.72)		123478F	(0.71)				
1268F	(0.765)		23468/12469F	(0.72)		123678F	(0.614)				
1467F	(0.765)		12347F	(0.72)		123479F	(0.685)				
1478F	(0.765)		12348F	(0.72)		123469F	(0.685)				
1369/1237F	(0.765)		12378F	(0.684)		123679F	(0.685)				
2467F	(0.765)		12678/12367F	(0.72)		234678F	(0.741)		**Conc.**	0	
2368F	(0.765)		12379F	(0.72)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.765)		12679F	(0.72)		123689F	(0.685)				
1278F	(0.765)		23467/12369F	(0.72)		123789F	(0.693)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.765)		23478F	(0.759)		123789/123489F	0			**(pg/g)**	
1267F	(0.765)		23478/12489F	0		123489F	(0.685)		OCDF	(2.48)	
2346/1249F	(0.765)		12489F	(0.72)							
2347/1279F	(0.765)		12349F	(0.72)							
2348F	(0.765)		12389F	(0.72)							
2378F	(0.765)										
2367/3467F	(0.765)										
1269F	(0.765)										
1239F	(0.765)										
1289F	(0.765)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 702-371-YBZ

Report Created: 10-Dec-2021 12:48 Analyst: pw

Sample ID: Method Blank B5985_18724 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18724_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18724
Date Collected:	n/a	Split:	-	Date Extracted:	08-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	10-Dec-2021 03:17
Lab Project No:	B5985	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.775)		0.775	(0.775)	(0.775)	(0.775)
12378-PeCDD	(0.882)		0.882	(0.441)	(0.882)	(0.882)
123478-HxCDD	(0.971)		0.971	(0.0971)	(0.0971)	(0.0971)
123678-HxCDD	(1.01)		1.01	(0.101)	(0.101)	(0.101)
123789-HxCDD	(0.867)		0.867	(0.0867)	(0.0867)	(0.0867)
1234678-HpCDD	(0.996)		0.996	(0.00996)	(0.00996)	(0.00996)
OCDD	(2.4)		2.4	(0.0024)	(0.00024)	(0.000721)
2378-TCDF	(0.765)		0.765	(0.0765)	(0.0765)	(0.0765)
12378-PeCDF	(0.684)		0.684	(0.0342)	(0.0342)	(0.0205)
23478-PeCDF	(0.759)		0.759	(0.379)	(0.379)	(0.228)
123478-HxCDF	(0.71)		0.71	(0.071)	(0.071)	(0.071)
123678-HxCDF	(0.614)		0.614	(0.0614)	(0.0614)	(0.0614)
234678-HxCDF	(0.741)		0.741	(0.0741)	(0.0741)	(0.0741)
123789-HxCDF	(0.693)		0.693	(0.0693)	(0.0693)	(0.0693)
1234678-HpCDF	(0.602)		0.602	(0.00602)	(0.00602)	(0.00602)
1234789-HpCDF	(0.829)		0.829	(0.00829)	(0.00829)	(0.00829)
OCDF	(2.48)		2.48	(0.00248)	(0.000248)	(0.000743)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	1.15	1.37	1.28
EMPC = 0, ND = DL	2.3	2.73	2.57
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	1.15	1.37	1.28
EMPC = EMPC, ND = DL	2.3	2.73	2.57
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 702-371-YBZ

Sample ID: 0_18724_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5985	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18724_DF	Date Extracted:	08-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18724	Date Analyzed:	10-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:42:07

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	9.31				ES 2378-TCDD	87.7	
12378-PeCDD	44.6				ES 12378-PeCDD	82.6	
123478-HxCDD	54.8				ES 123478-HxCDD	83.4	
123678-HxCDD	51.8				ES 123678-HxCDD	93.3	
123789-HxCDD	51.8				ES 123789-HxCDD	82.6	
1234678-HpCDD	53.2				ES 1234678-HpCDD	76.1	
OCDD	114				ES OCDD	44.1	
2378-TCDF	12.5				ES 2378-TCDF	75.6	
12378-PeCDF	53.5				ES 12378-PeCDF	87.6	
23478-PeCDF	58.8				ES 23478-PeCDF	84.3	
123478-HxCDF	56.2				ES 123478-HxCDF	93.2	
123678-HxCDF	54.9				ES 123678-HxCDF	102	
234678-HxCDF	55.2				ES 234678-HxCDF	93.6	
123789-HxCDF	49.9				ES 123789-HxCDF	88.7	
1234678-HpCDF	52.5				ES 1234678-HpCDF	92.2	
1234789-HpCDF	55.2				ES 1234789-HpCDF	76.1	
OCDF	105				ES OCDF	51.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	86.5	
Total TCDD	44.4		44.4		CS 12347-PeCDD	90.4	
Total PeCDD	68.8		68.8		CS 12346-PeCDF	95.4	
Total HxCDD	174		174		CS 123469-HxCDF	107	
Total HpCDD	65.9		65.9		CS 1234689-HpCDF	90.5	
Total TCDF	69		69				
Total PeCDF	222		222				
Total HxCDF	346		346				
Total HpCDF	108		108				
Total PCDD/Fs	**1,320**		**1,320**				
WHO-2005 TEQs							
TEQ: ND=0	114		114				
TEQ: ND=DL/2	114	0.572	114				
TEQ: ND=DL	114	1.14	114				

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METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211209R19	Analysis Date:	10-DEC-2021 01:42:07
Lab ID:	OPR1_18724_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.31	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	44.6	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	54.8	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	51.8	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.8	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	53.2	35	-	70	Y
OCDD	100	114	78	-	144	Y
2,3,7,8-TCDF	10	12.5	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	53.5	40	-	67	Y
2,3,4,7,8-PeCDF	50	58.8	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	56.2	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	54.9	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55.2	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	49.9	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	52.5	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	55.2	39	-	69	Y
OCDF	100	105	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 10 Dec 2021 12:48 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211209R19 Analysis Date: 10-DEC-2021 01:42:07

Lab ID: OPR1_18724_DF

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	87.7	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	82.6	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	83.4	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	93.3	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	82.6	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	76.1	26	-	166	Y
13C-OCDD	200	88.3	26	-	397	Y
13C-2,3,7,8-TCDF	100	75.6	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	87.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	84.3	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	93.2	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	102	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	93.6	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	88.7	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	92.2	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	76.1	20	-	186	Y
13C-OCDF	200	103	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	34.6	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 10 Dec 2021 12:48 Analyst: pw

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*07-Dec-21 at 11:28*
AP Project name:	*B5985*
Requested TAT:	*3 business days*
Projected due date:	*10-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120321-S-JC-SW-S-13	B5985_001	Solid	1	4oz Amber	03-Dec-21	13:25	-1.3	2	4905 2704 2072
11215131-120421-S-JC-SC-S-10	B5985_002	Solid	1	4oz Amber	04-Dec-21	10:50	-1.3	2	4905 2704 2072
11215131-120421-S-JC-SC-S-11	B5985_003	Solid	1	4oz Amber	04-Dec-21	11:00	-1.3	2	4905 2704 2072
11215131-120421-S-JC-SC-S-12	B5985_004	Solid	1	4oz Amber	04-Dec-21	11:10	-1.3	2	4905 2704 2072
11215131-120621-S-JC-SC-S-1	B5985_005	Solid - MS/MSD	1	4oz Amber	06-Dec-21	09:00	-1.3	2	4905 2704 2072
11215131-120621-S-JC-SC-S-2	B5985_006	Solid	1	4oz Amber	06-Dec-21	09:10	-1.3	2	4905 2704 2072
11215131-120621-S-JC-SC-S-3	B5985_007	Solid	1	4oz Amber	06-Dec-21	09:20	-1.3	2	4905 2704 2072
11215131-120621-S-JC-DUP-4	B5985_008	Solid	1	4oz Amber	06-Dec-21	n/a	-1.3	2	4905 2704 2072

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact, not received frozen.

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* AK 7 Dec 21

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B5985

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

PRESERVATIVE

None

ANALYSIS & METHOD

M1613B (D/F)

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	MS	QC MSD	QC DUP	QTY	REMARKS	See ssow
11215131-120321-S-JC-SW-S-13	12-3-21	1325	C	S	4 oz	X				1	RUSH	*
11215131-120321-S-JC-SW-B-6	↓	1335	1	1	4 oz	X				1		
11215131-120321-S-JC-SW-B-6H	↓	1345	↓	↓	4 oz	X				1	HOLD	
11215131-120421-S-JC-SC-O-12	12-4-21	0855	C	S	4 oz	X				1		
11215131-120421-S-JC-SC-S-10	1	1050	1	1	4 oz	X				1	RUSH	*
11215131-120421-S-JC-SC-S-11	1	1100	1	1	4 oz	X				1	RUSH	*
11215131-120421-S-JC-SC-S-12	1	1110	1	1	4 oz	X				1	RUSH	*
11215131-120421-S-JC-SC-O-6	1	1120	1	1	4 oz	X				1		
11215131-120421-S-JC-SC-B-5	1	1130	1	1	4 oz	X				1		
11215131-120421-S-JC-SC-O-7	↓	1415	↓	↓	4 oz	X				1		

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Brianna Norgh (BN)	12-6-21 ~~12-4-21~~	1230	[signature]
RELINQUISHED BY (2): [signature]	12-6-21	1430	RECEIVED BY: [signature] 12/6/21 1430
RELINQUISHED BY (3): [signature]	12/6/21	1430	RECEIVED BY:

RECEIVED BY LABORATORY: ashley [signature] DATE: 12/7/21 TIME: 11:28

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☒ INTACT ☐ BROKEN ☐ ABSENT

CARRIER: FedEx TEMP: °C -1.3°

TRACKING #: 4905 2704 2072

* = Samples in this project.

SGS CHAIN OF CUSTODY

B5985

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

PRESERVATIVE

None

ANALYSIS & METHOD

M1613B (D/F)

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS SEE SSOW	
11215131-120621-S-JC-SC-S-1	12-6-21	0900	C	S	4 oz	X	X	X			MS/MSD RUSH	*
11215131-120621-S-JC-SC-S-2		0910			4 oz	X				1	RUSH	*
11215131-120621-S-JC-SC-S-3		0920			4 oz	X				1	RUSH	*
11215131-120621-S-JC-SC-O-1		0930			4 oz	X				1		
11215131-120621-S-JC-SC-R-1		0940			4 oz	X				1		
11215131-120621-S-JC-SC-B-1H		0950			4 oz	X				1	HOLD	
11215131-120621-S-JC-DUP-4		—			4 oz	X			X	1	RUSH	*
					4 oz							
					4 oz							
					4 oz							

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Breanna Nash	12-6-21	1230	Eddie Castro
RELINQUISHED BY (2): Eddie Castro	12/6/21	1430	RECEIVED BY: 12/6/21 1430
RELINQUISHED BY (3):	12/6/21	1430	RECEIVED BY:

RECEIVED BY LABORATORY:	DATE:	TIME:
[illegible]	12/7/21	11:28

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT

CARRIER: FedEx TEMP: °C -1.3°

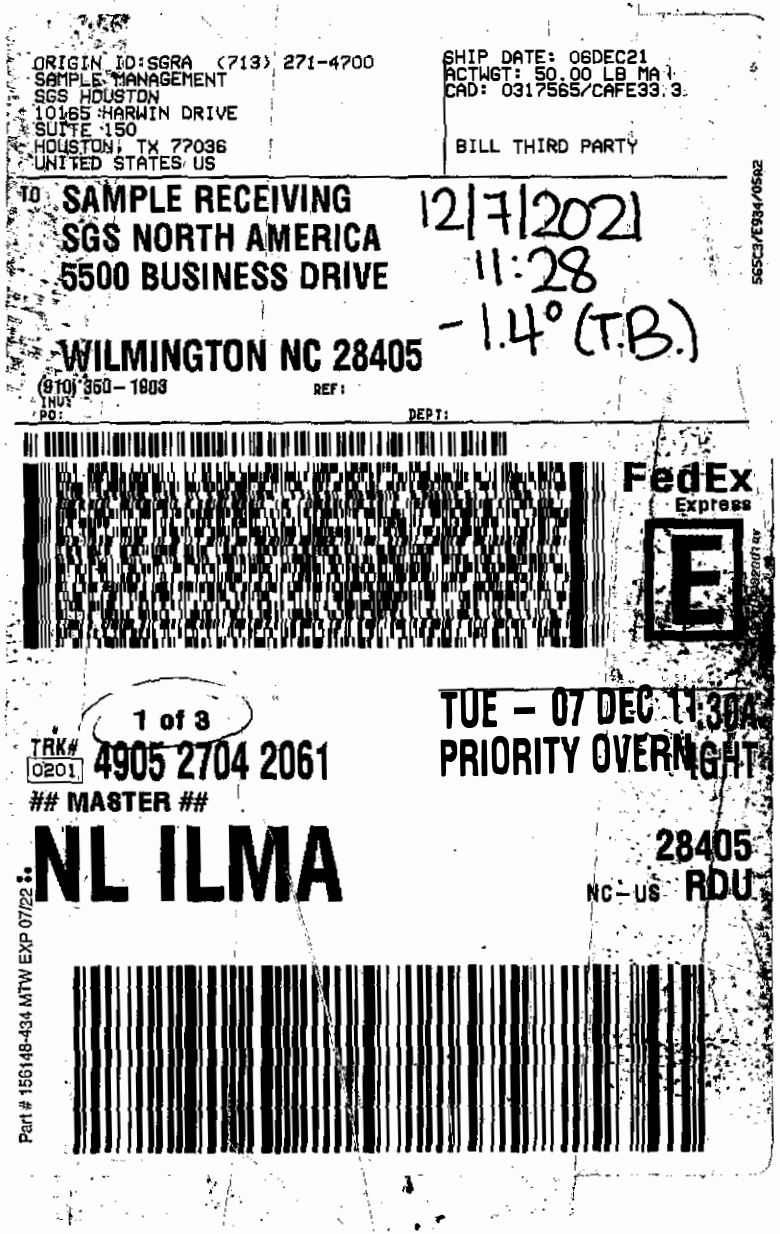
TRACKING #: 4905 2704 2072

* = Samples in this project.

SGS NORTH AMERICA INC | ENVIRONMENT, HEALTH & SAFETY 5500 Business Drive Wilmington, NC 28405 910 350 1903 | 866 846 8290 www.sgs.com/ehs

Member of the SGS Group (SGS SA)

B59985 1/1



ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 06DEC21
ACTWGT: 50.00 LB MA
CAD: 0317565/CAFE33.3

BILL THIRD PARTY

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903

12/7/2021
11:28
-1.4° (T.B.)

INV:
PO:
REF:
DEPT:

55SC3/E934/0502

FedEx Express

1 of 3

TRK# 0201 4905 2704 2061

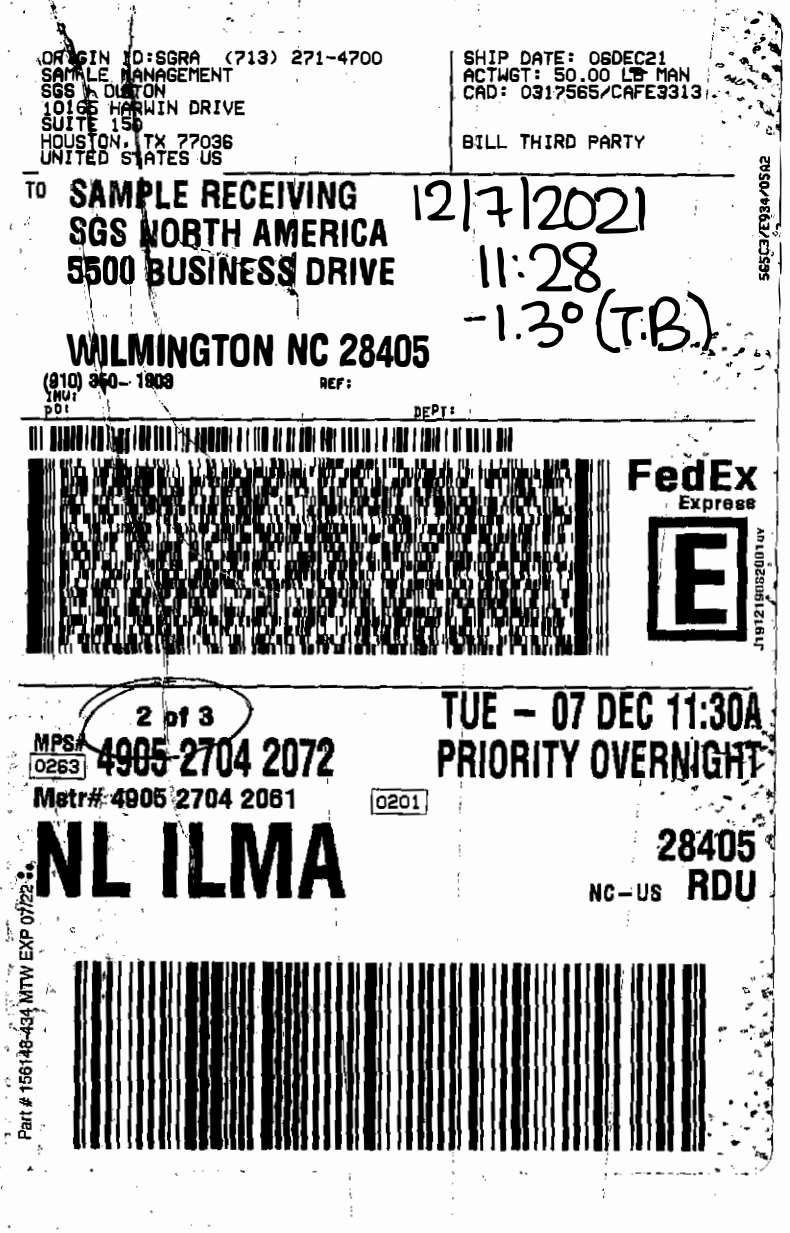
MASTER

TUE - 07 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Part # 156148-434 MTW EXP 07/22



ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 06DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903

12/7/2021
11:28
-1.3° (T.B.)

INV:
PO:
REF:
DEPT:

55SC3/E934/0502

FedEx Express

2 of 3

MPS# 0263 4905 2704 2072

Mstr# 4905 2704 2061 0201

TUE - 07 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Part # 156148-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5985

Initiation Date: 07-Dec-21

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 3 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR

10 g DWE extraction

Sample 005 is MS/MSD

Read and understood, initial and date: Prep Lab: KE JRH 12/7/21 12/8/21

HRMS Lab: 12/10/21

Reporting Instructions

M1613B

Full Report

Sample 005 is MS/MSD summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab: 12/10/21

PM Initials: akornegay Date: 07-Dec-2021

SGS

Methods: PCB / PAH; (PCDD/F) / WHO-2; QUANTICS / USV; DoD PCDD/F / PEST

Extraction Type: (SDS) / CLL; TALEX / Carbon SPE

Solid

Final Volume: 20mL

Batch# 18724

Split: ~~1/2 — 1/4~~

Extract Initial/Date: KE 12/8/21

Clean-up Initial/Date: ~~BB~~ 12/9/21

Transfer Init/Date: ~~BB~~ 12/9/21

Lab Sample ID	Extraction Position (Solvent: Tol)	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5985_18724_001	3	12.90				gray, clay-like
B5985_18724_002	4	12.34				gray, clay-like
B5985_18724_003	5	13.00				gray, sandy, clay-like
B5985_18724_004	6	15.62				gray/tan/white, clay-like
B5985_18724_005	7	13.11				dark gray/tan, clay-like, oil smell
B5985_18724_005MS	8	13.24				see 005
B5985_18724_005MSD	9	13.13				see 005
B5985_18724_006	10	13.09				gray, clay-like
B5985_18724_007	11	14.51				dark gray/tan, clay-like
B5985_18724_008	12	13.63				dark gray/tan, clay-like
MB1_18724	1	10.00				sodium sulfate
OPR1_18724	2	10.00				sodium sulfate

10 Dec 21

12/9/21

Supply IDs

~~BB~~ 12/9/21

Toluene ~~STL14.16~~ STL14.20

MeCHL STL14.2

Florisil SPL5.68

Hexane STL14.19

Silica SPL5.28D

S Nitrate N/A

Base Silica SPL5.67

HydroMatrix N/A

Tetradecane SPL5288

H_2SO_4 N/A

A Silica SPL5.65

Sodium Sulfate SPL5.28C

Additional Cleanup

Acid Partition Date/Initial:

Mini-Acid Date/Initial:

Carbon Column Date/Initial: 10 Dec 21 C

GPC Date/Initial:

Bond-Elute Date/Initial:

Cycle Time

TOL Start: 1500 Stop: 0915

HEX Start: Stop: 10 Dec 21 C

DCM Start: Stop:

SGS

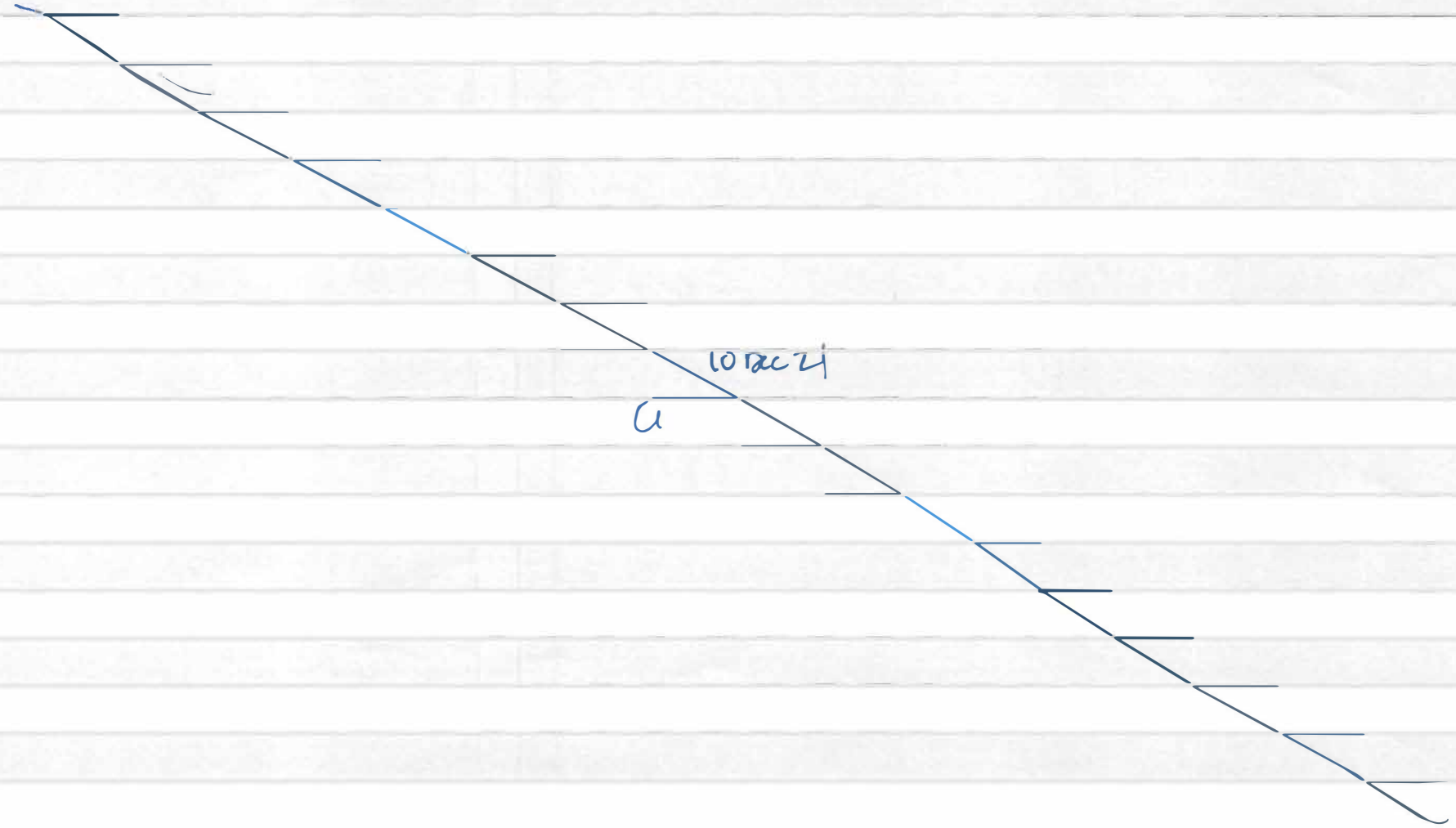
Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST

Solid

Batch# 18724

Inter-Department Communication Sheet

Large A/B column used at clean up – BBS 12/9/21



SGS

Wt. Volume Results

Batch #: 18724 **Comments:**

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5985_001	0.8	5.3	4.35	78.89%	78.89%			12.68	12.9	10.18
B5985_002	0.8	4.02	3.46	82.61%	82.61%			12.11	12.34	10.19
B5985_003	0.8	3.89	3.19	77.35%	77.35%			12.93	13	10.06
B5985_004	0.79	4.25	3.01	64.16%	64.16%			15.59	15.62	10.02
B5985_005	0.79	3.82	3.11	76.57%	76.57%			13.06	13.11	10.04
B5985_005MS	0.79	3.82	3.11	76.57%	76.57%			13.06	13.24	10.14
B5985_005MSD	0.79	3.82	3.11	76.57%	76.57%			13.06	13.13	10.05
B5985_006	0.8	4.66	3.75	76.42%	76.42%			13.08	13.09	10
B5985_007	0.79	5.36	4	70.24%	70.24%			14.24	14.51	10.19
B5985_008	0.79	3.85	3.07	74.51%	74.51%			13.42	13.63	10.16

reviewed

CA 10/22/21

% Solid Determination WorkSheet

SGS

Batch: 18724

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	Comments
B5985_18724_001	0.80	5.30	4.35	
B5985_18724_002	0.80	4.02	3.46	
B5985_18724_003	0.80	3.89	3.19	
B5985_18724_004	0.79	4.25	3.01	
B5985_18724_005	0.79	3.82	3.11	
B5985_18724_005MS	—	—	—	
B5985_18724_005MSD	—	—	—	
B5985_18724_006	0.80	4.66	3.75	
B5985_18724_007	0.79	5.36	4.00	
B5985_18724_008	0.79	3.85	3.07	1 10Dil21

12/4/21

Date/Initials: 12/7/21 KE

SGS

Methods: PCB / PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Solid

Batch # 18724

Lab Sample ID	Spiker Initials/Date: JRH 12/8/21	JRH 12/8/21	JRH 12/8/21	12/9/21	12/9/21		
	D/F Ax-A	D/F Ax-B	D/F FS	D/F CS	D/F JS		
	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5985_18724_001	—	—	KE	JRH	KE		
B5985_18724_002	—	—	KE	JRH	KE		
B5985_18724_003	—	—	KE	JRH	KE		
B5985_18724_004	—	—	KE	JRH	KE		
B5985_18724_005	—	—	KE	JRH	KE		
B5985_18724_005MS	KE	KE	KE	JRH	KE		
B5985_18724_005MSD	KE	KE	KE	JRH	KE		
B5985_18724_006	—	—	KE	JRH	KE		
B5985_18724_007	—	—	KE	JRH	KE		
B5985_18724_008	—	—	KE	JRH	KE		
MB1_18724	—	—	KE	JRH	KE		
OPR1_18724	—	—	KE		KE		

12/9/21

Standard Information

Pipette ID					JS 12/9/21
Spike ID	D/F Ax-A	D/F Ax-B	D/F FS	D/F CS	D/F JS
SIL #	24-154	25-187-2	26-1-7	25.338.1	25.309.1
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL
Expiration Date	7/9/28	6/22/22	8/2028	11/16/22	10/8/22

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
18	211209R18	3	CS3_211209_DF_RD ✓	1.00	SIL 25-347-1	PSW	984-034	10-Dec-2021	00:55:24
19	211209R19	59	OPR1_18724_DF	1.00	0_18724_OPR001	PSW	976-006	10-Dec-2021	01:42:07
20	211209R20	2	SBS_211209_DF_RB	1.00	SIL 20-61-1	PSW	976-368	10-Dec-2021	02:29:35
21	211209R21	58	MB1_18724_DF_SDS	10.00	Method Blank	PSW	702-371	10-Dec-2021	03:17:09
22	211209R22	60	B5985_18724_DF_001	10.18	11215131-120321-S-JC-SW-S-13	PSW	333-858	10-Dec-2021	04:04:38
23	211209R23	61	B5985_18724_DF_002	10.19	11215131-120421-S-JC-SC-S-10	PSW	723-731	10-Dec-2021	04:52:12
24	211209R24	62	B5985_18724_DF_003	10.06	11215131-120421-S-JC-SC-S-11	PSW	478-740	10-Dec-2021	05:39:45
25	211209R25	63	B5985_18724_DF_004	10.02	11215131-120421-S-JC-SC-S-12	PSW	786-451	10-Dec-2021	06:27:19
26	211209R26	64	B5985_18724_DF_005	10.04	11215131-120621-S-JC-SC-S-1	PSW	925-994	10-Dec-2021	07:14:47
27	211209R27	65	B5985_18724_DF_005MS	10.14	11215131-120621-S-JC-SC-S-1-MS	PSW	649-648	10-Dec-2021	08:02:20
28	211209R28	66	B5985_18724_DF_005MSD	10.05	11215131-120621-S-JC-SC-S-1-MSD	PSW	~~996-227~~ 775-448	10-Dec-2021	08:49:54
29	211209R29	67	B5985_18724_DF_006	10.00	11215131-120621-S-JC-SC-S-2	PSW	612-606 CL	10-Dec-2021	09:37:23
30	211209R30	68	B5985_18724_DF_007	10.19	11215131-120621-S-JC-SC-S-3	PSW	123-415 10Dec21	10-Dec-2021	10:24:51
31	211209R31	69	B5985_18724_DF_008 ✓	10.16	11215131-120621-S-JC-DUP-4	PSW	858-821	10-Dec-2021	11:12:19

REVIEWED
paul_walton , 12/10/2021, 1:29:55 PM

APPROVED
Carla_Lyon , 12/10/2021, 6:13:34 PM

Lab ID: MB1_18724_DF_SDS | **Acq'd:** 10 Dec 2021 03:17 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5985_18724 | **UTP:** 10-Dec-2021 12:46:19 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 702-371-YBZ

Datafile: 211209R21 | **Report:** 10 Dec 2021 12:48 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.34	-	5462.141	0.775
12378-PeCDD	NotFnd		1.0005	-		-	-	-	1.06	-	5111.275	0.882
123478-HxCDD	NotFnd		1.0003	-		-	-	-	1.06	-	4792.166	0.971
123678-HxCDD	NotFnd		1.0033	-		-	-	-	1.08	-	4792.166	1.01
123789-HxCDD	NotFnd		1.0110	-		-	-	-	1.02	-	4792.166	0.867
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	0.97	-	5174.547	0.996
OCDD	NotFnd		1.0003	-		-	-	-	1.07	-	5960.725	2.4
2378-TCDF	NotFnd		1.0006	-		-	-	-	0.96	-	4674.585	0.765
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	4736.657	0.684
23478-PeCDF	NotFnd		1.0006	-		-	-	-	0.94	-	4736.657	0.759
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.23	-	4714.295	0.71
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.13	-	4714.295	0.614
234678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	4714.295	0.741
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	4714.295	0.693
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.36	-	4813.13	0.602
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.30	-	4813.13	0.829
OCDF	NotFnd		1.0002	-		-	-	-	1.03	-	6391.14	2.48

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.32	1.0237	1.0237	0	1.00E+07	0.87	Y	1.03	90.1
ES 12378-PeCDD	33.65	1.2158	1.2162	+0.8	8.31E+06	1.70	Y	1.03	74.6
ES 123478-HxCDD	37.51	0.9920	0.9917	-0.7	7.30E+06	1.24	Y	0.99	89.5
ES 123678-HxCDD	37.63	0.9949	0.9948	-0.2	6.99E+06	1.22	Y	0.97	87.6
ES 123789-HxCDD	37.93	1.0026	1.0026	0	7.98E+06	1.23	Y	1.12	86.5
ES 1234678-HpCDD	40.53	1.0713	1.0714	+0.2	6.38E+06	0.98	Y	0.99	78.4
ES OCDD	43.07	1.1385	1.1385	0	6.77E+06	0.87	Y	0.78	53.1
ES 2378-TCDF	27.47	1.0519	1.0521	+0.3	1.37E+07	0.75	Y	1.08	76.7
ES 12378-PeCDF	32.21	1.2331	1.2337	+1.2	1.36E+07	1.58	Y	0.93	88
ES 23478-PeCDF	33.32	1.2754	1.2761	+1.4	1.30E+07	1.59	Y	0.92	85.3
ES 123478-HxCDF	36.53	0.9656	0.9657	+0.2	8.77E+06	0.53	Y	1.14	93.6
ES 123678-HxCDF	36.67	0.9693	0.9693	0	1.15E+07	0.52	Y	1.30	108
ES 234678-HxCDF	37.33	0.9869	0.9869	0	9.82E+06	0.52	Y	1.20	99.7
ES 123789-HxCDF	38.28	1.0121	1.0120	-0.2	8.04E+06	0.53	Y	1.14	86.3
ES 1234678-HpCDF	39.64	1.0478	1.0479	+0.2	7.44E+06	0.45	Y	0.95	95.5
ES 1234789-HpCDF	40.98	1.0832	1.0832	0	5.90E+06	0.43	Y	0.85	84.9
ES OCDF	43.25	1.1434	1.1434	0	7.99E+06	0.87	Y	0.93	52.7

Lab ID: MB1_18724_DF_SDS | **Acq'd:** 10 Dec 2021 03:17 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5985_18724 | **UTP:** 10-Dec-2021 12:46:19 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 702-371-YBZ

Datafile: 211209R21 | **Report:** 10 Dec 2021 12:48 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.66		-	-	-	1.08E+07	0.79	Y	-	-	
JS 1234-TCDF	26.11		-	-	-	1.65E+07	0.78	Y	-	-	
JS 123467-HxCDD	37.83		-	-	-	4.10E+06	1.32	Y	-	-	
CS 37Cl-2378-TCDD	28.34		1.0245	1.0245	0	4.58E+06	n/a	-	1.31	81.2	
CS 12347-PeCDD	33.15		1.1978	1.1983	+1.0	8.69E+06	1.54	Y	0.89	90.4	
CS 12346-PeCDF	31.68		1.2130	1.2136	+1.1	1.35E+07	1.50	Y	0.87	94.2	
CS 123469-HxCDF	36.98		0.9775	0.9776	+0.2	9.86E+06	0.48	Y	1.09	110	
CS 1234689-HpCDF	40.03		1.0580	1.0581	+0.2	7.23E+06	0.45	Y	0.86	102	
SS 37Cl-2378-TCDD	28.34		1.0245	1.0245	0	4.58E+06	n/a	-	1.26	90.6	Not used in this project.
SS 12347-PeCDD	33.15		1.1978	1.1983	+1.0	8.69E+06	1.54	Y	0.86	121	CL 10Dec21
SS 12346-PeCDF	31.68		1.2130	1.2136	+1.1	1.35E+07	1.50	Y	0.93	107	
SS 123469-HxCDF	36.98		0.9775	0.9776	+0.2	9.86E+06	0.48	Y	0.84	102	
SS 1234689-HpCDF	40.03		1.0580	1.0581	+0.2	7.23E+06	0.45	Y	0.91	107	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18724_DF_SDS **Acq'd: 10 Dec 2021 03:17 PSW** **Wt/Vol: 10.00 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: Method Blank B5985_18724 **UTP: 10-Dec-2021 12:46:19 PSW** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 702-371-YBZ**

Datafile: 211209R21 **Report: 10 Dec 2021 12:48 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		5462.141	0.775
1379-TCDD	NotFnd		0.8851						1.34		5462.141	0.775
1369-TCDD	NotFnd		0.9002						1.34		5462.141	0.775
1469-TCDD	NotFnd		0.9275						1.34		5462.141	0.775
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		5462.141	0.775
1378-TCDD	NotFnd		0.9427						1.34		5462.141	0.775
1268-TCDD	NotFnd		0.9498						1.34		5462.141	0.775
1478-TCDD	NotFnd		0.9584						1.34		5462.141	0.775
1279-TCDD	NotFnd		0.9644						1.34		5462.141	0.775
1234/1269-TCDD	NotFnd		0.9766						1.34		5462.141	0.775
1236-TCDD	NotFnd		0.9813						1.34		5462.141	0.775
1237/1238-TCDD	NotFnd		0.9906						1.34		5462.141	0.775
1239-TCDD	NotFnd		0.9952						1.34		5462.141	0.775
2378-TCDD	**NotFnd**		**1.0008**						**1.34**		**5462.141**	**0.775**
1278-TCDD	NotFnd		1.0122						1.34		5462.141	0.775
1267-TCDD	NotFnd		1.0168						1.34		5462.141	0.775
1289-TCDD	NotFnd		1.0349						1.34		5462.141	0.775
12479/12468-PeCDD	NotFnd		0.9267						1.06		5111.275	0.882
12469-PeCDD	NotFnd		0.9425						1.06		5111.275	0.882
12368-PeCDD	NotFnd		0.9588						1.06		5111.275	0.882
12478-PeCDD	NotFnd		0.9643						1.06		5111.275	0.882
12379-PeCDD	NotFnd		0.9673						1.06		5111.275	0.882
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		5111.275	0.882
12346/12347-PeCDD	NotFnd		0.9859						1.06		5111.275	0.882
12378-PeCDD	NotFnd		**1.0005**						**1.06**		**5111.275**	**0.882**
12367-PeCDD	NotFnd		1.0032						1.06		5111.275	0.882
12389-PeCDD	NotFnd		1.0135						1.06		5111.275	0.882
124679/124689-HxCDD	NotFnd		0.9544						1.05		4792.166	0.947
123468-HxCDD	NotFnd		0.9716						1.05		4792.166	0.947
123679/123689-HxCDD	NotFnd		0.9793						1.05		4792.166	0.947
123469-HxCDD	NotFnd		0.9829						1.05		4792.166	0.947
123478-HxCDD	NotFnd		**1.0003**						1.06		**4792.166**	**0.971**
123678-HxCDD	NotFnd		**1.0033**						1.08		**4792.166**	**1.01**
123467-HxCDD	NotFnd		1.0084						1.05		4792.166	0.947
123789-HxCDD	NotFnd		**1.0110**						1.02		**4792.166**	**0.867**

Lab ID: MB1_18724_DF_SDS | **Acq'd:** 10 Dec 2021 03:17 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5985_18724 | **UTP:** 10-Dec-2021 12:46:19 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 702-371-YBZ

Datafile: 211209R21 | **Report:** 10 Dec 2021 12:48 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9843						0.97		5174.547	0.996
1234678-HpCDD	**NotFnd**		**1.0003**						**0.97**		**5174.547**	**0.996**
OCDD	**NotFnd**		**1.0003**						**1.07**		**5960.725**	**2.4**
OCDD-a	NotFnd		1.0001						0.07		8649.798	56.5
1368-TCDF	NotFnd		0.8230						0.96		4674.585	0.765
1468-TCDF	NotFnd		0.8443						0.96		4674.585	0.765
2468-TCDF	NotFnd		0.8672						0.96		4674.585	0.765
1346/1246-TCDF	NotFnd		0.8802						0.96		4674.585	0.765
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		4674.585	0.765
1348-TCDF	NotFnd		0.8952						0.96		4674.585	0.765
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		4674.585	0.765
1268-TCDF	NotFnd		0.9136						0.96		4674.585	0.765
1467-TCDF	NotFnd		0.9185						0.96		4674.585	0.765
1478-TCDF	NotFnd		0.9247						0.96		4674.585	0.765
1369/1237-TCDF	NotFnd		0.9381						0.96		4674.585	0.765
2467-TCDF	NotFnd		0.9427						0.96		4674.585	0.765
2368-TCDF	NotFnd		0.9484						0.96		4674.585	0.765
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		4674.585	0.765
1278-TCDF	NotFnd		0.9682						0.96		4674.585	0.765
1349-TCDF	NotFnd		0.9725						0.96		4674.585	0.765
1267-TCDF	NotFnd		0.9782						0.96		4674.585	0.765
2346/1249-TCDF	NotFnd		0.9846						0.96		4674.585	0.765
2347/1279-TCDF	NotFnd		0.9926						0.96		4674.585	0.765
2348-TCDF	NotFnd		0.9966						0.96		4674.585	0.765
2378-TCDF	**NotFnd**		**1.0006**						**0.96**		**4674.585**	**0.765**
2367/3467-TCDF	NotFnd		1.0139						0.96		4674.585	0.765
1269-TCDF	NotFnd		1.0226						0.96		4674.585	0.765
1239-TCDF	NotFnd		1.0322						0.96		4674.585	0.765
1289-TCDF	NotFnd		1.0729						0.96		4674.585	0.765
13468/12468-PeCDF	NotFnd		0.9135						0.94		6662.996	1.01
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		4736.657	0.72
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		4736.657	0.72
14678-PeCDF	NotFnd		0.9693						0.94		4736.657	0.72
13479-PeCDF	NotFnd		0.9723						0.94		4736.657	0.72
13469/12479-PeCDF	NotFnd		0.9799						0.94		4736.657	0.72
12346-PeCDF	NotFnd		0.9842						0.94		4736.657	0.72

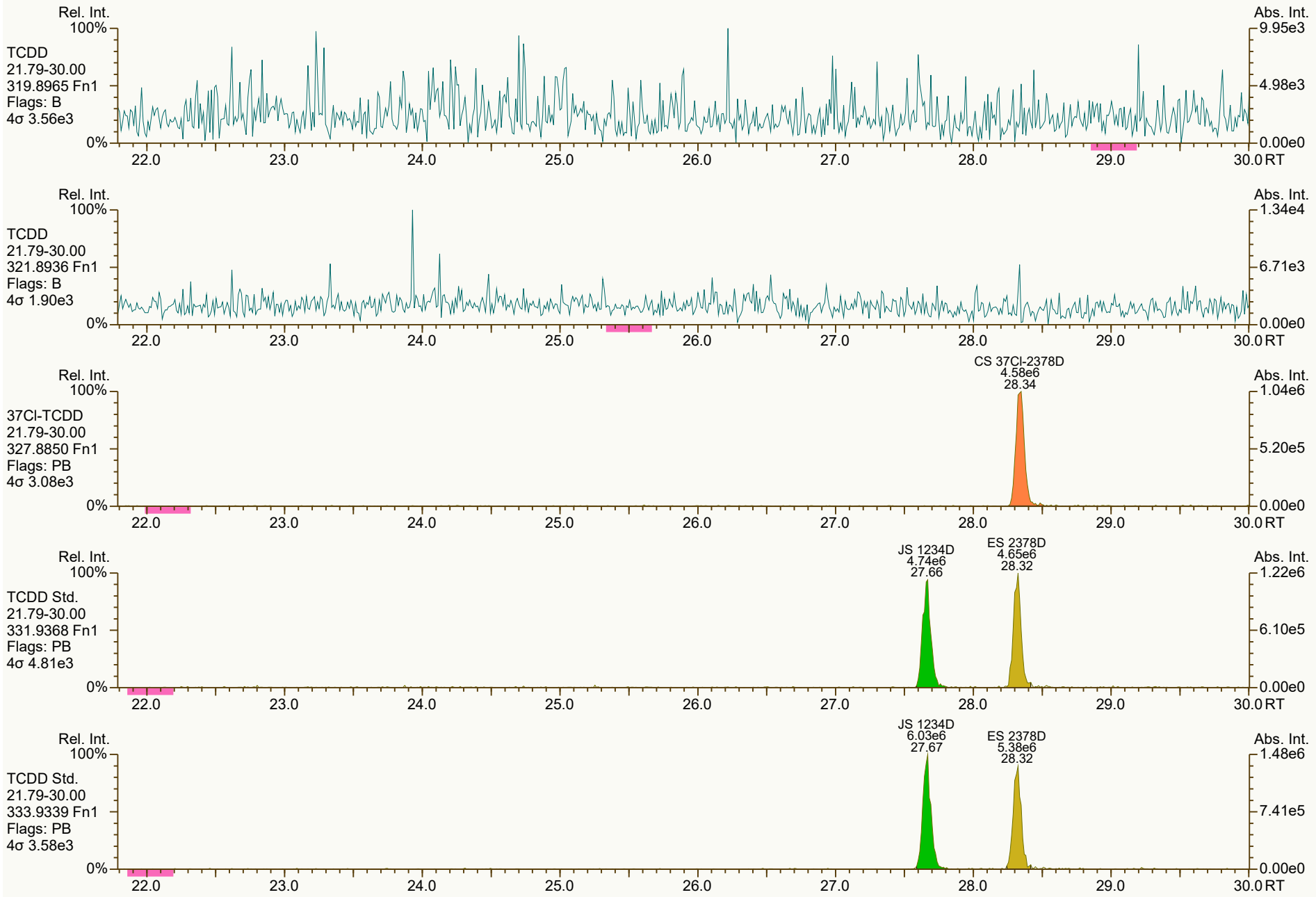
Lab ID: MB1_18724_DF_SDS | **Acq'd:** 10 Dec 2021 03:17 PSW | **Wt/Vol:** 10.00 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: Method Blank B5985_18724 | **UTP:** 10-Dec-2021 12:46:19 PSW | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 702-371-YBZ

Datafile: 211209R21 | **Report:** 10 Dec 2021 12:48 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		4736.657	0.72
12347-PeCDF	NotFnd		0.9893						0.94		4736.657	0.72
12348-PeCDF	NotFnd		0.9941						0.94		4736.657	0.72
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**4736.657**	**0.684**
12678/12367-PeCDF	NotFnd		1.0090						0.94		4736.657	0.72
12379-PeCDF	NotFnd		1.0143						0.94		4736.657	0.72
12679-PeCDF	NotFnd		0.9929						0.94		4736.657	0.72
23467/12369-PeCDF	NotFnd		0.9966						0.94		4736.657	0.72
23478-PeCDF	**NotFnd**		**1.0006**						**0.94**		**4736.657**	**0.759**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		4736.657	0.72
12349-PeCDF	NotFnd		1.0102						0.94		4736.657	0.72
12389-PeCDF	NotFnd		1.0325						0.94		4736.657	0.72
123468-HxCDF	NotFnd		0.9628						1.16		4714.295	0.685
124678/134678-HxCDF	NotFnd		0.9683						1.16		4714.295	0.685
134679-HxCDF	NotFnd		0.9746						1.16		4714.295	0.685
124679-HxCDF	NotFnd		0.9798						1.16		4714.295	0.685
124689-HxCDF	NotFnd		0.9859						1.16		4714.295	0.685
123467-HxCDF	NotFnd		0.9972						1.16		4714.295	0.685
123478-HxCDF	**NotFnd**		**1.0004**						**1.23**		**4714.295**	**0.71**
123678-HxCDF	**NotFnd**		**1.0004**						**1.13**		**4714.295**	**0.614**
123479-HxCDF	NotFnd		1.0049						1.16		4714.295	0.685
123469-HxCDF	NotFnd		1.0088						1.16		4714.295	0.685
123679-HxCDF	NotFnd		0.9943						1.16		4714.295	0.685
234678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**4714.295**	**0.741**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		4714.295	0.685
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**4714.295**	**0.693**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		4714.295	0.685
1234678-HpCDF	**NotFnd**		**1.0003**						**1.36**		**4813.13**	**0.602**
1234679-HpCDF	NotFnd		1.0067						1.33		4813.13	0.702
1234689-HpCDF	NotFnd		1.0100						1.33		4813.13	0.702
1234789-HpCDF	**NotFnd**		**1.0003**						**1.30**		**4813.13**	**0.829**
OCDF	**NotFnd**		**1.0002**						**1.03**		**6391.14**	**2.48**
OCDF-a	NotFnd		1.0002						0.06		8168.634	54.8


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.62e6
1.31e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.27e6
1.13e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.00e7
5.01e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.76e6
2.38e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 3.56e3
0%
Abs. Int.
9.95e3
4.98e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 1.90e3
0%
Abs. Int.
1.34e4
6.71e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.08e3
0%
CS 37Cl-2378D
4.58e6
28.34
Abs. Int.
1.04e6
5.20e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 4.81e3
0%
JS 1234D
4.74e6
27.66
ES 2378D
4.65e6
28.32
Abs. Int.
1.22e6
6.10e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 3.58e3
0%
JS 1234D
6.03e6
27.67
ES 2378D
5.38e6
28.32
Abs. Int.
1.48e6
7.41e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

SGS ID: MB1_18724_DF_SDS | Sample ID: Method Blank | Acq: 10-Dec-2021 03:17:09

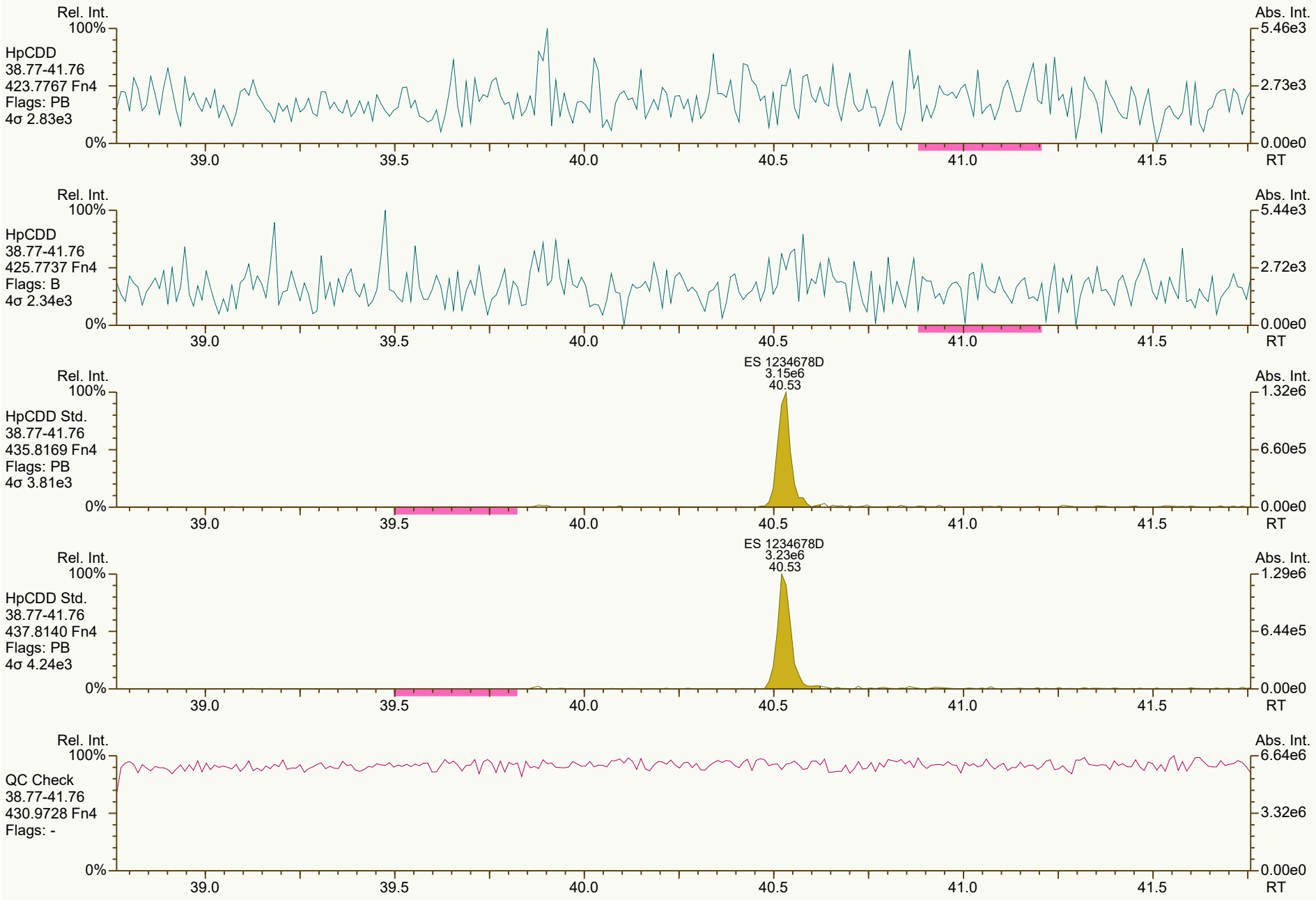
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58 | User: PSW Datafile: 211209R21



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\MB1_18724_DF_SDS.utp_res, saved 10-Dec-2021 12:46 (PSW) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7862, 3608 scc: 702-371 | *PKD: 10-Dec-2021 08:57 Printed: 10-Dec-2021 12:55 Page 3 of 12*

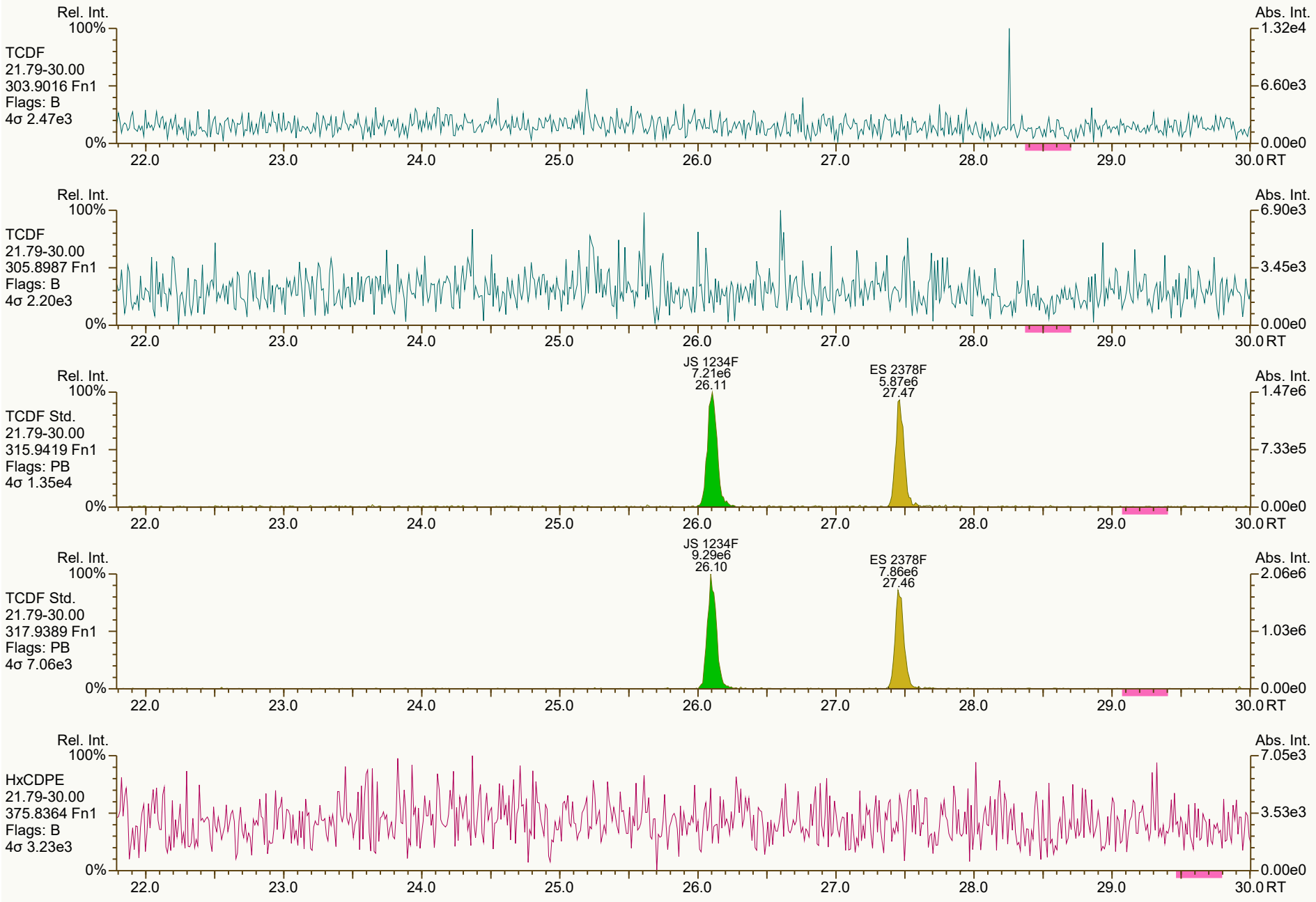

Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: B
4σ 2.53e3
0%
Abs. Int.
1.46e4
7.30e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 2.26e3
0%
Abs. Int.
5.19e3
2.60e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 5.55e3
0%
ES 123478D
4.04e6
37.51
ES 123678D
3.85e6
37.63
JS 123467D
2.33e6*
37.83
ES 123789D
4.41e6*
37.93
Abs. Int.
1.51e6
7.53e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 3.74e3
0%
ES 123478D
3.26e6
37.51
ES 123678D
3.14e6
37.63
JS 123467D
1.77e6*
37.83
ES 123789D
3.57e6*
37.93
Abs. Int.
1.23e6
6.14e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.00e7
5.01e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.83e3
0%
Abs. Int.
5.46e3
2.73e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: B
4σ 2.34e3
0%
Abs. Int.
5.44e3
2.72e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
ES 1234678D
3.15e6
40.53
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 3.81e3
0%
Abs. Int.
1.32e6
6.60e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
ES 1234678D
3.23e6
40.53
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.24e3
0%
Abs. Int.
1.29e6
6.44e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: B
4σ 2.64e3
0%
Abs. Int.
1.47e4
7.37e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 3.32e3
0%
Abs. Int.
9.91e3
4.96e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.14e6*
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 5.14e3
0%
Abs. Int.
1.08e6
5.39e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.63e6*
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 3.81e3
0%
Abs. Int.
1.22e6
6.12e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.76e6
2.38e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: MB1_18724_DF_SDS | Sample ID: Method Blank | Acq: 10-Dec-2021 03:17:09

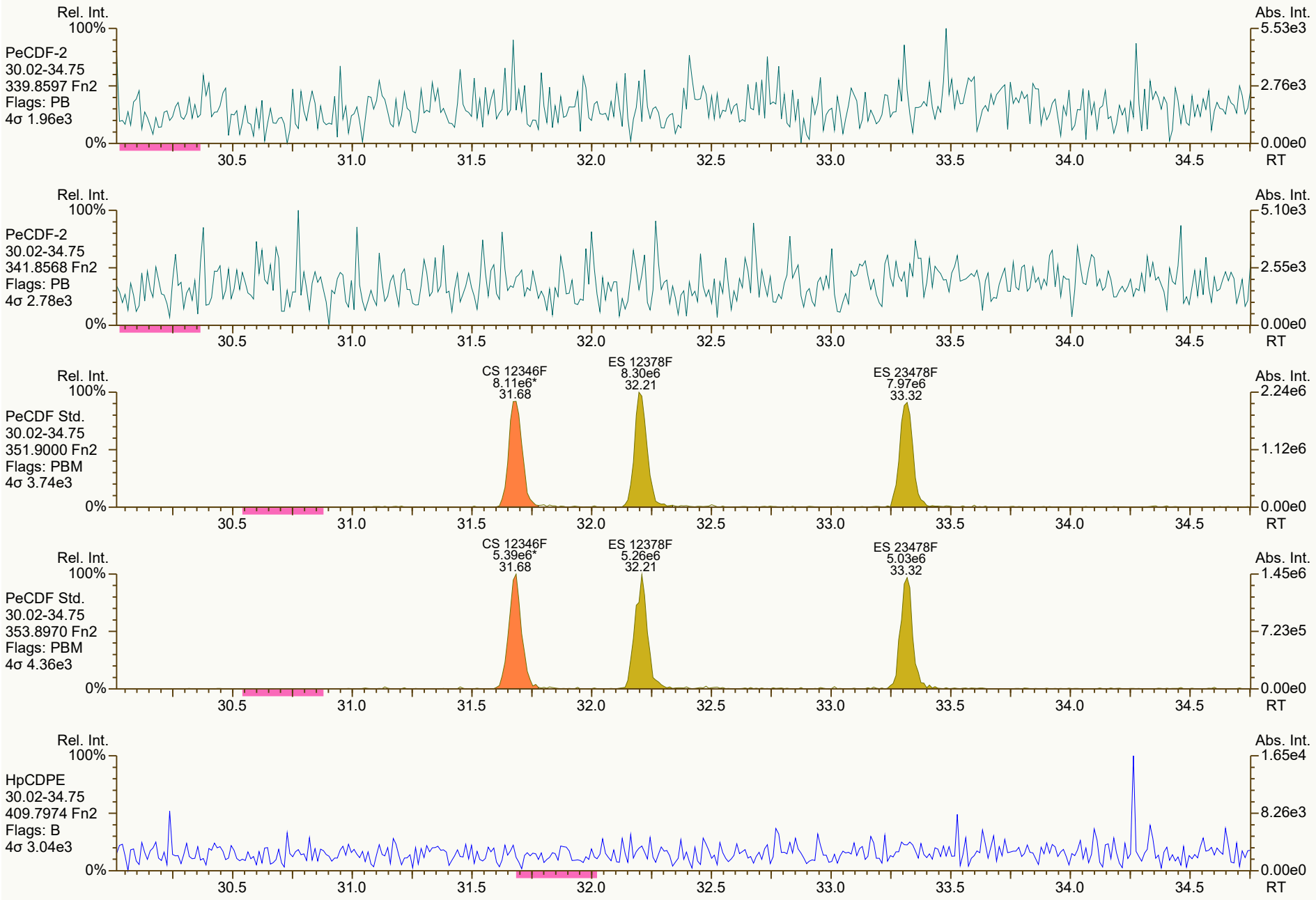
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 58 | User: PSW Datafile: 211209R21

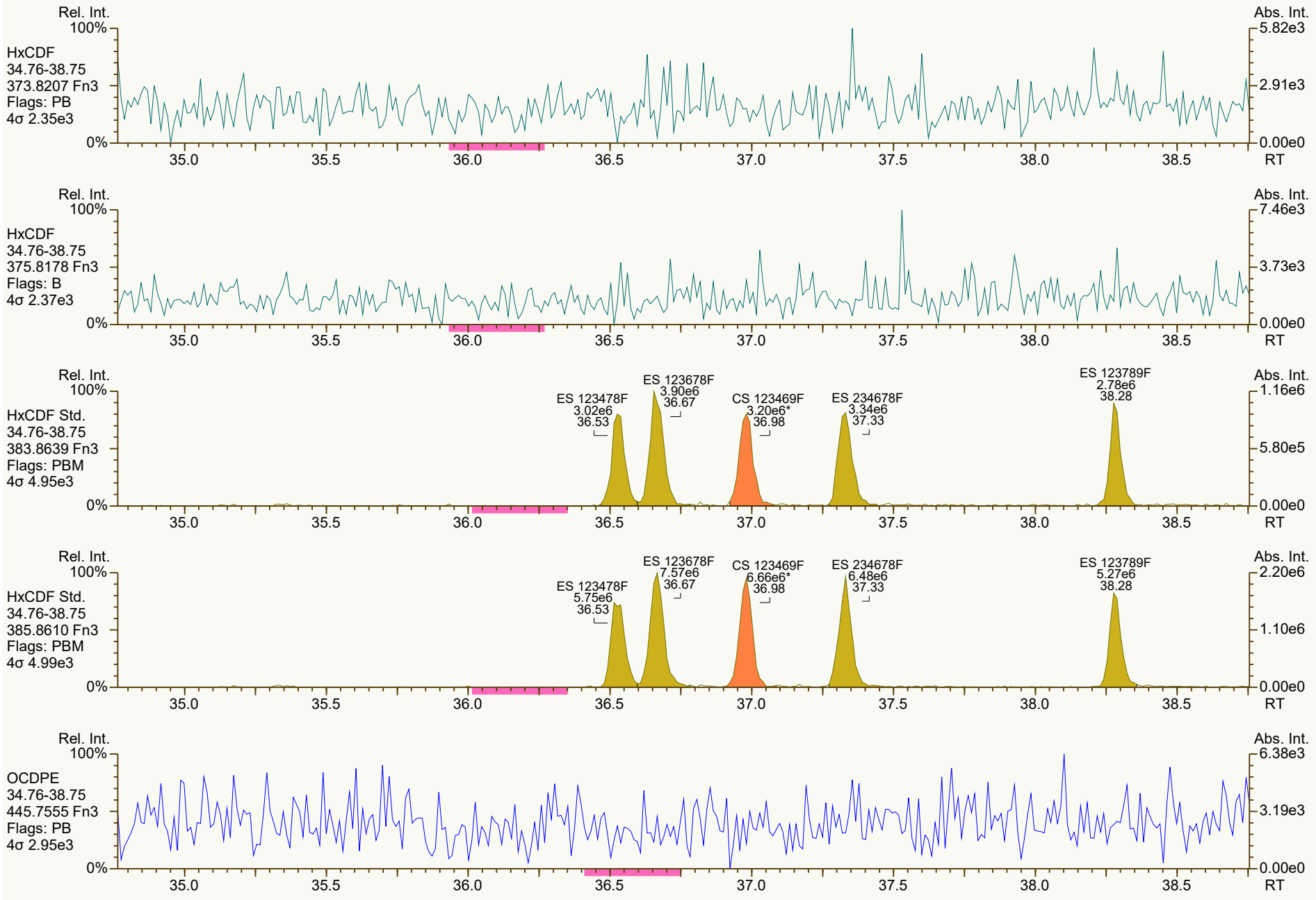


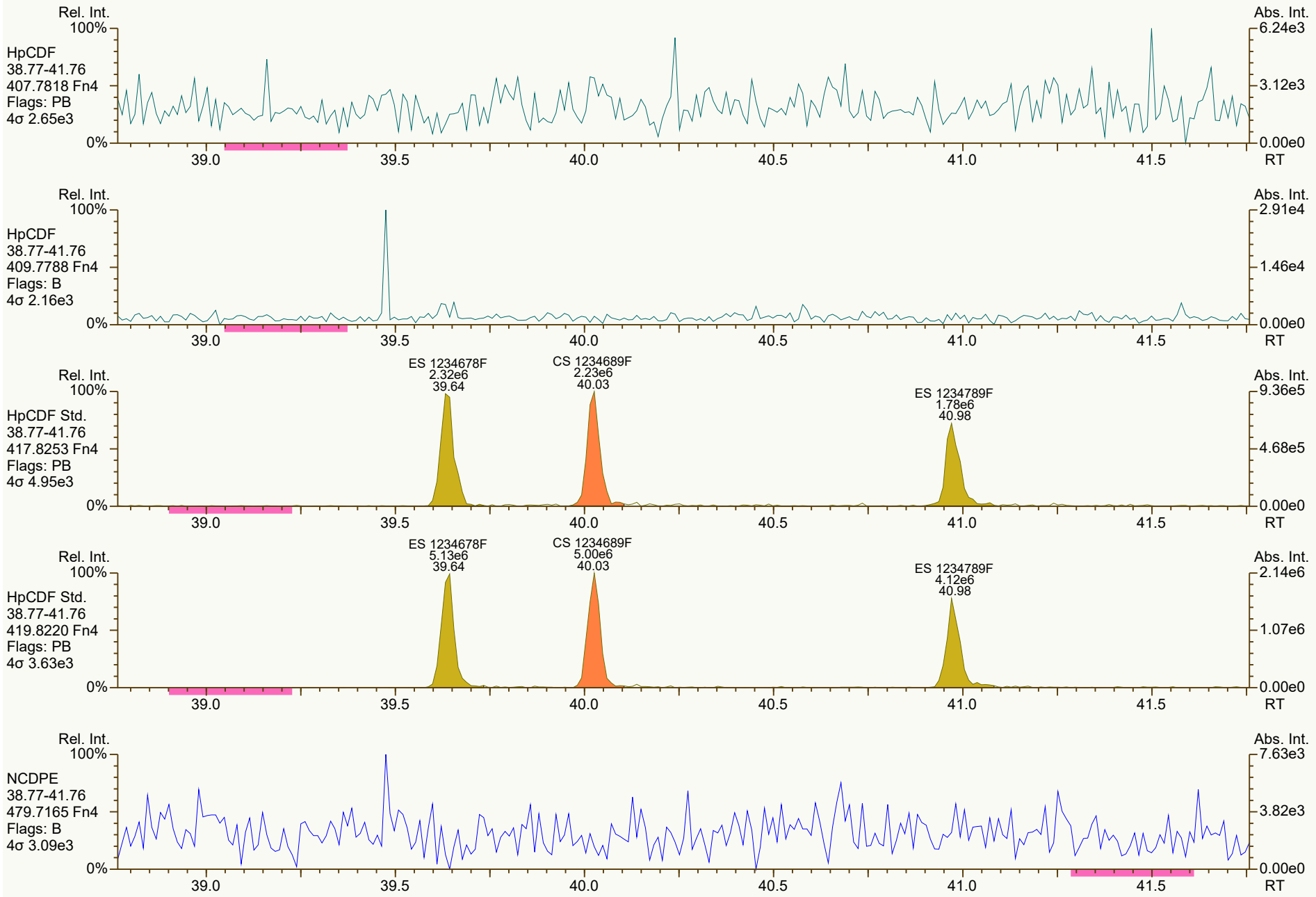
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\MB1_18724_DF_SDS.utp_res, saved 10-Dec-2021 12:46 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9426, 3669, 4270 scc: 702-371 *PKD: 10-Dec-2021 08:57 Printed: 10-Dec-2021 12:55 Page 7 of 12*


Rel. Int.
100%
0%
Abs. Int.
8.52e3
4.26e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 3.03e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
9.43e3
4.72e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.64e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.62e6
1.31e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 1.96e3
0%
Abs. Int.
5.53e3
2.76e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 2.78e3
0%
Abs. Int.
5.10e3
2.55e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PBM
4σ 3.74e3
0%
CS 12346F
8.11e6*
31.68
ES 12378F
8.30e6
32.21
ES 23478F
7.97e6
33.32
Abs. Int.
2.24e6
1.12e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PBM
4σ 4.36e3
0%
CS 12346F
5.39e6*
31.68
ES 12378F
5.26e6
32.21
ES 23478F
5.03e6
33.32
Abs. Int.
1.45e6
7.23e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.04e3
0%
Abs. Int.
1.65e4
8.26e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PB
4σ 2.35e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.75
375.8178 Fn3
Flags: B
4σ 2.37e3
0%
Abs. Int.
7.46e3
3.73e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PBM
4σ 4.95e3
0%
ES 123478F
3.02e6
36.53
ES 123678F
3.90e6
36.67
CS 123469F
3.20e6*
36.98
ES 234678F
3.34e6
37.33
ES 123789F
2.78e6
38.28
Abs. Int.
1.16e6
5.80e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PBM
4σ 4.99e3
0%
ES 123478F
5.75e6
36.53
ES 123678F
7.57e6
36.67
CS 123469F
6.66e6*
36.98
ES 234678F
6.48e6
37.33
ES 123789F
5.27e6
38.28
Abs. Int.
2.20e6
1.10e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.75
445.7555 Fn3
Flags: PB
4σ 2.95e3
0%
Abs. Int.
6.38e3
3.19e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 2.65e3
0%
Abs. Int.
6.24e3
3.12e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: B
4σ 2.16e3
0%
Abs. Int.
2.91e4
1.46e4
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 4.95e3
0%
ES 1234678F
2.32e6
39.64
CS 1234689F
2.23e6
40.03
ES 1234789F
1.78e6
40.98
Abs. Int.
9.36e5
4.68e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 3.63e3
0%
ES 1234678F
5.13e6
39.64
CS 1234689F
5.00e6
40.03
ES 1234789F
4.12e6
40.98
Abs. Int.
2.14e6
1.07e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.09e3
0%
Abs. Int.
7.63e3
3.82e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 2.78e3
0%
Abs. Int.
8.93e3
4.46e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 3.61e3
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.73e6
43.25
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.92e3
0%
Abs. Int.
1.17e6
5.87e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
4.27e6
43.25
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 3.93e3
0%
Abs. Int.
1.50e6
7.49e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.11e3
0%
Abs. Int.
5.69e3
2.85e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5985_18724_DF_001 **Acq'd:** 10 Dec 2021 04:04 PSW **Wt/Vol:** 10.18 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-JC-SW-S-13 **UTP:** 10-Dec-2021 12:46:19 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 333-858-SXQ

Datafile: 211209R22 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.35		1.0008	1.0007	-0.2	6.40E+06	0.79	Y	1.34	87.6	6439.355	0.893
12378-PeCDD	33.68	J	1.0005	1.0008	+0.6	7.40E+04	1.49	Y	1.06	1.36	4851.363	0.796
123478-HxCDD	NotFnd		1.0003	-		-	-	-	1.06	-	5853.542	1.22
123678-HxCDD	NotFnd		1.0033	-		-	-	-	1.08	-	5853.542	1.11
123789-HxCDD	NotFnd		1.0110	-		-	-	-	1.02	-	5853.542	1.08
1234678-HpCDD	40.55		1.0003	1.0003	0	1.13E+06	1.02	Y	0.97	32.5	5598.683	1.08
OCDD	43.08		1.0003	1.0002	-0.3	1.19E+07	0.87	Y	1.07	628	7095.815	2.66
2378-TCDF	27.50		1.0006	1.0008	+0.3	2.30E+07	0.79	Y	0.96	302	5181.994	0.754
12378-PeCDF	32.23		1.0006	1.0004	-0.4	7.13E+05	1.45	Y	0.95	9.87	5285.886	0.649
23478-PeCDF	33.35		1.0006	1.0007	+0.2	5.56E+05	1.57	Y	0.94	7.98	5285.886	0.696
123478-HxCDF	36.55		1.0004	1.0005	+0.2	9.45E+05	1.38	Y	1.23	14.4	4881.839	0.652
123678-HxCDF	36.69		1.0004	1.0004	0	2.33E+05	1.31	Y	1.13	3.39	4881.839	0.607
234678-HxCDF	37.36	J EMPC	1.0005	1.0007	+0.4	4.25E+04	0.94	N	1.15	0.696	4881.839	0.654
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	4881.839	0.716
1234678-HpCDF	39.65	EMPC	1.0003	1.0003	0	2.70E+05	0.88	N	1.36	4.89	4787.604	0.558
1234789-HpCDF	40.99	J EMPC	1.0003	1.0002	-0.2	4.31E+04	0.65	N	1.30	1.04	4787.604	0.76
OCDF	43.27	J EMPC	1.0002	1.0004	+0.5	1.03E+05	1.10	N	1.03	4.47	5249.602	1.64

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.33		1.0237	1.0237	0	1.07E+07	0.79	Y	1.03	81.4
ES 12378-PeCDD	33.65		1.2158	1.2161	+0.6	1.01E+07	1.55	Y	1.03	77
ES 123478-HxCDD	37.52		0.9920	0.9918	-0.5	8.11E+06	1.32	Y	0.99	84.9
ES 123678-HxCDD	37.64		0.9949	0.9949	0	7.51E+06	1.28	Y	0.97	80.4
ES 123789-HxCDD	37.94		1.0026	1.0027	+0.2	9.02E+06	1.33	Y	1.12	83.6
ES 1234678-HpCDD	40.54		1.0713	1.0714	+0.2	6.99E+06	1.05	Y	0.99	73.4
ES OCDD	43.07		1.1385	1.1385	0	6.95E+06	1.02	N	0.78	46.6
ES 2378-TCDF	27.47		1.0519	1.0519	0	1.56E+07	0.82	Y	1.08	74.6
ES 12378-PeCDF	32.22		1.2331	1.2336	+1.0	1.50E+07	1.71	Y	0.93	83.6
ES 23478-PeCDF	33.32		1.2754	1.2759	+1.0	1.46E+07	1.60	Y	0.92	82.1
ES 123478-HxCDF	36.54		0.9656	0.9657	+0.2	1.05E+07	0.53	Y	1.14	95.5
ES 123678-HxCDF	36.67		0.9693	0.9693	0	1.20E+07	0.52	Y	1.30	96.1
ES 234678-HxCDF	37.34		0.9869	0.9869	0	1.04E+07	0.51	Y	1.20	90.3
ES 123789-HxCDF	38.29		1.0121	1.0121	0	9.25E+06	0.46	Y	1.14	84.8
ES 1234678-HpCDF	39.64		1.0478	1.0479	+0.2	7.98E+06	0.39	Y	0.95	87.5
ES 1234789-HpCDF	40.99		1.0832	1.0833	+0.2	6.26E+06	0.50	Y	0.85	77
ES OCDF	43.26		1.1434	1.1433	-0.3	8.78E+06	0.95	Y	0.93	49.4

Lab ID: B5985_18724_DF_001 **Acq'd:** 10 Dec 2021 04:04 PSW **Wt/Vol:** 10.18 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120321-S-JC-SW-S-13 **UTP:** 10-Dec-2021 12:46:19 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 333-858-SXQ

Datafile: 211209R22 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.67		-	-	-	1.27E+07	0.84	Y	-	-	
JS 1234-TCDF	26.12		-	-	-	1.92E+07	0.80	Y	-	-	
JS 123467-HxCDD	37.83		-	-	-	4.80E+06	1.29	Y	-	-	
CS 37Cl-2378-TCDD	28.35		1.0245	1.0244	-0.2	5.16E+06	n/a	-	1.31	77.5	
CS 12347-PeCDD	33.16		1.1978	1.1981	+0.6	9.61E+06	1.71	Y	0.89	84.8	
CS 12346-PeCDF	31.69		1.2130	1.2134	+0.8	1.54E+07	1.51	Y	0.87	92.1	
CS 123469-HxCDF	36.99		0.9775	0.9776	+0.2	1.11E+07	0.54	Y	1.09	106	
CS 1234689-HpCDF	40.03		1.0580	1.0581	+0.2	8.08E+06	0.45	Y	0.86	97.4	
~~SS 37Cl-2378-TCDD~~	~~28.35~~		~~1.0245~~	~~1.0244~~	~~-0.2~~	~~5.16E+06~~	~~n/a~~		~~1.26~~	~~95.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.16~~		~~1.1978~~	~~1.1981~~	~~+0.6~~	~~9.61E+06~~	~~1.71~~	~~Y~~	~~0.86~~	~~110~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.69~~		~~1.2130~~	~~1.2134~~	~~+0.8~~	~~1.54E+07~~	~~1.51~~	~~Y~~	~~0.93~~	~~110~~	
~~SS 123469-HxCDF~~	~~36.99~~		~~0.9775~~	~~0.9776~~	~~+0.2~~	~~1.11E+07~~	~~0.54~~	~~Y~~	~~0.84~~	~~110~~	
~~SS 1234689-HpCDF~~	~~40.03~~		~~1.0580~~	~~1.0581~~	~~+0.2~~	~~8.08E+06~~	~~0.45~~	~~Y~~	~~0.91~~	~~111~~	

Totals	Conc	EMPC
Total TCDD	99.6	99.6
Total PeCDD	7.48	7.48
Total HxCDD	36.8	36.8
Total HpCDD	109	109
Total Tetra-Octa Dioxins	881	881
Total TCDF	559	591
Total PeCDF	23.3	25.8
Total HxCDF	21.6	22.3
Total HpCDF	3.06	8.99
Total Tetra-Octa Furans	606	653
Total Tetra-Octa Dioxins & Furans	1490	1530

Lab ID: B5985_18724_DF_001 **Acq'd: 10 Dec 2021 04:04 PSW** **Wt/Vol: 10.18 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-JC-SW-S-13 **UTP: 10-Dec-2021 12:46:19 PSW** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 333-858-SXQ**

Datafile: 211209R22 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		6439.355	0.893
1379-TCDD	NotFnd		0.8851						1.34		6439.355	0.893
1369-TCDD	NotFnd		0.9002						1.34		6439.355	0.893
1469-TCDD	26.28		0.9275	0.9276	+0.2	3.64E+05	0.77	Y	1.34	4.99	6439.355	0.893
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6439.355	0.893
1378-TCDD	NotFnd		0.9427						1.34		6439.355	0.893
1268-TCDD	NotFnd		0.9498						1.34		6439.355	0.893
1478-TCDD	NotFnd		0.9584						1.34		6439.355	0.893
1279-TCDD	NotFnd		0.9644						1.34		6439.355	0.893
1234/1269-TCDD	NotFnd		0.9766						1.34		6439.355	0.893
1236-TCDD	NotFnd		0.9813						1.34		6439.355	0.893
1237/1238-TCDD	NotFnd		0.9906						1.34		6439.355	0.893
1239-TCDD	NotFnd		0.9952						1.34		6439.355	0.893
2378-TCDD	**28.35**		**1.0008**	1.0007	**-0.2**	6.40E+06	0.79	Y	**1.34**	**87.6**	**6439.355**	**0.893**
1278-TCDD	28.68		1.0122	1.0123	+0.2	5.12E+05	0.77	Y	1.34	7	6439.355	0.893
1267-TCDD	NotFnd		1.0168						1.34		6439.355	0.893
1289-TCDD	NotFnd		1.0349						1.34		6439.355	0.893
12479/12468-PeCDD	NotFnd		0.9267						1.06		4851.363	0.796
12469-PeCDD	31.72		0.9425	0.9424	-0.2	2.68E+05	1.43	Y	1.06	4.91	4851.363	0.796
12368-PeCDD	NotFnd		0.9588						1.06		4851.363	0.796
12478-PeCDD	NotFnd		0.9643						1.06		4851.363	0.796
12379-PeCDD	NotFnd		0.9673						1.06		4851.363	0.796
12369/12467/12489-PeCDD	32.82	J	0.9750	0.9751	+0.2	6.59E+04	1.51	Y	1.06	1.21	4851.363	0.796
12346/12347-PeCDD	NotFnd		0.9859						1.06		4851.363	0.796
12378-PeCDD	33.68	J	**1.0005**	**1.0008**	**+0.6**	**7.40E+04**	**1.49**	**Y**	**1.06**	**1.36**	**4851.363**	**0.796**
12367-PeCDD	NotFnd		1.0032						1.06		4851.363	0.796
12389-PeCDD	NotFnd		1.0135						1.06		4851.363	0.796
124679/124689-HxCDD	35.82		0.9544	0.9547	+0.6	1.33E+06	1.18	Y	1.05	30.3	5853.542	1.13
123468-HxCDD	NotFnd		0.9716						1.05		5853.542	1.13
123679/123689-HxCDD	36.76		0.9793	0.9796	+0.7	2.86E+05	1.16	Y	1.05	6.52	5853.542	1.13
123469-HxCDD	NotFnd		0.9829						1.05		5853.542	1.13
123478-HxCDD	NotFnd		**1.0003**						1.06		**5853.542**	**1.22**
123678-HxCDD	NotFnd		**1.0033**						1.08		**5853.542**	**1.11**
123467-HxCDD	NotFnd		1.0084						1.05		5853.542	1.13
123789-HxCDD	NotFnd		**1.0110**						1.02		**5853.542**	**1.08**

Lab ID: B5985_18724_DF_001 **Acq'd: 10 Dec 2021 04:04 PSW** **Wt/Vol: 10.18 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-JC-SW-S-13 **UTP: 10-Dec-2021 12:46:19 PSW** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 333-858-SXQ**

Datafile: 211209R22 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

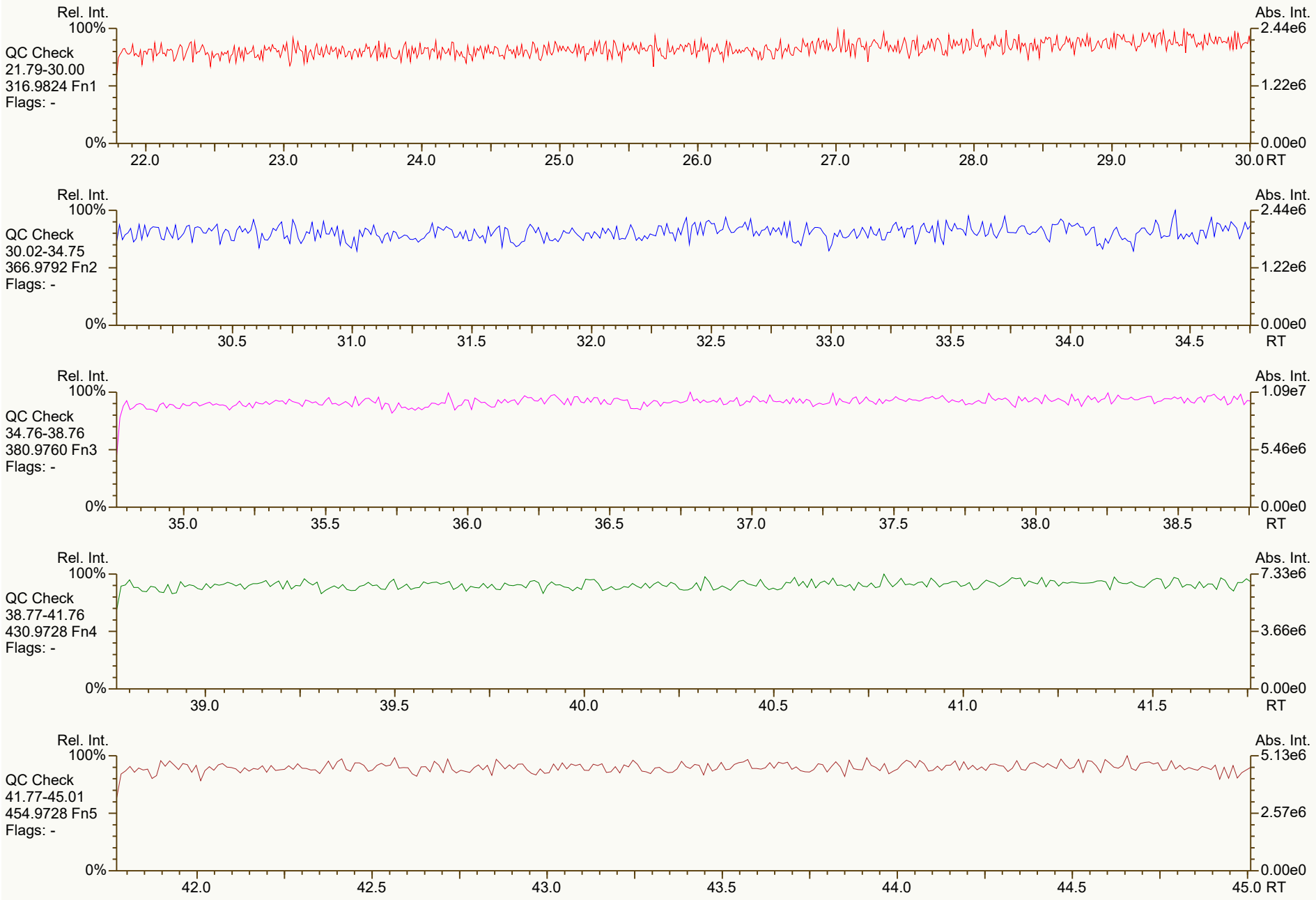
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.90		0.9843	0.9843	0	2.65E+06	1.01	Y	0.97	76.6	5598.683	1.08
1234678-HpCDD	**40.55**		**1.0003**	**1.0003**	**0**	**1.13E+06**	**1.02**	**Y**	**0.97**	**32.5**	**5598.683**	**1.08**
OCDD	**43.08**		**1.0003**	**1.0002**	**-0.3**	**1.19E+07**	**0.87**	**Y**	**1.07**	**628**	**7095.815**	**2.66**
OCDD-a	43.08	**EMPC**	1.0001	1.0001	0	6.49E+05	2.03	N	0.07	556	8708.573	52.8
1368-TCDF	NotFnd		0.8230						0.96		5181.994	0.754
1468-TCDF	NotFnd		0.8443						0.96		5181.994	0.754
2468-TCDF	23.82	EMPC	0.8672	0.8672	0	7.16E+04	1.11	N	0.96	0.941	5181.994	0.754
1346/1246-TCDF	24.25		0.8802	0.8827	+3.6	6.09E+04	0.69	Y	0.96	0.801	5181.994	0.754
1347/1378/1247-TCDF	24.35		0.8855	0.8862	+1.0	2.43E+05	0.87	Y	0.96	3.2	5181.994	0.754
1348-TCDF	24.59		0.8952	0.8952	0	1.19E+05	0.78	Y	0.96	1.56	5181.994	0.754
1248/1367/1379-TCDF	24.69		0.9000	0.8987	-1.9	1.14E+06	0.78	Y	0.96	15	5181.994	0.754
1268-TCDF	25.10		0.9136	0.9138	+0.3	4.22E+05	0.78	Y	0.96	5.56	5181.994	0.754
1467-TCDF	NotFnd		0.9185						0.96		5181.994	0.754
1478-TCDF	25.41		0.9247	0.9248	+0.2	9.47E+05	0.72	Y	0.96	12.5	5181.994	0.754
1369/1237-TCDF	25.78		0.9381	0.9384	+0.5	2.35E+05	0.83	Y	0.96	3.09	5181.994	0.754
2467-TCDF	NotFnd		0.9427						0.96		5181.994	0.754
2368-TCDF	26.07	EMPC	0.9484	0.9490	+0.9	6.91E+05	1.12	N	0.96	9.09	5181.994	0.754
1238/1234/1678/1469/1236-TCDF	26.15	EMPC	0.9517	0.9517	0	8.00E+05	0.56	N	0.96	10.5	5181.994	0.754
1278-TCDF	26.60		0.9682	0.9682	0	1.06E+07	0.76	Y	0.96	140	5181.994	0.754
1349-TCDF	NotFnd		0.9725						0.96		5181.994	0.754
1267-TCDF	26.87	EMPC	0.9782	0.9780	-0.3	6.09E+05	0.89	N	0.96	8.01	5181.994	0.754
2346/1249-TCDF	NotFnd		0.9846						0.96		5181.994	0.754
2347/1279-TCDF	27.28		0.9926	0.9930	+0.7	3.38E+05	0.78	Y	0.96	4.45	5181.994	0.754
2348-TCDF	27.38		0.9966	0.9966	0	1.68E+06	0.76	Y	0.96	22.1	5181.994	0.754
2378-TCDF	**27.50**		**1.0006**	**1.0008**	**+0.3**	**2.30E+07**	**0.79**	**Y**	**0.96**	**302**	**5181.994**	**0.754**
2367/3467-TCDF	27.85		1.0139	1.0137	-0.3	1.86E+06	0.79	Y	0.96	24.5	5181.994	0.754
1269-TCDF	28.09	EMPC	1.0226	1.0224	-0.3	3.12E+05	0.98	N	0.96	4.1	5181.994	0.754
1239-TCDF	NotFnd		1.0322						0.96		5181.994	0.754
1289-TCDF	29.50		1.0729	1.0737	+1.4	1.82E+06	0.85	Y	0.96	23.9	5181.994	0.754
13468/12468-PeCDF	NotFnd		0.9135						0.94		5862.453	0.745
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		5285.886	0.672
12368/13478/12478-PeCDF	31.14		0.9661	0.9666	+0.9	3.10E+05	1.62	Y	0.94	4.37	5285.886	0.672
14678-PeCDF	NotFnd		0.9693						0.94		5285.886	0.672
13479-PeCDF	NotFnd		0.9723						0.94		5285.886	0.672
13469/12479-PeCDF	NotFnd		0.9799						0.94		5285.886	0.672
12346-PeCDF	NotFnd		0.9842						0.94		5285.886	0.672

Lab ID: B5985_18724_DF_001 **Acq'd: 10 Dec 2021 04:04 PSW** **Wt/Vol: 10.18 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120321-S-JC-SW-S-13 **UTP: 10-Dec-2021 12:46:19 PSW** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 333-858-SXQ**

Datafile: 211209R22 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		5285.886	0.672
12347-PeCDF	NotFnd		0.9893						0.94		5285.886	0.672
12348-PeCDF	32.03	J	0.9941	0.9942	+0.2	7.55E+04	1.62	Y	0.94	1.06	5285.886	0.672
12378-PeCDF	**32.23**		**1.0006**	**1.0004**	**-0.4**	**7.13E+05**	**1.45**	**Y**	**0.95**	**9.87**	**5285.886**	**0.649**
12678/12367-PeCDF	32.52	EMPC	1.0090	1.0095	+1.0	1.81E+05	1.89	N	0.94	2.55	5285.886	0.672
12379-PeCDF	NotFnd		1.0143						0.94		5285.886	0.672
12679-PeCDF	NotFnd		0.9929						0.94		5285.886	0.672
23467/12369-PeCDF	NotFnd		0.9966						0.94		5285.886	0.672
23478-PeCDF	**33.35**		**1.0006**	**1.0007**	**+0.2**	**5.56E+05**	**1.57**	**Y**	**0.94**	**7.98**	**5285.886**	**0.696**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5285.886	0.672
12349-PeCDF	NotFnd		1.0102						0.94		5285.886	0.672
12389-PeCDF	NotFnd		1.0325						0.94		5285.886	0.672
123468-HxCDF	NotFnd		0.9628						1.16		4881.839	0.654
124678/134678-HxCDF	35.38	J	0.9683	0.9683	0	8.77E+04	1.36	Y	1.16	1.41	4881.839	0.654
134679-HxCDF	NotFnd		0.9746						1.16		4881.839	0.654
124679-HxCDF	NotFnd		0.9798						1.16		4881.839	0.654
124689-HxCDF	36.03	J	0.9859	0.9860	+0.2	5.10E+04	1.35	Y	1.16	0.818	4881.839	0.654
123467-HxCDF	NotFnd		0.9972						1.16		4881.839	0.654
123478-HxCDF	**36.55**		**1.0004**	**1.0005**	**+0.2**	**9.45E+05**	**1.38**	**Y**	**1.23**	**14.4**	**4881.839**	**0.652**
123678-HxCDF	**36.69**		**1.0004**	**1.0004**	**0**	**2.33E+05**	**1.31**	**Y**	**1.13**	**3.39**	**4881.839**	**0.607**
123479-HxCDF	NotFnd		1.0049						1.16		4881.839	0.654
123469-HxCDF	NotFnd		1.0088						1.16		4881.839	0.654
123679-HxCDF	NotFnd		0.9943						1.16		4881.839	0.654
234678-HxCDF	**37.36**	J EMPC	**1.0005**	**1.0007**	**+0.4**	**4.25E+04**	**0.94**	**N**	**1.15**	**0.696**	**4881.839**	**0.654**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		4881.839	0.654
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**4881.839**	**0.716**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.33	J	1.0007	1.0011	+0.9	9.93E+04	1.38	Y	1.16	1.59	4881.839	0.654
1234678-HpCDF	**39.65**	**EMPC**	**1.0003**	**1.0003**	**0**	**2.70E+05**	**0.88**	**N**	**1.36**	**4.89**	**4787.604**	**0.558**
1234679-HpCDF	NotFnd		1.0067						1.33		4787.604	0.646
1234689-HpCDF	40.04		1.0100	1.0100	0	1.47E+05	0.93	Y	1.33	3.06	4787.604	0.646
1234789-HpCDF	**40.99**	**J EMPC**	**1.0003**	**1.0002**	**-0.2**	**4.31E+04**	**0.65**	**N**	**1.30**	**1.04**	**4787.604**	**0.76**
OCDF	**43.27**	**J EMPC**	**1.0002**	**1.0004**	**+0.5**	**1.03E+05**	**1.10**	**N**	**1.03**	**4.47**	**5249.602**	**1.64**
OCDF-a	NotFnd		1.0002						0.06		8747.099	47.3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QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Abs. Int.
2.44e6
1.22e6
0.00e0
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
2.44e6
1.22e6
0.00e0
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
1.09e7
5.46e6
0.00e0
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
7.33e6
3.66e6
0.00e0
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
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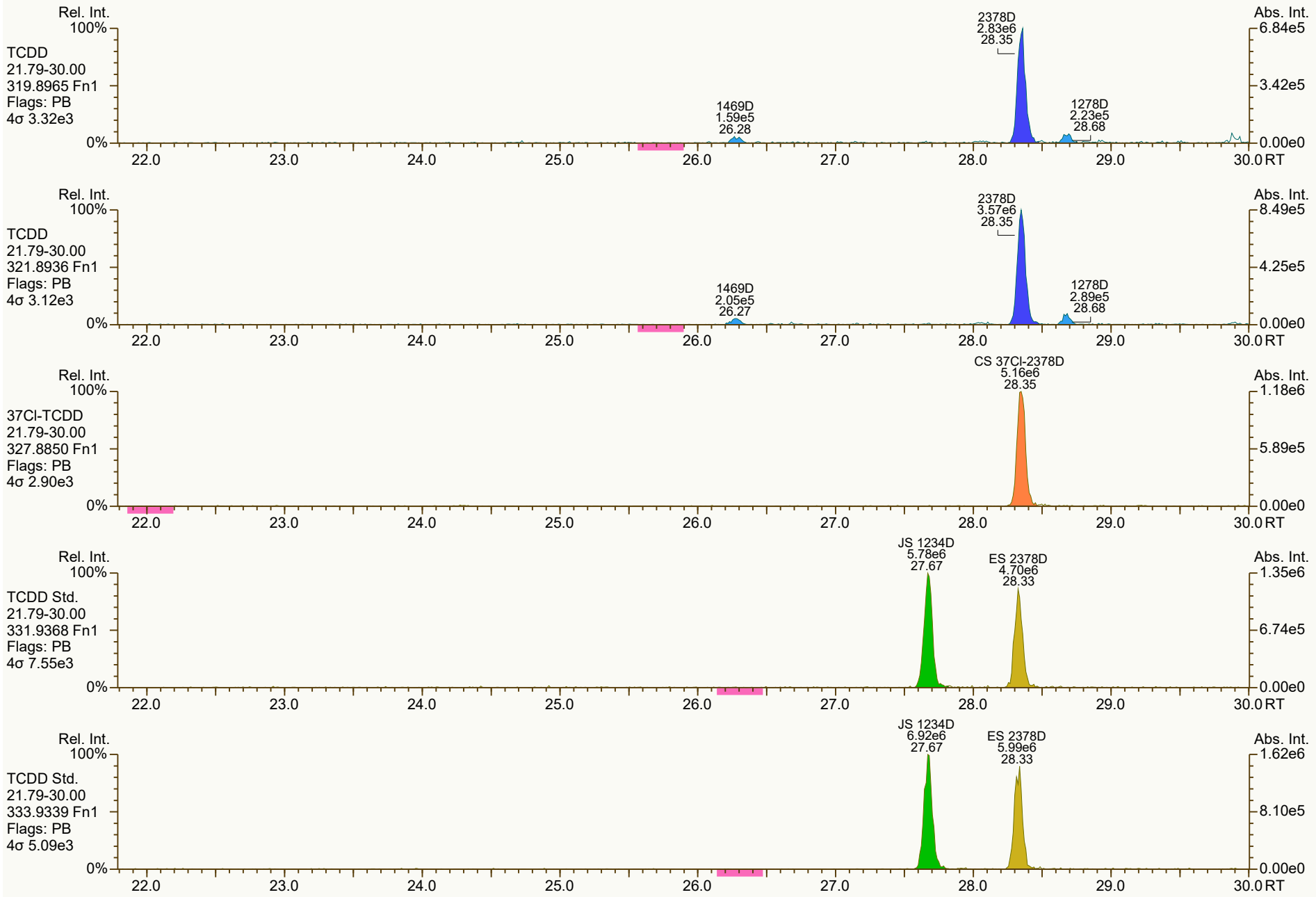
0.00e0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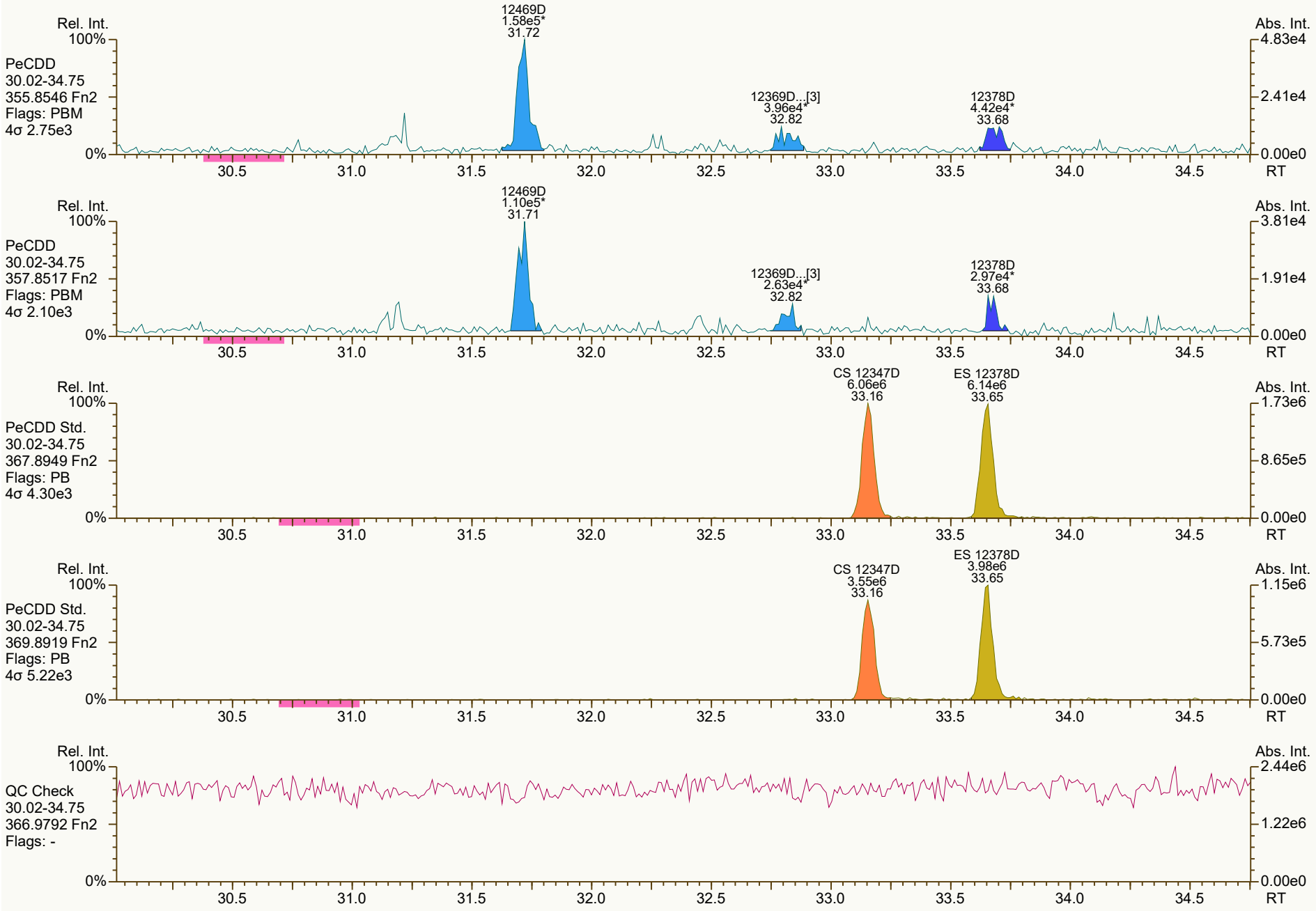
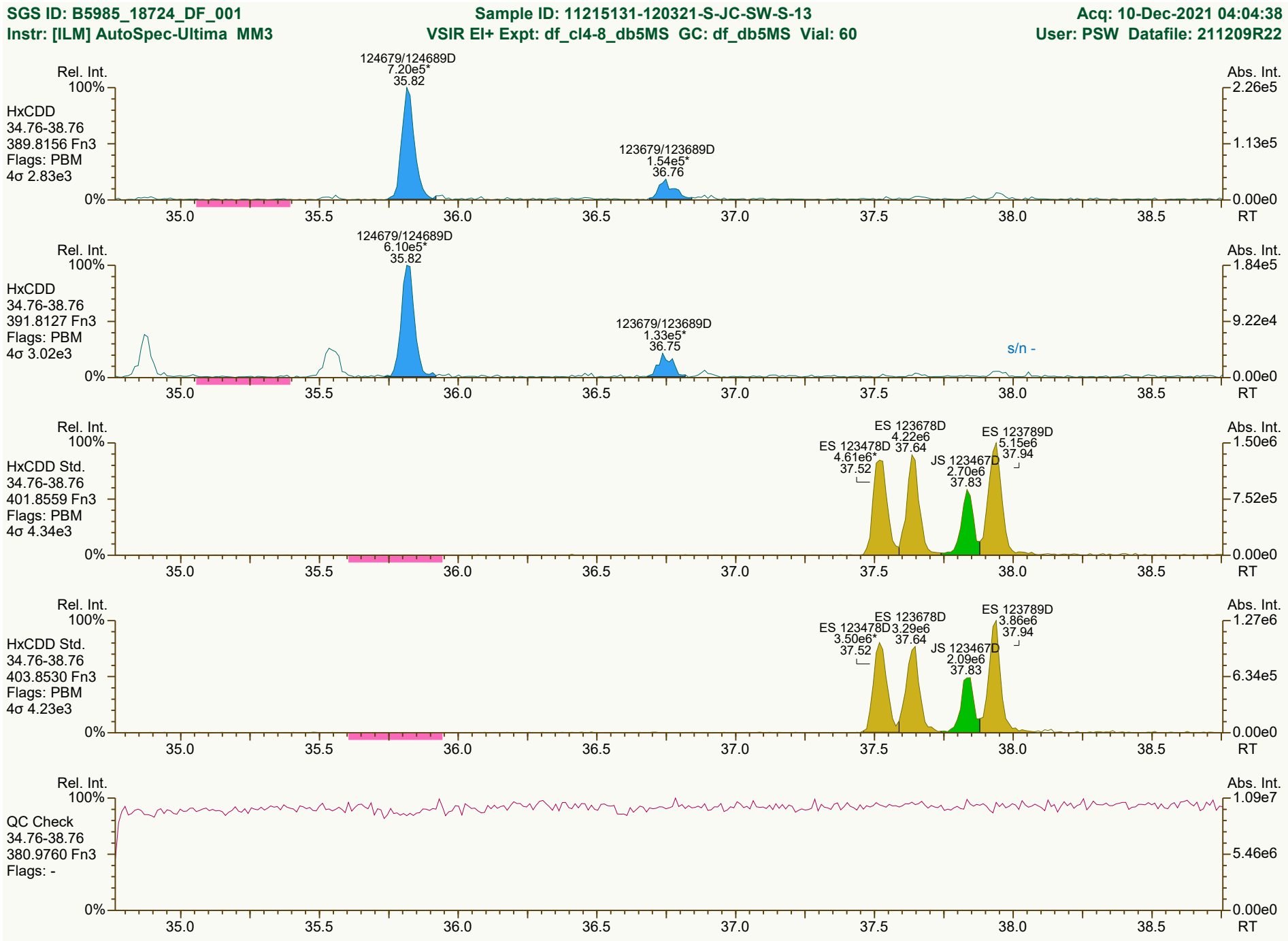
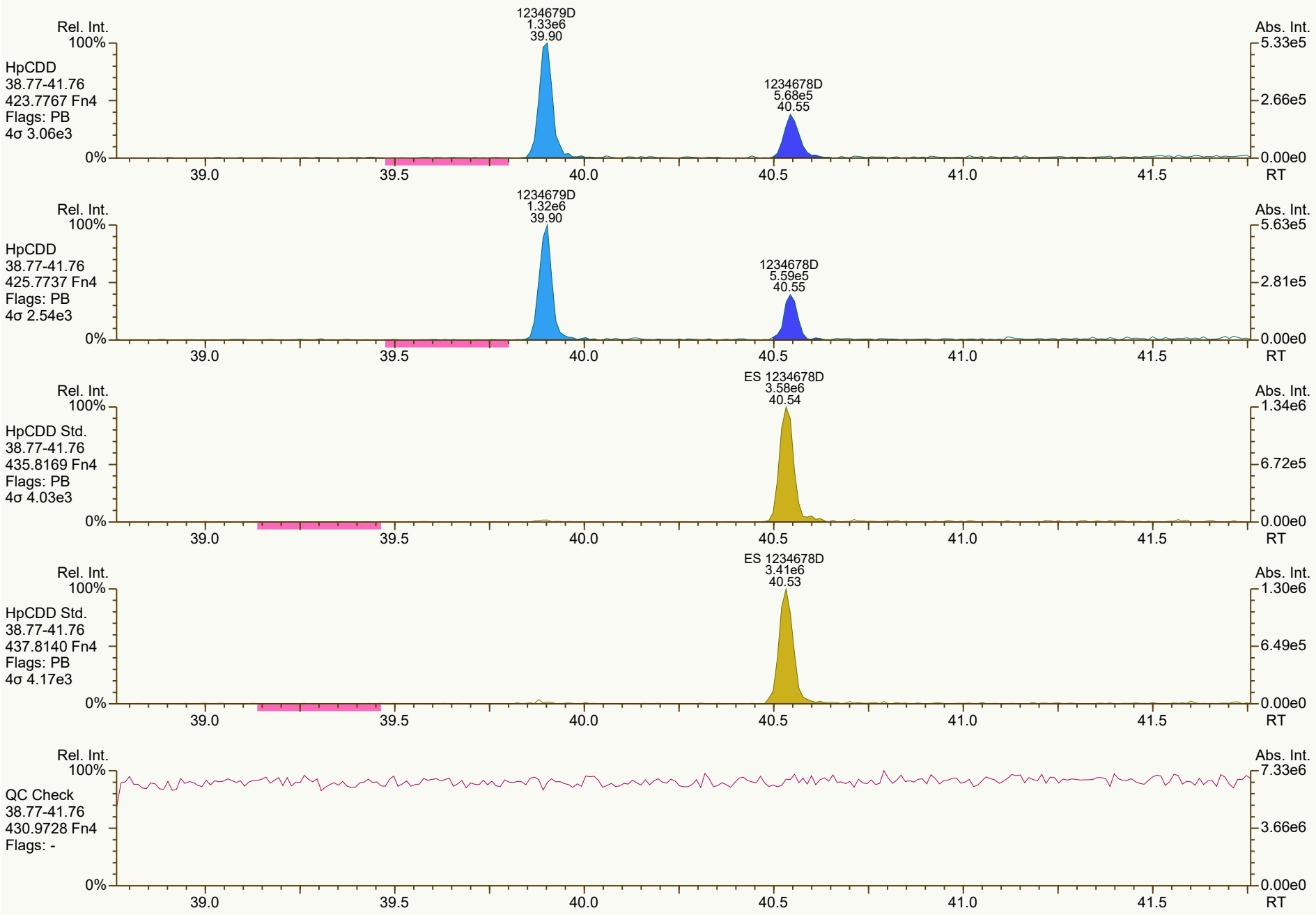
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PB
4σ 3.32e3
0%
2378D
2.83e6
28.35
1469D
1.59e5
26.28
1278D
2.23e5
28.68
Abs. Int.
6.84e5
3.42e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PB
4σ 3.12e3
0%
2378D
3.57e6
28.35
1469D
2.05e5
26.27
1278D
2.89e5
28.68
Abs. Int.
8.49e5
4.25e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 2.90e3
0%
CS 37Cl-2378D
5.16e6
28.35
Abs. Int.
1.18e6
5.89e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 7.55e3
0%
JS 1234D
5.78e6
27.67
ES 2378D
4.70e6
28.33
Abs. Int.
1.35e6
6.74e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 5.09e3
0%
JS 1234D
6.92e6
27.67
ES 2378D
5.99e6
28.33
Abs. Int.
1.62e6
8.10e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

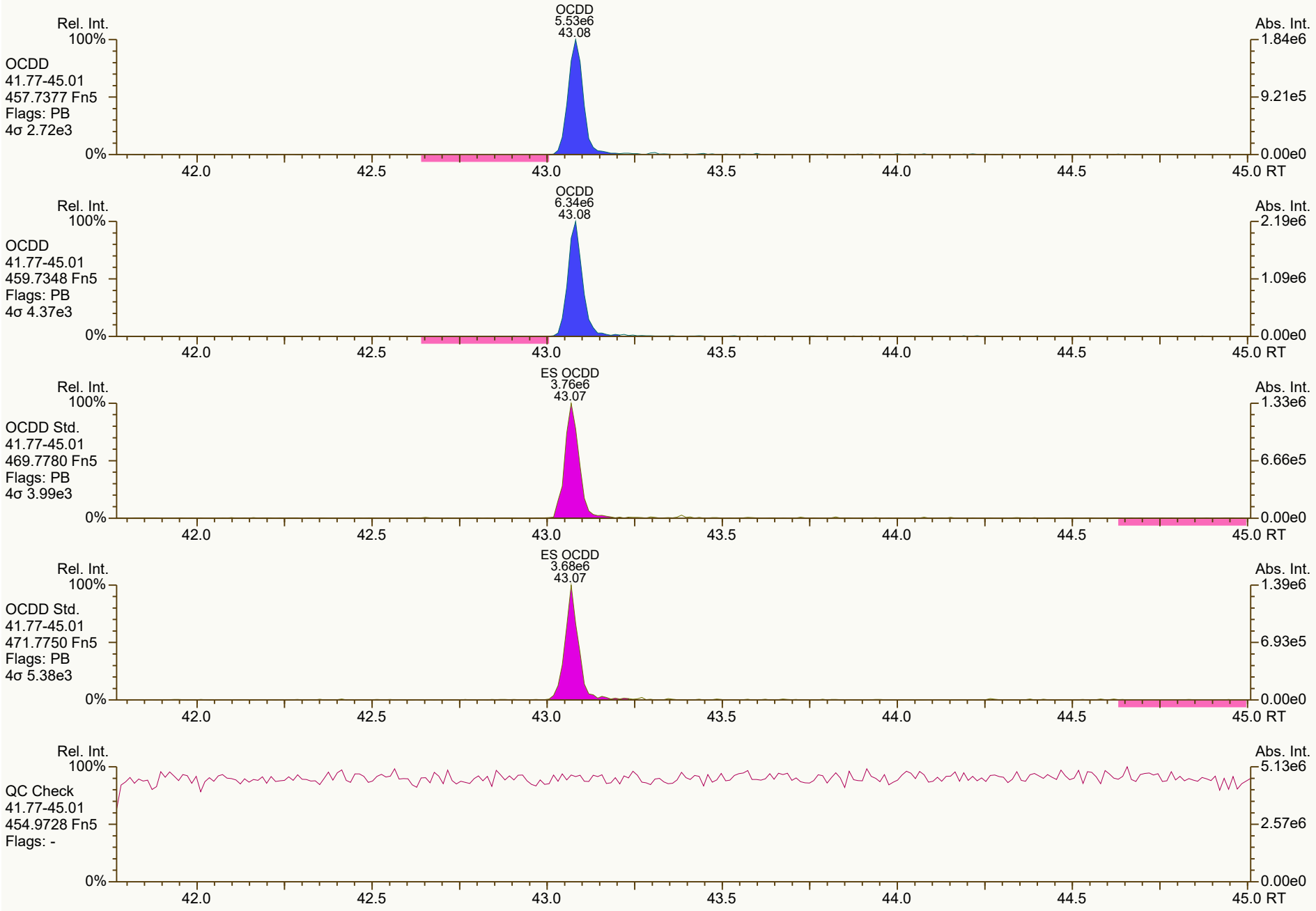

Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 2.75e3
12469D
1.58e5*
31.72
12369D...[3]
3.96e4*
32.82
12378D
4.42e4*
33.68
Abs. Int.
4.83e4
2.41e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 2.10e3
12469D
1.10e5*
31.71
12369D...[3]
2.63e4*
32.82
12378D
2.97e4*
33.68
Abs. Int.
3.81e4
1.91e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.30e3
CS 12347D
6.06e6
33.16
ES 12378D
6.14e6
33.65
Abs. Int.
1.73e6
8.65e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 5.22e3
CS 12347D
3.55e6
33.16
ES 12378D
3.98e6
33.65
Abs. Int.
1.15e6
5.73e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
2.44e6
1.22e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

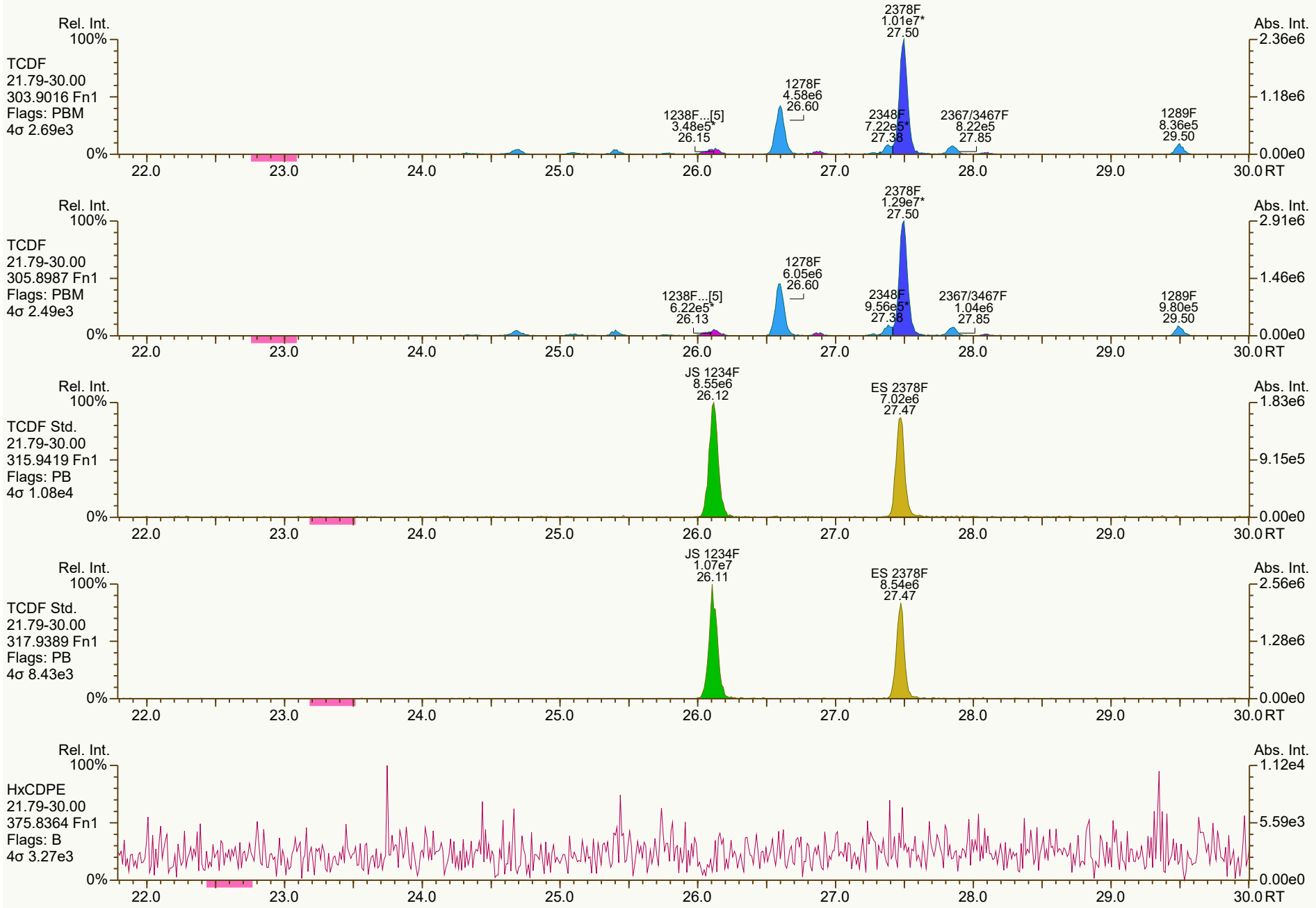
SGS ID: B5985_18724_DF_001 | Sample ID: 11215131-120321-S-JC-SW-S-13 | Acq: 10-Dec-2021 04:04:38
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60 | User: PSW Datafile: 211209R22



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_001.utp_res, saved 10-Dec-2021 12:46 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2812, 7624 scc: 333-858 | PKD: 10-Dec-2021 09:03 Printed: 10-Dec-2021 12:55 Page 4 of 12

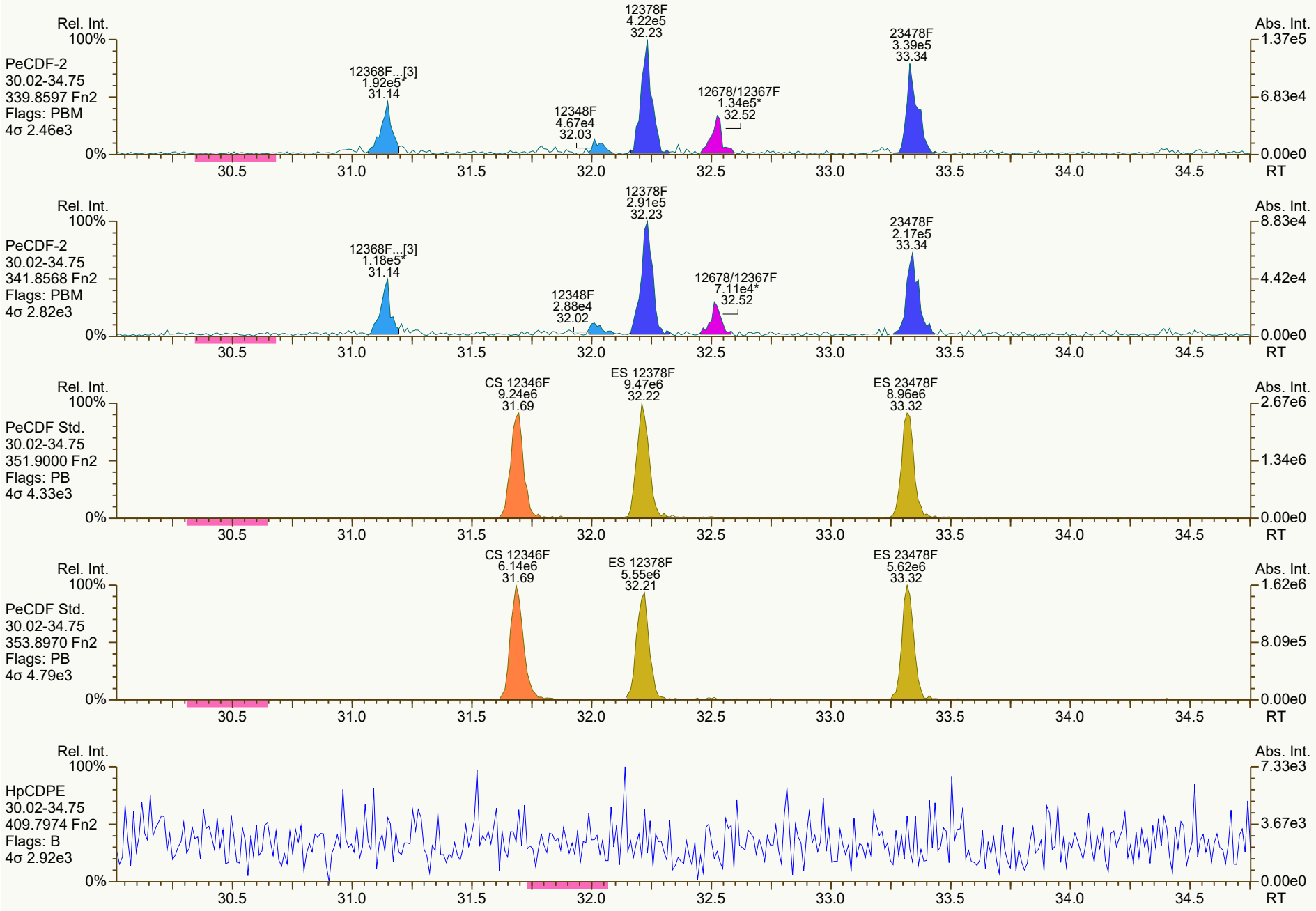

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 3.06e3
1234679D
1.33e6
39.90
1234678D
5.68e5
40.55
Abs. Int.
5.33e5
2.66e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 2.54e3
1234679D
1.32e6
39.90
1234678D
5.59e5
40.55
Abs. Int.
5.63e5
2.81e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.03e3
ES 1234678D
3.58e6
40.54
Abs. Int.
1.34e6
6.72e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.17e3
ES 1234678D
3.41e6
40.53
Abs. Int.
1.30e6
6.49e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
7.33e6
3.66e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

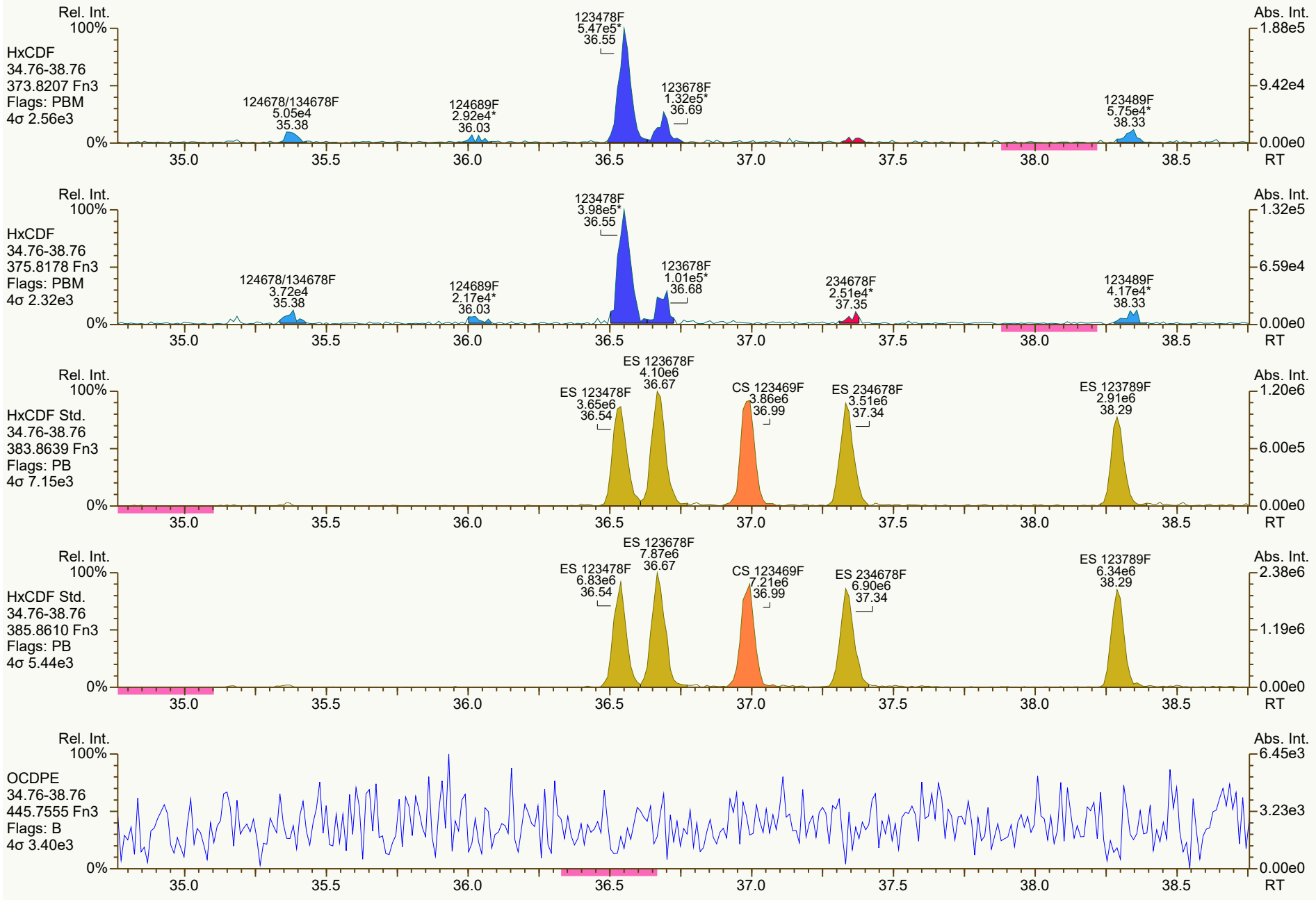

OCDD
5.53e6
43.08
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 2.72e3
0%
Abs. Int.
1.84e6
9.21e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.34e6
43.08
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 4.37e3
0%
Abs. Int.
2.19e6
1.09e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.76e6
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 3.99e3
0%
Abs. Int.
1.33e6
6.66e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.68e6
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.38e3
0%
Abs. Int.
1.39e6
6.93e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
5.13e6
2.57e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_001.utp_res, saved 10-Dec-2021 12:46 (PSW) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7024, 3435, 3481 scc: 333-858 *PKD: 10-Dec-2021 09:03 Printed: 10-Dec-2021 12:55 Page 7 of 12*


Rel. Int.
100%
0%
Abs. Int.
8.38e3
4.19e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 2.82e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.50e4
1.25e4
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.04e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.44e6
1.22e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 2.46e3
0%
12368F...[3]
1.92e5*
31.14
12348F
4.67e4
32.03
12378F
4.22e5
32.23
12678/12367F
1.34e5*
32.52
23478F
3.39e5
33.34
Abs. Int.
1.37e5
6.83e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 2.82e3
0%
12368F...[3]
1.18e5*
31.14
12348F
2.88e4
32.02
12378F
2.91e5
32.23
12678/12367F
7.11e4*
32.52
23478F
2.17e5
33.34
Abs. Int.
8.83e4
4.42e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.33e3
0%
CS 12346F
9.24e6
31.69
ES 12378F
9.47e6
32.22
ES 23478F
8.96e6
33.32
Abs. Int.
2.67e6
1.34e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.79e3
0%
CS 12346F
6.14e6
31.69
ES 12378F
5.55e6
32.21
ES 23478F
5.62e6
33.32
Abs. Int.
1.62e6
8.09e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.92e3
0%
Abs. Int.
7.33e3
3.67e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 2.56e3
123478F
5.47e5*
36.55
123678F
1.32e5*
36.69
124678/134678F
5.05e4
35.38
124689F
2.92e4*
36.03
123489F
5.75e4*
38.33
0%
Abs. Int.
1.88e5
9.42e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 2.32e3
123478F
3.98e5*
36.55
123678F
1.01e5*
36.68
124678/134678F
3.72e4
35.38
124689F
2.17e4*
36.03
234678F
2.51e4*
37.35
123489F
4.17e4*
38.33
0%
Abs. Int.
1.32e5
6.59e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 7.15e3
ES 123678F
4.10e6
36.67
ES 123478F
3.65e6
36.54
CS 123469F
3.86e6
36.99
ES 234678F
3.51e6
37.34
ES 123789F
2.91e6
38.29
0%
Abs. Int.
1.20e6
6.00e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 5.44e3
ES 123678F
7.87e6
36.67
ES 123478F
6.83e6
36.54
CS 123469F
7.21e6
36.99
ES 234678F
6.90e6
37.34
ES 123789F
6.34e6
38.29
0%
Abs. Int.
2.38e6
1.19e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.40e3
0%
Abs. Int.
6.45e3
3.23e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

SGS ID: B5985_18724_DF_001 | Sample ID: 11215131-120321-S-JC-SW-S-13 | Acq: 10-Dec-2021 04:04:38
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 60 | User: PSW Datafile: 211209R22



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_001.utp_res, saved 10-Dec-2021 12:46 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0372, 4994, 1391 scc: 333-858 | PKD: 10-Dec-2021 09:03 Printed: 10-Dec-2021 12:55 Page 11 of 12


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PBM
4σ 2.67e3
0%
OCDF
5.97e4*
43.27
Abs. Int.
3.26e4
1.63e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PBM
4σ 2.58e3
0%
OCDF
5.43e4*
43.27
Abs. Int.
2.14e4
1.07e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 3.17e3
0%
ES OCDF
4.28e6
43.26
Abs. Int.
1.49e6
7.47e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.28e3
0%
ES OCDF
4.51e6
43.26
Abs. Int.
1.38e6
6.90e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: PB
4σ 3.27e3
0%
Abs. Int.
1.12e4
5.58e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5985_18724_DF_002 **Acq'd:** 10 Dec 2021 04:52 PSW **Wt/Vol:** 10.19 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-10 **UTP:** 10-Dec-2021 12:46:20 PSW **J-level:** 0.49 pg/g **Split:** 1 **Checkcode:** 723-731-NYW

Datafile: 211209R23 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.33		1.0008	1.0005	-0.5	8.89E+04	0.83	Y	1.34	1.33	6949.616	1.02
12378-PeCDD	NotFnd		1.0005	-		-	-	-	1.06	-	4612.824	0.723
123478-HxCDD	NotFnd		1.0003	-		-	-	-	1.06	-	6438.874	1.5
123678-HxCDD	37.64		1.0033	1.0036	+0.7	1.44E+05	1.40	Y	1.08	3.72	6438.874	1.44
123789-HxCDD	37.95	J EMPC	1.0110	1.0117	+1.6	9.24E+04	1.67	N	1.02	2.23	6438.874	1.23
1234678-HpCDD	40.54		1.0003	1.0003	0	3.73E+06	1.07	Y	0.97	135	5422.918	1.34
OCDD	43.08		1.0003	1.0003	0	2.43E+07	0.89	Y	1.07	1,550	7890.322	3.51
2378-TCDF	27.49		1.0006	1.0010	+0.7	3.50E+05	0.78	Y	0.96	5.35	5852.507	0.95
12378-PeCDF	NotFnd		1.0006	-		-	-	-	0.95	-	5747.623	0.874
23478-PeCDF	33.34	J	1.0006	1.0010	+0.8	1.19E+05	1.49	Y	0.94	2.05	5747.623	0.869
123478-HxCDF	36.54	J	1.0004	1.0004	0	1.13E+05	1.11	Y	1.23	2.03	4549.172	0.661
123678-HxCDF	36.69	J	1.0004	1.0006	+0.4	7.52E+04	1.36	Y	1.13	1.2	4549.172	0.626
234678-HxCDF	37.34	J	1.0005	1.0003	-0.4	1.02E+05	1.30	Y	1.15	1.98	4549.172	0.701
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	4549.172	0.708
1234678-HpCDF	39.64		1.0003	1.0002	-0.2	6.74E+05	1.01	Y	1.36	13.9	4851.517	0.604
1234789-HpCDF	40.98	J EMPC	1.0003	1.0002	-0.2	4.11E+04	1.28	N	1.30	1.19	4851.517	0.849
OCDF	43.26		1.0002	1.0002	0	3.31E+05	0.90	Y	1.03	18.6	5798.898	2.54

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.32		1.0237	1.0237	0	9.76E+06	0.74	Y	1.03	82.2
ES 12378-PeCDD	33.64		1.2158	1.2162	+0.8	8.93E+06	1.43	Y	1.03	75.3
ES 123478-HxCDD	37.51		0.9920	0.9916	-0.9	6.90E+06	1.30	Y	0.99	84.5
ES 123678-HxCDD	37.63		0.9949	0.9948	-0.2	7.03E+06	1.13	Y	0.97	88
ES 123789-HxCDD	37.92		1.0026	1.0026	0	8.02E+06	1.26	Y	1.12	86.9
ES 1234678-HpCDD	40.53		1.0713	1.0714	+0.2	5.55E+06	1.01	Y	0.99	68.3
ES OCDD	43.06		1.1385	1.1385	0	5.77E+06	0.93	Y	0.78	45.2
ES 2378-TCDF	27.46		1.0519	1.0519	0	1.34E+07	0.78	Y	1.08	68.7
ES 12378-PeCDF	32.20		1.2331	1.2337	+1.2	1.33E+07	1.56	Y	0.93	79.2
ES 23478-PeCDF	33.31		1.2754	1.2761	+1.4	1.22E+07	1.55	Y	0.92	73.5
ES 123478-HxCDF	36.52		0.9656	0.9656	0	8.84E+06	0.55	Y	1.14	94.3
ES 123678-HxCDF	36.66		0.9693	0.9693	0	1.09E+07	0.50	Y	1.30	102
ES 234678-HxCDF	37.33		0.9869	0.9869	0	8.77E+06	0.54	Y	1.20	88.9
ES 123789-HxCDF	38.28		1.0121	1.0122	+0.2	8.00E+06	0.52	Y	1.14	85.8
ES 1234678-HpCDF	39.64		1.0478	1.0479	+0.2	7.01E+06	0.45	Y	0.95	89.9
ES 1234789-HpCDF	40.97		1.0832	1.0833	+0.2	5.21E+06	0.39	Y	0.85	75
ES OCDF	43.25		1.1434	1.1434	0	6.81E+06	0.92	Y	0.93	44.8

Lab ID: B5985_18724_DF_002 **Acq'd:** 10 Dec 2021 04:52 PSW **Wt/Vol:** 10.19 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-10 **UTP:** 10-Dec-2021 12:46:20 PSW **J-level:** 0.49 pg/g **Split:** 1 **Checkcode:** 723-731-NYW

Datafile: 211209R23 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.66		-	-	-	1.15E+07	0.84	Y	-	-	
JS 1234-TCDF	26.10		-	-	-	1.79E+07	0.74	Y	-	-	
JS 123467-HxCDD	37.82		-	-	-	4.10E+06	1.39	Y	-	-	
CS 37Cl-2378-TCDD	28.34		1.0245	1.0245	0	4.51E+06	n/a	-	1.31	75	
CS 12347-PeCDD	33.14		1.1978	1.1982	+0.8	8.59E+06	1.61	Y	0.89	83.8	
CS 12346-PeCDF	31.68		1.2130	1.2135	+1.0	1.38E+07	1.62	Y	0.87	88.6	
CS 123469-HxCDF	36.97		0.9775	0.9775	0	8.94E+06	0.49	Y	1.09	100	
CS 1234689-HpCDF	40.02		1.0580	1.0581	+0.2	6.52E+06	0.43	Y	0.86	92	
~~SS 37Cl-2378-TCDD~~	~~28.34~~		~~1.0245~~	~~1.0245~~	~~0~~	~~4.51E+06~~	~~n/a~~		~~1.26~~	~~91.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.14~~		~~1.1978~~	~~1.1982~~	~~+0.8~~	~~8.59E+06~~	~~1.61~~	~~Y~~	~~0.86~~	~~111~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.68~~		~~1.2130~~	~~1.2135~~	~~+1.0~~	~~1.38E+07~~	~~1.62~~	~~Y~~	~~0.93~~	~~112~~	
~~SS 123469-HxCDF~~	~~36.97~~		~~0.9775~~	~~0.9775~~	~~0~~	~~8.94E+06~~	~~0.49~~	~~Y~~	~~0.84~~	~~97.9~~	
~~SS 1234689-HpCDF~~	~~40.02~~		~~1.0580~~	~~1.0581~~	~~+0.2~~	~~6.52E+06~~	~~0.43~~	~~Y~~	~~0.91~~	~~102~~	

Totals	Conc	EMPC
Total TCDD	3.47	3.47
Total PeCDD	0	0
Total HxCDD	39.5	41.7
Total HpCDD	314	314
Total Tetra-Octa Dioxins	1900	1910
Total TCDF	5.35	13.3
Total PeCDF	17.9	18.5
Total HxCDF	26	26
Total HpCDF	34.3	35.5
Total Tetra-Octa Furans	102	112
Total Tetra-Octa Dioxins & Furans	2010	2020

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.79	0.83
Response	9.16E+04	8.89E+04

Lab ID: B5985_18724_DF_002 **Acq'd: 10 Dec 2021 04:52 PSW** **Wt/Vol: 10.19 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120421-S-JC-SC-S-10 **UTP: 10-Dec-2021 12:46:20 PSW** **J-level: 0.49 pg/g** **Split: 1** **Checkcode: 723-731-NYW**

Datafile: 211209R23 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8726						1.34		6949.616	1.02
1379-TCDD	NotFnd		0.8851						1.34		6949.616	1.02
1369-TCDD	NotFnd		0.9002						1.34		6949.616	1.02
1469-TCDD	26.27		0.9275	0.9277	+0.3	1.43E+05	0.81	Y	1.34	2.14	6949.616	1.02
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6949.616	1.02
1378-TCDD	NotFnd		0.9427						1.34		6949.616	1.02
1268-TCDD	NotFnd		0.9498						1.34		6949.616	1.02
1478-TCDD	NotFnd		0.9584						1.34		6949.616	1.02
1279-TCDD	NotFnd		0.9644						1.34		6949.616	1.02
1234/1269-TCDD	NotFnd		0.9766						1.34		6949.616	1.02
1236-TCDD	NotFnd		0.9813						1.34		6949.616	1.02
1237/1238-TCDD	NotFnd		0.9906						1.34		6949.616	1.02
1239-TCDD	NotFnd		0.9952						1.34		6949.616	1.02
2378-TCDD	**28.33**		**1.0008**	1.0005	**-0.5**	8.89E+04	0.83	Y	**1.34**	**1.33**	**6949.616**	**1.02**
1278-TCDD	NotFnd		1.0122						1.34		6949.616	1.02
1267-TCDD	NotFnd		1.0168						1.34		6949.616	1.02
1289-TCDD	NotFnd		1.0349						1.34		6949.616	1.02
12479/12468-PeCDD	NotFnd		0.9267						1.06		4612.824	0.723
12469-PeCDD	NotFnd		0.9425						1.06		4612.824	0.723
12368-PeCDD	NotFnd		0.9588						1.06		4612.824	0.723
12478-PeCDD	NotFnd		0.9643						1.06		4612.824	0.723
12379-PeCDD	NotFnd		0.9673						1.06		4612.824	0.723
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		4612.824	0.723
12346/12347-PeCDD	NotFnd		0.9859						1.06		4612.824	0.723
12378-PeCDD	NotFnd		**1.0005**						**1.06**		**4612.824**	**0.723**
12367-PeCDD	NotFnd		1.0032						1.06		4612.824	0.723
12389-PeCDD	NotFnd		1.0135						1.06		4612.824	0.723
124679/124689-HxCDD	35.81		0.9544	0.9547	+0.6	7.46E+05	1.23	Y	1.05	19	6438.874	1.38
123468-HxCDD	36.46	J	0.9716	0.9720	+0.9	5.87E+04	1.20	Y	1.05	1.5	6438.874	1.38
123679/123689-HxCDD	36.75		0.9793	0.9797	+0.9	5.97E+05	1.24	Y	1.05	15.2	6438.874	1.38
123469-HxCDD	NotFnd		0.9829						1.05		6438.874	1.38
123478-HxCDD	NotFnd		**1.0003**						1.06		**6438.874**	**1.5**
123678-HxCDD	37.64		**1.0033**	**1.0036**	**+0.7**	**1.44E+05**	**1.40**	**Y**	1.08	**3.72**	**6438.874**	**1.44**
123467-HxCDD	NotFnd		1.0084						1.05		6438.874	1.38
123789-HxCDD	37.95	J EMPC	**1.0110**	**1.0117**	**+1.6**	**9.24E+04**	**1.67**	**N**	1.02	**2.23**	**6438.874**	**1.23**

Lab ID: B5985_18724_DF_002 **Acq'd:** 10 Dec 2021 04:52 PSW **Wt/Vol:** 10.19 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-10 **UTP:** 10-Dec-2021 12:46:20 PSW **J-level:** 0.49 pg/g **Split:** 1 **Checkcode:** 723-731-NYW

Datafile: 211209R23 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

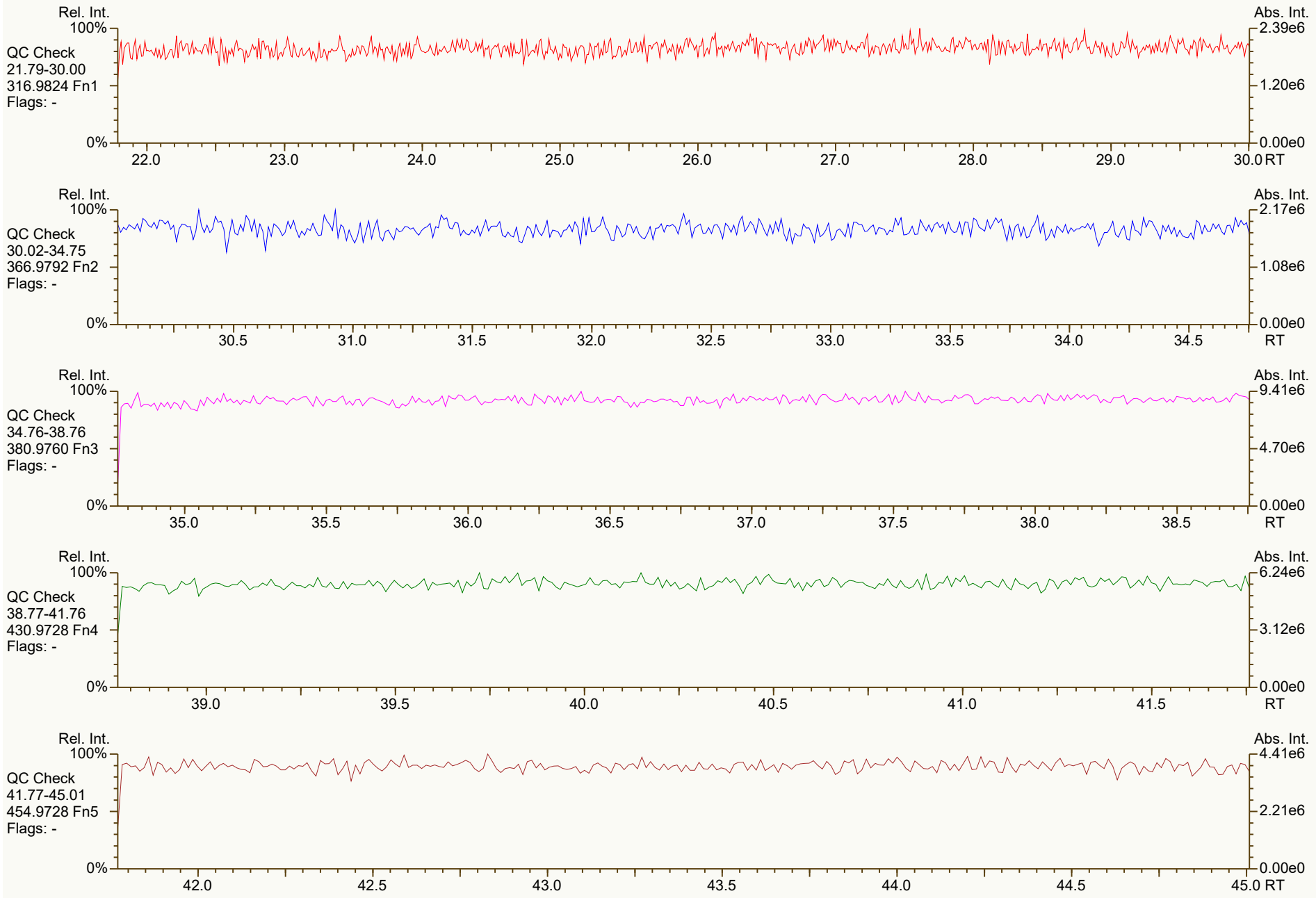
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.89		0.9843	0.9844	+0.2	4.94E+06	1.00	Y	0.97	179	5422.918	1.34
1234678-HpCDD	**40.54**		**1.0003**	**1.0003**	**0**	**3.73E+06**	**1.07**	**Y**	**0.97**	**135**	**5422.918**	**1.34**
OCDD	**43.08**		**1.0003**	**1.0003**	**0**	**2.43E+07**	**0.89**	**Y**	**1.07**	**1,550**	**7890.322**	**3.51**
OCDD-a	43.07		1.0001	1.0002	+0.3	1.55E+06	2.71	Y	0.07	1,600	9574.566	69
1368-TCDF	NotFnd		0.8230						0.96		5852.507	0.95
1468-TCDF	NotFnd		0.8443						0.96		5852.507	0.95
2468-TCDF	23.82	EMPC	0.8672	0.8676	+0.6	1.14E+05	1.04	N	0.96	1.75	5852.507	0.95
1346/1246-TCDF	NotFnd		0.8802						0.96		5852.507	0.95
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		5852.507	0.95
1348-TCDF	NotFnd		0.8952						0.96		5852.507	0.95
1248/1367/1379-TCDF	24.66	EMPC	0.9000	0.8982	-2.7	8.67E+04	0.91	N	0.96	1.33	5852.507	0.95
1268-TCDF	25.08	EMPC	0.9136	0.9133	-0.5	4.58E+04	0.65	N	0.96	0.701	5852.507	0.95
1467-TCDF	NotFnd		0.9185						0.96		5852.507	0.95
1478-TCDF	NotFnd		0.9247						0.96		5852.507	0.95
1369/1237-TCDF	NotFnd		0.9381						0.96		5852.507	0.95
2467-TCDF	NotFnd		0.9427						0.96		5852.507	0.95
2368-TCDF	26.07	EMPC	0.9484	0.9494	+1.6	1.23E+05	0.58	N	0.96	1.89	5852.507	0.95
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		5852.507	0.95
1278-TCDF	26.59	EMPC	0.9682	0.9683	+0.2	1.52E+05	0.89	N	0.96	2.32	5852.507	0.95
1349-TCDF	NotFnd		0.9725						0.96		5852.507	0.95
1267-TCDF	NotFnd		0.9782						0.96		5852.507	0.95
2346/1249-TCDF	NotFnd		0.9846						0.96		5852.507	0.95
2347/1279-TCDF	NotFnd		0.9926						0.96		5852.507	0.95
2348-TCDF	NotFnd		0.9966						0.96		5852.507	0.95
2378-TCDF	**27.49**		**1.0006**	**1.0010**	**+0.7**	**3.50E+05**	**0.78**	**Y**	**0.96**	**5.35**	**5852.507**	**0.95**
2367/3467-TCDF	NotFnd		1.0139						0.96		5852.507	0.95
1269-TCDF	NotFnd		1.0226						0.96		5852.507	0.95
1239-TCDF	NotFnd		1.0322						0.96		5852.507	0.95
1289-TCDF	NotFnd		1.0729						0.96		5852.507	0.95
13468/12468-PeCDF	29.43		0.9135	0.9138	+0.5	5.88E+05	1.46	Y	0.94	9.62	6779.033	1.03
13678/13467/12467-PeCDF	30.99	J EMPC	0.9612	0.9621	+1.7	3.97E+04	2.61	N	0.94	0.649	5747.623	0.872
12368/13478/12478-PeCDF	31.13		0.9661	0.9666	+0.9	2.98E+05	1.48	Y	0.94	4.87	5747.623	0.872
14678-PeCDF	NotFnd		0.9693						0.94		5747.623	0.872
13479-PeCDF	NotFnd		0.9723						0.94		5747.623	0.872
13469/12479-PeCDF	NotFnd		0.9799						0.94		5747.623	0.872
12346-PeCDF	NotFnd		0.9842						0.94		5747.623	0.872

Lab ID: B5985_18724_DF_002 **Acq'd: 10 Dec 2021 04:52 PSW** **Wt/Vol: 10.19 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120421-S-JC-SC-S-10 **UTP: 10-Dec-2021 12:46:20 PSW** **J-level: 0.49 pg/g** **Split: 1** **Checkcode: 723-731-NYW**

Datafile: 211209R23 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.77	J	0.9868	0.9864	-0.8	8.09E+04	1.64	Y	0.94	1.32	5747.623	0.872
12347-PeCDF	NotFnd		0.9893						0.94		5747.623	0.872
12348-PeCDF	NotFnd		0.9941						0.94		5747.623	0.872
12378-PeCDF	**NotFnd**		**1.0006**						**0.95**		**5747.623**	**0.874**
12678/12367-PeCDF	NotFnd		1.0090						0.94		5747.623	0.872
12379-PeCDF	NotFnd		1.0143						0.94		5747.623	0.872
12679-PeCDF	NotFnd		0.9929						0.94		5747.623	0.872
23467/12369-PeCDF	NotFnd		0.9966						0.94		5747.623	0.872
23478-PeCDF	**33.34**	J	**1.0006**	**1.0010**	**+0.8**	**1.19E+05**	**1.49**	**Y**	**0.94**	**2.05**	**5747.623**	**0.869**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5747.623	0.872
12349-PeCDF	NotFnd		1.0102						0.94		5747.623	0.872
12389-PeCDF	NotFnd		1.0325						0.94		5747.623	0.872
123468-HxCDF	35.17	J	0.9628	0.9629	+0.2	1.28E+05	1.25	Y	1.16	2.37	4549.172	0.67
124678/134678-HxCDF	35.36		0.9683	0.9682	-0.2	5.34E+05	1.34	Y	1.16	9.88	4549.172	0.67
134679-HxCDF	NotFnd		0.9746						1.16		4549.172	0.67
124679-HxCDF	NotFnd		0.9798						1.16		4549.172	0.67
124689-HxCDF	36.01		0.9859	0.9859	0	4.61E+05	1.17	Y	1.16	8.52	4549.172	0.67
123467-HxCDF	NotFnd		0.9972						1.16		4549.172	0.67
123478-HxCDF	**36.54**	J	**1.0004**	**1.0004**	**0**	**1.13E+05**	**1.11**	**Y**	**1.23**	**2.03**	**4549.172**	**0.661**
123678-HxCDF	**36.69**	J	**1.0004**	**1.0006**	**+0.4**	**7.52E+04**	**1.36**	**Y**	**1.13**	**1.2**	**4549.172**	**0.626**
123479-HxCDF	NotFnd		1.0049						1.16		4549.172	0.67
123469-HxCDF	NotFnd		1.0088						1.16		4549.172	0.67
123679-HxCDF	NotFnd		0.9943						1.16		4549.172	0.67
234678-HxCDF	**37.34**	J	**1.0005**	**1.0003**	**-0.4**	**1.02E+05**	**1.30**	**Y**	**1.15**	**1.98**	**4549.172**	**0.701**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		4549.172	0.67
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**4549.172**	**0.708**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		4549.172	0.67
1234678-HpCDF	**39.64**		**1.0003**	**1.0002**	**-0.2**	**6.74E+05**	**1.01**	**Y**	**1.36**	**13.9**	**4851.517**	**0.604**
1234679-HpCDF	NotFnd		1.0067						1.33		4851.517	0.708
1234689-HpCDF	40.03		1.0100	1.0100	0	8.47E+05	0.91	Y	1.33	20.4	4851.517	0.708
1234789-HpCDF	**40.98**	**J EMPC**	**1.0003**	**1.0002**	**-0.2**	**4.11E+04**	**1.28**	**N**	**1.30**	**1.19**	**4851.517**	**0.849**
OCDF	**43.26**		**1.0002**	**1.0002**	**0**	**3.31E+05**	**0.90**	**Y**	**1.03**	**18.6**	**5798.898**	**2.54**
OCDF-a	NotFnd		1.0002						0.06		7822.256	59.4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100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
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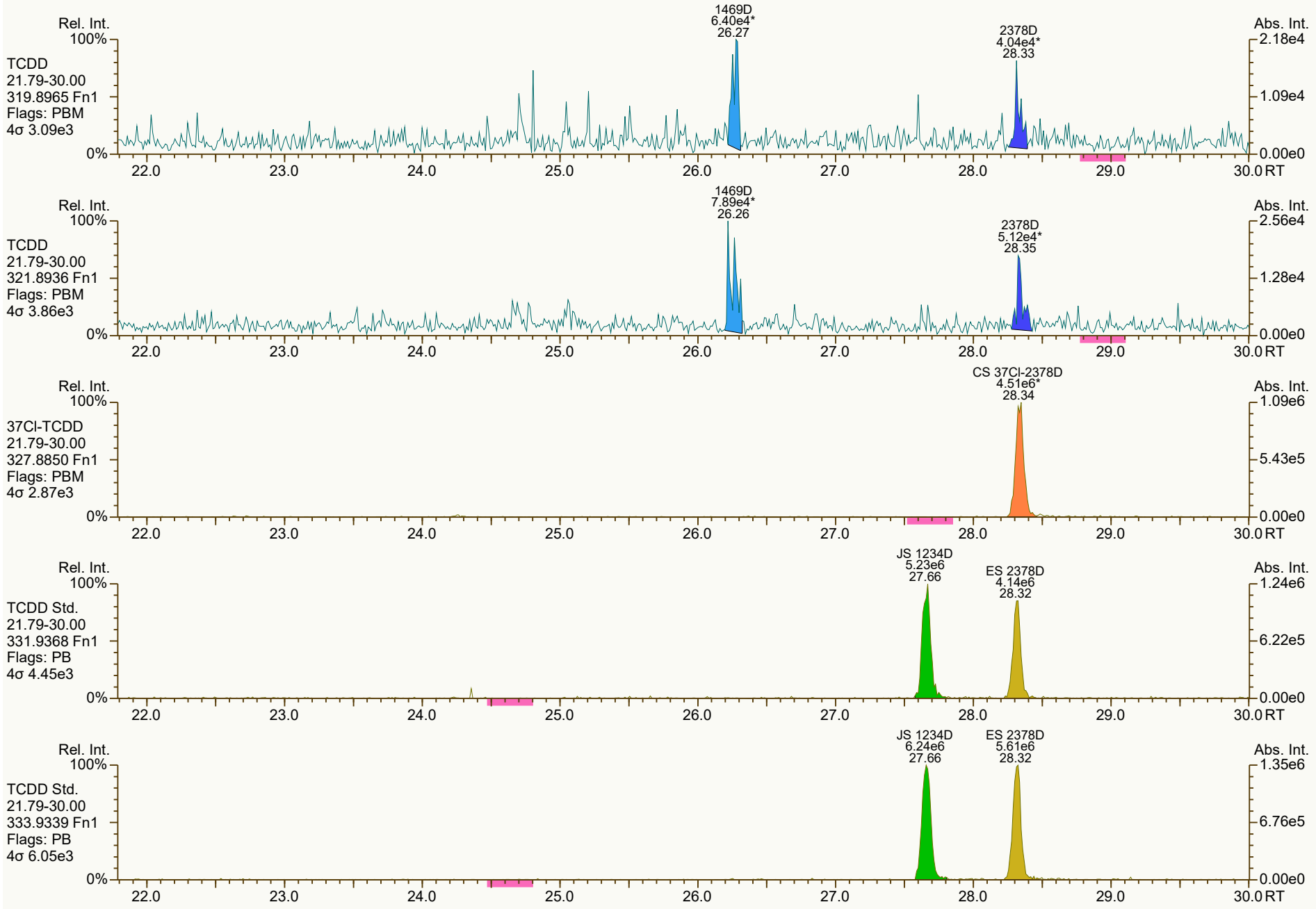
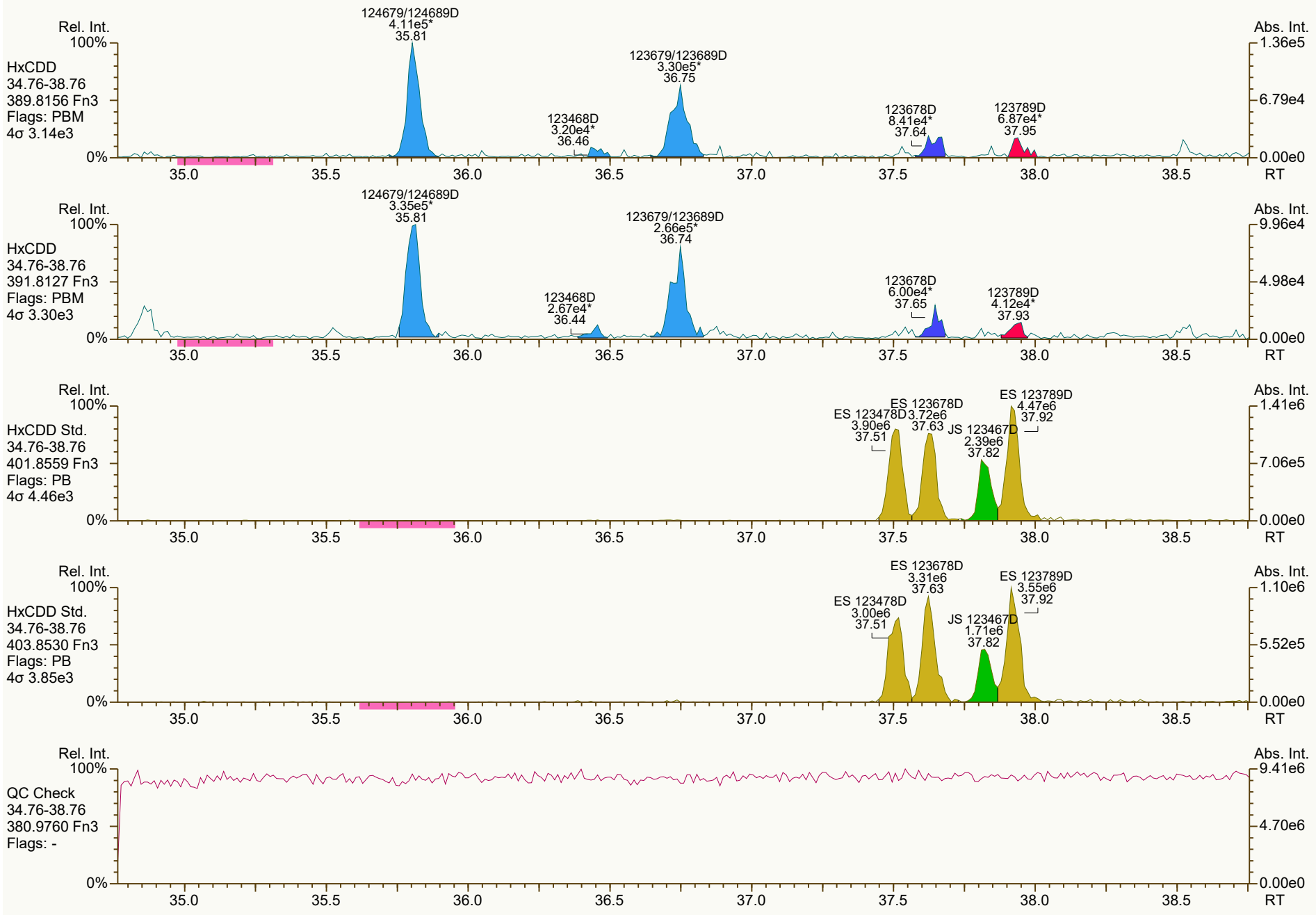
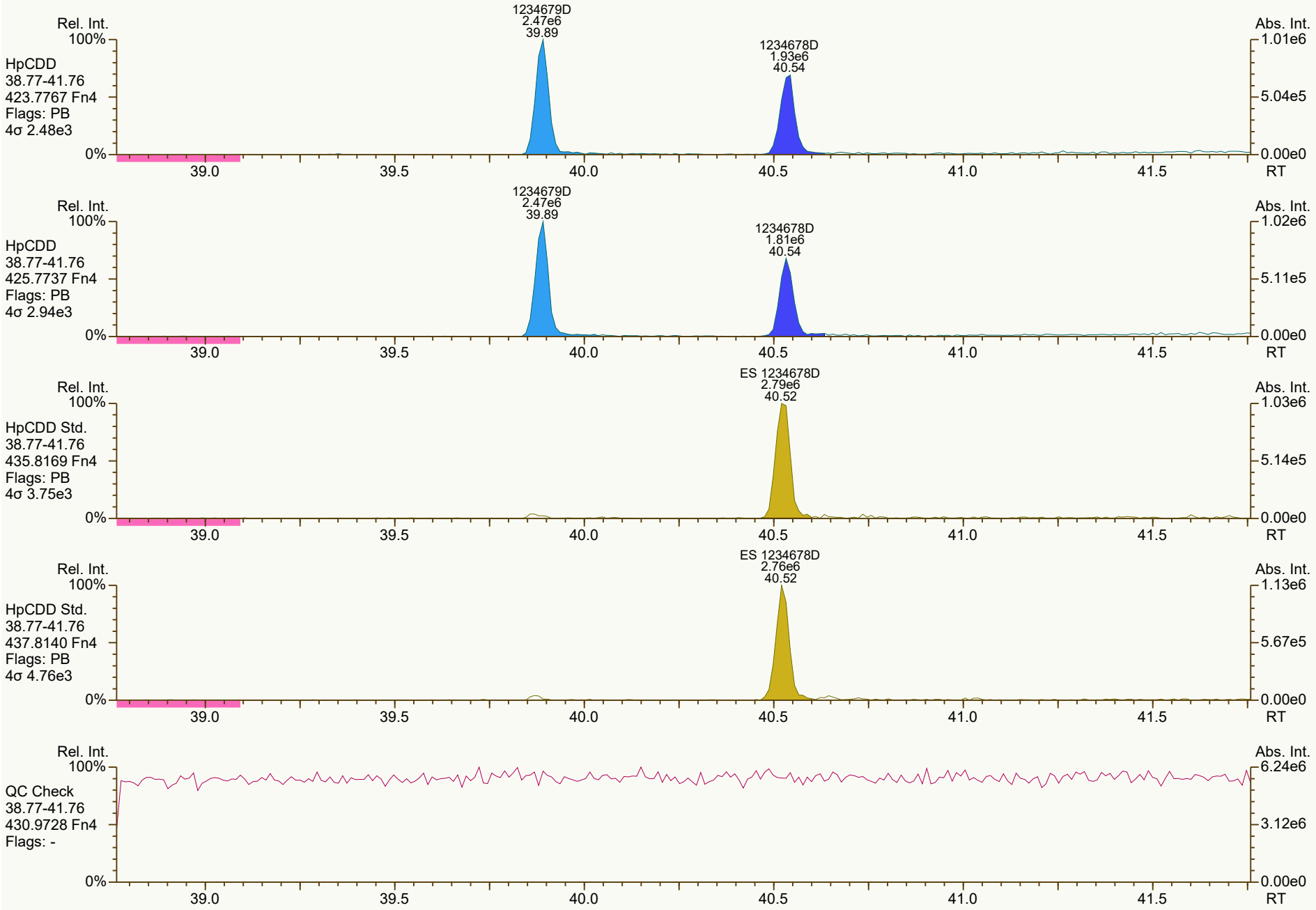
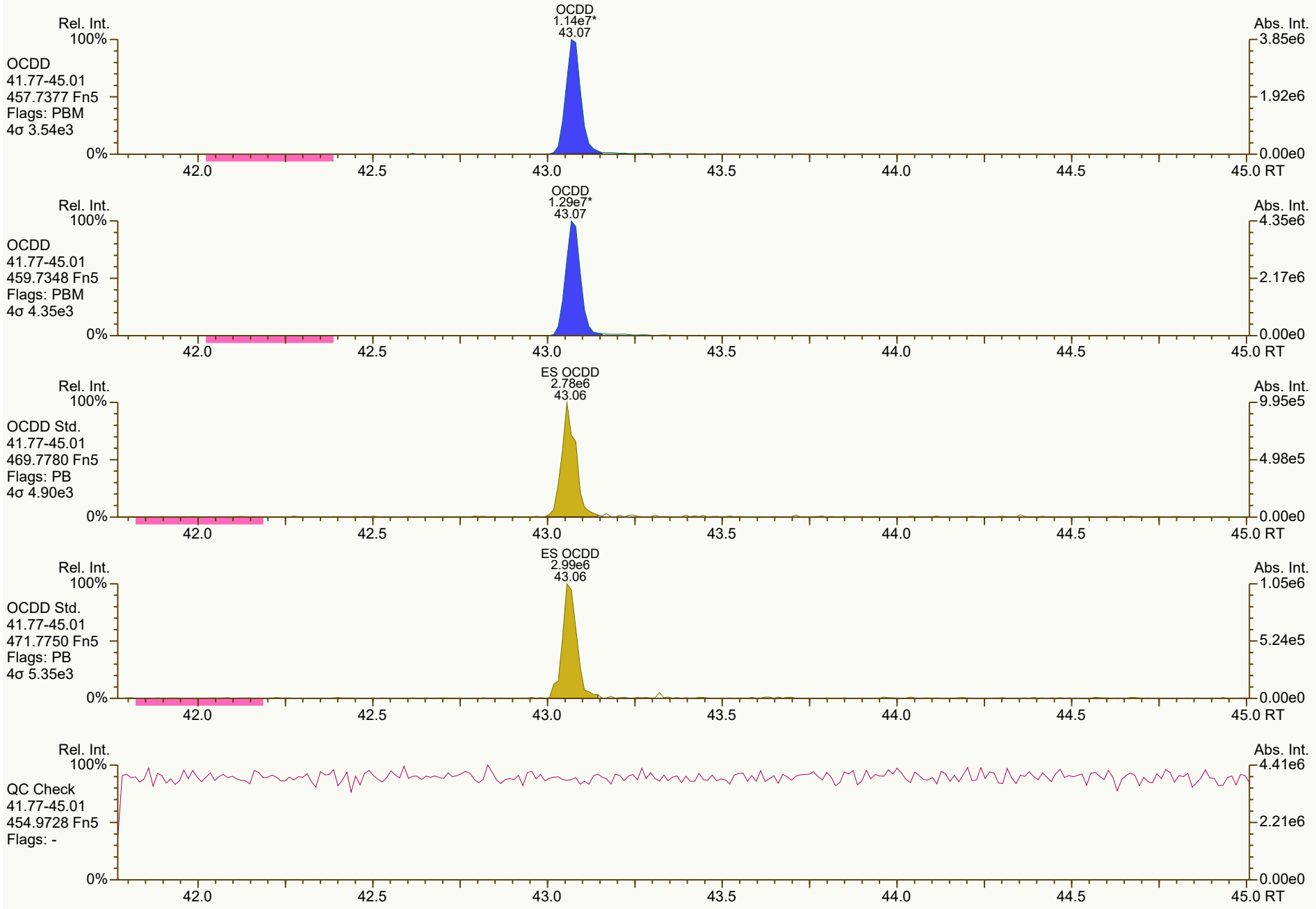
1.20e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.17e6
1.08e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.41e6
4.70e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.24e6
3.12e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.41e6
2.21e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 3.09e3
0%
1469D
6.40e4*
26.27
2378D
4.04e4*
28.33
Abs. Int.
2.18e4
1.09e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.86e3
0%
1469D
7.89e4*
26.26
2378D
5.12e4*
28.35
Abs. Int.
2.56e4
1.28e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PBM
4σ 2.87e3
0%
CS 37Cl-2378D
4.51e6*
28.34
Abs. Int.
1.09e6
5.43e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 4.45e3
0%
JS 1234D
5.23e6
27.66
ES 2378D
4.14e6
28.32
Abs. Int.
1.24e6
6.22e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 6.05e3
0%
JS 1234D
6.24e6
27.66
ES 2378D
5.61e6
28.32
Abs. Int.
1.35e6
6.76e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: B
4σ 2.10e3
0%
Abs. Int.
1.04e4
5.19e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: B
4σ 2.52e3
0%
Abs. Int.
1.77e4
8.87e3
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.37e3
CS 12347D
5.30e6
33.14
ES 12378D
5.26e6
33.64
0%
Abs. Int.
1.74e6
8.71e5
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 3.48e3
CS 12347D
3.29e6
33.14
ES 12378D
3.67e6
33.64
0%
Abs. Int.
1.09e6
5.45e5
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.17e6
1.08e6
0.00e0
30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 RT

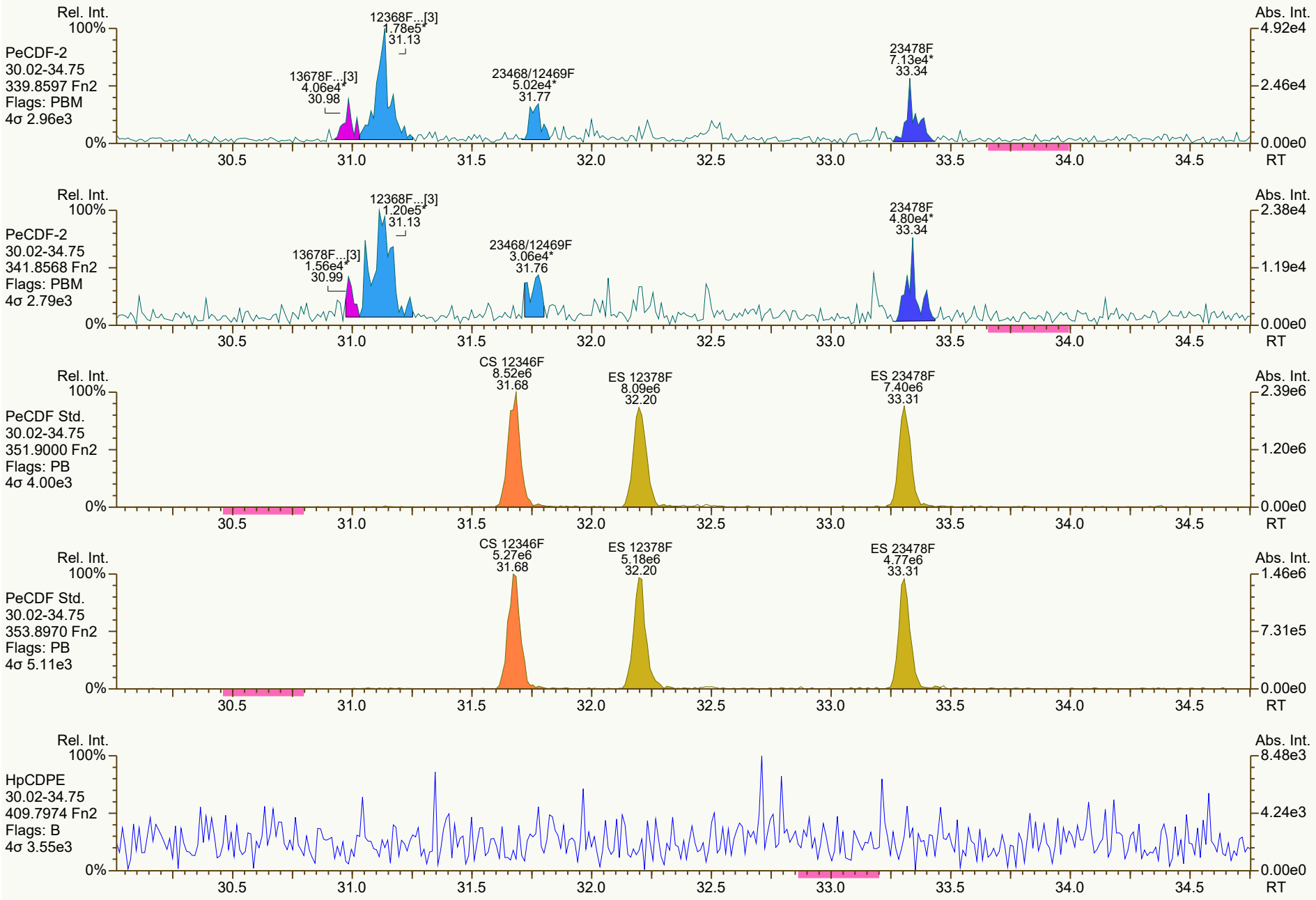

Rel. Int.
Abs. Int.
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 3.14e3
124679/124689D
4.11e5*
35.81
123679/123689D
3.30e5*
36.75
123468D
3.20e4*
36.46
123678D
8.41e4*
37.64
123789D
6.87e4*
37.95
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 3.30e3
124679/124689D
3.35e5*
35.81
123679/123689D
2.66e5*
36.74
123468D
2.67e4*
36.44
123678D
6.00e4*
37.65
123789D
4.12e4*
37.93
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 4.46e3
ES 123478D
3.90e6
37.51
ES 123678D
3.72e6
37.63
JS 123467D
2.39e6
37.82
ES 123789D
4.47e6
37.92
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 3.85e3
ES 123678D
3.31e6
37.63
ES 123478D
3.00e6
37.51
JS 123467D
1.71e6
37.82
ES 123789D
3.55e6
37.92
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
1.36e5
6.79e4
0.00e0
9.96e4
4.98e4
1.41e6
7.06e5
1.10e6
5.52e5
9.41e6
4.70e6

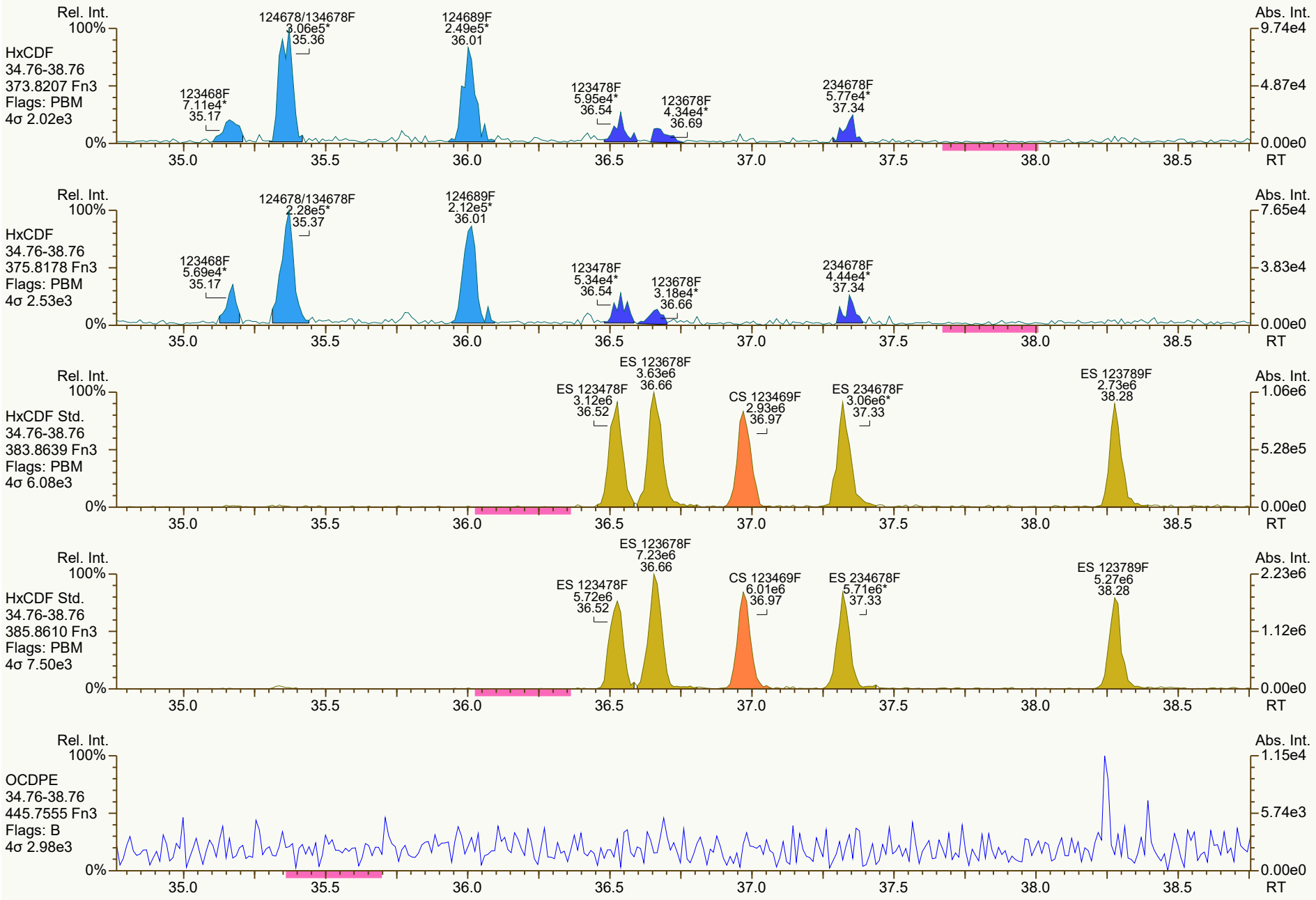

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.48e3
1234679D
2.47e6
39.89
1234678D
1.93e6
40.54
Abs. Int.
1.01e6
5.04e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 2.94e3
1234679D
2.47e6
39.89
1234678D
1.81e6
40.54
Abs. Int.
1.02e6
5.11e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 3.75e3
ES 1234678D
2.79e6
40.52
Abs. Int.
1.03e6
5.14e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.76e3
ES 1234678D
2.76e6
40.52
Abs. Int.
1.13e6
5.67e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
6.24e6
3.12e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

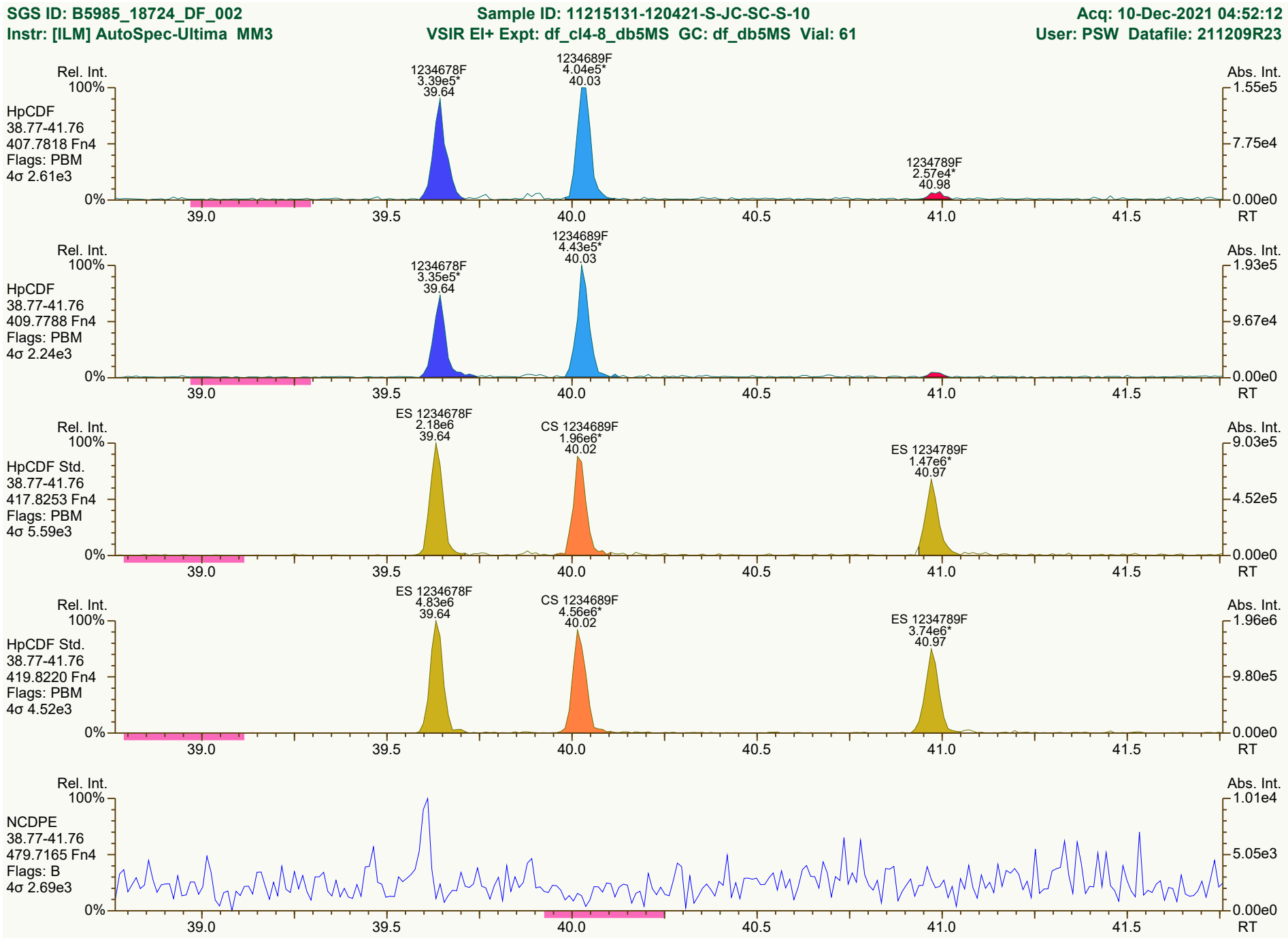

OCDD
1.14e7*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 3.54e3
0%
Abs. Int.
3.85e6
1.92e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.29e7*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 4.35e3
0%
Abs. Int.
4.35e6
2.17e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.78e6
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.90e3
0%
Abs. Int.
9.95e5
4.98e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.99e6
43.06
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.35e3
0%
Abs. Int.
1.05e6
5.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.41e6
2.21e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: B5985_18724_DF_002
Sample ID: 11215131-120421-S-JC-SC-S-10
Acq: 10-Dec-2021 04:52:12
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61
User: PSW Datafile: 211209R23
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.90e3
2468F 6.71e4* 23.82
1248F...[3] 4.47e4* 24.66
1268F 1.99e4* 25.08
2368F 5.37e4* 26.07
1278F 7.61e4 26.59
2378F 1.53e5* 27.49
3.90e4
1.95e4
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 2.95e3
2468F 6.45e4* 23.81
1248F...[3] 4.90e4* 24.68
1268F 3.08e4* 25.09
2368F 9.25e4* 26.08
1278F 8.57e4 26.58
2378F 1.96e5* 27.48
4.39e4
2.19e4
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.28e4
JS 1234F 7.62e6 26.10
ES 2378F 5.86e6 27.46
1.52e6
7.58e5
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 4.87e3
JS 1234F 1.03e7 26.10
ES 2378F 7.50e6 27.46
2.08e6
1.04e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.36e3
9.45e3
4.72e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_002.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8752, 4714, 8519 scc: 723-731
PKD: 10-Dec-2021 09:12 Printed: 10-Dec-2021 12:56 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
8.22e4
4.11e4
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PBM
4σ 3.71e3
13468/12468F
3.49e5*
29.43
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
7.38e4
3.69e4
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PBM
4σ 3.07e3
13468/12468F
2.39e5*
29.43
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.39e6
1.20e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 2.96e3
0%
12368F...[3]
1.78e5*
31.13
13678F...[3]
4.06e4*
30.98
23468/12469F
5.02e4*
31.77
23478F
7.13e4*
33.34
Abs. Int.
4.92e4
2.46e4
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 2.79e3
0%
12368F...[3]
1.20e5*
31.13
13678F...[3]
1.56e4*
30.99
23468/12469F
3.06e4*
31.76
23478F
4.80e4*
33.34
Abs. Int.
2.38e4
1.19e4
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.00e3
0%
CS 12346F
8.52e6
31.68
ES 12378F
8.09e6
32.20
ES 23478F
7.40e6
33.31
Abs. Int.
2.39e6
1.20e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 5.11e3
0%
CS 12346F
5.27e6
31.68
ES 12378F
5.18e6
32.20
ES 23478F
4.77e6
33.31
Abs. Int.
1.46e6
7.31e5
0.00e0
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.55e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 2.02e3
123468F
7.11e4*
35.17
124678/134678F
3.06e5*
35.36
124689F
2.49e5*
36.01
123478F
5.95e4*
36.54
123678F
4.34e4*
36.69
234678F
5.77e4*
37.34
0%
Abs. Int.
9.74e4
4.87e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 2.53e3
123468F
5.69e4*
35.17
124678/134678F
2.28e5*
35.37
124689F
2.12e5*
36.01
123478F
5.34e4*
36.54
123678F
3.18e4*
36.66
234678F
4.44e4*
37.34
0%
Abs. Int.
7.65e4
3.83e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PBM
4σ 6.08e3
ES 123478F
3.12e6
36.52
ES 123678F
3.63e6
36.66
CS 123469F
2.93e6
36.97
ES 234678F
3.06e6*
37.33
ES 123789F
2.73e6
38.28
0%
Abs. Int.
1.06e6
5.28e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PBM
4σ 7.50e3
ES 123478F
5.72e6
36.52
ES 123678F
7.23e6
36.66
CS 123469F
6.01e6
36.97
ES 234678F
5.71e6*
37.33
ES 123789F
5.27e6
38.28
0%
Abs. Int.
2.23e6
1.12e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.15e4
5.74e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: B5985_18724_DF_002
Sample ID: 11215131-120421-S-JC-SC-S-10
Acq: 10-Dec-2021 04:52:12
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 61
User: PSW Datafile: 211209R23
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.61e3
1234678F
3.39e5*
39.64
1234689F
4.04e5*
40.03
1234789F
2.57e4*
40.98
1.55e5
7.75e4
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 2.24e3
1234678F
3.35e5*
39.64
1234689F
4.43e5*
40.03
1.93e5
9.67e4
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 5.59e3
ES 1234678F
2.18e6
39.64
CS 1234689F
1.96e6*
40.02
ES 1234789F
1.47e6*
40.97
9.03e5
4.52e5
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 4.52e3
ES 1234678F
4.83e6
39.64
CS 1234689F
4.56e6*
40.02
ES 1234789F
3.74e6*
40.97
1.96e6
9.80e5
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.69e3
1.01e4
5.05e3
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_002.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2931, 7564, 1399 scc: 723-731
PKD: 10-Dec-2021 09:12 Printed: 10-Dec-2021 12:56 Page 11 of 12


OCDF
1.57e5*
43.26
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PBM
4σ 2.72e3
0%
Abs. Int.
7.11e4
3.55e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.74e5*
43.25
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PBM
4σ 3.08e3
0%
Abs. Int.
5.32e4
2.66e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.27e6
43.25
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 5.01e3
0%
Abs. Int.
1.05e6
5.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.54e6
43.25
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.17e3
0%
Abs. Int.
1.05e6
5.23e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.87e3
0%
Abs. Int.
8.41e3
4.20e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5985_18724_DF_003 **Acq'd:** 10 Dec 2021 05:39 PSW **Wt/Vol:** 10.06 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-11 **UTP:** 10-Dec-2021 12:46:21 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 478-740-NQL

Datafile: 211209R24 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.35		1.0008	1.0008	0	2.17E+07	0.79	Y	1.34	281	6700.223	0.877
12378-PeCDD	33.67		1.0005	1.0006	+0.2	2.33E+05	1.58	Y	1.06	4.39	5501.232	0.857
123478-HxCDD	37.53	J EMPC	1.0003	1.0005	+0.5	4.18E+04	0.90	N	1.06	0.994	4664.254	0.939
123678-HxCDD	37.65		1.0033	1.0035	+0.5	2.07E+05	1.28	Y	1.08	5.03	4664.254	0.916
123789-HxCDD	37.95	J EMPC	1.0110	1.0115	+1.1	1.10E+05	1.46	N	1.02	2.34	4664.254	0.774
1234678-HpCDD	40.55		1.0003	1.0003	0	4.98E+06	1.05	Y	0.97	156	6204.751	1.17
OCDD	43.09		1.0003	1.0003	0	3.41E+07	0.90	Y	1.07	2,020	7502.228	3.47
2378-TCDF	27.49	E	1.0006	1.0008	+0.3	8.59E+07	0.79	Y	0.96	1,080	5673.411	0.758
12378-PeCDF	32.23		1.0006	1.0005	-0.2	3.19E+06	1.48	Y	0.95	43.9	5627.486	0.721
23478-PeCDF	33.34		1.0006	1.0007	+0.2	2.41E+06	1.52	Y	0.94	34.9	5627.486	0.72
123478-HxCDF	36.55		1.0004	1.0005	+0.2	4.37E+06	1.26	Y	1.23	70.6	5480.797	0.689
123678-HxCDF	36.68		1.0004	1.0004	0	1.23E+06	1.27	Y	1.13	17.2	5480.797	0.584
234678-HxCDF	37.35		1.0005	1.0005	0	3.27E+05	1.33	Y	1.15	5.62	5480.797	0.854
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	5480.797	0.729
1234678-HpCDF	39.65		1.0003	1.0003	0	1.83E+06	1.08	Y	1.36	33.9	5404.182	0.641
1234789-HpCDF	40.99		1.0003	1.0003	0	3.12E+05	0.89	Y	1.30	8.07	5404.182	0.968
OCDF	43.27		1.0002	1.0001	-0.3	5.11E+05	0.89	Y	1.03	25.5	5750.761	2.35

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.32	1.0237	1.0237	0	1.14E+07	0.87	Y	1.03	80.9
ES 12378-PeCDD	33.65	1.2158	1.2161	+0.6	9.96E+06	1.65	Y	1.03	70.7
ES 123478-HxCDD	37.52	0.9920	0.9916	-0.9	7.92E+06	1.42	Y	0.99	84.3
ES 123678-HxCDD	37.63	0.9949	0.9947	-0.5	7.55E+06	1.32	Y	0.97	82.1
ES 123789-HxCDD	37.93	1.0026	1.0026	0	9.18E+06	1.24	Y	1.12	86.5
ES 1234678-HpCDD	40.53	1.0713	1.0714	+0.2	6.53E+06	1.08	Y	0.99	69.7
ES OCDD	43.08	1.1385	1.1386	+0.3	6.27E+06	0.84	Y	0.78	42.7
ES 2378-TCDF	27.47	1.0519	1.0520	+0.2	1.65E+07	0.78	Y	1.08	74.4
ES 12378-PeCDF	32.21	1.2331	1.2335	+0.8	1.53E+07	1.57	Y	0.93	80.1
ES 23478-PeCDF	33.32	1.2754	1.2759	+1.0	1.46E+07	1.56	Y	0.92	77.6
ES 123478-HxCDF	36.53	0.9656	0.9656	0	9.96E+06	0.51	Y	1.14	92.3
ES 123678-HxCDF	36.67	0.9693	0.9693	0	1.26E+07	0.51	Y	1.30	103
ES 234678-HxCDF	37.33	0.9869	0.9868	-0.2	1.00E+07	0.49	Y	1.20	88.4
ES 123789-HxCDF	38.29	1.0121	1.0121	0	9.69E+06	0.47	Y	1.14	90.2
ES 1234678-HpCDF	39.64	1.0478	1.0479	+0.2	7.86E+06	0.43	Y	0.95	87.6
ES 1234789-HpCDF	40.98	1.0832	1.0833	+0.2	5.91E+06	0.41	Y	0.85	73.9
ES OCDF	43.26	1.1434	1.1435	+0.3	7.78E+06	0.80	Y	0.93	44.5

Lab ID: B5985_18724_DF_003 **Acq'd:** 10 Dec 2021 05:39 PSW **Wt/Vol:** 10.06 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-11 **UTP:** 10-Dec-2021 12:46:21 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 478-740-NQL

Datafile: 211209R24 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.67		-	-	-	1.36E+07	0.81	Y	-	-	
JS 1234-TCDF	26.11		-	-	-	2.04E+07	0.78	Y	-	-	
JS 123467-HxCDD	37.83		-	-	-	4.72E+06	1.25	Y	-	-	
CS 37Cl-2378-TCDD	28.35		1.0245	1.0246	+0.2	5.50E+06	n/a	-	1.31	77	
CS 12347-PeCDD	33.15		1.1978	1.1981	+0.6	9.50E+06	1.53	Y	0.89	78.2	
CS 12346-PeCDF	31.69		1.2130	1.2135	+1.0	1.57E+07	1.57	Y	0.87	88.2	
CS 123469-HxCDF	36.98		0.9775	0.9774	-0.2	1.12E+07	0.52	Y	1.09	109	
CS 1234689-HpCDF	40.03		1.0580	1.0581	+0.2	8.11E+06	0.46	Y	0.86	99.3	
~~SS 37Cl-2378-TCDD~~	~~28.35~~		~~1.0245~~	~~1.0246~~	~~+0.2~~	~~5.50E+06~~	~~n/a~~		~~1.26~~	~~95.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.15~~		~~1.1978~~	~~1.1981~~	~~+0.6~~	~~9.50E+06~~	~~1.53~~	~~Y~~	~~0.86~~	~~110~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.69~~		~~1.2130~~	~~1.2135~~	~~+1.0~~	~~1.57E+07~~	~~1.57~~	~~Y~~	~~0.93~~	~~110~~	
~~SS 123469-HxCDF~~	~~36.98~~		~~0.9775~~	~~0.9774~~	~~-0.2~~	~~1.12E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~106~~	
~~SS 1234689-HpCDF~~	~~40.03~~		~~1.0580~~	~~1.0581~~	~~+0.2~~	~~8.11E+06~~	~~0.46~~	~~Y~~	~~0.91~~	~~113~~	

Totals	Conc	EMPC
Total TCDD	311	314
Total PeCDD	5.29	9.05
Total HxCDD	51.3	56
Total HpCDD	366	366
Total Tetra-Octa Dioxins	2750	2760
Total TCDF	2,120	2150
Total PeCDF	124	131
Total HxCDF	124	124
Total HpCDF	59.2	59.6
Total Tetra-Octa Furans	2,450	2490
Total Tetra-Octa Dioxins & Furans	5210	5250

Lab ID: B5985_18724_DF_003 **Acq'd: 10 Dec 2021 05:39 PSW** **Wt/Vol: 10.06 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120421-S-JC-SC-S-11 **UTP: 10-Dec-2021 12:46:21 PSW** **J-level: 0.497 pg/g** **Split: 1** **Checkcode: 478-740-NQL**

Datafile: 211209R24 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.70	EMPC	0.8726	0.8721	-0.7	4.37E+04	0.35	N	1.34	0.567	6700.223	0.877
1379-TCDD	NotFnd		0.8851						1.34		6700.223	0.877
1369-TCDD	NotFnd		0.9002						1.34		6700.223	0.877
1469-TCDD	26.27	EMPC	0.9275	0.9276	+0.2	1.71E+05	0.65	N	1.34	2.22	6700.223	0.877
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6700.223	0.877
1378-TCDD	NotFnd		0.9427						1.34		6700.223	0.877
1268-TCDD	NotFnd		0.9498						1.34		6700.223	0.877
1478-TCDD	NotFnd		0.9584						1.34		6700.223	0.877
1279-TCDD	NotFnd		0.9644						1.34		6700.223	0.877
1234/1269-TCDD	NotFnd		0.9766						1.34		6700.223	0.877
1236-TCDD	NotFnd		0.9813						1.34		6700.223	0.877
1237/1238-TCDD	28.05		0.9906	0.9902	-0.7	3.19E+05	0.86	Y	1.34	4.14	6700.223	0.877
1239-TCDD	NotFnd		0.9952						1.34		6700.223	0.877
2378-TCDD	**28.35**		**1.0008**	1.0008	**0**	2.17E+07	0.79	Y	**1.34**	**281**	**6700.223**	**0.877**
1278-TCDD	28.67		1.0122	1.0124	+0.3	1.98E+06	0.80	Y	1.34	25.6	6700.223	0.877
1267-TCDD	NotFnd		1.0168						1.34		6700.223	0.877
1289-TCDD	NotFnd		1.0349						1.34		6700.223	0.877
12479/12468-PeCDD	31.18	J	0.9267	0.9266	-0.2	4.78E+04	1.71	Y	1.06	0.901	5501.232	0.857
12469-PeCDD	31.70	J EMPC	0.9425	0.9423	-0.4	1.01E+05	1.82	N	1.06	1.9	5501.232	0.857
12368-PeCDD	32.24	J EMPC	0.9588	0.9582	-1.2	4.64E+04	0.89	N	1.06	0.874	5501.232	0.857
12478-PeCDD	NotFnd		0.9643						1.06		5501.232	0.857
12379-PeCDD	NotFnd		0.9673						1.06		5501.232	0.857
12369/12467/12489-PeCDD	32.80	J EMPC	0.9750	0.9749	-0.2	5.26E+04	1.83	N	1.06	0.99	5501.232	0.857
12346/12347-PeCDD	NotFnd		0.9859						1.06		5501.232	0.857
12378-PeCDD	33.67		**1.0005**	**1.0006**	**+0.2**	**2.33E+05**	**1.58**	**Y**	**1.06**	**4.39**	**5501.232**	**0.857**
12367-PeCDD	NotFnd		1.0032						1.06		5501.232	0.857
12389-PeCDD	NotFnd		1.0135						1.06		5501.232	0.857
124679/124689-HxCDD	35.81		0.9544	0.9547	+0.6	1.15E+06	1.25	Y	1.05	26.5	4664.254	0.87
123468-HxCDD	36.46	J	0.9716	0.9719	+0.7	9.17E+04	1.36	Y	1.05	2.11	4664.254	0.87
123679/123689-HxCDD	36.75		0.9793	0.9796	+0.7	7.69E+05	1.09	Y	1.05	17.7	4664.254	0.87
123469-HxCDD	36.88	J EMPC	0.9829	0.9831	+0.4	5.91E+04	1.98	N	1.05	1.36	4664.254	0.87
123478-HxCDD	37.53	J EMPC	**1.0003**	**1.0005**	**+0.5**	**4.18E+04**	**0.90**	**N**	1.06	**0.994**	**4664.254**	**0.939**
123678-HxCDD	37.65		**1.0033**	**1.0035**	**+0.5**	**2.07E+05**	**1.28**	**Y**	1.08	**5.03**	**4664.254**	**0.916**
123467-HxCDD	NotFnd		1.0084						1.05		4664.254	0.87
123789-HxCDD	37.95	J EMPC	**1.0110**	**1.0115**	**+1.1**	**1.10E+05**	**1.46**	**N**	1.02	**2.34**	**4664.254**	**0.774**

Lab ID: B5985_18724_DF_003 **Acq'd:** 10 Dec 2021 05:39 PSW **Wt/Vol:** 10.06 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-11 **UTP:** 10-Dec-2021 12:46:21 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 478-740-NQL

Datafile: 211209R24 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

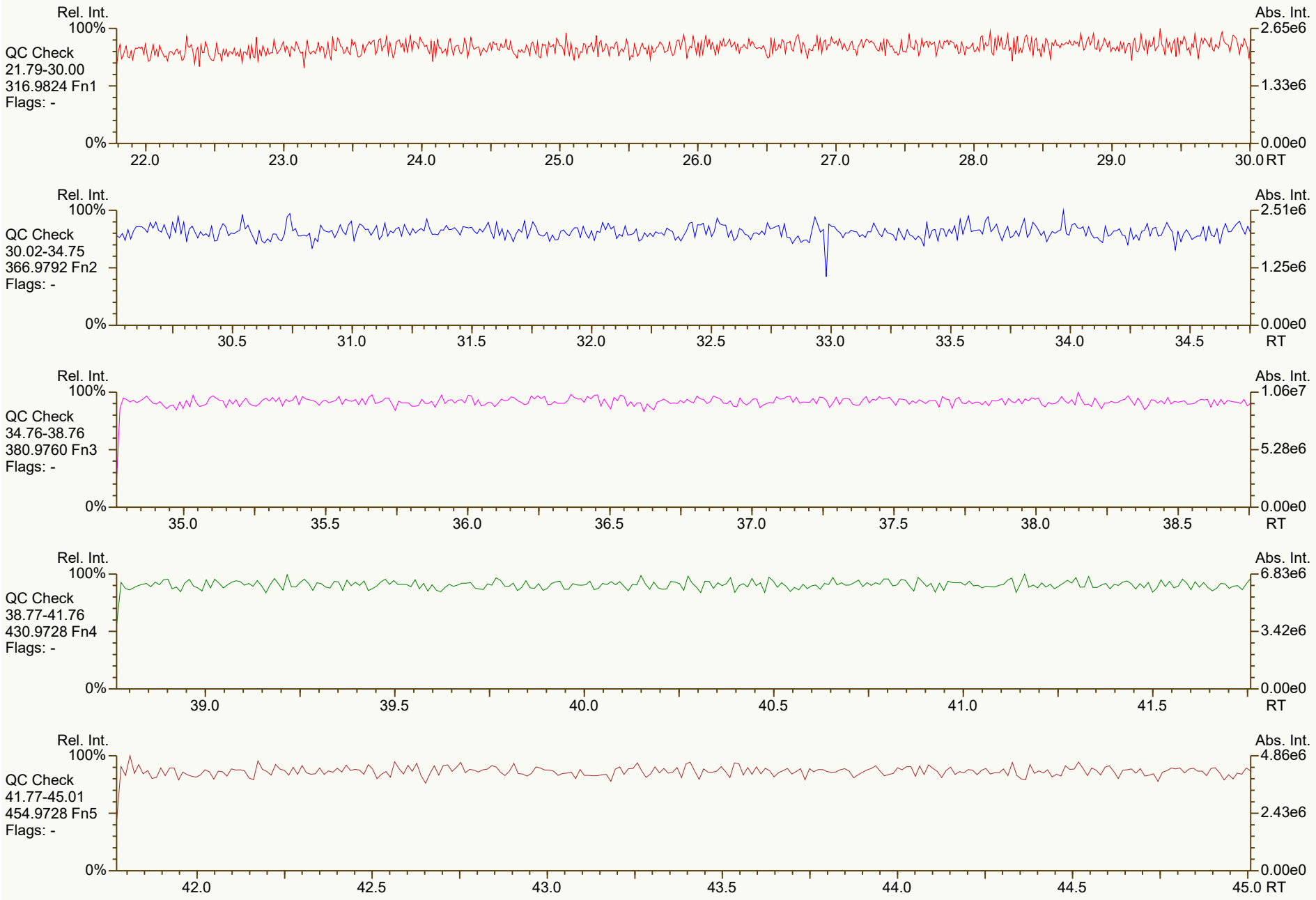
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.90		0.9843	0.9843	0	6.72E+06	1.00	Y	0.97	210	6204.751	1.17
1234678-HpCDD	**40.55**		**1.0003**	**1.0003**	**0**	**4.98E+06**	**1.05**	**Y**	**0.97**	**156**	**6204.751**	**1.17**
OCDD	**43.09**		**1.0003**	**1.0003**	**0**	**3.41E+07**	**0.90**	**Y**	**1.07**	**2,020**	**7502.228**	**3.47**
OCDD-a	43.08		1.0001	1.0002	+0.3	2.06E+06	2.76	Y	0.07	1,980	11291.839	84.7
1368-TCDF	NotFnd		0.8230						0.96		5673.411	0.758
1468-TCDF	23.17		0.8443	0.8435	-1.1	1.74E+05	0.66	Y	0.96	2.19	5673.411	0.758
2468-TCDF	23.81	EMPC	0.8672	0.8666	-0.9	2.00E+05	0.60	N	0.96	2.51	5673.411	0.758
1346/1246-TCDF	24.20	EMPC	0.8802	0.8809	+1.0	6.64E+04	1.10	N	0.96	0.834	5673.411	0.758
1347/1378/1247-TCDF	24.34		0.8855	0.8860	+0.7	9.28E+05	0.88	Y	0.96	11.6	5673.411	0.758
1348-TCDF	24.57		0.8952	0.8944	-1.2	2.09E+05	0.75	Y	0.96	2.62	5673.411	0.758
1248/1367/1379-TCDF	24.68		0.9000	0.8984	-2.4	4.04E+06	0.81	Y	0.96	50.7	5673.411	0.758
1268-TCDF	25.09	EMPC	0.9136	0.9134	-0.3	1.35E+06	0.89	N	0.96	17	5673.411	0.758
1467-TCDF	25.24	EMPC	0.9185	0.9187	+0.3	1.79E+05	0.92	N	0.96	2.24	5673.411	0.758
1478-TCDF	25.40		0.9247	0.9245	-0.3	3.54E+06	0.81	Y	0.96	44.4	5673.411	0.758
1369/1237-TCDF	25.77		0.9381	0.9382	+0.2	8.59E+05	0.70	Y	0.96	10.8	5673.411	0.758
2467-TCDF	25.91	EMPC	0.9427	0.9433	+0.9	1.33E+05	1.07	N	0.96	1.68	5673.411	0.758
2368-TCDF	26.05		0.9484	0.9484	0	2.53E+06	0.80	Y	0.96	31.8	5673.411	0.758
1238/1234/1678/1469/1236-TCDF	26.13		0.9517	0.9511	-0.9	4.65E+06	0.82	Y	0.96	58.4	5673.411	0.758
1278-TCDF	26.59		0.9682	0.9681	-0.2	4.04E+07	0.79	Y	0.96	507	5673.411	0.758
1349-TCDF	NotFnd		0.9725						0.96		5673.411	0.758
1267-TCDF	26.87		0.9782	0.9780	-0.3	2.14E+06	0.78	Y	0.96	26.8	5673.411	0.758
2346/1249-TCDF	NotFnd		0.9846						0.96		5673.411	0.758
2347/1279-TCDF	27.26		0.9926	0.9924	-0.3	1.03E+06	0.81	Y	0.96	12.9	5673.411	0.758
2348-TCDF	27.39		0.9966	0.9970	+0.7	7.92E+06	0.76	Y	0.96	99.4	5673.411	0.758
2378-TCDF	**27.49**	E	**1.0006**	**1.0008**	**+0.3**	**8.59E+07**	**0.79**	**Y**	**0.96**	**1,080**	**5673.411**	**0.758**
2367/3467-TCDF	27.84		1.0139	1.0136	-0.5	6.81E+06	0.83	Y	0.96	85.5	5673.411	0.758
1269-TCDF	28.10		1.0226	1.0228	+0.3	1.41E+06	0.67	Y	0.96	17.7	5673.411	0.758
1239-TCDF	NotFnd		1.0322						0.96		5673.411	0.758
1289-TCDF	29.49		1.0729	1.0737	+1.4	6.50E+06	0.83	Y	0.96	81.5	5673.411	0.758
13468/12468-PeCDF	29.44		0.9135	0.9140	+0.9	5.07E+05	1.50	Y	0.94	7.14	6869.951	0.88
13678/13467/12467-PeCDF	30.98	J EMPC	0.9612	0.9617	+0.9	7.89E+04	2.15	N	0.94	1.11	5627.486	0.721
12368/13478/12478-PeCDF	31.13		0.9661	0.9666	+0.9	1.60E+06	1.48	Y	0.94	22.5	5627.486	0.721
14678-PeCDF	31.23	J EMPC	0.9693	0.9695	+0.4	4.62E+04	1.06	N	0.94	0.652	5627.486	0.721
13479-PeCDF	NotFnd		0.9723						0.94		5627.486	0.721
13469/12479-PeCDF	NotFnd		0.9799						0.94		5627.486	0.721
12346-PeCDF	NotFnd		0.9842						0.94		5627.486	0.721

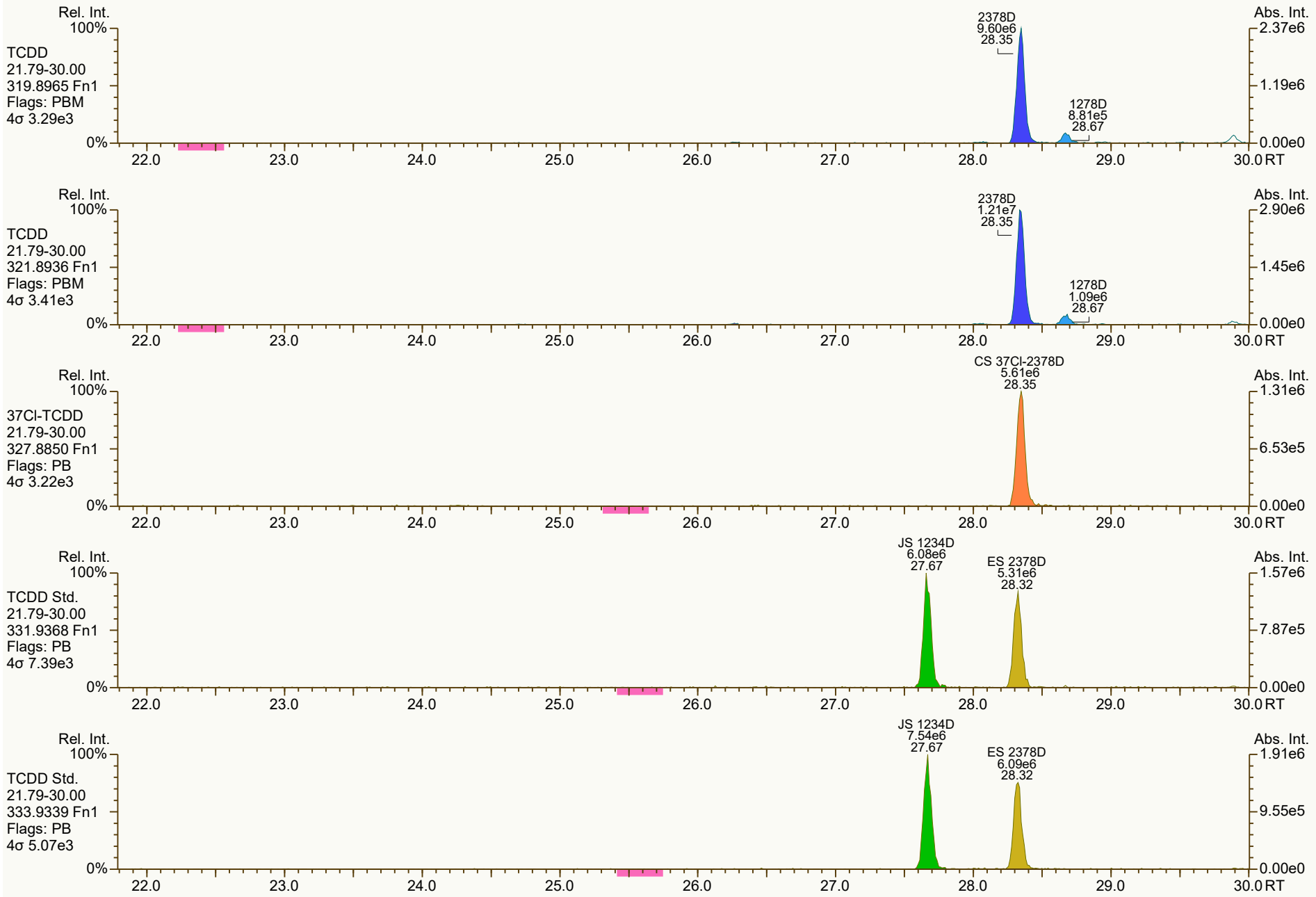
Lab ID: B5985_18724_DF_003 **Acq'd: 10 Dec 2021 05:39 PSW** **Wt/Vol: 10.06 g** **ICAL: MM3_DF_10272021_27JUL2021**

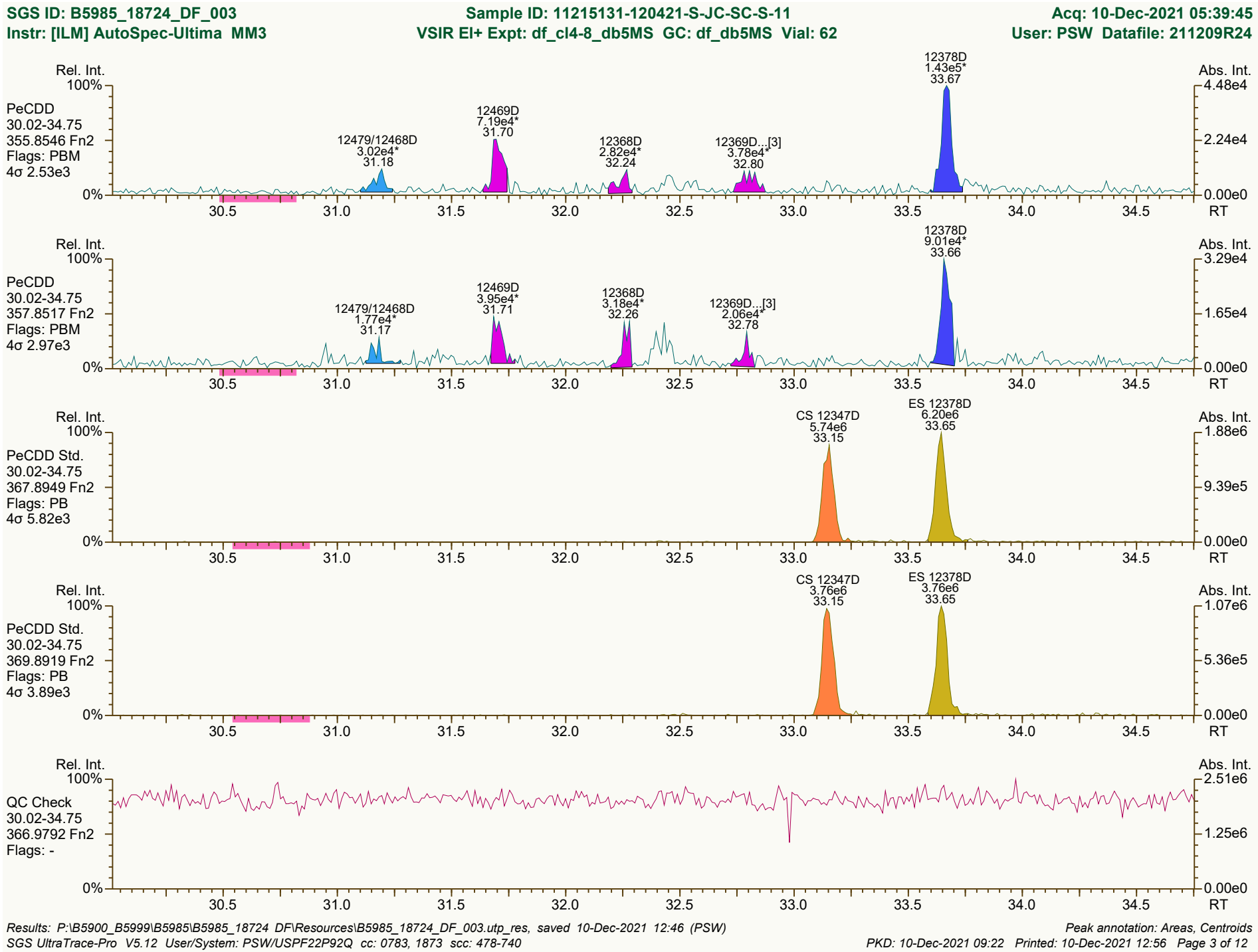
Client ID: 11215131-120421-S-JC-SC-S-11 **UTP: 10-Dec-2021 12:46:21 PSW** **J-level: 0.497 pg/g** **Split: 1** **Checkcode: 478-740-NQL**

Datafile: 211209R24 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

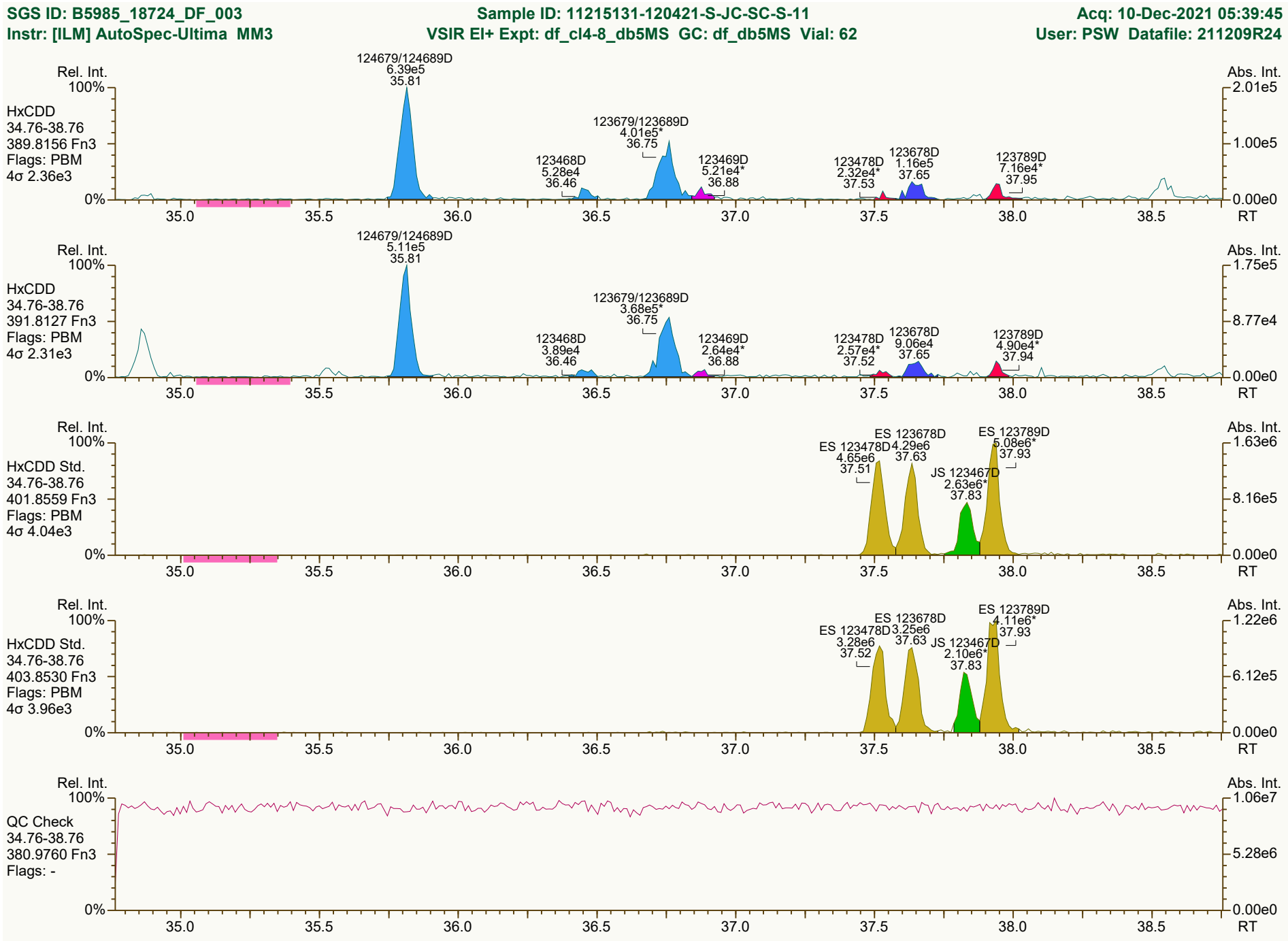
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.78	J	0.9868	0.9866	-0.4	1.43E+05	1.40	Y	0.94	2.02	5627.486	0.721
12347-PeCDF	31.86	J	0.9893	0.9892	-0.2	7.77E+04	1.46	Y	0.94	1.1	5627.486	0.721
12348-PeCDF	32.02	EMPC	0.9941	0.9941	0	2.63E+05	2.17	N	0.94	3.71	5627.486	0.721
12378-PeCDF	**32.23**		**1.0006**	**1.0005**	**-0.2**	**3.19E+06**	**1.48**	**Y**	**0.95**	**43.9**	**5627.486**	**0.721**
12678/12367-PeCDF	32.52		1.0090	1.0096	+1.2	9.12E+05	1.52	Y	0.94	12.9	5627.486	0.721
12379-PeCDF	NotFnd		1.0143						0.94		5627.486	0.721
12679-PeCDF	NotFnd		0.9929						0.94		5627.486	0.721
23467/12369-PeCDF	NotFnd		0.9966						0.94		5627.486	0.721
23478-PeCDF	**33.34**		**1.0006**	**1.0007**	**+0.2**	**2.41E+06**	**1.52**	**Y**	**0.94**	**34.9**	**5627.486**	**0.72**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		5627.486	0.721
12349-PeCDF	NotFnd		1.0102						0.94		5627.486	0.721
12389-PeCDF	34.40	J EMPC	1.0325	1.0326	+0.2	9.87E+04	2.29	N	0.94	1.39	5627.486	0.721
123468-HxCDF	35.18	J	0.9628	0.9629	+0.2	1.52E+05	1.35	Y	1.16	2.47	5480.797	0.705
124678/134678-HxCDF	35.37		0.9683	0.9682	-0.2	8.17E+05	1.32	Y	1.16	13.2	5480.797	0.705
134679-HxCDF	NotFnd		0.9746						1.16		5480.797	0.705
124679-HxCDF	NotFnd		0.9798						1.16		5480.797	0.705
124689-HxCDF	36.01		0.9859	0.9859	0	5.82E+05	1.36	Y	1.16	9.42	5480.797	0.705
123467-HxCDF	36.43	J EMPC	0.9972	0.9972	0	4.58E+04	0.98	N	1.16	0.74	5480.797	0.705
123478-HxCDF	**36.55**		**1.0004**	**1.0005**	**+0.2**	**4.37E+06**	**1.26**	**Y**	**1.23**	**70.6**	**5480.797**	**0.689**
123678-HxCDF	**36.68**		**1.0004**	**1.0004**	**0**	**1.23E+06**	**1.27**	**Y**	**1.13**	**17.2**	**5480.797**	**0.584**
123479-HxCDF	NotFnd		1.0049						1.16		5480.797	0.705
123469-HxCDF	NotFnd		1.0088						1.16		5480.797	0.705
123679-HxCDF	NotFnd		0.9943						1.16		5480.797	0.705
234678-HxCDF	**37.35**		**1.0005**	**1.0005**	**0**	**3.27E+05**	**1.33**	**Y**	**1.15**	**5.62**	**5480.797**	**0.854**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		5480.797	0.705
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**5480.797**	**0.729**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.33		1.0007	1.0011	+0.9	3.24E+05	1.27	Y	1.16	5.24	5480.797	0.705
1234678-HpCDF	**39.65**		**1.0003**	**1.0003**	**0**	**1.83E+06**	**1.08**	**Y**	**1.36**	**33.9**	**5404.182**	**0.641**
1234679-HpCDF	39.91	**J EMPC**	1.0067	1.0066	-0.2	1.74E+04	1.46	N	1.33	0.378	5404.182	0.78
1234689-HpCDF	40.04		1.0100	1.0100	0	7.91E+05	1.10	Y	1.33	17.2	5404.182	0.78
1234789-HpCDF	**40.99**		**1.0003**	**1.0003**	**0**	**3.12E+05**	**0.89**	**Y**	**1.30**	**8.07**	**5404.182**	**0.968**
OCDF	**43.27**		**1.0002**	**1.0001**	**-0.3**	**5.11E+05**	**0.89**	**Y**	**1.03**	**25.5**	**5750.761**	**2.35**
OCDF-a	NotFnd		1.0002						0.06		8887.863	62.8


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Abs. Int.
2.65e6
1.33e6
0.00e0
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Abs. Int.
2.51e6
1.25e6
0.00e0
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Abs. Int.
1.06e7
5.28e6
0.00e0
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
6.83e6
3.42e6
0.00e0
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
4.86e6
2.43e6
0.00e0

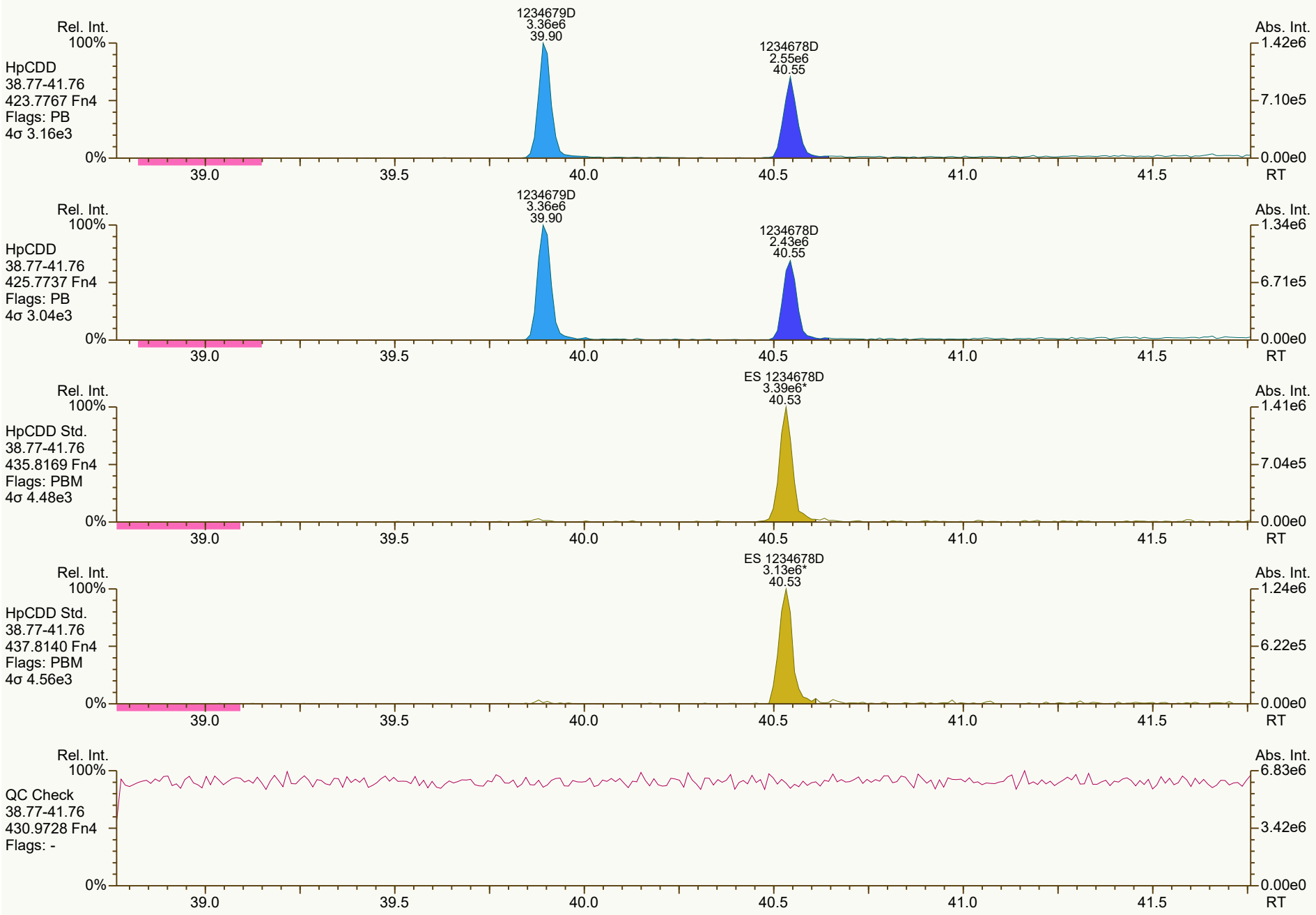

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 3.29e3
0%
2378D
9.60e6
28.35
1278D
8.81e5
28.67
Abs. Int.
2.37e6
1.19e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.41e3
0%
2378D
1.21e7
28.35
1278D
1.09e6
28.67
Abs. Int.
2.90e6
1.45e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.22e3
0%
CS 37Cl-2378D
5.61e6
28.35
Abs. Int.
1.31e6
6.53e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 7.39e3
0%
JS 1234D
6.08e6
27.67
ES 2378D
5.31e6
28.32
Abs. Int.
1.57e6
7.87e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 5.07e3
0%
JS 1234D
7.54e6
27.67
ES 2378D
6.09e6
28.32
Abs. Int.
1.91e6
9.55e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

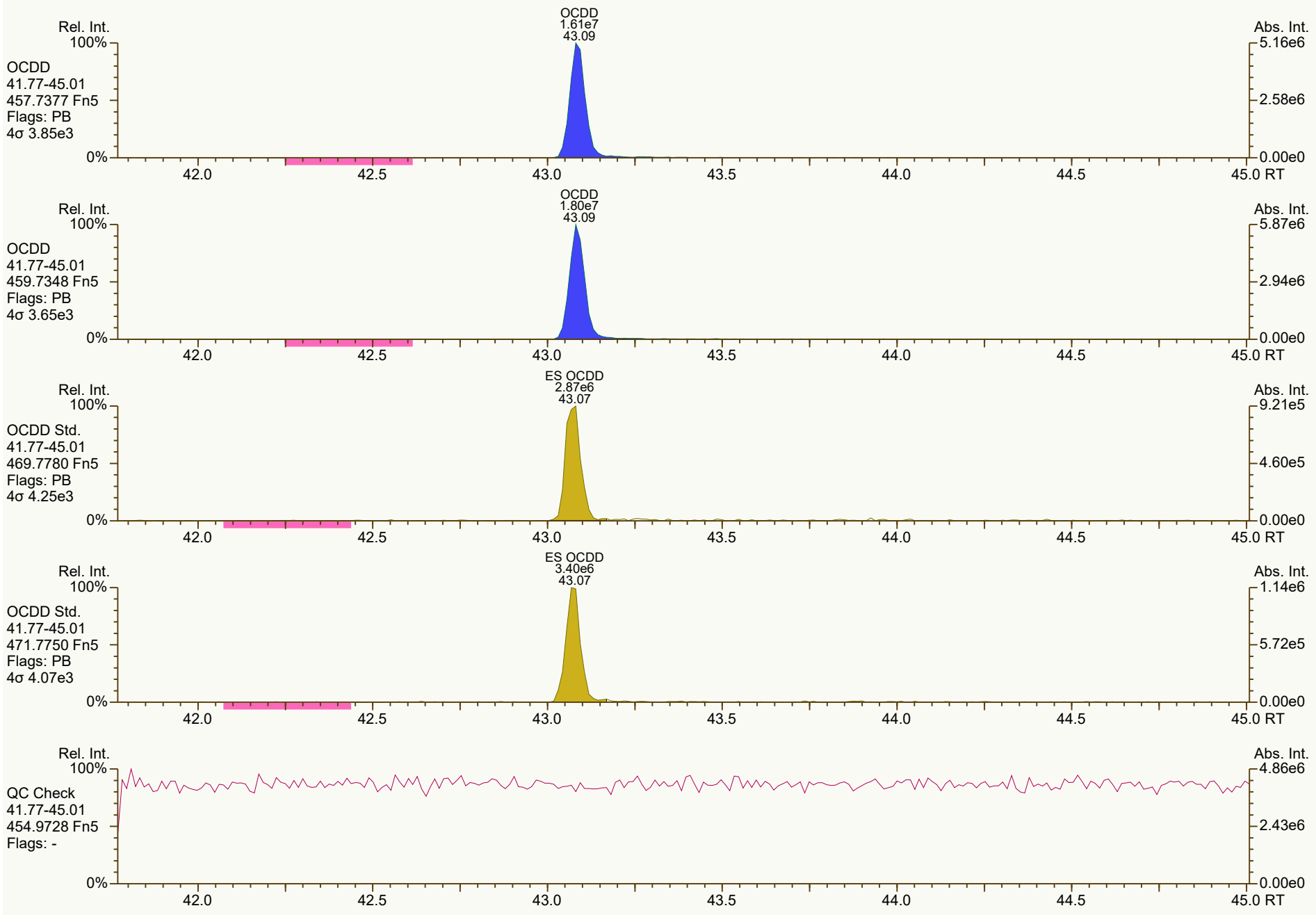

SGS ID: B5985_18724_DF_003
Sample ID: 11215131-120421-S-JC-SC-S-11
Acq: 10-Dec-2021 05:39:45
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211209R24
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 2.53e3
12479/12468D
3.02e4*
31.18
12469D
7.19e4*
31.70
12368D
2.82e4*
32.24
12369D...[3]
3.78e4*
32.80
12378D
1.43e5*
33.67
4.48e4
2.24e4
0.00e0
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 2.97e3
12479/12468D
1.77e4*
31.17
12469D
3.95e4*
31.71
12368D
3.18e4*
32.26
12369D...[3]
2.06e4*
32.78
12378D
9.01e4*
33.66
3.29e4
1.65e4
0.00e0
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.82e3
CS 12347D
5.74e6
33.15
ES 12378D
6.20e6
33.65
1.88e6
9.39e5
0.00e0
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 3.89e3
CS 12347D
3.76e6
33.15
ES 12378D
3.76e6
33.65
1.07e6
5.36e5
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
2.51e6
1.25e6
0.00e0
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_003.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0783, 1873 scc: 478-740
PKD: 10-Dec-2021 09:22 Printed: 10-Dec-2021 12:56 Page 3 of 12

SGS ID: B5985_18724_DF_003 | Sample ID: 11215131-120421-S-JC-SC-S-11 | Acq: 10-Dec-2021 05:39:45
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62 | User: PSW Datafile: 211209R24



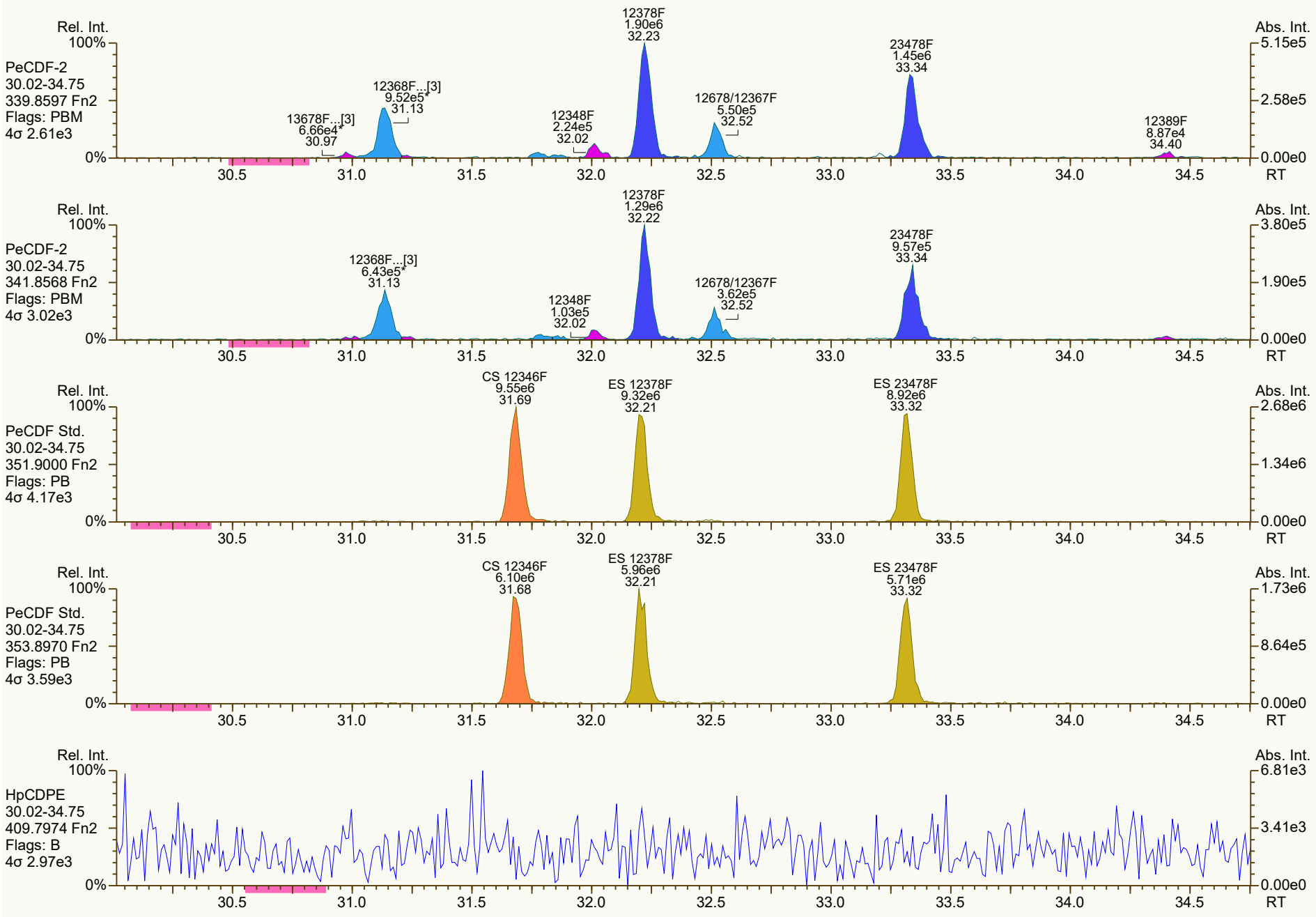
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_003.utp_res, saved 10-Dec-2021 12:46 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4282, 9058 scc: 478-740 | PKD: 10-Dec-2021 09:22 Printed: 10-Dec-2021 12:56 Page 4 of 12

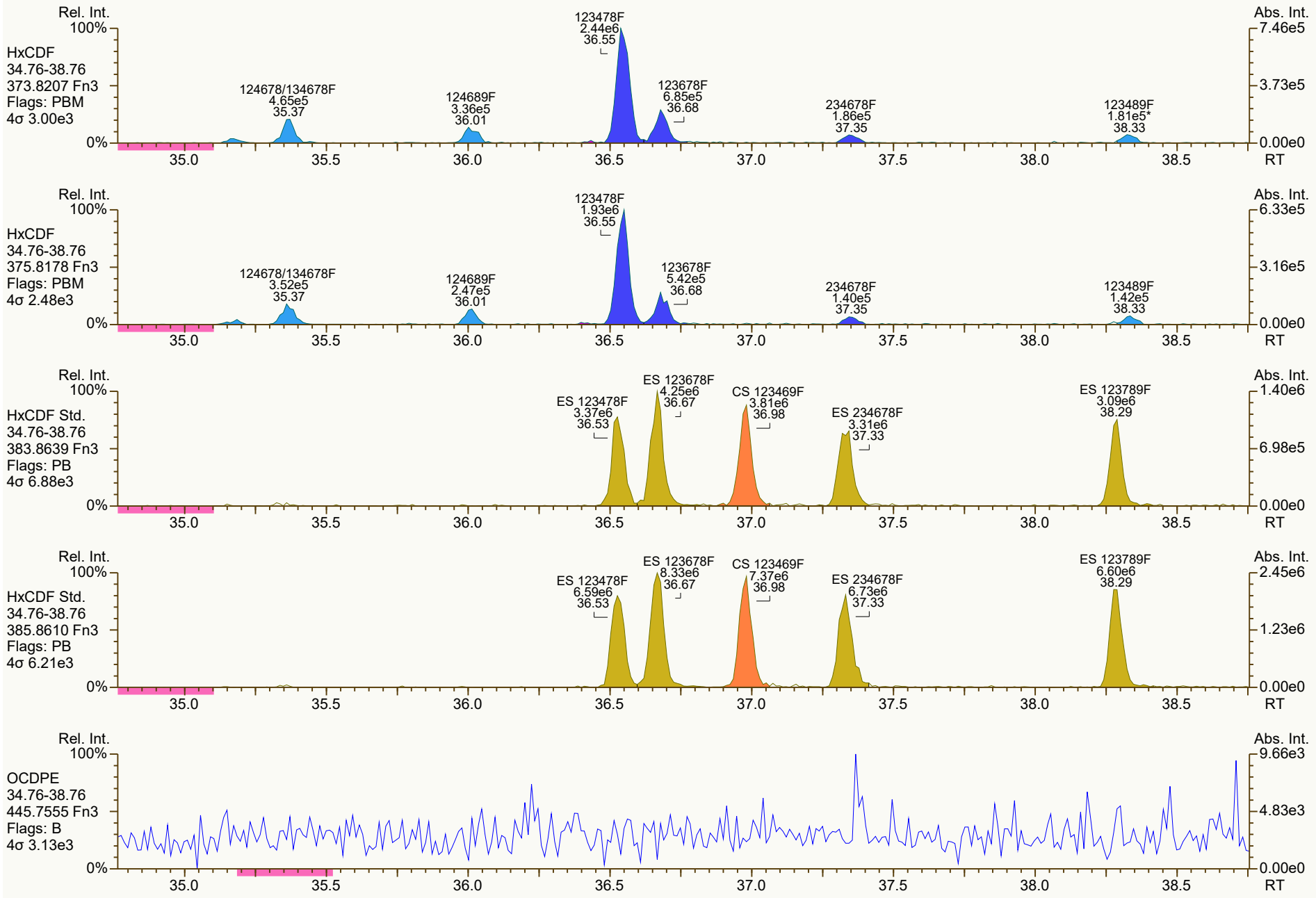

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 3.16e3
1234679D
3.36e6
39.90
1234678D
2.55e6
40.55
Abs. Int.
1.42e6
7.10e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 3.04e3
1234679D
3.36e6
39.90
1234678D
2.43e6
40.55
Abs. Int.
1.34e6
6.71e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 4.48e3
ES 1234678D
3.39e6*
40.53
Abs. Int.
1.41e6
7.04e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 4.56e3
ES 1234678D
3.13e6*
40.53
Abs. Int.
1.24e6
6.22e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
6.83e6
3.42e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

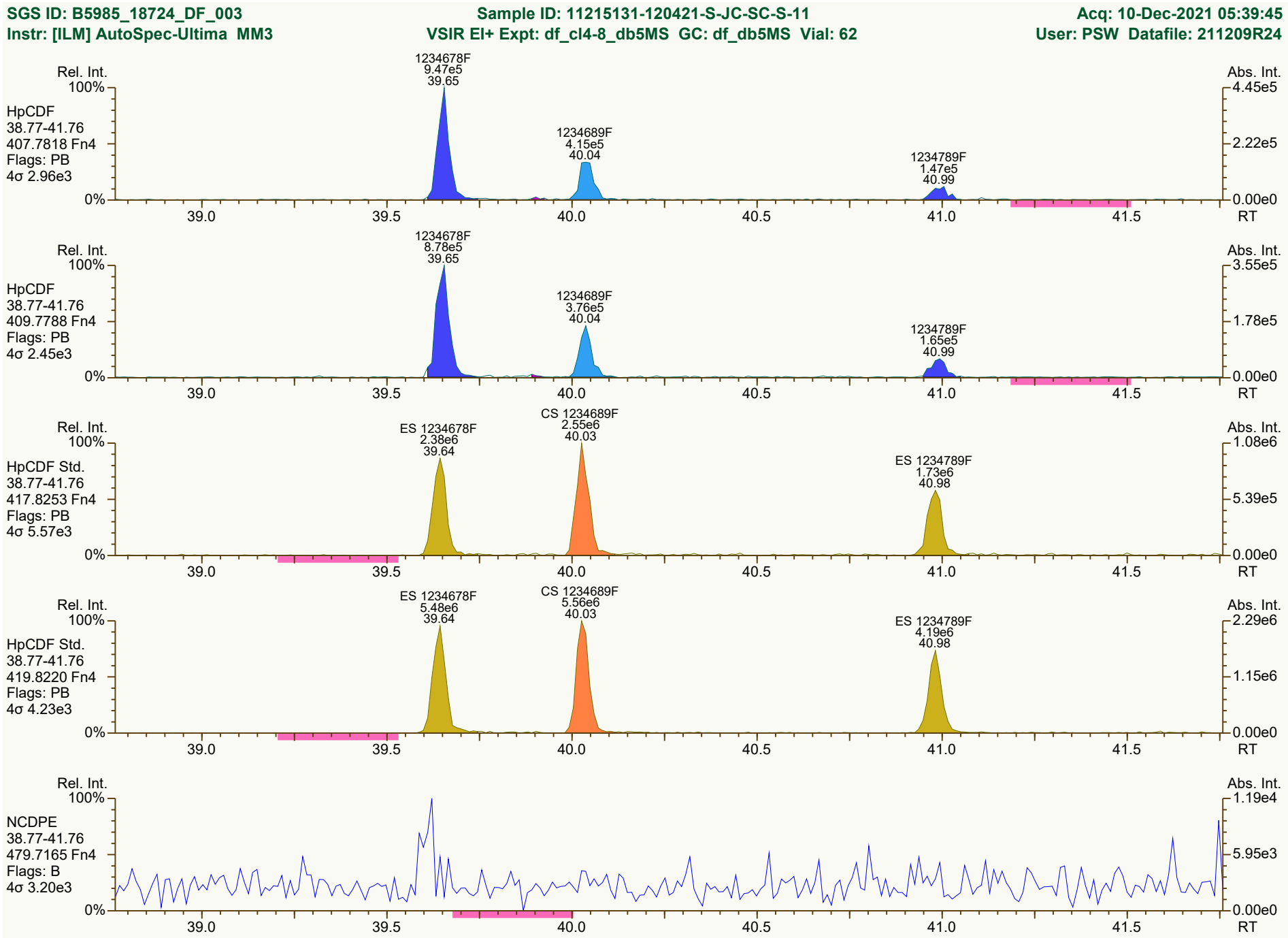

OCDD
1.61e7
43.09
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 3.85e3
0%
Abs. Int.
5.16e6
2.58e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.80e7
43.09
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 3.65e3
0%
Abs. Int.
5.87e6
2.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.87e6
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.25e3
0%
Abs. Int.
9.21e5
4.60e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.40e6
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.07e3
0%
Abs. Int.
1.14e6
5.72e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.86e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 3.12e3
0%
2378F
3.79e7
27.49
1278F
1.78e7
26.59
1238F...[5]
2.09e6
26.13
2348F
3.42e6
27.39
2367/3467F
3.09e6
27.84
1289F
2.94e6
29.49
Abs. Int.
9.01e6
4.51e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 2.55e3
0%
2378F
4.80e7
27.49
1278F
2.26e7
26.59
2348F
4.50e6
27.39
2367/3467F
3.72e6
27.84
1289F
3.56e6
29.49
Abs. Int.
1.17e7
5.83e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 7.89e3
0%
JS 1234F
8.98e6
26.11
ES 2378F
7.24e6
27.47
Abs. Int.
2.01e6
1.01e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 7.59e3
0%
JS 1234F
1.15e7
26.11
ES 2378F
9.25e6
27.47
Abs. Int.
2.42e6
1.21e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.48e3
0%
Abs. Int.
1.20e4
6.01e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
0%
Abs. Int.
8.96e4
4.48e4
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.19e3
13468/12468F
3.04e5
29.44
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
4.94e4
2.47e4
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 3.68e3
13468/12468F
2.03e5
29.43
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.65e6
1.33e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 2.61e3
0%
13678F...[3]
6.66e4*
30.97
12368F...[3]
9.52e5*
31.13
12348F
2.24e5
32.02
12378F
1.90e6
32.23
12678/12367F
5.50e5
32.52
23478F
1.45e6
33.34
12389F
8.87e4
34.40
Abs. Int.
5.15e5
2.58e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.02e3
0%
12368F...[3]
6.43e5*
31.13
12348F
1.03e5
32.02
12378F
1.29e6
32.22
12678/12367F
3.62e5
32.52
23478F
9.57e5
33.34
Abs. Int.
3.80e5
1.90e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.17e3
0%
CS 12346F
9.55e6
31.69
ES 12378F
9.32e6
32.21
ES 23478F
8.92e6
33.32
Abs. Int.
2.68e6
1.34e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 3.59e3
0%
CS 12346F
6.10e6
31.68
ES 12378F
5.96e6
32.21
ES 23478F
5.71e6
33.32
Abs. Int.
1.73e6
8.64e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.97e3
0%
Abs. Int.
6.81e3
3.41e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 3.00e3
0%
124678/134678F
4.65e5
35.37
124689F
3.36e5
36.01
123478F
2.44e6
36.55
123678F
6.85e5
36.68
234678F
1.86e5
37.35
123489F
1.81e5*
38.33
Abs. Int.
7.46e5
3.73e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 2.48e3
0%
124678/134678F
3.52e5
35.37
124689F
2.47e5
36.01
123478F
1.93e6
36.55
123678F
5.42e5
36.68
234678F
1.40e5
37.35
123489F
1.42e5
38.33
Abs. Int.
6.33e5
3.16e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 6.88e3
0%
ES 123478F
3.37e6
36.53
ES 123678F
4.25e6
36.67
CS 123469F
3.81e6
36.98
ES 234678F
3.31e6
37.33
ES 123789F
3.09e6
38.29
Abs. Int.
1.40e6
6.98e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 6.21e3
0%
ES 123478F
6.59e6
36.53
ES 123678F
8.33e6
36.67
CS 123469F
7.37e6
36.98
ES 234678F
6.73e6
37.33
ES 123789F
6.60e6
38.29
Abs. Int.
2.45e6
1.23e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.13e3
0%
Abs. Int.
9.66e3
4.83e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT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Sample ID: 11215131-120421-S-JC-SC-S-11
Acq: 10-Dec-2021 05:39:45
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62
User: PSW Datafile: 211209R24
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 2.96e3
1234678F
9.47e5
39.65
1234689F
4.15e5
40.04
1234789F
1.47e5
40.99
4.45e5
2.22e5
0.00e0
RT
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 2.45e3
1234678F
8.78e5
39.65
1234689F
3.76e5
40.04
1234789F
1.65e5
40.99
3.55e5
1.78e5
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 5.57e3
ES 1234678F
2.38e6
39.64
CS 1234689F
2.55e6
40.03
ES 1234789F
1.73e6
40.98
1.08e6
5.39e5
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 4.23e3
ES 1234678F
5.48e6
39.64
CS 1234689F
5.56e6
40.03
ES 1234789F
4.19e6
40.98
2.29e6
1.15e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.20e3
1.19e4
5.95e3
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
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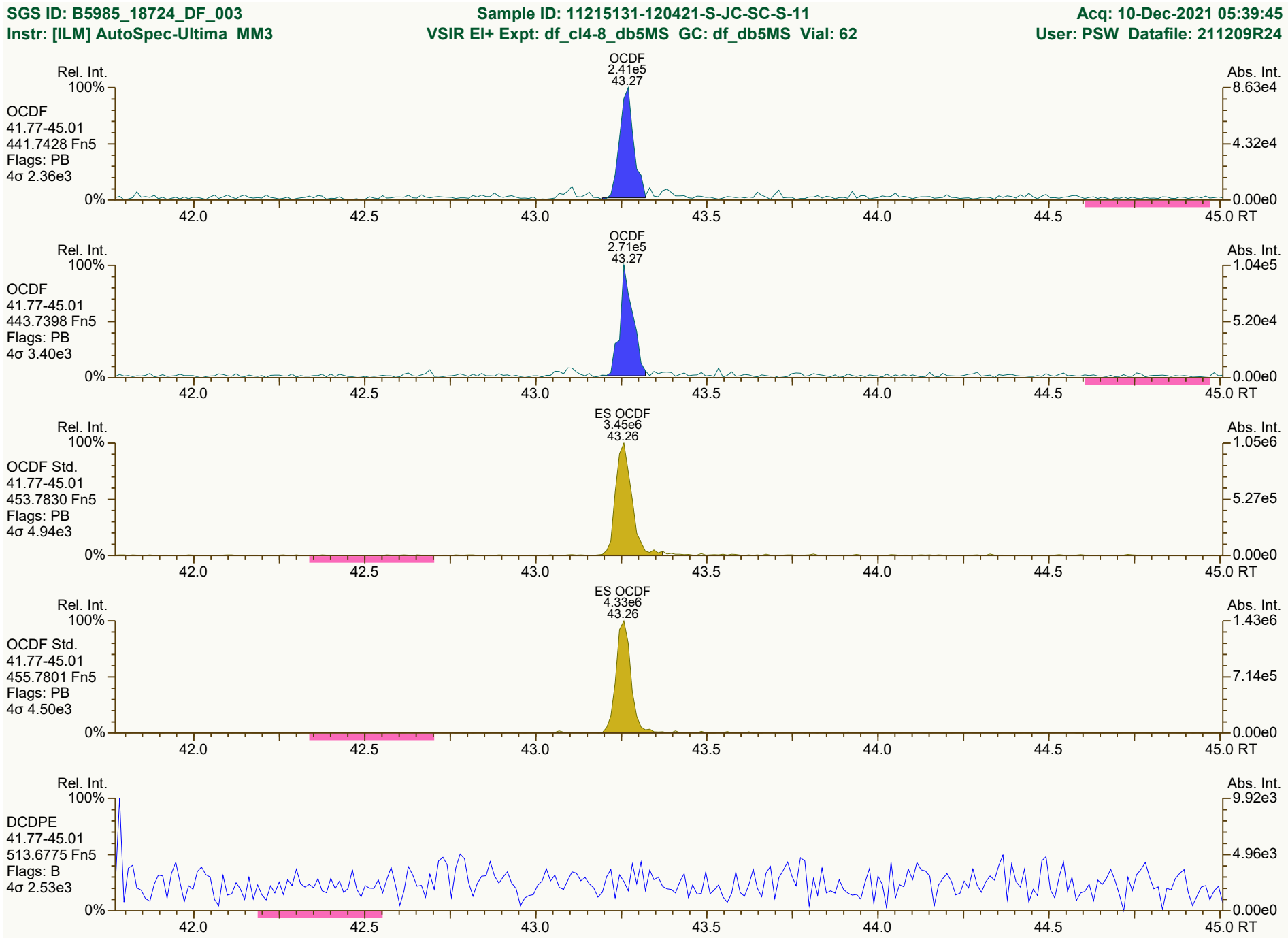
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9003, 3144, 6608 scc: 478-740
PKD: 10-Dec-2021 09:22 Printed: 10-Dec-2021 12:56 Page 11 of 12

SGS ID: B5985_18724_DF_003 | Sample ID: 11215131-120421-S-JC-SC-S-11 | Acq: 10-Dec-2021 05:39:45
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 62 | User: PSW Datafile: 211209R24



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_003.utp_res, saved 10-Dec-2021 12:46 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7082, 4041, 1076 scc: 478-740 | *PKD: 10-Dec-2021 09:22 Printed: 10-Dec-2021 12:56 Page 12 of 12*

Lab ID: B5985_18724_DF_004 **Acq'd:** 10 Dec 2021 06:27 PSW **Wt/Vol:** 10.02 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-12 **UTP:** 10-Dec-2021 12:46:21 PSW **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 786-451-HLV

Datafile: 211209R25 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.36	E	1.0008	1.0008	0	1.39E+08	0.79	Y	1.34	1,870	7593.84	1.03
12378-PeCDD	33.68		1.0005	1.0007	+0.4	1.15E+06	1.76	Y	1.06	23.6	6143.799	1.05
123478-HxCDD	37.54		1.0003	1.0003	0	1.31E+05	1.21	Y	1.06	3.45	5327.249	1.04
123678-HxCDD	37.66		1.0033	1.0036	+0.7	7.49E+05	1.18	Y	1.08	20.6	5327.249	1.11
123789-HxCDD	37.96		1.0110	1.0114	+0.9	2.71E+05	1.23	Y	1.02	6.3	5327.249	1.12
1234678-HpCDD	40.56		1.0003	1.0003	0	1.30E+07	1.04	Y	0.97	439	5458.717	1.14
OCDD	43.09		1.0003	1.0003	0	8.72E+07	0.90	Y	1.07	5,260	6631.723	2.68
2378-TCDF	27.50	E	1.0006	1.0007	+0.2	5.10E+08	0.79	Y	0.96	7,130	6228.003	0.994
12378-PeCDF	32.24		1.0006	1.0005	-0.2	2.38E+07	1.51	Y	0.95	384	7719.602	1.08
23478-PeCDF	33.36		1.0006	1.0008	+0.4	1.31E+07	1.53	Y	0.94	220	7719.602	1.2
123478-HxCDF	36.56		1.0004	1.0005	+0.2	4.97E+07	1.27	Y	1.23	925	8828.797	1.44
123678-HxCDF	36.70		1.0004	1.0006	+0.4	1.35E+07	1.22	Y	1.13	226	8828.797	1.21
234678-HxCDF	37.36		1.0005	1.0005	0	2.58E+06	1.20	Y	1.15	51.5	8828.797	1.42
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	8828.797	1.32
1234678-HpCDF	39.66		1.0003	1.0003	0	1.38E+07	1.06	Y	1.36	285	5334.545	0.607
1234789-HpCDF	41.00		1.0003	1.0003	0	3.51E+06	1.07	Y	1.30	88.9	5334.545	0.965
OCDF	43.28		1.0002	1.0003	+0.3	2.06E+07	0.87	Y	1.03	1,050	7555.388	2.88

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.34	1.0237	1.0235	-0.3	1.10E+07	0.81	Y	1.03	85.9
ES 12378-PeCDD	33.66	1.2158	1.2159	+0.2	9.17E+06	1.68	Y	1.03	71.7
ES 123478-HxCDD	37.53	0.9920	0.9917	-0.7	7.15E+06	1.40	Y	0.99	81.6
ES 123678-HxCDD	37.65	0.9949	0.9949	0	6.71E+06	1.32	Y	0.97	78.3
ES 123789-HxCDD	37.94	1.0026	1.0027	+0.2	8.46E+06	1.28	Y	1.12	85.5
ES 1234678-HpCDD	40.55	1.0713	1.0715	+0.5	6.05E+06	1.09	Y	0.99	69.2
ES OCDD	43.08	1.1385	1.1385	0	6.18E+06	0.85	Y	0.78	45.2
ES 2378-TCDF	27.48	1.0519	1.0520	+0.2	1.49E+07	0.76	Y	1.08	80.5
ES 12378-PeCDF	32.22	1.2331	1.2336	+1.0	1.31E+07	1.68	Y	0.93	82.2
ES 23478-PeCDF	33.33	1.2754	1.2759	+1.0	1.27E+07	1.63	Y	0.92	80.7
ES 123478-HxCDF	36.54	0.9656	0.9657	+0.2	8.68E+06	0.51	Y	1.14	86.3
ES 123678-HxCDF	36.68	0.9693	0.9693	0	1.05E+07	0.48	Y	1.30	92.3
ES 234678-HxCDF	37.34	0.9869	0.9869	0	8.69E+06	0.52	Y	1.20	82.1
ES 123789-HxCDF	38.30	1.0121	1.0122	+0.2	8.47E+06	0.50	Y	1.14	84.7
ES 1234678-HpCDF	39.65	1.0478	1.0479	+0.2	7.09E+06	0.44	Y	0.95	84.7
ES 1234789-HpCDF	40.99	1.0832	1.0833	+0.2	6.05E+06	0.50	Y	0.85	81.2
ES OCDF	43.27	1.1434	1.1434	0	7.63E+06	0.83	Y	0.93	46.8

Lab ID: B5985_18724_DF_004 **Acq'd:** 10 Dec 2021 06:27 PSW **Wt/Vol:** 10.02 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-12 **UTP:** 10-Dec-2021 12:46:21 PSW **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 786-451-HLV

Datafile: 211209R25 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.68		-	-	-	1.24E+07	0.84	Y	-	-	
JS 1234-TCDF	26.12		-	-	-	1.70E+07	0.78	Y	-	-	
JS 123467-HxCDD	37.84		-	-	-	4.40E+06	1.28	Y	-	-	
CS 37Cl-2378-TCDD	28.36		1.0245	1.0243	-0.3	4.64E+06	n/a	-	1.31	71.6	
CS 12347-PeCDD	33.17		1.1978	1.1980	+0.4	8.11E+06	1.62	Y	0.89	73.5	
CS 12346-PeCDF	31.70		1.2130	1.2135	+1.0	1.22E+07	1.63	Y	0.87	82.5	
CS 123469-HxCDF	36.99		0.9775	0.9776	+0.2	8.70E+06	0.51	Y	1.09	90.6	
CS 1234689-HpCDF	40.04		1.0580	1.0582	+0.5	6.48E+06	0.47	Y	0.86	85.1	
~~SS 37Cl-2378-TCDD~~	~~28.36~~		~~1.0245~~	~~1.0243~~	~~-0.3~~	~~4.64E+06~~	~~n/a~~		~~1.26~~	~~83.~~8	Not used in this project.
~~SS 12347-PeCDD~~	~~33.17~~		~~1.1978~~	~~1.1980~~	~~+0.4~~	~~8.11E+06~~	~~1.62~~	~~Y~~	~~0.86~~	~~102~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.70~~		~~1.2130~~	~~1.2135~~	~~+1.0~~	~~1.22E+07~~	~~1.63~~	~~Y~~	~~0.93~~	~~100~~	
~~SS 123469-HxCDF~~	~~36.99~~		~~0.9775~~	~~0.9776~~	~~+0.2~~	~~8.70E+06~~	~~0.51~~	~~Y~~	~~0.84~~	~~90.~~1	
~~SS 1234689-HpCDF~~	~~40.04~~		~~1.0580~~	~~1.0582~~	~~+0.5~~	~~6.48E+06~~	~~0.47~~	~~Y~~	~~0.91~~	~~100~~	

Totals	Conc	EMPC
Total TCDD	2080	2090
Total PeCDD	33.4	43.8
Total HxCDD	166	172
Total HpCDD	929	929
Total Tetra-Octa Dioxins	8470	8490
Total TCDF	13,800	13800
Total PeCDF	961	963
Total HxCDF	1,480	1490
Total HpCDF	591	601
Total Tetra-Octa Furans	17,900	17900
Total Tetra-Octa Dioxins & Furans	26300	26400

Lab ID: B5985_18724_DF_004 **Acq'd: 10 Dec 2021 06:27 PSW** **Wt/Vol: 10.02 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120421-S-JC-SC-S-12 **UTP: 10-Dec-2021 12:46:21 PSW** **J-level: 0.499 pg/g** **Split: 1** **Checkcode: 786-451-HLV**

Datafile: 211209R25 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.72		0.8726	0.8723	-0.4	1.92E+05	0.81	Y	1.34	2.6	7593.84	1.03
1379-TCDD	NotFnd		0.8851						1.34		7593.84	1.03
1369-TCDD	NotFnd		0.9002						1.34		7593.84	1.03
1469-TCDD	26.25	EMPC	0.9275	0.9266	-1.4	4.88E+04	1.04	N	1.34	0.659	7593.84	1.03
1247/1246/1248/1249-TCDD	26.52	EMPC	0.9361	0.9359	-0.3	2.39E+05	0.97	N	1.34	3.23	7593.84	1.03
1378-TCDD	26.71		0.9427	0.9426	-0.2	3.59E+05	0.79	Y	1.34	4.86	7593.84	1.03
1268-TCDD	NotFnd		0.9498						1.34		7593.84	1.03
1478-TCDD	27.16		0.9584	0.9584	0	3.28E+05	0.72	Y	1.34	4.43	7593.84	1.03
1279-TCDD	NotFnd		0.9644						1.34		7593.84	1.03
1234/1269-TCDD	NotFnd		0.9766						1.34		7593.84	1.03
1236-TCDD	NotFnd		0.9813						1.34		7593.84	1.03
1237/1238-TCDD	28.07		0.9906	0.9906	0	2.21E+06	0.74	Y	1.34	29.9	7593.84	1.03
1239-TCDD	NotFnd		0.9952						1.34		7593.84	1.03
2378-TCDD	**28.36**	E	**1.0008**	1.0008	**0**	1.39E+08	0.79	Y	**1.34**	**1,870**	**7593.84**	**1.03**
1278-TCDD	28.69		1.0122	1.0126	+0.7	1.23E+07	0.81	Y	1.34	166	7593.84	1.03
1267-TCDD	NotFnd		1.0168						1.34		7593.84	1.03
1289-TCDD	29.34	EMPC	1.0349	1.0356	+1.2	1.04E+05	1.33	N	1.34	1.41	7593.84	1.03
12479/12468-PeCDD	31.19		0.9267	0.9266	-0.2	2.50E+05	1.37	Y	1.06	5.14	6143.799	1.05
12469-PeCDD	31.72	J EMPC	0.9425	0.9424	-0.2	1.08E+05	0.49	N	1.06	2.23	6143.799	1.05
12368-PeCDD	32.27	EMPC	0.9588	0.9587	-0.2	1.49E+05	2.00	N	1.06	3.05	6143.799	1.05
12478-PeCDD	32.47		0.9643	0.9645	+0.4	1.22E+05	1.63	Y	1.06	2.5	6143.799	1.05
12379-PeCDD	32.56	J EMPC	0.9673	0.9673	0	8.18E+04	1.85	N	1.06	1.68	6143.799	1.05
12369/12467/12489-PeCDD	32.81	J	0.9750	0.9747	-0.6	1.04E+05	1.41	Y	1.06	2.13	6143.799	1.05
12346/12347-PeCDD	33.18	J EMPC	0.9859	0.9856	-0.6	5.13E+04	1.09	N	1.06	1.05	6143.799	1.05
12378-PeCDD	33.68		**1.0005**	**1.0007**	**+0.4**	**1.15E+06**	**1.76**	**Y**	**1.06**	**23.6**	**6143.799**	**1.05**
12367-PeCDD	33.80	J EMPC	1.0032	1.0041	+1.8	1.18E+05	1.85	N	1.06	2.42	6143.799	1.05
12389-PeCDD	NotFnd		1.0135						1.06		6143.799	1.05
124679/124689-HxCDD	35.83		0.9544	0.9548	+0.9	2.15E+06	1.24	Y	1.05	55	5327.249	1.09
123468-HxCDD	36.47	EMPC	0.9716	0.9719	+0.7	2.21E+05	1.57	N	1.05	5.64	5327.249	1.09
123679/123689-HxCDD	36.76		0.9793	0.9797	+0.9	2.93E+06	1.22	Y	1.05	74.7	5327.249	1.09
123469-HxCDD	36.89		0.9829	0.9832	+0.7	1.26E+05	1.24	Y	1.05	3.21	5327.249	1.09
123478-HxCDD	37.54		**1.0003**	**1.0003**	**0**	**1.31E+05**	**1.21**	**Y**	1.06	**3.45**	**5327.249**	**1.04**
123678-HxCDD	37.66		**1.0033**	**1.0036**	**+0.7**	**7.49E+05**	**1.18**	**Y**	1.08	**20.6**	**5327.249**	**1.11**
123467-HxCDD	37.86		1.0084	1.0088	+0.9	1.05E+05	1.23	Y	1.05	2.67	5327.249	1.09
123789-HxCDD	37.96		**1.0110**	**1.0114**	**+0.9**	**2.71E+05**	**1.23**	**Y**	1.02	**6.3**	**5327.249**	**1.12**

Lab ID: B5985_18724_DF_004 **Acq'd:** 10 Dec 2021 06:27 PSW **Wt/Vol:** 10.02 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120421-S-JC-SC-S-12 **UTP:** 10-Dec-2021 12:46:21 PSW **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 786-451-HLV

Datafile: 211209R25 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

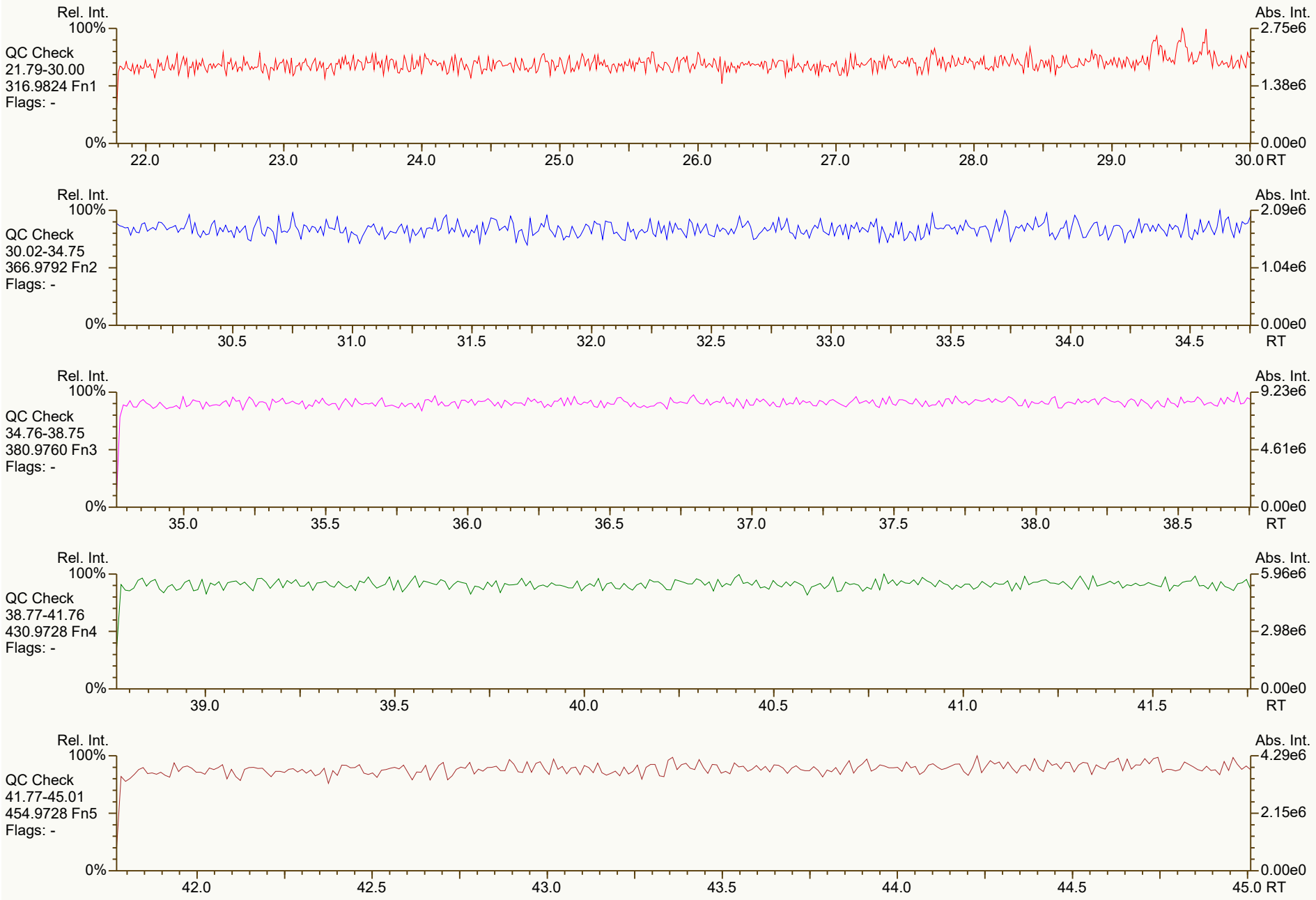
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.91		0.9843	0.9843	0	1.45E+07	1.08	Y	0.97	490	5458.717	1.14
1234678-HpCDD	**40.56**		**1.0003**	**1.0003**	**0**	**1.30E+07**	**1.04**	**Y**	**0.97**	**439**	**5458.717**	**1.14**
OCDD	**43.09**		**1.0003**	**1.0003**	**0**	**8.72E+07**	**0.90**	**Y**	**1.07**	**5,260**	**6631.723**	**2.68**
OCDD-a	43.09		1.0001	1.0002	+0.3	5.12E+06	2.70	Y	0.07	5,010	7213.374	47.2
1368-TCDF	NotFnd		0.8230						0.96		6228.003	0.994
1468-TCDF	23.19		0.8443	0.8436	-1.0	8.25E+05	0.84	Y	0.96	11.5	6228.003	0.994
2468-TCDF	23.82		0.8672	0.8669	-0.4	6.39E+05	0.88	Y	0.96	8.92	6228.003	0.994
1346/1246-TCDF	24.22		0.8802	0.8815	+1.9	5.76E+05	0.72	Y	0.96	8.05	6228.003	0.994
1347/1378/1247-TCDF	24.36		0.8855	0.8865	+1.5	5.20E+06	0.76	Y	0.96	72.6	6228.003	0.994
1348-TCDF	24.58		0.8952	0.8945	-1.0	1.26E+06	0.85	Y	0.96	17.5	6228.003	0.994
1248/1367/1379-TCDF	24.70		0.9000	0.8987	-1.9	2.30E+07	0.79	Y	0.96	321	6228.003	0.994
1268-TCDF	25.10		0.9136	0.9135	-0.2	7.62E+06	0.76	Y	0.96	106	6228.003	0.994
1467-TCDF	25.24		0.9185	0.9184	-0.2	1.43E+06	0.76	Y	0.96	20	6228.003	0.994
1478-TCDF	25.41		0.9247	0.9246	-0.2	2.09E+07	0.79	Y	0.96	292	6228.003	0.994
1369/1237-TCDF	25.78		0.9381	0.9382	+0.2	5.19E+06	0.81	Y	0.96	72.5	6228.003	0.994
2467-TCDF	25.90		0.9427	0.9426	-0.2	6.54E+05	0.85	Y	0.96	9.14	6228.003	0.994
2368-TCDF	26.06		0.9484	0.9482	-0.3	1.42E+07	0.77	Y	0.96	199	6228.003	0.994
1238/1234/1678/1469/1236-TCDF	26.14		0.9517	0.9511	-0.9	2.46E+07	0.77	Y	0.96	344	6228.003	0.994
1278-TCDF	26.60	E	0.9682	0.9680	-0.3	2.30E+08	0.79	Y	0.96	3,210	6228.003	0.994
1349-TCDF	NotFnd		0.9725						0.96		6228.003	0.994
1267-TCDF	26.88		0.9782	0.9780	-0.3	1.25E+07	0.79	Y	0.96	174	6228.003	0.994
2346/1249-TCDF	NotFnd		0.9846						0.96		6228.003	0.994
2347/1279-TCDF	27.27		0.9926	0.9921	-0.8	5.27E+06	0.75	Y	0.96	73.6	6228.003	0.994
2348-TCDF	27.38		0.9966	0.9963	-0.5	3.32E+07	0.80	Y	0.96	464	6228.003	0.994
2378-TCDF	**27.50**	E	**1.0006**	**1.0007**	**+0.2**	**5.10E+08**	**0.79**	**Y**	**0.96**	**7,130**	**6228.003**	**0.994**
2367/3467-TCDF	27.85		1.0139	1.0135	-0.7	4.10E+07	0.77	Y	0.96	573	6228.003	0.994
1269-TCDF	28.10		1.0226	1.0226	0	7.99E+06	0.78	Y	0.96	112	6228.003	0.994
1239-TCDF	NotFnd		1.0322						0.96		6228.003	0.994
1289-TCDF	29.51		1.0729	1.0738	+1.6	3.94E+07	0.79	Y	0.96	550	6228.003	0.994
13468/12468-PeCDF	29.46		0.9135	0.9141	+1.1	1.26E+06	1.51	Y	0.94	20.8	6634.856	0.98
13678/13467/12467-PeCDF	30.99		0.9612	0.9618	+1.1	5.15E+05	1.39	Y	0.94	8.46	7719.602	1.14
12368/13478/12478-PeCDF	31.15		0.9661	0.9667	+1.1	9.75E+06	1.56	Y	0.94	160	7719.602	1.14
14678-PeCDF	31.24		0.9693	0.9694	+0.2	4.18E+05	1.66	Y	0.94	6.87	7719.602	1.14
13479-PeCDF	NotFnd		0.9723						0.94		7719.602	1.14
13469/12479-PeCDF	31.56	J	0.9799	0.9793	-1.1	1.05E+05	1.54	Y	0.94	1.72	7719.602	1.14
12346-PeCDF	31.71	J EMPC	0.9842	0.9840	-0.4	8.33E+04	1.95	N	0.94	1.37	7719.602	1.14

Lab ID: B5985_18724_DF_004 **Acq'd: 10 Dec 2021 06:27 PSW** **Wt/Vol: 10.02 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120421-S-JC-SC-S-12 **UTP: 10-Dec-2021 12:46:21 PSW** **J-level: 0.499 pg/g** **Split: 1** **Checkcode: 786-451-HLV**

Datafile: 211209R25 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.80		0.9868	0.9868	0	4.56E+05	1.62	Y	0.94	7.5	7719.602	1.14
12347-PeCDF	31.88		0.9893	0.9892	-0.2	3.27E+05	1.68	Y	0.94	5.37	7719.602	1.14
12348-PeCDF	32.03		0.9941	0.9940	-0.2	1.53E+06	1.69	Y	0.94	25.2	7719.602	1.14
12378-PeCDF	**32.24**		**1.0006**	**1.0005**	**-0.2**	**2.38E+07**	**1.51**	**Y**	**0.95**	**384**	**7719.602**	**1.08**
12678/12367-PeCDF	32.53		1.0090	1.0096	+1.2	6.31E+06	1.65	Y	0.94	104	7719.602	1.14
12379-PeCDF	NotFnd		1.0143						0.94		7719.602	1.14
12679-PeCDF	NotFnd		0.9929						0.94		7719.602	1.14
23467/12369-PeCDF	33.22		0.9966	0.9966	0	3.64E+05	1.74	Y	0.94	5.98	7719.602	1.14
23478-PeCDF	**33.36**		**1.0006**	**1.0008**	**+0.4**	**1.31E+07**	**1.53**	**Y**	**0.94**	**220**	**7719.602**	**1.2**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7719.602	1.14
12349-PeCDF	NotFnd		1.0102						0.94		7719.602	1.14
12389-PeCDF	34.41		1.0325	1.0324	-0.2	7.23E+05	1.50	Y	0.94	11.9	7719.602	1.14
123468-HxCDF	35.19		0.9628	0.9630	+0.4	6.78E+05	1.28	Y	1.16	12.8	8828.797	1.34
124678/134678-HxCDF	35.38		0.9683	0.9683	0	5.56E+06	1.23	Y	1.16	105	8828.797	1.34
134679-HxCDF	NotFnd		0.9746						1.16		8828.797	1.34
124679-HxCDF	35.80	J EMPC	0.9798	0.9796	-0.4	1.02E+05	1.01	N	1.16	1.92	8828.797	1.34
124689-HxCDF	36.03		0.9859	0.9860	+0.2	4.87E+06	1.33	Y	1.16	91.8	8828.797	1.34
123467-HxCDF	36.43		0.9972	0.9971	-0.2	2.59E+05	1.39	Y	1.16	4.88	8828.797	1.34
123478-HxCDF	**36.56**		**1.0004**	**1.0005**	**+0.2**	**4.97E+07**	**1.27**	**Y**	**1.23**	**925**	**8828.797**	**1.44**
123678-HxCDF	**36.70**		**1.0004**	**1.0006**	**+0.4**	**1.35E+07**	**1.22**	**Y**	**1.13**	**226**	**8828.797**	**1.21**
123479-HxCDF	NotFnd		1.0049						1.16		8828.797	1.34
123469-HxCDF	NotFnd		1.0088						1.16		8828.797	1.34
123679-HxCDF	NotFnd		0.9943						1.16		8828.797	1.34
234678-HxCDF	**37.36**		**1.0005**	**1.0005**	**0**	**2.58E+06**	**1.20**	**Y**	**1.15**	**51.5**	**8828.797**	**1.42**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		8828.797	1.34
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**8828.797**	**1.32**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.34		1.0007	1.0011	+0.9	3.56E+06	1.18	Y	1.16	67.1	8828.797	1.34
1234678-HpCDF	**39.66**		**1.0003**	**1.0003**	**0**	**1.38E+07**	**1.06**	**Y**	**1.36**	**285**	**5334.545**	**0.607**
1234679-HpCDF	39.92	**EMPC**	1.0067	1.0066	-0.2	4.47E+05	1.21	N	1.33	10.2	5334.545	0.769
1234689-HpCDF	40.05		1.0100	1.0101	+0.2	9.50E+06	1.08	Y	1.33	217	5334.545	0.769
1234789-HpCDF	**41.00**		**1.0003**	**1.0003**	**0**	**3.51E+06**	**1.07**	**Y**	**1.30**	**88.9**	**5334.545**	**0.965**
OCDF	**43.28**		**1.0002**	**1.0003**	**+0.3**	**2.06E+07**	**0.87**	**Y**	**1.03**	**1,050**	**7555.388**	**2.88**
OCDF-a	43.27		1.0002	1.0001	-0.3	1.30E+06	2.32	Y	0.06	1,150	7682.801	50.7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21.79-30.00
316.9824 Fn1
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1.38e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.09e6
1.04e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.23e6
4.61e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
5.96e6
2.98e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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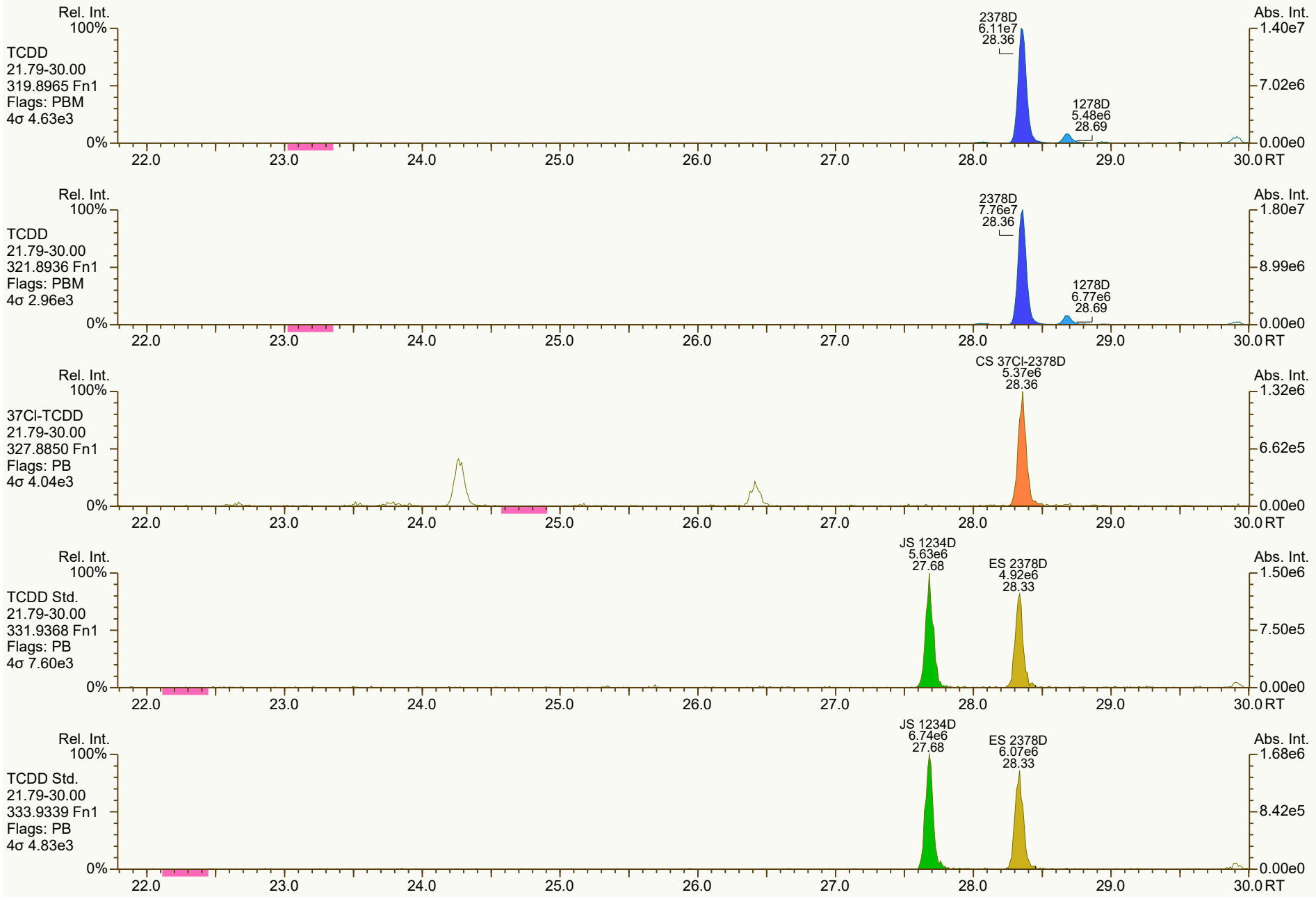
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT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TCDD
21.79-30.00
319.8965 Fn1
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4σ 4.63e3
0%
2378D
6.11e7
28.36
1278D
5.48e6
28.69
Abs. Int.
1.40e7
7.02e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 2.96e3
0%
2378D
7.76e7
28.36
1278D
6.77e6
28.69
Abs. Int.
1.80e7
8.99e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 4.04e3
0%
CS 37Cl-2378D
5.37e6
28.36
Abs. Int.
1.32e6
6.62e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 7.60e3
0%
JS 1234D
5.63e6
27.68
ES 2378D
4.92e6
28.33
Abs. Int.
1.50e6
7.50e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 4.83e3
0%
JS 1234D
6.74e6
27.68
ES 2378D
6.07e6
28.33
Abs. Int.
1.68e6
8.42e5
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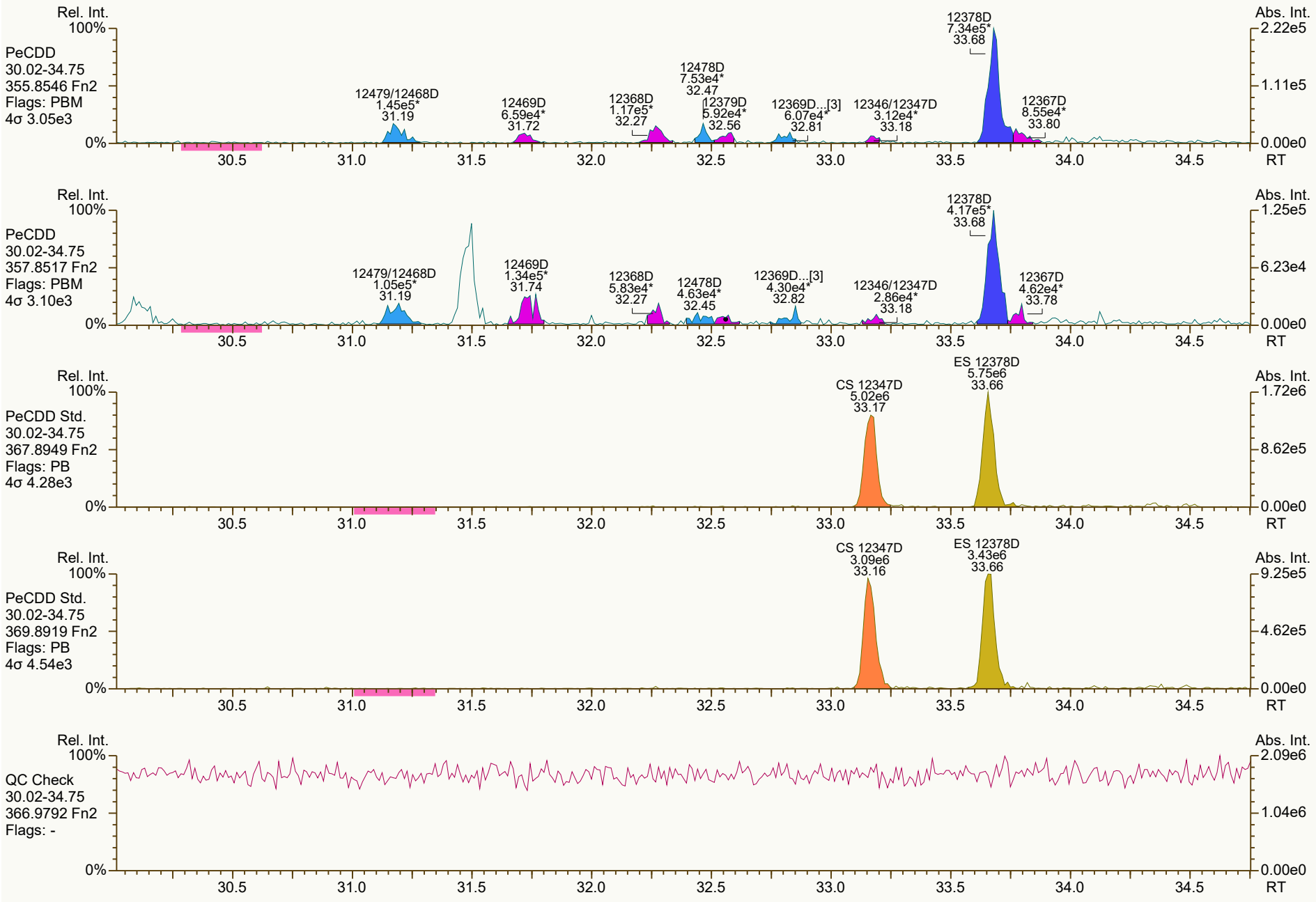
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT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100%
PeCDD
30.02-34.75
355.8546 Fn2
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0%
12479/12468D
1.45e5*
31.19
12469D
6.59e4*
31.72
12368D
1.17e5*
32.27
12478D
7.53e4*
32.47
12379D
5.92e4*
32.56
12369D...[3]
6.07e4*
32.81
12346/12347D
3.12e4*
33.18
12378D
7.34e5*
33.68
12367D
8.55e4*
33.80
Abs. Int.
2.22e5
1.11e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 3.10e3
0%
12479/12468D
1.05e5*
31.19
12469D
1.34e5*
31.74
12368D
5.83e4*
32.27
12478D
4.63e4*
32.45
12369D...[3]
4.30e4*
32.82
12346/12347D
2.86e4*
33.18
12378D
4.17e5*
33.68
12367D
4.62e4*
33.78
Abs. Int.
1.25e5
6.23e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.28e3
0%
CS 12347D
5.02e6
33.17
ES 12378D
5.75e6
33.66
Abs. Int.
1.72e6
8.62e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 4.54e3
0%
CS 12347D
3.09e6
33.16
ES 12378D
3.43e6
33.66
Abs. Int.
9.25e5
4.62e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.09e6
1.04e6
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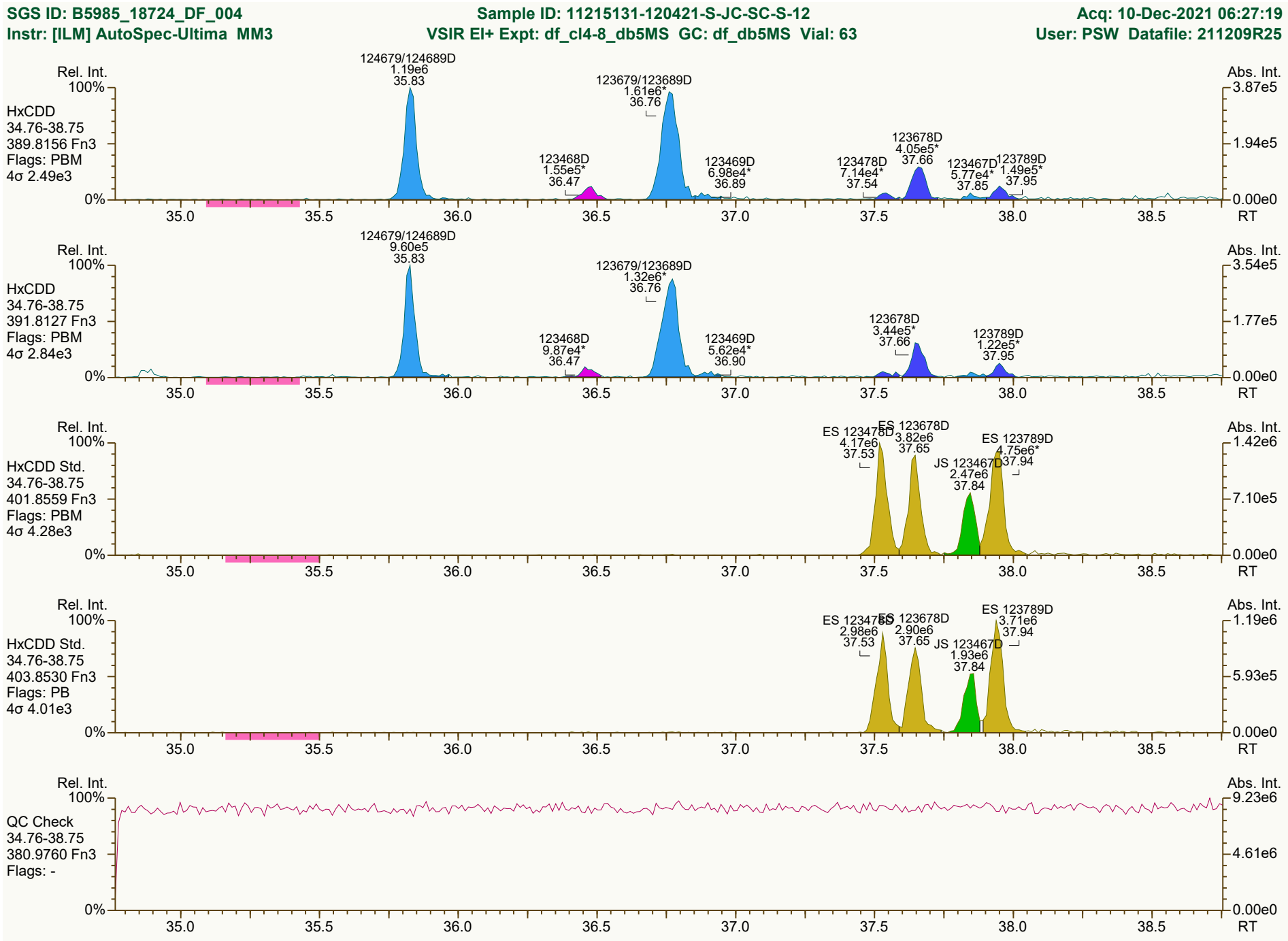
RT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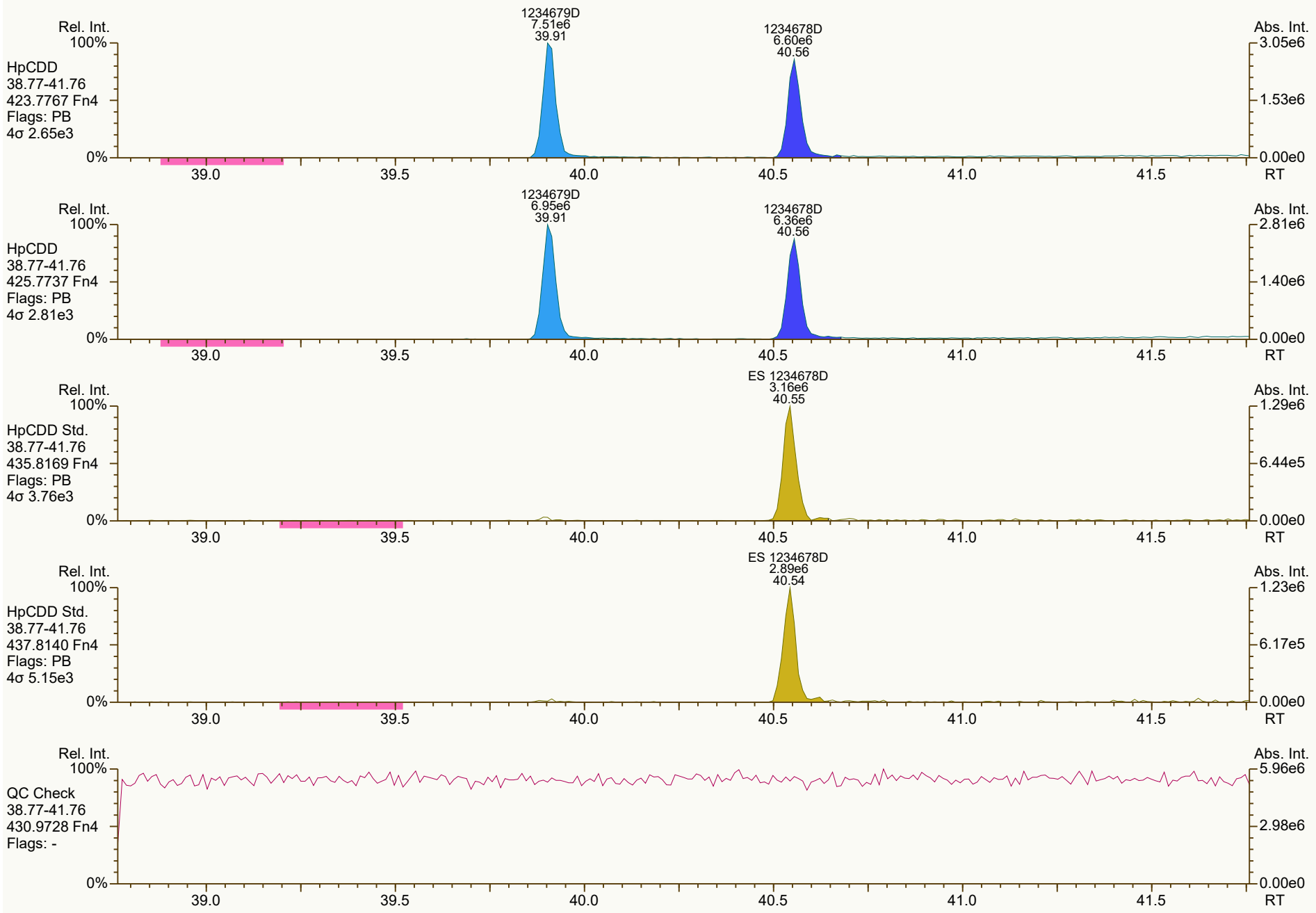
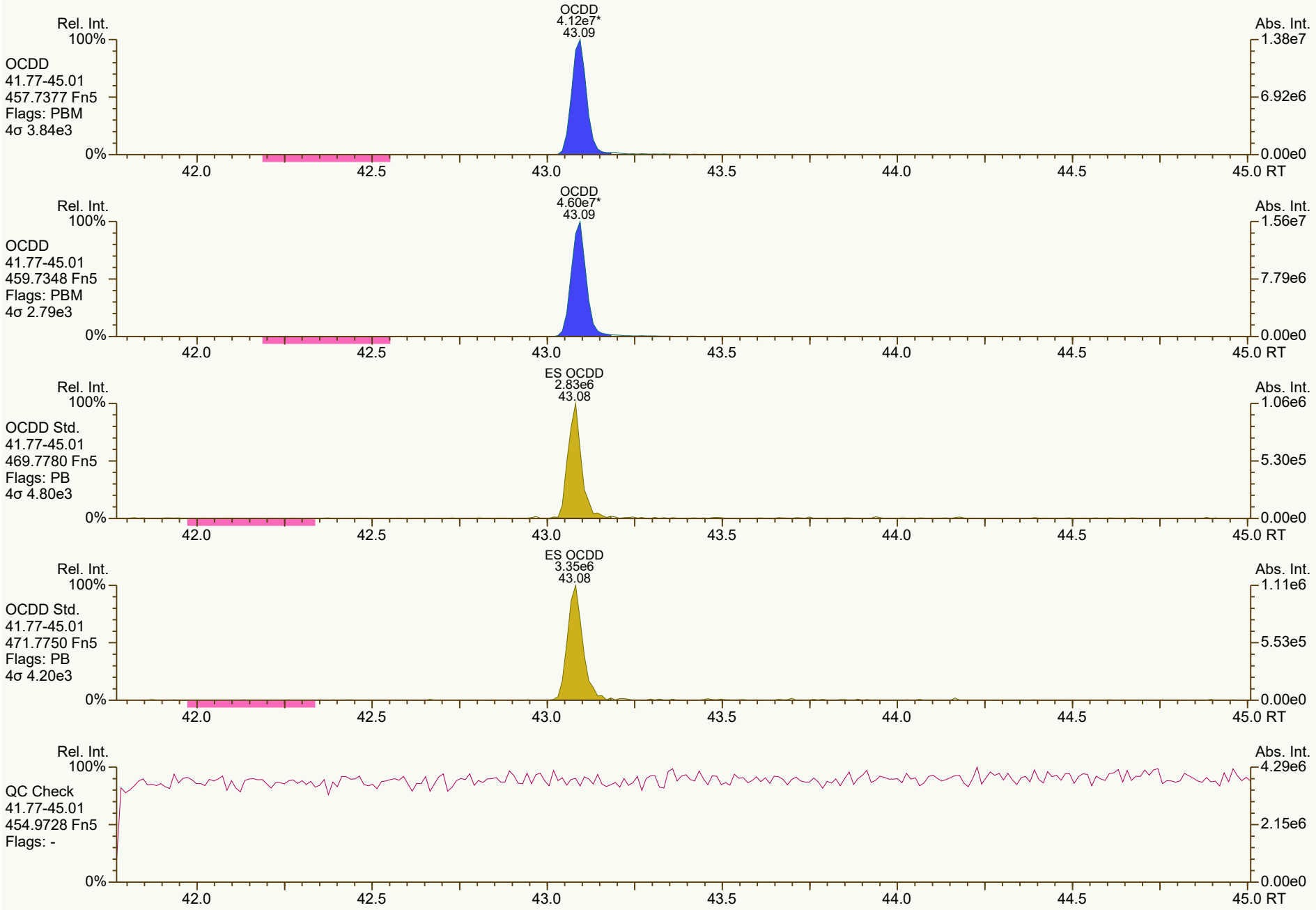
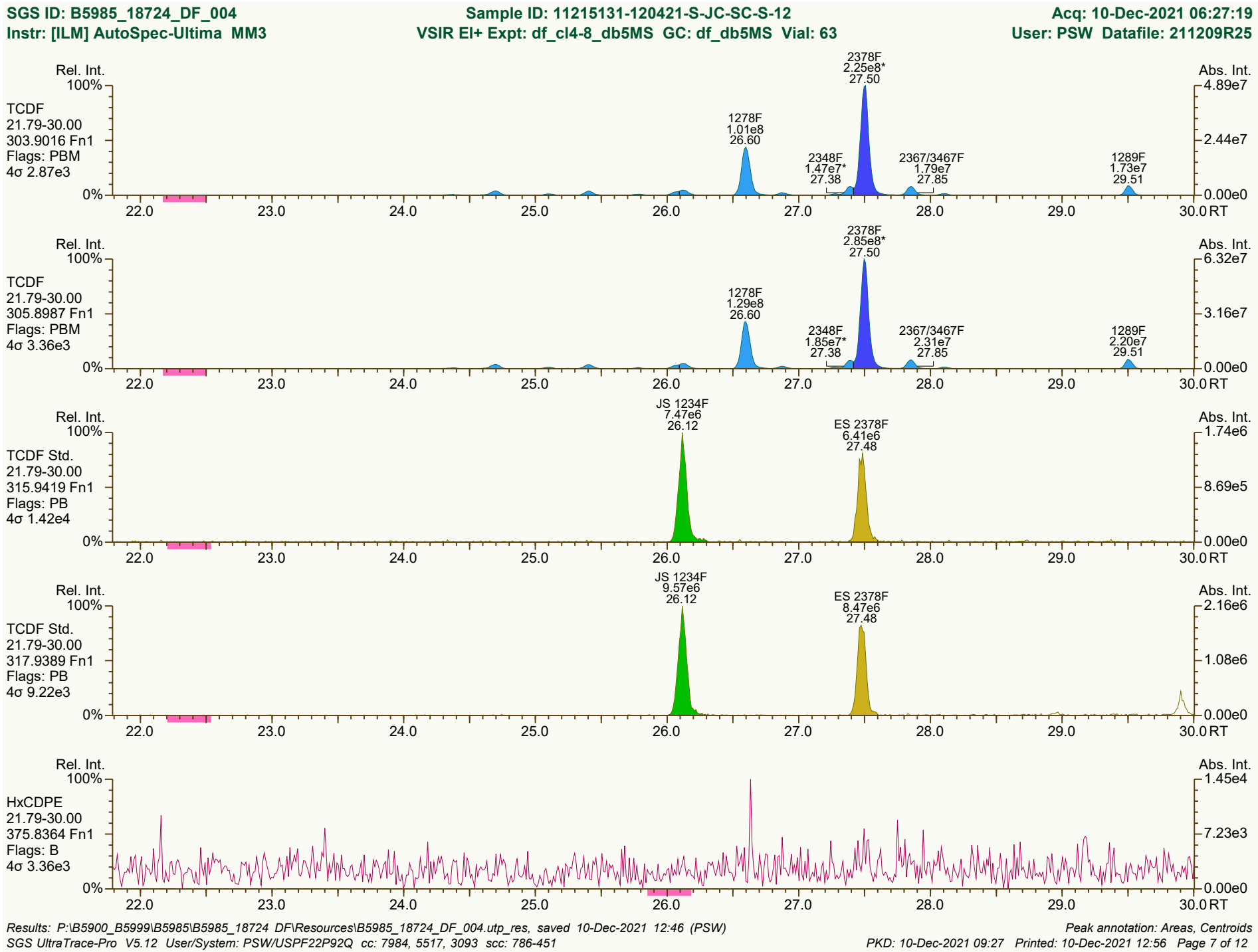
Sample ID: 11215131-120421-S-JC-SC-S-12
Acq: 10-Dec-2021 06:27:19
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 63
User: PSW Datafile: 211209R25
Rel. Int.
Abs. Int.
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PBM
4σ 2.49e3
124679/124689D
1.19e6
35.83
123679/123689D
1.61e6*
36.76
123468D
1.55e5*
36.47
123469D
6.98e4*
36.89
123478D
7.14e4*
37.54
123678D
4.05e5*
37.66
123467D
5.77e4*
37.85
123789D
1.49e5*
37.95
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 2.84e3
124679/124689D
9.60e5
35.83
123679/123689D
1.32e6*
36.76
123468D
9.87e4*
36.47
123469D
5.62e4*
36.90
123678D
3.44e5*
37.66
123789D
1.22e5*
37.95
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 4.28e3
ES 123478D
4.17e6
37.53
ES 123678D
3.82e6
37.65
JS 123467D
2.47e6
37.84
ES 123789D
4.75e6*
37.94
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PB
4σ 4.01e3
ES 123478D
2.98e6
37.53
ES 123678D
2.90e6
37.65
JS 123467D
1.93e6
37.84
ES 123789D
3.71e6
37.94
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.65e3
1234679D
7.51e6
39.91
1234678D
6.60e6
40.56
Abs. Int.
3.05e6
1.53e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 2.81e3
1234679D
6.95e6
39.91
1234678D
6.36e6
40.56
Abs. Int.
2.81e6
1.40e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 3.76e3
ES 1234678D
3.16e6
40.55
Abs. Int.
1.29e6
6.44e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 5.15e3
ES 1234678D
2.89e6
40.54
Abs. Int.
1.23e6
6.17e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
5.96e6
2.98e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

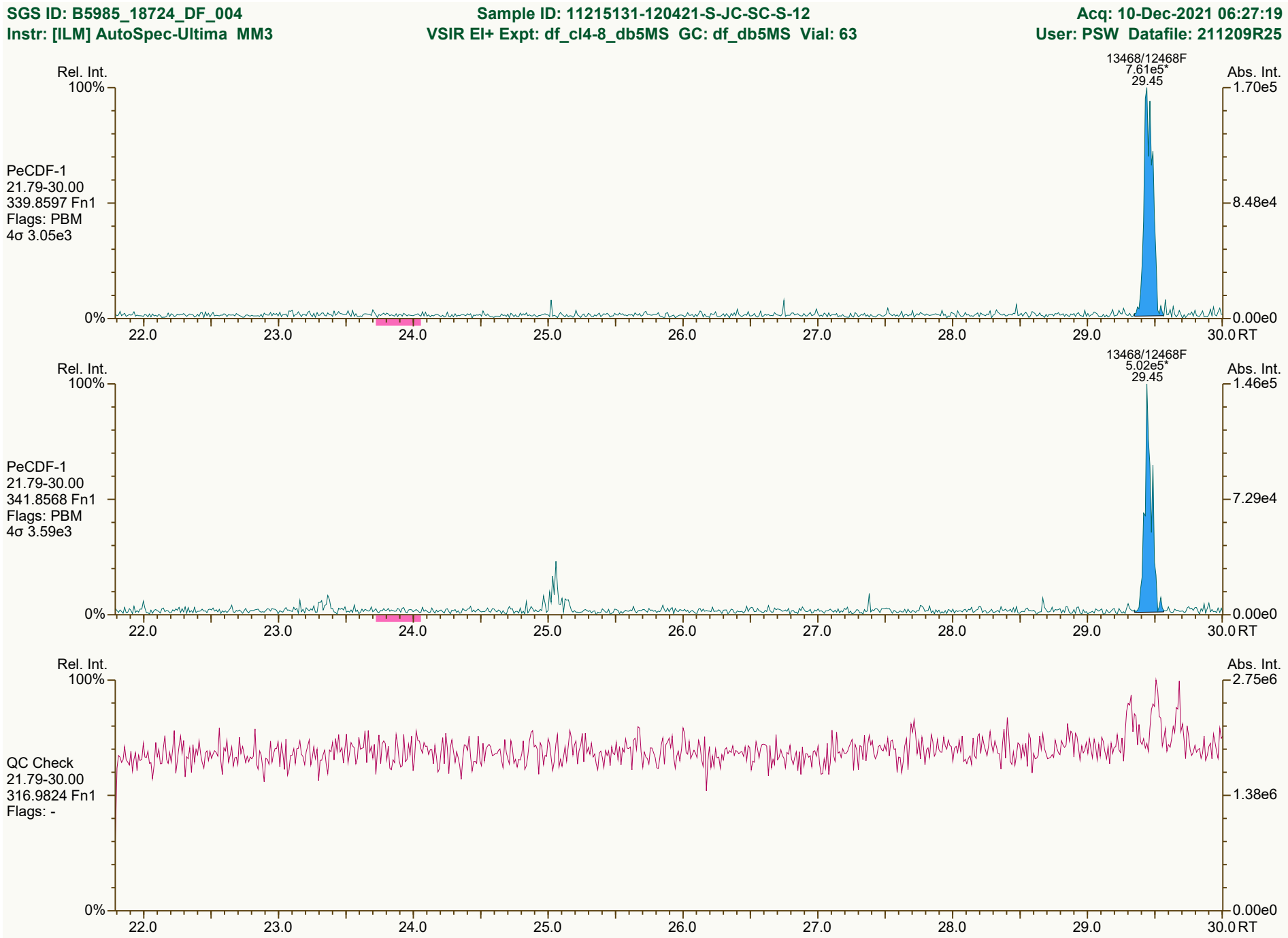

OCDD
4.12e7*
43.09
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 3.84e3
0%
Abs. Int.
1.38e7
6.92e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.60e7*
43.09
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 2.79e3
0%
Abs. Int.
1.56e7
7.79e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
2.83e6
43.08
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.80e3
0%
Abs. Int.
1.06e6
5.30e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
3.35e6
43.08
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.20e3
0%
Abs. Int.
1.11e6
5.53e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.29e6
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: B5985_18724_DF_004 | Sample ID: 11215131-120421-S-JC-SC-S-12 | Acq: 10-Dec-2021 06:27:19
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 63 | User: PSW Datafile: 211209R25

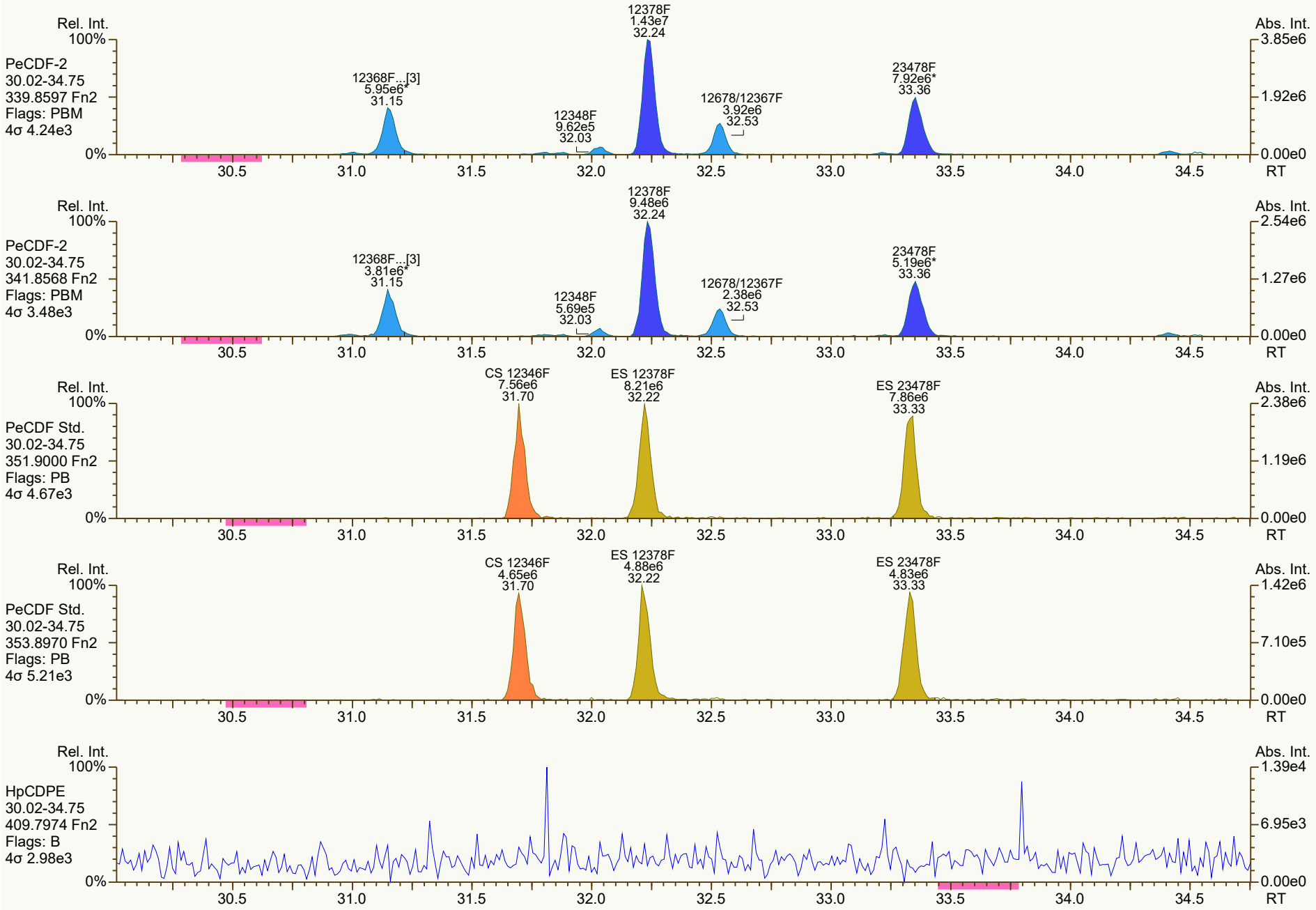


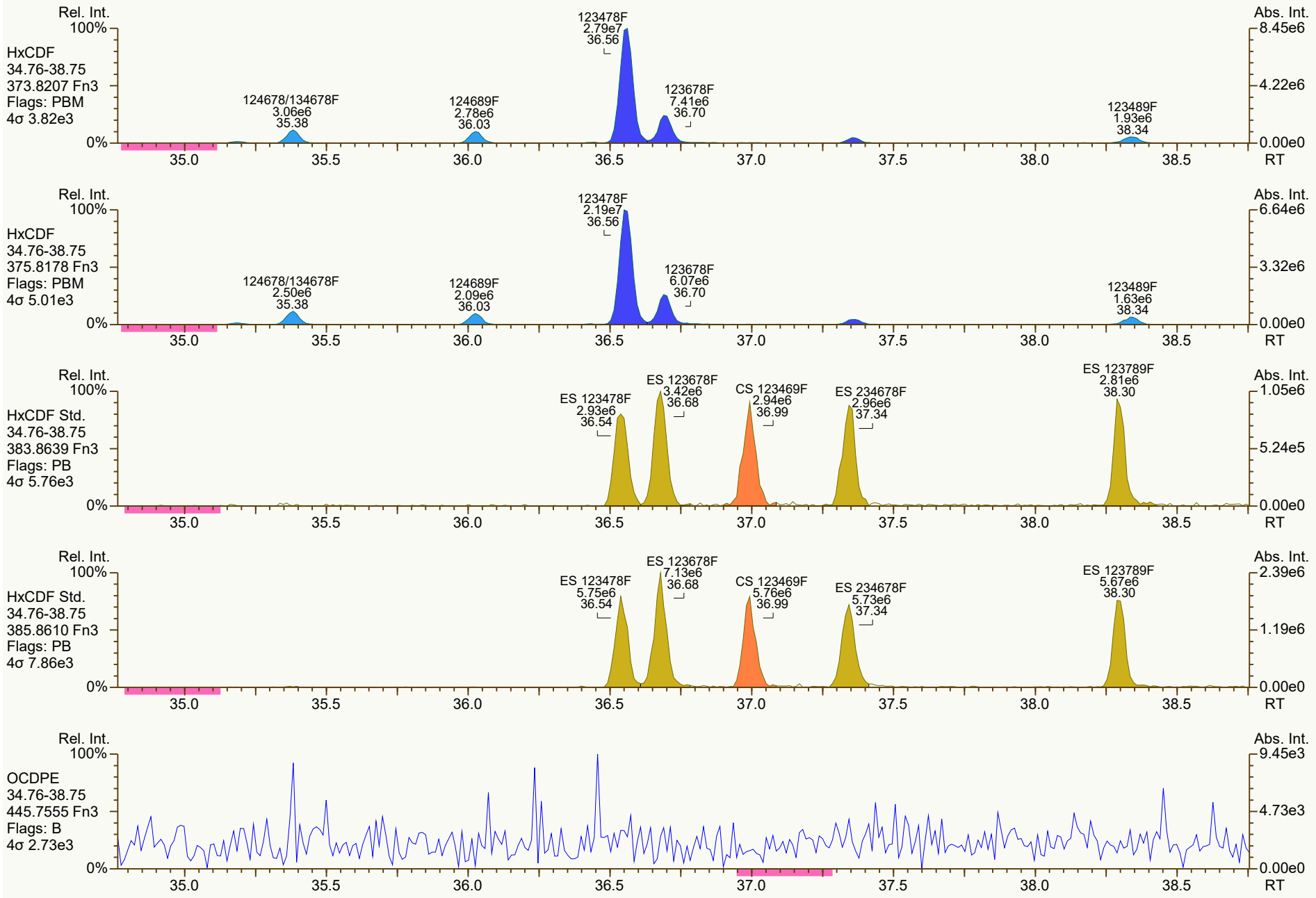
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_004.utp_res, saved 10-Dec-2021 12:46 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7984, 5517, 3093 scc: 786-451 | PKD: 10-Dec-2021 09:27 Printed: 10-Dec-2021 12:56 Page 7 of 12

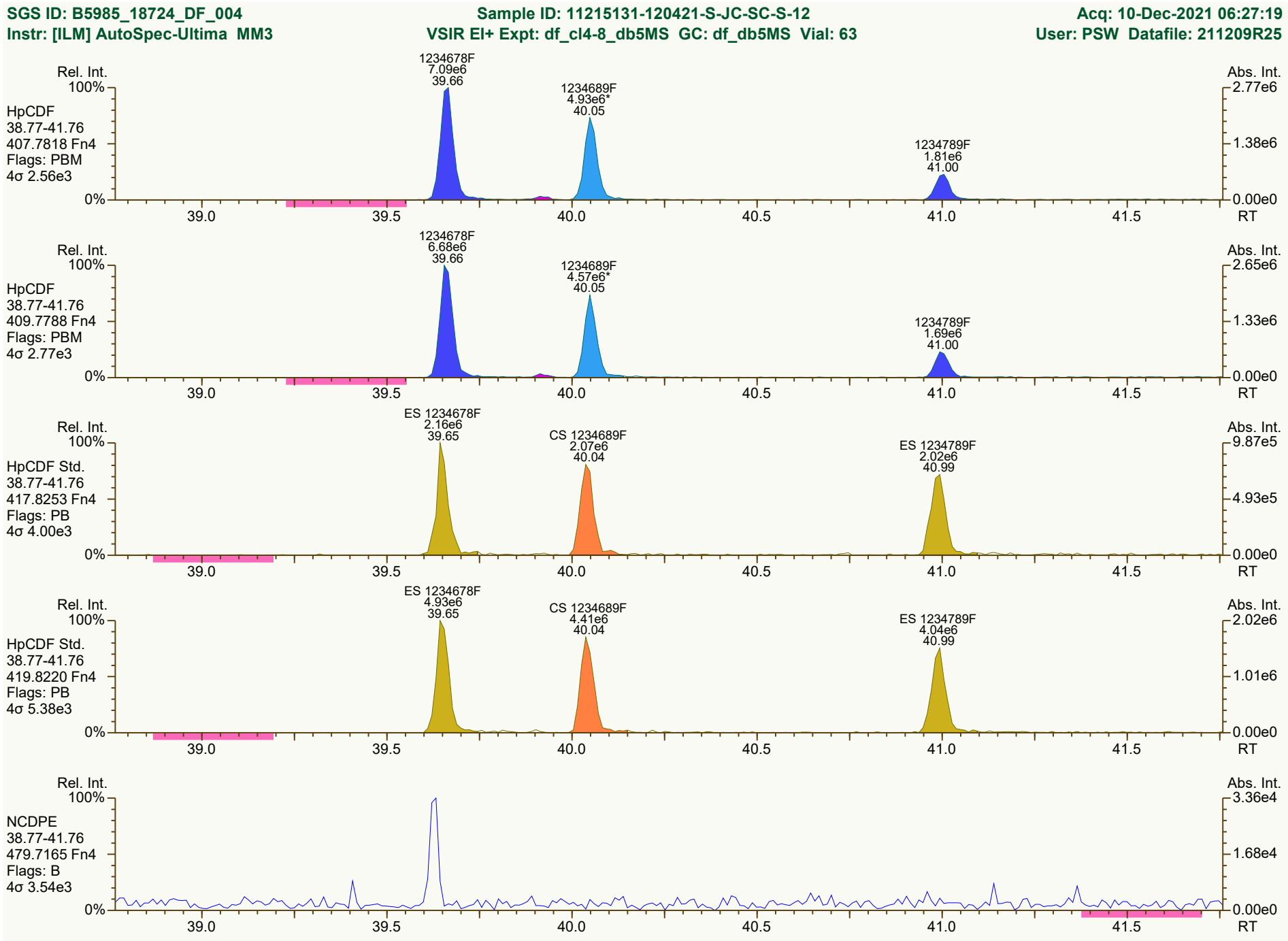
SGS ID: B5985_18724_DF_004 | Sample ID: 11215131-120421-S-JC-SC-S-12 | Acq: 10-Dec-2021 06:27:19
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 63 | User: PSW Datafile: 211209R25

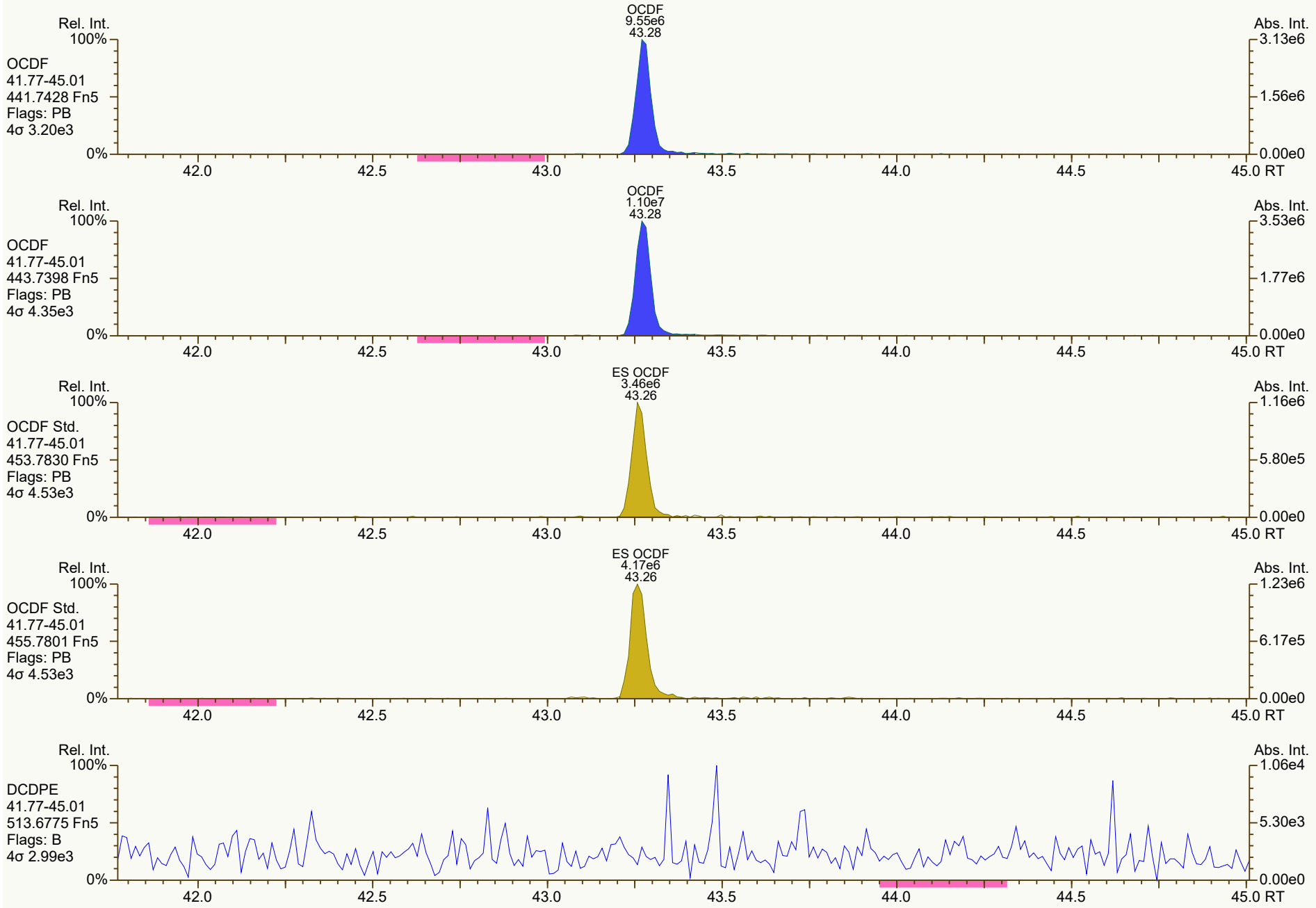


Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_004.utp_res, saved 10-Dec-2021 12:46 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9255 scc: 786-451 | *PKD: 10-Dec-2021 09:27 Printed: 10-Dec-2021 12:56 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 4.24e3
12368F...[3]
5.95e6*
31.15
12348F
9.62e5
32.03
12378F
1.43e7
32.24
12678/12367F
3.92e6
32.53
23478F
7.92e6*
33.36
Abs. Int.
3.85e6
1.92e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.48e3
12368F...[3]
3.81e6*
31.15
12348F
5.69e5
32.03
12378F
9.48e6
32.24
12678/12367F
2.38e6
32.53
23478F
5.19e6*
33.36
Abs. Int.
2.54e6
1.27e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.67e3
CS 12346F
7.56e6
31.70
ES 12378F
8.21e6
32.22
ES 23478F
7.86e6
33.33
Abs. Int.
2.38e6
1.19e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 5.21e3
CS 12346F
4.65e6
31.70
ES 12378F
4.88e6
32.22
ES 23478F
4.83e6
33.33
Abs. Int.
1.42e6
7.10e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.98e3
Abs. Int.
1.39e4
6.95e3
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 3.82e3
0%
123478F
2.79e7
36.56
124678/134678F
3.06e6
35.38
124689F
2.78e6
36.03
123678F
7.41e6
36.70
123489F
1.93e6
38.34
Abs. Int.
8.45e6
4.22e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 5.01e3
123478F
2.19e7
36.56
124678/134678F
2.50e6
35.38
124689F
2.09e6
36.03
123678F
6.07e6
36.70
123489F
1.63e6
38.34
6.64e6
3.32e6
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 5.76e3
ES 123478F
2.93e6
36.54
ES 123678F
3.42e6
36.68
CS 123469F
2.94e6
36.99
ES 234678F
2.96e6
37.34
ES 123789F
2.81e6
38.30
1.05e6
5.24e5
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 7.86e3
ES 123478F
5.75e6
36.54
ES 123678F
7.13e6
36.68
CS 123469F
5.76e6
36.99
ES 234678F
5.73e6
37.34
ES 123789F
5.67e6
38.30
2.39e6
1.19e6
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.73e3
9.45e3
4.73e3


SGS ID: B5985_18724_DF_004
Sample ID: 11215131-120421-S-JC-SC-S-12
Acq: 10-Dec-2021 06:27:19
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 63
User: PSW Datafile: 211209R25
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.56e3
1234678F
7.09e6
39.66
1234689F
4.93e6*
40.05
1234789F
1.81e6
41.00
2.77e6
1.38e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 2.77e3
1234678F
6.68e6
39.66
1234689F
4.57e6*
40.05
1234789F
1.69e6
41.00
2.65e6
1.33e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 4.00e3
ES 1234678F
2.16e6
39.65
CS 1234689F
2.07e6
40.04
ES 1234789F
2.02e6
40.99
9.87e5
4.93e5
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 5.38e3
ES 1234678F
4.93e6
39.65
CS 1234689F
4.41e6
40.04
ES 1234789F
4.04e6
40.99
2.02e6
1.01e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.54e3
3.36e4
1.68e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDF
9.55e6
43.28
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.20e3
0%
Abs. Int.
3.13e6
1.56e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.10e7
43.28
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 4.35e3
0%
Abs. Int.
3.53e6
1.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
3.46e6
43.26
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.53e3
0%
Abs. Int.
1.16e6
5.80e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
4.17e6
43.26
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.53e3
0%
Abs. Int.
1.23e6
6.17e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.99e3
0%
Abs. Int.
1.06e4
5.30e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5985_18724_DF_005 **Acq'd:** 10 Dec 2021 07:14 PSW **Wt/Vol:** 10.04 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1 **UTP:** 10-Dec-2021 12:46:22 PSW **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 925-994-NQM

Datafile: 211209R26 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.39	E	1.0008	1.0008	0	5.40E+08	0.79	Y	1.34	5,890	5818.184	0.701
12378-PeCDD	33.70		1.0005	1.0006	+0.2	4.32E+06	1.68	Y	1.06	69.6	7832.125	1.11
123478-HxCDD	37.56		1.0003	1.0004	+0.2	2.60E+05	1.36	Y	1.06	4.66	16244.618	2.31
123678-HxCDD	37.67		1.0033	1.0035	+0.5	1.67E+06	1.36	Y	1.08	30.7	16244.618	2.57
123789-HxCDD	37.97		1.0110	1.0113	+0.7	6.61E+05	1.28	Y	1.02	11.3	16244.618	2.35
1234678-HpCDD	40.56		1.0003	1.0003	0	4.93E+07	1.06	Y	0.97	1,130	8441.336	1.23
OCDD	43.12	E	1.0003	1.0003	0	7.02E+08	0.89	Y	1.07	19,900	6724.599	1.56
2378-TCDF	27.53	E	1.0006	1.0008	+0.3	1.93E+09	0.80	Y	0.96	20,800	6879.486	0.826
12378-PeCDF	32.27		1.0006	1.0006	0	7.71E+07	1.57	Y	0.95	965	9696.058	1.11
23478-PeCDF	33.38		1.0006	1.0008	+0.4	5.26E+07	1.57	Y	0.94	804	9696.058	1.46
123478-HxCDF	36.58		1.0004	1.0005	+0.2	1.13E+08	1.24	Y	1.23	1,520	8828.567	0.938
123678-HxCDF	36.72		1.0004	1.0005	+0.2	3.07E+07	1.24	Y	1.13	408	8828.567	0.904
234678-HxCDF	37.38		1.0005	1.0005	0	6.75E+06	1.19	Y	1.15	91.5	8828.567	1.05
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	8828.567	1.04
1234678-HpCDF	39.67		1.0003	1.0003	0	3.86E+07	1.05	Y	1.36	557	6487.008	0.578
1234789-HpCDF	41.01		1.0003	1.0003	0	9.62E+06	1.04	Y	1.30	162	6487.008	0.816
OCDF	43.30		1.0002	1.0003	+0.3	4.02E+07	0.90	Y	1.03	1,030	6789.443	1.46

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.36	1.0237	1.0233	-0.7	1.36E+07	0.82	Y	1.03	84
ES 12378-PeCDD	33.68	1.2158	1.2152	-1.2	1.17E+07	1.65	Y	1.03	72.2
ES 123478-HxCDD	37.54	0.9920	0.9917	-0.7	1.05E+07	1.37	Y	0.99	87.5
ES 123678-HxCDD	37.66	0.9949	0.9948	-0.2	1.00E+07	1.35	Y	0.97	85.1
ES 123789-HxCDD	37.96	1.0026	1.0027	+0.2	1.15E+07	1.16	Y	1.12	84.2
ES 1234678-HpCDD	40.55	1.0713	1.0712	-0.2	8.93E+06	1.03	Y	0.99	74.3
ES OCDD	43.10	1.1385	1.1387	+0.5	1.31E+07	0.89	Y	0.78	69.8
ES 2378-TCDF	27.51	1.0519	1.0518	-0.2	1.92E+07	0.81	Y	1.08	78.5
ES 12378-PeCDF	32.25	1.2331	1.2332	+0.2	1.68E+07	1.53	Y	0.93	79.8
ES 23478-PeCDF	33.36	1.2754	1.2754	0	1.39E+07	1.81	N	0.92	66.6
ES 123478-HxCDF	36.56	0.9656	0.9658	+0.4	1.21E+07	0.50	Y	1.14	87.2
ES 123678-HxCDF	36.70	0.9693	0.9695	+0.4	1.33E+07	0.55	Y	1.30	84.5
ES 234678-HxCDF	37.36	0.9869	0.9869	0	1.28E+07	0.51	Y	1.20	87.6
ES 123789-HxCDF	38.31	1.0121	1.0120	-0.2	1.20E+07	0.53	Y	1.14	87.4
ES 1234678-HpCDF	39.66	1.0478	1.0477	-0.2	1.01E+07	0.46	Y	0.95	88.2
ES 1234789-HpCDF	41.00	1.0832	1.0830	-0.5	9.10E+06	0.45	Y	0.85	88.7
ES OCDF	43.28	1.1434	1.1434	0	1.51E+07	0.98	Y	0.93	67.3

Lab ID: B5985_18724_DF_005 **Acq'd:** 10 Dec 2021 07:14 PSW **Wt/Vol:** 10.04 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1 **UTP:** 10-Dec-2021 12:46:22 PSW **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 925-994-NQM

Datafile: 211209R26 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.72		-	-	-	1.56E+07	0.79	Y	-	-	
JS 1234-TCDF	26.15		-	-	-	2.26E+07	0.76	Y	-	-	
JS 123467-HxCDD	37.85		-	-	-	6.06E+06	1.35	Y	-	-	
CS 37Cl-2378-TCDD	28.38		1.0245	1.0241	-0.7	6.35E+06	n/a	-	1.31	77.5	
CS 12347-PeCDD	33.19		1.1978	1.1974	-0.8	1.08E+07	1.73	Y	0.89	77.1	
CS 12346-PeCDF	31.73		1.2130	1.2133	+0.6	1.67E+07	1.61	Y	0.87	85	
CS 123469-HxCDF	37.01		0.9775	0.9777	+0.4	1.28E+07	0.54	Y	1.09	96.9	
CS 1234689-HpCDF	40.05		1.0580	1.0579	-0.2	1.08E+07	0.43	Y	0.86	103	
~~SS 37Cl-2378-TCDD~~	~~28.38~~		~~1.0245~~	~~1.0241~~	~~-0.7~~	~~6.35E+06~~	~~n/a~~		~~1.26~~	~~92.8~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.19~~		~~1.1978~~	~~1.1974~~	~~-0.8~~	~~1.08E+07~~	~~1.73~~	~~Y~~	~~0.86~~	~~107~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.73~~		~~1.2130~~	~~1.2133~~	~~+0.6~~	~~1.67E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~106~~	
~~SS 123469-HxCDF~~	~~37.01~~		~~0.9775~~	~~0.9777~~	~~+0.4~~	~~1.28E+07~~	~~0.54~~	~~Y~~	~~0.84~~	~~115~~	
~~SS 1234689-HpCDF~~	~~40.05~~		~~1.0580~~	~~1.0579~~	~~-0.2~~	~~1.08E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~117~~	

Totals	Conc	EMPC
Total TCDD	6580	6600
Total PeCDD	88	109
Total HxCDD	228	228
Total HpCDD	2350	2350
Total Tetra-Octa Dioxins	29100	29200
Total TCDF	40,400	40500
Total PeCDF	2,810	2820
Total HxCDF	2,480	2480
Total HpCDF	1,080	1080
Total Tetra-Octa Furans	47,800	47900
Total Tetra-Octa Dioxins & Furans	77000	77100

Lab ID: B5985_18724_DF_005 **Acq'd: 10 Dec 2021 07:14 PSW** **Wt/Vol: 10.04 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120621-S-JC-SC-S-1 **UTP: 10-Dec-2021 12:46:22 PSW** **J-level: 0.498 pg/g** **Split: 1** **Checkcode: 925-994-NQM**

Datafile: 211209R26 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.76		0.8726	0.8730	+0.6	1.05E+06	0.80	Y	1.34	11.5	5818.184	0.701
1379-TCDD	25.12		0.8851	0.8856	+0.8	4.05E+05	0.87	Y	1.34	4.42	5818.184	0.701
1369-TCDD	NotFnd		0.9002						1.34		5818.184	0.701
1469-TCDD	NotFnd		0.9275						1.34		5818.184	0.701
1247/1246/1248/1249-TCDD	26.55		0.9361	0.9362	+0.2	9.80E+05	0.72	Y	1.34	10.7	5818.184	0.701
1378-TCDD	26.73		0.9427	0.9425	-0.3	1.48E+06	0.74	Y	1.34	16.2	5818.184	0.701
1268-TCDD	26.93	EMPC	0.9498	0.9493	-0.8	1.35E+05	0.89	N	1.34	1.47	5818.184	0.701
1478-TCDD	27.20		0.9584	0.9588	+0.7	1.22E+06	0.85	Y	1.34	13.4	5818.184	0.701
1279-TCDD	NotFnd		0.9644						1.34		5818.184	0.701
1234/1269-TCDD	27.70	EMPC	0.9766	0.9765	-0.2	2.02E+05	0.63	N	1.34	2.2	5818.184	0.701
1236-TCDD	27.85	EMPC	0.9813	0.9819	+1.0	1.00E+05	1.72	N	1.34	1.09	5818.184	0.701
1237/1238-TCDD	28.09		0.9906	0.9904	-0.3	8.19E+06	0.82	Y	1.34	89.4	5818.184	0.701
1239-TCDD	NotFnd		0.9952						1.34		5818.184	0.701
2378-TCDD	**28.39**	E	**1.0008**	1.0008	**0**	5.40E+08	0.79	Y	**1.34**	**5,890**	**5818.184**	**0.701**
1278-TCDD	28.72		1.0122	1.0127	+0.9	4.96E+07	0.82	Y	1.34	541	5818.184	0.701
1267-TCDD	NotFnd		1.0168						1.34		5818.184	0.701
1289-TCDD	29.34	EMPC	1.0349	1.0344	-0.9	1.74E+06	1.12	N	1.34	19	5818.184	0.701
12479/12468-PeCDD	31.23		0.9267	0.9271	+0.7	4.86E+05	1.52	Y	1.06	7.83	7832.125	1.11
12469-PeCDD	31.76	EMPC	0.9425	0.9429	+0.8	2.35E+05	1.18	N	1.06	3.78	7832.125	1.11
12368-PeCDD	32.30		0.9588	0.9590	+0.4	5.35E+05	1.60	Y	1.06	8.62	7832.125	1.11
12478-PeCDD	32.49	EMPC	0.9643	0.9646	+0.6	3.74E+05	1.16	N	1.06	6.04	7832.125	1.11
12379-PeCDD	32.59	EMPC	0.9673	0.9677	+0.8	1.80E+05	1.16	N	1.06	2.9	7832.125	1.11
12369/12467/12489-PeCDD	32.85	EMPC	0.9750	0.9752	+0.4	1.76E+05	1.81	N	1.06	2.83	7832.125	1.11
12346/12347-PeCDD	33.21	J	0.9859	0.9861	+0.4	1.22E+05	1.42	Y	1.06	1.97	7832.125	1.11
12378-PeCDD	33.70		**1.0005**	**1.0006**	**+0.2**	**4.32E+06**	**1.68**	**Y**	**1.06**	**69.6**	**7832.125**	**1.11**
12367-PeCDD	33.82	EMPC	1.0032	1.0041	+1.8	2.38E+05	2.64	N	1.06	3.83	7832.125	1.11
12389-PeCDD	34.15	J EMPC	1.0135	1.0139	+0.8	1.02E+05	2.30	N	1.06	1.65	7832.125	1.11
124679/124689-HxCDD	35.85		0.9544	0.9549	+1.1	4.34E+06	1.22	Y	1.05	77	16244.618	2.4
123468-HxCDD	36.49		0.9716	0.9721	+1.1	5.50E+05	1.34	Y	1.05	9.75	16244.618	2.4
123679/123689-HxCDD	36.78		0.9793	0.9797	+0.9	4.82E+06	1.28	Y	1.05	85.5	16244.618	2.4
123469-HxCDD	36.91		0.9829	0.9832	+0.7	3.50E+05	1.40	Y	1.05	6.22	16244.618	2.4
123478-HxCDD	37.56		**1.0003**	**1.0004**	**+0.2**	**2.60E+05**	**1.36**	**Y**	1.06	**4.66**	**16244.618**	**2.31**
123678-HxCDD	37.67		**1.0033**	**1.0035**	**+0.5**	**1.67E+06**	**1.36**	**Y**	1.08	**30.7**	**16244.618**	**2.57**
123467-HxCDD	37.86		1.0084	1.0085	+0.2	1.56E+05	1.34	Y	1.05	2.76	16244.618	2.4
123789-HxCDD	37.97		**1.0110**	**1.0113**	**+0.7**	**6.61E+05**	**1.28**	**Y**	1.02	**11.3**	**16244.618**	**2.35**

Lab ID: B5985_18724_DF_005 | Acq'd: 10 Dec 2021 07:14 PSW | Wt/Vol: 10.04 g | ICAL: MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1 | UTP: 10-Dec-2021 12:46:22 PSW | J-level: 0.498 pg/g | Split: 1 | Checkcode: 925-994-NQM

Datafile: 211209R26 | Report: 10 Dec 2021 12:49 pw | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

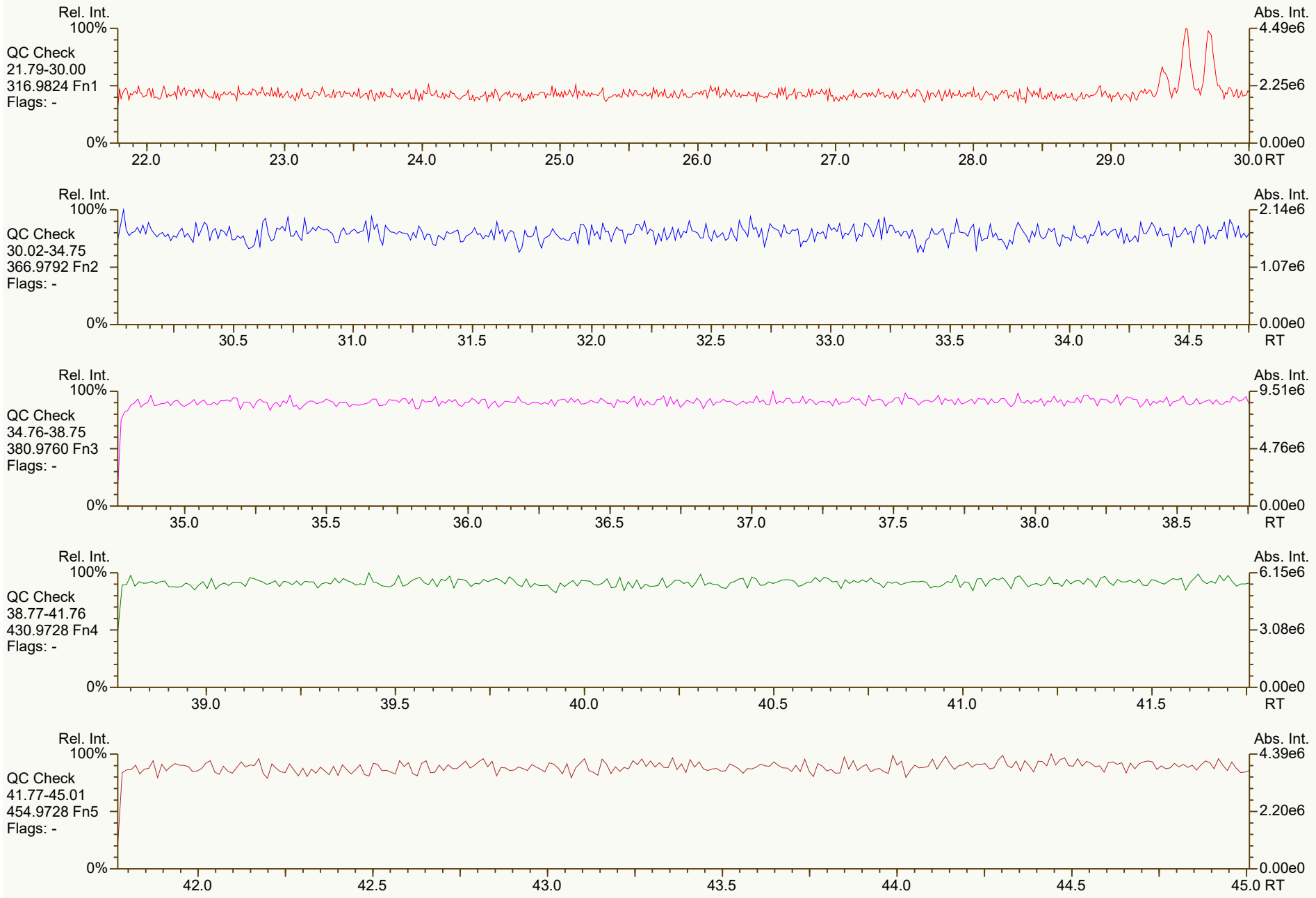
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.92		0.9843	0.9844	+0.2	5.33E+07	1.05	Y	0.97	1,220	8441.336	1.23
1234678-HpCDD	**40.56**		**1.0003**	**1.0003**	**0**	**4.93E+07**	**1.06**	**Y**	**0.97**	**1,130**	**8441.336**	**1.23**
OCDD	**43.12**	**E**	**1.0003**	**1.0003**	**0**	**7.02E+08**	**0.89**	**Y**	**1.07**	**19,900**	**6724.599**	**1.56**
OCDD-a	43.11	E	1.0001	1.0002	+0.3	4.21E+07	2.55	Y	0.07	19,300	8822.986	33.1
1368-TCDF	22.64		0.8230	0.8228	-0.3	1.00E+05	0.68	Y	0.96	1.08	6879.486	0.826
1468-TCDF	23.23		0.8443	0.8446	+0.4	2.43E+06	0.75	Y	0.96	26.2	6879.486	0.826
2468-TCDF	23.87	EMPC	0.8672	0.8678	+0.9	2.09E+06	0.95	N	0.96	22.6	6879.486	0.826
1346/1246-TCDF	24.22	EMPC	0.8802	0.8805	+0.4	2.56E+05	0.89	N	0.96	2.76	6879.486	0.826
1347/1378/1247-TCDF	24.40		0.8855	0.8871	+2.3	1.29E+07	0.79	Y	0.96	139	6879.486	0.826
1348-TCDF	24.63		0.8952	0.8954	+0.3	3.47E+06	0.78	Y	0.96	37.4	6879.486	0.826
1248/1367/1379-TCDF	24.75		0.9000	0.8996	-0.6	4.79E+07	0.79	Y	0.96	517	6879.486	0.826
1268-TCDF	25.15		0.9136	0.9141	+0.8	2.17E+07	0.81	Y	0.96	235	6879.486	0.826
1467-TCDF	25.27		0.9185	0.9187	+0.3	4.28E+06	0.75	Y	0.96	46.2	6879.486	0.826
1478-TCDF	25.45		0.9247	0.9250	+0.5	5.59E+07	0.81	Y	0.96	604	6879.486	0.826
1369/1237-TCDF	25.83		0.9381	0.9388	+1.1	1.77E+07	0.80	Y	0.96	191	6879.486	0.826
2467-TCDF	25.93		0.9427	0.9427	0	2.63E+06	0.83	Y	0.96	28.4	6879.486	0.826
2368-TCDF	26.08		0.9484	0.9480	-0.6	4.07E+07	0.79	Y	0.96	439	6879.486	0.826
1238/1234/1678/1469/1236-TCDF	26.16	E	0.9517	0.9509	-1.3	1.07E+08	0.80	Y	0.96	1,150	6879.486	0.826
1278-TCDF	26.63	E	0.9682	0.9680	-0.3	9.17E+08	0.79	Y	0.96	9,900	6879.486	0.826
1349-TCDF	NotFnd		0.9725						0.96		6879.486	0.826
1267-TCDF	26.90		0.9782	0.9779	-0.5	4.09E+07	0.80	Y	0.96	442	6879.486	0.826
2346/1249-TCDF	27.09		0.9846	0.9847	+0.2	5.19E+06	0.79	Y	0.96	56	6879.486	0.826
2347/1279-TCDF	27.30		0.9926	0.9925	-0.2	2.52E+07	0.79	Y	0.96	272	6879.486	0.826
2348-TCDF	27.42	E	0.9966	0.9968	+0.3	1.71E+08	0.79	Y	0.96	1,850	6879.486	0.826
2378-TCDF	**27.53**	E	**1.0006**	**1.0008**	**+0.3**	**1.93E+09**	**0.80**	**Y**	**0.96**	**20,800**	**6879.486**	**0.826**
2367/3467-TCDF	27.88	E	1.0139	1.0136	-0.5	1.58E+08	0.79	Y	0.96	1,710	6879.486	0.826
1269-TCDF	28.13		1.0226	1.0226	0	2.54E+07	0.81	Y	0.96	274	6879.486	0.826
1239-TCDF	28.40		1.0322	1.0323	+0.2	3.91E+06	0.81	Y	0.96	42.2	6879.486	0.826
1289-TCDF	29.55	E	1.0729	1.0743	+2.5	1.54E+08	0.80	Y	0.96	1,660	6879.486	0.826
13468/12468-PeCDF	29.50		0.9135	0.9146	+1.9	4.18E+06	1.40	Y	0.94	57.5	5887.813	0.769
13678/13467/12467-PeCDF	31.03		0.9612	0.9621	+1.7	1.13E+06	1.58	Y	0.94	15.6	9696.058	1.27
12368/13478/12478-PeCDF	31.19		0.9661	0.9670	+1.7	3.30E+07	1.55	Y	0.94	454	9696.058	1.27
14678-PeCDF	NotFnd		0.9693						0.94		9696.058	1.27
13479-PeCDF	NotFnd		0.9723						0.94		9696.058	1.27
13469/12479-PeCDF	31.56	EMPC	0.9799	0.9786	-2.5	3.07E+05	2.09	N	0.94	4.23	9696.058	1.27
12346-PeCDF	31.73	J	0.9842	0.9837	-1.0	1.38E+05	1.67	Y	0.94	1.9	9696.058	1.27

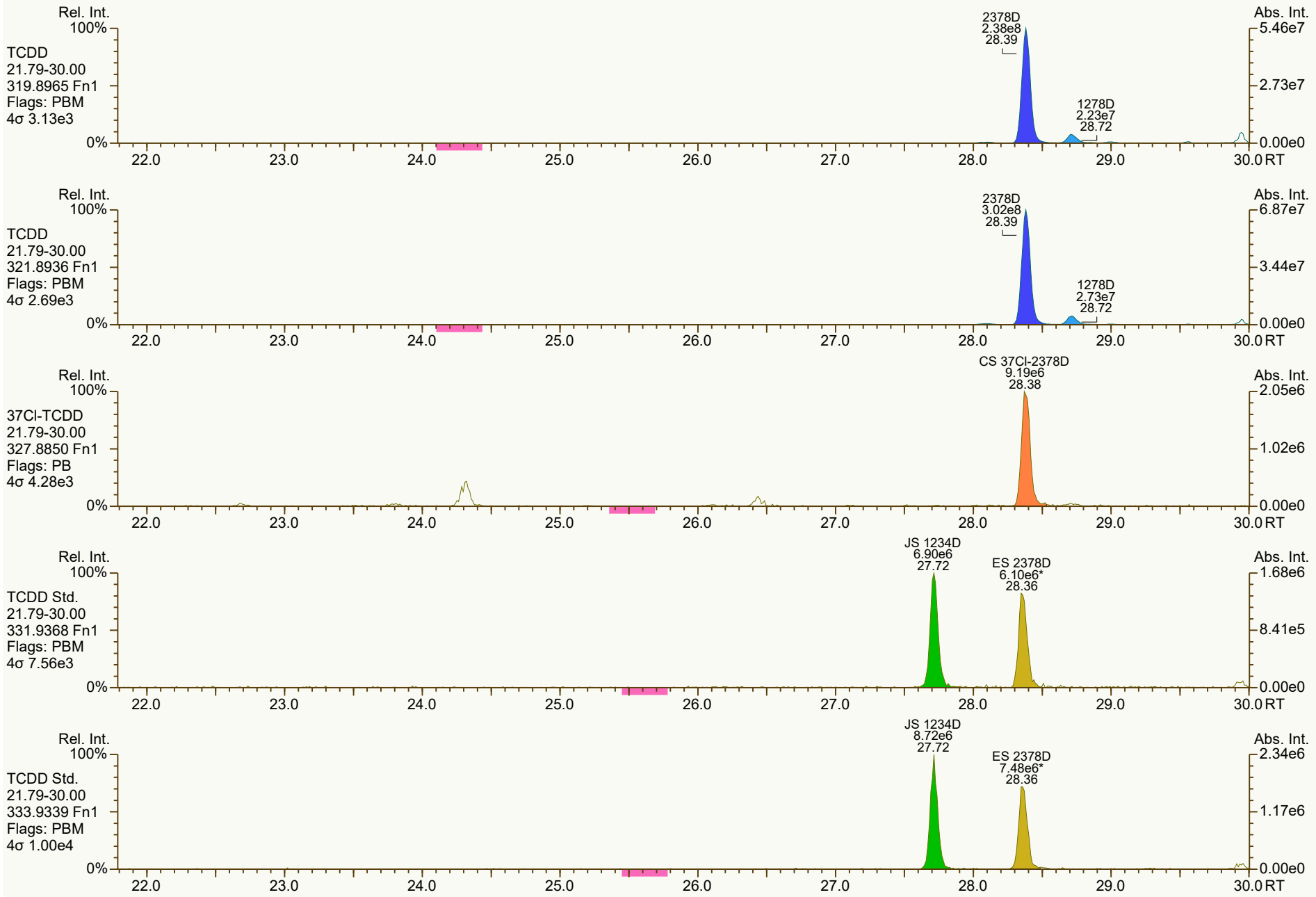
Lab ID: B5985_18724_DF_005 **Acq'd:** 10 Dec 2021 07:14 PSW **Wt/Vol:** 10.04 g **ICAL:** MM3_DF_10272021_27JUL2021

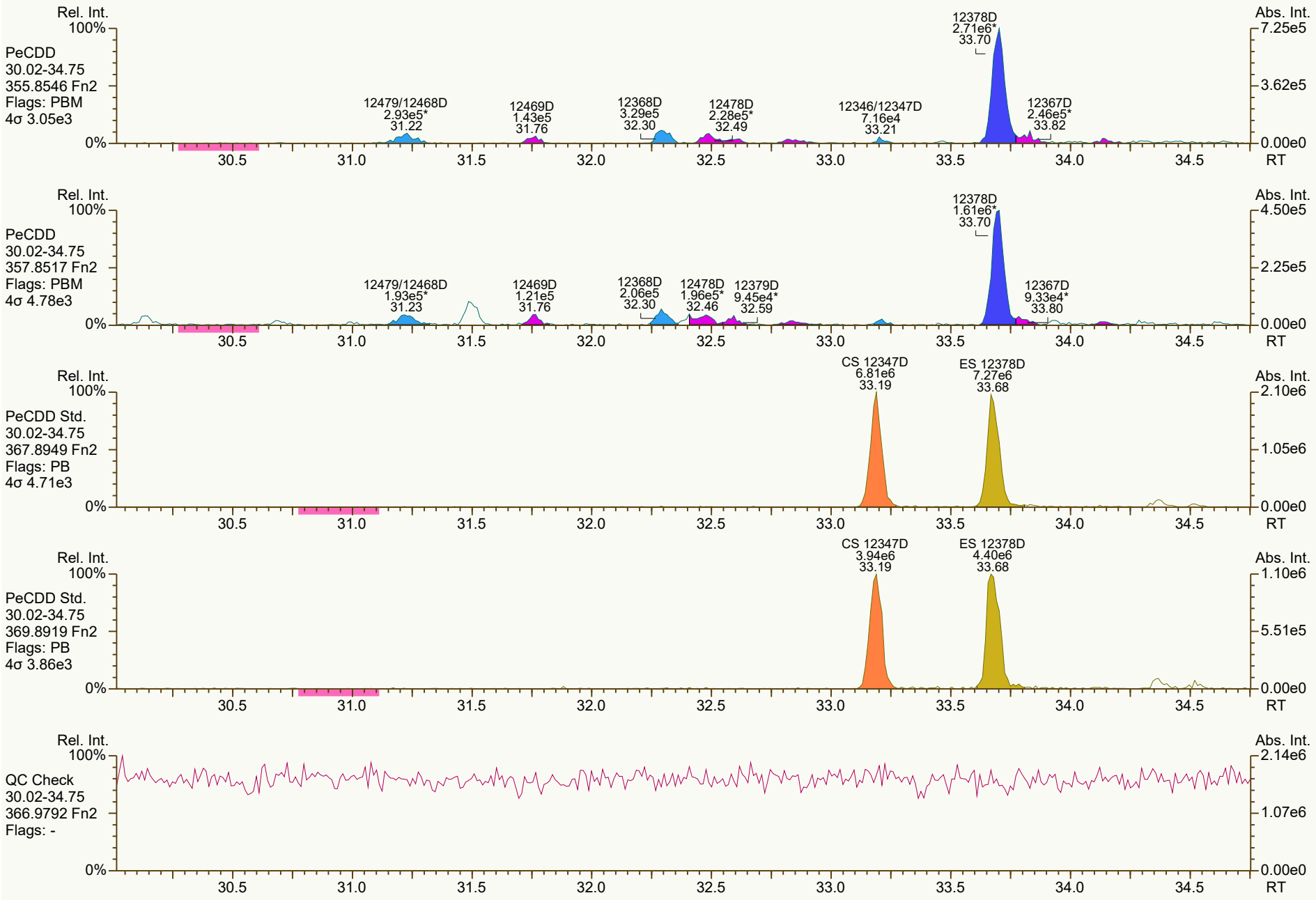
Client ID: 11215131-120621-S-JC-SC-S-1 **UTP:** 10-Dec-2021 12:46:22 PSW **J-level:** 0.498 pg/g **Split:** 1 **Checkcode:** 925-994-NQM

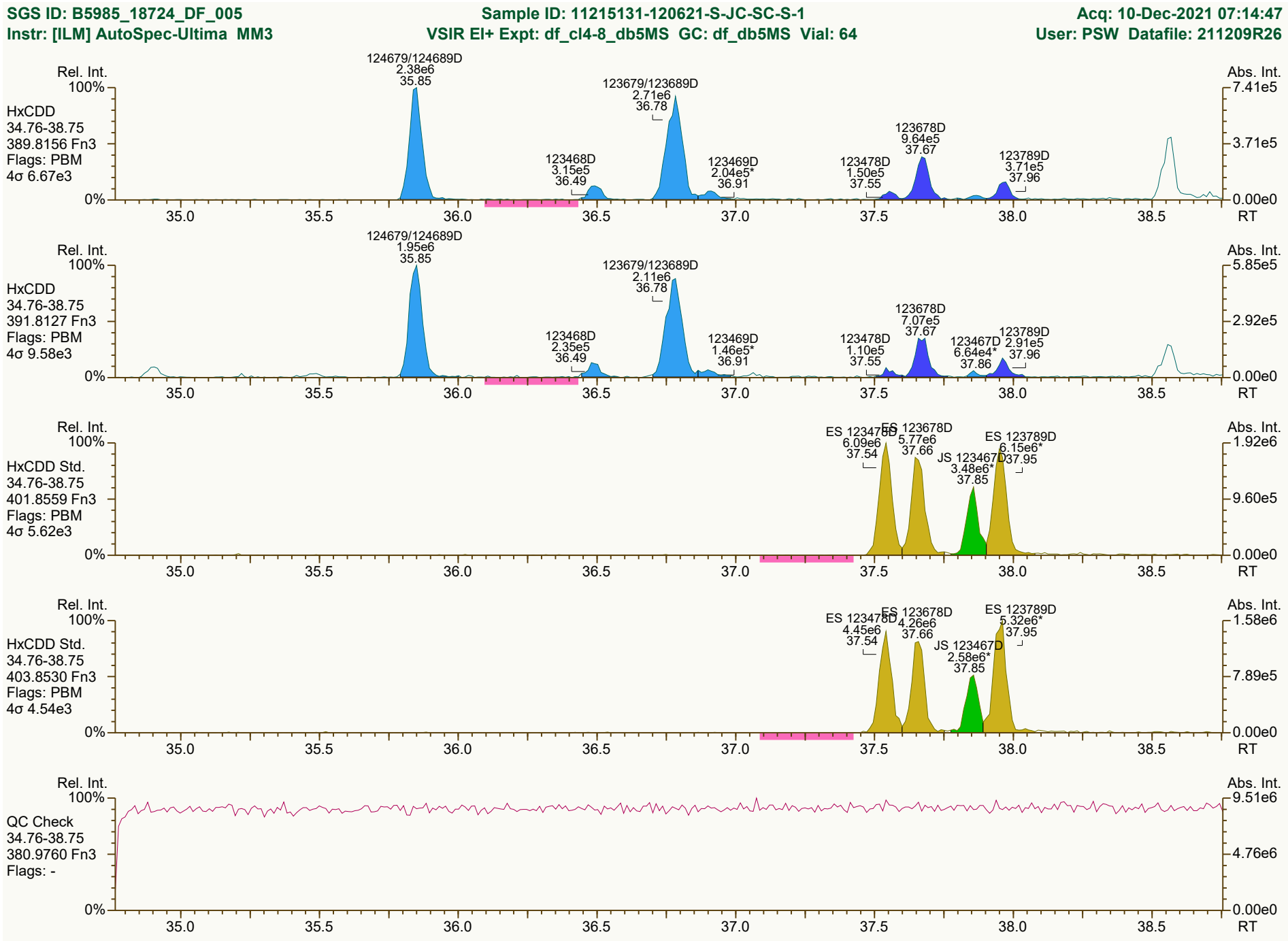
Datafile: 211209R26 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

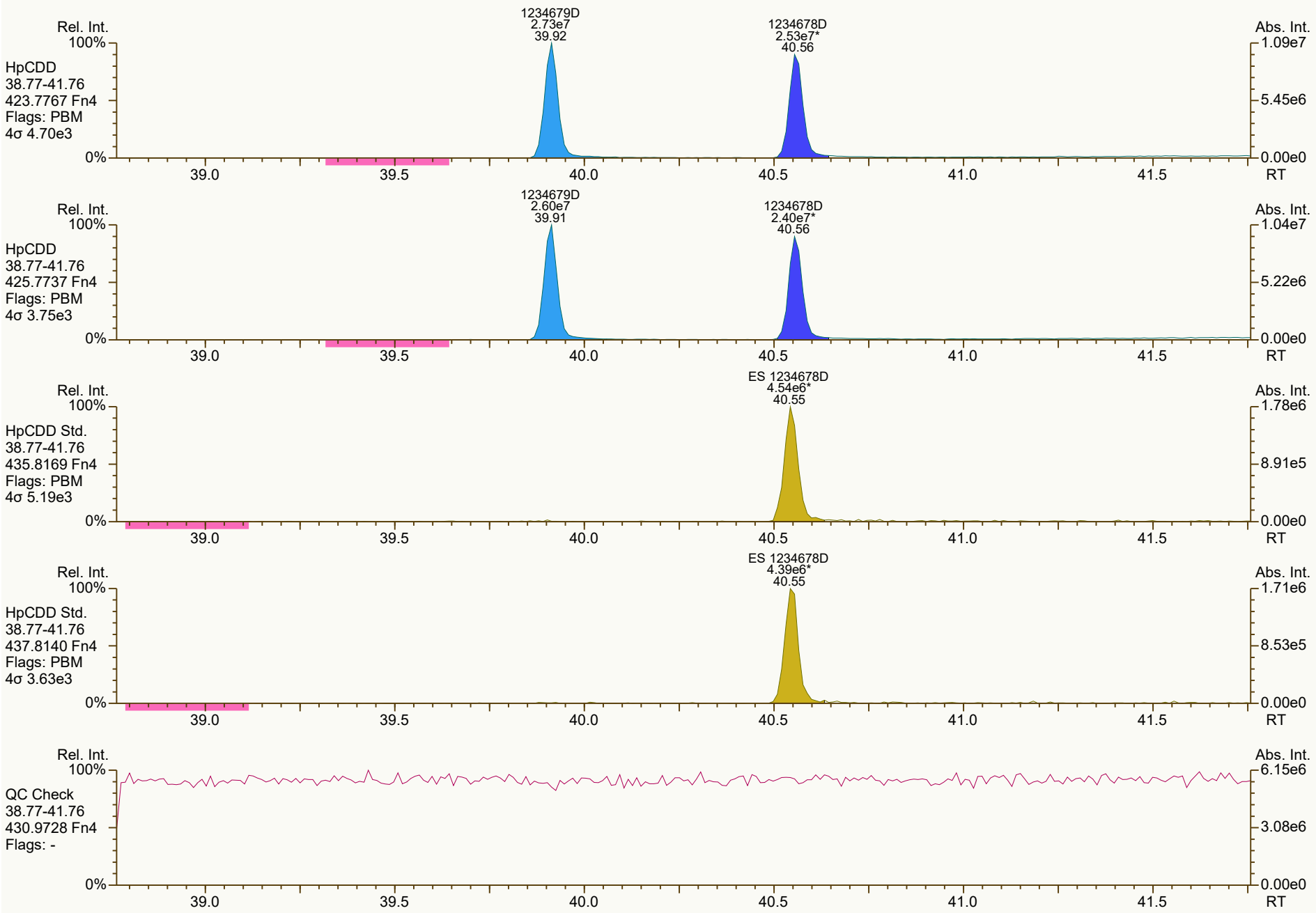
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.82		0.9868	0.9867	-0.2	1.37E+06	1.51	Y	0.94	18.9	9696.058	1.27
12347-PeCDF	31.90		0.9893	0.9891	-0.4	1.40E+06	1.58	Y	0.94	19.3	9696.058	1.27
12348-PeCDF	32.06		0.9941	0.9941	0	6.99E+06	1.51	Y	0.94	96.2	9696.058	1.27
12378-PeCDF	**32.27**		**1.0006**	**1.0006**	**0**	**7.71E+07**	**1.57**	**Y**	**0.95**	**965**	**9696.058**	**1.11**
12678/12367-PeCDF	32.56		1.0090	1.0096	+1.2	2.36E+07	1.58	Y	0.94	325	9696.058	1.27
12379-PeCDF	NotFnd		1.0143						0.94		9696.058	1.27
12679-PeCDF	NotFnd		0.9929						0.94		9696.058	1.27
23467/12369-PeCDF	33.24		0.9966	0.9965	-0.2	9.99E+05	1.78	Y	0.94	13.7	9696.058	1.27
23478-PeCDF	**33.38**		**1.0006**	**1.0008**	**+0.4**	**5.26E+07**	**1.57**	**Y**	**0.94**	**804**	**9696.058**	**1.46**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		9696.058	1.27
12349-PeCDF	NotFnd		1.0102						0.94		9696.058	1.27
12389-PeCDF	34.44		1.0325	1.0323	-0.4	3.05E+06	1.48	Y	0.94	42	9696.058	1.27
123468-HxCDF	35.22		0.9628	0.9633	+1.1	1.91E+06	1.24	Y	1.16	26.1	8828.567	0.981
124678/134678-HxCDF	35.41		0.9683	0.9685	+0.4	1.29E+07	1.28	Y	1.16	176	8828.567	0.981
134679-HxCDF	35.65	J	0.9746	0.9751	+1.1	1.04E+05	1.18	Y	1.16	1.42	8828.567	0.981
124679-HxCDF	35.82		0.9798	0.9799	+0.2	2.85E+05	1.28	Y	1.16	3.9	8828.567	0.981
124689-HxCDF	36.05		0.9859	0.9861	+0.4	8.77E+06	1.25	Y	1.16	120	8828.567	0.981
123467-HxCDF	36.45		0.9972	0.9971	-0.2	8.56E+05	1.39	Y	1.16	11.7	8828.567	0.981
123478-HxCDF	**36.58**		**1.0004**	**1.0005**	**+0.2**	**1.13E+08**	**1.24**	**Y**	**1.23**	**1,520**	**8828.567**	**0.938**
123678-HxCDF	**36.72**		**1.0004**	**1.0005**	**+0.2**	**3.07E+07**	**1.24**	**Y**	**1.13**	**408**	**8828.567**	**0.904**
123479-HxCDF	NotFnd		1.0049						1.16		8828.567	0.981
123469-HxCDF	NotFnd		1.0088						1.16		8828.567	0.981
123679-HxCDF	NotFnd		0.9943						1.16		8828.567	0.981
234678-HxCDF	**37.38**		**1.0005**	**1.0005**	**0**	**6.75E+06**	**1.19**	**Y**	**1.15**	**91.5**	**8828.567**	**1.05**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		8828.567	0.981
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**8828.567**	**1.04**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.35		1.0007	1.0011	+0.9	9.39E+06	1.28	Y	1.16	128	8828.567	0.981
1234678-HpCDF	**39.67**		**1.0003**	**1.0003**	**0**	**3.86E+07**	**1.05**	**Y**	**1.36**	**557**	**6487.008**	**0.578**
1234679-HpCDF	39.92		1.0067	1.0066	-0.2	7.47E+05	1.01	Y	1.33	11.6	6487.008	0.689
1234689-HpCDF	40.06		1.0100	1.0101	+0.2	2.28E+07	1.04	Y	1.33	355	6487.008	0.689
1234789-HpCDF	**41.01**		**1.0003**	**1.0003**	**0**	**9.62E+06**	**1.04**	**Y**	**1.30**	**162**	**6487.008**	**0.816**
OCDF	**43.30**		**1.0002**	**1.0003**	**+0.3**	**4.02E+07**	**0.90**	**Y**	**1.03**	**1,030**	**6789.443**	**1.46**
OCDF-a	43.29		1.0002	1.0002	0	2.64E+06	2.29	Y	0.06	1,170	6820.297	25.4

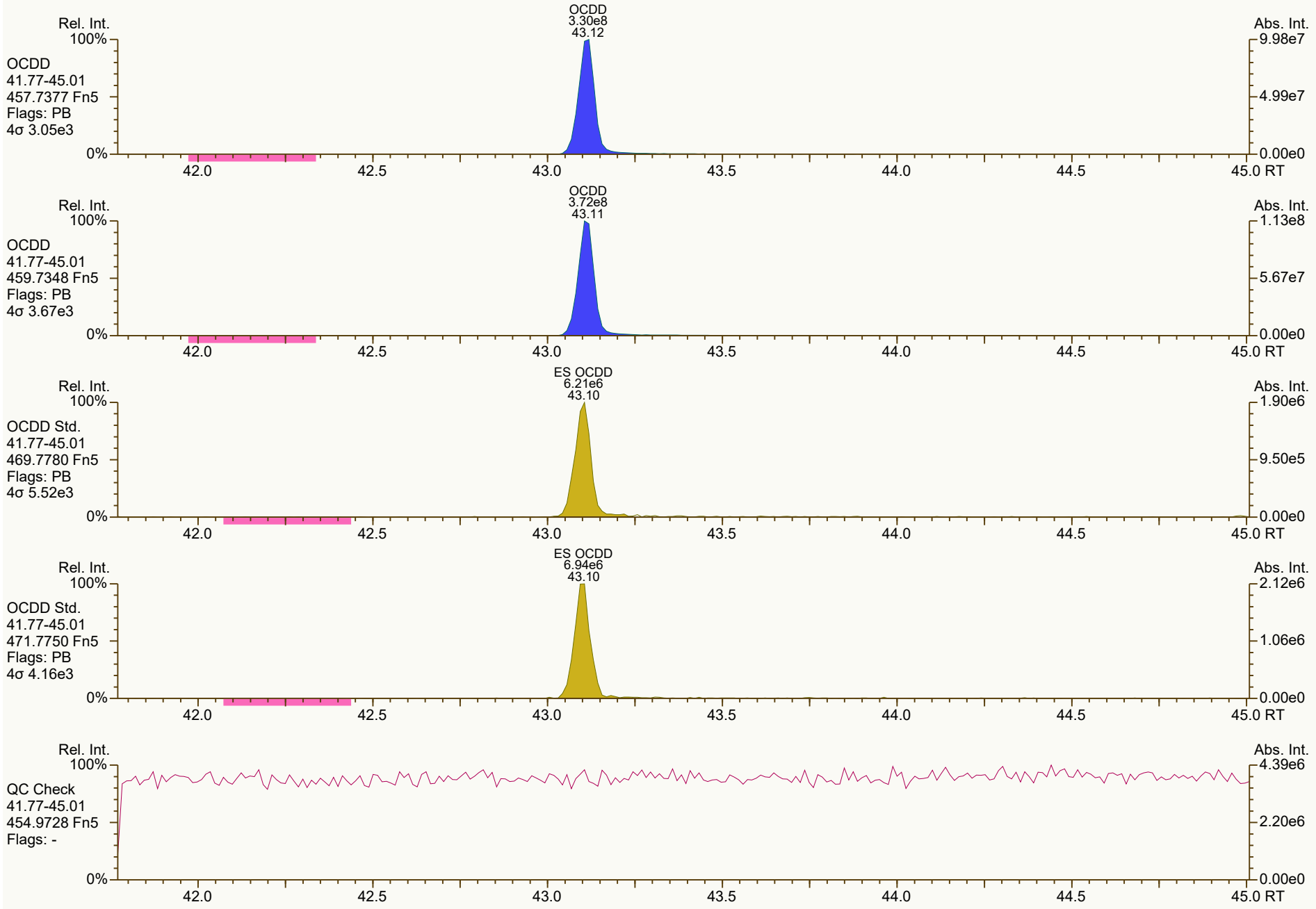

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.49e6
2.25e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.14e6
1.07e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.51e6
4.76e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.15e6
3.08e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.39e6
2.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 3.13e3
0%
2378D
2.38e8
28.39
1278D
2.23e7
28.72
Abs. Int.
5.46e7
2.73e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 2.69e3
0%
2378D
3.02e8
28.39
1278D
2.73e7
28.72
Abs. Int.
6.87e7
3.44e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 4.28e3
0%
CS 37Cl-2378D
9.19e6
28.38
Abs. Int.
2.05e6
1.02e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PBM
4σ 7.56e3
0%
JS 1234D
6.90e6
27.72
ES 2378D
6.10e6*
28.36
Abs. Int.
1.68e6
8.41e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PBM
4σ 1.00e4
0%
JS 1234D
8.72e6
27.72
ES 2378D
7.48e6*
28.36
Abs. Int.
2.34e6
1.17e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

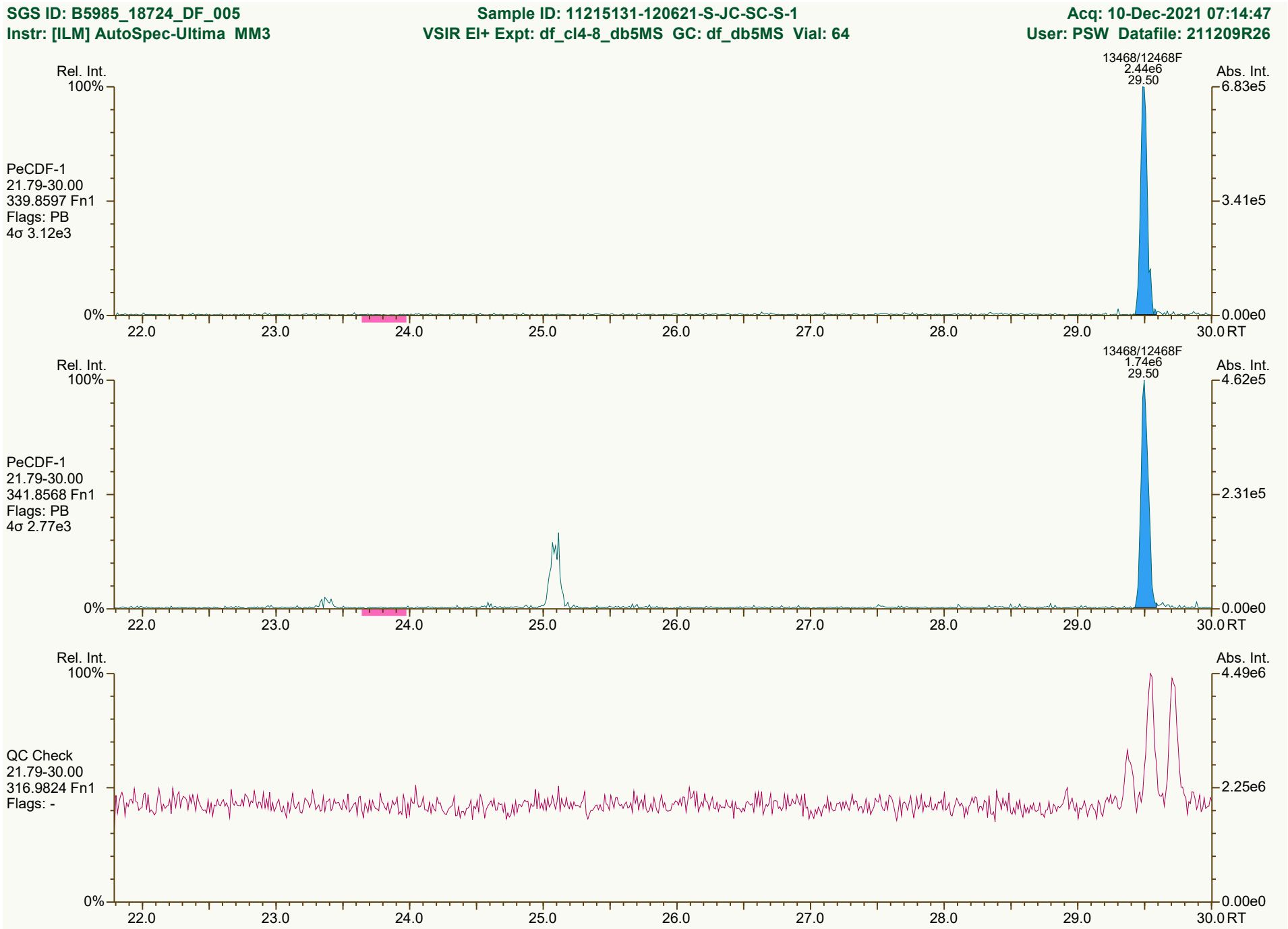

Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 3.05e3
0%
12479/12468D
2.93e5*
31.22
12469D
1.43e5
31.76
12368D
3.29e5
32.30
12478D
2.28e5*
32.49
12346/12347D
7.16e4
33.21
12378D
2.71e6*
33.70
12367D
2.46e5*
33.82
Abs. Int.
7.25e5
3.62e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 4.78e3
0%
12479/12468D
1.93e5*
31.23
12469D
1.21e5
31.76
12368D
2.06e5
32.30
12478D
1.96e5*
32.46
12379D
9.45e4*
32.59
12378D
1.61e6*
33.70
12367D
9.33e4*
33.80
Abs. Int.
4.50e5
2.25e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.71e3
0%
CS 12347D
6.81e6
33.19
ES 12378D
7.27e6
33.68
Abs. Int.
2.10e6
1.05e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 3.86e3
0%
CS 12347D
3.94e6
33.19
ES 12378D
4.40e6
33.68
Abs. Int.
1.10e6
5.51e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.14e6
1.07e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

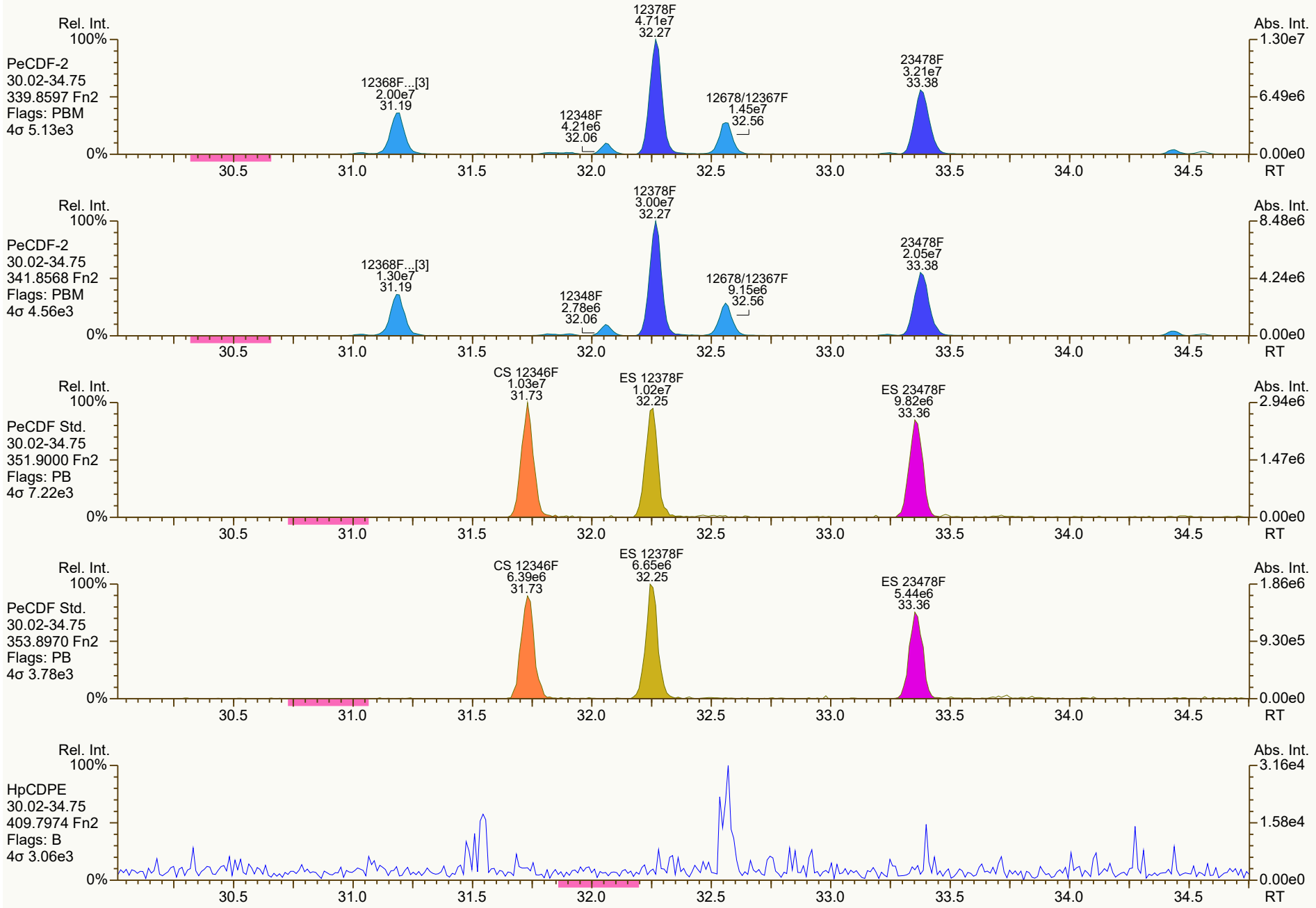

SGS ID: B5985_18724_DF_005
Sample ID: 11215131-120621-S-JC-SC-S-1
Acq: 10-Dec-2021 07:14:47
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 64
User: PSW Datafile: 211209R26
Rel. Int.
Abs. Int.
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PBM
4σ 6.67e3
124679/124689D
2.38e6
35.85
123679/123689D
2.71e6
36.78
123468D
3.15e5
36.49
123469D
2.04e5*
36.91
123478D
1.50e5
37.55
123678D
9.64e5
37.67
123789D
3.71e5
37.96
7.41e5
3.71e5
0.00e0
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 9.58e3
124679/124689D
1.95e6
35.85
123679/123689D
2.11e6
36.78
123468D
2.35e5
36.49
123469D
1.46e5*
36.91
123478D
1.10e5
37.55
123678D
7.07e5
37.67
123467D
6.64e4*
37.86
123789D
2.91e5
37.96
5.85e5
2.92e5
0.00e0
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 5.62e3
ES 123478D
6.09e6
37.54
ES 123678D
5.77e6
37.66
JS 123467D
3.48e6*
37.85
ES 123789D
6.15e6*
37.95
1.92e6
9.60e5
0.00e0
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 4.54e3
ES 123478D
4.45e6
37.54
ES 123678D
4.26e6
37.66
JS 123467D
2.58e6*
37.85
ES 123789D
5.32e6*
37.95
1.58e6
7.89e5
0.00e0
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
9.51e6
4.76e6
0.00e0
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

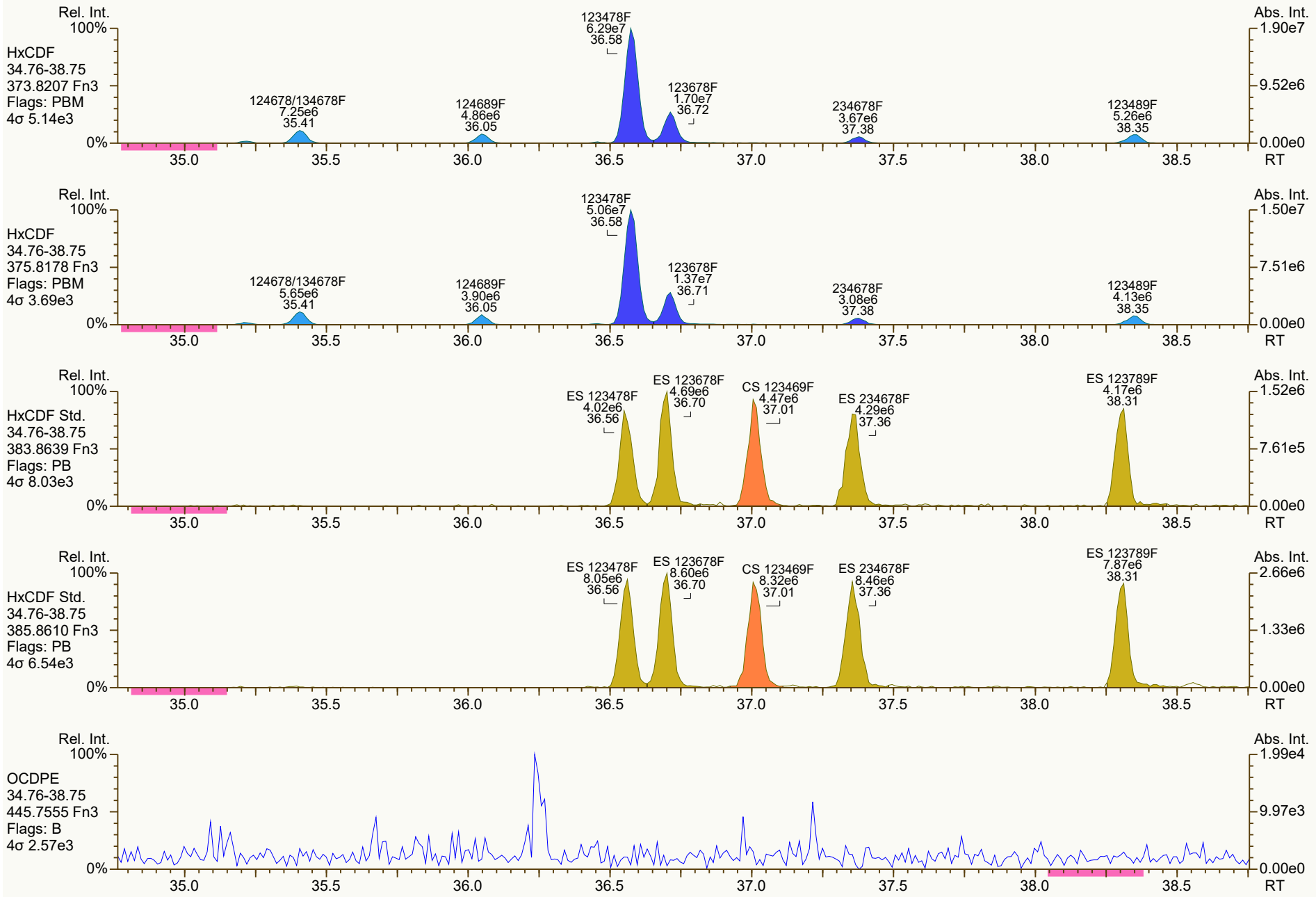

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 4.70e3
0%
1234679D
2.73e7
39.92
1234678D
2.53e7*
40.56
Abs. Int.
1.09e7
5.45e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 3.75e3
0%
1234679D
2.60e7
39.91
1234678D
2.40e7*
40.56
Abs. Int.
1.04e7
5.22e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 5.19e3
0%
ES 1234678D
4.54e6*
40.55
Abs. Int.
1.78e6
8.91e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 3.63e3
0%
ES 1234678D
4.39e6*
40.55
Abs. Int.
1.71e6
8.53e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.15e6
3.08e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

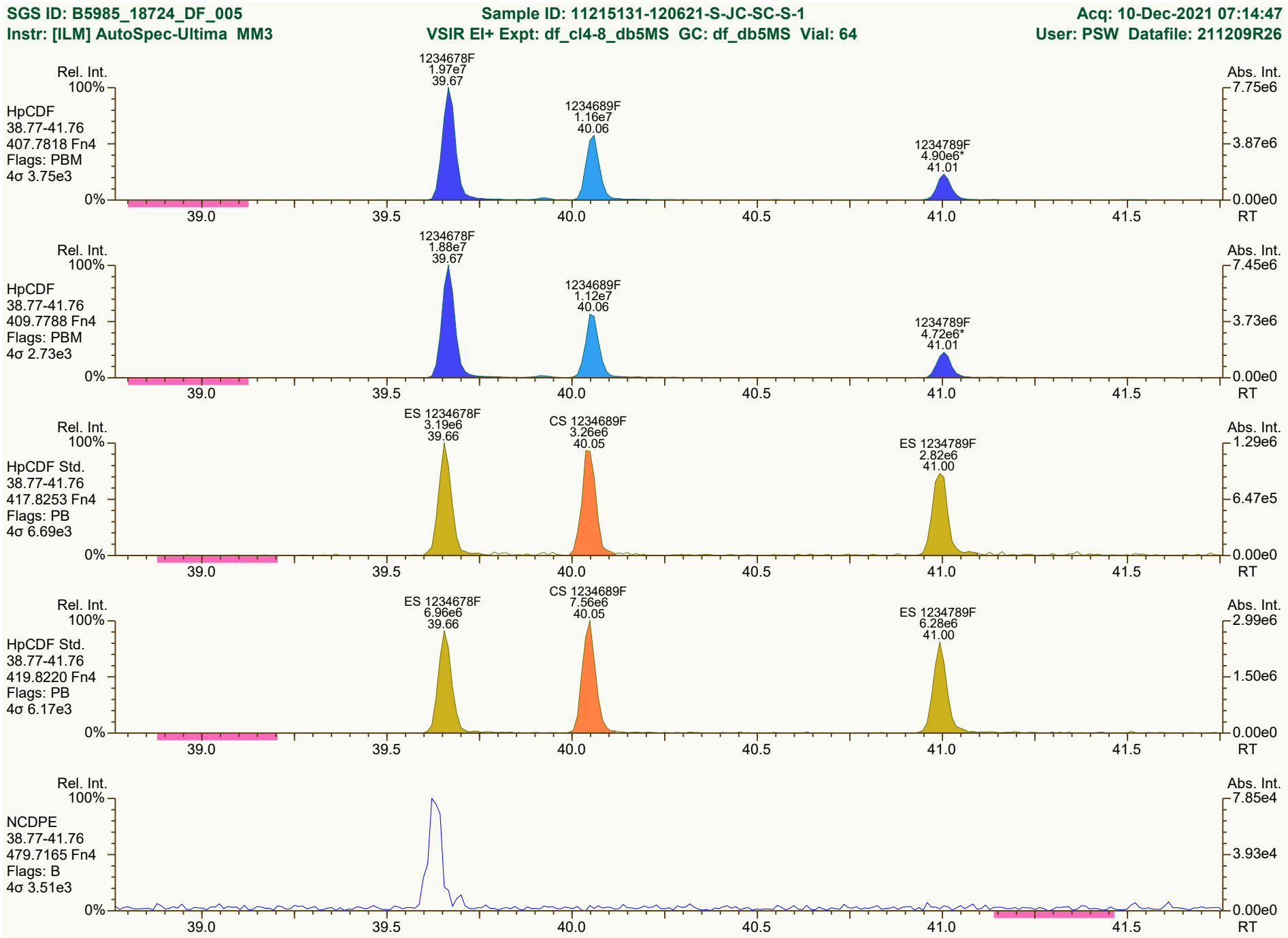

Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 3.05e3
0%
OCDD
3.30e8
43.12
Abs. Int.
9.98e7
4.99e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 3.67e3
0%
OCDD
3.72e8
43.11
Abs. Int.
1.13e8
5.67e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 5.52e3
0%
ES OCDD
6.21e6
43.10
Abs. Int.
1.90e6
9.50e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.16e3
0%
ES OCDD
6.94e6
43.10
Abs. Int.
2.12e6
1.06e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.39e6
2.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

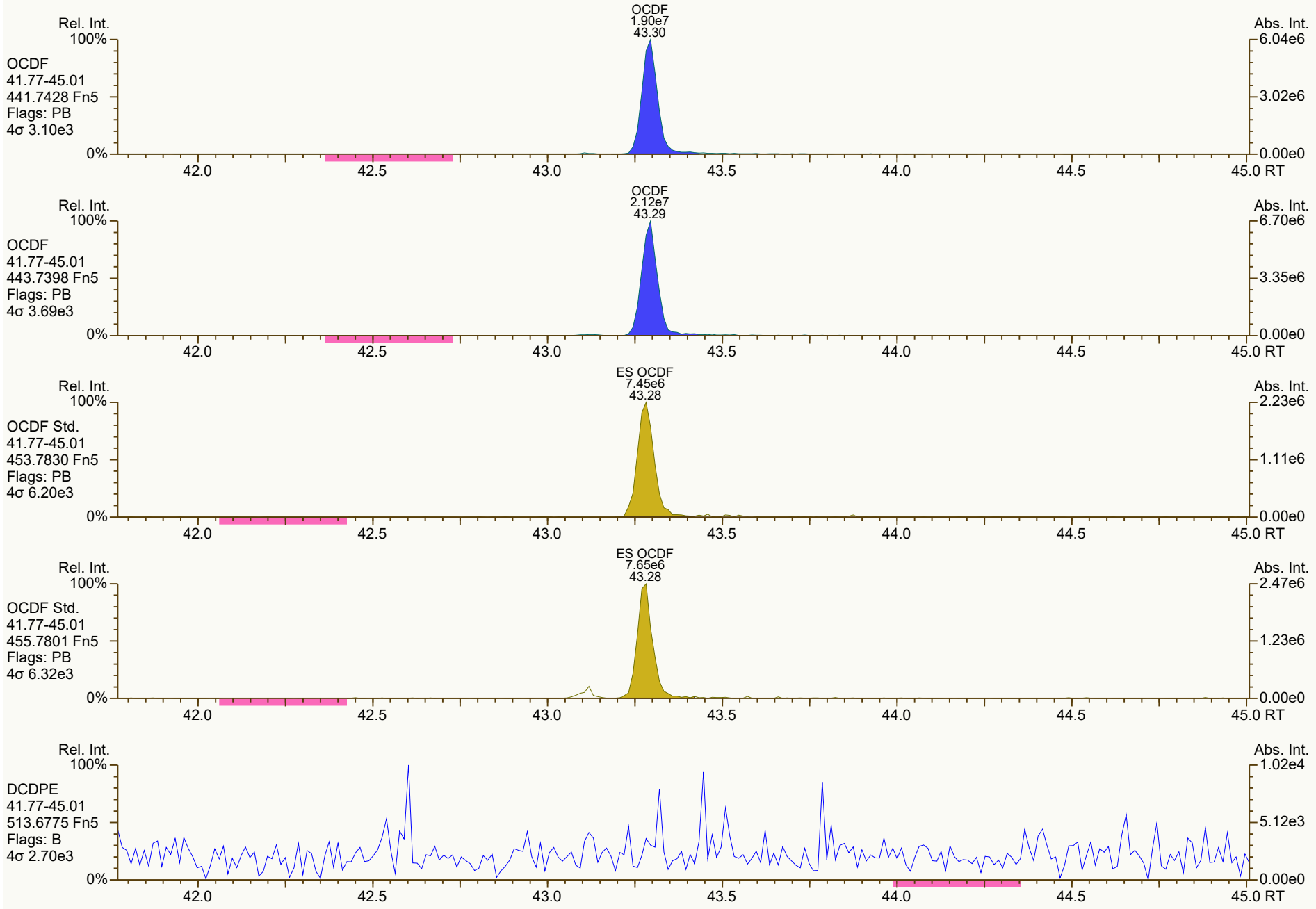

Rel. Int.
100%
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.79e3
0%
2378F
8.56e8
27.53
1278F
4.05e8
26.63
2348F
7.53e7*
27.42
2367/3467F
6.97e7
27.88
1289F
6.88e7
29.55
Abs. Int.
1.88e8
9.42e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 4.09e3
0%
2378F
1.07e9
27.53
1278F
5.12e8
26.63
2348F
9.57e7*
27.42
2367/3467F
8.87e7
27.88
1289F
8.55e7
29.55
Abs. Int.
2.36e8
1.18e8
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.53e4
0%
JS 1234F
9.72e6
26.15
ES 2378F
8.60e6
27.51
Abs. Int.
2.06e6
1.03e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 9.21e3
0%
JS 1234F
1.29e7
26.15
ES 2378F
1.06e7
27.51
Abs. Int.
2.61e6
1.30e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.56e3
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


SGS ID: B5985_18724_DF_005
Sample ID: 11215131-120621-S-JC-SC-S-1
Acq: 10-Dec-2021 07:14:47
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 64
User: PSW Datafile: 211209R26
Rel. Int.
100%
0%
Abs. Int.
6.83e5
3.41e5
0.00e0
13468/12468F
2.44e6
29.50
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.12e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
1.74e6
29.50
4.62e5
2.31e5
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 2.77e3
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
4.49e6
2.25e6
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_005.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5449 scc: 925-994
PKD: 10-Dec-2021 09:30 Printed: 10-Dec-2021 12:56 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 5.13e3
0%
12368F...[3]
2.00e7
31.19
12348F
4.21e6
32.06
12378F
4.71e7
32.27
12678/12367F
1.45e7
32.56
23478F
3.21e7
33.38
Abs. Int.
1.30e7
6.49e6
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 4.56e3
0%
12368F...[3]
1.30e7
31.19
12348F
2.78e6
32.06
12378F
3.00e7
32.27
12678/12367F
9.15e6
32.56
23478F
2.05e7
33.38
Abs. Int.
8.48e6
4.24e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 7.22e3
0%
CS 12346F
1.03e7
31.73
ES 12378F
1.02e7
32.25
ES 23478F
9.82e6
33.36
Abs. Int.
2.94e6
1.47e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 3.78e3
0%
CS 12346F
6.39e6
31.73
ES 12378F
6.65e6
32.25
ES 23478F
5.44e6
33.36
Abs. Int.
1.86e6
9.30e5
0.00e0
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.06e3
0%
Abs. Int.
3.16e4
1.58e4
0.00e0
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PBM
4σ 5.14e3
0%
123478F
6.29e7
36.58
124678/134678F
7.25e6
35.41
124689F
4.86e6
36.05
123678F
1.70e7
36.72
234678F
3.67e6
37.38
123489F
5.26e6
38.35
Abs. Int.
1.90e7
9.52e6
0.00e0
RT
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PBM
4σ 3.69e3
123478F
5.06e7
36.58
124678/134678F
5.65e6
35.41
124689F
3.90e6
36.05
123678F
1.37e7
36.71
234678F
3.08e6
37.38
123489F
4.13e6
38.35
1.50e7
7.51e6
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 8.03e3
ES 123478F
4.02e6
36.56
ES 123678F
4.69e6
36.70
CS 123469F
4.47e6
37.01
ES 234678F
4.29e6
37.36
ES 123789F
4.17e6
38.31
1.52e6
7.61e5
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 6.54e3
ES 123478F
8.05e6
36.56
ES 123678F
8.60e6
36.70
CS 123469F
8.32e6
37.01
ES 234678F
8.46e6
37.36
ES 123789F
7.87e6
38.31
2.66e6
1.33e6
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.57e3
1.99e4
9.97e3


SGS ID: B5985_18724_DF_005
Sample ID: 11215131-120621-S-JC-SC-S-1
Acq: 10-Dec-2021 07:14:47
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 64
User: PSW Datafile: 211209R26
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 3.75e3
1234678F
1.97e7
39.67
1234689F
1.16e7
40.06
1234789F
4.90e6*
41.01
7.75e6
3.87e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 2.73e3
1234678F
1.88e7
39.67
1234689F
1.12e7
40.06
1234789F
4.72e6*
41.01
7.45e6
3.73e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 6.69e3
ES 1234678F
3.19e6
39.66
CS 1234689F
3.26e6
40.05
ES 1234789F
2.82e6
41.00
1.29e6
6.47e5
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 6.17e3
ES 1234678F
6.96e6
39.66
CS 1234689F
7.56e6
40.05
ES 1234789F
6.28e6
41.00
2.99e6
1.50e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.51e3
7.85e4
3.93e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_005.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4178, 3087, 8985 scc: 925-994
PKD: 10-Dec-2021 09:30 Printed: 10-Dec-2021 12:56 Page 11 of 12


OCDF
1.90e7
43.30
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.10e3
0%
Abs. Int.
6.04e6
3.02e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.12e7
43.29
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.69e3
0%
Abs. Int.
6.70e6
3.35e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
7.45e6
43.28
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 6.20e3
0%
Abs. Int.
2.23e6
1.11e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
7.65e6
43.28
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 6.32e3
0%
Abs. Int.
2.47e6
1.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.70e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5985_18724_DF_005MS | **Acq'd:** 10 Dec 2021 08:02 PSW | **Wt/Vol:** 10.14 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1-MS | **UTP:** 10-Dec-2021 12:46:22 PSW | **J-level:** 0.493 pg/g | **Split:** 1 | **Checkcode:** 649-648-BZR

Datafile: 211209R27 | **Report:** 10 Dec 2021 12:49 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.40	E	1.0008	1.0008	0	5.54E+08	0.79	Y	1.34	6,750	8172.392	1.02
12378-PeCDD	33.71		1.0005	1.0006	+0.2	9.74E+06	1.55	Y	1.06	156	8544.487	1.11
123478-HxCDD	37.57		1.0003	1.0004	+0.2	5.71E+06	1.29	Y	1.06	111	13501.19	2.15
123678-HxCDD	37.68		1.0033	1.0036	+0.7	7.27E+06	1.25	Y	1.08	137	13501.19	2.07
123789-HxCDD	37.98		1.0110	1.0114	+0.9	6.22E+06	1.24	Y	1.02	112	13501.19	2.02
1234678-HpCDD	40.57		1.0003	1.0004	+0.2	5.93E+07	1.05	Y	0.97	1,290	8323.833	1.2
OCDD	43.12	E	1.0003	1.0002	-0.3	8.02E+08	0.89	Y	1.07	22,100	13492.59	3.25
2378-TCDF	27.54	E	1.0006	1.0008	+0.3	1.99E+09	0.79	Y	0.96	22,900	10427.91	1.31
12378-PeCDF	32.28		1.0006	1.0006	0	7.57E+07	1.56	Y	0.95	1,040	10636.077	1.21
23478-PeCDF	33.39		1.0006	1.0007	+0.2	5.49E+07	1.58	Y	0.94	792	10636.077	1.47
123478-HxCDF	36.58		1.0004	1.0004	0	1.20E+08	1.25	Y	1.23	1,790	11332.126	1.44
123678-HxCDF	36.72		1.0004	1.0005	+0.2	3.88E+07	1.25	Y	1.13	520	11332.126	1.31
234678-HxCDF	37.39		1.0005	1.0005	0	1.37E+07	1.27	Y	1.15	199	11332.126	1.49
123789-HxCDF	38.35		1.0005	1.0008	+0.7	1.52E+07	1.28	Y	1.14	237	11332.126	1.27
1234678-HpCDF	39.68		1.0003	1.0003	0	4.69E+07	1.02	Y	1.36	674	6437.877	0.565
1234789-HpCDF	41.02		1.0003	1.0003	0	1.62E+07	1.06	Y	1.30	280	6437.877	0.721
OCDF	43.31		1.0002	1.0003	+0.3	4.68E+07	0.86	Y	1.03	1,160	7747.929	1.54

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.38	1.0237	1.0234	-0.5	1.20E+07	0.85	Y	1.03	75.1
ES 12378-PeCDD	33.69	1.2158	1.2149	-1.8	1.16E+07	1.67	Y	1.03	72.4
ES 123478-HxCDD	37.55	0.9920	0.9917	-0.7	9.64E+06	1.32	Y	0.99	78.7
ES 123678-HxCDD	37.67	0.9949	0.9948	-0.2	9.70E+06	1.27	Y	0.97	80.9
ES 123789-HxCDD	37.96	1.0026	1.0026	0	1.08E+07	1.25	Y	1.12	77.8
ES 1234678-HpCDD	40.56	1.0713	1.0712	-0.2	9.28E+06	1.05	Y	0.99	76
ES OCDD	43.11	1.1385	1.1387	+0.5	1.34E+07	0.92	Y	0.78	69.9
ES 2378-TCDF	27.52	1.0519	1.0518	-0.2	1.79E+07	0.83	Y	1.08	76.3
ES 12378-PeCDF	32.26	1.2331	1.2330	-0.2	1.52E+07	1.63	Y	0.93	75.3
ES 23478-PeCDF	33.37	1.2754	1.2752	-0.4	1.46E+07	1.71	Y	0.92	73.1
ES 123478-HxCDF	36.57	0.9656	0.9658	+0.4	1.08E+07	0.63	N	1.14	76.4
ES 123678-HxCDF	36.70	0.9693	0.9694	+0.2	1.30E+07	0.53	Y	1.30	81.4
ES 234678-HxCDF	37.37	0.9869	0.9869	0	1.18E+07	0.52	Y	1.20	79.7
ES 123789-HxCDF	38.32	1.0121	1.0120	-0.2	1.12E+07	0.52	Y	1.14	79.9
ES 1234678-HpCDF	39.67	1.0478	1.0477	-0.2	1.01E+07	0.45	Y	0.95	86.2
ES 1234789-HpCDF	41.01	1.0832	1.0831	-0.2	8.77E+06	0.44	Y	0.85	84
ES OCDF	43.29	1.1434	1.1435	+0.3	1.56E+07	0.85	Y	0.93	68.2

Lab ID: B5985_18724_DF_005MS | **Acq'd:** 10 Dec 2021 08:02 PSW | **Wt/Vol:** 10.14 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1-MS | **UTP:** 10-Dec-2021 12:46:22 PSW | **J-level:** 0.493 pg/g | **Split:** 1 | **Checkcode:** 649-648-BZR

Datafile: 211209R27 | **Report:** 10 Dec 2021 12:49 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.73		-	-	-	1.55E+07	0.81	Y	-	-	
JS 1234-TCDF	26.16		-	-	-	2.16E+07	0.77	Y	-	-	
JS 123467-HxCDD	37.86		-	-	-	6.16E+06	1.21	Y	-	-	
CS 37Cl-2378-TCDD	28.40		1.0245	1.0242	-0.5	5.51E+06	n/a	-	1.31	67.8	
CS 12347-PeCDD	33.20		1.1978	1.1973	-1.0	1.07E+07	1.73	Y	0.89	77.3	
CS 12346-PeCDF	31.74		1.2130	1.2131	+0.2	1.53E+07	1.60	Y	0.87	81.9	
CS 123469-HxCDF	37.02		0.9775	0.9777	+0.4	1.14E+07	0.52	Y	1.09	85	
CS 1234689-HpCDF	40.06		1.0580	1.0580	0	1.01E+07	0.42	Y	0.86	94.7	
~~SS 37Cl-2378-TCDD~~	~~28.40~~		~~1.0245~~	~~1.0242~~	~~-0.5~~	~~5.51E+06~~	~~n/a~~		~~1.26~~	~~90.9~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.20~~		~~1.1978~~	~~1.1973~~	~~-1.0~~	~~1.07E+07~~	~~1.73~~	~~Y~~	~~0.86~~	~~107~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.74~~		~~1.2130~~	~~1.2131~~	~~+0.2~~	~~1.53E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~109~~	
~~SS 123469-HxCDF~~	~~37.02~~		~~0.9775~~	~~0.9777~~	~~+0.4~~	~~1.14E+07~~	~~0.52~~	~~Y~~	~~0.84~~	~~104~~	
~~SS 1234689-HpCDF~~	~~40.06~~		~~1.0580~~	~~1.0580~~	~~0~~	~~1.01E+07~~	~~0.42~~	~~Y~~	~~0.91~~	~~110~~	

Totals	Conc	EMPC
Total TCDD	7590	7630
Total PeCDD	222	241
Total HxCDD	578	584
Total HpCDD	2520	2520
Total Tetra-Octa Dioxins	33000	33100
Total TCDF	44,600	44600
Total PeCDF	3,020	3020
Total HxCDF	3,350	3350
Total HpCDF	1,340	1340
Total Tetra-Octa Furans	53,500	53500
Total Tetra-Octa Dioxins & Furans	86500	86600

Lab ID: B5985_18724_DF_005MS **Acq'd: 10 Dec 2021 08:02 PSW** **Wt/Vol: 10.14 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120621-S-JC-SC-S-1-MS **UTP: 10-Dec-2021 12:46:22 PSW** **J-level: 0.493 pg/g** **Split: 1** **Checkcode: 649-648-BZR**

Datafile: 211209R27 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.77		0.8726	0.8731	+0.7	2.75E+06	0.75	Y	1.34	33.6	8172.392	1.02
1379-TCDD	25.13	EMPC	0.8851	0.8858	+1.1	3.19E+05	0.52	N	1.34	3.89	8172.392	1.02
1369-TCDD	NotFnd		0.9002						1.34		8172.392	1.02
1469-TCDD	NotFnd		0.9275						1.34		8172.392	1.02
1247/1246/1248/1249-TCDD	26.57	EMPC	0.9361	0.9362	+0.2	9.39E+05	0.95	N	1.34	11.4	8172.392	1.02
1378-TCDD	26.75		0.9427	0.9426	-0.2	1.43E+06	0.76	Y	1.34	17.5	8172.392	1.02
1268-TCDD	26.94	EMPC	0.9498	0.9494	-0.6	1.00E+05	1.20	N	1.34	1.22	8172.392	1.02
1478-TCDD	27.20		0.9584	0.9585	+0.2	1.13E+06	0.72	Y	1.34	13.8	8172.392	1.02
1279-TCDD	NotFnd		0.9644						1.34		8172.392	1.02
1234/1269-TCDD	27.72	EMPC	0.9766	0.9768	+0.3	1.48E+05	0.64	N	1.34	1.8	8172.392	1.02
1236-TCDD	NotFnd		0.9813						1.34		8172.392	1.02
1237/1238-TCDD	28.10		0.9906	0.9902	-0.7	8.36E+06	0.84	Y	1.34	102	8172.392	1.02
1239-TCDD	28.24	EMPC	0.9952	0.9951	-0.2	1.53E+06	0.92	N	1.34	18.6	8172.392	1.02
2378-TCDD	**28.40**	E	**1.0008**	1.0008	**0**	5.54E+08	0.79	Y	**1.34**	**6,750**	**8172.392**	**1.02**
1278-TCDD	28.73		1.0122	1.0126	+0.7	5.19E+07	0.81	Y	1.34	633	8172.392	1.02
1267-TCDD	NotFnd		1.0168						1.34		8172.392	1.02
1289-TCDD	29.39		1.0349	1.0359	+1.8	2.99E+06	0.86	Y	1.34	36.4	8172.392	1.02
12479/12468-PeCDD	31.24		0.9267	0.9274	+1.3	1.74E+06	1.45	Y	1.06	27.9	8544.487	1.11
12469-PeCDD	31.77	EMPC	0.9425	0.9430	+1.0	2.24E+05	0.86	N	1.06	3.59	8544.487	1.11
12368-PeCDD	32.30		0.9588	0.9589	+0.2	6.08E+05	1.40	Y	1.06	9.75	8544.487	1.11
12478-PeCDD	32.50	EMPC	0.9643	0.9647	+0.8	4.28E+05	1.20	N	1.06	6.86	8544.487	1.11
12379-PeCDD	32.60		0.9673	0.9678	+1.0	2.15E+05	1.49	Y	1.06	3.44	8544.487	1.11
12369/12467/12489-PeCDD	32.85	EMPC	0.9750	0.9753	+0.6	1.89E+05	1.82	N	1.06	3.04	8544.487	1.11
12346/12347-PeCDD	33.22	J	0.9859	0.9862	+0.6	1.49E+05	1.58	Y	1.06	2.38	8544.487	1.11
12378-PeCDD	33.71		**1.0005**	**1.0006**	**+0.2**	**9.74E+06**	**1.55**	**Y**	**1.06**	**156**	**8544.487**	**1.11**
12367-PeCDD	33.83	EMPC	1.0032	1.0042	+2.0	3.71E+05	2.62	N	1.06	5.95	8544.487	1.11
12389-PeCDD	34.14		1.0135	1.0135	0	1.38E+06	1.74	Y	1.06	22.1	8544.487	1.11
124679/124689-HxCDD	35.86		0.9544	0.9549	+1.1	5.60E+06	1.29	Y	1.05	105	13501.19	2.08
123468-HxCDD	36.50		0.9716	0.9720	+0.9	5.46E+05	1.13	Y	1.05	10.2	13501.19	2.08
123679/123689-HxCDD	36.78		0.9793	0.9796	+0.7	5.29E+06	1.23	Y	1.05	98.8	13501.19	2.08
123469-HxCDD	36.92	EMPC	0.9829	0.9832	+0.7	2.97E+05	1.05	N	1.05	5.56	13501.19	2.08
123478-HxCDD	37.57		**1.0003**	**1.0004**	**+0.2**	**5.71E+06**	**1.29**	**Y**	1.06	**111**	**13501.19**	**2.15**
123678-HxCDD	37.68		**1.0033**	**1.0036**	**+0.7**	**7.27E+06**	**1.25**	**Y**	1.08	**137**	**13501.19**	**2.07**
123467-HxCDD	37.86		1.0084	1.0083	-0.2	2.96E+05	1.10	Y	1.05	5.53	13501.19	2.08
123789-HxCDD	37.98		**1.0110**	**1.0114**	**+0.9**	**6.22E+06**	**1.24**	**Y**	1.02	**112**	**13501.19**	**2.02**

Lab ID: B5985_18724_DF_005MS | **Acq'd:** 10 Dec 2021 08:02 PSW | **Wt/Vol:** 10.14 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1-MS | **UTP:** 10-Dec-2021 12:46:22 PSW | **J-level:** 0.493 pg/g | **Split:** 1 | **Checkcode:** 649-648-BZR

Datafile: 211209R27 | **Report:** 10 Dec 2021 12:49 pw | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.93		0.9843	0.9844	+0.2	5.63E+07	1.04	Y	0.97	1,230	8323.833	1.2
1234678-HpCDD	**40.57**		**1.0003**	**1.0004**	**+0.2**	**5.93E+07**	**1.05**	**Y**	**0.97**	**1,290**	**8323.833**	**1.2**
OCDD	**43.12**	**E**	**1.0003**	**1.0002**	**-0.3**	**8.02E+08**	**0.89**	**Y**	**1.07**	**22,100**	**13492.59**	**3.25**
OCDD-a	43.12	E	1.0001	1.0002	+0.3	4.91E+07	2.51	Y	0.07	21,900	9687.477	37.9
1368-TCDF	22.64		0.8230	0.8228	-0.3	2.45E+06	0.80	Y	0.96	28.2	10427.91	1.31
1468-TCDF	23.24		0.8443	0.8446	+0.4	2.60E+06	0.82	Y	0.96	30	10427.91	1.31
2468-TCDF	23.88		0.8672	0.8679	+1.0	2.87E+06	0.81	Y	0.96	33	10427.91	1.31
1346/1246-TCDF	24.29	EMPC	0.8802	0.8826	+3.5	9.24E+05	0.89	N	0.96	10.6	10427.91	1.31
1347/1378/1247-TCDF	24.42		0.8855	0.8874	+2.8	1.22E+07	0.79	Y	0.96	141	10427.91	1.31
1348-TCDF	24.65		0.8952	0.8957	+0.7	4.78E+06	0.80	Y	0.96	55	10427.91	1.31
1248/1367/1379-TCDF	24.76		0.9000	0.8998	-0.3	4.60E+07	0.80	Y	0.96	529	10427.91	1.31
1268-TCDF	25.15		0.9136	0.9141	+0.8	2.16E+07	0.79	Y	0.96	249	10427.91	1.31
1467-TCDF	25.28		0.9185	0.9187	+0.3	4.85E+06	0.79	Y	0.96	55.7	10427.91	1.31
1478-TCDF	25.46		0.9247	0.9251	+0.6	5.52E+07	0.78	Y	0.96	634	10427.91	1.31
1369/1237-TCDF	25.84		0.9381	0.9389	+1.2	1.82E+07	0.82	Y	0.96	210	10427.91	1.31
2467-TCDF	25.94		0.9427	0.9428	+0.2	2.29E+06	0.83	Y	0.96	26.4	10427.91	1.31
2368-TCDF	26.09		0.9484	0.9480	-0.6	4.12E+07	0.77	Y	0.96	474	10427.91	1.31
1238/1234/1678/1469/1236-TCDF	26.17	E	0.9517	0.9510	-1.1	1.10E+08	0.79	Y	0.96	1,270	10427.91	1.31
1278-TCDF	26.64	E	0.9682	0.9681	-0.2	9.53E+08	0.80	Y	0.96	11,000	10427.91	1.31
1349-TCDF	NotFnd		0.9725						0.96		10427.91	1.31
1267-TCDF	26.91		0.9782	0.9780	-0.3	4.30E+07	0.79	Y	0.96	494	10427.91	1.31
2346/1249-TCDF	27.11		0.9846	0.9850	+0.7	6.38E+06	0.81	Y	0.96	73.4	10427.91	1.31
2347/1279-TCDF	27.30		0.9926	0.9922	-0.7	2.11E+07	0.78	Y	0.96	243	10427.91	1.31
2348-TCDF	27.43	E	0.9966	0.9968	+0.3	1.85E+08	0.79	Y	0.96	2,120	10427.91	1.31
2378-TCDF	**27.54**	E	**1.0006**	**1.0008**	**+0.3**	**1.99E+09**	**0.79**	**Y**	**0.96**	**22,900**	**10427.91**	**1.31**
2367/3467-TCDF	27.89	E	1.0139	1.0136	-0.5	1.64E+08	0.79	Y	0.96	1,880	10427.91	1.31
1269-TCDF	28.14		1.0226	1.0227	+0.2	2.59E+07	0.79	Y	0.96	298	10427.91	1.31
1239-TCDF	28.39		1.0322	1.0318	-0.7	3.65E+06	0.79	Y	0.96	42	10427.91	1.31
1289-TCDF	29.56	E	1.0729	1.0741	+2.1	1.60E+08	0.78	Y	0.96	1,850	10427.91	1.31
13468/12468-PeCDF	29.49		0.9135	0.9141	+1.1	1.81E+07	1.63	Y	0.94	255	7741.845	0.971
13678/13467/12467-PeCDF	31.05		0.9612	0.9625	+2.4	1.23E+06	1.50	Y	0.94	17.4	10636.077	1.33
12368/13478/12478-PeCDF	31.19		0.9661	0.9670	+1.7	2.90E+07	1.58	Y	0.94	408	10636.077	1.33
14678-PeCDF	31.28		0.9693	0.9695	+0.4	1.29E+06	1.59	Y	0.94	18.1	10636.077	1.33
13479-PeCDF	31.38	J EMPC	0.9723	0.9726	+0.6	8.39E+04	1.10	N	0.94	1.18	10636.077	1.33
13469/12479-PeCDF	31.57		0.9799	0.9786	-2.5	4.47E+05	1.68	Y	0.94	6.28	10636.077	1.33
12346-PeCDF	31.73	J EMPC	0.9842	0.9836	-1.1	9.91E+04	1.13	N	0.94	1.39	10636.077	1.33

Lab ID: B5985_18724_DF_005MS | **Acq'd: 10 Dec 2021 08:02 PSW** | **Wt/Vol: 10.14 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120621-S-JC-SC-S-1-MS | **UTP: 10-Dec-2021 12:46:22 PSW** | **J-level: 0.493 pg/g** | **Split: 1** | **Checkcode: 649-648-BZR**

Datafile: 211209R27 | **Report: 10 Dec 2021 12:49 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.83		0.9868	0.9866	-0.4	1.45E+06	1.37	Y	0.94	20.4	10636.077	1.33
12347-PeCDF	31.91		0.9893	0.9893	0	1.32E+06	1.51	Y	0.94	18.6	10636.077	1.33
12348-PeCDF	32.07		0.9941	0.9941	0	6.22E+06	1.61	Y	0.94	87.5	10636.077	1.33
12378-PeCDF	**32.28**		**1.0006**	**1.0006**	**0**	**7.57E+07**	**1.56**	**Y**	**0.95**	**1,040**	**10636.077**	**1.21**
12678/12367-PeCDF	32.57		1.0090	1.0095	+1.0	2.00E+07	1.59	Y	0.94	281	10636.077	1.33
12379-PeCDF	NotFnd		1.0143						0.94		10636.077	1.33
12679-PeCDF	NotFnd		0.9929						0.94		10636.077	1.33
23467/12369-PeCDF	33.25		0.9966	0.9965	-0.2	9.20E+05	1.58	Y	0.94	12.9	10636.077	1.33
23478-PeCDF	**33.39**		**1.0006**	**1.0007**	**+0.2**	**5.49E+07**	**1.58**	**Y**	**0.94**	**792**	**10636.077**	**1.47**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		10636.077	1.33
12349-PeCDF	NotFnd		1.0102						0.94		10636.077	1.33
12389-PeCDF	34.44		1.0325	1.0322	-0.6	4.40E+06	1.63	Y	0.94	62	10636.077	1.33
123468-HxCDF	35.22		0.9628	0.9633	+1.1	1.97E+07	1.25	Y	1.16	285	11332.126	1.38
124678/134678-HxCDF	35.41		0.9683	0.9685	+0.4	1.23E+07	1.25	Y	1.16	179	11332.126	1.38
134679-HxCDF	NotFnd		0.9746						1.16		11332.126	1.38
124679-HxCDF	35.83		0.9798	0.9798	0	3.98E+05	1.33	Y	1.16	5.77	11332.126	1.38
124689-HxCDF	36.06		0.9859	0.9861	+0.4	8.86E+06	1.27	Y	1.16	129	11332.126	1.38
123467-HxCDF	36.45		0.9972	0.9969	-0.7	6.68E+05	1.22	Y	1.16	9.7	11332.126	1.38
123478-HxCDF	**36.58**		**1.0004**	**1.0004**	**0**	**1.20E+08**	**1.25**	**Y**	**1.23**	**1,790**	**11332.126**	**1.44**
123678-HxCDF	**36.72**		**1.0004**	**1.0005**	**+0.2**	**3.88E+07**	**1.25**	**Y**	**1.13**	**520**	**11332.126**	**1.31**
123479-HxCDF	NotFnd		1.0049						1.16		11332.126	1.38
123469-HxCDF	NotFnd		1.0088						1.16		11332.126	1.38
123679-HxCDF	NotFnd		0.9943						1.16		11332.126	1.38
234678-HxCDF	**37.39**		**1.0005**	**1.0005**	**0**	**1.37E+07**	**1.27**	**Y**	**1.15**	**199**	**11332.126**	**1.49**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		11332.126	1.38
123789-HxCDF	**38.35**		**1.0005**	**1.0008**	**+0.7**	**1.52E+07**	**1.28**	**Y**	**1.14**	**237**	**11332.126**	**1.27**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		11332.126	1.38
1234678-HpCDF	**39.68**		**1.0003**	**1.0003**	**0**	**4.69E+07**	**1.02**	**Y**	**1.36**	**674**	**6437.877**	**0.565**
1234679-HpCDF	39.93		1.0067	1.0066	-0.2	7.89E+05	1.14	Y	1.33	12.4	6437.877	0.637
1234689-HpCDF	40.07		1.0100	1.0101	+0.2	2.37E+07	1.06	Y	1.33	373	6437.877	0.637
1234789-HpCDF	**41.02**		**1.0003**	**1.0003**	**0**	**1.62E+07**	**1.06**	**Y**	**1.30**	**280**	**6437.877**	**0.721**
OCDF	**43.31**		**1.0002**	**1.0003**	**+0.3**	**4.68E+07**	**0.86**	**Y**	**1.03**	**1,160**	**7747.929**	**1.54**
OCDF-a	43.30		1.0002	1.0002	0	2.91E+06	2.35	Y	0.06	1,240	10468.833	36


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.44e6
2.22e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.76e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.23e6
4.61e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.09e6
3.05e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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2.16e6
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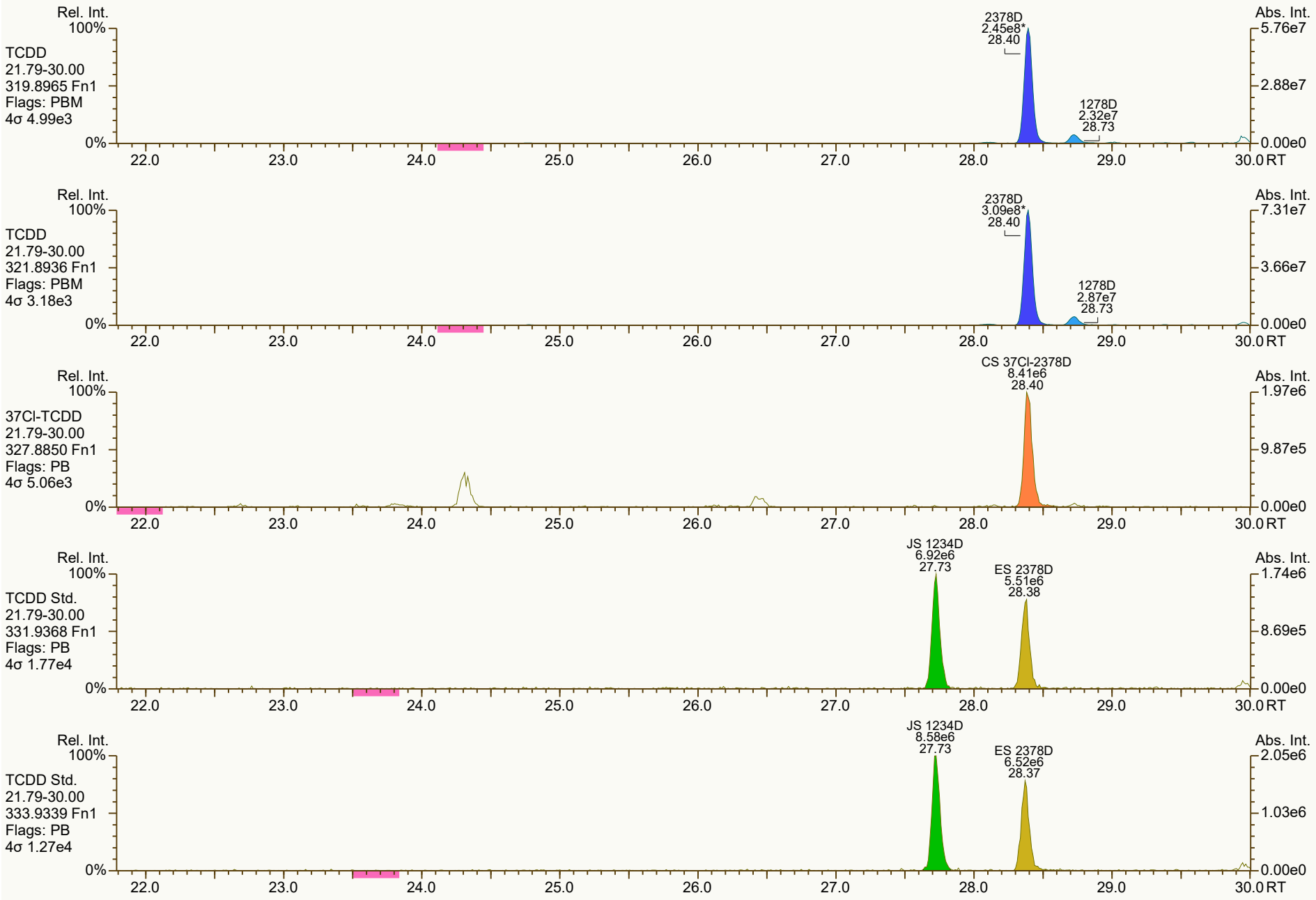
42.5
43.0
43.5
44.0
44.5
45.0 RT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100%
TCDD
21.79-30.00
319.8965 Fn1
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4σ 4.99e3
0%
2378D
2.45e8*
28.40
1278D
2.32e7
28.73
Abs. Int.
5.76e7
2.88e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.18e3
0%
2378D
3.09e8*
28.40
1278D
2.87e7
28.73
Abs. Int.
7.31e7
3.66e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 5.06e3
0%
CS 37Cl-2378D
8.41e6
28.40
Abs. Int.
1.97e6
9.87e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.77e4
0%
JS 1234D
6.92e6
27.73
ES 2378D
5.51e6
28.38
Abs. Int.
1.74e6
8.69e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.27e4
0%
JS 1234D
8.58e6
27.73
ES 2378D
6.52e6
28.37
Abs. Int.
2.05e6
1.03e6
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23.0
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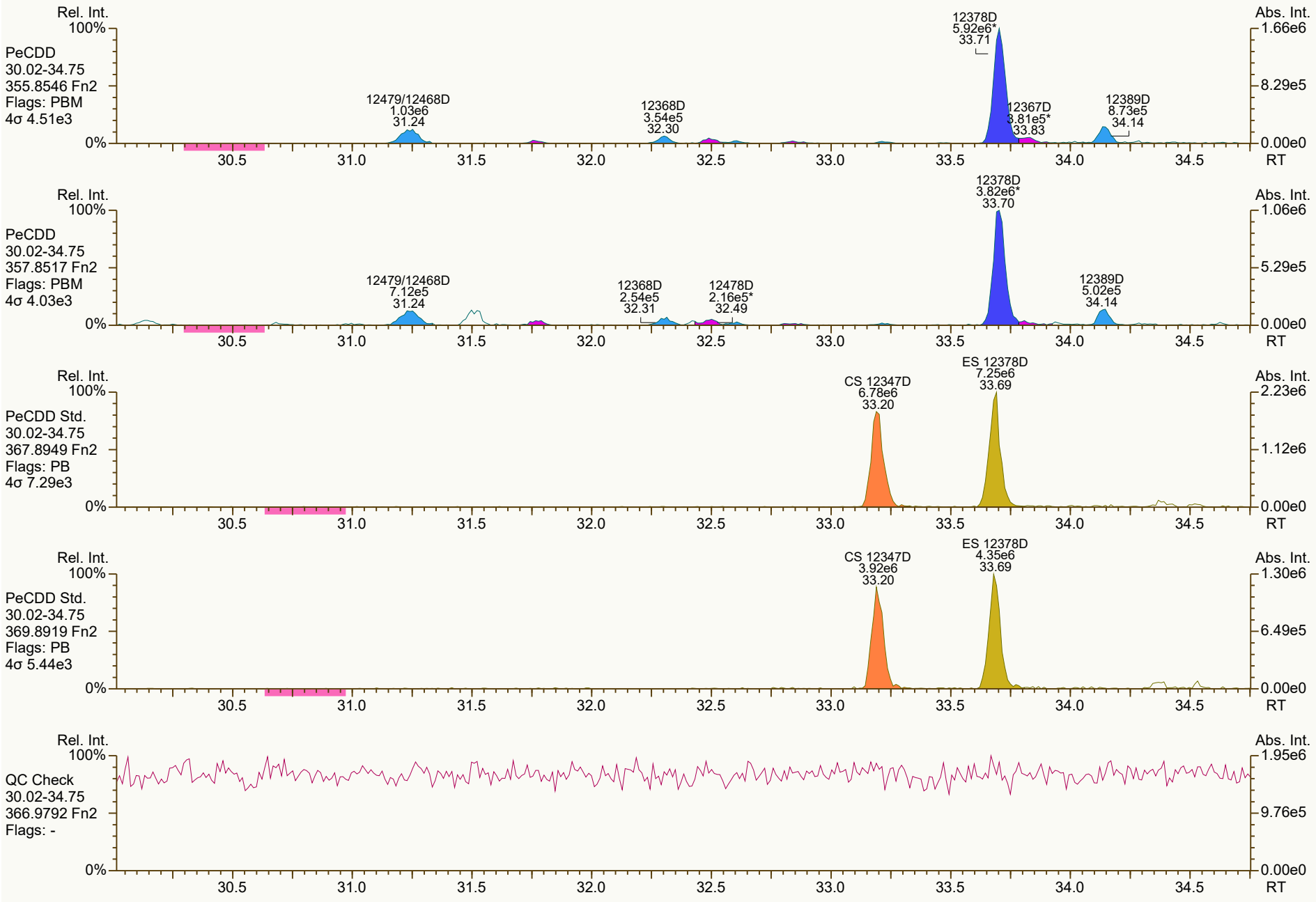
25.0
26.0
27.0
28.0
29.0
30.0 RT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100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
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12479/12468D
1.03e6
31.24
12368D
3.54e5
32.30
12378D
5.92e6*
33.71
12367D
3.81e5*
33.83
12389D
8.73e5
34.14
Abs. Int.
1.66e6
8.29e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 4.03e3
12479/12468D
7.12e5
31.24
12368D
2.54e5
32.31
12478D
2.16e5*
32.49
12378D
3.82e6*
33.70
12389D
5.02e5
34.14
Abs. Int.
1.06e6
5.29e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 7.29e3
CS 12347D
6.78e6
33.20
ES 12378D
7.25e6
33.69
Abs. Int.
2.23e6
1.12e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 5.44e3
CS 12347D
3.92e6
33.20
ES 12378D
4.35e6
33.69
Abs. Int.
1.30e6
6.49e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
1.95e6
9.76e5
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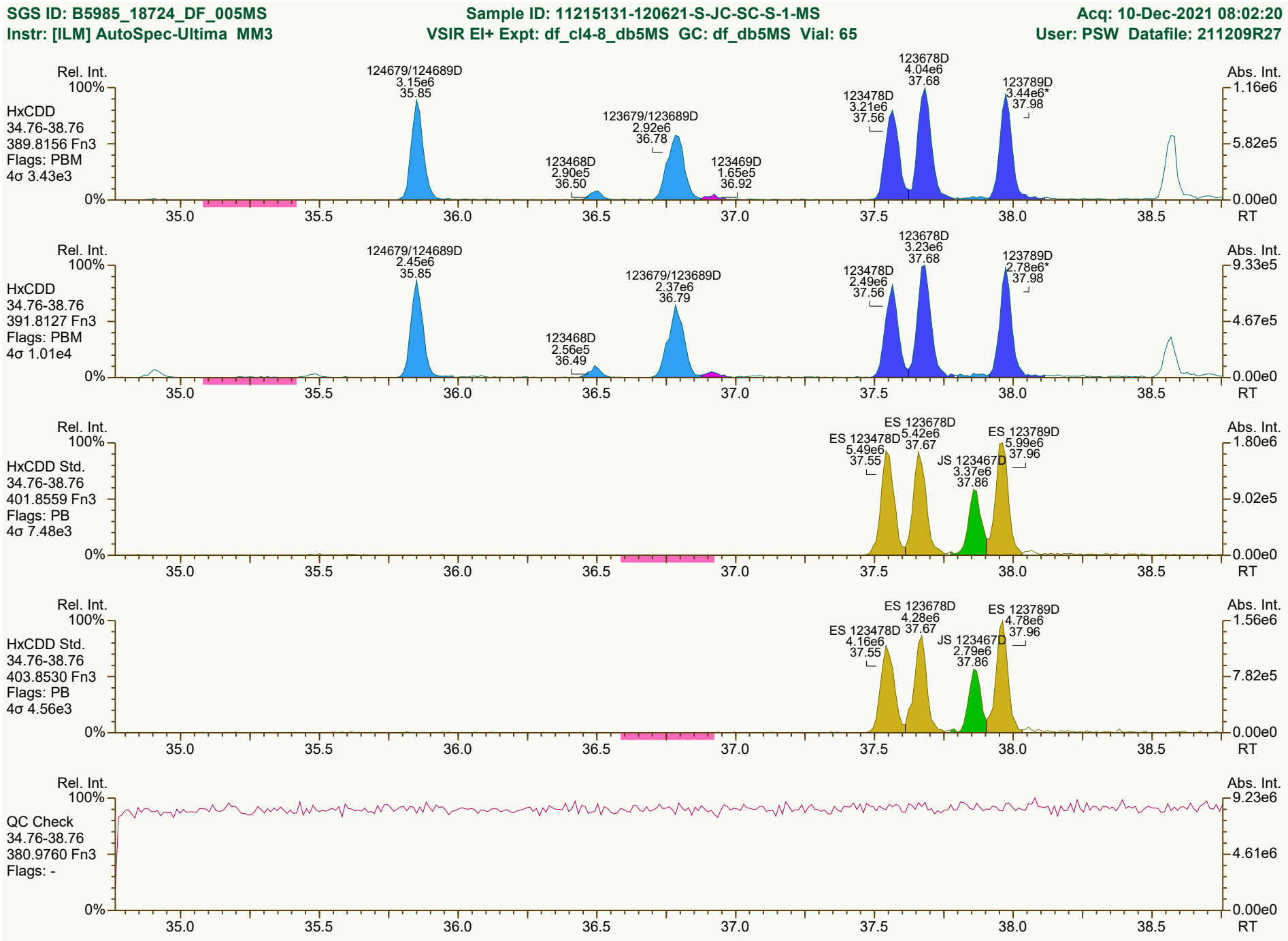
RT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Sample ID: 11215131-120621-S-JC-SC-S-1-MS
Acq: 10-Dec-2021 08:02:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: PSW Datafile: 211209R27
Rel. Int.
Abs. Int.
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 3.43e3
124679/124689D
3.15e6
35.85
123468D
2.90e5
36.50
123679/123689D
2.92e6
36.78
123469D
1.65e5
36.92
123478D
3.21e6
37.56
123678D
4.04e6
37.68
123789D
3.44e6*
37.98
1.16e6
5.82e5
0.00e0
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 1.01e4
124679/124689D
2.45e6
35.85
123468D
2.56e5
36.49
123679/123689D
2.37e6
36.79
123478D
2.49e6
37.56
123678D
3.23e6
37.68
123789D
2.78e6*
37.98
9.33e5
4.67e5
0.00e0
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 7.48e3
ES 123478D
5.49e6
37.55
ES 123678D
5.42e6
37.67
JS 123467D
3.37e6
37.86
ES 123789D
5.99e6
37.96
1.80e6
9.02e5
0.00e0
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 4.56e3
ES 123478D
4.16e6
37.55
ES 123678D
4.28e6
37.67
JS 123467D
2.79e6
37.86
ES 123789D
4.78e6
37.96
1.56e6
7.82e5
0.00e0
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
9.23e6
4.61e6
0.00e0
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
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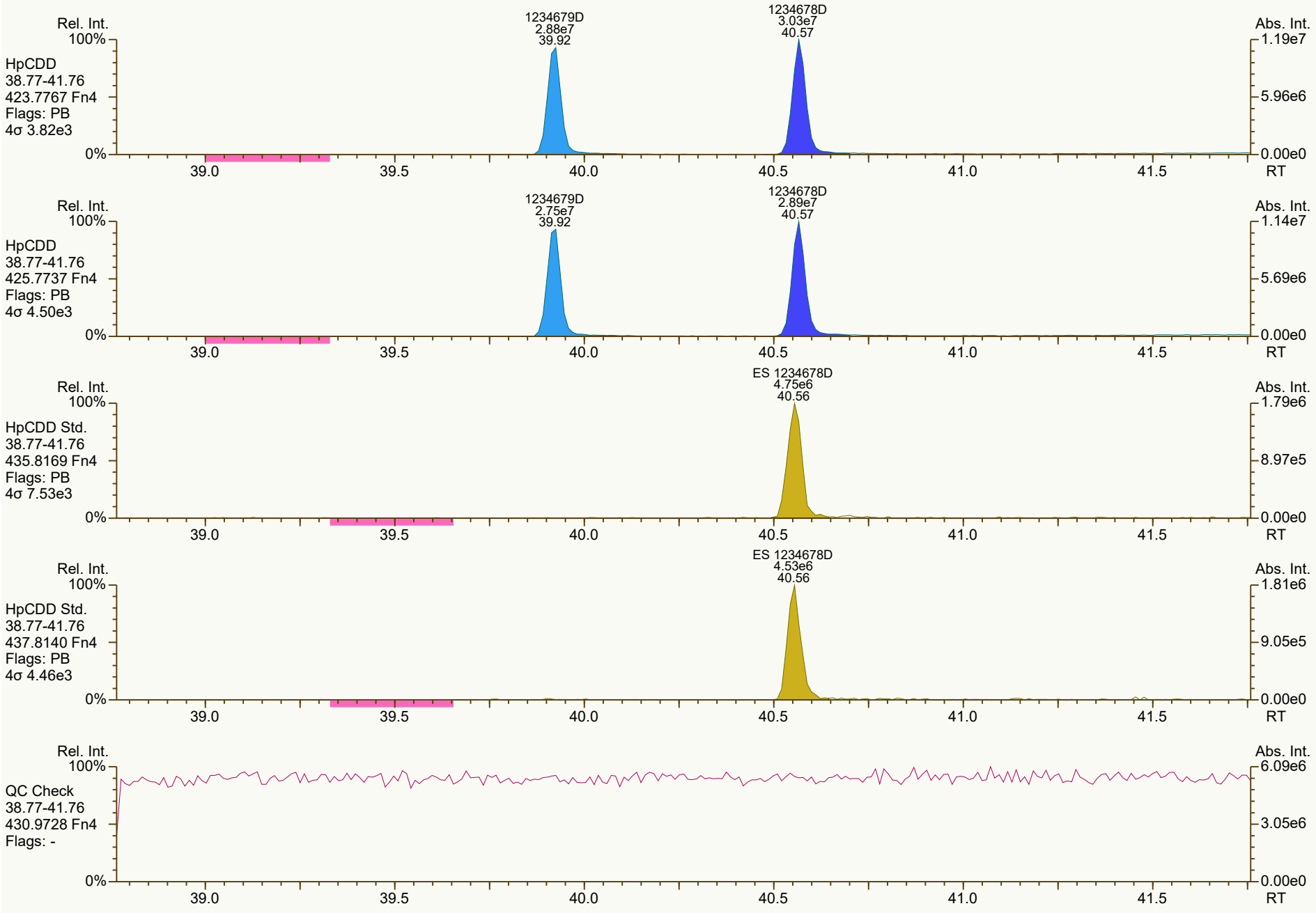
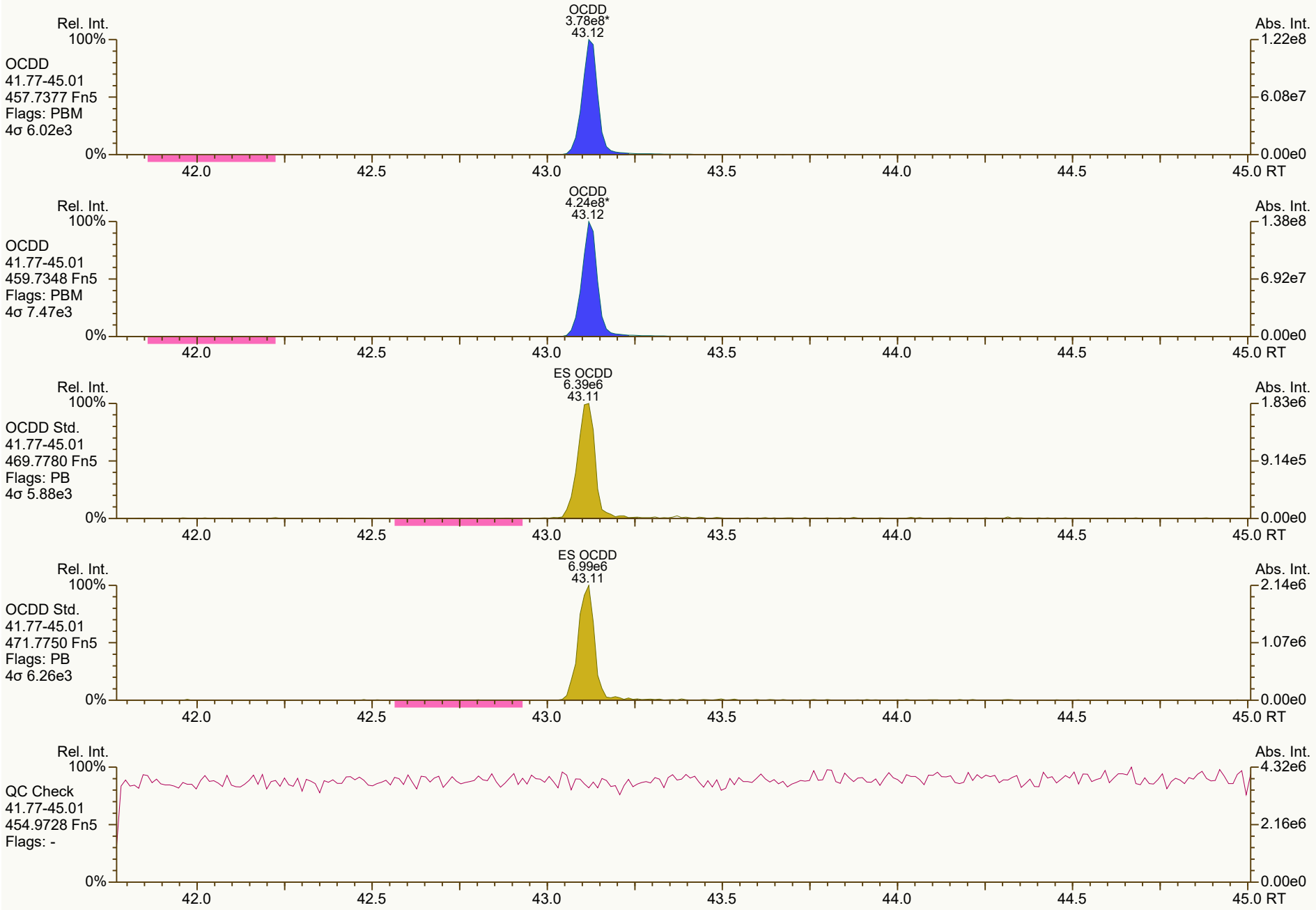
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2864, 5336 scc: 649-648
PKD: 10-Dec-2021 09:34 Printed: 10-Dec-2021 12:57 Page 4 of 12

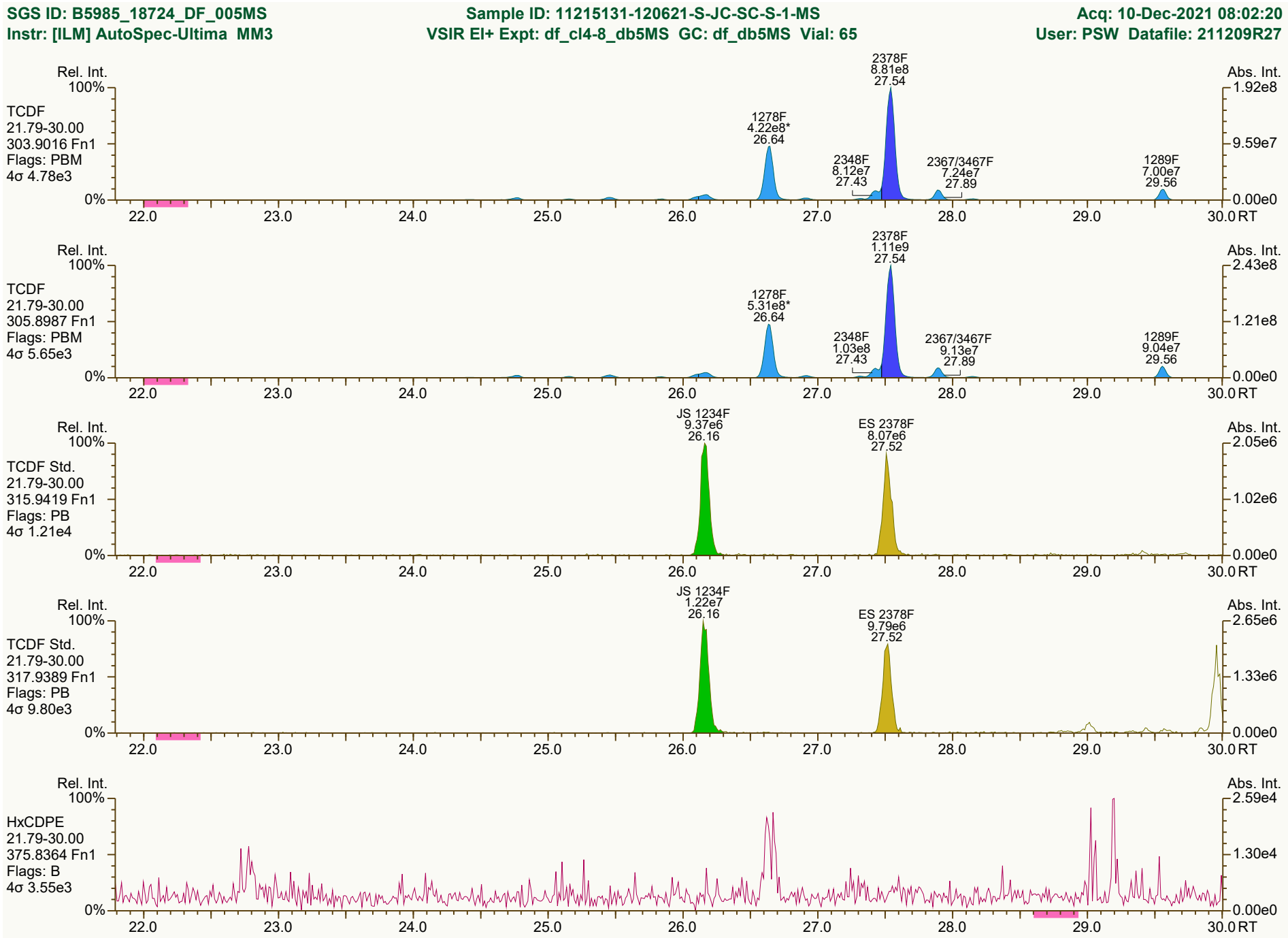

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 3.82e3
0%
1234679D
2.88e7
39.92
1234678D
3.03e7
40.57
Abs. Int.
1.19e7
5.96e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 4.50e3
0%
1234679D
2.75e7
39.92
1234678D
2.89e7
40.57
Abs. Int.
1.14e7
5.69e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 7.53e3
0%
ES 1234678D
4.75e6
40.56
Abs. Int.
1.79e6
8.97e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.46e3
0%
ES 1234678D
4.53e6
40.56
Abs. Int.
1.81e6
9.05e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.09e6
3.05e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 6.02e3
0%
OCDD
3.78e8*
43.12
Abs. Int.
1.22e8
6.08e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 7.47e3
0%
OCDD
4.24e8*
43.12
Abs. Int.
1.38e8
6.92e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 5.88e3
0%
ES OCDD
6.39e6
43.11
Abs. Int.
1.83e6
9.14e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 6.26e3
0%
ES OCDD
6.99e6
43.11
Abs. Int.
2.14e6
1.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: B5985_18724_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

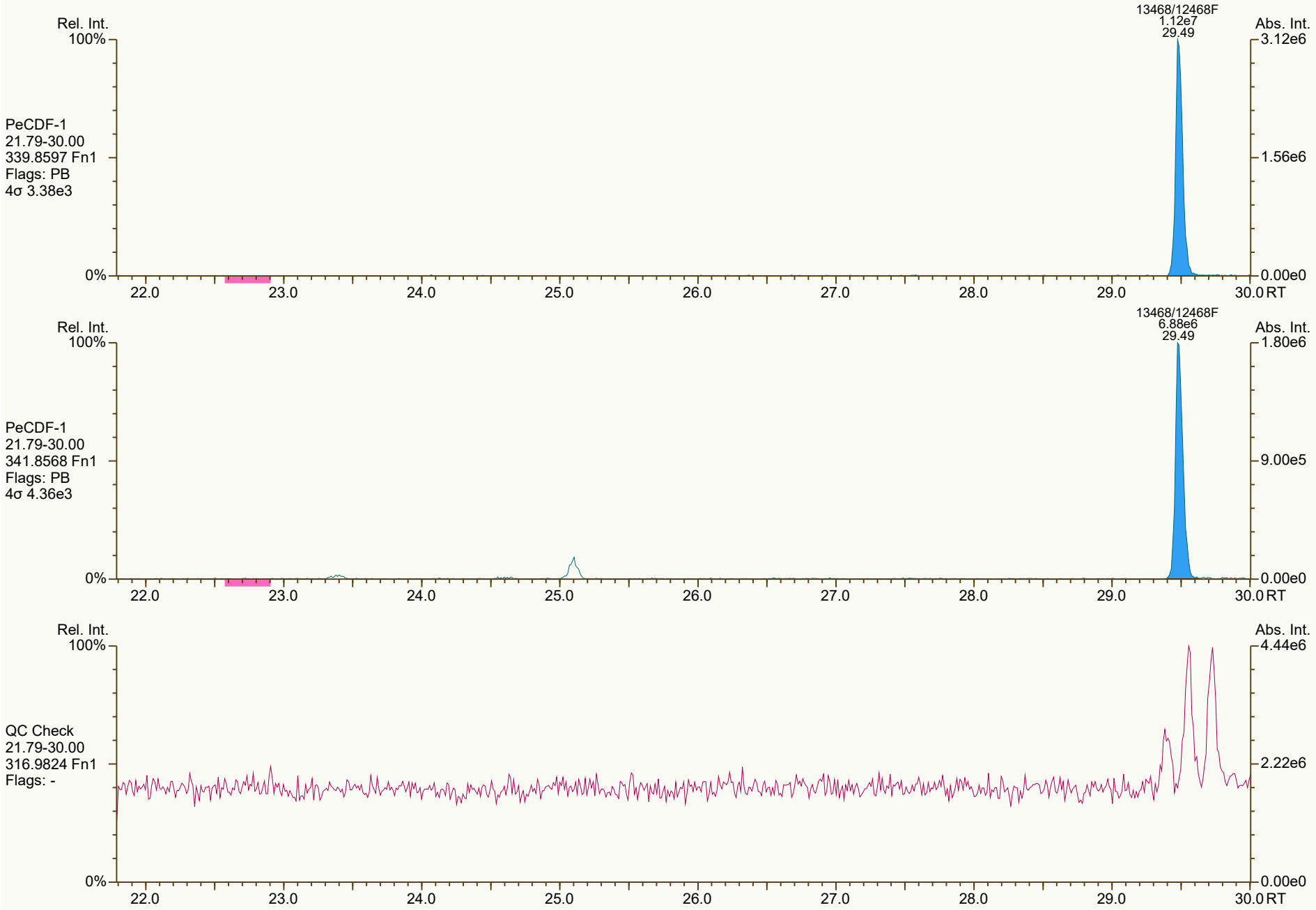
Sample ID: 11215131-120621-S-JC-SC-S-1-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65

Acq: 10-Dec-2021 08:02:20
User: PSW Datafile: 211209R27

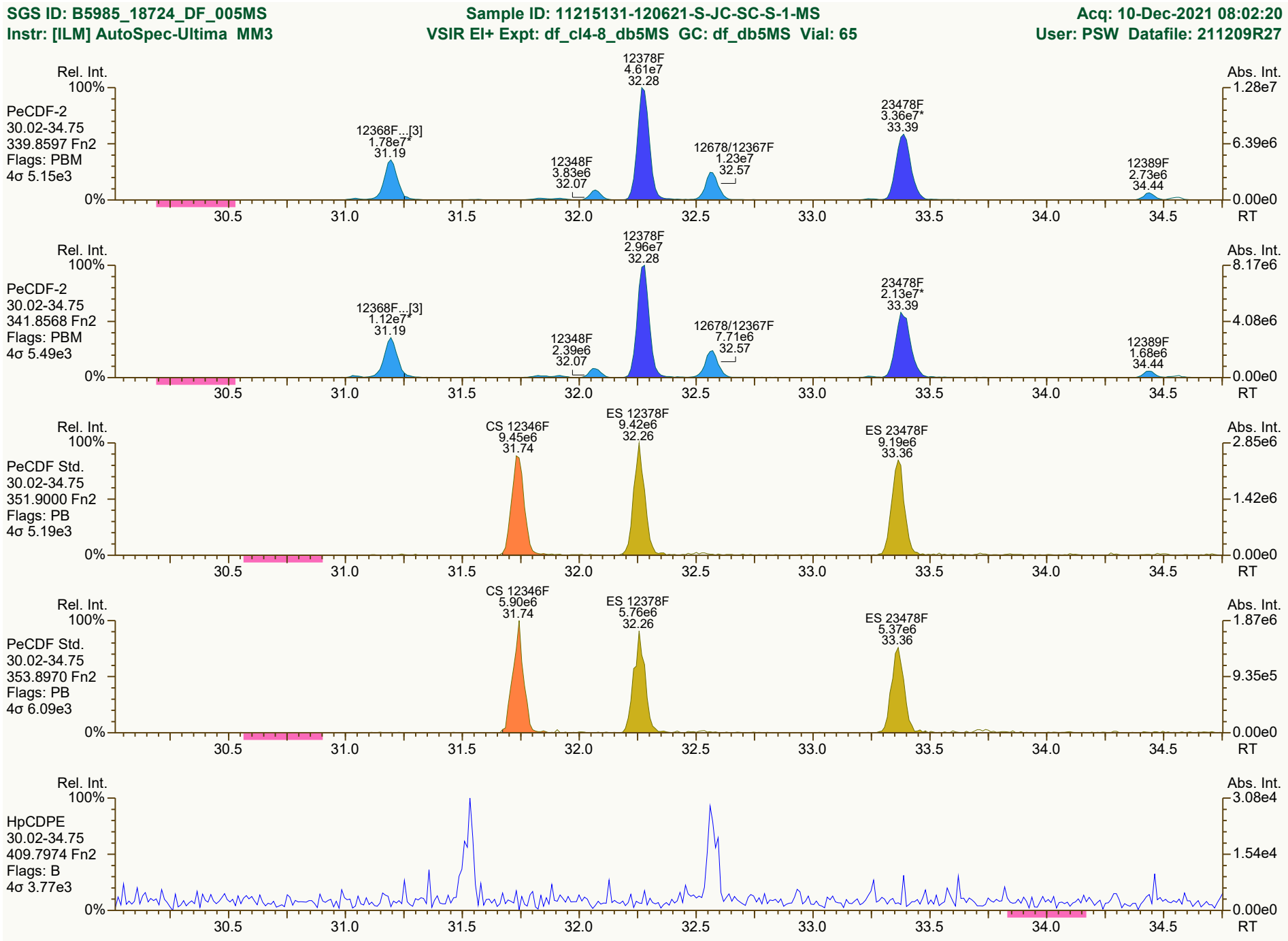


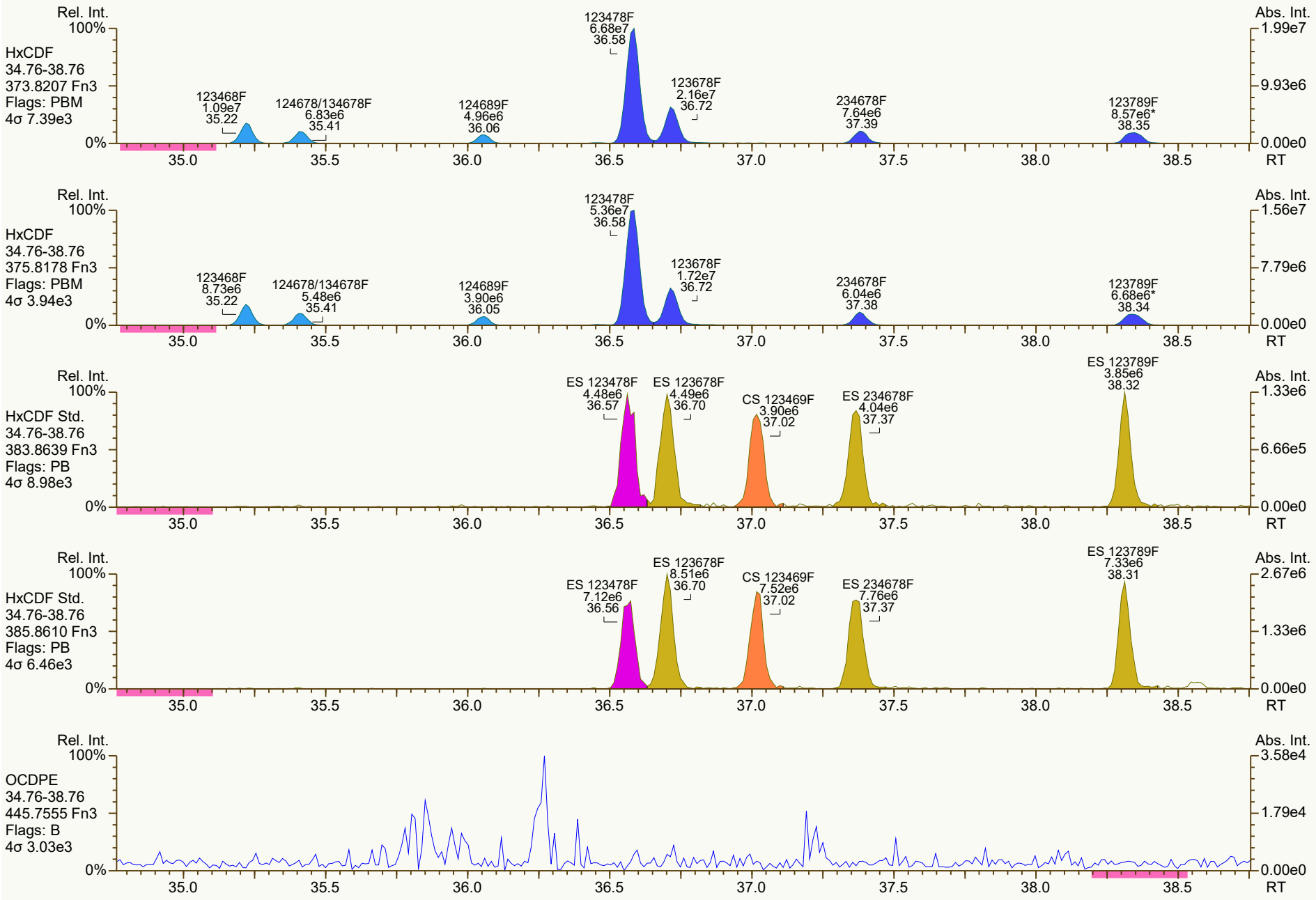
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_005MS.utp_res, saved 10-Dec-2021 12:46 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9810, 2726, 6344 scc: 649-648

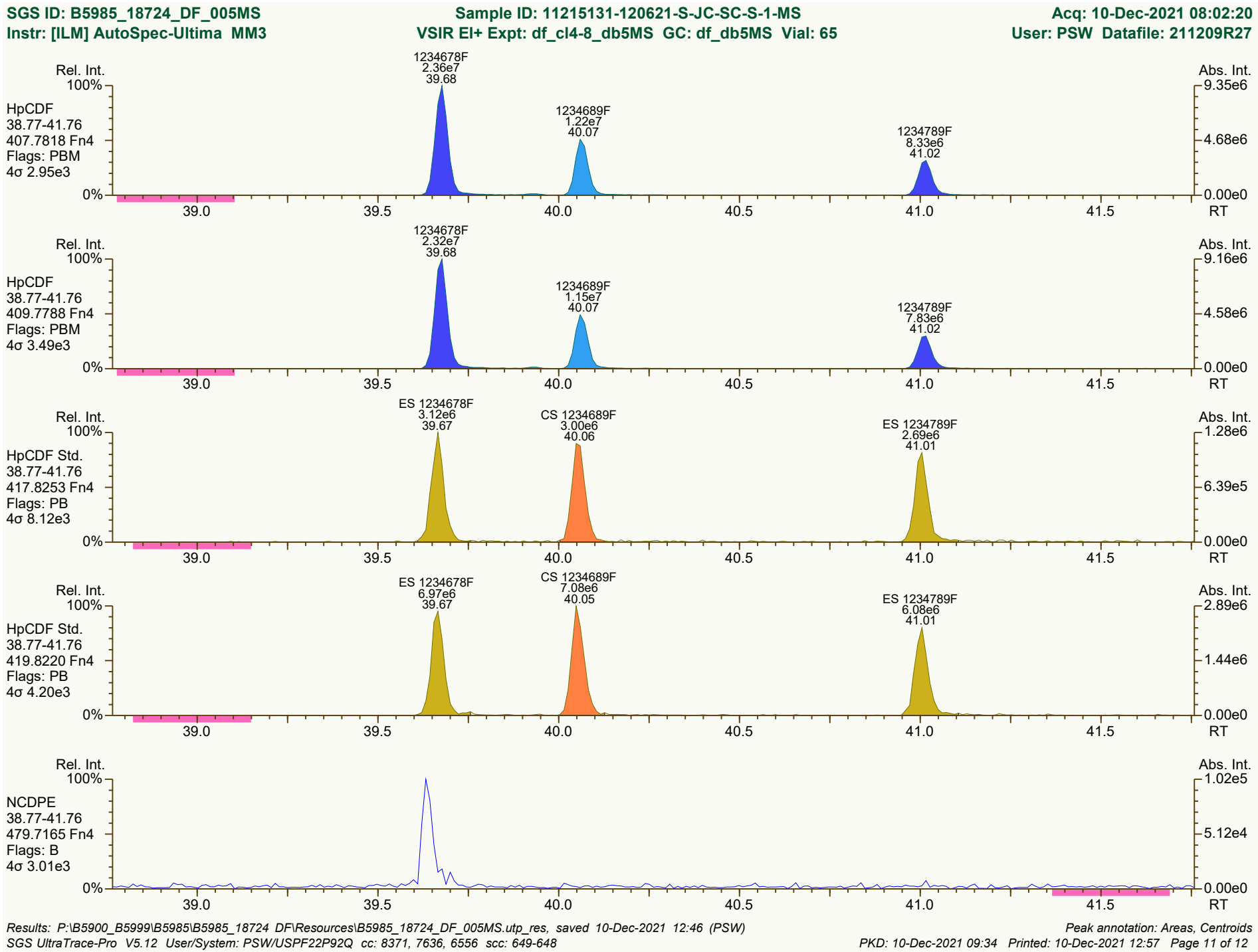
Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 09:34 Printed: 10-Dec-2021 12:57 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
13468/12468F
1.12e7
29.49
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.38e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
6.88e6
29.49
1.80e6
9.00e5
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 4.36e3
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
4.44e6
2.22e6

SGS ID: B5985_18724_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: 11215131-120621-S-JC-SC-S-1-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
Acq: 10-Dec-2021 08:02:20
User: PSW Datafile: 211209R27



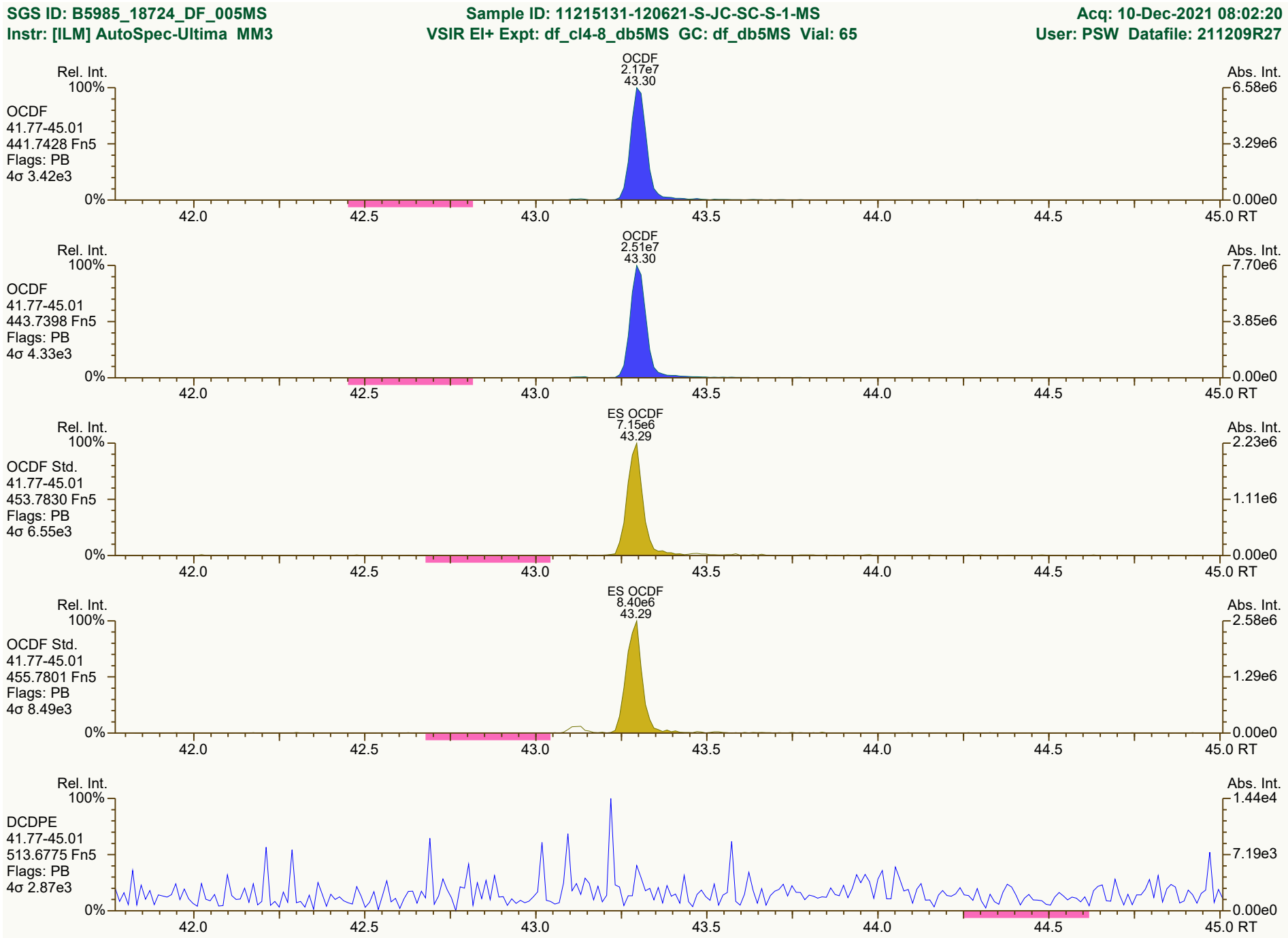

Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 7.39e3
123468F
1.09e7
35.22
124678/134678F
6.83e6
35.41
124689F
4.96e6
36.06
123478F
6.68e7
36.58
123678F
2.16e7
36.72
234678F
7.64e6
37.39
123789F
8.57e6*
38.35
Abs. Int.
1.99e7
9.93e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 3.94e3
123468F
8.73e6
35.22
124678/134678F
5.48e6
35.41
124689F
3.90e6
36.05
123478F
5.36e7
36.58
123678F
1.72e7
36.72
234678F
6.04e6
37.38
123789F
6.68e6*
38.34
1.56e7
7.79e6
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 8.98e3
ES 123478F
4.48e6
36.57
ES 123678F
4.49e6
36.70
CS 123469F
3.90e6
37.02
ES 234678F
4.04e6
37.37
ES 123789F
3.85e6
38.32
1.33e6
6.66e5
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 6.46e3
ES 123478F
7.12e6
36.56
ES 123678F
8.51e6
36.70
CS 123469F
7.52e6
37.02
ES 234678F
7.76e6
37.37
ES 123789F
7.33e6
38.31
2.67e6
1.33e6
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.03e3
3.58e4
1.79e4


SGS ID: B5985_18724_DF_005MS
Sample ID: 11215131-120621-S-JC-SC-S-1-MS
Acq: 10-Dec-2021 08:02:20
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: PSW Datafile: 211209R27
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 2.95e3
1234678F
2.36e7
39.68
1234689F
1.22e7
40.07
1234789F
8.33e6
41.02
9.35e6
4.68e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 3.49e3
1234678F
2.32e7
39.68
1234689F
1.15e7
40.07
1234789F
7.83e6
41.02
9.16e6
4.58e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 8.12e3
ES 1234678F
3.12e6
39.67
CS 1234689F
3.00e6
40.06
ES 1234789F
2.69e6
41.01
1.28e6
6.39e5
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 4.20e3
ES 1234678F
6.97e6
39.67
CS 1234689F
7.08e6
40.05
ES 1234789F
6.08e6
41.01
2.89e6
1.44e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.01e3
1.02e5
5.12e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_005MS.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8371, 7636, 6556 scc: 649-648
PKD: 10-Dec-2021 09:34 Printed: 10-Dec-2021 12:57 Page 11 of 12

SGS ID: B5985_18724_DF_005MS
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 11215131-120621-S-JC-SC-S-1-MS
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65

Acq: 10-Dec-2021 08:02:20
User: PSW Datafile: 211209R27



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_005MS.utp_res, saved 10-Dec-2021 12:46 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8977, 3445, 0171 scc: 649-648

Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 09:34 Printed: 10-Dec-2021 12:57 Page 12 of 12

Lab ID: B5985_18724_DF_005MSD **Acq'd:** 10 Dec 2021 08:49 PSW **Wt/Vol:** 10.05 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1-MSD **UTP:** 10-Dec-2021 16:23:17 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 775-448-HSG

Datafile: 211209R28 **Report:** 10 Dec 2021 16:24 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.39	E	1.0008	1.0008	0	8.08E+08	0.79	Y	1.34	7,780	8667.096	0.905
12378-PeCDD	33.71		1.0005	1.0006	+0.2	1.30E+07	1.58	Y	1.06	178	9685.646	1.13
123478-HxCDD	37.56		1.0003	1.0004	+0.2	7.06E+06	1.26	Y	1.06	112	15025.341	1.97
123678-HxCDD	37.68		1.0033	1.0036	+0.7	9.76E+06	1.27	Y	1.08	148	15025.341	2.14
123789-HxCDD	37.97		1.0110	1.0114	+0.9	8.23E+06	1.30	Y	1.02	116	15025.341	1.69
1234678-HpCDD	40.56		1.0003	1.0003	0	9.27E+07	1.04	Y	0.97	1,650	9107.488	1.1
OCDD	43.12	E	1.0003	1.0003	0	1.39E+09	0.90	Y	1.07	29,500	12958.519	2.49
2378-TCDF	27.54	E	1.0006	1.0008	+0.3	2.89E+09	0.80	Y	0.96	27,800	10240.59	1.1
12378-PeCDF	32.28		1.0006	1.0005	-0.2	1.30E+08	1.58	Y	0.95	1,420	14156.911	1.41
23478-PeCDF	33.39		1.0006	1.0007	+0.2	8.74E+07	1.56	Y	0.94	1,030	14156.911	1.75
123478-HxCDF	36.58		1.0004	1.0005	+0.2	1.99E+08	1.26	Y	1.23	2,250	13803.365	1.31
123678-HxCDF	36.72		1.0004	1.0004	0	6.02E+07	1.22	Y	1.13	639	13803.365	1.32
234678-HxCDF	37.38		1.0005	1.0005	0	2.00E+07	1.25	Y	1.15	235	13803.365	1.33
123789-HxCDF	38.34		1.0005	1.0009	+0.9	2.36E+07	1.26	Y	1.14	281	13803.365	1.21
1234678-HpCDF	39.67		1.0003	1.0002	-0.2	7.24E+07	1.04	Y	1.36	814	8188.156	0.599
1234789-HpCDF	41.01		1.0003	1.0003	0	2.39E+07	1.07	Y	1.30	332	8188.156	0.702
OCDF	43.29		1.0002	1.0003	+0.3	6.88E+07	0.89	Y	1.03	1,340	6384.885	1.02

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.37	1.0237	1.0233	-0.7	1.54E+07	0.85	Y	1.03	77.6
ES 12378-PeCDD	33.69	1.2158	1.2152	-1.2	1.37E+07	1.65	Y	1.03	68.9
ES 123478-HxCDD	37.54	0.9920	0.9917	-0.7	1.18E+07	1.27	Y	0.99	78.8
ES 123678-HxCDD	37.66	0.9949	0.9949	0	1.21E+07	1.27	Y	0.97	82.1
ES 123789-HxCDD	37.96	1.0026	1.0027	+0.2	1.39E+07	1.27	Y	1.12	81.8
ES 1234678-HpCDD	40.55	1.0713	1.0711	-0.5	1.15E+07	1.00	Y	0.99	76.6
ES OCDD	43.10	1.1385	1.1386	+0.3	1.75E+07	0.95	Y	0.78	74.3
ES 2378-TCDF	27.52	1.0519	1.0519	0	2.16E+07	0.81	Y	1.08	72.9
ES 12378-PeCDF	32.26	1.2331	1.2333	+0.4	1.93E+07	1.60	Y	0.93	75.9
ES 23478-PeCDF	33.37	1.2754	1.2756	+0.4	1.80E+07	1.58	Y	0.92	71.3
ES 123478-HxCDF	36.56	0.9656	0.9658	+0.4	1.43E+07	0.51	Y	1.14	82.5
ES 123678-HxCDF	36.70	0.9693	0.9694	+0.2	1.66E+07	0.51	Y	1.30	84.5
ES 234678-HxCDF	37.36	0.9869	0.9870	+0.2	1.47E+07	0.55	Y	1.20	80.7
ES 123789-HxCDF	38.31	1.0121	1.0119	-0.5	1.47E+07	0.55	Y	1.14	85.6
ES 1234678-HpCDF	39.66	1.0478	1.0477	-0.2	1.30E+07	0.46	Y	0.95	90.6
ES 1234789-HpCDF	41.00	1.0832	1.0830	-0.5	1.10E+07	0.45	Y	0.85	86
ES OCDF	43.28	1.1434	1.1433	-0.3	2.00E+07	0.90	Y	0.93	71.4

Lab ID: B5985_18724_DF_005MSD | **Acq'd:** 10 Dec 2021 08:49 PSW | **Wt/Vol:** 10.05 g | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1-MSD | **UTP:** 10-Dec-2021 16:23:17 PSW | **J-level:** 0.497 pg/g | **Split:** 1 | **Checkcode:** 775-448-HSG

Datafile: 211209R28 | **Report:** 10 Dec 2021 16:24 gd | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.72		-	-	-	1.91E+07	0.82	Y	-	-	
JS 1234-TCDF	26.16		-	-	-	2.73E+07	0.79	Y	-	-	
JS 123467-HxCDD	37.86		-	-	-	7.56E+06	1.31	Y	-	-	
CS 37Cl-2378-TCDD	28.39		1.0245	1.0241	-0.7	6.57E+06	n/a	-	1.31	65.5	
CS 12347-PeCDD	33.19		1.1978	1.1974	-0.8	1.28E+07	1.57	Y	0.89	74.7	
CS 12346-PeCDF	31.74		1.2130	1.2134	+0.8	1.88E+07	1.61	Y	0.87	79.4	
CS 123469-HxCDF	37.02		0.9775	0.9778	+0.7	1.47E+07	0.53	Y	1.09	89	
CS 1234689-HpCDF	40.05		1.0580	1.0579	-0.2	1.22E+07	0.43	Y	0.86	93.1	
~~SS 37Cl-2378-TCDD~~	~~28.39~~		~~1.0245~~	~~1.0241~~	~~-0.7~~	~~6.57E+06~~	~~n/a~~		~~1.26~~	~~84.9~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.19~~		~~1.1978~~	~~1.1974~~	~~-0.8~~	~~1.28E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~100~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.74~~		~~1.2130~~	~~1.2134~~	~~+0.8~~	~~1.88E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~105~~	
~~SS 123469-HxCDF~~	~~37.02~~		~~0.9775~~	~~0.9778~~	~~+0.7~~	~~1.47E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~105~~	
~~SS 1234689-HpCDF~~	~~40.05~~		~~1.0580~~	~~1.0579~~	~~-0.2~~	~~1.22E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~102~~	

Totals	Conc	EMPC
Total TCDD	8730	8780
Total PeCDD	256	283
Total HxCDD	668	668
Total HpCDD	3210	3210
Total Tetra-Octa Dioxins	42400	42500
Total TCDF	52,800	52900
Total PeCDF	4,000	4000
Total HxCDF	4,120	4130
Total HpCDF	1,640	1640
Total Tetra-Octa Furans	63,900	64000
Total Tetra-Octa Dioxins & Furans	106000	106000

Lab ID: B5985_18724_DF_005MSD **Acq'd:** 10 Dec 2021 08:49 PSW **Wt/Vol:** 10.05 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1-MSD **UTP:** 10-Dec-2021 16:23:17 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 775-448-HSG

Datafile: 211209R28 **Report:** 10 Dec 2021 16:24 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.78		0.8726	0.8734	+1.2	3.08E+06	0.80	Y	1.34	29.7	8667.096	0.905
1379-TCDD	25.12		0.8851	0.8854	+0.5	6.03E+05	0.87	Y	1.34	5.81	8667.096	0.905
1369-TCDD	NotFnd		0.9002						1.34		8667.096	0.905
1469-TCDD	NotFnd		0.9275						1.34		8667.096	0.905
1247/1246/1248/1249-TCDD	26.56		0.9361	0.9361	0	1.44E+06	0.87	Y	1.34	13.9	8667.096	0.905
1378-TCDD	26.74		0.9427	0.9425	-0.3	2.09E+06	0.77	Y	1.34	20.1	8667.096	0.905
1268-TCDD	26.92	EMPC	0.9498	0.9490	-1.3	2.04E+05	0.65	N	1.34	1.96	8667.096	0.905
1478-TCDD	27.20		0.9584	0.9587	+0.5	1.62E+06	0.83	Y	1.34	15.6	8667.096	0.905
1279-TCDD	NotFnd		0.9644						1.34		8667.096	0.905
1234/1269-TCDD	27.72		0.9766	0.9772	+1.0	2.40E+05	0.87	Y	1.34	2.31	8667.096	0.905
1236-TCDD	27.86	EMPC	0.9813	0.9822	+1.5	1.62E+05	1.15	N	1.34	1.56	8667.096	0.905
1237/1238-TCDD	28.09		0.9906	0.9903	-0.5	1.23E+07	0.83	Y	1.34	119	8667.096	0.905
1239-TCDD	28.24		0.9952	0.9953	+0.2	1.95E+06	0.87	Y	1.34	18.8	8667.096	0.905
2378-TCDD	**28.39**	E	**1.0008**	1.0008	**0**	8.08E+08	0.79	Y	**1.34**	**7,780**	**8667.096**	**0.905**
1278-TCDD	28.73		1.0122	1.0128	+1.0	7.50E+07	0.80	Y	1.34	723	8667.096	0.905
1267-TCDD	NotFnd		1.0168						1.34		8667.096	0.905
1289-TCDD	29.37	EMPC	1.0349	1.0351	+0.4	4.81E+06	0.94	N	1.34	46.3	8667.096	0.905
12479/12468-PeCDD	31.24		0.9267	0.9274	+1.3	2.34E+06	1.54	Y	1.06	32.1	9685.646	1.13
12469-PeCDD	31.77	EMPC	0.9425	0.9431	+1.1	3.22E+05	1.01	N	1.06	4.42	9685.646	1.13
12368-PeCDD	32.30		0.9588	0.9589	+0.2	8.72E+05	1.51	Y	1.06	12	9685.646	1.13
12478-PeCDD	32.49	EMPC	0.9643	0.9646	+0.6	6.20E+05	1.12	N	1.06	8.52	9685.646	1.13
12379-PeCDD	32.60		0.9673	0.9677	+0.8	2.93E+05	1.59	Y	1.06	4.03	9685.646	1.13
12369/12467/12489-PeCDD	32.85	EMPC	0.9750	0.9752	+0.4	2.78E+05	2.12	N	1.06	3.83	9685.646	1.13
12346/12347-PeCDD	33.22		0.9859	0.9862	+0.6	2.65E+05	1.68	Y	1.06	3.65	9685.646	1.13
12378-PeCDD	33.71		**1.0005**	**1.0006**	**+0.2**	**1.30E+07**	**1.58**	**Y**	**1.06**	**178**	**9685.646**	**1.13**
12367-PeCDD	33.84	EMPC	1.0032	1.0045	+2.6	6.94E+05	1.86	N	1.06	9.55	9685.646	1.13
12389-PeCDD	34.14		1.0135	1.0136	+0.2	1.91E+06	1.49	Y	1.06	26.3	9685.646	1.13
124679/124689-HxCDD	35.85		0.9544	0.9550	+1.3	8.71E+06	1.28	Y	1.05	131	15025.341	1.92
123468-HxCDD	36.49		0.9716	0.9720	+0.9	8.50E+05	1.36	Y	1.05	12.7	15025.341	1.92
123679/123689-HxCDD	36.78		0.9793	0.9797	+0.9	8.89E+06	1.27	Y	1.05	133	15025.341	1.92
123469-HxCDD	36.92		0.9829	0.9834	+1.1	5.33E+05	1.26	Y	1.05	8	15025.341	1.92
123478-HxCDD	37.56		**1.0003**	**1.0004**	**+0.2**	**7.06E+06**	**1.26**	**Y**	1.06	**112**	**15025.341**	**1.97**
123678-HxCDD	37.68		**1.0033**	**1.0036**	**+0.7**	**9.76E+06**	**1.27**	**Y**	1.08	**148**	**15025.341**	**2.14**
123467-HxCDD	37.86		1.0084	1.0085	+0.2	4.23E+05	1.36	Y	1.05	6.34	15025.341	1.92
123789-HxCDD	37.97		**1.0110**	**1.0114**	**+0.9**	**8.23E+06**	**1.30**	**Y**	1.02	**116**	**15025.341**	**1.69**

Lab ID: B5985_18724_DF_005MSD **Acq'd:** 10 Dec 2021 08:49 PSW **Wt/Vol:** 10.05 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-1-MSD **UTP:** 10-Dec-2021 16:23:17 PSW **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 775-448-HSG

Datafile: 211209R28 **Report:** 10 Dec 2021 16:24 gd **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.92		0.9843	0.9844	+0.2	8.77E+07	1.03	Y	0.97	1,560	9107.488	1.1
1234678-HpCDD	**40.56**		**1.0003**	**1.0003**	**0**	**9.27E+07**	**1.04**	**Y**	**0.97**	**1,650**	**9107.488**	**1.1**
OCDD	**43.12**	**E**	**1.0003**	**1.0003**	**0**	**1.39E+09**	**0.90**	**Y**	**1.07**	**29,500**	**12958.519**	**2.49**
OCDD-a	43.11	**E**	1.0001	1.0002	+0.3	8.30E+07	2.52	Y	0.07	28,600	9822.256	30.6
1368-TCDF	22.64		0.8230	0.8228	-0.3	2.55E+06	0.80	Y	0.96	24.5	10240.59	1.1
1468-TCDF	23.24	EMPC	0.8443	0.8446	+0.4	3.32E+06	0.91	N	0.96	31.9	10240.59	1.1
2468-TCDF	23.88		0.8672	0.8678	+0.9	4.22E+06	0.78	Y	0.96	40.5	10240.59	1.1
1346/1246-TCDF	24.23		0.8802	0.8807	+0.7	3.22E+05	0.84	Y	0.96	3.09	10240.59	1.1
1347/1378/1247-TCDF	24.41		0.8855	0.8872	+2.5	1.65E+07	0.80	Y	0.96	158	10240.59	1.1
1348-TCDF	24.67		0.8952	0.8967	+2.2	9.90E+06	0.80	Y	0.96	95	10240.59	1.1
1248/1367/1379-TCDF	24.77		0.9000	0.9003	+0.4	4.83E+07	0.79	Y	0.96	464	10240.59	1.1
1268-TCDF	25.15		0.9136	0.9141	+0.8	2.60E+07	0.80	Y	0.96	250	10240.59	1.1
1467-TCDF	25.28		0.9185	0.9187	+0.3	6.93E+06	0.81	Y	0.96	66.5	10240.59	1.1
1478-TCDF	25.45		0.9247	0.9251	+0.6	6.72E+07	0.80	Y	0.96	645	10240.59	1.1
1369/1237-TCDF	25.84		0.9381	0.9389	+1.2	2.39E+07	0.80	Y	0.96	229	10240.59	1.1
2467-TCDF	25.94		0.9427	0.9428	+0.2	3.43E+06	0.76	Y	0.96	33	10240.59	1.1
2368-TCDF	26.08		0.9484	0.9478	-0.9	5.16E+07	0.76	Y	0.96	495	10240.59	1.1
1238/1234/1678/1469/1236-TCDF	26.16	E	0.9517	0.9508	-1.4	1.57E+08	0.80	Y	0.96	1,500	10240.59	1.1
1278-TCDF	26.64	E	0.9682	0.9680	-0.3	1.35E+09	0.79	Y	0.96	13,000	10240.59	1.1
1349-TCDF	NotFnd		0.9725						0.96		10240.59	1.1
1267-TCDF	26.91		0.9782	0.9778	-0.6	5.47E+07	0.79	Y	0.96	525	10240.59	1.1
2346/1249-TCDF	27.10		0.9846	0.9849	+0.5	8.93E+06	0.81	Y	0.96	85.7	10240.59	1.1
2347/1279-TCDF	27.30		0.9926	0.9922	-0.7	3.31E+07	0.80	Y	0.96	318	10240.59	1.1
2348-TCDF	27.42	E	0.9966	0.9965	-0.2	2.34E+08	0.80	Y	0.96	2,250	10240.59	1.1
2378-TCDF	**27.54**	E	**1.0006**	**1.0008**	**+0.3**	**2.89E+09**	**0.80**	**Y**	**0.96**	**27,800**	**10240.59**	**1.1**
2367/3467-TCDF	27.89	E	1.0139	1.0136	-0.5	2.37E+08	0.80	Y	0.96	2,270	10240.59	1.1
1269-TCDF	28.14		1.0226	1.0226	0	3.38E+07	0.80	Y	0.96	324	10240.59	1.1
1239-TCDF	28.40		1.0322	1.0321	-0.2	5.38E+06	0.82	Y	0.96	51.6	10240.59	1.1
1289-TCDF	29.56	E	1.0729	1.0744	+2.7	2.33E+08	0.78	Y	0.96	2,230	10240.59	1.1
13468/12468-PeCDF	29.50		0.9135	0.9143	+1.4	2.37E+07	1.58	Y	0.94	268	8489.089	0.94
13678/13467/12467-PeCDF	31.04		0.9612	0.9623	+2.0	1.92E+06	1.44	Y	0.94	21.7	14156.911	1.57
12368/13478/12478-PeCDF	31.20		0.9661	0.9670	+1.7	5.14E+07	1.55	Y	0.94	582	14156.911	1.57
14678-PeCDF	31.29		0.9693	0.9698	+0.9	1.56E+06	1.55	Y	0.94	17.7	14156.911	1.57
13479-PeCDF	31.38	J	0.9723	0.9726	+0.6	2.11E+05	1.78	Y	0.94	2.39	14156.911	1.57
13469/12479-PeCDF	31.57		0.9799	0.9786	-2.5	6.30E+05	1.77	Y	0.94	7.13	14156.911	1.57
12346-PeCDF	31.75		0.9842	0.9842	0	2.94E+05	1.56	Y	0.94	3.33	14156.911	1.57

Lab ID: B5985_18724_DF_005MSD | **Acq'd: 10 Dec 2021 08:49 PSW** | **Wt/Vol: 10.05 g** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120621-S-JC-SC-S-1-MSD | **UTP: 10-Dec-2021 16:23:17 PSW** | **J-level: 0.497 pg/g** | **Split: 1** | **Checkcode: 775-448-HSG**

Datafile: 211209R28 | **Report: 10 Dec 2021 16:24 gd** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.84		0.9868	0.9869	+0.2	2.34E+06	1.54	Y	0.94	26.4	14156.911	1.57
12347-PeCDF	31.92		0.9893	0.9894	+0.2	1.80E+06	1.47	Y	0.94	20.4	14156.911	1.57
12348-PeCDF	32.07		0.9941	0.9942	+0.2	9.87E+06	1.60	Y	0.94	112	14156.911	1.57
12378-PeCDF	**32.28**		**1.0006**	**1.0005**	**-0.2**	**1.30E+08**	**1.58**	**Y**	**0.95**	**1,420**	**14156.911**	**1.41**
12678/12367-PeCDF	32.57		1.0090	1.0095	+1.0	3.53E+07	1.56	Y	0.94	399	14156.911	1.57
12379-PeCDF	NotFnd		1.0143						0.94		14156.911	1.57
12679-PeCDF	33.13		0.9929	0.9928	-0.2	3.20E+05	1.51	Y	0.94	3.62	14156.911	1.57
23467/12369-PeCDF	33.24		0.9966	0.9962	-0.8	1.50E+06	1.56	Y	0.94	17	14156.911	1.57
23478-PeCDF	**33.39**		**1.0006**	**1.0007**	**+0.2**	**8.74E+07**	**1.56**	**Y**	**0.94**	**1,030**	**14156.911**	**1.75**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		14156.911	1.57
12349-PeCDF	NotFnd		1.0102						0.94		14156.911	1.57
12389-PeCDF	34.44		1.0325	1.0321	-0.8	6.59E+06	1.65	Y	0.94	74.6	14156.911	1.57
123468-HxCDF	35.22		0.9628	0.9634	+1.3	2.56E+07	1.25	Y	1.16	291	13803.365	1.29
124678/134678-HxCDF	35.41		0.9683	0.9686	+0.6	2.14E+07	1.23	Y	1.16	244	13803.365	1.29
134679-HxCDF	NotFnd		0.9746						1.16		13803.365	1.29
124679-HxCDF	35.83	EMPC	0.9798	0.9800	+0.4	5.71E+05	1.43	N	1.16	6.49	13803.365	1.29
124689-HxCDF	36.05		0.9859	0.9862	+0.6	1.48E+07	1.24	Y	1.16	168	13803.365	1.29
123467-HxCDF	36.45		0.9972	0.9970	-0.4	1.43E+06	1.14	Y	1.16	16.2	13803.365	1.29
123478-HxCDF	**36.58**		**1.0004**	**1.0005**	**+0.2**	**1.99E+08**	**1.26**	**Y**	**1.23**	**2,250**	**13803.365**	**1.31**
123678-HxCDF	**36.72**		**1.0004**	**1.0004**	**0**	**6.02E+07**	**1.22**	**Y**	**1.13**	**639**	**13803.365**	**1.32**
123479-HxCDF	NotFnd		1.0049						1.16		13803.365	1.29
123469-HxCDF	NotFnd		1.0088						1.16		13803.365	1.29
123679-HxCDF	NotFnd		0.9943						1.16		13803.365	1.29
234678-HxCDF	**37.38**		**1.0005**	**1.0005**	**0**	**2.00E+07**	**1.25**	**Y**	**1.15**	**235**	**13803.365**	**1.33**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		13803.365	1.29
123789-HxCDF	**38.34**		**1.0005**	**1.0009**	**+0.9**	**2.36E+07**	**1.26**	**Y**	**1.14**	**281**	**13803.365**	**1.21**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		13803.365	1.29
1234678-HpCDF	**39.67**		**1.0003**	**1.0002**	**-0.2**	**7.24E+07**	**1.04**	**Y**	**1.36**	**814**	**8188.156**	**0.599**
1234679-HpCDF	39.92		1.0067	1.0066	-0.2	1.68E+06	1.00	Y	1.33	20.9	8188.156	0.646
1234689-HpCDF	40.06		1.0100	1.0101	+0.2	3.76E+07	1.04	Y	1.33	469	8188.156	0.646
1234789-HpCDF	**41.01**		**1.0003**	**1.0003**	**0**	**2.39E+07**	**1.07**	**Y**	**1.30**	**332**	**8188.156**	**0.702**
OCDF	**43.29**		**1.0002**	**1.0003**	**+0.3**	**6.88E+07**	**0.89**	**Y**	**1.03**	**1,340**	**6384.885**	**1.02**
OCDF-a	43.29		1.0002	1.0002	0	4.14E+06	2.81	Y	0.06	1,390	7906.692	21.9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QC Check
21.79-30.00
316.9824 Fn1
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0%
Abs. Int.
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2.68e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.93e6
9.67e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
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4.49e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
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2.97e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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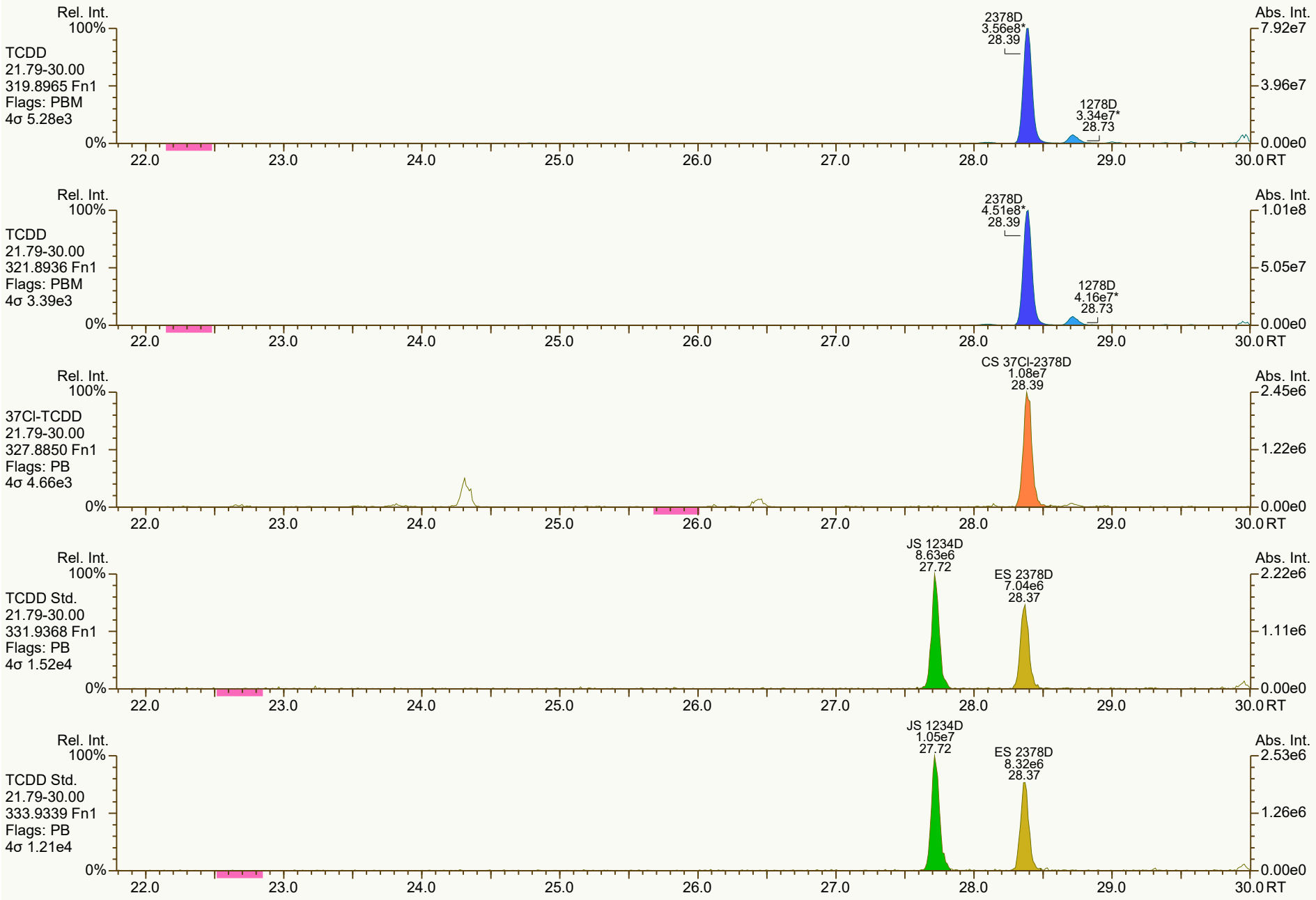
45.0 RT


Rel. Int.
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319.8965 Fn1
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2378D
3.56e8*
28.39
1278D
3.34e7*
28.73
Abs. Int.
7.92e7
3.96e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.39e3
0%
2378D
4.51e8*
28.39
1278D
4.16e7*
28.73
Abs. Int.
1.01e8
5.05e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 4.66e3
0%
CS 37Cl-2378D
1.08e7
28.39
Abs. Int.
2.45e6
1.22e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.52e4
0%
JS 1234D
8.63e6
27.72
ES 2378D
7.04e6
28.37
Abs. Int.
2.22e6
1.11e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.21e4
0%
JS 1234D
1.05e7
27.72
ES 2378D
8.32e6
28.37
Abs. Int.
2.53e6
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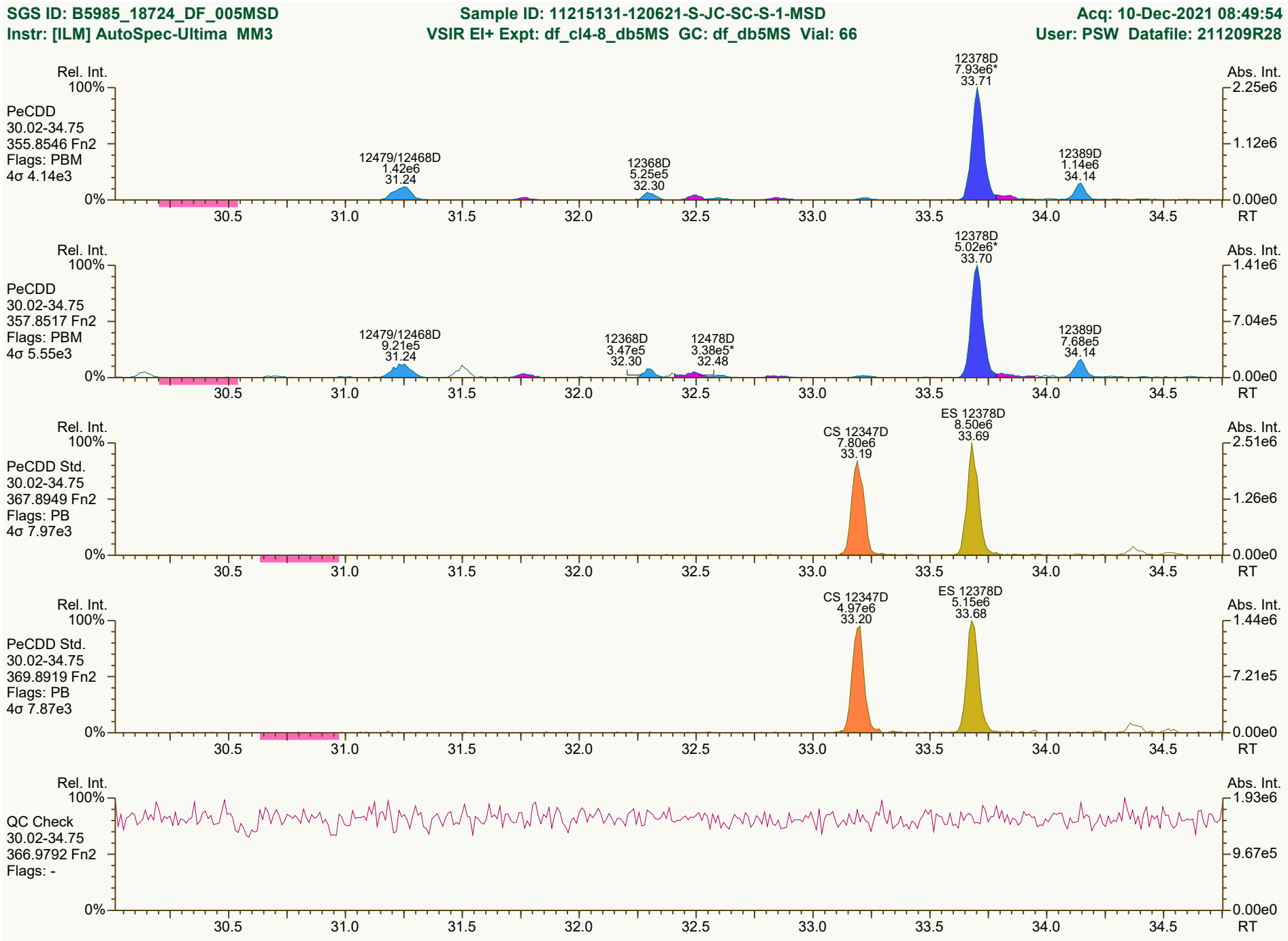
30.0 RT



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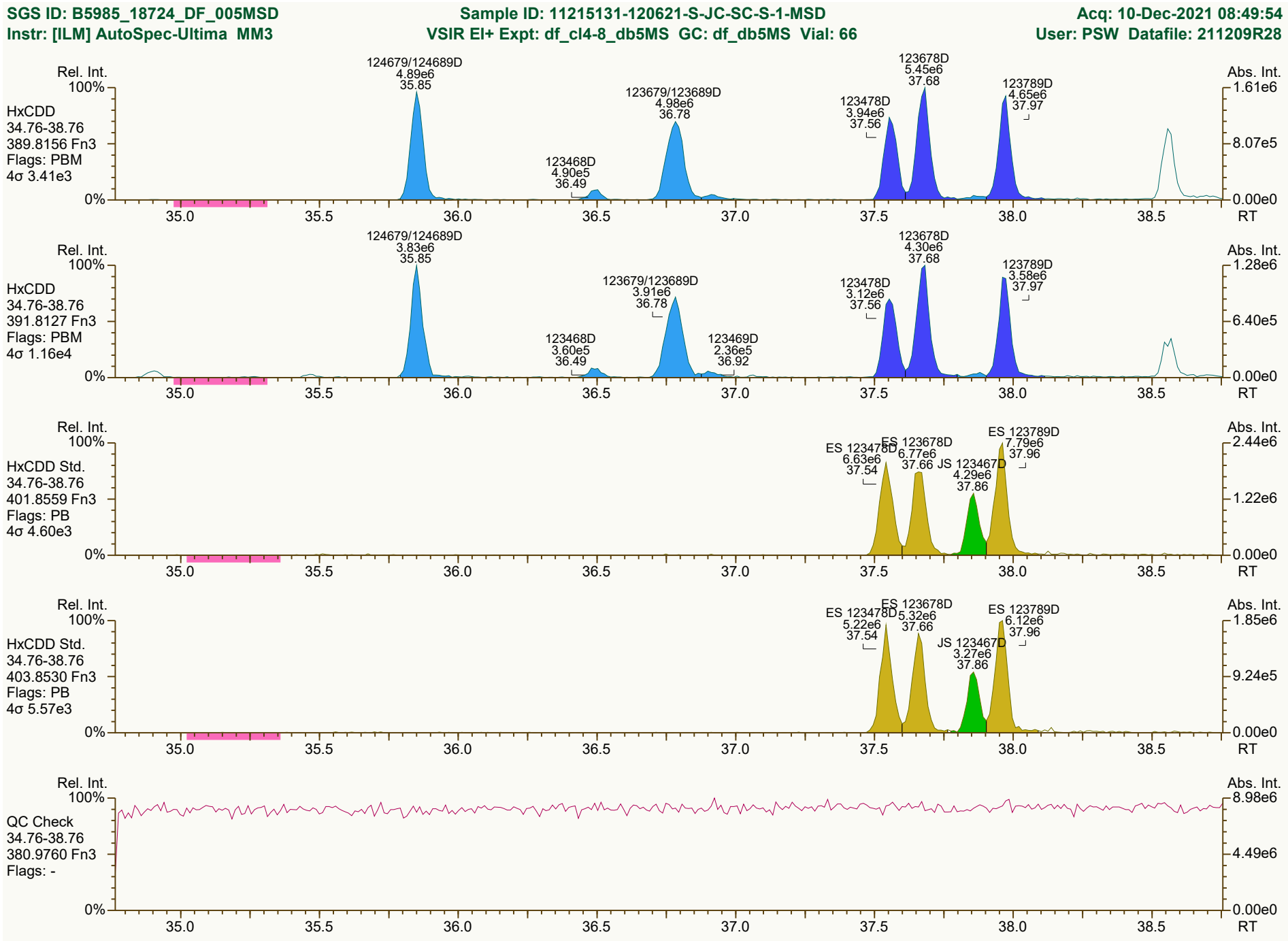
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3960, 6517 scc: 775-448
PKD: 10-Dec-2021 09:51 Printed: 10-Dec-2021 16:25 Page 3 of 12



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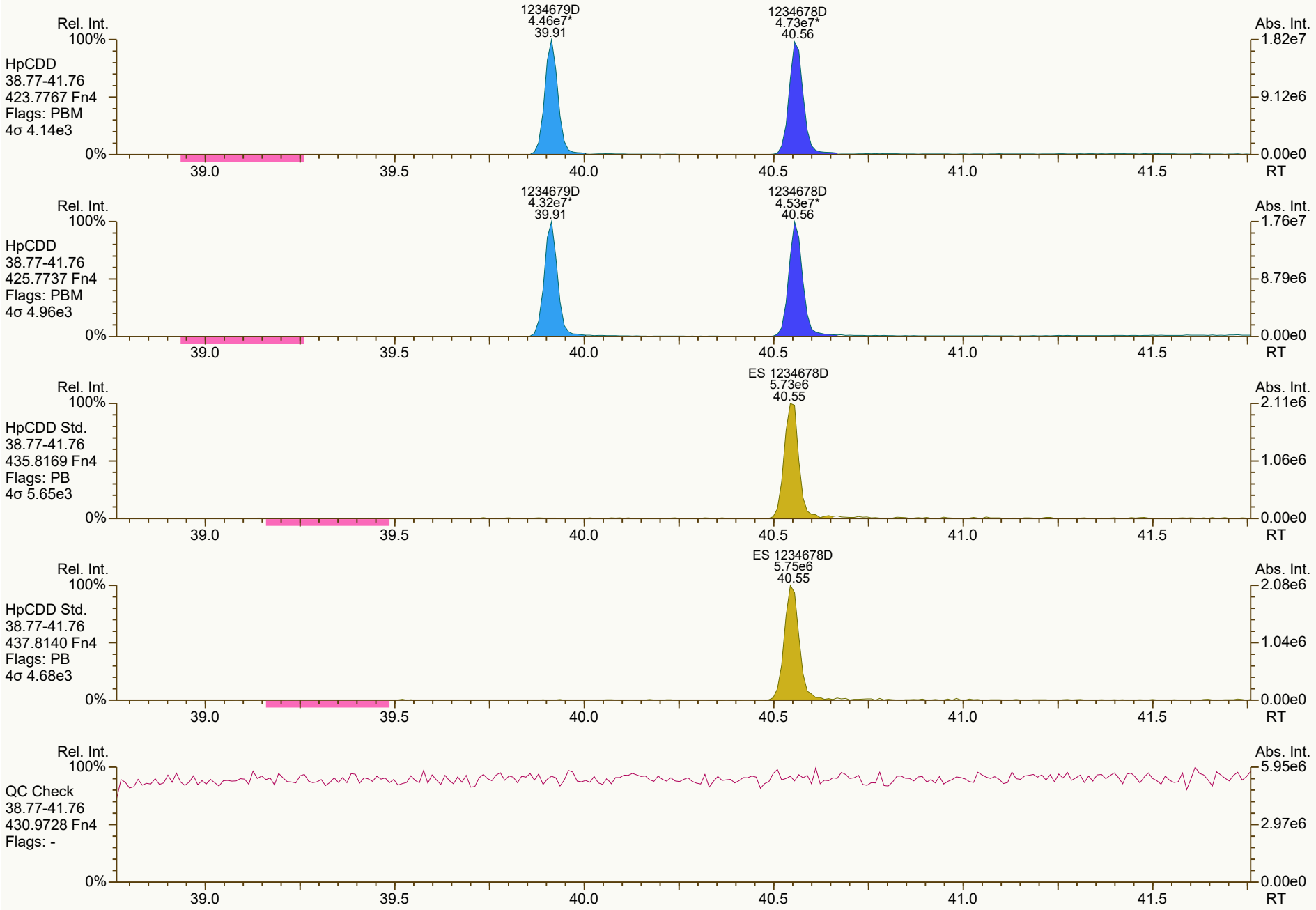
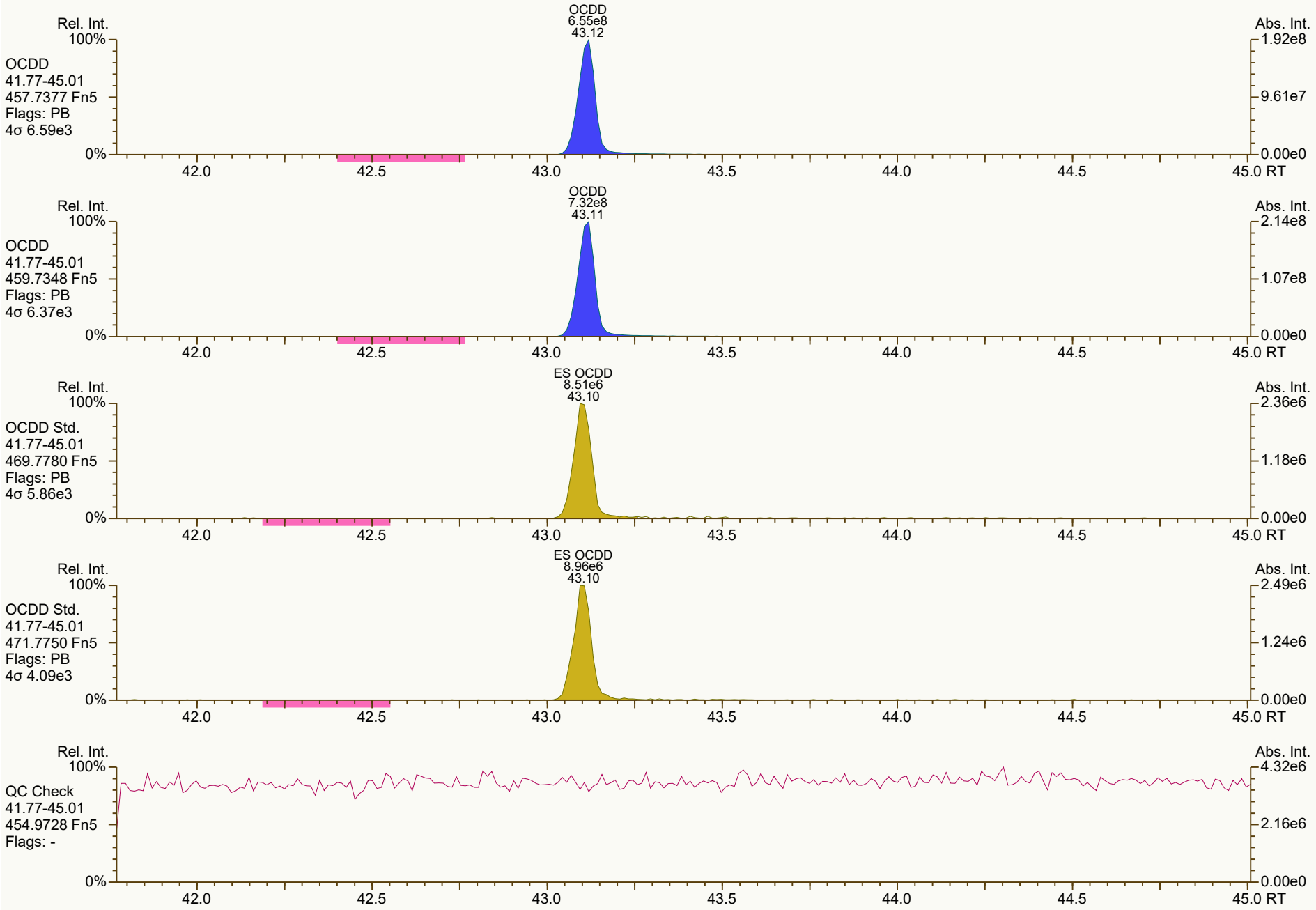
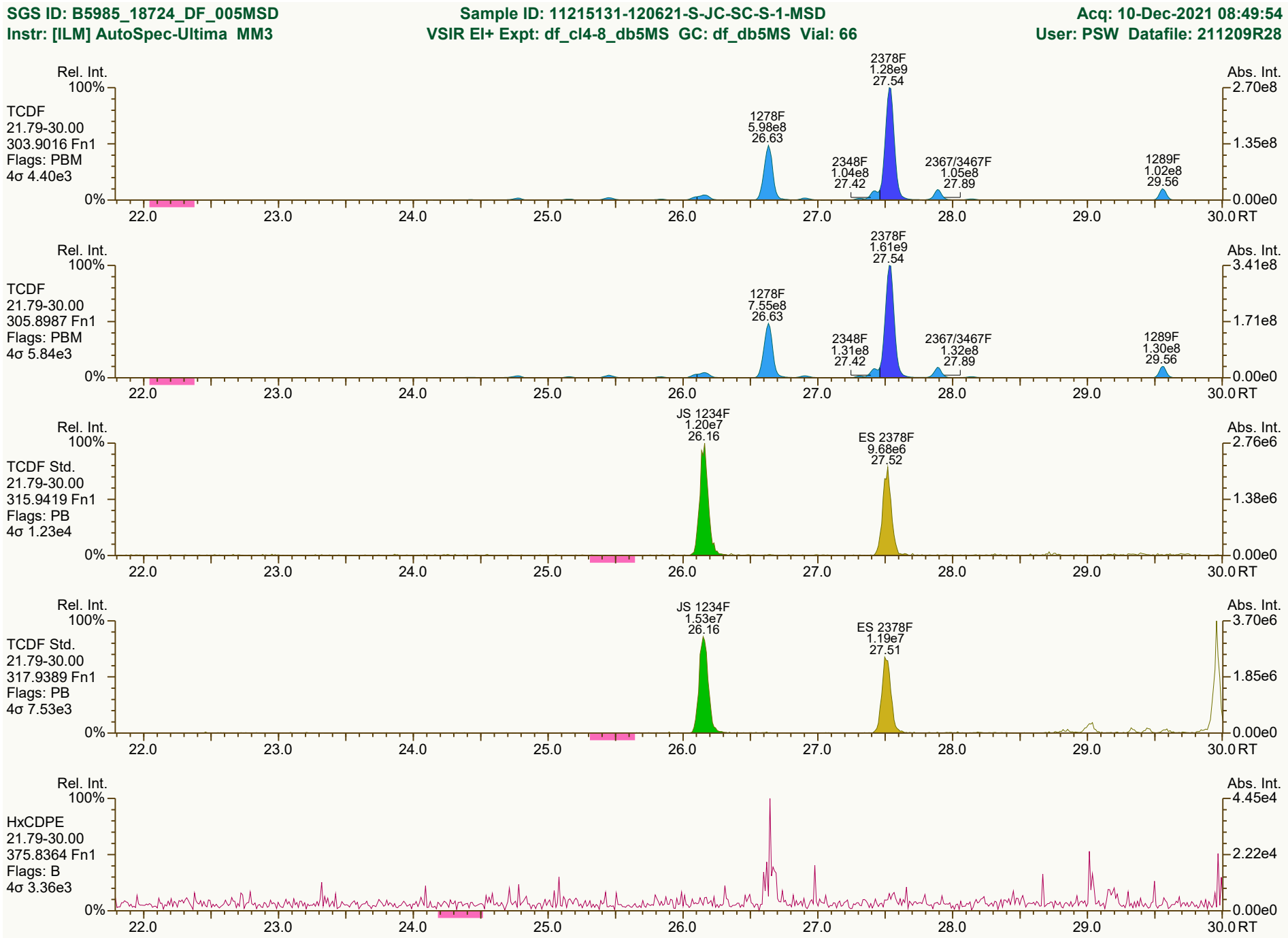
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2976, 0048 scc: 775-448
PKD: 10-Dec-2021 09:51 Printed: 10-Dec-2021 16:25 Page 4 of 12

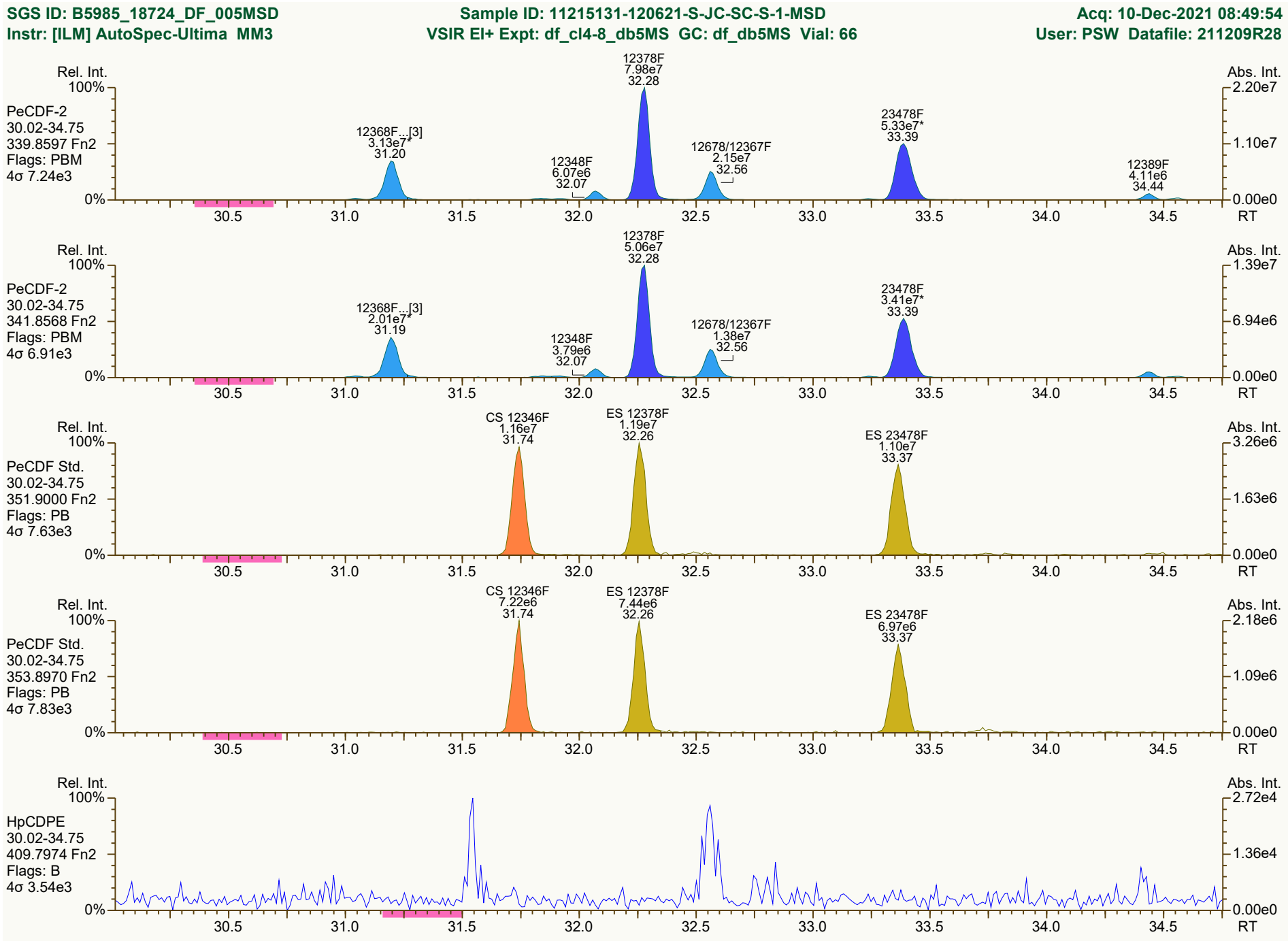

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PBM
4σ 4.14e3
0%
1234679D
4.46e7*
39.91
1234678D
4.73e7*
40.56
Abs. Int.
1.82e7
9.12e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PBM
4σ 4.96e3
0%
1234679D
4.32e7*
39.91
1234678D
4.53e7*
40.56
Abs. Int.
1.76e7
8.79e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 5.65e3
0%
ES 1234678D
5.73e6
40.55
Abs. Int.
2.11e6
1.06e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.68e3
0%
ES 1234678D
5.75e6
40.55
Abs. Int.
2.08e6
1.04e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

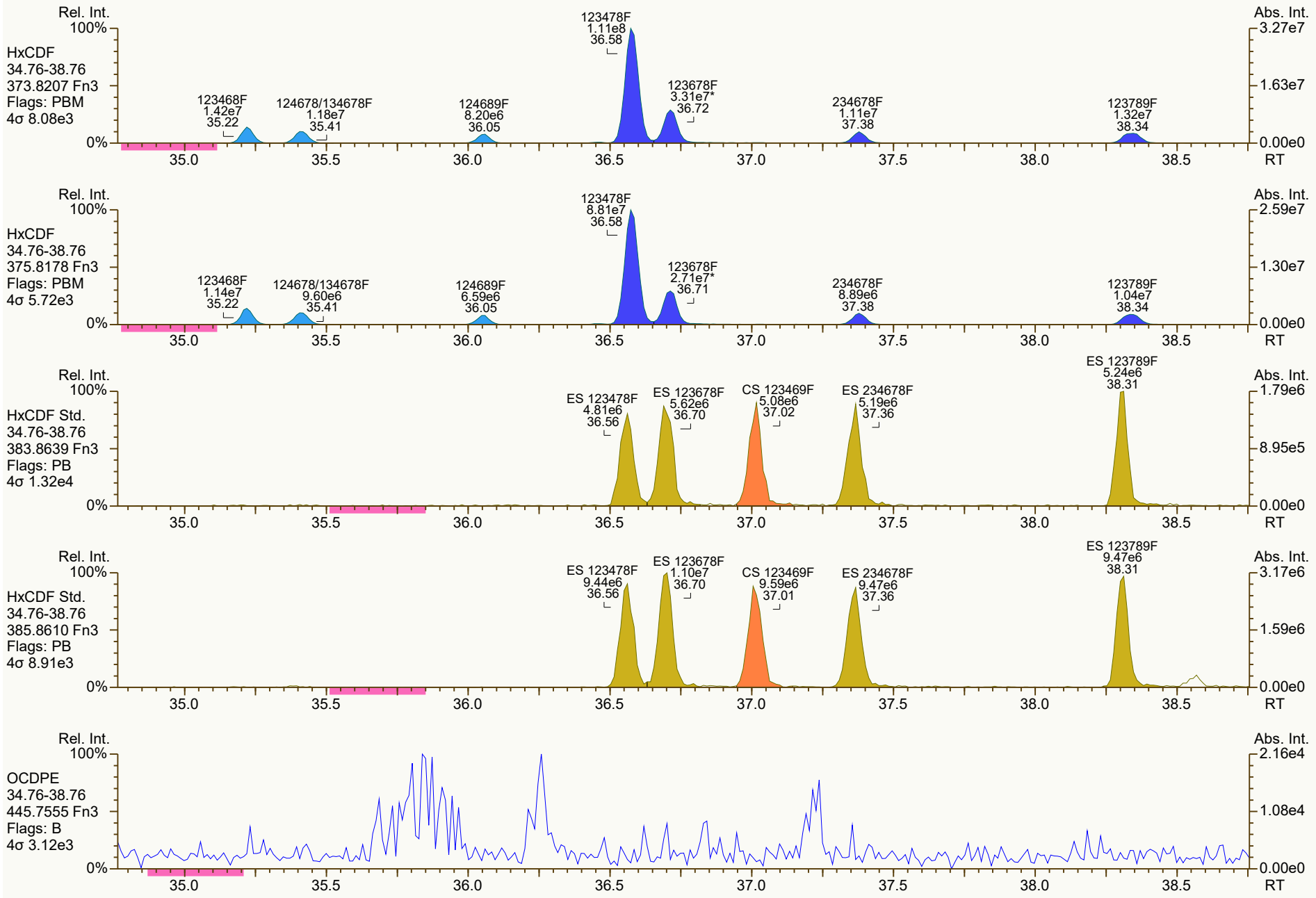

Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 6.59e3
0%
OCDD
6.55e8
43.12
Abs. Int.
1.92e8
9.61e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 6.37e3
0%
OCDD
7.32e8
43.11
Abs. Int.
2.14e8
1.07e8
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 5.86e3
0%
ES OCDD
8.51e6
43.10
Abs. Int.
2.36e6
1.18e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.09e3
0%
ES OCDD
8.96e6
43.10
Abs. Int.
2.49e6
1.24e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

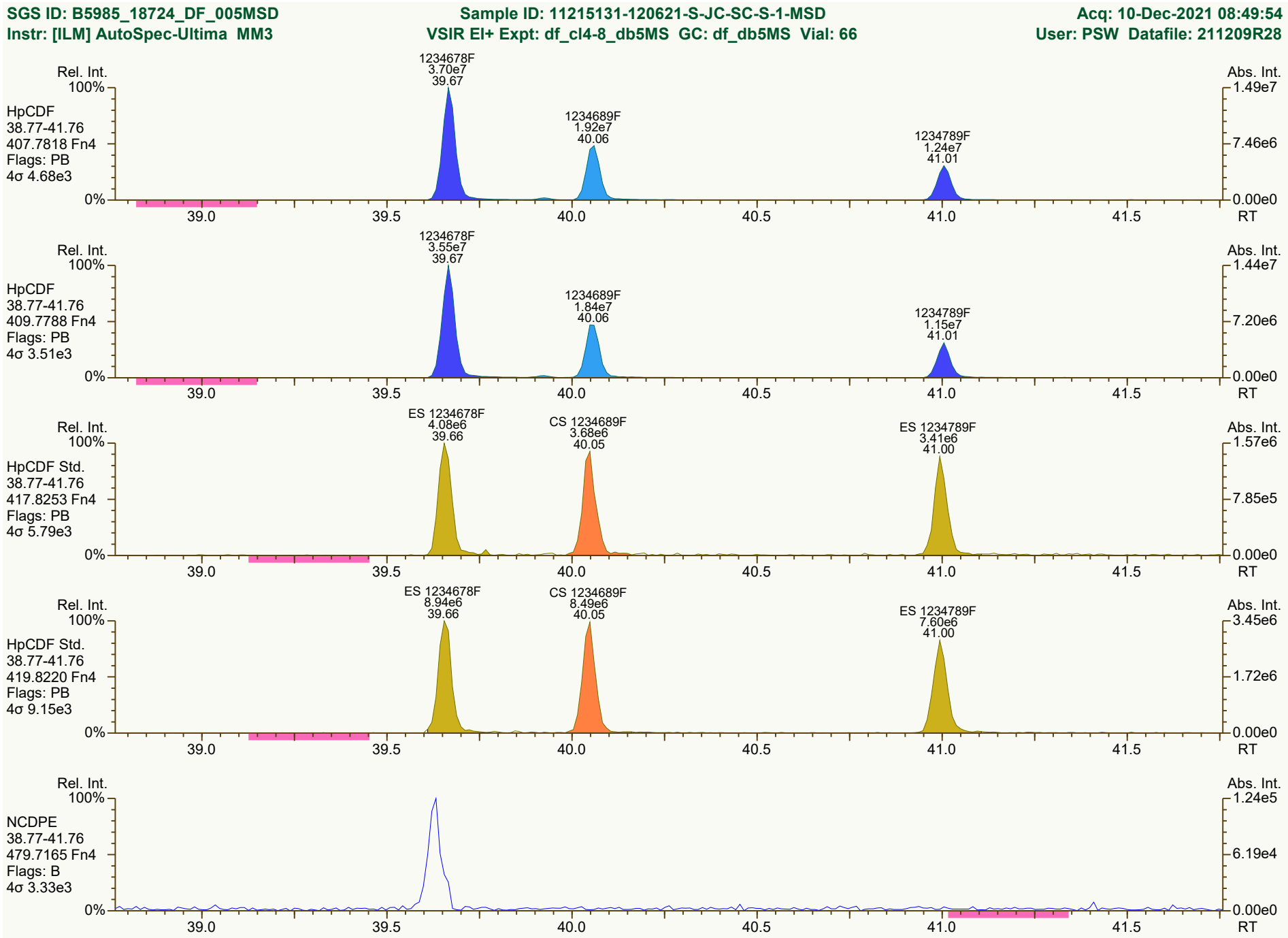


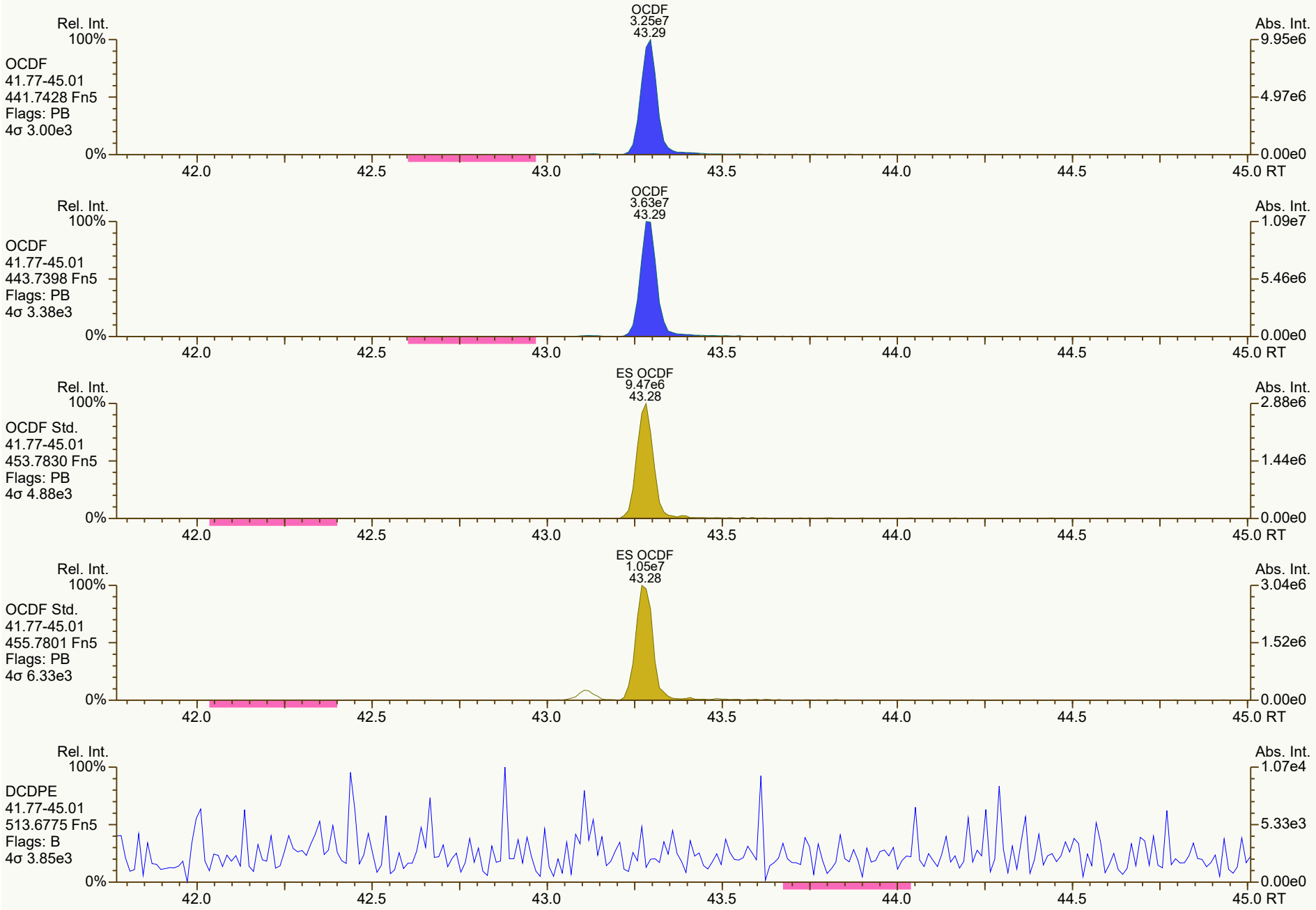
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_005MSD.utp_res, saved 10-Dec-2021 16:23 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9102, 4305, 7692 scc: 775-448
PKD: 10-Dec-2021 09:51 Printed: 10-Dec-2021 16:25 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 4.18e3
13468/12468F
1.45e7
29.50
Abs. Int.
4.28e6
2.14e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 4.31e3
13468/12468F
9.18e6
29.49
Abs. Int.
2.46e6
1.23e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
Abs. Int.
5.36e6
2.68e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


SGS ID: B5985_18724_DF_005MSD
Sample ID: 11215131-120621-S-JC-SC-S-1-MSD
Acq: 10-Dec-2021 08:49:54
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: PSW Datafile: 211209R28
Rel. Int.
Abs. Int.
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 7.24e3
12368F...[3] 3.13e7* 31.20
12348F 6.07e6 32.07
12378F 7.98e7 32.28
12678/12367F 2.15e7 32.56
23478F 5.33e7* 33.39
12389F 4.11e6 34.44
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 6.91e3
12368F...[3] 2.01e7* 31.19
12348F 3.79e6 32.07
12378F 5.06e7 32.28
12678/12367F 1.38e7 32.56
23478F 3.41e7* 33.39
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 7.63e3
CS 12346F 1.16e7 31.74
ES 12378F 1.19e7 32.26
ES 23478F 1.10e7 33.37
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 7.83e3
CS 12346F 7.22e6 31.74
ES 12378F 7.44e6 32.26
ES 23478F 6.97e6 33.37
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.54e3
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_005MSD.utp_res, saved 10-Dec-2021 16:23 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9844, 2365, 0640 scc: 775-448
PKD: 10-Dec-2021 09:51 Printed: 10-Dec-2021 16:25 Page 9 of 12


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 8.08e3
123468F
1.42e7
35.22
124678/134678F
1.18e7
35.41
124689F
8.20e6
36.05
123478F
1.11e8
36.58
123678F
3.31e7*
36.72
234678F
1.11e7
37.38
123789F
1.32e7
38.34
Abs. Int.
3.27e7
1.63e7
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 5.72e3
123468F
1.14e7
35.22
124678/134678F
9.60e6
35.41
124689F
6.59e6
36.05
123478F
8.81e7
36.58
123678F
2.71e7*
36.71
234678F
8.89e6
37.38
123789F
1.04e7
38.34
2.59e7
1.30e7
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 1.32e4
ES 123478F
4.81e6
36.56
ES 123678F
5.62e6
36.70
CS 123469F
5.08e6
37.02
ES 234678F
5.19e6
37.36
ES 123789F
5.24e6
38.31
1.79e6
8.95e5
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 8.91e3
ES 123478F
9.44e6
36.56
ES 123678F
1.10e7
36.70
CS 123469F
9.59e6
37.01
ES 234678F
9.47e6
37.36
ES 123789F
9.47e6
38.31
3.17e6
1.59e6
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.12e3
2.16e4
1.08e4


SGS ID: B5985_18724_DF_005MSD
Sample ID: 11215131-120621-S-JC-SC-S-1-MSD
Acq: 10-Dec-2021 08:49:54
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: PSW Datafile: 211209R28
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.68e3
1234678F
3.70e7
39.67
1234689F
1.92e7
40.06
1234789F
1.24e7
41.01
1.49e7
7.46e6
0.00e0
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.51e3
1234678F
3.55e7
39.67
1234689F
1.84e7
40.06
1234789F
1.15e7
41.01
1.44e7
7.20e6
0.00e0
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 5.79e3
ES 1234678F
4.08e6
39.66
CS 1234689F
3.68e6
40.05
ES 1234789F
3.41e6
41.00
1.57e6
7.85e5
0.00e0
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 9.15e3
ES 1234678F
8.94e6
39.66
CS 1234689F
8.49e6
40.05
ES 1234789F
7.60e6
41.00
3.45e6
1.72e6
0.00e0
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.33e3
1.24e5
6.19e4
0.00e0
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_005MSD.utp_res, saved 10-Dec-2021 16:23 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3397, 0077, 4843 scc: 775-448
PKD: 10-Dec-2021 09:51 Printed: 10-Dec-2021 16:25 Page 11 of 12


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.00e3
0%
OCDF
3.25e7
43.29
Abs. Int.
9.95e6
4.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.38e3
0%
OCDF
3.63e7
43.29
Abs. Int.
1.09e7
5.46e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 4.88e3
0%
ES OCDF
9.47e6
43.28
Abs. Int.
2.88e6
1.44e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 6.33e3
0%
ES OCDF
1.05e7
43.28
Abs. Int.
3.04e6
1.52e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.85e3
0%
Abs. Int.
1.07e4
5.33e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5985_18724_DF_006 **Acq'd:** 10 Dec 2021 09:37 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-2 **UTP:** 10-Dec-2021 12:46:24 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 612-606-CJZ

Datafile: 211209R29 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.36	E	1.0008	1.0008	0	1.28E+08	0.79	Y	1.34	1,640	11013.485	1.64
12378-PeCDD	33.68		1.0005	1.0006	+0.2	1.24E+06	1.42	Y	1.06	22.7	9760.594	1.65
123478-HxCDD	37.54		1.0003	1.0004	+0.2	2.41E+05	1.06	Y	1.06	5.22	13207.666	2.51
123678-HxCDD	37.66		1.0033	1.0036	+0.7	1.13E+06	1.15	Y	1.08	23.3	13207.666	2.24
123789-HxCDD	37.95	EMPC	1.0110	1.0113	+0.7	4.39E+05	1.63	N	1.02	8.5	13207.666	2.15
1234678-HpCDD	40.55		1.0003	1.0003	0	2.94E+07	1.04	Y	0.97	705	10967.772	1.58
OCDD	43.11	E	1.0003	1.0003	0	3.10E+08	0.90	Y	1.07	10,900	15047.407	4.23
2378-TCDF	27.50	E	1.0006	1.0008	+0.3	4.86E+08	0.80	Y	0.96	6,290	12651.209	1.58
12378-PeCDF	32.24		1.0006	1.0005	-0.2	1.63E+07	1.56	Y	0.95	237	10425.752	1.31
23478-PeCDF	33.35		1.0006	1.0007	+0.2	1.27E+07	1.56	Y	0.94	197	10425.752	1.51
123478-HxCDF	36.55		1.0004	1.0005	+0.2	2.58E+07	1.22	Y	1.23	383	8716.591	1.01
123678-HxCDF	36.69		1.0004	1.0005	+0.2	7.29E+06	1.24	Y	1.13	105	8716.591	1.09
234678-HxCDF	37.36		1.0005	1.0005	0	1.88E+06	1.39	Y	1.15	30	8716.591	1.16
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	8716.591	1.06
1234678-HpCDF	39.66		1.0003	1.0003	0	1.88E+07	1.06	Y	1.36	304	9132.327	0.91
1234789-HpCDF	41.00		1.0003	1.0002	-0.2	3.14E+06	0.98	Y	1.30	62.7	9132.327	1.26
OCDF	43.29		1.0002	1.0003	+0.3	7.65E+07	0.91	Y	1.03	2,370	7160.923	1.84

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.34	1.0237	1.0236	-0.2	1.16E+07	0.86	Y	1.03	77.9
ES 12378-PeCDD	33.66	1.2158	1.2158	0	1.03E+07	1.62	Y	1.03	69.2
ES 123478-HxCDD	37.52	0.9920	0.9917	-0.7	8.74E+06	1.27	Y	0.99	89.8
ES 123678-HxCDD	37.64	0.9949	0.9948	-0.2	8.95E+06	1.24	Y	0.97	94
ES 123789-HxCDD	37.94	1.0026	1.0026	0	1.02E+07	1.31	Y	1.12	92.5
ES 1234678-HpCDD	40.54	1.0713	1.0714	+0.2	8.57E+06	1.04	Y	0.99	88.4
ES OCDD	43.10	1.1385	1.1390	+1.3	1.06E+07	0.88	Y	0.78	69.8
ES 2378-TCDF	27.48	1.0519	1.0520	+0.2	1.61E+07	0.80	Y	1.08	78.8
ES 12378-PeCDF	32.22	1.2331	1.2335	+0.8	1.45E+07	1.63	Y	0.93	82.7
ES 23478-PeCDF	33.33	1.2754	1.2758	+0.8	1.37E+07	1.58	Y	0.92	79
ES 123478-HxCDF	36.54	0.9656	0.9656	0	1.09E+07	0.51	Y	1.14	97.4
ES 123678-HxCDF	36.67	0.9693	0.9693	0	1.23E+07	0.50	Y	1.30	96.8
ES 234678-HxCDF	37.34	0.9869	0.9868	-0.2	1.09E+07	0.51	Y	1.20	92.5
ES 123789-HxCDF	38.29	1.0121	1.0121	0	1.02E+07	0.52	Y	1.14	91.9
ES 1234678-HpCDF	39.65	1.0478	1.0478	0	9.05E+06	0.47	Y	0.95	97.4
ES 1234789-HpCDF	40.99	1.0832	1.0834	+0.5	7.71E+06	0.44	Y	0.85	93
ES OCDF	43.28	1.1434	1.1438	+1.0	1.26E+07	0.90	Y	0.93	69.4

Lab ID: B5985_18724_DF_006 **Acq'd:** 10 Dec 2021 09:37 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-2 **UTP:** 10-Dec-2021 12:46:24 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 612-606-CJZ

Datafile: 211209R29 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.68		-	-	-	1.44E+07	0.80	Y	-	-	
JS 1234-TCDF	26.12		-	-	-	1.88E+07	0.81	Y	-	-	
JS 123467-HxCDD	37.84		-	-	-	4.89E+06	1.45	N	-	-	
CS 37Cl-2378-TCDD	28.36		1.0245	1.0244	-0.2	5.25E+06	n/a	-	1.31	69.6	
CS 12347-PeCDD	33.16		1.1978	1.1978	0	9.48E+06	1.65	Y	0.89	73.8	
CS 12346-PeCDF	31.70		1.2130	1.2135	+1.0	1.46E+07	1.65	Y	0.87	89.6	
CS 123469-HxCDF	36.99		0.9775	0.9777	+0.4	1.10E+07	0.53	Y	1.09	103	
CS 1234689-HpCDF	40.04		1.0580	1.0581	+0.2	8.52E+06	0.46	Y	0.86	101	
~~SS 37Cl-2378-TCDD~~	~~28.36~~		~~1.0245~~	~~1.0244~~	~~-0.2~~	~~5.25E+06~~	~~n/a~~		~~1.26~~	~~89.7~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.16~~		~~1.1978~~	~~1.1978~~	~~0~~	~~9.48E+06~~	~~1.65~~	~~Y~~	~~0.86~~	~~107~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.70~~		~~1.2130~~	~~1.2135~~	~~+1.0~~	~~1.46E+07~~	~~1.65~~	~~Y~~	~~0.93~~	~~100~~	
~~SS 123469-HxCDF~~	~~36.99~~		~~0.9775~~	~~0.9777~~	~~+0.4~~	~~1.10E+07~~	~~0.53~~	~~Y~~	~~0.84~~	~~107~~	
~~SS 1234689-HpCDF~~	~~40.04~~		~~1.0580~~	~~1.0581~~	~~+0.2~~	~~8.52E+06~~	~~0.46~~	~~Y~~	~~0.91~~	~~103~~	

Totals	Conc	EMPC
Total TCDD	1840	1860
Total PeCDD	37.5	46.4
Total HxCDD	173	181
Total HpCDD	1510	1510
Total Tetra-Octa Dioxins	14500	14500
Total TCDF	12,500	12500
Total PeCDF	727	754
Total HxCDF	743	743
Total HpCDF	642	642
Total Tetra-Octa Furans	17,000	17000
Total Tetra-Octa Dioxins & Furans	31400	31500

Lab ID: B5985_18724_DF_006 **Acq'd:** 10 Dec 2021 09:37 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-2 **UTP:** 10-Dec-2021 12:46:24 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 612-606-CJZ

Datafile: 211209R29 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.72		0.8726	0.8723	-0.4	6.00E+05	0.80	Y	1.34	7.69	11013.485	1.64
1379-TCDD	25.07	EMPC	0.8851	0.8846	-0.8	1.50E+05	0.93	N	1.34	1.92	11013.485	1.64
1369-TCDD	NotFnd		0.9002						1.34		11013.485	1.64
1469-TCDD	NotFnd		0.9275						1.34		11013.485	1.64
1247/1246/1248/1249-TCDD	26.51	EMPC	0.9361	0.9354	-1.1	1.82E+05	1.15	N	1.34	2.33	11013.485	1.64
1378-TCDD	26.71	EMPC	0.9427	0.9424	-0.5	3.33E+05	1.18	N	1.34	4.27	11013.485	1.64
1268-TCDD	NotFnd		0.9498						1.34		11013.485	1.64
1478-TCDD	27.16	EMPC	0.9584	0.9583	-0.2	3.48E+05	0.97	N	1.34	4.47	11013.485	1.64
1279-TCDD	NotFnd		0.9644						1.34		11013.485	1.64
1234/1269-TCDD	NotFnd		0.9766						1.34		11013.485	1.64
1236-TCDD	NotFnd		0.9813						1.34		11013.485	1.64
1237/1238-TCDD	28.06		0.9906	0.9902	-0.7	2.30E+06	0.87	Y	1.34	29.5	11013.485	1.64
1239-TCDD	NotFnd		0.9952						1.34		11013.485	1.64
2378-TCDD	**28.36**	E	**1.0008**	1.0008	**0**	1.28E+08	0.79	Y	**1.34**	**1,640**	**11013.485**	**1.64**
1278-TCDD	28.69		1.0122	1.0125	+0.5	1.27E+07	0.78	Y	1.34	163	11013.485	1.64
1267-TCDD	NotFnd		1.0168						1.34		11013.485	1.64
1289-TCDD	29.29	EMPC	1.0349	1.0336	-2.3	5.50E+05	1.48	N	1.34	7.05	11013.485	1.64
12479/12468-PeCDD	31.19		0.9267	0.9267	0	3.74E+05	1.42	Y	1.06	6.85	9760.594	1.65
12469-PeCDD	31.72	J EMPC	0.9425	0.9425	0	1.29E+05	0.76	N	1.06	2.36	9760.594	1.65
12368-PeCDD	32.27		0.9588	0.9588	0	3.03E+05	1.36	Y	1.06	5.56	9760.594	1.65
12478-PeCDD	32.46	EMPC	0.9643	0.9644	+0.2	2.31E+05	0.88	N	1.06	4.23	9760.594	1.65
12379-PeCDD	32.56	J	0.9673	0.9675	+0.4	1.32E+05	1.77	Y	1.06	2.41	9760.594	1.65
12369/12467/12489-PeCDD	32.80	J EMPC	0.9750	0.9746	-0.8	1.29E+05	1.13	N	1.06	2.35	9760.594	1.65
12346/12347-PeCDD	NotFnd		0.9859						1.06		9760.594	1.65
12378-PeCDD	33.68		**1.0005**	**1.0006**	**+0.2**	**1.24E+06**	**1.42**	**Y**	**1.06**	**22.7**	**9760.594**	**1.65**
12367-PeCDD	NotFnd		1.0032						1.06		9760.594	1.65
12389-PeCDD	NotFnd		1.0135						1.06		9760.594	1.65
124679/124689-HxCDD	35.82		0.9544	0.9547	+0.6	2.70E+06	1.29	Y	1.05	55.3	13207.666	2.29
123468-HxCDD	36.47		0.9716	0.9720	+0.9	4.17E+05	1.26	Y	1.05	8.55	13207.666	2.29
123679/123689-HxCDD	36.76		0.9793	0.9796	+0.7	3.72E+06	1.23	Y	1.05	76.2	13207.666	2.29
123469-HxCDD	36.89		0.9829	0.9832	+0.7	1.90E+05	1.31	Y	1.05	3.89	13207.666	2.29
123478-HxCDD	37.54		**1.0003**	**1.0004**	**+0.2**	**2.41E+05**	**1.06**	**Y**	1.06	**5.22**	**13207.666**	**2.51**
123678-HxCDD	37.66		**1.0033**	**1.0036**	**+0.7**	**1.13E+06**	**1.15**	**Y**	1.08	**23.3**	**13207.666**	**2.24**
123467-HxCDD	NotFnd		1.0084						1.05		13207.666	2.29
123789-HxCDD	37.95	EMPC	**1.0110**	**1.0113**	**+0.7**	**4.39E+05**	**1.63**	**N**	1.02	**8.5**	**13207.666**	**2.15**

Lab ID: B5985_18724_DF_006 **Acq'd:** 10 Dec 2021 09:37 PSW **Wt/Vol:** 10.00 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-2 **UTP:** 10-Dec-2021 12:46:24 PSW **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 612-606-CJZ

Datafile: 211209R29 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

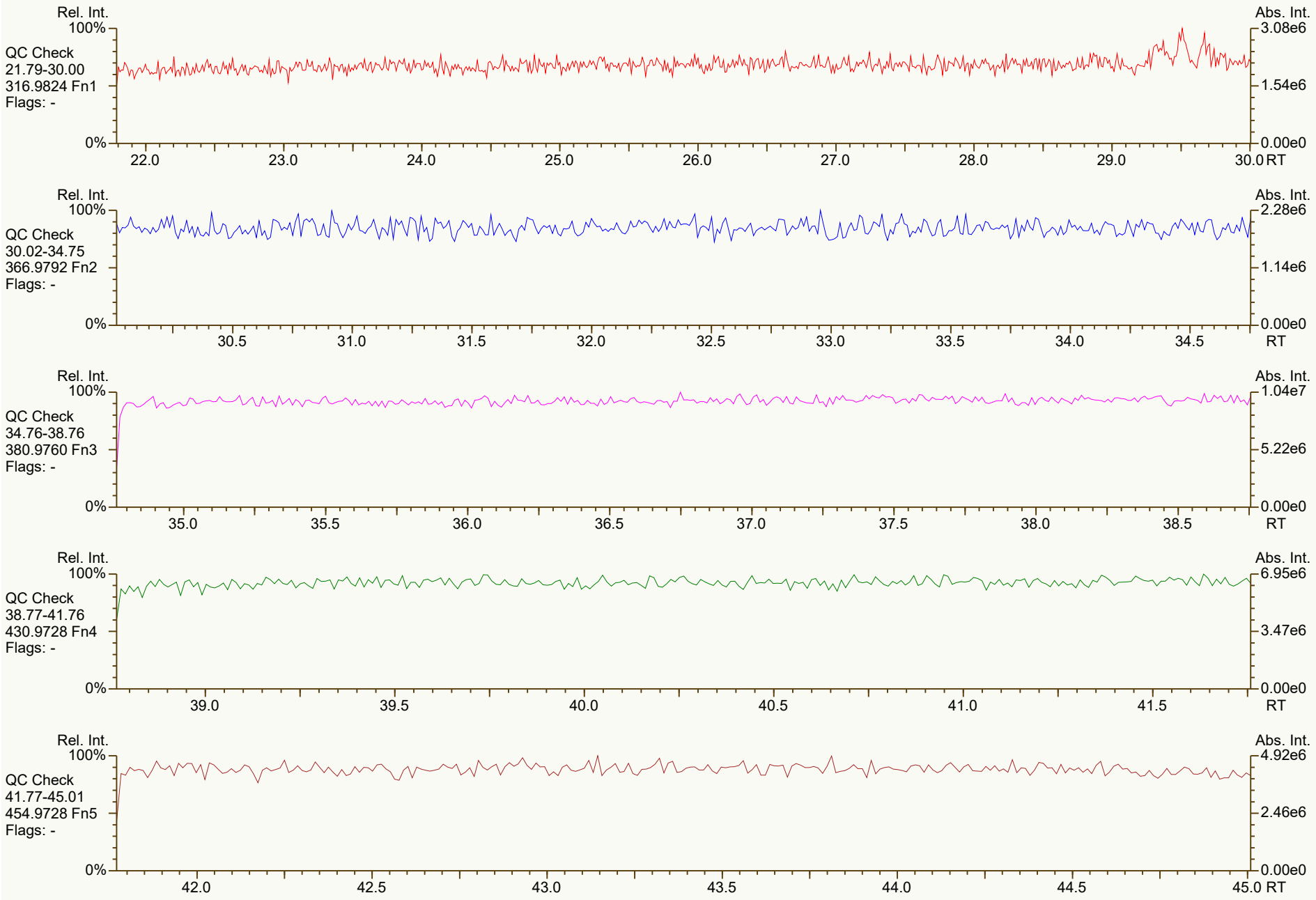
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.90		0.9843	0.9844	+0.2	3.37E+07	1.05	Y	0.97	808	10967.772	1.58
1234678-HpCDD	**40.55**		**1.0003**	**1.0003**	**0**	**2.94E+07**	**1.04**	**Y**	**0.97**	**705**	**10967.772**	**1.58**
OCDD	**43.11**	**E**	**1.0003**	**1.0003**	**0**	**3.10E+08**	**0.90**	**Y**	**1.07**	**10,900**	**15047.407**	**4.23**
OCDD-a	43.10	**E**	1.0001	1.0002	+0.3	1.93E+07	2.59	Y	0.07	11,000	10129.095	46.1
1368-TCDF	NotFnd		0.8230						0.96		12651.209	1.58
1468-TCDF	23.18		0.8443	0.8437	-0.8	7.88E+05	0.83	Y	0.96	10.2	12651.209	1.58
2468-TCDF	23.82		0.8672	0.8669	-0.4	1.21E+06	0.76	Y	0.96	15.7	12651.209	1.58
1346/1246-TCDF	24.25		0.8802	0.8823	+3.1	6.85E+05	0.88	Y	0.96	8.86	12651.209	1.58
1347/1378/1247-TCDF	24.37		0.8855	0.8868	+1.9	4.32E+06	0.77	Y	0.96	55.9	12651.209	1.58
1348-TCDF	24.58		0.8952	0.8946	-0.9	1.11E+06	0.74	Y	0.96	14.3	12651.209	1.58
1248/1367/1379-TCDF	24.70		0.9000	0.8988	-1.8	2.31E+07	0.78	Y	0.96	299	12651.209	1.58
1268-TCDF	25.11		0.9136	0.9136	0	7.78E+06	0.81	Y	0.96	101	12651.209	1.58
1467-TCDF	25.23		0.9185	0.9182	-0.5	1.42E+06	0.83	Y	0.96	18.4	12651.209	1.58
1478-TCDF	25.41		0.9247	0.9247	0	2.03E+07	0.79	Y	0.96	263	12651.209	1.58
1369/1237-TCDF	25.79		0.9381	0.9383	+0.3	5.10E+06	0.77	Y	0.96	66	12651.209	1.58
2467-TCDF	25.90	EMPC	0.9427	0.9424	-0.5	5.77E+05	0.65	N	0.96	7.47	12651.209	1.58
2368-TCDF	26.05		0.9484	0.9481	-0.5	1.21E+07	0.77	Y	0.96	157	12651.209	1.58
1238/1234/1678/1469/1236-TCDF	26.13		0.9517	0.9510	-1.1	2.73E+07	0.79	Y	0.96	353	12651.209	1.58
1278-TCDF	26.60	E	0.9682	0.9680	-0.3	2.29E+08	0.79	Y	0.96	2,960	12651.209	1.58
1349-TCDF	NotFnd		0.9725						0.96		12651.209	1.58
1267-TCDF	26.87		0.9782	0.9779	-0.5	1.20E+07	0.79	Y	0.96	155	12651.209	1.58
2346/1249-TCDF	27.07		0.9846	0.9849	+0.5	1.81E+06	0.85	Y	0.96	23.4	12651.209	1.58
2347/1279-TCDF	27.27		0.9926	0.9923	-0.5	5.26E+06	0.77	Y	0.96	68.1	12651.209	1.58
2348-TCDF	27.39		0.9966	0.9966	0	3.91E+07	0.80	Y	0.96	507	12651.209	1.58
2378-TCDF	**27.50**	E	**1.0006**	**1.0008**	**+0.3**	**4.86E+08**	**0.80**	**Y**	**0.96**	**6,290**	**12651.209**	**1.58**
2367/3467-TCDF	27.86		1.0139	1.0136	-0.5	3.91E+07	0.78	Y	0.96	507	12651.209	1.58
1269-TCDF	28.10		1.0226	1.0227	+0.2	7.75E+06	0.86	Y	0.96	100	12651.209	1.58
1239-TCDF	NotFnd		1.0322						0.96		12651.209	1.58
1289-TCDF	29.51		1.0729	1.0738	+1.6	3.96E+07	0.82	Y	0.96	512	12651.209	1.58
13468/12468-PeCDF	29.46		0.9135	0.9141	+1.1	3.38E+06	1.50	Y	0.94	50.7	5911.478	0.799
13678/13467/12467-PeCDF	31.00		0.9612	0.9621	+1.7	5.38E+05	1.75	Y	0.94	8.08	10425.752	1.41
12368/13478/12478-PeCDF	31.15		0.9661	0.9667	+1.1	7.76E+06	1.57	Y	0.94	117	10425.752	1.41
14678-PeCDF	31.23		0.9693	0.9691	-0.4	5.11E+05	1.42	Y	0.94	7.68	10425.752	1.41
13479-PeCDF	NotFnd		0.9723						0.94		10425.752	1.41
13469/12479-PeCDF	NotFnd		0.9799						0.94		10425.752	1.41
12346-PeCDF	NotFnd		0.9842						0.94		10425.752	1.41

Lab ID: B5985_18724_DF_006 **Acq'd: 10 Dec 2021 09:37 PSW** **Wt/Vol: 10.00 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120621-S-JC-SC-S-2 **UTP: 10-Dec-2021 12:46:24 PSW** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 612-606-CJZ**

Datafile: 211209R29 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.79		0.9868	0.9866	-0.4	6.88E+05	1.44	Y	0.94	10.3	10425.752	1.41
12347-PeCDF	31.87	EMPC	0.9893	0.9891	-0.4	3.23E+05	1.85	N	0.94	4.85	10425.752	1.41
12348-PeCDF	32.03	EMPC	0.9941	0.9941	0	1.47E+06	1.79	N	0.94	22	10425.752	1.41
12378-PeCDF	**32.24**		**1.0006**	**1.0005**	**-0.2**	**1.63E+07**	**1.56**	**Y**	**0.95**	**237**	**10425.752**	**1.31**
12678/12367-PeCDF	32.53		1.0090	1.0097	+1.4	5.61E+06	1.53	Y	0.94	84.3	10425.752	1.41
12379-PeCDF	NotFnd		1.0143						0.94		10425.752	1.41
12679-PeCDF	NotFnd		0.9929						0.94		10425.752	1.41
23467/12369-PeCDF	33.21		0.9966	0.9965	-0.2	3.30E+05	1.71	Y	0.94	4.96	10425.752	1.41
23478-PeCDF	**33.35**		**1.0006**	**1.0007**	**+0.2**	**1.27E+07**	**1.56**	**Y**	**0.94**	**197**	**10425.752**	**1.51**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		10425.752	1.41
12349-PeCDF	NotFnd		1.0102						0.94		10425.752	1.41
12389-PeCDF	34.41		1.0325	1.0325	0	7.40E+05	1.55	Y	0.94	11.1	10425.752	1.41
123468-HxCDF	35.19		0.9628	0.9630	+0.4	1.11E+06	1.33	Y	1.16	17.2	8716.591	1.08
124678/134678-HxCDF	35.38		0.9683	0.9683	0	5.59E+06	1.36	Y	1.16	86.7	8716.591	1.08
134679-HxCDF	NotFnd		0.9746						1.16		8716.591	1.08
124679-HxCDF	35.81		0.9798	0.9801	+0.6	2.51E+05	1.32	Y	1.16	3.9	8716.591	1.08
124689-HxCDF	36.02		0.9859	0.9860	+0.2	4.90E+06	1.31	Y	1.16	76.1	8716.591	1.08
123467-HxCDF	36.43		0.9972	0.9971	-0.2	2.64E+05	1.08	Y	1.16	4.09	8716.591	1.08
123478-HxCDF	**36.55**		**1.0004**	**1.0005**	**+0.2**	**2.58E+07**	**1.22**	**Y**	**1.23**	**383**	**8716.591**	**1.01**
123678-HxCDF	**36.69**		**1.0004**	**1.0005**	**+0.2**	**7.29E+06**	**1.24**	**Y**	**1.13**	**105**	**8716.591**	**1.09**
123479-HxCDF	36.85		1.0049	1.0049	0	2.38E+05	1.30	Y	1.16	3.69	8716.591	1.08
123469-HxCDF	37.00		1.0088	1.0090	+0.4	1.69E+05	1.40	Y	1.16	2.62	8716.591	1.08
123679-HxCDF	NotFnd		0.9943						1.16		8716.591	1.08
234678-HxCDF	**37.36**		**1.0005**	**1.0005**	**0**	**1.88E+06**	**1.39**	**Y**	**1.15**	**30**	**8716.591**	**1.16**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		8716.591	1.08
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**8716.591**	**1.06**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.33		1.0007	1.0011	+0.9	1.98E+06	1.23	Y	1.16	30.7	8716.591	1.08
1234678-HpCDF	**39.66**		**1.0003**	**1.0003**	**0**	**1.88E+07**	**1.06**	**Y**	**1.36**	**304**	**9132.327**	**0.91**
1234679-HpCDF	39.92		1.0067	1.0068	+0.2	5.80E+05	1.01	Y	1.33	10.4	9132.327	1.07
1234689-HpCDF	40.05		1.0100	1.0101	+0.2	1.48E+07	1.02	Y	1.33	265	9132.327	1.07
1234789-HpCDF	**41.00**		**1.0003**	**1.0002**	**-0.2**	**3.14E+06**	**0.98**	**Y**	**1.30**	**62.7**	**9132.327**	**1.26**
OCDF	**43.29**		**1.0002**	**1.0003**	**+0.3**	**7.65E+07**	**0.91**	**Y**	**1.03**	**2,370**	**7160.923**	**1.84**
OCDF-a	43.28		1.0002	1.0001	-0.3	4.28E+06	2.46	Y	0.06	2,300	8143.75	36.2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27.0
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29.0
30.0 RT
Rel. Int.
100%
QC Check
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32.0
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33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
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5.22e6
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35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
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Flags: -
0%
Abs. Int.
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3.47e6
0.00e0
39.0
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40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
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Flags: -
0%
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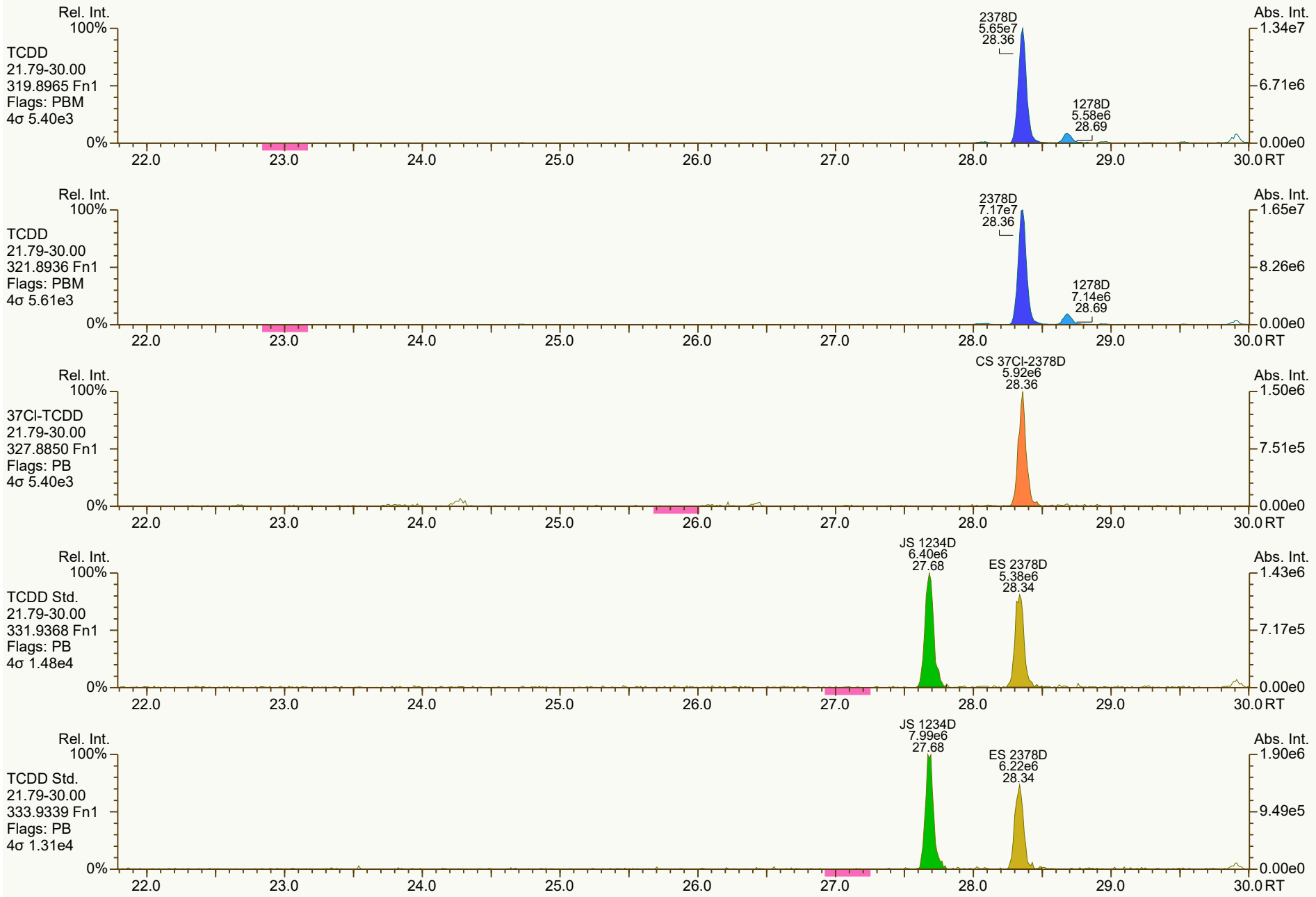
45.0 RT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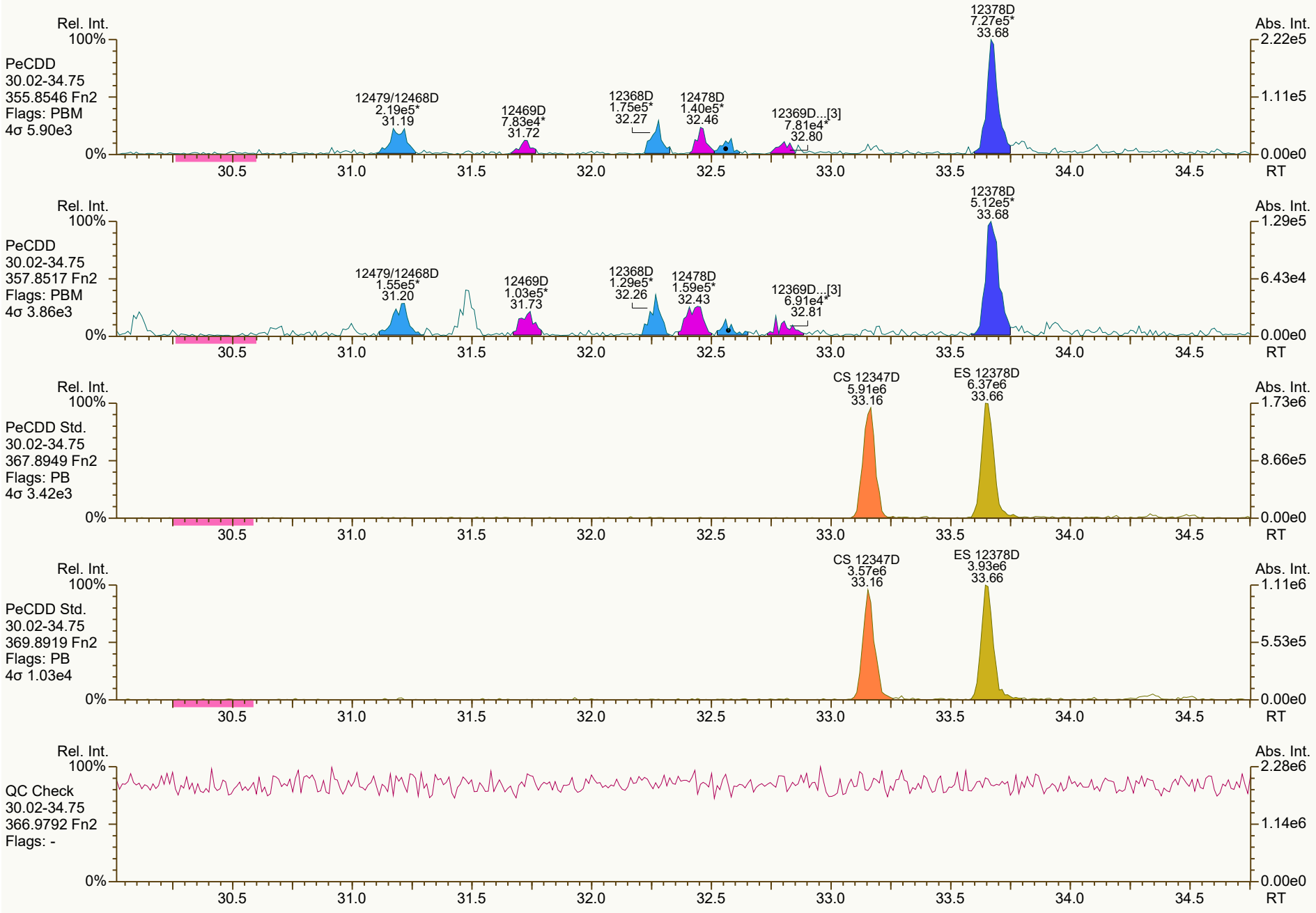
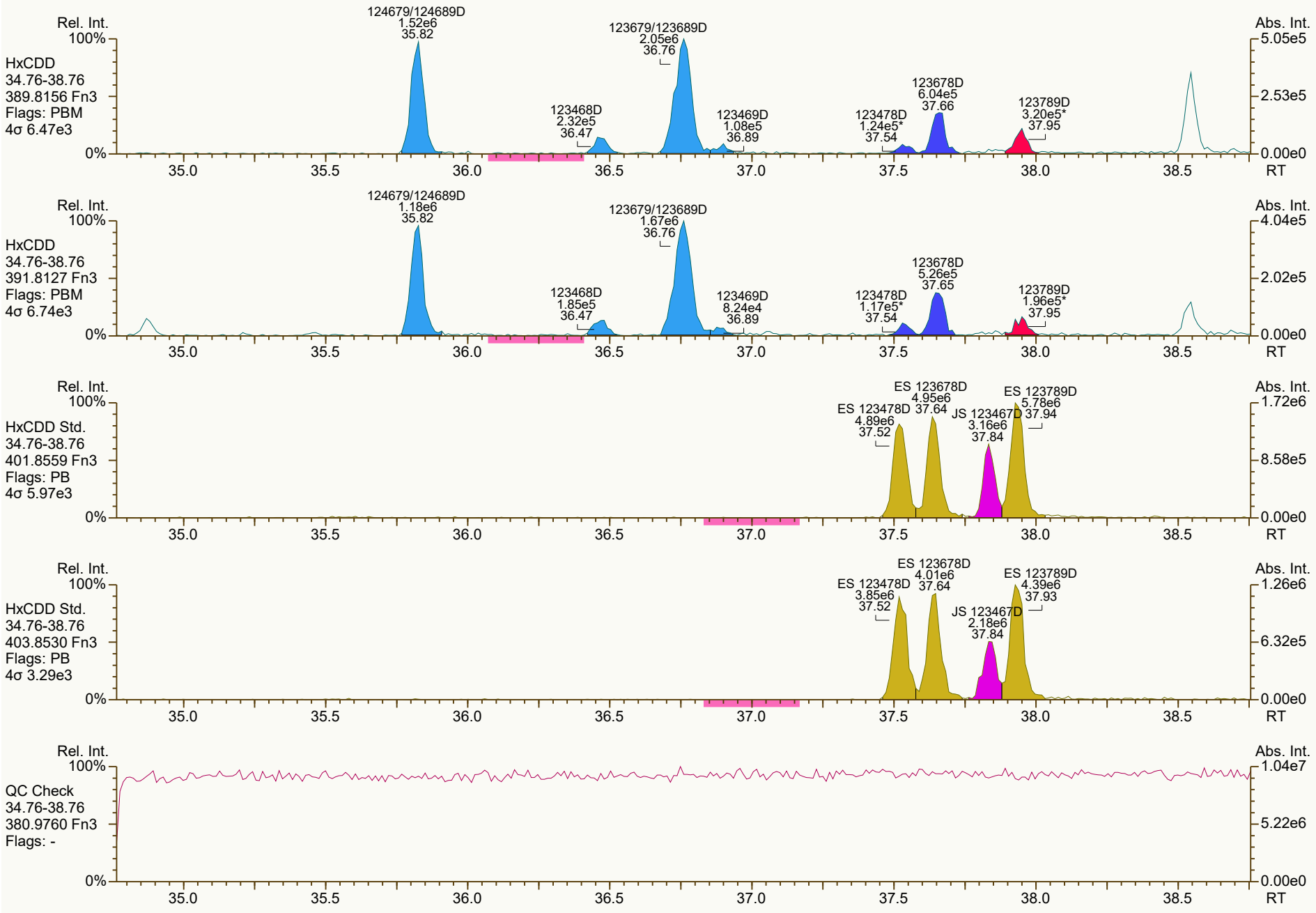
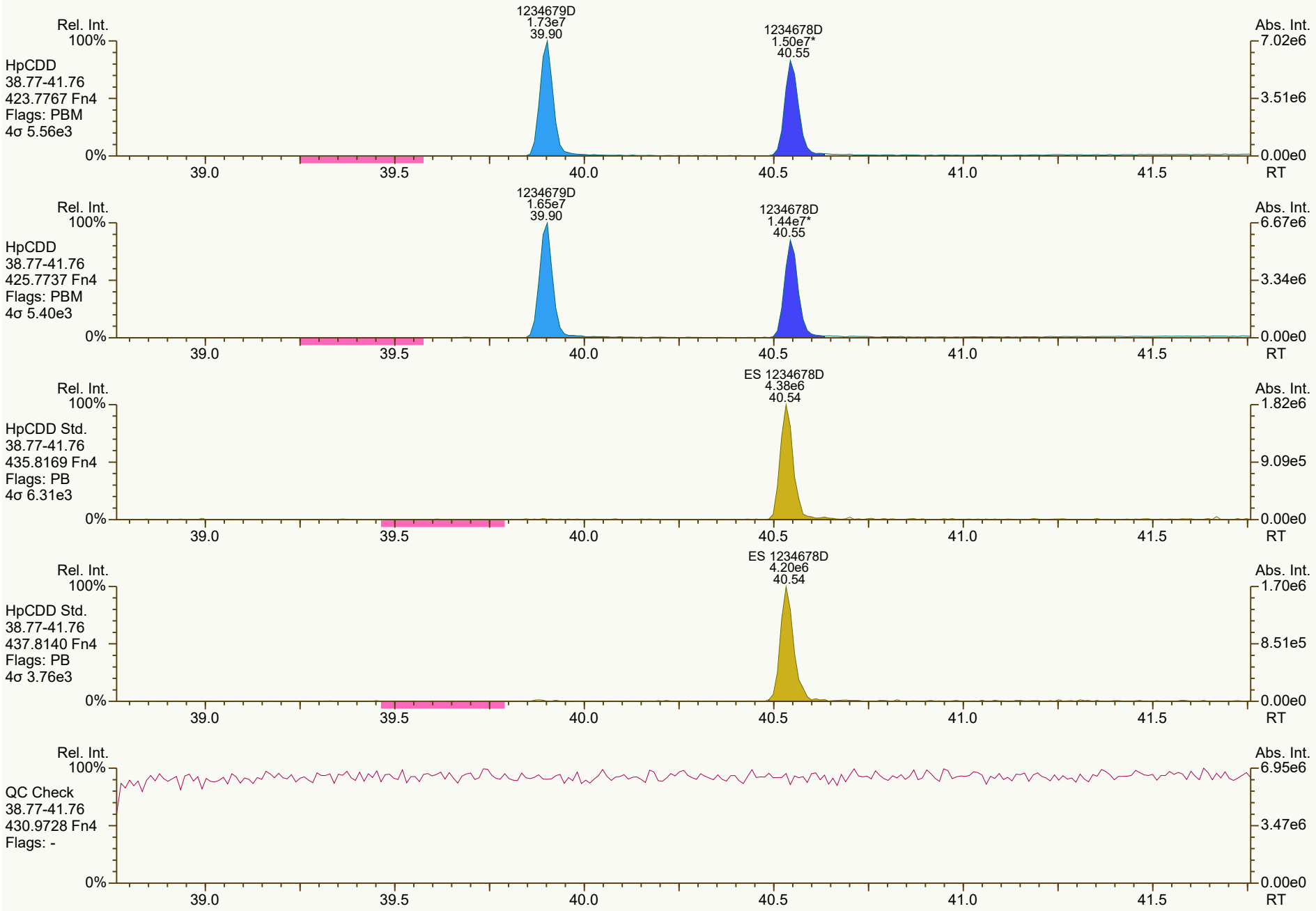
4σ 5.40e3
0%
2378D
5.65e7
28.36
1278D
5.58e6
28.69
Abs. Int.
1.34e7
6.71e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 5.61e3
0%
2378D
7.17e7
28.36
1278D
7.14e6
28.69
Abs. Int.
1.65e7
8.26e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 5.40e3
0%
CS 37Cl-2378D
5.92e6
28.36
Abs. Int.
1.50e6
7.51e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.48e4
0%
JS 1234D
6.40e6
27.68
ES 2378D
5.38e6
28.34
Abs. Int.
1.43e6
7.17e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.31e4
0%
JS 1234D
7.99e6
27.68
ES 2378D
6.22e6
28.34
Abs. Int.
1.90e6
9.49e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 5.90e3
12479/12468D
2.19e5*
31.19
12469D
7.83e4*
31.72
12368D
1.75e5*
32.27
12478D
1.40e5*
32.46
12369D...[3]
7.81e4*
32.80
12378D
7.27e5*
33.68
Abs. Int.
2.22e5
1.11e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 3.86e3
12479/12468D
1.55e5*
31.20
12469D
1.03e5*
31.73
12368D
1.29e5*
32.26
12478D
1.59e5*
32.43
12369D...[3]
6.91e4*
32.81
12378D
5.12e5*
33.68
Abs. Int.
1.29e5
6.43e4
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 3.42e3
CS 12347D
5.91e6
33.16
ES 12378D
6.37e6
33.66
Abs. Int.
1.73e6
8.66e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 1.03e4
CS 12347D
3.57e6
33.16
ES 12378D
3.93e6
33.66
Abs. Int.
1.11e6
5.53e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
2.28e6
1.14e6
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PBM
4σ 6.47e3
124679/124689D
1.52e6
35.82
123679/123689D
2.05e6
36.76
123468D
2.32e5
36.47
123469D
1.08e5
36.89
123478D
1.24e5*
37.54
123678D
6.04e5
37.66
123789D
3.20e5*
37.95
Abs. Int.
5.05e5
2.53e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PBM
4σ 6.74e3
124679/124689D
1.18e6
35.82
123679/123689D
1.67e6
36.76
123468D
1.85e5
36.47
123469D
8.24e4
36.89
123478D
1.17e5*
37.54
123678D
5.26e5
37.65
123789D
1.96e5*
37.95
Abs. Int.
4.04e5
2.02e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: PB
4σ 5.97e3
ES 123678D
4.95e6
37.64
ES 123478D
4.89e6
37.52
JS 123467D
3.16e6
37.84
ES 123789D
5.78e6
37.94
Abs. Int.
1.72e6
8.58e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: PB
4σ 3.29e3
ES 123678D
4.01e6
37.64
ES 123478D
3.85e6
37.52
JS 123467D
2.18e6
37.84
ES 123789D
4.39e6
37.93
Abs. Int.
1.26e6
6.32e5
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
Abs. Int.
1.04e7
5.22e6
0.00e0
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

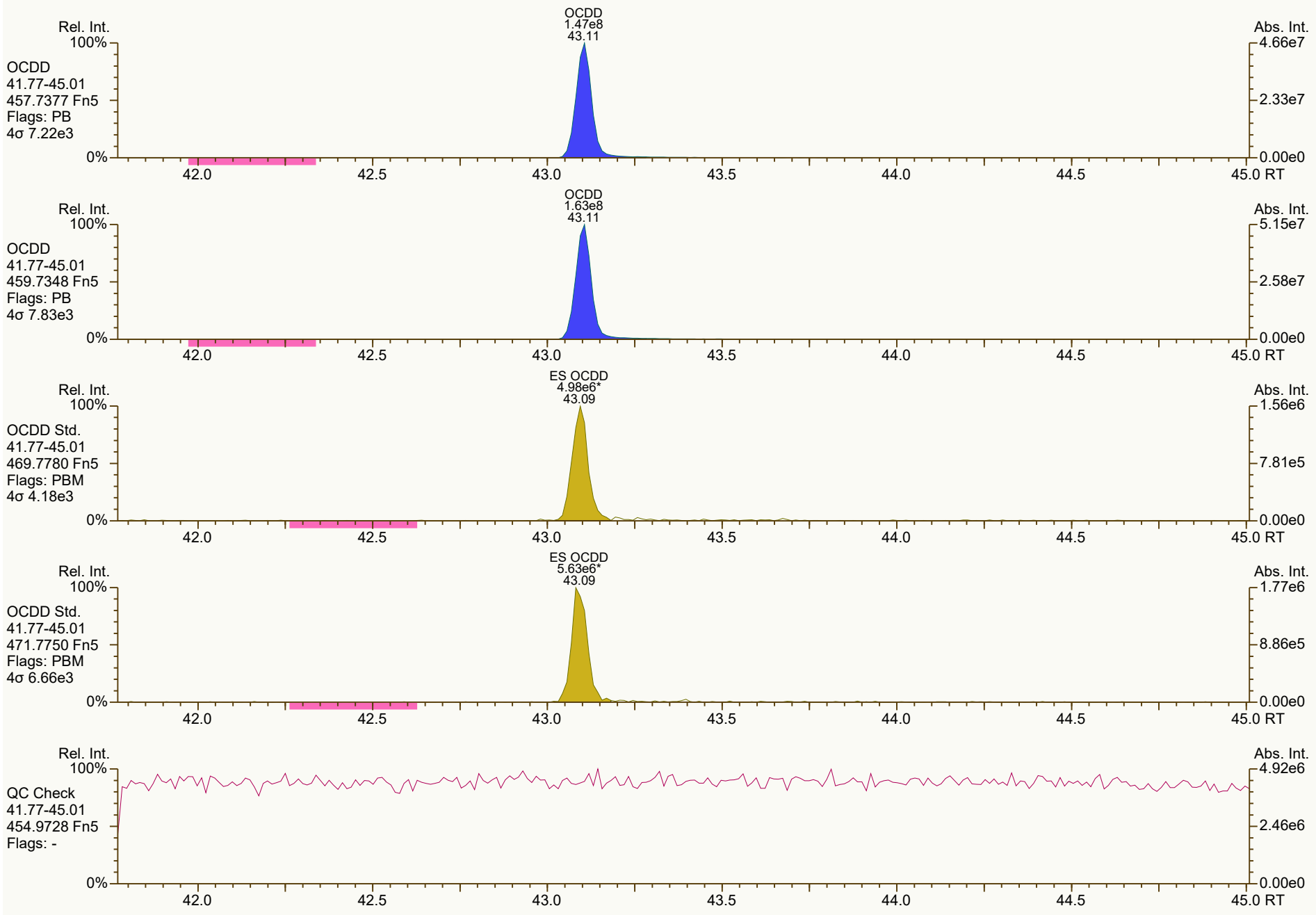
SGS ID: B5985_18724_DF_006 | Sample ID: 11215131-120621-S-JC-SC-S-2 | Acq: 10-Dec-2021 09:37:23

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67 | User: PSW Datafile: 211209R29

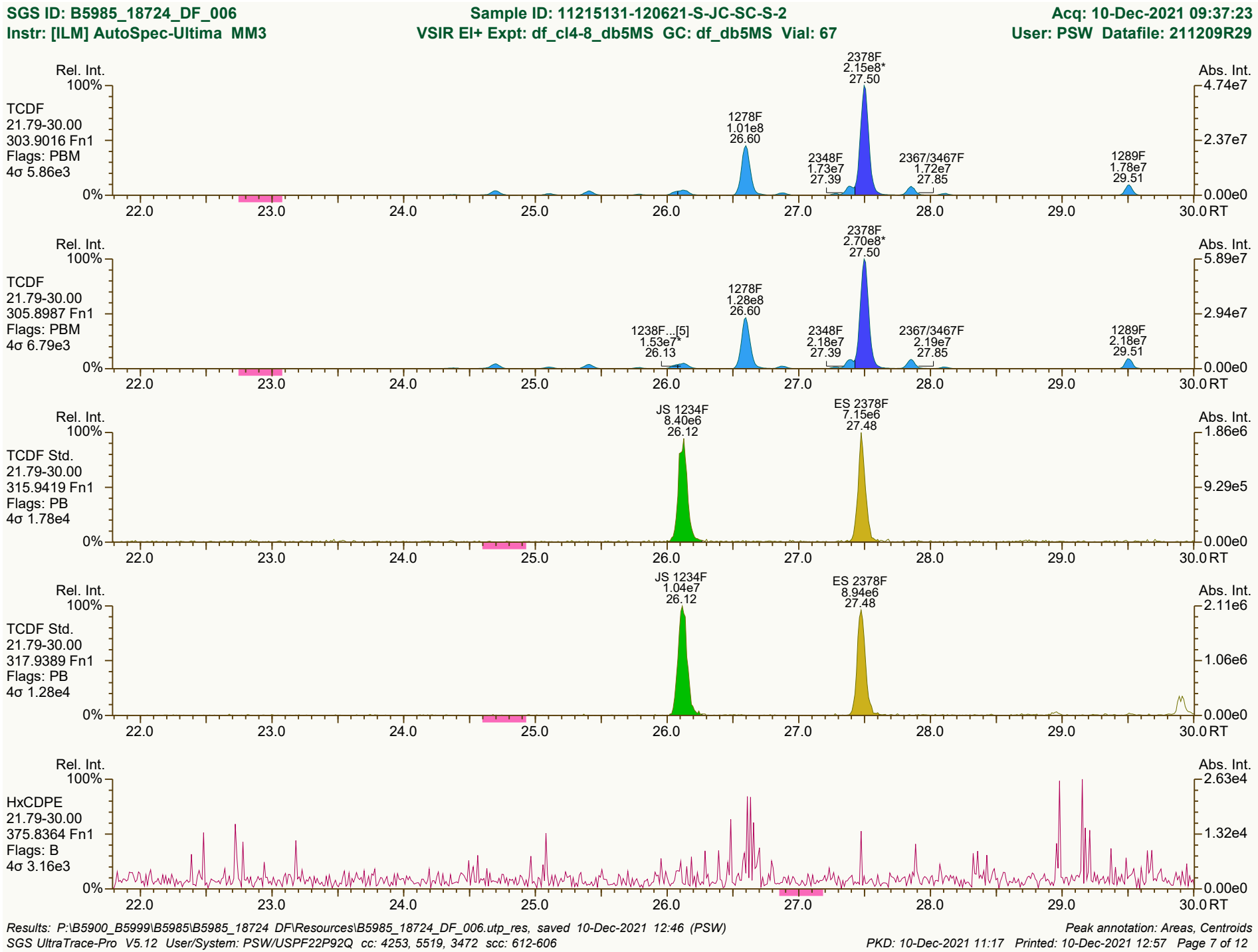


Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_006.utp_res, saved 10-Dec-2021 12:46 (PSW) | *Peak annotation: Areas, Centroids*

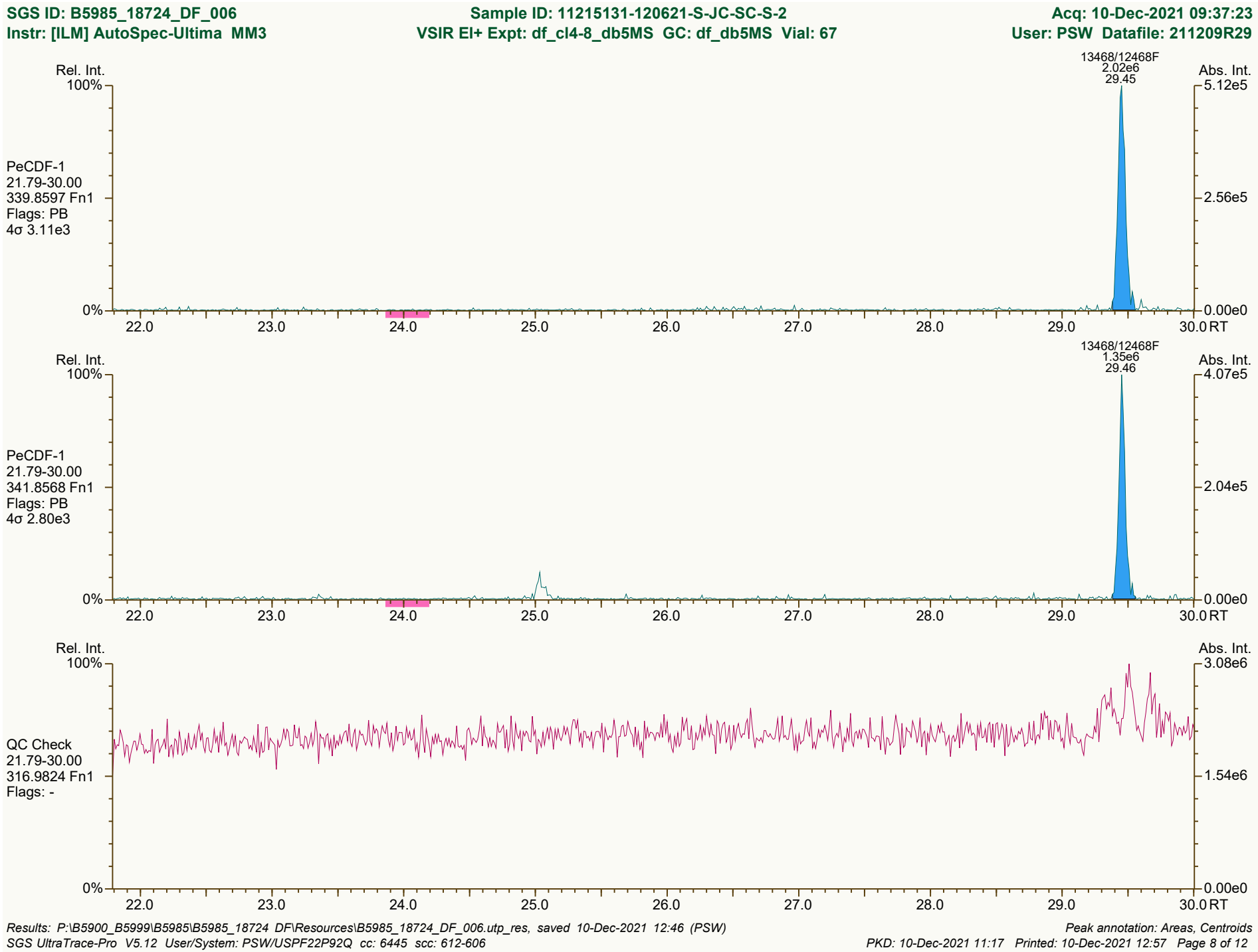
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6849, 0490 scc: 612-606 | *PKD: 10-Dec-2021 11:17 Printed: 10-Dec-2021 12:57 Page 5 of 12*


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 7.22e3
0%
OCDD
1.47e8
43.11
Abs. Int.
4.66e7
2.33e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 7.83e3
0%
OCDD
1.63e8
43.11
Abs. Int.
5.15e7
2.58e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 4.18e3
0%
ES OCDD
4.98e6*
43.09
Abs. Int.
1.56e6
7.81e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 6.66e3
0%
ES OCDD
5.63e6*
43.09
Abs. Int.
1.77e6
8.86e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.92e6
2.46e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

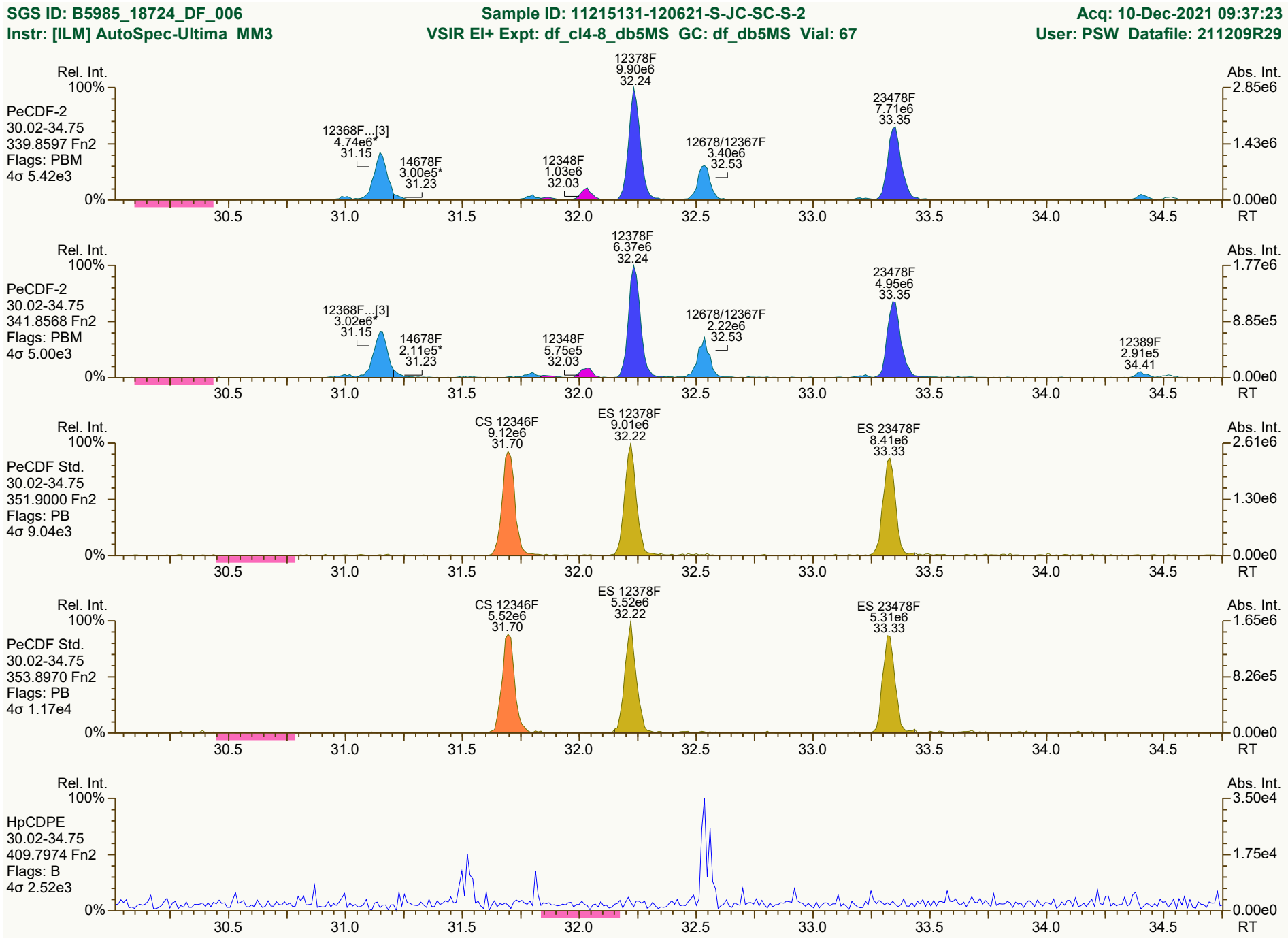
SGS ID: B5985_18724_DF_006 Sample ID: 11215131-120621-S-JC-SC-S-2 Acq: 10-Dec-2021 09:37:23
Instr: [ILM] AutoSpec-Ultima MM3 VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67 User: PSW Datafile: 211209R29

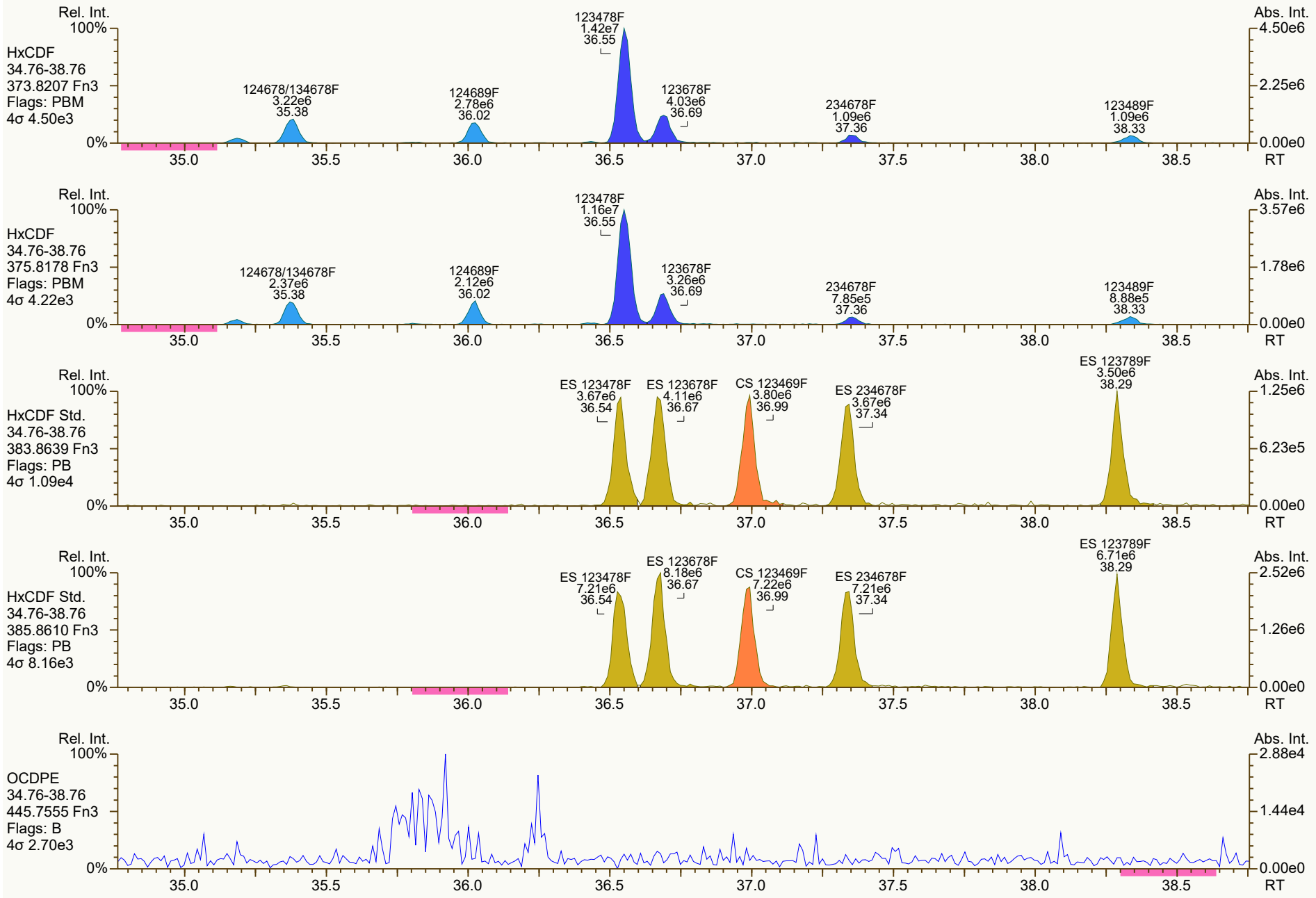


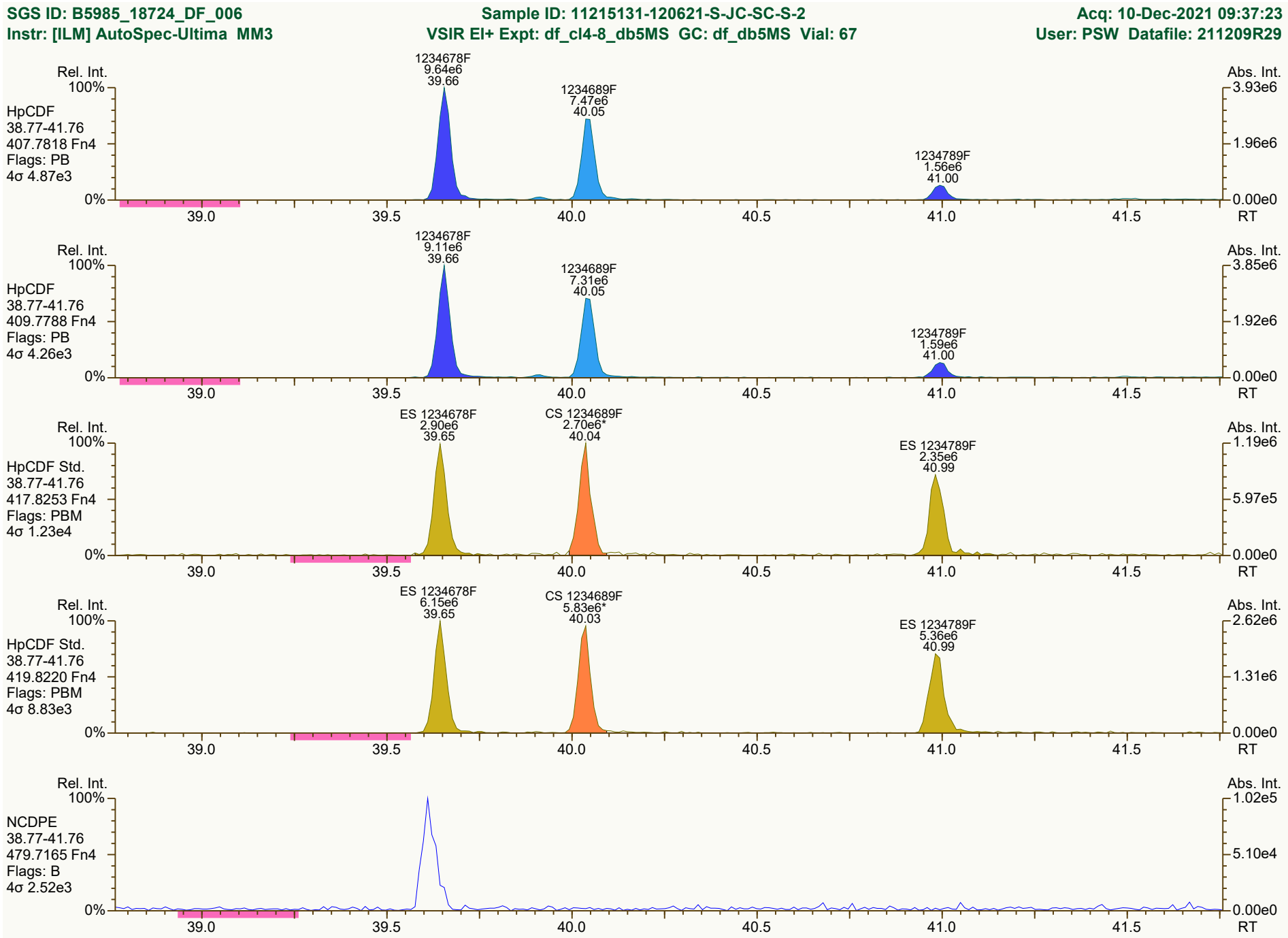
SGS ID: B5985_18724_DF_006 | Sample ID: 11215131-120621-S-JC-SC-S-2 | Acq: 10-Dec-2021 09:37:23
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67 | User: PSW Datafile: 211209R29

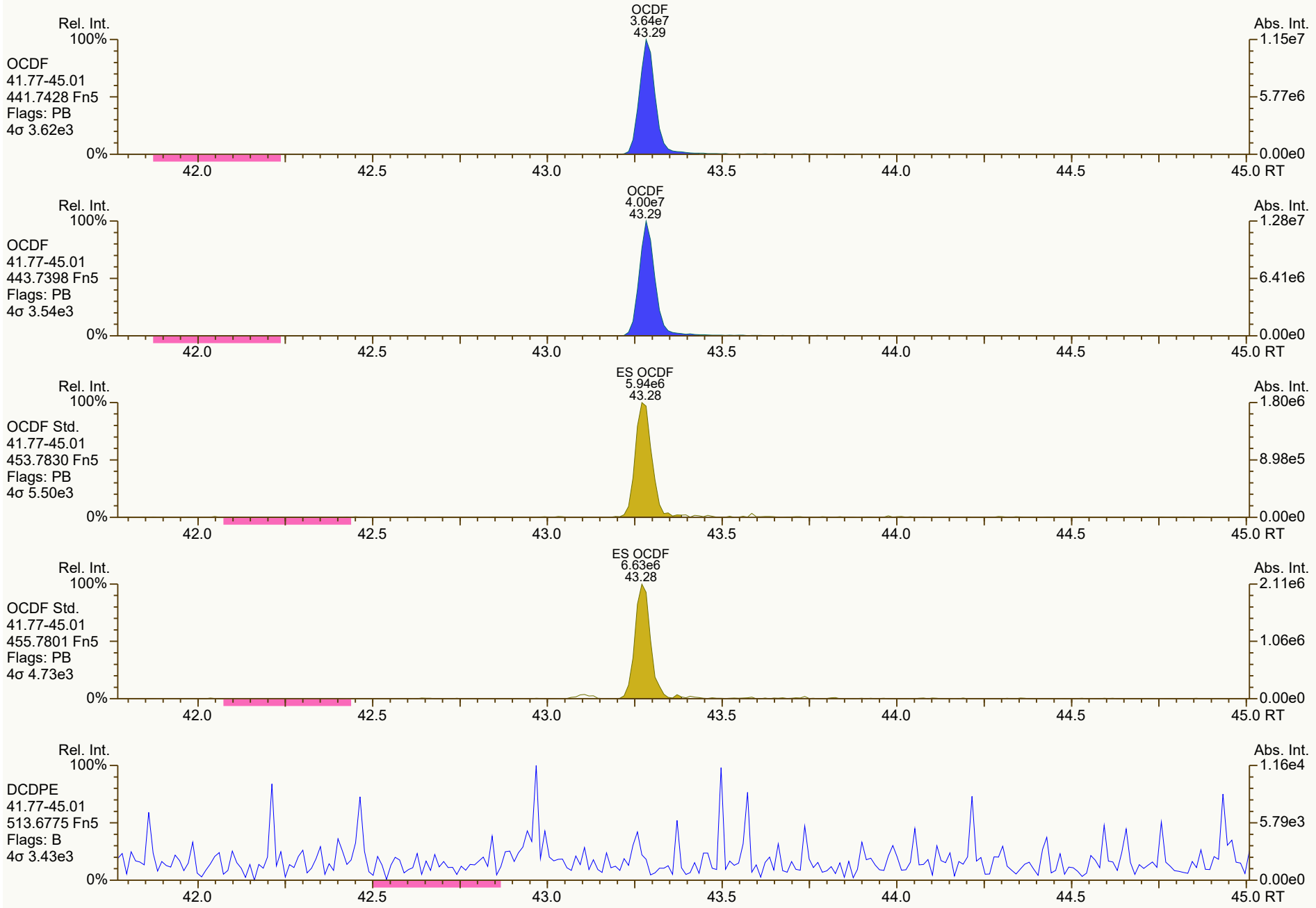


Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_006.utp_res, saved 10-Dec-2021 12:46 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 6445 scc: 612-606 | *PKD: 10-Dec-2021 11:17 Printed: 10-Dec-2021 12:57 Page 8 of 12*


SGS ID: B5985_18724_DF_006
Sample ID: 11215131-120621-S-JC-SC-S-2
Acq: 10-Dec-2021 09:37:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: PSW Datafile: 211209R29
Rel. Int.
Abs. Int.
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 5.42e3
12368F...[3] 4.74e6* 31.15
14678F 3.00e5* 31.23
12348F 1.03e6 32.03
12378F 9.90e6 32.24
12678/12367F 3.40e6 32.53
23478F 7.71e6 33.35
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 5.00e3
12368F...[3] 3.02e6* 31.15
14678F 2.11e5* 31.23
12348F 5.75e5 32.03
12378F 6.37e6 32.24
12678/12367F 2.22e6 32.53
23478F 4.95e6 33.35
12389F 2.91e5 34.41
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 9.04e3
CS 12346F 9.12e6 31.70
ES 12378F 9.01e6 32.22
ES 23478F 8.41e6 33.33
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 1.17e4
CS 12346F 5.52e6 31.70
ES 12378F 5.52e6 32.22
ES 23478F 5.31e6 33.33
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.52e3
100%
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_006.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5310, 2328, 3130 scc: 612-606
PKD: 10-Dec-2021 11:17 Printed: 10-Dec-2021 12:57 Page 9 of 12


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: PBM
4σ 4.50e3
0%
124678/134678F
3.22e6
35.38
124689F
2.78e6
36.02
123478F
1.42e7
36.55
123678F
4.03e6
36.69
234678F
1.09e6
37.36
123489F
1.09e6
38.33
Abs. Int.
4.50e6
2.25e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PBM
4σ 4.22e3
0%
124678/134678F
2.37e6
35.38
124689F
2.12e6
36.02
123478F
1.16e7
36.55
123678F
3.26e6
36.69
234678F
7.85e5
37.36
123489F
8.88e5
38.33
Abs. Int.
3.57e6
1.78e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: PB
4σ 1.09e4
0%
ES 123478F
3.67e6
36.54
ES 123678F
4.11e6
36.67
CS 123469F
3.80e6
36.99
ES 234678F
3.67e6
37.34
ES 123789F
3.50e6
38.29
Abs. Int.
1.25e6
6.23e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: PB
4σ 8.16e3
0%
ES 123478F
7.21e6
36.54
ES 123678F
8.18e6
36.67
CS 123469F
7.22e6
36.99
ES 234678F
7.21e6
37.34
ES 123789F
6.71e6
38.29
Abs. Int.
2.52e6
1.26e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 2.70e3
0%
Abs. Int.
2.88e4
1.44e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


SGS ID: B5985_18724_DF_006
Sample ID: 11215131-120621-S-JC-SC-S-2
Acq: 10-Dec-2021 09:37:23
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67
User: PSW Datafile: 211209R29
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.87e3
1234678F
9.64e6
39.66
1234689F
7.47e6
40.05
1234789F
1.56e6
41.00
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 4.26e3
1234678F
9.11e6
39.66
1234689F
7.31e6
40.05
1234789F
1.59e6
41.00
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 1.23e4
ES 1234678F
2.90e6
39.65
CS 1234689F
2.70e6*
40.04
ES 1234789F
2.35e6
40.99
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 8.83e3
ES 1234678F
6.15e6
39.65
CS 1234689F
5.83e6*
40.03
ES 1234789F
5.36e6
40.99
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.52e3
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_006.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5242, 6850, 6483 scc: 612-606
PKD: 10-Dec-2021 11:17 Printed: 10-Dec-2021 12:57 Page 11 of 12


OCDF
3.64e7
43.29
Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 3.62e3
0%
Abs. Int.
1.15e7
5.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.00e7
43.29
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 3.54e3
0%
Abs. Int.
1.28e7
6.41e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
5.94e6
43.28
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 5.50e3
0%
Abs. Int.
1.80e6
8.98e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
6.63e6
43.28
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.73e3
0%
Abs. Int.
2.11e6
1.06e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 3.43e3
0%
Abs. Int.
1.16e4
5.79e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5985_18724_DF_007 **Acq'd:** 10 Dec 2021 10:24 PSW **Wt/Vol:** 10.19 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-3 **UTP:** 10-Dec-2021 12:46:24 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 123-415-VMJ

Datafile: 211209R30 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.42	E	1.0008	1.0008	0	4.93E+08	0.78	Y	1.34	5,840	6597.944	0.889
12378-PeCDD	33.73		1.0005	1.0007	+0.4	4.00E+06	1.53	Y	1.06	69.7	9002.96	1.36
123478-HxCDD	37.58		1.0003	1.0003	0	4.85E+05	1.41	Y	1.06	9.76	8889.949	1.55
123678-HxCDD	37.70		1.0033	1.0035	+0.5	2.79E+06	1.27	Y	1.08	54.1	8889.949	1.4
123789-HxCDD	37.99		1.0110	1.0113	+0.7	1.14E+06	1.40	Y	1.02	20.8	8889.949	1.31
1234678-HpCDD	40.58		1.0003	1.0003	0	7.87E+07	1.05	Y	0.97	1,770	9910.187	1.5
OCDD	43.14	E	1.0003	1.0003	0	1.03E+09	0.90	Y	1.07	27,600	14541.623	3.34
2378-TCDF	27.56	E	1.0006	1.0009	+0.5	1.74E+09	0.80	Y	0.96	20,600	9029.976	1.23
12378-PeCDF	32.29		1.0006	1.0005	-0.2	6.96E+07	1.57	Y	0.95	978	7778.086	1.06
23478-PeCDF	33.41		1.0006	1.0008	+0.4	4.61E+07	1.56	Y	0.94	688	7778.086	1.23
123478-HxCDF	36.60		1.0004	1.0004	0	1.14E+08	1.26	Y	1.23	1,660	10548.938	1.36
123678-HxCDF	36.74		1.0004	1.0004	0	3.04E+07	1.26	Y	1.13	417	10548.938	1.19
234678-HxCDF	37.40		1.0005	1.0004	-0.2	6.23E+06	1.22	Y	1.15	93.4	10548.938	1.39
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	10548.938	1.41
1234678-HpCDF	39.69		1.0003	1.0003	0	4.46E+07	1.03	Y	1.36	686	9049.075	0.844
1234789-HpCDF	41.03		1.0003	1.0002	-0.2	1.04E+07	1.04	Y	1.30	190	9049.075	1.08
OCDF	43.32		1.0002	1.0003	+0.3	3.20E+07	0.90	Y	1.03	778	10929.025	2.13

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.40	1.0237	1.0234	-0.5	1.23E+07	0.80	Y	1.03	80
ES 12378-PeCDD	33.70	1.2158	1.2148	-2.0	1.06E+07	1.58	Y	1.03	69.1
ES 123478-HxCDD	37.57	0.9920	0.9918	-0.5	9.23E+06	1.25	Y	0.99	79.3
ES 123678-HxCDD	37.68	0.9949	0.9948	-0.2	9.36E+06	1.32	Y	0.97	82.2
ES 123789-HxCDD	37.98	1.0026	1.0027	+0.2	1.06E+07	1.23	Y	1.12	80.7
ES 1234678-HpCDD	40.57	1.0713	1.0711	-0.5	8.97E+06	0.99	Y	0.99	77.4
ES OCDD	43.12	1.1385	1.1384	-0.3	1.37E+07	0.96	Y	0.78	75.6
ES 2378-TCDF	27.54	1.0519	1.0517	-0.3	1.73E+07	0.80	Y	1.08	75.6
ES 12378-PeCDF	32.28	1.2331	1.2327	-0.8	1.48E+07	1.62	Y	0.93	75.1
ES 23478-PeCDF	33.38	1.2754	1.2749	-1.0	1.40E+07	1.68	Y	0.92	71.9
ES 123478-HxCDF	36.58	0.9656	0.9658	+0.4	1.09E+07	0.51	Y	1.14	81.8
ES 123678-HxCDF	36.72	0.9693	0.9694	+0.2	1.27E+07	0.52	Y	1.30	83.3
ES 234678-HxCDF	37.39	0.9869	0.9870	+0.2	1.14E+07	0.56	Y	1.20	80.8
ES 123789-HxCDF	38.33	1.0121	1.0120	-0.2	1.08E+07	0.54	Y	1.14	81
ES 1234678-HpCDF	39.68	1.0478	1.0476	-0.5	9.39E+06	0.45	Y	0.95	84.5
ES 1234789-HpCDF	41.02	1.0832	1.0829	-0.7	8.26E+06	0.44	Y	0.85	83.4
ES OCDF	43.30	1.1434	1.1432	-0.5	1.57E+07	0.86	Y	0.93	72.6

Lab ID: B5985_18724_DF_007 **Acq'd:** 10 Dec 2021 10:24 PSW **Wt/Vol:** 10.19 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-3 **UTP:** 10-Dec-2021 12:46:24 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 123-415-VMJ

Datafile: 211209R30 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.75		-	-	-	1.49E+07	0.82	Y	-	-
JS 1234-TCDF	26.18		-	-	-	2.11E+07	0.81	Y	-	-
JS 123467-HxCDD	37.88		-	-	-	5.85E+06	1.26	Y	-	-
CS 37Cl-2378-TCDD	28.42		1.0245	1.0242	-0.5	5.15E+06	n/a	-	1.31	66
CS 12347-PeCDD	33.21		1.1978	1.1970	-1.6	9.27E+06	1.55	Y	0.89	69.8
CS 12346-PeCDF	31.76		1.2130	1.2129	-0.2	1.40E+07	1.60	Y	0.87	76.3
CS 123469-HxCDF	37.04		0.9775	0.9778	+0.7	1.15E+07	0.56	Y	1.09	90.1
CS 1234689-HpCDF	40.07		1.0580	1.0579	-0.2	8.88E+06	0.45	Y	0.86	87.8
~~SS 37Cl-2378-TCDD~~	~~28.42~~		~~1.0245~~	~~1.0242~~	~~-0.5~~	~~5.15E+06~~	~~n/a~~		~~1.26~~	~~82.9~~ Not used in this project.
~~SS 12347-PeCDD~~	~~33.21~~		~~1.1978~~	~~1.1970~~	~~-1.6~~	~~9.27E+06~~	~~1.55~~	~~Y~~	~~0.86~~	~~101~~ CL 10Dec21
~~SS 12346-PeCDF~~	~~31.76~~		~~1.2130~~	~~1.2129~~	~~-0.2~~	~~1.40E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~102~~
~~SS 123469-HxCDF~~	~~37.04~~		~~0.9775~~	~~0.9778~~	~~+0.7~~	~~1.15E+07~~	~~0.56~~	~~Y~~	~~0.84~~	~~108~~
~~SS 1234689-HpCDF~~	~~40.07~~		~~1.0580~~	~~1.0579~~	~~-0.2~~	~~8.88E+06~~	~~0.45~~	~~Y~~	~~0.91~~	~~104~~

Totals	Conc	EMPC
Total TCDD	6530	6550
Total PeCDD	89.4	118
Total HxCDD	435	435
Total HpCDD	3870	3870
Total Tetra-Octa Dioxins	38500	38600
Total TCDF	40,400	40400
Total PeCDF	2,770	2770
Total HxCDF	2,780	2780
Total HpCDF	1,440	1440
Total Tetra-Octa Furans	48,100	48100
Total Tetra-Octa Dioxins & Furans	86600	86700

Lab ID: B5985_18724_DF_007 **Acq'd:** 10 Dec 2021 10:24 PSW **Wt/Vol:** 10.19 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-3 **UTP:** 10-Dec-2021 12:46:24 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 123-415-VMJ

Datafile: 211209R30 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.80		0.8726	0.8732	+0.9	1.14E+06	0.88	Y	1.34	13.6	6597.944	0.889
1379-TCDD	25.14		0.8851	0.8853	+0.3	4.20E+05	0.71	Y	1.34	4.98	6597.944	0.889
1369-TCDD	NotFnd		0.9002						1.34		6597.944	0.889
1469-TCDD	NotFnd		0.9275						1.34		6597.944	0.889
1247/1246/1248/1249-TCDD	26.59	EMPC	0.9361	0.9363	+0.3	8.66E+05	1.06	N	1.34	10.3	6597.944	0.889
1378-TCDD	26.77		0.9427	0.9428	+0.2	1.38E+06	0.74	Y	1.34	16.4	6597.944	0.889
1268-TCDD	NotFnd		0.9498						1.34		6597.944	0.889
1478-TCDD	27.22		0.9584	0.9585	+0.2	1.11E+06	0.78	Y	1.34	13.1	6597.944	0.889
1279-TCDD	NotFnd		0.9644						1.34		6597.944	0.889
1234/1269-TCDD	27.75		0.9766	0.9774	+1.3	1.58E+05	0.70	Y	1.34	1.87	6597.944	0.889
1236-TCDD	27.89		0.9813	0.9822	+1.5	1.33E+05	0.87	Y	1.34	1.58	6597.944	0.889
1237/1238-TCDD	28.12		0.9906	0.9903	-0.5	7.69E+06	0.84	Y	1.34	91.1	6597.944	0.889
1239-TCDD	NotFnd		0.9952						1.34		6597.944	0.889
2378-TCDD	**28.42**	E	**1.0008**	1.0008	**0**	4.93E+08	0.78	Y	**1.34**	**5,840**	**6597.944**	**0.889**
1278-TCDD	28.75		1.0122	1.0125	+0.5	4.54E+07	0.81	Y	1.34	538	6597.944	0.889
1267-TCDD	NotFnd		1.0168						1.34		6597.944	0.889
1289-TCDD	29.36	EMPC	1.0349	1.0340	-1.6	1.58E+06	1.17	N	1.34	18.7	6597.944	0.889
12479/12468-PeCDD	31.25	EMPC	0.9267	0.9272	+0.9	6.92E+05	1.27	N	1.06	12.1	9002.96	1.36
12469-PeCDD	31.78	EMPC	0.9425	0.9429	+0.8	2.43E+05	0.68	N	1.06	4.23	9002.96	1.36
12368-PeCDD	32.32		0.9588	0.9590	+0.4	5.79E+05	1.46	Y	1.06	10.1	9002.96	1.36
12478-PeCDD	32.51	EMPC	0.9643	0.9646	+0.6	5.88E+05	0.56	N	1.06	10.2	9002.96	1.36
12379-PeCDD	32.61		0.9673	0.9677	+0.8	2.58E+05	1.59	Y	1.06	4.49	9002.96	1.36
12369/12467/12489-PeCDD	32.84	J	0.9750	0.9743	-1.4	1.36E+05	1.39	Y	1.06	2.38	9002.96	1.36
12346/12347-PeCDD	33.24		0.9859	0.9861	+0.4	1.60E+05	1.35	Y	1.06	2.79	9002.96	1.36
12378-PeCDD	33.73		**1.0005**	**1.0007**	**+0.4**	**4.00E+06**	**1.53**	**Y**	**1.06**	**69.7**	**9002.96**	**1.36**
12367-PeCDD	NotFnd		1.0032						1.06		9002.96	1.36
12389-PeCDD	34.16	EMPC	1.0135	1.0135	0	1.42E+05	1.92	N	1.06	2.48	9002.96	1.36
124679/124689-HxCDD	35.87		0.9544	0.9549	+1.1	6.86E+06	1.22	Y	1.05	132	8889.949	1.41
123468-HxCDD	36.51		0.9716	0.9719	+0.7	1.08E+06	1.24	Y	1.05	20.7	8889.949	1.41
123679/123689-HxCDD	36.80		0.9793	0.9796	+0.7	9.01E+06	1.28	Y	1.05	173	8889.949	1.41
123469-HxCDD	36.94		0.9829	0.9832	+0.7	8.98E+05	1.22	Y	1.05	17.2	8889.949	1.41
123478-HxCDD	37.58		**1.0003**	**1.0003**	**0**	**4.85E+05**	**1.41**	**Y**	1.06	**9.76**	**8889.949**	**1.55**
123678-HxCDD	37.70		**1.0033**	**1.0035**	**+0.5**	**2.79E+06**	**1.27**	**Y**	1.08	**54.1**	**8889.949**	**1.4**
123467-HxCDD	37.88		1.0084	1.0083	-0.2	4.03E+05	1.32	Y	1.05	7.73	8889.949	1.41
123789-HxCDD	37.99		**1.0110**	**1.0113**	**+0.7**	**1.14E+06**	**1.40**	**Y**	1.02	**20.8**	**8889.949**	**1.31**

Lab ID: B5985_18724_DF_007 **Acq'd:** 10 Dec 2021 10:24 PSW **Wt/Vol:** 10.19 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-SC-S-3 **UTP:** 10-Dec-2021 12:46:24 PSW **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 123-415-VMJ

Datafile: 211209R30 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.94		0.9843	0.9844	+0.2	9.35E+07	1.05	Y	0.97	2,100	9910.187	1.5
1234678-HpCDD	**40.58**		**1.0003**	**1.0003**	**0**	**7.87E+07**	**1.05**	**Y**	**0.97**	**1,770**	**9910.187**	**1.5**
OCDD	**43.14**	**E**	**1.0003**	**1.0003**	**0**	**1.03E+09**	**0.90**	**Y**	**1.07**	**27,600**	**14541.623**	**3.34**
OCDD-a	43.13	E	1.0001	1.0002	+0.3	6.29E+07	2.46	Y	0.07	27,200	8469.627	31.5
1368-TCDF	22.67		0.8230	0.8230	0	3.31E+05	0.88	Y	0.96	3.92	9029.976	1.23
1468-TCDF	23.27		0.8443	0.8449	+0.8	2.43E+06	0.76	Y	0.96	28.7	9029.976	1.23
2468-TCDF	23.90		0.8672	0.8679	+1.0	3.01E+06	0.85	Y	0.96	35.6	9029.976	1.23
1346/1246-TCDF	24.34		0.8802	0.8838	+5.3	2.28E+06	0.75	Y	0.96	27	9029.976	1.23
1347/1378/1247-TCDF	24.45		0.8855	0.8879	+3.5	1.11E+07	0.79	Y	0.96	132	9029.976	1.23
1348-TCDF	24.66		0.8952	0.8956	+0.6	3.84E+06	0.80	Y	0.96	45.4	9029.976	1.23
1248/1367/1379-TCDF	24.78		0.9000	0.8998	-0.3	5.01E+07	0.80	Y	0.96	593	9029.976	1.23
1268-TCDF	25.17		0.9136	0.9141	+0.8	2.09E+07	0.80	Y	0.96	247	9029.976	1.23
1467-TCDF	25.30		0.9185	0.9187	+0.3	4.42E+06	0.76	Y	0.96	52.2	9029.976	1.23
1478-TCDF	25.48		0.9247	0.9251	+0.6	5.38E+07	0.80	Y	0.96	637	9029.976	1.23
1369/1237-TCDF	25.85		0.9381	0.9387	+0.9	1.60E+07	0.81	Y	0.96	190	9029.976	1.23
2467-TCDF	25.96		0.9427	0.9427	0	2.56E+06	0.82	Y	0.96	30.3	9029.976	1.23
2368-TCDF	26.10		0.9484	0.9479	-0.8	3.10E+07	0.77	Y	0.96	367	9029.976	1.23
1238/1234/1678/1469/1236-TCDF	26.19	E	0.9517	0.9509	-1.3	1.04E+08	0.79	Y	0.96	1,240	9029.976	1.23
1278-TCDF	26.66	E	0.9682	0.9681	-0.2	8.46E+08	0.79	Y	0.96	10,000	9029.976	1.23
1349-TCDF	NotFnd		0.9725						0.96		9029.976	1.23
1267-TCDF	26.94		0.9782	0.9781	-0.2	3.87E+07	0.81	Y	0.96	458	9029.976	1.23
2346/1249-TCDF	27.12		0.9846	0.9849	+0.5	5.61E+06	0.84	Y	0.96	66.4	9029.976	1.23
2347/1279-TCDF	27.33		0.9926	0.9923	-0.5	1.90E+07	0.75	Y	0.96	225	9029.976	1.23
2348-TCDF	27.44	E	0.9966	0.9966	0	1.42E+08	0.79	Y	0.96	1,670	9029.976	1.23
2378-TCDF	**27.56**	E	**1.0006**	**1.0009**	**+0.5**	**1.74E+09**	**0.80**	**Y**	**0.96**	**20,600**	**9029.976**	**1.23**
2367/3467-TCDF	27.91	E	1.0139	1.0136	-0.5	1.45E+08	0.79	Y	0.96	1,720	9029.976	1.23
1269-TCDF	28.16		1.0226	1.0226	0	2.30E+07	0.83	Y	0.96	272	9029.976	1.23
1239-TCDF	28.42		1.0322	1.0320	-0.3	3.30E+06	0.79	Y	0.96	39	9029.976	1.23
1289-TCDF	29.57	E	1.0729	1.0739	+1.8	1.44E+08	0.81	Y	0.96	1,700	9029.976	1.23
13468/12468-PeCDF	29.53		0.9135	0.9148	+2.3	7.53E+06	1.55	Y	0.94	109	6645.189	0.978
13678/13467/12467-PeCDF	31.06		0.9612	0.9622	+1.9	1.53E+06	1.68	Y	0.94	22.1	7778.086	1.14
12368/13478/12478-PeCDF	31.21		0.9661	0.9670	+1.7	3.16E+07	1.55	Y	0.94	458	7778.086	1.14
14678-PeCDF	31.32		0.9693	0.9703	+1.9	8.62E+05	1.57	Y	0.94	12.5	7778.086	1.14
13479-PeCDF	NotFnd		0.9723						0.94		7778.086	1.14
13469/12479-PeCDF	31.57		0.9799	0.9781	-3.4	7.71E+05	1.58	Y	0.94	11.2	7778.086	1.14
12346-PeCDF	31.76	J	0.9842	0.9841	-0.2	1.50E+05	1.73	Y	0.94	2.17	7778.086	1.14

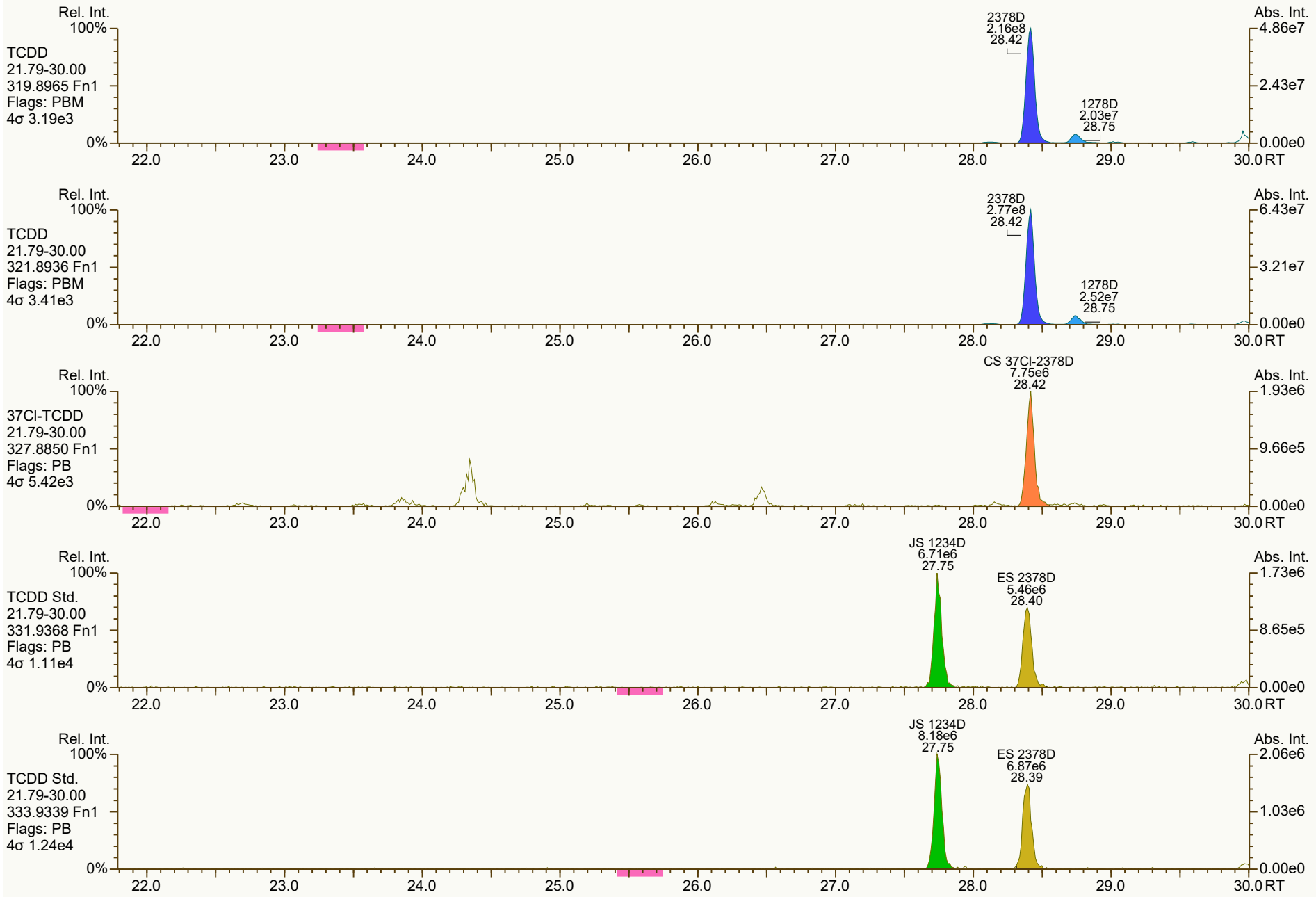
Lab ID: B5985_18724_DF_007 **Acq'd: 10 Dec 2021 10:24 PSW** **Wt/Vol: 10.19 g** **ICAL: MM3_DF_10272021_27JUL2021**

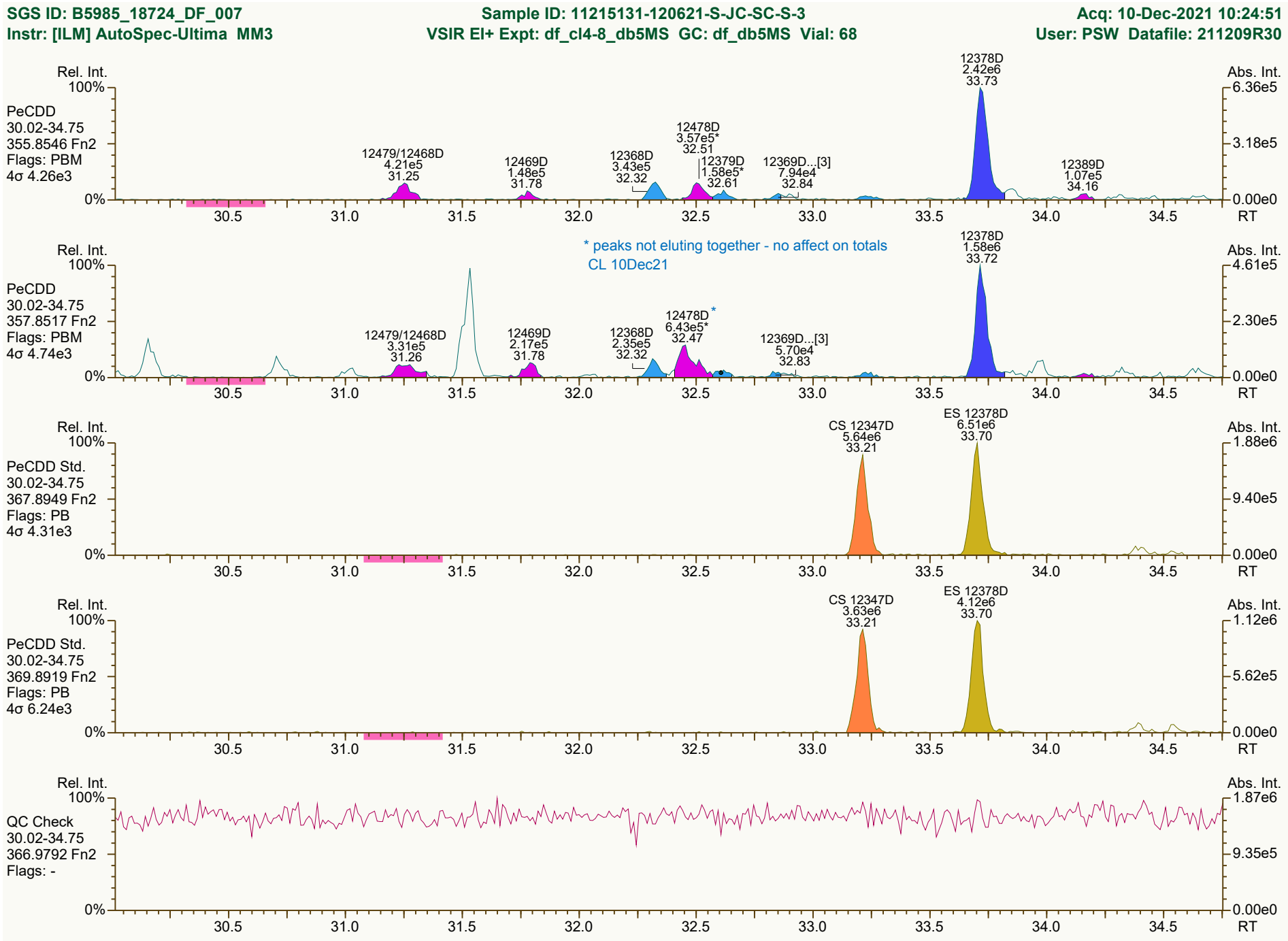
Client ID: 11215131-120621-S-JC-SC-S-3 **UTP: 10-Dec-2021 12:46:24 PSW** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 123-415-VMJ**

Datafile: 211209R30 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

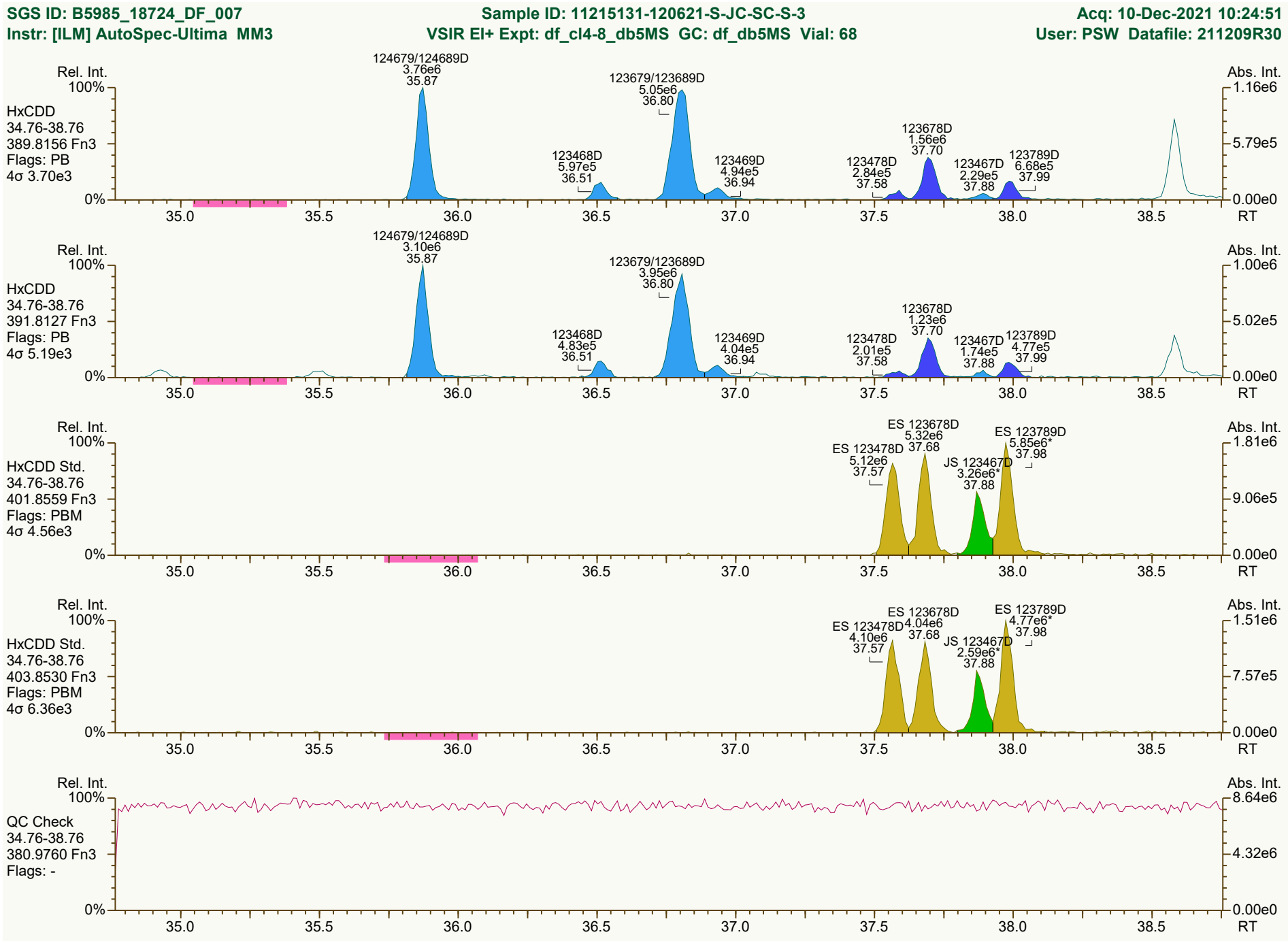
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.86		0.9868	0.9870	+0.4	2.00E+06	1.45	Y	0.94	29	7778.086	1.14
12347-PeCDF	31.94		0.9893	0.9895	+0.4	1.02E+06	1.60	Y	0.94	14.7	7778.086	1.14
12348-PeCDF	32.09		0.9941	0.9941	0	6.18E+06	1.60	Y	0.94	89.5	7778.086	1.14
12378-PeCDF	**32.29**		**1.0006**	**1.0005**	**-0.2**	**6.96E+07**	**1.57**	**Y**	**0.95**	**978**	**7778.086**	**1.06**
12678/12367-PeCDF	32.58		1.0090	1.0095	+1.0	2.08E+07	1.52	Y	0.94	300	7778.086	1.14
12379-PeCDF	NotFnd		1.0143						0.94		7778.086	1.14
12679-PeCDF	NotFnd		0.9929						0.94		7778.086	1.14
23467/12369-PeCDF	33.26		0.9966	0.9962	-0.8	1.01E+06	1.52	Y	0.94	14.6	7778.086	1.14
23478-PeCDF	**33.41**		**1.0006**	**1.0008**	**+0.4**	**4.61E+07**	**1.56**	**Y**	**0.94**	**688**	**7778.086**	**1.23**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7778.086	1.14
12349-PeCDF	NotFnd		1.0102						0.94		7778.086	1.14
12389-PeCDF	34.45		1.0325	1.0321	-0.8	2.63E+06	1.51	Y	0.94	38.1	7778.086	1.14
123468-HxCDF	35.24		0.9628	0.9632	+0.8	2.74E+06	1.25	Y	1.16	40.4	10548.938	1.33
124678/134678-HxCDF	35.43		0.9683	0.9685	+0.4	1.62E+07	1.22	Y	1.16	240	10548.938	1.33
134679-HxCDF	NotFnd		0.9746						1.16		10548.938	1.33
124679-HxCDF	35.85		0.9798	0.9800	+0.4	4.55E+05	1.19	Y	1.16	6.72	10548.938	1.33
124689-HxCDF	36.07		0.9859	0.9860	+0.2	1.26E+07	1.20	Y	1.16	186	10548.938	1.33
123467-HxCDF	36.48		0.9972	0.9971	-0.2	7.92E+05	1.33	Y	1.16	11.7	10548.938	1.33
123478-HxCDF	**36.60**		**1.0004**	**1.0004**	**0**	**1.14E+08**	**1.26**	**Y**	**1.23**	**1,660**	**10548.938**	**1.36**
123678-HxCDF	**36.74**		**1.0004**	**1.0004**	**0**	**3.04E+07**	**1.26**	**Y**	**1.13**	**417**	**10548.938**	**1.19**
123479-HxCDF	NotFnd		1.0049						1.16		10548.938	1.33
123469-HxCDF	NotFnd		1.0088						1.16		10548.938	1.33
123679-HxCDF	NotFnd		0.9943						1.16		10548.938	1.33
234678-HxCDF	**37.40**		**1.0005**	**1.0004**	**-0.2**	**6.23E+06**	**1.22**	**Y**	**1.15**	**93.4**	**10548.938**	**1.39**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		10548.938	1.33
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**10548.938**	**1.41**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.37		1.0007	1.0011	+0.9	8.32E+06	1.28	Y	1.16	123	10548.938	1.33
1234678-HpCDF	**39.69**		**1.0003**	**1.0003**	**0**	**4.46E+07**	**1.03**	**Y**	**1.36**	**686**	**9049.075**	**0.844**
1234679-HpCDF	39.94		1.0067	1.0066	-0.2	7.44E+05	1.01	Y	1.33	12.4	9049.075	0.953
1234689-HpCDF	40.08		1.0100	1.0101	+0.2	3.33E+07	1.05	Y	1.33	557	9049.075	0.953
1234789-HpCDF	**41.03**		**1.0003**	**1.0002**	**-0.2**	**1.04E+07**	**1.04**	**Y**	**1.30**	**190**	**9049.075**	**1.08**
OCDF	**43.32**		**1.0002**	**1.0003**	**+0.3**	**3.20E+07**	**0.90**	**Y**	**1.03**	**778**	**10929.025**	**2.13**
OCDF-a	43.31	**EMPC**	1.0002	1.0001	-0.3	1.84E+06	2.10	N	0.06	775	10566.536	35.7


Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
4.27e6
2.13e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.87e6
9.35e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
8.64e6
4.32e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
5.70e6
2.85e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.38e6
2.19e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

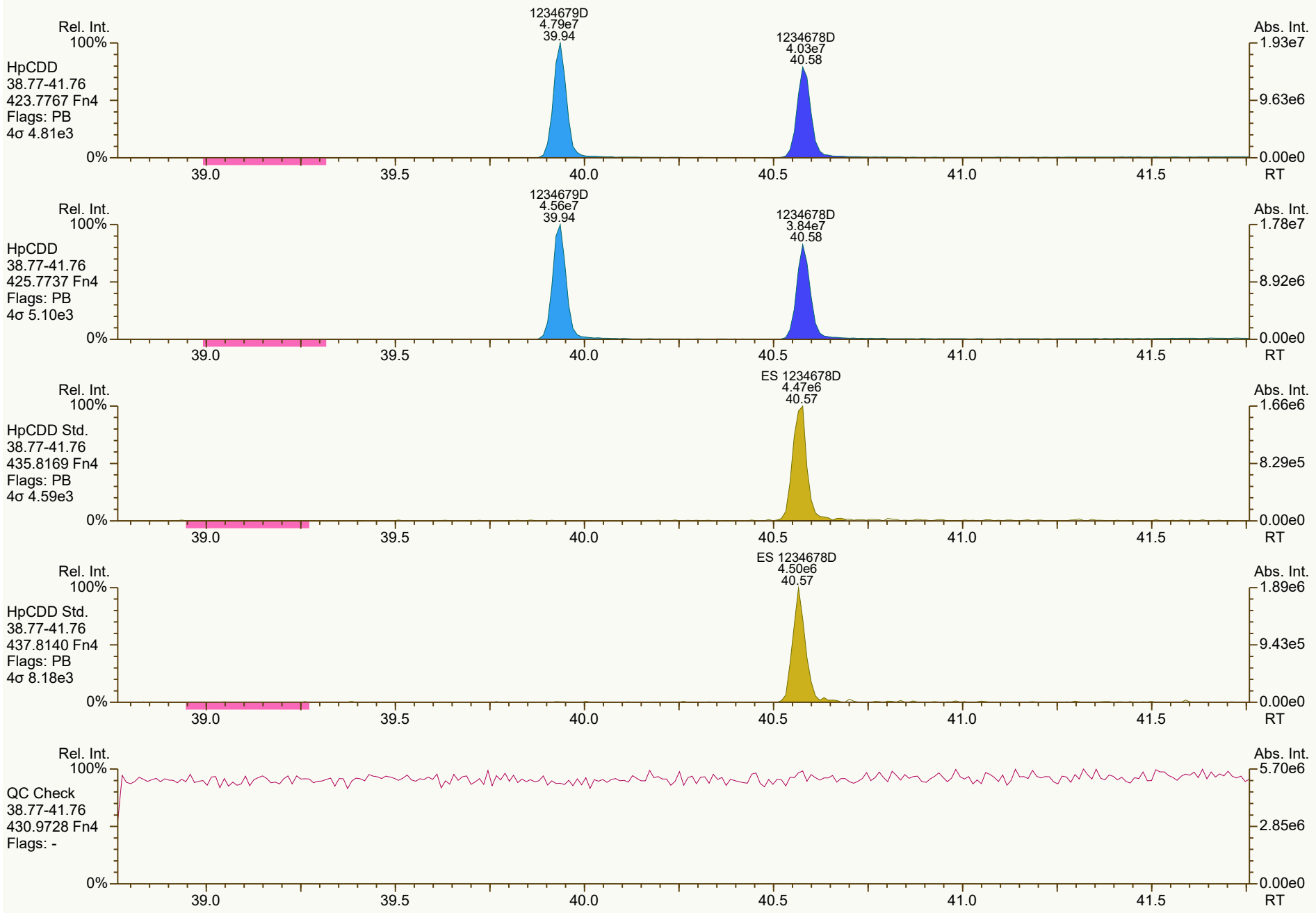

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 3.19e3
0%
2378D
2.16e8
28.42
1278D
2.03e7
28.75
Abs. Int.
4.86e7
2.43e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 3.41e3
0%
2378D
2.77e8
28.42
1278D
2.52e7
28.75
Abs. Int.
6.43e7
3.21e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 5.42e3
0%
CS 37Cl-2378D
7.75e6
28.42
Abs. Int.
1.93e6
9.66e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.11e4
0%
JS 1234D
6.71e6
27.75
ES 2378D
5.46e6
28.40
Abs. Int.
1.73e6
8.65e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 1.24e4
0%
JS 1234D
8.18e6
27.75
ES 2378D
6.87e6
28.39
Abs. Int.
2.06e6
1.03e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

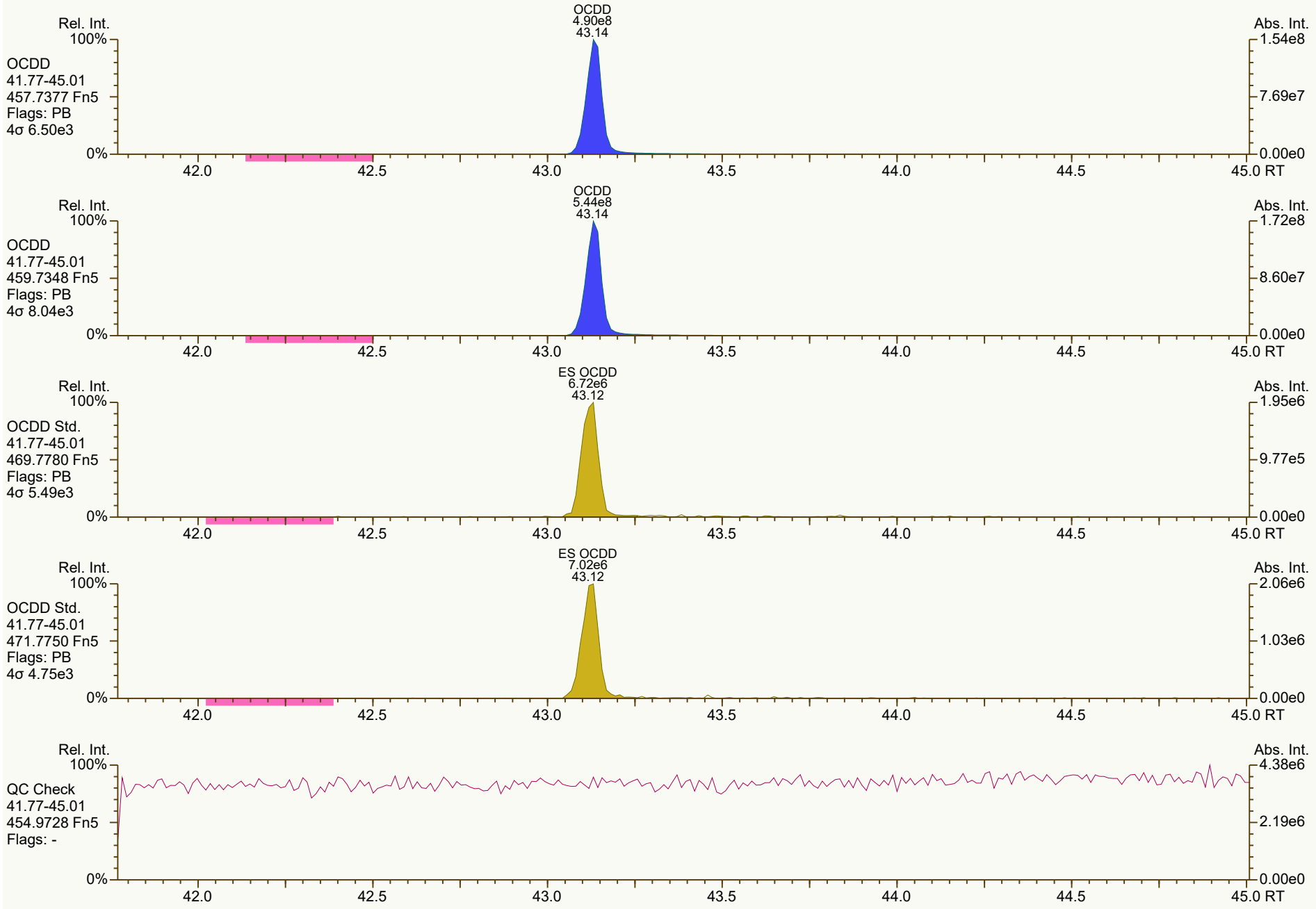

SGS ID: B5985_18724_DF_007
Sample ID: 11215131-120621-S-JC-SC-S-3
Acq: 10-Dec-2021 10:24:51
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 68
User: PSW Datafile: 211209R30
Rel. Int.
Abs. Int.
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 4.26e3
12479/12468D 4.21e5 31.25
12469D 1.48e5 31.78
12368D 3.43e5 32.32
12478D 3.57e5* 32.51
12379D 1.58e5* 32.61
12369D...[3] 7.94e4 32.84
12378D 2.42e6 33.73
12389D 1.07e5 34.16
* peaks not eluting together - no affect on totals
CL 10Dec21
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 4.74e3
12479/12468D 3.31e5 31.26
12469D 2.17e5 31.78
12368D 2.35e5 32.32
12478D * 6.43e5* 32.47
12369D...[3] 5.70e4 32.83
12378D 1.58e6 33.72
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.31e3
CS 12347D 5.64e6 33.21
ES 12378D 6.51e6 33.70
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 6.24e3
CS 12347D 3.63e6 33.21
ES 12378D 4.12e6 33.70
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_007.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9083, 2086 scc: 123-415
PKD: 10-Dec-2021 11:21 Printed: 10-Dec-2021 13:02 Page 3 of 12

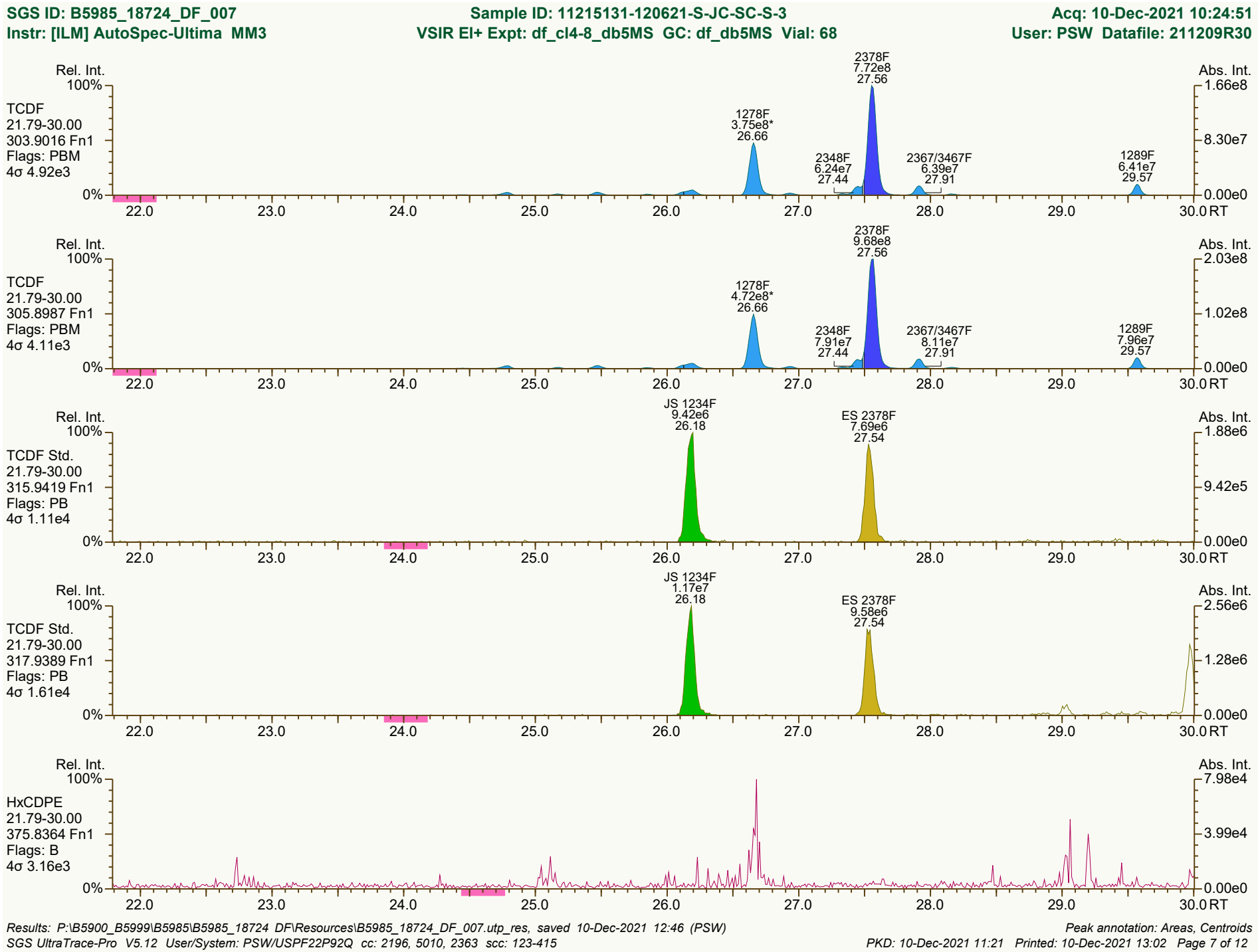
SGS ID: B5985_18724_DF_007 | Sample ID: 11215131-120621-S-JC-SC-S-3 | Acq: 10-Dec-2021 10:24:51
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 68 | User: PSW Datafile: 211209R30



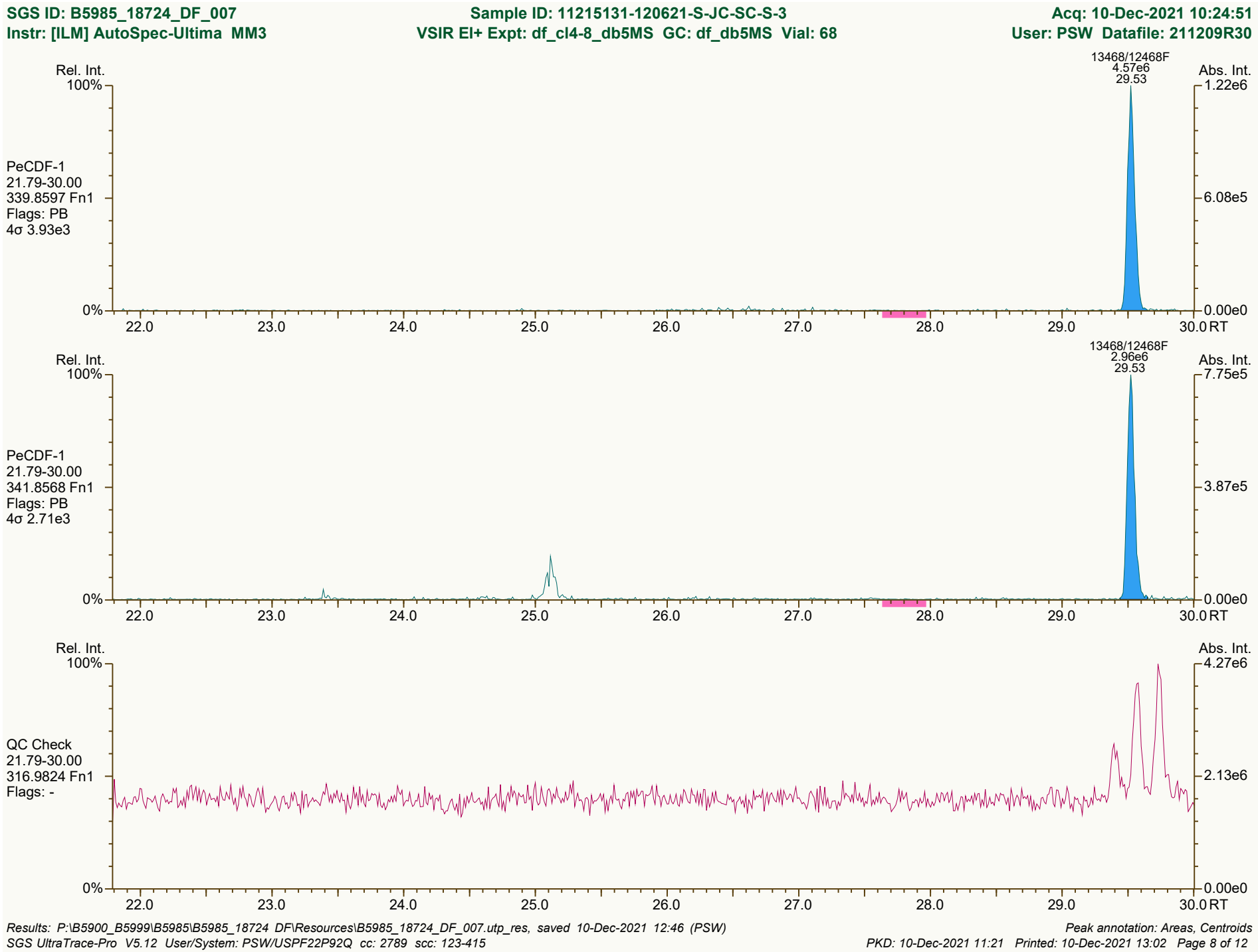
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_007.utp_res, saved 10-Dec-2021 12:46 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8804, 0556 scc: 123-415 | PKD: 10-Dec-2021 11:21 Printed: 10-Dec-2021 13:02 Page 4 of 12


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.81e3
0%
1234679D
4.79e7
39.94
1234678D
4.03e7
40.58
Abs. Int.
1.93e7
9.63e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 5.10e3
0%
1234679D
4.56e7
39.94
1234678D
3.84e7
40.58
Abs. Int.
1.78e7
8.92e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.59e3
0%
ES 1234678D
4.47e6
40.57
Abs. Int.
1.66e6
8.29e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 8.18e3
0%
ES 1234678D
4.50e6
40.57
Abs. Int.
1.89e6
9.43e5
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
5.70e6
2.85e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT

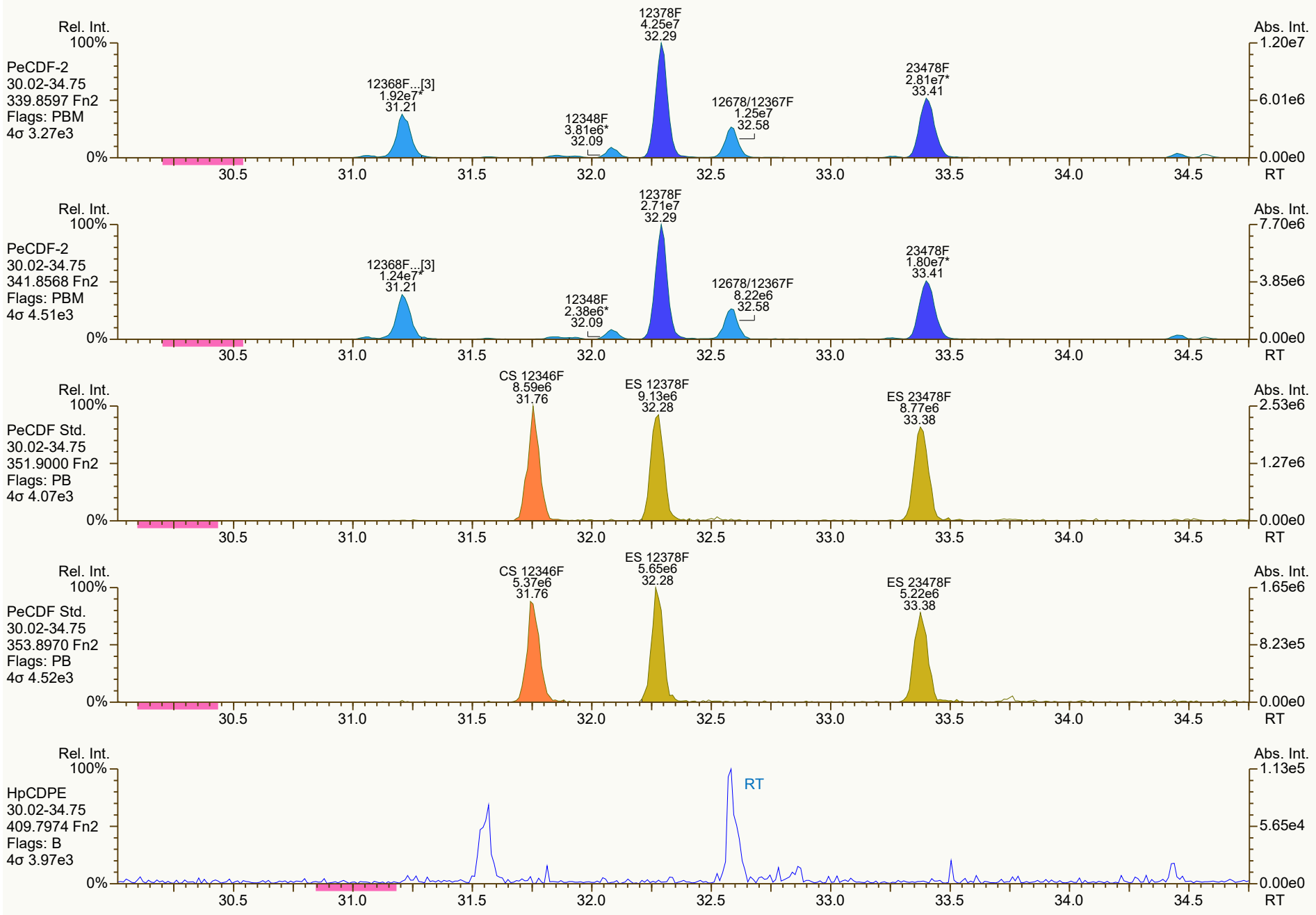

OCDD
4.90e8
43.14
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 6.50e3
0%
Abs. Int.
1.54e8
7.69e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.44e8
43.14
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 8.04e3
0%
Abs. Int.
1.72e8
8.60e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.72e6
43.12
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 5.49e3
0%
Abs. Int.
1.95e6
9.77e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.02e6
43.12
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.75e3
0%
Abs. Int.
2.06e6
1.03e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.38e6
2.19e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

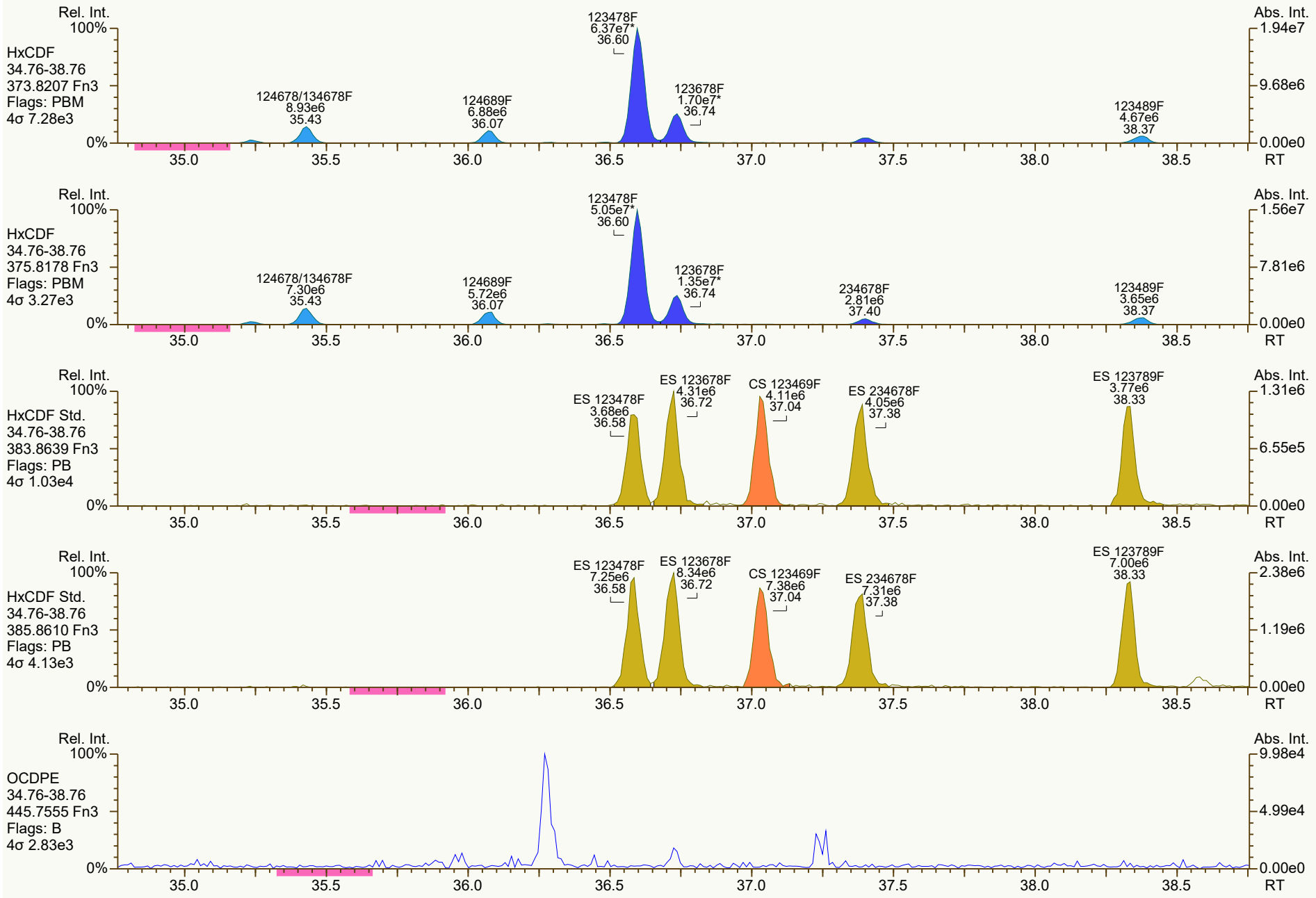

SGS ID: B5985_18724_DF_007
Sample ID: 11215131-120621-S-JC-SC-S-3
Acq: 10-Dec-2021 10:24:51
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 68
User: PSW Datafile: 211209R30
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 4.92e3
1278F
3.75e8*
26.66
2348F
6.24e7
27.44
2378F
7.72e8
27.56
2367/3467F
6.39e7
27.91
1289F
6.41e7
29.57
1.66e8
8.30e7
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 4.11e3
1278F
4.72e8*
26.66
2348F
7.91e7
27.44
2378F
9.68e8
27.56
2367/3467F
8.11e7
27.91
1289F
7.96e7
29.57
2.03e8
1.02e8
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.11e4
JS 1234F
9.42e6
26.18
ES 2378F
7.69e6
27.54
1.88e6
9.42e5
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 1.61e4
JS 1234F
1.17e7
26.18
ES 2378F
9.58e6
27.54
2.56e6
1.28e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.16e3
7.98e4
3.99e4
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_007.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2196, 5010, 2363 scc: 123-415
PKD: 10-Dec-2021 11:21 Printed: 10-Dec-2021 13:02 Page 7 of 12

SGS ID: B5985_18724_DF_007 | Sample ID: 11215131-120621-S-JC-SC-S-3 | Acq: 10-Dec-2021 10:24:51
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 68 | User: PSW Datafile: 211209R30



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_007.utp_res, saved 10-Dec-2021 12:46 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2789 scc: 123-415 | *PKD: 10-Dec-2021 11:21 Printed: 10-Dec-2021 13:02 Page 8 of 12*

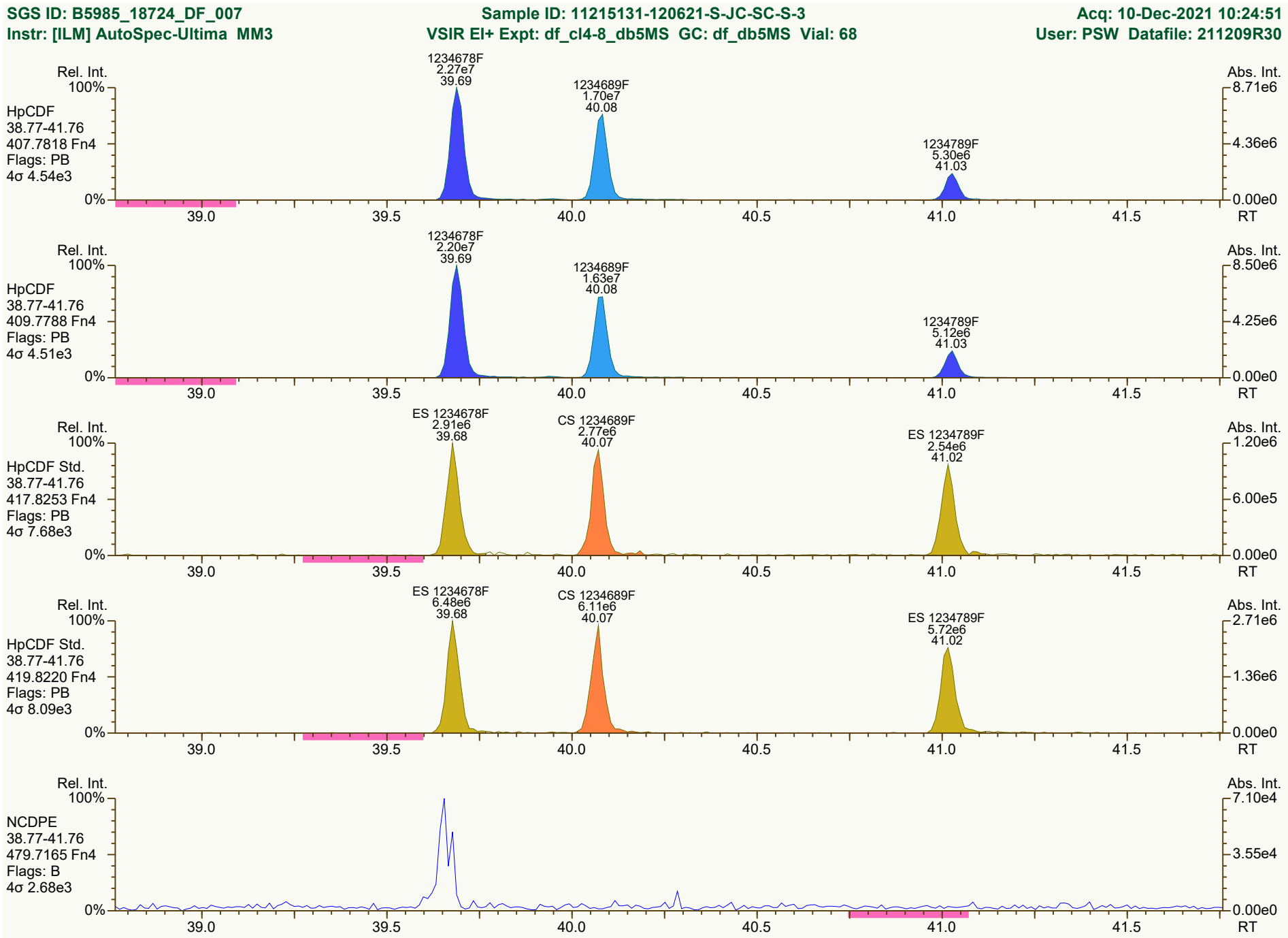

Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 3.27e3
0%
12368F...[3]
1.92e7*
31.21
12348F
3.81e6*
32.09
12378F
4.25e7
32.29
12678/12367F
1.25e7
32.58
23478F
2.81e7*
33.41
Abs. Int.
1.20e7
6.01e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 4.51e3
0%
12368F...[3]
1.24e7*
31.21
12348F
2.38e6*
32.09
12378F
2.71e7
32.29
12678/12367F
8.22e6
32.58
23478F
1.80e7*
33.41
Abs. Int.
7.70e6
3.85e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 4.07e3
0%
CS 12346F
8.59e6
31.76
ES 12378F
9.13e6
32.28
ES 23478F
8.77e6
33.38
Abs. Int.
2.53e6
1.27e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.52e3
0%
CS 12346F
5.37e6
31.76
ES 12378F
5.65e6
32.28
ES 23478F
5.22e6
33.38
Abs. Int.
1.65e6
8.23e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.97e3
0%
RT
Abs. Int.
1.13e5
5.65e4
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT



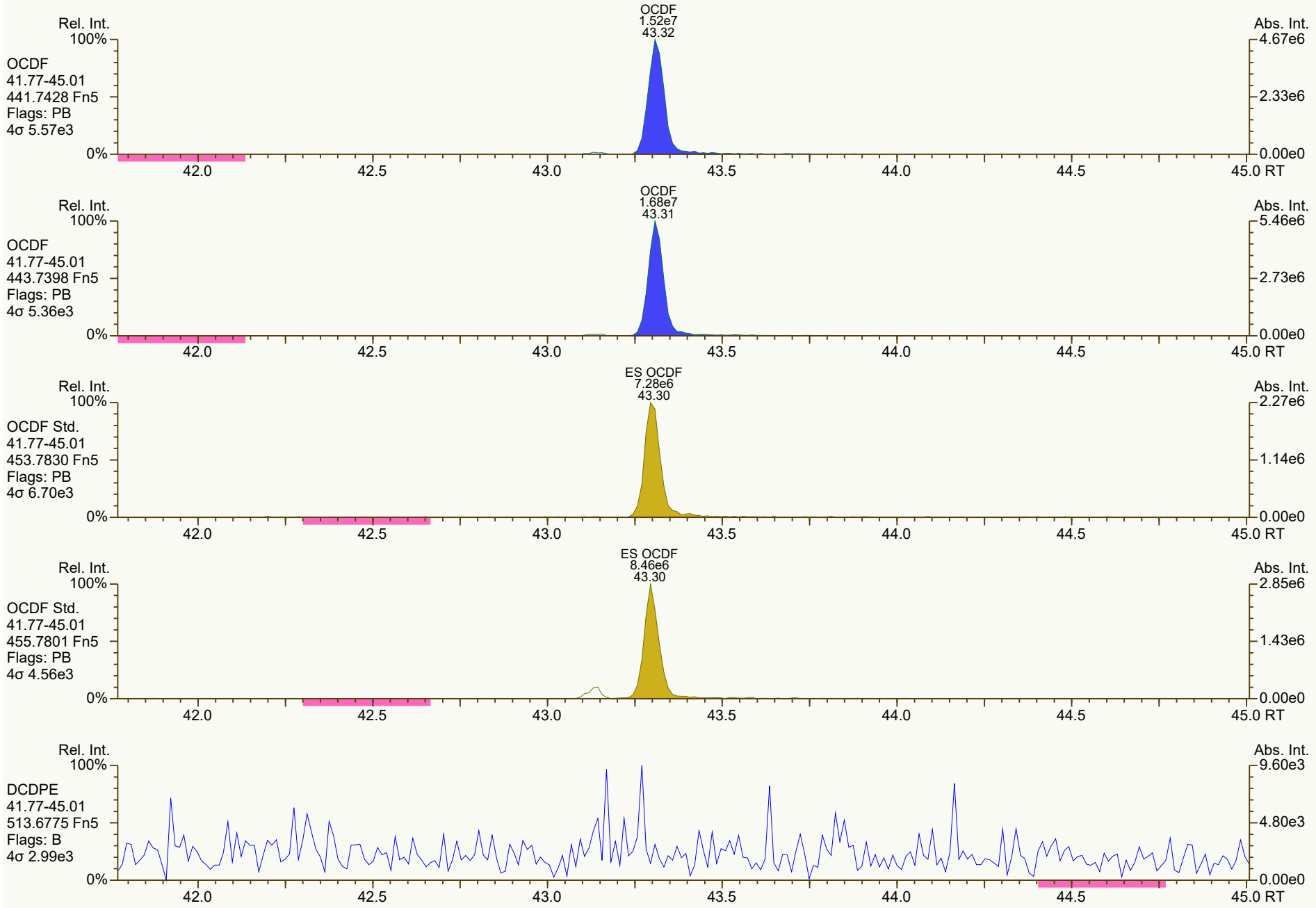
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_007.utp_res, saved 10-Dec-2021 12:46 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8245, 9142, 5432 scc: 123-415 *PKD: 10-Dec-2021 11:21 Printed: 10-Dec-2021 13:02 Page 10 of 12*

SGS ID: B5985_18724_DF_007 | Sample ID: 11215131-120621-S-JC-SC-S-3 | Acq: 10-Dec-2021 10:24:51
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 68 | User: PSW Datafile: 211209R30



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_007.utp_res, saved 10-Dec-2021 12:46 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0362, 3341, 2056 scc: 123-415 | PKD: 10-Dec-2021 11:21 Printed: 10-Dec-2021 13:02 Page 11 of 12


OCDF
1.52e7
43.32
Rel. Int.
Abs. Int.
OCDF
41.77-45.01
441.7428 Fn5
Flags: PB
4σ 5.57e3
OCDF
1.68e7
43.31
OCDF
41.77-45.01
443.7398 Fn5
Flags: PB
4σ 5.36e3
ES OCDF
7.28e6
43.30
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: PB
4σ 6.70e3
ES OCDF
8.46e6
43.30
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: PB
4σ 4.56e3
DCDPE
41.77-45.01
513.6775 Fn5
Flags: B
4σ 2.99e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5985_18724_DF_008 **Acq'd:** 10 Dec 2021 11:12 PSW **Wt/Vol:** 10.16 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-DUP-4 **UTP:** 10-Dec-2021 12:46:25 PSW **J-level:** 0.492 pg/g **Split:** 1 **Checkcode:** 858-821-LMQ

Datafile: 211209R31 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.39	E	1.0008	1.0008	0	6.16E+08	0.78	Y	1.34	8,810	7523.958	1.13
12378-PeCDD	33.71		1.0005	1.0007	+0.4	4.89E+06	1.69	Y	1.06	101	7642.568	1.36
123478-HxCDD	37.55		1.0003	1.0003	0	3.13E+05	1.11	Y	1.06	7.21	11798.474	2.07
123678-HxCDD	37.67		1.0033	1.0036	+0.7	1.85E+06	1.18	Y	1.08	46	11798.474	2.41
123789-HxCDD	37.97		1.0110	1.0114	+0.9	7.08E+05	1.42	Y	1.02	14.9	11798.474	1.94
1234678-HpCDD	40.56		1.0003	1.0004	+0.2	5.55E+07	1.04	Y	0.97	1,560	9556.055	1.84
OCDD	43.11	E	1.0003	1.0003	0	7.39E+08	0.89	Y	1.07	28,300	14484.532	4.41
2378-TCDF	27.53	E	1.0006	1.0008	+0.3	2.18E+09	0.80	Y	0.96	30,300	9008.099	1.57
12378-PeCDF	32.27		1.0006	1.0005	-0.2	7.56E+07	1.56	Y	0.95	1,240	11022.018	1.63
23478-PeCDF	33.39		1.0006	1.0008	+0.4	5.24E+07	1.56	Y	0.94	898	11022.018	1.9
123478-HxCDF	36.58		1.0004	1.0005	+0.2	1.14E+08	1.26	Y	1.23	1,960	9616.377	1.49
123678-HxCDF	36.71		1.0004	1.0004	0	3.01E+07	1.28	Y	1.13	501	9616.377	1.4
234678-HxCDF	37.38		1.0005	1.0005	0	6.21E+06	1.23	Y	1.15	106	9616.377	1.42
123789-HxCDF	NotFnd		1.0005	-		-	-	-	1.14	-	9616.377	1.38
1234678-HpCDF	39.67		1.0003	1.0003	0	3.91E+07	1.03	Y	1.36	731	8711.915	1.12
1234789-HpCDF	41.01		1.0003	1.0003	0	9.20E+06	1.05	Y	1.30	220	8711.915	1.36
OCDF	43.29		1.0002	1.0003	+0.3	3.02E+07	0.87	Y	1.03	1,030	7474.037	2.06

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.37	1.0237	1.0234	-0.5	1.02E+07	0.80	Y	1.03	79.4
ES 12378-PeCDD	33.68	1.2158	1.2152	-1.2	8.98E+06	1.49	Y	1.03	69.7
ES 123478-HxCDD	37.54	0.9920	0.9918	-0.5	8.11E+06	1.26	Y	0.99	88.3
ES 123678-HxCDD	37.66	0.9949	0.9949	0	7.33E+06	1.35	Y	0.97	81.6
ES 123789-HxCDD	37.95	1.0026	1.0027	+0.2	9.20E+06	1.23	Y	1.12	88.7
ES 1234678-HpCDD	40.55	1.0713	1.0712	-0.2	7.18E+06	1.13	Y	0.99	78.4
ES OCDD	43.10	1.1385	1.1387	+0.5	9.61E+06	0.89	Y	0.78	67
ES 2378-TCDF	27.51	1.0519	1.0520	+0.2	1.48E+07	0.78	Y	1.08	78
ES 12378-PeCDF	32.26	1.2331	1.2336	+1.0	1.27E+07	1.63	Y	0.93	77.7
ES 23478-PeCDF	33.36	1.2754	1.2759	+1.0	1.22E+07	1.56	Y	0.92	76
ES 123478-HxCDF	36.56	0.9656	0.9658	+0.4	9.25E+06	0.51	Y	1.14	87.7
ES 123678-HxCDF	36.70	0.9693	0.9695	+0.4	1.05E+07	0.55	Y	1.30	87.3
ES 234678-HxCDF	37.36	0.9869	0.9870	+0.2	9.98E+06	0.51	Y	1.20	90
ES 123789-HxCDF	38.30	1.0121	1.0120	-0.2	8.80E+06	0.53	Y	1.14	83.9
ES 1234678-HpCDF	39.66	1.0478	1.0477	-0.2	7.75E+06	0.40	Y	0.95	88.4
ES 1234789-HpCDF	40.99	1.0832	1.0830	-0.5	6.35E+06	0.44	Y	0.85	81.2
ES OCDF	43.28	1.1434	1.1435	+0.3	1.12E+07	0.87	Y	0.93	65.8

Lab ID: B5985_18724_DF_008 **Acq'd:** 10 Dec 2021 11:12 PSW **Wt/Vol:** 10.16 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-DUP-4 **UTP:** 10-Dec-2021 12:46:25 PSW **J-level:** 0.492 pg/g **Split:** 1 **Checkcode:** 858-821-LMQ

Datafile: 211209R31 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.72		-	-	-	1.25E+07	0.81	Y	-	-	
JS 1234-TCDF	26.15		-	-	-	1.75E+07	0.84	Y	-	-	
JS 123467-HxCDD	37.85		-	-	-	4.62E+06	1.31	Y	-	-	
CS 37Cl-2378-TCDD	28.39		1.0245	1.0242	-0.5	4.46E+06	n/a	-	1.31	68.4	
CS 12347-PeCDD	33.19		1.1978	1.1975	-0.6	8.07E+06	1.56	Y	0.89	72.5	
CS 12346-PeCDF	31.74		1.2130	1.2137	+1.3	1.17E+07	1.56	Y	0.87	77.5	
CS 123469-HxCDF	37.01		0.9775	0.9778	+0.7	1.00E+07	0.54	Y	1.09	99.3	
CS 1234689-HpCDF	40.04		1.0580	1.0579	-0.2	7.48E+06	0.47	Y	0.86	93.7	
~~SS 37Cl-2378-TCDD~~	~~28.39~~		~~1.0245~~	~~1.0242~~	~~-0.5~~	~~4.46E+06~~	~~n/a~~		~~1.26~~	~~86.6~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.19~~		~~1.1978~~	~~1.1975~~	~~-0.6~~	~~8.07E+06~~	~~1.56~~	~~Y~~	~~0.86~~	~~104~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.74~~		~~1.2130~~	~~1.2137~~	~~+1.3~~	~~1.17E+07~~	~~1.56~~	~~Y~~	~~0.93~~	~~99.6~~	
~~SS 123469-HxCDF~~	~~37.01~~		~~0.9775~~	~~0.9778~~	~~+0.7~~	~~1.00E+07~~	~~0.54~~	~~Y~~	~~0.84~~	~~114~~	
~~SS 1234689-HpCDF~~	~~40.04~~		~~1.0580~~	~~1.0579~~	~~-0.2~~	~~7.48E+06~~	~~0.47~~	~~Y~~	~~0.91~~	~~106~~	

Totals	Conc	EMPC
Total TCDD	9800	9840
Total PeCDD	128	160
Total HxCDD	304	325
Total HpCDD	3170	3170
Total Tetra-Octa Dioxins	41700	41800
Total TCDF	58,900	58900
Total PeCDF	3,390	3390
Total HxCDF	3,140	3150
Total HpCDF	1,440	1440
Total Tetra-Octa Furans	67,900	67900
Total Tetra-Octa Dioxins & Furans	110000	110000

Lab ID: B5985_18724_DF_008 **Acq'd: 10 Dec 2021 11:12 PSW** **Wt/Vol: 10.16 g** **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 11215131-120621-S-JC-DUP-4 **UTP: 10-Dec-2021 12:46:25 PSW** **J-level: 0.492 pg/g** **Split: 1** **Checkcode: 858-821-LMQ**

Datafile: 211209R31 **Report: 10 Dec 2021 12:49 pw** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.76		0.8726	0.8730	+0.6	1.13E+06	0.82	Y	1.34	16.2	7523.958	1.13
1379-TCDD	25.10	EMPC	0.8851	0.8850	-0.2	4.38E+05	0.91	N	1.34	6.28	7523.958	1.13
1369-TCDD	NotFnd		0.9002						1.34		7523.958	1.13
1469-TCDD	NotFnd		0.9275						1.34		7523.958	1.13
1247/1246/1248/1249-TCDD	26.55	EMPC	0.9361	0.9360	-0.2	1.02E+06	0.96	N	1.34	14.6	7523.958	1.13
1378-TCDD	26.73		0.9427	0.9425	-0.3	1.71E+06	0.80	Y	1.34	24.5	7523.958	1.13
1268-TCDD	NotFnd		0.9498						1.34		7523.958	1.13
1478-TCDD	27.19		0.9584	0.9587	+0.5	1.39E+06	0.84	Y	1.34	19.9	7523.958	1.13
1279-TCDD	NotFnd		0.9644						1.34		7523.958	1.13
1234/1269-TCDD	27.70	EMPC	0.9766	0.9767	+0.2	1.67E+05	0.90	N	1.34	2.39	7523.958	1.13
1236-TCDD	27.85	EMPC	0.9813	0.9817	+0.7	1.26E+05	1.21	N	1.34	1.81	7523.958	1.13
1237/1238-TCDD	28.09		0.9906	0.9902	-0.7	1.01E+07	0.87	Y	1.34	144	7523.958	1.13
1239-TCDD	NotFnd		0.9952						1.34		7523.958	1.13
2378-TCDD	**28.39**	E	**1.0008**	1.0008	**0**	6.16E+08	0.78	Y	**1.34**	**8,810**	**7523.958**	**1.13**
1278-TCDD	28.73		1.0122	1.0127	+0.9	5.46E+07	0.81	Y	1.34	782	7523.958	1.13
1267-TCDD	NotFnd		1.0168						1.34		7523.958	1.13
1289-TCDD	29.38	EMPC	1.0349	1.0359	+1.8	9.89E+05	1.08	N	1.34	14.2	7523.958	1.13
12479/12468-PeCDD	31.23	EMPC	0.9267	0.9271	+0.7	5.68E+05	1.29	N	1.06	11.8	7642.568	1.36
12469-PeCDD	31.77	EMPC	0.9425	0.9431	+1.1	2.62E+05	1.01	N	1.06	5.42	7642.568	1.36
12368-PeCDD	32.30		0.9588	0.9589	+0.2	5.79E+05	1.46	Y	1.06	12	7642.568	1.36
12478-PeCDD	32.49	EMPC	0.9643	0.9646	+0.6	4.04E+05	0.81	N	1.06	8.36	7642.568	1.36
12379-PeCDD	32.59		0.9673	0.9676	+0.6	2.11E+05	1.43	Y	1.06	4.36	7642.568	1.36
12369/12467/12489-PeCDD	32.85		0.9750	0.9753	+0.6	2.05E+05	1.50	Y	1.06	4.23	7642.568	1.36
12346/12347-PeCDD	33.21		0.9859	0.9861	+0.4	1.73E+05	1.33	Y	1.06	3.58	7642.568	1.36
12378-PeCDD	33.71		**1.0005**	**1.0007**	**+0.4**	**4.89E+06**	**1.69**	**Y**	**1.06**	**101**	**7642.568**	**1.36**
12367-PeCDD	33.83	EMPC	1.0032	1.0045	+2.6	3.21E+05	2.10	N	1.06	6.65	7642.568	1.36
12389-PeCDD	34.14		1.0135	1.0136	+0.2	1.23E+05	1.49	Y	1.06	2.55	7642.568	1.36
124679/124689-HxCDD	35.85		0.9544	0.9550	+1.3	4.63E+06	1.27	Y	1.05	106	11798.474	2.12
123468-HxCDD	36.49	EMPC	0.9716	0.9721	+1.1	5.14E+05	1.43	N	1.05	11.7	11798.474	2.12
123679/123689-HxCDD	36.78		0.9793	0.9797	+0.9	5.53E+06	1.21	Y	1.05	126	11798.474	2.12
123469-HxCDD	36.92	EMPC	0.9829	0.9834	+1.1	4.01E+05	1.46	N	1.05	9.15	11798.474	2.12
123478-HxCDD	37.55		**1.0003**	**1.0003**	**0**	**3.13E+05**	**1.11**	**Y**	1.06	**7.21**	**11798.474**	**2.07**
123678-HxCDD	37.67		**1.0033**	**1.0036**	**+0.7**	**1.85E+06**	**1.18**	**Y**	1.08	**46**	**11798.474**	**2.41**
123467-HxCDD	37.87		1.0084	1.0087	+0.7	1.72E+05	1.29	Y	1.05	3.92	11798.474	2.12
123789-HxCDD	37.97		**1.0110**	**1.0114**	**+0.9**	**7.08E+05**	**1.42**	**Y**	1.02	**14.9**	**11798.474**	**1.94**

Lab ID: B5985_18724_DF_008 **Acq'd:** 10 Dec 2021 11:12 PSW **Wt/Vol:** 10.16 g **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 11215131-120621-S-JC-DUP-4 **UTP:** 10-Dec-2021 12:46:25 PSW **J-level:** 0.492 pg/g **Split:** 1 **Checkcode:** 858-821-LMQ

Datafile: 211209R31 **Report:** 10 Dec 2021 12:49 pw **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.91		0.9843	0.9844	+0.2	5.70E+07	1.05	Y	0.97	1,600	9556.055	1.84
1234678-HpCDD	**40.56**		**1.0003**	**1.0004**	**+0.2**	**5.55E+07**	**1.04**	**Y**	**0.97**	**1,560**	**9556.055**	**1.84**
OCDD	**43.11**	**E**	**1.0003**	**1.0003**	**0**	**7.39E+08**	**0.89**	**Y**	**1.07**	**28,300**	**14484.532**	**4.41**
OCDD-a	43.11	E	1.0001	1.0002	+0.3	4.41E+07	2.45	Y	0.07	27,400	10842.153	53.4
1368-TCDF	22.62		0.8230	0.8222	-1.1	3.20E+05	0.83	Y	0.96	4.44	9008.099	1.57
1468-TCDF	23.23		0.8443	0.8444	+0.1	2.81E+06	0.80	Y	0.96	39	9008.099	1.57
2468-TCDF	23.86		0.8672	0.8673	+0.1	2.54E+06	0.82	Y	0.96	35.3	9008.099	1.57
1346/1246-TCDF	24.30		0.8802	0.8832	+4.4	2.02E+06	0.77	Y	0.96	28.1	9008.099	1.57
1347/1378/1247-TCDF	24.41		0.8855	0.8875	+2.9	1.33E+07	0.81	Y	0.96	185	9008.099	1.57
1348-TCDF	24.63		0.8952	0.8952	0	4.44E+06	0.83	Y	0.96	61.6	9008.099	1.57
1248/1367/1379-TCDF	24.75		0.9000	0.8996	-0.6	5.49E+07	0.80	Y	0.96	763	9008.099	1.57
1268-TCDF	25.14		0.9136	0.9138	+0.3	2.39E+07	0.78	Y	0.96	331	9008.099	1.57
1467-TCDF	25.26		0.9185	0.9184	-0.2	5.27E+06	0.79	Y	0.96	73.1	9008.099	1.57
1478-TCDF	25.44		0.9247	0.9249	+0.3	6.42E+07	0.79	Y	0.96	891	9008.099	1.57
1369/1237-TCDF	25.82		0.9381	0.9387	+0.9	1.96E+07	0.80	Y	0.96	272	9008.099	1.57
2467-TCDF	25.93		0.9427	0.9426	-0.2	2.69E+06	0.83	Y	0.96	37.3	9008.099	1.57
2368-TCDF	26.08		0.9484	0.9482	-0.3	6.04E+07	0.79	Y	0.96	838	9008.099	1.57
1238/1234/1678/1469/1236-TCDF	26.16	E	0.9517	0.9511	-0.9	1.04E+08	0.80	Y	0.96	1,440	9008.099	1.57
1278-TCDF	26.63	E	0.9682	0.9679	-0.5	1.04E+09	0.80	Y	0.96	14,500	9008.099	1.57
1349-TCDF	NotFnd		0.9725						0.96		9008.099	1.57
1267-TCDF	26.90		0.9782	0.9778	-0.6	4.51E+07	0.80	Y	0.96	626	9008.099	1.57
2346/1249-TCDF	27.09		0.9846	0.9847	+0.2	6.11E+06	0.82	Y	0.96	84.8	9008.099	1.57
2347/1279-TCDF	27.29		0.9926	0.9921	-0.8	2.30E+07	0.78	Y	0.96	319	9008.099	1.57
2348-TCDF	27.42	E	0.9966	0.9968	+0.3	2.00E+08	0.79	Y	0.96	2,780	9008.099	1.57
2378-TCDF	**27.53**	E	**1.0006**	**1.0008**	**+0.3**	**2.18E+09**	**0.80**	**Y**	**0.96**	**30,300**	**9008.099**	**1.57**
2367/3467-TCDF	27.88	E	1.0139	1.0136	-0.5	1.77E+08	0.79	Y	0.96	2,460	9008.099	1.57
1269-TCDF	28.13		1.0226	1.0227	+0.2	2.81E+07	0.79	Y	0.96	390	9008.099	1.57
1239-TCDF	NotFnd		1.0322						0.96		9008.099	1.57
1289-TCDF	29.55	E	1.0729	1.0744	+2.7	1.74E+08	0.78	Y	0.96	2,420	9008.099	1.57
13468/12468-PeCDF	29.50		0.9135	0.9147	+2.1	4.50E+06	1.62	Y	0.94	75.5	6398.701	1.02
13678/13467/12467-PeCDF	31.04		0.9612	0.9622	+1.9	1.21E+06	1.60	Y	0.94	20.3	11022.018	1.76
12368/13478/12478-PeCDF	31.19		0.9661	0.9670	+1.7	3.21E+07	1.56	Y	0.94	538	11022.018	1.76
14678-PeCDF	31.28		0.9693	0.9696	+0.6	1.37E+06	1.49	Y	0.94	22.9	11022.018	1.76
13479-PeCDF	NotFnd		0.9723						0.94		11022.018	1.76
13469/12479-PeCDF	NotFnd		0.9799						0.94		11022.018	1.76
12346-PeCDF	31.75		0.9842	0.9844	+0.4	2.13E+05	1.56	Y	0.94	3.58	11022.018	1.76

Lab ID: B5985_18724_DF_008 | **Acq'd: 10 Dec 2021 11:12 PSW** | **Wt/Vol: 10.16 g** | **ICAL: MM3_DF_10272021_27JUL2021**

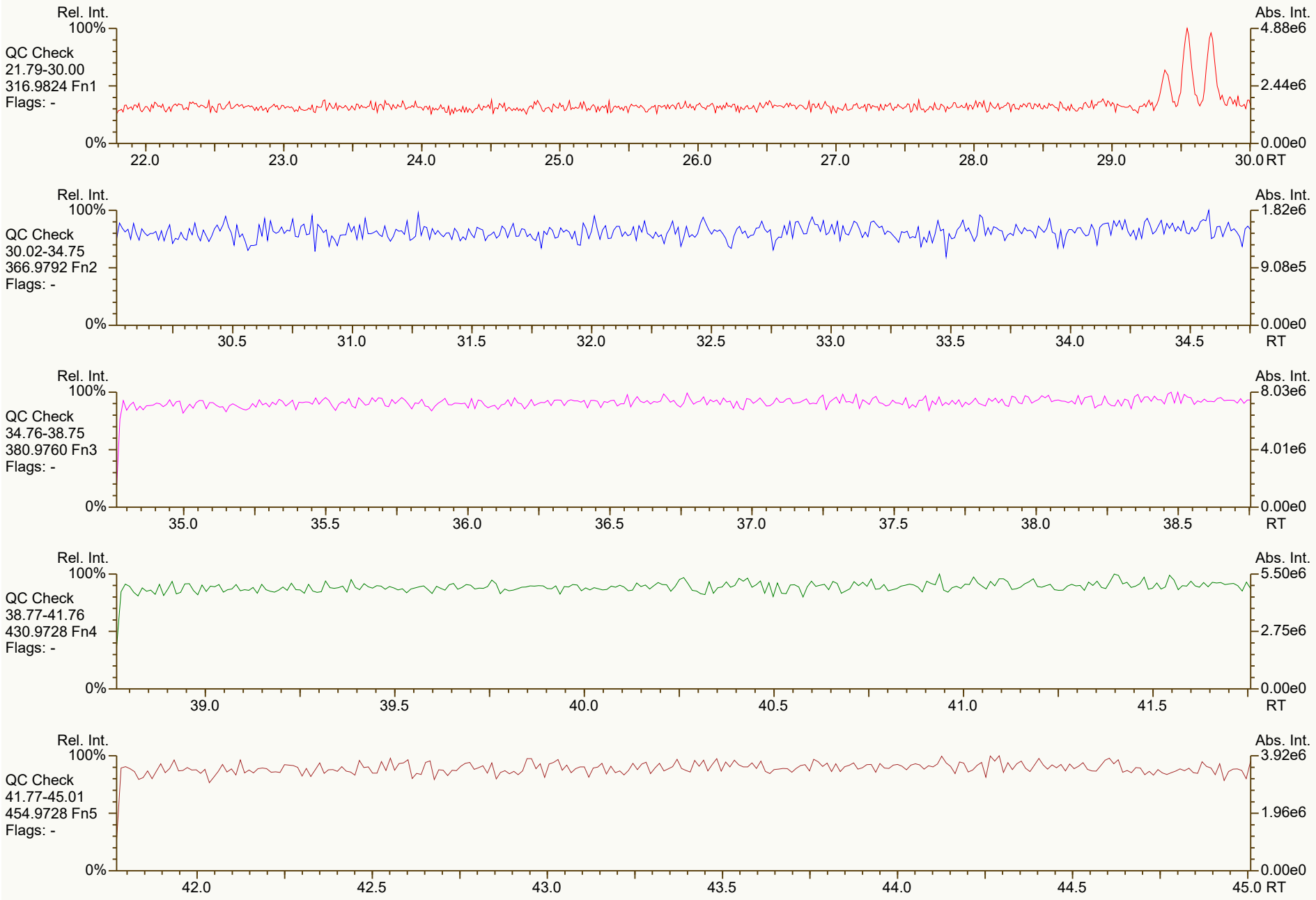
Client ID: 11215131-120621-S-JC-DUP-4 | **UTP: 10-Dec-2021 12:46:25 PSW** | **J-level: 0.492 pg/g** | **Split: 1** | **Checkcode: 858-821-LMQ**

Datafile: 211209R31 | **Report: 10 Dec 2021 12:49 pw** | **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	31.83		0.9868	0.9869	+0.2	1.51E+06	1.45	Y	0.94	25.3	11022.018	1.76
12347-PeCDF	31.91		0.9893	0.9893	0	1.38E+06	1.55	Y	0.94	23.2	11022.018	1.76
12348-PeCDF	32.07		0.9941	0.9942	+0.2	6.67E+06	1.49	Y	0.94	112	11022.018	1.76
12378-PeCDF	**32.27**		**1.0006**	**1.0005**	**-0.2**	**7.56E+07**	**1.56**	**Y**	**0.95**	**1,240**	**11022.018**	**1.63**
12678/12367-PeCDF	32.56		1.0090	1.0096	+1.2	2.21E+07	1.53	Y	0.94	370	11022.018	1.76
12379-PeCDF	NotFnd		1.0143						0.94		11022.018	1.76
12679-PeCDF	NotFnd		0.9929						0.94		11022.018	1.76
23467/12369-PeCDF	33.24		0.9966	0.9963	-0.6	1.04E+06	1.62	Y	0.94	17.5	11022.018	1.76
23478-PeCDF	**33.39**		**1.0006**	**1.0008**	**+0.4**	**5.24E+07**	**1.56**	**Y**	**0.94**	**898**	**11022.018**	**1.9**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		11022.018	1.76
12349-PeCDF	NotFnd		1.0102						0.94		11022.018	1.76
12389-PeCDF	34.44		1.0325	1.0322	-0.6	2.79E+06	1.64	Y	0.94	46.7	11022.018	1.76
123468-HxCDF	35.22		0.9628	0.9633	+1.1	1.98E+06	1.29	Y	1.16	34.8	9616.377	1.42
124678/134678-HxCDF	35.41		0.9683	0.9686	+0.6	1.28E+07	1.28	Y	1.16	226	9616.377	1.42
134679-HxCDF	NotFnd		0.9746						1.16		9616.377	1.42
124679-HxCDF	NotFnd		0.9798						1.16		9616.377	1.42
124689-HxCDF	36.05		0.9859	0.9861	+0.4	9.21E+06	1.29	Y	1.16	162	9616.377	1.42
123467-HxCDF	36.45	EMPC	0.9972	0.9971	-0.2	6.86E+05	1.05	N	1.16	12.1	9616.377	1.42
123478-HxCDF	**36.58**		**1.0004**	**1.0005**	**+0.2**	**1.14E+08**	**1.26**	**Y**	**1.23**	**1,960**	**9616.377**	**1.49**
123678-HxCDF	**36.71**		**1.0004**	**1.0004**	**0**	**3.01E+07**	**1.28**	**Y**	**1.13**	**501**	**9616.377**	**1.4**
123479-HxCDF	NotFnd		1.0049						1.16		9616.377	1.42
123469-HxCDF	NotFnd		1.0088						1.16		9616.377	1.42
123679-HxCDF	NotFnd		0.9943						1.16		9616.377	1.42
234678-HxCDF	**37.38**		**1.0005**	**1.0005**	**0**	**6.21E+06**	**1.23**	**Y**	**1.15**	**106**	**9616.377**	**1.42**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		9616.377	1.42
123789-HxCDF	**NotFnd**		**1.0005**						**1.14**		**9616.377**	**1.38**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	38.35		1.0007	1.0012	+1.2	8.54E+06	1.31	Y	1.16	150	9616.377	1.42
1234678-HpCDF	**39.67**		**1.0003**	**1.0003**	**0**	**3.91E+07**	**1.03**	**Y**	**1.36**	**731**	**8711.915**	**1.12**
1234679-HpCDF	39.92		1.0067	1.0065	-0.5	9.40E+05	1.18	Y	1.33	19.7	8711.915	1.23
1234689-HpCDF	40.06		1.0100	1.0100	0	2.22E+07	1.06	Y	1.33	467	8711.915	1.23
1234789-HpCDF	**41.01**		**1.0003**	**1.0003**	**0**	**9.20E+06**	**1.05**	**Y**	**1.30**	**220**	**8711.915**	**1.36**
OCDF	**43.29**		**1.0002**	**1.0003**	**+0.3**	**3.02E+07**	**0.87**	**Y**	**1.03**	**1,030**	**7474.037**	**2.06**
OCDF-a	43.29		1.0002	1.0002	0	1.65E+06	2.15	Y	0.06	975	7951.434	38

SGS ID: B5985_18724_DF_008 | **Sample ID: 11215131-120621-S-JC-DUP-4** | **Acq: 10-Dec-2021 11:12:19**

Instr: [ILM] AutoSpec-Ultima MM3 | **VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69** | **User: PSW Datafile: 211209R31**

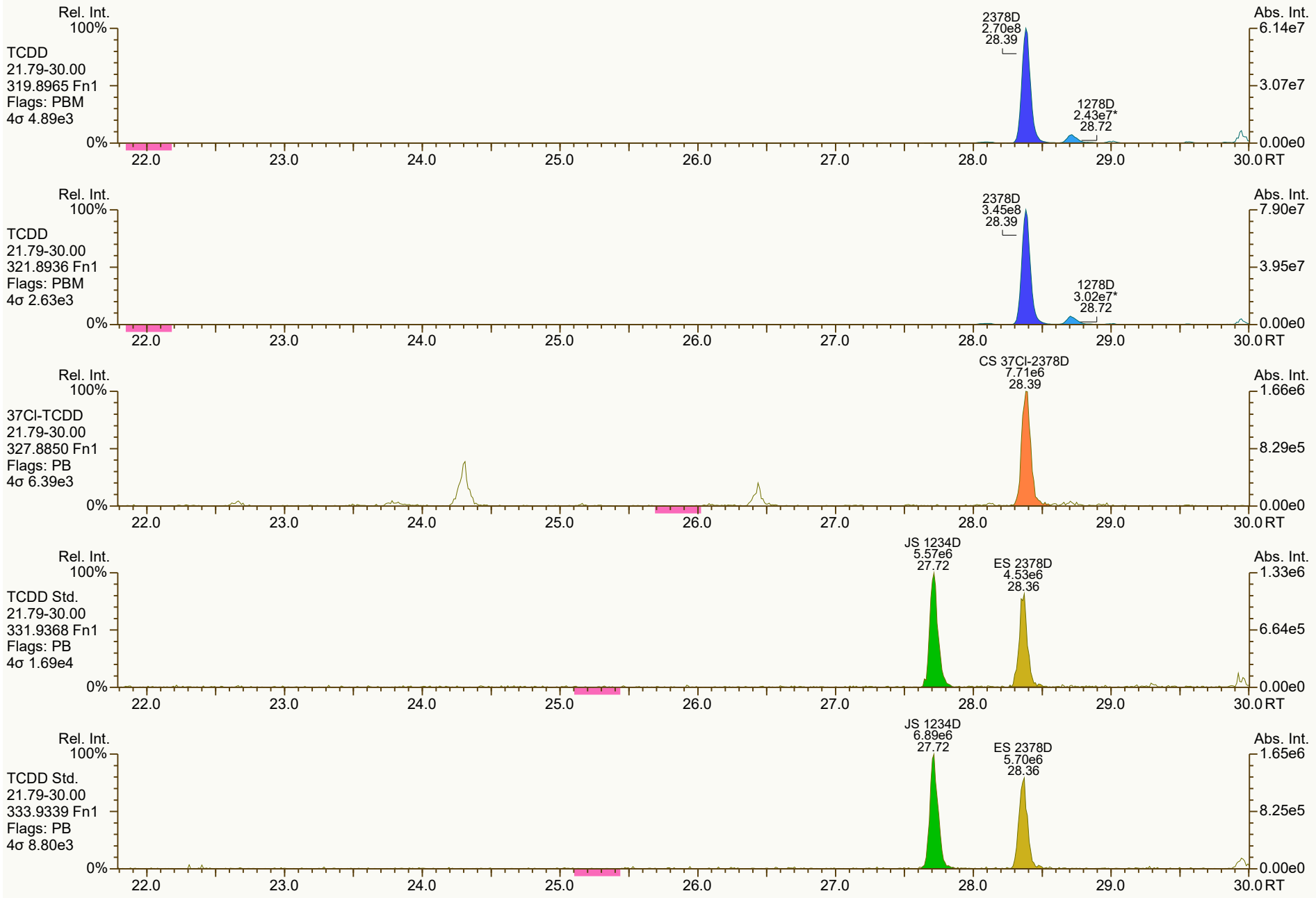


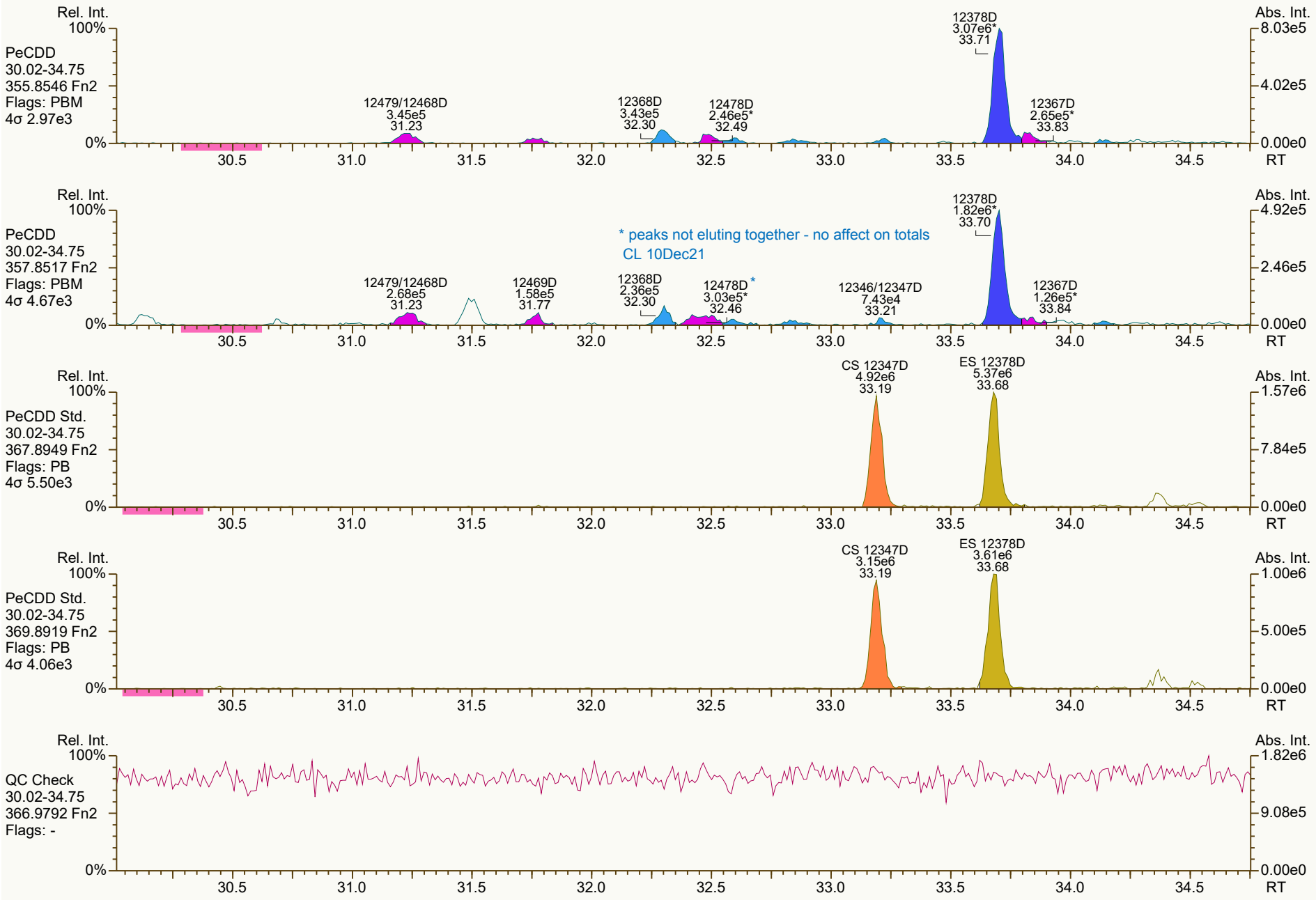
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_008.utp_res, saved 10-Dec-2021 12:53 (PSW)

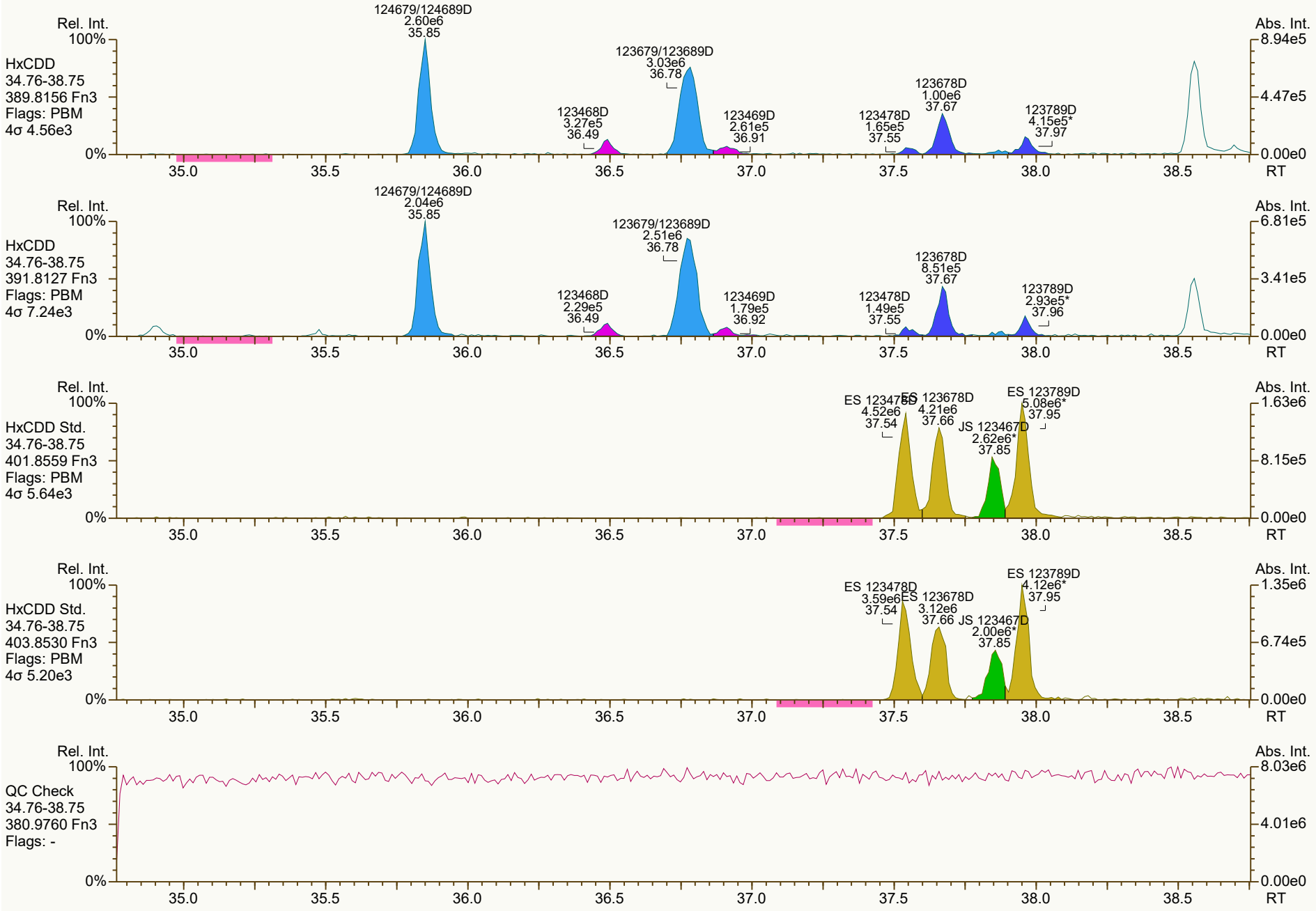
Peak annotation: Areas, Centroids

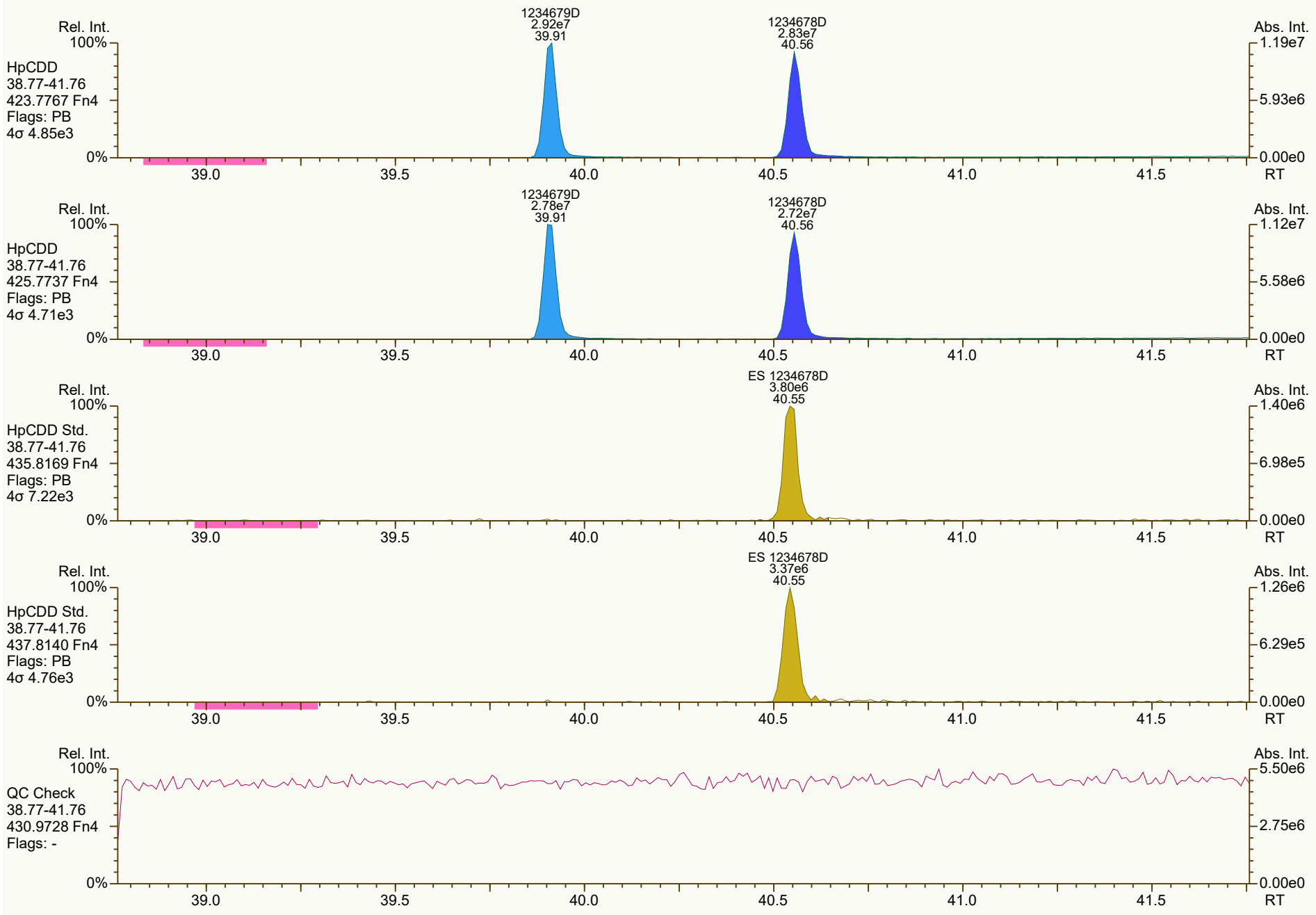
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q scc: 858-821

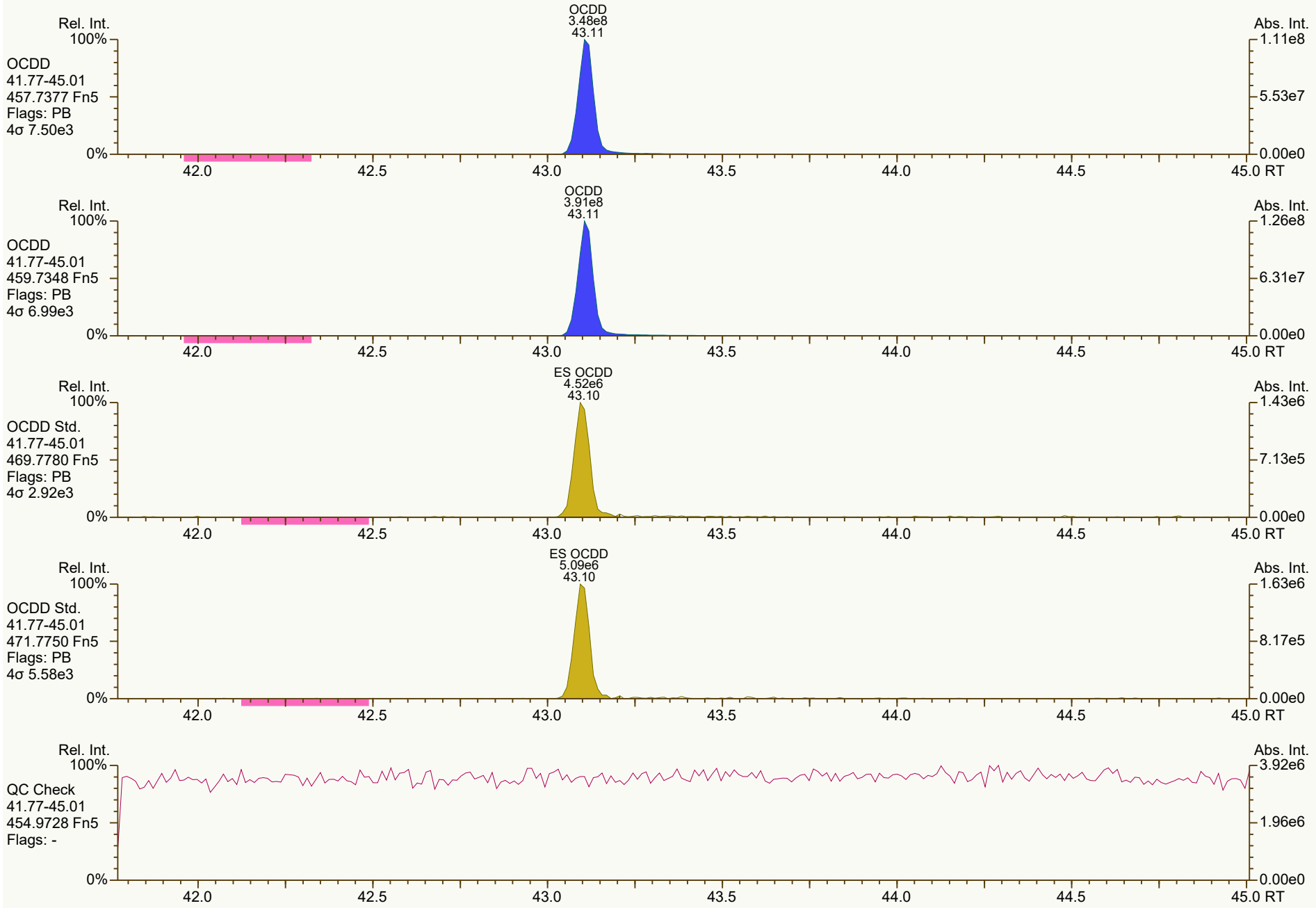
PKD: n/a Printed: 10-Dec-2021 13:02 Page 1 of 12


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 4.89e3
0%
2378D
2.70e8
28.39
1278D
2.43e7*
28.72
Abs. Int.
6.14e7
3.07e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 2.63e3
0%
2378D
3.45e8
28.39
1278D
3.02e7*
28.72
Abs. Int.
7.90e7
3.95e7
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 6.39e3
0%
CS 37Cl-2378D
7.71e6
28.39
Abs. Int.
1.66e6
8.29e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PB
4σ 1.69e4
0%
JS 1234D
5.57e6
27.72
ES 2378D
4.53e6
28.36
Abs. Int.
1.33e6
6.64e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PB
4σ 8.80e3
0%
JS 1234D
6.89e6
27.72
ES 2378D
5.70e6
28.36
Abs. Int.
1.65e6
8.25e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT

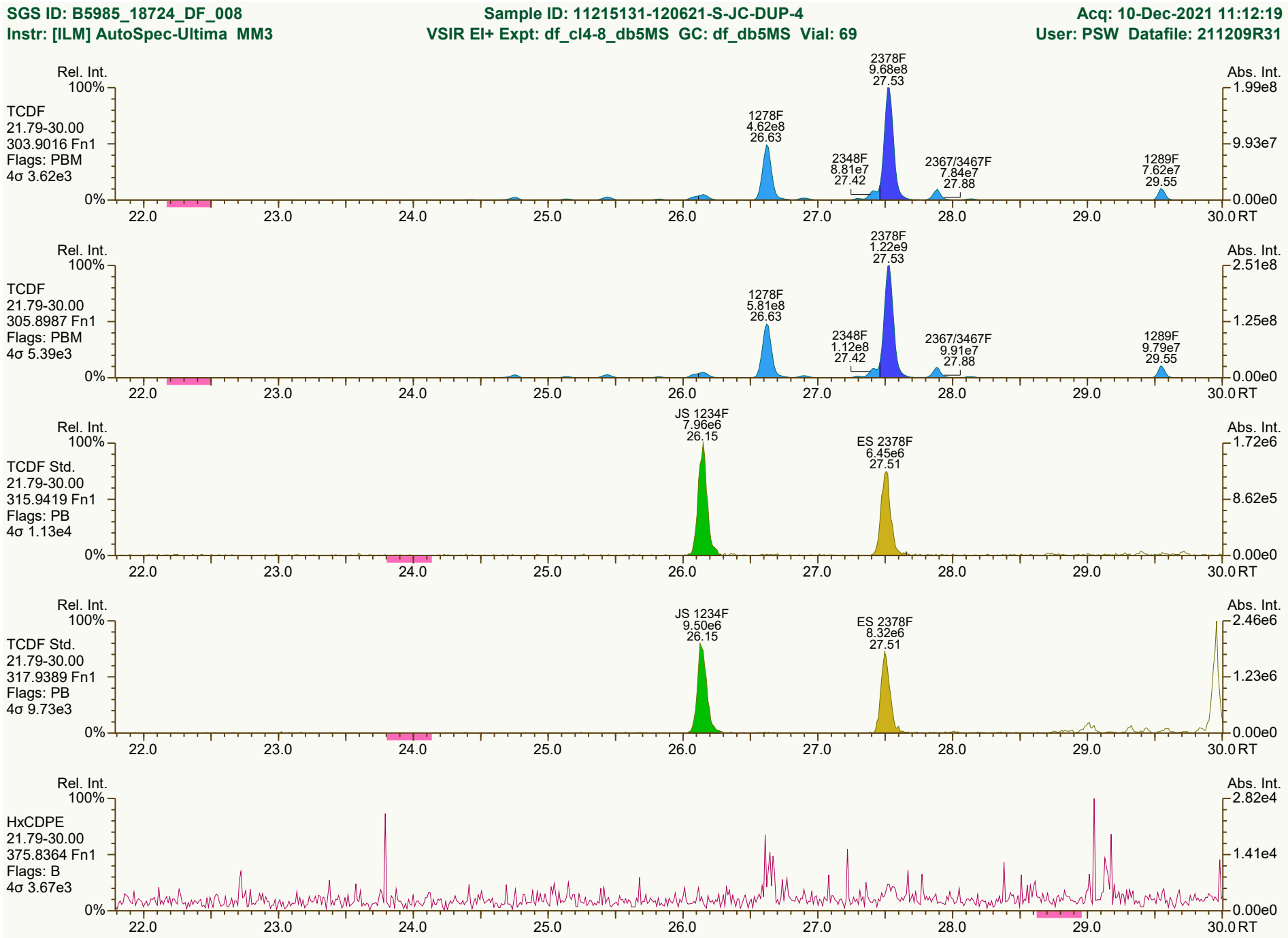

Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PBM
4σ 2.97e3
12479/12468D
3.45e5
31.23
12368D
3.43e5
32.30
12478D
2.46e5*
32.49
12378D
3.07e6*
33.71
12367D
2.65e5*
33.83
Abs. Int.
8.03e5
4.02e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PBM
4σ 4.67e3
* peaks not eluting together - no affect on totals
CL 10Dec21
12479/12468D
2.68e5
31.23
12469D
1.58e5
31.77
12368D
2.36e5
32.30
12478D *
3.03e5*
32.46
12346/12347D
7.43e4
33.21
12378D
1.82e6*
33.70
12367D
1.26e5*
33.84
Abs. Int.
4.92e5
2.46e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 5.50e3
CS 12347D
4.92e6
33.19
ES 12378D
5.37e6
33.68
Abs. Int.
1.57e6
7.84e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 4.06e3
CS 12347D
3.15e6
33.19
ES 12378D
3.61e6
33.68
Abs. Int.
1.00e6
5.00e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
Abs. Int.
1.82e6
9.08e5
0.00e0
0%
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT


Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PBM
4σ 4.56e3
0%
124679/124689D
2.60e6
35.85
123679/123689D
3.03e6
36.78
123468D
3.27e5
36.49
123469D
2.61e5
36.91
123478D
1.65e5
37.55
123678D
1.00e6
37.67
123789D
4.15e5*
37.97
Abs. Int.
8.94e5
4.47e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PBM
4σ 7.24e3
0%
124679/124689D
2.04e6
35.85
123679/123689D
2.51e6
36.78
123468D
2.29e5
36.49
123469D
1.79e5
36.92
123478D
1.49e5
37.55
123678D
8.51e5
37.67
123789D
2.93e5*
37.96
Abs. Int.
6.81e5
3.41e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 5.64e3
0%
ES 123478D
4.52e6
37.54
ES 123678D
4.21e6
37.66
JS 123467D
2.62e6*
37.85
ES 123789D
5.08e6*
37.95
Abs. Int.
1.63e6
8.15e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 5.20e3
0%
ES 123478D
3.59e6
37.54
ES 123678D
3.12e6
37.66
JS 123467D
2.00e6*
37.85
ES 123789D
4.12e6*
37.95
Abs. Int.
1.35e6
6.74e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
8.03e6
4.01e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 4.85e3
1234679D
2.92e7
39.91
1234678D
2.83e7
40.56
Abs. Int.
1.19e7
5.93e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 4.71e3
1234679D
2.78e7
39.91
1234678D
2.72e7
40.56
Abs. Int.
1.12e7
5.58e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 7.22e3
ES 1234678D
3.80e6
40.55
Abs. Int.
1.40e6
6.98e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 4.76e3
ES 1234678D
3.37e6
40.55
Abs. Int.
1.26e6
6.29e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
5.50e6
2.75e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

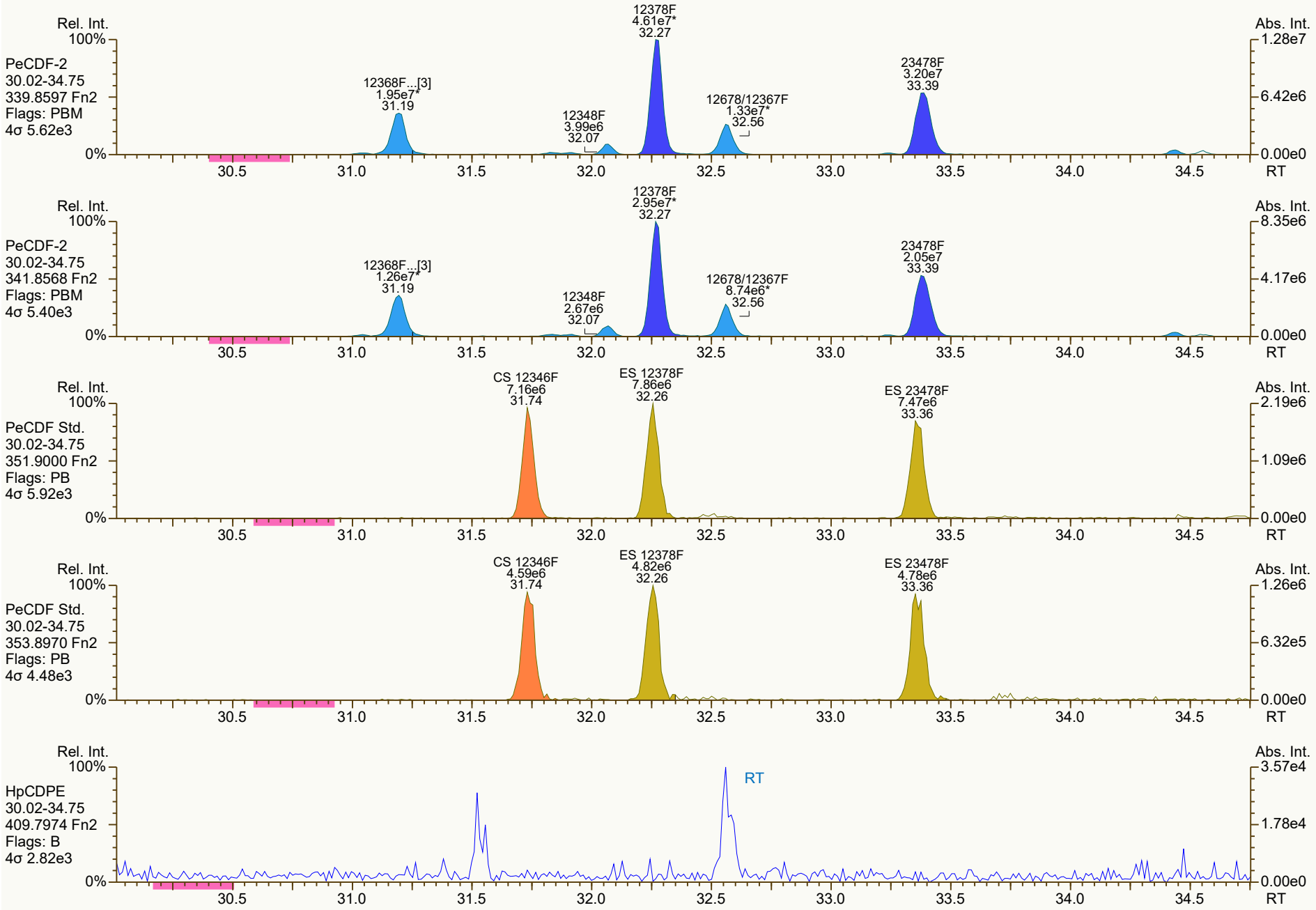

OCDD
3.48e8
43.11
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PB
4σ 7.50e3
0%
Abs. Int.
1.11e8
5.53e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.91e8
43.11
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PB
4σ 6.99e3
0%
Abs. Int.
1.26e8
6.31e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
4.52e6
43.10
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 2.92e3
0%
Abs. Int.
1.43e6
7.13e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
5.09e6
43.10
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 5.58e3
0%
Abs. Int.
1.63e6
8.17e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
3.92e6
1.96e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

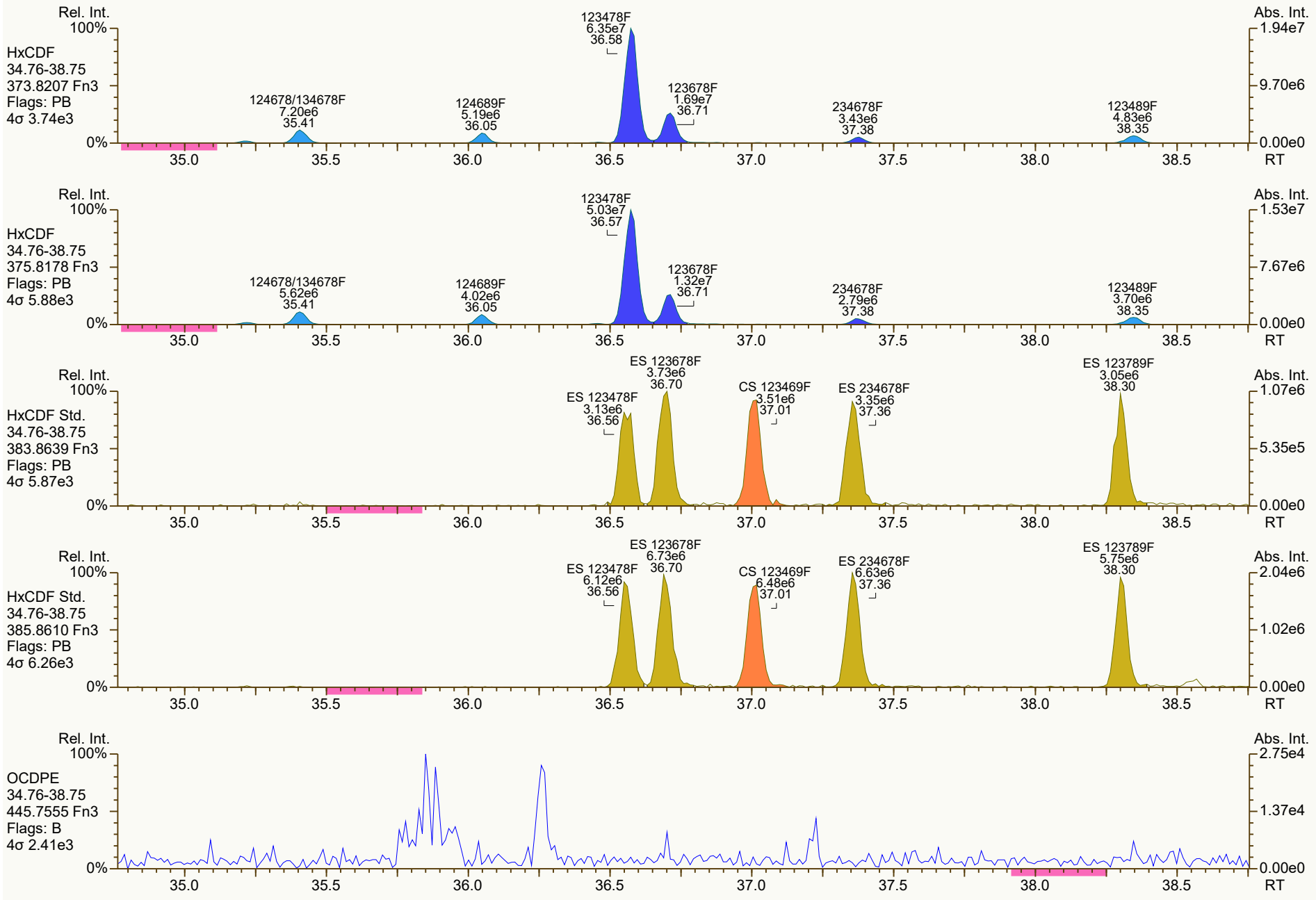
SGS ID: B5985_18724_DF_008 | Sample ID: 11215131-120621-S-JC-DUP-4 | Acq: 10-Dec-2021 11:12:19
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69 | User: PSW Datafile: 211209R31

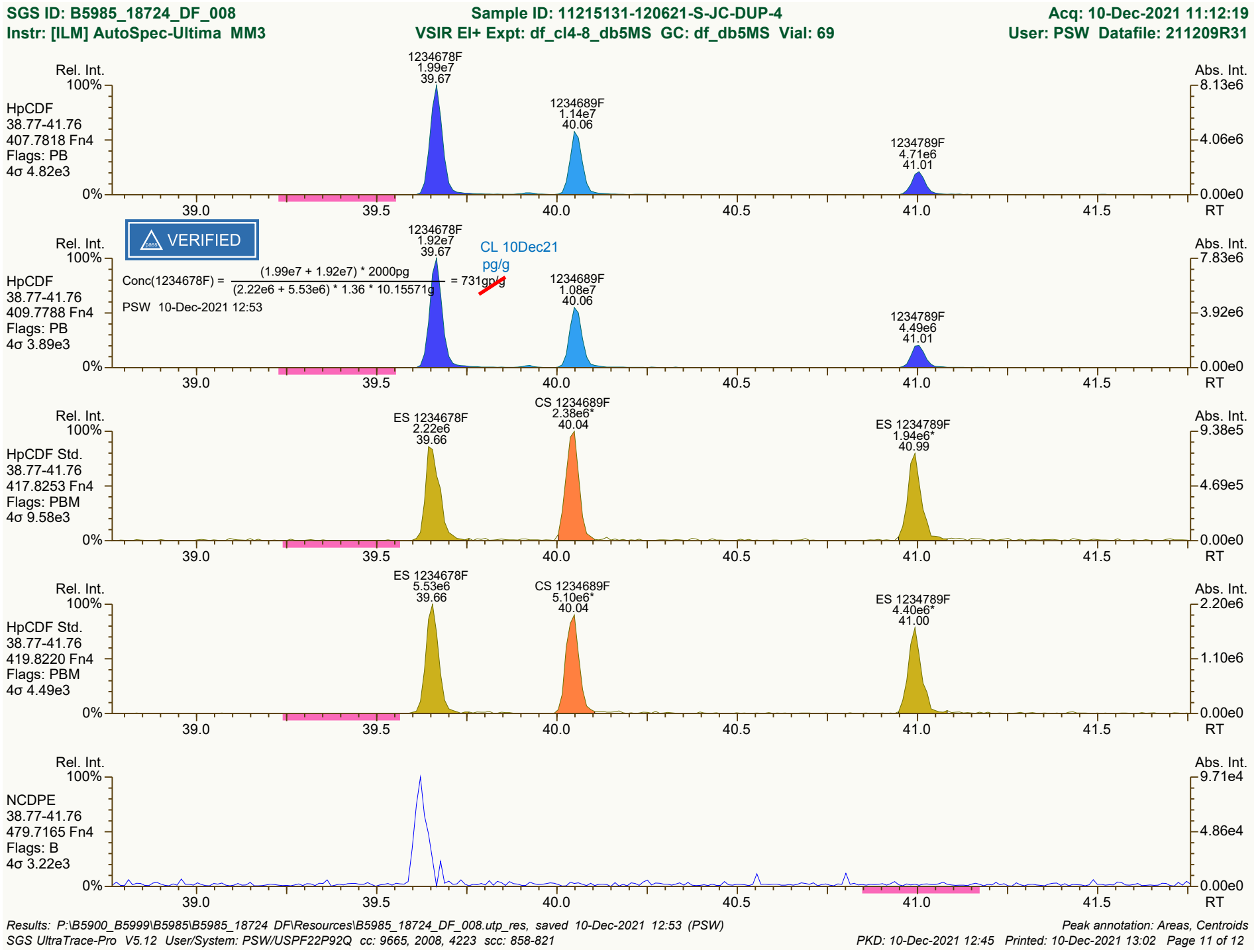


Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_008.utp_res, saved 10-Dec-2021 12:53 (PSW) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 7448, 5292, 4052 scc: 858-821 | PKD: 10-Dec-2021 12:45 Printed: 10-Dec-2021 13:02 Page 7 of 12

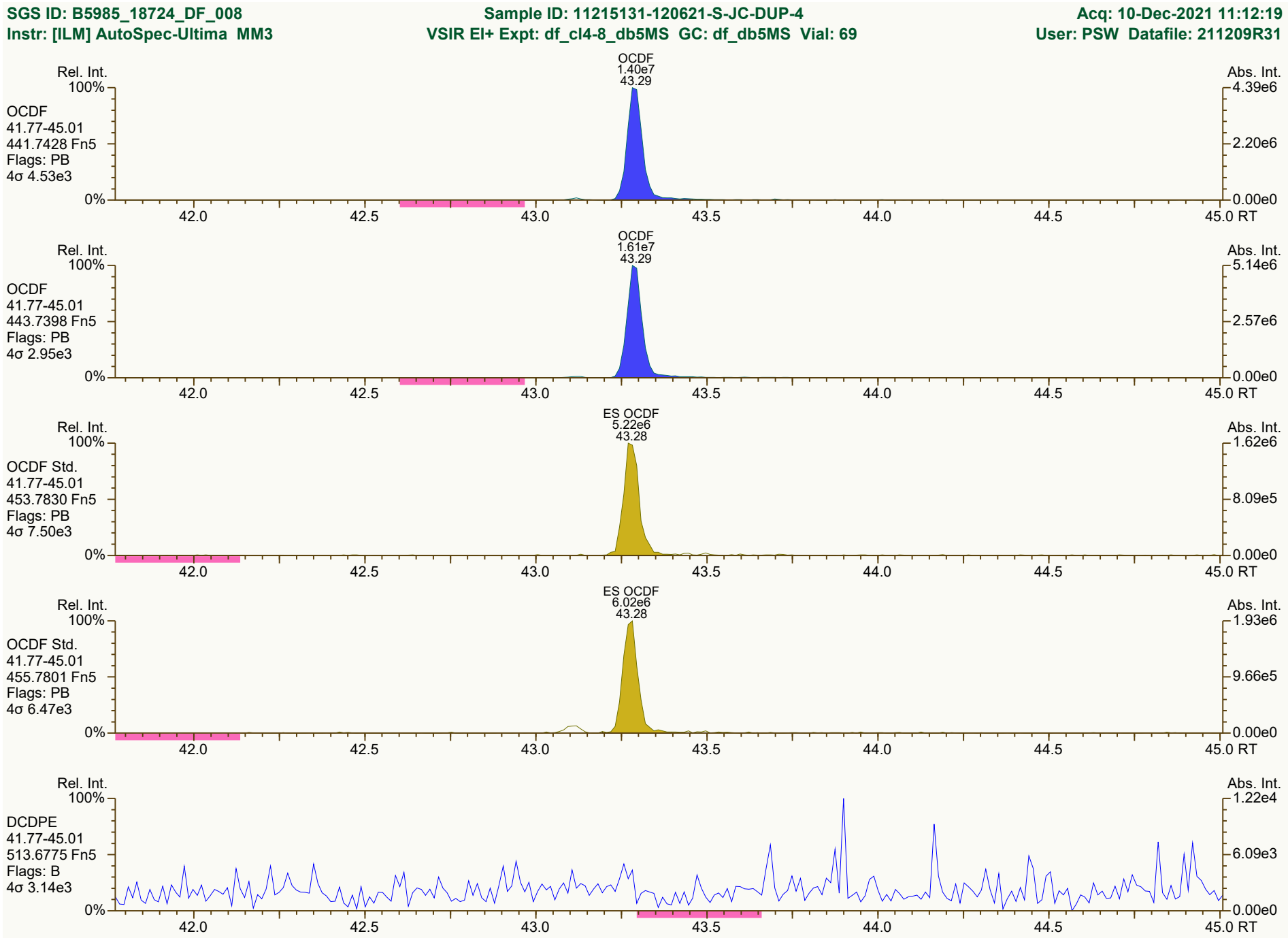

Rel. Int.
100%
0%
Abs. Int.
7.82e5
3.91e5
0.00e0
13468/12468F
2.79e6
29.50
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: PB
4σ 3.94e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
13468/12468F
1.72e6
29.50
4.17e5
2.09e5
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: PB
4σ 2.46e3
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
4.88e6
2.44e6


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 5.62e3
0%
12368F...[3]
1.95e7*
31.19
12348F
3.99e6
32.07
12378F
4.61e7*
32.27
12678/12367F
1.33e7*
32.56
23478F
3.20e7
33.39
Abs. Int.
1.28e7
6.42e6
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 5.40e3
0%
12368F...[3]
1.26e7*
31.19
12348F
2.67e6
32.07
12378F
2.95e7*
32.27
12678/12367F
8.74e6*
32.56
23478F
2.05e7
33.39
Abs. Int.
8.35e6
4.17e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 5.92e3
0%
CS 12346F
7.16e6
31.74
ES 12378F
7.86e6
32.26
ES 23478F
7.47e6
33.36
Abs. Int.
2.19e6
1.09e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.48e3
0%
CS 12346F
4.59e6
31.74
ES 12378F
4.82e6
32.26
ES 23478F
4.78e6
33.36
Abs. Int.
1.26e6
6.32e5
0.00e0
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.82e3
0%
RT
Abs. Int.
3.57e4
1.78e4
0.00e0
RT


Rel. Int.
100%
HxCDF
34.76-38.75
373.8207 Fn3
Flags: PB
4σ 3.74e3
0%
123478F
6.35e7
36.58
124678/134678F
7.20e6
35.41
124689F
5.19e6
36.05
123678F
1.69e7
36.71
234678F
3.43e6
37.38
123489F
4.83e6
38.35
Abs. Int.
1.94e7
9.70e6
0.00e0
RT
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
HxCDF
34.76-38.75
375.8178 Fn3
Flags: PB
4σ 5.88e3
123478F
5.03e7
36.57
124678/134678F
5.62e6
35.41
124689F
4.02e6
36.05
123678F
1.32e7
36.71
234678F
2.79e6
37.38
123489F
3.70e6
38.35
1.53e7
7.67e6
HxCDF Std.
34.76-38.75
383.8639 Fn3
Flags: PB
4σ 5.87e3
ES 123678F
3.73e6
36.70
ES 123478F
3.13e6
36.56
CS 123469F
3.51e6
37.01
ES 234678F
3.35e6
37.36
ES 123789F
3.05e6
38.30
1.07e6
5.35e5
HxCDF Std.
34.76-38.75
385.8610 Fn3
Flags: PB
4σ 6.26e3
ES 123678F
6.73e6
36.70
ES 123478F
6.12e6
36.56
CS 123469F
6.48e6
37.01
ES 234678F
6.63e6
37.36
ES 123789F
5.75e6
38.30
2.04e6
1.02e6
OCDPE
34.76-38.75
445.7555 Fn3
Flags: B
4σ 2.41e3
2.75e4
1.37e4


SGS ID: B5985_18724_DF_008
Sample ID: 11215131-120621-S-JC-DUP-4
Acq: 10-Dec-2021 11:12:19
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: PSW Datafile: 211209R31
Rel. Int.
Abs. Int.
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 4.82e3
1234678F
1.99e7
39.67
1234689F
1.14e7
40.06
1234789F
4.71e6
41.01
8.13e6
4.06e6
0.00e0
RT
VERIFIED
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 3.89e3
1234678F
1.92e7
39.67
CL 10Dec21
pg/g
Conc(1234678F) = (1.99e7 + 1.92e7) * 2000pg / (2.22e6 + 5.53e6) * 1.36 * 10.15571g = 731gp/g
PSW 10-Dec-2021 12:53
1234689F
1.08e7
40.06
1234789F
4.49e6
41.01
7.83e6
3.92e6
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PBM
4σ 9.58e3
ES 1234678F
2.22e6
39.66
CS 1234689F
2.38e6*
40.04
ES 1234789F
1.94e6*
40.99
9.38e5
4.69e5
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PBM
4σ 4.49e3
ES 1234678F
5.53e6
39.66
CS 1234689F
5.10e6*
40.04
ES 1234789F
4.40e6*
41.00
2.20e6
1.10e6
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 3.22e3
9.71e4
4.86e4
100%
0%
39.0
39.5
40.0
40.5
41.0
41.5
0.00e0
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_008.utp_res, saved 10-Dec-2021 12:53 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 9665, 2008, 4223 scc: 858-821
PKD: 10-Dec-2021 12:45 Printed: 10-Dec-2021 13:02 Page 11 of 12

SGS ID: B5985_18724_DF_008 | Sample ID: 11215131-120621-S-JC-DUP-4 | Acq: 10-Dec-2021 11:12:19
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69 | User: PSW Datafile: 211209R31



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\B5985_18724_DF_008.utp_res, saved 10-Dec-2021 12:53 (PSW) | *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4435, 3430, 4156 scc: 858-821 | *PKD: 10-Dec-2021 12:45 Printed: 10-Dec-2021 13:02 Page 12 of 12*

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
18	211209R18	3	CS3_211209_DF_RD ✓	1.00	SIL 25-347-1	PSW	984-034	10-Dec-2021	00:55:24
19	211209R19	59	OPR1_18724_DF	1.00	0_18724_OPR001	PSW	976-006	10-Dec-2021	01:42:07
20	211209R20	2	SBS_211209_DF_RB	1.00	SIL 20-61-1	PSW	976-368	10-Dec-2021	02:29:35
21	211209R21	58	MB1_18724_DF_SDS	10.00	Method Blank	PSW	702-371	10-Dec-2021	03:17:09
22	211209R22	60	B5985_18724_DF_001	10.18	11215131-120321-S-JC-SW-S-13	PSW	333-858	10-Dec-2021	04:04:38
23	211209R23	61	B5985_18724_DF_002	10.19	11215131-120421-S-JC-SC-S-10	PSW	723-731	10-Dec-2021	04:52:12
24	211209R24	62	B5985_18724_DF_003	10.06	11215131-120421-S-JC-SC-S-11	PSW	478-740	10-Dec-2021	05:39:45
25	211209R25	63	B5985_18724_DF_004	10.02	11215131-120421-S-JC-SC-S-12	PSW	786-451	10-Dec-2021	06:27:19
26	211209R26	64	B5985_18724_DF_005	10.04	11215131-120621-S-JC-SC-S-1	PSW	925-994	10-Dec-2021	07:14:47
27	211209R27	65	B5985_18724_DF_005MS	10.14	11215131-120621-S-JC-SC-S-1-MS	PSW	649-648	10-Dec-2021	08:02:20
28	211209R28	66	B5985_18724_DF_005MSD	10.05	11215131-120621-S-JC-SC-S-1-MSD	PSW	~~996-227~~ 775-448	10-Dec-2021	08:49:54
29	211209R29	67	B5985_18724_DF_006	10.00	11215131-120621-S-JC-SC-S-2	PSW	612-606 CL	10-Dec-2021	09:37:23
30	211209R30	68	B5985_18724_DF_007	10.19	11215131-120621-S-JC-SC-S-3	PSW	123-415 10Dec21	10-Dec-2021	10:24:51
31	211209R31	69	B5985_18724_DF_008 ✓	10.16	11215131-120621-S-JC-DUP-4	PSW	858-821	10-Dec-2021	11:12:19

REVIEWED
paul_walton , 12/10/2021, 1:29:55 PM

APPROVED
Carla_Lyon , 12/10/2021, 6:15:04 PM

Dioxin/Furan QC Summary	Acq'd: 10 Dec 2021 00:55 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211209_DF_RD	UTP: 10-Dec-2021 12:46:18 PSW	Checkcode: 984-034-HQQ
Sample ID: SIL 25-347-1	Report: 10 Dec 2021 12:54 pw	Datafile: 211209R18

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.34	1.38E+06	0.87	Y	1.34	1.08	-19%
12378-PeCDD	33.66	5.38E+06	1.57	Y	1.06	0.97	-8%
123478-HxCDD	37.52	4.66E+06	1.28	Y	1.06	0.98	-7%
123678-HxCDD	37.64	4.89E+06	1.24	Y	1.08	1.08	0%
123789-HxCDD	37.94	5.13E+06	1.20	Y	1.02	1.00	-2%
1234678-HpCDD	40.54	4.16E+06	1.07	Y	0.97	0.97	0%
OCDD	43.08	4.88E+06	0.89	Y	1.07	1.01	-6%
2378-TCDF	27.48	1.90E+06	0.85	Y	0.96	1.03	7%
12378-PeCDF	32.22	7.32E+06	1.55	Y	0.95	0.98	4%
23478-PeCDF	33.32	7.46E+06	1.52	Y	0.94	0.96	2%
123478-HxCDF	36.54	6.91E+06	1.25	Y	1.23	1.25	1%
123678-HxCDF	36.67	7.15E+06	1.27	Y	1.13	1.17	3%
234678-HxCDF	37.34	6.84E+06	1.22	Y	1.15	1.19	3%
123789-HxCDF	38.30	6.28E+06	1.28	Y	1.14	1.18	4%
1234678-HpCDF	39.64	5.87E+06	1.06	Y	1.36	1.27	-7%
1234789-HpCDF	40.98	4.93E+06	1.01	Y	1.30	1.28	-2%
OCDF	43.26	6.12E+06	0.93	Y	1.03	1.00	-3%
ES 2378-TCDD	28.31	1.27E+07	0.82	Y	1.03	1.01	-2%
ES 12378-PeCDD	33.637	1.10E+07	1.47	Y	1.03	0.88	-15%
ES 123478-HxCDD	37.506	9.52E+06	1.35	Y	0.99	1.08	8%
ES 123678-HxCDD	37.627	9.06E+06	1.24	Y	0.97	1.03	5%
ES 123789-HxCDD	37.921	1.03E+07	1.19	Y	1.12	1.16	3%
ES 1234678-HpCDD	40.526	8.55E+06	1.13	Y	0.99	0.97	-2%
ES OCDD	43.068	9.66E+06	0.99	Y	0.78	0.55	-30%
ES 2378-TCDF	27.461	1.84E+07	0.80	Y	1.08	0.99	-9%
ES 12378-PeCDF	32.2	1.49E+07	1.52	Y	0.93	0.80	-14%
ES 23478-PeCDF	33.305	1.55E+07	1.60	Y	0.92	0.83	-10%
ES 123478-HxCDF	36.519	1.11E+07	0.53	Y	1.14	1.26	10%
ES 123678-HxCDF	36.657	1.23E+07	0.51	Y	1.30	1.39	7%
ES 234678-HxCDF	37.325	1.15E+07	0.56	Y	1.20	1.30	8%
ES 123789-HxCDF	38.278	1.07E+07	0.52	Y	1.14	1.21	6%
ES 1234678-HpCDF	39.635	9.26E+06	0.43	Y	0.95	1.05	10%
ES 1234789-HpCDF	40.975	7.71E+06	0.50	Y	0.85	0.87	3%
ES OCDF	43.249	1.23E+07	0.95	Y	0.93	0.70	-25%

Dioxin/Furan QC Summary	Acq'd: 10 Dec 2021 00:55 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_211209_DF_RD	UTP: 10-Dec-2021 12:46:18 PSW	Checkcode: 984-034-HQQ
Sample ID: SIL 25-347-1	Report: 10 Dec 2021 12:54 pw	Datafile: 211209R18

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.66	1.26E+07	0.85	Y	-	-	-
JS 1234-TCDF	26.10	1.86E+07	0.80	Y	-	-	-
JS 123467-HxCDD	37.82	4.42E+06	1.20	Y	-	-	-
CS 37Cl-2378-TCDD	28.34	1.60E+06	n/a	-	1.31	1.27	-3%
CS 12347-PeCDD	33.14	1.01E+07	1.63	Y	0.89	0.81	-10%
CS 12346-PeCDF	31.68	1.49E+07	1.60	Y	0.87	0.80	-8%
CS 123469-HxCDF	36.97	1.17E+07	0.54	Y	1.09	1.32	21%
CS 1234689-HpCDF	40.02	9.31E+06	0.49	Y	0.86	1.05	22%
~~SS 37Cl-2378-TCDD~~	~~28.34~~	~~1.60E+06~~	~~n/a~~	~~-~~	~~1.26~~	~~1.25~~	~~0%~~
~~SS 12347-PeCDD~~	~~33.14~~	~~1.01E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~0.92~~	~~6%~~
~~SS 12346-PeCDF~~	~~31.68~~	~~1.49E+07~~	~~1.60~~	~~Y~~	~~0.93~~	~~1.00~~	~~7%~~
~~SS 123469-HxCDF~~	~~36.97~~	~~1.17E+07~~	~~0.54~~	~~Y~~	~~0.84~~	~~0.95~~	~~13%~~
~~SS 1234689-HpCDF~~	~~40.02~~	~~9.31E+06~~	~~0.49~~	~~Y~~	~~0.91~~	~~1.00~~	~~10%~~
Not used in this project.							
CL 10Dec21							
~~OCDD-a~~	~~43.08~~	~~2.40E+05~~	~~1.53~~	~~N~~	~~0.07~~	~~0.05~~	~~-25%~~
~~OCDF-a~~	~~43.25~~	~~9.54E+04~~	~~5.43~~	~~N~~	~~0.06~~	~~0.02~~	~~-74%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 211209R18 Analysis Date: 10-DEC-2021 00:55:24

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.87	0.65 - 0.89	Y	8.06	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.57	1.32 - 1.78	Y	45.9	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	46.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.8	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.20	1.05 - 1.43	Y	49.2	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88 - 1.20	Y	50	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	94.5	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.85	0.65 - 0.89	Y	10.7	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	51.9	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	51.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.5	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	51.6	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	51.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	51.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.06	0.88 - 1.20	Y	46.6	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	49.2	43 - 58	Y
OCDF	M+2/M+4	0.93	0.76 - 1.02	Y	97	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 10 Dec 2021 12:48 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

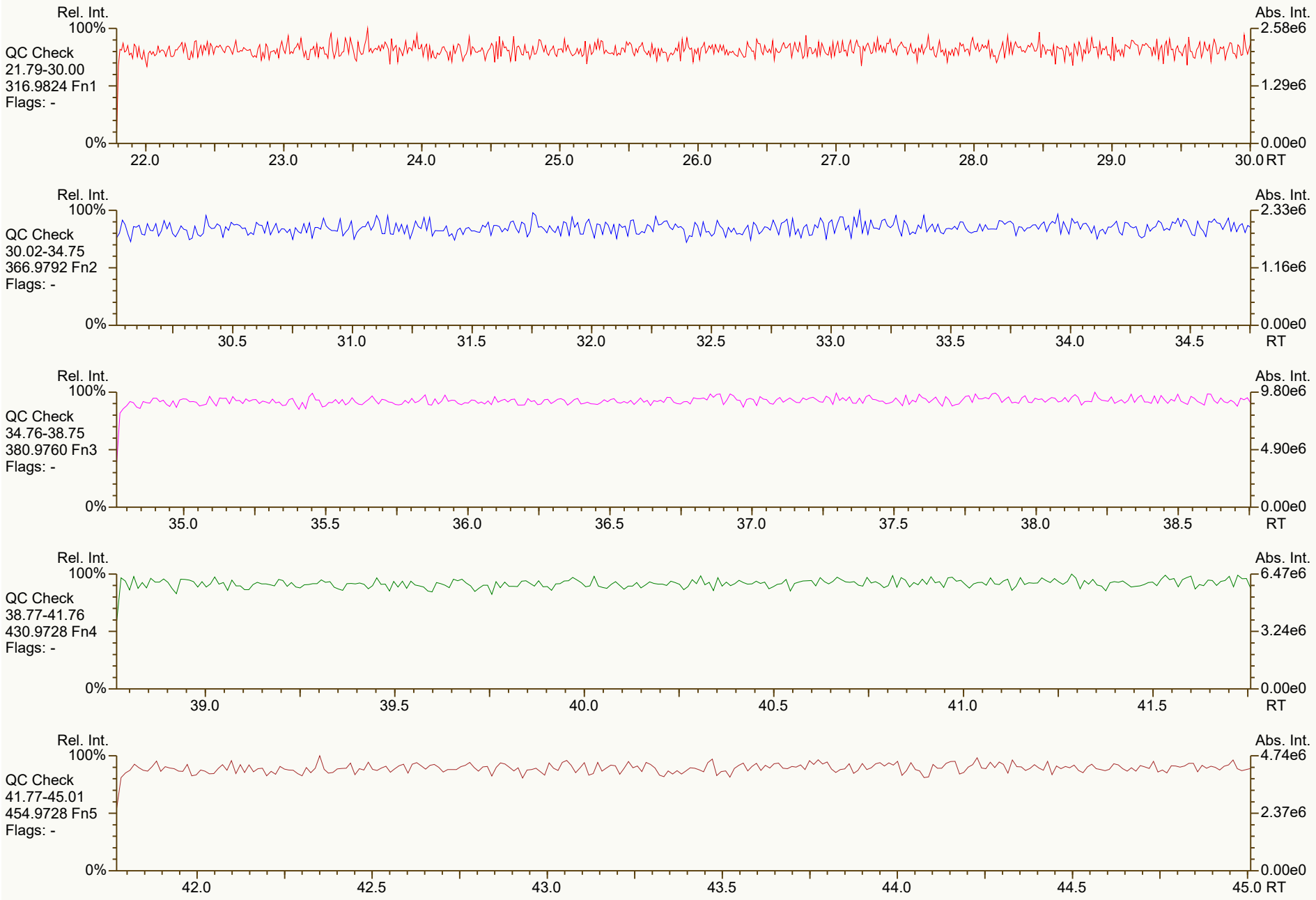
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

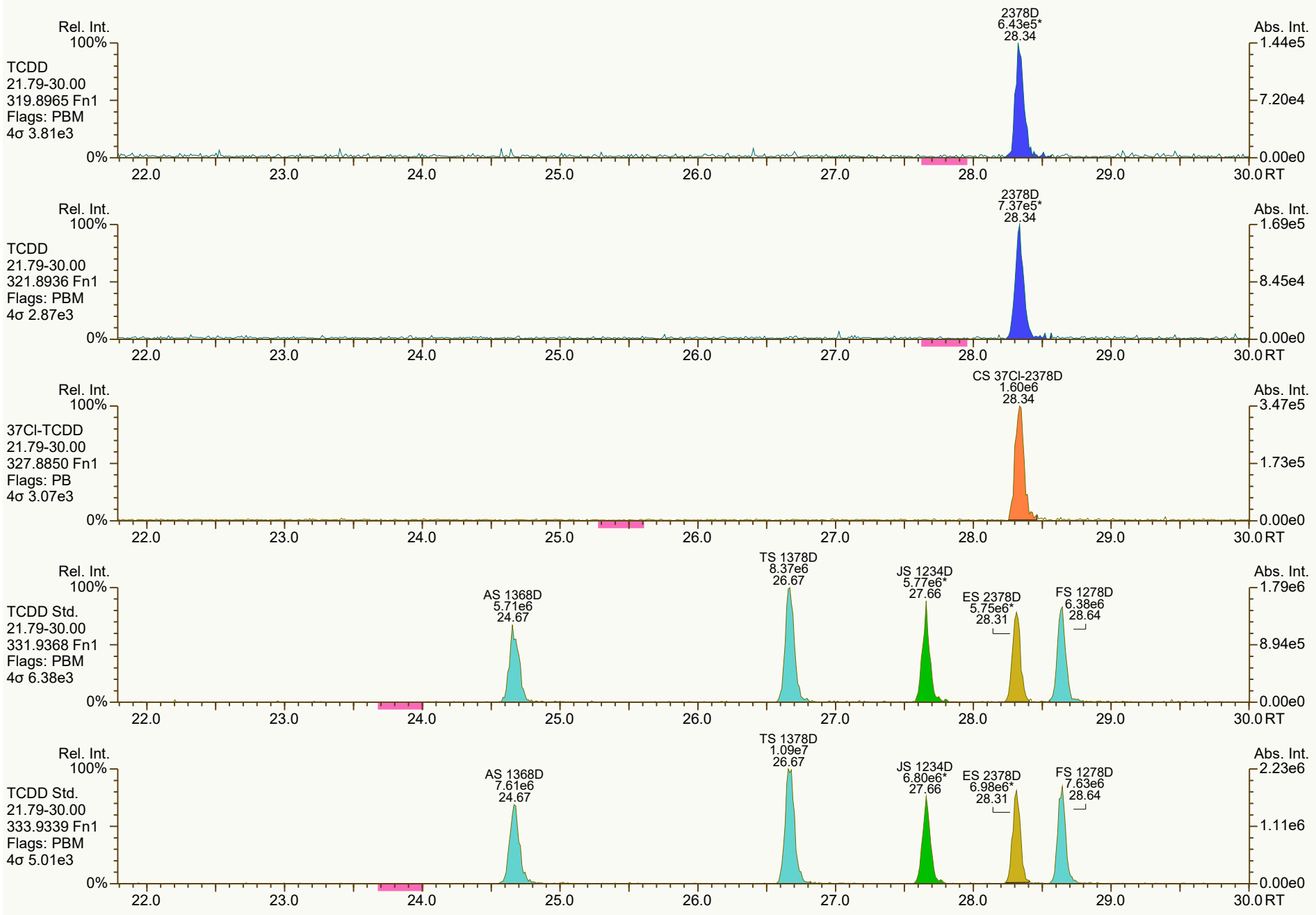
Instrument ID: MM3 GC Column ID: ZB-5ms

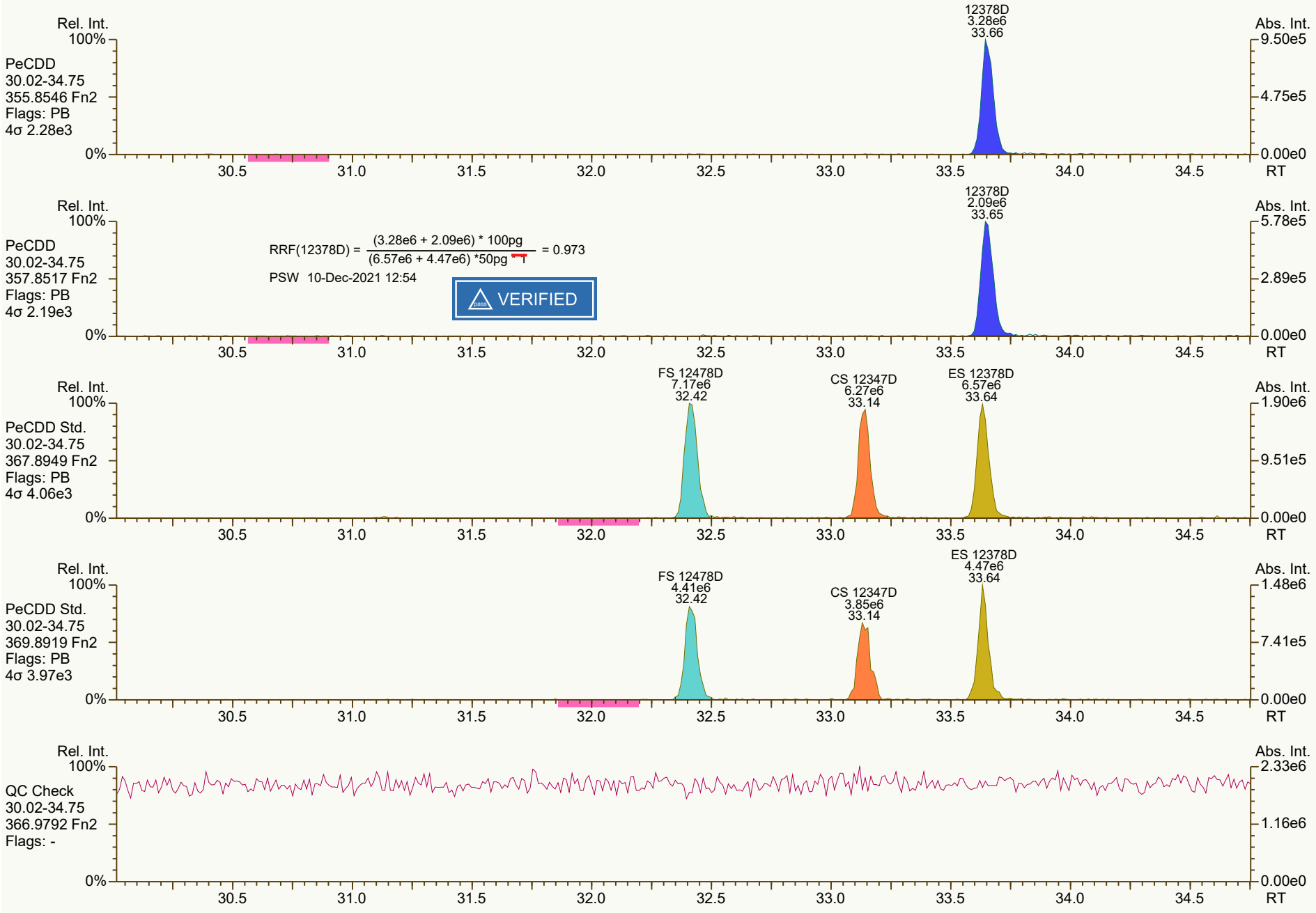
VER Data Filename: 211209R18 Analysis Date: 10-DEC-2021 00:55:24

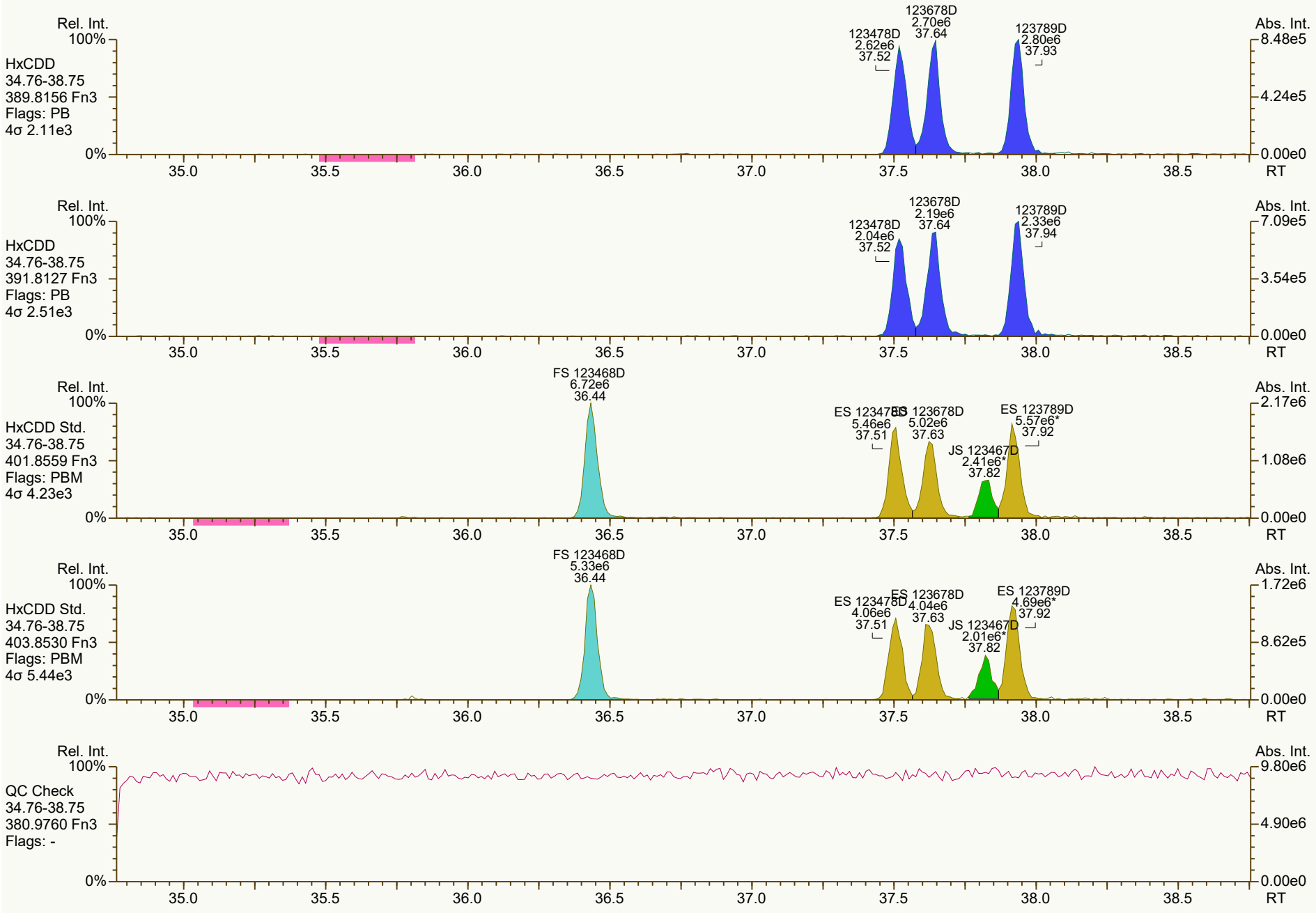
LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65	-	0.89	Y	98	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.47	1.32	-	1.78	Y	85	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.35	1.05	-	1.43	Y	108	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	105	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.19	1.05	-	1.43	Y	103	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.13	0.88	-	1.20	Y	97.6	72	-	138	Y
13C-OCDD	M+2/M+4	0.99	0.76	-	1.02	Y	141	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	91.2	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	85.7	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	90.2	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	110	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.56	0.43	-	0.59	Y	108	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	106	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.43	0.37	-	0.51	Y	110	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.50	0.37	-	0.51	Y	103	77	-	129	Y
13C-OCDF	M+2/M+4	0.95	0.76	-	1.02	Y	150	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.71	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.63	1.32	-	1.78	Y	90.2	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.60	1.32	-	1.78	Y	91.9	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	121	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.49	0.37	-	0.51	Y	122	70	-	130	Y

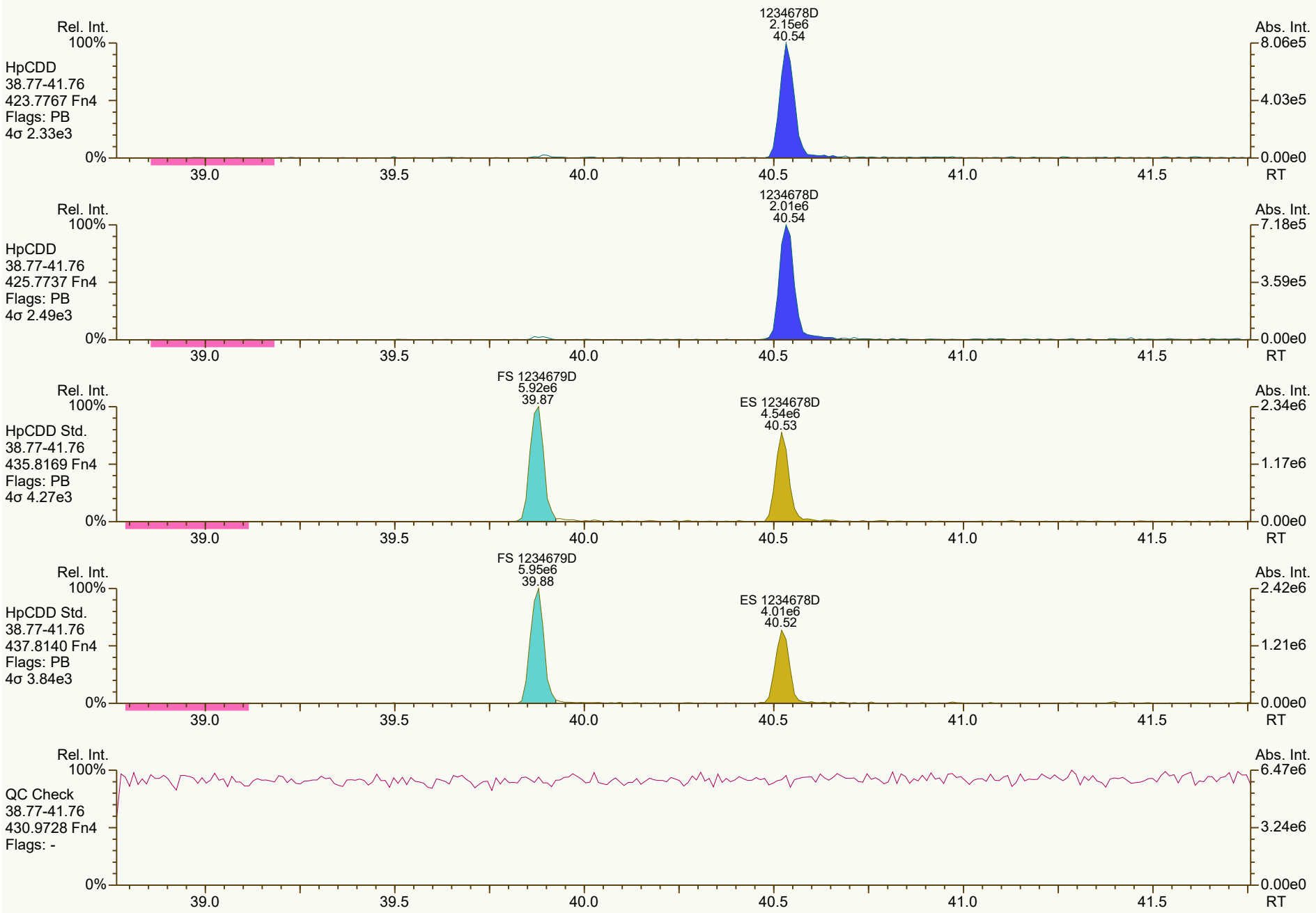
Processed: 10 Dec 2021 12:48 Analyst: pw

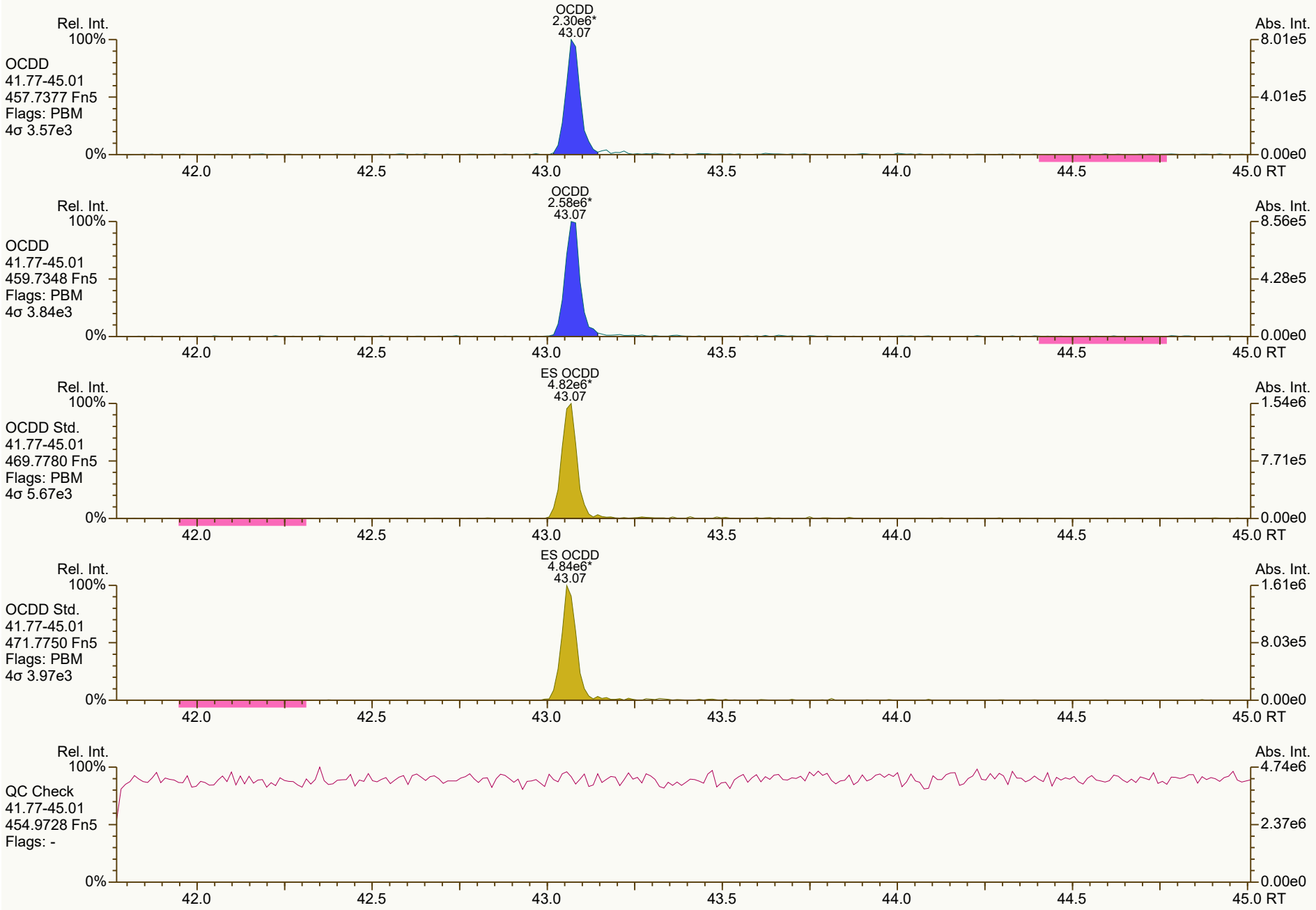

Rel. Int.
100%
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.58e6
1.29e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.33e6
1.16e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.80e6
4.90e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
6.47e6
3.24e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.74e6
2.37e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

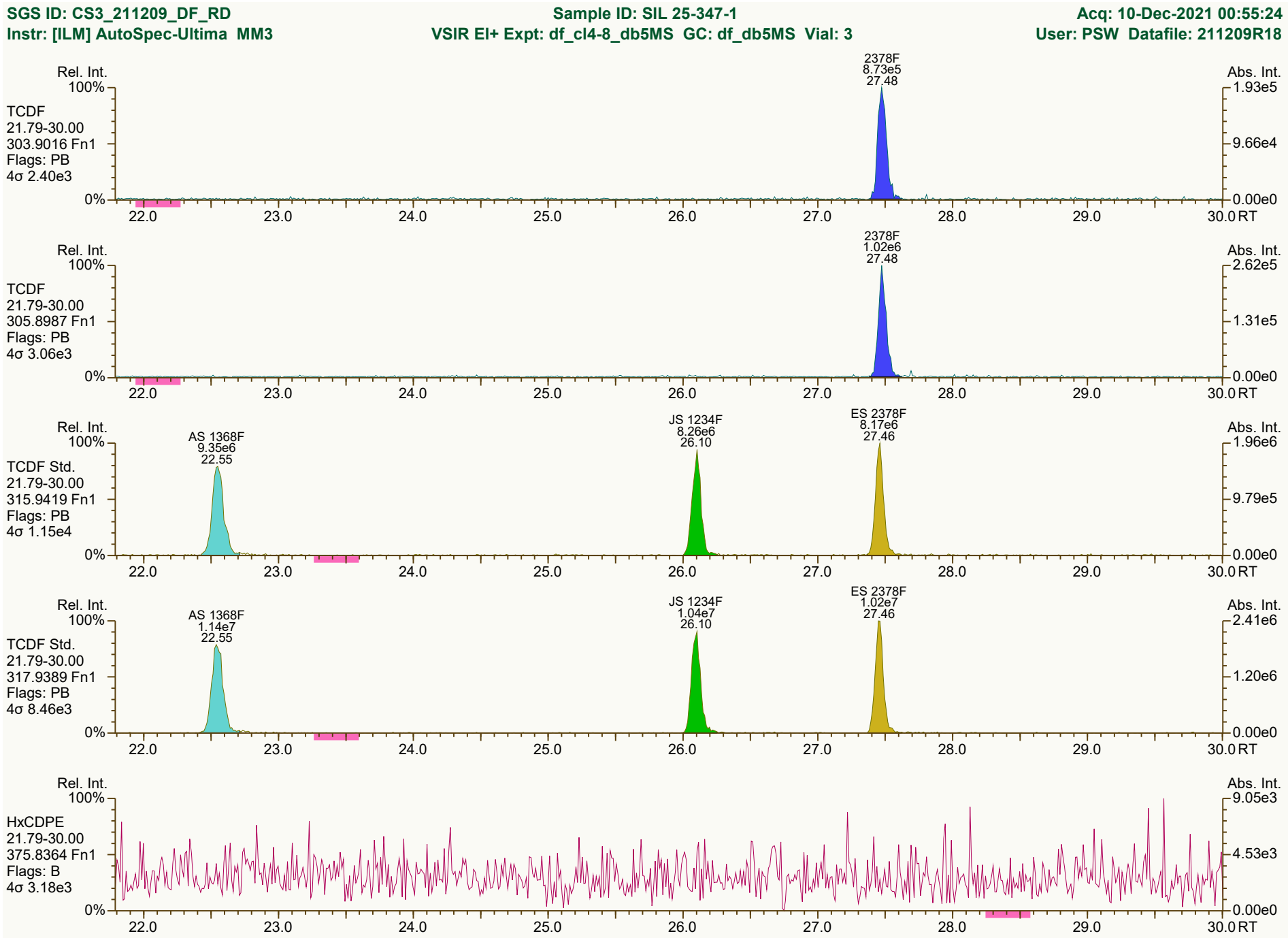

Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: PBM
4σ 3.81e3
0%
2378D
6.43e5*
28.34
Abs. Int.
1.44e5
7.20e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: PBM
4σ 2.87e3
0%
2378D
7.37e5*
28.34
Abs. Int.
1.69e5
8.45e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: PB
4σ 3.07e3
0%
CS 37Cl-2378D
1.60e6
28.34
Abs. Int.
3.47e5
1.73e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: PBM
4σ 6.38e3
0%
AS 1368D
5.71e6
24.67
TS 1378D
8.37e6
26.67
JS 1234D
5.77e6*
27.66
ES 2378D
5.75e6*
28.31
FS 1278D
6.38e6
28.64
Abs. Int.
1.79e6
8.94e5
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: PBM
4σ 5.01e3
0%
AS 1368D
7.61e6
24.67
TS 1378D
1.09e7
26.67
JS 1234D
6.80e6*
27.66
ES 2378D
6.98e6*
28.31
FS 1278D
7.63e6
28.64
Abs. Int.
2.23e6
1.11e6
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: PB
4σ 2.28e3
0%
12378D
3.28e6
33.66
Abs. Int.
9.50e5
4.75e5
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
PeCDD
30.02-34.75
357.8517 Fn2
Flags: PB
4σ 2.19e3
RRF(12378D) = (3.28e6 + 2.09e6) * 100pg / (6.57e6 + 4.47e6) *50pg = 0.973
PSW 10-Dec-2021 12:54
VERIFIED
12378D
2.09e6
33.65
5.78e5
2.89e5
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: PB
4σ 4.06e3
FS 12478D
7.17e6
32.42
CS 12347D
6.27e6
33.14
ES 12378D
6.57e6
33.64
1.90e6
9.51e5
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: PB
4σ 3.97e3
FS 12478D
4.41e6
32.42
CS 12347D
3.85e6
33.14
ES 12378D
4.47e6
33.64
1.48e6
7.41e5
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
2.33e6
1.16e6

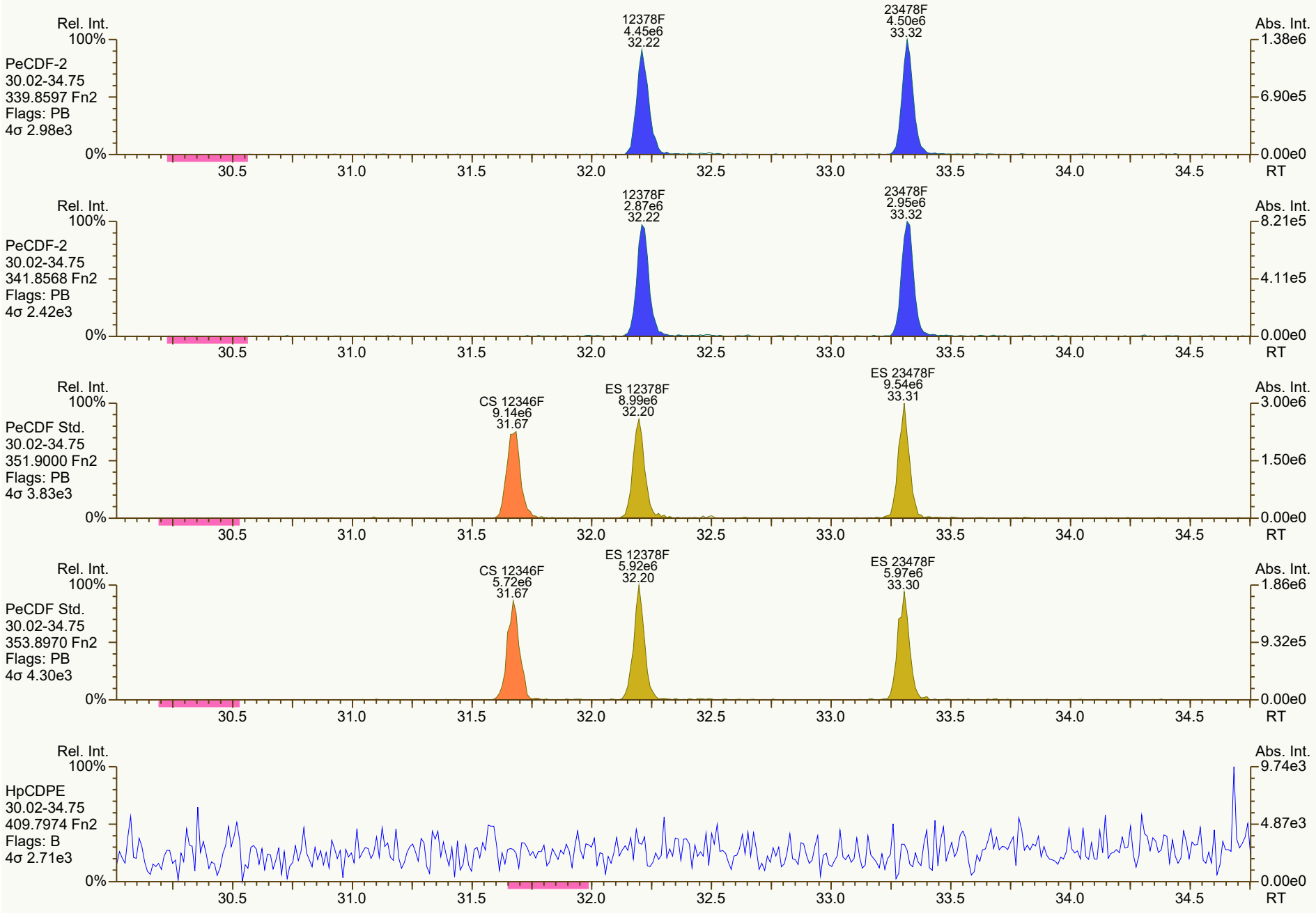

Rel. Int.
100%
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 2.11e3
0%
123678D
2.70e6
37.64
123478D
2.62e6
37.52
123789D
2.80e6
37.93
Abs. Int.
8.48e5
4.24e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 2.51e3
0%
123678D
2.19e6
37.64
123478D
2.04e6
37.52
123789D
2.33e6
37.94
Abs. Int.
7.09e5
3.54e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 4.23e3
0%
FS 123468D
6.72e6
36.44
ES 123478D
5.46e6
37.51
ES 123678D
5.02e6
37.63
JS 123467D
2.41e6*
37.82
ES 123789D
5.57e6*
37.92
Abs. Int.
2.17e6
1.08e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 5.44e3
0%
FS 123468D
5.33e6
36.44
ES 123478D
4.06e6
37.51
ES 123678D
4.04e6
37.63
JS 123467D
2.01e6*
37.82
ES 123789D
4.69e6*
37.92
Abs. Int.
1.72e6
8.62e5
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
0%
Abs. Int.
9.80e6
4.90e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.33e3
1234678D
2.15e6
40.54
Abs. Int.
8.06e5
4.03e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 2.49e3
1234678D
2.01e6
40.54
Abs. Int.
7.18e5
3.59e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PB
4σ 4.27e3
FS 1234679D
5.92e6
39.87
ES 1234678D
4.54e6
40.53
Abs. Int.
2.34e6
1.17e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PB
4σ 3.84e3
FS 1234679D
5.95e6
39.88
ES 1234678D
4.01e6
40.52
Abs. Int.
2.42e6
1.21e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
6.47e6
3.24e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
2.30e6*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 3.57e3
0%
Abs. Int.
8.01e5
4.01e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.58e6*
43.07
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 3.84e3
0%
Abs. Int.
8.56e5
4.28e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
4.82e6*
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PBM
4σ 5.67e3
0%
Abs. Int.
1.54e6
7.71e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
4.84e6*
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PBM
4σ 3.97e3
0%
Abs. Int.
1.61e6
8.03e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.74e6
2.37e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: CS3_211209_DF_RD
Sample ID: SIL 25-347-1
Acq: 10-Dec-2021 00:55:24
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 211209R18
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PB
4σ 2.40e3
2378F
8.73e5
27.48
1.93e5
9.66e4
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PB
4σ 3.06e3
2378F
1.02e6
27.48
2.62e5
1.31e5
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 1.15e4
AS 1368F
9.35e6
22.55
JS 1234F
8.26e6
26.10
ES 2378F
8.17e6
27.46
1.96e6
9.79e5
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 8.46e3
AS 1368F
1.14e7
22.55
JS 1234F
1.04e7
26.10
ES 2378F
1.02e7
27.46
2.41e6
1.20e6
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.18e3
9.05e3
4.53e3
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\CS3_211209_DF_RD.utp_res, saved 10-Dec-2021 12:54 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2451, 8710, 2446 scc: 984-034
PKD: 10-Dec-2021 08:16 Printed: 10-Dec-2021 12:54 Page 7 of 12

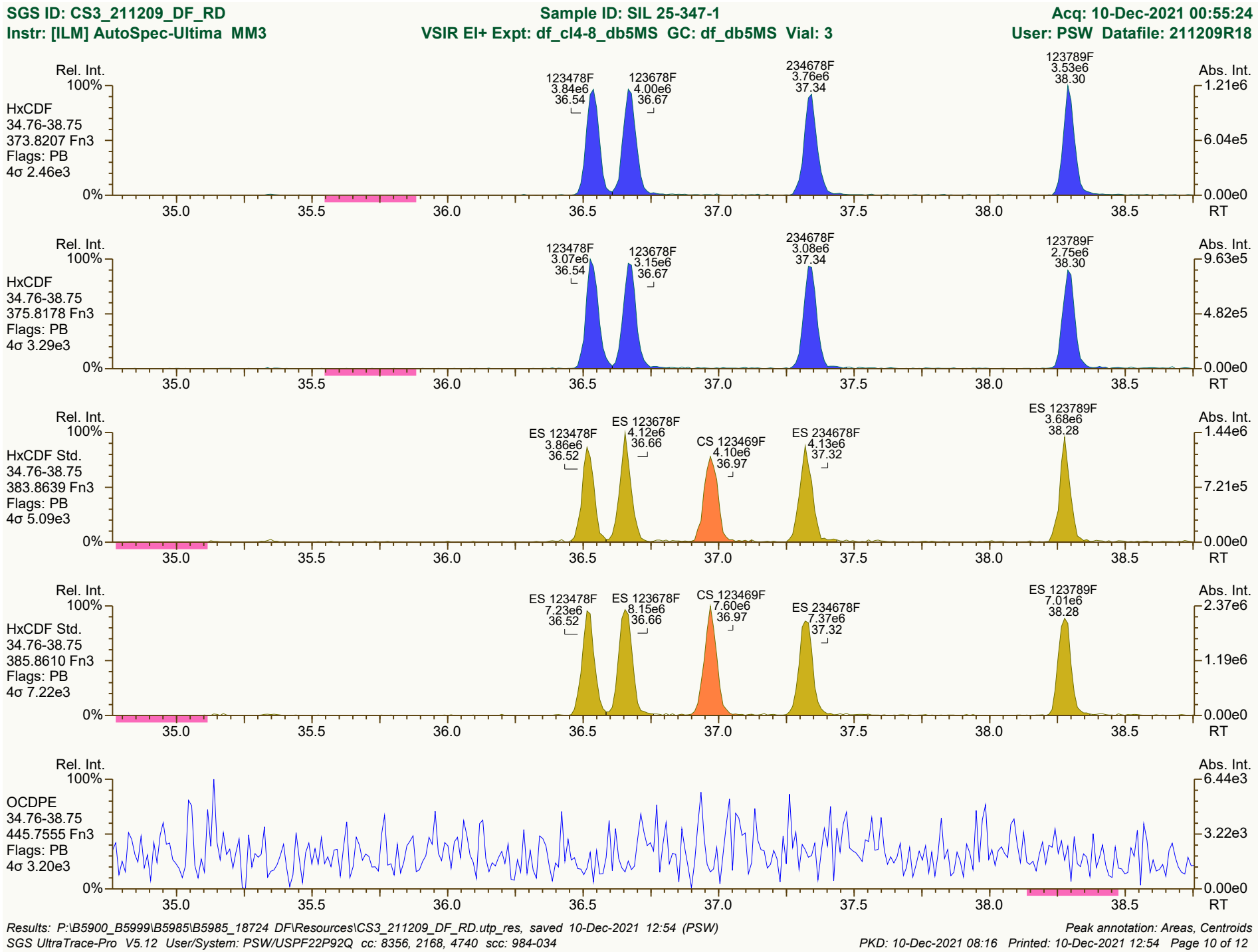

Rel. Int.
100%
0%
Abs. Int.
6.71e4
3.35e4
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 3.27e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.23e4
6.15e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 3.24e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.58e6
1.29e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PB
4σ 2.98e3
0%
12378F
4.45e6
32.22
23478F
4.50e6
33.32
Abs. Int.
1.38e6
6.90e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PB
4σ 2.42e3
0%
12378F
2.87e6
32.22
23478F
2.95e6
33.32
Abs. Int.
8.21e5
4.11e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 3.83e3
0%
CS 12346F
9.14e6
31.67
ES 12378F
8.99e6
32.20
ES 23478F
9.54e6
33.31
Abs. Int.
3.00e6
1.50e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 4.30e3
0%
CS 12346F
5.72e6
31.67
ES 12378F
5.92e6
32.20
ES 23478F
5.97e6
33.30
Abs. Int.
1.86e6
9.32e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 2.71e3
0%
Abs. Int.
9.74e3
4.87e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

SGS ID: CS3_211209_DF_RD
Instr: [ILM] AutoSpec-Ultima MM3

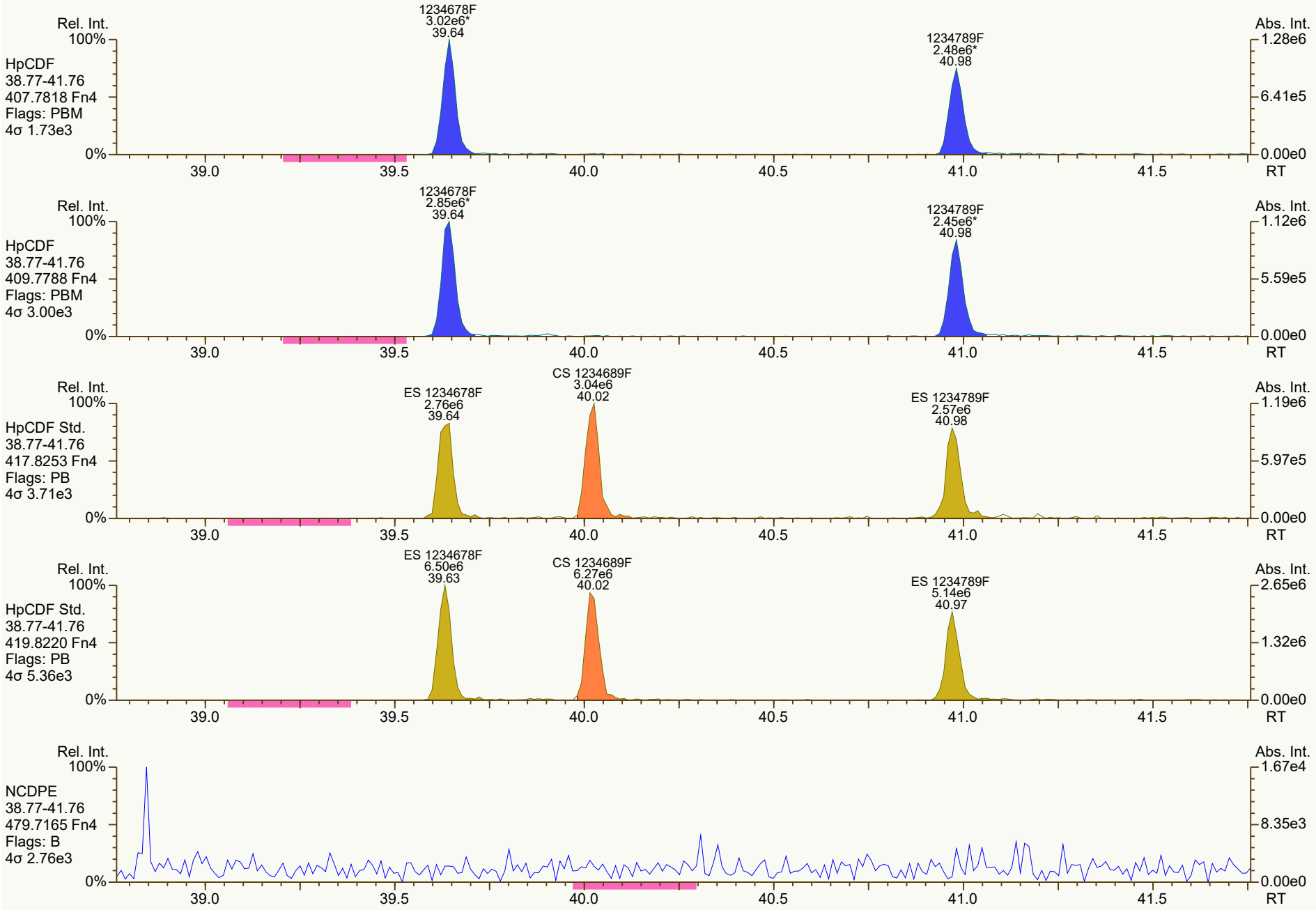
Sample ID: SIL 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 10-Dec-2021 00:55:24
User: PSW Datafile: 211209R18

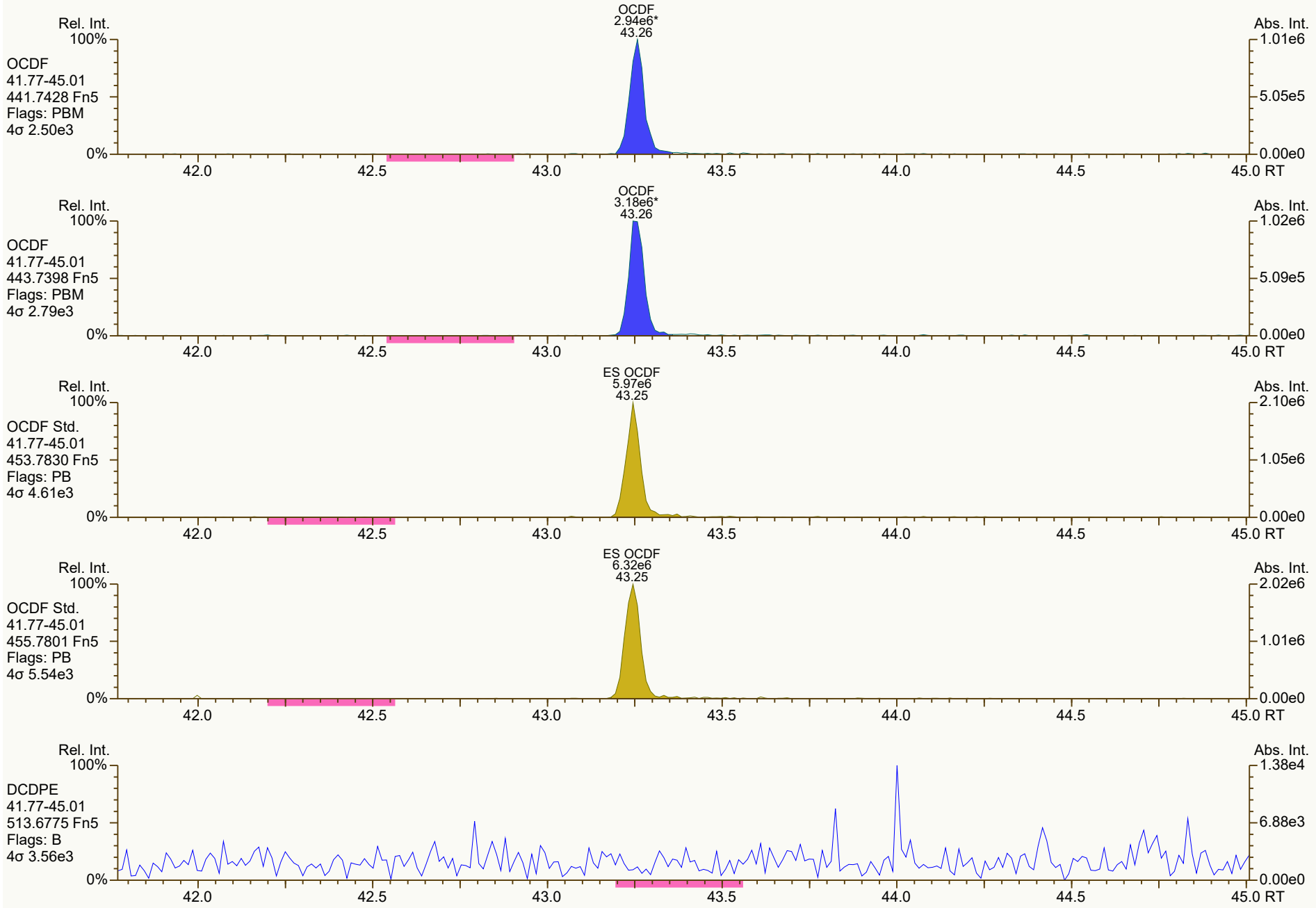


Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\CS3_211209_DF_RD.utp_res, saved 10-Dec-2021 12:54 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8356, 2168, 4740 scc: 984-034

Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 08:16 Printed: 10-Dec-2021 12:54 Page 10 of 12

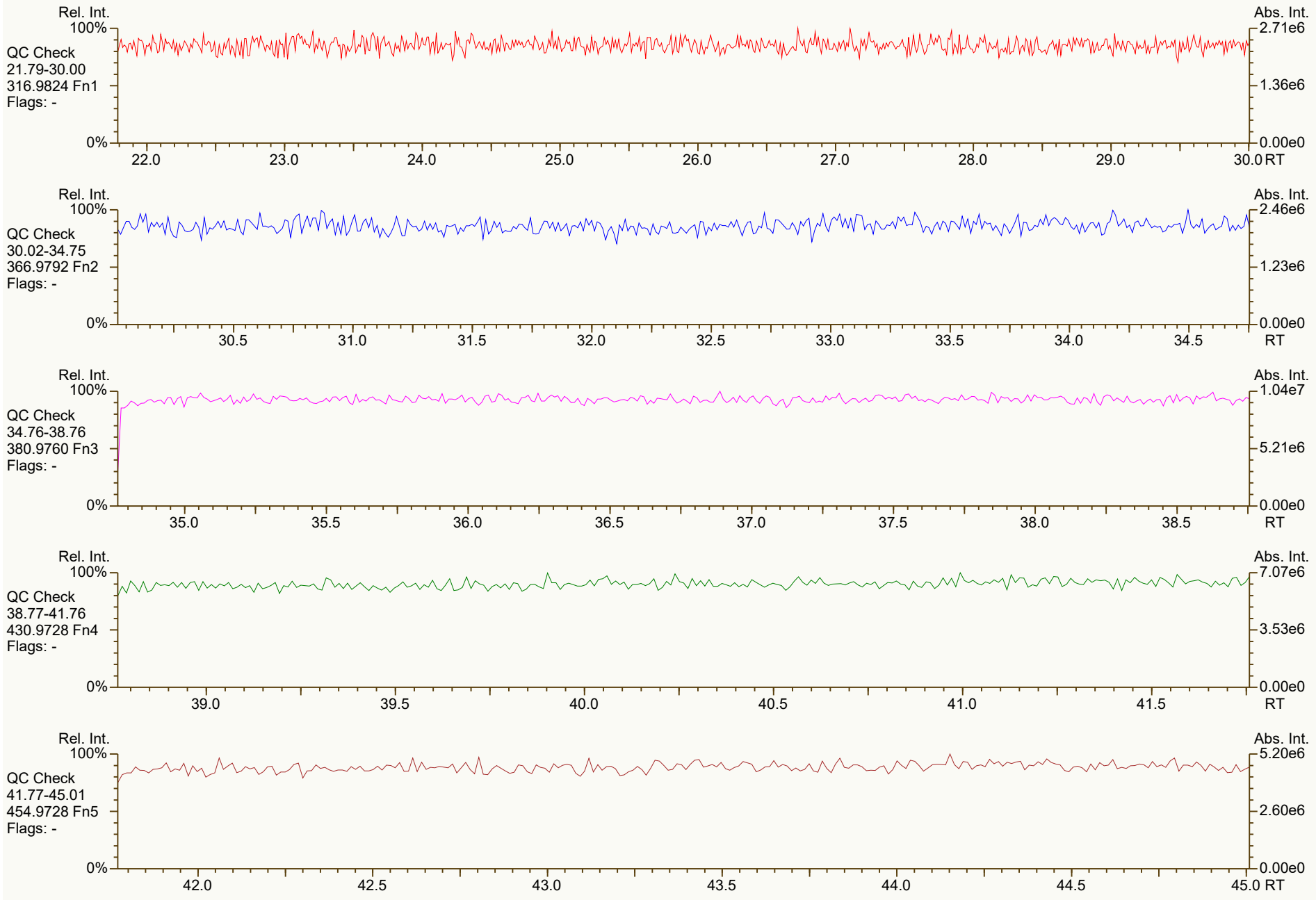

Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PBM
4σ 1.73e3
1234678F
3.02e6*
39.64
1234789F
2.48e6*
40.98
Abs. Int.
1.28e6
6.41e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PBM
4σ 3.00e3
1234678F
2.85e6*
39.64
1234789F
2.45e6*
40.98
Abs. Int.
1.12e6
5.59e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: PB
4σ 3.71e3
ES 1234678F
2.76e6
39.64
CS 1234689F
3.04e6
40.02
ES 1234789F
2.57e6
40.98
Abs. Int.
1.19e6
5.97e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: PB
4σ 5.36e3
ES 1234678F
6.50e6
39.63
CS 1234689F
6.27e6
40.02
ES 1234789F
5.14e6
40.97
Abs. Int.
2.65e6
1.32e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.76e3
Abs. Int.
1.67e4
8.35e3
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT

SGS ID: CS3_211209_DF_RD | Sample ID: SIL 25-347-1 | Acq: 10-Dec-2021 00:55:24
Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: PSW Datafile: 211209R18



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\CS3_211209_DF_RD.utp_res, saved 10-Dec-2021 12:54 (PSW) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3301, 4684, 8258 scc: 984-034 *PKD: 10-Dec-2021 08:16 Printed: 10-Dec-2021 12:54 Page 12 of 12*


Rel. Int.
100%
0%
Abs. Int.
2.71e6
1.36e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.46e6
1.23e6
0.00e0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
0%
Abs. Int.
1.04e7
5.21e6
0.00e0
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
0%
Abs. Int.
7.07e6
3.53e6
0.00e0
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
0%
Abs. Int.
5.20e6
2.60e6
0.00e0
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
21.79-30.00
319.8965 Fn1
Flags: B
4σ 3.52e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD
21.79-30.00
321.8936 Fn1
Flags: B
4σ 2.90e3
0%
Abs. Int.
8.20e3
4.10e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
37Cl-TCDD
21.79-30.00
327.8850 Fn1
Flags: B
4σ 2.73e3
0%
Abs. Int.
1.20e4
6.00e3
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
331.9368 Fn1
Flags: B
4σ 6.61e3
0%
Abs. Int.
2.48e4
1.24e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
TCDD Std.
21.79-30.00
333.9339 Fn1
Flags: B
4σ 3.85e3
0%
Abs. Int.
3.19e4
1.60e4
0.00e0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDD
30.02-34.75
355.8546 Fn2
Flags: B
4σ 2.44e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
Rel. Int.
100%
PeCDD
30.02-34.75
357.8517 Fn2
Flags: B
4σ 1.77e3
0%
Abs. Int.
6.51e3
3.26e3
0.00e0
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
367.8949 Fn2
Flags: B
4σ 5.78e3
0%
Abs. Int.
1.14e4
5.68e3
0.00e0
RT
Rel. Int.
100%
PeCDD Std.
30.02-34.75
369.8919 Fn2
Flags: B
4σ 3.81e3
0%
Abs. Int.
9.50e3
4.75e3
0.00e0
RT
Rel. Int.
100%
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.46e6
1.23e6
0.00e0
RT


Rel. Int.
100%
HxCDD
34.76-38.76
389.8156 Fn3
Flags: PB
4σ 1.87e3
0%
Abs. Int.
5.34e3
2.67e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD
34.76-38.76
391.8127 Fn3
Flags: PB
4σ 2.88e3
0%
Abs. Int.
6.13e3
3.07e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
401.8559 Fn3
Flags: B
4σ 3.47e3
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDD Std.
34.76-38.76
403.8530 Fn3
Flags: B
4σ 5.57e3
0%
Abs. Int.
1.21e4
6.06e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
QC Check
34.76-38.76
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.04e7
5.21e6
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT

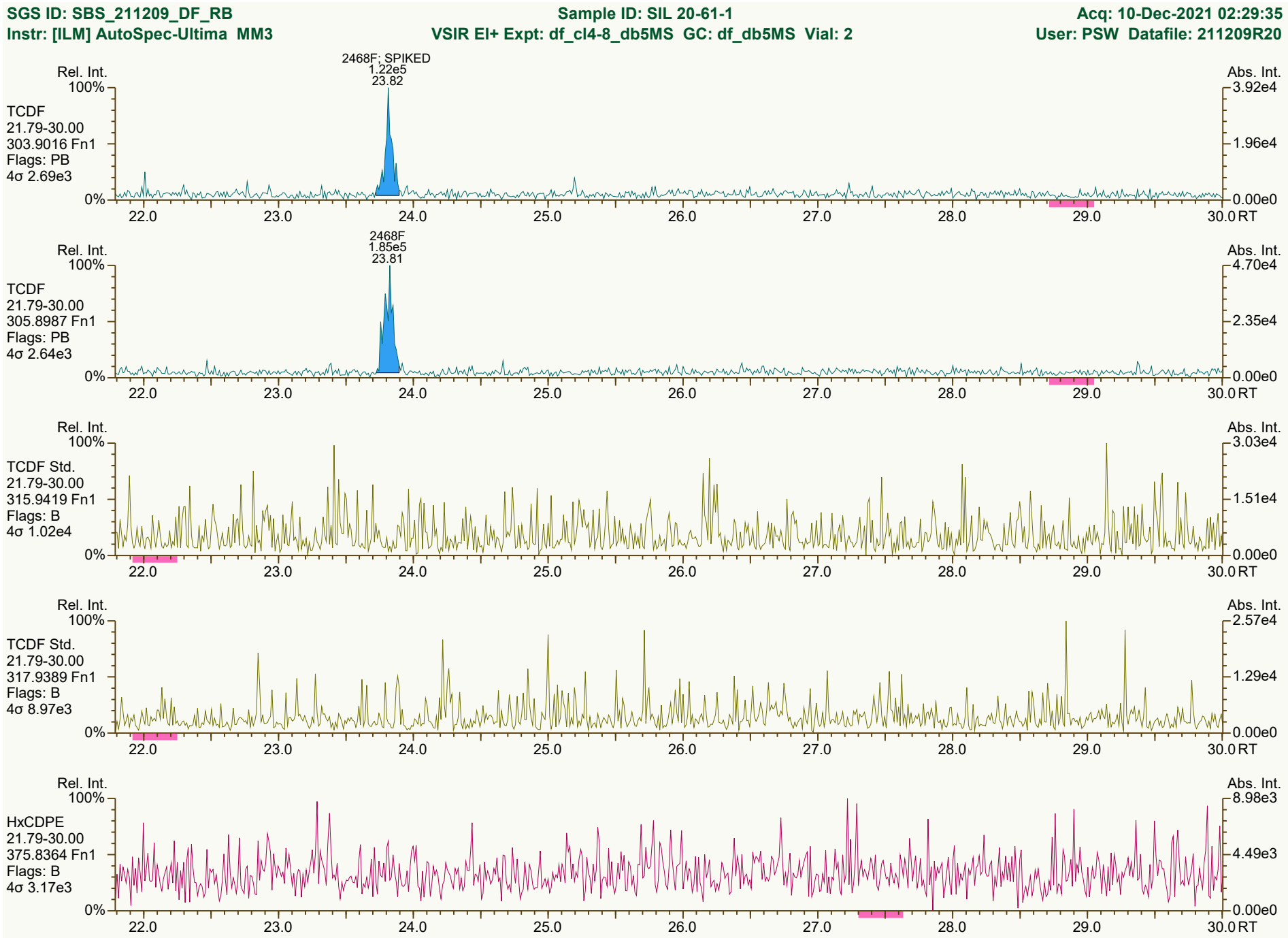

Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.59e3
0%
Abs. Int.
4.56e3
2.28e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: B
4σ 1.64e3
0%
Abs. Int.
5.89e3
2.95e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: B
4σ 3.81e3
0%
Abs. Int.
1.04e4
5.21e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: B
4σ 4.04e3
0%
Abs. Int.
1.41e4
7.07e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
0%
Abs. Int.
7.07e6
3.53e6
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: B
4σ 3.54e3
0%
Abs. Int.
1.04e4
5.22e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: B
4σ 3.27e3
0%
Abs. Int.
1.72e4
8.62e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: B
4σ 3.59e3
0%
Abs. Int.
1.15e4
5.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: B
4σ 4.44e3
0%
Abs. Int.
1.30e4
6.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
5.20e6
2.60e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_211209_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

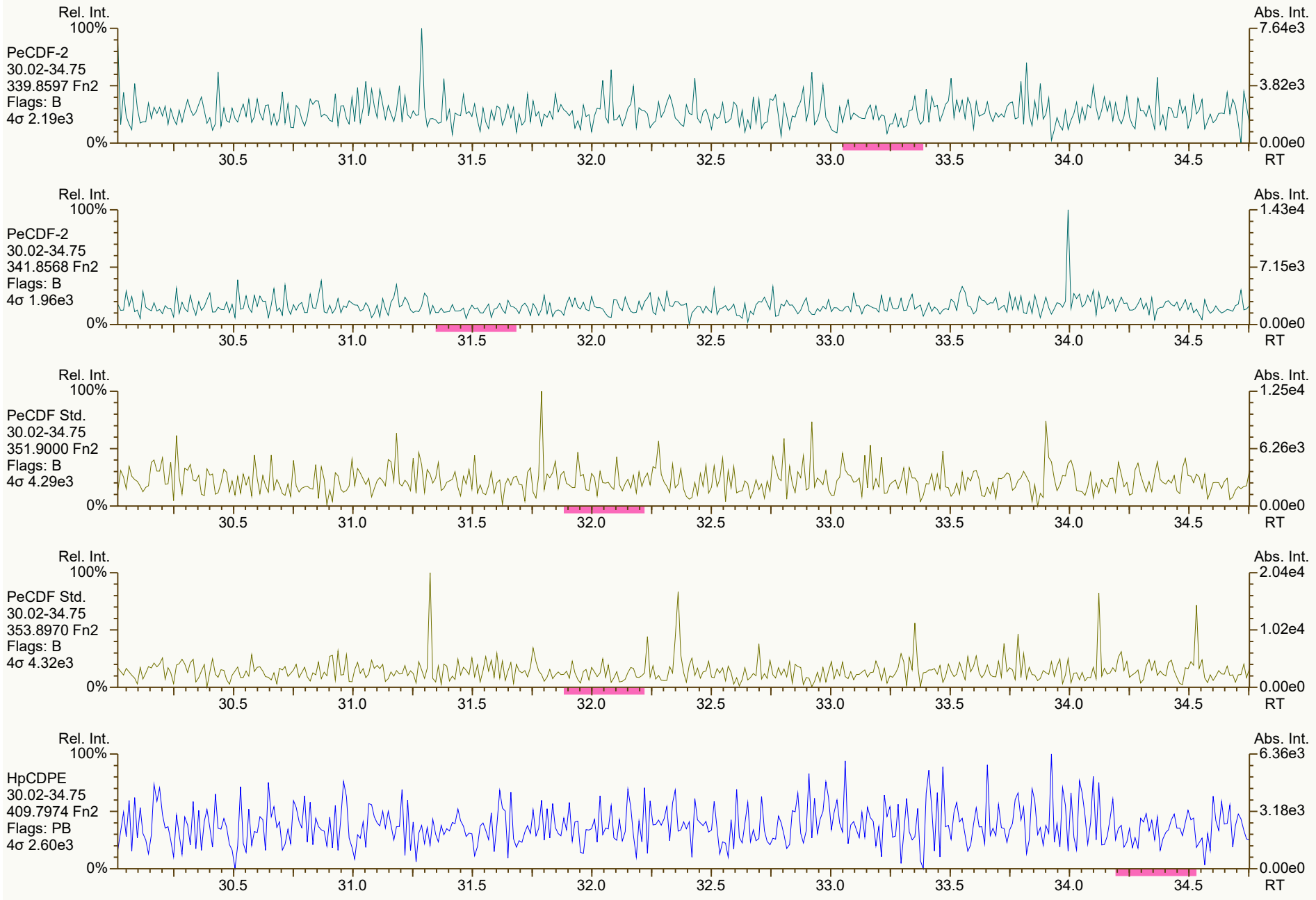
Acq: 10-Dec-2021 02:29:35
User: PSW Datafile: 211209R20



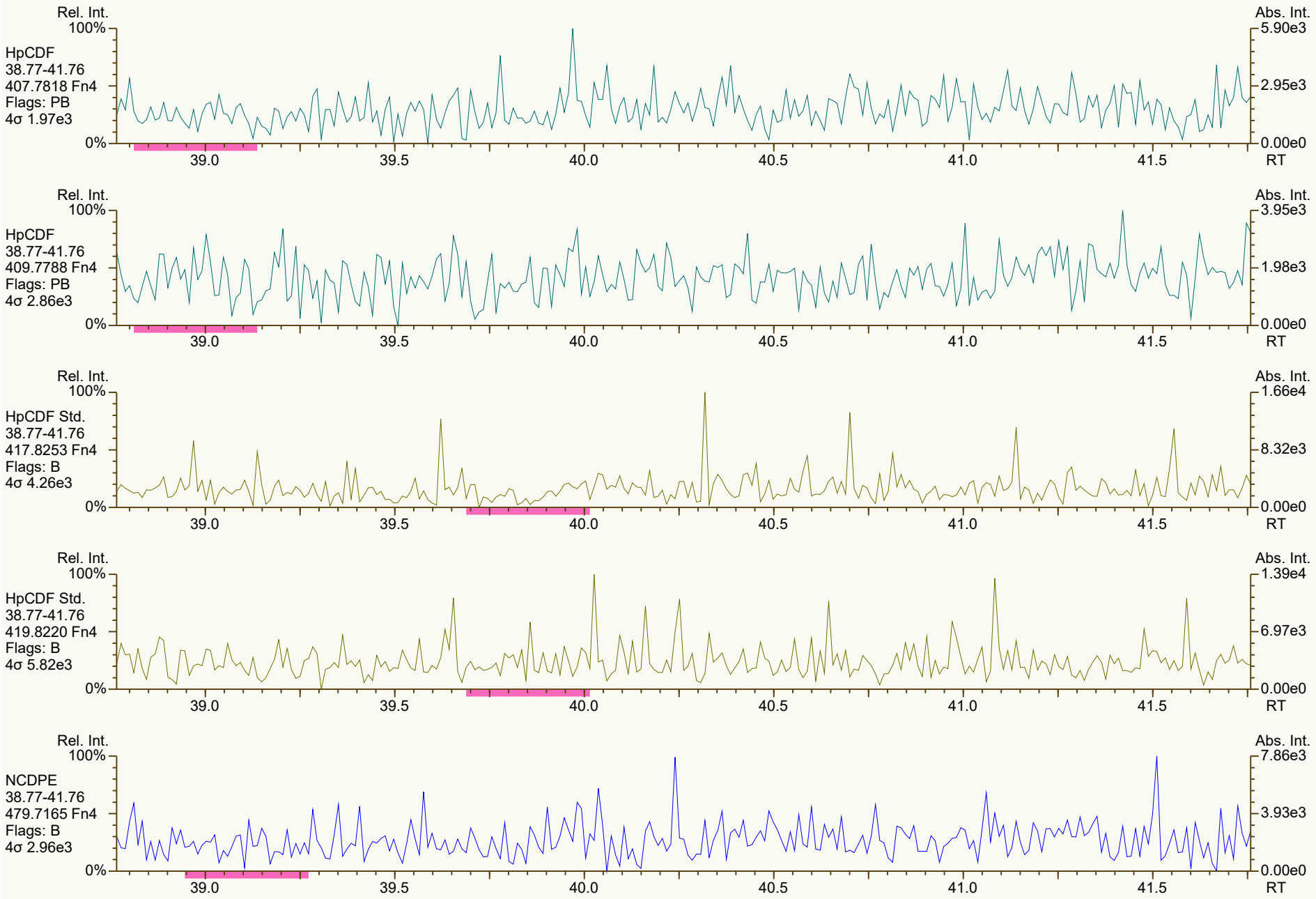
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\SBS_211209_DF_RB.utp_res, saved 10-Dec-2021 08:23 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 0608, 4045, 2269 scc: 976-368

Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 08:23 Printed: 10-Dec-2021 12:55 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
9.98e3
4.99e3
0.00e0
PeCDF-1
21.79-30.00
339.8597 Fn1
Flags: B
4σ 2.97e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
1.06e4
5.29e3
0.00e0
PeCDF-1
21.79-30.00
341.8568 Fn1
Flags: B
4σ 2.87e3
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Rel. Int.
100%
0%
Abs. Int.
2.71e6
1.36e6
0.00e0
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: B
4σ 2.19e3
0%
Abs. Int.
7.64e3
3.82e3
0.00e0
RT
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: B
4σ 1.96e3
0%
Abs. Int.
1.43e4
7.15e3
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: B
4σ 4.29e3
0%
Abs. Int.
1.25e4
6.26e3
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: B
4σ 4.32e3
0%
Abs. Int.
2.04e4
1.02e4
0.00e0
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: PB
4σ 2.60e3
0%
Abs. Int.
6.36e3
3.18e3
0.00e0
RT


Rel. Int.
100%
HxCDF
34.76-38.76
373.8207 Fn3
Flags: B
4σ 2.27e3
0%
Abs. Int.
5.87e3
2.94e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF
34.76-38.76
375.8178 Fn3
Flags: PB
4σ 2.38e3
0%
Abs. Int.
5.63e3
2.82e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
383.8639 Fn3
Flags: B
4σ 3.87e3
0%
Abs. Int.
1.30e4
6.49e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
HxCDF Std.
34.76-38.76
385.8610 Fn3
Flags: B
4σ 4.19e3
0%
Abs. Int.
2.49e4
1.25e4
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Rel. Int.
100%
OCDPE
34.76-38.76
445.7555 Fn3
Flags: B
4σ 3.39e3
0%
Abs. Int.
9.91e3
4.95e3
0.00e0
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT


Rel. Int.
100%
HpCDF
38.77-41.76
407.7818 Fn4
Flags: PB
4σ 1.97e3
0%
Abs. Int.
5.90e3
2.95e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF
38.77-41.76
409.7788 Fn4
Flags: PB
4σ 2.86e3
0%
Abs. Int.
3.95e3
1.98e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
417.8253 Fn4
Flags: B
4σ 4.26e3
0%
Abs. Int.
1.66e4
8.32e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDF Std.
38.77-41.76
419.8220 Fn4
Flags: B
4σ 5.82e3
0%
Abs. Int.
1.39e4
6.97e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
NCDPE
38.77-41.76
479.7165 Fn4
Flags: B
4σ 2.96e3
0%
Abs. Int.
7.86e3
3.93e3
0.00e0
39.0
39.5
40.0
40.5
41.0
41.5
RT


Rel. Int.
100%
OCDF
41.77-45.01
441.7428 Fn5
Flags: B
4σ 2.36e3
0%
Abs. Int.
2.19e4
1.10e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.77-45.01
443.7398 Fn5
Flags: B
4σ 2.86e3
0%
Abs. Int.
6.58e3
3.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
453.7830 Fn5
Flags: B
4σ 4.05e3
0%
Abs. Int.
7.18e3
3.59e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.77-45.01
455.7801 Fn5
Flags: B
4σ 4.69e3
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.77-45.01
513.6775 Fn5
Flags: PB
4σ 2.52e3
0%
Abs. Int.
6.90e3
3.45e3
0.00e0
42.0
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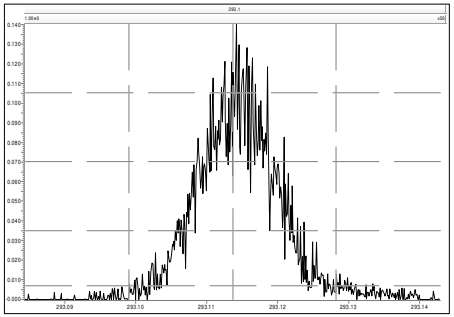
M 292.9824 R 11560



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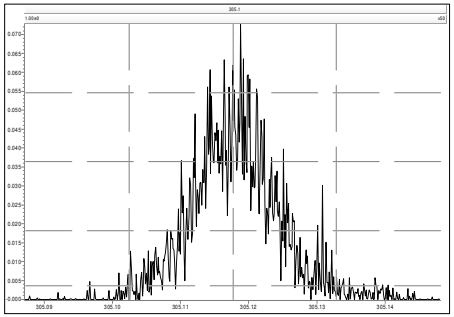

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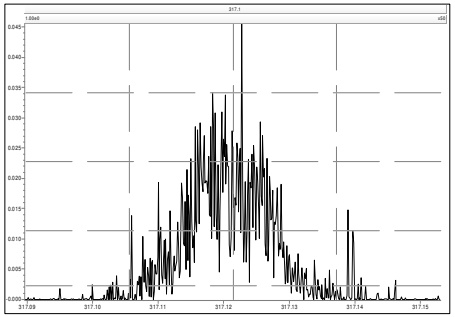
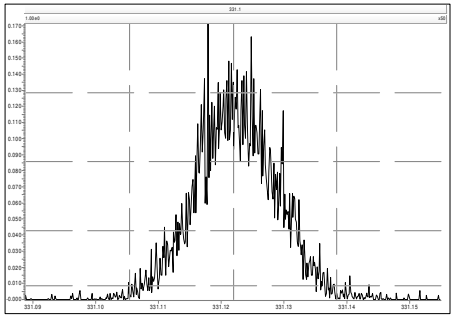
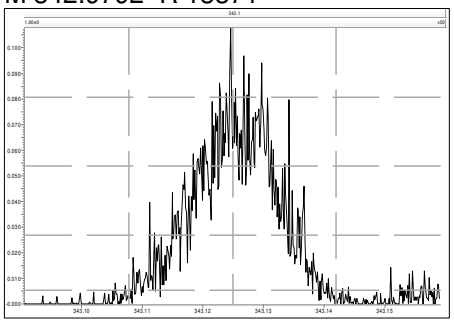


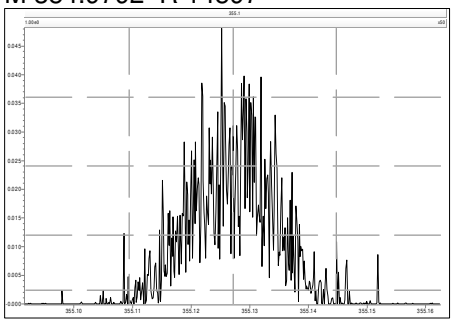
M 330.9792 R 12502



M 342.9792 R 13371



M 354.9792 R 14597



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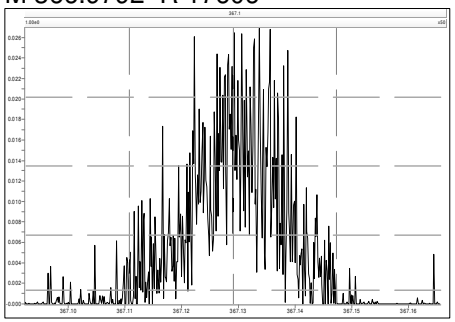
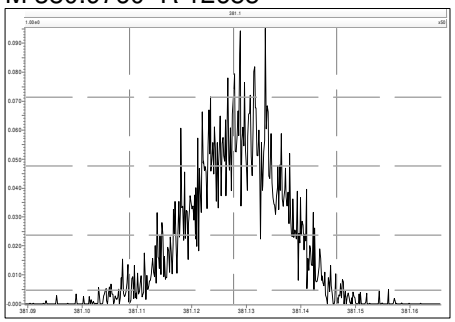


M 380.9760 R 12655



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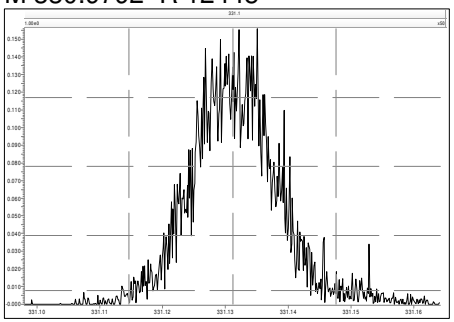

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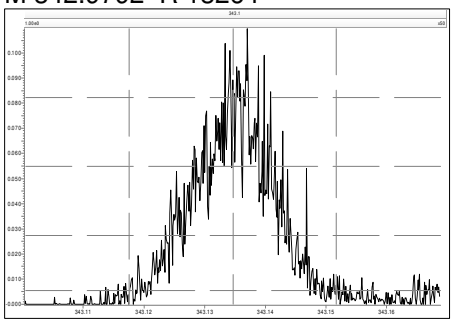
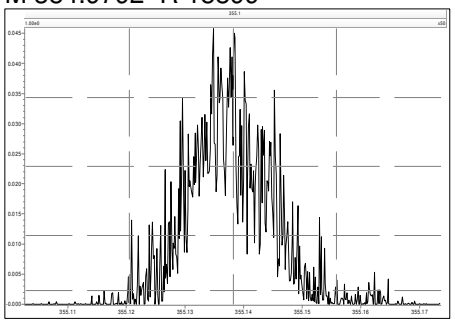


M 354.9792 R 15899



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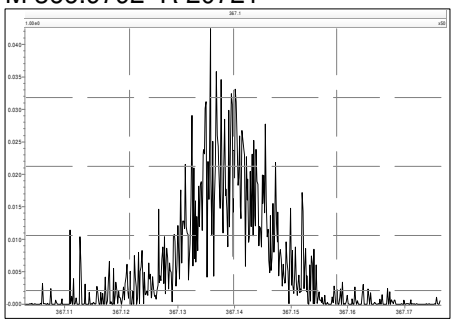

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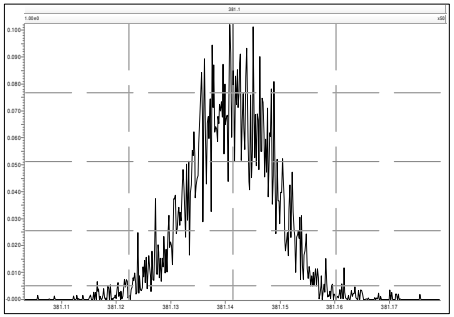

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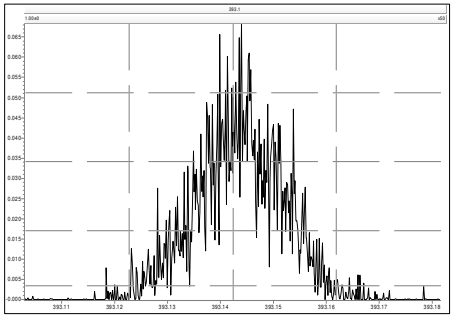
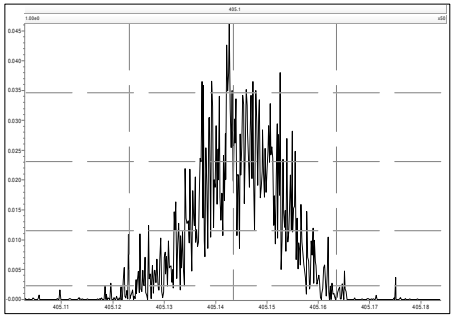


M 404.9760 R 15030



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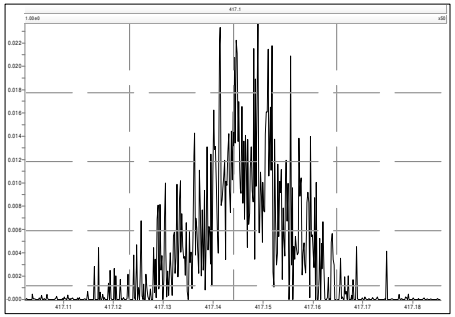
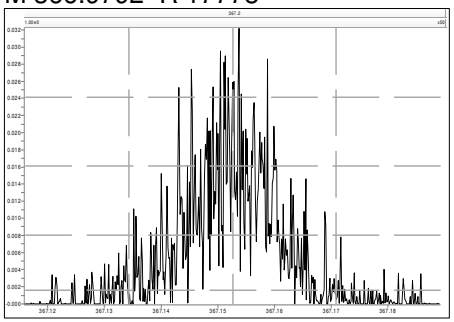
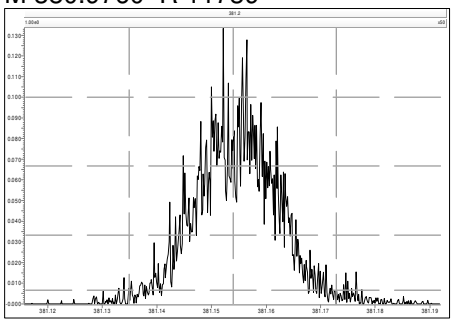


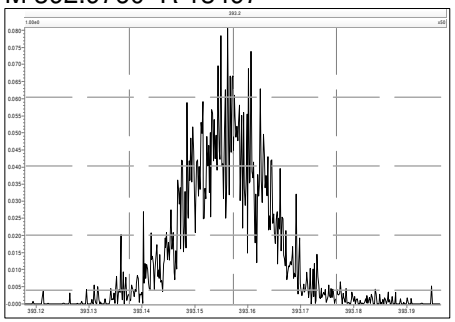
M 366.9792 R 17778



M 380.9760 R 11739



M 392.9760 R 13497



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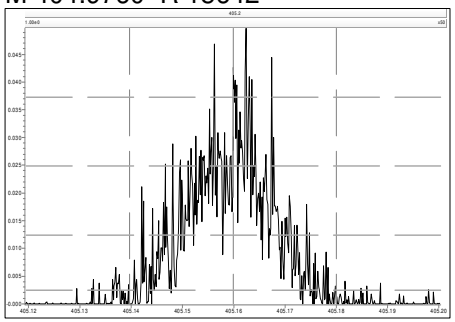

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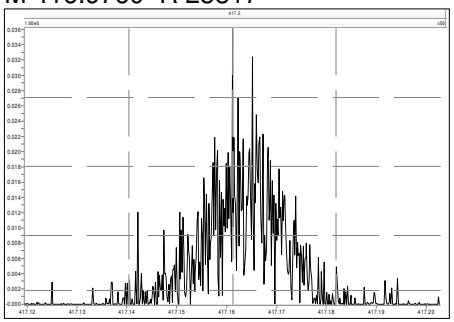
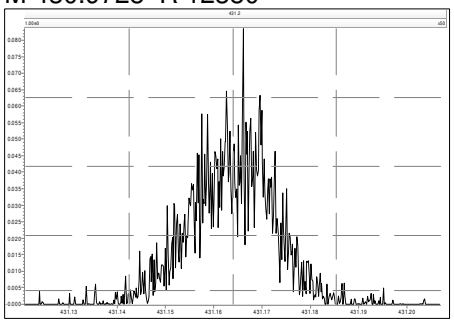
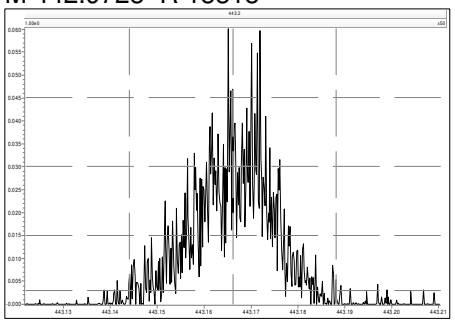


M 430.9728 R 12380



M 442.9728 R 15818



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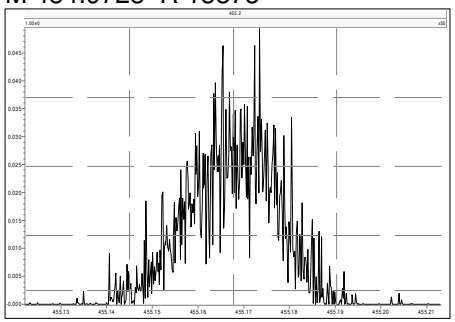
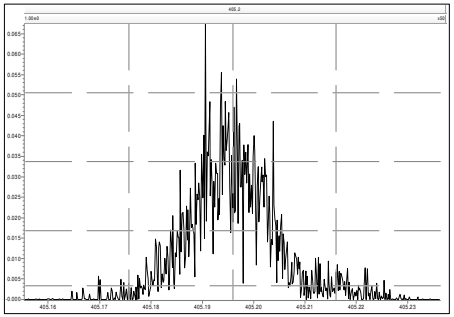
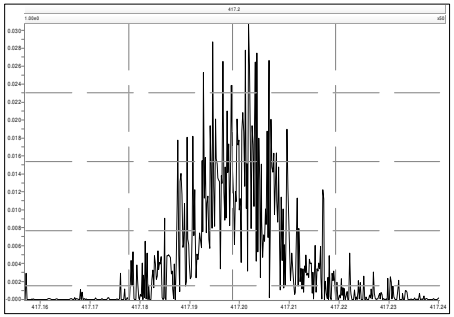


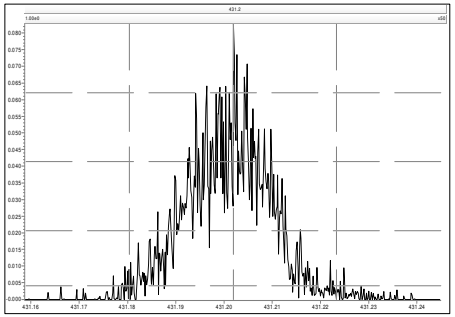
M 404.9760 R 13446



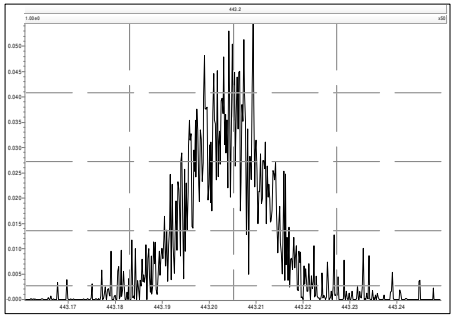
M 416.9760 R 22734



M 430.9728 R 14346



M 442.9728 R 15186



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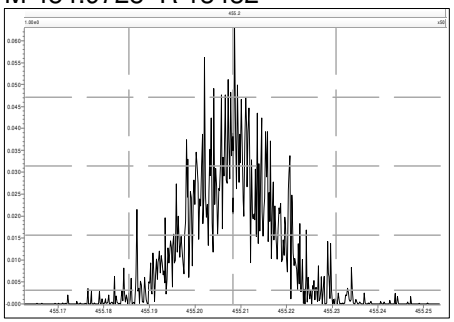
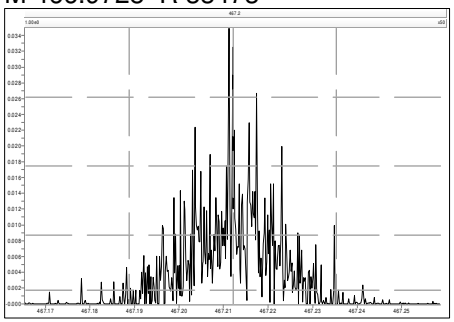
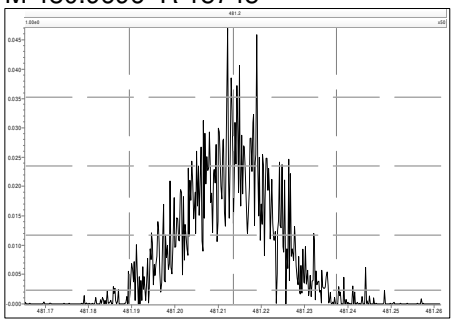


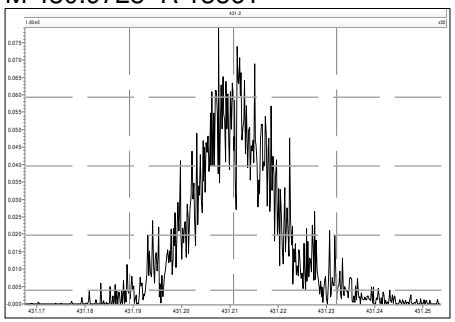
M 466.9728 R 33473



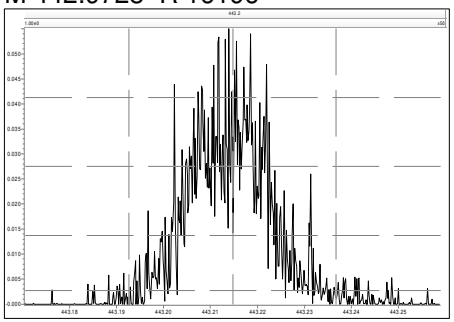
M 480.9696 R 15745



M 430.9728 R 13561



M 442.9728 R 16196



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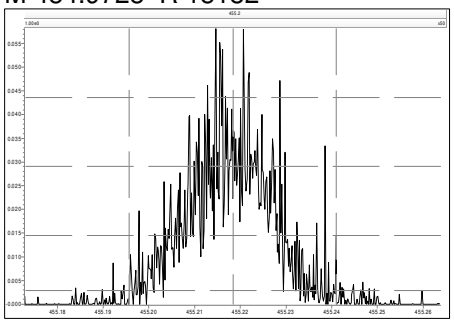

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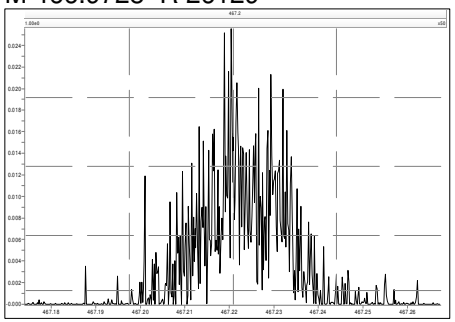
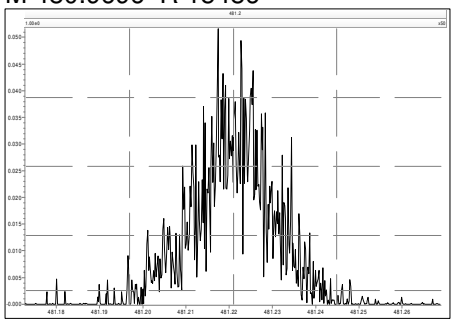


M 480.9696 R 15486



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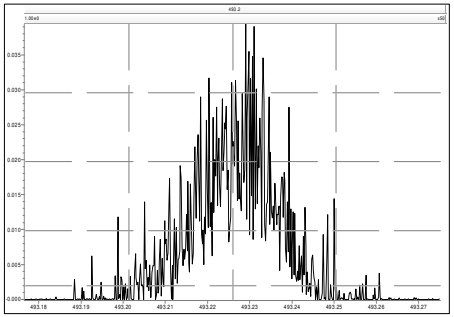
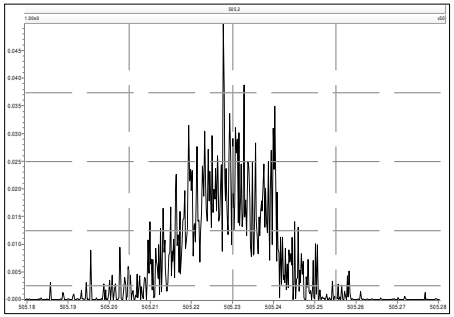


M 504.9696 R 15685



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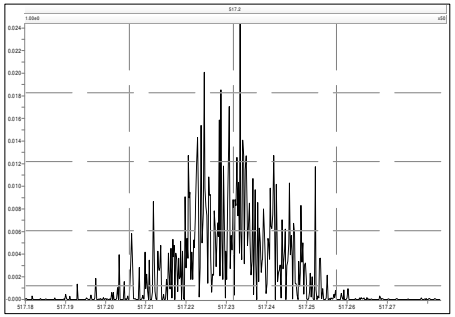

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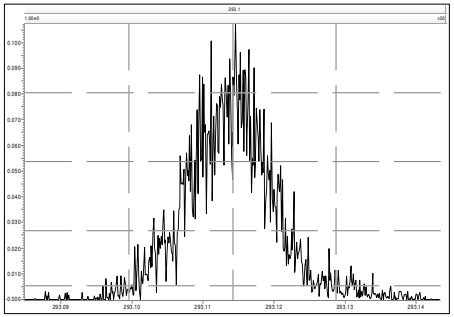
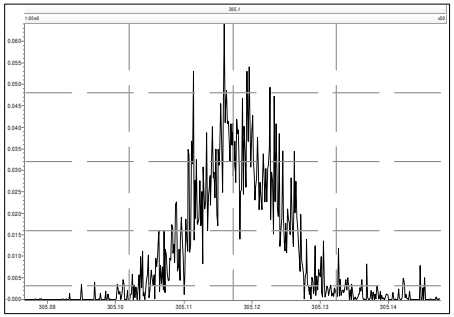
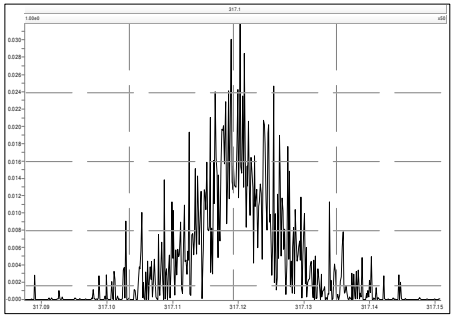
M 292.9824 R 12061



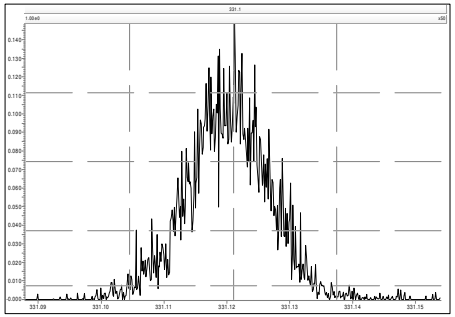
M 304.9824 R 15742



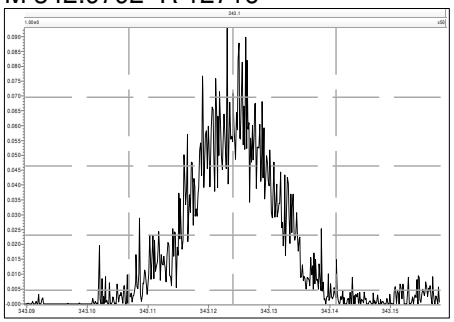
M 316.9824 R 23037



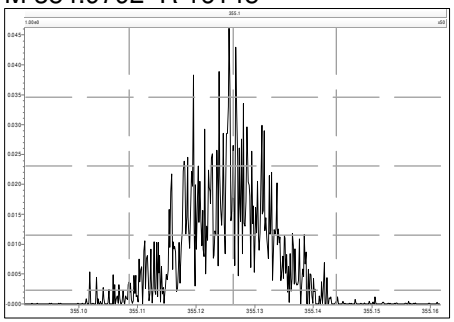
M 330.9792 R 12209



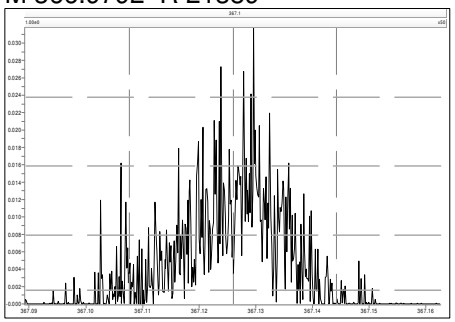
M 342.9792 R 12716



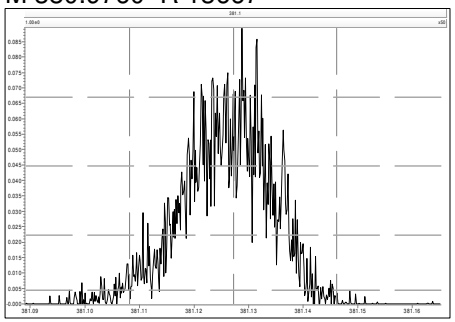
M 354.9792 R 16145



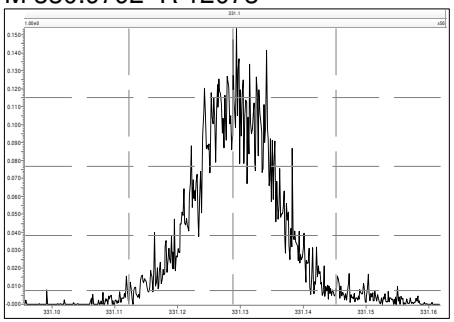
M 366.9792 R 21389



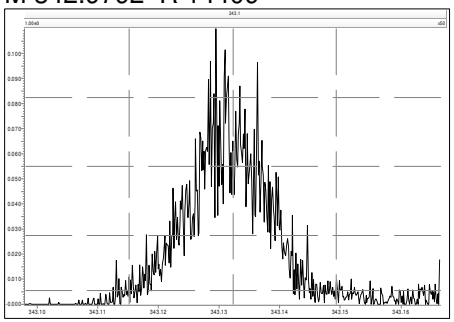
M 380.9760 R 13667



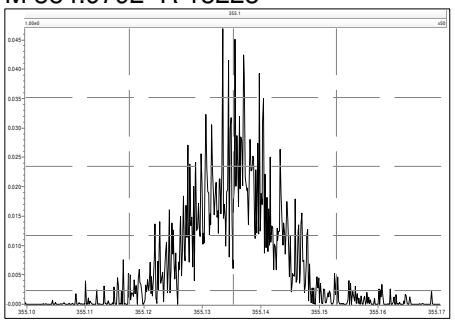
M 330.9792 R 12073



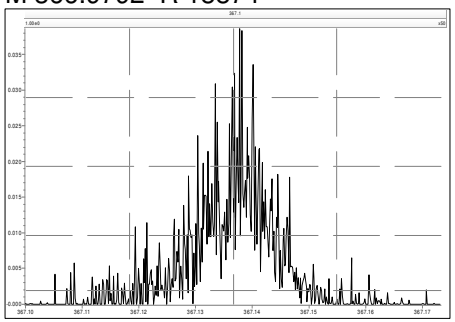
M 342.9792 R 14409



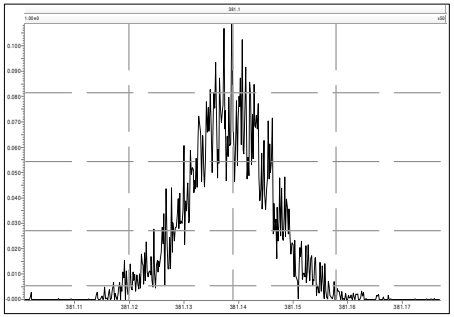
M 354.9792 R 15228



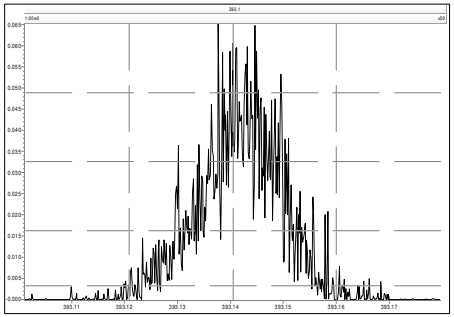
M 366.9792 R 18874



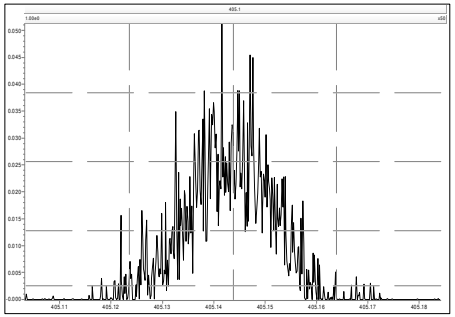
M 380.9760 R 13552



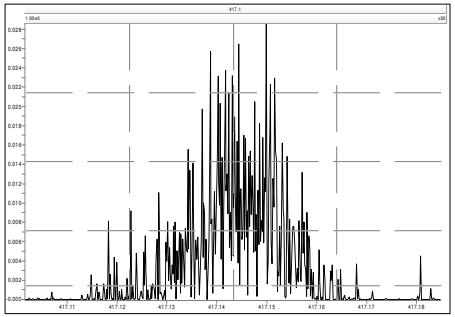
M 392.9760 R 14916



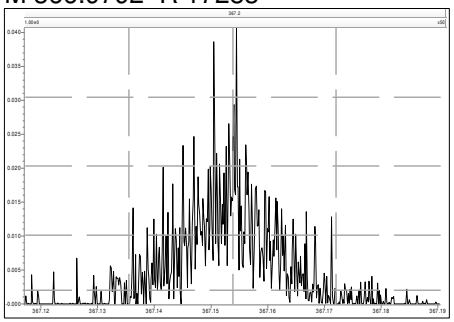
M 404.9760 R 14956



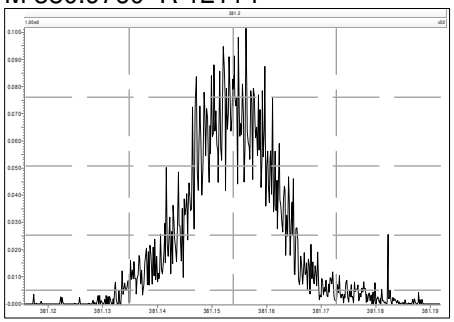
M 416.9760 R 50724



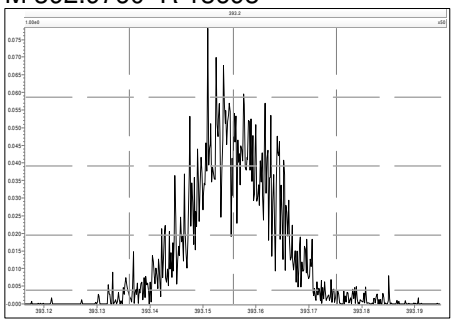
M 366.9792 R 17283



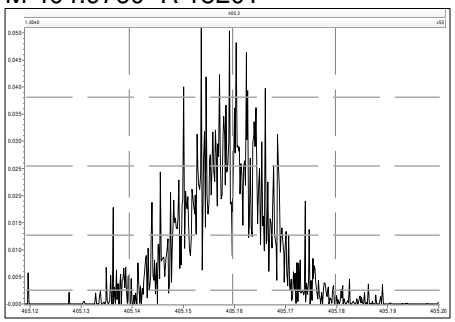
M 380.9760 R 12114



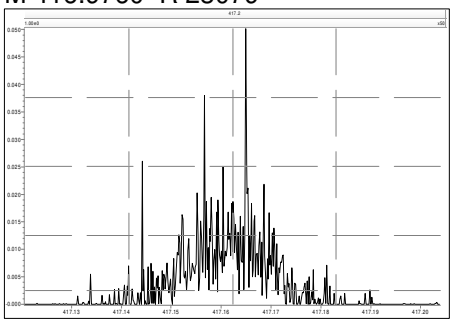
M 392.9760 R 13698



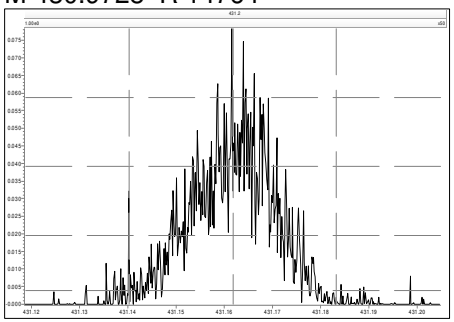
M 404.9760 R 15201



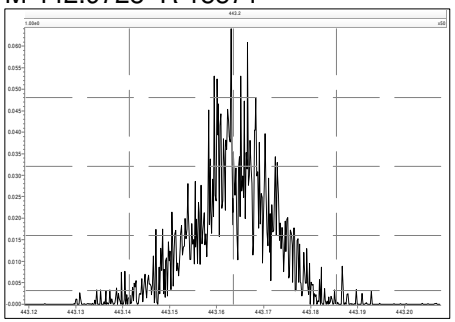
M 416.9760 R 23079



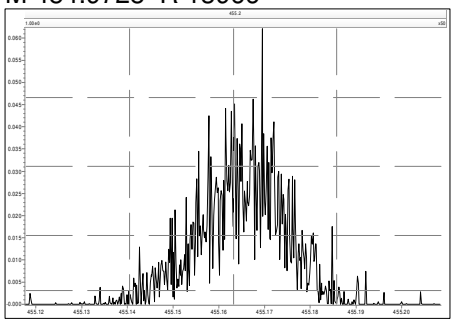
M 430.9728 R 14764



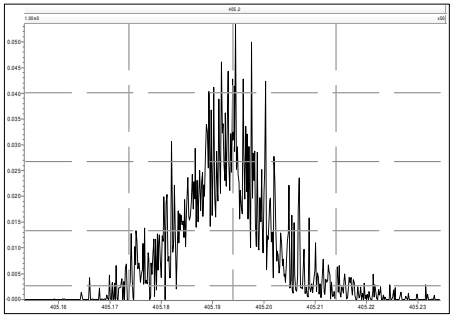
M 442.9728 R 15571



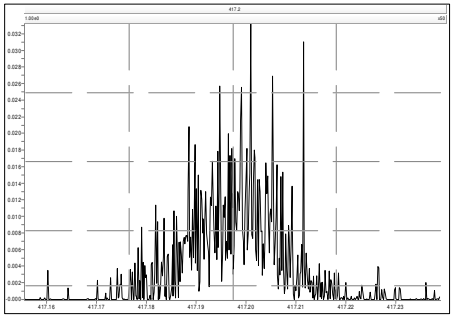
M 454.9728 R 13966



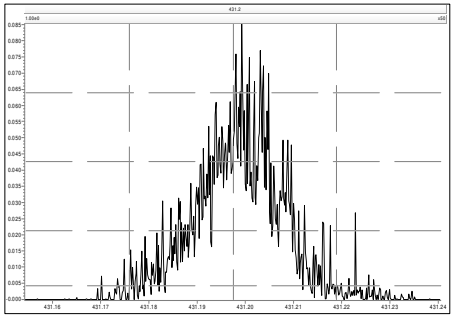
M 404.9760 R 15271



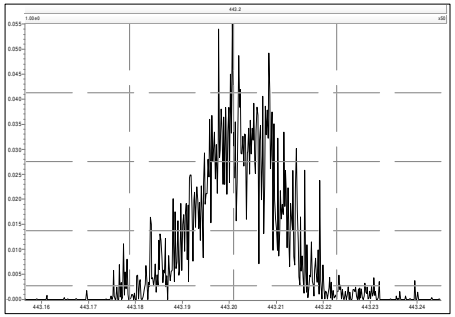
M 416.9760 R 53635



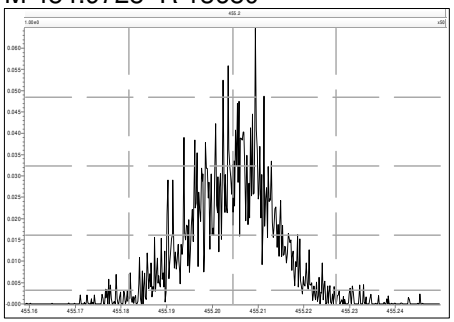
M 430.9728 R 12372



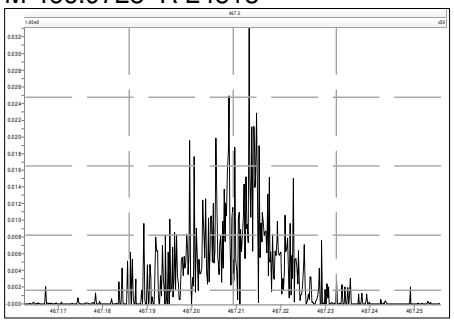
M 442.9728 R 14690



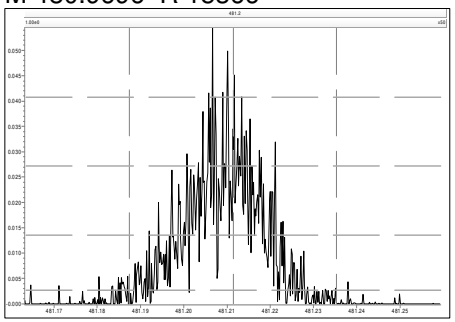
M 454.9728 R 13680



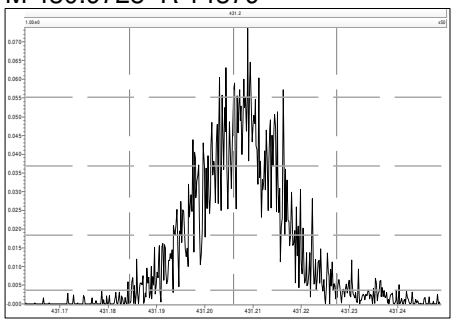
M 466.9728 R 24513



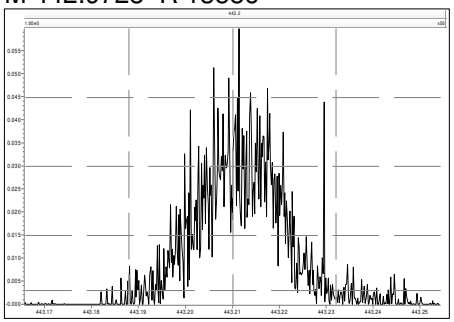
M 480.9696 R 15366



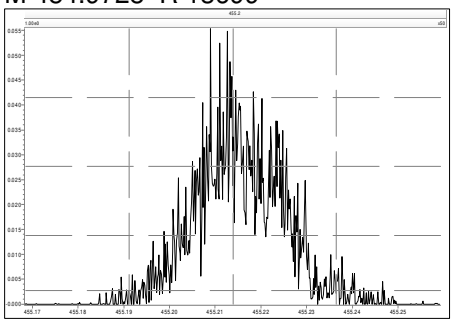
M 430.9728 R 14379



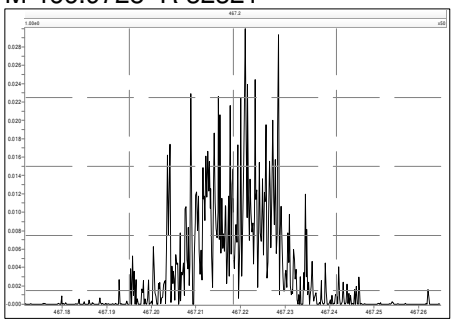
M 442.9728 R 13586



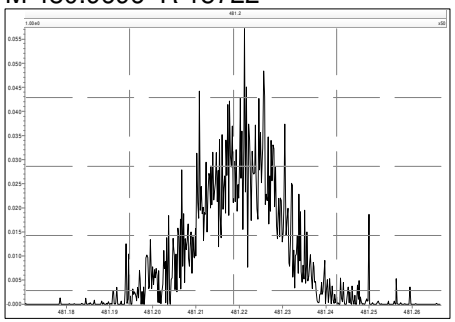
M 454.9728 R 13699



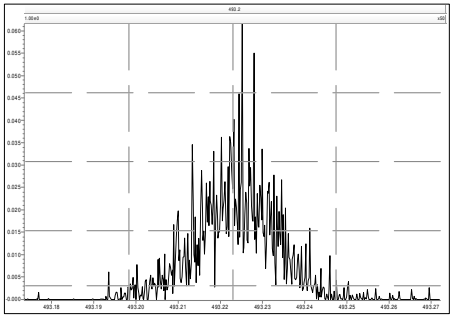
M 466.9728 R 32321



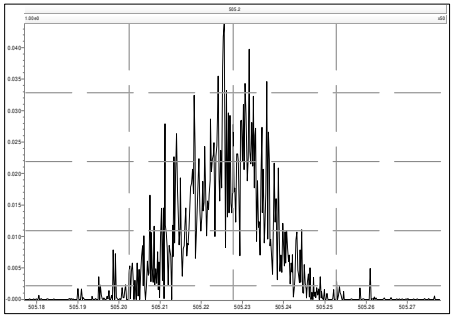
M 480.9696 R 15722



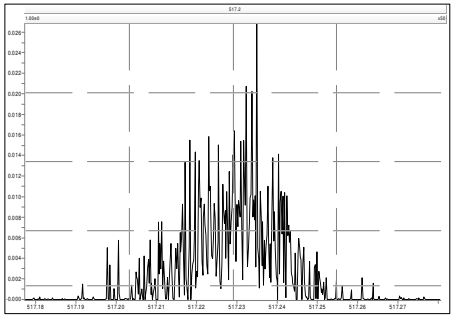
M 492.9696 R 15409



M 504.9696 R 16374



M 516.9697 R 23280



Dioxin/Furan ICAL Summary — SGS North America — Processed: 27 Jul 2021 15:01

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 0.25 pg/uL CS0	210727R03 0.5 pg/uL CS1	210727R04 2 pg/uL CS2	210727R05 10 pg/uL CS3	210727R06 40 pg/uL CS4	210727R07 200 pg/uL CS5	210727R08 500 pg/uL CS6
2378-TCDD	1.34	4.7%	1.45 ✓	1.34	1.26	1.32	1.30	1.35	1.39
12378-PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
123478-HxCDD	1.06	3.3%	1.10	1.10	0.99	1.05	1.05	1.06	1.05
123678-HxCDD	1.08	2.9%	1.12	1.07	1.02 ✓	1.08	1.10	1.10	1.09
123789-HxCDD	1.02	4.8%	1.10	1.05	0.95	0.99	0.99	1.01	1.00
1234678-HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
OCDD	1.07	4.2%	1.15	1.04	1.01	1.07	1.08 ✓	1.06	1.08
2378-TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
12378-PeCDF	0.95	3.2%	1.00	0.94	0.90	0.94	0.95	0.93	0.96
23478-PeCDF	0.94	3.7%	0.99	0.90 ✓	0.90	0.92	0.93	0.96	0.96
123478-HxCDF	1.23	3.3%	1.32	1.23	1.19	1.22	1.24	1.24	1.22
123678-HxCDF	1.13	3.0%	1.17	1.16	1.07	1.10	1.13	1.14	1.14
234678-HxCDF	1.15	4.2%	1.23	1.19	1.08	1.14	1.13	1.15	1.15
123789-HxCDF	1.14	3.5%	1.19	1.08	1.09	1.14	1.14	1.15	1.16 ✓
1234678-HpCDF	1.36	3.6%	1.46	1.35	1.31	1.34 ✓	1.33	1.37	1.36
1234789-HpCDF	1.30	4.0%	1.34	1.20	1.26	1.34	1.30	1.35	1.33
OCDF	1.03	4.1%	1.01	1.01	0.95	1.03	1.05	1.06 ✓	1.08
ES 2378-TCDD	1.03	1.7%	1.02	1.02	1.02	1.05	1.06	1.04	1.02
ES 12378-PeCDD	1.03	3.5%	1.01	1.02	0.99	1.01	1.03	1.07	1.10
ES 123478-HxCDD	0.99	4.4%	0.97	0.93	0.99	1.00	0.98	1.03	1.07
ES 123678-HxCDD	0.97	5.2%	0.94	0.91	0.95	1.01	0.94	1.02	1.05
ES 123789-HxCDD	1.12	5.1%	1.09	1.04	1.12	1.14	1.09	1.17	1.22
ES 1234678-HpCDD	0.99	5.2%	0.95	0.92	0.98	1.02	0.97	1.05	1.06
ES OCDD	0.78	8.4%	0.73	0.71	0.74	0.77	0.75	0.85	0.89
ES 2378-TCDF	1.08	1.2%	1.06	1.08	1.07 ✓	1.09	1.09	1.08	1.10
ES 12378-PeCDF	0.93	2.7%	0.91	0.91	0.92	0.93	0.95	0.95	0.98
ES 23478-PeCDF	0.92	2.4%	0.90	0.91	0.90	0.93	0.93	0.93	0.96
ES 123478-HxCDF	1.14	5.9%	1.09	1.04	1.13	1.18	1.12	1.21	1.23
ES 123678-HxCDF	1.30	4.9%	1.24	1.21	1.27	1.35	1.27	1.36	1.37
ES 234678-HxCDF	1.20	4.9%	1.14	1.12	1.18	1.23	1.20	1.27	1.27
ES 123789-HxCDF	1.14	5.9%	1.06	1.07	1.11	1.16	1.12	1.20	1.24
ES 1234678-HpCDF	0.95	5.7%	0.90	0.88	0.92	0.98	0.94	1.00	1.03
ES 1234789-HpCDF	0.85	7.0%	0.79	0.78	0.82	0.86	0.83	0.90	0.94
ES OCDF	0.93	8.9%	0.86	0.83	0.88	0.93	0.90	1.01	1.06

APPROVED
Carla_Lyon , 7/28/2021, 12:24:59 PM

ICAL: MM3_DF_10272021_27JUL2021
Data Acquired: 27-Jul-2021

Name	Mean	% RSD	210727R02 **0.25 pg/uL CS0**	210727R03 **0.5 pg/uL CS1**	210727R04 **2 pg/uL CS2**	210727R05 **10 pg/uL CS3**	210727R06 **40 pg/uL CS4**	210727R07 **200 pg/uL CS5**	210727R08 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.31	2.3%	-	1.32	1.27	1.30	1.31	1.35	-
CS 12347-PeCDD	0.89	2.1%	0.89	0.91	0.88	0.87	0.93	0.88	0.89
CS 12346-PeCDF	0.87	1.7%	0.86	0.88	0.86	0.89	0.88	0.86	0.85
CS 123469-HxCDF	1.09	2.8%	1.06	1.04	1.08	1.14	1.09	1.12	1.09
CS 1234689-HpCDF	0.86	3.3%	0.86	0.84	0.86	0.92	0.86	0.86	0.84
SS 37Cl-2378-TCDD	1.26	2.3%	-	1.29	1.25	1.24	1.23	1.29	-
SS 12347-PeCDD	0.86	4.0%	0.88	0.89	0.89	0.86	0.90	0.82 ✓	0.81
SS 12346-PeCDF	0.93	3.5%	0.94	0.97	0.93	0.96	0.93	0.91	0.87
SS 123469-HxCDF	0.84	2.8%	0.86	0.86	0.85	0.84	0.86	0.82	0.80
SS 1234689-HpCDF	0.91	6.0%	0.96	0.96	0.94	0.94	0.92	0.86	0.81
AS 1368-TCDD	1.02	0.7%	1.01	1.03	1.02	1.02 ✓	1.02	1.04	1.02
AS 1368-TCDF	1.08	1.9%	1.05	1.06	1.07	1.10	1.09	1.10	1.07
~~OCDD-a~~	~~0.07~~	~~7.2%~~	~~0.06~~	~~0.08~~	~~0.07~~	~~0.07~~	~~0.07~~	~~0.06~~	~~0.07~~
~~OCDF-a~~	~~0.06~~	~~7.0%~~	~~0.05~~	~~0.06~~	~~0.05~~	~~0.06~~	~~0.06~~	~~0.06~~	~~0.06~~
Not reported from this ICAL - CL 28Jul21									
Totals									
Total TCDD	1.34	4.7%	1.45	1.34	1.26	1.32	1.30	1.35	1.39
Total PeCDD	1.06	2.0%	1.09	1.07	1.02	1.05	1.06	1.07	1.05
Total HxCDD	1.05	3.3%	1.11	1.07	0.99	1.04	1.05	1.06	1.05
Total HpCDD	0.97	4.1%	1.05	0.95	0.92	0.95	0.98	0.98	1.00
Total TCDF	0.96	3.7%	1.01	0.94	0.90	0.95	0.96	0.97	0.99
Total PeCDF	0.94	3.3%	1.00	0.92	0.90	0.93	0.94	0.95	0.96
Total HxCDF	1.16	3.1%	1.23	1.16	1.11	1.15	1.16	1.17	1.17
Total HpCDF	1.33	3.2%	1.40	1.28	1.28	1.34	1.32	1.36	1.34
FS 1278-TCDD	1.08	0.7%	1.08	1.08	1.09	1.08	1.08	1.08	1.10
FS 12478-PeCDD	1.09	3.7%	1.10	1.10 ✓	1.12	1.13	1.13	1.07	1.01
FS 123468-HxCDD	1.26	4.2%	1.27	1.30	1.28	1.32	1.28	1.24	1.16
FS 1234679-HpCDD	1.36	5.0%	1.41	1.37	1.38	1.42	1.38 ✓	1.30	1.23
TS 1378-TCDD	1.35	2.3%	1.36 ✓	1.38	1.36	1.31	1.30	1.35	1.37

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	210727R01	2	SBS_210727_DF_RA	1.00	SIL 20-61-1	PSW	638-037	27-Jul-2021	08:17:39
2	210727R02	85	CS0_210727_DF_RA	1.00	SIL 25-6-3	PSW	693-472	27-Jul-2021	09:04:23
3	210727R03	86	CS1_210727_DF_RA	1.00	SIL 25-6-2	PSW	554-132	27-Jul-2021	09:54:34
4	210727R04	87	CS2_210727_DF_RA	1.00	SIL 25-6-1	PSW	377-233	27-Jul-2021	10:44:24
5	210727R05	3	CS3_210727_DF_RA	1.00	SIL 23-672-1	PSW	230-891	27-Jul-2021	11:32:33
6	210727R06	88	CS4_210727_DF_RA	1.00	SIL 25-5-4	PSW	602-590	27-Jul-2021	12:19:16
7	210727R07	89	CS5_210727_DF_RA	1.00	SIL 25-5-3	PSW	147-553	27-Jul-2021	13:09:36
8	210727R08	90	CS6_210727_DF_RA	1.00	SIL 25-5-2	PSW	783-472	27-Jul-2021	13:58:27

Alternate OCDD/OCDF - NR in this ICAL. CL 28Jul21

REVIEWED
paul_walton , 7/28/2021, 8:31:00 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:08 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

Dioxin/Furan STD Association	SGS Environmental Services

Individual Native Standards

2378-TCDD	ES 2378-TCDD
12378-PeCDD	ES 12378-PeCDD
123478-HxCDD	ES 123478-HxCDD
123678-HxCDD	ES 123678-HxCDD
123789-HxCDD	ES 123789-HxCDD
1234678-HpCDD	ES 1234678-HpCDD
OCDD	ES OCDD
2378-TCDF	ES 2378-TCDF
12378-PeCDF	ES 12378-PeCDF
23478-PeCDF	ES 23478-PeCDF
123478-HxCDF	ES 123478-HxCDF
123678-HxCDF	ES 123678-HxCDF
234678-HxCDF	ES 234678-HxCDF
123789-HxCDF	ES 123789-HxCDF
1234678-HpCDF	ES 1234678-HpCDF
1234789-HpCDF	ES 1234789-HpCDF
OCDF	ES OCDF

Cleanup/Sampling Standards

CS 37Cl-2378-TCDD	1234 TCDD 13C12
CS 12347-PeCDD	1234 TCDD 13C12
CS 12346-PeCDF	1234 TCDF 13C12
CS 123469-HxCDF	123467 HxCDD 13C12
CS 1234689-HpCDF	123467 HxCDD 13C12

Alternate Standards

AS 1368-TCDD	1234 TCDD 13C12
AS 1368-TCDF	1234 TCDF 13C12

Shipping Standards

FS 1278-TCDD	ES 2378-TCDD
FS 12478-PeCDD	ES 12378-PeCDD
FS 123468-HxCDD	ES 123478-HxCDD
FS 1234679-HpCDD	ES 1234678-HpCDD
TS 1378-TCDD	ES 2378-TCDD

Extraction Standards

ES 2378-TCDD	1234 TCDD 13C12
ES 12378-PeCDD	1234 TCDD 13C12
ES 123478-HxCDD	123467 HxCDD 13C12
ES 123678-HxCDD	123467 HxCDD 13C12
ES 123789-HxCDD	123467 HxCDD 13C12
ES 1234678-HpCDD	123467 HxCDD 13C12
ES OCDD	123467 HxCDD 13C12
ES 2378-TCDF	1234 TCDF 13C12
ES 12378-PeCDF	1234 TCDF 13C12
ES 23478-PeCDF	1234 TCDF 13C12
ES 123478-HxCDF	123467 HxCDD 13C12
ES 123678-HxCDF	123467 HxCDD 13C12
ES 234678-HxCDF	123467 HxCDD 13C12
ES 123789-HxCDF	123467 HxCDD 13C12
ES 1234678-HpCDF	123467 HxCDD 13C12
ES 1234789-HpCDF	123467 HxCDD 13C12
ES OCDF	123467 HxCDD 13C12

Injection Standards

1234 TCDD 13C12
1234 TCDF 13C12
123467 HxCDD 13C12

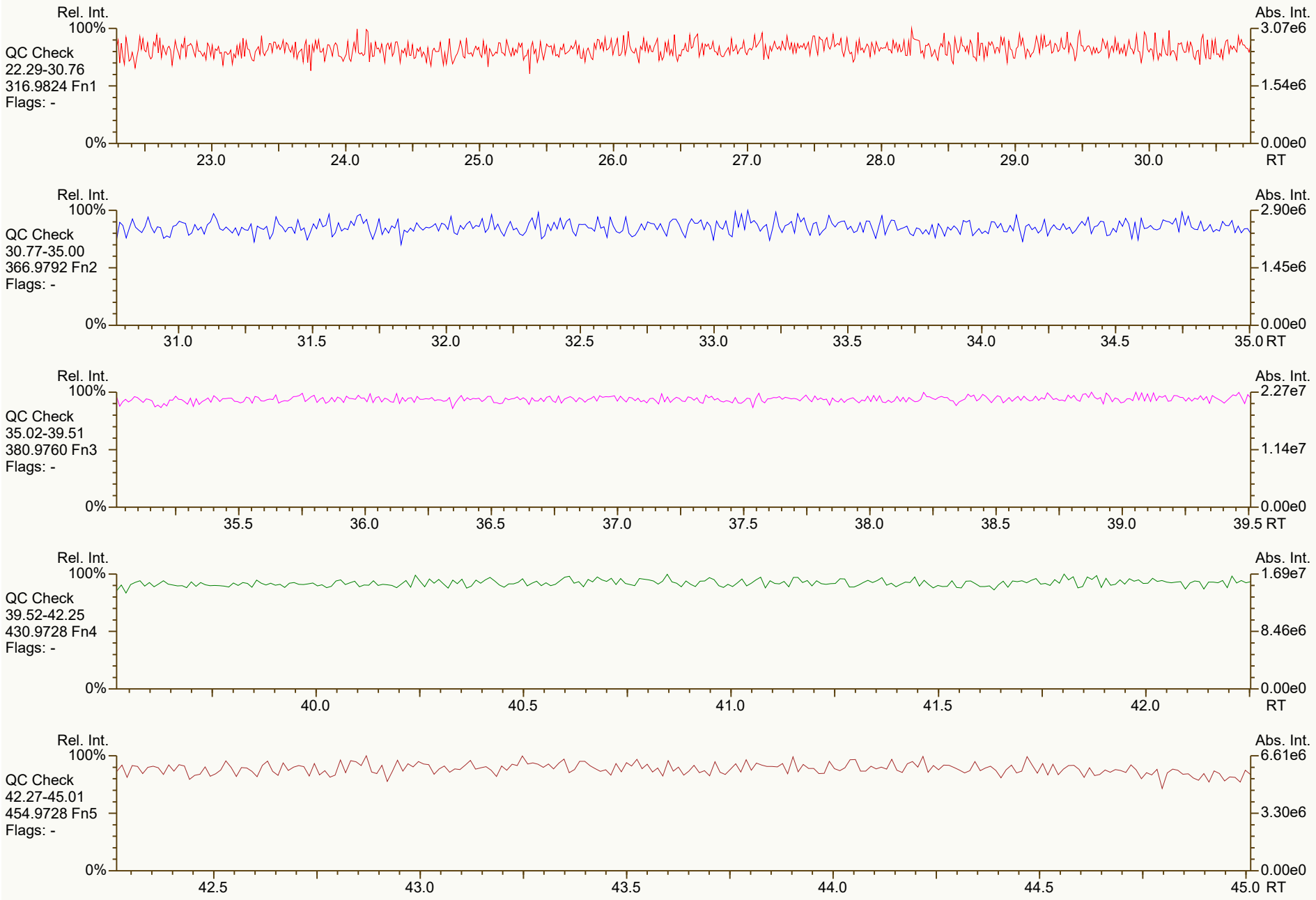
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	6.43E+05	0.73	Y	1.34	1.45	8%
12378-PeCDD	33.80	2.41E+06	1.48	Y	1.06	1.09	3%
123478-HxCDD	37.67	2.24E+06	1.35	Y	1.06	1.10	4%
123678-HxCDD	37.78	2.20E+06	1.31	Y	1.08	1.12	3%
123789-HxCDD	38.07	2.52E+06	1.21	Y	1.02	1.10	9%
1234678-HpCDD	40.66	2.08E+06	0.99	Y	0.97	1.05	7%
OCDD	43.22	3.52E+06	0.85	Y	1.07	1.15	8%
2378-TCDF	27.66	7.49E+05	0.72	Y	0.96	1.01	5%
12378-PeCDF	32.38	3.19E+06	1.44	Y	0.95	1.00	5%
23478-PeCDF	33.46	3.11E+06	1.57	Y	0.94	0.99	6%
123478-HxCDF	36.68	3.00E+06	1.23	Y	1.23	1.32	7%
123678-HxCDF	36.82	3.05E+06	1.18	Y	1.13	1.17	4%
234678-HxCDF	37.49	2.95E+06	1.17	Y	1.15	1.23	7%
123789-HxCDF	38.42	2.65E+06	1.30	Y	1.14	1.19	5%
1234678-HpCDF	39.76	2.75E+06	1.00	Y	1.36	1.46	7%
1234789-HpCDF	41.10	2.20E+06	1.11	Y	1.30	1.34	3%
OCDF	43.40	3.66E+06	0.85	Y	1.03	1.01	-1%
ES 2378-TCDD	28.50	1.77E+08	0.79	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.781	1.77E+08	1.63	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.653	1.63E+08	1.26	Y	0.99	0.97	-2%
ES 123678-HxCDD	37.766	1.57E+08	1.27	Y	0.97	0.94	-3%
ES 123789-HxCDD	38.056	1.82E+08	1.26	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.643	1.59E+08	1.05	Y	0.99	0.95	-4%
ES OCDD	43.205	2.44E+08	0.92	Y	0.78	0.73	-6%
ES 2378-TCDF	27.645	2.97E+08	0.78	Y	1.08	1.06	-2%
ES 12378-PeCDF	32.355	2.55E+08	1.55	Y	0.93	0.91	-2%
ES 23478-PeCDF	33.445	2.50E+08	1.56	Y	0.92	0.90	-3%
ES 123478-HxCDF	36.661	1.82E+08	0.53	Y	1.14	1.09	-5%
ES 123678-HxCDF	36.801	2.08E+08	0.53	Y	1.30	1.24	-4%
ES 234678-HxCDF	37.466	1.92E+08	0.53	Y	1.20	1.14	-5%
ES 123789-HxCDF	38.399	1.78E+08	0.52	Y	1.14	1.06	-7%
ES 1234678-HpCDF	39.748	1.51E+08	0.44	Y	0.95	0.90	-5%
ES 1234789-HpCDF	41.09	1.32E+08	0.45	Y	0.85	0.79	-7%
ES OCDF	43.389	2.89E+08	0.89	Y	0.93	0.86	-7%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:04 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS0_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 693-472-SFB
Sample ID: SIL 25-6-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R02

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.74E+08	0.80	Y	-	-	-
JS 1234-TCDF	26.33	2.80E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	8.38E+07	1.33	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.89	0.89	0%
CS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.78E+08	0.52	Y	1.09	1.06	-2%
CS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.29	1.55E+08	1.66	Y	0.86	0.88	2%
SS 12346-PeCDF	31.84	2.41E+08	1.54	Y	0.93	0.94	2%
SS 123469-HxCDF	37.12	1.78E+08	0.52	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.13	1.44E+08	0.45	Y	0.91	0.96	5%
AS 1368-TCDD	24.91	1.76E+08	0.79	Y	1.02	1.01	-1%
AS 1368-TCDF	22.86	2.95E+08	0.78	Y	1.08	1.05	-2%
FS 1278-TCDD	28.82	1.91E+08	0.78	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.94E+08	1.64	Y	1.09	1.10	0%
FS 123468-HxCDD	36.58	2.07E+08	1.26	Y	1.26	1.27	0%
FS 1234679-HpCDD	39.99	2.24E+08	1.06	Y	1.36	1.41	4%
TS 1378-TCDD	26.87	2.41E+08	0.79	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.22~~	~~1.80E+05~~	~~0.99~~	~~N~~	~~0.07~~	~~0.06~~	~~-11%~~
~~OCDF-a~~	~~43.41~~	~~1.98E+05~~	~~2.81~~	~~Y~~	~~0.06~~	~~0.05~~	~~-7%~~

Not reported from this ICAL - CL 28Jul21



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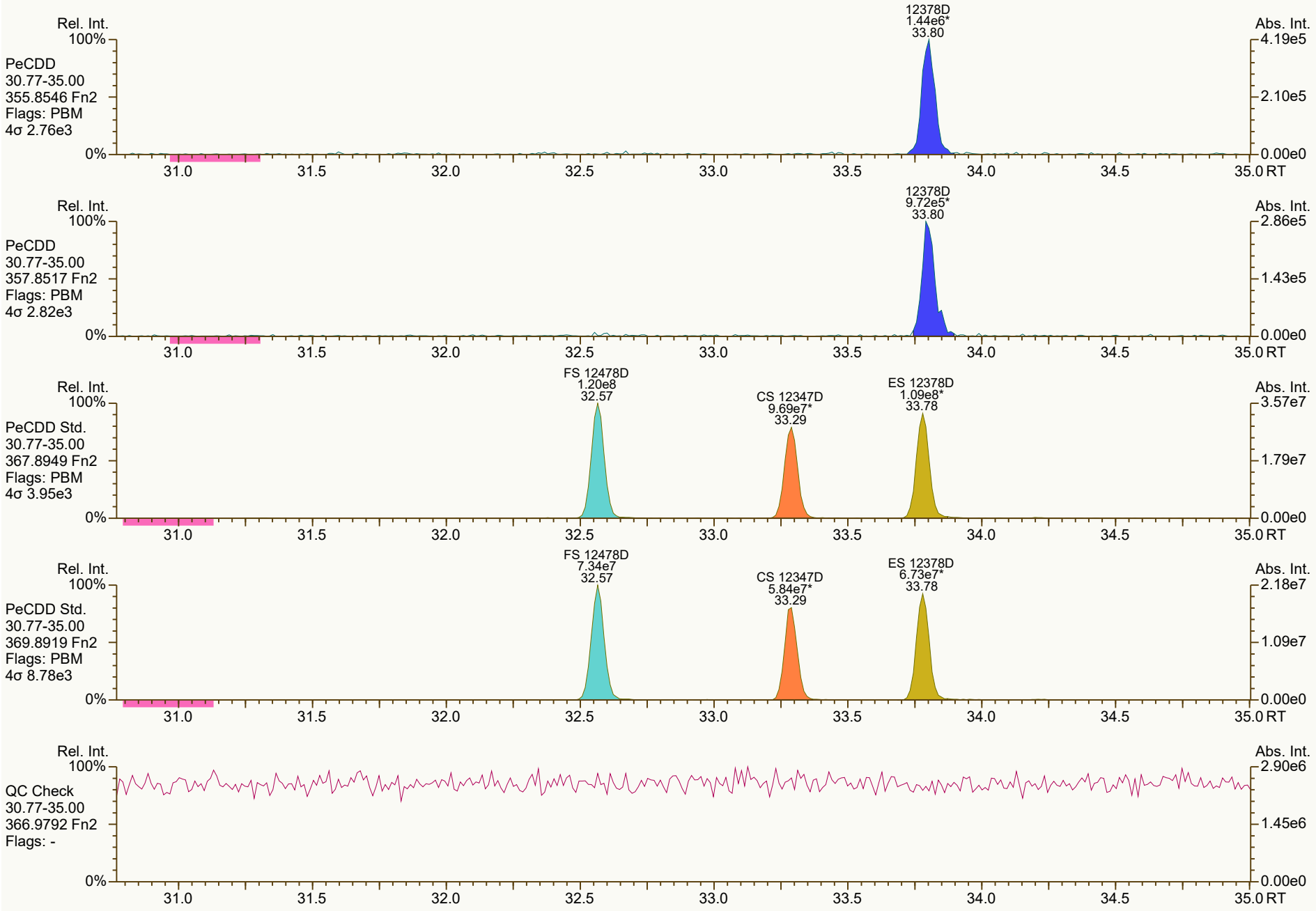
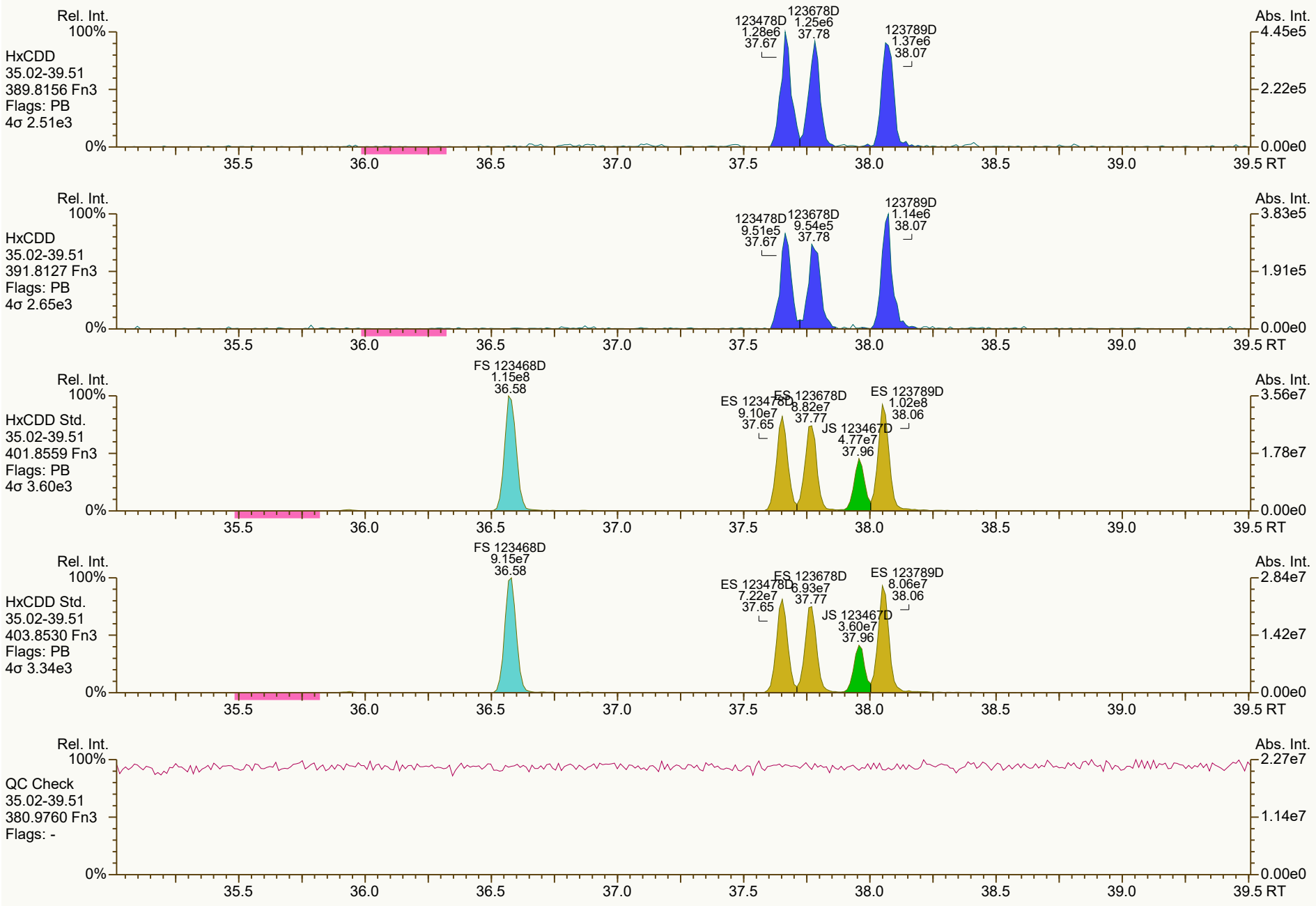
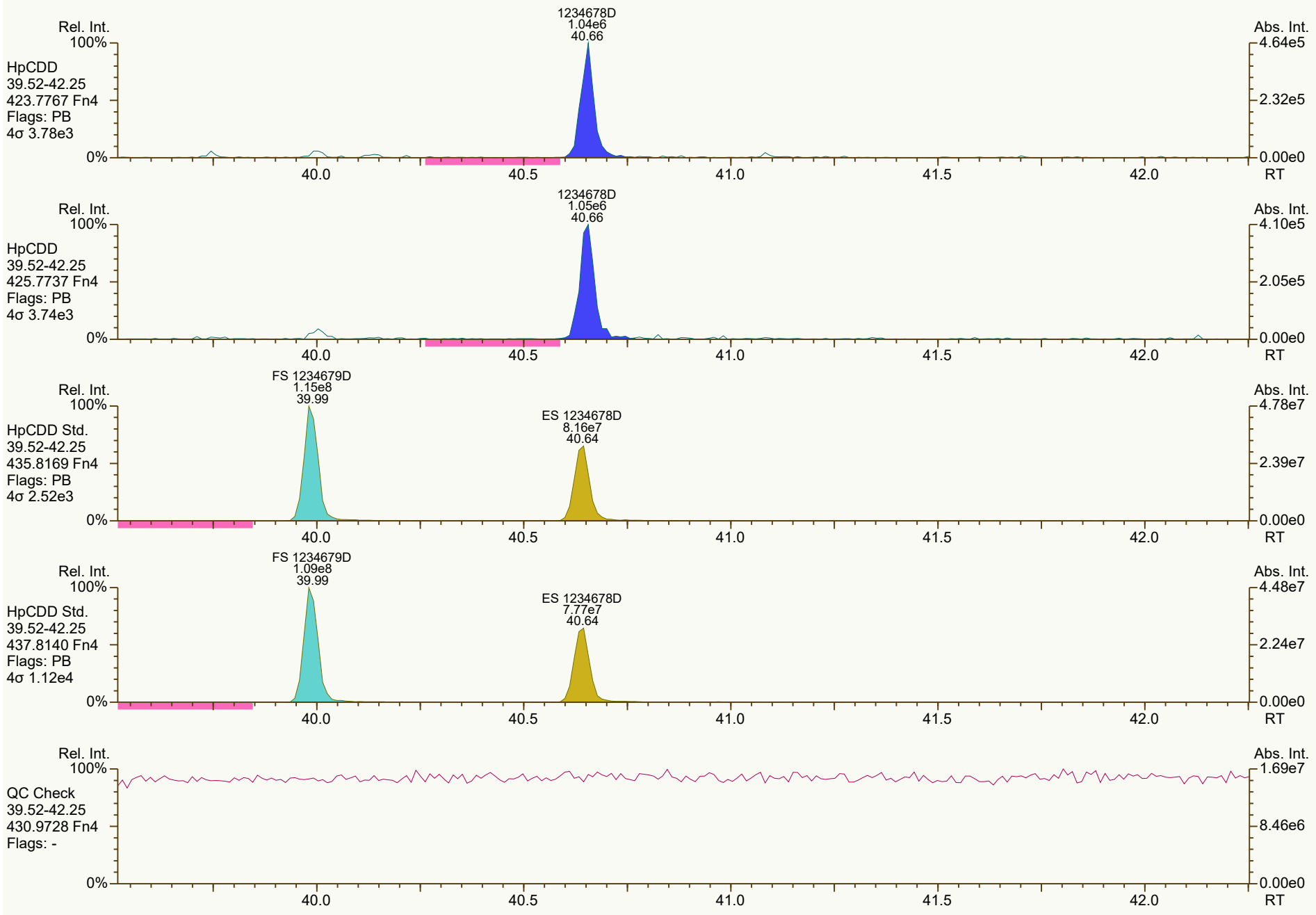
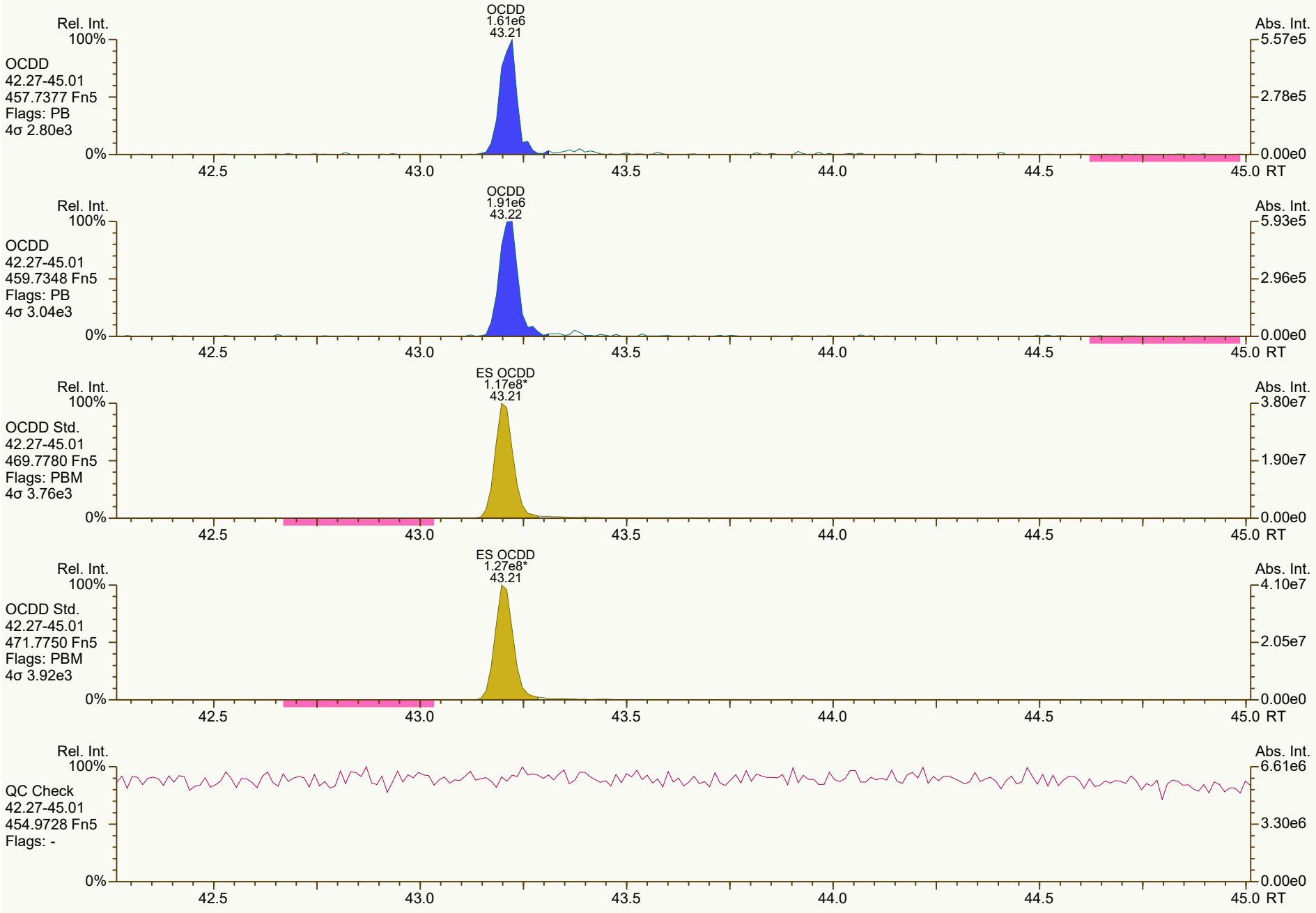
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q scc: 693-472 *PKD: n/a Printed: 27-Jul-2021 15:30 Page 1 of 12*

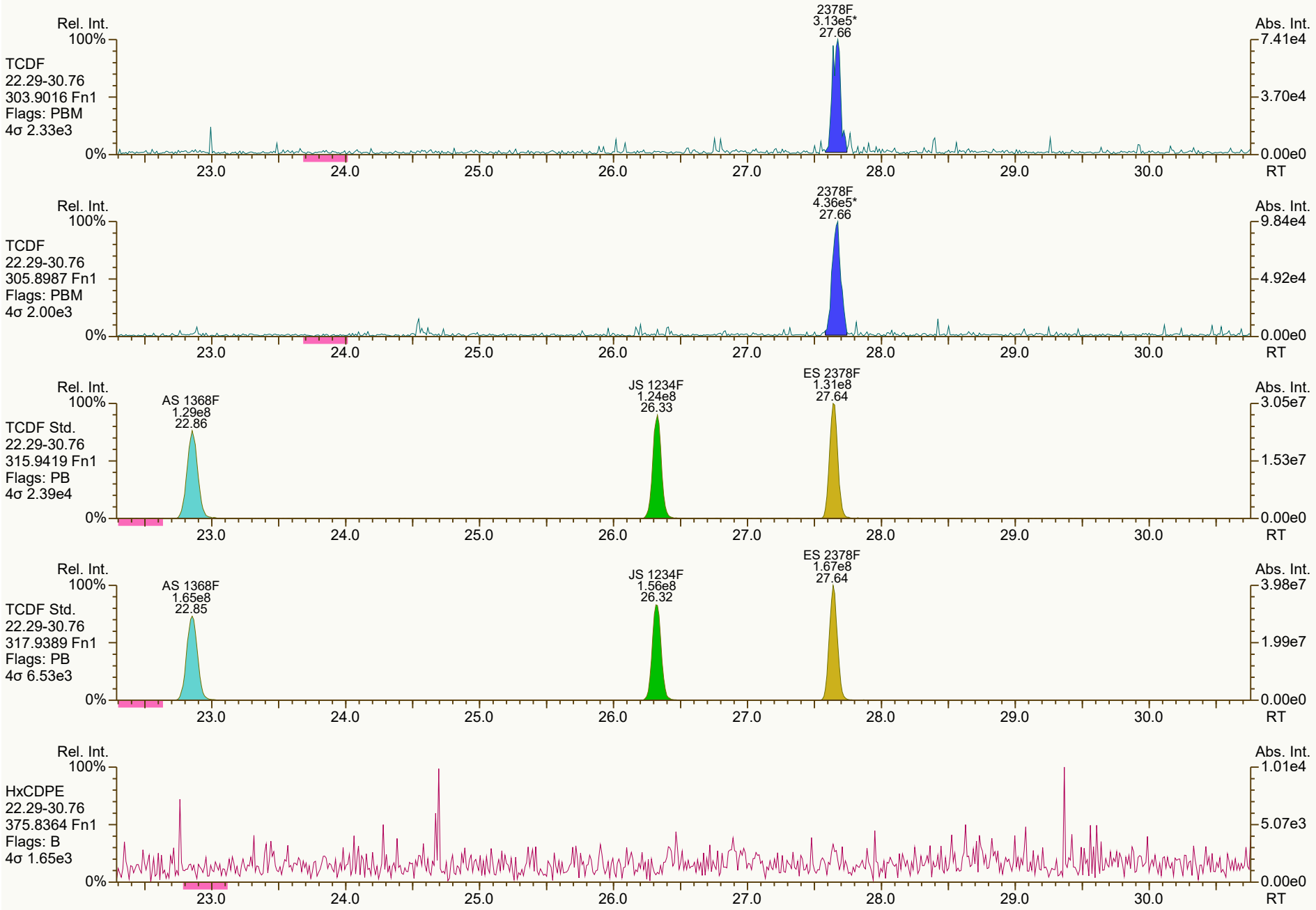

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 2.21e3
0%
2378D
2.70e5*
28.52
Abs. Int.
6.87e4
3.43e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.34e3
RRF(2378D) = (2.70e5 + 3.73e5) * 100pg / (7.81e7 + 9.89e7) * 0.25pg = 1.45
PSW 27-Jul-2021 15:08
OK
CL 28Jul21
2378D
3.73e5*
28.52
9.52e4
4.76e4
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.84e3
1.43e4
7.14e3
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.61e3
AS 1368D
7.76e7
24.91
TS 1378D
1.07e8
26.87
JS 1234D
7.74e7
27.86
ES 2378D
7.81e7
28.50
FS 1278D
8.37e7
28.82
2.55e7
1.28e7
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.86e3
RRF(TS 1378D) = (1.07e8 + 1.34e8) * 100pg / (7.81e7 + 9.89e7) * 100pg = 1.36
PSW 27-Jul-2021 15:11
OK - CL 28Jul21
AS 1368D
9.87e7
24.91
TS 1378D
1.34e8
26.87
JS 1234D
9.66e7
27.86
ES 2378D
9.89e7
28.50
FS 1278D
1.08e8
28.82
3.19e7
1.59e7


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 2.76e3
0%
12378D
1.44e6*
33.80
Abs. Int.
4.19e5
2.10e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.82e3
0%
12378D
9.72e5*
33.80
Abs. Int.
2.86e5
1.43e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.95e3
0%
FS 12478D
1.20e8
32.57
CS 12347D
9.69e7*
33.29
ES 12378D
1.09e8*
33.78
Abs. Int.
3.57e7
1.79e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 8.78e3
0%
FS 12478D
7.34e7
32.57
CS 12347D
5.84e7*
33.29
ES 12378D
6.73e7*
33.78
Abs. Int.
2.18e7
1.09e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.51e3
123478D 1.28e6 37.67
123678D 1.25e6 37.78
123789D 1.37e6 38.07
4.45e5
2.22e5
0.00e0
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.65e3
123478D 9.51e5 37.67
123678D 9.54e5 37.78
123789D 1.14e6 38.07
3.83e5
1.91e5
0.00e0
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.60e3
FS 123468D 1.15e8 36.58
ES 123478D 9.10e7 37.65
ES 123678D 8.82e7 37.77
JS 123467D 4.77e7 37.96
ES 123789D 1.02e8 38.06
3.56e7
1.78e7
0.00e0
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.34e3
FS 123468D 9.15e7 36.58
ES 123478D 7.22e7 37.65
ES 123678D 6.93e7 37.77
JS 123467D 3.60e7 37.96
ES 123789D 8.06e7 38.06
2.84e7
1.42e7
0.00e0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.27e7
1.14e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 3.78e3
1234678D
1.04e6
40.66
Abs. Int.
4.64e5
2.32e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.74e3
1234678D
1.05e6
40.66
Abs. Int.
4.10e5
2.05e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.52e3
FS 1234679D
1.15e8
39.99
ES 1234678D
8.16e7
40.64
Abs. Int.
4.78e7
2.39e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.12e4
FS 1234679D
1.09e8
39.99
ES 1234678D
7.77e7
40.64
Abs. Int.
4.48e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.69e7
8.46e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDD
1.61e6
43.21
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.80e3
0%
Abs. Int.
5.57e5
2.78e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
5.93e5
2.96e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.17e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PBM
4σ 3.76e3
0%
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.27e8*
43.21
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PBM
4σ 3.92e3
0%
Abs. Int.
4.10e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.61e6
3.30e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.33e3
2378F
3.13e5*
27.66
Abs. Int.
7.41e4
3.70e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.00e3
2378F
4.36e5*
27.66
Abs. Int.
9.84e4
4.92e4
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.39e4
AS 1368F
1.29e8
22.86
JS 1234F
1.24e8
26.33
ES 2378F
1.31e8
27.64
Abs. Int.
3.05e7
1.53e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 6.53e3
AS 1368F
1.65e8
22.85
JS 1234F
1.56e8
26.32
ES 2378F
1.67e8
27.64
Abs. Int.
3.98e7
1.99e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 1.65e3
Abs. Int.
1.01e4
5.07e3
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

SGS ID: CS0_210727_DF_RA | Sample ID: SIL 25-6-3 | Acq: 27-Jul-2021 09:04:23

Instr: [ILM] AutoSpec-Ultima MM3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 85 | User: PSW Datafile: 210727R02

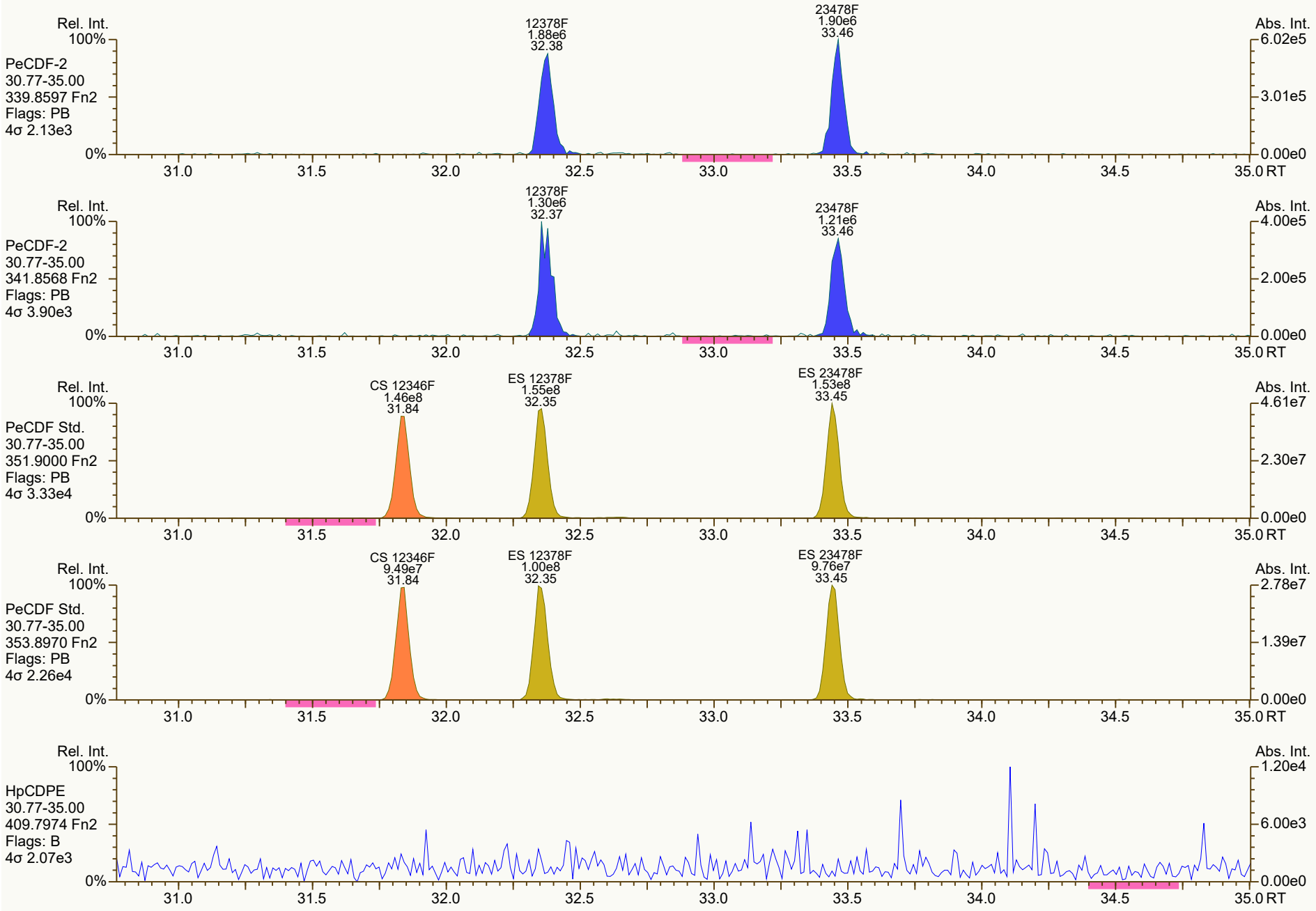


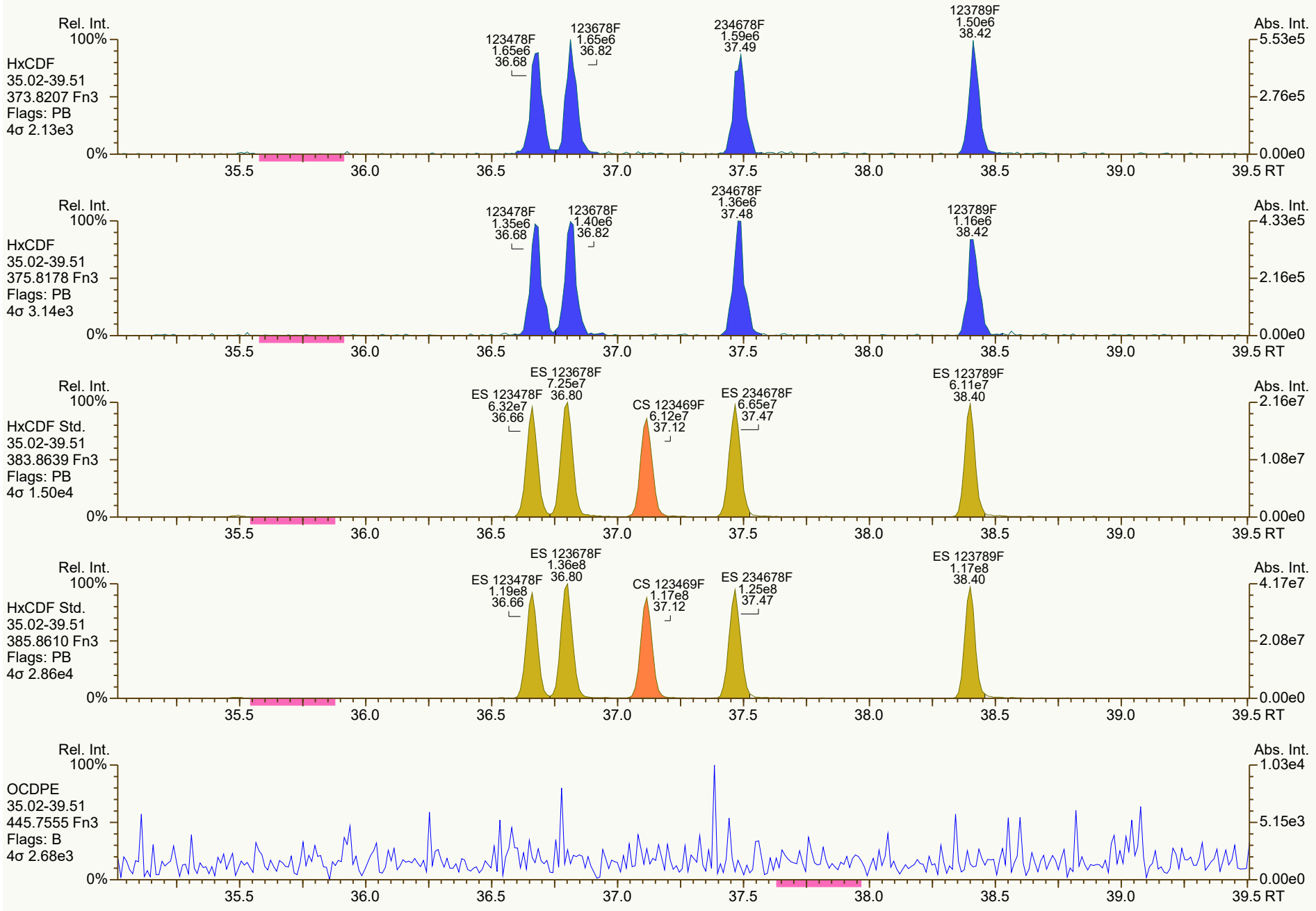
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS0_210727_DF_RA.utp_res, saved 27-Jul-2021 15:12 (PSW)

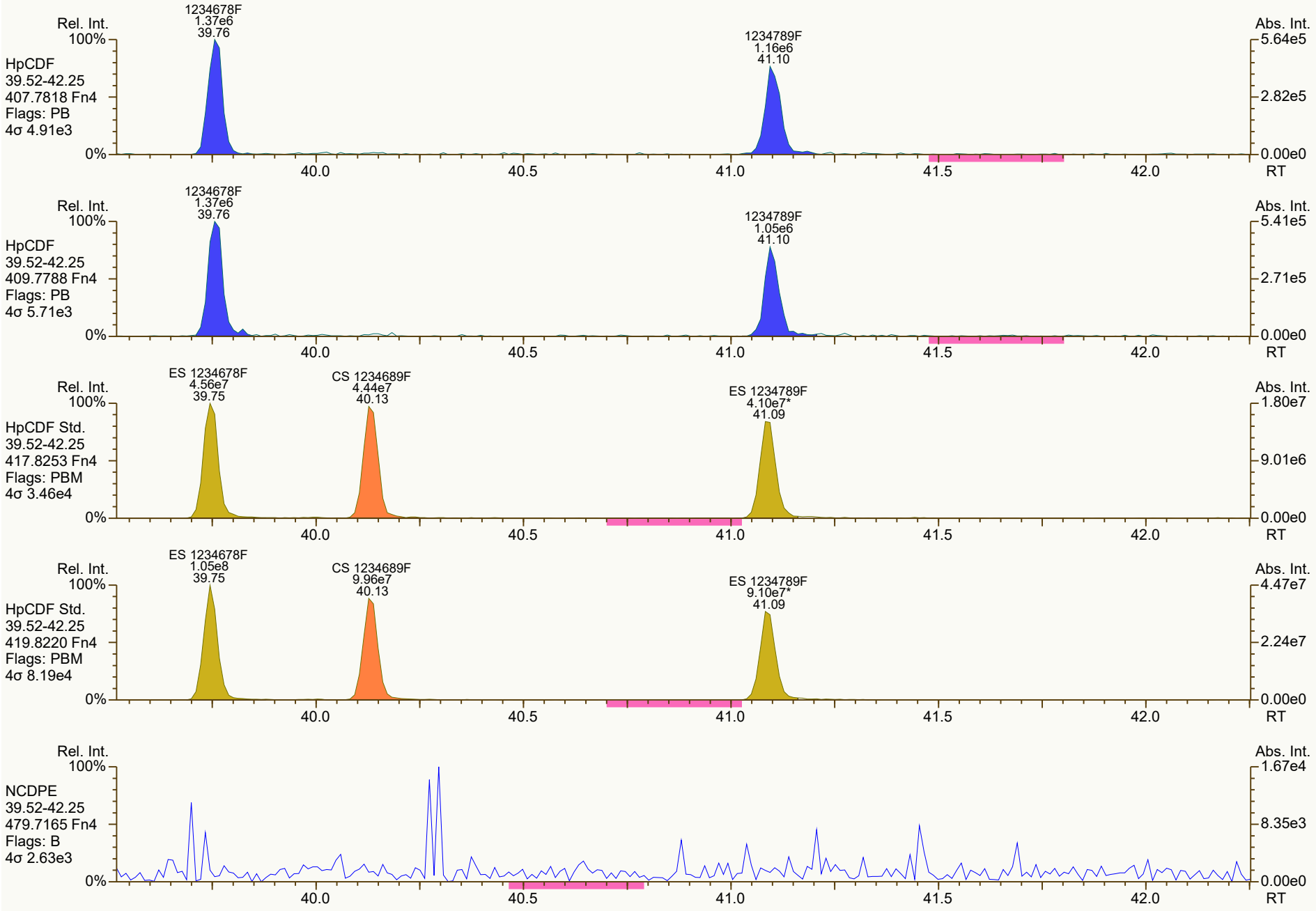
Peak annotation: Areas, Centroids

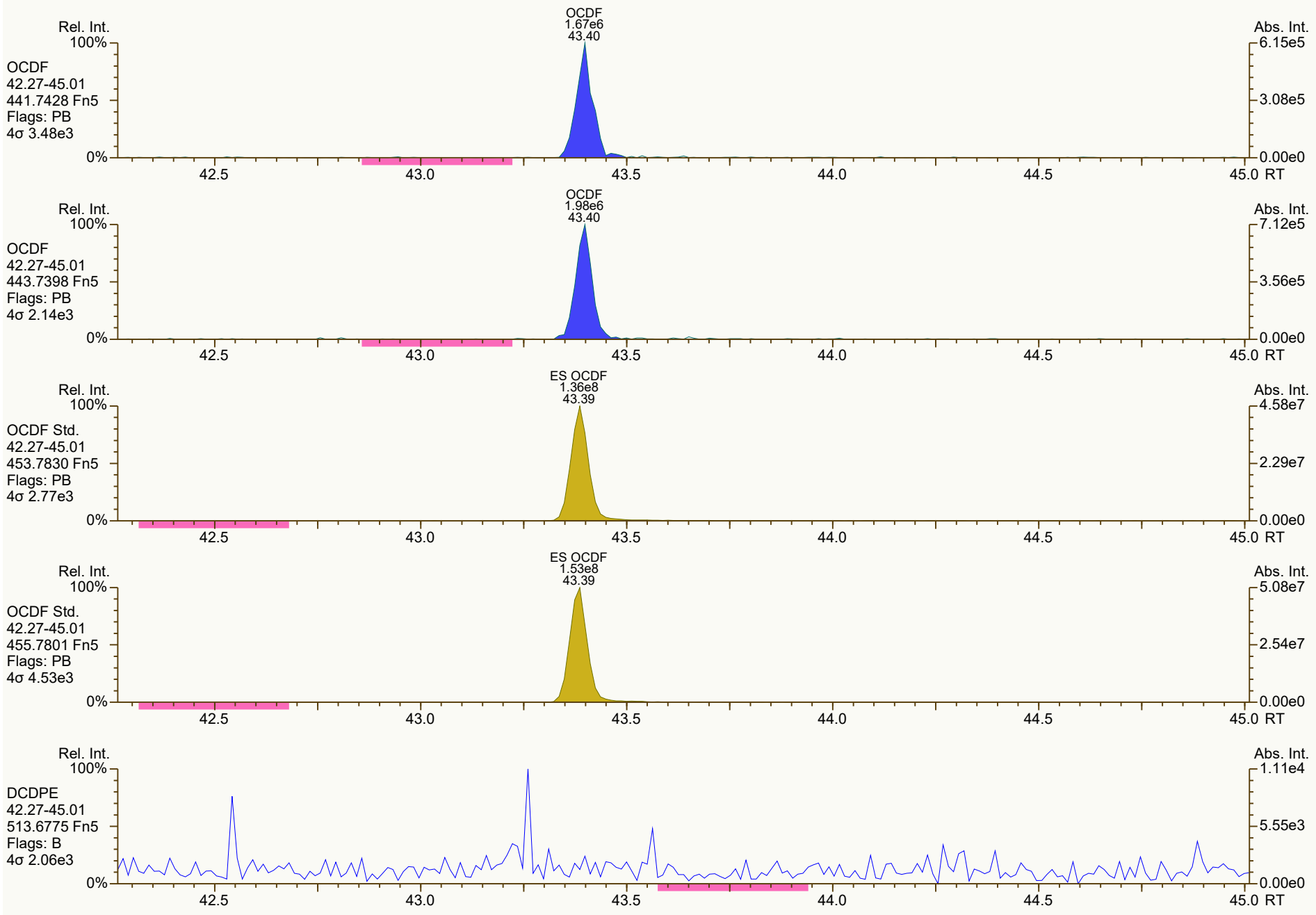
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1474 scc: 693-472

PKD: 27-Jul-2021 09:51 Printed: 27-Jul-2021 15:30 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.13e3
0%
12378F
1.88e6
32.38
23478F
1.90e6
33.46
Abs. Int.
6.02e5
3.01e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.90e3
0%
12378F
1.30e6
32.37
23478F
1.21e6
33.46
Abs. Int.
4.00e5
2.00e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 3.33e4
0%
CS 12346F
1.46e8
31.84
ES 12378F
1.55e8
32.35
ES 23478F
1.53e8
33.45
Abs. Int.
4.61e7
2.30e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.26e4
0%
CS 12346F
9.49e7
31.84
ES 12378F
1.00e8
32.35
ES 23478F
9.76e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
1.20e4
6.00e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PB
4σ 2.13e3
123478F 1.65e6 36.68
123678F 1.65e6 36.82
234678F 1.59e6 37.49
123789F 1.50e6 38.42
Abs. Int.
5.53e5
2.76e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PB
4σ 3.14e3
123478F 1.35e6 36.68
123678F 1.40e6 36.82
234678F 1.36e6 37.48
123789F 1.16e6 38.42
Abs. Int.
4.33e5
2.16e5
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.50e4
ES 123478F 6.32e7 36.66
ES 123678F 7.25e7 36.80
CS 123469F 6.12e7 37.12
ES 234678F 6.65e7 37.47
ES 123789F 6.11e7 38.40
Abs. Int.
2.16e7
1.08e7
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.86e4
ES 123478F 1.19e8 36.66
ES 123678F 1.36e8 36.80
CS 123469F 1.17e8 37.12
ES 234678F 1.25e8 37.47
ES 123789F 1.17e8 38.40
Abs. Int.
4.17e7
2.08e7
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.68e3
Abs. Int.
1.03e4
5.15e3
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e3
1234678F
1.37e6
39.76
1234789F
1.16e6
41.10
Abs. Int.
5.64e5
2.82e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.71e3
1234678F
1.37e6
39.76
1234789F
1.05e6
41.10
Abs. Int.
5.41e5
2.71e5
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.46e4
ES 1234678F
4.56e7
39.75
CS 1234689F
4.44e7
40.13
ES 1234789F
4.10e7*
41.09
Abs. Int.
1.80e7
9.01e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 8.19e4
ES 1234678F
1.05e8
39.75
CS 1234689F
9.96e7
40.13
ES 1234789F
9.10e7*
41.09
Abs. Int.
4.47e7
2.24e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
Abs. Int.
1.67e4
8.35e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 3.48e3
0%
OCDF
1.67e6
43.40
Abs. Int.
6.15e5
3.08e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.14e3
0%
OCDF
1.98e6
43.40
Abs. Int.
7.12e5
3.56e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 2.77e3
0%
ES OCDF
1.36e8
43.39
Abs. Int.
4.58e7
2.29e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.53e3
0%
ES OCDF
1.53e8
43.39
Abs. Int.
5.08e7
2.54e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.11e4
5.55e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

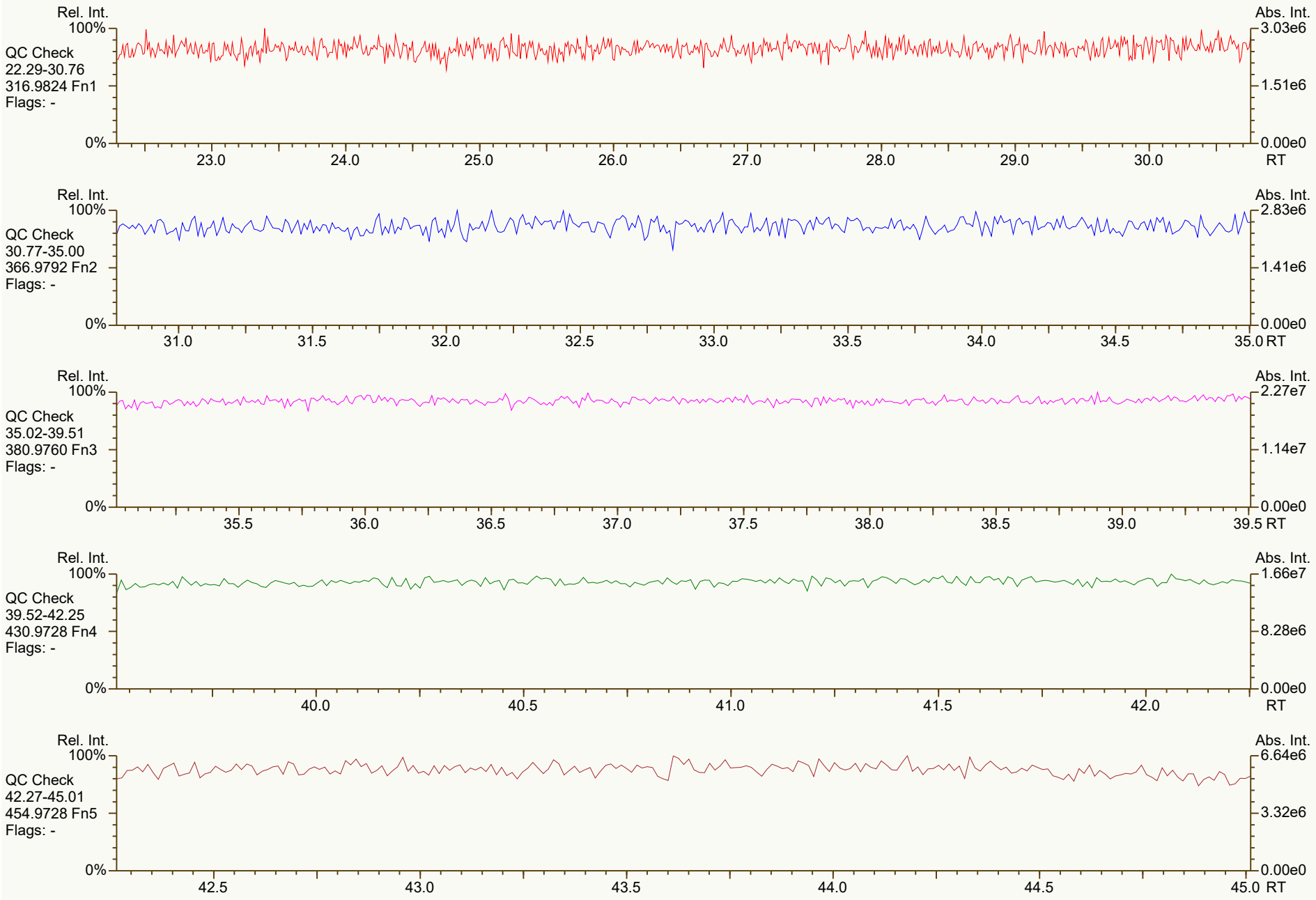
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

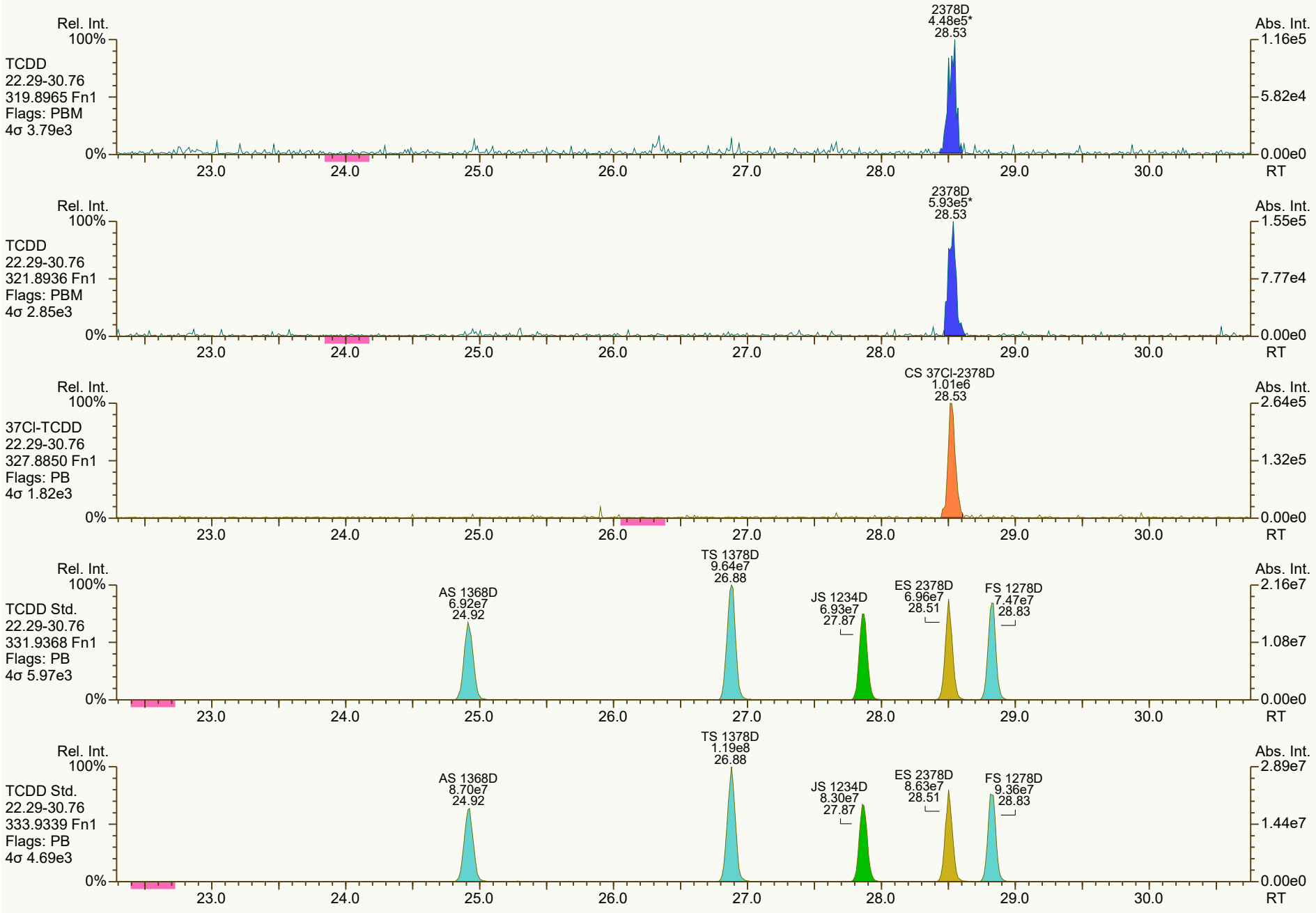
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.04E+06	0.76	Y	1.34	1.34	-1%
12378-PeCDD	33.81	4.16E+06	1.48	Y	1.06	1.07	1%
123478-HxCDD	37.68	3.92E+06	1.22	Y	1.06	1.10	4%
123678-HxCDD	37.79	3.74E+06	1.22	Y	1.08	1.07	-1%
123789-HxCDD	38.08	4.22E+06	1.33	Y	1.02	1.05	4%
1234678-HpCDD	40.66	3.34E+06	1.16	Y	0.97	0.95	-3%
OCDD	43.23	5.66E+06	0.85	Y	1.07	1.04	-3%
2378-TCDF	27.67	1.25E+06	0.72	Y	0.96	0.94	-2%
12378-PeCDF	32.38	5.24E+06	1.54	Y	0.95	0.94	0%
23478-PeCDF	33.47	5.06E+06	1.63	Y	0.94	0.90	-4%
123478-HxCDF	36.69	4.92E+06	1.14	Y	1.23	1.23	-1%
123678-HxCDF	36.83	5.41E+06	1.33	Y	1.13	1.16	3%
234678-HxCDF	37.49	5.10E+06	1.23	Y	1.15	1.19	3%
123789-HxCDF	38.42	4.41E+06	1.28	Y	1.14	1.08	-5%
1234678-HpCDF	39.76	4.59E+06	0.97	Y	1.36	1.35	0%
1234789-HpCDF	41.11	3.63E+06	1.08	Y	1.30	1.20	-7%
OCDF	43.41	6.46E+06	0.90	Y	1.03	1.01	-2%
ES 2378-TCDD	28.51	1.56E+08	0.81	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.789	1.56E+08	1.63	Y	1.03	1.02	-1%
ES 123478-HxCDD	37.66	1.43E+08	1.26	Y	0.99	0.93	-6%
ES 123678-HxCDD	37.773	1.40E+08	1.27	Y	0.97	0.91	-6%
ES 123789-HxCDD	38.062	1.60E+08	1.24	Y	1.12	1.04	-7%
ES 1234678-HpCDD	40.65	1.41E+08	1.06	Y	0.99	0.92	-8%
ES OCDD	43.215	2.18E+08	0.91	Y	0.78	0.71	-9%
ES 2378-TCDF	27.651	2.66E+08	0.77	Y	1.08	1.08	0%
ES 12378-PeCDF	32.362	2.22E+08	1.59	Y	0.93	0.91	-3%
ES 23478-PeCDF	33.454	2.24E+08	1.55	Y	0.92	0.91	-1%
ES 123478-HxCDF	36.667	1.60E+08	0.52	Y	1.14	1.04	-9%
ES 123678-HxCDF	36.807	1.86E+08	0.54	Y	1.30	1.21	-7%
ES 234678-HxCDF	37.474	1.72E+08	0.53	Y	1.20	1.12	-7%
ES 123789-HxCDF	38.407	1.64E+08	0.51	Y	1.14	1.07	-6%
ES 1234678-HpCDF	39.755	1.36E+08	0.46	Y	0.95	0.88	-7%
ES 1234789-HpCDF	41.099	1.21E+08	0.45	Y	0.85	0.78	-7%
ES OCDF	43.396	2.56E+08	0.88	Y	0.93	0.83	-10%

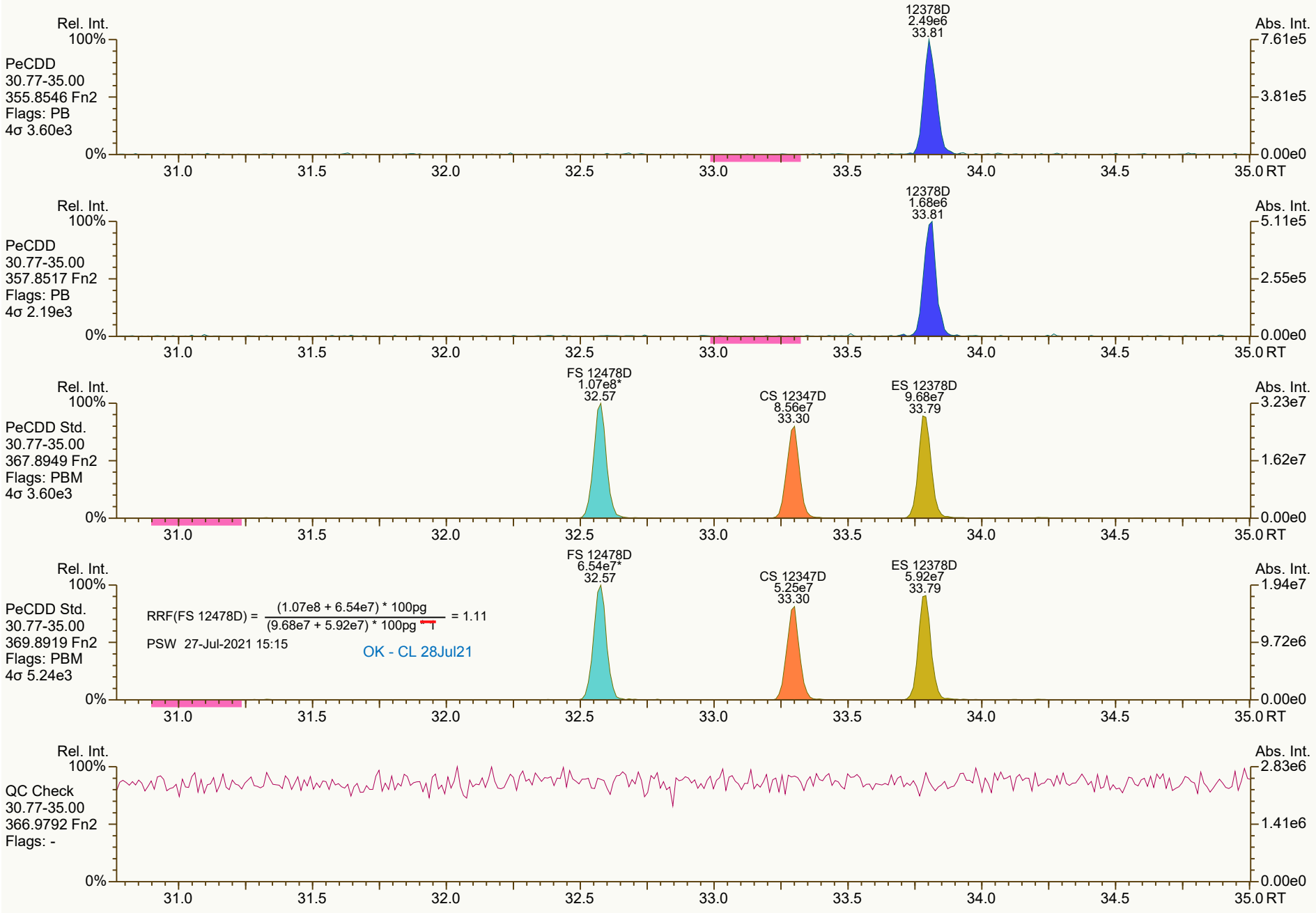
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 09:54 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS1_210727_DF_RA	UTP: 27-Jul-2021 15:00:19 PSW	Checkcode: 554-132-FHC
Sample ID: SIL 25-6-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R03

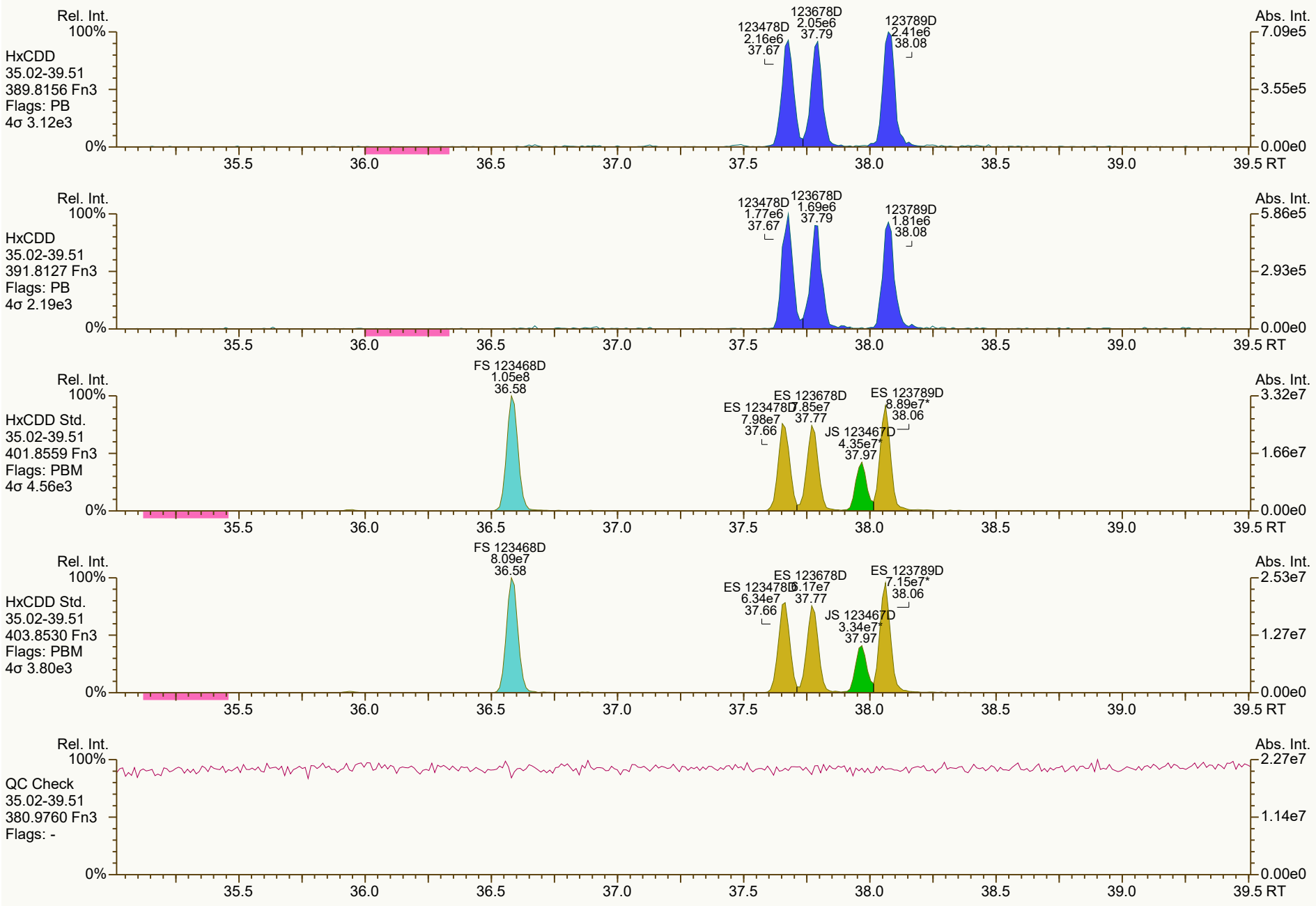
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.52E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.33	2.45E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	7.69E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.31	1.32	1%
CS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.89	0.91	2%
CS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.87	0.88	1%
CS 123469-HxCDF	37.12	1.61E+08	0.52	Y	1.09	1.04	-4%
CS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.86	0.84	-2%
SS 37Cl-2378-TCDD	28.53	1.01E+06	n/a	-	1.26	1.29	2%
SS 12347-PeCDD	33.30	1.38E+08	1.63	Y	0.86	0.89	2%
SS 12346-PeCDF	31.85	2.15E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.61E+08	0.52	Y	0.84	0.86	3%
SS 1234689-HpCDF	40.14	1.30E+08	0.44	Y	0.91	0.96	5%
AS 1368-TCDD	24.92	1.56E+08	0.80	Y	1.02	1.03	0%
AS 1368-TCDF	22.86	2.59E+08	0.77	Y	1.08	1.06	-2%
FS 1278-TCDD	28.83	1.68E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.72E+08	1.63	Y	1.09	1.10	1%
FS 123468-HxCDD	36.59	1.86E+08	1.29	Y	1.26	1.30	3%
FS 1234679-HpCDD	39.99	1.93E+08	1.05	Y	1.36	1.37	1%
TS 1378-TCDD	26.88	2.16E+08	0.81	Y	1.35	1.38	3%
~~OCDD-a~~	~~43.23~~	~~4.10E+05~~	~~2.91~~	~~N~~	~~0.07~~	~~0.08~~	~~14%~~
~~OCDF-a~~	~~43.40~~	~~3.79E+05~~	~~1.92~~	~~N~~	~~0.06~~	~~0.06~~	~~0%~~

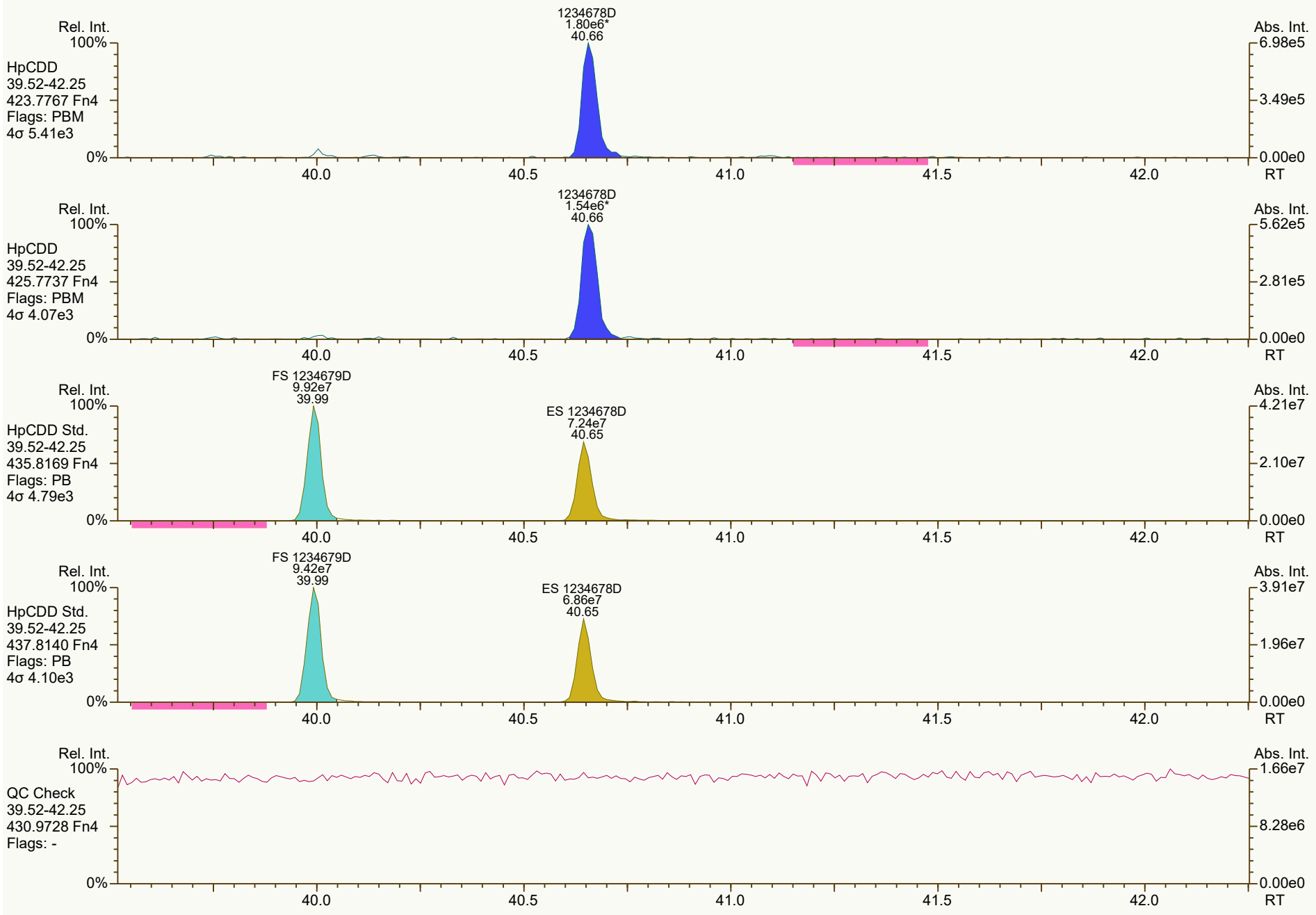
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.14e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PBM
4σ 3.79e3
0%
2378D
4.48e5*
28.53
Abs. Int.
1.16e5
5.82e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PBM
4σ 2.85e3
0%
2378D
5.93e5*
28.53
Abs. Int.
1.55e5
7.77e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.82e3
0%
CS 37Cl-2378D
1.01e6
28.53
Abs. Int.
2.64e5
1.32e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.97e3
0%
AS 1368D
6.92e7
24.92
TS 1378D
9.64e7
26.88
JS 1234D
6.93e7
27.87
ES 2378D
6.96e7
28.51
FS 1278D
7.47e7
28.83
Abs. Int.
2.16e7
1.08e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.69e3
0%
AS 1368D
8.70e7
24.92
TS 1378D
1.19e8
26.88
JS 1234D
8.30e7
27.87
ES 2378D
8.63e7
28.51
FS 1278D
9.36e7
28.83
Abs. Int.
2.89e7
1.44e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.60e3
0%
12378D
2.49e6
33.81
Abs. Int.
7.61e5
3.81e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.19e3
0%
12378D
1.68e6
33.81
Abs. Int.
5.11e5
2.55e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.60e3
0%
FS 12478D
1.07e8*
32.57
CS 12347D
8.56e7
33.30
ES 12378D
9.68e7
33.79
Abs. Int.
3.23e7
1.62e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 5.24e3
0%
RRF(FS 12478D) = (1.07e8 + 6.54e7) * 100pg / (9.68e7 + 5.92e7) * 100pg * 1 = 1.11
PSW 27-Jul-2021 15:15
OK - CL 28Jul21
FS 12478D
6.54e7*
32.57
CS 12347D
5.25e7
33.30
ES 12378D
5.92e7
33.79
Abs. Int.
1.94e7
9.72e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.83e6
1.41e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.12e3
123478D
2.16e6
37.67
123678D
2.05e6
37.79
123789D
2.41e6
38.08
Abs. Int.
7.09e5
3.55e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.19e3
123478D
1.77e6
37.67
123678D
1.69e6
37.79
123789D
1.81e6
38.08
Abs. Int.
5.86e5
2.93e5
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.56e3
FS 123468D
1.05e8
36.58
ES 123478D
7.98e7
37.66
ES 123678D
7.85e7
37.77
JS 123467D
4.35e7*
37.97
ES 123789D
8.89e7*
38.06
Abs. Int.
3.32e7
1.66e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.80e3
FS 123468D
8.09e7
36.58
ES 123478D
6.34e7
37.66
ES 123678D
6.17e7
37.77
JS 123467D
3.34e7*
37.97
ES 123789D
7.15e7*
38.06
Abs. Int.
2.53e7
1.27e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.14e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

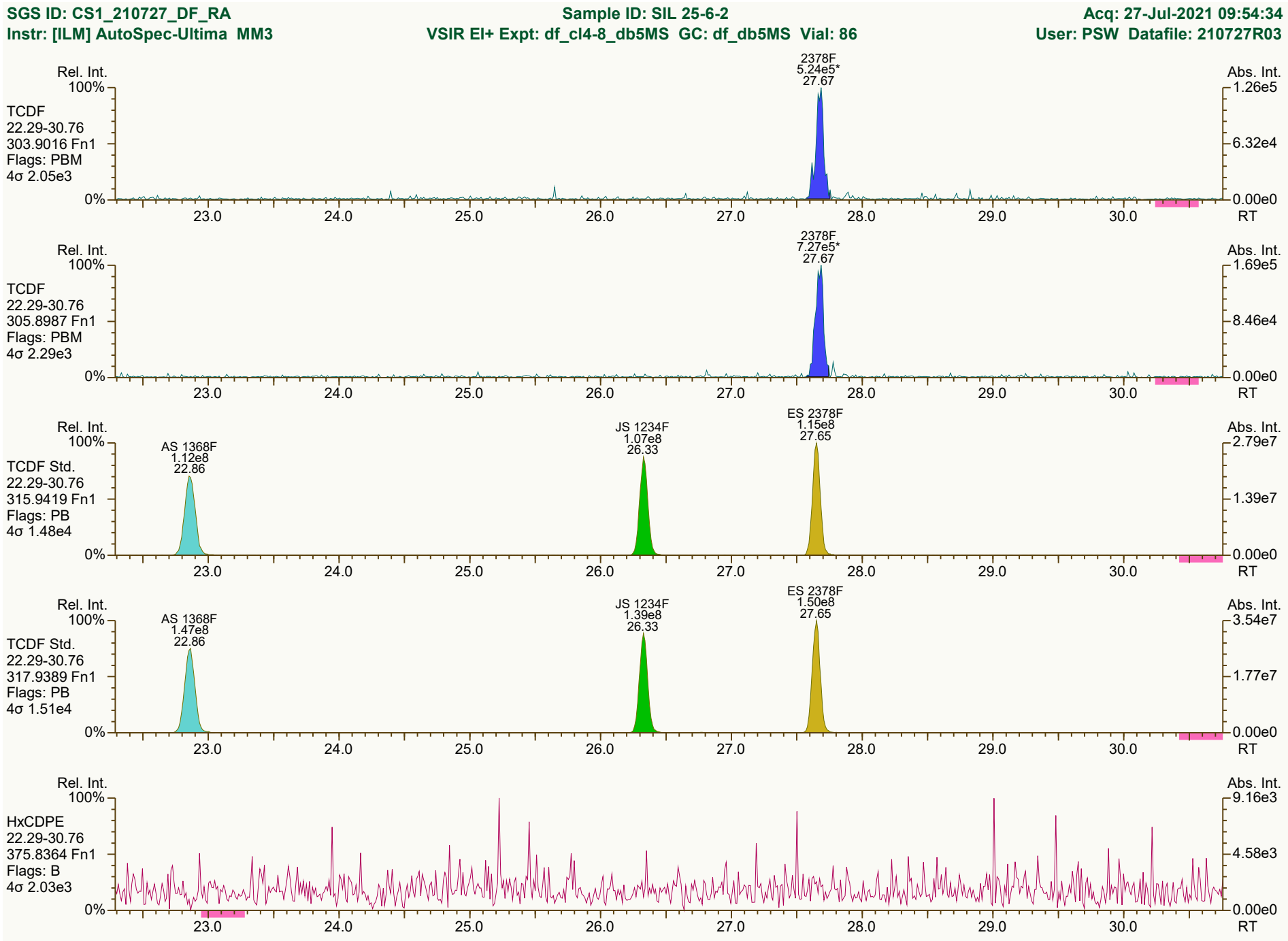

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 5.41e3
0%
1234678D
1.80e6*
40.66
Abs. Int.
6.98e5
3.49e5
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 4.07e3
0%
1234678D
1.54e6*
40.66
Abs. Int.
5.62e5
2.81e5
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 4.79e3
0%
FS 1234679D
9.92e7
39.99
ES 1234678D
7.24e7
40.65
Abs. Int.
4.21e7
2.10e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.10e3
0%
FS 1234679D
9.42e7
39.99
ES 1234678D
6.86e7
40.65
Abs. Int.
3.91e7
1.96e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.66e7
8.28e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0


OCDD
2.61e6
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 2.60e3
0%
Abs. Int.
8.02e5
4.01e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.05e6
43.22
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 3.89e3
0%
Abs. Int.
1.09e6
5.45e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.04e8
43.22
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 2.94e3
0%
Abs. Int.
3.50e7
1.75e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.14e8
43.22
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 3.15e3
0%
Abs. Int.
3.84e7
1.92e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

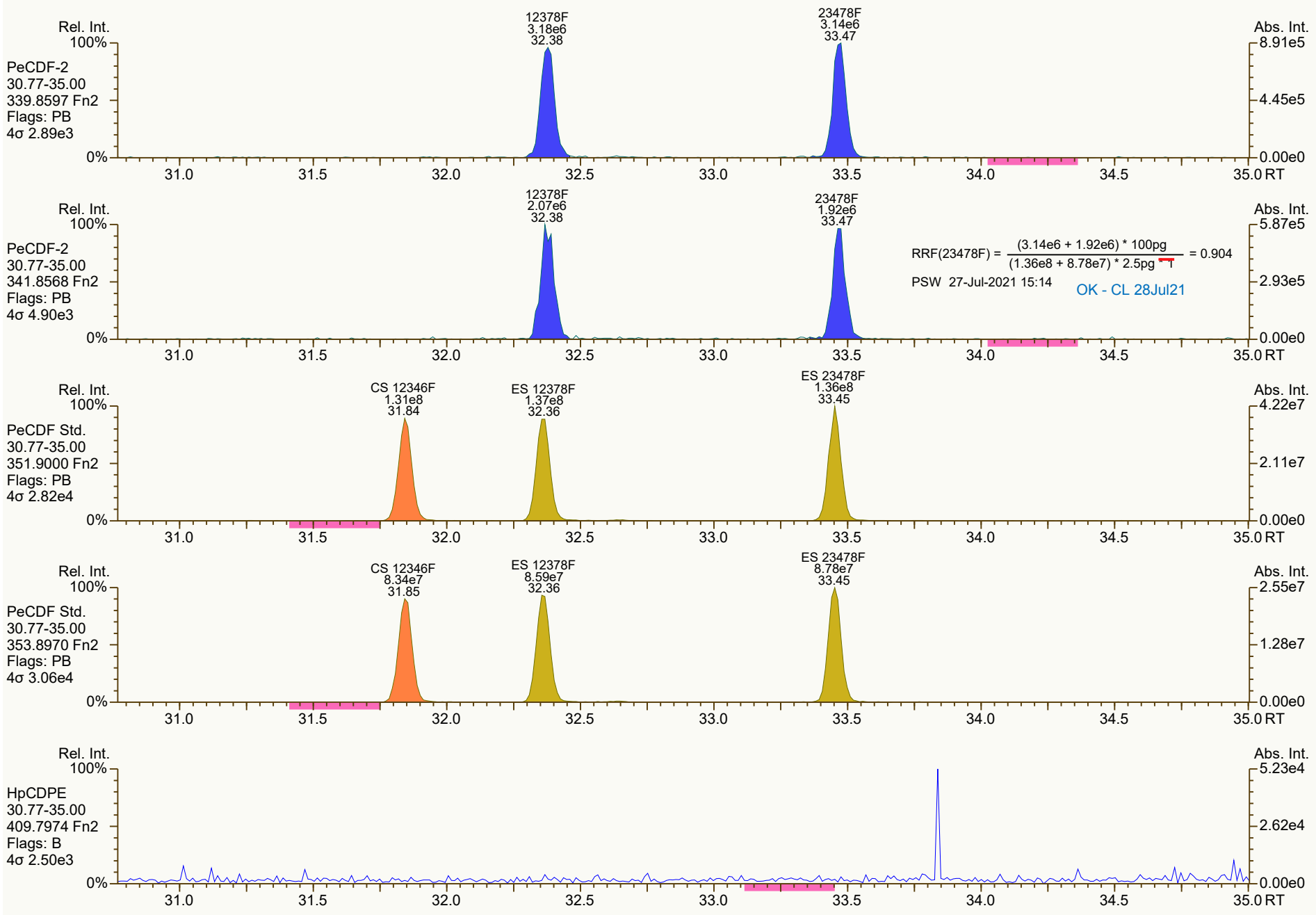
Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 0890, 2579, 1486 scc: 554-132

Peak annotation: Areas, Centroids
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 7 of 12

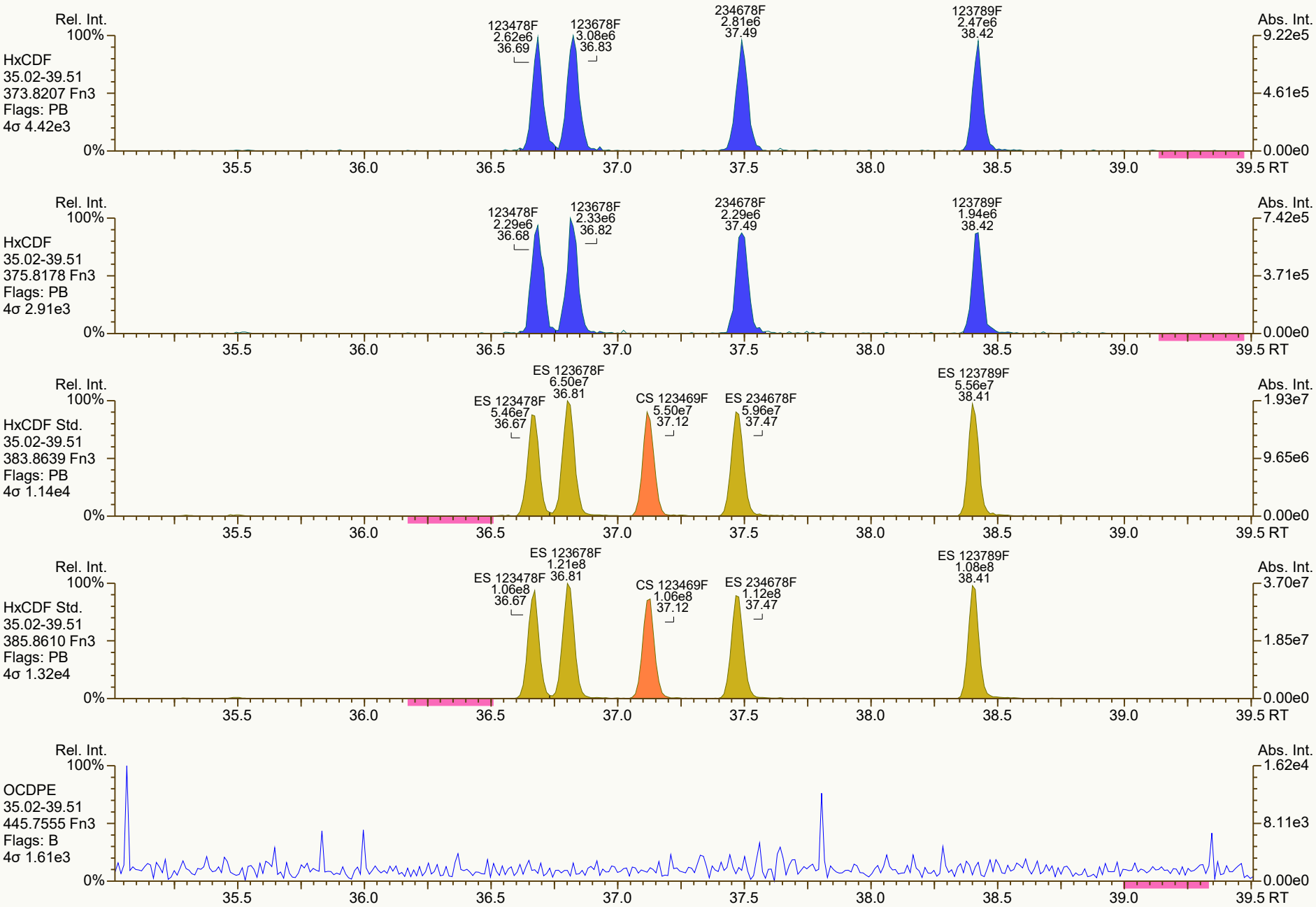

Rel. Int.
100%
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.43e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.13e4
5.66e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.60e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.03e6
1.51e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.89e3
0%
12378F
3.18e6
32.38
23478F
3.14e6
33.47
Abs. Int.
8.91e5
4.45e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 4.90e3
0%
12378F
2.07e6
32.38
23478F
1.92e6
33.47
RRF(23478F) = (3.14e6 + 1.92e6) * 100pg / (1.36e8 + 8.78e7) * 2.5pg * T = 0.904
PSW 27-Jul-2021 15:14
OK - CL 28Jul21
Abs. Int.
5.87e5
2.93e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.82e4
0%
CS 12346F
1.31e8
31.84
ES 12378F
1.37e8
32.36
ES 23478F
1.36e8
33.45
Abs. Int.
4.22e7
2.11e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 3.06e4
0%
CS 12346F
8.34e7
31.85
ES 12378F
8.59e7
32.36
ES 23478F
8.78e7
33.45
Abs. Int.
2.55e7
1.28e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.50e3
0%
Abs. Int.
5.23e4
2.62e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03

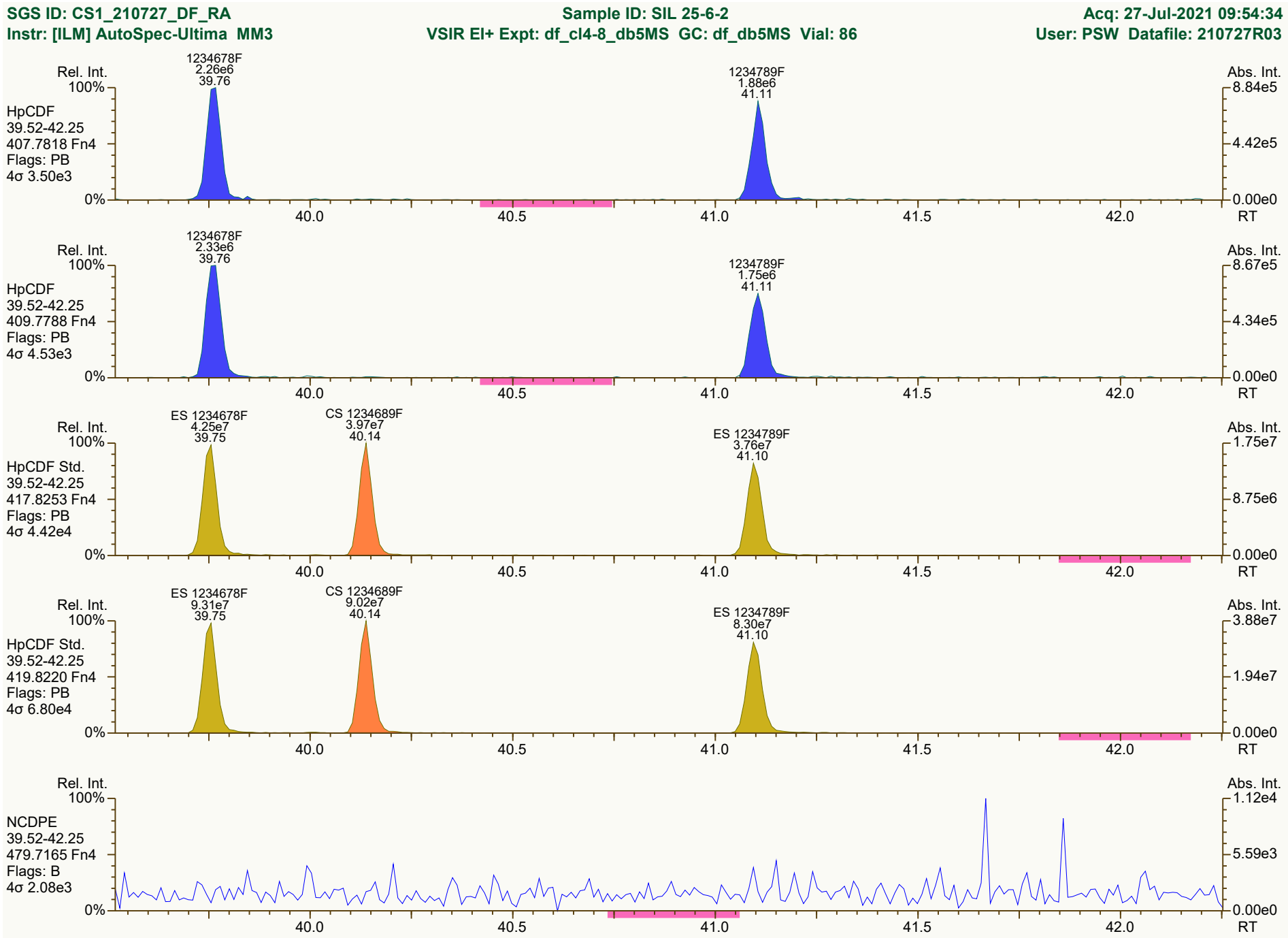


Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6555, 5794, 9510 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 10 of 12

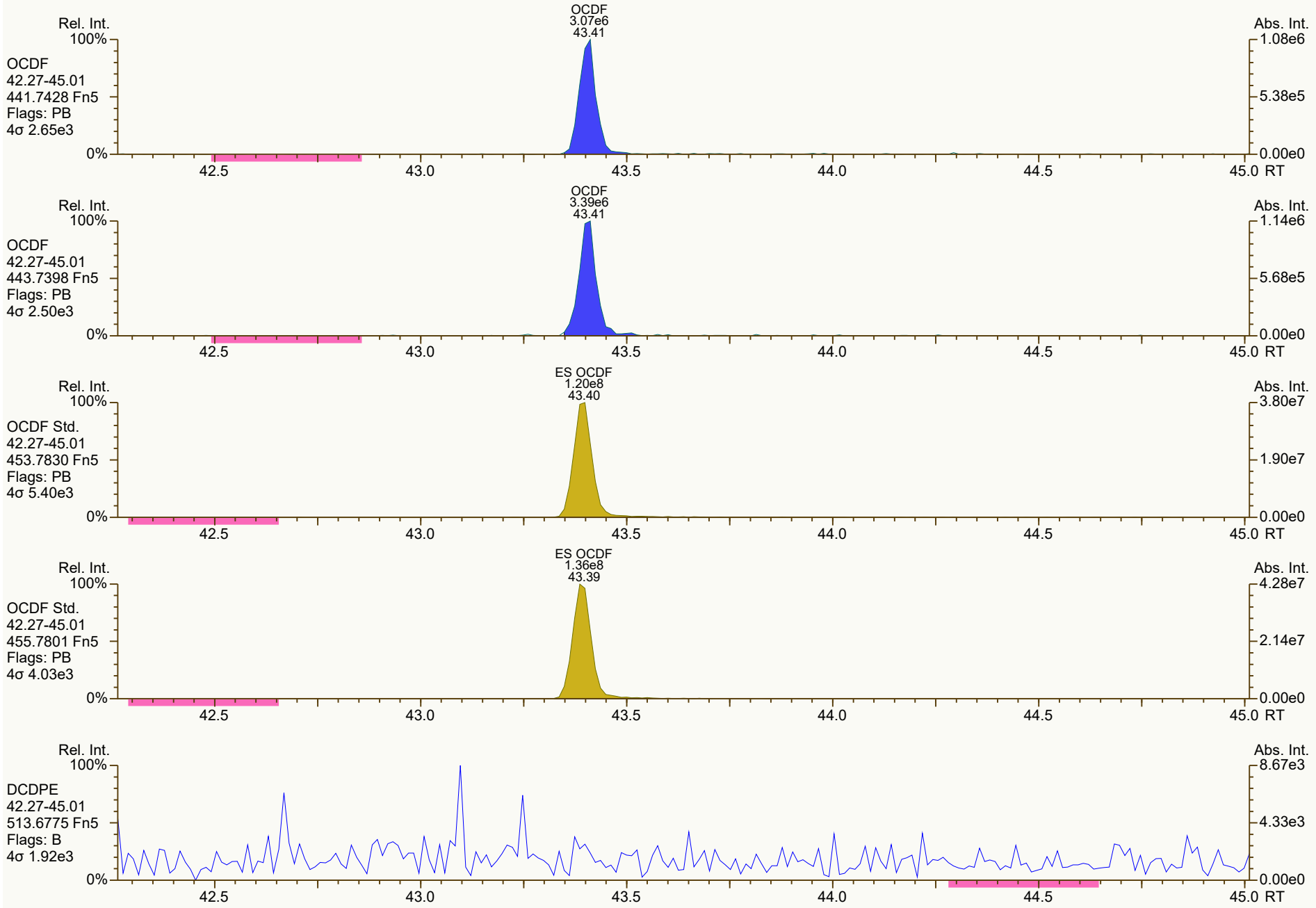
SGS ID: CS1_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 25-6-2
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 86

Acq: 27-Jul-2021 09:54:34
User: PSW Datafile: 210727R03



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS1_210727_DF_RA.utp_res, saved 27-Jul-2021 15:16 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8166, 3912, 7586 scc: 554-132
PKD: 27-Jul-2021 10:42 Printed: 27-Jul-2021 15:30 Page 11 of 12


Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 2.65e3
0%
OCDF
3.07e6
43.41
Abs. Int.
1.08e6
5.38e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 2.50e3
0%
OCDF
3.39e6
43.41
Abs. Int.
1.14e6
5.68e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.40e3
0%
ES OCDF
1.20e8
43.40
Abs. Int.
3.80e7
1.90e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.03e3
0%
ES OCDF
1.36e8
43.39
Abs. Int.
4.28e7
2.14e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 1.92e3
0%
Abs. Int.
8.67e3
4.33e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

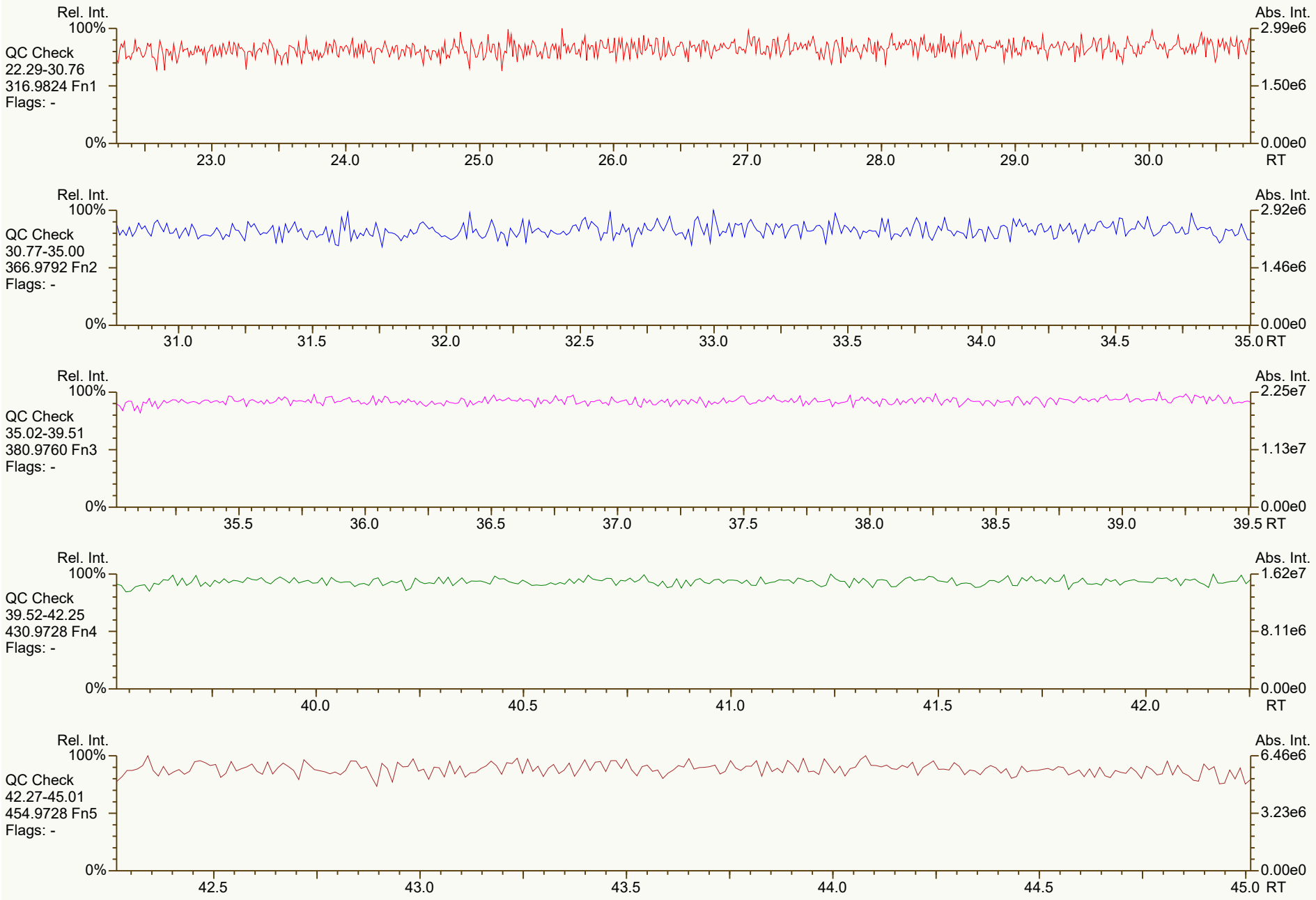
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

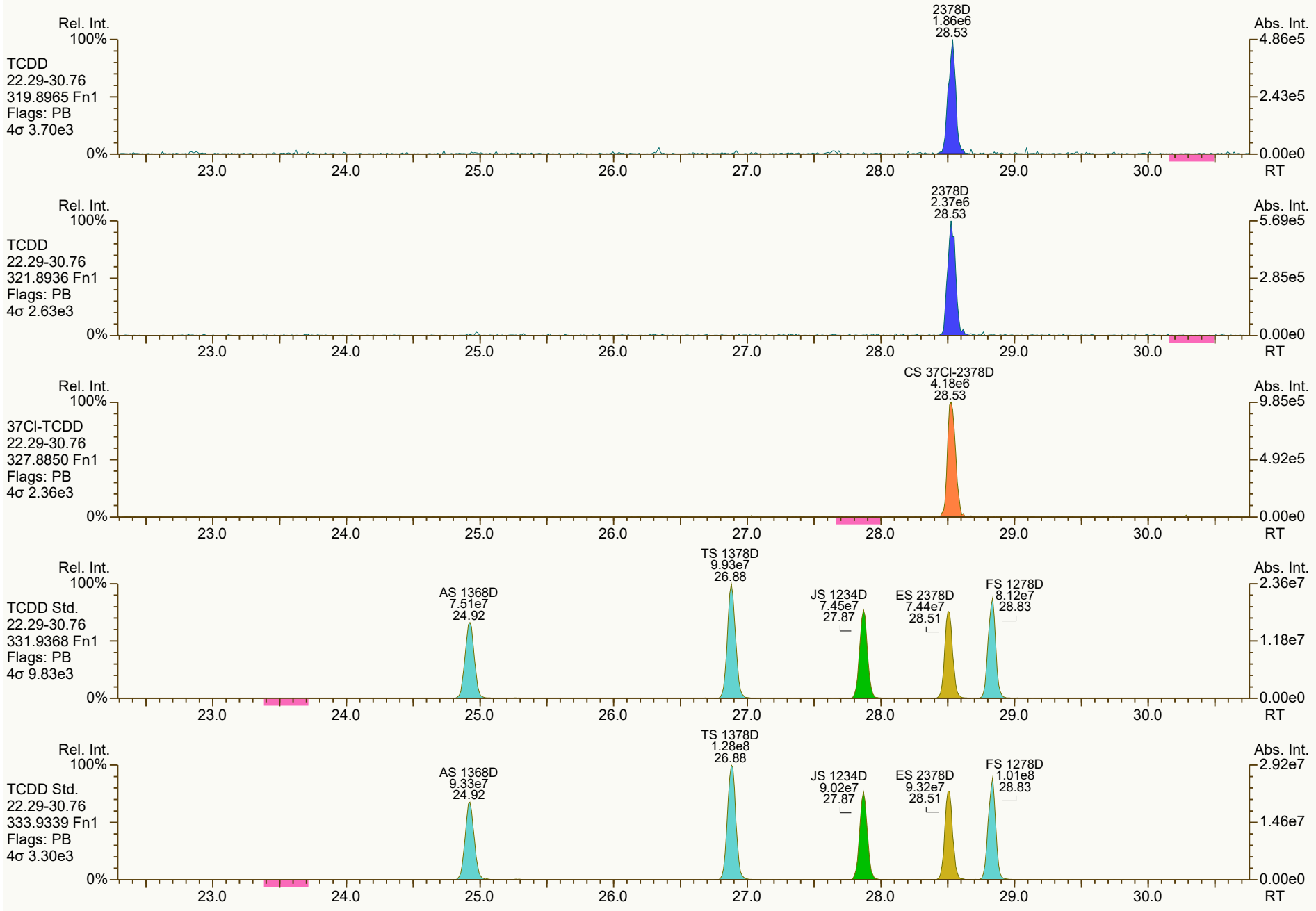
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	4.23E+06	0.79	Y	1.34	1.26	-6%
12378-PeCDD	33.81	1.67E+07	1.63	Y	1.06	1.02	-4%
123478-HxCDD	37.68	1.53E+07	1.32	Y	1.06	0.99	-6%
123678-HxCDD	37.80	1.52E+07	1.22	Y	1.08	1.02	-5%
123789-HxCDD	38.08	1.66E+07	1.25	Y	1.02	0.95	-6%
1234678-HpCDD	40.67	1.41E+07	1.01	Y	0.97	0.92	-6%
OCDD	43.23	2.33E+07	0.88	Y	1.07	1.01	-6%
2378-TCDF	27.68	5.04E+06	0.83	Y	0.96	0.90	-6%
12378-PeCDF	32.39	2.16E+07	1.63	Y	0.95	0.90	-5%
23478-PeCDF	33.48	2.12E+07	1.52	Y	0.94	0.90	-4%
123478-HxCDF	36.69	2.09E+07	1.25	Y	1.23	1.19	-4%
123678-HxCDF	36.83	2.13E+07	1.24	Y	1.13	1.07	-5%
234678-HxCDF	37.50	1.98E+07	1.20	Y	1.15	1.08	-6%
123789-HxCDF	38.43	1.89E+07	1.24	Y	1.14	1.09	-4%
1234678-HpCDF	39.77	1.87E+07	1.01	Y	1.36	1.31	-4%
1234789-HpCDF	41.12	1.60E+07	1.02	Y	1.30	1.26	-3%
OCDF	43.41	2.61E+07	0.92	Y	1.03	0.95	-7%
ES 2378-TCDD	28.51	1.68E+08	0.80	Y	1.03	1.02	-2%
ES 12378-PeCDD	33.794	1.63E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.667	1.54E+08	1.28	Y	0.99	0.99	-1%
ES 123678-HxCDD	37.781	1.49E+08	1.24	Y	0.97	0.95	-2%
ES 123789-HxCDD	38.07	1.75E+08	1.26	Y	1.12	1.12	0%
ES 1234678-HpCDD	40.658	1.53E+08	1.06	Y	0.99	0.98	-1%
ES OCDD	43.222	2.31E+08	0.90	Y	0.78	0.74	-5%
ES 2378-TCDF	27.656	2.80E+08	0.80	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.368	2.40E+08	1.55	Y	0.93	0.92	-2%
ES 23478-PeCDF	33.459	2.36E+08	1.59	Y	0.92	0.90	-2%
ES 123478-HxCDF	36.674	1.76E+08	0.52	Y	1.14	1.13	-1%
ES 123678-HxCDF	36.814	1.99E+08	0.52	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.481	1.84E+08	0.52	Y	1.20	1.18	-2%
ES 123789-HxCDF	38.416	1.73E+08	0.52	Y	1.14	1.11	-2%
ES 1234678-HpCDF	39.761	1.43E+08	0.44	Y	0.95	0.92	-3%
ES 1234789-HpCDF	41.105	1.28E+08	0.46	Y	0.85	0.82	-3%
ES OCDF	43.404	2.74E+08	0.87	Y	0.93	0.88	-5%

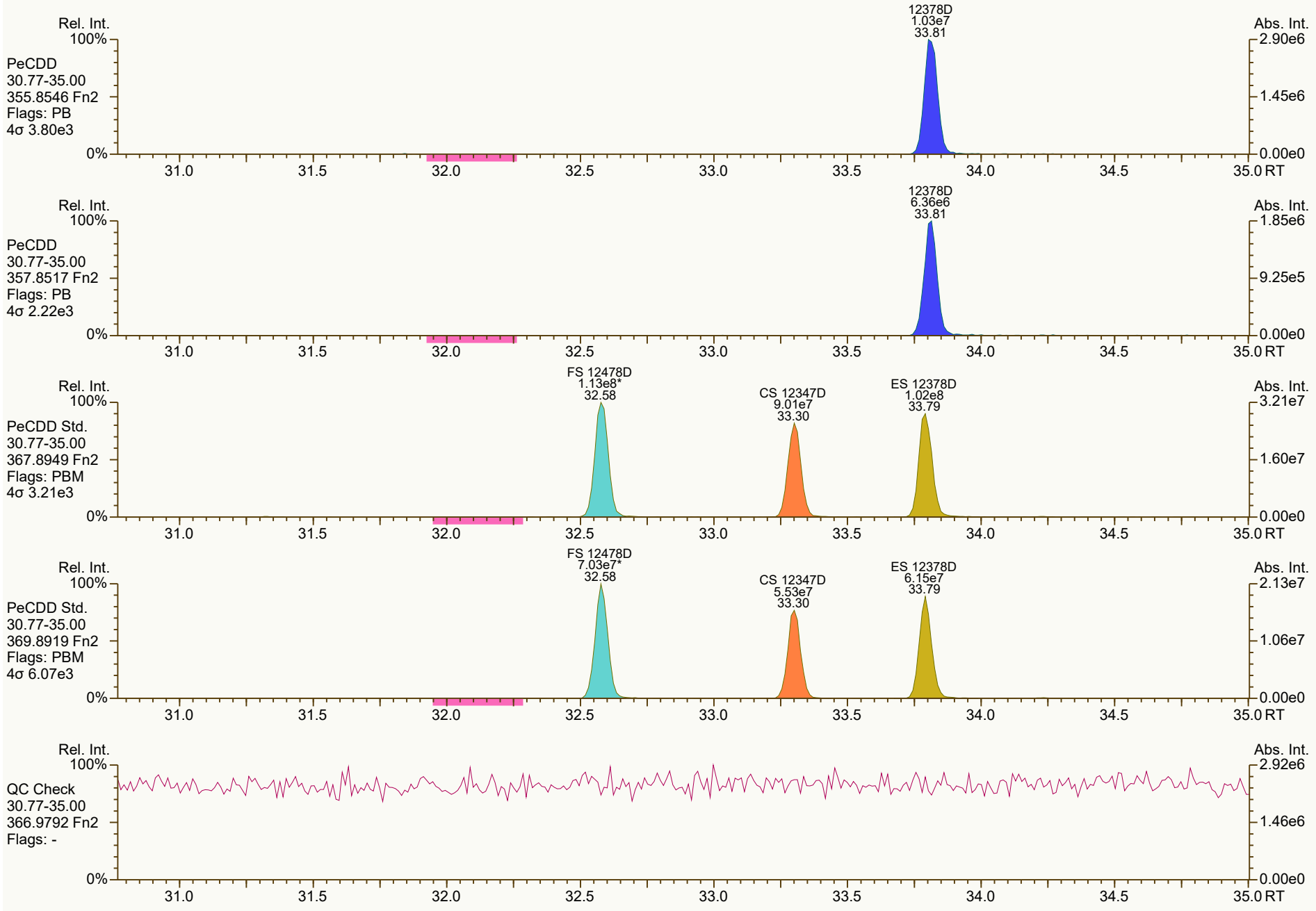
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 10:44 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS2_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 377-233-TNL
Sample ID: SIL 25-6-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R04

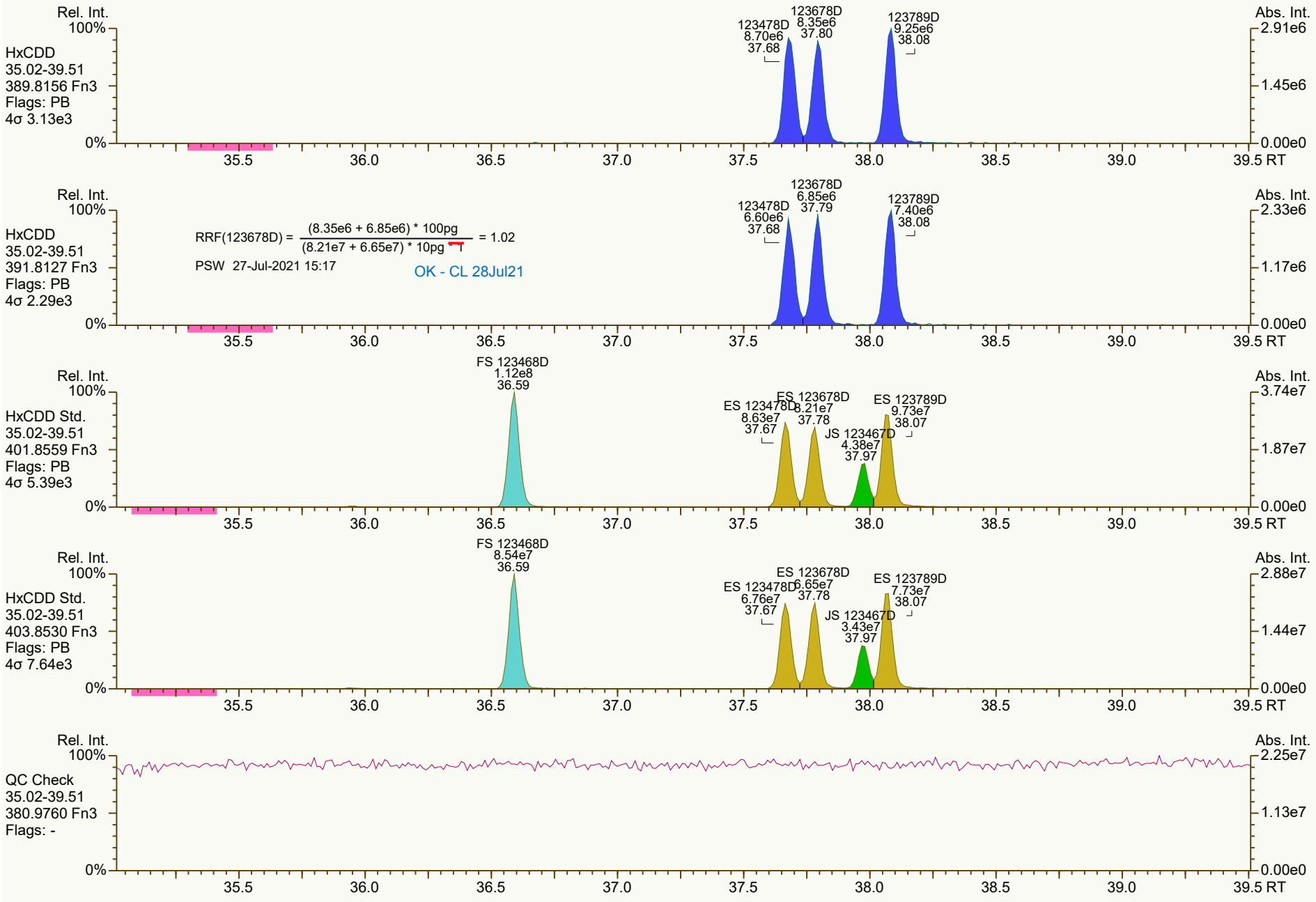
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.65E+08	0.83	Y	-	-	-
JS 1234-TCDF	26.34	2.62E+08	0.75	Y	-	-	-
JS 123467-HxCDD	37.97	7.80E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.31	1.27	-3%
CS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.13	1.69E+08	0.52	Y	1.09	1.08	-1%
CS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	4.18E+06	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.45E+08	1.63	Y	0.86	0.89	3%
SS 12346-PeCDF	31.85	2.24E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.13	1.69E+08	0.52	Y	0.84	0.85	1%
SS 1234689-HpCDF	40.15	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.92	1.68E+08	0.81	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.81E+08	0.77	Y	1.08	1.07	-1%
FS 1278-TCDD	28.83	1.83E+08	0.80	Y	1.08	1.09	0%
FS 12478-PeCDD	32.58	1.83E+08	1.61	Y	1.09	1.12	3%
FS 123468-HxCDD	36.59	1.97E+08	1.31	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	2.12E+08	1.04	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	2.27E+08	0.78	Y	1.35	1.36	1%
~~OCDD-a~~	~~43.23~~	~~1.51E+06~~	~~2.07~~	~~N~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.41~~	~~1.45E+06~~	~~3.13~~	~~N~~	~~0.06~~	~~0.05~~	~~-11%~~

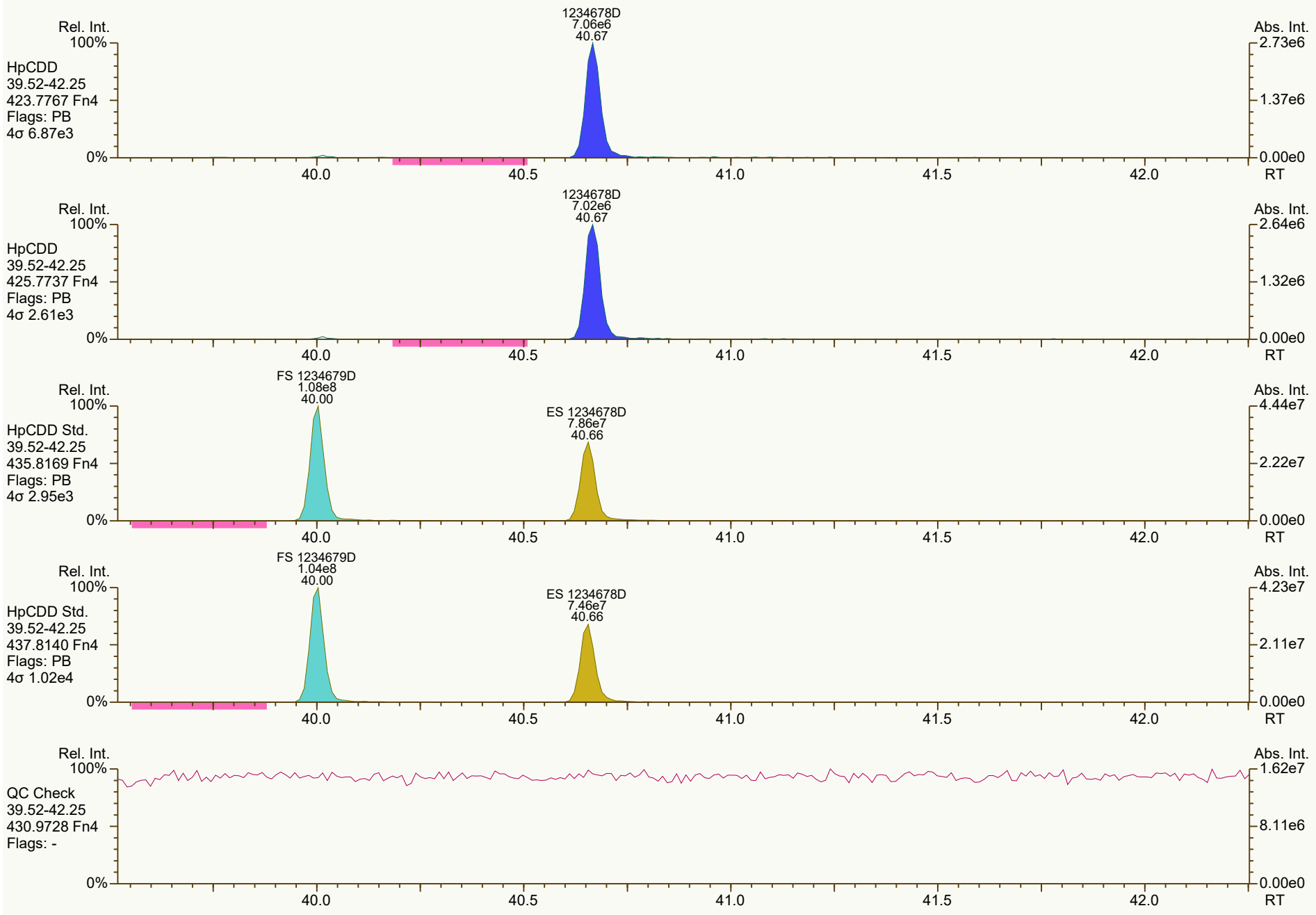
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.99e6
1.50e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.25e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.46e6
3.23e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

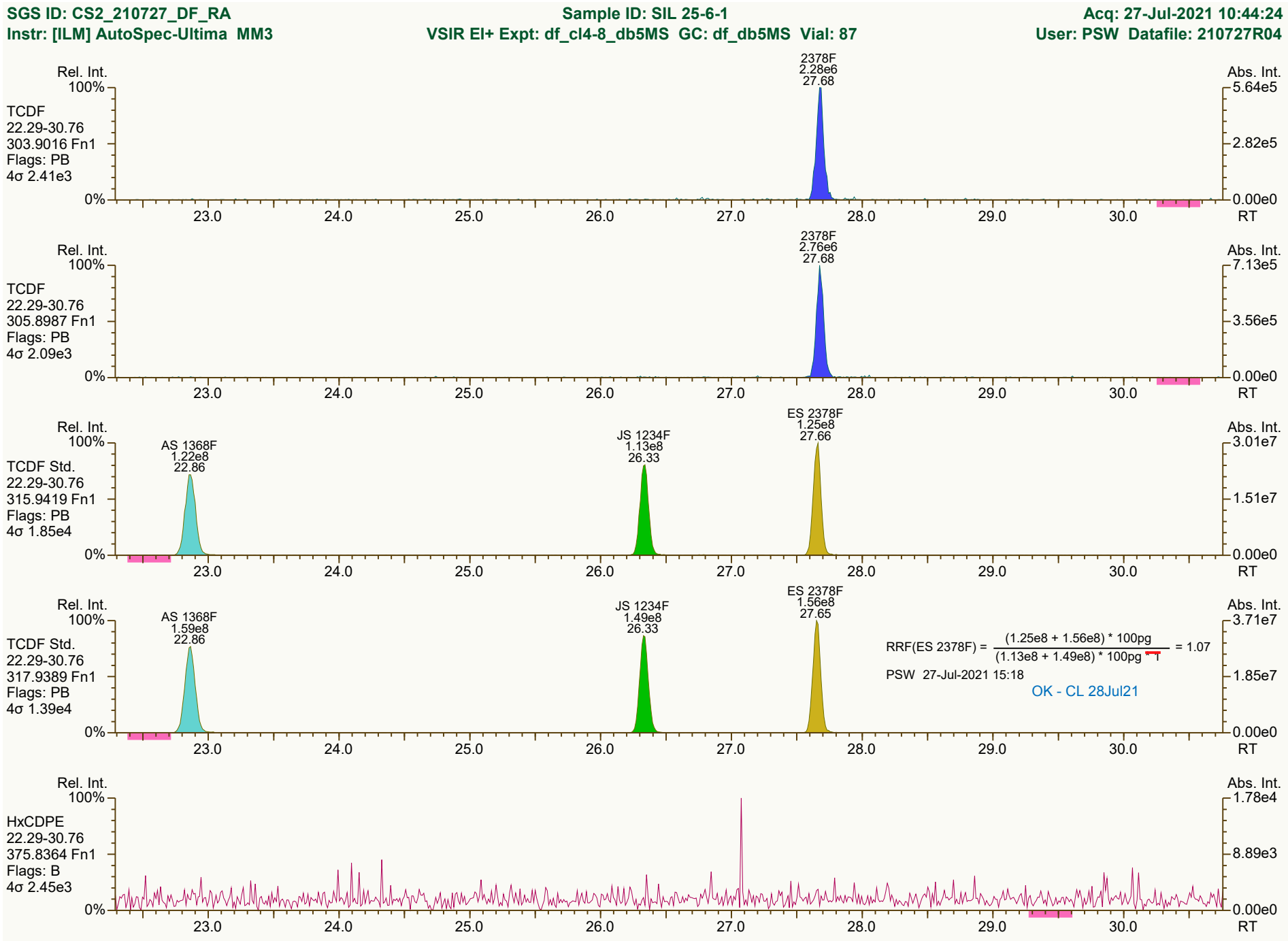

Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.70e3
0%
2378D
1.86e6
28.53
Abs. Int.
4.86e5
2.43e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.63e3
0%
2378D
2.37e6
28.53
Abs. Int.
5.69e5
2.85e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.36e3
0%
CS 37Cl-2378D
4.18e6
28.53
Abs. Int.
9.85e5
4.92e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 9.83e3
0%
AS 1368D
7.51e7
24.92
TS 1378D
9.93e7
26.88
JS 1234D
7.45e7
27.87
ES 2378D
7.44e7
28.51
FS 1278D
8.12e7
28.83
Abs. Int.
2.36e7
1.18e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.30e3
0%
AS 1368D
9.33e7
24.92
TS 1378D
1.28e8
26.88
JS 1234D
9.02e7
27.87
ES 2378D
9.32e7
28.51
FS 1278D
1.01e8
28.83
Abs. Int.
2.92e7
1.46e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.80e3
0%
12378D
1.03e7
33.81
Abs. Int.
2.90e6
1.45e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.22e3
0%
12378D
6.36e6
33.81
Abs. Int.
1.85e6
9.25e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.21e3
0%
FS 12478D
1.13e8*
32.58
CS 12347D
9.01e7
33.30
ES 12378D
1.02e8
33.79
Abs. Int.
3.21e7
1.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 6.07e3
0%
FS 12478D
7.03e7*
32.58
CS 12347D
5.53e7
33.30
ES 12378D
6.15e7
33.79
Abs. Int.
2.13e7
1.06e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

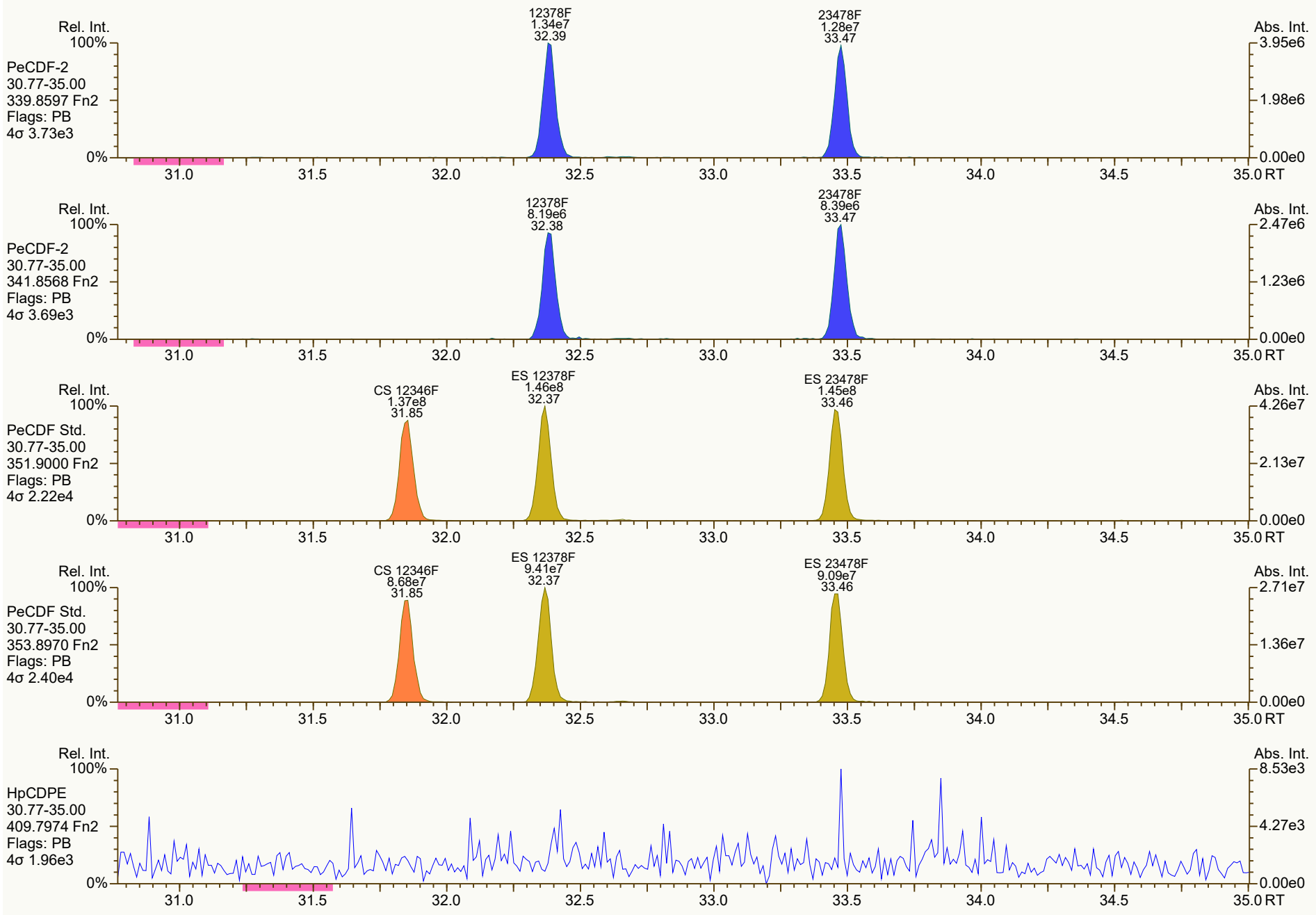

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 3.13e3
123478D 8.70e6 37.68
123678D 8.35e6 37.80
123789D 9.25e6 38.08
Abs. Int.
2.91e6
1.45e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.29e3
RRF(123678D) = (8.35e6 + 6.85e6) * 100pg / (8.21e7 + 6.65e7) * 10pg = 1.02
PSW 27-Jul-2021 15:17
OK - CL 28Jul21
123478D 6.60e6 37.68
123678D 6.85e6 37.79
123789D 7.40e6 38.08
2.33e6
1.17e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 5.39e3
FS 123468D 1.12e8 36.59
ES 123478D 8.63e7 37.67
ES 123678D 8.21e7 37.78
JS 123467D 4.38e7 37.97
ES 123789D 9.73e7 38.07
3.74e7
1.87e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 7.64e3
FS 123468D 8.54e7 36.59
ES 123478D 6.76e7 37.67
ES 123678D 6.65e7 37.78
JS 123467D 3.43e7 37.97
ES 123789D 7.73e7 38.07
2.88e7
1.44e7
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
2.25e7
1.13e7


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 6.87e3
0%
1234678D
7.06e6
40.67
Abs. Int.
2.73e6
1.37e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 2.61e3
0%
1234678D
7.02e6
40.67
Abs. Int.
2.64e6
1.32e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.95e3
0%
FS 1234679D
1.08e8
40.00
ES 1234678D
7.86e7
40.66
Abs. Int.
4.44e7
2.22e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 1.02e4
0%
FS 1234679D
1.04e8
40.00
ES 1234678D
7.46e7
40.66
Abs. Int.
4.23e7
2.11e7
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.62e7
8.11e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


OCDD
1.09e7
43.23
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PB
4σ 3.62e3
0%
Abs. Int.
3.54e6
1.77e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.24e7
43.23
OCDD
42.27-45.01
459.7348 Fn5
Flags: PB
4σ 1.67e3
4.01e6
2.00e6
ES OCDD
1.10e8
43.22
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 3.79e3
3.53e7
1.77e7
ES OCDD
1.22e8
43.22
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 7.59e3
3.84e7
1.92e7
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
6.46e6
3.23e6


SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3
Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87
Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04
Rel. Int.
100%
0%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.41e3
2378F
2.28e6
27.68
Abs. Int.
5.64e5
2.82e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.09e3
2378F
2.76e6
27.68
7.13e5
3.56e5
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.85e4
AS 1368F
1.22e8
22.86
JS 1234F
1.13e8
26.33
ES 2378F
1.25e8
27.66
3.01e7
1.51e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.39e4
AS 1368F
1.59e8
22.86
JS 1234F
1.49e8
26.33
ES 2378F
1.56e8
27.65
RRF(ES 2378F) = (1.25e8 + 1.56e8) * 100pg / (1.13e8 + 1.49e8) * 100pg * 1 = 1.07
PSW 27-Jul-2021 15:18
OK - CL 28Jul21
3.71e7
1.85e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.45e3
1.78e4
8.89e3
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9273, 2389, 5803 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 7 of 12

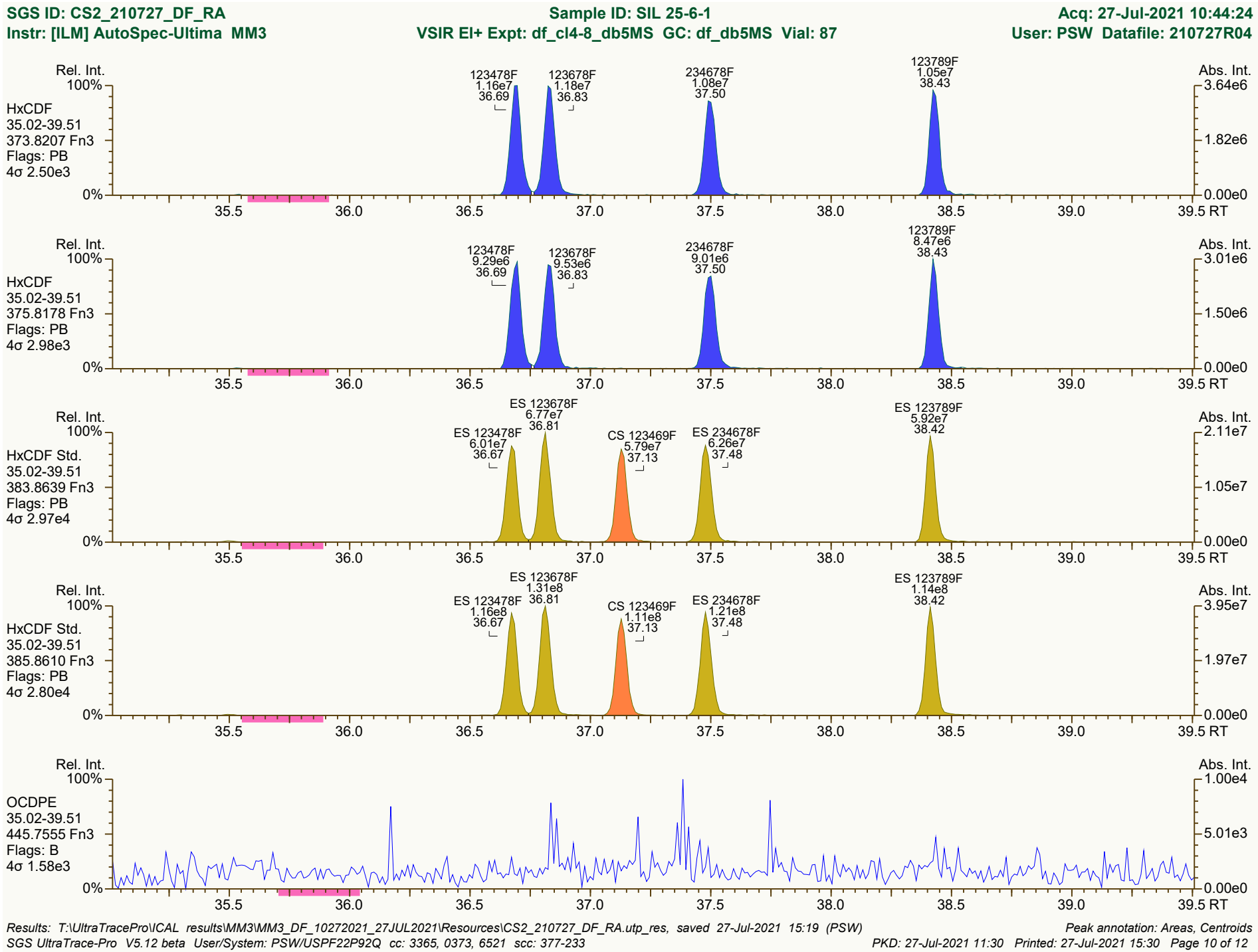

Rel. Int.
100%
0%
Abs. Int.
1.66e4
8.28e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.30e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.23e3
2.64e4
1.32e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.99e6
1.50e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 3.73e3
0%
12378F
1.34e7
32.39
23478F
1.28e7
33.47
Abs. Int.
3.95e6
1.98e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.69e3
0%
12378F
8.19e6
32.38
23478F
8.39e6
33.47
Abs. Int.
2.47e6
1.23e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 2.22e4
0%
CS 12346F
1.37e8
31.85
ES 12378F
1.46e8
32.37
ES 23478F
1.45e8
33.46
Abs. Int.
4.26e7
2.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.40e4
0%
CS 12346F
8.68e7
31.85
ES 12378F
9.41e7
32.37
ES 23478F
9.09e7
33.46
Abs. Int.
2.71e7
1.36e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: PB
4σ 1.96e3
0%
Abs. Int.
8.53e3
4.27e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

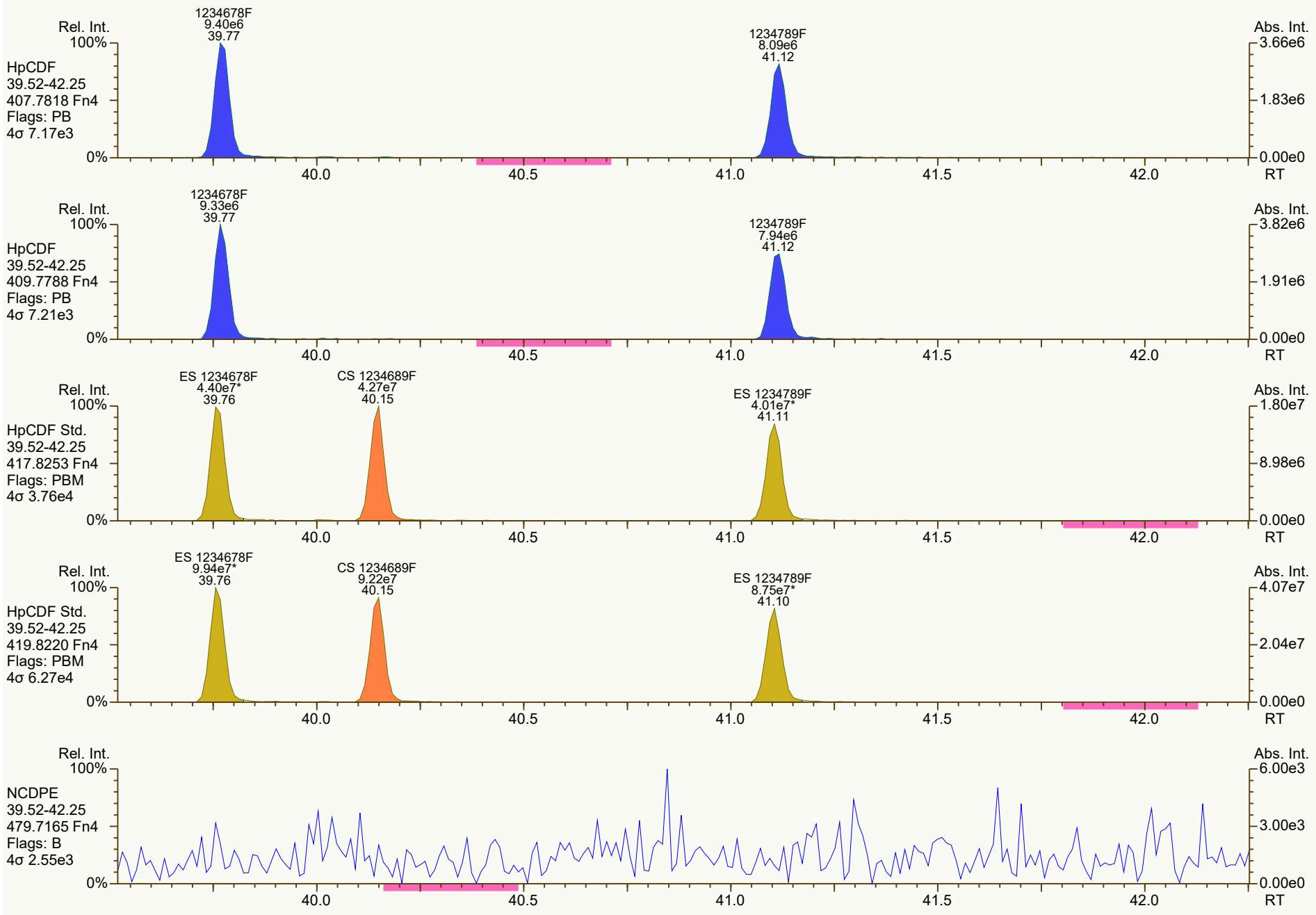
SGS ID: CS2_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

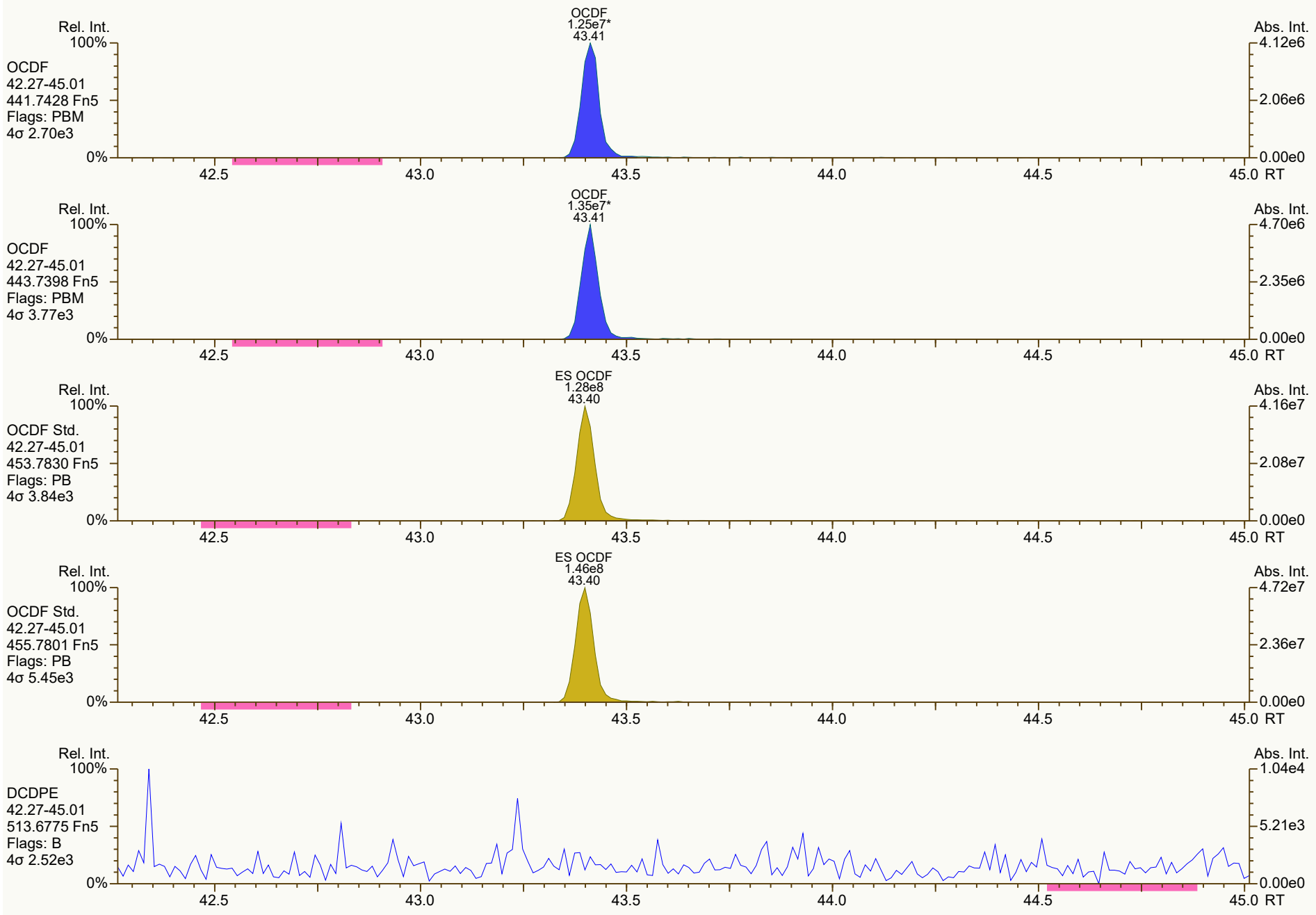
Sample ID: SIL 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 87

Acq: 27-Jul-2021 10:44:24
User: PSW Datafile: 210727R04



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS2_210727_DF_RA.utp_res, saved 27-Jul-2021 15:19 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3365, 0373, 6521 scc: 377-233
PKD: 27-Jul-2021 11:30 Printed: 27-Jul-2021 15:30 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 7.17e3
1234678F
9.40e6
39.77
1234789F
8.09e6
41.12
Abs. Int.
3.66e6
1.83e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 7.21e3
1234678F
9.33e6
39.77
1234789F
7.94e6
41.12
Abs. Int.
3.82e6
1.91e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.76e4
ES 1234678F
4.40e7*
39.76
CS 1234689F
4.27e7
40.15
ES 1234789F
4.01e7*
41.11
Abs. Int.
1.80e7
8.98e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 6.27e4
ES 1234678F
9.94e7*
39.76
CS 1234689F
9.22e7
40.15
ES 1234789F
8.75e7*
41.10
Abs. Int.
4.07e7
2.04e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.55e3
Abs. Int.
6.00e3
3.00e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDF
1.25e7*
43.41
Rel. Int.
100%
OCDF
42.27-45.01
441.7428 Fn5
Flags: PBM
4σ 2.70e3
0%
Abs. Int.
4.12e6
2.06e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.35e7*
43.41
OCDF
42.27-45.01
443.7398 Fn5
Flags: PBM
4σ 3.77e3
4.70e6
2.35e6
ES OCDF
1.28e8
43.40
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 3.84e3
4.16e7
2.08e7
ES OCDF
1.46e8
43.40
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 5.45e3
4.72e7
2.36e7
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.52e3
1.04e4
5.21e3

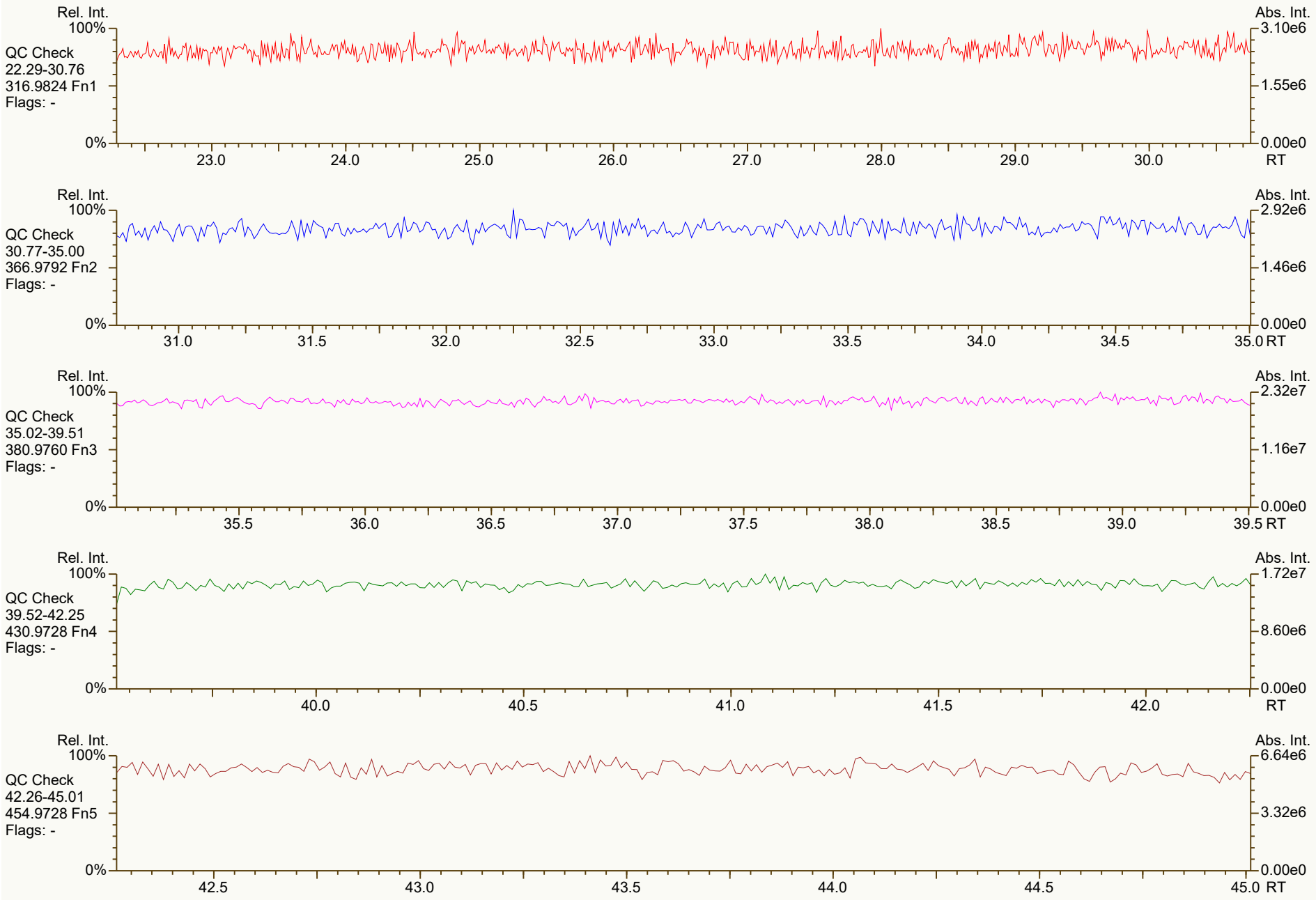
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

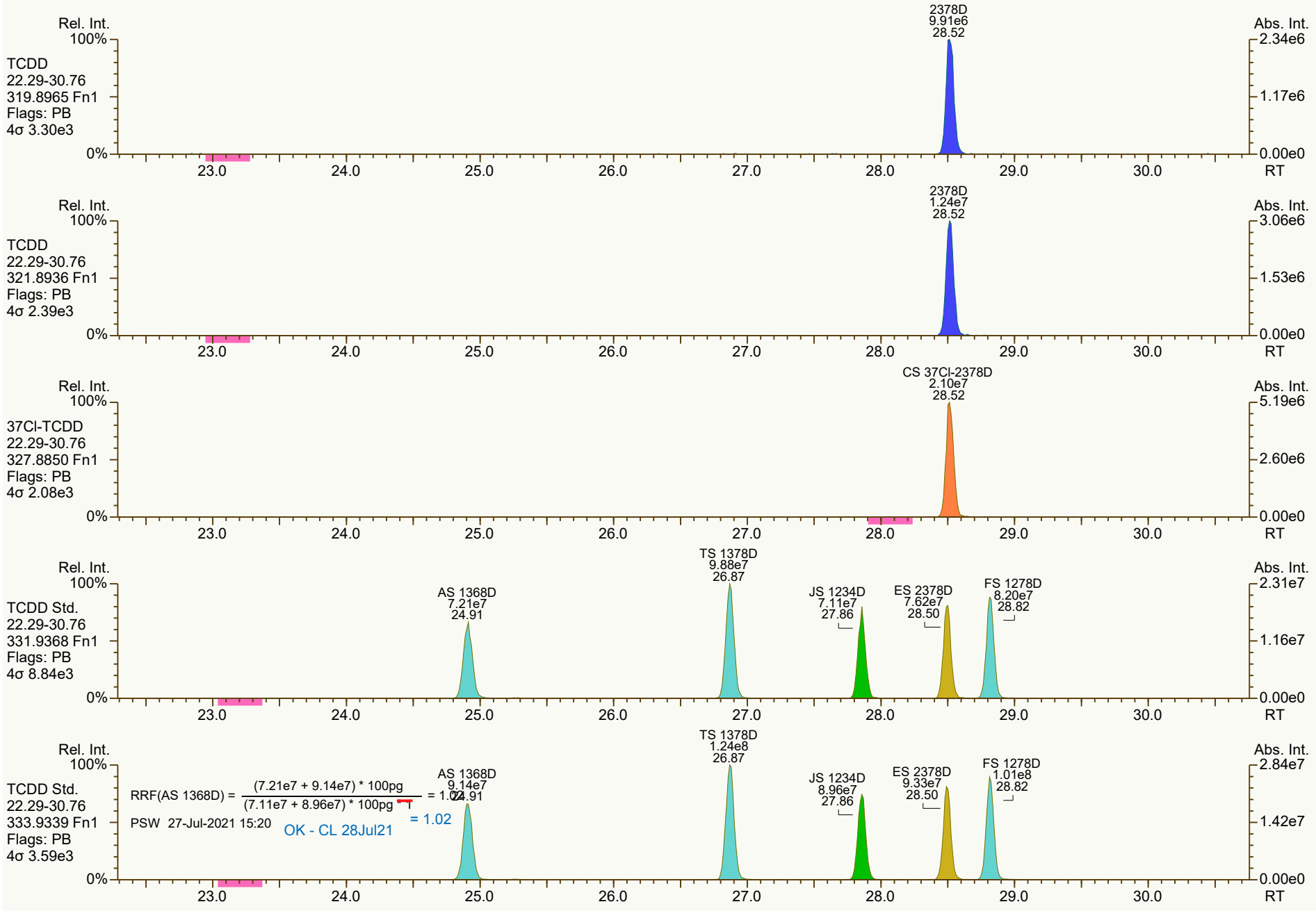
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.23E+07	0.80	Y	1.34	1.32	-2%
12378-PeCDD	33.80	8.56E+07	1.57	Y	1.06	1.05	-1%
123478-HxCDD	37.67	7.63E+07	1.25	Y	1.06	1.05	-1%
123678-HxCDD	37.78	7.89E+07	1.25	Y	1.08	1.08	0%
123789-HxCDD	38.07	8.22E+07	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.66	7.06E+07	1.03	Y	0.97	0.95	-2%
OCDD	43.22	1.21E+08	0.89	Y	1.07	1.07	0%
2378-TCDF	27.66	2.66E+07	0.80	Y	0.96	0.95	-1%
12378-PeCDF	32.37	1.11E+08	1.56	Y	0.95	0.94	-1%
23478-PeCDF	33.46	1.09E+08	1.56	Y	0.94	0.92	-2%
123478-HxCDF	36.68	1.05E+08	1.22	Y	1.23	1.22	-2%
123678-HxCDF	36.82	1.08E+08	1.25	Y	1.13	1.10	-2%
234678-HxCDF	37.49	1.02E+08	1.24	Y	1.15	1.14	-1%
123789-HxCDF	38.42	9.59E+07	1.23	Y	1.14	1.14	0%
1234678-HpCDF	39.76	9.62E+07	1.03	Y	1.36	1.34	-1%
1234789-HpCDF	41.10	8.35E+07	1.03	Y	1.30	1.34	3%
OCDF	43.41	1.40E+08	0.89	Y	1.03	1.03	0%
ES 2378-TCDD	28.50	1.70E+08	0.82	Y	1.03	1.05	2%
ES 12378-PeCDD	33.782	1.63E+08	1.65	Y	1.03	1.01	-2%
ES 123478-HxCDD	37.654	1.45E+08	1.26	Y	0.99	1.00	0%
ES 123678-HxCDD	37.768	1.46E+08	1.27	Y	0.97	1.01	3%
ES 123789-HxCDD	38.057	1.66E+08	1.23	Y	1.12	1.14	1%
ES 1234678-HpCDD	40.644	1.48E+08	1.08	Y	0.99	1.02	3%
ES OCDD	43.211	2.25E+08	0.88	Y	0.78	0.77	-1%
ES 2378-TCDF	27.643	2.80E+08	0.79	Y	1.08	1.09	1%
ES 12378-PeCDF	32.354	2.37E+08	1.58	Y	0.93	0.93	-1%
ES 23478-PeCDF	33.446	2.37E+08	1.53	Y	0.92	0.93	0%
ES 123478-HxCDF	36.661	1.72E+08	0.52	Y	1.14	1.18	4%
ES 123678-HxCDF	36.801	1.96E+08	0.52	Y	1.30	1.35	4%
ES 234678-HxCDF	37.469	1.79E+08	0.54	Y	1.20	1.23	2%
ES 123789-HxCDF	38.404	1.68E+08	0.52	Y	1.14	1.16	2%
ES 1234678-HpCDF	39.75	1.43E+08	0.45	Y	0.95	0.98	4%
ES 1234789-HpCDF	41.092	1.25E+08	0.44	Y	0.85	0.86	1%
ES OCDF	43.395	2.71E+08	0.89	Y	0.93	0.93	1%

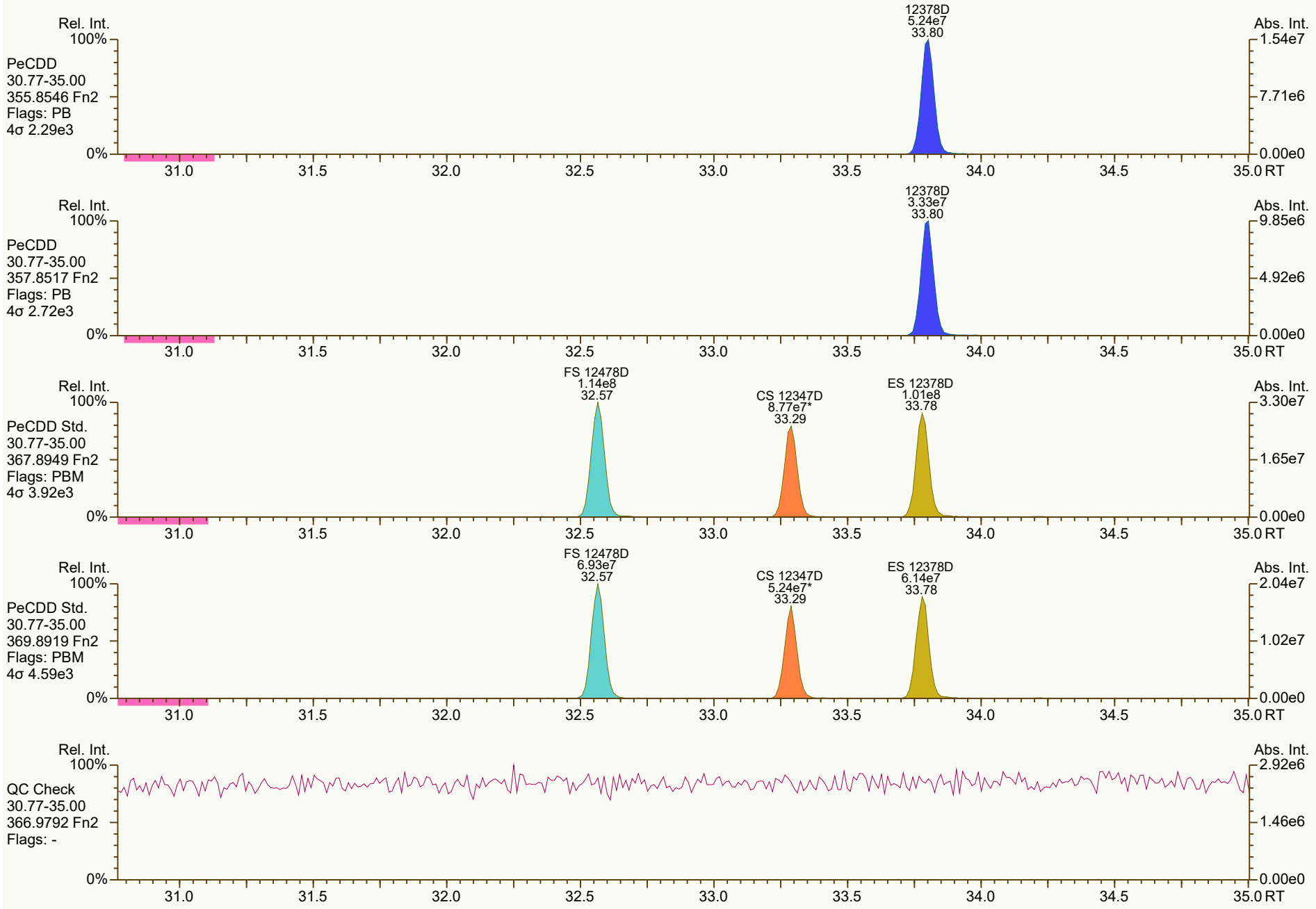
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 11:32 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RA	UTP: 27-Jul-2021 15:00:20 PSW	Checkcode: 230-891-PQT
Sample ID: SIL 23-672-1	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R05

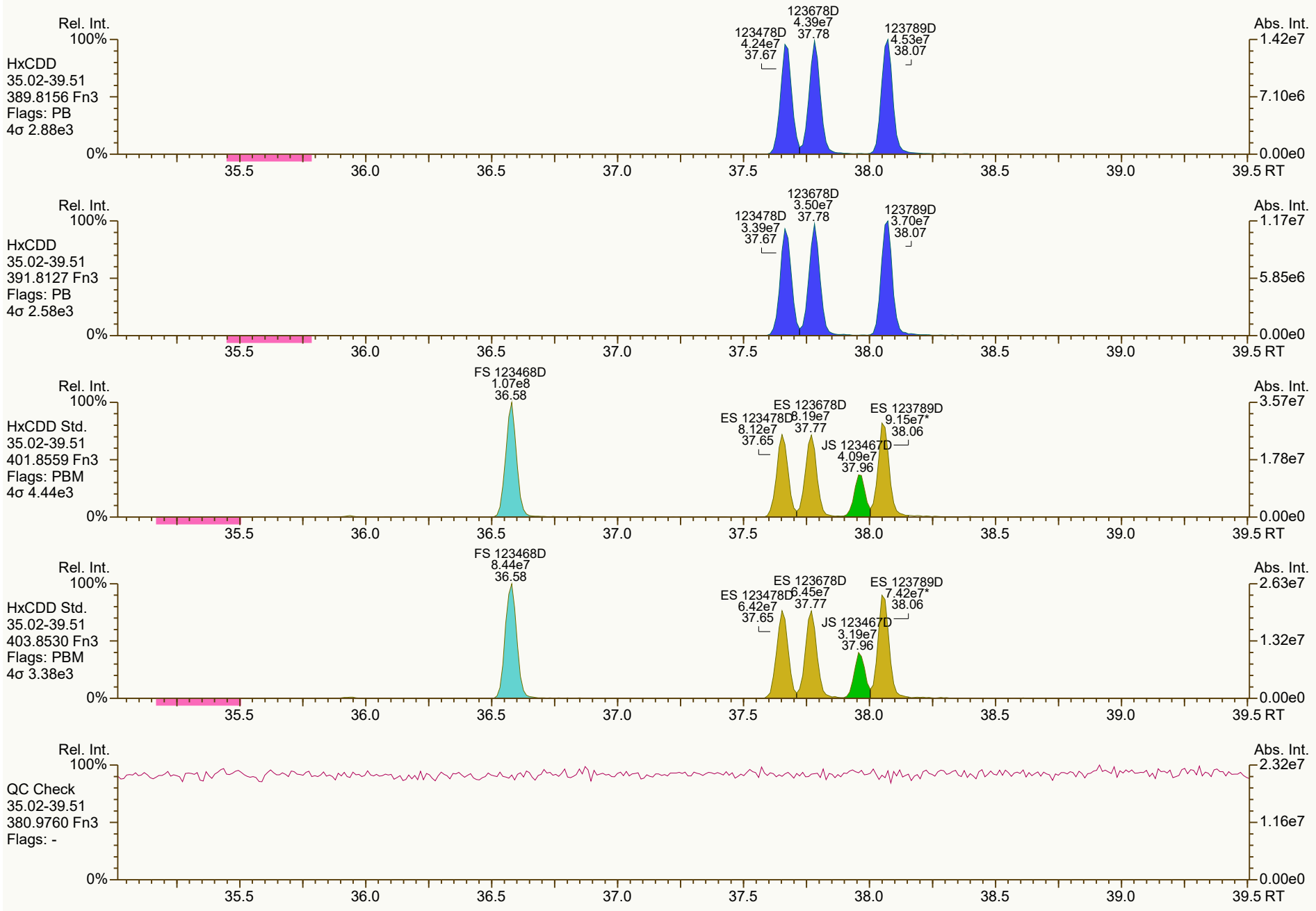
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.61E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.32	2.56E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.96	7.28E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.31	1.30	0%
CS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.89	0.87	-2%
CS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.87	0.89	2%
CS 123469-HxCDF	37.12	1.65E+08	0.52	Y	1.09	1.14	4%
CS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.86	0.92	7%
SS 37Cl-2378-TCDD	28.52	2.10E+07	n/a	-	1.26	1.24	-2%
SS 12347-PeCDD	33.29	1.40E+08	1.67	Y	0.86	0.86	0%
SS 12346-PeCDF	31.84	2.28E+08	1.55	Y	0.93	0.96	3%
SS 123469-HxCDF	37.12	1.65E+08	0.52	Y	0.84	0.84	0%
SS 1234689-HpCDF	40.13	1.35E+08	0.46	Y	0.91	0.94	3%
AS 1368-TCDD	24.91	1.64E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.85	2.82E+08	0.79	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.83E+08	0.81	Y	1.08	1.08	0%
FS 12478-PeCDD	32.57	1.84E+08	1.65	Y	1.09	1.13	3%
FS 123468-HxCDD	36.58	1.91E+08	1.27	Y	1.26	1.32	4%
FS 1234679-HpCDD	39.99	2.10E+08	1.06	Y	1.36	1.42	5%
TS 1378-TCDD	26.87	2.23E+08	0.80	Y	1.35	1.31	-3%
~~OCDD-a~~	~~43.22~~	~~7.32E+06~~	~~2.45~~	~~Y~~	~~0.07~~	~~0.07~~	~~-1%~~
~~OCDF-a~~	~~43.40~~	~~8.14E+06~~	~~2.47~~	~~Y~~	~~0.06~~	~~0.06~~	~~1%~~

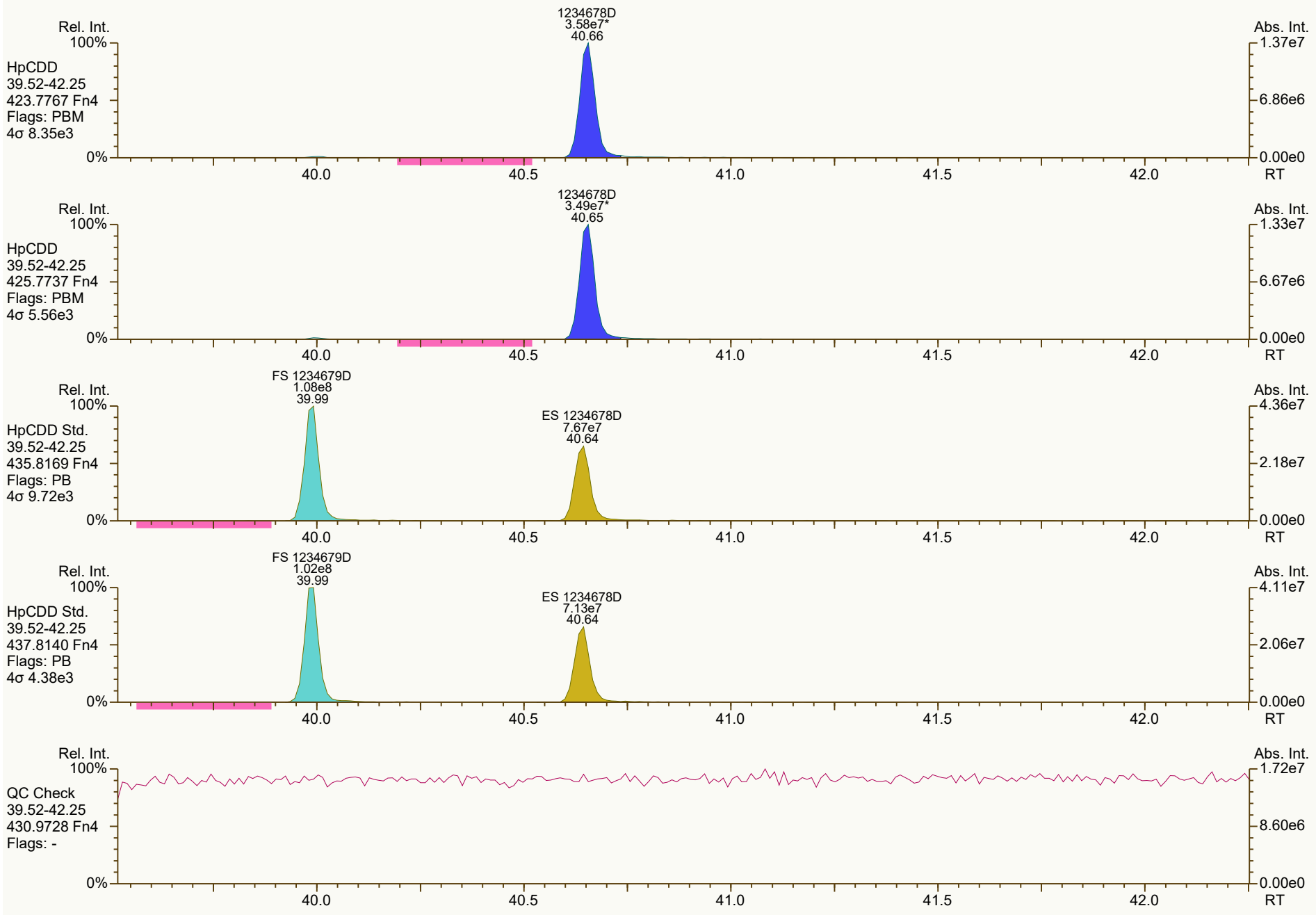
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.32e7
1.16e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.72e7
8.60e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.64e6
3.32e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.30e3
0%
2378D
9.91e6
28.52
Abs. Int.
2.34e6
1.17e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.39e3
0%
2378D
1.24e7
28.52
Abs. Int.
3.06e6
1.53e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.08e3
0%
CS 37Cl-2378D
2.10e7
28.52
Abs. Int.
5.19e6
2.60e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 8.84e3
0%
AS 1368D
7.21e7
24.91
TS 1378D
9.88e7
26.87
JS 1234D
7.11e7
27.86
ES 2378D
7.62e7
28.50
FS 1278D
8.20e7
28.82
Abs. Int.
2.31e7
1.16e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 3.59e3
0%
RRF(AS 1368D) = (7.21e7 + 9.14e7) * 100pg / (7.11e7 + 8.96e7) * 100pg = 1.02
PSW 27-Jul-2021 15:20
OK - CL 28Jul21
= 1.02
AS 1368D
9.14e7
24.91
TS 1378D
1.24e8
26.87
JS 1234D
8.96e7
27.86
ES 2378D
9.33e7
28.50
FS 1278D
1.01e8
28.82
Abs. Int.
2.84e7
1.42e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.29e3
0%
12378D
5.24e7
33.80
Abs. Int.
1.54e7
7.71e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.72e3
0%
12378D
3.33e7
33.80
Abs. Int.
9.85e6
4.92e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PBM
4σ 3.92e3
0%
FS 12478D
1.14e8
32.57
CS 12347D
8.77e7*
33.29
ES 12378D
1.01e8
33.78
Abs. Int.
3.30e7
1.65e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PBM
4σ 4.59e3
0%
FS 12478D
6.93e7
32.57
CS 12347D
5.24e7*
33.29
ES 12378D
6.14e7
33.78
Abs. Int.
2.04e7
1.02e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.92e6
1.46e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.88e3
123678D
4.39e7
37.78
123478D
4.24e7
37.67
123789D
4.53e7
38.07
Abs. Int.
1.42e7
7.10e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.58e3
123678D
3.50e7
37.78
123478D
3.39e7
37.67
123789D
3.70e7
38.07
Abs. Int.
1.17e7
5.85e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 4.44e3
FS 123468D
1.07e8
36.58
ES 123678D
8.19e7
37.77
ES 123478D
8.12e7
37.65
ES 123789D
9.15e7*
38.06
JS 123467D
4.09e7
37.96
Abs. Int.
3.57e7
1.78e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 3.38e3
FS 123468D
8.44e7
36.58
ES 123678D
6.45e7
37.77
ES 123478D
6.42e7
37.65
ES 123789D
7.42e7*
38.06
JS 123467D
3.19e7
37.96
Abs. Int.
2.63e7
1.32e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.32e7
1.16e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

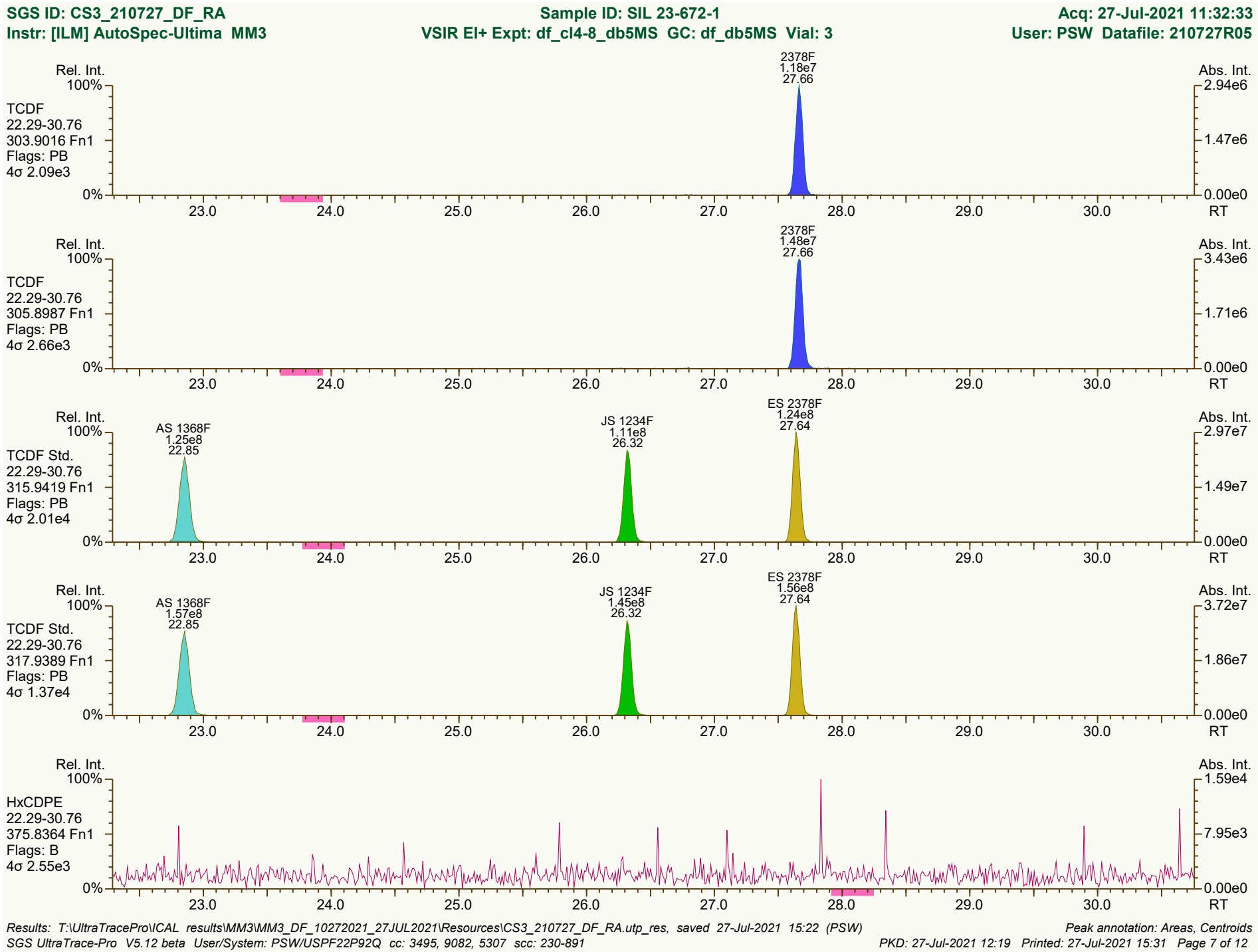

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 8.35e3
0%
1234678D
3.58e7*
40.66
Abs. Int.
1.37e7
6.86e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 5.56e3
1234678D
3.49e7*
40.65
1.33e7
6.67e6
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 9.72e3
FS 1234679D
1.08e8
39.99
ES 1234678D
7.67e7
40.64
4.36e7
2.18e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.38e3
FS 1234679D
1.02e8
39.99
ES 1234678D
7.13e7
40.64
4.11e7
2.06e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.72e7
8.60e6


OCDD
5.68e7*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.46e3
0%
Abs. Int.
2.00e7
1.00e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
6.38e7*
43.22
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 3.66e3
2.18e7
1.09e7
ES OCDD
1.05e8*
43.21
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 6.38e3
3.38e7
1.69e7
ES OCDD
1.20e8*
43.21
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.59e3
3.96e7
1.98e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
6.64e6
3.32e6

SGS ID: CS3_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

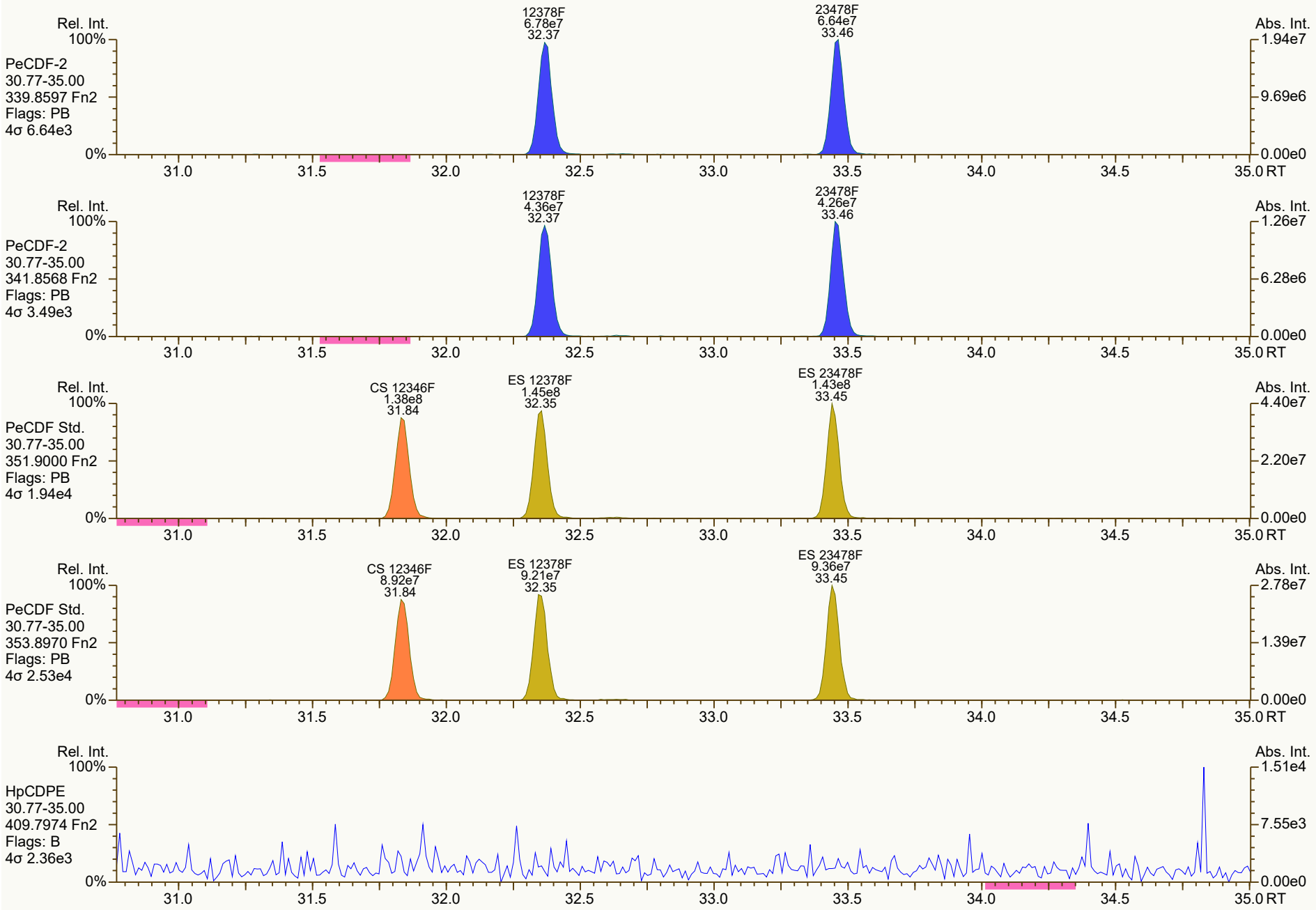
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 27-Jul-2021 11:32:33
User: PSW Datafile: 210727R05



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 3495, 9082, 5307 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 7 of 12

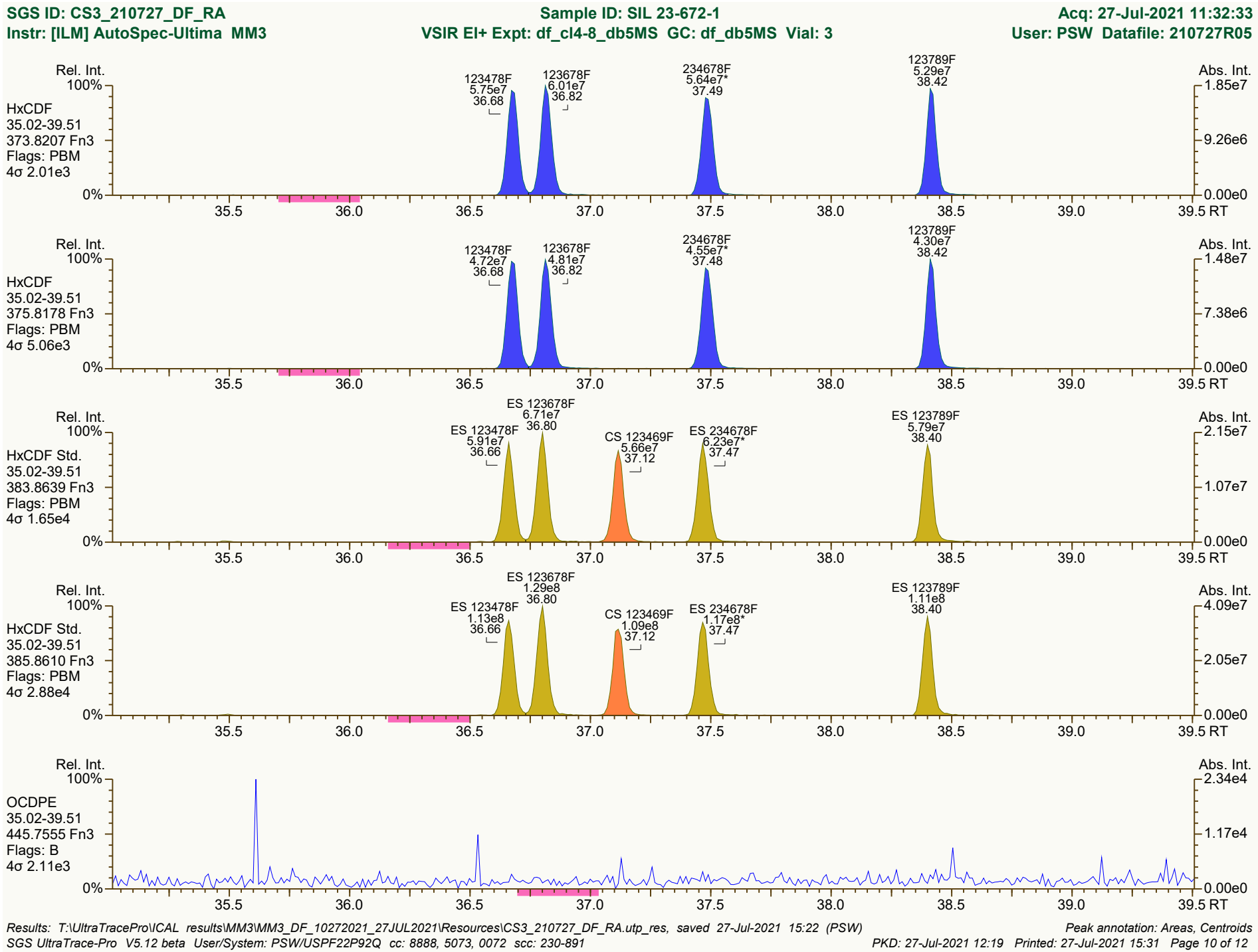

Rel. Int.
100%
0%
Abs. Int.
1.52e4
7.61e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.35e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.57e4
7.83e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.27e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
3.10e6
1.55e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 6.64e3
0%
12378F
6.78e7
32.37
23478F
6.64e7
33.46
Abs. Int.
1.94e7
9.69e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 3.49e3
0%
12378F
4.36e7
32.37
23478F
4.26e7
33.46
Abs. Int.
1.26e7
6.28e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PB
4σ 1.94e4
0%
CS 12346F
1.38e8
31.84
ES 12378F
1.45e8
32.35
ES 23478F
1.43e8
33.45
Abs. Int.
4.40e7
2.20e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PB
4σ 2.53e4
0%
CS 12346F
8.92e7
31.84
ES 12378F
9.21e7
32.35
ES 23478F
9.36e7
33.45
Abs. Int.
2.78e7
1.39e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.36e3
0%
Abs. Int.
1.51e4
7.55e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

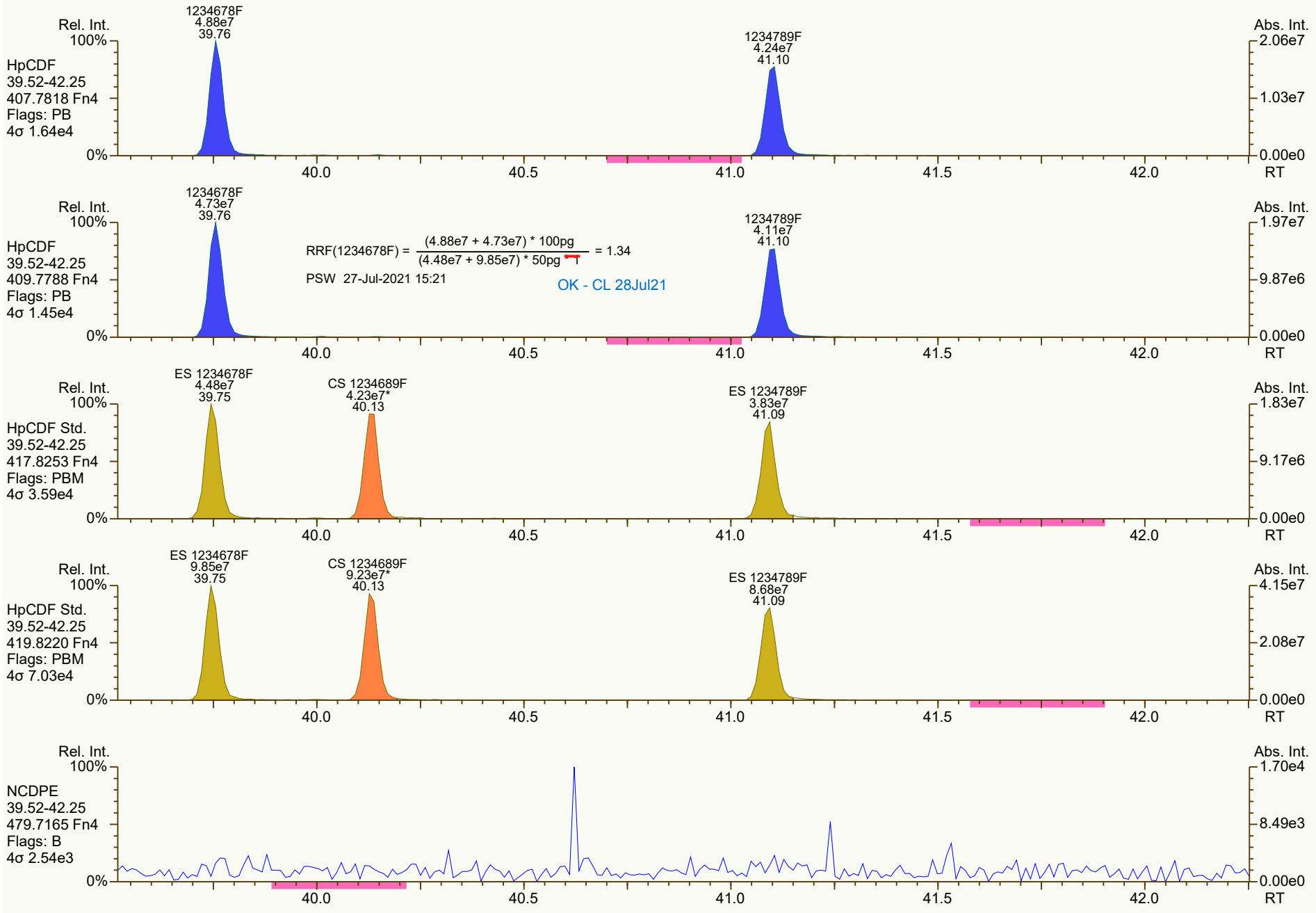
SGS ID: CS3_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

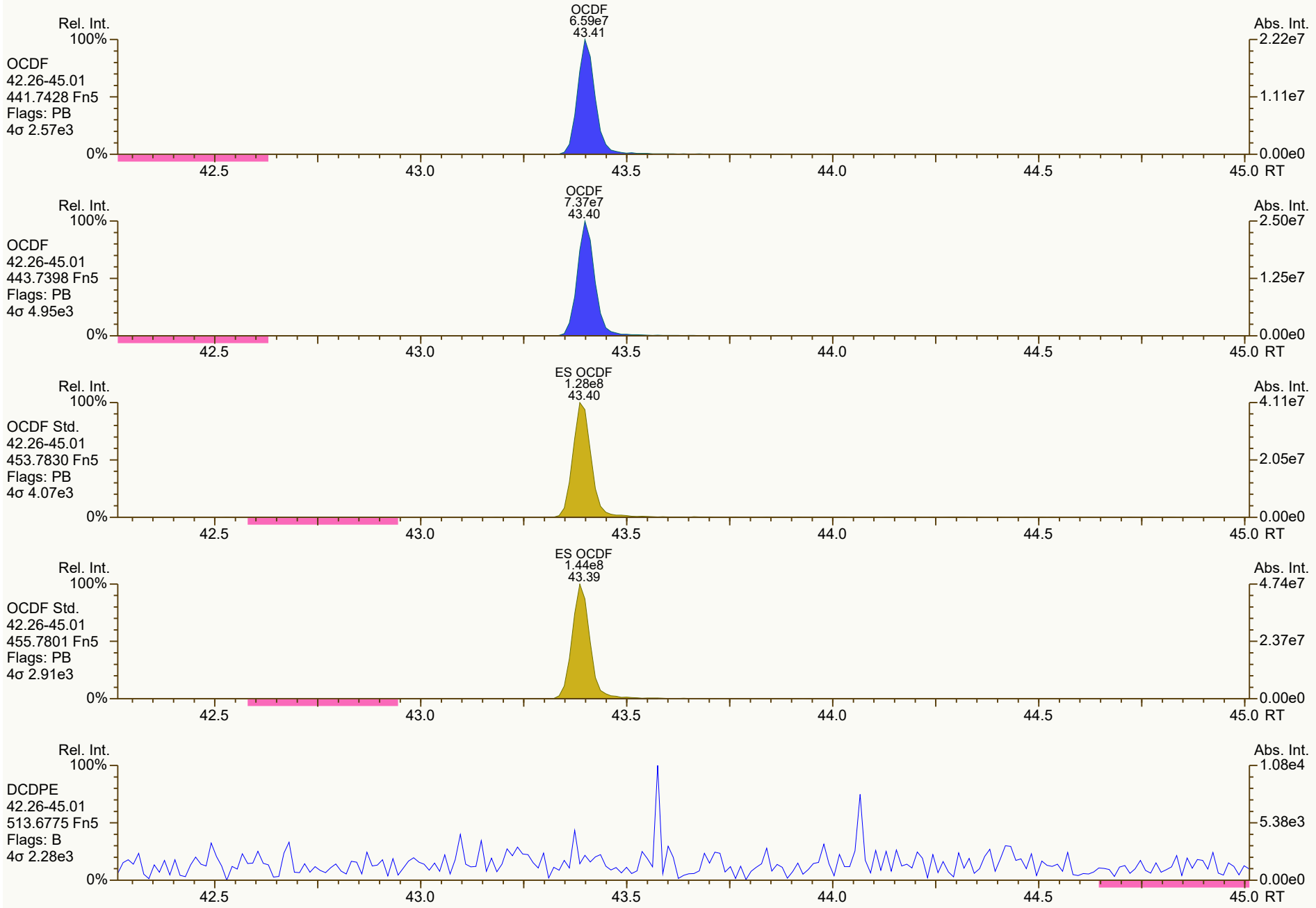
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 27-Jul-2021 11:32:33
User: PSW Datafile: 210727R05



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RA.utp_res, saved 27-Jul-2021 15:22 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8888, 5073, 0072 scc: 230-891
PKD: 27-Jul-2021 12:19 Printed: 27-Jul-2021 15:31 Page 10 of 12


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.64e4
1234678F
4.88e7
39.76
1234789F
4.24e7
41.10
Abs. Int.
2.06e7
1.03e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.45e4
1234678F
4.73e7
39.76
RRF(1234678F) = (4.88e7 + 4.73e7) * 100pg / (4.48e7 + 9.85e7) * 50pg = 1.34
PSW 27-Jul-2021 15:21
OK - CL 28Jul21
1234789F
4.11e7
41.10
Abs. Int.
1.97e7
9.87e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 3.59e4
ES 1234678F
4.48e7
39.75
CS 1234689F
4.23e7*
40.13
ES 1234789F
3.83e7
41.09
Abs. Int.
1.83e7
9.17e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 7.03e4
ES 1234678F
9.85e7
39.75
CS 1234689F
9.23e7*
40.13
ES 1234789F
8.68e7
41.09
Abs. Int.
4.15e7
2.08e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.54e3
Abs. Int.
1.70e4
8.49e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDF
6.59e7
43.41
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.57e3
0%
Abs. Int.
2.22e7
1.11e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
7.37e7
43.40
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 4.95e3
0%
Abs. Int.
2.50e7
1.25e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.28e8
43.40
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 4.07e3
0%
Abs. Int.
4.11e7
2.05e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.44e8
43.39
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.91e3
0%
Abs. Int.
4.74e7
2.37e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.28e3
0%
Abs. Int.
1.08e4
5.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

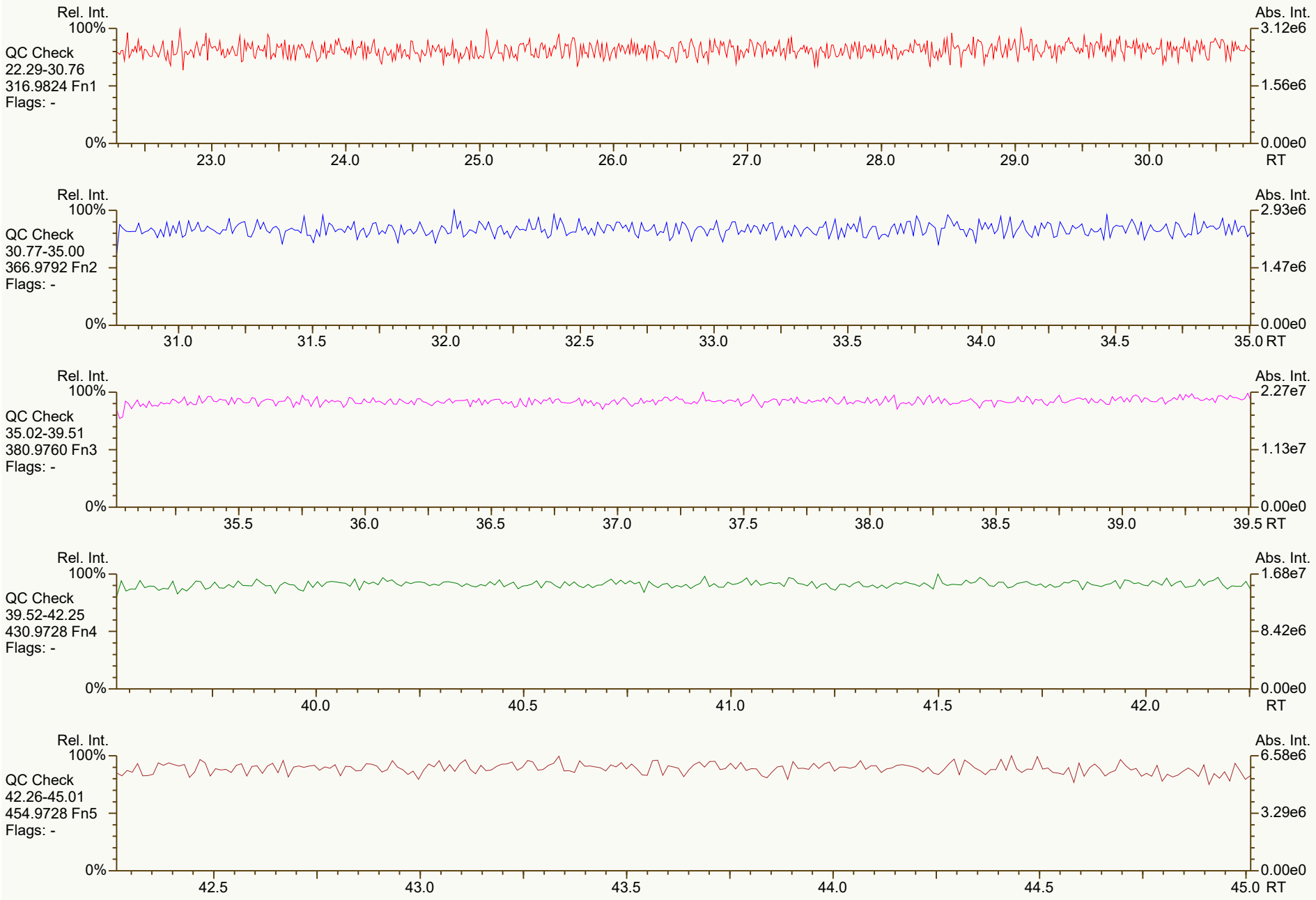
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

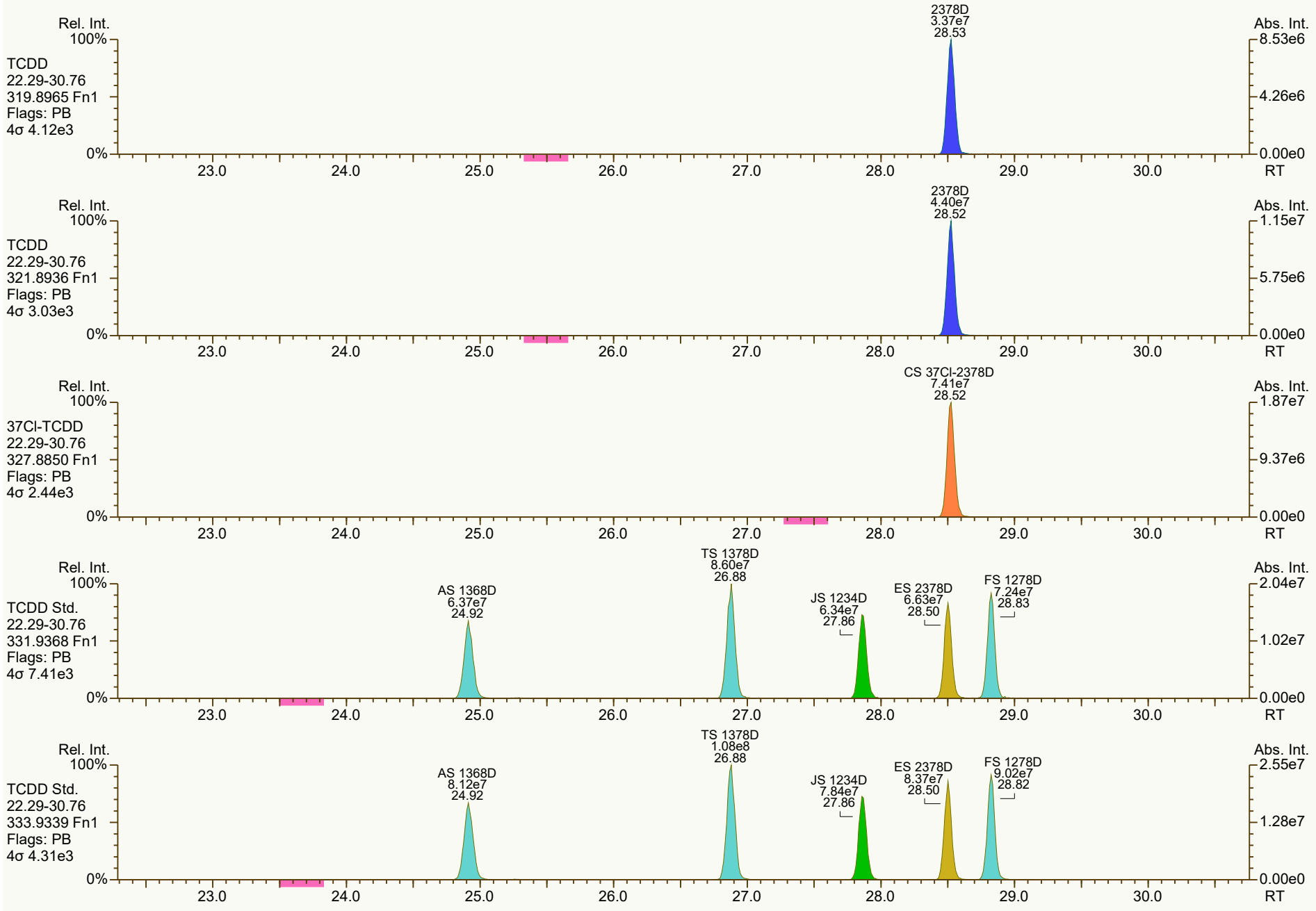
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	7.77E+07	0.76	Y	1.34	1.30	-4%
12378-PeCDD	33.81	3.10E+08	1.55	Y	1.06	1.06	0%
123478-HxCDD	37.68	2.82E+08	1.23	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.84E+08	1.24	Y	1.08	1.10	2%
123789-HxCDD	38.08	2.99E+08	1.23	Y	1.02	0.99	-2%
1234678-HpCDD	40.67	2.61E+08	1.03	Y	0.97	0.98	0%
OCDD	43.23	4.49E+08	0.90	Y	1.07	1.08	1%
2378-TCDF	27.67	9.59E+07	0.77	Y	0.96	0.96	0%
12378-PeCDF	32.38	4.09E+08	1.58	Y	0.95	0.95	0%
23478-PeCDF	33.47	3.96E+08	1.56	Y	0.94	0.93	-1%
123478-HxCDF	36.69	3.82E+08	1.23	Y	1.23	1.24	0%
123678-HxCDF	36.83	3.97E+08	1.25	Y	1.13	1.13	0%
234678-HxCDF	37.49	3.75E+08	1.25	Y	1.15	1.13	-2%
123789-HxCDF	38.43	3.51E+08	1.24	Y	1.14	1.14	0%
1234678-HpCDF	39.77	3.45E+08	1.03	Y	1.36	1.33	-2%
1234789-HpCDF	41.11	2.99E+08	1.04	Y	1.30	1.30	0%
OCDF	43.41	5.22E+08	0.91	Y	1.03	1.05	2%
ES 2378-TCDD	28.50	1.50E+08	0.79	Y	1.03	1.06	2%
ES 12378-PeCDD	33.789	1.46E+08	1.59	Y	1.03	1.03	0%
ES 123478-HxCDD	37.662	1.34E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.775	1.29E+08	1.28	Y	0.97	0.94	-4%
ES 123789-HxCDD	38.064	1.51E+08	1.27	Y	1.12	1.09	-3%
ES 1234678-HpCDD	40.654	1.33E+08	1.06	Y	0.99	0.97	-2%
ES OCDD	43.216	2.07E+08	0.92	Y	0.78	0.75	-3%
ES 2378-TCDF	27.649	2.49E+08	0.80	Y	1.08	1.09	1%
ES 12378-PeCDF	32.362	2.16E+08	1.57	Y	0.93	0.95	2%
ES 23478-PeCDF	33.454	2.12E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.668	1.54E+08	0.51	Y	1.14	1.12	-2%
ES 123678-HxCDF	36.808	1.75E+08	0.53	Y	1.30	1.27	-2%
ES 234678-HxCDF	37.477	1.66E+08	0.53	Y	1.20	1.20	0%
ES 123789-HxCDF	38.409	1.54E+08	0.52	Y	1.14	1.12	-1%
ES 1234678-HpCDF	39.757	1.30E+08	0.45	Y	0.95	0.94	-1%
ES 1234789-HpCDF	41.102	1.15E+08	0.45	Y	0.85	0.83	-2%
ES OCDF	43.398	2.49E+08	0.90	Y	0.93	0.90	-2%

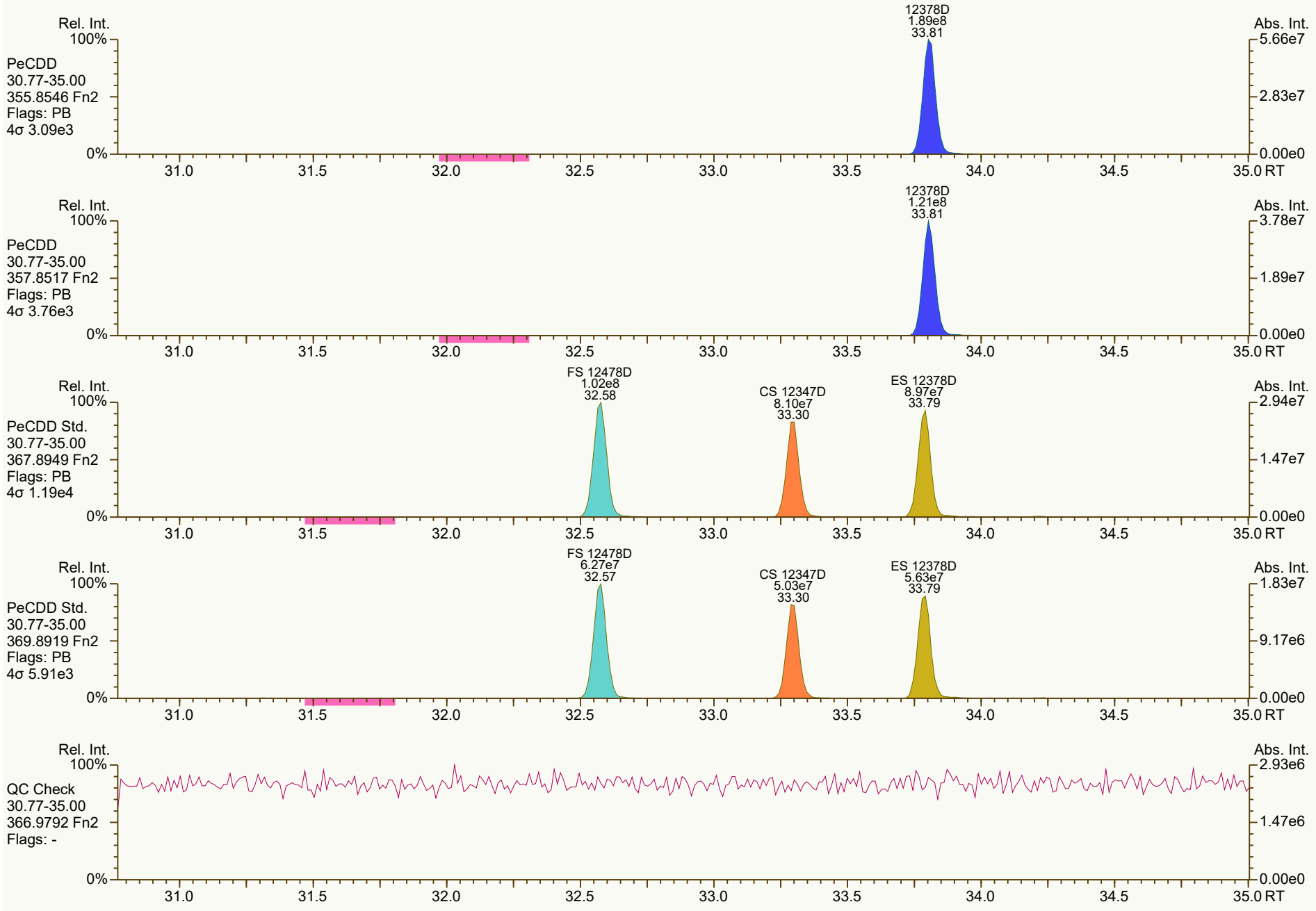
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 12:19 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS4_210727_DF_RA	UTP: 27-Jul-2021 15:00:21 PSW	Checkcode: 602-590-JSF
Sample ID: SIL 25-5-4	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R06

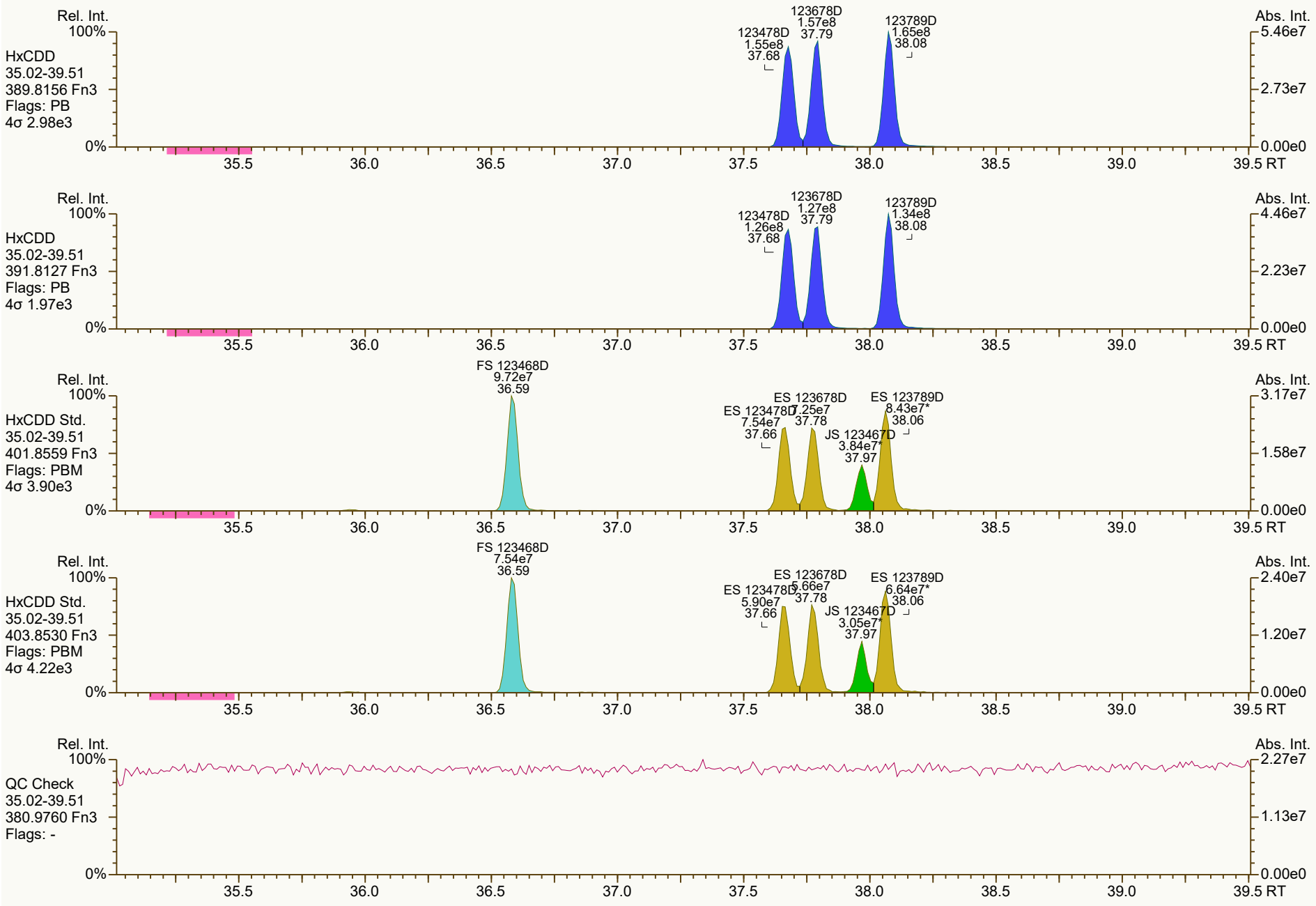
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	1.42E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	2.27E+08	0.77	Y	-	-	-
JS 123467-HxCDD	37.97	6.89E+07	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.31	1.31	0%
CS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.89	0.93	4%
CS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.87	0.88	2%
CS 123469-HxCDF	37.12	1.50E+08	0.54	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.86	0.86	0%
SS 37Cl-2378-TCDD	28.53	7.41E+07	n/a	-	1.26	1.23	-2%
SS 12347-PeCDD	33.30	1.31E+08	1.61	Y	0.86	0.90	4%
SS 12346-PeCDF	31.84	2.01E+08	1.58	Y	0.93	0.93	0%
SS 123469-HxCDF	37.12	1.50E+08	0.54	Y	0.84	0.86	2%
SS 1234689-HpCDF	40.14	1.19E+08	0.46	Y	0.91	0.92	1%
AS 1368-TCDD	24.92	1.45E+08	0.79	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	2.49E+08	0.79	Y	1.08	1.09	1%
FS 1278-TCDD	28.83	1.63E+08	0.80	Y	1.08	1.08	0%
FS 12478-PeCDD	32.58	1.64E+08	1.62	Y	1.09	1.13	3%
FS 123468-HxCDD	36.59	1.73E+08	1.29	Y	1.26	1.28	2%
FS 1234679-HpCDD	40.00	1.84E+08	1.07	Y	1.36	1.38	2%
TS 1378-TCDD	26.88	1.94E+08	0.79	Y	1.35	1.30	-4%
~~OCDD-a~~	~~43.22~~	~~2.77E+07~~	~~2.50~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~
~~OCDF-a~~	~~43.41~~	~~3.08E+07~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~4%~~

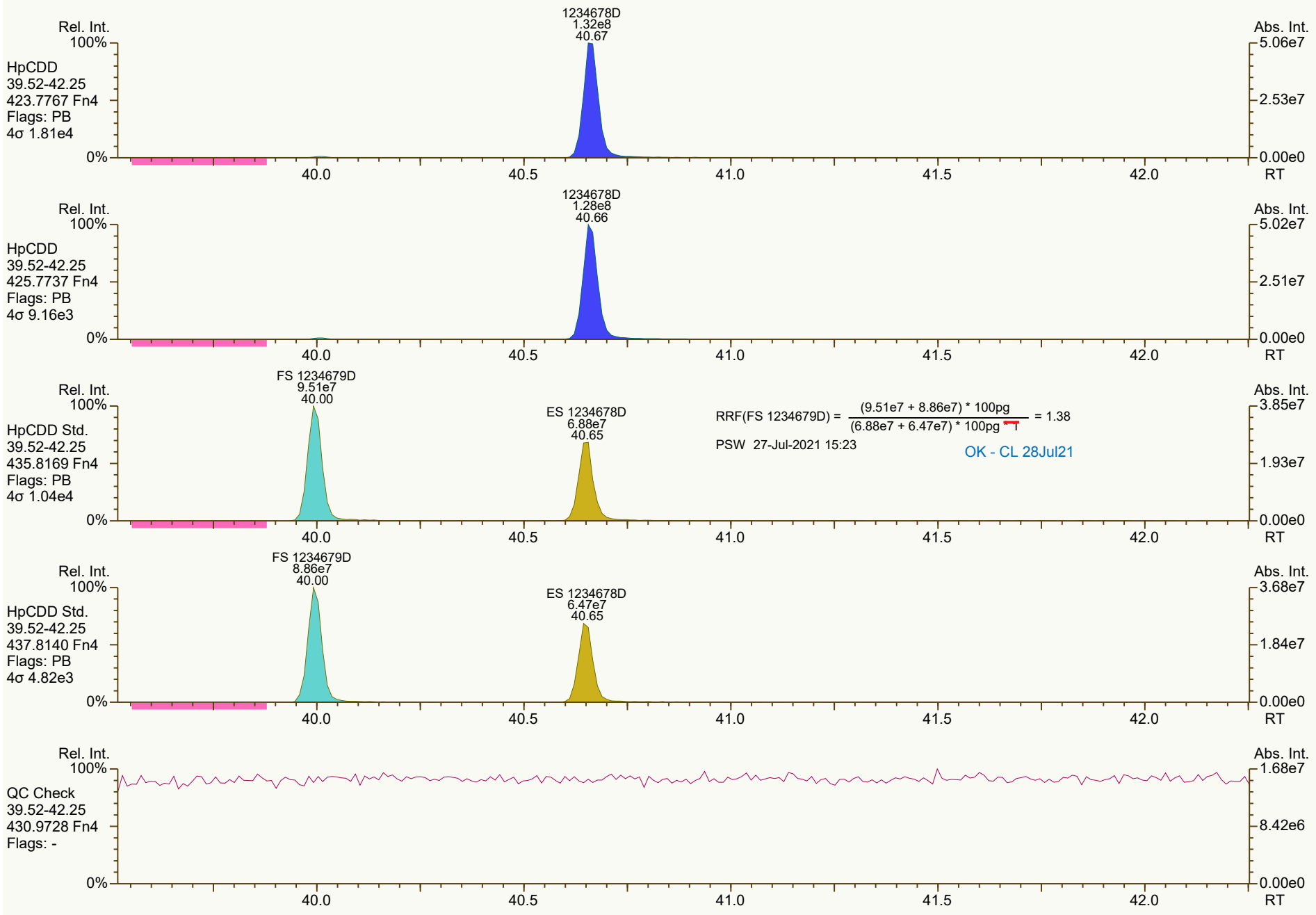
Not reported from this ICAL - CL 28Jul21

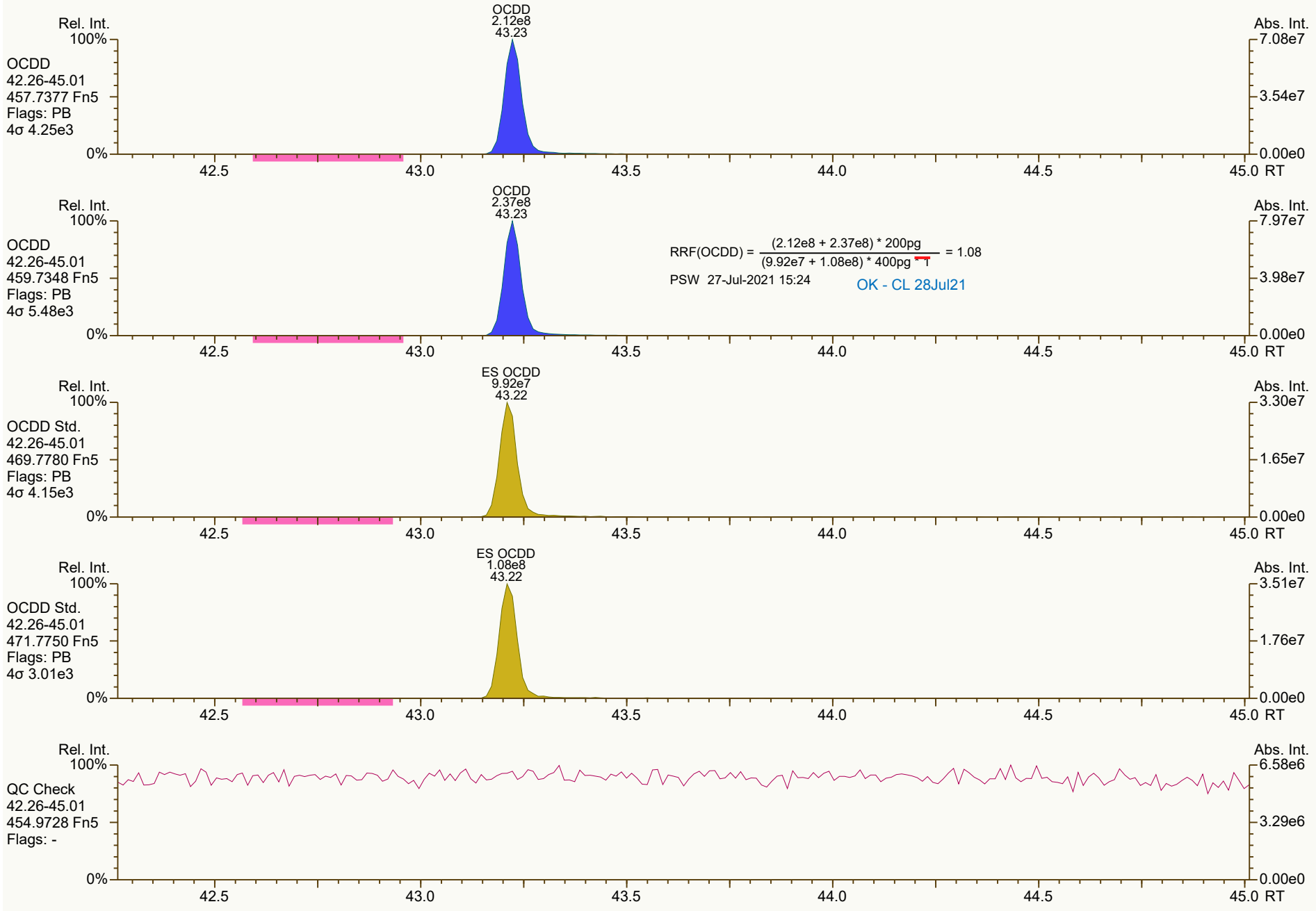

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.27e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.68e7
8.42e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 4.12e3
2378D
3.37e7
28.53
8.53e6
4.26e6
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 3.03e3
2378D
4.40e7
28.52
1.15e7
5.75e6
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 2.44e3
CS 37Cl-2378D
7.41e7
28.52
1.87e7
9.37e6
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.41e3
AS 1368D
6.37e7
24.92
TS 1378D
8.60e7
26.88
JS 1234D
6.34e7
27.86
ES 2378D
6.63e7
28.50
FS 1278D
7.24e7
28.83
2.04e7
1.02e7
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.31e3
AS 1368D
8.12e7
24.92
TS 1378D
1.08e8
26.88
JS 1234D
7.84e7
27.86
ES 2378D
8.37e7
28.50
FS 1278D
9.02e7
28.82
2.55e7
1.28e7
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 3.09e3
0%
12378D
1.89e8
33.81
Abs. Int.
5.66e7
2.83e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 3.76e3
0%
12378D
1.21e8
33.81
Abs. Int.
3.78e7
1.89e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 1.19e4
0%
FS 12478D
1.02e8
32.58
CS 12347D
8.10e7
33.30
ES 12378D
8.97e7
33.79
Abs. Int.
2.94e7
1.47e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 5.91e3
0%
FS 12478D
6.27e7
32.57
CS 12347D
5.03e7
33.30
ES 12378D
5.63e7
33.79
Abs. Int.
1.83e7
9.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.93e6
1.47e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

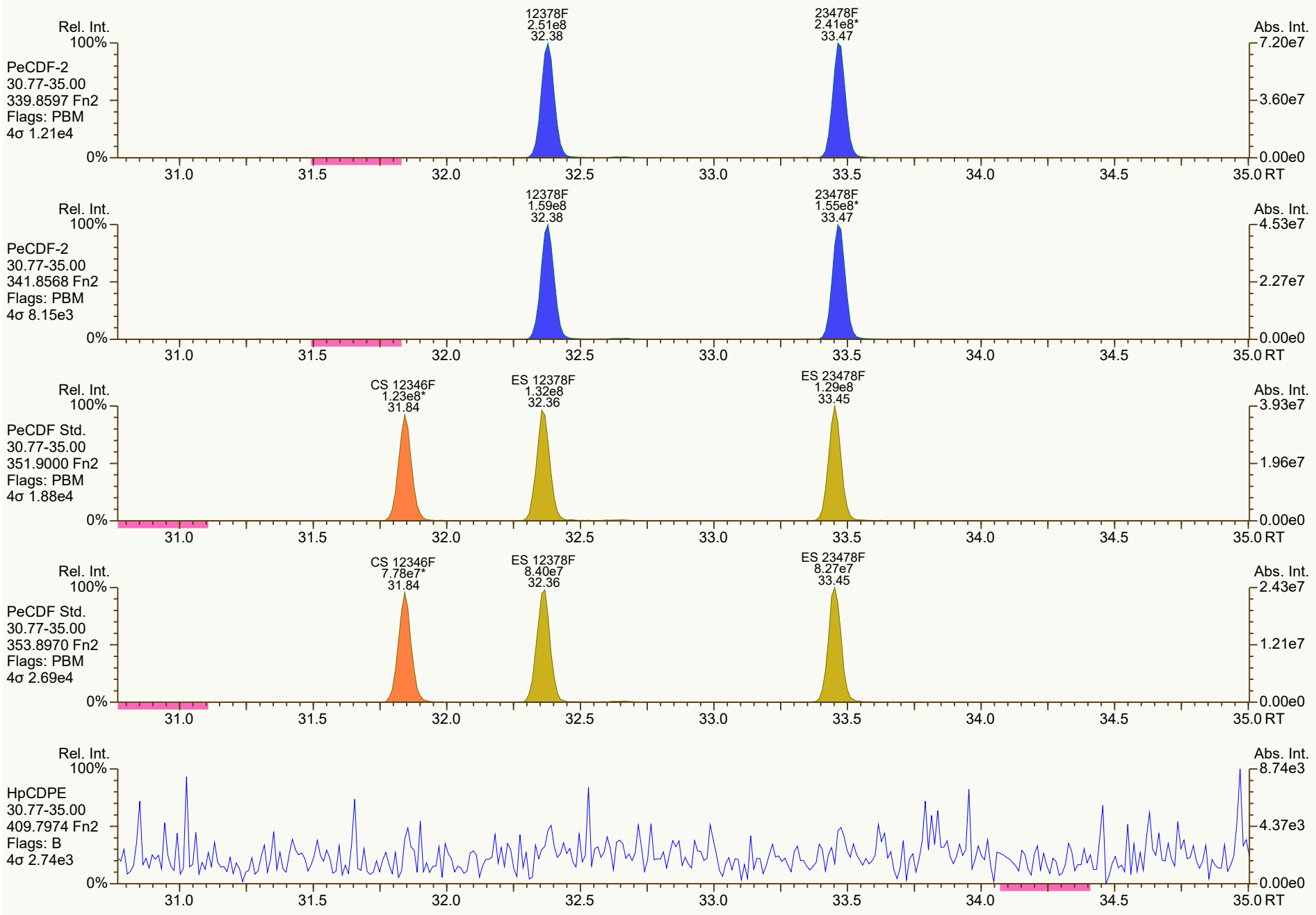

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.98e3
123678D
1.57e8
37.79
123478D
1.55e8
37.68
123789D
1.65e8
38.08
Abs. Int.
5.46e7
2.73e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.97e3
123678D
1.27e8
37.79
123478D
1.26e8
37.68
123789D
1.34e8
38.08
Abs. Int.
4.46e7
2.23e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.90e3
FS 123468D
9.72e7
36.59
ES 123678D
7.25e7
37.78
ES 123478D
7.54e7
37.66
ES 123789D
8.43e7*
38.06
JS 123467D
3.84e7*
37.97
Abs. Int.
3.17e7
1.58e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 4.22e3
FS 123468D
7.54e7
36.59
ES 123678D
5.66e7
37.78
ES 123478D
5.90e7
37.66
ES 123789D
6.64e7*
38.06
JS 123467D
3.05e7*
37.97
Abs. Int.
2.40e7
1.20e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
2.27e7
1.13e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

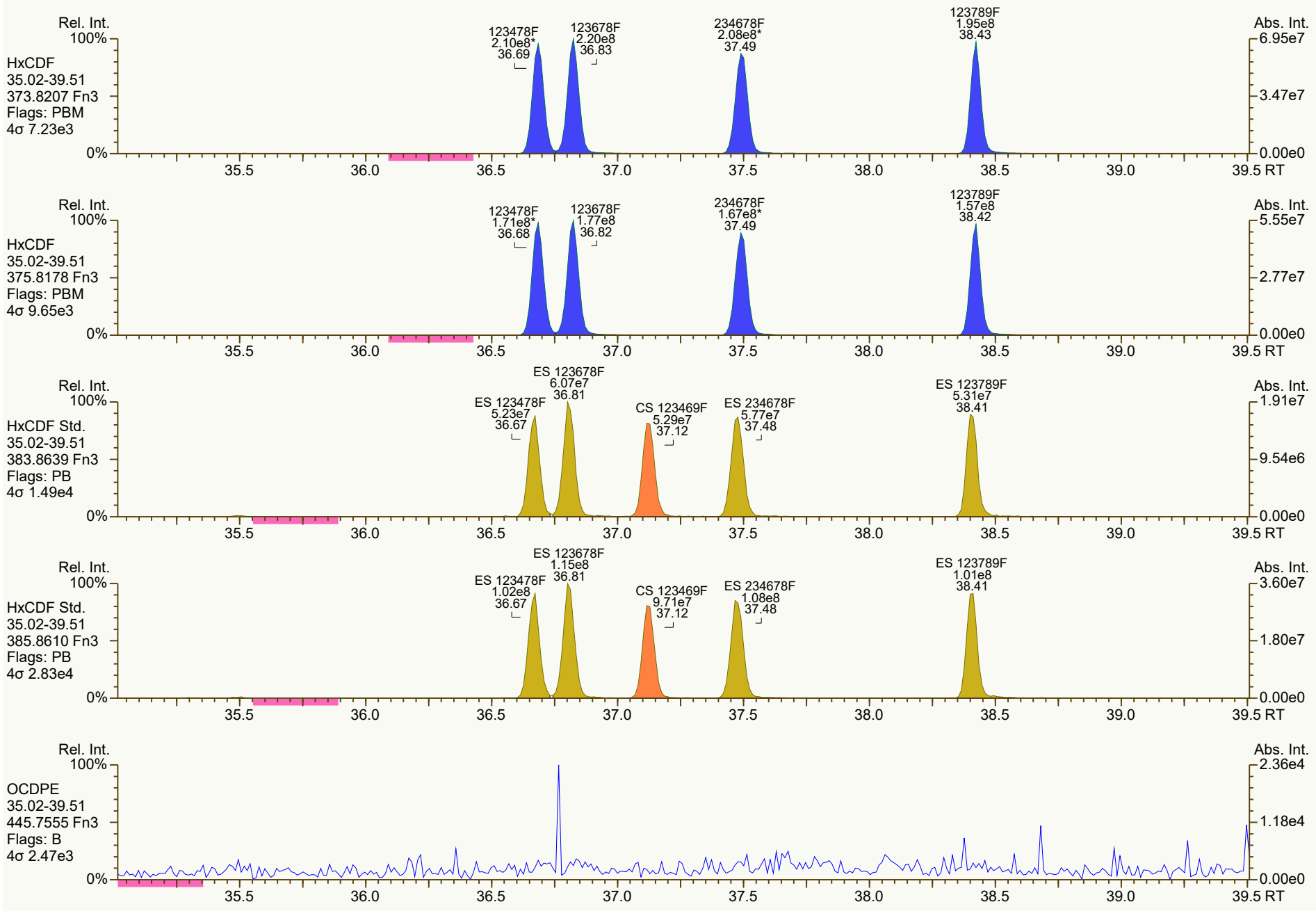

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 1.81e4
1234678D
1.32e8
40.67
Abs. Int.
5.06e7
2.53e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 9.16e3
1234678D
1.28e8
40.66
5.02e7
2.51e7
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.04e4
FS 1234679D
9.51e7
40.00
ES 1234678D
6.88e7
40.65
RRF(FS 1234679D) = (9.51e7 + 8.86e7) * 100pg / (6.88e7 + 6.47e7) * 100pg = 1.38
PSW 27-Jul-2021 15:23
OK - CL 28Jul21
3.85e7
1.93e7
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 4.82e3
FS 1234679D
8.86e7
40.00
ES 1234678D
6.47e7
40.65
3.68e7
1.84e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.68e7
8.42e6

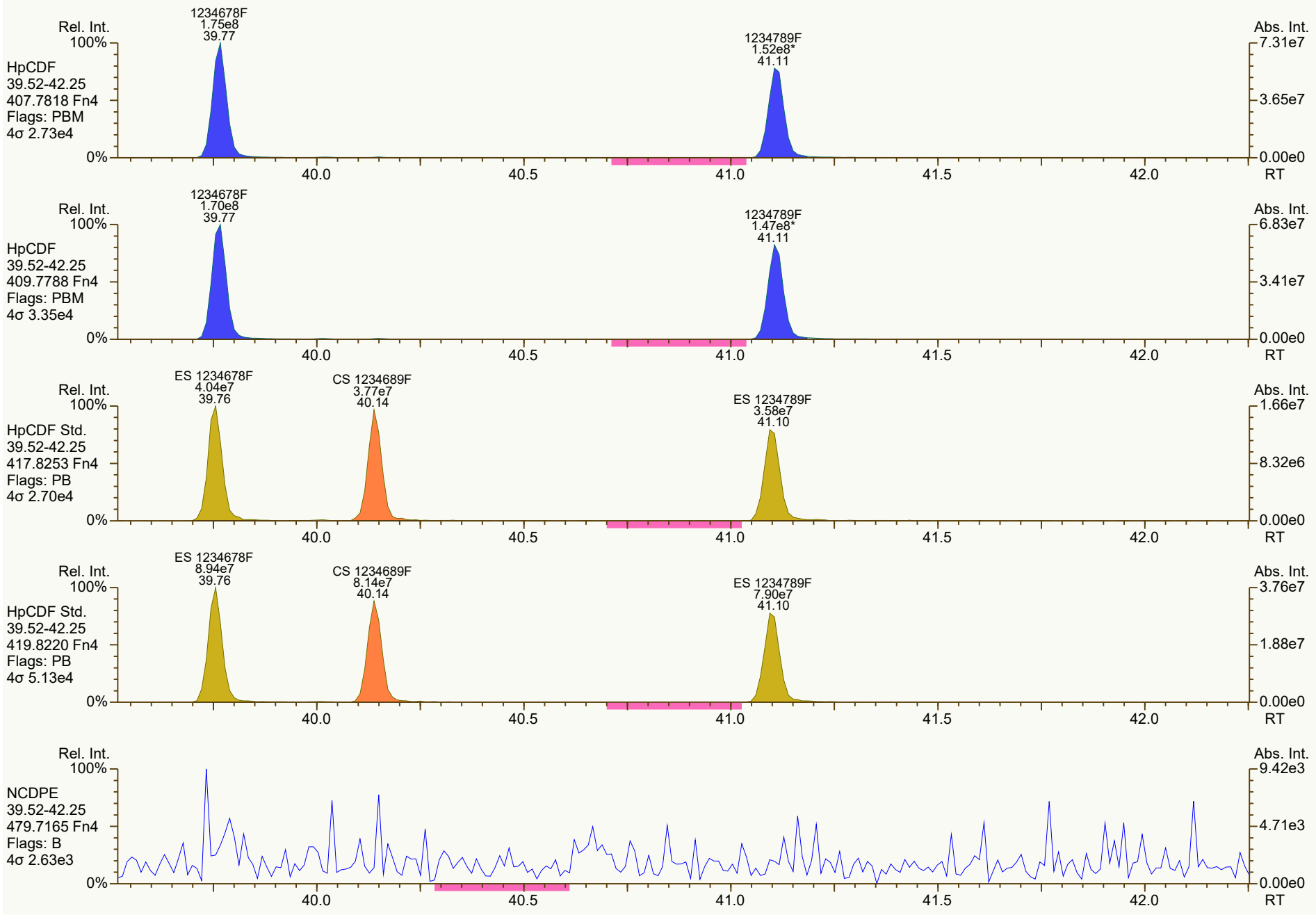

Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PB
4σ 4.25e3
0%
OCDD
2.12e8
43.23
Abs. Int.
7.08e7
3.54e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PB
4σ 5.48e3
0%
OCDD
2.37e8
43.23
Abs. Int.
7.97e7
3.98e7
0.00e0
RRF(OCDD) = (2.12e8 + 2.37e8) * 200pg / (9.92e7 + 1.08e8) * 400pg = 1.08
PSW 27-Jul-2021 15:24
OK - CL 28Jul21
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.15e3
0%
ES OCDD
9.92e7
43.22
Abs. Int.
3.30e7
1.65e7
0.00e0
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.01e3
0%
ES OCDD
1.08e8
43.22
Abs. Int.
3.51e7
1.76e7
0.00e0
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
6.58e6
3.29e6
0.00e0


Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.95e3
0%
2378F
4.17e7
27.67
Abs. Int.
9.81e6
4.91e6
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.51e3
0%
2378F
5.43e7
27.67
Abs. Int.
1.28e7
6.42e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 2.36e4
0%
AS 1368F
1.10e8
22.86
JS 1234F
9.87e7
26.33
ES 2378F
1.10e8
27.65
Abs. Int.
2.69e7
1.34e7
0.00e0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.34e4
0%
AS 1368F
1.39e8
22.85
JS 1234F
1.29e8
26.33
ES 2378F
1.38e8
27.65
Abs. Int.
3.21e7
1.60e7
0.00e0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.81e3
0%
Abs. Int.
9.37e3
4.68e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.32e4
6.61e3
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.55e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.28e3
2.14e4
1.07e4
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
3.12e6
1.56e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PBM
4σ 1.21e4
0%
12378F
2.51e8
32.38
23478F
2.41e8*
33.47
Abs. Int.
7.20e7
3.60e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PBM
4σ 8.15e3
0%
12378F
1.59e8
32.38
23478F
1.55e8*
33.47
Abs. Int.
4.53e7
2.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 1.88e4
0%
CS 12346F
1.23e8*
31.84
ES 12378F
1.32e8
32.36
ES 23478F
1.29e8
33.45
Abs. Int.
3.93e7
1.96e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.69e4
0%
CS 12346F
7.78e7*
31.84
ES 12378F
8.40e7
32.36
ES 23478F
8.27e7
33.45
Abs. Int.
2.43e7
1.21e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.74e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 7.23e3
123478F
2.10e8*
36.69
123678F
2.20e8
36.83
234678F
2.08e8*
37.49
123789F
1.95e8
38.43
Abs. Int.
6.95e7
3.47e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.65e3
123478F
1.71e8*
36.68
123678F
1.77e8
36.82
234678F
1.67e8*
37.49
123789F
1.57e8
38.42
Abs. Int.
5.55e7
2.77e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.49e4
ES 123478F
5.23e7
36.67
ES 123678F
6.07e7
36.81
CS 123469F
5.29e7
37.12
ES 234678F
5.77e7
37.48
ES 123789F
5.31e7
38.41
Abs. Int.
1.91e7
9.54e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.83e4
ES 123478F
1.02e8
36.67
ES 123678F
1.15e8
36.81
CS 123469F
9.71e7
37.12
ES 234678F
1.08e8
37.48
ES 123789F
1.01e8
38.41
Abs. Int.
3.60e7
1.80e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.47e3
Abs. Int.
2.36e4
1.18e4
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
0%
Abs. Int.
RT
40.0
40.5
41.0
41.5
42.0
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PBM
4σ 2.73e4
1234678F
1.75e8
39.77
1234789F
1.52e8*
41.11
7.31e7
3.65e7
0.00e0
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PBM
4σ 3.35e4
1234678F
1.70e8
39.77
1234789F
1.47e8*
41.11
6.83e7
3.41e7
0.00e0
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.70e4
ES 1234678F
4.04e7
39.76
CS 1234689F
3.77e7
40.14
ES 1234789F
3.58e7
41.10
1.66e7
8.32e6
0.00e0
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.13e4
ES 1234678F
8.94e7
39.76
CS 1234689F
8.14e7
40.14
ES 1234789F
7.90e7
41.10
3.76e7
1.88e7
0.00e0
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.63e3
9.42e3
4.71e3
0.00e0


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.68e3
0%
OCDF
2.49e8
43.41
Abs. Int.
8.08e7
4.04e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.81e3
0%
OCDF
2.73e8
43.41
Abs. Int.
8.85e7
4.43e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.20e3
0%
ES OCDF
1.18e8
43.40
Abs. Int.
3.94e7
1.97e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 5.23e3
0%
ES OCDF
1.31e8
43.40
Abs. Int.
4.16e7
2.08e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.11e3
0%
Abs. Int.
4.05e3
2.02e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

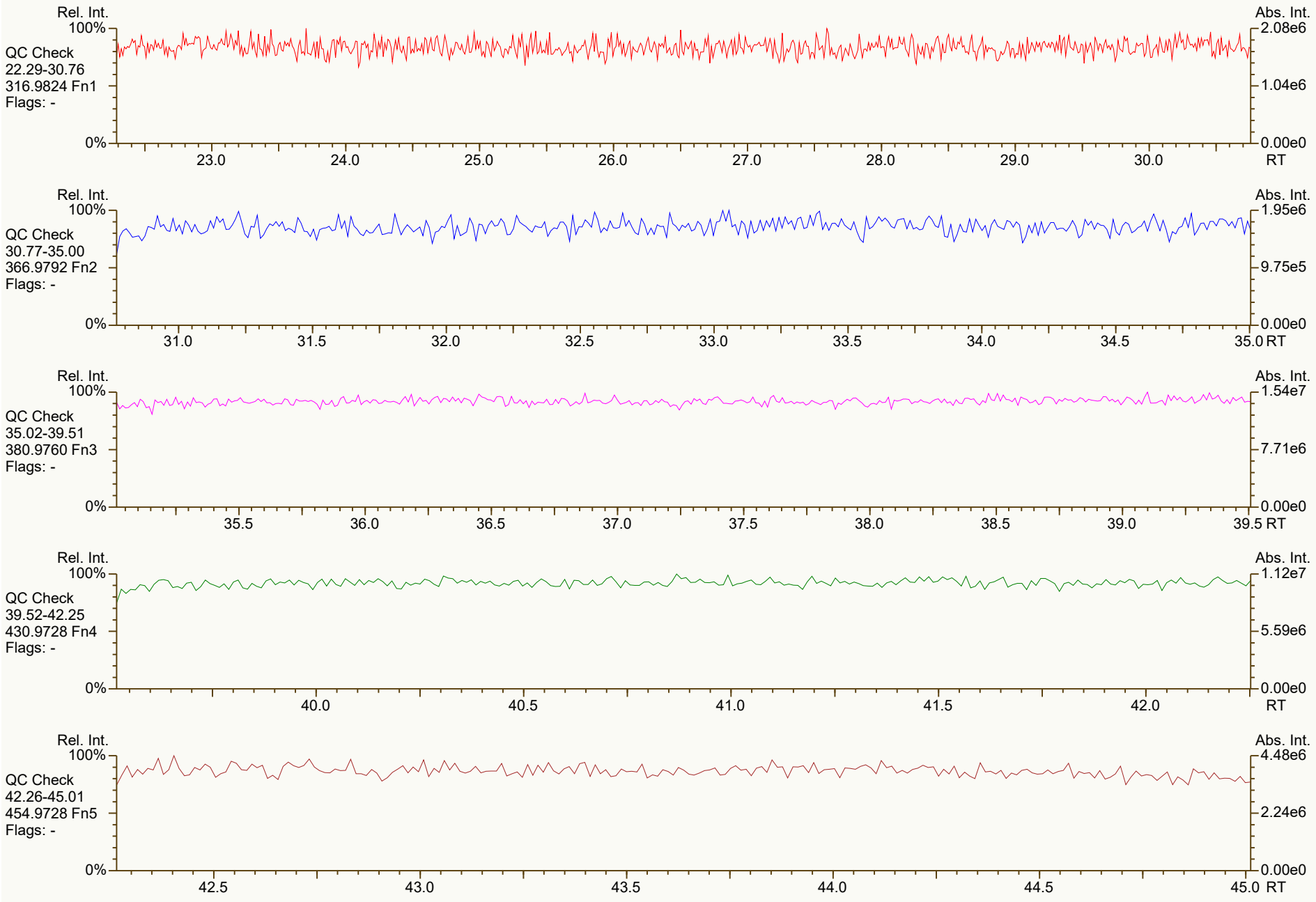
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

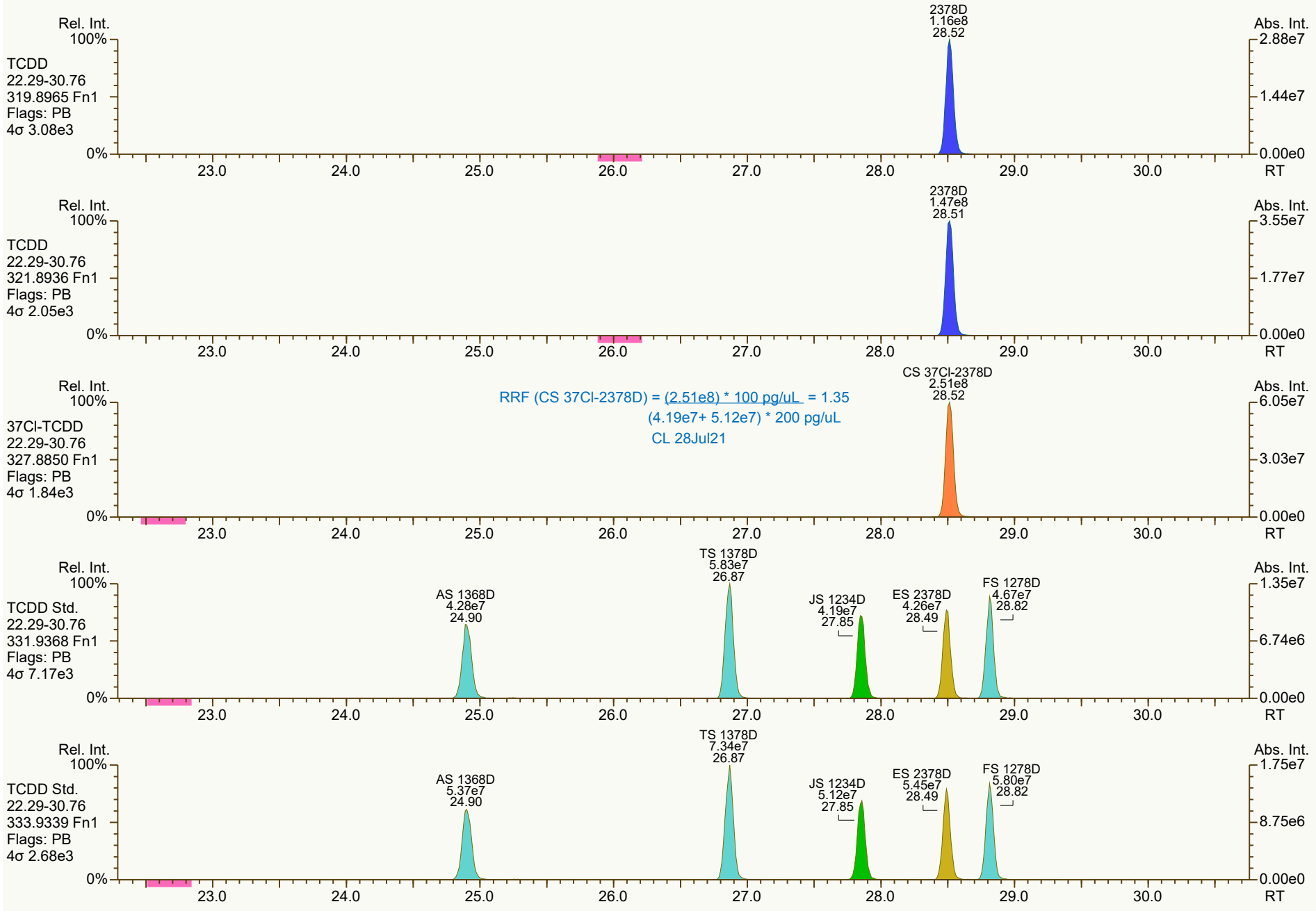
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.52	2.63E+08	0.78	Y	1.34	1.35	1%
12378-PeCDD	33.80	1.06E+09	1.56	Y	1.06	1.07	1%
123478-HxCDD	37.67	9.52E+08	1.24	Y	1.06	1.06	0%
123678-HxCDD	37.78	9.75E+08	1.25	Y	1.08	1.10	1%
123789-HxCDD	38.07	1.03E+09	1.25	Y	1.02	1.01	-1%
1234678-HpCDD	40.66	8.94E+08	1.04	Y	0.97	0.98	1%
OCDD	43.22	1.57E+09	0.88	Y	1.07	1.06	-1%
2378-TCDF	27.66	3.19E+08	0.77	Y	0.96	0.97	1%
12378-PeCDF	32.37	1.33E+09	1.51	Y	0.95	0.93	-1%
23478-PeCDF	33.46	1.36E+09	1.58	Y	0.94	0.96	3%
123478-HxCDF	36.68	1.30E+09	1.25	Y	1.23	1.24	0%
123678-HxCDF	36.82	1.35E+09	1.25	Y	1.13	1.14	1%
234678-HxCDF	37.49	1.27E+09	1.24	Y	1.15	1.15	0%
123789-HxCDF	38.42	1.20E+09	1.24	Y	1.14	1.15	2%
1234678-HpCDF	39.76	1.19E+09	1.03	Y	1.36	1.37	1%
1234789-HpCDF	41.10	1.06E+09	1.03	Y	1.30	1.35	4%
OCDF	43.40	1.87E+09	0.90	Y	1.03	1.06	3%
ES 2378-TCDD	28.49	9.72E+07	0.78	Y	1.03	1.04	1%
ES 12378-PeCDD	33.782	9.96E+07	1.62	Y	1.03	1.07	3%
ES 123478-HxCDD	37.654	8.99E+07	1.27	Y	0.99	1.03	4%
ES 123678-HxCDD	37.768	8.89E+07	1.27	Y	0.97	1.02	5%
ES 123789-HxCDD	38.058	1.02E+08	1.27	Y	1.12	1.17	4%
ES 1234678-HpCDD	40.644	9.11E+07	1.06	Y	0.99	1.05	6%
ES OCDD	43.21	1.48E+08	0.89	Y	0.78	0.85	9%
ES 2378-TCDF	27.639	1.64E+08	0.80	Y	1.08	1.08	0%
ES 12378-PeCDF	32.354	1.43E+08	1.61	Y	0.93	0.95	1%
ES 23478-PeCDF	33.446	1.41E+08	1.56	Y	0.92	0.93	1%
ES 123478-HxCDF	36.662	1.05E+08	0.52	Y	1.14	1.21	6%
ES 123678-HxCDF	36.801	1.19E+08	0.53	Y	1.30	1.36	5%
ES 234678-HxCDF	37.468	1.11E+08	0.51	Y	1.20	1.27	6%
ES 123789-HxCDF	38.402	1.04E+08	0.54	Y	1.14	1.20	5%
ES 1234678-HpCDF	39.749	8.70E+07	0.46	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.092	7.84E+07	0.46	Y	0.85	0.90	6%
ES OCDF	43.392	1.76E+08	0.89	Y	0.93	1.01	9%

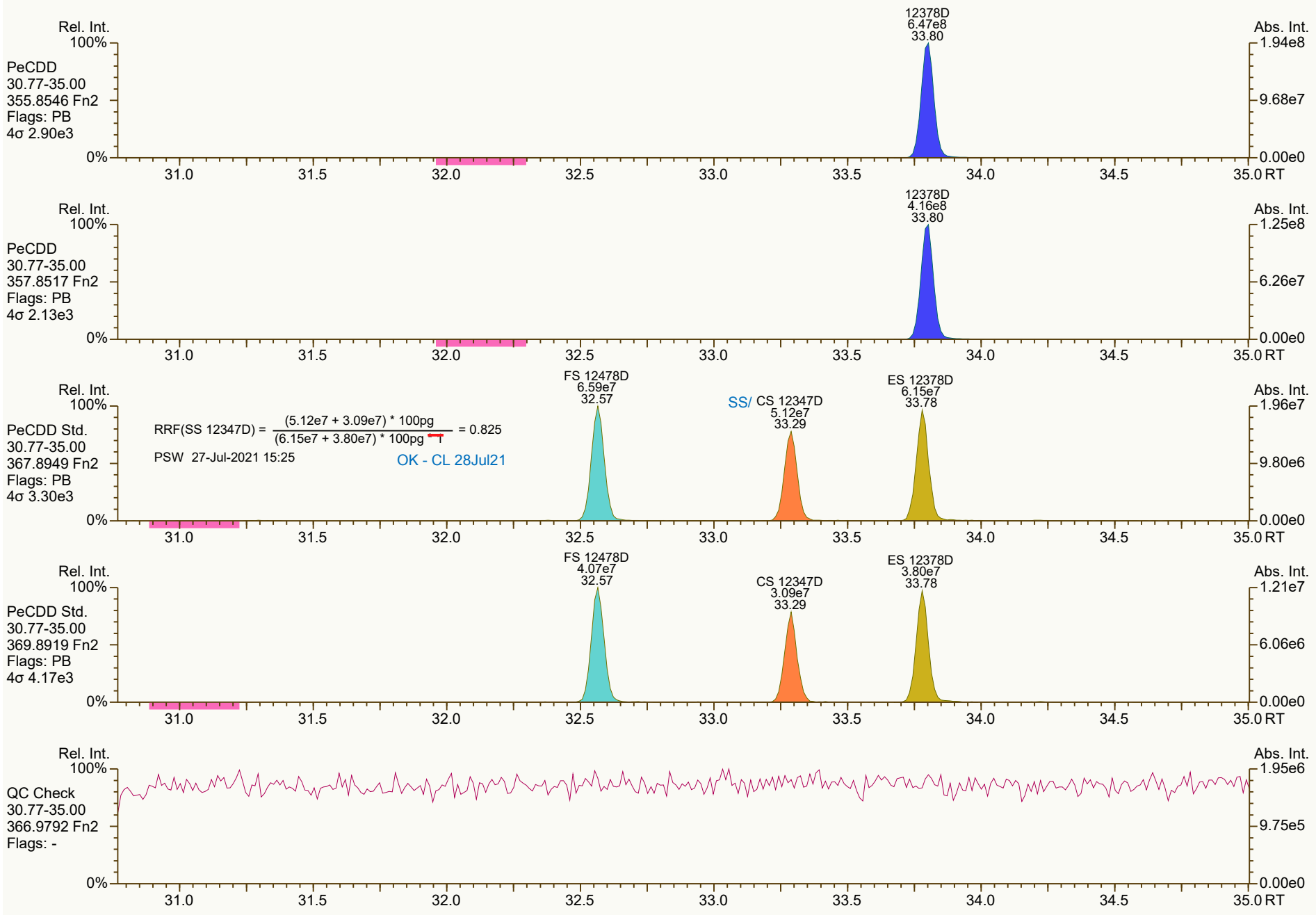
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:09 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS5_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 147-553-CLL
Sample ID: SIL 25-5-3	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R07

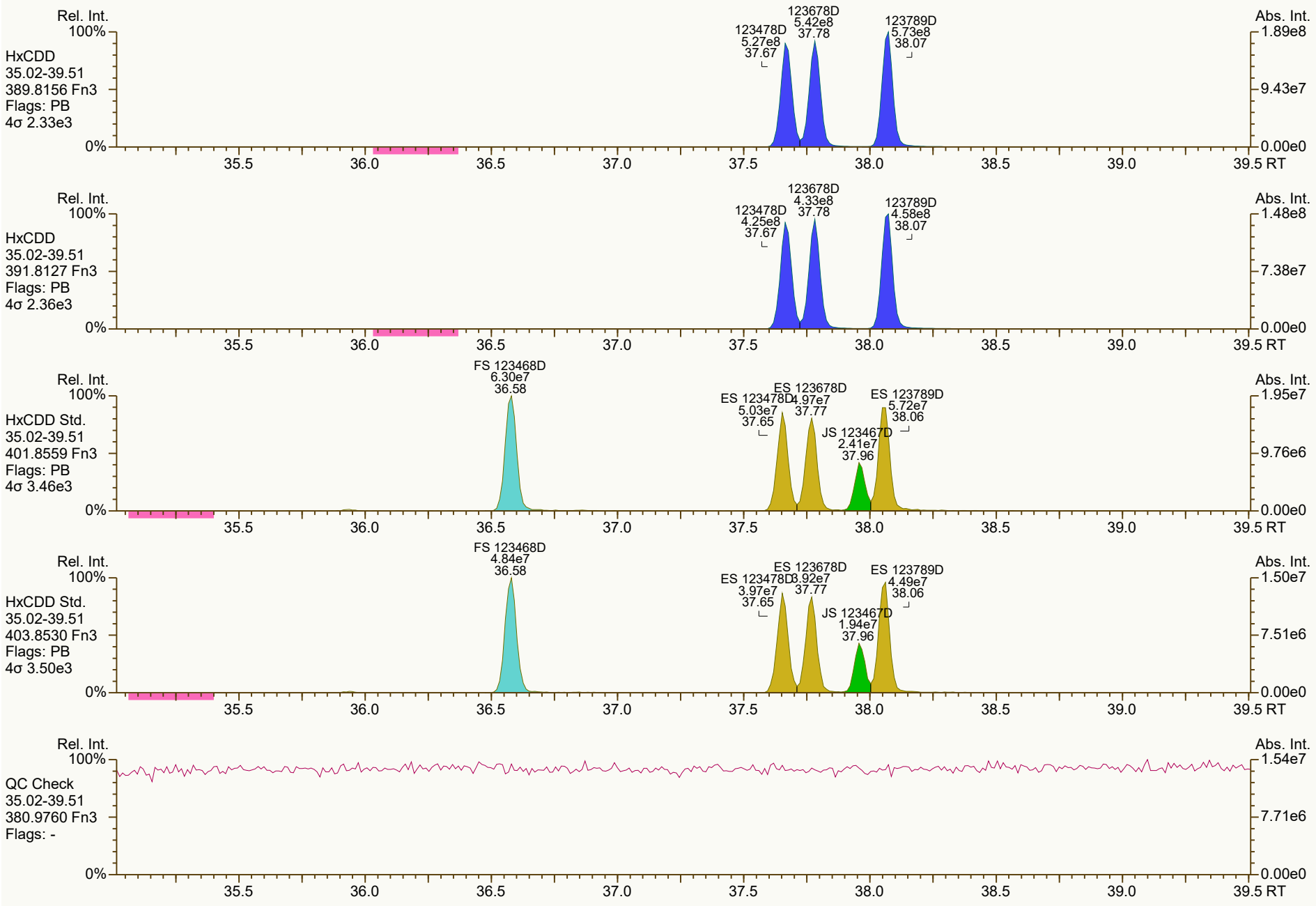
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.85	9.31E+07	0.82	Y	-	-	-
JS 1234-TCDF	26.32	1.51E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.96	4.35E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.31	1.35	3%
CS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.89	0.88	-1%
CS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.11	9.75E+07	0.53	Y	1.09	1.12	3%
CS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.86	0.86	-1%
SS 37Cl-2378-TCDD	28.52	2.51E+08	n/a	-	1.26	1.29	3%
SS 12347-PeCDD	33.29	8.21E+07	1.66	Y	0.86	0.82	-5%
SS 12346-PeCDF	31.84	1.30E+08	1.57	Y	0.93	0.91	-2%
SS 123469-HxCDF	37.11	9.75E+07	0.53	Y	0.84	0.82	-2%
SS 1234689-HpCDF	40.13	7.48E+07	0.44	Y	0.91	0.86	-6%
AS 1368-TCDD	24.90	9.65E+07	0.80	Y	1.02	1.04	1%
AS 1368-TCDF	22.84	1.66E+08	0.78	Y	1.08	1.10	2%
FS 1278-TCDD	28.82	1.05E+08	0.81	Y	1.08	1.08	-1%
FS 12478-PeCDD	32.57	1.07E+08	1.62	Y	1.09	1.07	-2%
FS 123468-HxCDD	36.58	1.11E+08	1.30	Y	1.26	1.24	-2%
FS 1234679-HpCDD	39.99	1.18E+08	1.06	Y	1.36	1.30	-4%
TS 1378-TCDD	26.87	1.32E+08	0.79	Y	1.35	1.35	1%
~~OCDD-a~~	~~43.22~~	~~9.57E+07~~	~~2.52~~	~~Y~~	~~0.07~~	~~0.06~~	~~-2%~~
~~OCDF-a~~	~~43.40~~	~~1.10E+08~~	~~2.51~~	~~Y~~	~~0.06~~	~~0.06~~	~~5%~~

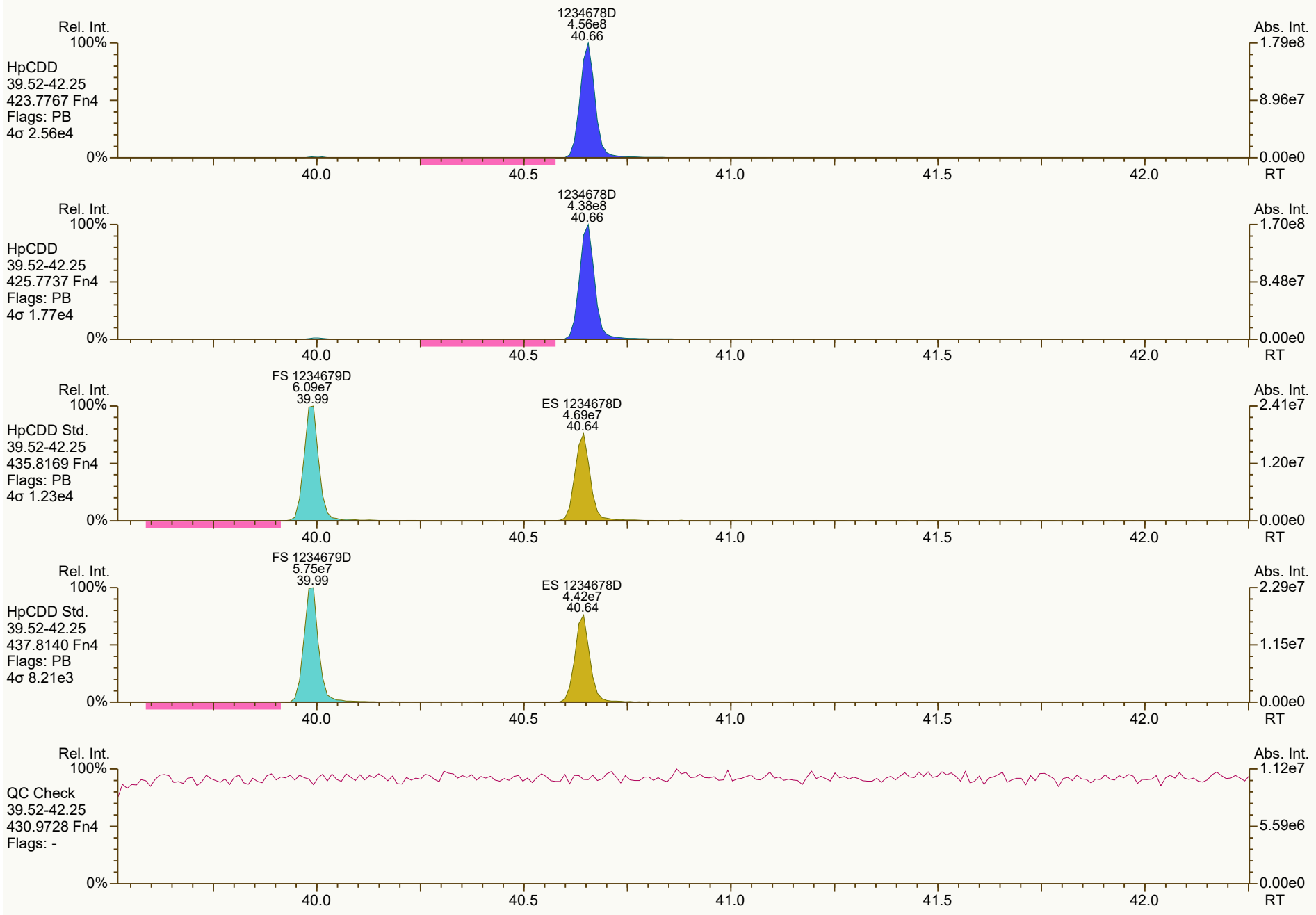
Not reported from this ICAL - CL 28Jul21


Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.08e6
1.04e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.54e7
7.71e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.12e7
5.59e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.08e3
2378D
1.16e8
28.52
2.88e7
1.44e7
0.00e0
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.05e3
2378D
1.47e8
28.51
3.55e7
1.77e7
0.00e0
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.84e3
RRF (CS 37Cl-2378D) = (2.51e8) * 100 pg/uL = 1.35
(4.19e7+ 5.12e7) * 200 pg/uL
CL 28Jul21
CS 37Cl-2378D
2.51e8
28.52
6.05e7
3.03e7
0.00e0
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.17e3
AS 1368D
4.28e7
24.90
TS 1378D
5.83e7
26.87
JS 1234D
4.19e7
27.85
ES 2378D
4.26e7
28.49
FS 1278D
4.67e7
28.82
1.35e7
6.74e6
0.00e0
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.68e3
AS 1368D
5.37e7
24.90
TS 1378D
7.34e7
26.87
JS 1234D
5.12e7
27.85
ES 2378D
5.45e7
28.49
FS 1278D
5.80e7
28.82
1.75e7
8.75e6
0.00e0


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PB
4σ 2.90e3
0%
12378D
6.47e8
33.80
Abs. Int.
1.94e8
9.68e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.13e3
0%
12378D
4.16e8
33.80
Abs. Int.
1.25e8
6.26e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.30e3
0%
RRF(SS 12347D) = (5.12e7 + 3.09e7) * 100pg / (6.15e7 + 3.80e7) * 100pg = 0.825
PSW 27-Jul-2021 15:25
OK - CL 28Jul21
FS 12478D
6.59e7
32.57
SS/ CS 12347D
5.12e7
33.29
ES 12378D
6.15e7
33.78
Abs. Int.
1.96e7
9.80e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.17e3
0%
FS 12478D
4.07e7
32.57
CS 12347D
3.09e7
33.29
ES 12378D
3.80e7
33.78
Abs. Int.
1.21e7
6.06e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.95e6
9.75e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 2.33e3
123478D
5.27e8
37.67
123678D
5.42e8
37.78
123789D
5.73e8
38.07
Abs. Int.
1.89e8
9.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.36e3
123478D
4.25e8
37.67
123678D
4.33e8
37.78
123789D
4.58e8
38.07
Abs. Int.
1.48e8
7.38e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 3.46e3
FS 123468D
6.30e7
36.58
ES 123478D
5.03e7
37.65
ES 123678D
4.97e7
37.77
JS 123467D
2.41e7
37.96
ES 123789D
5.72e7
38.06
Abs. Int.
1.95e7
9.76e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 3.50e3
FS 123468D
4.84e7
36.58
ES 123478D
3.97e7
37.65
ES 123678D
3.92e7
37.77
JS 123467D
1.94e7
37.96
ES 123789D
4.49e7
38.06
Abs. Int.
1.50e7
7.51e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.54e7
7.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.56e4
1234678D
4.56e8
40.66
Abs. Int.
1.79e8
8.96e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.77e4
1234678D
4.38e8
40.66
Abs. Int.
1.70e8
8.48e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 1.23e4
FS 1234679D
6.09e7
39.99
ES 1234678D
4.69e7
40.64
Abs. Int.
2.41e7
1.20e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 8.21e3
FS 1234679D
5.75e7
39.99
ES 1234678D
4.42e7
40.64
Abs. Int.
2.29e7
1.15e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
Abs. Int.
1.12e7
5.59e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDD
7.34e8*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
2.52e8
1.26e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
8.31e8*
43.22
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.52e3
0%
Abs. Int.
2.81e8
1.40e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.94e7
43.21
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 3.01e3
0%
Abs. Int.
2.31e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.81e7
43.21
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 3.23e3
0%
Abs. Int.
2.71e7
1.35e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.48e6
2.24e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: CS5_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

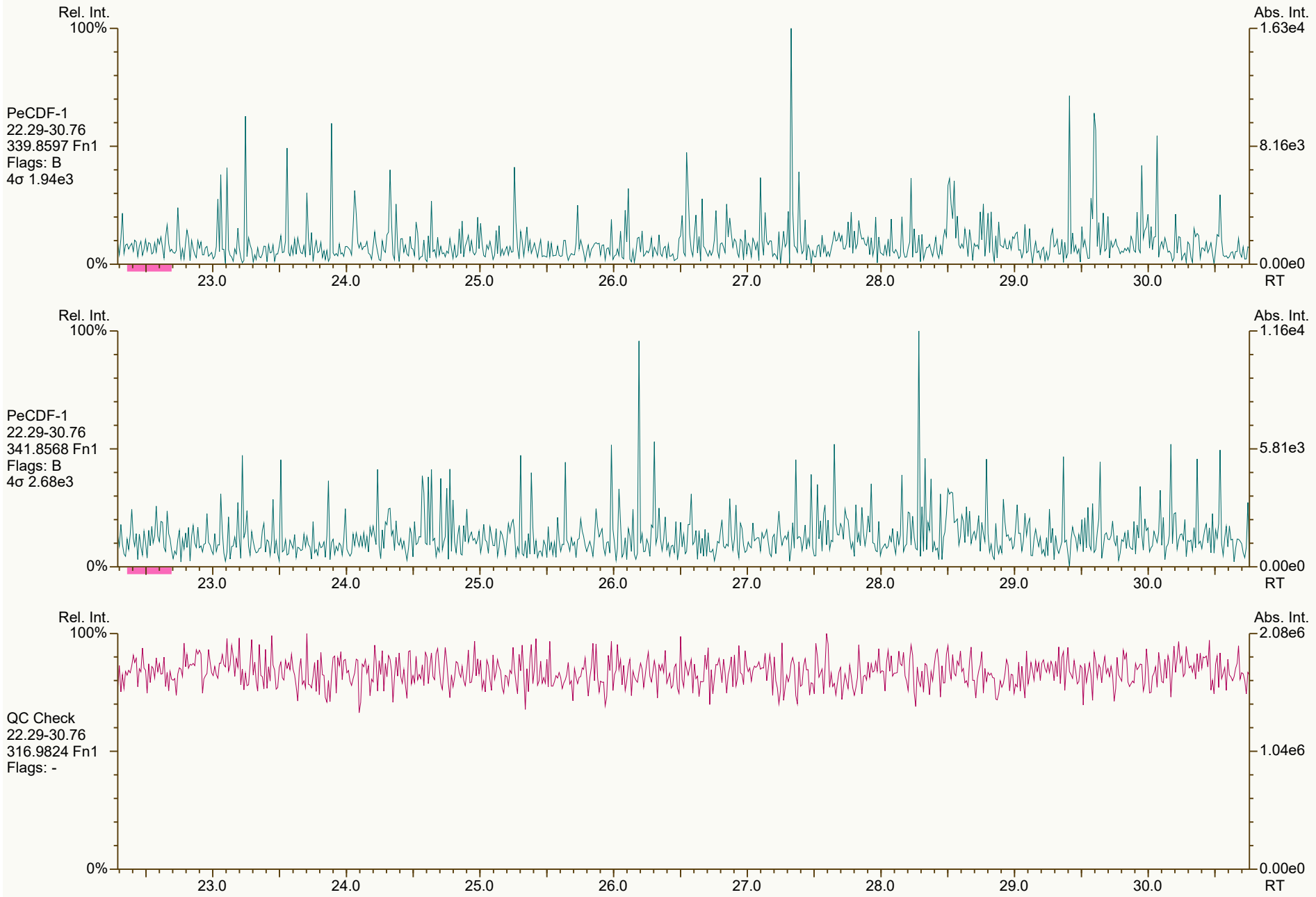
Sample ID: SIL 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 89

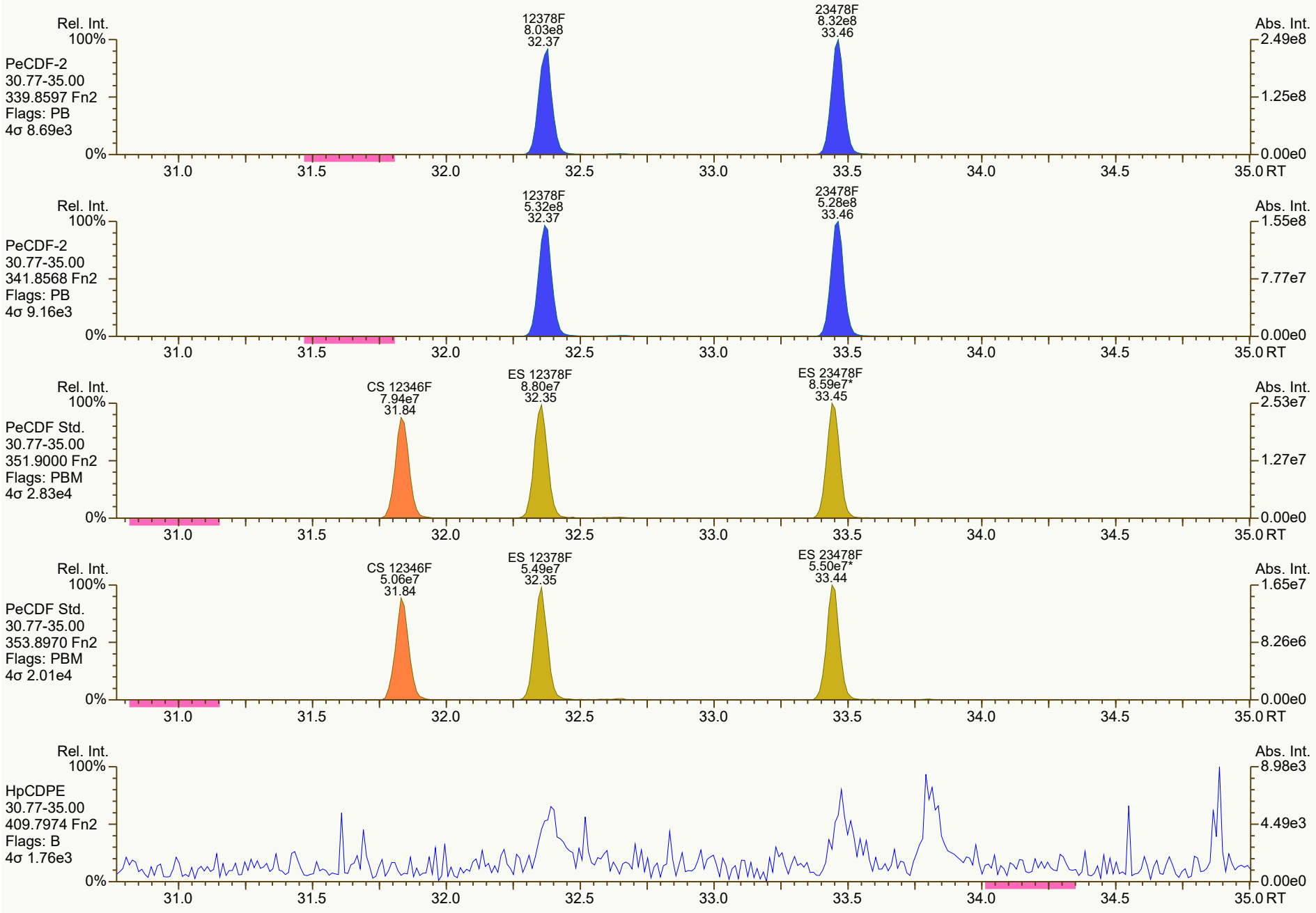
Acq: 27-Jul-2021 13:09:36
User: PSW Datafile: 210727R07

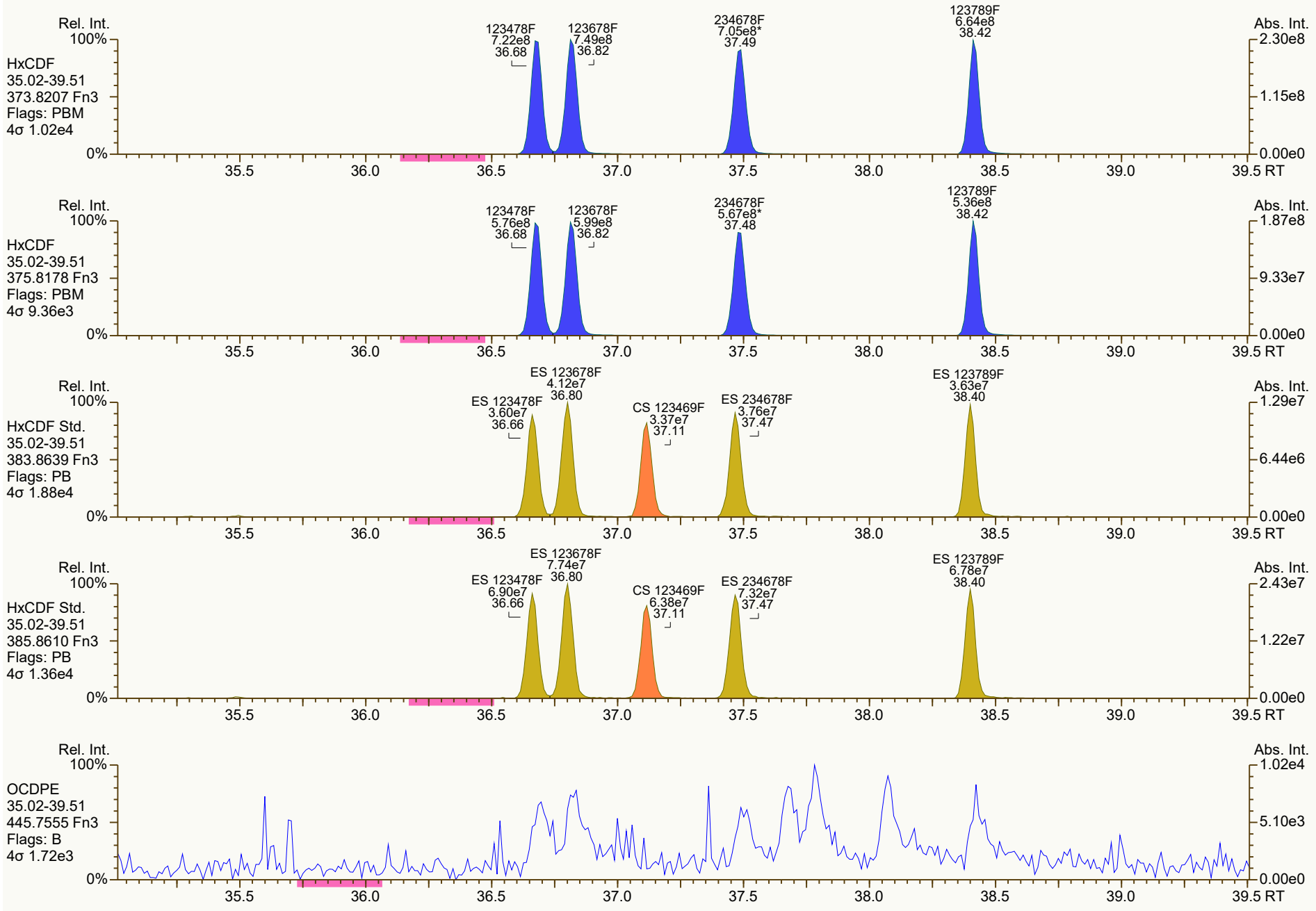


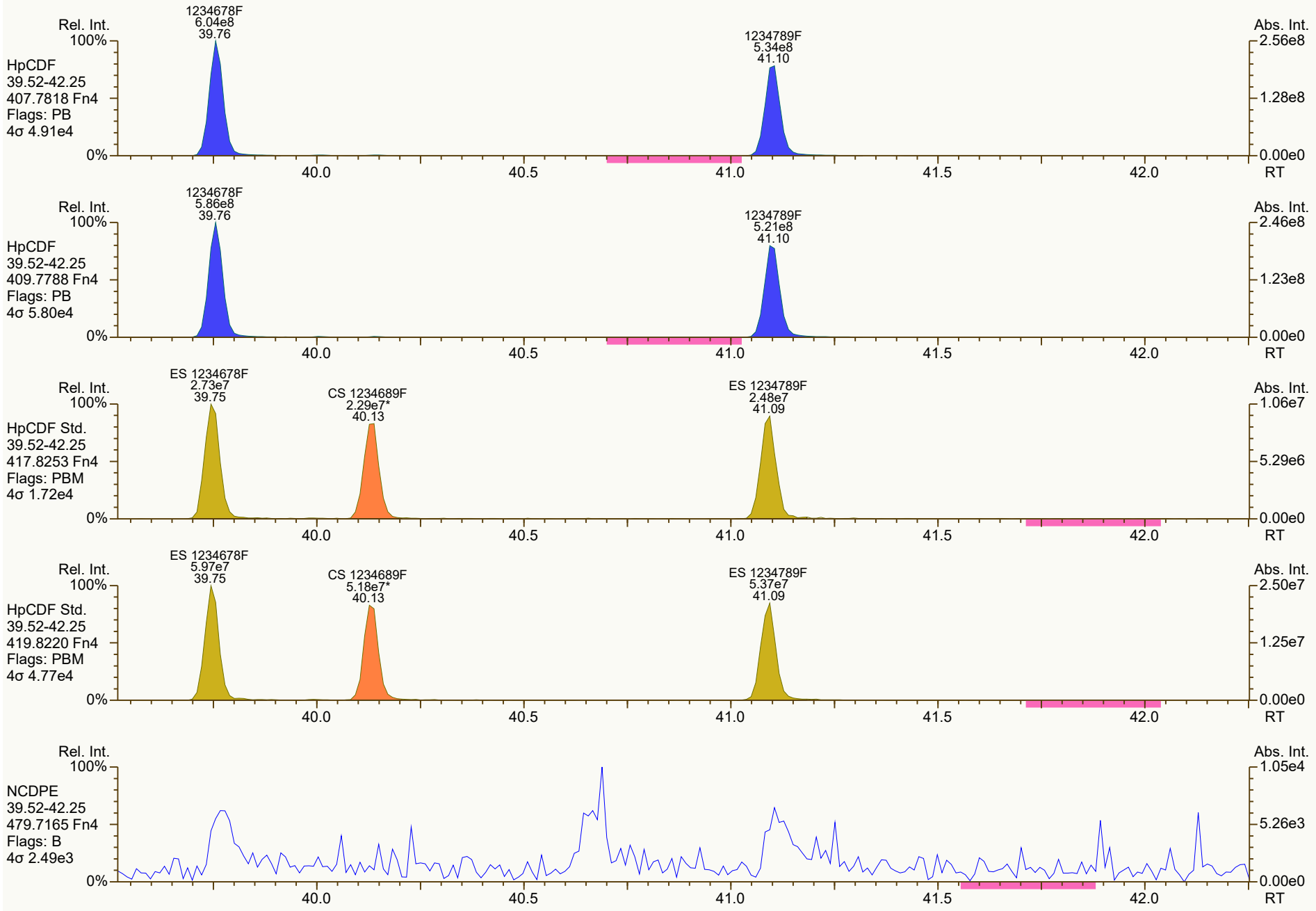
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS5_210727_DF_RA.utp_res, saved 27-Jul-2021 15:27 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1711, 4954, 8949 scc: 147-553

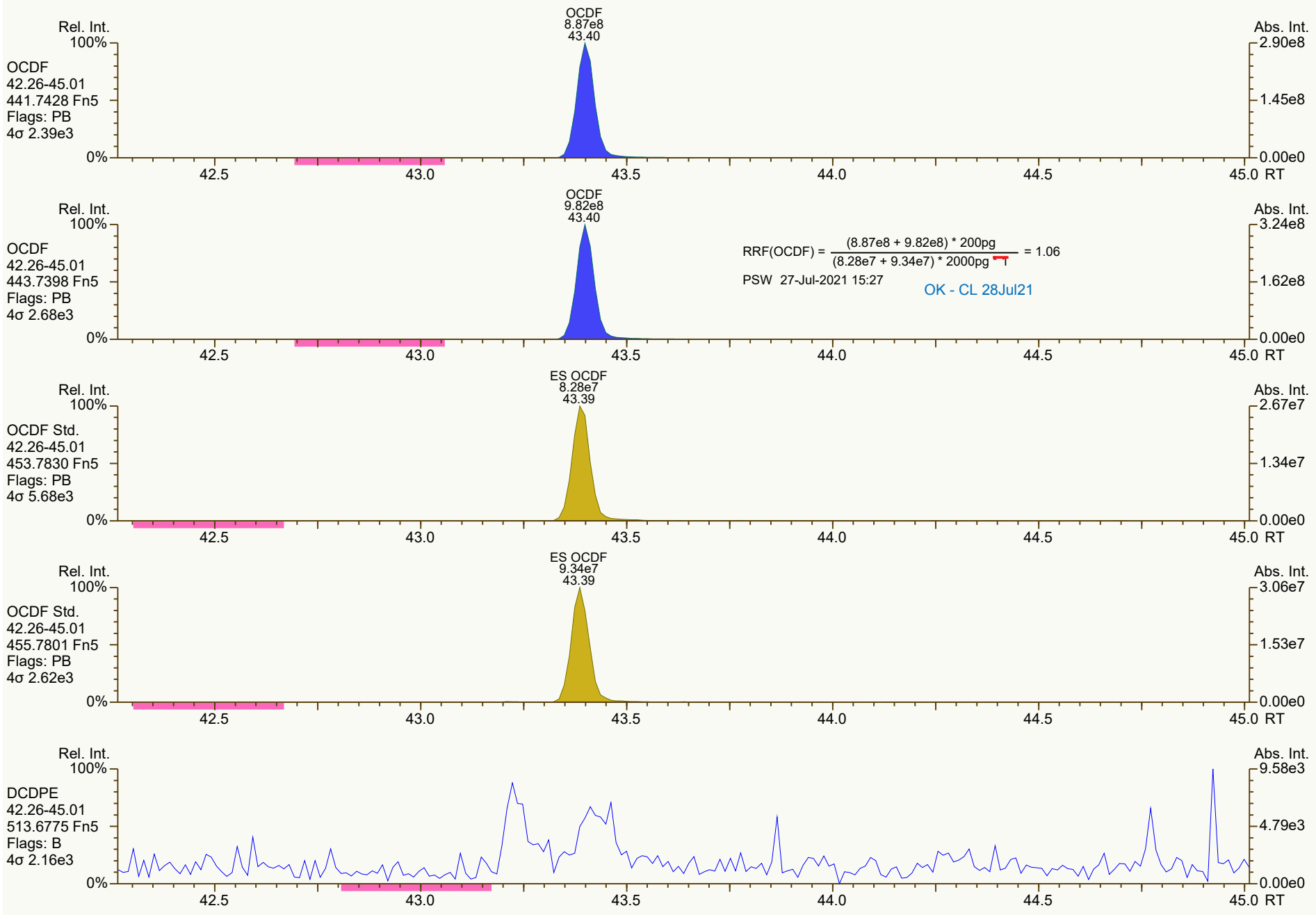
Peak annotation: Areas, Centroids
PKD: 27-Jul-2021 13:55 Printed: 27-Jul-2021 15:31 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
1.63e4
8.16e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 1.94e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.16e4
5.81e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 2.68e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.08e6
1.04e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 8.69e3
0%
12378F
8.03e8
32.37
23478F
8.32e8
33.46
Abs. Int.
2.49e8
1.25e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 9.16e3
0%
12378F
5.32e8
32.37
23478F
5.28e8
33.46
Abs. Int.
1.55e8
7.77e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.83e4
0%
CS 12346F
7.94e7
31.84
ES 12378F
8.80e7
32.35
ES 23478F
8.59e7*
33.45
Abs. Int.
2.53e7
1.27e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.01e4
0%
CS 12346F
5.06e7
31.84
ES 12378F
5.49e7
32.35
ES 23478F
5.50e7*
33.44
Abs. Int.
1.65e7
8.26e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 1.76e3
0%
Abs. Int.
8.98e3
4.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.02e4
0%
123478F
7.22e8
36.68
123678F
7.49e8
36.82
234678F
7.05e8*
37.49
123789F
6.64e8
38.42
Abs. Int.
2.30e8
1.15e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 9.36e3
0%
123478F
5.76e8
36.68
123678F
5.99e8
36.82
234678F
5.67e8*
37.48
123789F
5.36e8
38.42
Abs. Int.
1.87e8
9.33e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 1.88e4
0%
ES 123478F
3.60e7
36.66
ES 123678F
4.12e7
36.80
CS 123469F
3.37e7
37.11
ES 234678F
3.76e7
37.47
ES 123789F
3.63e7
38.40
Abs. Int.
1.29e7
6.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.36e4
0%
ES 123478F
6.90e7
36.66
ES 123678F
7.74e7
36.80
CS 123469F
6.38e7
37.11
ES 234678F
7.32e7
37.47
ES 123789F
6.78e7
38.40
Abs. Int.
2.43e7
1.22e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 1.72e3
0%
Abs. Int.
1.02e4
5.10e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 4.91e4
1234678F
6.04e8
39.76
1234789F
5.34e8
41.10
Abs. Int.
2.56e8
1.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 5.80e4
1234678F
5.86e8
39.76
1234789F
5.21e8
41.10
Abs. Int.
2.46e8
1.23e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PBM
4σ 1.72e4
ES 1234678F
2.73e7
39.75
CS 1234689F
2.29e7*
40.13
ES 1234789F
2.48e7
41.09
Abs. Int.
1.06e7
5.29e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PBM
4σ 4.77e4
ES 1234678F
5.97e7
39.75
CS 1234689F
5.18e7*
40.13
ES 1234789F
5.37e7
41.09
Abs. Int.
2.50e7
1.25e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.49e3
Abs. Int.
1.05e4
5.26e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PB
4σ 2.39e3
0%
OCDF
8.87e8
43.40
Abs. Int.
2.90e8
1.45e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PB
4σ 2.68e3
0%
OCDF
9.82e8
43.40
RRF(OCDF) = (8.87e8 + 9.82e8) * 200pg / (8.28e7 + 9.34e7) * 2000pg = 1.06
PSW 27-Jul-2021 15:27
OK - CL 28Jul21
Abs. Int.
3.24e8
1.62e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 5.68e3
0%
ES OCDF
8.28e7
43.39
Abs. Int.
2.67e7
1.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 2.62e3
0%
ES OCDF
9.34e7
43.39
Abs. Int.
3.06e7
1.53e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.16e3
0%
Abs. Int.
9.58e3
4.79e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

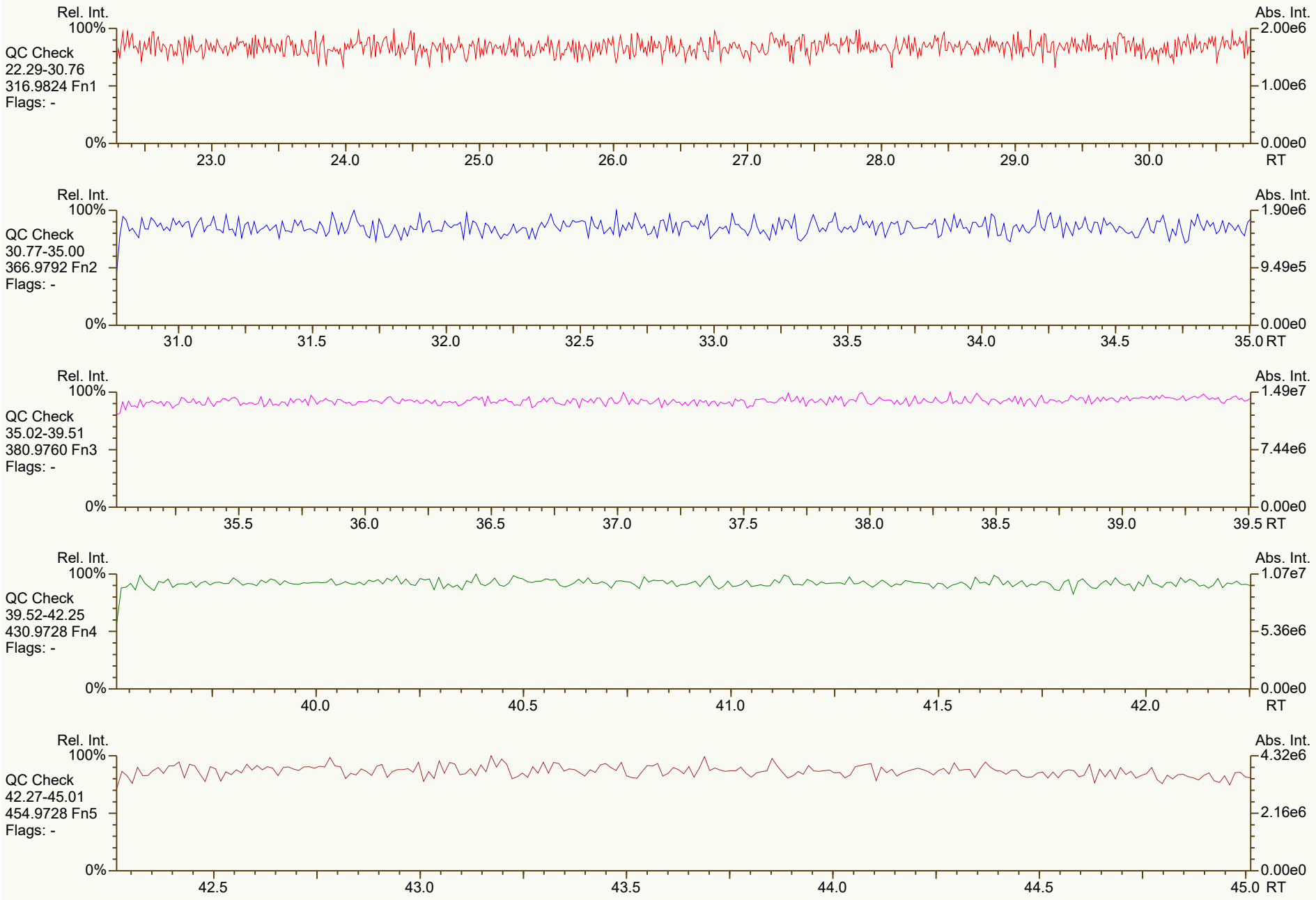
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

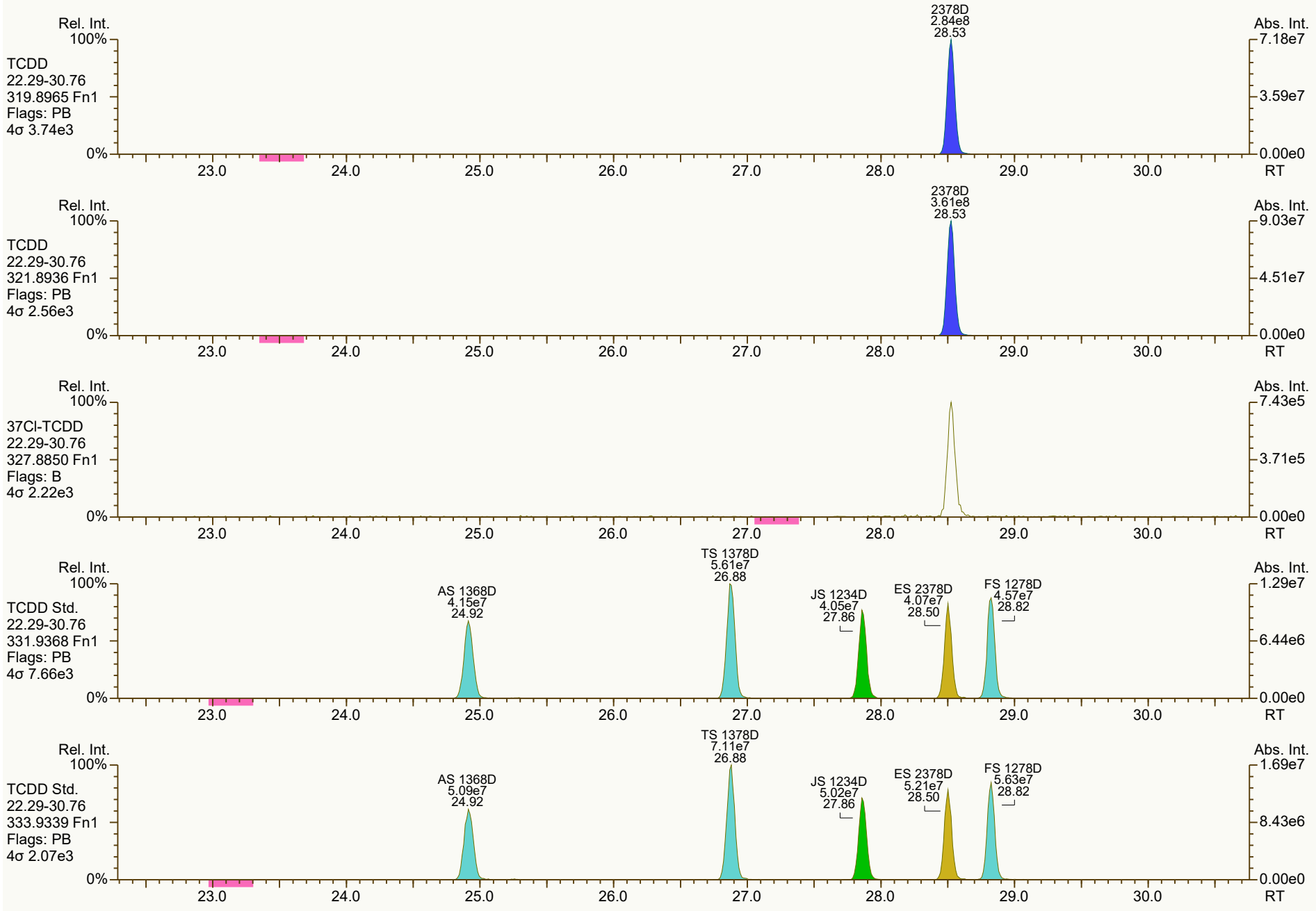
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	6.45E+08	0.79	Y	1.34	1.39	3%
12378-PeCDD	33.81	2.62E+09	1.57	Y	1.06	1.05	0%
123478-HxCDD	37.68	2.41E+09	1.26	Y	1.06	1.05	-1%
123678-HxCDD	37.79	2.46E+09	1.25	Y	1.08	1.09	1%
123789-HxCDD	38.08	2.63E+09	1.25	Y	1.02	1.00	-1%
1234678-HpCDD	40.66	2.28E+09	1.03	Y	0.97	1.00	2%
OCDD	43.24	4.13E+09	0.89	Y	1.07	1.08	1%
2378-TCDF	27.67	7.99E+08	0.77	Y	0.96	0.99	3%
12378-PeCDF	32.38	3.47E+09	1.57	Y	0.95	0.96	2%
23478-PeCDF	33.47	3.38E+09	1.55	Y	0.94	0.96	2%
123478-HxCDF	36.69	3.24E+09	1.24	Y	1.23	1.22	-1%
123678-HxCDF	36.83	3.36E+09	1.24	Y	1.13	1.14	0%
234678-HxCDF	37.49	3.14E+09	1.25	Y	1.15	1.15	0%
123789-HxCDF	38.43	3.10E+09	1.25	Y	1.14	1.16	2%
1234678-HpCDF	39.77	3.01E+09	1.04	Y	1.36	1.36	0%
1234789-HpCDF	41.11	2.70E+09	1.03	Y	1.30	1.33	2%
OCDF	43.42	4.91E+09	0.91	Y	1.03	1.08	5%
ES 2378-TCDD	28.50	9.29E+07	0.78	Y	1.03	1.02	-1%
ES 12378-PeCDD	33.791	9.93E+07	1.63	Y	1.03	1.10	6%
ES 123478-HxCDD	37.663	9.19E+07	1.24	Y	0.99	1.07	7%
ES 123678-HxCDD	37.778	9.02E+07	1.27	Y	0.97	1.05	7%
ES 123789-HxCDD	38.067	1.05E+08	1.27	Y	1.12	1.22	8%
ES 1234678-HpCDD	40.65	9.14E+07	1.03	Y	0.99	1.06	7%
ES OCDD	43.227	1.53E+08	0.91	Y	0.78	0.89	14%
ES 2378-TCDF	27.65	1.62E+08	0.78	Y	1.08	1.10	2%
ES 12378-PeCDF	32.365	1.44E+08	1.56	Y	0.93	0.98	5%
ES 23478-PeCDF	33.455	1.42E+08	1.59	Y	0.92	0.96	4%
ES 123478-HxCDF	36.671	1.06E+08	0.53	Y	1.14	1.23	8%
ES 123678-HxCDF	36.81	1.18E+08	0.53	Y	1.30	1.37	6%
ES 234678-HxCDF	37.477	1.09E+08	0.52	Y	1.20	1.27	5%
ES 123789-HxCDF	38.411	1.07E+08	0.52	Y	1.14	1.24	9%
ES 1234678-HpCDF	39.757	8.85E+07	0.45	Y	0.95	1.03	8%
ES 1234789-HpCDF	41.1	8.15E+07	0.45	Y	0.85	0.94	12%
ES OCDF	43.407	1.83E+08	0.90	Y	0.93	1.06	14%

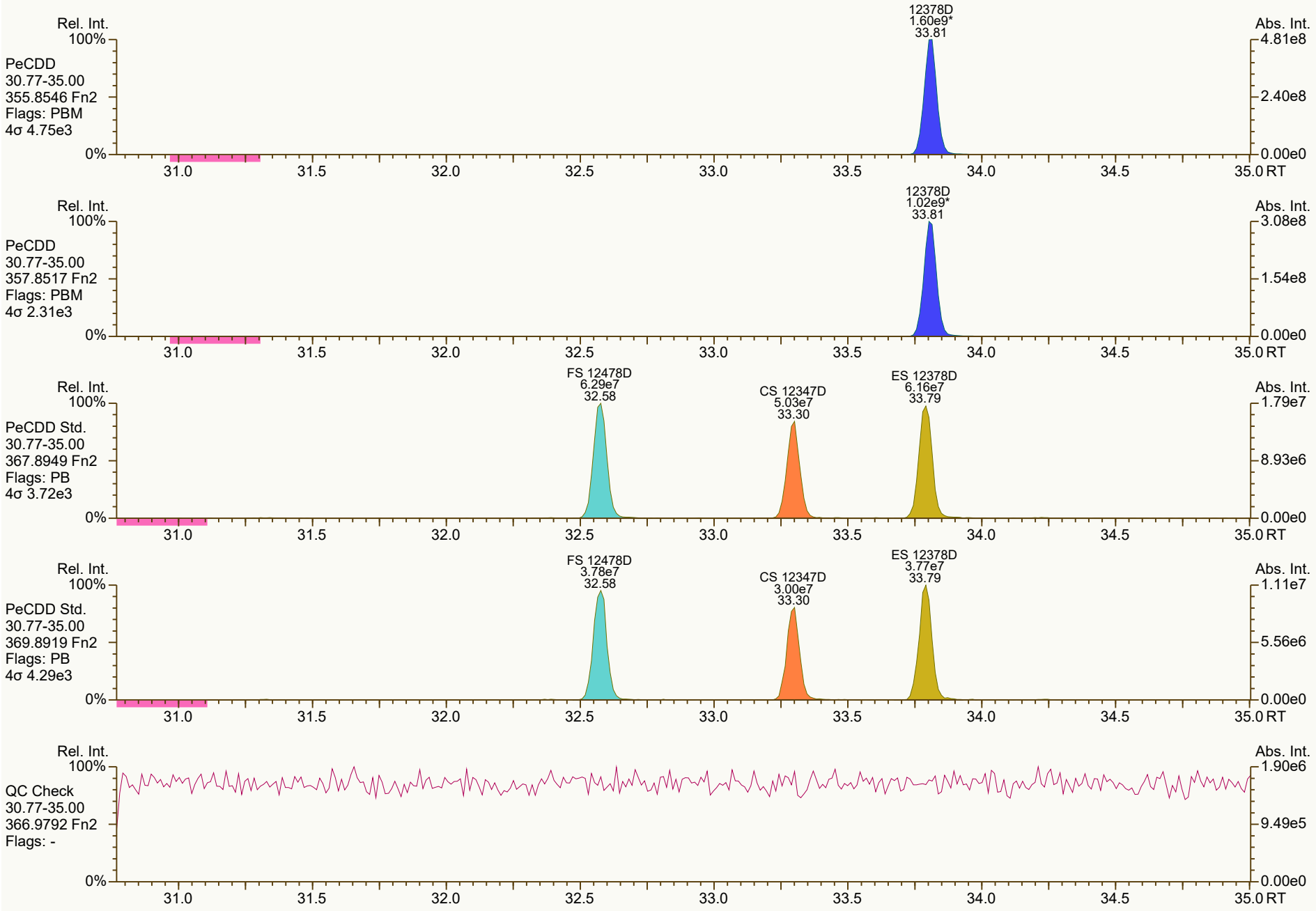
Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 13:58 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS6_210727_DF_RA	UTP: 27-Jul-2021 15:00:22 PSW	Checkcode: 783-472-ZXK
Sample ID: SIL 25-5-2	Report: 27 Jul 2021 15:02 pw	Datafile: 210727R08

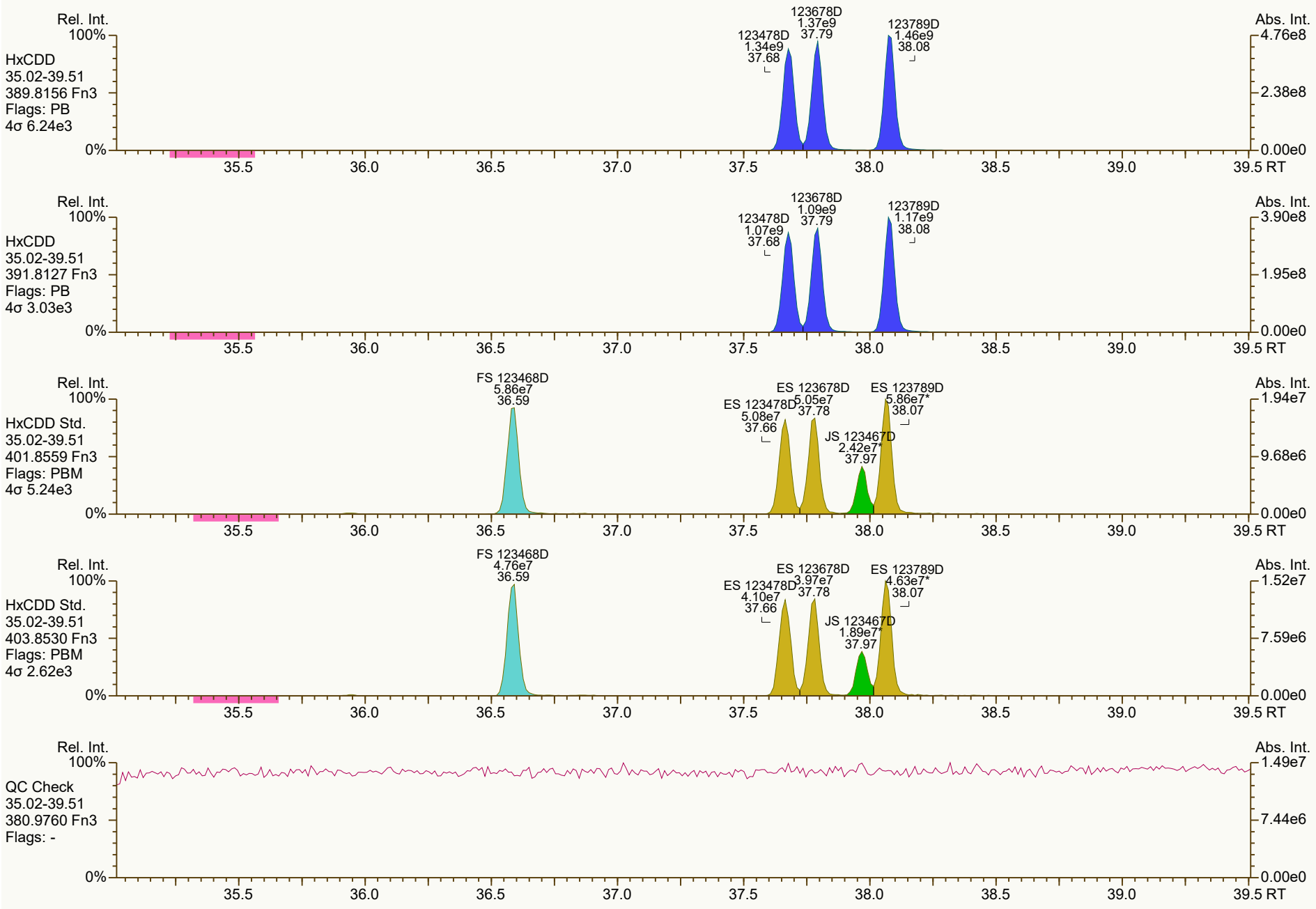
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.86	9.07E+07	0.81	Y	-	-	-
JS 1234-TCDF	26.33	1.47E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	4.31E+07	1.28	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.31		
CS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.89	0.89	-1%
CS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.87	0.85	-2%
CS 123469-HxCDF	37.12	9.43E+07	0.51	Y	1.09	1.09	0%
CS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.86	0.84	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.26		
SS 12347-PeCDD	33.30	8.03E+07	1.68	Y	0.86	0.81	-6%
SS 12346-PeCDF	31.84	1.25E+08	1.54	Y	0.93	0.87	-7%
SS 123469-HxCDF	37.12	9.43E+07	0.51	Y	0.84	0.80	-5%
SS 1234689-HpCDF	40.14	7.21E+07	0.44	Y	0.91	0.81	-11%
AS 1368-TCDD	24.92	9.24E+07	0.82	Y	1.02	1.02	0%
AS 1368-TCDF	22.86	1.58E+08	0.79	Y	1.08	1.07	0%
FS 1278-TCDD	28.83	1.02E+08	0.81	Y	1.08	1.10	1%
FS 12478-PeCDD	32.58	1.01E+08	1.67	Y	1.09	1.01	-7%
FS 123468-HxCDD	36.59	1.06E+08	1.23	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.99	1.12E+08	1.07	Y	1.36	1.23	-9%
TS 1378-TCDD	26.88	1.27E+08	0.79	Y	1.35	1.37	2%
~~OCDD-a~~	~~43.23~~	~~2.53E+08~~	~~2.47~~	~~Y~~	~~0.07~~	~~0.07~~	~~0%~~
~~OCDF-a~~	~~43.42~~	~~2.93E+08~~	~~2.57~~	~~Y~~	~~0.06~~	~~0.06~~	~~8%~~

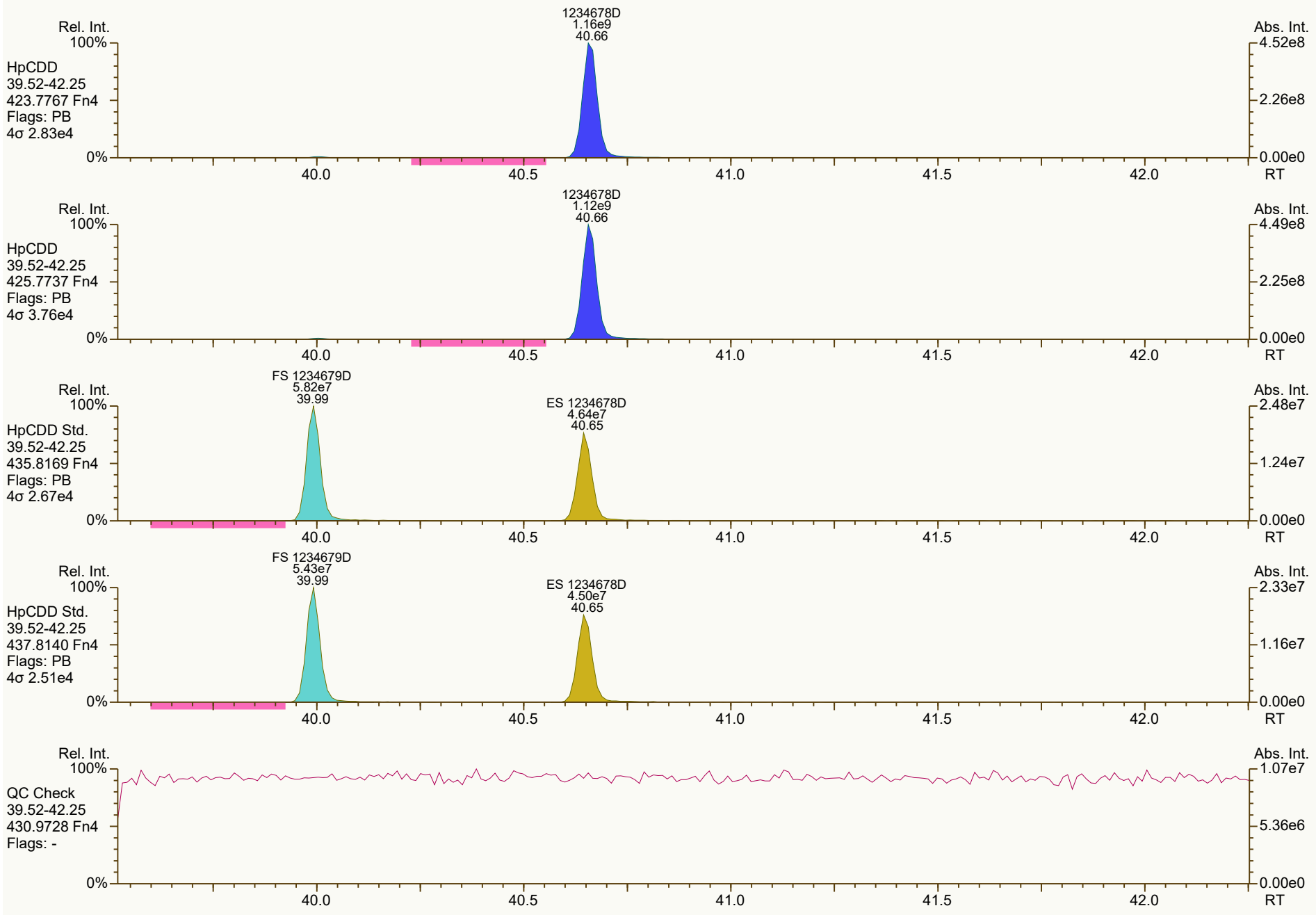
Not reported from this ICAL - CL 28Jul21

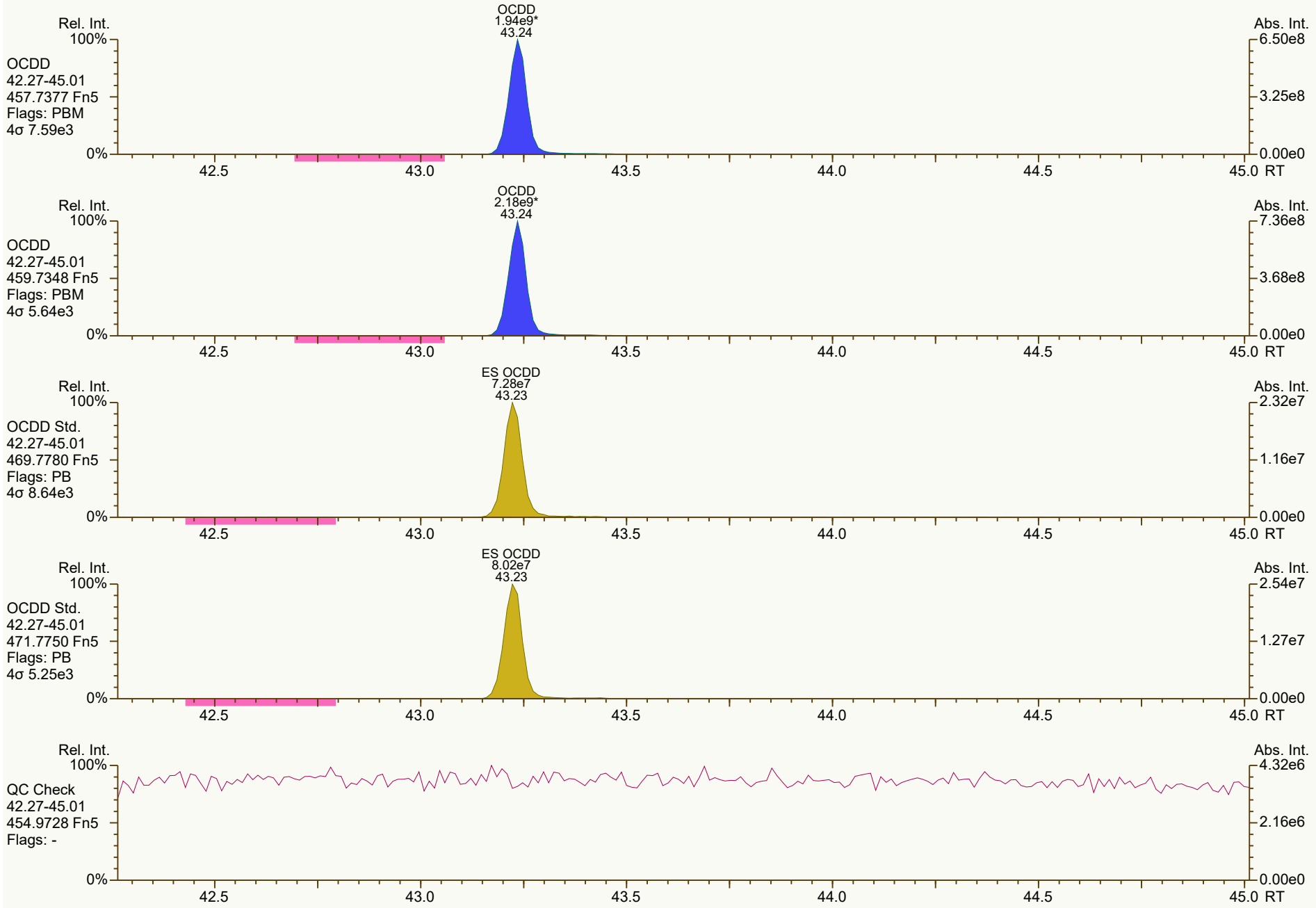

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
2.00e6
1.00e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.49e7
7.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 3.74e3
0%
2378D
2.84e8
28.53
Abs. Int.
7.18e7
3.59e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.56e3
0%
2378D
3.61e8
28.53
Abs. Int.
9.03e7
4.51e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.22e3
0%
Abs. Int.
7.43e5
3.71e5
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 7.66e3
0%
AS 1368D
4.15e7
24.92
TS 1378D
5.61e7
26.88
JS 1234D
4.05e7
27.86
ES 2378D
4.07e7
28.50
FS 1278D
4.57e7
28.82
Abs. Int.
1.29e7
6.44e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 2.07e3
0%
AS 1368D
5.09e7
24.92
TS 1378D
7.11e7
26.88
JS 1234D
5.02e7
27.86
ES 2378D
5.21e7
28.50
FS 1278D
5.63e7
28.82
Abs. Int.
1.69e7
8.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: PBM
4σ 4.75e3
0%
12378D
1.60e9*
33.81
Abs. Int.
4.81e8
2.40e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PBM
4σ 2.31e3
0%
12378D
1.02e9*
33.81
Abs. Int.
3.08e8
1.54e8
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 3.72e3
0%
FS 12478D
6.29e7
32.58
CS 12347D
5.03e7
33.30
ES 12378D
6.16e7
33.79
Abs. Int.
1.79e7
8.93e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.29e3
0%
FS 12478D
3.78e7
32.58
CS 12347D
3.00e7
33.30
ES 12378D
3.77e7
33.79
Abs. Int.
1.11e7
5.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.90e6
9.49e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

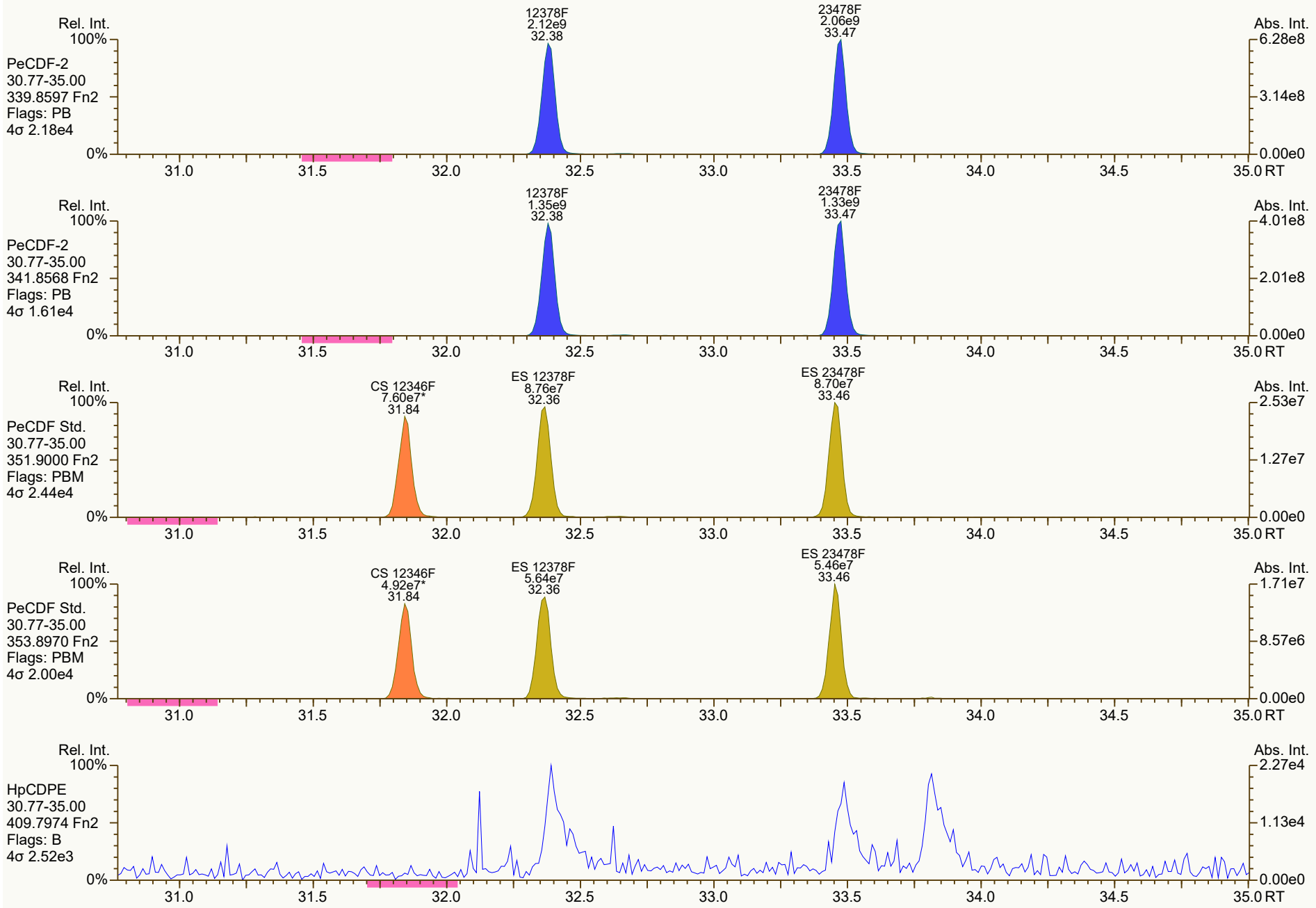

Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 6.24e3
0%
123678D
1.37e9
37.79
123478D
1.34e9
37.68
123789D
1.46e9
38.08
Abs. Int.
4.76e8
2.38e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 3.03e3
0%
123678D
1.09e9
37.79
123478D
1.07e9
37.68
123789D
1.17e9
38.08
Abs. Int.
3.90e8
1.95e8
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 5.24e3
0%
FS 123468D
5.86e7
36.59
ES 123678D
5.05e7
37.78
ES 123478D
5.08e7
37.66
ES 123789D
5.86e7*
38.07
JS 123467D
2.42e7*
37.97
Abs. Int.
1.94e7
9.68e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.62e3
0%
FS 123468D
4.76e7
36.59
ES 123678D
3.97e7
37.78
ES 123478D
4.10e7
37.66
ES 123789D
4.63e7*
38.07
JS 123467D
1.89e7*
37.97
Abs. Int.
1.52e7
7.59e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.49e7
7.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

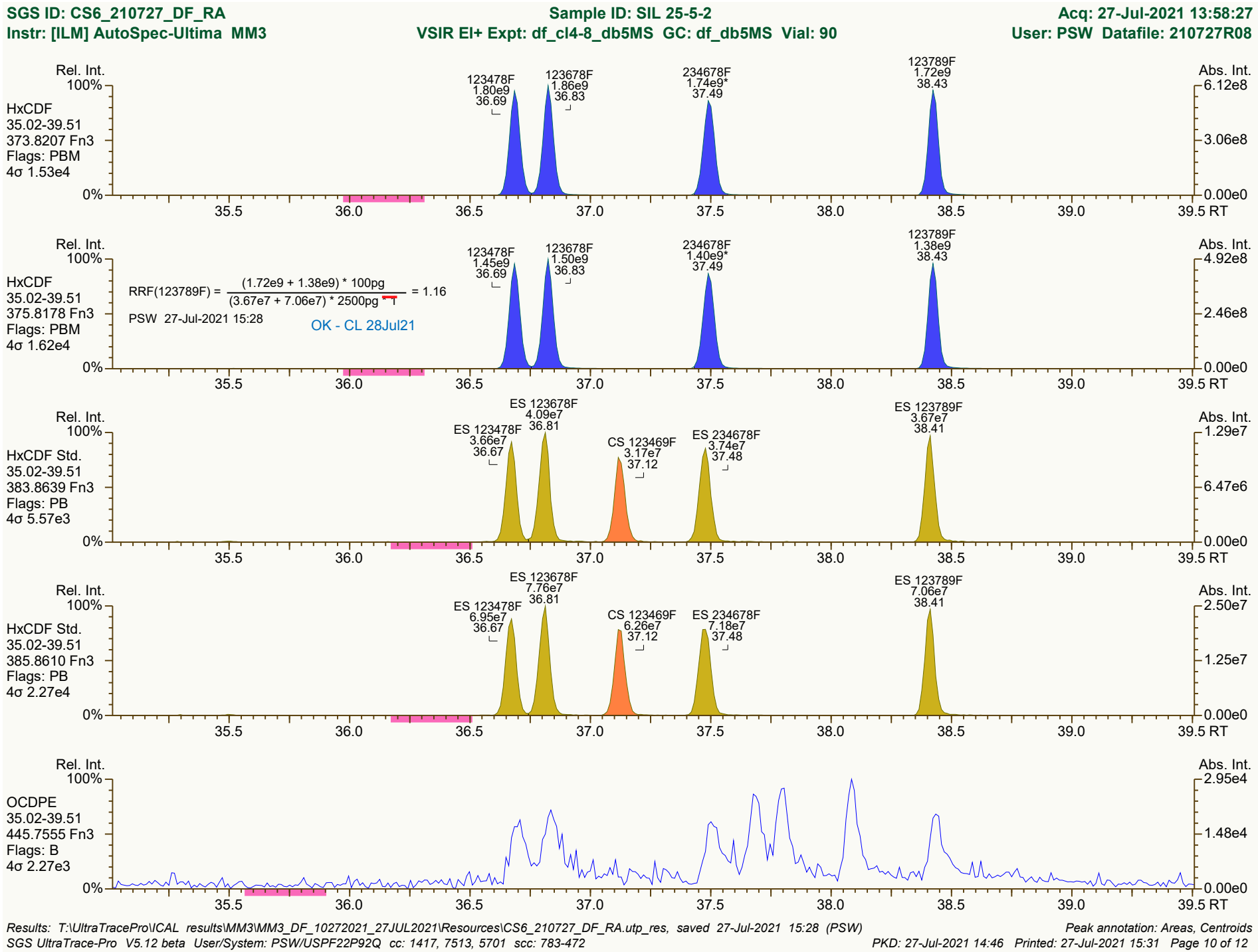

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
4σ 2.83e4
0%
1234678D
1.16e9
40.66
Abs. Int.
4.52e8
2.26e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 3.76e4
0%
1234678D
1.12e9
40.66
Abs. Int.
4.49e8
2.25e8
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PB
4σ 2.67e4
0%
FS 1234679D
5.82e7
39.99
ES 1234678D
4.64e7
40.65
Abs. Int.
2.48e7
1.24e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PB
4σ 2.51e4
0%
FS 1234679D
5.43e7
39.99
ES 1234678D
4.50e7
40.65
Abs. Int.
2.33e7
1.16e7
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.07e7
5.36e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0

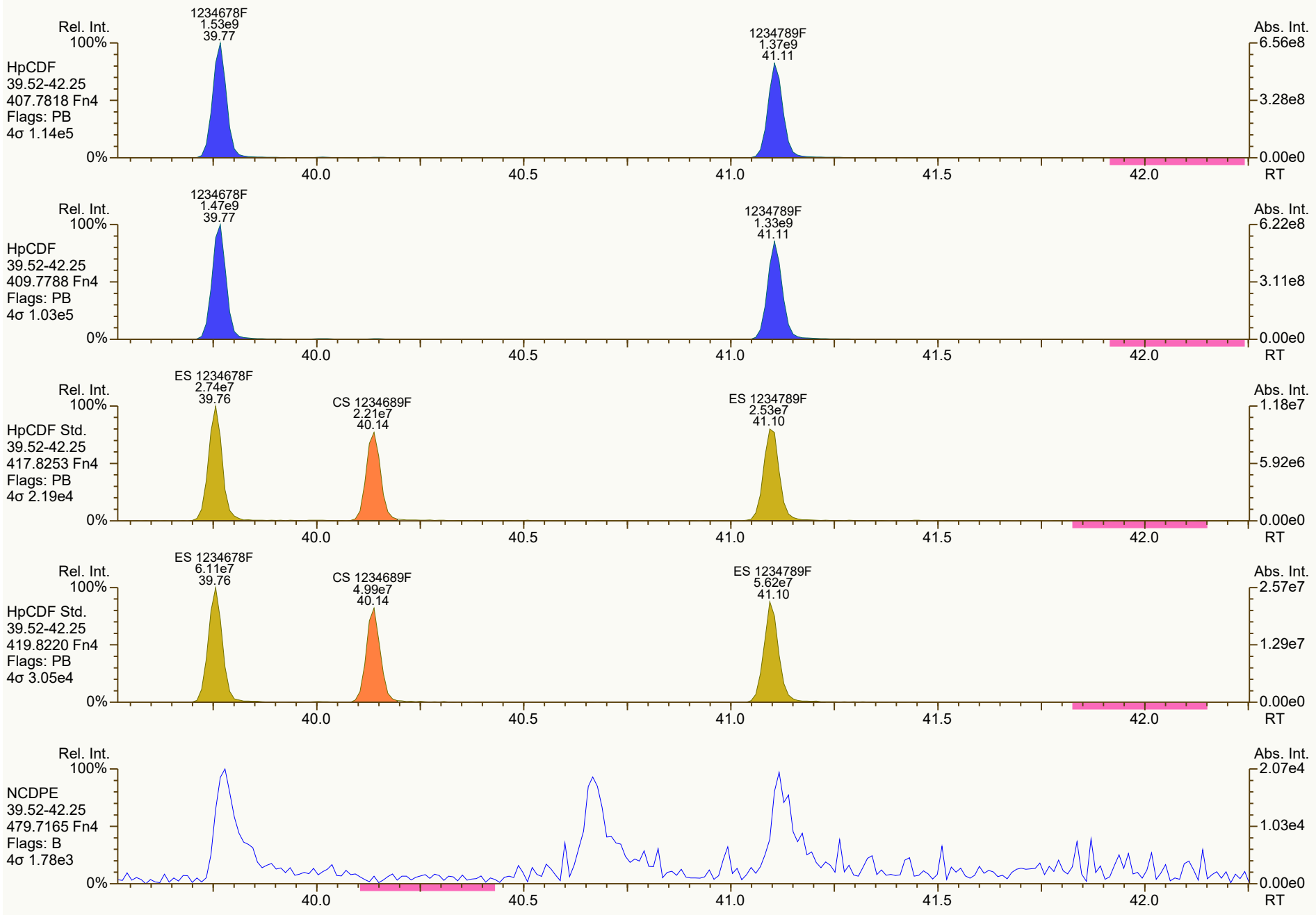

OCDD
1.94e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
457.7377 Fn5
Flags: PBM
4σ 7.59e3
0%
Abs. Int.
6.50e8
3.25e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.18e9*
43.24
Rel. Int.
100%
OCDD
42.27-45.01
459.7348 Fn5
Flags: PBM
4σ 5.64e3
0%
Abs. Int.
7.36e8
3.68e8
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.28e7
43.23
Rel. Int.
100%
OCDD Std.
42.27-45.01
469.7780 Fn5
Flags: PB
4σ 8.64e3
0%
Abs. Int.
2.32e7
1.16e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.02e7
43.23
Rel. Int.
100%
OCDD Std.
42.27-45.01
471.7750 Fn5
Flags: PB
4σ 5.25e3
0%
Abs. Int.
2.54e7
1.27e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.27-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.32e6
2.16e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

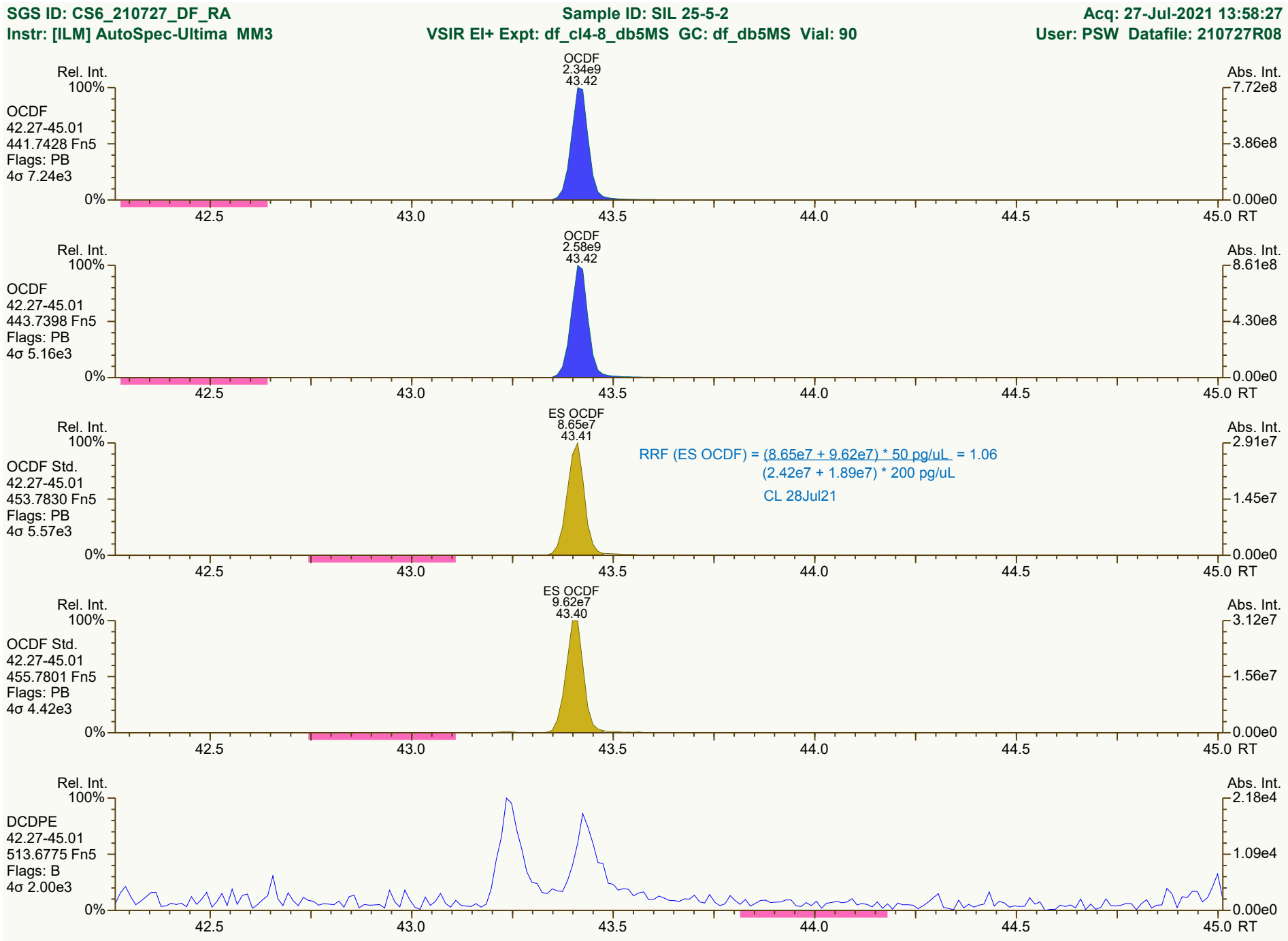

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 2.81e3
2378F
3.47e8
27.67
Abs. Int.
8.18e7
4.09e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.63e3
2378F
4.52e8
27.67
Abs. Int.
1.06e8
5.31e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.51e4
AS 1368F
6.97e7
22.86
JS 1234F
6.51e7
26.33
ES 2378F
7.12e7
27.65
Abs. Int.
1.73e7
8.65e6
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 8.59e3
AS 1368F
8.87e7
22.85
JS 1234F
8.23e7
26.33
ES 2378F
9.09e7
27.65
Abs. Int.
2.19e7
1.09e7
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.16e3
Abs. Int.
1.85e4
9.24e3
0.00e0
0%
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
2.08e4
1.04e4
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 3.81e3
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 4.96e3
1.40e4
7.01e3
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
2.00e6
1.00e6


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: PB
4σ 2.18e4
12378F
2.12e9
32.38
23478F
2.06e9
33.47
Abs. Int.
6.28e8
3.14e8
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: PB
4σ 1.61e4
12378F
1.35e9
32.38
23478F
1.33e9
33.47
Abs. Int.
4.01e8
2.01e8
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: PBM
4σ 2.44e4
CS 12346F
7.60e7*
31.84
ES 12378F
8.76e7
32.36
ES 23478F
8.70e7
33.46
Abs. Int.
2.53e7
1.27e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: PBM
4σ 2.00e4
CS 12346F
4.92e7*
31.84
ES 12378F
5.64e7
32.36
ES 23478F
5.46e7
33.46
Abs. Int.
1.71e7
8.57e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.52e3
Abs. Int.
2.27e4
1.13e4
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
Rel. Int.
Abs. Int.
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 1.53e4
123478F 1.80e9 36.69
123678F 1.86e9 36.83
234678F 1.74e9* 37.49
123789F 1.72e9 38.43
6.12e8
3.06e8
0.00e0
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 1.62e4
RRF(123789F) = (1.72e9 + 1.38e9) * 100pg / (3.67e7 + 7.06e7) * 2500pg = 1.16
PSW 27-Jul-2021 15:28
OK - CL 28Jul21
123478F 1.45e9 36.69
123678F 1.50e9 36.83
234678F 1.40e9* 37.49
123789F 1.38e9 38.43
4.92e8
2.46e8
0.00e0
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.57e3
ES 123478F 3.66e7 36.67
ES 123678F 4.09e7 36.81
CS 123469F 3.17e7 37.12
ES 234678F 3.74e7 37.48
ES 123789F 3.67e7 38.41
1.29e7
6.47e6
0.00e0
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 2.27e4
ES 123478F 6.95e7 36.67
ES 123678F 7.76e7 36.81
CS 123469F 6.26e7 37.12
ES 234678F 7.18e7 37.48
ES 123789F 7.06e7 38.41
2.50e7
1.25e7
0.00e0
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.27e3
2.95e4
1.48e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1417, 7513, 5701 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:31 Page 10 of 12

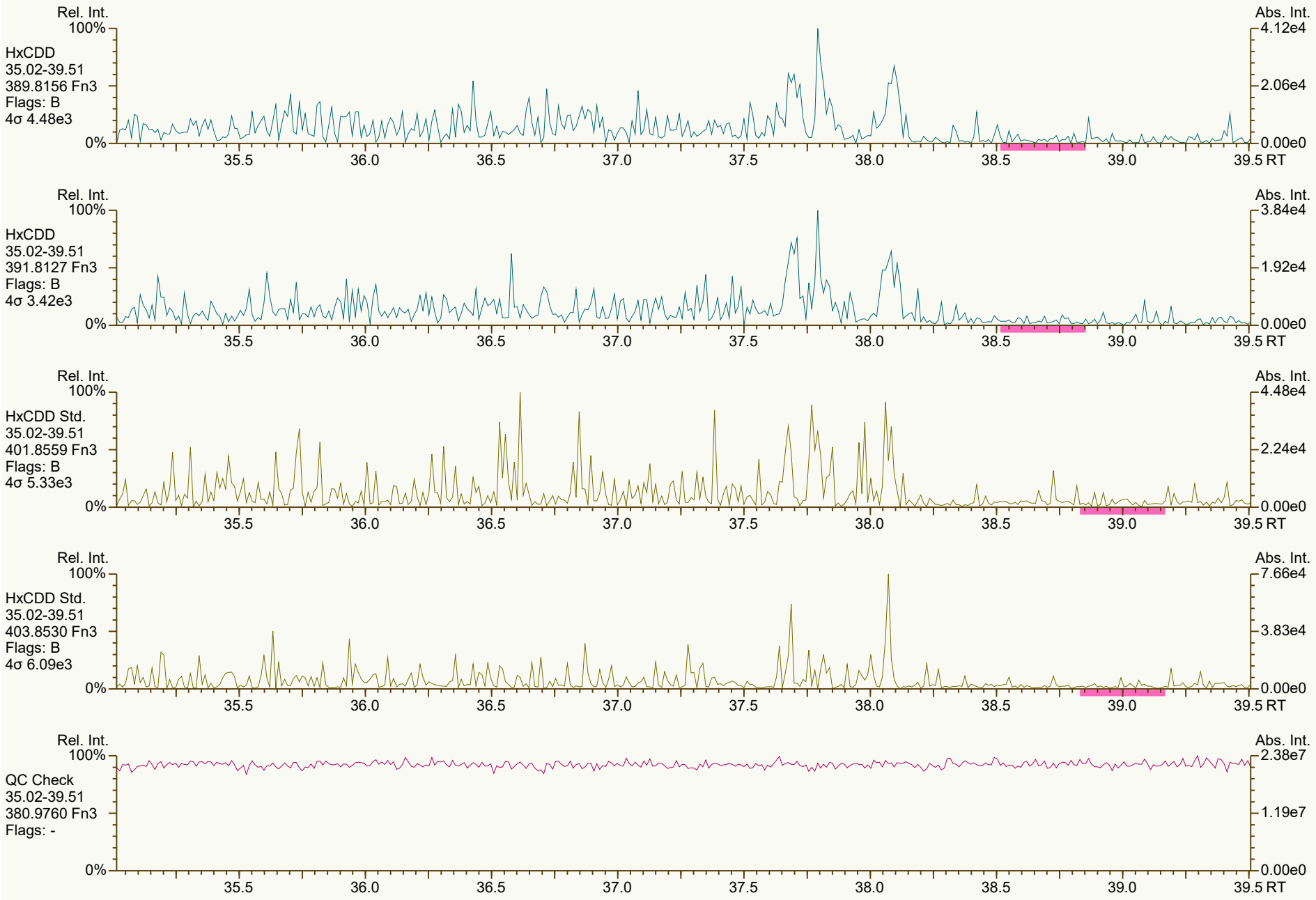

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.14e5
1234678F
1.53e9
39.77
1234789F
1.37e9
41.11
Abs. Int.
6.56e8
3.28e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.03e5
1234678F
1.47e9
39.77
1234789F
1.33e9
41.11
Abs. Int.
6.22e8
3.11e8
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.19e4
ES 1234678F
2.74e7
39.76
CS 1234689F
2.21e7
40.14
ES 1234789F
2.53e7
41.10
Abs. Int.
1.18e7
5.92e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 3.05e4
ES 1234678F
6.11e7
39.76
CS 1234689F
4.99e7
40.14
ES 1234789F
5.62e7
41.10
Abs. Int.
2.57e7
1.29e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 1.78e3
Abs. Int.
2.07e4
1.03e4
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


SGS ID: CS6_210727_DF_RA
Sample ID: SIL 25-5-2
Acq: 27-Jul-2021 13:58:27
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 90
User: PSW Datafile: 210727R08
OCDF
2.34e9
43.42
Rel. Int.
Abs. Int.
OCDF
42.27-45.01
441.7428 Fn5
Flags: PB
4σ 7.24e3
OCDF
2.58e9
43.42
OCDF
42.27-45.01
443.7398 Fn5
Flags: PB
4σ 5.16e3
ES OCDF
8.65e7
43.41
OCDF Std.
42.27-45.01
453.7830 Fn5
Flags: PB
4σ 5.57e3
RRF (ES OCDF) = (8.65e7 + 9.62e7) * 50 pg/uL = 1.06
(2.42e7 + 1.89e7) * 200 pg/uL
CL 28Jul21
ES OCDF
9.62e7
43.40
OCDF Std.
42.27-45.01
455.7801 Fn5
Flags: PB
4σ 4.42e3
DCDPE
42.27-45.01
513.6775 Fn5
Flags: B
4σ 2.00e3
42.5
43.0
43.5
44.0
44.5
45.0 RT
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS6_210727_DF_RA.utp_res, saved 27-Jul-2021 15:28 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 8670, 9652, 4309 scc: 783-472
PKD: 27-Jul-2021 14:46 Printed: 27-Jul-2021 15:32 Page 12 of 12

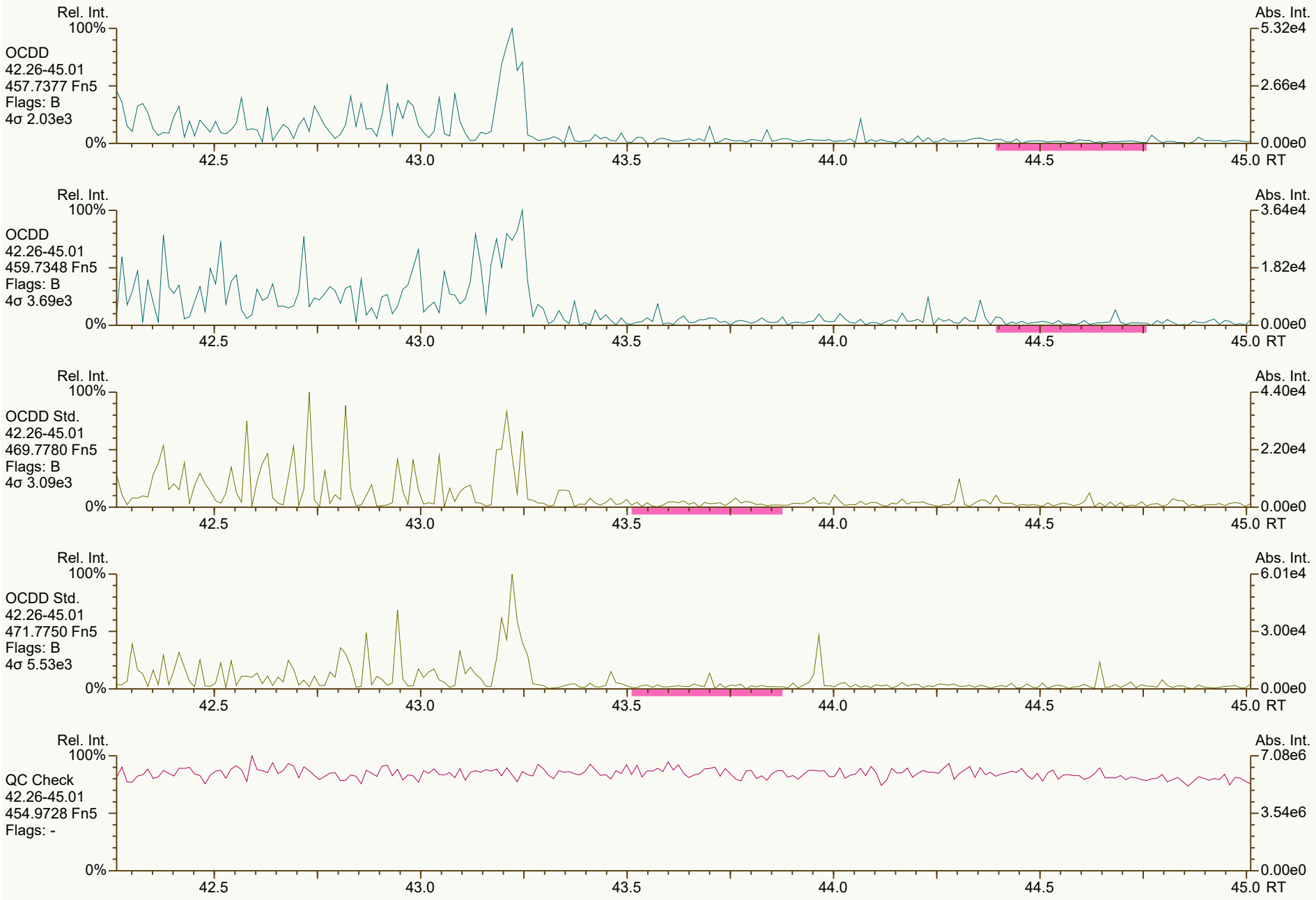

Rel. Int.
100%
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
22.29-30.76
319.8965 Fn1
Flags: B
4σ 5.46e3
0%
Abs. Int.
1.96e4
9.79e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: B
4σ 3.81e3
0%
Abs. Int.
1.72e4
8.58e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.57e4
7.86e3
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: B
4σ 1.19e4
0%
Abs. Int.
4.60e4
2.30e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: B
4σ 4.18e3
0%
Abs. Int.
4.81e4
2.40e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT


Rel. Int.
100%
PeCDD
30.77-35.00
355.8546 Fn2
Flags: B
4σ 9.54e3
0%
Abs. Int.
3.89e4
1.94e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: B
4σ 5.05e3
0%
Abs. Int.
2.54e4
1.27e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: B
4σ 5.45e3
0%
Abs. Int.
6.36e4
3.18e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: B
4σ 4.94e3
0%
Abs. Int.
2.95e4
1.48e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
3.06e6
1.53e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: B
4σ 4.48e3
0%
Abs. Int.
4.12e4
2.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: B
4σ 3.42e3
0%
Abs. Int.
3.84e4
1.92e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: B
4σ 5.33e3
0%
Abs. Int.
4.48e4
2.24e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: B
4σ 6.09e3
0%
Abs. Int.
7.66e4
3.83e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.38e7
1.19e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

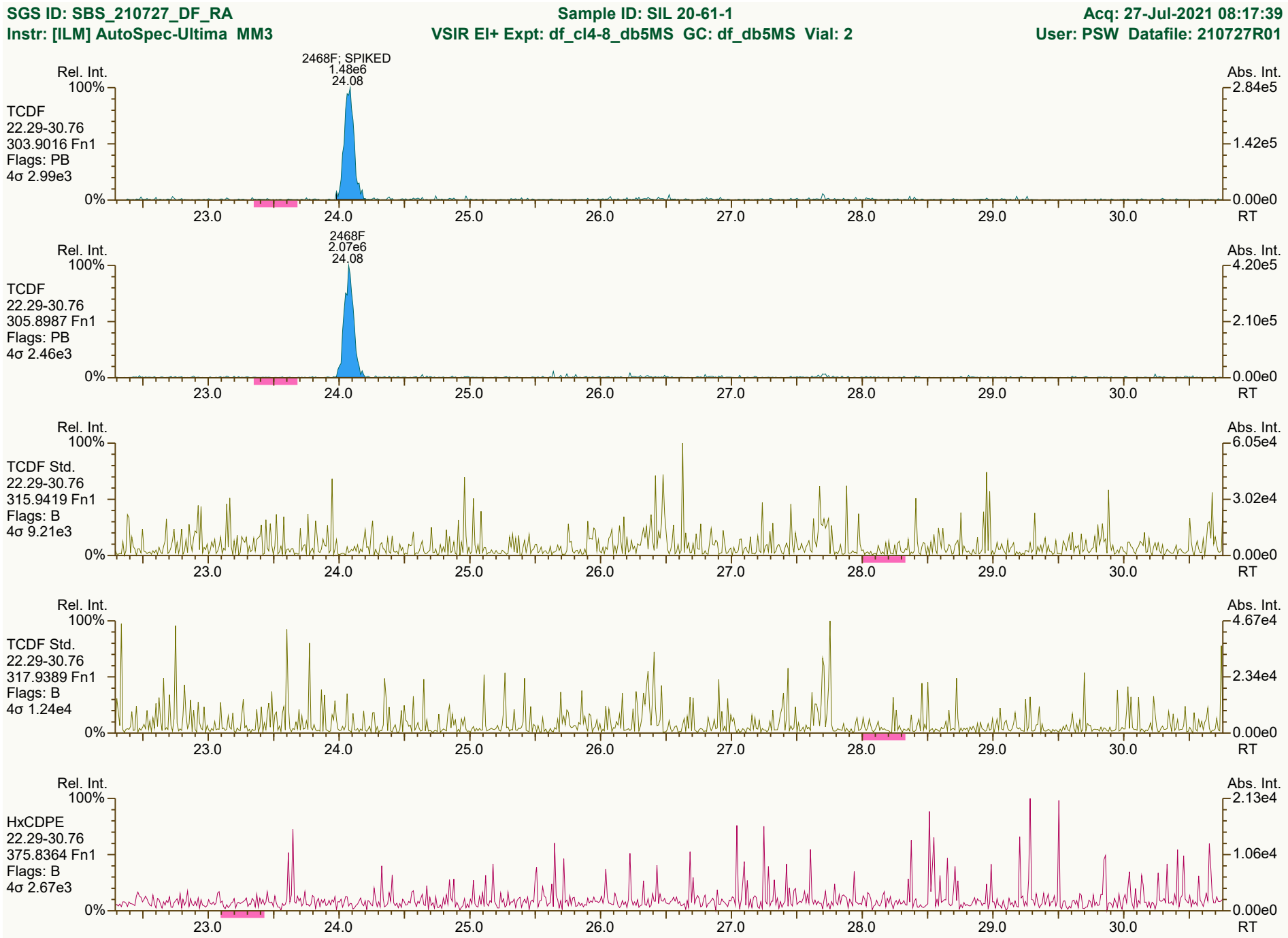

Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: B
4σ 8.10e3
0%
Abs. Int.
5.65e4
2.82e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: B
4σ 9.20e3
0%
Abs. Int.
3.29e4
1.64e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: B
4σ 7.86e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: B
4σ 3.02e3
0%
Abs. Int.
6.85e4
3.43e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.77e7
8.83e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: B
4σ 2.03e3
0%
Abs. Int.
5.32e4
2.66e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: B
4σ 3.69e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: B
4σ 3.09e3
0%
Abs. Int.
4.40e4
2.20e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: B
4σ 5.53e3
0%
Abs. Int.
6.01e4
3.00e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
7.08e6
3.54e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

SGS ID: SBS_210727_DF_RA
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 20-61-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2

Acq: 27-Jul-2021 08:17:39
User: PSW Datafile: 210727R01



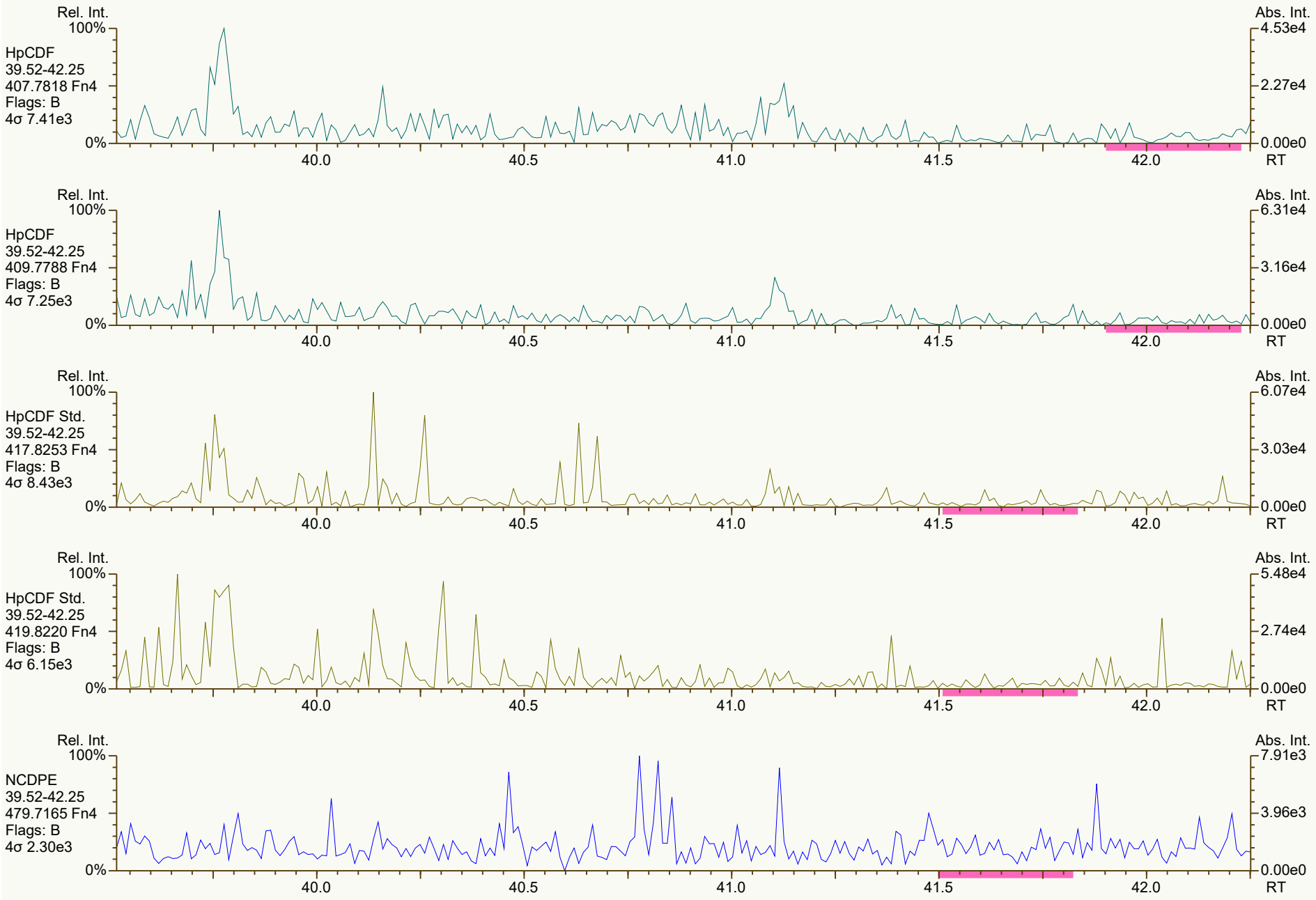
Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\SBS_210727_DF_RA.utp_res, saved 27-Jul-2021 09:16 (PSW)
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 9293, 5161, 7483 scc: 638-037

Peak annotation: Areas, Centroids
PKD: 27-Jul-2021 09:16 Printed: 27-Jul-2021 15:30 Page 7 of 12


Rel. Int.
100%
0%
Abs. Int.
3.87e4
1.94e4
0.00e0
RT
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 6.47e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
0%
Abs. Int.
3.57e4
1.78e4
0.00e0
RT
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 6.41e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
Rel. Int.
100%
0%
Abs. Int.
3.23e6
1.61e6
0.00e0
RT
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0


Rel. Int.
100%
PeCDF-2
30.77-35.00
339.8597 Fn2
Flags: B
4σ 6.52e3
0%
Abs. Int.
4.88e4
2.44e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.77-35.00
341.8568 Fn2
Flags: B
4σ 6.57e3
0%
Abs. Int.
3.28e4
1.64e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
351.9000 Fn2
Flags: B
4σ 2.11e3
0%
Abs. Int.
6.19e4
3.10e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.77-35.00
353.8970 Fn2
Flags: B
4σ 3.42e3
0%
Abs. Int.
5.42e4
2.71e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.77-35.00
409.7974 Fn2
Flags: B
4σ 2.38e3
0%
Abs. Int.
2.31e4
1.15e4
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: B
4σ 6.81e3
0%
Abs. Int.
5.46e4
2.73e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: B
4σ 4.05e3
0%
Abs. Int.
3.51e4
1.76e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: B
4σ 6.70e3
0%
Abs. Int.
4.23e4
2.11e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: B
4σ 1.33e4
0%
Abs. Int.
8.19e4
4.10e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.51e3
0%
Abs. Int.
2.13e4
1.06e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: B
4σ 7.41e3
0%
Abs. Int.
4.53e4
2.27e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: B
4σ 7.25e3
0%
Abs. Int.
6.31e4
3.16e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: B
4σ 8.43e3
0%
Abs. Int.
6.07e4
3.03e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: B
4σ 6.15e3
0%
Abs. Int.
5.48e4
2.74e4
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: B
4σ 2.30e3
0%
Abs. Int.
7.91e3
3.96e3
0.00e0
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: B
4σ 2.18e3
0%
Abs. Int.
4.13e4
2.06e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: B
4σ 1.96e3
0%
Abs. Int.
5.82e4
2.91e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: B
4σ 3.42e3
0%
Abs. Int.
6.44e4
3.22e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: B
4σ 2.75e3
0%
Abs. Int.
6.15e4
3.08e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: PB
4σ 2.12e3
0%
Abs. Int.
5.85e3
2.93e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Instrument: MM3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
15	210727R15	3	CS3_210727_DF_RB ✓	1.00	SIL 23-672-1	PSW	320-816	27-Jul-2021	19:43:55
16	210727R16	92	CS3_210727_DF_RC	1.00	ICV SIL 24-11-9 ✓	PSW	537-883	27-Jul-2021	20:31:28

REVIEWED
paul_walton , 7/28/2021, 8:29:53 AM

APPROVED
Carla_Lyon , 7/28/2021, 12:25:21 PM

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	28.53	1.67E+07	0.81	Y	1.34	1.35	0%
12378-PeCDD	33.81	6.38E+07	1.58	Y	1.06	1.06	0%
123478-HxCDD	37.68	5.49E+07	1.25	Y	1.06	1.06	1%
123678-HxCDD	37.79	5.63E+07	1.26	Y	1.08	1.10	2%
123789-HxCDD	38.08	5.86E+07	1.24	Y	1.02	1.00	-2%
1234678-HpCDD	40.66	4.96E+07	1.04	Y	0.97	0.98	0%
OCDD	43.23	8.27E+07	0.89	Y	1.07	1.07	0%
2378-TCDF	27.67	2.12E+07	0.80	Y	0.96	0.97	1%
12378-PeCDF	32.38	8.71E+07	1.57	Y	0.95	0.97	2%
23478-PeCDF	33.47	7.79E+07	1.46	Y	0.94	0.92	-2%
123478-HxCDF	36.69	7.88E+07	1.25	Y	1.23	1.25	2%
123678-HxCDF	36.83	8.26E+07	1.26	Y	1.13	1.13	0%
234678-HxCDF	37.49	7.73E+07	1.25	Y	1.15	1.18	2%
123789-HxCDF	38.43	6.95E+07	1.26	Y	1.14	1.13	0%
1234678-HpCDF	39.77	7.02E+07	1.03	Y	1.36	1.34	-2%
1234789-HpCDF	41.11	5.97E+07	1.05	Y	1.30	1.36	5%
OCDF	43.41	9.92E+07	0.91	Y	1.03	1.06	3%
ES 2378-TCDD	28.50	1.24E+08	0.80	Y	1.03	1.03	-1%
ES 12378-PeCDD	33.788	1.20E+08	1.66	Y	1.03	0.99	-4%
ES 123478-HxCDD	37.661	1.03E+08	1.29	Y	0.99	0.98	-1%
ES 123678-HxCDD	37.775	1.02E+08	1.32	Y	0.97	0.97	0%
ES 123789-HxCDD	38.065	1.17E+08	1.31	Y	1.12	1.12	-1%
ES 1234678-HpCDD	40.653	1.01E+08	1.07	Y	0.99	0.96	-3%
ES OCDD	43.218	1.54E+08	0.91	Y	0.78	0.73	-6%
ES 2378-TCDF	27.65	2.18E+08	0.77	Y	1.08	1.07	-1%
ES 12378-PeCDF	32.362	1.80E+08	1.58	Y	0.93	0.89	-5%
ES 23478-PeCDF	33.452	1.68E+08	1.62	Y	0.92	0.83	-10%
ES 123478-HxCDF	36.669	1.26E+08	0.54	Y	1.14	1.19	4%
ES 123678-HxCDF	36.809	1.47E+08	0.50	Y	1.30	1.39	7%
ES 234678-HxCDF	37.476	1.31E+08	0.52	Y	1.20	1.25	4%
ES 123789-HxCDF	38.411	1.23E+08	0.52	Y	1.14	1.17	3%
ES 1234678-HpCDF	39.758	1.05E+08	0.47	Y	0.95	1.00	5%
ES 1234789-HpCDF	41.102	8.75E+07	0.45	Y	0.85	0.83	-2%
ES OCDF	43.399	1.88E+08	0.89	Y	0.93	0.89	-4%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 19:43 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RB	UTP: 28-Jul-2021 08:16:58 PSW	Checkcode: 320-816-PRY
Sample ID: SIL 23-672-1	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R15

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	1.21E+08	0.79	Y	-	-	-
JS 1234-TCDF	26.33	2.03E+08	0.78	Y	-	-	-
JS 123467-HxCDD	37.97	5.27E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.31	1.28	-2%
CS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.89	0.87	-3%
CS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.87	0.86	-1%
CS 123469-HxCDF	37.12	1.22E+08	0.52	Y	1.09	1.16	7%
CS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.86	0.90	4%
SS 37Cl-2378-TCDD	28.53	1.55E+07	n/a	-	1.26	1.25	-1%
SS 12347-PeCDD	33.30	1.05E+08	1.66	Y	0.86	0.87	1%
SS 12346-PeCDF	31.84	1.75E+08	1.58	Y	0.93	0.97	4%
SS 123469-HxCDF	37.12	1.22E+08	0.52	Y	0.84	0.83	-1%
SS 1234689-HpCDF	40.14	9.48E+07	0.44	Y	0.91	0.90	-1%
~~OCDD-a~~	~~43.22~~	~~4.70E+06~~	~~2.62~~	~~Y~~	~~0.07~~	~~0.06~~	~~-8%~~
~~OCDF-a~~	~~43.41~~	~~5.40E+06~~	~~2.31~~	~~Y~~	~~0.06~~	~~0.06~~	~~-3%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	10	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32	-	1.78	Y	50.1	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	50.3	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05	-	1.43	Y	50.9	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	49.1	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88	-	1.20	Y	50.1	40	-	60	Y
OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	10.1	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32	-	1.78	Y	51.2	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32	-	1.78	Y	49.2	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	50.8	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	51.1	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.8	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.1	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88	-	1.20	Y	52.4	40	-	60	Y
OCDF	M+2/M+4	0.91	0.76	-	1.02	Y	103	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	70	-	130	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	70	-	130	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	140	-	260	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	10	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.58	1.32 - 1.78	Y	50.1	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	50.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	50.9	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	49.1	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.04	0.88 - 1.20	Y	50.1	43 - 58	Y
OCDD	M+2/M+4	0.89	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	10.1	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32 - 1.78	Y	51.2	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.46	1.32 - 1.78	Y	49.2	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	50.8	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	51.1	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.8	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.1	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88 - 1.20	Y	52.4	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	103	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

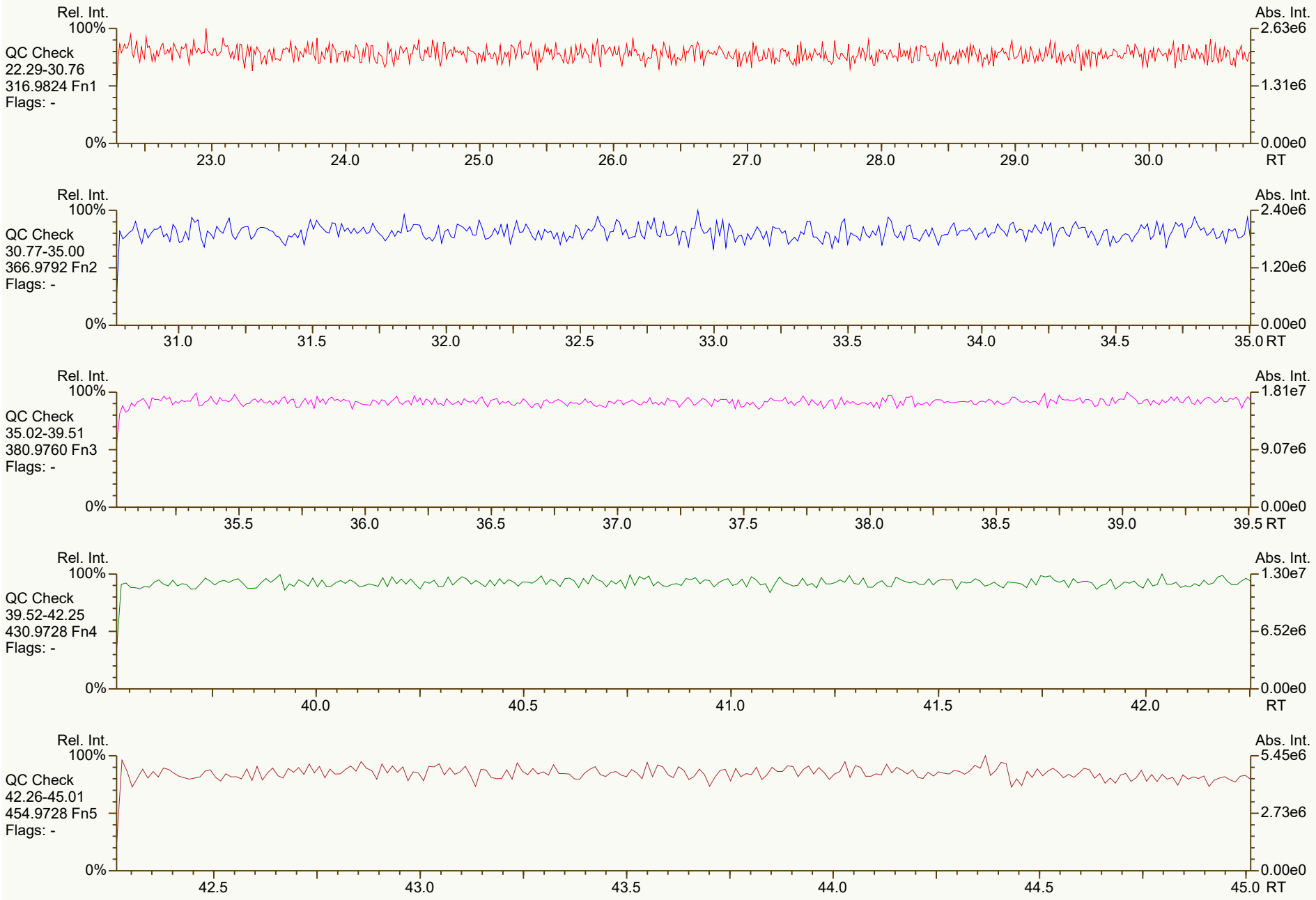
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R15 Analysis Date: 27-JUL-2021 19:43:55

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.80	0.65	-	0.89	Y	99.2	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	96.1	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	98.7	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.32	1.05	-	1.43	Y	99.8	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.31	1.05	-	1.43	Y	99.2	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.07	0.88	-	1.20	Y	97.1	72	-	138	Y
13C-OCDD	M+2/M+4	0.91	0.76	-	1.02	Y	188	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	98.9	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	94.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32	-	1.78	Y	89.9	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	104	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	105	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	98.1	77	-	129	Y
13C-OCDF	M+2/M+4	0.89	0.76	-	1.02	Y	193	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						9.78	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.66	1.32	-	1.78	Y	97	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99.1	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	107	70	-	130	Y
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.44	0.37	-	0.51	Y	104	70	-	130	Y

Processed: 28 Jul 2021 08:18 Analyst: pw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100%
0%
Abs. Int.
2.63e6
1.31e6
0.00e0
RT
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
2.40e6
1.20e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.81e7
9.07e6
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.30e7
6.52e6
40.0
40.5
41.0
41.5
42.0
QC Check
42.26-45.01
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44.0
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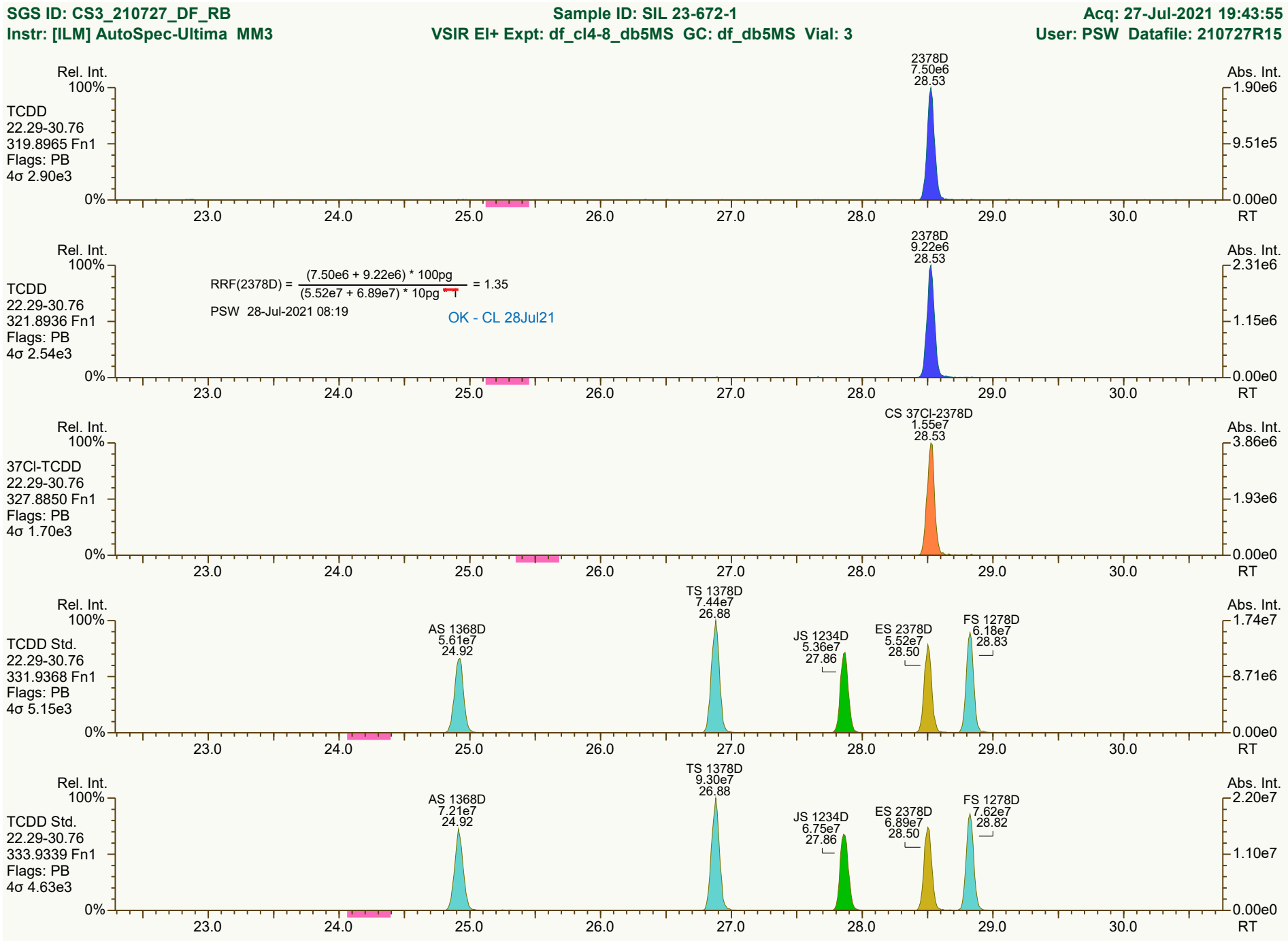
45.0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Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15
Rel. Int.
Abs. Int.
TCDD
22.29-30.76
319.8965 Fn1
Flags: PB
4σ 2.90e3
2378D
7.50e6
28.53
1.90e6
9.51e5
0.00e0
RT
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.54e3
RRF(2378D) = (7.50e6 + 9.22e6) * 100pg / (5.52e7 + 6.89e7) * 10pg = 1.35
PSW 28-Jul-2021 08:19
OK - CL 28Jul21
2378D
9.22e6
28.53
2.31e6
1.15e6
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: PB
4σ 1.70e3
CS 37Cl-2378D
1.55e7
28.53
3.86e6
1.93e6
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.15e3
AS 1368D
5.61e7
24.92
TS 1378D
7.44e7
26.88
JS 1234D
5.36e7
27.86
ES 2378D
5.52e7
28.50
FS 1278D
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28.83
1.74e7
8.71e6
TCDD Std.
22.29-30.76
333.9339 Fn1
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TS 1378D
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27.86
ES 2378D
6.89e7
28.50
FS 1278D
7.62e7
28.82
2.20e7
1.10e7
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25.0
26.0
27.0
28.0
29.0
30.0
0%
100%
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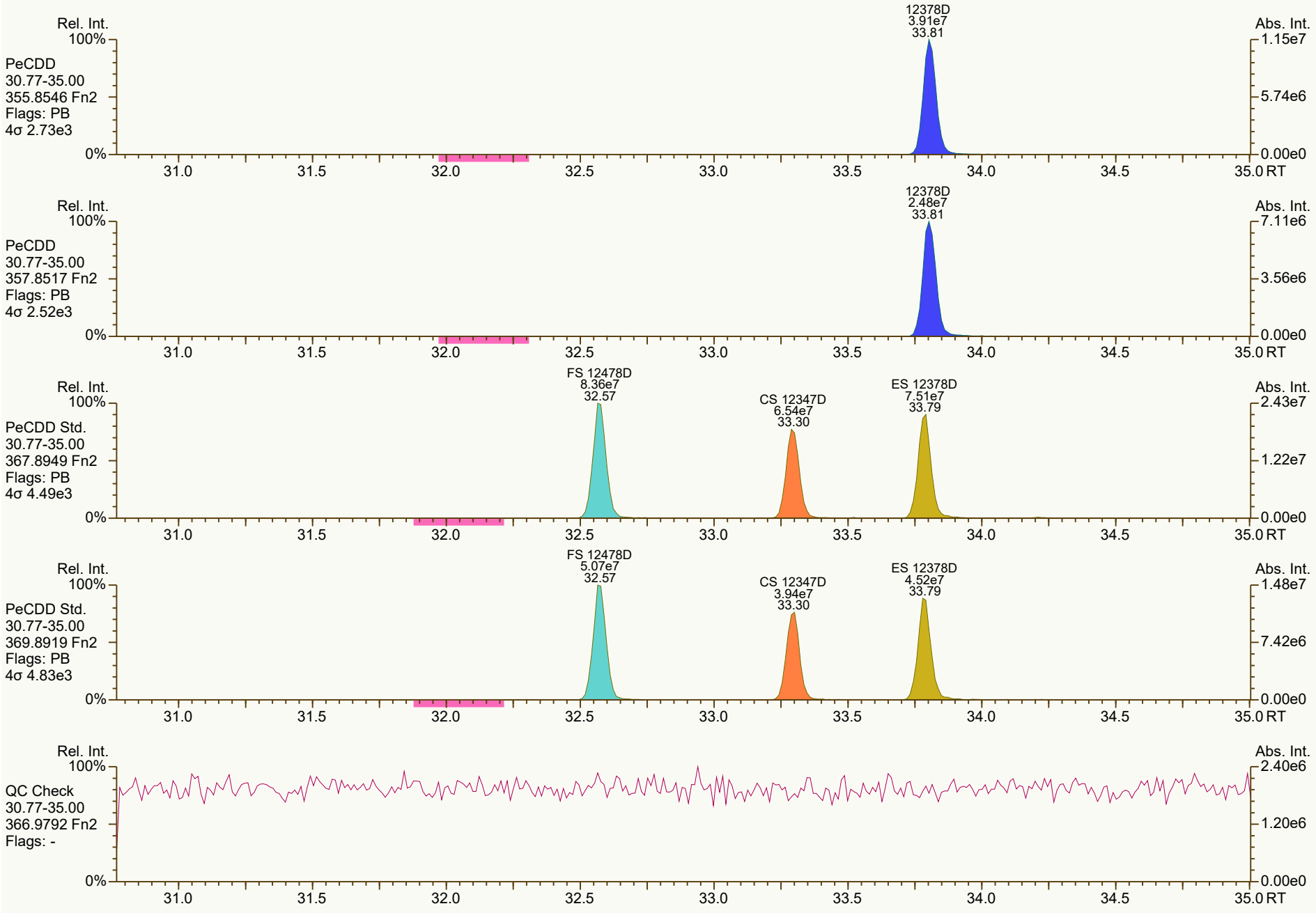
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 2864, 8257, 5037 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:20 Page 2 of 12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Flags: PB
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0%
12378D
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33.81
Abs. Int.
1.15e7
5.74e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.52e3
0%
12378D
2.48e7
33.81
Abs. Int.
7.11e6
3.56e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 4.49e3
0%
FS 12478D
8.36e7
32.57
CS 12347D
6.54e7
33.30
ES 12378D
7.51e7
33.79
Abs. Int.
2.43e7
1.22e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
5.07e7
32.57
CS 12347D
3.94e7
33.30
ES 12378D
4.52e7
33.79
Abs. Int.
1.48e7
7.42e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.40e6
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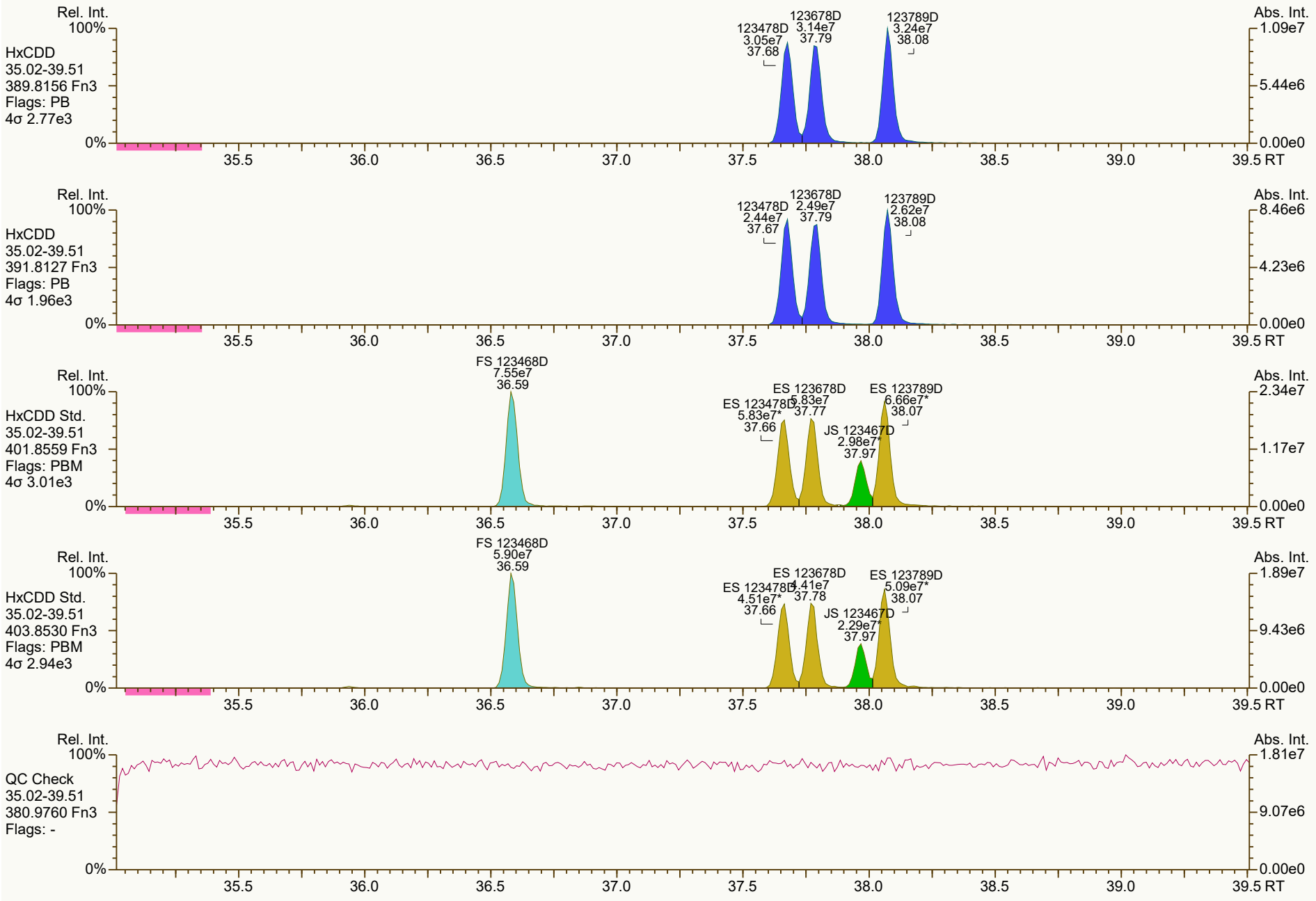
34.0
34.5
35.0 RT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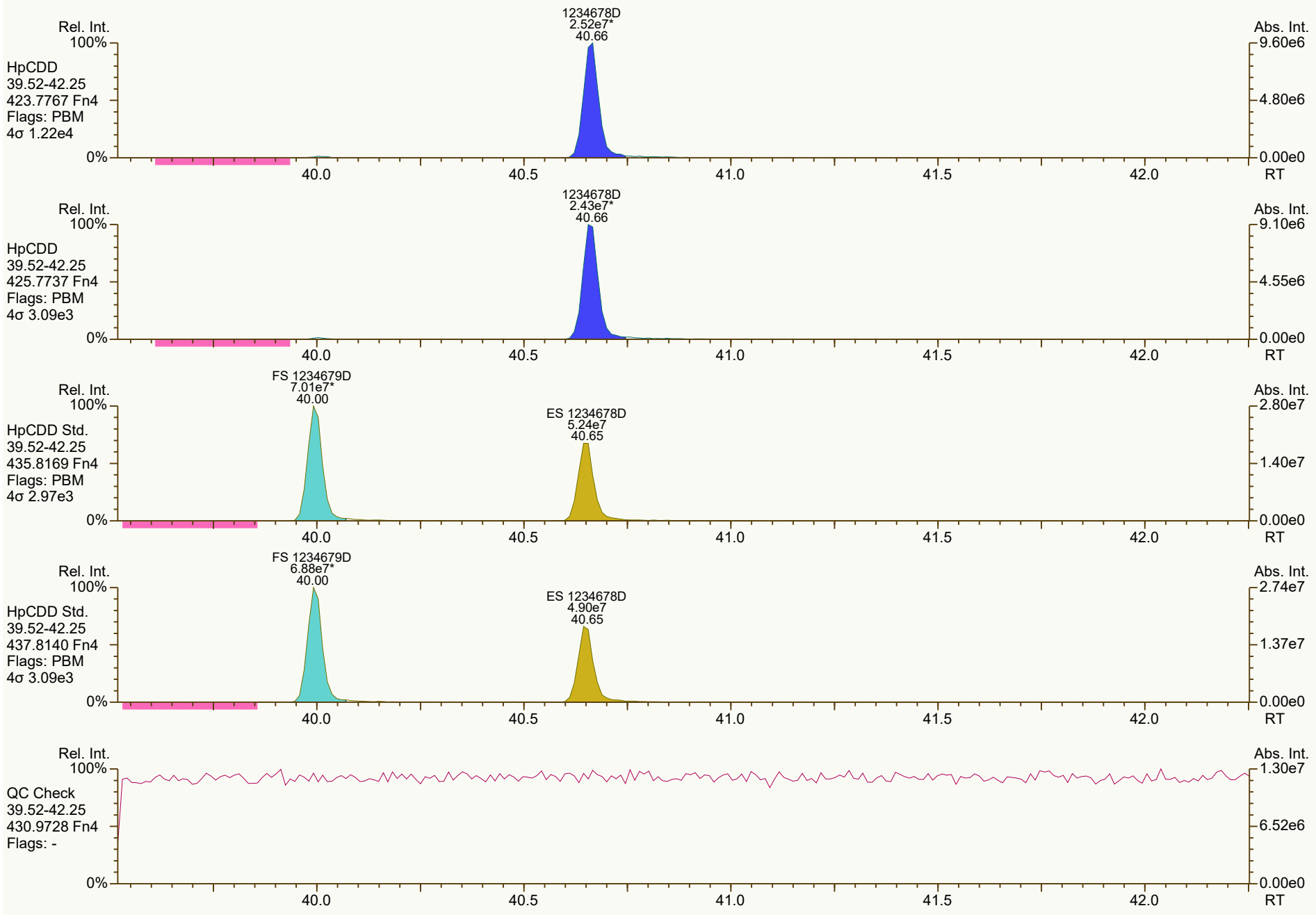
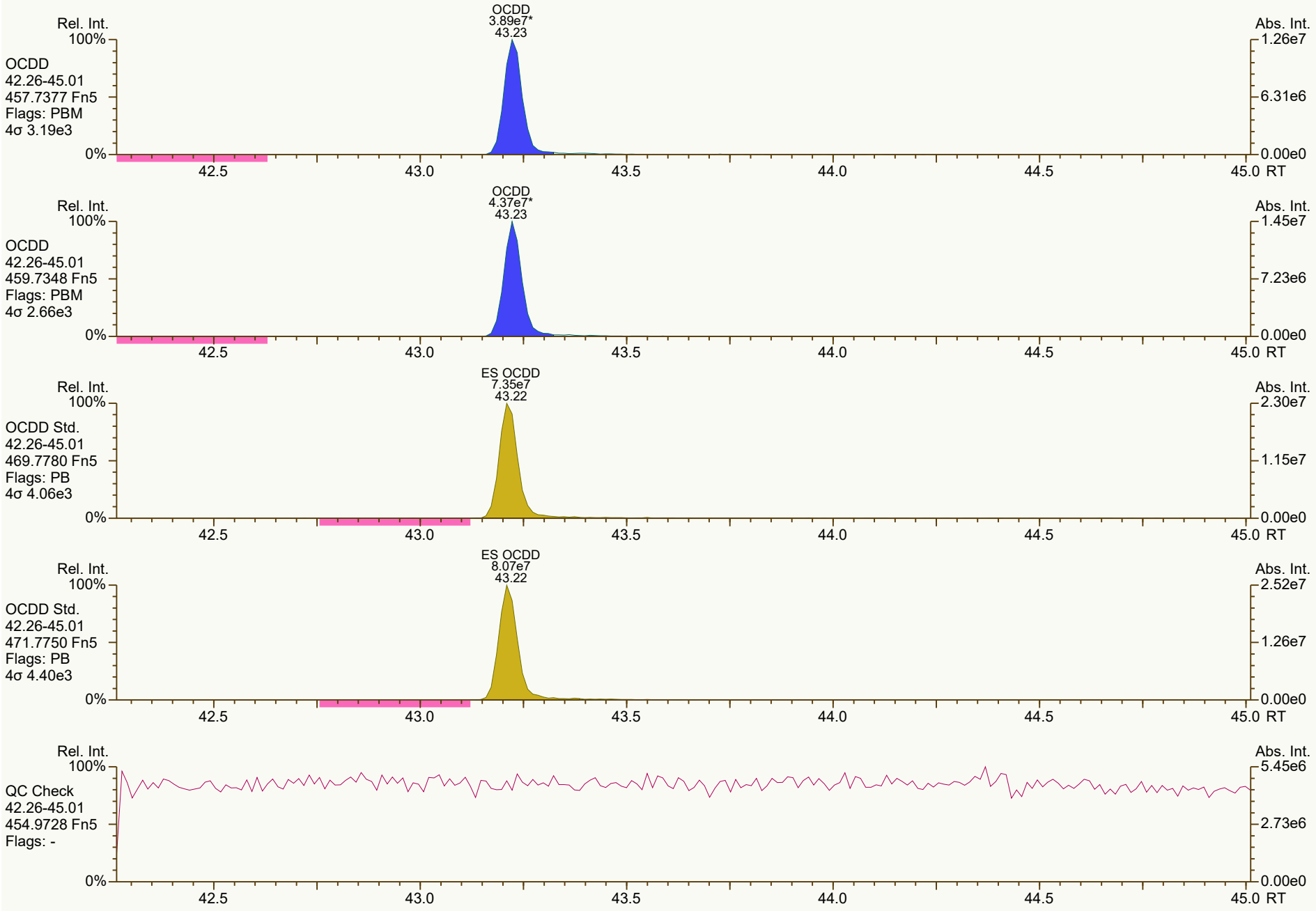
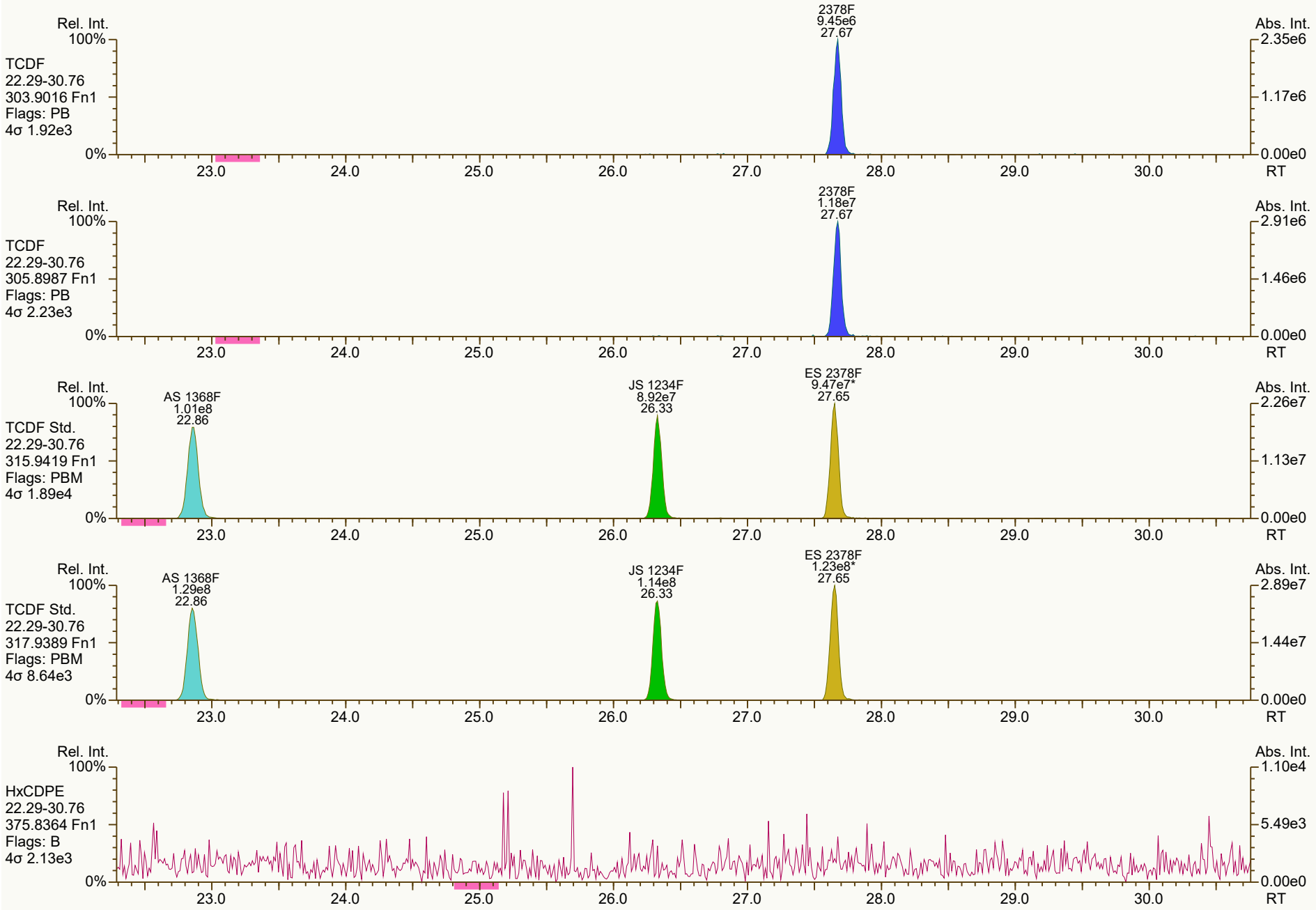
389.8156 Fn3
Flags: PB
4σ 2.77e3
123478D 3.05e7 37.68
123678D 3.14e7 37.79
123789D 3.24e7 38.08
Abs. Int.
1.09e7
5.44e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 39.5 RT
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 1.96e3
123478D 2.44e7 37.67
123678D 2.49e7 37.79
123789D 2.62e7 38.08
8.46e6
4.23e6
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PBM
4σ 3.01e3
FS 123468D 7.55e7 36.59
ES 123478D 5.83e7* 37.66
ES 123678D 5.83e7 37.77
JS 123467D 2.98e7* 37.97
ES 123789D 6.66e7* 38.07
2.34e7
1.17e7
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PBM
4σ 2.94e3
FS 123468D 5.90e7 36.59
ES 123478D 4.51e7* 37.66
ES 123678D 4.41e7 37.78
JS 123467D 2.29e7* 37.97
ES 123789D 5.09e7* 38.07
1.89e7
9.43e6
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
1.81e7
9.07e6


Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PBM
4σ 1.22e4
0%
1234678D
2.52e7*
40.66
Abs. Int.
9.60e6
4.80e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
Rel. Int.
100%
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PBM
4σ 3.09e3
0%
1234678D
2.43e7*
40.66
Abs. Int.
9.10e6
4.55e6
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 2.97e3
0%
FS 1234679D
7.01e7*
40.00
ES 1234678D
5.24e7
40.65
Abs. Int.
2.80e7
1.40e7
0.00e0
RT
Rel. Int.
100%
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 3.09e3
0%
FS 1234679D
6.88e7*
40.00
ES 1234678D
4.90e7
40.65
Abs. Int.
2.74e7
1.37e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.30e7
6.52e6
0.00e0
RT


OCDD
3.89e7*
43.23
Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 3.19e3
0%
Abs. Int.
1.26e7
6.31e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.37e7*
43.23
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 2.66e3
1.45e7
7.23e6
ES OCDD
7.35e7
43.22
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PB
4σ 4.06e3
2.30e7
1.15e7
ES OCDD
8.07e7
43.22
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PB
4σ 4.40e3
2.52e7
1.26e7
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
5.45e6
2.73e6


Rel. Int.
100%
0%
Abs. Int.
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDF
22.29-30.76
303.9016 Fn1
Flags: PB
4σ 1.92e3
2378F
9.45e6
27.67
2.35e6
1.17e6
0.00e0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PB
4σ 2.23e3
2378F
1.18e7
27.67
2.91e6
1.46e6
0.00e0
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PBM
4σ 1.89e4
AS 1368F
1.01e8
22.86
JS 1234F
8.92e7
26.33
ES 2378F
9.47e7*
27.65
2.26e7
1.13e7
0.00e0
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PBM
4σ 8.64e3
AS 1368F
1.29e8
22.86
JS 1234F
1.14e8
26.33
ES 2378F
1.23e8*
27.65
2.89e7
1.44e7
0.00e0
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.13e3
1.10e4
5.49e3
0.00e0

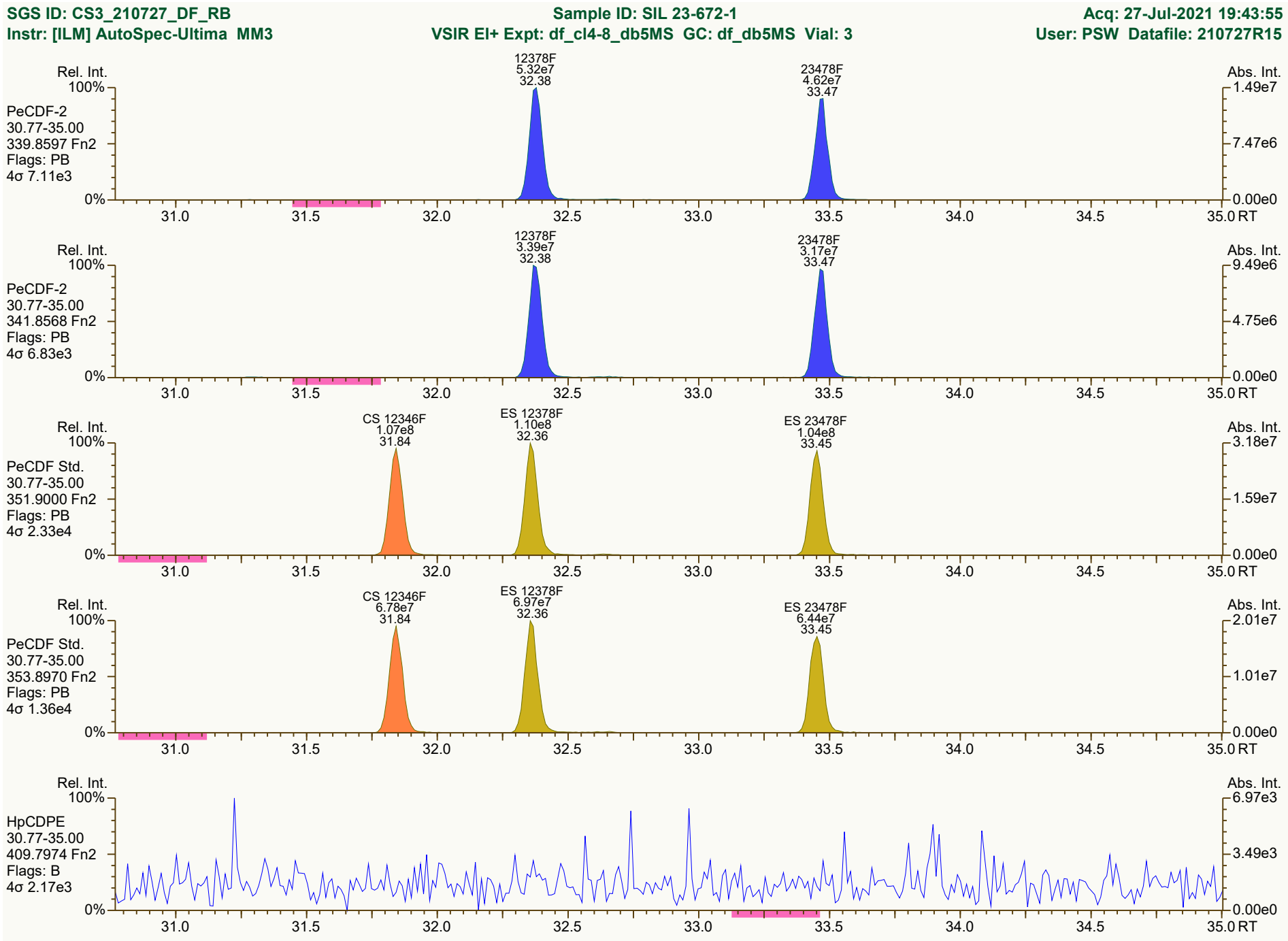
SGS ID: CS3_210727_DF_RB
Sample ID: SIL 23-672-1
Acq: 27-Jul-2021 19:43:55
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: PSW Datafile: 210727R15



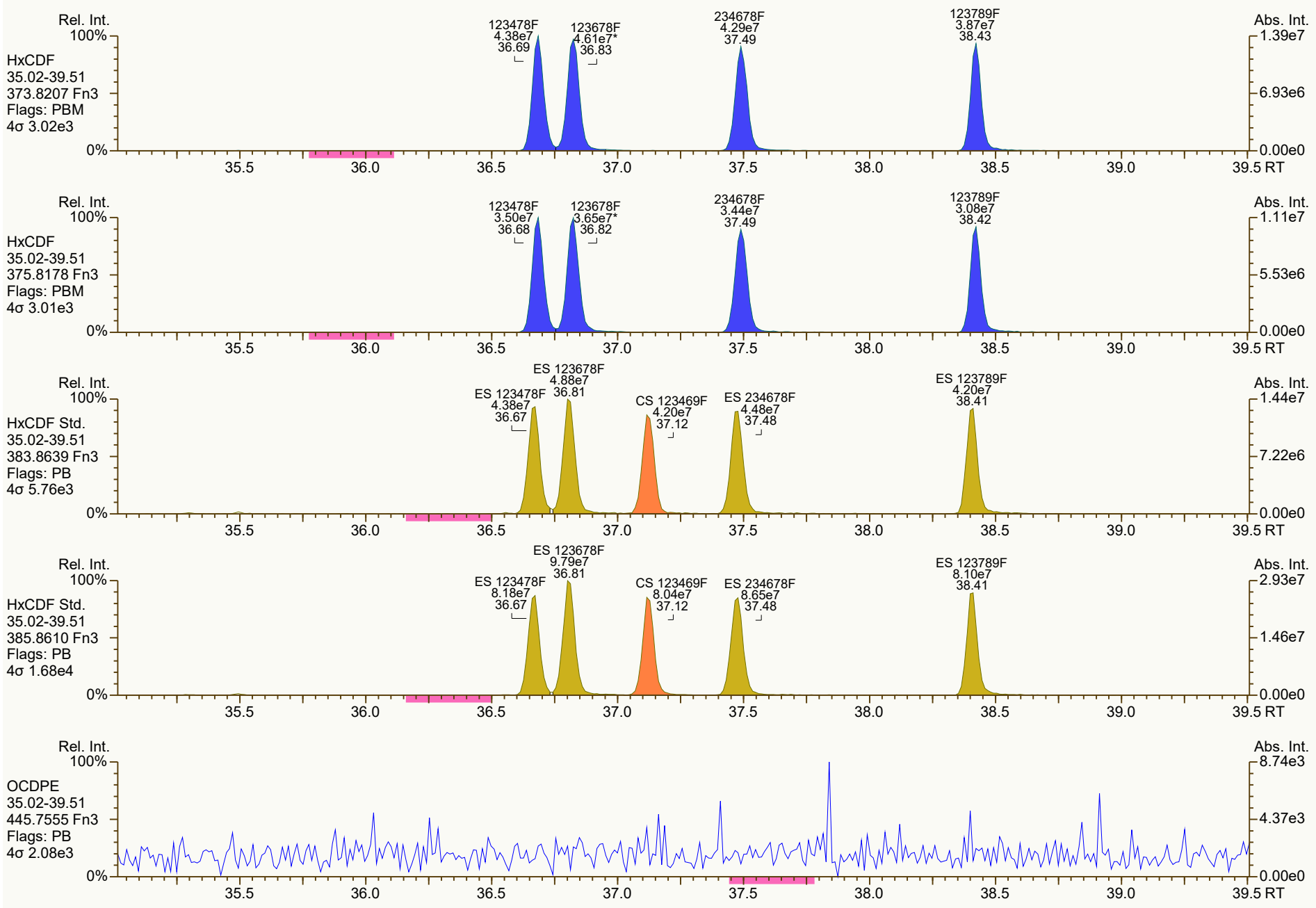
SGS ID: CS3_210727_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

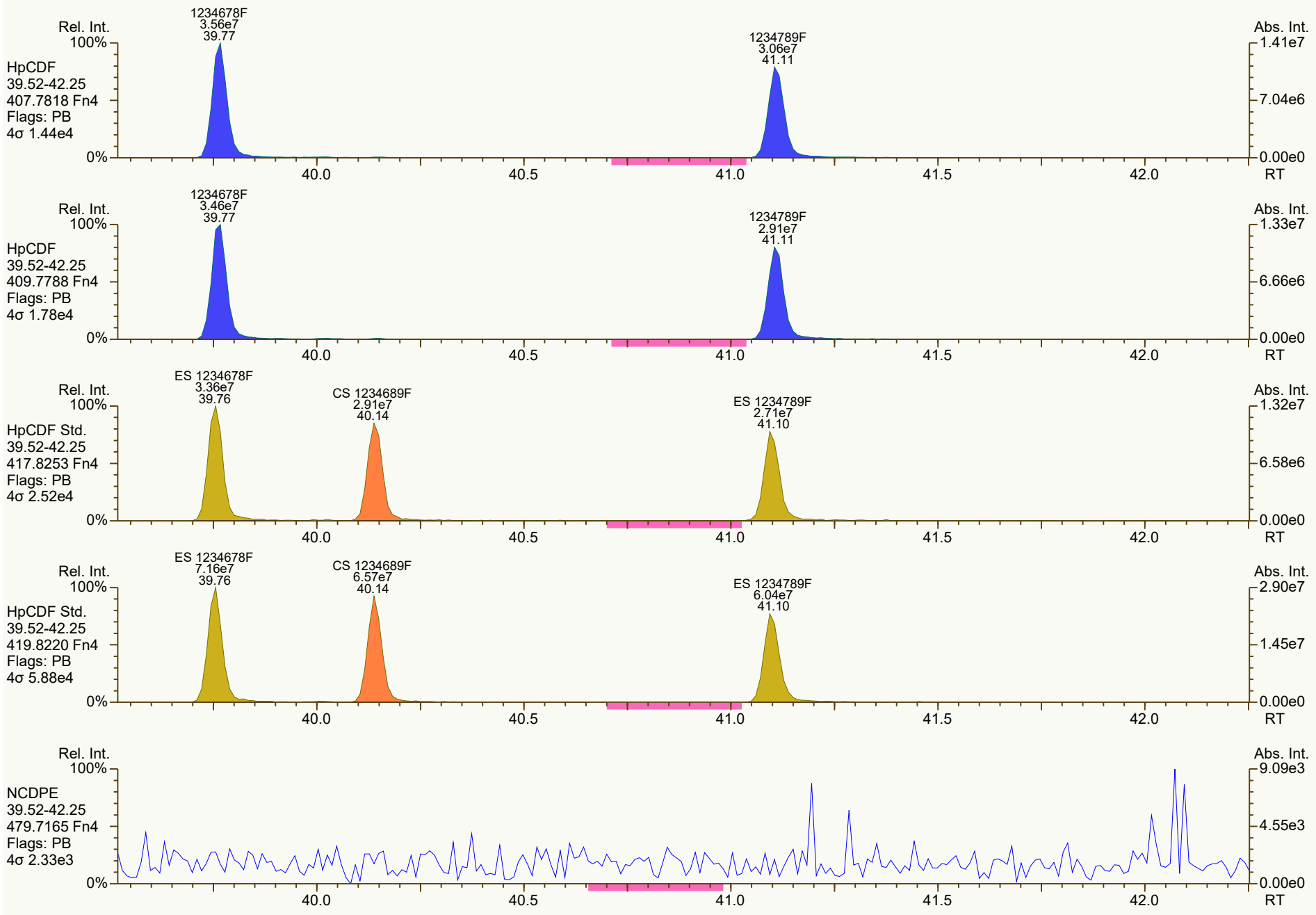
Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 27-Jul-2021 19:43:55
User: PSW Datafile: 210727R15



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 1037, 5263, 2332 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 9 of 12

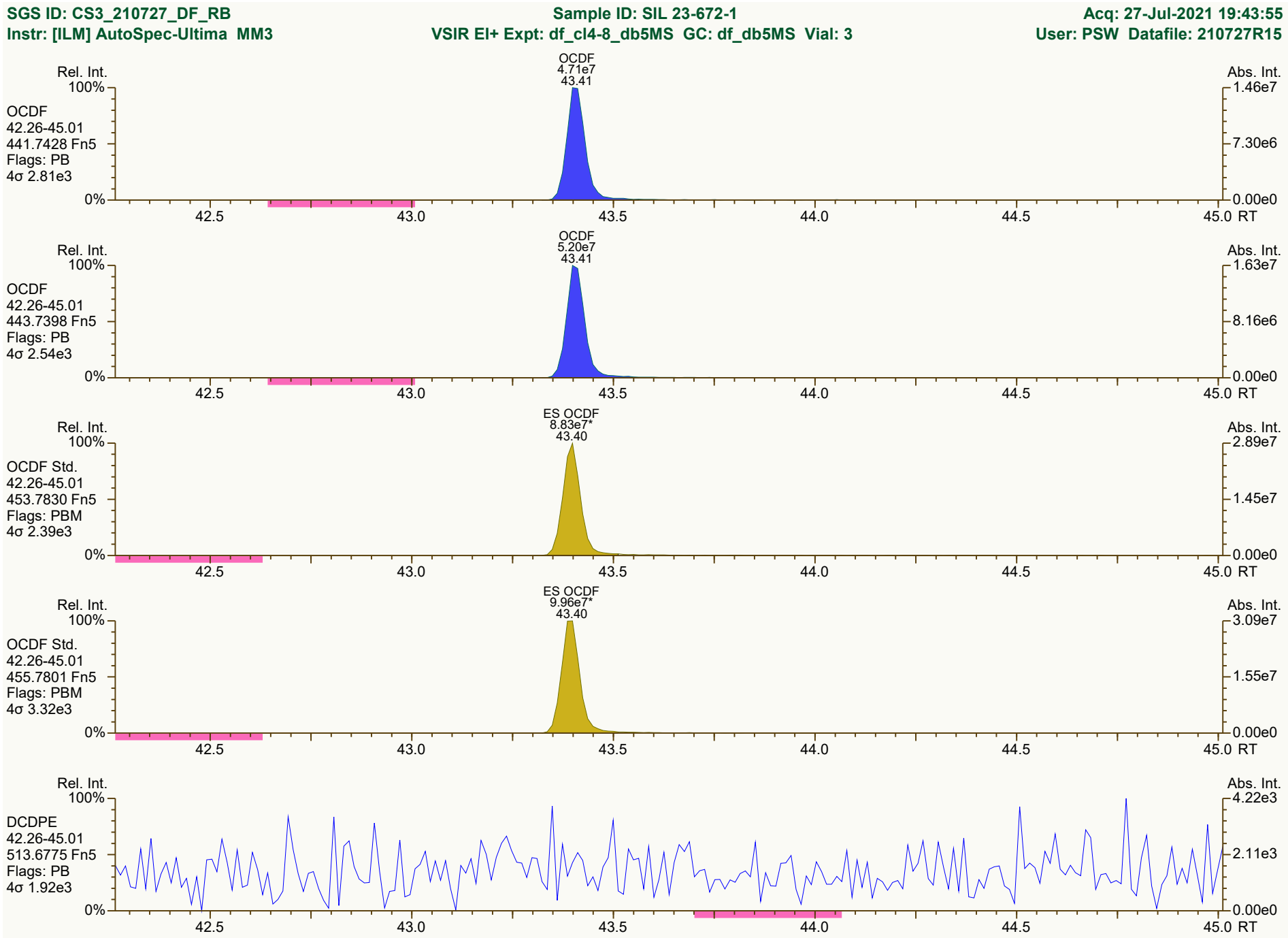

Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 3.02e3
0%
123478F
4.38e7
36.69
123678F
4.61e7*
36.83
234678F
4.29e7
37.49
123789F
3.87e7
38.43
Abs. Int.
1.39e7
6.93e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 3.01e3
0%
123478F
3.50e7
36.68
123678F
3.65e7*
36.82
234678F
3.44e7
37.49
123789F
3.08e7
38.42
Abs. Int.
1.11e7
5.53e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PB
4σ 5.76e3
0%
ES 123678F
4.88e7
36.81
ES 123478F
4.38e7
36.67
CS 123469F
4.20e7
37.12
ES 234678F
4.48e7
37.48
ES 123789F
4.20e7
38.41
Abs. Int.
1.44e7
7.22e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PB
4σ 1.68e4
0%
ES 123678F
9.79e7
36.81
ES 123478F
8.18e7
36.67
CS 123469F
8.04e7
37.12
ES 234678F
8.65e7
37.48
ES 123789F
8.10e7
38.41
Abs. Int.
2.93e7
1.46e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: PB
4σ 2.08e3
0%
Abs. Int.
8.74e3
4.37e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT


Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.44e4
1234678F
3.56e7
39.77
1234789F
3.06e7
41.11
Abs. Int.
1.41e7
7.04e6
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.78e4
1234678F
3.46e7
39.77
1234789F
2.91e7
41.11
1.33e7
6.66e6
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.52e4
ES 1234678F
3.36e7
39.76
CS 1234689F
2.91e7
40.14
ES 1234789F
2.71e7
41.10
1.32e7
6.58e6
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 5.88e4
ES 1234678F
7.16e7
39.76
CS 1234689F
6.57e7
40.14
ES 1234789F
6.04e7
41.10
2.90e7
1.45e7
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.33e3
9.09e3
4.55e3

SGS ID: CS3_210727_DF_RB
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: SIL 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 27-Jul-2021 19:43:55
User: PSW Datafile: 210727R15



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RB.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 6396, 9005, 0471 scc: 320-816
PKD: 28-Jul-2021 08:11 Printed: 28-Jul-2021 08:21 Page 12 of 12

Dioxin/Furan QC Summary		Acq'd: 27 Jul 2021 20:31 PSW				ICAL: MM3_DF_10272021_27JUL2021	
Lab ID: CS3_210727_DF_RC		UTP: 28-Jul-2021 08:16:59 PSW				Checkcode: 537-883-PJZ	
Sample ID: ICV SIL 24-11-9		Report: 28 Jul 2021 08:18 pw				Datafile: 210727R16	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.53	2.48E+07	0.79	Y	1.34	1.22	-9%
12378-PeCDD	33.81	9.55E+07	1.55	Y	1.06	0.98	-8%
123478-HxCDD	37.68	8.89E+07	1.25	Y	1.06	1.04	-1%
123678-HxCDD	37.80	9.70E+07	1.25	Y	1.08	1.14	5%
123789-HxCDD	38.09	9.52E+07	1.24	Y	1.02	0.95	-7%
1234678-HpCDD	40.67	8.40E+07	1.03	Y	0.97	0.99	1%
OCDD	43.24	1.45E+08	0.90	Y	1.07	1.07	0%
2378-TCDF	27.68	3.32E+07	0.79	Y	0.96	0.95	-1%
12378-PeCDF	32.38	1.28E+08	1.52	Y	0.95	0.87	-8%
23478-PeCDF	33.48	1.47E+08	1.58	Y	0.94	1.00	6%
123478-HxCDF	36.69	1.27E+08	1.27	Y	1.23	1.25	1%
123678-HxCDF	36.83	1.34E+08	1.26	Y	1.13	1.11	-2%
234678-HxCDF	37.50	1.26E+08	1.24	Y	1.15	1.17	1%
123789-HxCDF	38.43	1.13E+08	1.25	Y	1.14	1.10	-3%
1234678-HpCDF	39.77	1.18E+08	1.02	Y	1.36	1.34	-2%
1234789-HpCDF	41.12	9.93E+07	1.03	Y	1.30	1.29	-1%
OCDF	43.42	1.67E+08	0.90	Y	1.03	1.02	-1%
ES 2378-TCDD	28.51	2.04E+08	0.81	Y	1.03	0.96	-7%
ES 12378-PeCDD	33.795	1.95E+08	1.65	Y	1.03	0.92	-11%
ES 123478-HxCDD	37.667	1.70E+08	1.28	Y	0.99	0.98	-2%
ES 123678-HxCDD	37.781	1.70E+08	1.29	Y	0.97	0.97	0%
ES 123789-HxCDD	38.071	2.01E+08	1.25	Y	1.12	1.15	2%
ES 1234678-HpCDD	40.656	1.70E+08	1.05	Y	0.99	0.97	-2%
ES OCDD	43.225	2.69E+08	0.90	Y	0.78	0.77	-1%
ES 2378-TCDF	27.654	3.51E+08	0.77	Y	1.08	0.99	-9%
ES 12378-PeCDF	32.366	2.97E+08	1.58	Y	0.93	0.84	-10%
ES 23478-PeCDF	33.459	2.95E+08	1.56	Y	0.92	0.84	-9%
ES 123478-HxCDF	36.673	2.04E+08	0.52	Y	1.14	1.17	2%
ES 123678-HxCDF	36.814	2.41E+08	0.53	Y	1.30	1.38	7%
ES 234678-HxCDF	37.481	2.17E+08	0.52	Y	1.20	1.24	3%
ES 123789-HxCDF	38.414	2.06E+08	0.52	Y	1.14	1.18	4%
ES 1234678-HpCDF	39.764	1.76E+08	0.46	Y	0.95	1.01	6%
ES 1234789-HpCDF	41.106	1.54E+08	0.45	Y	0.85	0.88	4%
ES OCDF	43.408	3.28E+08	0.88	Y	0.93	0.94	2%

Dioxin/Furan QC Summary	Acq'd: 27 Jul 2021 20:31 PSW	ICAL: MM3_DF_10272021_27JUL2021
Lab ID: CS3_210727_DF_RC	UTP: 28-Jul-2021 08:16:59 PSW	Checkcode: 537-883-PJZ
Sample ID: ICV SIL 24-11-9	Report: 28 Jul 2021 08:18 pw	Datafile: 210727R16

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.87	2.13E+08	0.81	Y	-	-	-
JS 1234-TCDF	26.33	3.53E+08	0.79	Y	-	-	-
JS 123467-HxCDD	37.97	8.73E+07	1.21	Y	-	-	-
~~OCDD-a~~	~~43.23~~	~~9.07E+06~~	~~2.21~~	~~Y~~	~~0.07~~	~~0.07~~	~~2%~~
~~OCDF-a~~	~~43.42~~	~~9.95E+06~~	~~2.34~~	~~Y~~	~~0.06~~	~~0.06~~	~~2%~~

Not reported from this ICAL - CL 28Jul21

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	M/M+2	0.79	0.65	-	0.89	Y	9.05	8	-	12	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	46.2	40	-	60	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	49.4	40	-	60	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	52.7	40	-	60	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05	-	1.43	Y	46.7	40	-	60	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88	-	1.20	Y	50.7	40	-	60	Y
OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	100	80	-	120	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65	-	0.89	Y	9.87	8	-	12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32	-	1.78	Y	45.8	40	-	60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	53.1	40	-	60	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05	-	1.43	Y	50.5	40	-	60	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05	-	1.43	Y	49.2	40	-	60	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05	-	1.43	Y	50.6	40	-	60	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05	-	1.43	Y	48.4	40	-	60	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88	-	1.20	Y	49.2	40	-	60	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88	-	1.20	Y	49.7	40	-	60	Y
OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	99.5	80	-	120	Y

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 8290A **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	70	-	130	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	70	-	130	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	70	-	130	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	70	-	130	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	70	-	130	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	140	-	260	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	70	-	130	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	70	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	70	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	70	-	130	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	130	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	70	-	130	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	70	-	130	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	70	-	130	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	70	-	130	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	140	-	260	Y
CLEANUP STANDARDS n/a - CL 28Jul21											
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:17 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.79	0.65 - 0.89	Y	9.05	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32 - 1.78	Y	46.2	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	49.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	52.7	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.24	1.05 - 1.43	Y	46.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88 - 1.20	Y	50.7	43 - 58	Y
OCDD	M+2/M+4	0.90	0.76 - 1.02	Y	100	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.79	0.65 - 0.89	Y	9.87	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.52	1.32 - 1.78	Y	45.8	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	53.1	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	50.5	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	49.2	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05 - 1.43	Y	50.6	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.25	1.05 - 1.43	Y	48.4	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	49.2	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.03	0.88 - 1.20	Y	49.7	43 - 58	Y
OCDF	M+2/M+4	0.90	0.76 - 1.02	Y	99.5	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 28 Jul 2021 08:18 Analyst: pw

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

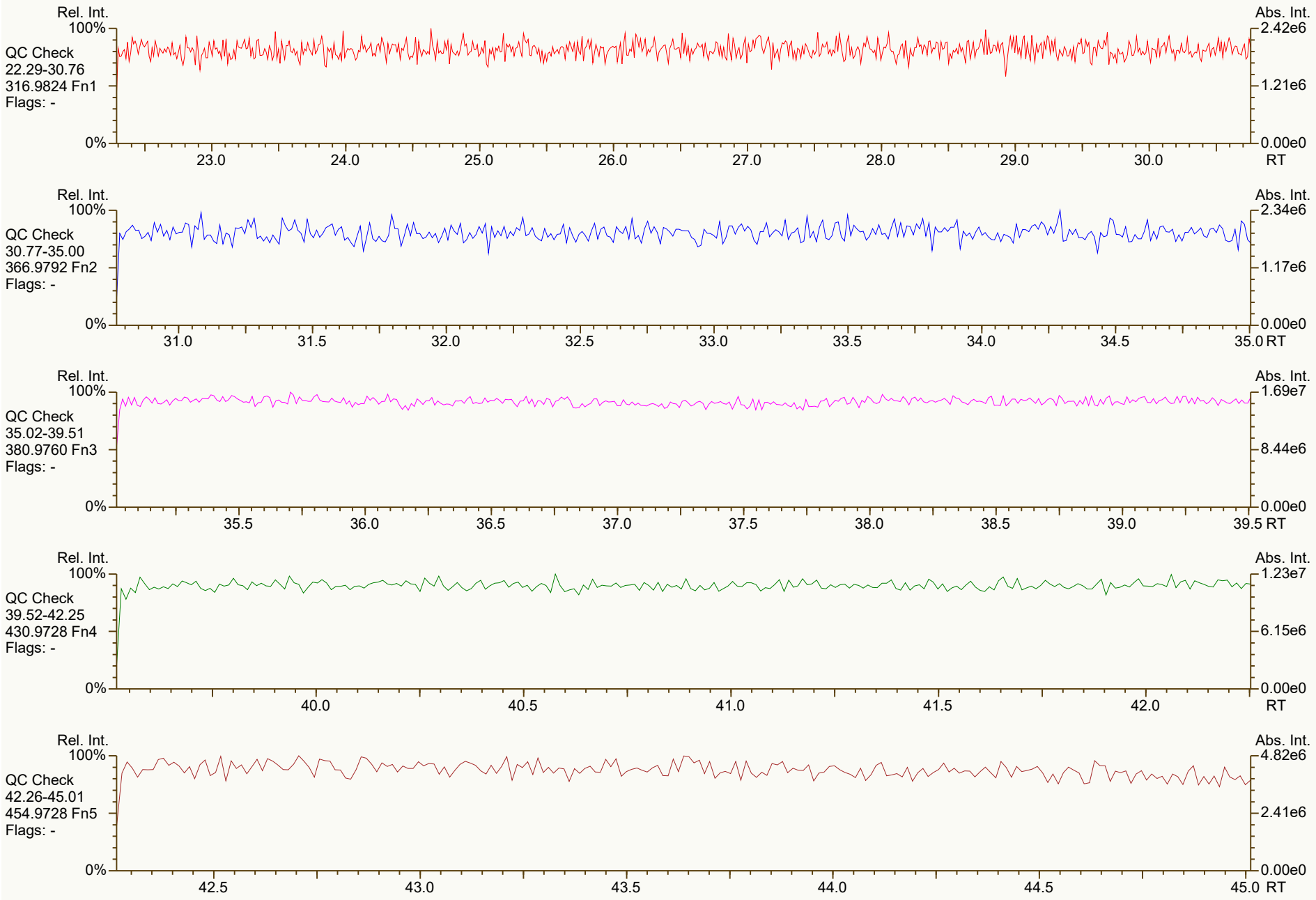
Initial Calibration: ICAL: MM3_DF_10272021_27JUL2021

Instrument ID: MM3 GC Column ID: ZB-5ms

VER Data Filename: 210727R16 Analysis Date: 27-JUL-2021 20:31:28

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	92.9	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.65	1.32	-	1.78	Y	88.8	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05	-	1.43	Y	98.1	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	100	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05	-	1.43	Y	102	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88	-	1.20	Y	98.2	72	-	138	Y
13C-OCDD	M+2/M+4	0.90	0.76	-	1.02	Y	198	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.77	0.65	-	0.89	Y	91.5	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	89.8	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	90.5	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	102	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	107	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	103	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43	-	0.59	Y	104	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	106	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	104	77	-	129	Y
13C-OCDF	M+2/M+4	0.88	0.76	-	1.02	Y	203	96	-	415	Y
CLEANUP STANDARDS	n/a - CL 28Jul21										
~~37Cl-2,3,7,8-TCDD~~	~~n/a~~						~~0~~	~~7.9~~	~~-~~	~~12.7~~	~~N~~
~~13C-1,2,3,4,7-PeCDD~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6-PeCDF~~	~~M+2/M+4~~	~~0.00~~	~~1.32~~	~~-~~	~~1.78~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,9-HxCDF~~	~~M/M+2~~	~~0.00~~	~~0.43~~	~~-~~	~~0.59~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~
~~13C-1,2,3,4,6,8,9-HpCDF~~	~~M/M+2~~	~~0.00~~	~~0.37~~	~~-~~	~~0.51~~	~~N~~	~~0~~	~~70~~	~~-~~	~~130~~	~~N~~

Processed: 28 Jul 2021 08:18 Analyst: pw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316.9824 Fn1
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1.21e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.69e7
8.44e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.23e7
6.15e6
0.00e0
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
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0%
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42.5
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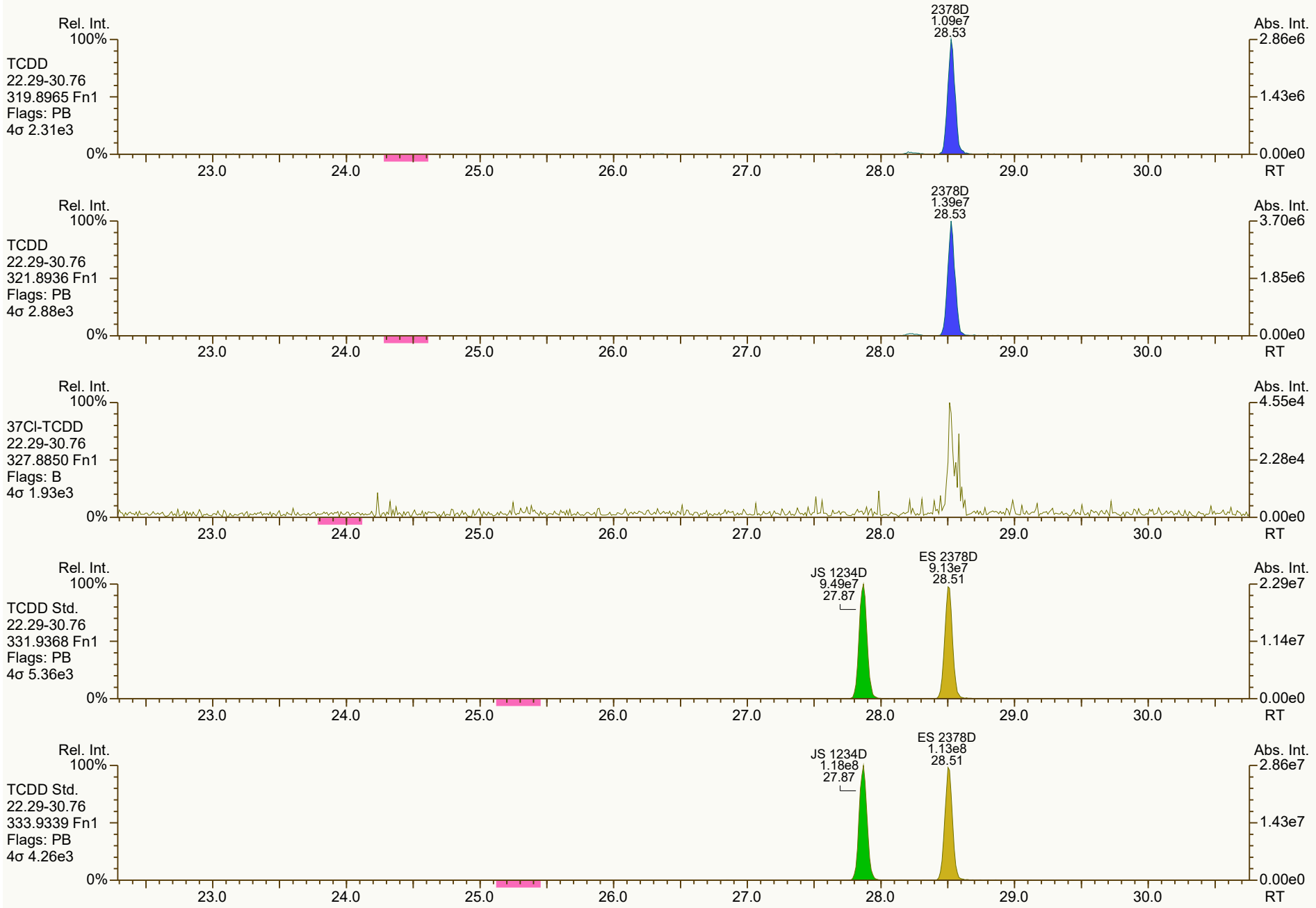
45.0 RT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TCDD
22.29-30.76
319.8965 Fn1
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4σ 2.31e3
0%
2378D
1.09e7
28.53
Abs. Int.
2.86e6
1.43e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD
22.29-30.76
321.8936 Fn1
Flags: PB
4σ 2.88e3
0%
2378D
1.39e7
28.53
Abs. Int.
3.70e6
1.85e6
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
22.29-30.76
327.8850 Fn1
Flags: B
4σ 1.93e3
0%
Abs. Int.
4.55e4
2.28e4
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
331.9368 Fn1
Flags: PB
4σ 5.36e3
0%
JS 1234D
9.49e7
27.87
ES 2378D
9.13e7
28.51
Abs. Int.
2.29e7
1.14e7
0.00e0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
TCDD Std.
22.29-30.76
333.9339 Fn1
Flags: PB
4σ 4.26e3
0%
JS 1234D
1.18e8
27.87
ES 2378D
1.13e8
28.51
Abs. Int.
2.86e7
1.43e7
0.00e0
23.0
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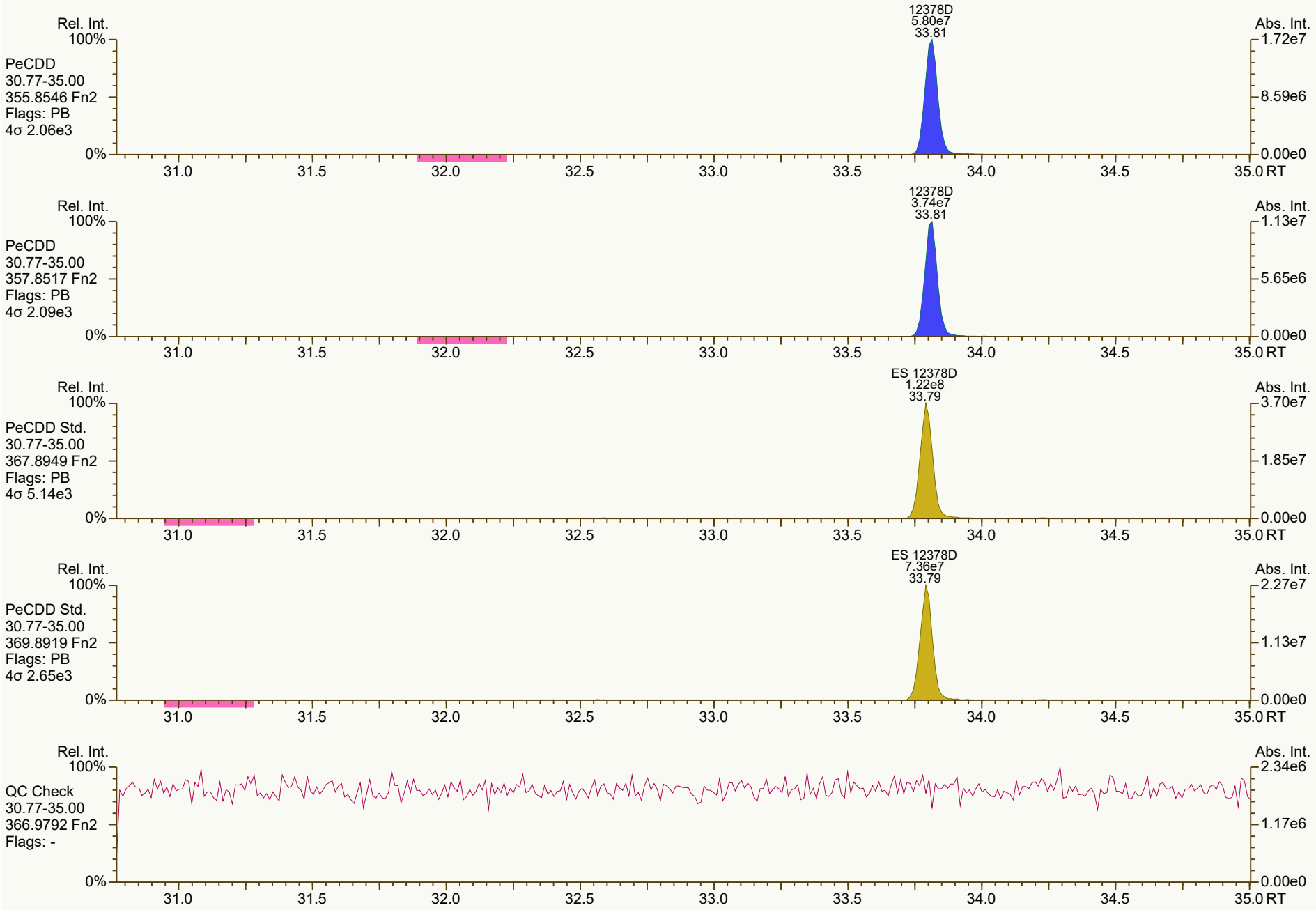
25.0
26.0
27.0
28.0
29.0
30.0
RT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355.8546 Fn2
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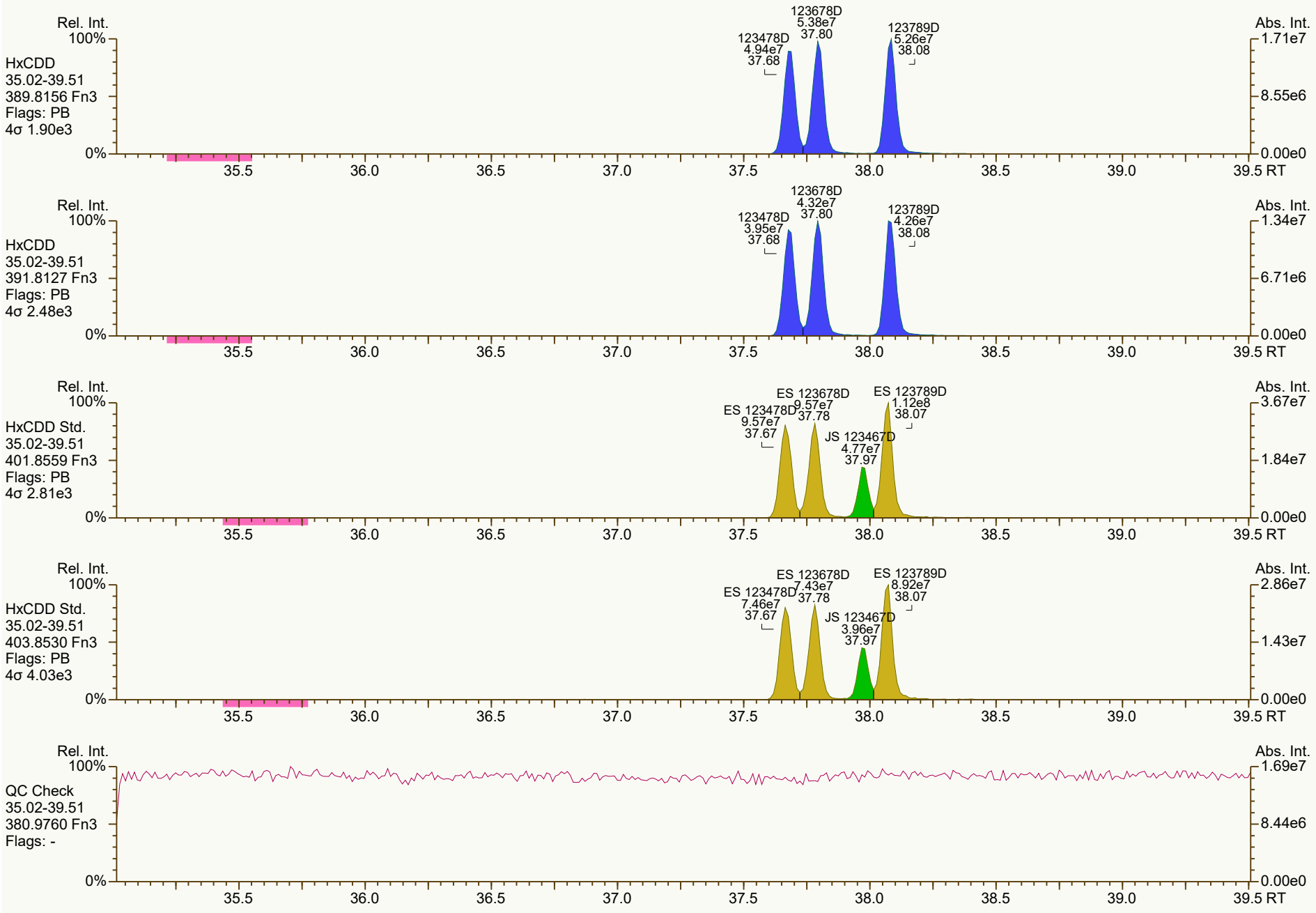
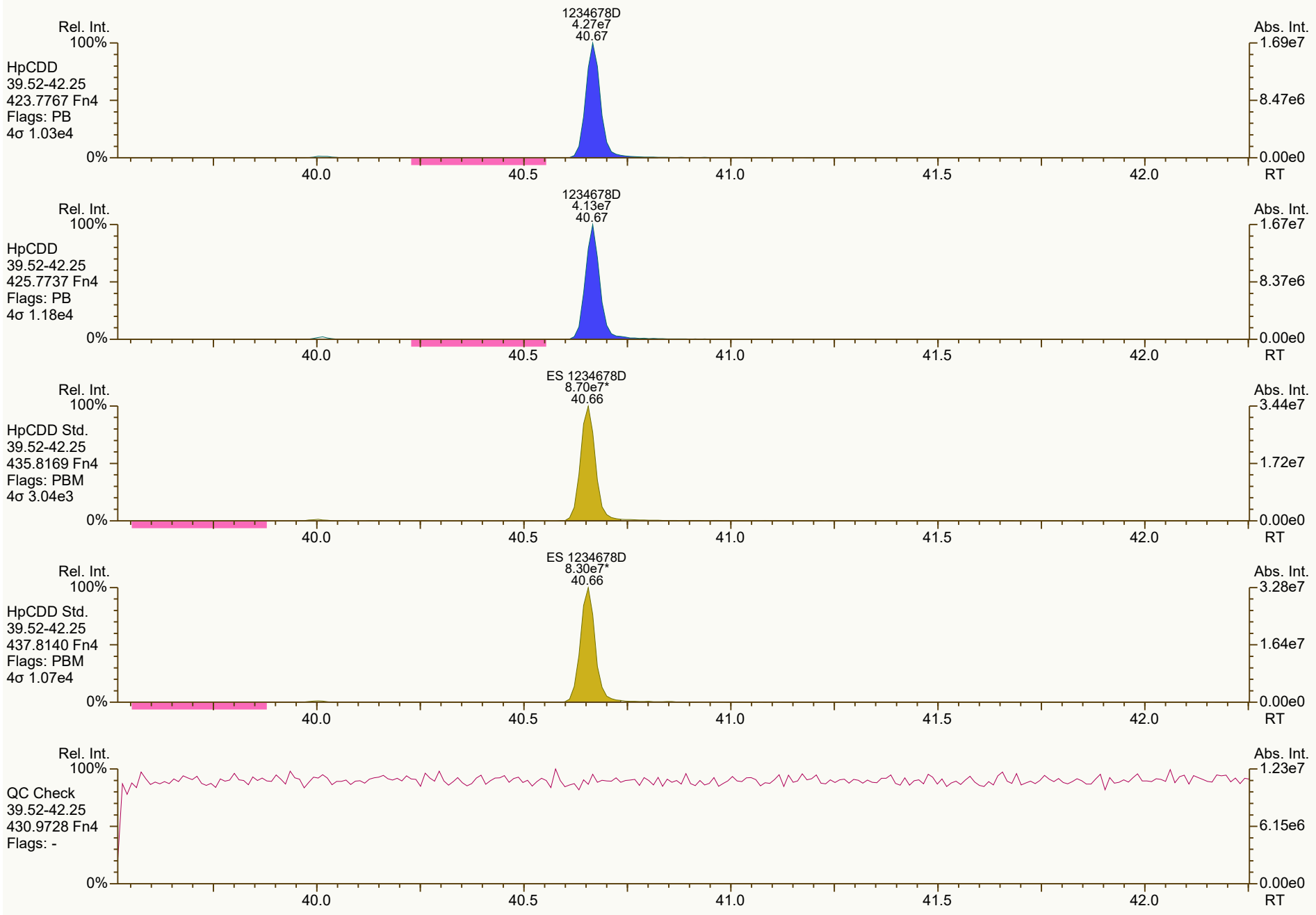
0%
12378D
5.80e7
33.81
Abs. Int.
1.72e7
8.59e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.77-35.00
357.8517 Fn2
Flags: PB
4σ 2.09e3
0%
12378D
3.74e7
33.81
Abs. Int.
1.13e7
5.65e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
367.8949 Fn2
Flags: PB
4σ 5.14e3
0%
ES 12378D
1.22e8
33.79
Abs. Int.
3.70e7
1.85e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.77-35.00
369.8919 Fn2
Flags: PB
4σ 2.65e3
0%
ES 12378D
7.36e7
33.79
Abs. Int.
2.27e7
1.13e7
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.77-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDD
35.02-39.51
389.8156 Fn3
Flags: PB
4σ 1.90e3
123678D
5.38e7
37.80
123478D
4.94e7
37.68
123789D
5.26e7
38.08
Abs. Int.
1.71e7
8.55e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD
35.02-39.51
391.8127 Fn3
Flags: PB
4σ 2.48e3
123678D
4.32e7
37.80
123478D
3.95e7
37.68
123789D
4.26e7
38.08
Abs. Int.
1.34e7
6.71e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
401.8559 Fn3
Flags: PB
4σ 2.81e3
ES 123678D
9.57e7
37.78
ES 123478D
9.57e7
37.67
ES 123789D
1.12e8
38.07
JS 123467D
4.77e7
37.97
Abs. Int.
3.67e7
1.84e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDD Std.
35.02-39.51
403.8530 Fn3
Flags: PB
4σ 4.03e3
ES 123678D
7.43e7
37.78
ES 123478D
7.46e7
37.67
ES 123789D
8.92e7
38.07
JS 123467D
3.96e7
37.97
Abs. Int.
2.86e7
1.43e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
QC Check
35.02-39.51
380.9760 Fn3
Flags: -
Abs. Int.
1.69e7
8.44e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT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Rel. Int.
100%
HpCDD
39.52-42.25
423.7767 Fn4
Flags: PB
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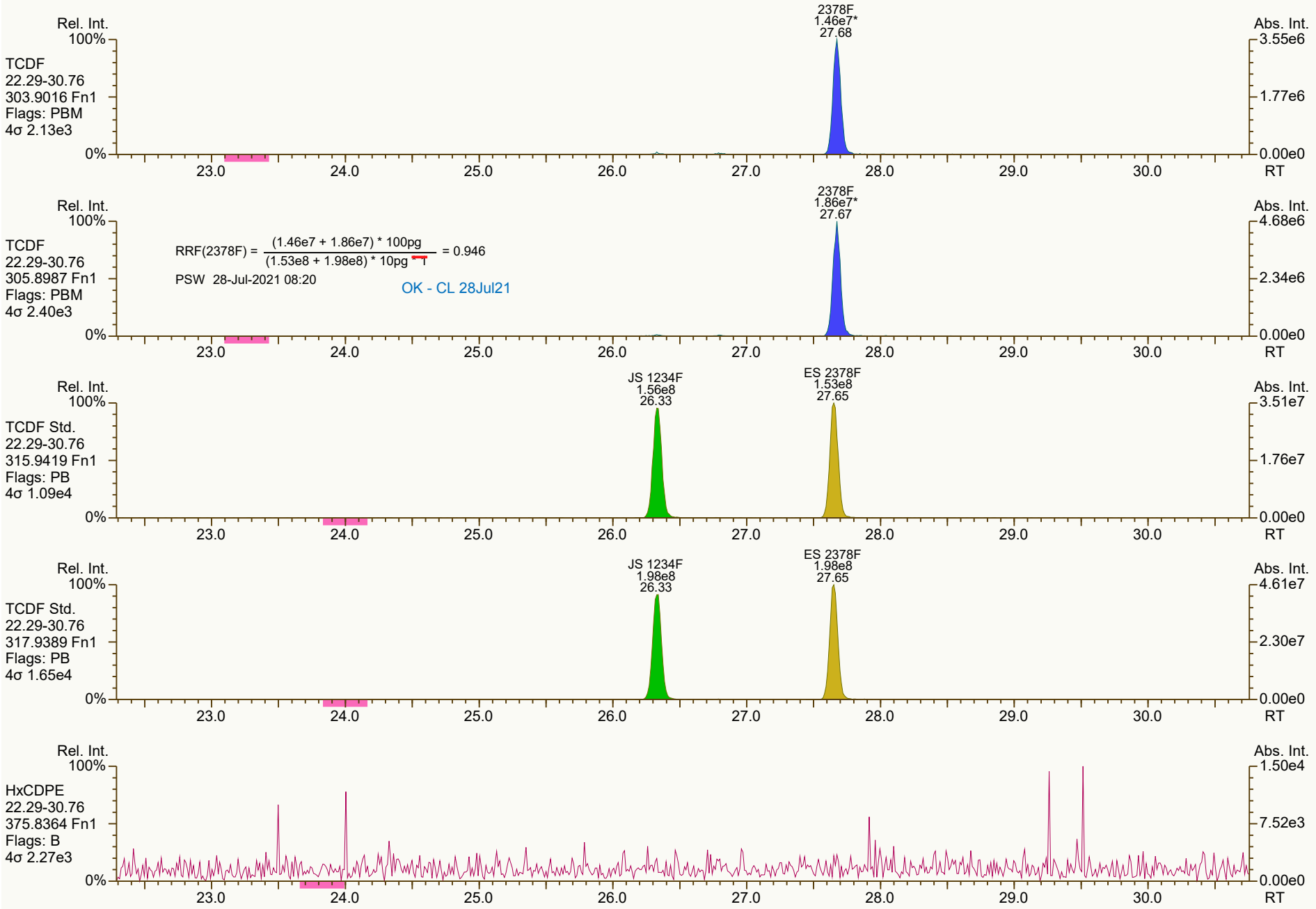
0%
Abs. Int.
1.69e7
8.47e6
0.00e0
RT
40.0
40.5
41.0
41.5
42.0
1234678D
4.13e7
40.67
HpCDD
39.52-42.25
425.7737 Fn4
Flags: PB
4σ 1.18e4
1.67e7
8.37e6
ES 1234678D
8.70e7*
40.66
HpCDD Std.
39.52-42.25
435.8169 Fn4
Flags: PBM
4σ 3.04e3
3.44e7
1.72e7
ES 1234678D
8.30e7*
40.66
HpCDD Std.
39.52-42.25
437.8140 Fn4
Flags: PBM
4σ 1.07e4
3.28e7
1.64e7
QC Check
39.52-42.25
430.9728 Fn4
Flags: -
1.23e7
6.15e6


Rel. Int.
100%
OCDD
42.26-45.01
457.7377 Fn5
Flags: PBM
4σ 2.37e3
0%
OCDD
6.83e7*
43.24
Abs. Int.
2.30e7
1.15e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.26-45.01
459.7348 Fn5
Flags: PBM
4σ 4.65e3
0%
OCDD
7.63e7*
43.23
Abs. Int.
2.58e7
1.29e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
469.7780 Fn5
Flags: PBM
4σ 3.40e3
0%
ES OCDD
1.28e8*
43.22
Abs. Int.
4.34e7
2.17e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.26-45.01
471.7750 Fn5
Flags: PBM
4σ 5.30e3
0%
ES OCDD
1.41e8*
43.22
Abs. Int.
4.68e7
2.34e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.26-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.82e6
2.41e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

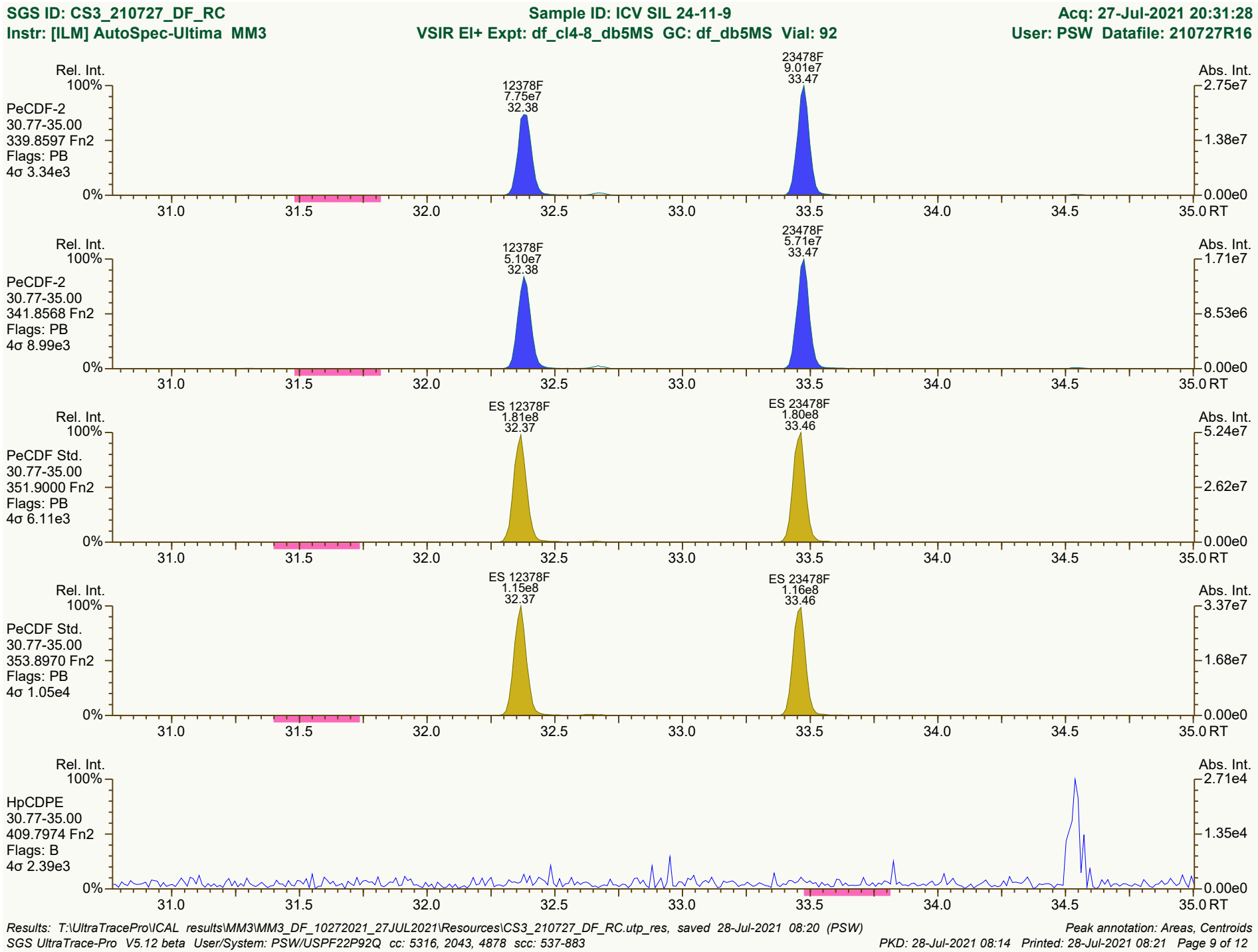

Rel. Int.
100%
TCDF
22.29-30.76
303.9016 Fn1
Flags: PBM
4σ 2.13e3
0%
2378F
1.46e7*
27.68
Abs. Int.
3.55e6
1.77e6
0.00e0
RT
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
TCDF
22.29-30.76
305.8987 Fn1
Flags: PBM
4σ 2.40e3
RRF(2378F) = (1.46e7 + 1.86e7) * 100pg / (1.53e8 + 1.98e8) * 10pg * 1 = 0.946
PSW 28-Jul-2021 08:20
OK - CL 28Jul21
2378F
1.86e7*
27.67
4.68e6
2.34e6
TCDF Std.
22.29-30.76
315.9419 Fn1
Flags: PB
4σ 1.09e4
JS 1234F
1.56e8
26.33
ES 2378F
1.53e8
27.65
3.51e7
1.76e7
TCDF Std.
22.29-30.76
317.9389 Fn1
Flags: PB
4σ 1.65e4
JS 1234F
1.98e8
26.33
ES 2378F
1.98e8
27.65
4.61e7
2.30e7
HxCDPE
22.29-30.76
375.8364 Fn1
Flags: B
4σ 2.27e3
1.50e4
7.52e3


Rel. Int.
100%
0%
Abs. Int.
1.31e4
6.54e3
0.00e0
PeCDF-1
22.29-30.76
339.8597 Fn1
Flags: B
4σ 2.61e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.73e3
0.00e0
PeCDF-1
22.29-30.76
341.8568 Fn1
Flags: B
4σ 3.05e3
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.42e6
1.21e6
0.00e0
QC Check
22.29-30.76
316.9824 Fn1
Flags: -
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
RT

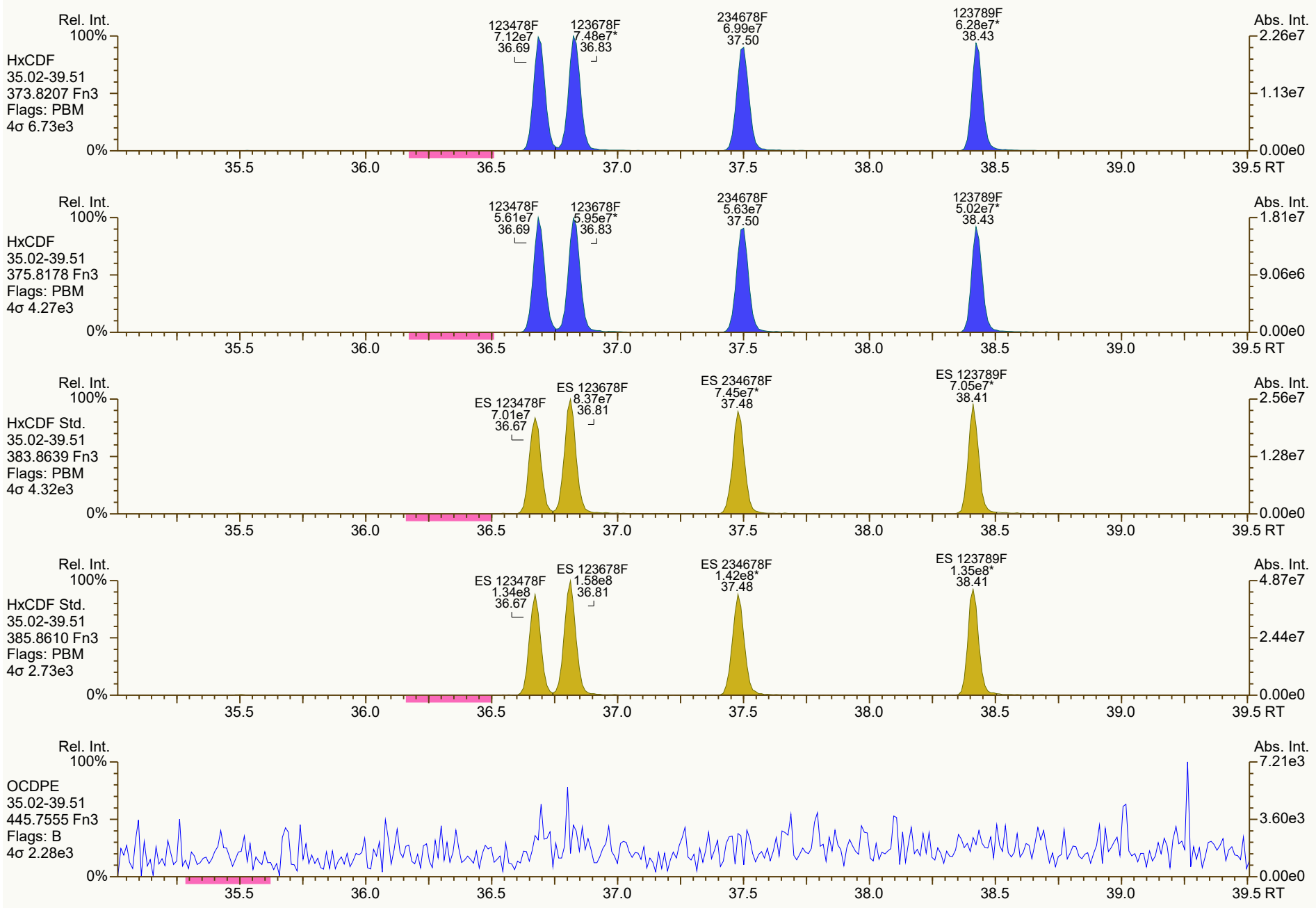
SGS ID: CS3_210727_DF_RC
Instr: [ILM] AutoSpec-Ultima MM3

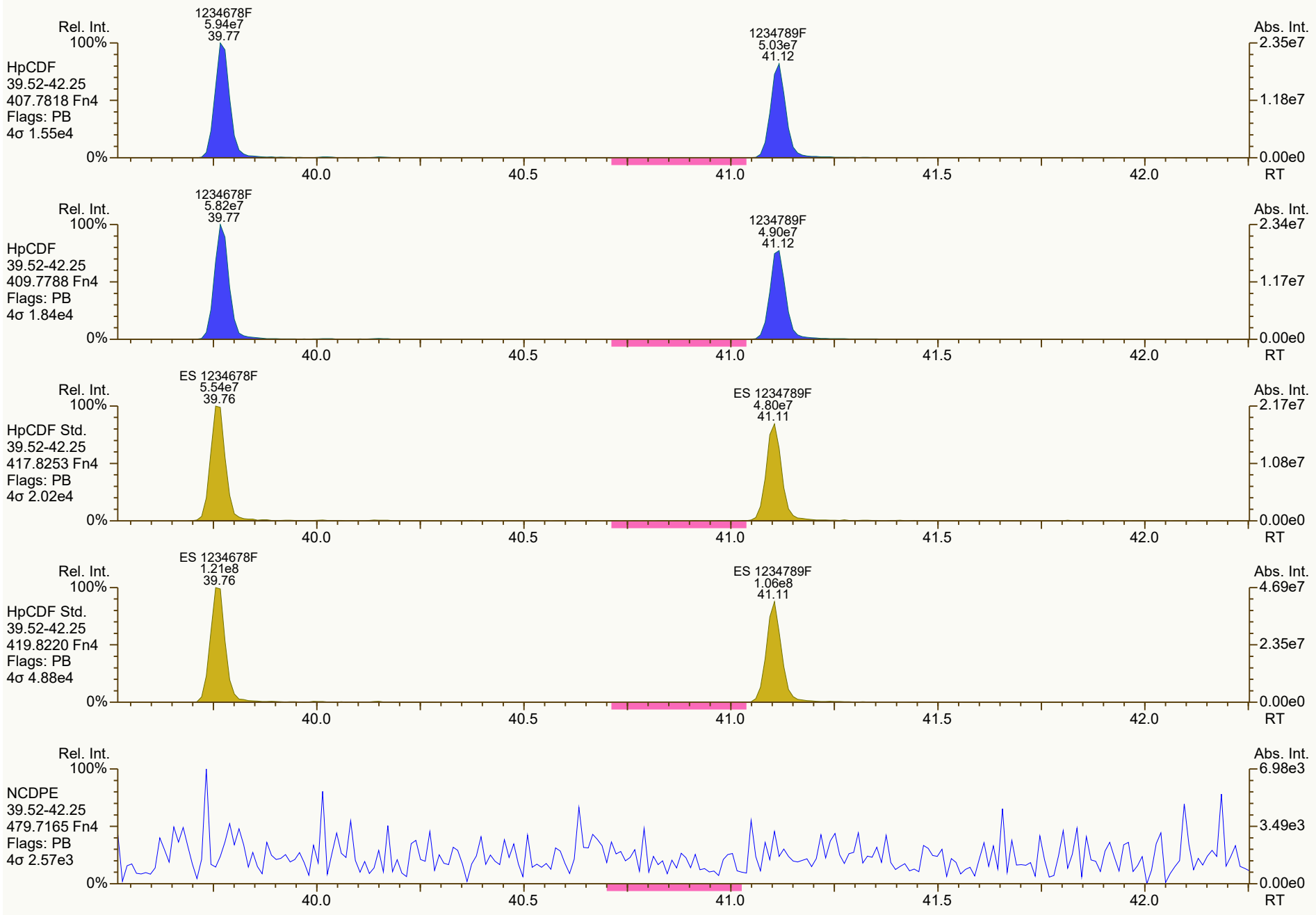
Sample ID: ICV SIL 24-11-9
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 92

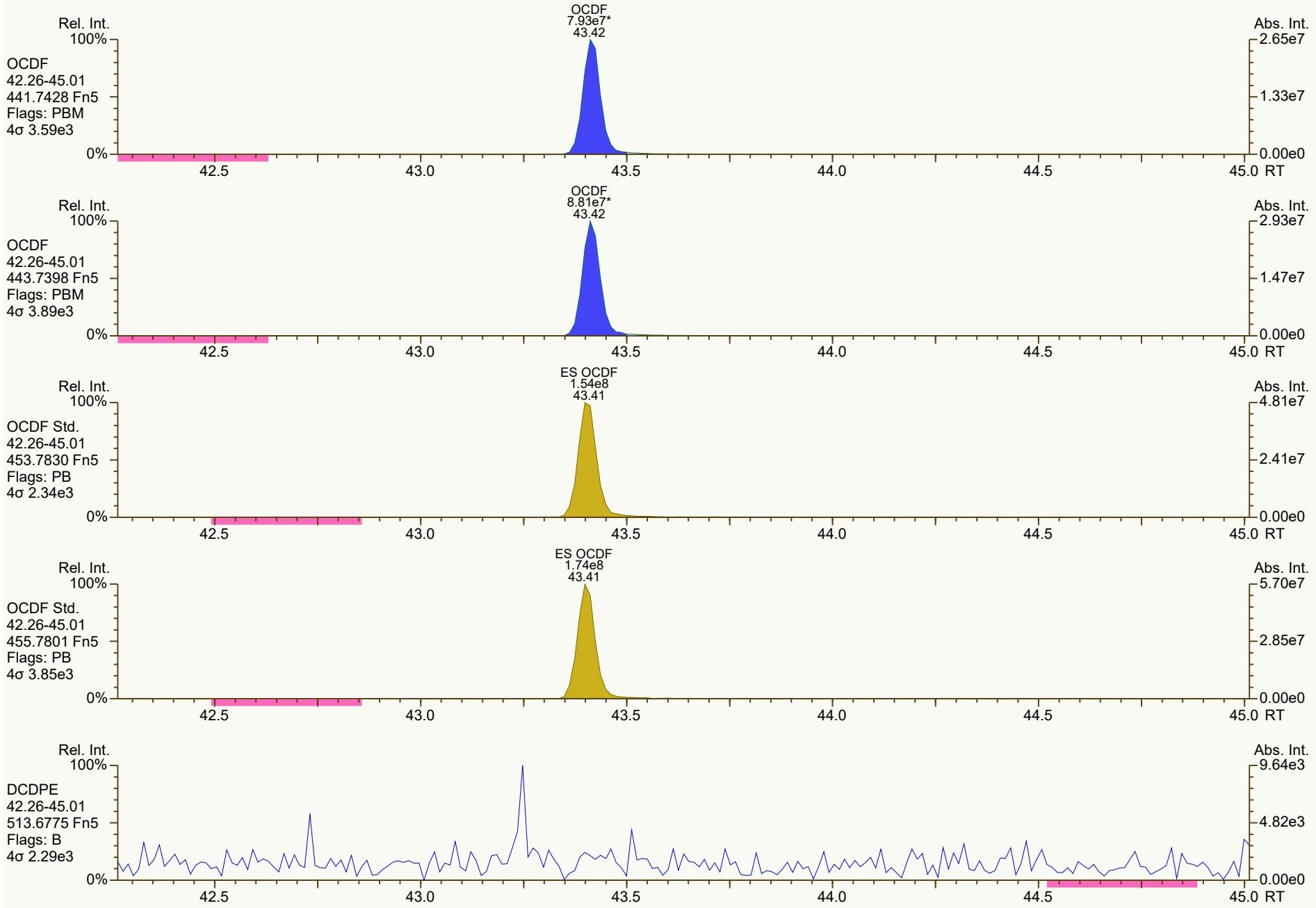
Acq: 27-Jul-2021 20:31:28
User: PSW Datafile: 210727R16



Results: T:\UltraTracePro\ICAL results\MM3\MM3_DF_10272021_27JUL2021\Resources\CS3_210727_DF_RC.utp_res, saved 28-Jul-2021 08:20 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 beta User/System: PSW/USPF22P92Q cc: 5316, 2043, 4878 scc: 537-883
PKD: 28-Jul-2021 08:14 Printed: 28-Jul-2021 08:21 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.51
373.8207 Fn3
Flags: PBM
4σ 6.73e3
0%
123478F
7.12e7
36.69
123678F
7.48e7*
36.83
234678F
6.99e7
37.50
123789F
6.28e7*
38.43
Abs. Int.
2.26e7
1.13e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF
35.02-39.51
375.8178 Fn3
Flags: PBM
4σ 4.27e3
0%
123478F
5.61e7
36.69
123678F
5.95e7*
36.83
234678F
5.63e7
37.50
123789F
5.02e7*
38.43
Abs. Int.
1.81e7
9.06e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
383.8639 Fn3
Flags: PBM
4σ 4.32e3
0%
ES 123478F
7.01e7
36.67
ES 123678F
8.37e7
36.81
ES 234678F
7.45e7*
37.48
ES 123789F
7.05e7*
38.41
Abs. Int.
2.56e7
1.28e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.51
385.8610 Fn3
Flags: PBM
4σ 2.73e3
0%
ES 123478F
1.34e8
36.67
ES 123678F
1.58e8
36.81
ES 234678F
1.42e8*
37.48
ES 123789F
1.35e8*
38.41
Abs. Int.
4.87e7
2.44e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT
Rel. Int.
100%
OCDPE
35.02-39.51
445.7555 Fn3
Flags: B
4σ 2.28e3
0%
Abs. Int.
7.21e3
3.60e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5 RT

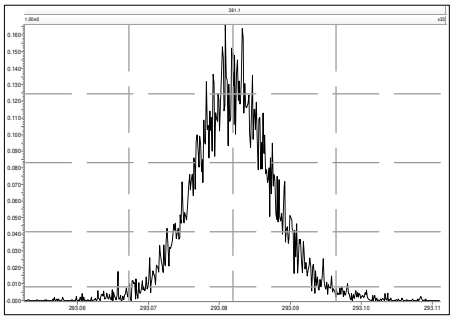

Rel. Int.
100%
HpCDF
39.52-42.25
407.7818 Fn4
Flags: PB
4σ 1.55e4
1234678F
5.94e7
39.77
1234789F
5.03e7
41.12
Abs. Int.
2.35e7
1.18e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.52-42.25
409.7788 Fn4
Flags: PB
4σ 1.84e4
1234678F
5.82e7
39.77
1234789F
4.90e7
41.12
Abs. Int.
2.34e7
1.17e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
417.8253 Fn4
Flags: PB
4σ 2.02e4
ES 1234678F
5.54e7
39.76
ES 1234789F
4.80e7
41.11
Abs. Int.
2.17e7
1.08e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.52-42.25
419.8220 Fn4
Flags: PB
4σ 4.88e4
ES 1234678F
1.21e8
39.76
ES 1234789F
1.06e8
41.11
Abs. Int.
4.69e7
2.35e7
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.52-42.25
479.7165 Fn4
Flags: PB
4σ 2.57e3
Abs. Int.
6.98e3
3.49e3
0.00e0
0%
40.0
40.5
41.0
41.5
42.0
RT


OCDF
7.93e7*
43.42
Rel. Int.
100%
OCDF
42.26-45.01
441.7428 Fn5
Flags: PBM
4σ 3.59e3
0%
Abs. Int.
2.65e7
1.33e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
8.81e7*
43.42
Rel. Int.
100%
OCDF
42.26-45.01
443.7398 Fn5
Flags: PBM
4σ 3.89e3
0%
Abs. Int.
2.93e7
1.47e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.54e8
43.41
Rel. Int.
100%
OCDF Std.
42.26-45.01
453.7830 Fn5
Flags: PB
4σ 2.34e3
0%
Abs. Int.
4.81e7
2.41e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.74e8
43.41
Rel. Int.
100%
OCDF Std.
42.26-45.01
455.7801 Fn5
Flags: PB
4σ 3.85e3
0%
Abs. Int.
5.70e7
2.85e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.26-45.01
513.6775 Fn5
Flags: B
4σ 2.29e3
0%
Abs. Int.
9.64e3
4.82e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

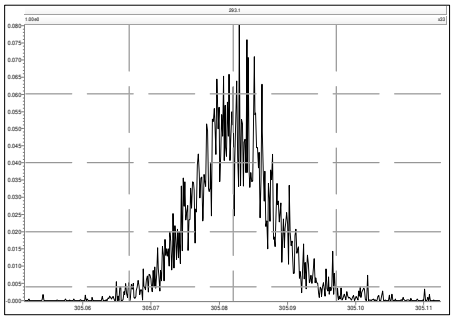
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:15:38 Eastern Daylight Time

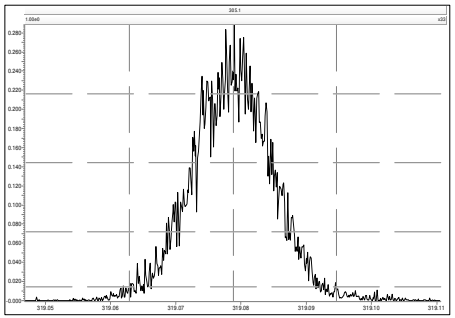
M 292.9824 R 12951



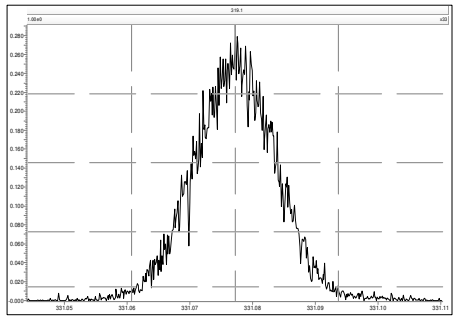
M 304.9824 R 13589



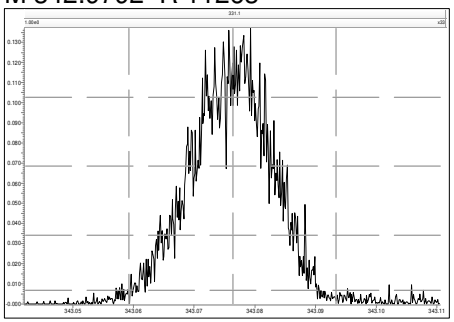
M 318.9792 R 11848



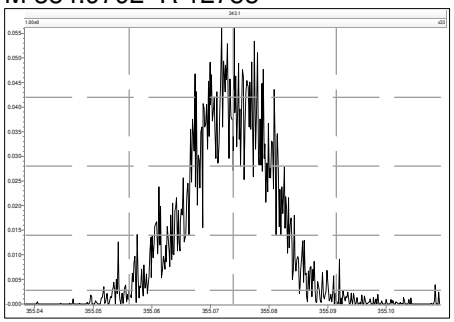
M 330.9792 R 11310



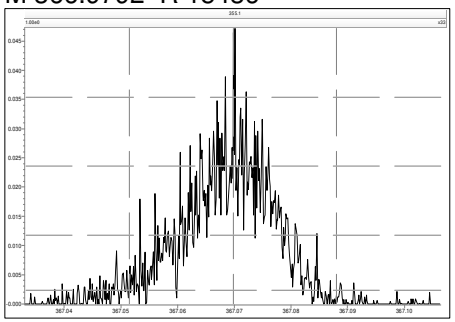
M 342.9792 R 11263



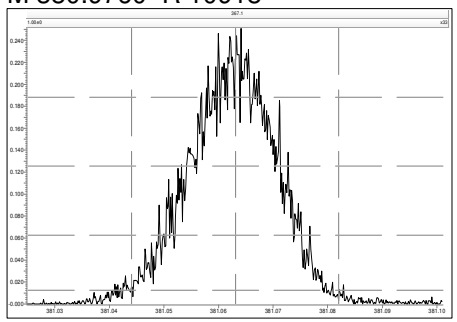
M 354.9792 R 12755



M 366.9792 R 15436



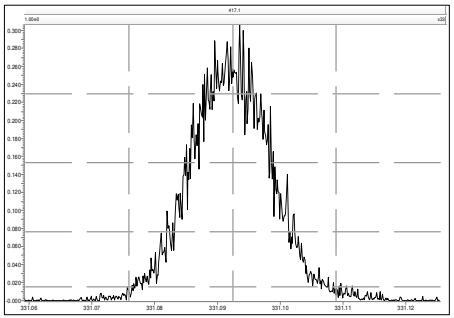
M 380.9760 R 10918



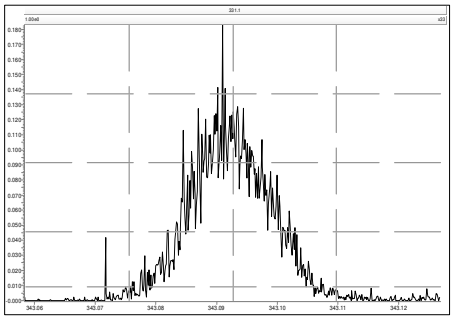
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:03 Eastern Daylight Time

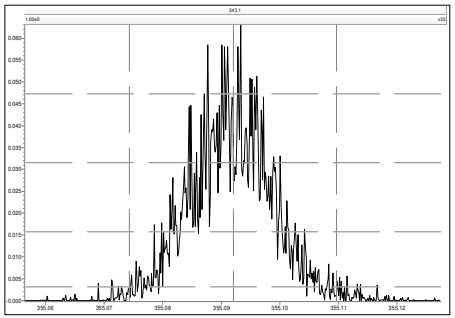
M 330.9792 R 11165



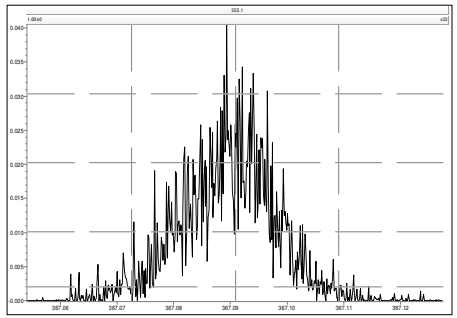
M 342.9792 R 12440



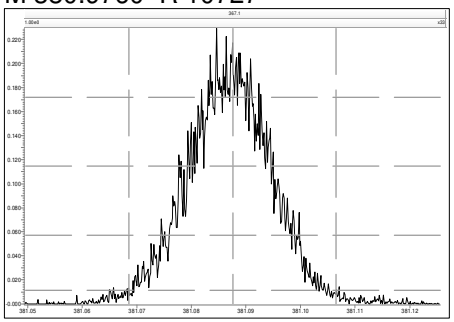
M 354.9792 R 12626



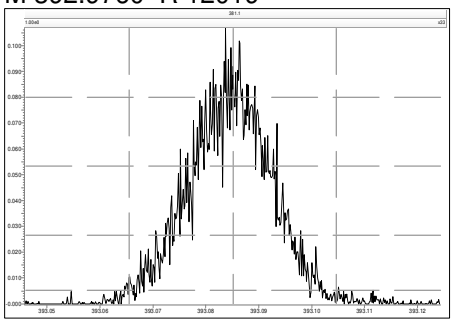
M 366.9792 R 12134



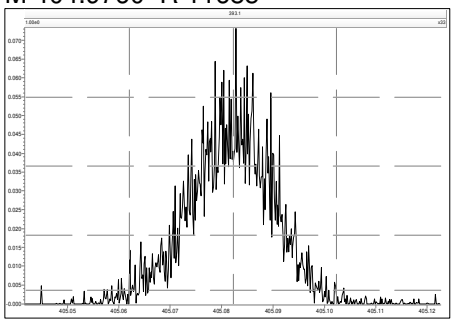
M 380.9760 R 10727



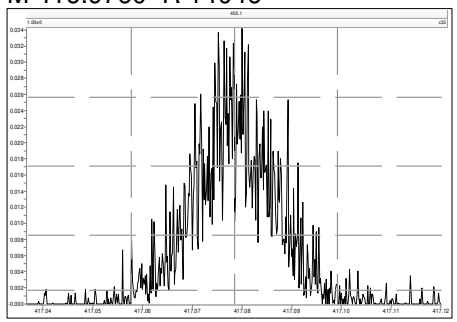
M 392.9760 R 12019



M 404.9760 R 11685



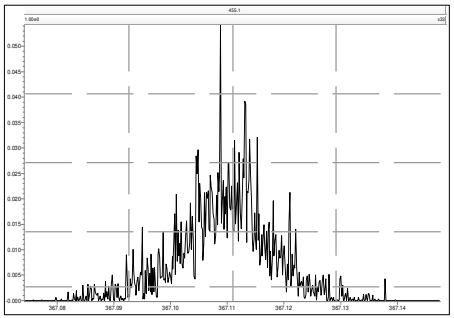
M 416.9760 R 14046



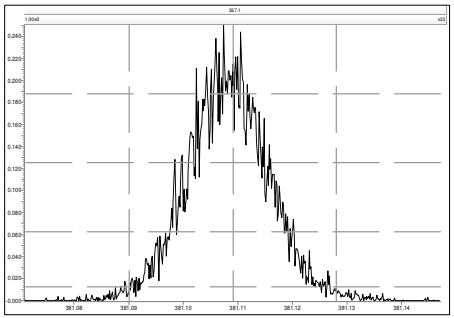
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:24 Eastern Daylight Time

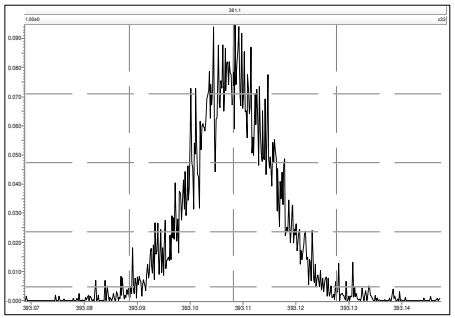
M 366.9792 R 13020



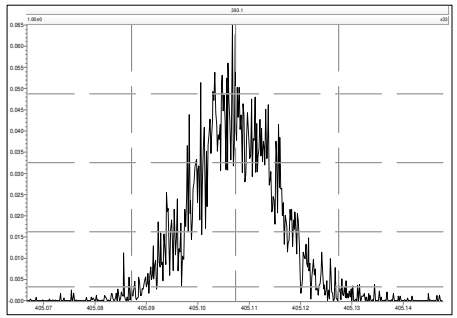
M 380.9760 R 11361



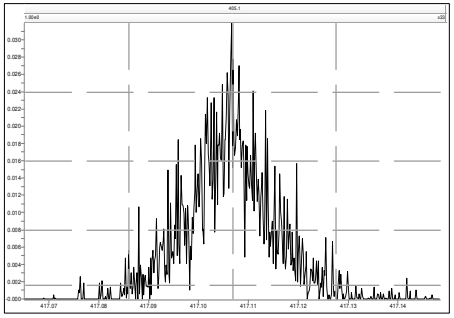
M 392.9760 R 11464



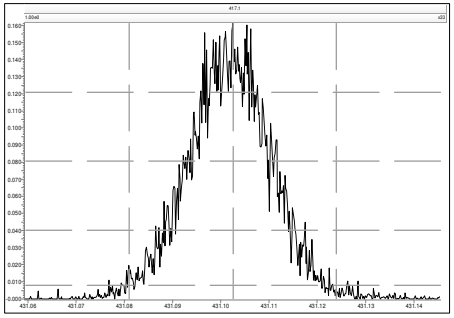
M 404.9760 R 12314



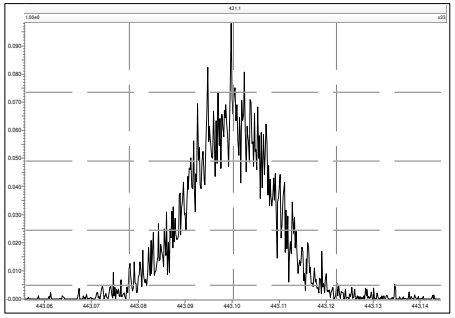
M 416.9760 R 17727



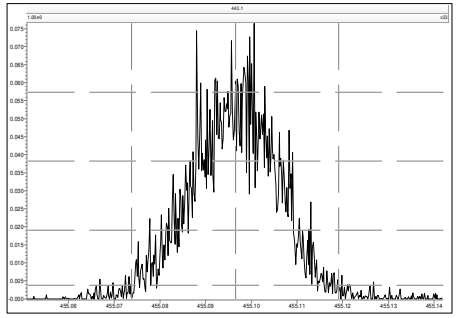
M 430.9728 R 11112



M 442.9728 R 13157



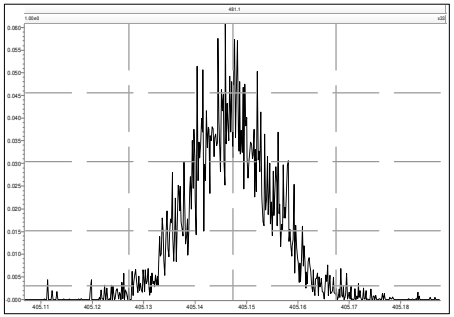
M 454.9728 R 12133



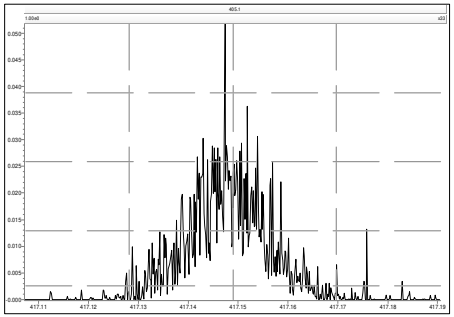
File: Experiment: df_cl4-8_db5MS.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed: Tuesday, July 27, 2021 08:16:47 Eastern Daylight Time

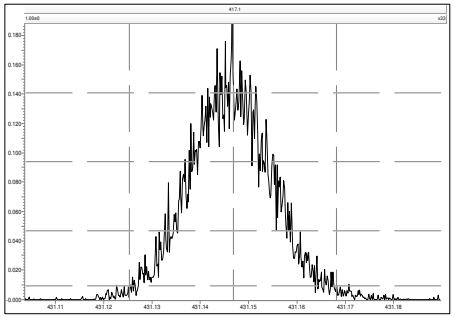
M 404.9760 R 12954



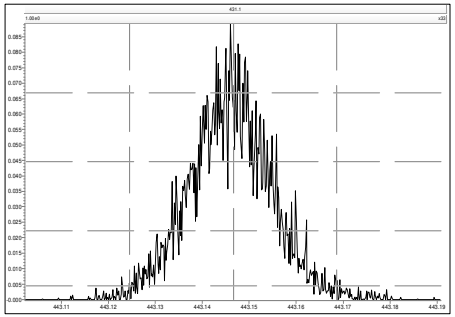
M 416.9760 R 17005



M 430.9728 R 11739



M 442.9728 R 11849



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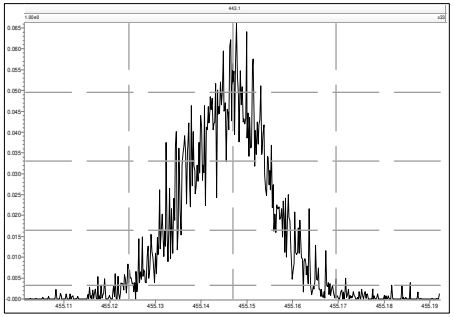

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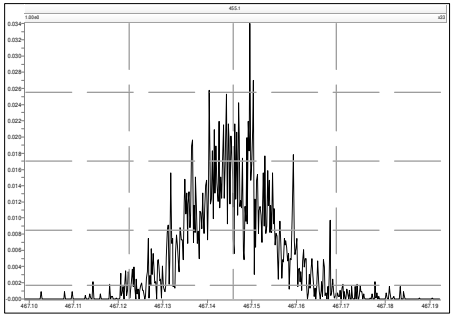

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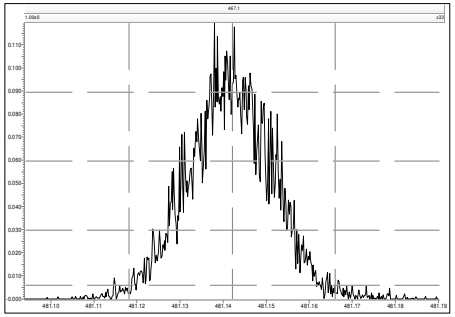

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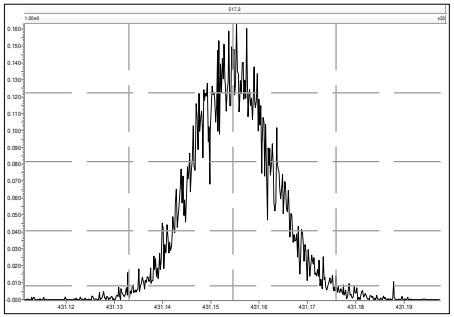

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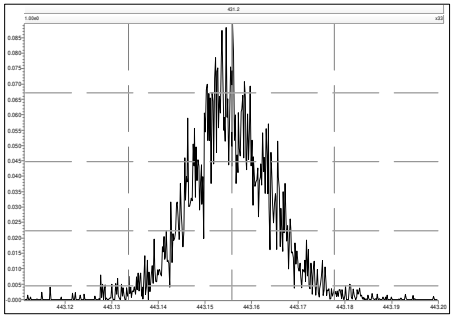

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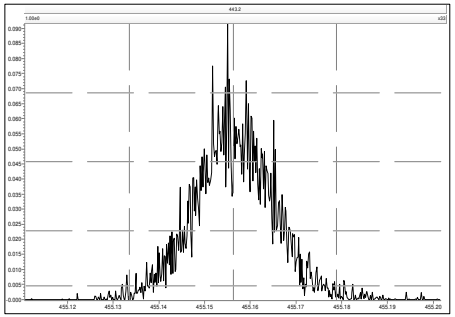

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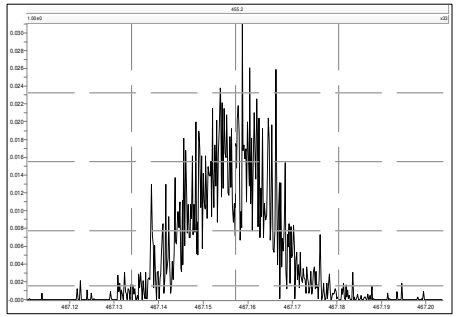

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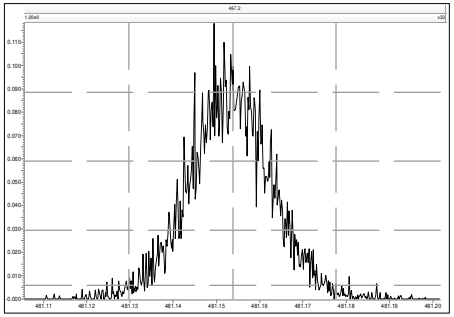
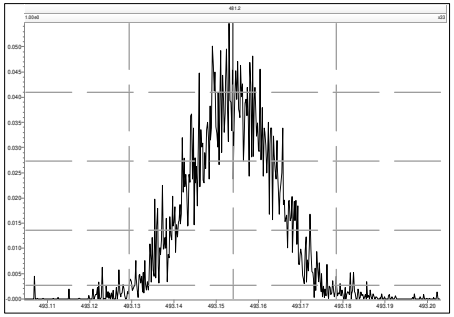
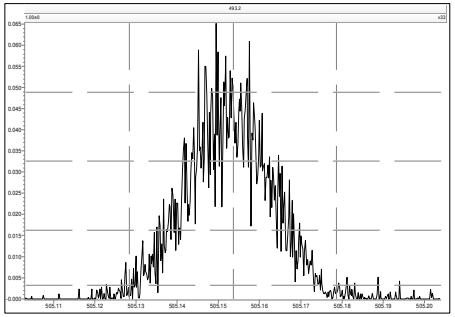


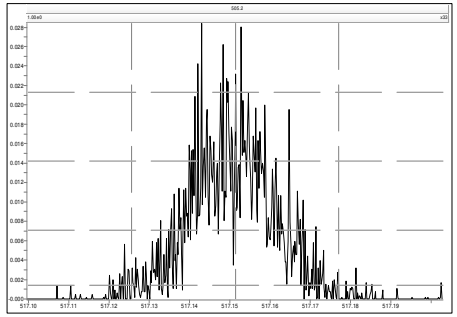
M 492.9696 R 12562



M 504.9696 R 13300



M 516.9697 R 15342



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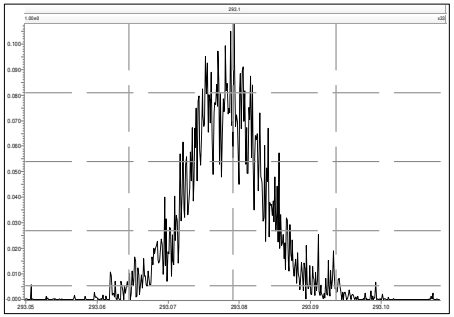

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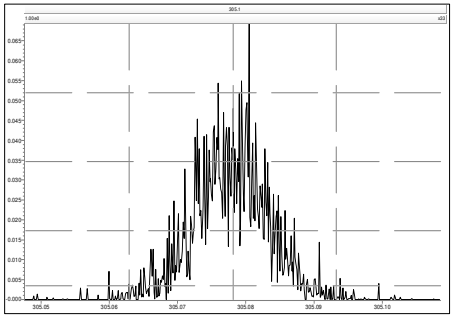

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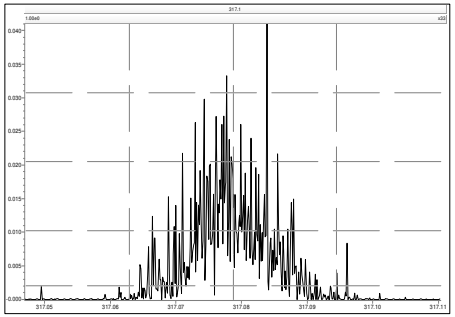

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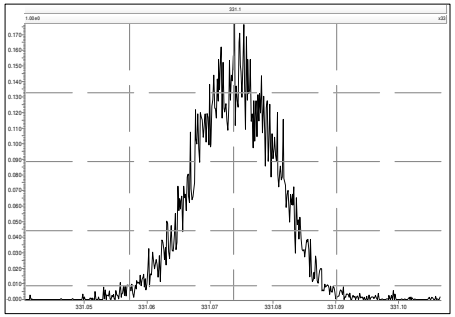

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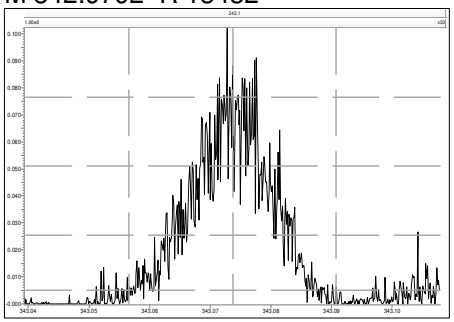

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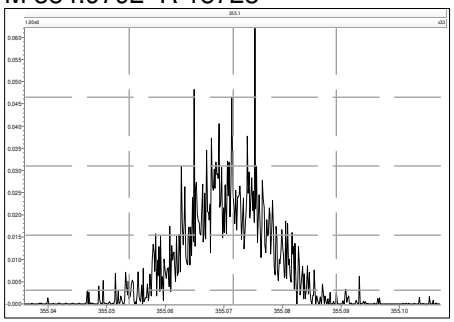

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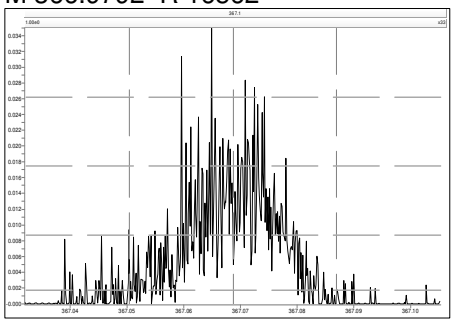

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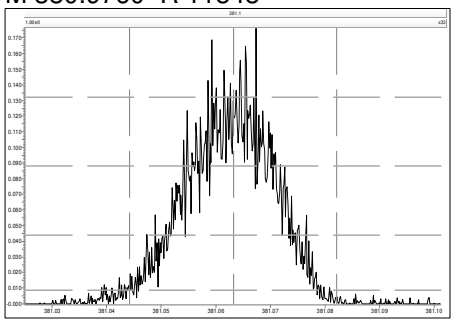

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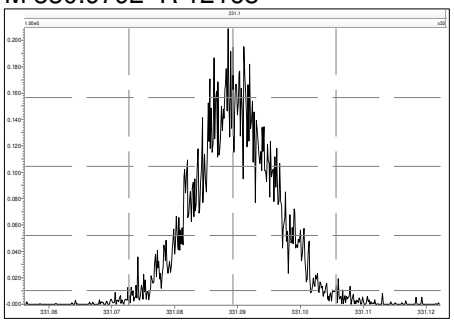

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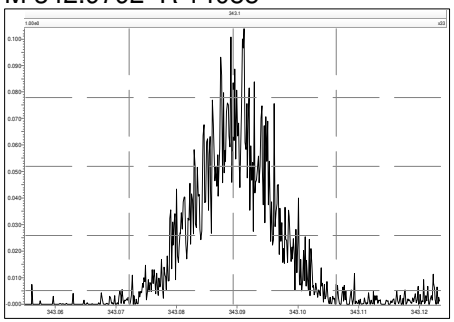

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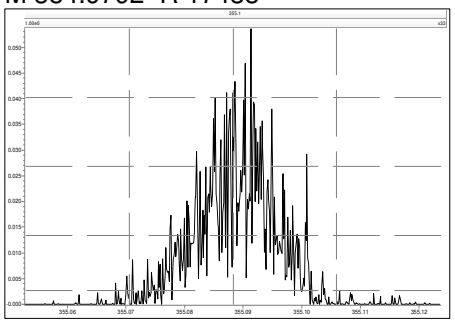

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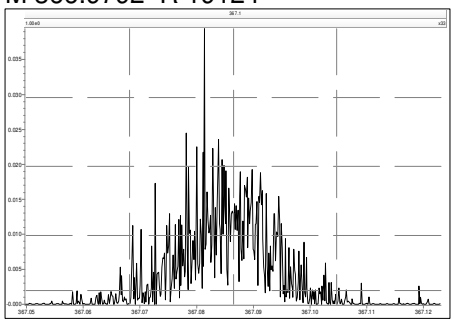

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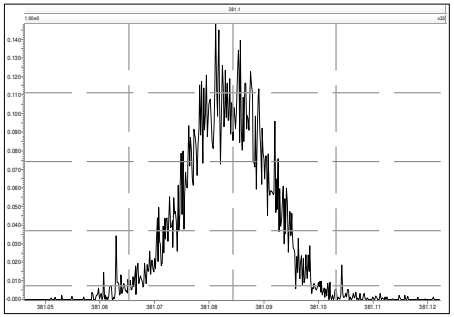

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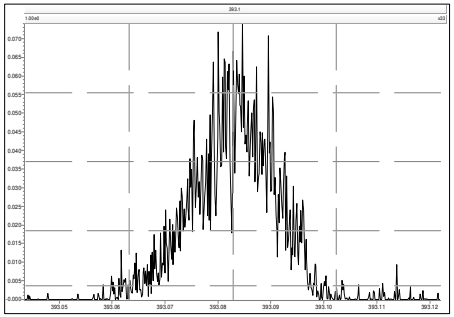

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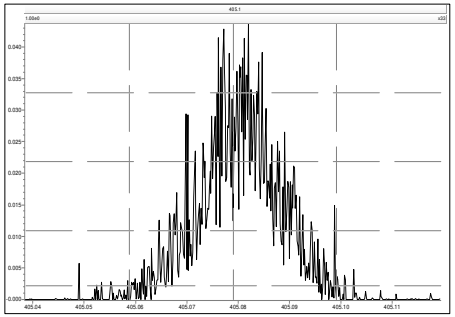

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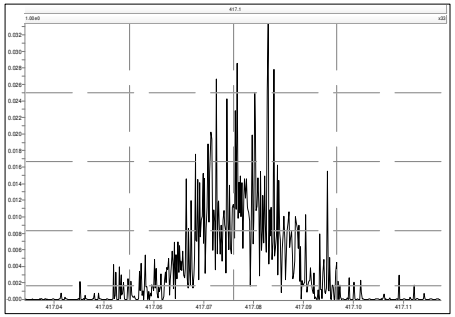

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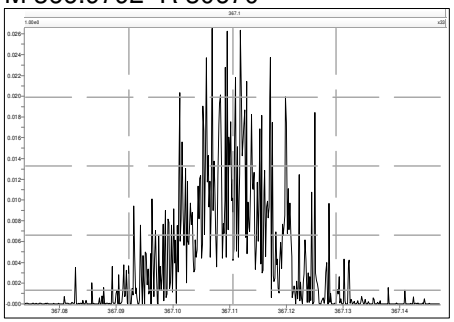

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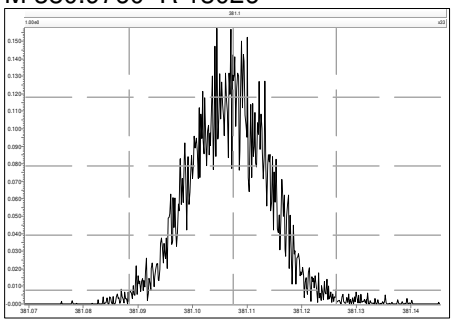

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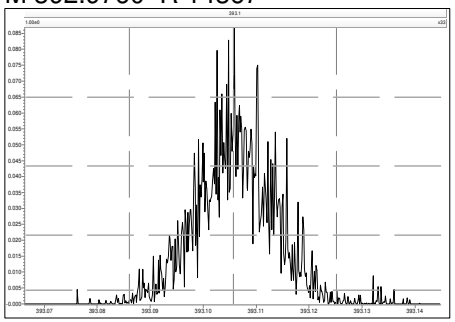

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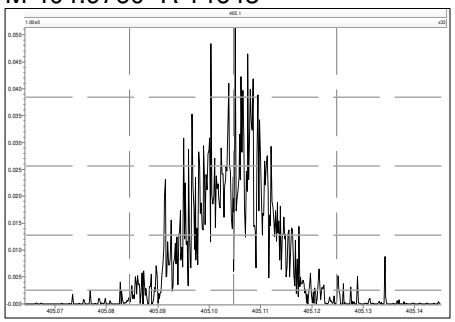

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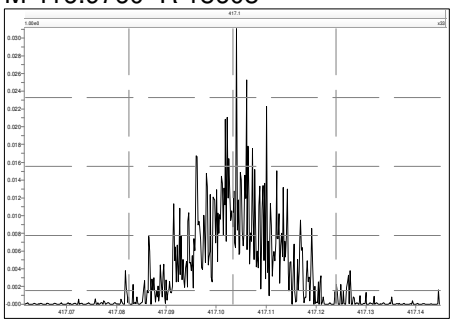

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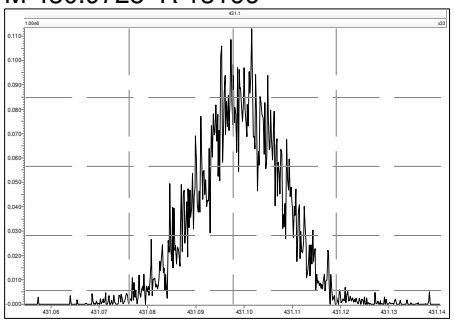

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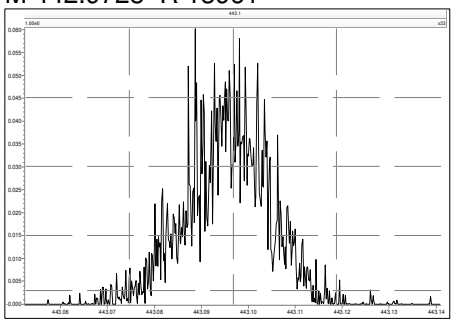

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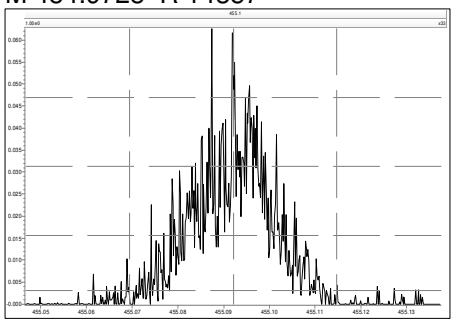
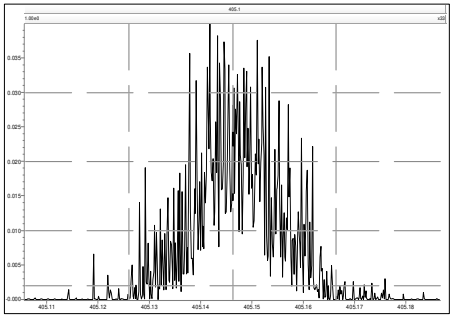


M 404.9760 R 17503



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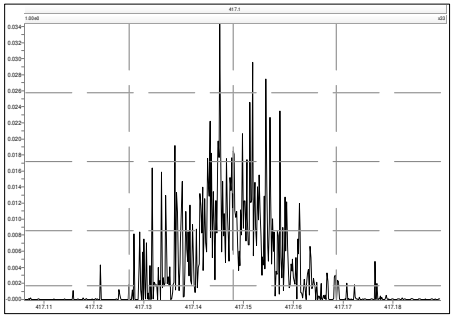
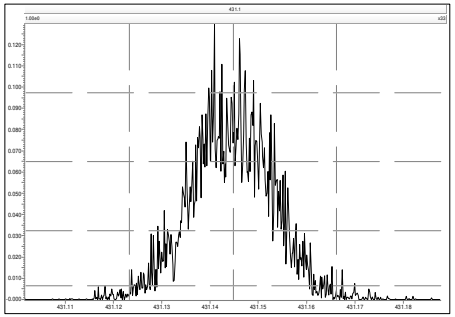


M 430.9728 R 12961



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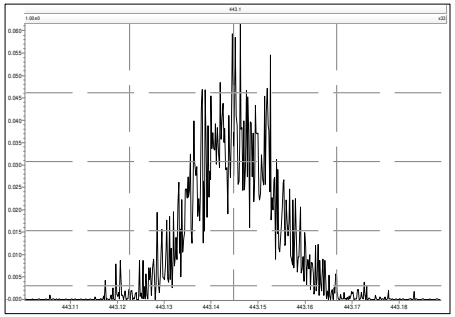

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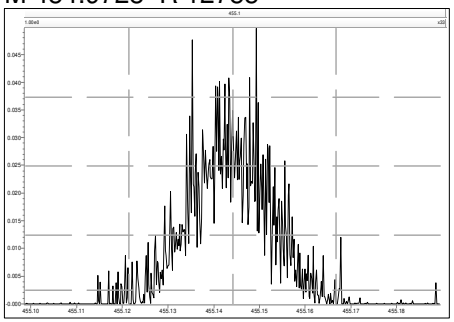

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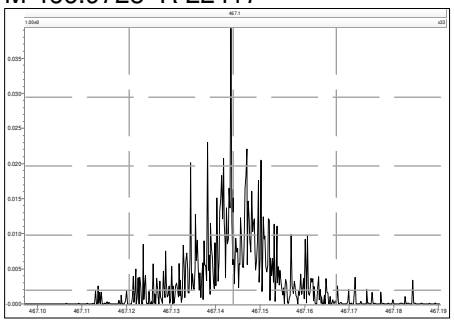

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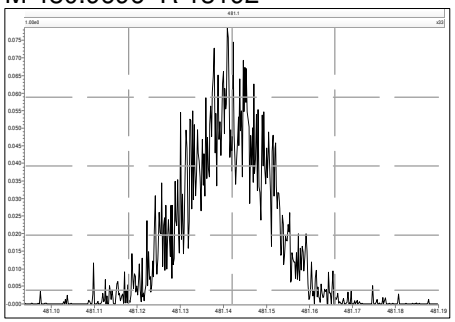

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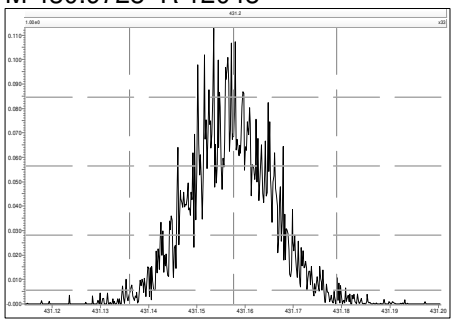

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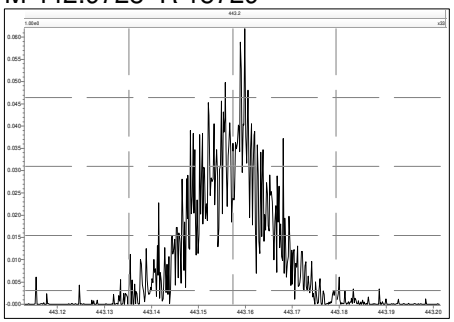

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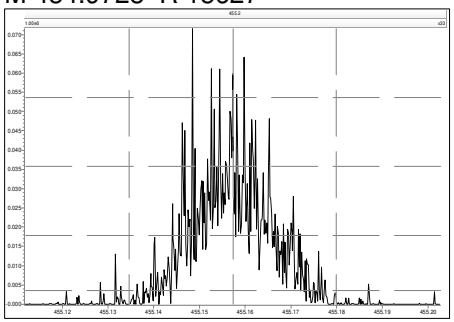

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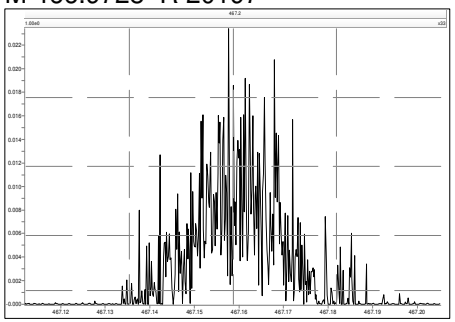
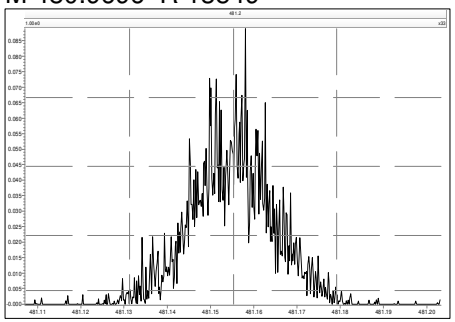


M 480.9696 R 13549



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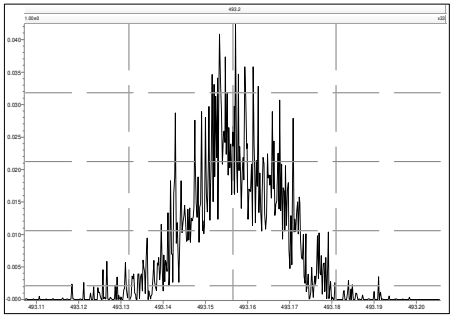

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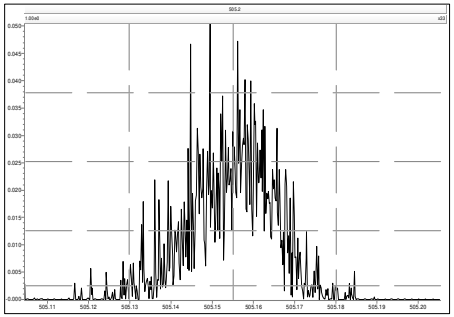

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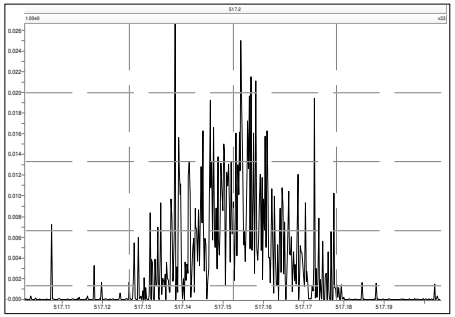

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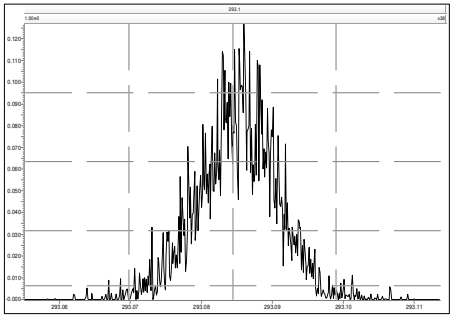

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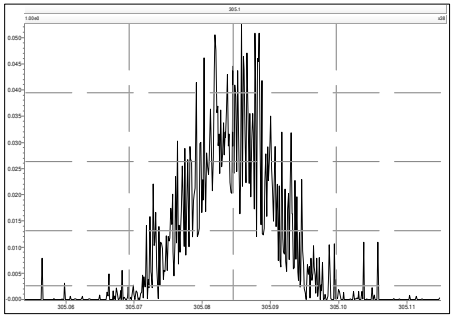
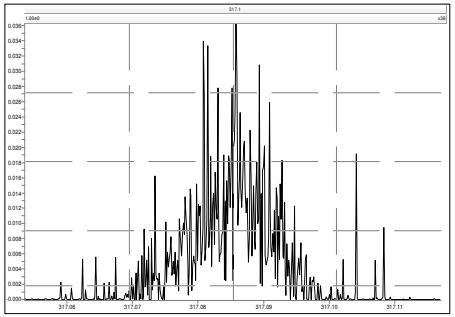
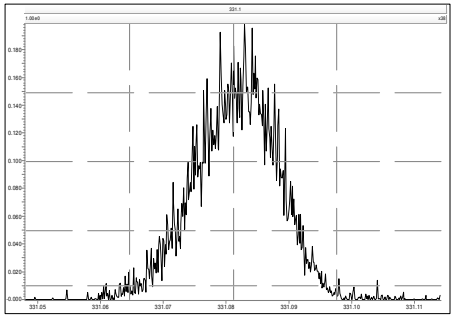


M 316.9824 R 21930



M 330.9792 R 11364



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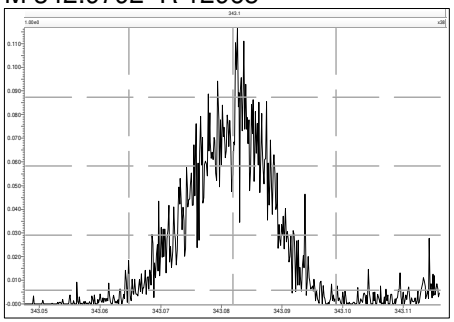

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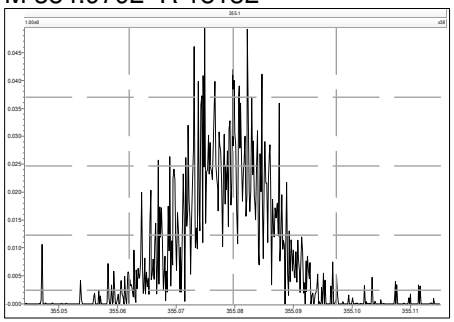

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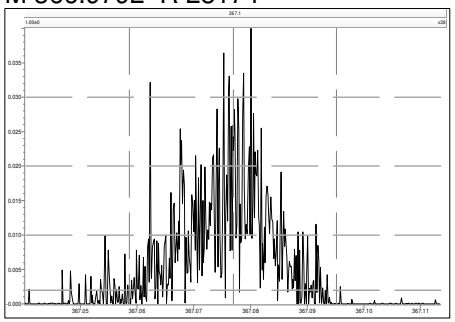

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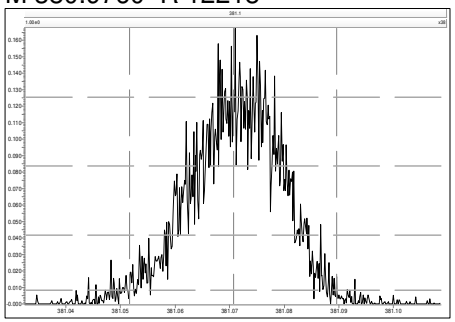

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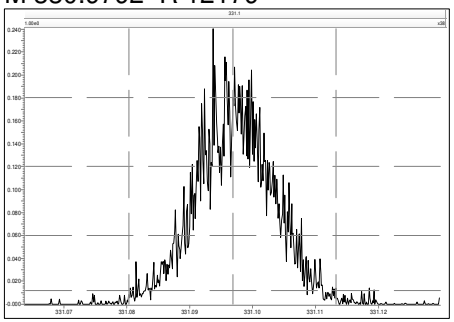

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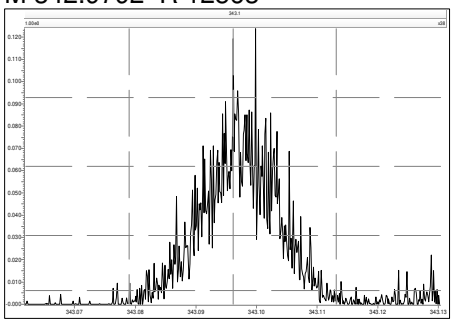

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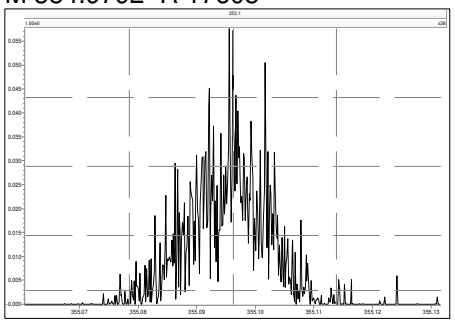

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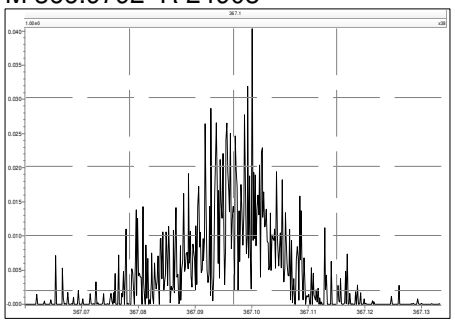

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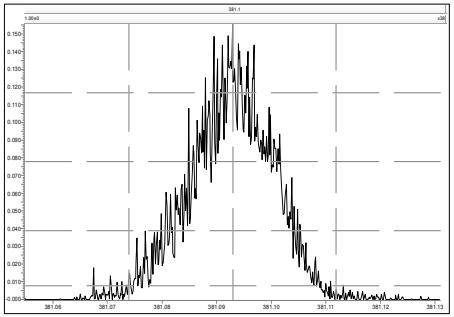

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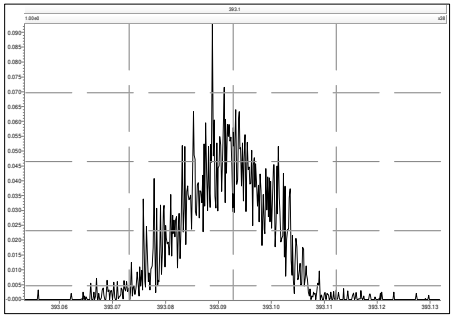

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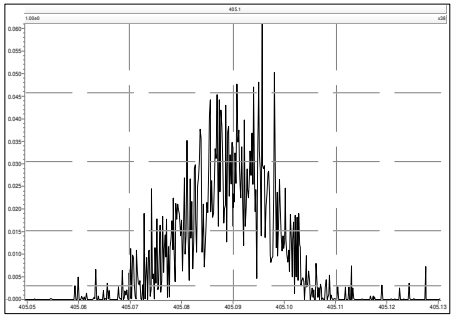

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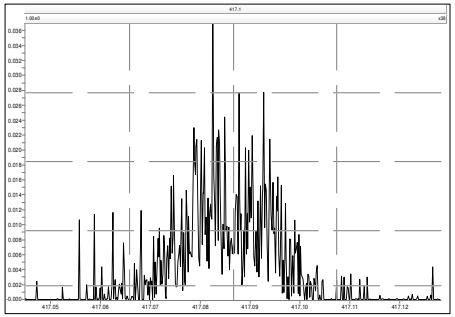
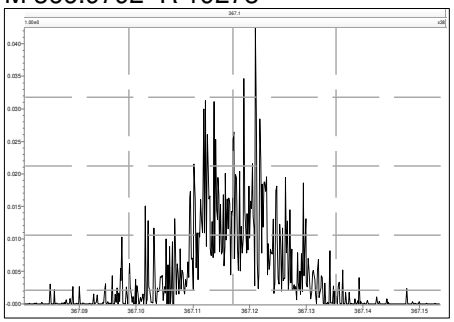


M 366.9792 R 19278



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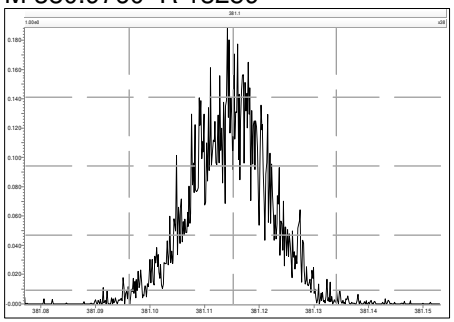

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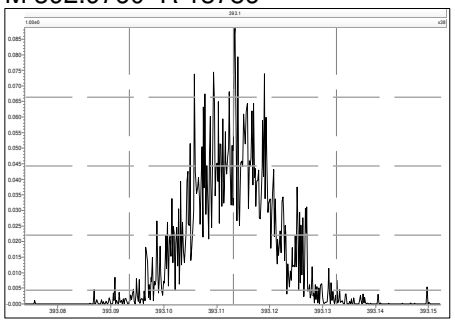

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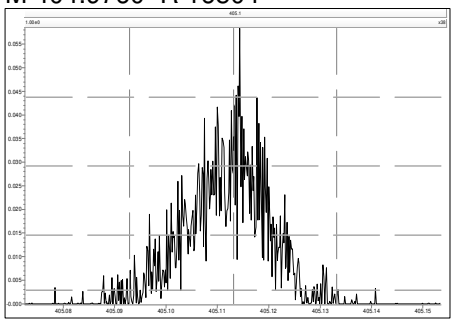

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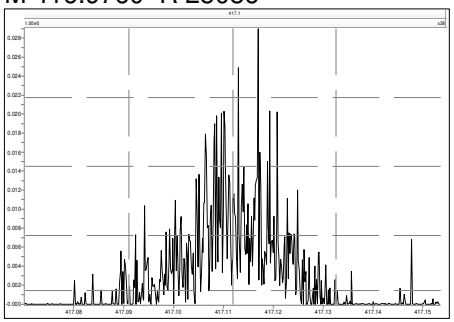

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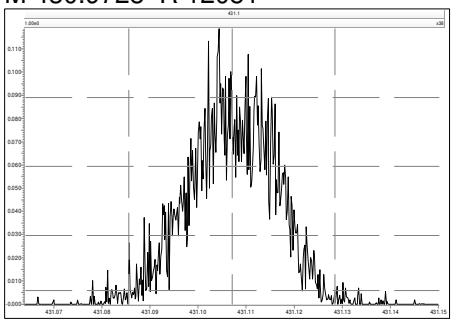

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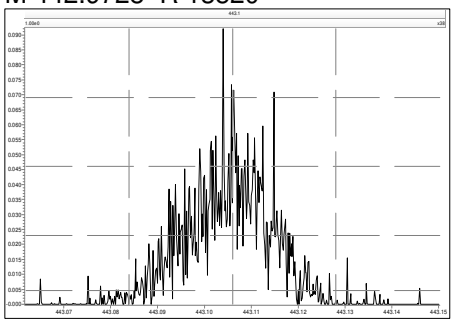

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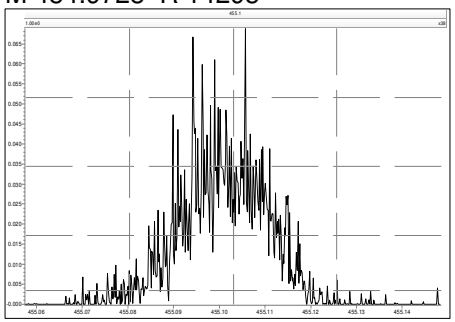
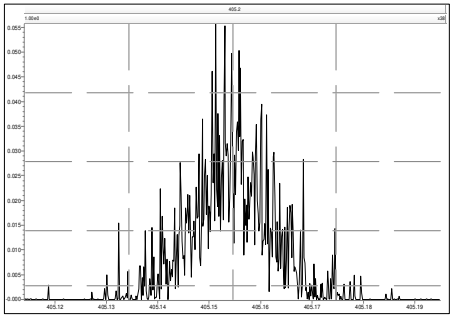


M 404.9760 R 19329



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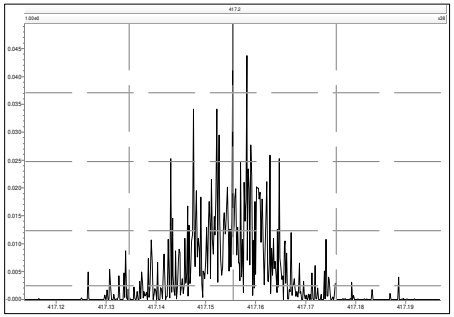

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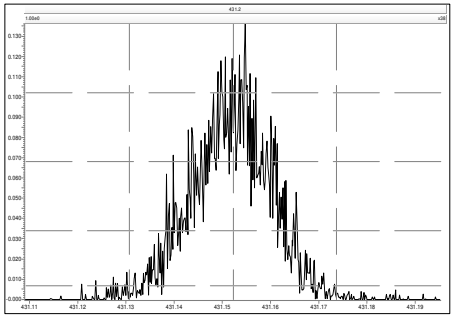

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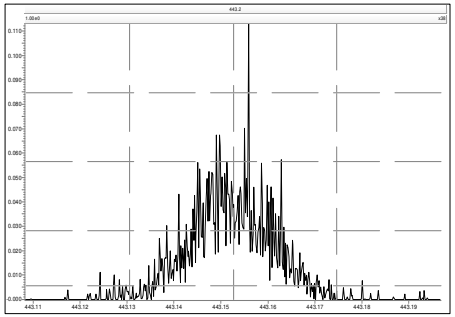

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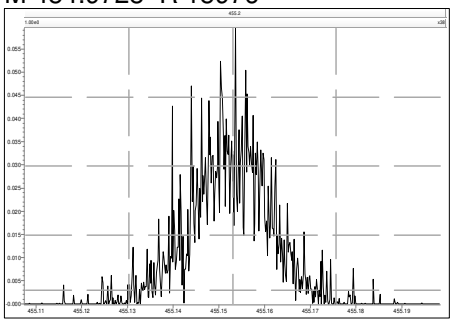

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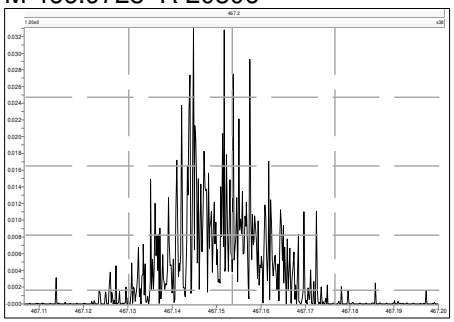

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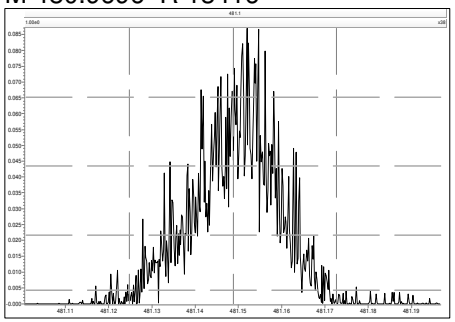

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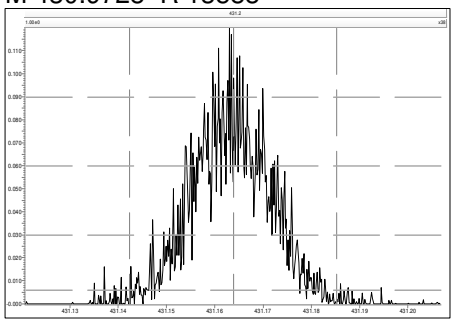

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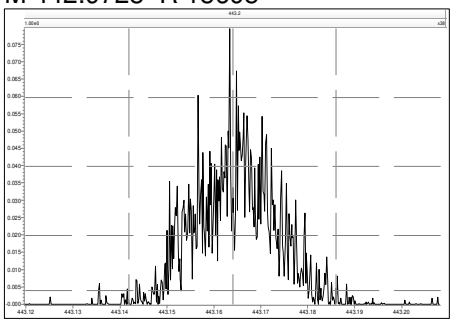

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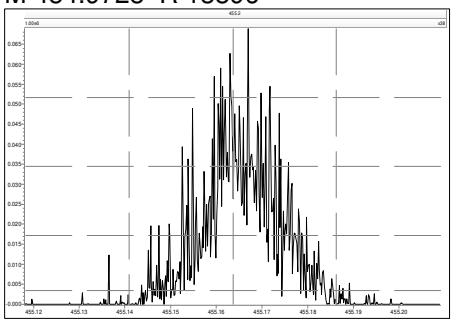
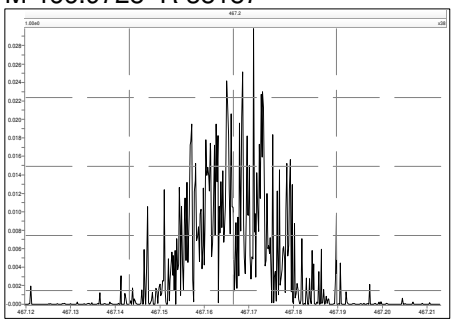


M 466.9728 R 38187



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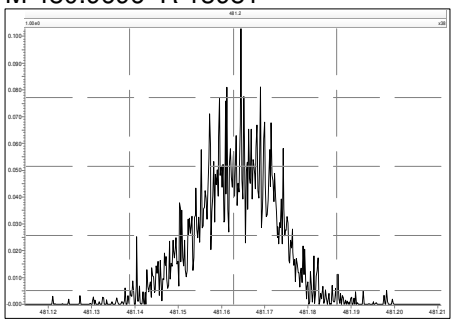
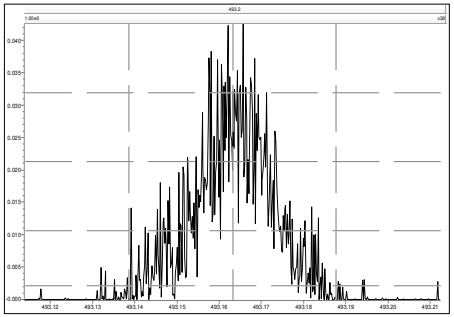
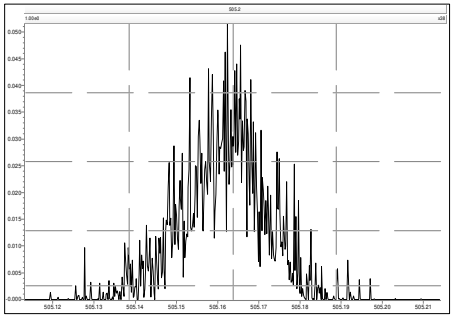


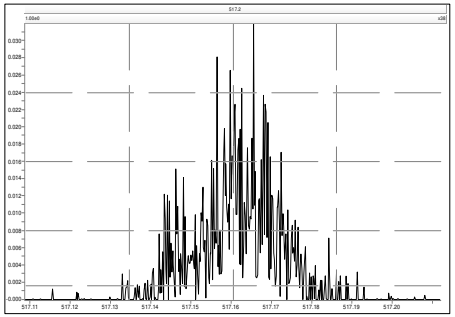
M 492.9696 R 16021



M 504.9696 R 14411



M 516.9697 R 27065



Lab ID: OPR1_18724_DF

APPROVED
Carla_Lyon , 12/10/2021, 2:59:58 PM

Acq'd: 10 Dec 2021 01:42 PSW

Wt/Vol: 1 uL

ICAL: MM3_DF_10272021_27JUL2021

Client ID: 0_18724_OPR001

UTP: 10-Dec-2021 12:46:18 PSW

J-level: 0.25 pg/uL **Split:** 1

Checkcode: 976-006-MPD

Datafile: 211209R19

Report: 10 Dec 2021 12:48 pw

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.35		1.0008	1.0008	0	1.82E+06	0.82	Y	1.34	9.31	6769.804	0.36
12378-PeCDD	33.67		1.0005	1.0005	0	6.48E+06	1.57	Y	1.06	44.6	4907.127	0.287
123478-HxCDD	37.53		1.0003	1.0004	+0.2	6.26E+06	1.25	Y	1.06	54.8	4977.171	0.383
123678-HxCDD	37.65		1.0033	1.0036	+0.7	6.62E+06	1.21	Y	1.08	51.8	4977.171	0.344
123789-HxCDD	37.94		1.0110	1.0114	+0.9	6.36E+06	1.33	Y	1.02	51.8	4977.171	0.324
1234678-HpCDD	40.55		1.0003	1.0003	0	5.10E+06	1.06	Y	0.97	53.2	5525.777	0.389
OCDD	43.08		1.0003	1.0002	-0.3	5.43E+06	0.87	Y	1.07	114	6264.251	1.03
2378-TCDF	27.49		1.0006	1.0006	0	2.48E+06	0.85	Y	0.96	12.5	5636.143	0.338
12378-PeCDF	32.23		1.0006	1.0005	-0.2	1.05E+07	1.55	Y	0.95	53.5	7821.856	0.387
23478-PeCDF	33.34		1.0006	1.0005	-0.2	1.09E+07	1.54	Y	0.94	58.8	7821.856	0.389
123478-HxCDF	36.55		1.0004	1.0005	+0.2	9.62E+06	1.29	Y	1.23	56.2	11508.795	0.551
123678-HxCDF	36.69		1.0004	1.0005	+0.2	1.07E+07	1.25	Y	1.13	54.9	11508.795	0.475
234678-HxCDF	37.35		1.0005	1.0005	0	9.32E+06	1.29	Y	1.15	55.2	11508.795	0.591
123789-HxCDF	38.30		1.0005	1.0004	-0.2	7.43E+06	1.28	Y	1.14	49.9	11508.795	0.582
1234678-HpCDF	39.65		1.0003	1.0003	0	8.15E+06	1.00	Y	1.36	52.5	5643.93	0.205
1234789-HpCDF	40.99		1.0003	1.0002	-0.2	6.03E+06	1.06	Y	1.30	55.2	5643.93	0.345
OCDF	43.26		1.0002	1.0002	0	6.68E+06	0.96	Y	1.03	105	6288.596	0.832

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.32	1.0237	1.0236	-0.2	1.46E+07	0.81	Y	1.03	87.7
ES 12378-PeCDD	33.65	1.2158	1.2162	+0.8	1.37E+07	1.51	Y	1.03	82.6
ES 123478-HxCDD	37.52	0.9920	0.9916	-0.9	1.08E+07	1.27	Y	0.99	83.4
ES 123678-HxCDD	37.64	0.9949	0.9948	-0.2	1.18E+07	1.26	Y	0.97	93.3
ES 123789-HxCDD	37.93	1.0026	1.0026	0	1.21E+07	1.19	Y	1.12	82.6
ES 1234678-HpCDD	40.53	1.0713	1.0713	0	9.83E+06	1.03	Y	0.99	76.1
ES OCDD	43.07	1.1385	1.1384	-0.3	8.93E+06	1.05	N	0.78	44.1
ES 2378-TCDF	27.47	1.0519	1.0519	0	2.07E+07	0.82	Y	1.08	75.6
ES 12378-PeCDF	32.21	1.2331	1.2334	+0.6	2.07E+07	1.63	Y	0.93	87.6
ES 23478-PeCDF	33.32	1.2754	1.2759	+1.0	1.97E+07	1.57	Y	0.92	84.3
ES 123478-HxCDF	36.53	0.9656	0.9656	0	1.39E+07	0.53	Y	1.14	93.2
ES 123678-HxCDF	36.67	0.9693	0.9693	0	1.73E+07	0.51	Y	1.30	102
ES 234678-HxCDF	37.33	0.9869	0.9868	-0.2	1.47E+07	0.52	Y	1.20	93.6
ES 123789-HxCDF	38.29	1.0121	1.0120	-0.2	1.31E+07	0.50	Y	1.14	88.7
ES 1234678-HpCDF	39.64	1.0478	1.0478	0	1.14E+07	0.44	Y	0.95	92.2
ES 1234789-HpCDF	40.98	1.0832	1.0832	0	8.39E+06	0.41	Y	0.85	76.1
ES OCDF	43.25	1.1434	1.1433	-0.3	1.25E+07	0.92	Y	0.93	51.7

Lab ID: OPR1_18724_DF | **Acq'd:** 10 Dec 2021 01:42 PSW | **Wt/Vol:** 1 uL | **ICAL:** MM3_DF_10272021_27JUL2021

Client ID: 0_18724_OPR001 | **UTP:** 10-Dec-2021 12:46:18 PSW | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 976-006-MPD

Datafile: 211209R19 | **Report:** 10 Dec 2021 12:48 pw | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	27.67		-	-	-	1.60E+07	0.84	Y	-	-	
JS 1234-TCDF	26.11		-	-	-	2.53E+07	0.77	Y	-	-	
JS 123467-HxCDD	37.83		-	-	-	6.51E+06	1.20	Y	-	-	
CS 37Cl-2378-TCDD	28.35		1.0245	1.0244	-0.2	7.27E+06	n/a	-	1.31	86.5	
CS 12347-PeCDD	33.15		1.1978	1.1982	+0.8	1.29E+07	1.57	Y	0.89	90.4	
CS 12346-PeCDF	31.69		1.2130	1.2133	+0.6	2.10E+07	1.61	Y	0.87	95.4	
CS 123469-HxCDF	36.98		0.9775	0.9775	0	1.52E+07	0.56	Y	1.09	107	
CS 1234689-HpCDF	40.03		1.0580	1.0581	+0.2	1.02E+07	0.43	Y	0.86	90.5	
~~SS 37Cl-2378-TCDD~~	~~28.35~~		~~1.0245~~	~~1.0244~~	~~-0.2~~	~~7.27E+06~~	~~n/a~~		~~1.26~~	~~99.1~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.15~~		~~1.1978~~	~~1.1982~~	~~+0.8~~	~~1.29E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~109~~	CL 10Dec21
~~SS 12346-PeCDF~~	~~31.69~~		~~1.2130~~	~~1.2133~~	~~+0.6~~	~~2.10E+07~~	~~1.61~~	~~Y~~	~~0.93~~	~~109~~	
~~SS 123469-HxCDF~~	~~36.98~~		~~0.9775~~	~~0.9775~~	~~0~~	~~1.52E+07~~	~~0.56~~	~~Y~~	~~0.84~~	~~105~~	
~~SS 1234689-HpCDF~~	~~40.03~~		~~1.0580~~	~~1.0581~~	~~+0.2~~	~~1.02E+07~~	~~0.43~~	~~Y~~	~~0.91~~	~~97.9~~	

Totals	Conc	EMPC
Total TCDD	44.4	44.4
Total PeCDD	68.8	68.8
Total HxCDD	174	174
Total HpCDD	65.9	65.9
Total Tetra-Octa Dioxins	467	467
Total TCDF	69	69
Total PeCDF	222	222
Total HxCDF	346	346
Total HpCDF	108	108
Total Tetra-Octa Furans	849	849
Total Tetra-Octa Dioxins & Furans	1320	1320

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.816	0.82
Response	1.83E+06	1.82E+06

Lab ID: OPR1_18724_DF | **Acq'd: 10 Dec 2021 01:42 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18724_OPR001 | **UTP: 10-Dec-2021 12:46:18 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 976-006-MPD**

Datafile: 211209R19 | **Report: 10 Dec 2021 12:48 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	24.71		0.8726	0.8725	-0.1	2.74E+06	0.78	Y	1.34	14	6769.804	0.36
1379-TCDD	NotFnd		0.8851						1.34		6769.804	0.36
1369-TCDD	NotFnd		0.9002						1.34		6769.804	0.36
1469-TCDD	NotFnd		0.9275						1.34		6769.804	0.36
1247/1246/1248/1249-TCDD	NotFnd		0.9361						1.34		6769.804	0.36
1378-TCDD	NotFnd		0.9427						1.34		6769.804	0.36
1268-TCDD	NotFnd		0.9498						1.34		6769.804	0.36
1478-TCDD	NotFnd		0.9584						1.34		6769.804	0.36
1279-TCDD	NotFnd		0.9644						1.34		6769.804	0.36
1234/1269-TCDD	NotFnd		0.9766						1.34		6769.804	0.36
1236-TCDD	NotFnd		0.9813						1.34		6769.804	0.36
1237/1238-TCDD	NotFnd		0.9906						1.34		6769.804	0.36
1239-TCDD	28.19		0.9952	0.9952	0	1.69E+06	0.80	Y	1.34	8.65	6769.804	0.36
2378-TCDD	**28.35**		**1.0008**	1.0008	**0**	1.82E+06	0.82	Y	**1.34**	**9.31**	**6769.804**	**0.36**
1278-TCDD	NotFnd		1.0122						1.34		6769.804	0.36
1267-TCDD	NotFnd		1.0168						1.34		6769.804	0.36
1289-TCDD	29.31		1.0349	1.0349	0	2.42E+06	0.76	Y	1.34	12.4	6769.804	0.36
12479/12468-PeCDD	31.18		0.9267	0.9265	-0.4	1.65E+06	1.51	Y	1.06	11.4	4907.127	0.287
12469-PeCDD	NotFnd		0.9425						1.06		4907.127	0.287
12368-PeCDD	NotFnd		0.9588						1.06		4907.127	0.287
12478-PeCDD	NotFnd		0.9643						1.06		4907.127	0.287
12379-PeCDD	NotFnd		0.9673						1.06		4907.127	0.287
12369/12467/12489-PeCDD	NotFnd		0.9750						1.06		4907.127	0.287
12346/12347-PeCDD	NotFnd		0.9859						1.06		4907.127	0.287
12378-PeCDD	33.67		**1.0005**	**1.0005**	**0**	**6.48E+06**	**1.57**	**Y**	**1.06**	**44.6**	**4907.127**	**0.287**
12367-PeCDD	NotFnd		1.0032						1.06		4907.127	0.287
12389-PeCDD	34.11		1.0135	1.0135	0	1.85E+06	1.52	Y	1.06	12.7	4907.127	0.287
124679/124689-HxCDD	35.82		0.9544	0.9547	+0.6	1.95E+06	1.31	Y	1.05	16	4977.171	0.349
123468-HxCDD	NotFnd		0.9716						1.05		4977.171	0.349
123679/123689-HxCDD	NotFnd		0.9793						1.05		4977.171	0.349
123469-HxCDD	NotFnd		0.9829						1.05		4977.171	0.349
123478-HxCDD	37.53		**1.0003**	**1.0004**	**+0.2**	**6.26E+06**	**1.25**	**Y**	1.06	**54.8**	**4977.171**	**0.383**
123678-HxCDD	37.65		**1.0033**	**1.0036**	**+0.7**	**6.62E+06**	**1.21**	**Y**	1.08	**51.8**	**4977.171**	**0.344**
123467-HxCDD	NotFnd		1.0084						1.05		4977.171	0.349
123789-HxCDD	37.94		**1.0110**	**1.0114**	**+0.9**	**6.36E+06**	**1.33**	**Y**	1.02	**51.8**	**4977.171**	**0.324**

Lab ID: OPR1_18724_DF | **Acq'd: 10 Dec 2021 01:42 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18724_OPR001 | **UTP: 10-Dec-2021 12:46:18 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 976-006-MPD**

Datafile: 211209R19 | **Report: 10 Dec 2021 12:48 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	39.90		0.9843	0.9843	0	1.22E+06	0.94	Y	0.97	12.7	5525.777	0.389
1234678-HpCDD	**40.55**		**1.0003**	**1.0003**	**0**	**5.10E+06**	**1.06**	**Y**	**0.97**	**53.2**	**5525.777**	**0.389**
OCDD	**43.08**		**1.0003**	**1.0002**	**-0.3**	**5.43E+06**	**0.87**	**Y**	**1.07**	**114**	**6264.251**	**1.03**
OCDD-a	43.08		1.0001	1.0002	+0.3	3.18E+05	2.46	Y	0.07	108	8907.142	23.7
1368-TCDF	22.60		0.8230	0.8228	-0.3	3.39E+06	0.80	Y	0.96	17	5636.143	0.338
1468-TCDF	NotFnd		0.8443						0.96		5636.143	0.338
2468-TCDF	23.82		0.8672	0.8672	0	7.66E+05	0.74	Y	0.96	3.84	5636.143	0.338
1346/1246-TCDF	NotFnd		0.8802						0.96		5636.143	0.338
1347/1378/1247-TCDF	NotFnd		0.8855						0.96		5636.143	0.338
1348-TCDF	NotFnd		0.8952						0.96		5636.143	0.338
1248/1367/1379-TCDF	NotFnd		0.9000						0.96		5636.143	0.338
1268-TCDF	NotFnd		0.9136						0.96		5636.143	0.338
1467-TCDF	NotFnd		0.9185						0.96		5636.143	0.338
1478-TCDF	NotFnd		0.9247						0.96		5636.143	0.338
1369/1237-TCDF	NotFnd		0.9381						0.96		5636.143	0.338
2467-TCDF	NotFnd		0.9427						0.96		5636.143	0.338
2368-TCDF	NotFnd		0.9484						0.96		5636.143	0.338
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9517						0.96		5636.143	0.338
1278-TCDF	NotFnd		0.9682						0.96		5636.143	0.338
1349-TCDF	NotFnd		0.9725						0.96		5636.143	0.338
1267-TCDF	NotFnd		0.9782						0.96		5636.143	0.338
2346/1249-TCDF	NotFnd		0.9846						0.96		5636.143	0.338
2347/1279-TCDF	NotFnd		0.9926						0.96		5636.143	0.338
2348-TCDF	27.38		0.9966	0.9967	+0.2	3.24E+06	0.75	Y	0.96	16.3	5636.143	0.338
2378-TCDF	**27.49**		**1.0006**	**1.0006**	**0**	**2.48E+06**	**0.85**	**Y**	**0.96**	**12.5**	**5636.143**	**0.338**
2367/3467-TCDF	NotFnd		1.0139						0.96		5636.143	0.338
1269-TCDF	NotFnd		1.0226						0.96		5636.143	0.338
1239-TCDF	NotFnd		1.0322						0.96		5636.143	0.338
1289-TCDF	29.48		1.0729	1.0732	+0.5	3.87E+06	0.75	Y	0.96	19.4	5636.143	0.338
13468/12468-PeCDF	29.41		0.9135	0.9129	-1.1	1.87E+07	1.62	Y	0.94	98.3	6993.473	0.347
13678/13467/12467-PeCDF	NotFnd		0.9612						0.94		7821.856	0.388
12368/13478/12478-PeCDF	NotFnd		0.9661						0.94		7821.856	0.388
14678-PeCDF	NotFnd		0.9693						0.94		7821.856	0.388
13479-PeCDF	NotFnd		0.9723						0.94		7821.856	0.388
13469/12479-PeCDF	NotFnd		0.9799						0.94		7821.856	0.388
12346-PeCDF	NotFnd		0.9842						0.94		7821.856	0.388

Lab ID: OPR1_18724_DF | **Acq'd: 10 Dec 2021 01:42 PSW** | **Wt/Vol: 1 uL** | **ICAL: MM3_DF_10272021_27JUL2021**

Client ID: 0_18724_OPR001 | **UTP: 10-Dec-2021 12:46:18 PSW** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 976-006-MPD**

Datafile: 211209R19 | **Report: 10 Dec 2021 12:48 pw** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						0.94		7821.856	0.388
12347-PeCDF	NotFnd		0.9893						0.94		7821.856	0.388
12348-PeCDF	NotFnd		0.9941						0.94		7821.856	0.388
12378-PeCDF	**32.23**		**1.0006**	**1.0005**	**-0.2**	**1.05E+07**	**1.55**	**Y**	**0.95**	**53.5**	**7821.856**	**0.387**
12678/12367-PeCDF	NotFnd		1.0090						0.94		7821.856	0.388
12379-PeCDF	NotFnd		1.0143						0.94		7821.856	0.388
12679-PeCDF	NotFnd		0.9929						0.94		7821.856	0.388
23467/12369-PeCDF	NotFnd		0.9966						0.94		7821.856	0.388
23478-PeCDF	**33.34**		**1.0006**	**1.0005**	**-0.2**	**1.09E+07**	**1.54**	**Y**	**0.94**	**58.8**	**7821.856**	**0.389**
23478/12489-PeCDF	NotFnd		0.0000						0.94			
12489-PeCDF	NotFnd		1.0055						0.94		7821.856	0.388
12349-PeCDF	NotFnd		1.0102						0.94		7821.856	0.388
12389-PeCDF	34.40		1.0325	1.0326	+0.2	2.17E+06	1.54	Y	0.94	11.4	7821.856	0.388
123468-HxCDF	35.18		0.9628	0.9629	+0.2	2.22E+07	1.25	Y	1.16	130	11508.795	0.545
124678/134678-HxCDF	NotFnd		0.9683						1.16		11508.795	0.545
134679-HxCDF	NotFnd		0.9746						1.16		11508.795	0.545
124679-HxCDF	NotFnd		0.9798						1.16		11508.795	0.545
124689-HxCDF	NotFnd		0.9859						1.16		11508.795	0.545
123467-HxCDF	NotFnd		0.9972						1.16		11508.795	0.545
123478-HxCDF	**36.55**		**1.0004**	**1.0005**	**+0.2**	**9.62E+06**	**1.29**	**Y**	**1.23**	**56.2**	**11508.795**	**0.551**
123678-HxCDF	**36.69**		**1.0004**	**1.0005**	**+0.2**	**1.07E+07**	**1.25**	**Y**	**1.13**	**54.9**	**11508.795**	**0.475**
123479-HxCDF	NotFnd		1.0049						1.16		11508.795	0.545
123469-HxCDF	NotFnd		1.0088						1.16		11508.795	0.545
123679-HxCDF	NotFnd		0.9943						1.16		11508.795	0.545
234678-HxCDF	**37.35**		**1.0005**	**1.0005**	**0**	**9.32E+06**	**1.29**	**Y**	**1.15**	**55.2**	**11508.795**	**0.591**
234678/123689-HxCDF	NotFnd		0.0000						1.15			
123689-HxCDF	NotFnd		1.0054						1.16		11508.795	0.545
123789-HxCDF	**38.30**		**1.0005**	**1.0004**	**-0.2**	**7.43E+06**	**1.28**	**Y**	**1.14**	**49.9**	**11508.795**	**0.582**
123789/123489-HxCDF	NotFnd		0.0000						1.14			
123489-HxCDF	NotFnd		1.0007						1.16		11508.795	0.545
1234678-HpCDF	**39.65**		**1.0003**	**1.0003**	**0**	**8.15E+06**	**1.00**	**Y**	**1.36**	**52.5**	**5643.93**	**0.205**
1234679-HpCDF	NotFnd		1.0067						1.33		5643.93	0.264
1234689-HpCDF	NotFnd		1.0100						1.33		5643.93	0.264
1234789-HpCDF	**40.99**		**1.0003**	**1.0002**	**-0.2**	**6.03E+06**	**1.06**	**Y**	**1.30**	**55.2**	**5643.93**	**0.345**
OCDF	**43.26**		**1.0002**	**1.0002**	**0**	**6.68E+06**	**0.96**	**Y**	**1.03**	**105**	**6288.596**	**0.832**
OCDF-a	NotFnd		1.0002						0.06		8538.938	19.6

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211209R19	Analysis Date:	10-DEC-2021 01:42:07
Lab ID:	OPR1_18724_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	9.31	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	44.6	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	54.8	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	51.8	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.8	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	53.2	35	-	70	Y
OCDD	100	114	78	-	144	Y
2,3,7,8-TCDF	10	12.5	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	53.5	40	-	67	Y
2,3,4,7,8-PeCDF	50	58.8	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	56.2	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	54.9	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55.2	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	49.9	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	52.5	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	55.2	39	-	69	Y
OCDF	100	105	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 10 Dec 2021 12:48 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
VER Data Filename:	211209R19	Analysis Date:	10-DEC-2021 01:42:07
Lab ID:	OPR1_18724_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	87.7	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	82.6	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	83.4	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	93.3	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	82.6	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	76.1	26	-	166	Y
13C-OCDD	200	88.3	26	-	397	Y
13C-2,3,7,8-TCDF	100	75.6	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	87.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	84.3	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	93.2	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	102	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	93.6	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	88.7	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	92.2	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	76.1	20	-	186	Y
13C-OCDF	200	103	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	34.6	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 10 Dec 2021 12:48 Analyst: pw

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: MM3_DF_10272021_27JUL2021		
Instrument ID:	MM3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211209R19	Analysis Date:	10-DEC-2021 01:42:07
Lab ID:	OPR1_18724_DF		

Window Defining Standards Results

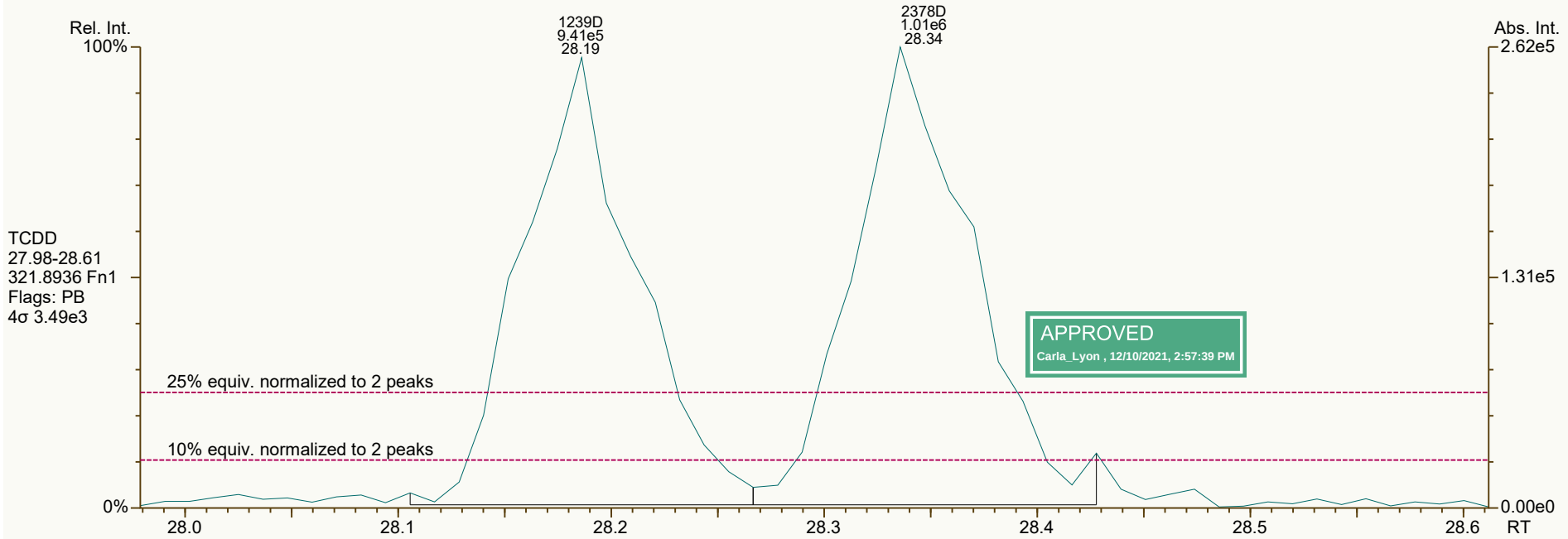
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	24.71	1289-TCDD	29.31
12479/12468-PeCDD	31.18	12389-PeCDD	34.11
124679/124689-HxCDD	35.82	123789-HxCDD	37.94
1234679-HpCDD	39.90	1234678-HpCDD	40.55
1368-TCDF	22.60	1289-TCDF	29.48
13468/12468-PeCDF	29.41	12389-PeCDF	34.40
123468-HxCDF	35.18	123789-HxCDF	38.30
1234678-HpCDF	39.65	1234789-HpCDF	40.99

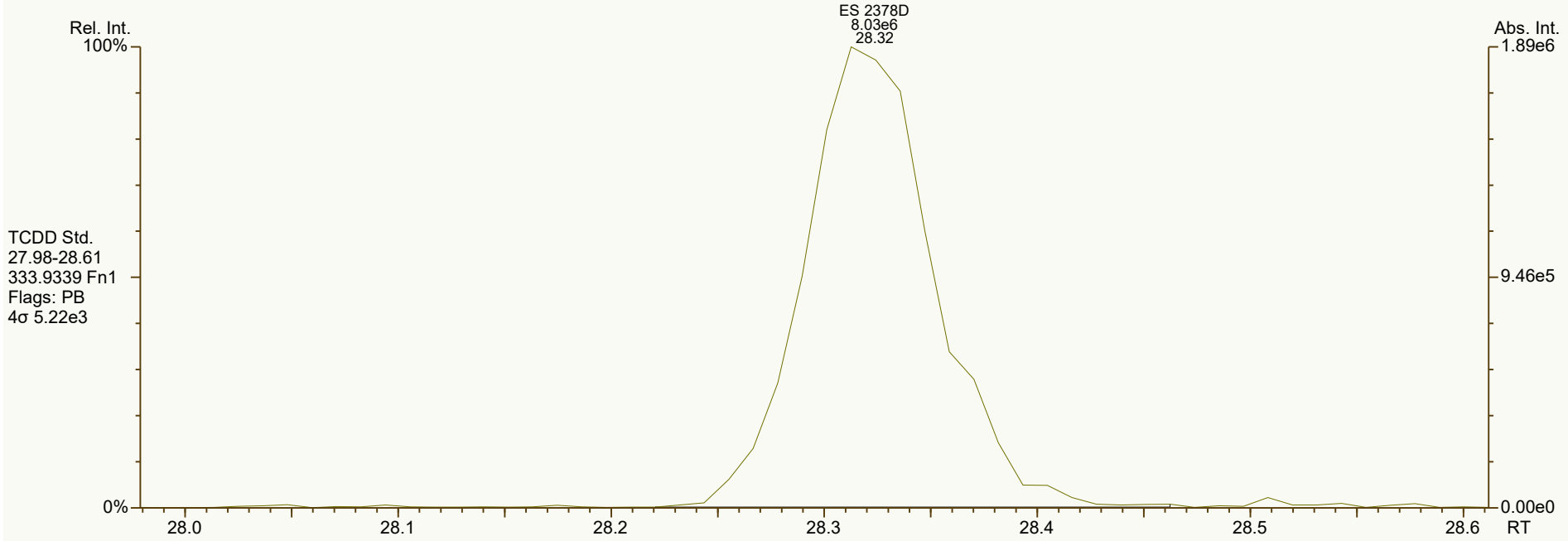
Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.19	2378-TCDD	28.35
2348-TCDF	27.38	2378-TCDF	27.49

Processed: 10 Dec 2021 12:48 Analyst: pw

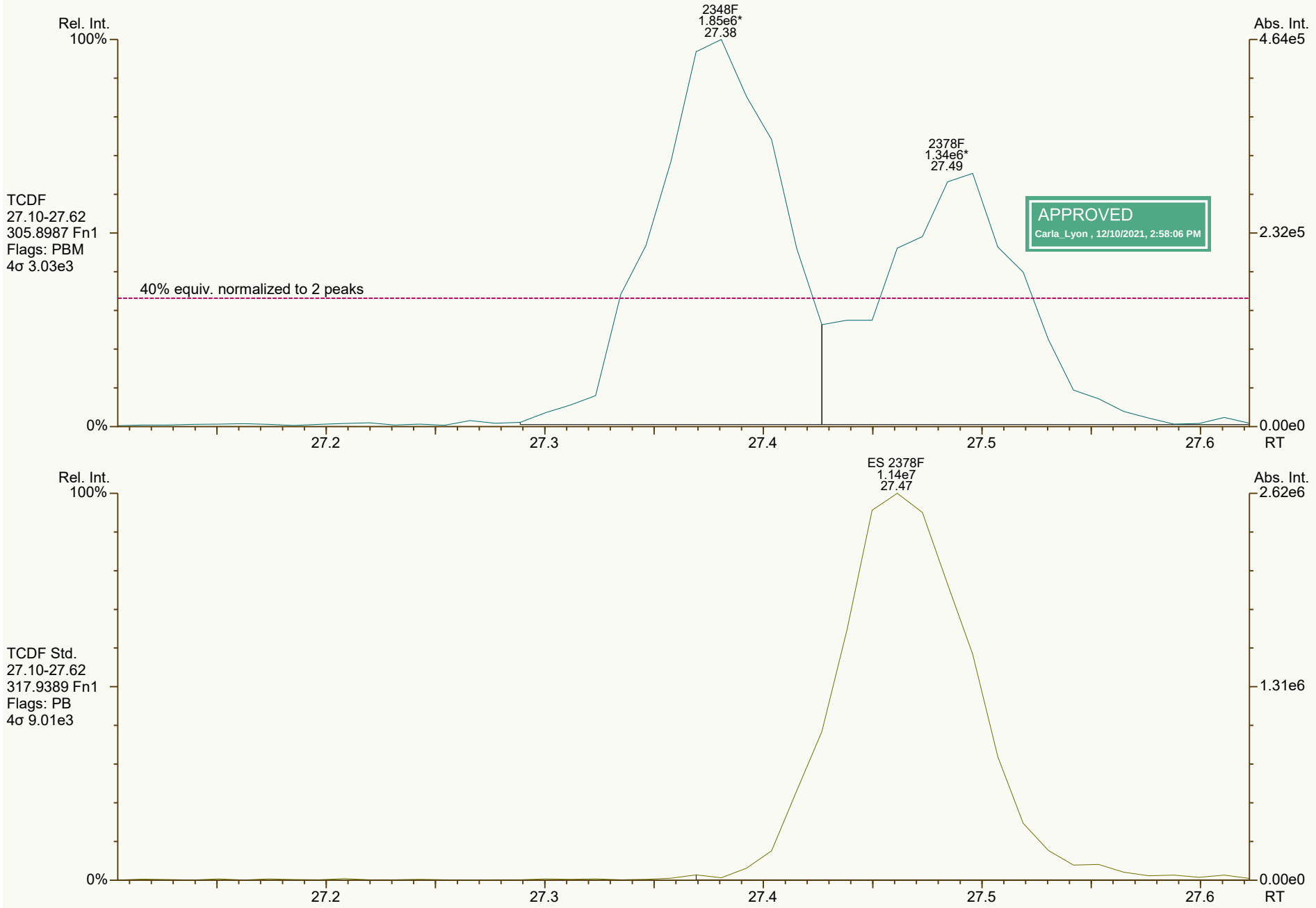
SGS ID: OPR1_18724_DF
Sample ID: 0_18724_OPR001
Acq: 10-Dec-2021 01:42:07
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211209R19



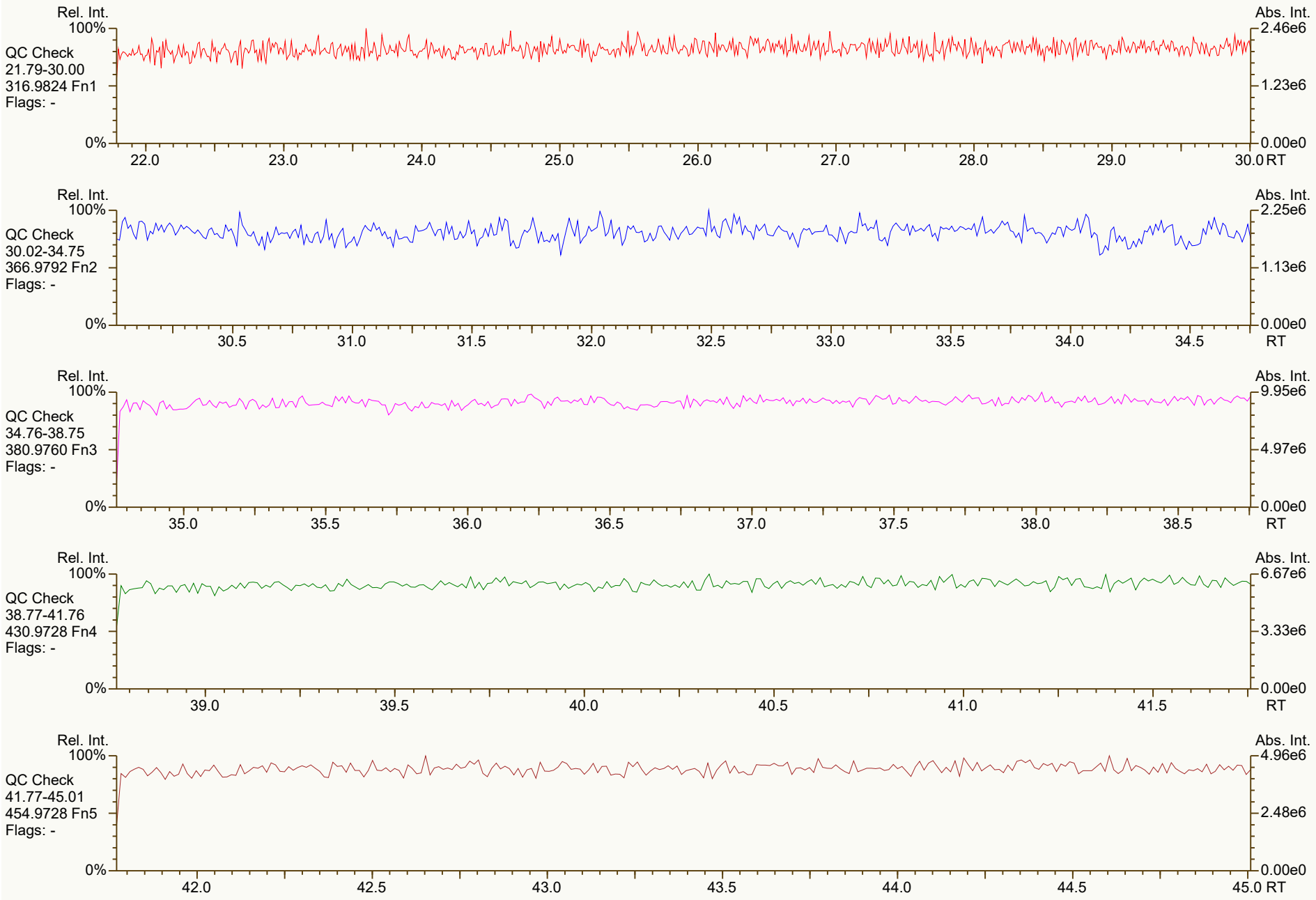


Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:53

SGS ID: OPR1_18724_DF
Sample ID: 0_18724_OPR001
Acq: 10-Dec-2021 01:42:07
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211209R19



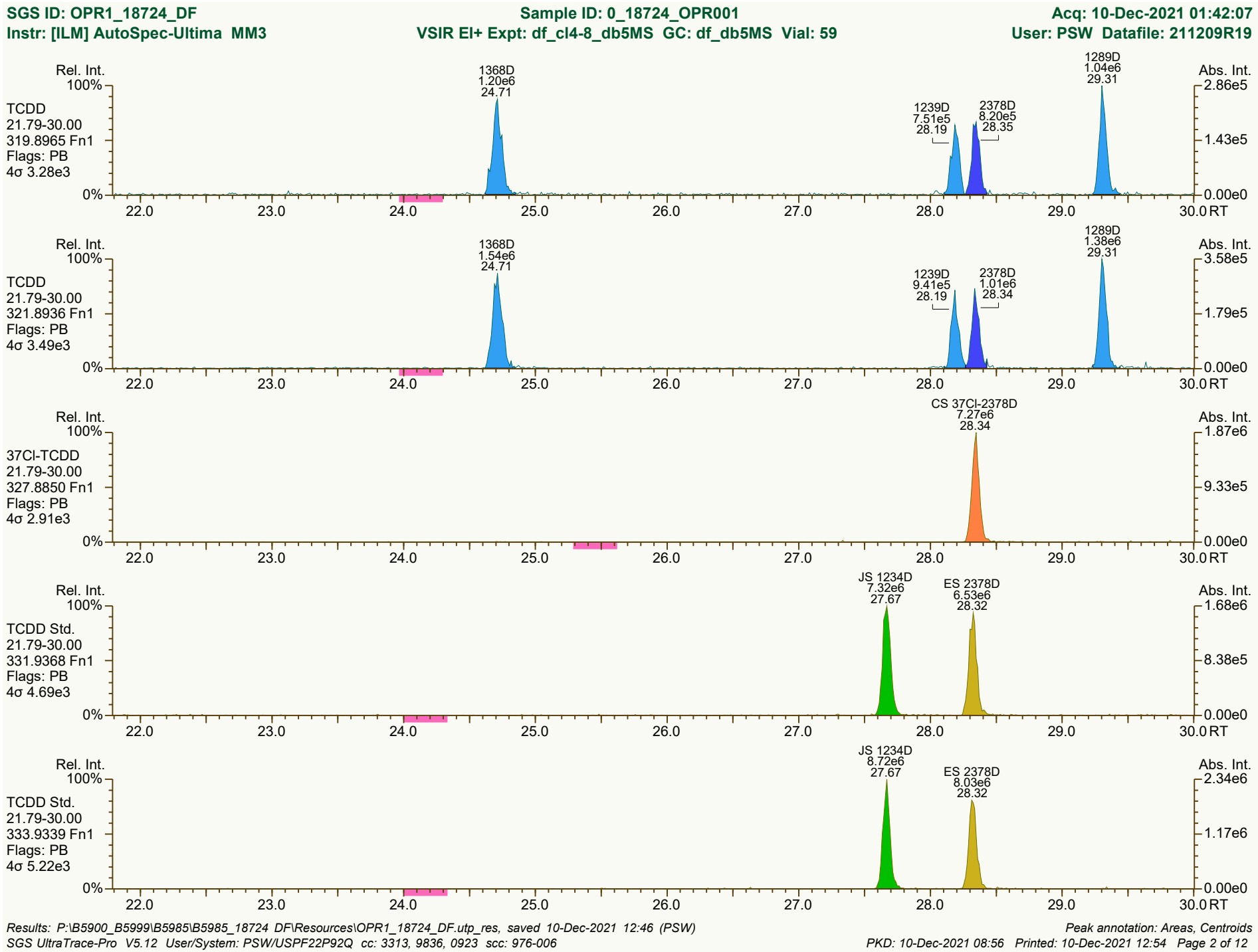
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:53


Rel. Int.
100%
0%
Abs. Int.
2.46e6
1.23e6
0.00e0
RT
QC Check
21.79-30.00
316.9824 Fn1
Flags: -
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
QC Check
30.02-34.75
366.9792 Fn2
Flags: -
2.25e6
1.13e6
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
9.95e6
4.97e6
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
6.67e6
3.33e6
39.0
39.5
40.0
40.5
41.0
41.5
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
4.96e6
2.48e6
42.0
42.5
43.0
43.5
44.0
44.5
45.0

SGS ID: OPR1_18724_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18724_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59

Acq: 10-Dec-2021 01:42:07
User: PSW Datafile: 211209R19



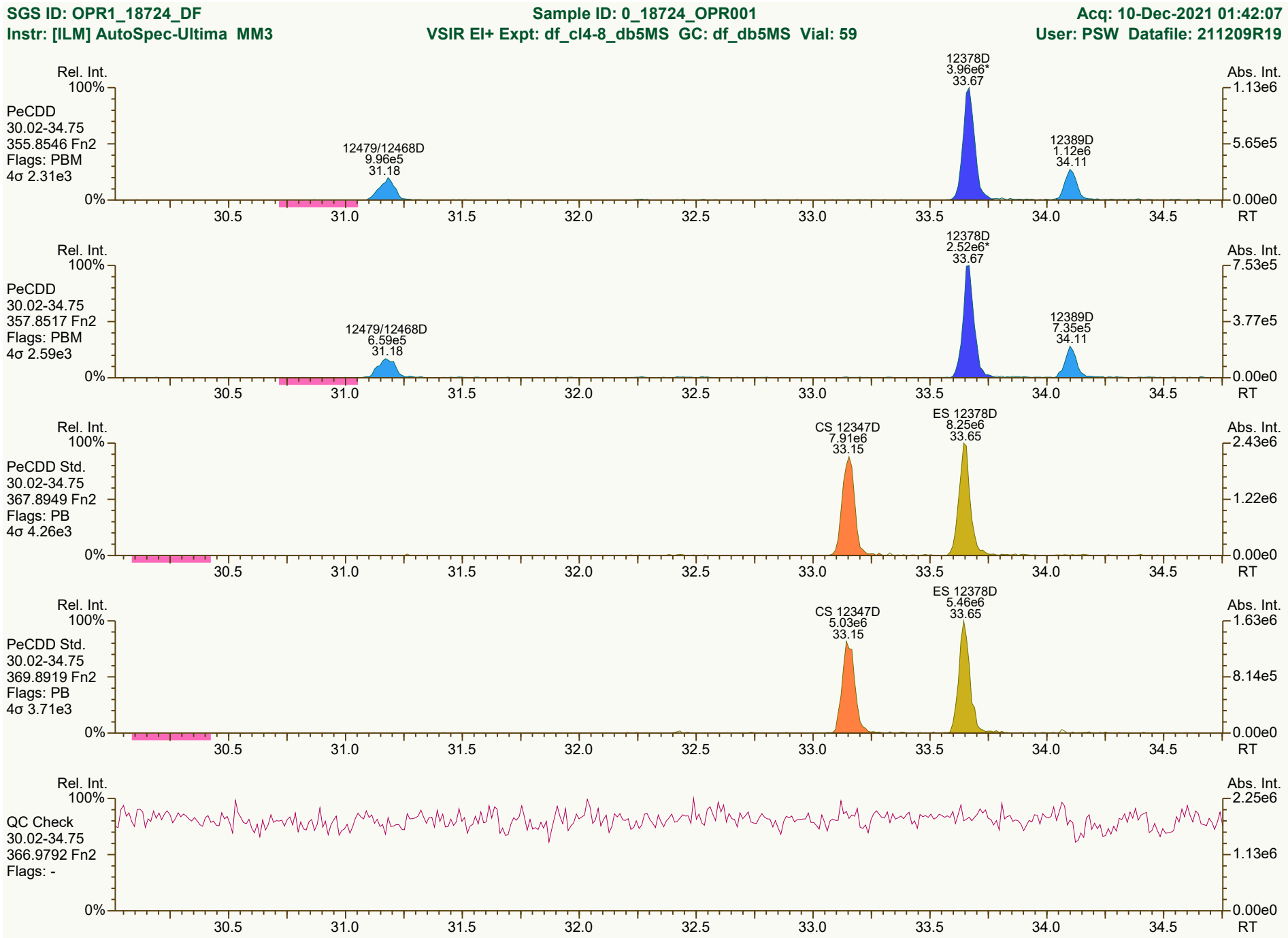
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3313, 9836, 0923 scc: 976-006

Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:54 Page 2 of 12

SGS ID: OPR1_18724_DF
Instr: [ILM] AutoSpec-Ultima MM3

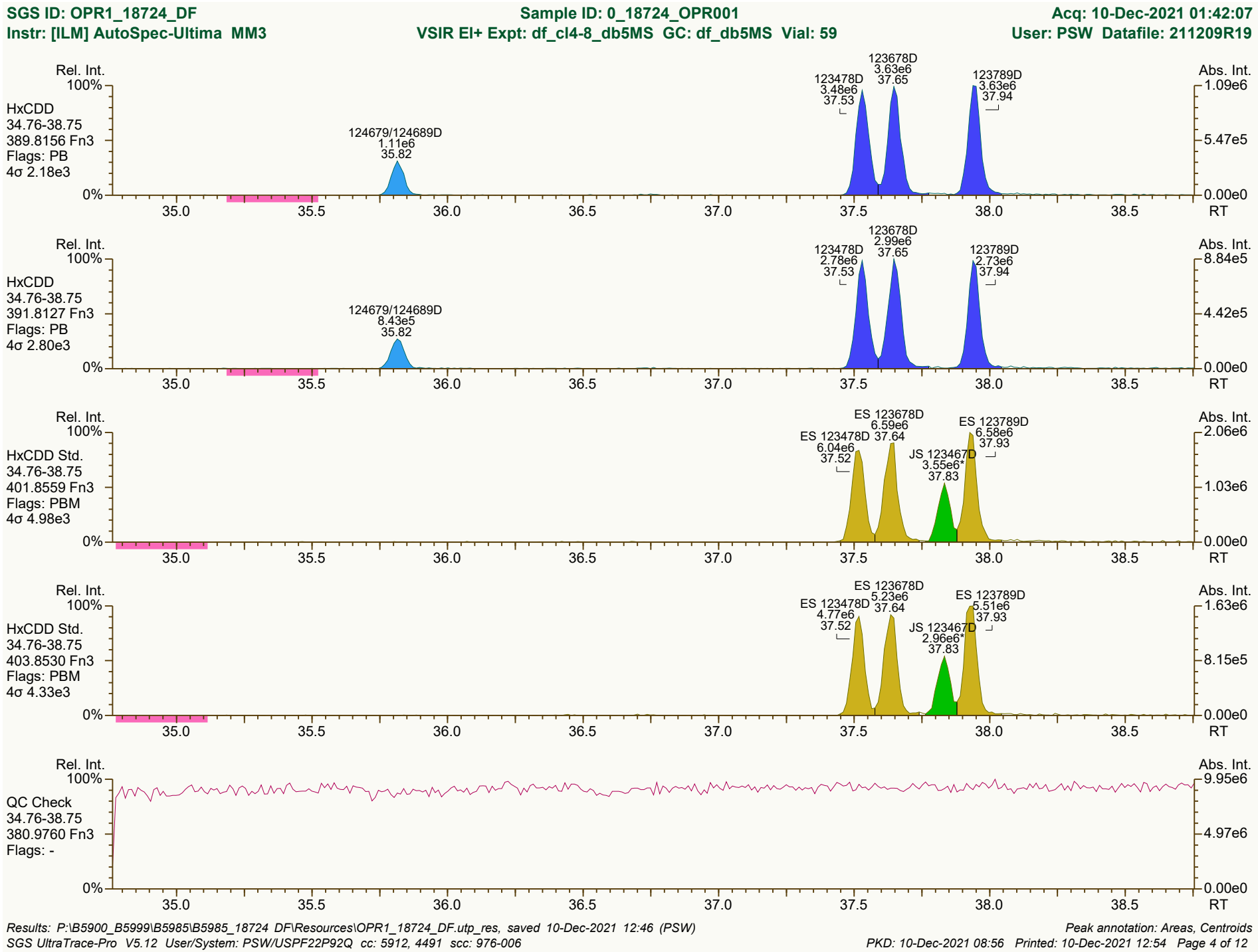
Sample ID: 0_18724_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59

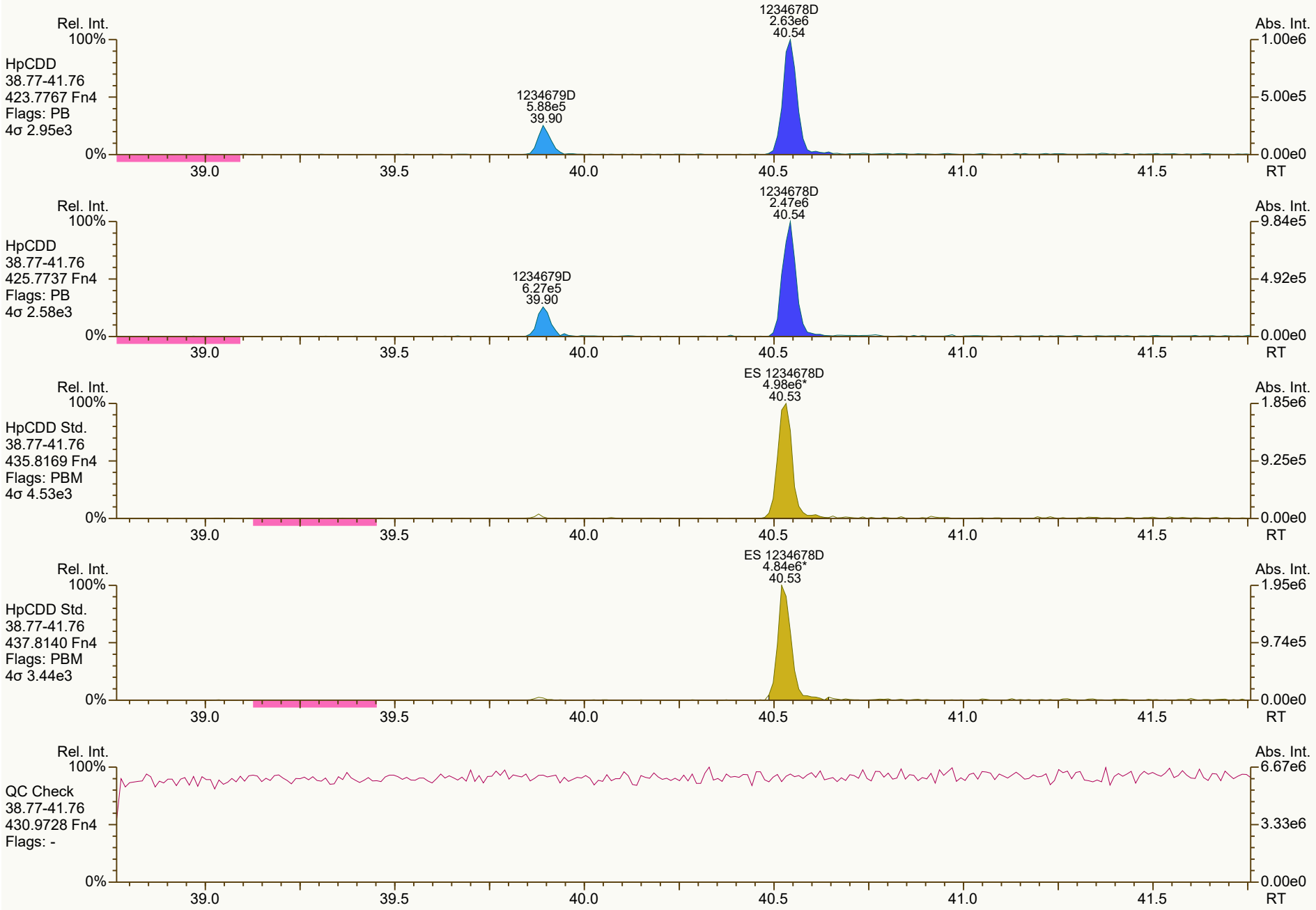
Acq: 10-Dec-2021 01:42:07
User: PSW Datafile: 211209R19

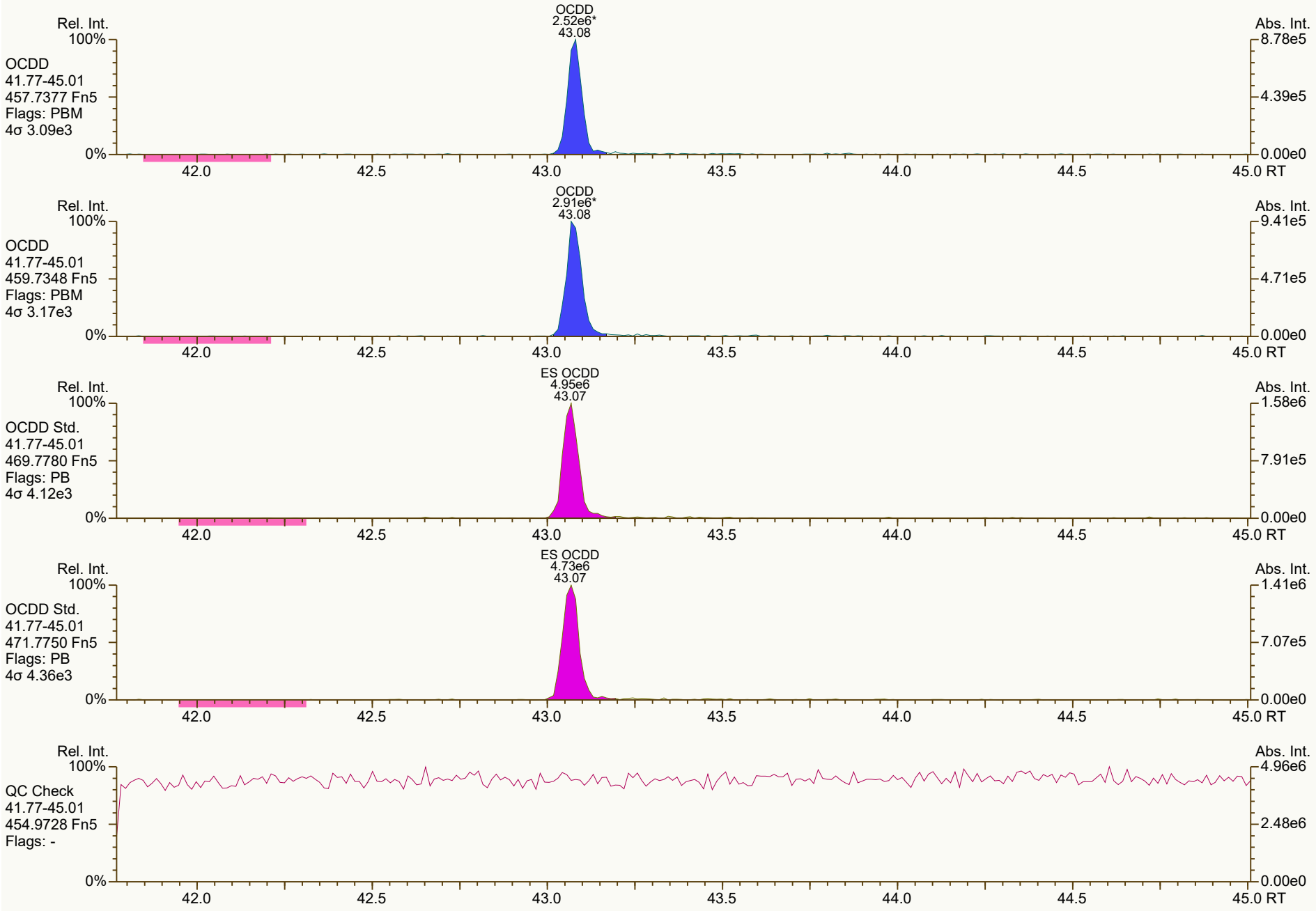


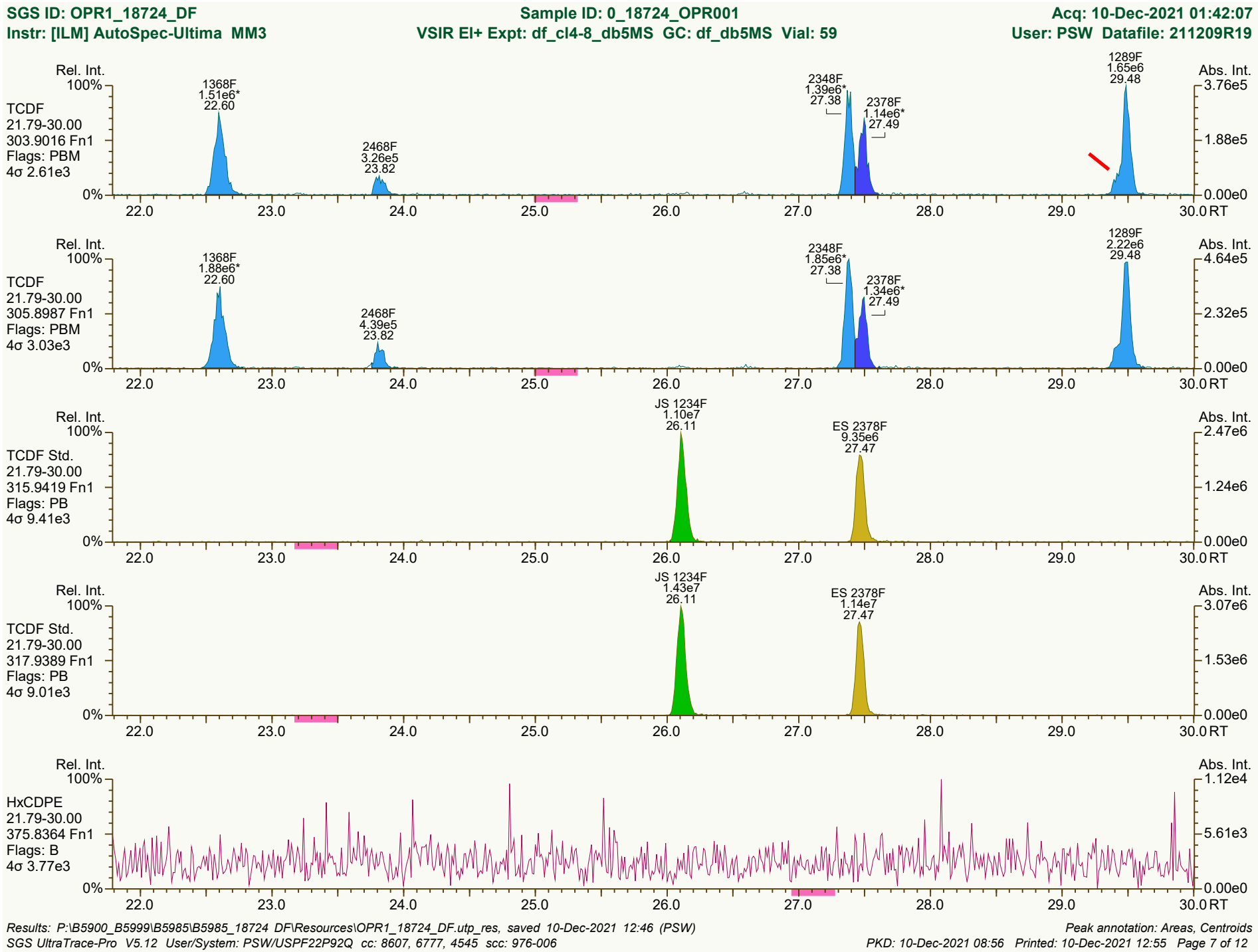
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 3035, 4292 scc: 976-006

Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:54 Page 3 of 12


SGS ID: OPR1_18724_DF
Sample ID: 0_18724_OPR001
Acq: 10-Dec-2021 01:42:07
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211209R19
Rel. Int.
Abs. Int.
HxCDD
34.76-38.75
389.8156 Fn3
Flags: PB
4σ 2.18e3
124679/124689D
1.11e6
35.82
123478D
3.48e6
37.53
123678D
3.63e6
37.65
123789D
3.63e6
37.94
1.09e6
5.47e5
0.00e0
HxCDD
34.76-38.75
391.8127 Fn3
Flags: PB
4σ 2.80e3
124679/124689D
8.43e5
35.82
123478D
2.78e6
37.53
123678D
2.99e6
37.65
123789D
2.73e6
37.94
8.84e5
4.42e5
0.00e0
HxCDD Std.
34.76-38.75
401.8559 Fn3
Flags: PBM
4σ 4.98e3
ES 123478D
6.04e6
37.52
ES 123678D
6.59e6
37.64
JS 123467D
3.55e6*
37.83
ES 123789D
6.58e6
37.93
2.06e6
1.03e6
0.00e0
HxCDD Std.
34.76-38.75
403.8530 Fn3
Flags: PBM
4σ 4.33e3
ES 123478D
4.77e6
37.52
ES 123678D
5.23e6
37.64
JS 123467D
2.96e6*
37.83
ES 123789D
5.51e6
37.93
1.63e6
8.15e5
0.00e0
QC Check
34.76-38.75
380.9760 Fn3
Flags: -
9.95e6
4.97e6
0.00e0
100%
0%
35.0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 5912, 4491 scc: 976-006
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:54 Page 4 of 12


Rel. Int.
100%
HpCDD
38.77-41.76
423.7767 Fn4
Flags: PB
4σ 2.95e3
1234678D
2.63e6
40.54
1234679D
5.88e5
39.90
Abs. Int.
1.00e6
5.00e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD
38.77-41.76
425.7737 Fn4
Flags: PB
4σ 2.58e3
1234678D
2.47e6
40.54
1234679D
6.27e5
39.90
Abs. Int.
9.84e5
4.92e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
435.8169 Fn4
Flags: PBM
4σ 4.53e3
ES 1234678D
4.98e6*
40.53
Abs. Int.
1.85e6
9.25e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
HpCDD Std.
38.77-41.76
437.8140 Fn4
Flags: PBM
4σ 3.44e3
ES 1234678D
4.84e6*
40.53
Abs. Int.
1.95e6
9.74e5
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT
Rel. Int.
100%
QC Check
38.77-41.76
430.9728 Fn4
Flags: -
Abs. Int.
6.67e6
3.33e6
0.00e0
0%
39.0
39.5
40.0
40.5
41.0
41.5
RT


OCDD
2.52e6*
43.08
Rel. Int.
100%
OCDD
41.77-45.01
457.7377 Fn5
Flags: PBM
4σ 3.09e3
0%
Abs. Int.
8.78e5
4.39e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.91e6*
43.08
Rel. Int.
100%
OCDD
41.77-45.01
459.7348 Fn5
Flags: PBM
4σ 3.17e3
0%
Abs. Int.
9.41e5
4.71e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
4.95e6
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
469.7780 Fn5
Flags: PB
4σ 4.12e3
0%
Abs. Int.
1.58e6
7.91e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
4.73e6
43.07
Rel. Int.
100%
OCDD Std.
41.77-45.01
471.7750 Fn5
Flags: PB
4σ 4.36e3
0%
Abs. Int.
1.41e6
7.07e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.77-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.96e6
2.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


SGS ID: OPR1_18724_DF
Sample ID: 0_18724_OPR001
Acq: 10-Dec-2021 01:42:07
Instr: [ILM] AutoSpec-Ultima MM3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59
User: PSW Datafile: 211209R19
Rel. Int.
Abs. Int.
TCDF
21.79-30.00
303.9016 Fn1
Flags: PBM
4σ 2.61e3
1368F 1.51e6* 22.60
2468F 3.26e5 23.82
2348F 1.39e6* 27.38
2378F 1.14e6* 27.49
1289F 1.65e6 29.48
3.76e5
1.88e5
0.00e0
TCDF
21.79-30.00
305.8987 Fn1
Flags: PBM
4σ 3.03e3
1368F 1.88e6* 22.60
2468F 4.39e5 23.82
2348F 1.85e6* 27.38
2378F 1.34e6* 27.49
1289F 2.22e6 29.48
4.64e5
2.32e5
0.00e0
TCDF Std.
21.79-30.00
315.9419 Fn1
Flags: PB
4σ 9.41e3
JS 1234F 1.10e7 26.11
ES 2378F 9.35e6 27.47
2.47e6
1.24e6
0.00e0
TCDF Std.
21.79-30.00
317.9389 Fn1
Flags: PB
4σ 9.01e3
JS 1234F 1.43e7 26.11
ES 2378F 1.14e7 27.47
3.07e6
1.53e6
0.00e0
HxCDPE
21.79-30.00
375.8364 Fn1
Flags: B
4σ 3.77e3
1.12e4
5.61e3
0.00e0
100%
0%
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0 RT
Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 8607, 6777, 4545 scc: 976-006
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:55 Page 7 of 12

SGS ID: OPR1_18724_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18724_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59

Acq: 10-Dec-2021 01:42:07
User: PSW Datafile: 211209R19



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2075 scc: 976-006

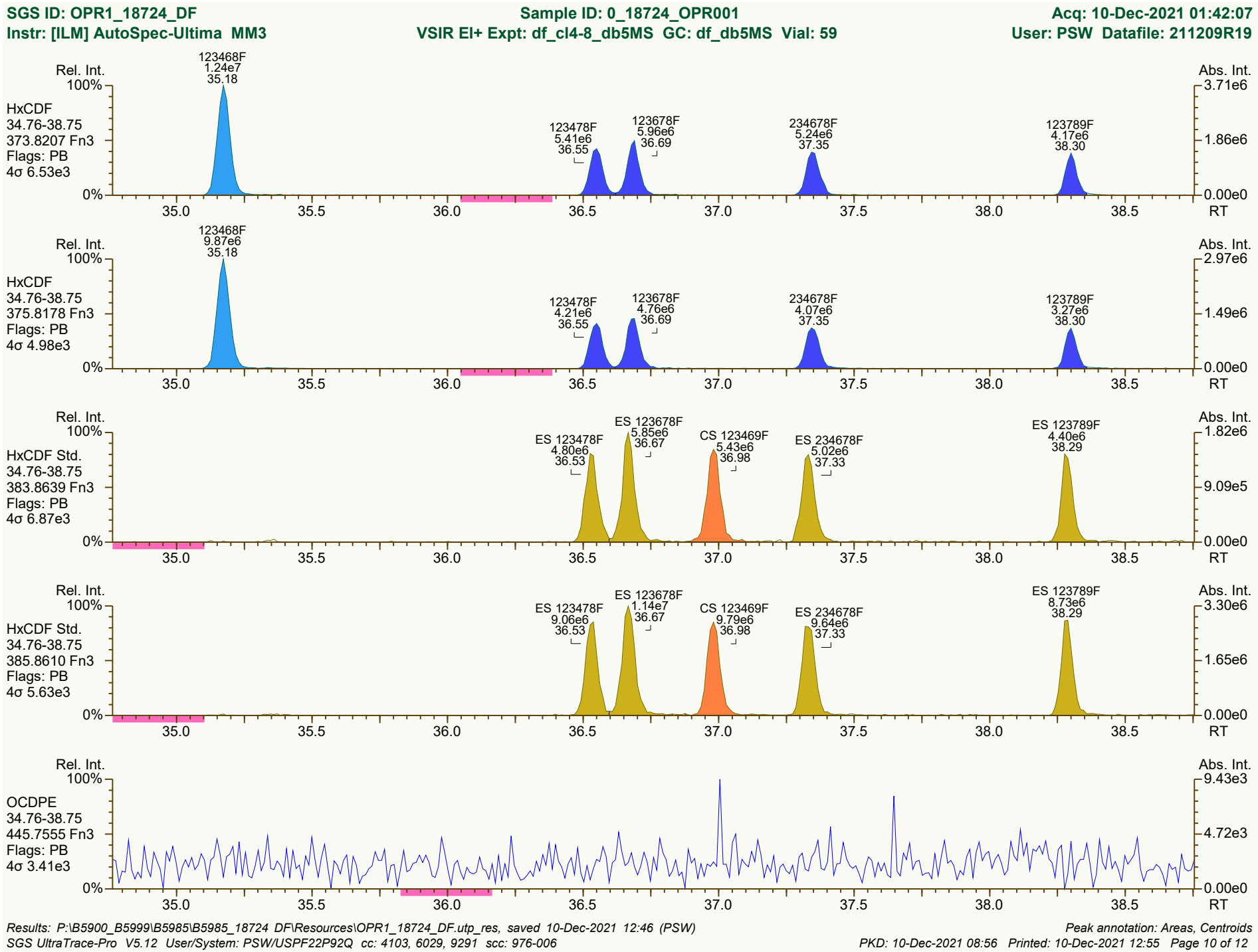
Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:55 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.02-34.75
339.8597 Fn2
Flags: PBM
4σ 4.49e3
0%
12378F
6.38e6
32.23
23478F
6.59e6*
33.33
12389F
1.32e6
34.40
Abs. Int.
2.01e6
1.01e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF-2
30.02-34.75
341.8568 Fn2
Flags: PBM
4σ 3.33e3
0%
12378F
4.11e6
32.23
23478F
4.27e6*
33.33
12389F
8.55e5
34.40
Abs. Int.
1.20e6
6.01e5
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
351.9000 Fn2
Flags: PB
4σ 2.80e3
0%
CS 12346F
1.29e7
31.68
ES 12378F
1.28e7
32.21
ES 23478F
1.20e7
33.32
Abs. Int.
3.36e6
1.68e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
PeCDF Std.
30.02-34.75
353.8970 Fn2
Flags: PB
4σ 6.12e3
0%
CS 12346F
8.03e6
31.68
ES 12378F
7.88e6
32.21
ES 23478F
7.65e6
33.32
Abs. Int.
2.14e6
1.07e6
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT
Rel. Int.
100%
HpCDPE
30.02-34.75
409.7974 Fn2
Flags: B
4σ 3.00e3
0%
Abs. Int.
6.50e3
3.25e3
0.00e0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
RT

SGS ID: OPR1_18724_DF
Instr: [ILM] AutoSpec-Ultima MM3

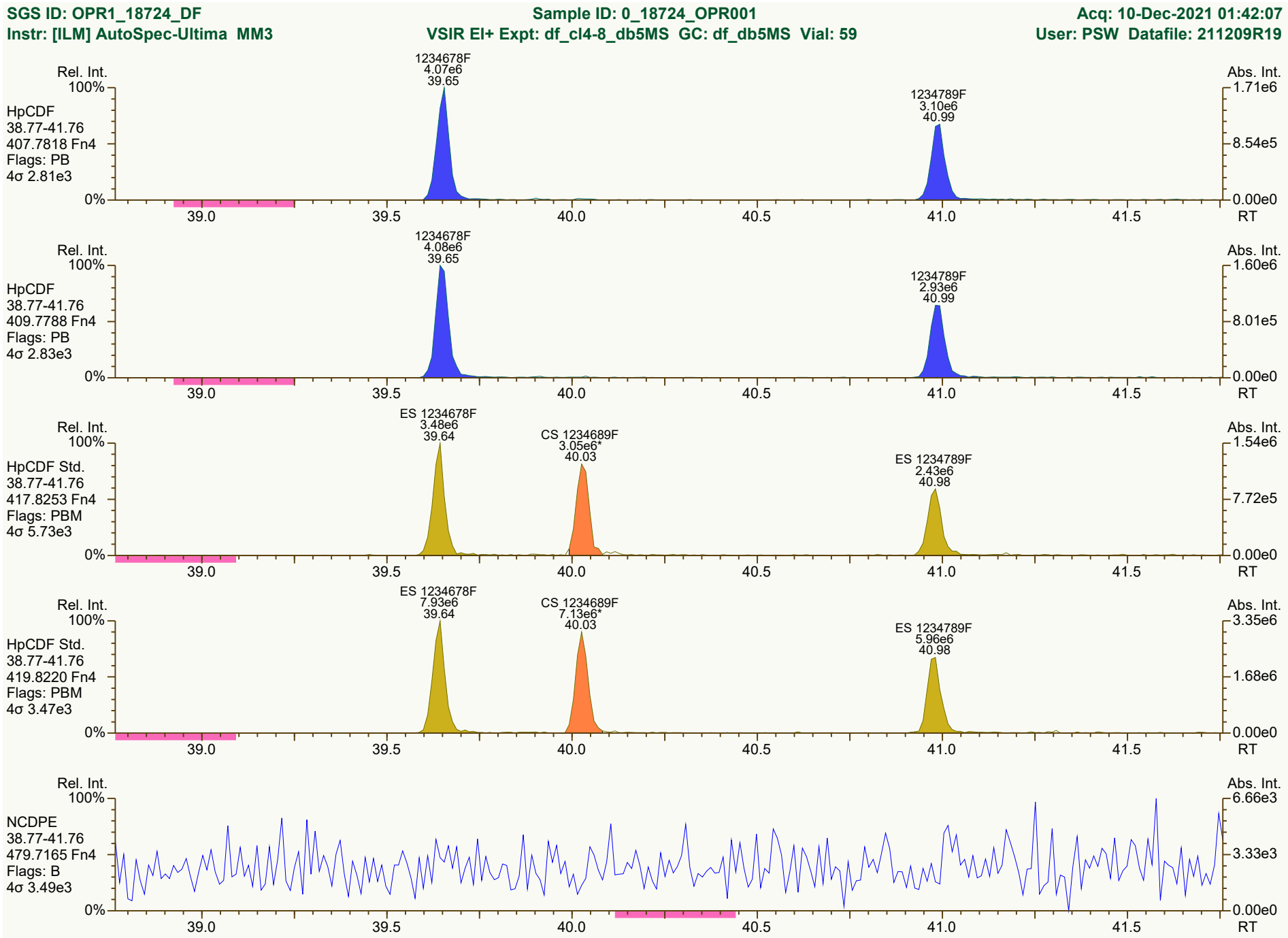
Sample ID: 0_18724_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59

Acq: 10-Dec-2021 01:42:07
User: PSW Datafile: 211209R19



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4103, 6029, 9291 scc: 976-006

Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:55 Page 10 of 12

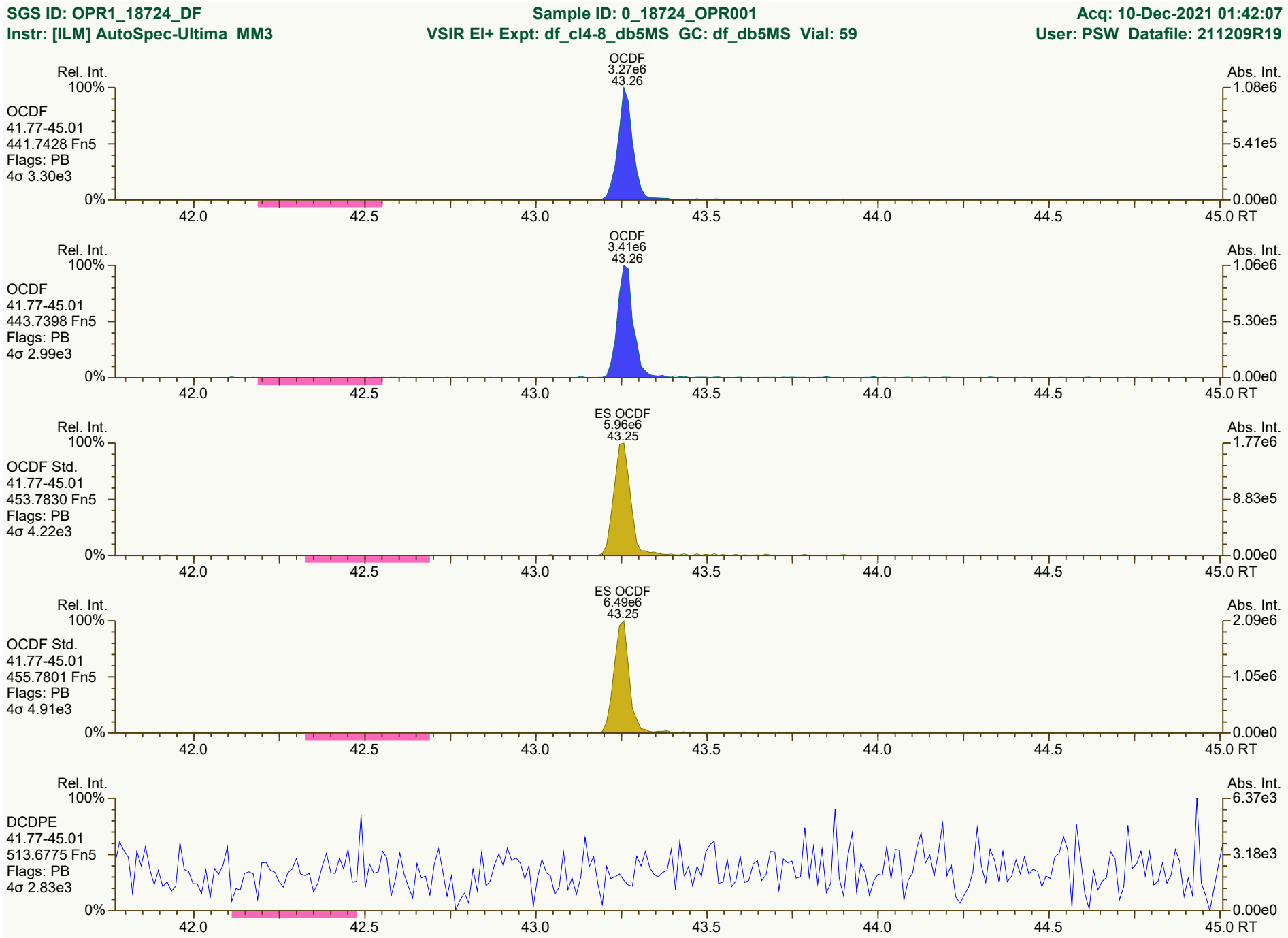


Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 2797, 3709, 5650 scc: 976-006
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:55 Page 11 of 12

SGS ID: OPR1_18724_DF
Instr: [ILM] AutoSpec-Ultima MM3

Sample ID: 0_18724_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 59

Acq: 10-Dec-2021 01:42:07
User: PSW Datafile: 211209R19



Results: P:\B5900_B5999\B5985\B5985_18724 DF\Resources\OPR1_18724_DF.utp_res, saved 10-Dec-2021 12:46 (PSW)
SGS UltraTrace-Pro V5.12 User/System: PSW/USPF22P92Q cc: 4330, 3858, 0043 scc: 976-006

Peak annotation: Areas, Centroids
PKD: 10-Dec-2021 08:56 Printed: 10-Dec-2021 12:55 Page 12 of 12



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120321-S-JC-SW-B-6 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID	B5986_18732_DF_001	Date Extracted:	15-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	74.2 %	QC Batch No:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:47:28

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	888				ES 2378-TCDD	87.9	
12378-PeCDD	11				ES 12378-PeCDD	109	
123478-HxCDD	3.51				ES 123478-HxCDD	90.8	
123678-HxCDD	13.6				ES 123678-HxCDD	92.1	
123789-HxCDD	7.35				ES 123789-HxCDD	90.5	
1234678-HpCDD	260				ES 1234678-HpCDD	93.9	
OCDD	3,880				ES OCDD	58.4	
2378-TCDF	2,650			E	ES 2378-TCDF	86.3	
12378-PeCDF	78.2				ES 12378-PeCDF	98.3	
23478-PeCDF	70.3				ES 23478-PeCDF	99.8	
123478-HxCDF	162				ES 123478-HxCDF	106	
123678-HxCDF	41.2				ES 123678-HxCDF	109	
234678-HxCDF	12.4				ES 234678-HxCDF	110	
123789-HxCDF	ND	0.597			ES 123789-HxCDF	112	
1234678-HpCDF	185				ES 1234678-HpCDF	110	
1234789-HpCDF	41.7				ES 1234789-HpCDF	102	
OCDF	4,560				ES OCDF	67	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	87.3	
Total TCDD	1,010		1,020		CS 12347-PeCDD	112	
Total PeCDD	32.9		41		CS 12346-PeCDF	97.7	
Total HxCDD	141		146		CS 123469-HxCDF	115	
Total HpCDD	642		642		CS 1234689-HpCDF	112	
Total TCDF	5,280		5,280	E			
Total PeCDF	281		283				
Total HxCDF	333		334				
Total HpCDF	387		387				
Total PCDD/Fs	**16,500**		**16,600**	E			
WHO-2005 TEQs							
TEQ: ND=0	1220		1220				
TEQ: ND=DL/2	1220	0.97	1220				
TEQ: ND=DL	1220	1.94	1220				

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Sample ID: 11215131-120321-S-JC-SW-B-6 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID:	B5986_18732_DF_001	Date Extracted:	15-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	74.2 %	QC Batch No.:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:47:28

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	5.87		12479/12468D	9.2		124679/124689D	65.7		1234679D	382	
1379D	2.18		12469D	[4.43]		123468D	8.76		1234678D	260	
1369D	1.04		12368D	4.05		123679/123689D	42.1				
1469D	[4.77]		12478D	[2.72]		123469D	[2.7]				
1247D...[4]	2.64		12379D	2.06	J	123478D	3.51				
1378D	[3.16]		12369D...[3]	4.51		123678D	13.6				
1268D	(0.61)		12346/12347D	0.929	J	123467D	[2.54]				
1478D	2.38		12378D	11		123789D	7.35		**Conc.**	642	
1279D	(0.61)		12367D	1.17	J				**EMPC**	642	
1234/1269D	[1.38]		12389D	[0.899]	J						
1236D	(0.61)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	14.3										
1239D	(0.61)								OCDD	3880	
2378D	888										
1278D	86.5										
1267D	2.98										
1289D	[1.89]										
Conc.	1,010		**Conc.**	32.9		**Conc.**	141				
EMPC	1,020		**EMPC**	41		**EMPC**	146				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	1,220	1,220
TEQ: ND=DL/2	1,220	1,220
TEQ: ND=DL	1,220	1,220

	Conc.	EMPC
Total PCDD/Fs	16,500	16,600

Checkcode: 677-327-ZTY

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120321-S-JC-SW-B-6 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	Lab Sample ID:	B5986_18732_DF_001	Date Extracted:	15-Dec-2021
Date Collected:	03-Dec-2021	% Solid:	74.2 %	QC Batch No.:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:47:28

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[1.79]		13468/12468F	21.6		123468F	12		1234678F	185	
1468F	6.95		13678F...[3]	4.9		124678/134678F	43.5		1234679F	21.5	
2468F	11.6		12368F...[3]	52.7		134679F	[0.564]	J	1234689F	139	
1346/1246F	(0.278)		14678F	(0.537)		124679F	2.41	J	1234789F	41.7	
1347F...[3]	34		13479F	(0.537)		124689F	39.2				
1348F	139		13469/12479F	1.22	J	123467F	4.01				
1248F...[3]	(0.278)		12346F	(0.537)		123478F	162				
1268F	47.9		23468/12469F	8.2		123678F	41.2				
1467F	7.31		12347F	[2.4]	J	123479F	(0.583)				
1478F	115		12348F	10.2		123469F	2.96				
1369/1237F	29.2		12378F	78.2		123679F	(0.583)				
2467F	4.17		12678/12367F	26.7		234678F	12.4		**Conc.**	387	
2368F	77.5		12379F	(0.537)		234678/123689F	0		**EMPC**	387	
1238F...[5]	137		12679F	(0.537)		123689F	(0.583)				
1278F	1240	E	23467/12369F	2.48		123789F	(0.597)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.278)		23478F	70.3		123789/123489F	0				
1267F	69.8		23478/12489F	0		123489F	13.3		OCDF	4560	
2346/1249F	8.46		12489F	(0.537)							
2347/1279F	33.8		12349F	(0.537)							
2348F	175		12389F	4.12							
2378F	2650	E									
2367/3467F	218										
1269F	44.7										
1239F	[2.36]										
1289F	222										
Conc.	5,280		**Conc.**	281		**Conc.**	333				
EMPC	5,280		**EMPC**	283		**EMPC**	334				

Checkcode: 677-327-ZTY

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120321-S-JC-SW-B-6 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5986_18732_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.19 g	QC Batch No.:	18732
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	15-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 22:47
Lab Project No:	B5986	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	888		0.61	888	888	888
12378-PeCDD	11		0.601	5.49	11	11
123478-HxCDD	3.51		0.963	0.351	0.351	0.351
123678-HxCDD	13.6		0.925	1.36	1.36	1.36
123789-HxCDD	7.35		0.917	0.735	0.735	0.735
1234678-HpCDD	260		0.675	2.6	2.6	2.6
OCDD	3880		1.04	3.88	0.388	1.16
2378-TCDF	2650	E	0.278	265	265	265
12378-PeCDF	78.2		0.539	3.91	3.91	2.34
23478-PeCDF	70.3		0.535	35.2	35.2	21.1
123478-HxCDF	162		0.588	16.2	16.2	16.2
123678-HxCDF	41.2		0.563	4.12	4.12	4.12
234678-HxCDF	12.4		0.589	1.24	1.24	1.24
123789-HxCDF	(0.597)		0.597	(0.0597)	(0.0597)	(0.0597)
1234678-HpCDF	185		0.148	1.85	1.85	1.85
1234789-HpCDF	41.7		0.219	0.417	0.417	0.417
OCDF	4560		1.18	4.56	0.456	1.37

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TEQ Summaries			
EMPC = 0, ND = 0	1230	1230	1220
EMPC = 0, ND = DL / 2	1230	1230	1220
EMPC = 0, ND = DL	1230	1230	1220
EMPC = 0, < J-level = 0	1230	1230	1220
EMPC = EMPC, ND = 0	1230	1230	1220
EMPC = EMPC, ND = DL / 2	1230	1230	1220
EMPC = EMPC, ND = DL	1230	1230	1220
EMPC = EMPC, < J-level = 0	1230	1230	1220

Checkcode: 677-327-ZTY

Sample ID: 11215131-120421-S-JC-SC-O-12 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID	B5986_18732_DF_002	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	70.4 %	QC Batch No:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:33:49

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	6.65				ES 2378-TCDD	81.5	
12378-PeCDD	10.9				ES 12378-PeCDD	104	
123478-HxCDD	13.3				ES 123478-HxCDD	81.8	
123678-HxCDD	96.3				ES 123678-HxCDD	82.5	
123789-HxCDD	59.6				ES 123789-HxCDD	81	
1234678-HpCDD	3,920				ES 1234678-HpCDD	86.2	
OCDD	31,700			E	ES OCDD	62.5	
2378-TCDF	105				ES 2378-TCDF	80	
12378-PeCDF	26.6				ES 12378-PeCDF	90.5	
23478-PeCDF	58.5				ES 23478-PeCDF	91.7	
123478-HxCDF	60.6				ES 123478-HxCDF	97.8	
123678-HxCDF	24.8				ES 123678-HxCDF	101	
234678-HxCDF	28.8				ES 234678-HxCDF	94	
123789-HxCDF	ND	0.773			ES 123789-HxCDF	98.8	
1234678-HpCDF	194				ES 1234678-HpCDF	97.8	
1234789-HpCDF	37.5				ES 1234789-HpCDF	92.9	
OCDF	595				ES OCDF	65.1	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	88.7	
Total TCDD	46.8		62.8		CS 12347-PeCDD	115	
Total PeCDD	106		113		CS 12346-PeCDF	99.8	
Total HxCDD	963		963		CS 123469-HxCDF	114	
Total HpCDD	7,930		7,930		CS 1234689-HpCDF	114	
Total TCDF	581		640				
Total PeCDF	365		366				
Total HxCDF	370		370				
Total HpCDF	604		604				
Total PCDD/Fs	**43,300**		**43,400**	E			
WHO-2005 TEQs							
TEQ: ND=0	126		126				
TEQ: ND=DL/2	126	1.25	126				
TEQ: ND=DL	126	2.51	126				

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Sample ID: 11215131-120421-S-JC-SC-O-12 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID:	B5986_18732_DF_002	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	70.4 %	QC Batch No.:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:33:49

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	14.8		12479/12468D	27.3		124679/124689D	269		1234679D	4010	
1379D	[6.61]		12469D	[7.61]		123468D	40.4		1234678D	3920	
1369D	[2.06]		12368D	14.3		123679/123689D	438				
1469D	1.06		12478D	12.3		123469D	29.7				
1247D...[4]	5.37		12379D	9.47		123478D	13.3				
1378D	5.74		12369D...[3]	12.9		123678D	96.3				
1268D	[1.78]		12346/12347D	8.99		123467D	16.5				
1478D	[0.95]		12378D	10.9		123789D	59.6		**Conc.**	7,930	
1279D	2.12		12367D	3.82					**EMPC**	7,930	
1234/1269D	3.84		12389D	5.89							
1236D	1.39								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	4.16										
1239D	1.61								OCDD	31700	E
2378D	6.65										
1278D	[2.7]										
1267D	[0.695]										
1289D	[1.25]										
Conc.	46.8		**Conc.**	106		**Conc.**	963				
EMPC	62.8		**EMPC**	113		**EMPC**	963				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	126	126
TEQ: ND=DL/2	126	126
TEQ: ND=DL	126	126

	Conc.	EMPC
Total PCDD/Fs	43,300	43,400

Checkcode: 135-907-PRT

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120421-S-JC-SC-O-12 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	Lab Sample ID:	B5986_18732_DF_002	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	70.4 %	QC Batch No.:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	23:33:49

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	5.1		13468/12468F	33.8		123468F	22.5		1234678F	194	
1468F	8.1		13678F...[3]	33.4		124678/134678F	94.7		1234679F	17.5	
2468F	13.1		12368F...[3]	93.8		134679F	2.05	J	1234689F	354	
1346/1246F	8.6		14678F	10.4		124679F	6.41		1234789F	37.5	
1347F...[3]	41.7		13479F	2.13	J	124689F	93.1				
1348F	12.7		13469/12479F	3.99		123467F	17.9				
1248F...[3]	37.8		12346F	4.64		123478F	60.6				
1268F	15.4		23468/12469F	15.8		123678F	24.8				
1467F	16.5		12347F	10.4		123479F	2.12	J			
1478F	34.9		12348F	12.3		123469F	3.21				
1369/1237F	10.5		12378F	26.6		123679F	3.56				
2467F	10.4		12678/12367F	34.4		234678F	28.8		**Conc.**	604	
2368F	34.2		12379F	[1.35]	J	234678/123689F	0		**EMPC**	604	
1238F...[5]	23		12679F	2.89		123689F	(0.77)				
1278F	47.6		23467/12369F	17.4		123789F	(0.773)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.228)		23478F	58.5		123789/123489F	0				
1267F	27.6		23478/12489F	0		123489F	10.6		OCDF	595	
2346/1249F	9.03		12489F	(0.544)							
2347/1279F	22.4		12349F	1.54	J						
2348F	[52.4]		12389F	3.24							
2378F	105										
2367/3467F	88.1										
1269F	7.86										
1239F	0.965										
1289F	[7.16]										
Conc.	581		**Conc.**	365		**Conc.**	370				
EMPC	640		**EMPC**	366		**EMPC**	370				

Checkcode: 135-907-PRT

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120421-S-JC-SC-O-12 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5986_18732_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.06 g	QC Batch No.:	18732
Date Collected:	04-Dec-2021	Split:	-	Date Extracted:	15-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	17-Dec-2021 23:33
Lab Project No:	B5986	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	6.65		0.474	6.65	6.65	6.65
12378-PeCDD	10.9		1.14	5.43	10.9	10.9
123478-HxCDD	13.3		1.24	1.33	1.33	1.33
123678-HxCDD	96.3		1.25	9.63	9.63	9.63
123789-HxCDD	59.6		1.17	5.96	5.96	5.96
1234678-HpCDD	3920		0.526	39.2	39.2	39.2
OCDD	31700	E	1.67	31.7	3.17	9.51
2378-TCDF	105		0.228	10.5	10.5	10.5
12378-PeCDF	26.6		0.563	1.33	1.33	0.797
23478-PeCDF	58.5		0.524	29.3	29.3	17.6
123478-HxCDF	60.6		0.742	6.06	6.06	6.06
123678-HxCDF	24.8		0.749	2.48	2.48	2.48
234678-HxCDF	28.8		0.827	2.88	2.88	2.88
123789-HxCDF	(0.773)		0.773	(0.0773)	(0.0773)	(0.0773)
1234678-HpCDF	194		0.55	1.94	1.94	1.94
1234789-HpCDF	37.5		0.842	0.375	0.375	0.375
OCDF	595		0.745	0.595	0.0595	0.179

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TEQ Summaries			
EMPC = 0, ND = 0	155	132	126
EMPC = 0, ND = DL / 2	155	132	126
EMPC = 0, ND = DL	155	132	126
EMPC = 0, < J-level = 0	155	132	126
EMPC = EMPC, ND = 0	155	132	126
EMPC = EMPC, ND = DL / 2	155	132	126
EMPC = EMPC, ND = DL	155	132	126
EMPC = EMPC, < J-level = 0	155	132	126

Checkcode: 135-907-PRT

Sample ID: 11215131-120421-S-JC-SC-O-6 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.02 g	Lab Sample ID	B5986_18732_DF_003	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	80.4 %	QC Batch No:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:20:09

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	18				ES 2378-TCDD	85.5	
12378-PeCDD	2.25			J	ES 12378-PeCDD	106	
123478-HxCDD	3.87				ES 123478-HxCDD	85.6	
123678-HxCDD	15.8				ES 123678-HxCDD	86.8	
123789-HxCDD	8.67				ES 123789-HxCDD	85.8	
1234678-HpCDD	463				ES 1234678-HpCDD	88.9	
OCDD	6,540				ES OCDD	71.5	
2378-TCDF	53.7				ES 2378-TCDF	81.4	
12378-PeCDF	3.87				ES 12378-PeCDF	89.9	
23478-PeCDF	7.92				ES 23478-PeCDF	91.4	
123478-HxCDF	10.5				ES 123478-HxCDF	101	
123678-HxCDF	5.6				ES 123678-HxCDF	101	
234678-HxCDF	6.75				ES 234678-HxCDF	99.9	
123789-HxCDF	ND	0.264			ES 123789-HxCDF	102	
1234678-HpCDF	70.5				ES 1234678-HpCDF	105	
1234789-HpCDF	6.52				ES 1234789-HpCDF	102	
OCDF	213				ES OCDF	75.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	84.6	
Total TCDD	23.6		24.8		CS 12347-PeCDD	103	
Total PeCDD	11.6		14.7		CS 12346-PeCDF	89.1	
Total HxCDD	134		134		CS 123469-HxCDF	103	
Total HpCDD	985		985		CS 1234689-HpCDF	107	
Total TCDF	128		133				
Total PeCDF	73.1		75.2				
Total HxCDF	111		112				
Total HpCDF	201		201				
Total PCDD/Fs	**8,420**		**8,430**				
WHO-2005 TEQs							
TEQ: ND=0	40.7		40.7				
TEQ: ND=DL/2	40.7	0.74	40.7				
TEQ: ND=DL	40.7	1.48	40.7				

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Sample ID: 11215131-120421-S-JC-SC-O-6 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.02 g	Lab Sample ID:	B5986_18732_DF_003	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	80.4 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:20:09

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	2.84		12479/12468D	3.9		124679/124689D	39.5		1234679D	521	
1379D	0.815		12469D	[1.93]	J	123468D	6.51		1234678D	463	
1369D	(0.466)		12368D	1.78	J	123679/123689D	53.5				
1469D	[0.693]		12478D	2.07	J	123469D	3.48				
1247D...[4]	[0.542]		12379D	[1.17]	J	123478D	3.87				
1378D	(0.466)		12369D...[3]	1.64	J	123678D	15.8				
1268D	(0.466)		12346/12347D	(0.611)		123467D	2.23	J			
1478D	(0.466)		12378D	2.25	J	123789D	8.67		**Conc.**	985	
1279D	(0.466)		12367D	(0.611)					**EMPC**	985	
1234/1269D	(0.466)		12389D	(0.611)							
1236D	(0.466)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.466)										
1239D	(0.466)								OCDD	6540	
2378D	18										
1278D	1.88										
1267D	(0.466)										
1289D	(0.466)										
Conc.	23.6		**Conc.**	11.6		**Conc.**	134				
EMPC	24.8		**EMPC**	14.7		**EMPC**	134				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	40.7	40.7
TEQ: ND=DL/2	40.7	40.7
TEQ: ND=DL	40.7	40.7

	Conc.	EMPC
Total PCDD/Fs	8,420	8,430

Checkcode: 313-227-TKV

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120421-S-JC-SC-O-6 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.02 g	Lab Sample ID:	B5986_18732_DF_003	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	80.4 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	0:20:09

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.6		13468/12468F	20.3		123468F	9.1		1234678F	70.5	
1468F	1.93		13678F...[3]	4.06		124678/134678F	36.2		1234679F	2.57	
2468F	7.07		12368F...[3]	18.1		134679F	(0.266)		1234689F	121	
1346/1246F	1.31		14678F	1.1	J	124679F	1.8	J	1234789F	6.52	
1347F...[3]	[2.41]		13479F	(0.319)		124689F	37.1				
1348F	1.16		13469/12479F	1.73	J	123467F	2.39	J			
1248F...[3]	4.07		12346F	(0.319)		123478F	10.5				
1268F	3.84		23468/12469F	6.29		123678F	5.6				
1467F	[0.797]		12347F	(0.319)		123479F	(0.266)				
1478F	3.02		12348F	1.22	J	123469F	[0.496]	J			
1369/1237F	1.33		12378F	3.87		123679F	(0.266)				
2467F	1.16		12678/12367F	8.59		234678F	6.75		**Conc.**	201	
2368F	6.71		12379F	(0.319)		234678/123689F	0		**EMPC**	201	
1238F...[5]	3.06		12679F	(0.319)		123689F	(0.266)				
1278F	20.4		23467/12369F	[1.32]	J	123789F	(0.264)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.191)		23478F	7.92		123789/123489F	0				
1267F	1.82		23478/12489F	0		123489F	1.53	J	OCDF	213	
2346/1249F	[0.543]		12489F	(0.319)							
2347/1279F	[1.32]		12349F	(0.319)							
2348F	3.3		12389F	[0.774]	J						
2378F	53.7										
2367/3467F	7.86										
1269F	1.15										
1239F	(0.191)										
1289F	4.23										
Conc.	128		**Conc.**	73.1		**Conc.**	111				
EMPC	133		**EMPC**	75.2		**EMPC**	112				

Checkcode: 313-227-TKV

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120421-S-JC-SC-O-6 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5986_18732_DF_003
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.02 g	QC Batch No.:	18732
Date Collected:	04-Dec-2021	Split:	-	Date Extracted:	15-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	18-Dec-2021 00:20
Lab Project No:	B5986	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	18		0.466	18	18	18
12378-PeCDD	2.25	J	0.611	1.13	2.25	2.25
123478-HxCDD	3.87		0.531	0.387	0.387	0.387
123678-HxCDD	15.8		0.541	1.58	1.58	1.58
123789-HxCDD	8.67		0.503	0.867	0.867	0.867
1234678-HpCDD	463		0.692	4.63	4.63	4.63
OCDD	6540		2.25	6.54	0.654	1.96
2378-TCDF	53.7		0.191	5.37	5.37	5.37
12378-PeCDF	3.87		0.315	0.194	0.194	0.116
23478-PeCDF	7.92		0.323	3.96	3.96	2.38
123478-HxCDF	10.5		0.26	1.05	1.05	1.05
123678-HxCDF	5.6		0.271	0.56	0.56	0.56
234678-HxCDF	6.75		0.27	0.675	0.675	0.675
123789-HxCDF	(0.264)		0.264	(0.0264)	(0.0264)	(0.0264)
1234678-HpCDF	70.5		0.221	0.705	0.705	0.705
1234789-HpCDF	6.52		0.322	0.0652	0.0652	0.0652
OCDF	213		0.998	0.213	0.0213	0.0639

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TEQ Summaries			
EMPC = 0, ND = 0	46	41	40.7
EMPC = 0, ND = DL / 2	46	41	40.7
EMPC = 0, ND = DL	46	41	40.7
EMPC = 0, < J-level = 0	44.8	38.7	38.4
EMPC = EMPC, ND = 0	46	41	40.7
EMPC = EMPC, ND = DL / 2	46	41	40.7
EMPC = EMPC, ND = DL	46	41	40.7
EMPC = EMPC, < J-level = 0	44.8	38.7	38.4

Checkcode: 313-227-TKV

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Sample ID: 11215131-120421-S-JC-SC-B-5 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID	B5986_18732_DF_004	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	77.3 %	QC Batch No:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:06:28

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	37.4				ES 2378-TCDD	88.9	
12378-PeCDD	EMPC		0.607	J	ES 12378-PeCDD	117	
123478-HxCDD	ND	0.334			ES 123478-HxCDD	93.6	
123678-HxCDD	EMPC		0.892	J	ES 123678-HxCDD	94.1	
123789-HxCDD	1.54			J	ES 123789-HxCDD	90	
1234678-HpCDD	30.5				ES 1234678-HpCDD	102	
OCDD	507				ES OCDD	63.9	
2378-TCDF	104				ES 2378-TCDF	85.3	
12378-PeCDF	4.03				ES 12378-PeCDF	102	
23478-PeCDF	3.01				ES 23478-PeCDF	103	
123478-HxCDF	6.6				ES 123478-HxCDF	112	
123678-HxCDF	1.54			J	ES 123678-HxCDF	118	
234678-HxCDF	0.497			J	ES 234678-HxCDF	113	
123789-HxCDF	ND	0.224			ES 123789-HxCDF	109	
1234678-HpCDF	3.2				ES 1234678-HpCDF	130	
1234789-HpCDF	0.817			J	ES 1234789-HpCDF	110	
OCDF	9.69				ES OCDF	70.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	96.8	
Total TCDD	45.3		45.3		CS 12347-PeCDD	125	
Total PeCDD	4.82		5.43		CS 12346-PeCDF	109	
Total HxCDD	29.7		30.6		CS 123469-HxCDF	130	
Total HpCDD	91.7		91.7		CS 1234689-HpCDF	135	V
Total TCDF	198		208				
Total PeCDF	10.5		10.5				
Total HxCDF	11		11.4				
Total HpCDF	6.66		6.66				
Total PCDD/Fs	**915**		**927**				
WHO-2005 TEQs							
TEQ: ND=0	50.3		51				
TEQ: ND=DL/2	50.3	0.602	51				
TEQ: ND=DL	50.4	1.2	51.1				

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Sample ID: 11215131-120421-S-JC-SC-B-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID:	B5986_18732_DF_004	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	77.3 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:06:28

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.539)		12479/12468D	0.983	J	124679/124689D	22.2		1234679D	61.3	
1379D	(0.539)		12469D	2.66		123468D	(0.326)		1234678D	30.5	
1369D	(0.539)		12368D	(0.363)		123679/123689D	5.96				
1469D	4.5		12478D	(0.363)		123469D	(0.326)				
1247D...[4]	(0.539)		12379D	(0.363)		123478D	(0.334)				
1378D	(0.539)		12369D...[3]	1.18	J	123678D	[0.892]	J			
1268D	(0.539)		12346/12347D	(0.363)		123467D	(0.326)				
1478D	(0.539)		12378D	[0.607]	J	123789D	1.54	J	**Conc.**	91.7	
1279D	(0.539)		12367D	(0.363)					**EMPC**	91.7	
1234/1269D	(0.539)		12389D	(0.363)							
1236D	(0.539)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.539)										
1239D	(0.539)								OCDD	507	
2378D	37.4										
1278D	3.45										
1267D	(0.539)										
1289D	(0.539)										
Conc.	45.3		**Conc.**	4.82		**Conc.**	29.7				
EMPC	45.3		**EMPC**	5.43		**EMPC**	30.6				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	50.3	51
TEQ: ND=DL/2	50.3	51
TEQ: ND=DL	50.4	51.1

	Conc.	EMPC
Total PCDD/Fs	915	927

Checkcode: 875-443-QCW

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120421-S-JC-SC-B-5 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	Lab Sample ID:	B5986_18732_DF_004	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	77.3 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:06:28

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.233)		13468/12468F	(0.139)		123468F	(0.215)		1234678F	3.2	
1468F	(0.233)		13678F...[3]	(0.256)		124678/134678F	1.33	J	1234679F	(0.284)	
2468F	0.648		12368F...[3]	2.22	J	134679F	(0.215)		1234689F	2.64	
1346/1246F	(0.233)		14678F	(0.256)		124679F	(0.215)		1234789F	0.817	J
1347F...[3]	[1.66]		13479F	(0.256)		124689F	1.05	J			
1348F	5.71		13469/12479F	(0.256)		123467F	(0.215)				
1248F...[3]	(0.233)		12346F	(0.256)		123478F	6.6				
1268F	[1.78]		23468/12469F	(0.256)		123678F	1.54	J			
1467F	(0.233)		12347F	(0.256)		123479F	(0.215)				
1478F	4.37		12348F	(0.256)		123469F	(0.215)				
1369/1237F	1.28		12378F	4.03		123679F	(0.215)				
2467F	(0.233)		12678/12367F	1.25	J	234678F	0.497	J	**Conc.**	6.66	
2368F	3.11		12379F	(0.256)		234678/123689F	0		**EMPC**	6.66	
1238F...[5]	[5.23]		12679F	(0.256)		123689F	(0.215)				
1278F	50.3		23467/12369F	(0.256)		123789F	(0.224)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.233)		23478F	3.01		123789/123489F	0				
1267F	2.81		23478/12489F	0		123489F	[0.442]	J	OCDF	9.69	
2346/1249F	(0.233)		12489F	(0.256)							
2347/1279F	[1.46]		12349F	(0.256)							
2348F	6.75		12389F	(0.256)							
2378F	104										
2367/3467F	8.62										
1269F	1.59										
1239F	(0.233)										
1289F	9.34										
Conc.	198		**Conc.**	10.5		**Conc.**	11				
EMPC	208		**EMPC**	10.5		**EMPC**	11.4				

Checkcode: 875-443-QCW

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120421-S-JC-SC-B-5 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5986_18732_DF_004
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.14 g	QC Batch No.:	18732
Date Collected:	04-Dec-2021	Split:	-	Date Extracted:	15-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	18-Dec-2021 01:06
Lab Project No:	B5986	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	37.4		0.539	37.4	37.4	37.4
12378-PeCDD	[0.607]	J	0.363	[0.303]	[0.607]	[0.607]
123478-HxCDD	(0.334)		0.334	(0.0334)	(0.0334)	(0.0334)
123678-HxCDD	[0.892]	J	0.327	[0.0892]	[0.0892]	[0.0892]
123789-HxCDD	1.54	J	0.318	0.154	0.154	0.154
1234678-HpCDD	30.5		0.582	0.305	0.305	0.305
OCDD	507		2.2	0.507	0.0507	0.152
2378-TCDF	104		0.233	10.4	10.4	10.4
12378-PeCDF	4.03		0.266	0.201	0.201	0.121
23478-PeCDF	3.01		0.245	1.5	1.5	0.903
123478-HxCDF	6.6		0.214	0.66	0.66	0.66
123678-HxCDF	1.54	J	0.2	0.154	0.154	0.154
234678-HxCDF	0.497	J	0.224	0.0497	0.0497	0.0497
123789-HxCDF	(0.224)		0.224	(0.0224)	(0.0224)	(0.0224)
1234678-HpCDF	3.2		0.222	0.032	0.032	0.032
1234789-HpCDF	0.817	J	0.369	0.00817	0.00817	0.00817
OCDF	9.69		1	0.00969	0.000969	0.00291

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TEQ Summaries			
EMPC = 0, ND = 0	51.4	50.9	50.3
EMPC = 0, ND = DL / 2	51.4	50.9	50.3
EMPC = 0, ND = DL	51.4	50.9	50.4
EMPC = 0, < J-level = 0	51	50.5	49.9
EMPC = EMPC, ND = 0	51.8	51.6	51
EMPC = EMPC, ND = DL / 2	51.8	51.6	51
EMPC = EMPC, ND = DL	51.8	51.6	51.1
EMPC = EMPC, < J-level = 0	51	50.5	49.9

Checkcode: 875-443-QCW

Sample ID: 11215131-120421-S-JC-SC-O-7 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.15 g	Lab Sample ID	B5986_18732_DF_005	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	73.3 %	QC Batch No:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:52:49

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	7,500			E	ES 2378-TCDD	82.7	
12378-PeCDD	74.7				ES 12378-PeCDD	95.7	
123478-HxCDD	7.54				ES 123478-HxCDD	85.3	
123678-HxCDD	36.3				ES 123678-HxCDD	84.4	
123789-HxCDD	14.6				ES 123789-HxCDD	85.5	
1234678-HpCDD	1,020				ES 1234678-HpCDD	90	
OCDD	15,200			E	ES OCDD	76.4	
2378-TCDF	20,100			E	ES 2378-TCDF	79.2	
12378-PeCDF	1,090				ES 12378-PeCDF	85.5	
23478-PeCDF	675				ES 23478-PeCDF	84.8	
123478-HxCDF	2,020				ES 123478-HxCDF	98.9	
123678-HxCDF	494				ES 123678-HxCDF	98.2	
234678-HxCDF	105				ES 234678-HxCDF	95.8	
123789-HxCDF	ND	0.471			ES 123789-HxCDF	101	
1234678-HpCDF	597				ES 1234678-HpCDF	105	
1234789-HpCDF	206				ES 1234789-HpCDF	101	
OCDF	1,510				ES OCDF	81.3	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	78.8	
Total TCDD	8,350		8,390	E	CS 12347-PeCDD	101	
Total PeCDD	103		116		CS 12346-PeCDF	87	
Total HxCDD	239		239		CS 123469-HxCDF	109	
Total HpCDD	1,970		1,970		CS 1234689-HpCDF	111	
Total TCDF	38,700		38,700	E			
Total PeCDF	2,740		2,740				
Total HxCDF	3,150		3,150				
Total HpCDF	1,220		1,220				
Total PCDD/Fs	**73,200**		**73,300**	E			
WHO-2005 TEQs							
TEQ: ND=0	10100		10100				
TEQ: ND=DL/2	10100	0.952	10100				
TEQ: ND=DL	10100	1.9	10100				

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Sample ID: 11215131-120421-S-JC-SC-O-7 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.15 g	Lab Sample ID:	B5986_18732_DF_005	Date Extracted:	15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	73.3 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	1:52:49

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	7.83		12479/12468D	7.71		124679/124689D	69.5		1234679D	952	
1379D	3.78		12469D	[2.86]		123468D	10.2		1234678D	1020	
1369D	(0.508)		12368D	8.86		123679/123689D	93.1				
1469D	1.16		12478D	[7.38]		123469D	4.66				
1247D...[4]	11.3		12379D	2.99		123478D	7.54				
1378D	22.8		12369D...[3]	3.35		123678D	36.3				
1268D	[1.5]		12346/12347D	[2.38]	J	123467D	3.46				
1478D	17.2		12378D	74.7		123789D	14.6		**Conc.**	1,970	
1279D	(0.508)		12367D	3.96					**EMPC**	1,970	
1234/1269D	2.93		12389D	1.89	J						
1236D	[1.31]								**Octa-Dioxin**	**Conc**	**Qualifiers**
1237/1238D	117									**(pg/g)**	
1239D	(0.508)								OCDD	15200	E
2378D	7500	E									
1278D	668										
1267D	[16.3]										
1289D	[13]										
Conc.	8,350		**Conc.**	103		**Conc.**	239				
EMPC	8,390		**EMPC**	116		**EMPC**	239				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	10,100	10,100
TEQ: ND=DL/2	10,100	10,100
TEQ: ND=DL	10,100	10,100

	Conc.	EMPC
Total PCDD/Fs	73,200	73,300

Checkcode: 360-861-QJD

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120421-S-JC-SC-O-7 Method 1613B

Client Data		Sample Data		Laboratory Data		
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received: 07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.15 g	Lab Sample ID:	B5986_18732_DF_005	Date Extracted: 15-Dec-2021
Date Collected:	04-Dec-2021	% Solid:	73.3 %	QC Batch No.:	18732	Date Analyzed: 18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed: 1:52:49

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	4.18		13468/12468F	33.4		123468F	27.4		1234678F	597	
1468F	27.2		13678F...[3]	13.4		124678/134678F	192		1234679F	10.7	
2468F	24.1		12368F...[3]	450		134679F	(0.497)		1234689F	408	
1346/1246F	(0.224)		14678F	(0.458)		124679F	3.76		1234789F	206	
1347F...[3]	153		13479F	(0.458)		124689F	134				
1348F	77.9		13469/12479F	4.37		123467F	11.6				
1248F...[3]	494		12346F	(0.458)		123478F	2020				
1268F	234		23468/12469F	20.6		123678F	494				
1467F	49.2		12347F	17.9		123479F	(0.497)				
1478F	590		12348F	84.6		123469F	6.65				
1369/1237F	196		12378F	1090		123679F	(0.497)				
2467F	24.9		12678/12367F	295		234678F	105		**Conc.**	1,220	
2368F	532		12379F	(0.458)		234678/123689F	0		**EMPC**	1,220	
1238F...[5]	982		12679F	[2]	J	123689F	(0.497)				
1278F	9520	E	23467/12369F	12.6		123789F	(0.471)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.224)		23478F	675		123789/123489F	0				
1267F	434		23478/12489F	0		123489F	156		OCDF	1510	
2346/1249F	51.8		12489F	(0.458)							
2347/1279F	266		12349F	(0.458)							
2348F	1380	E	12389F	38.4							
2378F	20100	E									
2367/3467F	1610	E									
1269F	247										
1239F	27.2										
1289F	1710	E									
Conc.	38,700		**Conc.**	2,740		**Conc.**	3,150				
EMPC	38,700		**EMPC**	2,740		**EMPC**	3,150				

Checkcode: 360-861-QJD

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120421-S-JC-SC-O-7 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5986_18732_DF_005
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.15 g	QC Batch No.:	18732
Date Collected:	04-Dec-2021	Split:	-	Date Extracted:	15-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	18-Dec-2021 01:52
Lab Project No:	B5986	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	7500	E	0.508	7500	7500	7500
12378-PeCDD	74.7		0.759	37.4	74.7	74.7
123478-HxCDD	7.54		0.845	0.754	0.754	0.754
123678-HxCDD	36.3		0.822	3.63	3.63	3.63
123789-HxCDD	14.6		0.79	1.46	1.46	1.46
1234678-HpCDD	1020		0.515	10.2	10.2	10.2
OCDD	15200	E	0.965	15.2	1.52	4.56
2378-TCDF	20100	E	0.224	2010	2010	2010
12378-PeCDF	1090		0.438	54.7	54.7	32.8
23478-PeCDF	675		0.479	338	338	203
123478-HxCDF	2020		0.501	202	202	202
123678-HxCDF	494		0.493	49.4	49.4	49.4
234678-HxCDF	105		0.525	10.5	10.5	10.5
123789-HxCDF	(0.471)		0.471	(0.0471)	(0.0471)	(0.0471)
1234678-HpCDF	597		0.307	5.97	5.97	5.97
1234789-HpCDF	206		0.463	2.06	2.06	2.06
OCDF	1510		0.604	1.51	0.151	0.453

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TEQ Summaries			
EMPC = 0, ND = 0	10200	10300	10100
EMPC = 0, ND = DL / 2	10200	10300	10100
EMPC = 0, ND = DL	10200	10300	10100
EMPC = 0, < J-level = 0	10200	10300	10100
EMPC = EMPC, ND = 0	10200	10300	10100
EMPC = EMPC, ND = DL / 2	10200	10300	10100
EMPC = EMPC, ND = DL	10200	10300	10100
EMPC = EMPC, < J-level = 0	10200	10300	10100

Sample ID: 11215131-120621-S-JC-SC-O-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	Lab Sample ID	B5986_18732_DF_006	Date Extracted:	15-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	81.7 %	QC Batch No:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:39:09

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	31				ES 2378-TCDD	76.8	
12378-PeCDD	3.57				ES 12378-PeCDD	102	
123478-HxCDD	8.12				ES 123478-HxCDD	78.8	
123678-HxCDD	33.4				ES 123678-HxCDD	78.4	
123789-HxCDD	16.2				ES 123789-HxCDD	80	
1234678-HpCDD	957				ES 1234678-HpCDD	80.3	
OCDD	16,800			E	ES OCDD	53.1	
2378-TCDF	89				ES 2378-TCDF	74.6	
12378-PeCDF	6.46				ES 12378-PeCDF	91.8	
23478-PeCDF	10.9				ES 23478-PeCDF	90	
123478-HxCDF	16.5				ES 123478-HxCDF	99.5	
123678-HxCDF	10.3				ES 123678-HxCDF	103	
234678-HxCDF	13.1				ES 234678-HxCDF	99.2	
123789-HxCDF	ND	0.288			ES 123789-HxCDF	101	
1234678-HpCDF	147				ES 1234678-HpCDF	97.8	
1234789-HpCDF	11.7				ES 1234789-HpCDF	89.5	
OCDF	274				ES OCDF	54.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	86.7	
Total TCDD	40		43.1		CS 12347-PeCDD	112	
Total PeCDD	22.2		28.2		CS 12346-PeCDF	95.2	
Total HxCDD	310		310		CS 123469-HxCDF	114	
Total HpCDD	2,360		2,360		CS 1234689-HpCDF	108	
Total TCDF	213		214				
Total PeCDF	92.1		94.1				
Total HxCDF	222		222				
Total HpCDF	413		413				
Total PCDD/Fs	**20,700**		**20,700**	E			
WHO-2005 TEQs							
TEQ: ND=0	72.9		72.9				
TEQ: ND=DL/2	73	0.646	73				
TEQ: ND=DL	73	1.29	73				

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Sample ID: 11215131-120621-S-JC-SC-O-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	Lab Sample ID:	B5986_18732_DF_006	Date Extracted:	15-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	81.7 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:39:09

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	5.78		12479/12468D	6.56		124679/124689D	97.9		1234679D	1400	
1379D	[1.26]		12469D	3.62		123468D	15.2		1234678D	957	
1369D	(0.408)		12368D	3.26		123679/123689D	115				
1469D	(0.408)		12478D	4.27		123469D	16.7				
1247D...[4]	(0.408)		12379D	[1.43]	J	123478D	8.12				
1378D	[0.735]		12369D...[3]	[2.99]		123678D	33.4				
1268D	(0.408)		12346/12347D	[0.81]	J	123467D	7				
1478D	(0.408)		12378D	3.57		123789D	16.2		**Conc.**	2,360	
1279D	(0.408)		12367D	0.917	J				**EMPC**	2,360	
1234/1269D	(0.408)		12389D	[0.777]	J						
1236D	(0.408)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[1.03]										
1239D	(0.408)								OCDD	16800	E
2378D	31										
1278D	3.25										
1267D	(0.408)										
1289D	(0.408)										
Conc.	40		**Conc.**	22.2		**Conc.**	310				
EMPC	43.1		**EMPC**	28.2		**EMPC**	310				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	72.9	72.9
TEQ: ND=DL/2	73	73
TEQ: ND=DL	73	73

	Conc.	EMPC
Total PCDD/Fs	20,700	20,700

Checkcode: 305-317-KYG

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120621-S-JC-SC-O-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	Lab Sample ID:	B5986_18732_DF_006	Date Extracted:	15-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	81.7 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	2:39:09

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	0.967		13468/12468F	23.8		123468F	17.7		1234678F	147	
1468F	2		13678F...[3]	7.64		124678/134678F	70.7		1234679F	6.16	
2468F	7.7		12368F...[3]	24.5		134679F	(0.295)		1234689F	248	
1346/1246F	(0.249)		14678F	(0.423)		124679F	4.48		1234789F	11.7	
1347F...[3]	5.72		13479F	(0.423)		124689F	80.9				
1348F	1.25		13469/12479F	[0.816]	J	123467F	3.92				
1248F...[3]	6.45		12346F	0.51	J	123478F	16.5				
1268F	4.31		23468/12469F	7.63		123678F	10.3				
1467F	1.18		12347F	[1.17]	J	123479F	(0.295)				
1478F	5.04		12348F	1.66	J	123469F	1.1	J			
1369/1237F	1.78		12378F	6.46		123679F	0.664	J			
2467F	1.66		12678/12367F	5.57		234678F	13.1		**Conc.**	413	
2368F	7.93		12379F	(0.423)		234678/123689F	0		**EMPC**	413	
1238F...[5]	5.49		12679F	(0.423)		123689F	(0.295)				
1278F	37.6		23467/12369F	2.83		123789F	(0.288)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.249)		23478F	10.9		123789/123489F	0				
1267F	3.45		23478/12489F	0		123489F	2.84		OCDF	274	
2346/1249F	[0.759]		12489F	(0.423)							
2347/1279F	2.33		12349F	(0.423)							
2348F	6.95		12389F	0.535	J						
2378F	89										
2367/3467F	12.4										
1269F	1.68										
1239F	(0.249)										
1289F	8.04										
Conc.	213		**Conc.**	92.1		**Conc.**	222				
EMPC	214		**EMPC**	94.1		**EMPC**	222				

Checkcode: 305-317-KYG

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120621-S-JC-SC-O-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5986_18732_DF_006
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.13 g	QC Batch No.:	18732
Date Collected:	06-Dec-2021	Split:	-	Date Extracted:	15-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	18-Dec-2021 02:39
Lab Project No:	B5986	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	31		0.408	31	31	31
12378-PeCDD	3.57		0.487	1.78	3.57	3.57
123478-HxCDD	8.12		0.34	0.812	0.812	0.812
123678-HxCDD	33.4		0.335	3.34	3.34	3.34
123789-HxCDD	16.2		0.303	1.62	1.62	1.62
1234678-HpCDD	957		0.621	9.57	9.57	9.57
OCDD	16800	E	2.09	16.8	1.68	5.03
2378-TCDF	89		0.249	8.9	8.9	8.9
12378-PeCDF	6.46		0.417	0.323	0.323	0.194
23478-PeCDF	10.9		0.43	5.46	5.46	3.27
123478-HxCDF	16.5		0.299	1.65	1.65	1.65
123678-HxCDF	10.3		0.286	1.03	1.03	1.03
234678-HxCDF	13.1		0.309	1.31	1.31	1.31
123789-HxCDF	(0.288)		0.288	(0.0288)	(0.0288)	(0.0288)
1234678-HpCDF	147		0.369	1.47	1.47	1.47
1234789-HpCDF	11.7		0.526	0.117	0.117	0.117
OCDF	274		0.661	0.274	0.0274	0.0822

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TEQ Summaries			
EMPC = 0, ND = 0	85.4	71.9	72.9
EMPC = 0, ND = DL / 2	85.4	71.9	73
EMPC = 0, ND = DL	85.4	71.9	73
EMPC = 0, < J-level = 0	85.4	71.9	72.9
EMPC = EMPC, ND = 0	85.4	71.9	72.9
EMPC = EMPC, ND = DL / 2	85.4	71.9	73
EMPC = EMPC, ND = DL	85.4	71.9	73
EMPC = EMPC, < J-level = 0	85.4	71.9	72.9

Checkcode: 305-317-KYG

Sample ID: 11215131-120621-S-JC-SC-B-1 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID	B5986_18732_DF_007	Date Extracted:	15-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	62.5 %	QC Batch No:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:25:27

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	10,500			E	ES 2378-TCDD	72.2	
12378-PeCDD	115				ES 12378-PeCDD	88.4	
123478-HxCDD	28.3				ES 123478-HxCDD	75.7	
123678-HxCDD	136				ES 123678-HxCDD	72.7	
123789-HxCDD	53.7				ES 123789-HxCDD	73.4	
1234678-HpCDD	3,740				ES 1234678-HpCDD	86.1	
OCDD	61,800			E	ES OCDD	71.2	
2378-TCDF	28,500			E	ES 2378-TCDF	75.6	
12378-PeCDF	1,070				ES 12378-PeCDF	83.5	
23478-PeCDF	864				ES 23478-PeCDF	86.5	
123478-HxCDF	1,640				ES 123478-HxCDF	95.5	
123678-HxCDF	451				ES 123678-HxCDF	93.7	
234678-HxCDF	121				ES 234678-HxCDF	93.7	
123789-HxCDF	ND	0.592			ES 123789-HxCDF	96.1	
1234678-HpCDF	915				ES 1234678-HpCDF	102	
1234789-HpCDF	200				ES 1234789-HpCDF	99.2	
OCDF	966				ES OCDF	75.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	70.7	
Total TCDD	11,800		11,800	E	CS 12347-PeCDD	100	
Total PeCDD	233		266		CS 12346-PeCDF	92.1	
Total HxCDD	1,070		1,070		CS 123469-HxCDF	110	
Total HpCDD	7,970		7,970		CS 1234689-HpCDF	120	
Total TCDF	53,900		53,900	E			
Total PeCDF	3,280		3,280				
Total HxCDF	3,130		3,130				
Total HpCDF	2,070		2,070				
Total PCDD/Fs	**146,000**		**146,000**	E			
WHO-2005 TEQs							
TEQ: ND=0	14100		14100				
TEQ: ND=DL/2	14100	2.03	14100				
TEQ: ND=DL	14100	4.07	14100				

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Sample ID: 11215131-120621-S-JC-SC-B-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID:	B5986_18732_DF_007	Date Extracted:	15-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	62.5 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:25:27

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	38.3		12479/12468D	36.4		124679/124689D	340		1234679D	4220	
1379D	16.7		12469D	[21.5]		123468D	45.4		1234678D	3740	
1369D	2.59		12368D	27.5		123679/123689D	414				
1469D	(0.747)		12478D	23		123469D	43.8				
1247D...[4]	18.8		12379D	10.7		123478D	28.3				
1378D	37.2		12369D...[3]	14.6		123678D	136				
1268D	3.15		12346/12347D	[8.4]		123467D	12.7				
1478D	23.9		12378D	115		123789D	53.7		**Conc.**	7,970	
1279D	[1.98]		12367D	6.06					**EMPC**	7,970	
1234/1269D	4.79		12389D	[3.53]							
1236D	[2.06]								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	171										
1239D	(0.747)								OCDD	61800	E
2378D	10500	E									
1278D	955										
1267D	[33.1]										
1289D	[18.6]										
Conc.	11,800		**Conc.**	233		**Conc.**	1,070				
EMPC	11,800		**EMPC**	266		**EMPC**	1,070				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	14,100	14,100
TEQ: ND=DL/2	14,100	14,100
TEQ: ND=DL	14,100	14,100

	Conc.	EMPC
Total PCDD/Fs	146,000	146,000

Checkcode: 407-080-ZWV

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120621-S-JC-SC-B-1 Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID:	B5986_18732_DF_007	Date Extracted:	15-Dec-2021
Date Collected:	06-Dec-2021	% Solid:	62.5 %	QC Batch No.:	18732	Date Analyzed:	18-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	3:25:27

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	6.51		13468/12468F	110		123468F	64.1		1234678F	915	
1468F	43		13678F...[3]	37.4		124678/134678F	353		1234679F	17.8	
2468F	63.6		12368F...[3]	547		134679F	(0.589)		1234689F	934	
1346/1246F	(0.406)		14678F	(0.946)		124679F	11.2		1234789F	200	
1347F...[3]	188		13479F	(0.946)		124689F	342				
1348F	(0.406)		13469/12479F	16.7		123467F	15.9				
1248F...[3]	606		12346F	(0.946)		123478F	1640				
1268F	278		23468/12469F	51		123678F	451				
1467F	71.2		12347F	24.3		123479F	(0.589)				
1478F	659		12348F	116		123469F	(0.589)				
1369/1237F	244		12378F	1070		123679F	(0.589)				
2467F	40.5		12678/12367F	361		234678F	121		**Conc.**	2,070	
2368F	712		12379F	(0.946)		234678/123689F	0		**EMPC**	2,070	
1238F...[5]	1340	E	12679F	3.29		123689F	(0.589)				
1278F	13100	E	23467/12369F	20.9		123789F	(0.592)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.406)		23478F	864		123789/123489F	0				
1267F	548		23478/12489F	0		123489F	132		OCDF	966	
2346/1249F	71.5		12489F	(0.946)							
2347/1279F	340		12349F	(0.946)							
2348F	2090	E	12389F	53.3							
2378F	28500	E									
2367/3467F	2270	E									
1269F	309										
1239F	38										
1289F	2380	E									
Conc.	53,900		**Conc.**	3,280		**Conc.**	3,130				
EMPC	53,900		**EMPC**	3,280		**EMPC**	3,130				

Checkcode: 407-080-ZWV

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: 11215131-120621-S-JC-SC-B-1 TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5986_18732_DF_007
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	QC Batch No.:	18732
Date Collected:	06-Dec-2021	Split:	-	Date Extracted:	15-Dec-2021
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	18-Dec-2021 03:25
Lab Project No:	B5986	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	10500	E	0.747	10500	10500	10500
12378-PeCDD	115		2.14	57.3	115	115
123478-HxCDD	28.3		1.95	2.83	2.83	2.83
123678-HxCDD	136		1.98	13.6	13.6	13.6
123789-HxCDD	53.7		1.69	5.37	5.37	5.37
1234678-HpCDD	3740		1.21	37.4	37.4	37.4
OCDD	61800	E	2.79	61.8	6.18	18.6
2378-TCDF	28500	E	0.406	2850	2850	2850
12378-PeCDF	1070		0.914	53.6	53.6	32.2
23478-PeCDF	864		0.978	432	432	259
123478-HxCDF	1640		0.619	164	164	164
123678-HxCDF	451		0.57	45.1	45.1	45.1
234678-HxCDF	121		0.575	12.1	12.1	12.1
123789-HxCDF	(0.592)		0.592	(0.0592)	(0.0592)	(0.0592)
1234678-HpCDF	915		0.324	9.15	9.15	9.15
1234789-HpCDF	200		0.483	2	2	2
OCDF	966		1.27	0.966	0.0966	0.29

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TEQ Summaries			
EMPC = 0, ND = 0	14200	14200	14100
EMPC = 0, ND = DL / 2	14200	14200	14100
EMPC = 0, ND = DL	14200	14200	14100
EMPC = 0, < J-level = 0	14200	14200	14100
EMPC = EMPC, ND = 0	14200	14200	14100
EMPC = EMPC, ND = DL / 2	14200	14200	14100
EMPC = EMPC, ND = DL	14200	14200	14100
EMPC = EMPC, < J-level = 0	14200	14200	14100

Sample ID: Method Blank B5986_18732 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18732_DF_SDS	Date Extracted:	15-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:01:09

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.357			ES 2378-TCDD	90.9	
12378-PeCDD	ND	0.224			ES 12378-PeCDD	117	
123478-HxCDD	ND	0.16			ES 123478-HxCDD	93.5	
123678-HxCDD	ND	0.151			ES 123678-HxCDD	95.1	
123789-HxCDD	ND	0.141			ES 123789-HxCDD	92.8	
1234678-HpCDD	ND	0.282			ES 1234678-HpCDD	91.6	
OCDD	ND	0.831			ES OCDD	47.7	
2378-TCDF	ND	0.231			ES 2378-TCDF	86.6	
12378-PeCDF	ND	0.177			ES 12378-PeCDF	107	
23478-PeCDF	ND	0.186			ES 23478-PeCDF	106	
123478-HxCDF	ND	0.138			ES 123478-HxCDF	116	
123678-HxCDF	ND	0.142			ES 123678-HxCDF	119	
234678-HxCDF	ND	0.142			ES 234678-HxCDF	116	
123789-HxCDF	ND	0.145			ES 123789-HxCDF	115	
1234678-HpCDF	ND	0.0856			ES 1234678-HpCDF	118	
1234789-HpCDF	ND	0.151			ES 1234789-HpCDF	99.9	
OCDF	ND	1.03			ES OCDF	56.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	96.6	
Total TCDD	ND	0.357	ND		CS 12347-PeCDD	125	
Total PeCDD	ND	0.224	ND		CS 12346-PeCDF	112	
Total HxCDD	ND	0.15	ND		CS 123469-HxCDF	127	
Total HpCDD	ND	0.282	ND		CS 1234689-HpCDF	119	
Total TCDF	ND	0.231	ND				
Total PeCDF	ND	0.181	ND				
Total HxCDF	ND	0.142	ND				
Total HpCDF	ND	0.113	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	0.386	0.386	0.386				
TEQ: ND=DL	0.773	0.773	0.773				

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Sample ID: Method Blank B5986_18732 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18732_DF_SDS	Date Extracted:	15-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:01:09

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.357)		12479/12468D	(0.224)		124679/124689D	(0.15)		1234679D	(0.282)	
1379D	(0.357)		12469D	(0.224)		123468D	(0.15)		1234678D	(0.282)	
1369D	(0.357)		12368D	(0.224)		123679/123689D	(0.15)				
1469D	(0.357)		12478D	(0.224)		123469D	(0.15)				
1247D...[4]	(0.357)		12379D	(0.224)		123478D	(0.16)				
1378D	(0.357)		12369D...[3]	(0.224)		123678D	(0.151)				
1268D	(0.357)		12346/12347D	(0.224)		123467D	(0.15)				
1478D	(0.357)		12378D	(0.224)		123789D	(0.141)		**Conc.**	0	
1279D	(0.357)		12367D	(0.224)					**EMPC**	0	
1234/1269D	(0.357)		12389D	(0.224)							
1236D	(0.357)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.357)										
1239D	(0.357)								OCDD	(0.831)	
2378D	(0.357)										
1278D	(0.357)										
1267D	(0.357)										
1289D	(0.357)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	0.386	0.386
TEQ: ND=DL	0.773	0.773

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 041-257-JQS

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: Method Blank B5986_18732 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18732_DF_SDS	Date Extracted:	15-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	22:01:09

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.231)		13468/12468F	(0.145)		123468F	(0.142)		1234678F	(0.0856)	
1468F	(0.231)		13678F...[3]	(0.181)		124678/134678F	(0.142)		1234679F	(0.113)	
2468F	(0.231)		12368F...[3]	(0.181)		134679F	(0.142)		1234689F	(0.113)	
1346/1246F	(0.231)		14678F	(0.181)		124679F	(0.142)		1234789F	(0.151)	
1347F...[3]	(0.231)		13479F	(0.181)		124689F	(0.142)				
1348F	(0.231)		13469/12479F	(0.181)		123467F	(0.142)				
1248F...[3]	(0.231)		12346F	(0.181)		123478F	(0.138)				
1268F	(0.231)		23468/12469F	(0.181)		123678F	(0.142)				
1467F	(0.231)		12347F	(0.181)		123479F	(0.142)				
1478F	(0.231)		12348F	(0.181)		123469F	(0.142)				
1369/1237F	(0.231)		12378F	(0.177)		123679F	(0.142)				
2467F	(0.231)		12678/12367F	(0.181)		234678F	(0.142)		**Conc.**	0	
2368F	(0.231)		12379F	(0.181)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.231)		12679F	(0.181)		123689F	(0.142)				
1278F	(0.231)		23467/12369F	(0.181)		123789F	(0.145)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.231)		23478F	(0.186)		123789/123489F	0			**(pg/g)**	
1267F	(0.231)		23478/12489F	0		123489F	(0.142)		OCDF	(1.03)	
2346/1249F	(0.231)		12489F	(0.181)							
2347/1279F	(0.231)		12349F	(0.181)							
2348F	(0.231)		12389F	(0.181)							
2378F	(0.231)										
2367/3467F	(0.231)										
1269F	(0.231)										
1239F	(0.231)										
1289F	(0.231)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 041-257-JQS

Report Created: 20-Dec-2021 14:15 Analyst: TF

Sample ID: Method Blank B5986_18732 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18732_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18732
Date Collected:	n/a	Split:	-	Date Extracted:	15-Dec-2021
Date Received:	n/a	Dilution:	-	Date Analyzed:	17-Dec-2021 22:01
Lab Project No:	B5986	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.357)		0.357	(0.357)	(0.357)	(0.357)
12378-PeCDD	(0.224)		0.224	(0.112)	(0.224)	(0.224)
123478-HxCDD	(0.16)		0.16	(0.016)	(0.016)	(0.016)
123678-HxCDD	(0.151)		0.151	(0.0151)	(0.0151)	(0.0151)
123789-HxCDD	(0.141)		0.141	(0.0141)	(0.0141)	(0.0141)
1234678-HpCDD	(0.282)		0.282	(0.00282)	(0.00282)	(0.00282)
OCDD	(0.831)		0.831	(0.000831)	(0.0000831)	(0.000249)
2378-TCDF	(0.231)		0.231	(0.0231)	(0.0231)	(0.0231)
12378-PeCDF	(0.177)		0.177	(0.00883)	(0.00883)	(0.0053)
23478-PeCDF	(0.186)		0.186	(0.0929)	(0.0929)	(0.0557)
123478-HxCDF	(0.138)		0.138	(0.0138)	(0.0138)	(0.0138)
123678-HxCDF	(0.142)		0.142	(0.0142)	(0.0142)	(0.0142)
234678-HxCDF	(0.142)		0.142	(0.0142)	(0.0142)	(0.0142)
123789-HxCDF	(0.145)		0.145	(0.0145)	(0.0145)	(0.0145)
1234678-HpCDF	(0.0856)		0.0856	(0.000856)	(0.000856)	(0.000856)
1234789-HpCDF	(0.151)		0.151	(0.00151)	(0.00151)	(0.00151)
OCDF	(1.03)		1.03	(0.00103)	(0.000103)	(0.00031)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.351	0.406	0.386
EMPC = 0, ND = DL	0.703	0.813	0.773
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.351	0.406	0.386
EMPC = EMPC, ND = DL	0.703	0.813	0.773
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 041-257-JQS

SGS North America - DF v0.99

Sample ID: 0_18732_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18732_DF	Date Extracted:	15-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	19:42:09

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.3				ES 2378-TCDD	89.5	
12378-PeCDD	52.2				ES 12378-PeCDD	112	
123478-HxCDD	58.5				ES 123478-HxCDD	97.4	
123678-HxCDD	56.6				ES 123678-HxCDD	98.7	
123789-HxCDD	55				ES 123789-HxCDD	97.5	
1234678-HpCDD	53.3				ES 1234678-HpCDD	97.7	
OCDD	107				ES OCDD	51.4	
2378-TCDF	11.4				ES 2378-TCDF	89.3	
12378-PeCDF	53.1				ES 12378-PeCDF	108	
23478-PeCDF	57.7				ES 23478-PeCDF	105	
123478-HxCDF	53.9				ES 123478-HxCDF	121	
123678-HxCDF	53.8				ES 123678-HxCDF	125	
234678-HxCDF	55				ES 234678-HxCDF	119	
123789-HxCDF	51				ES 123789-HxCDF	118	
1234678-HpCDF	52.8				ES 1234678-HpCDF	126	
1234789-HpCDF	53.3				ES 1234789-HpCDF	105	
OCDF	106				ES OCDF	57.9	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	96.6	
Total TCDD	61		61		CS 12347-PeCDD	124	
Total PeCDD	83.4		83.4		CS 12346-PeCDF	112	
Total HxCDD	189		189		CS 123469-HxCDF	134	
Total HpCDD	68		68		CS 1234689-HpCDF	130	
Total TCDF	71		71				
Total PeCDF	187		187				
Total HxCDF	359		359				
Total HpCDF	106		106				
Total PCDD/Fs	**1,340**		**1,340**				
WHO-2005 TEQs							
TEQ: ND=0	125		125				
TEQ: ND=DL/2	125	0.28	125				
TEQ: ND=DL	125	0.561	125				

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Sample ID: 0_18732_OPR002

Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5986	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18732_DF	Date Extracted:	15-Dec-2021
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18732	Date Analyzed:	17-Dec-2021
		Split:	-	Dilution:	-	Time Analyzed:	20:28:29

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	13.4				ES 2378-TCDD	95.2	
12378-PeCDD	54.7				ES 12378-PeCDD	123	
123478-HxCDD	61.3				ES 123478-HxCDD	101	
123678-HxCDD	62.6				ES 123678-HxCDD	99.9	
123789-HxCDD	58.7				ES 123789-HxCDD	99.9	
1234678-HpCDD	56.4				ES 1234678-HpCDD	95.7	
OCDD	115				ES OCDD	46.7	
2378-TCDF	12.8				ES 2378-TCDF	88.4	
12378-PeCDF	56				ES 12378-PeCDF	115	
23478-PeCDF	61.3				ES 23478-PeCDF	111	
123478-HxCDF	57.2				ES 123478-HxCDF	125	
123678-HxCDF	56				ES 123678-HxCDF	136	
234678-HxCDF	58.3				ES 234678-HxCDF	126	
123789-HxCDF	56.4				ES 123789-HxCDF	120	
1234678-HpCDF	54.9				ES 1234678-HpCDF	131	
1234789-HpCDF	55.6				ES 1234789-HpCDF	102	
OCDF	110				ES OCDF	54	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	96.8	
Total TCDD	59.2		59.2		CS 12347-PeCDD	130	
Total PeCDD	83.5		83.5		CS 12346-PeCDF	115	
Total HxCDD	201		201		CS 123469-HxCDF	136	
Total HpCDD	70.5		70.5		CS 1234689-HpCDF	125	
Total TCDF	70.6		70.6				
Total PeCDF	186		186				
Total HxCDF	363		363				
Total HpCDF	111		111				
Total PCDD/Fs	**1,370**		**1,370**				
WHO-2005 TEQs							
TEQ: ND=0	132		132				
TEQ: ND=DL/2	132	0.257	132				
TEQ: ND=DL	132	0.514	132				

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Sample DUP

Method 1613B

Sample ID: 0_18732_OPR001

Analyte	OPR1_18732_DF pg/uL	OPR2_18732_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	12.3	13.4	8.9%
1,2,3,7,8-PeCDD	52.2	54.7	4.5%
1,2,3,4,7,8-HxCDD	58.5	61.3	4.8%
1,2,3,6,7,8-HxCDD	56.6	62.6	9.9%
1,2,3,7,8,9-HxCDD	55	58.7	6.5%
1,2,3,4,6,7,8-HpCDD	53.3	56.4	5.7%
OCDD	107	115	7.5%
2,3,7,8-TCDF	11.4	12.8	11.8%
1,2,3,7,8-PeCDF	53.1	56	5.4%
2,3,4,7,8-PeCDF	57.7	61.3	6.1%
1,2,3,4,7,8-HxCDF	53.9	57.2	6.0%
1,2,3,6,7,8-HxCDF	53.8	56	4.0%
2,3,4,6,7,8-HxCDF	55	58.3	5.9%
1,2,3,7,8,9-HxCDF	51	56.4	10.1%
1,2,3,4,6,7,8-HpCDF	52.8	54.9	4.0%
1,2,3,4,7,8,9-HpCDF	53.3	55.6	4.2%
OCDF	106	110	3.2%
Totals			
Total TCDD	61	59.2	2.9%
Total PeCDD	83.4	83.5	0.2%
Total HxCDD	189	201	6.2%
Total HpCDD	68	70.5	3.6%
Total TCDF	71	70.6	0.6%
Total PeCDF	187	186	0.3%
Total HxCDF	359	363	0.9%
Total HpCDF	106	111	4.1%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*07-Dec-21 at 11:28*
AP Project name:	*B5986*
Requested TAT:	*10 business days*
Projected due date:	*21-Dec-21*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120321-S-JC-SW-B-6	B5986_001	Solid	1	4oz Amber	03-Dec-21	13:35	-1.3	2	4905 2704 2072
11215131-120421-S-JC-SC-O-12	B5986_002	Solid	1	4oz Amber	04-Dec-21	08:55	-1.3	2	4905 2704 2072
11215131-120421-S-JC-SC-O-6	B5986_003	Solid	1	4oz Amber	04-Dec-21	11:20	-1.3	2	4905 2704 2072
11215131-120421-S-JC-SC-B-5	B5986_004	Solid	1	4oz Amber	04-Dec-21	11:30	-1.3	2	4905 2704 2072
11215131-120421-S-JC-SC-O-7	B5986_005	Solid	1	4oz Amber	04-Dec-21	14:15	-1.3	2	4905 2704 2072
11215131-120621-S-JC-SC-O-1	B5986_006	Solid	1	4oz Amber	06-Dec-21	09:30	-1.3	2	4905 2704 2072
11215131-120621-S-JC-SC-B-1	B5986_007	Solid	1	4oz Amber	06-Dec-21	09:40	-1.3	2	4905 2704 2072

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact, not received frozen.

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* AK 7 Dec 21

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B59826

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUNDTIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV
SPECIAL DELIVERABLES:
☐ DoD ☒ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

PRESERVATIVE
None

ANALYSIS & METHOD
M1613B (D/F)

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVDICE TO (☒ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS See SSOW	
11215131-120321-S-JC-SW-S-13	12-3-21	1325	C	S	4 oz	X				1	RUSH	
11215131-120321-S-JC-SW-B-6	↓	1335	↓	↓	4 oz	X				1		*
11215131-120321-S-JC-SW-B-6H	↓	1345	↓	↓	4 oz	X				1	HOLD	
11215131-120421-S-JC-SC-O-12	12-4-21	0855	C	S	4 oz	X				1		*
11215131-120421-S-JC-SC-S-10		1050			4 oz	X				1	RUSH	
11215131-120421-S-JC-SC-S-11		1100			4 oz	X				1	RUSH	
11215131-120421-S-JC-SC-S-12		1110			4 oz	X				1	RUSH	
11215131-120421-S-JC-SC-O-6		1120			4 oz	X				1		*
11215131-120421-S-JC-SC-B-5		1130			4 oz	X				1		*
11215131-120421-S-JC-SC-O-7	↓	1415	↓	↓	4 oz	X				1		*

COLLECTED/RELINQUISHED BY (1): Breana Nordt	DATE: 12-6-21	TIME: 1230	RECEIVED BY:	RECEIVED BY LABORATORY: DATE: 12/7/21 TIME: 11:28
RELINQUISHED BY (2): Eddie Castro	DATE: 12-6-21	TIME: 1430	RECEIVED BY: 12/6/21 1435	COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT
RELINQUISHED BY (3):	DATE: 12/6/21	TIME: 1435	RECEIVED BY:	CONTAINER SEALS: ☒ INTACT ☐ BROKEN ☐ ABSENT
				CARRIER: FedEx TEMP: °C -1.3°
				TRACKING #: 4905 2704 2072

* = Samples in this project.

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Member of the SGS Group (SGS SA)

SGS CHAIN OF CUSTODY

B5986

PROJECT INFO
PROJECT: 11215131-SJRWP - PCFSE
P.O. #:
QUOTE #: file
SITE REF: International Paper
TURN AROUND TIME: Refer to Notes and Remark
REPORT LEVEL: ☐ Level I ☐ Level II ■ Level IV
SPECIAL DELIVERABLES:
☐ DoD ■ EDD/Version: GHD EQuIS 4-file
☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO
COMPANY: GHD Services Inc.
CONTACT: Meagan Willis
ADDRESS: 11451 Katy Fwy #400,Houston
PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (■ CHECK IF SAME)
COMPANY:
CONTACT:
ADDRESS:
PHONE: EMAIL:

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	PRESERVATIVE: None	ANALYSIS & METHOD: M1613B (D/F)	QC: MS	MSD	DUP	QTY	REMARKS
11215131-120621-S-JC-SC-S-1	12-6-21	0900	C	S	4 oz	X		X	X			MS/MSD RUSH
11215131-120621-S-JC-SC-S-2	"	0910	"	"	4 oz	X					1	RUSH
11215131-120621-S-JC-SC-S-3		0920			4 oz	X					1	RUSH
11215131-120621-S-JC-SC-D-1		0930			4 oz	X					1	*
11215131-120621-S-JC-SC-B-1		0940			4 oz	X					1	¥
11215131-120621-S-JC-SC-B-1H		0950			4 oz	X					1	HOLD
11215131-120621-S-JC-DUP-4	↓	—	↓	↓	4 oz	X				X	1	RUSH ¥ pAO 12/7/21
					4 oz							
					4 oz							
					4 oz							

COLLECTED/RELINQUISHED BY (1): Breanna Nolt	DATE: 12-6-21	TIME: 1230	RECEIVED BY: Eddie Cruz	
RELINQUISHED BY (2): Eddie Cruz	DATE: 12/6/21	TIME: 1430	RECEIVED BY:	12/6/21 1430
RELINQUISHED BY (3):	DATE: 12/6/21	TIME: 1430	RECEIVED BY:	

RECEIVED BY LABORATORY: Ashley Givens DATE: 12/7/21 TIME: 11:28
COOLER SEAL: ☑ INTACT ☐ BROKEN ☐ ABSENT
CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☑ ABSENT
CARRIER: FedEx TEMP: °C -1.3°
TRACKING #: 4605 2704 2072

* = Samples in this project.

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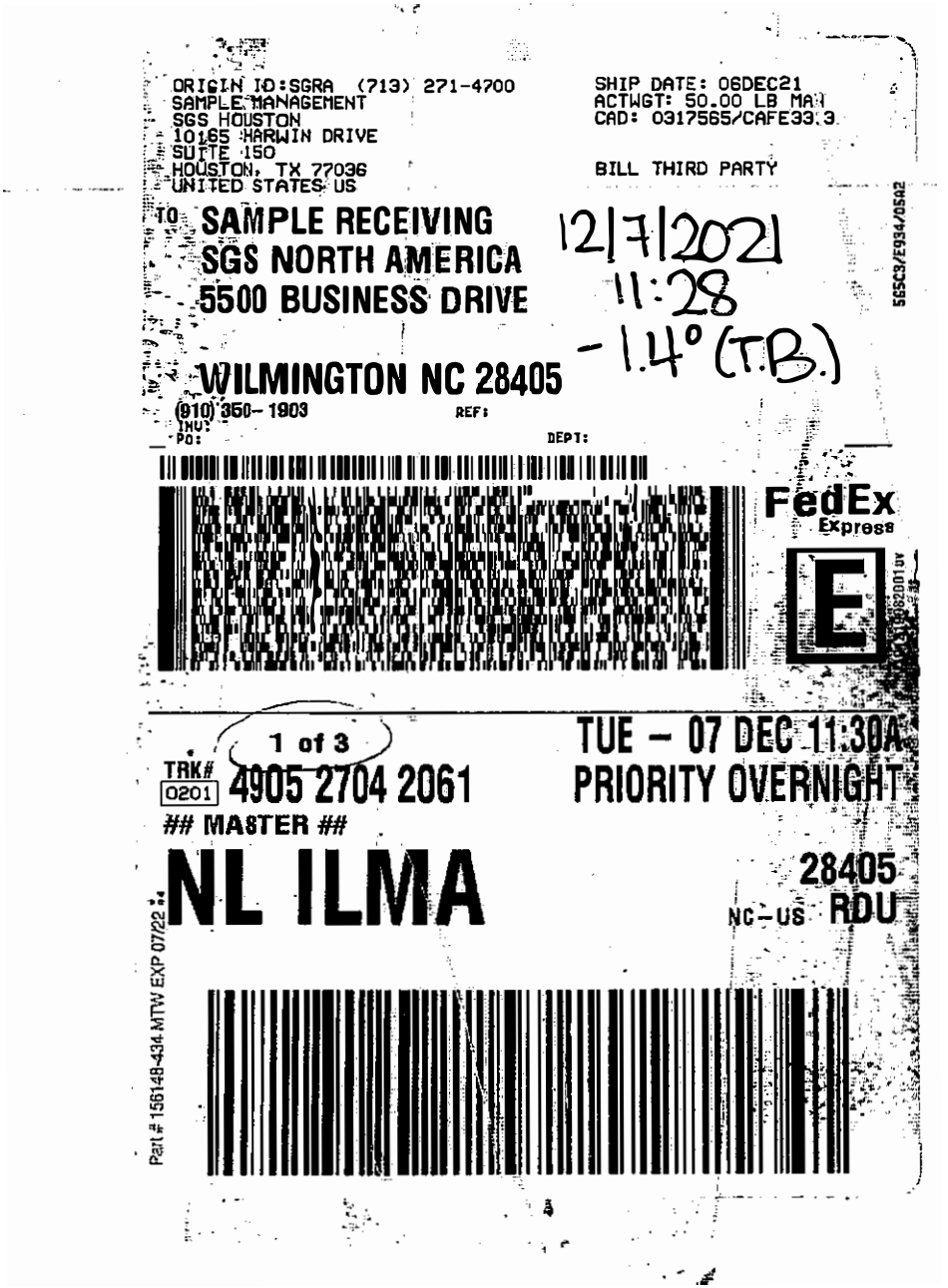


ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 06DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903

12/7/2021
11:28
-1.4° (T.B.)

INV:
PO:
REF:
DEPT:

FedEx Express

1 of 3

TRK# 0201 4905 2704 2061

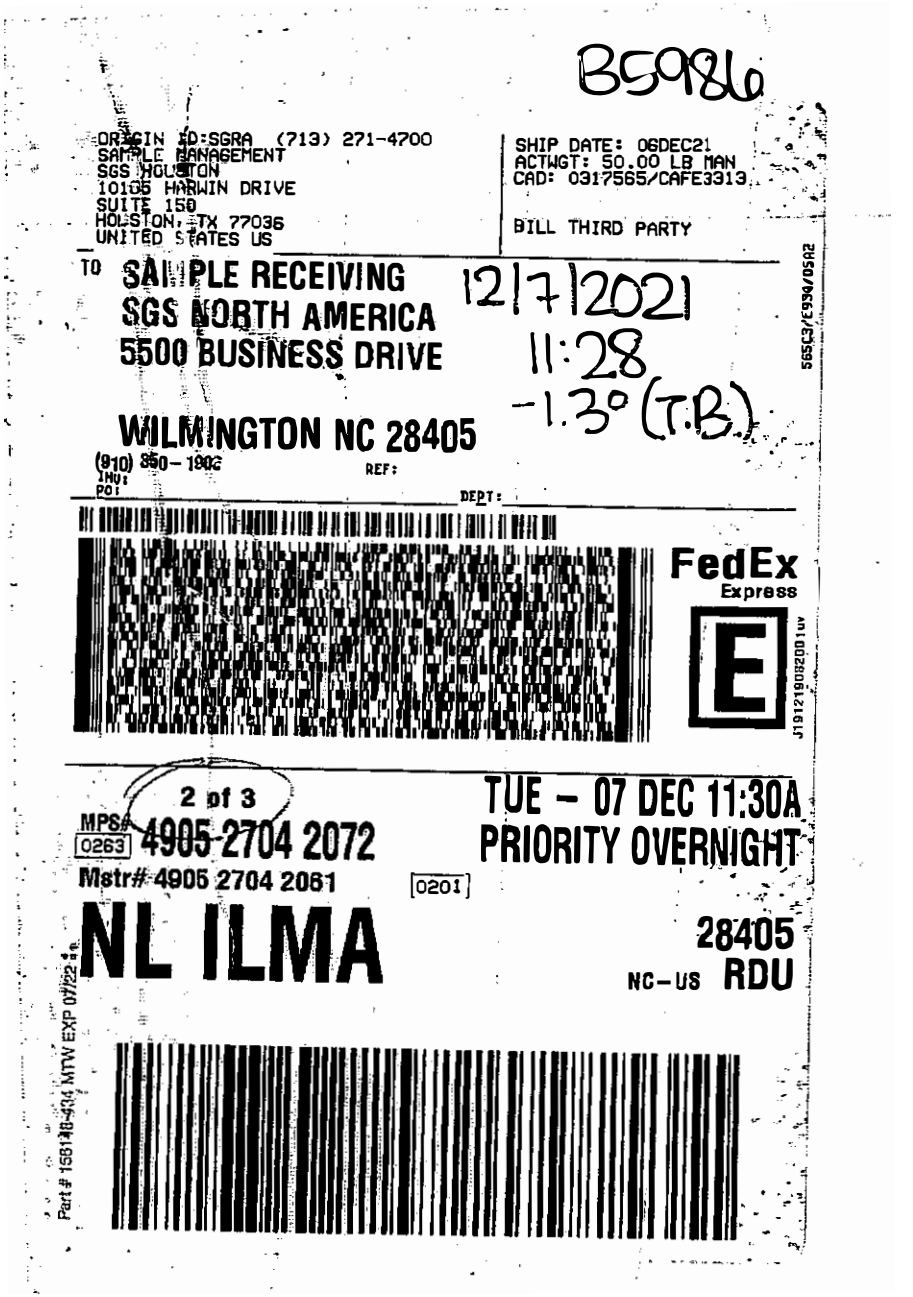
TUE - 07 DEC 11:30A
PRIORITY OVERNIGHT

MASTER

NL ILMA

28405
NC-US RDU

Part # 156148-434 MTW EXP 07/22



B59986

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 06DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903

12/7/2021
11:28
-1.3° (T.B.)

INV:
PO:
REF:
DEPT:

FedEx Express

2 of 3

MPS# 0263 4905 2704 2072
Mstr# 4905 2704 2061 0201

TUE - 07 DEC 11:30A
PRIORITY OVERNIGHT

NL ILMA

28405
NC-US RDU

Part # 156148-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5986

Initiation Date: 08-Dec-21

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & OPRD

10 g DWE extraction

Read and understood, initial and date: Prep Lab: KE 12/15/21 JRH 12/15/21 RPB 12/16/21 HRMS Lab:

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: akornegay Date: 08-Dec-2021

SGS

Methods: PCB / PAH; (PCDD/F) WHO-2; QUANTICS USV; DoD PCDD/F PEST

Extraction Type: (SDS) CLL; TALEX Carbon SPE

Solid

Final Volume: 20 µL

Batch# 18732

Split: ~~1/3~~ ~~1/4~~

Extract Initial/Date: KE 12/15/21

Clean-up Initial/Date: RAS 12/16/21

Transfer Init/Date: RAS 12/17/21

Lab Sample ID	Extraction Position (Solvent: TOL)	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5986_18732_001	4	13.73				dark gray, clay-like, oil smell
B5986_18732_002	5	14.29				light brown, clay-like
B5986_18732_003	6	12.47				light brown, clay-like
B5986_18732_004	7	13.11				gray, clay-like
B5986_18732_005	8	13.85				dark gray, clay-like
B5986_18732_006	9	12.40				brown, clay-like
B5986_18732_007	10	16.02				dark gray, clay-like, oil smell
B6000_18732_001	11	12.52				light brown, clay-like
B6000_18732_002	12	12.86				brown/orange, clay-like
B6000_18732_003	13	15.81			21Dec21	dark gray, clay-like, oil smell
B6000_18732_004	14	12.58		CL		brown, clay-like
B6000_18732_005	15	13.70				brown, clay-like
B6000_18732_006	16	12.60				gray, clay-like
B6000_18732_007	17	12.36				brown, clay-like
B6000_18732_008	18	13.04				gray, clay-like
MB1_18732	1	10.00				sodium sulfate
OPR1_18732	2	10.00				sodium sulfate
OPR2_18732	3	10.00				sodium sulfate

RAS 12/17/21

Supply IDs

Toluene	SR 101-20
MeCHL	STL94-2
Florisil	SPL5-70
Hexane	STL14.19
Silica	SPL5-28D
S Nitrate	N/A
Base Silica	SPL5-67
HydroMatrix	N/A
Tetradecane	SPL5-28B
H_2SO_4	N/A
A Silica	SPL5.71
Sodium Sulfate	SPL5-28C

Additional Cleanup

Acid Partition Date/Initial:	
Mini-Acid Date/Initial:	21Dec21 CL
Carbon Column Date/Initial:	
GPC Date/Initial:	
Bond-Elute Date/Initial:	

Cycle Time

TOL	Start: 1600
	Stop: 0900
HEX	Start:
	Stop: 21Dec21 CL
DCM	Start:
	Stop:

SGS

Methods: PCB PCDD/F QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

Solid

Batch# 18732

Inter-Department Communication Sheet

21 Dec 21

SGS

Wt. Volume Results

Batch #: 18732 **Comments:**

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5986_001	0.79	5.06	3.96	74.24%	74.24%			13.47	13.73	10.19
B5986_002	0.8	4.01	3.06	70.40%	70.40%			14.2	14.29	10.06
B5986_003	0.81	4.12	3.47	80.36%	80.36%			12.44	12.47	10.02
B5986_004	0.79	4.32	3.52	77.34%	77.34%			12.93	13.11	10.14
B5986_005	0.83	3.9	3.08	73.29%	73.29%			13.64	13.85	10.15
B5986_006	0.79	4.28	3.64	81.66%	81.66%			12.25	12.4	10.13
B5986_007	0.79	4.12	2.87	62.46%	62.46%			16.01	16.02	10.01
B6000_001	0.78	4.28	3.59	80.29%	80.29%			12.46	12.52	10.05
B6000_002	0.8	4.38	3.61	78.49%	78.49%			12.74	12.86	10.09
B6000_003	0.8	4.99	3.5	64.44%	64.44%			15.52	15.81	10.19
B6000_004	0.8	4.7	3.94	80.51%	80.51%			12.42	12.58	10.13
B6000_005	0.8	4.98	3.92	74.64%	74.64%			13.4	13.7	10.23
B6000_006	0.8	5.04	4.23	80.90%	80.90%			12.36	12.6	10.19
B6000_007	0.8	5.4	4.54	81.30%	81.30%			12.3	12.36	10.05
B6000_008	0.8	4.24	3.47	77.62%	77.62%			12.88	13.04	10.12

reviewed
21 Dec 21

% Solid Determination WorkSheet

SGS

Batch: 18732

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	10g DWE	Comments
B5986_18732_001	0.79	5.06	3.96	13.47	
B5986_18732_002	0.80	4.01	3.06	14.70	
B5986_18732_003	0.81	4.12	3.47	12.44	
B5986_18732_004	0.79	4.32	3.52	12.93	
B5986_18732_005	0.83	3.90	3.08	13.64	
B5986_18732_006	0.79	4.28	3.64	12.25	
B5986_18732_007	0.79	4.12	2.87	16.01	
B6000_18732_001	0.78	4.28	3.59	12.46	
B6000_18732_002	0.80	4.38	3.61	12.74	
B6000_18732_003	0.80	4.99	3.50	15.52	21 DEC 21
B6000_18732_004	0.80	4.70	3.94	12.42	6
B6000_18732_005	0.80	4.98	3.92	13.40	
B6000_18732_006	0.80	5.04	4.23	12.36	
B6000_18732_007	0.80	5.40	4.54	12.30	
B6000_18732_008	0.80	4.24	3.47	12.88	

RAB 12/17/21

Date/Initials: KE 12/15/21

SGS

Methods: PCB / PAH | PCDD/F / WHO-2 | QUANTICS / USV | DoD PCDD/F / PEST | Solid

Batch # 18732

Lab Sample ID	Spiker Initials/Date: JRH 12/15/21	JRH 12/15/21	JRH 12/15/21	12/15/21 12/14/21	JRH 12/16/21		
	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS		
	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount: 20µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5986_18732_001	—	—	KE	KE	JRH		
B5986_18732_002	—	—	KE	KE	JRH		
B5986_18732_003	—	—	KE	KE	JRH		
B5986_18732_004	—	—	KE	KE	JRH		
B5986_18732_005	—	—	KE	KE	JRH		
B5986_18732_006	—	—	KE	KE	JRH		
B5986_18732_007	—	—	KE	KE	JRH		
B6000_18732_001	—	—	KE	KE	JRH		
B6000_18732_002	—	—	KE	KE	JRH		
B6000_18732_003	—	—	KE	KE	JRH		
B6000_18732_004	—	—	KE	KE	JRH		
B6000_18732_005	—	—	KE	KE	JRH		
B6000_18732_006	—	—	KE	KE	JRH		
B6000_18732_007	—	—	KE	KE	JRH		
B6000_18732_008	—	—	KE	KE	JRH		
MB1_18732	—	—	KE	KE	JRH		
OPR1_18732	KE	KE	KE	KE	JRH		
OPR2_18732	KE	KE	KE	KE	JRH		

12/17/21

Standard Information

Pipette ID						12/17/21
Spike ID	D/F Ax-A	D/F Ax-B	D/F ES	D/F CS	D/F JS	
SIL #	24-15-4	25-187-2	26-1-7	25.338.1	25.309.1	
Concentration	10pg/µL	10pg/µL	100pg/µL	100 pg/µL	100 pg/µL	
Expiration Date	7/9/28	6/22/22	8/2027	11/16/22	10/8/22	

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
12	211217C12	3	CS3_211217_DF_CB	1.00	25-347-1	DTF	908-086	17-Dec-2021	18:55:50
13	211217C13	18	OPR1_18732_DF	1.00	0_18732_OPR001	DTF	047-295	17-Dec-2021	19:42:09
14	211217C14	19	OPR2_18732_DF	1.00	0_18732_OPR002	DTF	721-652	17-Dec-2021	20:28:29
15	211217C15	2	SBS_211217_DF_CB	1.00	20-61-1	DTF	403-481	17-Dec-2021	21:14:49
16	211217C16	17	MB1_18732_DF_SDS	10.00	Method Blank	DTF	041-257	17-Dec-2021	22:01:09
17	211217C17	20	B5986_18732_DF_001	10.19	11215131-120321-S-JC-SW-B-6	DTF	677-327	17-Dec-2021	22:47:28
18	211217C18	21	B5986_18732_DF_002	10.06	11215131-120421-S-JC-SC-O-12	DTF	135-907	17-Dec-2021	23:33:49
19	211217C19	22	B5986_18732_DF_003	10.02	11215131-120421-S-JC-SC-O-6	DTF	313-227	18-Dec-2021	00:20:09
20	211217C20	23	B5986_18732_DF_004	10.14	11215131-120421-S-JC-SC-B-5	DTF	875-443	18-Dec-2021	01:06:28
21	211217C21	24	B5986_18732_DF_005	10.15	11215131-120421-S-JC-SC-O-7	DTF	360-861	18-Dec-2021	01:52:49
22	211217C22	25	B5986_18732_DF_006	10.13	11215131-120621-S-JC-SC-O-1	DTF	305-317	18-Dec-2021	02:39:09
23	211217C23	26	B5986_18732_DF_007	10.01	11215131-120621-S-JC-SC-B-1	DTF	407-080	18-Dec-2021	03:25:27

REVIEWED
Tyler_Fritz , 12/20/2021, 2:46:19 PM

APPROVED
Carla_Lyon , 12/21/2021, 2:20:43 PM

Lab ID: MB1_18732_DF_SDS | **Acq'd:** 17 Dec 2021 22:01 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5986_18732 | **UTP:** 20-Dec-2021 14:13:05 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 041-257-JQS

Datafile: 211217C16 | **Report:** 20 Dec 2021 14:15 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	6570.497	0.357
12378-PeCDD	NotFnd		1.0005	-		-	-	-	1.04	-	4254.226	0.224
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	2707.421	0.16
123678-HxCDD	NotFnd		1.0031	-		-	-	-	1.15	-	2707.421	0.151
123789-HxCDD	NotFnd		1.0102	-		-	-	-	1.05	-	2707.421	0.141
1234678-HpCDD	NotFnd		1.0004	-		-	-	-	1.06	-	4206.556	0.282
OCDD	NotFnd		1.0003	-		-	-	-	1.13	-	3137.432	0.831
2378-TCDF	NotFnd		1.0007	-		-	-	-	1.08	-	5866.915	0.231
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	5471.473	0.177
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	5471.473	0.186
123478-HxCDF	NotFnd		1.0005	-		-	-	-	1.27	-	4151.238	0.138
123678-HxCDF	NotFnd		1.0005	-		-	-	-	1.15	-	4151.238	0.142
234678-HxCDF	NotFnd		1.0004	-		-	-	-	1.19	-	4151.238	0.142
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	4151.238	0.145
1234678-HpCDF	NotFnd		1.0003	-		-	-	-	1.37	-	2680.779	0.0856
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	2680.779	0.151
OCDF	NotFnd		1.0003	-		-	-	-	1.07	-	5736.135	1.03

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.04	1.0215	1.0217	+0.3	2.85E+07	0.84	Y	1.05	90.9
ES 12378-PeCDD	34.28	1.2040	1.2062	+4.5	3.09E+07	1.58	Y	0.88	117
ES 123478-HxCDD	38.19	0.9925	0.9923	-0.5	2.51E+07	1.24	Y	0.97	93.5
ES 123678-HxCDD	38.29	0.9953	0.9951	-0.5	2.48E+07	1.28	Y	0.94	95.1
ES 123789-HxCDD	38.57	1.0024	1.0023	-0.2	2.80E+07	1.20	Y	1.09	92.8
ES 1234678-HpCDD	41.20	1.0697	1.0707	+2.5	2.31E+07	1.09	Y	0.91	91.6
ES OCDD	44.00	1.1413	1.1432	+5.0	1.64E+07	0.95	Y	0.62	47.7
ES 2378-TCDF	28.20	1.0469	1.0475	+1.0	4.93E+07	0.76	Y	1.06	86.6
ES 12378-PeCDF	32.87	1.2181	1.2208	+5.3	5.23E+07	1.52	Y	0.91	107
ES 23478-PeCDF	33.95	1.2578	1.2610	+6.5	5.03E+07	1.47	Y	0.88	106
ES 123478-HxCDF	37.19	0.9670	0.9664	-1.3	3.83E+07	0.54	Y	1.20	116
ES 123678-HxCDF	37.34	0.9708	0.9702	-1.3	4.46E+07	0.53	Y	1.35	119
ES 234678-HxCDF	38.01	0.9881	0.9877	-0.9	3.97E+07	0.55	Y	1.24	116
ES 123789-HxCDF	38.90	1.0108	1.0109	+0.2	3.66E+07	0.55	Y	1.16	115
ES 1234678-HpCDF	40.25	1.0452	1.0459	+1.7	3.15E+07	0.46	Y	0.97	118
ES 1234789-HpCDF	41.67	1.0818	1.0829	+2.8	2.35E+07	0.48	Y	0.85	99.9
ES OCDF	44.18	1.1461	1.1479	+4.8	2.51E+07	0.94	Y	0.81	56.2

Lab ID: MB1_18732_DF_SDS **Acq'd:** 17 Dec 2021 22:01 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5986_18732 **UTP:** 20-Dec-2021 14:13:05 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 041-257-JQS

Datafile: 211217C16 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.42		-	-	-	3.00E+07	0.85	Y	-	-	
JS 1234-TCDF	26.92		-	-	-	5.37E+07	0.76	Y	-	-	
JS 123467-HxCDD	38.48		-	-	-	1.38E+07	1.25	Y	-	-	
CS 37Cl-2378-TCDD	29.06		1.0222	1.0224	+0.3	1.39E+07	n/a	-	1.20	96.6	
CS 12347-PeCDD	33.80		1.1870	1.1891	+4.3	2.82E+07	1.59	Y	0.75	125	
CS 12346-PeCDF	32.36		1.1994	1.2019	+4.9	5.11E+07	1.50	Y	0.85	112	
CS 123469-HxCDF	37.67		0.9793	0.9787	-1.4	3.90E+07	0.55	Y	1.12	127	
CS 1234689-HpCDF	40.66		1.0556	1.0565	+2.2	2.92E+07	0.46	Y	0.89	119	
~~SS 37Cl-2378-TCDD~~	~~29.06~~		~~1.0222~~	~~1.0224~~	~~+0.3~~	~~1.39E+07~~	~~n/a~~		~~1.15~~	~~107~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.80~~		~~1.1870~~	~~1.1891~~	~~+4.3~~	~~2.82E+07~~	~~1.59~~	~~Y~~	~~0.86~~	~~106~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.36~~		~~1.1994~~	~~1.2019~~	~~+4.9~~	~~5.11E+07~~	~~1.50~~	~~Y~~	~~0.94~~	~~104~~	
~~SS 123469-HxCDF~~	~~37.67~~		~~0.9793~~	~~0.9787~~	~~-1.4~~	~~3.90E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~106~~	
~~SS 1234689-HpCDF~~	~~40.66~~		~~1.0556~~	~~1.0565~~	~~+2.2~~	~~2.92E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~101~~	

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18732_DF_SDS **Acq'd: 17 Dec 2021 22:01 DTF** **Wt/Vol: 10.00 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: Method Blank B5986_18732 **UTP: 20-Dec-2021 14:13:05 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 041-257-JQS**

Datafile: 211217C16 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8819						1.18		6570.497	0.357
1379-TCDD	NotFnd		0.8935						1.18		6570.497	0.357
1369-TCDD	NotFnd		0.9073						1.18		6570.497	0.357
1469-TCDD	NotFnd		0.9329						1.18		6570.497	0.357
1247/1246/1248/1249-TCDD	NotFnd		0.9407						1.18		6570.497	0.357
1378-TCDD	NotFnd		0.9466						1.18		6570.497	0.357
1268-TCDD	NotFnd		0.9531						1.18		6570.497	0.357
1478-TCDD	NotFnd		0.9610						1.18		6570.497	0.357
1279-TCDD	NotFnd		0.9668						1.18		6570.497	0.357
1234/1269-TCDD	NotFnd		0.9783						1.18		6570.497	0.357
1236-TCDD	NotFnd		0.9830						1.18		6570.497	0.357
1237/1238-TCDD	NotFnd		0.9913						1.18		6570.497	0.357
1239-TCDD	NotFnd		0.9959						1.18		6570.497	0.357
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**6570.497**	**0.357**
1278-TCDD	NotFnd		1.0115						1.18		6570.497	0.357
1267-TCDD	NotFnd		1.0160						1.18		6570.497	0.357
1289-TCDD	NotFnd		1.0331						1.18		6570.497	0.357
12479/12468-PeCDD	NotFnd		0.9295						1.04		4254.226	0.224
12469-PeCDD	NotFnd		0.9448						1.04		4254.226	0.224
12368-PeCDD	NotFnd		0.9602						1.04		4254.226	0.224
12478-PeCDD	NotFnd		0.9656						1.04		4254.226	0.224
12379-PeCDD	NotFnd		0.9686						1.04		4254.226	0.224
12369/12467/12489-PeCDD	NotFnd		0.9760						1.04		4254.226	0.224
12346/12347-PeCDD	NotFnd		0.9866						1.04		4254.226	0.224
12378-PeCDD	NotFnd		**1.0005**						**1.04**		**4254.226**	**0.224**
12367-PeCDD	NotFnd		1.0031						1.04		4254.226	0.224
12389-PeCDD	NotFnd		1.0132						1.04		4254.226	0.224
124679/124689-HxCDD	NotFnd		0.9553						1.10		2707.421	0.15
123468-HxCDD	NotFnd		0.9725						1.10		2707.421	0.15
123679/123689-HxCDD	NotFnd		0.9803						1.10		2707.421	0.15
123469-HxCDD	NotFnd		0.9842						1.10		2707.421	0.15
123478-HxCDD	NotFnd		**1.0004**						1.09		**2707.421**	**0.16**
123678-HxCDD	NotFnd		**1.0031**						1.15		**2707.421**	**0.151**
123467-HxCDD	NotFnd		1.0078						1.10		2707.421	0.15
123789-HxCDD	NotFnd		**1.0102**						1.05		**2707.421**	**0.141**

Lab ID: MB1_18732_DF_SDS **Acq'd:** 17 Dec 2021 22:01 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5986_18732 **UTP:** 20-Dec-2021 14:13:05 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 041-257-JQS

Datafile: 211217C16 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

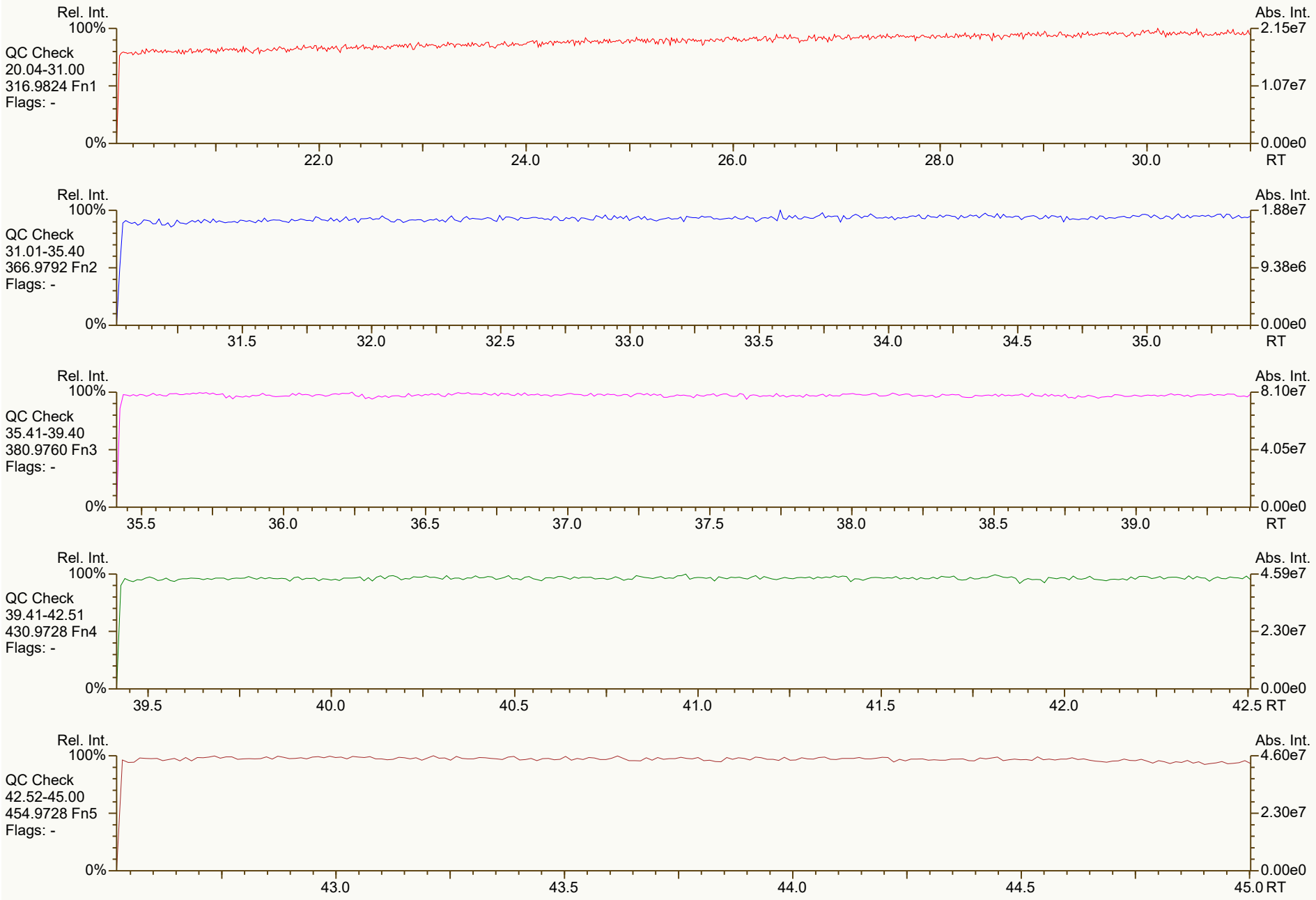
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9837						1.06		4206.556	0.282
1234678-HpCDD	**NotFnd**		**1.0004**						**1.06**		**4206.556**	**0.282**
OCDD	**NotFnd**		**1.0003**						**1.13**		**3137.432**	**0.831**
OCDD-a	NotFnd		1.0002						0.07		4403.942	18.2
1368-TCDF	NotFnd		0.8388						1.08		5866.915	0.231
1468-TCDF	NotFnd		0.8578						1.08		5866.915	0.231
2468-TCDF	NotFnd		0.8780						1.08		5866.915	0.231
1346/1246-TCDF	NotFnd		0.8906						1.08		5866.915	0.231
1347/1378/1247-TCDF	NotFnd		0.8951						1.08		5866.915	0.231
1348-TCDF	NotFnd		0.9041						1.08		5866.915	0.231
1248/1367/1379-TCDF	NotFnd		0.9084						1.08		5866.915	0.231
1268-TCDF	NotFnd		0.9207						1.08		5866.915	0.231
1467-TCDF	NotFnd		0.9253						1.08		5866.915	0.231
1478-TCDF	NotFnd		0.9309						1.08		5866.915	0.231
1369/1237-TCDF	NotFnd		0.9431						1.08		5866.915	0.231
2467-TCDF	NotFnd		0.9472						1.08		5866.915	0.231
2368-TCDF	NotFnd		0.9524						1.08		5866.915	0.231
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9560						1.08		5866.915	0.231
1278-TCDF	NotFnd		0.9710						1.08		5866.915	0.231
1349-TCDF	NotFnd		0.9752						1.08		5866.915	0.231
1267-TCDF	NotFnd		0.9802						1.08		5866.915	0.231
2346/1249-TCDF	NotFnd		0.9863						1.08		5866.915	0.231
2347/1279-TCDF	NotFnd		0.9936						1.08		5866.915	0.231
2348-TCDF	NotFnd		0.9971						1.08		5866.915	0.231
2378-TCDF	**NotFnd**		**1.0007**						**1.08**		**5866.915**	**0.231**
2367/3467-TCDF	NotFnd		1.0134						1.08		5866.915	0.231
1269-TCDF	NotFnd		1.0219						1.08		5866.915	0.231
1239-TCDF	NotFnd		1.0309						1.08		5866.915	0.231
1289-TCDF	NotFnd		1.0689						1.08		5866.915	0.231
13468/12468-PeCDF	NotFnd		0.9175						1.02		4376.711	0.145
13678/13467/12467-PeCDF	NotFnd		0.9630						1.02		5471.473	0.181
12368/13478/12478-PeCDF	NotFnd		0.9675						1.02		5471.473	0.181
14678-PeCDF	NotFnd		0.9705						1.02		5471.473	0.181
13479-PeCDF	NotFnd		0.9734						1.02		5471.473	0.181
13469/12479-PeCDF	NotFnd		0.9807						1.02		5471.473	0.181
12346-PeCDF	NotFnd		0.9848						1.02		5471.473	0.181

Lab ID: MB1_18732_DF_SDS | **Acq'd:** 17 Dec 2021 22:01 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5986_18732 | **UTP:** 20-Dec-2021 14:13:05 DTF | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 041-257-JQS

Datafile: 211217C16 | **Report:** 20 Dec 2021 14:15 TF | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		5471.473	0.181
12347-PeCDF	NotFnd		0.9895						1.02		5471.473	0.181
12348-PeCDF	NotFnd		0.9943						1.02		5471.473	0.181
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**5471.473**	**0.177**
12678/12367-PeCDF	NotFnd		1.0086						1.02		5471.473	0.181
12379-PeCDF	NotFnd		1.0137						1.02		5471.473	0.181
12679-PeCDF	NotFnd		0.9936						1.02		5471.473	0.181
23467/12369-PeCDF	NotFnd		0.9970						1.02		5471.473	0.181
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**5471.473**	**0.186**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		5471.473	0.181
12349-PeCDF	NotFnd		1.0103						1.02		5471.473	0.181
12389-PeCDF	NotFnd		1.0317						1.02		5471.473	0.181
123468-HxCDF	NotFnd		0.9634						1.19		4151.238	0.142
124678/134678-HxCDF	NotFnd		0.9687						1.19		4151.238	0.142
134679-HxCDF	NotFnd		0.9748						1.19		4151.238	0.142
124679-HxCDF	NotFnd		0.9800						1.19		4151.238	0.142
124689-HxCDF	NotFnd		0.9857						1.19		4151.238	0.142
123467-HxCDF	NotFnd		0.9973						1.19		4151.238	0.142
123478-HxCDF	**NotFnd**		**1.0005**						**1.27**		**4151.238**	**0.138**
123678-HxCDF	**NotFnd**		**1.0005**						**1.15**		**4151.238**	**0.142**
123479-HxCDF	NotFnd		1.0051						1.19		4151.238	0.142
123469-HxCDF	NotFnd		1.0092						1.19		4151.238	0.142
123679-HxCDF	NotFnd		0.9948						1.19		4151.238	0.142
234678-HxCDF	**NotFnd**		**1.0004**						**1.19**		**4151.238**	**0.142**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		4151.238	0.142
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**4151.238**	**0.145**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		4151.238	0.142
1234678-HpCDF	**NotFnd**		**1.0003**						**1.37**		**2680.779**	**0.0856**
1234679-HpCDF	NotFnd		1.0068						1.34		2680.779	0.113
1234689-HpCDF	NotFnd		1.0102						1.34		2680.779	0.113
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**2680.779**	**0.151**
OCDF	**NotFnd**		**1.0003**						**1.07**		**5736.135**	**1.03**
OCDF-a	NotFnd		1.0002						0.07		4031.985	11.7

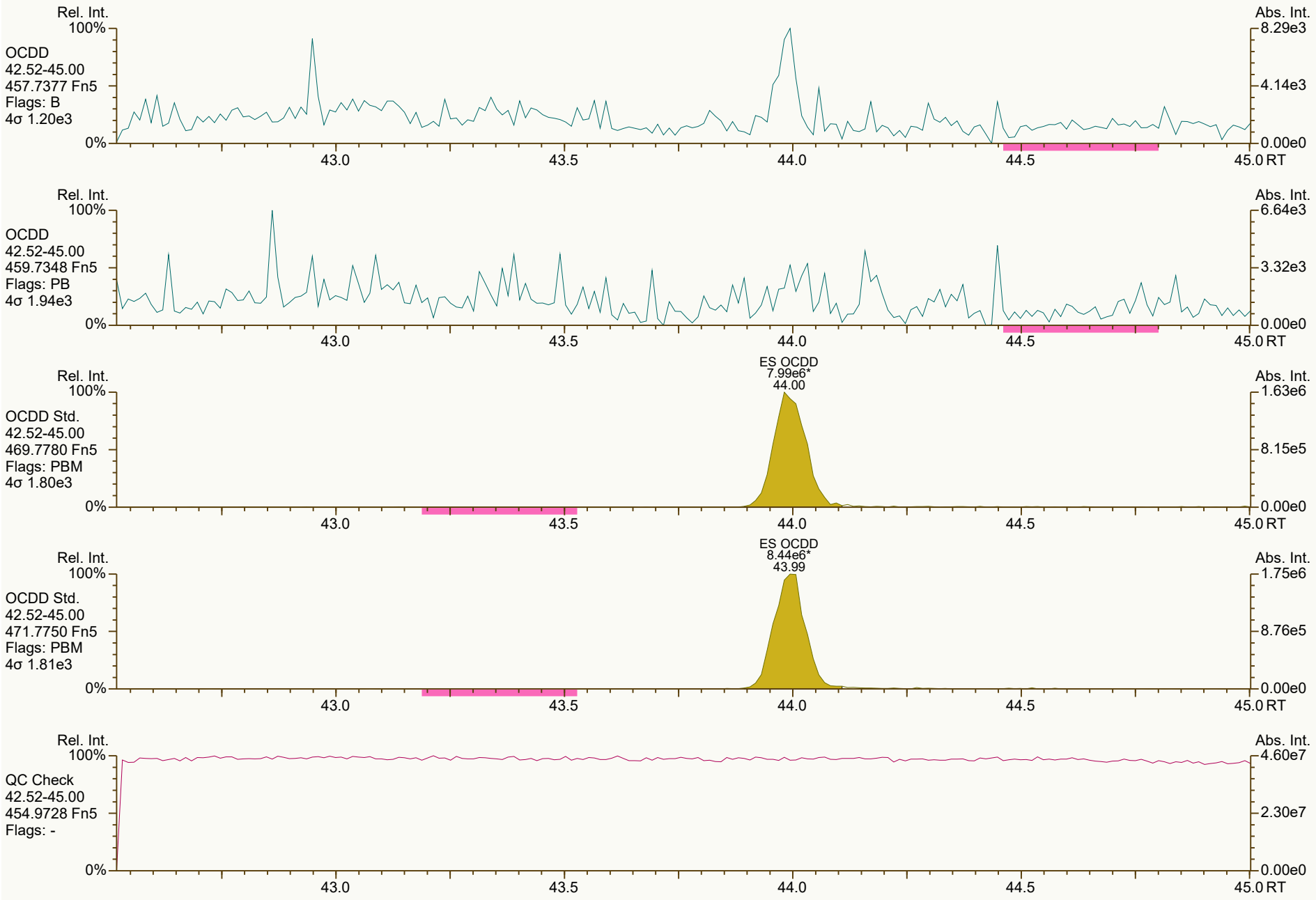

Rel. Int.
100%
0%
Abs. Int.
2.15e7
1.07e7
0.00e0
RT
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
22.0
24.0
26.0
28.0
30.0
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
1.88e7
9.38e6
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
8.10e7
4.05e7
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
4.59e7
2.30e7
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
4.60e7
2.30e7
43.0
43.5
44.0
44.5
45.0 RT

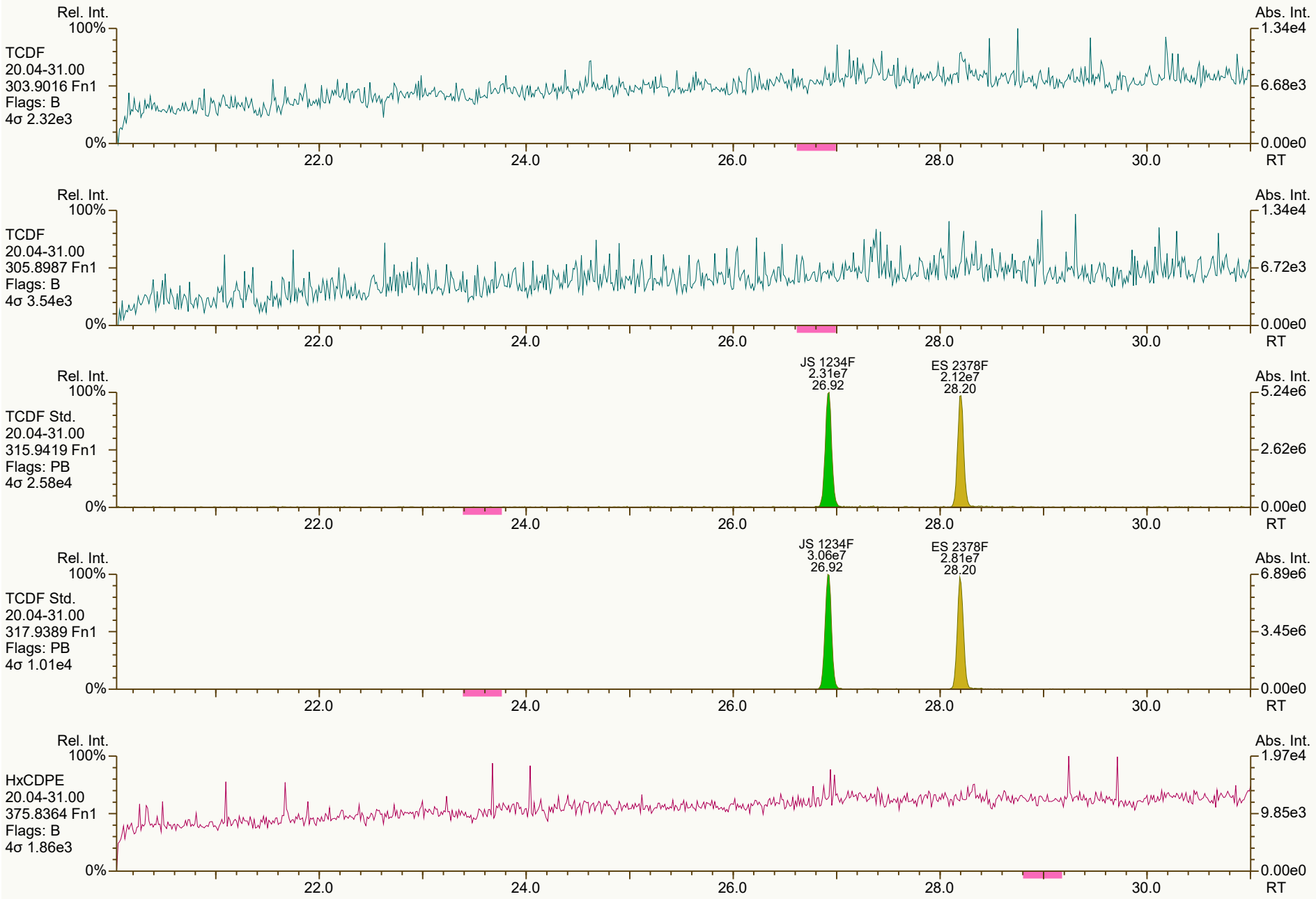

Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: B
4σ 4.53e3
0%
Abs. Int.
1.52e4
7.58e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: B
4σ 2.04e3
0%
Abs. Int.
1.34e4
6.71e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PBM
4σ 1.75e3
0%
CS 37Cl-2378D
1.39e7*
29.06
Abs. Int.
3.56e6
1.78e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PBM
4σ 1.41e4
0%
JS 1234D
1.38e7
28.42
ES 2378D
1.30e7*
29.04
Abs. Int.
3.55e6
1.77e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PBM
4σ 6.02e3
0%
JS 1234D
1.62e7
28.42
ES 2378D
1.55e7*
29.04
Abs. Int.
4.18e6
2.09e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: B
4σ 2.76e3
0%
Abs. Int.
8.57e3
4.28e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PB
4σ 1.50e3
0%
Abs. Int.
7.42e3
3.71e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PB
4σ 3.94e3
0%
CS 12347D
1.73e7
33.80
ES 12378D
1.89e7
34.28
Abs. Int.
5.62e6
2.81e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PB
4σ 4.20e3
0%
CS 12347D
1.09e7
33.80
ES 12378D
1.20e7
34.28
Abs. Int.
3.49e6
1.75e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.88e7
9.38e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT

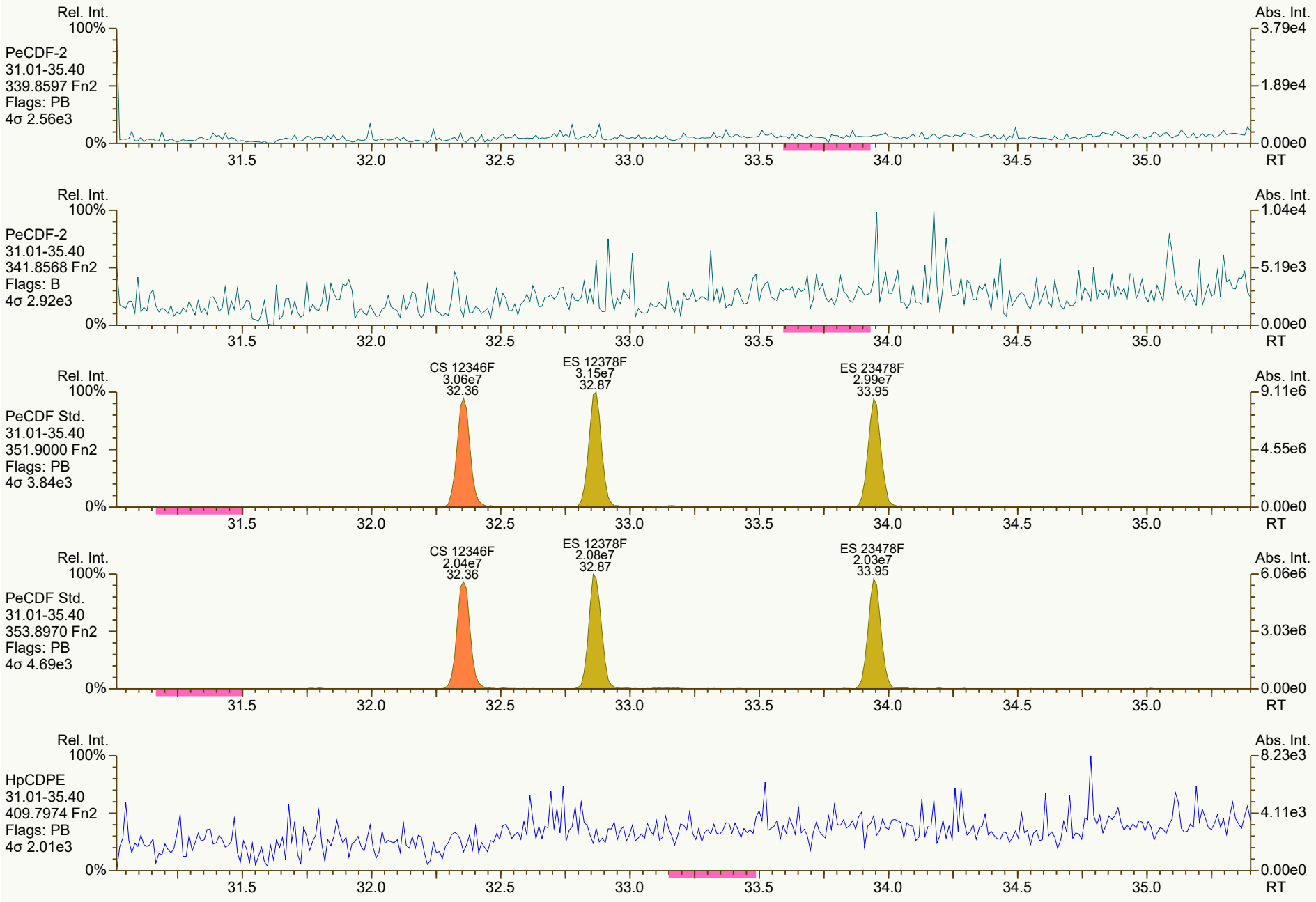

Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: B
4σ 1.25e3
0%
Abs. Int.
9.82e3
4.91e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
35.41-39.40
391.8127 Fn3
Flags: B
4σ 1.46e3
0%
Abs. Int.
7.60e3
3.80e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PBM
4σ 2.89e3
0%
ES 123678D
1.39e7
38.29
ES 123478D
1.39e7
38.19
ES 123789D
1.53e7*
38.57
JS 123467D
7.67e6*
38.48
Abs. Int.
5.02e6
2.51e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PB
4σ 4.57e3
0%
ES 123678D
1.09e7
38.29
ES 123478D
1.12e7
38.19
ES 123789D
1.27e7
38.57
JS 123467D
6.12e6
38.48
Abs. Int.
4.18e6
2.09e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
Abs. Int.
8.10e7
4.05e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

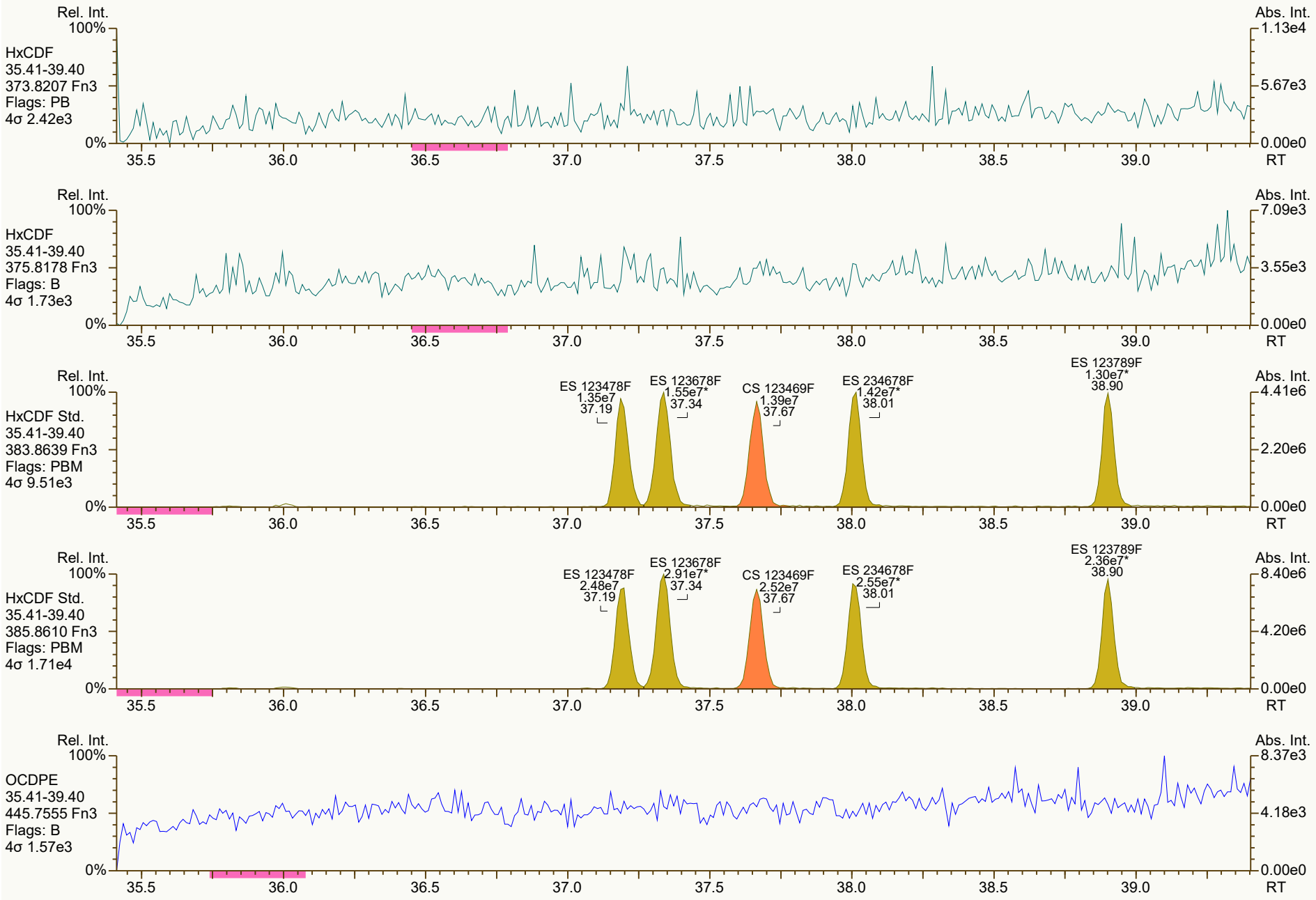

Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: B
4σ 2.41e3
0%
Abs. Int.
7.58e3
3.79e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PB
4σ 1.79e3
0%
Abs. Int.
5.16e3
2.58e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
ES 1234678D
1.20e7*
41.20
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PBM
4σ 5.22e3
0%
Abs. Int.
3.68e6
1.84e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
ES 1234678D
1.10e7*
41.20
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PBM
4σ 2.65e3
0%
Abs. Int.
3.42e6
1.71e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.59e7
2.30e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: B
4σ 1.20e3
0%
Abs. Int.
8.29e3
4.14e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 1.94e3
0%
Abs. Int.
6.64e3
3.32e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.99e6*
44.00
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PBM
4σ 1.80e3
0%
Abs. Int.
1.63e6
8.15e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
8.44e6*
43.99
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PBM
4σ 1.81e3
0%
Abs. Int.
1.75e6
8.76e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.60e7
2.30e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: B
4σ 2.32e3
0%
Abs. Int.
1.34e4
6.68e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: B
4σ 3.54e3
0%
Abs. Int.
1.34e4
6.72e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PB
4σ 2.58e4
0%
JS 1234F
2.31e7
26.92
ES 2378F
2.12e7
28.20
Abs. Int.
5.24e6
2.62e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PB
4σ 1.01e4
0%
JS 1234F
3.06e7
26.92
ES 2378F
2.81e7
28.20
Abs. Int.
6.89e6
3.45e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 1.86e3
0%
Abs. Int.
1.97e4
9.85e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.05e4
5.26e3
0.00e0
RT
22.0
24.0
26.0
28.0
30.0
PeCDF-1
20.04-31.00
339.8597 Fn1
Flags: B
4σ 2.37e3
PeCDF-1
20.04-31.00
341.8568 Fn1
Flags: B
4σ 2.01e3
2.99e4
1.50e4
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
2.15e7
1.07e7

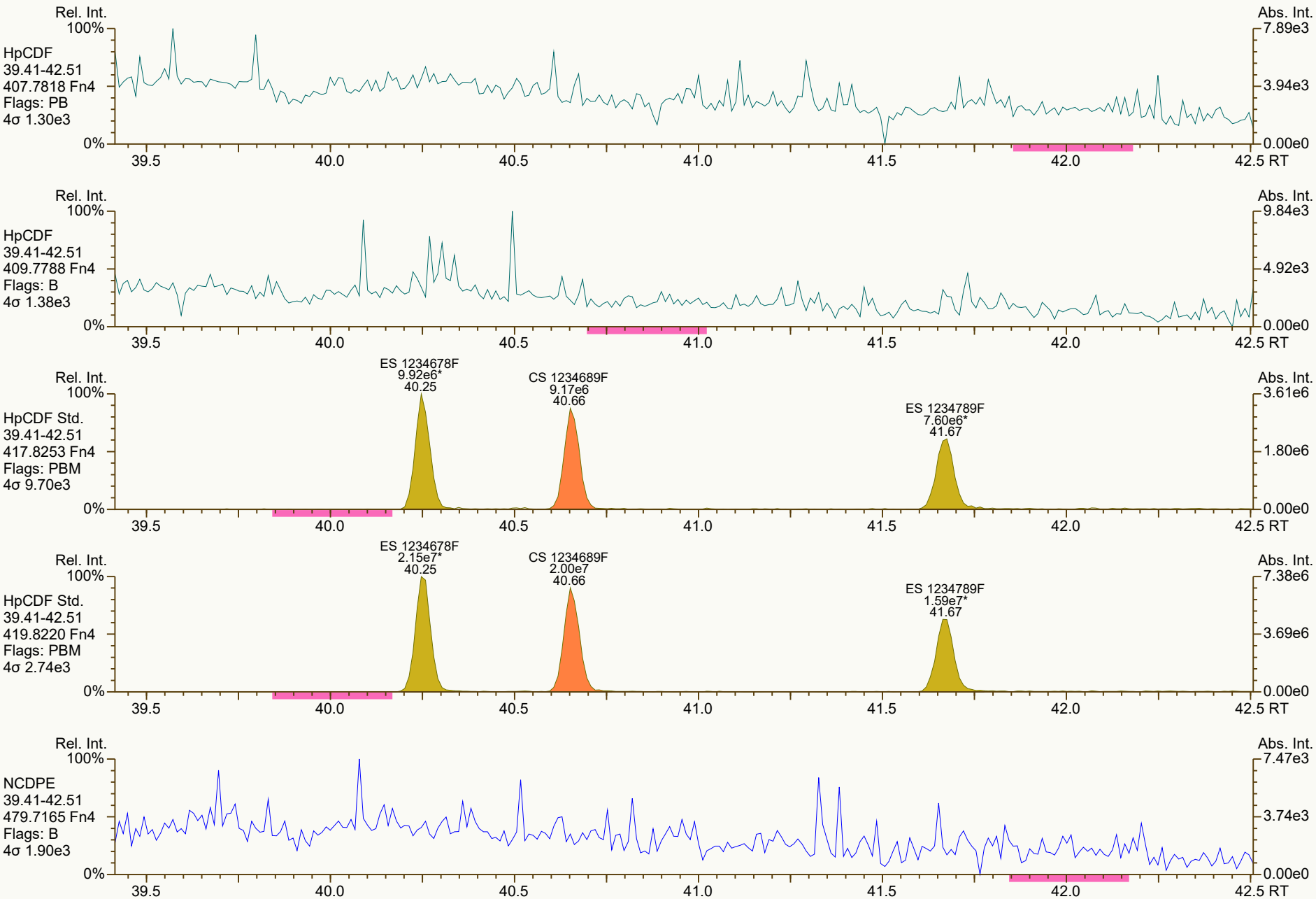

Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PB
4σ 2.56e3
0%
Abs. Int.
3.79e4
1.89e4
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: B
4σ 2.92e3
0%
Abs. Int.
1.04e4
5.19e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PB
4σ 3.84e3
0%
CS 12346F
3.06e7
32.36
ES 12378F
3.15e7
32.87
ES 23478F
2.99e7
33.95
Abs. Int.
9.11e6
4.55e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PB
4σ 4.69e3
0%
CS 12346F
2.04e7
32.36
ES 12378F
2.08e7
32.87
ES 23478F
2.03e7
33.95
Abs. Int.
6.06e6
3.03e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: PB
4σ 2.01e3
0%
Abs. Int.
8.23e3
4.11e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
100%
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PB
4σ 2.42e3
0%
Abs. Int.
1.13e4
5.67e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF
35.41-39.40
375.8178 Fn3
Flags: B
4σ 1.73e3
0%
Abs. Int.
7.09e3
3.55e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PBM
4σ 9.51e3
0%
ES 123478F
1.35e7
37.19
ES 123678F
1.55e7*
37.34
CS 123469F
1.39e7
37.67
ES 234678F
1.42e7*
38.01
ES 123789F
1.30e7*
38.90
Abs. Int.
4.41e6
2.20e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PBM
4σ 1.71e4
0%
ES 123478F
2.48e7
37.19
ES 123678F
2.91e7*
37.34
CS 123469F
2.52e7
37.67
ES 234678F
2.55e7*
38.01
ES 123789F
2.36e7*
38.90
Abs. Int.
8.40e6
4.20e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 1.57e3
0%
Abs. Int.
8.37e3
4.18e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

SGS ID: MB1_18732_DF_SDS
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: Method Blank
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 17

Acq: 17-Dec-2021 22:01:09
User: DTF Datafile: 211217C16



Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\MB1_18732_DF_SDS.utp_res, saved 20-Dec-2021 14:13 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9373, 9323, 0278 scc: 041-257

Peak annotation: Areas, Centroids
Revised: 20-Dec-2021 09:34 (DTF) Printed: 20-Dec-2021 14:26 Page 11 of 12


Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PB
4σ 2.39e3
0%
Abs. Int.
4.54e3
2.27e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: B
4σ 3.35e3
0%
Abs. Int.
1.03e4
5.15e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.21e7*
44.17
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PBM
4σ 2.00e3
0%
Abs. Int.
2.51e6
1.25e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.30e7*
44.17
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PBM
4σ 5.75e3
0%
Abs. Int.
2.72e6
1.36e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: B
4σ 1.46e3
0%
Abs. Int.
5.65e3
2.83e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5986_18732_DF_001 **Acq'd:** 17 Dec 2021 22:47 DTF **Wt/Vol:** 10.19 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-6 **UTP:** 20-Dec-2021 14:13:06 DTF **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 677-327-ZTY

Datafile: 211217C17 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.06		1.0008	1.0008	0	1.26E+08	0.82	Y	1.18	888	8965.88	0.61
12378-PeCDD	34.31		1.0005	1.0006	+0.2	1.43E+06	1.63	Y	1.04	11	9357.106	0.601
123478-HxCDD	38.20		1.0004	1.0004	0	3.99E+05	1.30	Y	1.09	3.51	14251.93	0.963
123678-HxCDD	38.30		1.0031	1.0031	0	1.61E+06	1.18	Y	1.15	13.6	14251.93	0.925
123789-HxCDD	38.58		1.0102	1.0103	+0.2	9.00E+05	1.27	Y	1.05	7.35	14251.93	0.917
1234678-HpCDD	41.21		1.0004	1.0003	-0.2	2.79E+07	1.06	Y	1.06	260	8897.256	0.675
OCDD	44.01		1.0003	1.0003	0	1.89E+08	0.91	Y	1.13	3,880	3847.129	1.04
2378-TCDF	28.22	E	1.0007	1.0007	0	5.87E+08	0.81	Y	1.08	2,650	5864.318	0.278
12378-PeCDF	32.89		1.0005	1.0005	0	1.61E+07	1.54	Y	1.02	78.2	13010.712	0.539
23478-PeCDF	33.98		1.0005	1.0008	+0.6	1.42E+07	1.60	Y	1.02	70.3	13010.712	0.535
123478-HxCDF	37.21		1.0005	1.0004	-0.2	3.11E+07	1.25	Y	1.27	162	13710.311	0.588
123678-HxCDF	37.35		1.0005	1.0005	0	8.25E+06	1.25	Y	1.15	41.2	13710.311	0.563
234678-HxCDF	38.03		1.0004	1.0004	0	2.38E+06	1.26	Y	1.19	12.4	13710.311	0.589
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	13710.311	0.597
1234678-HpCDF	40.25		1.0003	1.0003	0	3.20E+07	1.04	Y	1.37	185	3428.468	0.148
1234789-HpCDF	41.68		1.0003	1.0002	-0.3	5.61E+06	1.11	Y	1.31	41.7	3428.468	0.219
OCDF	44.19		1.0003	1.0003	0	3.13E+08	0.91	Y	1.07	4,560	6575.365	1.18

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.04	1.0215	1.0217	+0.3	2.36E+07	0.79	Y	1.05	87.9
ES 12378-PeCDD	34.28	1.2040	1.2064	+4.9	2.46E+07	1.56	Y	0.88	109
ES 123478-HxCDD	38.19	0.9925	0.9924	-0.2	2.05E+07	1.28	Y	0.97	90.8
ES 123678-HxCDD	38.29	0.9953	0.9951	-0.5	2.02E+07	1.25	Y	0.94	92.1
ES 123789-HxCDD	38.57	1.0024	1.0023	-0.2	2.29E+07	1.23	Y	1.09	90.5
ES 1234678-HpCDD	41.20	1.0697	1.0708	+2.7	1.99E+07	1.04	Y	0.91	93.9
ES OCDD	44.00	1.1413	1.1435	+5.8	1.69E+07	0.97	Y	0.62	58.4
ES 2378-TCDF	28.19	1.0469	1.0476	+1.2	4.02E+07	0.77	Y	1.06	86.3
ES 12378-PeCDF	32.87	1.2181	1.2212	+6.1	3.94E+07	1.48	Y	0.91	98.3
ES 23478-PeCDF	33.95	1.2578	1.2614	+7.3	3.88E+07	1.60	Y	0.88	99.8
ES 123478-HxCDF	37.19	0.9670	0.9666	-0.9	2.97E+07	0.54	Y	1.20	106
ES 123678-HxCDF	37.34	0.9708	0.9703	-1.1	3.41E+07	0.54	Y	1.35	109
ES 234678-HxCDF	38.01	0.9881	0.9878	-0.7	3.16E+07	0.54	Y	1.24	110
ES 123789-HxCDF	38.90	1.0108	1.0110	+0.5	3.01E+07	0.58	Y	1.16	112
ES 1234678-HpCDF	40.24	1.0452	1.0459	+1.7	2.48E+07	0.45	Y	0.97	110
ES 1234789-HpCDF	41.67	1.0818	1.0830	+3.0	2.02E+07	0.46	Y	0.85	102
ES OCDF	44.18	1.1461	1.1481	+5.3	2.51E+07	0.91	Y	0.81	67

Lab ID: B5986_18732_DF_001 **Acq'd:** 17 Dec 2021 22:47 DTF **Wt/Vol:** 10.19 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-6 **UTP:** 20-Dec-2021 14:13:06 DTF **J-level:** 0.491 pg/g **Split:** 1 **Checkcode:** 677-327-ZTY

Datafile: 211217C17 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.42		-	-	-	2.57E+07	0.82	Y	-	-	
JS 1234-TCDF	26.91		-	-	-	4.40E+07	0.78	Y	-	-	
JS 123467-HxCDD	38.48		-	-	-	1.16E+07	1.21	Y	-	-	
CS 37Cl-2378-TCDD	29.06		1.0222	1.0225	+0.5	1.08E+07	n/a	-	1.20	87.3	
CS 12347-PeCDD	33.80		1.1870	1.1892	+4.5	2.17E+07	1.58	Y	0.75	112	
CS 12346-PeCDF	32.36		1.1994	1.2023	+5.6	3.66E+07	1.48	Y	0.85	97.7	
CS 123469-HxCDF	37.67		0.9793	0.9789	-0.9	2.98E+07	0.53	Y	1.12	115	
CS 1234689-HpCDF	40.65		1.0556	1.0565	+2.2	2.30E+07	0.46	Y	0.89	112	
~~SS 37Cl-2378-TCDD~~	~~29.06~~		~~1.0222~~	~~1.0225~~	~~+0.5~~	~~1.08E+07~~	~~n/a~~		~~1.15~~	~~99.6~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.80~~		~~1.1870~~	~~1.1892~~	~~+4.5~~	~~2.17E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~103~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.36~~		~~1.1994~~	~~1.2023~~	~~+5.6~~	~~3.66E+07~~	~~1.48~~	~~Y~~	~~0.94~~	~~99.1~~	
~~SS 123469-HxCDF~~	~~37.67~~		~~0.9793~~	~~0.9789~~	~~-0.9~~	~~2.98E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~106~~	
~~SS 1234689-HpCDF~~	~~40.65~~		~~1.0556~~	~~1.0565~~	~~+2.2~~	~~2.30E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~101~~	

Totals	Conc	EMPC
Total TCDD	1010	1020
Total PeCDD	32.9	41
Total HxCDD	141	146
Total HpCDD	642	642
Total Tetra-Octa Dioxins	5700	5730
Total TCDF	5,280	5280
Total PeCDF	281	283
Total HxCDF	333	334
Total HpCDF	387	387
Total Tetra-Octa Furans	10,800	10800
Total Tetra-Octa Dioxins & Furans	16500	16600

Lab ID: B5986_18732_DF_001 **Acq'd: 17 Dec 2021 22:47 DTF** **Wt/Vol: 10.19 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120321-S-JC-SW-B-6 **UTP: 20-Dec-2021 14:13:06 DTF** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 677-327-ZTY**

Datafile: 211217C17 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.55		0.8819	0.8801	-2.8	8.36E+05	0.68	Y	1.18	5.87	8965.88	0.61
1379-TCDD	25.91		0.8935	0.8922	-2.0	3.10E+05	0.77	Y	1.18	2.18	8965.88	0.61
1369-TCDD	26.32		0.9073	0.9063	-1.6	1.48E+05	0.68	Y	1.18	1.04	8965.88	0.61
1469-TCDD	27.06	EMPC	0.9329	0.9319	-1.6	6.80E+05	0.89	N	1.18	4.77	8965.88	0.61
1247/1246/1248/1249-TCDD	27.27		0.9407	0.9393	-2.3	3.77E+05	0.78	Y	1.18	2.64	8965.88	0.61
1378-TCDD	27.46	EMPC	0.9466	0.9458	-1.3	4.50E+05	0.90	N	1.18	3.16	8965.88	0.61
1268-TCDD	NotFnd		0.9531						1.18		8965.88	0.61
1478-TCDD	27.89		0.9610	0.9606	-0.7	3.39E+05	0.74	Y	1.18	2.38	8965.88	0.61
1279-TCDD	NotFnd		0.9668						1.18		8965.88	0.61
1234/1269-TCDD	28.40	EMPC	0.9783	0.9779	-0.7	1.96E+05	1.10	N	1.18	1.38	8965.88	0.61
1236-TCDD	NotFnd		0.9830						1.18		8965.88	0.61
1237/1238-TCDD	28.79		0.9913	0.9914	+0.2	2.04E+06	0.86	Y	1.18	14.3	8965.88	0.61
1239-TCDD	NotFnd		0.9959						1.18		8965.88	0.61
2378-TCDD	**29.06**		**1.0008**	1.0008	**0**	1.26E+08	0.82	Y	**1.18**	**888**	**8965.88**	**0.61**
1278-TCDD	29.38		1.0115	1.0116	+0.2	1.23E+07	0.82	Y	1.18	86.5	8965.88	0.61
1267-TCDD	29.51		1.0160	1.0163	+0.5	4.25E+05	0.83	Y	1.18	2.98	8965.88	0.61
1289-TCDD	30.01	EMPC	1.0331	1.0336	+0.9	2.70E+05	0.96	N	1.18	1.89	8965.88	0.61
12479/12468-PeCDD	31.85		0.9295	0.9291	-0.8	1.19E+06	1.59	Y	1.04	9.2	9357.106	0.601
12469-PeCDD	32.38	EMPC	0.9448	0.9444	-0.8	5.75E+05	1.32	N	1.04	4.43	9357.106	0.601
12368-PeCDD	32.91		0.9602	0.9600	-0.4	5.26E+05	1.54	Y	1.04	4.05	9357.106	0.601
12478-PeCDD	33.10	EMPC	0.9656	0.9655	-0.2	3.53E+05	1.19	N	1.04	2.72	9357.106	0.601
12379-PeCDD	33.20	J	0.9686	0.9685	-0.2	2.68E+05	1.49	Y	1.04	2.06	9357.106	0.601
12369/12467/12489-PeCDD	33.46		0.9760	0.9761	+0.2	5.86E+05	1.62	Y	1.04	4.51	9357.106	0.601
12346/12347-PeCDD	33.82	J	0.9866	0.9864	-0.4	1.21E+05	1.45	Y	1.04	0.929	9357.106	0.601
12378-PeCDD	34.31		**1.0005**	**1.0006**	**+0.2**	**1.43E+06**	**1.63**	**Y**	**1.04**	**11**	**9357.106**	**0.601**
12367-PeCDD	34.40	J	1.0031	1.0032	+0.2	1.52E+05	1.70	Y	1.04	1.17	9357.106	0.601
12389-PeCDD	34.75	J EMPC	1.0132	1.0136	+0.8	1.17E+05	1.18	N	1.04	0.899	9357.106	0.601
124679/124689-HxCDD	36.47		0.9553	0.9551	-0.4	7.78E+06	1.28	Y	1.10	65.7	14251.93	0.933
123468-HxCDD	37.13		0.9725	0.9723	-0.4	1.04E+06	1.28	Y	1.10	8.76	14251.93	0.933
123679/123689-HxCDD	37.42		0.9803	0.9801	-0.4	4.99E+06	1.25	Y	1.10	42.1	14251.93	0.933
123469-HxCDD	37.57	EMPC	0.9842	0.9838	-0.9	3.20E+05	1.58	N	1.10	2.7	14251.93	0.933
123478-HxCDD	38.20		**1.0004**	**1.0004**	**0**	**3.99E+05**	**1.30**	**Y**	1.09	**3.51**	**14251.93**	**0.963**
123678-HxCDD	38.30		**1.0031**	**1.0031**	**0**	**1.61E+06**	**1.18**	**Y**	1.15	**13.6**	**14251.93**	**0.925**
123467-HxCDD	38.49	EMPC	1.0078	1.0080	+0.5	3.00E+05	1.44	N	1.10	2.54	14251.93	0.933
123789-HxCDD	38.58		**1.0102**	**1.0103**	**+0.2**	**9.00E+05**	**1.27**	**Y**	1.05	**7.35**	**14251.93**	**0.917**

Lab ID: B5986_18732_DF_001 | Acq'd: 17 Dec 2021 22:47 DTF | Wt/Vol: 10.19 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-6 | UTP: 20-Dec-2021 14:13:06 DTF | J-level: 0.491 pg/g | Split: 1 | Checkcode: 677-327-ZTY

Datafile: 211217C17 | Report: 20 Dec 2021 14:15 TF | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

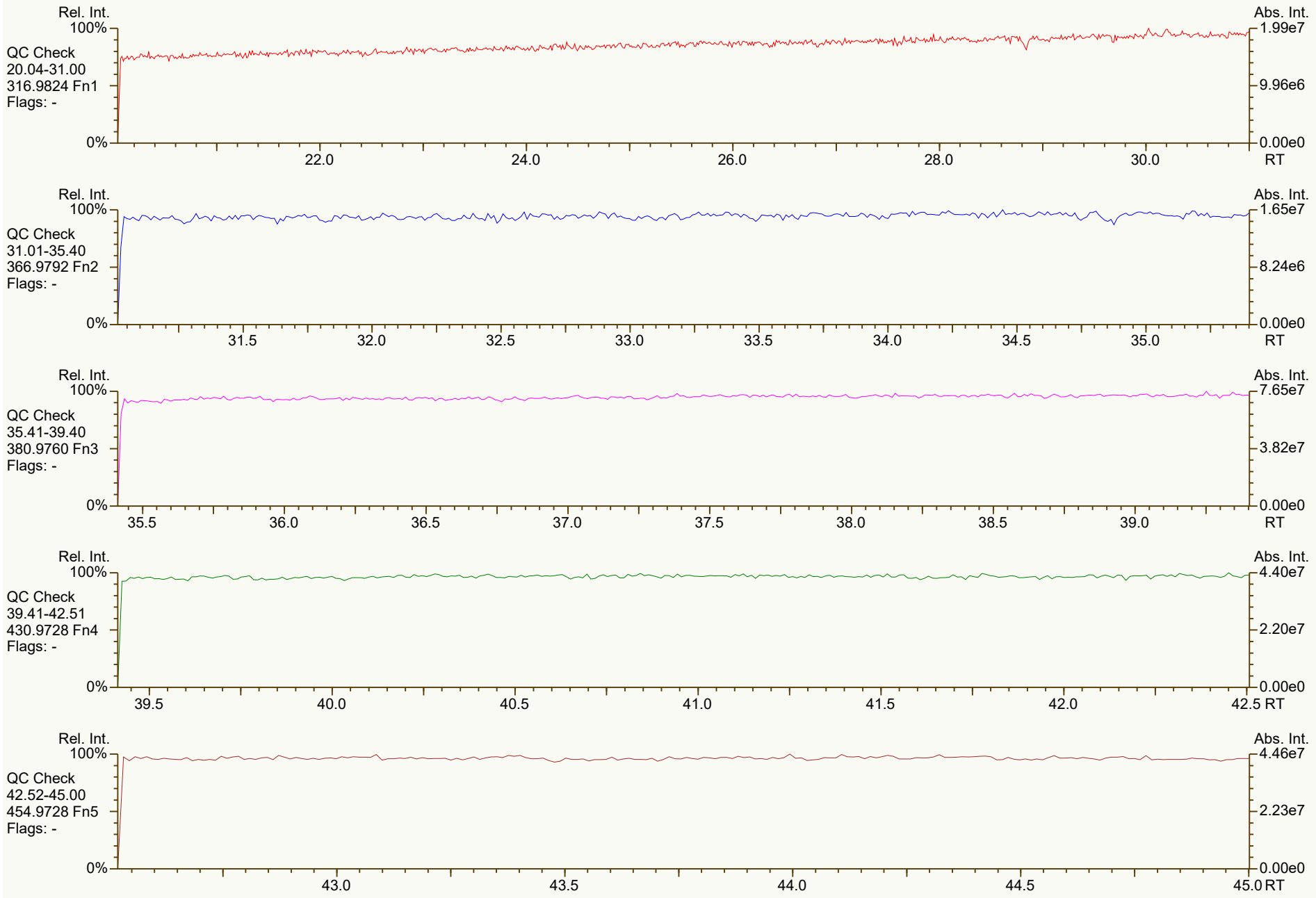
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.52		0.9837	0.9835	-0.5	4.11E+07	1.05	Y	1.06	382	8897.256	0.675
1234678-HpCDD	**41.21**		**1.0004**	**1.0003**	**-0.2**	**2.79E+07**	**1.06**	**Y**	**1.06**	**260**	**8897.256**	**0.675**
OCDD	**44.01**		**1.0003**	**1.0003**	**0**	**1.89E+08**	**0.91**	**Y**	**1.13**	**3,880**	**3847.129**	**1.04**
OCDD-a	44.01		1.0002	1.0002	0	1.21E+07	2.32	Y	0.07	3,890	8382.44	35.5
1368-TCDF	23.57	EMPC	0.8388	0.8358	-4.2	3.96E+05	0.91	N	1.08	1.79	5864.318	0.278
1468-TCDF	24.12		0.8578	0.8554	-3.5	1.54E+06	0.84	Y	1.08	6.95	5864.318	0.278
2468-TCDF	24.70		0.8780	0.8762	-2.7	2.56E+06	0.85	Y	1.08	11.6	5864.318	0.278
1346/1246-TCDF	NotFnd		0.8906						1.08		5864.318	0.278
1347/1378/1247-TCDF	25.20		0.8951	0.8939	-1.8	7.53E+06	0.85	Y	1.08	34	5864.318	0.278
1348-TCDF	25.53		0.9041	0.9055	+2.1	3.08E+07	0.81	Y	1.08	139	5864.318	0.278
1248/1367/1379-TCDF	NotFnd		0.9084						1.08		5864.318	0.278
1268-TCDF	25.93		0.9207	0.9196	-1.7	1.06E+07	0.83	Y	1.08	47.9	5864.318	0.278
1467-TCDF	26.06		0.9253	0.9243	-1.6	1.62E+06	0.82	Y	1.08	7.31	5864.318	0.278
1478-TCDF	26.22		0.9309	0.9298	-1.7	2.55E+07	0.81	Y	1.08	115	5864.318	0.278
1369/1237-TCDF	26.58		0.9431	0.9428	-0.5	6.46E+06	0.79	Y	1.08	29.2	5864.318	0.278
2467-TCDF	26.69		0.9472	0.9467	-0.8	9.23E+05	0.82	Y	1.08	4.17	5864.318	0.278
2368-TCDF	26.83		0.9524	0.9515	-1.4	1.72E+07	0.79	Y	1.08	77.5	5864.318	0.278
1238/1234/1678/1469/1236-TCDF	26.92		0.9560	0.9547	-2.1	3.04E+07	0.81	Y	1.08	137	5864.318	0.278
1278-TCDF	27.36	E	0.9710	0.9705	-0.8	2.74E+08	0.81	Y	1.08	1,240	5864.318	0.278
1349-TCDF	NotFnd		0.9752						1.08		5864.318	0.278
1267-TCDF	27.63		0.9802	0.9798	-0.7	1.54E+07	0.83	Y	1.08	69.8	5864.318	0.278
2346/1249-TCDF	27.82		0.9863	0.9868	+0.8	1.87E+06	0.83	Y	1.08	8.46	5864.318	0.278
2347/1279-TCDF	28.01		0.9936	0.9934	-0.3	7.48E+06	0.83	Y	1.08	33.8	5864.318	0.278
2348-TCDF	28.11		0.9971	0.9969	-0.3	3.86E+07	0.81	Y	1.08	175	5864.318	0.278
2378-TCDF	**28.22**	E	**1.0007**	**1.0007**	**0**	**5.87E+08**	**0.81**	**Y**	**1.08**	**2,650**	**5864.318**	**0.278**
2367/3467-TCDF	28.56		1.0134	1.0131	-0.5	4.82E+07	0.82	Y	1.08	218	5864.318	0.278
1269-TCDF	28.82		1.0219	1.0221	+0.3	9.90E+06	0.84	Y	1.08	44.7	5864.318	0.278
1239-TCDF	29.08	EMPC	1.0309	1.0313	+0.7	5.22E+05	0.59	N	1.08	2.36	5864.318	0.278
1289-TCDF	30.18		1.0689	1.0704	+2.7	4.91E+07	0.82	Y	1.08	222	5864.318	0.278
13468/12468-PeCDF	30.16		0.9175	0.9175	0	4.41E+06	1.54	Y	1.02	21.6	5016.47	0.207
13678/13467/12467-PeCDF	31.66		0.9630	0.9632	+0.4	9.99E+05	1.51	Y	1.02	4.9	13010.712	0.537
12368/13478/12478-PeCDF	31.81		0.9675	0.9679	+0.8	1.07E+07	1.59	Y	1.02	52.7	13010.712	0.537
14678-PeCDF	NotFnd		0.9705						1.02		13010.712	0.537
13479-PeCDF	NotFnd		0.9734						1.02		13010.712	0.537
13469/12479-PeCDF	32.20	J	0.9807	0.9797	-1.9	2.49E+05	1.45	Y	1.02	1.22	13010.712	0.537
12346-PeCDF	NotFnd		0.9848						1.02		13010.712	0.537

Lab ID: B5986_18732_DF_001 **Acq'd: 17 Dec 2021 22:47 DTF** **Wt/Vol: 10.19 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120321-S-JC-SW-B-6 **UTP: 20-Dec-2021 14:13:06 DTF** **J-level: 0.491 pg/g** **Split: 1** **Checkcode: 677-327-ZTY**

Datafile: 211217C17 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.44		0.9868	0.9869	+0.2	1.67E+06	1.52	Y	1.02	8.2	13010.712	0.537
12347-PeCDF	32.53	J EMPC	0.9895	0.9896	+0.2	4.89E+05	2.08	N	1.02	2.4	13010.712	0.537
12348-PeCDF	32.68		0.9943	0.9944	+0.2	2.07E+06	1.65	Y	1.02	10.2	13010.712	0.537
12378-PeCDF	**32.89**		**1.0005**	**1.0005**	**0**	**1.61E+07**	**1.54**	**Y**	**1.02**	**78.2**	**13010.712**	**0.539**
12678/12367-PeCDF	33.18		1.0086	1.0094	+1.6	5.43E+06	1.56	Y	1.02	26.7	13010.712	0.537
12379-PeCDF	NotFnd		1.0137						1.02		13010.712	0.537
12679-PeCDF	NotFnd		0.9936						1.02		13010.712	0.537
23467/12369-PeCDF	33.85		0.9970	0.9969	-0.2	5.06E+05	1.73	Y	1.02	2.48	13010.712	0.537
23478-PeCDF	**33.98**		**1.0005**	**1.0008**	**+0.6**	**1.42E+07**	**1.60**	**Y**	**1.02**	**70.3**	**13010.712**	**0.535**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		13010.712	0.537
12349-PeCDF	NotFnd		1.0103						1.02		13010.712	0.537
12389-PeCDF	35.03		1.0317	1.0319	+0.4	8.40E+05	1.59	Y	1.02	4.12	13010.712	0.537
123468-HxCDF	35.83		0.9634	0.9634	0	2.29E+06	1.20	Y	1.19	12	13710.311	0.583
124678/134678-HxCDF	36.02		0.9687	0.9686	-0.2	8.31E+06	1.27	Y	1.19	43.5	13710.311	0.583
134679-HxCDF	36.25	J EMPC	0.9748	0.9747	-0.2	1.08E+05	1.81	N	1.19	0.564	13710.311	0.583
124679-HxCDF	36.45	J	0.9800	0.9800	0	4.59E+05	1.27	Y	1.19	2.41	13710.311	0.583
124689-HxCDF	36.66		0.9857	0.9858	+0.2	7.47E+06	1.24	Y	1.19	39.2	13710.311	0.583
123467-HxCDF	37.09		0.9973	0.9972	-0.2	7.64E+05	1.28	Y	1.19	4.01	13710.311	0.583
123478-HxCDF	**37.21**		**1.0005**	**1.0004**	**-0.2**	**3.11E+07**	**1.25**	**Y**	**1.27**	**162**	**13710.311**	**0.588**
123678-HxCDF	**37.35**		**1.0005**	**1.0005**	**0**	**8.25E+06**	**1.25**	**Y**	**1.15**	**41.2**	**13710.311**	**0.563**
123479-HxCDF	NotFnd		1.0051						1.19		13710.311	0.583
123469-HxCDF	37.68		1.0092	1.0092	0	5.65E+05	1.34	Y	1.19	2.96	13710.311	0.583
123679-HxCDF	NotFnd		0.9948						1.19		13710.311	0.583
234678-HxCDF	**38.03**		**1.0004**	**1.0004**	**0**	**2.38E+06**	**1.26**	**Y**	**1.19**	**12.4**	**13710.311**	**0.589**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		13710.311	0.583
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**13710.311**	**0.597**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.94		1.0007	1.0011	+0.9	2.54E+06	1.24	Y	1.19	13.3	13710.311	0.583
1234678-HpCDF	**40.25**		**1.0003**	**1.0003**	**0**	**3.20E+07**	**1.04**	**Y**	**1.37**	**185**	**3428.468**	**0.148**
1234679-HpCDF	40.52		1.0068	1.0070	+0.5	3.31E+06	1.06	Y	1.34	21.5	3428.468	0.179
1234689-HpCDF	40.66		1.0102	1.0104	+0.5	2.13E+07	1.06	Y	1.34	139	3428.468	0.179
1234789-HpCDF	**41.68**		**1.0003**	**1.0002**	**-0.3**	**5.61E+06**	**1.11**	**Y**	**1.31**	**41.7**	**3428.468**	**0.219**
OCDF	**44.19**		**1.0003**	**1.0003**	**0**	**3.13E+08**	**0.91**	**Y**	**1.07**	**4,560**	**6575.365**	**1.18**
OCDF-a	44.19		1.0002	1.0002	0	1.94E+07	2.47	Y	0.07	4,570	5182.707	15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316.9824 Fn1
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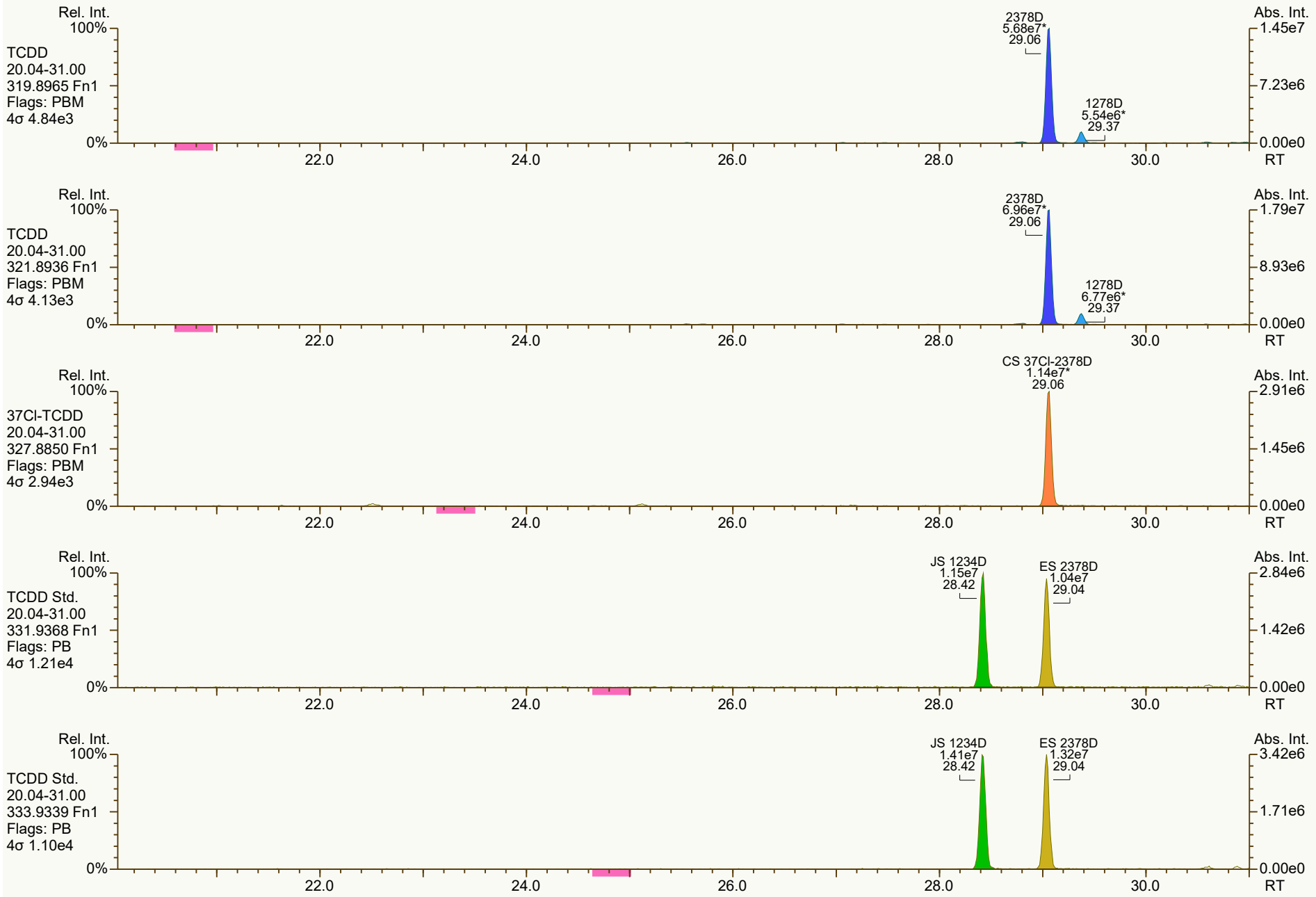
26.0
28.0
30.0
RT
Abs. Int.
1.99e7
9.96e6
0.00e0
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Abs. Int.
1.65e7
8.24e6
0.00e0
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Abs. Int.
7.65e7
3.82e7
0.00e0
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.40e7
2.20e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
4.46e7
2.23e7
0.00e0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100%
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20.04-31.00
319.8965 Fn1
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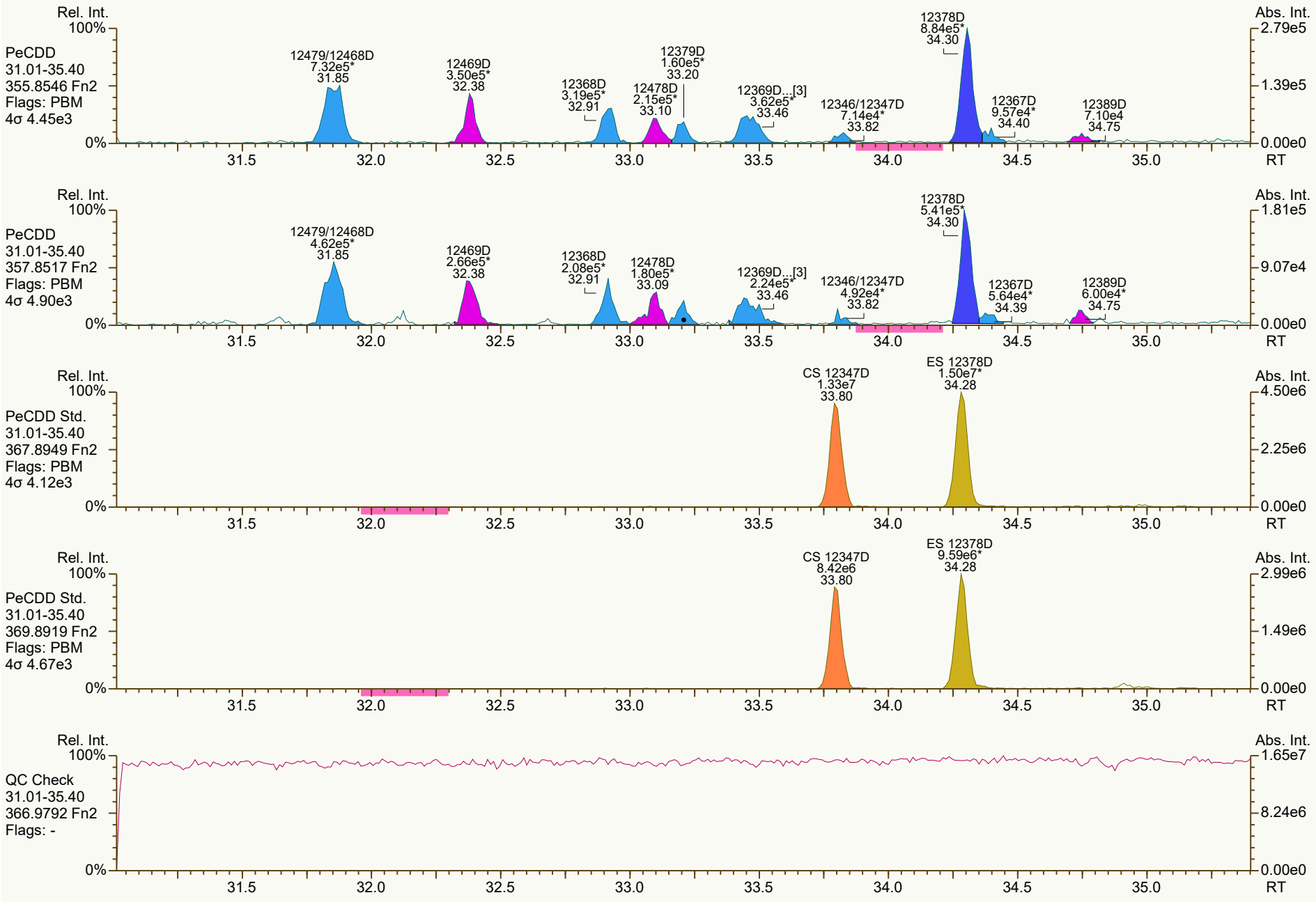
0%
2378D
5.68e7*
29.06
1278D
5.54e6*
29.37
Abs. Int.
1.45e7
7.23e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: PBM
4σ 4.13e3
0%
2378D
6.96e7*
29.06
1278D
6.77e6*
29.37
Abs. Int.
1.79e7
8.93e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PBM
4σ 2.94e3
0%
CS 37Cl-2378D
1.14e7*
29.06
Abs. Int.
2.91e6
1.45e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PB
4σ 1.21e4
0%
JS 1234D
1.15e7
28.42
ES 2378D
1.04e7
29.04
Abs. Int.
2.84e6
1.42e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PB
4σ 1.10e4
0%
JS 1234D
1.41e7
28.42
ES 2378D
1.32e7
29.04
Abs. Int.
3.42e6
1.71e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT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100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PBM
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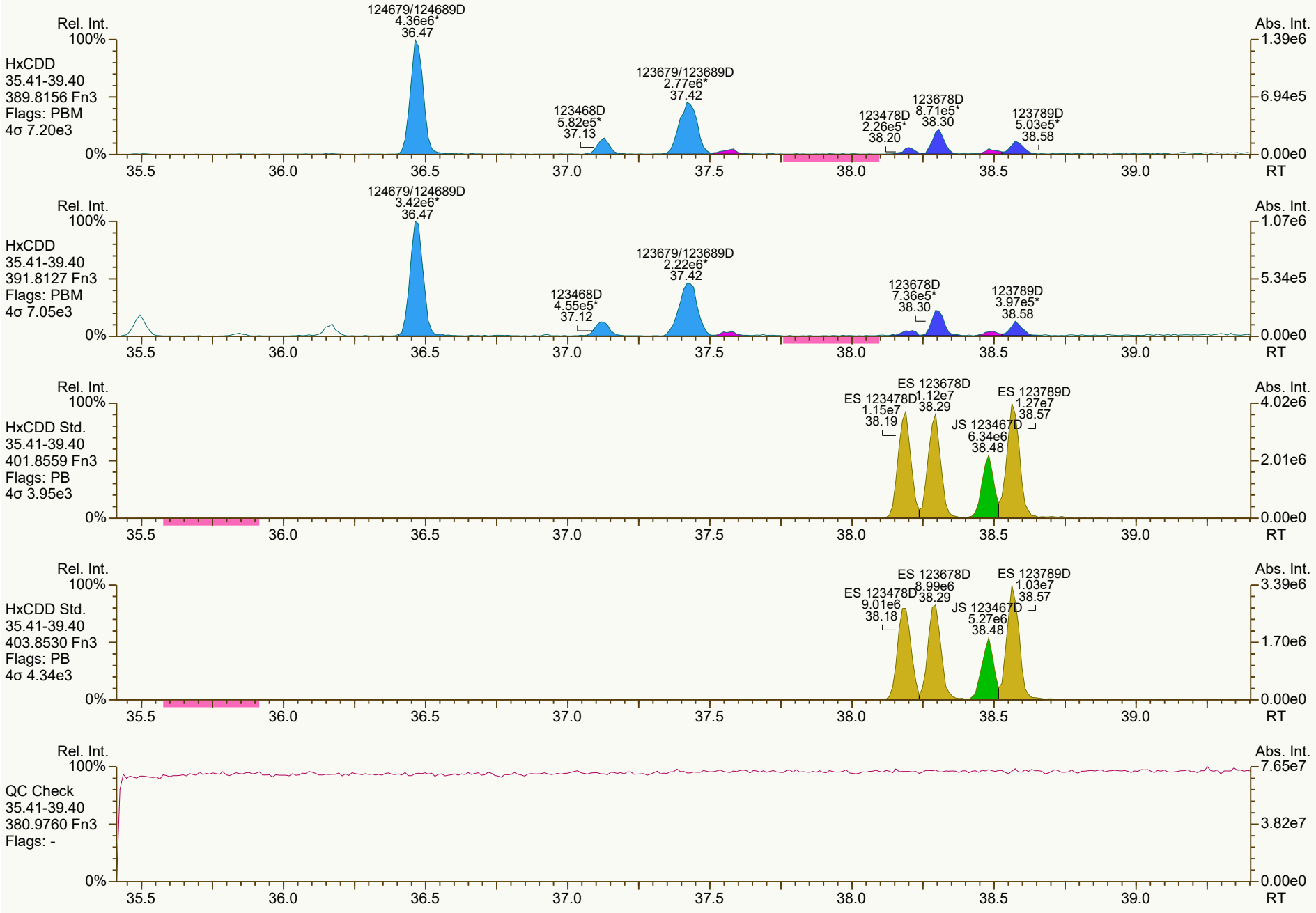
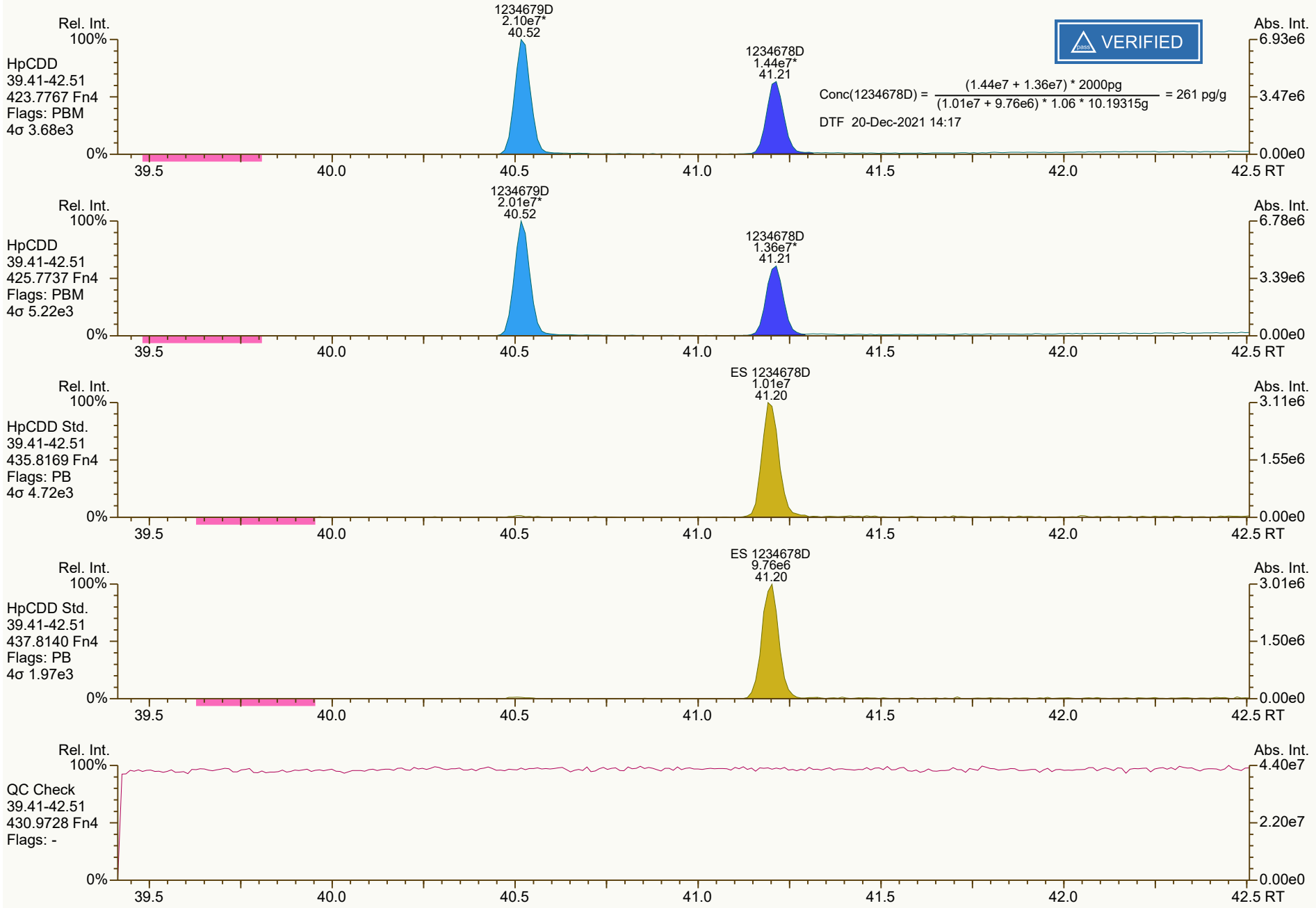
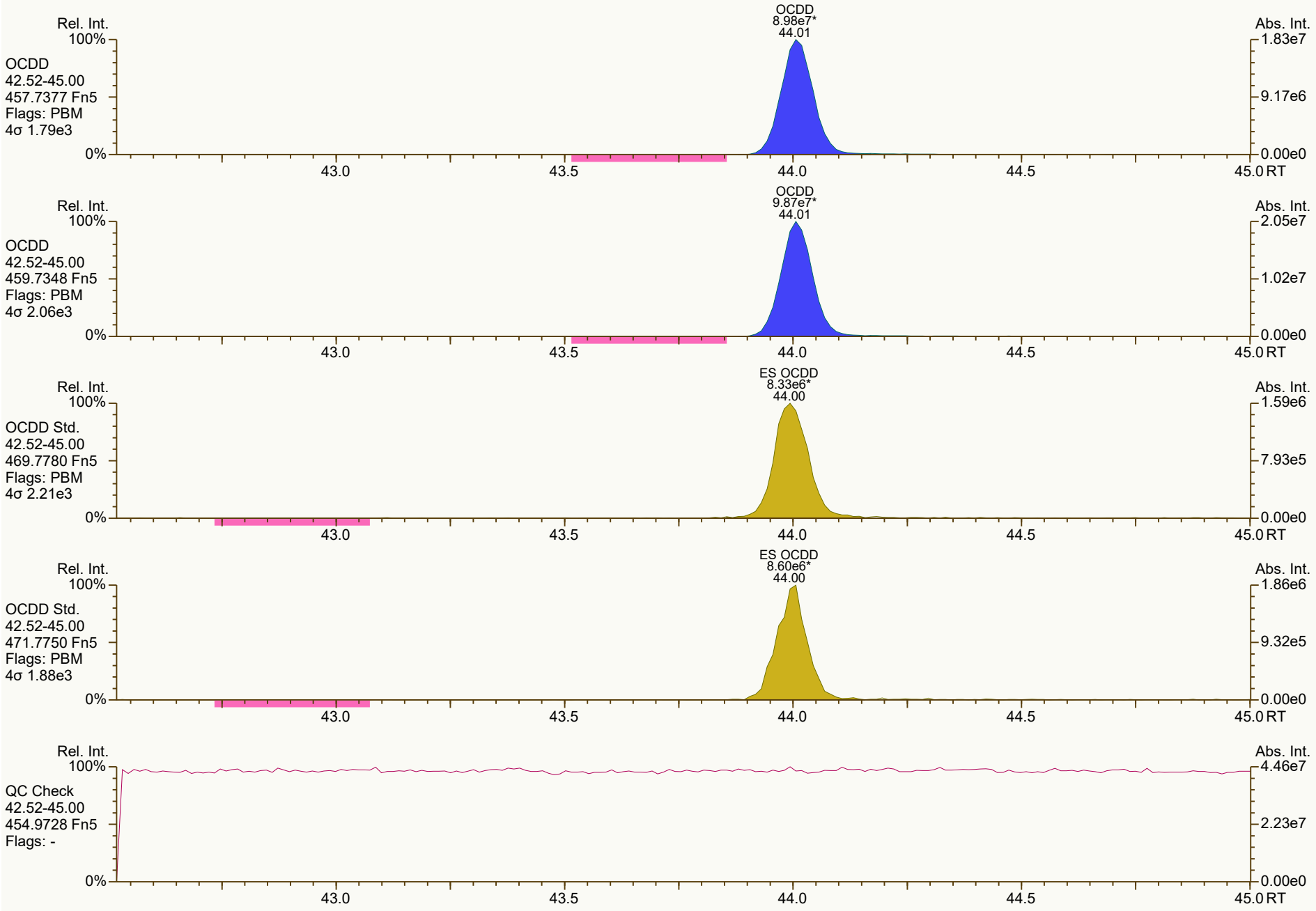
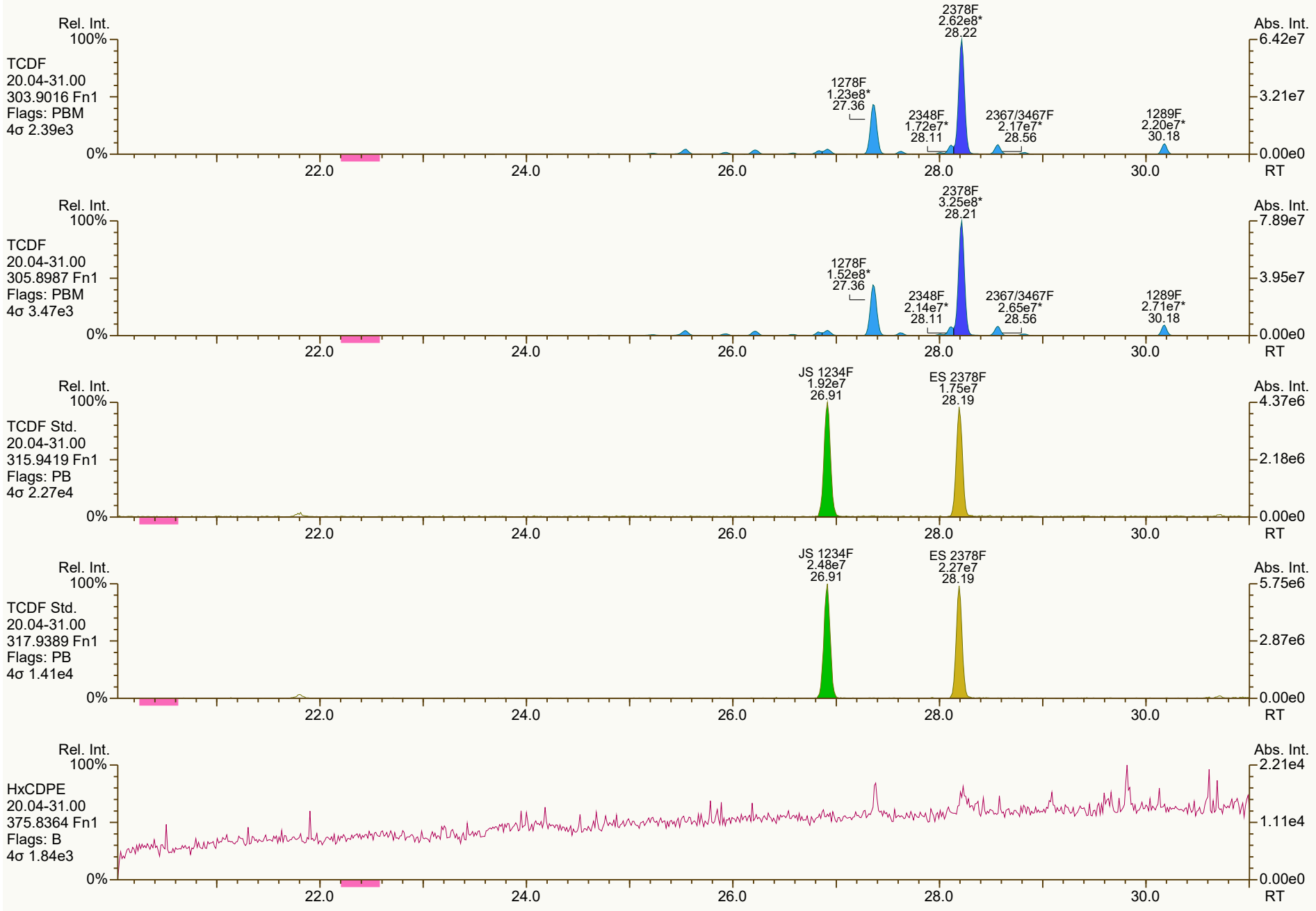
12479/12468D
7.32e5*
31.85
12469D
3.50e5*
32.38
12368D
3.19e5*
32.91
12478D
2.15e5*
33.10
12379D
1.60e5*
33.20
12369D...[3]
3.62e5*
33.46
12346/12347D
7.14e4*
33.82
12378D
8.84e5*
34.30
12367D
9.57e4*
34.40
12389D
7.10e4
34.75
Abs. Int.
2.79e5
1.39e5
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PBM
4σ 4.90e3
12479/12468D
4.62e5*
31.85
12469D
2.66e5*
32.38
12368D
2.08e5*
32.91
12478D
1.80e5*
33.09
12369D...[3]
2.24e5*
33.46
12346/12347D
4.92e4*
33.82
12378D
5.41e5*
34.30
12367D
5.64e4*
34.39
12389D
6.00e4*
34.75
Abs. Int.
1.81e5
9.07e4
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PBM
4σ 4.12e3
CS 12347D
1.33e7
33.80
ES 12378D
1.50e7*
34.28
Abs. Int.
4.50e6
2.25e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PBM
4σ 4.67e3
CS 12347D
8.42e6
33.80
ES 12378D
9.59e6*
34.28
Abs. Int.
2.99e6
1.49e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
Abs. Int.
1.65e7
8.24e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PBM
4σ 7.20e3
0%
124679/124689D
4.36e6*
36.47
123468D
5.82e5*
37.13
123679/123689D
2.77e6*
37.42
123478D
2.26e5*
38.20
123678D
8.71e5*
38.30
123789D
5.03e5*
38.58
Abs. Int.
1.39e6
6.94e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PBM
4σ 7.05e3
0%
124679/124689D
3.42e6*
36.47
123468D
4.55e5*
37.12
123679/123689D
2.22e6*
37.42
123678D
7.36e5*
38.30
123789D
3.97e5*
38.58
Abs. Int.
1.07e6
5.34e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PB
4σ 3.95e3
0%
ES 123678D
1.12e7
38.29
ES 123478D
1.15e7
38.19
ES 123789D
1.27e7
38.57
JS 123467D
6.34e6
38.48
Abs. Int.
4.02e6
2.01e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PB
4σ 4.34e3
0%
ES 123678D
8.99e6
38.29
ES 123478D
9.01e6
38.18
ES 123789D
1.03e7
38.57
JS 123467D
5.27e6
38.48
Abs. Int.
3.39e6
1.70e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
Abs. Int.
7.65e7
3.82e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

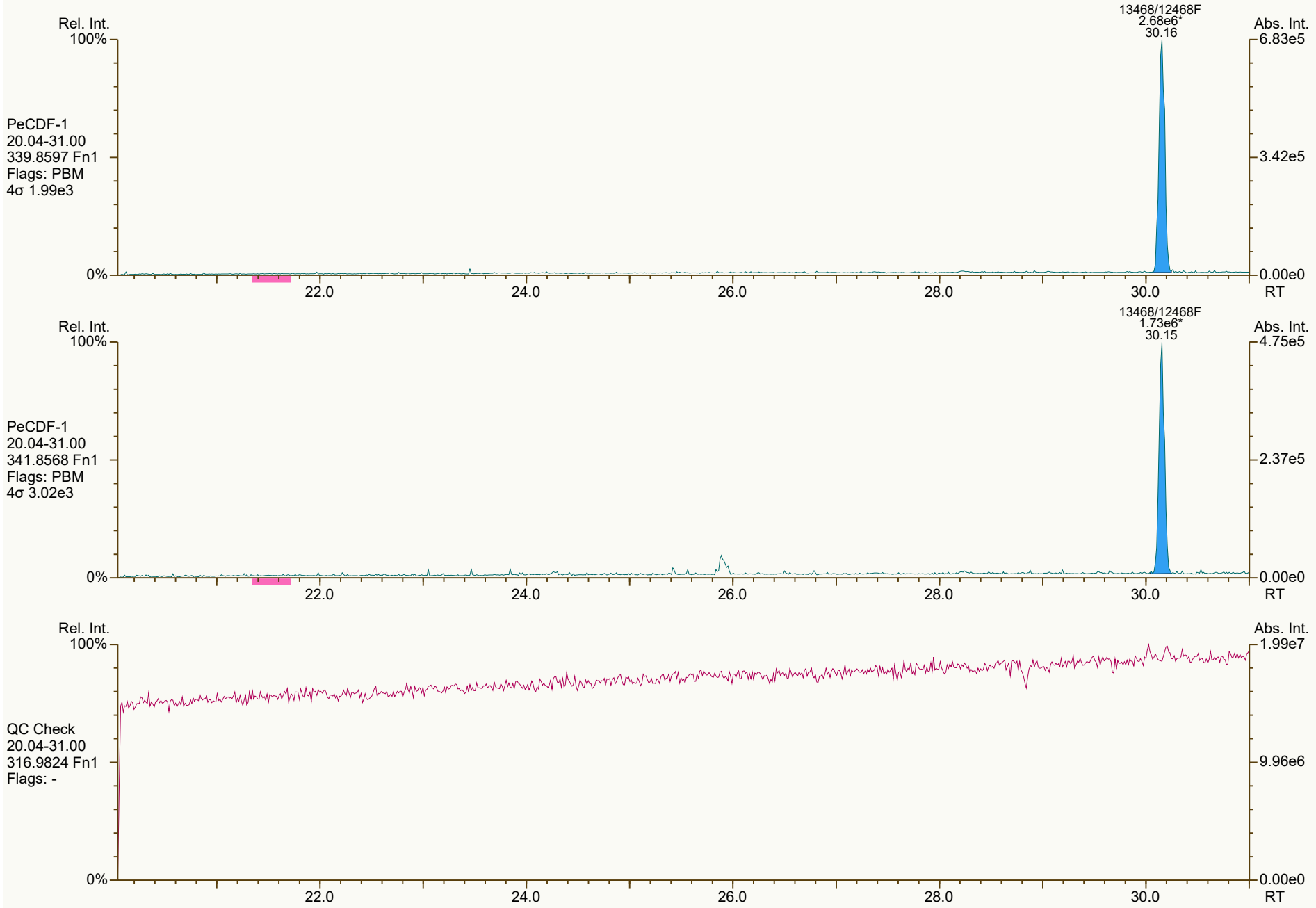

Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PBM
4σ 3.68e3
0%
1234679D
2.10e7*
40.52
1234678D
1.44e7*
41.21
VERIFIED
Conc(1234678D) = (1.44e7 + 1.36e7) * 2000pg / (1.01e7 + 9.76e6) * 1.06 * 10.19315g = 261 pg/g
DTF 20-Dec-2021 14:17
Abs. Int.
6.93e6
3.47e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PBM
4σ 5.22e3
0%
1234679D
2.01e7*
40.52
1234678D
1.36e7*
41.21
Abs. Int.
6.78e6
3.39e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PB
4σ 4.72e3
0%
ES 1234678D
1.01e7
41.20
Abs. Int.
3.11e6
1.55e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PB
4σ 1.97e3
0%
ES 1234678D
9.76e6
41.20
Abs. Int.
3.01e6
1.50e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.40e7
2.20e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PBM
4σ 1.79e3
0%
OCDD
8.98e7*
44.01
Abs. Int.
1.83e7
9.17e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PBM
4σ 2.06e3
0%
OCDD
9.87e7*
44.01
Abs. Int.
2.05e7
1.02e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PBM
4σ 2.21e3
0%
ES OCDD
8.33e6*
44.00
Abs. Int.
1.59e6
7.93e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PBM
4σ 1.88e3
0%
ES OCDD
8.60e6*
44.00
Abs. Int.
1.86e6
9.32e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.46e7
2.23e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 2.39e3
0%
2378F
2.62e8*
28.22
1278F
1.23e8*
27.36
2348F
1.72e7*
28.11
2367/3467F
2.17e7*
28.56
1289F
2.20e7*
30.18
Abs. Int.
6.42e7
3.21e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 3.47e3
0%
2378F
3.25e8*
28.21
1278F
1.52e8*
27.36
2348F
2.14e7*
28.11
2367/3467F
2.65e7*
28.56
1289F
2.71e7*
30.18
Abs. Int.
7.89e7
3.95e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PB
4σ 2.27e4
0%
JS 1234F
1.92e7
26.91
ES 2378F
1.75e7
28.19
Abs. Int.
4.37e6
2.18e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PB
4σ 1.41e4
0%
JS 1234F
2.48e7
26.91
ES 2378F
2.27e7
28.19
Abs. Int.
5.75e6
2.87e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 1.84e3
0%
Abs. Int.
2.21e4
1.11e4
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

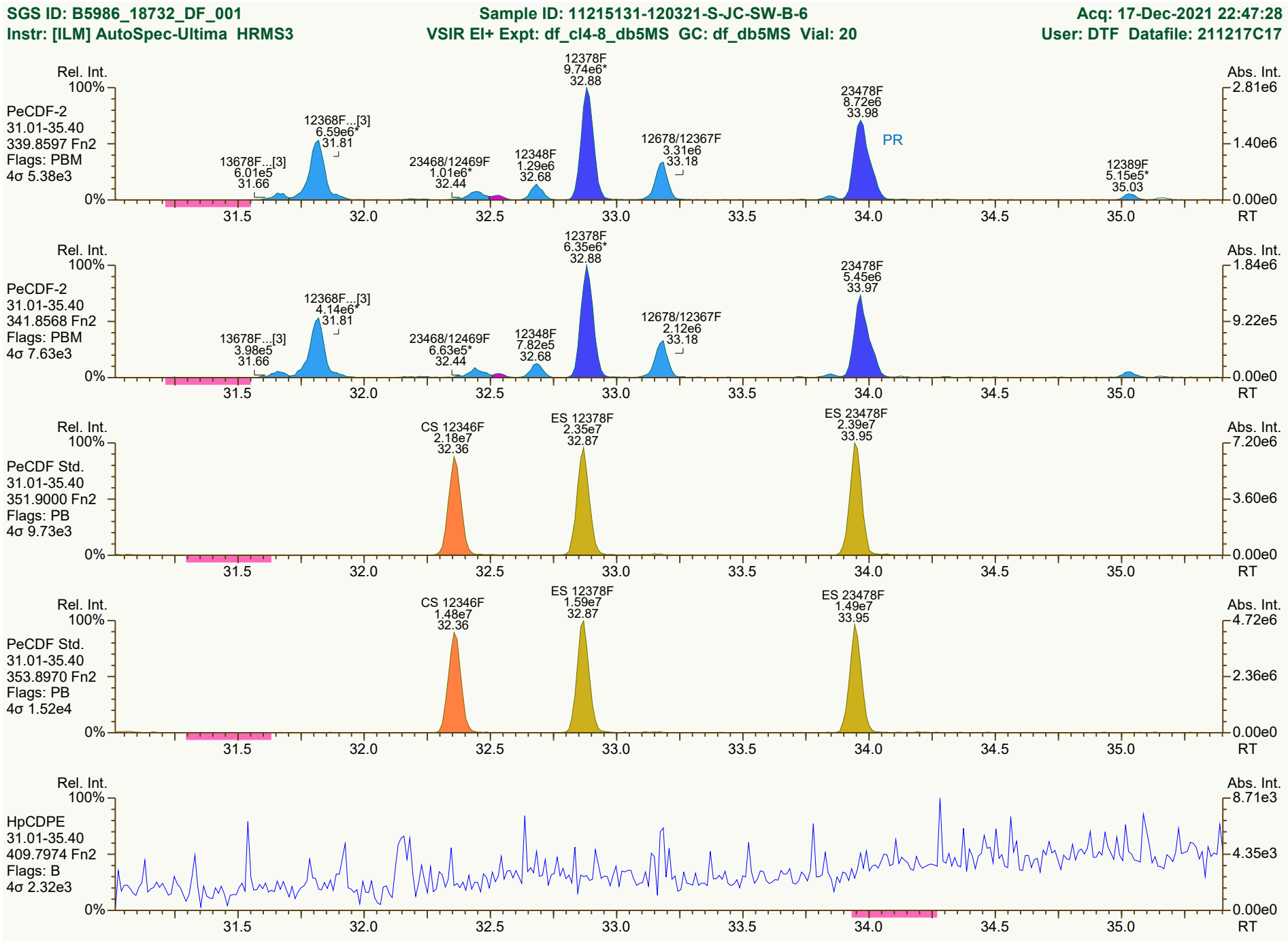
SGS ID: B5986_18732_DF_001 | Sample ID: 11215131-120321-S-JC-SW-B-6 | Acq: 17-Dec-2021 22:47:28

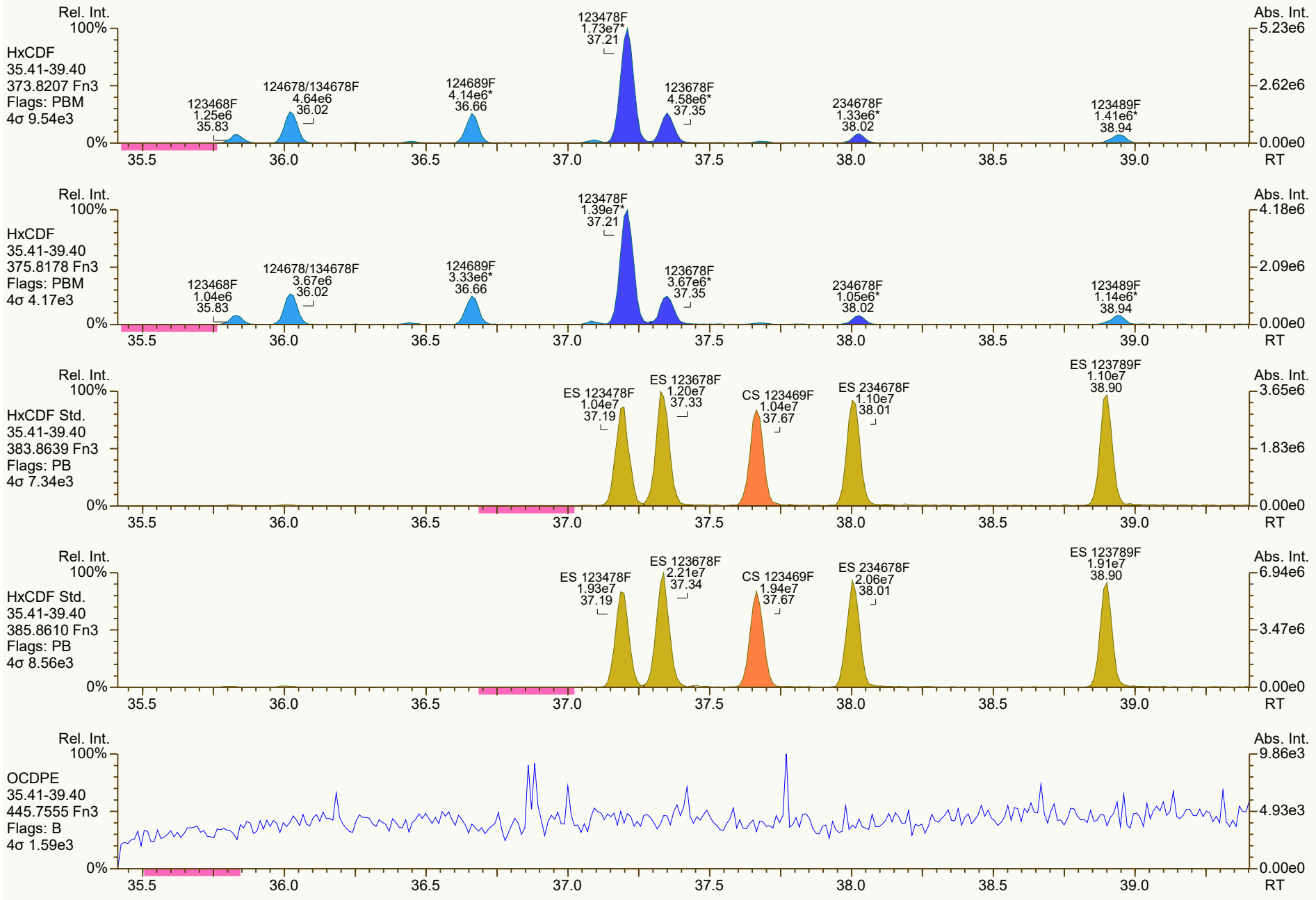
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 20 | User: DTF Datafile: 211217C17

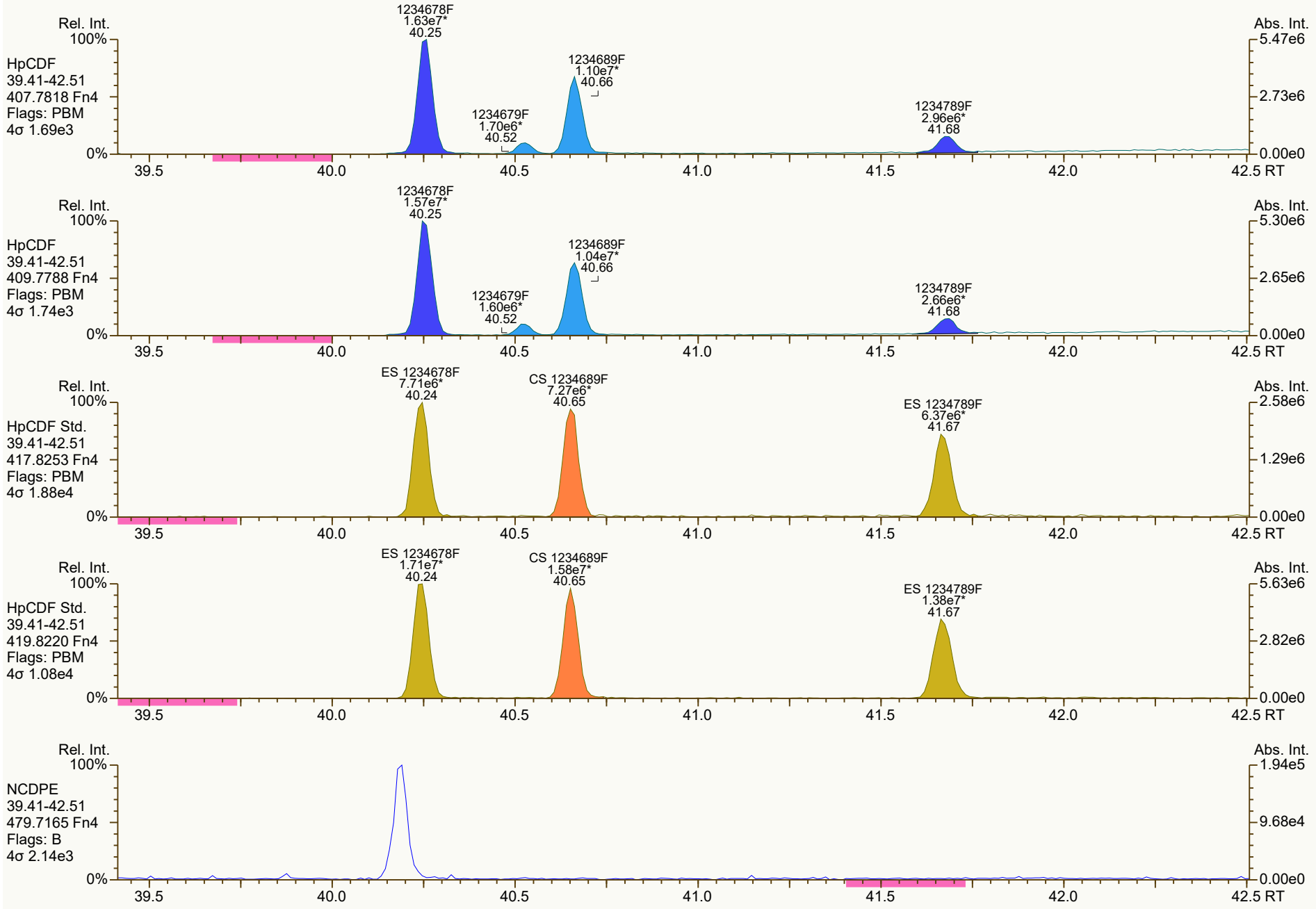


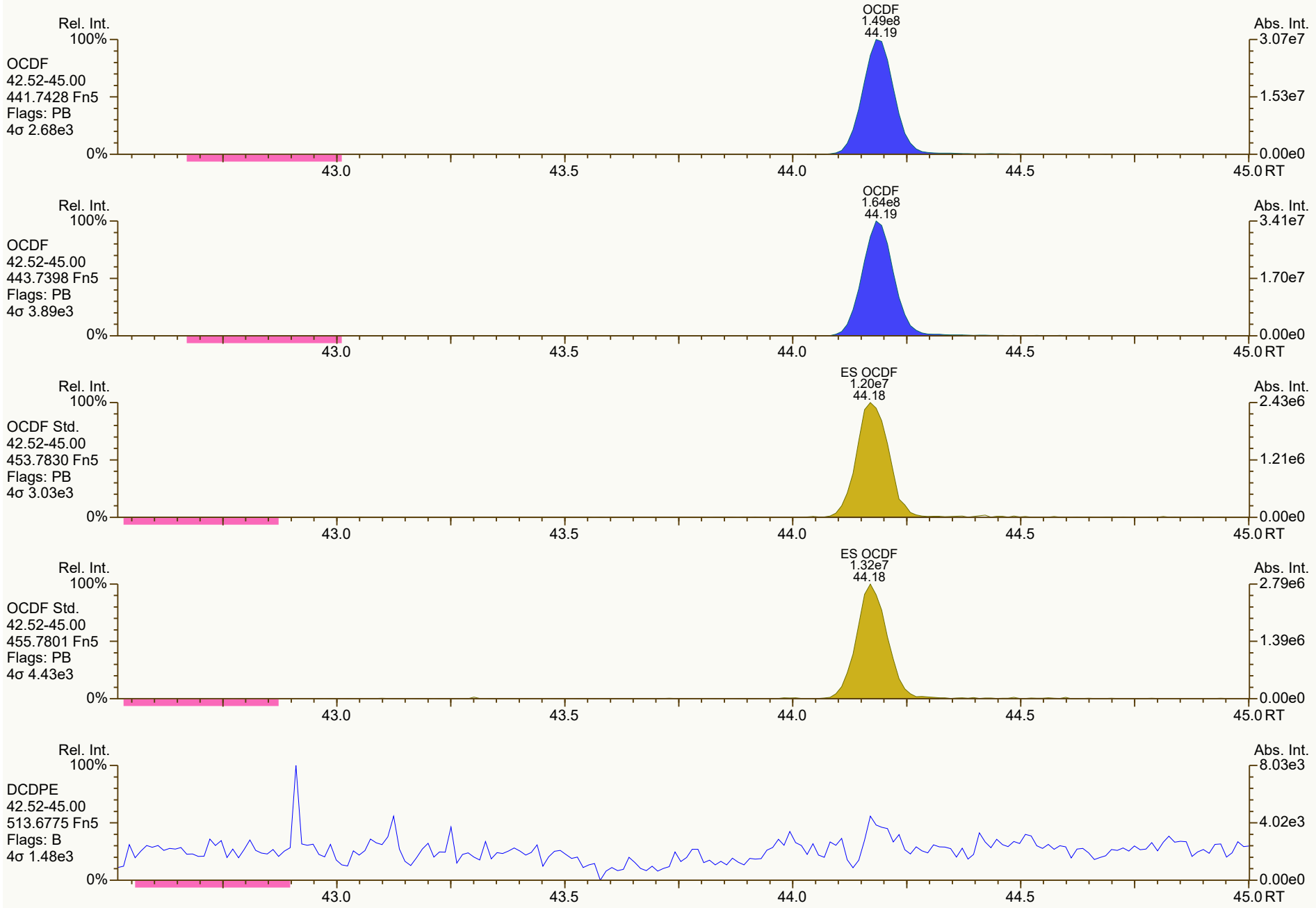
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_001.utp_res, saved 20-Dec-2021 14:17 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8561 scc: 677-327 *Revised: 20-Dec-2021 09:46 (DTF) Printed: 20-Dec-2021 14:26 Page 8 of 12*


SGS ID: B5986_18732_DF_001
Sample ID: 11215131-120321-S-JC-SW-B-6
Acq: 17-Dec-2021 22:47:28
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 20
User: DTF Datafile: 211217C17
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PBM
4σ 5.38e3
13678F...[3] 6.01e5 31.66
12368F...[3] 6.59e6* 31.81
23468/12469F 1.01e6* 32.44
12348F 1.29e6 32.68
12378F 9.74e6* 32.88
12678/12367F 3.31e6 33.18
23478F 8.72e6 33.98
PR
12389F 5.15e5* 35.03
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PBM
4σ 7.63e3
13678F...[3] 3.98e5 31.66
12368F...[3] 4.14e6* 31.81
23468/12469F 6.63e5* 32.44
12348F 7.82e5 32.68
12378F 6.35e6* 32.88
12678/12367F 2.12e6 33.18
23478F 5.45e6 33.97
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PB
4σ 9.73e3
CS 12346F 2.18e7 32.36
ES 12378F 2.35e7 32.87
ES 23478F 2.39e7 33.95
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PB
4σ 1.52e4
CS 12346F 1.48e7 32.36
ES 12378F 1.59e7 32.87
ES 23478F 1.49e7 33.95
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 2.32e3
Rel. Int.
Abs. Int.
RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_001.utp_res, saved 20-Dec-2021 14:17 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9951, 9503, 2295 scc: 677-327
Revised: 20-Dec-2021 09:47 (DTF) Printed: 20-Dec-2021 14:26 Page 9 of 12


Rel. Int.
100%
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PBM
4σ 9.54e3
0%
123468F 1.25e6 35.83
124678/134678F 4.64e6 36.02
124689F 4.14e6* 36.66
123478F 1.73e7* 37.21
123678F 4.58e6* 37.35
234678F 1.33e6* 38.02
123489F 1.41e6* 38.94
Abs. Int.
5.23e6
2.62e6
0.00e0
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
HxCDF
35.41-39.40
375.8178 Fn3
Flags: PBM
4σ 4.17e3
123468F 1.04e6 35.83
124678/134678F 3.67e6 36.02
124689F 3.33e6* 36.66
123478F 1.39e7* 37.21
123678F 3.67e6* 37.35
234678F 1.05e6* 38.02
123489F 1.14e6* 38.94
4.18e6
2.09e6
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PB
4σ 7.34e3
ES 123478F 1.04e7 37.19
ES 123678F 1.20e7 37.33
CS 123469F 1.04e7 37.67
ES 234678F 1.10e7 38.01
ES 123789F 1.10e7 38.90
3.65e6
1.83e6
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PB
4σ 8.56e3
ES 123478F 1.93e7 37.19
ES 123678F 2.21e7 37.34
CS 123469F 1.94e7 37.67
ES 234678F 2.06e7 38.01
ES 123789F 1.91e7 38.90
6.94e6
3.47e6
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 1.59e3
9.86e3
4.93e3


Rel. Int.
100%
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 1.69e3
1234678F
1.63e7*
40.25
1234679F
1.70e6*
40.52
1234689F
1.10e7*
40.66
1234789F
2.96e6*
41.68
Abs. Int.
5.47e6
2.73e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 1.74e3
1234678F
1.57e7*
40.25
1234679F
1.60e6*
40.52
1234689F
1.04e7*
40.66
1234789F
2.66e6*
41.68
Abs. Int.
5.30e6
2.65e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PBM
4σ 1.88e4
ES 1234678F
7.71e6*
40.24
CS 1234689F
7.27e6*
40.65
ES 1234789F
6.37e6*
41.67
Abs. Int.
2.58e6
1.29e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PBM
4σ 1.08e4
ES 1234678F
1.71e7*
40.24
CS 1234689F
1.58e7*
40.65
ES 1234789F
1.38e7*
41.67
Abs. Int.
5.63e6
2.82e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 2.14e3
Abs. Int.
1.94e5
9.68e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PB
4σ 2.68e3
0%
OCDF
1.49e8
44.19
Abs. Int.
3.07e7
1.53e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: PB
4σ 3.89e3
0%
OCDF
1.64e8
44.19
Abs. Int.
3.41e7
1.70e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PB
4σ 3.03e3
0%
ES OCDF
1.20e7
44.18
Abs. Int.
2.43e6
1.21e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PB
4σ 4.43e3
0%
ES OCDF
1.32e7
44.18
Abs. Int.
2.79e6
1.39e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: B
4σ 1.48e3
0%
Abs. Int.
8.03e3
4.02e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5986_18732_DF_002 **Acq'd:** 17 Dec 2021 23:33 DTF **Wt/Vol:** 10.06 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-O-12 **UTP:** 20-Dec-2021 14:13:06 DTF **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 135-907-PRT

Datafile: 211217C18 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.05		1.0008	1.0006	-0.3	1.38E+06	0.81	Y	1.18	6.65	10096.952	0.474
12378-PeCDD	34.30		1.0005	1.0005	0	2.10E+06	1.41	Y	1.04	10.9	25643.31	1.14
123478-HxCDD	38.20		1.0004	1.0004	0	2.21E+06	1.31	Y	1.09	13.3	27831.59	1.24
123678-HxCDD	38.31		1.0031	1.0032	+0.2	1.65E+07	1.26	Y	1.15	96.3	27831.59	1.25
123789-HxCDD	38.59		1.0102	1.0104	+0.5	1.06E+07	1.28	Y	1.05	59.6	27831.59	1.17
1234678-HpCDD	41.23		1.0004	1.0003	-0.2	6.27E+08	1.05	Y	1.06	3,920	10166.142	0.526
OCDD	44.05	E	1.0003	1.0003	0	2.67E+09	0.91	Y	1.13	31,700	9643.363	1.67
2378-TCDF	28.22		1.0007	1.0008	+0.2	3.32E+07	0.76	Y	1.08	105	7168.592	0.228
12378-PeCDF	32.88		1.0005	1.0005	0	7.76E+06	1.62	Y	1.02	26.6	18448.852	0.563
23478-PeCDF	33.97		1.0005	1.0007	+0.4	1.67E+07	1.56	Y	1.02	58.5	18448.852	0.524
123478-HxCDF	37.21		1.0005	1.0005	0	1.73E+07	1.28	Y	1.27	60.6	25447.58	0.742
123678-HxCDF	37.35		1.0005	1.0004	-0.2	7.47E+06	1.27	Y	1.15	24.8	25447.58	0.749
234678-HxCDF	38.03		1.0004	1.0005	+0.2	7.66E+06	1.29	Y	1.19	28.8	25447.58	0.827
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	25447.58	0.773
1234678-HpCDF	40.26		1.0003	1.0003	0	4.83E+07	1.06	Y	1.37	194	17806.147	0.55
1234789-HpCDF	41.69		1.0003	1.0003	0	7.43E+06	1.05	Y	1.31	37.5	17806.147	0.842
OCDF	44.22		1.0003	1.0003	0	6.44E+07	0.92	Y	1.07	595	6355.769	0.745

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.04	1.0215	1.0217	+0.3	3.47E+07	0.80	Y	1.05	81.5
ES 12378-PeCDD	34.28	1.2040	1.2064	+4.9	3.71E+07	1.57	Y	0.88	104
ES 123478-HxCDD	38.19	0.9925	0.9923	-0.5	3.03E+07	1.31	Y	0.97	81.8
ES 123678-HxCDD	38.30	0.9953	0.9951	-0.5	2.97E+07	1.22	Y	0.94	82.5
ES 123789-HxCDD	38.57	1.0024	1.0023	-0.2	3.37E+07	1.26	Y	1.09	81
ES 1234678-HpCDD	41.22	1.0697	1.0710	+3.2	3.00E+07	1.08	Y	0.91	86.2
ES OCDD	44.03	1.1413	1.1442	+7.7	2.98E+07	0.97	Y	0.62	62.5
ES 2378-TCDF	28.20	1.0469	1.0474	+0.8	5.83E+07	0.75	Y	1.06	80
ES 12378-PeCDF	32.86	1.2181	1.2208	+5.3	5.67E+07	1.50	Y	0.91	90.5
ES 23478-PeCDF	33.94	1.2578	1.2609	+6.3	5.57E+07	1.55	Y	0.88	91.7
ES 123478-HxCDF	37.19	0.9670	0.9665	-1.1	4.47E+07	0.54	Y	1.20	97.8
ES 123678-HxCDF	37.34	0.9708	0.9702	-1.3	5.20E+07	0.56	Y	1.35	101
ES 234678-HxCDF	38.01	0.9881	0.9877	-0.9	4.45E+07	0.54	Y	1.24	94
ES 123789-HxCDF	38.91	1.0108	1.0110	+0.5	4.35E+07	0.53	Y	1.16	98.8
ES 1234678-HpCDF	40.25	1.0452	1.0460	+1.9	3.61E+07	0.46	Y	0.97	97.8
ES 1234789-HpCDF	41.68	1.0818	1.0831	+3.3	3.02E+07	0.47	Y	0.85	92.9
ES OCDF	44.20	1.1461	1.1487	+6.9	4.01E+07	0.92	Y	0.81	65.1

Lab ID: B5986_18732_DF_002 **Acq'd:** 17 Dec 2021 23:33 DTF **Wt/Vol:** 10.06 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-O-12 **UTP:** 20-Dec-2021 14:13:06 DTF **J-level:** 0.497 pg/g **Split:** 1 **Checkcode:** 135-907-PRT

Datafile: 211217C18 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.42		-	-	-	4.07E+07	0.84	Y	-	-	
JS 1234-TCDF	26.92		-	-	-	6.88E+07	0.76	Y	-	-	
JS 123467-HxCDD	38.48		-	-	-	1.91E+07	1.28	Y	-	-	
CS 37Cl-2378-TCDD	29.06		1.0222	1.0225	+0.5	1.74E+07	n/a	-	1.20	88.7	
CS 12347-PeCDD	33.79		1.1870	1.1892	+4.5	3.52E+07	1.65	Y	0.75	115	
CS 12346-PeCDF	32.35		1.1994	1.2019	+4.9	5.84E+07	1.52	Y	0.85	99.8	
CS 123469-HxCDF	37.67		0.9793	0.9789	-0.9	4.86E+07	0.54	Y	1.12	114	
CS 1234689-HpCDF	40.67		1.0556	1.0567	+2.7	3.85E+07	0.46	Y	0.89	114	
~~SS 37Cl-2378-TCDD~~	~~29.06~~		~~1.0222~~	~~1.0225~~	~~+0.5~~	~~1.74E+07~~	~~n/a~~		~~1.15~~	~~109~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.79~~		~~1.1870~~	~~1.1892~~	~~+4.5~~	~~3.52E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~110~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.35~~		~~1.1994~~	~~1.2019~~	~~+4.9~~	~~5.84E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~110~~	
~~SS 123469-HxCDF~~	~~37.67~~		~~0.9793~~	~~0.9789~~	~~-0.9~~	~~4.86E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~113~~	
~~SS 1234689-HpCDF~~	~~40.67~~		~~1.0556~~	~~1.0567~~	~~+2.7~~	~~3.85E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~116~~	

Totals	Conc	EMPC
Total TCDD	46.8	62.8
Total PeCDD	106	113
Total HxCDD	963	963
Total HpCDD	7930	7930
Total Tetra-Octa Dioxins	40800	40800
Total TCDF	581	640
Total PeCDF	365	366
Total HxCDF	370	370
Total HpCDF	604	604
Total Tetra-Octa Furans	2,510	2580
Total Tetra-Octa Dioxins & Furans	43300	43400

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.8	0.81
Response	1.39E+06	1.38E+06

Lab ID: B5986_18732_DF_002 **Acq'd: 17 Dec 2021 23:33 DTF** **Wt/Vol: 10.06 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-O-12 **UTP: 20-Dec-2021 14:13:06 DTF** **J-level: 0.497 pg/g** **Split: 1** **Checkcode: 135-907-PRT**

Datafile: 211217C18 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.57		0.8819	0.8806	-2.0	3.07E+06	0.80	Y	1.18	14.8	10096.952	0.474
1379-TCDD	25.91	EMPC	0.8935	0.8924	-1.7	1.37E+06	0.91	N	1.18	6.61	10096.952	0.474
1369-TCDD	26.31	EMPC	0.9073	0.9062	-1.7	4.25E+05	1.00	N	1.18	2.06	10096.952	0.474
1469-TCDD	27.06		0.9329	0.9320	-1.5	2.19E+05	0.77	Y	1.18	1.06	10096.952	0.474
1247/1246/1248/1249-TCDD	27.29		0.9407	0.9400	-1.1	1.11E+06	0.85	Y	1.18	5.37	10096.952	0.474
1378-TCDD	27.47		0.9466	0.9461	-0.8	1.19E+06	0.86	Y	1.18	5.74	10096.952	0.474
1268-TCDD	27.65	EMPC	0.9531	0.9524	-1.2	3.68E+05	0.97	N	1.18	1.78	10096.952	0.474
1478-TCDD	27.90	EMPC	0.9610	0.9608	-0.3	1.96E+05	0.99	N	1.18	0.95	10096.952	0.474
1279-TCDD	28.06		0.9668	0.9664	-0.7	4.38E+05	0.82	Y	1.18	2.12	10096.952	0.474
1234/1269-TCDD	28.42		0.9783	0.9789	+1.0	7.93E+05	0.79	Y	1.18	3.84	10096.952	0.474
1236-TCDD	28.54		0.9830	0.9830	0	2.87E+05	0.82	Y	1.18	1.39	10096.952	0.474
1237/1238-TCDD	28.78		0.9913	0.9912	-0.2	8.61E+05	0.83	Y	1.18	4.16	10096.952	0.474
1239-TCDD	28.92		0.9959	0.9959	0	3.34E+05	0.77	Y	1.18	1.61	10096.952	0.474
2378-TCDD	**29.05**		**1.0008**	1.0006	**-0.3**	1.38E+06	0.81	Y	**1.18**	**6.65**	**10096.952**	**0.474**
1278-TCDD	29.37	EMPC	1.0115	1.0115	0	5.58E+05	0.89	N	1.18	2.7	10096.952	0.474
1267-TCDD	29.51	EMPC	1.0160	1.0164	+0.7	1.44E+05	1.15	N	1.18	0.695	10096.952	0.474
1289-TCDD	30.01	EMPC	1.0331	1.0336	+0.9	2.59E+05	1.00	N	1.18	1.25	10096.952	0.474
12479/12468-PeCDD	31.85		0.9295	0.9289	-1.1	5.28E+06	1.43	Y	1.04	27.3	25643.31	1.14
12469-PeCDD	32.37	EMPC	0.9448	0.9443	-1.0	1.47E+06	0.65	N	1.04	7.61	25643.31	1.14
12368-PeCDD	32.91		0.9602	0.9599	-0.6	2.76E+06	1.51	Y	1.04	14.3	25643.31	1.14
12478-PeCDD	33.09		0.9656	0.9653	-0.6	2.38E+06	1.56	Y	1.04	12.3	25643.31	1.14
12379-PeCDD	33.20		0.9686	0.9684	-0.4	1.83E+06	1.74	Y	1.04	9.47	25643.31	1.14
12369/12467/12489-PeCDD	33.46		0.9760	0.9758	-0.4	2.49E+06	1.60	Y	1.04	12.9	25643.31	1.14
12346/12347-PeCDD	33.83		0.9866	0.9866	0	1.74E+06	1.57	Y	1.04	8.99	25643.31	1.14
12378-PeCDD	34.30		**1.0005**	**1.0005**	**0**	**2.10E+06**	**1.41**	**Y**	**1.04**	**10.9**	**25643.31**	**1.14**
12367-PeCDD	34.39		1.0031	1.0031	0	7.39E+05	1.62	Y	1.04	3.82	25643.31	1.14
12389-PeCDD	34.74		1.0132	1.0133	+0.2	1.14E+06	1.54	Y	1.04	5.89	25643.31	1.14
124679/124689-HxCDD	36.47		0.9553	0.9550	-0.7	4.63E+07	1.26	Y	1.10	269	27831.59	1.22
123468-HxCDD	37.13		0.9725	0.9722	-0.7	6.95E+06	1.31	Y	1.10	40.4	27831.59	1.22
123679/123689-HxCDD	37.43		0.9803	0.9801	-0.4	7.55E+07	1.28	Y	1.10	438	27831.59	1.22
123469-HxCDD	37.57		0.9842	0.9838	-0.9	5.11E+06	1.25	Y	1.10	29.7	27831.59	1.22
123478-HxCDD	38.20		**1.0004**	**1.0004**	**0**	**2.21E+06**	**1.31**	**Y**	1.09	**13.3**	**27831.59**	**1.24**
123678-HxCDD	38.31		**1.0031**	**1.0032**	**+0.2**	**1.65E+07**	**1.26**	**Y**	1.15	**96.3**	**27831.59**	**1.25**
123467-HxCDD	38.49		1.0078	1.0080	+0.5	2.85E+06	1.31	Y	1.10	16.5	27831.59	1.22
123789-HxCDD	38.59		**1.0102**	**1.0104**	**+0.5**	**1.06E+07**	**1.28**	**Y**	1.05	**59.6**	**27831.59**	**1.17**

Lab ID: B5986_18732_DF_002 **Acq'd: 17 Dec 2021 23:33 DTF** **Wt/Vol: 10.06 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-O-12 **UTP: 20-Dec-2021 14:13:06 DTF** **J-level: 0.497 pg/g** **Split: 1** **Checkcode: 135-907-PRT**

Datafile: 211217C18 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

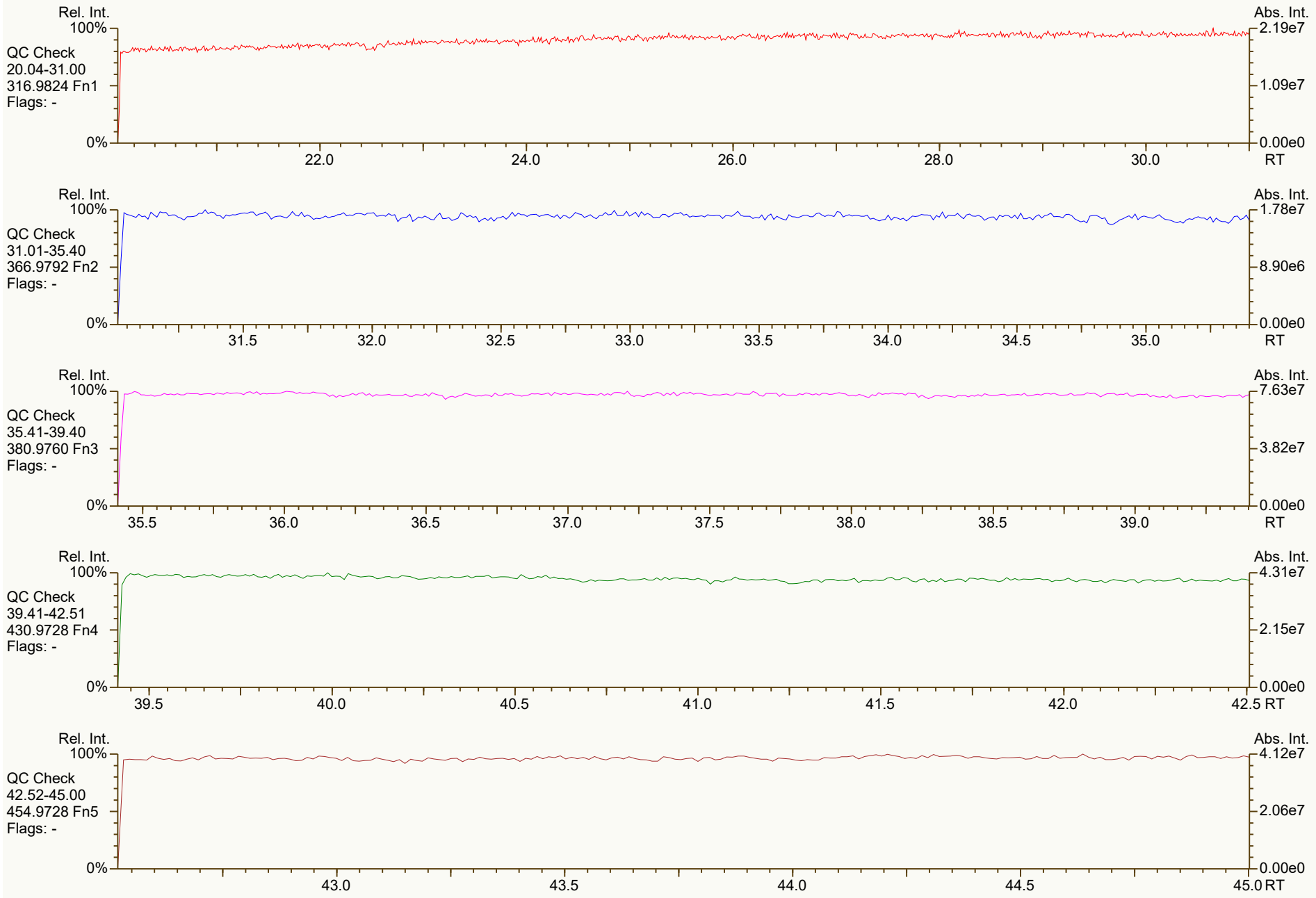
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.53		0.9837	0.9834	-0.7	6.41E+08	1.06	Y	1.06	4,010	10166.142	0.526
1234678-HpCDD	**41.23**		**1.0004**	**1.0003**	**-0.2**	**6.27E+08**	**1.05**	**Y**	**1.06**	**3,920**	**10166.142**	**0.526**
OCDD	**44.05**	**E**	**1.0003**	**1.0003**	**0**	**2.67E+09**	**0.91**	**Y**	**1.13**	**31,700**	**9643.363**	**1.67**
OCDD-a	44.04	**E**	1.0002	1.0002	0	1.59E+08	2.56	Y	0.07	29,500	7915.706	21.4
1368-TCDF	23.59		0.8388	0.8367	-3.0	1.61E+06	0.86	Y	1.08	5.1	7168.592	0.228
1468-TCDF	24.13		0.8578	0.8559	-2.8	2.56E+06	0.80	Y	1.08	8.1	7168.592	0.228
2468-TCDF	24.72		0.8780	0.8765	-2.2	4.16E+06	0.80	Y	1.08	13.1	7168.592	0.228
1346/1246-TCDF	25.09		0.8906	0.8897	-1.4	2.72E+06	0.77	Y	1.08	8.6	7168.592	0.228
1347/1378/1247-TCDF	25.21		0.8951	0.8940	-1.7	1.32E+07	0.78	Y	1.08	41.7	7168.592	0.228
1348-TCDF	25.45		0.9041	0.9026	-2.3	4.02E+06	0.81	Y	1.08	12.7	7168.592	0.228
1248/1367/1379-TCDF	25.55		0.9084	0.9062	-3.4	1.19E+07	0.82	Y	1.08	37.8	7168.592	0.228
1268-TCDF	25.94		0.9207	0.9198	-1.4	4.88E+06	0.79	Y	1.08	15.4	7168.592	0.228
1467-TCDF	26.07		0.9253	0.9244	-1.4	5.22E+06	0.78	Y	1.08	16.5	7168.592	0.228
1478-TCDF	26.22		0.9309	0.9299	-1.6	1.10E+07	0.78	Y	1.08	34.9	7168.592	0.228
1369/1237-TCDF	26.58		0.9431	0.9428	-0.5	3.33E+06	0.78	Y	1.08	10.5	7168.592	0.228
2467-TCDF	26.69		0.9472	0.9467	-0.8	3.29E+06	0.80	Y	1.08	10.4	7168.592	0.228
2368-TCDF	26.84		0.9524	0.9520	-0.6	1.08E+07	0.82	Y	1.08	34.2	7168.592	0.228
1238/1234/1678/1469/1236-TCDF	26.95		0.9560	0.9558	-0.3	7.28E+06	0.84	Y	1.08	23	7168.592	0.228
1278-TCDF	27.37		0.9710	0.9708	-0.3	1.51E+07	0.80	Y	1.08	47.6	7168.592	0.228
1349-TCDF	NotFnd		0.9752						1.08		7168.592	0.228
1267-TCDF	27.63		0.9802	0.9800	-0.3	8.74E+06	0.82	Y	1.08	27.6	7168.592	0.228
2346/1249-TCDF	27.82		0.9863	0.9865	+0.3	2.86E+06	0.83	Y	1.08	9.03	7168.592	0.228
2347/1279-TCDF	28.01		0.9936	0.9934	-0.3	7.10E+06	0.83	Y	1.08	22.4	7168.592	0.228
2348-TCDF	28.11	EMPC	0.9971	0.9971	0	1.66E+07	0.89	N	1.08	52.4	7168.592	0.228
2378-TCDF	**28.22**		**1.0007**	**1.0008**	**+0.2**	**3.32E+07**	**0.76**	**Y**	**1.08**	**105**	**7168.592**	**0.228**
2367/3467-TCDF	28.57		1.0134	1.0132	-0.3	2.79E+07	0.81	Y	1.08	88.1	7168.592	0.228
1269-TCDF	28.81		1.0219	1.0218	-0.2	2.49E+06	0.82	Y	1.08	7.86	7168.592	0.228
1239-TCDF	29.08		1.0309	1.0314	+0.9	3.05E+05	0.76	Y	1.08	0.965	7168.592	0.228
1289-TCDF	30.16	EMPC	1.0689	1.0696	+1.3	2.27E+06	1.18	N	1.08	7.16	7168.592	0.228
13468/12468-PeCDF	30.15		0.9175	0.9173	-0.4	9.77E+06	1.56	Y	1.02	33.8	4879.99	0.144
13678/13467/12467-PeCDF	31.65		0.9630	0.9631	+0.2	9.64E+06	1.58	Y	1.02	33.4	18448.852	0.544
12368/13478/12478-PeCDF	31.80		0.9675	0.9676	+0.2	2.71E+07	1.58	Y	1.02	93.8	18448.852	0.544
14678-PeCDF	31.89		0.9705	0.9704	-0.2	3.01E+06	1.59	Y	1.02	10.4	18448.852	0.544
13479-PeCDF	31.98	J	0.9734	0.9732	-0.4	6.16E+05	1.53	Y	1.02	2.13	18448.852	0.544
13469/12479-PeCDF	32.21		0.9807	0.9802	-1.0	1.15E+06	1.55	Y	1.02	3.99	18448.852	0.544
12346-PeCDF	32.37		0.9848	0.9849	+0.2	1.34E+06	1.50	Y	1.02	4.64	18448.852	0.544

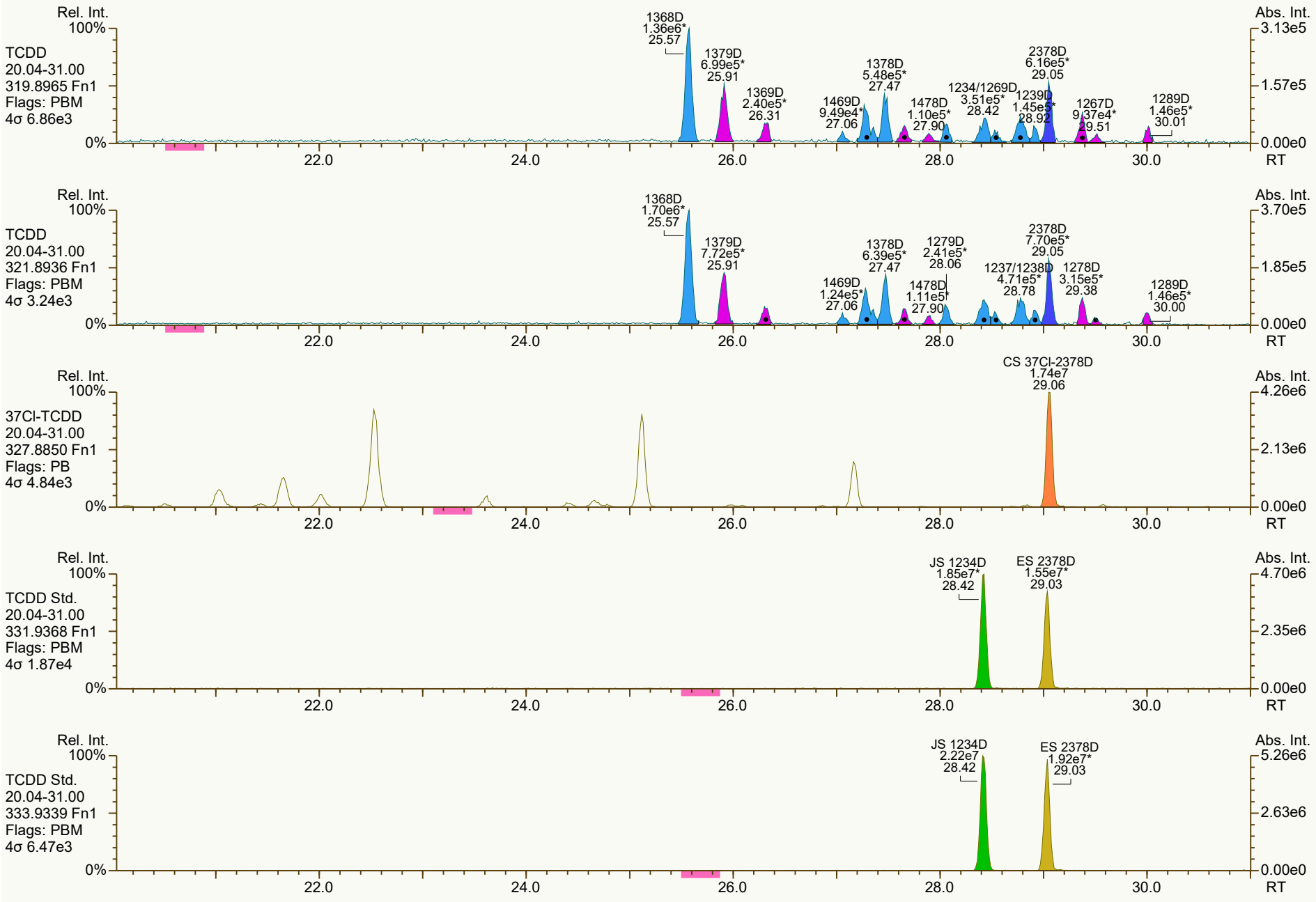
Lab ID: B5986_18732_DF_002 **Acq'd: 17 Dec 2021 23:33 DTF** **Wt/Vol: 10.06 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

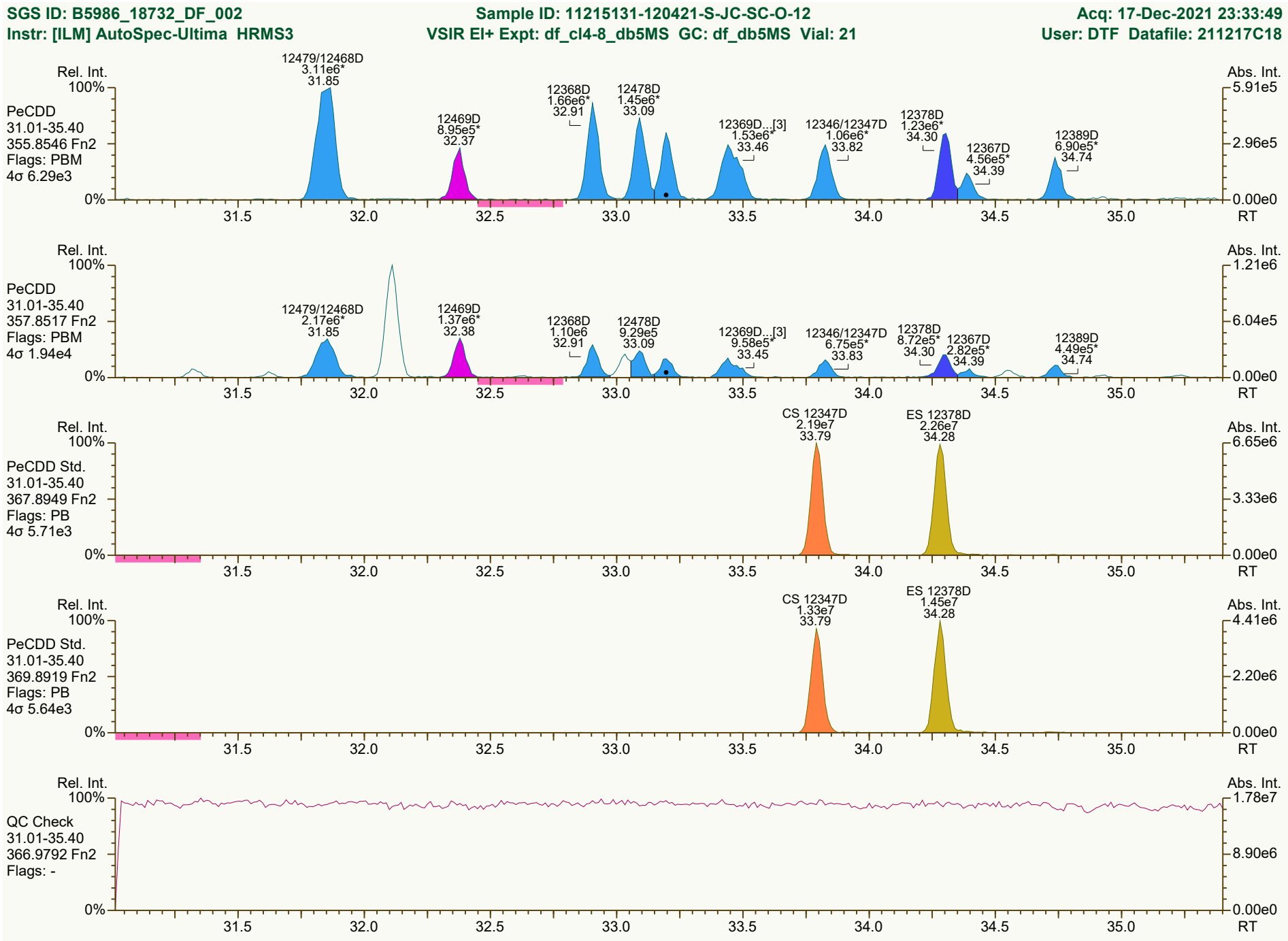
Client ID: 11215131-120421-S-JC-SC-O-12 **UTP: 20-Dec-2021 14:13:06 DTF** **J-level: 0.497 pg/g** **Split: 1** **Checkcode: 135-907-PRT**

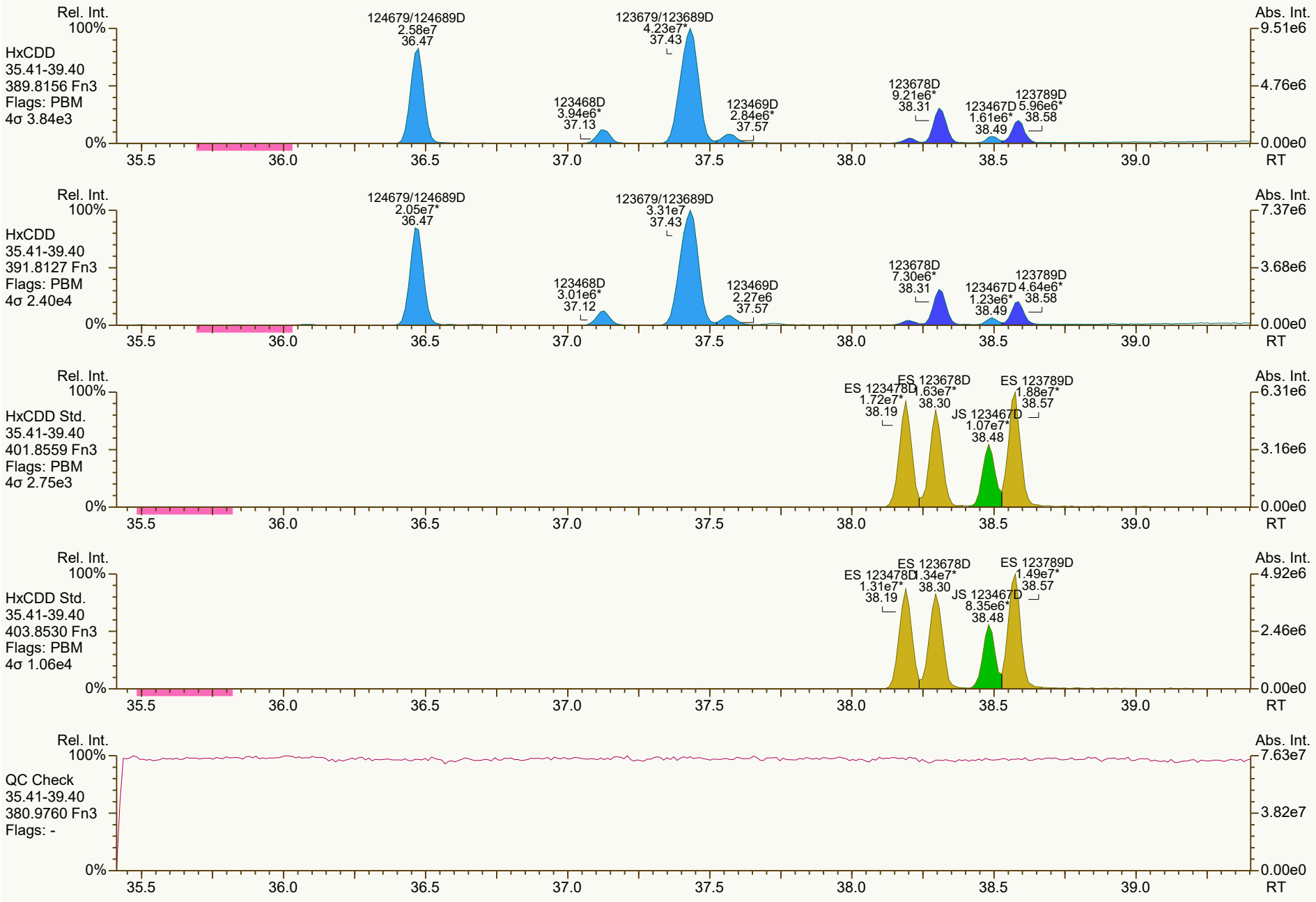
Datafile: 211217C18 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

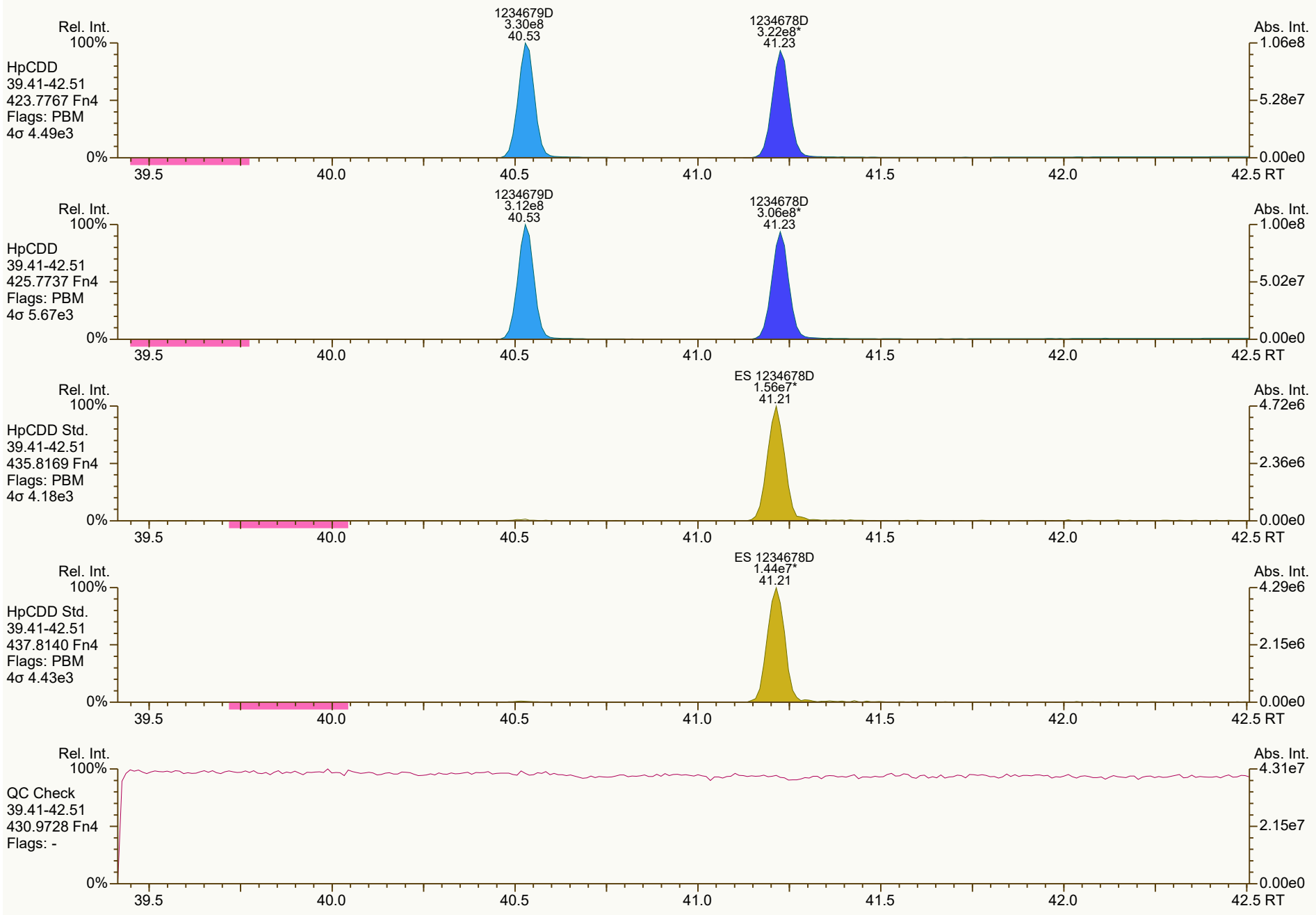
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.44		0.9868	0.9870	+0.4	4.57E+06	1.52	Y	1.02	15.8	18448.852	0.544
12347-PeCDF	32.52		0.9895	0.9896	+0.2	3.00E+06	1.70	Y	1.02	10.4	18448.852	0.544
12348-PeCDF	32.68		0.9943	0.9944	+0.2	3.56E+06	1.53	Y	1.02	12.3	18448.852	0.544
12378-PeCDF	**32.88**		**1.0005**	**1.0005**	**0**	**7.76E+06**	**1.62**	**Y**	**1.02**	**26.6**	**18448.852**	**0.563**
12678/12367-PeCDF	33.16		1.0086	1.0089	+0.6	9.93E+06	1.61	Y	1.02	34.4	18448.852	0.544
12379-PeCDF	33.32	J EMPC	1.0137	1.0139	+0.4	3.91E+05	1.28	N	1.02	1.35	18448.852	0.544
12679-PeCDF	33.72		0.9936	0.9935	-0.2	8.36E+05	1.60	Y	1.02	2.89	18448.852	0.544
23467/12369-PeCDF	33.84		0.9970	0.9971	+0.2	5.02E+06	1.55	Y	1.02	17.4	18448.852	0.544
23478-PeCDF	**33.97**		**1.0005**	**1.0007**	**+0.4**	**1.67E+07**	**1.56**	**Y**	**1.02**	**58.5**	**18448.852**	**0.524**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		18448.852	0.544
12349-PeCDF	34.30	J	1.0103	1.0104	+0.2	4.45E+05	1.35	Y	1.02	1.54	18448.852	0.544
12389-PeCDF	35.03		1.0317	1.0321	+0.8	9.36E+05	1.55	Y	1.02	3.24	18448.852	0.544
123468-HxCDF	35.83		0.9634	0.9633	-0.2	6.24E+06	1.26	Y	1.19	22.5	25447.58	0.77
124678/134678-HxCDF	36.03		0.9687	0.9686	-0.2	2.63E+07	1.28	Y	1.19	94.7	25447.58	0.77
134679-HxCDF	36.26	J	0.9748	0.9749	+0.2	5.68E+05	1.25	Y	1.19	2.05	25447.58	0.77
124679-HxCDF	36.45		0.9800	0.9799	-0.2	1.78E+06	1.24	Y	1.19	6.41	25447.58	0.77
124689-HxCDF	36.67		0.9857	0.9858	+0.2	2.58E+07	1.27	Y	1.19	93.1	25447.58	0.77
123467-HxCDF	37.09		0.9973	0.9973	0	4.97E+06	1.35	Y	1.19	17.9	25447.58	0.77
123478-HxCDF	**37.21**		**1.0005**	**1.0005**	**0**	**1.73E+07**	**1.28**	**Y**	**1.27**	**60.6**	**25447.58**	**0.742**
123678-HxCDF	**37.35**		**1.0005**	**1.0004**	**-0.2**	**7.47E+06**	**1.27**	**Y**	**1.15**	**24.8**	**25447.58**	**0.749**
123479-HxCDF	37.52	J	1.0051	1.0049	-0.5	5.89E+05	1.21	Y	1.19	2.12	25447.58	0.77
123469-HxCDF	37.69		1.0092	1.0093	+0.2	8.89E+05	1.26	Y	1.19	3.21	25447.58	0.77
123679-HxCDF	37.82		0.9948	0.9949	+0.2	9.88E+05	1.28	Y	1.19	3.56	25447.58	0.77
234678-HxCDF	**38.03**		**1.0004**	**1.0005**	**+0.2**	**7.66E+06**	**1.29**	**Y**	**1.19**	**28.8**	**25447.58**	**0.827**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		25447.58	0.77
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**25447.58**	**0.773**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.95		1.0007	1.0011	+0.9	2.94E+06	1.32	Y	1.19	10.6	25447.58	0.77
1234678-HpCDF	**40.26**		**1.0003**	**1.0003**	**0**	**4.83E+07**	**1.06**	**Y**	**1.37**	**194**	**17806.147**	**0.55**
1234679-HpCDF	40.53		1.0068	1.0070	+0.5	3.90E+06	1.08	Y	1.34	17.5	17806.147	0.681
1234689-HpCDF	40.68		1.0102	1.0105	+0.7	7.91E+07	1.05	Y	1.34	354	17806.147	0.681
1234789-HpCDF	**41.69**		**1.0003**	**1.0003**	**0**	**7.43E+06**	**1.05**	**Y**	**1.31**	**37.5**	**17806.147**	**0.842**
OCDF	**44.22**		**1.0003**	**1.0003**	**0**	**6.44E+07**	**0.92**	**Y**	**1.07**	**595**	**6355.769**	**0.745**
OCDF-a	44.21		1.0002	1.0002	0	4.13E+06	2.43	Y	0.07	617	5779.81	10.9

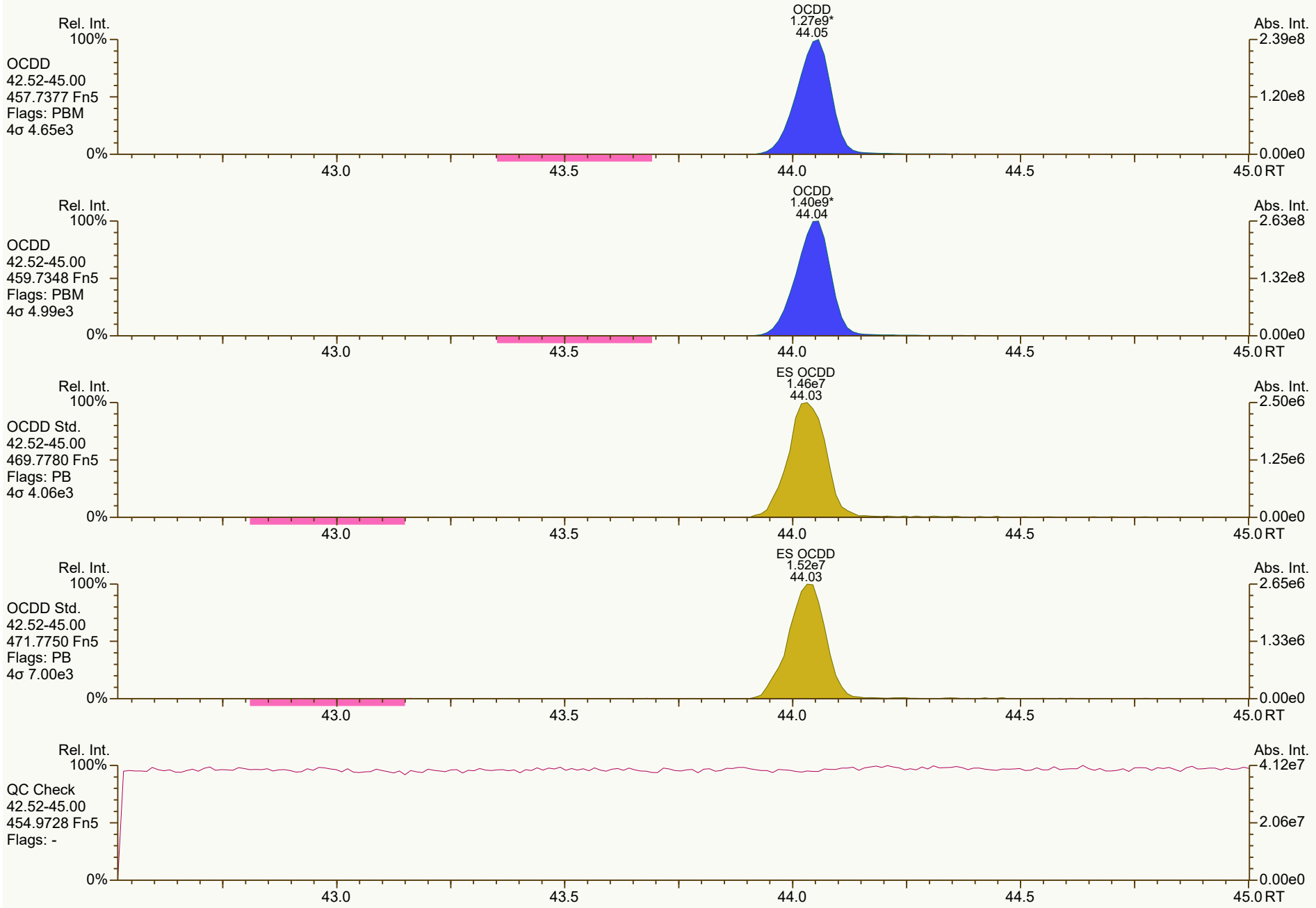

Rel. Int.
100%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
0%
22.0
24.0
26.0
28.0
30.0
Abs. Int.
2.19e7
1.09e7
0.00e0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Abs. Int.
1.78e7
8.90e6
0.00e0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
Abs. Int.
7.63e7
3.82e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.31e7
2.15e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
4.12e7
2.06e7
0.00e0

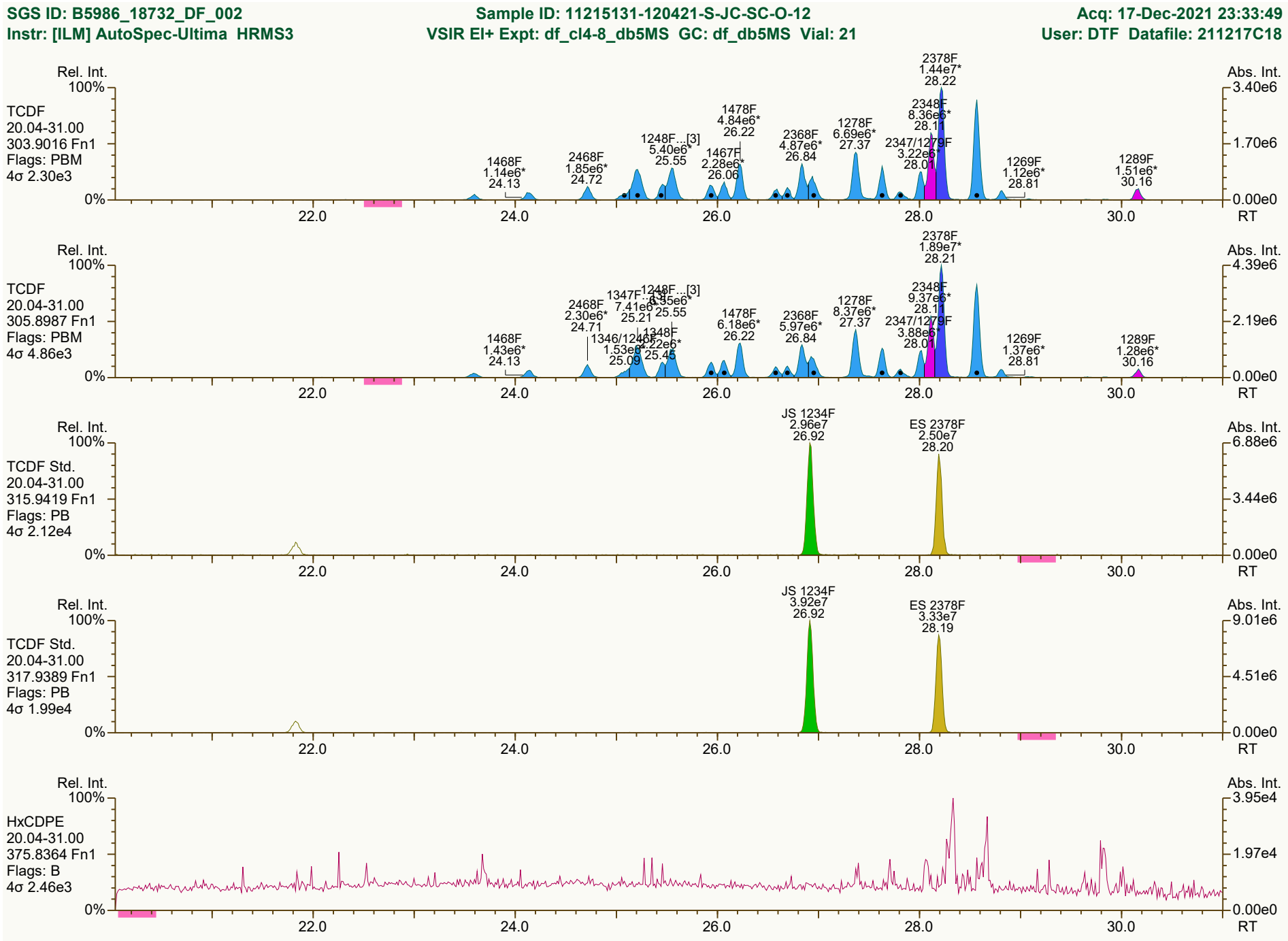

Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: PBM
4σ 6.86e3
0%
1368D 1.36e6* 25.57
1379D 6.99e5* 25.91
1369D 2.40e5* 26.31
1469D 9.49e4* 27.06
1378D 5.48e5* 27.47
1478D 1.10e5* 27.90
1234/1269D 3.51e5* 28.42
1239D 1.45e5* 28.92
2378D 6.16e5* 29.05
1267D 9.37e4* 29.51
1289D 1.46e5* 30.01
Abs. Int.
3.13e5
1.57e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: PBM
4σ 3.24e3
0%
1368D 1.70e6* 25.57
1379D 7.72e5* 25.91
1469D 1.24e5* 27.06
1378D 6.39e5* 27.47
1478D 1.11e5* 27.90
1279D 2.41e5* 28.06
1237/1238D 4.71e5* 28.78
2378D 7.70e5* 29.05
1278D 3.15e5* 29.38
1289D 1.46e5* 30.00
Abs. Int.
3.70e5
1.85e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PB
4σ 4.84e3
0%
CS 37Cl-2378D 1.74e7 29.06
Abs. Int.
4.26e6
2.13e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PBM
4σ 1.87e4
0%
JS 1234D 1.85e7* 28.42
ES 2378D 1.55e7* 29.03
Abs. Int.
4.70e6
2.35e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PBM
4σ 6.47e3
0%
JS 1234D 2.22e7 28.42
ES 2378D 1.92e7* 29.03
Abs. Int.
5.26e6
2.63e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


SGS ID: B5986_18732_DF_002
Sample ID: 11215131-120421-S-JC-SC-O-12
Acq: 17-Dec-2021 23:33:49
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 21
User: DTF Datafile: 211217C18
Rel. Int.
Abs. Int.
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PBM
4σ 6.29e3
12479/12468D 3.11e6* 31.85
12469D 8.95e5* 32.37
12368D 1.66e6* 32.91
12478D 1.45e6* 33.09
12369D...[3] 1.53e6* 33.46
12346/12347D 1.06e6* 33.82
12378D 1.23e6* 34.30
12367D 4.56e5* 34.39
12389D 6.90e5* 34.74
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PBM
4σ 1.94e4
12479/12468D 2.17e6* 31.85
12469D 1.37e6* 32.38
12368D 1.10e6 32.91
12478D 9.29e5 33.09
12369D...[3] 9.58e5* 33.45
12346/12347D 6.75e5* 33.83
12378D 8.72e5* 34.30
12367D 2.82e5* 34.39
12389D 4.49e5* 34.74
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PB
4σ 5.71e3
CS 12347D 2.19e7 33.79
ES 12378D 2.26e7 34.28
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PB
4σ 5.64e3
CS 12347D 1.33e7 33.79
ES 12378D 1.45e7 34.28
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_002.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0508, 8636 scc: 135-907
Revised: 20-Dec-2021 10:36 (DTF) Printed: 20-Dec-2021 14:26 Page 3 of 12

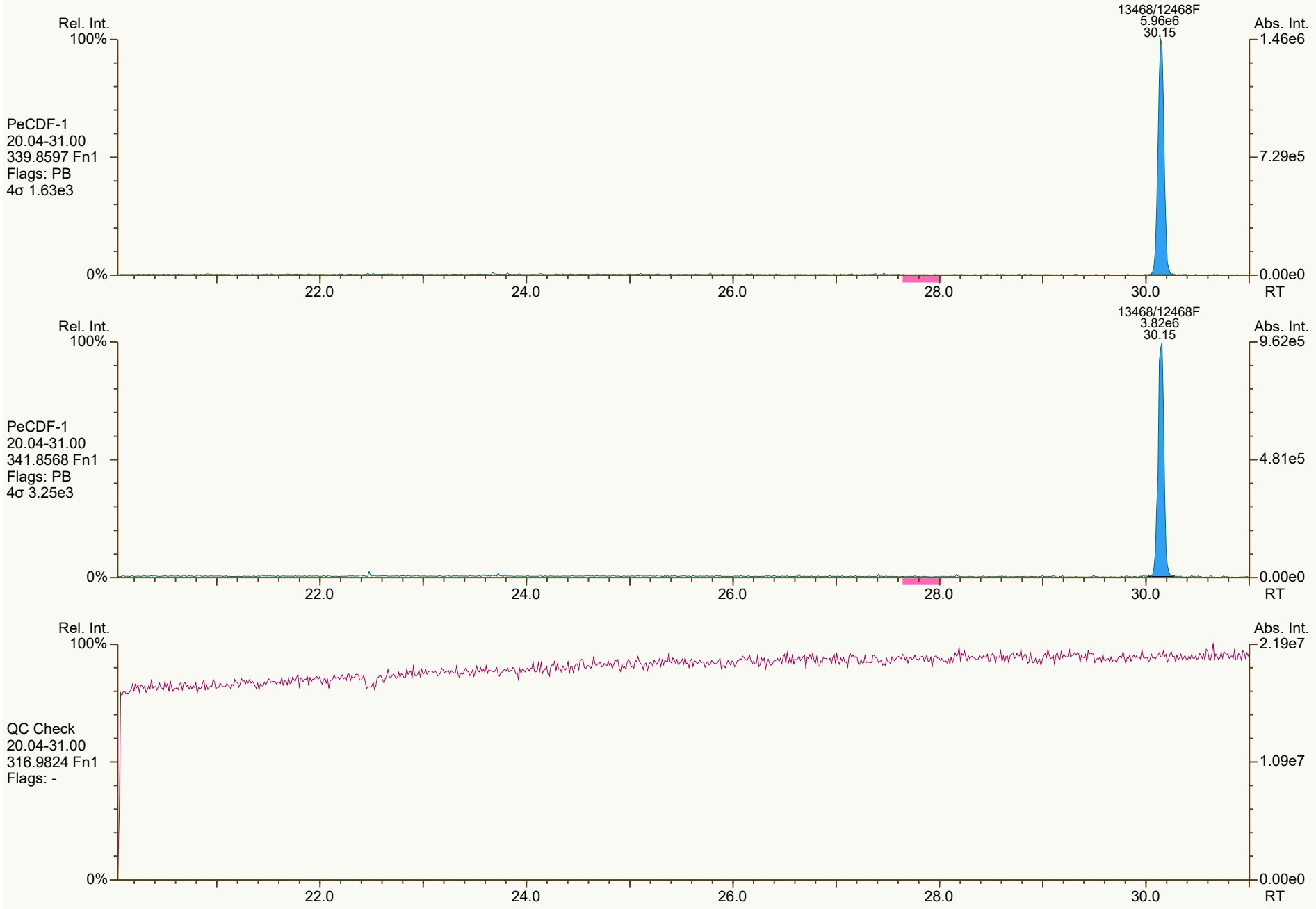

Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PBM
4σ 3.84e3
124679/124689D
2.58e7
36.47
123679/123689D
4.23e7*
37.43
123468D
3.94e6*
37.13
123469D
2.84e6*
37.57
123678D
9.21e6*
38.31
123467D
1.61e6*
38.49
123789D
5.96e6*
38.58
Abs. Int.
9.51e6
4.76e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PBM
4σ 2.40e4
124679/124689D
2.05e7*
36.47
123679/123689D
3.31e7
37.43
123468D
3.01e6*
37.12
123469D
2.27e6
37.57
123678D
7.30e6*
38.31
123467D
1.23e6*
38.49
123789D
4.64e6*
38.58
Abs. Int.
7.37e6
3.68e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PBM
4σ 2.75e3
ES 123478D
1.72e7*
38.19
ES 123678D
1.63e7*
38.30
JS 123467D
1.07e7*
38.48
ES 123789D
1.88e7*
38.57
Abs. Int.
6.31e6
3.16e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PBM
4σ 1.06e4
ES 123478D
1.31e7*
38.19
ES 123678D
1.34e7*
38.30
JS 123467D
8.35e6*
38.48
ES 123789D
1.49e7*
38.57
Abs. Int.
4.92e6
2.46e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
Abs. Int.
7.63e7
3.82e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

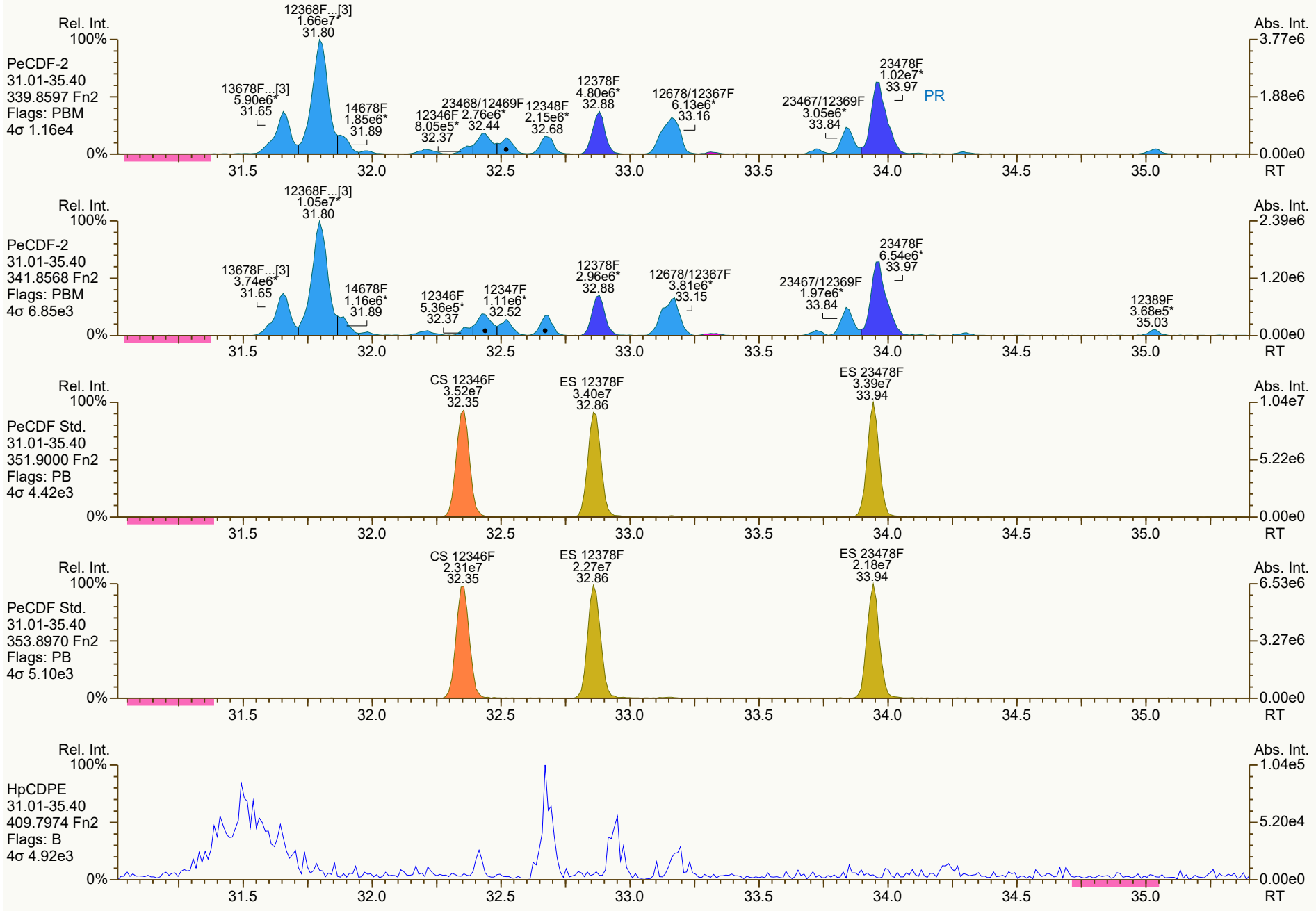

Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PBM
4σ 4.49e3
0%
1234679D
3.30e8
40.53
1234678D
3.22e8*
41.23
Abs. Int.
1.06e8
5.28e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PBM
4σ 5.67e3
0%
1234679D
3.12e8
40.53
1234678D
3.06e8*
41.23
Abs. Int.
1.00e8
5.02e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PBM
4σ 4.18e3
0%
ES 1234678D
1.56e7*
41.21
Abs. Int.
4.72e6
2.36e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PBM
4σ 4.43e3
0%
ES 1234678D
1.44e7*
41.21
Abs. Int.
4.29e6
2.15e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.31e7
2.15e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT

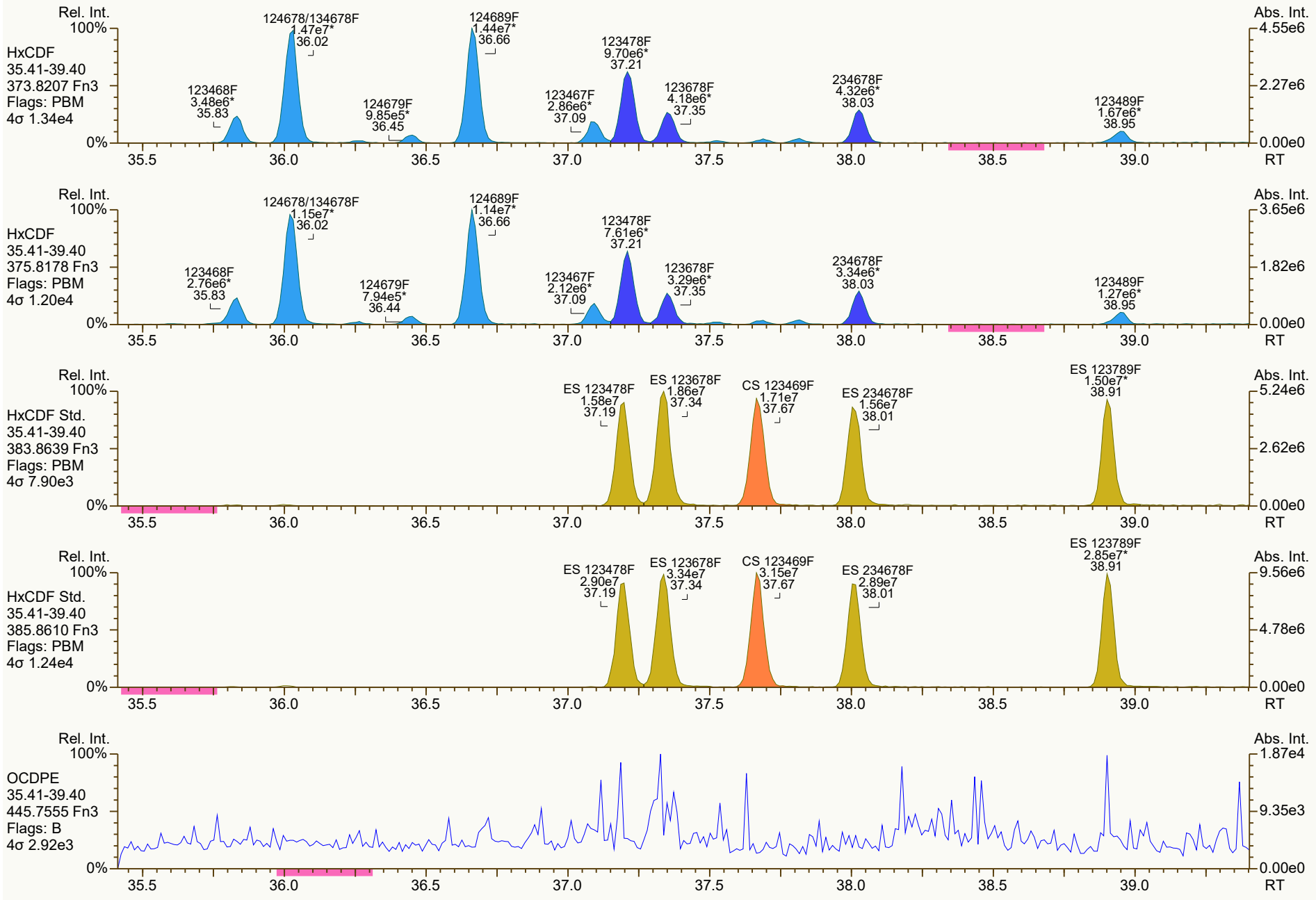

Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PBM
4σ 4.65e3
0%
OCDD
1.27e9*
44.05
Abs. Int.
2.39e8
1.20e8
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PBM
4σ 4.99e3
0%
OCDD
1.40e9*
44.04
Abs. Int.
2.63e8
1.32e8
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 4.06e3
0%
ES OCDD
1.46e7
44.03
Abs. Int.
2.50e6
1.25e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 7.00e3
0%
ES OCDD
1.52e7
44.03
Abs. Int.
2.65e6
1.33e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.12e7
2.06e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

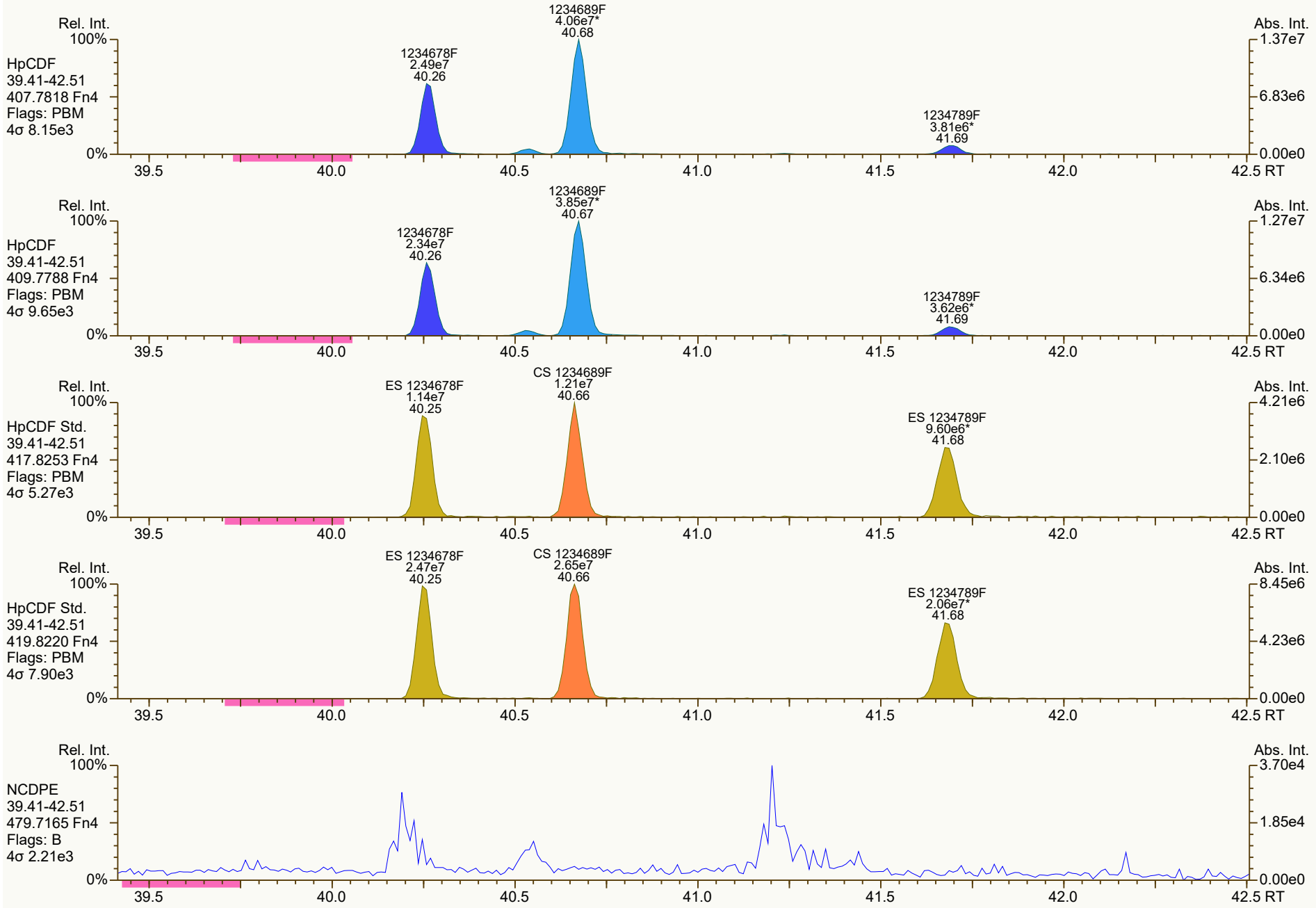


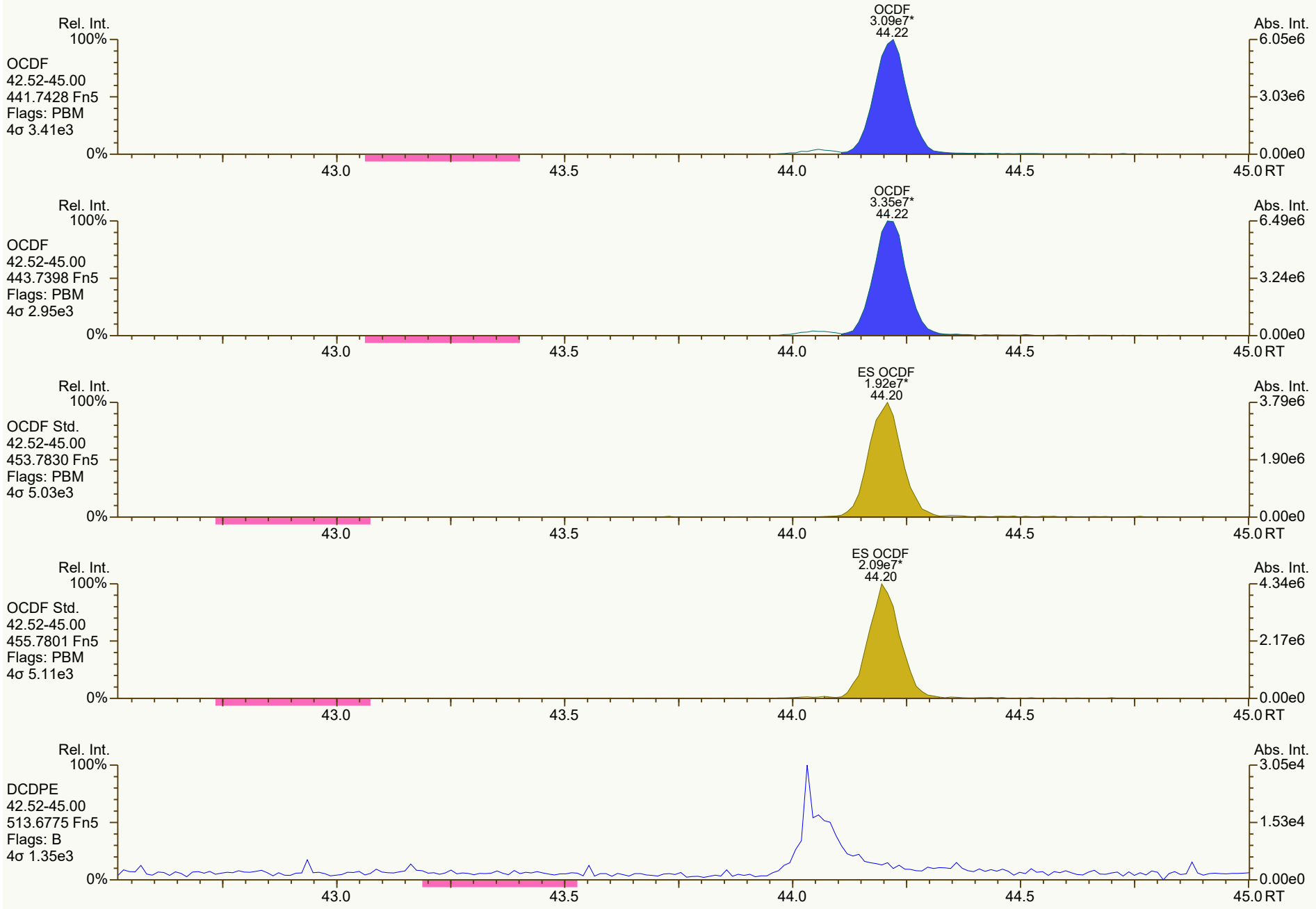
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_002.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0417, 2480, 7641 scc: 135-907
Revised: 20-Dec-2021 10:39 (DTF) Printed: 20-Dec-2021 14:26 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
339.8597 Fn1
Flags: PB
4σ 1.63e3
13468/12468F
5.96e6
30.15
Abs. Int.
1.46e6
7.29e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
341.8568 Fn1
Flags: PB
4σ 3.25e3
13468/12468F
3.82e6
30.15
Abs. Int.
9.62e5
4.81e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
Abs. Int.
2.19e7
1.09e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
Abs. Int.
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PBM
4σ 1.16e4
12368F...[3] 1.66e7* 31.80
13678F...[3] 5.90e6* 31.65
14678F 1.85e6* 31.89
12346F 8.05e5* 32.37
23468/12469F 2.76e6* 32.44
12348F 2.15e6* 32.68
12378F 4.80e6* 32.88
12678/12367F 6.13e6* 33.16
23467/12369F 3.05e6* 33.84
23478F 1.02e7* 33.97
PR
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PBM
4σ 6.85e3
12368F...[3] 1.05e7* 31.80
13678F...[3] 3.74e6* 31.65
14678F 1.16e6* 31.89
12346F 5.36e5* 32.37
12347F 1.11e6* 32.52
12378F 2.96e6* 32.88
12678/12367F 3.81e6* 33.15
23467/12369F 1.97e6* 33.84
23478F 6.54e6* 33.97
12389F 3.68e5* 35.03
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PB
4σ 4.42e3
CS 12346F 3.52e7 32.35
ES 12378F 3.40e7 32.86
ES 23478F 3.39e7 33.94
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PB
4σ 5.10e3
CS 12346F 2.31e7 32.35
ES 12378F 2.27e7 32.86
ES 23478F 2.18e7 33.94
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 4.92e3
100%
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
3.77e6
1.88e6
0.00e0
2.39e6
1.20e6
1.04e7
5.22e6
6.53e6
3.27e6
1.04e5
5.20e4


Rel. Int.
100%
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PBM
4σ 1.34e4
123468F 3.48e6* 35.83
124678/134678F 1.47e7* 36.02
124679F 9.85e5* 36.45
124689F 1.44e7* 36.66
123467F 2.86e6* 37.09
123478F 9.70e6* 37.21
123678F 4.18e6* 37.35
234678F 4.32e6* 38.03
123489F 1.67e6* 38.95
Abs. Int.
4.55e6
2.27e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF
35.41-39.40
375.8178 Fn3
Flags: PBM
4σ 1.20e4
123468F 2.76e6* 35.83
124678/134678F 1.15e7* 36.02
124679F 7.94e5* 36.44
124689F 1.14e7* 36.66
123467F 2.12e6* 37.09
123478F 7.61e6* 37.21
123678F 3.29e6* 37.35
234678F 3.34e6* 38.03
123489F 1.27e6* 38.95
Abs. Int.
3.65e6
1.82e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PBM
4σ 7.90e3
ES 123478F 1.58e7 37.19
ES 123678F 1.86e7 37.34
CS 123469F 1.71e7 37.67
ES 234678F 1.56e7 38.01
ES 123789F 1.50e7* 38.91
Abs. Int.
5.24e6
2.62e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PBM
4σ 1.24e4
ES 123478F 2.90e7 37.19
ES 123678F 3.34e7 37.34
CS 123469F 3.15e7 37.67
ES 234678F 2.89e7 38.01
ES 123789F 2.85e7* 38.91
Abs. Int.
9.56e6
4.78e6
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Rel. Int.
100%
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 2.92e3
Abs. Int.
1.87e4
9.35e3
0.00e0
0%
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT


Rel. Int.
100%
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 8.15e3
1234678F
2.49e7
40.26
1234689F
4.06e7*
40.68
1234789F
3.81e6*
41.69
Abs. Int.
1.37e7
6.83e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 9.65e3
1234678F
2.34e7
40.26
1234689F
3.85e7*
40.67
1234789F
3.62e6*
41.69
Abs. Int.
1.27e7
6.34e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PBM
4σ 5.27e3
ES 1234678F
1.14e7
40.25
CS 1234689F
1.21e7
40.66
ES 1234789F
9.60e6*
41.68
Abs. Int.
4.21e6
2.10e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PBM
4σ 7.90e3
ES 1234678F
2.47e7
40.25
CS 1234689F
2.65e7
40.66
ES 1234789F
2.06e7*
41.68
Abs. Int.
8.45e6
4.23e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 2.21e3
Abs. Int.
3.70e4
1.85e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PBM
4σ 3.41e3
0%
OCDF
3.09e7*
44.22
Abs. Int.
6.05e6
3.03e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: PBM
4σ 2.95e3
0%
OCDF
3.35e7*
44.22
Abs. Int.
6.49e6
3.24e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PBM
4σ 5.03e3
0%
ES OCDF
1.92e7*
44.20
Abs. Int.
3.79e6
1.90e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PBM
4σ 5.11e3
0%
ES OCDF
2.09e7*
44.20
Abs. Int.
4.34e6
2.17e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: B
4σ 1.35e3
0%
Abs. Int.
3.05e4
1.53e4
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5986_18732_DF_003 **Acq'd:** 18 Dec 2021 00:20 DTF **Wt/Vol:** 10.02 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-O-6 **UTP:** 20-Dec-2021 14:13:07 DTF **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 313-227-TKV

Datafile: 211217C19 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.07		1.0008	1.0008	0	3.57E+06	0.80	Y	1.18	18	8469.652	0.466
12378-PeCDD	34.31	J	1.0005	1.0005	0	4.07E+05	1.49	Y	1.04	2.25	12749.389	0.611
123478-HxCDD	38.21		1.0004	1.0004	0	6.12E+05	1.35	Y	1.09	3.87	11051.462	0.531
123678-HxCDD	38.32		1.0031	1.0032	+0.2	2.60E+06	1.30	Y	1.15	15.8	11051.462	0.541
123789-HxCDD	38.59		1.0102	1.0104	+0.5	1.49E+06	1.27	Y	1.05	8.67	11051.462	0.503
1234678-HpCDD	41.23		1.0004	1.0003	-0.2	6.96E+07	1.05	Y	1.06	463	11935.684	0.692
OCDD	44.02		1.0003	1.0003	0	5.74E+08	0.90	Y	1.13	6,540	15524.675	2.25
2378-TCDF	28.23		1.0007	1.0008	+0.2	1.60E+07	0.80	Y	1.08	53.7	5515.915	0.191
12378-PeCDF	32.89		1.0005	1.0005	0	1.04E+06	1.63	Y	1.02	3.87	10083.151	0.315
23478-PeCDF	33.99		1.0005	1.0010	+1.0	2.09E+06	1.54	Y	1.02	7.92	10083.151	0.323
123478-HxCDF	37.22		1.0005	1.0005	0	2.83E+06	1.22	Y	1.27	10.5	8441.232	0.26
123678-HxCDF	37.36		1.0005	1.0004	-0.2	1.54E+06	1.31	Y	1.15	5.6	8441.232	0.271
234678-HxCDF	38.03		1.0004	1.0005	+0.2	1.74E+06	1.32	Y	1.19	6.75	8441.232	0.27
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	8441.232	0.264
1234678-HpCDF	40.27		1.0003	1.0003	0	1.71E+07	1.04	Y	1.37	70.5	7438.48	0.221
1234789-HpCDF	41.69		1.0003	1.0002	-0.3	1.29E+06	1.13	Y	1.31	6.52	7438.48	0.322
OCDF	44.20		1.0003	1.0003	0	2.44E+07	0.91	Y	1.07	213	8749.015	0.998

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.05	1.0215	1.0218	+0.5	3.33E+07	0.82	Y	1.05	85.5
ES 12378-PeCDD	34.29	1.2040	1.2062	+4.5	3.48E+07	1.59	Y	0.88	106
ES 123478-HxCDD	38.19	0.9925	0.9924	-0.2	2.90E+07	1.19	Y	0.97	85.6
ES 123678-HxCDD	38.30	0.9953	0.9952	-0.2	2.86E+07	1.27	Y	0.94	86.8
ES 123789-HxCDD	38.58	1.0024	1.0024	0	3.26E+07	1.23	Y	1.09	85.8
ES 1234678-HpCDD	41.21	1.0697	1.0708	+2.7	2.83E+07	1.08	Y	0.91	88.9
ES OCDD	44.01	1.1413	1.1435	+5.8	3.11E+07	0.92	Y	0.62	71.5
ES 2378-TCDF	28.21	1.0469	1.0474	+0.8	5.52E+07	0.76	Y	1.06	81.4
ES 12378-PeCDF	32.87	1.2181	1.2207	+5.1	5.24E+07	1.52	Y	0.91	89.9
ES 23478-PeCDF	33.95	1.2578	1.2607	+5.9	5.17E+07	1.48	Y	0.88	91.4
ES 123478-HxCDF	37.20	0.9670	0.9666	-0.9	4.23E+07	0.53	Y	1.20	101
ES 123678-HxCDF	37.35	0.9708	0.9704	-0.9	4.76E+07	0.54	Y	1.35	101
ES 234678-HxCDF	38.02	0.9881	0.9878	-0.7	4.32E+07	0.53	Y	1.24	99.9
ES 123789-HxCDF	38.91	1.0108	1.0111	+0.7	4.12E+07	0.54	Y	1.16	102
ES 1234678-HpCDF	40.26	1.0452	1.0460	+1.9	3.55E+07	0.46	Y	0.97	105
ES 1234789-HpCDF	41.68	1.0818	1.0830	+3.0	3.02E+07	0.46	Y	0.85	102
ES OCDF	44.19	1.1461	1.1482	+5.6	4.27E+07	0.91	Y	0.81	75.9

Lab ID: B5986_18732_DF_003 **Acq'd:** 18 Dec 2021 00:20 DTF **Wt/Vol:** 10.02 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-O-6 **UTP:** 20-Dec-2021 14:13:07 DTF **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 313-227-TKV

Datafile: 211217C19 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.43		-	-	-	3.73E+07	0.83	Y	-	-	
JS 1234-TCDF	26.93		-	-	-	6.40E+07	0.78	Y	-	-	
JS 123467-HxCDD	38.49		-	-	-	1.74E+07	1.19	Y	-	-	
CS 37Cl-2378-TCDD	29.07		1.0222	1.0225	+0.5	1.52E+07	n/a	-	1.20	84.6	
CS 12347-PeCDD	33.80		1.1870	1.1891	+4.3	2.90E+07	1.58	Y	0.75	103	
CS 12346-PeCDF	32.36		1.1994	1.2017	+4.5	4.85E+07	1.53	Y	0.85	89.1	
CS 123469-HxCDF	37.68		0.9793	0.9790	-0.7	4.03E+07	0.55	Y	1.12	103	
CS 1234689-HpCDF	40.67		1.0556	1.0567	+2.7	3.31E+07	0.46	Y	0.89	107	
~~SS 37Cl-2378-TCDD~~	~~29.07~~		~~1.0222~~	~~1.0225~~	~~+0.5~~	~~1.52E+07~~	~~n/a~~		~~1.15~~	~~99.2~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.80~~		~~1.1870~~	~~1.1891~~	~~+4.3~~	~~2.90E+07~~	~~1.58~~	~~Y~~	~~0.86~~	~~97.3~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.36~~		~~1.1994~~	~~1.2017~~	~~+4.5~~	~~4.85E+07~~	~~1.53~~	~~Y~~	~~0.94~~	~~98.9~~	
~~SS 123469-HxCDF~~	~~37.68~~		~~0.9793~~	~~0.9790~~	~~-0.7~~	~~4.03E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~102~~	
~~SS 1234689-HpCDF~~	~~40.67~~		~~1.0556~~	~~1.0567~~	~~+2.7~~	~~3.31E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~102~~	

Totals	Conc	EMPC
Total TCDD	23.6	24.8
Total PeCDD	11.6	14.7
Total HxCDD	134	134
Total HpCDD	985	985
Total Tetra-Octa Dioxins	7690	7690
Total TCDF	128	133
Total PeCDF	73.1	75.2
Total HxCDF	111	112
Total HpCDF	201	201
Total Tetra-Octa Furans	726	733
Total Tetra-Octa Dioxins & Furans	8420	8430

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.798	0.80
Response	3.58E+06	3.57E+06

Lab ID: B5986_18732_DF_003 **Acq'd: 18 Dec 2021 00:20 DTF** **Wt/Vol: 10.02 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-O-6 **UTP: 20-Dec-2021 14:13:07 DTF** **J-level: 0.499 pg/g** **Split: 1** **Checkcode: 313-227-TKV**

Datafile: 211217C19 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.58		0.8819	0.8808	-1.7	5.62E+05	0.84	Y	1.18	2.84	8469.652	0.466
1379-TCDD	25.92		0.8935	0.8924	-1.7	1.61E+05	0.78	Y	1.18	0.815	8469.652	0.466
1369-TCDD	NotFnd		0.9073						1.18		8469.652	0.466
1469-TCDD	27.08	EMPC	0.9329	0.9322	-1.1	1.37E+05	1.11	N	1.18	0.693	8469.652	0.466
1247/1246/1248/1249-TCDD	27.30	EMPC	0.9407	0.9397	-1.6	1.07E+05	0.92	N	1.18	0.542	8469.652	0.466
1378-TCDD	NotFnd		0.9466						1.18		8469.652	0.466
1268-TCDD	NotFnd		0.9531						1.18		8469.652	0.466
1478-TCDD	NotFnd		0.9610						1.18		8469.652	0.466
1279-TCDD	NotFnd		0.9668						1.18		8469.652	0.466
1234/1269-TCDD	NotFnd		0.9783						1.18		8469.652	0.466
1236-TCDD	NotFnd		0.9830						1.18		8469.652	0.466
1237/1238-TCDD	NotFnd		0.9913						1.18		8469.652	0.466
1239-TCDD	NotFnd		0.9959						1.18		8469.652	0.466
2378-TCDD	**29.07**		**1.0008**	1.0008	**0**	3.57E+06	0.80	Y	**1.18**	**18**	**8469.652**	**0.466**
1278-TCDD	29.38		1.0115	1.0116	+0.2	3.73E+05	0.85	Y	1.18	1.88	8469.652	0.466
1267-TCDD	NotFnd		1.0160						1.18		8469.652	0.466
1289-TCDD	NotFnd		1.0331						1.18		8469.652	0.466
12479/12468-PeCDD	31.85		0.9295	0.9290	-1.0	7.04E+05	1.61	Y	1.04	3.9	12749.389	0.611
12469-PeCDD	32.38	J EMPC	0.9448	0.9444	-0.8	3.48E+05	0.71	N	1.04	1.93	12749.389	0.611
12368-PeCDD	32.92	J	0.9602	0.9600	-0.4	3.22E+05	1.62	Y	1.04	1.78	12749.389	0.611
12478-PeCDD	33.10	J	0.9656	0.9653	-0.6	3.74E+05	1.65	Y	1.04	2.07	12749.389	0.611
12379-PeCDD	33.21	J EMPC	0.9686	0.9684	-0.4	2.12E+05	1.92	N	1.04	1.17	12749.389	0.611
12369/12467/12489-PeCDD	33.46	J	0.9760	0.9757	-0.6	2.96E+05	1.46	Y	1.04	1.64	12749.389	0.611
12346/12347-PeCDD	NotFnd		0.9866						1.04		12749.389	0.611
12378-PeCDD	34.31	J	**1.0005**	**1.0005**	**0**	**4.07E+05**	**1.49**	**Y**	**1.04**	**2.25**	**12749.389**	**0.611**
12367-PeCDD	NotFnd		1.0031						1.04		12749.389	0.611
12389-PeCDD	NotFnd		1.0132						1.04		12749.389	0.611
124679/124689-HxCDD	36.48		0.9553	0.9551	-0.4	6.52E+06	1.27	Y	1.10	39.5	11051.462	0.523
123468-HxCDD	37.14		0.9725	0.9723	-0.4	1.07E+06	1.23	Y	1.10	6.51	11051.462	0.523
123679/123689-HxCDD	37.44		0.9803	0.9801	-0.4	8.82E+06	1.26	Y	1.10	53.5	11051.462	0.523
123469-HxCDD	37.58		0.9842	0.9839	-0.7	5.74E+05	1.36	Y	1.10	3.48	11051.462	0.523
123478-HxCDD	38.21		**1.0004**	**1.0004**	**0**	**6.12E+05**	**1.35**	**Y**	1.09	**3.87**	**11051.462**	**0.531**
123678-HxCDD	38.32		**1.0031**	**1.0032**	**+0.2**	**2.60E+06**	**1.30**	**Y**	1.15	**15.8**	**11051.462**	**0.541**
123467-HxCDD	38.50	J	1.0078	1.0080	+0.5	3.67E+05	1.26	Y	1.10	2.23	11051.462	0.523
123789-HxCDD	38.59		**1.0102**	**1.0104**	**+0.5**	**1.49E+06**	**1.27**	**Y**	1.05	**8.67**	**11051.462**	**0.503**

Lab ID: B5986_18732_DF_003 **Acq'd: 18 Dec 2021 00:20 DTF** **Wt/Vol: 10.02 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-O-6 **UTP: 20-Dec-2021 14:13:07 DTF** **J-level: 0.499 pg/g** **Split: 1** **Checkcode: 313-227-TKV**

Datafile: 211217C19 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

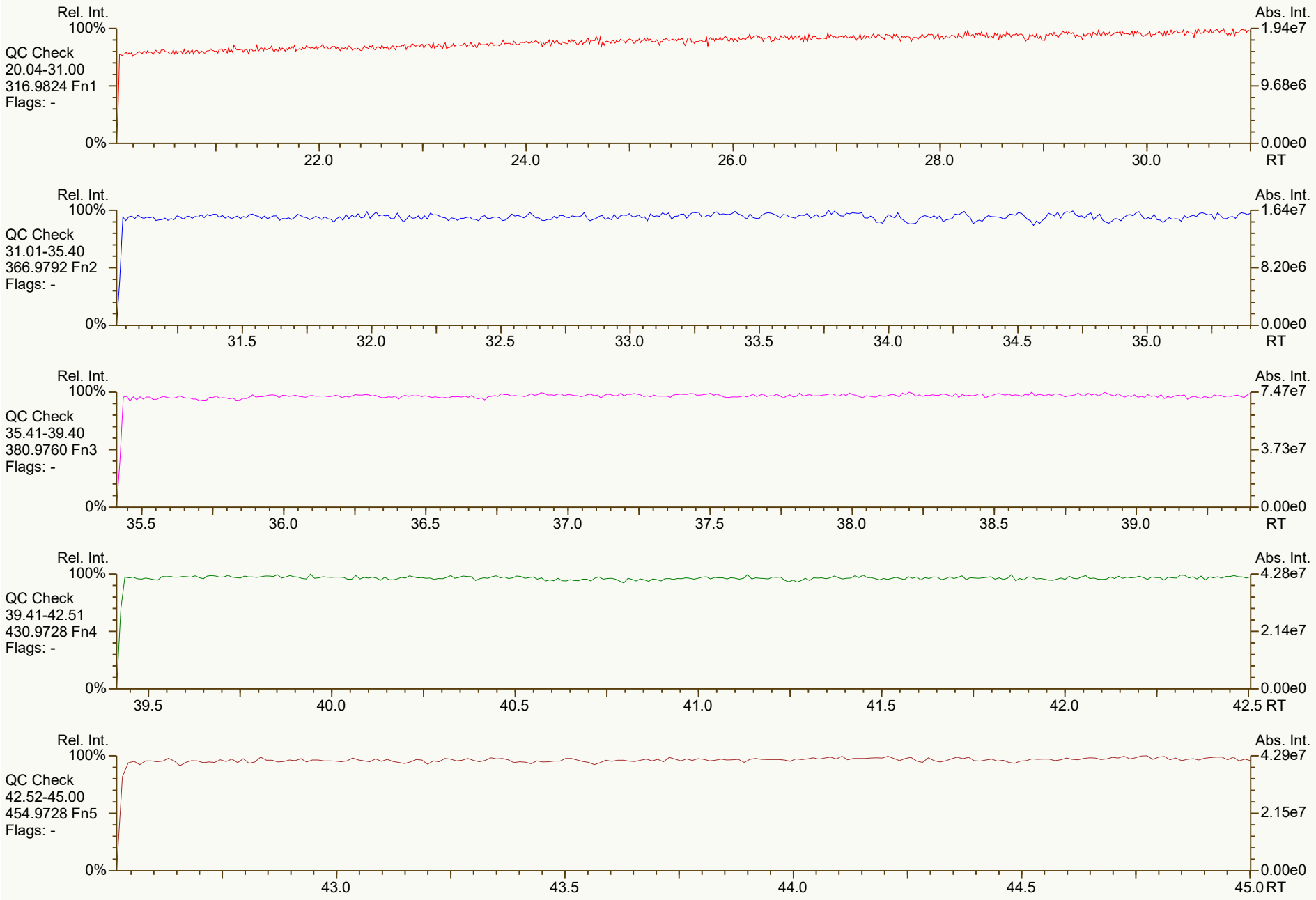
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.53		0.9837	0.9835	-0.5	7.83E+07	1.06	Y	1.06	521	11935.684	0.692
1234678-HpCDD	**41.23**		**1.0004**	**1.0003**	**-0.2**	**6.96E+07**	**1.05**	**Y**	**1.06**	**463**	**11935.684**	**0.692**
OCDD	**44.02**		**1.0003**	**1.0003**	**0**	**5.74E+08**	**0.90**	**Y**	**1.13**	**6,540**	**15524.675**	**2.25**
OCDD-a	44.02		1.0002	1.0002	0	3.46E+07	2.50	Y	0.07	6,170	6301.048	14.3
1368-TCDF	23.60		0.8388	0.8368	-2.8	1.79E+05	0.88	Y	1.08	0.6	5515.915	0.191
1468-TCDF	24.15		0.8578	0.8561	-2.5	5.76E+05	0.84	Y	1.08	1.93	5515.915	0.191
2468-TCDF	24.73		0.8780	0.8767	-1.9	2.11E+06	0.79	Y	1.08	7.07	5515.915	0.191
1346/1246-TCDF	25.12		0.8906	0.8907	+0.2	3.92E+05	0.86	Y	1.08	1.31	5515.915	0.191
1347/1378/1247-TCDF	25.24	EMPC	0.8951	0.8947	-0.6	7.19E+05	0.91	N	1.08	2.41	5515.915	0.191
1348-TCDF	25.49		0.9041	0.9036	-0.8	3.46E+05	0.75	Y	1.08	1.16	5515.915	0.191
1248/1367/1379-TCDF	25.57		0.9084	0.9066	-2.8	1.21E+06	0.81	Y	1.08	4.07	5515.915	0.191
1268-TCDF	25.95		0.9207	0.9200	-1.1	1.14E+06	0.79	Y	1.08	3.84	5515.915	0.191
1467-TCDF	26.08	EMPC	0.9253	0.9247	-0.9	2.38E+05	0.90	N	1.08	0.797	5515.915	0.191
1478-TCDF	26.23		0.9309	0.9300	-1.4	8.99E+05	0.86	Y	1.08	3.02	5515.915	0.191
1369/1237-TCDF	26.59		0.9431	0.9427	-0.6	3.96E+05	0.83	Y	1.08	1.33	5515.915	0.191
2467-TCDF	26.71		0.9472	0.9469	-0.5	3.46E+05	0.76	Y	1.08	1.16	5515.915	0.191
2368-TCDF	26.85		0.9524	0.9519	-0.8	2.00E+06	0.84	Y	1.08	6.71	5515.915	0.191
1238/1234/1678/1469/1236-TCDF	26.95		0.9560	0.9553	-1.1	9.13E+05	0.87	Y	1.08	3.06	5515.915	0.191
1278-TCDF	27.38		0.9710	0.9709	-0.2	6.09E+06	0.82	Y	1.08	20.4	5515.915	0.191
1349-TCDF	NotFnd		0.9752						1.08		5515.915	0.191
1267-TCDF	27.64		0.9802	0.9800	-0.3	5.42E+05	0.84	Y	1.08	1.82	5515.915	0.191
2346/1249-TCDF	27.82	EMPC	0.9863	0.9864	+0.2	1.62E+05	0.90	N	1.08	0.543	5515.915	0.191
2347/1279-TCDF	28.03	EMPC	0.9936	0.9937	+0.2	3.94E+05	1.03	N	1.08	1.32	5515.915	0.191
2348-TCDF	28.12		0.9971	0.9970	-0.2	9.85E+05	0.84	Y	1.08	3.3	5515.915	0.191
2378-TCDF	**28.23**		**1.0007**	**1.0008**	**+0.2**	**1.60E+07**	**0.80**	**Y**	**1.08**	**53.7**	**5515.915**	**0.191**
2367/3467-TCDF	28.58		1.0134	1.0131	-0.5	2.35E+06	0.86	Y	1.08	7.86	5515.915	0.191
1269-TCDF	28.82		1.0219	1.0218	-0.2	3.42E+05	0.85	Y	1.08	1.15	5515.915	0.191
1239-TCDF	NotFnd		1.0309						1.08		5515.915	0.191
1289-TCDF	30.18		1.0689	1.0700	+2.0	1.26E+06	0.87	Y	1.08	4.23	5515.915	0.191
13468/12468-PeCDF	30.16		0.9175	0.9175	0	5.40E+06	1.67	Y	1.02	20.3	3899.469	0.123
13678/13467/12467-PeCDF	31.67		0.9630	0.9633	+0.6	1.08E+06	1.70	Y	1.02	4.06	10083.151	0.319
12368/13478/12478-PeCDF	31.81		0.9675	0.9676	+0.2	4.82E+06	1.56	Y	1.02	18.1	10083.151	0.319
14678-PeCDF	31.91	J	0.9705	0.9708	+0.6	2.92E+05	1.67	Y	1.02	1.1	10083.151	0.319
13479-PeCDF	NotFnd		0.9734						1.02		10083.151	0.319
13469/12479-PeCDF	32.19	J	0.9807	0.9792	-2.9	4.60E+05	1.60	Y	1.02	1.73	10083.151	0.319
12346-PeCDF	NotFnd		0.9848						1.02		10083.151	0.319

Lab ID: B5986_18732_DF_003 **Acq'd: 18 Dec 2021 00:20 DTF** **Wt/Vol: 10.02 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-O-6 **UTP: 20-Dec-2021 14:13:07 DTF** **J-level: 0.499 pg/g** **Split: 1** **Checkcode: 313-227-TKV**

Datafile: 211217C19 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.46		0.9868	0.9874	+1.2	1.67E+06	1.60	Y	1.02	6.29	10083.151	0.319
12347-PeCDF	NotFnd		0.9895						1.02		10083.151	0.319
12348-PeCDF	32.69	J	0.9943	0.9944	+0.2	3.24E+05	1.67	Y	1.02	1.22	10083.151	0.319
12378-PeCDF	**32.89**		**1.0005**	**1.0005**	**0**	**1.04E+06**	**1.63**	**Y**	**1.02**	**3.87**	**10083.151**	**0.315**
12678/12367-PeCDF	33.19		1.0086	1.0095	+1.8	2.29E+06	1.55	Y	1.02	8.59	10083.151	0.319
12379-PeCDF	NotFnd		1.0137						1.02		10083.151	0.319
12679-PeCDF	NotFnd		0.9936						1.02		10083.151	0.319
23467/12369-PeCDF	33.85	J EMPC	0.9970	0.9970	0	3.52E+05	1.27	N	1.02	1.32	10083.151	0.319
23478-PeCDF	**33.99**		**1.0005**	**1.0010**	**+1.0**	**2.09E+06**	**1.54**	**Y**	**1.02**	**7.92**	**10083.151**	**0.323**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		10083.151	0.319
12349-PeCDF	NotFnd		1.0103						1.02		10083.151	0.319
12389-PeCDF	35.04	J EMPC	1.0317	1.0321	+0.8	2.06E+05	1.29	N	1.02	0.774	10083.151	0.319
123468-HxCDF	35.84		0.9634	0.9634	0	2.37E+06	1.20	Y	1.19	9.1	8441.232	0.266
124678/134678-HxCDF	36.03		0.9687	0.9686	-0.2	9.44E+06	1.23	Y	1.19	36.2	8441.232	0.266
134679-HxCDF	NotFnd		0.9748						1.19		8441.232	0.266
124679-HxCDF	36.45	J	0.9800	0.9799	-0.2	4.70E+05	1.23	Y	1.19	1.8	8441.232	0.266
124689-HxCDF	36.67		0.9857	0.9858	+0.2	9.68E+06	1.29	Y	1.19	37.1	8441.232	0.266
123467-HxCDF	37.10	J	0.9973	0.9972	-0.2	6.23E+05	1.33	Y	1.19	2.39	8441.232	0.266
123478-HxCDF	**37.22**		**1.0005**	**1.0005**	**0**	**2.83E+06**	**1.22**	**Y**	**1.27**	**10.5**	**8441.232**	**0.26**
123678-HxCDF	**37.36**		**1.0005**	**1.0004**	**-0.2**	**1.54E+06**	**1.31**	**Y**	**1.15**	**5.6**	**8441.232**	**0.271**
123479-HxCDF	NotFnd		1.0051						1.19		8441.232	0.266
123469-HxCDF	37.69	J EMPC	1.0092	1.0092	0	1.29E+05	1.66	N	1.19	0.496	8441.232	0.266
123679-HxCDF	NotFnd		0.9948						1.19		8441.232	0.266
234678-HxCDF	**38.03**		**1.0004**	**1.0005**	**+0.2**	**1.74E+06**	**1.32**	**Y**	**1.19**	**6.75**	**8441.232**	**0.27**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		8441.232	0.266
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**8441.232**	**0.264**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.95	J	1.0007	1.0009	+0.5	4.00E+05	1.33	Y	1.19	1.53	8441.232	0.266
1234678-HpCDF	**40.27**		**1.0003**	**1.0003**	**0**	**1.71E+07**	**1.04**	**Y**	**1.37**	**70.5**	**7438.48**	**0.221**
1234679-HpCDF	40.53		1.0068	1.0069	+0.2	5.66E+05	1.15	Y	1.34	2.57	7438.48	0.267
1234689-HpCDF	40.68		1.0102	1.0104	+0.5	2.67E+07	1.04	Y	1.34	121	7438.48	0.267
1234789-HpCDF	**41.69**		**1.0003**	**1.0002**	**-0.3**	**1.29E+06**	**1.13**	**Y**	**1.31**	**6.52**	**7438.48**	**0.322**
OCDF	**44.20**		**1.0003**	**1.0003**	**0**	**2.44E+07**	**0.91**	**Y**	**1.07**	**213**	**8749.015**	**0.998**
OCDF-a	44.20		1.0002	1.0002	0	1.60E+06	2.51	Y	0.07	225	5456.299	10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20.04-31.00
316.9824 Fn1
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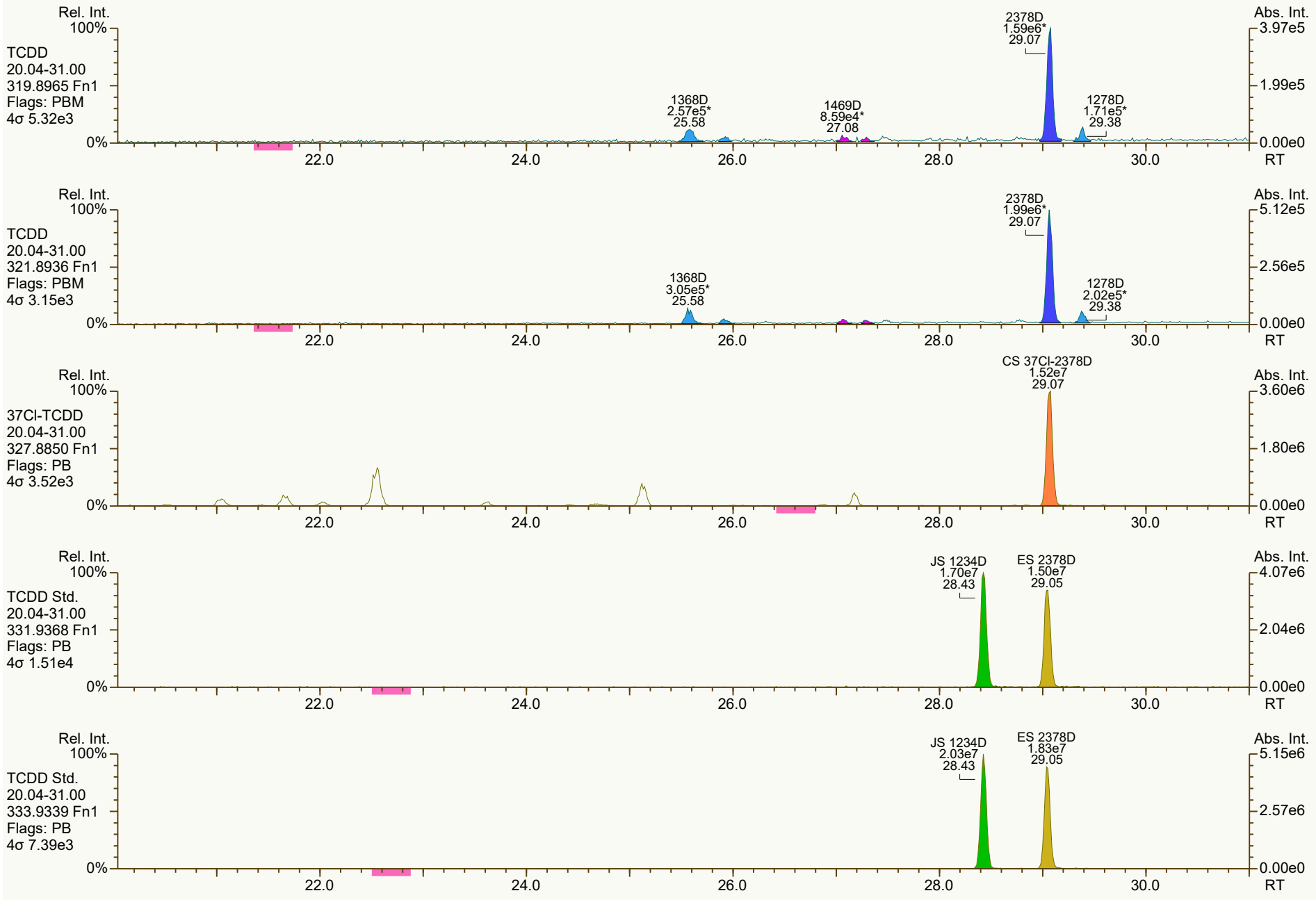
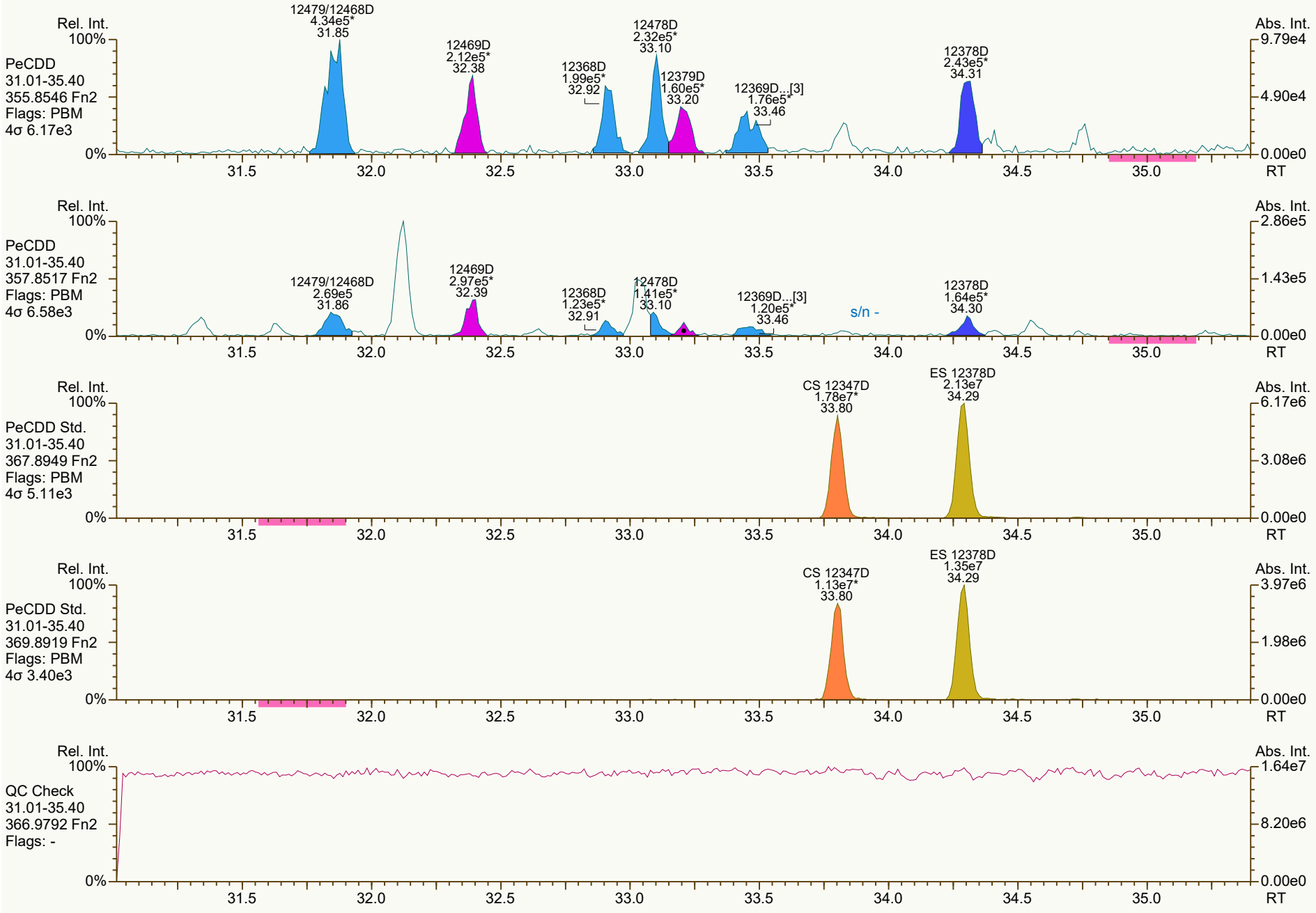
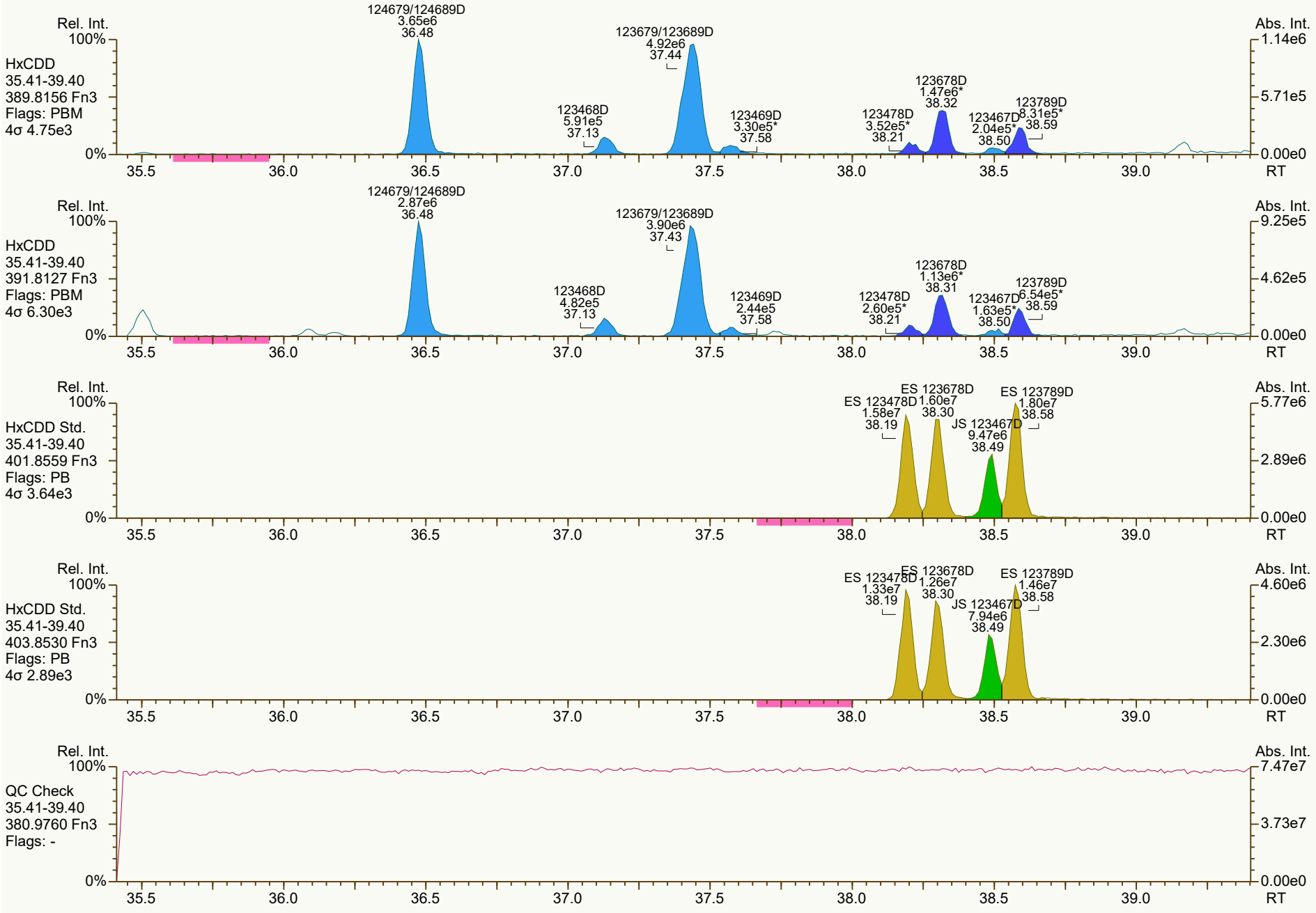
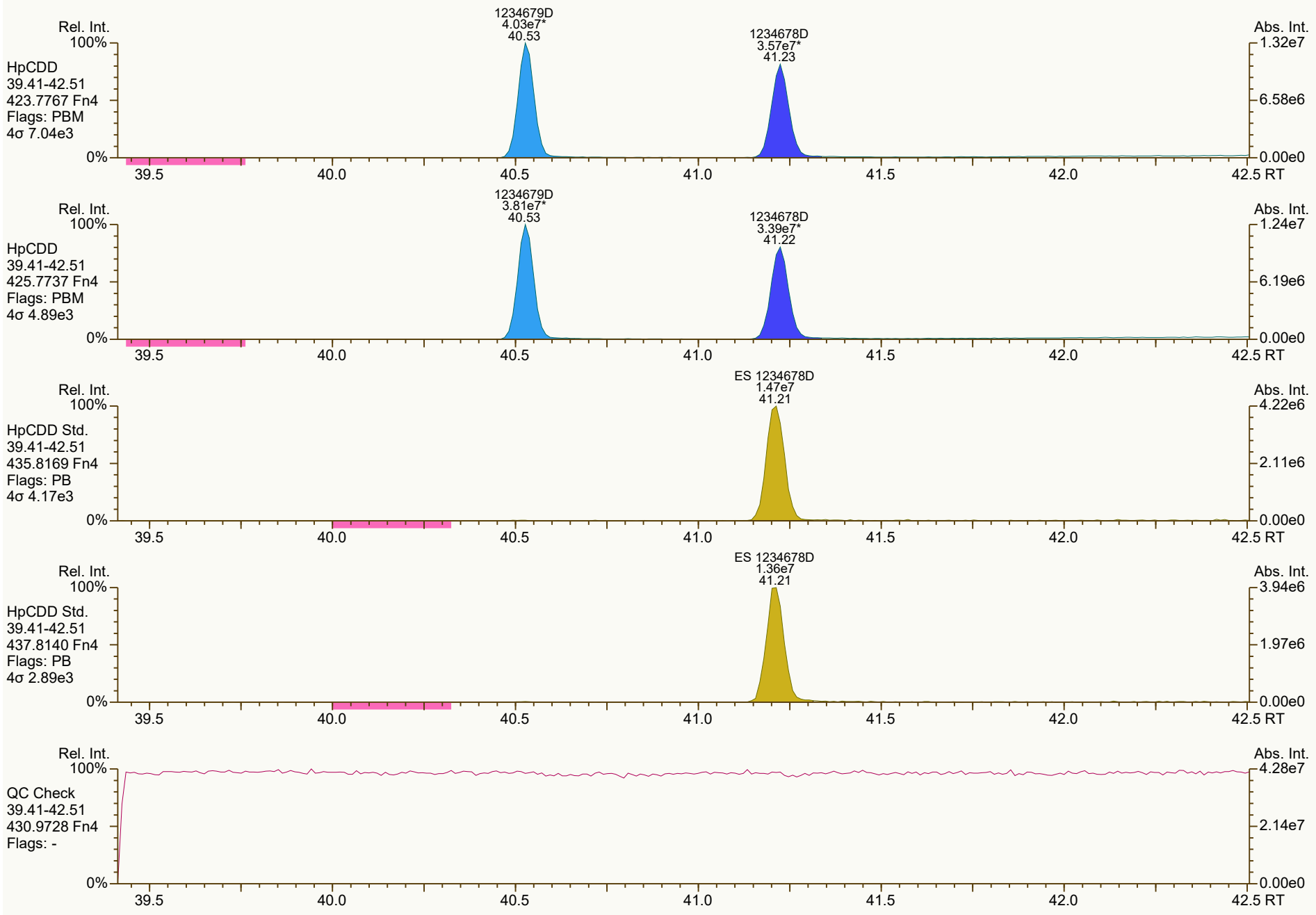
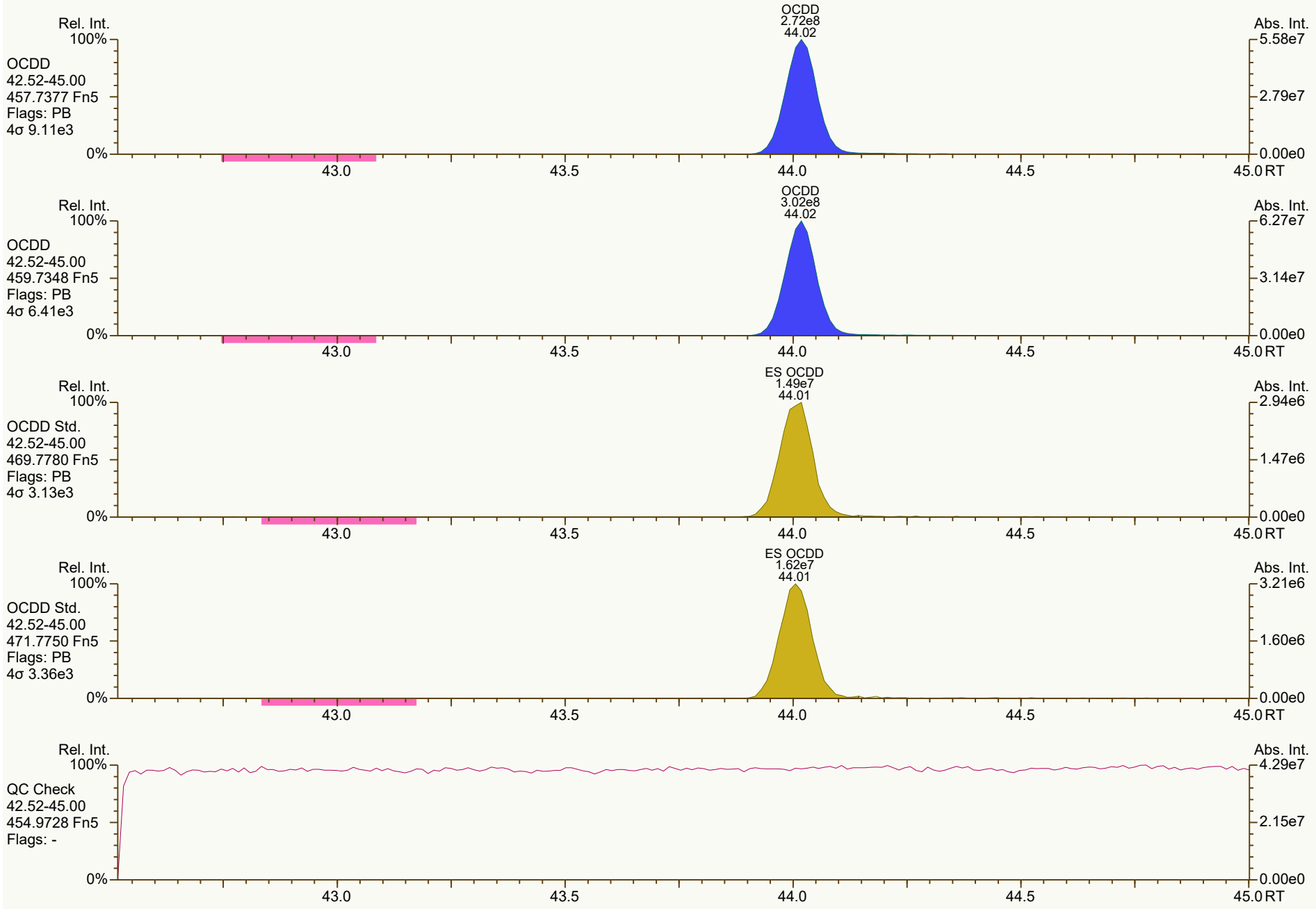
0%
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
1.94e7
9.68e6
0.00e0
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Abs. Int.
1.64e7
8.20e6
0.00e0
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Abs. Int.
7.47e7
3.73e7
0.00e0
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.28e7
2.14e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
4.29e7
2.15e7
0.00e0


Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: PBM
4σ 5.32e3
0%
2378D
1.59e6*
29.07
1368D
2.57e5*
25.58
1469D
8.59e4*
27.08
1278D
1.71e5*
29.38
Abs. Int.
3.97e5
1.99e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: PBM
4σ 3.15e3
0%
2378D
1.99e6*
29.07
1368D
3.05e5*
25.58
1278D
2.02e5*
29.38
Abs. Int.
5.12e5
2.56e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PB
4σ 3.52e3
0%
CS 37Cl-2378D
1.52e7
29.07
Abs. Int.
3.60e6
1.80e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PB
4σ 1.51e4
0%
JS 1234D
1.70e7
28.43
ES 2378D
1.50e7
29.05
Abs. Int.
4.07e6
2.04e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PB
4σ 7.39e3
0%
JS 1234D
2.03e7
28.43
ES 2378D
1.83e7
29.05
Abs. Int.
5.15e6
2.57e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

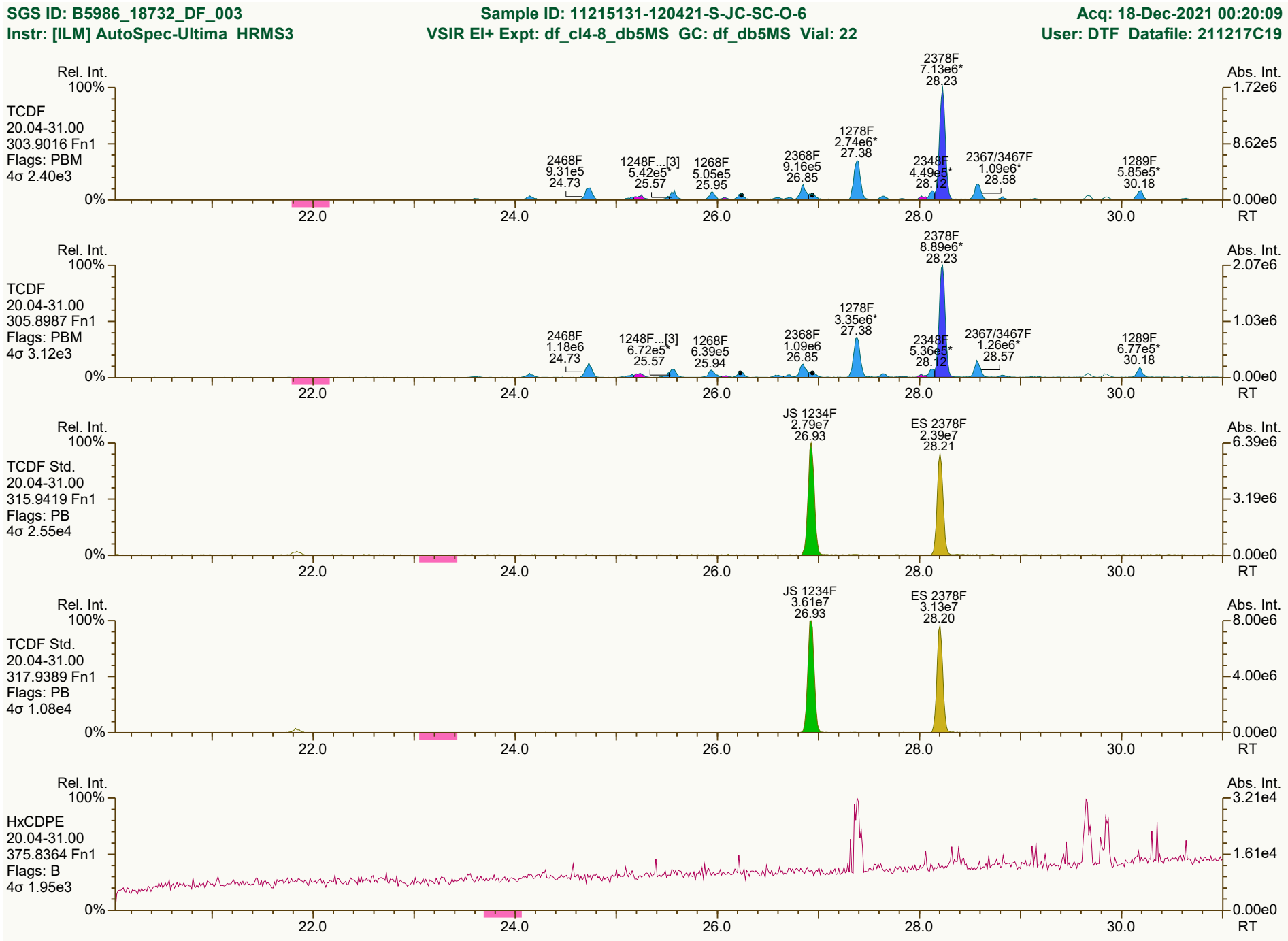

Rel. Int.
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PBM
4σ 6.17e3
0%
12479/12468D
4.34e5*
31.85
12469D
2.12e5*
32.38
12368D
1.99e5*
32.92
12478D
2.32e5*
33.10
12379D
1.60e5*
33.20
12369D...[3]
1.76e5*
33.46
12378D
2.43e5*
34.31
Abs. Int.
9.79e4
4.90e4
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PBM
4σ 6.58e3
0%
12479/12468D
2.69e5
31.86
12469D
2.97e5*
32.39
12368D
1.23e5*
32.91
12478D
1.41e5*
33.10
12369D...[3]
1.20e5*
33.46
s/n -
12378D
1.64e5*
34.30
Abs. Int.
2.86e5
1.43e5
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PBM
4σ 5.11e3
0%
CS 12347D
1.78e7*
33.80
ES 12378D
2.13e7
34.29
Abs. Int.
6.17e6
3.08e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PBM
4σ 3.40e3
0%
CS 12347D
1.13e7*
33.80
ES 12378D
1.35e7
34.29
Abs. Int.
3.97e6
1.98e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.64e7
8.20e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PBM
4σ 4.75e3
0%
124679/124689D
3.65e6
36.48
123679/123689D
4.92e6
37.44
123468D
5.91e5
37.13
123469D
3.30e5*
37.58
123478D
3.52e5*
38.21
123678D
1.47e6*
38.32
123467D
2.04e5*
38.50
123789D
8.31e5*
38.59
Abs. Int.
1.14e6
5.71e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PBM
4σ 6.30e3
0%
124679/124689D
2.87e6
36.48
123679/123689D
3.90e6
37.43
123468D
4.82e5
37.13
123469D
2.44e5
37.58
123478D
2.60e5*
38.21
123678D
1.13e6*
38.31
123467D
1.63e5*
38.50
123789D
6.54e5*
38.59
Abs. Int.
9.25e5
4.62e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PB
4σ 3.64e3
0%
ES 123478D
1.58e7
38.19
ES 123678D
1.60e7
38.30
JS 123467D
9.47e6
38.49
ES 123789D
1.80e7
38.58
Abs. Int.
5.77e6
2.89e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PB
4σ 2.89e3
0%
ES 123478D
1.33e7
38.19
ES 123678D
1.26e7
38.30
JS 123467D
7.94e6
38.49
ES 123789D
1.46e7
38.58
Abs. Int.
4.60e6
2.30e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
Abs. Int.
7.47e7
3.73e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT


Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PBM
4σ 7.04e3
0%
1234679D
4.03e7*
40.53
1234678D
3.57e7*
41.23
Abs. Int.
1.32e7
6.58e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PBM
4σ 4.89e3
0%
1234679D
3.81e7*
40.53
1234678D
3.39e7*
41.22
Abs. Int.
1.24e7
6.19e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PB
4σ 4.17e3
0%
ES 1234678D
1.47e7
41.21
Abs. Int.
4.22e6
2.11e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PB
4σ 2.89e3
0%
ES 1234678D
1.36e7
41.21
Abs. Int.
3.94e6
1.97e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.28e7
2.14e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT

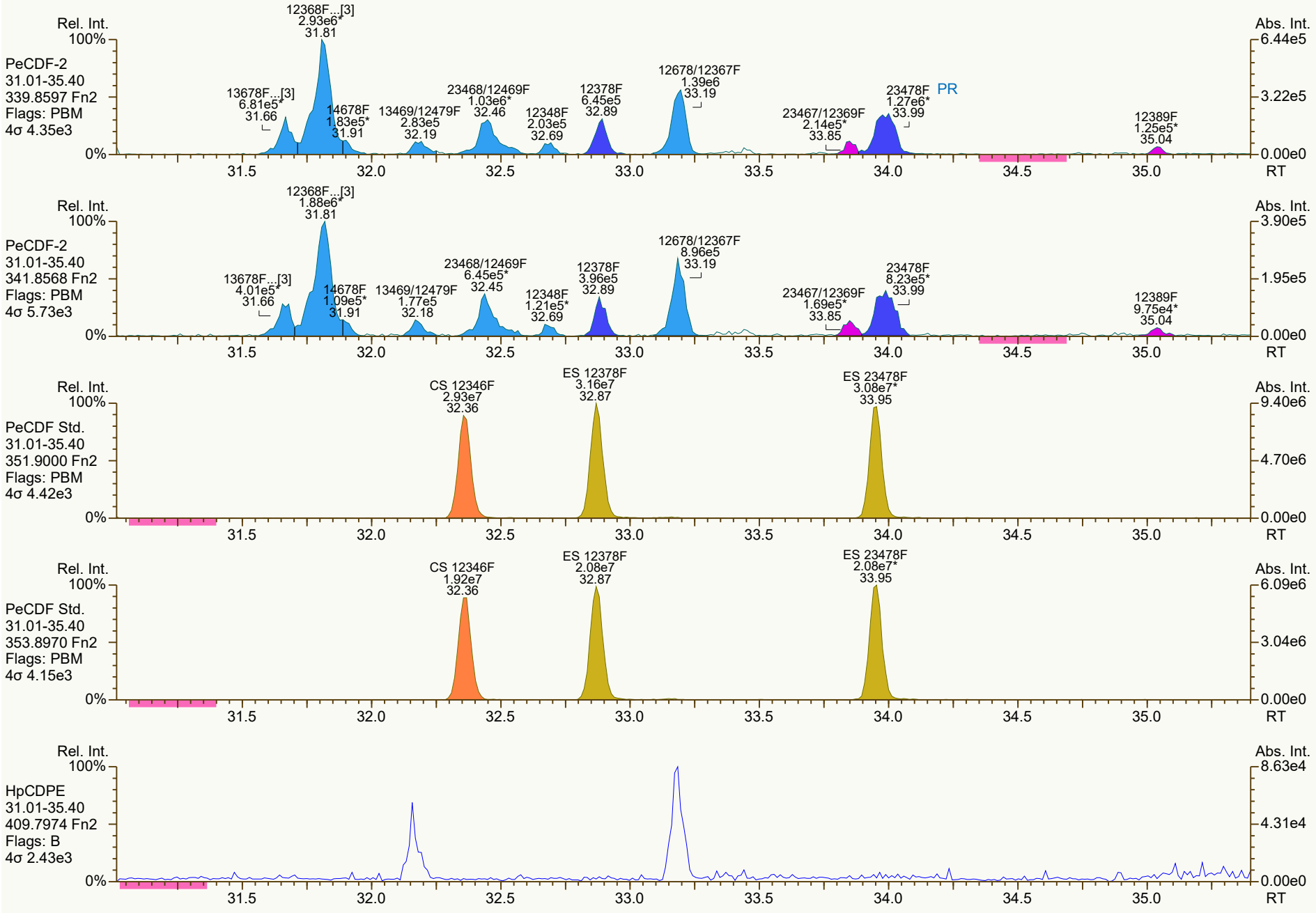

Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PB
4σ 9.11e3
0%
OCDD
2.72e8
44.02
Abs. Int.
5.58e7
2.79e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 6.41e3
0%
OCDD
3.02e8
44.02
Abs. Int.
6.27e7
3.14e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 3.13e3
0%
ES OCDD
1.49e7
44.01
Abs. Int.
2.94e6
1.47e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 3.36e3
0%
ES OCDD
1.62e7
44.01
Abs. Int.
3.21e6
1.60e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.29e7
2.15e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

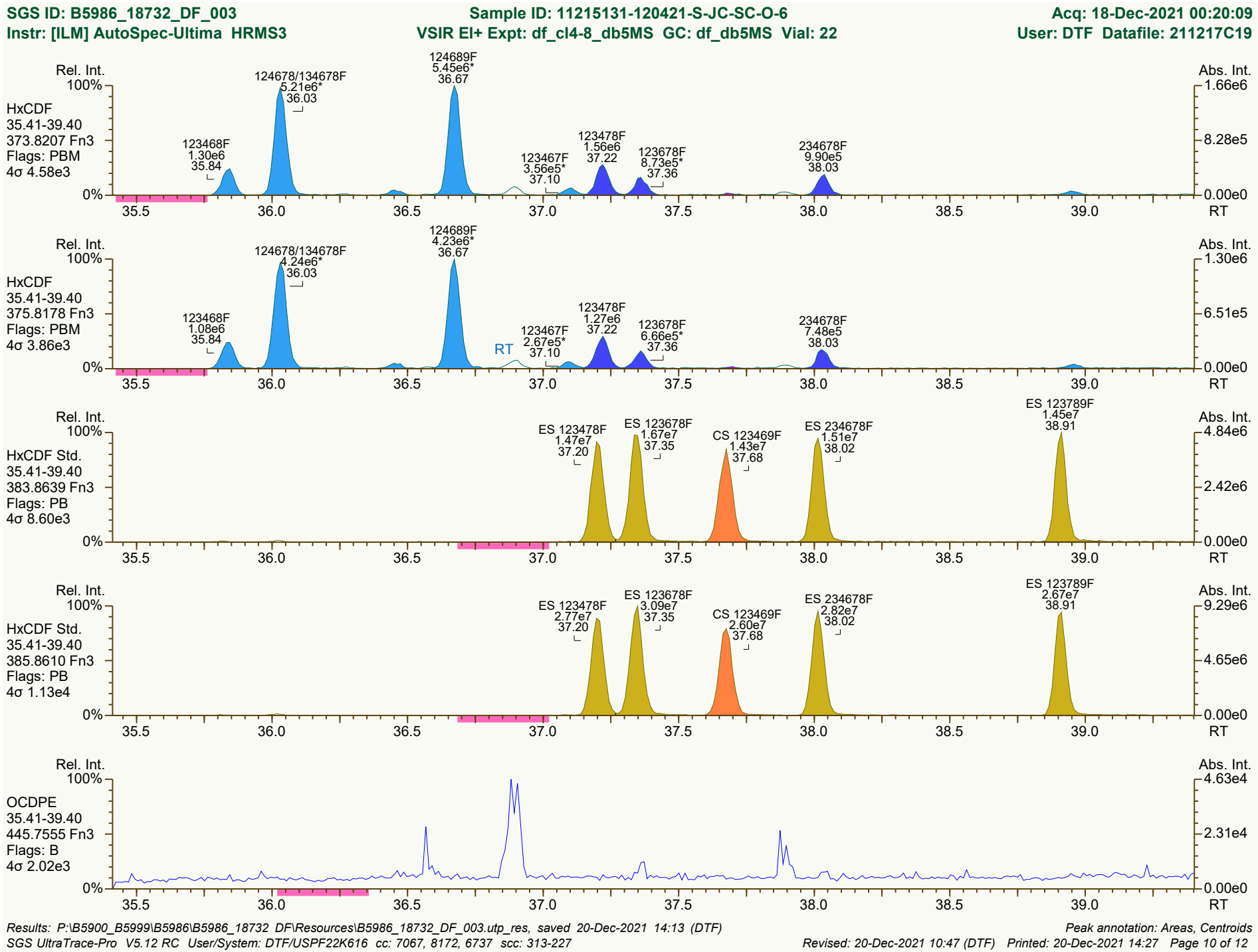
SGS ID: B5986_18732_DF_003 | Sample ID: 11215131-120421-S-JC-SC-O-6 | Acq: 18-Dec-2021 00:20:09
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22 | User: DTF Datafile: 211217C19

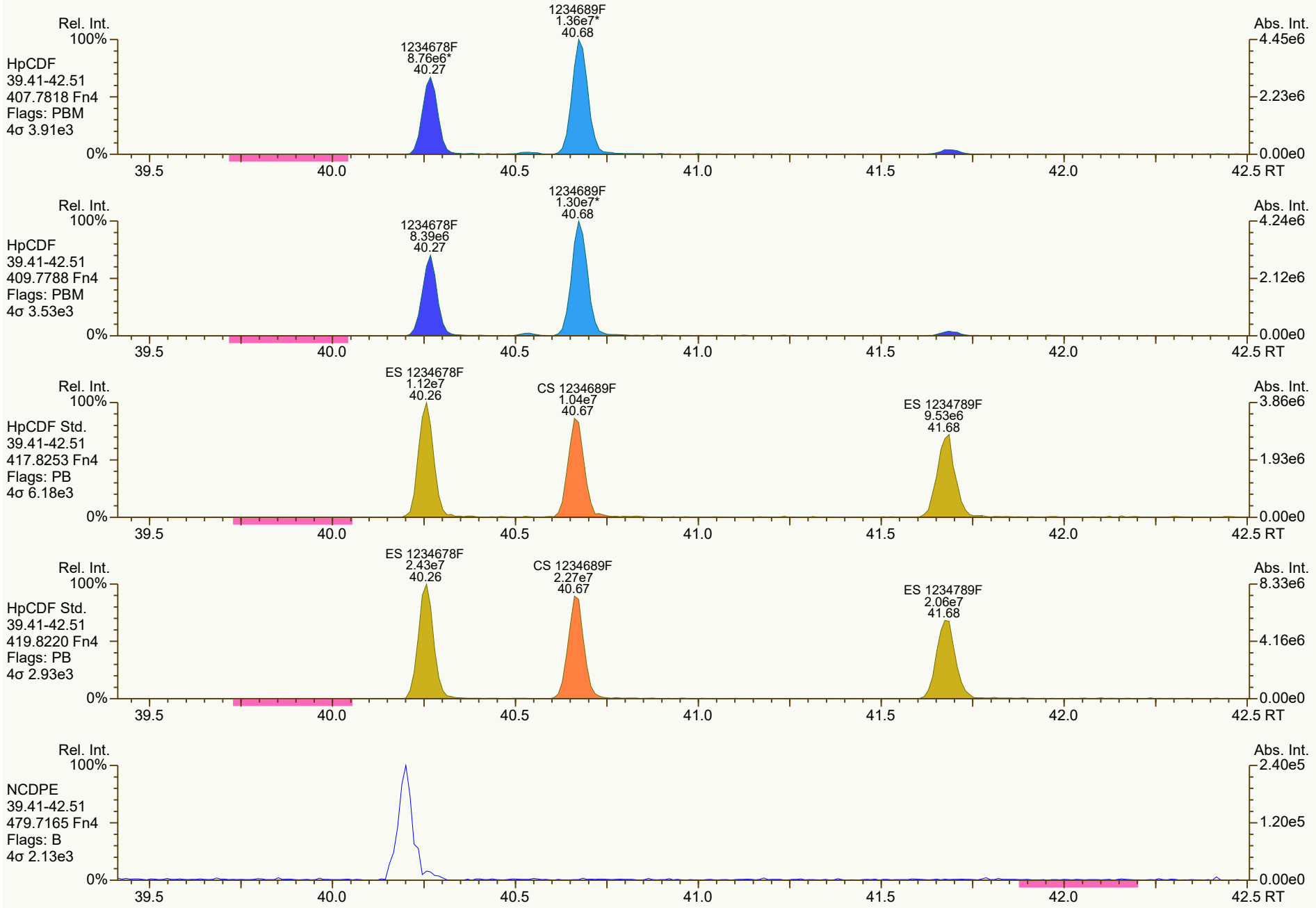


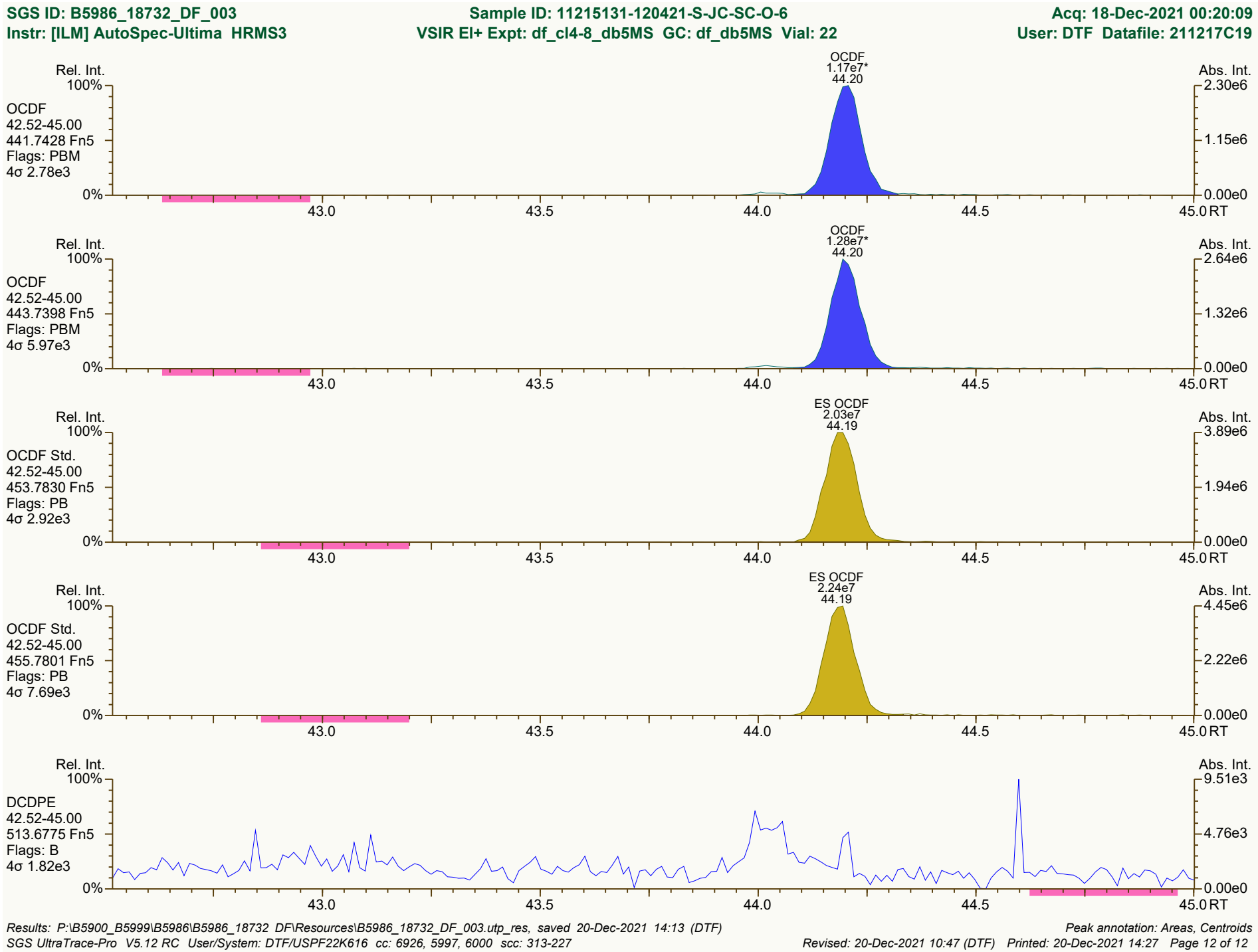
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_003.utp_res, saved 20-Dec-2021 14:13 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 8373, 4619, 3855 scc: 313-227 | Revised: 20-Dec-2021 10:45 (DTF) Printed: 20-Dec-2021 14:26 Page 7 of 12


Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
339.8597 Fn1
Flags: PBM
4σ 1.51e3
13468/12468F
3.38e6*
30.16
Abs. Int.
8.86e5
4.43e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
341.8568 Fn1
Flags: PBM
4σ 2.39e3
13468/12468F
2.02e6*
30.16
Abs. Int.
5.43e5
2.71e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
Abs. Int.
1.94e7
9.68e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PBM
4σ 4.35e3
0%
12368F...[3] 2.93e6* 31.81
13678F...[3] 6.81e5* 31.66
14678F 1.83e5* 31.91
13469/12479F 2.83e5 32.19
23468/12469F 1.03e6* 32.46
12348F 2.03e5 32.69
12378F 6.45e5 32.89
12678/12367F 1.39e6 33.19
23467/12369F 2.14e5* 33.85
23478F 1.27e6* 33.99 PR
12389F 1.25e5* 35.04
Abs. Int.
6.44e5
3.22e5
0.00e0
RT
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PBM
4σ 5.73e3
0%
12368F...[3] 1.88e6* 31.81
13678F...[3] 4.01e5* 31.66
14678F 1.09e5* 31.91
13469/12479F 1.77e5 32.18
23468/12469F 6.45e5* 32.45
12348F 1.21e5* 32.69
12378F 3.96e5 32.89
12678/12367F 8.96e5 33.19
23467/12369F 1.69e5* 33.85
23478F 8.23e5* 33.99
12389F 9.75e4* 35.04
Abs. Int.
3.90e5
1.95e5
0.00e0
RT
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PBM
4σ 4.42e3
0%
CS 12346F 2.93e7 32.36
ES 12378F 3.16e7 32.87
ES 23478F 3.08e7* 33.95
Abs. Int.
9.40e6
4.70e6
0.00e0
RT
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PBM
4σ 4.15e3
0%
CS 12346F 1.92e7 32.36
ES 12378F 2.08e7 32.87
ES 23478F 2.08e7* 33.95
Abs. Int.
6.09e6
3.04e6
0.00e0
RT
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 2.43e3
0%
Abs. Int.
8.63e4
4.31e4
0.00e0
RT
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0


SGS ID: B5986_18732_DF_003
Sample ID: 11215131-120421-S-JC-SC-O-6
Acq: 18-Dec-2021 00:20:09
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22
User: DTF Datafile: 211217C19
Rel. Int.
Abs. Int.
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PBM
4σ 4.58e3
123468F 1.30e6 35.84
124678/134678F 5.21e6* 36.03
124689F 5.45e6* 36.67
123467F 3.56e5* 37.10
123478F 1.56e6 37.22
123678F 8.73e5* 37.36
234678F 9.90e5 38.03
HxCDF
35.41-39.40
375.8178 Fn3
Flags: PBM
4σ 3.86e3
123468F 1.08e6 35.84
124678/134678F 4.24e6* 36.03
124689F 4.23e6* 36.67
RT
123467F 2.67e5* 37.10
123478F 1.27e6 37.22
123678F 6.66e5* 37.36
234678F 7.48e5 38.03
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PB
4σ 8.60e3
ES 123478F 1.47e7 37.20
ES 123678F 1.67e7 37.35
CS 123469F 1.43e7 37.68
ES 234678F 1.51e7 38.02
ES 123789F 1.45e7 38.91
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PB
4σ 1.13e4
ES 123478F 2.77e7 37.20
ES 123678F 3.09e7 37.35
CS 123469F 2.60e7 37.68
ES 234678F 2.82e7 38.02
ES 123789F 2.67e7 38.91
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 2.02e3
RT


Rel. Int.
100%
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 3.91e3
1234678F
8.76e6*
40.27
1234689F
1.36e7*
40.68
Abs. Int.
4.45e6
2.23e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 3.53e3
1234678F
8.39e6
40.27
1234689F
1.30e7*
40.68
Abs. Int.
4.24e6
2.12e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PB
4σ 6.18e3
ES 1234678F
1.12e7
40.26
CS 1234689F
1.04e7
40.67
ES 1234789F
9.53e6
41.68
Abs. Int.
3.86e6
1.93e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PB
4σ 2.93e3
ES 1234678F
2.43e7
40.26
CS 1234689F
2.27e7
40.67
ES 1234789F
2.06e7
41.68
Abs. Int.
8.33e6
4.16e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 2.13e3
Abs. Int.
2.40e5
1.20e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


SGS ID: B5986_18732_DF_003
Sample ID: 11215131-120421-S-JC-SC-O-6
Acq: 18-Dec-2021 00:20:09
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 22
User: DTF Datafile: 211217C19
Rel. Int.
Abs. Int.
OCDF
1.17e7*
44.20
OCDF
42.52-45.00
441.7428 Fn5
Flags: PBM
4σ 2.78e3
OCDF
1.28e7*
44.20
OCDF
42.52-45.00
443.7398 Fn5
Flags: PBM
4σ 5.97e3
ES OCDF
2.03e7
44.19
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PB
4σ 2.92e3
ES OCDF
2.24e7
44.19
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PB
4σ 7.69e3
DCDPE
42.52-45.00
513.6775 Fn5
Flags: B
4σ 1.82e3
RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_003.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6926, 5997, 6000 scc: 313-227
Revised: 20-Dec-2021 10:47 (DTF) Printed: 20-Dec-2021 14:27 Page 12 of 12

Lab ID: B5986_18732_DF_004 **Acq'd:** 18 Dec 2021 01:06 DTF **Wt/Vol:** 10.14 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-B-5 **UTP:** 20-Dec-2021 14:13:07 DTF **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 875-443-QCW

Datafile: 211217C20 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.05		1.0008	1.0008	0	5.78E+06	0.81	Y	1.18	37.4	8596.758	0.539
12378-PeCDD	34.29	J EMPC	1.0005	1.0005	0	9.10E+04	1.94	N	1.04	0.607	6515.226	0.363
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	5753.994	0.334
123678-HxCDD	38.30	J EMPC	1.0031	1.0032	+0.2	1.20E+05	1.63	N	1.15	0.892	5753.994	0.327
123789-HxCDD	38.57	J	1.0102	1.0102	0	2.09E+05	1.31	Y	1.05	1.54	5753.994	0.318
1234678-HpCDD	41.22		1.0004	1.0003	-0.2	3.98E+06	1.09	Y	1.06	30.5	8704.468	0.582
OCDD	44.01		1.0003	1.0003	0	3.02E+07	0.91	Y	1.13	507	11183.607	2.2
2378-TCDF	28.21		1.0007	1.0008	+0.2	2.50E+07	0.83	Y	1.08	104	5566.748	0.233
12378-PeCDF	32.87		1.0005	1.0005	0	9.41E+05	1.53	Y	1.02	4.03	7052.612	0.266
23478-PeCDF	33.96		1.0005	1.0007	+0.4	6.89E+05	1.56	Y	1.02	3.01	7052.612	0.245
123478-HxCDF	37.20		1.0005	1.0005	0	1.49E+06	1.23	Y	1.27	6.6	5891.735	0.214
123678-HxCDF	37.35	J	1.0005	1.0005	0	3.73E+05	1.30	Y	1.15	1.54	5891.735	0.2
234678-HxCDF	38.02	J	1.0004	1.0005	+0.2	1.10E+05	1.35	Y	1.19	0.497	5891.735	0.224
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	5891.735	0.224
1234678-HpCDF	40.26		1.0003	1.0003	0	7.27E+05	1.05	Y	1.37	3.2	6671.96	0.222
1234789-HpCDF	41.68	J	1.0003	1.0002	-0.3	1.32E+05	1.09	Y	1.31	0.817	6671.96	0.369
OCDF	44.20		1.0003	1.0002	-0.3	7.86E+05	0.88	Y	1.07	9.69	6088.427	1

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.02	1.0215	1.0217	+0.3	2.57E+07	0.81	Y	1.05	88.9
ES 12378-PeCDD	34.28	1.2040	1.2065	+5.1	2.85E+07	1.63	Y	0.88	117
ES 123478-HxCDD	38.18	0.9925	0.9924	-0.2	2.37E+07	1.26	Y	0.97	93.6
ES 123678-HxCDD	38.29	0.9953	0.9952	-0.2	2.32E+07	1.24	Y	0.94	94.1
ES 123789-HxCDD	38.56	1.0024	1.0023	-0.2	2.57E+07	1.27	Y	1.09	90
ES 1234678-HpCDD	41.21	1.0697	1.0710	+3.2	2.43E+07	1.08	Y	0.91	102
ES OCDD	44.00	1.1413	1.1436	+6.1	2.08E+07	0.90	Y	0.62	63.9
ES 2378-TCDF	28.19	1.0469	1.0475	+1.0	4.40E+07	0.78	Y	1.06	85.3
ES 12378-PeCDF	32.85	1.2181	1.2211	+5.9	4.50E+07	1.51	Y	0.91	102
ES 23478-PeCDF	33.94	1.2578	1.2613	+7.1	4.43E+07	1.51	Y	0.88	103
ES 123478-HxCDF	37.19	0.9670	0.9665	-1.1	3.51E+07	0.54	Y	1.20	112
ES 123678-HxCDF	37.33	0.9708	0.9702	-1.3	4.16E+07	0.55	Y	1.35	118
ES 234678-HxCDF	38.00	0.9881	0.9877	-0.9	3.67E+07	0.53	Y	1.24	113
ES 123789-HxCDF	38.90	1.0108	1.0110	+0.5	3.30E+07	0.54	Y	1.16	109
ES 1234678-HpCDF	40.24	1.0452	1.0460	+1.9	3.27E+07	0.47	Y	0.97	130
ES 1234789-HpCDF	41.67	1.0818	1.0831	+3.3	2.44E+07	0.45	Y	0.85	110
ES OCDF	44.19	1.1461	1.1486	+6.6	2.98E+07	0.90	Y	0.81	70.8

Lab ID: B5986_18732_DF_004 **Acq'd:** 18 Dec 2021 01:06 DTF **Wt/Vol:** 10.14 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-B-5 **UTP:** 20-Dec-2021 14:13:07 DTF **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 875-443-QCW

Datafile: 211217C20 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.41		-	-	-	2.77E+07	0.82	Y	-	-	
JS 1234-TCDF	26.91		-	-	-	4.86E+07	0.75	Y	-	-	
JS 123467-HxCDD	38.47		-	-	-	1.30E+07	1.28	Y	-	-	
CS 37Cl-2378-TCDD	29.05		1.0222	1.0225	+0.5	1.29E+07	n/a	-	1.20	96.8	
CS 12347-PeCDD	33.79		1.1870	1.1893	+4.7	2.60E+07	1.60	Y	0.75	125	
CS 12346-PeCDF	32.35		1.1994	1.2022	+5.4	4.49E+07	1.52	Y	0.85	109	
CS 123469-HxCDF	37.66		0.9793	0.9789	-0.9	3.79E+07	0.53	Y	1.12	130	
CS 1234689-HpCDF	40.66	V	1.0556	1.0567	+2.7	3.13E+07	0.47	Y	0.89	135	
~~SS 37Cl-2378-TCDD~~	~~29.05~~		~~1.0222~~	~~1.0225~~	~~+0.5~~	~~1.29E+07~~	~~n/a~~		~~1.15~~	~~109~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.79~~		~~1.1870~~	~~1.1893~~	~~+4.7~~	~~2.60E+07~~	~~1.60~~	~~Y~~	~~0.86~~	~~106~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.35~~		~~1.1994~~	~~1.2022~~	~~+5.4~~	~~4.49E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~107~~	
~~SS 123469-HxCDF~~	~~37.66~~		~~0.9793~~	~~0.9789~~	~~-0.9~~	~~3.79E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~110~~	
~~SS 1234689-HpCDF~~	~~40.66~~		~~1.0556~~	~~1.0567~~	~~+2.7~~	~~3.13E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~104~~	

Totals	Conc	EMPC
Total TCDD	45.3	45.3
Total PeCDD	4.82	5.43
Total HxCDD	29.7	30.6
Total HpCDD	91.7	91.7
Total Tetra-Octa Dioxins	679	680
Total TCDF	198	208
Total PeCDF	10.5	10.5
Total HxCDF	11	11.4
Total HpCDF	6.66	6.66
Total Tetra-Octa Furans	236	247
Total Tetra-Octa Dioxins & Furans	915	927

Lab ID: B5986_18732_DF_004 **Acq'd: 18 Dec 2021 01:06 DTF** **Wt/Vol: 10.14 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-B-5 **UTP: 20-Dec-2021 14:13:07 DTF** **J-level: 0.493 pg/g** **Split: 1** **Checkcode: 875-443-QCW**

Datafile: 211217C20 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8819						1.18		8596.758	0.539
1379-TCDD	NotFnd		0.8935						1.18		8596.758	0.539
1369-TCDD	NotFnd		0.9073						1.18		8596.758	0.539
1469-TCDD	27.05		0.9329	0.9320	-1.5	6.96E+05	0.85	Y	1.18	4.5	8596.758	0.539
1247/1246/1248/1249-TCDD	NotFnd		0.9407						1.18		8596.758	0.539
1378-TCDD	NotFnd		0.9466						1.18		8596.758	0.539
1268-TCDD	NotFnd		0.9531						1.18		8596.758	0.539
1478-TCDD	NotFnd		0.9610						1.18		8596.758	0.539
1279-TCDD	NotFnd		0.9668						1.18		8596.758	0.539
1234/1269-TCDD	NotFnd		0.9783						1.18		8596.758	0.539
1236-TCDD	NotFnd		0.9830						1.18		8596.758	0.539
1237/1238-TCDD	NotFnd		0.9913						1.18		8596.758	0.539
1239-TCDD	NotFnd		0.9959						1.18		8596.758	0.539
2378-TCDD	**29.05**		**1.0008**	1.0008	**0**	5.78E+06	0.81	Y	**1.18**	**37.4**	**8596.758**	**0.539**
1278-TCDD	29.36		1.0115	1.0117	+0.4	5.33E+05	0.79	Y	1.18	3.45	8596.758	0.539
1267-TCDD	NotFnd		1.0160						1.18		8596.758	0.539
1289-TCDD	NotFnd		1.0331						1.18		8596.758	0.539
12479/12468-PeCDD	31.84	J	0.9295	0.9289	-1.1	1.47E+05	1.32	Y	1.04	0.983	6515.226	0.363
12469-PeCDD	32.37		0.9448	0.9444	-0.8	3.99E+05	1.38	Y	1.04	2.66	6515.226	0.363
12368-PeCDD	NotFnd		0.9602						1.04		6515.226	0.363
12478-PeCDD	NotFnd		0.9656						1.04		6515.226	0.363
12379-PeCDD	NotFnd		0.9686						1.04		6515.226	0.363
12369/12467/12489-PeCDD	33.45	J	0.9760	0.9759	-0.2	1.76E+05	1.48	Y	1.04	1.18	6515.226	0.363
12346/12347-PeCDD	NotFnd		0.9866						1.04		6515.226	0.363
12378-PeCDD	34.29	J EMPC	**1.0005**	**1.0005**	**0**	**9.10E+04**	**1.94**	**N**	**1.04**	**0.607**	**6515.226**	**0.363**
12367-PeCDD	NotFnd		1.0031						1.04		6515.226	0.363
12389-PeCDD	NotFnd		1.0132						1.04		6515.226	0.363
124679/124689-HxCDD	36.46		0.9553	0.9550	-0.7	2.98E+06	1.34	Y	1.10	22.2	5753.994	0.326
123468-HxCDD	NotFnd		0.9725						1.10		5753.994	0.326
123679/123689-HxCDD	37.42		0.9803	0.9800	-0.7	8.00E+05	1.27	Y	1.10	5.96	5753.994	0.326
123469-HxCDD	NotFnd		0.9842						1.10		5753.994	0.326
123478-HxCDD	NotFnd		**1.0004**						1.09		**5753.994**	**0.334**
123678-HxCDD	38.30	J EMPC	**1.0031**	**1.0032**	**+0.2**	**1.20E+05**	**1.63**	**N**	1.15	**0.892**	**5753.994**	**0.327**
123467-HxCDD	NotFnd		1.0078						1.10		5753.994	0.326
123789-HxCDD	38.57	J	**1.0102**	**1.0102**	**0**	**2.09E+05**	**1.31**	**Y**	1.05	**1.54**	**5753.994**	**0.318**

Lab ID: B5986_18732_DF_004 **Acq'd:** 18 Dec 2021 01:06 DTF **Wt/Vol:** 10.14 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-B-5 **UTP:** 20-Dec-2021 14:13:07 DTF **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 875-443-QCW

Datafile: 211217C20 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

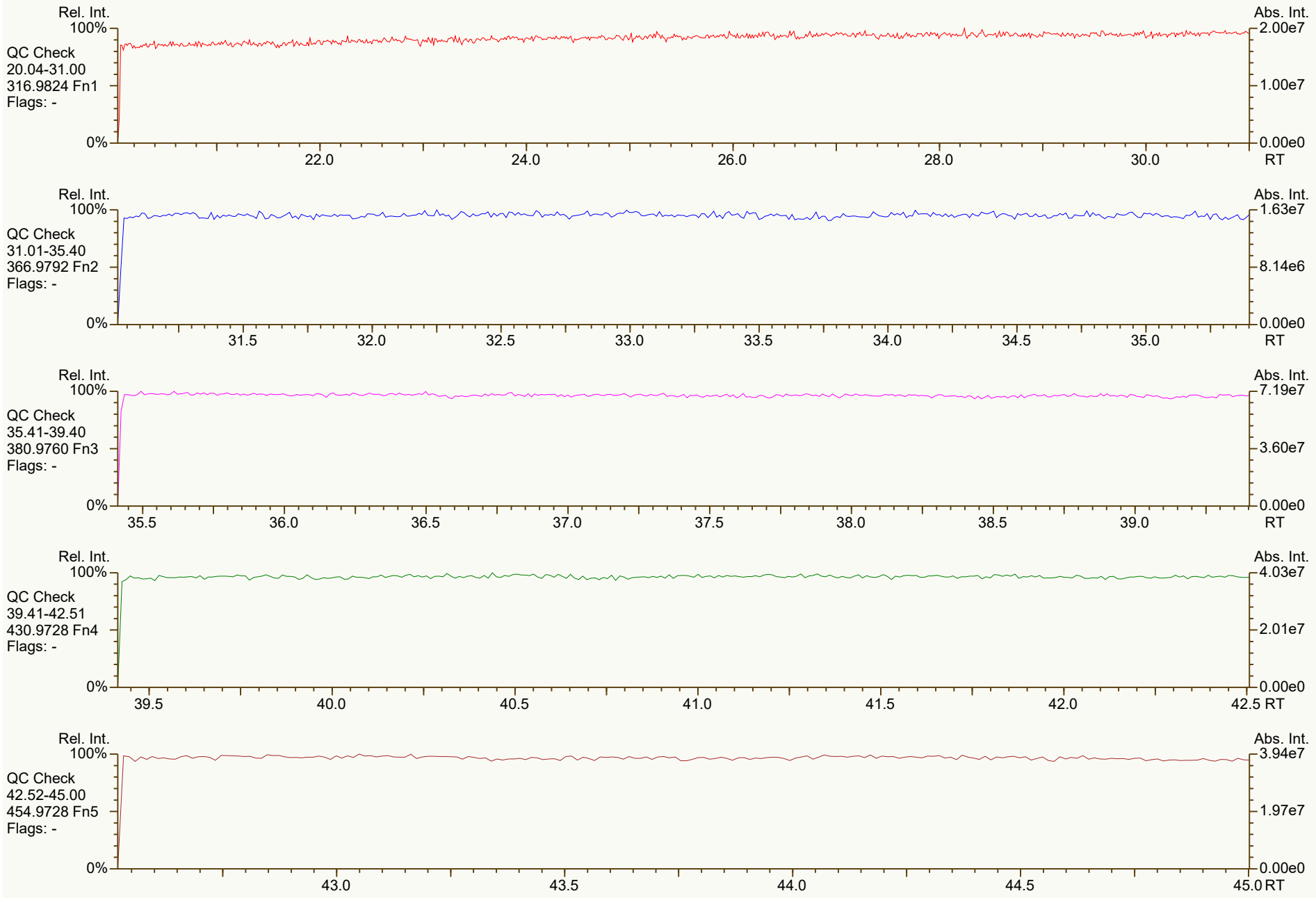
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.52		0.9837	0.9834	-0.7	8.00E+06	1.03	Y	1.06	61.3	8704.468	0.582
1234678-HpCDD	**41.22**		**1.0004**	**1.0003**	**-0.2**	**3.98E+06**	**1.09**	**Y**	**1.06**	**30.5**	**8704.468**	**0.582**
OCDD	**44.01**		**1.0003**	**1.0003**	**0**	**3.02E+07**	**0.91**	**Y**	**1.13**	**507**	**11183.607**	**2.2**
OCDD-a	44.01		1.0002	1.0002	0	1.77E+06	2.26	Y	0.07	466	8767.726	27
1368-TCDF	NotFnd		0.8388						1.08		5566.748	0.233
1468-TCDF	NotFnd		0.8578						1.08		5566.748	0.233
2468-TCDF	24.69		0.8780	0.8761	-2.8	1.56E+05	0.86	Y	1.08	0.648	5566.748	0.233
1346/1246-TCDF	NotFnd		0.8906						1.08		5566.748	0.233
1347/1378/1247-TCDF	25.19	EMPC	0.8951	0.8938	-2.0	3.98E+05	0.89	N	1.08	1.66	5566.748	0.233
1348-TCDF	25.52		0.9041	0.9055	+2.1	1.37E+06	0.86	Y	1.08	5.71	5566.748	0.233
1248/1367/1379-TCDF	NotFnd		0.9084						1.08		5566.748	0.233
1268-TCDF	25.93	EMPC	0.9207	0.9198	-1.4	4.28E+05	0.90	N	1.08	1.78	5566.748	0.233
1467-TCDF	NotFnd		0.9253						1.08		5566.748	0.233
1478-TCDF	26.21		0.9309	0.9299	-1.6	1.05E+06	0.77	Y	1.08	4.37	5566.748	0.233
1369/1237-TCDF	26.57		0.9431	0.9426	-0.8	3.07E+05	0.75	Y	1.08	1.28	5566.748	0.233
2467-TCDF	NotFnd		0.9472						1.08		5566.748	0.233
2368-TCDF	26.82		0.9524	0.9515	-1.4	7.47E+05	0.68	Y	1.08	3.11	5566.748	0.233
1238/1234/1678/1469/1236-TCDF	26.91	EMPC	0.9560	0.9547	-2.1	1.26E+06	1.03	N	1.08	5.23	5566.748	0.233
1278-TCDF	27.36		0.9710	0.9707	-0.5	1.21E+07	0.80	Y	1.08	50.3	5566.748	0.233
1349-TCDF	NotFnd		0.9752						1.08		5566.748	0.233
1267-TCDF	27.62		0.9802	0.9801	-0.2	6.76E+05	0.85	Y	1.08	2.81	5566.748	0.233
2346/1249-TCDF	NotFnd		0.9863						1.08		5566.748	0.233
2347/1279-TCDF	28.01	EMPC	0.9936	0.9937	+0.2	3.51E+05	0.90	N	1.08	1.46	5566.748	0.233
2348-TCDF	28.10		0.9971	0.9969	-0.3	1.62E+06	0.77	Y	1.08	6.75	5566.748	0.233
2378-TCDF	**28.21**		**1.0007**	**1.0008**	**+0.2**	**2.50E+07**	**0.83**	**Y**	**1.08**	**104**	**5566.748**	**0.233**
2367/3467-TCDF	28.55		1.0134	1.0130	-0.7	2.07E+06	0.80	Y	1.08	8.62	5566.748	0.233
1269-TCDF	28.80		1.0219	1.0219	0	3.81E+05	0.79	Y	1.08	1.59	5566.748	0.233
1239-TCDF	NotFnd		1.0309						1.08		5566.748	0.233
1289-TCDF	30.17		1.0689	1.0703	+2.5	2.25E+06	0.80	Y	1.08	9.34	5566.748	0.233
13468/12468-PeCDF	NotFnd		0.9175						1.02		3829.41	0.139
13678/13467/12467-PeCDF	NotFnd		0.9630						1.02		7052.612	0.256
12368/13478/12478-PeCDF	31.80	J	0.9675	0.9678	+0.6	5.14E+05	1.50	Y	1.02	2.22	7052.612	0.256
14678-PeCDF	NotFnd		0.9705						1.02		7052.612	0.256
13479-PeCDF	NotFnd		0.9734						1.02		7052.612	0.256
13469/12479-PeCDF	NotFnd		0.9807						1.02		7052.612	0.256
12346-PeCDF	NotFnd		0.9848						1.02		7052.612	0.256

Lab ID: B5986_18732_DF_004 **Acq'd: 18 Dec 2021 01:06 DTF** **Wt/Vol: 10.14 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-B-5 **UTP: 20-Dec-2021 14:13:07 DTF** **J-level: 0.493 pg/g** **Split: 1** **Checkcode: 875-443-QCW**

Datafile: 211217C20 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		7052.612	0.256
12347-PeCDF	NotFnd		0.9895						1.02		7052.612	0.256
12348-PeCDF	NotFnd		0.9943						1.02		7052.612	0.256
12378-PeCDF	**32.87**		**1.0005**	**1.0005**	**0**	**9.41E+05**	**1.53**	**Y**	**1.02**	**4.03**	**7052.612**	**0.266**
12678/12367-PeCDF	33.16	J	1.0086	1.0093	+1.4	2.89E+05	1.46	Y	1.02	1.25	7052.612	0.256
12379-PeCDF	NotFnd		1.0137						1.02		7052.612	0.256
12679-PeCDF	NotFnd		0.9936						1.02		7052.612	0.256
23467/12369-PeCDF	NotFnd		0.9970						1.02		7052.612	0.256
23478-PeCDF	**33.96**		**1.0005**	**1.0007**	**+0.4**	**6.89E+05**	**1.56**	**Y**	**1.02**	**3.01**	**7052.612**	**0.245**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		7052.612	0.256
12349-PeCDF	NotFnd		1.0103						1.02		7052.612	0.256
12389-PeCDF	NotFnd		1.0317						1.02		7052.612	0.256
123468-HxCDF	NotFnd		0.9634						1.19		5891.735	0.215
124678/134678-HxCDF	36.02	J	0.9687	0.9686	-0.2	2.94E+05	1.13	Y	1.19	1.33	5891.735	0.215
134679-HxCDF	NotFnd		0.9748						1.19		5891.735	0.215
124679-HxCDF	NotFnd		0.9800						1.19		5891.735	0.215
124689-HxCDF	36.66	J	0.9857	0.9858	+0.2	2.32E+05	1.14	Y	1.19	1.05	5891.735	0.215
123467-HxCDF	NotFnd		0.9973						1.19		5891.735	0.215
123478-HxCDF	**37.20**		**1.0005**	**1.0005**	**0**	**1.49E+06**	**1.23**	**Y**	**1.27**	**6.6**	**5891.735**	**0.214**
123678-HxCDF	**37.35**	J	**1.0005**	**1.0005**	**0**	**3.73E+05**	**1.30**	**Y**	**1.15**	**1.54**	**5891.735**	**0.2**
123479-HxCDF	NotFnd		1.0051						1.19		5891.735	0.215
123469-HxCDF	NotFnd		1.0092						1.19		5891.735	0.215
123679-HxCDF	NotFnd		0.9948						1.19		5891.735	0.215
234678-HxCDF	**38.02**	J	**1.0004**	**1.0005**	**+0.2**	**1.10E+05**	**1.35**	**Y**	**1.19**	**0.497**	**5891.735**	**0.224**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		5891.735	0.215
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**5891.735**	**0.224**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.94	J EMPC	1.0007	1.0011	+0.9	9.79E+04	1.97	N	1.19	0.442	5891.735	0.215
1234678-HpCDF	**40.26**		**1.0003**	**1.0003**	**0**	**7.27E+05**	**1.05**	**Y**	**1.37**	**3.2**	**6671.96**	**0.222**
1234679-HpCDF	NotFnd		1.0068						1.34		6671.96	0.284
1234689-HpCDF	40.66		1.0102	1.0104	+0.5	5.13E+05	1.08	Y	1.34	2.64	6671.96	0.284
1234789-HpCDF	**41.68**	**J**	**1.0003**	**1.0002**	**-0.3**	**1.32E+05**	**1.09**	**Y**	**1.31**	**0.817**	**6671.96**	**0.369**
OCDF	**44.20**		**1.0003**	**1.0002**	**-0.3**	**7.86E+05**	**0.88**	**Y**	**1.07**	**9.69**	**6088.427**	**1**
OCDF-a	44.18	**J EMPC**	1.0002	0.9998	-1.1	8.80E+03	2.01	N	0.07	1.75	4934.609	13.1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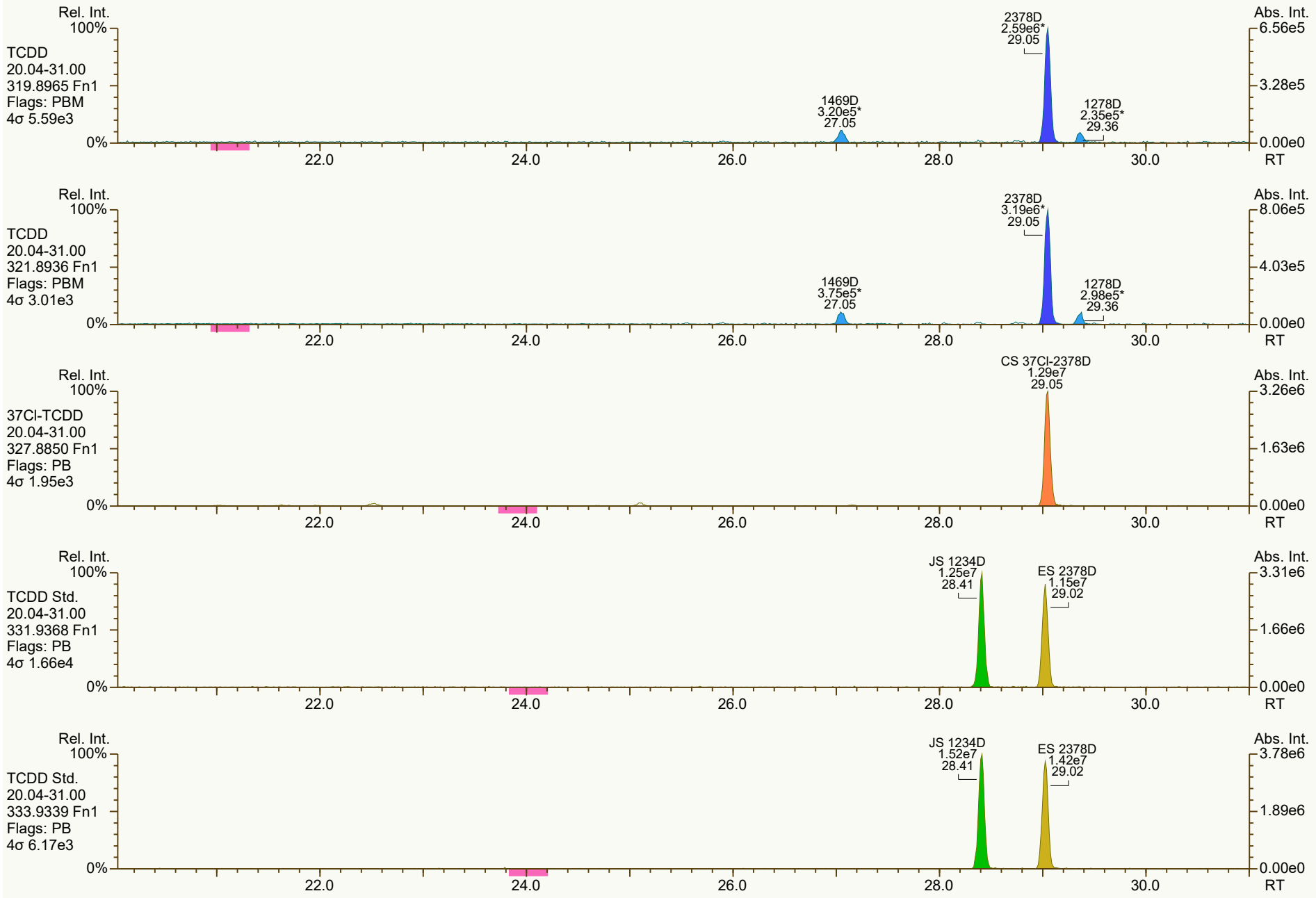
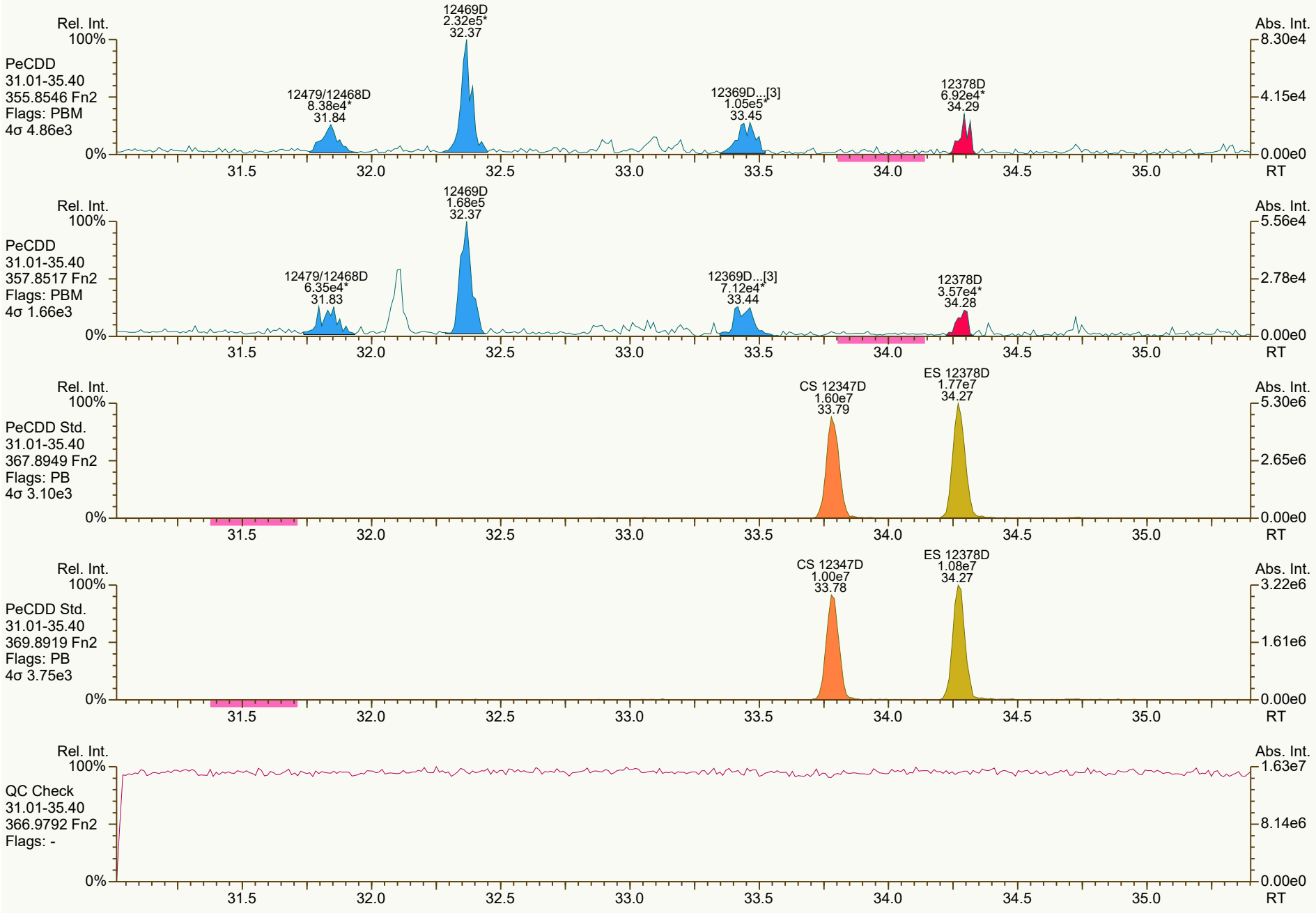
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
0%
22.0
24.0
26.0
28.0
30.0
Abs. Int.
2.00e7
1.00e7
0.00e0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Abs. Int.
1.63e7
8.14e6
0.00e0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
Abs. Int.
7.19e7
3.60e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.03e7
2.01e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
3.94e7
1.97e7
0.00e0


Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: PBM
4σ 5.59e3
0%
2378D
2.59e6*
29.05
1469D
3.20e5*
27.05
1278D
2.35e5*
29.36
Abs. Int.
6.56e5
3.28e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: PBM
4σ 3.01e3
0%
2378D
3.19e6*
29.05
1469D
3.75e5*
27.05
1278D
2.98e5*
29.36
Abs. Int.
8.06e5
4.03e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PB
4σ 1.95e3
0%
CS 37Cl-2378D
1.29e7
29.05
Abs. Int.
3.26e6
1.63e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PB
4σ 1.66e4
0%
JS 1234D
1.25e7
28.41
ES 2378D
1.15e7
29.02
Abs. Int.
3.31e6
1.66e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PB
4σ 6.17e3
0%
JS 1234D
1.52e7
28.41
ES 2378D
1.42e7
29.02
Abs. Int.
3.78e6
1.89e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT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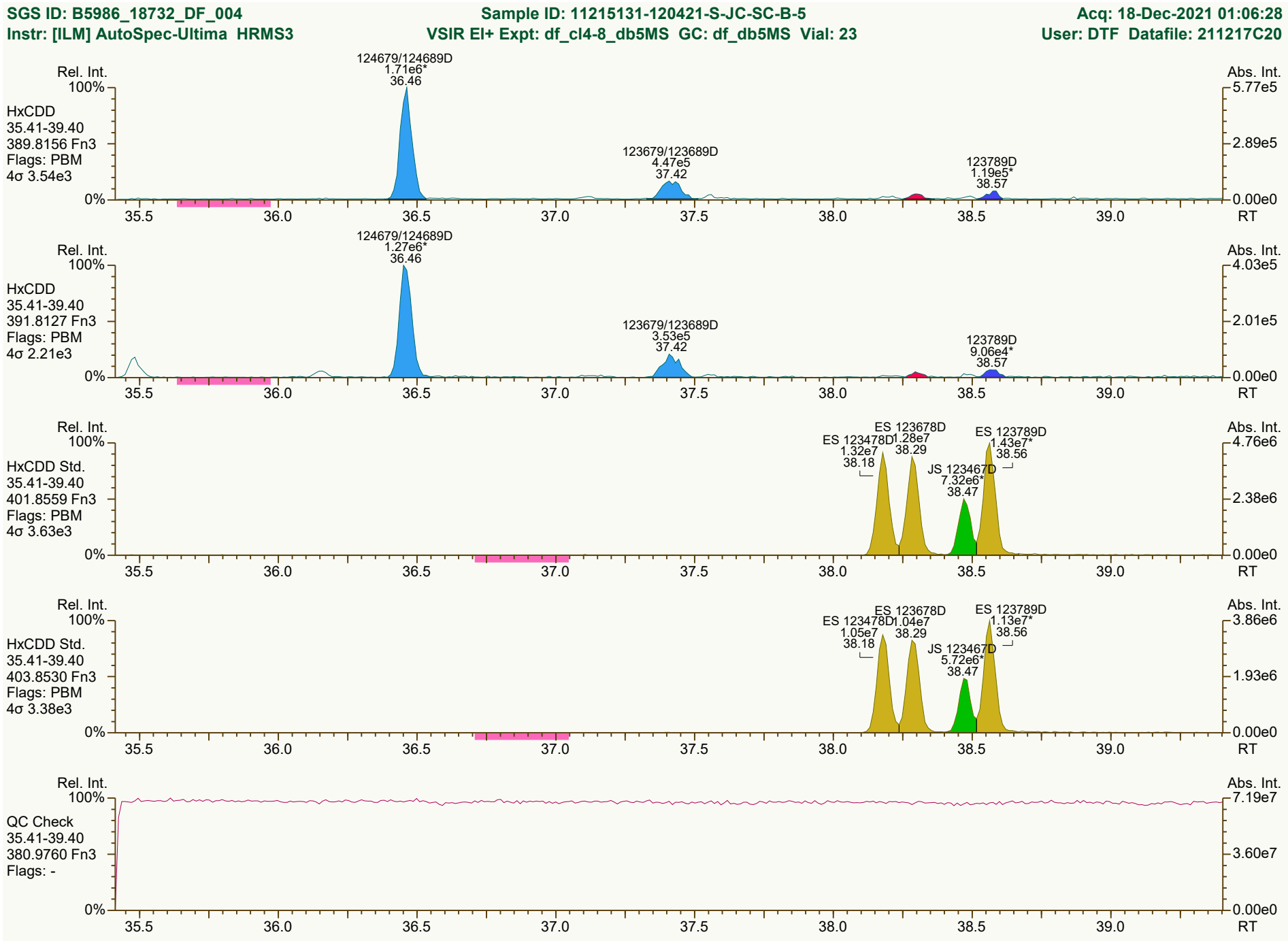
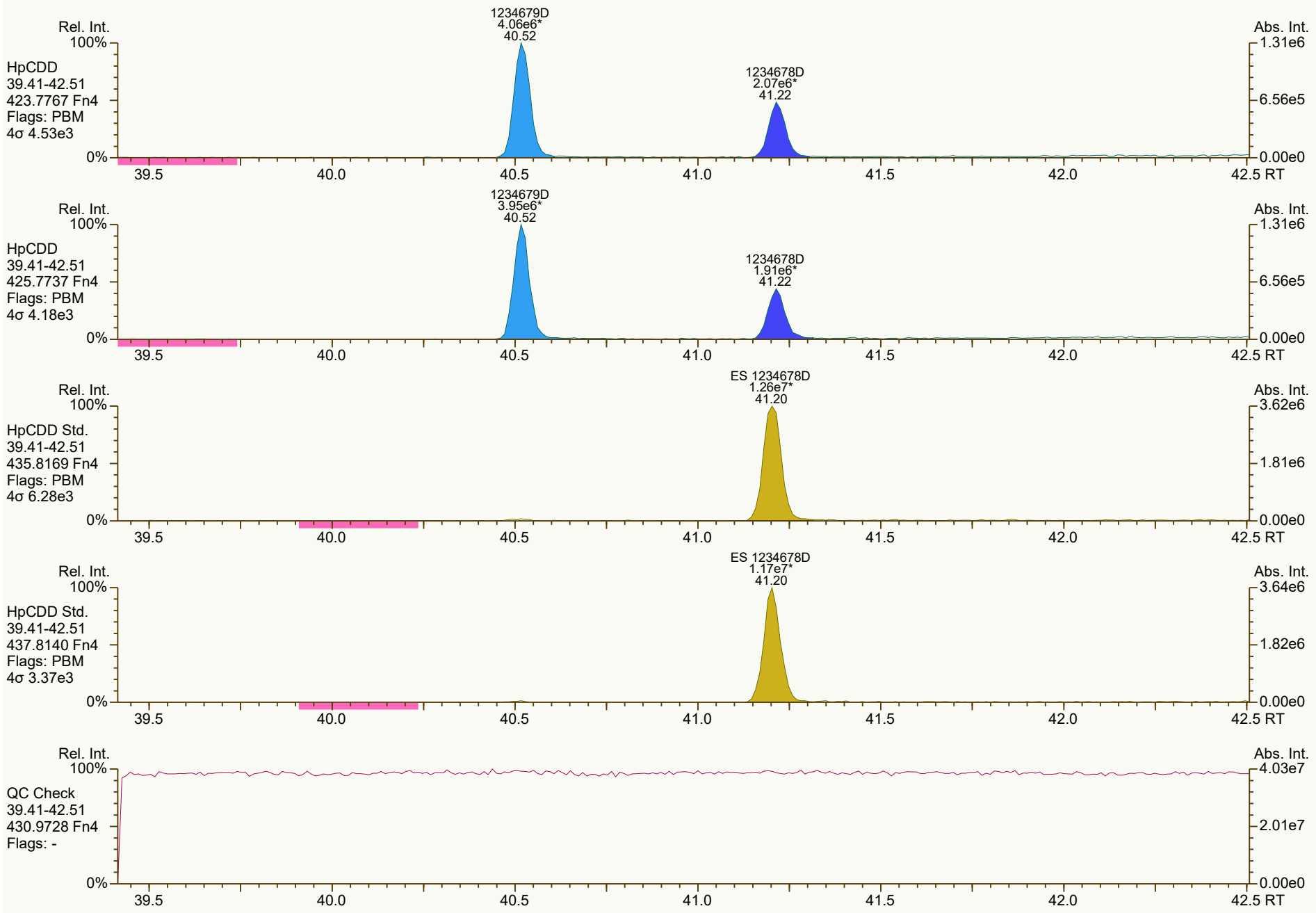
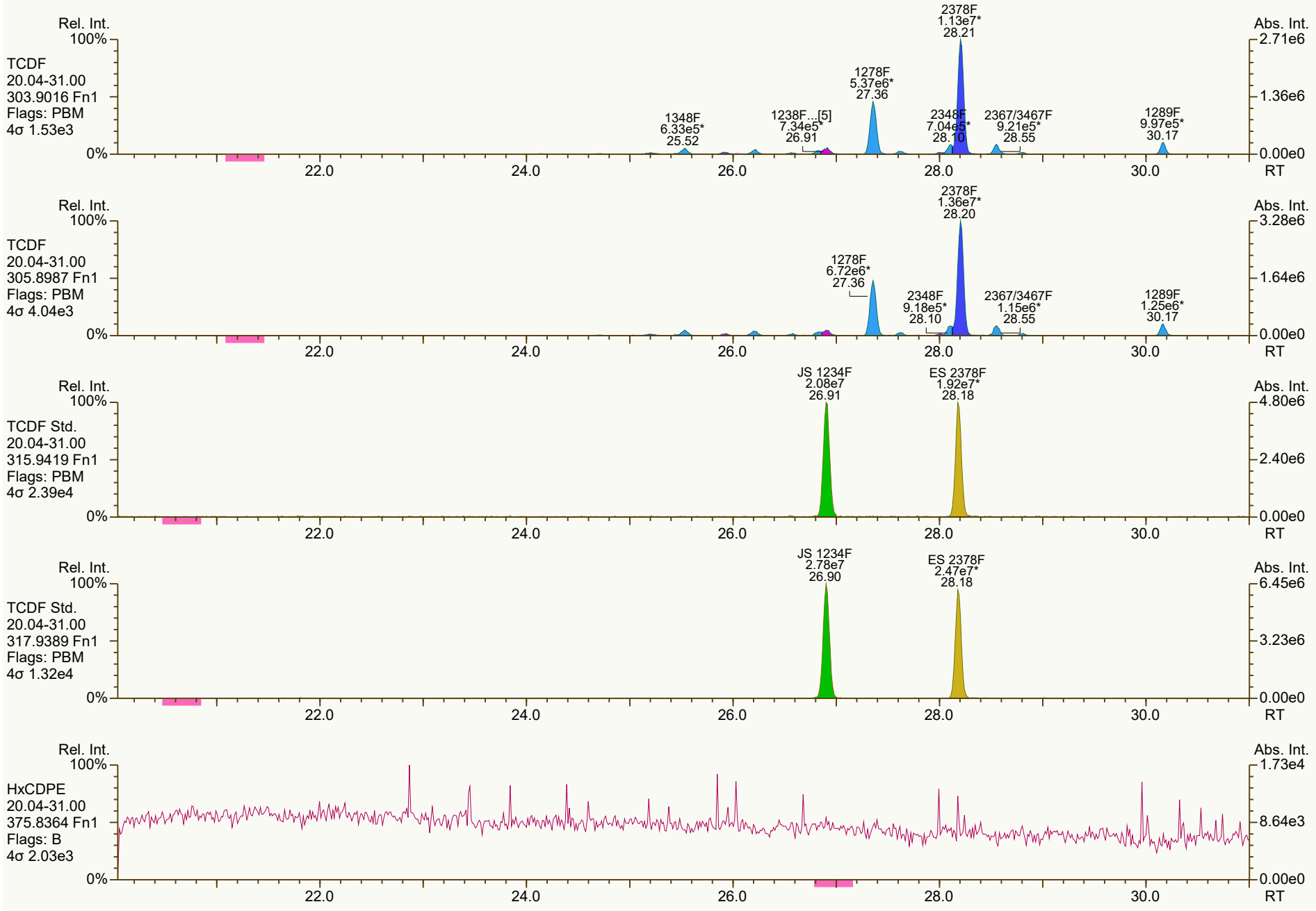
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PBM
4σ 4.86e3
12479/12468D
8.38e4*
31.84
12469D
2.32e5*
32.37
12369D...[3]
1.05e5*
33.45
12378D
6.92e4*
34.29
Abs. Int.
8.30e4
4.15e4
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PBM
4σ 1.66e3
12479/12468D
6.35e4*
31.83
12469D
1.68e5
32.37
12369D...[3]
7.12e4*
33.44
12378D
3.57e4*
34.28
Abs. Int.
5.56e4
2.78e4
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PB
4σ 3.10e3
CS 12347D
1.60e7
33.79
ES 12378D
1.77e7
34.27
Abs. Int.
5.30e6
2.65e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PB
4σ 3.75e3
CS 12347D
1.00e7
33.78
ES 12378D
1.08e7
34.27
Abs. Int.
3.22e6
1.61e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
Abs. Int.
1.63e7
8.14e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


SGS ID: B5986_18732_DF_004
Sample ID: 11215131-120421-S-JC-SC-B-5
Acq: 18-Dec-2021 01:06:28
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 23
User: DTF Datafile: 211217C20
Rel. Int.
Abs. Int.
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PBM
4σ 3.54e3
124679/124689D
1.71e6*
36.46
123679/123689D
4.47e5
37.42
123789D
1.19e5*
38.57
5.77e5
2.89e5
0.00e0
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PBM
4σ 2.21e3
124679/124689D
1.27e6*
36.46
123679/123689D
3.53e5
37.42
123789D
9.06e4*
38.57
4.03e5
2.01e5
0.00e0
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PBM
4σ 3.63e3
ES 123478D
1.32e7
38.18
ES 123678D
1.28e7
38.29
JS 123467D
7.32e6*
38.47
ES 123789D
1.43e7*
38.56
4.76e6
2.38e6
0.00e0
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PBM
4σ 3.38e3
ES 123478D
1.05e7
38.18
ES 123678D
1.04e7
38.29
JS 123467D
5.72e6*
38.47
ES 123789D
1.13e7*
38.56
3.86e6
1.93e6
0.00e0
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
7.19e7
3.60e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_004.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9431, 1498 scc: 875-443
Revised: 20-Dec-2021 11:19 (DTF) Printed: 20-Dec-2021 14:27 Page 4 of 12


Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PBM
4σ 4.53e3
1234679D
4.06e6*
40.52
1234678D
2.07e6*
41.22
Abs. Int.
1.31e6
6.56e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PBM
4σ 4.18e3
1234679D
3.95e6*
40.52
1234678D
1.91e6*
41.22
Abs. Int.
1.31e6
6.56e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PBM
4σ 6.28e3
ES 1234678D
1.26e7*
41.20
Abs. Int.
3.62e6
1.81e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PBM
4σ 3.37e3
ES 1234678D
1.17e7*
41.20
Abs. Int.
3.64e6
1.82e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
Abs. Int.
4.03e7
2.01e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PB
4σ 4.62e3
0%
OCDD
1.44e7
44.01
Abs. Int.
2.85e6
1.43e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 6.56e3
0%
OCDD
1.58e7
44.01
Abs. Int.
3.13e6
1.56e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 2.86e3
0%
ES OCDD
9.86e6
44.00
Abs. Int.
2.10e6
1.05e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 3.05e3
0%
ES OCDD
1.10e7
44.00
Abs. Int.
2.23e6
1.11e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
3.94e7
1.97e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 1.53e3
0%
1348F
6.33e5*
25.52
1238F...[5]
7.34e5*
26.91
1278F
5.37e6*
27.36
2378F
1.13e7*
28.21
2348F
7.04e5*
28.10
2367/3467F
9.21e5*
28.55
1289F
9.97e5*
30.17
Abs. Int.
2.71e6
1.36e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 4.04e3
0%
1278F
6.72e6*
27.36
2378F
1.36e7*
28.20
2348F
9.18e5*
28.10
2367/3467F
1.15e6*
28.55
1289F
1.25e6*
30.17
Abs. Int.
3.28e6
1.64e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PBM
4σ 2.39e4
0%
JS 1234F
2.08e7
26.91
ES 2378F
1.92e7*
28.18
Abs. Int.
4.80e6
2.40e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PBM
4σ 1.32e4
0%
JS 1234F
2.78e7
26.90
ES 2378F
2.47e7*
28.18
Abs. Int.
6.45e6
3.23e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 2.03e3
0%
Abs. Int.
1.73e4
8.64e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

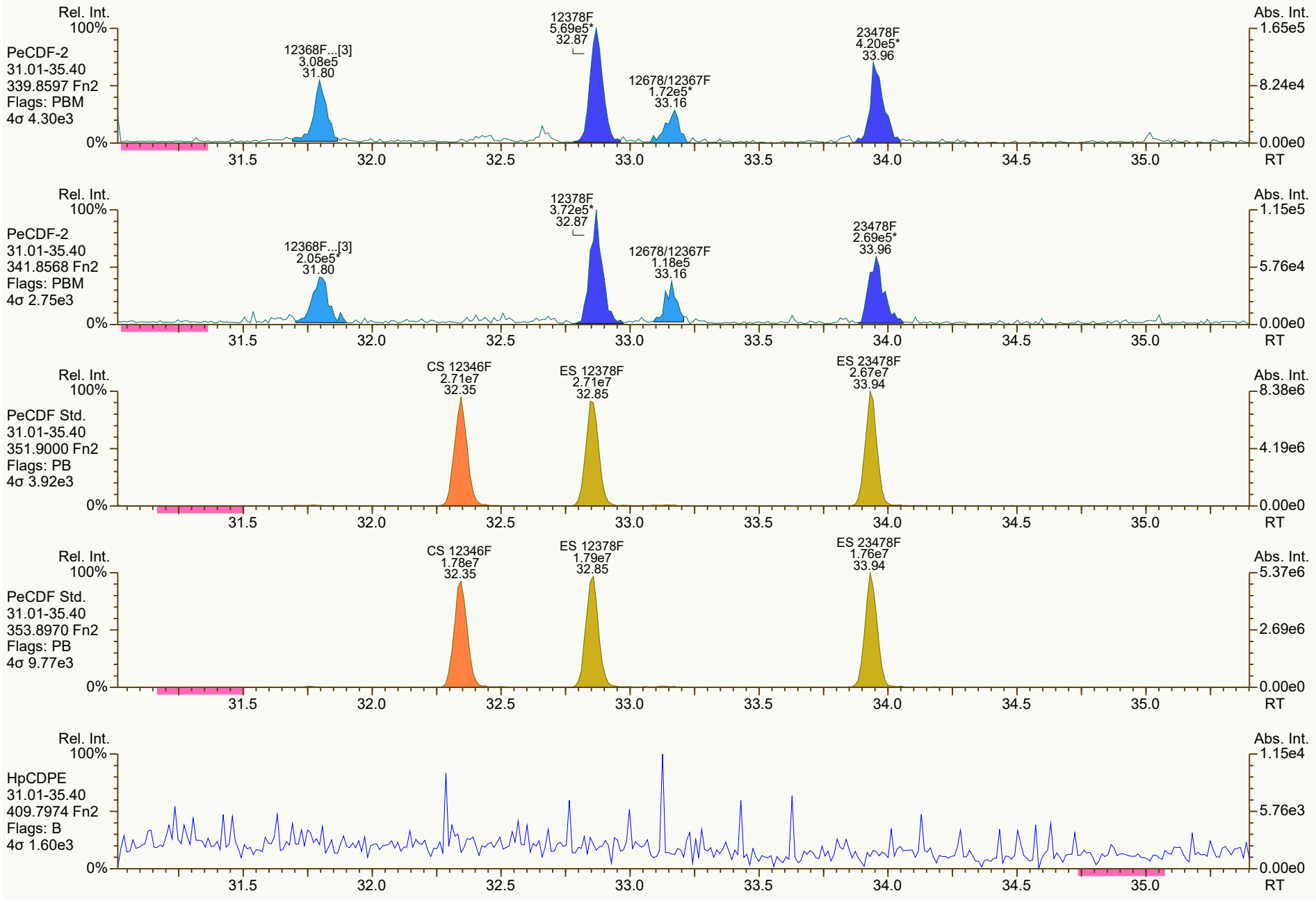
SGS ID: B5986_18732_DF_004 | Sample ID: 11215131-120421-S-JC-SC-B-5 | Acq: 18-Dec-2021 01:06:28

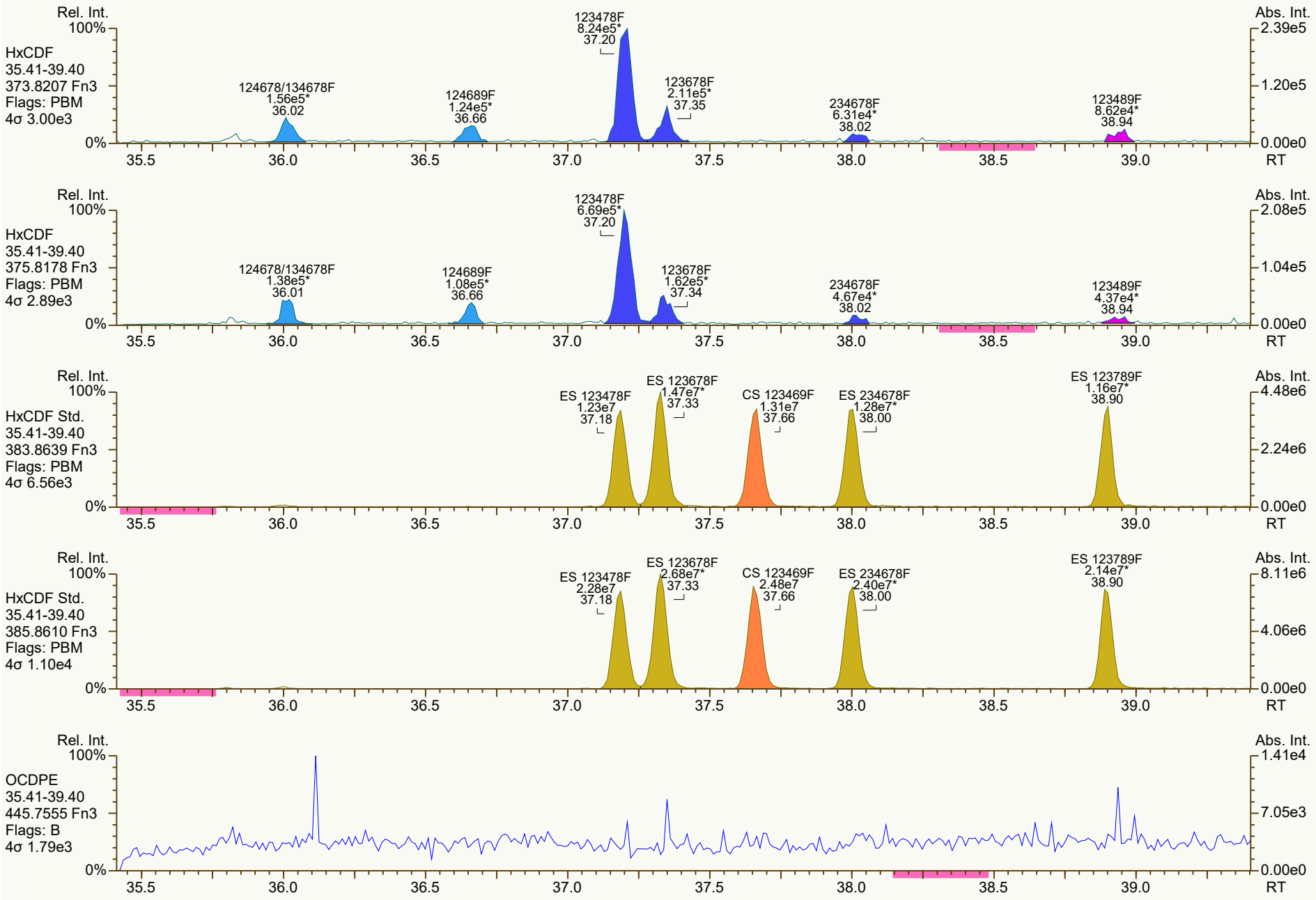
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 23 | User: DTF Datafile: 211217C20

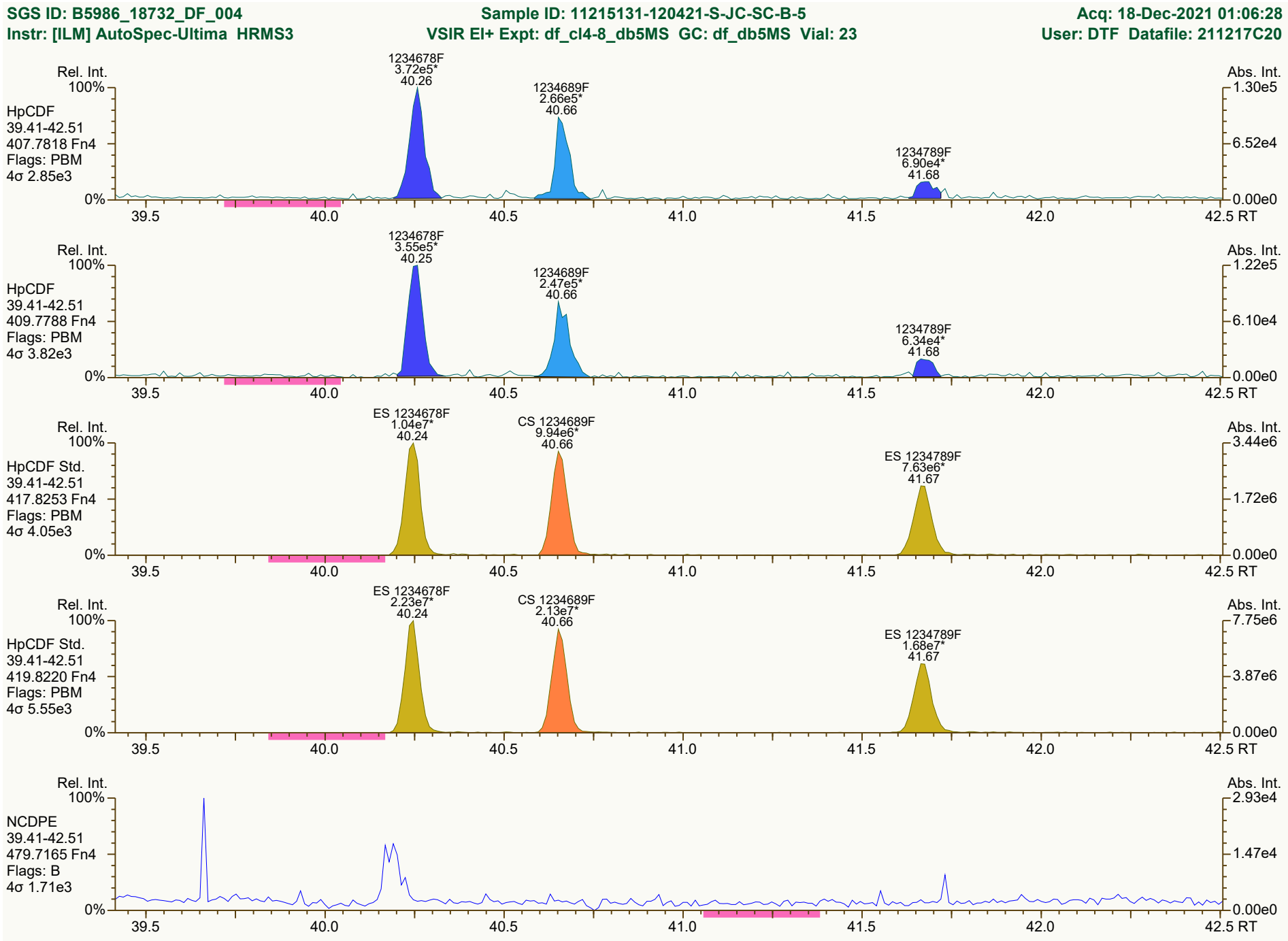


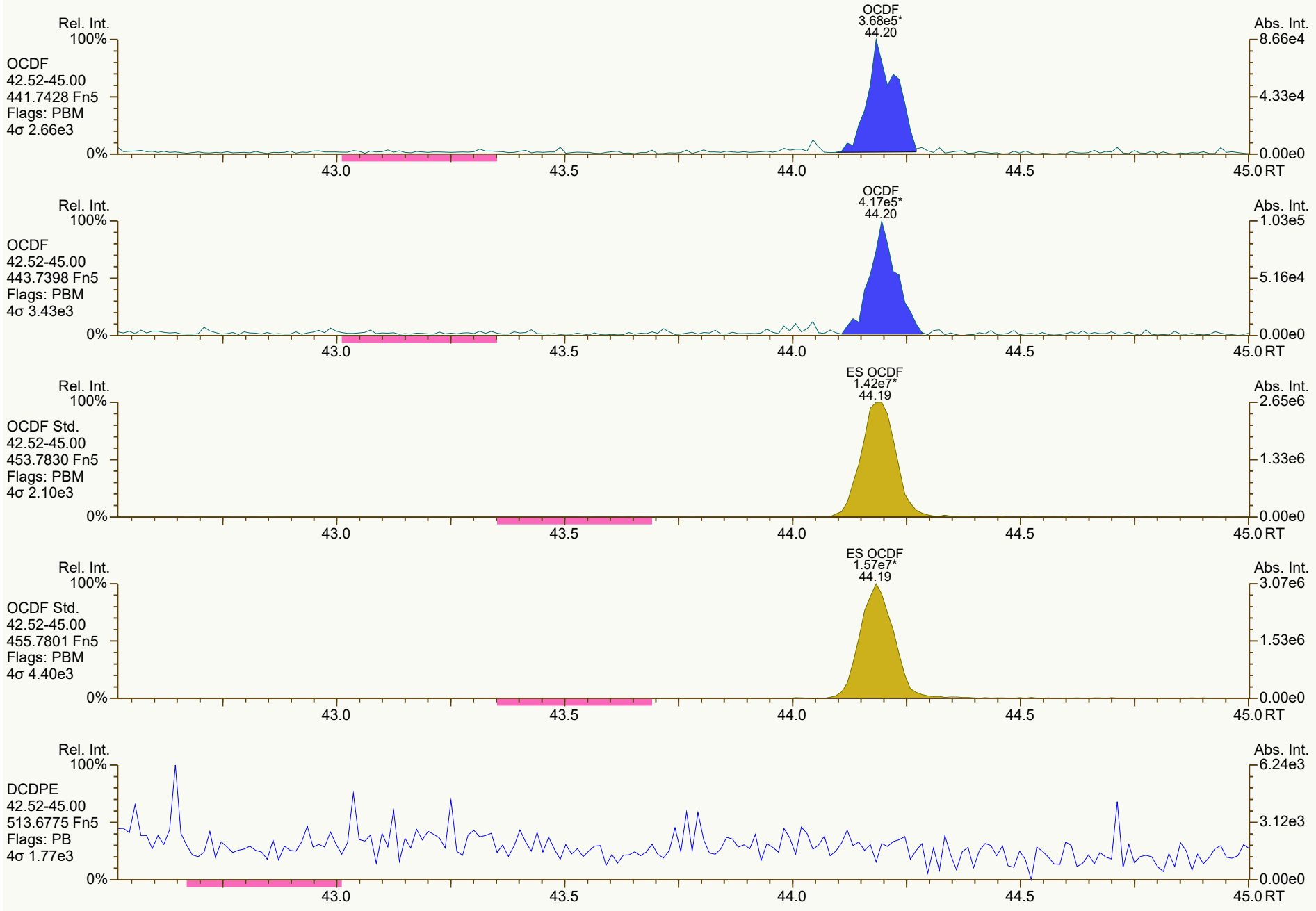
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_004.utp_res, saved 20-Dec-2021 14:13 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7817 scc: 875-443 *Revised: 20-Dec-2021 11:28 (DTF) Printed: 20-Dec-2021 14:27 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PBM
4σ 4.30e3
12368F...[3]
3.08e5
31.80
12378F
5.69e5*
32.87
12678/12367F
1.72e5*
33.16
23478F
4.20e5*
33.96
Abs. Int.
1.65e5
8.24e4
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PBM
4σ 2.75e3
12368F...[3]
2.05e5*
31.80
12378F
3.72e5*
32.87
12678/12367F
1.18e5
33.16
23478F
2.69e5*
33.96
Abs. Int.
1.15e5
5.76e4
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PB
4σ 3.92e3
CS 12346F
2.71e7
32.35
ES 12378F
2.71e7
32.85
ES 23478F
2.67e7
33.94
Abs. Int.
8.38e6
4.19e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PB
4σ 9.77e3
CS 12346F
1.78e7
32.35
ES 12378F
1.79e7
32.85
ES 23478F
1.76e7
33.94
Abs. Int.
5.37e6
2.69e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 1.60e3
Abs. Int.
1.15e4
5.76e3
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
100%
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PBM
4σ 3.00e3
0%
123478F
8.24e5*
37.20
124678/134678F
1.56e5*
36.02
124689F
1.24e5*
36.66
123678F
2.11e5*
37.35
234678F
6.31e4*
38.02
123489F
8.62e4*
38.94
Abs. Int.
2.39e5
1.20e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF
35.41-39.40
375.8178 Fn3
Flags: PBM
4σ 2.89e3
0%
123478F
6.69e5*
37.20
124678/134678F
1.38e5*
36.01
124689F
1.08e5*
36.66
123678F
1.62e5*
37.34
234678F
4.67e4*
38.02
123489F
4.37e4*
38.94
Abs. Int.
2.08e5
1.04e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PBM
4σ 6.56e3
0%
ES 123478F
1.23e7
37.18
ES 123678F
1.47e7*
37.33
CS 123469F
1.31e7
37.66
ES 234678F
1.28e7*
38.00
ES 123789F
1.16e7*
38.90
Abs. Int.
4.48e6
2.24e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PBM
4σ 1.10e4
0%
ES 123478F
2.28e7
37.18
ES 123678F
2.68e7*
37.33
CS 123469F
2.48e7
37.66
ES 234678F
2.40e7*
38.00
ES 123789F
2.14e7*
38.90
Abs. Int.
8.11e6
4.06e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.41e4
7.05e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT


SGS ID: B5986_18732_DF_004
Sample ID: 11215131-120421-S-JC-SC-B-5
Acq: 18-Dec-2021 01:06:28
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 23
User: DTF Datafile: 211217C20
Rel. Int.
Abs. Int.
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 2.85e3
1234678F
3.72e5*
40.26
1234689F
2.66e5*
40.66
1234789F
6.90e4*
41.68
1.30e5
6.52e4
0.00e0
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 3.82e3
1234678F
3.55e5*
40.25
1234689F
2.47e5*
40.66
1234789F
6.34e4*
41.68
1.22e5
6.10e4
0.00e0
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PBM
4σ 4.05e3
ES 1234678F
1.04e7*
40.24
CS 1234689F
9.94e6*
40.66
ES 1234789F
7.63e6*
41.67
3.44e6
1.72e6
0.00e0
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PBM
4σ 5.55e3
ES 1234678F
2.23e7*
40.24
CS 1234689F
2.13e7*
40.66
ES 1234789F
1.68e7*
41.67
7.75e6
3.87e6
0.00e0
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 1.71e3
2.93e4
1.47e4
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_004.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4716, 5280, 6248 scc: 875-443
Revised: 20-Dec-2021 11:31 (DTF) Printed: 20-Dec-2021 14:27 Page 11 of 12


OCDF
3.68e5*
44.20
Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PBM
4σ 2.66e3
0%
Abs. Int.
8.66e4
4.33e4
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.17e5*
44.20
OCDF
42.52-45.00
443.7398 Fn5
Flags: PBM
4σ 3.43e3
1.03e5
5.16e4
ES OCDF
1.42e7*
44.19
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PBM
4σ 2.10e3
2.65e6
1.33e6
ES OCDF
1.57e7*
44.19
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PBM
4σ 4.40e3
3.07e6
1.53e6
DCDPE
42.52-45.00
513.6775 Fn5
Flags: PB
4σ 1.77e3
6.24e3
3.12e3

Lab ID: B5986_18732_DF_005 **Acq'd:** 18 Dec 2021 01:52 DTF **Wt/Vol:** 10.15 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-O-7 **UTP:** 20-Dec-2021 14:13:08 DTF **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 360-861-QJD

Datafile: 211217C21 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.08	E	1.0008	1.0008	0	1.32E+09	0.81	Y	1.18	7,500	8978.516	0.508
12378-PeCDD	34.32		1.0005	1.0006	+0.2	1.12E+07	1.60	Y	1.04	74.7	13155.29	0.759
123478-HxCDD	38.21		1.0004	1.0003	-0.2	1.04E+06	1.21	Y	1.09	7.54	14674.192	0.845
123678-HxCDD	38.31		1.0031	1.0031	0	5.05E+06	1.32	Y	1.15	36.3	14674.192	0.822
123789-HxCDD	38.59		1.0102	1.0104	+0.5	2.18E+06	1.18	Y	1.05	14.6	14674.192	0.79
1234678-HpCDD	41.22		1.0004	1.0003	-0.2	1.35E+08	1.05	Y	1.06	1,020	8714.522	0.515
OCDD	44.02	E	1.0003	1.0003	0	1.24E+09	0.91	Y	1.13	15,200	6263.953	0.965
2378-TCDF	28.24	E	1.0007	1.0007	0	5.27E+09	0.81	Y	1.08	20,100	5381.549	0.224
12378-PeCDF	32.91		1.0005	1.0005	0	2.53E+08	1.56	Y	1.02	1,090	11526.402	0.438
23478-PeCDF	34.00		1.0005	1.0008	+0.6	1.49E+08	1.59	Y	1.02	675	11526.402	0.479
123478-HxCDF	37.22		1.0005	1.0005	0	4.63E+08	1.27	Y	1.27	2,020	13861.67	0.501
123678-HxCDF	37.37		1.0005	1.0005	0	1.15E+08	1.27	Y	1.15	494	13861.67	0.493
234678-HxCDF	38.04		1.0004	1.0005	+0.2	2.26E+07	1.24	Y	1.19	105	13861.67	0.525
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	13861.67	0.471
1234678-HpCDF	40.27		1.0003	1.0003	0	1.26E+08	1.04	Y	1.37	597	9083.695	0.307
1234789-HpCDF	41.69		1.0003	1.0003	0	3.53E+07	1.04	Y	1.31	206	9083.695	0.463
OCDF	44.19		1.0003	1.0003	0	1.62E+08	0.90	Y	1.07	1,510	5347.066	0.604

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.06	1.0215	1.0213	-0.3	2.93E+07	0.84	Y	1.05	82.7
ES 12378-PeCDD	34.30	1.2040	1.2055	+3.1	2.85E+07	1.58	Y	0.88	95.7
ES 123478-HxCDD	38.19	0.9925	0.9924	-0.2	2.49E+07	1.28	Y	0.97	85.3
ES 123678-HxCDD	38.30	0.9953	0.9951	-0.5	2.39E+07	1.25	Y	0.94	84.4
ES 123789-HxCDD	38.58	1.0024	1.0024	0	2.80E+07	1.23	Y	1.09	85.5
ES 1234678-HpCDD	41.20	1.0697	1.0706	+2.2	2.46E+07	1.08	Y	0.91	90
ES OCDD	44.01	1.1413	1.1435	+5.8	2.86E+07	0.94	Y	0.62	76.4
ES 2378-TCDF	28.22	1.0469	1.0475	+1.0	4.79E+07	0.79	Y	1.06	79.2
ES 12378-PeCDF	32.89	1.2181	1.2208	+5.3	4.44E+07	1.51	Y	0.91	85.5
ES 23478-PeCDF	33.97	1.2578	1.2609	+6.3	4.27E+07	1.51	Y	0.88	84.8
ES 123478-HxCDF	37.21	0.9670	0.9667	-0.7	3.55E+07	0.55	Y	1.20	98.9
ES 123678-HxCDF	37.35	0.9708	0.9704	-0.9	3.98E+07	0.52	Y	1.35	98.2
ES 234678-HxCDF	38.02	0.9881	0.9879	-0.5	3.57E+07	0.54	Y	1.24	95.8
ES 123789-HxCDF	38.91	1.0108	1.0109	+0.2	3.51E+07	0.55	Y	1.16	101
ES 1234678-HpCDF	40.25	1.0452	1.0458	+1.4	3.03E+07	0.47	Y	0.97	105
ES 1234789-HpCDF	41.67	1.0818	1.0828	+2.5	2.59E+07	0.47	Y	0.85	101
ES OCDF	44.18	1.1461	1.1479	+4.8	3.94E+07	0.92	Y	0.81	81.3

Lab ID: B5986_18732_DF_005 **Acq'd:** 18 Dec 2021 01:52 DTF **Wt/Vol:** 10.15 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-O-7 **UTP:** 20-Dec-2021 14:13:08 DTF **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 360-861-QJD

Datafile: 211217C21 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.45		-	-	-	3.38E+07	0.84	Y	-	-	
JS 1234-TCDF	26.94		-	-	-	5.71E+07	0.78	Y	-	-	
JS 123467-HxCDD	38.49		-	-	-	1.50E+07	1.17	Y	-	-	
CS 37Cl-2378-TCDD	29.08		1.0222	1.0221	-0.2	1.28E+07	n/a	-	1.20	78.8	
CS 12347-PeCDD	33.82		1.1870	1.1886	+3.2	2.57E+07	1.61	Y	0.75	101	
CS 12346-PeCDF	32.39		1.1994	1.2021	+5.2	4.23E+07	1.54	Y	0.85	87	
CS 123469-HxCDF	37.68		0.9793	0.9790	-0.7	3.64E+07	0.53	Y	1.12	109	
CS 1234689-HpCDF	40.66		1.0556	1.0564	+2.0	2.95E+07	0.47	Y	0.89	111	
~~SS 37Cl-2378-TCDD~~	~~29.08~~		~~1.0222~~	~~1.0221~~	~~-0.2~~	~~1.28E+07~~	~~n/a~~		~~1.15~~	~~95.5~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.82~~		~~1.1870~~	~~1.1886~~	~~+3.2~~	~~2.57E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~105~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.39~~		~~1.1994~~	~~1.2021~~	~~+5.2~~	~~4.23E+07~~	~~1.54~~	~~Y~~	~~0.94~~	~~102~~	
~~SS 123469-HxCDF~~	~~37.68~~		~~0.9793~~	~~0.9790~~	~~-0.7~~	~~3.64E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~110~~	
~~SS 1234689-HpCDF~~	~~40.66~~		~~1.0556~~	~~1.0564~~	~~+2.0~~	~~2.95E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~106~~	

Totals	Conc	EMPC
Total TCDD	8350	8390
Total PeCDD	103	116
Total HxCDD	239	239
Total HpCDD	1970	1970
Total Tetra-Octa Dioxins	25900	25900
Total TCDF	38,700	38700
Total PeCDF	2,740	2740
Total HxCDF	3,150	3150
Total HpCDF	1,220	1220
Total Tetra-Octa Furans	47,400	47400
Total Tetra-Octa Dioxins & Furans	73200	73300

Lab ID: B5986_18732_DF_005 **Acq'd: 18 Dec 2021 01:52 DTF** **Wt/Vol: 10.15 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-O-7 **UTP: 20-Dec-2021 14:13:08 DTF** **J-level: 0.493 pg/g** **Split: 1** **Checkcode: 360-861-QJD**

Datafile: 211217C21 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.60		0.8819	0.8810	-1.4	1.38E+06	0.80	Y	1.18	7.83	8978.516	0.508
1379-TCDD	25.94		0.8935	0.8926	-1.4	6.64E+05	0.75	Y	1.18	3.78	8978.516	0.508
1369-TCDD	NotFnd		0.9073						1.18		8978.516	0.508
1469-TCDD	27.09		0.9329	0.9321	-1.3	2.04E+05	0.74	Y	1.18	1.16	8978.516	0.508
1247/1246/1248/1249-TCDD	27.30		0.9407	0.9395	-2.0	1.99E+06	0.88	Y	1.18	11.3	8978.516	0.508
1378-TCDD	27.48		0.9466	0.9457	-1.5	4.01E+06	0.82	Y	1.18	22.8	8978.516	0.508
1268-TCDD	27.68	EMPC	0.9531	0.9525	-1.0	2.64E+05	0.98	N	1.18	1.5	8978.516	0.508
1478-TCDD	27.92		0.9610	0.9607	-0.5	3.02E+06	0.84	Y	1.18	17.2	8978.516	0.508
1279-TCDD	NotFnd		0.9668						1.18		8978.516	0.508
1234/1269-TCDD	28.44		0.9783	0.9785	+0.3	5.16E+05	0.81	Y	1.18	2.93	8978.516	0.508
1236-TCDD	28.58	EMPC	0.9830	0.9835	+0.9	2.31E+05	1.07	N	1.18	1.31	8978.516	0.508
1237/1238-TCDD	28.80		0.9913	0.9912	-0.2	2.05E+07	0.83	Y	1.18	117	8978.516	0.508
1239-TCDD	NotFnd		0.9959						1.18		8978.516	0.508
2378-TCDD	**29.08**	E	**1.0008**	1.0008	**0**	1.32E+09	0.81	Y	**1.18**	**7,500**	**8978.516**	**0.508**
1278-TCDD	29.40		1.0115	1.0118	+0.5	1.18E+08	0.81	Y	1.18	668	8978.516	0.508
1267-TCDD	29.53	EMPC	1.0160	1.0163	+0.5	2.87E+06	1.03	N	1.18	16.3	8978.516	0.508
1289-TCDD	30.05	EMPC	1.0331	1.0340	+1.6	2.29E+06	0.97	N	1.18	13	8978.516	0.508
12479/12468-PeCDD	31.88		0.9295	0.9296	+0.2	1.15E+06	1.60	Y	1.04	7.71	13155.29	0.759
12469-PeCDD	32.41	EMPC	0.9448	0.9448	0	4.28E+05	0.69	N	1.04	2.86	13155.29	0.759
12368-PeCDD	32.93		0.9602	0.9601	-0.2	1.33E+06	1.49	Y	1.04	8.86	13155.29	0.759
12478-PeCDD	33.12	EMPC	0.9656	0.9656	0	1.10E+06	1.28	N	1.04	7.38	13155.29	0.759
12379-PeCDD	33.23		0.9686	0.9688	+0.4	4.47E+05	1.64	Y	1.04	2.99	13155.29	0.759
12369/12467/12489-PeCDD	33.48		0.9760	0.9761	+0.2	5.01E+05	1.60	Y	1.04	3.35	13155.29	0.759
12346/12347-PeCDD	33.84	J EMPC	0.9866	0.9867	+0.2	3.55E+05	1.31	N	1.04	2.38	13155.29	0.759
12378-PeCDD	34.32		**1.0005**	**1.0006**	**+0.2**	**1.12E+07**	**1.60**	**Y**	**1.04**	**74.7**	**13155.29**	**0.759**
12367-PeCDD	34.42		1.0031	1.0035	+0.8	5.93E+05	1.72	Y	1.04	3.96	13155.29	0.759
12389-PeCDD	34.76	J	1.0132	1.0135	+0.6	2.83E+05	1.54	Y	1.04	1.89	13155.29	0.759
124679/124689-HxCDD	36.49		0.9553	0.9553	0	9.88E+06	1.29	Y	1.10	69.5	14674.192	0.816
123468-HxCDD	37.14		0.9725	0.9723	-0.4	1.45E+06	1.32	Y	1.10	10.2	14674.192	0.816
123679/123689-HxCDD	37.44		0.9803	0.9803	0	1.32E+07	1.26	Y	1.10	93.1	14674.192	0.816
123469-HxCDD	37.59		0.9842	0.9841	-0.2	6.62E+05	1.25	Y	1.10	4.66	14674.192	0.816
123478-HxCDD	38.21		**1.0004**	**1.0003**	**-0.2**	**1.04E+06**	**1.21**	**Y**	1.09	**7.54**	**14674.192**	**0.845**
123678-HxCDD	38.31		**1.0031**	**1.0031**	**0**	**5.05E+06**	**1.32**	**Y**	1.15	**36.3**	**14674.192**	**0.822**
123467-HxCDD	38.50		1.0078	1.0080	+0.5	4.92E+05	1.32	Y	1.10	3.46	14674.192	0.816
123789-HxCDD	38.59		**1.0102**	**1.0104**	**+0.5**	**2.18E+06**	**1.18**	**Y**	1.05	**14.6**	**14674.192**	**0.79**

Lab ID: B5986_18732_DF_005 **Acq'd:** 18 Dec 2021 01:52 DTF **Wt/Vol:** 10.15 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120421-S-JC-SC-O-7 **UTP:** 20-Dec-2021 14:13:08 DTF **J-level:** 0.493 pg/g **Split:** 1 **Checkcode:** 360-861-QJD

Datafile: 211217C21 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

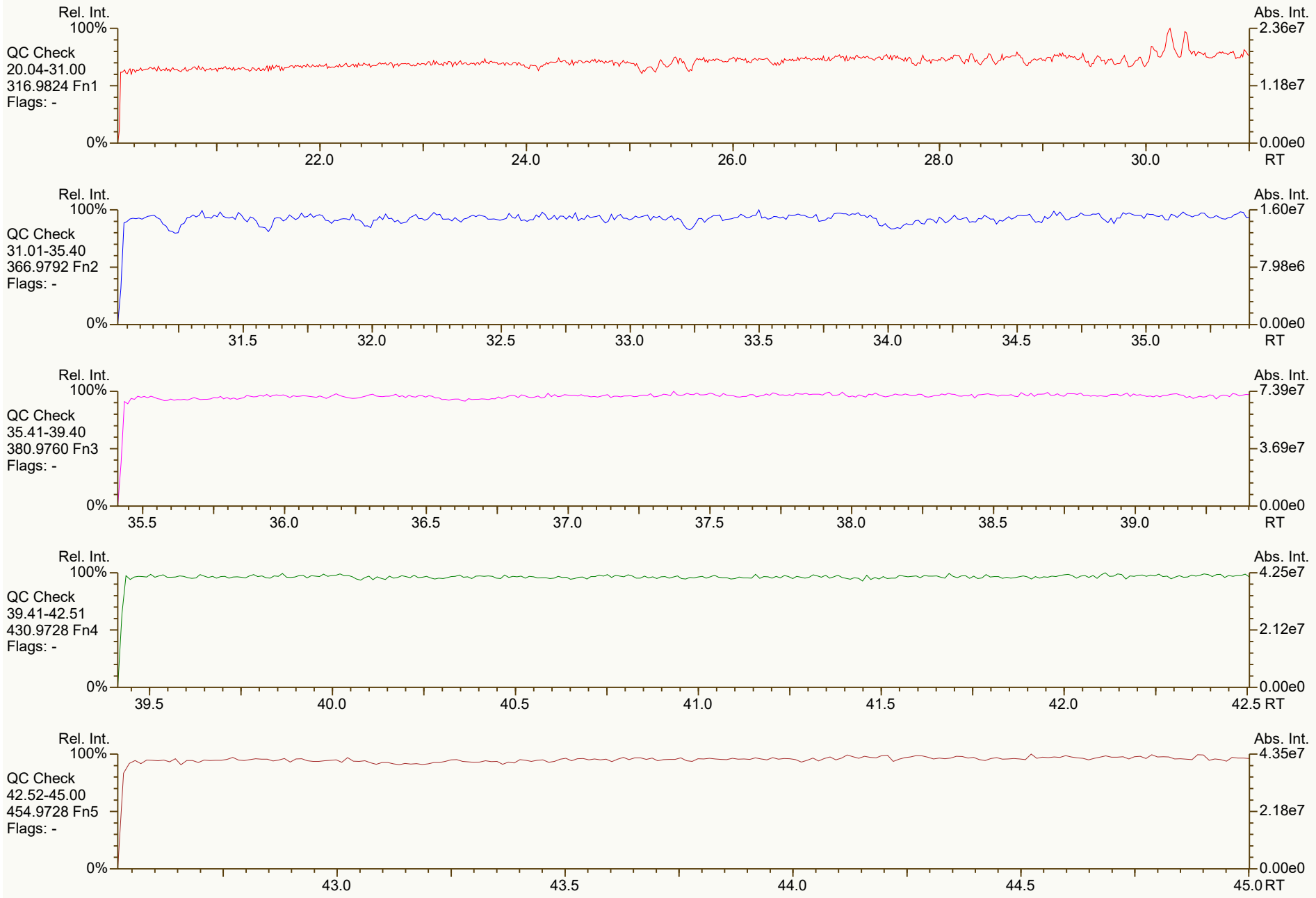
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.53		0.9837	0.9836	-0.2	1.26E+08	1.05	Y	1.06	952	8714.522	0.515
1234678-HpCDD	**41.22**		**1.0004**	**1.0003**	**-0.2**	**1.35E+08**	**1.05**	**Y**	**1.06**	**1,020**	**8714.522**	**0.515**
OCDD	**44.02**	**E**	**1.0003**	**1.0003**	**0**	**1.24E+09**	**0.91**	**Y**	**1.13**	**15,200**	**6263.953**	**0.965**
OCDD-a	44.02	E	1.0002	1.0002	0	7.51E+07	2.51	Y	0.07	14,400	6327.431	15.2
1368-TCDF	23.61		0.8388	0.8366	-3.1	1.10E+06	0.80	Y	1.08	4.18	5381.549	0.224
1468-TCDF	24.16		0.8578	0.8563	-2.2	7.14E+06	0.81	Y	1.08	27.2	5381.549	0.224
2468-TCDF	24.75		0.8780	0.8769	-1.6	6.32E+06	0.83	Y	1.08	24.1	5381.549	0.224
1346/1246-TCDF	NotFnd		0.8906						1.08		5381.549	0.224
1347/1378/1247-TCDF	25.26		0.8951	0.8952	+0.2	4.01E+07	0.82	Y	1.08	153	5381.549	0.224
1348-TCDF	25.50		0.9041	0.9037	-0.6	2.04E+07	0.80	Y	1.08	77.9	5381.549	0.224
1248/1367/1379-TCDF	25.59		0.9084	0.9069	-2.3	1.30E+08	0.81	Y	1.08	494	5381.549	0.224
1268-TCDF	25.96		0.9207	0.9200	-1.1	6.14E+07	0.81	Y	1.08	234	5381.549	0.224
1467-TCDF	26.09		0.9253	0.9245	-1.3	1.29E+07	0.82	Y	1.08	49.2	5381.549	0.224
1478-TCDF	26.25		0.9309	0.9302	-1.1	1.55E+08	0.81	Y	1.08	590	5381.549	0.224
1369/1237-TCDF	26.62		0.9431	0.9431	0	5.14E+07	0.83	Y	1.08	196	5381.549	0.224
2467-TCDF	26.71		0.9472	0.9466	-1.0	6.52E+06	0.83	Y	1.08	24.9	5381.549	0.224
2368-TCDF	26.85		0.9524	0.9515	-1.5	1.39E+08	0.79	Y	1.08	532	5381.549	0.224
1238/1234/1678/1469/1236-TCDF	26.94		0.9560	0.9546	-2.3	2.57E+08	0.82	Y	1.08	982	5381.549	0.224
1278-TCDF	27.39	E	0.9710	0.9705	-0.8	2.50E+09	0.81	Y	1.08	9,520	5381.549	0.224
1349-TCDF	NotFnd		0.9752						1.08		5381.549	0.224
1267-TCDF	27.65		0.9802	0.9797	-0.8	1.14E+08	0.81	Y	1.08	434	5381.549	0.224
2346/1249-TCDF	27.85		0.9863	0.9867	+0.7	1.36E+07	0.83	Y	1.08	51.8	5381.549	0.224
2347/1279-TCDF	28.04		0.9936	0.9935	-0.2	6.97E+07	0.80	Y	1.08	266	5381.549	0.224
2348-TCDF	28.13	E	0.9971	0.9969	-0.3	3.61E+08	0.79	Y	1.08	1,380	5381.549	0.224
2378-TCDF	**28.24**	E	**1.0007**	**1.0007**	**0**	**5.27E+09**	**0.81**	**Y**	**1.08**	**20,100**	**5381.549**	**0.224**
2367/3467-TCDF	28.59	E	1.0134	1.0132	-0.3	4.23E+08	0.81	Y	1.08	1,610	5381.549	0.224
1269-TCDF	28.84		1.0219	1.0219	0	6.46E+07	0.81	Y	1.08	247	5381.549	0.224
1239-TCDF	29.09		1.0309	1.0309	0	7.13E+06	0.83	Y	1.08	27.2	5381.549	0.224
1289-TCDF	30.22	E	1.0689	1.0708	+3.4	4.49E+08	0.81	Y	1.08	1,710	5381.549	0.224
13468/12468-PeCDF	30.19		0.9175	0.9179	+0.7	7.54E+06	1.64	Y	1.02	33.4	5227.035	0.208
13678/13467/12467-PeCDF	31.69		0.9630	0.9636	+1.1	3.04E+06	1.52	Y	1.02	13.4	11526.402	0.458
12368/13478/12478-PeCDF	31.84		0.9675	0.9682	+1.3	1.02E+08	1.57	Y	1.02	450	11526.402	0.458
14678-PeCDF	NotFnd		0.9705						1.02		11526.402	0.458
13479-PeCDF	NotFnd		0.9734						1.02		11526.402	0.458
13469/12479-PeCDF	32.21		0.9807	0.9793	-2.7	9.88E+05	1.73	Y	1.02	4.37	11526.402	0.458
12346-PeCDF	NotFnd		0.9848						1.02		11526.402	0.458

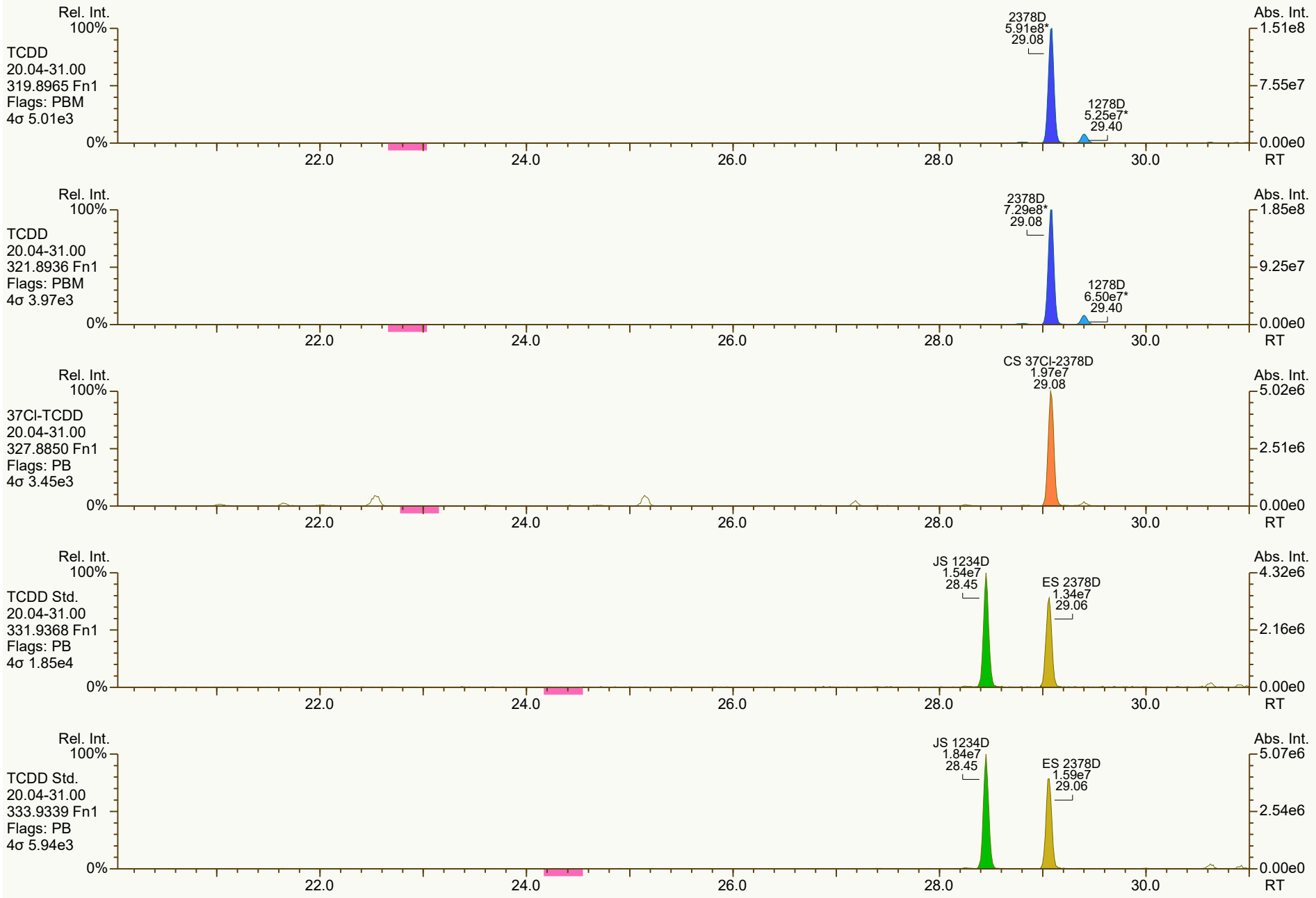
Lab ID: B5986_18732_DF_005 **Acq'd: 18 Dec 2021 01:52 DTF** **Wt/Vol: 10.15 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120421-S-JC-SC-O-7 **UTP: 20-Dec-2021 14:13:08 DTF** **J-level: 0.493 pg/g** **Split: 1** **Checkcode: 360-861-QJD**

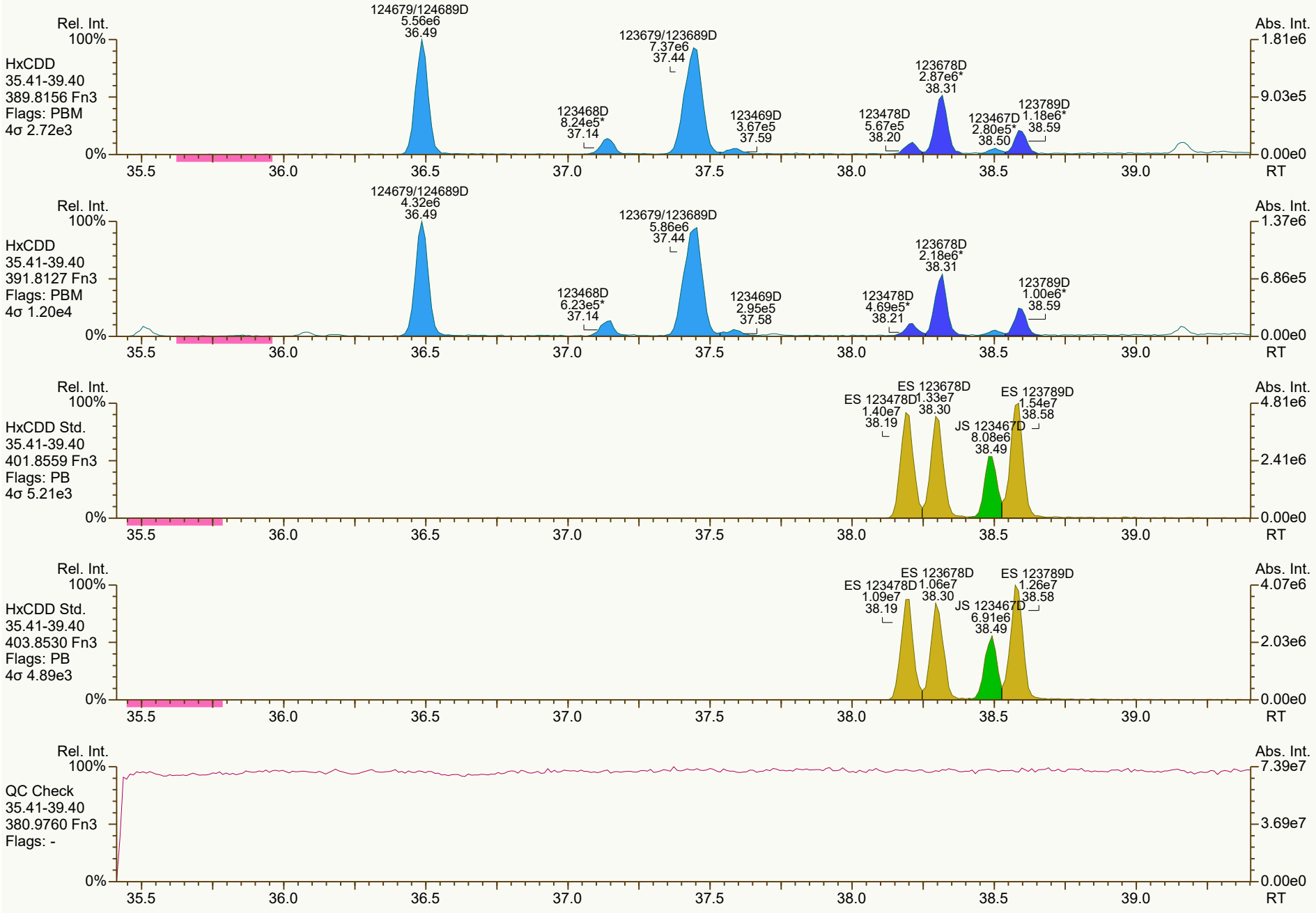
Datafile: 211217C21 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

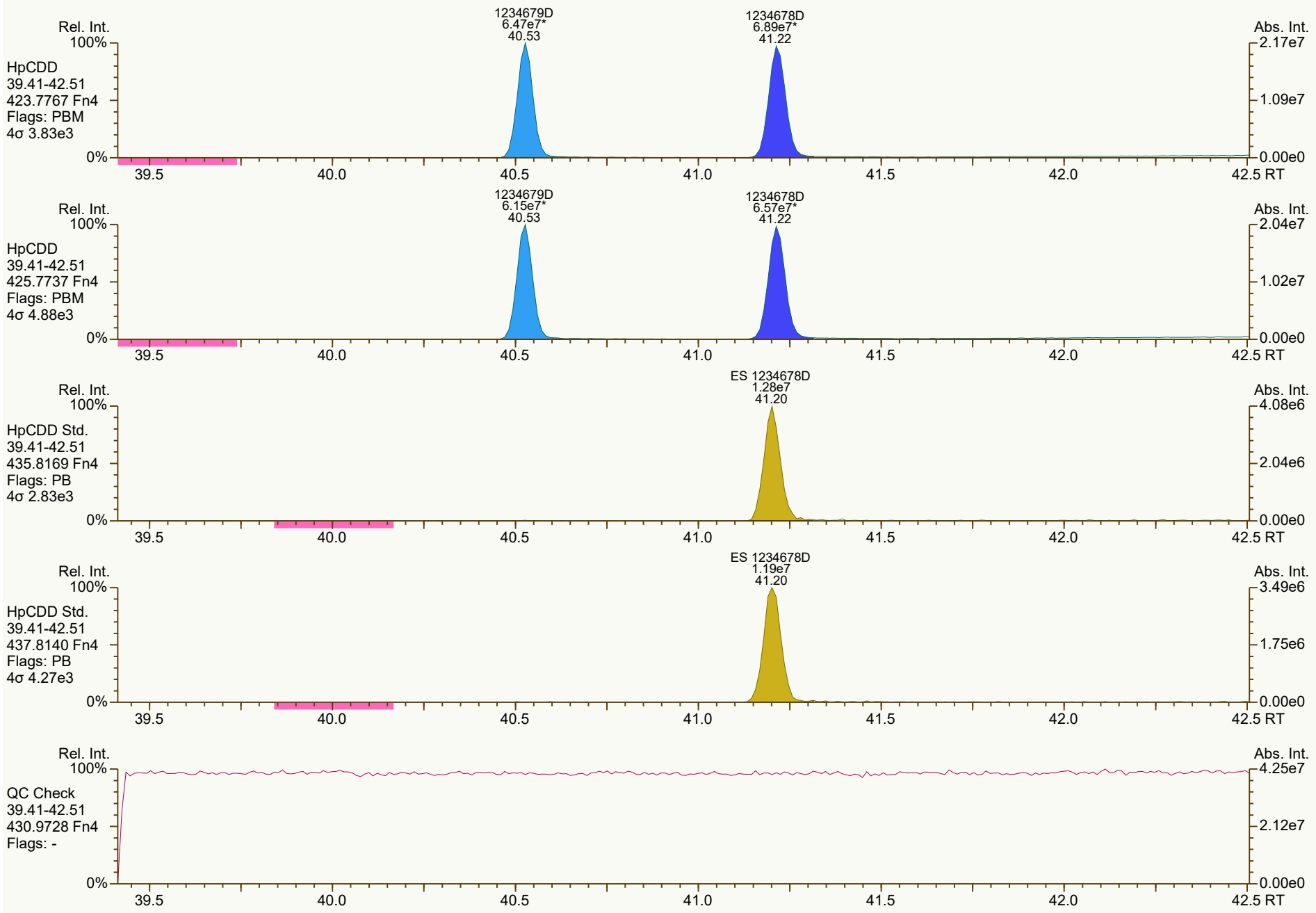
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.46		0.9868	0.9868	0	4.67E+06	1.57	Y	1.02	20.6	11526.402	0.458
12347-PeCDF	32.55		0.9895	0.9896	+0.2	4.06E+06	1.60	Y	1.02	17.9	11526.402	0.458
12348-PeCDF	32.71		0.9943	0.9944	+0.2	1.91E+07	1.58	Y	1.02	84.6	11526.402	0.458
12378-PeCDF	**32.91**		**1.0005**	**1.0005**	**0**	**2.53E+08**	**1.56**	**Y**	**1.02**	**1,090**	**11526.402**	**0.438**
12678/12367-PeCDF	33.20		1.0086	1.0092	+1.2	6.68E+07	1.58	Y	1.02	295	11526.402	0.458
12379-PeCDF	NotFnd		1.0137						1.02		11526.402	0.458
12679-PeCDF	33.74	J EMPC	0.9936	0.9932	-0.8	4.51E+05	1.81	N	1.02	2	11526.402	0.458
23467/12369-PeCDF	33.87		0.9970	0.9969	-0.2	2.85E+06	1.56	Y	1.02	12.6	11526.402	0.458
23478-PeCDF	**34.00**		**1.0005**	**1.0008**	**+0.6**	**1.49E+08**	**1.59**	**Y**	**1.02**	**675**	**11526.402**	**0.479**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		11526.402	0.458
12349-PeCDF	NotFnd		1.0103						1.02		11526.402	0.458
12389-PeCDF	35.05		1.0317	1.0318	+0.2	8.69E+06	1.56	Y	1.02	38.4	11526.402	0.458
123468-HxCDF	35.85		0.9634	0.9636	+0.4	6.06E+06	1.22	Y	1.19	27.4	13861.67	0.497
124678/134678-HxCDF	36.04		0.9687	0.9688	+0.2	4.24E+07	1.26	Y	1.19	192	13861.67	0.497
134679-HxCDF	NotFnd		0.9748						1.19		13861.67	0.497
124679-HxCDF	36.46		0.9800	0.9800	0	8.32E+05	1.34	Y	1.19	3.76	13861.67	0.497
124689-HxCDF	36.68		0.9857	0.9859	+0.4	2.97E+07	1.28	Y	1.19	134	13861.67	0.497
123467-HxCDF	37.10		0.9973	0.9972	-0.2	2.58E+06	1.33	Y	1.19	11.6	13861.67	0.497
123478-HxCDF	**37.22**		**1.0005**	**1.0005**	**0**	**4.63E+08**	**1.27**	**Y**	**1.27**	**2,020**	**13861.67**	**0.501**
123678-HxCDF	**37.37**		**1.0005**	**1.0005**	**0**	**1.15E+08**	**1.27**	**Y**	**1.15**	**494**	**13861.67**	**0.493**
123479-HxCDF	NotFnd		1.0051						1.19		13861.67	0.497
123469-HxCDF	37.69		1.0092	1.0092	0	1.47E+06	1.29	Y	1.19	6.65	13861.67	0.497
123679-HxCDF	NotFnd		0.9948						1.19		13861.67	0.497
234678-HxCDF	**38.04**		**1.0004**	**1.0005**	**+0.2**	**2.26E+07**	**1.24**	**Y**	**1.19**	**105**	**13861.67**	**0.525**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		13861.67	0.497
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**13861.67**	**0.471**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.95		1.0007	1.0011	+0.9	3.45E+07	1.25	Y	1.19	156	13861.67	0.497
1234678-HpCDF	**40.27**		**1.0003**	**1.0003**	**0**	**1.26E+08**	**1.04**	**Y**	**1.37**	**597**	**9083.695**	**0.307**
1234679-HpCDF	40.53		1.0068	1.0068	0	2.04E+06	1.06	Y	1.34	10.7	9083.695	0.378
1234689-HpCDF	40.67		1.0102	1.0104	+0.5	7.80E+07	1.04	Y	1.34	408	9083.695	0.378
1234789-HpCDF	**41.69**		**1.0003**	**1.0003**	**0**	**3.53E+07**	**1.04**	**Y**	**1.31**	**206**	**9083.695**	**0.463**
OCDF	**44.19**		**1.0003**	**1.0003**	**0**	**1.62E+08**	**0.90**	**Y**	**1.07**	**1,510**	**5347.066**	**0.604**
OCDF-a	44.19		1.0002	1.0002	0	1.02E+07	2.65	Y	0.07	1,530	5017.626	9.15

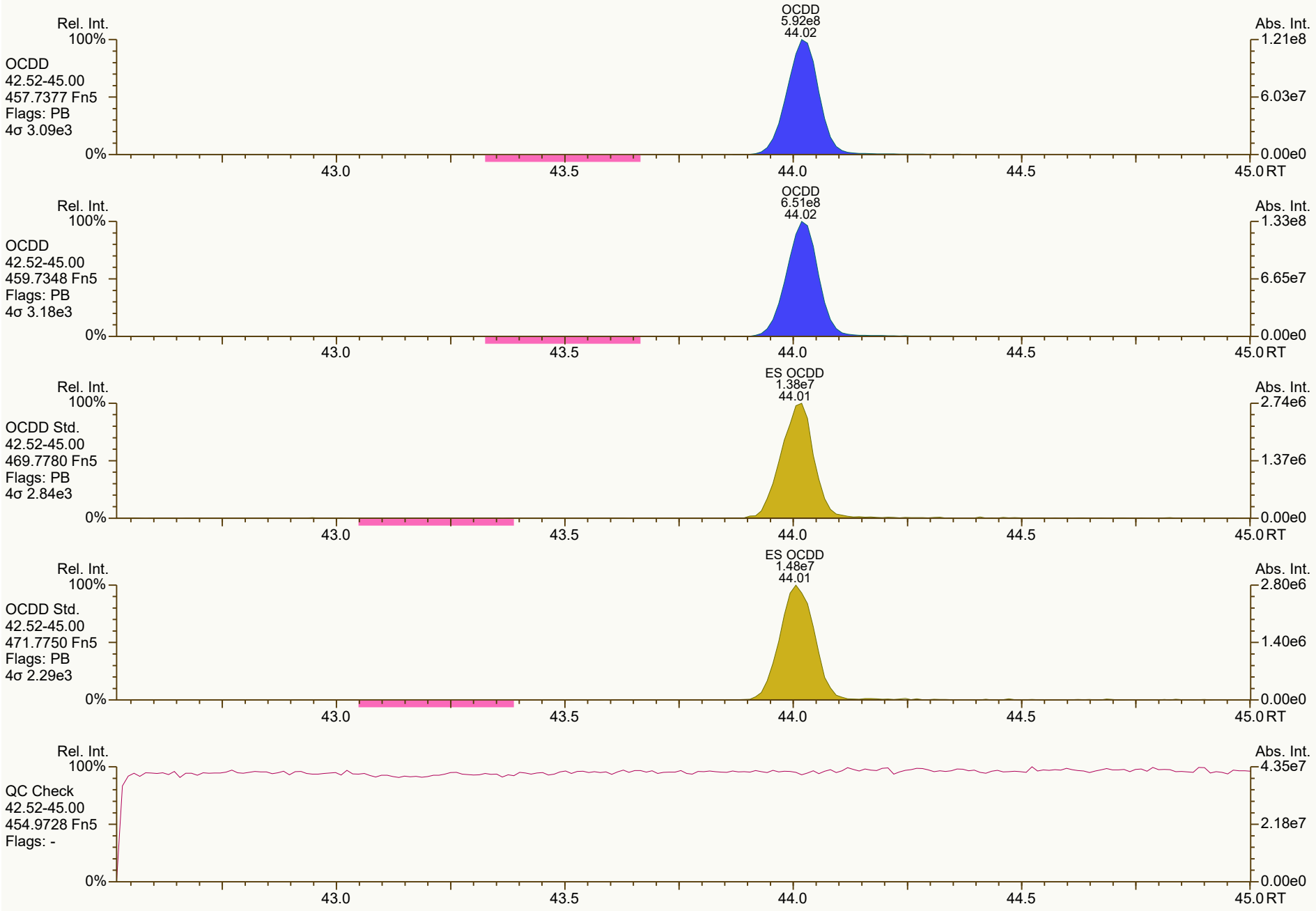

Rel. Int.
100%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
0%
22.0
24.0
26.0
28.0
30.0
Abs. Int.
2.36e7
1.18e7
0.00e0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Abs. Int.
1.60e7
7.98e6
0.00e0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
Abs. Int.
7.39e7
3.69e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.25e7
2.12e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
4.35e7
2.18e7
0.00e0

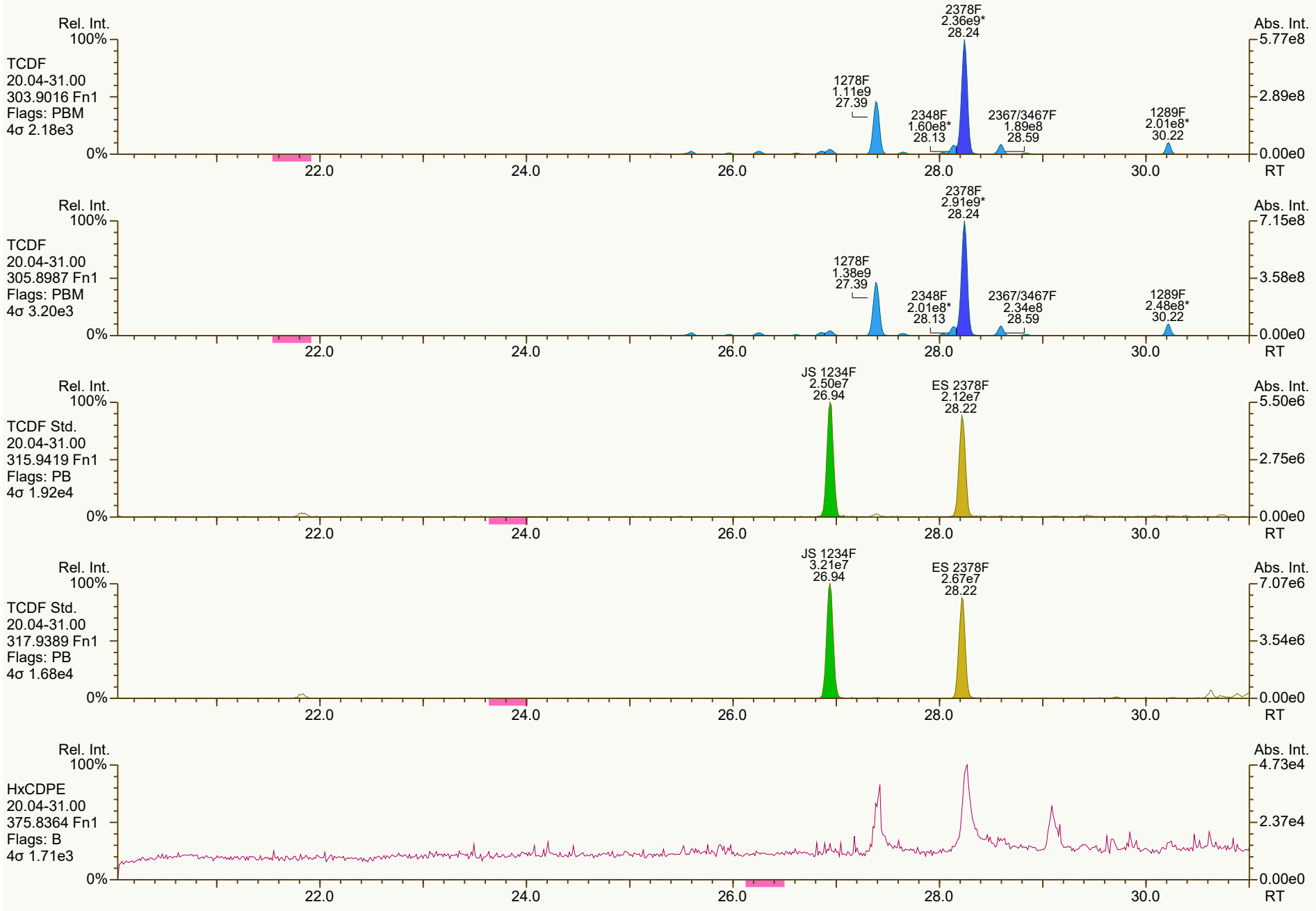

Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: PBM
4σ 5.01e3
0%
2378D
5.91e8*
29.08
1278D
5.25e7*
29.40
Abs. Int.
1.51e8
7.55e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: PBM
4σ 3.97e3
0%
2378D
7.29e8*
29.08
1278D
6.50e7*
29.40
Abs. Int.
1.85e8
9.25e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PB
4σ 3.45e3
0%
CS 37Cl-2378D
1.97e7
29.08
Abs. Int.
5.02e6
2.51e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PB
4σ 1.85e4
0%
JS 1234D
1.54e7
28.45
ES 2378D
1.34e7
29.06
Abs. Int.
4.32e6
2.16e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PB
4σ 5.94e3
0%
JS 1234D
1.84e7
28.45
ES 2378D
1.59e7
29.06
Abs. Int.
5.07e6
2.54e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PBM
4σ 4.34e3
12479/12468D
7.09e5
31.88
12368D
7.92e5*
32.93
12478D
6.72e5*
33.12
12378D
6.88e6*
34.32
12367D
3.75e5*
34.42
0%
Abs. Int.
2.01e6
1.01e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PBM
4σ 8.81e3
12479/12468D
4.44e5
31.89
12469D
3.75e5*
32.40
12368D
5.34e5*
32.93
12478D
5.27e5*
33.11
12378D
4.30e6*
34.32
12367D
2.18e5*
34.42
0%
Abs. Int.
1.27e6
6.37e5
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PB
4σ 4.69e3
CS 12347D
1.58e7
33.82
ES 12378D
1.74e7
34.30
0%
Abs. Int.
5.05e6
2.52e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PBM
4σ 6.68e3
CS 12347D
9.87e6
33.82
ES 12378D
1.10e7*
34.30
0%
Abs. Int.
3.12e6
1.56e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.60e7
7.98e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT

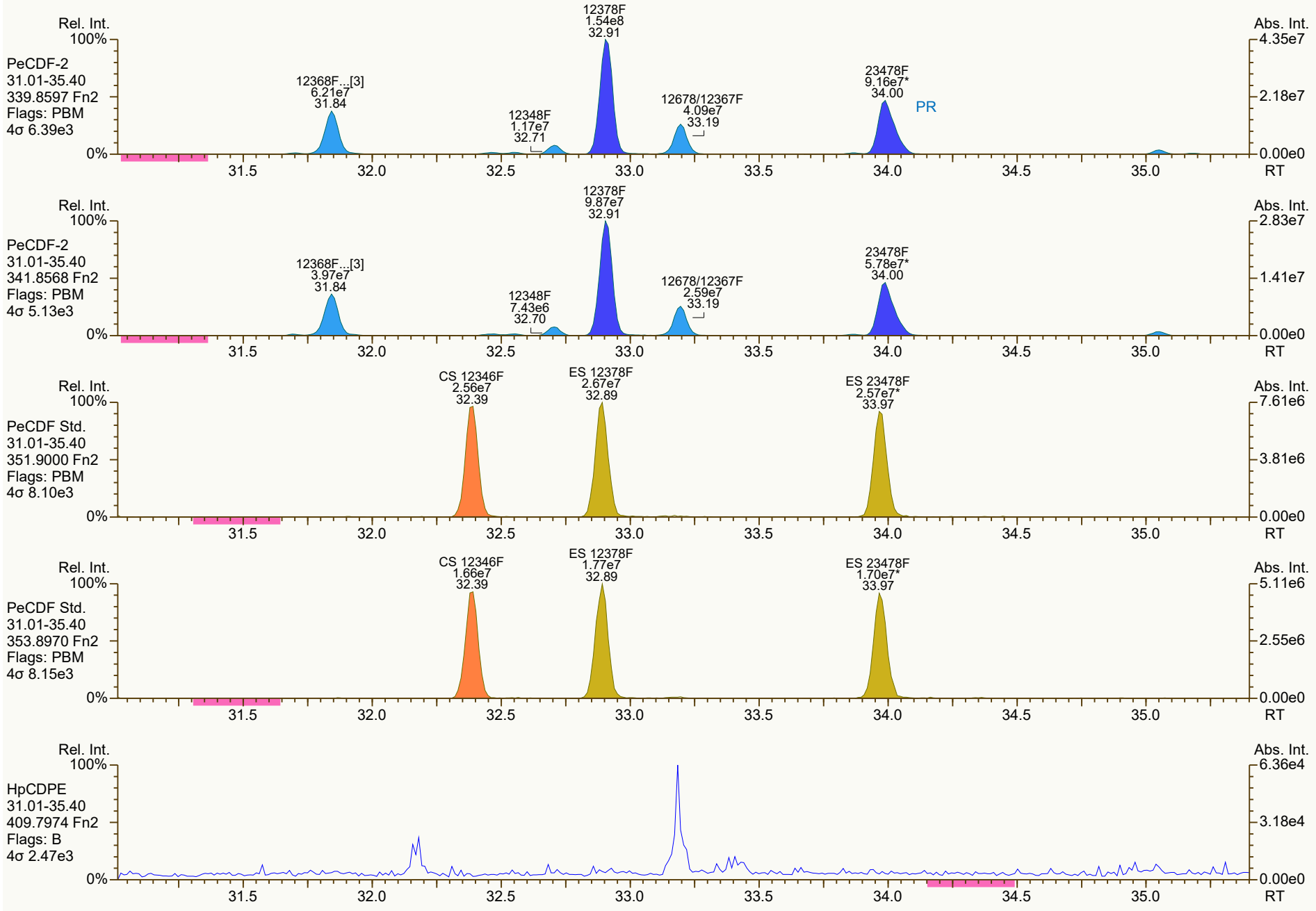

Rel. Int.
100%
0%
Abs. Int.
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PBM
4σ 2.72e3
124679/124689D
5.56e6
36.49
123679/123689D
7.37e6
37.44
123468D
8.24e5*
37.14
123469D
3.67e5
37.59
123478D
5.67e5
38.20
123678D
2.87e6*
38.31
123467D
2.80e5*
38.50
123789D
1.18e6*
38.59
1.81e6
9.03e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PBM
4σ 1.20e4
124679/124689D
4.32e6
36.49
123679/123689D
5.86e6
37.44
123468D
6.23e5*
37.14
123469D
2.95e5
37.58
123478D
4.69e5*
38.21
123678D
2.18e6*
38.31
123789D
1.00e6*
38.59
1.37e6
6.86e5
0.00e0
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PB
4σ 5.21e3
ES 123678D
1.33e7
38.30
ES 123478D
1.40e7
38.19
JS 123467D
8.08e6
38.49
ES 123789D
1.54e7
38.58
4.81e6
2.41e6
0.00e0
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PB
4σ 4.89e3
ES 123678D
1.06e7
38.30
ES 123478D
1.09e7
38.19
JS 123467D
6.91e6
38.49
ES 123789D
1.26e7
38.58
4.07e6
2.03e6
0.00e0
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
7.39e7
3.69e7
0.00e0

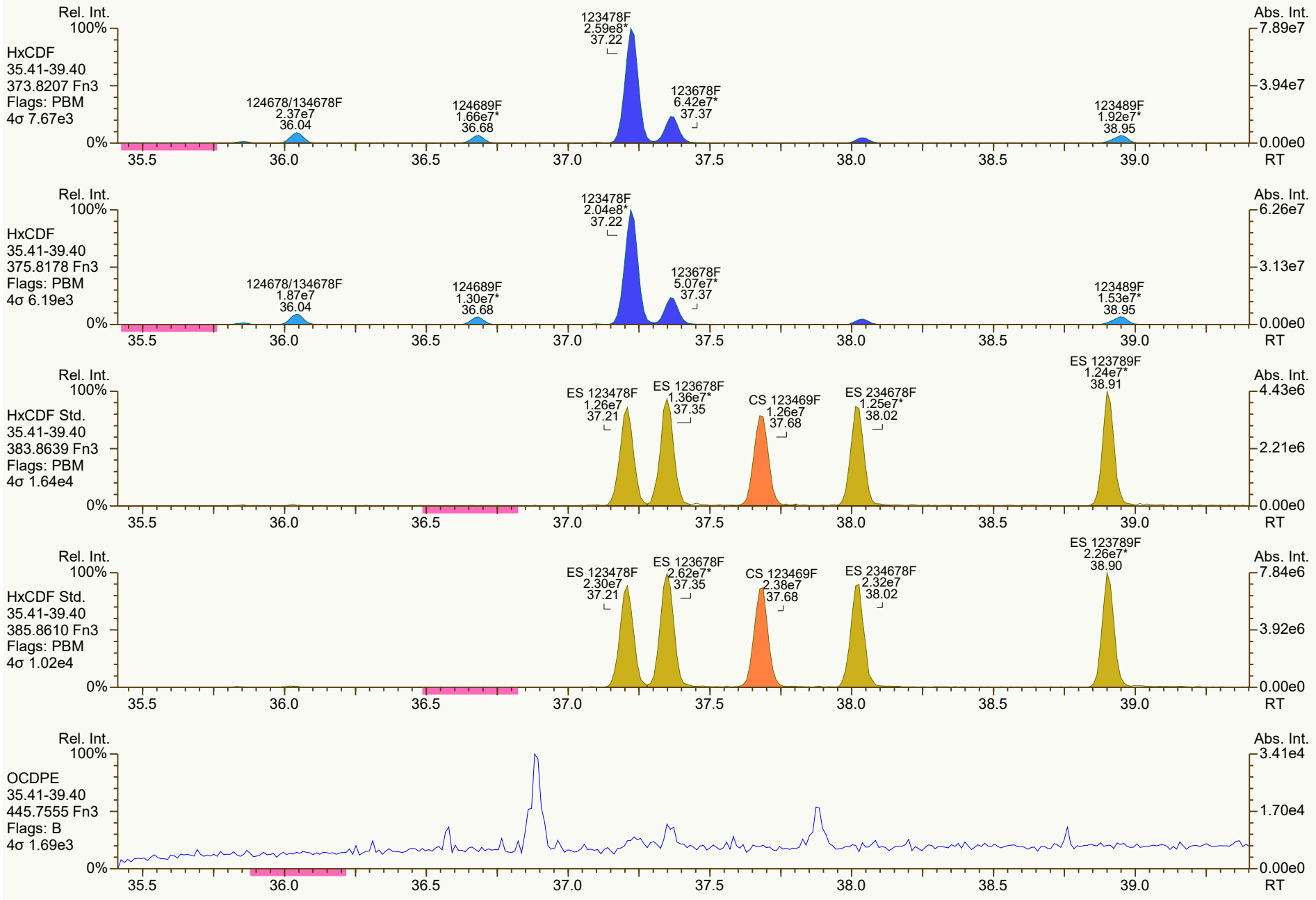

Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PBM
4σ 3.83e3
0%
1234679D
6.47e7*
40.53
1234678D
6.89e7*
41.22
Abs. Int.
2.17e7
1.09e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PBM
4σ 4.88e3
0%
1234679D
6.15e7*
40.53
1234678D
6.57e7*
41.22
Abs. Int.
2.04e7
1.02e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PB
4σ 2.83e3
0%
ES 1234678D
1.28e7
41.20
Abs. Int.
4.08e6
2.04e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PB
4σ 4.27e3
0%
ES 1234678D
1.19e7
41.20
Abs. Int.
3.49e6
1.75e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.25e7
2.12e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT

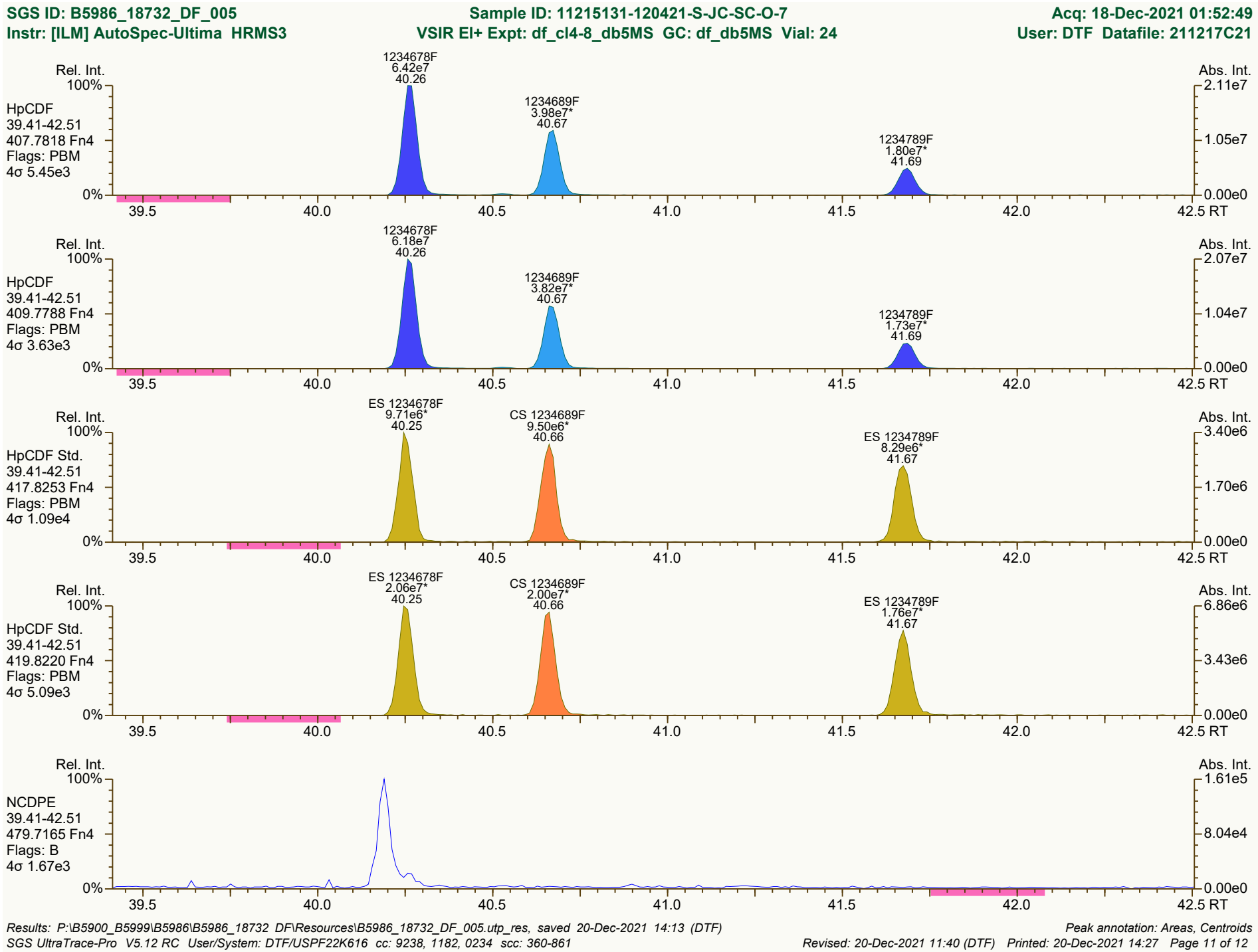

Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PB
4σ 3.09e3
0%
OCDD
5.92e8
44.02
Abs. Int.
1.21e8
6.03e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 3.18e3
0%
OCDD
6.51e8
44.02
Abs. Int.
1.33e8
6.65e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDD
1.38e7
44.01
Abs. Int.
2.74e6
1.37e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 2.29e3
0%
ES OCDD
1.48e7
44.01
Abs. Int.
2.80e6
1.40e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.35e7
2.18e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 2.18e3
0%
2378F
2.36e9*
28.24
1278F
1.11e9
27.39
2348F
1.60e8*
28.13
2367/3467F
1.89e8
28.59
1289F
2.01e8*
30.22
Abs. Int.
5.77e8
2.89e8
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 3.20e3
0%
2378F
2.91e9*
28.24
1278F
1.38e9
27.39
2348F
2.01e8*
28.13
2367/3467F
2.34e8
28.59
1289F
2.48e8*
30.22
Abs. Int.
7.15e8
3.58e8
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PB
4σ 1.92e4
0%
JS 1234F
2.50e7
26.94
ES 2378F
2.12e7
28.22
Abs. Int.
5.50e6
2.75e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PB
4σ 1.68e4
0%
JS 1234F
3.21e7
26.94
ES 2378F
2.67e7
28.22
Abs. Int.
7.07e6
3.54e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 1.71e3
0%
Abs. Int.
4.73e4
2.37e4
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

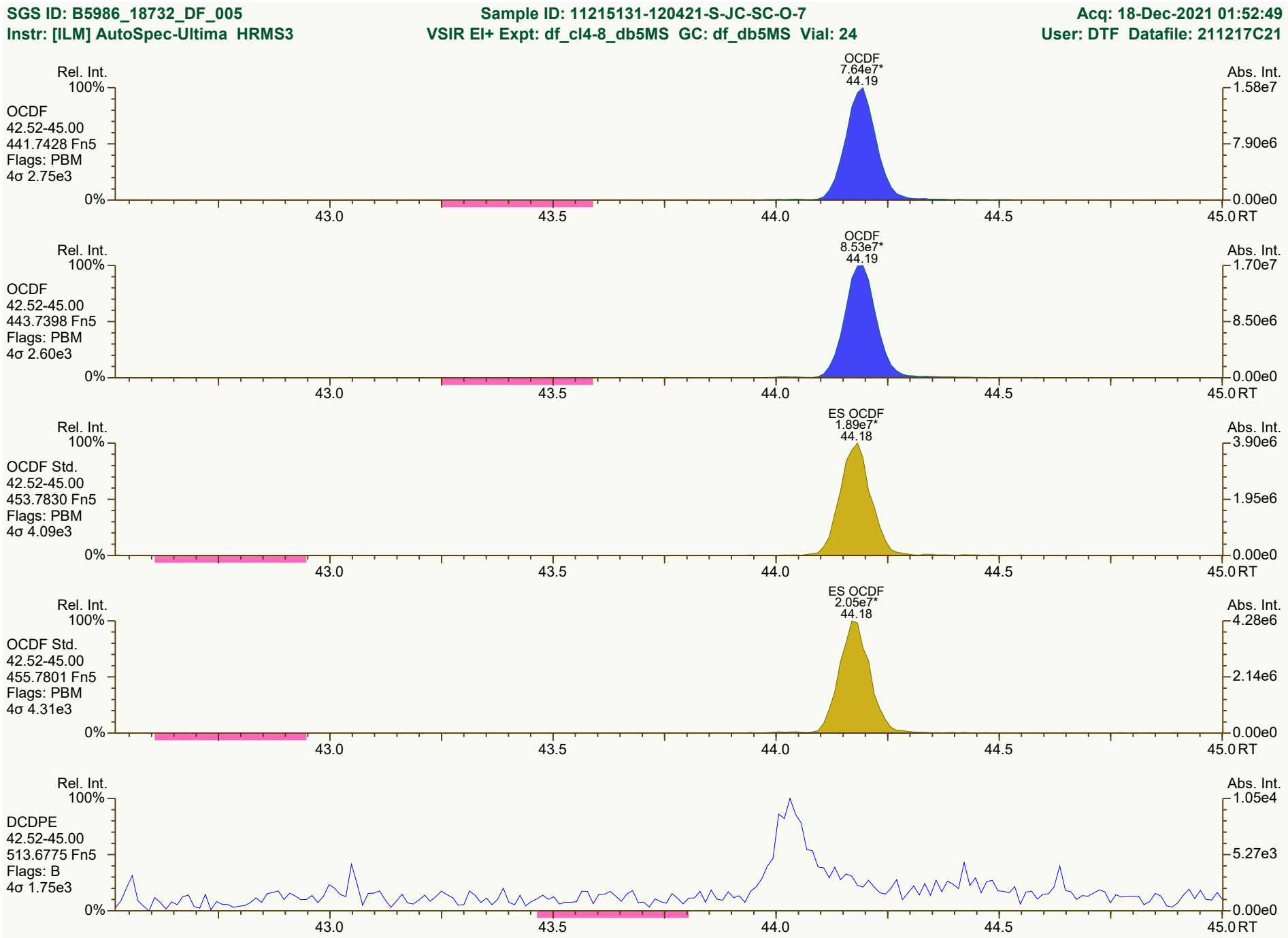

13468/12468F
4.69e6
30.19
Rel. Int.
100%
Abs. Int.
1.23e6
PeCDF-1
20.04-31.00
339.8597 Fn1
Flags: PB
4σ 2.49e3
6.17e5
0%
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
13468/12468F
2.86e6
30.19
Rel. Int.
100%
Abs. Int.
7.37e5
PeCDF-1
20.04-31.00
341.8568 Fn1
Flags: PB
4σ 2.74e3
3.69e5
0%
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
Abs. Int.
2.36e7
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
1.18e7
0%
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PBM
4σ 6.39e3
0%
12368F...[3]
6.21e7
31.84
12348F
1.17e7
32.71
12378F
1.54e8
32.91
12678/12367F
4.09e7
33.19
23478F
9.16e7*
34.00
PR
Abs. Int.
4.35e7
2.18e7
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PBM
4σ 5.13e3
0%
12368F...[3]
3.97e7
31.84
12348F
7.43e6
32.70
12378F
9.87e7
32.91
12678/12367F
2.59e7
33.19
23478F
5.78e7*
34.00
Abs. Int.
2.83e7
1.41e7
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PBM
4σ 8.10e3
0%
CS 12346F
2.56e7
32.39
ES 12378F
2.67e7
32.89
ES 23478F
2.57e7*
33.97
Abs. Int.
7.61e6
3.81e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PBM
4σ 8.15e3
0%
CS 12346F
1.66e7
32.39
ES 12378F
1.77e7
32.89
ES 23478F
1.70e7*
33.97
Abs. Int.
5.11e6
2.55e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 2.47e3
0%
Abs. Int.
6.36e4
3.18e4
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
100%
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PBM
4σ 7.67e3
0%
123478F
2.59e8*
37.22
124678/134678F
2.37e7
36.04
124689F
1.66e7*
36.68
123678F
6.42e7*
37.37
123489F
1.92e7*
38.95
Abs. Int.
7.89e7
3.94e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
HxCDF
35.41-39.40
375.8178 Fn3
Flags: PBM
4σ 6.19e3
123478F
2.04e8*
37.22
124678/134678F
1.87e7
36.04
124689F
1.30e7*
36.68
123678F
5.07e7*
37.37
123489F
1.53e7*
38.95
6.26e7
3.13e7
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PBM
4σ 1.64e4
ES 123478F
1.26e7
37.21
ES 123678F
1.36e7*
37.35
CS 123469F
1.26e7
37.68
ES 234678F
1.25e7*
38.02
ES 123789F
1.24e7*
38.91
4.43e6
2.21e6
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PBM
4σ 1.02e4
ES 123478F
2.30e7
37.21
ES 123678F
2.62e7*
37.35
CS 123469F
2.38e7
37.68
ES 234678F
2.32e7
38.02
ES 123789F
2.26e7*
38.90
7.84e6
3.92e6
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 1.69e3
3.41e4
1.70e4


SGS ID: B5986_18732_DF_005
Sample ID: 11215131-120421-S-JC-SC-O-7
Acq: 18-Dec-2021 01:52:49
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24
User: DTF Datafile: 211217C21
Rel. Int.
Abs. Int.
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 5.45e3
1234678F
6.42e7
40.26
1234689F
3.98e7*
40.67
1234789F
1.80e7*
41.69
2.11e7
1.05e7
0.00e0
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 3.63e3
1234678F
6.18e7
40.26
1234689F
3.82e7*
40.67
1234789F
1.73e7*
41.69
2.07e7
1.04e7
0.00e0
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PBM
4σ 1.09e4
ES 1234678F
9.71e6*
40.25
CS 1234689F
9.50e6*
40.66
ES 1234789F
8.29e6*
41.67
3.40e6
1.70e6
0.00e0
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PBM
4σ 5.09e3
ES 1234678F
2.06e7*
40.25
CS 1234689F
2.00e7*
40.66
ES 1234789F
1.76e7*
41.67
6.86e6
3.43e6
0.00e0
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 1.67e3
1.61e5
8.04e4
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_005.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9238, 1182, 0234 scc: 360-861
Revised: 20-Dec-2021 11:40 (DTF) Printed: 20-Dec-2021 14:27 Page 11 of 12

SGS ID: B5986_18732_DF_005 | Sample ID: 11215131-120421-S-JC-SC-O-7 | Acq: 18-Dec-2021 01:52:49
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 24 | User: DTF Datafile: 211217C21



Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_005.utp_res, saved 20-Dec-2021 14:13 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9291, 6328, 4439 scc: 360-861 | Revised: 20-Dec-2021 11:40 (DTF) Printed: 20-Dec-2021 14:27 Page 12 of 12

Lab ID: B5986_18732_DF_006 **Acq'd:** 18 Dec 2021 02:39 DTF **Wt/Vol:** 10.13 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-O-1 **UTP:** 20-Dec-2021 14:13:08 DTF **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 305-317-KYG

Datafile: 211217C22 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.05		1.0008	1.0007	-0.2	5.77E+06	0.84	Y	1.18	31	7822.053	0.408
12378-PeCDD	34.30		1.0005	1.0005	0	6.51E+05	1.51	Y	1.04	3.57	10627.731	0.487
123478-HxCDD	38.20		1.0004	1.0003	-0.2	1.27E+06	1.23	Y	1.09	8.12	6850.907	0.34
123678-HxCDD	38.31		1.0031	1.0032	+0.2	5.34E+06	1.24	Y	1.15	33.4	6850.907	0.335
123789-HxCDD	38.59		1.0102	1.0104	+0.5	2.78E+06	1.27	Y	1.05	16.2	6850.907	0.303
1234678-HpCDD	41.23		1.0004	1.0003	-0.2	1.40E+08	1.06	Y	1.06	957	10667.37	0.621
OCDD	44.04	E	1.0003	1.0003	0	1.18E+09	0.91	Y	1.13	16,800	10971.222	2.09
2378-TCDF	28.21		1.0007	1.0007	0	2.71E+07	0.82	Y	1.08	89	7744.491	0.249
12378-PeCDF	32.88		1.0005	1.0005	0	1.98E+06	1.58	Y	1.02	6.46	15022.235	0.417
23478-PeCDF	33.98		1.0005	1.0010	+1.0	3.16E+06	1.61	Y	1.02	10.9	15022.235	0.43
123478-HxCDF	37.21		1.0005	1.0004	-0.2	4.70E+06	1.29	Y	1.27	16.5	10096.576	0.299
123678-HxCDF	37.35		1.0005	1.0004	-0.2	3.11E+06	1.19	Y	1.15	10.3	10096.576	0.286
234678-HxCDF	38.03		1.0004	1.0005	+0.2	3.60E+06	1.23	Y	1.19	13.1	10096.576	0.309
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	10096.576	0.288
1234678-HpCDF	40.26		1.0003	1.0003	0	3.58E+07	1.07	Y	1.37	147	11519.402	0.369
1234789-HpCDF	41.70		1.0003	1.0003	0	2.20E+06	1.15	Y	1.31	11.7	11519.402	0.526
OCDF	44.21		1.0003	1.0003	0	2.43E+07	0.92	Y	1.07	274	4670.691	0.661

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.03	1.0215	1.0217	+0.3	3.10E+07	0.83	Y	1.05	76.8
ES 12378-PeCDD	34.28	1.2040	1.2064	+4.9	3.48E+07	1.59	Y	0.88	102
ES 123478-HxCDD	38.19	0.9925	0.9924	-0.2	2.85E+07	1.26	Y	0.97	78.8
ES 123678-HxCDD	38.30	0.9953	0.9952	-0.2	2.75E+07	1.25	Y	0.94	78.4
ES 123789-HxCDD	38.58	1.0024	1.0024	0	3.24E+07	1.23	Y	1.09	80
ES 1234678-HpCDD	41.21	1.0697	1.0709	+3.0	2.72E+07	1.08	Y	0.91	80.3
ES OCDD	44.02	1.1413	1.1440	+7.1	2.46E+07	0.97	Y	0.62	53.1
ES 2378-TCDF	28.19	1.0469	1.0474	+0.8	5.58E+07	0.77	Y	1.06	74.6
ES 12378-PeCDF	32.86	1.2181	1.2208	+5.3	5.90E+07	1.48	Y	0.91	91.8
ES 23478-PeCDF	33.94	1.2578	1.2610	+6.5	5.61E+07	1.56	Y	0.88	90
ES 123478-HxCDF	37.19	0.9670	0.9665	-1.1	4.43E+07	0.53	Y	1.20	99.5
ES 123678-HxCDF	37.34	0.9708	0.9702	-1.3	5.18E+07	0.55	Y	1.35	103
ES 234678-HxCDF	38.01	0.9881	0.9877	-0.9	4.58E+07	0.55	Y	1.24	99.2
ES 123789-HxCDF	38.90	1.0108	1.0110	+0.5	4.33E+07	0.54	Y	1.16	101
ES 1234678-HpCDF	40.25	1.0452	1.0460	+1.9	3.52E+07	0.47	Y	0.97	97.8
ES 1234789-HpCDF	41.68	1.0818	1.0832	+3.5	2.83E+07	0.48	Y	0.85	89.5
ES OCDF	44.20	1.1461	1.1485	+6.4	3.26E+07	0.91	Y	0.81	54.4

Lab ID: B5986_18732_DF_006 **Acq'd:** 18 Dec 2021 02:39 DTF **Wt/Vol:** 10.13 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-O-1 **UTP:** 20-Dec-2021 14:13:08 DTF **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 305-317-KYG

Datafile: 211217C22 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.42		-	-	-	3.87E+07	0.86	Y	-	-	
JS 1234-TCDF	26.92		-	-	-	7.06E+07	0.77	Y	-	-	
JS 123467-HxCDD	38.48		-	-	-	1.86E+07	1.25	Y	-	-	
CS 37Cl-2378-TCDD	29.05		1.0222	1.0225	+0.5	1.61E+07	n/a	-	1.20	86.7	
CS 12347-PeCDD	33.79		1.1870	1.1892	+4.5	3.25E+07	1.65	Y	0.75	112	
CS 12346-PeCDF	32.35		1.1994	1.2019	+4.9	5.72E+07	1.52	Y	0.85	95.2	
CS 123469-HxCDF	37.67		0.9793	0.9788	-1.1	4.75E+07	0.53	Y	1.12	114	
CS 1234689-HpCDF	40.66		1.0556	1.0567	+2.7	3.57E+07	0.45	Y	0.89	108	
~~SS 37Cl-2378-TCDD~~	~~29.05~~		~~1.0222~~	~~1.0225~~	~~+0.5~~	~~1.61E+07~~	~~n/a~~		~~1.15~~	~~113~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.79~~		~~1.1870~~	~~1.1892~~	~~+4.5~~	~~3.25E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~109~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.35~~		~~1.1994~~	~~1.2019~~	~~+4.9~~	~~5.72E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~104~~	
~~SS 123469-HxCDF~~	~~37.67~~		~~0.9793~~	~~0.9788~~	~~-1.1~~	~~4.75E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~111~~	
~~SS 1234689-HpCDF~~	~~40.66~~		~~1.0556~~	~~1.0567~~	~~+2.7~~	~~3.57E+07~~	~~0.45~~	~~Y~~	~~0.92~~	~~111~~	

Totals	Conc	EMPC
Total TCDD	40	43.1
Total PeCDD	22.2	28.2
Total HxCDD	310	310
Total HpCDD	2360	2360
Total Tetra-Octa Dioxins	19500	19500
Total TCDF	213	214
Total PeCDF	92.1	94.1
Total HxCDF	222	222
Total HpCDF	413	413
Total Tetra-Octa Furans	1,210	1220
Total Tetra-Octa Dioxins & Furans	20700	20700

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.833	0.84
Response	5.78E+06	5.77E+06

Lab ID: B5986_18732_DF_006 **Acq'd: 18 Dec 2021 02:39 DTF** **Wt/Vol: 10.13 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120621-S-JC-SC-O-1 **UTP: 20-Dec-2021 14:13:08 DTF** **J-level: 0.494 pg/g** **Split: 1** **Checkcode: 305-317-KYG**

Datafile: 211217C22 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.57		0.8819	0.8807	-1.8	1.08E+06	0.85	Y	1.18	5.78	7822.053	0.408
1379-TCDD	25.92	EMPC	0.8935	0.8926	-1.4	2.35E+05	0.93	N	1.18	1.26	7822.053	0.408
1369-TCDD	NotFnd		0.9073						1.18		7822.053	0.408
1469-TCDD	NotFnd		0.9329						1.18		7822.053	0.408
1247/1246/1248/1249-TCDD	NotFnd		0.9407						1.18		7822.053	0.408
1378-TCDD	27.47	EMPC	0.9466	0.9462	-0.7	1.37E+05	1.07	N	1.18	0.735	7822.053	0.408
1268-TCDD	NotFnd		0.9531						1.18		7822.053	0.408
1478-TCDD	NotFnd		0.9610						1.18		7822.053	0.408
1279-TCDD	NotFnd		0.9668						1.18		7822.053	0.408
1234/1269-TCDD	NotFnd		0.9783						1.18		7822.053	0.408
1236-TCDD	NotFnd		0.9830						1.18		7822.053	0.408
1237/1238-TCDD	28.78	EMPC	0.9913	0.9914	+0.2	1.92E+05	0.98	N	1.18	1.03	7822.053	0.408
1239-TCDD	NotFnd		0.9959						1.18		7822.053	0.408
2378-TCDD	**29.05**		**1.0008**	1.0007	**-0.2**	5.77E+06	0.84	Y	**1.18**	**31**	**7822.053**	**0.408**
1278-TCDD	29.37		1.0115	1.0115	0	6.05E+05	0.81	Y	1.18	3.25	7822.053	0.408
1267-TCDD	NotFnd		1.0160						1.18		7822.053	0.408
1289-TCDD	NotFnd		1.0331						1.18		7822.053	0.408
12479/12468-PeCDD	31.85		0.9295	0.9289	-1.1	1.20E+06	1.62	Y	1.04	6.56	10627.731	0.487
12469-PeCDD	32.37		0.9448	0.9443	-1.0	6.61E+05	1.59	Y	1.04	3.62	10627.731	0.487
12368-PeCDD	32.91		0.9602	0.9598	-0.8	5.96E+05	1.77	Y	1.04	3.26	10627.731	0.487
12478-PeCDD	33.09		0.9656	0.9654	-0.4	7.78E+05	1.52	Y	1.04	4.27	10627.731	0.487
12379-PeCDD	33.20	J EMPC	0.9686	0.9683	-0.6	2.60E+05	1.24	N	1.04	1.43	10627.731	0.487
12369/12467/12489-PeCDD	33.46	EMPC	0.9760	0.9760	0	5.45E+05	1.79	N	1.04	2.99	10627.731	0.487
12346/12347-PeCDD	33.82	J EMPC	0.9866	0.9865	-0.2	1.48E+05	2.08	N	1.04	0.81	10627.731	0.487
12378-PeCDD	34.30		**1.0005**	**1.0005**	**0**	**6.51E+05**	**1.51**	**Y**	**1.04**	**3.57**	**10627.731**	**0.487**
12367-PeCDD	34.39	J	1.0031	1.0031	0	1.67E+05	1.50	Y	1.04	0.917	10627.731	0.487
12389-PeCDD	34.74	J EMPC	1.0132	1.0133	+0.2	1.42E+05	1.92	N	1.04	0.777	10627.731	0.487
124679/124689-HxCDD	36.47		0.9553	0.9550	-0.7	1.60E+07	1.28	Y	1.10	97.9	6850.907	0.325
123468-HxCDD	37.12		0.9725	0.9721	-0.9	2.48E+06	1.20	Y	1.10	15.2	6850.907	0.325
123679/123689-HxCDD	37.43		0.9803	0.9800	-0.7	1.88E+07	1.25	Y	1.10	115	6850.907	0.325
123469-HxCDD	37.57		0.9842	0.9838	-0.9	2.73E+06	1.28	Y	1.10	16.7	6850.907	0.325
123478-HxCDD	38.20		**1.0004**	**1.0003**	**-0.2**	**1.27E+06**	**1.23**	**Y**	1.09	**8.12**	**6850.907**	**0.34**
123678-HxCDD	38.31		**1.0031**	**1.0032**	**+0.2**	**5.34E+06**	**1.24**	**Y**	1.15	**33.4**	**6850.907**	**0.335**
123467-HxCDD	38.50		1.0078	1.0080	+0.5	1.14E+06	1.22	Y	1.10	7	6850.907	0.325
123789-HxCDD	38.59		**1.0102**	**1.0104**	**+0.5**	**2.78E+06**	**1.27**	**Y**	1.05	**16.2**	**6850.907**	**0.303**

Lab ID: B5986_18732_DF_006 **Acq'd:** 18 Dec 2021 02:39 DTF **Wt/Vol:** 10.13 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-O-1 **UTP:** 20-Dec-2021 14:13:08 DTF **J-level:** 0.494 pg/g **Split:** 1 **Checkcode:** 305-317-KYG

Datafile: 211217C22 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

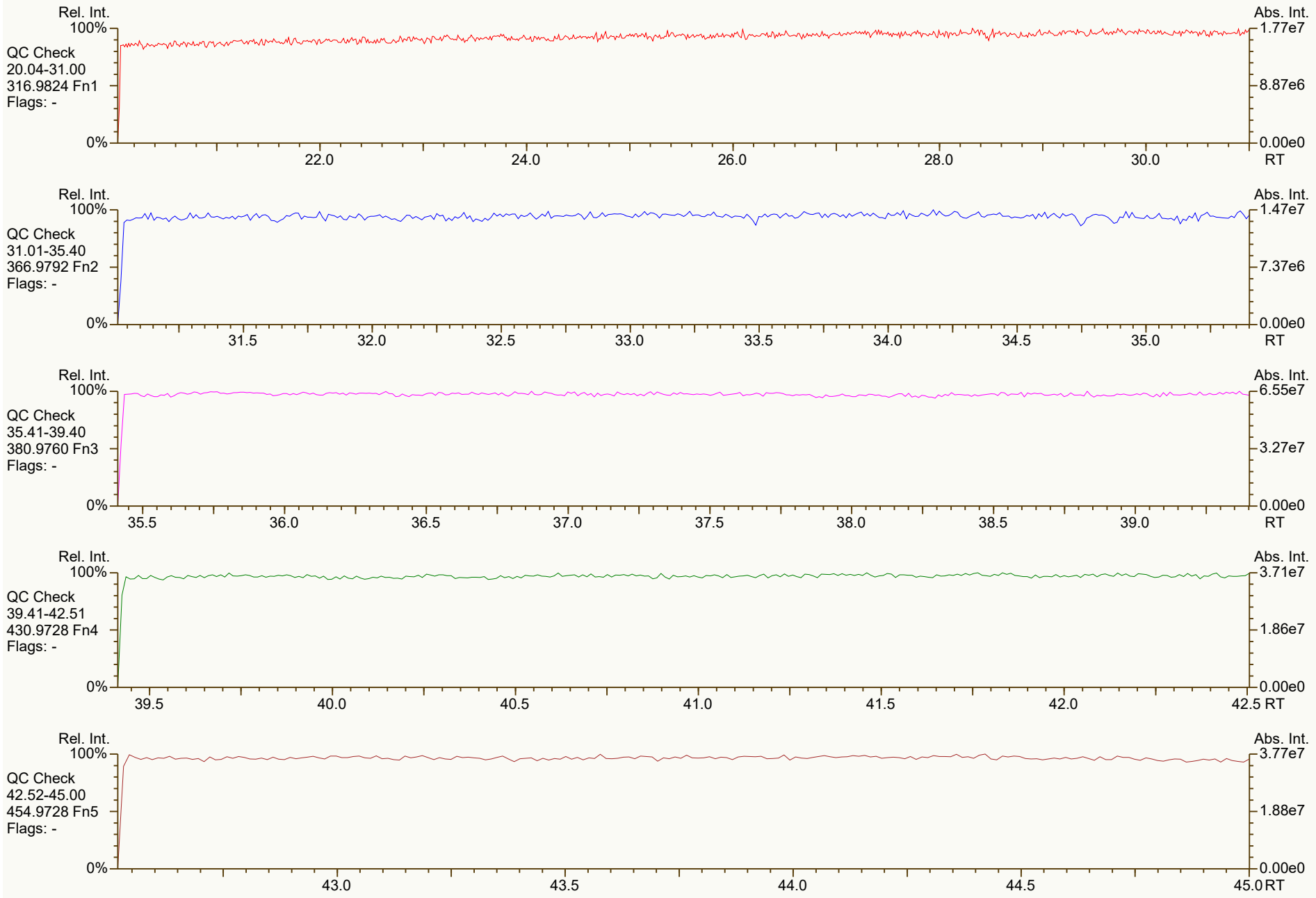
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.53		0.9837	0.9835	-0.5	2.05E+08	1.06	Y	1.06	1,400	10667.37	0.621
1234678-HpCDD	**41.23**		**1.0004**	**1.0003**	**-0.2**	**1.40E+08**	**1.06**	**Y**	**1.06**	**957**	**10667.37**	**0.621**
OCDD	**44.04**	**E**	**1.0003**	**1.0003**	**0**	**1.18E+09**	**0.91**	**Y**	**1.13**	**16,800**	**10971.222**	**2.09**
OCDD-a	44.03	**E**	1.0002	1.0002	0	7.05E+07	2.46	Y	0.07	15,700	8287.319	24.7
1368-TCDF	23.59		0.8388	0.8369	-2.7	2.95E+05	0.68	Y	1.08	0.967	7744.491	0.249
1468-TCDF	24.14		0.8578	0.8561	-2.5	6.10E+05	0.84	Y	1.08	2	7744.491	0.249
2468-TCDF	24.71		0.8780	0.8765	-2.2	2.35E+06	0.77	Y	1.08	7.7	7744.491	0.249
1346/1246-TCDF	NotFnd		0.8906						1.08		7744.491	0.249
1347/1378/1247-TCDF	25.19		0.8951	0.8935	-2.4	1.74E+06	0.76	Y	1.08	5.72	7744.491	0.249
1348-TCDF	25.46		0.9041	0.9032	-1.4	3.81E+05	0.77	Y	1.08	1.25	7744.491	0.249
1248/1367/1379-TCDF	25.55		0.9084	0.9063	-3.2	1.97E+06	0.87	Y	1.08	6.45	7744.491	0.249
1268-TCDF	25.93		0.9207	0.9198	-1.4	1.31E+06	0.79	Y	1.08	4.31	7744.491	0.249
1467-TCDF	26.06		0.9253	0.9245	-1.3	3.60E+05	0.75	Y	1.08	1.18	7744.491	0.249
1478-TCDF	26.22		0.9309	0.9301	-1.3	1.53E+06	0.78	Y	1.08	5.04	7744.491	0.249
1369/1237-TCDF	26.58		0.9431	0.9427	-0.6	5.43E+05	0.87	Y	1.08	1.78	7744.491	0.249
2467-TCDF	26.69		0.9472	0.9468	-0.6	5.05E+05	0.82	Y	1.08	1.66	7744.491	0.249
2368-TCDF	26.84		0.9524	0.9519	-0.8	2.42E+06	0.73	Y	1.08	7.93	7744.491	0.249
1238/1234/1678/1469/1236-TCDF	26.93		0.9560	0.9553	-1.1	1.67E+06	0.76	Y	1.08	5.49	7744.491	0.249
1278-TCDF	27.37		0.9710	0.9707	-0.5	1.15E+07	0.82	Y	1.08	37.6	7744.491	0.249
1349-TCDF	NotFnd		0.9752						1.08		7744.491	0.249
1267-TCDF	27.63		0.9802	0.9800	-0.3	1.05E+06	0.78	Y	1.08	3.45	7744.491	0.249
2346/1249-TCDF	27.82	EMPC	0.9863	0.9866	+0.5	2.31E+05	1.09	N	1.08	0.759	7744.491	0.249
2347/1279-TCDF	28.01		0.9936	0.9935	-0.2	7.10E+05	0.86	Y	1.08	2.33	7744.491	0.249
2348-TCDF	28.11		0.9971	0.9969	-0.3	2.12E+06	0.80	Y	1.08	6.95	7744.491	0.249
2378-TCDF	**28.21**		**1.0007**	**1.0007**	**0**	**2.71E+07**	**0.82**	**Y**	**1.08**	**89**	**7744.491**	**0.249**
2367/3467-TCDF	28.56		1.0134	1.0131	-0.5	3.78E+06	0.83	Y	1.08	12.4	7744.491	0.249
1269-TCDF	28.81		1.0219	1.0218	-0.2	5.13E+05	0.87	Y	1.08	1.68	7744.491	0.249
1239-TCDF	NotFnd		1.0309						1.08		7744.491	0.249
1289-TCDF	30.17		1.0689	1.0701	+2.2	2.45E+06	0.83	Y	1.08	8.04	7744.491	0.249
13468/12468-PeCDF	30.15		0.9175	0.9173	-0.4	7.09E+06	1.63	Y	1.02	23.8	4870.161	0.137
13678/13467/12467-PeCDF	31.65		0.9630	0.9631	+0.2	2.27E+06	1.67	Y	1.02	7.64	15022.235	0.423
12368/13478/12478-PeCDF	31.80		0.9675	0.9677	+0.4	7.31E+06	1.59	Y	1.02	24.5	15022.235	0.423
14678-PeCDF	NotFnd		0.9705						1.02		15022.235	0.423
13479-PeCDF	NotFnd		0.9734						1.02		15022.235	0.423
13469/12479-PeCDF	32.20	J EMPC	0.9807	0.9799	-1.5	2.43E+05	1.23	N	1.02	0.816	15022.235	0.423
12346-PeCDF	32.35	J	0.9848	0.9845	-0.6	1.52E+05	1.59	Y	1.02	0.51	15022.235	0.423

Lab ID: B5986_18732_DF_006 **Acq'd: 18 Dec 2021 02:39 DTF** **Wt/Vol: 10.13 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120621-S-JC-SC-O-1 **UTP: 20-Dec-2021 14:13:08 DTF** **J-level: 0.494 pg/g** **Split: 1** **Checkcode: 305-317-KYG**

Datafile: 211217C22 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.43		0.9868	0.9870	+0.4	2.27E+06	1.61	Y	1.02	7.63	15022.235	0.423
12347-PeCDF	32.52	J EMPC	0.9895	0.9897	+0.4	3.49E+05	1.25	N	1.02	1.17	15022.235	0.423
12348-PeCDF	32.67	J	0.9943	0.9943	0	4.93E+05	1.35	Y	1.02	1.66	15022.235	0.423
12378-PeCDF	**32.88**		**1.0005**	**1.0005**	**0**	**1.98E+06**	**1.58**	**Y**	**1.02**	**6.46**	**15022.235**	**0.417**
12678/12367-PeCDF	33.16		1.0086	1.0091	+1.0	1.66E+06	1.53	Y	1.02	5.57	15022.235	0.423
12379-PeCDF	NotFnd		1.0137						1.02		15022.235	0.423
12679-PeCDF	NotFnd		0.9936						1.02		15022.235	0.423
23467/12369-PeCDF	33.84		0.9970	0.9970	0	8.43E+05	1.66	Y	1.02	2.83	15022.235	0.423
23478-PeCDF	**33.98**		**1.0005**	**1.0010**	**+1.0**	**3.16E+06**	**1.61**	**Y**	**1.02**	**10.9**	**15022.235**	**0.43**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		15022.235	0.423
12349-PeCDF	NotFnd		1.0103						1.02		15022.235	0.423
12389-PeCDF	35.03	J	1.0317	1.0320	+0.6	1.59E+05	1.67	Y	1.02	0.535	15022.235	0.423
123468-HxCDF	35.83		0.9634	0.9634	0	4.95E+06	1.18	Y	1.19	17.7	10096.576	0.295
124678/134678-HxCDF	36.02		0.9687	0.9686	-0.2	1.98E+07	1.28	Y	1.19	70.7	10096.576	0.295
134679-HxCDF	NotFnd		0.9748						1.19		10096.576	0.295
124679-HxCDF	36.44		0.9800	0.9799	-0.2	1.25E+06	1.31	Y	1.19	4.48	10096.576	0.295
124689-HxCDF	36.66		0.9857	0.9858	+0.2	2.26E+07	1.27	Y	1.19	80.9	10096.576	0.295
123467-HxCDF	37.09		0.9973	0.9973	0	1.10E+06	1.22	Y	1.19	3.92	10096.576	0.295
123478-HxCDF	**37.21**		**1.0005**	**1.0004**	**-0.2**	**4.70E+06**	**1.29**	**Y**	**1.27**	**16.5**	**10096.576**	**0.299**
123678-HxCDF	**37.35**		**1.0005**	**1.0004**	**-0.2**	**3.11E+06**	**1.19**	**Y**	**1.15**	**10.3**	**10096.576**	**0.286**
123479-HxCDF	NotFnd		1.0051						1.19		10096.576	0.295
123469-HxCDF	37.69	J	1.0092	1.0095	+0.7	3.09E+05	1.16	Y	1.19	1.1	10096.576	0.295
123679-HxCDF	37.81	J	0.9948	0.9947	-0.2	1.86E+05	1.27	Y	1.19	0.664	10096.576	0.295
234678-HxCDF	**38.03**		**1.0004**	**1.0005**	**+0.2**	**3.60E+06**	**1.23**	**Y**	**1.19**	**13.1**	**10096.576**	**0.309**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		10096.576	0.295
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**10096.576**	**0.288**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.95		1.0007	1.0012	+1.2	7.95E+05	1.27	Y	1.19	2.84	10096.576	0.295
1234678-HpCDF	**40.26**		**1.0003**	**1.0003**	**0**	**3.58E+07**	**1.07**	**Y**	**1.37**	**147**	**11519.402**	**0.369**
1234679-HpCDF	40.53		1.0068	1.0069	+0.2	1.32E+06	1.18	Y	1.34	6.16	11519.402	0.438
1234689-HpCDF	40.67		1.0102	1.0104	+0.5	5.33E+07	1.07	Y	1.34	248	11519.402	0.438
1234789-HpCDF	**41.70**		**1.0003**	**1.0003**	**0**	**2.20E+06**	**1.15**	**Y**	**1.31**	**11.7**	**11519.402**	**0.526**
OCDF	**44.21**		**1.0003**	**1.0003**	**0**	**2.43E+07**	**0.92**	**Y**	**1.07**	**274**	**4670.691**	**0.661**
OCDF-a	44.21		1.0002	1.0003	+0.3	1.64E+06	2.35	Y	0.07	299	4088.418	9.34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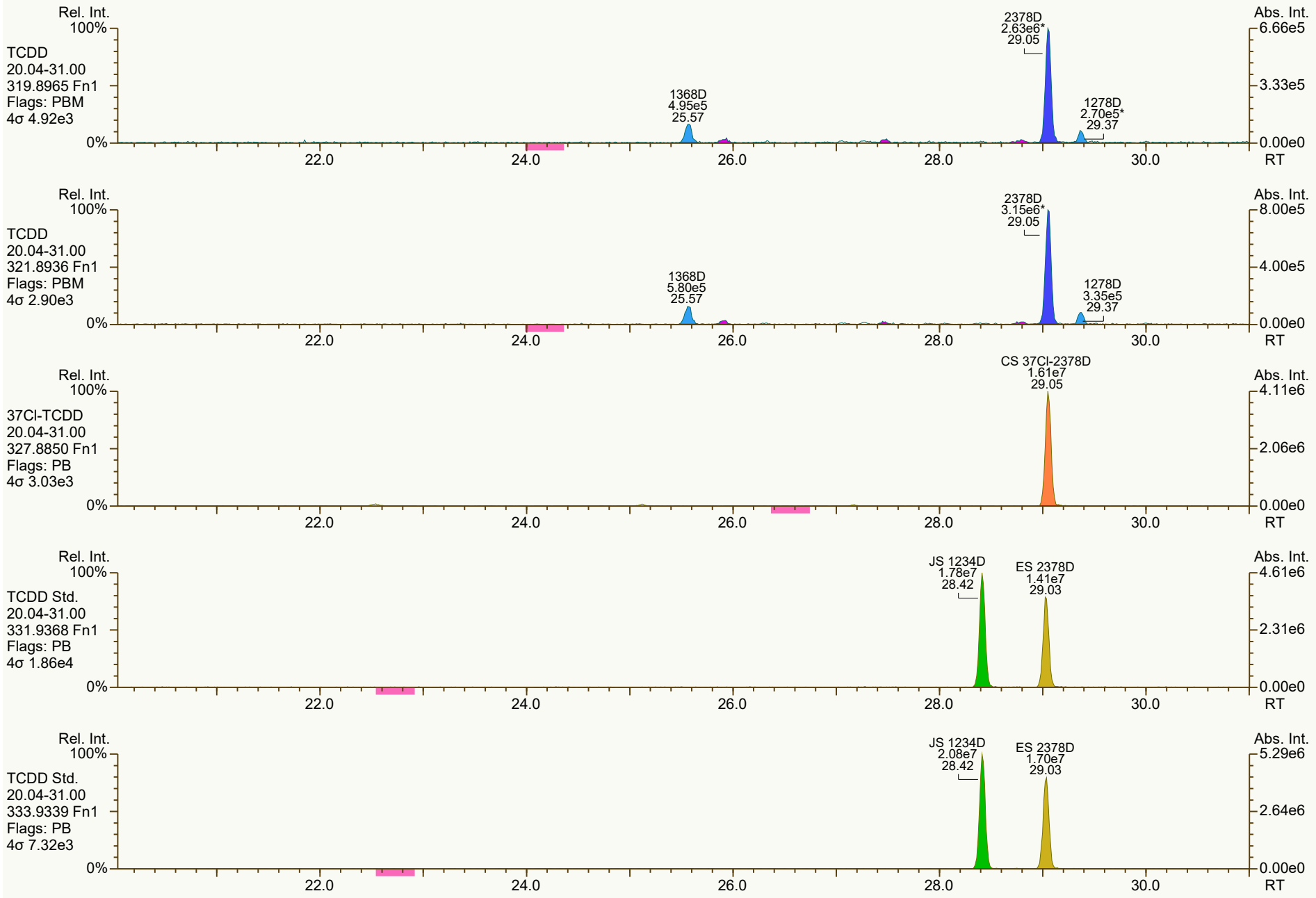
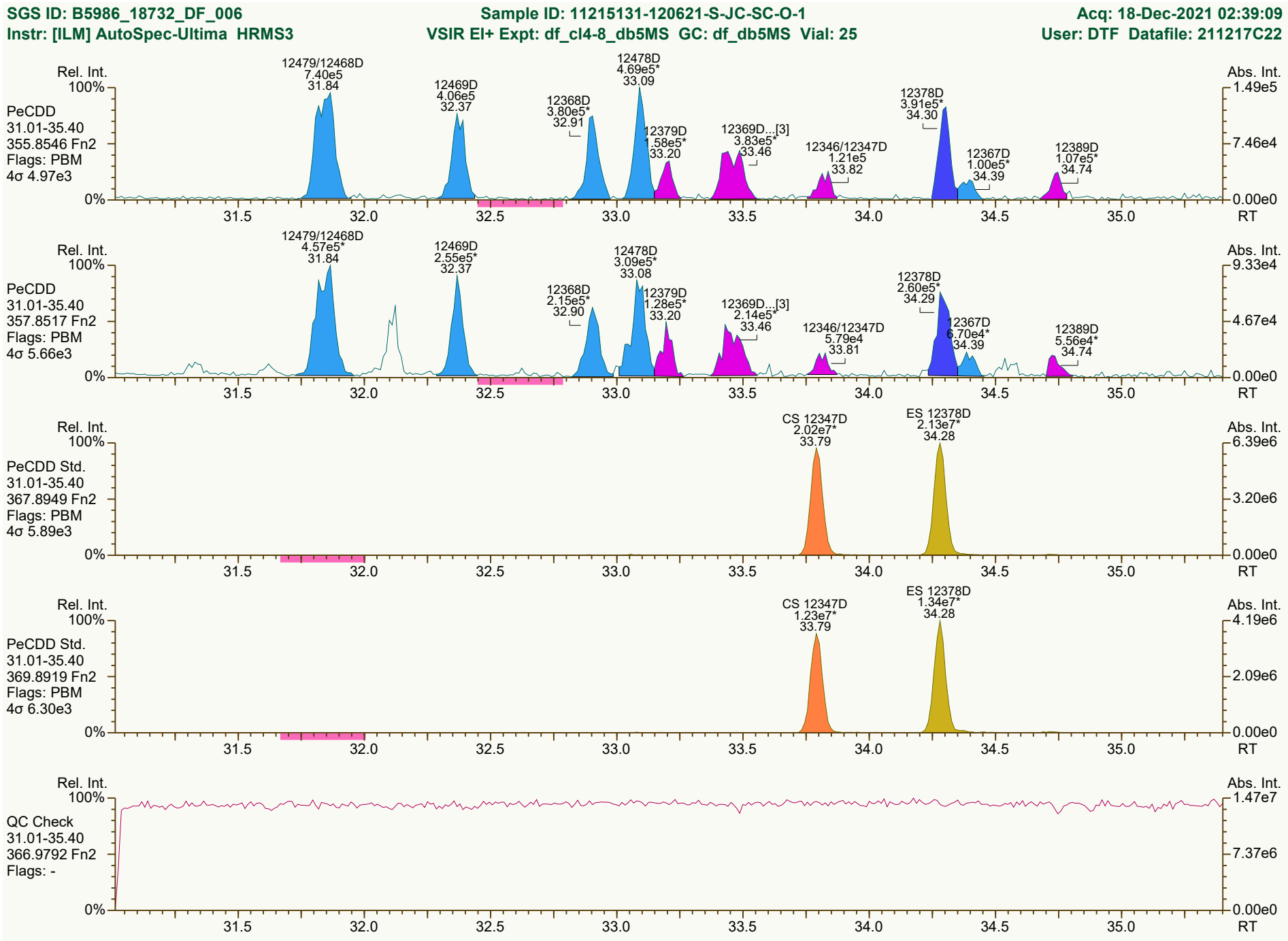
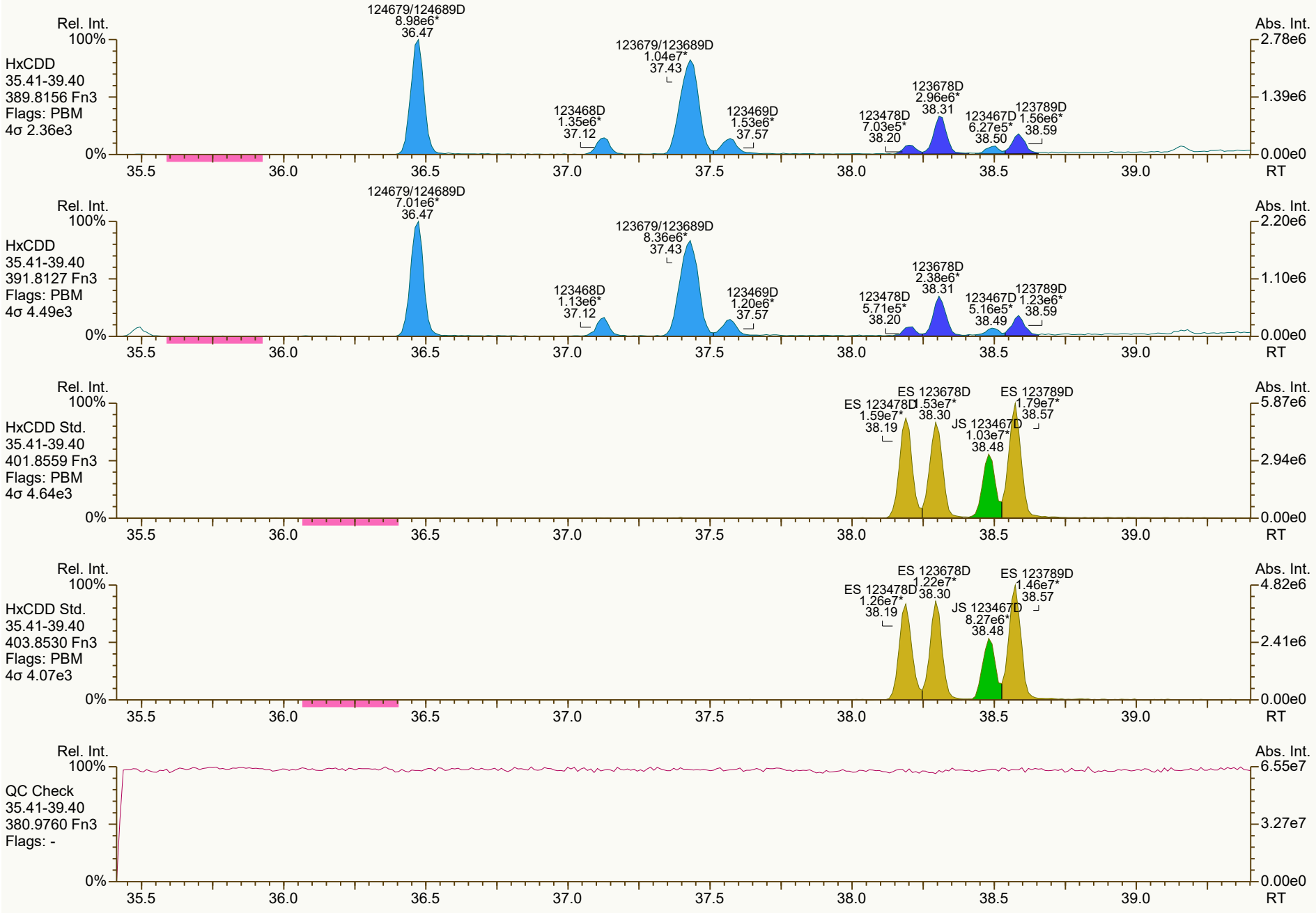
20.04-31.00
316.9824 Fn1
Flags: -
0%
22.0
24.0
26.0
28.0
30.0
RT
Abs. Int.
1.77e7
8.87e6
0.00e0
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Abs. Int.
1.47e7
7.37e6
0.00e0
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Abs. Int.
6.55e7
3.27e7
0.00e0
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
3.71e7
1.86e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
3.77e7
1.88e7
0.00e0

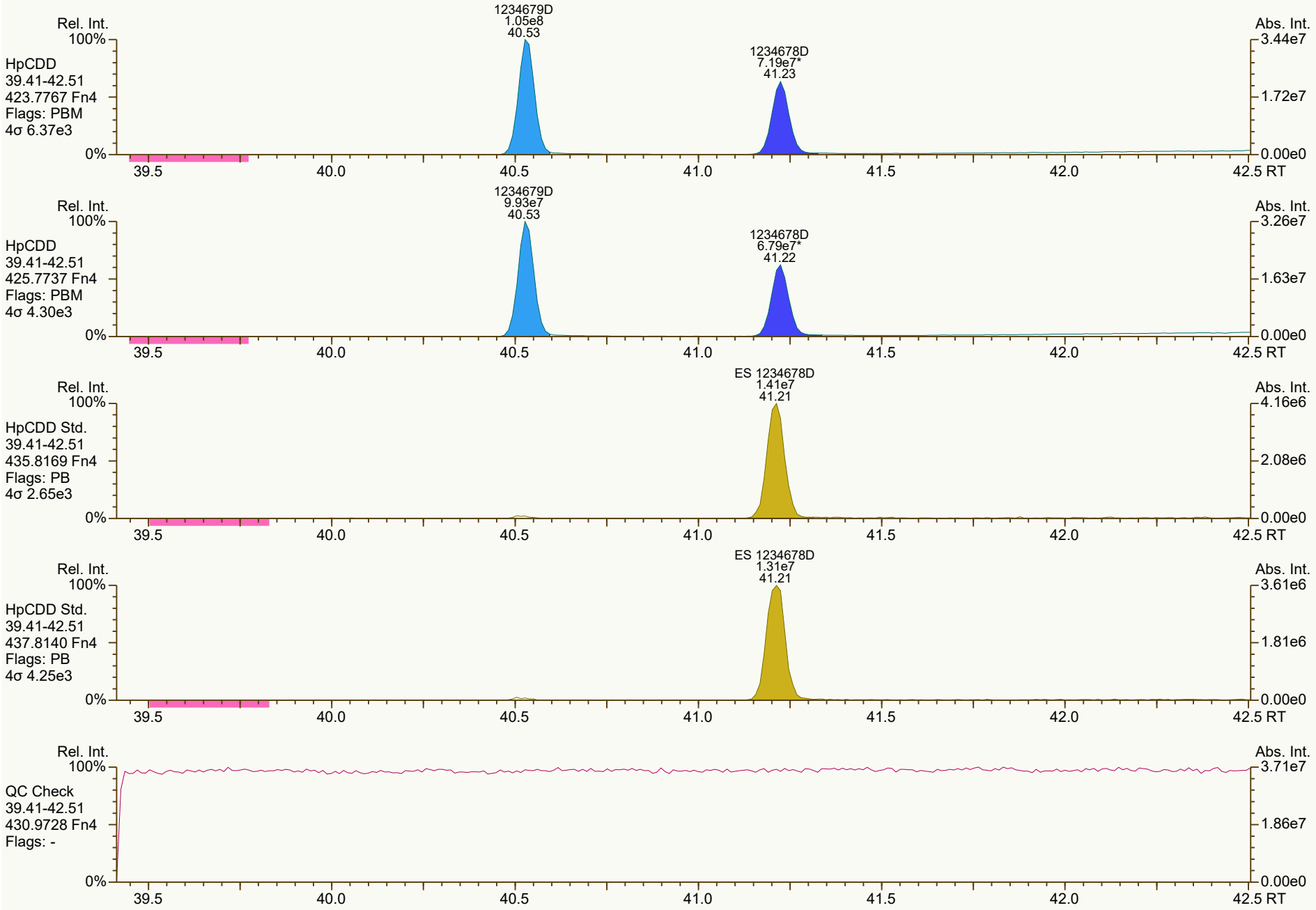

Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: PBM
4σ 4.92e3
0%
2378D
2.63e6*
29.05
1368D
4.95e5
25.57
1278D
2.70e5*
29.37
Abs. Int.
6.66e5
3.33e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: PBM
4σ 2.90e3
0%
2378D
3.15e6*
29.05
1368D
5.80e5
25.57
1278D
3.35e5
29.37
Abs. Int.
8.00e5
4.00e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PB
4σ 3.03e3
0%
CS 37Cl-2378D
1.61e7
29.05
Abs. Int.
4.11e6
2.06e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PB
4σ 1.86e4
0%
JS 1234D
1.78e7
28.42
ES 2378D
1.41e7
29.03
Abs. Int.
4.61e6
2.31e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PB
4σ 7.32e3
0%
JS 1234D
2.08e7
28.42
ES 2378D
1.70e7
29.03
Abs. Int.
5.29e6
2.64e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

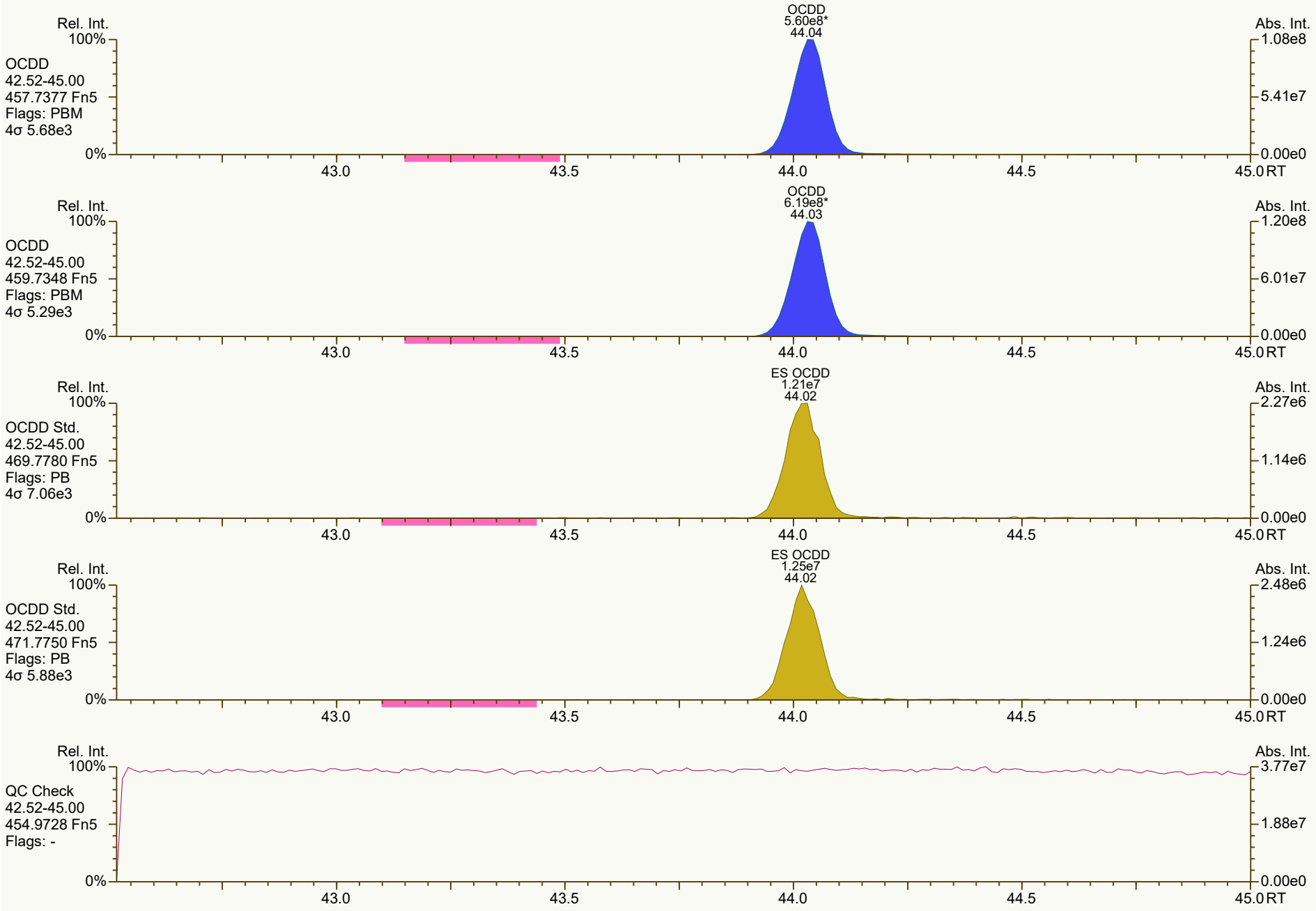
SGS ID: B5986_18732_DF_006 | Sample ID: 11215131-120621-S-JC-SC-O-1 | Acq: 18-Dec-2021 02:39:09
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25 | User: DTF Datafile: 211217C22



Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_006.utp_res, saved 20-Dec-2021 14:13 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7245, 2337 scc: 305-317 | Revised: 20-Dec-2021 11:43 (DTF) Printed: 20-Dec-2021 14:27 Page 3 of 12

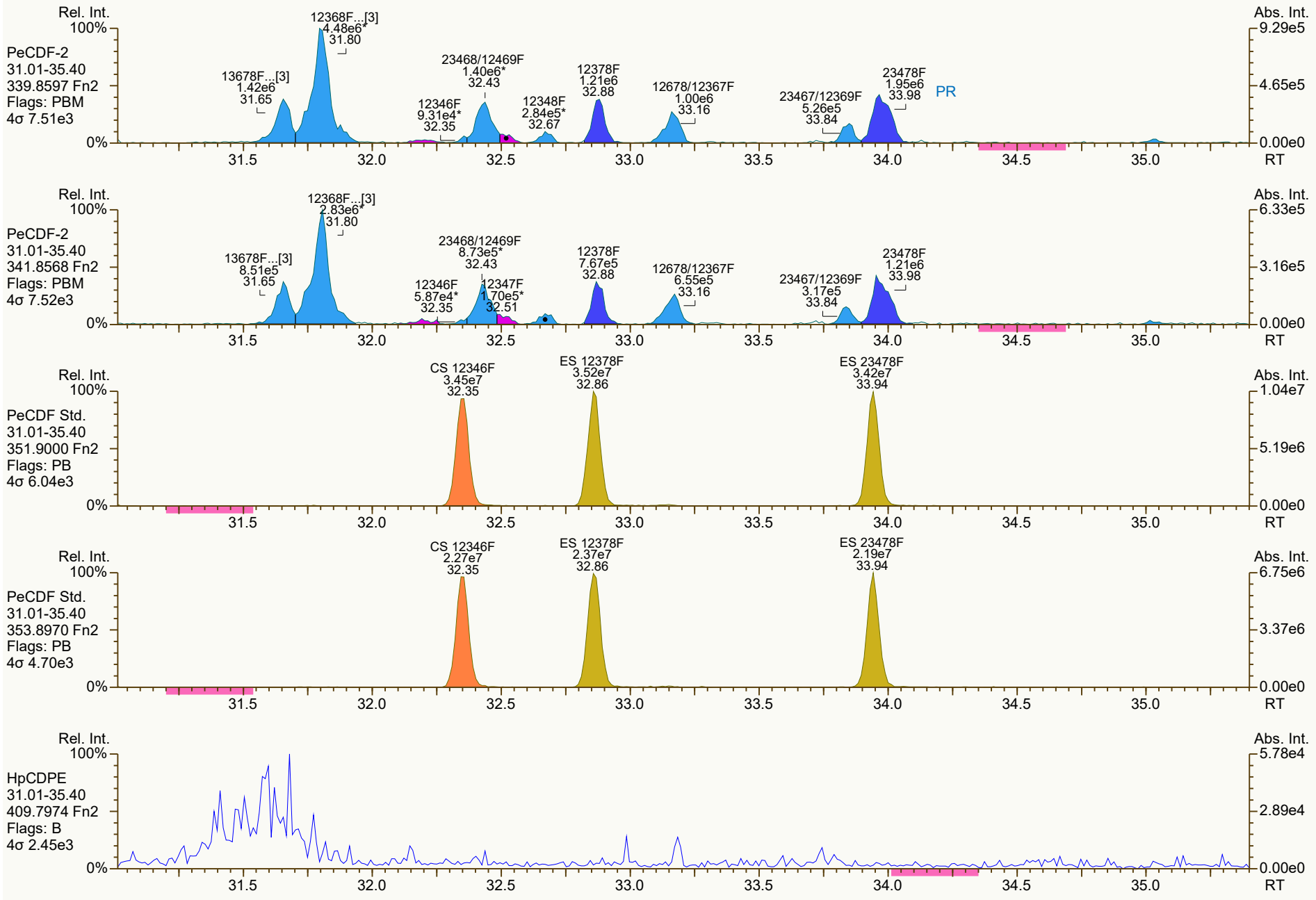

Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PBM
4σ 2.36e3
0%
124679/124689D
8.98e6*
36.47
123679/123689D
1.04e7*
37.43
123468D
1.35e6*
37.12
123469D
1.53e6*
37.57
123678D
2.96e6*
38.31
123478D
7.03e5*
38.20
123467D
6.27e5*
38.50
123789D
1.56e6*
38.59
Abs. Int.
2.78e6
1.39e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PBM
4σ 4.49e3
0%
124679/124689D
7.01e6*
36.47
123679/123689D
8.36e6*
37.43
123468D
1.13e6*
37.12
123469D
1.20e6*
37.57
123678D
2.38e6*
38.31
123478D
5.71e5*
38.20
123467D
5.16e5*
38.49
123789D
1.23e6*
38.59
Abs. Int.
2.20e6
1.10e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PBM
4σ 4.64e3
0%
ES 123678D
1.53e7*
38.30
ES 123478D
1.59e7*
38.19
ES 123789D
1.79e7*
38.57
JS 123467D
1.03e7*
38.48
Abs. Int.
5.87e6
2.94e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PBM
4σ 4.07e3
0%
ES 123678D
1.22e7*
38.30
ES 123478D
1.26e7*
38.19
ES 123789D
1.46e7*
38.57
JS 123467D
8.27e6*
38.48
Abs. Int.
4.82e6
2.41e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
Abs. Int.
6.55e7
3.27e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

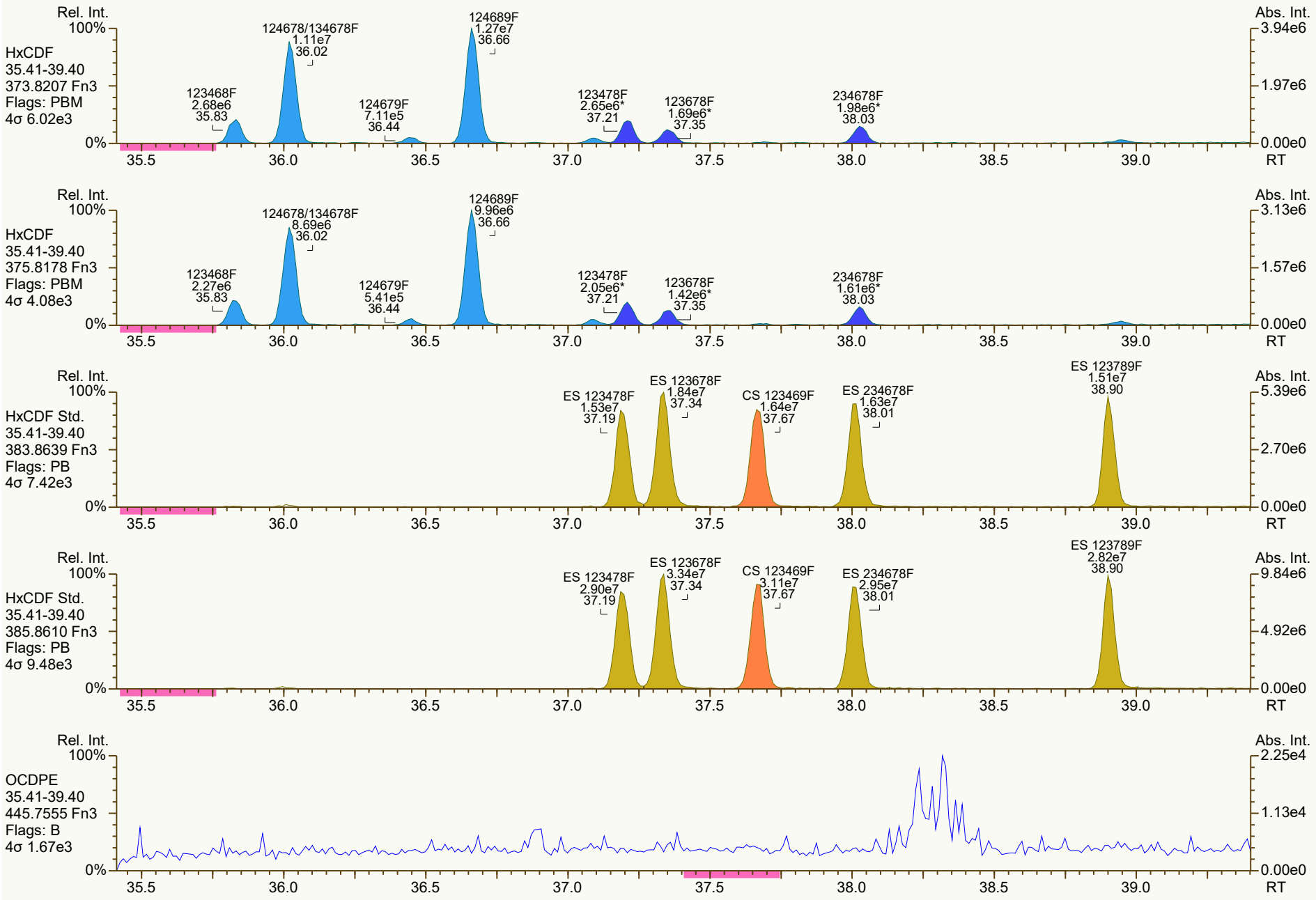

Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PBM
4σ 6.37e3
0%
1234679D
1.05e8
40.53
1234678D
7.19e7*
41.23
Abs. Int.
3.44e7
1.72e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PBM
4σ 4.30e3
0%
1234679D
9.93e7
40.53
1234678D
6.79e7*
41.22
Abs. Int.
3.26e7
1.63e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PB
4σ 2.65e3
0%
ES 1234678D
1.41e7
41.21
Abs. Int.
4.16e6
2.08e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PB
4σ 4.25e3
0%
ES 1234678D
1.31e7
41.21
Abs. Int.
3.61e6
1.81e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
3.71e7
1.86e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT

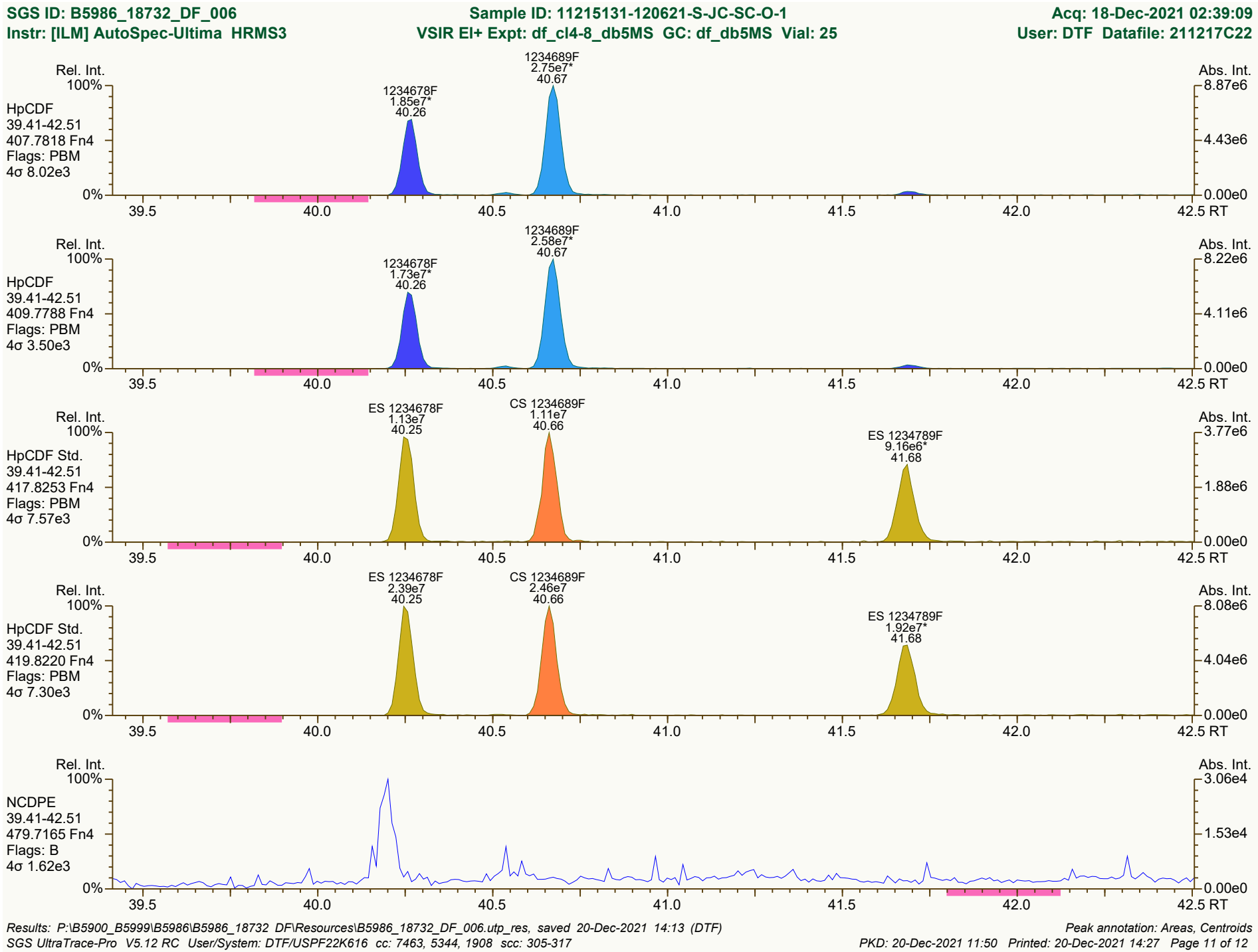

Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PBM
4σ 5.68e3
0%
OCDD
5.60e8*
44.04
Abs. Int.
1.08e8
5.41e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PBM
4σ 5.29e3
0%
OCDD
6.19e8*
44.03
Abs. Int.
1.20e8
6.01e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 7.06e3
0%
ES OCDD
1.21e7
44.02
Abs. Int.
2.27e6
1.14e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 5.88e3
0%
ES OCDD
1.25e7
44.02
Abs. Int.
2.48e6
1.24e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
3.77e7
1.88e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

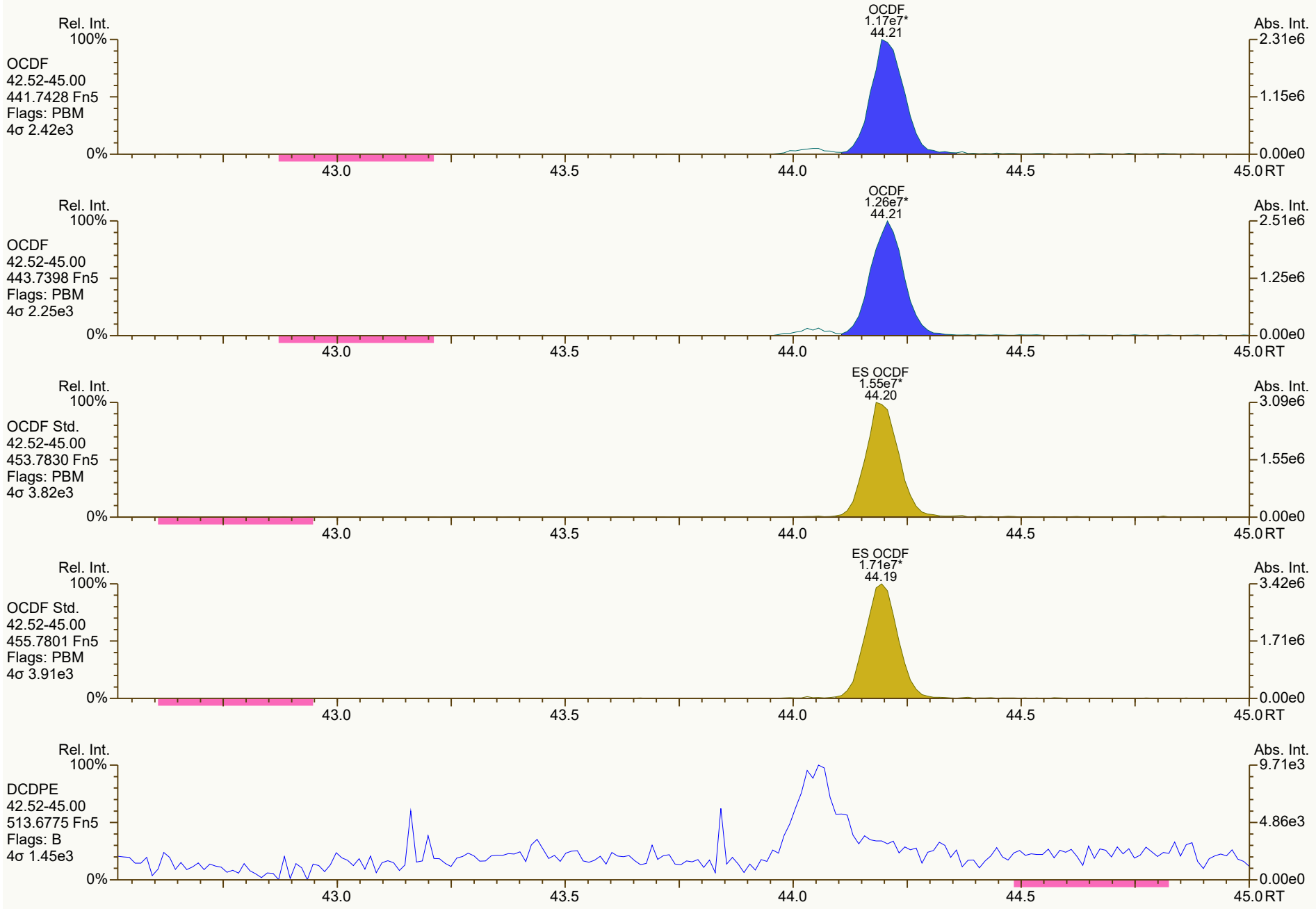

Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 2.71e3
0%
2468F 1.02e6* 24.71
1248F...[3] 9.12e5* 25.55
2368F 1.02e6* 26.84
1238F...[5] 7.24e5* 26.93
1278F 5.16e6* 27.37
2378F 1.22e7* 28.21
2348F 9.38e5* 28.11
2367/3467F 1.71e6* 28.56
1289F 1.11e6 30.17
Abs. Int.
2.99e6
1.50e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 5.04e3
0%
2468F 1.33e6* 24.71
1248F...[3] 1.05e6* 25.55
1478F 8.61e5* 26.22
2368F 1.40e6* 26.84
1278F 6.31e6* 27.37
2378F 1.49e7* 28.21
2348F 1.18e6* 28.11
2367/3467F 2.06e6* 28.56
1289F 1.34e6 30.17
Abs. Int.
3.65e6
1.82e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PB
4σ 2.25e4
0%
JS 1234F 3.06e7 26.92
ES 2378F 2.42e7 28.19
Abs. Int.
7.41e6
3.71e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PB
4σ 1.70e4
0%
JS 1234F 4.00e7 26.92
ES 2378F 3.16e7 28.19
Abs. Int.
9.38e6
4.69e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 1.73e3
0%
Abs. Int.
1.75e4
8.74e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
339.8597 Fn1
Flags: PB
4σ 2.18e3
13468/12468F
4.40e6
30.14
Abs. Int.
1.15e6
5.75e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
341.8568 Fn1
Flags: PB
4σ 2.69e3
13468/12468F
2.70e6
30.14
Abs. Int.
7.16e5
3.58e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
Abs. Int.
1.77e7
8.87e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PBM
4σ 7.51e3
0%
12368F...[3]
4.48e6*
31.80
13678F...[3]
1.42e6
31.65
23468/12469F
1.40e6*
32.43
12346F
9.31e4*
32.35
12348F
2.84e5*
32.67
12378F
1.21e6
32.88
12678/12367F
1.00e6
33.16
23467/12369F
5.26e5
33.84
23478F
1.95e6
33.98
PR
Abs. Int.
9.29e5
4.65e5
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PBM
4σ 7.52e3
0%
12368F...[3]
2.83e6*
31.80
13678F...[3]
8.51e5
31.65
23468/12469F
8.73e5*
32.43
12346F
5.87e4*
32.35
12347F
1.70e5*
32.51
12378F
7.67e5
32.88
12678/12367F
6.55e5
33.16
23467/12369F
3.17e5
33.84
23478F
1.21e6
33.98
Abs. Int.
6.33e5
3.16e5
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PB
4σ 6.04e3
0%
CS 12346F
3.45e7
32.35
ES 12378F
3.52e7
32.86
ES 23478F
3.42e7
33.94
Abs. Int.
1.04e7
5.19e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PB
4σ 4.70e3
0%
CS 12346F
2.27e7
32.35
ES 12378F
2.37e7
32.86
ES 23478F
2.19e7
33.94
Abs. Int.
6.75e6
3.37e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 2.45e3
0%
Abs. Int.
5.78e4
2.89e4
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
Abs. Int.
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PBM
4σ 6.02e3
123468F 2.68e6 35.83
124678/134678F 1.11e7 36.02
124679F 7.11e5 36.44
124689F 1.27e7 36.66
123478F 2.65e6* 37.21
123678F 1.69e6* 37.35
234678F 1.98e6* 38.03
3.94e6
1.97e6
0.00e0
HxCDF
35.41-39.40
375.8178 Fn3
Flags: PBM
4σ 4.08e3
123468F 2.27e6 35.83
124678/134678F 8.69e6 36.02
124679F 5.41e5 36.44
124689F 9.96e6 36.66
123478F 2.05e6* 37.21
123678F 1.42e6* 37.35
234678F 1.61e6* 38.03
3.13e6
1.57e6
0.00e0
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PB
4σ 7.42e3
ES 123478F 1.53e7 37.19
ES 123678F 1.84e7 37.34
CS 123469F 1.64e7 37.67
ES 234678F 1.63e7 38.01
ES 123789F 1.51e7 38.90
5.39e6
2.70e6
0.00e0
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PB
4σ 9.48e3
ES 123478F 2.90e7 37.19
ES 123678F 3.34e7 37.34
CS 123469F 3.11e7 37.67
ES 234678F 2.95e7 38.01
ES 123789F 2.82e7 38.90
9.84e6
4.92e6
0.00e0
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 1.67e3
2.25e4
1.13e4
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT


SGS ID: B5986_18732_DF_006
Sample ID: 11215131-120621-S-JC-SC-O-1
Acq: 18-Dec-2021 02:39:09
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 25
User: DTF Datafile: 211217C22
Rel. Int.
Abs. Int.
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 8.02e3
1234678F
1.85e7*
40.26
1234689F
2.75e7*
40.67
8.87e6
4.43e6
0.00e0
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 3.50e3
1234678F
1.73e7*
40.26
1234689F
2.58e7*
40.67
8.22e6
4.11e6
0.00e0
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PBM
4σ 7.57e3
ES 1234678F
1.13e7
40.25
CS 1234689F
1.11e7
40.66
ES 1234789F
9.16e6*
41.68
3.77e6
1.88e6
0.00e0
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PBM
4σ 7.30e3
ES 1234678F
2.39e7
40.25
CS 1234689F
2.46e7
40.66
ES 1234789F
1.92e7*
41.68
8.08e6
4.04e6
0.00e0
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 1.62e3
3.06e4
1.53e4
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_006.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7463, 5344, 1908 scc: 305-317
PKD: 20-Dec-2021 11:50 Printed: 20-Dec-2021 14:27 Page 11 of 12


Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PBM
4σ 2.42e3
0%
OCDF
1.17e7*
44.21
Abs. Int.
2.31e6
1.15e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: PBM
4σ 2.25e3
0%
OCDF
1.26e7*
44.21
Abs. Int.
2.51e6
1.25e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PBM
4σ 3.82e3
0%
ES OCDF
1.55e7*
44.20
Abs. Int.
3.09e6
1.55e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PBM
4σ 3.91e3
0%
ES OCDF
1.71e7*
44.19
Abs. Int.
3.42e6
1.71e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
9.71e3
4.86e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5986_18732_DF_007 **Acq'd:** 18 Dec 2021 03:25 DTF **Wt/Vol:** 10.01 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-B-1 **UTP:** 20-Dec-2021 14:13:09 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 407-080-ZWV

Datafile: 211217C23 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.14	E	1.0008	1.0008	0	1.46E+09	0.82	Y	1.18	10,500	9477.057	0.747
12378-PeCDD	34.37		1.0005	1.0006	+0.2	1.44E+07	1.56	Y	1.04	115	30821.55	2.14
123478-HxCDD	38.26		1.0004	1.0003	-0.2	3.19E+06	1.37	Y	1.09	28.3	27521.357	1.95
123678-HxCDD	38.36		1.0031	1.0031	0	1.51E+07	1.31	Y	1.15	136	27521.357	1.98
123789-HxCDD	38.64		1.0102	1.0103	+0.2	6.35E+06	1.30	Y	1.05	53.7	27521.357	1.69
1234678-HpCDD	41.27		1.0004	1.0003	-0.2	4.39E+08	1.06	Y	1.06	3,740	16322.961	1.21
OCDD	44.10	E	1.0003	1.0003	0	4.36E+09	0.91	Y	1.13	61,800	12767.786	2.79
2378-TCDF	28.30	E	1.0007	1.0007	0	6.48E+09	0.81	Y	1.08	28,500	7913.833	0.406
12378-PeCDF	32.96		1.0005	1.0005	0	2.20E+08	1.56	Y	1.02	1,070	20145.055	0.914
23478-PeCDF	34.05		1.0005	1.0008	+0.6	1.77E+08	1.57	Y	1.02	864	20145.055	0.978
123478-HxCDF	37.28		1.0005	1.0005	0	3.37E+08	1.26	Y	1.27	1,640	13927.3	0.619
123678-HxCDF	37.42		1.0005	1.0005	0	9.29E+07	1.25	Y	1.15	451	13927.3	0.57
234678-HxCDF	38.09		1.0004	1.0005	+0.2	2.35E+07	1.25	Y	1.19	121	13927.3	0.575
123789-HxCDF	NotFnd		1.0003	-		-	-	-	1.16	-	13927.3	0.592
1234678-HpCDF	40.31		1.0003	1.0003	0	1.74E+08	1.06	Y	1.37	915	8707.985	0.324
1234789-HpCDF	41.73		1.0003	1.0002	-0.3	3.11E+07	1.04	Y	1.31	200	8707.985	0.483
OCDF	44.27		1.0003	1.0003	0	8.88E+07	0.91	Y	1.07	966	8933.288	1.27

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.12	1.0215	1.0214	-0.2	2.35E+07	0.80	Y	1.05	72.2
ES 12378-PeCDD	34.35	1.2040	1.2049	+1.9	2.42E+07	1.70	Y	0.88	88.4
ES 123478-HxCDD	38.24	0.9925	0.9925	0	2.07E+07	1.21	Y	0.97	75.7
ES 123678-HxCDD	38.35	0.9953	0.9953	0	1.93E+07	1.23	Y	0.94	72.7
ES 123789-HxCDD	38.62	1.0024	1.0023	-0.2	2.26E+07	1.24	Y	1.09	73.4
ES 1234678-HpCDD	41.25	1.0697	1.0706	+2.2	2.21E+07	1.06	Y	0.91	86.1
ES OCDD	44.08	1.1413	1.1440	+7.1	2.50E+07	0.92	Y	0.62	71.2
ES 2378-TCDF	28.28	1.0469	1.0472	+0.5	4.21E+07	0.81	Y	1.06	75.6
ES 12378-PeCDF	32.95	1.2181	1.2197	+3.2	4.00E+07	1.57	Y	0.91	83.5
ES 23478-PeCDF	34.02	1.2578	1.2596	+3.7	4.02E+07	1.48	Y	0.88	86.5
ES 123478-HxCDF	37.26	0.9670	0.9670	0	3.22E+07	0.53	Y	1.20	95.5
ES 123678-HxCDF	37.40	0.9708	0.9707	-0.2	3.57E+07	0.55	Y	1.35	93.7
ES 234678-HxCDF	38.07	0.9881	0.9879	-0.5	3.28E+07	0.54	Y	1.24	93.7
ES 123789-HxCDF	38.95	1.0108	1.0109	+0.2	3.13E+07	0.55	Y	1.16	96.1
ES 1234678-HpCDF	40.29	1.0452	1.0457	+1.2	2.77E+07	0.46	Y	0.97	102
ES 1234789-HpCDF	41.72	1.0818	1.0827	+2.3	2.38E+07	0.44	Y	0.85	99.2
ES OCDF	44.25	1.1461	1.1484	+6.1	3.43E+07	0.93	Y	0.81	75.4

Lab ID: B5986_18732_DF_007 **Acq'd:** 18 Dec 2021 03:25 DTF **Wt/Vol:** 10.01 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-B-1 **UTP:** 20-Dec-2021 14:13:09 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 407-080-ZWV

Datafile: 211217C23 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.51		-	-	-	3.11E+07	0.81	Y	-	-	
JS 1234-TCDF	27.01		-	-	-	5.26E+07	0.78	Y	-	-	
JS 123467-HxCDD	38.53		-	-	-	1.41E+07	1.30	Y	-	-	
CS 37Cl-2378-TCDD	29.14		1.0222	1.0222	0	1.06E+07	n/a	-	1.20	70.7	
CS 12347-PeCDD	33.87		1.1870	1.1880	+2.0	2.35E+07	1.54	Y	0.75	100	
CS 12346-PeCDF	32.44		1.1994	1.2012	+3.5	4.12E+07	1.52	Y	0.85	92.1	
CS 123469-HxCDF	37.74		0.9793	0.9793	0	3.46E+07	0.56	Y	1.12	110	
CS 1234689-HpCDF	40.71		1.0556	1.0565	+2.2	3.00E+07	0.47	Y	0.89	120	
~~SS 37Cl-2378-TCDD~~	~~29.14~~		~~1.0222~~	~~1.0222~~	~~0~~	~~1.06E+07~~	~~n/a~~		~~1.15~~	~~98.1~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.87~~		~~1.1870~~	~~1.1880~~	~~+2.0~~	~~2.35E+07~~	~~1.54~~	~~Y~~	~~0.86~~	~~113~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.44~~		~~1.1994~~	~~1.2012~~	~~+3.5~~	~~4.12E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~110~~	
~~SS 123469-HxCDF~~	~~37.74~~		~~0.9793~~	~~0.9793~~	~~0~~	~~3.46E+07~~	~~0.56~~	~~Y~~	~~0.83~~	~~117~~	
~~SS 1234689-HpCDF~~	~~40.71~~		~~1.0556~~	~~1.0565~~	~~+2.2~~	~~3.00E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~118~~	

Totals	Conc	EMPC
Total TCDD	11800	11800
Total PeCDD	233	266
Total HxCDD	1070	1070
Total HpCDD	7970	7970
Total Tetra-Octa Dioxins	82900	83000
Total TCDF	53,900	53900
Total PeCDF	3,280	3280
Total HxCDF	3,130	3130
Total HpCDF	2,070	2070
Total Tetra-Octa Furans	63,300	63300
Total Tetra-Octa Dioxins & Furans	146000	146000

Lab ID: B5986_18732_DF_007 **Acq'd: 18 Dec 2021 03:25 DTF** **Wt/Vol: 10.01 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120621-S-JC-SC-B-1 **UTP: 20-Dec-2021 14:13:09 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 407-080-ZWV**

Datafile: 211217C23 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.68		0.8819	0.8817	-0.3	5.35E+06	0.84	Y	1.18	38.3	9477.057	0.747
1379-TCDD	26.01		0.8935	0.8930	-0.8	2.33E+06	0.84	Y	1.18	16.7	9477.057	0.747
1369-TCDD	26.42		0.9073	0.9073	0	3.61E+05	0.88	Y	1.18	2.59	9477.057	0.747
1469-TCDD	NotFnd		0.9329						1.18		9477.057	0.747
1247/1246/1248/1249-TCDD	27.37		0.9407	0.9398	-1.5	2.62E+06	0.80	Y	1.18	18.8	9477.057	0.747
1378-TCDD	27.55		0.9466	0.9460	-1.0	5.19E+06	0.86	Y	1.18	37.2	9477.057	0.747
1268-TCDD	27.75		0.9531	0.9529	-0.3	4.40E+05	0.83	Y	1.18	3.15	9477.057	0.747
1478-TCDD	27.98		0.9610	0.9609	-0.2	3.33E+06	0.83	Y	1.18	23.9	9477.057	0.747
1279-TCDD	28.15	EMPC	0.9668	0.9666	-0.3	2.76E+05	1.06	N	1.18	1.98	9477.057	0.747
1234/1269-TCDD	28.50		0.9783	0.9785	+0.3	6.68E+05	0.83	Y	1.18	4.79	9477.057	0.747
1236-TCDD	28.64	EMPC	0.9830	0.9834	+0.7	2.88E+05	1.01	N	1.18	2.06	9477.057	0.747
1237/1238-TCDD	28.86		0.9913	0.9911	-0.3	2.38E+07	0.83	Y	1.18	171	9477.057	0.747
1239-TCDD	NotFnd		0.9959						1.18		9477.057	0.747
2378-TCDD	**29.14**	E	**1.0008**	1.0008	**0**	1.46E+09	0.82	Y	**1.18**	**10,500**	**9477.057**	**0.747**
1278-TCDD	29.46		1.0115	1.0118	+0.5	1.33E+08	0.82	Y	1.18	955	9477.057	0.747
1267-TCDD	29.60	EMPC	1.0160	1.0165	+0.9	4.61E+06	0.90	N	1.18	33.1	9477.057	0.747
1289-TCDD	30.10	EMPC	1.0331	1.0336	+0.9	2.59E+06	0.93	N	1.18	18.6	9477.057	0.747
12479/12468-PeCDD	31.95		0.9295	0.9299	+0.8	4.57E+06	1.48	Y	1.04	36.4	30821.55	2.14
12469-PeCDD	32.46	EMPC	0.9448	0.9450	+0.4	2.70E+06	0.98	N	1.04	21.5	30821.55	2.14
12368-PeCDD	32.99		0.9602	0.9603	+0.2	3.45E+06	1.61	Y	1.04	27.5	30821.55	2.14
12478-PeCDD	33.18		0.9656	0.9657	+0.2	2.88E+06	1.73	Y	1.04	23	30821.55	2.14
12379-PeCDD	33.28		0.9686	0.9688	+0.4	1.34E+06	1.43	Y	1.04	10.7	30821.55	2.14
12369/12467/12489-PeCDD	33.53		0.9760	0.9759	-0.2	1.83E+06	1.51	Y	1.04	14.6	30821.55	2.14
12346/12347-PeCDD	33.90	EMPC	0.9866	0.9867	+0.2	1.05E+06	1.31	N	1.04	8.4	30821.55	2.14
12378-PeCDD	34.37		**1.0005**	**1.0006**	**+0.2**	**1.44E+07**	**1.56**	**Y**	**1.04**	**115**	**30821.55**	**2.14**
12367-PeCDD	34.47		1.0031	1.0035	+0.8	7.60E+05	1.51	Y	1.04	6.06	30821.55	2.14
12389-PeCDD	34.81	EMPC	1.0132	1.0134	+0.4	4.43E+05	1.96	N	1.04	3.53	30821.55	2.14
124679/124689-HxCDD	36.54		0.9553	0.9555	+0.4	3.89E+07	1.27	Y	1.10	340	27521.357	1.86
123468-HxCDD	37.20		0.9725	0.9726	+0.2	5.19E+06	1.33	Y	1.10	45.4	27521.357	1.86
123679/123689-HxCDD	37.49		0.9803	0.9804	+0.2	4.73E+07	1.29	Y	1.10	414	27521.357	1.86
123469-HxCDD	37.64		0.9842	0.9842	0	5.01E+06	1.28	Y	1.10	43.8	27521.357	1.86
123478-HxCDD	38.26		**1.0004**	**1.0003**	**-0.2**	**3.19E+06**	**1.37**	**Y**	1.09	**28.3**	**27521.357**	**1.95**
123678-HxCDD	38.36		**1.0031**	**1.0031**	**0**	**1.51E+07**	**1.31**	**Y**	1.15	**136**	**27521.357**	**1.98**
123467-HxCDD	38.54		1.0078	1.0078	0	1.46E+06	1.22	Y	1.10	12.7	27521.357	1.86
123789-HxCDD	38.64		**1.0102**	**1.0103**	**+0.2**	**6.35E+06**	**1.30**	**Y**	1.05	**53.7**	**27521.357**	**1.69**

Lab ID: B5986_18732_DF_007 **Acq'd:** 18 Dec 2021 03:25 DTF **Wt/Vol:** 10.01 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-B-1 **UTP:** 20-Dec-2021 14:13:09 DTF **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 407-080-ZWV

Datafile: 211217C23 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

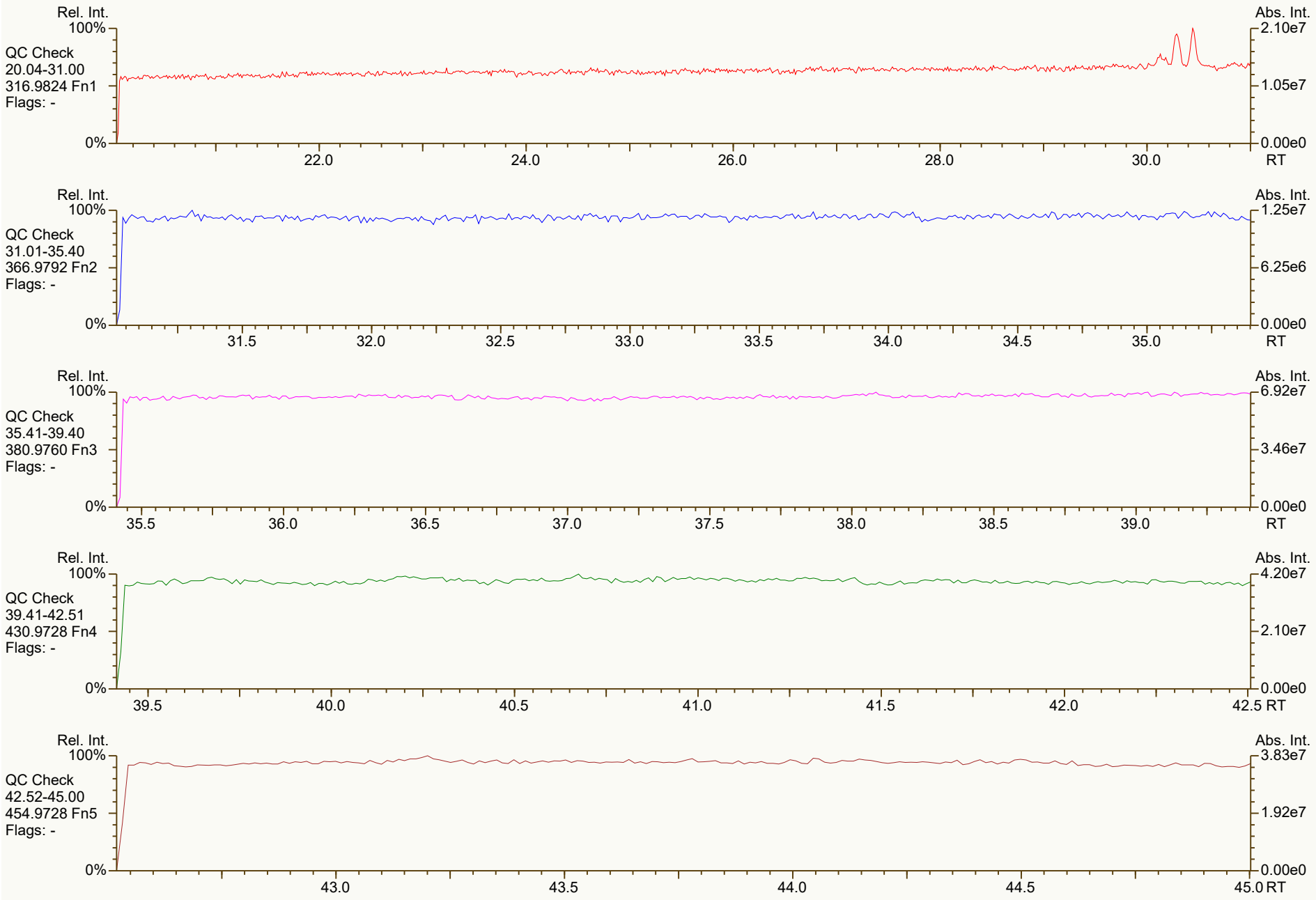
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.57		0.9837	0.9836	-0.2	4.96E+08	1.06	Y	1.06	4,220	16322.961	1.21
1234678-HpCDD	**41.27**		**1.0004**	**1.0003**	**-0.2**	**4.39E+08**	**1.06**	**Y**	**1.06**	**3,740**	**16322.961**	**1.21**
OCDD	**44.10**	**E**	**1.0003**	**1.0003**	**0**	**4.36E+09**	**0.91**	**Y**	**1.13**	**61,800**	**12767.786**	**2.79**
OCDD-a	44.09	E	1.0002	1.0002	0	2.48E+08	2.54	Y	0.07	54,900	8861.002	30.3
1368-TCDF	23.69		0.8388	0.8376	-1.7	1.48E+06	0.79	Y	1.08	6.51	7913.833	0.406
1468-TCDF	24.24		0.8578	0.8571	-1.0	9.78E+06	0.79	Y	1.08	43	7913.833	0.406
2468-TCDF	24.82		0.8780	0.8776	-0.6	1.45E+07	0.84	Y	1.08	63.6	7913.833	0.406
1346/1246-TCDF	NotFnd		0.8906						1.08		7913.833	0.406
1347/1378/1247-TCDF	25.33		0.8951	0.8954	+0.5	4.29E+07	0.82	Y	1.08	188	7913.833	0.406
1348-TCDF	NotFnd		0.9041						1.08		7913.833	0.406
1248/1367/1379-TCDF	25.65		0.9084	0.9070	-2.2	1.38E+08	0.82	Y	1.08	606	7913.833	0.406
1268-TCDF	26.03		0.9207	0.9205	-0.3	6.33E+07	0.81	Y	1.08	278	7913.833	0.406
1467-TCDF	26.16		0.9253	0.9248	-0.8	1.62E+07	0.83	Y	1.08	71.2	7913.833	0.406
1478-TCDF	26.32		0.9309	0.9304	-0.8	1.50E+08	0.80	Y	1.08	659	7913.833	0.406
1369/1237-TCDF	26.69		0.9431	0.9435	+0.6	5.55E+07	0.81	Y	1.08	244	7913.833	0.406
2467-TCDF	26.78		0.9472	0.9468	-0.6	9.22E+06	0.84	Y	1.08	40.5	7913.833	0.406
2368-TCDF	26.92		0.9524	0.9517	-1.1	1.62E+08	0.80	Y	1.08	712	7913.833	0.406
1238/1234/1678/1469/1236-TCDF	27.01	E	0.9560	0.9548	-1.9	3.05E+08	0.81	Y	1.08	1,340	7913.833	0.406
1278-TCDF	27.46	E	0.9710	0.9707	-0.5	2.99E+09	0.80	Y	1.08	13,100	7913.833	0.406
1349-TCDF	NotFnd		0.9752						1.08		7913.833	0.406
1267-TCDF	27.71		0.9802	0.9797	-0.8	1.25E+08	0.81	Y	1.08	548	7913.833	0.406
2346/1249-TCDF	27.90		0.9863	0.9865	+0.3	1.63E+07	0.83	Y	1.08	71.5	7913.833	0.406
2347/1279-TCDF	28.09		0.9936	0.9933	-0.5	7.74E+07	0.80	Y	1.08	340	7913.833	0.406
2348-TCDF	28.19	E	0.9971	0.9968	-0.5	4.75E+08	0.80	Y	1.08	2,090	7913.833	0.406
2378-TCDF	**28.30**	E	**1.0007**	**1.0007**	**0**	**6.48E+09**	**0.81**	**Y**	**1.08**	**28,500**	**7913.833**	**0.406**
2367/3467-TCDF	28.65	E	1.0134	1.0130	-0.7	5.17E+08	0.81	Y	1.08	2,270	7913.833	0.406
1269-TCDF	28.90		1.0219	1.0216	-0.5	7.04E+07	0.82	Y	1.08	309	7913.833	0.406
1239-TCDF	29.15		1.0309	1.0307	-0.3	8.64E+06	0.85	Y	1.08	38	7913.833	0.406
1289-TCDF	30.28	E	1.0689	1.0705	+2.9	5.40E+08	0.81	Y	1.08	2,380	7913.833	0.406
13468/12468-PeCDF	30.26		0.9175	0.9184	+1.6	2.25E+07	1.57	Y	1.02	110	5252.771	0.247
13678/13467/12467-PeCDF	31.75		0.9630	0.9638	+1.5	7.67E+06	1.56	Y	1.02	37.4	20145.055	0.946
12368/13478/12478-PeCDF	31.90		0.9675	0.9683	+1.5	1.12E+08	1.56	Y	1.02	547	20145.055	0.946
14678-PeCDF	NotFnd		0.9705						1.02		20145.055	0.946
13479-PeCDF	NotFnd		0.9734						1.02		20145.055	0.946
13469/12479-PeCDF	32.25		0.9807	0.9789	-3.5	3.42E+06	1.50	Y	1.02	16.7	20145.055	0.946
12346-PeCDF	NotFnd		0.9848						1.02		20145.055	0.946

Lab ID: B5986_18732_DF_007 **Acq'd: 18 Dec 2021 03:25 DTF** **Wt/Vol: 10.01 g** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 11215131-120621-S-JC-SC-B-1 **UTP: 20-Dec-2021 14:13:09 DTF** **J-level: 0.5 pg/g** **Split: 1** **Checkcode: 407-080-ZWV**

Datafile: 211217C23 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.52		0.9868	0.9870	+0.4	1.05E+07	1.53	Y	1.02	51	20145.055	0.946
12347-PeCDF	32.61		0.9895	0.9899	+0.8	4.99E+06	1.61	Y	1.02	24.3	20145.055	0.946
12348-PeCDF	32.76		0.9943	0.9945	+0.4	2.38E+07	1.56	Y	1.02	116	20145.055	0.946
12378-PeCDF	**32.96**		**1.0005**	**1.0005**	**0**	**2.20E+08**	**1.56**	**Y**	**1.02**	**1,070**	**20145.055**	**0.914**
12678/12367-PeCDF	33.25		1.0086	1.0092	+1.2	7.41E+07	1.54	Y	1.02	361	20145.055	0.946
12379-PeCDF	NotFnd		1.0137						1.02		20145.055	0.946
12679-PeCDF	33.80		0.9936	0.9933	-0.6	6.75E+05	1.64	Y	1.02	3.29	20145.055	0.946
23467/12369-PeCDF	33.92		0.9970	0.9968	-0.4	4.29E+06	1.52	Y	1.02	20.9	20145.055	0.946
23478-PeCDF	**34.05**		**1.0005**	**1.0008**	**+0.6**	**1.77E+08**	**1.57**	**Y**	**1.02**	**864**	**20145.055**	**0.978**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		20145.055	0.946
12349-PeCDF	NotFnd		1.0103						1.02		20145.055	0.946
12389-PeCDF	35.10		1.0317	1.0317	0	1.09E+07	1.58	Y	1.02	53.3	20145.055	0.946
123468-HxCDF	35.91		0.9634	0.9637	+0.6	1.26E+07	1.25	Y	1.19	64.1	13927.3	0.589
124678/134678-HxCDF	36.10		0.9687	0.9688	+0.2	6.96E+07	1.27	Y	1.19	353	13927.3	0.589
134679-HxCDF	NotFnd		0.9748						1.19		13927.3	0.589
124679-HxCDF	36.52		0.9800	0.9800	0	2.20E+06	1.29	Y	1.19	11.2	13927.3	0.589
124689-HxCDF	36.74		0.9857	0.9860	+0.7	6.73E+07	1.24	Y	1.19	342	13927.3	0.589
123467-HxCDF	37.15		0.9973	0.9971	-0.4	3.14E+06	1.20	Y	1.19	15.9	13927.3	0.589
123478-HxCDF	**37.28**		**1.0005**	**1.0005**	**0**	**3.37E+08**	**1.26**	**Y**	**1.27**	**1,640**	**13927.3**	**0.619**
123678-HxCDF	**37.42**		**1.0005**	**1.0005**	**0**	**9.29E+07**	**1.25**	**Y**	**1.15**	**451**	**13927.3**	**0.57**
123479-HxCDF	NotFnd		1.0051						1.19		13927.3	0.589
123469-HxCDF	NotFnd		1.0092						1.19		13927.3	0.589
123679-HxCDF	NotFnd		0.9948						1.19		13927.3	0.589
234678-HxCDF	**38.09**		**1.0004**	**1.0005**	**+0.2**	**2.35E+07**	**1.25**	**Y**	**1.19**	**121**	**13927.3**	**0.575**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		13927.3	0.589
123789-HxCDF	**NotFnd**		**1.0003**						**1.16**		**13927.3**	**0.592**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.99		1.0007	1.0010	+0.7	2.60E+07	1.24	Y	1.19	132	13927.3	0.589
1234678-HpCDF	**40.31**		**1.0003**	**1.0003**	**0**	**1.74E+08**	**1.06**	**Y**	**1.37**	**915**	**8707.985**	**0.324**
1234679-HpCDF	40.57		1.0068	1.0068	0	3.06E+06	1.03	Y	1.34	17.8	8707.985	0.396
1234689-HpCDF	40.72		1.0102	1.0106	+1.0	1.61E+08	1.05	Y	1.34	934	8707.985	0.396
1234789-HpCDF	**41.73**		**1.0003**	**1.0002**	**-0.3**	**3.11E+07**	**1.04**	**Y**	**1.31**	**200**	**8707.985**	**0.483**
OCDF	**44.27**		**1.0003**	**1.0003**	**0**	**8.88E+07**	**0.91**	**Y**	**1.07**	**966**	**8933.288**	**1.27**
OCDF-a	44.26		1.0002	1.0002	0	5.83E+06	2.28	Y	0.07	1,020	5366.357	12.3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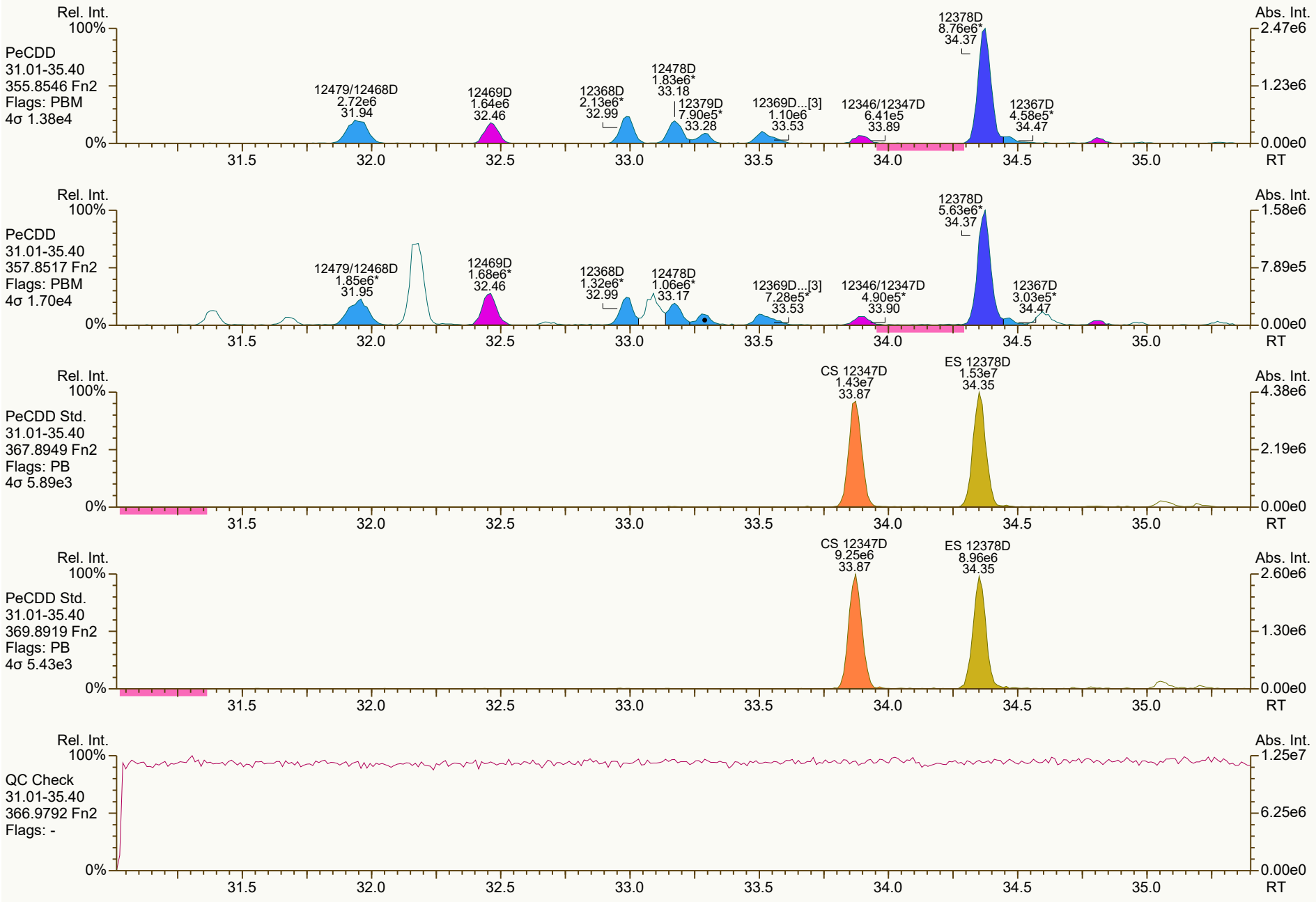
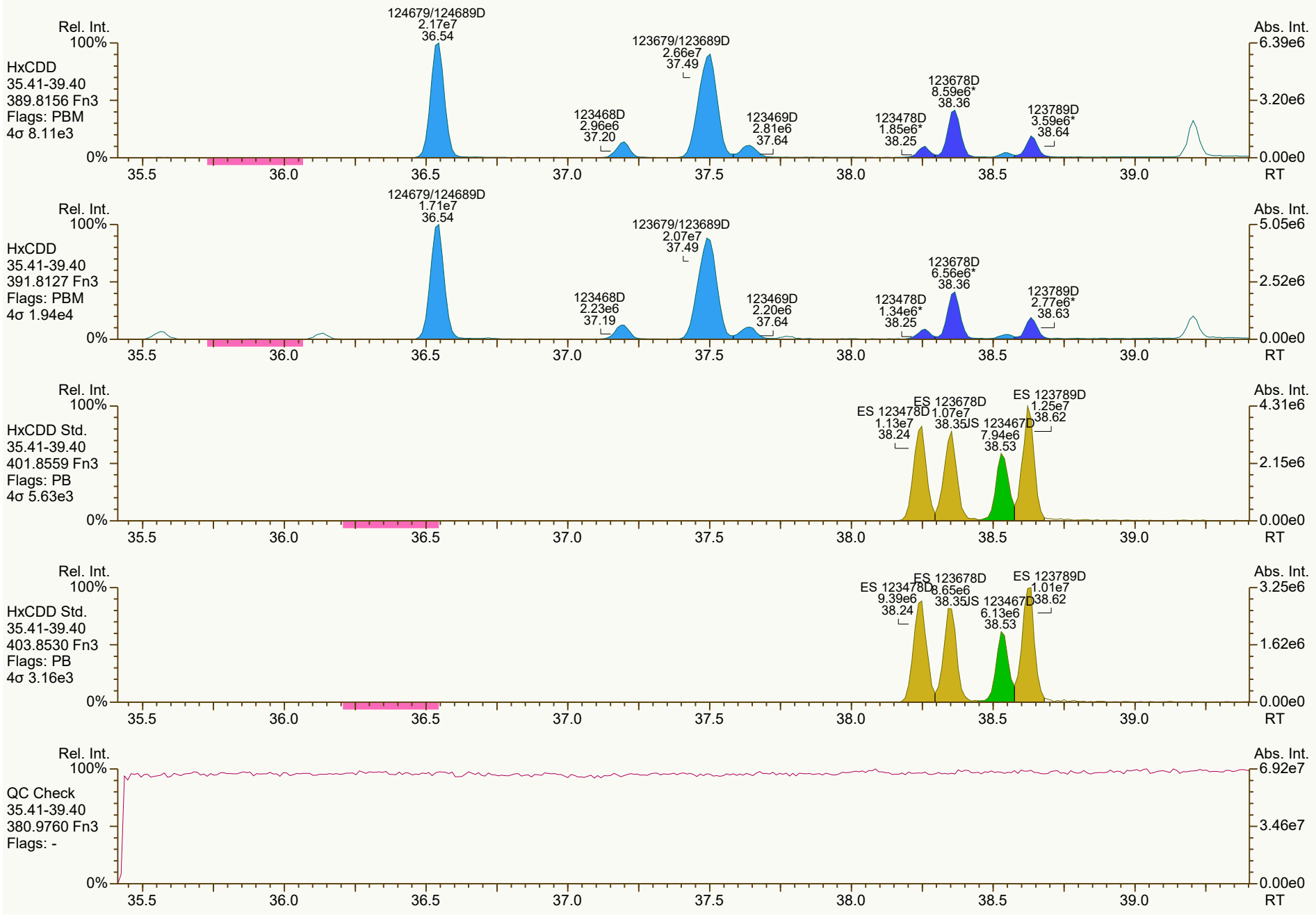
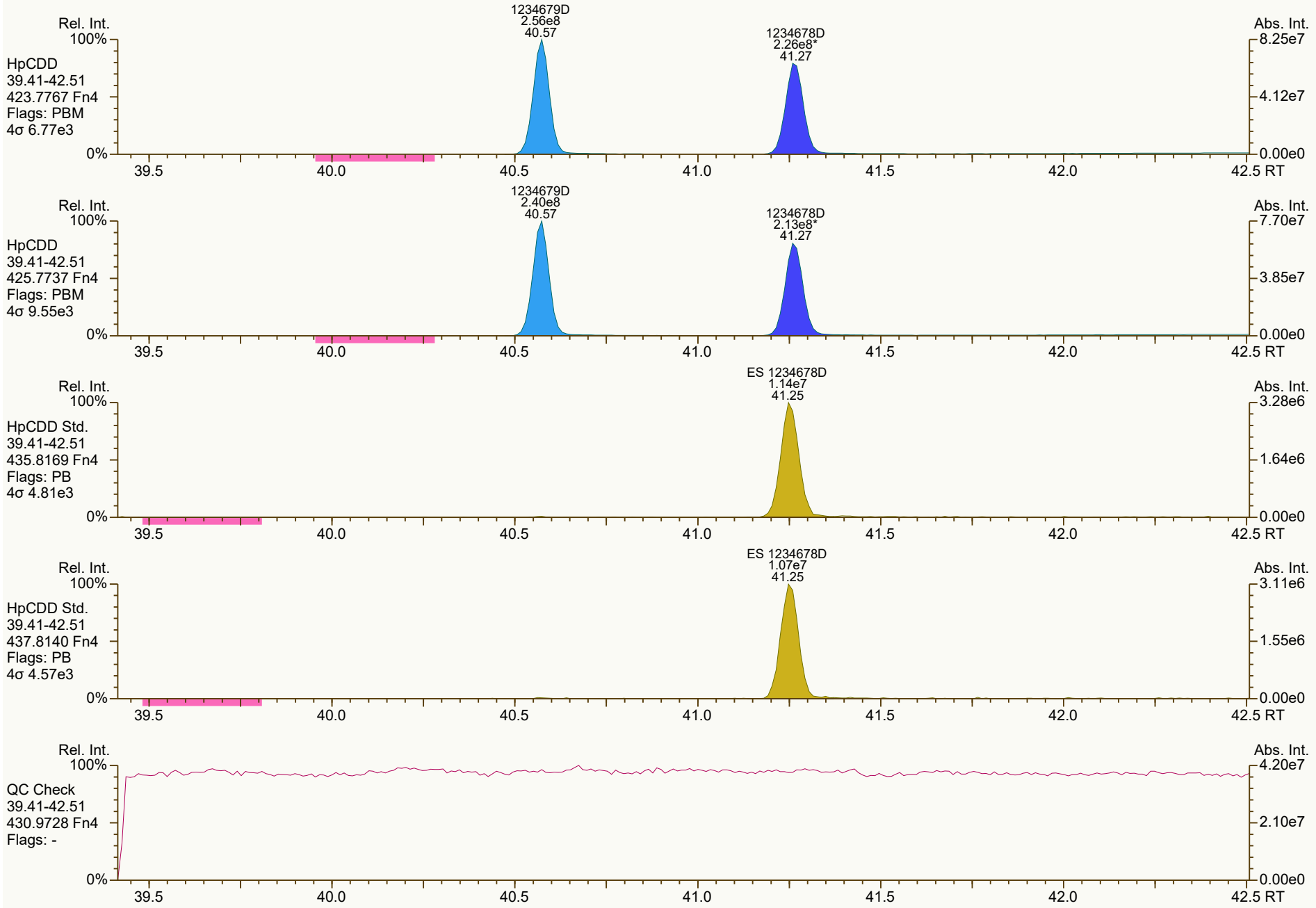
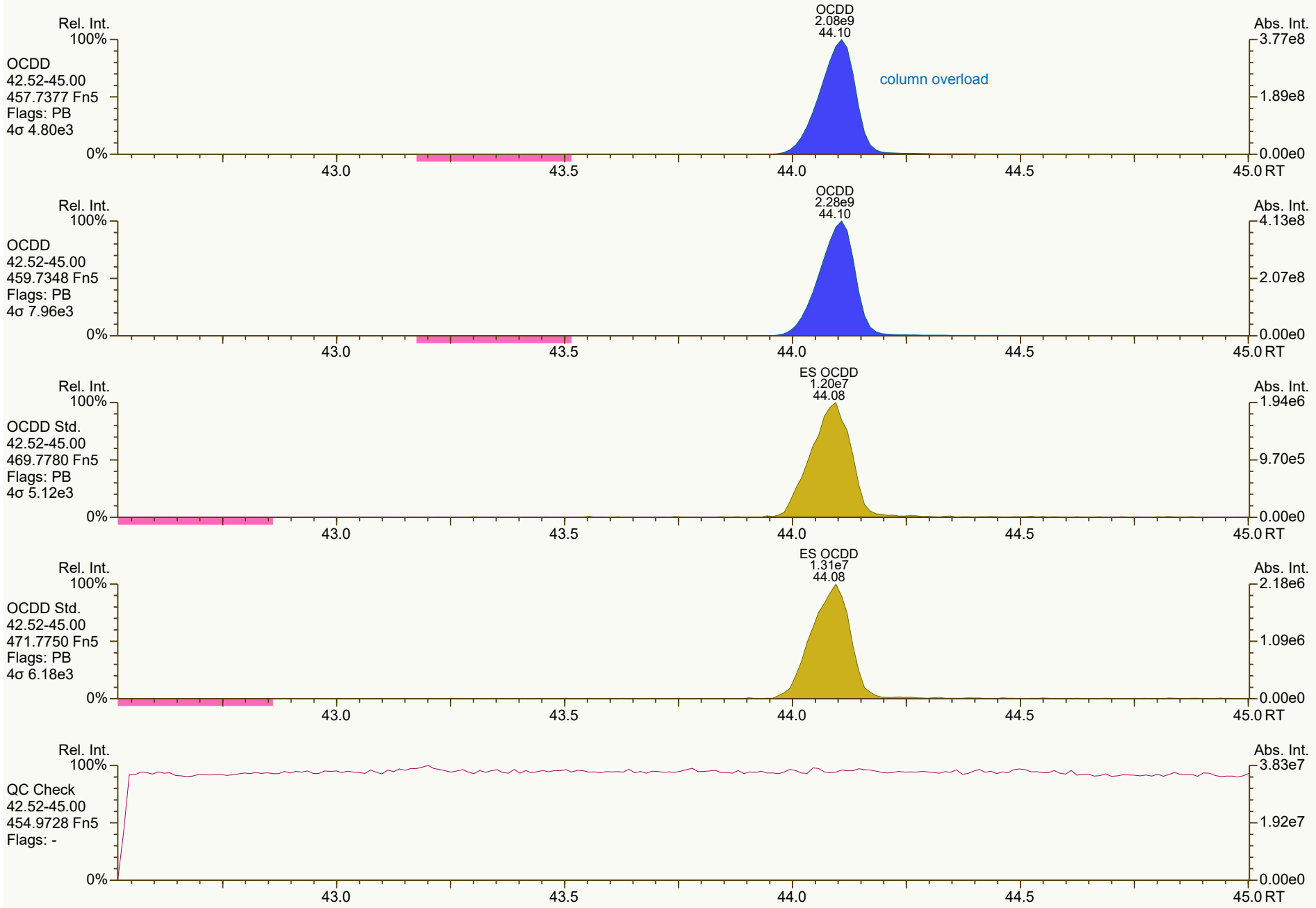
100%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
0%
22.0
24.0
26.0
28.0
30.0
Abs. Int.
2.10e7
1.05e7
0.00e0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Abs. Int.
1.25e7
6.25e6
0.00e0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
Abs. Int.
6.92e7
3.46e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.20e7
2.10e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
3.83e7
1.92e7
0.00e0

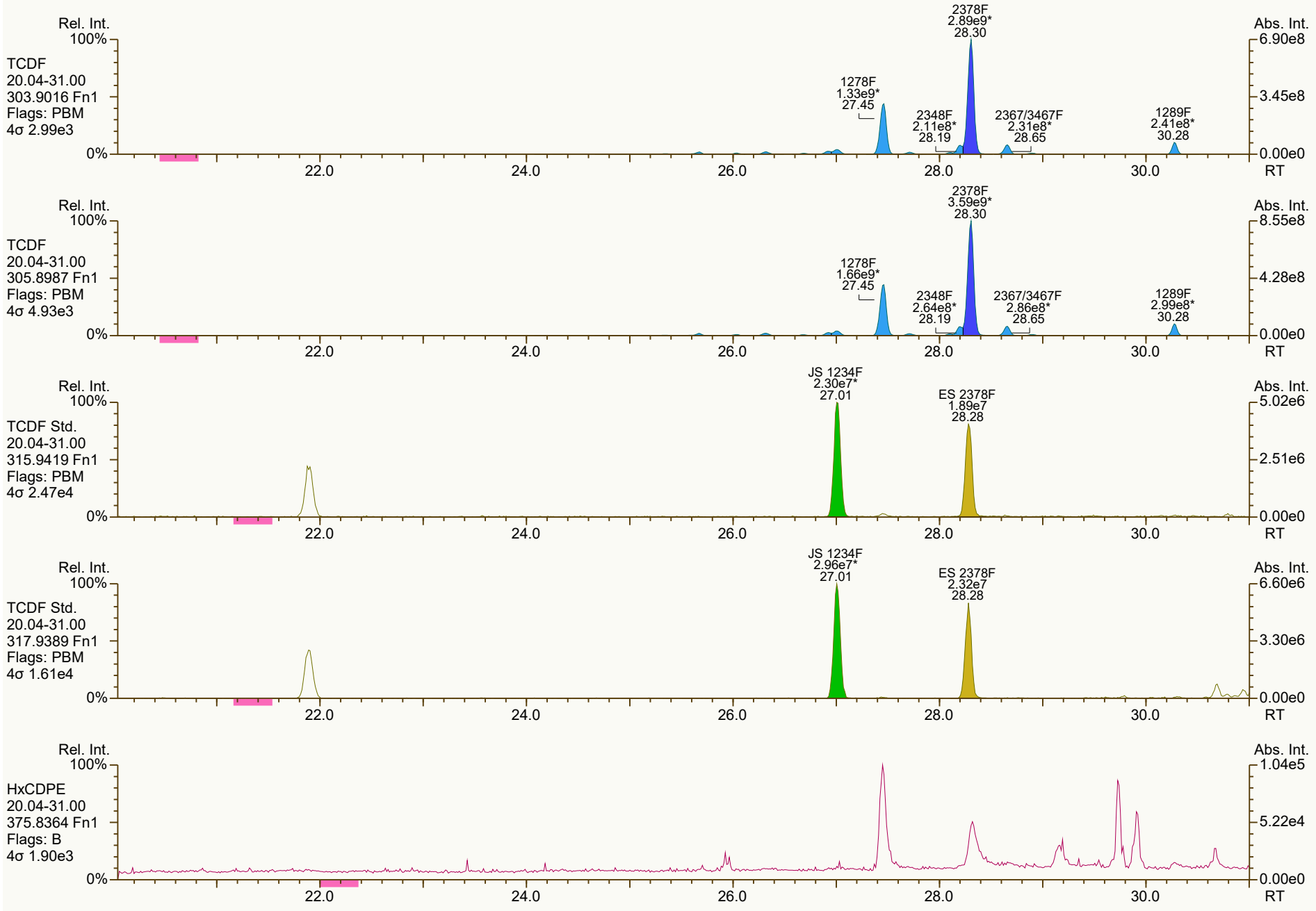

Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: PBM
4σ 4.96e3
0%
2378D
6.58e8*
29.14
1278D
5.99e7*
29.46
Abs. Int.
1.59e8
7.94e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: PBM
4σ 4.52e3
0%
2378D
8.05e8*
29.14
1278D
7.32e7*
29.46
Abs. Int.
1.95e8
9.74e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PB
4σ 7.63e3
0%
CS 37Cl-2378D
1.81e7
29.14
Abs. Int.
4.30e6
2.15e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PB
4σ 1.64e4
0%
JS 1234D
1.39e7
28.51
ES 2378D
1.04e7
29.12
Abs. Int.
3.52e6
1.76e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PB
4σ 1.00e4
0%
JS 1234D
1.72e7
28.51
ES 2378D
1.31e7
29.12
Abs. Int.
4.38e6
2.19e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

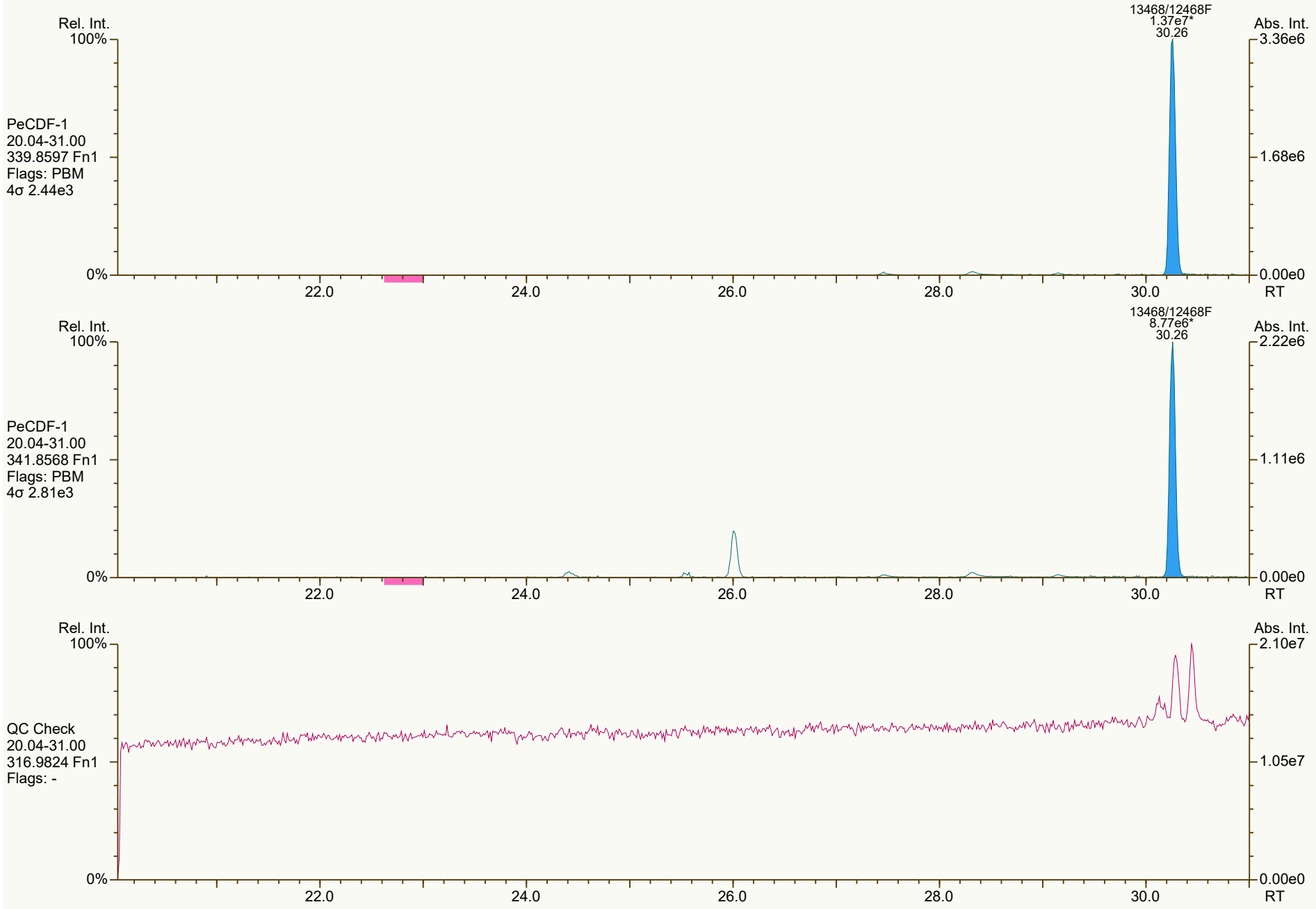

Rel. Int.
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PBM
4σ 1.38e4
12479/12468D
2.72e6
31.94
12469D
1.64e6
32.46
12368D
2.13e6*
32.99
12478D
1.83e6*
33.18
12379D
7.90e5*
33.28
12369D...[3]
1.10e6
33.53
12346/12347D
6.41e5
33.89
12378D
8.76e6*
34.37
12367D
4.58e5*
34.47
Abs. Int.
2.47e6
1.23e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PBM
4σ 1.70e4
12479/12468D
1.85e6*
31.95
12469D
1.68e6*
32.46
12368D
1.32e6*
32.99
12478D
1.06e6*
33.17
12369D...[3]
7.28e5*
33.53
12346/12347D
4.90e5*
33.90
12378D
5.63e6*
34.37
12367D
3.03e5*
34.47
Abs. Int.
1.58e6
7.89e5
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PB
4σ 5.89e3
CS 12347D
1.43e7
33.87
ES 12378D
1.53e7
34.35
Abs. Int.
4.38e6
2.19e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PB
4σ 5.43e3
CS 12347D
9.25e6
33.87
ES 12378D
8.96e6
34.35
Abs. Int.
2.60e6
1.30e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
Abs. Int.
1.25e7
6.25e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT

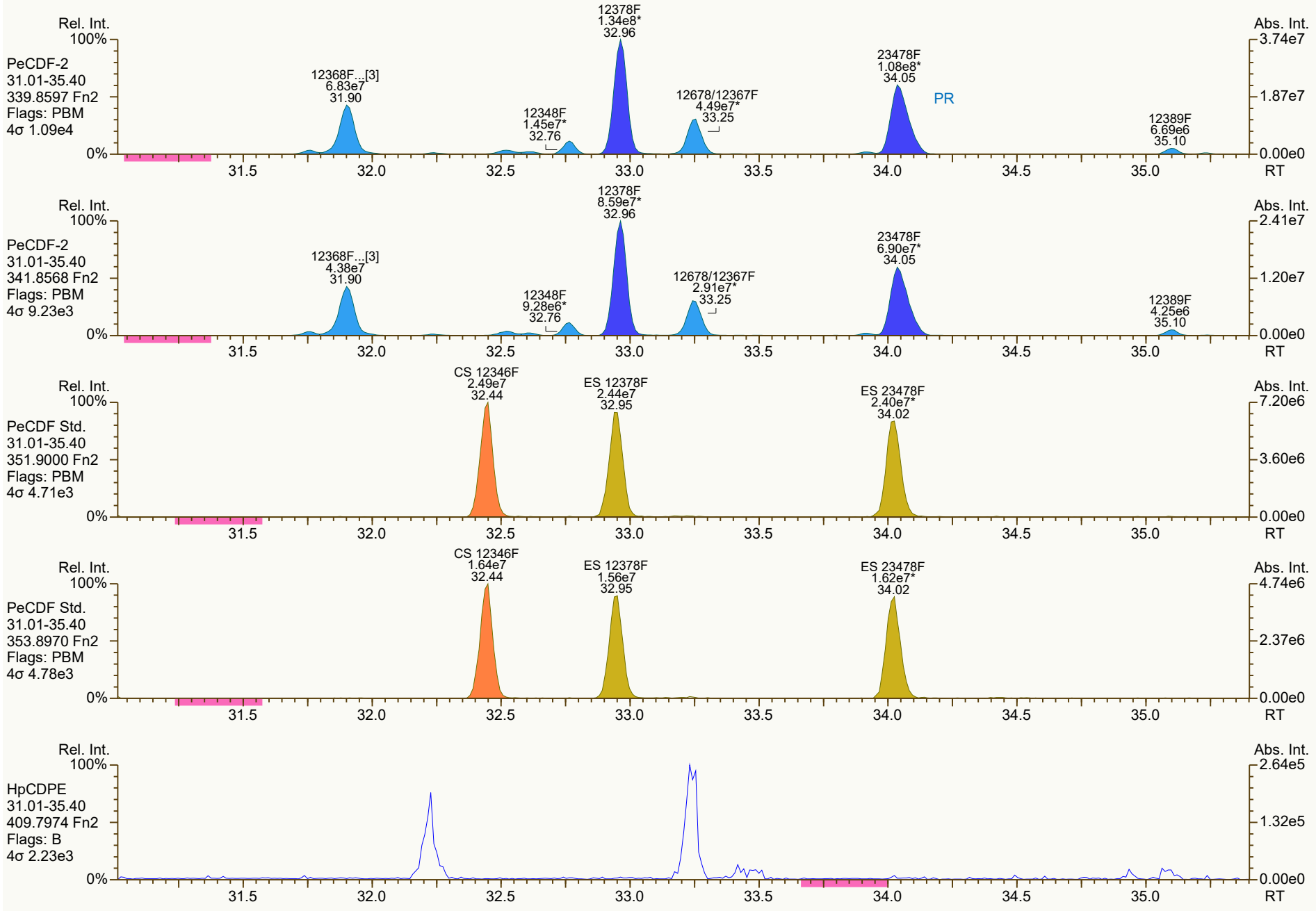

Rel. Int.
Abs. Int.
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PBM
4σ 8.11e3
124679/124689D
2.17e7
36.54
123679/123689D
2.66e7
37.49
123468D
2.96e6
37.20
123469D
2.81e6
37.64
123678D
8.59e6*
38.36
123478D
1.85e6*
38.25
123789D
3.59e6*
38.64
6.39e6
3.20e6
0.00e0
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PBM
4σ 1.94e4
124679/124689D
1.71e7
36.54
123679/123689D
2.07e7
37.49
123468D
2.23e6
37.19
123469D
2.20e6
37.64
123678D
6.56e6*
38.36
123478D
1.34e6*
38.25
123789D
2.77e6*
38.63
5.05e6
2.52e6
0.00e0
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PB
4σ 5.63e3
ES 123478D
1.13e7
38.24
ES 123678D
1.07e7
38.35
JS 123467D
7.94e6
38.53
ES 123789D
1.25e7
38.62
4.31e6
2.15e6
0.00e0
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PB
4σ 3.16e3
ES 123478D
9.39e6
38.24
ES 123678D
8.65e6
38.35
JS 123467D
6.13e6
38.53
ES 123789D
1.01e7
38.62
3.25e6
1.62e6
0.00e0
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
6.92e7
3.46e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

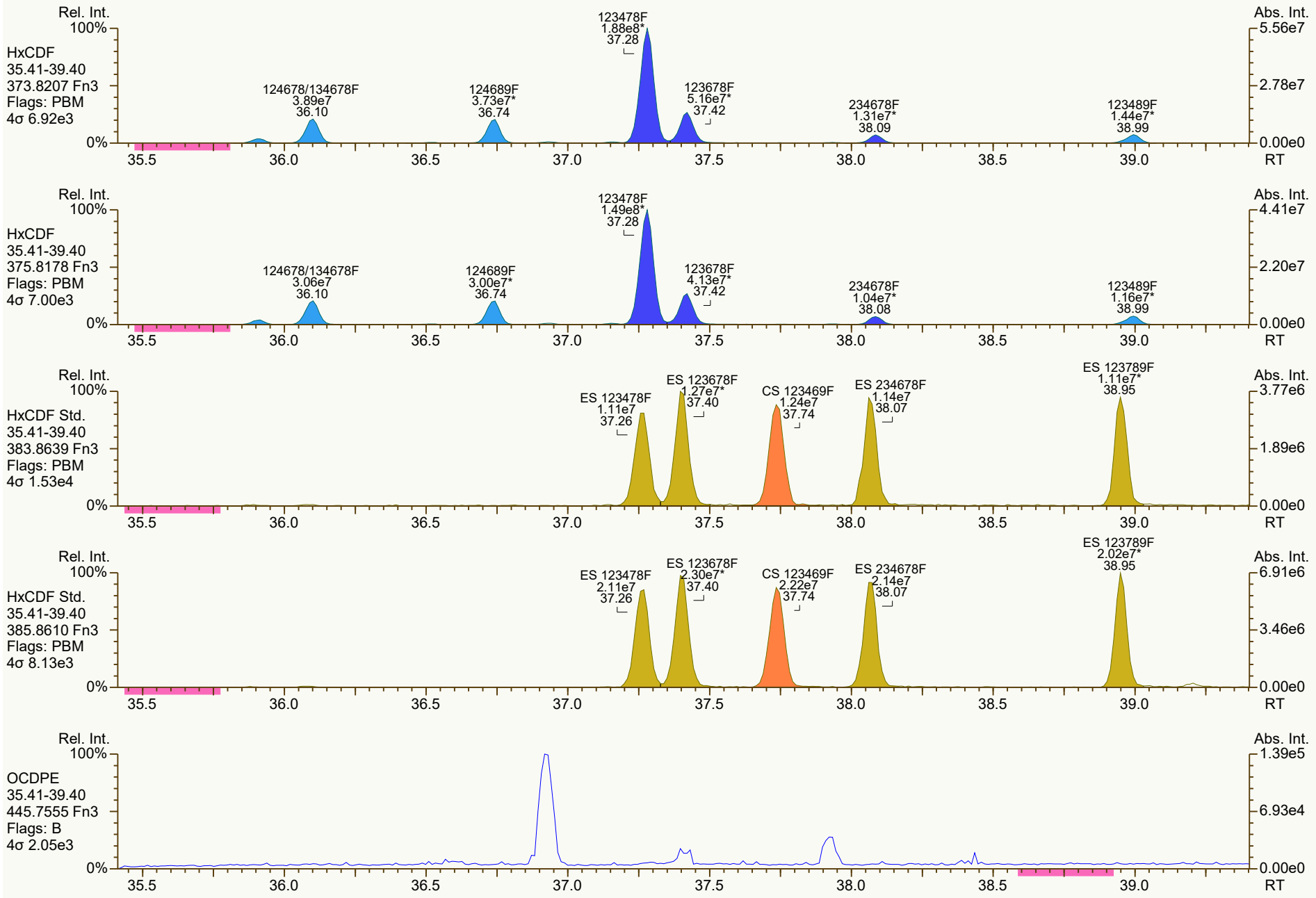

Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PBM
4σ 6.77e3
0%
1234679D
2.56e8
40.57
1234678D
2.26e8*
41.27
Abs. Int.
8.25e7
4.12e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PBM
4σ 9.55e3
0%
1234679D
2.40e8
40.57
1234678D
2.13e8*
41.27
Abs. Int.
7.70e7
3.85e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PB
4σ 4.81e3
0%
ES 1234678D
1.14e7
41.25
Abs. Int.
3.28e6
1.64e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PB
4σ 4.57e3
0%
ES 1234678D
1.07e7
41.25
Abs. Int.
3.11e6
1.55e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.20e7
2.10e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT

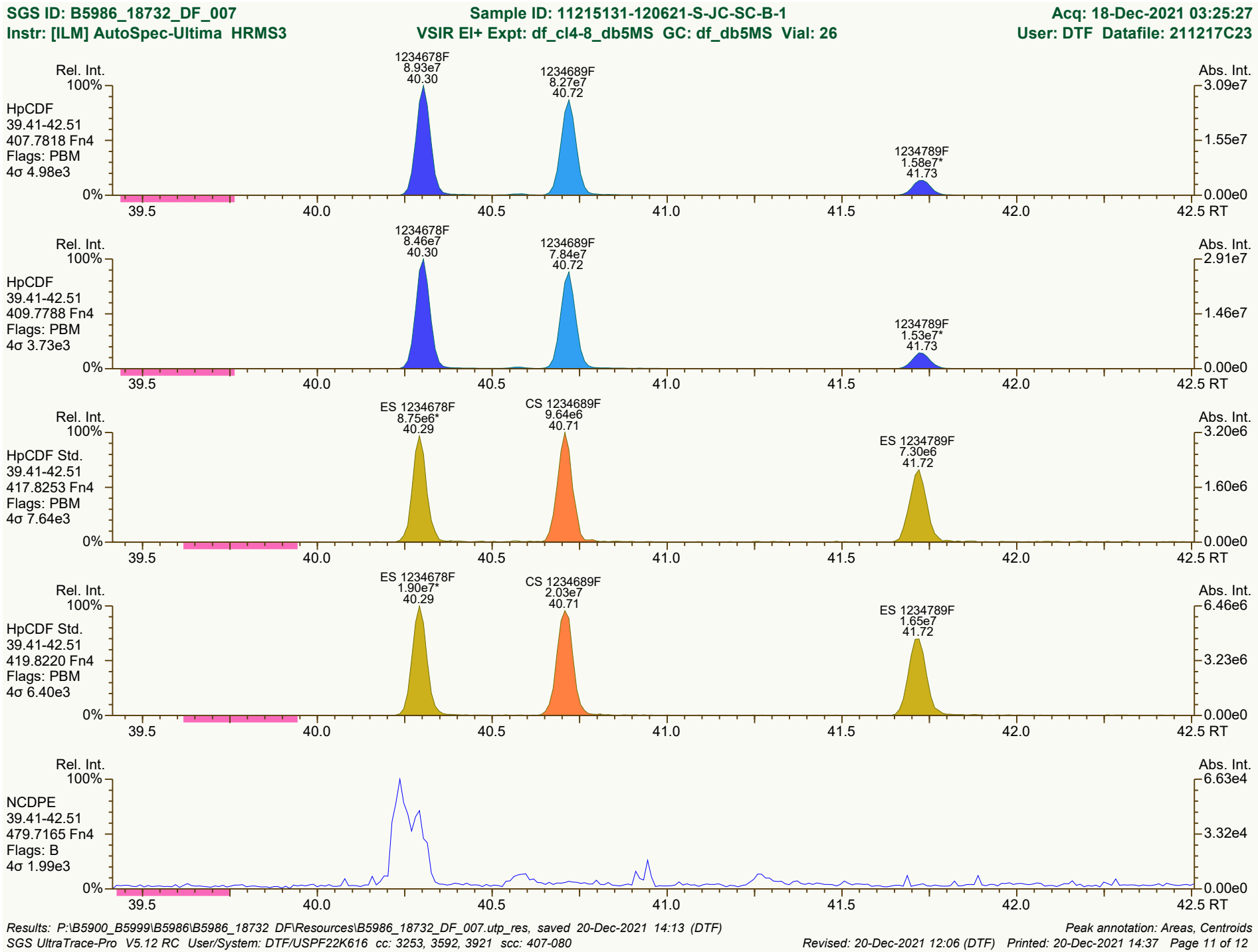

Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PB
4σ 4.80e3
0%
OCDD
2.08e9
44.10
column overload
Abs. Int.
3.77e8
1.89e8
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 7.96e3
0%
OCDD
2.28e9
44.10
Abs. Int.
4.13e8
2.07e8
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 5.12e3
0%
ES OCDD
1.20e7
44.08
Abs. Int.
1.94e6
9.70e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 6.18e3
0%
ES OCDD
1.31e7
44.08
Abs. Int.
2.18e6
1.09e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
3.83e7
1.92e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

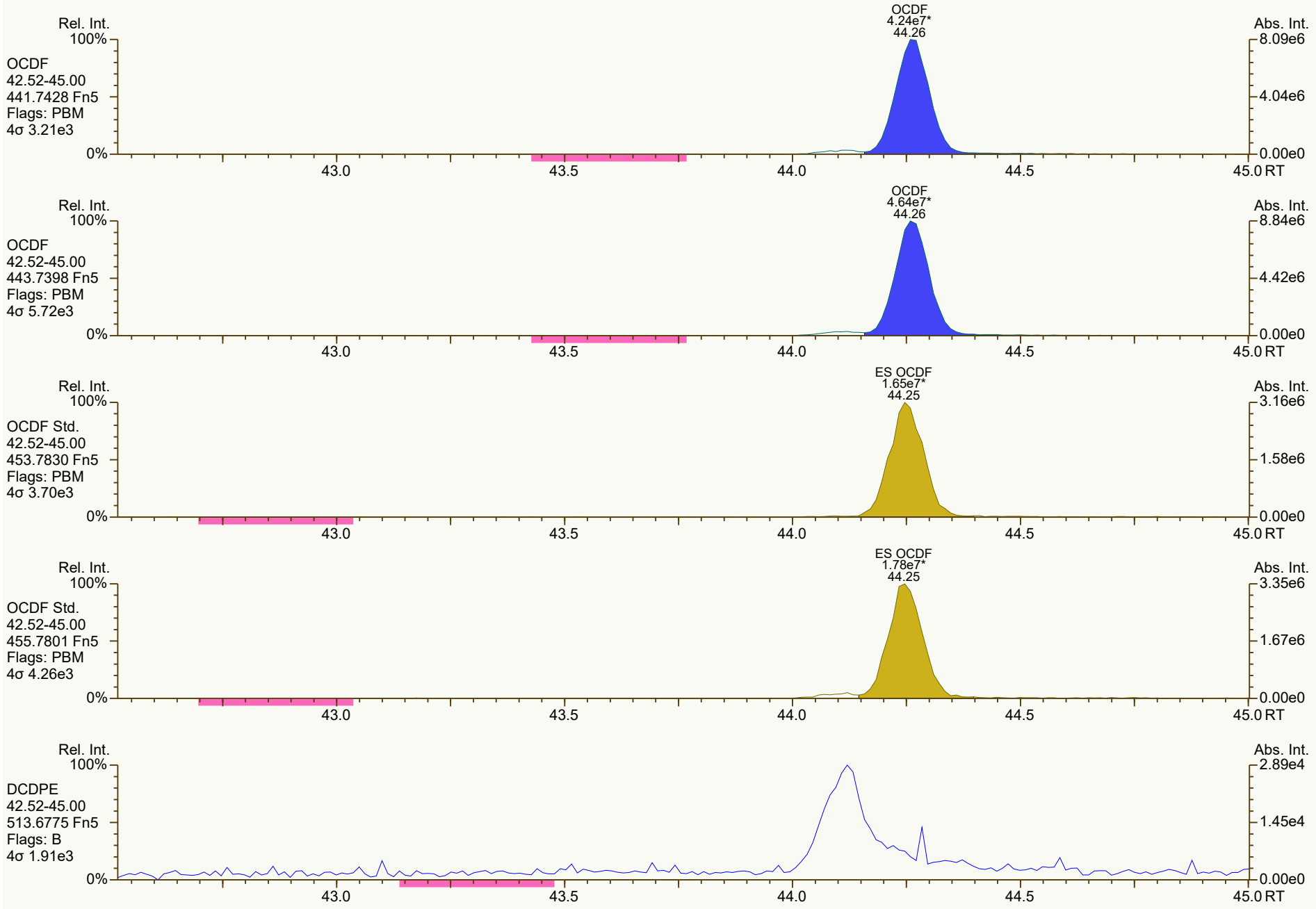

Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 2.99e3
0%
2378F
2.89e9*
28.30
1278F
1.33e9*
27.45
2348F
2.11e8*
28.19
2367/3467F
2.31e8*
28.65
1289F
2.41e8*
30.28
Abs. Int.
6.90e8
3.45e8
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 4.93e3
0%
2378F
3.59e9*
28.30
1278F
1.66e9*
27.45
2348F
2.64e8*
28.19
2367/3467F
2.86e8*
28.65
1289F
2.99e8*
30.28
Abs. Int.
8.55e8
4.28e8
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PBM
4σ 2.47e4
0%
JS 1234F
2.30e7*
27.01
ES 2378F
1.89e7
28.28
Abs. Int.
5.02e6
2.51e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PBM
4σ 1.61e4
0%
JS 1234F
2.96e7*
27.01
ES 2378F
2.32e7
28.28
Abs. Int.
6.60e6
3.30e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 1.90e3
0%
Abs. Int.
1.04e5
5.22e4
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
339.8597 Fn1
Flags: PBM
4σ 2.44e3
13468/12468F
1.37e7*
30.26
Abs. Int.
3.36e6
1.68e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
341.8568 Fn1
Flags: PBM
4σ 2.81e3
13468/12468F
8.77e6*
30.26
Abs. Int.
2.22e6
1.11e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
Abs. Int.
2.10e7
1.05e7
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PBM
4σ 1.09e4
0%
12368F...[3]
6.83e7
31.90
12348F
1.45e7*
32.76
12378F
1.34e8*
32.96
12678/12367F
4.49e7*
33.25
23478F
1.08e8*
34.05
PR
12389F
6.69e6
35.10
Abs. Int.
3.74e7
1.87e7
0.00e0
RT
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PBM
4σ 9.23e3
0%
12368F...[3]
4.38e7
31.90
12348F
9.28e6*
32.76
12378F
8.59e7*
32.96
12678/12367F
2.91e7*
33.25
23478F
6.90e7*
34.05
12389F
4.25e6
35.10
Abs. Int.
2.41e7
1.20e7
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PBM
4σ 4.71e3
0%
CS 12346F
2.49e7
32.44
ES 12378F
2.44e7
32.95
ES 23478F
2.40e7*
34.02
Abs. Int.
7.20e6
3.60e6
0.00e0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PBM
4σ 4.78e3
0%
CS 12346F
1.64e7
32.44
ES 12378F
1.56e7
32.95
ES 23478F
1.62e7*
34.02
Abs. Int.
4.74e6
2.37e6
0.00e0
RT
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 2.23e3
0%
Abs. Int.
2.64e5
1.32e5
0.00e0
RT


Rel. Int.
100%
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PBM
4σ 6.92e3
0%
124678/134678F
3.89e7
36.10
124689F
3.73e7*
36.74
123478F
1.88e8*
37.28
123678F
5.16e7*
37.42
234678F
1.31e7*
38.09
123489F
1.44e7*
38.99
Abs. Int.
5.56e7
2.78e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF
35.41-39.40
375.8178 Fn3
Flags: PBM
4σ 7.00e3
0%
124678/134678F
3.06e7
36.10
124689F
3.00e7*
36.74
123478F
1.49e8*
37.28
123678F
4.13e7*
37.42
234678F
1.04e7*
38.08
123489F
1.16e7*
38.99
Abs. Int.
4.41e7
2.20e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PBM
4σ 1.53e4
0%
ES 123478F
1.11e7
37.26
ES 123678F
1.27e7*
37.40
CS 123469F
1.24e7
37.74
ES 234678F
1.14e7
38.07
ES 123789F
1.11e7*
38.95
Abs. Int.
3.77e6
1.89e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PBM
4σ 8.13e3
0%
ES 123478F
2.11e7
37.26
ES 123678F
2.30e7*
37.40
CS 123469F
2.22e7
37.74
ES 234678F
2.14e7
38.07
ES 123789F
2.02e7*
38.95
Abs. Int.
6.91e6
3.46e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 2.05e3
0%
Abs. Int.
1.39e5
6.93e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT


SGS ID: B5986_18732_DF_007
Sample ID: 11215131-120621-S-JC-SC-B-1
Acq: 18-Dec-2021 03:25:27
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 26
User: DTF Datafile: 211217C23
Rel. Int.
Abs. Int.
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 4.98e3
1234678F
8.93e7
40.30
1234689F
8.27e7
40.72
1234789F
1.58e7*
41.73
3.09e7
1.55e7
0.00e0
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 3.73e3
1234678F
8.46e7
40.30
1234689F
7.84e7
40.72
1234789F
1.53e7*
41.73
2.91e7
1.46e7
0.00e0
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PBM
4σ 7.64e3
ES 1234678F
8.75e6*
40.29
CS 1234689F
9.64e6
40.71
ES 1234789F
7.30e6
41.72
3.20e6
1.60e6
0.00e0
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PBM
4σ 6.40e3
ES 1234678F
1.90e7*
40.29
CS 1234689F
2.03e7
40.71
ES 1234789F
1.65e7
41.72
6.46e6
3.23e6
0.00e0
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 1.99e3
6.63e4
3.32e4
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\B5986_18732_DF_007.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3253, 3592, 3921 scc: 407-080
Revised: 20-Dec-2021 12:06 (DTF) Printed: 20-Dec-2021 14:37 Page 11 of 12


Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PBM
4σ 3.21e3
0%
OCDF
4.24e7*
44.26
Abs. Int.
8.09e6
4.04e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: PBM
4σ 5.72e3
0%
OCDF
4.64e7*
44.26
Abs. Int.
8.84e6
4.42e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PBM
4σ 3.70e3
0%
ES OCDF
1.65e7*
44.25
Abs. Int.
3.16e6
1.58e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PBM
4σ 4.26e3
0%
ES OCDF
1.78e7*
44.25
Abs. Int.
3.35e6
1.67e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: B
4σ 1.91e3
0%
Abs. Int.
2.89e4
1.45e4
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
12	211217C12	3	CS3_211217_DF_CB	1.00	25-347-1	DTF	908-086	17-Dec-2021	18:55:50
13	211217C13	18	OPR1_18732_DF	1.00	0_18732_OPR001	DTF	047-295	17-Dec-2021	19:42:09
14	211217C14	19	OPR2_18732_DF	1.00	0_18732_OPR002	DTF	721-652	17-Dec-2021	20:28:29
15	211217C15	2	SBS_211217_DF_CB	1.00	20-61-1	DTF	403-481	17-Dec-2021	21:14:49
16	211217C16	17	MB1_18732_DF_SDS	10.00	Method Blank	DTF	041-257	17-Dec-2021	22:01:09
17	211217C17	20	B5986_18732_DF_001	10.19	11215131-120321-S-JC-SW-B-6	DTF	677-327	17-Dec-2021	22:47:28
18	211217C18	21	B5986_18732_DF_002	10.06	11215131-120421-S-JC-SC-O-12	DTF	135-907	17-Dec-2021	23:33:49
19	211217C19	22	B5986_18732_DF_003	10.02	11215131-120421-S-JC-SC-O-6	DTF	313-227	18-Dec-2021	00:20:09
20	211217C20	23	B5986_18732_DF_004	10.14	11215131-120421-S-JC-SC-B-5	DTF	875-443	18-Dec-2021	01:06:28
21	211217C21	24	B5986_18732_DF_005	10.15	11215131-120421-S-JC-SC-O-7	DTF	360-861	18-Dec-2021	01:52:49
22	211217C22	25	B5986_18732_DF_006	10.13	11215131-120621-S-JC-SC-O-1	DTF	305-317	18-Dec-2021	02:39:09
23	211217C23	26	B5986_18732_DF_007	10.01	11215131-120621-S-JC-SC-B-1	DTF	407-080	18-Dec-2021	03:25:27

REVIEWED
Tyler_Fritz , 12/20/2021, 2:46:19 PM

APPROVED
Carla_Lyon , 12/21/2021, 1:27:46 PM

Dioxin/Furan QC Summary	Acq'd: 17 Dec 2021 18:55 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211217_DF_CB	UTP: 20-Dec-2021 14:13:04 DTF	Checkcode: 908-086-NWG
Sample ID: 25-347-1	Report: 20 Dec 2021 14:14 TF	Datafile: 211217C12

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n	
2378-TCDD	29.06	4.86E+06	0.81	Y	1.18	1.38	16%	
12378-PeCDD	34.30	2.15E+07	1.59	Y	1.04	1.20	15%	
123478-HxCDD	38.20	2.00E+07	1.28	Y	1.09	1.27	17%	
123678-HxCDD	38.31	2.09E+07	1.25	Y	1.15	1.33	16%	
123789-HxCDD	38.59	2.20E+07	1.26	Y	1.05	1.25	19%	
1234678-HpCDD	41.22	1.78E+07	1.08	Y	1.06	1.13	6%	
OCDD	44.01	1.64E+07	0.93	Y	1.13	1.23	9%	
2378-TCDF	28.23	8.10E+06	0.80	Y	1.08	1.29	20%	
12378-PeCDF	32.88	3.51E+07	1.55	Y	1.02	1.18	15%	
23478-PeCDF	33.96	3.46E+07	1.55	Y	1.02	1.16	13%	
123478-HxCDF	37.21	3.39E+07	1.27	Y	1.27	1.41	11%	
123678-HxCDF	37.35	3.52E+07	1.26	Y	1.15	1.27	11%	
234678-HxCDF	38.03	3.30E+07	1.28	Y	1.19	1.28	8%	
123789-HxCDF	38.92	2.97E+07	1.29	Y	1.16	1.23	5%	
1234678-HpCDF	40.26	2.95E+07	1.07	Y	1.37	1.44	5%	
1234789-HpCDF	41.68	2.41E+07	1.08	Y	1.31	1.44	10%	
OCDF	44.19	2.34E+07	0.91	Y	1.07	1.18	10%	
ES 2378-TCDD	29.04	3.53E+07	0.81	Y	1.05	1.02	-2%	
ES 12378-PeCDD	34.284	3.60E+07	1.56	Y	0.88	1.04	18%	
ES 123478-HxCDD	38.185	3.15E+07	1.29	Y	0.97	0.93	-4%	
ES 123678-HxCDD	38.292	3.13E+07	1.27	Y	0.94	0.93	-2%	
ES 123789-HxCDD	38.572	3.51E+07	1.27	Y	1.09	1.04	-5%	
ES 1234678-HpCDD	41.203	3.17E+07	1.08	Y	0.91	0.94	3%	
ES OCDD	43.995	2.67E+07	0.92	Y	0.62	0.39	-37%	OK 1613B CL 21Dec21
ES 2378-TCDF	28.203	6.28E+07	0.76	Y	1.06	1.04	-2%	
ES 12378-PeCDF	32.867	5.97E+07	1.54	Y	0.91	0.98	8%	
ES 23478-PeCDF	33.946	5.98E+07	1.55	Y	0.88	0.99	12%	
ES 123478-HxCDF	37.19	4.82E+07	0.55	Y	1.20	1.43	19%	
ES 123678-HxCDF	37.336	5.53E+07	0.55	Y	1.35	1.64	21%	
ES 234678-HxCDF	38.01	5.14E+07	0.54	Y	1.24	1.52	22%	
ES 123789-HxCDF	38.903	4.84E+07	0.54	Y	1.16	1.43	24%	
ES 1234678-HpCDF	40.252	4.10E+07	0.45	Y	0.97	1.21	25%	
ES 1234789-HpCDF	41.672	3.35E+07	0.47	Y	0.85	0.99	16%	
ES OCDF	44.175	3.97E+07	0.90	Y	0.81	0.59	-27%	

Dioxin/Furan QC Summary	Acq'd: 17 Dec 2021 18:55 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211217_DF_CB	UTP: 20-Dec-2021 14:13:04 DTF	Checkcode: 908-086-NWG
Sample ID: 25-347-1	Report: 20 Dec 2021 14:14 TF	Datafile: 211217C12

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	28.43	3.46E+07	0.84	Y	-	-	-
JS 1234-TCDF	26.93	6.06E+07	0.76	Y	-	-	-
JS 123467-HxCDD	38.48	1.69E+07	1.27	Y	-	-	-
CS 37Cl-2378-TCDD	29.06	4.98E+06	n/a	-	1.20	1.44	20%
CS 12347-PeCDD	33.80	3.29E+07	1.61	Y	0.75	0.95	26%
CS 12346-PeCDF	32.36	5.69E+07	1.53	Y	0.85	0.94	10%
CS 123469-HxCDF	37.66	5.07E+07	0.54	Y	1.12	1.50	34% *
CS 1234689-HpCDF	40.66	4.01E+07	0.46	Y	0.89	1.19	34% *
							* M1613B does not specify range. CL 21Dec21
~~SS 37Cl-2378-TCDD~~	~~29.06~~	~~4.98E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.41~~	~~23%~~
~~SS 12347-PeCDD~~	~~33.80~~	~~3.29E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~0.91~~	~~6%~~
~~SS 12346-PeCDF~~	~~32.36~~	~~5.69E+07~~	~~1.53~~	~~Y~~	~~0.94~~	~~0.95~~	~~2%~~
~~SS 123469-HxCDF~~	~~37.66~~	~~5.07E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~0.92~~	~~11%~~
~~SS 1234689-HpCDF~~	~~40.66~~	~~4.01E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~0.98~~	~~6%~~
Not used in this project.							
CL 21Dec21							
~~OCDD-a~~	~~44.01~~	~~9.75E+05~~	~~2.67~~	~~Y~~	~~0.07~~	~~0.07~~	~~1%~~
~~OCDF-a~~	~~44.16~~	~~4.88E+05~~	~~2.52~~	~~Y~~	~~0.07~~	~~0.02~~	~~-63%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 211217C12 Analysis Date: 17-DEC-2021 18:55:50

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.81	0.65 - 0.89	Y	11.6	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.59	1.32 - 1.78	Y	57.7	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05 - 1.43	Y	58.3	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05 - 1.43	Y	58	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05 - 1.43	Y	59.7	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88 - 1.20	Y	53.1	43 - 58	Y
OCDD	M+2/M+4	0.93	0.76 - 1.02	Y	109	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.80	0.65 - 0.89	Y	12	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	57.4	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32 - 1.78	Y	56.7	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	55.3	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05 - 1.43	Y	55.3	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	54	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.29	1.05 - 1.43	Y	52.7	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.07	0.88 - 1.20	Y	52.4	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.08	0.88 - 1.20	Y	55	43 - 58	Y
OCDF	M+2/M+4	0.91	0.76 - 1.02	Y	110	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 20 Dec 2021 14:14 Analyst: TF

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

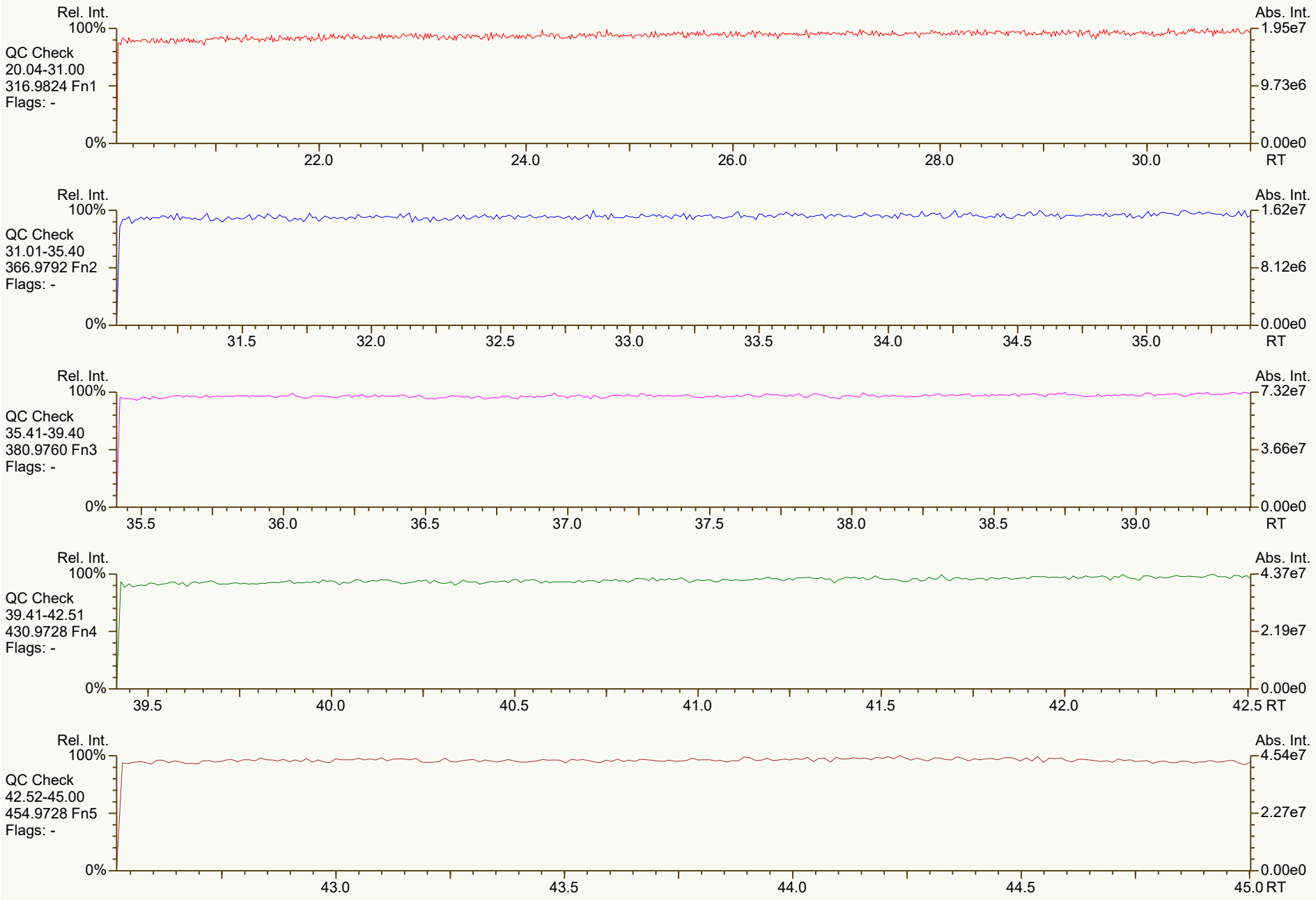
Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 211217C12 Analysis Date: 17-DEC-2021 18:55:50

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65	-	0.89	Y	97.6	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.56	1.32	-	1.78	Y	118	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.29	1.05	-	1.43	Y	95.9	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	98.1	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	95.2	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.08	0.88	-	1.20	Y	103	72	-	138	Y
13C-OCDD	M+2/M+4	0.92	0.76	-	1.02	Y	126	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.76	0.65	-	0.89	Y	97.8	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32	-	1.78	Y	108	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.55	1.32	-	1.78	Y	112	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	119	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	121	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	122	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	124	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	125	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	116	77	-	129	Y
13C-OCDF	M+2/M+4	0.90	0.76	-	1.02	Y	145	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						12	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.61	1.32	-	1.78	Y	126	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.53	1.32	-	1.78	Y	110	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF *	M/M+2	0.54	0.43	-	0.59	Y	134	70	-	130	N
13C-1,2,3,4,6,8,9-HpCDF *	M/M+2	0.46	0.37	-	0.51	Y	134	70	-	130	N

* M1613B does not specify range. CL 21Dec21

Processed: 20 Dec 2021 14:14 Analyst: TF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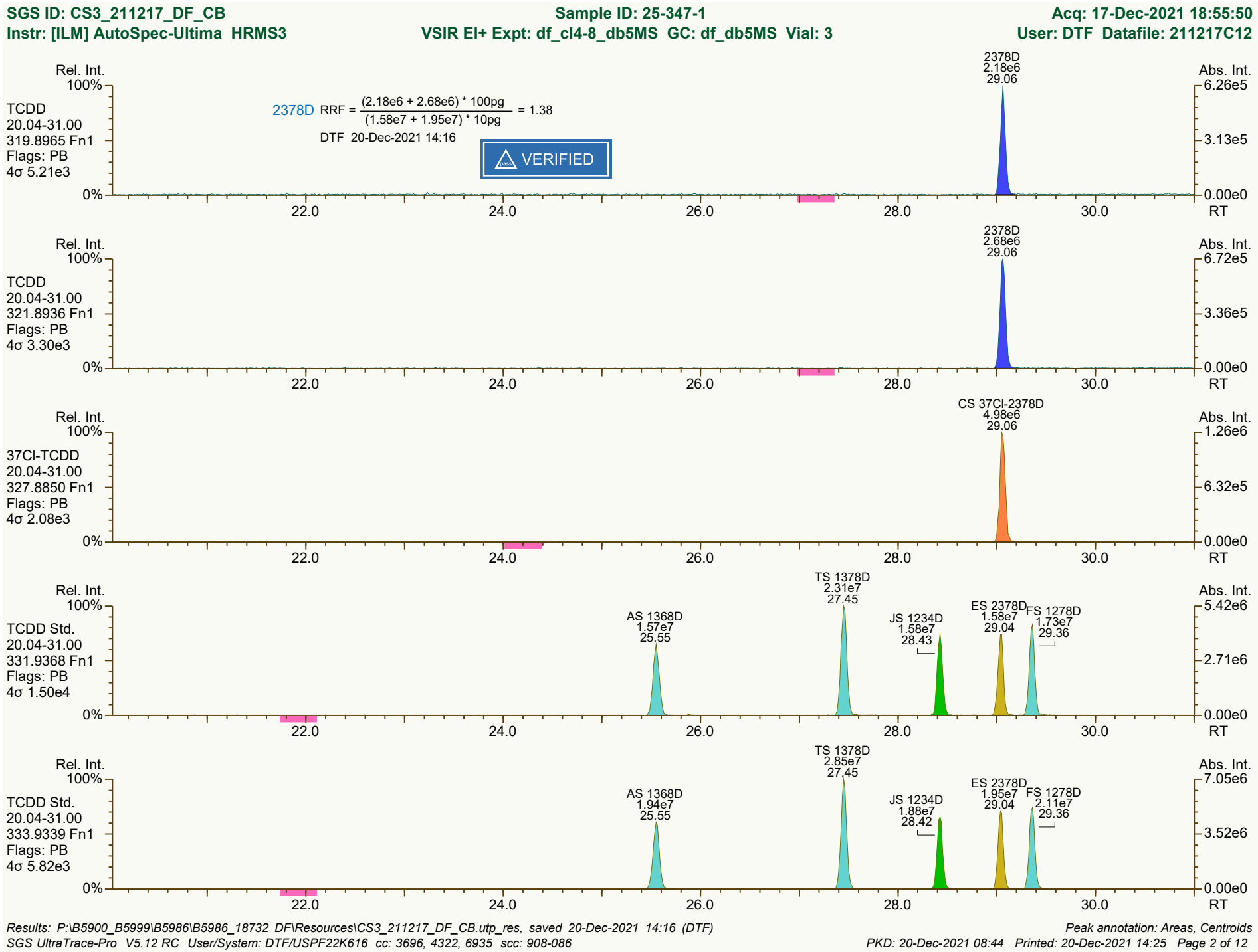
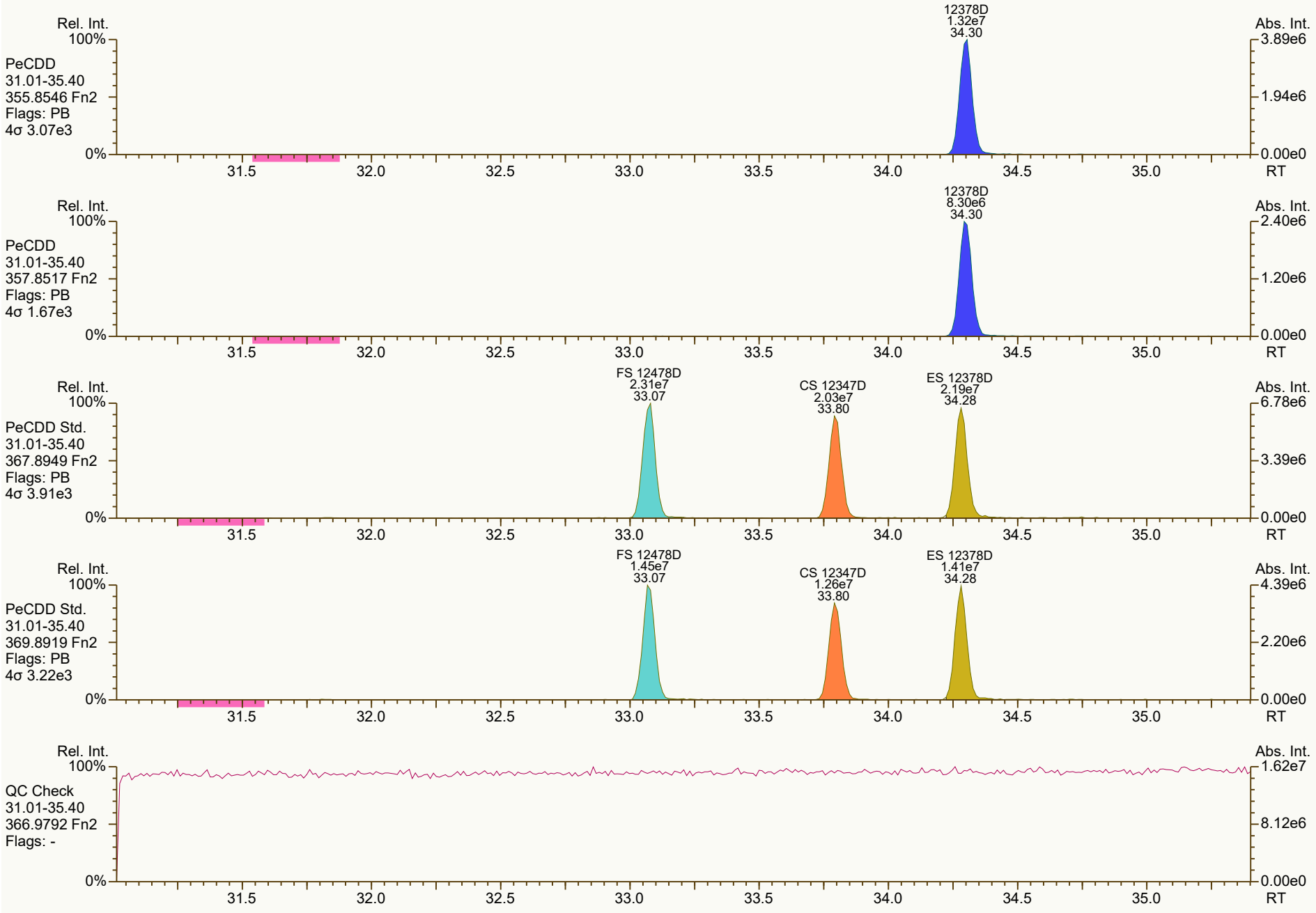
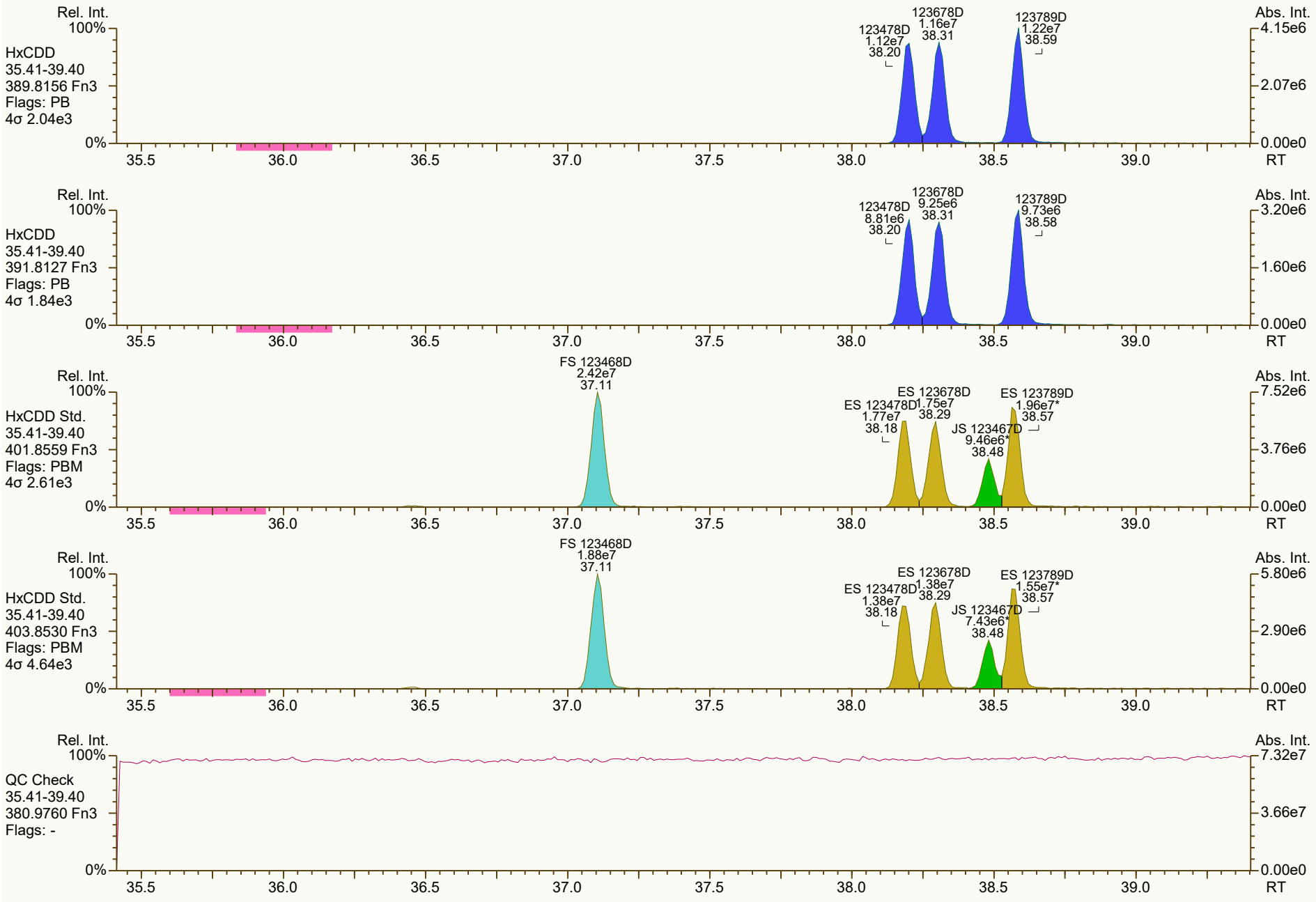
316.9824 Fn1
Flags: -
0%
22.0
24.0
26.0
28.0
30.0
Abs. Int.
1.95e7
9.73e6
0.00e0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Abs. Int.
1.62e7
8.12e6
0.00e0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
Abs. Int.
7.32e7
3.66e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.37e7
2.19e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
4.54e7
2.27e7
0.00e0

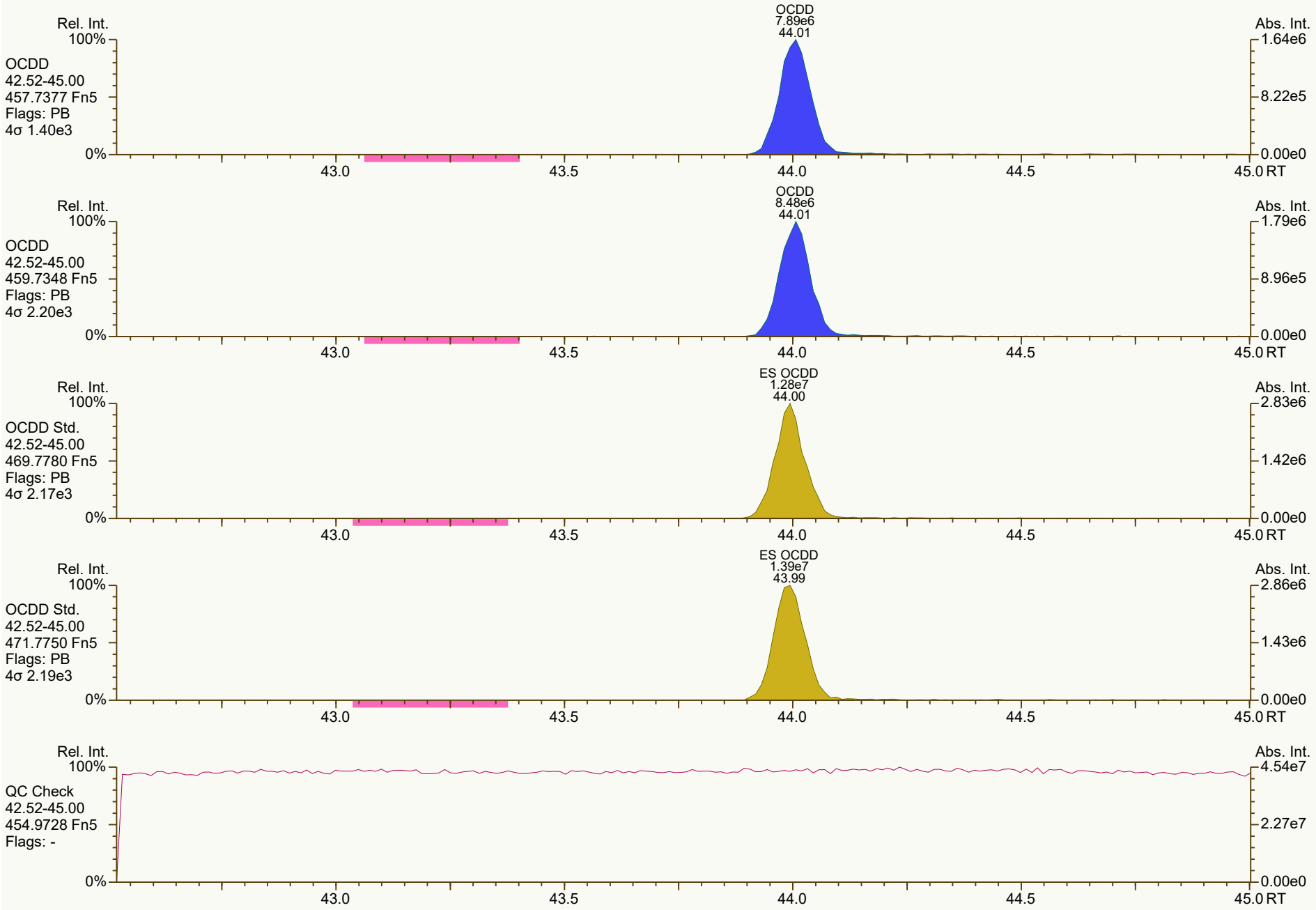
SGS ID: CS3_211217_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
Acq: 17-Dec-2021 18:55:50
User: DTF Datafile: 211217C12




Rel. Int.
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PB
4σ 3.07e3
12378D
1.32e7
34.30
Abs. Int.
3.89e6
1.94e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PB
4σ 1.67e3
12378D
8.30e6
34.30
Abs. Int.
2.40e6
1.20e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PB
4σ 3.91e3
FS 12478D
2.31e7
33.07
CS 12347D
2.03e7
33.80
ES 12378D
2.19e7
34.28
Abs. Int.
6.78e6
3.39e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PB
4σ 3.22e3
FS 12478D
1.45e7
33.07
CS 12347D
1.26e7
33.80
ES 12378D
1.41e7
34.28
Abs. Int.
4.39e6
2.20e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
Abs. Int.
1.62e7
8.12e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PB
4σ 2.04e3
123478D
1.12e7
38.20
123678D
1.16e7
38.31
123789D
1.22e7
38.59
Abs. Int.
4.15e6
2.07e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PB
4σ 1.84e3
123478D
8.81e6
38.20
123678D
9.25e6
38.31
123789D
9.73e6
38.58
Abs. Int.
3.20e6
1.60e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PBM
4σ 2.61e3
FS 123468D
2.42e7
37.11
ES 123478D
1.77e7
38.18
ES 123678D
1.75e7
38.29
JS 123467D
9.46e6*
38.48
ES 123789D
1.96e7*
38.57
Abs. Int.
7.52e6
3.76e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PBM
4σ 4.64e3
FS 123468D
1.88e7
37.11
ES 123478D
1.38e7
38.18
ES 123678D
1.38e7
38.29
JS 123467D
7.43e6*
38.48
ES 123789D
1.55e7*
38.57
Abs. Int.
5.80e6
2.90e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
Abs. Int.
7.32e7
3.66e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

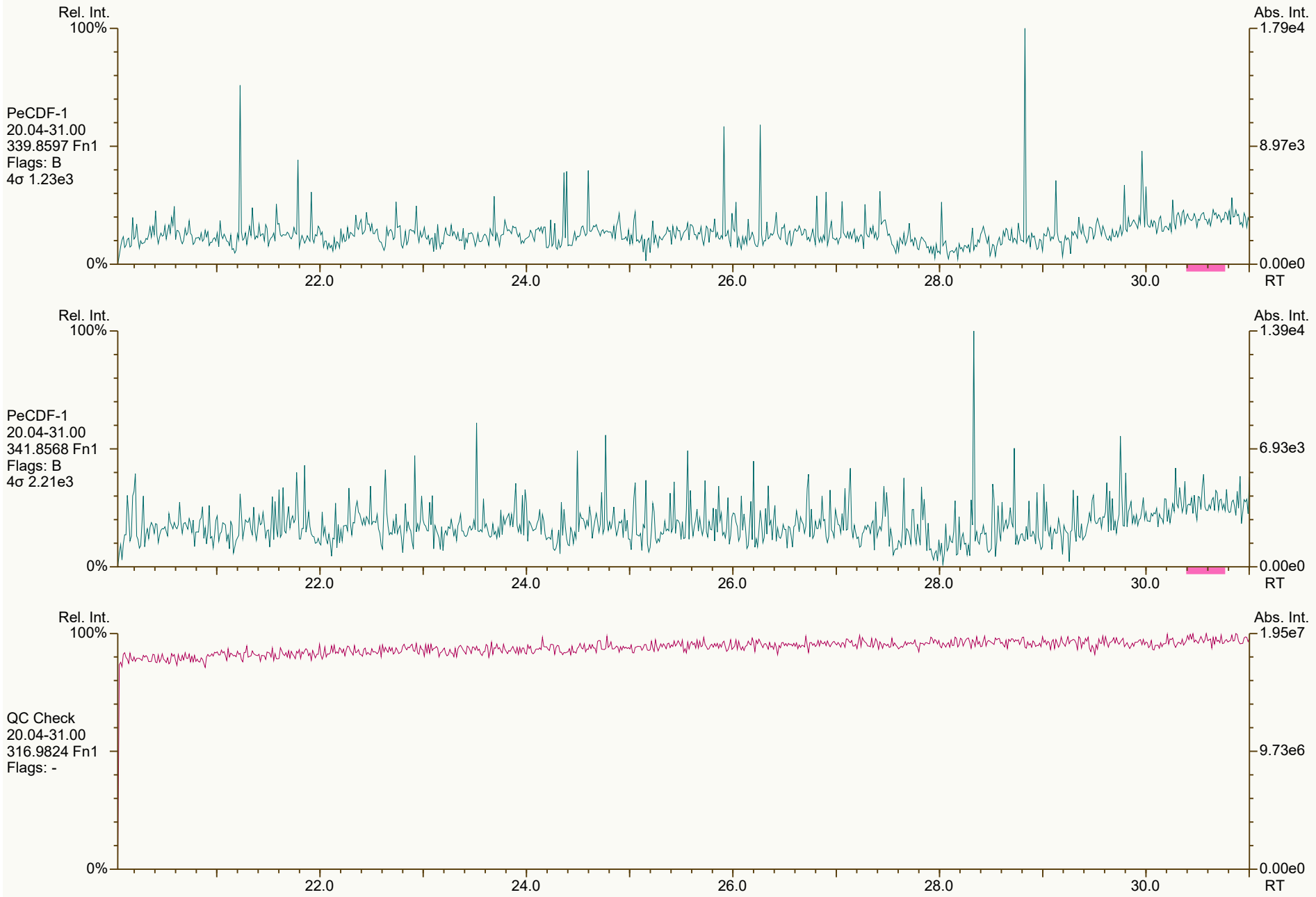

Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PB
4σ 2.77e3
0%
1234678D
9.26e6
41.22
Abs. Int.
2.81e6
1.41e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PB
4σ 1.52e3
0%
1234678D
8.58e6
41.22
Abs. Int.
2.56e6
1.28e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PB
4σ 3.14e3
0%
FS 1234679D
2.40e7
40.51
ES 1234678D
1.64e7
41.20
Abs. Int.
8.05e6
4.03e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PB
4σ 4.26e3
0%
FS 1234679D
2.25e7
40.51
ES 1234678D
1.52e7
41.20
Abs. Int.
7.49e6
3.74e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.37e7
2.19e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PB
4σ 1.40e3
0%
OCDD
7.89e6
44.01
Abs. Int.
1.64e6
8.22e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 2.20e3
0%
OCDD
8.48e6
44.01
Abs. Int.
1.79e6
8.96e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 2.17e3
0%
ES OCDD
1.28e7
44.00
Abs. Int.
2.83e6
1.42e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 2.19e3
0%
ES OCDD
1.39e7
43.99
Abs. Int.
2.86e6
1.43e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.54e7
2.27e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 1.75e3
0%
2378F
3.60e6*
28.22
Abs. Int.
8.62e5
4.31e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 3.75e3
0%
2378F
4.51e6*
28.22
Abs. Int.
1.10e6
5.49e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PB
4σ 1.79e4
0%
AS 1368F
2.86e7
23.57
JS 1234F
2.62e7
26.93
ES 2378F
2.72e7
28.20
Abs. Int.
6.78e6
3.39e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PB
4σ 1.60e4
0%
AS 1368F
3.68e7
23.57
JS 1234F
3.44e7
26.93
ES 2378F
3.56e7
28.20
Abs. Int.
8.82e6
4.41e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 1.85e3
0%
Abs. Int.
1.48e4
7.42e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

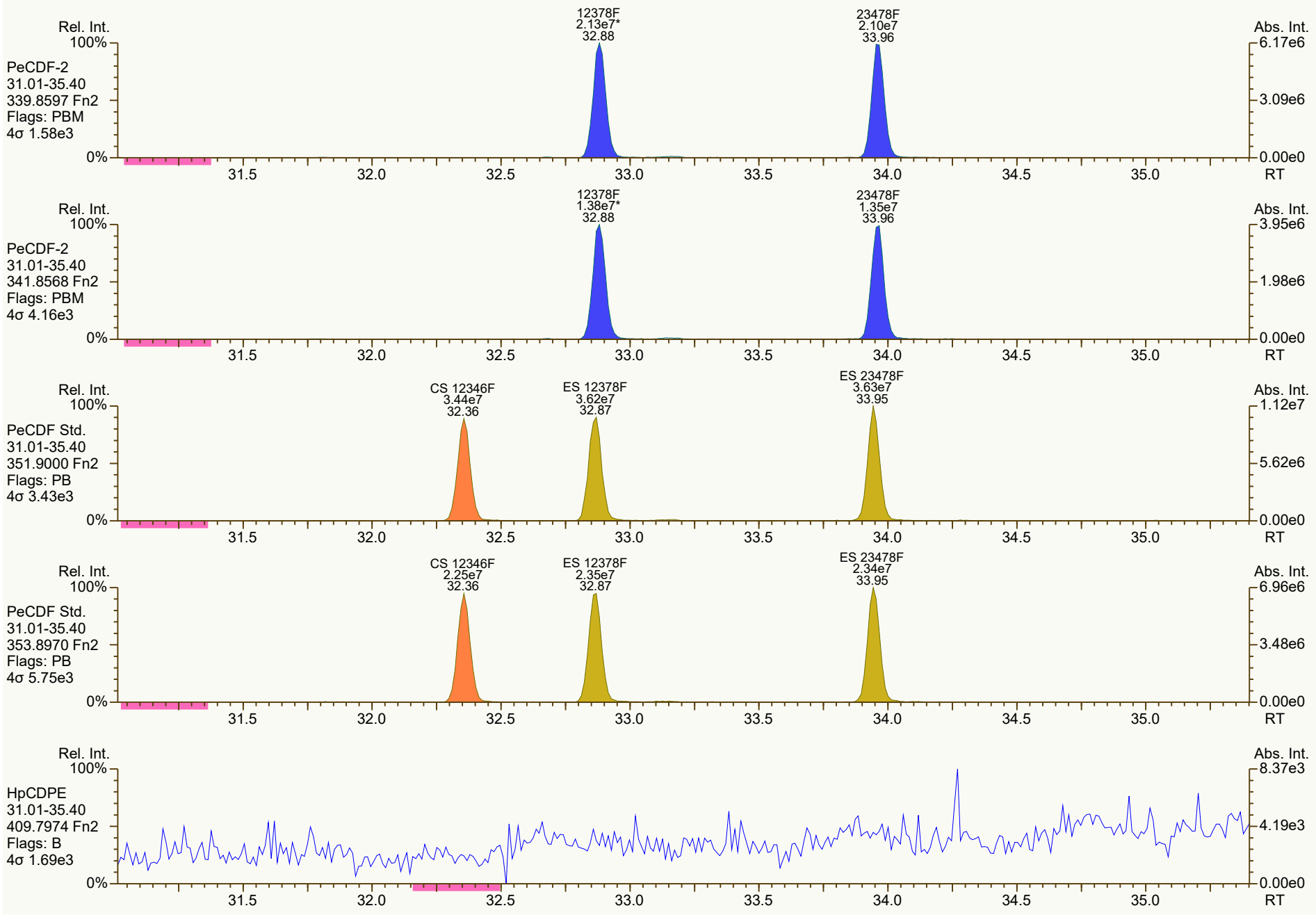
SGS ID: CS3_211217_DF_CB | Sample ID: 25-347-1 | Acq: 17-Dec-2021 18:55:50

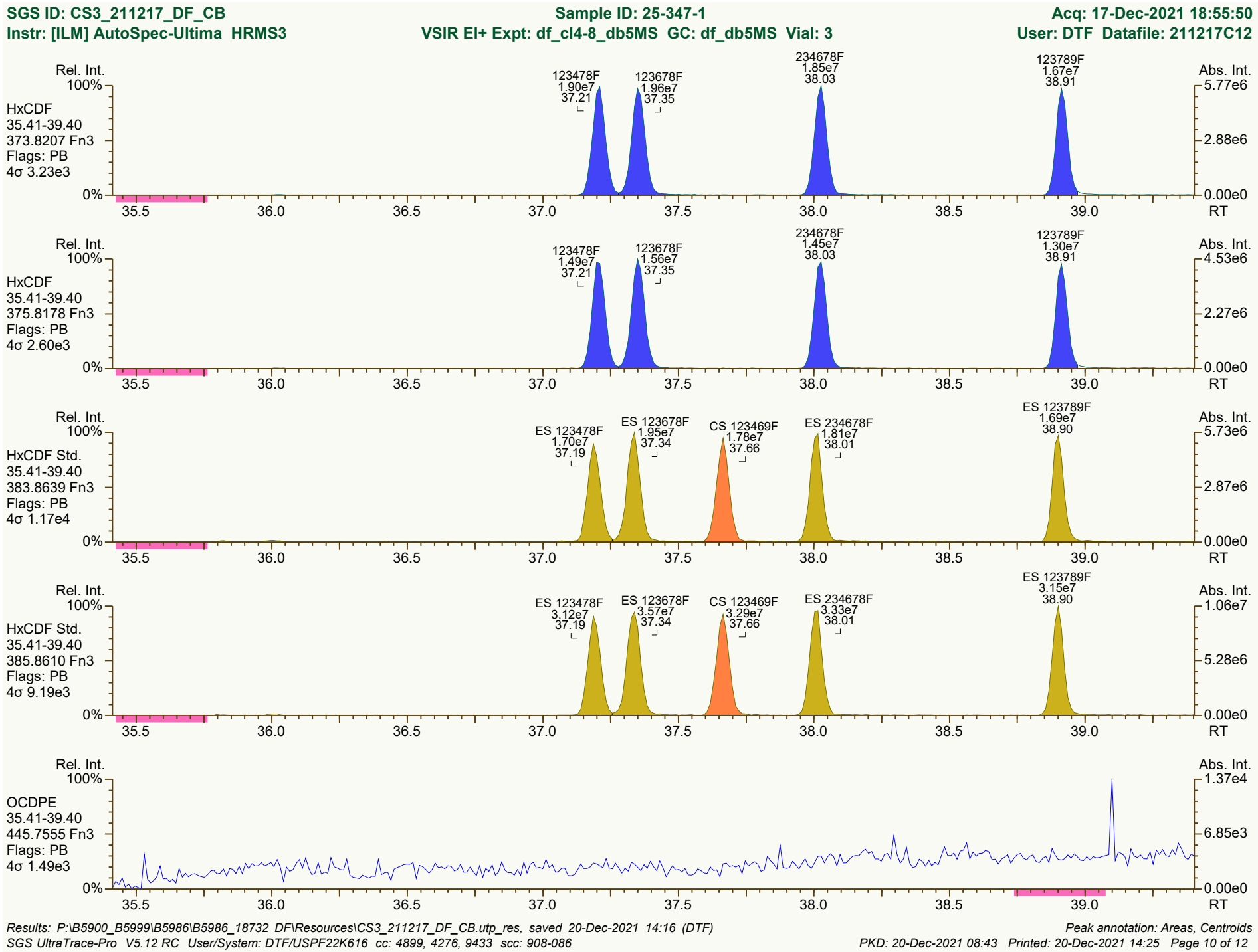
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3 | User: DTF Datafile: 211217C12



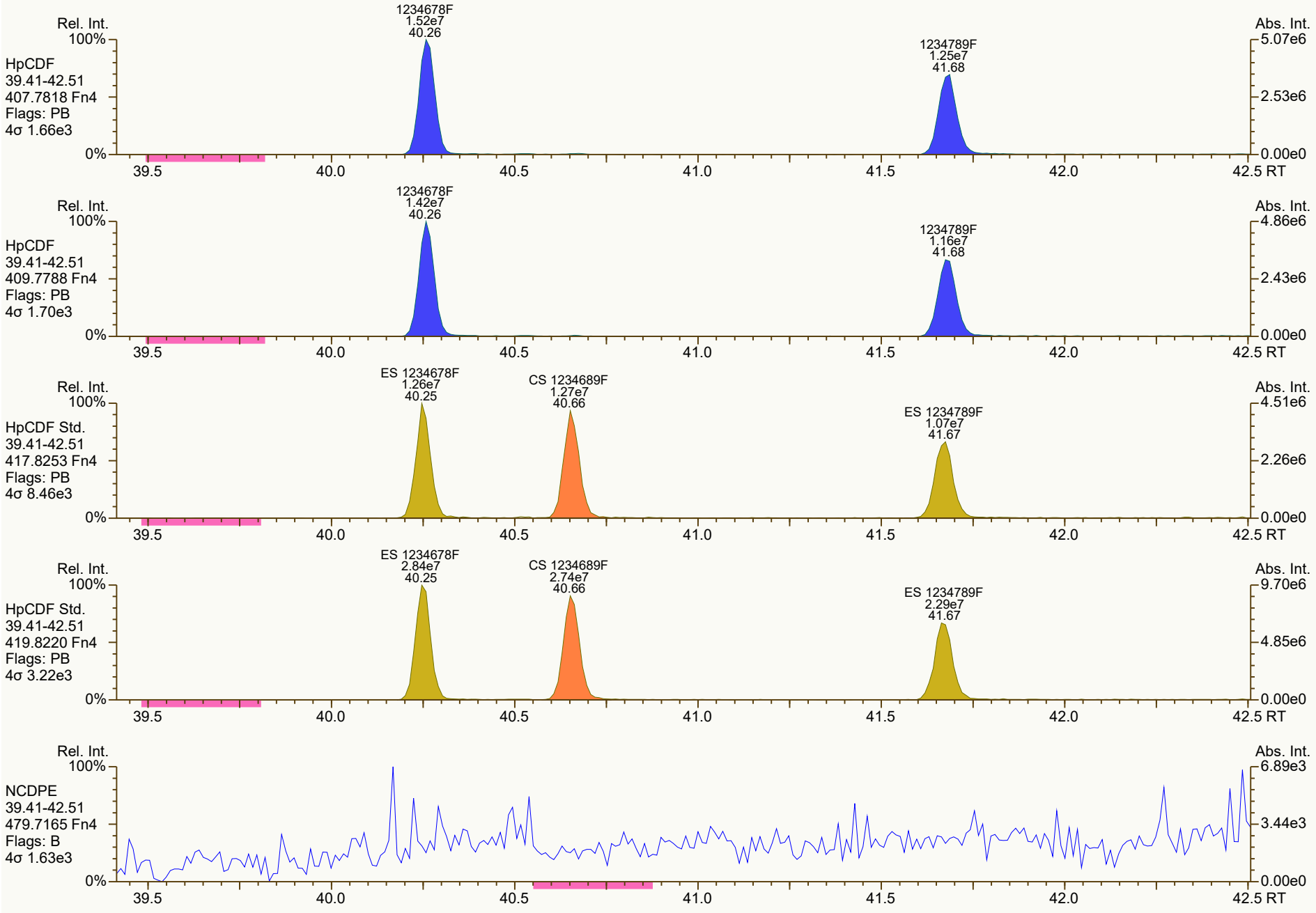
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\CS3_211217_DF_CB.utp_res, saved 20-Dec-2021 14:16 (DTF) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5908 scc: 908-086 | *PKD: 20-Dec-2021 08:43 Printed: 20-Dec-2021 14:25 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PBM
4σ 1.58e3
0%
12378F
2.13e7*
32.88
23478F
2.10e7
33.96
Abs. Int.
6.17e6
3.09e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PBM
4σ 4.16e3
0%
12378F
1.38e7*
32.88
23478F
1.35e7
33.96
Abs. Int.
3.95e6
1.98e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PB
4σ 3.43e3
0%
CS 12346F
3.44e7
32.36
ES 12378F
3.62e7
32.87
ES 23478F
3.63e7
33.95
Abs. Int.
1.12e7
5.62e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PB
4σ 5.75e3
0%
CS 12346F
2.25e7
32.36
ES 12378F
2.35e7
32.87
ES 23478F
2.34e7
33.95
Abs. Int.
6.96e6
3.48e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 1.69e3
0%
Abs. Int.
8.37e3
4.19e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT



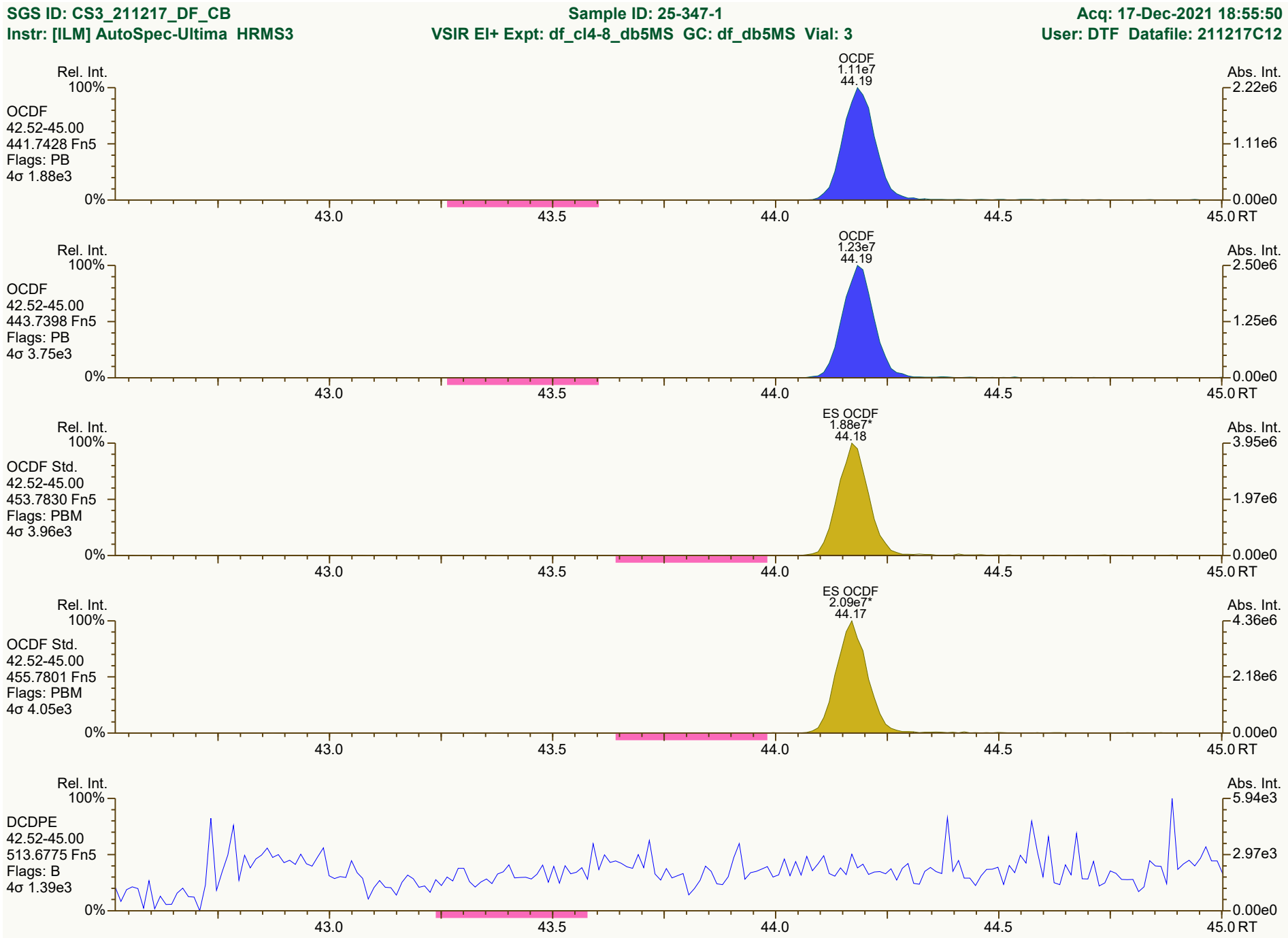
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\CS3_211217_DF_CB.utp_res, saved 20-Dec-2021 14:16 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4899, 4276, 9433 scc: 908-086
Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 08:43 Printed: 20-Dec-2021 14:25 Page 10 of 12


Rel. Int.
100%
0%
Abs. Int.
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PB
4σ 1.66e3
1234678F
1.52e7
40.26
1234789F
1.25e7
41.68
5.07e6
2.53e6
0.00e0
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PB
4σ 1.70e3
1234678F
1.42e7
40.26
1234789F
1.16e7
41.68
4.86e6
2.43e6
0.00e0
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PB
4σ 8.46e3
ES 1234678F
1.26e7
40.25
CS 1234689F
1.27e7
40.66
ES 1234789F
1.07e7
41.67
4.51e6
2.26e6
0.00e0
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PB
4σ 3.22e3
ES 1234678F
2.84e7
40.25
CS 1234689F
2.74e7
40.66
ES 1234789F
2.29e7
41.67
9.70e6
4.85e6
0.00e0
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 1.63e3
6.89e3
3.44e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT

SGS ID: CS3_211217_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3

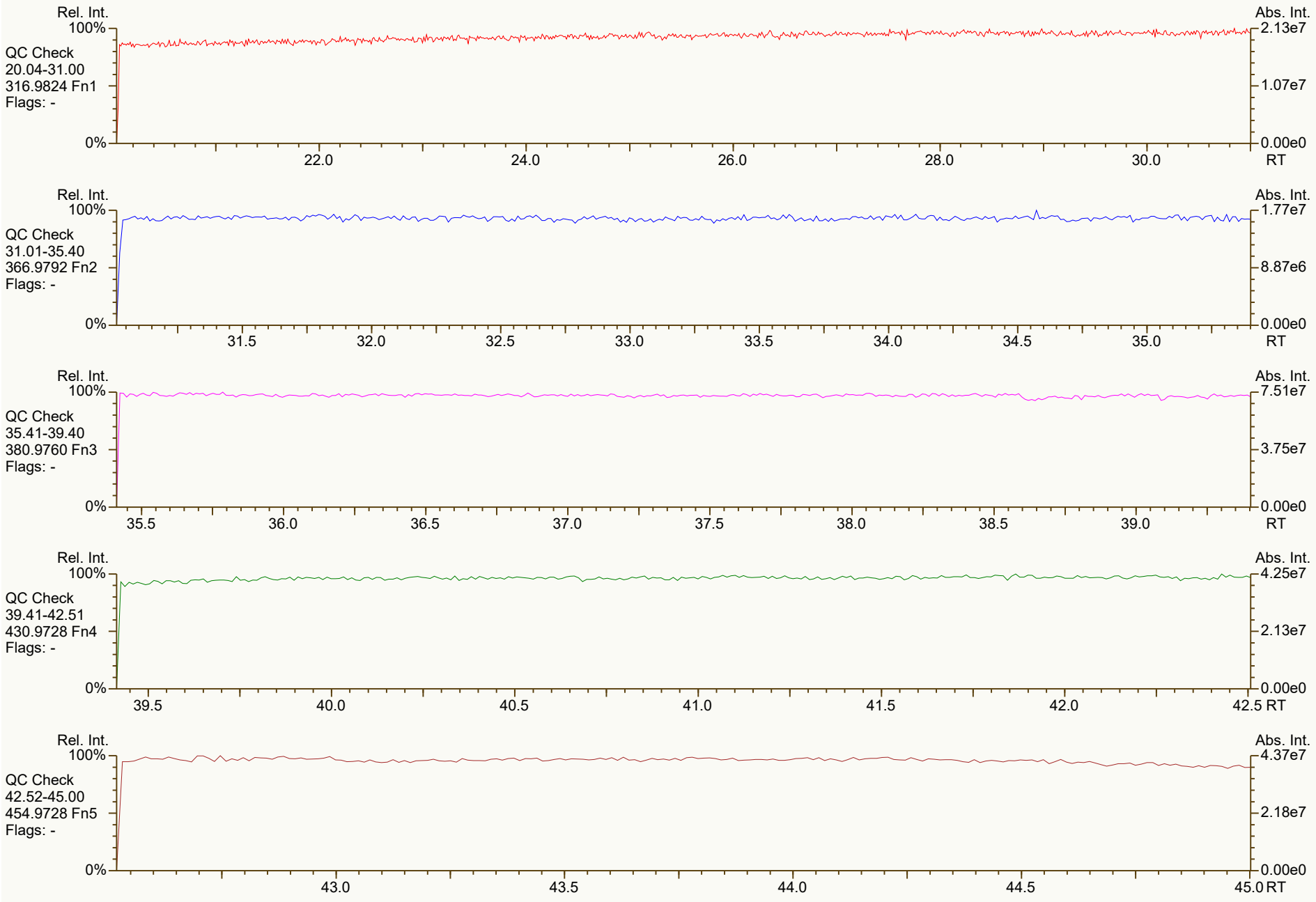
Sample ID: 25-347-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

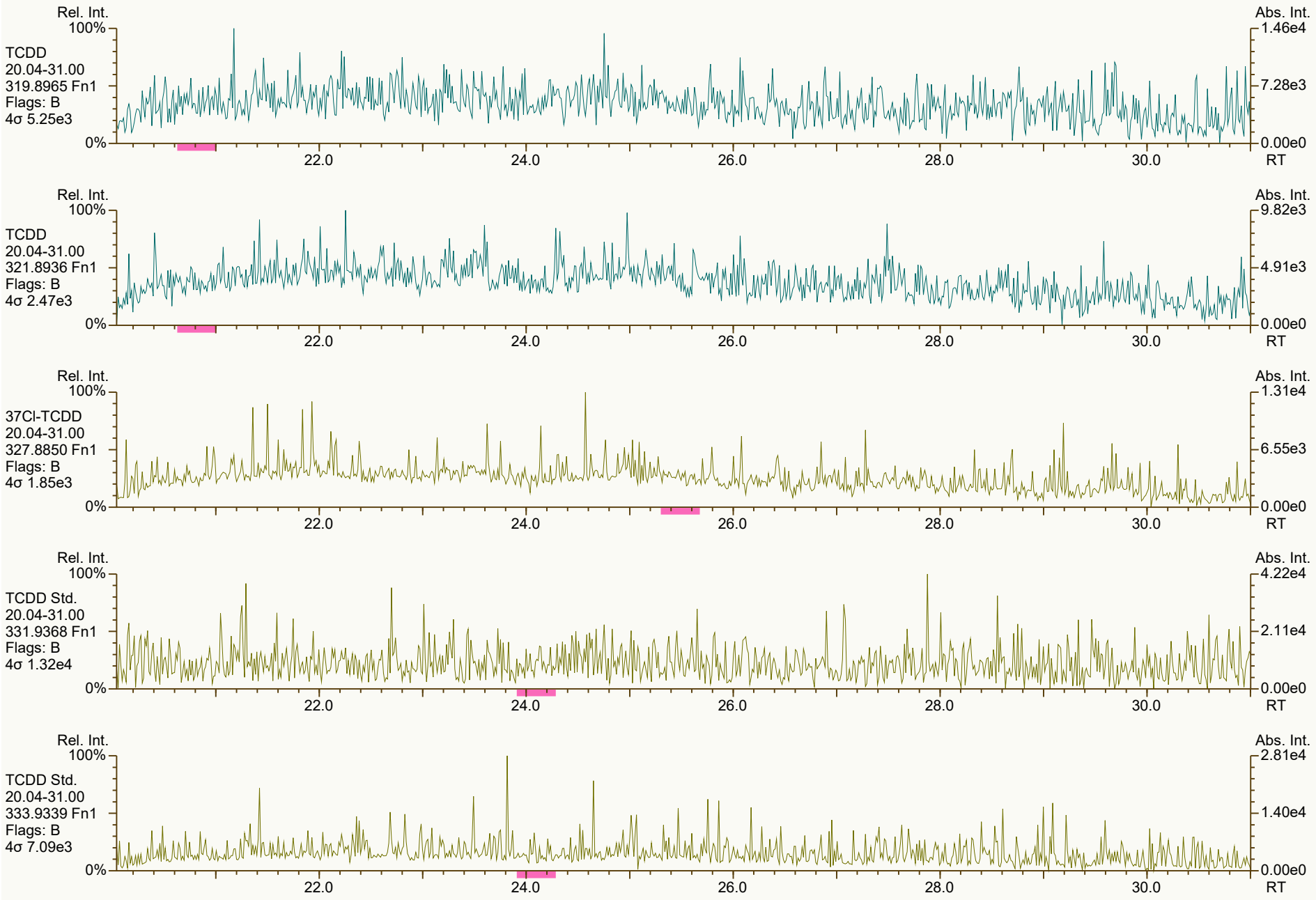
Acq: 17-Dec-2021 18:55:50
User: DTF Datafile: 211217C12



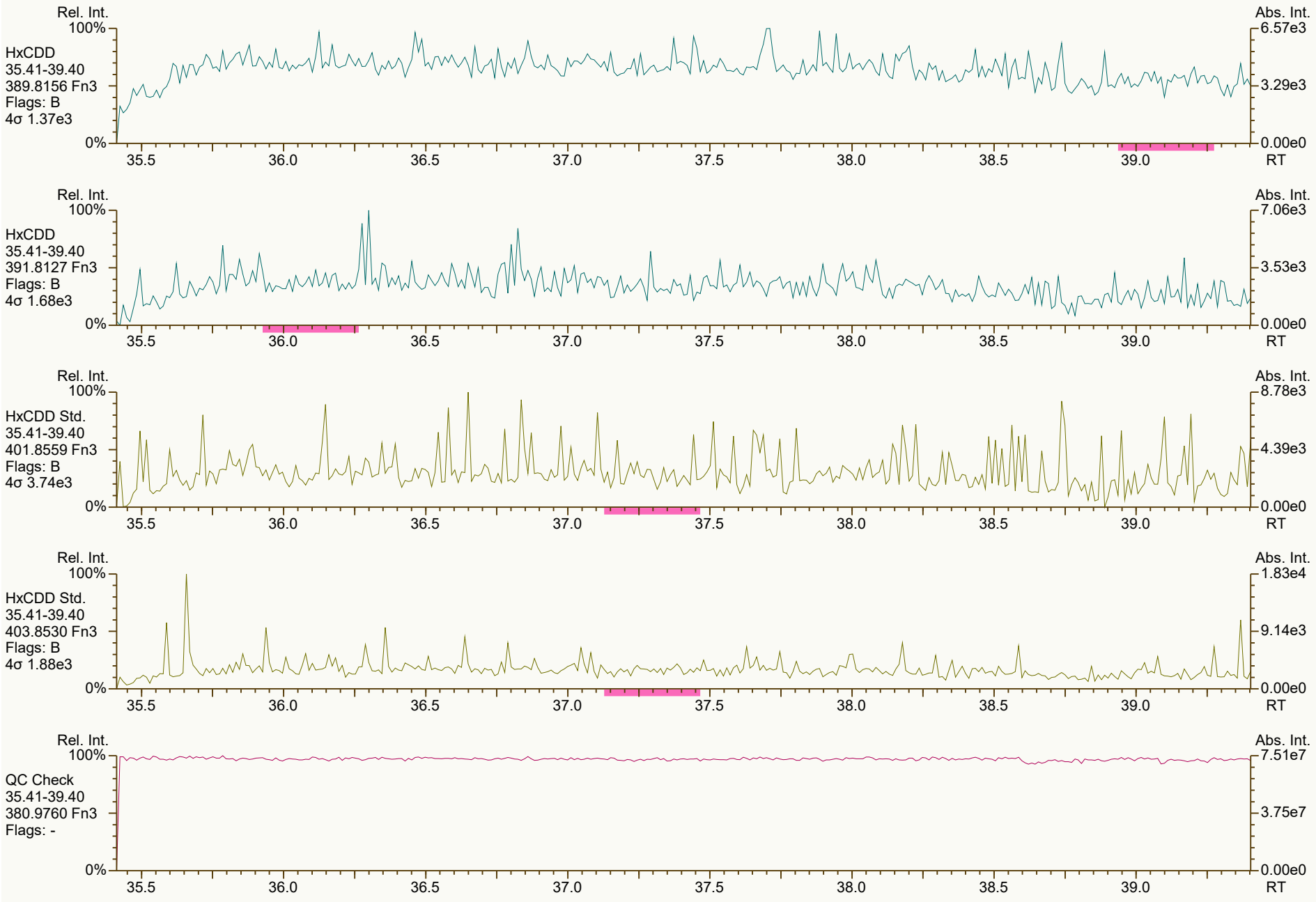
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\CS3_211217_DF_CB.utp_res, saved 20-Dec-2021 14:16 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7916, 4321, 5239 scc: 908-086

Peak annotation: Areas, Centroids
Revised: 20-Dec-2021 08:43 (DTF) Printed: 20-Dec-2021 14:25 Page 12 of 12

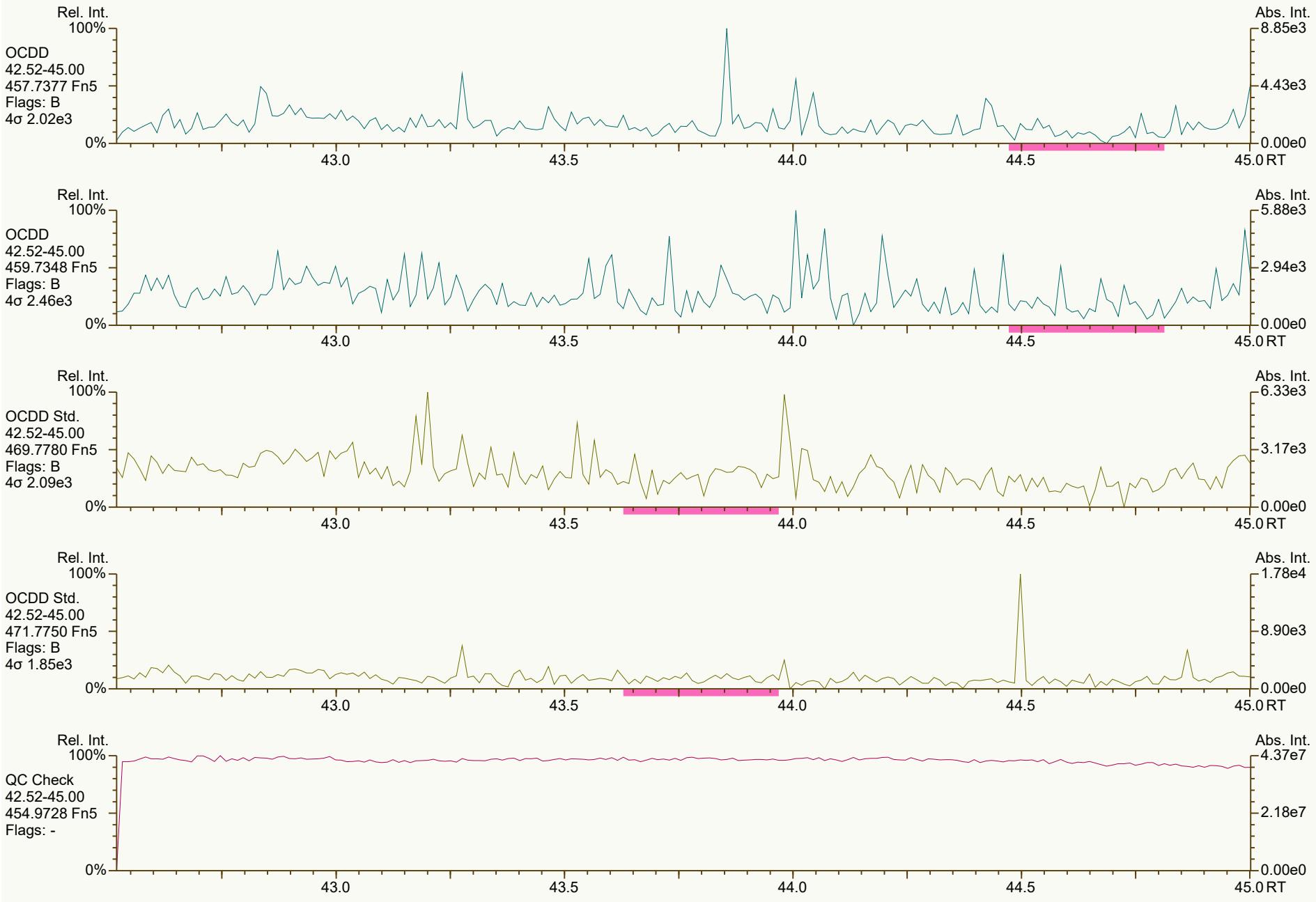

Rel. Int.
100%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
0%
22.0
24.0
26.0
28.0
30.0
Abs. Int.
2.13e7
1.07e7
0.00e0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Abs. Int.
1.77e7
8.87e6
0.00e0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
Abs. Int.
7.51e7
3.75e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.25e7
2.13e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
4.37e7
2.18e7
0.00e0

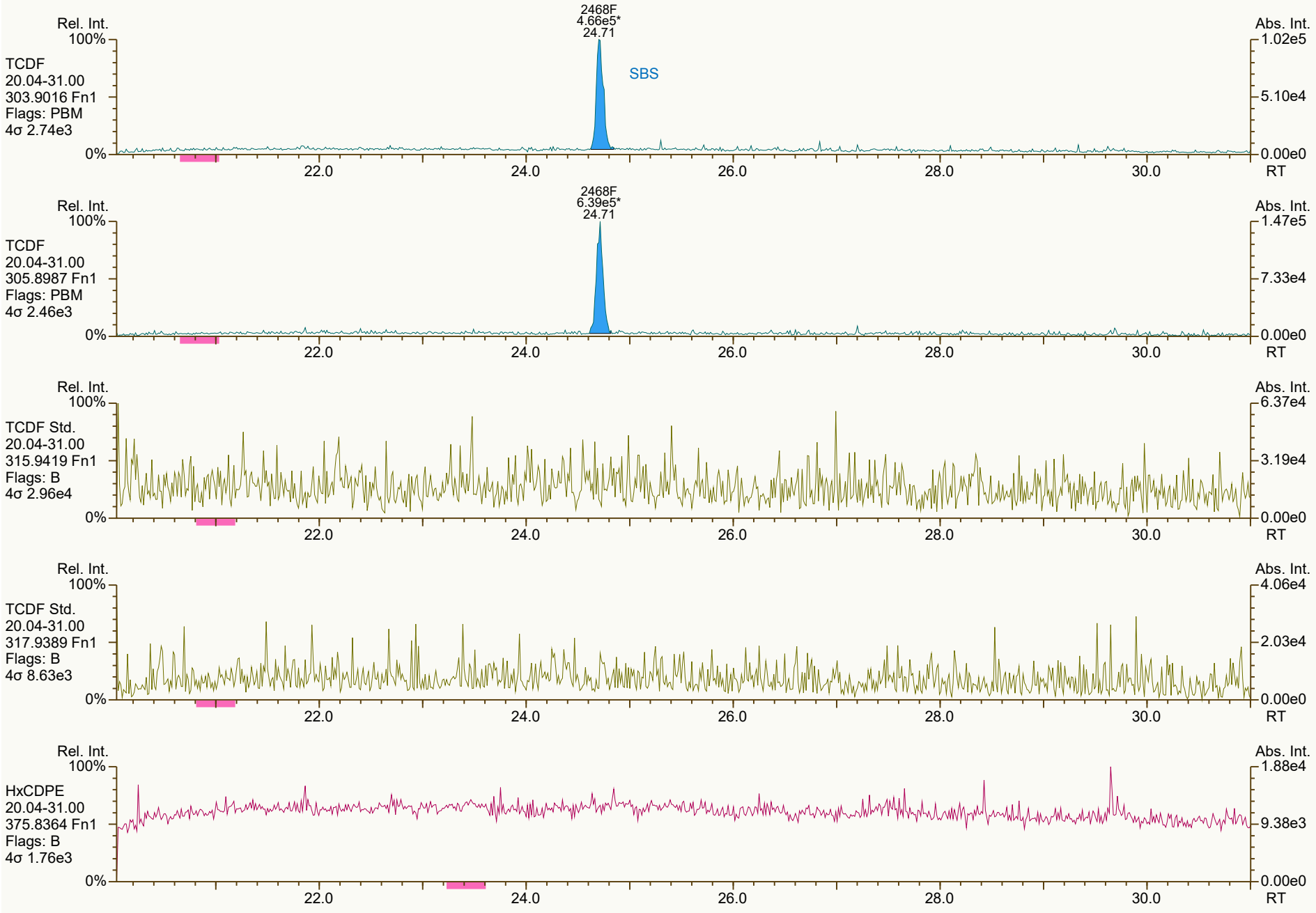

Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: B
4σ 5.25e3
0%
Abs. Int.
1.46e4
7.28e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: B
4σ 2.47e3
0%
Abs. Int.
9.82e3
4.91e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: B
4σ 1.85e3
0%
Abs. Int.
1.31e4
6.55e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: B
4σ 1.32e4
0%
Abs. Int.
4.22e4
2.11e4
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: B
4σ 7.09e3
0%
Abs. Int.
2.81e4
1.40e4
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

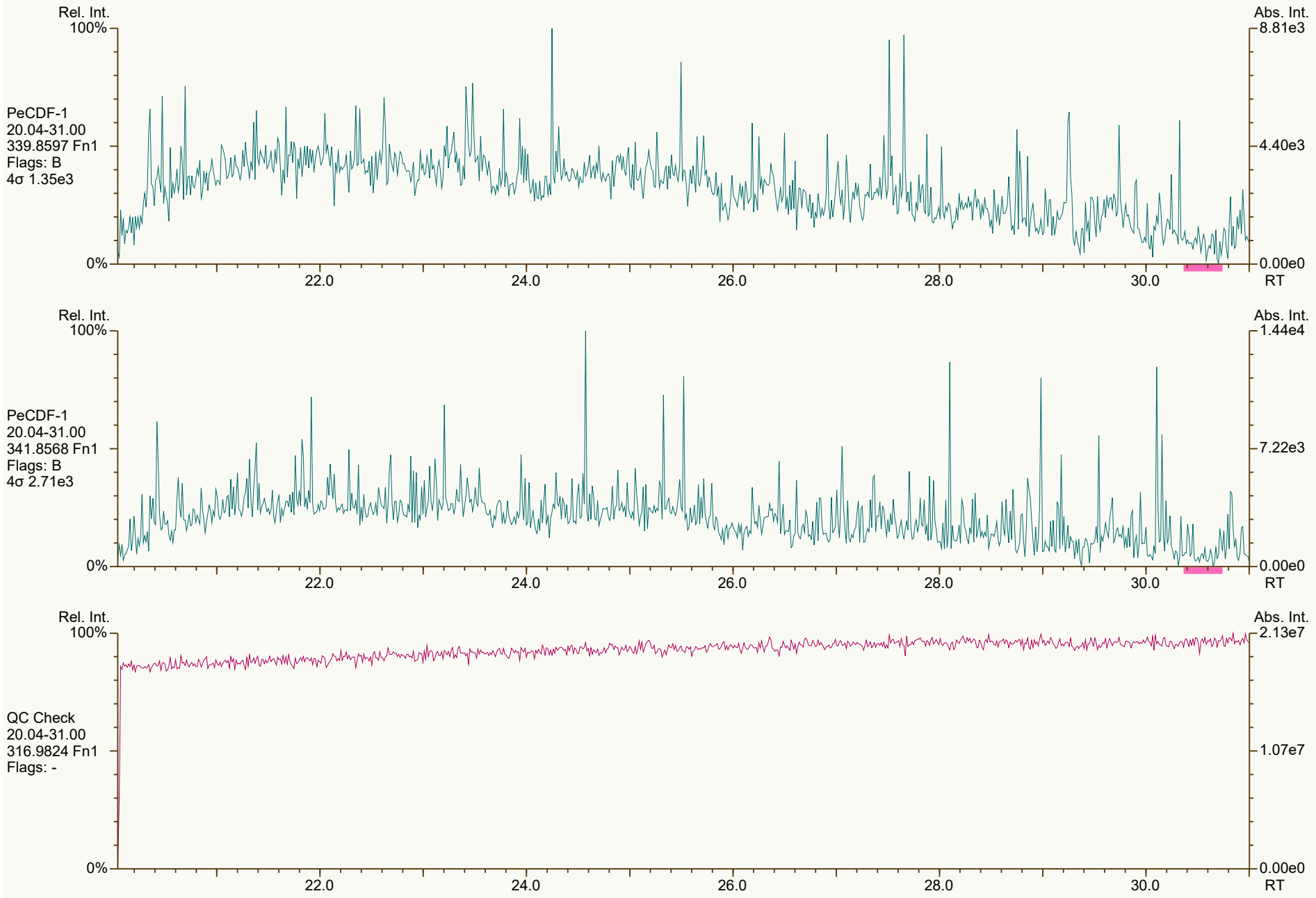

Rel. Int.
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: B
4σ 2.57e3
0%
Abs. Int.
8.19e3
4.10e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PB
4σ 1.17e3
0%
Abs. Int.
5.29e3
2.64e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: B
4σ 2.42e3
0%
Abs. Int.
1.85e4
9.24e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: B
4σ 6.28e3
0%
Abs. Int.
1.82e4
9.08e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
Abs. Int.
1.77e7
8.87e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: B
4σ 1.37e3
0%
Abs. Int.
6.57e3
3.29e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
35.41-39.40
391.8127 Fn3
Flags: B
4σ 1.68e3
0%
Abs. Int.
7.06e3
3.53e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: B
4σ 3.74e3
0%
Abs. Int.
8.78e3
4.39e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: B
4σ 1.88e3
0%
Abs. Int.
1.83e4
9.14e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
Abs. Int.
7.51e7
3.75e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT

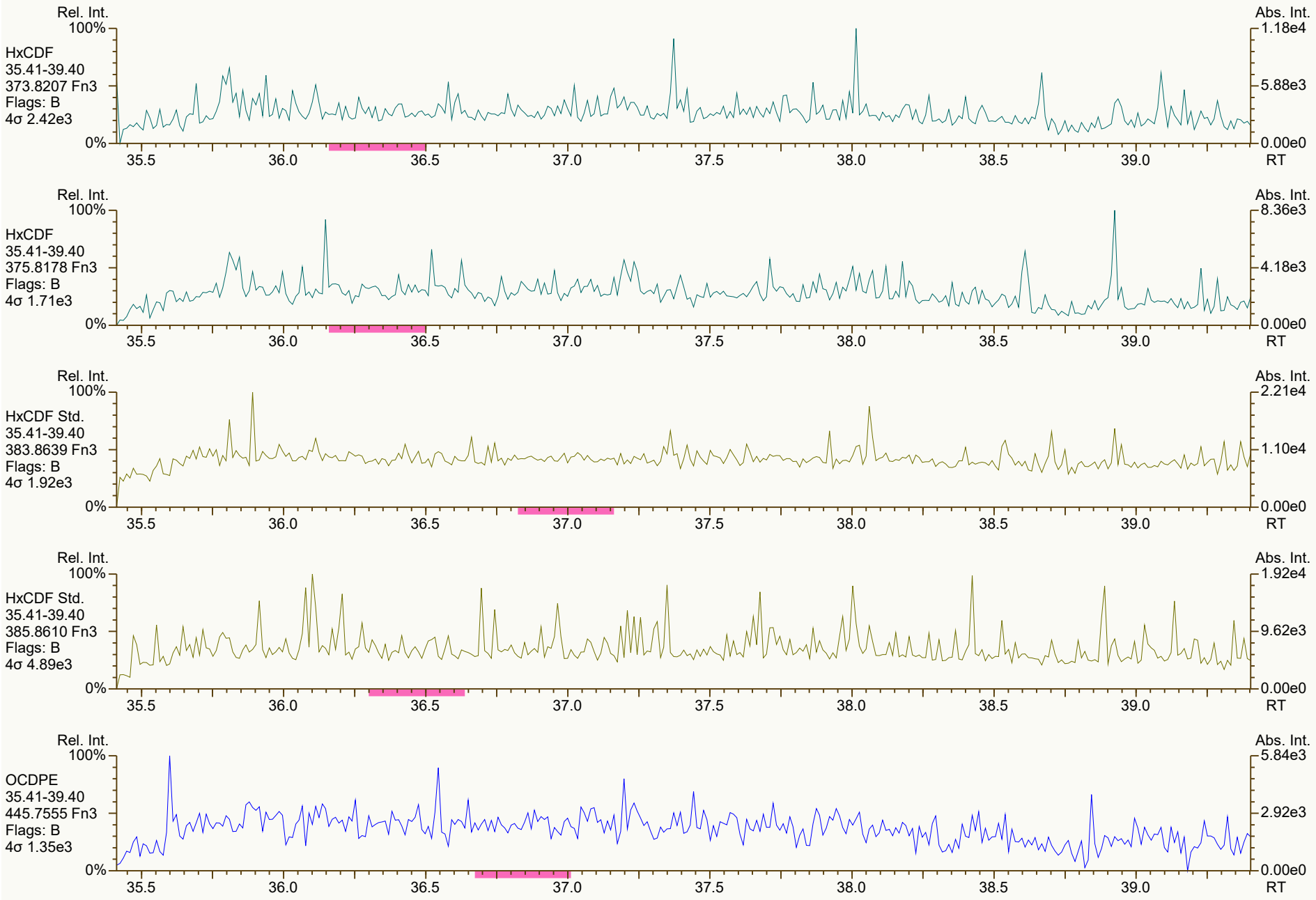

Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: B
4σ 1.47e3
0%
Abs. Int.
8.66e3
4.33e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PB
4σ 1.53e3
0%
Abs. Int.
6.55e3
3.28e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: B
4σ 3.41e3
0%
Abs. Int.
1.21e4
6.05e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: B
4σ 2.79e3
0%
Abs. Int.
1.19e4
5.94e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
Abs. Int.
4.25e7
2.13e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: B
4σ 2.02e3
0%
Abs. Int.
8.85e3
4.43e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: B
4σ 2.46e3
0%
Abs. Int.
5.88e3
2.94e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: B
4σ 2.09e3
0%
Abs. Int.
6.33e3
3.17e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: B
4σ 1.85e3
0%
Abs. Int.
1.78e4
8.90e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.37e7
2.18e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 2.74e3
2468F
4.66e5*
24.71
SBS
Abs. Int.
1.02e5
5.10e4
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 2.46e3
2468F
6.39e5*
24.71
Abs. Int.
1.47e5
7.33e4
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: B
4σ 2.96e4
Abs. Int.
6.37e4
3.19e4
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: B
4σ 8.63e3
Abs. Int.
4.06e4
2.03e4
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
1.88e4
9.38e3
0.00e0
0%
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
8.81e3
4.40e3
0.00e0
PeCDF-1
20.04-31.00
339.8597 Fn1
Flags: B
4σ 1.35e3
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.44e4
7.22e3
0.00e0
PeCDF-1
20.04-31.00
341.8568 Fn1
Flags: B
4σ 2.71e3
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.13e7
1.07e7
0.00e0
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: B
4σ 1.65e3
0%
Abs. Int.
3.35e4
1.67e4
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: B
4σ 2.69e3
0%
Abs. Int.
1.32e4
6.62e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
4.94e4
2.47e4
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: B
4σ 2.94e3
0%
Abs. Int.
2.49e4
1.25e4
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 2.40e3
0%
Abs. Int.
8.55e3
4.27e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT

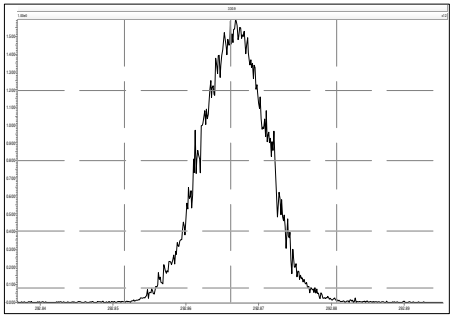

Rel. Int.
100%
HxCDF
35.41-39.40
373.8207 Fn3
Flags: B
4σ 2.42e3
0%
Abs. Int.
1.18e4
5.88e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF
35.41-39.40
375.8178 Fn3
Flags: B
4σ 1.71e3
0%
Abs. Int.
8.36e3
4.18e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: B
4σ 1.92e3
0%
Abs. Int.
2.21e4
1.10e4
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: B
4σ 4.89e3
0%
Abs. Int.
1.92e4
9.62e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 1.35e3
0%
Abs. Int.
5.84e3
2.92e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT


Rel. Int.
100%
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PB
4σ 1.67e3
0%
Abs. Int.
7.02e3
3.51e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PB
4σ 1.56e3
0%
Abs. Int.
1.40e4
7.00e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: B
4σ 5.14e3
0%
Abs. Int.
1.59e4
7.95e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: B
4σ 2.03e3
0%
Abs. Int.
1.78e4
8.89e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
NCDPE
39.41-42.51
479.7165 Fn4
Flags: PB
4σ 1.85e3
0%
Abs. Int.
4.94e3
2.47e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT

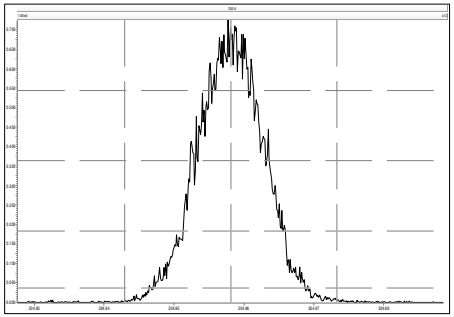

Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: B
4σ 2.13e3
0%
Abs. Int.
9.40e3
4.70e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: B
4σ 2.17e3
0%
Abs. Int.
8.54e3
4.27e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: B
4σ 2.18e3
0%
Abs. Int.
1.65e4
8.25e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: B
4σ 6.53e3
0%
Abs. Int.
1.81e4
9.05e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: PB
4σ 1.30e3
0%
Abs. Int.
5.13e3
2.57e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

Printed: Friday, December 17, 2021 18:55:48 Eastern Standard Time

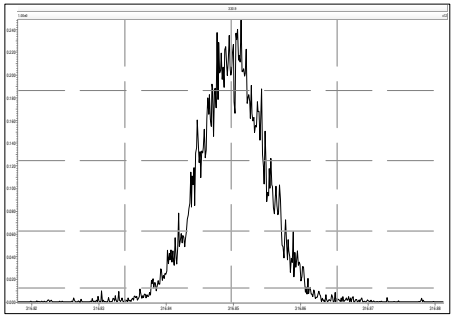
M 292.9824 R 13889



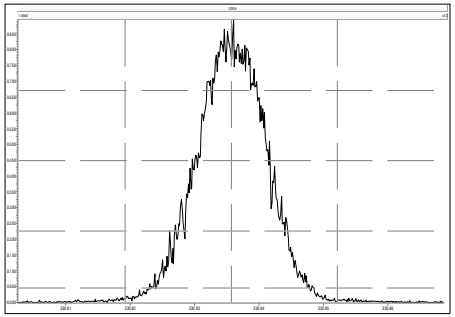
M 304.9824 R 14084



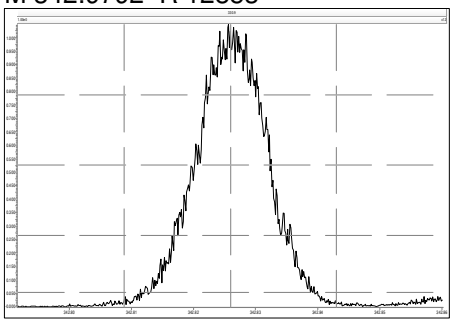
M 316.9824 R 14166



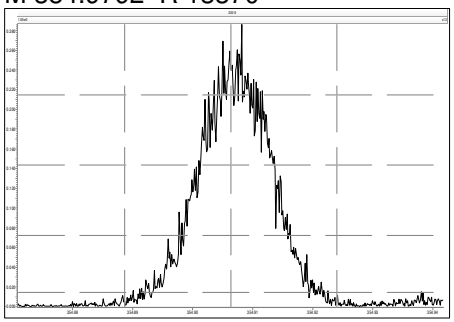
M 330.9792 R 13158



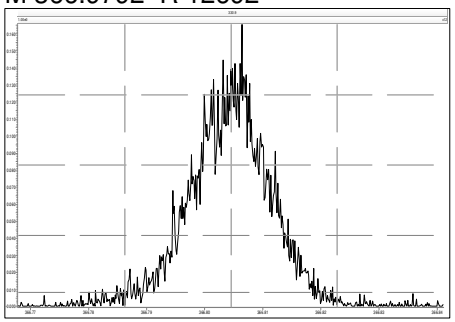
M 342.9792 R 12853



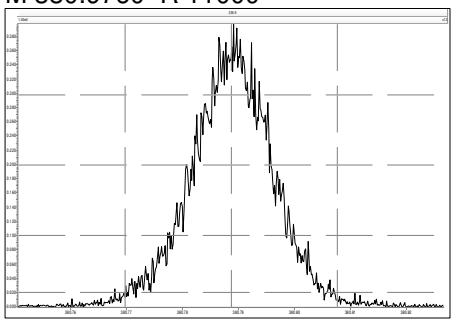
M 354.9792 R 13370



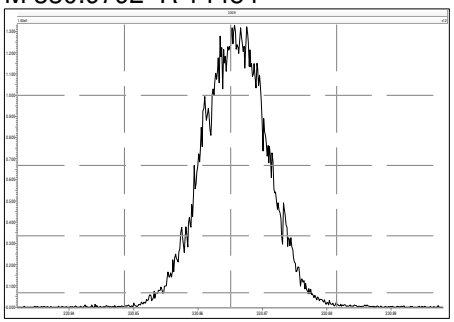
M 366.9792 R 12692



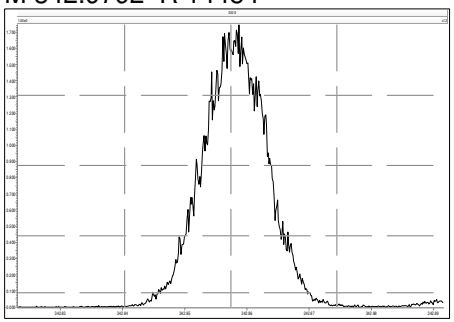
M 380.9760 R 11000



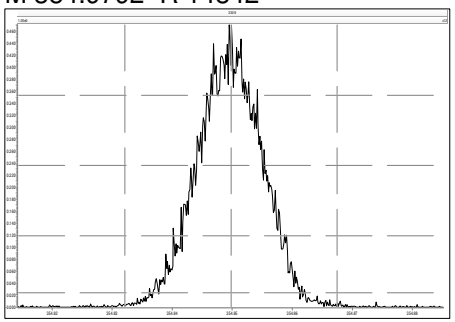
M 330.9792 R 14454



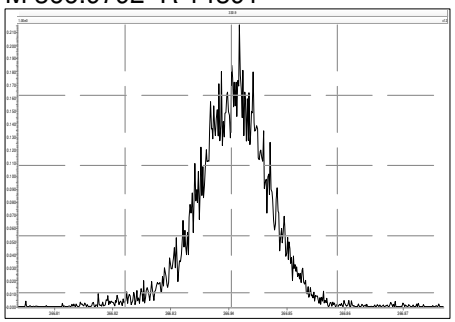
M 342.9792 R 14454



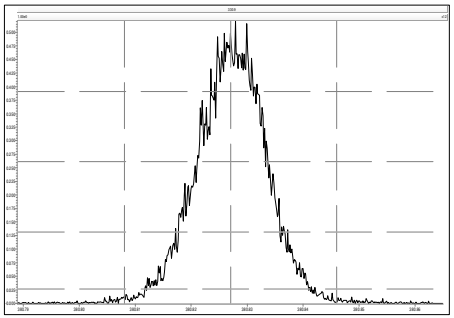
M 354.9792 R 14842



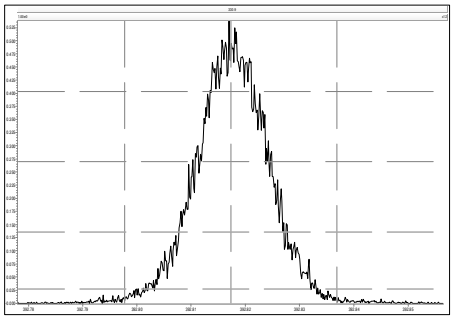
M 366.9792 R 14391



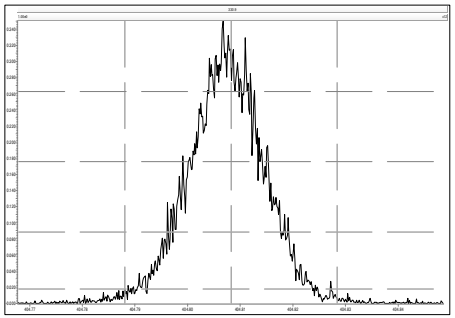
M 380.9760 R 13058



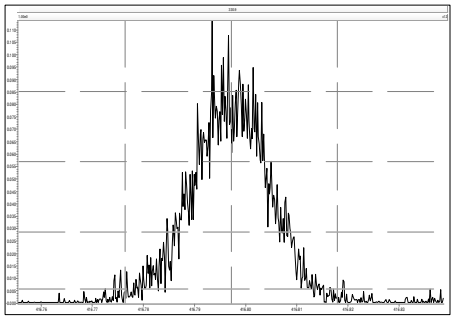
M 392.9760 R 12766



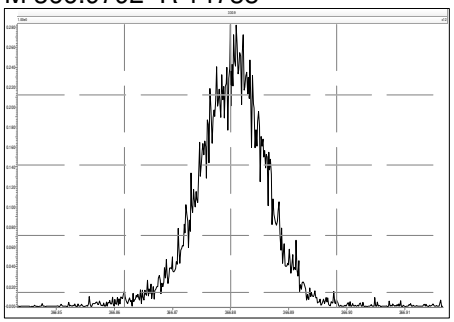
M 404.9760 R 12475



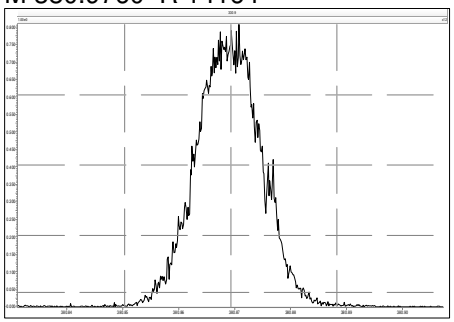
M 416.9760 R 12255



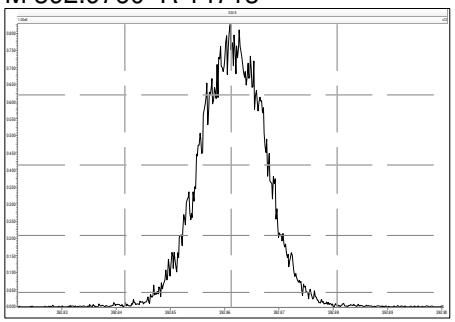
M 366.9792 R 14738



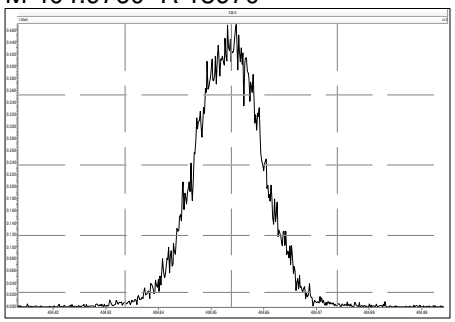
M 380.9760 R 14164



M 392.9760 R 14713



M 404.9760 R 13970



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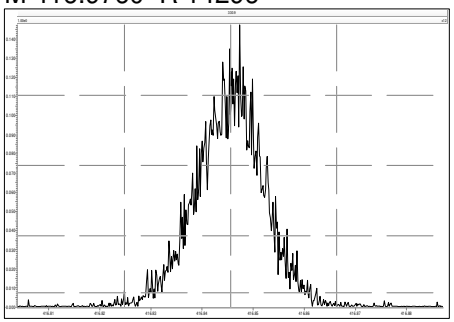

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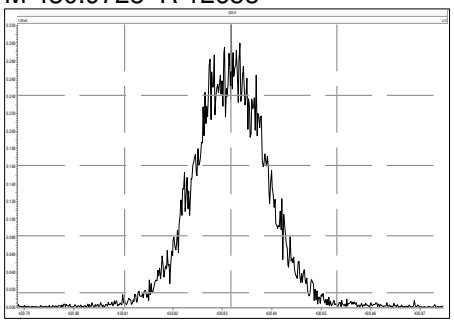

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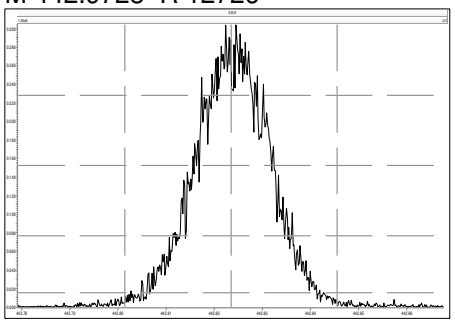

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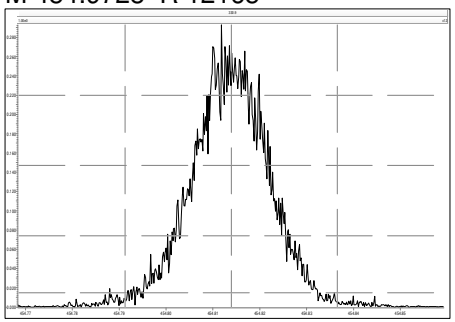

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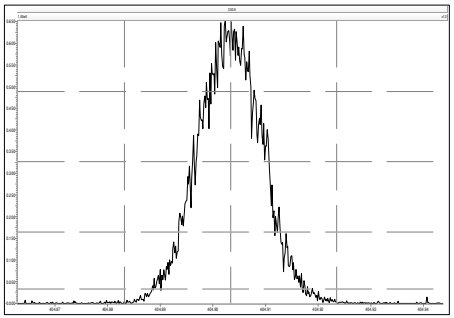

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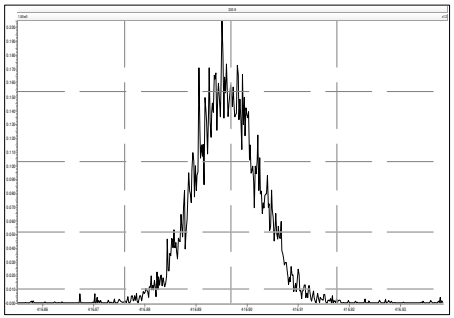

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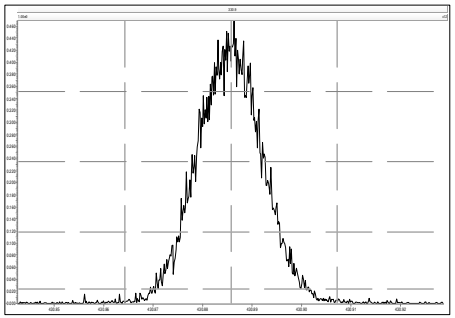

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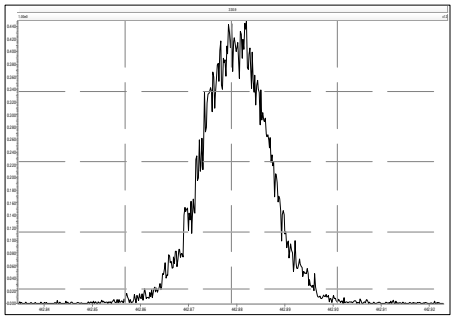

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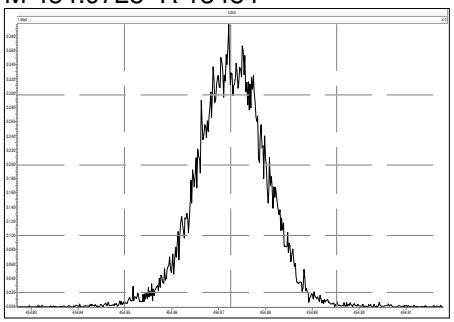

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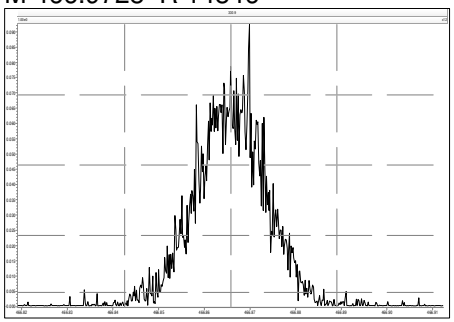

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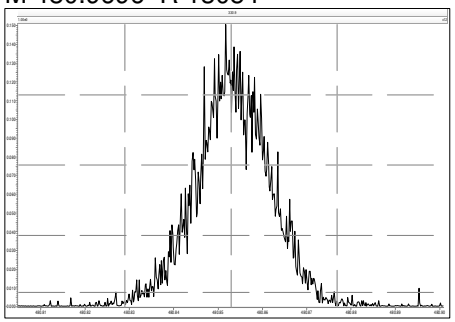

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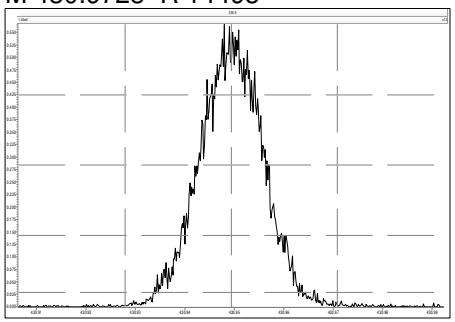

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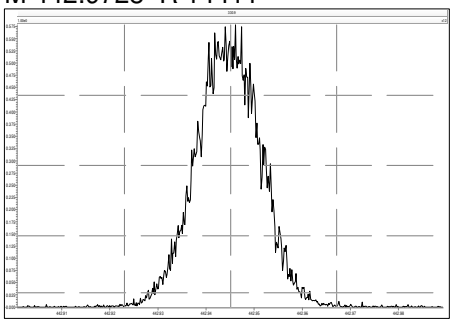

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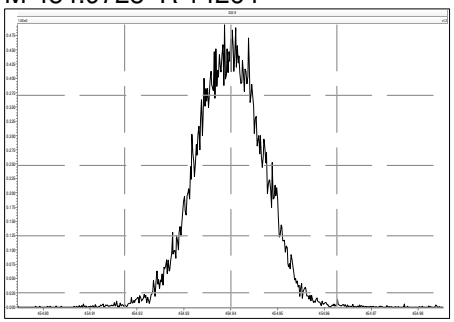

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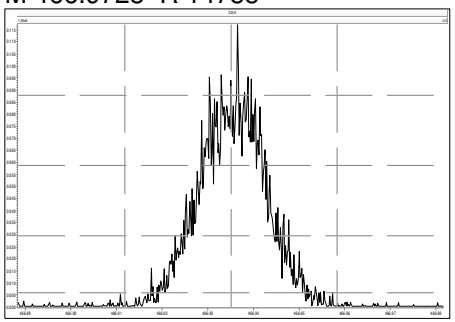

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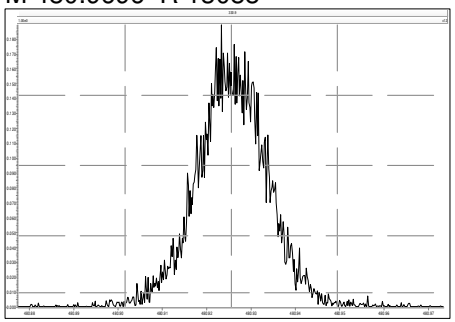

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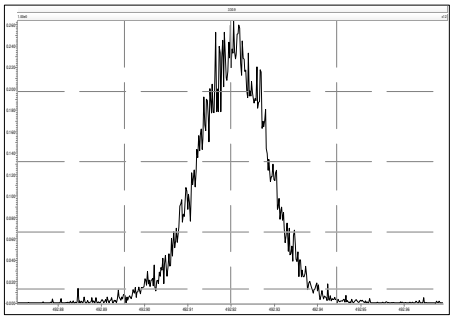

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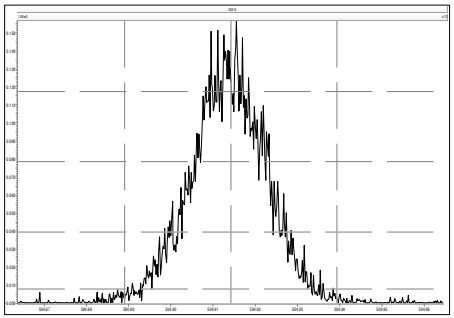

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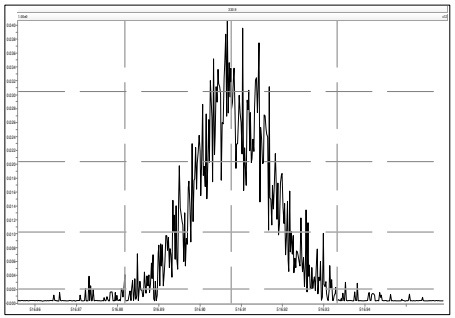

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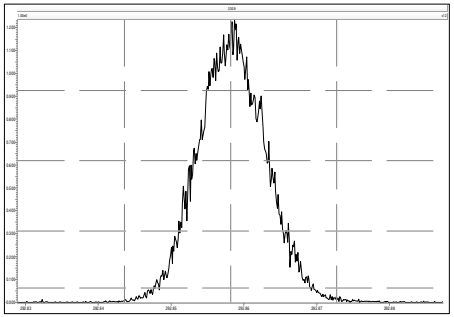

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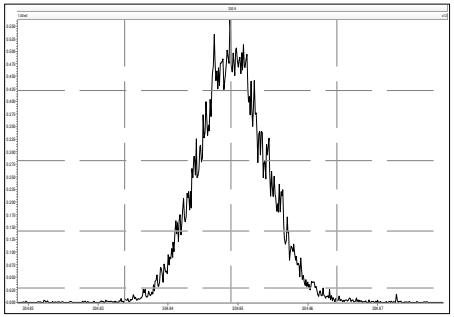

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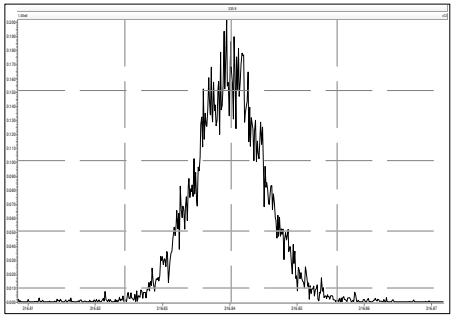

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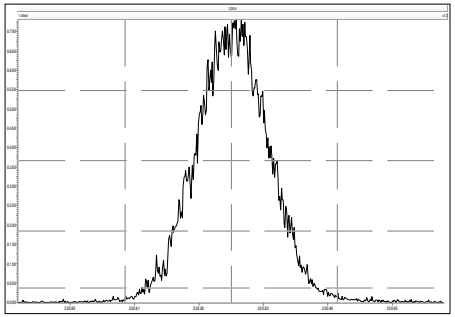

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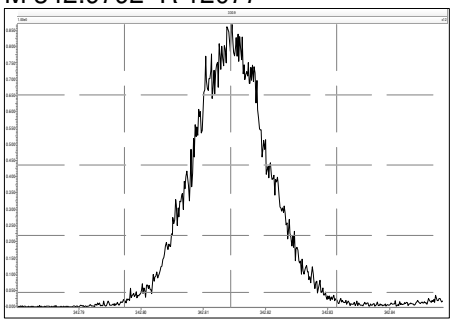

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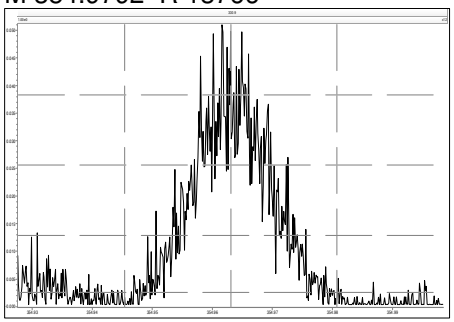

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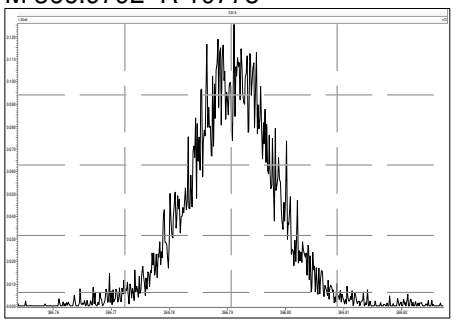

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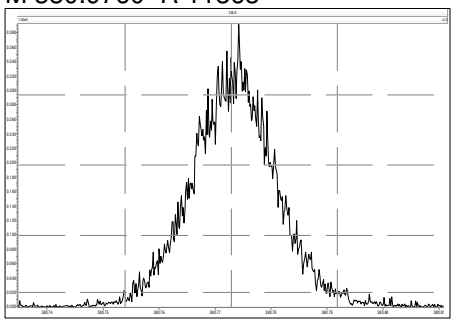

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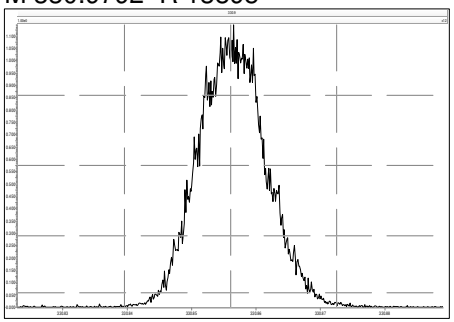

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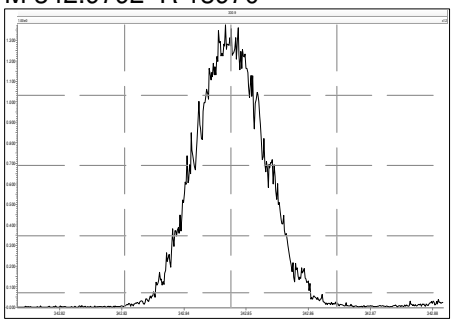

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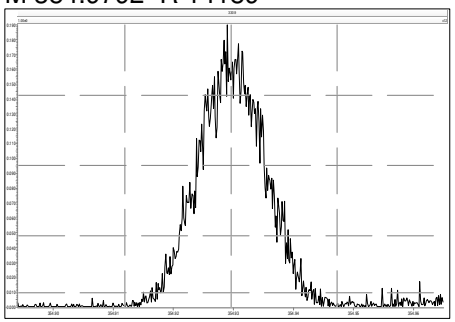

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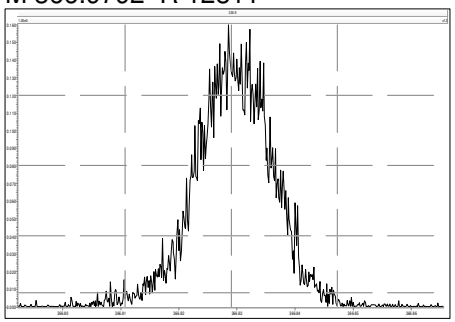

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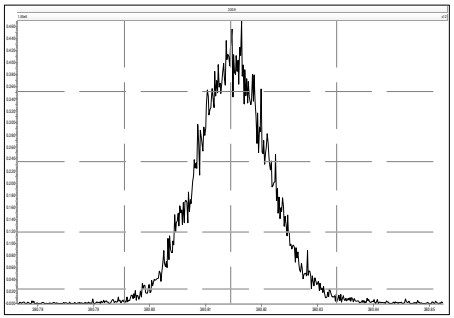

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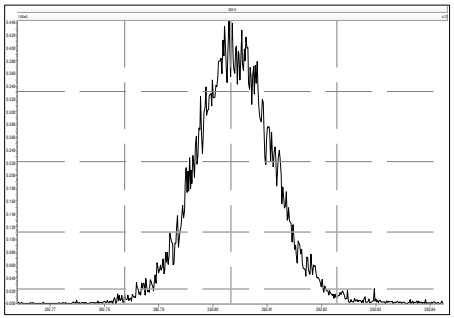

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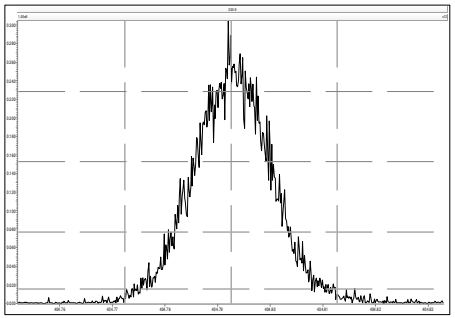

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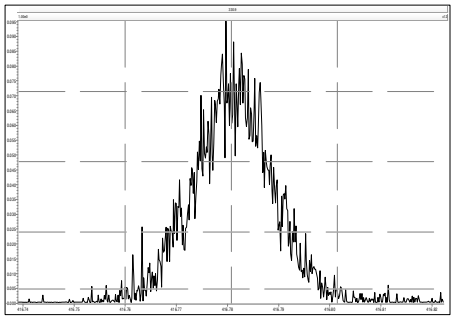

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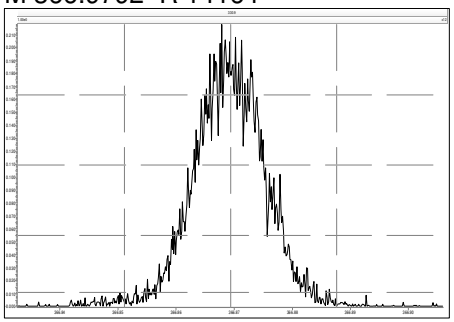

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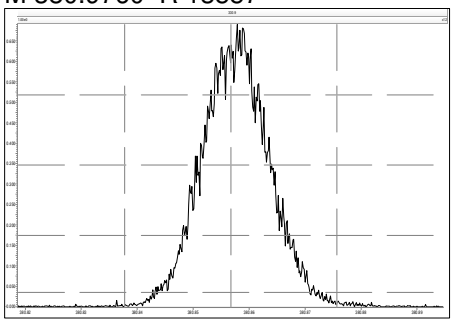

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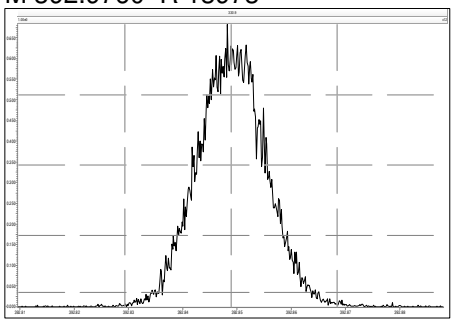

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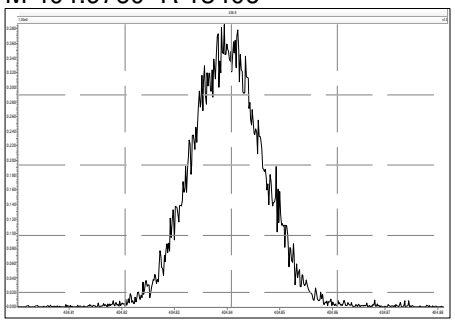

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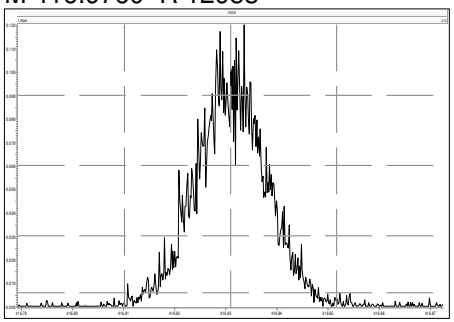
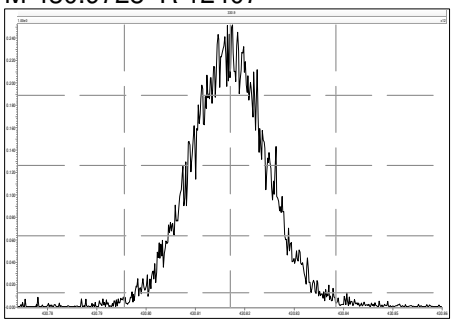


M 430.9728 R 12407



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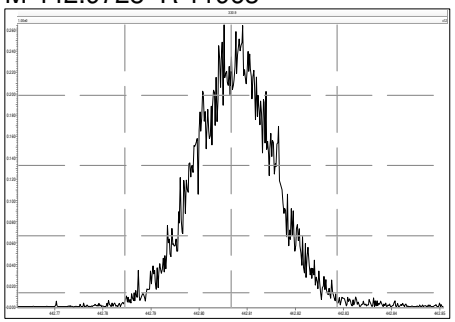
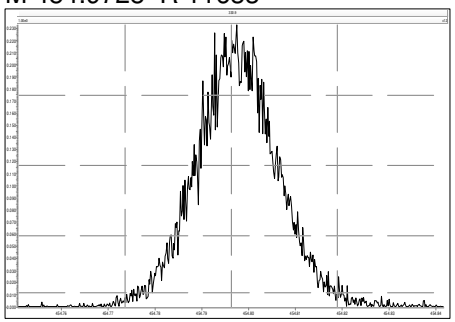


M 454.9728 R 11633



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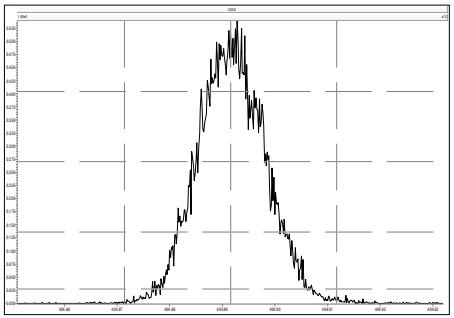

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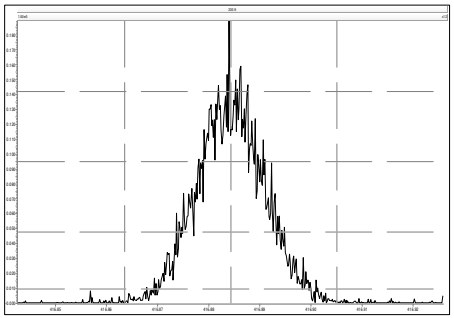

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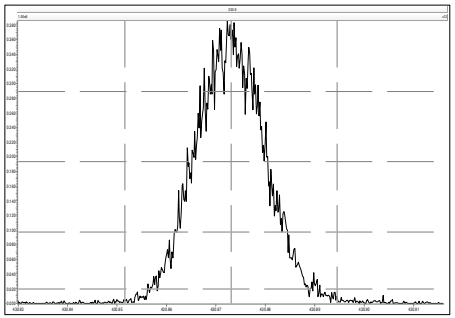
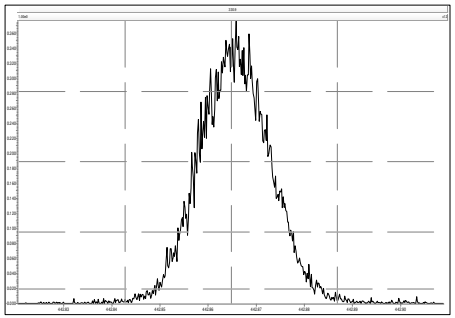


M 442.9728 R 13550



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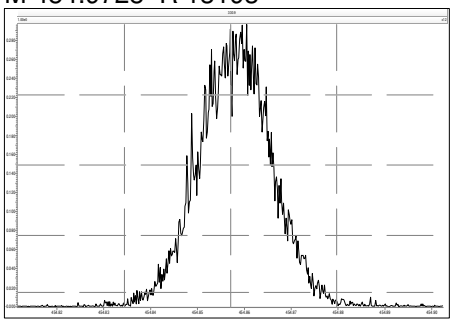

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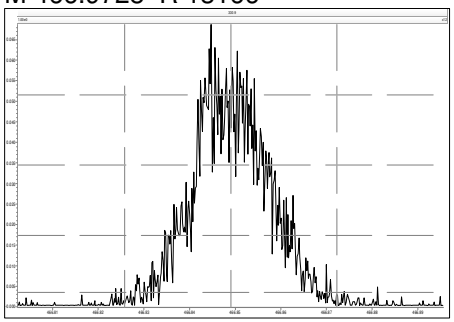
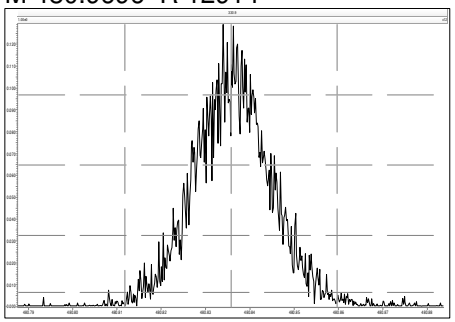


M 480.9696 R 12914



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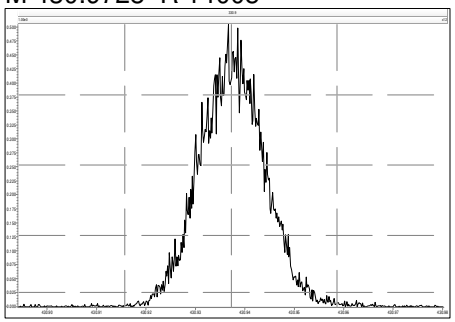

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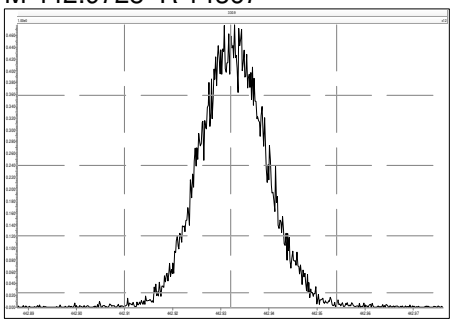

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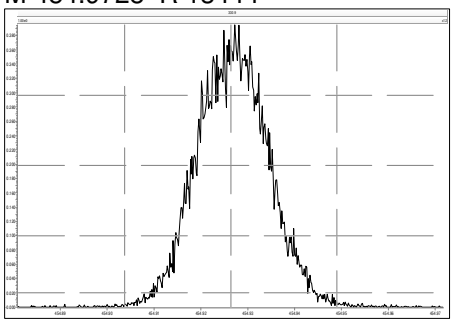
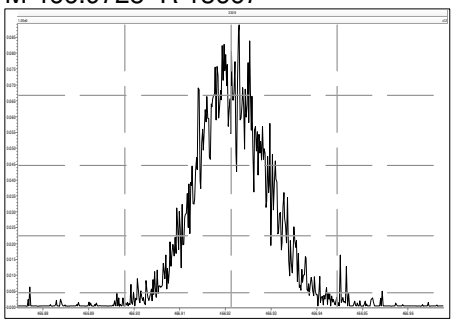
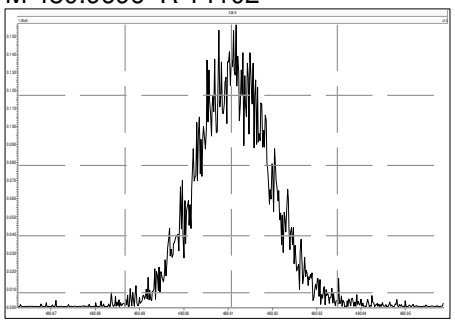


M 466.9728 R 13667

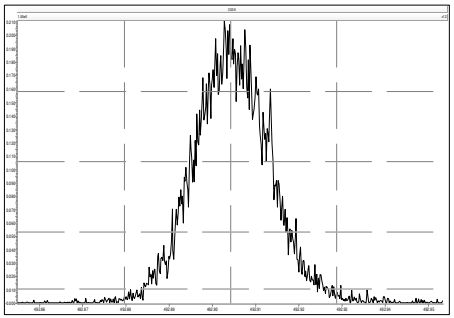


M 480.9696 R 14102

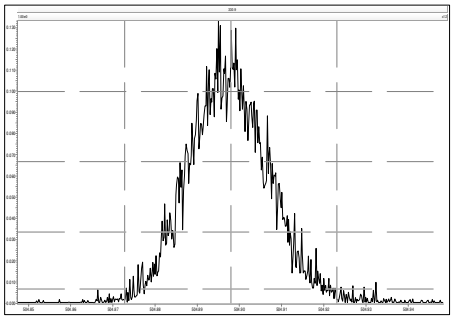


Printed: Saturday, December 18, 2021 04:19:50 Eastern Standard Time

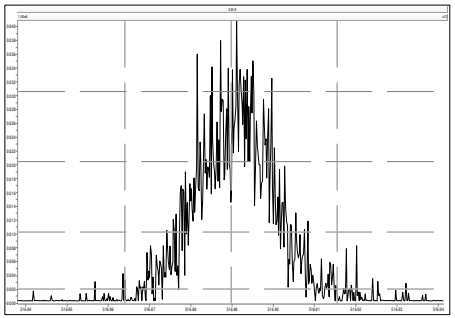
M 492.9696 R 12377



M 504.9696 R 12811



M 516.9697 R 13689



Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 0.25 pg/uL CS0	211110C05 0.5 pg/uL CS1	211110C06 2 pg/uL CS2	211110C07 10 pg/uL CS3	211110C08 40 pg/uL CS4	211110C09 200 pg/uL CS5	211110C10 500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 **0.25 pg/uL CS0**	211110C05 **0.5 pg/uL CS1**	211110C06 **2 pg/uL CS2**	211110C07 **10 pg/uL CS3**	211110C08 **40 pg/uL CS4**	211110C09 **200 pg/uL CS5**	211110C10 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86 ✓	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07 ✓	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10 ✓	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28 ✓	1.33

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

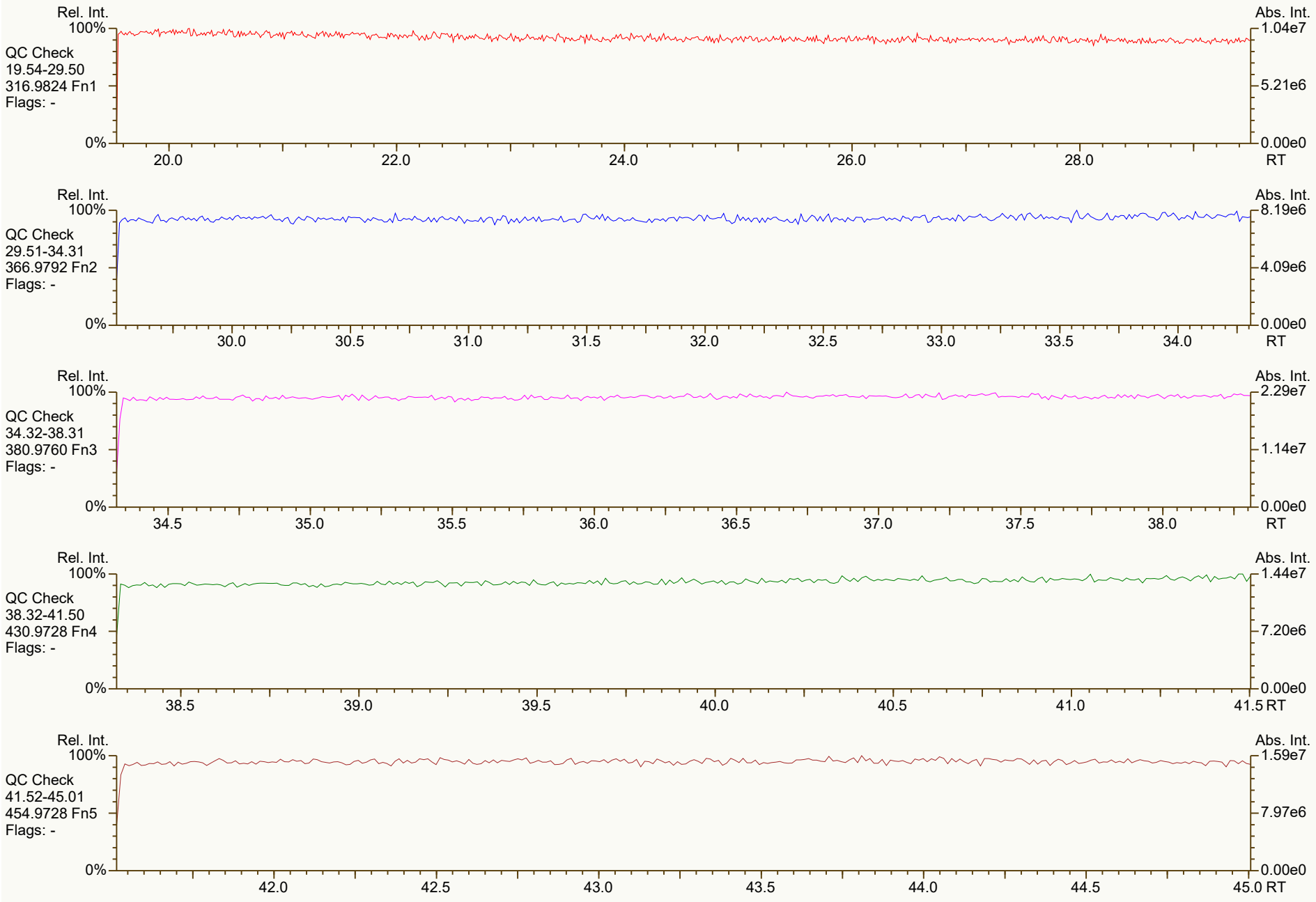
APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

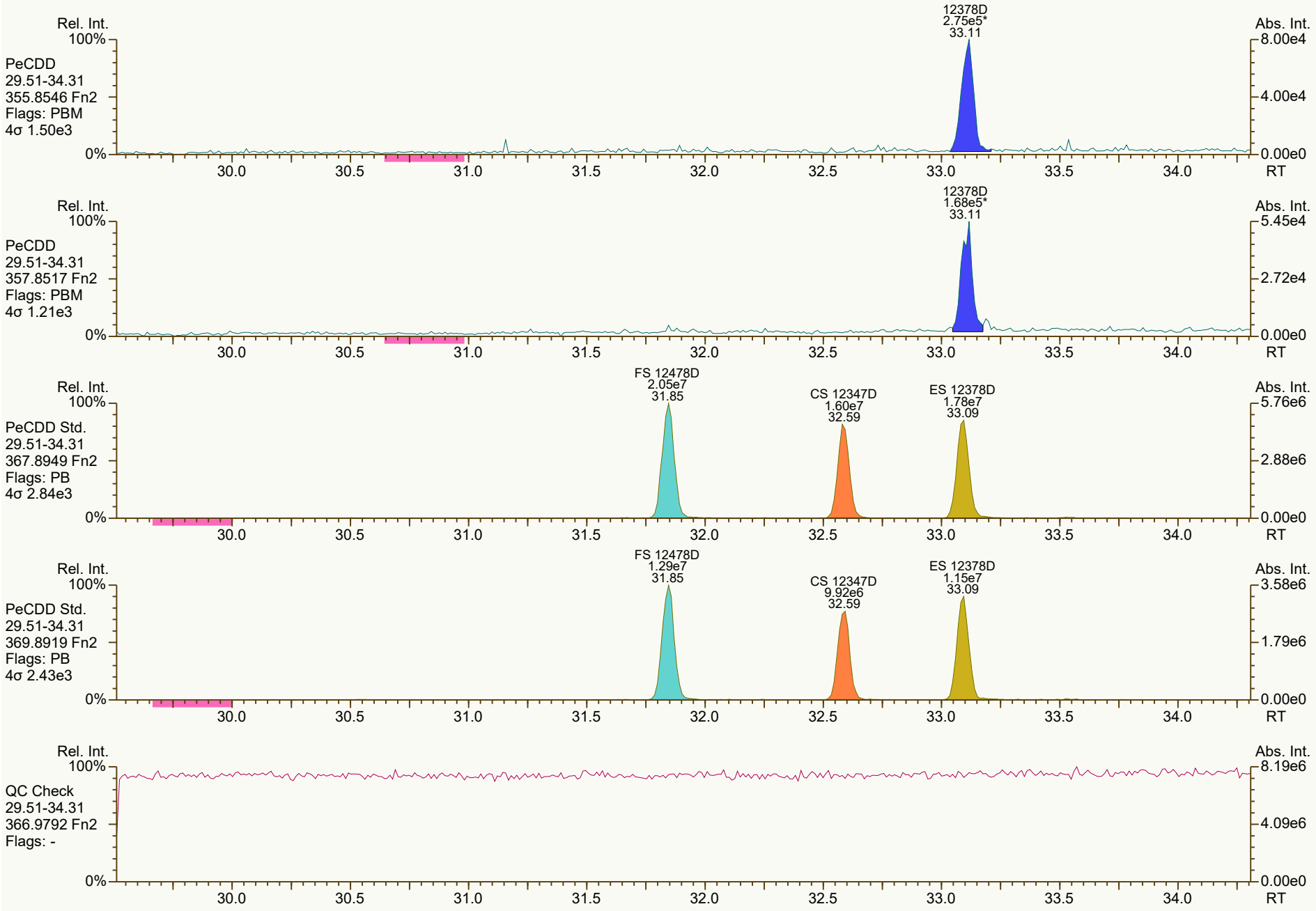
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:02 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA	UTP: 11-Nov-2021 16:23:33 DTF	Checkcode: 245-007-QLD
Sample ID: 25-6-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C04

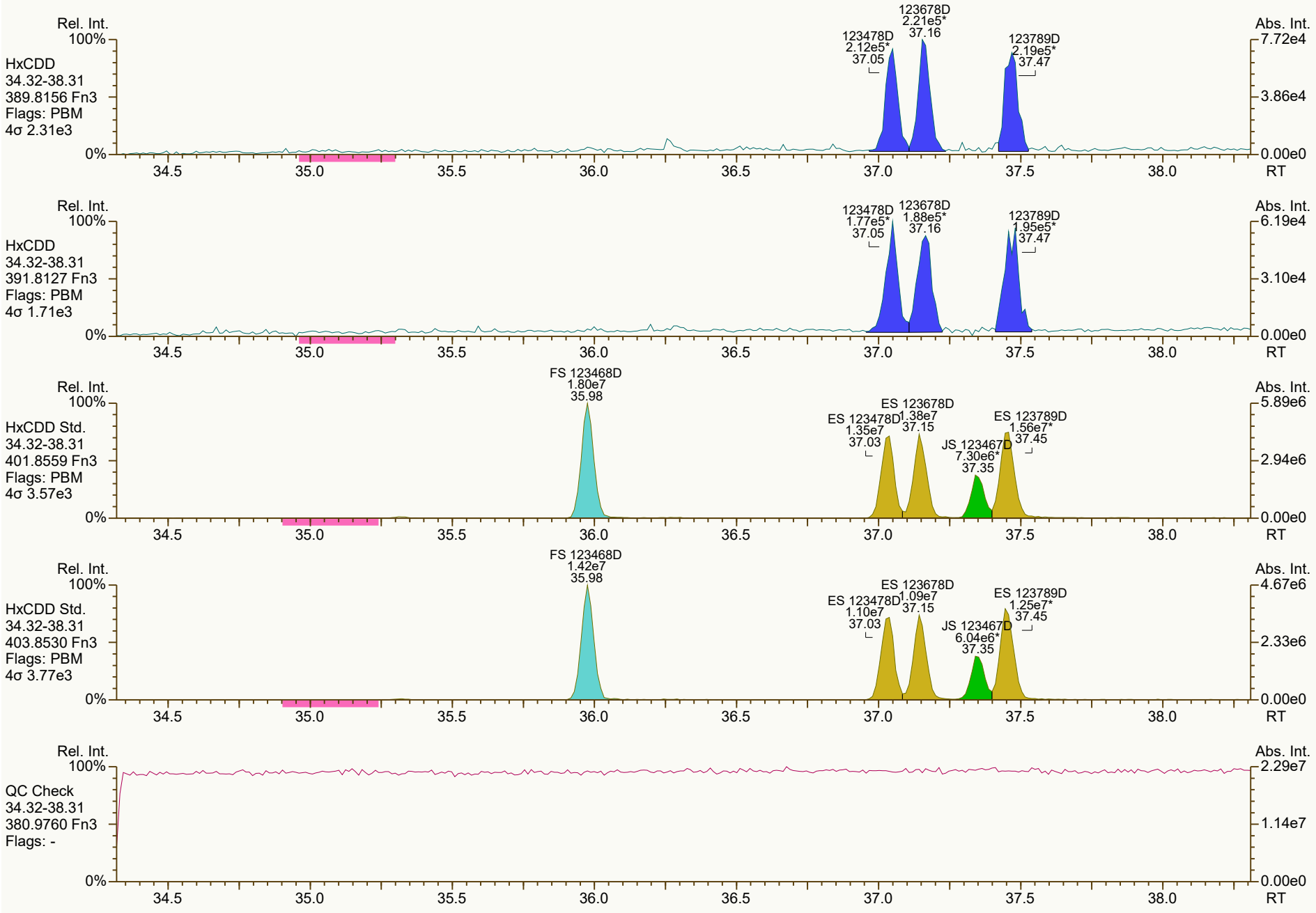
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

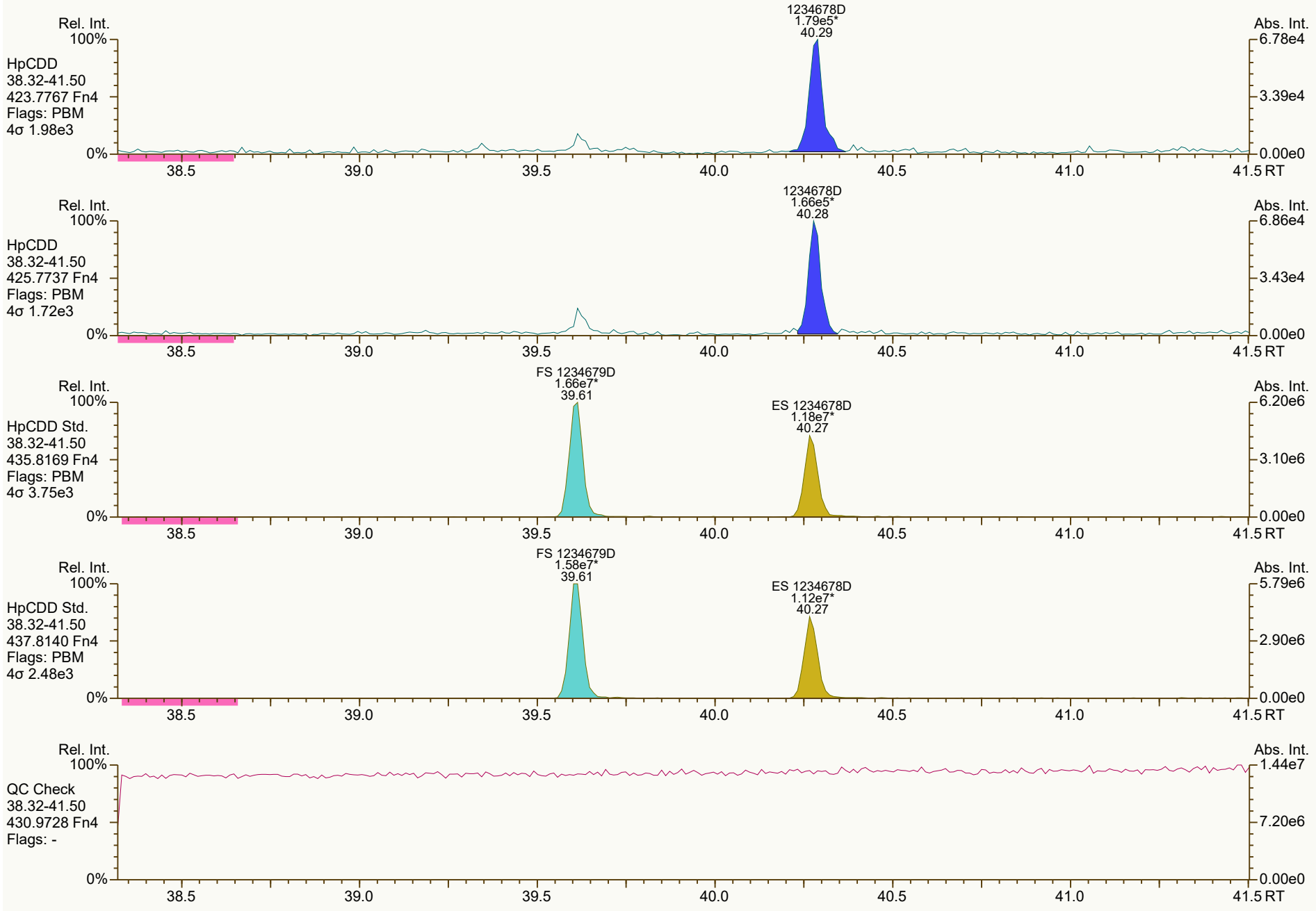
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF					ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF					Checkcode: 245-007-QLD
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF					Datafile: 211110C04
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%

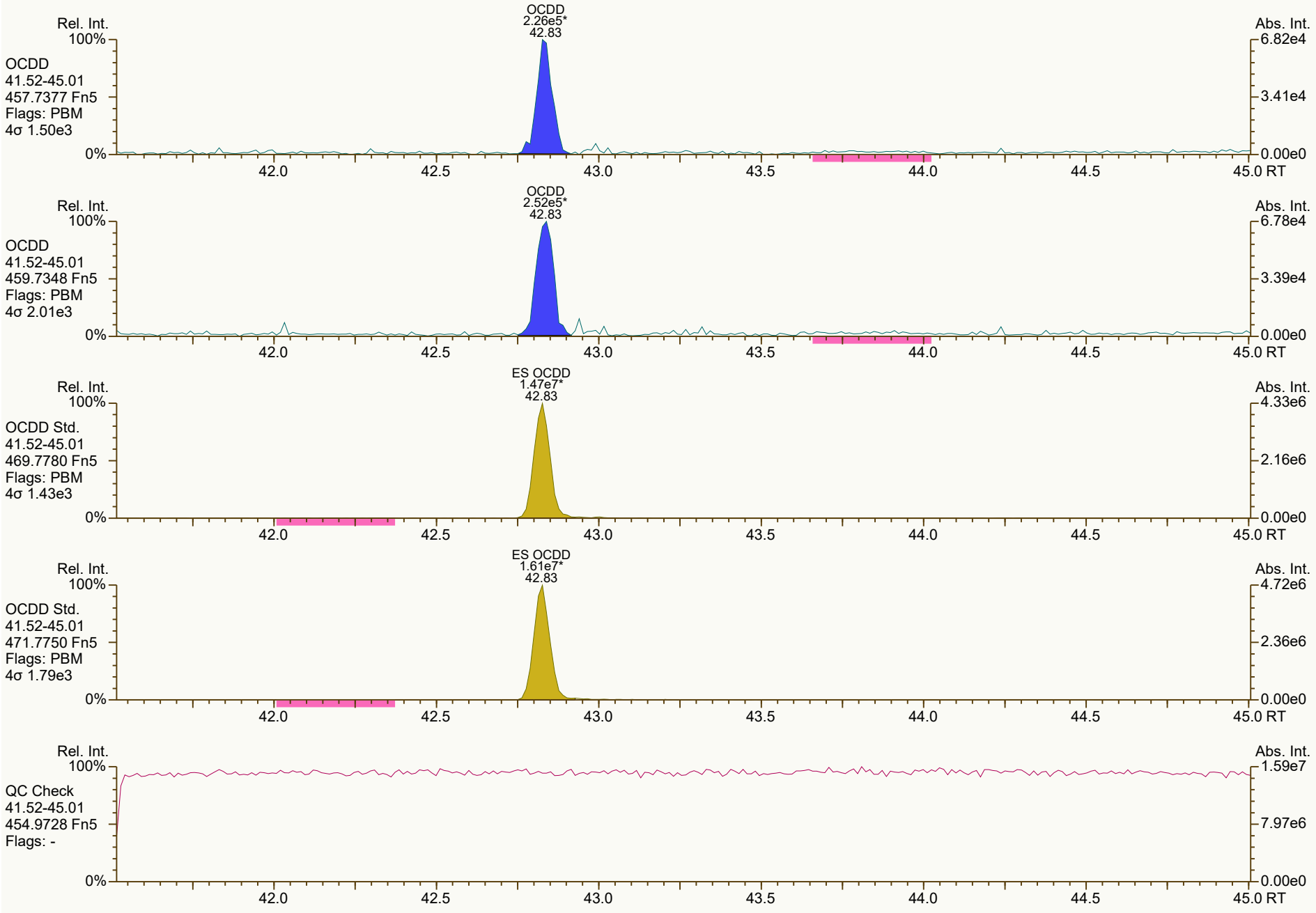

Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.04e7
5.21e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.19e6
4.09e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.29e7
1.14e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.44e7
7.20e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.97e6
0.00e0

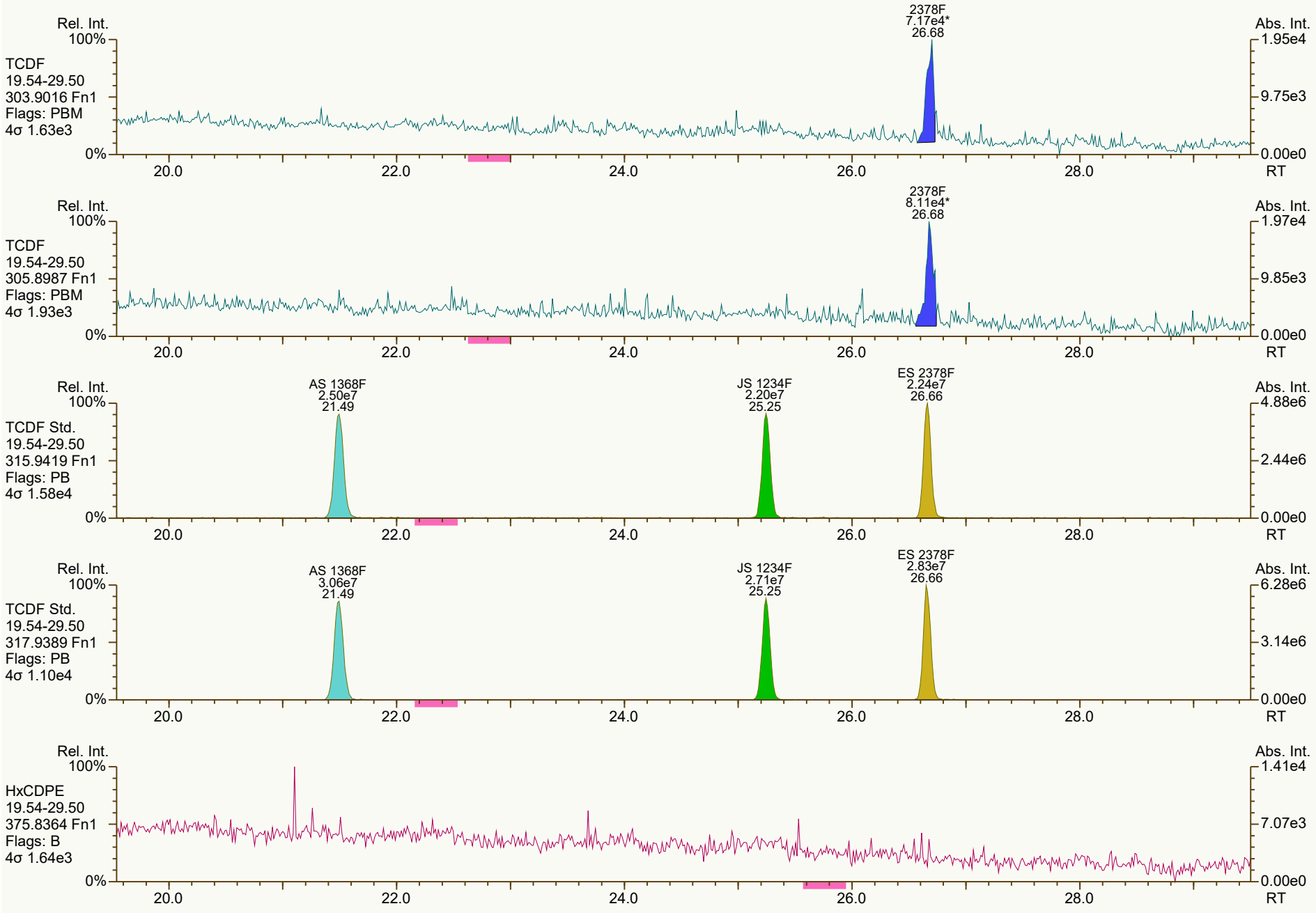

SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04
Rel. Int.
Abs. Int.
TCDD
19.54-29.50
319.8965 Fn1
Flags: PBM
4σ 2.61e3
2378D
5.29e4*
27.60
1.67e4
8.35e3
0.00e0
RRF = (5.29e4 + 6.64e4) * 100pg / (1.59e7 + 1.97e7) * .25pg = 1.34
DTF 11-Nov-2021 16:30
APPROVED
Amy_Boehm , 11/11/2021, 5:12:33 PM
TCDD
19.54-29.50
321.8936 Fn1
Flags: PBM
4σ 2.27e3
2378D
6.64e4*
27.59
2.13e4
1.06e4
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.48e3
9.73e3
4.86e3
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 9.73e3
AS 1368D
1.64e7
23.73
TS 1378D
2.18e7
25.85
JS 1234D
1.56e7
26.90
ES 2378D
1.59e7
27.57
FS 1278D
1.73e7
27.92
4.65e6
2.32e6
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.27e3
AS 1368D
2.03e7
23.73
TS 1378D
2.73e7
25.85
JS 1234D
1.90e7
26.90
ES 2378D
1.97e7
27.57
FS 1278D
2.17e7
27.92
5.85e6
2.92e6
0%
100%
20.0
22.0
24.0
26.0
28.0
RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3504, 1483, 2998 scc: 245-007
Revised: 11-Nov-2021 16:18 (DTF) Printed: 11-Nov-2021 16:32 Page 2 of 12


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
Abs. Int.
8.00e4
4.00e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.68e5*
33.11
Abs. Int.
5.45e4
2.72e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
Abs. Int.
5.76e6
2.88e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
Abs. Int.
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
123478D 2.12e5* 37.05
123678D 2.21e5* 37.16
123789D 2.19e5* 37.47
7.72e4
3.86e4
0.00e0
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
123478D 1.77e5* 37.05
123678D 1.88e5* 37.16
123789D 1.95e5* 37.47
6.19e4
3.10e4
0.00e0
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
FS 123468D 1.80e7 35.98
ES 123478D 1.35e7 37.03
ES 123678D 1.38e7 37.15
JS 123467D 7.30e6* 37.35
ES 123789D 1.56e7* 37.45
5.89e6
2.94e6
0.00e0
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
FS 123468D 1.42e7 35.98
ES 123478D 1.10e7 37.03
ES 123678D 1.09e7 37.15
JS 123467D 6.04e6* 37.35
ES 123789D 1.25e7* 37.45
4.67e6
2.33e6
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.29e7
1.14e7
0.00e0
100%
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
0%
1234678D
1.79e5*
40.29
Abs. Int.
6.78e4
3.39e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
0%
1234678D
1.66e5*
40.28
Abs. Int.
6.86e4
3.43e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
0%
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
Abs. Int.
6.20e6
3.10e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
0%
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
Abs. Int.
5.79e6
2.90e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

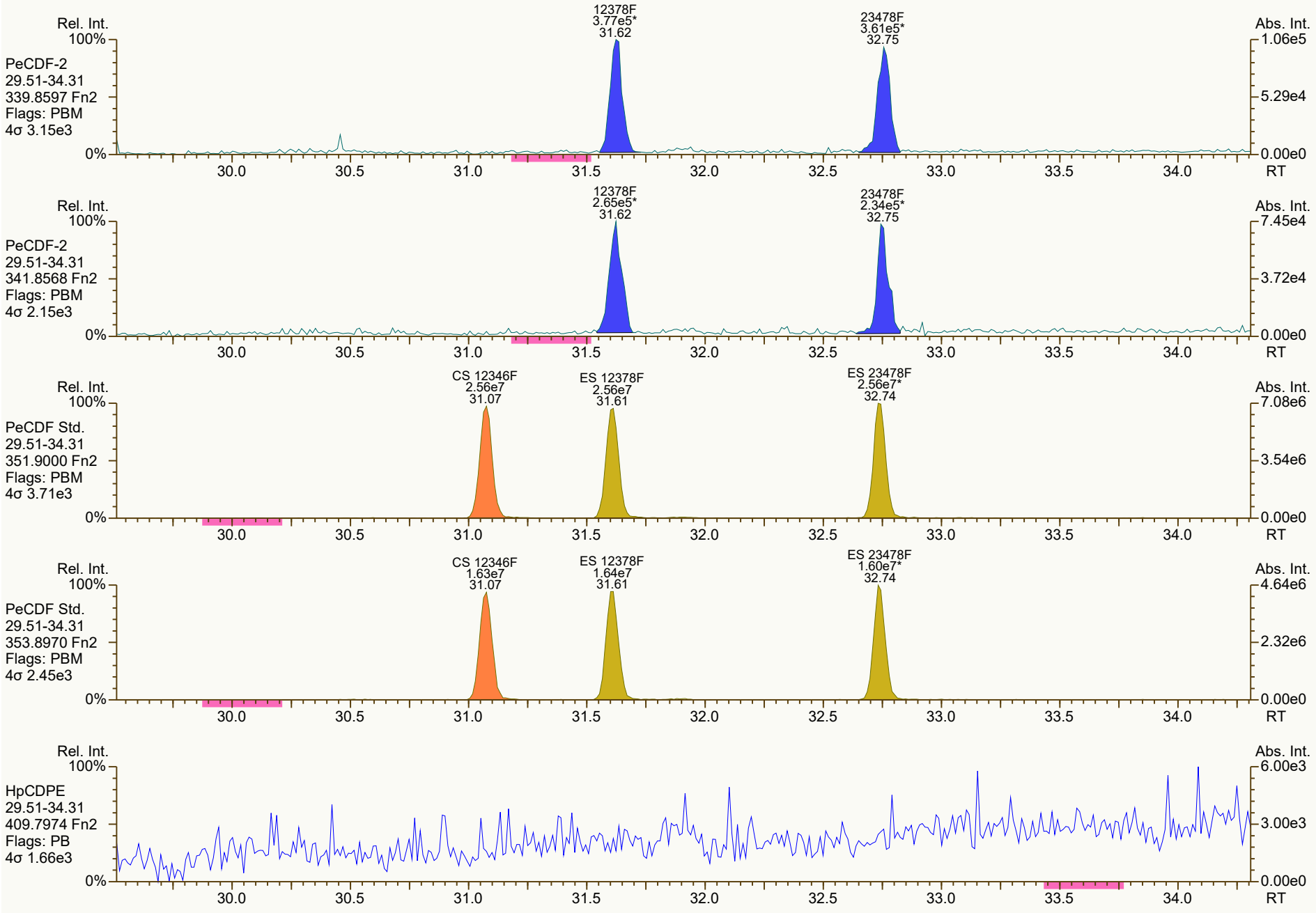

OCDD
2.26e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
6.82e4
3.41e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.52e5*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
ES OCDD
1.47e7*
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
4.33e6
2.16e6
ES OCDD
1.61e7*
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
4.72e6
2.36e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.59e7
7.97e6

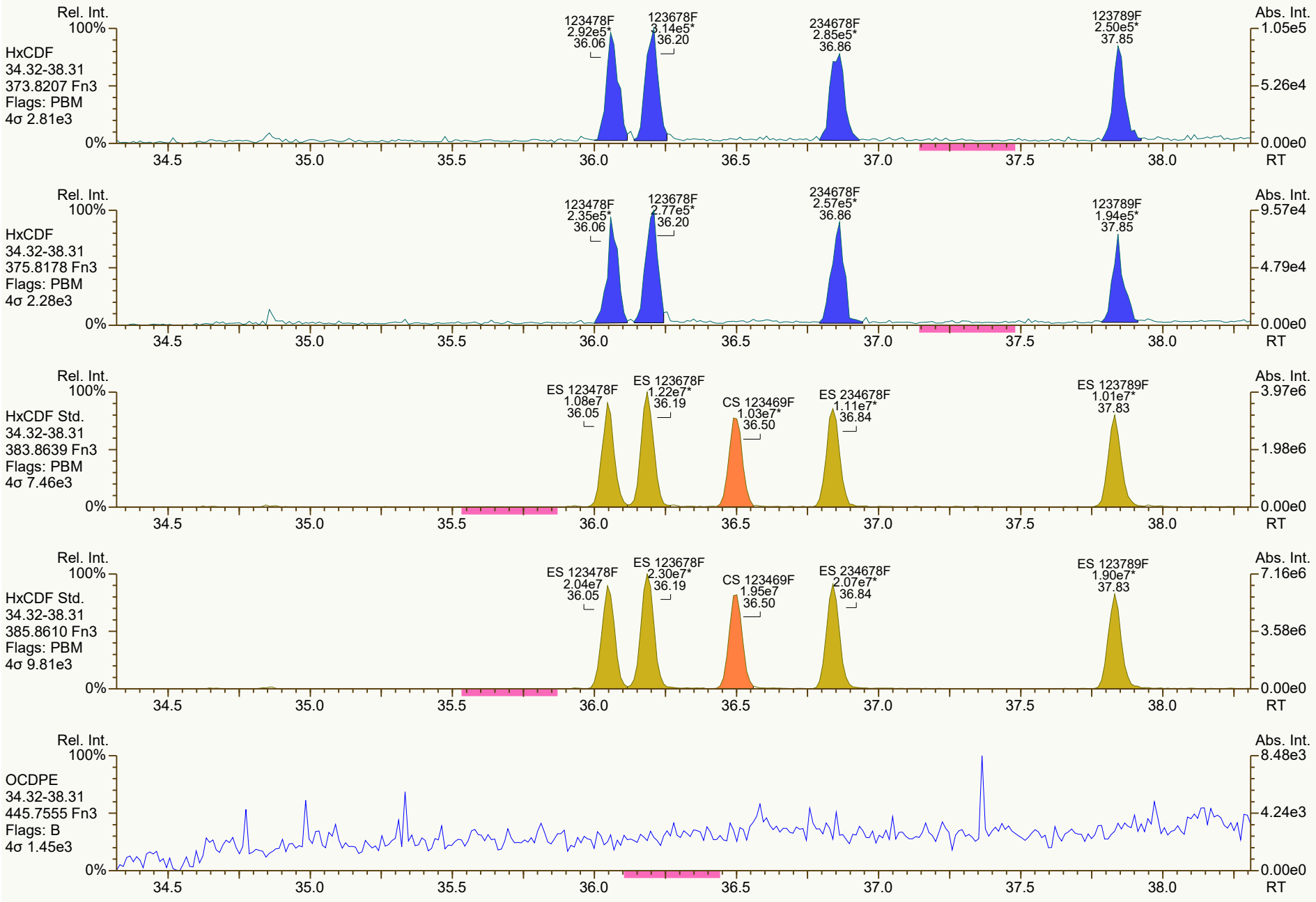

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
0%
2378F
7.17e4*
26.68
Abs. Int.
1.95e4
9.75e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
0%
2378F
8.11e4*
26.68
Abs. Int.
1.97e4
9.85e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
Abs. Int.
4.88e6
2.44e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
0%
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
26.66
Abs. Int.
6.28e6
3.14e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.41e4
7.07e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

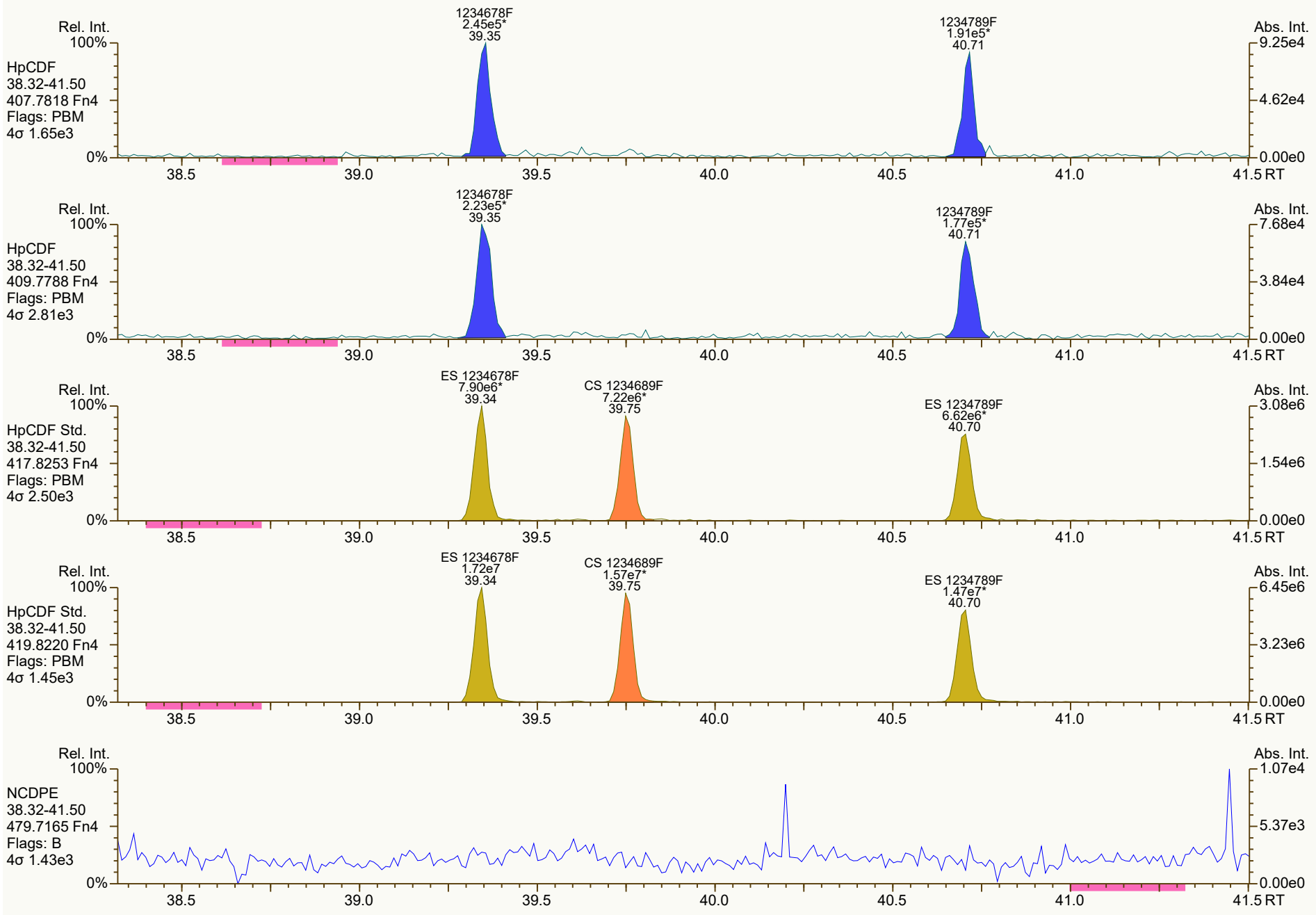
SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04



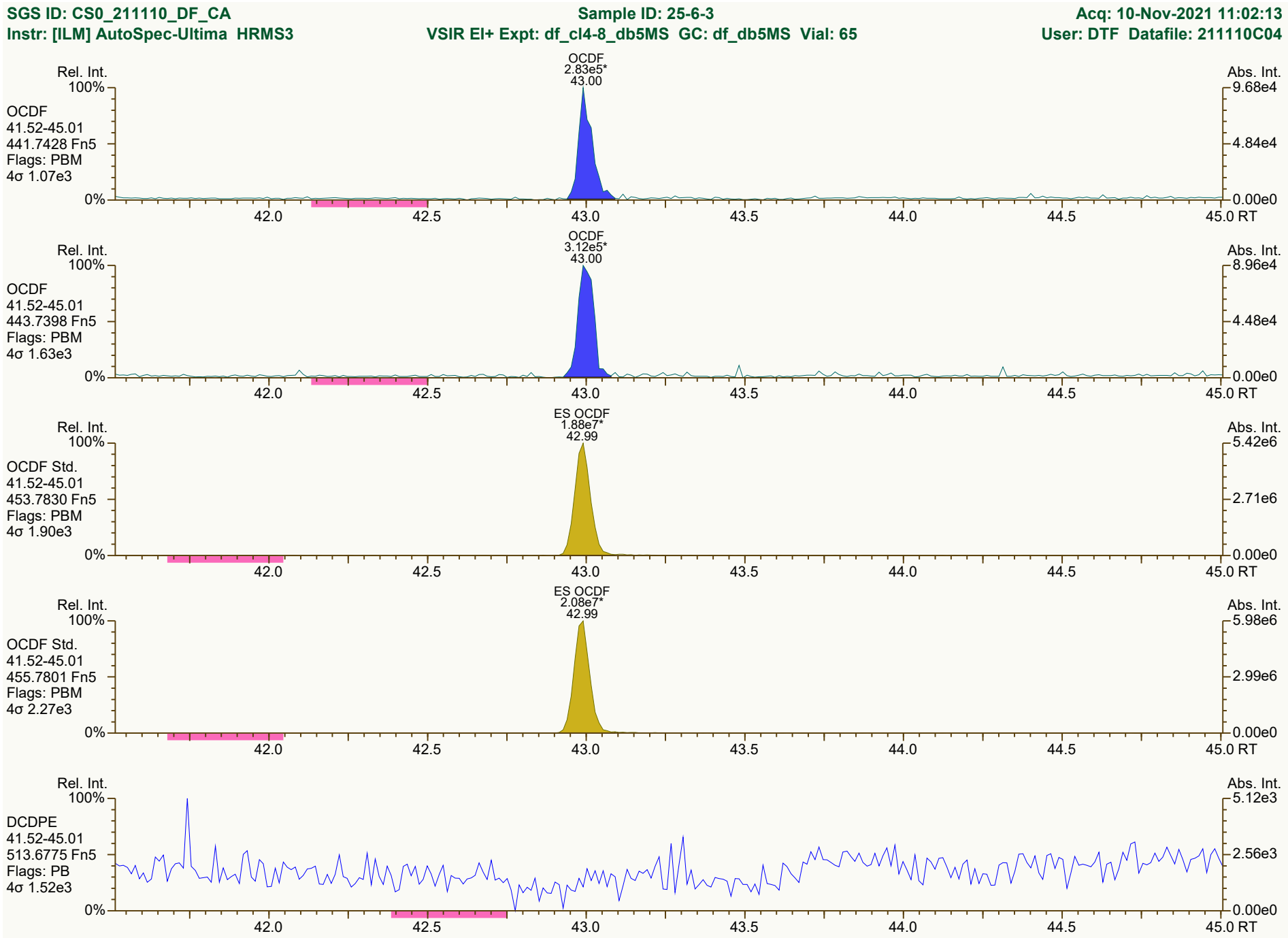
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6412 scc: 245-007
PKD: 10-Nov-2021 13:30 Printed: 11-Nov-2021 16:32 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12378F
3.77e5*
31.62
23478F
3.61e5*
32.75
Abs. Int.
1.06e5
5.29e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
0%
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
Abs. Int.
7.45e4
3.72e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
0%
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
Abs. Int.
7.08e6
3.54e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
0%
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.81e3
0%
123478F
2.92e5*
36.06
123678F
3.14e5*
36.20
234678F
2.85e5*
36.86
123789F
2.50e5*
37.85
Abs. Int.
1.05e5
5.26e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.28e3
0%
123478F
2.35e5*
36.06
123678F
2.77e5*
36.20
234678F
2.57e5*
36.86
123789F
1.94e5*
37.85
Abs. Int.
9.57e4
4.79e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.46e3
0%
ES 123478F
1.08e7
36.05
ES 123678F
1.22e7*
36.19
CS 123469F
1.03e7*
36.50
ES 234678F
1.11e7*
36.84
ES 123789F
1.01e7*
37.83
Abs. Int.
3.97e6
1.98e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.81e3
0%
ES 123478F
2.04e7
36.05
ES 123678F
2.30e7*
36.19
CS 123469F
1.95e7
36.50
ES 234678F
2.07e7*
36.84
ES 123789F
1.90e7*
37.83
Abs. Int.
7.16e6
3.58e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
Abs. Int.
9.25e4
4.62e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
Abs. Int.
7.68e4
3.84e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
Abs. Int.
3.08e6
1.54e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
Abs. Int.
6.45e6
3.23e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
Abs. Int.
1.07e4
5.37e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

SGS ID: CS0_211110_DF_CA | Sample ID: 25-6-3 | Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65 | User: DTF Datafile: 211110C04

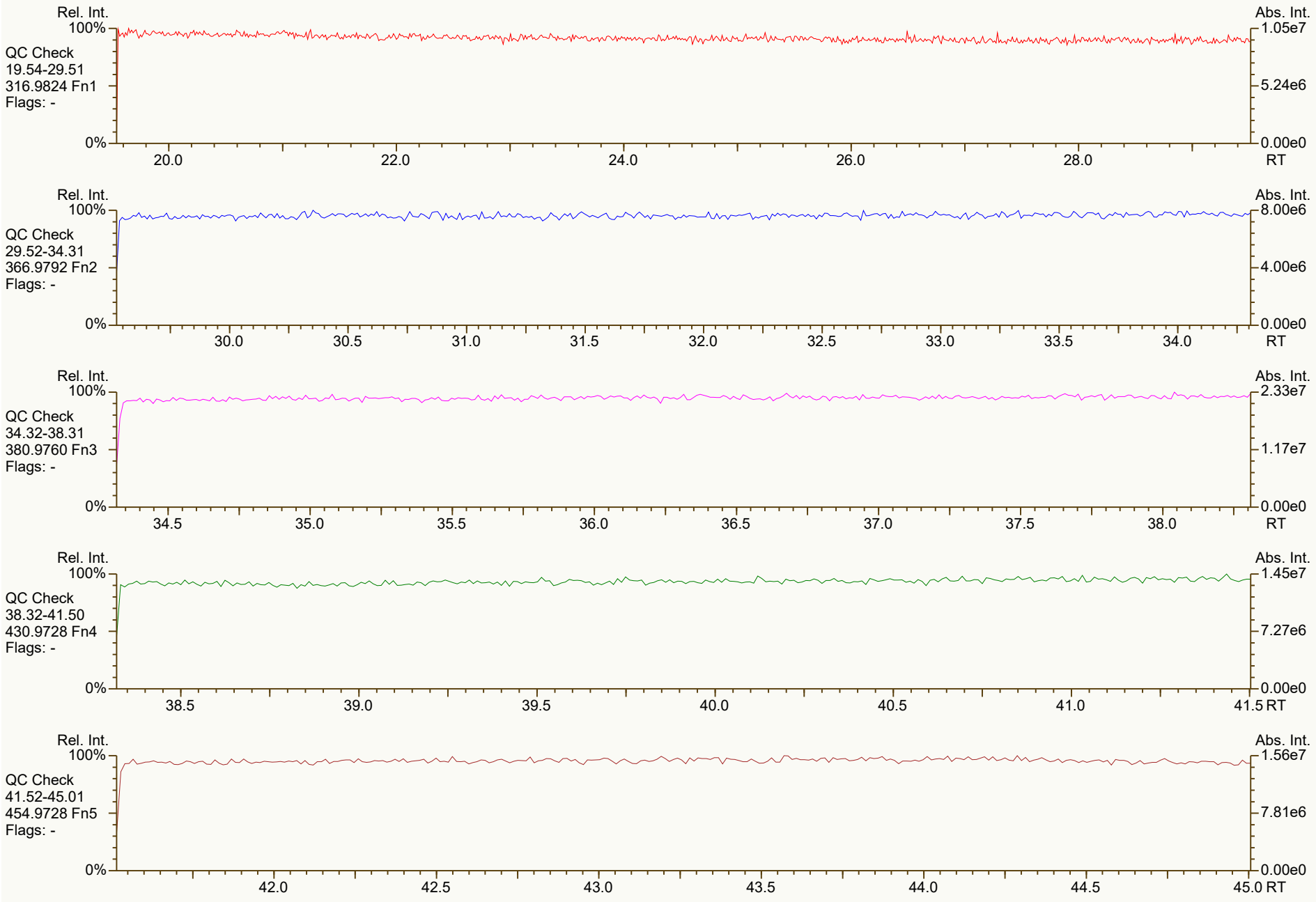


Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF) *Peak annotation: Areas, Centroids*
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5689, 8554, 0504 scc: 245-007 *Revised: 10-Nov-2021 13:36 (DTF) Printed: 11-Nov-2021 16:32 Page 12 of 12*

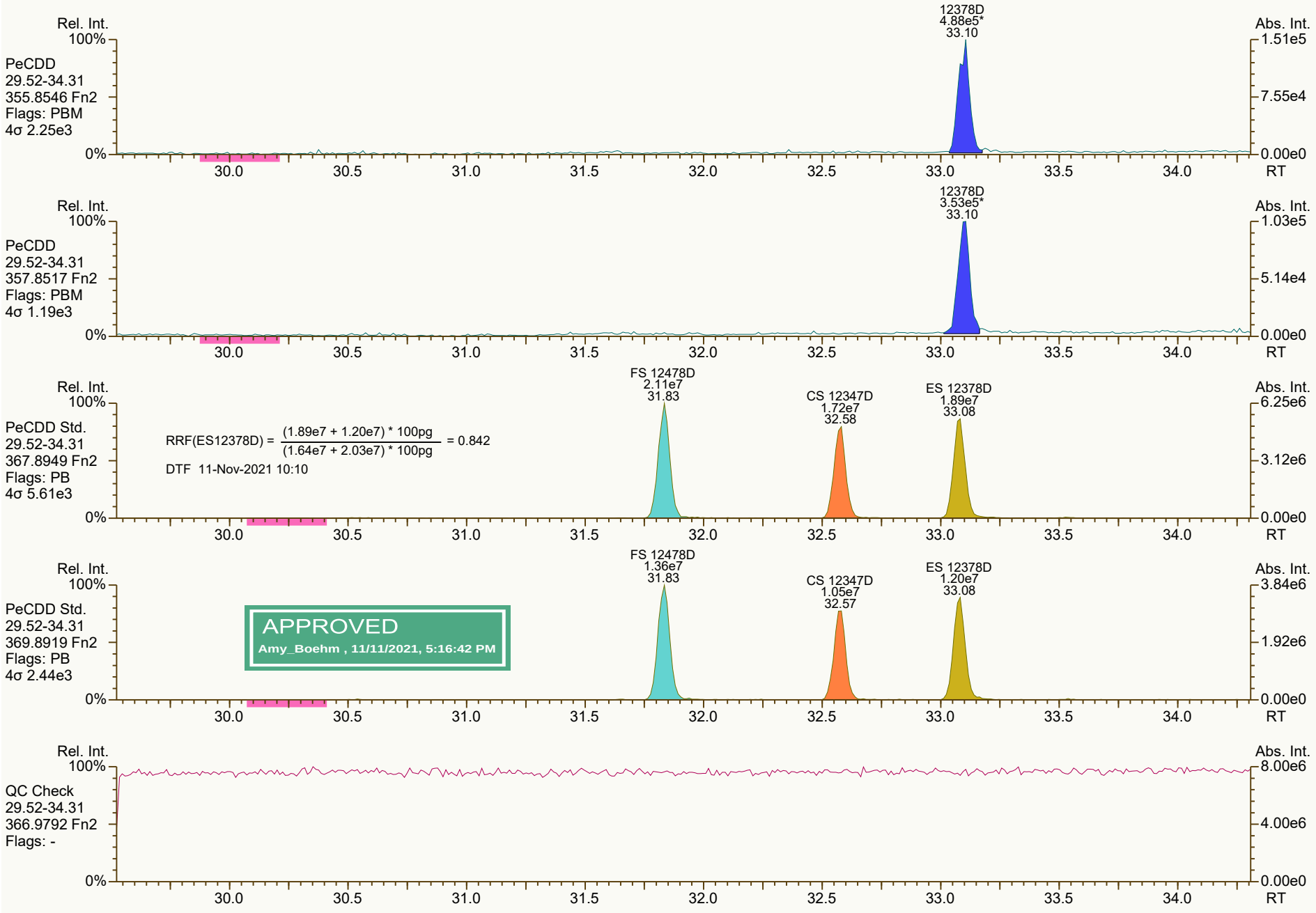
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:48 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS1_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 419-111-CRN
Sample ID: 25-6-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C05

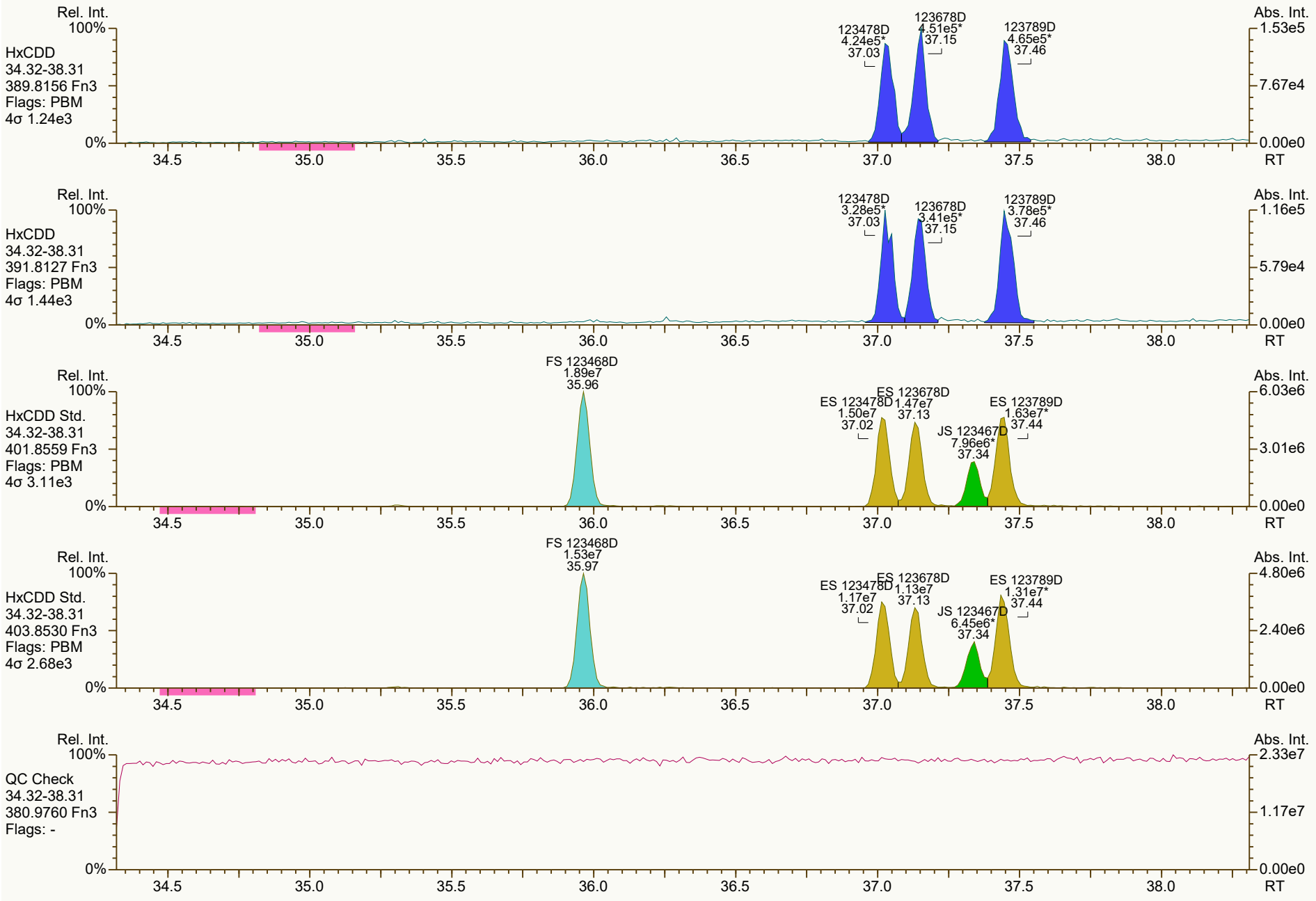
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

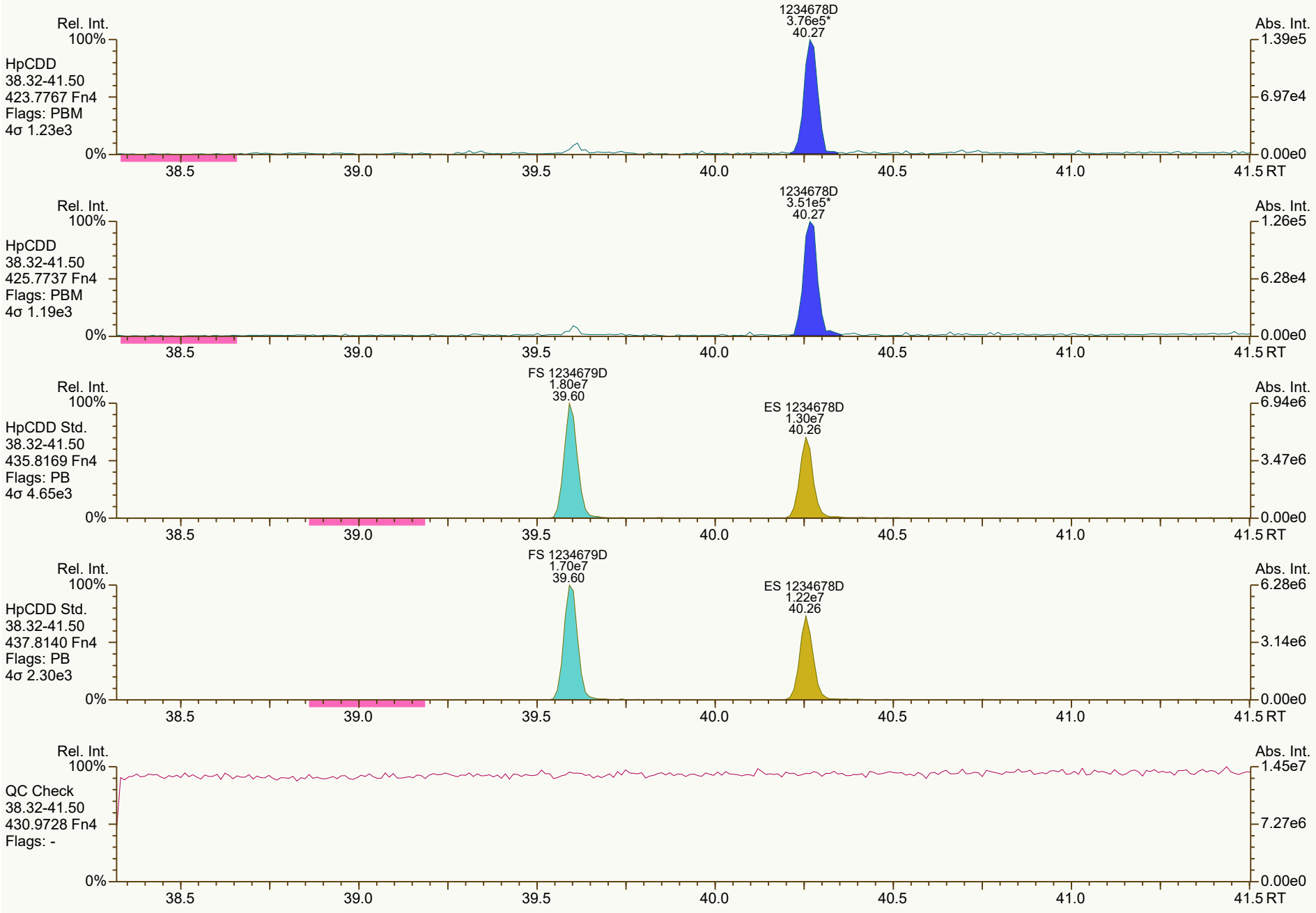
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

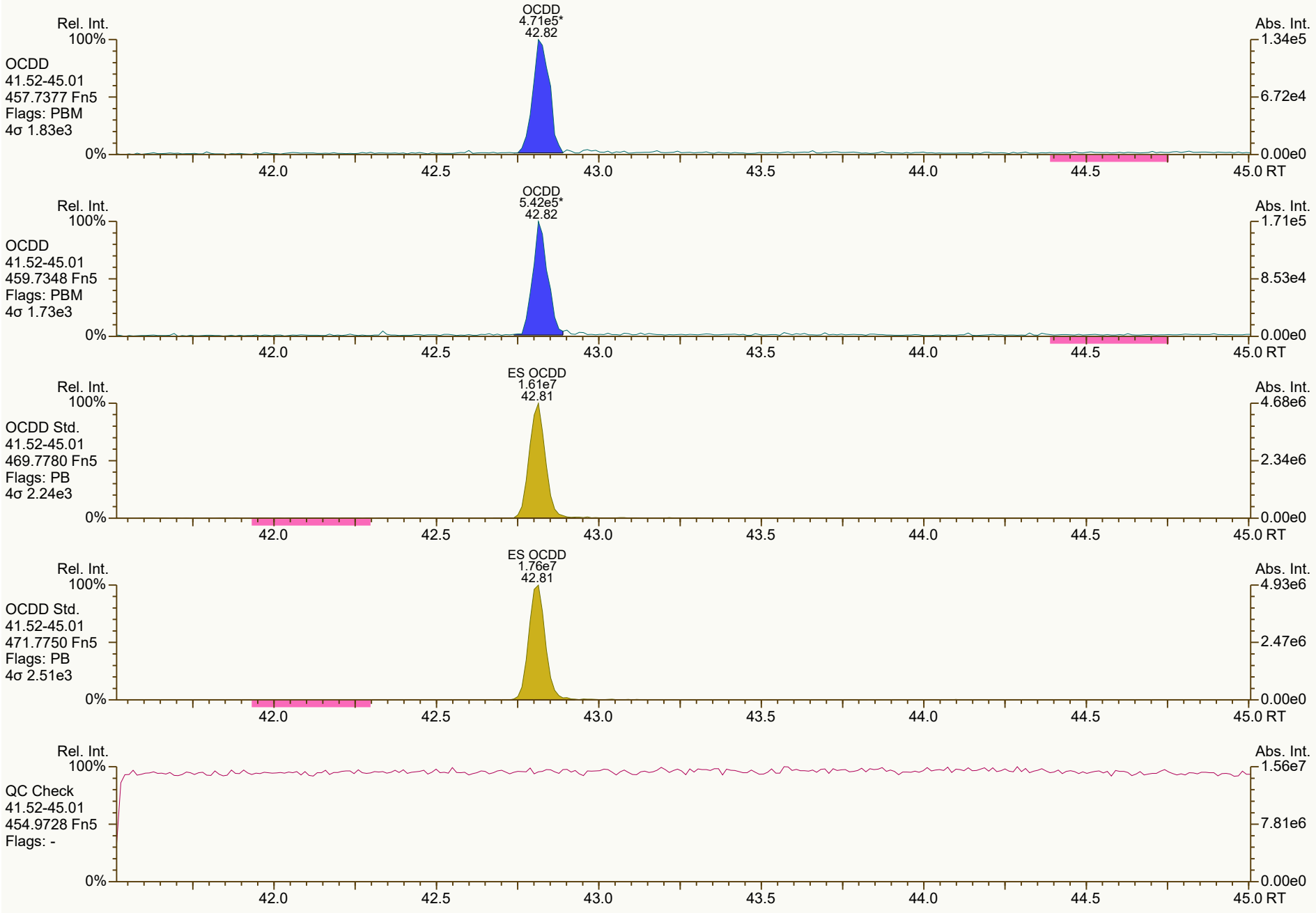

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.05e7
5.24e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.00e6
4.00e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.45e7
7.27e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.56e7
7.81e6
0.00e0

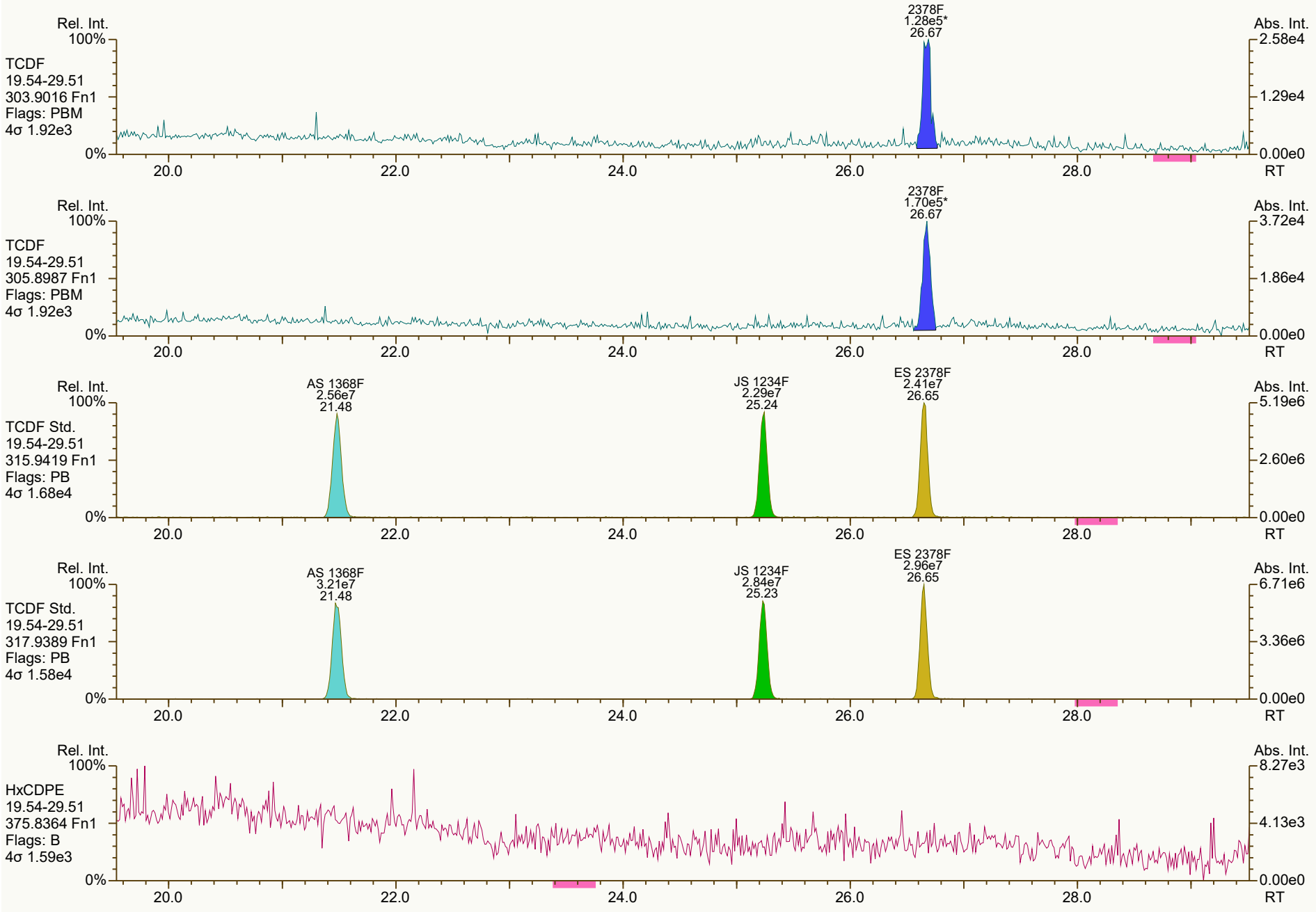

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 3.33e3
0%
2378D
1.05e5*
27.58
Abs. Int.
2.76e4
1.38e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.06e3
0%
2378D
1.27e5*
27.58
Abs. Int.
2.99e4
1.49e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.52e3
0%
CS 37Cl-2378D
2.01e5*
27.59
Abs. Int.
5.18e4
2.59e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 1.05e4
0%
AS 1368D
1.71e7
23.72
TS 1378D
2.28e7
25.84
JS 1234D
1.64e7
26.89
ES 2378D
1.66e7
27.56
FS 1278D
1.82e7
27.90
Abs. Int.
4.92e6
2.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 5.59e3
0%
AS 1368D
2.15e7
23.72
TS 1378D
2.86e7
25.84
JS 1234D
2.03e7
26.89
ES 2378D
2.11e7
27.56
FS 1278D
2.26e7
27.90
Abs. Int.
6.21e6
3.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.25e3
12378D
4.88e5*
33.10
Abs. Int.
1.51e5
7.55e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.19e3
12378D
3.53e5*
33.10
1.03e5
5.14e4
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 5.61e3
RRF(ES12378D) = (1.89e7 + 1.20e7) * 100pg / (1.64e7 + 2.03e7) * 100pg = 0.842
DTF 11-Nov-2021 10:10
FS 12478D
2.11e7
31.83
CS 12347D
1.72e7
32.58
ES 12378D
1.89e7
33.08
6.25e6
3.12e6
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 2.44e3
APPROVED
Amy_Boehm , 11/11/2021, 5:16:42 PM
FS 12478D
1.36e7
31.83
CS 12347D
1.05e7
32.57
ES 12378D
1.20e7
33.08
3.84e6
1.92e6
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
8.00e6
4.00e6

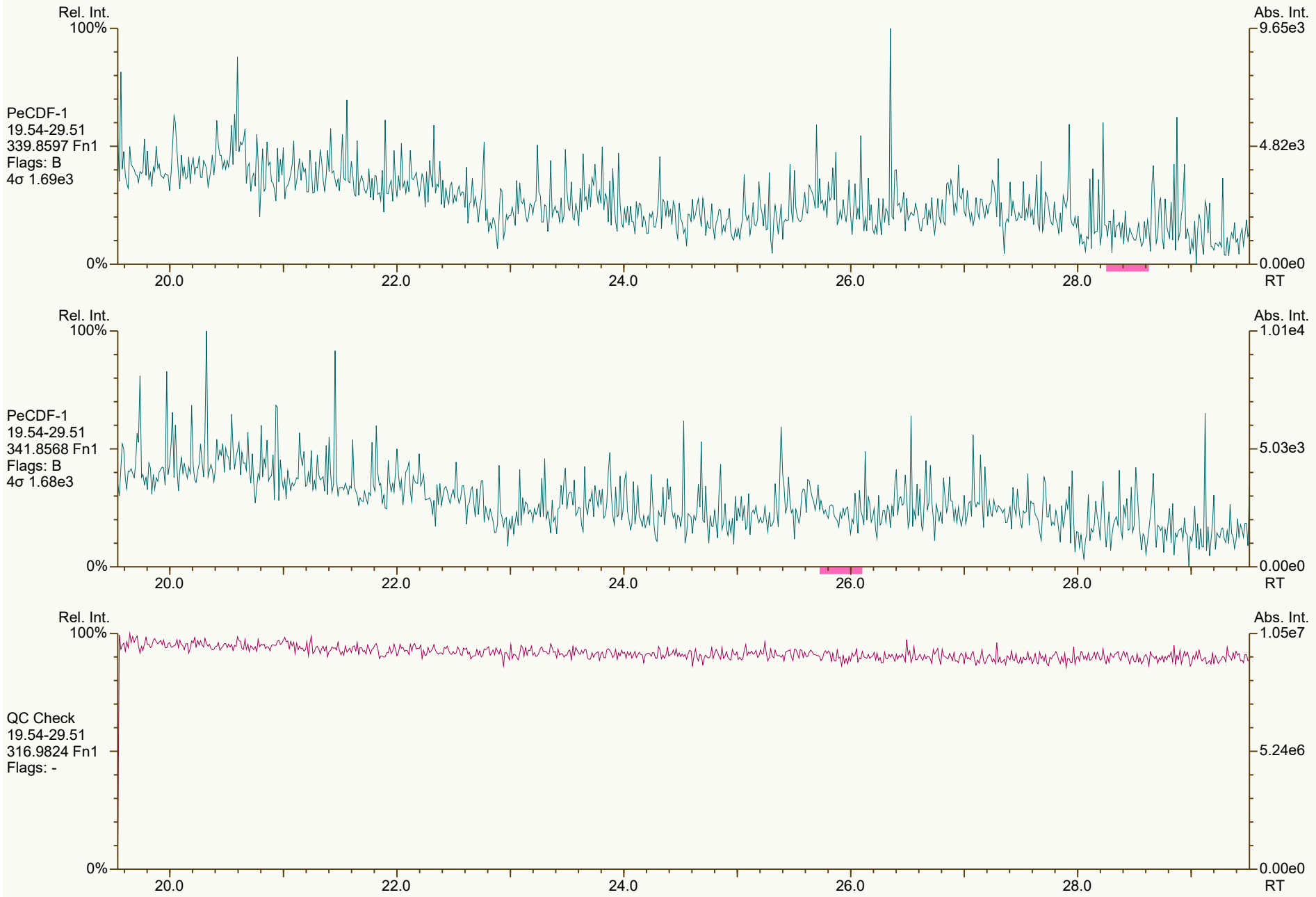

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D
4.24e5*
37.03
123678D
4.51e5*
37.15
123789D
4.65e5*
37.46
Abs. Int.
1.53e5
7.67e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D
3.28e5*
37.03
123678D
3.41e5*
37.15
123789D
3.78e5*
37.46
Abs. Int.
1.16e5
5.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D
1.89e7
35.96
ES 123478D
1.50e7
37.02
ES 123678D
1.47e7
37.13
JS 123467D
7.96e6*
37.34
ES 123789D
1.63e7*
37.44
Abs. Int.
6.03e6
3.01e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
1.53e7
35.97
ES 123478D
1.17e7
37.02
ES 123678D
1.13e7
37.13
JS 123467D
6.45e6*
37.34
ES 123789D
1.31e7*
37.44
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
0%
1234678D
3.76e5*
40.27
Abs. Int.
1.39e5
6.97e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
0%
1234678D
3.51e5*
40.27
Abs. Int.
1.26e5
6.28e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
0%
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
Abs. Int.
6.94e6
3.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
0%
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
Abs. Int.
6.28e6
3.14e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.45e7
7.27e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
4.71e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
1.34e5
6.72e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
Abs. Int.
1.71e5
8.53e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
Abs. Int.
4.93e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.56e7
7.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

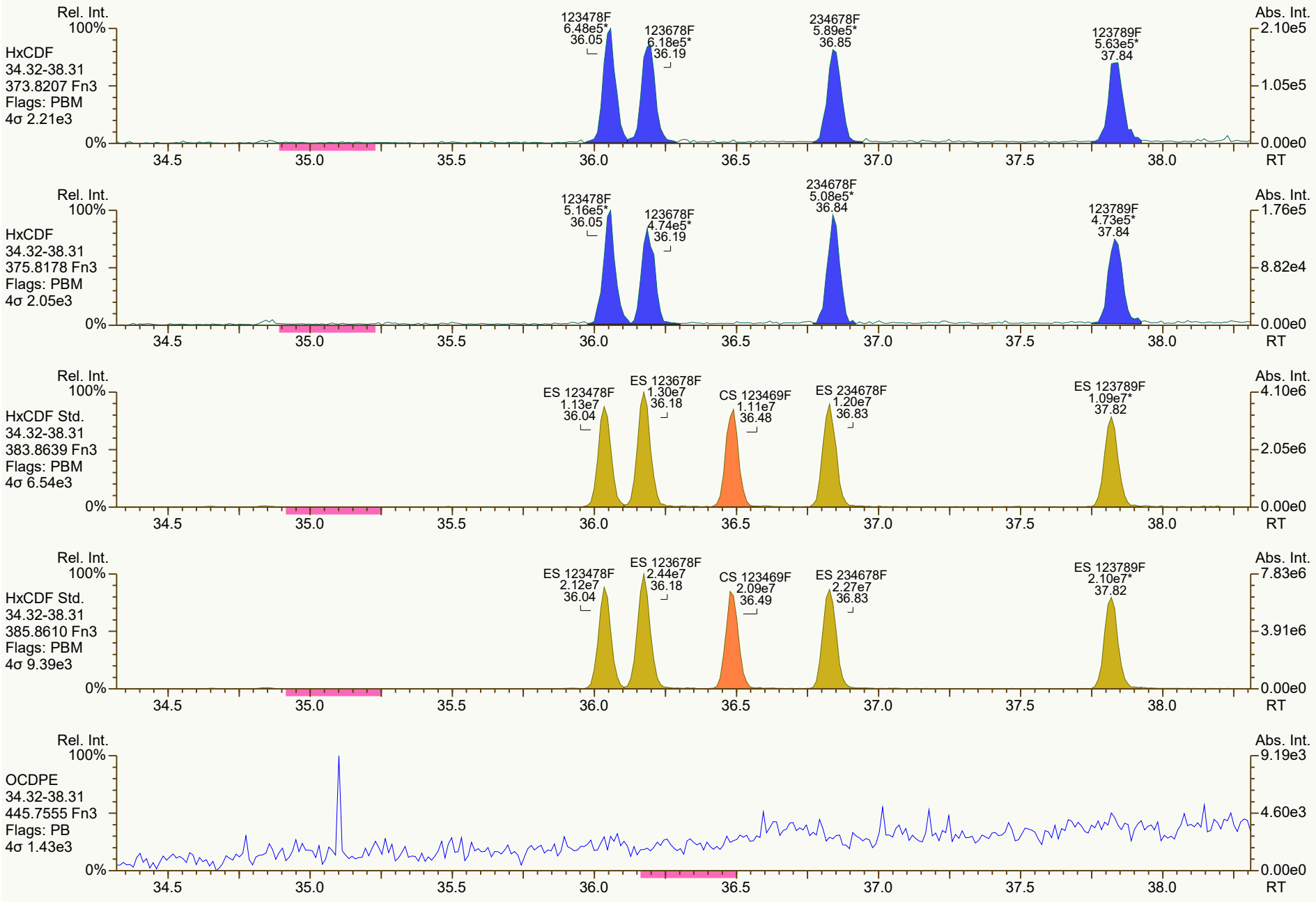

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.28e5*
26.67
Abs. Int.
2.58e4
1.29e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.70e5*
26.67
Abs. Int.
3.72e4
1.86e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.68e4
0%
AS 1368F
2.56e7
21.48
JS 1234F
2.29e7
25.24
ES 2378F
2.41e7
26.65
Abs. Int.
5.19e6
2.60e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
3.21e7
21.48
JS 1234F
2.84e7
25.23
ES 2378F
2.96e7
26.65
Abs. Int.
6.71e6
3.36e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

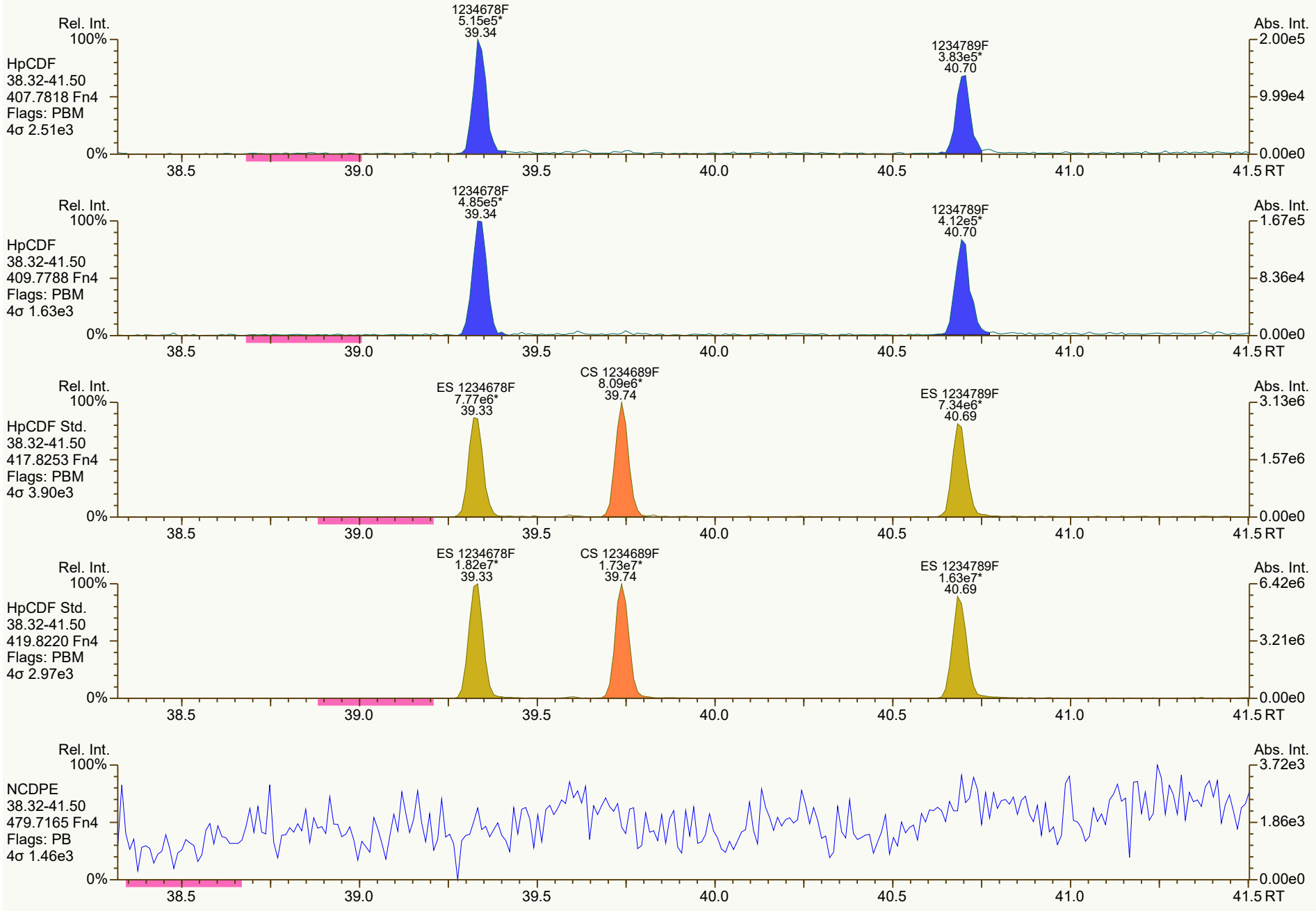
SGS ID: CS1_211110_DF_CA
Sample ID: 25-6-2
Acq: 10-Nov-2021 11:48:34
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 66
User: DTF Datafile: 211110C05

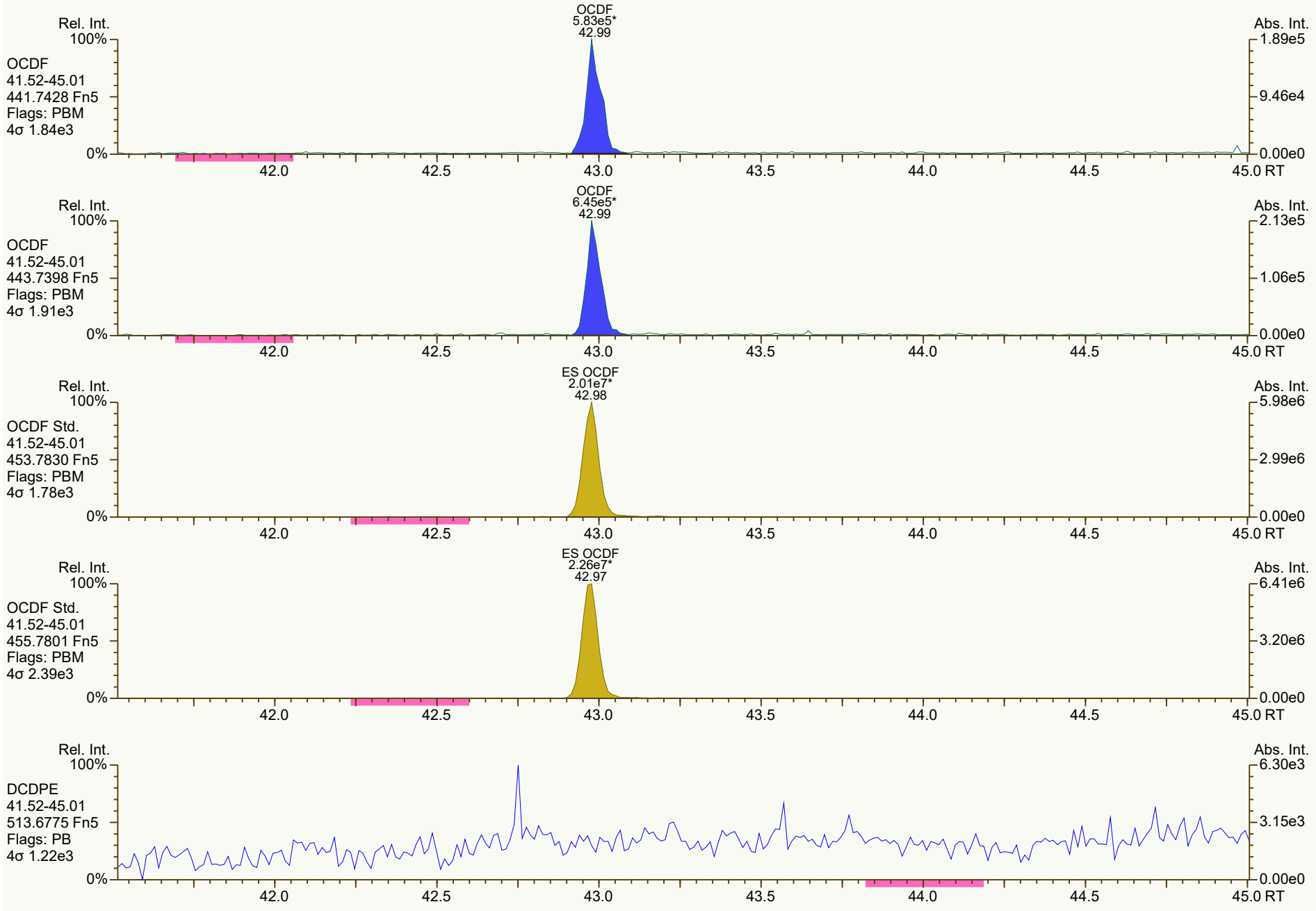


Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS1_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2313 scc: 419-111
Revised: 10-Nov-2021 13:36 (DTF) Printed: 11-Nov-2021 10:40 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
Abs. Int.
2.10e5
1.05e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
Abs. Int.
1.40e5
7.02e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.63e7
32.73
Abs. Int.
7.54e6
3.77e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
CS 12346F
1.69e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
Abs. Int.
4.85e6
2.42e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
Abs. Int.
1.10e4
5.51e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.21e3
0%
123478F
6.48e5*
36.05
123678F
6.18e5*
36.19
234678F
5.89e5*
36.85
123789F
5.63e5*
37.84
Abs. Int.
2.10e5
1.05e5
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.05e3
123478F
5.16e5*
36.05
123678F
4.74e5*
36.19
234678F
5.08e5*
36.84
123789F
4.73e5*
37.84
1.76e5
8.82e4
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 6.54e3
ES 123478F
1.13e7
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.11e7
36.48
ES 234678F
1.20e7
36.83
ES 123789F
1.09e7*
37.82
4.10e6
2.05e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.39e3
ES 123478F
2.12e7
36.04
ES 123678F
2.44e7
36.18
CS 123469F
2.09e7
36.49
ES 234678F
2.27e7
36.83
ES 123789F
2.10e7*
37.82
7.83e6
3.91e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.43e3
9.19e3
4.60e3


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.51e3
1234678F
5.15e5*
39.34
1234789F
3.83e5*
40.70
Abs. Int.
2.00e5
9.99e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.63e3
1234678F
4.85e5*
39.34
1234789F
4.12e5*
40.70
Abs. Int.
1.67e5
8.36e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 3.90e3
ES 1234678F
7.77e6*
39.33
CS 1234689F
8.09e6*
39.74
ES 1234789F
7.34e6*
40.69
Abs. Int.
3.13e6
1.57e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.97e3
ES 1234678F
1.82e7*
39.33
CS 1234689F
1.73e7*
39.74
ES 1234789F
1.63e7*
40.69
Abs. Int.
6.42e6
3.21e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.46e3
Abs. Int.
3.72e3
1.86e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

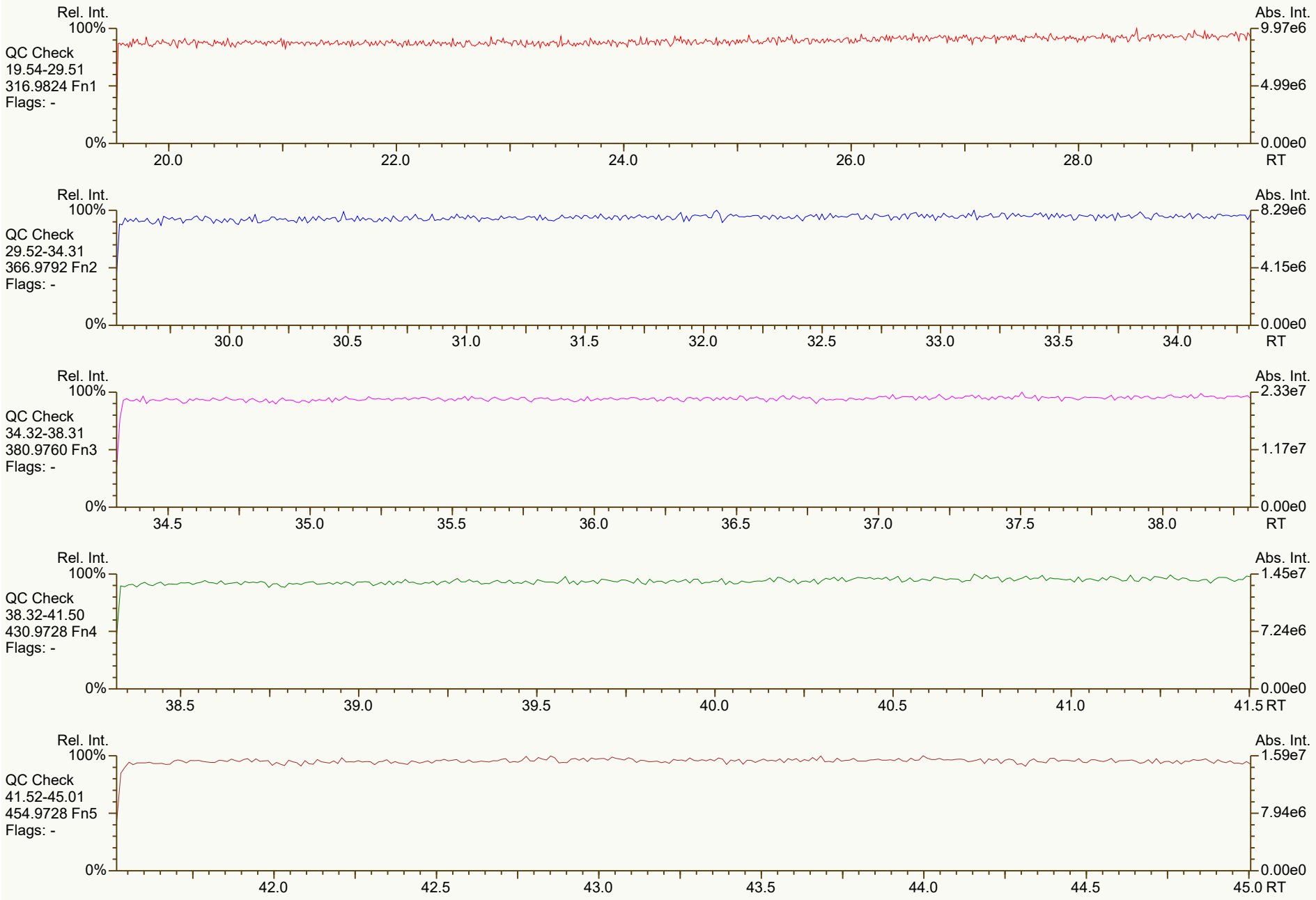

OCDF
5.83e5*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
0%
Abs. Int.
1.89e5
9.46e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.45e5*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
0%
Abs. Int.
2.13e5
1.06e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
0%
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.26e7*
42.97
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
0%
Abs. Int.
6.41e6
3.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

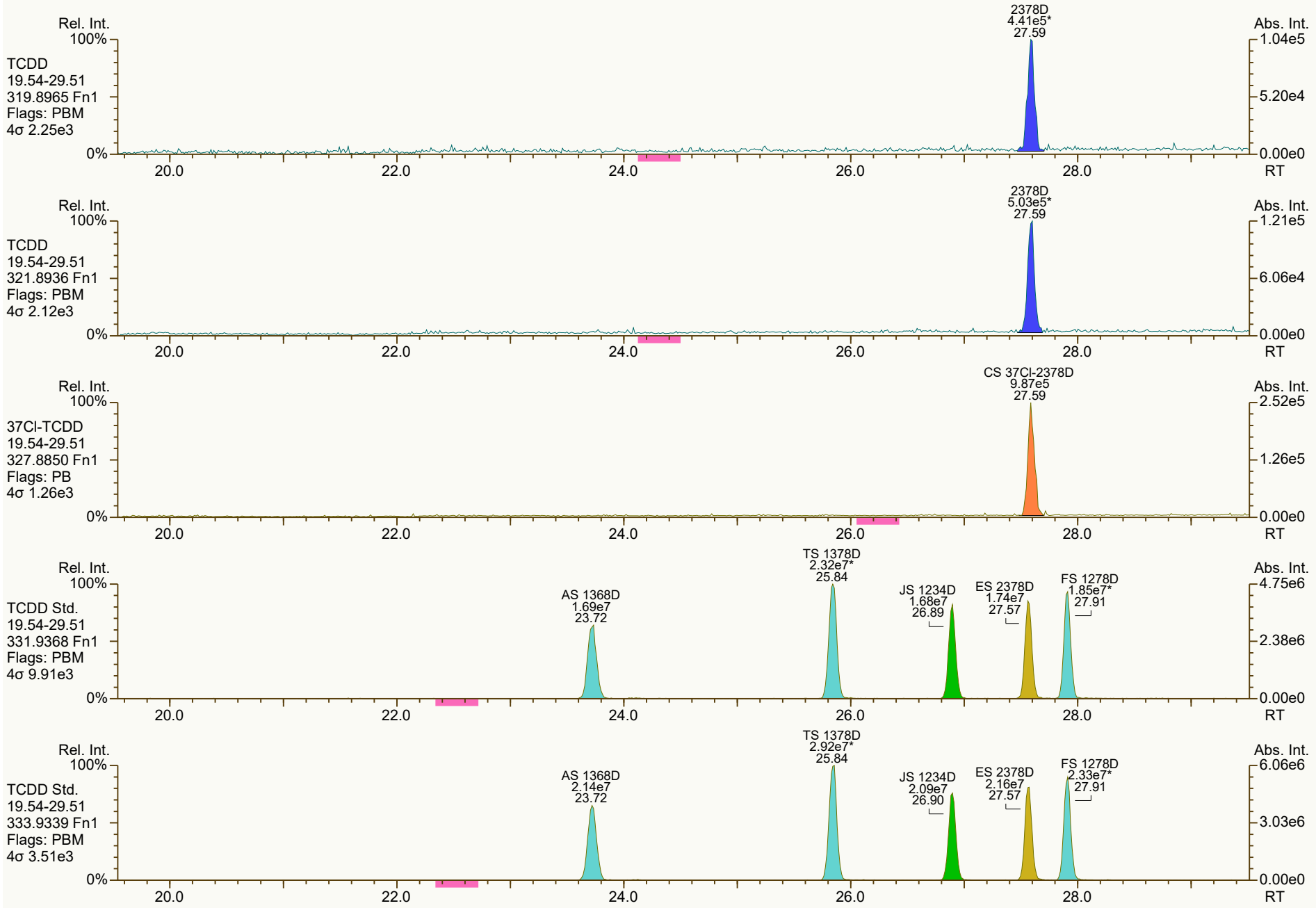
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

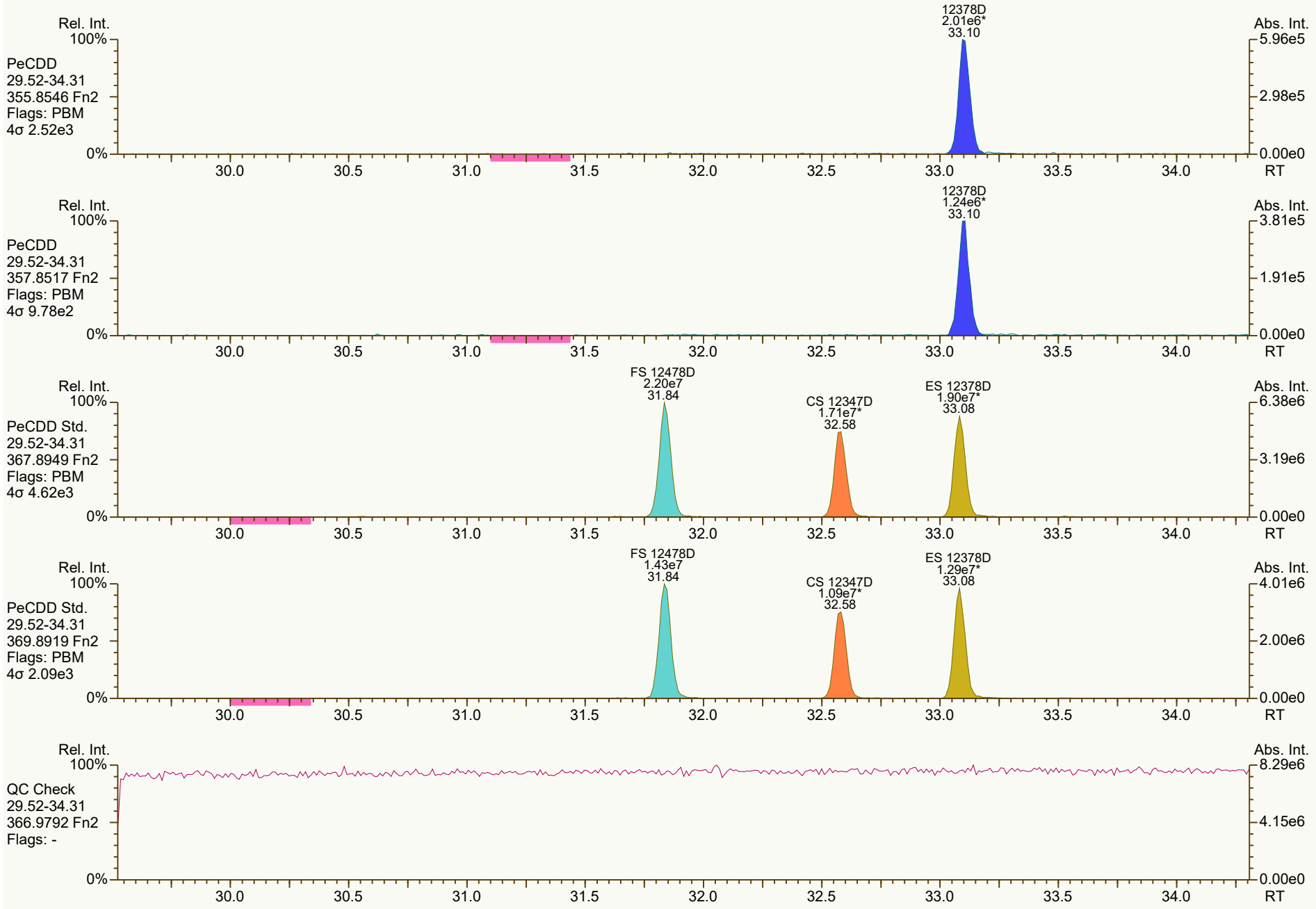
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

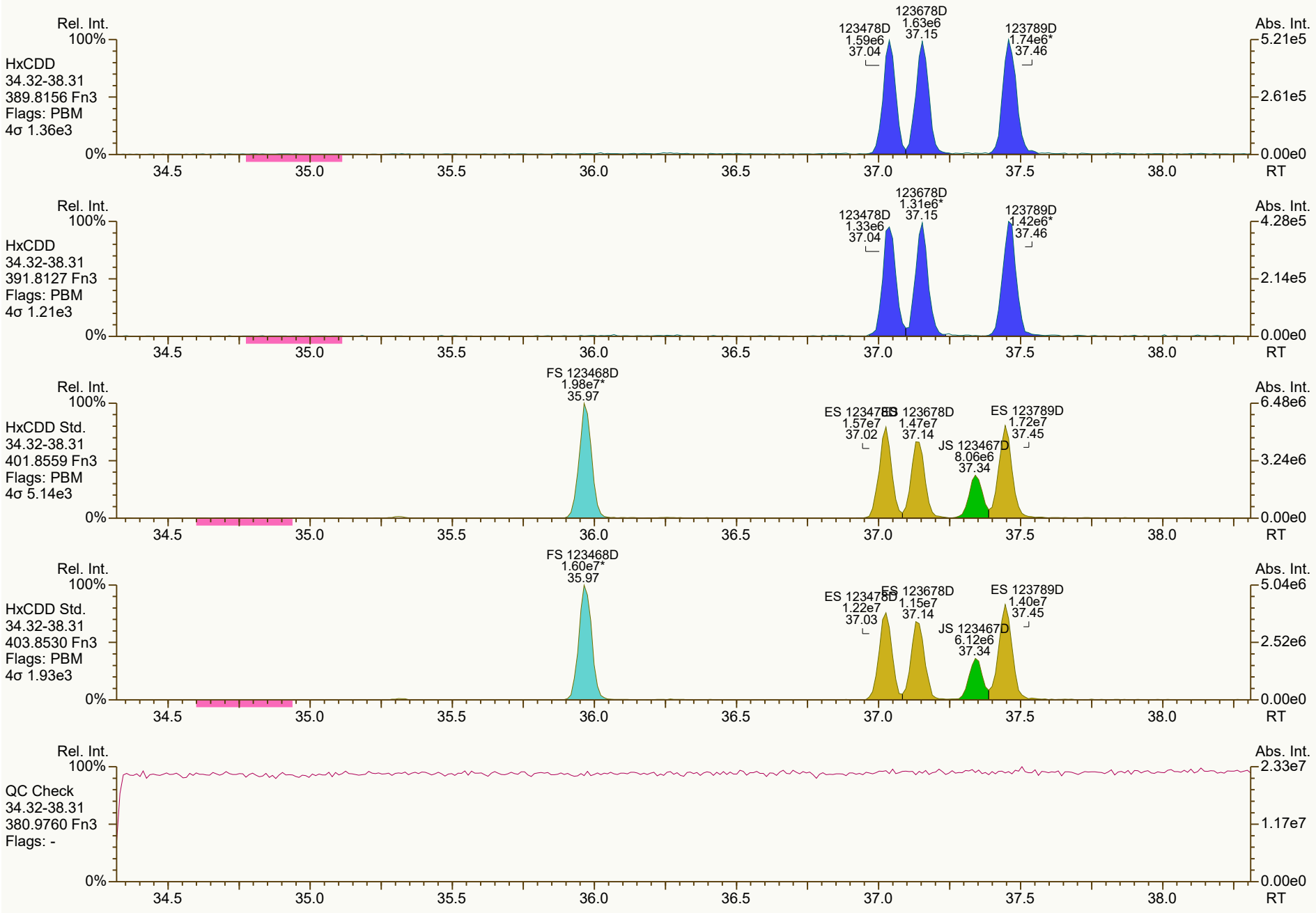
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

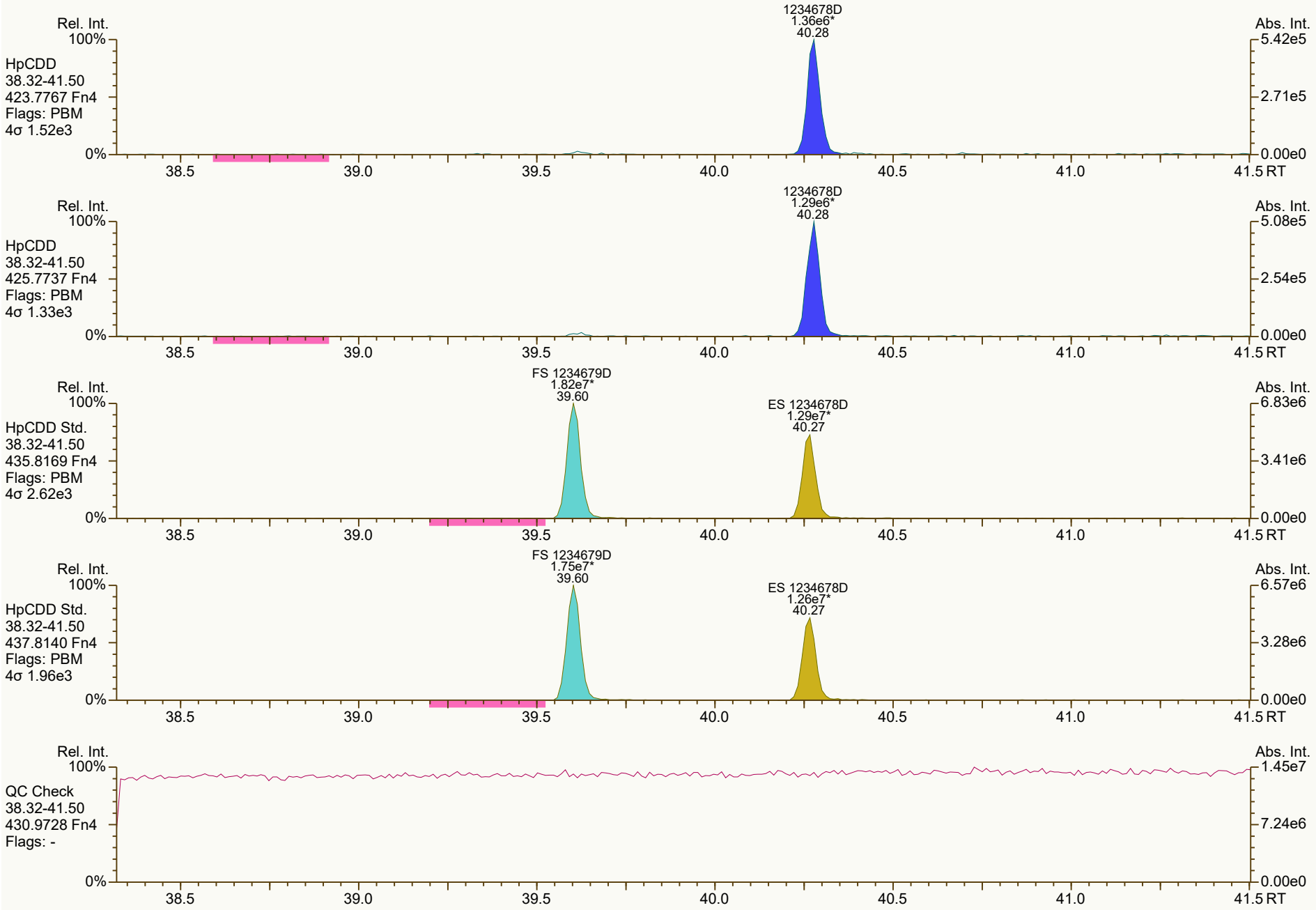
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%


Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.29e6
4.15e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.45e7
7.24e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.94e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
0%
2378D
4.41e5*
27.59
Abs. Int.
1.04e5
5.20e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
0%
2378D
5.03e5*
27.59
Abs. Int.
1.21e5
6.06e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
0%
CS 37Cl-2378D
9.87e5
27.59
Abs. Int.
2.52e5
1.26e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
0%
AS 1368D
1.69e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.85e7*
27.91
Abs. Int.
4.75e6
2.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
0%
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.52e3
12378D
2.01e6*
33.10
Abs. Int.
5.96e5
2.98e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 9.78e2
12378D
1.24e6*
33.10
Abs. Int.
3.81e5
1.91e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 4.62e3
FS 12478D
2.20e7
31.84
CS 12347D
1.71e7*
32.58
ES 12378D
1.90e7*
33.08
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 2.09e3
FS 12478D
1.43e7
31.84
CS 12347D
1.09e7*
32.58
ES 12378D
1.29e7*
33.08
Abs. Int.
4.01e6
2.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.29e6
4.15e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123478D
1.59e6
37.04
123678D
1.63e6
37.15
123789D
1.74e6*
37.46
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123478D
1.33e6
37.04
123678D
1.31e6*
37.15
123789D
1.42e6*
37.46
4.28e5
2.14e5
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D
1.98e7*
35.97
ES 123478D
1.57e7
37.02
ES 123678D
1.47e7
37.14
JS 123467D
8.06e6
37.34
ES 123789D
1.72e7
37.45
6.48e6
3.24e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D
1.60e7*
35.97
ES 123478D
1.22e7
37.03
ES 123678D
1.15e7
37.14
JS 123467D
6.12e6
37.34
ES 123789D
1.40e7
37.45
5.04e6
2.52e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.33e7
1.17e7


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.36e6*
40.28
Abs. Int.
5.42e5
2.71e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
Abs. Int.
5.08e5
2.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
Abs. Int.
6.83e6
3.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.96e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
Abs. Int.
6.57e6
3.28e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.45e7
7.24e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.80e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
5.27e5
2.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.08e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
0%
Abs. Int.
6.49e5
3.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.65e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.82e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
5.21e6
2.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
2378F
5.70e5*
26.68
Abs. Int.
1.27e5
6.37e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
2378F
6.77e5*
26.68
Abs. Int.
1.62e5
8.11e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
26.65
Abs. Int.
5.72e6
2.86e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
26.65
Abs. Int.
7.12e6
3.56e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
Abs. Int.
8.34e3
4.17e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT

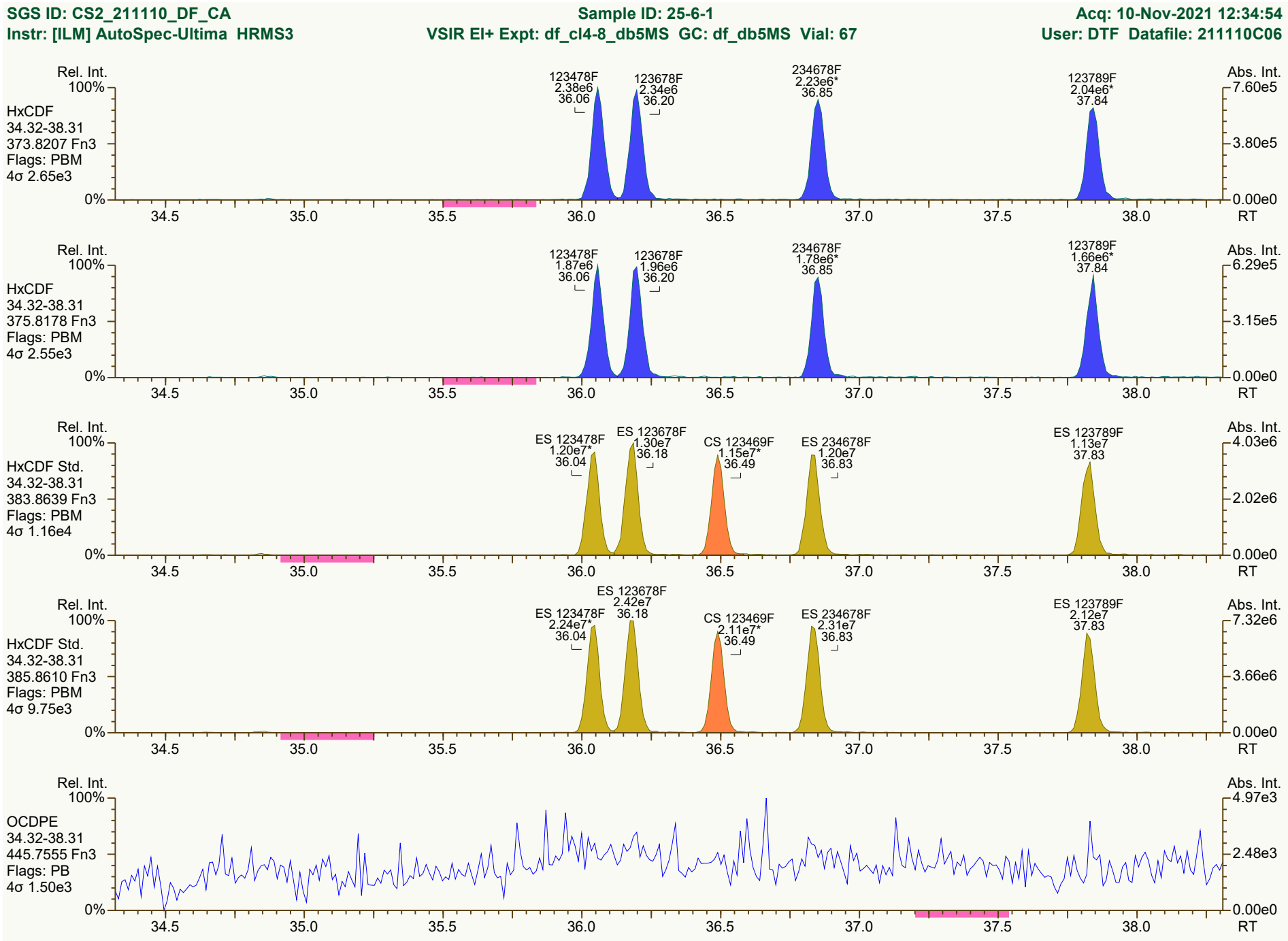

Rel. Int.
100%
0%
Abs. Int.
9.23e3
4.62e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.32e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.97e6
4.99e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
0%
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
Abs. Int.
8.19e5
4.10e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
Abs. Int.
5.27e5
2.63e5
0.00e0
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
0%
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
Abs. Int.
8.01e6
4.01e6
0.00e0
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
0%
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
Abs. Int.
5.19e6
2.59e6
0.00e0
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
0%
Abs. Int.
6.67e3
3.33e3
0.00e0

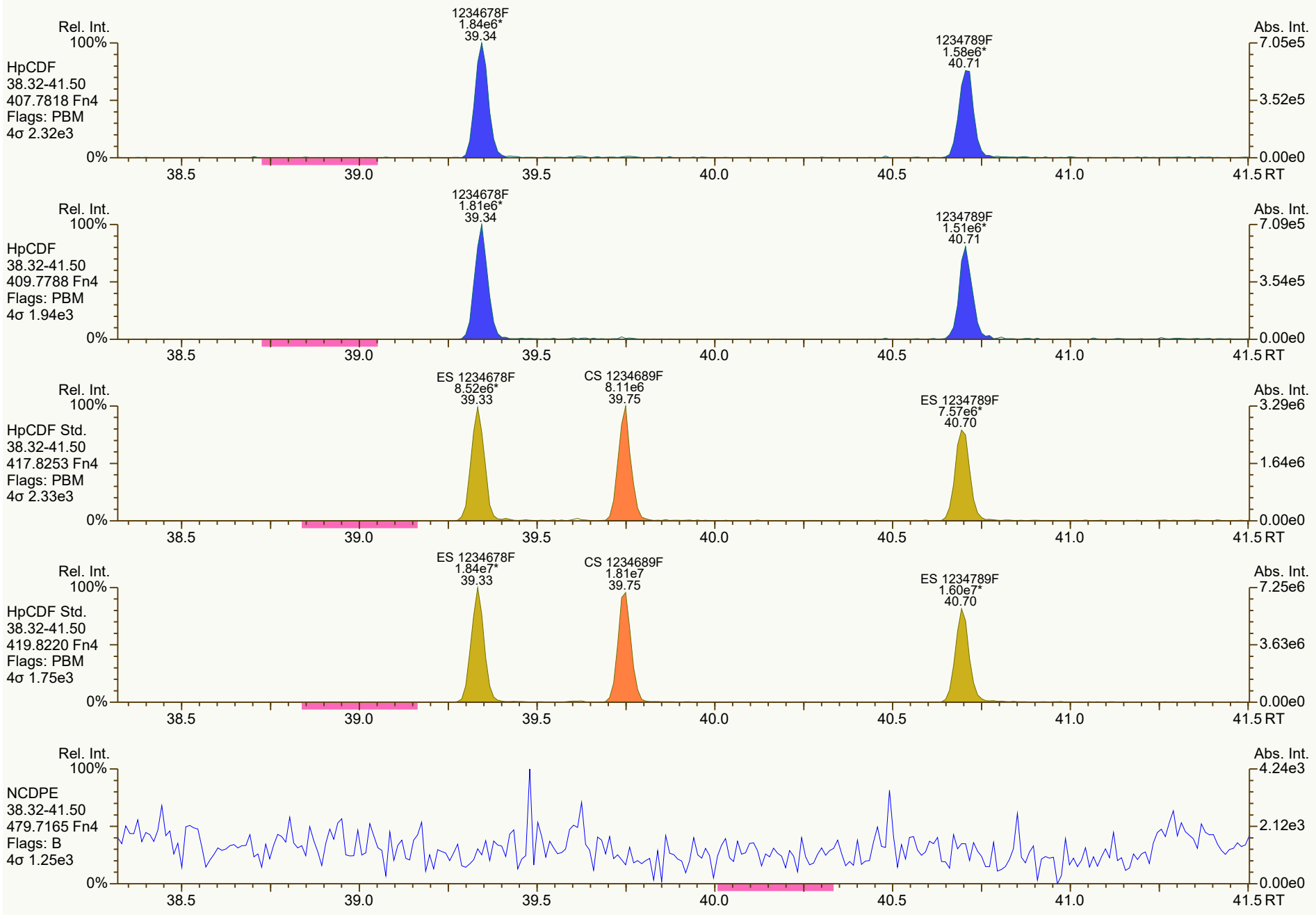
SGS ID: CS2_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3

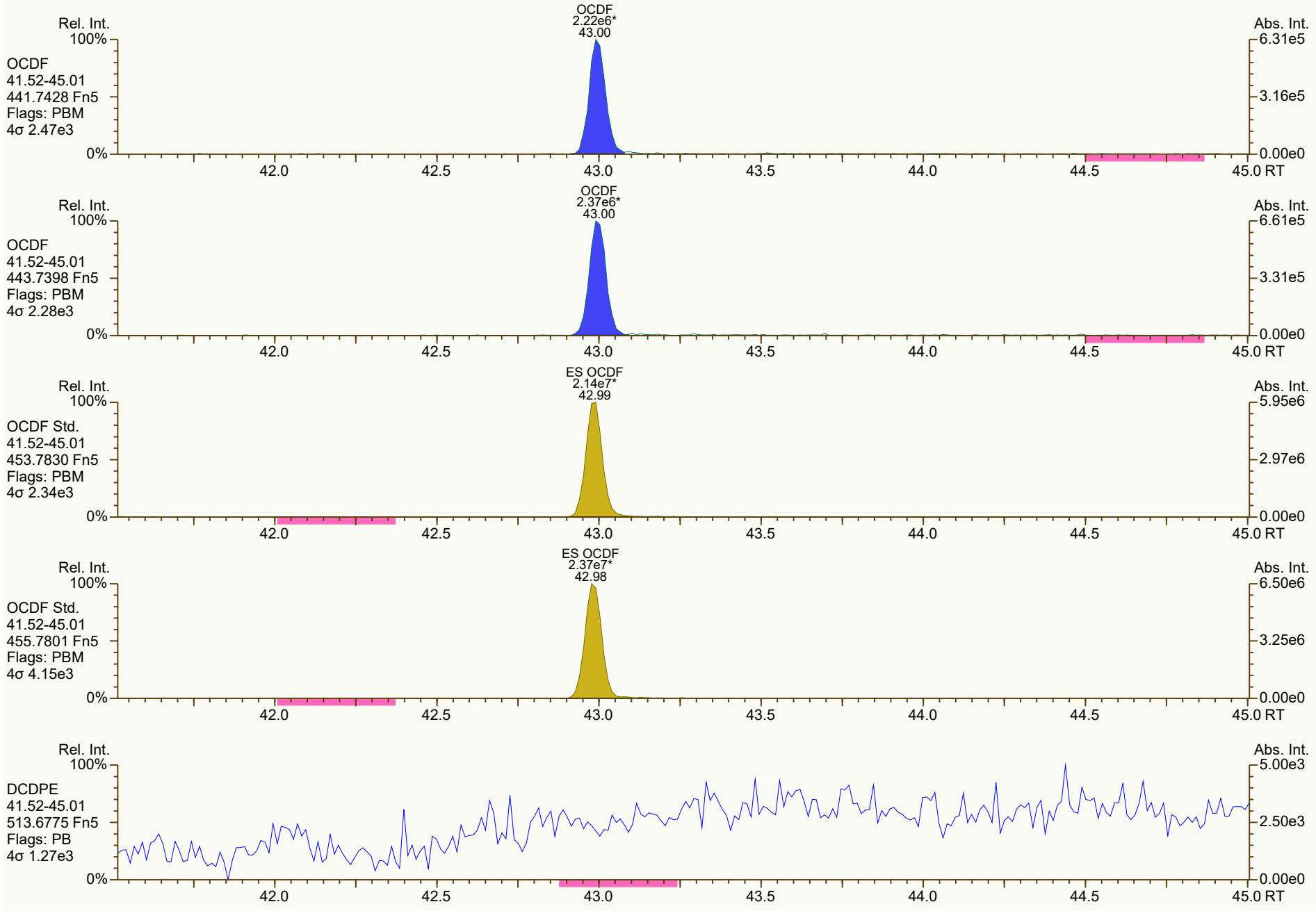
Sample ID: 25-6-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 67

Acq: 10-Nov-2021 12:34:54
User: DTF Datafile: 211110C06



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS2_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7496, 9123, 5141 scc: 385-758
Revised: 10-Nov-2021 13:52 (DTF) Printed: 11-Nov-2021 10:40 Page 10 of 12

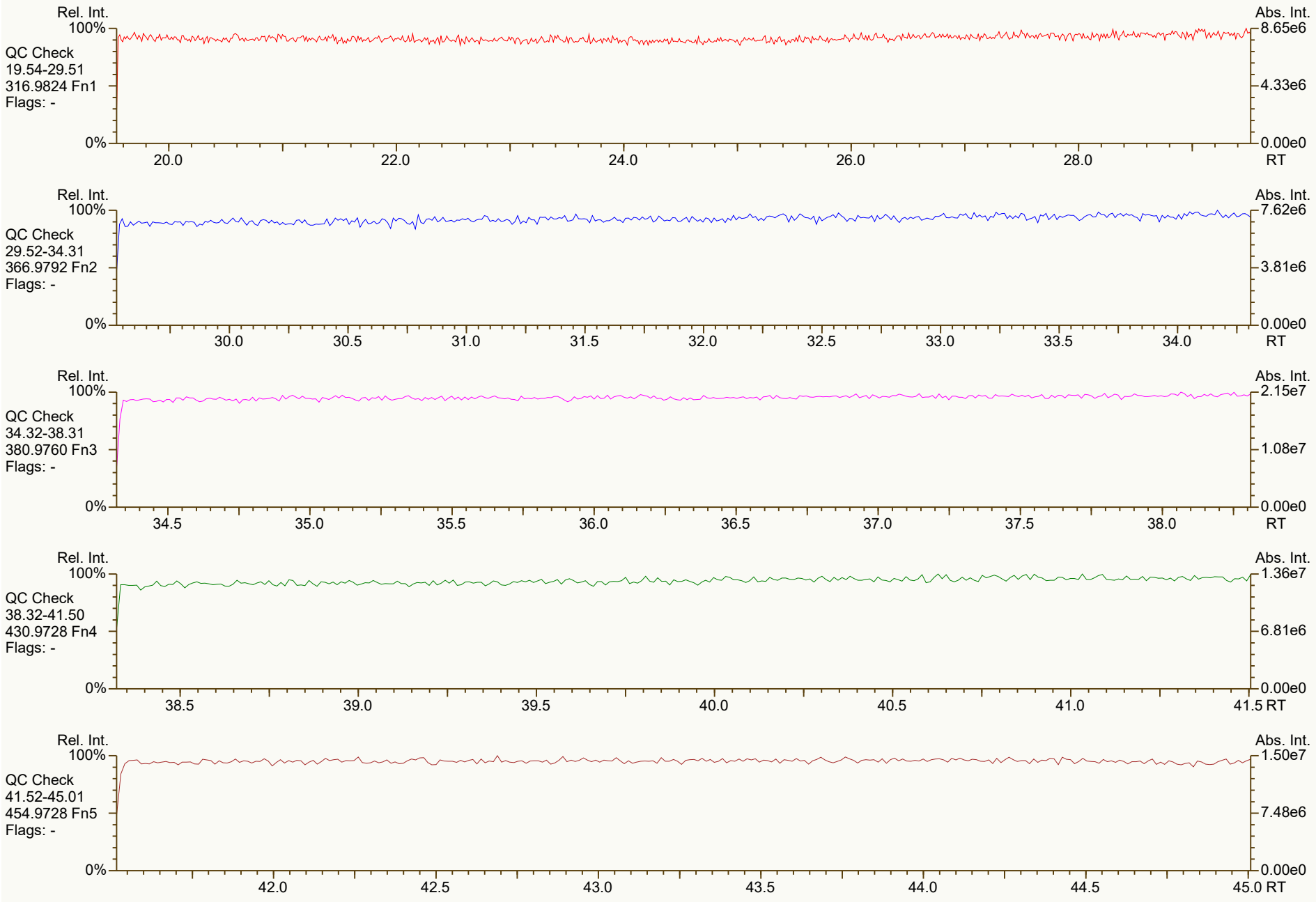

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.32e3
0%
1234678F
1.84e6*
39.34
1234789F
1.58e6*
40.71
Abs. Int.
7.05e5
3.52e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.94e3
0%
1234678F
1.81e6*
39.34
1234789F
1.51e6*
40.71
Abs. Int.
7.09e5
3.54e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.33e3
0%
ES 1234678F
8.52e6*
39.33
CS 1234689F
8.11e6
39.75
ES 1234789F
7.57e6*
40.70
Abs. Int.
3.29e6
1.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.75e3
0%
ES 1234678F
1.84e7*
39.33
CS 1234689F
1.81e7
39.75
ES 1234789F
1.60e7*
40.70
Abs. Int.
7.25e6
3.63e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.25e3
0%
Abs. Int.
4.24e3
2.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDF
2.22e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
0%
Abs. Int.
6.31e5
3.16e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.37e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
0%
Abs. Int.
6.61e5
3.31e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.37e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
6.50e6
3.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.00e3
2.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

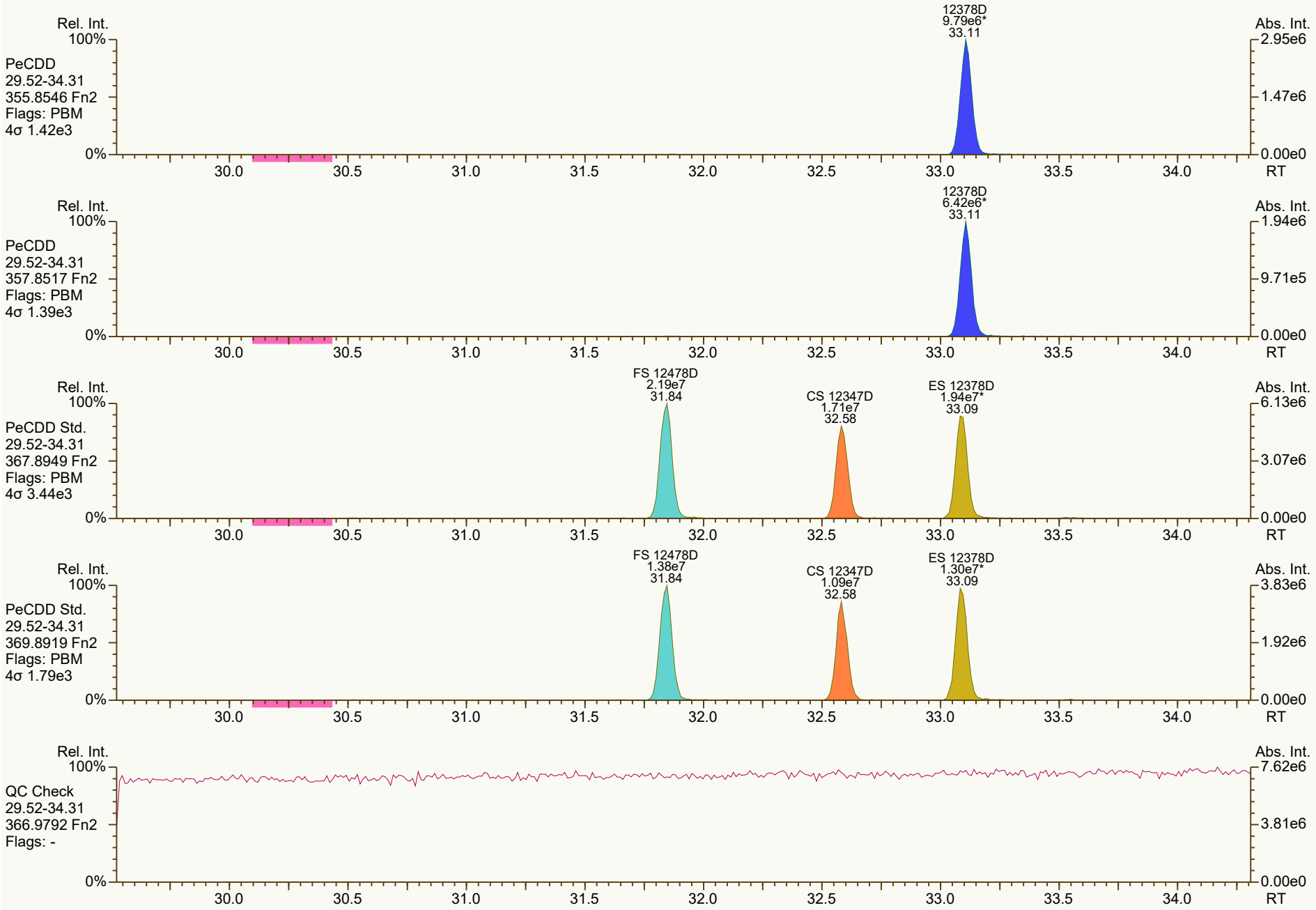
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 13:21 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_211110_DF_CB		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 507-474-MKW	
Sample ID: 23-672-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C07	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

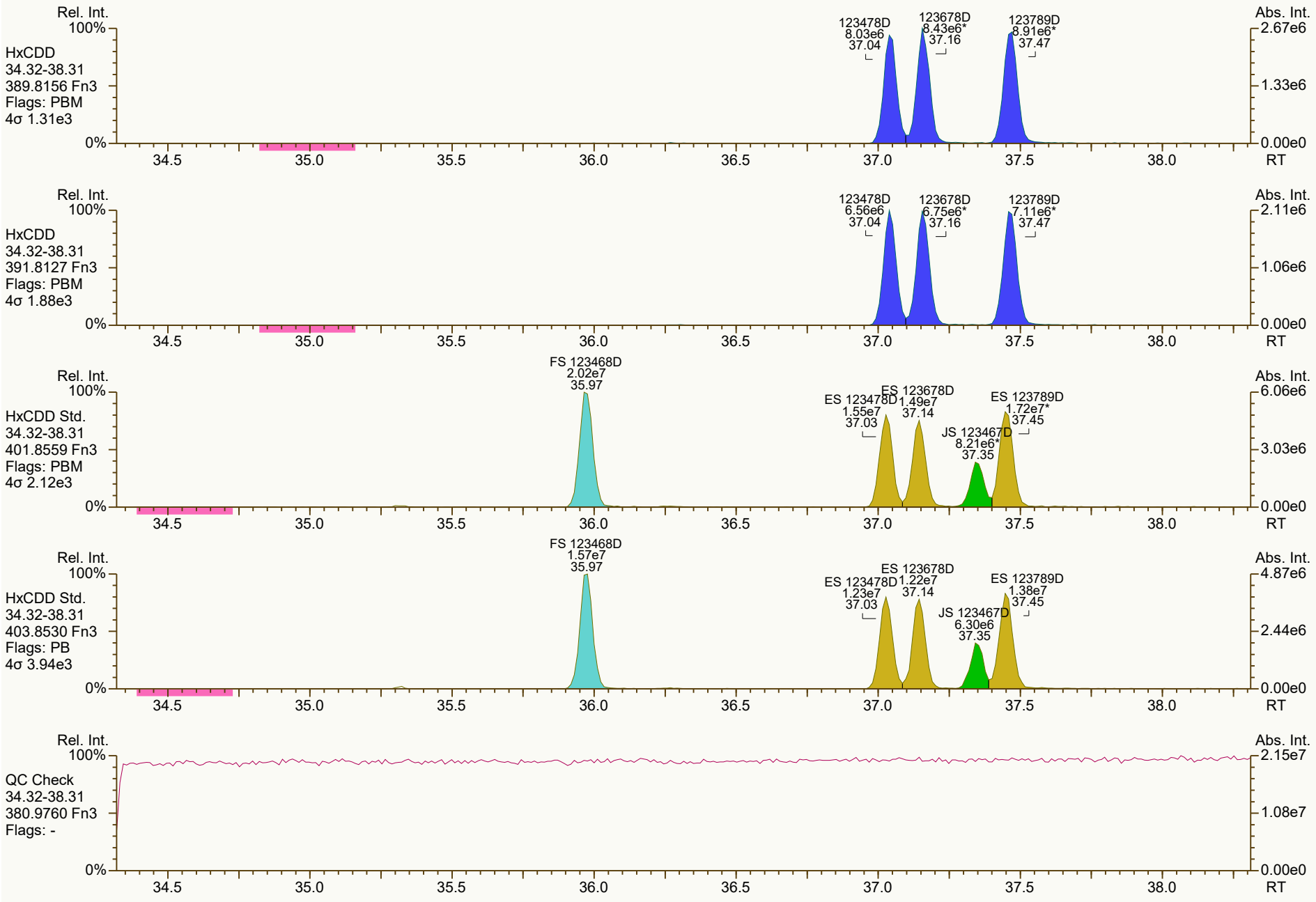
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 13:21 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211110_DF_CB	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 507-474-MKW
Sample ID: 23-672-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C07

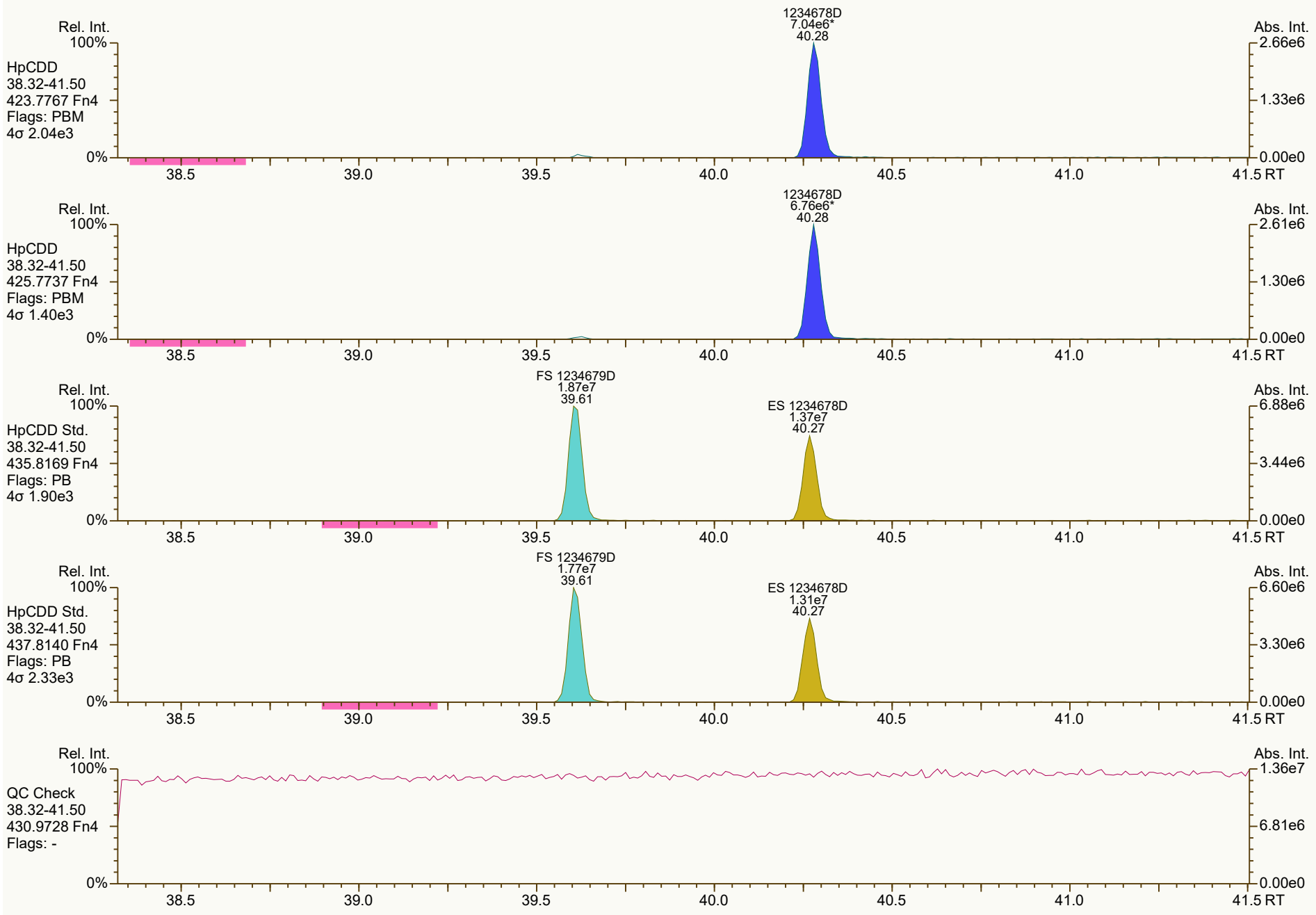
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%


Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.65e6
4.33e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.62e6
3.81e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.15e7
1.08e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.36e7
6.81e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.50e7
7.48e6
0.00e0

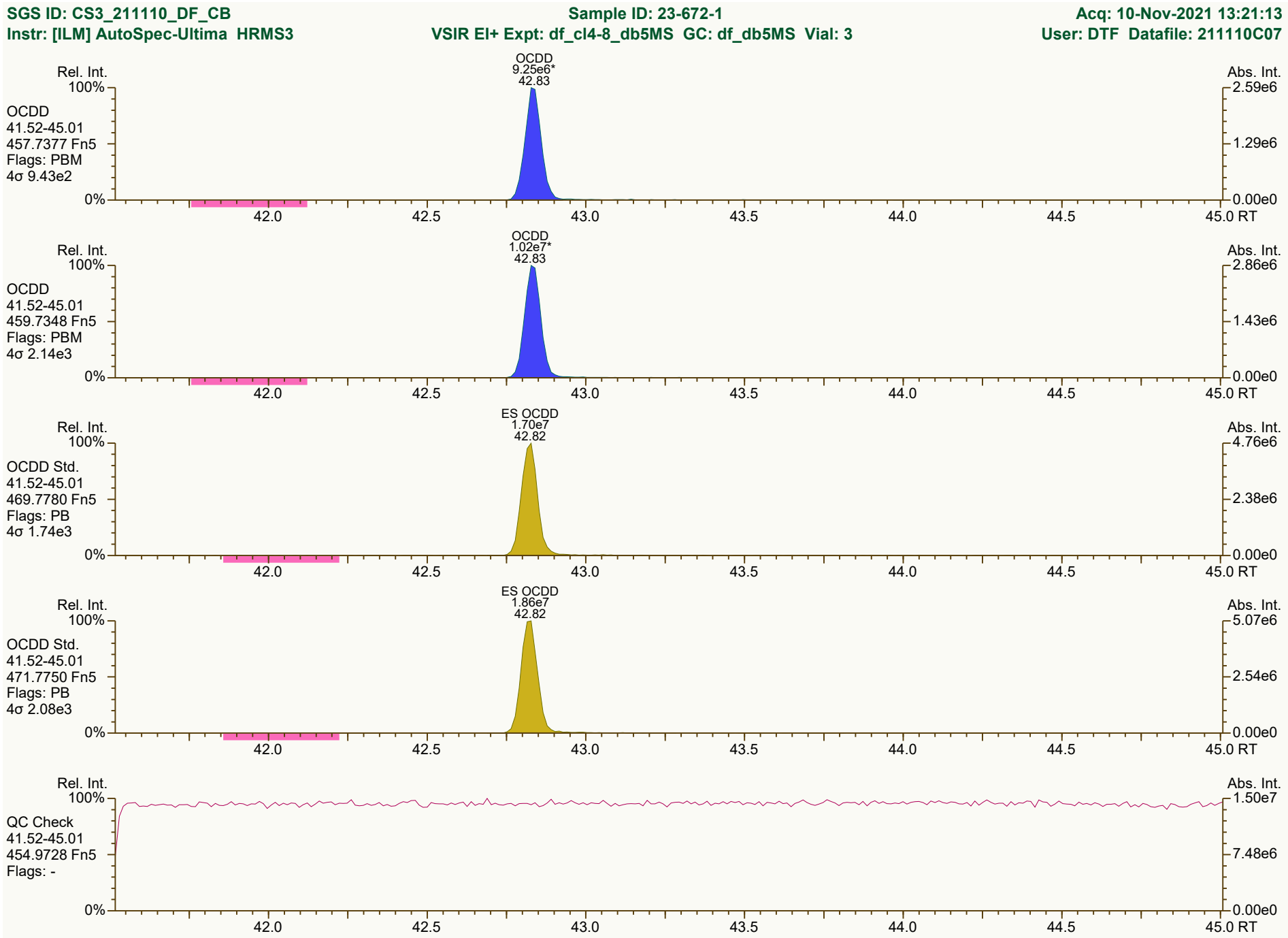

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
0%
2378D
1.99e6
27.60
Abs. Int.
4.35e5
2.17e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
0%
2378D
2.55e6
27.60
Abs. Int.
5.98e5
2.99e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
Abs. Int.
1.03e6
5.16e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
0%
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
Abs. Int.
4.80e6
2.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
0%
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.42e3
0%
12378D
9.79e6*
33.11
Abs. Int.
2.95e6
1.47e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.39e3
0%
12378D
6.42e6*
33.11
Abs. Int.
1.94e6
9.71e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 3.44e3
0%
FS 12478D
2.19e7
31.84
CS 12347D
1.71e7
32.58
ES 12378D
1.94e7*
33.09
Abs. Int.
6.13e6
3.07e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 1.79e3
0%
FS 12478D
1.38e7
31.84
CS 12347D
1.09e7
32.58
ES 12378D
1.30e7*
33.09
Abs. Int.
3.83e6
1.92e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.62e6
3.81e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.31e3
123478D
8.03e6
37.04
123678D
8.43e6*
37.16
123789D
8.91e6*
37.47
Abs. Int.
2.67e6
1.33e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.88e3
123478D
6.56e6
37.04
123678D
6.75e6*
37.16
123789D
7.11e6*
37.47
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.12e3
FS 123468D
2.02e7
35.97
ES 123478D
1.55e7
37.03
ES 123678D
1.49e7
37.14
JS 123467D
8.21e6*
37.35
ES 123789D
1.72e7*
37.45
Abs. Int.
6.06e6
3.03e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.94e3
FS 123468D
1.57e7
35.97
ES 123478D
1.23e7
37.03
ES 123678D
1.22e7
37.14
JS 123467D
6.30e6
37.35
ES 123789D
1.38e7
37.45
Abs. Int.
4.87e6
2.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.15e7
1.08e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

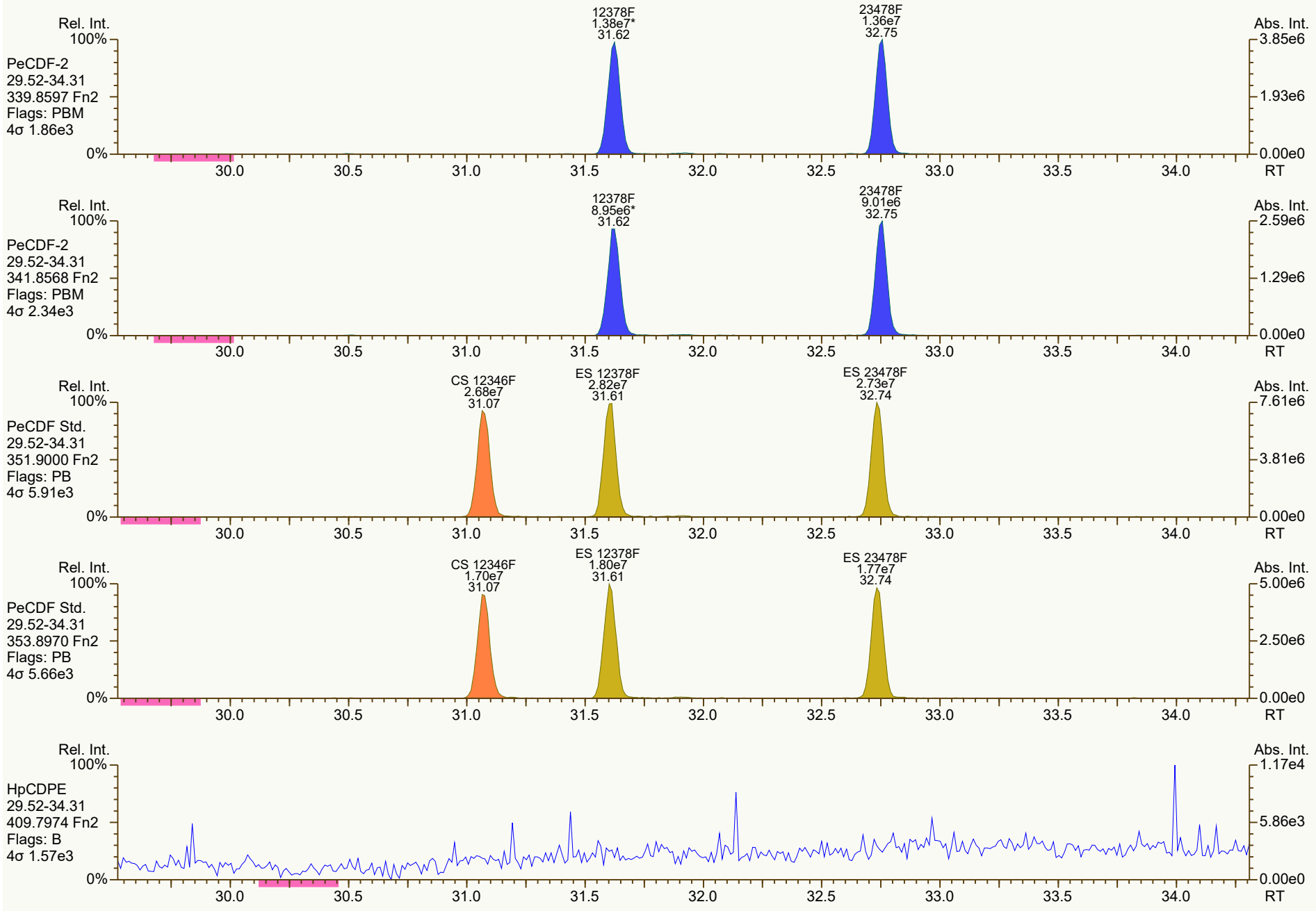

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.61
ES 1234678D
1.37e7
40.27
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.61
ES 1234678D
1.31e7
40.27
Abs. Int.
6.60e6
3.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07




Rel. Int.
100%
0%
Abs. Int.
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.54e3
2378F
2.58e6
26.68
5.81e5
2.91e5
0.00e0
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.71e3
2378F
3.32e6
26.68
7.66e5
3.83e5
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.69e4
AS 1368F
2.59e7
21.50
JS 1234F
2.21e7
25.25
ES 2378F
2.41e7
26.66
5.45e6
2.73e6
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.04e4
AS 1368F
3.25e7
21.50
JS 1234F
2.82e7
25.25
ES 2378F
3.03e7
26.66
6.76e6
3.38e6
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.54e3
6.84e3
3.42e3
20.0
22.0
24.0
26.0
28.0
RT

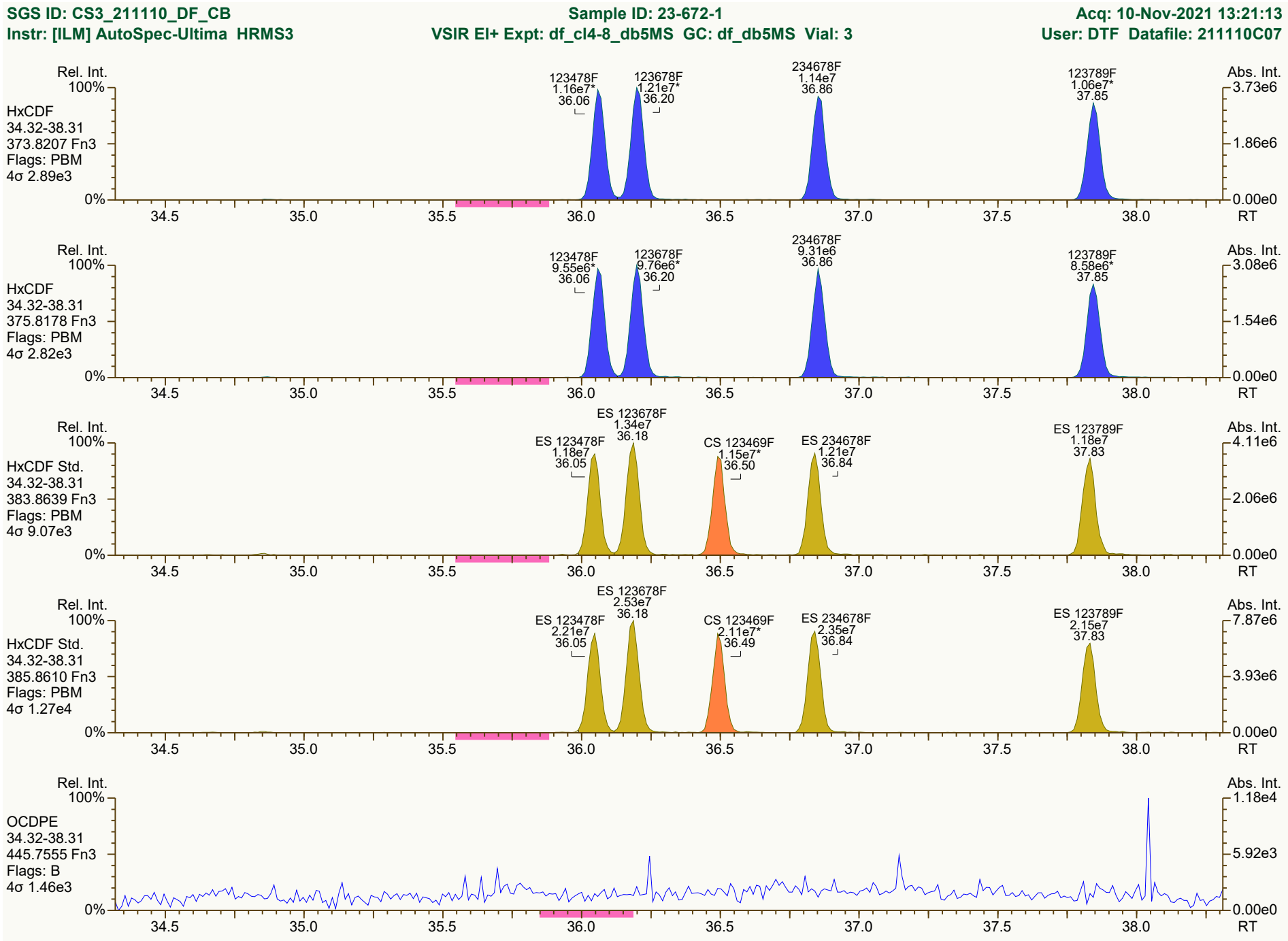

Rel. Int.
100%
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.76e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.65e6
4.33e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.86e3
12378F
1.38e7*
31.62
23478F
1.36e7
32.75
Abs. Int.
3.85e6
1.93e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.34e3
12378F
8.95e6*
31.62
23478F
9.01e6
32.75
Abs. Int.
2.59e6
1.29e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 5.91e3
CS 12346F
2.68e7
31.07
ES 12378F
2.82e7
31.61
ES 23478F
2.73e7
32.74
Abs. Int.
7.61e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 5.66e3
CS 12346F
1.70e7
31.07
ES 12378F
1.80e7
31.61
ES 23478F
1.77e7
32.74
Abs. Int.
5.00e6
2.50e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.57e3
Abs. Int.
1.17e4
5.86e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

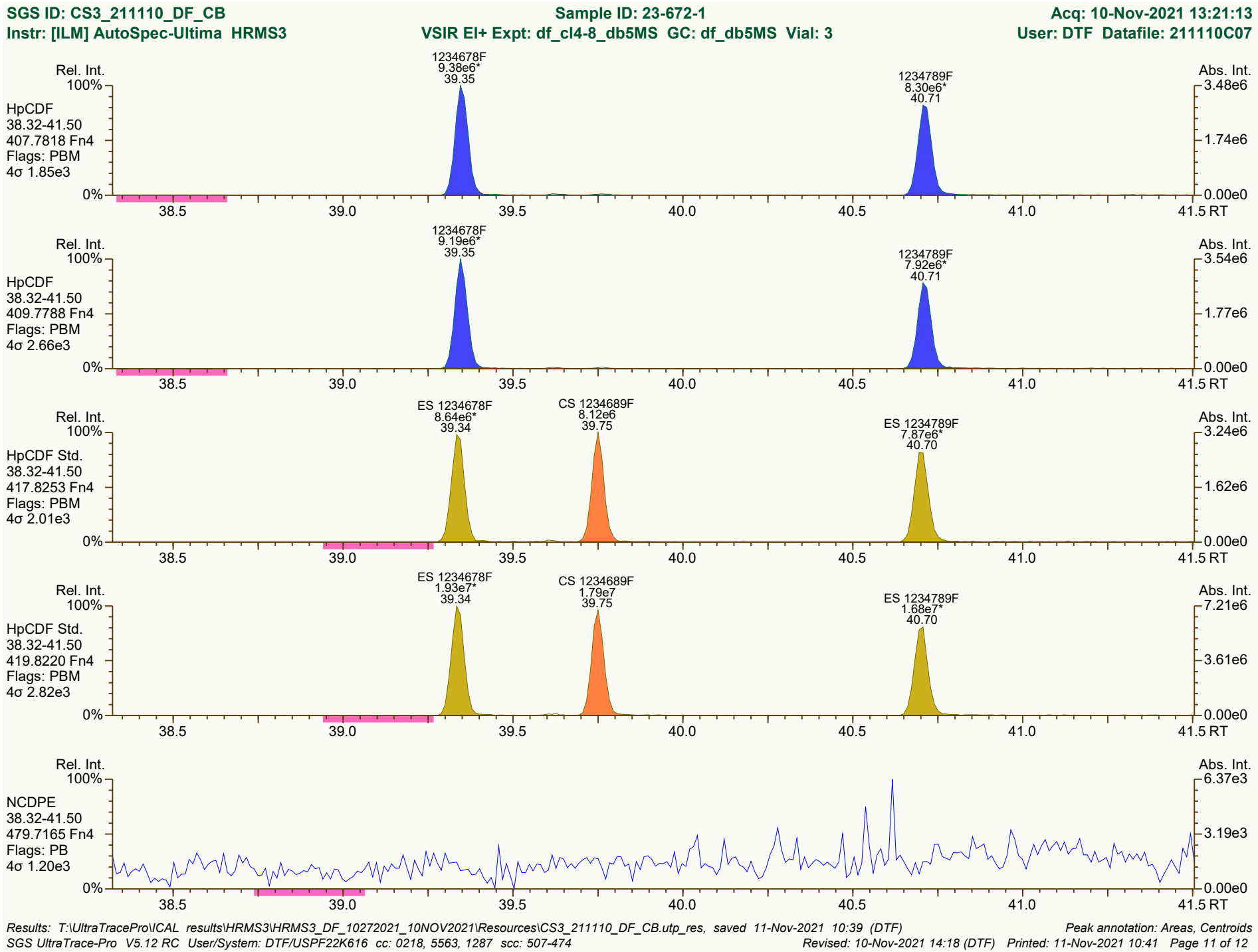
SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0985, 9027, 6556 scc: 507-474
Revised: 10-Nov-2021 14:18 (DTF) Printed: 11-Nov-2021 10:41 Page 10 of 12

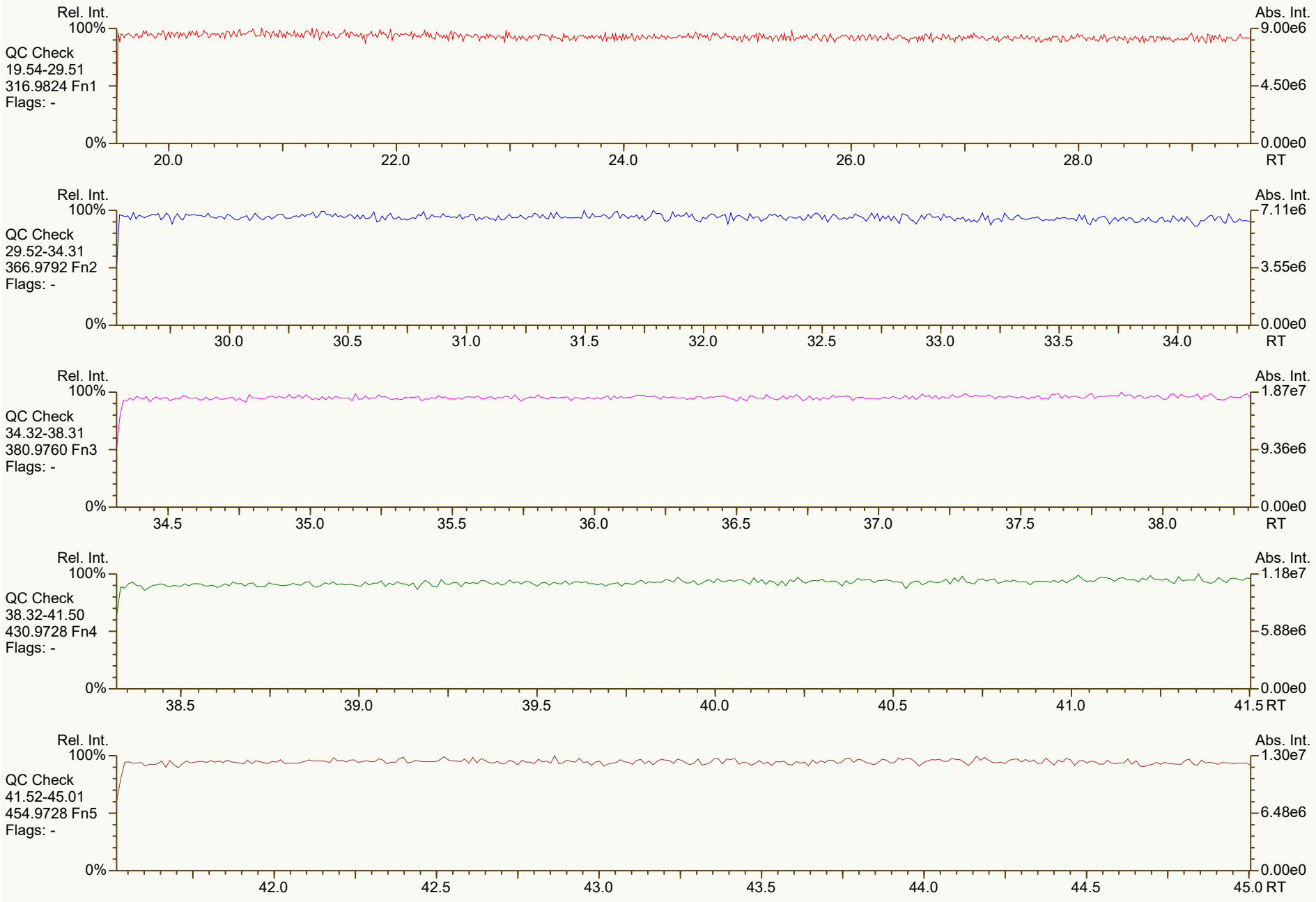

SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07
Rel. Int.
100%
0%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.85e3
1234678F
9.38e6*
39.35
1234789F
8.30e6*
40.71
Abs. Int.
3.48e6
1.74e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.66e3
1234678F
9.19e6*
39.35
1234789F
7.92e6*
40.71
3.54e6
1.77e6
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.01e3
ES 1234678F
8.64e6*
39.34
CS 1234689F
8.12e6
39.75
ES 1234789F
7.87e6*
40.70
3.24e6
1.62e6
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.82e3
ES 1234678F
1.93e7*
39.34
CS 1234689F
1.79e7
39.75
ES 1234789F
1.68e7*
40.70
7.21e6
3.61e6
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.20e3
6.37e3
3.19e3
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0218, 5563, 1287 scc: 507-474
Revised: 10-Nov-2021 14:18 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

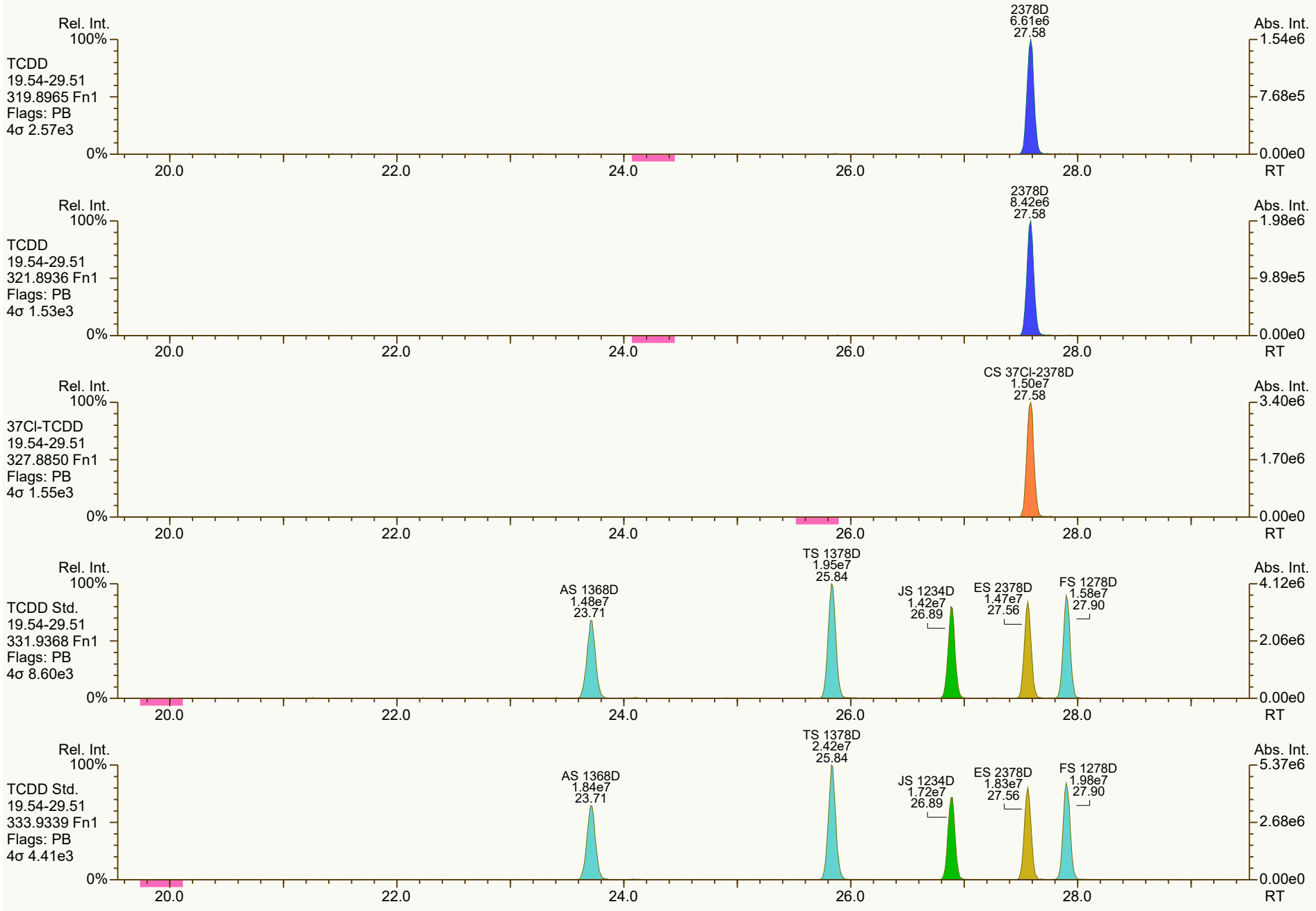

OCDF
1.15e7*
43.00
Rel. Int.
Abs. Int.
100%
0%
3.25e6
1.62e6
0.00e0
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
1.28e7*
43.00
3.53e6
1.76e6
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
ES OCDF
2.21e7*
42.99
6.08e6
3.04e6
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
ES OCDF
2.39e7*
42.99
6.65e6
3.32e6
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
4.82e3
2.41e3
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3

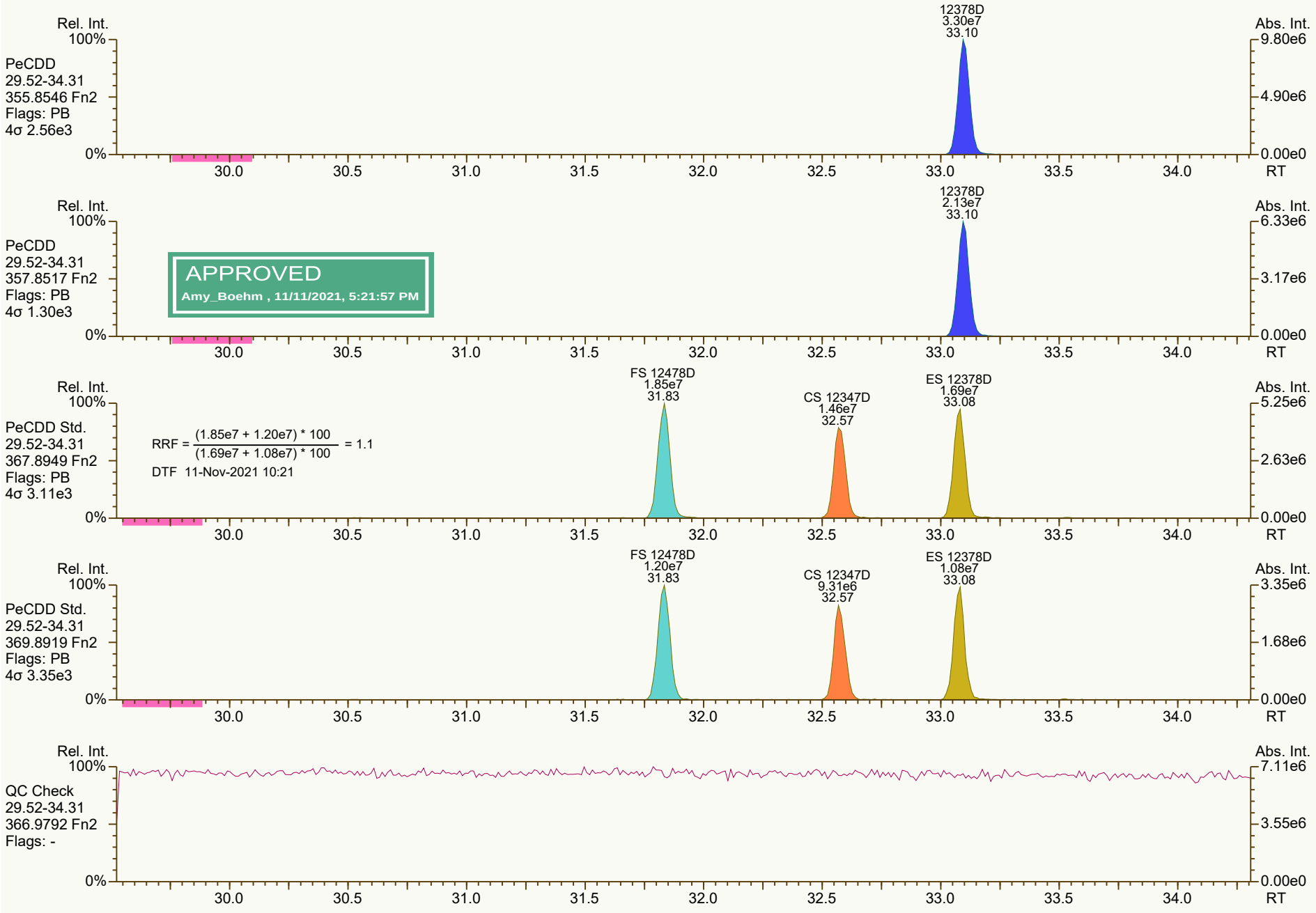
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:07 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS4_211110_DF_CA	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 855-576-PGM
Sample ID: 25-5-4	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C08

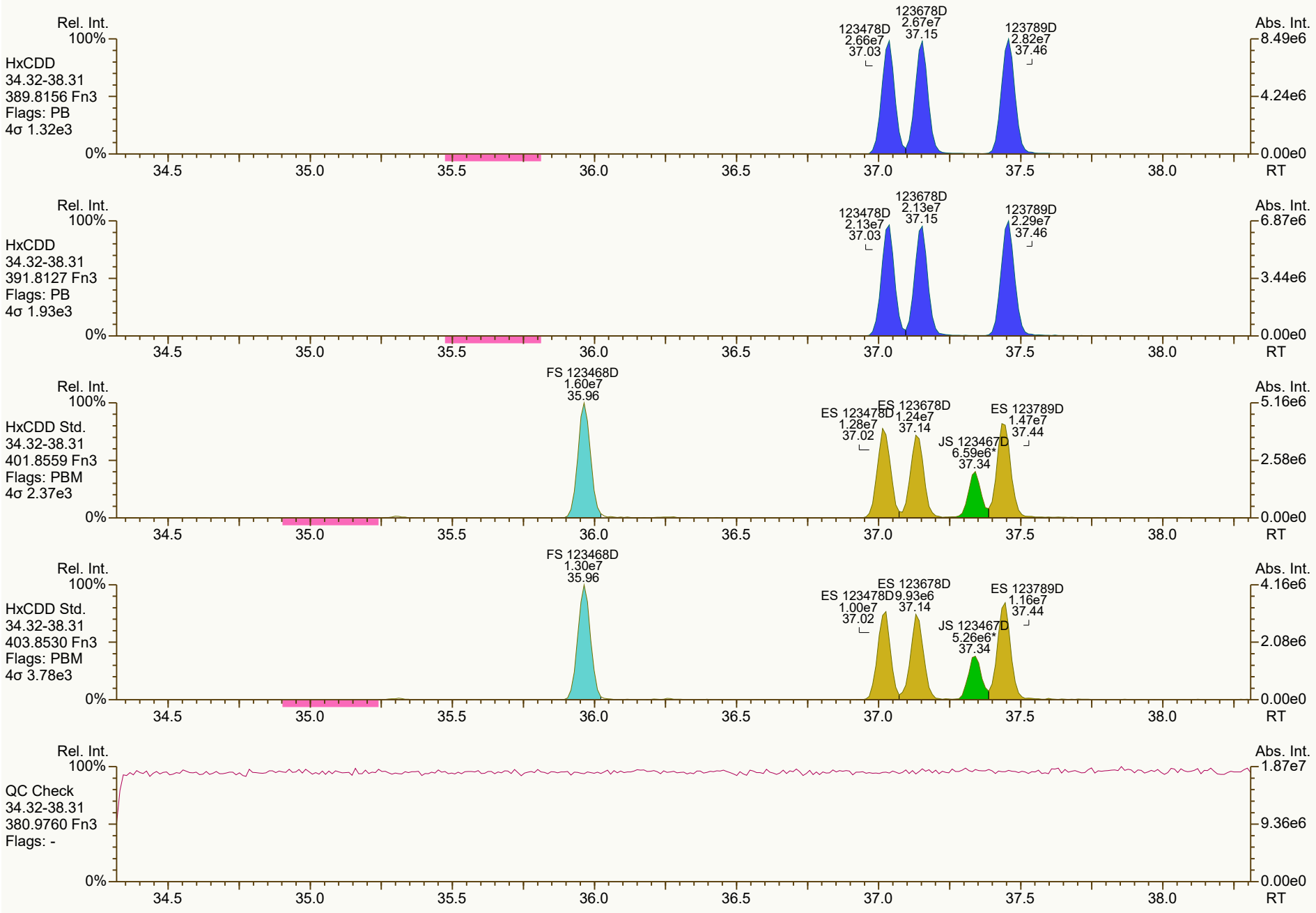
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

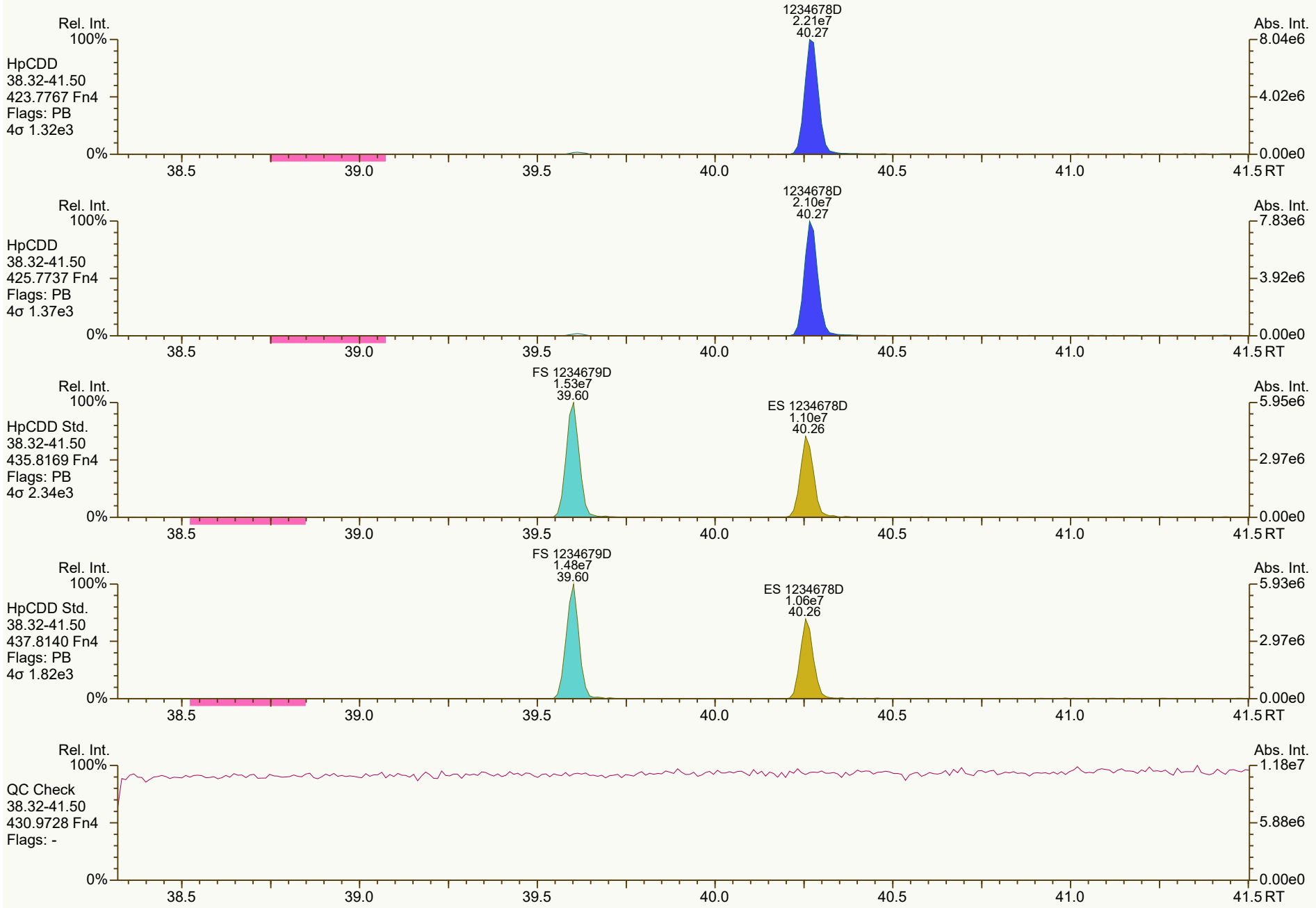
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

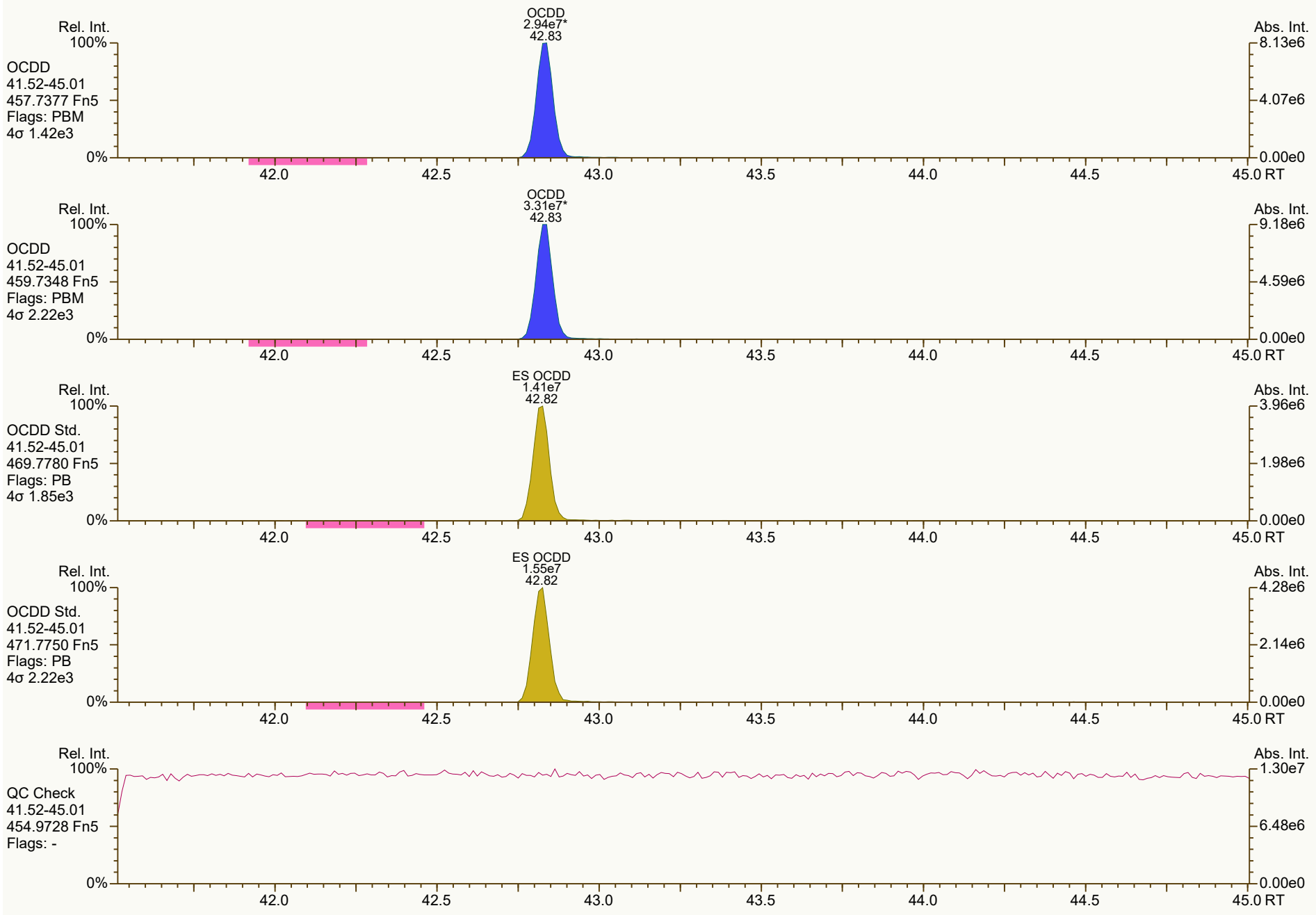

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.00e6
4.50e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.11e6
3.55e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.87e7
9.36e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.18e7
5.88e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.30e7
6.48e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
0%
2378D
6.61e6
27.58
Abs. Int.
1.54e6
7.68e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
0%
2378D
8.42e6
27.58
Abs. Int.
1.98e6
9.89e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
0%
CS 37Cl-2378D
1.50e7
27.58
Abs. Int.
3.40e6
1.70e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
0%
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
Abs. Int.
4.12e6
2.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
0%
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
Abs. Int.
5.37e6
2.68e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PB
4σ 2.56e3
12378D
3.30e7
33.10
Abs. Int.
9.80e6
4.90e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PB
4σ 1.30e3
12378D
2.13e7
33.10
6.33e6
3.17e6
APPROVED
Amy_Boehm , 11/11/2021, 5:21:57 PM
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 3.11e3
RRF = (1.85e7 + 1.20e7) * 100 / (1.69e7 + 1.08e7) * 100 = 1.1
DTF 11-Nov-2021 10:21
FS 12478D
1.85e7
31.83
CS 12347D
1.46e7
32.57
ES 12378D
1.69e7
33.08
5.25e6
2.63e6
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 3.35e3
FS 12478D
1.20e7
31.83
CS 12347D
9.31e6
32.57
ES 12378D
1.08e7
33.08
3.35e6
1.68e6
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
7.11e6
3.55e6


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123478D
2.66e7
37.03
123678D
2.67e7
37.15
123789D
2.82e7
37.46
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123478D
2.13e7
37.03
123678D
2.13e7
37.15
123789D
2.29e7
37.46
Abs. Int.
6.87e6
3.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D
1.60e7
35.96
ES 123478D
1.28e7
37.02
ES 123678D
1.24e7
37.14
JS 123467D
6.59e6*
37.34
ES 123789D
1.47e7
37.44
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D
1.30e7
35.96
ES 123478D
1.00e7
37.02
ES 123678D
9.93e6
37.14
JS 123467D
5.26e6*
37.34
ES 123789D
1.16e7
37.44
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.87e7
9.36e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

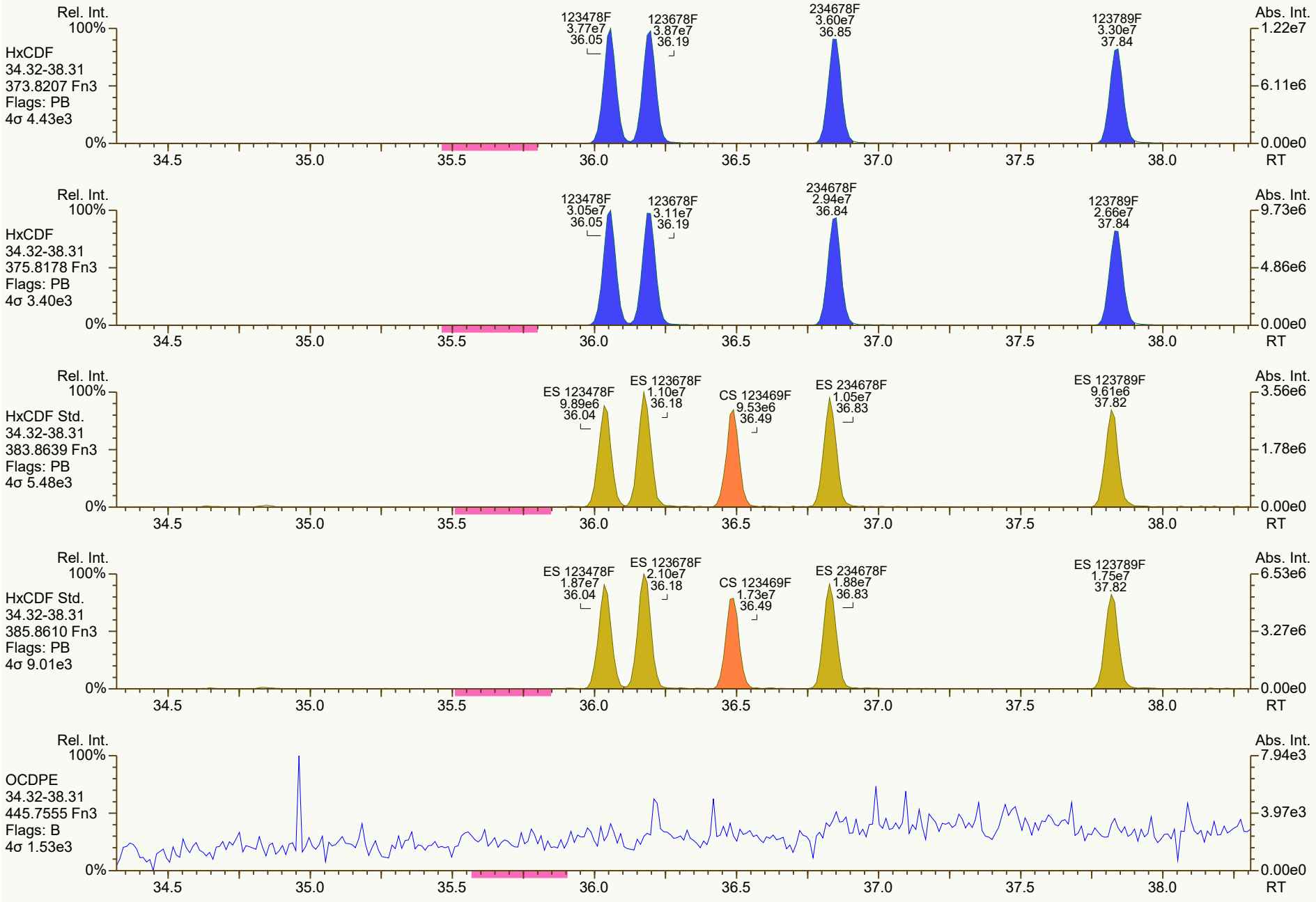

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
1234678D
2.21e7
40.27
Abs. Int.
8.04e6
4.02e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
1234678D
2.10e7
40.27
Abs. Int.
7.83e6
3.92e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
Abs. Int.
5.95e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
Abs. Int.
5.93e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.18e7
5.88e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

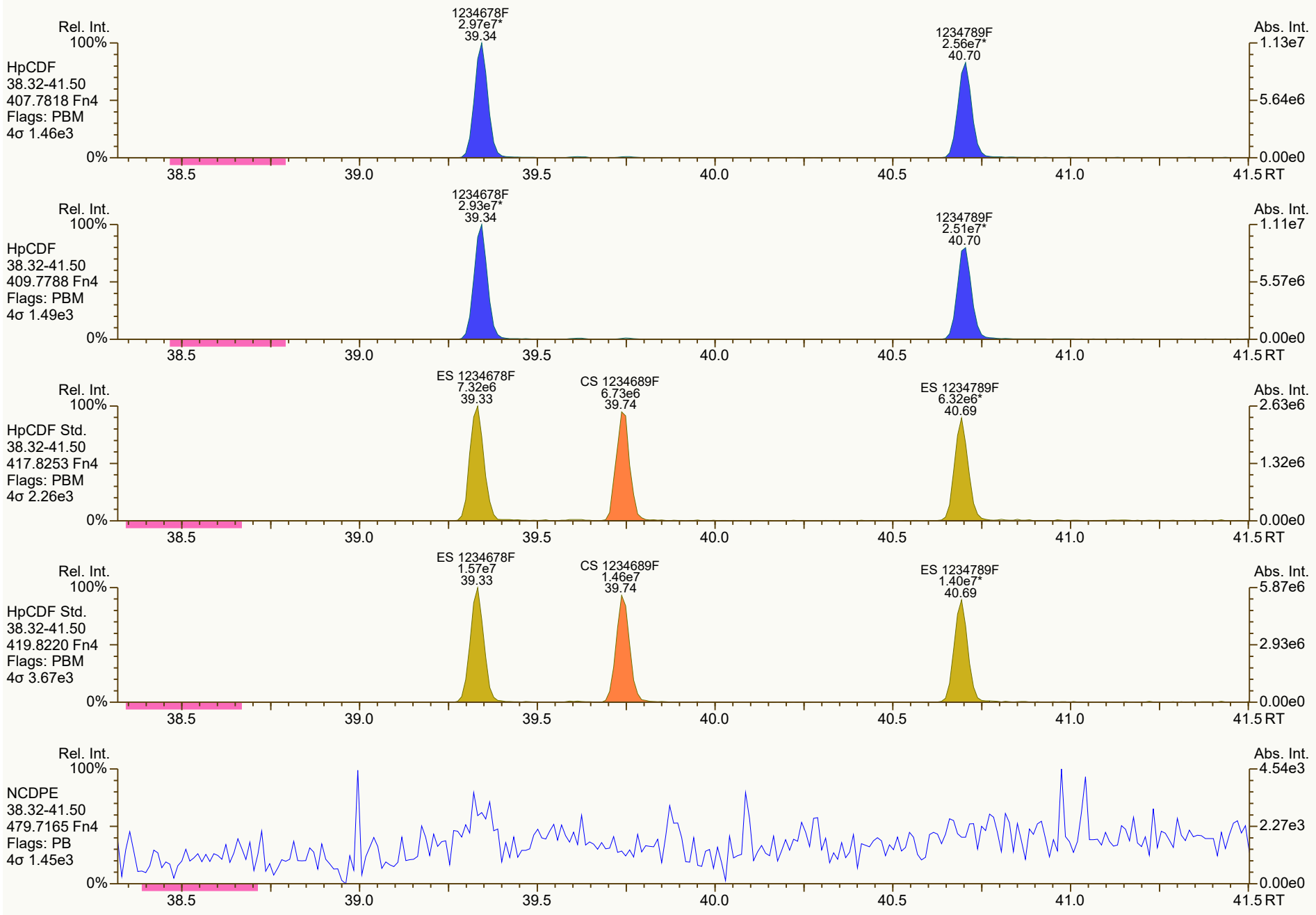

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.42e3
0%
OCDD
2.94e7*
42.83
Abs. Int.
8.13e6
4.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.22e3
0%
OCDD
3.31e7*
42.83
Abs. Int.
9.18e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
ES OCDD
1.41e7
42.82
Abs. Int.
3.96e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.22e3
0%
ES OCDD
1.55e7
42.82
Abs. Int.
4.28e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

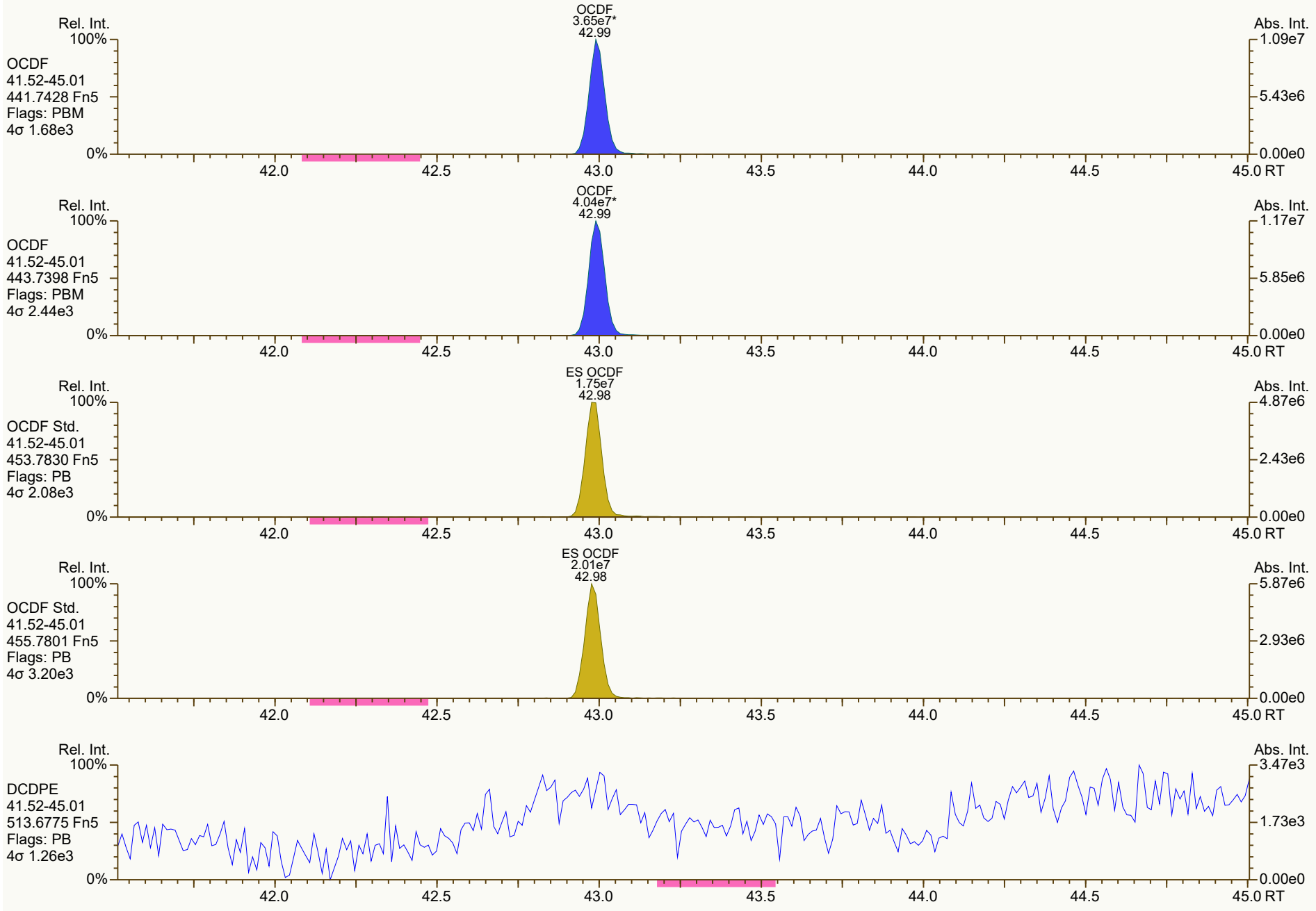

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
0%
2378F
8.36e6
26.67
Abs. Int.
1.89e6
9.43e5
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
0%
2378F
1.07e7
26.67
Abs. Int.
2.41e6
1.20e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
0%
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7*
25.23
ES 2378F
2.05e7
26.65
Abs. Int.
4.47e6
2.23e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
0%
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7*
25.23
ES 2378F
2.57e7
26.65
Abs. Int.
5.68e6
2.84e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
0%
Abs. Int.
9.44e3
4.72e3
0.00e0
RT


Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.83e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.94e3
4.47e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.00e6
4.50e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
Abs. Int.
1.30e7
6.48e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
Abs. Int.
8.36e6
4.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12346F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
Abs. Int.
6.66e6
3.33e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12346F
1.46e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
Abs. Int.
4.36e6
2.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
Abs. Int.
7.51e3
3.76e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 4.43e3
123478F
3.77e7
36.05
123678F
3.87e7
36.19
234678F
3.60e7
36.85
123789F
3.30e7
37.84
Abs. Int.
1.22e7
6.11e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 3.40e3
123478F
3.05e7
36.05
123678F
3.11e7
36.19
234678F
2.94e7
36.84
123789F
2.66e7
37.84
Abs. Int.
9.73e6
4.86e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.48e3
ES 123478F
9.89e6
36.04
ES 123678F
1.10e7
36.18
CS 123469F
9.53e6
36.49
ES 234678F
1.05e7
36.83
ES 123789F
9.61e6
37.82
Abs. Int.
3.56e6
1.78e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 9.01e3
ES 123478F
1.87e7
36.04
ES 123678F
2.10e7
36.18
CS 123469F
1.73e7
36.49
ES 234678F
1.88e7
36.83
ES 123789F
1.75e7
37.82
Abs. Int.
6.53e6
3.27e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.53e3
Abs. Int.
7.94e3
3.97e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
0%
1234678F
2.97e7*
39.34
1234789F
2.56e7*
40.70
Abs. Int.
1.13e7
5.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
0%
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
Abs. Int.
1.11e7
5.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
0%
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
Abs. Int.
2.63e6
1.32e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
0%
ES 1234678F
1.57e7
39.33
CS 1234689F
1.46e7
39.74
ES 1234789F
1.40e7*
40.69
Abs. Int.
5.87e6
2.93e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
0%
Abs. Int.
4.54e3
2.27e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

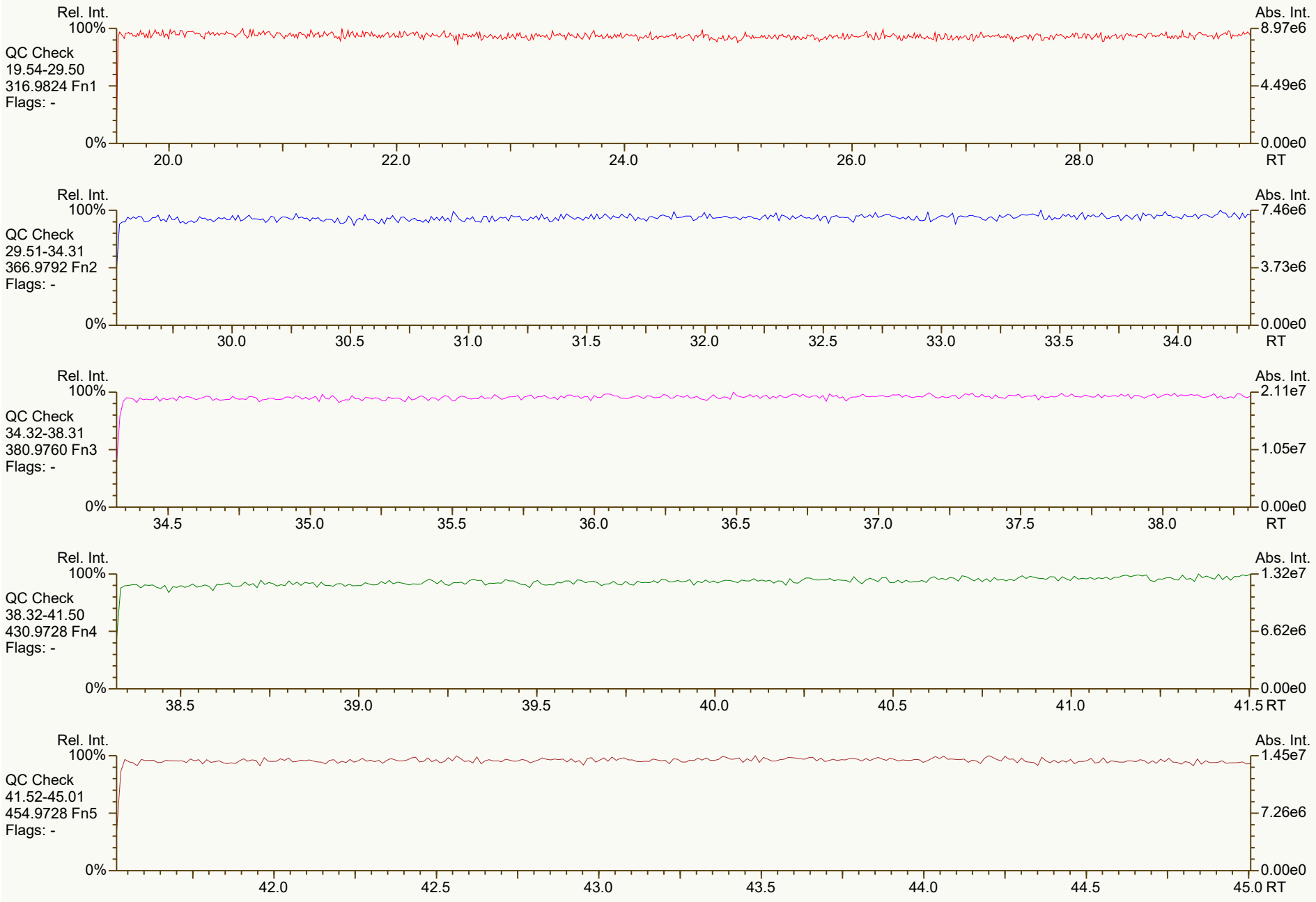

OCDF
3.65e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.04e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.75e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
0%
Abs. Int.
4.87e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
0%
Abs. Int.
5.87e6
2.93e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
0%
Abs. Int.
3.47e3
1.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

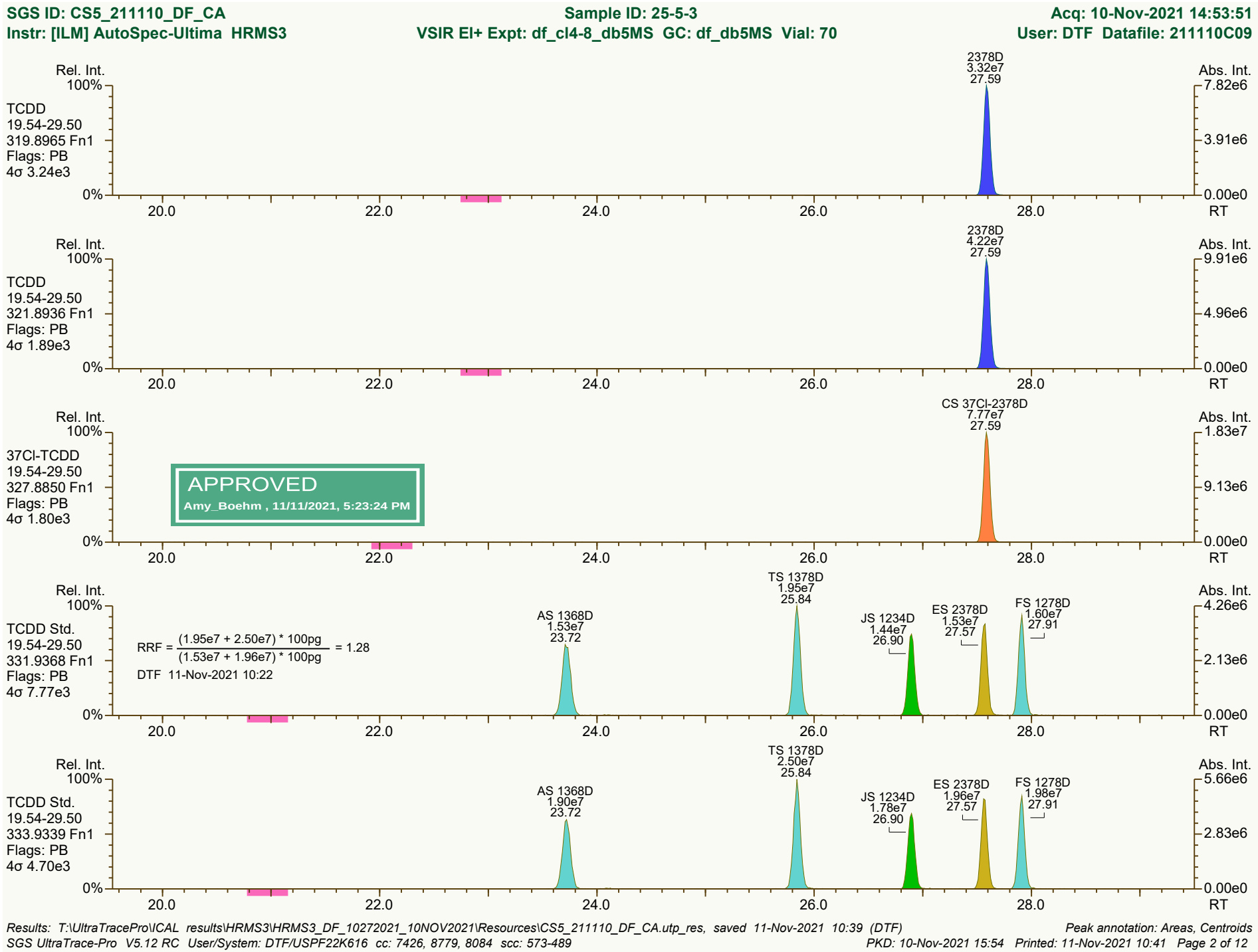
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

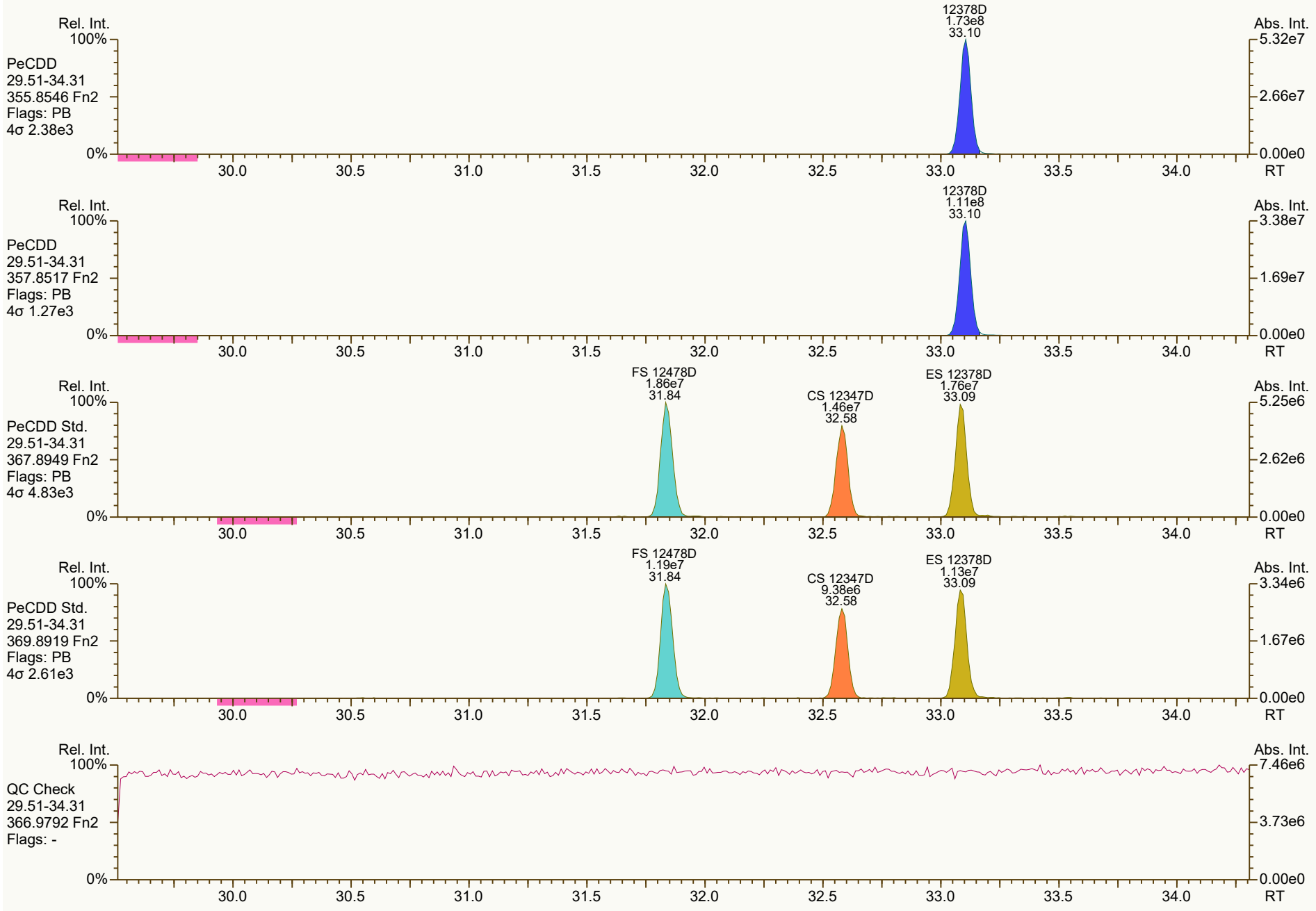
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

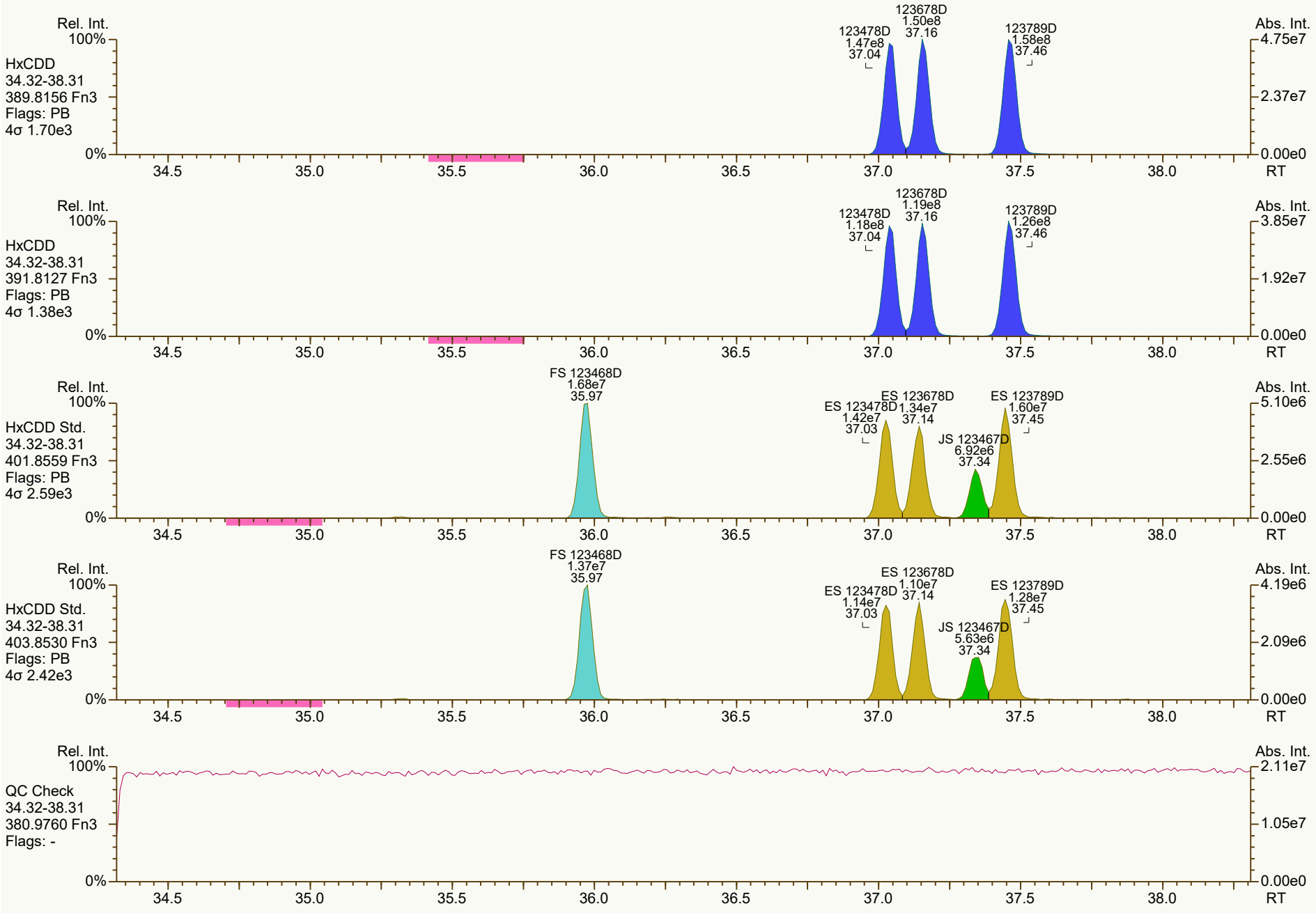
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

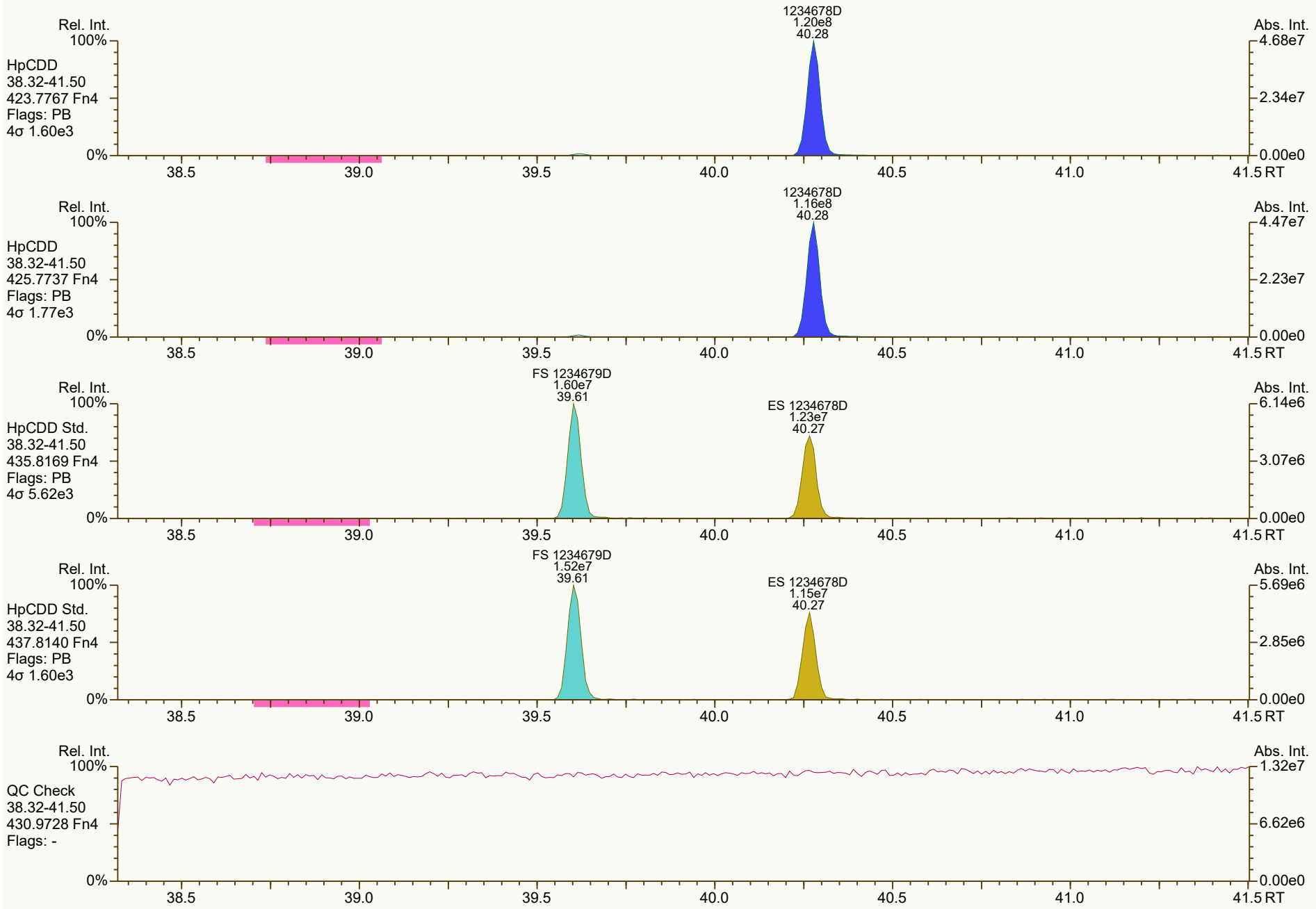
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

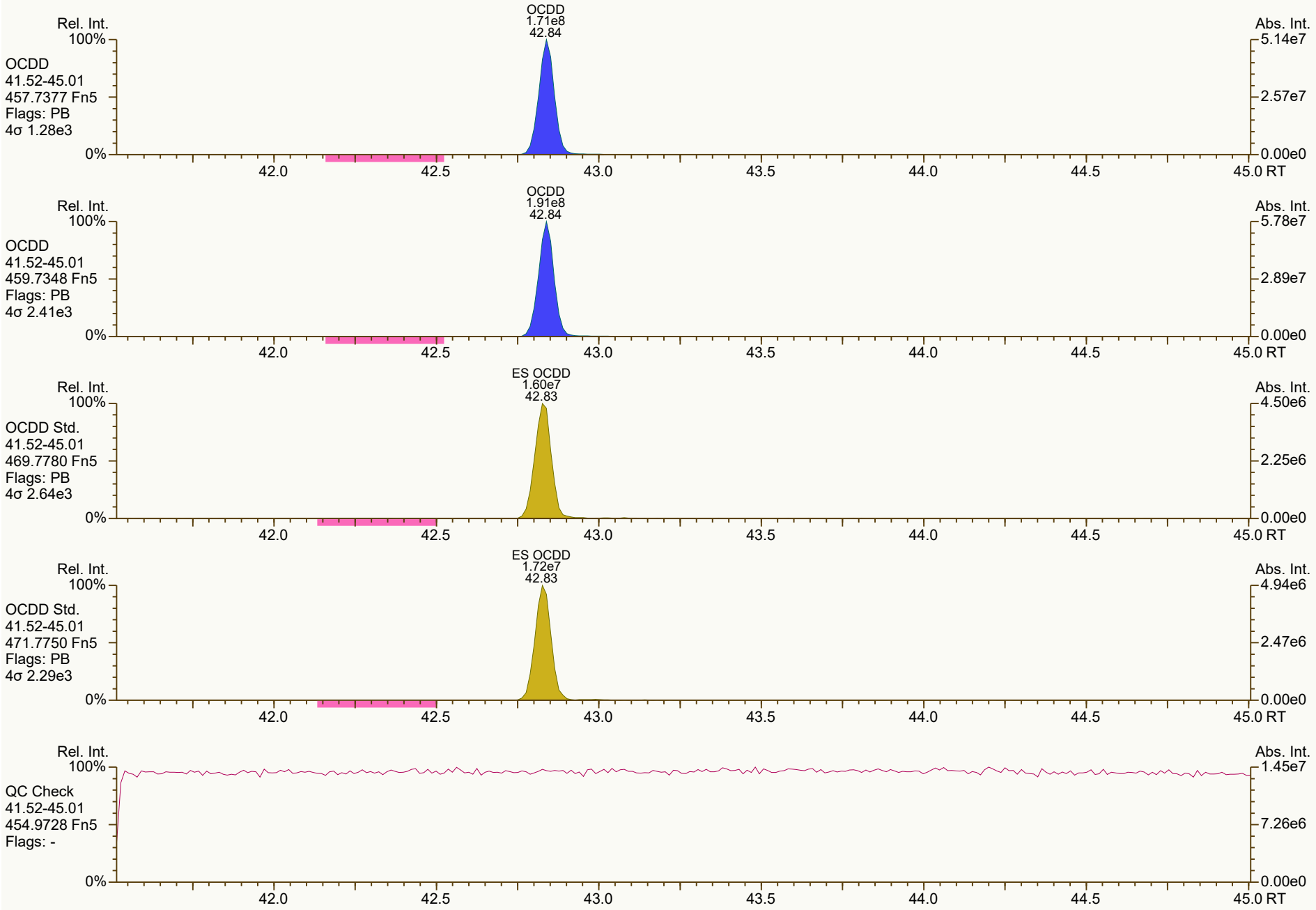

Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
RT
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
7.46e6
3.73e6
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.11e7
1.05e7
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.32e7
6.62e6
38.5
39.0
39.5
40.0
40.5
41.0
41.5
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6
42.0
42.5
43.0
43.5
44.0
44.5
45.0


SGS ID: CS5_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-5-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
Acq: 10-Nov-2021 14:53:51
User: DTF Datafile: 211110C09
Rel. Int.
100%
0%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PB
4σ 3.24e3
2378D
3.32e7
27.59
Abs. Int.
7.82e6
3.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
TCDD
19.54-29.50
321.8936 Fn1
Flags: PB
4σ 1.89e3
2378D
4.22e7
27.59
9.91e6
4.96e6
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: PB
4σ 1.80e3
CS 37Cl-2378D
7.77e7
27.59
1.83e7
9.13e6
APPROVED
Amy_Boehm , 11/11/2021, 5:23:24 PM
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 7.77e3
RRF = (1.95e7 + 2.50e7) * 100pg / (1.53e7 + 1.96e7) * 100pg = 1.28
DTF 11-Nov-2021 10:22
AS 1368D
1.53e7
23.72
TS 1378D
1.95e7
25.84
JS 1234D
1.44e7
26.90
ES 2378D
1.53e7
27.57
FS 1278D
1.60e7
27.91
4.26e6
2.13e6
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.70e3
AS 1368D
1.90e7
23.72
TS 1378D
2.50e7
25.84
JS 1234D
1.78e7
26.90
ES 2378D
1.96e7
27.57
FS 1278D
1.98e7
27.91
5.66e6
2.83e6
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7426, 8779, 8084 scc: 573-489
PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 2 of 12


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
0%
12378D
1.73e8
33.10
Abs. Int.
5.32e7
2.66e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
0%
12378D
1.11e8
33.10
Abs. Int.
3.38e7
1.69e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
0%
FS 12478D
1.86e7
31.84
CS 12347D
1.46e7
32.58
ES 12378D
1.76e7
33.09
Abs. Int.
5.25e6
2.62e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
0%
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
Abs. Int.
3.34e6
1.67e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.46e6
3.73e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

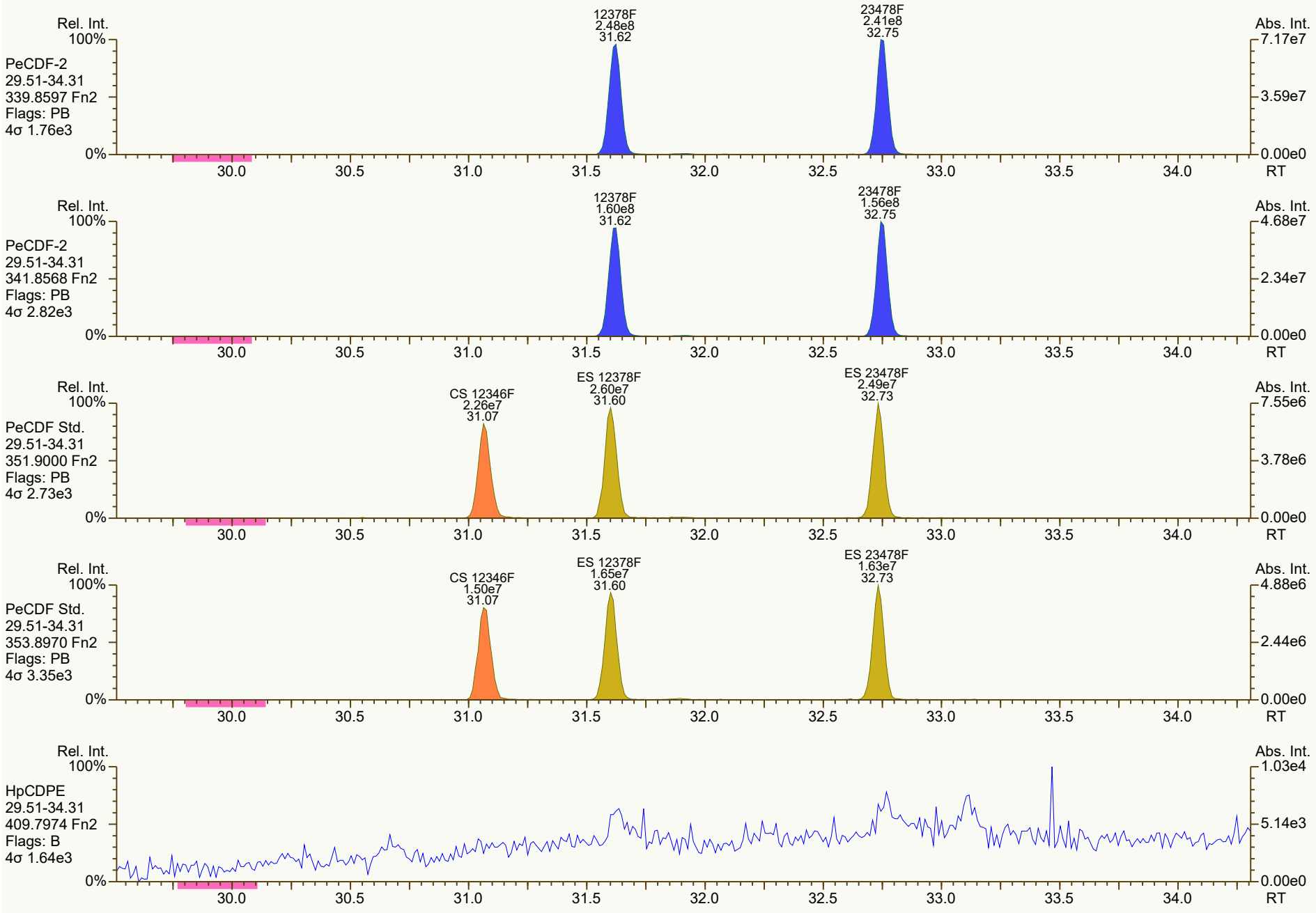

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
123478D
1.47e8
37.04
123678D
1.50e8
37.16
123789D
1.58e8
37.46
Abs. Int.
4.75e7
2.37e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
123478D
1.18e8
37.04
123678D
1.19e8
37.16
123789D
1.26e8
37.46
Abs. Int.
3.85e7
1.92e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
FS 123468D
1.68e7
35.97
ES 123478D
1.42e7
37.03
ES 123678D
1.34e7
37.14
JS 123467D
6.92e6
37.34
ES 123789D
1.60e7
37.45
Abs. Int.
5.10e6
2.55e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
FS 123468D
1.37e7
35.97
ES 123478D
1.14e7
37.03
ES 123678D
1.10e7
37.14
JS 123467D
5.63e6
37.34
ES 123789D
1.28e7
37.45
Abs. Int.
4.19e6
2.09e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.11e7
1.05e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
1.20e8
40.28
Abs. Int.
4.68e7
2.34e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.77e3
1234678D
1.16e8
40.28
Abs. Int.
4.47e7
2.23e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 5.62e3
FS 1234679D
1.60e7
39.61
ES 1234678D
1.23e7
40.27
Abs. Int.
6.14e6
3.07e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.60e3
FS 1234679D
1.52e7
39.61
ES 1234678D
1.15e7
40.27
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.32e7
6.62e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
1.71e8
42.84
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
0%
Abs. Int.
5.14e7
2.57e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e8
42.84
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
5.78e7
2.89e7
ES OCDD
1.60e7
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
4.50e6
2.25e6
ES OCDD
1.72e7
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
4.94e6
2.47e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6

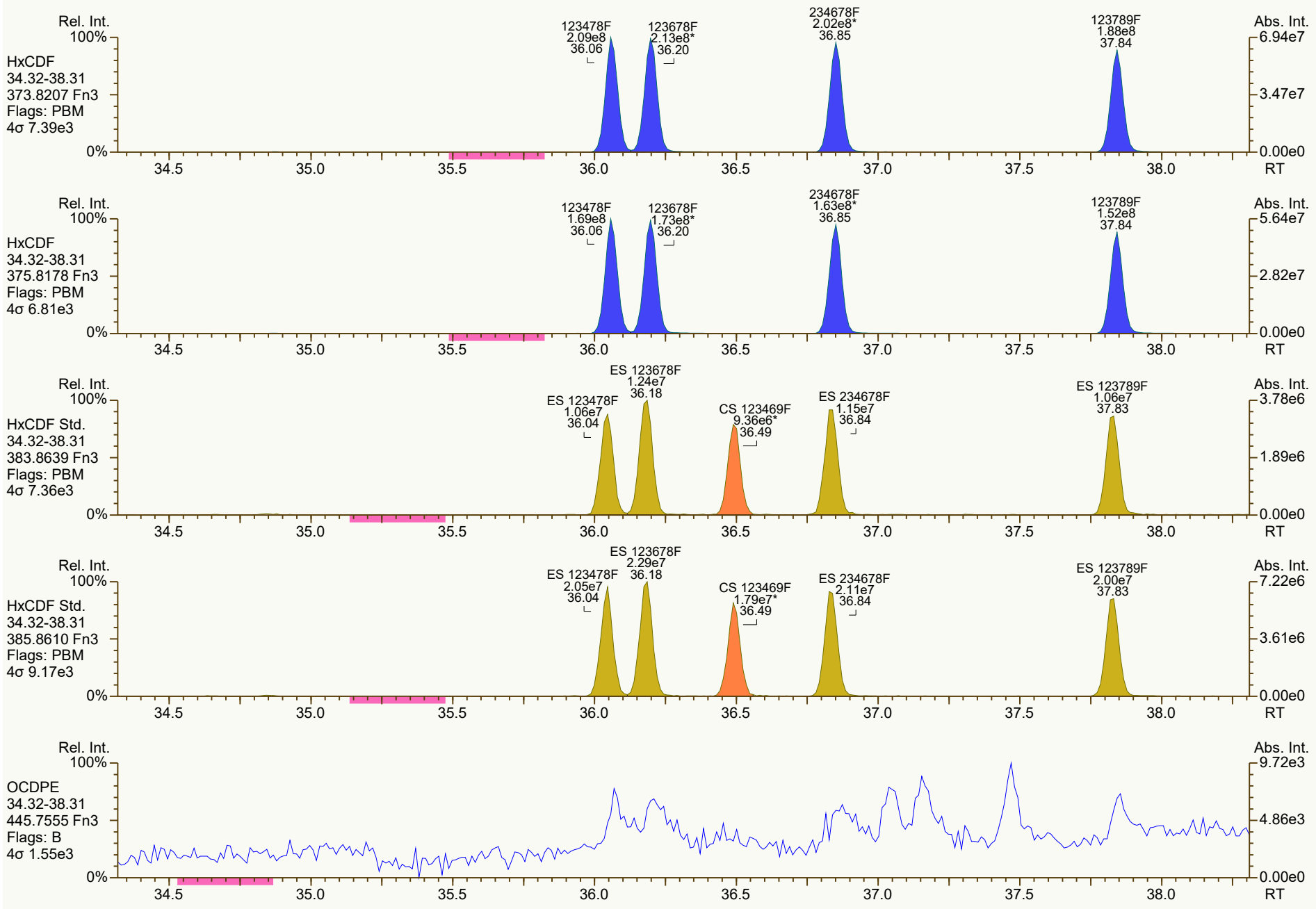

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
0%
2378F
4.22e7
26.68
Abs. Int.
9.59e6
4.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
0%
2378F
5.40e7
26.68
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
0%
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
Abs. Int.
4.70e6
2.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
Abs. Int.
5.78e6
2.89e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
0%
Abs. Int.
7.47e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.43e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 2.08e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
0%
12378F
2.48e8
31.62
23478F
2.41e8
32.75
Abs. Int.
7.17e7
3.59e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
0%
12378F
1.60e8
31.62
23478F
1.56e8
32.75
Abs. Int.
4.68e7
2.34e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
0%
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
Abs. Int.
7.55e6
3.78e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
0%
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.63e7
32.73
Abs. Int.
4.88e6
2.44e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

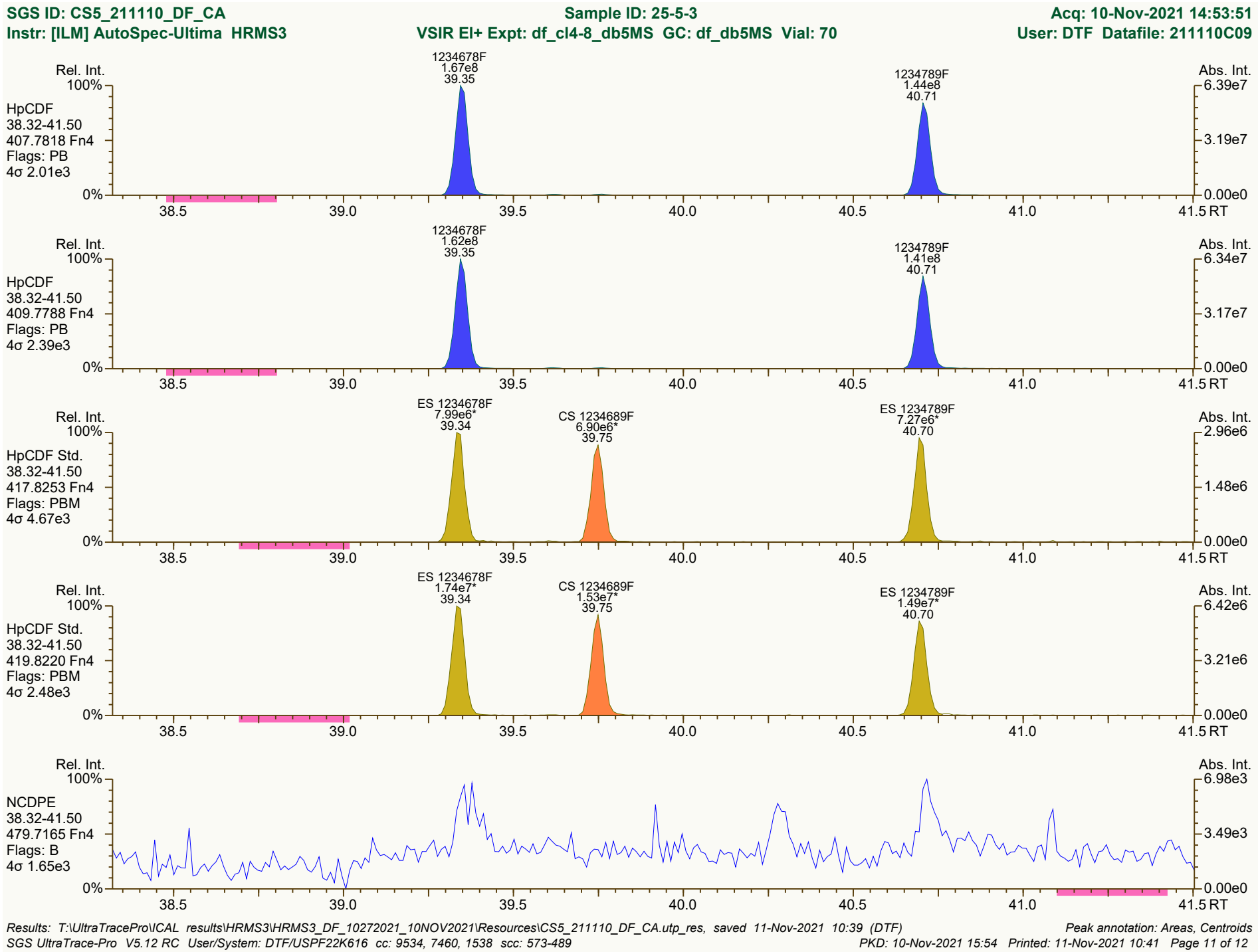
SGS ID: CS5_211110_DF_CA | Sample ID: 25-5-3 | Acq: 10-Nov-2021 14:53:51

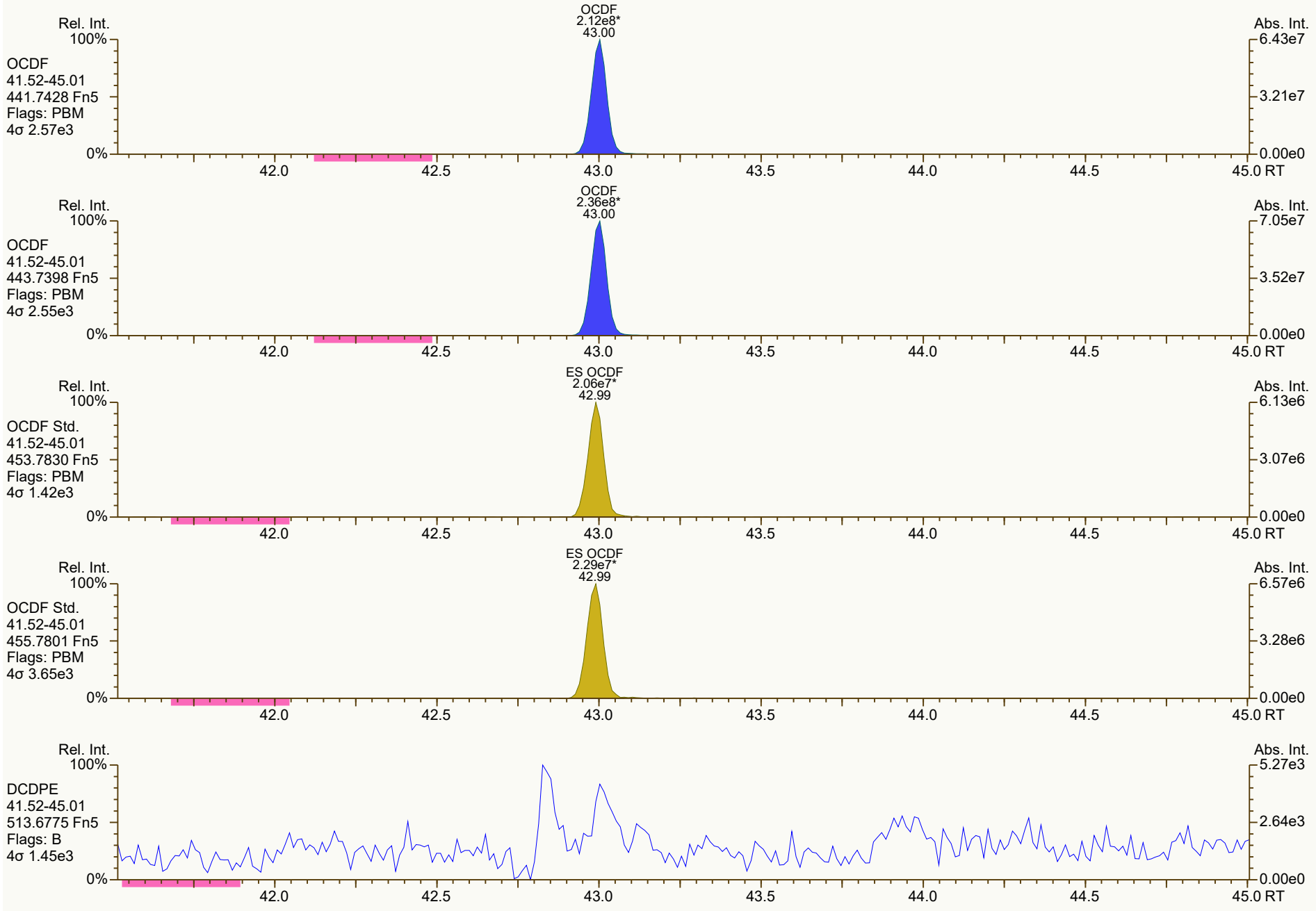
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70 | User: DTF Datafile: 211110C09



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7902, 6877, 1014 scc: 573-489 *PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 10 of 12*


SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 2.01e3
1234678F
1.67e8
39.35
1234789F
1.44e8
40.71
6.39e7
3.19e7
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 2.39e3
1234678F
1.62e8
39.35
1234789F
1.41e8
40.71
6.34e7
3.17e7
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.67e3
ES 1234678F
7.99e6*
39.34
CS 1234689F
6.90e6*
39.75
ES 1234789F
7.27e6*
40.70
2.96e6
1.48e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.48e3
ES 1234678F
1.74e7*
39.34
CS 1234689F
1.53e7*
39.75
ES 1234789F
1.49e7*
40.70
6.42e6
3.21e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.65e3
6.98e3
3.49e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9534, 7460, 1538 scc: 573-489
PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 11 of 12

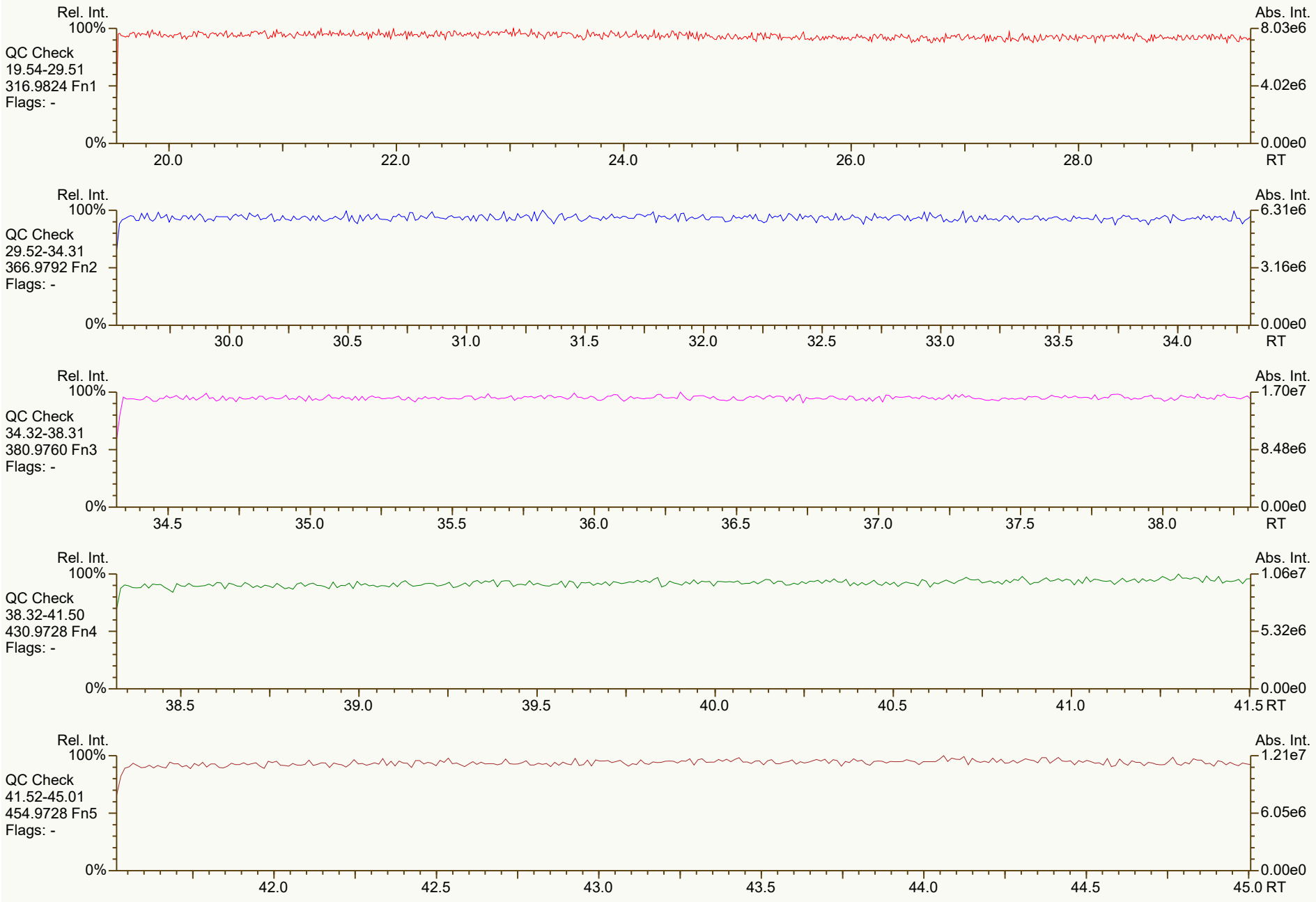

OCDF
2.12e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
6.43e7
3.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.36e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
0%
Abs. Int.
7.05e7
3.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
6.13e6
3.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
6.57e6
3.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
5.27e3
2.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

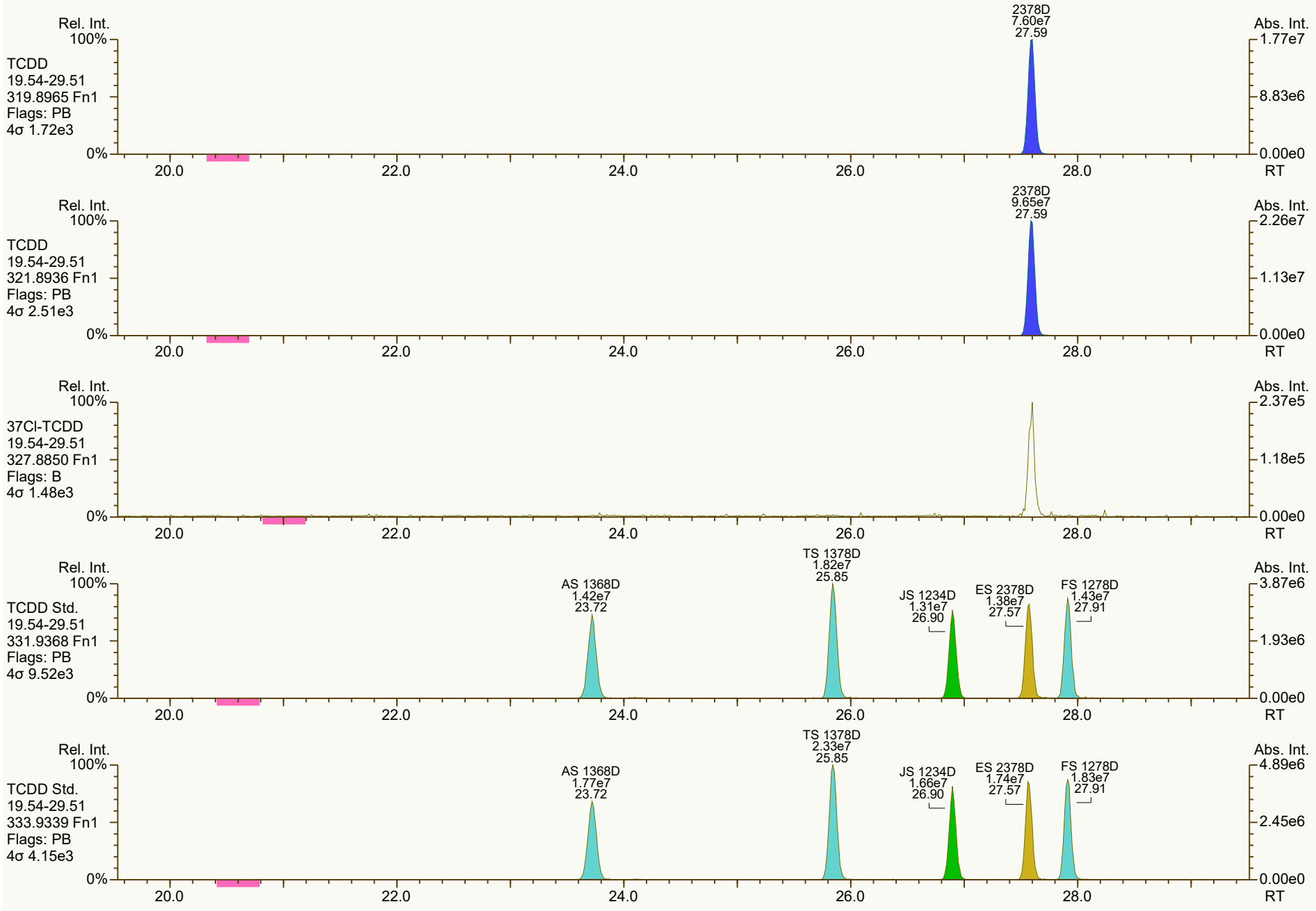
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

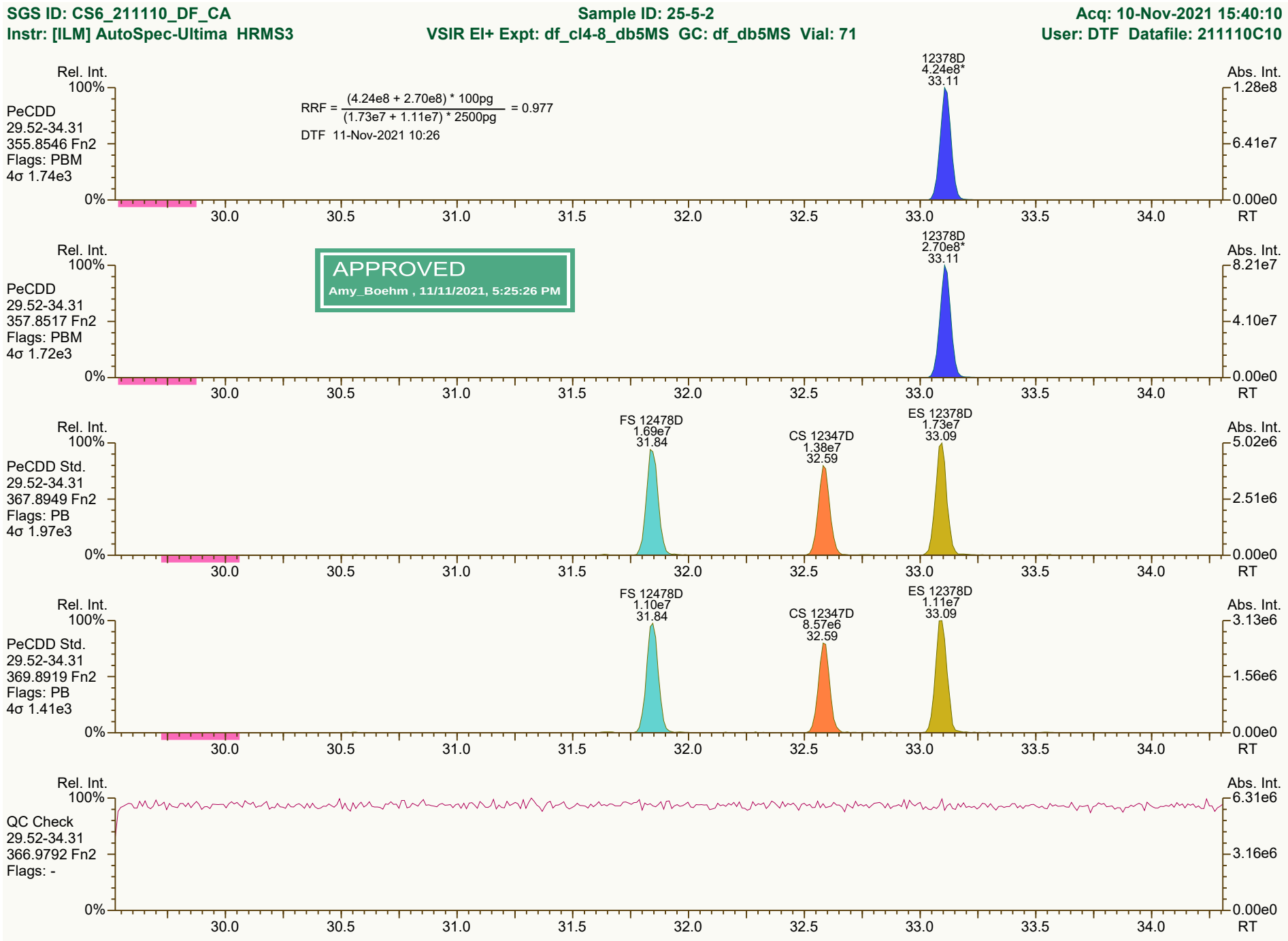
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

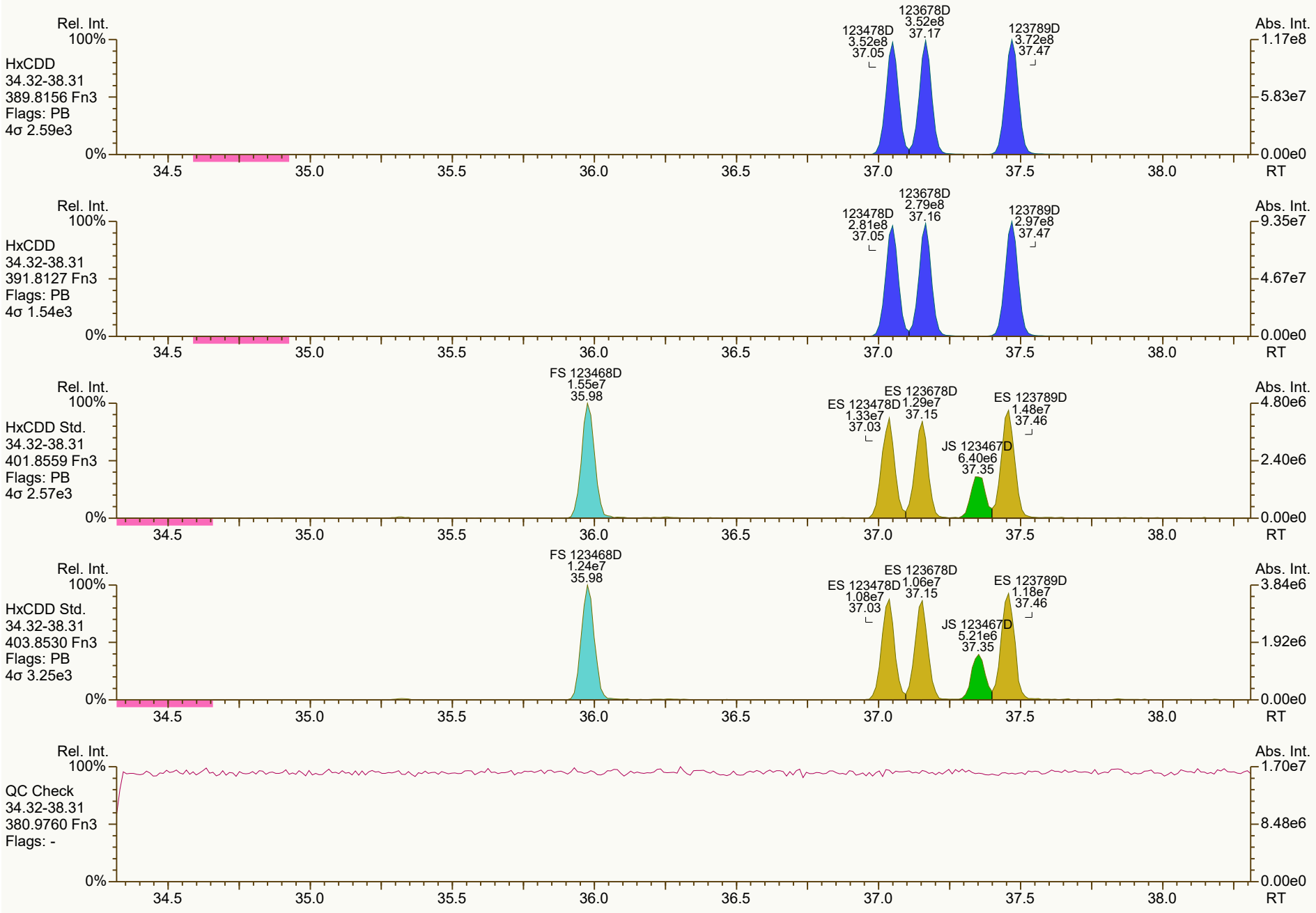

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
Abs. Int.
8.03e6
4.02e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.31e6
3.16e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.70e7
8.48e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.06e7
5.32e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.21e7
6.05e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

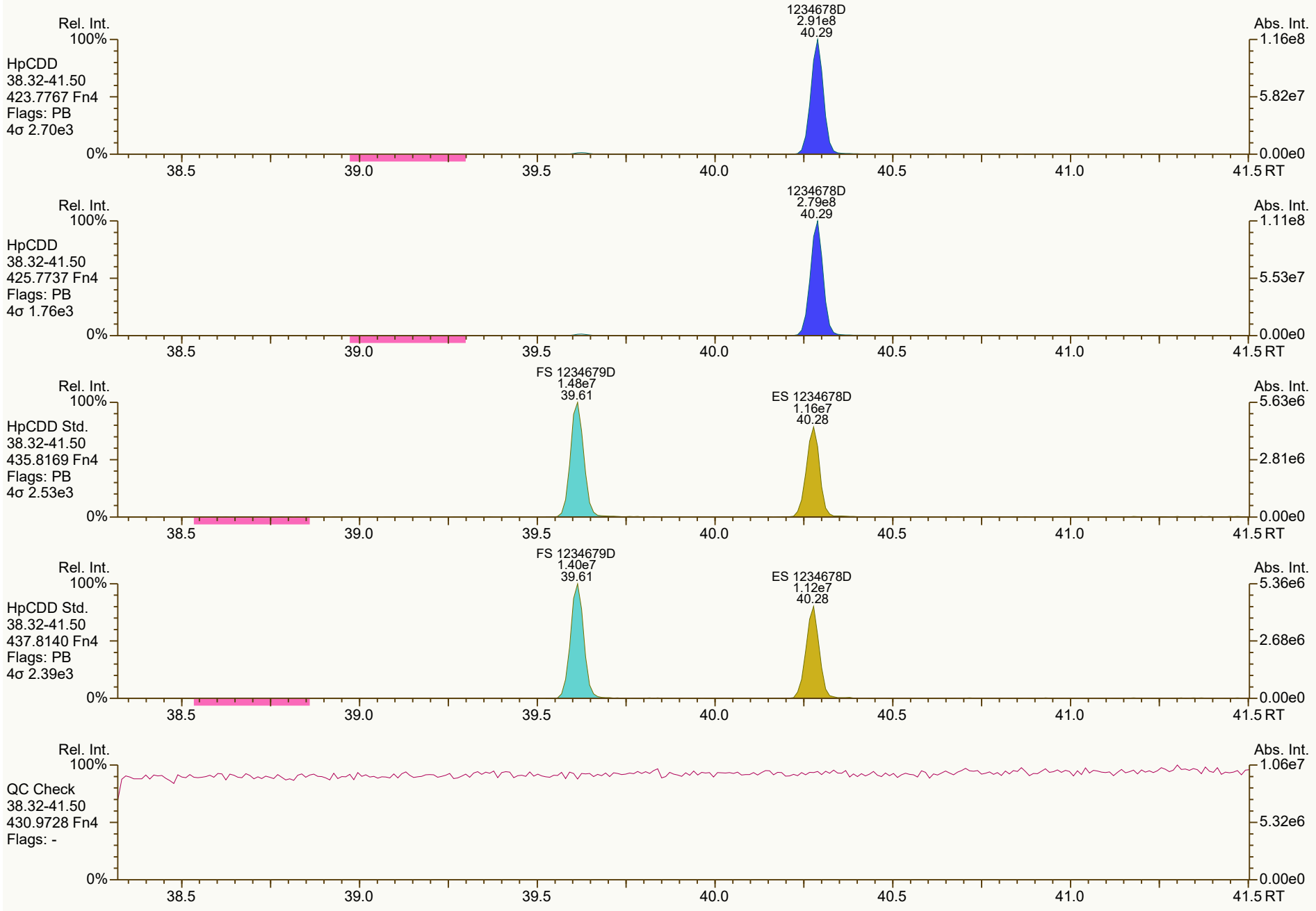

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
0%
2378D
7.60e7
27.59
Abs. Int.
1.77e7
8.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
0%
2378D
9.65e7
27.59
Abs. Int.
2.26e7
1.13e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
2.37e5
1.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
0%
AS 1368D
1.42e7
23.72
TS 1378D
1.82e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
Abs. Int.
3.87e6
1.93e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
0%
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.83e7
27.91
Abs. Int.
4.89e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

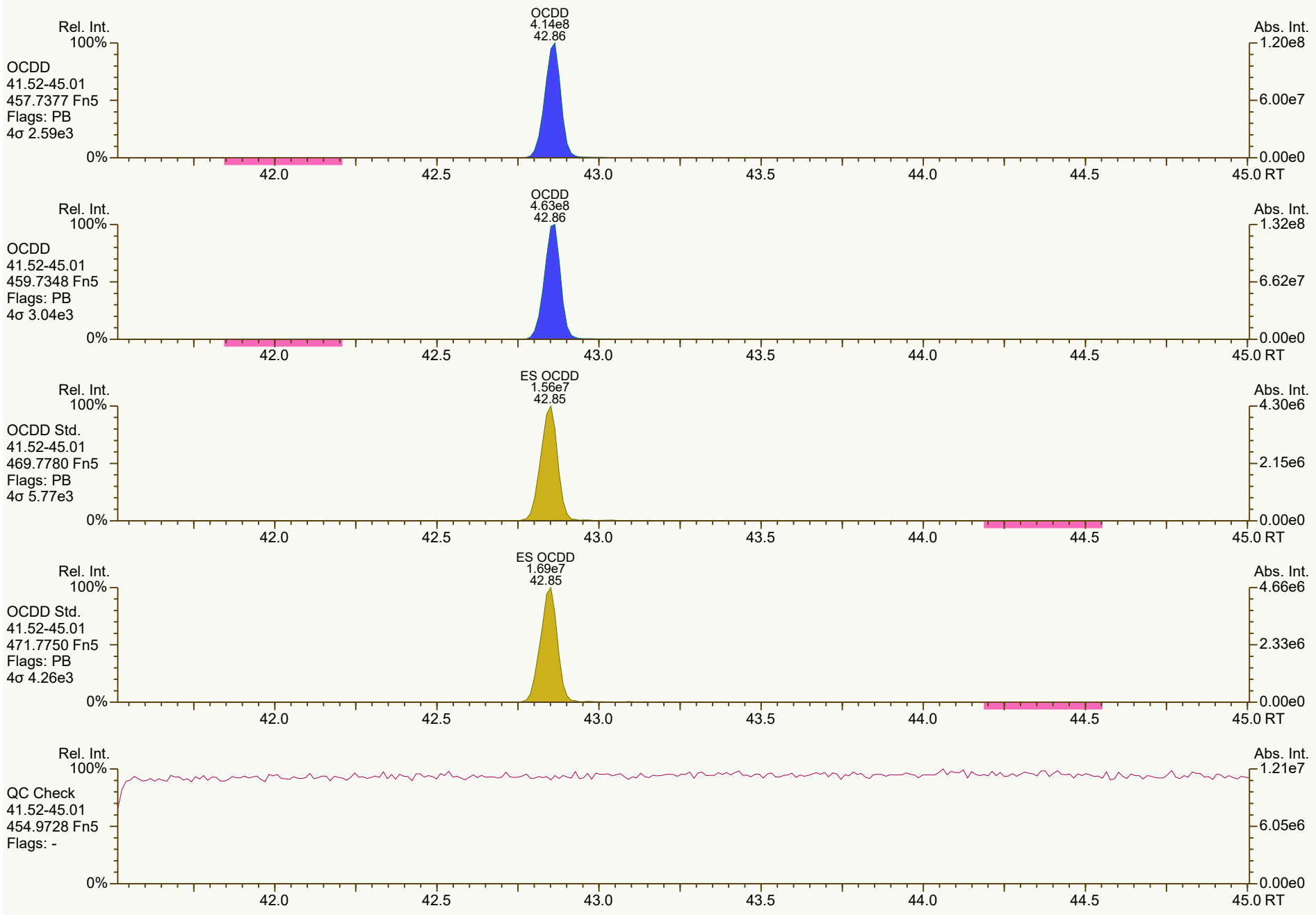
SGS ID: CS6_211110_DF_CA | Sample ID: 25-5-2 | Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71 | User: DTF Datafile: 211110C10



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0456, 7992 scc: 172-736 | PKD: 10-Nov-2021 16:47 Printed: 11-Nov-2021 10:41 Page 3 of 12


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
123478D
3.52e8
37.05
123678D
3.52e8
37.17
123789D
3.72e8
37.47
Abs. Int.
1.17e8
5.83e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
123478D
2.81e8
37.05
123678D
2.79e8
37.16
123789D
2.97e8
37.47
Abs. Int.
9.35e7
4.67e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
FS 123468D
1.55e7
35.98
ES 123478D
1.33e7
37.03
ES 123678D
1.29e7
37.15
JS 123467D
6.40e6
37.35
ES 123789D
1.48e7
37.46
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
FS 123468D
1.24e7
35.98
ES 123478D
1.08e7
37.03
ES 123678D
1.06e7
37.15
JS 123467D
5.21e6
37.35
ES 123789D
1.18e7
37.46
Abs. Int.
3.84e6
1.92e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.70e7
8.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
1234678D
2.91e8
40.29
Abs. Int.
1.16e8
5.82e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
1234678D
2.79e8
40.29
Abs. Int.
1.11e8
5.53e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
FS 1234679D
1.48e7
39.61
ES 1234678D
1.16e7
40.28
Abs. Int.
5.63e6
2.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
FS 1234679D
1.40e7
39.61
ES 1234678D
1.12e7
40.28
Abs. Int.
5.36e6
2.68e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.06e7
5.32e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

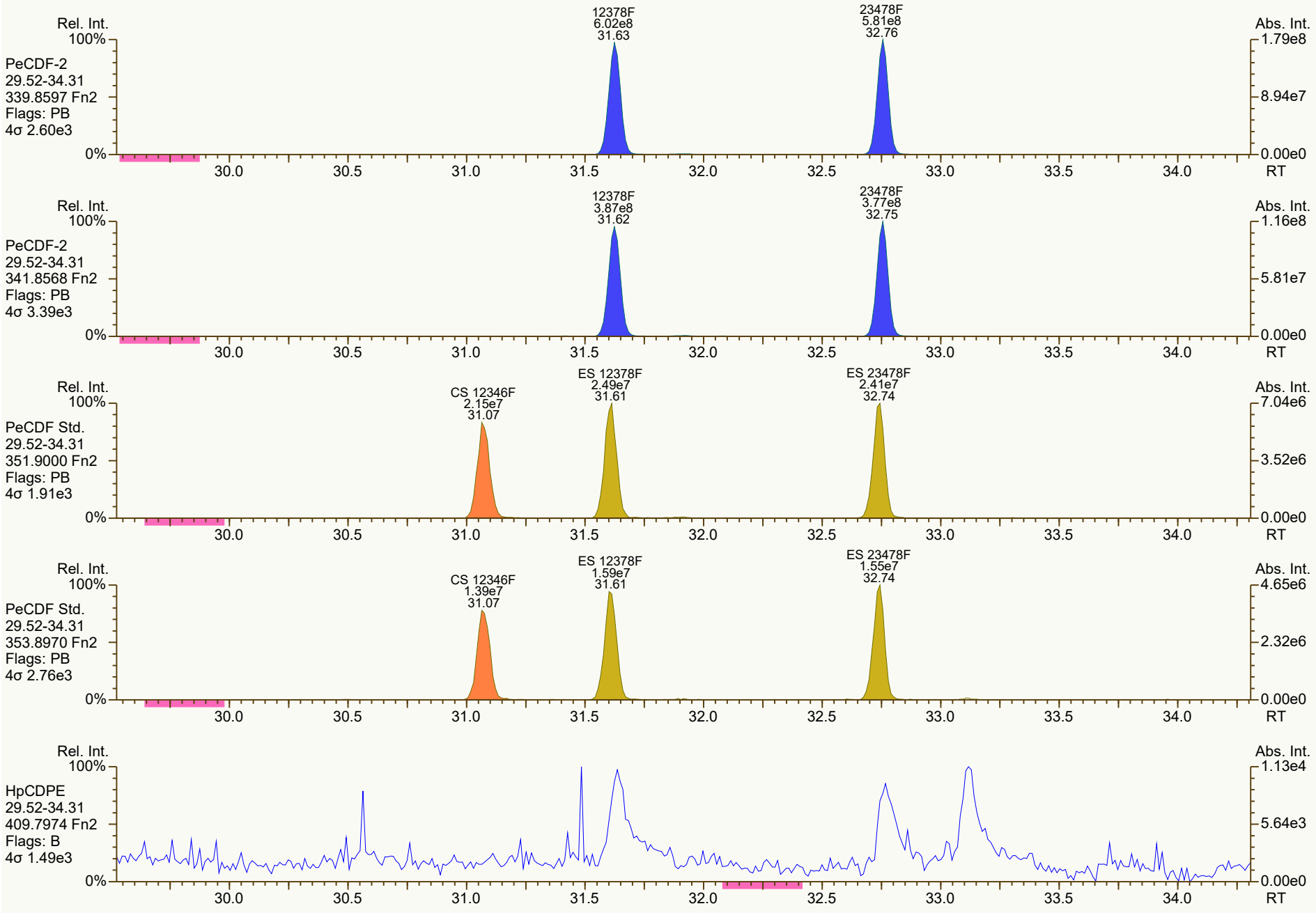

Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.59e3
0%
OCDD
4.14e8
42.86
Abs. Int.
1.20e8
6.00e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
OCDD
4.63e8
42.86
Abs. Int.
1.32e8
6.62e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.77e3
0%
ES OCDD
1.56e7
42.85
Abs. Int.
4.30e6
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.26e3
0%
ES OCDD
1.69e7
42.85
Abs. Int.
4.66e6
2.33e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.21e7
6.05e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

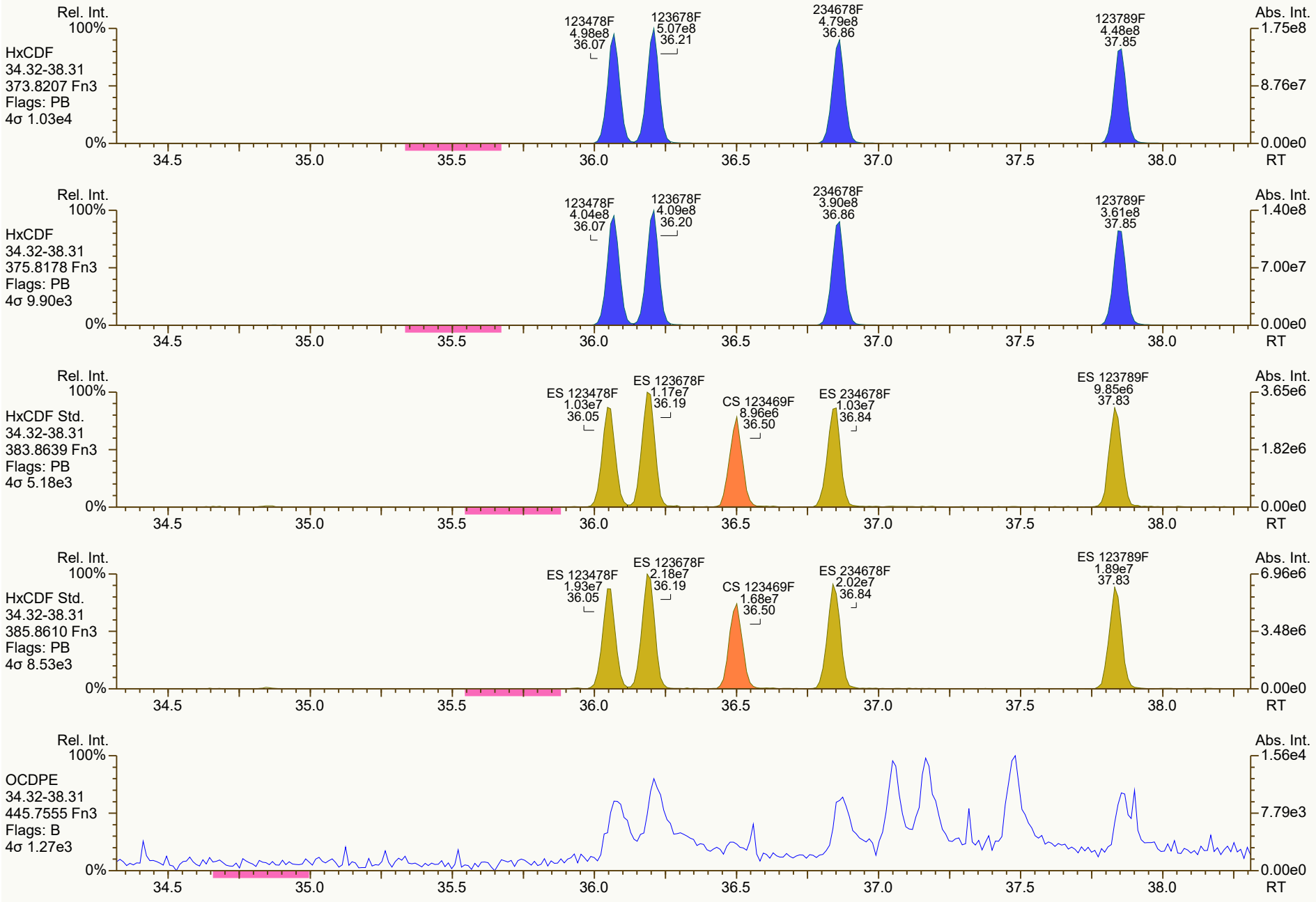

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 2.26e3
0%
2378F
9.73e7
26.68
Abs. Int.
2.17e7
1.08e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 2.01e3
0%
2378F
1.26e8
26.68
Abs. Int.
2.85e7
1.42e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.95e4
0%
AS 1368F
2.07e7
21.49
JS 1234F
1.84e7
25.24
ES 2378F
1.95e7
26.66
Abs. Int.
4.38e6
2.19e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 7.53e3
0%
AS 1368F
2.62e7
21.49
JS 1234F
2.32e7
25.24
ES 2378F
2.51e7
26.65
Abs. Int.
5.43e6
2.72e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.55e3
0%
Abs. Int.
6.34e3
3.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

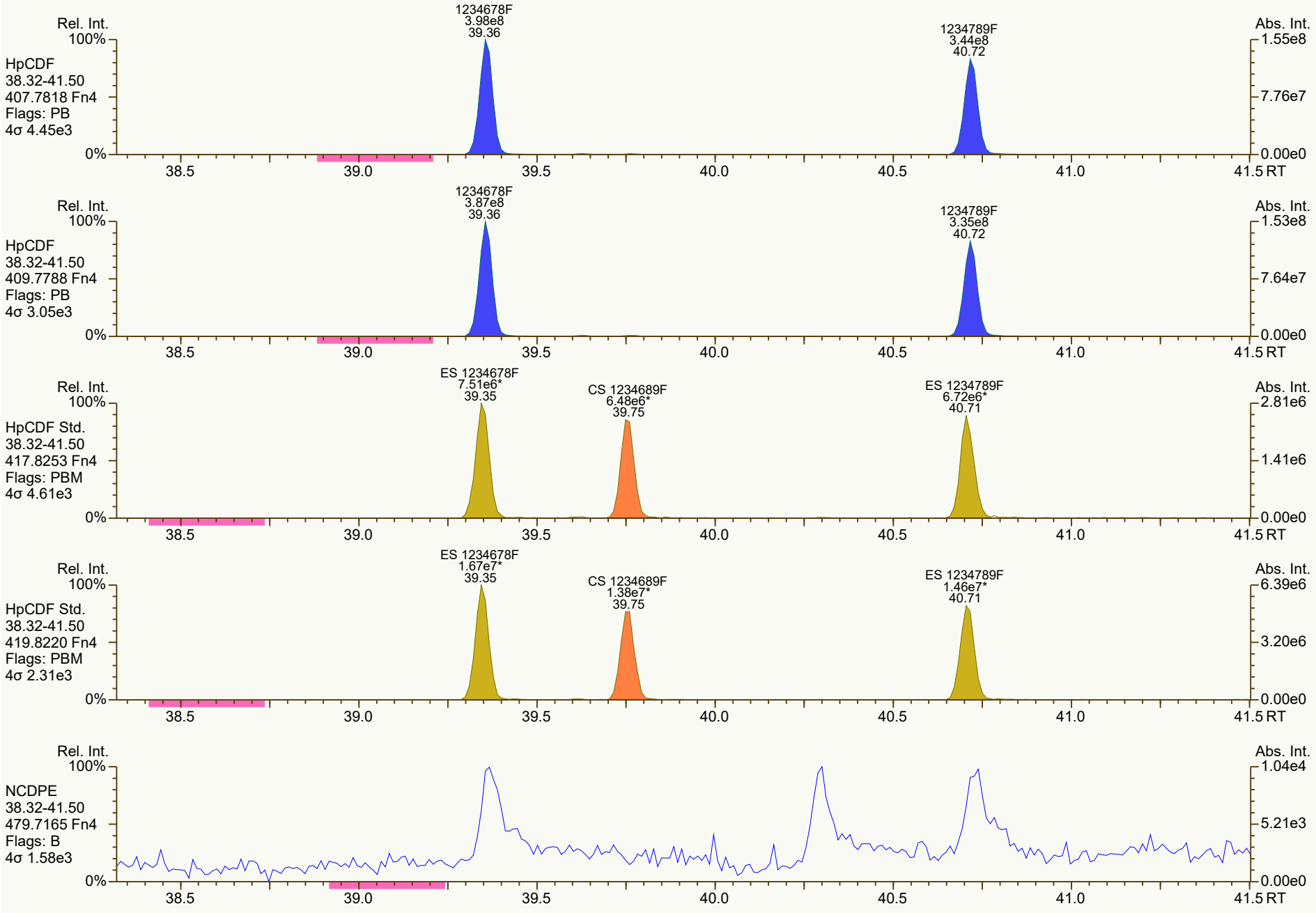
SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10

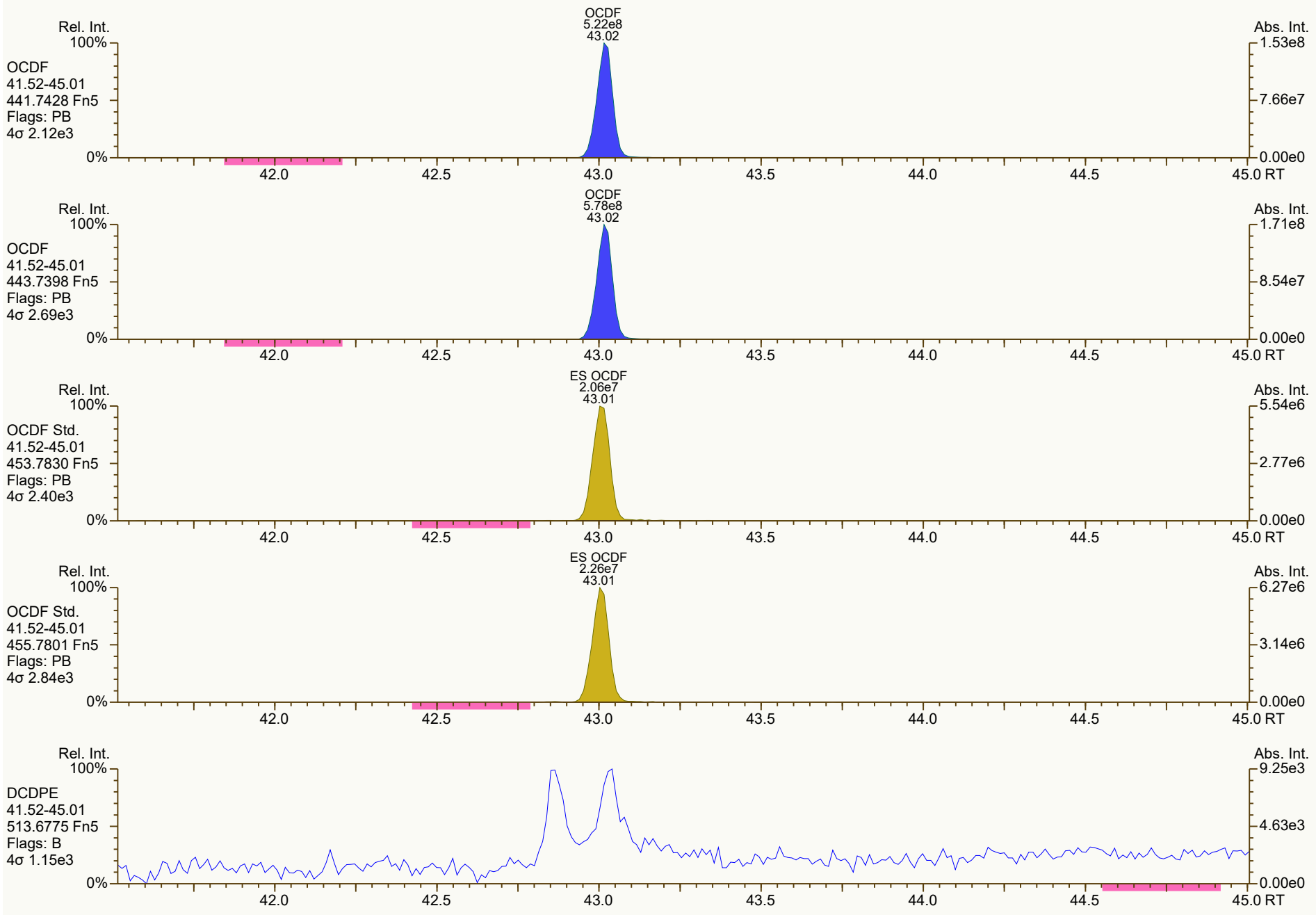


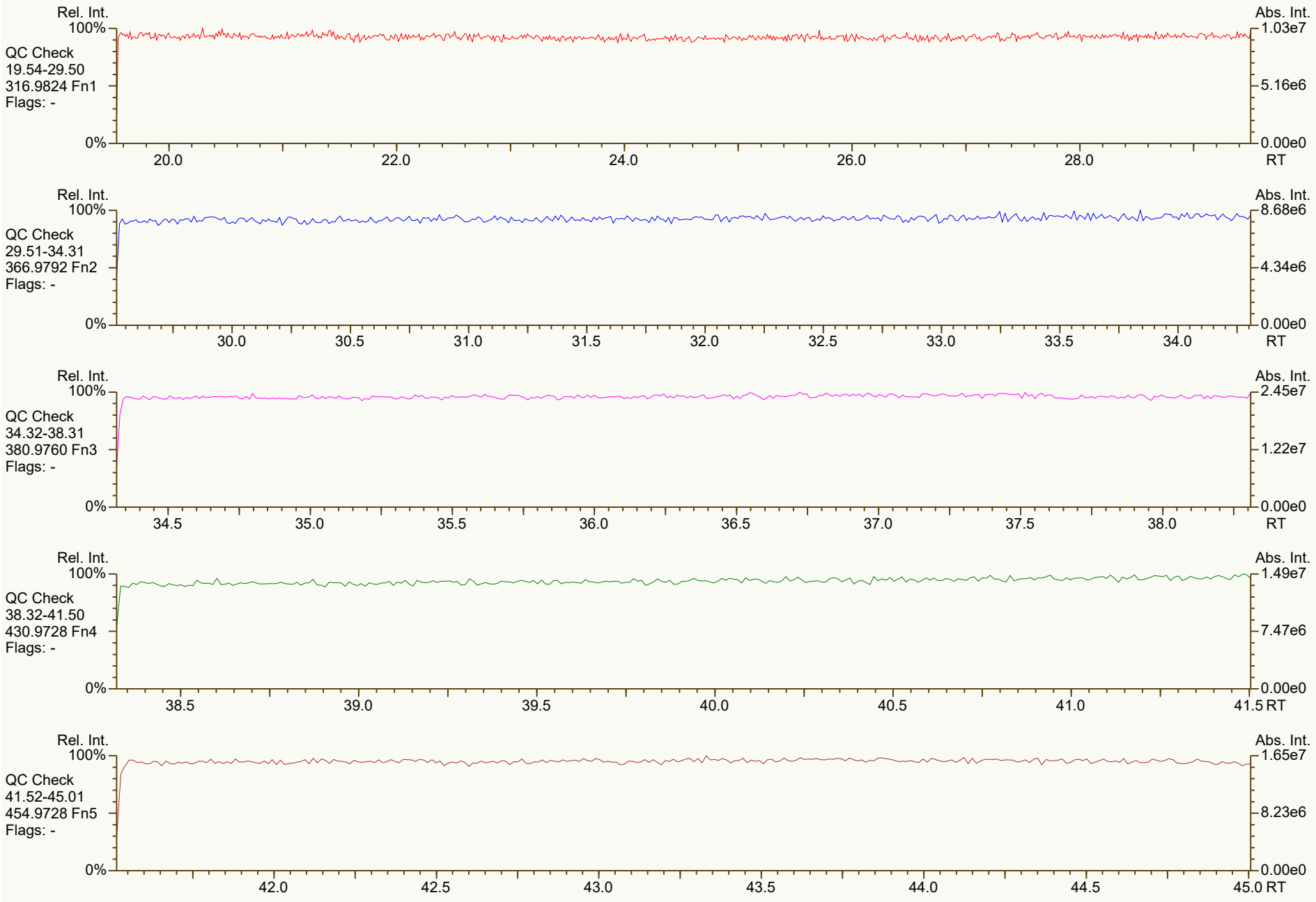
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4239 scc: 172-736
PKD: 10-Nov-2021 16:46 Printed: 11-Nov-2021 10:41 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PB
4σ 2.60e3
0%
12378F
6.02e8
31.63
23478F
5.81e8
32.76
Abs. Int.
1.79e8
8.94e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PB
4σ 3.39e3
0%
12378F
3.87e8
31.62
23478F
3.77e8
32.75
Abs. Int.
1.16e8
5.81e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 1.91e3
0%
CS 12346F
2.15e7
31.07
ES 12378F
2.49e7
31.61
ES 23478F
2.41e7
32.74
Abs. Int.
7.04e6
3.52e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.76e3
0%
CS 12346F
1.39e7
31.07
ES 12378F
1.59e7
31.61
ES 23478F
1.55e7
32.74
Abs. Int.
4.65e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.49e3
0%
Abs. Int.
1.13e4
5.64e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 1.03e4
123478F
4.98e8
36.07
123678F
5.07e8
36.21
234678F
4.79e8
36.86
123789F
4.48e8
37.85
Abs. Int.
1.75e8
8.76e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 9.90e3
123478F
4.04e8
36.07
123678F
4.09e8
36.20
234678F
3.90e8
36.86
123789F
3.61e8
37.85
Abs. Int.
1.40e8
7.00e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.18e3
ES 123478F
1.03e7
36.05
ES 123678F
1.17e7
36.19
CS 123469F
8.96e6
36.50
ES 234678F
1.03e7
36.84
ES 123789F
9.85e6
37.83
Abs. Int.
3.65e6
1.82e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 8.53e3
ES 123478F
1.93e7
36.05
ES 123678F
2.18e7
36.19
CS 123469F
1.68e7
36.50
ES 234678F
2.02e7
36.84
ES 123789F
1.89e7
37.83
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.27e3
Abs. Int.
1.56e4
7.79e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e8
39.36
1234789F
3.44e8
40.72
Abs. Int.
1.55e8
7.76e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e8
39.36
1234789F
3.35e8
40.72
Abs. Int.
1.53e8
7.64e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
Abs. Int.
2.81e6
1.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
Abs. Int.
1.04e4
5.21e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
OCDF
5.22e8
43.02
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
OCDF
5.78e8
43.02
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
ES OCDF
2.06e7
43.01
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDF
2.26e7
43.01
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.03e7
5.16e6
0.00e0
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.68e6
4.34e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.45e7
1.22e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.49e7
7.47e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.65e7
8.23e6
0.00e0

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

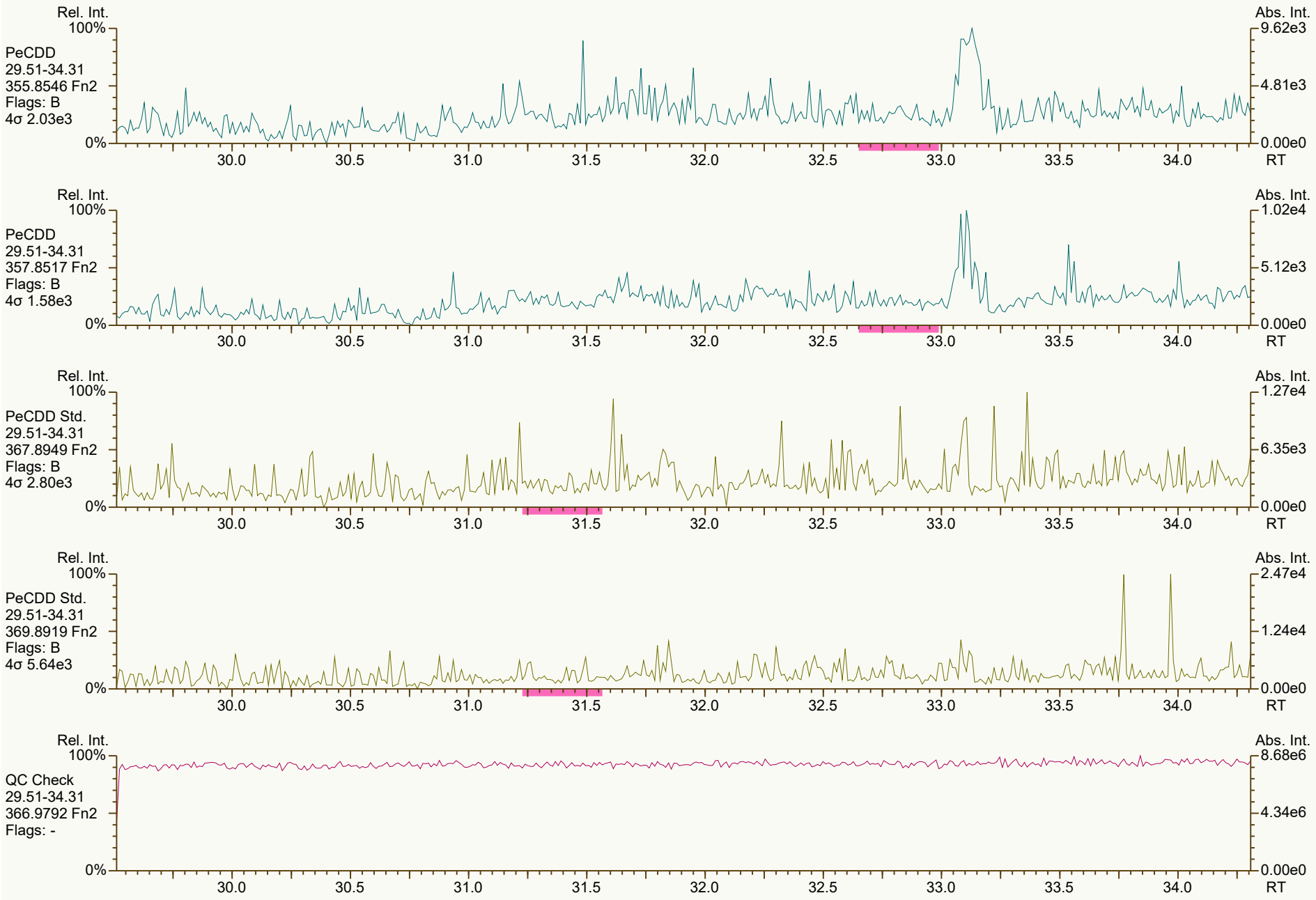
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF) *Peak annotation: Areas, Centroids*

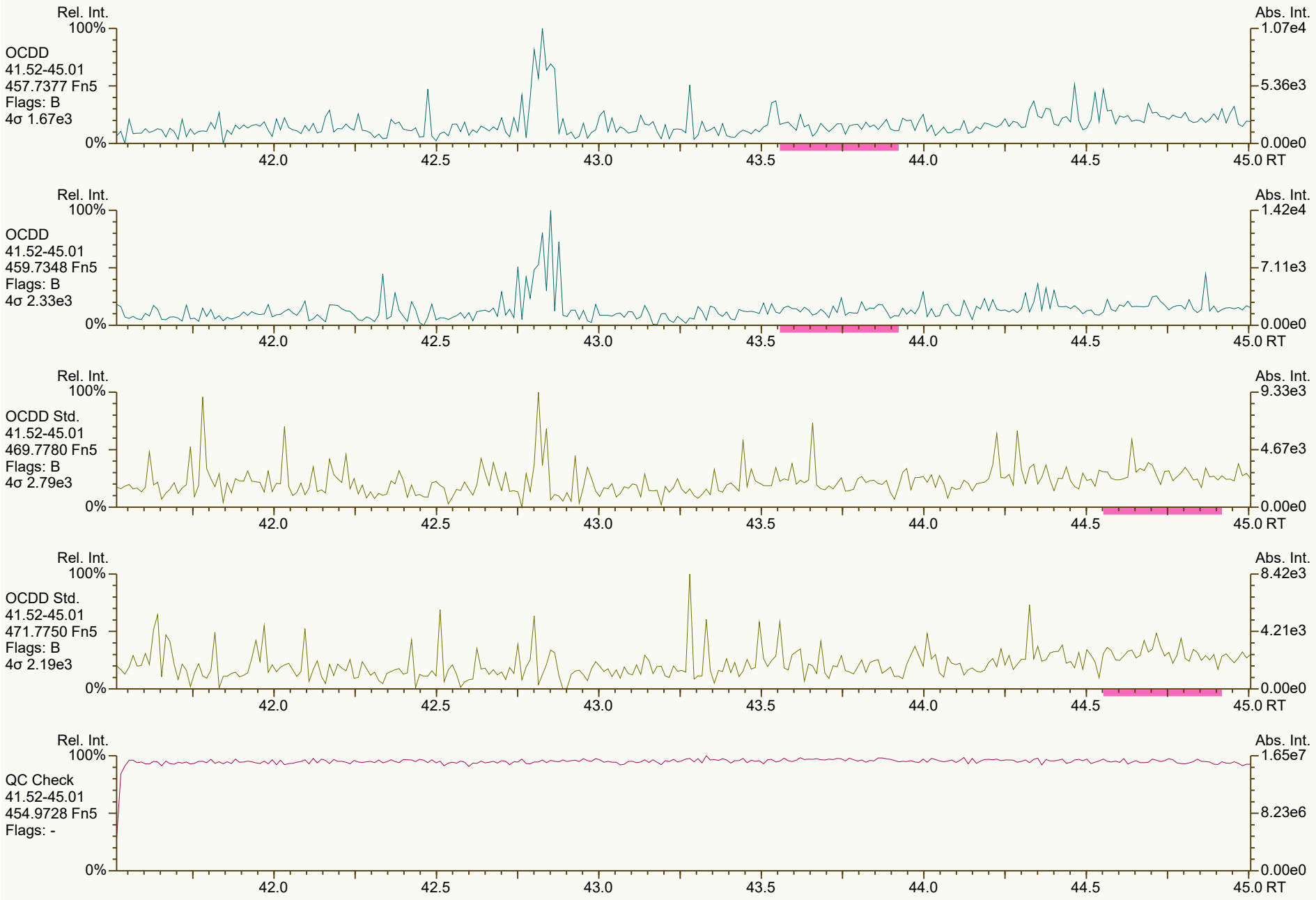
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4939, 4247, 1318 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1*


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: B
4σ 2.56e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.75e3
0%
Abs. Int.
8.16e3
4.08e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: B
4σ 7.98e3
0%
Abs. Int.
2.72e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: B
4σ 6.62e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: B
4σ 2.80e3
0%
Abs. Int.
1.27e4
6.35e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: B
4σ 5.64e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.68e6
4.34e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: B
4σ 5.99e3
0%
Abs. Int.
1.61e4
8.05e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.45e7
1.22e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.62e4
8.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: B
4σ 2.39e3
0%
Abs. Int.
2.45e4
1.23e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: B
4σ 2.97e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.49e7
7.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.07e4
5.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.42e4
7.11e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.65e7
8.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
2468F
3.48e5*
22.78
Abs. Int.
7.07e4
3.53e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
2468F
5.04e5*
22.78
Abs. Int.
1.06e5
5.32e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
Abs. Int.
5.11e4
2.56e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
Abs. Int.
2.83e4
1.42e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
9.47e3
4.73e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT

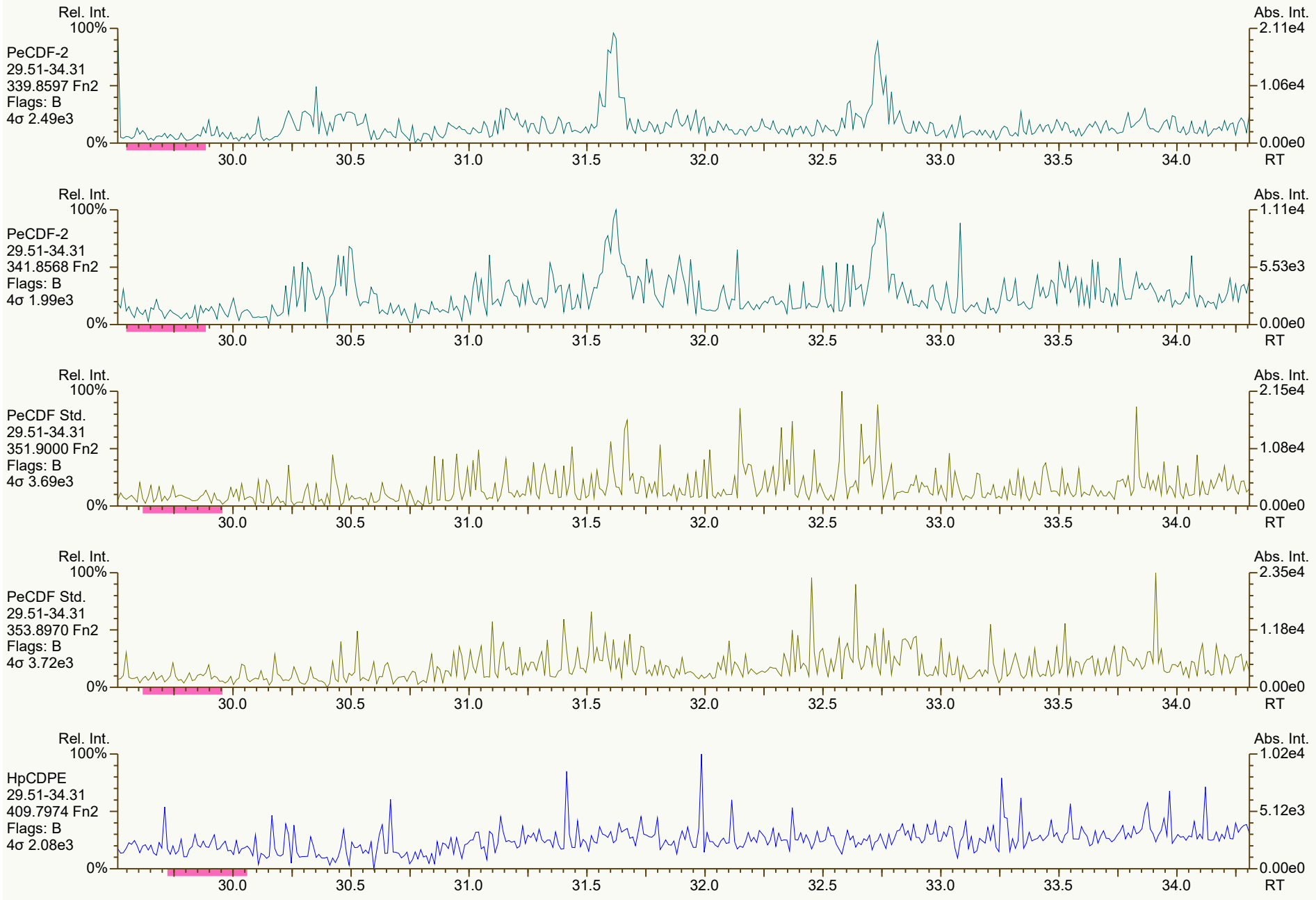
SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

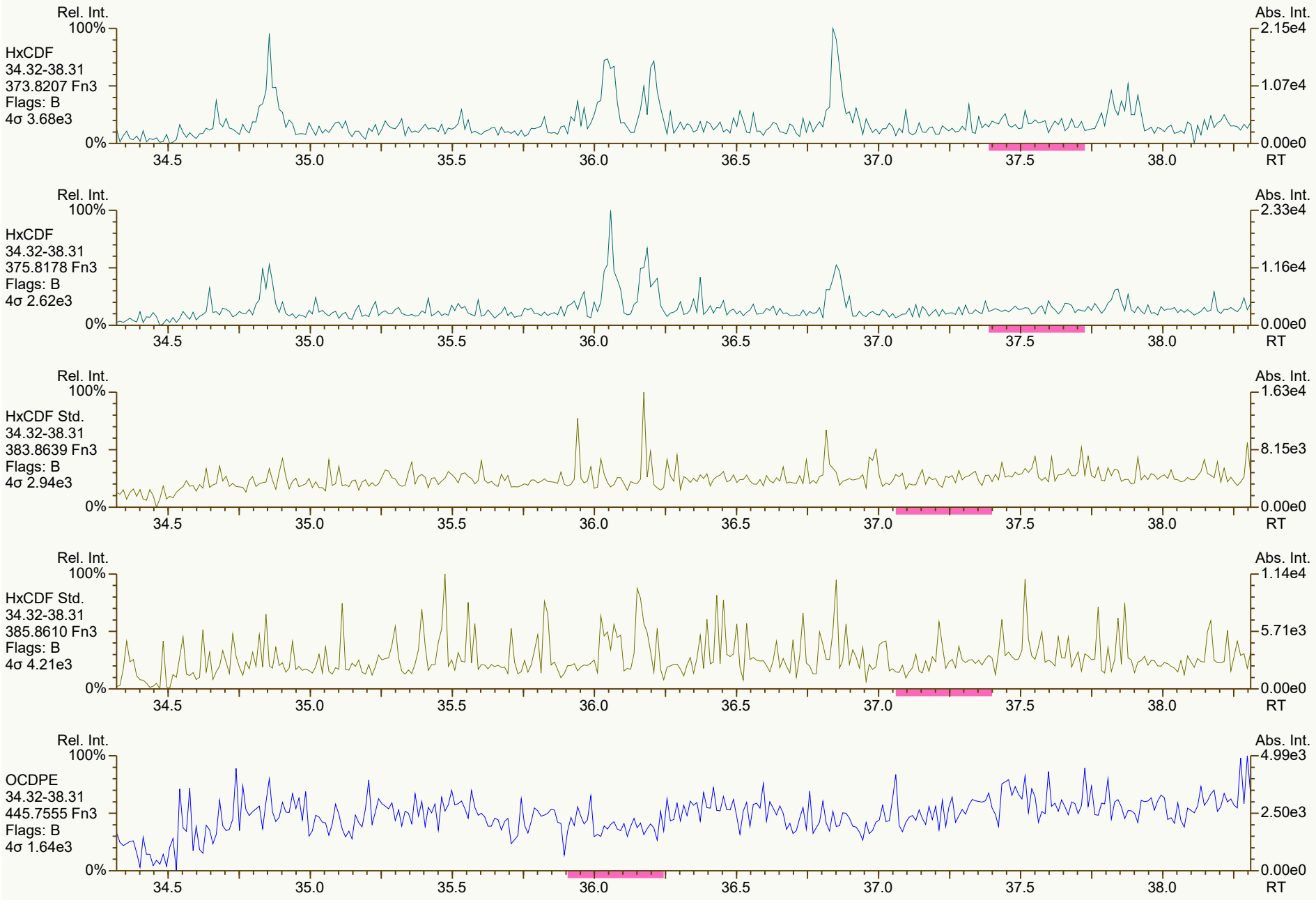
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF) *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4115 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:39 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: B
4σ 2.49e3
0%
Abs. Int.
2.11e4
1.06e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: B
4σ 3.69e3
0%
Abs. Int.
2.15e4
1.08e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: B
4σ 3.72e3
0%
Abs. Int.
2.35e4
1.18e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
2.15e4
1.07e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.33e4
1.16e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: B
4σ 4.21e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.64e3
0%
Abs. Int.
4.99e3
2.50e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

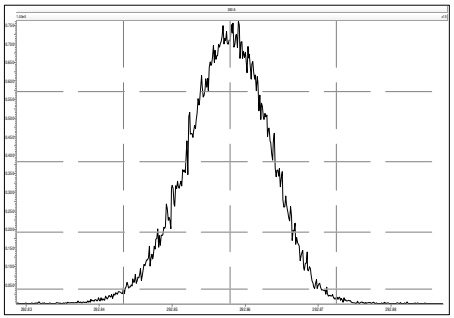

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: B
4σ 2.83e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: B
4σ 5.26e3
0%
Abs. Int.
2.80e4
1.40e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.49e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.02e4
5.08e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
6.88e3
3.44e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.40e3
0%
Abs. Int.
4.10e3
2.05e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

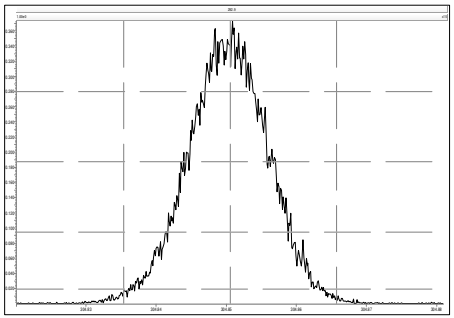
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

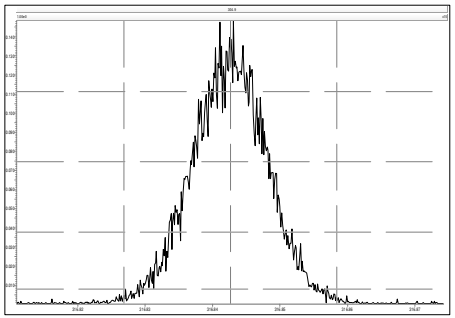
M 292.9824 R 10731



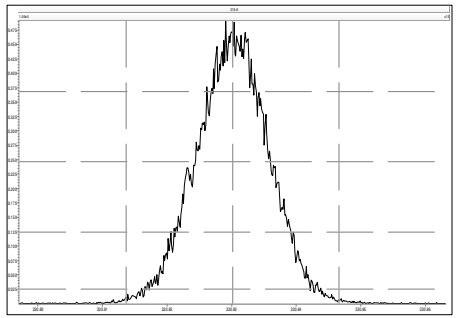
M 304.9824 R 11311



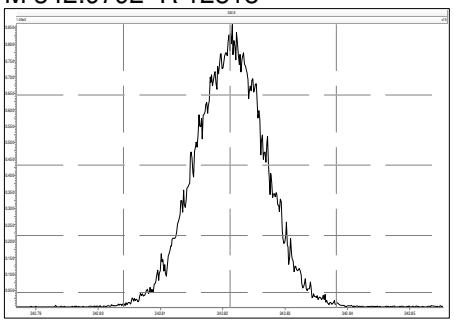
M 316.9824 R 12373



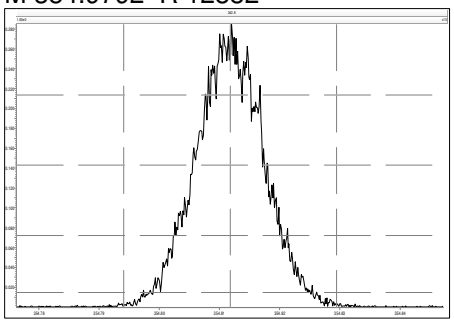
M 330.9792 R 12887



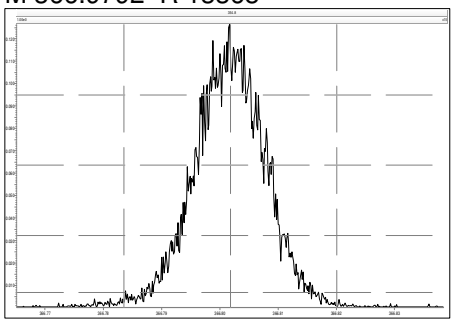
M 342.9792 R 12818



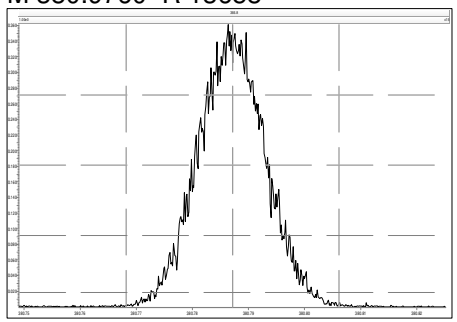
M 354.9792 R 12882



M 366.9792 R 13368



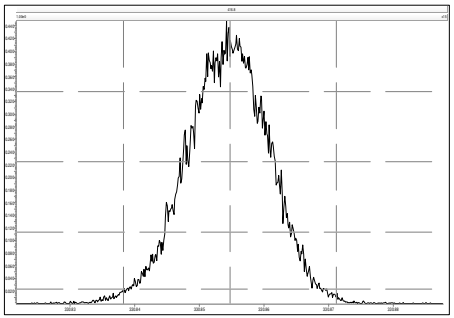
M 380.9760 R 13658



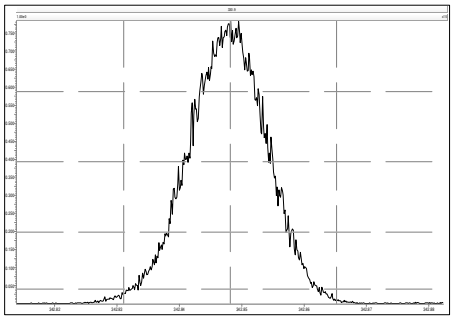
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

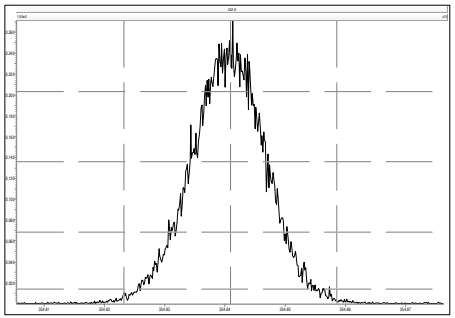
M 330.9792 R 11112



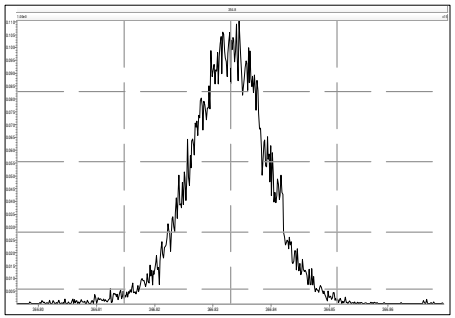
M 342.9792 R 11909



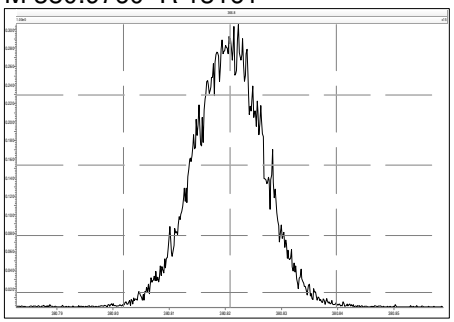
M 354.9792 R 11684



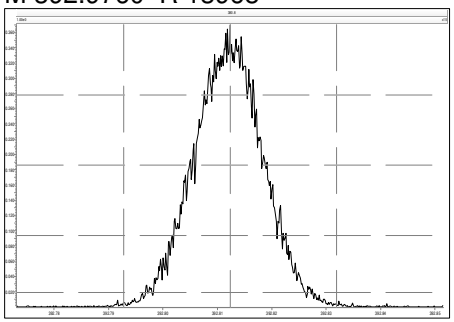
M 366.9792 R 11962



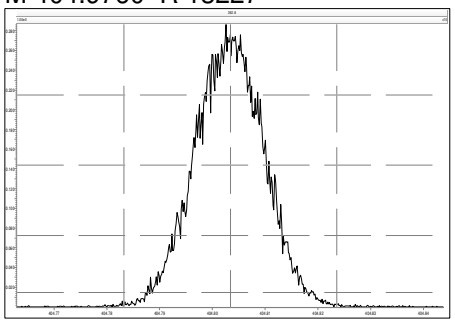
M 380.9760 R 13161



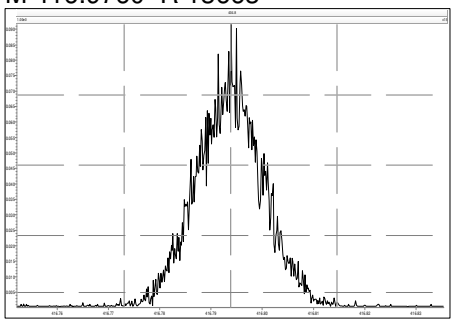
M 392.9760 R 13968



M 404.9760 R 13227



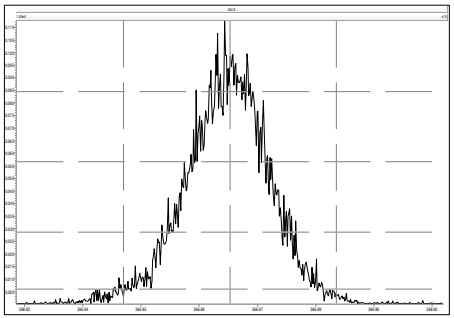
M 416.9760 R 13663



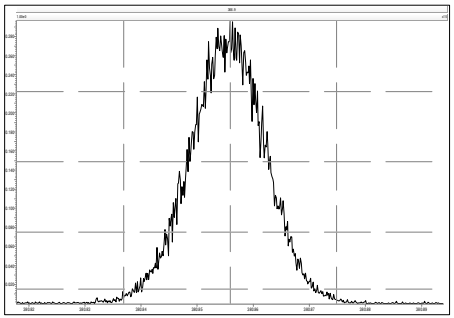
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

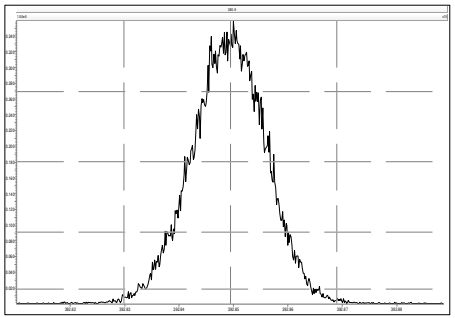
M 366.9792 R 10680



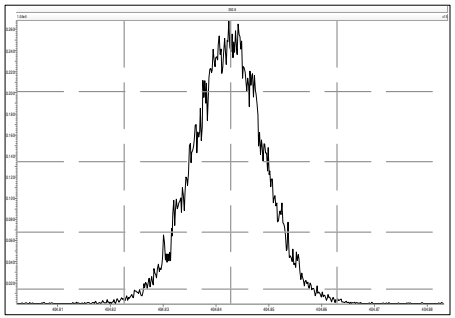
M 380.9760 R 12315



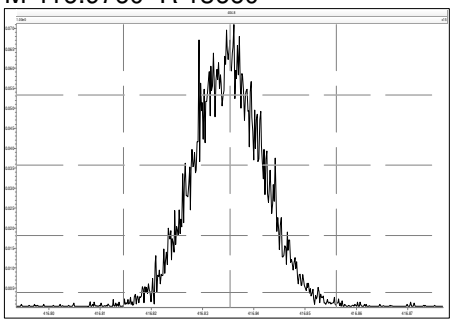
M 392.9760 R 12197



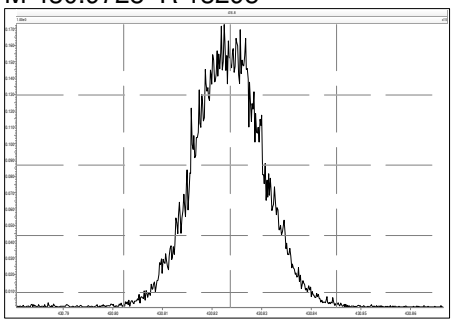
M 404.9760 R 12433



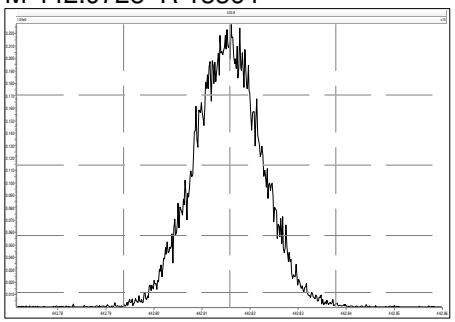
M 416.9760 R 13660



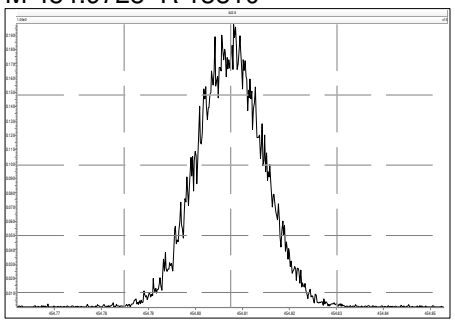
M 430.9728 R 13295



M 442.9728 R 13364



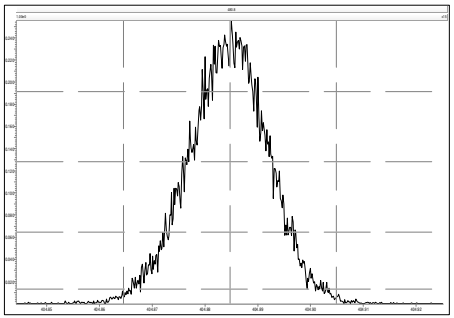
M 454.9728 R 13810



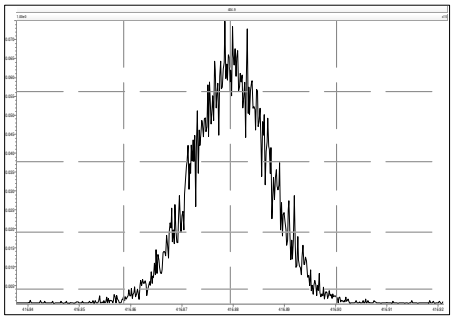
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

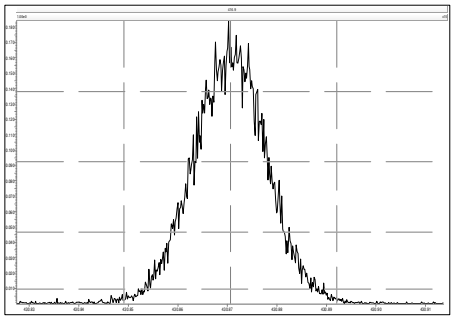
M 404.9760 R 11679



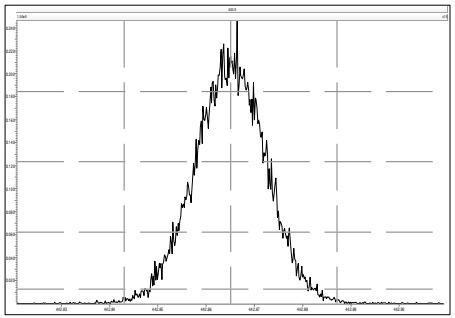
M 416.9760 R 12886



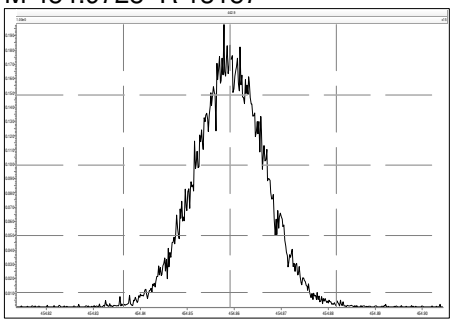
M 430.9728 R 12253



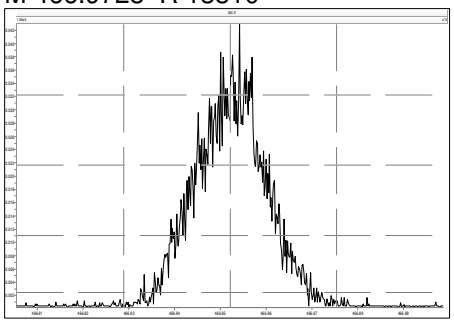
M 442.9728 R 12756



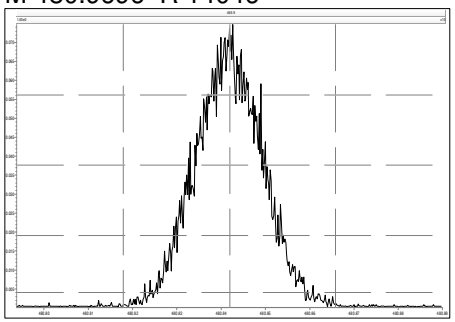
M 454.9728 R 13157



M 466.9728 R 13810



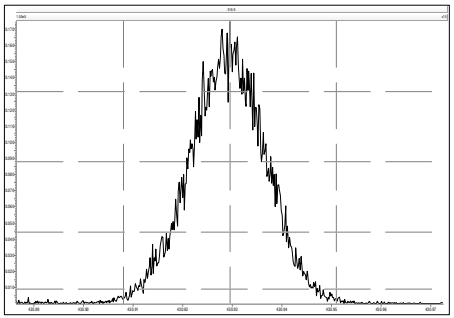
M 480.9696 R 14046



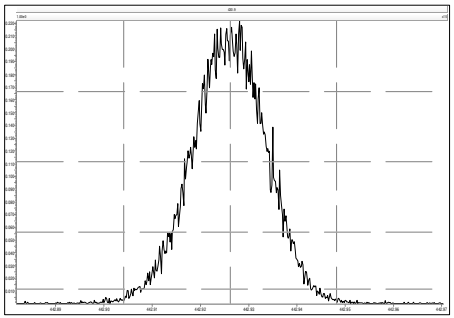
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

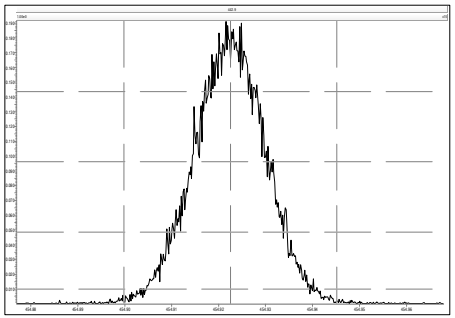
M 430.9728 R 11574



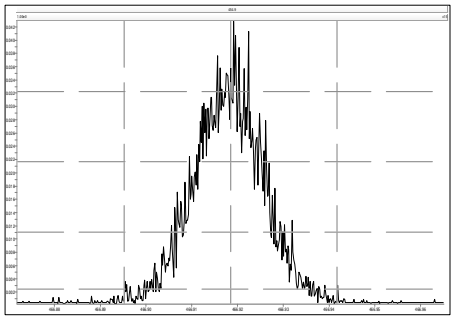
M 442.9728 R 12198



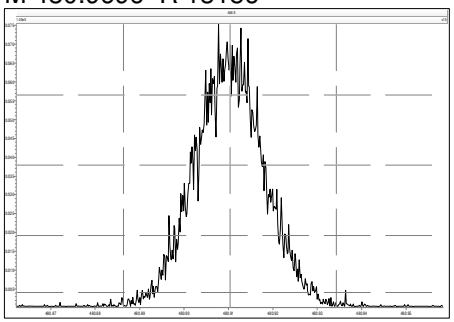
M 454.9728 R 12950



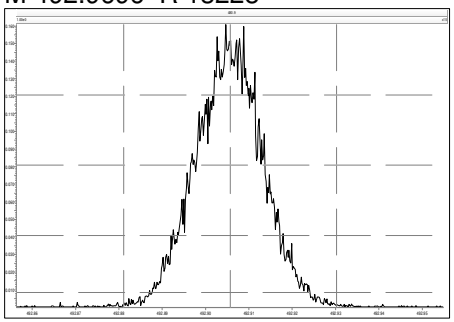
M 466.9728 R 13088



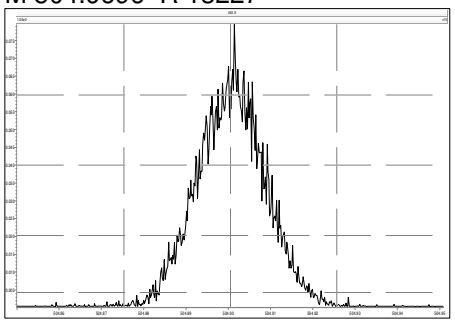
M 480.9696 R 13156



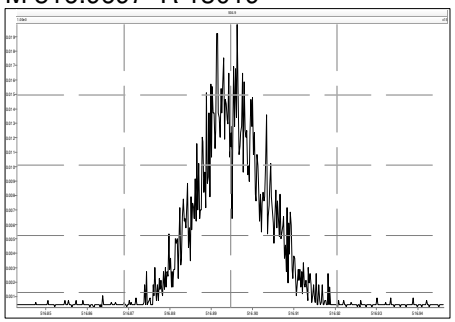
M 492.9696 R 13228



M 504.9696 R 13227



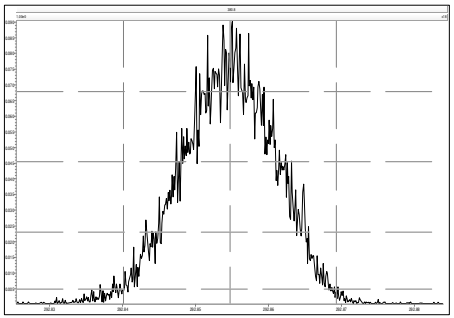
M 516.9697 R 13019



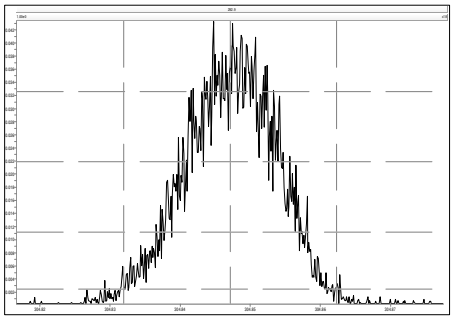
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

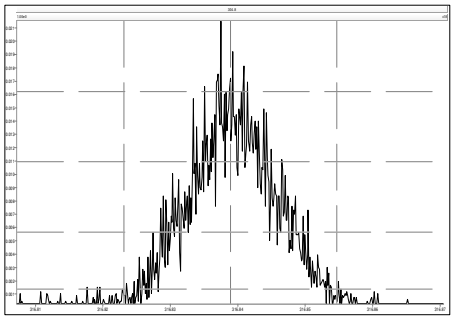
M 292.9824 R 10122



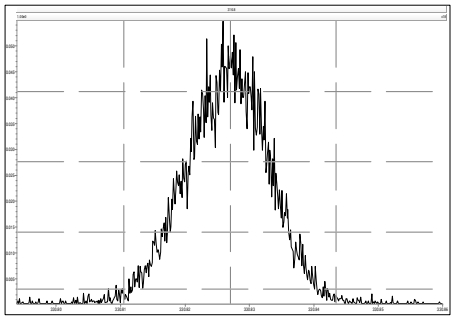
M 304.9824 R 10329



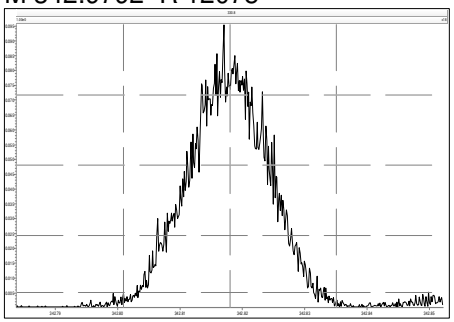
M 316.9824 R 11964



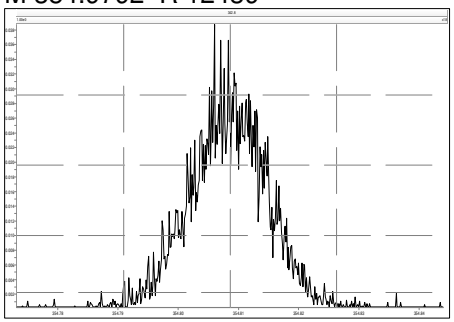
M 330.9792 R 11062



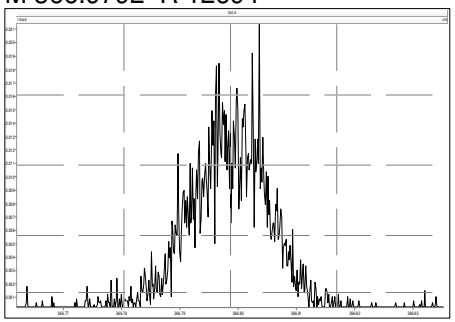
M 342.9792 R 12075



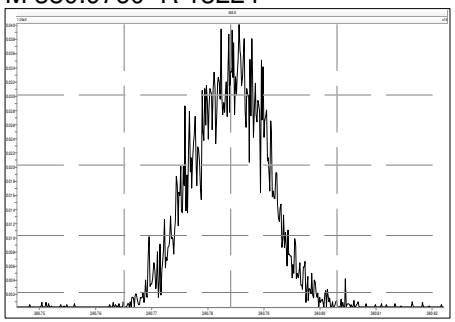
M 354.9792 R 12439



M 366.9792 R 12694



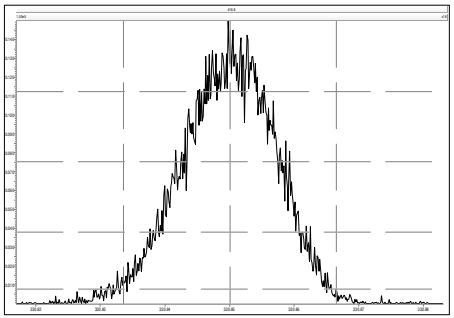
M 380.9760 R 13224



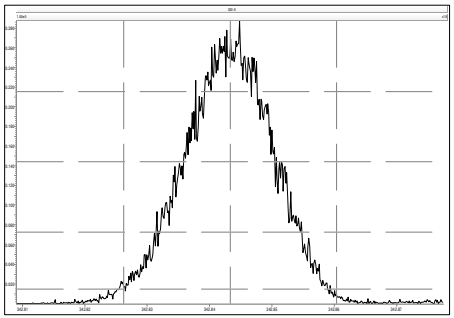
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

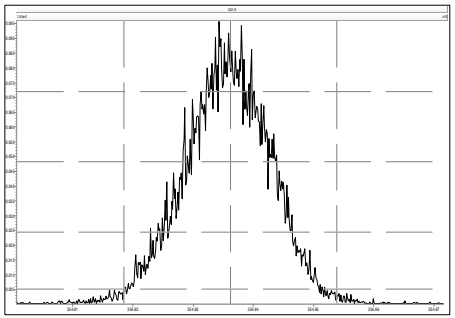
M 330.9792 R 10730



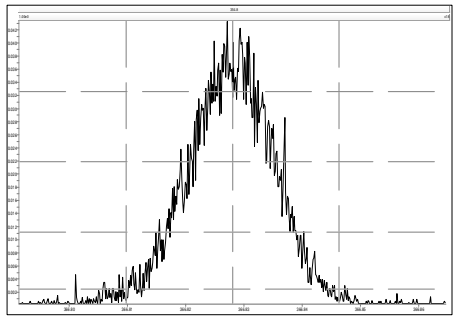
M 342.9792 R 10039



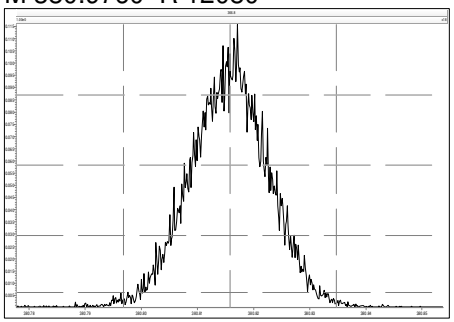
M 354.9792 R 11108



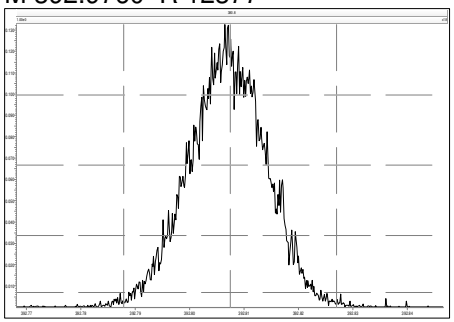
M 366.9792 R 11520



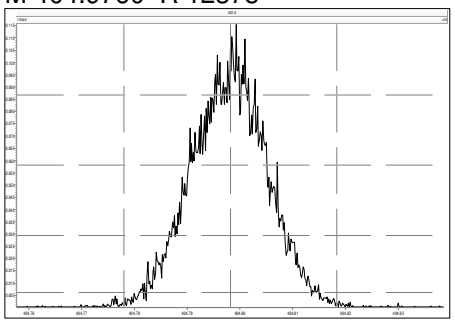
M 380.9760 R 12080



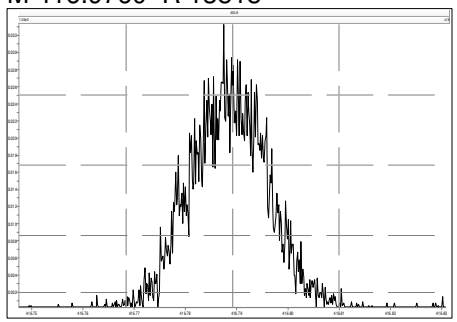
M 392.9760 R 12377



M 404.9760 R 12375



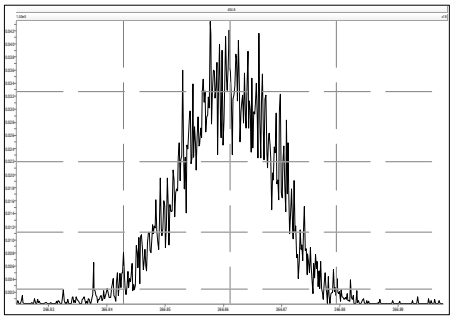
M 416.9760 R 13515



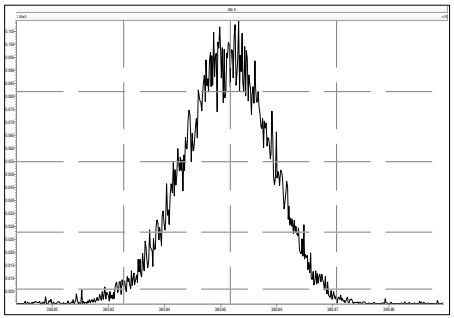
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

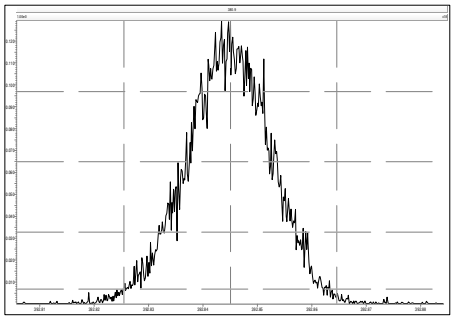
M 366.9792 R 10866



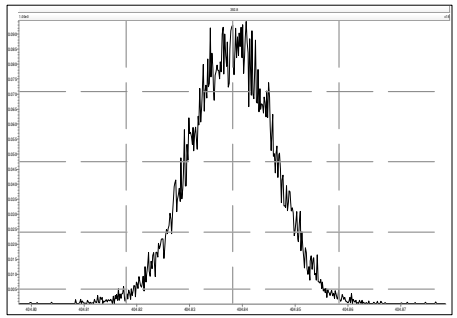
M 380.9760 R 10416



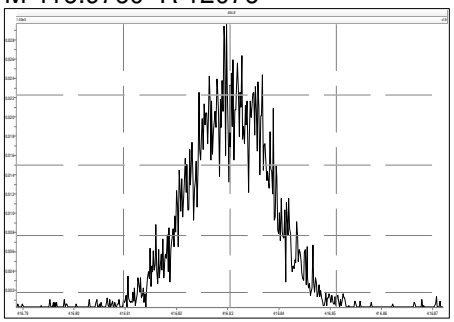
M 392.9760 R 10640



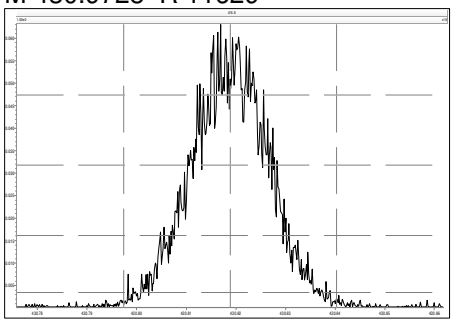
M 404.9760 R 11957



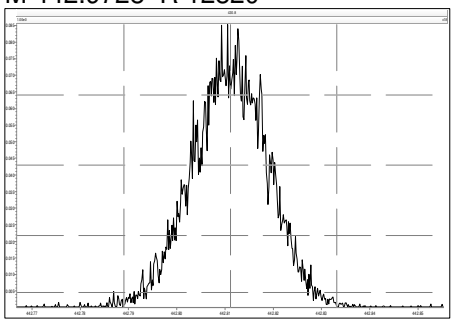
M 416.9760 R 12076



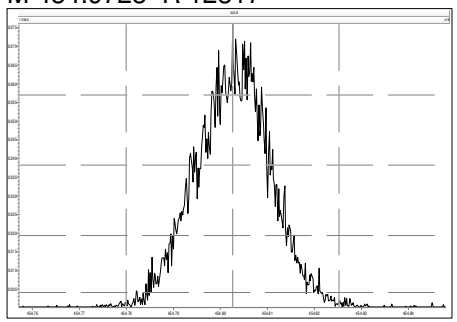
M 430.9728 R 11629



M 442.9728 R 12820



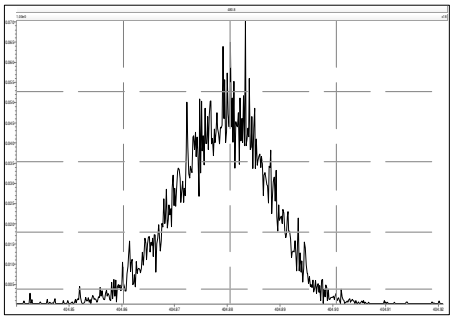
M 454.9728 R 12317



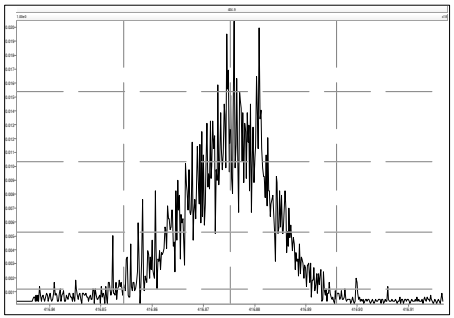
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

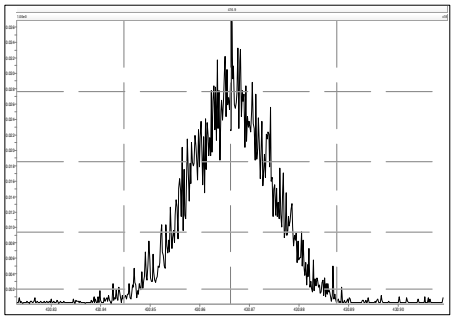
M 404.9760 R 10505



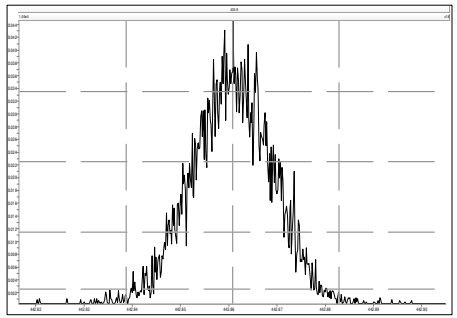
M 416.9760 R 12500



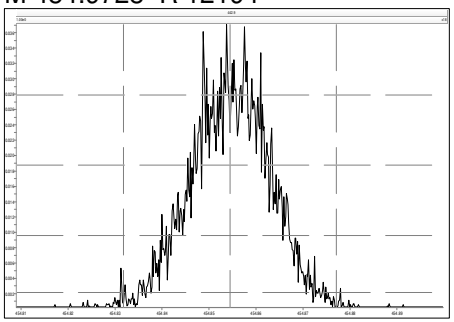
M 430.9728 R 11362



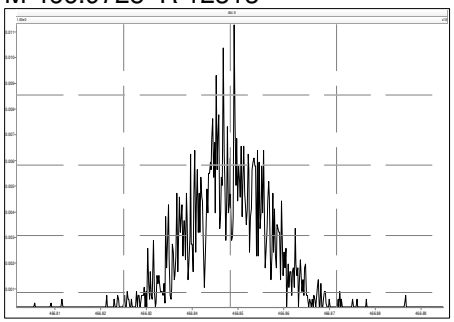
M 442.9728 R 12756



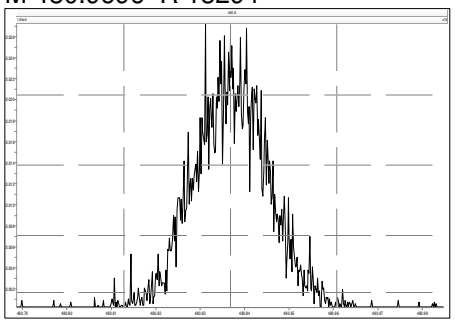
M 454.9728 R 12194



M 466.9728 R 12313



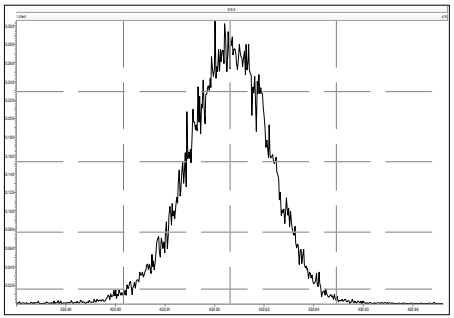
M 480.9696 R 13294



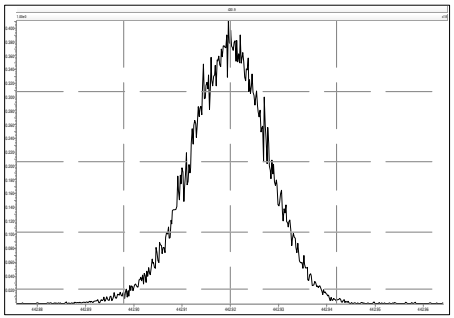
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

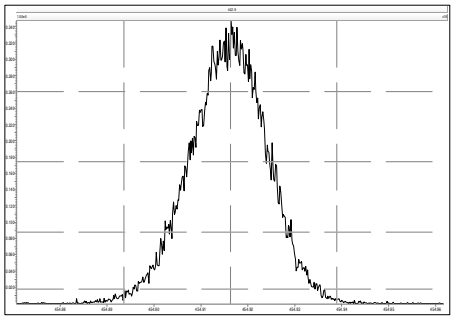
M 430.9728 R 11312



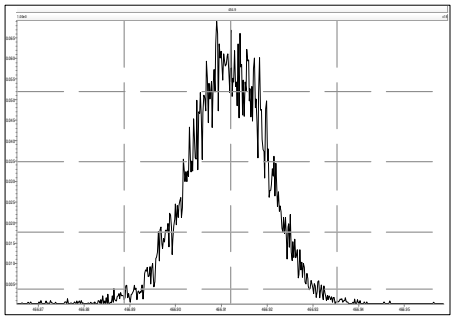
M 442.9728 R 11110



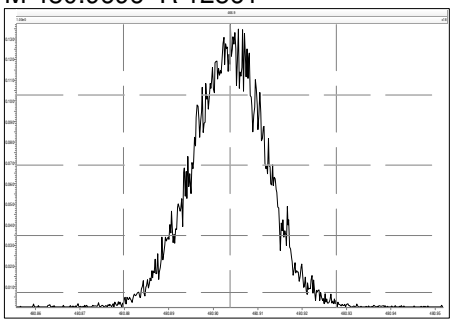
M 454.9728 R 11906



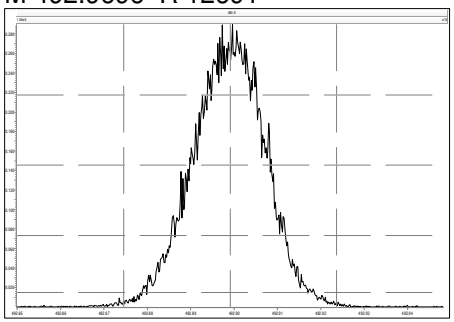
M 466.9728 R 12562



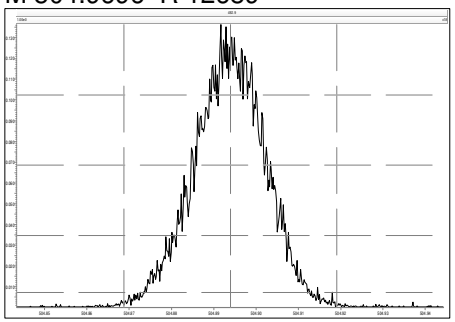
M 480.9696 R 12561



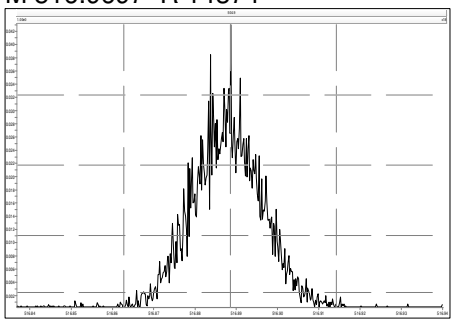
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



Lab ID: OPR1_18732_DF

APPROVED
Carla_Lyon , 12/21/2021, 1:34:53 PM

Acq'd: 17 Dec 2021 19:42 DTF

Wt/Vol: 1 uL

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Client ID: 0_18732_OPR001

UTP: 20-Dec-2021 14:13:04 DTF

J-level: 0.25 pg/uL **Split:** 1

Checkcode: 047-295-NVK

Datafile: 211217C13

Report: 20 Dec 2021 14:14 TF

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

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2378-TCDD	29.06		1.0008	1.0008	0	3.89E+06	0.80	Y	1.18	12.3	7017.129	0.207
12378-PeCDD	34.30		1.0005	1.0006	+0.2	1.52E+07	1.59	Y	1.04	52.2	5898.819	0.166
123478-HxCDD	38.20		1.0004	1.0004	0	1.49E+07	1.27	Y	1.09	58.5	4166.151	0.129
123678-HxCDD	38.31		1.0031	1.0031	0	1.50E+07	1.26	Y	1.15	56.6	4166.151	0.123
123789-HxCDD	38.59		1.0102	1.0104	+0.5	1.51E+07	1.26	Y	1.05	55	4166.151	0.112
1234678-HpCDD	41.21		1.0004	1.0003	-0.2	1.24E+07	1.06	Y	1.06	53.3	4507.269	0.159
OCDD	44.01		1.0003	1.0003	0	9.54E+06	0.92	Y	1.13	107	4490.074	0.615
2378-TCDF	28.22		1.0007	1.0008	+0.2	5.87E+06	0.81	Y	1.08	11.4	5782.324	0.113
12378-PeCDF	32.89		1.0005	1.0005	0	2.70E+07	1.58	Y	1.02	53.1	7868.428	0.128
23478-PeCDF	33.96		1.0005	1.0005	0	2.76E+07	1.57	Y	1.02	57.7	7868.428	0.139
123478-HxCDF	37.21		1.0005	1.0004	-0.2	2.45E+07	1.27	Y	1.27	53.9	12554.366	0.223
123678-HxCDF	37.35		1.0005	1.0004	-0.2	2.59E+07	1.30	Y	1.15	53.8	12554.366	0.228
234678-HxCDF	38.03		1.0004	1.0004	0	2.38E+07	1.26	Y	1.19	55	12554.366	0.225
123789-HxCDF	38.92		1.0003	1.0004	+0.2	2.00E+07	1.22	Y	1.16	51	12554.366	0.228
1234678-HpCDF	40.26		1.0003	1.0002	-0.2	2.17E+07	1.05	Y	1.37	52.8	3467.927	0.0593
1234789-HpCDF	41.68		1.0003	1.0003	0	1.54E+07	1.03	Y	1.31	53.3	3467.927	0.101
OCDF	44.19		1.0003	1.0003	0	1.32E+07	0.94	Y	1.07	106	6060.254	0.61

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.04	1.0215	1.0217	+0.3	2.67E+07	0.82	Y	1.05	89.5
ES 12378-PeCDD	34.28	1.2040	1.2062	+4.5	2.81E+07	1.67	Y	0.88	112
ES 123478-HxCDD	38.19	0.9925	0.9923	-0.5	2.34E+07	1.27	Y	0.97	97.4
ES 123678-HxCDD	38.29	0.9953	0.9951	-0.5	2.30E+07	1.23	Y	0.94	98.7
ES 123789-HxCDD	38.57	1.0024	1.0023	-0.2	2.63E+07	1.21	Y	1.09	97.5
ES 1234678-HpCDD	41.20	1.0697	1.0706	+2.2	2.20E+07	1.08	Y	0.91	97.7
ES OCDD	43.99	1.1413	1.1432	+5.0	1.58E+07	0.94	Y	0.62	51.4
ES 2378-TCDF	28.20	1.0469	1.0474	+0.8	4.79E+07	0.78	Y	1.06	89.3
ES 12378-PeCDF	32.87	1.2181	1.2208	+5.3	4.96E+07	1.56	Y	0.91	108
ES 23478-PeCDF	33.95	1.2578	1.2609	+6.3	4.68E+07	1.53	Y	0.88	105
ES 123478-HxCDF	37.19	0.9670	0.9665	-1.1	3.58E+07	0.56	Y	1.20	121
ES 123678-HxCDF	37.34	0.9708	0.9702	-1.3	4.18E+07	0.55	Y	1.35	125
ES 234678-HxCDF	38.01	0.9881	0.9878	-0.7	3.65E+07	0.54	Y	1.24	119
ES 123789-HxCDF	38.90	1.0108	1.0109	+0.2	3.37E+07	0.55	Y	1.16	118
ES 1234678-HpCDF	40.25	1.0452	1.0459	+1.7	3.01E+07	0.47	Y	0.97	126
ES 1234789-HpCDF	41.67	1.0818	1.0829	+2.8	2.22E+07	0.48	Y	0.85	105
ES OCDF	44.17	1.1461	1.1479	+4.8	2.31E+07	0.89	Y	0.81	57.9

Lab ID: OPR1_18732_DF **Acq'd:** 17 Dec 2021 19:42 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18732_OPR001 **UTP:** 20-Dec-2021 14:13:04 DTF **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 047-295-NVK

Datafile: 211217C13 **Report:** 20 Dec 2021 14:14 TF **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.42		-	-	-	2.85E+07	0.83	Y	-	-	
JS 1234-TCDF	26.92		-	-	-	5.06E+07	0.75	Y	-	-	
JS 123467-HxCDD	38.48		-	-	-	1.23E+07	1.33	Y	-	-	
CS 37Cl-2378-TCDD	29.06		1.0222	1.0225	+0.5	1.33E+07	n/a	-	1.20	96.6	
CS 12347-PeCDD	33.80		1.1870	1.1891	+4.3	2.67E+07	1.63	Y	0.75	124	
CS 12346-PeCDF	32.36		1.1994	1.2018	+4.7	4.82E+07	1.50	Y	0.85	112	
CS 123469-HxCDF	37.67		0.9793	0.9788	-1.1	3.69E+07	0.54	Y	1.12	134	
CS 1234689-HpCDF	40.66		1.0556	1.0565	+2.2	2.85E+07	0.47	Y	0.89	130	
~~SS 37Cl-2378-TCDD~~	~~29.06~~		~~1.0222~~	~~1.0225~~	~~+0.5~~	~~1.33E+07~~	~~n/a~~		~~1.15~~	~~100~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.80~~		~~1.1870~~	~~1.1891~~	~~+4.3~~	~~2.67E+07~~	~~1.63~~	~~Y~~	~~0.86~~	~~111~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.36~~		~~1.1994~~	~~1.2018~~	~~+4.7~~	~~4.82E+07~~	~~1.50~~	~~Y~~	~~0.94~~	~~104~~	
~~SS 123469-HxCDF~~	~~37.67~~		~~0.9793~~	~~0.9788~~	~~-1.1~~	~~3.69E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~107~~	
~~SS 1234689-HpCDF~~	~~40.66~~		~~1.0556~~	~~1.0565~~	~~+2.2~~	~~2.85E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~103~~	

Totals	Conc	EMPC
Total TCDD	61	61
Total PeCDD	83.4	83.4
Total HxCDD	189	189
Total HpCDD	68	68
Total Tetra-Octa Dioxins	509	509
Total TCDF	71	71
Total PeCDF	187	187
Total HxCDF	359	359
Total HpCDF	106	106
Total Tetra-Octa Furans	830	830
Total Tetra-Octa Dioxins & Furans	1340	1340

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.796	0.80
Response	3.90E+06	3.89E+06

Lab ID: OPR1_18732_DF **Acq'd: 17 Dec 2021 19:42 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18732_OPR001 **UTP: 20-Dec-2021 14:13:04 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 047-295-NVK**

Datafile: 211217C13 **Report: 20 Dec 2021 14:14 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.57		0.8819	0.8806	-2.0	5.74E+06	0.82	Y	1.18	18.1	7017.129	0.207
1379-TCDD	NotFnd		0.8935						1.18		7017.129	0.207
1369-TCDD	NotFnd		0.9073						1.18		7017.129	0.207
1469-TCDD	NotFnd		0.9329						1.18		7017.129	0.207
1247/1246/1248/1249-TCDD	NotFnd		0.9407						1.18		7017.129	0.207
1378-TCDD	NotFnd		0.9466						1.18		7017.129	0.207
1268-TCDD	NotFnd		0.9531						1.18		7017.129	0.207
1478-TCDD	NotFnd		0.9610						1.18		7017.129	0.207
1279-TCDD	NotFnd		0.9668						1.18		7017.129	0.207
1234/1269-TCDD	NotFnd		0.9783						1.18		7017.129	0.207
1236-TCDD	NotFnd		0.9830						1.18		7017.129	0.207
1237/1238-TCDD	NotFnd		0.9913						1.18		7017.129	0.207
1239-TCDD	28.92		0.9959	0.9961	+0.3	3.91E+06	0.83	Y	1.18	12.4	7017.129	0.207
2378-TCDD	**29.06**		**1.0008**	1.0008	**0**	3.89E+06	0.80	Y	**1.18**	**12.3**	**7017.129**	**0.207**
1278-TCDD	NotFnd		1.0115						1.18		7017.129	0.207
1267-TCDD	NotFnd		1.0160						1.18		7017.129	0.207
1289-TCDD	30.01		1.0331	1.0335	+0.7	5.76E+06	0.82	Y	1.18	18.2	7017.129	0.207
12479/12468-PeCDD	31.86		0.9295	0.9292	-0.6	4.25E+06	1.65	Y	1.04	14.6	5898.819	0.166
12469-PeCDD	NotFnd		0.9448						1.04		5898.819	0.166
12368-PeCDD	NotFnd		0.9602						1.04		5898.819	0.166
12478-PeCDD	NotFnd		0.9656						1.04		5898.819	0.166
12379-PeCDD	NotFnd		0.9686						1.04		5898.819	0.166
12369/12467/12489-PeCDD	NotFnd		0.9760						1.04		5898.819	0.166
12346/12347-PeCDD	NotFnd		0.9866						1.04		5898.819	0.166
12378-PeCDD	34.30		**1.0005**	**1.0006**	**+0.2**	**1.52E+07**	**1.59**	**Y**	**1.04**	**52.2**	**5898.819**	**0.166**
12367-PeCDD	NotFnd		1.0031						1.04		5898.819	0.166
12389-PeCDD	34.75		1.0132	1.0134	+0.4	4.82E+06	1.57	Y	1.04	16.6	5898.819	0.166
124679/124689-HxCDD	36.47		0.9553	0.9550	-0.7	5.08E+06	1.28	Y	1.10	19.1	4166.151	0.121
123468-HxCDD	NotFnd		0.9725						1.10		4166.151	0.121
123679/123689-HxCDD	NotFnd		0.9803						1.10		4166.151	0.121
123469-HxCDD	NotFnd		0.9842						1.10		4166.151	0.121
123478-HxCDD	38.20		**1.0004**	**1.0004**	**0**	**1.49E+07**	**1.27**	**Y**	1.09	**58.5**	**4166.151**	**0.129**
123678-HxCDD	38.31		**1.0031**	**1.0031**	**0**	**1.50E+07**	**1.26**	**Y**	1.15	**56.6**	**4166.151**	**0.123**
123467-HxCDD	NotFnd		1.0078						1.10		4166.151	0.121
123789-HxCDD	38.59		**1.0102**	**1.0104**	**+0.5**	**1.51E+07**	**1.26**	**Y**	1.05	**55**	**4166.151**	**0.112**

Lab ID: OPR1_18732_DF | **Acq'd: 17 Dec 2021 19:42 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18732_OPR001 | **UTP: 20-Dec-2021 14:13:04 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 047-295-NVK**

Datafile: 211217C13 | **Report: 20 Dec 2021 14:14 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.52		0.9837	0.9835	-0.5	3.44E+06	1.00	Y	1.06	14.7	4507.269	0.159
1234678-HpCDD	**41.21**		**1.0004**	**1.0003**	**-0.2**	**1.24E+07**	**1.06**	**Y**	**1.06**	**53.3**	**4507.269**	**0.159**
OCDD	**44.01**		**1.0003**	**1.0003**	**0**	**9.54E+06**	**0.92**	**Y**	**1.13**	**107**	**4490.074**	**0.615**
OCDD-a	44.00	**EMPC**	1.0002	1.0002	0	5.75E+05	2.09	N	0.07	101	7883.855	16.9
1368-TCDF	23.60		0.8388	0.8367	-3.0	8.71E+06	0.80	Y	1.08	16.9	5782.324	0.113
1468-TCDF	NotFnd		0.8578						1.08		5782.324	0.113
2468-TCDF	24.72		0.8780	0.8766	-2.1	2.30E+06	0.80	Y	1.08	4.45	5782.324	0.113
1346/1246-TCDF	NotFnd		0.8906						1.08		5782.324	0.113
1347/1378/1247-TCDF	NotFnd		0.8951						1.08		5782.324	0.113
1348-TCDF	NotFnd		0.9041						1.08		5782.324	0.113
1248/1367/1379-TCDF	NotFnd		0.9084						1.08		5782.324	0.113
1268-TCDF	NotFnd		0.9207						1.08		5782.324	0.113
1467-TCDF	NotFnd		0.9253						1.08		5782.324	0.113
1478-TCDF	NotFnd		0.9309						1.08		5782.324	0.113
1369/1237-TCDF	NotFnd		0.9431						1.08		5782.324	0.113
2467-TCDF	NotFnd		0.9472						1.08		5782.324	0.113
2368-TCDF	NotFnd		0.9524						1.08		5782.324	0.113
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9560						1.08		5782.324	0.113
1278-TCDF	NotFnd		0.9710						1.08		5782.324	0.113
1349-TCDF	NotFnd		0.9752						1.08		5782.324	0.113
1267-TCDF	NotFnd		0.9802						1.08		5782.324	0.113
2346/1249-TCDF	NotFnd		0.9863						1.08		5782.324	0.113
2347/1279-TCDF	NotFnd		0.9936						1.08		5782.324	0.113
2348-TCDF	28.12		0.9971	0.9972	+0.2	9.59E+06	0.80	Y	1.08	18.6	5782.324	0.113
2378-TCDF	**28.22**		**1.0007**	**1.0008**	**+0.2**	**5.87E+06**	**0.81**	**Y**	**1.08**	**11.4**	**5782.324**	**0.113**
2367/3467-TCDF	NotFnd		1.0134						1.08		5782.324	0.113
1269-TCDF	NotFnd		1.0219						1.08		5782.324	0.113
1239-TCDF	NotFnd		1.0309						1.08		5782.324	0.113
1289-TCDF	30.18		1.0689	1.0701	+2.2	1.02E+07	0.79	Y	1.08	19.8	5782.324	0.113
13468/12468-PeCDF	30.13		0.9175	0.9166	-1.6	3.09E+07	1.60	Y	1.02	62.8	4661.732	0.0791
13678/13467/12467-PeCDF	NotFnd		0.9630						1.02		7868.428	0.134
12368/13478/12478-PeCDF	NotFnd		0.9675						1.02		7868.428	0.134
14678-PeCDF	NotFnd		0.9705						1.02		7868.428	0.134
13479-PeCDF	NotFnd		0.9734						1.02		7868.428	0.134
13469/12479-PeCDF	NotFnd		0.9807						1.02		7868.428	0.134
12346-PeCDF	NotFnd		0.9848						1.02		7868.428	0.134

Lab ID: OPR1_18732_DF | **Acq'd: 17 Dec 2021 19:42 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18732_OPR001 | **UTP: 20-Dec-2021 14:13:04 DTF** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 047-295-NVK**

Datafile: 211217C13 | **Report: 20 Dec 2021 14:14 TF** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		7868.428	0.134
12347-PeCDF	NotFnd		0.9895						1.02		7868.428	0.134
12348-PeCDF	NotFnd		0.9943						1.02		7868.428	0.134
12378-PeCDF	**32.89**		**1.0005**	**1.0005**	**0**	**2.70E+07**	**1.58**	**Y**	**1.02**	**53.1**	**7868.428**	**0.128**
12678/12367-PeCDF	NotFnd		1.0086						1.02		7868.428	0.134
12379-PeCDF	NotFnd		1.0137						1.02		7868.428	0.134
12679-PeCDF	NotFnd		0.9936						1.02		7868.428	0.134
23467/12369-PeCDF	NotFnd		0.9970						1.02		7868.428	0.134
23478-PeCDF	**33.96**		**1.0005**	**1.0005**	**0**	**2.76E+07**	**1.57**	**Y**	**1.02**	**57.7**	**7868.428**	**0.139**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		7868.428	0.134
12349-PeCDF	NotFnd		1.0103						1.02		7868.428	0.134
12389-PeCDF	35.04		1.0317	1.0321	+0.8	6.56E+06	1.58	Y	1.02	13.3	7868.428	0.134
123468-HxCDF	35.83		0.9634	0.9634	0	6.43E+07	1.27	Y	1.19	146	12554.366	0.226
124678/134678-HxCDF	NotFnd		0.9687						1.19		12554.366	0.226
134679-HxCDF	NotFnd		0.9748						1.19		12554.366	0.226
124679-HxCDF	NotFnd		0.9800						1.19		12554.366	0.226
124689-HxCDF	NotFnd		0.9857						1.19		12554.366	0.226
123467-HxCDF	NotFnd		0.9973						1.19		12554.366	0.226
123478-HxCDF	**37.21**		**1.0005**	**1.0004**	**-0.2**	**2.45E+07**	**1.27**	**Y**	**1.27**	**53.9**	**12554.366**	**0.223**
123678-HxCDF	**37.35**		**1.0005**	**1.0004**	**-0.2**	**2.59E+07**	**1.30**	**Y**	**1.15**	**53.8**	**12554.366**	**0.228**
123479-HxCDF	NotFnd		1.0051						1.19		12554.366	0.226
123469-HxCDF	NotFnd		1.0092						1.19		12554.366	0.226
123679-HxCDF	NotFnd		0.9948						1.19		12554.366	0.226
234678-HxCDF	**38.03**		**1.0004**	**1.0004**	**0**	**2.38E+07**	**1.26**	**Y**	**1.19**	**55**	**12554.366**	**0.225**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		12554.366	0.226
123789-HxCDF	**38.92**		**1.0003**	**1.0004**	**+0.2**	**2.00E+07**	**1.22**	**Y**	**1.16**	**51**	**12554.366**	**0.228**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		12554.366	0.226
1234678-HpCDF	**40.26**		**1.0003**	**1.0002**	**-0.2**	**2.17E+07**	**1.05**	**Y**	**1.37**	**52.8**	**3467.927**	**0.0593**
1234679-HpCDF	NotFnd		1.0068						1.34		3467.927	0.0766
1234689-HpCDF	NotFnd		1.0102						1.34		3467.927	0.0766
1234789-HpCDF	**41.68**		**1.0003**	**1.0003**	**0**	**1.54E+07**	**1.03**	**Y**	**1.31**	**53.3**	**3467.927**	**0.101**
OCDF	**44.19**		**1.0003**	**1.0003**	**0**	**1.32E+07**	**0.94**	**Y**	**1.07**	**106**	**6060.254**	**0.61**
OCDF-a	44.18	**EMPC**	1.0002	1.0001	-0.3	5.38E+05	3.15	N	0.07	70.1	5668.088	9.21

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211217C13	Analysis Date:	17-DEC-2021 19:42:09
Lab ID:	OPR1_18732_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.3	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	52.2	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	58.5	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	56.6	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	55	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	53.3	35	-	70	Y
OCDD	100	107	78	-	144	Y
2,3,7,8-TCDF	10	11.4	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	53.1	40	-	67	Y
2,3,4,7,8-PeCDF	50	57.7	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	53.9	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	53.8	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	51	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	52.8	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	53.3	39	-	69	Y
OCDF	100	106	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2021 14:15 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211217C13	Analysis Date:	17-DEC-2021 19:42:09
Lab ID:	OPR1_18732_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	89.5	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	112	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	97.4	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	98.7	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	97.5	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	97.7	26	-	166	Y
13C-OCDD	200	103	26	-	397	Y
13C-2,3,7,8-TCDF	100	89.3	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	108	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	105	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	121	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	125	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	119	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	118	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	126	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	105	20	-	186	Y
13C-OCDF	200	116	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	38.6	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 20 Dec 2021 14:15 Analyst: TF

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	211217C13	Analysis Date:	17-DEC-2021 19:42:09
Lab ID:	OPR1_18732_DF		

Window Defining Standards Results

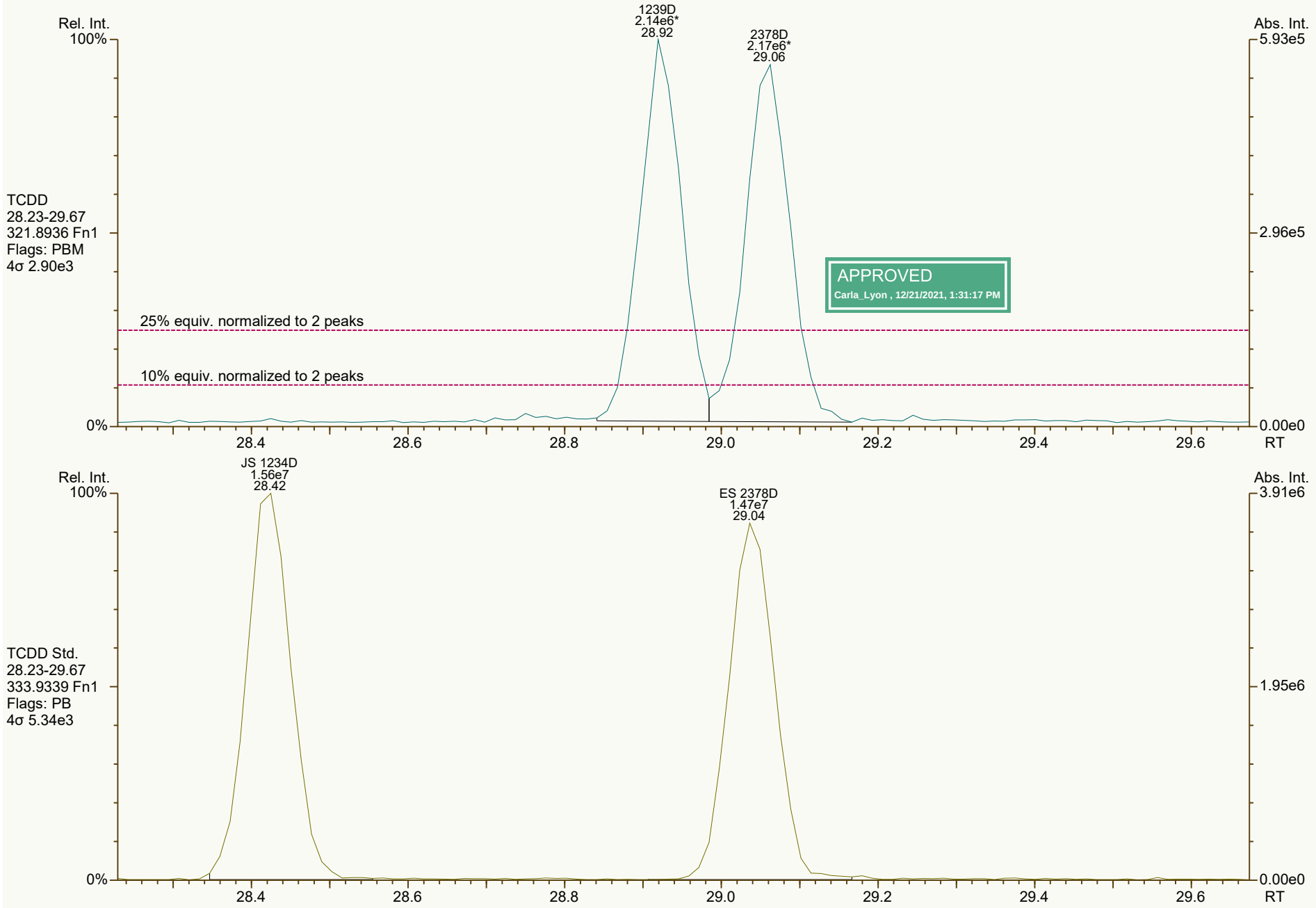
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.57	1289-TCDD	30.01
12479/12468-PeCDD	31.86	12389-PeCDD	34.75
124679/124689-HxCDD	36.47	123789-HxCDD	38.59
1234679-HpCDD	40.52	1234678-HpCDD	41.21
1368-TCDF	23.60	1289-TCDF	30.18
13468/12468-PeCDF	30.13	12389-PeCDF	35.04
123468-HxCDF	35.83	123789-HxCDF	38.92
1234678-HpCDF	40.26	1234789-HpCDF	41.68

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.92	2378-TCDD	29.06
2348-TCDF	28.12	2378-TCDF	28.22

Processed: 20 Dec 2021 14:15 Analyst: TF

SGS ID: OPR1_18732_DF
Sample ID: 0_18732_OPR001
Acq: 17-Dec-2021 19:42:09
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18
User: DTF Datafile: 211217C13



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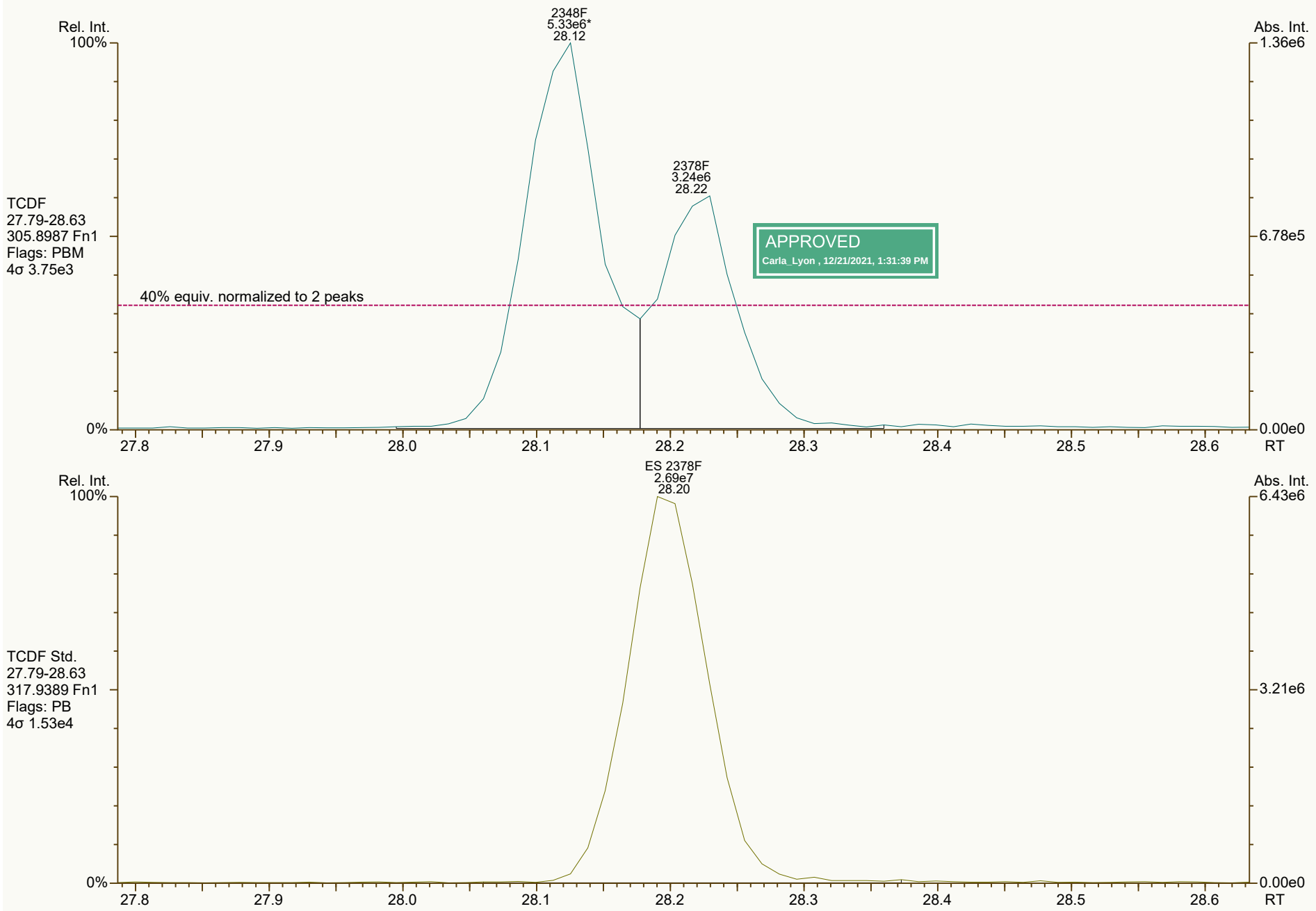
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616
Revised: 20-Dec-2021 09:24 (DTF) Printed: 20-Dec-2021 14:17

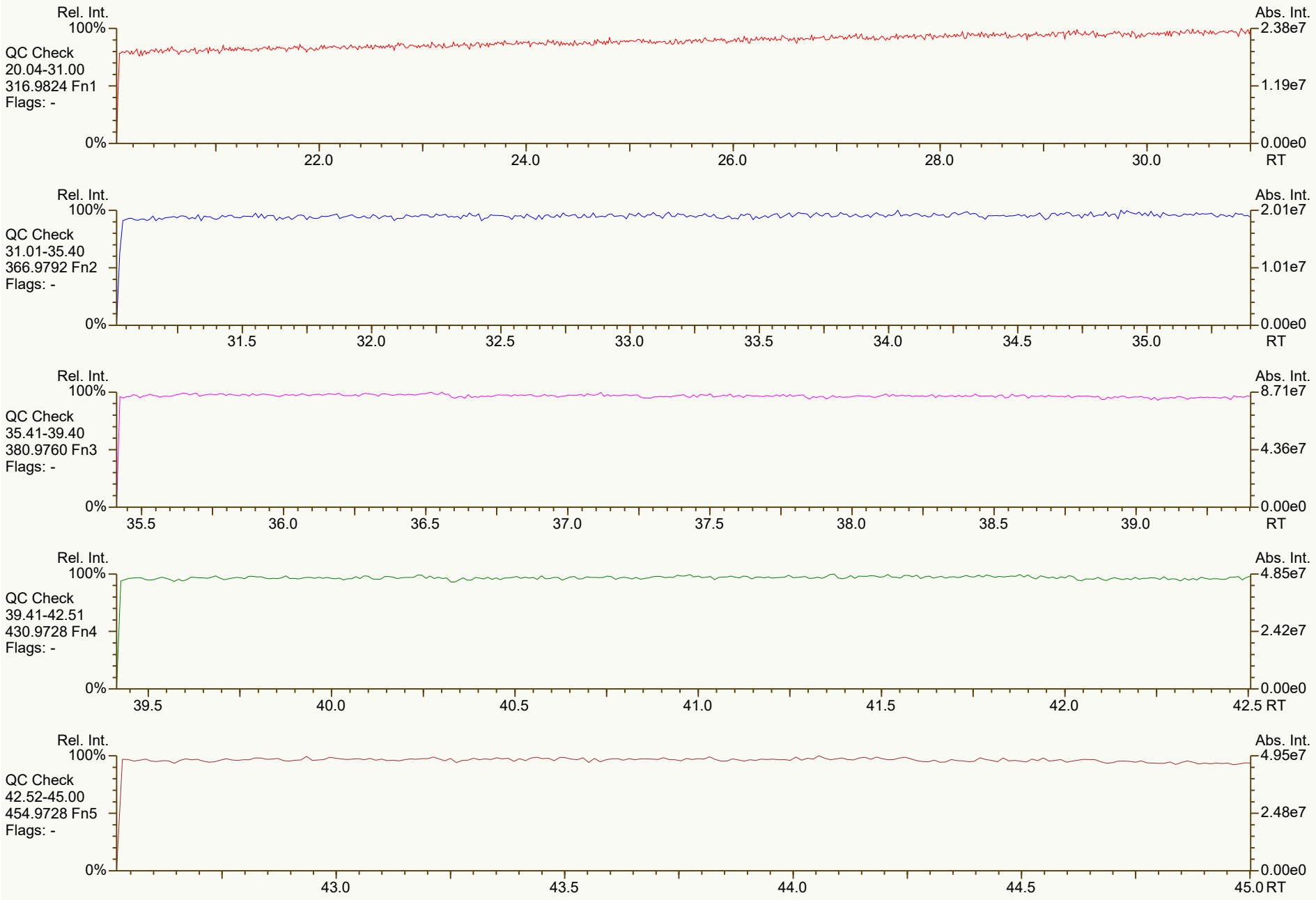
SGS ID: OPR1_18732_DF
Sample ID: 0_18732_OPR001
Acq: 17-Dec-2021 19:42:09
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18
User: DTF Datafile: 211217C13



Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\OPR1_18732_DF.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616
PKD: 20-Dec-2021 09:25 Printed: 20-Dec-2021 14:17

SGS ID: OPR1_18732_DF | Sample ID: 0_18732_OPR001 | Acq: 17-Dec-2021 19:42:09

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18 | User: DTF Datafile: 211217C13

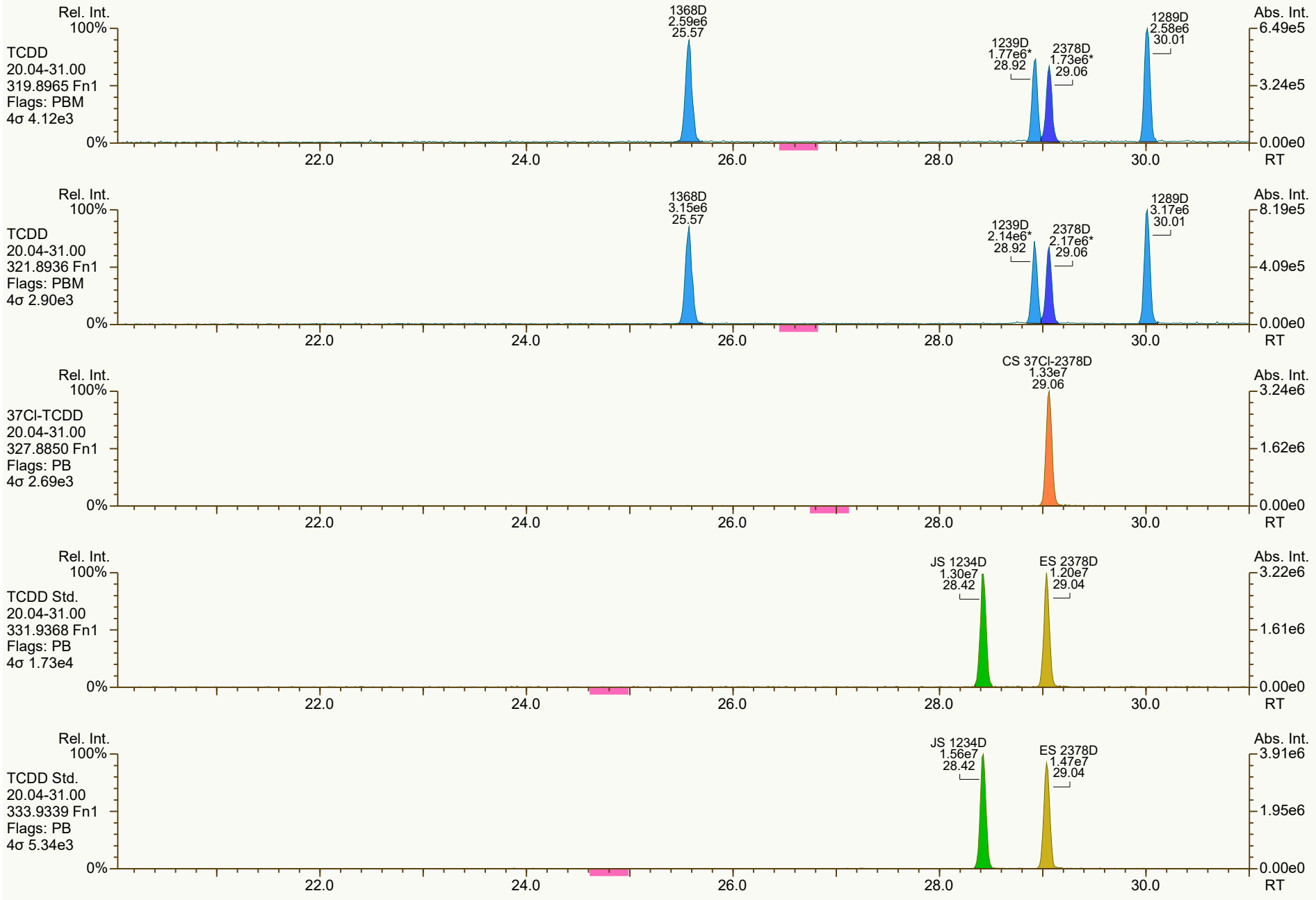


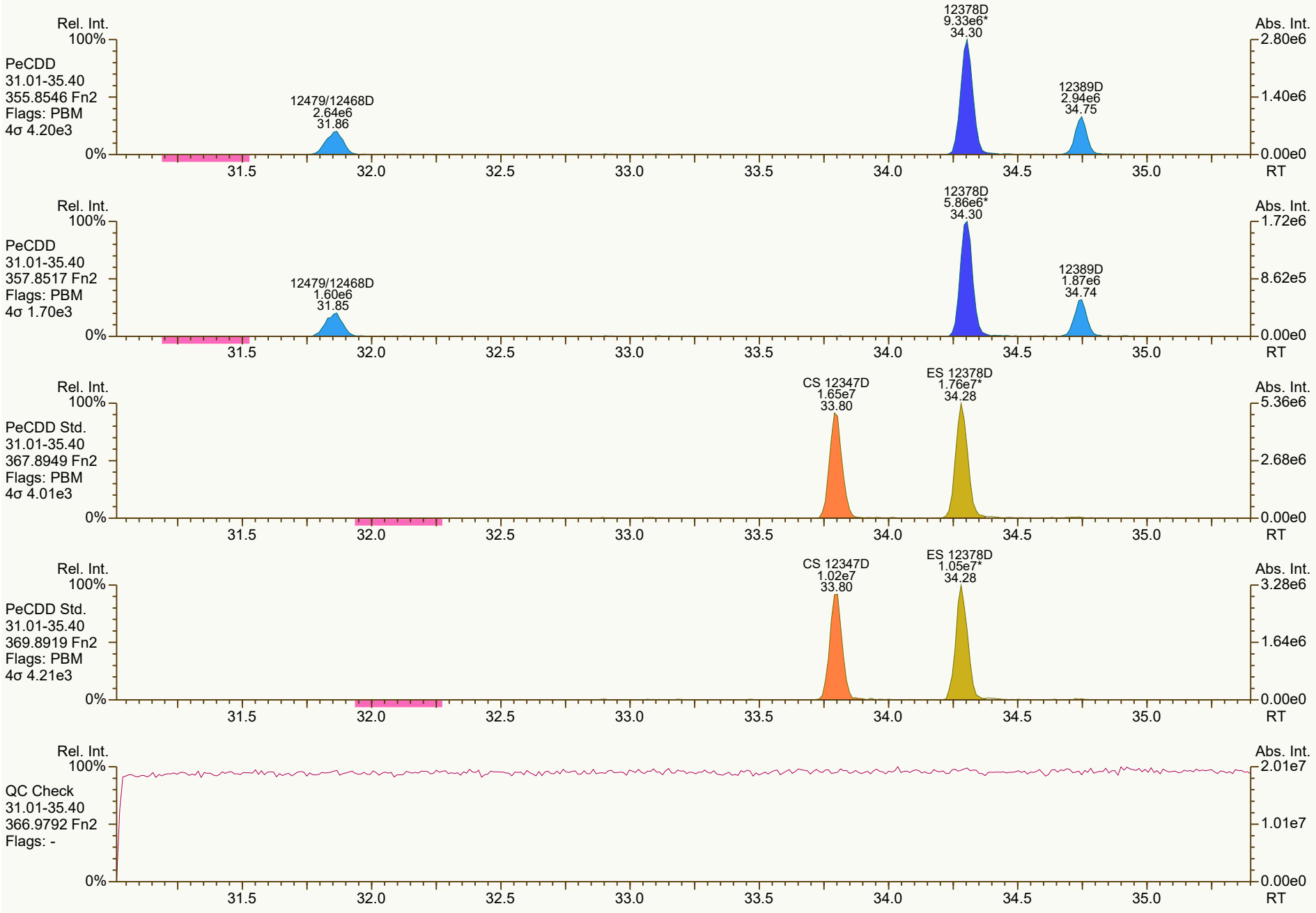
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\OPR1_18732_DF.utp_res, saved 20-Dec-2021 14:13 (DTF)

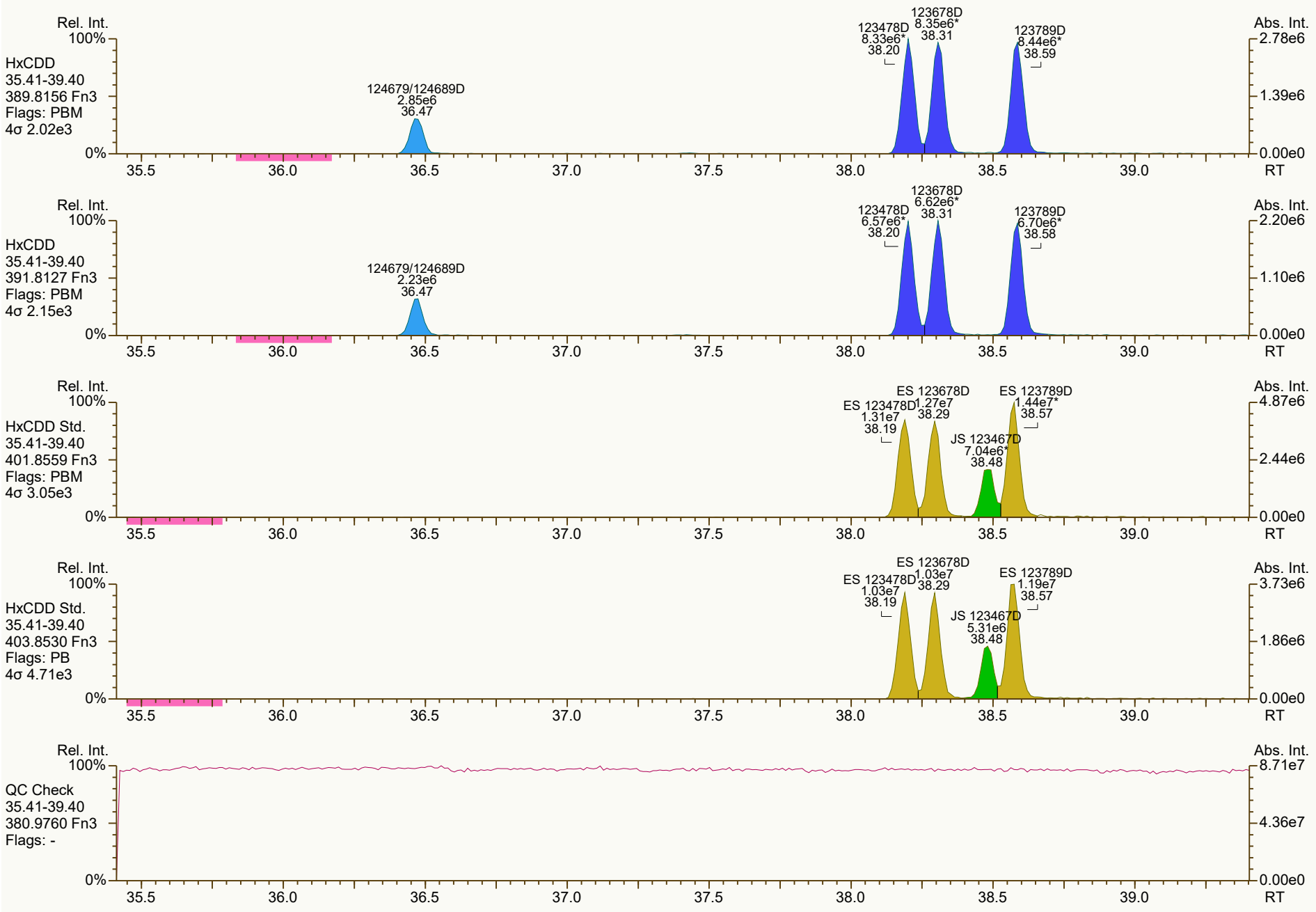
Peak annotation: Areas, Centroids

SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 scc: 047-295

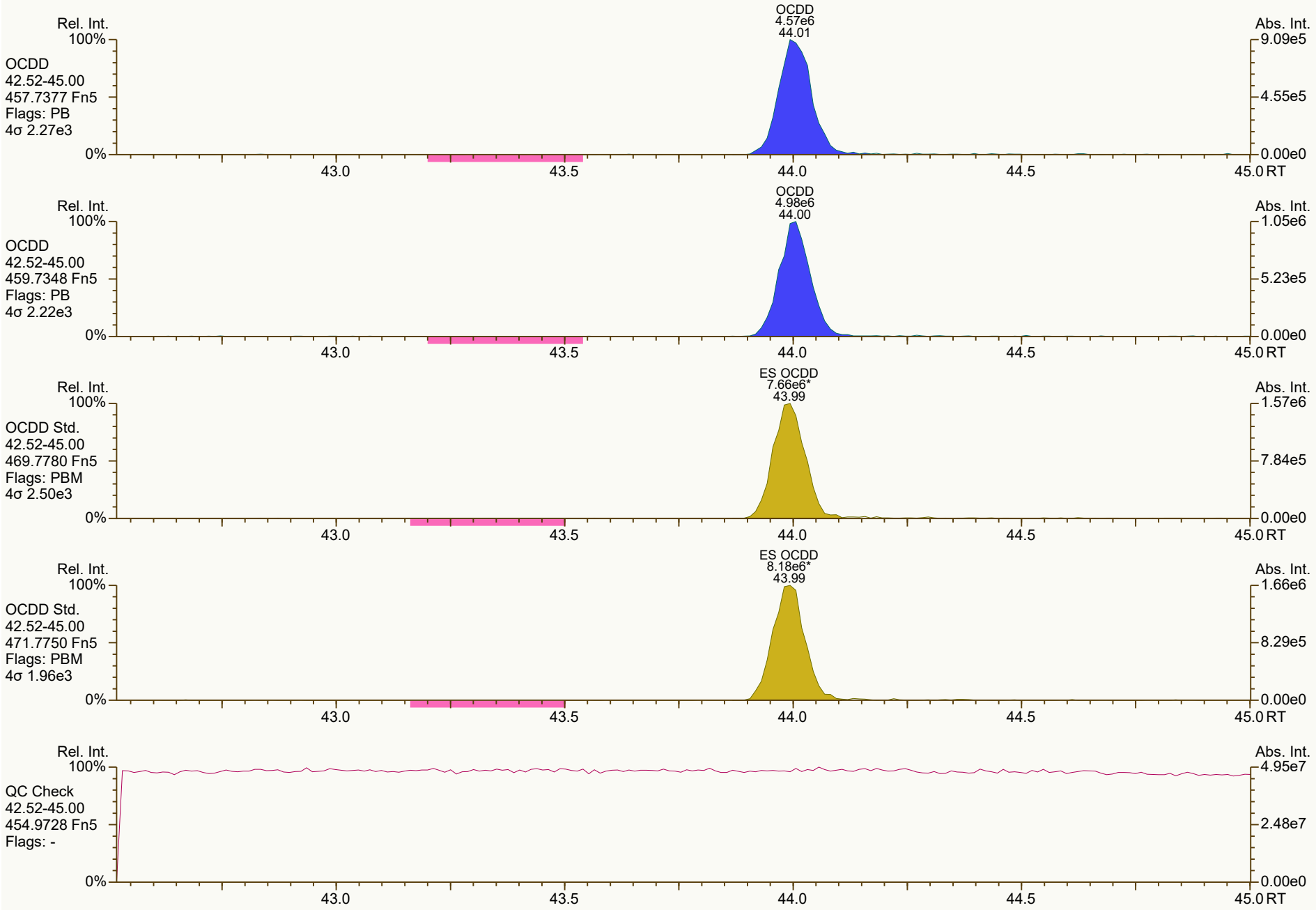
PKD: n/a Printed: 20-Dec-2021 14:25 Page 1 of 12

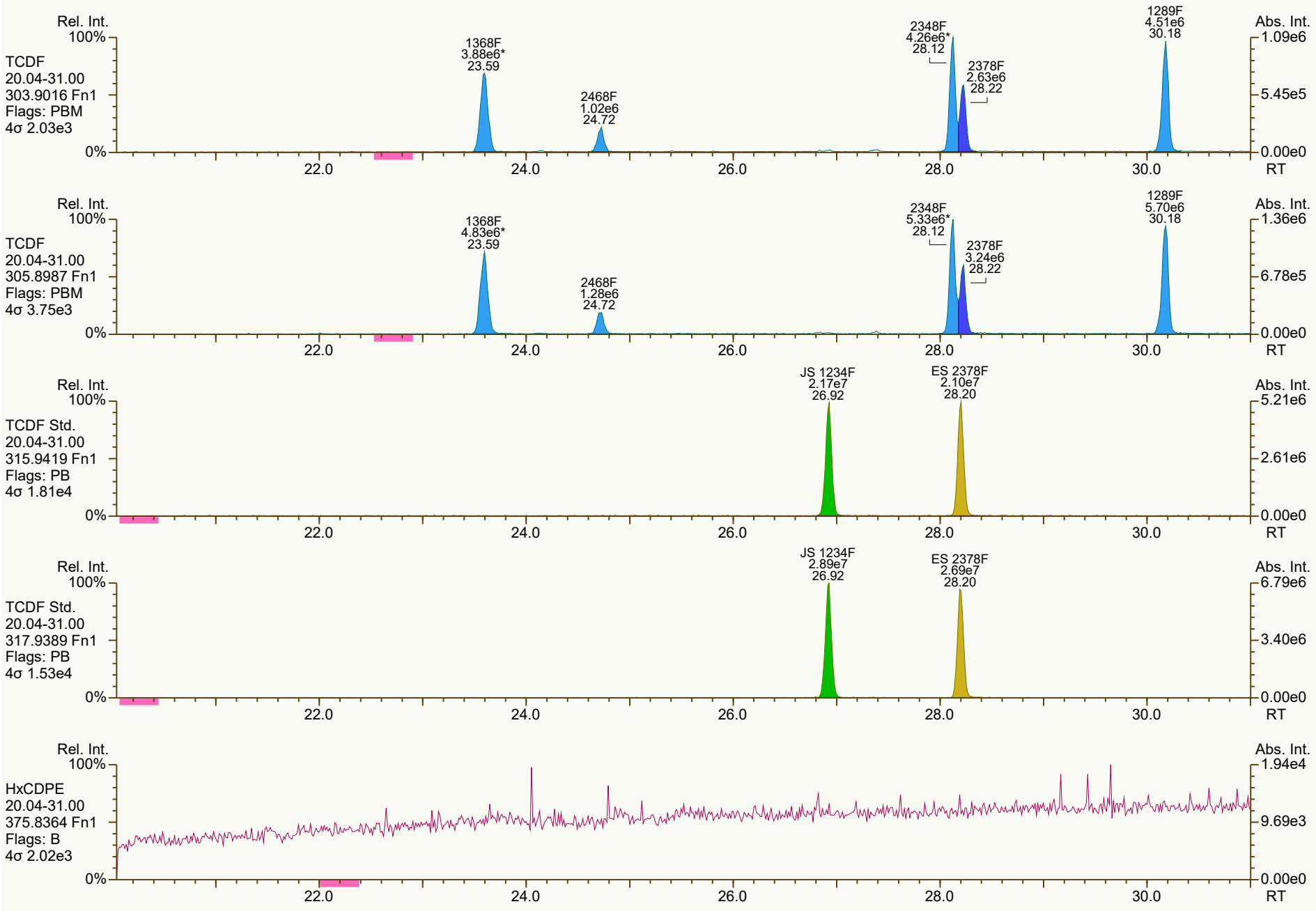

Rel. Int.
100%
TCDD
20.04-31.00
319.8965 Fn1
Flags: PBM
4σ 4.12e3
0%
1368D
2.59e6
25.57
1239D
1.77e6*
28.92
2378D
1.73e6*
29.06
1289D
2.58e6
30.01
Abs. Int.
6.49e5
3.24e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
20.04-31.00
321.8936 Fn1
Flags: PBM
4σ 2.90e3
0%
1368D
3.15e6
25.57
1239D
2.14e6*
28.92
2378D
2.17e6*
29.06
1289D
3.17e6
30.01
Abs. Int.
8.19e5
4.09e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
20.04-31.00
327.8850 Fn1
Flags: PB
4σ 2.69e3
0%
CS 37Cl-2378D
1.33e7
29.06
Abs. Int.
3.24e6
1.62e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
331.9368 Fn1
Flags: PB
4σ 1.73e4
0%
JS 1234D
1.30e7
28.42
ES 2378D
1.20e7
29.04
Abs. Int.
3.22e6
1.61e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
20.04-31.00
333.9339 Fn1
Flags: PB
4σ 5.34e3
0%
JS 1234D
1.56e7
28.42
ES 2378D
1.47e7
29.04
Abs. Int.
3.91e6
1.95e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

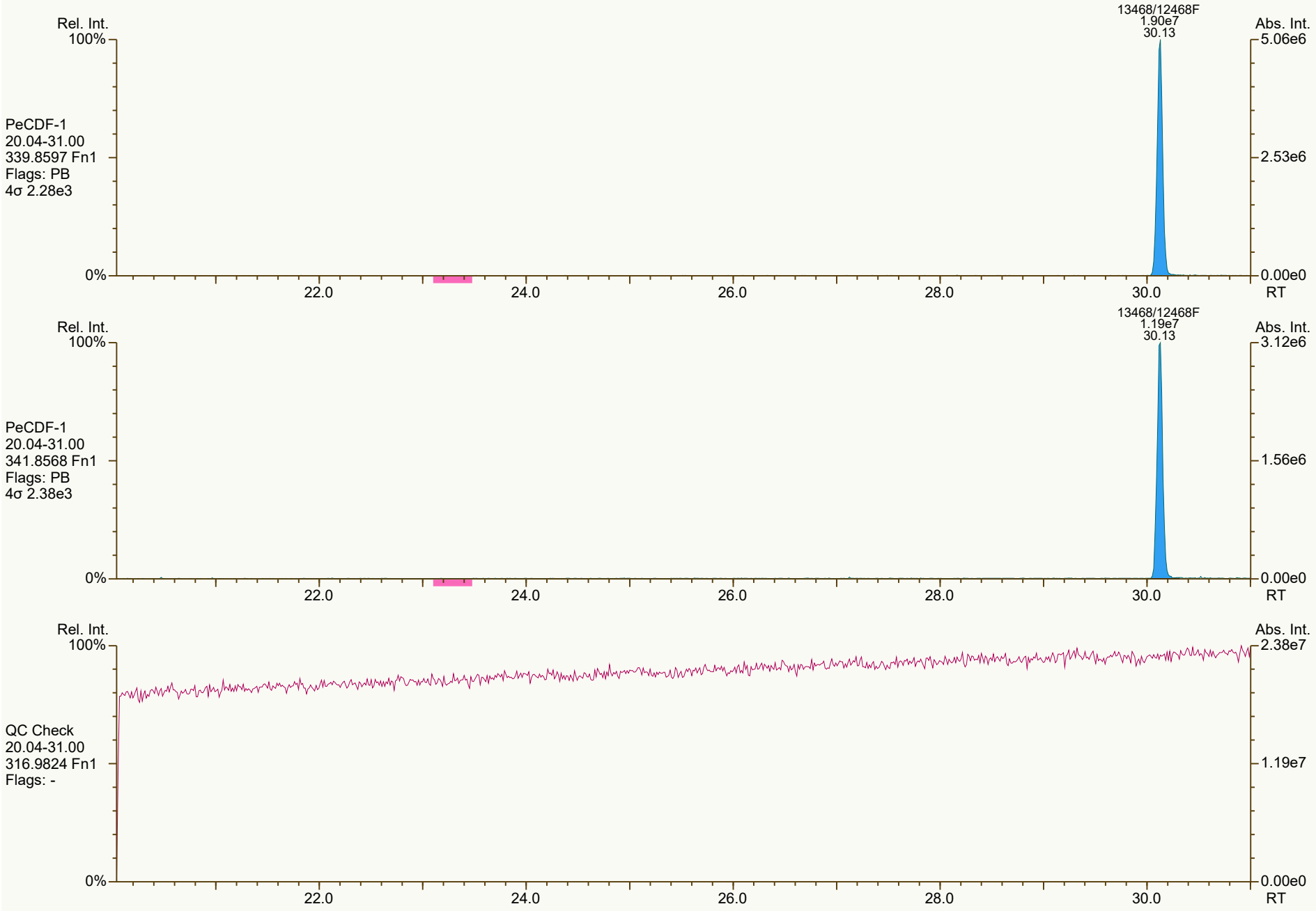

Rel. Int.
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PBM
4σ 4.20e3
0%
12479/12468D
2.64e6
31.86
12378D
9.33e6*
34.30
12389D
2.94e6
34.75
Abs. Int.
2.80e6
1.40e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PBM
4σ 1.70e3
0%
12479/12468D
1.60e6
31.85
12378D
5.86e6*
34.30
12389D
1.87e6
34.74
Abs. Int.
1.72e6
8.62e5
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PBM
4σ 4.01e3
0%
CS 12347D
1.65e7
33.80
ES 12378D
1.76e7*
34.28
Abs. Int.
5.36e6
2.68e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PBM
4σ 4.21e3
0%
CS 12347D
1.02e7
33.80
ES 12378D
1.05e7*
34.28
Abs. Int.
3.28e6
1.64e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
Abs. Int.
2.01e7
1.01e7
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PBM
4σ 2.02e3
124679/124689D
2.85e6
36.47
123478D
8.33e6*
38.20
123678D
8.35e6*
38.31
123789D
8.44e6*
38.59
Abs. Int.
2.78e6
1.39e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PBM
4σ 2.15e3
124679/124689D
2.23e6
36.47
123478D
6.57e6*
38.20
123678D
6.62e6*
38.31
123789D
6.70e6*
38.58
Abs. Int.
2.20e6
1.10e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PBM
4σ 3.05e3
ES 123478D
1.31e7
38.19
ES 123678D
1.27e7
38.29
JS 123467D
7.04e6*
38.48
ES 123789D
1.44e7*
38.57
Abs. Int.
4.87e6
2.44e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PB
4σ 4.71e3
ES 123478D
1.03e7
38.19
ES 123678D
1.03e7
38.29
JS 123467D
5.31e6
38.48
ES 123789D
1.19e7
38.57
Abs. Int.
3.73e6
1.86e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
Abs. Int.
8.71e7
4.36e7
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT


Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PBM
4σ 2.74e3
1234678D
6.40e6*
41.21
1234679D
1.72e6
40.52
Abs. Int.
2.04e6
1.02e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PBM
4σ 1.77e3
1234678D
6.04e6*
41.21
1234679D
1.72e6
40.52
Abs. Int.
1.84e6
9.19e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PB
4σ 4.86e3
ES 1234678D
1.14e7
41.20
Abs. Int.
3.48e6
1.74e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PB
4σ 2.10e3
ES 1234678D
1.06e7
41.20
Abs. Int.
3.15e6
1.57e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
Abs. Int.
4.85e7
2.42e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PB
4σ 2.27e3
0%
OCDD
4.57e6
44.01
Abs. Int.
9.09e5
4.55e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PB
4σ 2.22e3
0%
OCDD
4.98e6
44.00
Abs. Int.
1.05e6
5.23e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PBM
4σ 2.50e3
0%
ES OCDD
7.66e6*
43.99
Abs. Int.
1.57e6
7.84e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PBM
4σ 1.96e3
0%
ES OCDD
8.18e6*
43.99
Abs. Int.
1.66e6
8.29e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.95e7
2.48e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

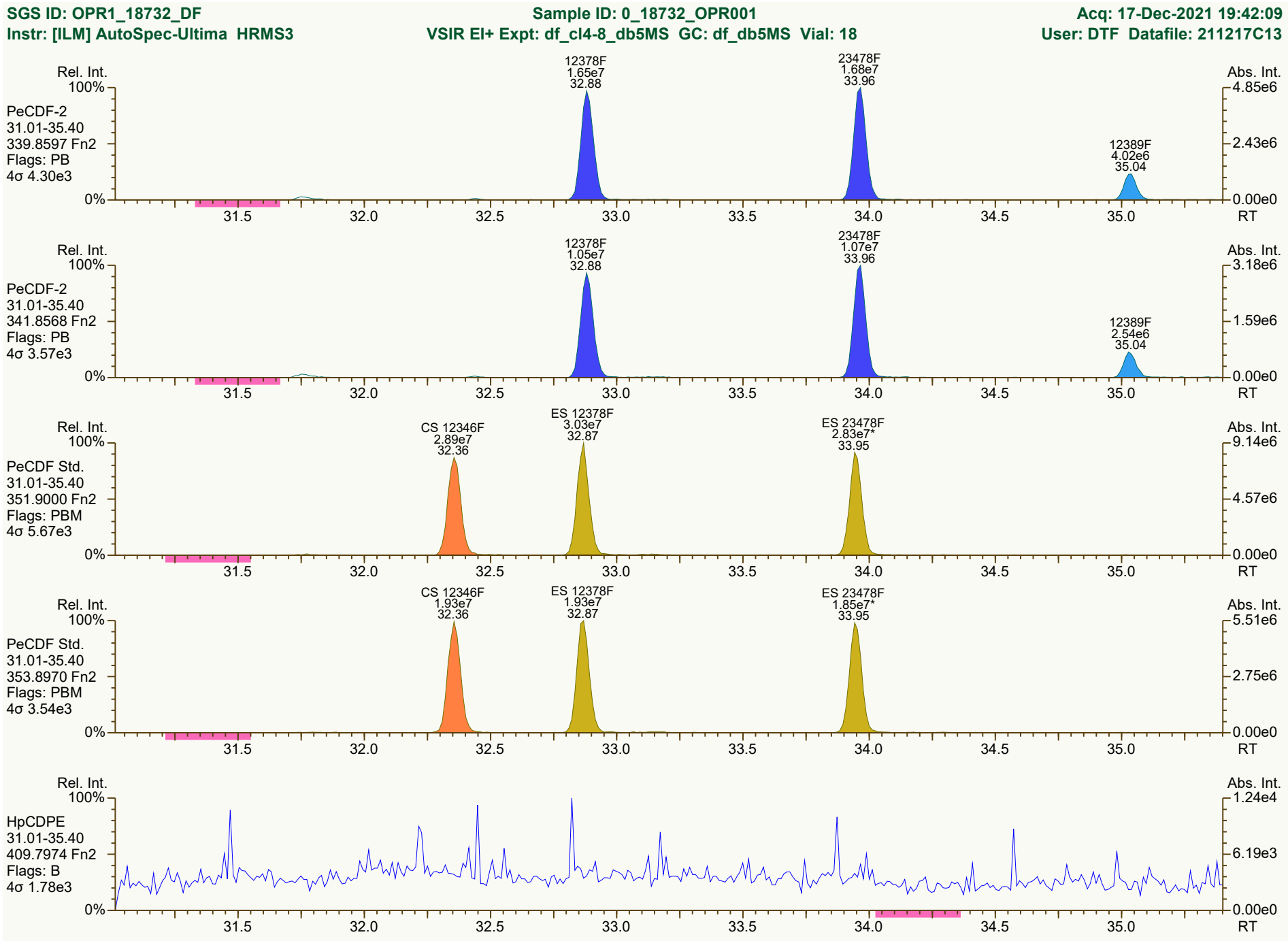

Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 2.03e3
0%
1368F
3.88e6*
23.59
2468F
1.02e6
24.72
2348F
4.26e6*
28.12
2378F
2.63e6
28.22
1289F
4.51e6
30.18
Abs. Int.
1.09e6
5.45e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 3.75e3
0%
1368F
4.83e6*
23.59
2468F
1.28e6
24.72
2348F
5.33e6*
28.12
2378F
3.24e6
28.22
1289F
5.70e6
30.18
Abs. Int.
1.36e6
6.78e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PB
4σ 1.81e4
0%
JS 1234F
2.17e7
26.92
ES 2378F
2.10e7
28.20
Abs. Int.
5.21e6
2.61e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PB
4σ 1.53e4
0%
JS 1234F
2.89e7
26.92
ES 2378F
2.69e7
28.20
Abs. Int.
6.79e6
3.40e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 2.02e3
0%
Abs. Int.
1.94e4
9.69e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
PeCDF-1
20.04-31.00
339.8597 Fn1
Flags: PB
4σ 2.28e3
13468/12468F
1.90e7
30.13
Abs. Int.
5.06e6
2.53e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
PeCDF-1
20.04-31.00
341.8568 Fn1
Flags: PB
4σ 2.38e3
13468/12468F
1.19e7
30.13
3.12e6
1.56e6
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
2.38e7
1.19e7

SGS ID: OPR1_18732_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18732_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

Acq: 17-Dec-2021 19:42:09
User: DTF Datafile: 211217C13



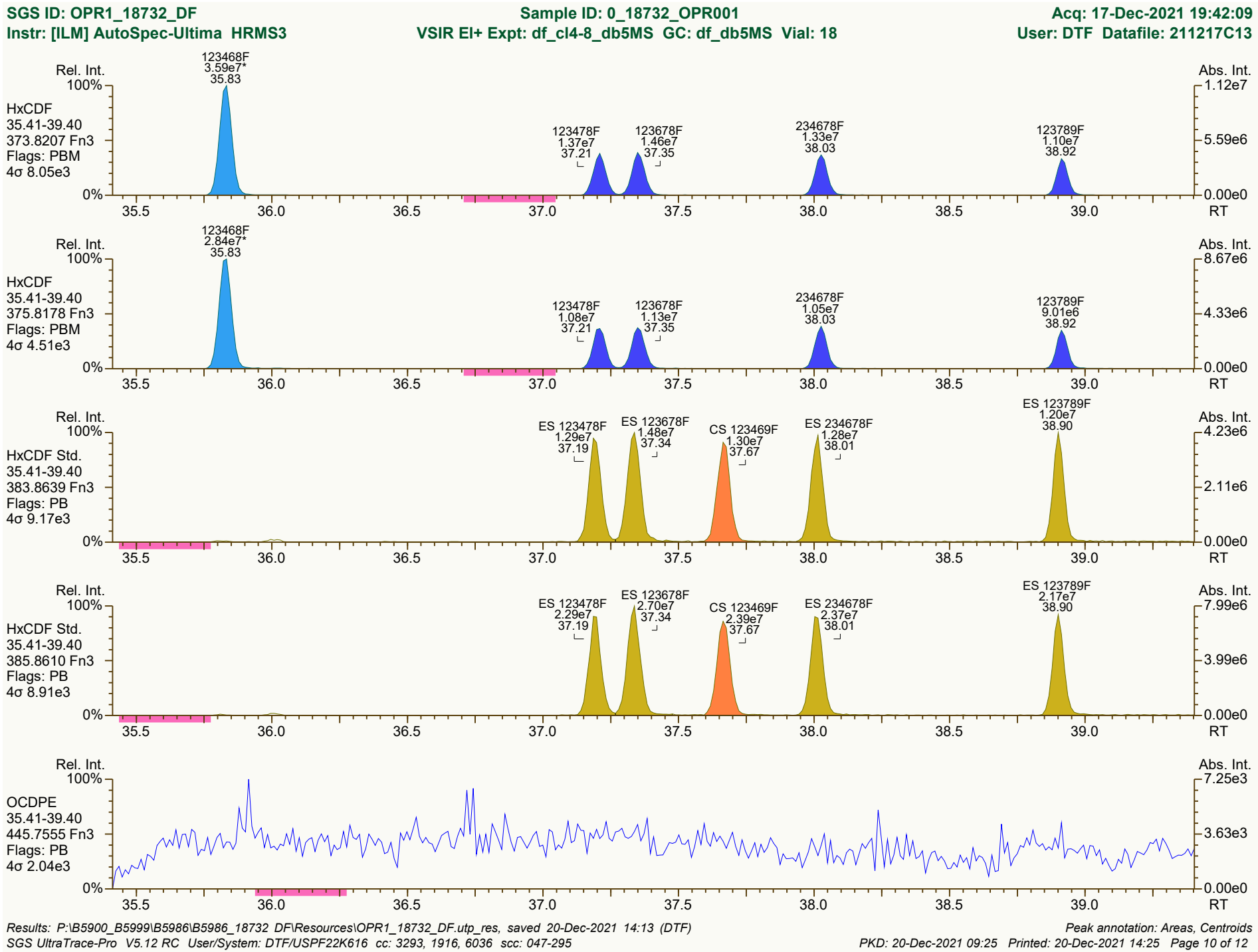
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\OPR1_18732_DF.utp_res, saved 20-Dec-2021 14:13 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 5257, 2577, 0144 scc: 047-295

Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:25 Printed: 20-Dec-2021 14:25 Page 9 of 12

SGS ID: OPR1_18732_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

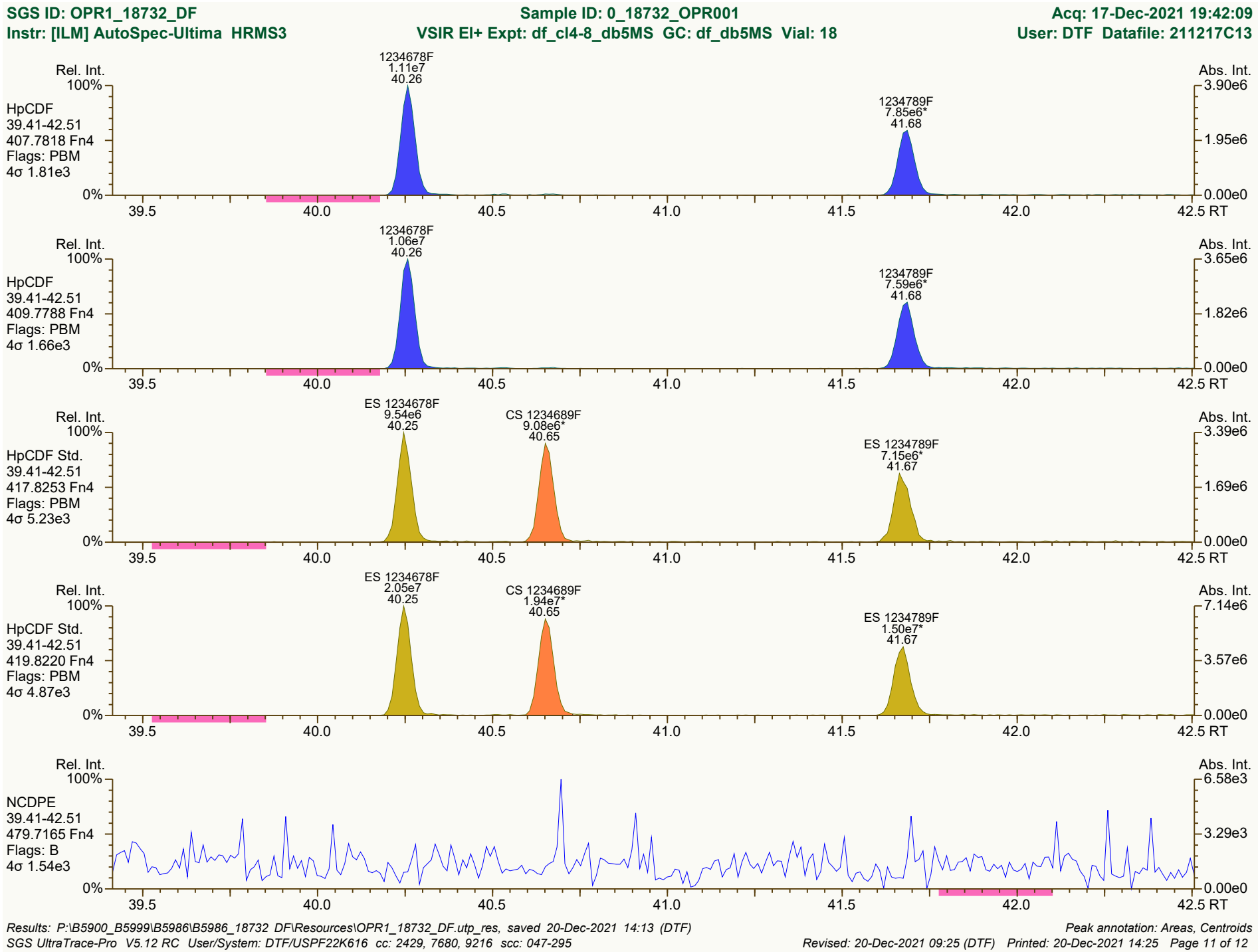
Sample ID: 0_18732_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18

Acq: 17-Dec-2021 19:42:09
User: DTF Datafile: 211217C13



Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\OPR1_18732_DF.utp_res, saved 20-Dec-2021 14:13 (DTF)
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3293, 1916, 6036 scc: 047-295

Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:25 Printed: 20-Dec-2021 14:25 Page 10 of 12


SGS ID: OPR1_18732_DF
Sample ID: 0_18732_OPR001
Acq: 17-Dec-2021 19:42:09
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 18
User: DTF Datafile: 211217C13
Rel. Int.
Abs. Int.
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 1.81e3
1234678F
1.11e7
40.26
1234789F
7.85e6*
41.68
3.90e6
1.95e6
0.00e0
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 1.66e3
1234678F
1.06e7
40.26
1234789F
7.59e6*
41.68
3.65e6
1.82e6
0.00e0
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PBM
4σ 5.23e3
ES 1234678F
9.54e6
40.25
CS 1234689F
9.08e6*
40.65
ES 1234789F
7.15e6*
41.67
3.39e6
1.69e6
0.00e0
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PBM
4σ 4.87e3
ES 1234678F
2.05e7
40.25
CS 1234689F
1.94e7*
40.65
ES 1234789F
1.50e7*
41.67
7.14e6
3.57e6
0.00e0
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 1.54e3
6.58e3
3.29e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\OPR1_18732_DF.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2429, 7680, 9216 scc: 047-295
Revised: 20-Dec-2021 09:25 (DTF) Printed: 20-Dec-2021 14:25 Page 11 of 12


Rel. Int.
100%
OCDF
42.52-45.00
441.7428 Fn5
Flags: PB
4σ 2.33e3
0%
OCDF
6.40e6
44.19
Abs. Int.
1.35e6
6.74e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.52-45.00
443.7398 Fn5
Flags: PB
4σ 3.73e3
0%
OCDF
6.78e6
44.19
Abs. Int.
1.43e6
7.14e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
453.7830 Fn5
Flags: PB
4σ 1.94e3
0%
ES OCDF
1.09e7
44.17
Abs. Int.
2.19e6
1.09e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.52-45.00
455.7801 Fn5
Flags: PB
4σ 4.67e3
0%
ES OCDF
1.22e7
44.17
Abs. Int.
2.44e6
1.22e6
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.52-45.00
513.6775 Fn5
Flags: PB
4σ 1.39e3
0%
Abs. Int.
4.26e3
2.13e3
0.00e0
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: OPR2_18732_DF **Acq'd: 17 Dec 2021 20:28 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18732_OPR002 **UTP: 20-Dec-2021 14:13:05 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 721-652-LNY**

Datafile: 211217C14 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	29.06		1.0008	1.0008	0	5.55E+06	0.84	Y	1.18	13.4	8968.901	0.217
12378-PeCDD	34.31		1.0005	1.0006	+0.2	2.15E+07	1.58	Y	1.04	54.7	6231.005	0.135
123478-HxCDD	38.21		1.0004	1.0004	0	2.03E+07	1.30	Y	1.09	61.3	4447.468	0.1
123678-HxCDD	38.32		1.0031	1.0032	+0.2	2.10E+07	1.29	Y	1.15	62.6	4447.468	0.108
123789-HxCDD	38.59		1.0102	1.0104	+0.5	2.08E+07	1.28	Y	1.05	58.7	4447.468	0.096
1234678-HpCDD	41.23		1.0004	1.0003	-0.2	1.62E+07	1.07	Y	1.06	56.4	5726.44	0.169
OCDD	44.01		1.0003	1.0003	0	1.18E+07	0.90	Y	1.13	115	4352.556	0.505
2378-TCDF	28.23		1.0007	1.0008	+0.2	8.29E+06	0.82	Y	1.08	12.8	4241.796	0.0636
12378-PeCDF	32.89		1.0005	1.0005	0	3.87E+07	1.53	Y	1.02	56	11484.29	0.14
23478-PeCDF	33.97		1.0005	1.0005	0	3.94E+07	1.55	Y	1.02	61.3	11484.29	0.153
123478-HxCDF	37.22		1.0005	1.0005	0	3.39E+07	1.25	Y	1.27	57.2	12822.891	0.174
123678-HxCDF	37.36		1.0005	1.0005	0	3.69E+07	1.26	Y	1.15	56	12822.891	0.162
234678-HxCDF	38.03		1.0004	1.0004	0	3.37E+07	1.28	Y	1.19	58.3	12822.891	0.183
123789-HxCDF	38.93		1.0003	1.0004	+0.2	2.82E+07	1.26	Y	1.16	56.4	12822.891	0.196
1234678-HpCDF	40.27		1.0003	1.0003	0	2.96E+07	1.07	Y	1.37	54.9	3931.644	0.0521
1234789-HpCDF	41.69		1.0003	1.0003	0	1.95E+07	1.04	Y	1.31	55.6	3931.644	0.0975
OCDF	44.20		1.0003	1.0003	0	1.60E+07	0.90	Y	1.07	110	5471.528	0.478

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	29.04	1.0215	1.0217	+0.3	3.49E+07	0.83	Y	1.05	95.2
ES 12378-PeCDD	34.29	1.2040	1.2063	+4.7	3.80E+07	1.58	Y	0.88	123
ES 123478-HxCDD	38.19	0.9925	0.9923	-0.5	3.04E+07	1.29	Y	0.97	101
ES 123678-HxCDD	38.30	0.9953	0.9952	-0.2	2.93E+07	1.30	Y	0.94	99.9
ES 123789-HxCDD	38.58	1.0024	1.0023	-0.2	3.39E+07	1.26	Y	1.09	99.9
ES 1234678-HpCDD	41.21	1.0697	1.0709	+3.0	2.72E+07	1.07	Y	0.91	95.7
ES OCDD	44.00	1.1413	1.1433	+5.3	1.81E+07	0.93	Y	0.62	46.7
ES 2378-TCDF	28.20	1.0469	1.0474	+0.8	6.01E+07	0.76	Y	1.06	88.4
ES 12378-PeCDF	32.87	1.2181	1.2207	+5.1	6.74E+07	1.54	Y	0.91	115
ES 23478-PeCDF	33.95	1.2578	1.2609	+6.3	6.30E+07	1.52	Y	0.88	111
ES 123478-HxCDF	37.20	0.9670	0.9665	-1.1	4.66E+07	0.55	Y	1.20	125
ES 123678-HxCDF	37.34	0.9708	0.9702	-1.3	5.71E+07	0.54	Y	1.35	136
ES 234678-HxCDF	38.02	0.9881	0.9877	-0.9	4.86E+07	0.53	Y	1.24	126
ES 123789-HxCDF	38.91	1.0108	1.0109	+0.2	4.30E+07	0.53	Y	1.16	120
ES 1234678-HpCDF	40.26	1.0452	1.0460	+1.9	3.93E+07	0.48	Y	0.97	131
ES 1234789-HpCDF	41.68	1.0818	1.0829	+2.8	2.69E+07	0.46	Y	0.85	102
ES OCDF	44.19	1.1461	1.1482	+5.6	2.71E+07	0.91	Y	0.81	54

Lab ID: OPR2_18732_DF | **Acq'd:** 17 Dec 2021 20:28 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18732_OPR002 | **UTP:** 20-Dec-2021 14:13:05 DTF | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 721-652-LNY

Datafile: 211217C14 | **Report:** 20 Dec 2021 14:15 TF | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %	
JS 1234-TCDD	28.43		-	-	-	3.51E+07	0.83	Y	-	-	
JS 1234-TCDF	26.93		-	-	-	6.42E+07	0.75	Y	-	-	
JS 123467-HxCDD	38.49		-	-	-	1.55E+07	1.25	Y	-	-	
CS 37Cl-2378-TCDD	29.06		1.0222	1.0224	+0.3	1.63E+07	n/a	-	1.20	96.8	
CS 12347-PeCDD	33.80		1.1870	1.1892	+4.5	3.42E+07	1.65	Y	0.75	130	
CS 12346-PeCDF	32.36		1.1994	1.2018	+4.7	6.29E+07	1.52	Y	0.85	115	
CS 123469-HxCDF	37.67		0.9793	0.9788	-1.1	4.72E+07	0.54	Y	1.12	136	
CS 1234689-HpCDF	40.67		1.0556	1.0566	+2.4	3.44E+07	0.46	Y	0.89	125	
~~SS 37Cl-2378-TCDD~~	~~29.06~~		~~1.0222~~	~~1.0224~~	~~+0.3~~	~~1.63E+07~~	~~n/a~~		~~1.15~~	~~102~~	Not used in this project.
~~SS 12347-PeCDD~~	~~33.80~~		~~1.1870~~	~~1.1892~~	~~+4.5~~	~~3.42E+07~~	~~1.65~~	~~Y~~	~~0.86~~	~~105~~	CL 21Dec21
~~SS 12346-PeCDF~~	~~32.36~~		~~1.1994~~	~~1.2018~~	~~+4.7~~	~~6.29E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~99.5~~	
~~SS 123469-HxCDF~~	~~37.67~~		~~0.9793~~	~~0.9788~~	~~-1.1~~	~~4.72E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~99.7~~	
~~SS 1234689-HpCDF~~	~~40.67~~		~~1.0556~~	~~1.0566~~	~~+2.4~~	~~3.44E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~95.2~~	

Totals	Conc	EMPC
Total TCDD	59.2	59.2
Total PeCDD	83.5	83.5
Total HxCDD	201	201
Total HpCDD	70.5	70.5
Total Tetra-Octa Dioxins	530	530
Total TCDF	70.6	70.6
Total PeCDF	186	186
Total HxCDF	363	363
Total HpCDF	111	111
Total Tetra-Octa Furans	840	840
Total Tetra-Octa Dioxins & Furans	1370	1370

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.841	0.84
Response	5.56E+06	5.55E+06

Lab ID: OPR2_18732_DF **Acq'd: 17 Dec 2021 20:28 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18732_OPR002 **UTP: 20-Dec-2021 14:13:05 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 721-652-LNY**

Datafile: 211217C14 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.58		0.8819	0.8806	-2.0	6.84E+06	0.83	Y	1.18	16.5	8968.901	0.217
1379-TCDD	NotFnd		0.8935						1.18		8968.901	0.217
1369-TCDD	NotFnd		0.9073						1.18		8968.901	0.217
1469-TCDD	NotFnd		0.9329						1.18		8968.901	0.217
1247/1246/1248/1249-TCDD	NotFnd		0.9407						1.18		8968.901	0.217
1378-TCDD	NotFnd		0.9466						1.18		8968.901	0.217
1268-TCDD	NotFnd		0.9531						1.18		8968.901	0.217
1478-TCDD	NotFnd		0.9610						1.18		8968.901	0.217
1279-TCDD	NotFnd		0.9668						1.18		8968.901	0.217
1234/1269-TCDD	NotFnd		0.9783						1.18		8968.901	0.217
1236-TCDD	NotFnd		0.9830						1.18		8968.901	0.217
1237/1238-TCDD	NotFnd		0.9913						1.18		8968.901	0.217
1239-TCDD	28.93		0.9959	0.9960	+0.2	4.98E+06	0.80	Y	1.18	12.1	8968.901	0.217
2378-TCDD	**29.06**		**1.0008**	1.0008	**0**	5.55E+06	0.84	Y	**1.18**	**13.4**	**8968.901**	**0.217**
1278-TCDD	NotFnd		1.0115						1.18		8968.901	0.217
1267-TCDD	NotFnd		1.0160						1.18		8968.901	0.217
1289-TCDD	30.02		1.0331	1.0335	+0.7	7.11E+06	0.83	Y	1.18	17.2	8968.901	0.217
12479/12468-PeCDD	31.86		0.9295	0.9291	-0.8	5.38E+06	1.58	Y	1.04	13.7	6231.005	0.135
12469-PeCDD	NotFnd		0.9448						1.04		6231.005	0.135
12368-PeCDD	NotFnd		0.9602						1.04		6231.005	0.135
12478-PeCDD	NotFnd		0.9656						1.04		6231.005	0.135
12379-PeCDD	NotFnd		0.9686						1.04		6231.005	0.135
12369/12467/12489-PeCDD	NotFnd		0.9760						1.04		6231.005	0.135
12346/12347-PeCDD	NotFnd		0.9866						1.04		6231.005	0.135
12378-PeCDD	34.31		**1.0005**	**1.0006**	**+0.2**	**2.15E+07**	**1.58**	**Y**	**1.04**	**54.7**	**6231.005**	**0.135**
12367-PeCDD	NotFnd		1.0031						1.04		6231.005	0.135
12389-PeCDD	34.75		1.0132	1.0134	+0.4	6.00E+06	1.54	Y	1.04	15.2	6231.005	0.135
124679/124689-HxCDD	36.48		0.9553	0.9550	-0.7	6.37E+06	1.27	Y	1.10	18.7	4447.468	0.101
123468-HxCDD	NotFnd		0.9725						1.10		4447.468	0.101
123679/123689-HxCDD	NotFnd		0.9803						1.10		4447.468	0.101
123469-HxCDD	NotFnd		0.9842						1.10		4447.468	0.101
123478-HxCDD	38.21		**1.0004**	**1.0004**	**0**	**2.03E+07**	**1.30**	**Y**	1.09	**61.3**	**4447.468**	**0.1**
123678-HxCDD	38.32		**1.0031**	**1.0032**	**+0.2**	**2.10E+07**	**1.29**	**Y**	1.15	**62.6**	**4447.468**	**0.108**
123467-HxCDD	NotFnd		1.0078						1.10		4447.468	0.101
123789-HxCDD	38.59		**1.0102**	**1.0104**	**+0.5**	**2.08E+07**	**1.28**	**Y**	1.05	**58.7**	**4447.468**	**0.096**

Lab ID: OPR2_18732_DF **Acq'd:** 17 Dec 2021 20:28 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18732_OPR002 **UTP:** 20-Dec-2021 14:13:05 DTF **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 721-652-LNY

Datafile: 211217C14 **Report:** 20 Dec 2021 14:15 TF **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.53		0.9837	0.9834	-0.7	4.06E+06	1.10	Y	1.06	14.1	5726.44	0.169
1234678-HpCDD	**41.23**		**1.0004**	**1.0003**	**-0.2**	**1.62E+07**	**1.07**	**Y**	**1.06**	**56.4**	**5726.44**	**0.169**
OCDD	**44.01**		**1.0003**	**1.0003**	**0**	**1.18E+07**	**0.90**	**Y**	**1.13**	**115**	**4352.556**	**0.505**
OCDD-a	44.01		1.0002	1.0001	-0.3	8.31E+05	2.75	Y	0.07	127	4581.462	8.31
1368-TCDF	23.60		0.8388	0.8369	-2.7	1.06E+07	0.81	Y	1.08	16.4	4241.796	0.0636
1468-TCDF	NotFnd		0.8578						1.08		4241.796	0.0636
2468-TCDF	24.73		0.8780	0.8767	-1.9	2.73E+06	0.81	Y	1.08	4.21	4241.796	0.0636
1346/1246-TCDF	NotFnd		0.8906						1.08		4241.796	0.0636
1347/1378/1247-TCDF	NotFnd		0.8951						1.08		4241.796	0.0636
1348-TCDF	NotFnd		0.9041						1.08		4241.796	0.0636
1248/1367/1379-TCDF	NotFnd		0.9084						1.08		4241.796	0.0636
1268-TCDF	NotFnd		0.9207						1.08		4241.796	0.0636
1467-TCDF	NotFnd		0.9253						1.08		4241.796	0.0636
1478-TCDF	NotFnd		0.9309						1.08		4241.796	0.0636
1369/1237-TCDF	NotFnd		0.9431						1.08		4241.796	0.0636
2467-TCDF	NotFnd		0.9472						1.08		4241.796	0.0636
2368-TCDF	NotFnd		0.9524						1.08		4241.796	0.0636
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9560						1.08		4241.796	0.0636
1278-TCDF	NotFnd		0.9710						1.08		4241.796	0.0636
1349-TCDF	NotFnd		0.9752						1.08		4241.796	0.0636
1267-TCDF	NotFnd		0.9802						1.08		4241.796	0.0636
2346/1249-TCDF	NotFnd		0.9863						1.08		4241.796	0.0636
2347/1279-TCDF	NotFnd		0.9936						1.08		4241.796	0.0636
2348-TCDF	28.12		0.9971	0.9972	+0.2	1.14E+07	0.79	Y	1.08	17.6	4241.796	0.0636
2378-TCDF	**28.23**		**1.0007**	**1.0008**	**+0.2**	**8.29E+06**	**0.82**	**Y**	**1.08**	**12.8**	**4241.796**	**0.0636**
2367/3467-TCDF	NotFnd		1.0134						1.08		4241.796	0.0636
1269-TCDF	NotFnd		1.0219						1.08		4241.796	0.0636
1239-TCDF	NotFnd		1.0309						1.08		4241.796	0.0636
1289-TCDF	30.18		1.0689	1.0700	+2.0	1.27E+07	0.83	Y	1.08	19.6	4241.796	0.0636
13468/12468-PeCDF	30.13		0.9175	0.9166	-1.6	3.75E+07	1.57	Y	1.02	56.2	3892.78	0.0496
13678/13467/12467-PeCDF	NotFnd		0.9630						1.02		11484.29	0.146
12368/13478/12478-PeCDF	NotFnd		0.9675						1.02		11484.29	0.146
14678-PeCDF	NotFnd		0.9705						1.02		11484.29	0.146
13479-PeCDF	NotFnd		0.9734						1.02		11484.29	0.146
13469/12479-PeCDF	NotFnd		0.9807						1.02		11484.29	0.146
12346-PeCDF	NotFnd		0.9848						1.02		11484.29	0.146

Lab ID: OPR2_18732_DF **Acq'd: 17 Dec 2021 20:28 DTF** **Wt/Vol: 1 uL** **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18732_OPR002 **UTP: 20-Dec-2021 14:13:05 DTF** **J-level: 0.25 pg/uL** **Split: 1** **Checkcode: 721-652-LNY**

Datafile: 211217C14 **Report: 20 Dec 2021 14:15 TF** **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		11484.29	0.146
12347-PeCDF	NotFnd		0.9895						1.02		11484.29	0.146
12348-PeCDF	NotFnd		0.9943						1.02		11484.29	0.146
12378-PeCDF	**32.89**		**1.0005**	**1.0005**	**0**	**3.87E+07**	**1.53**	**Y**	**1.02**	**56**	**11484.29**	**0.14**
12678/12367-PeCDF	NotFnd		1.0086						1.02		11484.29	0.146
12379-PeCDF	NotFnd		1.0137						1.02		11484.29	0.146
12679-PeCDF	NotFnd		0.9936						1.02		11484.29	0.146
23467/12369-PeCDF	NotFnd		0.9970						1.02		11484.29	0.146
23478-PeCDF	**33.97**		**1.0005**	**1.0005**	**0**	**3.94E+07**	**1.55**	**Y**	**1.02**	**61.3**	**11484.29**	**0.153**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		11484.29	0.146
12349-PeCDF	NotFnd		1.0103						1.02		11484.29	0.146
12389-PeCDF	35.04		1.0317	1.0321	+0.8	8.53E+06	1.56	Y	1.02	12.8	11484.29	0.146
123468-HxCDF	35.83		0.9634	0.9633	-0.2	7.86E+07	1.27	Y	1.19	135	12822.891	0.177
124678/134678-HxCDF	NotFnd		0.9687						1.19		12822.891	0.177
134679-HxCDF	NotFnd		0.9748						1.19		12822.891	0.177
124679-HxCDF	NotFnd		0.9800						1.19		12822.891	0.177
124689-HxCDF	NotFnd		0.9857						1.19		12822.891	0.177
123467-HxCDF	NotFnd		0.9973						1.19		12822.891	0.177
123478-HxCDF	**37.22**		**1.0005**	**1.0005**	**0**	**3.39E+07**	**1.25**	**Y**	**1.27**	**57.2**	**12822.891**	**0.174**
123678-HxCDF	**37.36**		**1.0005**	**1.0005**	**0**	**3.69E+07**	**1.26**	**Y**	**1.15**	**56**	**12822.891**	**0.162**
123479-HxCDF	NotFnd		1.0051						1.19		12822.891	0.177
123469-HxCDF	NotFnd		1.0092						1.19		12822.891	0.177
123679-HxCDF	NotFnd		0.9948						1.19		12822.891	0.177
234678-HxCDF	**38.03**		**1.0004**	**1.0004**	**0**	**3.37E+07**	**1.28**	**Y**	**1.19**	**58.3**	**12822.891**	**0.183**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		12822.891	0.177
123789-HxCDF	**38.93**		**1.0003**	**1.0004**	**+0.2**	**2.82E+07**	**1.26**	**Y**	**1.16**	**56.4**	**12822.891**	**0.196**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		12822.891	0.177
1234678-HpCDF	**40.27**		**1.0003**	**1.0003**	**0**	**2.96E+07**	**1.07**	**Y**	**1.37**	**54.9**	**3931.644**	**0.0521**
1234679-HpCDF	NotFnd		1.0068						1.34		3931.644	0.0703
1234689-HpCDF	NotFnd		1.0102						1.34		3931.644	0.0703
1234789-HpCDF	**41.69**		**1.0003**	**1.0003**	**0**	**1.95E+07**	**1.04**	**Y**	**1.31**	**55.6**	**3931.644**	**0.0975**
OCDF	**44.20**		**1.0003**	**1.0003**	**0**	**1.60E+07**	**0.90**	**Y**	**1.07**	**110**	**5471.528**	**0.478**
OCDF-a	44.20	**EMPC**	1.0002	1.0003	+0.3	9.49E+05	2.08	N	0.07	105	5420.257	7.64

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211217C14	Analysis Date:	17-DEC-2021 20:28:29
Lab ID:	OPR2_18732_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	13.4	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	54.7	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	61.3	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	62.6	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	58.7	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.4	35	-	70	Y
OCDD	100	115	78	-	144	Y
2,3,7,8-TCDF	10	12.8	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	56	40	-	67	Y
2,3,4,7,8-PeCDF	50	61.3	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	57.2	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	56	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	58.3	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	56.4	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	54.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	55.6	39	-	69	Y
OCDF	100	110	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 20 Dec 2021 14:15 Analyst: TF

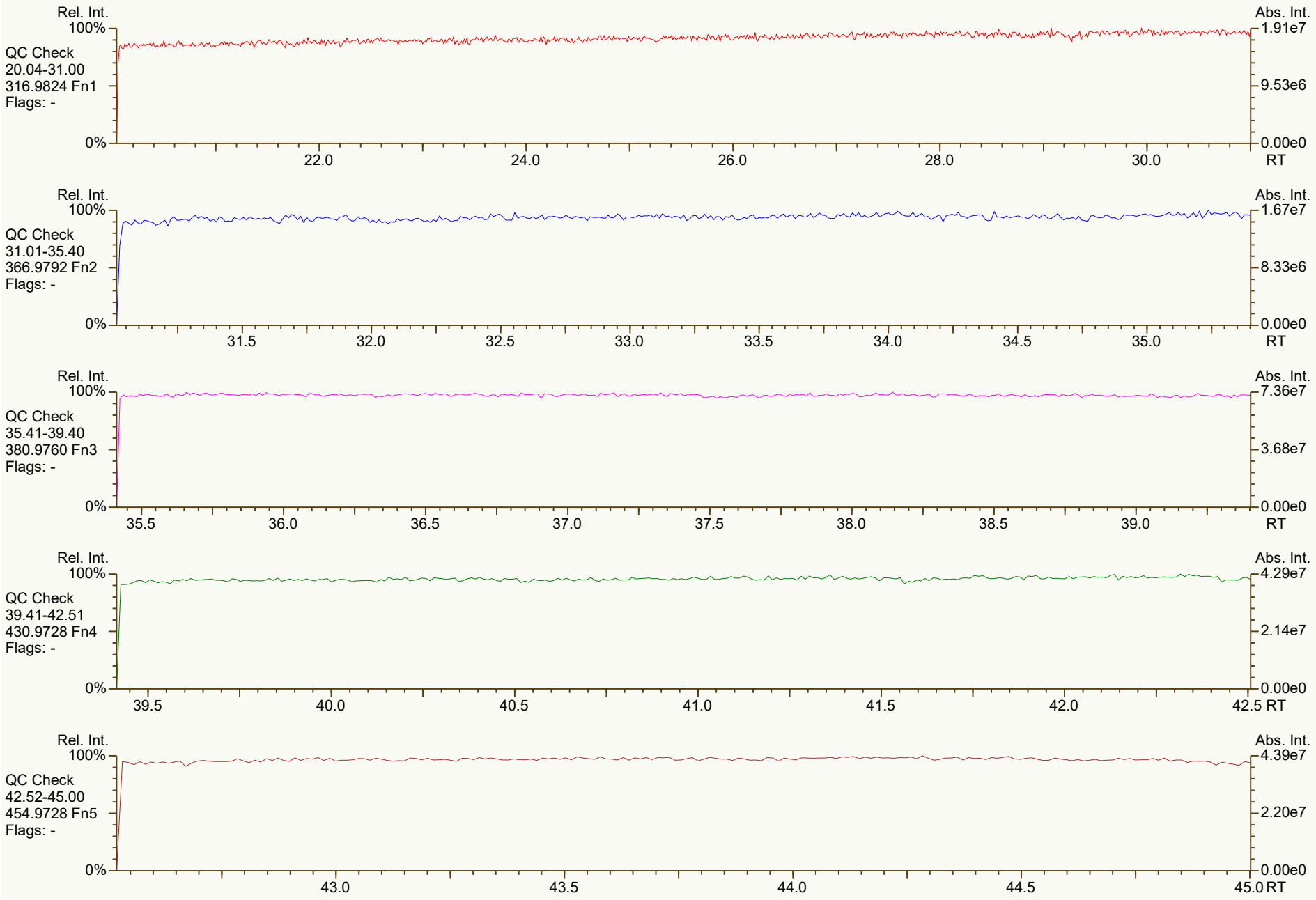
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	211217C14	Analysis Date:	17-DEC-2021 20:28:29
Lab ID:	OPR2_18732_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	95.2	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	123	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	101	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	99.9	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	99.9	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	95.7	26	-	166	Y
13C-OCDD	200	93.4	26	-	397	Y
13C-2,3,7,8-TCDF	100	88.4	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	115	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	111	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	125	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	136	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	126	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	120	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	131	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	102	20	-	186	Y
13C-OCDF	200	108	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	38.7	12.4	-	76.4	Y

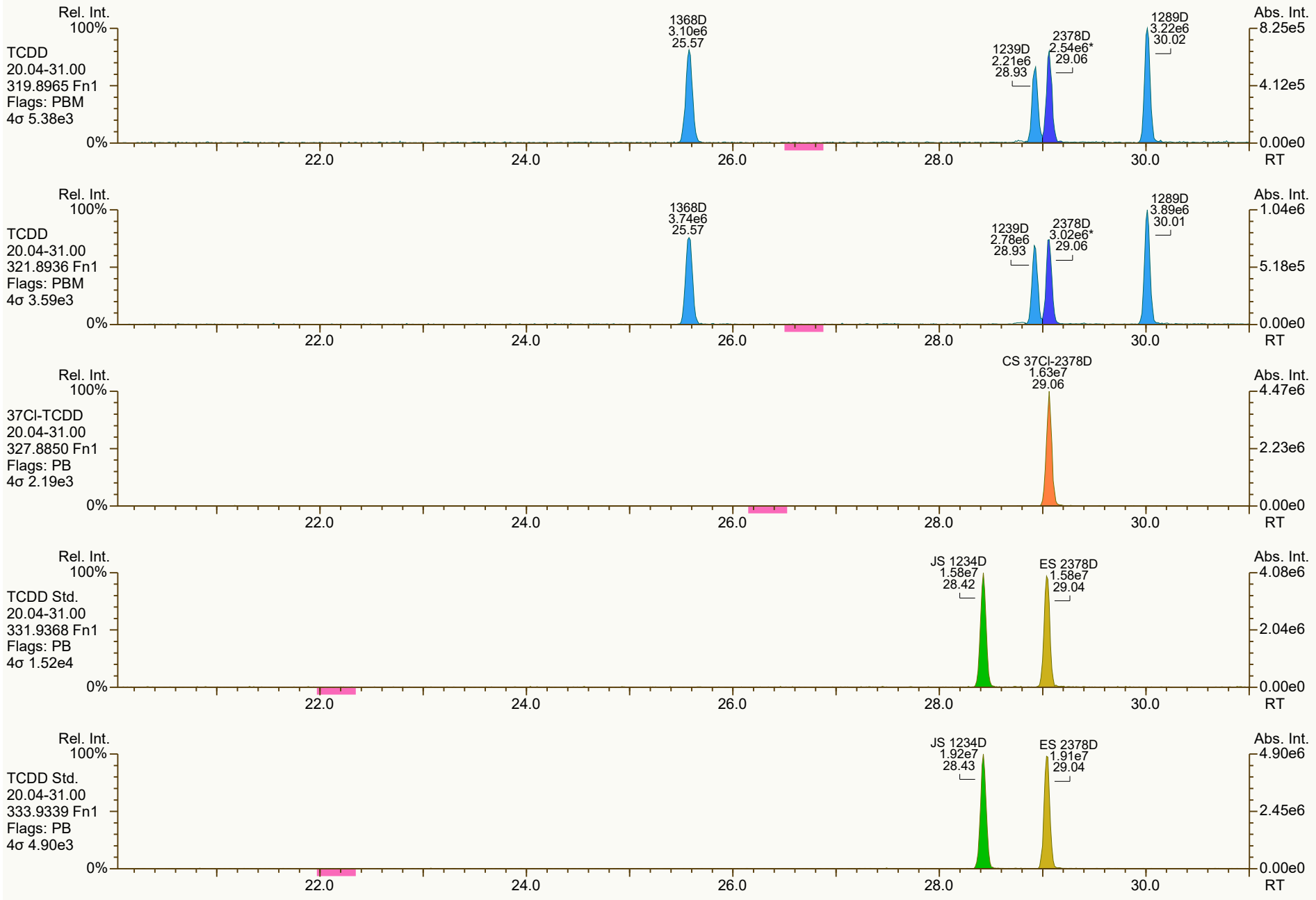
Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 20 Dec 2021 14:15 Analyst: TF


Rel. Int.
100%
QC Check
20.04-31.00
316.9824 Fn1
Flags: -
0%
22.0
24.0
26.0
28.0
30.0
Abs. Int.
1.91e7
9.53e6
0.00e0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
Abs. Int.
1.67e7
8.33e6
0.00e0
RT
Rel. Int.
100%
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
Abs. Int.
7.36e7
3.68e7
0.00e0
RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Abs. Int.
4.29e7
2.14e7
0.00e0
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
4.39e7
2.20e7
0.00e0

SGS ID: OPR2_18732_DF | Sample ID: 0_18732_OPR002 | Acq: 17-Dec-2021 20:28:29

Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19 | User: DTF Datafile: 211217C14



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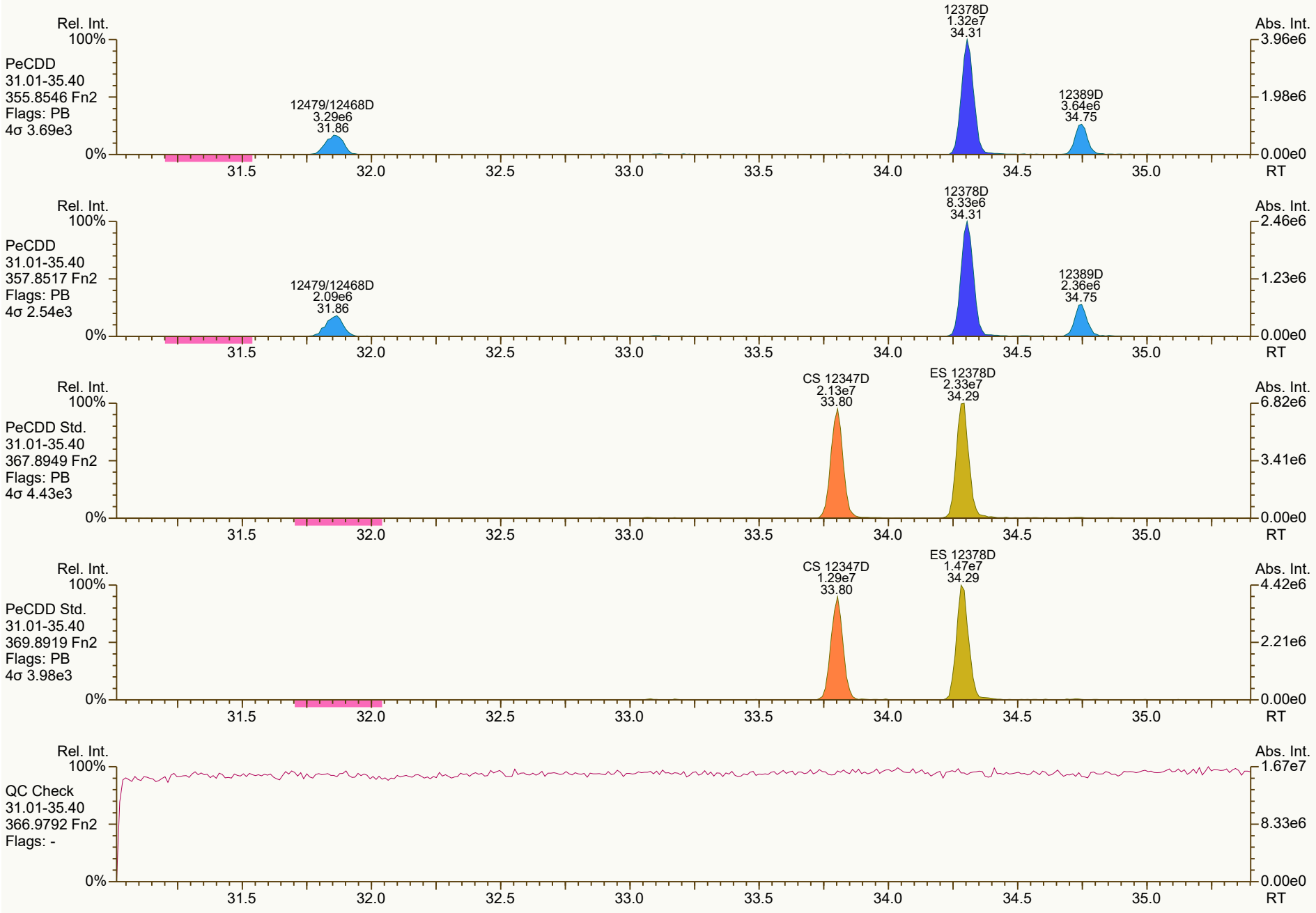
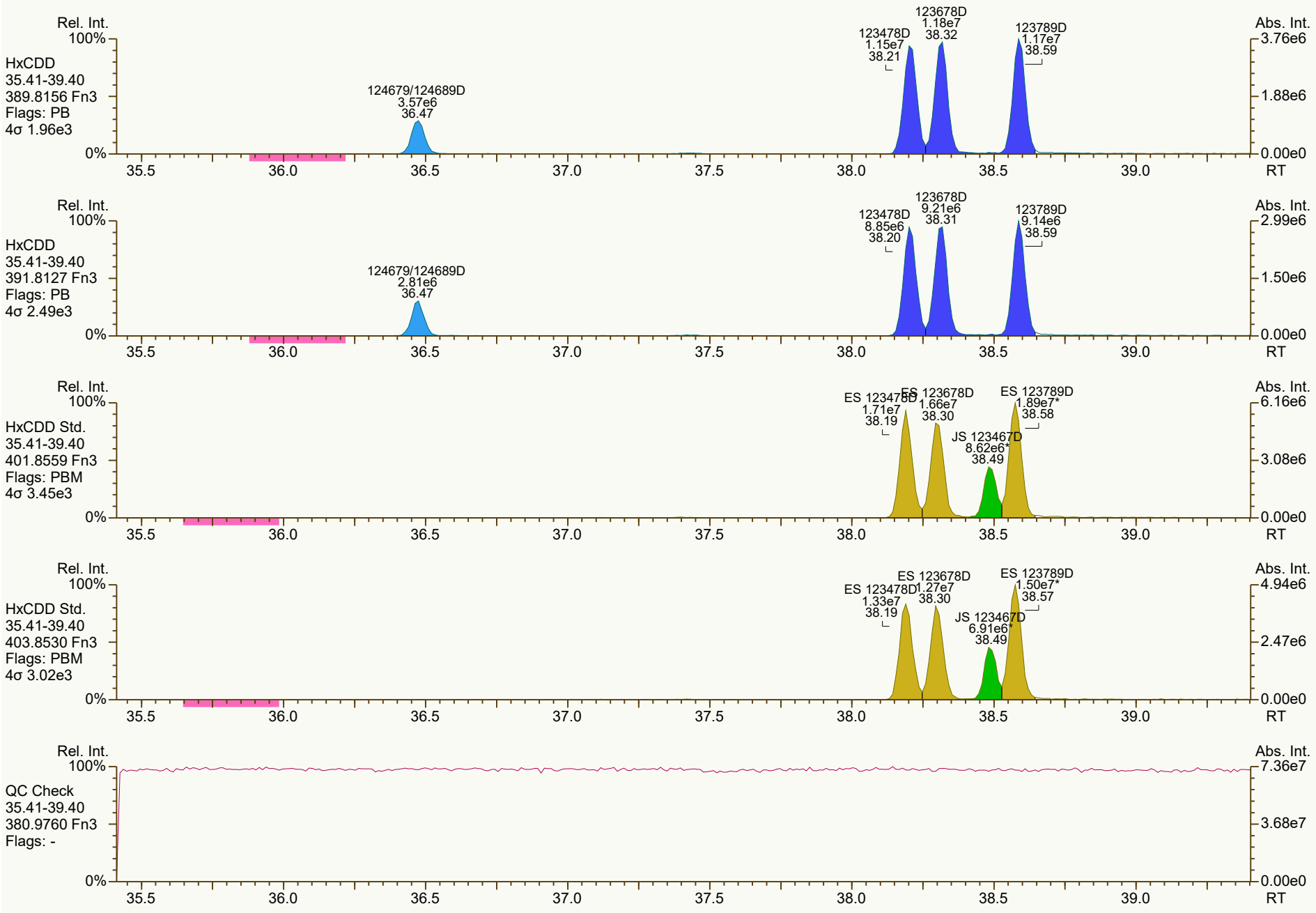
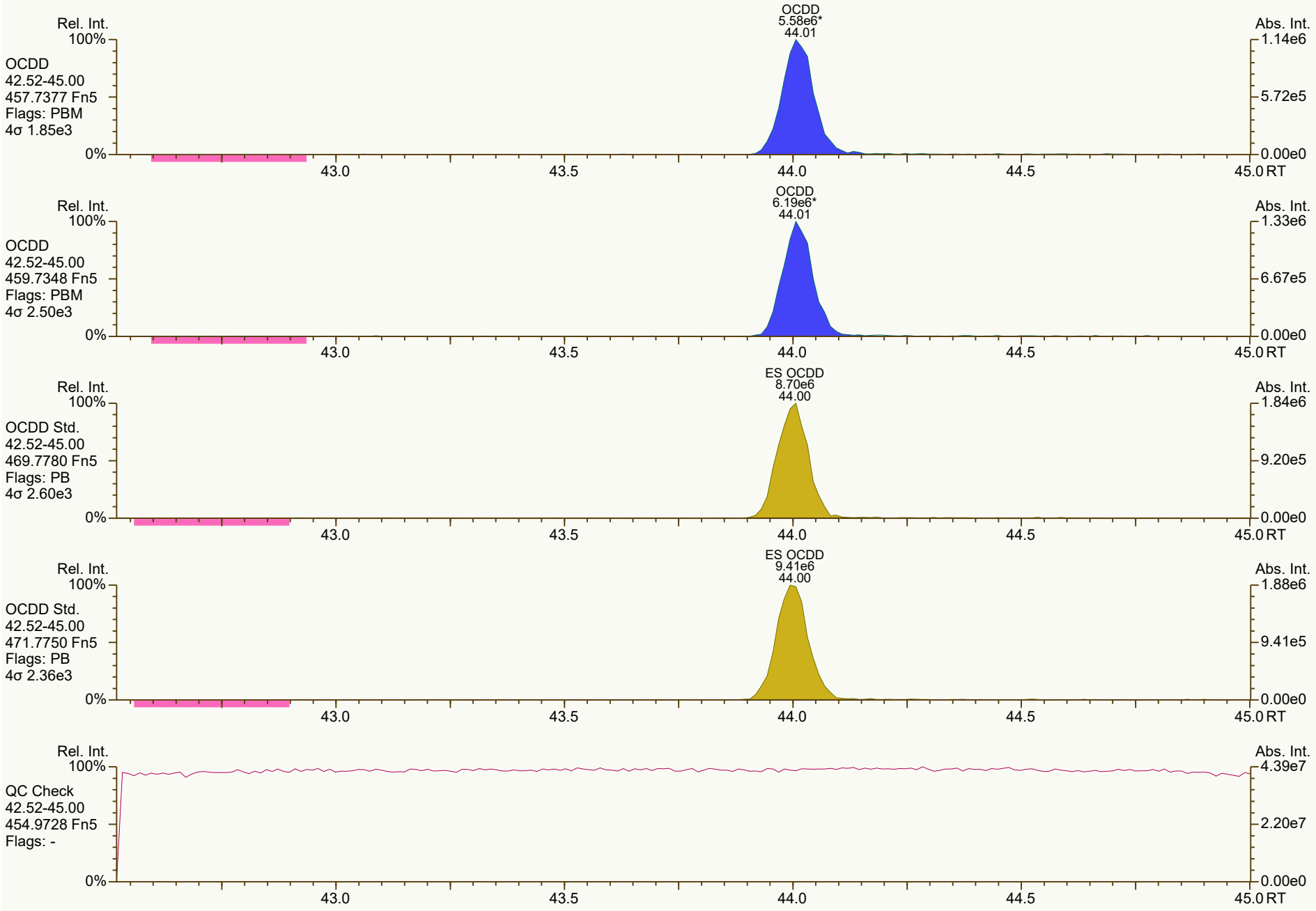
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6695, 5504, 0797 scc: 721-652 | *Revised: 20-Dec-2021 09:28 (DTF) Printed: 20-Dec-2021 14:25 Page 2 of 12*


Rel. Int.
100%
PeCDD
31.01-35.40
355.8546 Fn2
Flags: PB
4σ 3.69e3
12479/12468D
3.29e6
31.86
12378D
1.32e7
34.31
12389D
3.64e6
34.75
Abs. Int.
3.96e6
1.98e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD
31.01-35.40
357.8517 Fn2
Flags: PB
4σ 2.54e3
12479/12468D
2.09e6
31.86
12378D
8.33e6
34.31
12389D
2.36e6
34.75
Abs. Int.
2.46e6
1.23e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
367.8949 Fn2
Flags: PB
4σ 4.43e3
CS 12347D
2.13e7
33.80
ES 12378D
2.33e7
34.29
Abs. Int.
6.82e6
3.41e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDD Std.
31.01-35.40
369.8919 Fn2
Flags: PB
4σ 3.98e3
CS 12347D
1.29e7
33.80
ES 12378D
1.47e7
34.29
Abs. Int.
4.42e6
2.21e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
QC Check
31.01-35.40
366.9792 Fn2
Flags: -
Abs. Int.
1.67e7
8.33e6
0.00e0
0%
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT

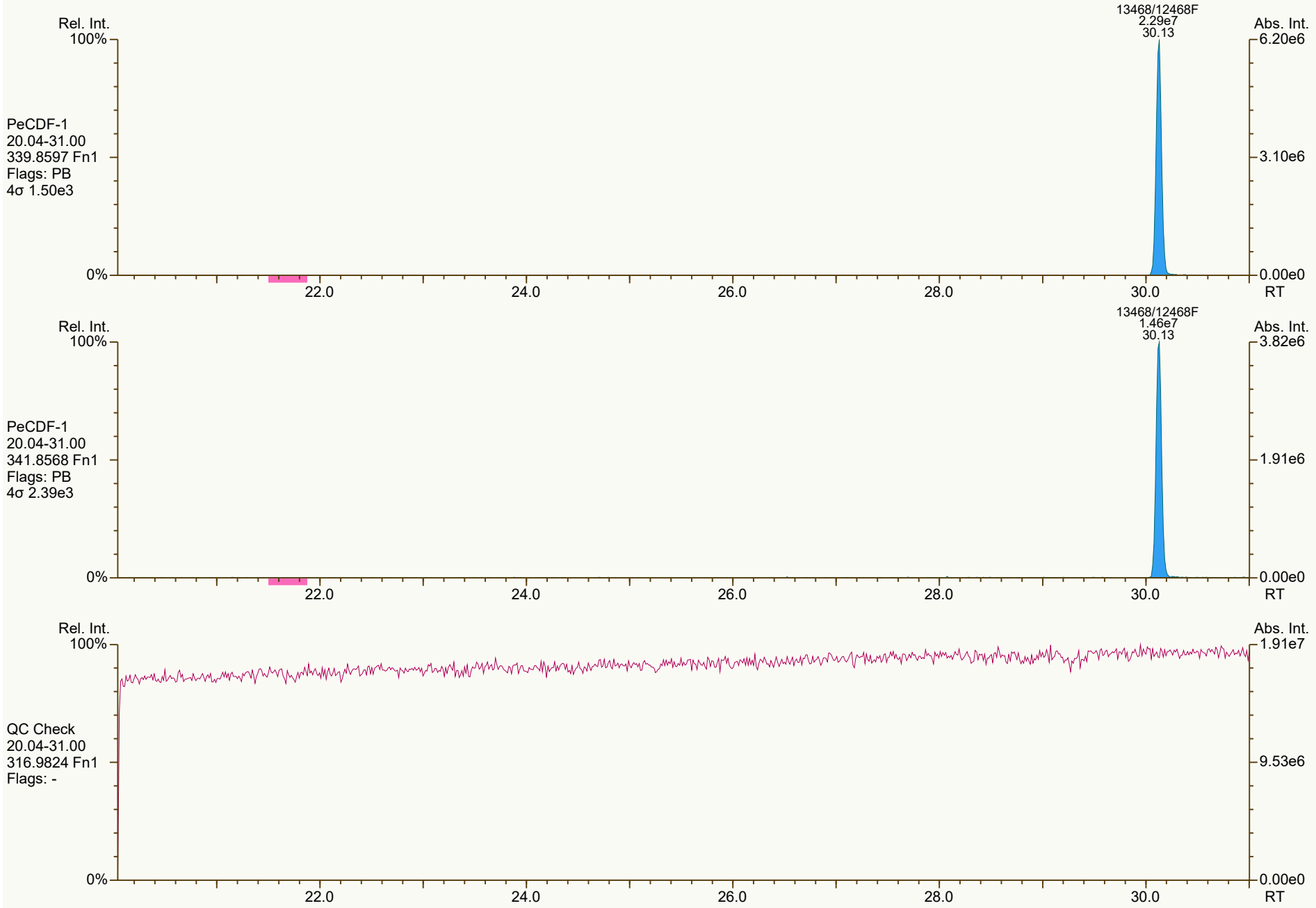

Rel. Int.
100%
HxCDD
35.41-39.40
389.8156 Fn3
Flags: PB
4σ 1.96e3
124679/124689D
3.57e6
36.47
123478D
1.15e7
38.21
123678D
1.18e7
38.32
123789D
1.17e7
38.59
Abs. Int.
3.76e6
1.88e6
0.00e0
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
RT
HxCDD
35.41-39.40
391.8127 Fn3
Flags: PB
4σ 2.49e3
124679/124689D
2.81e6
36.47
123478D
8.85e6
38.20
123678D
9.21e6
38.31
123789D
9.14e6
38.59
2.99e6
1.50e6
HxCDD Std.
35.41-39.40
401.8559 Fn3
Flags: PBM
4σ 3.45e3
ES 123478D
1.71e7
38.19
ES 123678D
1.66e7
38.30
JS 123467D
8.62e6*
38.49
ES 123789D
1.89e7*
38.58
6.16e6
3.08e6
HxCDD Std.
35.41-39.40
403.8530 Fn3
Flags: PBM
4σ 3.02e3
ES 123478D
1.33e7
38.19
ES 123678D
1.27e7
38.30
JS 123467D
6.91e6*
38.49
ES 123789D
1.50e7*
38.57
4.94e6
2.47e6
QC Check
35.41-39.40
380.9760 Fn3
Flags: -
7.36e7
3.68e7


Rel. Int.
100%
HpCDD
39.41-42.51
423.7767 Fn4
Flags: PB
4σ 3.91e3
1234678D
8.38e6
41.23
1234679D
2.12e6
40.53
Abs. Int.
2.54e6
1.27e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD
39.41-42.51
425.7737 Fn4
Flags: PB
4σ 1.82e3
1234678D
7.86e6
41.22
1234679D
1.94e6
40.53
Abs. Int.
2.35e6
1.17e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
435.8169 Fn4
Flags: PB
4σ 4.05e3
ES 1234678D
1.40e7
41.21
Abs. Int.
4.15e6
2.07e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
HpCDD Std.
39.41-42.51
437.8140 Fn4
Flags: PB
4σ 4.32e3
ES 1234678D
1.31e7
41.21
Abs. Int.
3.99e6
2.00e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Rel. Int.
100%
QC Check
39.41-42.51
430.9728 Fn4
Flags: -
Abs. Int.
4.29e7
2.14e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT


Rel. Int.
100%
OCDD
42.52-45.00
457.7377 Fn5
Flags: PBM
4σ 1.85e3
0%
OCDD
5.58e6*
44.01
Abs. Int.
1.14e6
5.72e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.52-45.00
459.7348 Fn5
Flags: PBM
4σ 2.50e3
0%
OCDD
6.19e6*
44.01
Abs. Int.
1.33e6
6.67e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
469.7780 Fn5
Flags: PB
4σ 2.60e3
0%
ES OCDD
8.70e6
44.00
Abs. Int.
1.84e6
9.20e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.52-45.00
471.7750 Fn5
Flags: PB
4σ 2.36e3
0%
ES OCDD
9.41e6
44.00
Abs. Int.
1.88e6
9.41e5
0.00e0
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.52-45.00
454.9728 Fn5
Flags: -
0%
Abs. Int.
4.39e7
2.20e7
0.00e0
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
20.04-31.00
303.9016 Fn1
Flags: PBM
4σ 1.62e3
0%
1368F
4.74e6*
23.60
2468F
1.22e6
24.72
2348F
5.04e6
28.12
2378F
3.74e6*
28.23
1289F
5.77e6*
30.18
Abs. Int.
1.35e6
6.76e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
20.04-31.00
305.8987 Fn1
Flags: PBM
4σ 2.62e3
0%
1368F
5.89e6*
23.60
2468F
1.51e6
24.72
2348F
6.35e6
28.12
2378F
4.55e6*
28.22
1289F
6.94e6*
30.18
Abs. Int.
1.63e6
8.15e5
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
315.9419 Fn1
Flags: PB
4σ 2.23e4
0%
JS 1234F
2.75e7
26.93
ES 2378F
2.59e7
28.20
Abs. Int.
6.67e6
3.33e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
20.04-31.00
317.9389 Fn1
Flags: PB
4σ 1.21e4
0%
JS 1234F
3.67e7
26.92
ES 2378F
3.42e7
28.20
Abs. Int.
8.38e6
4.19e6
0.00e0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
20.04-31.00
375.8364 Fn1
Flags: B
4σ 1.49e3
0%
Abs. Int.
1.70e4
8.48e3
0.00e0
22.0
24.0
26.0
28.0
30.0
RT

SGS ID: OPR2_18732_DF
Sample ID: 0_18732_OPR002
Acq: 17-Dec-2021 20:28:29
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19
User: DTF Datafile: 211217C14



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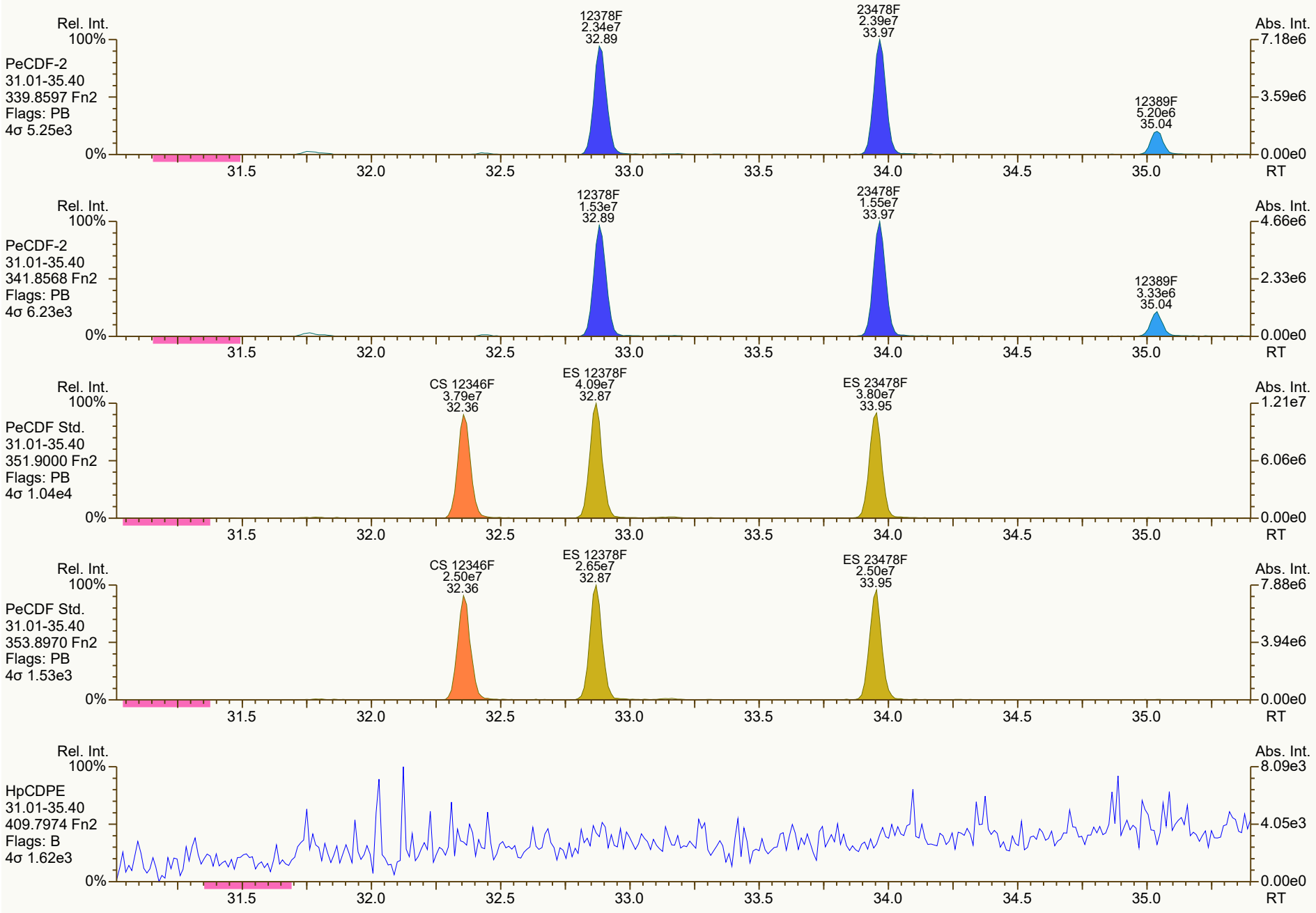
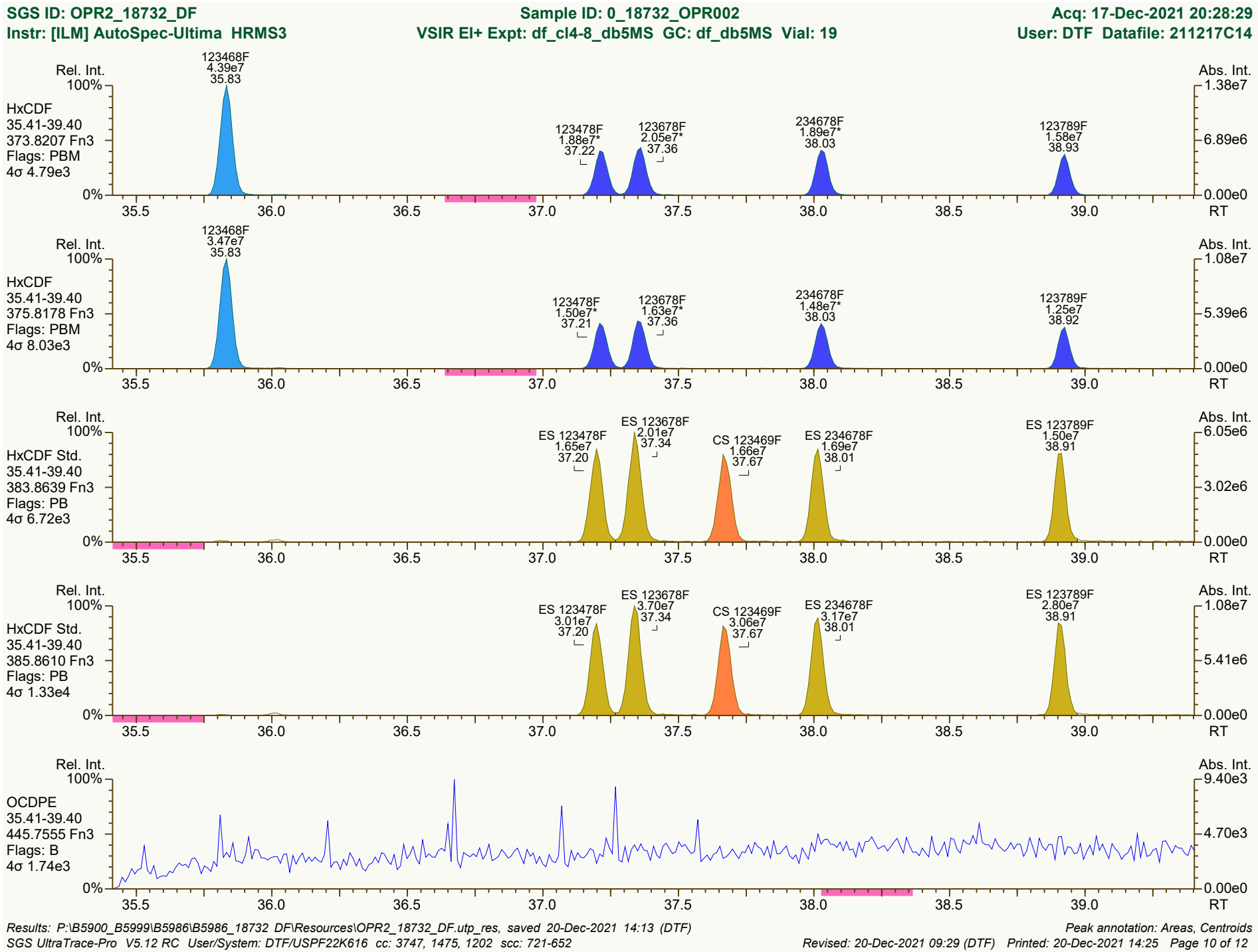
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0524 scc: 721-652
PKD: 20-Dec-2021 09:25 Printed: 20-Dec-2021 14:25 Page 8 of 12


Rel. Int.
100%
PeCDF-2
31.01-35.40
339.8597 Fn2
Flags: PB
4σ 5.25e3
0%
12378F
2.34e7
32.89
23478F
2.39e7
33.97
12389F
5.20e6
35.04
Abs. Int.
7.18e6
3.59e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF-2
31.01-35.40
341.8568 Fn2
Flags: PB
4σ 6.23e3
0%
12378F
1.53e7
32.89
23478F
1.55e7
33.97
12389F
3.33e6
35.04
Abs. Int.
4.66e6
2.33e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
351.9000 Fn2
Flags: PB
4σ 1.04e4
0%
CS 12346F
3.79e7
32.36
ES 12378F
4.09e7
32.87
ES 23478F
3.80e7
33.95
Abs. Int.
1.21e7
6.06e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
PeCDF Std.
31.01-35.40
353.8970 Fn2
Flags: PB
4σ 1.53e3
0%
CS 12346F
2.50e7
32.36
ES 12378F
2.65e7
32.87
ES 23478F
2.50e7
33.95
Abs. Int.
7.88e6
3.94e6
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT
Rel. Int.
100%
HpCDPE
31.01-35.40
409.7974 Fn2
Flags: B
4σ 1.62e3
0%
Abs. Int.
8.09e3
4.05e3
0.00e0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
RT


SGS ID: OPR2_18732_DF
Sample ID: 0_18732_OPR002
Acq: 17-Dec-2021 20:28:29
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19
User: DTF Datafile: 211217C14
Rel. Int.
Abs. Int.
HxCDF
35.41-39.40
373.8207 Fn3
Flags: PBM
4σ 4.79e3
123468F 4.39e7 35.83
123478F 1.88e7* 37.22
123678F 2.05e7* 37.36
234678F 1.89e7* 38.03
123789F 1.58e7 38.93
HxCDF
35.41-39.40
375.8178 Fn3
Flags: PBM
4σ 8.03e3
123468F 3.47e7 35.83
123478F 1.50e7* 37.21
123678F 1.63e7* 37.36
234678F 1.48e7* 38.03
123789F 1.25e7 38.92
HxCDF Std.
35.41-39.40
383.8639 Fn3
Flags: PB
4σ 6.72e3
ES 123478F 1.65e7 37.20
ES 123678F 2.01e7 37.34
CS 123469F 1.66e7 37.67
ES 234678F 1.69e7 38.01
ES 123789F 1.50e7 38.91
HxCDF Std.
35.41-39.40
385.8610 Fn3
Flags: PB
4σ 1.33e4
ES 123478F 3.01e7 37.20
ES 123678F 3.70e7 37.34
CS 123469F 3.06e7 37.67
ES 234678F 3.17e7 38.01
ES 123789F 2.80e7 38.91
OCDPE
35.41-39.40
445.7555 Fn3
Flags: B
4σ 1.74e3
RT
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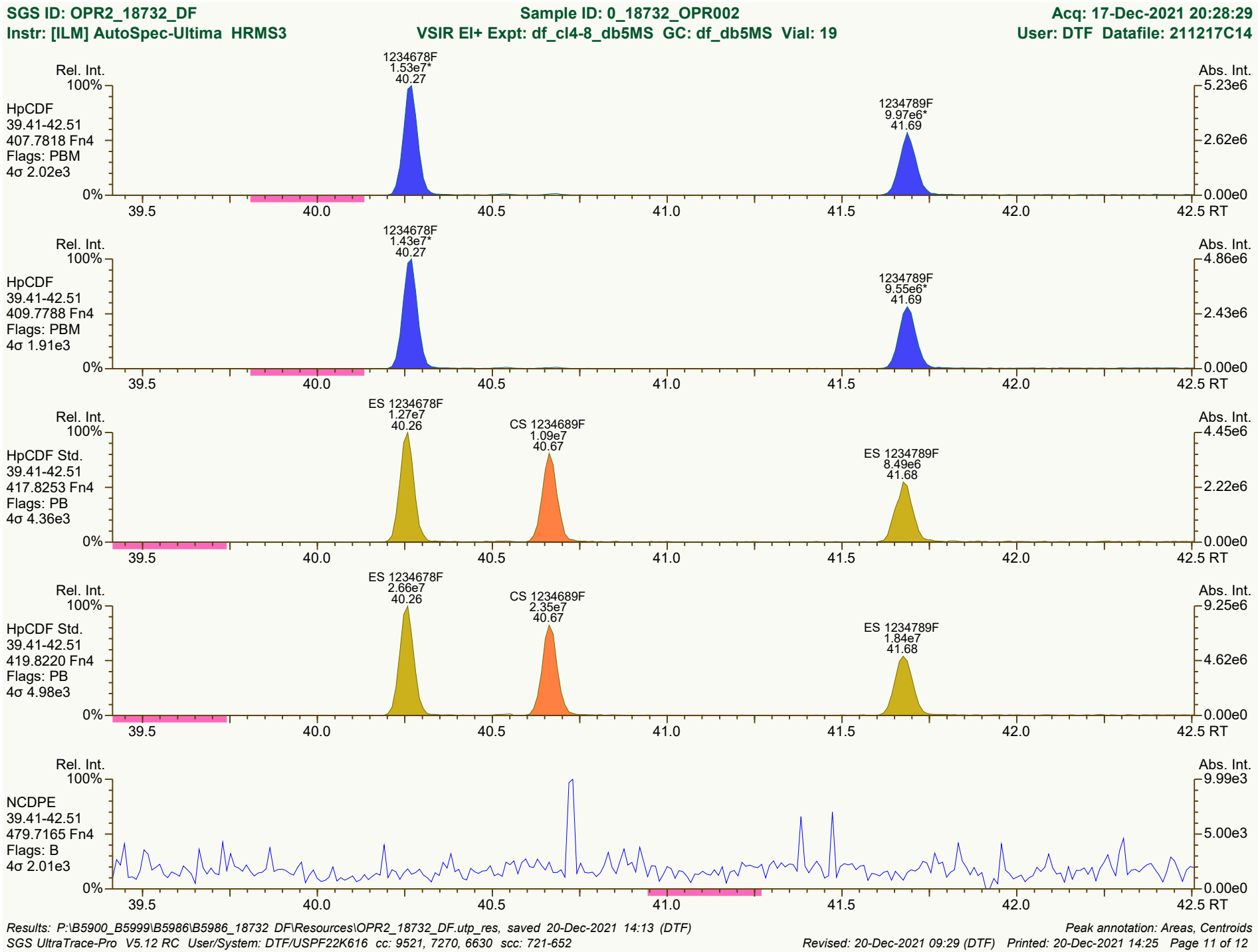
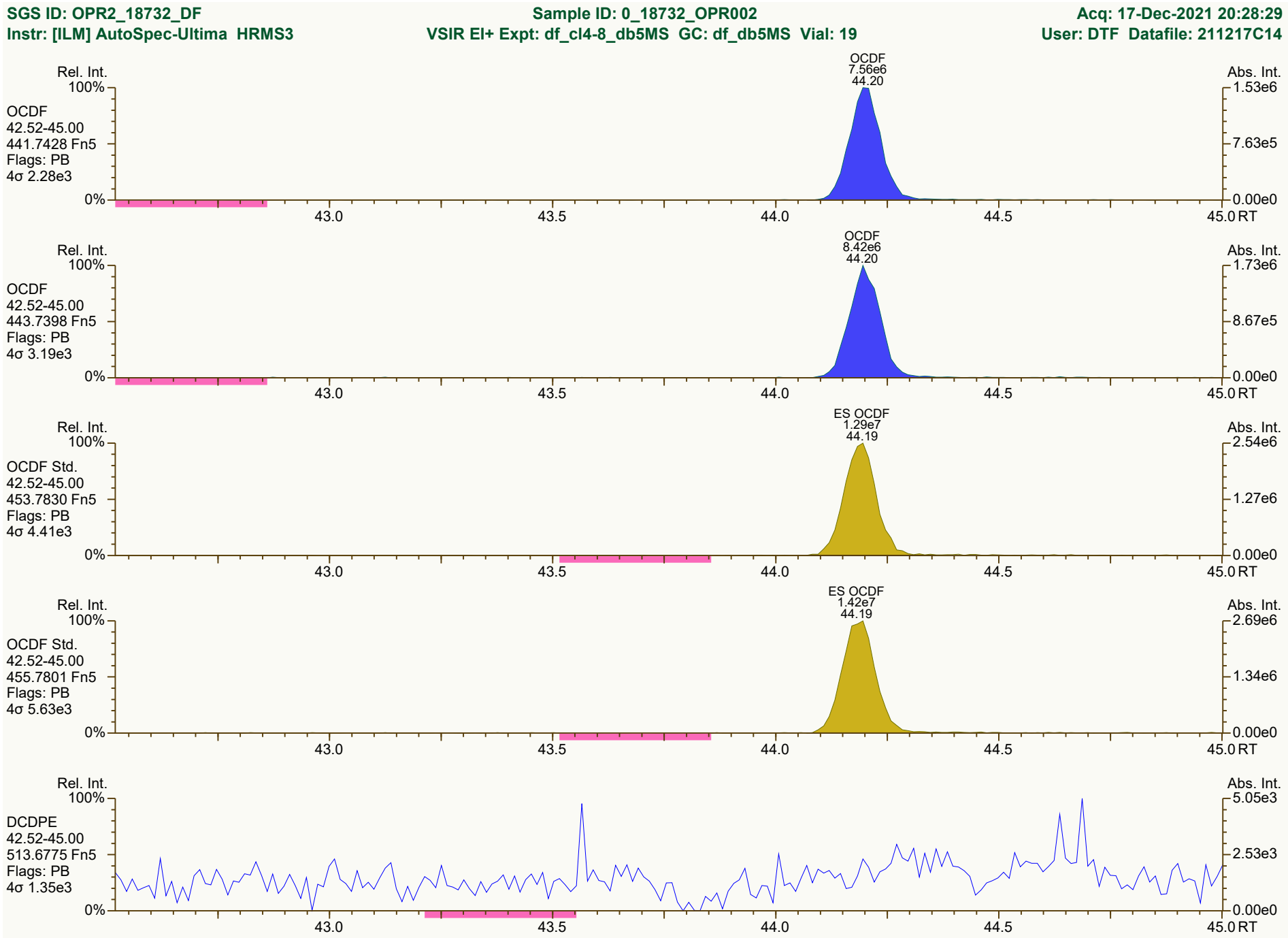
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3747, 1475, 1202 scc: 721-652
Revised: 20-Dec-2021 09:29 (DTF) Printed: 20-Dec-2021 14:25 Page 10 of 12


SGS ID: OPR2_18732_DF
Sample ID: 0_18732_OPR002
Acq: 17-Dec-2021 20:28:29
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19
User: DTF Datafile: 211217C14
Rel. Int.
Abs. Int.
HpCDF
39.41-42.51
407.7818 Fn4
Flags: PBM
4σ 2.02e3
1234678F
1.53e7*
40.27
1234789F
9.97e6*
41.69
5.23e6
2.62e6
0.00e0
HpCDF
39.41-42.51
409.7788 Fn4
Flags: PBM
4σ 1.91e3
1234678F
1.43e7*
40.27
1234789F
9.55e6*
41.69
4.86e6
2.43e6
0.00e0
HpCDF Std.
39.41-42.51
417.8253 Fn4
Flags: PB
4σ 4.36e3
ES 1234678F
1.27e7
40.26
CS 1234689F
1.09e7
40.67
ES 1234789F
8.49e6
41.68
4.45e6
2.22e6
0.00e0
HpCDF Std.
39.41-42.51
419.8220 Fn4
Flags: PB
4σ 4.98e3
ES 1234678F
2.66e7
40.26
CS 1234689F
2.35e7
40.67
ES 1234789F
1.84e7
41.68
9.25e6
4.62e6
0.00e0
NCDPE
39.41-42.51
479.7165 Fn4
Flags: B
4σ 2.01e3
9.99e3
5.00e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
42.5 RT
Results: P:\B5900_B5999\B5986\B5986_18732 DF\Resources\OPR2_18732_DF.utp_res, saved 20-Dec-2021 14:13 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9521, 7270, 6630 scc: 721-652
Revised: 20-Dec-2021 09:29 (DTF) Printed: 20-Dec-2021 14:25 Page 11 of 12

SGS ID: OPR2_18732_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18732_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 19

Acq: 17-Dec-2021 20:28:29
User: DTF Datafile: 211217C14



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SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 7120, 8531, 0200 scc: 721-652

Peak annotation: Areas, Centroids
PKD: 20-Dec-2021 09:25 Printed: 20-Dec-2021 14:25 Page 12 of 12



FINAL LAB REPORT

11215131-SJRWP-PCFSE

B5961

08-Dec-2021

Prepared by

SGS NORTH AMERICA

Prepared for

GHD Services Inc.

11215131-SJRWP-PCFSE

Meagan Willis
11451 Katy Fwy #400
Houston, TX 77036
Phone: 713-907-3710
Email: Meagan.Willis@ghd.com

This report is approved by

Tamara Burkamper

tamara.burkamper@sgs.com

Senior Project Manager

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Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	11215131-SJRWP-PCFSE
SGS Project #	B5961
Analytical Protocol(s)	1613B
No. Samples Submitted	5
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	03-Dec-21
Condition Received	Good
Temperature upon Receipt (ºC)	0.5
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Requested sample analysis per Method 1613, Revision B Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS, October 1994.

Samples were prepped per SW-846 Test Method 3540C: Soxhlet Extraction. Revision 3, December 1996.
and per SOPs DC_441.6, clean up per DC_365.10 and analyzed per DC_364.14.

Soil samples are reported on “dry weight” basis.

There was no client designated MS/MSD. OPR/OPRD analyzed for precision.

Data processing uses proprietary software.

Non-Detects are reported to the EDL, which are below the calculated J-Level.

Prep chemists include Ricky Ballard, Jason Hall, and Kelsey Ellis.

Analytical Chemists include Paul Walton and/or Tyler Fritz.

All Samples were extracted and analyzed within recommended holding times.

Initial Calibration meets requirements. The low point of the ICAL is 0.25 pg/uL.

Continuing Calibration meets requirements.

No re-extractions or dilutions were required.

Sample extracts re-analyzed on the instrument are indicated with suffix “-RJ”.

MB1_18710: the reported percent recovery of labeled cleanup standard CS 1,2,3,4,6,9-HxCDF is above criteria. There is no impact on analyte concentrations.

OPR1/OPR2_18710 meet accuracy and precision criteria.

Samples were extracted at ~10-gram dry weight equivalent and final extract volume of 20uL.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	20-054-0
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.3)
Florida DOH	E87634
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020019
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
North Dakota	R-197
Ohio	87785
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
US Coast Guard	16714/159.317/SGS
Vermont	VT-87634
Virginia	460214
Washington	C913

Rev. 12-Oct-2021

Sample ID: 11215131-120321-S-JC-SW-B-6H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.10 g	Lab Sample ID	B5987_18819_DF_001	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	80.1 %	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	17:44:30

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	83.4				ES 2378-TCDD	76.4	
12378-PeCDD	3.64				ES 12378-PeCDD	80.3	
123478-HxCDD	EMPC		2.35	J	ES 123478-HxCDD	82.7	
123678-HxCDD	8.11				ES 123678-HxCDD	85.2	
123789-HxCDD	4.49				ES 123789-HxCDD	78.7	
1234678-HpCDD	147				ES 1234678-HpCDD	86.8	
OCDD	2,060				ES OCDD	90.5	
2378-TCDF	294				ES 2378-TCDF	67.6	
12378-PeCDF	9.16				ES 12378-PeCDF	78.3	
23478-PeCDF	16.3				ES 23478-PeCDF	76.6	
123478-HxCDF	19.8				ES 123478-HxCDF	93.6	
123678-HxCDF	9.53				ES 123678-HxCDF	97.9	
234678-HxCDF	6.48				ES 234678-HxCDF	78.8	
123789-HxCDF	ND	0.604			ES 123789-HxCDF	90.4	
1234678-HpCDF	96				ES 1234678-HpCDF	98.8	
1234789-HpCDF	8.78				ES 1234789-HpCDF	93.8	
OCDF	2,100				ES OCDF	104	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	73.7	
Total TCDD	119		135		CS 12347-PeCDD	93.1	
Total PeCDD	41.5		50.1		CS 12346-PeCDF	82.2	
Total HxCDD	94.3		96.7		CS 123469-HxCDF	103	
Total HpCDD	364		364		CS 1234689-HpCDF	111	
Total TCDF	704		708				
Total PeCDF	130		136				
Total HxCDF	104		109				
Total HpCDF	185		185				
Total PCDD/Fs	**5,900**		**5,950**				
WHO-2005 TEQs							
TEQ: ND=0	130		130				
TEQ: ND=DL/2	130	1.08	131				
TEQ: ND=DL	130	2.16	131				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: 11215131-120321-S-JC-SW-B-6H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.10 g	Lab Sample ID:	B5987_18819_DF_001	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	80.1 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	17:44:30

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	7.75		12479/12468D	12.4		124679/124689D	39.8		1234679D	217	
1379D	4.91		12469D	[4.52]		123468D	11.1		1234678D	147	
1369D	2.61		12368D	8.42		123679/123689D	25.3				
1469D	6.95		12478D	[2.24]	J	123469D	3.02				
1247D...[4]	4.94		12379D	5.38		123478D	[2.35]	J			
1378D	[2.78]		12369D...[3]	5.21		123678D	8.11				
1268D	[1.78]		12346/12347D	4.9		123467D	2.56				
1478D	[0.696]		12378D	3.64		123789D	4.49		**Conc.**	364	
1279D	[1.65]		12367D	[1.77]	J				**EMPC**	364	
1234/1269D	[2.5]		12389D	1.54	J						
1236D	[1.33]								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	[4.44]										
1239D	[0.843]								OCDD	2060	
2378D	83.4										
1278D	8.01										
1267D	(0.633)										
1289D	(0.633)										
Conc.	119		**Conc.**	41.5		**Conc.**	94.3				
EMPC	135		**EMPC**	50.1		**EMPC**	96.7				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	130	130
TEQ: ND=DL/2	130	131
TEQ: ND=DL	130	131

	Conc.	EMPC
Total PCDD/Fs	5,900	5,950

Checkcode: 131-299-DLV

Report Created: 24-Jan-2022 13:23 Analyst: MS

Sample ID: 11215131-120321-S-JC-SW-B-6H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.10 g	Lab Sample ID:	B5987_18819_DF_001	Date Extracted:	10-Jan-2022
Date Collected:	03-Dec-2021	% Solid:	80.1 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	17:44:30

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[3.44]		13468/12468F	23.1		123468F	8.74		1234678F	96	
1468F	6.04		13678F...[3]	13.6		124678/134678F	32.5		1234679F	6.4	
2468F	7.75		12368F...[3]	28.4		134679F	(0.548)		1234689F	74	
1346/1246F	6.32		14678F	[3.49]		124679F	1.89	J	1234789F	8.78	
1347F...[3]	18.9		13479F	[0.521]	J	124689F	19.1				
1348F	4.28		13469/12479F	[1.82]	J	123467F	[5.8]				
1248F...[3]	25.9		12346F	3.57		123478F	19.8				
1268F	12.7		23468/12469F	8.77		123678F	9.53				
1467F	5.58		12347F	3.55		123479F	(0.548)				
1478F	19		12348F	5.14		123469F	1.93	J			
1369/1237F	7.19		12378F	9.16		123679F	0.764	J			
2467F	5.94		12678/12367F	11.8		234678F	6.48		**Conc.**	185	
2368F	17.9		12379F	(0.528)		234678/123689F	0		**EMPC**	185	
1238F...[5]	27.1		12679F	(0.528)		123689F	(0.548)				
1278F	139		23467/12369F	6.08		123789F	(0.604)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(0.694)		23478F	16.3		123789/123489F	0				
1267F	13		23478/12489F	0		123489F	2.78		OCDF	2100	
2346/1249F	7.48		12489F	(0.528)							
2347/1279F	9.02		12349F	[0.688]	J						
2348F	16.9		12389F	(0.528)							
2378F	294										
2367/3467F	33.6										
1269F	6.08										
1239F	(0.694)										
1289F	20.4										
Conc.	704		**Conc.**	130		**Conc.**	104				
EMPC	708		**EMPC**	136		**EMPC**	109				

Checkcode: 131-299-DLV

Report Created: 24-Jan-2022 13:23 Analyst: MS

Sample ID: 11215131-120321-S-JC-SW-B-6H TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5987_18819_DF_001
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.10 g	QC Batch No.:	18819
Date Collected:	03-Dec-2021	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	20-Jan-2022 17:44
Lab Project No:	B5987	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	83.4		0.633	83.4	83.4	83.4
12378-PeCDD	3.64		0.764	1.82	3.64	3.64
123478-HxCDD	[2.35]	J	0.932	[0.235]	[0.235]	[0.235]
123678-HxCDD	8.11		0.963	0.811	0.811	0.811
123789-HxCDD	4.49		0.964	0.449	0.449	0.449
1234678-HpCDD	147		0.611	1.47	1.47	1.47
OCDD	2060		0.94	2.06	0.206	0.618
2378-TCDF	294		0.694	29.4	29.4	29.4
12378-PeCDF	9.16		0.53	0.458	0.458	0.275
23478-PeCDF	16.3		0.526	8.15	8.15	4.89
123478-HxCDF	19.8		0.497	1.98	1.98	1.98
123678-HxCDF	9.53		0.474	0.953	0.953	0.953
234678-HxCDF	6.48		0.653	0.648	0.648	0.648
123789-HxCDF	(0.604)		0.604	(0.0604)	(0.0604)	(0.0604)
1234678-HpCDF	96		0.288	0.96	0.96	0.96
1234789-HpCDF	8.78		0.426	0.0878	0.0878	0.0878
OCDF	2100		0.765	2.1	0.21	0.63

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TEQ Summaries			
EMPC = 0, ND = 0	135	133	130
EMPC = 0, ND = DL / 2	135	133	130
EMPC = 0, ND = DL	135	133	130
EMPC = 0, < J-level = 0	135	133	130
EMPC = EMPC, ND = 0	135	133	130
EMPC = EMPC, ND = DL / 2	135	133	131
EMPC = EMPC, ND = DL	135	133	131
EMPC = EMPC, < J-level = 0	135	133	130

Checkcode: 131-299-DLV

Sample ID: 11215131-120621-S-JC-SC-B-1H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID	B5987_18819_DF_002	Date Extracted:	10-Jan-2022
Date Collected:	06-Dec-2021	% Solid:	48.0 %	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	18:30:48

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	24,000			E	ES 2378-TCDD	44.2	
12378-PeCDD	235				ES 12378-PeCDD	59.7	
123478-HxCDD	11.5				ES 123478-HxCDD	55.1	
123678-HxCDD	58.8				ES 123678-HxCDD	54.4	
123789-HxCDD	20.1				ES 123789-HxCDD	53.4	
1234678-HpCDD	1,610				ES 1234678-HpCDD	56.7	
OCDD	24,400			E	ES OCDD	52.6	
2378-TCDF	68,200			E	ES 2378-TCDF	33.3	
12378-PeCDF	2,760				ES 12378-PeCDF	55.5	
23478-PeCDF	1,960			PR	ES 23478-PeCDF	50.4	
123478-HxCDF	5,020			E	ES 123478-HxCDF	64.4	
123678-HxCDF	1,270				ES 123678-HxCDF	62.7	
234678-HxCDF	285				ES 234678-HxCDF	44.3	
123789-HxCDF	ND	2.23			ES 123789-HxCDF	60.5	
1234678-HpCDF	1,720				ES 1234678-HpCDF	63.1	
1234789-HpCDF	615				ES 1234789-HpCDF	61.5	
OCDF	6,130				ES OCDF	60.8	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	35.5	
Total TCDD	27,000		27,000		CS 12347-PeCDD	61.9	
Total PeCDD	330		341		CS 12346-PeCDF	56.7	
Total HxCDD	453		463		CS 123469-HxCDF	70.3	
Total HpCDD	3,200		3,200		CS 1234689-HpCDF	70.1	
Total TCDF	125,000		125,000				
Total PeCDF	7,350		7,400				
Total HxCDF	7,870		7,870				
Total HpCDF	3,170		3,170				
Total PCDD/Fs	**205,000**		**205,000**				
WHO-2005 TEQs							
TEQ: ND=0	32400		32400				
TEQ: ND=DL/2	32400	1.84	32400				
TEQ: ND=DL	32400	3.68	32400				

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Sample ID: 11215131-120621-S-JC-SC-B-1H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID:	B5987_18819_DF_002	Date Extracted:	10-Jan-2022
Date Collected:	06-Dec-2021	% Solid:	48.0 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	18:30:48

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	8.06		12479/12468D	23.3		124679/124689D	166		1234679D	1600	
1379D	8.13		12469D	6.64		123468D	22.9		1234678D	1610	
1369D	(1.01)		12368D	25.2		123679/123689D	170				
1469D	2.15		12478D	17		123469D	[9.98]				
1247D...[4]	19.2		12379D	[6.69]		123478D	11.5				
1378D	50.4		12369D...[3]	7.29		123678D	58.8				
1268D	[2.97]		12346/12347D	5.77		123467D	4.69				
1478D	[25.7]		12378D	235		123789D	20.1		**Conc.**	3,200	
1279D	(1.01)		12367D	9.84					**EMPC**	3,200	
1234/1269D	[6.09]		12389D	[3.96]							
1236D	2.98								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	329										
1239D	(1.01)								OCDD	24400	E
2378D	24000	E									
1278D	2470	E									
1267D	56.1										
1289D	28.6										
Conc.	27,000		**Conc.**	330		**Conc.**	453				
EMPC	27,000		**EMPC**	341		**EMPC**	463				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	32,400	32,400
TEQ: ND=DL/2	32,400	32,400
TEQ: ND=DL	32,400	32,400

	Conc.	EMPC
Total PCDD/Fs	205,000	205,000

Checkcode: 312-725-VLG

Report Created: 24-Jan-2022 13:23 Analyst: MS

Sample ID: 11215131-120621-S-JC-SC-B-1H — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	07-Dec-2021
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	Lab Sample ID:	B5987_18819_DF_002	Date Extracted:	10-Jan-2022
Date Collected:	06-Dec-2021	% Solid:	48.0 %	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	18:30:48

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	[5.01]		13468/12468F	90.7		123468F	58.8		1234678F	1720	
1468F	56.5		13678F...[3]	39.5		124678/134678F	464		1234679F	33.3	
2468F	68.7		12368F...[3]	1170		134679F	(2.43)		1234689F	803	
1346/1246F	14.2		14678F	(1.39)		124679F	8.27		1234789F	615	
1347F...[3]	271		13479F	(1.39)		124689F	289				
1348F	91.4		13469/12479F	(1.39)		123467F	30.3				
1248F...[3]	787		12346F	5.14		123478F	5020	E			
1268F	385		23468/12469F	[52.3]		123678F	1270				
1467F	132		12347F	50		123479F	19.9				
1478F	971		12348F	270		123469F	18				
1369/1237F	377		12378F	2760		123679F	8.87				
2467F	129		12678/12367F	844		234678F	285		**Conc.**	3,170	
2368F	962		12379F	(1.39)		234678/123689F	0		**EMPC**	3,170	
1238F...[5]	2590	E	12679F	6.49		123689F	(2.43)				
1278F	28900	E	23467/12369F	37.7		123789F	(2.23)		**Octa-Furan**	**Conc (pg/g)**	**Qualifiers**
1349F	(1.31)		23478F	1960	PR	123789/123489F	0				
1267F	820		23478/12489F	0		123489F	398		OCDF	6130	
2346/1249F	210		12489F	(1.39)							
2347/1279F	1050	E	12349F	(1.39)							
2348F	3370	E	12389F	114							
2378F	68200	E									
2367/3467F	7120	E									
1269F	414										
1239F	74.4										
1289F	8150	E									
Conc.	125,000		**Conc.**	7,350		**Conc.**	7,870				
EMPC	125,000		**EMPC**	7,400		**EMPC**	7,870				

Checkcode: 312-725-VLG

Report Created: 24-Jan-2022 13:23 Analyst: MS

Sample ID: 11215131-120621-S-JC-SC-B-1H TEQ Summary Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	B5987_18819_DF_002
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.01 g	QC Batch No.:	18819
Date Collected:	06-Dec-2021	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	07-Dec-2021	Dilution:	-	Date Analyzed:	20-Jan-2022 18:30
Lab Project No:	B5987	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	24000	E	1.01	24000	24000	24000
12378-PeCDD	235		0.612	118	235	235
123478-HxCDD	11.5		1.34	1.15	1.15	1.15
123678-HxCDD	58.8		1.31	5.88	5.88	5.88
123789-HxCDD	20.1		1.2	2.01	2.01	2.01
1234678-HpCDD	1610		0.997	16.1	16.1	16.1
OCDD	24400	E	1.75	24.4	2.44	7.31
2378-TCDF	68200	E	1.31	6820	6820	6820
12378-PeCDF	2760		1.21	138	138	82.9
23478-PeCDF	1960		1.59	979	979	587
123478-HxCDF	5020	E	2.1	502	502	502
123678-HxCDF	1270		2.24	127	127	127
234678-HxCDF	285		3.47	28.5	28.5	28.5
123789-HxCDF	(2.23)		2.23	(0.223)	(0.223)	(0.223)
1234678-HpCDF	1720		0.733	17.2	17.2	17.2
1234789-HpCDF	615		1.09	6.15	6.15	6.15
OCDF	6130		1.02	6.13	0.613	1.84

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TEQ Summaries			
EMPC = 0, ND = 0	32800	32900	32400
EMPC = 0, ND = DL / 2	32800	32900	32400
EMPC = 0, ND = DL	32800	32900	32400
EMPC = 0, < J-level = 0	32800	32900	32400
EMPC = EMPC, ND = 0	32800	32900	32400
EMPC = EMPC, ND = DL / 2	32800	32900	32400
EMPC = EMPC, ND = DL	32800	32900	32400
EMPC = EMPC, < J-level = 0	32800	32900	32400

Sample ID: Method Blank B5987_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Analyte	Conc. (pg/g)	DL (pg/g)	EMPC (pg/g)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.984			ES 2378-TCDD	78.2	
12378-PeCDD	ND	0.644			ES 12378-PeCDD	93.4	
123478-HxCDD	ND	0.522			ES 123478-HxCDD	80.8	
123678-HxCDD	ND	0.481			ES 123678-HxCDD	92.6	
123789-HxCDD	ND	0.468			ES 123789-HxCDD	83.7	
1234678-HpCDD	ND	0.46			ES 1234678-HpCDD	89.9	
OCDD	ND	1.04			ES OCDD	70.7	
2378-TCDF	ND	0.616			ES 2378-TCDF	86.7	
12378-PeCDF	ND	0.355			ES 12378-PeCDF	91	
23478-PeCDF	ND	0.327			ES 23478-PeCDF	93.6	
123478-HxCDF	ND	0.33			ES 123478-HxCDF	93.7	
123678-HxCDF	ND	0.321			ES 123678-HxCDF	99.4	
234678-HxCDF	ND	0.437			ES 234678-HxCDF	79.2	
123789-HxCDF	ND	0.448			ES 123789-HxCDF	84	
1234678-HpCDF	ND	0.226			ES 1234678-HpCDF	113	
1234789-HpCDF	ND	0.354			ES 1234789-HpCDF	91.8	
OCDF	ND	0.655			ES OCDF	84.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	79.4	
Total TCDD	ND	0.984	ND		CS 12347-PeCDD	104	
Total PeCDD	ND	0.644	ND		CS 12346-PeCDF	96.3	
Total HxCDD	ND	0.489	ND		CS 123469-HxCDF	108	
Total HpCDD	ND	0.46	ND		CS 1234689-HpCDF	119	
Total TCDF	ND	0.616	ND				
Total PeCDF	ND	0.341	ND				
Total HxCDF	ND	0.376	ND				
Total HpCDF	ND	0.279	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	1.06	1.06	1.06				
TEQ: ND=DL	2.11	2.11	2.11				

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Sample ID: Method Blank B5987_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Tetra-Dioxins	Conc. (pg/g)	Qualifiers	Penta-Dioxins	Conc. (pg/g)	Qualifiers	Hexa-Dioxins	Conc (pg/g)	Qualifiers	Hepta-Dioxins	Conc (pg/g)	Qualifiers
1368D	(0.984)		12479/12468D	(0.644)		124679/124689D	(0.489)		1234679D	(0.46)	
1379D	(0.984)		12469D	(0.644)		123468D	(0.489)		1234678D	(0.46)	
1369D	(0.984)		12368D	(0.644)		123679/123689D	(0.489)				
1469D	(0.984)		12478D	(0.644)		123469D	(0.489)				
1247D...[4]	(0.984)		12379D	(0.644)		123478D	(0.522)				
1378D	(0.984)		12369D...[3]	(0.644)		123678D	(0.481)				
1268D	(0.984)		12346/12347D	(0.644)		123467D	(0.489)				
1478D	(0.984)		12378D	(0.644)		123789D	(0.468)		**Conc.**	0	
1279D	(0.984)		12367D	(0.644)					**EMPC**	0	
1234/1269D	(0.984)		12389D	(0.644)							
1236D	(0.984)								**Octa-Dioxin**	**Conc (pg/g)**	**Qualifiers**
1237/1238D	(0.984)										
1239D	(0.984)								OCDD	(1.04)	
2378D	(0.984)										
1278D	(0.984)										
1267D	(0.984)										
1289D	(0.984)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

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WHO-2005 TEQs	Conc.	EMPC
TEQ: ND=0	0	0
TEQ: ND=DL/2	1.06	1.06
TEQ: ND=DL	2.11	2.11

	Conc.	EMPC
Total PCDD/Fs	0	0

Checkcode: 248-046-QCQ

Report Created: 24-Jan-2022 13:23 Analyst: MS

Sample ID: Method Blank B5987_18819 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	Lab Sample ID:	MB1_18819_DF_SDS	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No.:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	13:52:51

Tetra-Furans	Conc. (pg/g)	Qualifiers	Penta-Furans	Conc. (pg/g)	Qualifiers	Hexa-Furans	Conc (pg/g)	Qualifiers	Hepta-Furans	Conc (pg/g)	Qualifiers
1368F	(0.616)		13468/12468F	(0.343)		123468F	(0.376)		1234678F	(0.226)	
1468F	(0.616)		13678F...[3]	(0.341)		124678/134678F	(0.376)		1234679F	(0.279)	
2468F	(0.616)		12368F...[3]	(0.341)		134679F	(0.376)		1234689F	(0.279)	
1346/1246F	(0.616)		14678F	(0.341)		124679F	(0.376)		1234789F	(0.354)	
1347F...[3]	(0.616)		13479F	(0.341)		124689F	(0.376)				
1348F	(0.616)		13469/12479F	(0.341)		123467F	(0.376)				
1248F...[3]	(0.616)		12346F	(0.341)		123478F	(0.33)				
1268F	(0.616)		23468/12469F	(0.341)		123678F	(0.321)				
1467F	(0.616)		12347F	(0.341)		123479F	(0.376)				
1478F	(0.616)		12348F	(0.341)		123469F	(0.376)				
1369/1237F	(0.616)		12378F	(0.355)		123679F	(0.376)				
2467F	(0.616)		12678/12367F	(0.341)		234678F	(0.437)		**Conc.**	0	
2368F	(0.616)		12379F	(0.341)		234678/123689F	0		**EMPC**	0	
1238F...[5]	(0.616)		12679F	(0.341)		123689F	(0.376)				
1278F	(0.616)		23467/12369F	(0.341)		123789F	(0.448)		**Octa-Furan**	**Conc**	**Qualifiers**
1349F	(0.616)		23478F	(0.327)		123789/123489F	0			**(pg/g)**	
1267F	(0.616)		23478/12489F	0		123489F	(0.376)		OCDF	(0.655)	
2346/1249F	(0.616)		12489F	(0.341)							
2347/1279F	(0.616)		12349F	(0.341)							
2348F	(0.616)		12389F	(0.341)							
2378F	(0.616)										
2367/3467F	(0.616)										
1269F	(0.616)										
1239F	(0.616)										
1289F	(0.616)										
Conc.	0		**Conc.**	0		**Conc.**	0				
EMPC	0		**EMPC**	0		**EMPC**	0				

Checkcode: 248-046-QCQ

Report Created: 24-Jan-2022 13:23 Analyst: MS

Sample ID: Method Blank B5987_18819 — TEQ Summary — Method 1613B

Client Project Name:	GHD Services Inc.	Matrix:	Solid	Lab Sample ID:	MB1_18819_DF_SDS
Cliend Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	10.00 g	QC Batch No.:	18819
Date Collected:	n/a	Split:	-	Date Extracted:	10-Jan-2022
Date Received:	n/a	Dilution:	-	Date Analyzed:	20-Jan-2022 13:52
Lab Project No:	B5987	Units	pg/g		

Analyte	Result	Qualifiers	DLs	I-TEQ	WHO-1998	WHO-2005
2378-TCDD	(0.984)		0.984	(0.984)	(0.984)	(0.984)
12378-PeCDD	(0.644)		0.644	(0.322)	(0.644)	(0.644)
123478-HxCDD	(0.522)		0.522	(0.0522)	(0.0522)	(0.0522)
123678-HxCDD	(0.481)		0.481	(0.0481)	(0.0481)	(0.0481)
123789-HxCDD	(0.468)		0.468	(0.0468)	(0.0468)	(0.0468)
1234678-HpCDD	(0.46)		0.46	(0.0046)	(0.0046)	(0.0046)
OCDD	(1.04)		1.04	(0.00104)	(0.000104)	(0.000312)
2378-TCDF	(0.616)		0.616	(0.0616)	(0.0616)	(0.0616)
12378-PeCDF	(0.355)		0.355	(0.0178)	(0.0178)	(0.0107)
23478-PeCDF	(0.327)		0.327	(0.164)	(0.164)	(0.0981)
123478-HxCDF	(0.33)		0.33	(0.033)	(0.033)	(0.033)
123678-HxCDF	(0.321)		0.321	(0.0321)	(0.0321)	(0.0321)
234678-HxCDF	(0.437)		0.437	(0.0437)	(0.0437)	(0.0437)
123789-HxCDF	(0.448)		0.448	(0.0448)	(0.0448)	(0.0448)
1234678-HpCDF	(0.226)		0.226	(0.00226)	(0.00226)	(0.00226)
1234789-HpCDF	(0.354)		0.354	(0.00354)	(0.00354)	(0.00354)
OCDF	(0.655)		0.655	(0.000655)	(0.0000655)	(0.000197)

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TEQ Summaries			
EMPC = 0, ND = 0	0	0	0
EMPC = 0, ND = DL / 2	0.931	1.09	1.06
EMPC = 0, ND = DL	1.86	2.18	2.11
EMPC = 0, < J-level = 0	0	0	0
EMPC = EMPC, ND = 0	0	0	0
EMPC = EMPC, ND = DL / 2	0.931	1.09	1.06
EMPC = EMPC, ND = DL	1.86	2.18	2.11
EMPC = EMPC, < J-level = 0	0	0	0

Checkcode: 248-046-QCQ

SGS North America - DF v0.99

Sample ID: 0_18819_OPR001 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR1_18819_DF	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	11:32:05

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.1				ES 2378-TCDD	90.8	
12378-PeCDD	52				ES 12378-PeCDD	92.9	
123478-HxCDD	59.9				ES 123478-HxCDD	90.3	
123678-HxCDD	56.9				ES 123678-HxCDD	98	
123789-HxCDD	51.3				ES 123789-HxCDD	99.3	
1234678-HpCDD	56.3				ES 1234678-HpCDD	102	
OCDD	114				ES OCDD	89.1	
2378-TCDF	10.9				ES 2378-TCDF	87.1	
12378-PeCDF	51.3				ES 12378-PeCDF	99.6	
23478-PeCDF	56.6				ES 23478-PeCDF	99.7	
123478-HxCDF	56.5				ES 123478-HxCDF	106	
123678-HxCDF	56.4				ES 123678-HxCDF	116	
234678-HxCDF	57.4				ES 234678-HxCDF	82.7	
123789-HxCDF	52.5				ES 123789-HxCDF	109	
1234678-HpCDF	54.9				ES 1234678-HpCDF	139	
1234789-HpCDF	55.9				ES 1234789-HpCDF	111	
OCDF	115				ES OCDF	94.2	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	88.2	
Total TCDD	60		60		CS 12347-PeCDD	32.5	
Total PeCDD	82.9		82.9		CS 12346-PeCDF	95.9	
Total HxCDD	186		186		CS 123469-HxCDF	120	
Total HpCDD	71.1		71.1		CS 1234689-HpCDF	126	
Total TCDF	71.1		71.1				
Total PeCDF	206		206				
Total HxCDF	377		377				
Total HpCDF	111		111				
Total PCDD/Fs	**1,390**		**1,390**				
WHO-2005 TEQs							
TEQ: ND=0	125		125				
TEQ: ND=DL/2	125	0.568	125				
TEQ: ND=DL	125	1.14	125				

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Sample ID: 0_18819_OPR002 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	GHD Services Inc.	Matrix:	Solid	Lab Project ID:	B5987	Date Received:	n/a
Project ID:	11215131-SJRWP-PCFSE	Weight/Volume:	1 uL	Lab Sample ID	OPR2_18819_DF	Date Extracted:	10-Jan-2022
Date Collected:	n/a	% Solid:	n/a	QC Batch No:	18819	Date Analyzed:	20-Jan-2022
		Split:	-	Dilution:	-	Time Analyzed:	12:20:14

Analyte	Conc. (pg/uL)	DL (pg/uL)	EMPC (pg/uL)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	12.3				ES 2378-TCDD	80.5	
12378-PeCDD	55.2				ES 12378-PeCDD	87.9	
123478-HxCDD	57.7				ES 123478-HxCDD	87	
123678-HxCDD	61				ES 123678-HxCDD	95.7	
123789-HxCDD	58.5				ES 123789-HxCDD	84	
1234678-HpCDD	56.7				ES 1234678-HpCDD	98.7	
OCDD	120				ES OCDD	91.4	
2378-TCDF	12				ES 2378-TCDF	72.9	
12378-PeCDF	54.5				ES 12378-PeCDF	83.1	
23478-PeCDF	59				ES 23478-PeCDF	80.6	
123478-HxCDF	58.9				ES 123478-HxCDF	94.1	
123678-HxCDF	60.3				ES 123678-HxCDF	103	
234678-HxCDF	55				ES 234678-HxCDF	88.6	
123789-HxCDF	56.7				ES 123789-HxCDF	91.3	
1234678-HpCDF	63.4			V	ES 1234678-HpCDF	113	
1234789-HpCDF	57.3				ES 1234789-HpCDF	111	
OCDF	116				ES OCDF	98.6	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	80.3	
Total TCDD	62.7		62.7		CS 12347-PeCDD	96.3	
Total PeCDD	87.1		87.1		CS 12346-PeCDF	82.9	
Total HxCDD	196		196		CS 123469-HxCDF	111	
Total HpCDD	71.8		71.8		CS 1234689-HpCDF	122	
Total TCDF	76.3		76.3				
Total PeCDF	230		230				
Total HxCDF	396		396				
Total HpCDF	121		121				
Total PCDD/Fs	**1,480**		**1,480**				
WHO-2005 TEQs							
TEQ: ND=0	131		131				
TEQ: ND=DL/2	131	0.435	131				
TEQ: ND=DL	131	0.87	131				

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Sample DUP

Method 1613B

Sample ID: 0_18819_OPR001

Analyte	OPR1_18819_DF pg/uL	OPR2_18819_DF (DUP) pg/uL	RPD
2,3,7,8-TCDD	12.1	12.3	1.9%
1,2,3,7,8-PeCDD	52	55.2	5.9%
1,2,3,4,7,8-HxCDD	59.9	57.7	3.8%
1,2,3,6,7,8-HxCDD	56.9	61	7.0%
1,2,3,7,8,9-HxCDD	51.3	58.5	13.1%
1,2,3,4,6,7,8-HpCDD	56.3	56.7	0.7%
OCDD	114	120	4.6%
2,3,7,8-TCDF	10.9	12	10.3%
1,2,3,7,8-PeCDF	51.3	54.5	6.0%
2,3,4,7,8-PeCDF	56.6	59	4.2%
1,2,3,4,7,8-HxCDF	56.5	58.9	4.1%
1,2,3,6,7,8-HxCDF	56.4	60.3	6.6%
2,3,4,6,7,8-HxCDF	57.4	55	4.2%
1,2,3,7,8,9-HxCDF	52.5	56.7	7.7%
1,2,3,4,6,7,8-HpCDF	54.9	63.4	14.4%
1,2,3,4,7,8,9-HpCDF	55.9	57.3	2.6%
OCDF	115	116	1.0%
Totals			
Total TCDD	60	62.7	4.3%
Total PeCDD	82.9	87.1	4.9%
Total HxCDD	186	196	5.2%
Total HpCDD	71.1	71.8	1.0%
Total TCDF	71.1	76.3	7.1%
Total PeCDF	206	230	10.9%
Total HxCDF	377	396	5.0%
Total HpCDF	111	121	8.6%

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Tamara Burkamper*
Receipt Date & Time:	*07-Dec-21 at 11:28*
AP Project name:	*B5987*
Requested TAT:	*10 business days*
Projected due date:	*19-Jan-22*
Matrix:	*Solid*
Phone#:	*910-794-1613*
Email Address:	*Tamara.Burkamper@sgs.com*

Company Contact:	*Meagan Willis*
Company:	*GHD Services Inc.*
Project Name & Site:	*11215131-SJRWP-PCFSE*
Project PO#:	*340-002625*
QAAP/Contract #:	*file*
Requested Analysis:	*M1613B*
Phone#:	*713-907-3710*
Email Address:	*Meagan.Willis@ghd.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
11215131-120321-S-JC-SW-B-6H	B5987_001*	Solid	1	4oz Amber	03-Dec-21	13:45	-1.3	2	4905 2704 2072
11215131-120621-S-JC-SC-B-1H	B5987_002*	Solid	1	4oz Amber	06-Dec-21	09:50	-1.3	2	4905 2704 2072

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact, not received frozen. *samples taken off HOLD per client email dated 1/5/2022

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* TB 01/05/2022

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/terms_and_conditions.htm

SGS CHAIN OF CUSTODY

B5987

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS	See ccsow
11215131-120321-S-JC-SW-S-13	12-3-21	1325	C	S	4 oz	X				1	RUSH	
11215131-120321-S-JC-SW-B-6	↓	1335	↓	↓	4 oz	X				1		
11215131-120321-S-JC-SW-B-6H	↓	1345	↓	↓	4 oz	X				1	HOLD	*
11215131-120421-S-JC-SC-O-12	12-4-21	0855	C	S	4 oz	X				1		
11215131-120421-S-JC-SC-S-10	↓	1050	↓	↓	4 oz	X				1	RUSH	
11215131-120421-S-JC-SC-S-11	↓	1100	↓	↓	4 oz	X				1	RUSH	
11215131-120421-S-JC-SC-S-12	↓	1110	↓	↓	4 oz	X				1	RUSH	
11215131-120421-S-JC-SC-O-6	↓	1120	↓	↓	4 oz	X				1		
11215131-120421-S-JC-SC-B-5	↓	1130	↓	↓	4 oz	X				1		
11215131-120421-S-JC-SC-O-7	↓	1415	↓	↓	4 oz	X				1		

	DATE:	TIME:		
COLLECTED/RELINQUISHED BY (1): Brianna North (BN)	12-6-21 ~~12-4-21~~	1230	RECEIVED BY: [signature]	RECEIVED BY LABORATORY: [signature] DATE: 12/7/21 TIME: 11:28
RELINQUISHED BY (2): [signature]	12-6-21	1430	RECEIVED BY: [signature] 12/6/21 1230	COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT
RELINQUISHED BY (3): [signature]	12/6/21	1430	RECEIVED BY:	CONTAINER SEALS: ☒ INTACT ☐ BROKEN ☐ ABSENT
				CARRIER: FedEx TEMP: °C -1.3°
				TRACKING #: 4905 2704 2072

*= Samples in this project.

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SGS CHAIN OF CUSTODY

B5987

PROJECT INFO

PROJECT: 11215131-SJRWP - PCFSE

P.O. #:

QUOTE #: file

SITE REF: International Paper

TURN AROUND TIME: Refer to Notes and Remarks

REPORT LEVEL: ☐ Level I ☐ Level II ☒ Level IV

SPECIAL DELIVERABLES:

☐ DoD ☒ EDD/Version: GHD EQuIS 4-file

☐ State of Origin:

SPECIAL INSTRUCTIONS / COMMENTS

SEND DOCUMENTATION / RESULTS TO

COMPANY: GHD Services Inc.

CONTACT: Meagan Willis

ADDRESS: 11451 Katy Fwy #400,Houston

PHONE: 713-907-3716 EMAIL: Meagan.Willis

INVOICE TO (☒ CHECK IF SAME)

COMPANY:

CONTACT:

ADDRESS:

PHONE: EMAIL:

PRESERVATIVE: None

ANALYSIS & METHOD: M1613B (D/F)

SAMPLE ID / DESCRIPTION	DATE	TIME	TYPE (C, G)	MATRIX	CONT	M1613B (D/F)	QC MS	QC MSD	QC DUP	QTY	REMARKS SEE SSOW
11215131-120621-S-JC-SC-S-1	12-6-21	0900	C	S	4 oz	X	X	X			MS/MSD RUSH
11215131-120621-S-JC-SC-S-2		0910			4 oz	X				1	RUSH
11215131-120621-S-JC-SC-S-3		0920			4 oz	X				1	RUSH
11215131-120621-S-JC-SC-O-1		0930			4 oz	X				1	
11215131-120621-S-JC-SC-B-1		0940			4 oz	X				1	
11215131-120621-S-JC-SC-B-1+1		0950			4 oz	X				1	HOLD *
11215131-120621-S-JC-DUP-4		—			4 oz	X			X	1	
					4 oz						
					4 oz						
					4 oz						

COLLECTED/RELINQUISHED BY (1):	DATE:	TIME:	RECEIVED BY:
Brianna Nash	12-6-21	1230	Eddie Castro
RELINQUISHED BY (2): Eddie Castro	12/6/21	1430	RECEIVED BY: 12/6/21 1430
RELINQUISHED BY (3):	12/6/21	1430	RECEIVED BY:

RECEIVED BY LABORATORY:	DATE:	TIME:
Ashley Owens	12/7/21	11:28

COOLER SEAL: ☒ INTACT ☐ BROKEN ☐ ABSENT

CONTAINER SEALS: ☐ INTACT ☐ BROKEN ☒ ABSENT

CARRIER: FedEx TEMP: °C -1.3°

TRACKING #: 4905 2704 2072

* = Samples in this project.

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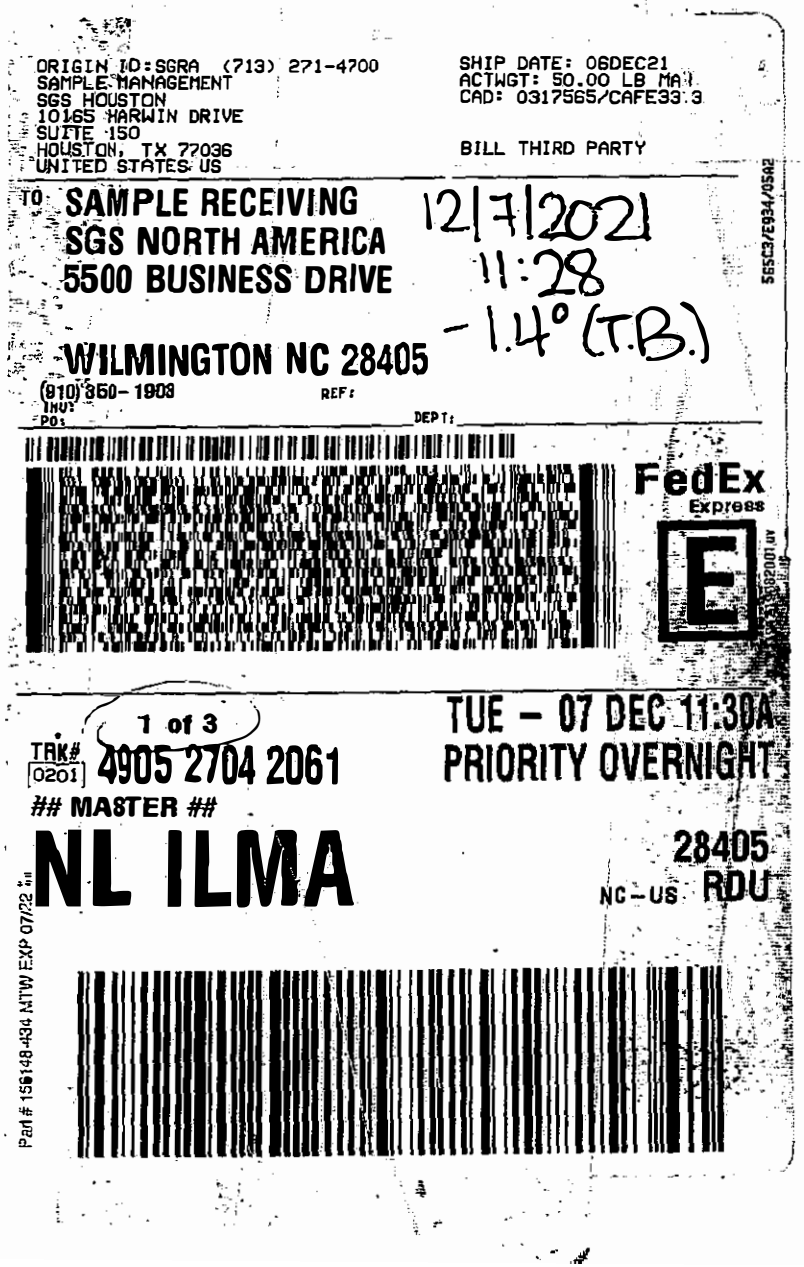


ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 06DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE33.3

BILL THIRD PARTY

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1903 REF:
INV:
PO: DEPT:

12/7/2021
11:28
-1.4° (T.B.)

555C3/E934/0502

FedEx Express

1 of 3

TRK# 0201 4905 2704 2061

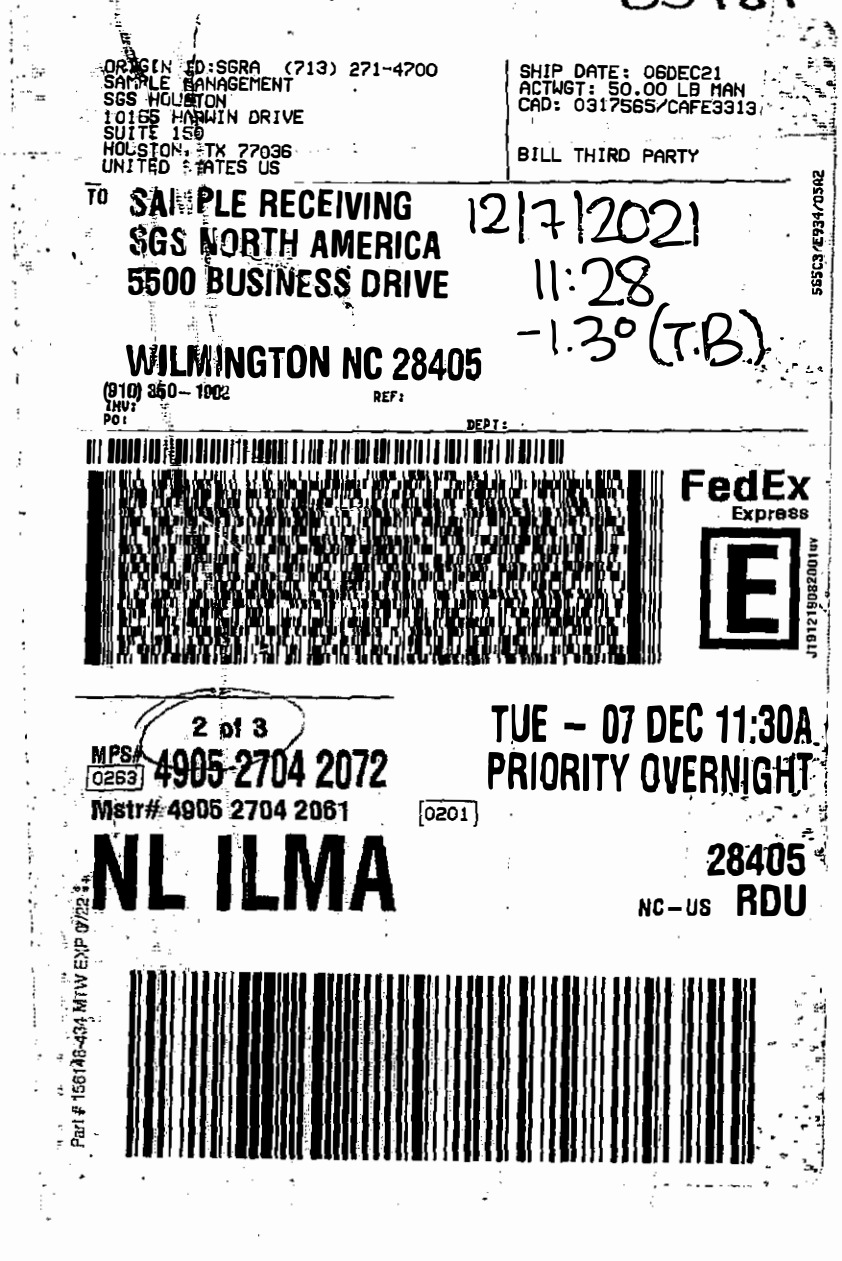
MASTER

TUE - 07 DEC 11:30A
PRIORITY OVERNIGHT

28405
NC-US RDU

NL ILMA

Part # 156148-434 MTW EXP 07/22



B5987

ORIGIN ID:SGRA (713) 271-4700
SAMPLE MANAGEMENT
SGS HOUSTON
10165 HARWIN DRIVE
SUITE 150
HOUSTON, TX 77036
UNITED STATES US

SHIP DATE: 06DEC21
ACTWGT: 50.00 LB MAN
CAD: 0317565/CAFE3313

BILL THIRD PARTY

TO SAMPLE RECEIVING
SGS NORTH AMERICA
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 350-1902 REF:
INV:
PO: DEPT:

12/7/2021
11:28
-1.3° (T.B.)

555C3/E934/0502

FedEx Express

2 of 3

MPS# 0263 4905 2704 2072

Mstr# 4905 2704 2061 0201

TUE - 07 DEC 11:30A
PRIORITY OVERNIGHT

28405
NC-US RDU

NL ILMA

Part # 156148-434 MTW EXP 07/22

Project Initiation Form

Project Number: B5987

Initiation Date: 05-Jan-22

Client Name: GHD Services Inc.

Analysis Method: 1613 PCDD/F

Sample Matrix: Solid

TAT: 10 days

Project Manager: Tamara

Special Instructions

M1613B w/ OPR & ●PRD

10 g DWE extraction

Read and understood, initial and date: Prep Lab: KE 1/10/22 HRMS Lab:

Reporting Instructions

M1613B
Full Report

OPR/OPRD Summary

WHO2005 TEQ

GHD EQuIS 4-file EDD

Read and understood, initial and date: HRMS Lab:

PM Initials: tburkamper Date: 05-Jan-2022

SGS

Methods: PCB PAH | PCDD/F WHO-2 | QUANTICS USV | DoD PCDD/F PEST | Extraction Type: SDS CLL | TALEX Carbon SPE | Solid | Final Volume: 20µL

Batch# 18819 | Split: 1/2 1/4 | Extract Initial/Date: WE 1/10/22 | Clean-up Initial/Date: JRH 1/13/22 | Transfer Init/Date: JRH 1/14/22

Lab Sample ID	Extraction Position Solvent: Tol.	Extraction Weight/Volume g	mL	(Td)	ASECS #	Observations
B5964_18819_006	20	13.28				gray, clay-like, oil smell
B5971_18819_002	21	13.73				gray, clay-like, sandy
B5971_18819_003	22	12.51				gray, clay-like
B5971_18819_005	23	13.23				gray, clay-like
B5987_18819_001	24	12.61				gray, clay-like, oil smell
B5987_18819_002	43	20.88				gray, clay-like, oil smell
B5992_18819_001	44	13.73				gray, clay-like, oil smell
B5992_18819_003	45	15.02				brown/gray, clay-like, oil smell
B5992_18819_004	46	12.59				gray-brown, clay-like
B6001_18819_001	47	12.65				gray-brown, clay-like
B6008_18819_002	48	12.69				gray, clay-like
MB1_18819	17	10.00				sodium sulfate
OPR1_18819	18	10.00				sodium sulfate
OPR2_18819	19	10.00				sodium sulfate

TB 1/24/22

BOB 1/14/22

Supply IDs

Toluene SR 14-23
MeCHL SR.14.21
Florisil SPLS-77
Hexane ST44-27
Silica SPLS-69
S Nitrate N/A
Base Silica SPLS-78
HydroMatrix N/A
Tetradecane SPLS-73D
H_2SO_4 N/A
A Silica SPLS-79
Sodium Sulfate SPLS-28C

Additional Cleanup

Acid Partition Date/Initial:
Mini-Acid Date/Initial:
Carbon Column Date/Initial:
GPC Date/Initial: TB 1/24/22
Bond-Elute Date/Initial:

Cycle Time

TOL: Start: 1300 Stop: 0930
HEX: Start: Stop:
DCM: Start: Stop:

TB 1/24/22

SGS

Methods: PCB PCDD/F QUANTICS DoD PCDD/F
PAH WHO-2 USV PEST

Solid

Batch# 18819

Inter-Department Communication Sheet

SGS

Wt. Volume Results

Batch #: 18819

Comments:

ak 1/20/22

Lab Sample ID	Boat WT.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	% Solid	Average % Solid	RSD	Qtest Ratio (if Applicable)	Dry Wt. Equiv.	Extracted Wt.	Final Wt.
B5964_006	0.84	3.95	3.21	76.21%	76.21%			13.12	13.28	10.12
B5971_002	0.85	4.65	3.66	73.95%	73.95%			13.52	13.73	10.15
B5971_003	0.8	4.38	3.66	79.89%	79.89%			12.52	12.56	10.03
B5971_005	0.81	4.21	3.41	76.47%	76.47%			13.08	13.23	10.12
B5987_001	0.8	4.16	3.49	80.06%	80.06%			12.49	12.61	10.1
B5987_002	0.81	4.71	2.68	47.95%	47.95%			20.86	20.88	10.01
B5992_001	0.81	4.49	3.5	73.10%	73.10%			13.68	13.73	10.04
B5992_003	0.81	4.53	3.31	67.20%	67.20%			14.88	15.02	10.09
B5992_004	0.8	4.41	3.68	79.78%	79.78%			12.53	12.59	10.04
B6001_001	0.79	4.76	3.97	80.10%	80.10%			12.48	12.65	10.13
B6008_002	0.8	4.04	3.36	79.01%	79.01%			12.66	12.69	10.03

7°
1/21/22

% Solid Determination WorkSheet

SGS

Batch: 18819

Lab Sample ID	Boat Wt.	Sample Wt. + Boat Wt.	Dried Sample + Boat Wt.	10g DWE	Comments
B5964_18819_006	0.84	3.95	3.21	13.12	
B5971_18819_002	0.85	4.05	3.16	13.52	
B5971_18819_003	0.80	4.38	3.66	12.57	
B5971_18819_005	0.81	4.21	3.41	13.08	
B5987_18819_001	0.80	4.16	3.49	12.49	
B5987_18819_002	0.81	4.71	2.68	20.86	
B5992_18819_001	0.81	4.49	3.50	13.68	
B5992_18819_003	0.81	4.53	3.31	14.88	
B5992_18819_004	0.80	4.41	3.68	12.53	
B6001_18819_001	0.79	4.76	3.97	12.48	
B6008_18819_002	0.80	4.84	3.36	12.66	

Date/Initials: 1/10/22 ME

SGS | Methods: PCB, PAH | PCDD/F, WHO-2 | QUANTICS, USV | DoD PCDD/F, PEST | Solid

Batch# 18819

Lab Sample ID	Spiker Initials/Date: JRH 1/10/22	JRH 1/10/22	JRH 1/10/22	JRH 1/13/22	JRH 1/13/22		
	DIF Ax-A	DIF Ax-B	DIF ES	DIF CS	DIF JS		
	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount: 20 µL	Amount:	Amount:
	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials	Observer Initials
B5964_18819_006	–	–	KE	RAB	JRH		
B5971_18819_002	–	–	KE	RAB	JRH		
B5971_18819_003	–	–	KE	RAB	JRH		
B5971_18819_005	–	–	KE	RAB	JRH		
B5987_18819_001	–	–	KE	RAB	JRH		
B5987_18819_002	–	–	KE	RAB	JRH		
B5992_18819_001	–	–	KE	RAB	JRH		
B5992_18819_003	–	–	KE	RAB	JRH		
B5992_18819_004	–	–	KE	RAB	JRH		
B6001_18819_001	–	–	KE	RAB	JRH		
B6008_18819_002	–	–	KE	RAB	JRH		
MB1_18819	–	–	KE	RAB	JRH		
OPR1_18819	KE	KE	KE	RAB	JRH		
OPR2_18819	KE	KE	KE	RAB	JRH		

RAB 1/14/22

Standard Information							
Pipette ID							RAB 1/14/22
Spike ID	DIF Ax-A	DIF Ax-B	DIF ES	DIF CS	DIF JS		
SIL #	26-2-8	as-167-2	26-2-9	25.338.1	2.5.309.1		
Concentration	10 pg/µL	10 pg/µL	100 pg/µL	100 pg/µL	100 pg/µL		
Expiration Date	7/9/24	6/22/22	8/2023	11/16/22	10/8/22		

REVIEWED
Megan_Shannahan , 1/24/2022, 1:30:48 PM

SGS Environmental Services — Run Log **Project: B5987_18819_DF**

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	220120C01	3	CS3_220120_DF_CA	1.00	SIL 25-347-1	DTF, MLS	343-977	20-Jan-2022	10:26:30
2	220120C02	50	OPR1_18819_DF	1.00	0_18819_OPR001	DTF, MLS	697-611	20-Jan-2022	11:32:05
3	220120C03	51	OPR2_18819_DF	1.00	0_18819_OPR002	DTF, MLS	751-300	20-Jan-2022	12:20:14
4	220120C04	2	SBS_220120_DF_CA	1.00	20-61-1	DTF	981-901	20-Jan-2022	13:06:33
5	220120C05	49	MB1_18819_DF_SDS	10.00	Method Blank	DTF, MLS	248-046	20-Jan-2022	13:52:51
6	220120C10	56	B5987_18819_DF_001	10.10	11215131-120321-S-JC-SW-B-6H	DTF, MLS	131-299	20-Jan-2022	17:44:30
7	220120C11	57	B5987_18819_DF_002	10.01	11215131-120621-S-JC-SC-B-1H	DTF, MLS	312-725	20-Jan-2022	18:30:48

REVIEWED
Tamara Burkamper , 1/24/2022, 2:22:53 PM

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5987_18819 **UTP:** 24-Jan-2022 13:18:40 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 248-046-QCQ

Datafile: 220120C05 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	NotFnd		1.0008	-		-	-	-	1.18	-	6558.717	0.984
12378-PeCDD	NotFnd		1.0006	-		-	-	-	1.04	-	4628.235	0.644
123478-HxCDD	NotFnd		1.0004	-		-	-	-	1.09	-	3273.325	0.522
123678-HxCDD	NotFnd		1.0034	-		-	-	-	1.15	-	3273.325	0.481
123789-HxCDD	NotFnd		1.0109	-		-	-	-	1.05	-	3273.325	0.468
1234678-HpCDD	NotFnd		1.0003	-		-	-	-	1.06	-	3096.852	0.46
OCDD	NotFnd		1.0002	-		-	-	-	1.13	-	3168.45	1.04
2378-TCDF	NotFnd		1.0008	-		-	-	-	1.08	-	6140.069	0.616
12378-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3857.122	0.355
23478-PeCDF	NotFnd		1.0005	-		-	-	-	1.02	-	3857.122	0.327
123478-HxCDF	NotFnd		1.0004	-		-	-	-	1.27	-	3495.234	0.33
123678-HxCDF	NotFnd		1.0004	-		-	-	-	1.15	-	3495.234	0.321
234678-HxCDF	NotFnd		1.0004	-		-	-	-	1.19	-	3495.234	0.437
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	3495.234	0.448
1234678-HpCDF	NotFnd		1.0002	-		-	-	-	1.37	-	2900.075	0.226
1234789-HpCDF	NotFnd		1.0003	-		-	-	-	1.31	-	2900.075	0.354
OCDF	NotFnd		1.0002	-		-	-	-	1.07	-	3066.141	0.655

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.64	1.0233	1.0235	+0.3	1.25E+07	0.80	Y	1.05	78.2
ES 12378-PeCDD	33.95	1.2121	1.2129	+1.6	1.26E+07	1.64	Y	0.88	93.4
ES 123478-HxCDD	37.84	0.9921	0.9921	0	1.04E+07	1.24	Y	0.97	80.8
ES 123678-HxCDD	37.95	0.9951	0.9950	-0.2	1.16E+07	1.29	Y	0.94	92.6
ES 123789-HxCDD	38.24	1.0025	1.0026	+0.2	1.21E+07	1.22	Y	1.09	83.7
ES 1234678-HpCDD	40.86	1.0709	1.0714	+1.2	1.09E+07	1.16	Y	0.91	89.9
ES OCDD	43.50	1.1403	1.1407	+1.0	1.17E+07	0.93	Y	0.62	70.7
ES 2378-TCDF	27.79	1.0506	1.0511	+0.8	2.20E+07	0.81	Y	1.06	86.7
ES 12378-PeCDF	32.51	1.2281	1.2294	+2.5	1.99E+07	1.64	Y	0.91	91
ES 23478-PeCDF	33.61	1.2698	1.2711	+2.6	1.98E+07	1.61	Y	0.88	93.6
ES 123478-HxCDF	36.83	0.9657	0.9656	-0.2	1.49E+07	0.54	Y	1.20	93.7
ES 123678-HxCDF	36.97	0.9695	0.9694	-0.2	1.78E+07	0.54	Y	1.35	99.4
ES 234678-HxCDF	37.65	0.9874	0.9873	-0.2	1.30E+07	0.57	Y	1.24	79.2
ES 123789-HxCDF	38.59	1.0116	1.0118	+0.5	1.29E+07	0.54	Y	1.16	84
ES 1234678-HpCDF	39.93	1.0467	1.0470	+0.7	1.44E+07	0.48	Y	0.97	113
ES 1234789-HpCDF	41.32	1.0830	1.0834	+1.0	1.04E+07	0.46	Y	0.85	91.8
ES OCDF	43.69	1.1451	1.1456	+1.3	1.80E+07	0.89	Y	0.81	84.4

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5987_18819 **UTP:** 24-Jan-2022 13:18:40 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 248-046-QCQ

Datafile: 220120C05 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.99		-	-	-	1.53E+07	0.83	Y	-	-
JS 1234-TCDF	26.44		-	-	-	2.40E+07	0.83	Y	-	-
JS 123467-HxCDD	38.14		-	-	-	6.62E+06	1.33	Y	-	-
CS 37Cl-2378-TCDD	28.67		1.0241	1.0243	+0.3	5.85E+06	n/a	-	1.20	79.4
CS 12347-PeCDD	33.44		1.1943	1.1950	+1.4	1.20E+07	1.67	Y	0.75	104
CS 12346-PeCDF	31.98		1.2083	1.2094	+2.1	1.97E+07	1.64	Y	0.85	96.3
CS 123469-HxCDF	37.29		0.9778	0.9777	-0.2	1.60E+07	0.53	Y	1.12	108
CS 1234689-HpCDF	40.33		1.0571	1.0575	+1.0	1.40E+07	0.48	Y	0.89	119
~~SS 37Cl-2378-TCDD~~	~~28.67~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~5.85E+06~~	~~n/a~~		~~1.15~~	~~102~~
~~SS 12347-PeCDD~~	~~33.44~~		~~1.1943~~	~~1.1950~~	~~+1.4~~	~~1.20E+07~~	~~1.67~~	~~Y~~	~~0.86~~	~~111~~
~~SS 12346-PeCDF~~	~~31.98~~		~~1.2083~~	~~1.2094~~	~~+2.1~~	~~1.97E+07~~	~~1.64~~	~~Y~~	~~0.94~~	~~106~~
~~SS 123469-HxCDF~~	~~37.29~~		~~0.9778~~	~~0.9777~~	~~-0.2~~	~~1.60E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~100~~
~~SS 1234689-HpCDF~~	~~40.33~~		~~1.0571~~	~~1.0575~~	~~+1.0~~	~~1.40E+07~~	~~0.48~~	~~Y~~	~~0.92~~	~~105~~

Totals	Conc	EMPC
Total TCDD	0	0
Total PeCDD	0	0
Total HxCDD	0	0
Total HpCDD	0	0
Total Tetra-Octa Dioxins	0	0
Total TCDF	0	0
Total PeCDF	0	0
Total HxCDF	0	0
Total HpCDF	0	0
Total Tetra-Octa Furans	0	0
Total Tetra-Octa Dioxins & Furans	0	0

Lab ID: MB1_18819_DF_SDS **Acq'd:** 20 Jan 2022 13:52 DTF **Wt/Vol:** 10.00 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5987_18819 **UTP:** 24-Jan-2022 13:18:40 MLS **J-level:** 0.5 pg/g **Split:** 1 **Checkcode:** 248-046-QCQ

Datafile: 220120C05 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	NotFnd		0.8755						1.18		6558.717	0.984
1379-TCDD	NotFnd		0.8876						1.18		6558.717	0.984
1369-TCDD	NotFnd		0.9023						1.18		6558.717	0.984
1469-TCDD	NotFnd		0.9291						1.18		6558.717	0.984
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		6558.717	0.984
1378-TCDD	NotFnd		0.9440						1.18		6558.717	0.984
1268-TCDD	NotFnd		0.9506						1.18		6558.717	0.984
1478-TCDD	NotFnd		0.9591						1.18		6558.717	0.984
1279-TCDD	NotFnd		0.9649						1.18		6558.717	0.984
1234/1269-TCDD	NotFnd		0.9771						1.18		6558.717	0.984
1236-TCDD	NotFnd		0.9820						1.18		6558.717	0.984
1237/1238-TCDD	NotFnd		0.9908						1.18		6558.717	0.984
1239-TCDD	NotFnd		0.9954						1.18		6558.717	0.984
2378-TCDD	**NotFnd**		**1.0008**						**1.18**		**6558.717**	**0.984**
1278-TCDD	NotFnd		1.0121						1.18		6558.717	0.984
1267-TCDD	NotFnd		1.0167						1.18		6558.717	0.984
1289-TCDD	NotFnd		1.0341						1.18		6558.717	0.984
12479/12468-PeCDD	NotFnd		0.9273						1.04		4628.235	0.644
12469-PeCDD	NotFnd		0.9430						1.04		4628.235	0.644
12368-PeCDD	NotFnd		0.9592						1.04		4628.235	0.644
12478-PeCDD	NotFnd		0.9647						1.04		4628.235	0.644
12379-PeCDD	NotFnd		0.9676						1.04		4628.235	0.644
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		4628.235	0.644
12346/12347-PeCDD	NotFnd		0.9860						1.04		4628.235	0.644
12378-PeCDD	NotFnd		**1.0006**						**1.04**		**4628.235**	**0.644**
12367-PeCDD	NotFnd		1.0034						1.04		4628.235	0.644
12389-PeCDD	NotFnd		1.0134						1.04		4628.235	0.644
124679/124689-HxCDD	NotFnd		0.9545						1.10		3273.325	0.489
123468-HxCDD	NotFnd		0.9715						1.10		3273.325	0.489
123679/123689-HxCDD	NotFnd		0.9793						1.10		3273.325	0.489
123469-HxCDD	NotFnd		0.9829						1.10		3273.325	0.489
123478-HxCDD	NotFnd		**1.0004**						1.09		**3273.325**	**0.522**
123678-HxCDD	NotFnd		**1.0034**						1.15		**3273.325**	**0.481**
123467-HxCDD	NotFnd		1.0082						1.10		3273.325	0.489
123789-HxCDD	NotFnd		**1.0109**						1.05		**3273.325**	**0.468**

Lab ID: MB1_18819_DF_SDS | Acq'd: 20 Jan 2022 13:52 DTF | Wt/Vol: 10.00 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5987_18819 | UTP: 24-Jan-2022 13:18:40 MLS | J-level: 0.5 pg/g | Split: 1 | Checkcode: 248-046-QCQ

Datafile: 220120C05 | Report: 24 Jan 2022 13:23 MS | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

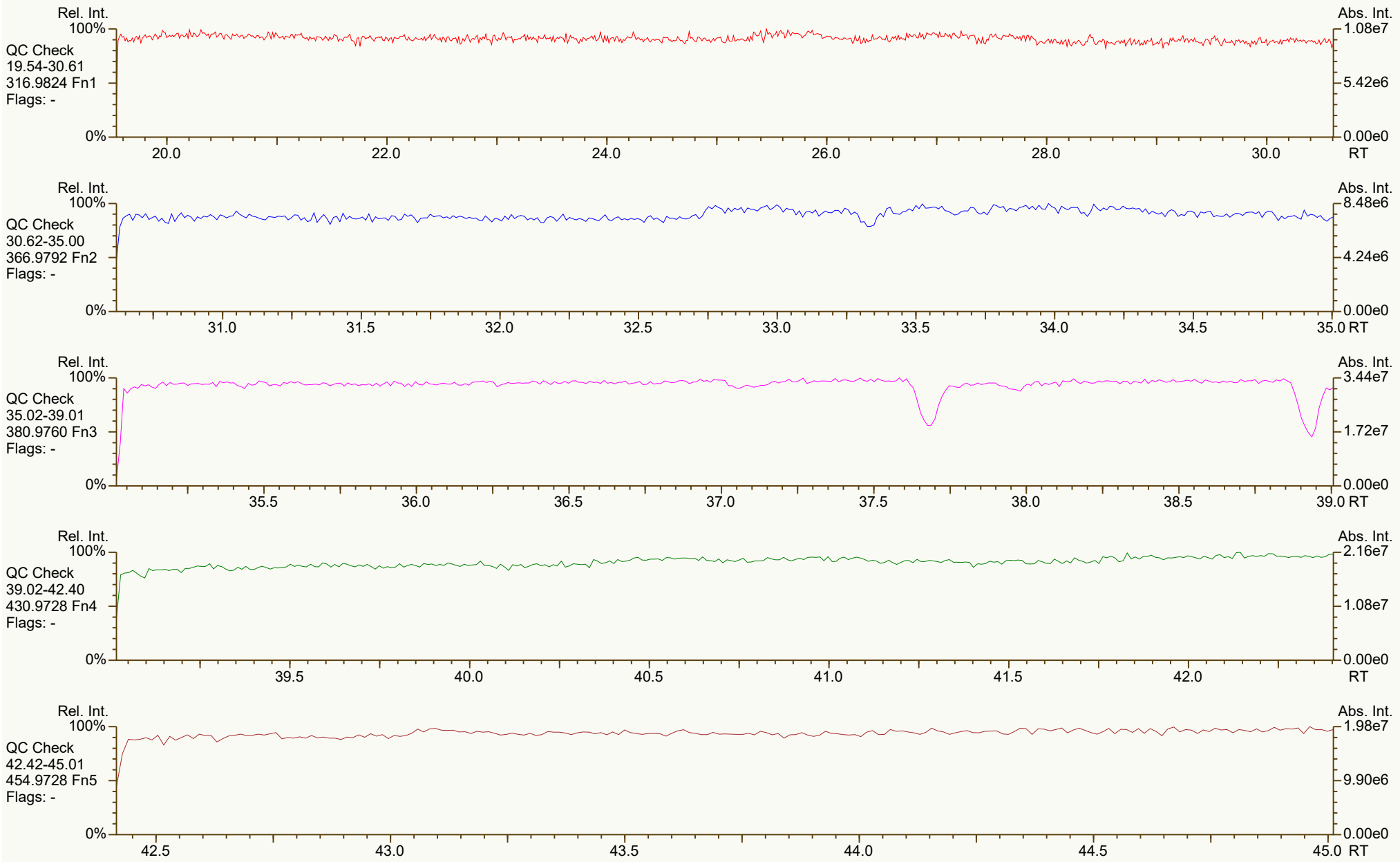
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	NotFnd		0.9838						1.06		3096.852	0.46
1234678-HpCDD	**NotFnd**		**1.0003**						**1.06**		**3096.852**	**0.46**
OCDD	**NotFnd**		**1.0002**						**1.13**		**3168.45**	**1.04**
OCDD-a	NotFnd		1.0002						0.07		4053.297	20.8
1368-TCDF	NotFnd		0.8282						1.08		6140.069	0.616
1468-TCDF	NotFnd		0.8485						1.08		6140.069	0.616
2468-TCDF	NotFnd		0.8709						1.08		6140.069	0.616
1346/1246-TCDF	NotFnd		0.8829						1.08		6140.069	0.616
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		6140.069	0.616
1348-TCDF	NotFnd		0.8980						1.08		6140.069	0.616
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		6140.069	0.616
1268-TCDF	NotFnd		0.9158						1.08		6140.069	0.616
1467-TCDF	NotFnd		0.9206						1.08		6140.069	0.616
1478-TCDF	NotFnd		0.9266						1.08		6140.069	0.616
1369/1237-TCDF	NotFnd		0.9397						1.08		6140.069	0.616
2467-TCDF	NotFnd		0.9440						1.08		6140.069	0.616
2368-TCDF	NotFnd		0.9497						1.08		6140.069	0.616
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		6140.069	0.616
1278-TCDF	NotFnd		0.9690						1.08		6140.069	0.616
1349-TCDF	NotFnd		0.9730						1.08		6140.069	0.616
1267-TCDF	NotFnd		0.9787						1.08		6140.069	0.616
2346/1249-TCDF	NotFnd		0.9850						1.08		6140.069	0.616
2347/1279-TCDF	NotFnd		0.9929						1.08		6140.069	0.616
2348-TCDF	NotFnd		0.9970						1.08		6140.069	0.616
2378-TCDF	**NotFnd**		**1.0008**						**1.08**		**6140.069**	**0.616**
2367/3467-TCDF	NotFnd		1.0136						1.08		6140.069	0.616
1269-TCDF	NotFnd		1.0221						1.08		6140.069	0.616
1239-TCDF	NotFnd		1.0319						1.08		6140.069	0.616
1289-TCDF	NotFnd		1.0740						1.08		6140.069	0.616
13468/12468-PeCDF	NotFnd		0.9145						1.02		3874.537	0.343
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		3857.122	0.341
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		3857.122	0.341
14678-PeCDF	NotFnd		0.9695						1.02		3857.122	0.341
13479-PeCDF	NotFnd		0.9724						1.02		3857.122	0.341
13469/12479-PeCDF	NotFnd		0.9801						1.02		3857.122	0.341
12346-PeCDF	NotFnd		0.9842						1.02		3857.122	0.341

Lab ID: MB1_18819_DF_SDS | **Acq'd:** 20 Jan 2022 13:52 DTF | **Wt/Vol:** 10.00 g | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: Method Blank B5987_18819 | **UTP:** 24-Jan-2022 13:18:40 MLS | **J-level:** 0.5 pg/g | **Split:** 1 | **Checkcode:** 248-046-QCQ

Datafile: 220120C05 | **Report:** 24 Jan 2022 13:23 MS | **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		3857.122	0.341
12347-PeCDF	NotFnd		0.9895						1.02		3857.122	0.341
12348-PeCDF	NotFnd		0.9941						1.02		3857.122	0.341
12378-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3857.122**	**0.355**
12678/12367-PeCDF	NotFnd		1.0090						1.02		3857.122	0.341
12379-PeCDF	NotFnd		1.0142						1.02		3857.122	0.341
12679-PeCDF	NotFnd		0.9931						1.02		3857.122	0.341
23467/12369-PeCDF	NotFnd		0.9966						1.02		3857.122	0.341
23478-PeCDF	**NotFnd**		**1.0005**						**1.02**		**3857.122**	**0.327**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		3857.122	0.341
12349-PeCDF	NotFnd		1.0101						1.02		3857.122	0.341
12389-PeCDF	NotFnd		1.0322						1.02		3857.122	0.341
123468-HxCDF	NotFnd		0.9627						1.19		3495.234	0.376
124678/134678-HxCDF	NotFnd		0.9684						1.19		3495.234	0.376
134679-HxCDF	NotFnd		0.9747						1.19		3495.234	0.376
124679-HxCDF	NotFnd		0.9802						1.19		3495.234	0.376
124689-HxCDF	NotFnd		0.9858						1.19		3495.234	0.376
123467-HxCDF	NotFnd		0.9972						1.19		3495.234	0.376
123478-HxCDF	**NotFnd**		**1.0004**						**1.27**		**3495.234**	**0.33**
123678-HxCDF	**NotFnd**		**1.0004**						**1.15**		**3495.234**	**0.321**
123479-HxCDF	NotFnd		1.0051						1.19		3495.234	0.376
123469-HxCDF	NotFnd		1.0091						1.19		3495.234	0.376
123679-HxCDF	NotFnd		0.9943						1.19		3495.234	0.376
234678-HxCDF	**NotFnd**		**1.0004**						**1.19**		**3495.234**	**0.437**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3495.234	0.376
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**3495.234**	**0.448**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		3495.234	0.376
1234678-HpCDF	**NotFnd**		**1.0002**						**1.37**		**2900.075**	**0.226**
1234679-HpCDF	NotFnd		1.0067						1.34		2900.075	0.279
1234689-HpCDF	NotFnd		1.0101						1.34		2900.075	0.279
1234789-HpCDF	**NotFnd**		**1.0003**						**1.31**		**2900.075**	**0.354**
OCDF	**NotFnd**		**1.0002**						**1.07**		**3066.141**	**0.655**
OCDF-a	NotFnd		1.0002						0.07		3258.893	11.2


Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.08e7
5.42e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.48e6
4.24e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.44e7
1.72e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.16e7
1.08e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.98e7
9.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
Abs. Int.
TCDD
19.54-30.61
319.8965 Fn1
Flags: B
4σ 3.85e3
1.04e4
5.22e3
0.00e0
RT
TCDD
19.54-30.61
321.8936 Fn1
Flags: B
4σ 2.71e3
1.08e4
5.42e3
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 2.34e3
CS 37Cl-2378D
5.85e6
28.66
1.32e6
6.62e5
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 7.54e3
JS 1234D
6.96e6
27.99
ES 2378D
5.56e6
28.64
1.64e6
8.18e5
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 6.73e3
JS 1234D
8.36e6
27.98
ES 2378D
6.97e6
28.64
2.04e6
1.02e6
100%
0%
20.0
22.0
24.0
26.0
28.0
30.0


Rel. Int.
Abs. Int.
PeCDD
30.62-35.00
355.8546 Fn2
Flags: B
4σ 2.54e3
1.05e4
5.24e3
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: B
4σ 2.09e3
8.03e3
4.01e3
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PB
4σ 4.34e3
CS 12347D
7.51e6
33.44
ES 12378D
7.82e6
33.94
2.15e6
1.08e6
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PB
4σ 1.92e3
CS 12347D
4.49e6
33.44
ES 12378D
4.77e6
33.94
1.29e6
6.47e5
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
8.48e6
4.24e6
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PB
4σ 1.52e3
6.30e3
3.15e3
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: B
4σ 1.76e3
7.98e3
3.99e3
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.37e3
ES 123678D
6.52e6
37.95
ES 123478D
5.76e6
37.84
JS 123467D
3.78e6*
38.14
ES 123789D
6.66e6*
38.24
1.84e6
9.18e5
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.47e3
ES 123678D
5.05e6
37.95
ES 123478D
4.64e6
37.83
JS 123467D
2.84e6
38.14
ES 123789D
5.44e6*
38.24
1.46e6
7.30e5
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.44e7
1.72e7
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.70e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: B
4σ 1.40e3
0%
Abs. Int.
5.56e3
2.78e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
ES 1234678D
5.82e6*
40.86
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.48e3
0%
Abs. Int.
1.70e6
8.52e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
ES 1234678D
5.04e6*
40.86
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 2.11e3
0%
Abs. Int.
1.47e6
7.37e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.16e7
1.08e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PB
4σ 1.48e3
0%
Abs. Int.
5.92e3
2.96e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: PB
4σ 1.69e3
0%
Abs. Int.
6.13e3
3.06e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.84e3
0%
ES OCDD
5.65e6*
43.50
Abs. Int.
1.31e6
6.55e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 1.39e3
0%
ES OCDD
6.04e6*
43.50
Abs. Int.
1.44e6
7.22e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.98e7
9.90e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: B
4σ 2.51e3
0%
Abs. Int.
8.35e3
4.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: B
4σ 3.63e3
0%
Abs. Int.
1.47e4
7.34e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 9.37e3
JS 1234F
1.09e7
26.44
ES 2378F
9.85e6
27.79
0%
Abs. Int.
2.34e6
1.17e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 5.31e3
JS 1234F
1.31e7
26.44
ES 2378F
1.22e7
27.79
0%
Abs. Int.
2.98e6
1.49e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.28e3
0%
Abs. Int.
1.11e4
5.55e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

SGS ID: MB1_18819_DF_SDS | Sample ID: Method Blank | Acq: 20-Jan-2022 13:52:51

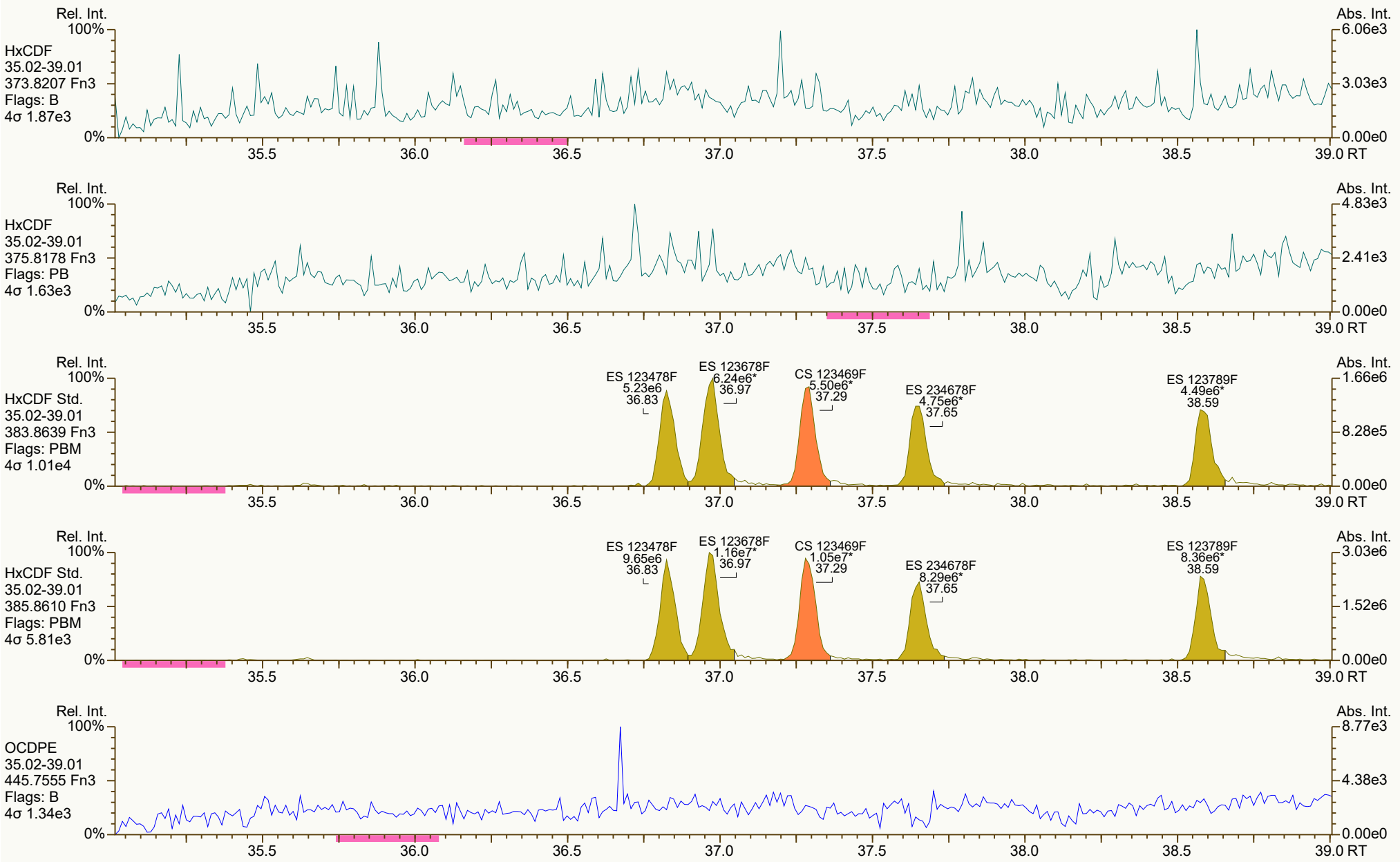
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 49 | User: DTF Datafile: 220120C05

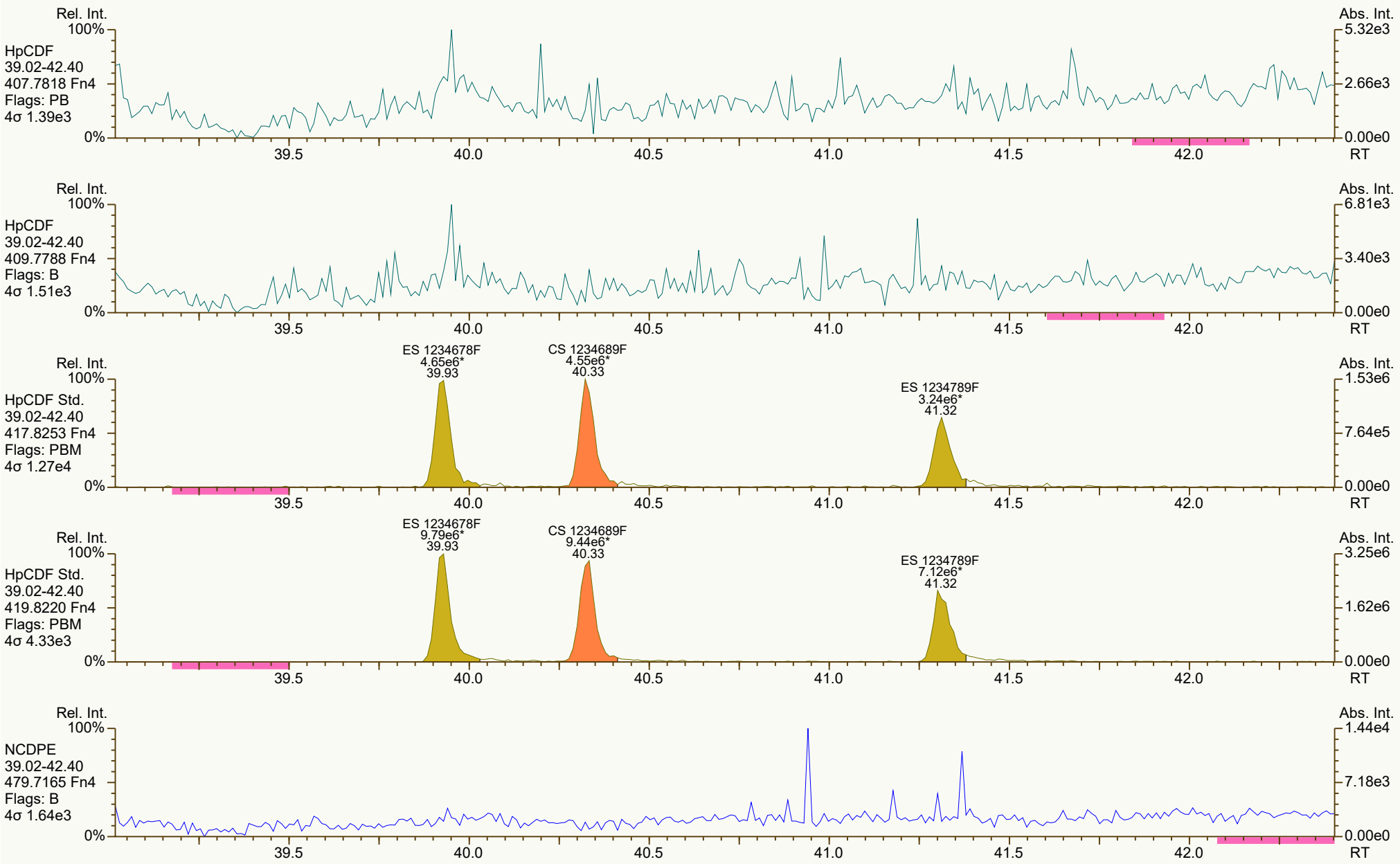


Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\MB1_18819_DF_SDS.utp_res, saved 24-Jan-2022 13:18 (MLS) | *Peak annotation: Areas, Centroids*

SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 8146 scc: 248-046 | *PKD: 21-Jan-2022 10:05 Printed: 24-Jan-2022 13:28 Page 8 of 12*


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PB
4σ 1.78e3
0%
Abs. Int.
6.18e3
3.09e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: B
4σ 2.07e3
0%
Abs. Int.
6.27e3
3.13e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 6.77e3
0%
CS 12346F
1.22e7
31.98
ES 12378F
1.24e7
32.51
ES 23478F
1.22e7
33.61
Abs. Int.
3.57e6
1.79e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 4.03e3
0%
CS 12346F
7.46e6
31.98
ES 12378F
7.52e6
32.51
ES 23478F
7.59e6
33.61
Abs. Int.
2.02e6
1.01e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: PB
4σ 1.64e3
0%
Abs. Int.
1.26e4
6.30e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: B
4σ 1.87e3
0%
Abs. Int.
6.06e3
3.03e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PB
4σ 1.63e3
0%
Abs. Int.
4.83e3
2.41e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 1.01e4
0%
ES 123478F
5.23e6
36.83
ES 123678F
6.24e6*
36.97
CS 123469F
5.50e6*
37.29
ES 234678F
4.75e6*
37.65
ES 123789F
4.49e6*
38.59
Abs. Int.
1.66e6
8.28e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 5.81e3
0%
ES 123478F
9.65e6
36.83
ES 123678F
1.16e7*
36.97
CS 123469F
1.05e7*
37.29
ES 234678F
8.29e6*
37.65
ES 123789F
8.36e6*
38.59
Abs. Int.
3.03e6
1.52e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.34e3
0%
Abs. Int.
8.77e3
4.38e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PB
4σ 1.39e3
0%
Abs. Int.
5.32e3
2.66e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: B
4σ 1.51e3
0%
Abs. Int.
6.81e3
3.40e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 1.27e4
ES 1234678F
4.65e6*
39.93
CS 1234689F
4.55e6*
40.33
ES 1234789F
3.24e6*
41.32
0%
Abs. Int.
1.53e6
7.64e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 4.33e3
ES 1234678F
9.79e6*
39.93
CS 1234689F
9.44e6*
40.33
ES 1234789F
7.12e6*
41.32
0%
Abs. Int.
3.25e6
1.62e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.44e4
7.18e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 1.48e3
0%
Abs. Int.
4.76e3
2.38e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.49e3
4.25e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 3.78e3
0%
ES OCDF
8.52e6*
43.69
Abs. Int.
2.06e6
1.03e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 1.93e3
0%
ES OCDF
9.53e6*
43.69
Abs. Int.
2.16e6
1.08e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.02e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5987_18819_DF_001 **Acq'd:** 20 Jan 2022 17:44 DTF **Wt/Vol:** 10.10 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-6H **UTP:** 24-Jan-2022 13:18:41 MLS **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 131-299-DLV

Datafile: 220120C10 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.65		1.0008	1.0008	0	5.83E+06	0.82	Y	1.18	83.4	4799.816	0.633
12378-PeCDD	33.95		1.0006	1.0006	0	1.97E+05	1.38	Y	1.04	3.64	4537.753	0.764
123478-HxCDD	37.84	J EMPC	1.0004	1.0003	-0.2	1.26E+05	1.67	N	1.09	2.35	5947.147	0.932
123678-HxCDD	37.96		1.0034	1.0034	0	4.56E+05	1.06	Y	1.15	8.11	5947.147	0.963
123789-HxCDD	38.24		1.0109	1.0109	0	2.46E+05	1.27	Y	1.05	4.49	5947.147	0.964
1234678-HpCDD	40.86		1.0003	1.0003	0	7.52E+06	1.00	Y	1.06	147	4286.672	0.611
OCDD	43.52		1.0002	1.0003	+0.3	7.99E+07	0.90	Y	1.13	2,060	3575.583	0.94
2378-TCDF	27.80		1.0008	1.0007	-0.2	2.77E+07	0.80	Y	1.08	294	6064.522	0.694
12378-PeCDF	32.51		1.0005	1.0005	0	8.15E+05	1.65	Y	1.02	9.16	5114.377	0.53
23478-PeCDF	33.63		1.0005	1.0007	+0.4	1.37E+06	1.65	Y	1.02	16.3	5114.377	0.526
123478-HxCDF	36.84		1.0004	1.0004	0	1.72E+06	1.25	Y	1.27	19.8	5092.817	0.497
123678-HxCDF	36.98		1.0004	1.0004	0	8.85E+05	1.27	Y	1.15	9.53	5092.817	0.474
234678-HxCDF	37.66		1.0004	1.0004	0	4.59E+05	1.25	Y	1.19	6.48	5092.817	0.653
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	5092.817	0.604
1234678-HpCDF	39.93		1.0002	1.0003	+0.2	7.66E+06	1.03	Y	1.37	96	3170.718	0.288
1234789-HpCDF	41.32		1.0003	1.0001	-0.5	5.59E+05	0.91	Y	1.31	8.78	3170.718	0.426
OCDF	43.70		1.0002	1.0002	0	1.16E+08	0.90	Y	1.07	2,100	4339.276	0.765

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.63		1.0233	1.0235	+0.3	1.17E+07	0.80	Y	1.05	76.4
ES 12378-PeCDD	33.93		1.2121	1.2129	+1.6	1.03E+07	1.59	Y	0.88	80.3
ES 123478-HxCDD	37.83		0.9921	0.9920	-0.2	9.70E+06	1.24	Y	0.97	82.7
ES 123678-HxCDD	37.94		0.9951	0.9951	0	9.71E+06	1.24	Y	0.94	85.2
ES 123789-HxCDD	38.23		1.0025	1.0025	0	1.04E+07	1.17	Y	1.09	78.7
ES 1234678-HpCDD	40.85		1.0709	1.0712	+0.7	9.56E+06	1.01	Y	0.91	86.8
ES OCDD	43.50		1.1403	1.1409	+1.6	1.36E+07	0.85	Y	0.62	90.5
ES 2378-TCDF	27.78		1.0506	1.0511	+0.8	1.73E+07	0.83	Y	1.06	67.6
ES 12378-PeCDF	32.50		1.2281	1.2293	+2.3	1.72E+07	1.64	Y	0.91	78.3
ES 23478-PeCDF	33.60		1.2698	1.2712	+2.8	1.63E+07	1.58	Y	0.88	76.6
ES 123478-HxCDF	36.82		0.9657	0.9657	0	1.35E+07	0.50	Y	1.20	93.6
ES 123678-HxCDF	36.96		0.9695	0.9694	-0.2	1.60E+07	0.56	Y	1.35	97.9
ES 234678-HxCDF	37.65		0.9874	0.9873	-0.2	1.18E+07	0.56	Y	1.24	78.8
ES 123789-HxCDF	38.58		1.0116	1.0118	+0.5	1.26E+07	0.54	Y	1.16	90.4
ES 1234678-HpCDF	39.92		1.0467	1.0470	+0.7	1.15E+07	0.48	Y	0.97	98.8
ES 1234789-HpCDF	41.32		1.0830	1.0835	+1.2	9.64E+06	0.48	Y	0.85	93.8
ES OCDF	43.69		1.1451	1.1457	+1.6	2.03E+07	0.93	Y	0.81	104

Lab ID: B5987_18819_DF_001 **Acq'd:** 20 Jan 2022 17:44 DTF **Wt/Vol:** 10.10 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-6H **UTP:** 24-Jan-2022 13:18:41 MLS **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 131-299-DLV

Datafile: 220120C10 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.98		-	-	-	1.46E+07	0.82	Y	-	-
JS 1234-TCDF	26.43		-	-	-	2.41E+07	0.80	Y	-	-
JS 123467-HxCDD	38.13		-	-	-	6.03E+06	1.32	Y	-	-
CS 37Cl-2378-TCDD	28.65		1.0241	1.0242	+0.2	5.18E+06	n/a	-	1.20	73.7
CS 12347-PeCDD	33.43		1.1943	1.1951	+1.6	1.03E+07	1.68	Y	0.75	93.1
CS 12346-PeCDF	31.97		1.2083	1.2094	+2.1	1.69E+07	1.59	Y	0.85	82.2
CS 123469-HxCDF	37.28		0.9778	0.9777	-0.2	1.39E+07	0.53	Y	1.12	103
CS 1234689-HpCDF	40.32		1.0571	1.0574	+0.7	1.19E+07	0.50	Y	0.89	111
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0242~~	~~+0.2~~	~~5.18E+06~~	~~n/a~~		~~1.15~~	~~96.6~~
~~SS 12347-PeCDD~~	~~33.43~~		~~1.1943~~	~~1.1951~~	~~+1.6~~	~~1.03E+07~~	~~1.68~~	~~Y~~	~~0.86~~	~~116~~
~~SS 12346-PeCDF~~	~~31.97~~		~~1.2083~~	~~1.2094~~	~~+2.1~~	~~1.69E+07~~	~~1.59~~	~~Y~~	~~0.94~~	~~105~~
~~SS 123469-HxCDF~~	~~37.28~~		~~0.9778~~	~~0.9777~~	~~-0.2~~	~~1.39E+07~~	~~0.53~~	~~Y~~	~~0.83~~	~~105~~
~~SS 1234689-HpCDF~~	~~40.32~~		~~1.0571~~	~~1.0574~~	~~+0.7~~	~~1.19E+07~~	~~0.50~~	~~Y~~	~~0.92~~	~~112~~

Totals	Conc	EMPC
Total TCDD	119	135
Total PeCDD	41.5	50.1
Total HxCDD	94.3	96.7
Total HpCDD	364	364
Total Tetra-Octa Dioxins	2680	2710
Total TCDF	704	708
Total PeCDF	130	136
Total HxCDF	104	109
Total HpCDF	185	185
Total Tetra-Octa Furans	3,220	3240
Total Tetra-Octa Dioxins & Furans	5900	5950

Lab ID: B5987_18819_DF_001 **Acq'd:** 20 Jan 2022 17:44 DTF **Wt/Vol:** 10.10 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-6H **UTP:** 24-Jan-2022 13:18:41 MLS **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 131-299-DLV

Datafile: 220120C10 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.05		0.8755	0.8749	-0.9	5.42E+05	0.77	Y	1.18	7.75	4799.816	0.633
1379-TCDD	25.40		0.8876	0.8871	-0.8	3.43E+05	0.75	Y	1.18	4.91	4799.816	0.633
1369-TCDD	25.82		0.9023	0.9019	-0.6	1.82E+05	0.71	Y	1.18	2.61	4799.816	0.633
1469-TCDD	26.59		0.9291	0.9285	-1.0	4.86E+05	0.78	Y	1.18	6.95	4799.816	0.633
1247/1246/1248/1249-TCDD	26.82		0.9373	0.9367	-1.0	3.46E+05	0.84	Y	1.18	4.94	4799.816	0.633
1378-TCDD	27.02	EMPC	0.9440	0.9437	-0.5	1.95E+05	1.01	N	1.18	2.78	4799.816	0.633
1268-TCDD	27.21	EMPC	0.9506	0.9502	-0.7	1.25E+05	1.22	N	1.18	1.78	4799.816	0.633
1478-TCDD	27.45	EMPC	0.9591	0.9587	-0.7	4.87E+04	1.48	N	1.18	0.696	4799.816	0.633
1279-TCDD	27.61	EMPC	0.9649	0.9641	-1.3	1.15E+05	1.03	N	1.18	1.65	4799.816	0.633
1234/1269-TCDD	27.98	EMPC	0.9771	0.9773	+0.3	1.75E+05	0.97	N	1.18	2.5	4799.816	0.633
1236-TCDD	28.13	EMPC	0.9820	0.9823	+0.5	9.32E+04	0.93	N	1.18	1.33	4799.816	0.633
1237/1238-TCDD	28.37	EMPC	0.9908	0.9910	+0.3	3.11E+05	0.95	N	1.18	4.44	4799.816	0.633
1239-TCDD	28.50	EMPC	0.9954	0.9952	-0.3	5.90E+04	1.28	N	1.18	0.843	4799.816	0.633
2378-TCDD	**28.65**		**1.0008**	1.0008	**0**	5.83E+06	0.82	Y	**1.18**	**83.4**	**4799.816**	**0.633**
1278-TCDD	28.97		1.0121	1.0119	-0.3	5.60E+05	0.85	Y	1.18	8.01	4799.816	0.633
1267-TCDD	NotFnd		1.0167						1.18		4799.816	0.633
1289-TCDD	NotFnd		1.0341						1.18		4799.816	0.633
12479/12468-PeCDD	31.46		0.9273	0.9271	-0.4	6.73E+05	1.60	Y	1.04	12.4	4537.753	0.764
12469-PeCDD	31.99	EMPC	0.9430	0.9427	-0.6	2.45E+05	1.17	N	1.04	4.52	4537.753	0.764
12368-PeCDD	32.54		0.9592	0.9591	-0.2	4.56E+05	1.77	Y	1.04	8.42	4537.753	0.764
12478-PeCDD	32.73	J EMPC	0.9647	0.9644	-0.6	1.21E+05	1.29	N	1.04	2.24	4537.753	0.764
12379-PeCDD	32.83		0.9676	0.9674	-0.4	2.91E+05	1.34	Y	1.04	5.38	4537.753	0.764
12369/12467/12489-PeCDD	33.09		0.9752	0.9751	-0.2	2.82E+05	1.45	Y	1.04	5.21	4537.753	0.764
12346/12347-PeCDD	33.46		0.9860	0.9860	0	2.65E+05	1.70	Y	1.04	4.9	4537.753	0.764
12378-PeCDD	33.95		**1.0006**	**1.0006**	**0**	**1.97E+05**	**1.38**	**Y**	**1.04**	**3.64**	**4537.753**	**0.764**
12367-PeCDD	34.04	J EMPC	1.0034	1.0032	-0.4	9.57E+04	1.21	N	1.04	1.77	4537.753	0.764
12389-PeCDD	34.39	J	1.0134	1.0134	0	8.36E+04	1.48	Y	1.04	1.54	4537.753	0.764
124679/124689-HxCDD	36.10		0.9545	0.9542	-0.6	2.18E+06	1.29	Y	1.10	39.8	5947.147	0.953
123468-HxCDD	36.75		0.9715	0.9714	-0.2	6.07E+05	1.30	Y	1.10	11.1	5947.147	0.953
123679/123689-HxCDD	37.05		0.9793	0.9794	+0.2	1.39E+06	1.29	Y	1.10	25.3	5947.147	0.953
123469-HxCDD	37.18		0.9829	0.9829	0	1.66E+05	1.26	Y	1.10	3.02	5947.147	0.953
123478-HxCDD	37.84	J EMPC	**1.0004**	**1.0003**	**-0.2**	**1.26E+05**	**1.67**	**N**	1.09	**2.35**	**5947.147**	**0.932**
123678-HxCDD	37.96		**1.0034**	**1.0034**	**0**	**4.56E+05**	**1.06**	**Y**	1.15	**8.11**	**5947.147**	**0.963**
123467-HxCDD	38.14		1.0082	1.0083	+0.2	1.41E+05	1.27	Y	1.10	2.56	5947.147	0.953
123789-HxCDD	38.24		**1.0109**	**1.0109**	**0**	**2.46E+05**	**1.27**	**Y**	1.05	**4.49**	**5947.147**	**0.964**

Lab ID: B5987_18819_DF_001 **Acq'd:** 20 Jan 2022 17:44 DTF **Wt/Vol:** 10.10 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-6H **UTP:** 24-Jan-2022 13:18:41 MLS **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 131-299-DLV

Datafile: 220120C10 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

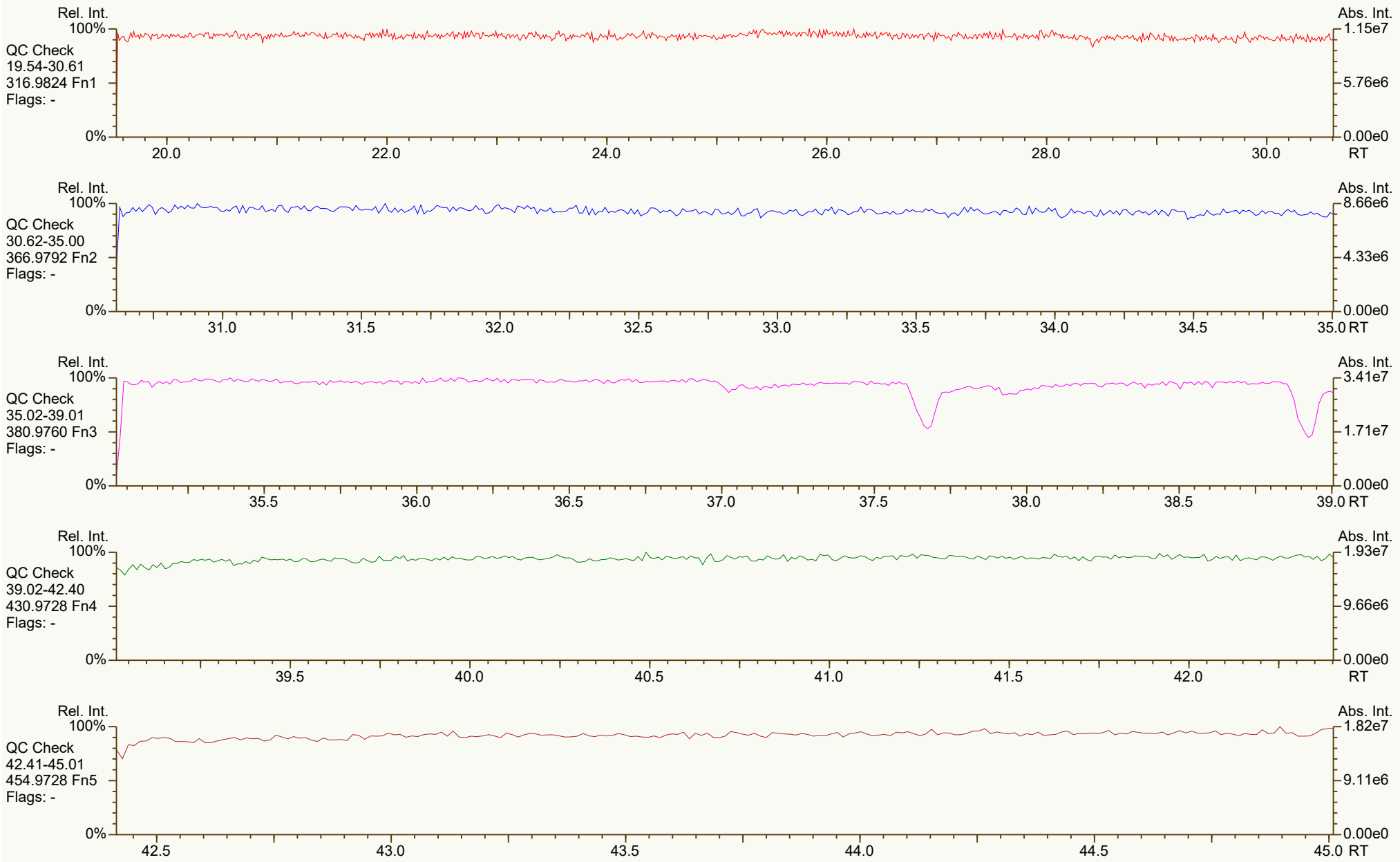
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.18		0.9838	0.9837	-0.2	1.11E+07	1.02	Y	1.06	217	4286.672	0.611
1234678-HpCDD	**40.86**		**1.0003**	**1.0003**	**0**	**7.52E+06**	**1.00**	**Y**	**1.06**	**147**	**4286.672**	**0.611**
OCDD	**43.52**		**1.0002**	**1.0003**	**+0.3**	**7.99E+07**	**0.90**	**Y**	**1.13**	**2,060**	**3575.583**	**0.94**
OCDD-a	43.51		1.0002	1.0002	0	4.96E+06	2.53	Y	0.07	2,000	4287.706	17.6
1368-TCDF	22.98	EMPC	0.8282	0.8269	-1.8	3.24E+05	0.89	N	1.08	3.44	6064.522	0.694
1468-TCDF	23.54		0.8485	0.8473	-1.7	5.69E+05	0.84	Y	1.08	6.04	6064.522	0.694
2468-TCDF	24.16		0.8709	0.8697	-1.7	7.30E+05	0.66	Y	1.08	7.75	6064.522	0.694
1346/1246-TCDF	24.53		0.8829	0.8828	-0.1	5.95E+05	0.71	Y	1.08	6.32	6064.522	0.694
1347/1378/1247-TCDF	24.67		0.8884	0.8879	-0.7	1.78E+06	0.81	Y	1.08	18.9	6064.522	0.694
1348-TCDF	24.92		0.8980	0.8970	-1.5	4.03E+05	0.88	Y	1.08	4.28	6064.522	0.694
1248/1367/1379-TCDF	25.03		0.9026	0.9007	-2.9	2.44E+06	0.75	Y	1.08	25.9	6064.522	0.694
1268-TCDF	25.43		0.9158	0.9152	-0.9	1.20E+06	0.71	Y	1.08	12.7	6064.522	0.694
1467-TCDF	25.56		0.9206	0.9201	-0.8	5.25E+05	0.88	Y	1.08	5.58	6064.522	0.694
1478-TCDF	25.73		0.9266	0.9261	-0.8	1.79E+06	0.78	Y	1.08	19	6064.522	0.694
1369/1237-TCDF	26.10		0.9397	0.9395	-0.3	6.77E+05	0.75	Y	1.08	7.19	6064.522	0.694
2467-TCDF	26.22		0.9440	0.9437	-0.5	5.60E+05	0.84	Y	1.08	5.94	6064.522	0.694
2368-TCDF	26.38		0.9497	0.9494	-0.5	1.69E+06	0.82	Y	1.08	17.9	6064.522	0.694
1238/1234/1678/1469/1236-TCDF	26.47		0.9528	0.9525	-0.5	2.56E+06	0.78	Y	1.08	27.1	6064.522	0.694
1278-TCDF	26.92		0.9690	0.9687	-0.5	1.31E+07	0.81	Y	1.08	139	6064.522	0.694
1349-TCDF	NotFnd		0.9730						1.08		6064.522	0.694
1267-TCDF	27.18		0.9787	0.9784	-0.5	1.22E+06	0.83	Y	1.08	13	6064.522	0.694
2346/1249-TCDF	27.37		0.9850	0.9850	0	7.04E+05	0.81	Y	1.08	7.48	6064.522	0.694
2347/1279-TCDF	27.58		0.9929	0.9928	-0.2	8.50E+05	0.83	Y	1.08	9.02	6064.522	0.694
2348-TCDF	27.69		0.9970	0.9965	-0.8	1.60E+06	0.80	Y	1.08	16.9	6064.522	0.694
2378-TCDF	**27.80**		**1.0008**	**1.0007**	**-0.2**	**2.77E+07**	**0.80**	**Y**	**1.08**	**294**	**6064.522**	**0.694**
2367/3467-TCDF	28.15		1.0136	1.0133	-0.5	3.16E+06	0.80	Y	1.08	33.6	6064.522	0.694
1269-TCDF	28.40		1.0221	1.0221	0	5.73E+05	0.86	Y	1.08	6.08	6064.522	0.694
1239-TCDF	NotFnd		1.0319						1.08		6064.522	0.694
1289-TCDF	29.79		1.0740	1.0723	-3.0	1.92E+06	0.79	Y	1.08	20.4	6064.522	0.694
13468/12468-PeCDF	29.72		0.9145	0.9146	+0.2	2.00E+06	1.57	Y	1.02	23.1	3522.817	0.364
13678/13467/12467-PeCDF	31.26		0.9619	0.9619	0	1.18E+06	1.62	Y	1.02	13.6	5114.377	0.528
12368/13478/12478-PeCDF	31.42		0.9665	0.9669	+0.8	2.46E+06	1.57	Y	1.02	28.4	5114.377	0.528
14678-PeCDF	31.51	EMPC	0.9695	0.9697	+0.4	3.02E+05	1.80	N	1.02	3.49	5114.377	0.528
13479-PeCDF	31.59	J EMPC	0.9724	0.9722	-0.4	4.51E+04	1.10	N	1.02	0.521	5114.377	0.528
13469/12479-PeCDF	31.83	J EMPC	0.9801	0.9794	-1.3	1.58E+05	1.30	N	1.02	1.82	5114.377	0.528
12346-PeCDF	31.98		0.9842	0.9843	+0.2	3.09E+05	1.62	Y	1.02	3.57	5114.377	0.528

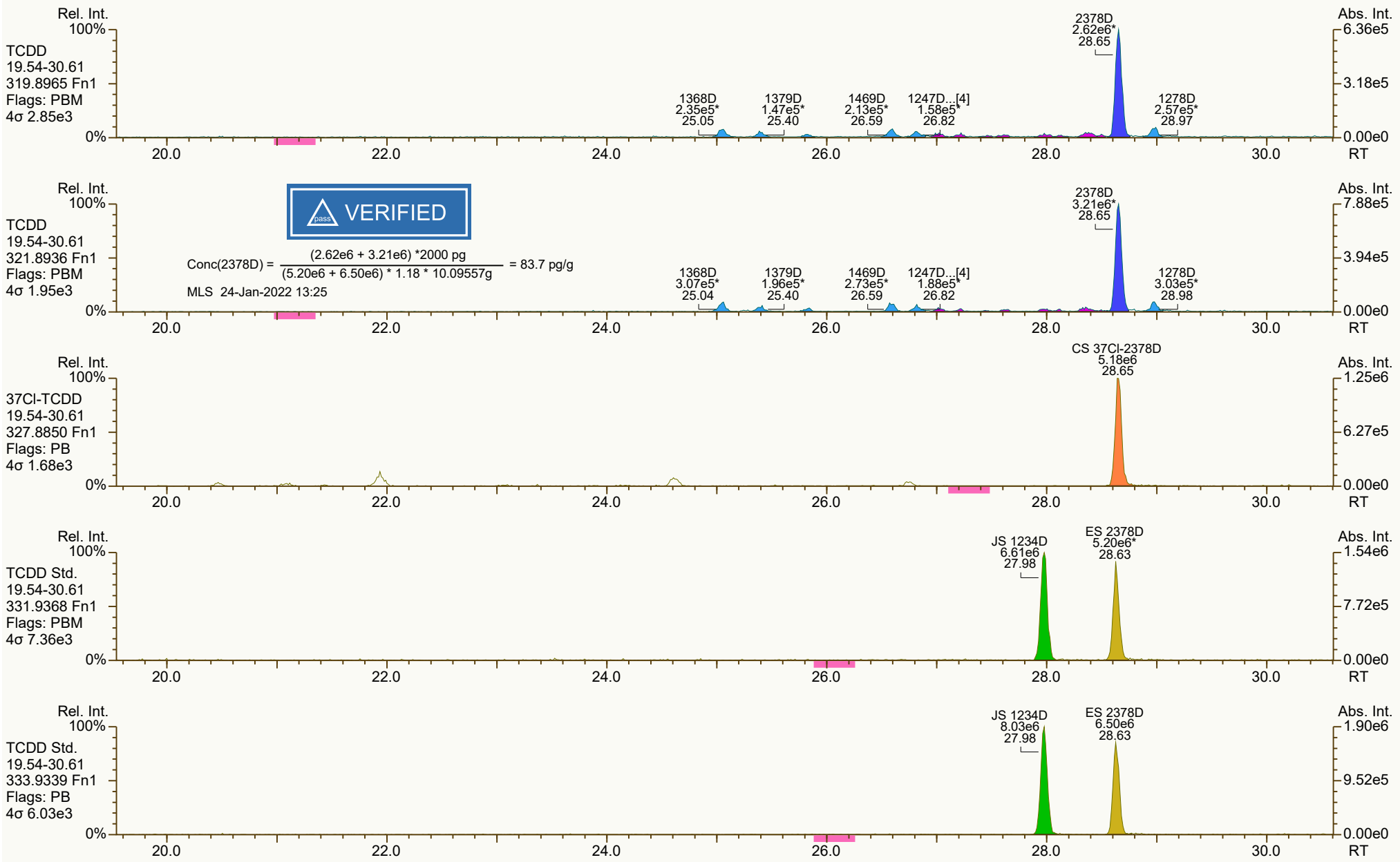
Lab ID: B5987_18819_DF_001 **Acq'd:** 20 Jan 2022 17:44 DTF **Wt/Vol:** 10.10 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120321-S-JC-SW-B-6H **UTP:** 24-Jan-2022 13:18:41 MLS **J-level:** 0.495 pg/g **Split:** 1 **Checkcode:** 131-299-DLV

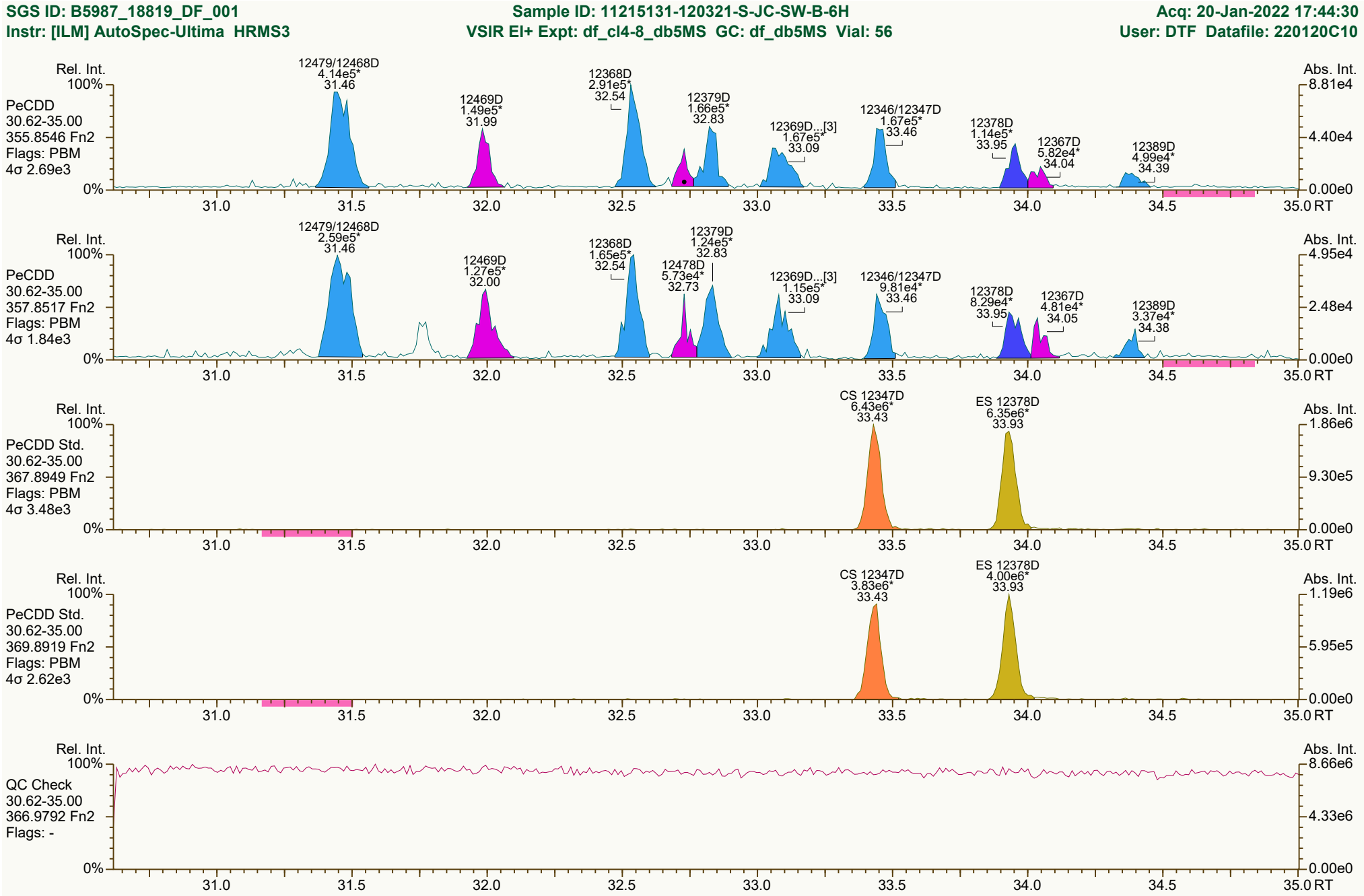
Datafile: 220120C10 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.07		0.9868	0.9869	+0.2	7.59E+05	1.47	Y	1.02	8.77	5114.377	0.528
12347-PeCDF	32.15		0.9895	0.9893	-0.4	3.07E+05	1.64	Y	1.02	3.55	5114.377	0.528
12348-PeCDF	32.31		0.9941	0.9941	0	4.45E+05	1.59	Y	1.02	5.14	5114.377	0.528
12378-PeCDF	**32.51**		**1.0005**	**1.0005**	**0**	**8.15E+05**	**1.65**	**Y**	**1.02**	**9.16**	**5114.377**	**0.53**
12678/12367-PeCDF	32.80		1.0090	1.0093	+0.6	1.03E+06	1.54	Y	1.02	11.8	5114.377	0.528
12379-PeCDF	NotFnd		1.0142						1.02		5114.377	0.528
12679-PeCDF	NotFnd		0.9931						1.02		5114.377	0.528
23467/12369-PeCDF	33.49		0.9966	0.9967	+0.2	5.26E+05	1.60	Y	1.02	6.08	5114.377	0.528
23478-PeCDF	**33.63**		**1.0005**	**1.0007**	**+0.4**	**1.37E+06**	**1.65**	**Y**	**1.02**	**16.3**	**5114.377**	**0.526**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		5114.377	0.528
12349-PeCDF	33.95	J EMPC	1.0101	1.0104	+0.6	5.95E+04	1.14	N	1.02	0.688	5114.377	0.528
12389-PeCDF	NotFnd		1.0322						1.02		5114.377	0.528
123468-HxCDF	35.45		0.9627	0.9628	+0.2	7.10E+05	1.18	Y	1.19	8.74	5092.817	0.548
124678/134678-HxCDF	35.65		0.9684	0.9682	-0.4	2.64E+06	1.31	Y	1.19	32.5	5092.817	0.548
134679-HxCDF	NotFnd		0.9747						1.19		5092.817	0.548
124679-HxCDF	36.07	J	0.9802	0.9796	-1.3	1.54E+05	1.41	Y	1.19	1.89	5092.817	0.548
124689-HxCDF	36.30		0.9858	0.9857	-0.2	1.56E+06	1.26	Y	1.19	19.1	5092.817	0.548
123467-HxCDF	36.72	EMPC	0.9972	0.9971	-0.2	4.71E+05	1.50	N	1.19	5.8	5092.817	0.548
123478-HxCDF	**36.84**		**1.0004**	**1.0004**	**0**	**1.72E+06**	**1.25**	**Y**	**1.27**	**19.8**	**5092.817**	**0.497**
123678-HxCDF	**36.98**		**1.0004**	**1.0004**	**0**	**8.85E+05**	**1.27**	**Y**	**1.15**	**9.53**	**5092.817**	**0.474**
123479-HxCDF	NotFnd		1.0051						1.19		5092.817	0.548
123469-HxCDF	37.30	J	1.0091	1.0091	0	1.57E+05	1.32	Y	1.19	1.93	5092.817	0.548
123679-HxCDF	37.42	J	0.9943	0.9941	-0.4	6.21E+04	1.20	Y	1.19	0.764	5092.817	0.548
234678-HxCDF	**37.66**		**1.0004**	**1.0004**	**0**	**4.59E+05**	**1.25**	**Y**	**1.19**	**6.48**	**5092.817**	**0.653**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		5092.817	0.548
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**5092.817**	**0.604**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.62		1.0007	1.0011	+0.9	2.25E+05	1.36	Y	1.19	2.78	5092.817	0.548
1234678-HpCDF	**39.93**		**1.0002**	**1.0003**	**+0.2**	**7.66E+06**	**1.03**	**Y**	**1.37**	**96**	**3170.718**	**0.288**
1234679-HpCDF	40.19		1.0067	1.0066	-0.2	4.58E+05	1.07	Y	1.34	6.4	3170.718	0.35
1234689-HpCDF	40.33		1.0101	1.0102	+0.2	5.30E+06	1.09	Y	1.34	74	3170.718	0.35
1234789-HpCDF	**41.32**		**1.0003**	**1.0001**	**-0.5**	**5.59E+05**	**0.91**	**Y**	**1.31**	**8.78**	**3170.718**	**0.426**
OCDF	**43.70**		**1.0002**	**1.0002**	**0**	**1.16E+08**	**0.90**	**Y**	**1.07**	**2,100**	**4339.276**	**0.765**
OCDF-a	43.69		1.0002	1.0001	-0.3	7.18E+06	2.55	Y	0.07	2,100	4209.319	12

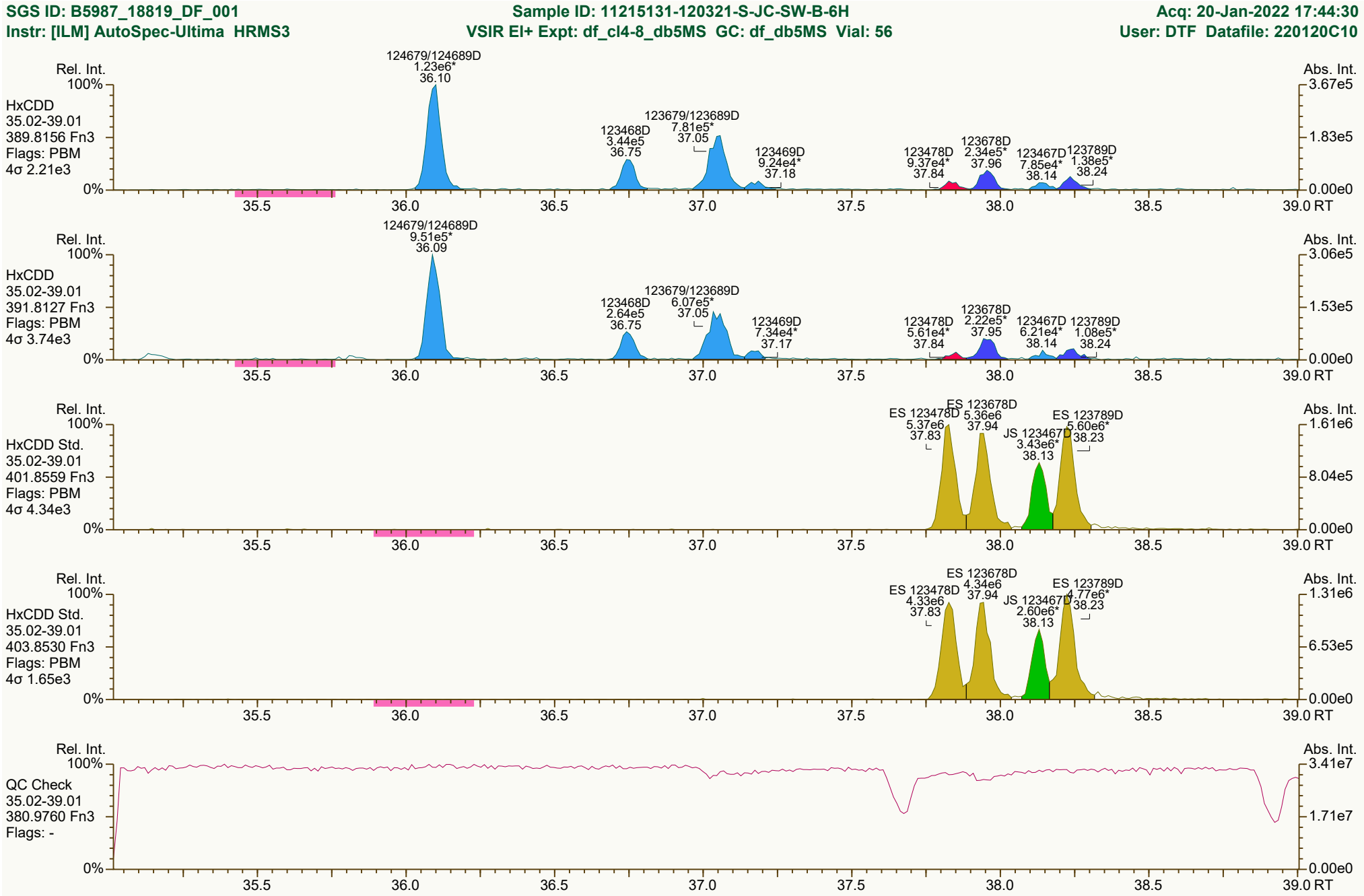

Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.15e7
5.76e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.66e6
4.33e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.41e7
1.71e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.93e7
9.66e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.82e7
9.11e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

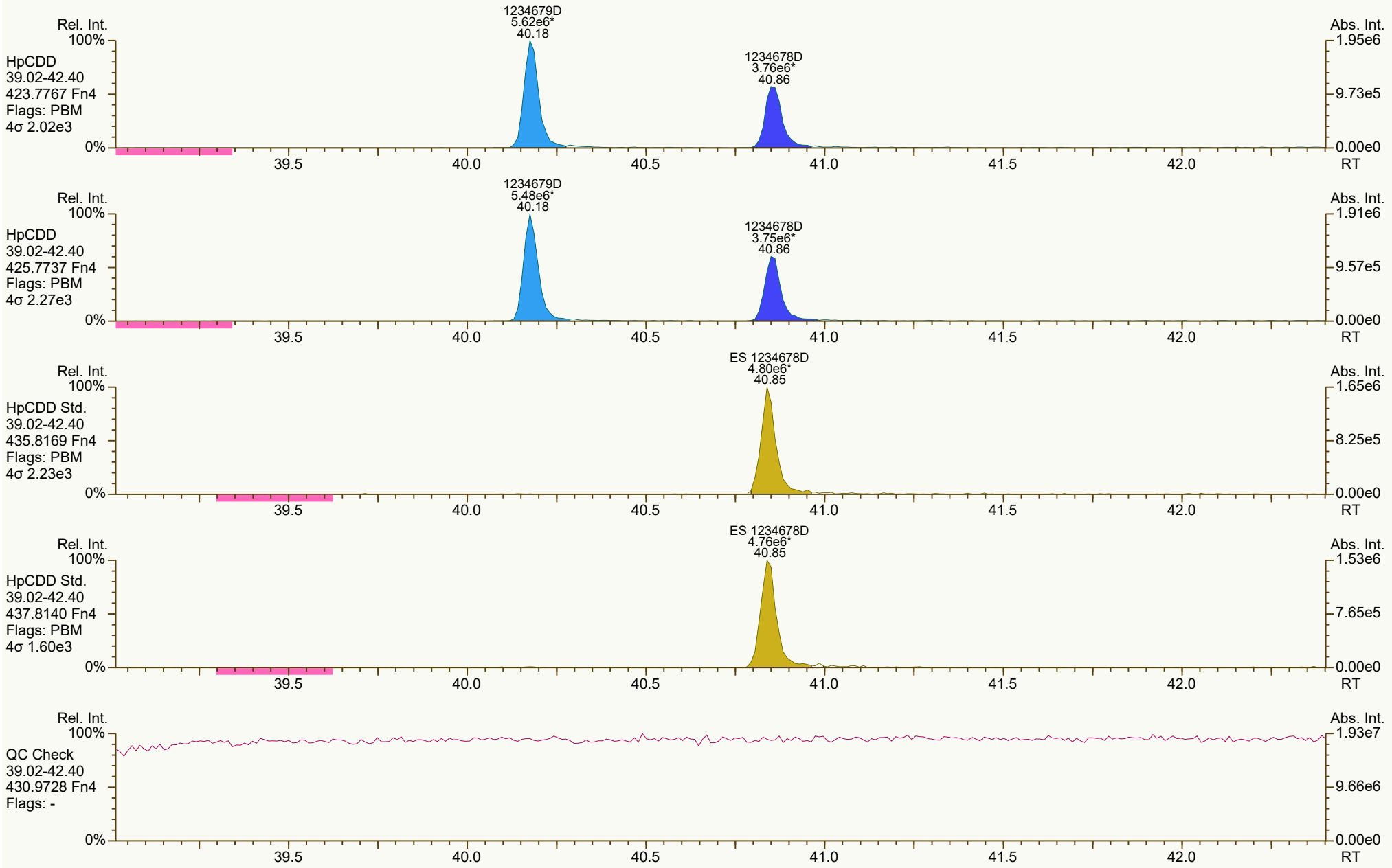

Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 2.85e3
0%
2378D
2.62e6*
28.65
1368D
2.35e5*
25.05
1379D
1.47e5*
25.40
1469D
2.13e5*
26.59
1247D...[4]
1.58e5*
26.82
1278D
2.57e5*
28.97
Abs. Int.
6.36e5
3.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
VERIFIED
pass
Conc(2378D) = (2.62e6 + 3.21e6) *2000 pg / (5.20e6 + 6.50e6) * 1.18 * 10.09557g = 83.7 pg/g
MLS 24-Jan-2022 13:25
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.95e3
2378D
3.21e6*
28.65
1368D
3.07e5*
25.04
1379D
1.96e5*
25.40
1469D
2.73e5*
26.59
1247D...[4]
1.88e5*
26.82
1278D
3.03e5*
28.98
7.88e5
3.94e5
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.68e3
CS 37Cl-2378D
5.18e6
28.65
1.25e6
6.27e5
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PBM
4σ 7.36e3
JS 1234D
6.61e6
27.98
ES 2378D
5.20e6*
28.63
1.54e6
7.72e5
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 6.03e3
JS 1234D
8.03e6
27.98
ES 2378D
6.50e6
28.63
1.90e6
9.52e5

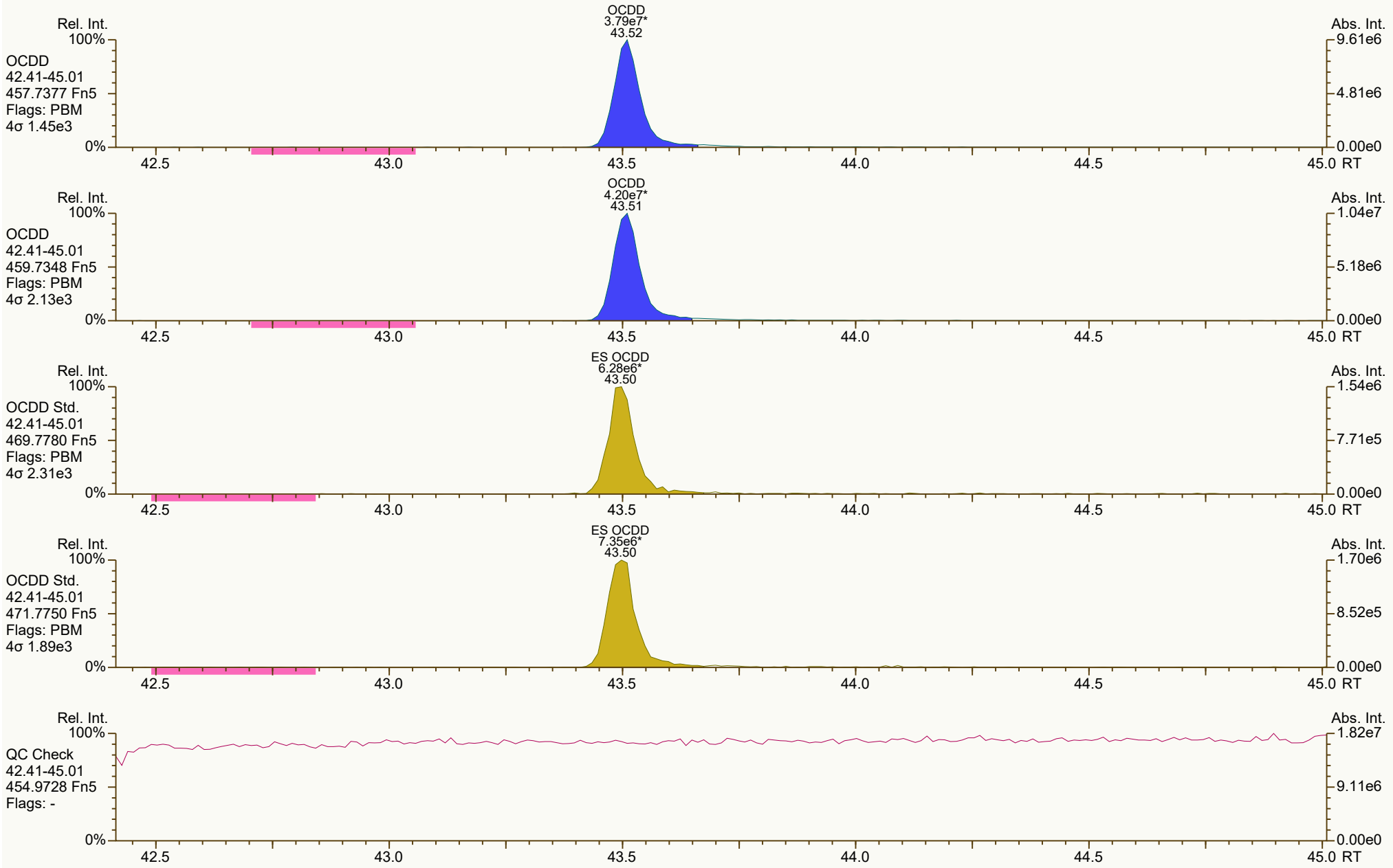
SGS ID: B5987_18819_DF_001 | Sample ID: 11215131-120321-S-JC-SW-B-6H | Acq: 20-Jan-2022 17:44:30
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56 | User: DTF Datafile: 220120C10

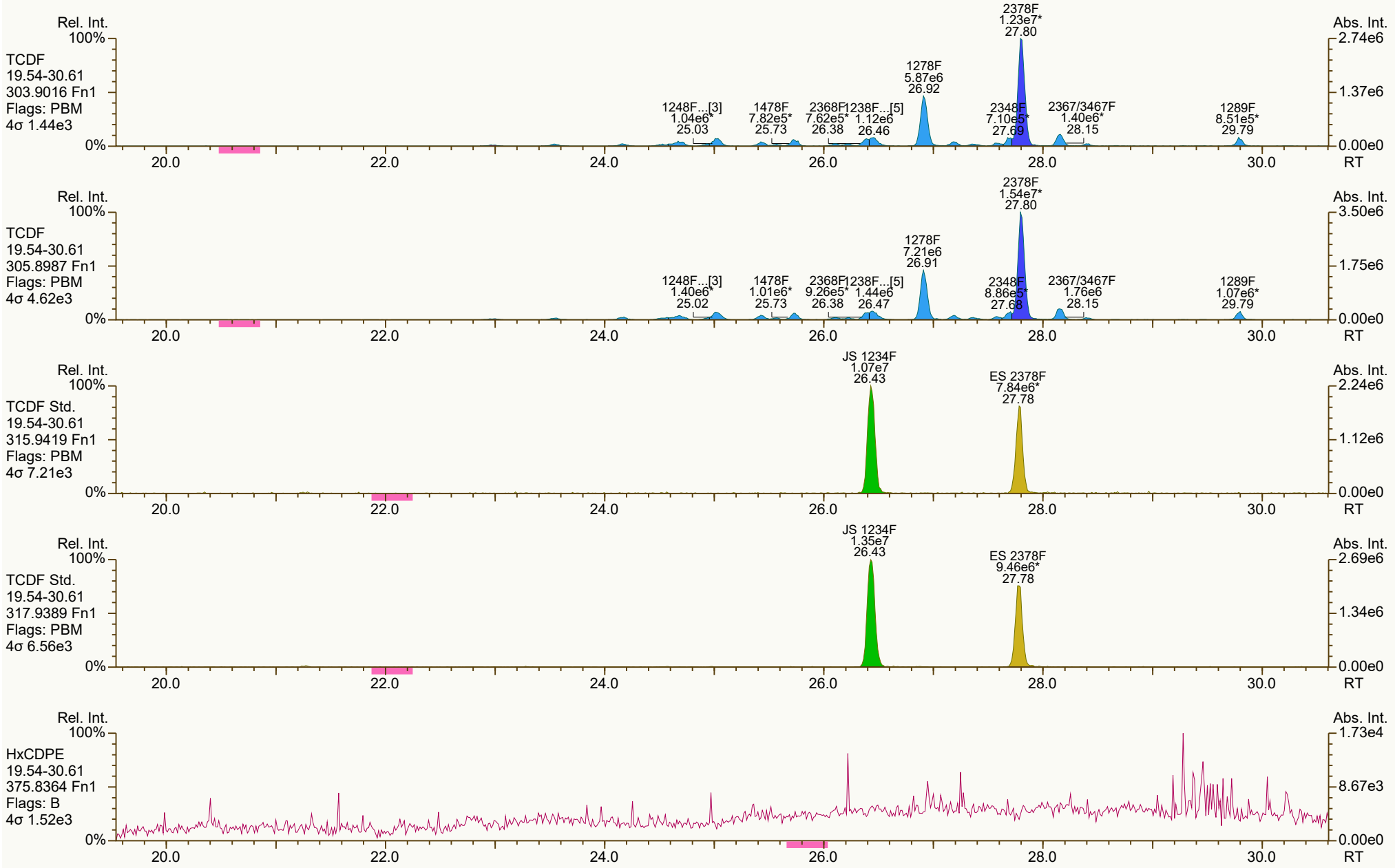


Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\B5987_18819_DF_001.utp_res, saved 24-Jan-2022 13:26 (MLS) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 2723, 3176 scc: 131-299 | Revised: 24-Jan-2022 13:02 (MLS) Printed: 24-Jan-2022 13:28 Page 3 of 12


SGS ID: B5987_18819_DF_001
Sample ID: 11215131-120321-S-JC-SW-B-6H
Acq: 20-Jan-2022 17:44:30
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56
User: DTF Datafile: 220120C10
Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 2.21e3
124679/124689D
1.23e6*
36.10
123468D
3.44e5
36.75
123679/123689D
7.81e5*
37.05
123469D
9.24e4*
37.18
123478D
9.37e4*
37.84
123678D
2.34e5*
37.96
123467D
7.85e4*
38.14
123789D
1.38e5*
38.24
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 3.74e3
124679/124689D
9.51e5*
36.09
123468D
2.64e5
36.75
123679/123689D
6.07e5*
37.05
123469D
7.34e4*
37.17
123478D
5.61e4*
37.84
123678D
2.22e5*
37.95
123467D
6.21e4*
38.14
123789D
1.08e5*
38.24
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 4.34e3
ES 123678D
5.36e6
37.94
ES 123478D
5.37e6
37.83
JS 123467D
3.43e6*
38.13
ES 123789D
5.60e6*
38.23
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 1.65e3
ES 123678D
4.34e6
37.94
ES 123478D
4.33e6
37.83
JS 123467D
2.60e6*
38.13
ES 123789D
4.77e6*
38.23
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
3.67e5
1.83e5
0.00e0
3.06e5
1.53e5
1.61e6
8.04e5
1.31e6
6.53e5
3.41e7
1.71e7


Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.02e3
0%
1234679D
5.62e6*
40.18
1234678D
3.76e6*
40.86
Abs. Int.
1.95e6
9.73e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 2.27e3
0%
1234679D
5.48e6*
40.18
1234678D
3.75e6*
40.86
Abs. Int.
1.91e6
9.57e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.23e3
0%
ES 1234678D
4.80e6*
40.85
Abs. Int.
1.65e6
8.25e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.60e3
0%
ES 1234678D
4.76e6*
40.85
Abs. Int.
1.53e6
7.65e5
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.93e7
9.66e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT

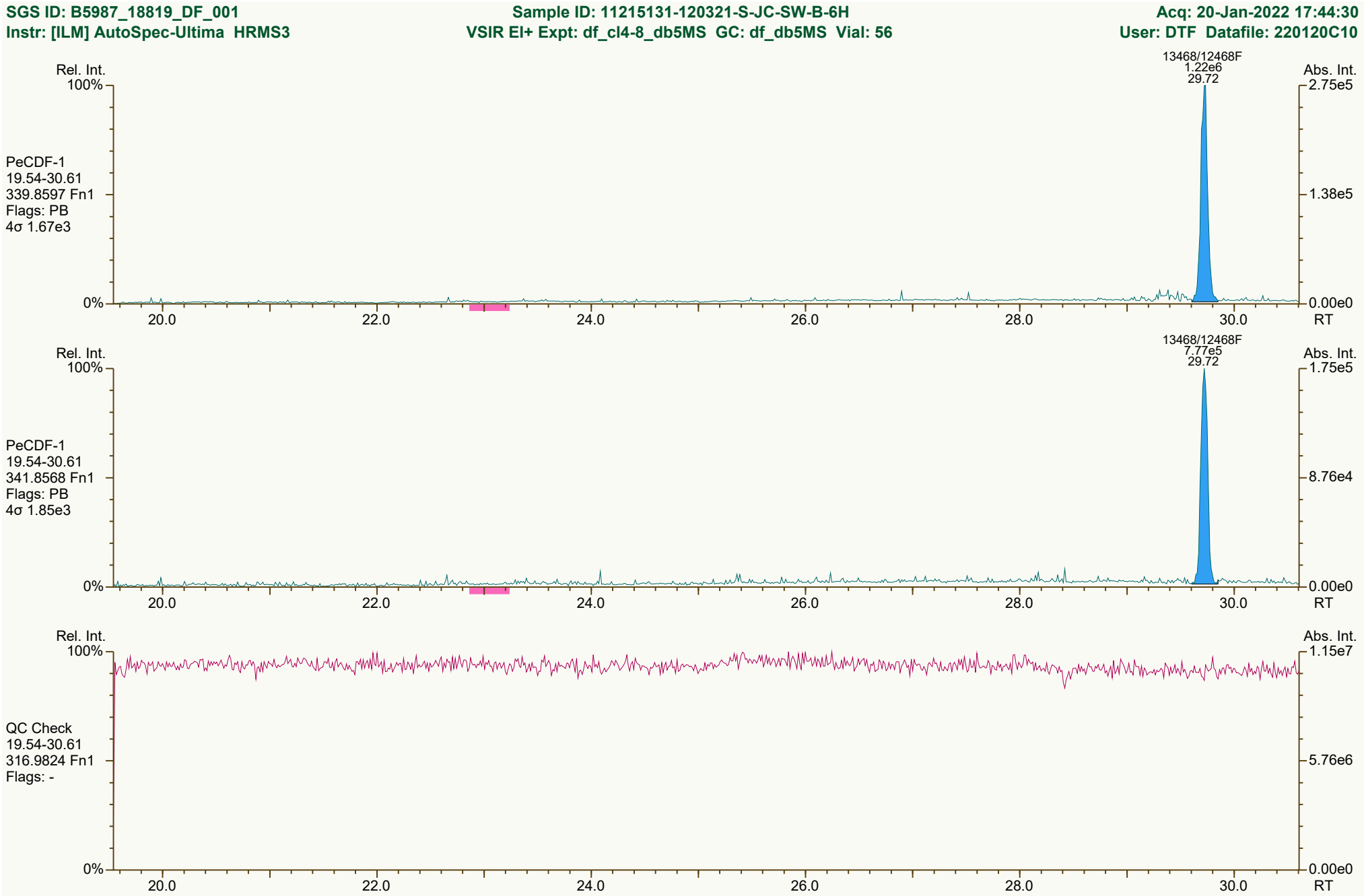

OCDD
3.79e7*
43.52
Rel. Int.
100%
OCDD
42.41-45.01
457.7377 Fn5
Flags: PBM
4σ 1.45e3
0%
Abs. Int.
9.61e6
4.81e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.20e7*
43.51
Rel. Int.
100%
OCDD
42.41-45.01
459.7348 Fn5
Flags: PBM
4σ 2.13e3
0%
Abs. Int.
1.04e7
5.18e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
6.28e6*
43.50
Rel. Int.
100%
OCDD Std.
42.41-45.01
469.7780 Fn5
Flags: PBM
4σ 2.31e3
0%
Abs. Int.
1.54e6
7.71e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
7.35e6*
43.50
Rel. Int.
100%
OCDD Std.
42.41-45.01
471.7750 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
1.70e6
8.52e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.41-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.82e7
9.11e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.44e3
0%
Abs. Int.
2.74e6
1.37e6
0.00e0
2378F 1.23e7* 27.80
1278F 5.87e6 26.92
1248F...[3] 1.04e6* 25.03
1478F 7.82e5* 25.73
2368F 7.62e5* 26.38
1238F...[5] 1.12e6 26.46
2348F 7.10e5* 27.69
2367/3467F 1.40e6* 28.15
1289F 8.51e5* 29.79
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.62e3
0%
Abs. Int.
3.50e6
1.75e6
0.00e0
2378F 1.54e7* 27.80
1278F 7.21e6 26.91
1248F...[3] 1.40e6* 25.02
1478F 1.01e6* 25.73
2368F 9.26e5* 26.38
1238F...[5] 1.44e6 26.47
2348F 8.86e5* 27.68
2367/3467F 1.76e6 28.15
1289F 1.07e6* 29.79
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 7.21e3
0%
Abs. Int.
2.24e6
1.12e6
0.00e0
JS 1234F 1.07e7 26.43
ES 2378F 7.84e6* 27.78
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 6.56e3
0%
Abs. Int.
2.69e6
1.34e6
0.00e0
JS 1234F 1.35e7 26.43
ES 2378F 9.46e6* 27.78
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.52e3
0%
Abs. Int.
1.73e4
8.67e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

SGS ID: B5987_18819_DF_001
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 11215131-120321-S-JC-SW-B-6H
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56

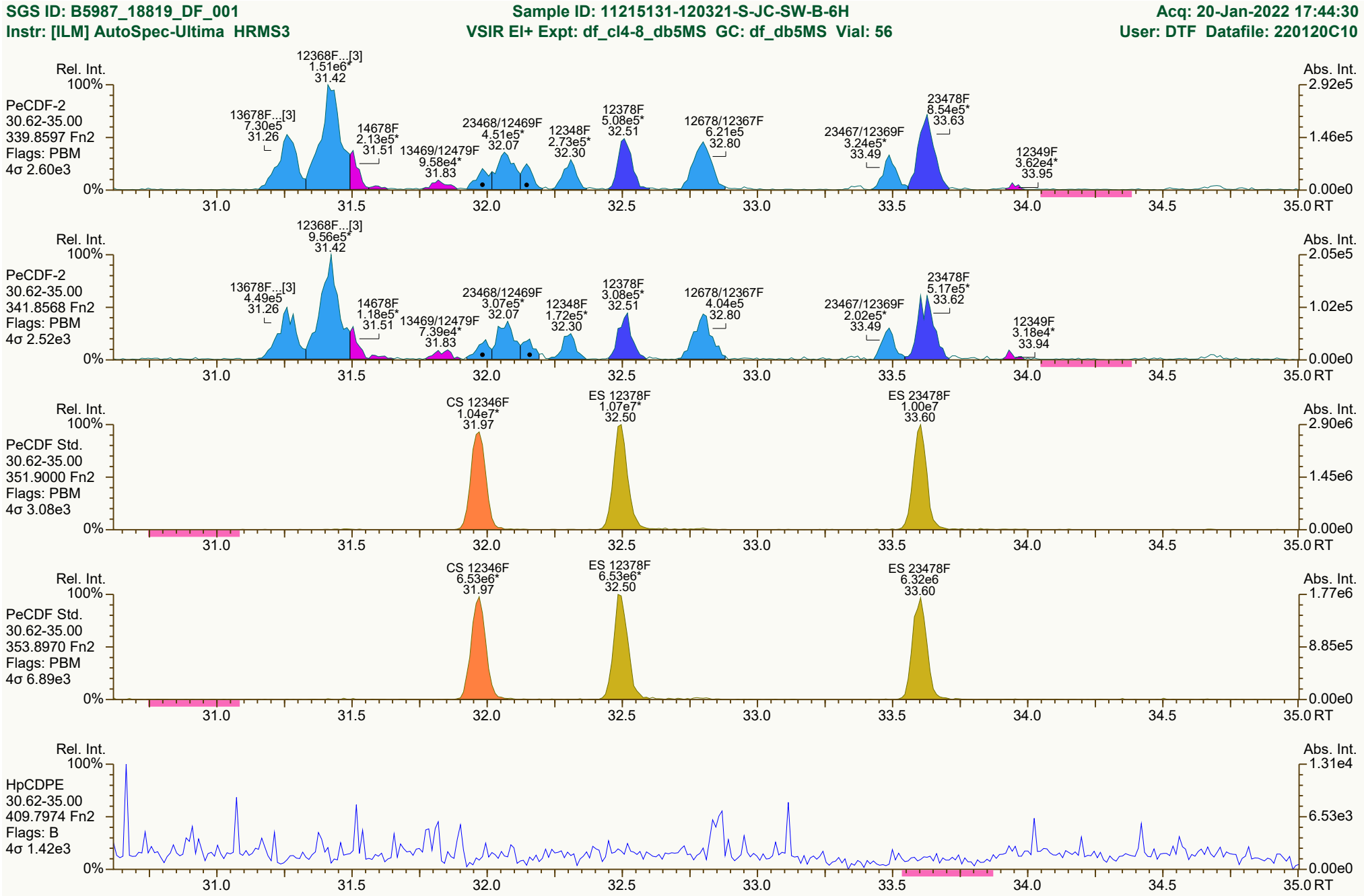
Acq: 20-Jan-2022 17:44:30
User: DTF Datafile: 220120C10



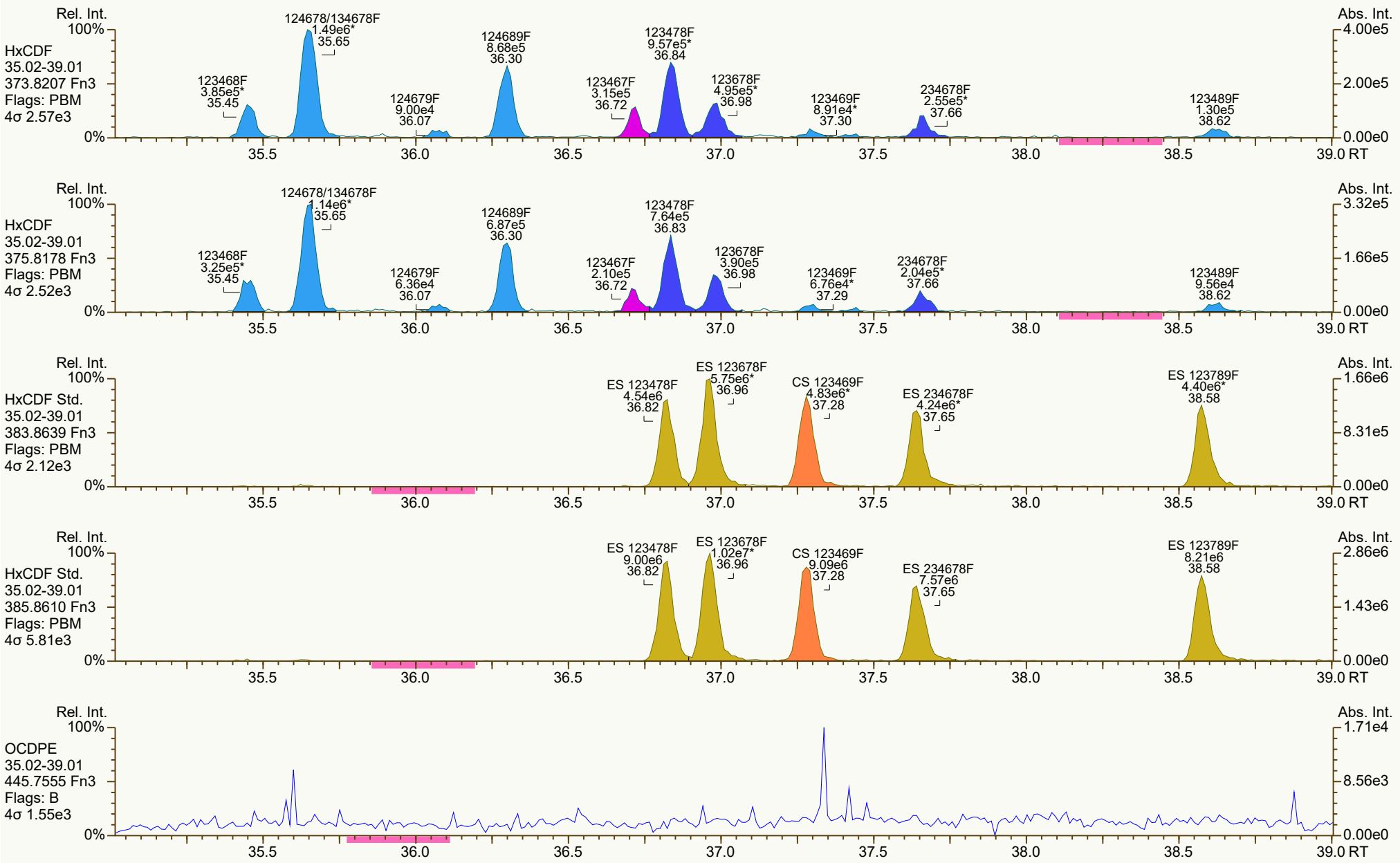
Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\B5987_18819_DF_001.utp_res, saved 24-Jan-2022 13:26 (MLS)
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 9418 scc: 131-299

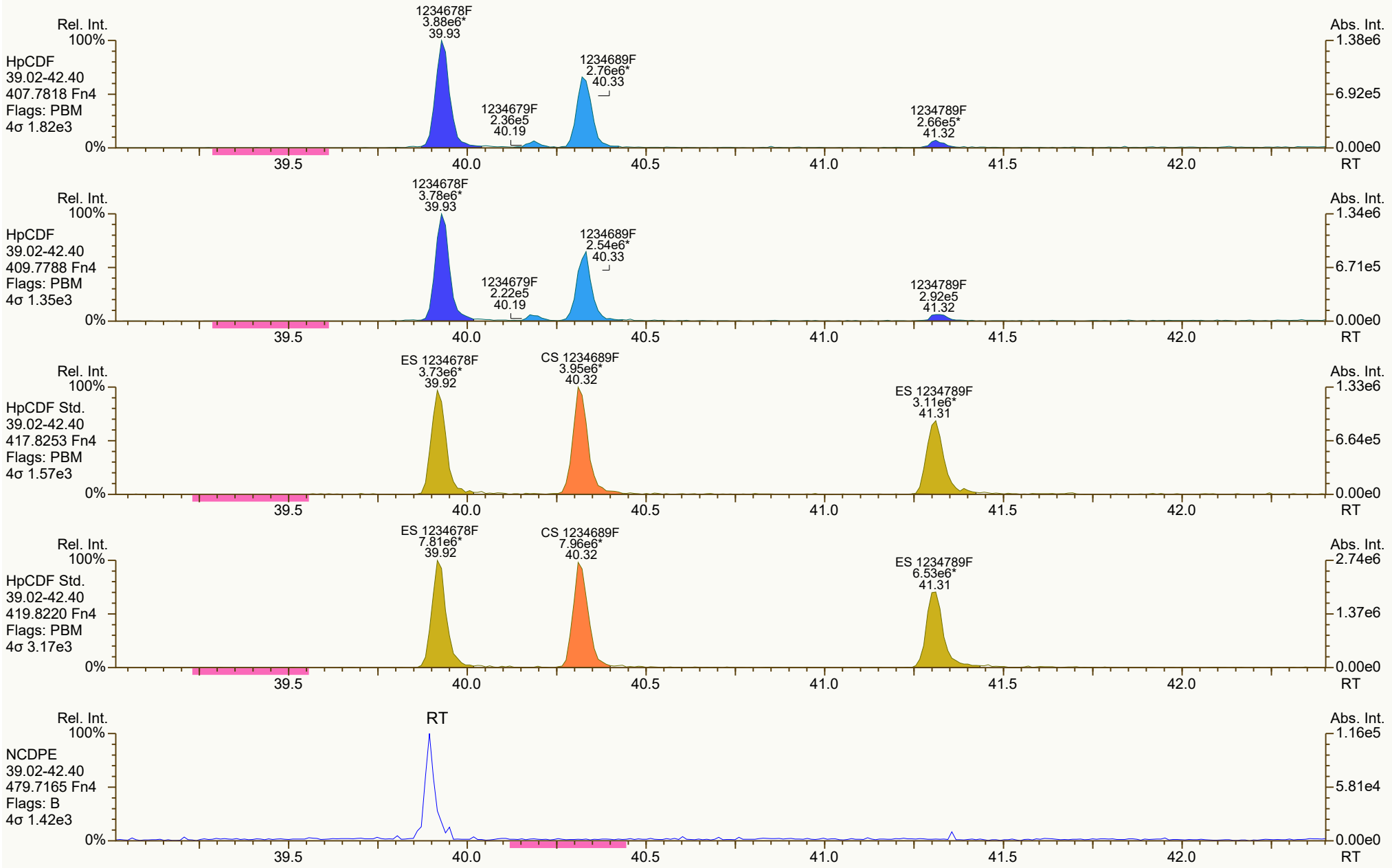
Peak annotation: Areas, Centroids
PKD: 24-Jan-2022 13:02 Printed: 24-Jan-2022 13:28 Page 8 of 12

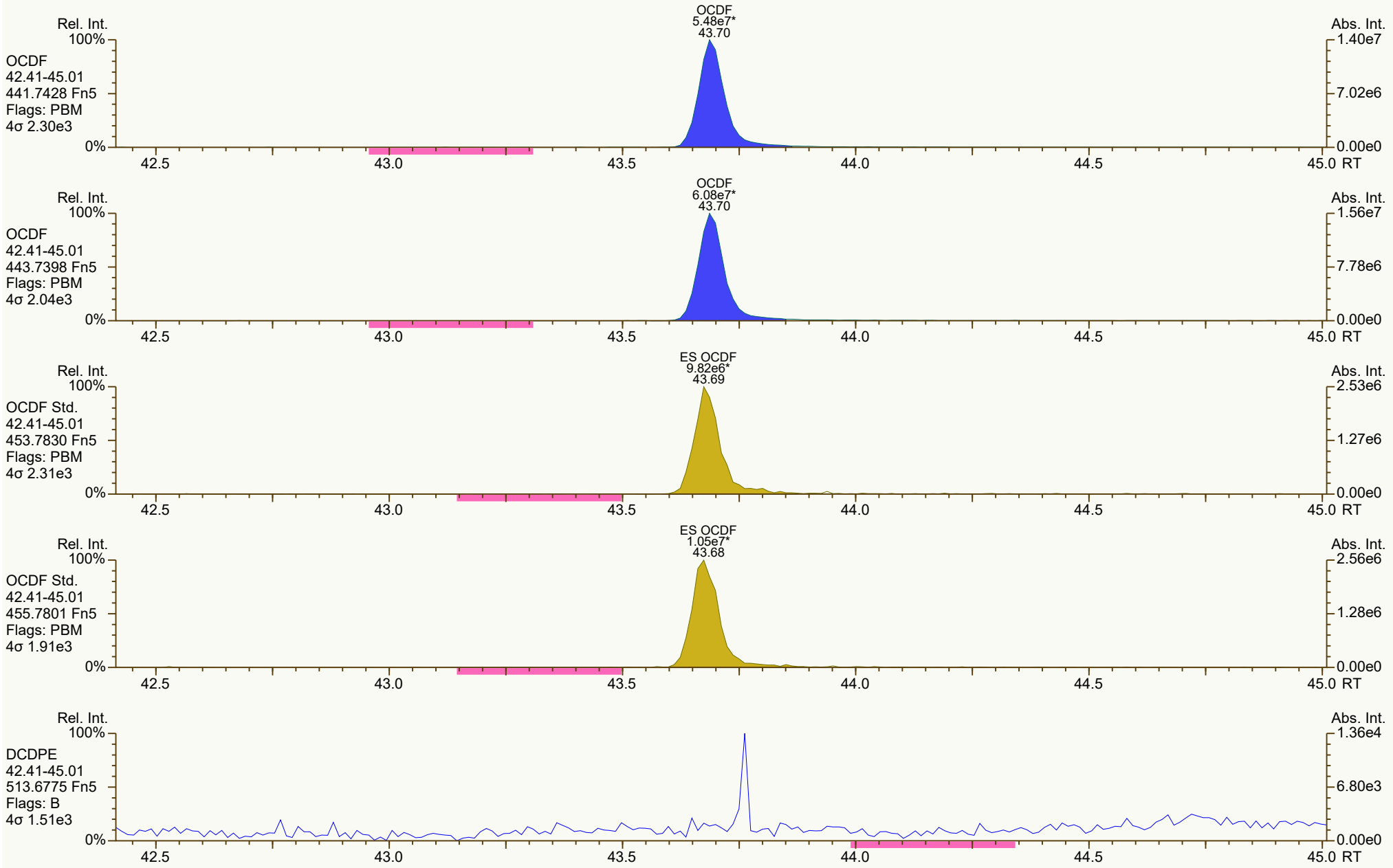
SGS ID: B5987_18819_DF_001 | Sample ID: 11215131-120321-S-JC-SW-B-6H | Acq: 20-Jan-2022 17:44:30
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 56 | User: DTF Datafile: 220120C10



Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\B5987_18819_DF_001.utp_res, saved 24-Jan-2022 13:26 (MLS) | Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 2260, 6609, 1455 scc: 131-299 | PKD: 24-Jan-2022 13:02 Printed: 24-Jan-2022 13:28 Page 9 of 12


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 2.57e3
123468F 3.85e5* 35.45
124678/134678F 1.49e6* 35.65
124679F 9.00e4 36.07
124689F 8.68e5 36.30
123467F 3.15e5 36.72
123478F 9.57e5* 36.84
123678F 4.95e5* 36.98
123469F 8.91e4* 37.30
234678F 2.55e5* 37.66
123489F 1.30e5 38.62
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.52e3
123468F 3.25e5* 35.45
124678/134678F 1.14e6* 35.65
124679F 6.36e4 36.07
124689F 6.87e5 36.30
123467F 2.10e5 36.72
123478F 7.64e5 36.83
123678F 3.90e5 36.98
123469F 6.76e4* 37.29
234678F 2.04e5* 37.66
123489F 9.56e4 38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 2.12e3
ES 123478F 4.54e6 36.82
ES 123678F 5.75e6* 36.96
CS 123469F 4.83e6* 37.28
ES 234678F 4.24e6* 37.65
ES 123789F 4.40e6* 38.58
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 5.81e3
ES 123478F 9.00e6 36.82
ES 123678F 1.02e7* 36.96
CS 123469F 9.09e6 37.28
ES 234678F 7.57e6 37.65
ES 123789F 8.21e6 38.58
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.55e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
4.00e5
2.00e5
0.00e0
3.32e5
1.66e5
1.66e6
8.31e5
2.86e6
1.43e6
1.71e4
8.56e3


Rel. Int.
100%
0%
Abs. Int.
RT
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 1.82e3
1234678F
3.88e6*
39.93
1234679F
2.36e5
40.19
1234689F
2.76e6*
40.33
1234789F
2.66e5*
41.32
1.38e6
6.92e5
0.00e0
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.35e3
1234678F
3.78e6*
39.93
1234679F
2.22e5
40.19
1234689F
2.54e6*
40.33
1234789F
2.92e5
41.32
1.34e6
6.71e5
0.00e0
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 1.57e3
ES 1234678F
3.73e6*
39.92
CS 1234689F
3.95e6*
40.32
ES 1234789F
3.11e6*
41.31
1.33e6
6.64e5
0.00e0
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 3.17e3
ES 1234678F
7.81e6*
39.92
CS 1234689F
7.96e6*
40.32
ES 1234789F
6.53e6*
41.31
2.74e6
1.37e6
0.00e0
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.42e3
RT
1.16e5
5.81e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0


Rel. Int.
100%
OCDF
42.41-45.01
441.7428 Fn5
Flags: PBM
4σ 2.30e3
0%
OCDF
5.48e7*
43.70
Abs. Int.
1.40e7
7.02e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.41-45.01
443.7398 Fn5
Flags: PBM
4σ 2.04e3
0%
OCDF
6.08e7*
43.70
Abs. Int.
1.56e7
7.78e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.41-45.01
453.7830 Fn5
Flags: PBM
4σ 2.31e3
0%
ES OCDF
9.82e6*
43.69
Abs. Int.
2.53e6
1.27e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.41-45.01
455.7801 Fn5
Flags: PBM
4σ 1.91e3
0%
ES OCDF
1.05e7*
43.68
Abs. Int.
2.56e6
1.28e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.41-45.01
513.6775 Fn5
Flags: B
4σ 1.51e3
0%
Abs. Int.
1.36e4
6.80e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: B5987_18819_DF_002 **Acq'd:** 20 Jan 2022 18:30 DTF **Wt/Vol:** 10.01 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-B-1H **UTP:** 24-Jan-2022 13:18:41 MLS **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 312-725-VLG

Datafile: 220120C11 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.70	E	1.0008	1.0008	0	1.21E+09	0.80	Y	1.18	24,000	5208.358	1.01
12378-PeCDD	34.01		1.0006	1.0005	-0.2	1.18E+07	1.63	Y	1.04	235	3438.583	0.612
123478-HxCDD	37.88		1.0004	1.0003	-0.2	5.10E+05	1.19	Y	1.09	11.5	7228.417	1.34
123678-HxCDD	37.99		1.0034	1.0034	0	2.65E+06	1.23	Y	1.15	58.8	7228.417	1.31
123789-HxCDD	38.28		1.0109	1.0110	+0.2	9.34E+05	1.35	Y	1.05	20.1	7228.417	1.2
1234678-HpCDD	40.88		1.0003	1.0003	0	6.72E+07	1.05	Y	1.06	1,610	6026.772	0.997
OCDD	43.53	E	1.0002	1.0003	+0.3	6.87E+08	0.91	Y	1.13	24,400	4932.831	1.75
2378-TCDF	27.84	E	1.0008	1.0007	-0.2	3.80E+09	0.80	Y	1.08	68,200	6134.039	1.31
12378-PeCDF	32.59		1.0005	1.0005	0	2.10E+08	1.55	Y	1.02	2,760	9240.84	1.21
23478-PeCDF	33.70		1.0005	1.0008	+0.6	1.30E+08	1.56	Y	1.02	1,960	9240.84	1.59
123478-HxCDF	36.88	E	1.0004	1.0004	0	3.75E+08	1.26	Y	1.27	5,020	17413.547	2.1
123678-HxCDF	37.02		1.0004	1.0005	+0.2	9.45E+07	1.25	Y	1.15	1,270	17413.547	2.24
234678-HxCDF	37.71		1.0004	1.0005	+0.2	1.42E+07	1.23	Y	1.19	285	17413.547	3.47
123789-HxCDF	NotFnd		1.0004	-		-	-	-	1.16	-	17413.547	2.23
1234678-HpCDF	39.95		1.0002	1.0003	+0.2	1.10E+08	1.03	Y	1.37	1,720	6886.89	0.733
1234789-HpCDF	41.34		1.0003	1.0002	-0.2	3.21E+07	1.04	Y	1.31	615	6886.89	1.09
OCDF	43.71		1.0002	1.0003	+0.3	2.46E+08	0.89	Y	1.07	6,130	4163.059	1.02

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.68	1.0233	1.0233	0	8.53E+06	0.76	Y	1.05	44.2
ES 12378-PeCDD	33.99	1.2121	1.2131	+2.0	9.68E+06	1.62	Y	0.88	59.7
ES 123478-HxCDD	37.86	0.9921	0.9920	-0.2	8.16E+06	1.29	Y	0.97	55.1
ES 123678-HxCDD	37.98	0.9951	0.9950	-0.2	7.82E+06	1.29	Y	0.94	54.4
ES 123789-HxCDD	38.26	1.0025	1.0026	+0.2	8.88E+06	1.26	Y	1.09	53.4
ES 1234678-HpCDD	40.86	1.0709	1.0707	-0.5	7.88E+06	1.05	Y	0.91	56.7
ES OCDD	43.52	1.1403	1.1402	-0.3	1.00E+07	0.89	Y	0.62	52.6
ES 2378-TCDF	27.82	1.0506	1.0510	+0.7	1.03E+07	0.90	N	1.06	33.3
ES 12378-PeCDF	32.57	1.2281	1.2303	+4.3	1.48E+07	1.57	Y	0.91	55.5
ES 23478-PeCDF	33.67	1.2698	1.2719	+4.2	1.30E+07	1.60	Y	0.88	50.4
ES 123478-HxCDF	36.87	0.9657	0.9659	+0.4	1.17E+07	0.53	Y	1.20	64.4
ES 123678-HxCDF	37.00	0.9695	0.9695	0	1.29E+07	0.55	Y	1.35	62.7
ES 234678-HxCDF	37.69	0.9874	0.9875	+0.2	8.38E+06	0.52	Y	1.24	44.3
ES 123789-HxCDF	38.61	1.0116	1.0116	0	1.06E+07	0.52	Y	1.16	60.5
ES 1234678-HpCDF	39.94	1.0467	1.0464	-0.7	9.30E+06	0.49	Y	0.97	63.1
ES 1234789-HpCDF	41.33	1.0830	1.0828	-0.5	7.97E+06	0.47	Y	0.85	61.5
ES OCDF	43.70	1.1451	1.1450	-0.3	1.50E+07	0.87	Y	0.81	60.8

Lab ID: B5987_18819_DF_002 **Acq'd:** 20 Jan 2022 18:30 DTF **Wt/Vol:** 10.01 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-B-1H **UTP:** 24-Jan-2022 13:18:41 MLS **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 312-725-VLG

Datafile: 220120C11 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	28.02		-	-	-	1.84E+07	0.83	Y	-	-
JS 1234-TCDF	26.47		-	-	-	2.93E+07	0.80	Y	-	-
JS 123467-HxCDD	38.17		-	-	-	7.61E+06	1.17	Y	-	-
CS 37Cl-2378-TCDD	28.70		1.0241	1.0241	0	3.15E+06	n/a	-	1.20	35.5
CS 12347-PeCDD	33.50		1.1943	1.1954	+2.2	8.59E+06	1.63	Y	0.75	61.9
CS 12346-PeCDF	32.05		1.2083	1.2106	+4.4	1.41E+07	1.62	Y	0.85	56.7
CS 123469-HxCDF	37.33		0.9778	0.9780	+0.4	1.20E+07	0.54	Y	1.12	70.3
CS 1234689-HpCDF	40.34		1.0571	1.0569	-0.5	9.47E+06	0.43	Y	0.89	70.1
~~SS 37Cl-2378-TCDD~~	~~28.70~~		~~1.0241~~	~~1.0241~~	~~0~~	~~3.15E+06~~	~~n/a~~		~~1.15~~	~~80.5~~
~~SS 12347-PeCDD~~	~~33.50~~		~~1.1943~~	~~1.1954~~	~~+2.2~~	~~8.59E+06~~	~~1.63~~	~~Y~~	~~0.86~~	~~103~~
~~SS 12346-PeCDF~~	~~32.05~~		~~1.2083~~	~~1.2106~~	~~+4.4~~	~~1.41E+07~~	~~1.62~~	~~Y~~	~~0.94~~	~~102~~
~~SS 123469-HxCDF~~	~~37.33~~		~~0.9778~~	~~0.9780~~	~~+0.4~~	~~1.20E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~112~~
~~SS 1234689-HpCDF~~	~~40.34~~		~~1.0571~~	~~1.0569~~	~~-0.5~~	~~9.47E+06~~	~~0.43~~	~~Y~~	~~0.92~~	~~111~~

Totals	Conc	EMPC
Total TCDD	27000	27000
Total PeCDD	330	341
Total HxCDD	453	463
Total HpCDD	3200	3200
Total Tetra-Octa Dioxins	55300	55400
Total TCDF	125,000	125000
Total PeCDF	7,350	7400
Total HxCDF	7,870	7870
Total HpCDF	3,170	3170
Total Tetra-Octa Furans	150,000	150000
Total Tetra-Octa Dioxins & Furans	205000	205000

Lab ID: B5987_18819_DF_002 **Acq'd:** 20 Jan 2022 18:30 DTF **Wt/Vol:** 10.01 g **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-B-1H **UTP:** 24-Jan-2022 13:18:41 MLS **J-level:** 0.499 pg/g **Split:** 1 **Checkcode:** 312-725-VLG

Datafile: 220120C11 **Report:** 24 Jan 2022 13:23 MS **Stds (pg):** JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.11		0.8755	0.8755	0	4.07E+05	0.76	Y	1.18	8.06	5208.358	1.01
1379-TCDD	25.45		0.8876	0.8873	-0.5	4.11E+05	0.83	Y	1.18	8.13	5208.358	1.01
1369-TCDD	NotFnd		0.9023						1.18		5208.358	1.01
1469-TCDD	26.63		0.9291	0.9288	-0.5	1.09E+05	0.83	Y	1.18	2.15	5208.358	1.01
1247/1246/1248/1249-TCDD	26.85		0.9373	0.9362	-1.8	9.73E+05	0.78	Y	1.18	19.2	5208.358	1.01
1378-TCDD	27.04		0.9440	0.9431	-1.5	2.55E+06	0.85	Y	1.18	50.4	5208.358	1.01
1268-TCDD	27.25	EMPC	0.9506	0.9502	-0.7	1.50E+05	0.59	N	1.18	2.97	5208.358	1.01
1478-TCDD	27.50	EMPC	0.9591	0.9589	-0.3	1.30E+06	0.91	N	1.18	25.7	5208.358	1.01
1279-TCDD	NotFnd		0.9649						1.18		5208.358	1.01
1234/1269-TCDD	28.02	EMPC	0.9771	0.9770	-0.2	3.08E+05	0.96	N	1.18	6.09	5208.358	1.01
1236-TCDD	28.19		0.9820	0.9831	+1.9	1.51E+05	0.75	Y	1.18	2.98	5208.358	1.01
1237/1238-TCDD	28.42		0.9908	0.9909	+0.2	1.67E+07	0.80	Y	1.18	329	5208.358	1.01
1239-TCDD	NotFnd		0.9954						1.18		5208.358	1.01
2378-TCDD	**28.70**	E	**1.0008**	1.0008	**0**	1.21E+09	0.80	Y	**1.18**	**24,000**	**5208.358**	**1.01**
1278-TCDD	29.03	E	1.0121	1.0123	+0.3	1.25E+08	0.80	Y	1.18	2,470	5208.358	1.01
1267-TCDD	29.17		1.0167	1.0173	+1.1	2.84E+06	0.74	Y	1.18	56.1	5208.358	1.01
1289-TCDD	29.70		1.0341	1.0357	+2.9	1.45E+06	0.82	Y	1.18	28.6	5208.358	1.01
12479/12468-PeCDD	31.54		0.9273	0.9277	+0.8	1.17E+06	1.54	Y	1.04	23.3	3438.583	0.612
12469-PeCDD	32.08		0.9430	0.9435	+1.0	3.33E+05	1.50	Y	1.04	6.64	3438.583	0.612
12368-PeCDD	32.61		0.9592	0.9591	-0.2	1.26E+06	1.48	Y	1.04	25.2	3438.583	0.612
12478-PeCDD	32.79		0.9647	0.9646	-0.2	8.55E+05	1.59	Y	1.04	17	3438.583	0.612
12379-PeCDD	32.90	EMPC	0.9676	0.9678	+0.4	3.36E+05	1.94	N	1.04	6.69	3438.583	0.612
12369/12467/12489-PeCDD	33.16		0.9752	0.9753	+0.2	3.66E+05	1.38	Y	1.04	7.29	3438.583	0.612
12346/12347-PeCDD	33.52		0.9860	0.9861	+0.2	2.90E+05	1.41	Y	1.04	5.77	3438.583	0.612
12378-PeCDD	34.01		**1.0006**	**1.0005**	**-0.2**	**1.18E+07**	**1.63**	**Y**	**1.04**	**235**	**3438.583**	**0.612**
12367-PeCDD	34.11		1.0034	1.0034	0	4.94E+05	1.77	Y	1.04	9.84	3438.583	0.612
12389-PeCDD	34.45	EMPC	1.0134	1.0134	0	1.99E+05	1.86	N	1.04	3.96	3438.583	0.612
124679/124689-HxCDD	36.15		0.9545	0.9547	+0.4	7.52E+06	1.32	Y	1.10	166	7228.417	1.28
123468-HxCDD	36.79		0.9715	0.9717	+0.4	1.04E+06	1.25	Y	1.10	22.9	7228.417	1.28
123679/123689-HxCDD	37.08		0.9793	0.9794	+0.2	7.71E+06	1.28	Y	1.10	170	7228.417	1.28
123469-HxCDD	37.22	EMPC	0.9829	0.9831	+0.4	4.53E+05	1.48	N	1.10	9.98	7228.417	1.28
123478-HxCDD	37.88		**1.0004**	**1.0003**	**-0.2**	**5.10E+05**	**1.19**	**Y**	1.09	**11.5**	**7228.417**	**1.34**
123678-HxCDD	37.99		**1.0034**	**1.0034**	**0**	**2.65E+06**	**1.23**	**Y**	1.15	**58.8**	**7228.417**	**1.31**
123467-HxCDD	38.17		1.0082	1.0082	0	2.13E+05	1.37	Y	1.10	4.69	7228.417	1.28
123789-HxCDD	38.28		**1.0109**	**1.0110**	**+0.2**	**9.34E+05**	**1.35**	**Y**	1.05	**20.1**	**7228.417**	**1.2**

Lab ID: B5987_18819_DF_002 | Acq'd: 20 Jan 2022 18:30 DTF | Wt/Vol: 10.01 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-B-1H | UTP: 24-Jan-2022 13:18:41 MLS | J-level: 0.499 pg/g | Split: 1 | Checkcode: 312-725-VLG

Datafile: 220120C11 | Report: 24 Jan 2022 13:23 MS | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

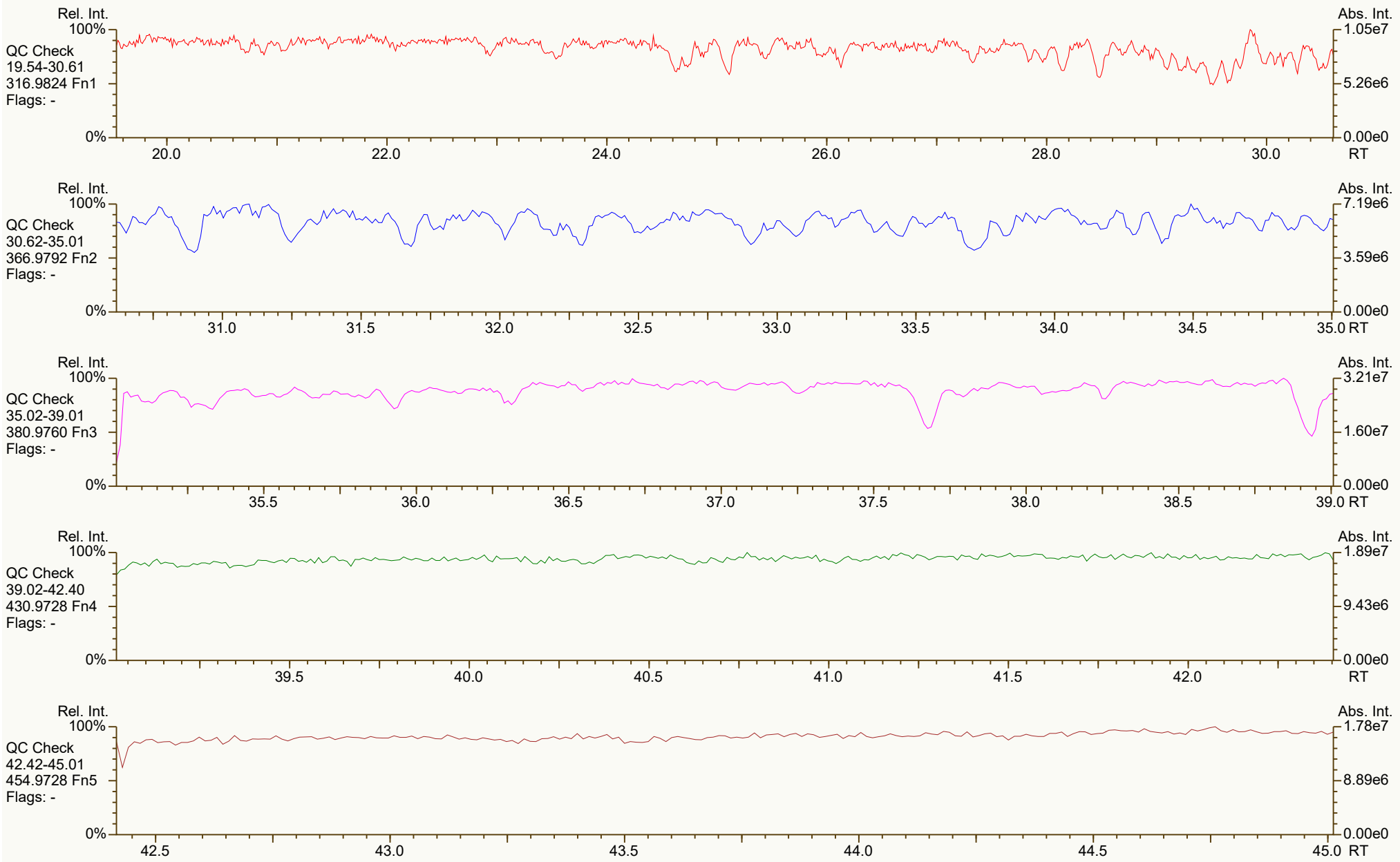
Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.20		0.9838	0.9839	+0.2	6.69E+07	1.06	Y	1.06	1,600	6026.772	0.997
1234678-HpCDD	**40.88**		**1.0003**	**1.0003**	**0**	**6.72E+07**	**1.05**	**Y**	**1.06**	**1,610**	**6026.772**	**0.997**
OCDD	**43.53**	**E**	**1.0002**	**1.0003**	**+0.3**	**6.87E+08**	**0.91**	**Y**	**1.13**	**24,400**	**4932.831**	**1.75**
OCDD-a	43.53	E	1.0002	1.0003	+0.3	4.23E+07	2.52	Y	0.07	23,500	5038.302	27.9
1368-TCDF	23.01	EMPC	0.8282	0.8269	-1.8	2.79E+05	1.01	N	1.08	5.01	6134.039	1.31
1468-TCDF	23.59		0.8485	0.8478	-1.0	3.15E+06	0.75	Y	1.08	56.5	6134.039	1.31
2468-TCDF	24.21		0.8709	0.8703	-0.9	3.83E+06	0.78	Y	1.08	68.7	6134.039	1.31
1346/1246-TCDF	24.60		0.8829	0.8840	+1.6	7.92E+05	0.71	Y	1.08	14.2	6134.039	1.31
1347/1378/1247-TCDF	24.75		0.8884	0.8894	+1.5	1.51E+07	0.81	Y	1.08	271	6134.039	1.31
1348-TCDF	24.98		0.8980	0.8978	-0.3	5.09E+06	0.80	Y	1.08	91.4	6134.039	1.31
1248/1367/1379-TCDF	25.09		0.9026	0.9019	-1.1	4.39E+07	0.79	Y	1.08	787	6134.039	1.31
1268-TCDF	25.48		0.9158	0.9158	0	2.15E+07	0.81	Y	1.08	385	6134.039	1.31
1467-TCDF	25.61		0.9206	0.9203	-0.5	7.34E+06	0.83	Y	1.08	132	6134.039	1.31
1478-TCDF	25.78		0.9266	0.9264	-0.3	5.41E+07	0.80	Y	1.08	971	6134.039	1.31
1369/1237-TCDF	26.16		0.9397	0.9402	+0.8	2.10E+07	0.80	Y	1.08	377	6134.039	1.31
2467-TCDF	26.26		0.9440	0.9438	-0.3	7.19E+06	0.79	Y	1.08	129	6134.039	1.31
2368-TCDF	26.40		0.9497	0.9489	-1.3	5.36E+07	0.77	Y	1.08	962	6134.039	1.31
1238/1234/1678/1469/1236-TCDF	26.48	E	0.9528	0.9517	-1.7	1.45E+08	0.80	Y	1.08	2,590	6134.039	1.31
1278-TCDF	26.95	E	0.9690	0.9686	-0.6	1.61E+09	0.80	Y	1.08	28,900	6134.039	1.31
1349-TCDF	NotFnd		0.9730						1.08		6134.039	1.31
1267-TCDF	27.22		0.9787	0.9783	-0.7	4.57E+07	0.80	Y	1.08	820	6134.039	1.31
2346/1249-TCDF	27.40		0.9850	0.9850	0	1.17E+07	0.81	Y	1.08	210	6134.039	1.31
2347/1279-TCDF	27.61	E	0.9929	0.9925	-0.7	5.88E+07	0.77	Y	1.08	1,050	6134.039	1.31
2348-TCDF	27.72	E	0.9970	0.9963	-1.2	1.88E+08	0.79	Y	1.08	3,370	6134.039	1.31
2378-TCDF	**27.84**	E	**1.0008**	**1.0007**	**-0.2**	**3.80E+09**	**0.80**	**Y**	**1.08**	**68,200**	**6134.039**	**1.31**
2367/3467-TCDF	28.20	E	1.0136	1.0136	0	3.97E+08	0.80	Y	1.08	7,120	6134.039	1.31
1269-TCDF	28.45		1.0221	1.0226	+0.9	2.31E+07	0.80	Y	1.08	414	6134.039	1.31
1239-TCDF	28.71		1.0319	1.0318	-0.2	4.15E+06	0.81	Y	1.08	74.4	6134.039	1.31
1289-TCDF	29.87	E	1.0740	1.0737	-0.5	4.54E+08	0.79	Y	1.08	8,150	6134.039	1.31
13468/12468-PeCDF	29.81		0.9145	0.9153	+1.4	6.45E+06	1.75	Y	1.02	90.7	3978.638	0.598
13678/13467/12467-PeCDF	31.35		0.9619	0.9624	+0.9	2.81E+06	1.56	Y	1.02	39.5	9240.84	1.39
12368/13478/12478-PeCDF	31.50		0.9665	0.9671	+1.1	8.34E+07	1.54	Y	1.02	1,170	9240.84	1.39
14678-PeCDF	NotFnd		0.9695						1.02		9240.84	1.39
13479-PeCDF	NotFnd		0.9724						1.02		9240.84	1.39
13469/12479-PeCDF	NotFnd		0.9801						1.02		9240.84	1.39
12346-PeCDF	32.05		0.9842	0.9841	-0.2	3.66E+05	1.63	Y	1.02	5.14	9240.84	1.39

Lab ID: B5987_18819_DF_002 | Acq'd: 20 Jan 2022 18:30 DTF | Wt/Vol: 10.01 g | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 11215131-120621-S-JC-SC-B-1H | UTP: 24-Jan-2022 13:18:41 MLS | J-level: 0.499 pg/g | Split: 1 | Checkcode: 312-725-VLG

Datafile: 220120C11 | Report: 24 Jan 2022 13:23 MS | Stds (pg): JS: 2000 ES: 2000 CS/SS: 2000, 800 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	32.14	EMPC	0.9868	0.9869	+0.2	3.72E+06	1.79	N	1.02	52.3	9240.84	1.39
12347-PeCDF	32.23		0.9895	0.9896	+0.2	3.56E+06	1.47	Y	1.02	50	9240.84	1.39
12348-PeCDF	32.38		0.9941	0.9942	+0.2	1.92E+07	1.55	Y	1.02	270	9240.84	1.39
12378-PeCDF	**32.59**		**1.0005**	**1.0005**	**0**	**2.10E+08**	**1.55**	**Y**	**1.02**	**2,760**	**9240.84**	**1.21**
12678/12367-PeCDF	32.87		1.0090	1.0092	+0.4	6.01E+07	1.57	Y	1.02	844	9240.84	1.39
12379-PeCDF	NotFnd		1.0142						1.02		9240.84	1.39
12679-PeCDF	33.42		0.9931	0.9926	-1.0	4.62E+05	1.53	Y	1.02	6.49	9240.84	1.39
23467/12369-PeCDF	33.55		0.9966	0.9964	-0.4	2.68E+06	1.58	Y	1.02	37.7	9240.84	1.39
23478-PeCDF	**33.70**		**1.0005**	**1.0008**	**+0.6**	**1.30E+08**	**1.56**	**Y**	**1.02**	**1,960**	**9240.84**	**1.59**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		9240.84	1.39
12349-PeCDF	NotFnd		1.0101						1.02		9240.84	1.39
12389-PeCDF	34.74		1.0322	1.0318	-0.8	8.10E+06	1.65	Y	1.02	114	9240.84	1.39
123468-HxCDF	35.52		0.9627	0.9636	+1.9	3.84E+06	1.24	Y	1.19	58.8	17413.547	2.43
124678/134678-HxCDF	35.71		0.9684	0.9687	+0.6	3.03E+07	1.24	Y	1.19	464	17413.547	2.43
134679-HxCDF	NotFnd		0.9747						1.19		17413.547	2.43
124679-HxCDF	36.12		0.9802	0.9798	-0.9	5.40E+05	1.27	Y	1.19	8.27	17413.547	2.43
124689-HxCDF	36.35		0.9858	0.9861	+0.7	1.88E+07	1.26	Y	1.19	289	17413.547	2.43
123467-HxCDF	36.76		0.9972	0.9970	-0.4	1.98E+06	1.21	Y	1.19	30.3	17413.547	2.43
123478-HxCDF	**36.88**	E	**1.0004**	**1.0004**	**0**	**3.75E+08**	**1.26**	**Y**	**1.27**	**5,020**	**17413.547**	**2.1**
123678-HxCDF	**37.02**		**1.0004**	**1.0005**	**+0.2**	**9.45E+07**	**1.25**	**Y**	**1.15**	**1,270**	**17413.547**	**2.24**
123479-HxCDF	37.19		1.0051	1.0049	-0.4	1.30E+06	1.14	Y	1.19	19.9	17413.547	2.43
123469-HxCDF	37.35		1.0091	1.0093	+0.4	1.18E+06	1.42	Y	1.19	18	17413.547	2.43
123679-HxCDF	37.47		0.9943	0.9942	-0.2	5.79E+05	1.15	Y	1.19	8.87	17413.547	2.43
234678-HxCDF	**37.71**		**1.0004**	**1.0005**	**+0.2**	**1.42E+07**	**1.23**	**Y**	**1.19**	**285**	**17413.547**	**3.47**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		17413.547	2.43
123789-HxCDF	**NotFnd**		**1.0004**						**1.16**		**17413.547**	**2.23**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	38.65		1.0007	1.0010	+0.7	2.60E+07	1.23	Y	1.19	398	17413.547	2.43
1234678-HpCDF	**39.95**		**1.0002**	**1.0003**	**+0.2**	**1.10E+08**	**1.03**	**Y**	**1.37**	**1,720**	**6886.89**	**0.733**
1234679-HpCDF	40.21		1.0067	1.0068	+0.2	1.92E+06	1.11	Y	1.34	33.3	6886.89	0.894
1234689-HpCDF	40.35		1.0101	1.0103	+0.5	4.65E+07	1.01	Y	1.34	803	6886.89	0.894
1234789-HpCDF	**41.34**		**1.0003**	**1.0002**	**-0.2**	**3.21E+07**	**1.04**	**Y**	**1.31**	**615**	**6886.89**	**1.09**
OCDF	**43.71**		**1.0002**	**1.0003**	**+0.3**	**2.46E+08**	**0.89**	**Y**	**1.07**	**6,130**	**4163.059**	**1.02**
OCDF-a	43.71		1.0002	1.0003	+0.3	1.53E+07	2.38	Y	0.07	6,170	5020.45	19.8


Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
Abs. Int.
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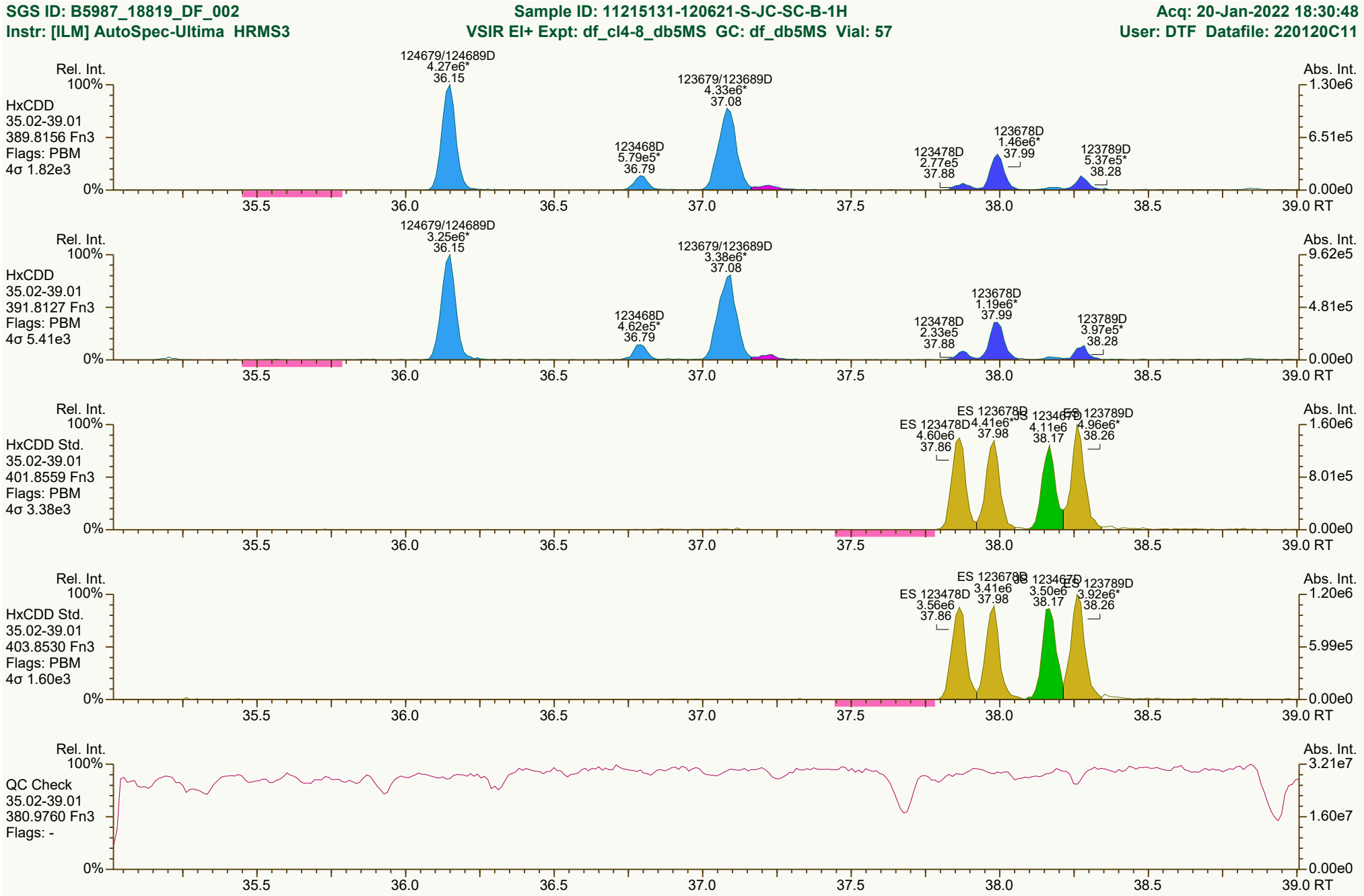
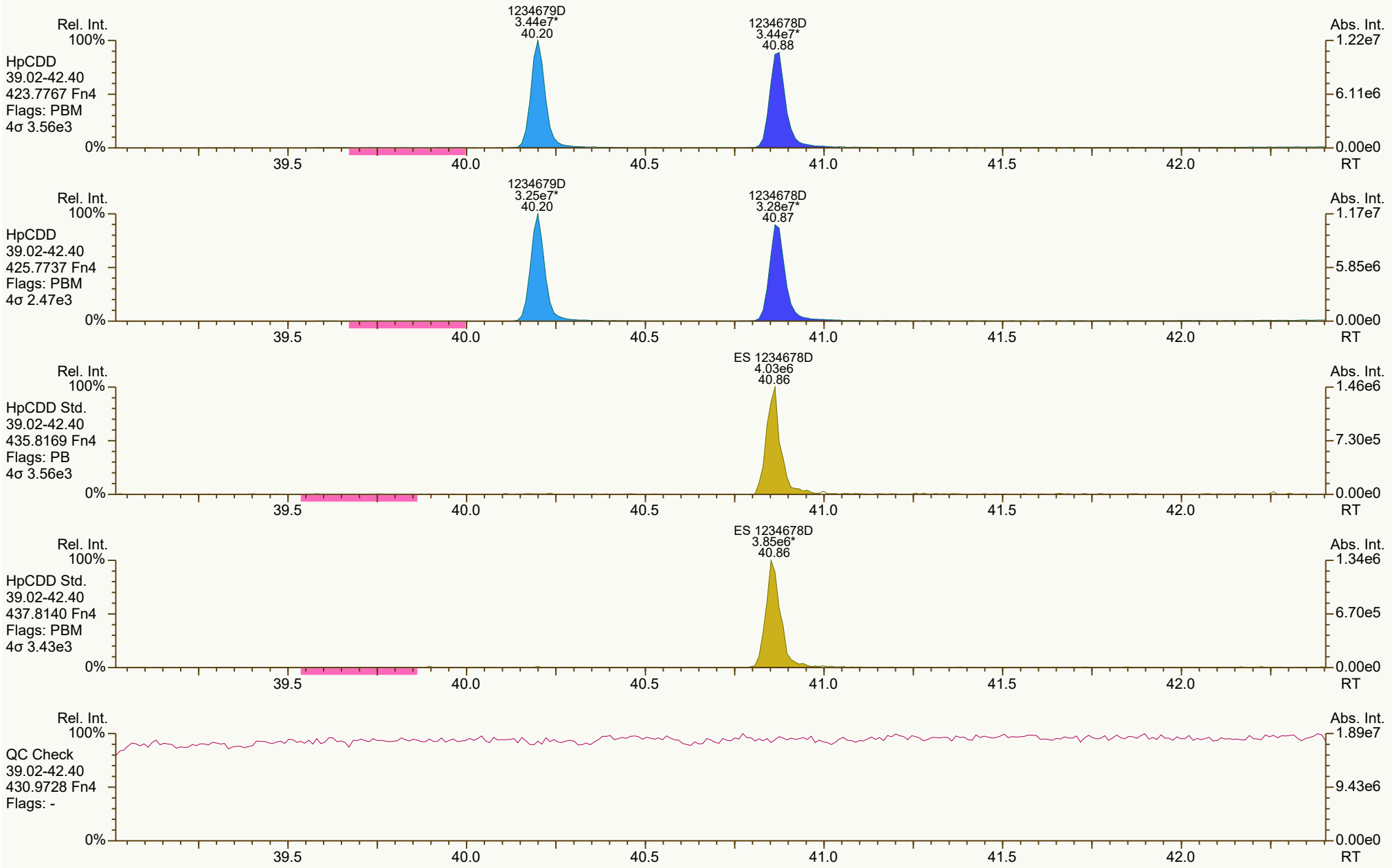
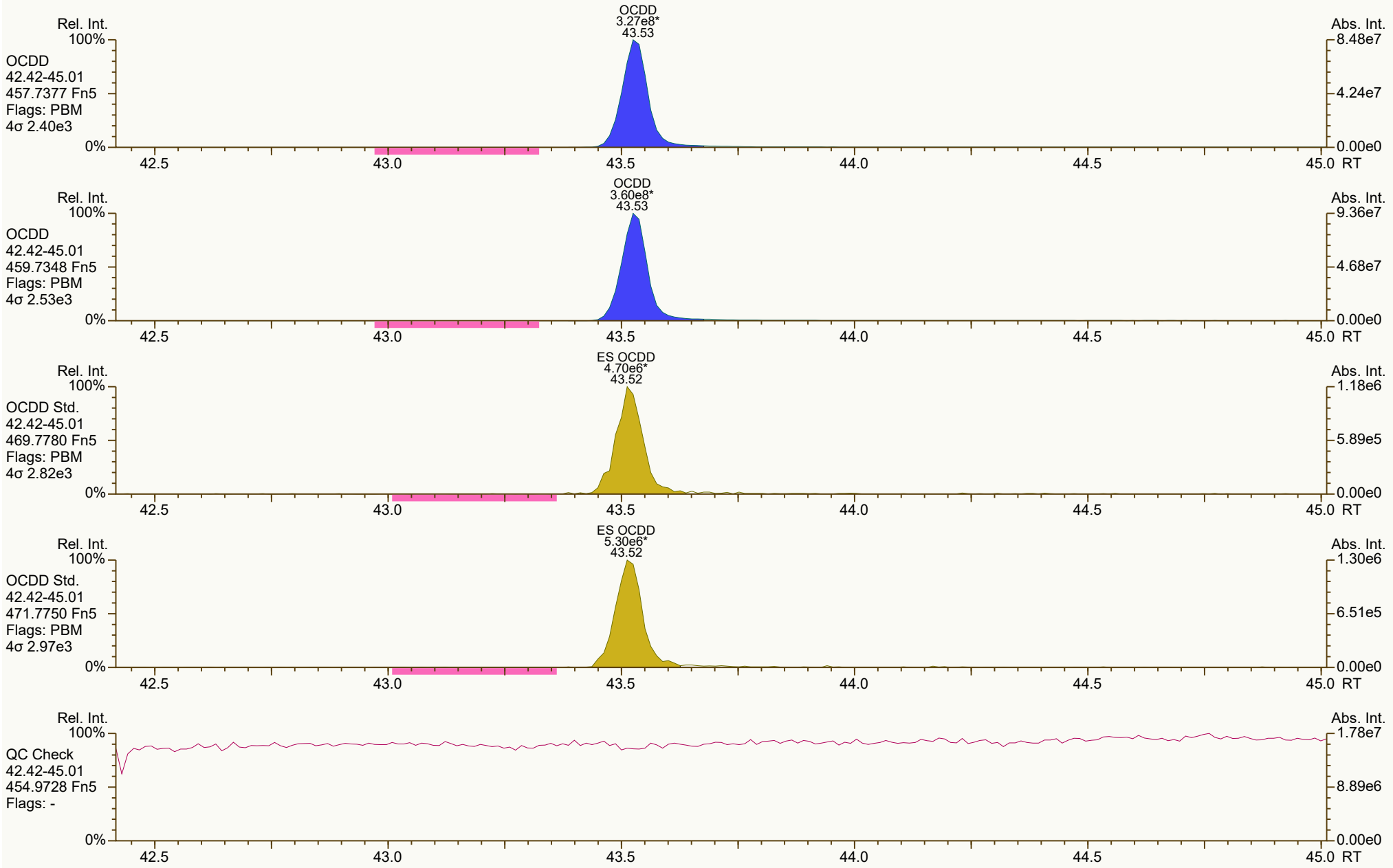
5.26e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.19e6
3.59e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.21e7
1.60e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.89e7
9.43e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.78e7
8.89e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

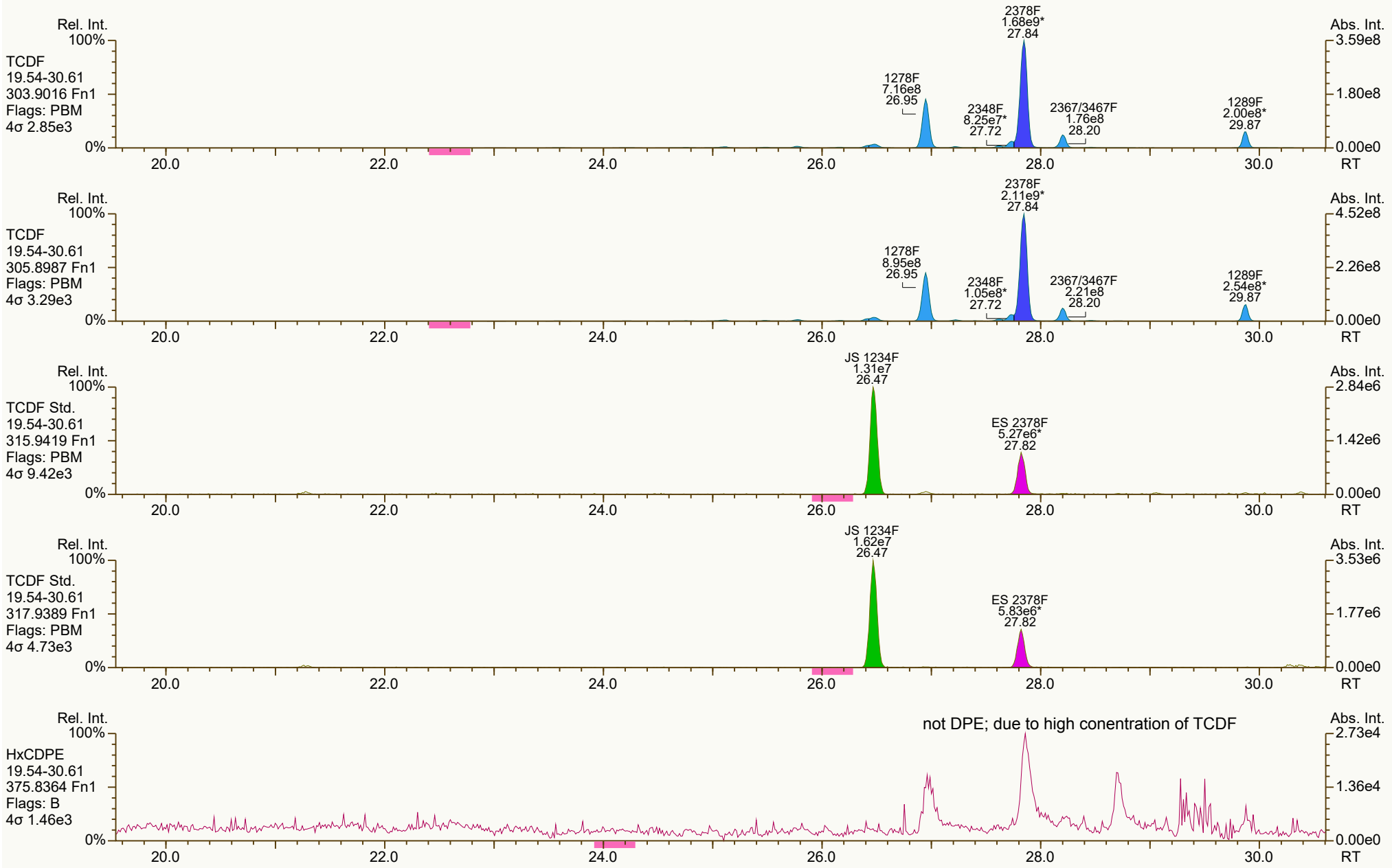

Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 3.07e3
0%
2378D
5.39e8*
28.70
1278D
5.54e7*
29.03
Abs. Int.
1.29e8
6.47e7
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.14e3
0%
2378D
6.74e8*
28.70
1278D
6.96e7*
29.03
Abs. Int.
1.64e8
8.21e7
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 2.45e3
0%
CS 37Cl-2378D
9.48e6
28.70
Abs. Int.
2.21e6
1.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PBM
4σ 7.90e3
0%
JS 1234D
8.35e6
28.02
ES 2378D
3.67e6*
28.68
Abs. Int.
1.91e6
9.53e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 4.98e3
0%
JS 1234D
1.01e7
28.02
ES 2378D
4.86e6
28.68
Abs. Int.
2.23e6
1.12e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
Abs. Int.
PeCDD
30.62-35.01
355.8546 Fn2
Flags: PBM
4σ 2.08e3
12479/12468D
7.08e5
31.54
12368D
7.55e5
32.61
12478D
5.24e5
32.79
12378D
7.31e6*
34.01
12367D
3.16e5*
34.11
PeCDD
30.62-35.01
357.8517 Fn2
Flags: PBM
4σ 1.36e3
12479/12468D
4.61e5
31.54
12368D
5.10e5
32.60
12478D
3.31e5*
32.79
12378D
4.50e6*
34.01
12367D
1.78e5*
34.11
PeCDD Std.
30.62-35.01
367.8949 Fn2
Flags: PBM
4σ 2.22e3
CS 12347D
5.33e6
33.50
ES 12378D
5.98e6*
33.99
PeCDD Std.
30.62-35.01
369.8919 Fn2
Flags: PBM
4σ 2.42e3
CS 12347D
3.26e6
33.50
ES 12378D
3.70e6*
33.99
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
2.08e6
1.04e6
0.00e0
1.22e6
6.10e5
1.68e6
8.38e5
1.06e6
5.30e5
7.19e6
3.59e6


SGS ID: B5987_18819_DF_002
Sample ID: 11215131-120621-S-JC-SC-B-1H
Acq: 20-Jan-2022 18:30:48
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220120C11
Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.82e3
124679/124689D
4.27e6*
36.15
123679/123689D
4.33e6*
37.08
123468D
5.79e5*
36.79
123678D
1.46e6*
37.99
123478D
2.77e5
37.88
123789D
5.37e5*
38.28
1.30e6
6.51e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 5.41e3
124679/124689D
3.25e6*
36.15
123679/123689D
3.38e6*
37.08
123468D
4.62e5*
36.79
123678D
1.19e6*
37.99
123478D
2.33e5
37.88
123789D
3.97e5*
38.28
9.62e5
4.81e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.38e3
ES 123478D
4.60e6
37.86
ES 123678D
4.41e6*
37.98
123467D
4.11e6
38.17
ES 123789D
4.96e6*
38.26
1.60e6
8.01e5
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 1.60e3
ES 123478D
3.56e6
37.86
ES 123678D
3.41e6
37.98
123467D
3.50e6
38.17
ES 123789D
3.92e6*
38.26
1.20e6
5.99e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.21e7
1.60e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\B5987_18819_DF_002.utp_res, saved 24-Jan-2022 13:18 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 2432, 9578 scc: 312-725
PKD: 24-Jan-2022 13:07 Printed: 24-Jan-2022 13:28 Page 4 of 12

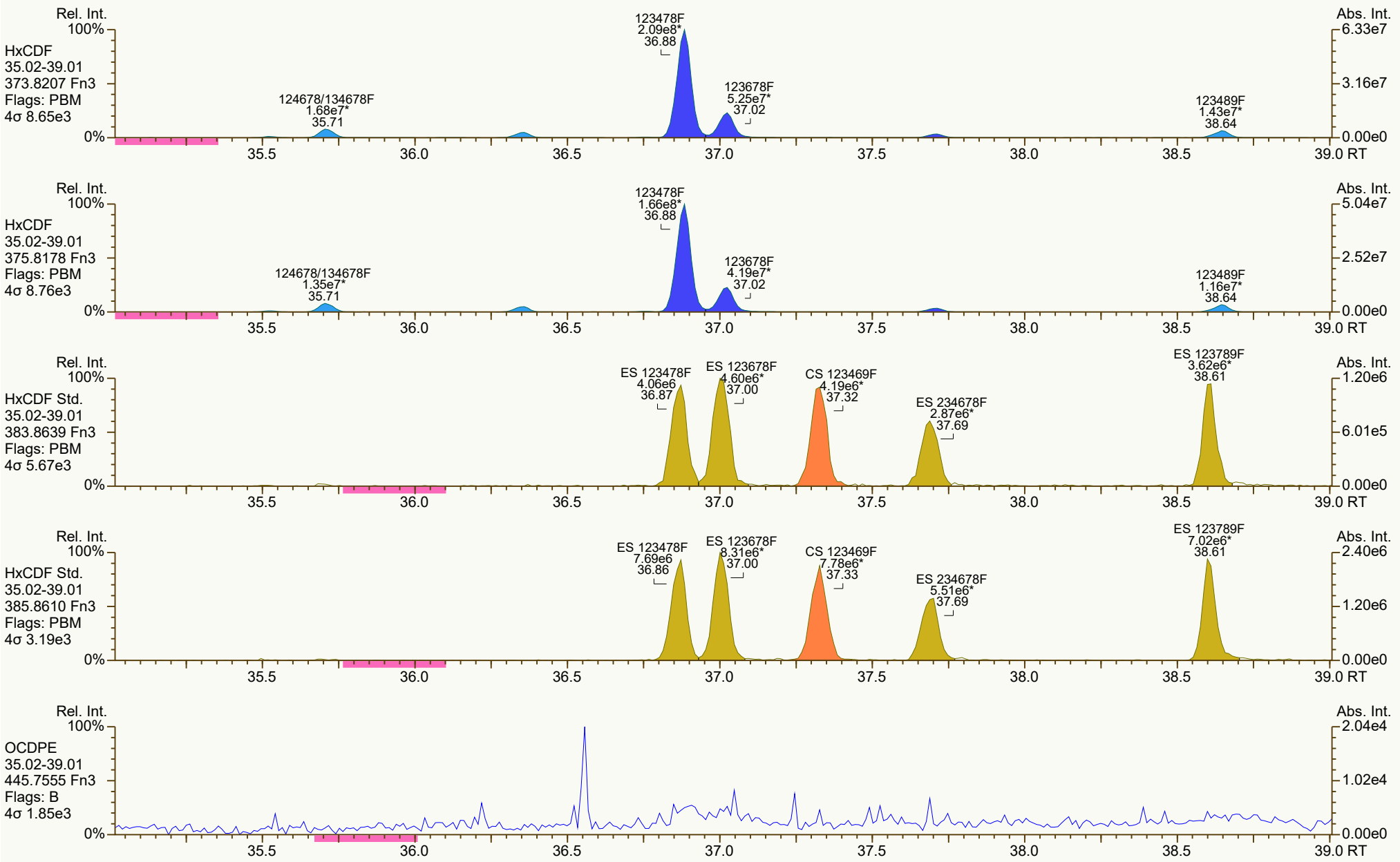

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 3.56e3
1234679D
3.44e7*
40.20
1234678D
3.44e7*
40.88
Abs. Int.
1.22e7
6.11e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 2.47e3
1234679D
3.25e7*
40.20
1234678D
3.28e7*
40.87
Abs. Int.
1.17e7
5.85e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PB
4σ 3.56e3
ES 1234678D
4.03e6
40.86
Abs. Int.
1.46e6
7.30e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 3.43e3
ES 1234678D
3.85e6*
40.86
Abs. Int.
1.34e6
6.70e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.89e7
9.43e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

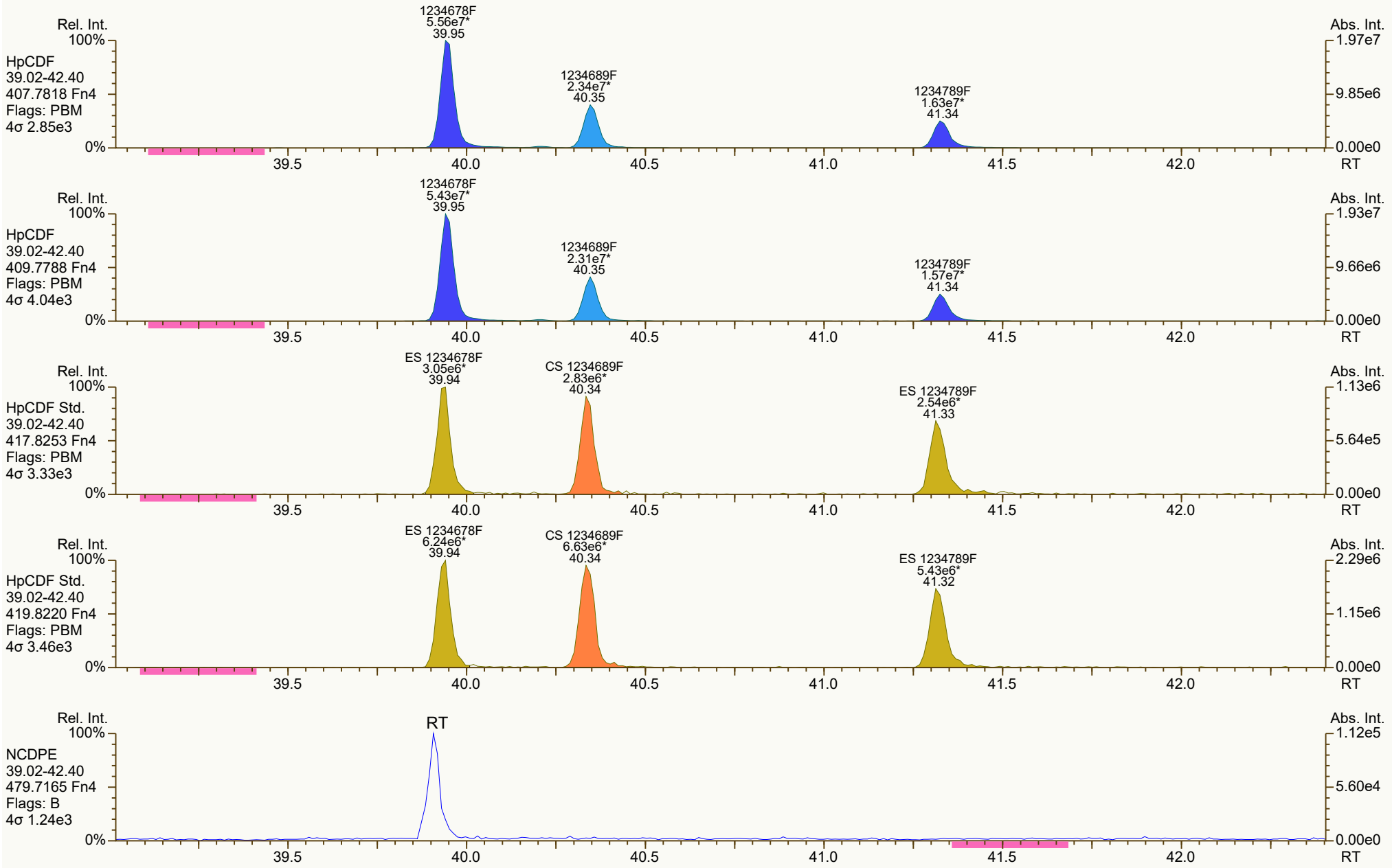

OCDD
3.27e8*
43.53
Rel. Int.
Abs. Int.
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 2.40e3
OCDD
3.60e8*
43.53
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 2.53e3
ES OCDD
4.70e6*
43.52
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.82e3
ES OCDD
5.30e6*
43.52
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 2.97e3
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 2.85e3
0%
2378F
1.68e9*
27.84
1278F
7.16e8
26.95
2348F
8.25e7*
27.72
2367/3467F
1.76e8
28.20
1289F
2.00e8*
29.87
Abs. Int.
3.59e8
1.80e8
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 3.29e3
0%
2378F
2.11e9*
27.84
1278F
8.95e8
26.95
2348F
1.05e8*
27.72
2367/3467F
2.21e8
28.20
1289F
2.54e8*
29.87
Abs. Int.
4.52e8
2.26e8
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 9.42e3
0%
JS 1234F
1.31e7
26.47
ES 2378F
5.27e6*
27.82
Abs. Int.
2.84e6
1.42e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 4.73e3
0%
JS 1234F
1.62e7
26.47
ES 2378F
5.83e6*
27.82
Abs. Int.
3.53e6
1.77e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.46e3
0%
not DPE; due to high conentration of TCDF
Abs. Int.
2.73e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


SGS ID: B5987_18819_DF_002
Sample ID: 11215131-120621-S-JC-SC-B-1H
Acq: 20-Jan-2022 18:30:48
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 57
User: DTF Datafile: 220120C11
Rel. Int.
100%
0%
Abs. Int.
1.03e6
5.14e5
0.00e0
13468/12468F
4.10e6*
29.81
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PBM
4σ 1.82e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
6.06e5
3.03e5
0.00e0
13468/12468F
2.35e6*
29.81
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PBM
4σ 2.16e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.05e7
5.26e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT
Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\B5987_18819_DF_002.utp_res, saved 24-Jan-2022 13:18 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 4694 scc: 312-725
PKD: 24-Jan-2022 13:18 Printed: 24-Jan-2022 13:28 Page 8 of 12


Rel. Int.
100%
PeCDF-2
30.62-35.01
339.8597 Fn2
Flags: PBM
4σ 4.74e3
12368F...[3]
5.06e7*
31.50
12348F
1.17e7*
32.38
12378F
1.27e8
32.59
12678/12367F
3.67e7
32.87
23478F
7.93e7*
33.70
PR
Abs. Int.
3.41e7
1.70e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.01
341.8568 Fn2
Flags: PBM
4σ 4.50e3
12368F...[3]
3.28e7*
31.50
12348F
7.53e6*
32.38
12378F
8.23e7
32.59
12678/12367F
2.33e7
32.87
23478F
5.09e7*
33.70
Abs. Int.
2.25e7
1.13e7
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.01
351.9000 Fn2
Flags: PBM
4σ 3.99e3
CS 12346F
8.74e6*
32.05
ES 12378F
9.02e6
32.57
ES 23478F
8.02e6*
33.67
Abs. Int.
2.41e6
1.20e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.01
353.8970 Fn2
Flags: PBM
4σ 2.46e3
CS 12346F
5.38e6*
32.05
ES 12378F
5.76e6
32.57
ES 23478F
5.00e6*
33.67
Abs. Int.
1.54e6
7.71e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.01
409.7974 Fn2
Flags: B
4σ 1.45e3
Abs. Int.
1.84e4
9.18e3
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 8.65e3
123478F
2.09e8*
36.88
123678F
5.25e7*
37.02
124678/134678F
1.68e7*
35.71
123489F
1.43e7*
38.64
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 8.76e3
123478F
1.66e8*
36.88
123678F
4.19e7*
37.02
124678/134678F
1.35e7*
35.71
123489F
1.16e7*
38.64
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 5.67e3
ES 123478F
4.06e6
36.87
ES 123678F
4.60e6*
37.00
CS 123469F
4.19e6*
37.32
ES 234678F
2.87e6*
37.69
ES 123789F
3.62e6*
38.61
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 3.19e3
ES 123478F
7.69e6
36.86
ES 123678F
8.31e6*
37.00
CS 123469F
7.78e6*
37.33
ES 234678F
5.51e6*
37.69
ES 123789F
7.02e6*
38.61
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.85e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.85e3
1234678F
5.56e7*
39.95
1234689F
2.34e7*
40.35
1234789F
1.63e7*
41.34
Abs. Int.
1.97e7
9.85e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 4.04e3
1234678F
5.43e7*
39.95
1234689F
2.31e7*
40.35
1234789F
1.57e7*
41.34
Abs. Int.
1.93e7
9.66e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 3.33e3
ES 1234678F
3.05e6*
39.94
CS 1234689F
2.83e6*
40.34
ES 1234789F
2.54e6*
41.33
Abs. Int.
1.13e6
5.64e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 3.46e3
ES 1234678F
6.24e6*
39.94
CS 1234689F
6.63e6*
40.34
ES 1234789F
5.43e6*
41.32
Abs. Int.
2.29e6
1.15e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.24e3
RT
Abs. Int.
1.12e5
5.60e4
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT


OCDF
1.16e8
43.71
Rel. Int.
Abs. Int.
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 2.05e3
OCDF
1.30e8
43.71
OCDF
42.42-45.01
443.7398 Fn5
Flags: PB
4σ 2.11e3
ES OCDF
6.97e6*
43.70
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 1.99e3
ES OCDF
7.99e6*
43.70
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 2.20e3
DCDPE
42.42-45.01
513.6775 Fn5
Flags: B
4σ 1.46e3
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0
RT

REVIEWED
Megan_Shannahan , 1/24/2022, 1:30:48 PM

SGS Environmental Services — Run Log

Project: B5987_18819_DF

Instrument: HRMS3 (AutoSpec-Ultima)

MS Experiment: df_cl4-8_db5MS

GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
1	220120C01	3	CS3_220120_DF_CA	1.00	SIL 25-347-1	DTF, MLS	343-977	20-Jan-2022	10:26:30
2	220120C02	50	OPR1_18819_DF	1.00	0_18819_OPR001	DTF, MLS	697-611	20-Jan-2022	11:32:05
3	220120C03	51	OPR2_18819_DF	1.00	0_18819_OPR002	DTF, MLS	751-300	20-Jan-2022	12:20:14
4	220120C04	2	SBS_220120_DF_CA	1.00	20-61-1	DTF	981-901	20-Jan-2022	13:06:33
5	220120C05	49	MB1_18819_DF_SDS	10.00	Method Blank	DTF, MLS	248-046	20-Jan-2022	13:52:51
6	220120C10	56	B5987_18819_DF_001	10.10	11215131-120321-S-JC-SW-B-6H	DTF, MLS	131-299	20-Jan-2022	17:44:30
7	220120C11	57	B5987_18819_DF_002	10.01	11215131-120621-S-JC-SC-B-1H	DTF, MLS	312-725	20-Jan-2022	18:30:48

REVIEWED
Tamara Burkamper , 1/24/2022, 2:14:29 PM

Dioxin/Furan QC Summary		Acq'd: 20 Jan 2022 10:26 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS3_220120_DF_CA		UTP: 24-Jan-2022 13:18:39 MLS				Checkcode: 343-977-NFN	
Sample ID: SIL 25-347-1		Report: 24 Jan 2022 13:20 MS				Datafile: 220120C01	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	28.65	1.80E+06	0.84	Y	1.18	1.29	9%
12378-PeCDD	33.95	7.00E+06	1.54	Y	1.04	1.07	3%
123478-HxCDD	37.84	6.03E+06	1.27	Y	1.09	1.16	7%
123678-HxCDD	37.96	6.80E+06	1.19	Y	1.15	1.23	7%
123789-HxCDD	38.24	6.39E+06	1.29	Y	1.05	1.02	-2%
1234678-HpCDD	40.86	5.82E+06	1.01	Y	1.06	1.10	3%
OCDD	43.50	8.90E+06	0.91	Y	1.13	1.19	6%
2378-TCDF	27.80	2.80E+06	0.78	Y	1.08	1.15	6%
12378-PeCDF	32.51	1.18E+07	1.56	Y	1.02	1.10	7%
23478-PeCDF	33.62	1.13E+07	1.58	Y	1.02	1.05	3%
123478-HxCDF	36.83	1.06E+07	1.22	Y	1.27	1.34	6%
123678-HxCDF	36.98	1.14E+07	1.27	Y	1.15	1.19	3%
234678-HxCDF	37.66	1.09E+07	1.31	Y	1.19	1.27	7%
123789-HxCDF	38.60	9.04E+06	1.28	Y	1.16	1.26	8%
1234678-HpCDF	39.93	9.31E+06	1.01	Y	1.37	1.39	1%
1234789-HpCDF	41.32	7.60E+06	1.02	Y	1.31	1.37	5%
OCDF	43.70	1.34E+07	0.92	Y	1.07	1.17	9%
ES 2378-TCDD	28.63	1.39E+07	0.82	Y	1.05	1.00	-4%
ES 12378-PeCDD	33.932	1.31E+07	1.55	Y	0.88	0.94	7%
ES 123478-HxCDD	37.822	1.04E+07	1.27	Y	0.97	0.95	-2%
ES 123678-HxCDD	37.938	1.11E+07	1.21	Y	0.94	1.02	8%
ES 123789-HxCDD	38.227	1.25E+07	1.33	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.846	1.06E+07	1.06	Y	0.91	0.97	7%
ES OCDD	43.494	1.49E+07	0.89	Y	0.62	0.68	10%
ES 2378-TCDF	27.78	2.44E+07	0.80	Y	1.06	0.99	-7%
ES 12378-PeCDF	32.493	2.14E+07	1.56	Y	0.91	0.87	-5%
ES 23478-PeCDF	33.598	2.16E+07	1.58	Y	0.88	0.87	-1%
ES 123478-HxCDF	36.817	1.57E+07	0.55	Y	1.20	1.44	20%
ES 123678-HxCDF	36.961	1.92E+07	0.54	Y	1.35	1.76	30% *
ES 234678-HxCDF	37.644	1.71E+07	0.54	Y	1.24	1.57	27%
ES 123789-HxCDF	38.576	1.44E+07	0.53	Y	1.16	1.32	14%
ES 1234678-HpCDF	39.914	1.34E+07	0.47	Y	0.97	1.23	27%
ES 1234789-HpCDF	41.307	1.11E+07	0.45	Y	0.85	1.02	20%
ES OCDF	43.683	2.29E+07	0.92	Y	0.81	1.05	30%

***meets M1613B criteria**
TB 01/24/2022

Dioxin/Furan QC Summary	Acq'd: 20 Jan 2022 10:26 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_220120_DF_CA	UTP: 24-Jan-2022 13:18:39 MLS	Checkcode: 343-977-NFN
Sample ID: SIL 25-347-1	Report: 24 Jan 2022 13:20 MS	Datafile: 220120C01

Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	27.97	1.39E+07	0.85	Y	-	-	-
JS 1234-TCDF	26.43	2.47E+07	0.81	Y	-	-	-
JS 123467-HxCDD	38.12	5.44E+06	1.26	Y	-	-	-
CS 37Cl-2378-TCDD	28.65	1.89E+06	n/a	-	1.20	1.36	13%
CS 12347-PeCDD	33.43	1.20E+07	1.57	Y	0.75	0.86	15%
CS 12346-PeCDF	31.96	2.09E+07	1.65	Y	0.85	0.85	0%
CS 123469-HxCDF	37.28	1.70E+07	0.55	Y	1.12	1.56	40%
CS 1234689-HpCDF	40.31	1.45E+07	0.46	Y	0.89	1.33	50%
~~SS 37Cl-2378-TCDD~~	~~28.65~~	~~1.09E+06~~	~~n/a~~	~~-~~	~~1.15~~	~~1.36~~	~~18%~~
~~SS 12347-PeCDD~~	~~33.43~~	~~1.20E+07~~	~~1.57~~	~~Y~~	~~0.86~~	~~0.92~~	~~7%~~
~~SS 12346-PeCDF~~	~~31.96~~	~~2.09E+07~~	~~1.65~~	~~Y~~	~~0.94~~	~~0.90~~	~~5%~~
~~SS 123469-HxCDF~~	~~37.28~~	~~1.70E+07~~	~~0.55~~	~~Y~~	~~0.83~~	~~0.89~~	~~7%~~
~~SS 1234689-HpCDF~~	~~40.31~~	~~1.45E+07~~	~~0.46~~	~~Y~~	~~0.92~~	~~1.08~~	~~17%~~
~~OCDD a~~	~~43.50~~	~~5.10E+05~~	~~1.77~~	~~N~~	~~0.07~~	~~0.07~~	~~-4%~~
~~OCDF a~~	~~43.69~~	~~8.65E+05~~	~~2.71~~	~~Y~~	~~0.07~~	~~0.08~~	~~14%~~

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4A**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220120C01 Analysis Date: 20-JAN-2022 10:26:30

NATIVE ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS	OK	CONC. FOUND	RANGE (ng/mL)	OK
2,3,7,8-TCDD	M/M+2	0.84	0.65 - 0.89	Y	10.9	7.8 - 12.9	Y
1,2,3,7,8-PeCDD	M+2/M+4	1.54	1.32 - 1.78	Y	51.7	39 - 65	Y
1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05 - 1.43	Y	53.4	39 - 64	Y
1,2,3,6,7,8-HxCDD	M+2/M+4	1.19	1.05 - 1.43	Y	53.4	39 - 64	Y
1,2,3,7,8,9-HxCDD	M+2/M+4	1.29	1.05 - 1.43	Y	48.9	41 - 61	Y
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.01	0.88 - 1.20	Y	51.7	43 - 58	Y
OCDD	M+2/M+4	0.91	0.76 - 1.02	Y	106	79 - 126	Y
2,3,7,8-TCDF	M/M+2	0.78	0.65 - 0.89	Y	10.6	8.4 - 12	Y
1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32 - 1.78	Y	53.7	41 - 60	Y
2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32 - 1.78	Y	51.5	41 - 61	Y
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05 - 1.43	Y	52.9	45 - 56	Y
1,2,3,6,7,8-HxCDF	M+2/M+4	1.27	1.05 - 1.43	Y	51.7	44 - 57	Y
2,3,4,6,7,8-HxCDF	M+2/M+4	1.31	1.05 - 1.43	Y	53.4	44 - 57	Y
1,2,3,7,8,9-HxCDF	M+2/M+4	1.28	1.05 - 1.43	Y	54	45 - 56	Y
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.01	0.88 - 1.20	Y	50.6	45 - 55	Y
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.02	0.88 - 1.20	Y	52.5	43 - 58	Y
OCDF	M+2/M+4	0.92	0.76 - 1.02	Y	109	63 - 159	Y

See Table 9, Method 1613, for m/z specifications.

Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

Contract-required concentration range as specified in Table 6, Method 1613.

Processed: 24 Jan 2022 13:20 Analyst: MS

METHOD 1613B **PCDD/F CALIBRATION VERIFICATION** **FORM 4B**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS3_DF_10272021 10NOV2021

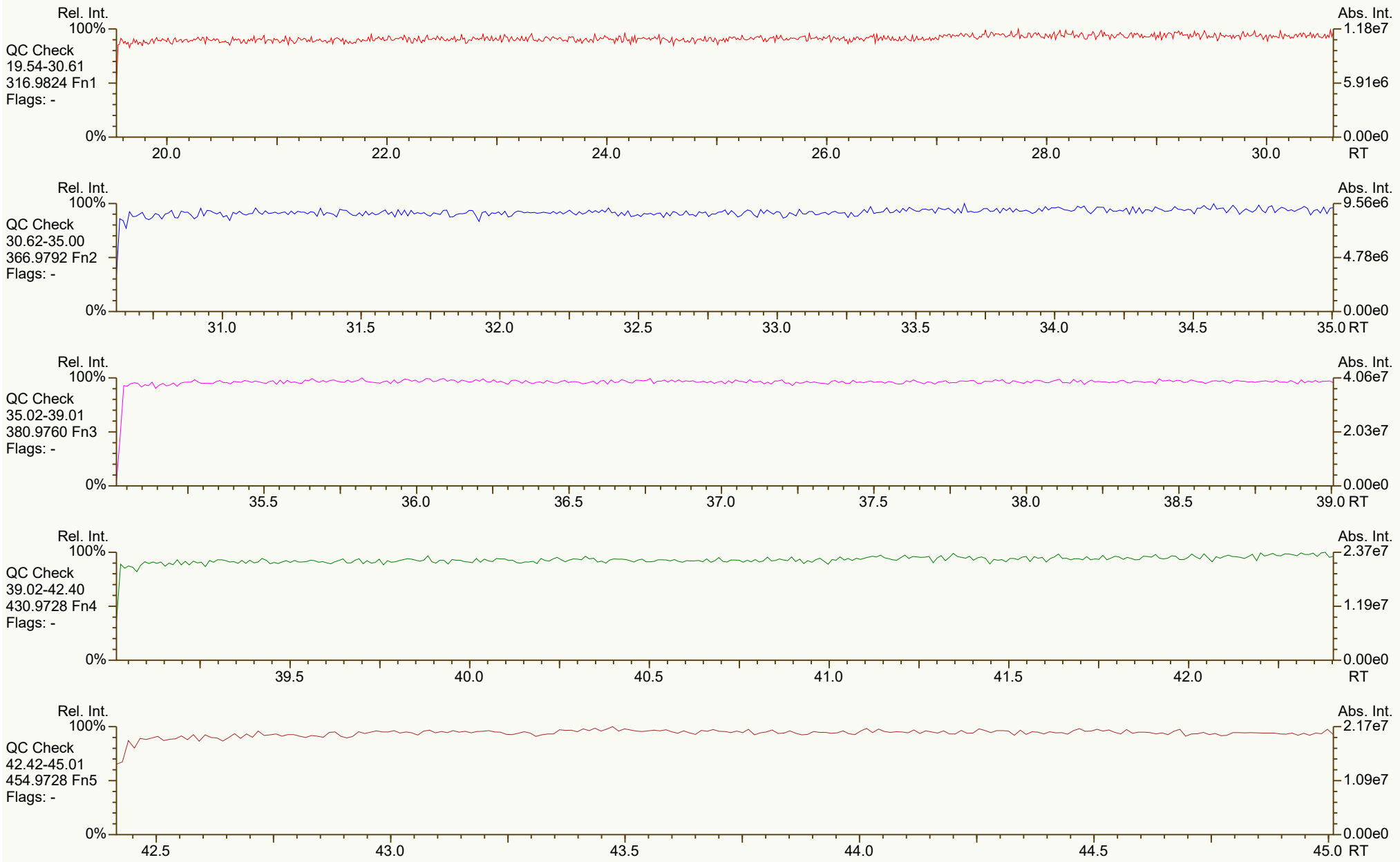
Instrument ID: HRMS3 GC Column ID: ZB-5ms

VER Data Filename: 220120C01 Analysis Date: 20-JAN-2022 10:26:30

LABELED ANALYTES	M/Z's FORMING RATIO	ION ABUND. RATIO	QC LIMITS			OK	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	M/M+2	0.82	0.65	-	0.89	Y	95.7	82	-	121	Y
13C-1,2,3,7,8-PeCDD	M+2/M+4	1.55	1.32	-	1.78	Y	107	62	-	160	Y
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.27	1.05	-	1.43	Y	98	85	-	117	Y
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.21	1.05	-	1.43	Y	108	85	-	118	Y
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.33	1.05	-	1.43	Y	105	85	-	118	Y
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.06	0.88	-	1.20	Y	107	72	-	138	Y
13C-OCDD	M+2/M+4	0.89	0.76	-	1.02	Y	219	96	-	415	Y
13C-2,3,7,8-TCDF	M/M+2	0.80	0.65	-	0.89	Y	93.4	71	-	140	Y
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.56	1.32	-	1.78	Y	95.1	76	-	130	Y
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.58	1.32	-	1.78	Y	99	77	-	130	Y
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	120	76	-	131	Y
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	130	70	-	143	Y
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.54	0.43	-	0.59	Y	127	73	-	137	Y
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.53	0.43	-	0.59	Y	114	74	-	135	Y
13C-1,2,3,4,6,7,8-HpCDF	M/M+2	0.47	0.37	-	0.51	Y	127	78	-	129	Y
13C-1,2,3,4,7,8,9-HpCDF	M/M+2	0.45	0.37	-	0.51	Y	120	77	-	129	Y
13C-OCDF	M+2/M+4	0.92	0.76	-	1.02	Y	260	96	-	415	Y
CLEANUP STANDARDS											
37Cl-2,3,7,8-TCDD	n/a						11.3	7.9	-	12.7	Y
13C-1,2,3,4,7-PeCDD	M+2/M+4	1.57	1.32	-	1.78	Y	115	70	-	130	Y
13C-1,2,3,4,6-PeCDF	M+2/M+4	1.65	1.32	-	1.78	Y	99.6	70	-	130	Y
13C-1,2,3,4,6,9-HxCDF	M/M+2	0.55	0.43	-	0.59	Y	140	70	-	130	N
13C-1,2,3,4,6,8,9-HpCDF	M/M+2	0.46	0.37	-	0.51	Y	150	70	-	130	N

Processed: 24 Jan 2022 13:20 Analyst: MS

no method 1613B specified criteria for these standards
TB 01/24/2022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5.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.56e6
4.78e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
4.06e7
2.03e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.37e7
1.19e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
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1.09e7
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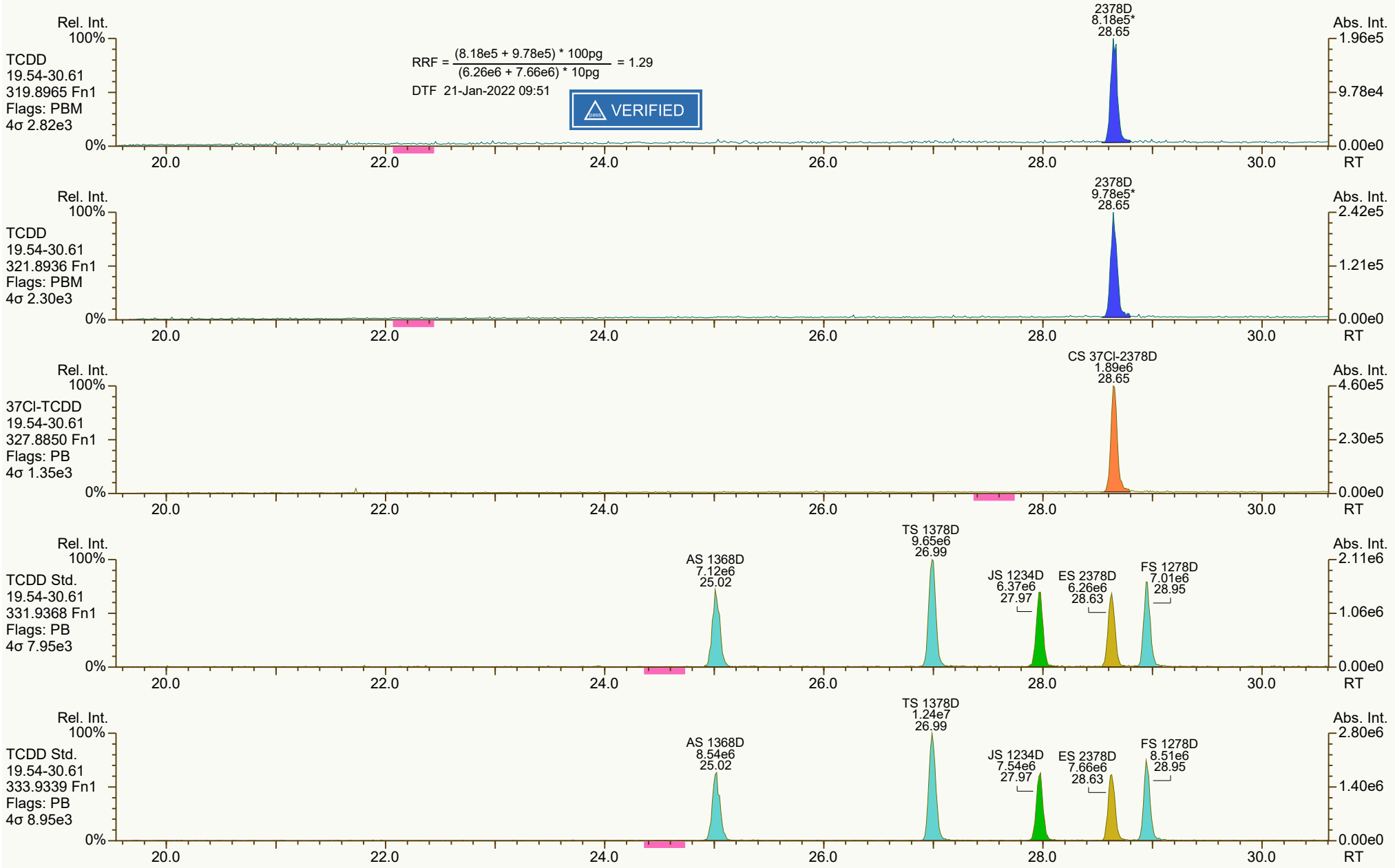
42.5
43.0
43.5
44.0
44.5
45.0 RT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19.54-30.61
319.8965 Fn1
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0%
RRF = (8.18e5 + 9.78e5) * 100pg / (6.26e6 + 7.66e6) * 10pg = 1.29
DTF 21-Jan-2022 09:51
VERIFIED
2378D
8.18e5*
28.65
Abs. Int.
1.96e5
9.78e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.30e3
0%
2378D
9.78e5*
28.65
Abs. Int.
2.42e5
1.21e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.35e3
0%
CS 37Cl-2378D
1.89e6
28.65
Abs. Int.
4.60e5
2.30e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 7.95e3
0%
AS 1368D
7.12e6
25.02
TS 1378D
9.65e6
26.99
JS 1234D
6.37e6
27.97
ES 2378D
6.26e6
28.63
FS 1278D
7.01e6
28.95
Abs. Int.
2.11e6
1.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 8.95e3
0%
AS 1368D
8.54e6
25.02
TS 1378D
1.24e7
26.99
JS 1234D
7.54e6
27.97
ES 2378D
7.66e6
28.63
FS 1278D
8.51e6
28.95
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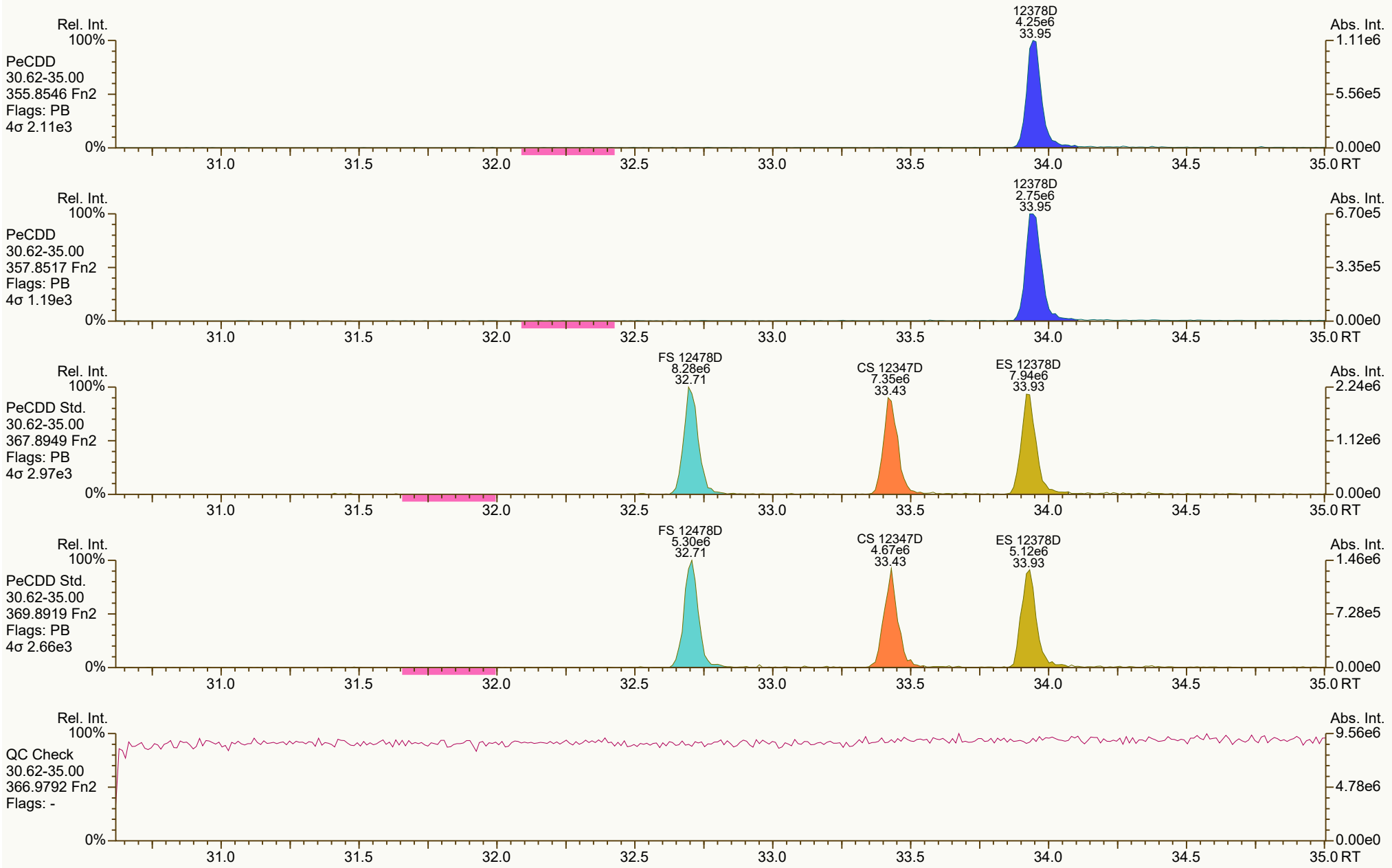
22.0
24.0
26.0
28.0
30.0
RT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Abs. Int.
PeCDD
30.62-35.00
355.8546 Fn2
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12378D
4.25e6
33.95
1.11e6
5.56e5
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.19e3
12378D
2.75e6
33.95
6.70e5
3.35e5
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: PB
4σ 2.97e3
FS 12478D
8.28e6
32.71
CS 12347D
7.35e6
33.43
ES 12378D
7.94e6
33.93
2.24e6
1.12e6
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: PB
4σ 2.66e3
FS 12478D
5.30e6
32.71
CS 12347D
4.67e6
33.43
ES 12378D
5.12e6
33.93
1.46e6
7.28e5
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
9.56e6
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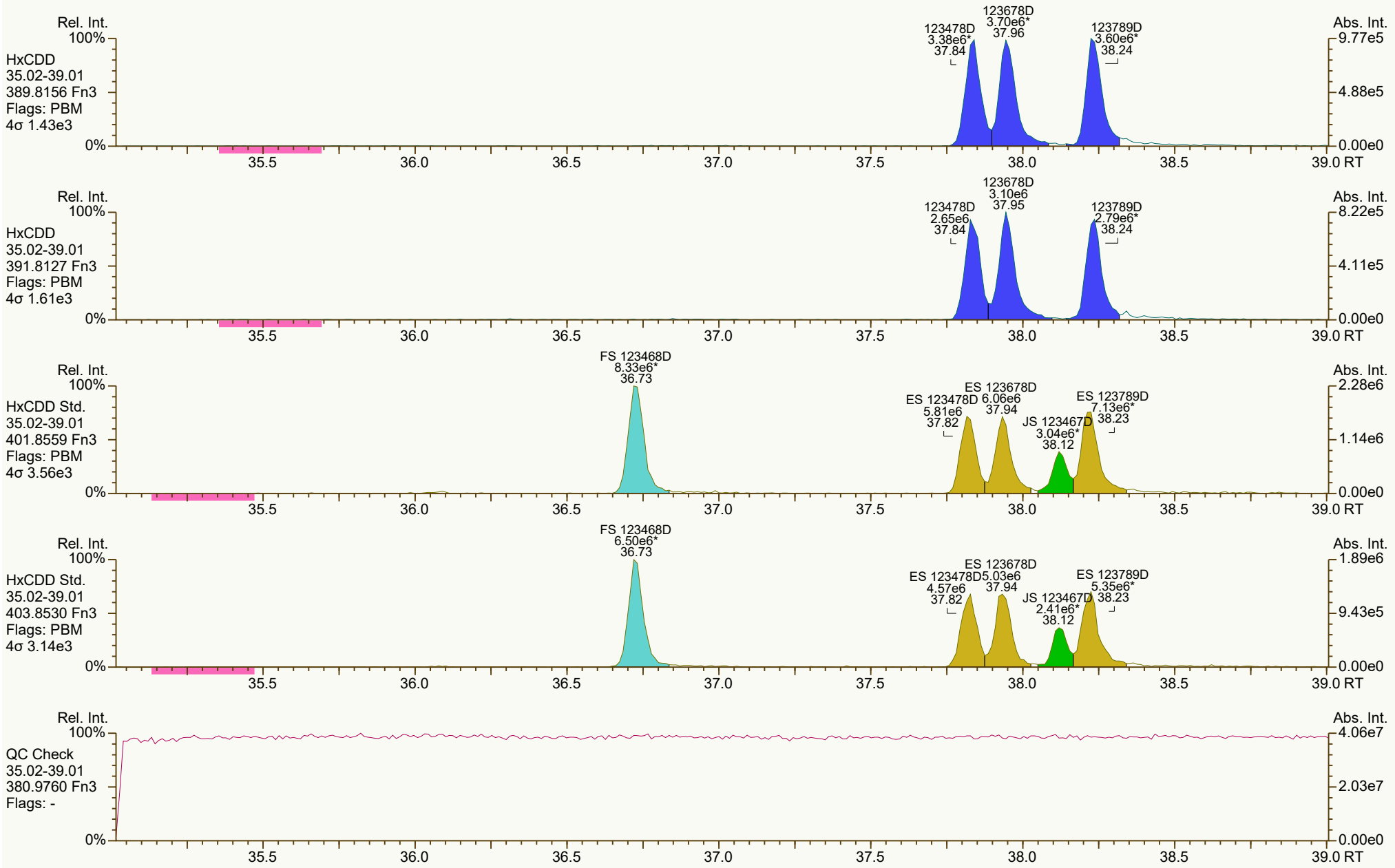
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.43e3
123478D 3.38e6* 37.84
123678D 3.70e6* 37.96
123789D 3.60e6* 38.24
9.77e5
4.88e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 1.61e3
123478D 2.65e6 37.84
123678D 3.10e6 37.95
123789D 2.79e6* 38.24
8.22e5
4.11e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.56e3
FS 123468D 8.33e6* 36.73
ES 123478D 5.81e6 37.82
ES 123678D 6.06e6 37.94
JS 123467D 3.04e6* 38.12
ES 123789D 7.13e6* 38.23
2.28e6
1.14e6
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 3.14e3
FS 123468D 6.50e6* 36.73
ES 123478D 4.57e6 37.82
ES 123678D 5.03e6 37.94
JS 123467D 2.41e6* 38.12
ES 123789D 5.35e6* 38.23
1.89e6
9.43e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
4.06e7
2.03e7
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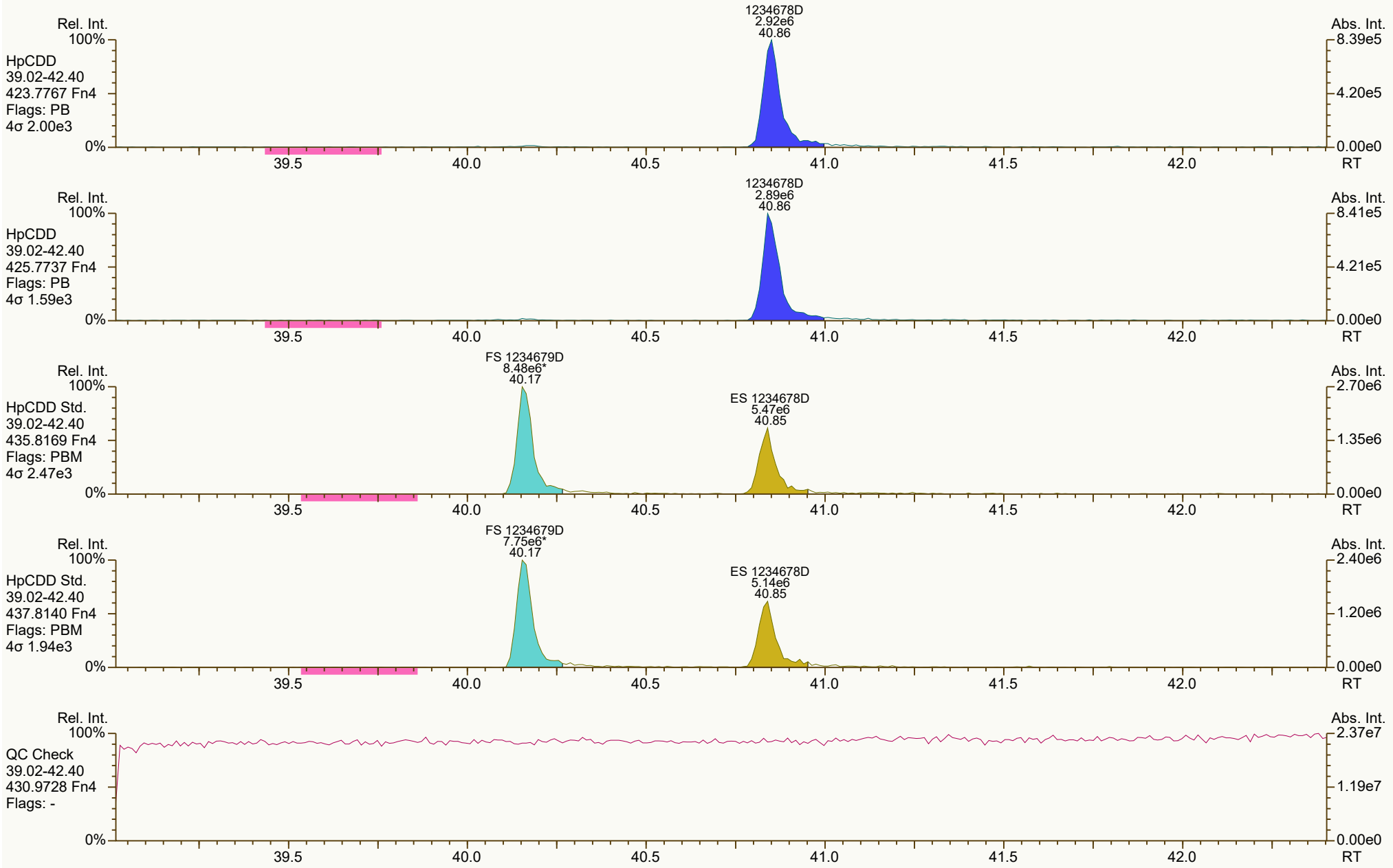
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT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HpCDD
39.02-42.40
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1234678D
2.92e6
40.86
Abs. Int.
8.39e5
4.20e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PB
4σ 1.59e3
1234678D
2.89e6
40.86
Abs. Int.
8.41e5
4.21e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.47e3
FS 1234679D
8.48e6*
40.17
ES 1234678D
5.47e6
40.85
Abs. Int.
2.70e6
1.35e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.94e3
FS 1234679D
7.75e6*
40.17
ES 1234678D
5.14e6
40.85
Abs. Int.
2.40e6
1.20e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
2.37e7
1.19e7
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

SGS ID: CS3_220120_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: SIL 25-347-1
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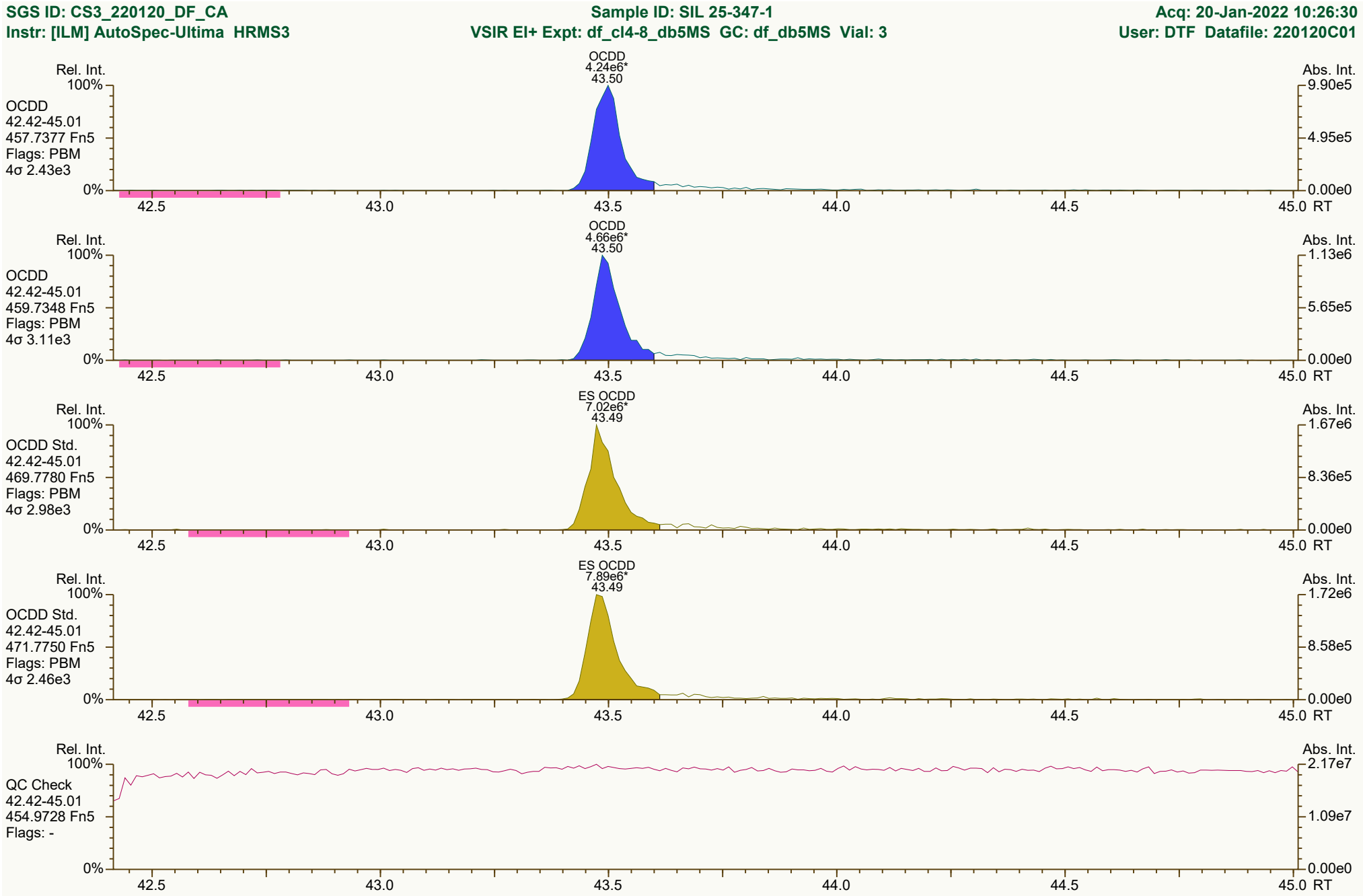
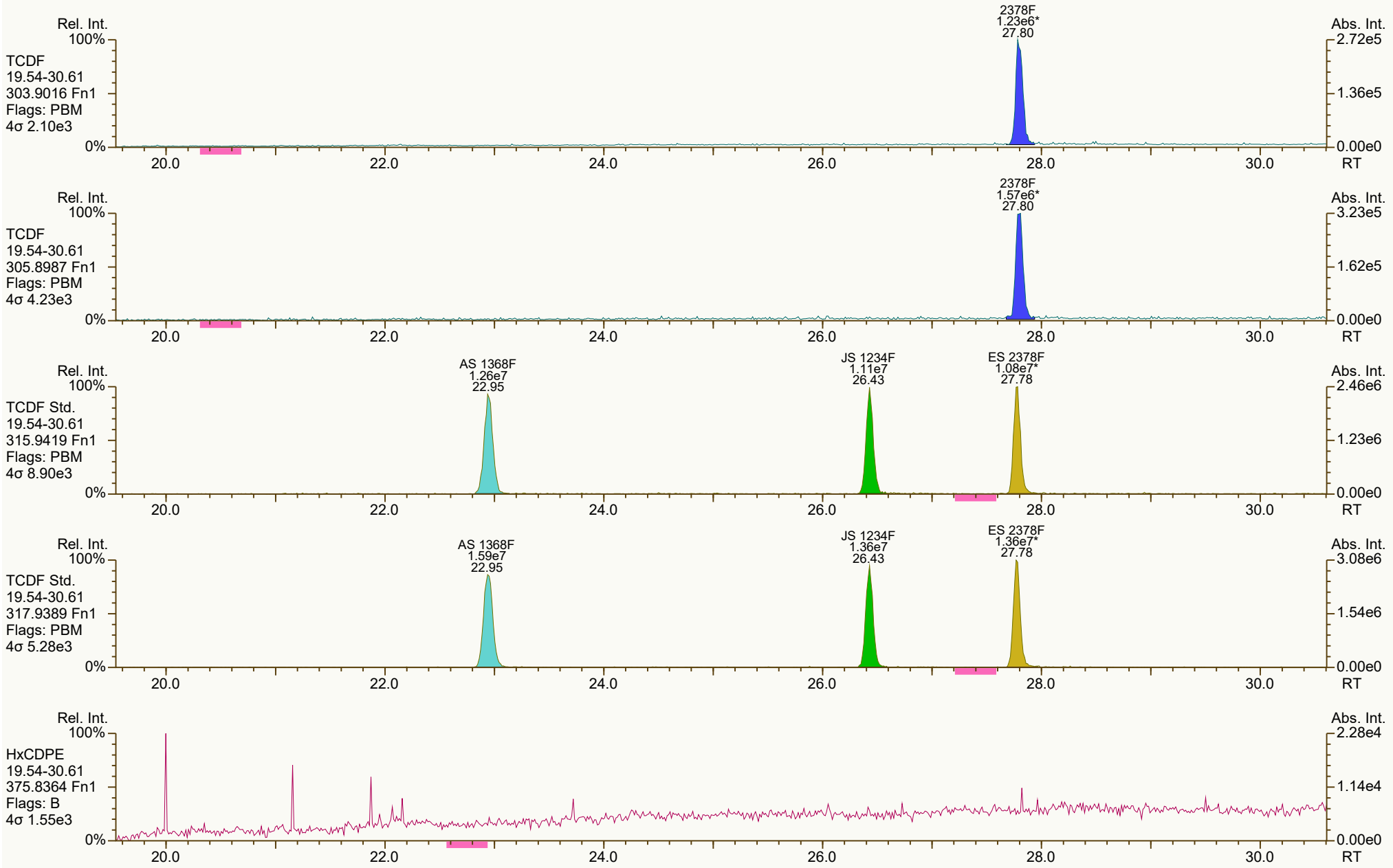
Acq: 20-Jan-2022 10:26:30
User: DTF Datafile: 220120C01

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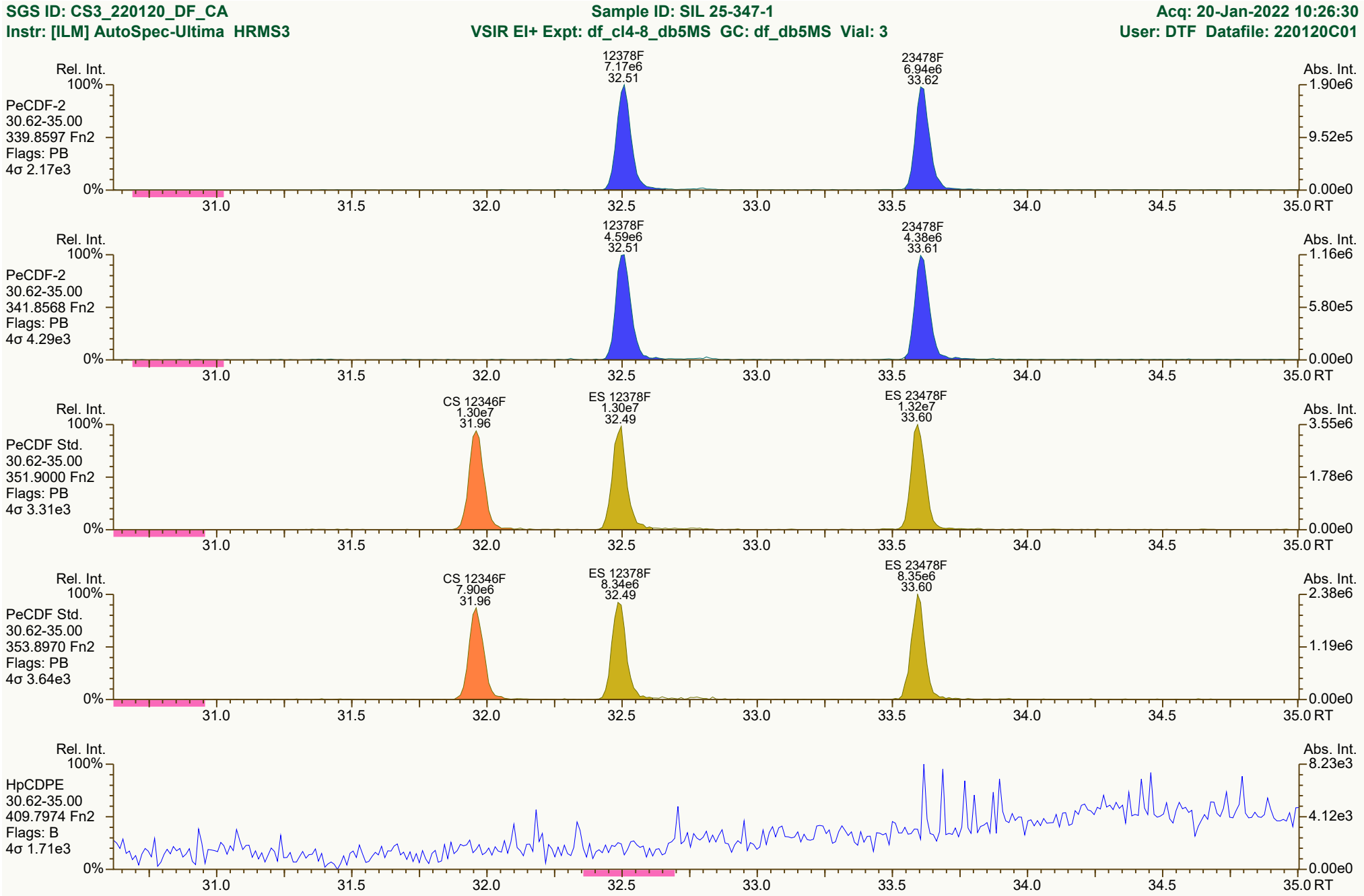
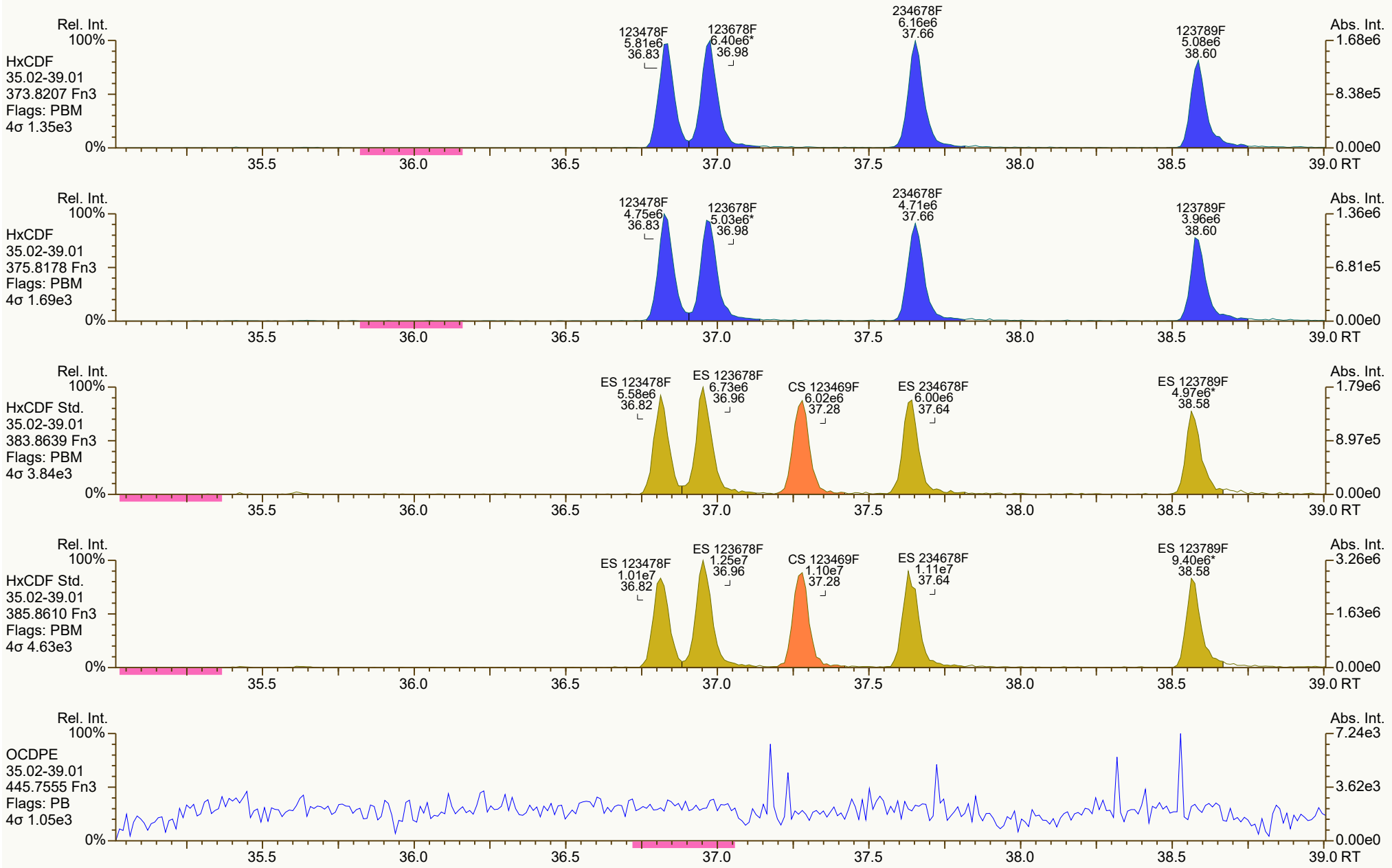
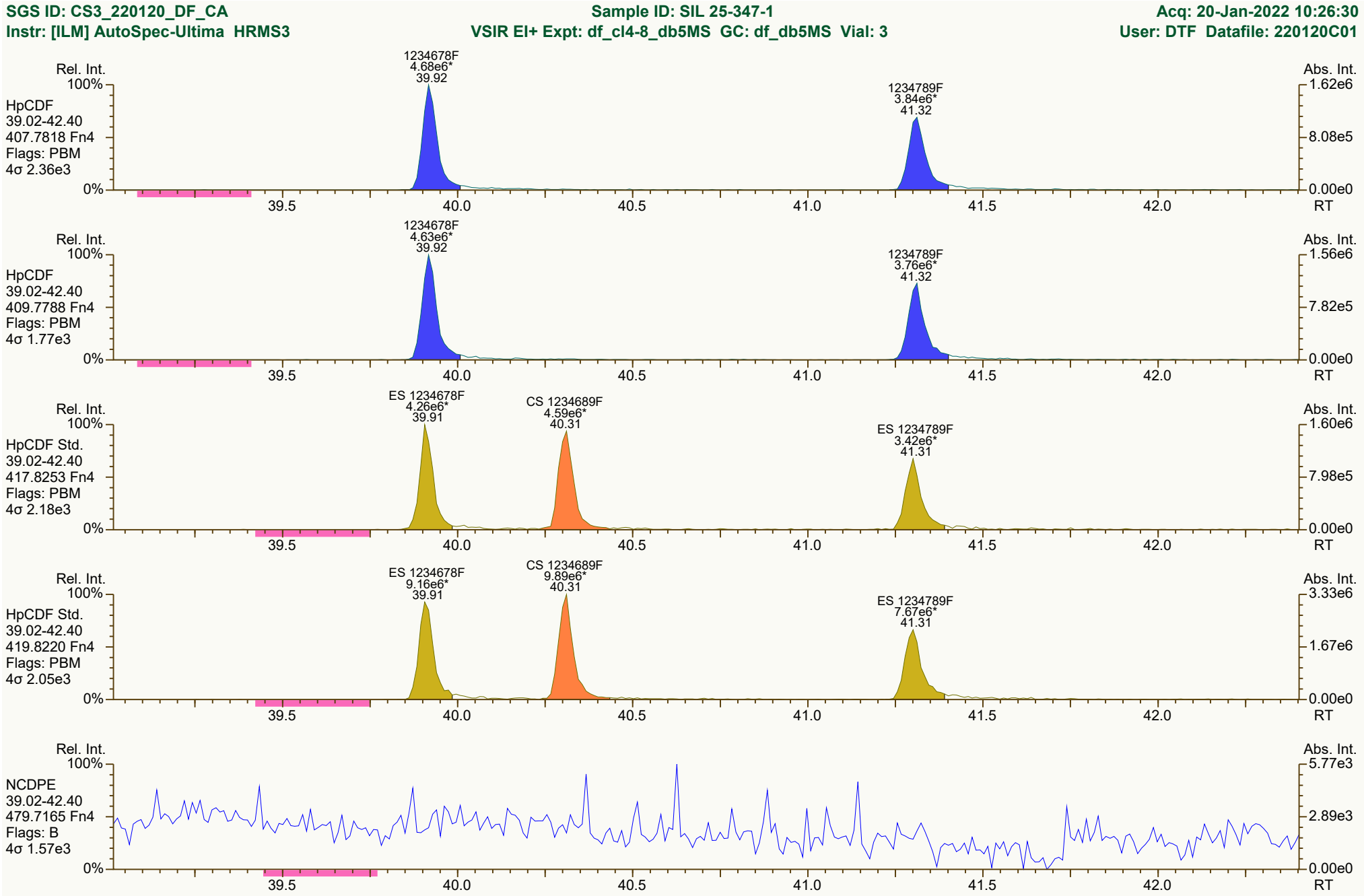
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 2.10e3
0%
2378F
1.23e6*
27.80
Abs. Int.
2.72e5
1.36e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.23e3
0%
2378F
1.57e6*
27.80
Abs. Int.
3.23e5
1.62e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PBM
4σ 8.90e3
0%
AS 1368F
1.26e7
22.95
JS 1234F
1.11e7
26.43
ES 2378F
1.08e7*
27.78
Abs. Int.
2.46e6
1.23e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PBM
4σ 5.28e3
0%
AS 1368F
1.59e7
22.95
JS 1234F
1.36e7
26.43
ES 2378F
1.36e7*
27.78
Abs. Int.
3.08e6
1.54e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.55e3
0%
Abs. Int.
2.28e4
1.14e4
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT

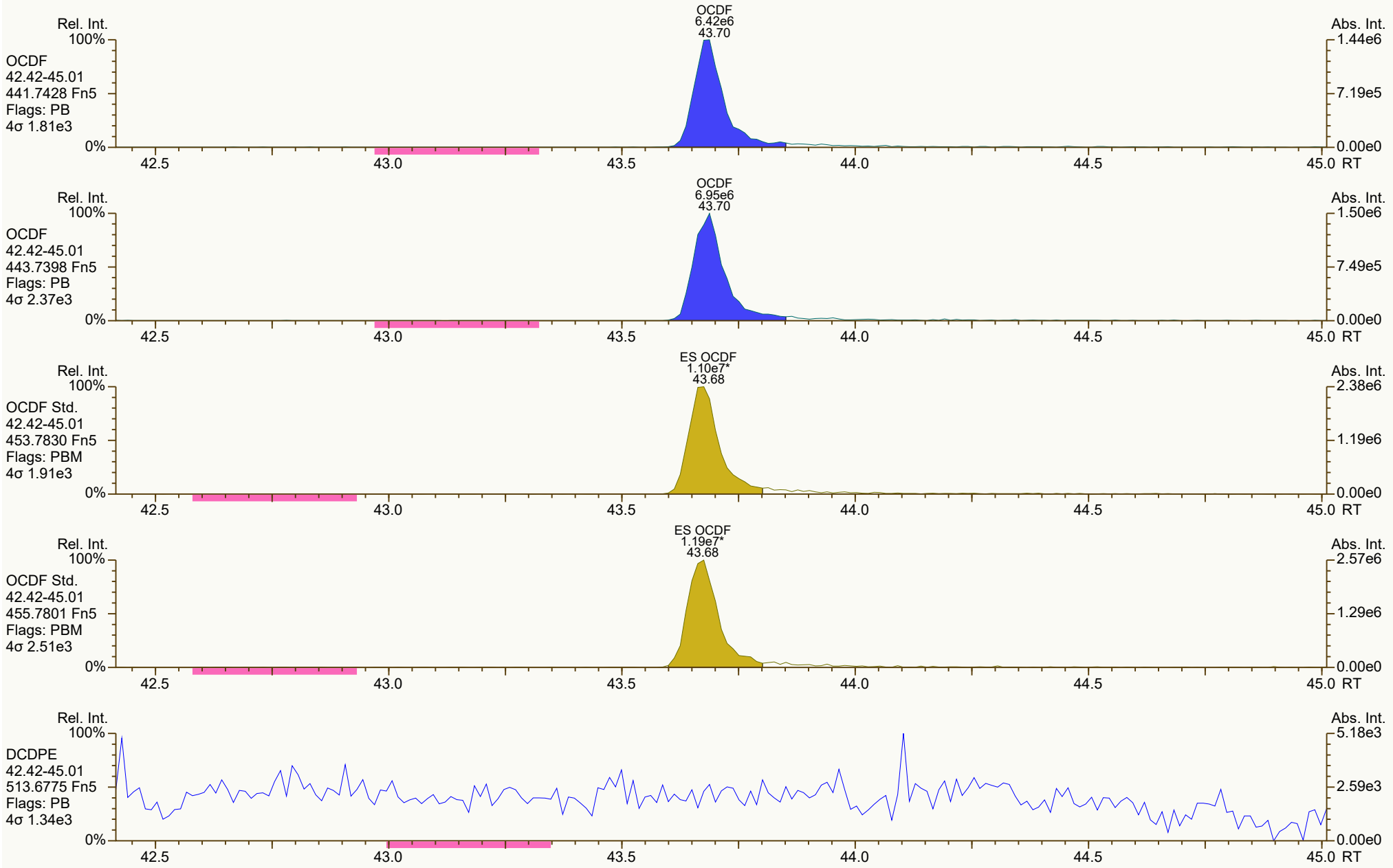

Rel. Int.
100%
0%
Abs. Int.
1.11e4
5.57e3
0.00e0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.42e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.75e4
8.74e3
0.00e0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 2.52e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.18e7
5.91e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT

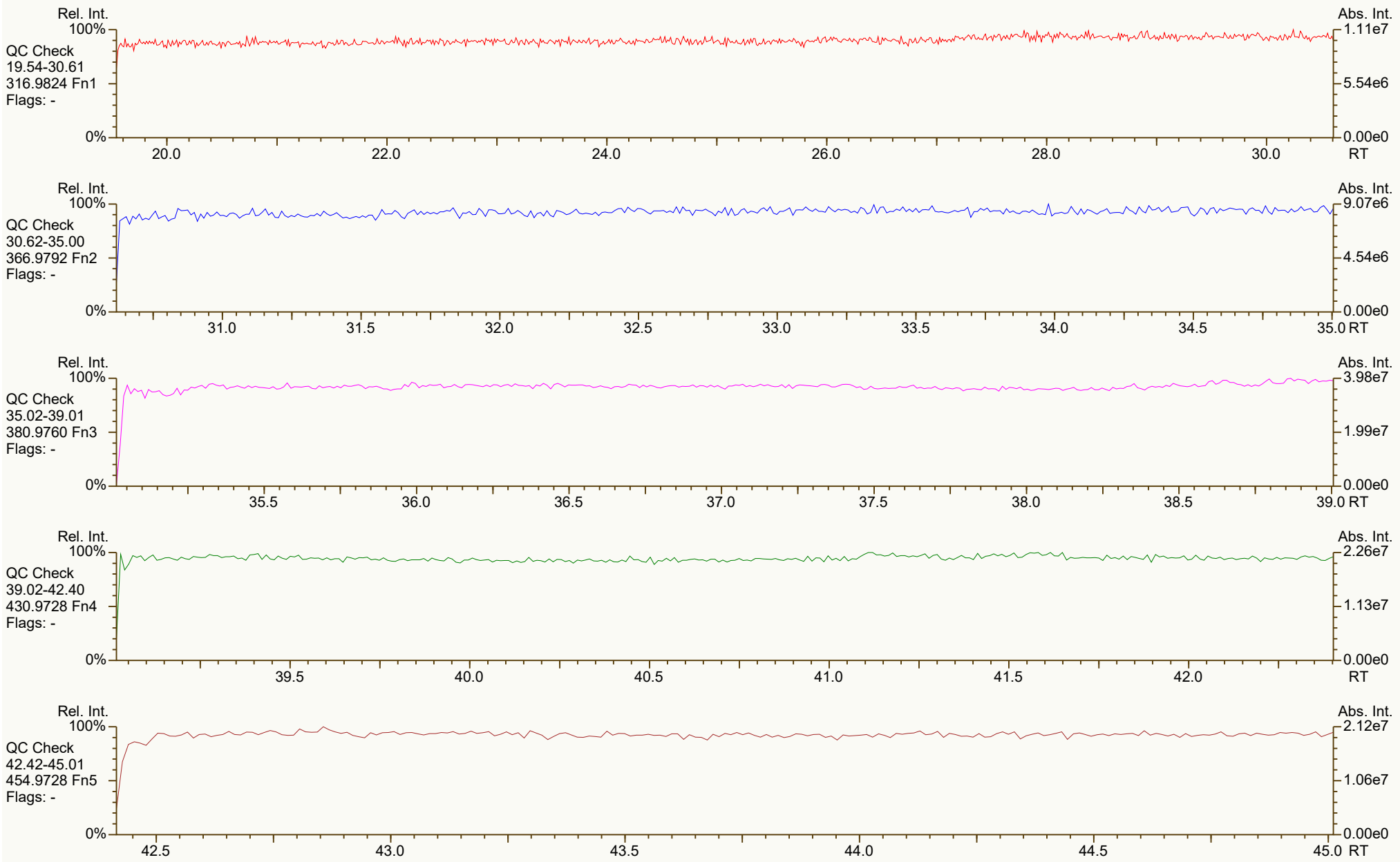


Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\CS3_220120_DF_CA.utp_res, saved 24-Jan-2022 13:18 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 1859, 8158, 2887 scc: 343-977
PKD: 20-Jan-2022 11:24 Printed: 24-Jan-2022 13:27 Page 9 of 12


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.35e3
0%
123478F
5.81e6
36.83
123678F
6.40e6*
36.98
234678F
6.16e6
37.66
123789F
5.08e6
38.60
Abs. Int.
1.68e6
8.38e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 1.69e3
0%
123478F
4.75e6
36.83
123678F
5.03e6*
36.98
234678F
4.71e6
37.66
123789F
3.96e6
38.60
Abs. Int.
1.36e6
6.81e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 3.84e3
0%
ES 123478F
5.58e6
36.82
ES 123678F
6.73e6
36.96
CS 123469F
6.02e6
37.28
ES 234678F
6.00e6
37.64
ES 123789F
4.97e6*
38.58
Abs. Int.
1.79e6
8.97e5
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 4.63e3
0%
ES 123478F
1.01e7
36.82
ES 123678F
1.25e7
36.96
CS 123469F
1.10e7
37.28
ES 234678F
1.11e7
37.64
ES 123789F
9.40e6*
38.58
Abs. Int.
3.26e6
1.63e6
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.05e3
0%
Abs. Int.
7.24e3
3.62e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


SGS ID: CS3_220120_DF_CA
Sample ID: SIL 25-347-1
Acq: 20-Jan-2022 10:26:30
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 220120C01
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.36e3
1234678F
4.68e6*
39.92
1234789F
3.84e6*
41.32
1.62e6
8.08e5
0.00e0
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.77e3
1234678F
4.63e6*
39.92
1234789F
3.76e6*
41.32
1.56e6
7.82e5
0.00e0
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 2.18e3
ES 1234678F
4.26e6*
39.91
CS 1234689F
4.59e6*
40.31
ES 1234789F
3.42e6*
41.31
1.60e6
7.98e5
0.00e0
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.05e3
ES 1234678F
9.16e6*
39.91
CS 1234689F
9.89e6*
40.31
ES 1234789F
7.67e6*
41.31
3.33e6
1.67e6
0.00e0
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.57e3
5.77e3
2.89e3
0.00e0
100%
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\CS3_220120_DF_CA.utp_res, saved 24-Jan-2022 13:18 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 1642, 7197, 8271 scc: 343-977
Revised: 20-Jan-2022 11:26 (DTF) Printed: 24-Jan-2022 13:27 Page 11 of 12


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PB
4σ 1.81e3
0%
OCDF
6.42e6
43.70
Abs. Int.
1.44e6
7.19e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PB
4σ 2.37e3
0%
OCDF
6.95e6
43.70
Abs. Int.
1.50e6
7.49e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 1.91e3
0%
ES OCDF
1.10e7*
43.68
Abs. Int.
2.38e6
1.19e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 2.51e3
0%
ES OCDF
1.19e7*
43.68
Abs. Int.
2.57e6
1.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.34e3
0%
Abs. Int.
5.18e3
2.59e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

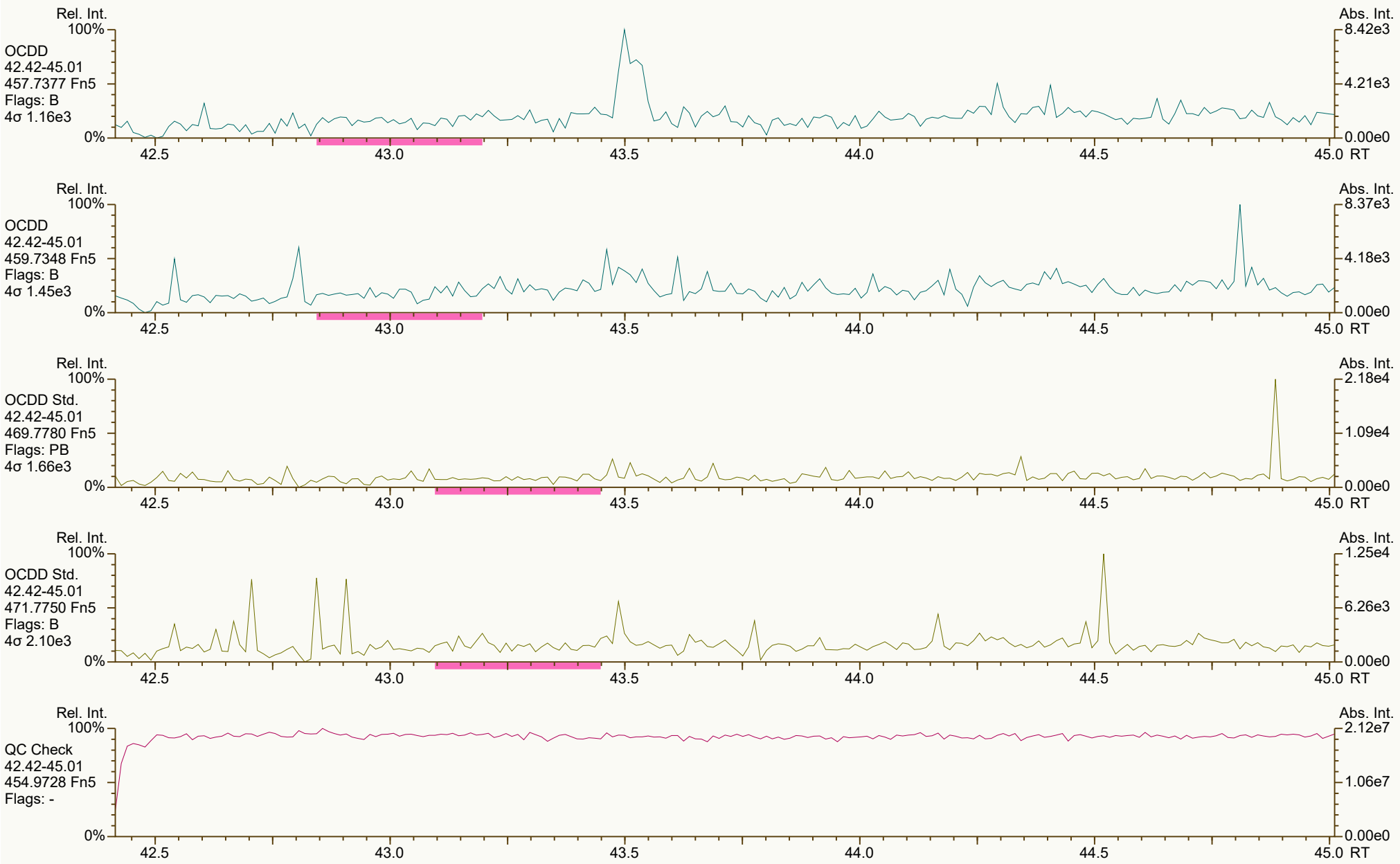

Rel. Int.
100%
0%
Abs. Int.
1.11e7
5.54e6
0.00e0
RT
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
9.07e6
4.54e6
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.98e7
1.99e7
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
2.26e7
1.13e7
39.5
40.0
40.5
41.0
41.5
42.0
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
2.12e7
1.06e7
42.5
43.0
43.5
44.0
44.5
45.0

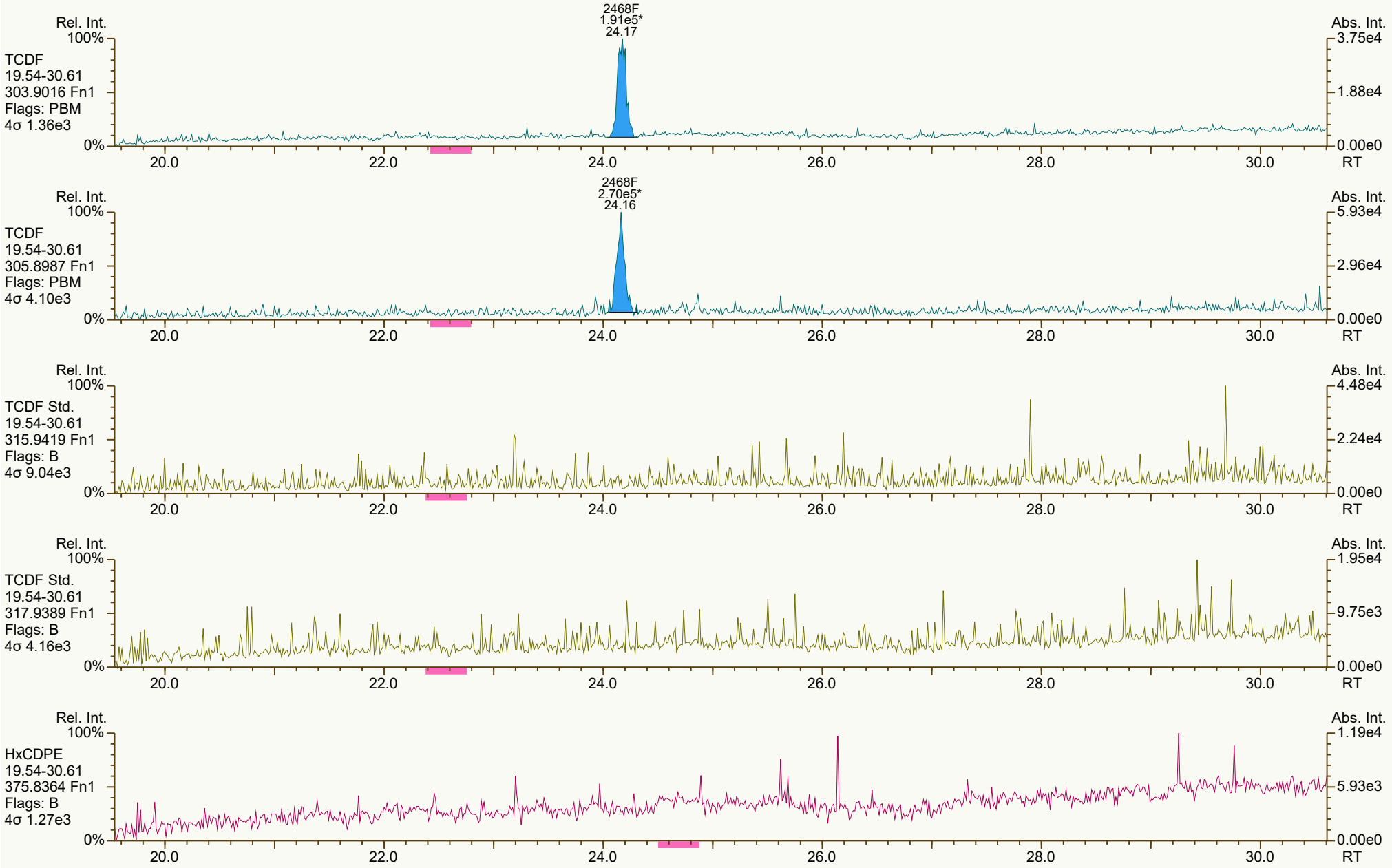

Rel. Int.
100%
0%
Abs. Int.
TCDD
19.54-30.61
319.8965 Fn1
Flags: B
4σ 2.38e3
1.37e4
6.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
TCDD
19.54-30.61
321.8936 Fn1
Flags: B
4σ 1.44e3
1.26e4
6.31e3
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: B
4σ 1.05e3
1.29e4
6.46e3
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: B
4σ 8.82e3
2.87e4
1.43e4
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: B
4σ 4.45e3
3.71e4
1.86e4


Rel. Int.
Abs. Int.
PeCDD
30.62-35.00
355.8546 Fn2
Flags: B
4σ 9.21e2
1.11e4
5.54e3
0.00e0
PeCDD
30.62-35.00
357.8517 Fn2
Flags: PB
4σ 1.61e3
8.11e3
4.06e3
PeCDD Std.
30.62-35.00
367.8949 Fn2
Flags: B
4σ 2.06e3
1.94e4
9.69e3
PeCDD Std.
30.62-35.00
369.8919 Fn2
Flags: B
4σ 2.45e3
1.39e4
6.96e3
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
9.07e6
4.54e6
100%
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT

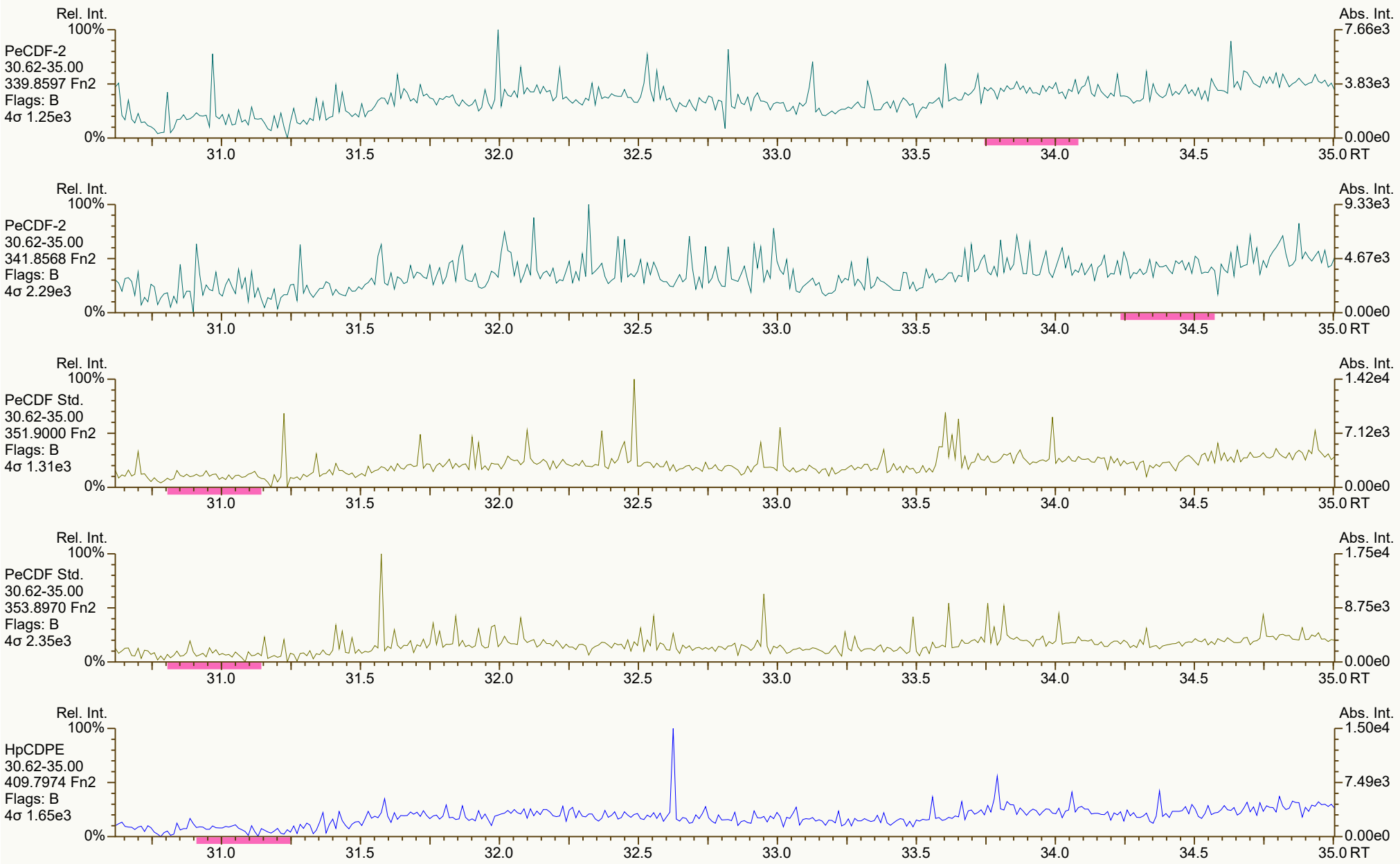

Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PB
4σ 1.18e3
100%
0%
7.52e3
3.76e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
HxCDD
35.02-39.01
391.8127 Fn3
Flags: B
4σ 2.00e3
6.90e3
3.45e3
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: B
4σ 3.93e3
1.64e4
8.20e3
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: B
4σ 1.80e3
1.65e4
8.23e3
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.98e7
1.99e7

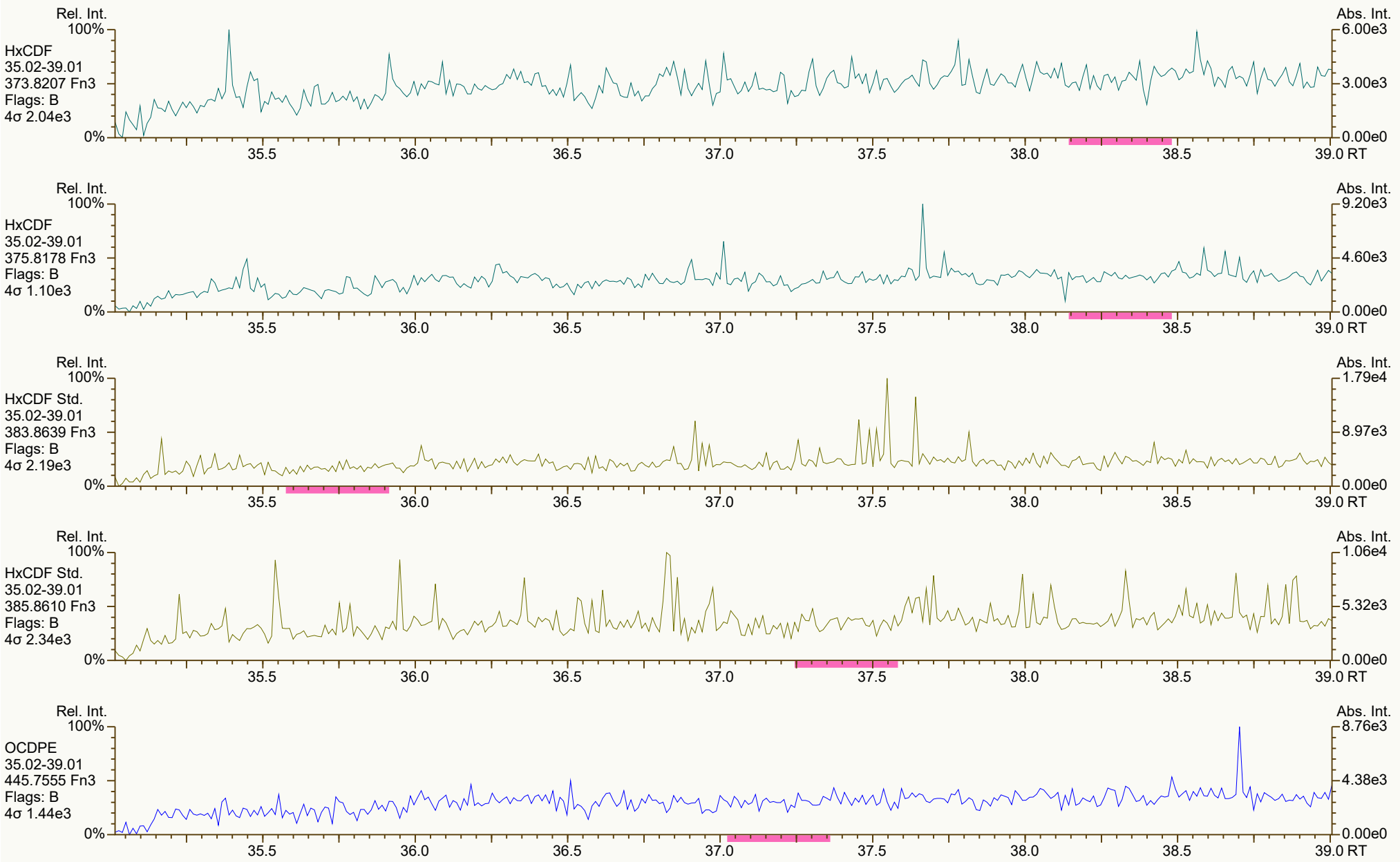

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PB
4σ 1.82e3
0%
Abs. Int.
4.47e3
2.24e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: B
4σ 1.06e3
0%
Abs. Int.
3.92e3
1.96e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: B
4σ 1.43e3
0%
Abs. Int.
1.20e4
6.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: B
4σ 1.50e3
0%
Abs. Int.
5.87e3
2.94e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.26e7
1.13e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: B
4σ 1.16e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
42.42-45.01
459.7348 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.37e3
4.18e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PB
4σ 1.66e3
0%
Abs. Int.
2.18e4
1.09e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: B
4σ 2.10e3
0%
Abs. Int.
1.25e4
6.26e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
2.12e7
1.06e7
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.36e3
2468F
1.91e5*
24.17
Abs. Int.
3.75e4
1.88e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.10e3
2468F
2.70e5*
24.16
Abs. Int.
5.93e4
2.96e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: B
4σ 9.04e3
Abs. Int.
4.48e4
2.24e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: B
4σ 4.16e3
Abs. Int.
1.95e4
9.75e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.27e3
Abs. Int.
1.19e4
5.93e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
1.13e4
5.64e3
0.00e0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: B
4σ 1.73e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.85e4
1.43e4
0.00e0
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: B
4σ 1.53e3
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.11e7
5.54e6
0.00e0
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: B
4σ 1.25e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: B
4σ 2.29e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: B
4σ 1.31e3
0%
Abs. Int.
1.42e4
7.12e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: B
4σ 2.35e3
0%
Abs. Int.
1.75e4
8.75e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.65e3
0%
Abs. Int.
1.50e4
7.49e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
100%
HxCDF
35.02-39.01
373.8207 Fn3
Flags: B
4σ 2.04e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF
35.02-39.01
375.8178 Fn3
Flags: B
4σ 1.10e3
0%
Abs. Int.
9.20e3
4.60e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: B
4σ 2.19e3
0%
Abs. Int.
1.79e4
8.97e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: B
4σ 2.34e3
0%
Abs. Int.
1.06e4
5.32e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.44e3
0%
Abs. Int.
8.76e3
4.38e3
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

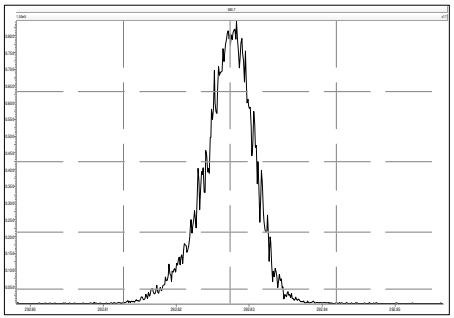

Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.03e3
4.02e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: B
4σ 1.36e3
0%
Abs. Int.
6.09e3
3.04e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PB
4σ 1.48e3
0%
Abs. Int.
3.64e4
1.82e4
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: B
4σ 1.94e3
0%
Abs. Int.
8.51e3
4.26e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.41e3
0%
Abs. Int.
2.94e3
1.47e3
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: B
4σ 1.88e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PB
4σ 1.84e3
0%
Abs. Int.
5.82e3
2.91e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: B
4σ 2.14e3
0%
Abs. Int.
2.56e4
1.28e4
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: B
4σ 1.90e3
0%
Abs. Int.
1.19e4
5.95e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: PB
4σ 1.24e3
0%
Abs. Int.
6.85e3
3.42e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

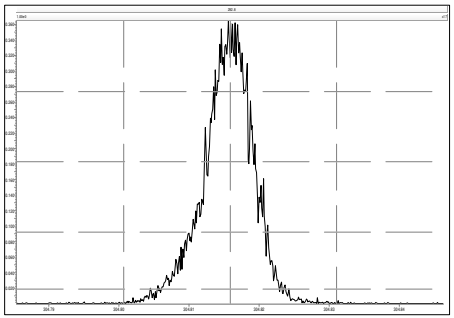
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:23:58 Eastern Standard Time

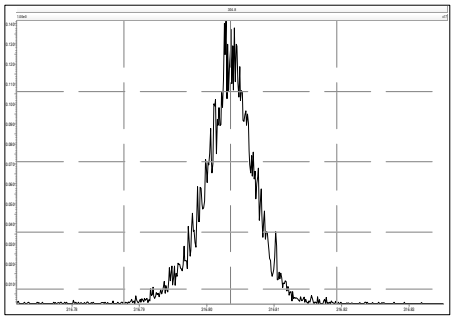
M 292.9824 R 17483



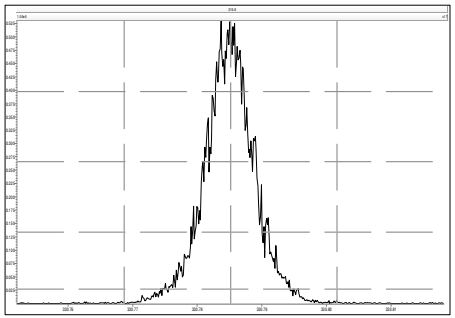
M 304.9824 R 17991



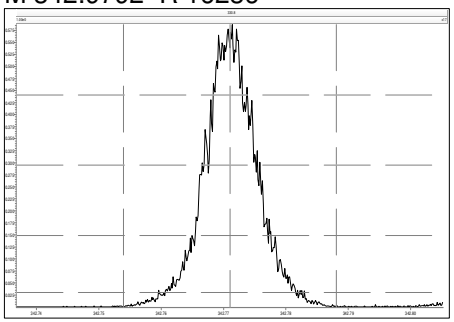
M 316.9824 R 17598



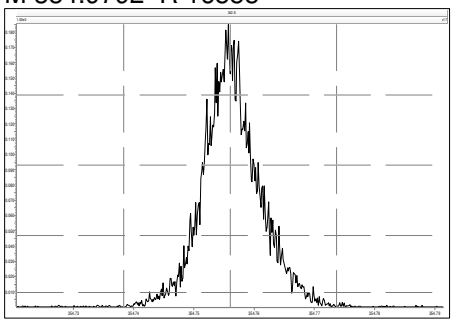
M 330.9792 R 17481



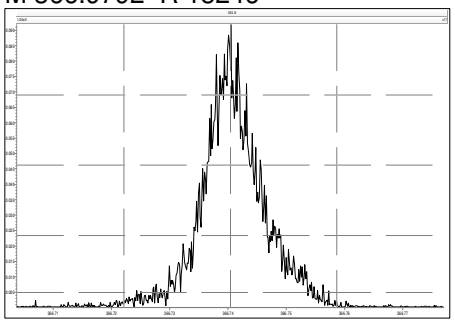
M 342.9792 R 16236



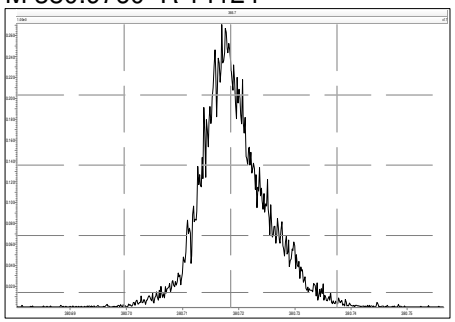
M 354.9792 R 16555



M 366.9792 R 15246



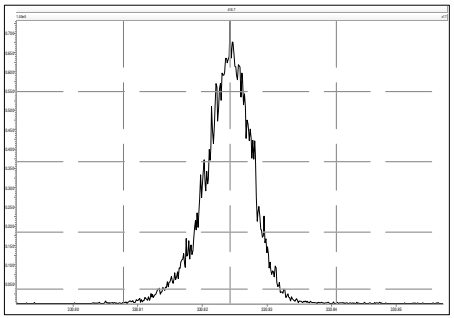
M 380.9760 R 14124



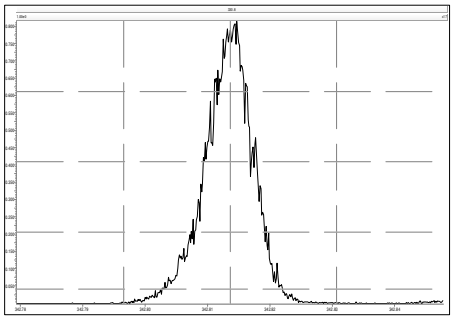
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:24:19 Eastern Standard Time

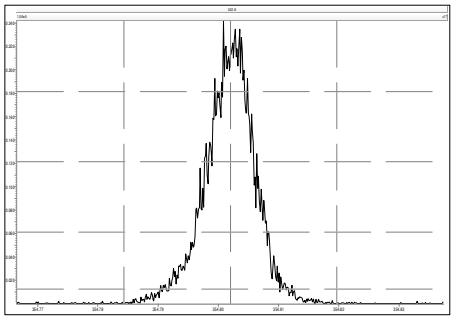
M 330.9792 R 18519



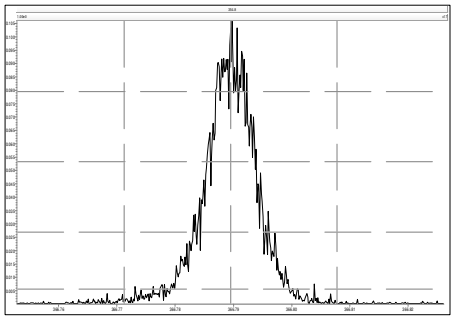
M 342.9792 R 17610



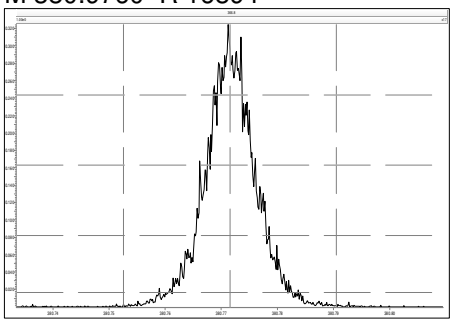
M 354.9792 R 18249



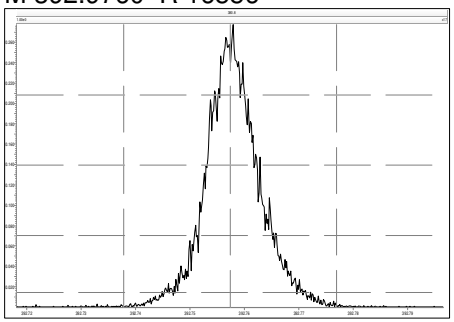
M 366.9792 R 17728



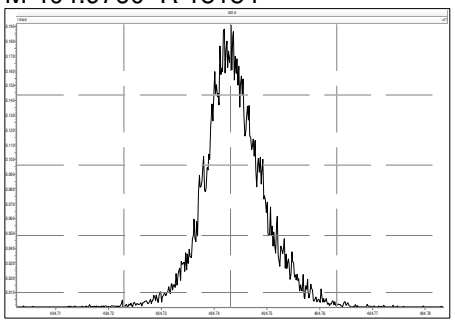
M 380.9760 R 16894



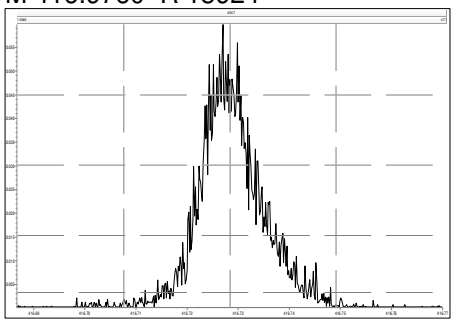
M 392.9760 R 16556



M 404.9760 R 15154



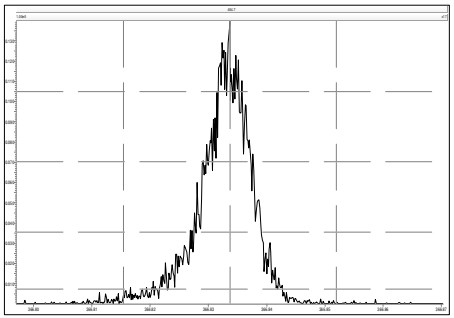
M 416.9760 R 15924



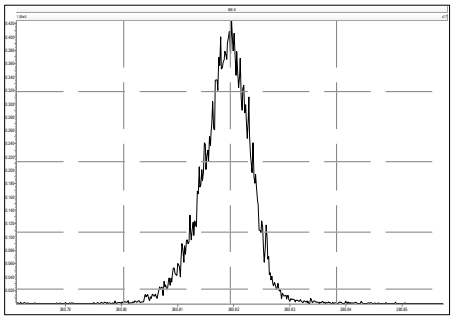
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:24:53 Eastern Standard Time

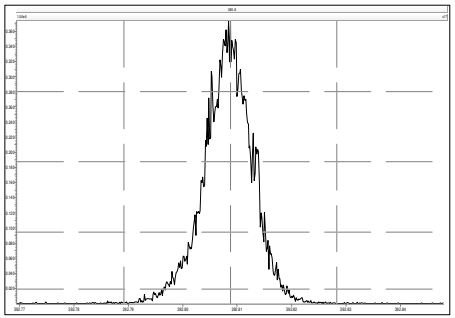
M 366.9792 R 17241



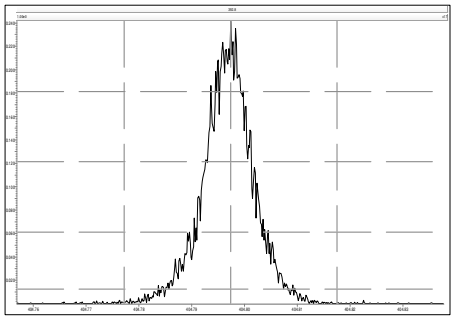
M 380.9760 R 18387



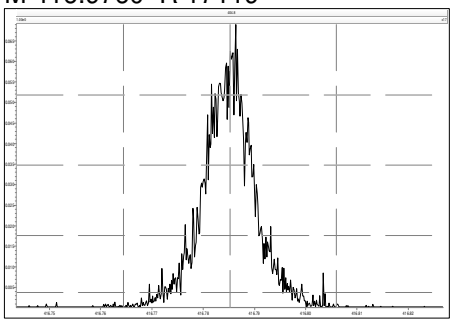
M 392.9760 R 17484



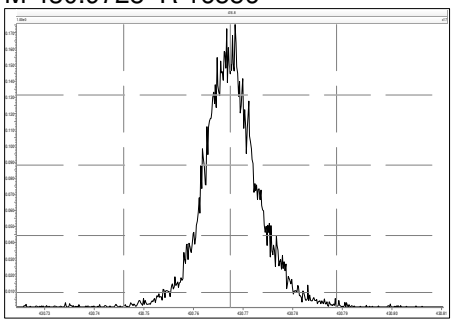
M 404.9760 R 17128



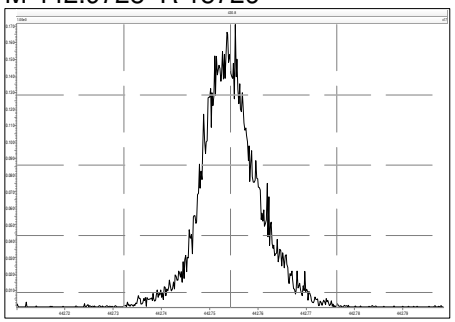
M 416.9760 R 17119



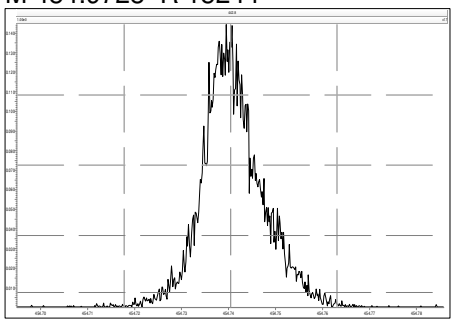
M 430.9728 R 16556



M 442.9728 R 15726



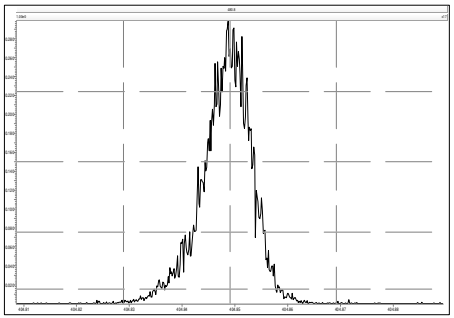
M 454.9728 R 15244



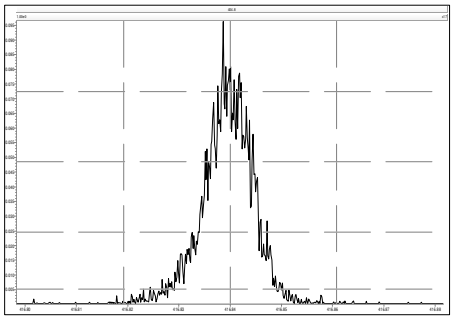
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:25:19 Eastern Standard Time

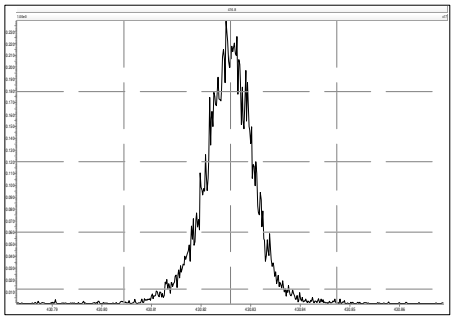
M 404.9760 R 17725



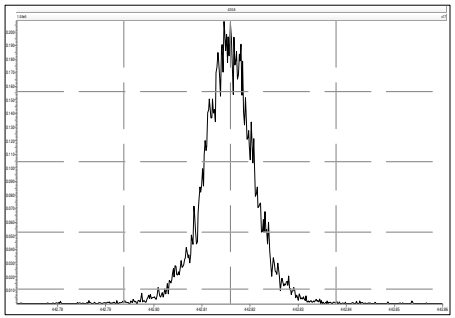
M 416.9760 R 18517



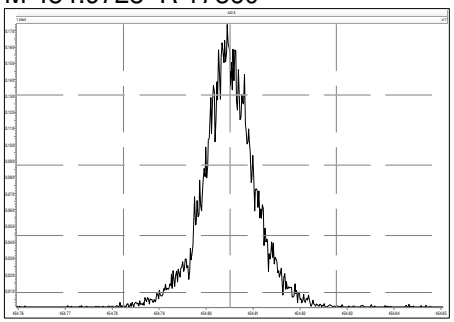
M 430.9728 R 18521



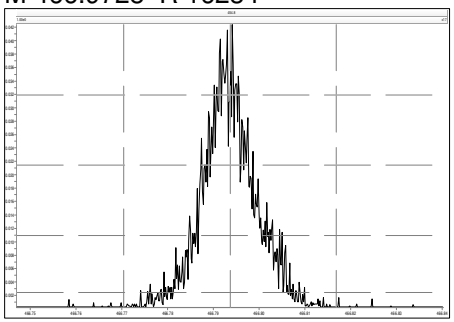
M 442.9728 R 17361



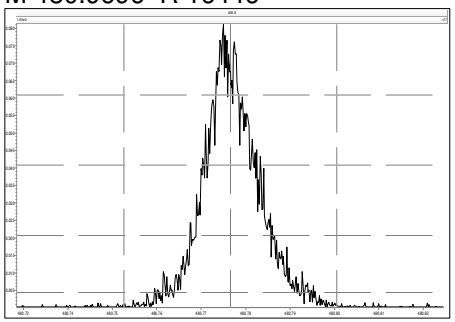
M 454.9728 R 17860



M 466.9728 R 16234



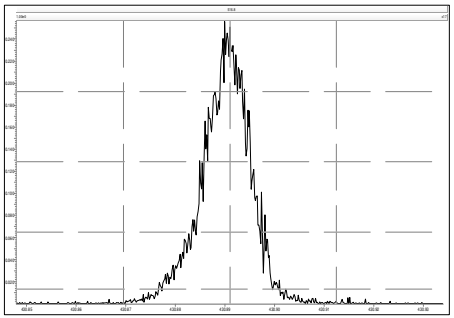
M 480.9696 R 16446



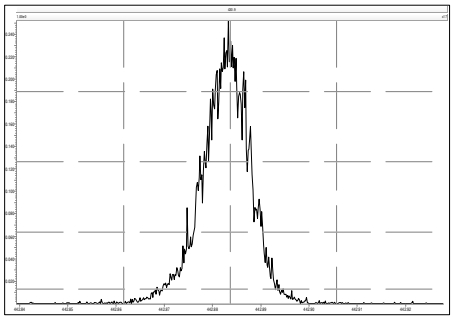
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Thursday, January 20, 2022 10:25:39 Eastern Standard Time

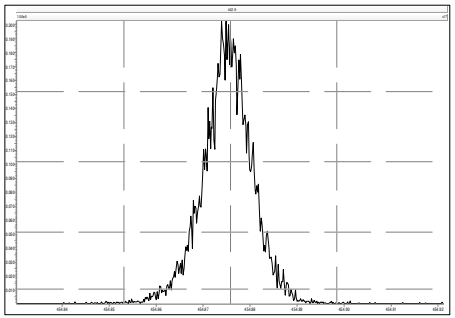
M 430.9728 R 18115



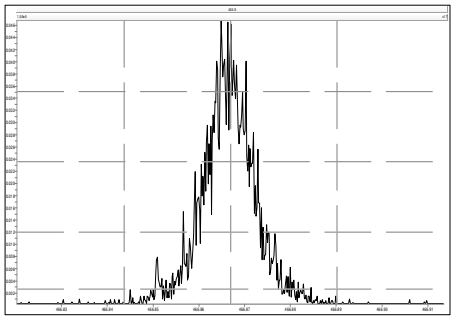
M 442.9728 R 17853



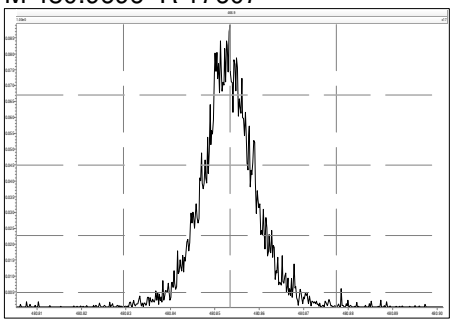
M 454.9728 R 17986



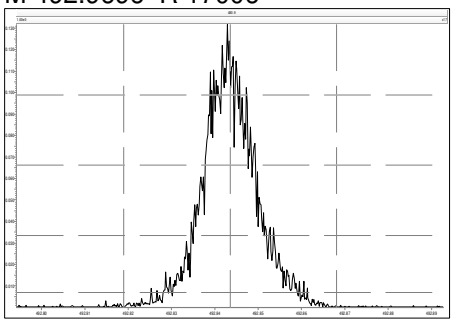
M 466.9728 R 19845



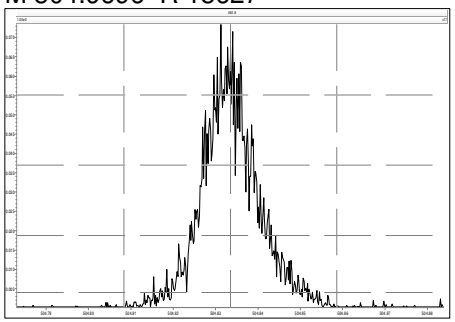
M 480.9696 R 17607



M 492.9696 R 17006



M 504.9696 R 15627



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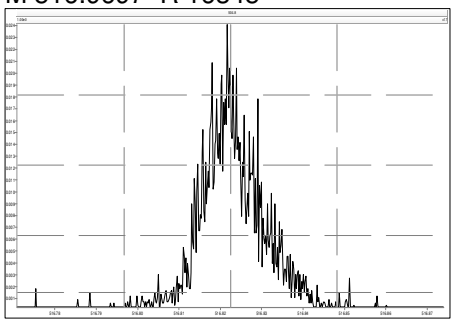

Printed: Thursday, January 20, 2022 23:16:44 Eastern Standard Time

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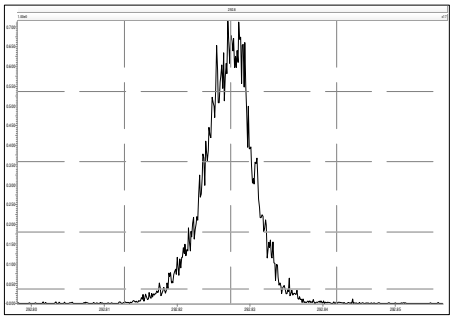

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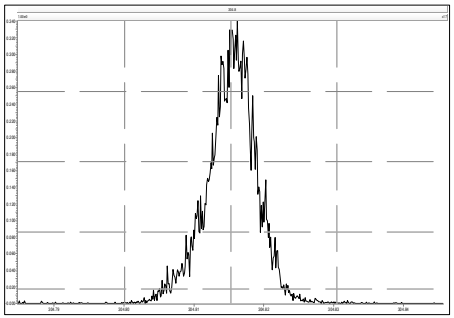

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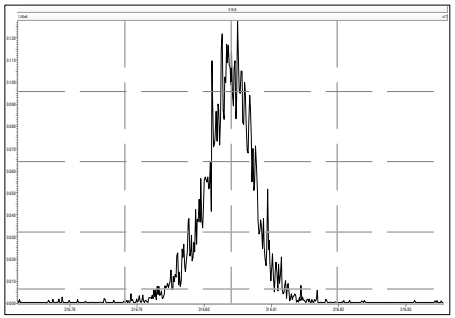
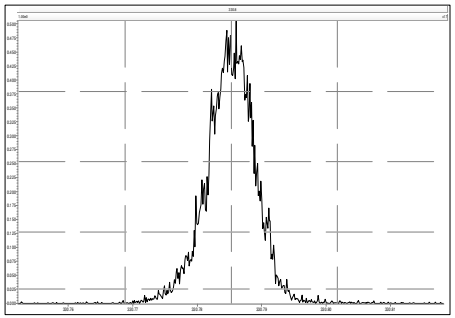


M 330.9792 R 19087



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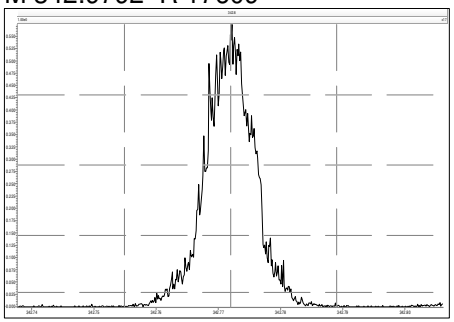

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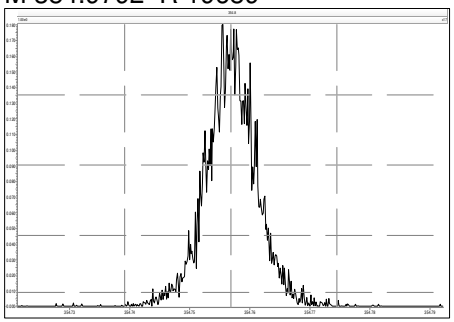

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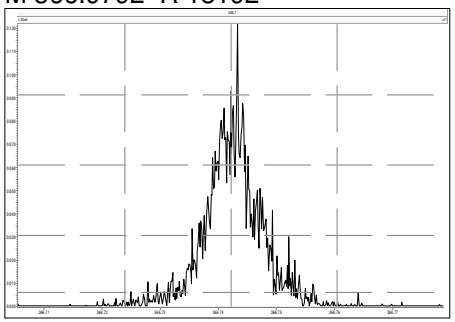

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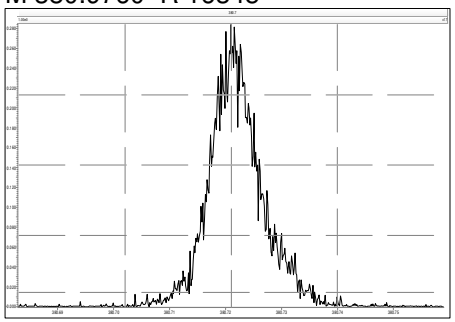

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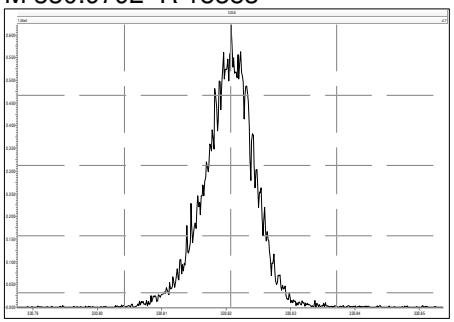

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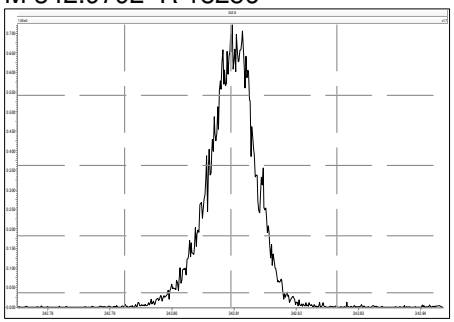

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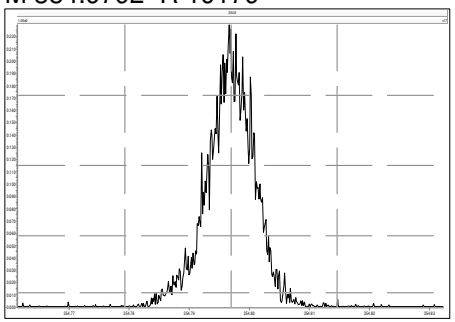

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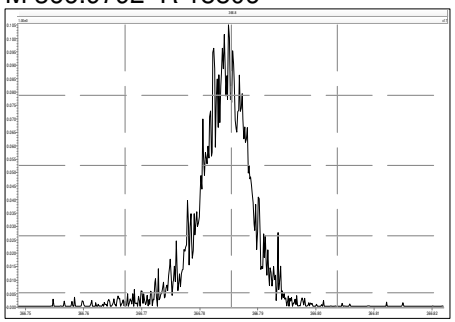
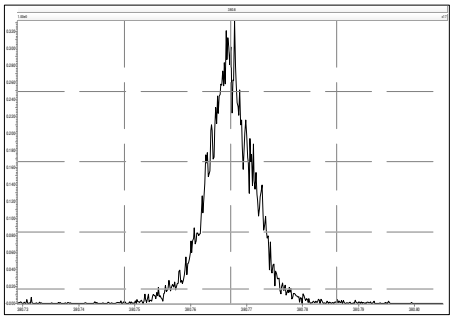
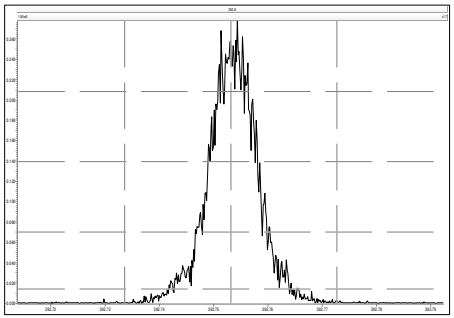


M 380.9760 R 19231



M 392.9760 R 18801



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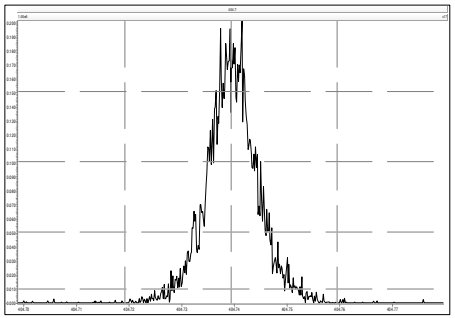

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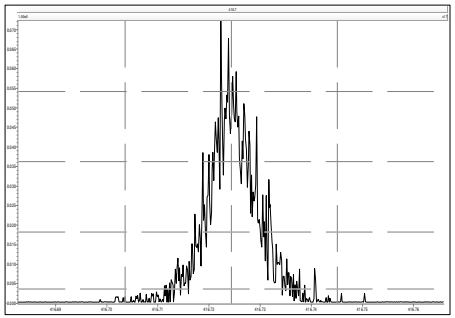

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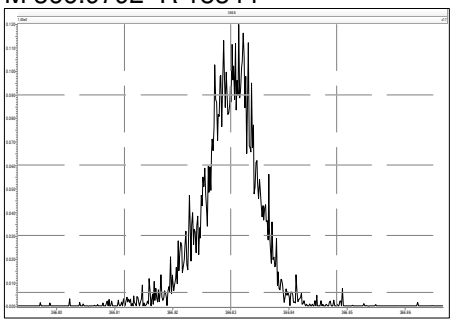

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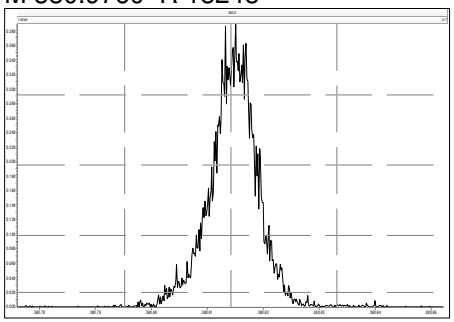

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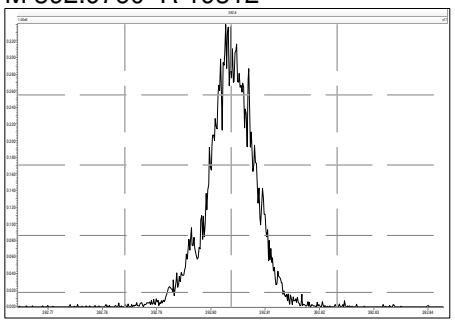

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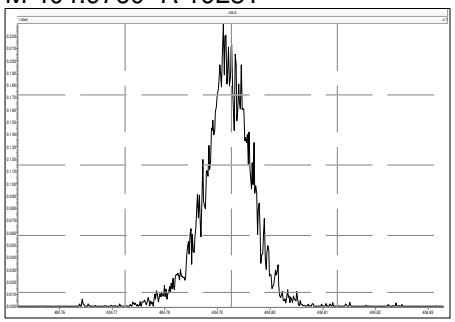

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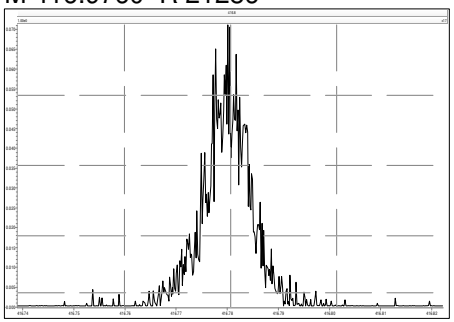

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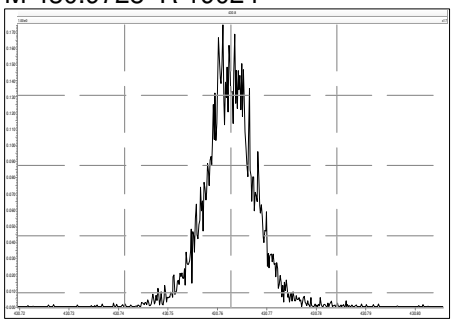

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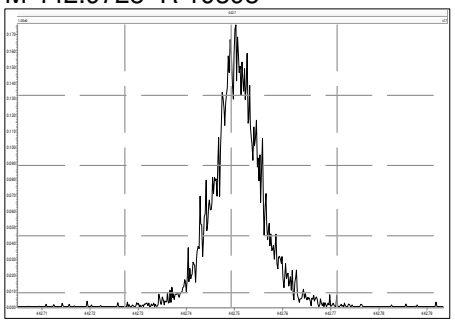

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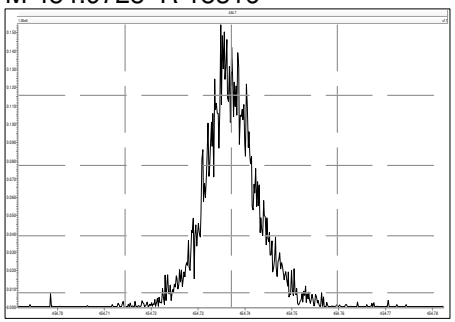
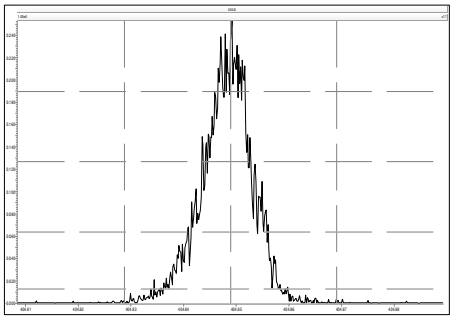


M 404.9760 R 18256



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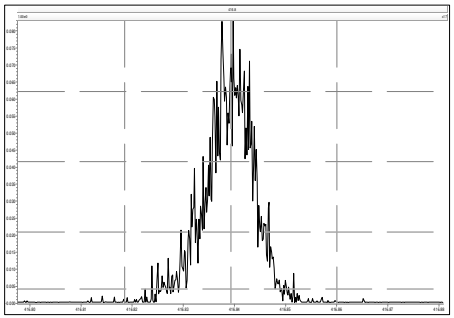

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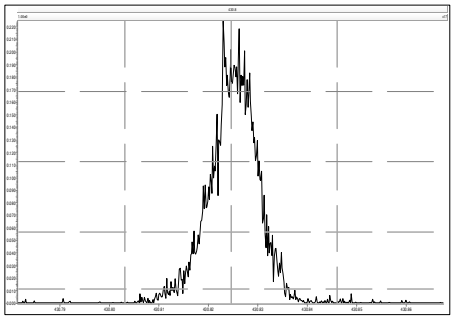

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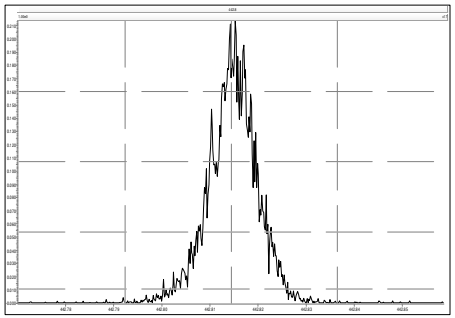

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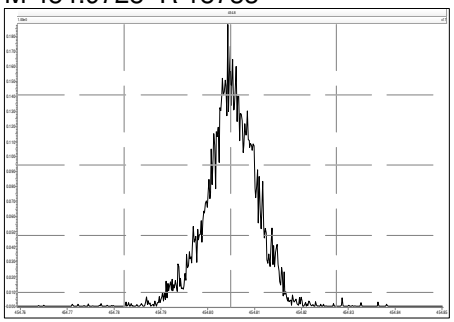

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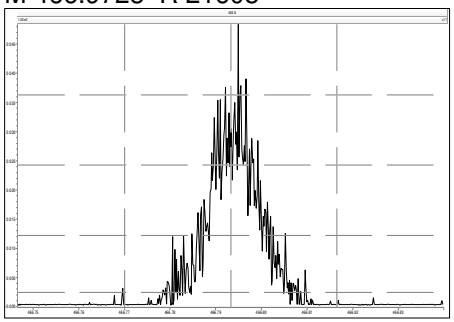

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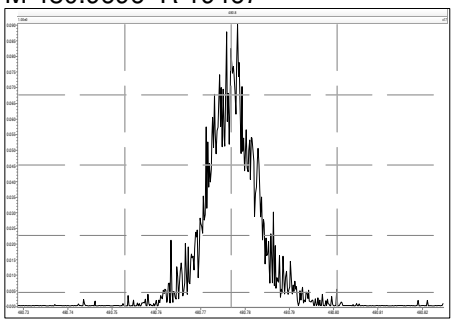

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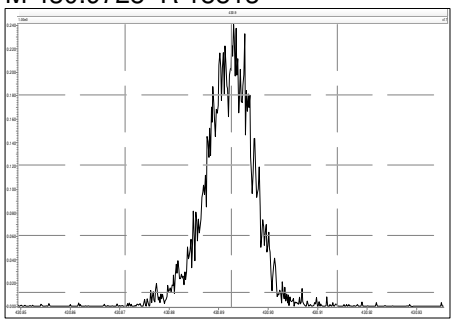

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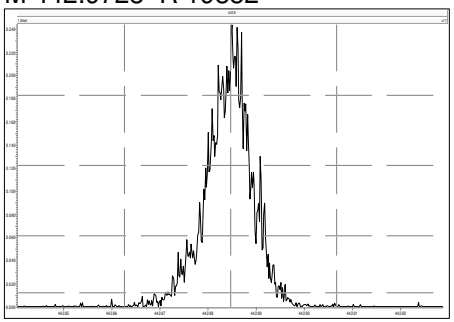

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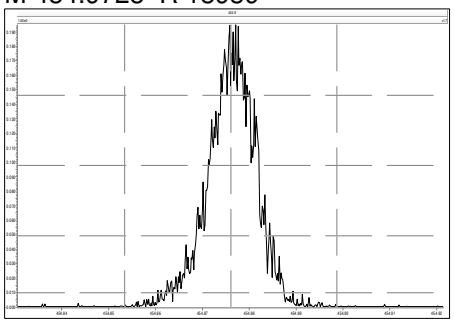
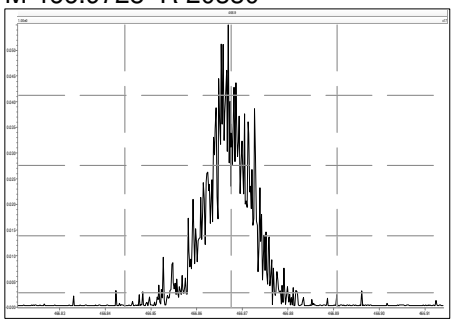
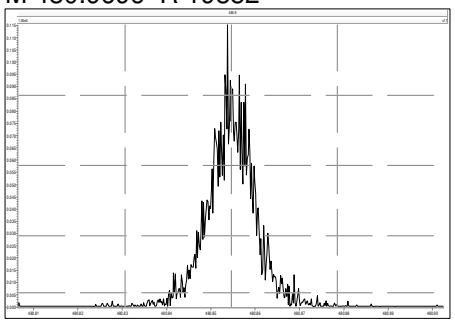


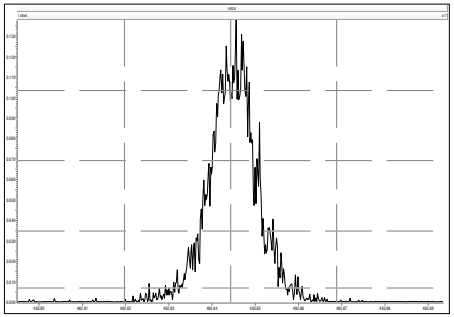
M 466.9728 R 20330



M 480.9696 R 19852



M 492.9696 R 19170



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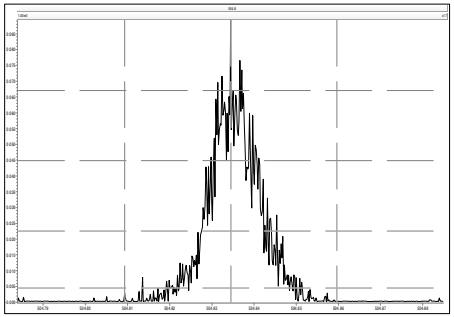
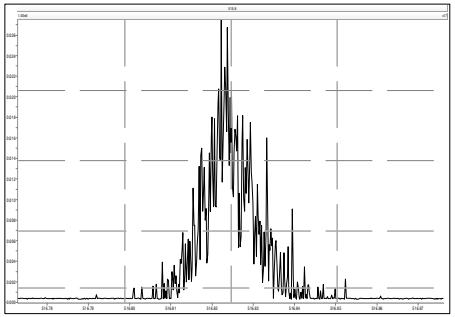


M 516.9697 R 23536



Dioxin/Furan ICAL Summary — SGS North America — Processed: 11 Nov 2021 16:24

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 0.25 pg/uL CS0	211110C05 0.5 pg/uL CS1	211110C06 2 pg/uL CS2	211110C07 10 pg/uL CS3	211110C08 40 pg/uL CS4	211110C09 200 pg/uL CS5	211110C10 500 pg/uL CS6
2378-TCDD	1.18	7.4%	1.34 ✓	1.23	1.21	1.18	1.14	1.08	1.11
12378-PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98 ✓
123478-HxCDD	1.09	7.8%	1.27	1.13	1.04	1.05	1.05	1.03	1.05
123678-HxCDD	1.15	7.9%	1.32	1.22	1.12	1.12	1.07	1.10	1.08
123789-HxCDD	1.05	7.7%	1.18	1.14	1.01	1.03	0.98	0.99	1.01
1234678-HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
OCDD	1.13	6.1%	1.24	1.20	1.12	1.09	1.06	1.09	1.08
2378-TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
12378-PeCDF	1.02	9.4%	1.22	1.08	1.00	0.98	0.96	0.96	0.97
23478-PeCDF	1.02	7.3%	1.15	1.10	0.99	1.00	0.96	0.96	0.97
123478-HxCDF	1.27	6.9%	1.35	1.43	1.24	1.25	1.19	1.21	1.22
123678-HxCDF	1.15	7.8%	1.34	1.17	1.15	1.13	1.09	1.09	1.09
234678-HxCDF	1.19	7.8%	1.37	1.27	1.14	1.16	1.12	1.12	1.14
123789-HxCDF	1.16	6.3%	1.22	1.30	1.14	1.15	1.10	1.11	1.12
1234678-HpCDF	1.37	7.5%	1.49	1.54	1.36	1.33	1.28	1.29	1.29
1234789-HpCDF	1.31	3.4%	1.38	1.34	1.31	1.32	1.25	1.28	1.27
OCDF	1.07	7.0%	1.20	1.15	1.02	1.06	1.02	1.03	1.02
ES 2378-TCDD	1.05	1.9%	1.03	1.03	1.03	1.05	1.05	1.08	1.05
ES 12378-PeCDD	0.88	4.6%	0.85	0.84 ✓	0.84	0.89	0.88	0.90	0.96
ES 123478-HxCDD	0.97	4.6%	0.92	0.93	0.99	0.96	0.96	1.02	1.04
ES 123678-HxCDD	0.94	3.8%	0.93	0.90	0.92	0.93	0.94	0.97	1.01
ES 123789-HxCDD	1.09	4.3%	1.05	1.02	1.10	1.07	1.11	1.15	1.15
ES 1234678-HpCDD	0.91	4.6%	0.86	0.87	0.90	0.92	0.91	0.95	0.98
ES OCDD	0.62	7.0%	0.58	0.58	0.61	0.61	0.62	0.66	0.70
ES 2378-TCDF	1.06	1.9%	1.03	1.05	1.07	1.08	1.04	1.07	1.07
ES 12378-PeCDF	0.91	4.6%	0.85	0.89	0.89	0.92	0.89	0.94	0.98
ES 23478-PeCDF	0.88	4.5%	0.85	0.85	0.87	0.89	0.86	0.91	0.95
ES 123478-HxCDF	1.20	4.0%	1.17	1.13	1.21	1.17	1.21	1.24	1.27
ES 123678-HxCDF	1.35	4.0%	1.32	1.30	1.31	1.33	1.35	1.41	1.44
ES 234678-HxCDF	1.24	3.7%	1.19	1.20	1.24	1.23	1.23	1.29	1.31
ES 123789-HxCDF	1.16	4.8%	1.09	1.10	1.14	1.15	1.15	1.22	1.24
ES 1234678-HpCDF	0.97	4.9%	0.94	0.90	0.95	0.96	0.97	1.01	1.04
ES 1234789-HpCDF	0.85	4.7%	0.80	0.82	0.83	0.85	0.86	0.88	0.92
ES OCDF	0.81	8.4%	0.74	0.74	0.79	0.79	0.79	0.87	0.93

ICAL: HRMS3_DF_10272021 10NOV2021
Data Acquired: 10-Nov-2021

Name	Mean	% RSD	211110C04 **0.25 pg/uL CS0**	211110C05 **0.5 pg/uL CS1**	211110C06 **2 pg/uL CS2**	211110C07 **10 pg/uL CS3**	211110C08 **40 pg/uL CS4**	211110C09 **200 pg/uL CS5**	211110C10 **500 pg/uL CS6**
CS 37Cl-2378-TCDD	1.20	6.3%	-	1.09	1.31	1.21	1.20	1.21	-
CS 12347-PeCDD	0.75	1.1%	0.75	0.75	0.74	0.77	0.76	0.74	0.75
CS 12346-PeCDF	0.85	1.5%	0.85	0.85	0.86 ✓	0.87	0.84	0.83	0.85
CS 123469-HxCDF	1.12	1.8%	1.11	1.11	1.15	1.12	1.13	1.08	1.11
CS 1234689-HpCDF	0.89	2.5%	0.86	0.88	0.93	0.90	0.90	0.88	0.87
SS 37Cl-2378-TCDD	1.15	6.5%	-	1.07	1.27	1.15	1.14	1.11	-
SS 12347-PeCDD	0.86	4.3%	0.89	0.89	0.88	0.86	0.86	0.83	0.79
SS 12346-PeCDF	0.94	4.9%	1.00	0.95	0.97	0.95	0.94	0.88	0.87
SS 123469-HxCDF	0.83	5.1%	0.85	0.85	0.88	0.84	0.84	0.77	0.77
SS 1234689-HpCDF	0.92	5.6%	0.91	0.98	0.98	0.93	0.93	0.87	0.84
AS 1368-TCDD	1.06	1.9%	1.06	1.05	1.01	1.07 ✓	1.06	1.07	1.07
AS 1368-TCDF	1.13	1.7%	1.13	1.12	1.13	1.16	1.10	1.11	1.13
OCDD-a	0.07	6.4%	-	-	0.07	0.08	0.07	0.07	0.07
OCDF-a	0.07	4.9%	0.07	-	0.07	0.07	0.07	0.06	0.06
Totals									
Total TCDD	1.18	7.4%	1.34	1.23	1.21	1.18	1.14	1.08	1.11
Total PeCDD	1.04	8.2%	1.21	1.09	1.02	1.00	0.98	0.98	0.98
Total HxCDD	1.10	7.6%	1.26	1.16	1.06	1.07	1.03	1.04	1.04
Total HpCDD	1.06	8.0%	1.20	1.16	1.04	1.03	1.00	0.99	1.00
Total TCDF	1.08	6.9%	1.21	1.11	1.12	1.09	1.03	1.00	1.00
Total PeCDF	1.02	8.3%	1.18	1.09	1.00	0.99	0.96	0.96	0.97
Total HxCDF	1.19	6.6%	1.32	1.29	1.17	1.17	1.12	1.13	1.14
Total HpCDF	1.34	5.4%	1.44	1.44	1.33	1.32	1.27	1.29	1.28
FS 1278-TCDD	1.07	2.3%	1.10	1.08	1.07	1.08	1.08	1.03	1.05
FS 12478-PeCDD	1.09	5.0%	1.14	1.12	1.14	1.10	1.10 ✓	1.06	0.98
FS 123468-HxCDD	1.26	4.6%	1.31	1.28	1.28	1.29	1.27	1.20	1.16
FS 1234679-HpCDD	1.36	4.1%	1.41	1.39	1.40	1.36	1.40	1.31	1.26
TS 1378-TCDD	1.34	2.5%	1.38	1.37	1.34	1.34	1.33	1.28 ✓	1.33

Instrument: HRMS3 (AutoSpec-Ultima) MS Experiment: df_cl4-8_db5MS GC Program: df_db5MS

#	Datafile	Vial#	Lab ID	Wt/Vol	Client/Sample ID	Analyst(s)	Checkcode	Acq Date	Acq Time
3	211110C03	2	SBS_211110_DF_CA	1.00	20-61-1	DTF	876-647	10-Nov-2021	10:15:54
4	211110C04	65	CS0_211110_DF_CA	1.00	25-6-3	DTF	245-007	10-Nov-2021	11:02:13
5	211110C05	66	CS1_211110_DF_CA	1.00	25-6-2	DTF	419-111	10-Nov-2021	11:48:34
6	211110C06	67	CS2_211110_DF_CA	1.00	25-6-1	DTF	385-758	10-Nov-2021	12:34:54
7	211110C07	3	CS3_211110_DF_CB	1.00	23-672-1	DTF	507-474	10-Nov-2021	13:21:13
8	211110C08	69	CS4_211110_DF_CA	1.00	25-5-4	DTF	855-576	10-Nov-2021	14:07:32
9	211110C09	70	CS5_211110_DF_CA	1.00	25-5-3	DTF	573-489	10-Nov-2021	14:53:51
10	211110C10	71	CS6_211110_DF_CA	1.00	25-5-2	DTF	172-736	10-Nov-2021	15:40:10

REVIEWED
Tyler_Fritz , 11/11/2021, 4:44:03 PM

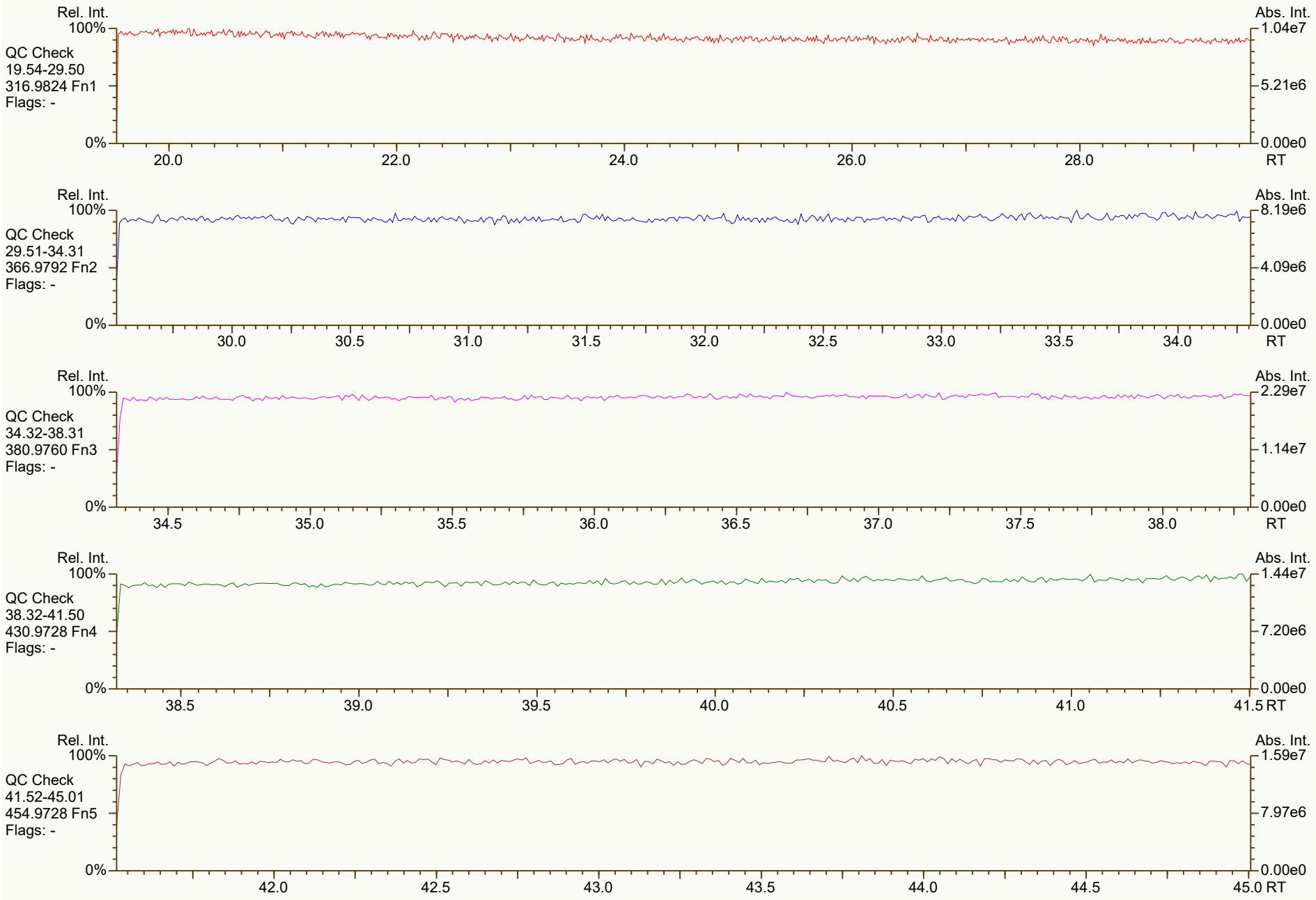
APPROVED
Amy_Boehm , 11/11/2021, 5:28:50 PM

Dioxin/Furan ICAL Concentrations	SGS Environmental Services							
	Concentration							
Individual Native Standards	CS0 pg/uL	CS1 pg/uL	CS2 pg/uL	CS3 pg/uL	CS4 pg/uL	CS5 pg/uL	CS6 pg/uL	Working Standards pg/uL
2378-TCDD	0.25	0.5	2	10	40	200	500	1
12378-PeCDD	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDD	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDD	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDD	1.25	2.5	10	50	200	1000	2500	1
OCDD	2.5	5	20	100	400	2000	5000	1
2378-TCDF	0.25	0.5	2	10	40	200	500	1
12378-PeCDF	1.25	2.5	10	50	200	1000	2500	1
23478-PeCDF	1.25	2.5	10	50	200	1000	2500	1
123478-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
234678-HxCDF	1.25	2.5	10	50	200	1000	2500	1
123789-HxCDF	1.25	2.5	10	50	200	1000	2500	1
1234678-HpCDF	1.25	2.5	10	50	200	1000	2500	1
1234789-HpCDF	1.25	2.5	10	50	200	1000	2500	1
OCDF	2.5	5	20	100	400	2000	5000	1
Extraction Standards								
ES 2378-TCDD	100	100	100	100	100	100	100	10
ES 12378-PeCDD	100	100	100	100	100	100	100	10
ES 123478-HxCDD	100	100	100	100	100	100	100	10
ES 123678-HxCDD	100	100	100	100	100	100	100	10
ES 123789-HxCDD	100	100	100	100	100	100	100	10
ES 1234678-HpCDD	100	100	100	100	100	100	100	10
ES OCDD	200	200	200	200	200	200	200	10
ES 2378-TCDF	100	100	100	100	100	100	100	10
ES 12378-PeCDF	100	100	100	100	100	100	100	10
ES 23478-PeCDF	100	100	100	100	100	100	100	10
ES 123478-HxCDF	100	100	100	100	100	100	100	10
ES 123678-HxCDF	100	100	100	100	100	100	100	10
ES 234678-HxCDF	100	100	100	100	100	100	100	10
ES 123789-HxCDF	100	100	100	100	100	100	100	10
ES 1234678-HpCDF	100	100	100	100	100	100	100	10
ES 1234789-HpCDF	100	100	100	100	100	100	100	10
ES OCDF	200	200	200	200	200	200	200	10
Cleanup/Sampling Standards								
CS 37Cl-2378-TCDD	-	0.5	2	10	40	200	-	4
CS 12347-PeCDD	100	100	100	100	100	100	100	10
CS 12346-PeCDF	100	100	100	100	100	100	100	10
CS 123469-HxCDF	100	100	100	100	100	100	100	10
CS 1234689-HpCDF	100	100	100	100	100	100	100	10
Alternate Standards								
AS 1368-TCDD	100	100	100	100	100	100	100	10
AS 1368-TCDF	100	100	100	100	100	100	100	10
Shipping Standards								
FS 1278-TCDD	100	100	100	100	100	100	100	100
FS 12478-PeCDD	100	100	100	100	100	100	100	100
FS 123468-HxCDD	100	100	100	100	100	100	100	100
FS 1234679-HpCDD	100	100	100	100	100	100	100	100
TS 1378-TCDD	100	100	100	100	100	100	100	100
Injection Standards								
1234 TCDD 13C12	100	100	100	100	100	100	100	10
1234 TCDF 13C12	100	100	100	100	100	100	100	10
123467 HxCDD 13C12	50	50	50	50	50	50	50	5

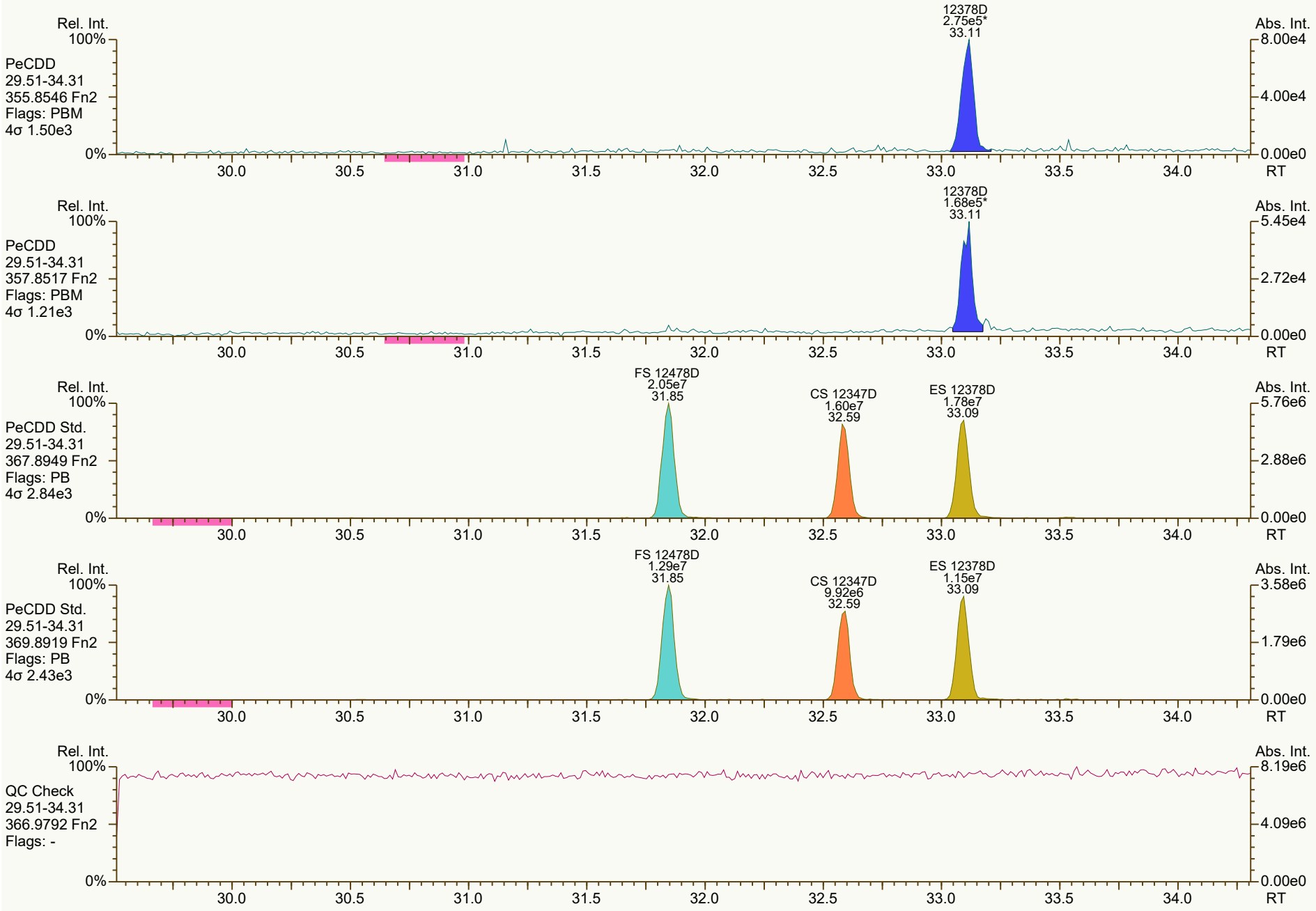
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 11:02 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA	UTP: 11-Nov-2021 16:23:33 DTF	Checkcode: 245-007-QLD
Sample ID: 25-6-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C04

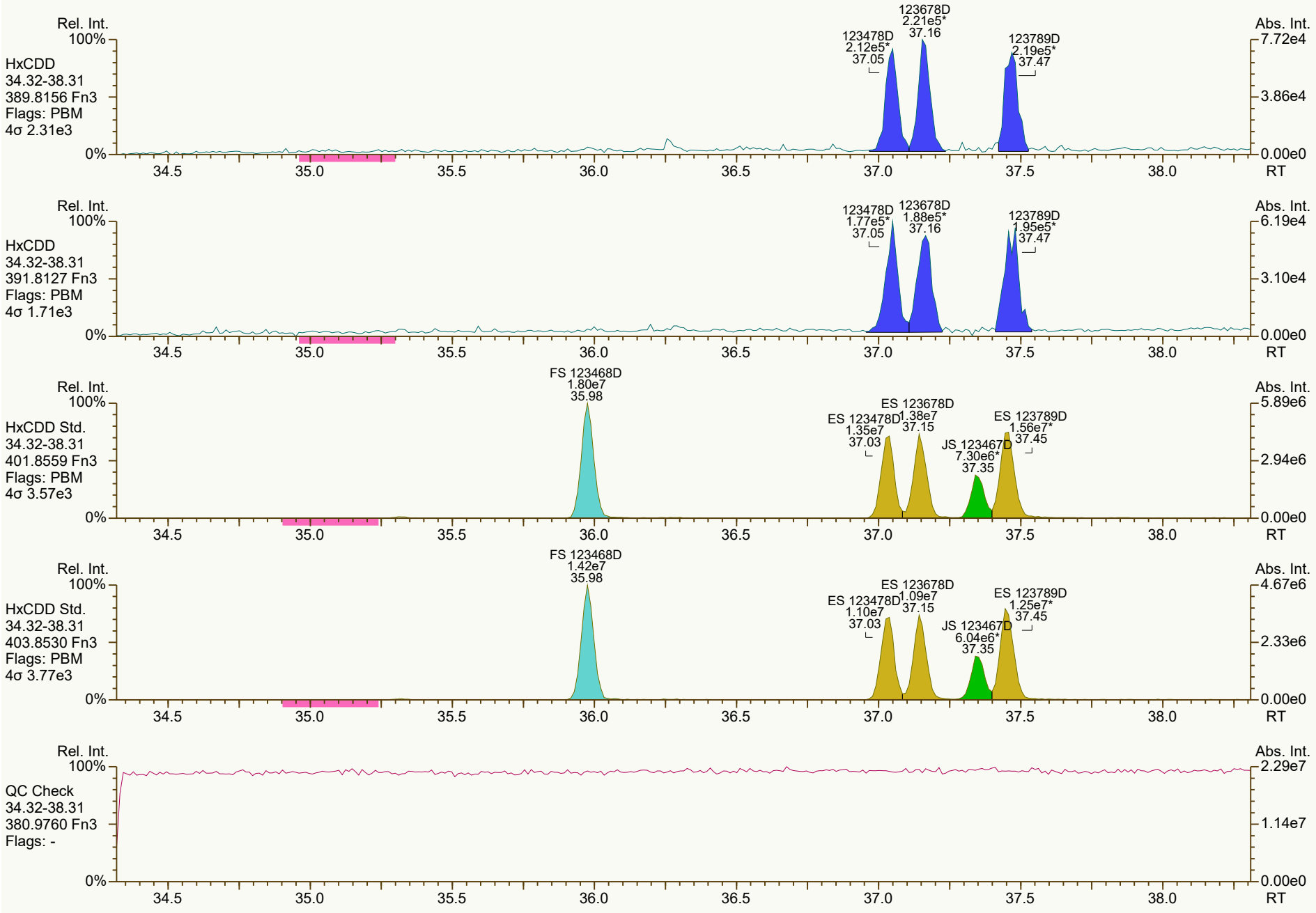
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	1.19E+05	0.80	Y	1.18	1.34	13%
12378-PeCDD	33.11	4.42E+05	1.64	Y	1.04	1.21	17%
123478-HxCDD	37.05	3.89E+05	1.20	Y	1.09	1.27	16%
123678-HxCDD	37.16	4.09E+05	1.18	Y	1.15	1.32	15%
123789-HxCDD	37.47	4.14E+05	1.13	Y	1.05	1.18	12%
1234678-HpCDD	40.29	3.45E+05	1.08	Y	1.06	1.20	13%
OCDD	42.83	4.78E+05	0.90	Y	1.13	1.24	10%
2378-TCDF	26.68	1.53E+05	0.88	Y	1.08	1.21	12%
12378-PeCDF	31.63	6.42E+05	1.42	Y	1.02	1.22	19%
23478-PeCDF	32.75	5.95E+05	1.54	Y	1.02	1.15	12%
123478-HxCDF	36.06	5.27E+05	1.24	Y	1.27	1.35	6%
123678-HxCDF	36.20	5.91E+05	1.13	Y	1.15	1.34	17%
234678-HxCDF	36.86	5.43E+05	1.11	Y	1.19	1.37	15%
123789-HxCDF	37.85	4.44E+05	1.29	Y	1.16	1.22	5%
1234678-HpCDF	39.35	4.67E+05	1.10	Y	1.37	1.49	9%
1234789-HpCDF	40.71	3.68E+05	1.08	Y	1.31	1.38	6%
OCDF	43.00	5.95E+05	0.91	Y	1.07	1.20	12%
ES 2378-TCDD	27.57	3.56E+07	0.80	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.092	2.93E+07	1.55	Y	0.88	0.85	-4%
ES 123478-HxCDD	37.032	2.45E+07	1.23	Y	0.97	0.92	-6%
ES 123678-HxCDD	37.146	2.47E+07	1.26	Y	0.94	0.93	-2%
ES 123789-HxCDD	37.455	2.81E+07	1.25	Y	1.09	1.05	-4%
ES 1234678-HpCDD	40.273	2.30E+07	1.06	Y	0.91	0.86	-6%
ES OCDD	42.826	3.08E+07	0.91	Y	0.62	0.58	-7%
ES 2378-TCDF	26.661	5.07E+07	0.79	Y	1.06	1.03	-3%
ES 12378-PeCDF	31.609	4.20E+07	1.57	Y	0.91	0.85	-6%
ES 23478-PeCDF	32.739	4.16E+07	1.60	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.049	3.11E+07	0.53	Y	1.20	1.17	-3%
ES 123678-HxCDF	36.187	3.52E+07	0.53	Y	1.35	1.32	-3%
ES 234678-HxCDF	36.84	3.18E+07	0.53	Y	1.24	1.19	-4%
ES 123789-HxCDF	37.832	2.91E+07	0.53	Y	1.16	1.09	-6%
ES 1234678-HpCDF	39.342	2.51E+07	0.46	Y	0.97	0.94	-3%
ES 1234789-HpCDF	40.703	2.14E+07	0.45	Y	0.85	0.80	-6%
ES OCDF	42.99	3.95E+07	0.90	Y	0.81	0.74	-8%

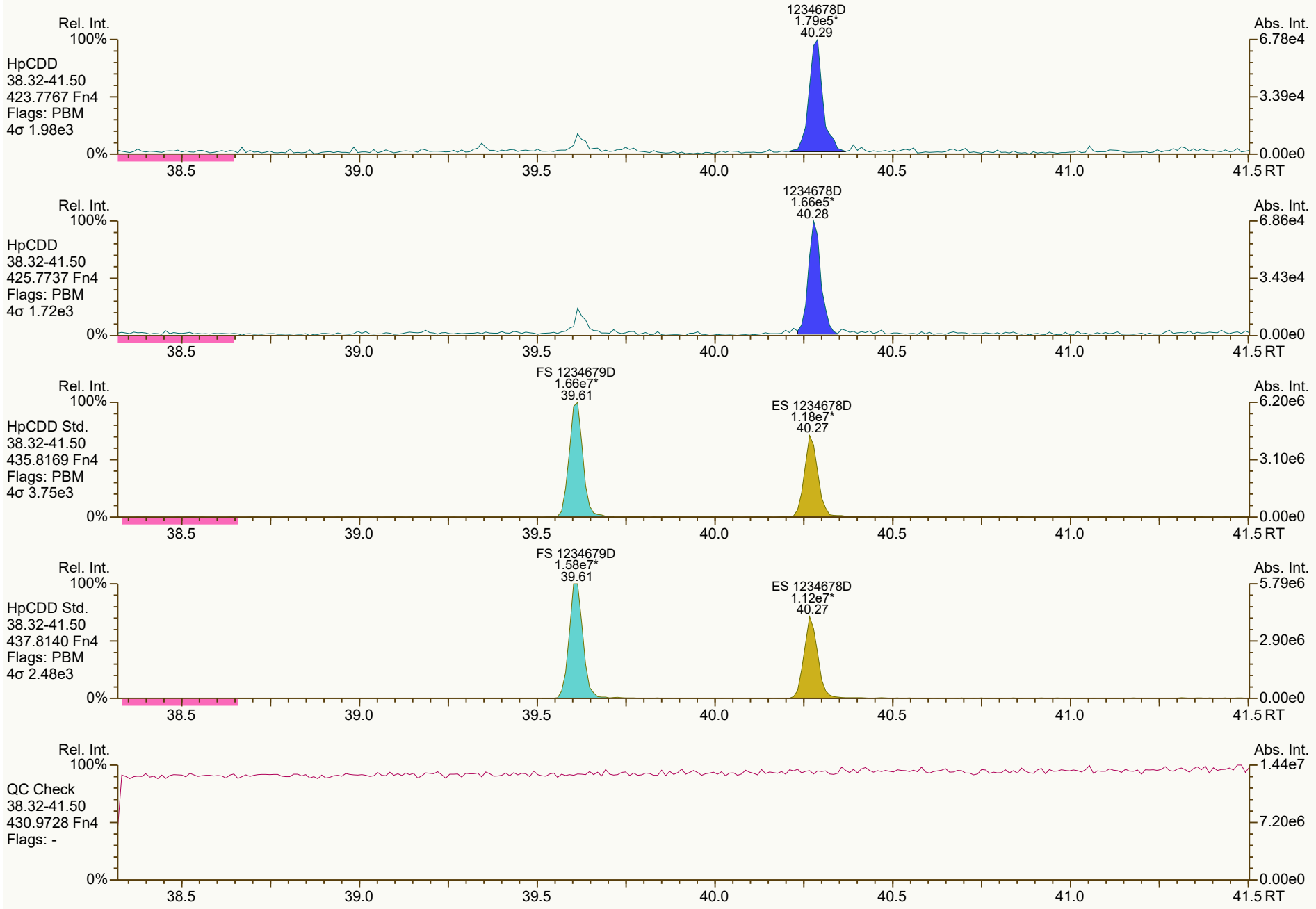
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:02 DTF					ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS0_211110_DF_CA		UTP: 11-Nov-2021 16:23:33 DTF					Checkcode: 245-007-QLD
Sample ID: 25-6-3		Report: 11 Nov 2021 16:25 TF					Datafile: 211110C04
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.90	3.46E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.25	4.91E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.35	1.33E+07	1.21	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.75	0.75	-1%
CS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.98E+07	0.53	Y	1.12	1.11	0%
CS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.89	0.86	-3%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.59E+07	1.61	Y	0.86	0.89	3%
SS 12346-PeCDF	31.08	4.19E+07	1.57	Y	0.94	1.00	6%
SS 123469-HxCDF	36.50	2.98E+07	0.53	Y	0.83	0.85	2%
SS 1234689-HpCDF	39.75	2.29E+07	0.46	Y	0.92	0.91	-1%
AS 1368-TCDD	23.73	3.67E+07	0.81	Y	1.06	1.06	0%
AS 1368-TCDF	21.50	5.56E+07	0.82	Y	1.13	1.13	0%
FS 1278-TCDD	27.92	3.90E+07	0.80	Y	1.07	1.10	2%
FS 12478-PeCDD	31.85	3.33E+07	1.59	Y	1.09	1.14	4%
FS 123468-HxCDD	35.98	3.22E+07	1.26	Y	1.26	1.31	5%
FS 1234679-HpCDD	39.61	3.24E+07	1.05	Y	1.36	1.41	4%
TS 1378-TCDD	25.85	4.91E+07	0.80	Y	1.34	1.38	3%
OCDD-a	NotFnd				0.07		
OCDF-a	42.99	3.25E+04	2.38	Y	0.07	0.07	-1%

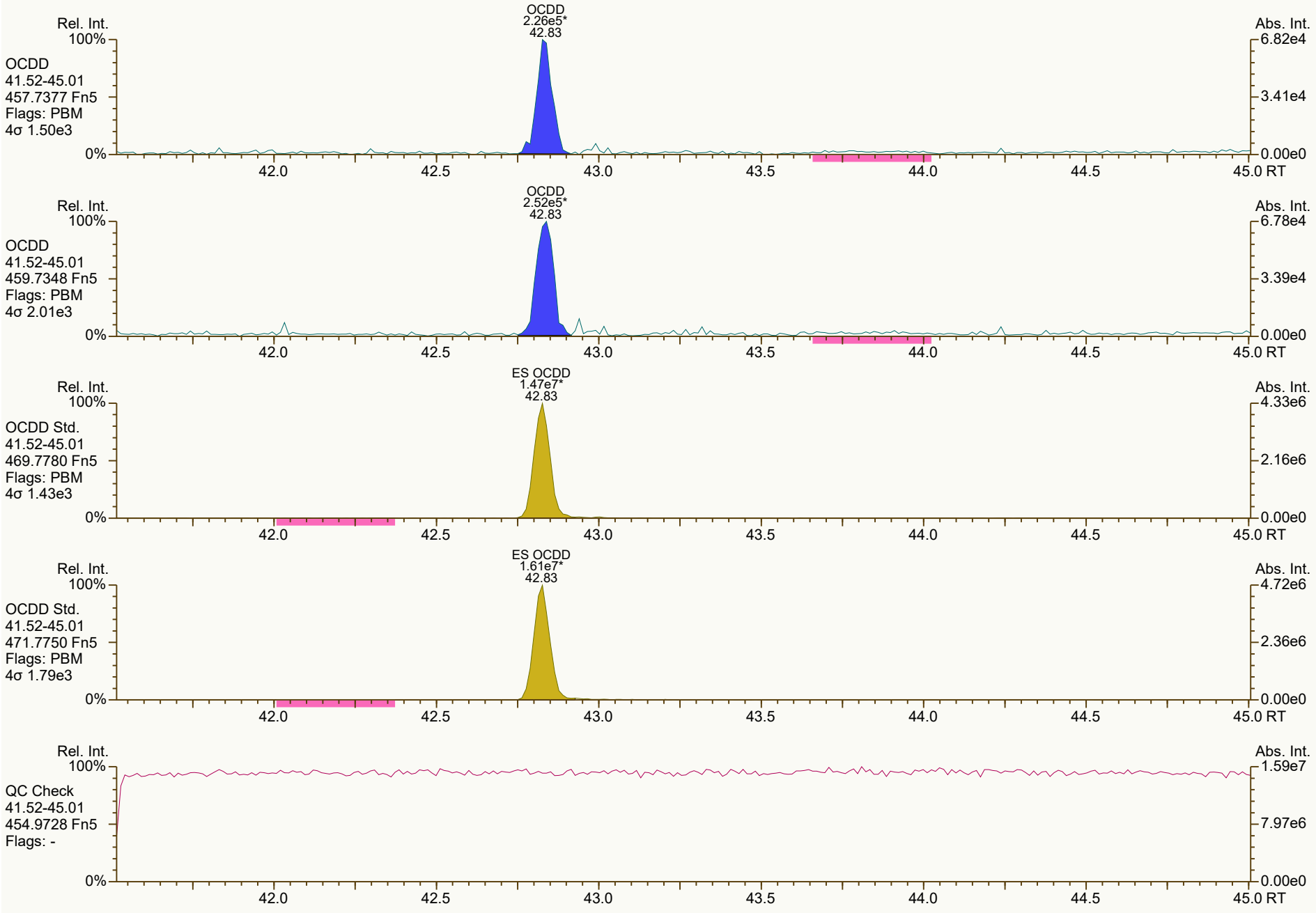

Rel. Int.
100%
0%
Abs. Int.
1.04e7
5.21e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.19e6
4.09e6
0.00e0
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
0%
Abs. Int.
2.29e7
1.14e7
0.00e0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
0%
Abs. Int.
1.59e7
7.97e6
0.00e0
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

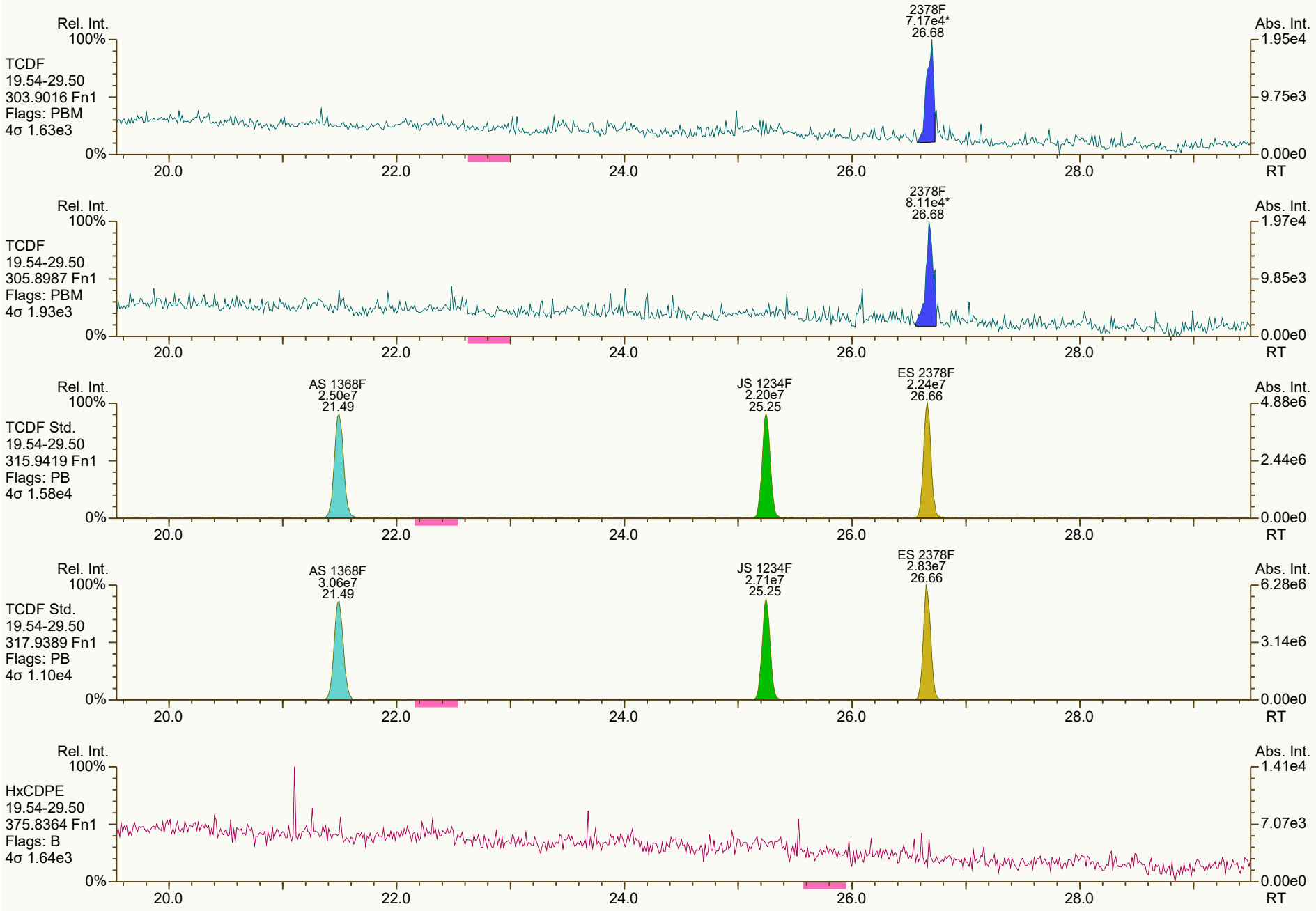

SGS ID: CS0_211110_DF_CA
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 25-6-3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
Acq: 10-Nov-2021 11:02:13
User: DTF Datafile: 211110C04
Rel. Int.
100%
0%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PBM
4σ 2.61e3
RRF = (5.29e4 + 6.64e4) * 100pg / (1.59e7 + 1.97e7) * .25pg = 1.34
DTF 11-Nov-2021 16:30
2378D
5.29e4*
27.60
Abs. Int.
1.67e4
8.35e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
APPROVED
Amy_Boehm , 11/11/2021, 5:12:33 PM
TCDD
19.54-29.50
321.8936 Fn1
Flags: PBM
4σ 2.27e3
2378D
6.64e4*
27.59
2.13e4
1.06e4
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.48e3
9.73e3
4.86e3
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 9.73e3
AS 1368D
1.64e7
23.73
TS 1378D
2.18e7
25.85
JS 1234D
1.56e7
26.90
ES 2378D
1.59e7
27.57
FS 1278D
1.73e7
27.92
4.65e6
2.32e6
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.27e3
AS 1368D
2.03e7
23.73
TS 1378D
2.73e7
25.85
JS 1234D
1.90e7
26.90
ES 2378D
1.97e7
27.57
FS 1278D
2.17e7
27.92
5.85e6
2.92e6
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 3504, 1483, 2998 scc: 245-007
Revised: 11-Nov-2021 16:18 (DTF) Printed: 11-Nov-2021 16:32 Page 2 of 12


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PBM
4σ 1.50e3
12378D
2.75e5*
33.11
Abs. Int.
8.00e4
4.00e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PBM
4σ 1.21e3
12378D
1.68e5*
33.11
Abs. Int.
5.45e4
2.72e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 2.84e3
FS 12478D
2.05e7
31.85
CS 12347D
1.60e7
32.59
ES 12378D
1.78e7
33.09
Abs. Int.
5.76e6
2.88e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.43e3
FS 12478D
1.29e7
31.85
CS 12347D
9.92e6
32.59
ES 12378D
1.15e7
33.09
Abs. Int.
3.58e6
1.79e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.19e6
4.09e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 2.31e3
123478D
2.12e5*
37.05
123678D
2.21e5*
37.16
123789D
2.19e5*
37.47
Abs. Int.
7.72e4
3.86e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.71e3
123478D
1.77e5*
37.05
123678D
1.88e5*
37.16
123789D
1.95e5*
37.47
Abs. Int.
6.19e4
3.10e4
0.00e0
0%
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.57e3
FS 123468D
1.80e7
35.98
ES 123678D
1.38e7
37.15
ES 123478D
1.35e7
37.03
ES 123789D
1.56e7*
37.45
JS 123467D
7.30e6*
37.35
Abs. Int.
5.89e6
2.94e6
0.00e0
0%
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.77e3
FS 123468D
1.42e7
35.98
ES 123678D
1.09e7
37.15
ES 123478D
1.10e7
37.03
ES 123789D
1.25e7*
37.45
JS 123467D
6.04e6*
37.35
Abs. Int.
4.67e6
2.33e6
0.00e0
0%
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.29e7
1.14e7
0.00e0
0%
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.98e3
0%
1234678D
1.79e5*
40.29
Abs. Int.
6.78e4
3.39e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.72e3
0%
1234678D
1.66e5*
40.28
Abs. Int.
6.86e4
3.43e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 3.75e3
0%
FS 1234679D
1.66e7*
39.61
ES 1234678D
1.18e7*
40.27
Abs. Int.
6.20e6
3.10e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 2.48e3
0%
FS 1234679D
1.58e7*
39.61
ES 1234678D
1.12e7*
40.27
Abs. Int.
5.79e6
2.90e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.44e7
7.20e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

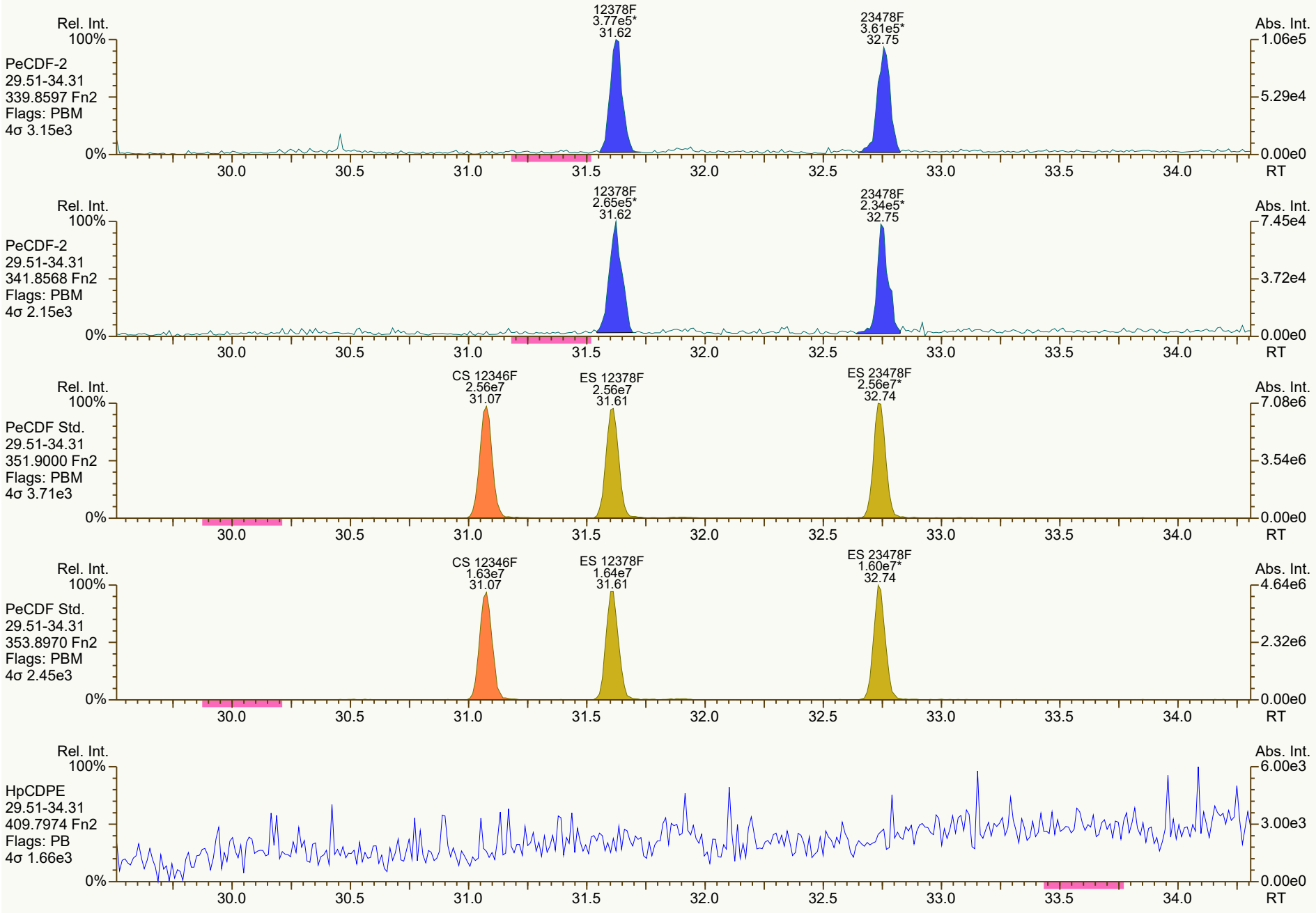

OCDD
2.26e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.50e3
0%
Abs. Int.
6.82e4
3.41e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.52e5*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.01e3
0%
Abs. Int.
6.78e4
3.39e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.47e7*
42.83
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.43e3
0%
Abs. Int.
4.33e6
2.16e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7*
42.83
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 1.79e3
0%
Abs. Int.
4.72e6
2.36e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

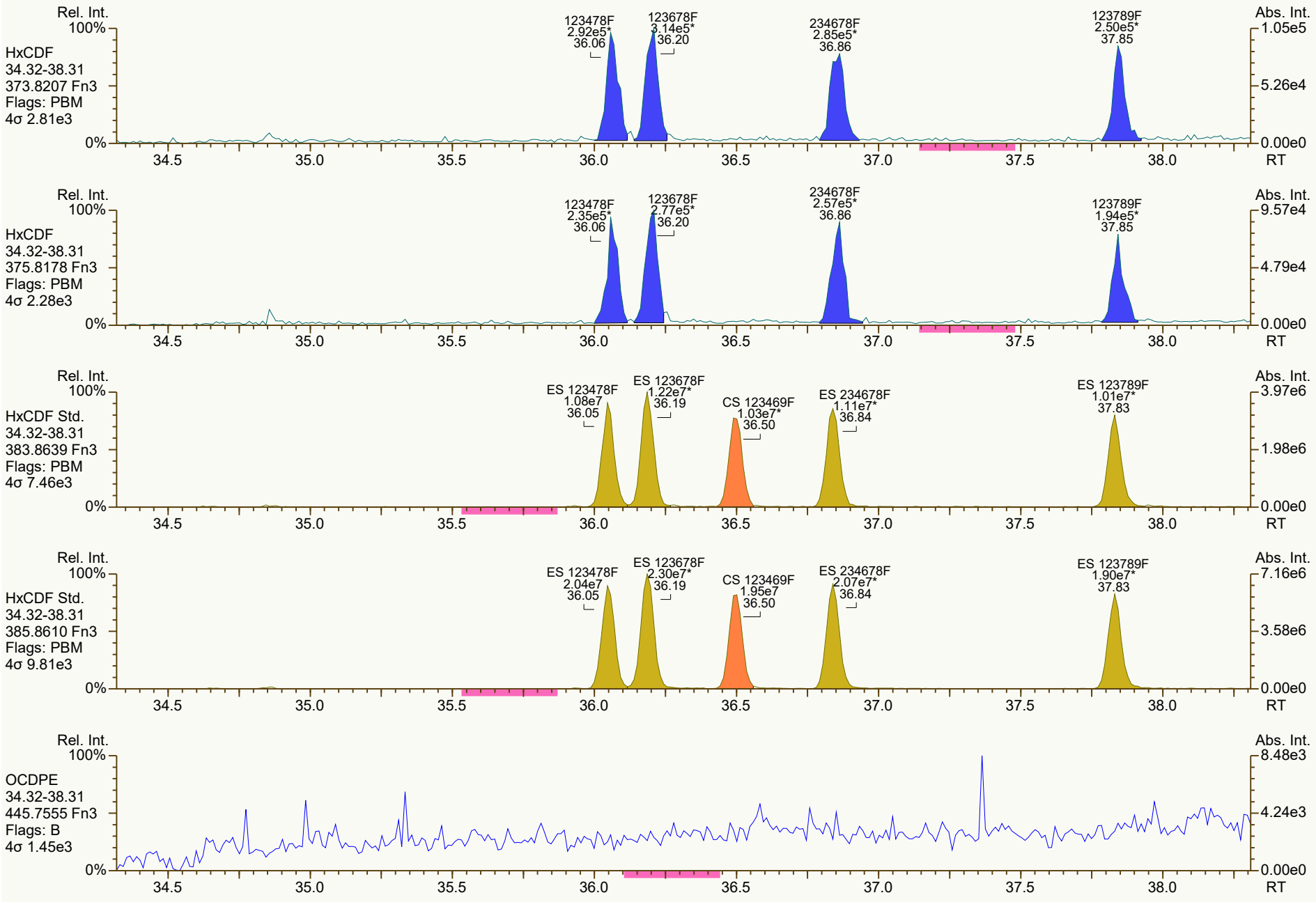

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.63e3
2378F
7.17e4*
26.68
Abs. Int.
1.95e4
9.75e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 1.93e3
2378F
8.11e4*
26.68
Abs. Int.
1.97e4
9.85e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.58e4
AS 1368F
2.50e7
21.49
JS 1234F
2.20e7
25.25
ES 2378F
2.24e7
26.66
Abs. Int.
4.88e6
2.44e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.10e4
AS 1368F
3.06e7
21.49
JS 1234F
2.71e7
25.25
ES 2378F
2.83e7
26.66
Abs. Int.
6.28e6
3.14e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.64e3
Abs. Int.
1.41e4
7.07e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT

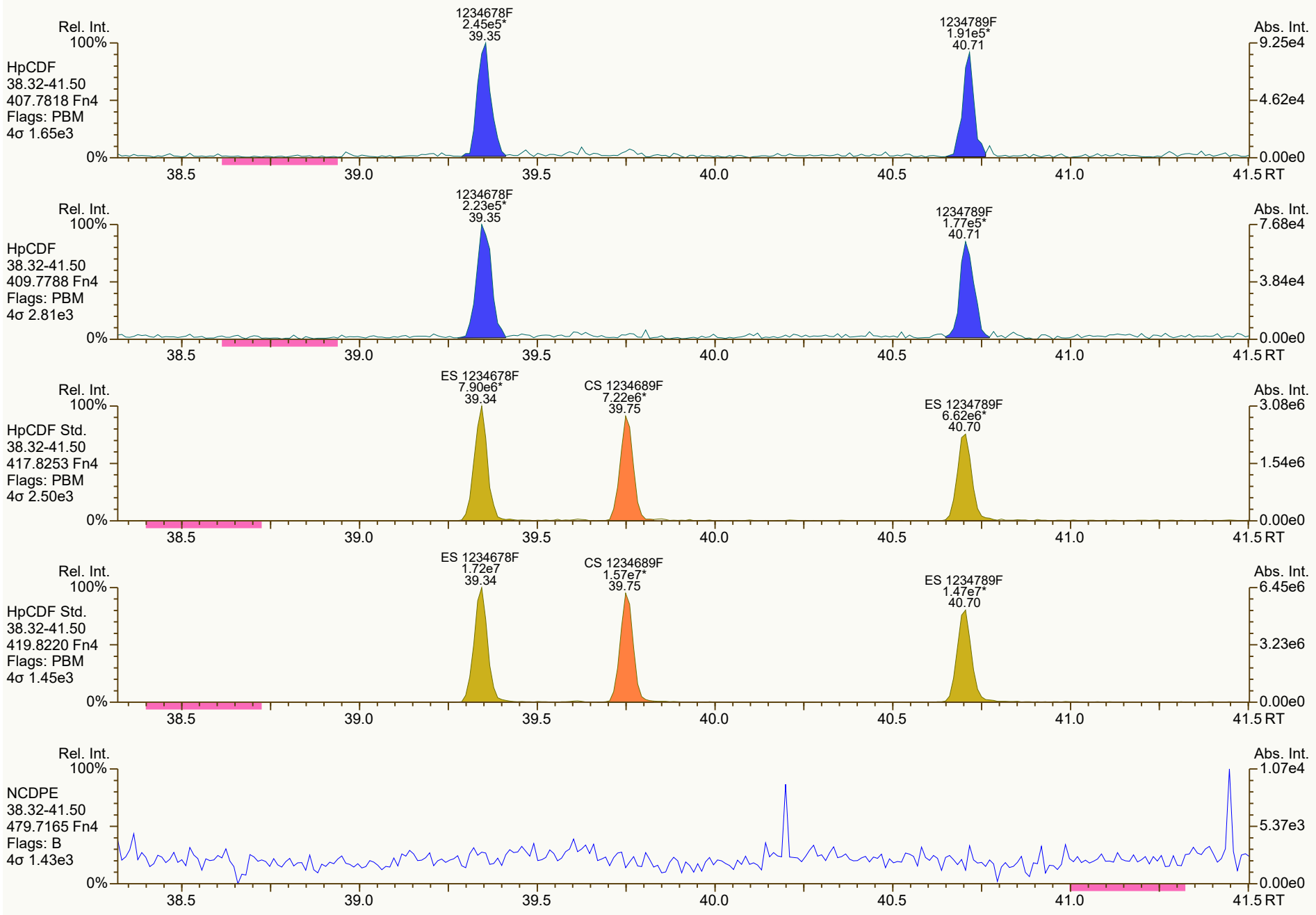
SGS ID: CS0_211110_DF_CA
Sample ID: 25-6-3
Acq: 10-Nov-2021 11:02:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 65
User: DTF Datafile: 211110C04



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS0_211110_DF_CA.utp_res, saved 11-Nov-2021 16:31 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 6412 scc: 245-007
PKD: 10-Nov-2021 13:30 Printed: 11-Nov-2021 16:32 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PBM
4σ 3.15e3
0%
12378F
3.77e5*
31.62
23478F
3.61e5*
32.75
Abs. Int.
1.06e5
5.29e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PBM
4σ 2.15e3
0%
12378F
2.65e5*
31.62
23478F
2.34e5*
32.75
Abs. Int.
7.45e4
3.72e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PBM
4σ 3.71e3
0%
CS 12346F
2.56e7
31.07
ES 12378F
2.56e7
31.61
ES 23478F
2.56e7*
32.74
Abs. Int.
7.08e6
3.54e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PBM
4σ 2.45e3
0%
CS 12346F
1.63e7
31.07
ES 12378F
1.64e7
31.61
ES 23478F
1.60e7*
32.74
Abs. Int.
4.64e6
2.32e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: PB
4σ 1.66e3
0%
Abs. Int.
6.00e3
3.00e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

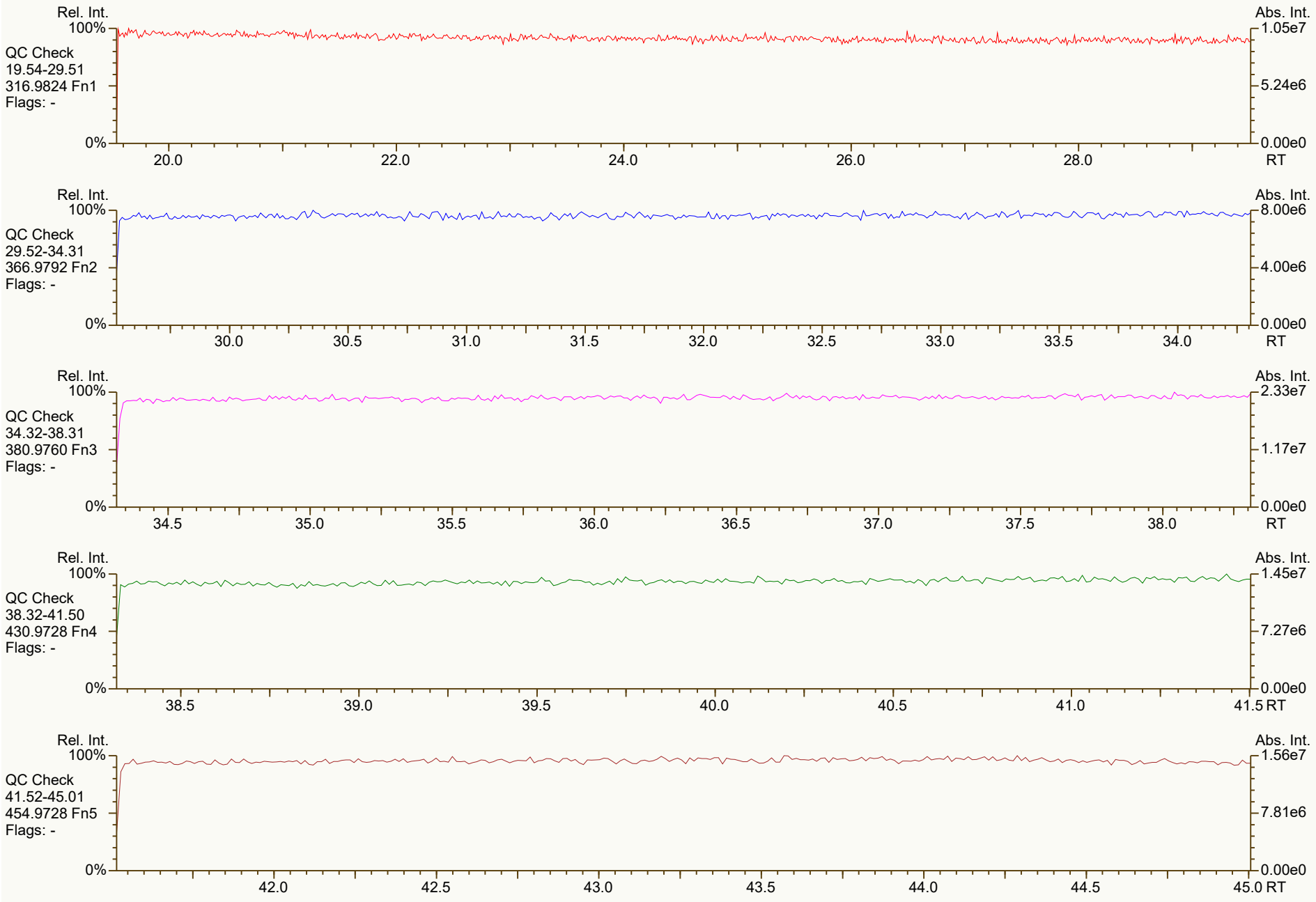

Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.81e3
0%
123478F
2.92e5*
36.06
123678F
3.14e5*
36.20
234678F
2.85e5*
36.86
123789F
2.50e5*
37.85
Abs. Int.
1.05e5
5.26e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.28e3
0%
123478F
2.35e5*
36.06
123678F
2.77e5*
36.20
234678F
2.57e5*
36.86
123789F
1.94e5*
37.85
Abs. Int.
9.57e4
4.79e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.46e3
0%
ES 123478F
1.08e7
36.05
ES 123678F
1.22e7*
36.19
CS 123469F
1.03e7*
36.50
ES 234678F
1.11e7*
36.84
ES 123789F
1.01e7*
37.83
Abs. Int.
3.97e6
1.98e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.81e3
0%
ES 123478F
2.04e7
36.05
ES 123678F
2.30e7*
36.19
CS 123469F
1.95e7
36.50
ES 234678F
2.07e7*
36.84
ES 123789F
1.90e7*
37.83
Abs. Int.
7.16e6
3.58e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.45e3
0%
Abs. Int.
8.48e3
4.24e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.65e3
1234678F
2.45e5*
39.35
1234789F
1.91e5*
40.71
Abs. Int.
9.25e4
4.62e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.81e3
1234678F
2.23e5*
39.35
1234789F
1.77e5*
40.71
Abs. Int.
7.68e4
3.84e4
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.50e3
ES 1234678F
7.90e6*
39.34
CS 1234689F
7.22e6*
39.75
ES 1234789F
6.62e6*
40.70
Abs. Int.
3.08e6
1.54e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.45e3
ES 1234678F
1.72e7
39.34
CS 1234689F
1.57e7*
39.75
ES 1234789F
1.47e7*
40.70
Abs. Int.
6.45e6
3.23e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.43e3
Abs. Int.
1.07e4
5.37e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

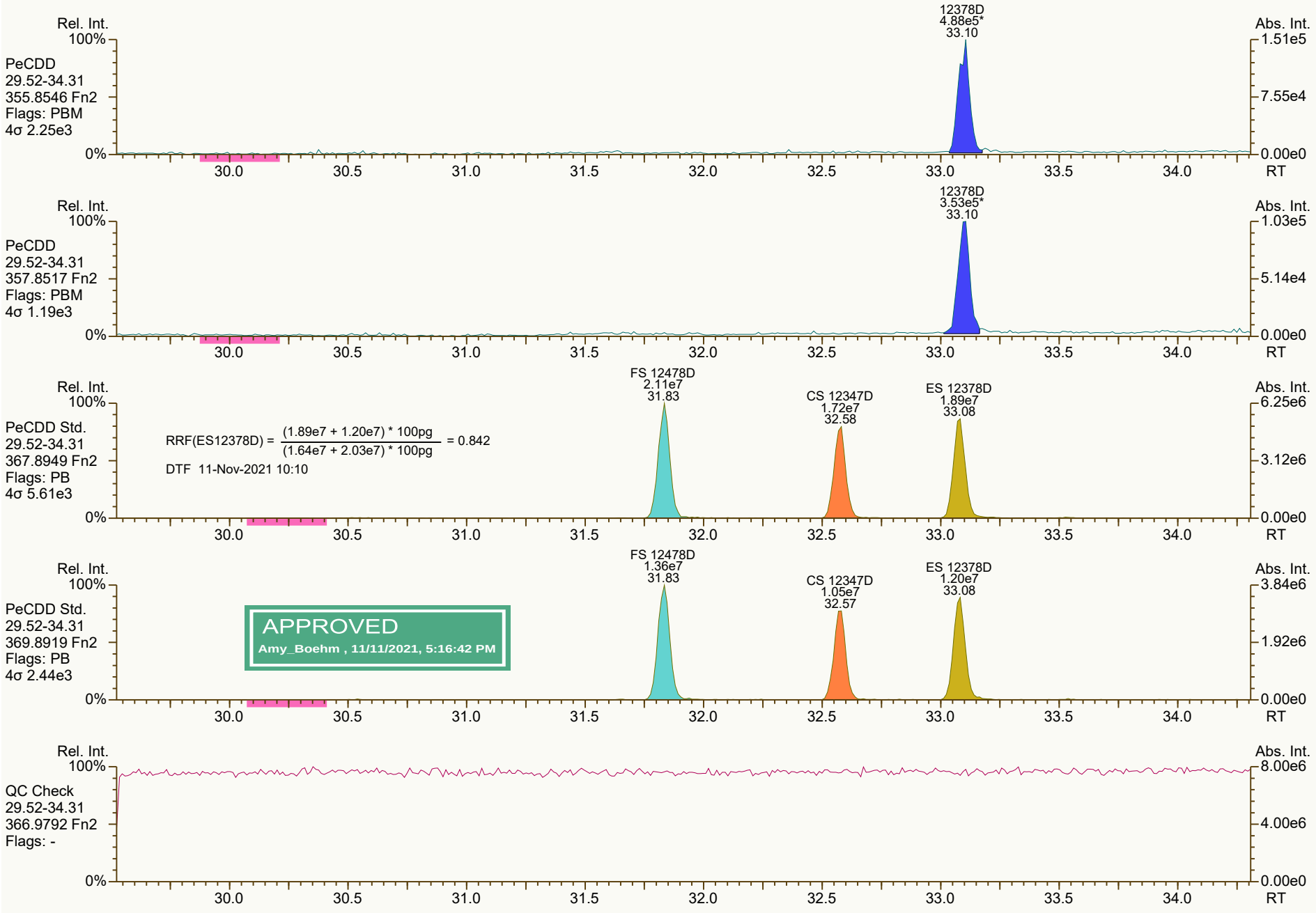

OCDF
2.83e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.07e3
0%
Abs. Int.
9.68e4
4.84e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
3.12e5*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.63e3
0%
Abs. Int.
8.96e4
4.48e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.88e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.90e3
0%
Abs. Int.
5.42e6
2.71e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.08e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.27e3
0%
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.52e3
0%
Abs. Int.
5.12e3
2.56e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

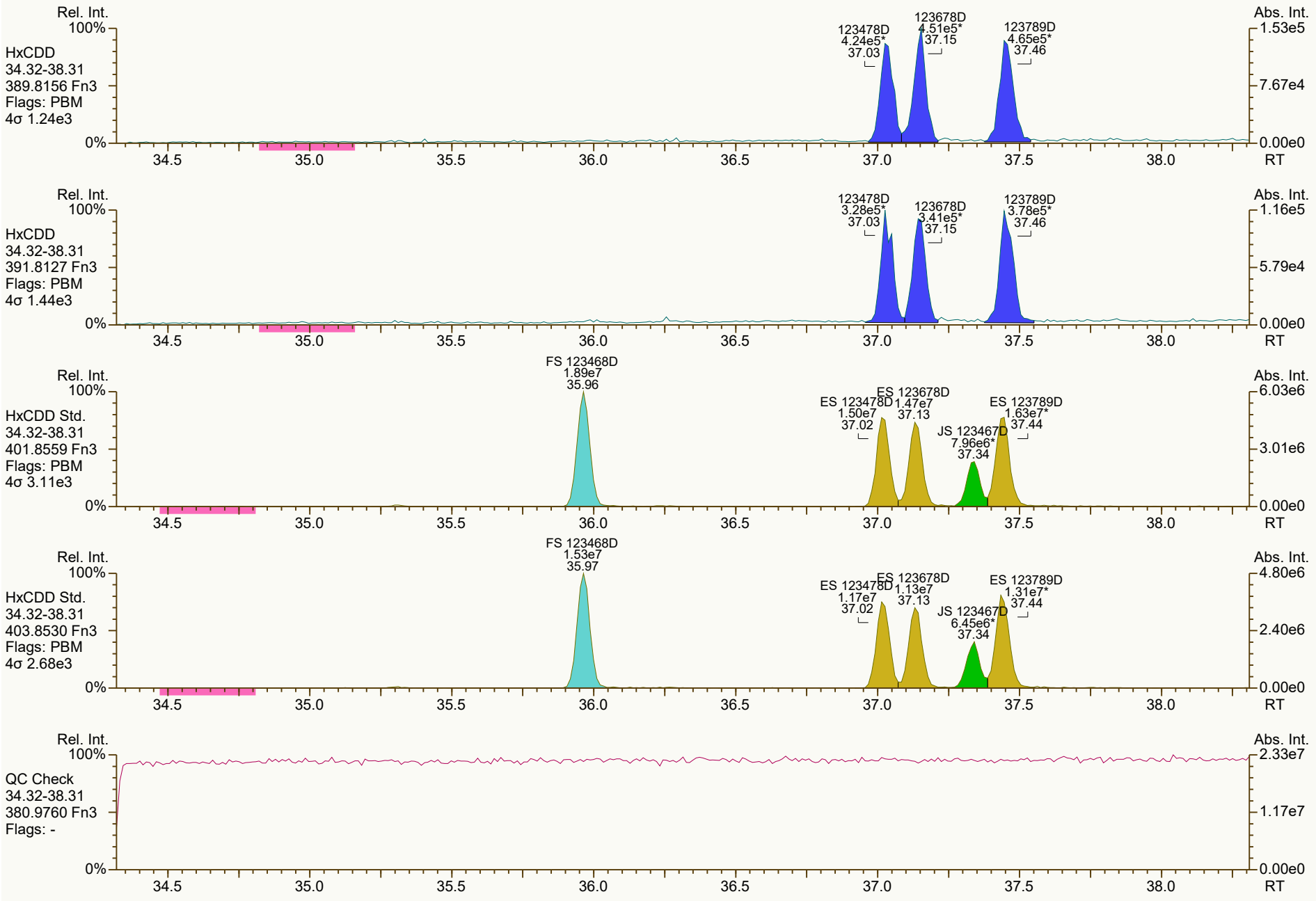
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.58	2.32E+05	0.82	Y	1.18	1.23	4%
12378-PeCDD	33.10	8.41E+05	1.39	Y	1.04	1.09	5%
123478-HxCDD	37.03	7.52E+05	1.29	Y	1.09	1.13	3%
123678-HxCDD	37.15	7.91E+05	1.32	Y	1.15	1.22	6%
123789-HxCDD	37.46	8.43E+05	1.23	Y	1.05	1.14	9%
1234678-HpCDD	40.27	7.27E+05	1.07	Y	1.06	1.16	9%
OCDD	42.82	1.01E+06	0.87	Y	1.13	1.20	7%
2378-TCDF	26.67	2.98E+05	0.75	Y	1.08	1.11	3%
12378-PeCDF	31.61	1.22E+06	1.43	Y	1.02	1.08	5%
23478-PeCDF	32.74	1.20E+06	1.54	Y	1.02	1.10	8%
123478-HxCDF	36.05	1.16E+06	1.26	Y	1.27	1.43	13%
123678-HxCDF	36.19	1.09E+06	1.31	Y	1.15	1.17	1%
234678-HxCDF	36.85	1.10E+06	1.16	Y	1.19	1.27	7%
123789-HxCDF	37.84	1.04E+06	1.19	Y	1.16	1.30	12%
1234678-HpCDF	39.34	9.99E+05	1.06	Y	1.37	1.54	12%
1234789-HpCDF	40.70	7.95E+05	0.93	Y	1.31	1.34	3%
OCDF	42.99	1.23E+06	0.91	Y	1.07	1.15	7%
ES 2378-TCDD	27.56	3.76E+07	0.79	Y	1.05	1.03	-2%
ES 12378-PeCDD	33.081	3.09E+07	1.57	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.02	2.67E+07	1.29	Y	0.97	0.93	-5%
ES 123678-HxCDD	37.135	2.60E+07	1.30	Y	0.94	0.90	-5%
ES 123789-HxCDD	37.441	2.95E+07	1.24	Y	1.09	1.02	-6%
ES 1234678-HpCDD	40.259	2.51E+07	1.07	Y	0.91	0.87	-5%
ES OCDD	42.812	3.37E+07	0.92	Y	0.62	0.58	-6%
ES 2378-TCDF	26.65	5.38E+07	0.81	Y	1.06	1.05	-1%
ES 12378-PeCDF	31.597	4.55E+07	1.55	Y	0.91	0.89	-3%
ES 23478-PeCDF	32.727	4.34E+07	1.54	Y	0.88	0.85	-4%
ES 123478-HxCDF	36.037	3.26E+07	0.53	Y	1.20	1.13	-6%
ES 123678-HxCDF	36.175	3.74E+07	0.53	Y	1.35	1.30	-4%
ES 234678-HxCDF	36.829	3.46E+07	0.53	Y	1.24	1.20	-3%
ES 123789-HxCDF	37.82	3.18E+07	0.52	Y	1.16	1.10	-4%
ES 1234678-HpCDF	39.328	2.60E+07	0.43	Y	0.97	0.90	-7%
ES 1234789-HpCDF	40.69	2.37E+07	0.45	Y	0.85	0.82	-4%
ES OCDF	42.976	4.27E+07	0.89	Y	0.81	0.74	-8%

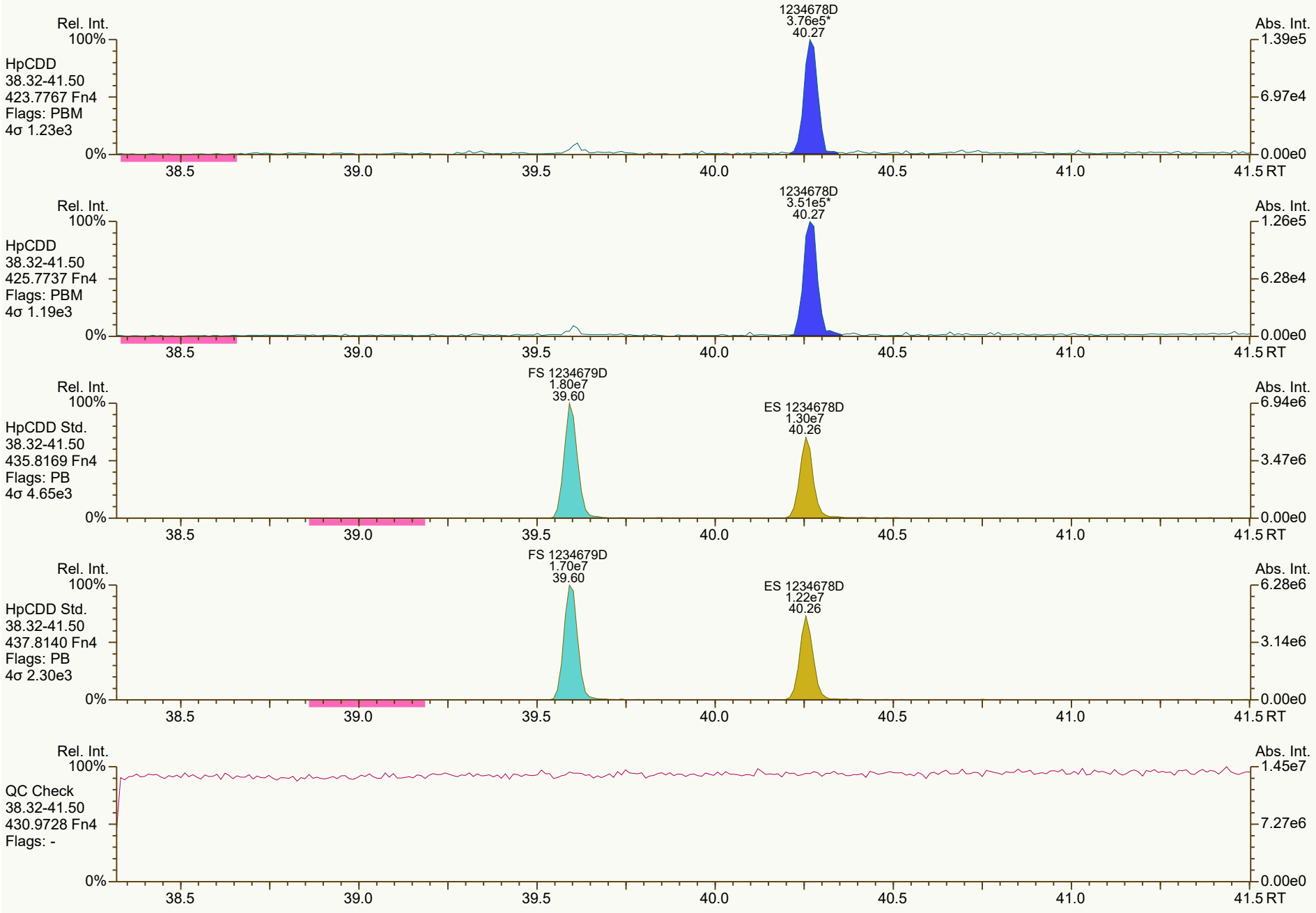
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 11:48 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS1_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 419-111-CRN	
Sample ID: 25-6-2		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C05	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.67E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.13E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.44E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.20	1.09	-9%
CS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.75	0.75	0%
CS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.85	0.85	-1%
CS 123469-HxCDF	36.49	3.20E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	2.01E+05	n/a	-	1.15	1.07	-7%
SS 12347-PeCDD	32.58	2.77E+07	1.64	Y	0.86	0.89	4%
SS 12346-PeCDF	31.06	4.34E+07	1.57	Y	0.94	0.95	2%
SS 123469-HxCDF	36.49	3.20E+07	0.53	Y	0.83	0.85	3%
SS 1234689-HpCDF	39.74	2.54E+07	0.47	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.86E+07	0.79	Y	1.06	1.05	0%
AS 1368-TCDF	21.48	5.77E+07	0.80	Y	1.13	1.12	0%
FS 1278-TCDD	27.91	4.07E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.47E+07	1.55	Y	1.09	1.12	3%
FS 123468-HxCDD	35.97	3.43E+07	1.23	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.60	3.50E+07	1.06	Y	1.36	1.39	2%
TS 1378-TCDD	25.84	5.14E+07	0.80	Y	1.34	1.37	2%
OCDD-a	NotFnd				0.07		
OCDF-a	NotFnd				0.07		

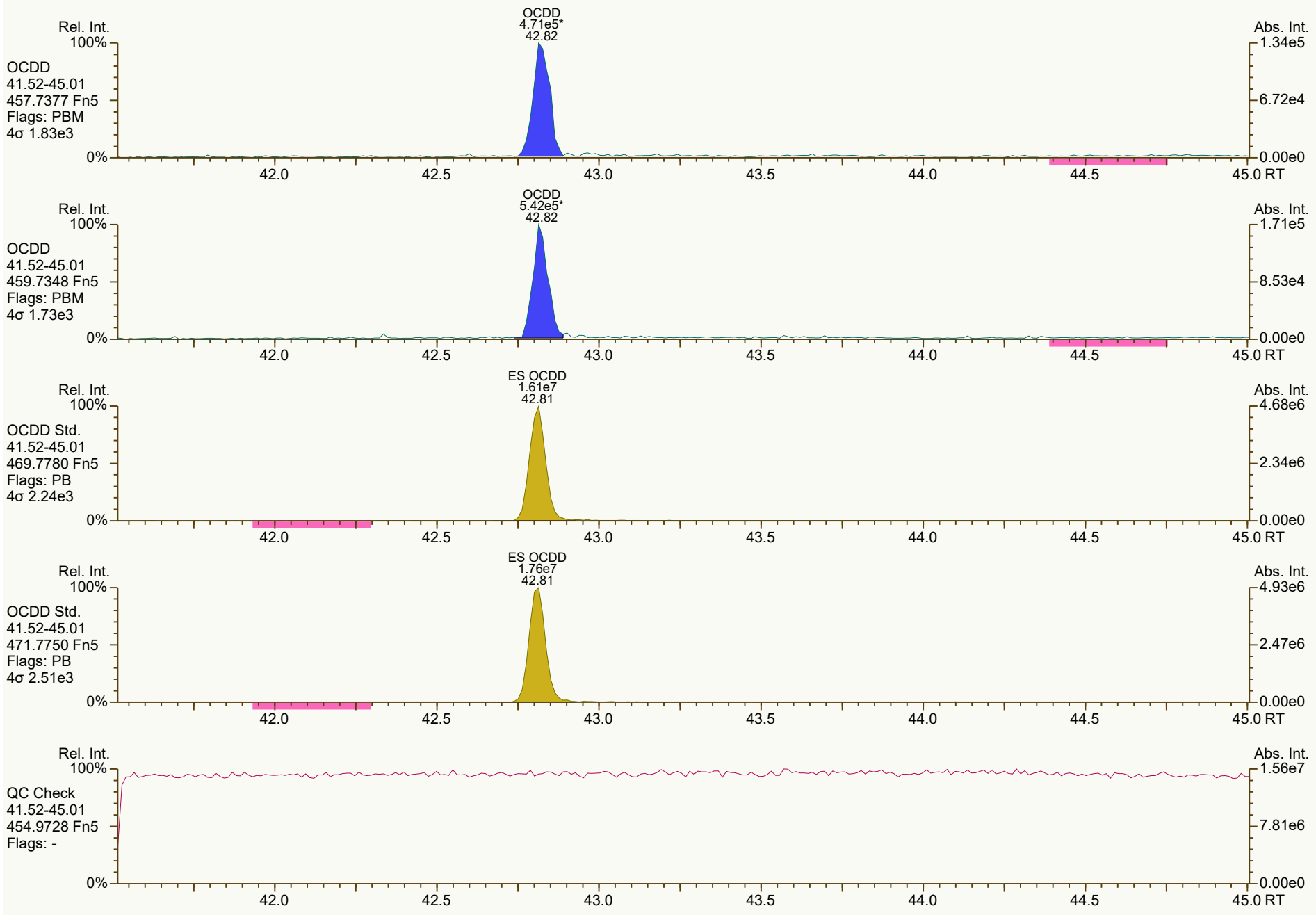

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
1.05e7
5.24e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.00e6
4.00e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
RT
Abs. Int.
1.45e7
7.27e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
RT
Abs. Int.
1.56e7
7.81e6
0.00e0

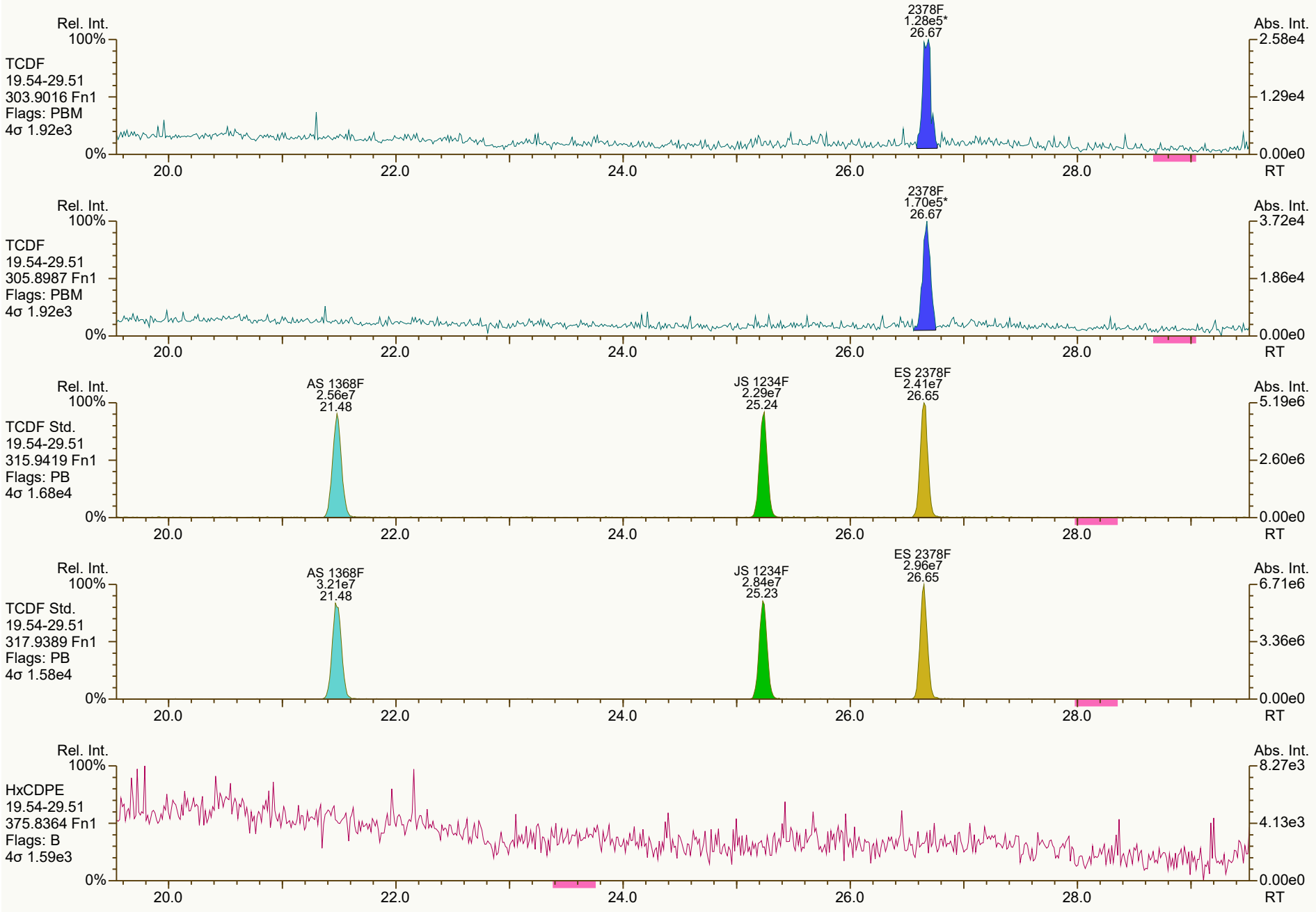

Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 3.33e3
0%
2378D
1.05e5*
27.58
Abs. Int.
2.76e4
1.38e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.06e3
0%
2378D
1.27e5*
27.58
Abs. Int.
2.99e4
1.49e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.52e3
0%
CS 37Cl-2378D
2.01e5*
27.59
Abs. Int.
5.18e4
2.59e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 1.05e4
0%
AS 1368D
1.71e7
23.72
TS 1378D
2.28e7
25.84
JS 1234D
1.64e7
26.89
ES 2378D
1.66e7
27.56
FS 1278D
1.82e7
27.90
Abs. Int.
4.92e6
2.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 5.59e3
0%
AS 1368D
2.15e7
23.72
TS 1378D
2.86e7
25.84
JS 1234D
2.03e7
26.89
ES 2378D
2.11e7
27.56
FS 1278D
2.26e7
27.90
Abs. Int.
6.21e6
3.10e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

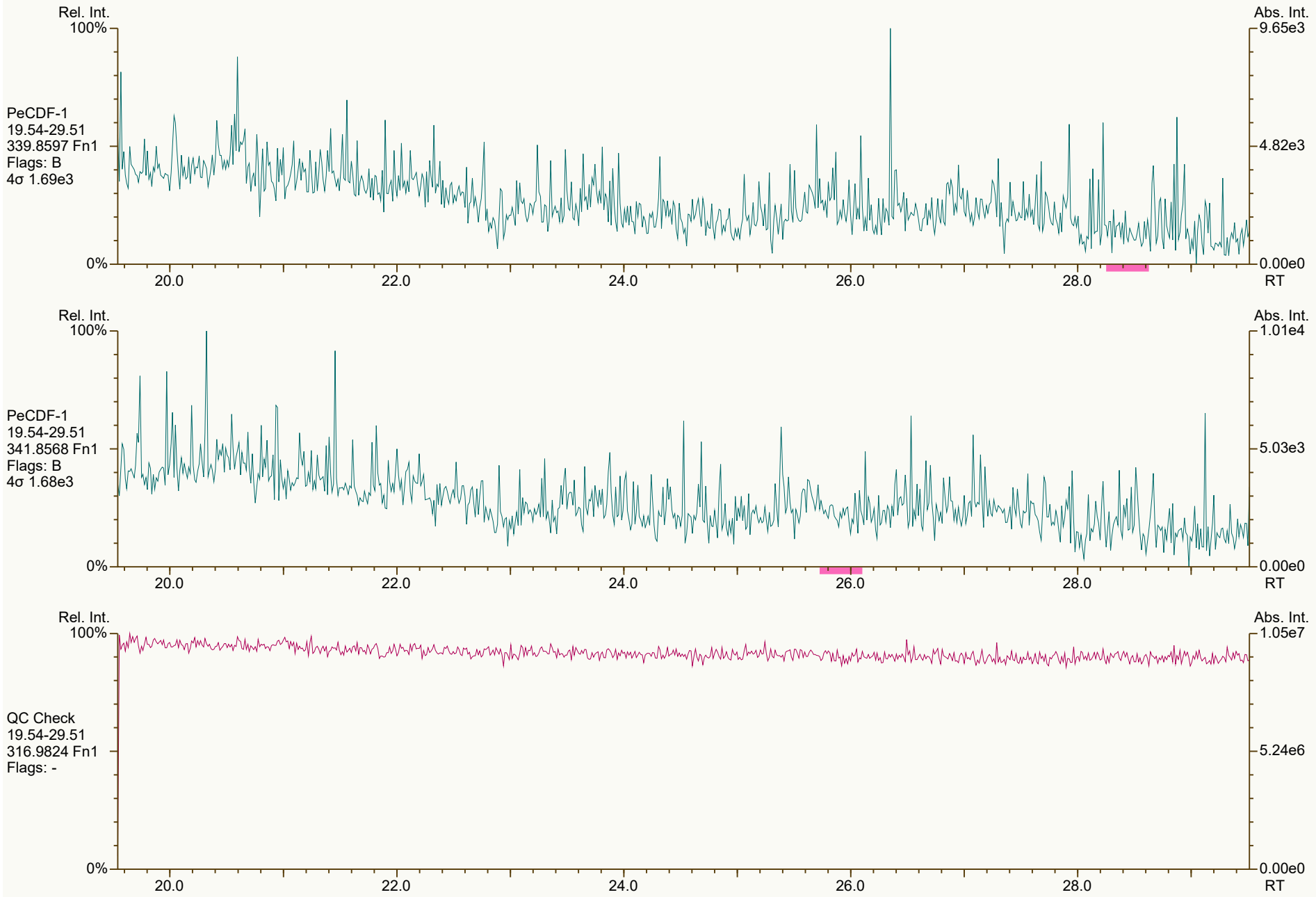

Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.25e3
12378D
4.88e5*
33.10
Abs. Int.
1.51e5
7.55e4
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.19e3
12378D
3.53e5*
33.10
1.03e5
5.14e4
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 5.61e3
RRF(ES12378D) = (1.89e7 + 1.20e7) * 100pg / (1.64e7 + 2.03e7) * 100pg = 0.842
DTF 11-Nov-2021 10:10
FS 12478D
2.11e7
31.83
CS 12347D
1.72e7
32.58
ES 12378D
1.89e7
33.08
6.25e6
3.12e6
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 2.44e3
APPROVED
Amy_Boehm , 11/11/2021, 5:16:42 PM
FS 12478D
1.36e7
31.83
CS 12347D
1.05e7
32.57
ES 12378D
1.20e7
33.08
3.84e6
1.92e6
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
8.00e6
4.00e6


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.24e3
123478D
4.24e5*
37.03
123678D
4.51e5*
37.15
123789D
4.65e5*
37.46
Abs. Int.
1.53e5
7.67e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.44e3
123478D
3.28e5*
37.03
123678D
3.41e5*
37.15
123789D
3.78e5*
37.46
Abs. Int.
1.16e5
5.79e4
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 3.11e3
FS 123468D
1.89e7
35.96
ES 123678D
1.47e7
37.13
ES 123478D
1.50e7
37.02
ES 123789D
1.63e7*
37.44
JS 123467D
7.96e6*
37.34
Abs. Int.
6.03e6
3.01e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 2.68e3
FS 123468D
1.53e7
35.97
ES 123678D
1.13e7
37.13
ES 123478D
1.17e7
37.02
ES 123789D
1.31e7*
37.44
JS 123467D
6.45e6*
37.34
Abs. Int.
4.80e6
2.40e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.33e7
1.17e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

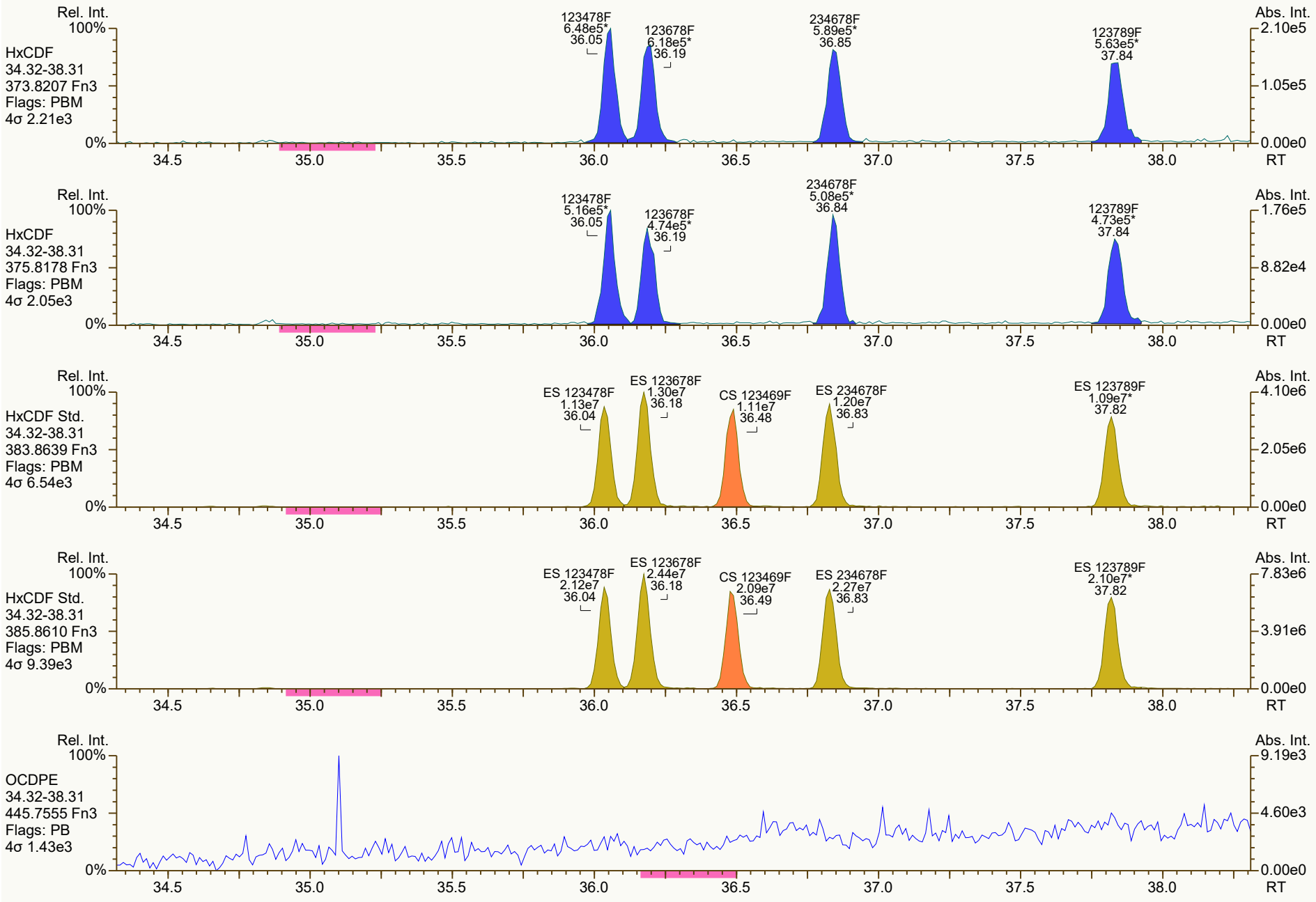

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.23e3
0%
1234678D
3.76e5*
40.27
Abs. Int.
1.39e5
6.97e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.19e3
0%
1234678D
3.51e5*
40.27
Abs. Int.
1.26e5
6.28e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 4.65e3
0%
FS 1234679D
1.80e7
39.60
ES 1234678D
1.30e7
40.26
Abs. Int.
6.94e6
3.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.30e3
0%
FS 1234679D
1.70e7
39.60
ES 1234678D
1.22e7
40.26
Abs. Int.
6.28e6
3.14e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.45e7
7.27e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
4.71e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.83e3
0%
Abs. Int.
1.34e5
6.72e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
5.42e5*
42.82
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.73e3
0%
Abs. Int.
1.71e5
8.53e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.61e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.24e3
0%
Abs. Int.
4.68e6
2.34e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.76e7
42.81
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.51e3
0%
Abs. Int.
4.93e6
2.47e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.56e7
7.81e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

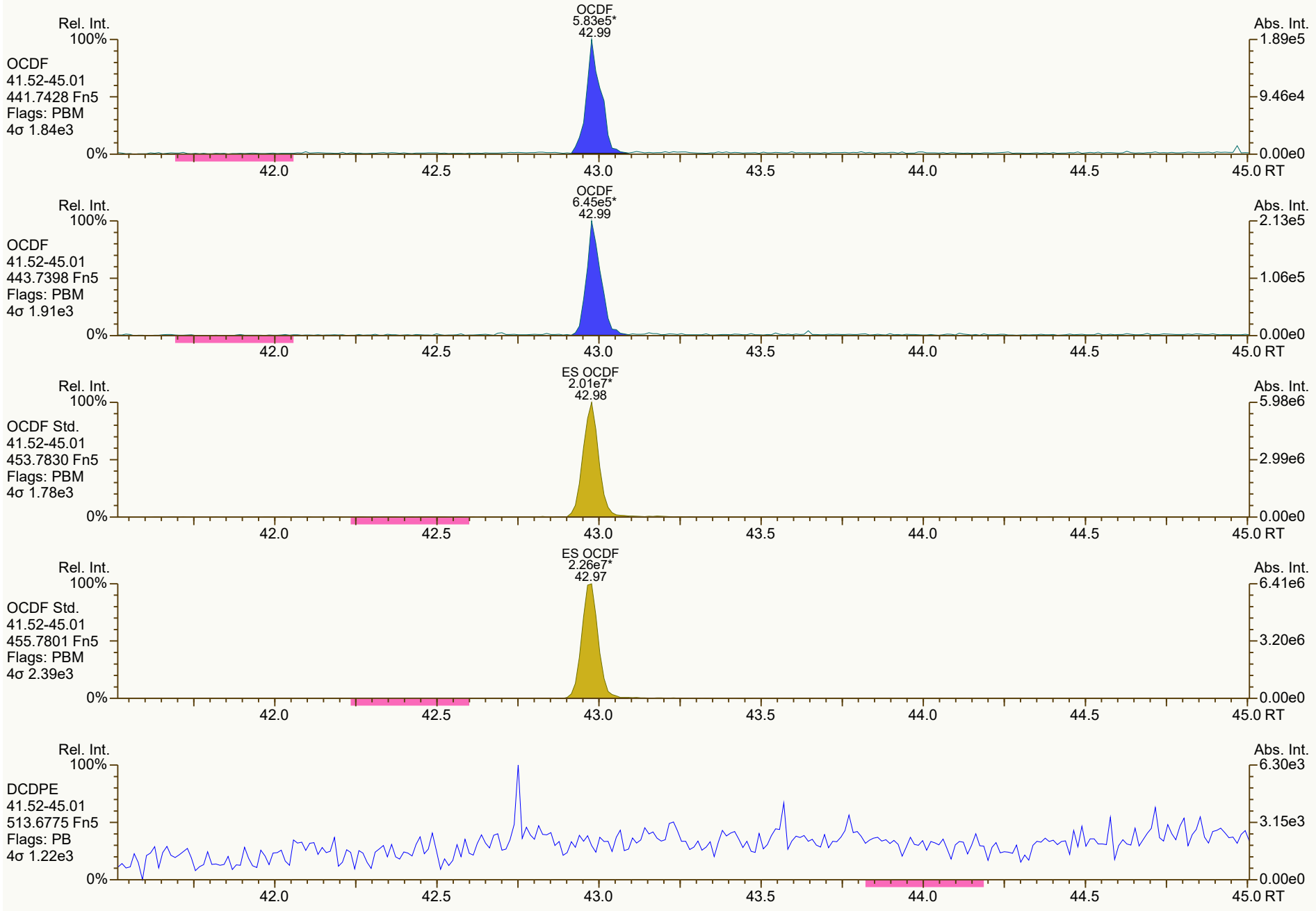

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.28e5*
26.67
Abs. Int.
2.58e4
1.29e4
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 1.92e3
0%
2378F
1.70e5*
26.67
Abs. Int.
3.72e4
1.86e4
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.68e4
0%
AS 1368F
2.56e7
21.48
JS 1234F
2.29e7
25.24
ES 2378F
2.41e7
26.65
Abs. Int.
5.19e6
2.60e6
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.58e4
0%
AS 1368F
3.21e7
21.48
JS 1234F
2.84e7
25.23
ES 2378F
2.96e7
26.65
Abs. Int.
6.71e6
3.36e6
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.59e3
0%
Abs. Int.
8.27e3
4.13e3
0.00e0
RT
20.0
22.0
24.0
26.0
28.0


Rel. Int.
100%
0%
Abs. Int.
9.65e3
4.82e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.69e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.01e4
5.03e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.68e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.05e7
5.24e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.22e3
0%
12378F
7.20e5
31.61
23478F
7.27e5*
32.74
Abs. Int.
2.10e5
1.05e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 1.97e3
0%
12378F
5.04e5
31.61
23478F
4.71e5*
32.74
Abs. Int.
1.40e5
7.02e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 2.97e3
0%
CS 12346F
2.65e7
31.06
ES 12378F
2.76e7
31.60
ES 23478F
2.63e7
32.73
Abs. Int.
7.54e6
3.77e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 3.57e3
0%
CS 12346F
1.69e7
31.06
ES 12378F
1.79e7
31.60
ES 23478F
1.71e7
32.73
Abs. Int.
4.85e6
2.42e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.93e3
0%
Abs. Int.
1.10e4
5.51e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.21e3
0%
123478F
6.48e5*
36.05
123678F
6.18e5*
36.19
234678F
5.89e5*
36.85
123789F
5.63e5*
37.84
Abs. Int.
2.10e5
1.05e5
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.05e3
0%
123478F
5.16e5*
36.05
123678F
4.74e5*
36.19
234678F
5.08e5*
36.84
123789F
4.73e5*
37.84
Abs. Int.
1.76e5
8.82e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 6.54e3
0%
ES 123478F
1.13e7
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.11e7
36.48
ES 234678F
1.20e7
36.83
ES 123789F
1.09e7*
37.82
Abs. Int.
4.10e6
2.05e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.39e3
0%
ES 123478F
2.12e7
36.04
ES 123678F
2.44e7
36.18
CS 123469F
2.09e7
36.49
ES 234678F
2.27e7
36.83
ES 123789F
2.10e7*
37.82
Abs. Int.
7.83e6
3.91e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.43e3
0%
Abs. Int.
9.19e3
4.60e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

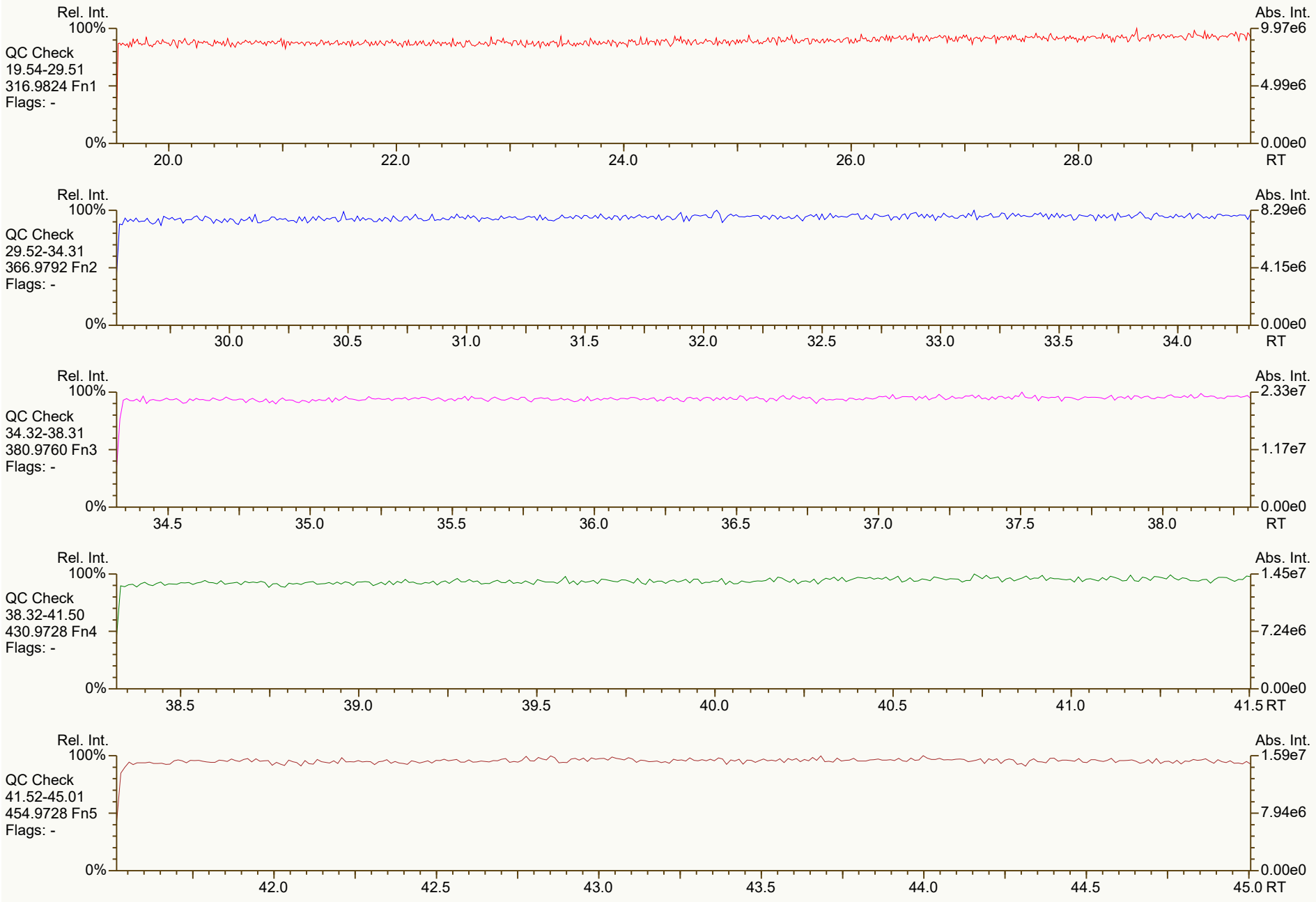

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.51e3
0%
1234678F
5.15e5*
39.34
1234789F
3.83e5*
40.70
Abs. Int.
2.00e5
9.99e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.63e3
0%
1234678F
4.85e5*
39.34
1234789F
4.12e5*
40.70
Abs. Int.
1.67e5
8.36e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 3.90e3
0%
ES 1234678F
7.77e6*
39.33
CS 1234689F
8.09e6*
39.74
ES 1234789F
7.34e6*
40.69
Abs. Int.
3.13e6
1.57e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.97e3
0%
ES 1234678F
1.82e7*
39.33
CS 1234689F
1.73e7*
39.74
ES 1234789F
1.63e7*
40.69
Abs. Int.
6.42e6
3.21e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.46e3
0%
Abs. Int.
3.72e3
1.86e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

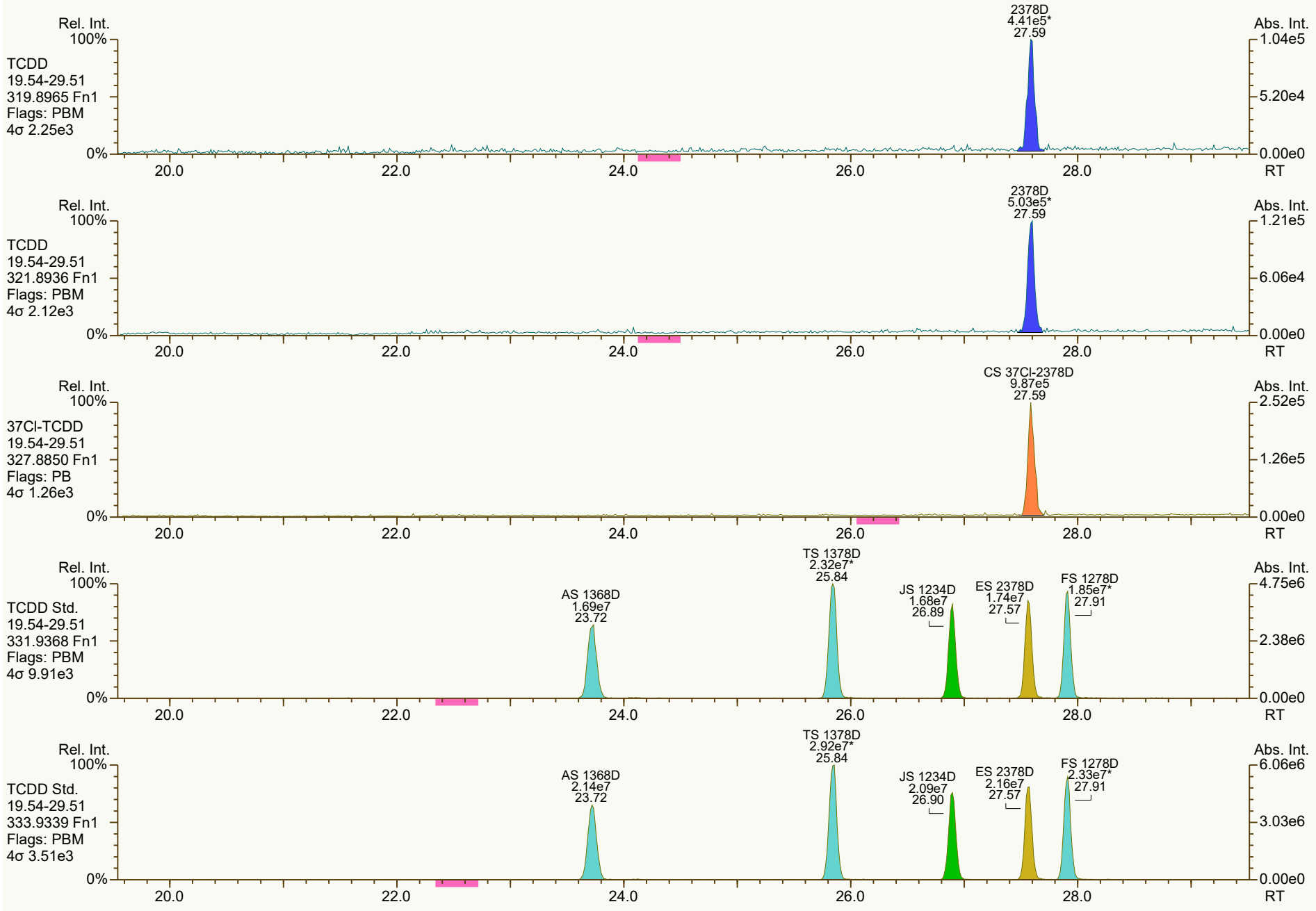

Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.84e3
0%
OCDF
5.83e5*
42.99
Abs. Int.
1.89e5
9.46e4
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 1.91e3
0%
OCDF
6.45e5*
42.99
Abs. Int.
2.13e5
1.06e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.78e3
0%
ES OCDF
2.01e7*
42.98
Abs. Int.
5.98e6
2.99e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.39e3
0%
ES OCDF
2.26e7*
42.97
Abs. Int.
6.41e6
3.20e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.22e3
0%
Abs. Int.
6.30e3
3.15e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

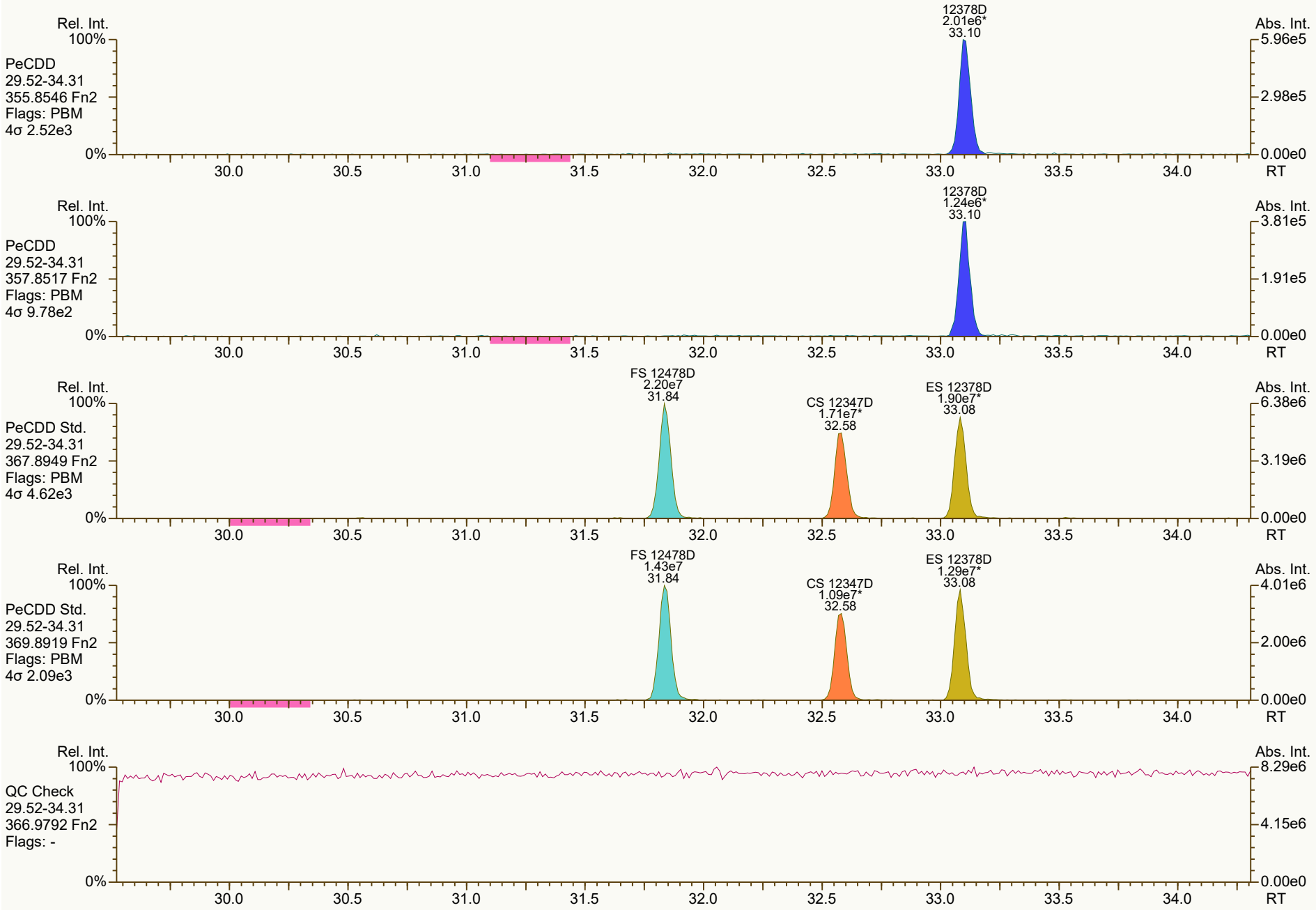
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 12:34 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS2_211110_DF_CA	UTP: 11-Nov-2021 16:22:21 DTF	Checkcode: 385-758-WQN
Sample ID: 25-6-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C06

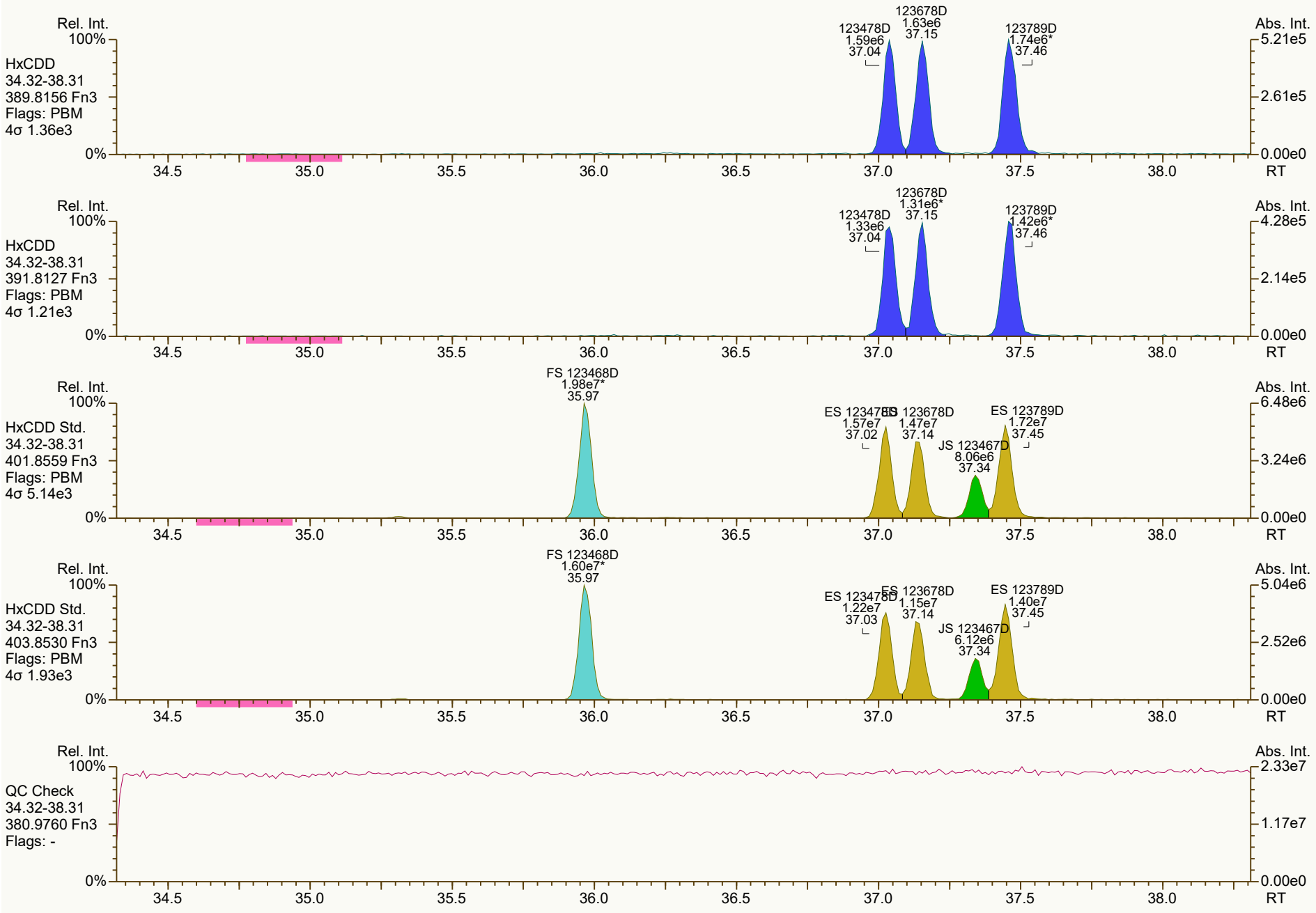
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	9.44E+05	0.88	Y	1.18	1.21	2%
12378-PeCDD	33.10	3.25E+06	1.61	Y	1.04	1.02	-2%
123478-HxCDD	37.04	2.92E+06	1.19	Y	1.09	1.04	-4%
123678-HxCDD	37.15	2.94E+06	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.46	3.16E+06	1.22	Y	1.05	1.01	-3%
1234678-HpCDD	40.28	2.64E+06	1.05	Y	1.06	1.04	-2%
OCDD	42.83	3.88E+06	0.86	Y	1.13	1.12	0%
2378-TCDF	26.68	1.25E+06	0.84	Y	1.08	1.12	4%
12378-PeCDF	31.62	4.63E+06	1.55	Y	1.02	1.00	-2%
23478-PeCDF	32.75	4.45E+06	1.49	Y	1.02	0.99	-3%
123478-HxCDF	36.06	4.25E+06	1.27	Y	1.27	1.24	-3%
123678-HxCDF	36.20	4.30E+06	1.20	Y	1.15	1.15	0%
234678-HxCDF	36.85	4.01E+06	1.25	Y	1.19	1.14	-4%
123789-HxCDF	37.84	3.70E+06	1.23	Y	1.16	1.14	-2%
1234678-HpCDF	39.35	3.66E+06	1.02	Y	1.37	1.36	-1%
1234789-HpCDF	40.71	3.08E+06	1.05	Y	1.31	1.31	0%
OCDF	43.00	4.59E+06	0.93	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.90E+07	0.80	Y	1.05	1.03	-1%
ES 12378-PeCDD	33.085	3.19E+07	1.48	Y	0.88	0.84	-4%
ES 123478-HxCDD	37.025	2.80E+07	1.29	Y	0.97	0.99	1%
ES 123678-HxCDD	37.14	2.62E+07	1.27	Y	0.94	0.92	-2%
ES 123789-HxCDD	37.448	3.12E+07	1.23	Y	1.09	1.10	1%
ES 1234678-HpCDD	40.265	2.55E+07	1.03	Y	0.91	0.90	-2%
ES OCDD	42.818	3.46E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.655	5.56E+07	0.80	Y	1.06	1.07	1%
ES 12378-PeCDF	31.601	4.63E+07	1.54	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.732	4.49E+07	1.57	Y	0.88	0.87	-2%
ES 123478-HxCDF	36.041	3.44E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.18	3.73E+07	0.54	Y	1.35	1.31	-3%
ES 234678-HxCDF	36.835	3.52E+07	0.52	Y	1.24	1.24	0%
ES 123789-HxCDF	37.826	3.24E+07	0.53	Y	1.16	1.14	-1%
ES 1234678-HpCDF	39.334	2.69E+07	0.46	Y	0.97	0.95	-2%
ES 1234789-HpCDF	40.697	2.36E+07	0.47	Y	0.85	0.83	-2%
ES OCDF	42.986	4.51E+07	0.90	Y	0.81	0.79	-2%

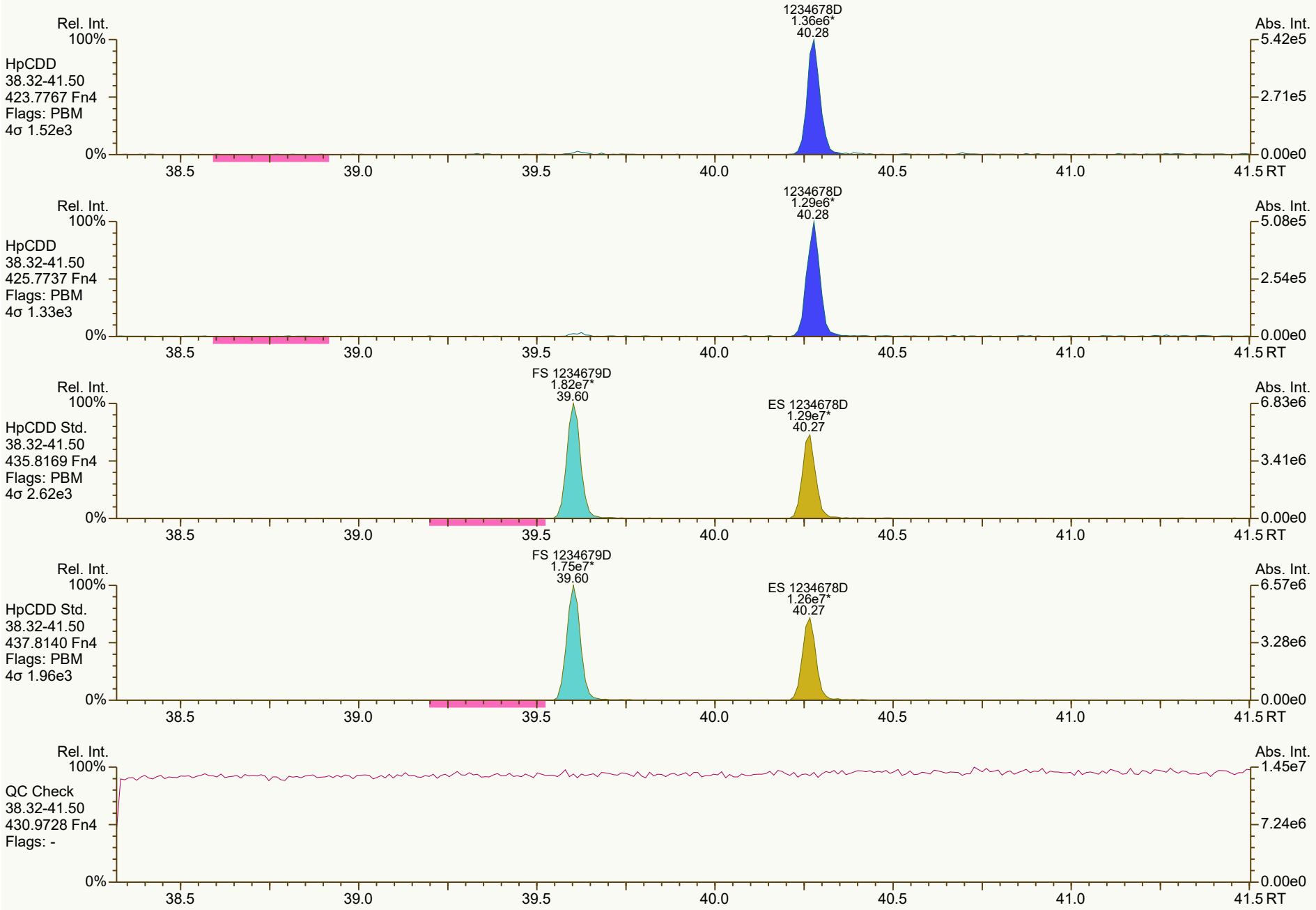
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 12:34 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS2_211110_DF_CA		UTP: 11-Nov-2021 16:22:21 DTF				Checkcode: 385-758-WQN	
Sample ID: 25-6-1		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C06	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.77E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	5.19E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.42E+07	1.32	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.20	1.31	9%
CS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.85	0.86	1%
CS 123469-HxCDF	36.49	3.27E+07	0.55	Y	1.12	1.15	3%
CS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.89	0.93	4%
SS 37Cl-2378-TCDD	27.59	9.87E+05	n/a	-	1.15	1.27	10%
SS 12347-PeCDD	32.58	2.80E+07	1.56	Y	0.86	0.88	2%
SS 12346-PeCDF	31.07	4.47E+07	1.57	Y	0.94	0.97	3%
SS 123469-HxCDF	36.49	3.27E+07	0.55	Y	0.83	0.88	6%
SS 1234689-HpCDF	39.75	2.63E+07	0.45	Y	0.92	0.98	6%
AS 1368-TCDD	23.72	3.83E+07	0.79	Y	1.06	1.01	-4%
AS 1368-TCDF	21.49	5.88E+07	0.81	Y	1.13	1.13	1%
FS 1278-TCDD	27.91	4.18E+07	0.79	Y	1.07	1.07	0%
FS 12478-PeCDD	31.84	3.63E+07	1.54	Y	1.09	1.14	4%
FS 123468-HxCDD	35.97	3.57E+07	1.24	Y	1.26	1.28	2%
FS 1234679-HpCDD	39.61	3.57E+07	1.04	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	5.24E+07	0.80	Y	1.34	1.34	1%
OCDD-a	42.83	2.58E+05	2.22	Y	0.07	0.07	3%
OCDF-a	42.99	3.24E+05	2.76	Y	0.07	0.07	8%

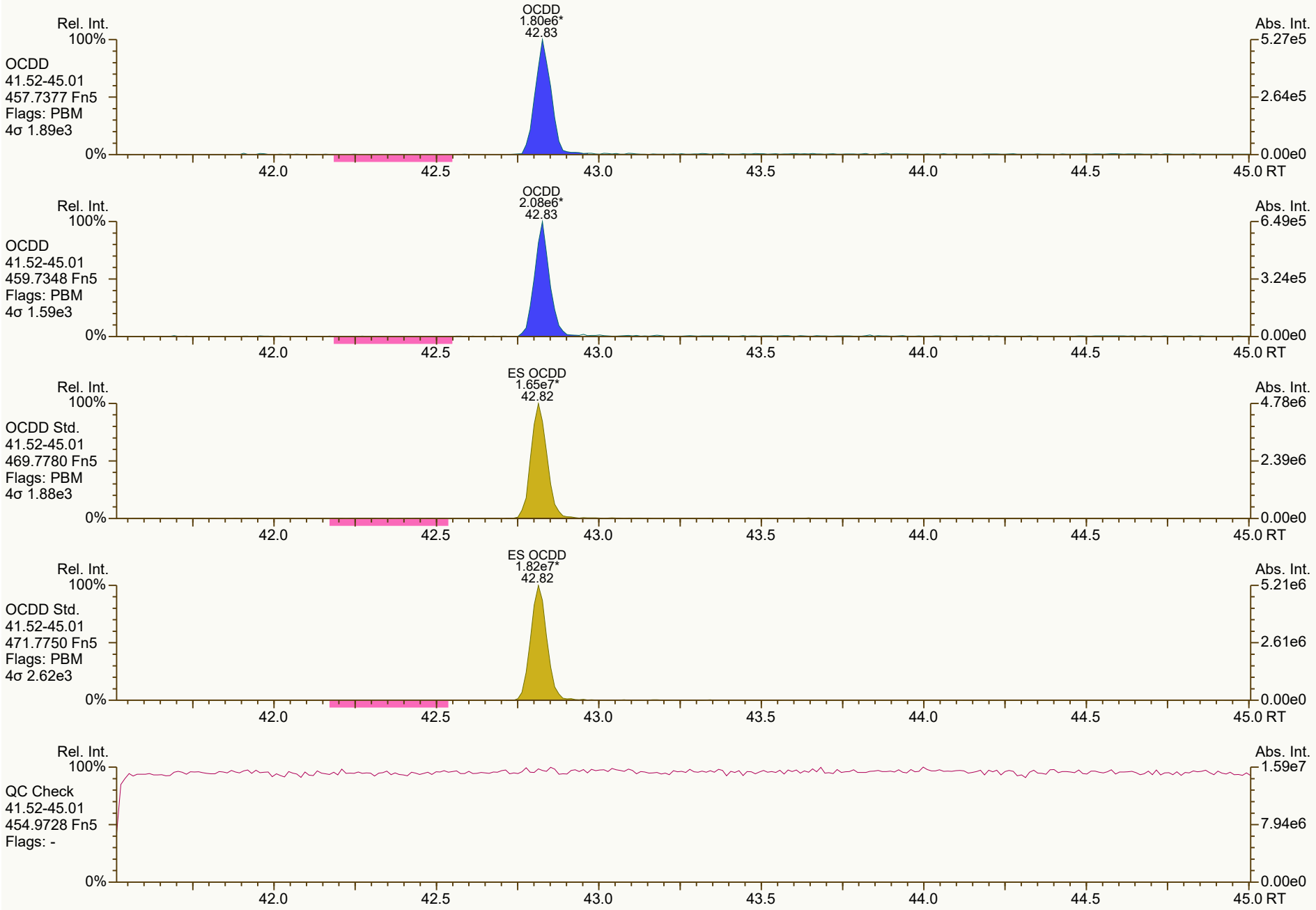

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
9.97e6
4.99e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
8.29e6
4.15e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.33e7
1.17e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.45e7
7.24e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.59e7
7.94e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PBM
4σ 2.25e3
0%
2378D
4.41e5*
27.59
Abs. Int.
1.04e5
5.20e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PBM
4σ 2.12e3
0%
2378D
5.03e5*
27.59
Abs. Int.
1.21e5
6.06e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.26e3
0%
CS 37Cl-2378D
9.87e5
27.59
Abs. Int.
2.52e5
1.26e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PBM
4σ 9.91e3
0%
AS 1368D
1.69e7
23.72
TS 1378D
2.32e7*
25.84
JS 1234D
1.68e7
26.89
ES 2378D
1.74e7
27.57
FS 1278D
1.85e7*
27.91
Abs. Int.
4.75e6
2.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PBM
4σ 3.51e3
0%
AS 1368D
2.14e7
23.72
TS 1378D
2.92e7*
25.84
JS 1234D
2.09e7
26.90
ES 2378D
2.16e7
27.57
FS 1278D
2.33e7*
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 2.52e3
12378D
2.01e6*
33.10
Abs. Int.
5.96e5
2.98e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 9.78e2
12378D
1.24e6*
33.10
Abs. Int.
3.81e5
1.91e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 4.62e3
FS 12478D
2.20e7
31.84
CS 12347D
1.71e7*
32.58
ES 12378D
1.90e7*
33.08
Abs. Int.
6.38e6
3.19e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 2.09e3
FS 12478D
1.43e7
31.84
CS 12347D
1.09e7*
32.58
ES 12378D
1.29e7*
33.08
Abs. Int.
4.01e6
2.00e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
8.29e6
4.15e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.36e3
123478D
1.59e6
37.04
123678D
1.63e6
37.15
123789D
1.74e6*
37.46
Abs. Int.
5.21e5
2.61e5
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.21e3
123478D
1.33e6
37.04
123678D
1.31e6*
37.15
123789D
1.42e6*
37.46
4.28e5
2.14e5
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 5.14e3
FS 123468D
1.98e7*
35.97
ES 123478D
1.57e7
37.02
ES 123678D
1.47e7
37.14
JS 123467D
8.06e6
37.34
ES 123789D
1.72e7
37.45
6.48e6
3.24e6
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 1.93e3
FS 123468D
1.60e7*
35.97
ES 123478D
1.22e7
37.03
ES 123678D
1.15e7
37.14
JS 123467D
6.12e6
37.34
ES 123789D
1.40e7
37.45
5.04e6
2.52e6
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.33e7
1.17e7

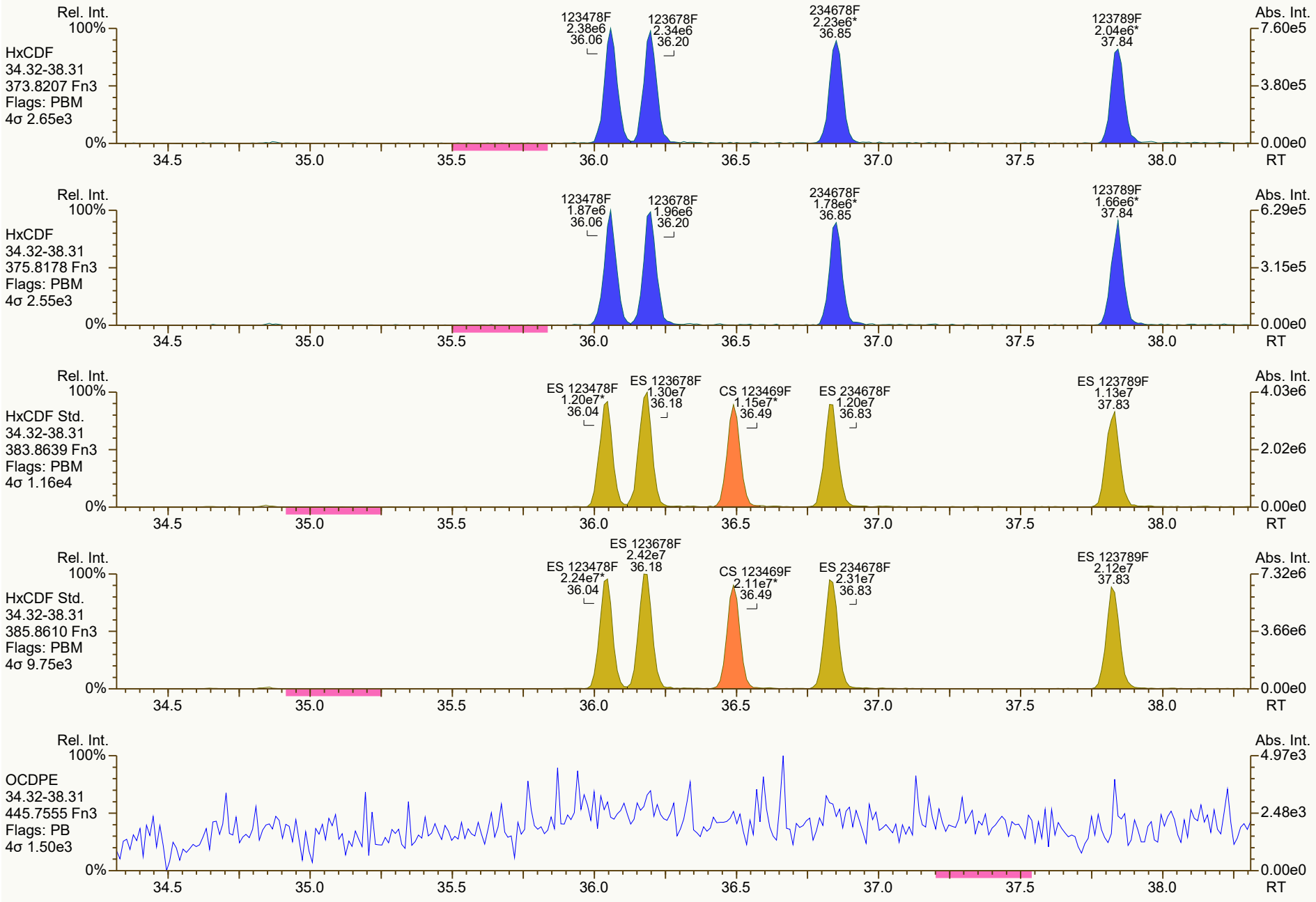

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 1.52e3
1234678D
1.36e6*
40.28
Abs. Int.
5.42e5
2.71e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.33e3
1234678D
1.29e6*
40.28
Abs. Int.
5.08e5
2.54e5
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PBM
4σ 2.62e3
FS 1234679D
1.82e7*
39.60
ES 1234678D
1.29e7*
40.27
Abs. Int.
6.83e6
3.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PBM
4σ 1.96e3
FS 1234679D
1.75e7*
39.60
ES 1234678D
1.26e7*
40.27
Abs. Int.
6.57e6
3.28e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.45e7
7.24e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

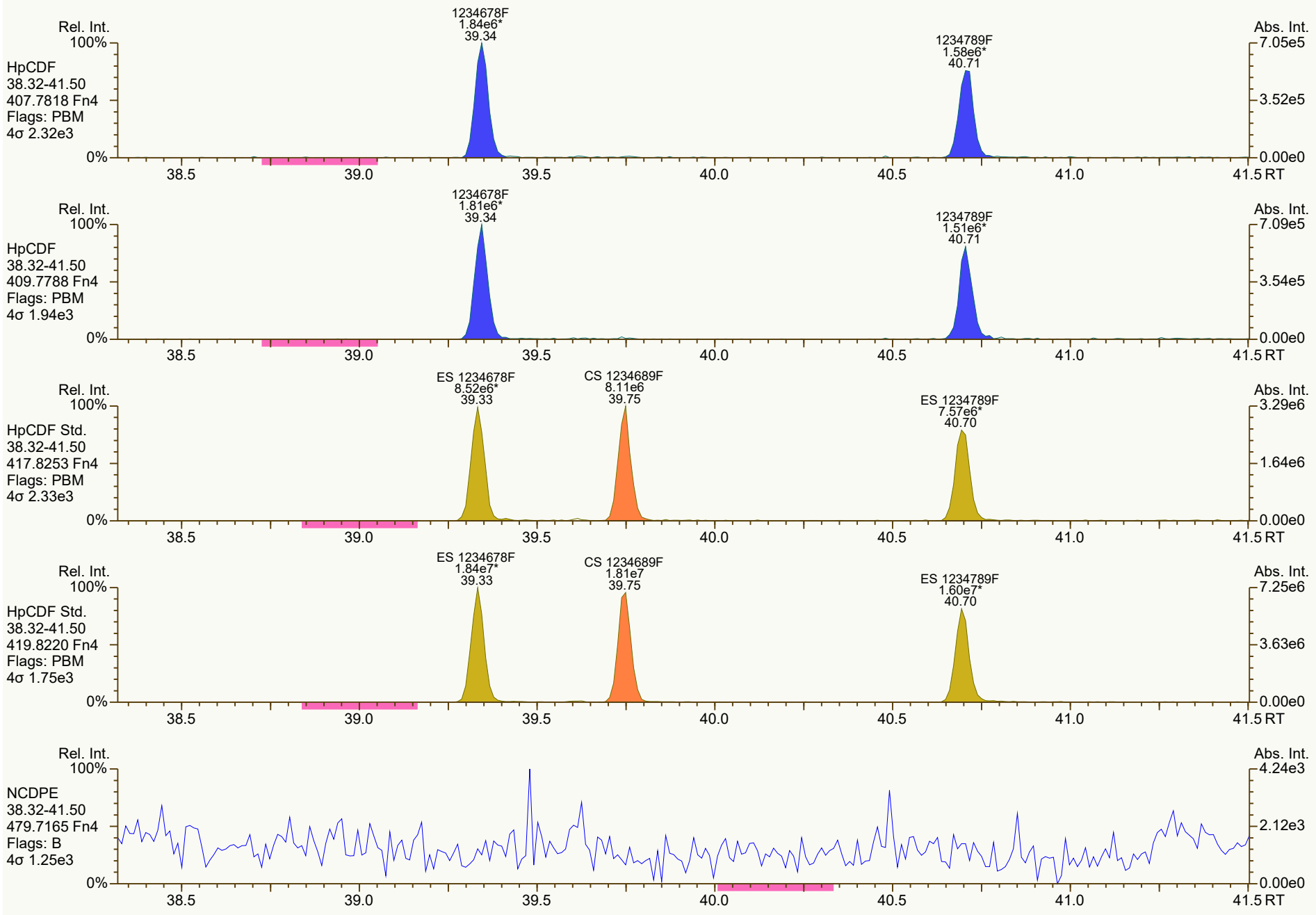

OCDD
1.80e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.89e3
0%
Abs. Int.
5.27e5
2.64e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
2.08e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 1.59e3
0%
Abs. Int.
6.49e5
3.24e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.65e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PBM
4σ 1.88e3
0%
Abs. Int.
4.78e6
2.39e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.82e7*
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PBM
4σ 2.62e3
0%
Abs. Int.
5.21e6
2.61e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.59e7
7.94e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

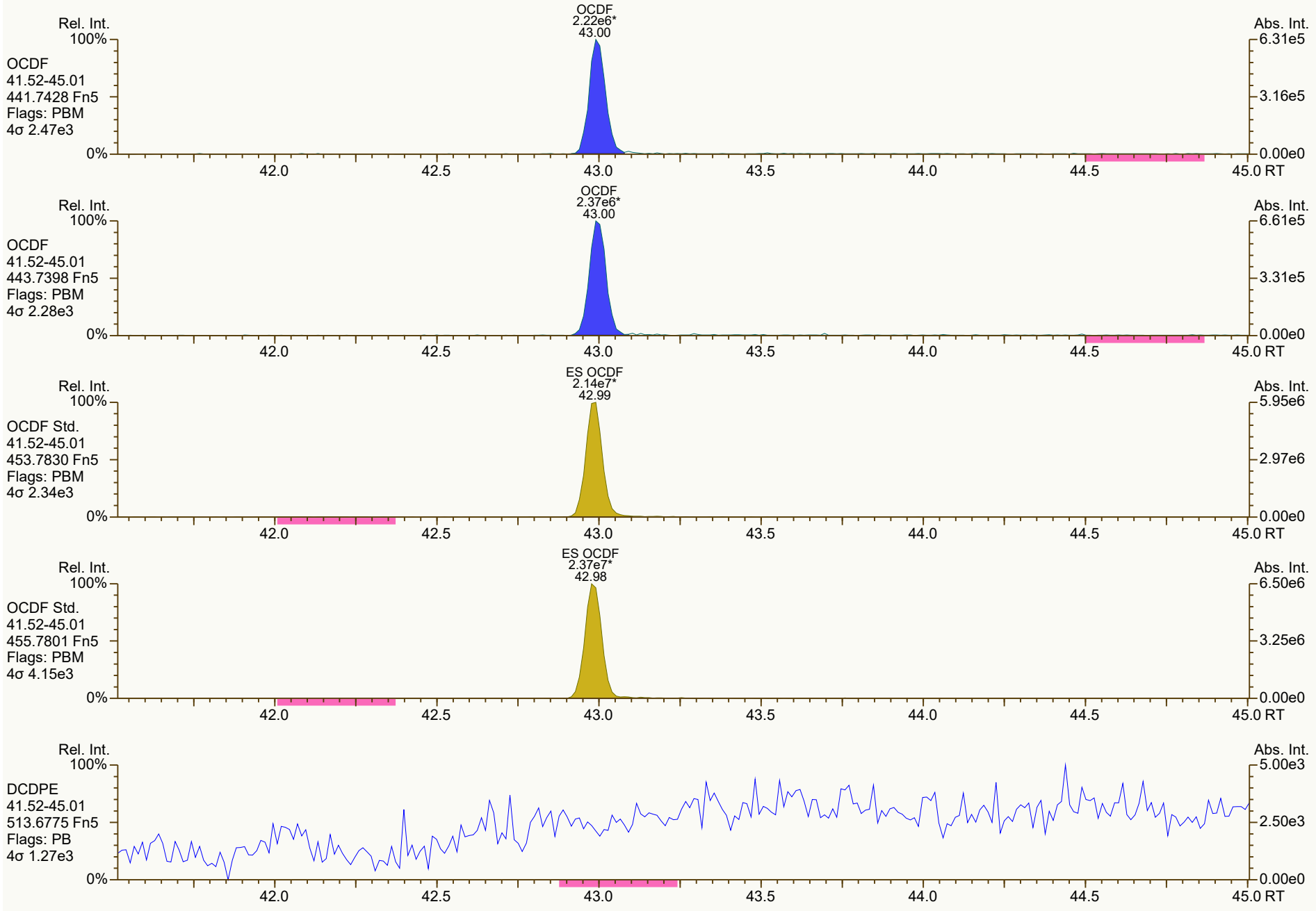

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PBM
4σ 1.35e3
0%
2378F
5.70e5*
26.68
Abs. Int.
1.27e5
6.37e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PBM
4σ 2.14e3
0%
2378F
6.77e5*
26.68
Abs. Int.
1.62e5
8.11e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.56e4
0%
AS 1368F
2.63e7
21.49
JS 1234F
2.34e7
25.24
ES 2378F
2.46e7*
26.65
Abs. Int.
5.72e6
2.86e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.32e4
0%
AS 1368F
3.24e7
21.49
JS 1234F
2.85e7
25.24
ES 2378F
3.10e7*
26.65
Abs. Int.
7.12e6
3.56e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.25e3
0%
Abs. Int.
8.34e3
4.17e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.23e3
4.62e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.53e4
7.63e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 2.32e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.97e6
4.99e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 2.51e3
0%
12378F
2.81e6*
31.62
23478F
2.66e6
32.75
Abs. Int.
8.19e5
4.10e5
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.47e3
APPROVED
Amy_Boehm , 11/11/2021, 5:19:05 PM
12378F
1.82e6*
31.62
23478F
1.79e6
32.75
5.27e5
2.63e5
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PBM
4σ 5.67e3
RRF(CS) = (2.73e7 + 1.74e7) * 100 / (2.34e7 + 2.85e7) * 100 = 0.861
DTF 11-Nov-2021 10:15
CS 12346F
2.73e7
31.07
ES 12378F
2.81e7
31.60
ES 23478F
2.74e7*
32.73
8.01e6
4.01e6
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PBM
4σ 4.28e3
CS 12346F
1.74e7
31.07
ES 12378F
1.82e7
31.60
ES 23478F
1.75e7*
32.73
5.19e6
2.59e6
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.50e3
6.67e3
3.33e3


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 2.65e3
0%
123478F
2.38e6
36.06
123678F
2.34e6
36.20
234678F
2.23e6*
36.85
123789F
2.04e6*
37.84
Abs. Int.
7.60e5
3.80e5
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 2.55e3
0%
123478F
1.87e6
36.06
123678F
1.96e6
36.20
234678F
1.78e6*
36.85
123789F
1.66e6*
37.84
Abs. Int.
6.29e5
3.15e5
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 1.16e4
0%
ES 123478F
1.20e7*
36.04
ES 123678F
1.30e7
36.18
CS 123469F
1.15e7*
36.49
ES 234678F
1.20e7
36.83
ES 123789F
1.13e7
37.83
Abs. Int.
4.03e6
2.02e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.75e3
0%
ES 123678F
2.42e7
36.18
ES 123478F
2.24e7*
36.04
CS 123469F
2.11e7*
36.49
ES 234678F
2.31e7
36.83
ES 123789F
2.12e7
37.83
Abs. Int.
7.32e6
3.66e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: PB
4σ 1.50e3
0%
Abs. Int.
4.97e3
2.48e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 2.32e3
0%
1234678F
1.84e6*
39.34
1234789F
1.58e6*
40.71
Abs. Int.
7.05e5
3.52e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.94e3
0%
1234678F
1.81e6*
39.34
1234789F
1.51e6*
40.71
Abs. Int.
7.09e5
3.54e5
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.33e3
0%
ES 1234678F
8.52e6*
39.33
CS 1234689F
8.11e6
39.75
ES 1234789F
7.57e6*
40.70
Abs. Int.
3.29e6
1.64e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 1.75e3
0%
ES 1234678F
1.84e7*
39.33
CS 1234689F
1.81e7
39.75
ES 1234789F
1.60e7*
40.70
Abs. Int.
7.25e6
3.63e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.25e3
0%
Abs. Int.
4.24e3
2.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

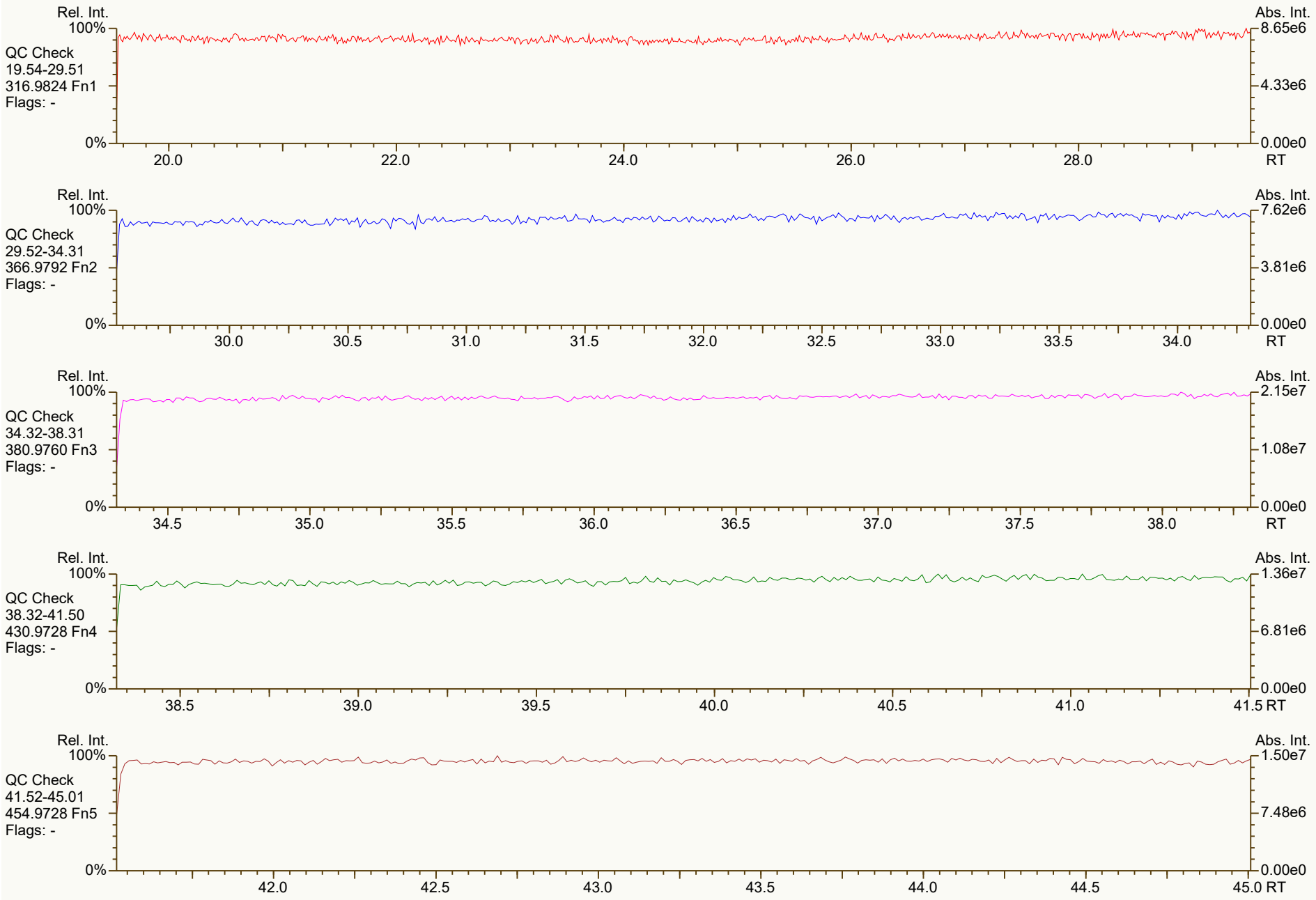

OCDF
2.22e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.47e3
0%
Abs. Int.
6.31e5
3.16e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.37e6*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.28e3
0%
Abs. Int.
6.61e5
3.31e5
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.14e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.34e3
0%
Abs. Int.
5.95e6
2.97e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.37e7*
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 4.15e3
0%
Abs. Int.
6.50e6
3.25e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.27e3
0%
Abs. Int.
5.00e3
2.50e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 13:21 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211110_DF_CB	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 507-474-MKW
Sample ID: 23-672-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C07

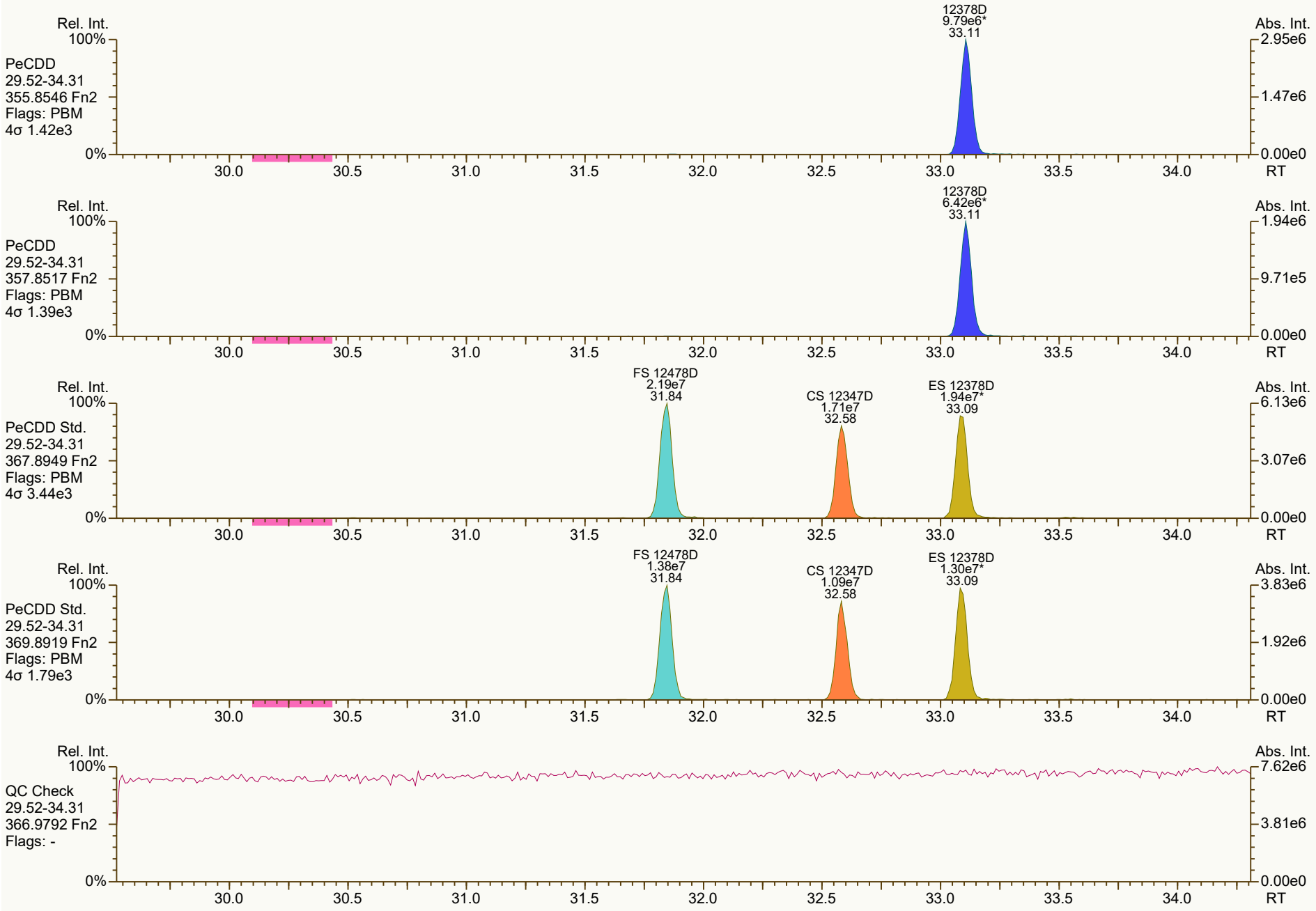
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.60	4.54E+06	0.78	Y	1.18	1.18	0%
12378-PeCDD	33.11	1.62E+07	1.53	Y	1.04	1.00	-4%
123478-HxCDD	37.04	1.46E+07	1.22	Y	1.09	1.05	-4%
123678-HxCDD	37.16	1.52E+07	1.25	Y	1.15	1.12	-2%
123789-HxCDD	37.47	1.60E+07	1.25	Y	1.05	1.03	-1%
1234678-HpCDD	40.28	1.38E+07	1.04	Y	1.06	1.03	-3%
OCDD	42.84	1.95E+07	0.90	Y	1.13	1.09	-3%
2378-TCDF	26.68	5.91E+06	0.78	Y	1.08	1.09	1%
12378-PeCDF	31.62	2.27E+07	1.54	Y	1.02	0.98	-4%
23478-PeCDF	32.75	2.26E+07	1.51	Y	1.02	1.00	-1%
123478-HxCDF	36.06	2.12E+07	1.22	Y	1.27	1.25	-2%
123678-HxCDF	36.20	2.19E+07	1.24	Y	1.15	1.13	-2%
234678-HxCDF	36.86	2.07E+07	1.22	Y	1.19	1.16	-2%
123789-HxCDF	37.85	1.92E+07	1.23	Y	1.16	1.15	-1%
1234678-HpCDF	39.35	1.86E+07	1.02	Y	1.37	1.33	-3%
1234789-HpCDF	40.71	1.62E+07	1.05	Y	1.31	1.32	1%
OCDF	43.00	2.43E+07	0.90	Y	1.07	1.06	-1%
ES 2378-TCDD	27.57	3.84E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.09	3.25E+07	1.49	Y	0.88	0.89	1%
ES 123478-HxCDD	37.028	2.78E+07	1.26	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.144	2.71E+07	1.22	Y	0.94	0.93	-1%
ES 123789-HxCDD	37.451	3.10E+07	1.24	Y	1.09	1.07	-2%
ES 1234678-HpCDD	40.271	2.68E+07	1.04	Y	0.91	0.92	1%
ES OCDD	42.824	3.56E+07	0.91	Y	0.62	0.61	-2%
ES 2378-TCDF	26.66	5.44E+07	0.80	Y	1.06	1.08	2%
ES 12378-PeCDF	31.605	4.62E+07	1.56	Y	0.91	0.92	1%
ES 23478-PeCDF	32.736	4.50E+07	1.54	Y	0.88	0.89	1%
ES 123478-HxCDF	36.045	3.39E+07	0.53	Y	1.20	1.17	-2%
ES 123678-HxCDF	36.185	3.87E+07	0.53	Y	1.35	1.33	-1%
ES 234678-HxCDF	36.84	3.56E+07	0.52	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.831	3.33E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.338	2.79E+07	0.45	Y	0.97	0.96	-1%
ES 1234789-HpCDF	40.703	2.46E+07	0.47	Y	0.85	0.85	0%
ES OCDF	42.992	4.59E+07	0.92	Y	0.81	0.79	-2%

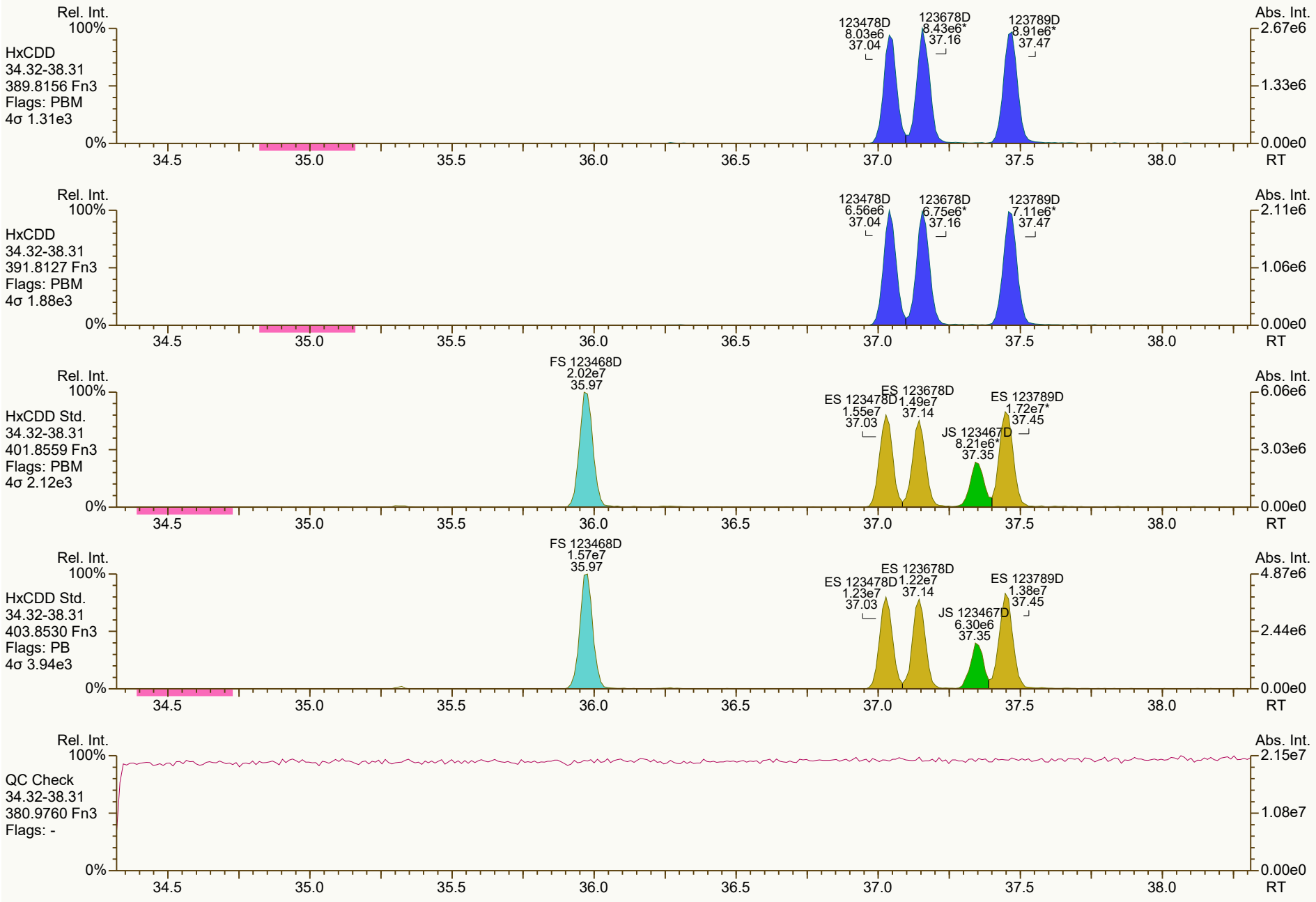
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 13:21 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS3_211110_DF_CB	UTP: 11-Nov-2021 16:22:22 DTF	Checkcode: 507-474-MKW
Sample ID: 23-672-1	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C07

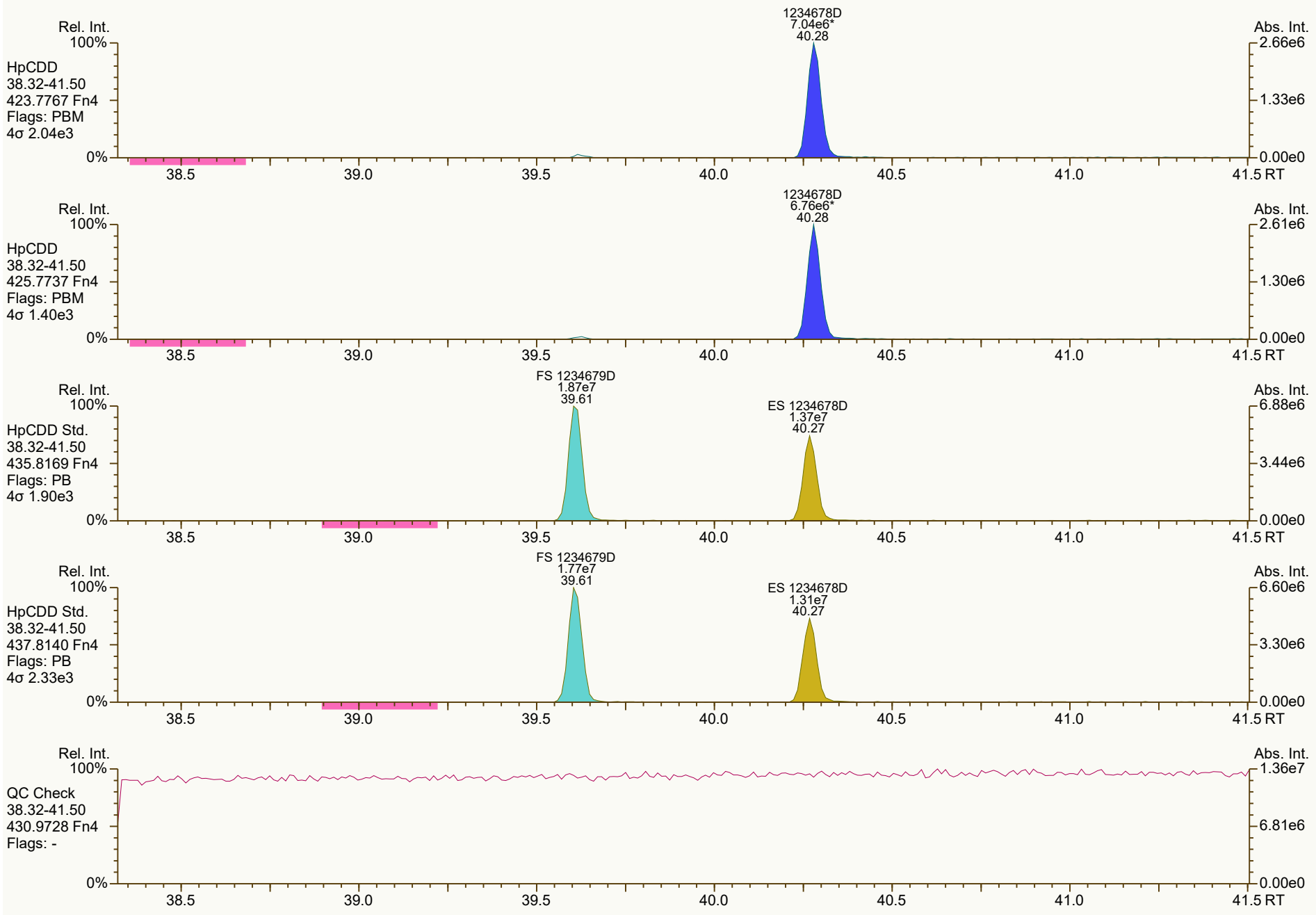
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.66E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.25	5.03E+07	0.78	Y	-	-	-
JS 123467-HxCDD	37.35	1.45E+07	1.30	Y	-	-	-
CS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.75	0.77	2%
CS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.85	0.87	2%
CS 123469-HxCDF	36.50	3.26E+07	0.54	Y	1.12	1.12	1%
CS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.60	4.42E+06	n/a	-	1.15	1.15	0%
SS 12347-PeCDD	32.59	2.80E+07	1.56	Y	0.86	0.86	1%
SS 12346-PeCDF	31.07	4.38E+07	1.58	Y	0.94	0.95	1%
SS 123469-HxCDF	36.50	3.26E+07	0.54	Y	0.83	0.84	2%
SS 1234689-HpCDF	39.75	2.60E+07	0.45	Y	0.92	0.93	2%
AS 1368-TCDD	23.73	3.93E+07	0.79	Y	1.06	1.07	2%
AS 1368-TCDF	21.50	5.84E+07	0.80	Y	1.13	1.16	3%
FS 1278-TCDD	27.91	4.15E+07	0.81	Y	1.07	1.08	1%
FS 12478-PeCDD	31.84	3.57E+07	1.59	Y	1.09	1.10	1%
FS 123468-HxCDD	35.97	3.59E+07	1.29	Y	1.26	1.29	3%
FS 1234679-HpCDD	39.61	3.63E+07	1.06	Y	1.36	1.36	0%
TS 1378-TCDD	25.85	5.15E+07	0.79	Y	1.34	1.34	0%
OCDD-a	42.83	1.39E+06	2.86	Y	0.07	0.08	9%
OCDF-a	43.00	1.53E+06	2.52	Y	0.07	0.07	0%


Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.65e6
4.33e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
7.62e6
3.81e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
2.15e7
1.08e7
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.36e7
6.81e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.50e7
7.48e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.18e3
0%
2378D
1.99e6
27.60
Abs. Int.
4.35e5
2.17e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.12e3
0%
2378D
2.55e6
27.60
Abs. Int.
5.98e5
2.99e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PBM
4σ 1.34e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:20:15 PM
CS 37Cl-2378D
4.42e6*
27.60
Abs. Int.
1.03e6
5.16e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.70e3
0%
RRF = (1.73e7 + 2.20e7) * 100 / (1.61e7 + 2.04e7) * 100 = 1.08
DTF 11-Nov-2021 10:16
AS 1368D
1.73e7
23.73
TS 1378D
2.27e7
25.85
JS 1234D
1.61e7
26.90
ES 2378D
1.70e7
27.57
FS 1278D
1.85e7
27.91
Abs. Int.
4.80e6
2.40e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 6.56e3
0%
AS 1368D
2.20e7
23.73
TS 1378D
2.88e7
25.85
JS 1234D
2.04e7
26.90
ES 2378D
2.15e7
27.57
FS 1278D
2.30e7
27.91
Abs. Int.
6.06e6
3.03e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.42e3
12378D
9.79e6*
33.11
Abs. Int.
2.95e6
1.47e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.39e3
12378D
6.42e6*
33.11
Abs. Int.
1.94e6
9.71e5
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PBM
4σ 3.44e3
FS 12478D
2.19e7
31.84
CS 12347D
1.71e7
32.58
ES 12378D
1.94e7*
33.09
Abs. Int.
6.13e6
3.07e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PBM
4σ 1.79e3
FS 12478D
1.38e7
31.84
CS 12347D
1.09e7
32.58
ES 12378D
1.30e7*
33.09
Abs. Int.
3.83e6
1.92e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
Abs. Int.
7.62e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PBM
4σ 1.31e3
123478D
8.03e6
37.04
123678D
8.43e6*
37.16
123789D
8.91e6*
37.47
Abs. Int.
2.67e6
1.33e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PBM
4σ 1.88e3
123478D
6.56e6
37.04
123678D
6.75e6*
37.16
123789D
7.11e6*
37.47
Abs. Int.
2.11e6
1.06e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.12e3
FS 123468D
2.02e7
35.97
ES 123478D
1.55e7
37.03
ES 123678D
1.49e7
37.14
JS 123467D
8.21e6*
37.35
ES 123789D
1.72e7*
37.45
Abs. Int.
6.06e6
3.03e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.94e3
FS 123468D
1.57e7
35.97
ES 123478D
1.23e7
37.03
ES 123678D
1.22e7
37.14
JS 123467D
6.30e6
37.35
ES 123789D
1.38e7
37.45
Abs. Int.
4.87e6
2.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.15e7
1.08e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
7.04e6*
40.28
Abs. Int.
2.66e6
1.33e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PBM
4σ 1.40e3
1234678D
6.76e6*
40.28
Abs. Int.
2.61e6
1.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 1.90e3
FS 1234679D
1.87e7
39.61
ES 1234678D
1.37e7
40.27
Abs. Int.
6.88e6
3.44e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.33e3
FS 1234679D
1.77e7
39.61
ES 1234678D
1.31e7
40.27
Abs. Int.
6.60e6
3.30e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.36e7
6.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
9.25e6*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 9.43e2
0%
Abs. Int.
2.59e6
1.29e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.02e7*
42.83
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.14e3
2.86e6
1.43e6
ES OCDD
1.70e7
42.82
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.74e3
4.76e6
2.38e6
ES OCDD
1.86e7
42.82
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.08e3
5.07e6
2.54e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.50e7
7.48e6


Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.54e3
0%
2378F
2.58e6
26.68
Abs. Int.
5.81e5
2.91e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.71e3
0%
2378F
3.32e6
26.68
Abs. Int.
7.66e5
3.83e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.69e4
0%
AS 1368F
2.59e7
21.50
JS 1234F
2.21e7
25.25
ES 2378F
2.41e7
26.66
Abs. Int.
5.45e6
2.73e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 1.04e4
0%
AS 1368F
3.25e7
21.50
JS 1234F
2.82e7
25.25
ES 2378F
3.03e7
26.66
Abs. Int.
6.76e6
3.38e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: PB
4σ 1.54e3
0%
Abs. Int.
6.84e3
3.42e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT

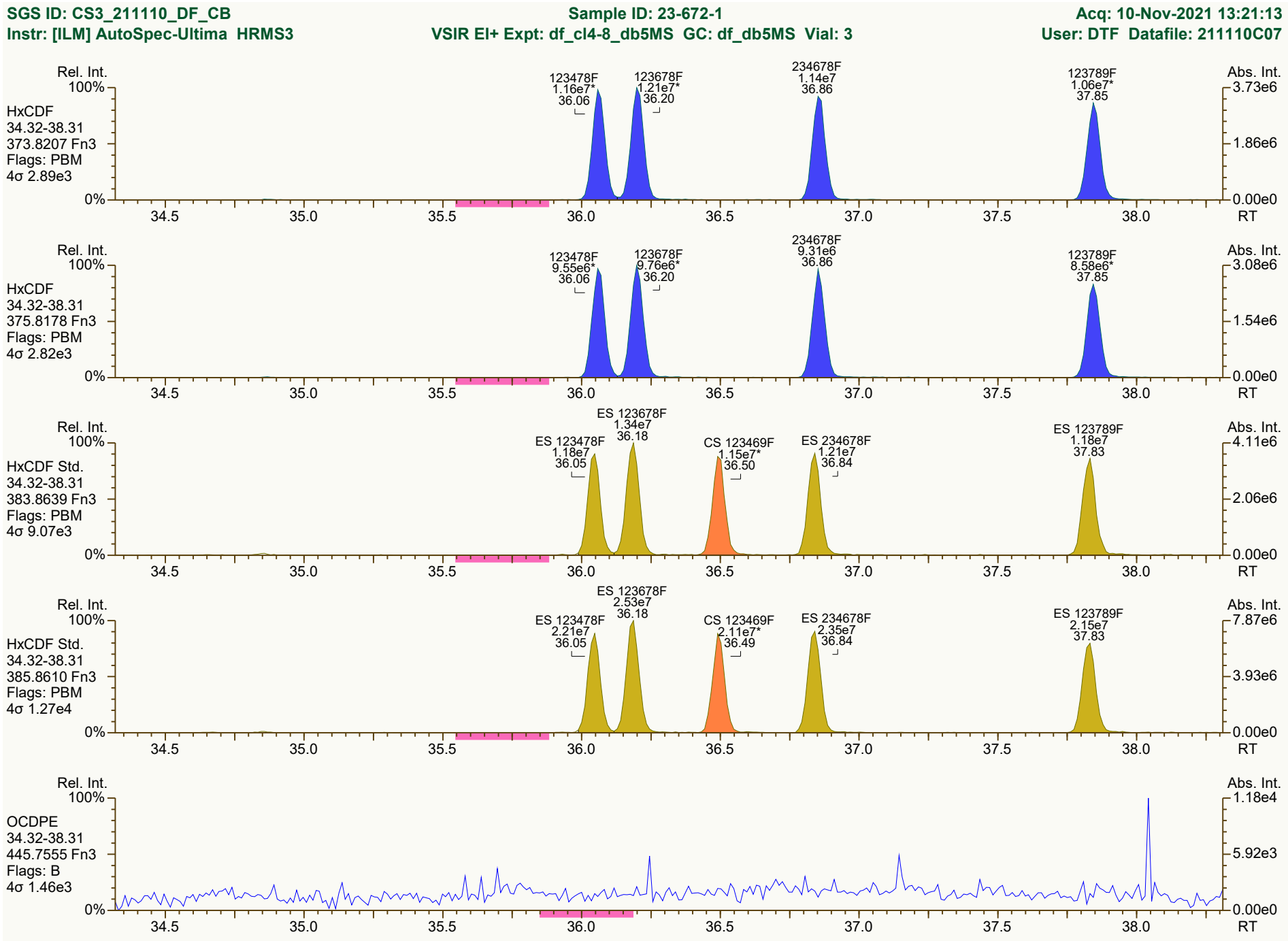

Rel. Int.
100%
0%
Abs. Int.
1.35e4
6.76e3
0.00e0
PeCDF-1
19.54-29.51
339.8597 Fn1
Flags: B
4σ 1.76e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.77e4
8.83e3
0.00e0
PeCDF-1
19.54-29.51
341.8568 Fn1
Flags: B
4σ 1.52e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
8.65e6
4.33e6
0.00e0
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.86e3
12378F
1.38e7*
31.62
23478F
1.36e7
32.75
Abs. Int.
3.85e6
1.93e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 2.34e3
12378F
8.95e6*
31.62
23478F
9.01e6
32.75
Abs. Int.
2.59e6
1.29e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 5.91e3
CS 12346F
2.68e7
31.07
ES 12378F
2.82e7
31.61
ES 23478F
2.73e7
32.74
Abs. Int.
7.61e6
3.81e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 5.66e3
CS 12346F
1.70e7
31.07
ES 12378F
1.80e7
31.61
ES 23478F
1.77e7
32.74
Abs. Int.
5.00e6
2.50e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.57e3
Abs. Int.
1.17e4
5.86e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

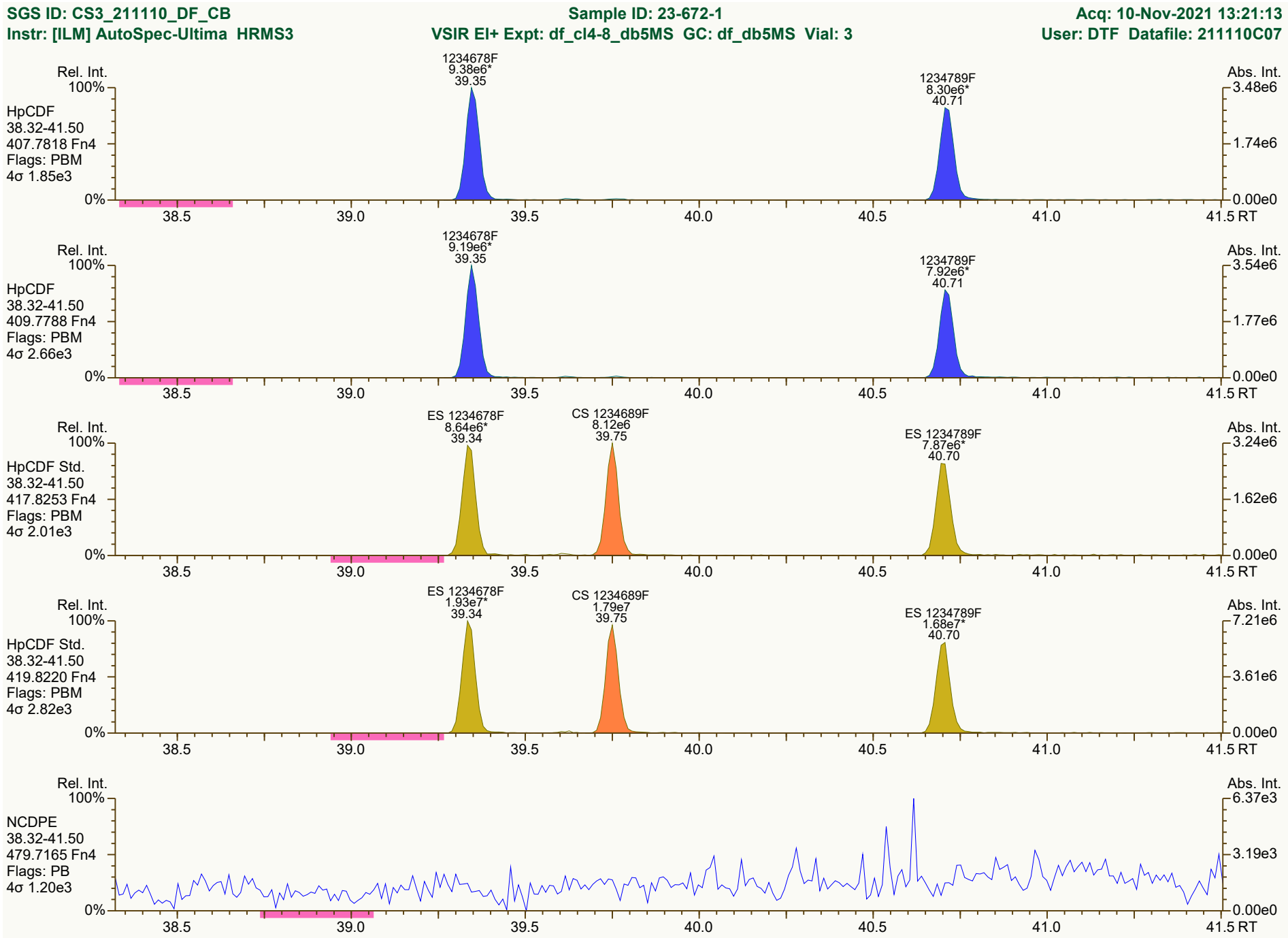
SGS ID: CS3_211110_DF_CB
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 23-672-1
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3

Acq: 10-Nov-2021 13:21:13
User: DTF Datafile: 211110C07



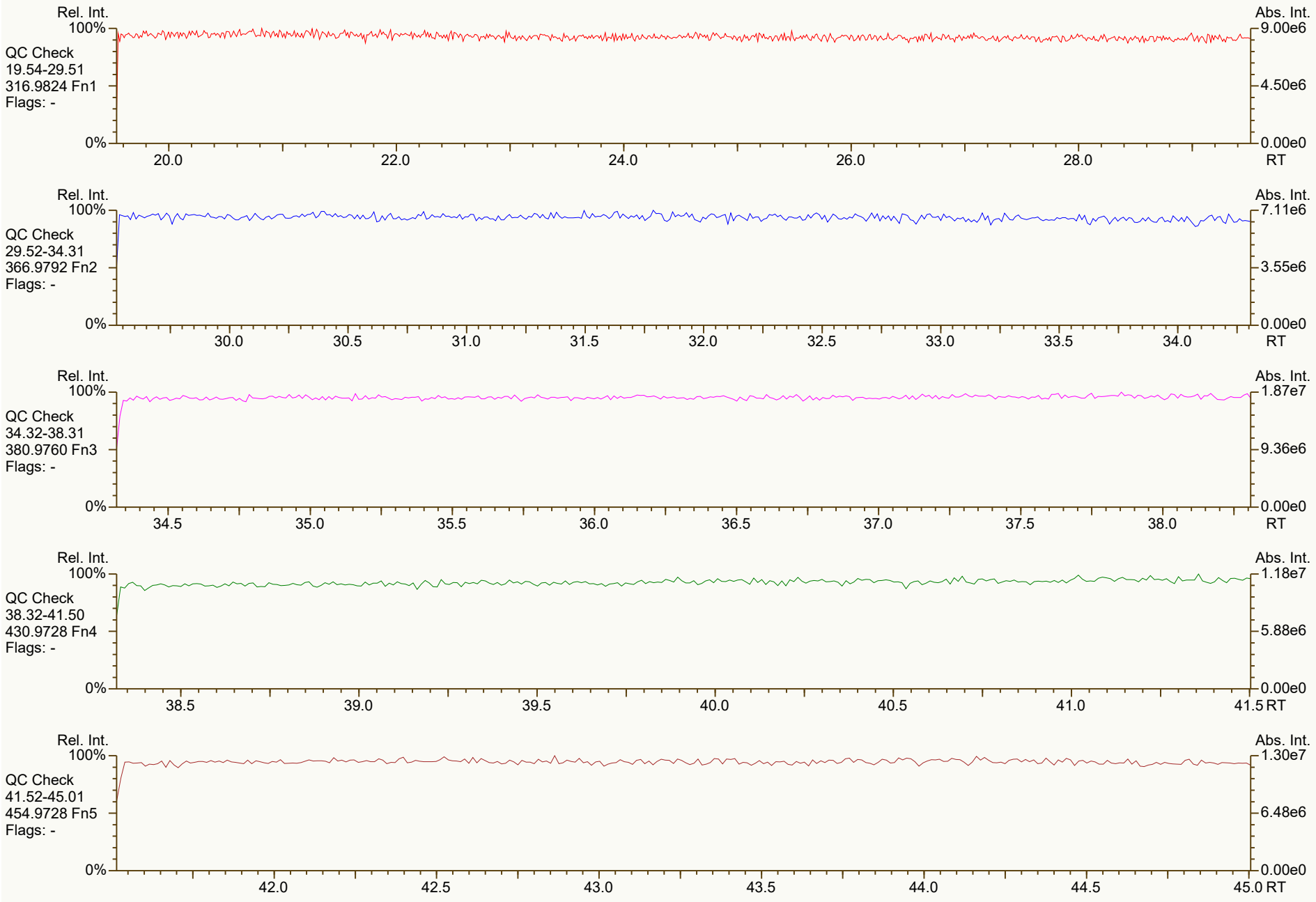
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS3_211110_DF_CB.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 0985, 9027, 6556 scc: 507-474
Revised: 10-Nov-2021 14:18 (DTF) Printed: 11-Nov-2021 10:41 Page 10 of 12

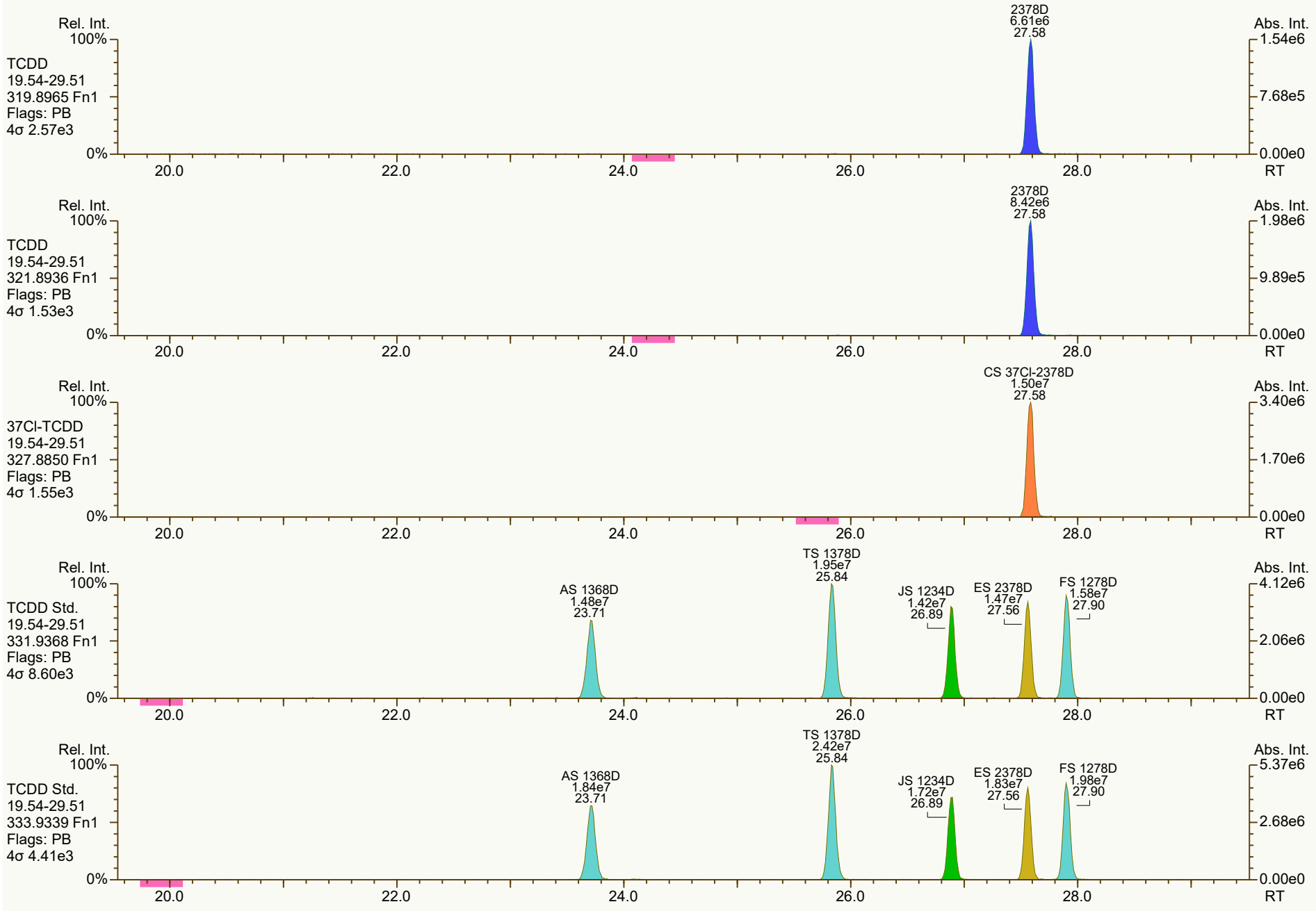

SGS ID: CS3_211110_DF_CB
Sample ID: 23-672-1
Acq: 10-Nov-2021 13:21:13
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 3
User: DTF Datafile: 211110C07
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.85e3
1234678F
9.38e6*
39.35
1234789F
8.30e6*
40.71
3.48e6
1.74e6
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 2.66e3
1234678F
9.19e6*
39.35
1234789F
7.92e6*
40.71
3.54e6
1.77e6
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.01e3
ES 1234678F
8.64e6*
39.34
CS 1234689F
8.12e6
39.75
ES 1234789F
7.87e6*
40.70
3.24e6
1.62e6
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.82e3
ES 1234678F
1.93e7*
39.34
CS 1234689F
1.79e7
39.75
ES 1234789F
1.68e7*
40.70
7.21e6
3.61e6
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.20e3
6.37e3
3.19e3
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

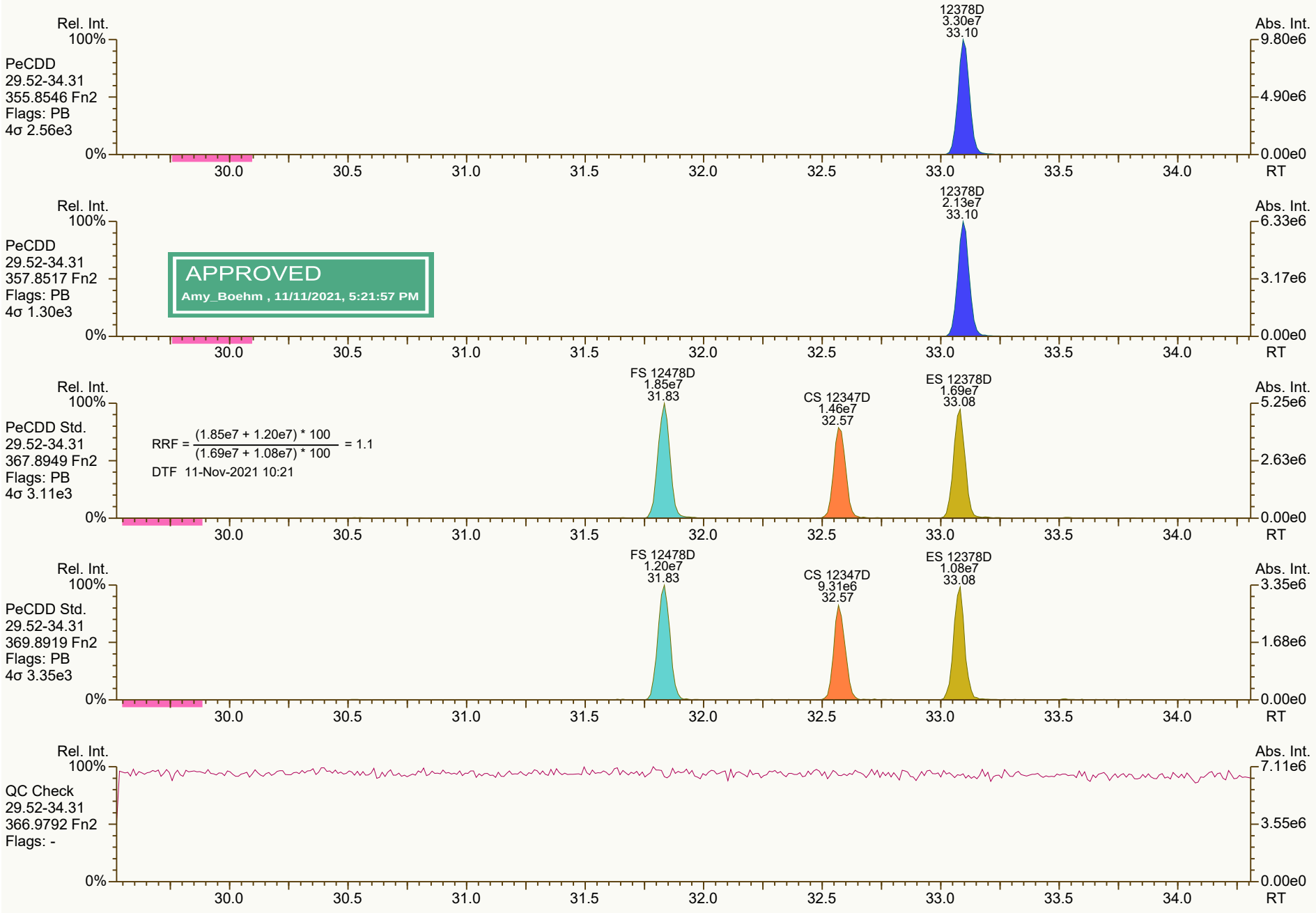

OCDF
1.15e7*
43.00
Rel. Int.
Abs. Int.
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
OCDF
1.28e7*
43.00
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 3.27e3
ES OCDF
2.21e7*
42.99
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 2.51e3
ES OCDF
2.39e7*
42.99
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 2.23e3
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.64e3
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

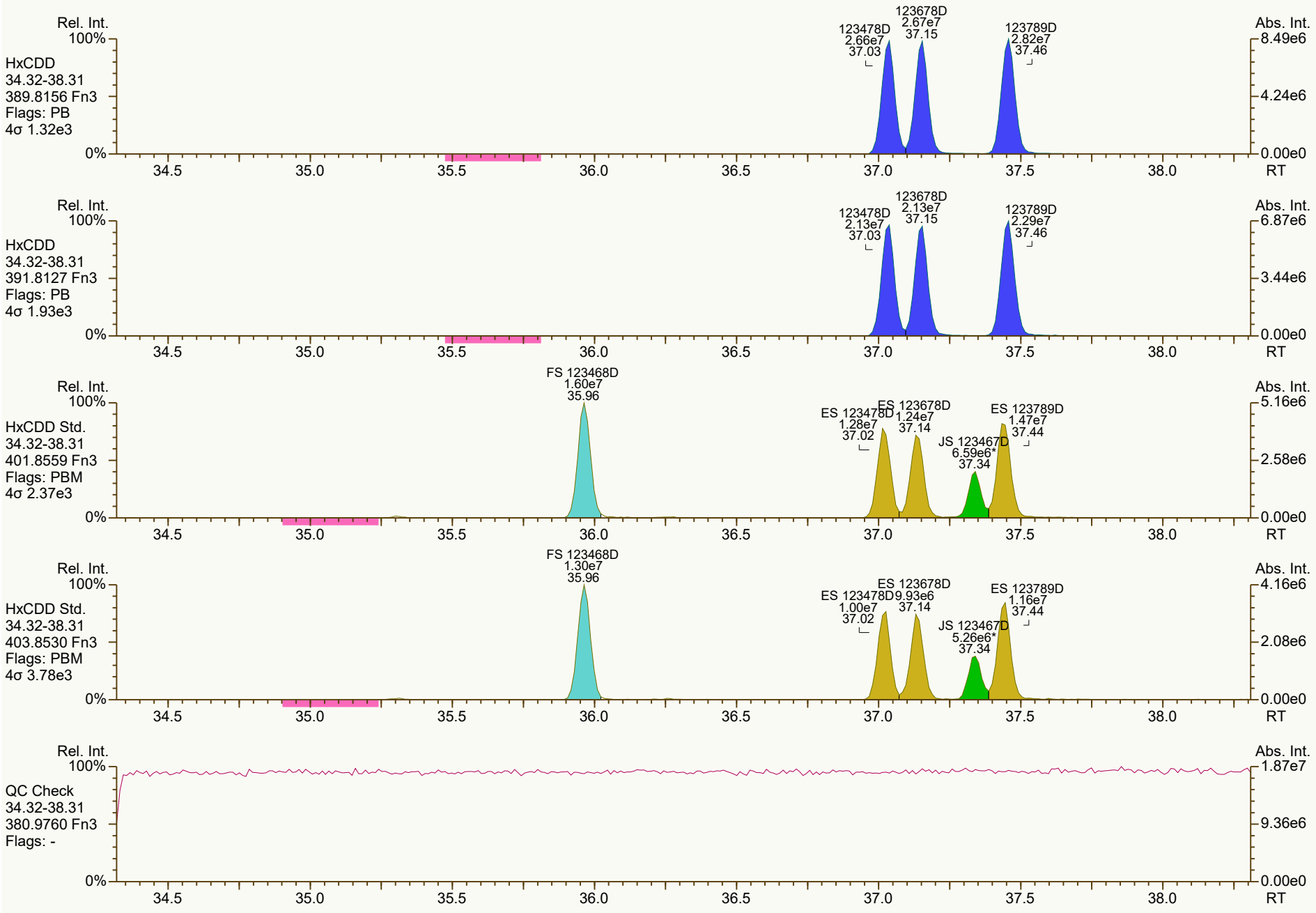
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	1.50E+07	0.79	Y	1.18	1.14	-4%
12378-PeCDD	33.10	5.42E+07	1.55	Y	1.04	0.98	-5%
123478-HxCDD	37.03	4.79E+07	1.25	Y	1.09	1.05	-4%
123678-HxCDD	37.15	4.80E+07	1.25	Y	1.15	1.07	-6%
123789-HxCDD	37.46	5.11E+07	1.23	Y	1.05	0.98	-7%
1234678-HpCDD	40.27	4.31E+07	1.05	Y	1.06	1.00	-6%
OCDD	42.83	6.25E+07	0.89	Y	1.13	1.06	-6%
2378-TCDF	26.67	1.91E+07	0.78	Y	1.08	1.03	-4%
12378-PeCDF	31.61	7.66E+07	1.54	Y	1.02	0.96	-6%
23478-PeCDF	32.74	7.39E+07	1.53	Y	1.02	0.96	-6%
123478-HxCDF	36.05	6.83E+07	1.24	Y	1.27	1.19	-6%
123678-HxCDF	36.19	6.98E+07	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.85	6.54E+07	1.23	Y	1.19	1.12	-6%
123789-HxCDF	37.84	5.95E+07	1.24	Y	1.16	1.10	-6%
1234678-HpCDF	39.34	5.90E+07	1.02	Y	1.37	1.28	-6%
1234789-HpCDF	40.70	5.08E+07	1.02	Y	1.31	1.25	-4%
OCDF	43.00	7.69E+07	0.90	Y	1.07	1.02	-4%
ES 2378-TCDD	27.56	3.30E+07	0.80	Y	1.05	1.05	0%
ES 12378-PeCDD	33.08	2.77E+07	1.58	Y	0.88	0.88	0%
ES 123478-HxCDD	37.019	2.28E+07	1.28	Y	0.97	0.96	-1%
ES 123678-HxCDD	37.135	2.23E+07	1.25	Y	0.94	0.94	0%
ES 123789-HxCDD	37.442	2.62E+07	1.27	Y	1.09	1.11	1%
ES 1234678-HpCDD	40.26	2.16E+07	1.03	Y	0.91	0.91	0%
ES OCDD	42.823	2.95E+07	0.91	Y	0.62	0.62	0%
ES 2378-TCDF	26.648	4.62E+07	0.80	Y	1.06	1.04	-2%
ES 12378-PeCDF	31.596	3.99E+07	1.53	Y	0.91	0.89	-2%
ES 23478-PeCDF	32.726	3.84E+07	1.55	Y	0.88	0.86	-2%
ES 123478-HxCDF	36.037	2.86E+07	0.53	Y	1.20	1.21	1%
ES 123678-HxCDF	36.177	3.20E+07	0.52	Y	1.35	1.35	0%
ES 234678-HxCDF	36.829	2.93E+07	0.56	Y	1.24	1.23	-1%
ES 123789-HxCDF	37.822	2.72E+07	0.55	Y	1.16	1.15	-1%
ES 1234678-HpCDF	39.332	2.30E+07	0.47	Y	0.97	0.97	0%
ES 1234789-HpCDF	40.694	2.03E+07	0.45	Y	0.85	0.86	1%
ES OCDF	42.984	3.76E+07	0.87	Y	0.81	0.79	-2%

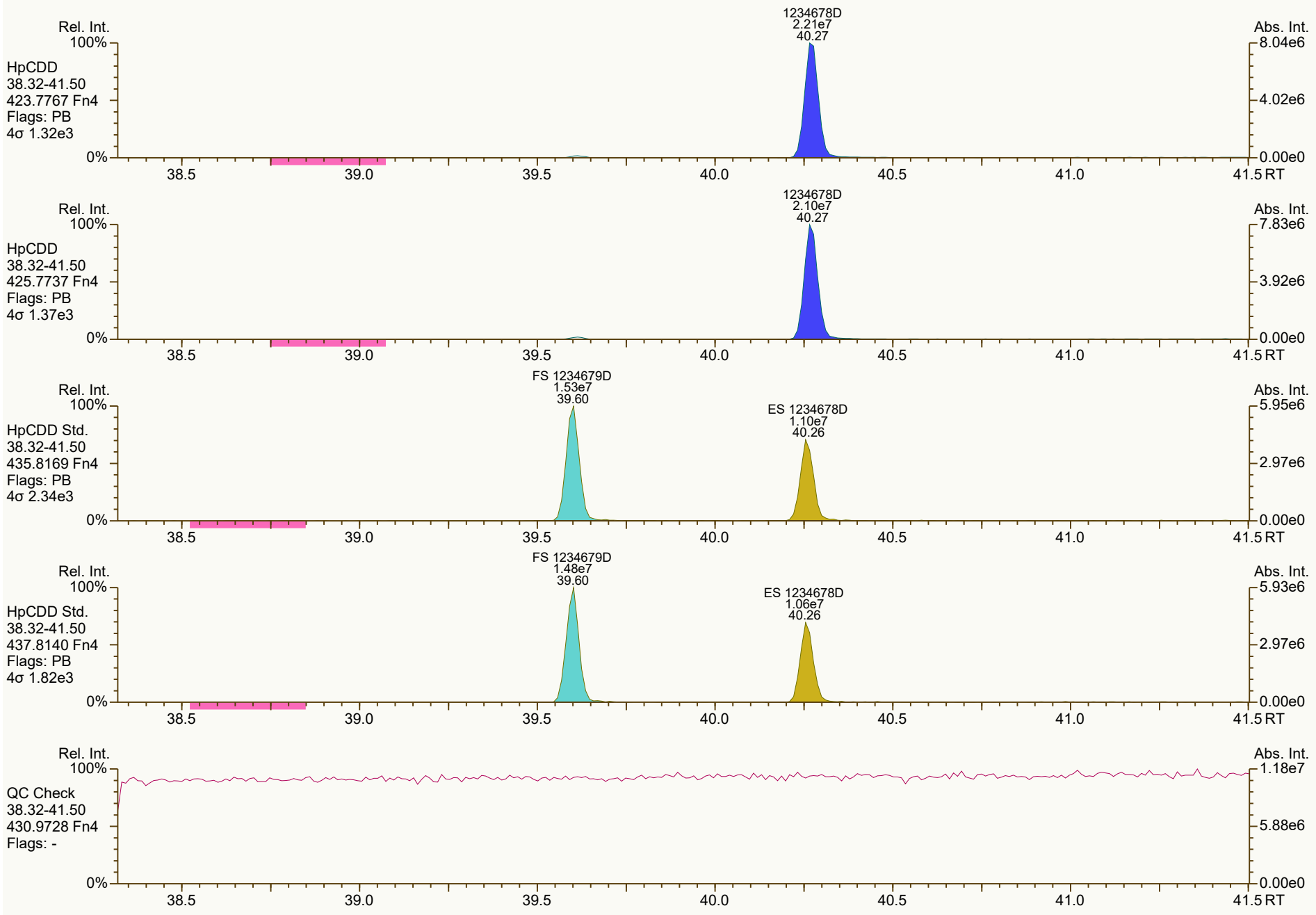
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:07 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS4_211110_DF_CA		UTP: 11-Nov-2021 16:22:22 DTF				Checkcode: 855-576-PGM	
Sample ID: 25-5-4		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C08	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
JS 1234-TCDD	26.89	3.14E+07	0.82	Y	-	-	-
JS 1234-TCDF	25.23	4.46E+07	0.82	Y	-	-	-
JS 123467-HxCDD	37.34	1.19E+07	1.25	Y	-	-	-
CS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.20	1.20	-1%
CS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.75	0.76	1%
CS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.85	0.84	-1%
CS 123469-HxCDF	36.49	2.68E+07	0.55	Y	1.12	1.13	1%
CS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.89	0.90	1%
SS 37Cl-2378-TCDD	27.58	1.50E+07	n/a	-	1.15	1.14	-1%
SS 12347-PeCDD	32.57	2.39E+07	1.57	Y	0.86	0.86	1%
SS 12346-PeCDF	31.06	3.74E+07	1.57	Y	0.94	0.94	0%
SS 123469-HxCDF	36.49	2.68E+07	0.55	Y	0.83	0.84	1%
SS 1234689-HpCDF	39.74	2.13E+07	0.46	Y	0.92	0.93	1%
AS 1368-TCDD	23.71	3.32E+07	0.80	Y	1.06	1.06	0%
AS 1368-TCDF	21.48	4.92E+07	0.79	Y	1.13	1.10	-2%
FS 1278-TCDD	27.90	3.57E+07	0.80	Y	1.07	1.08	1%
FS 12478-PeCDD	31.83	3.05E+07	1.54	Y	1.09	1.10	1%
FS 123468-HxCDD	35.96	2.90E+07	1.23	Y	1.26	1.27	1%
FS 1234679-HpCDD	39.60	3.02E+07	1.03	Y	1.36	1.40	3%
TS 1378-TCDD	25.84	4.37E+07	0.81	Y	1.34	1.33	-1%
OCDD-a	42.83	4.22E+06	2.47	Y	0.07	0.07	-1%
OCDF-a	42.99	5.07E+06	2.63	Y	0.07	0.07	2%

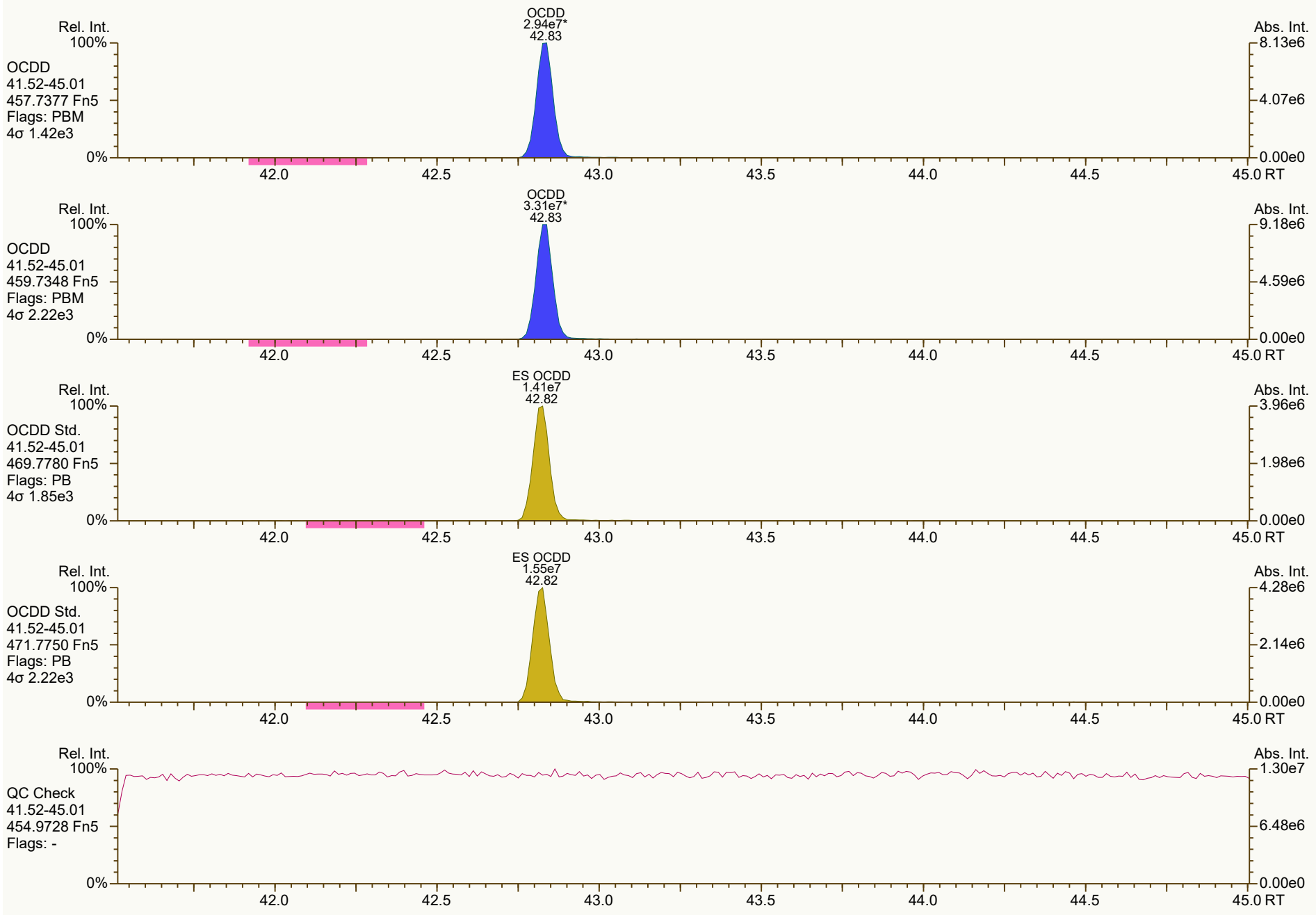

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
Abs. Int.
9.00e6
4.50e6
0.00e0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
Abs. Int.
7.11e6
3.55e6
0.00e0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Abs. Int.
1.87e7
9.36e6
0.00e0
RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
Abs. Int.
1.18e7
5.88e6
0.00e0
RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
Abs. Int.
1.30e7
6.48e6
0.00e0
RT


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 2.57e3
0%
2378D
6.61e6
27.58
Abs. Int.
1.54e6
7.68e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 1.53e3
0%
2378D
8.42e6
27.58
Abs. Int.
1.98e6
9.89e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: PB
4σ 1.55e3
0%
CS 37Cl-2378D
1.50e7
27.58
Abs. Int.
3.40e6
1.70e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 8.60e3
0%
AS 1368D
1.48e7
23.71
TS 1378D
1.95e7
25.84
JS 1234D
1.42e7
26.89
ES 2378D
1.47e7
27.56
FS 1278D
1.58e7
27.90
Abs. Int.
4.12e6
2.06e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.41e3
0%
AS 1368D
1.84e7
23.71
TS 1378D
2.42e7
25.84
JS 1234D
1.72e7
26.89
ES 2378D
1.83e7
27.56
FS 1278D
1.98e7
27.90
Abs. Int.
5.37e6
2.68e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PB
4σ 2.56e3
0%
12378D
3.30e7
33.10
Abs. Int.
9.80e6
4.90e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PB
4σ 1.30e3
APPROVED
Amy_Boehm , 11/11/2021, 5:21:57 PM
0%
12378D
2.13e7
33.10
Abs. Int.
6.33e6
3.17e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 3.11e3
RRF = (1.85e7 + 1.20e7) * 100 / (1.69e7 + 1.08e7) * 100 = 1.1
DTF 11-Nov-2021 10:21
0%
FS 12478D
1.85e7
31.83
CS 12347D
1.46e7
32.57
ES 12378D
1.69e7
33.08
Abs. Int.
5.25e6
2.63e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 3.35e3
0%
FS 12478D
1.20e7
31.83
CS 12347D
9.31e6
32.57
ES 12378D
1.08e7
33.08
Abs. Int.
3.35e6
1.68e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.11e6
3.55e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.32e3
123478D
2.66e7
37.03
123678D
2.67e7
37.15
123789D
2.82e7
37.46
Abs. Int.
8.49e6
4.24e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.93e3
123478D
2.13e7
37.03
123678D
2.13e7
37.15
123789D
2.29e7
37.46
Abs. Int.
6.87e6
3.44e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PBM
4σ 2.37e3
FS 123468D
1.60e7
35.96
ES 123478D
1.28e7
37.02
ES 123678D
1.24e7
37.14
JS 123467D
6.59e6*
37.34
ES 123789D
1.47e7
37.44
Abs. Int.
5.16e6
2.58e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PBM
4σ 3.78e3
FS 123468D
1.30e7
35.96
ES 123478D
1.00e7
37.02
ES 123678D
9.93e6
37.14
JS 123467D
5.26e6*
37.34
ES 123789D
1.16e7
37.44
Abs. Int.
4.16e6
2.08e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
1.87e7
9.36e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.32e3
1234678D
2.21e7
40.27
Abs. Int.
8.04e6
4.02e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.37e3
1234678D
2.10e7
40.27
Abs. Int.
7.83e6
3.92e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.34e3
FS 1234679D
1.53e7
39.60
ES 1234678D
1.10e7
40.26
Abs. Int.
5.95e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.82e3
FS 1234679D
1.48e7
39.60
ES 1234678D
1.06e7
40.26
Abs. Int.
5.93e6
2.97e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.18e7
5.88e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


OCDD
2.94e7*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
8.13e6
4.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
3.31e7*
42.83
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PBM
4σ 2.22e3
0%
Abs. Int.
9.18e6
4.59e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.41e7
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 1.85e3
0%
Abs. Int.
3.96e6
1.98e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.55e7
42.82
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.22e3
0%
Abs. Int.
4.28e6
2.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.30e7
6.48e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

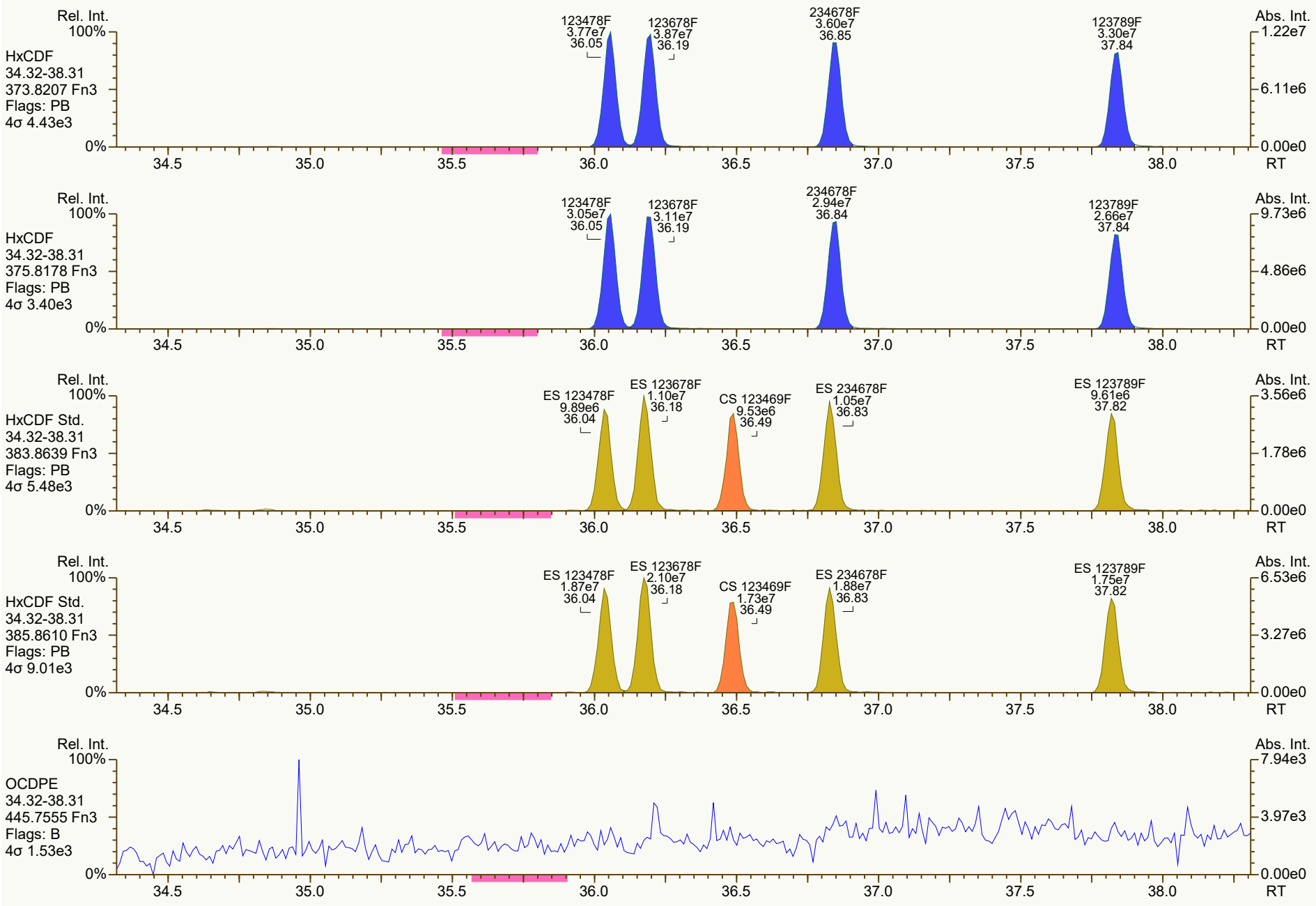

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 1.89e3
0%
2378F
8.36e6
26.67
Abs. Int.
1.89e6
9.43e5
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 1.73e3
0%
2378F
1.07e7
26.67
Abs. Int.
2.41e6
1.20e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PBM
4σ 1.97e4
0%
AS 1368F
2.17e7
21.48
JS 1234F
2.01e7*
25.23
ES 2378F
2.05e7
26.65
Abs. Int.
4.47e6
2.23e6
0.00e0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PBM
4σ 1.08e4
0%
AS 1368F
2.75e7
21.48
JS 1234F
2.45e7*
25.23
ES 2378F
2.57e7
26.65
Abs. Int.
5.68e6
2.84e6
0.00e0
RT
Rel. Int.
100%
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.52e3
0%
Abs. Int.
9.44e3
4.72e3
0.00e0
RT

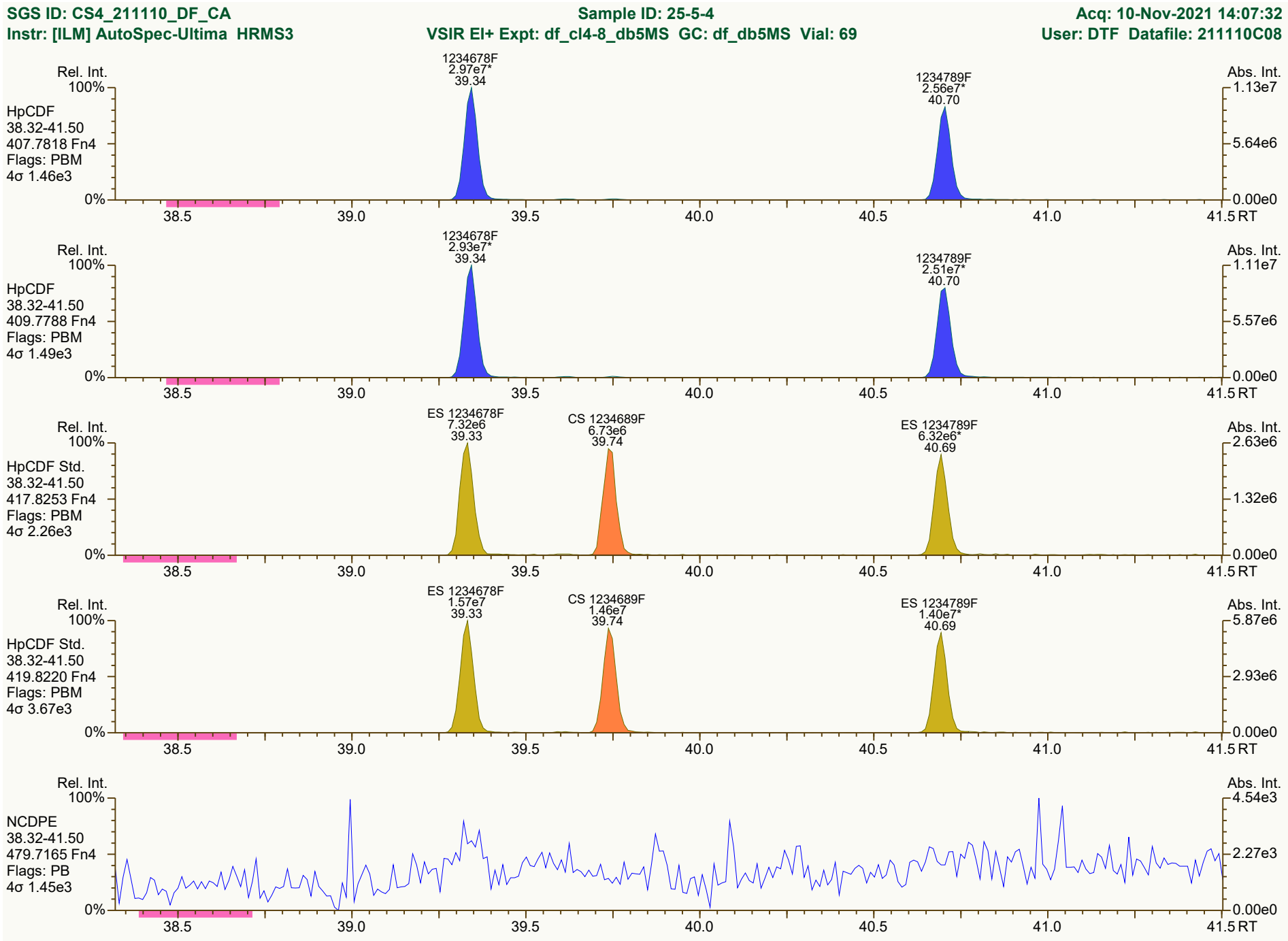
SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08

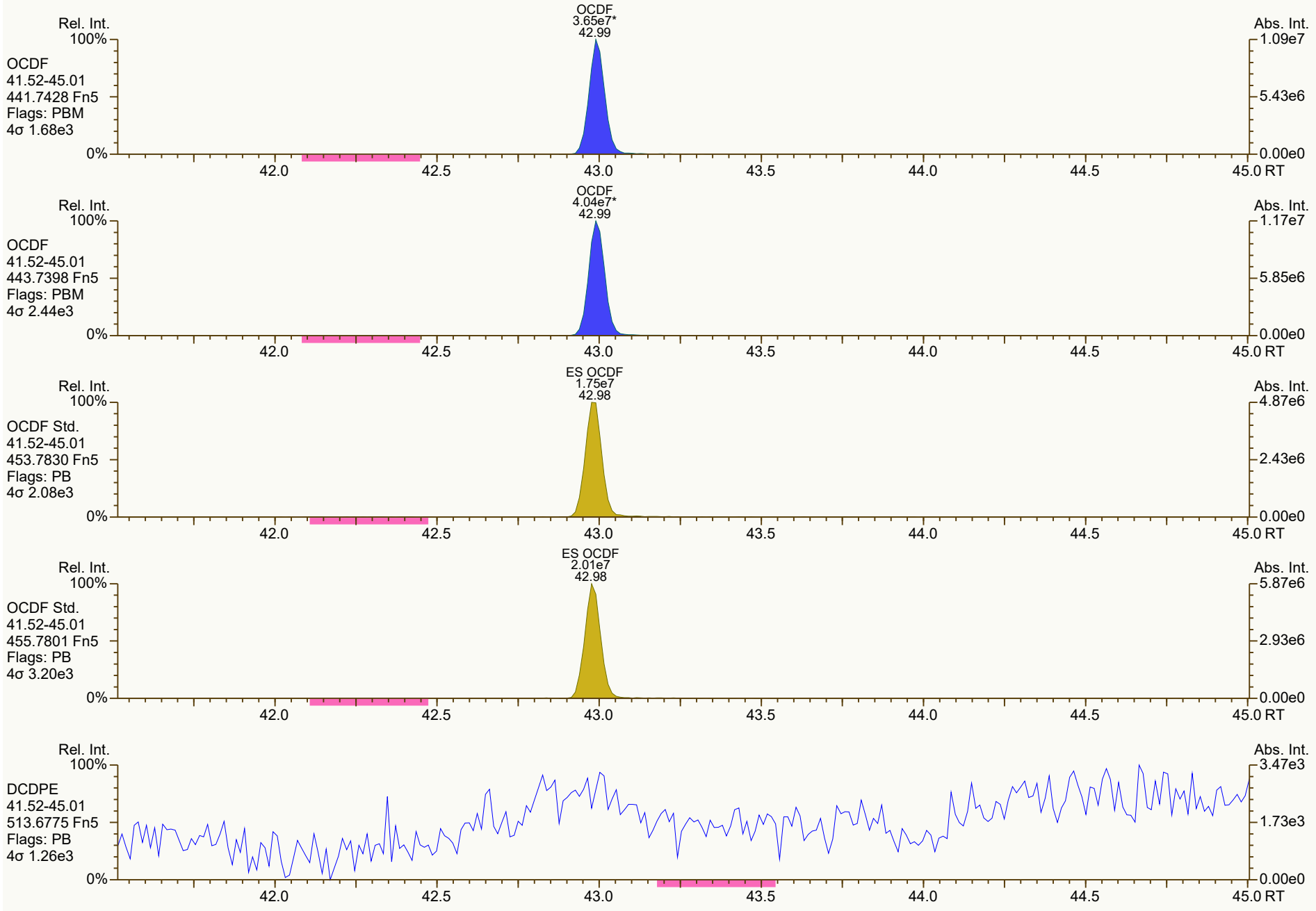


Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9500 scc: 855-576
PKD: 10-Nov-2021 15:16 Printed: 11-Nov-2021 10:41 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PBM
4σ 1.24e3
12378F
4.64e7
31.61
23478F
4.47e7*
32.74
Abs. Int.
1.30e7
6.48e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PBM
4σ 3.17e3
12378F
3.01e7
31.61
23478F
2.92e7*
32.74
Abs. Int.
8.36e6
4.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 3.39e3
CS 12346F
2.29e7
31.06
ES 12378F
2.41e7
31.60
ES 23478F
2.34e7
32.73
Abs. Int.
6.66e6
3.33e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.61e3
CS 12346F
1.46e7
31.06
ES 12378F
1.58e7
31.60
ES 23478F
1.51e7
32.73
Abs. Int.
4.36e6
2.18e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: PB
4σ 1.48e3
Abs. Int.
7.51e3
3.76e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 4.43e3
0%
123478F
3.77e7
36.05
123678F
3.87e7
36.19
234678F
3.60e7
36.85
123789F
3.30e7
37.84
Abs. Int.
1.22e7
6.11e6
0.00e0
RT
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 3.40e3
123478F
3.05e7
36.05
123678F
3.11e7
36.19
234678F
2.94e7
36.84
123789F
2.66e7
37.84
9.73e6
4.86e6
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.48e3
ES 123478F
9.89e6
36.04
ES 123678F
1.10e7
36.18
CS 123469F
9.53e6
36.49
ES 234678F
1.05e7
36.83
ES 123789F
9.61e6
37.82
3.56e6
1.78e6
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 9.01e3
ES 123478F
1.87e7
36.04
ES 123678F
2.10e7
36.18
CS 123469F
1.73e7
36.49
ES 234678F
1.88e7
36.83
ES 123789F
1.75e7
37.82
6.53e6
3.27e6
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.53e3
7.94e3
3.97e3

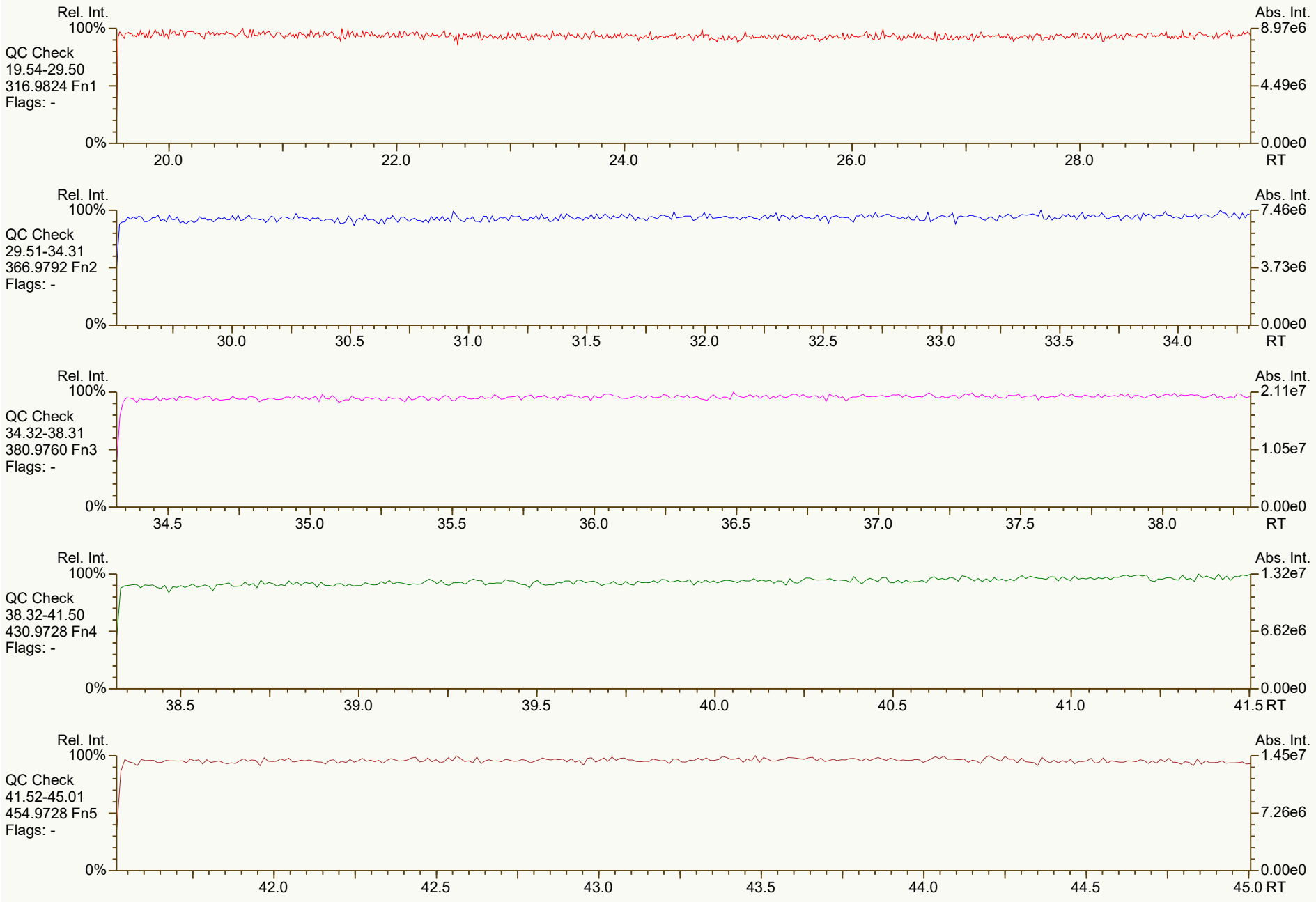

SGS ID: CS4_211110_DF_CA
Sample ID: 25-5-4
Acq: 10-Nov-2021 14:07:32
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 69
User: DTF Datafile: 211110C08
Rel. Int.
100%
0%
Abs. Int.
1.13e7
5.64e6
0.00e0
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PBM
4σ 1.46e3
1234678F
2.97e7*
39.34
1234789F
2.56e7*
40.70
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PBM
4σ 1.49e3
1234678F
2.93e7*
39.34
1234789F
2.51e7*
40.70
1.11e7
5.57e6
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 2.26e3
ES 1234678F
7.32e6
39.33
CS 1234689F
6.73e6
39.74
ES 1234789F
6.32e6*
40.69
2.63e6
1.32e6
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 3.67e3
ES 1234678F
1.57e7
39.33
CS 1234689F
1.46e7
39.74
ES 1234789F
1.40e7*
40.69
5.87e6
2.93e6
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.45e3
4.54e3
2.27e3
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS4_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 2764, 9565, 4492 scc: 855-576
Revised: 10-Nov-2021 15:17 (DTF) Printed: 11-Nov-2021 10:41 Page 11 of 12

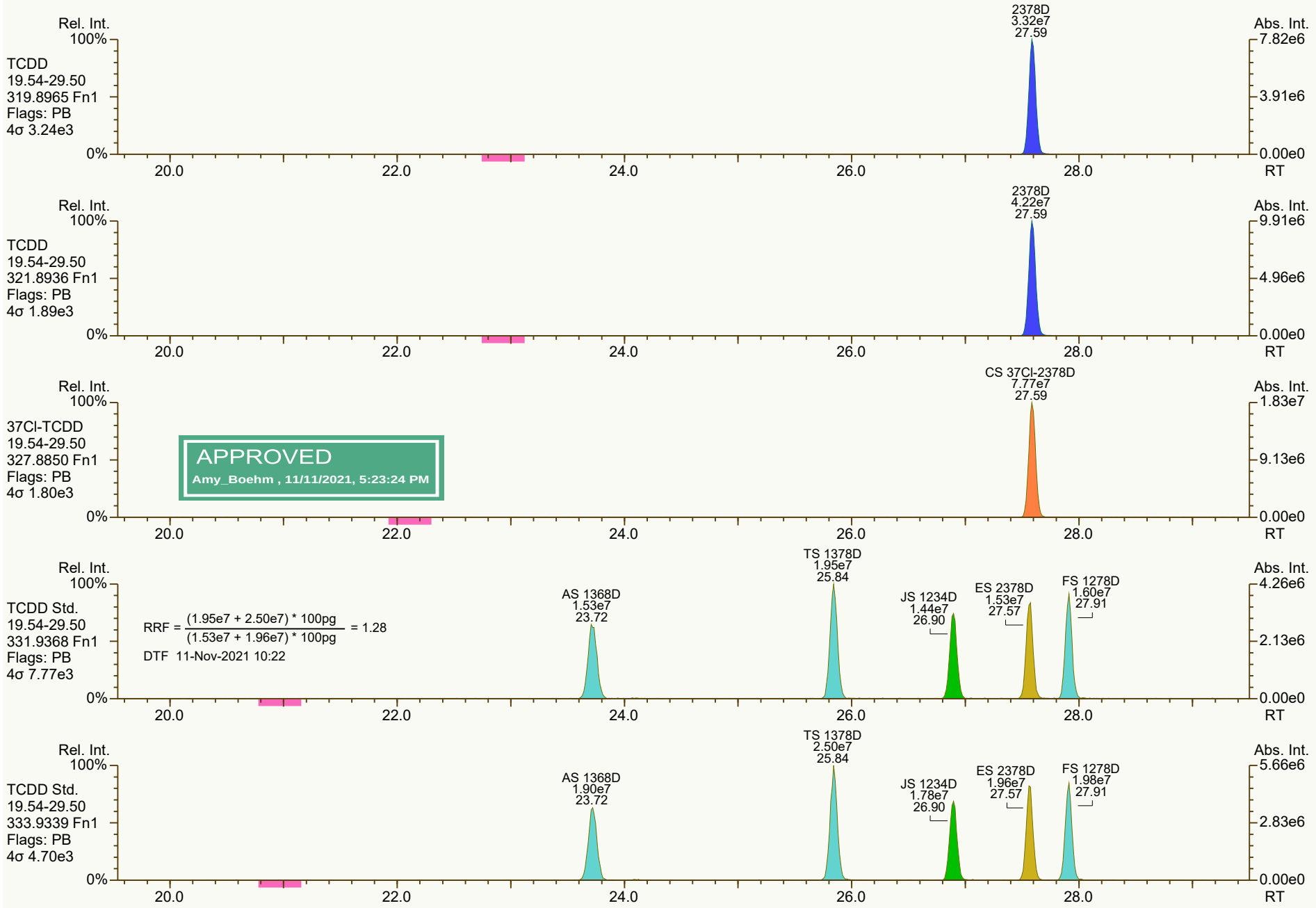

OCDF
3.65e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 1.68e3
0%
Abs. Int.
1.09e7
5.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
4.04e7*
42.99
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.44e3
0%
Abs. Int.
1.17e7
5.85e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.75e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.08e3
0%
Abs. Int.
4.87e6
2.43e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.01e7
42.98
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 3.20e3
0%
Abs. Int.
5.87e6
2.93e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: PB
4σ 1.26e3
0%
Abs. Int.
3.47e3
1.73e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

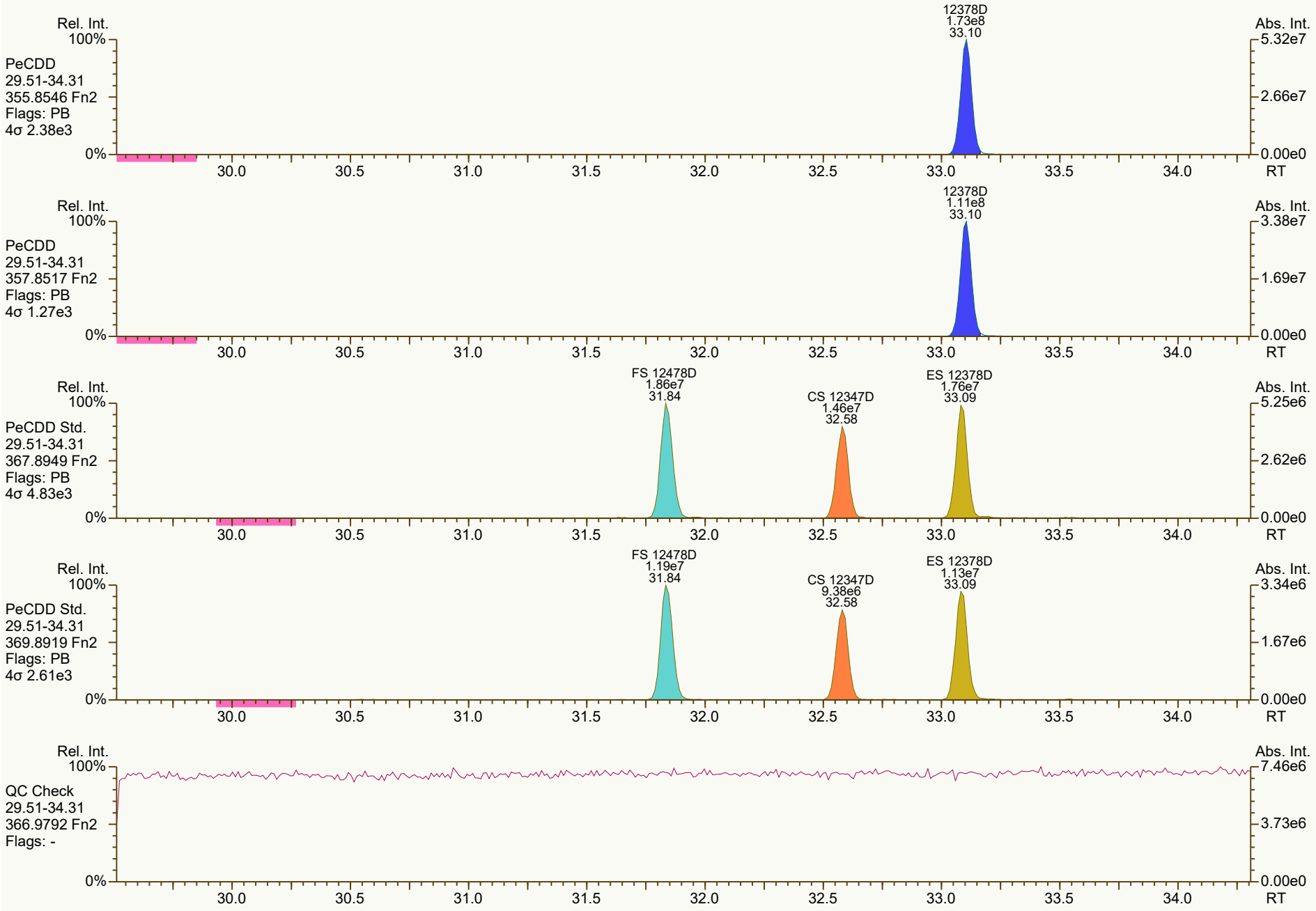
Dioxin/Furan QC Summary		Acq'd: 10 Nov 2021 14:53 DTF				ICAL: HRMS3_DF_10272021 10NOV2021	
Lab ID: CS5_211110_DF_CA		UTP: 11-Nov-2021 16:22:23 DTF				Checkcode: 573-489-BMZ	
Sample ID: 25-5-3		Report: 11 Nov 2021 16:25 TF				Datafile: 211110C09	
Name	**RT**	**Response**	**RA**	**OK**	**Ref. RRFs**	**Calc. RRFs**	**Dev'n**
2378-TCDD	27.59	7.54E+07	0.79	Y	1.18	1.08	-9%
12378-PeCDD	33.10	2.84E+08	1.56	Y	1.04	0.98	-5%
123478-HxCDD	37.04	2.65E+08	1.25	Y	1.09	1.03	-5%
123678-HxCDD	37.16	2.69E+08	1.26	Y	1.15	1.10	-4%
123789-HxCDD	37.46	2.84E+08	1.25	Y	1.05	0.99	-6%
1234678-HpCDD	40.28	2.36E+08	1.04	Y	1.06	0.99	-6%
OCDD	42.84	3.62E+08	0.89	Y	1.13	1.09	-3%
2378-TCDF	26.68	9.62E+07	0.78	Y	1.08	1.00	-8%
12378-PeCDF	31.62	4.08E+08	1.55	Y	1.02	0.96	-6%
23478-PeCDF	32.75	3.97E+08	1.54	Y	1.02	0.96	-6%
123478-HxCDF	36.06	3.78E+08	1.24	Y	1.27	1.21	-4%
123678-HxCDF	36.20	3.86E+08	1.23	Y	1.15	1.09	-5%
234678-HxCDF	36.85	3.65E+08	1.24	Y	1.19	1.12	-6%
123789-HxCDF	37.84	3.40E+08	1.24	Y	1.16	1.11	-5%
1234678-HpCDF	39.35	3.29E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.71	2.85E+08	1.03	Y	1.31	1.28	-2%
OCDF	43.00	4.48E+08	0.90	Y	1.07	1.03	-4%
ES 2378-TCDD	27.57	3.49E+07	0.78	Y	1.05	1.08	4%
ES 12378-PeCDD	33.087	2.89E+07	1.56	Y	0.88	0.90	2%
ES 123478-HxCDD	37.026	2.56E+07	1.25	Y	0.97	1.02	5%
ES 123678-HxCDD	37.142	2.44E+07	1.22	Y	0.94	0.97	3%
ES 123789-HxCDD	37.448	2.88E+07	1.26	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.267	2.37E+07	1.07	Y	0.91	0.95	4%
ES OCDD	42.829	3.32E+07	0.93	Y	0.62	0.66	6%
ES 2378-TCDF	26.655	4.83E+07	0.79	Y	1.06	1.07	1%
ES 12378-PeCDF	31.602	4.25E+07	1.58	Y	0.91	0.94	4%
ES 23478-PeCDF	32.733	4.12E+07	1.53	Y	0.88	0.91	4%
ES 123478-HxCDF	36.044	3.11E+07	0.52	Y	1.20	1.24	3%
ES 123678-HxCDF	36.182	3.54E+07	0.54	Y	1.35	1.41	4%
ES 234678-HxCDF	36.836	3.25E+07	0.54	Y	1.24	1.29	4%
ES 123789-HxCDF	37.828	3.07E+07	0.53	Y	1.16	1.22	6%
ES 1234678-HpCDF	39.337	2.54E+07	0.46	Y	0.97	1.01	4%
ES 1234789-HpCDF	40.697	2.22E+07	0.49	Y	0.85	0.88	4%
ES OCDF	42.99	4.35E+07	0.90	Y	0.81	0.87	7%

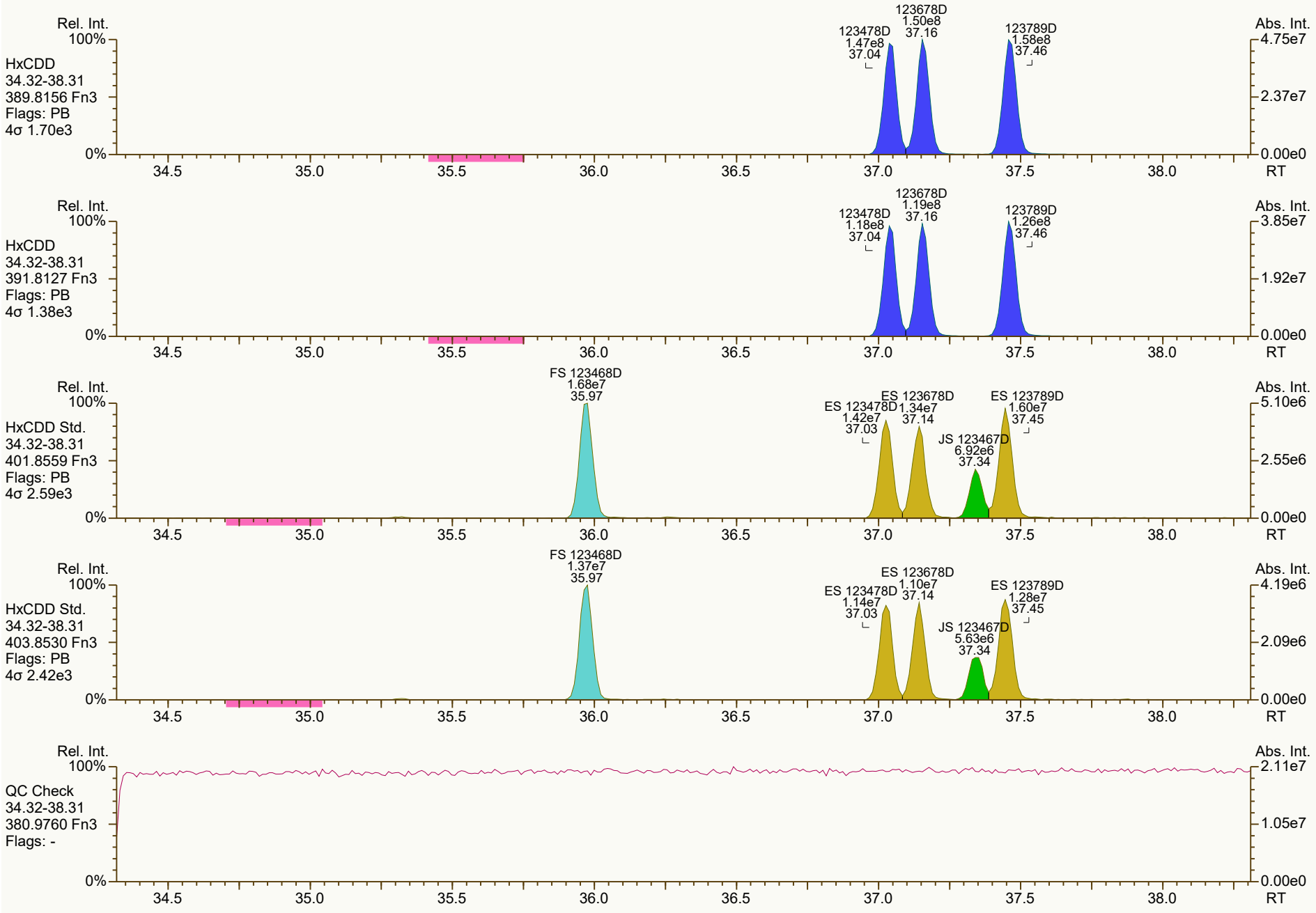
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 14:53 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS5_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 573-489-BMZ
Sample ID: 25-5-3	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C09

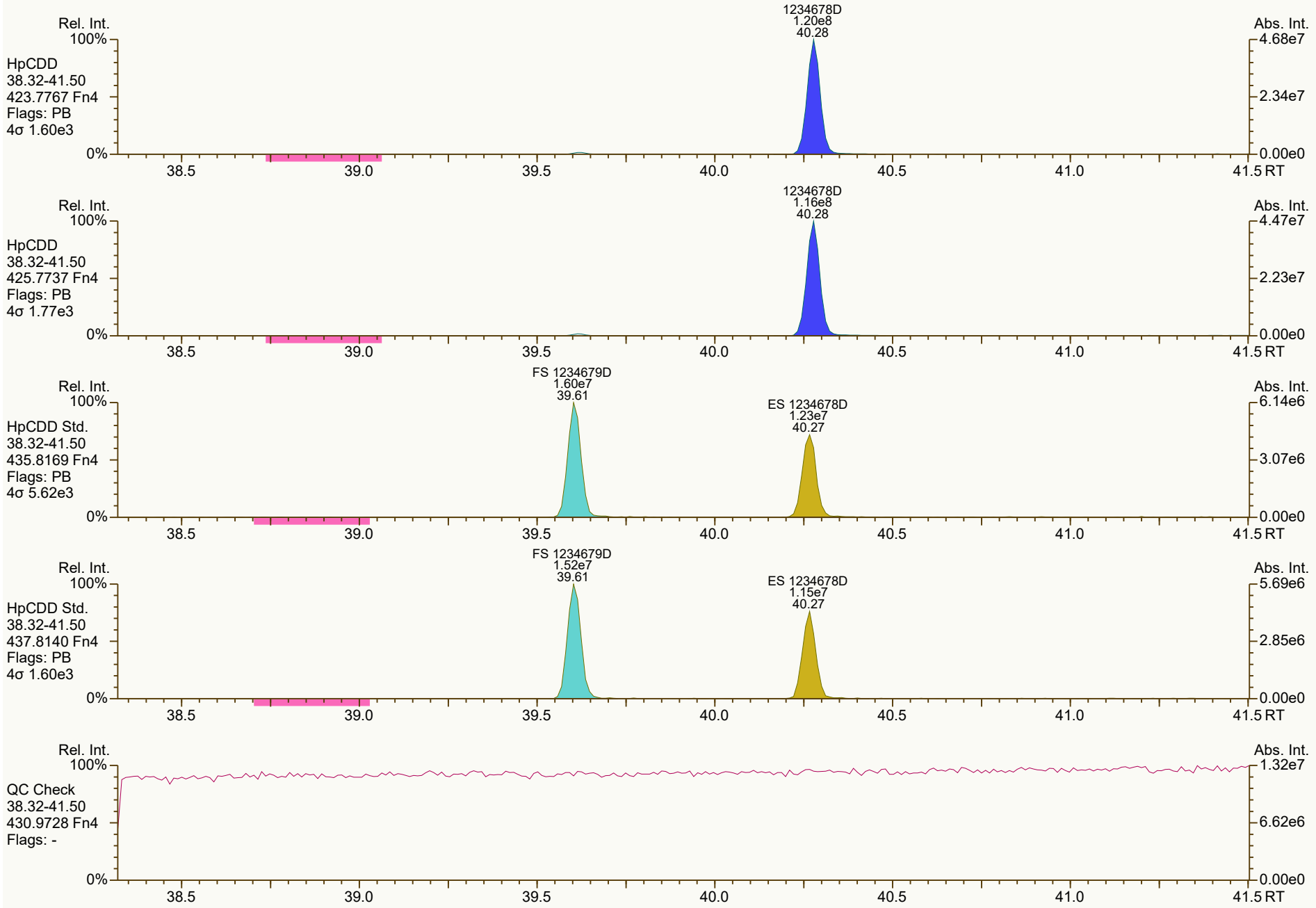
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	3.22E+07	0.81	Y	-	-	-
JS 1234-TCDF	25.24	4.50E+07	0.81	Y	-	-	-
JS 123467-HxCDD	37.34	1.26E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.20	1.21	0%
CS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.75	0.74	-1%
CS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.85	0.83	-2%
CS 123469-HxCDF	36.49	2.72E+07	0.52	Y	1.12	1.08	-3%
CS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.89	0.88	-1%
SS 37Cl-2378-TCDD	27.59	7.77E+07	n/a	-	1.15	1.11	-3%
SS 12347-PeCDD	32.58	2.40E+07	1.56	Y	0.86	0.83	-3%
SS 12346-PeCDF	31.07	3.76E+07	1.51	Y	0.94	0.88	-6%
SS 123469-HxCDF	36.49	2.72E+07	0.52	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.75	2.21E+07	0.45	Y	0.92	0.87	-5%
AS 1368-TCDD	23.72	3.43E+07	0.81	Y	1.06	1.07	1%
AS 1368-TCDF	21.49	4.99E+07	0.78	Y	1.13	1.11	-2%
FS 1278-TCDD	27.91	3.58E+07	0.81	Y	1.07	1.03	-4%
FS 12478-PeCDD	31.84	3.05E+07	1.56	Y	1.09	1.06	-3%
FS 123468-HxCDD	35.97	3.06E+07	1.22	Y	1.26	1.20	-5%
FS 1234679-HpCDD	39.61	3.12E+07	1.05	Y	1.36	1.31	-4%
TS 1378-TCDD	25.84	4.45E+07	0.78	Y	1.34	1.28	-5%
OCDD-a	42.84	2.30E+07	2.56	Y	0.07	0.07	-4%
OCDF-a	43.00	2.80E+07	2.47	Y	0.07	0.06	-3%

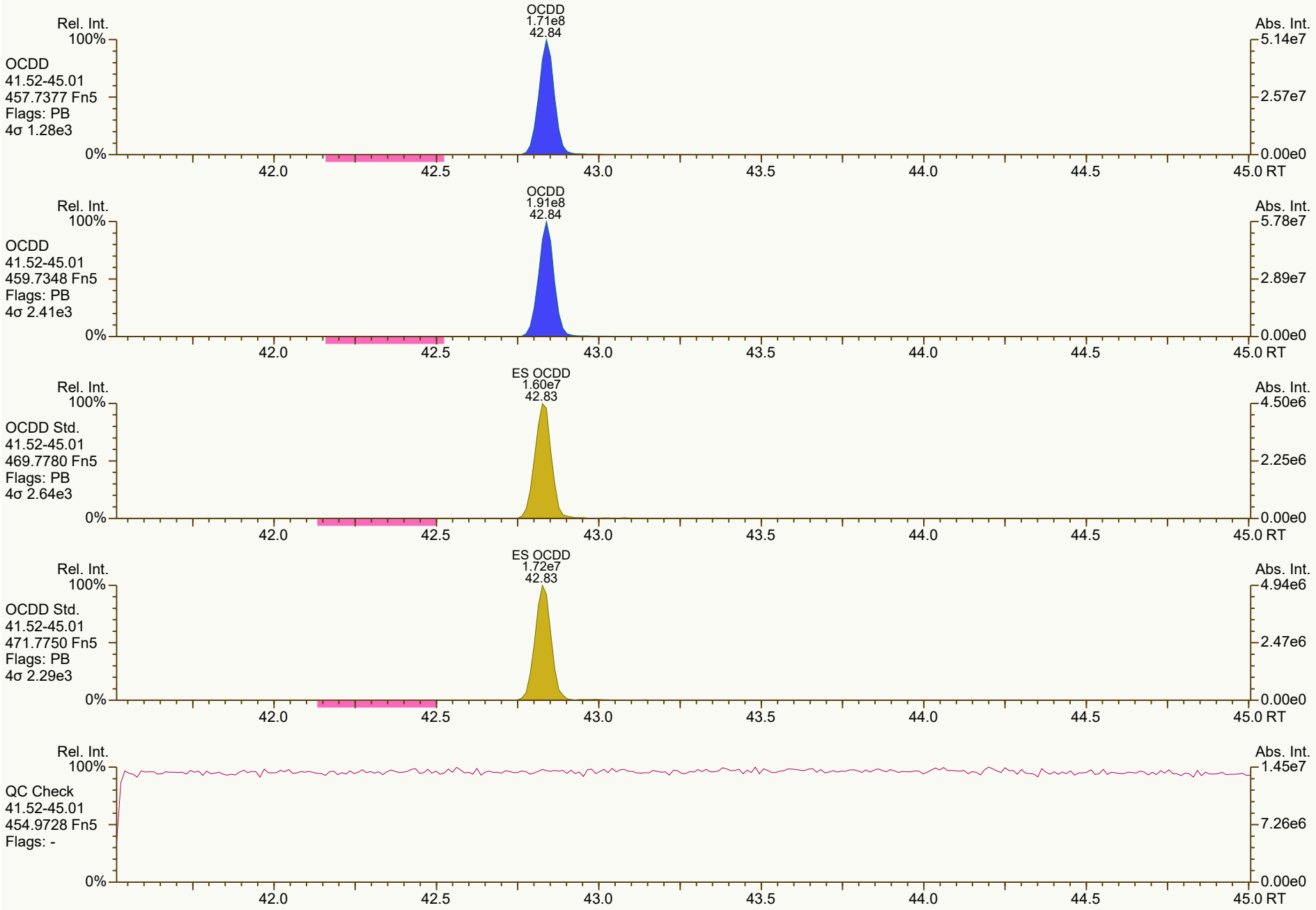

Rel. Int.
100%
0%
Abs. Int.
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
8.97e6
4.49e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
7.46e6
3.73e6
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
2.11e7
1.05e7
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
1.32e7
6.62e6
38.5
39.0
39.5
40.0
40.5
41.0
41.5
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6
42.0
42.5
43.0
43.5
44.0
44.5
45.0


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: PB
4σ 3.24e3
0%
2378D
3.32e7
27.59
Abs. Int.
7.82e6
3.91e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: PB
4σ 1.89e3
0%
2378D
4.22e7
27.59
Abs. Int.
9.91e6
4.96e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: PB
4σ 1.80e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:23:24 PM
CS 37Cl-2378D
7.77e7
27.59
Abs. Int.
1.83e7
9.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: PB
4σ 7.77e3
0%
RRF = (1.95e7 + 2.50e7) * 100pg / (1.53e7 + 1.96e7) * 100pg = 1.28
DTF 11-Nov-2021 10:22
AS 1368D
1.53e7
23.72
TS 1378D
1.95e7
25.84
JS 1234D
1.44e7
26.90
ES 2378D
1.53e7
27.57
FS 1278D
1.60e7
27.91
Abs. Int.
4.26e6
2.13e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: PB
4σ 4.70e3
0%
AS 1368D
1.90e7
23.72
TS 1378D
2.50e7
25.84
JS 1234D
1.78e7
26.90
ES 2378D
1.96e7
27.57
FS 1278D
1.98e7
27.91
Abs. Int.
5.66e6
2.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: PB
4σ 2.38e3
12378D
1.73e8
33.10
Abs. Int.
5.32e7
2.66e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: PB
4σ 1.27e3
12378D
1.11e8
33.10
Abs. Int.
3.38e7
1.69e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: PB
4σ 4.83e3
FS 12478D
1.86e7
31.84
CS 12347D
1.46e7
32.58
ES 12378D
1.76e7
33.09
Abs. Int.
5.25e6
2.62e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: PB
4σ 2.61e3
FS 12478D
1.19e7
31.84
CS 12347D
9.38e6
32.58
ES 12378D
1.13e7
33.09
Abs. Int.
3.34e6
1.67e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
Abs. Int.
7.46e6
3.73e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

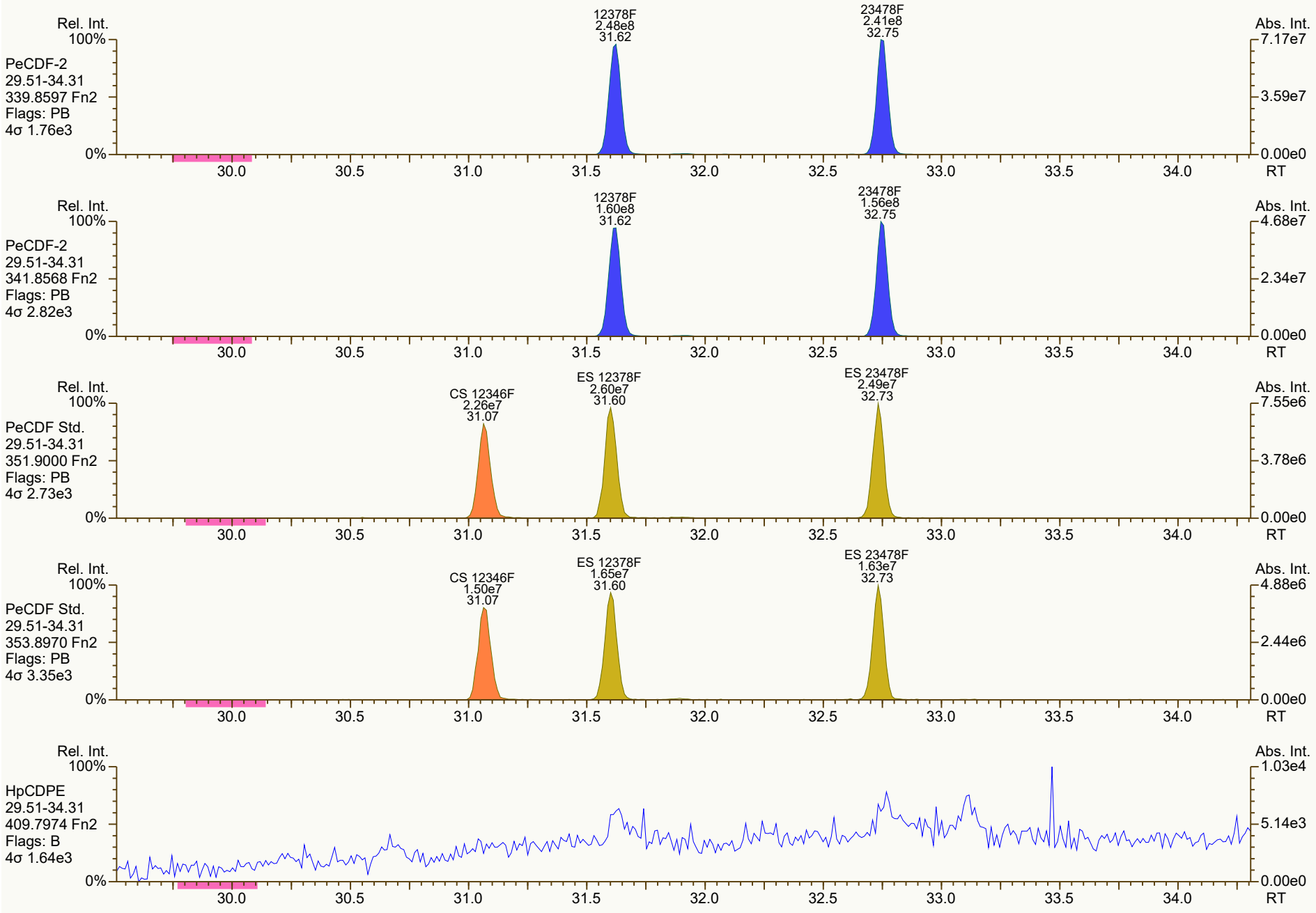

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 1.70e3
123478D
1.47e8
37.04
123678D
1.50e8
37.16
123789D
1.58e8
37.46
Abs. Int.
4.75e7
2.37e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.38e3
123478D
1.18e8
37.04
123678D
1.19e8
37.16
123789D
1.26e8
37.46
Abs. Int.
3.85e7
1.92e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.59e3
FS 123468D
1.68e7
35.97
ES 123478D
1.42e7
37.03
ES 123678D
1.34e7
37.14
JS 123467D
6.92e6
37.34
ES 123789D
1.60e7
37.45
Abs. Int.
5.10e6
2.55e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 2.42e3
FS 123468D
1.37e7
35.97
ES 123478D
1.14e7
37.03
ES 123678D
1.10e7
37.14
JS 123467D
5.63e6
37.34
ES 123789D
1.28e7
37.45
Abs. Int.
4.19e6
2.09e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
Abs. Int.
2.11e7
1.05e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

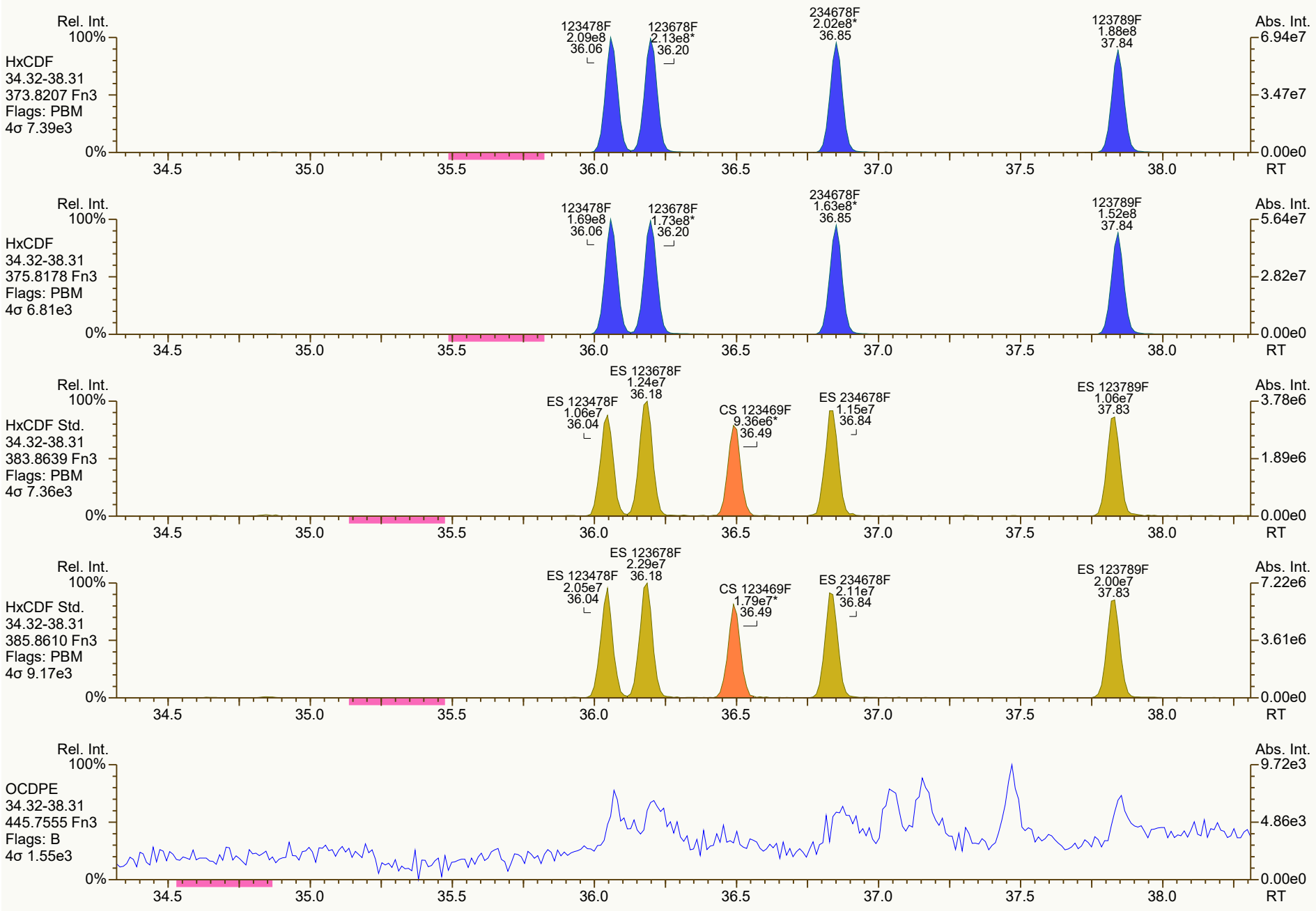

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 1.60e3
1234678D
1.20e8
40.28
Abs. Int.
4.68e7
2.34e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.77e3
1234678D
1.16e8
40.28
Abs. Int.
4.47e7
2.23e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 5.62e3
FS 1234679D
1.60e7
39.61
ES 1234678D
1.23e7
40.27
Abs. Int.
6.14e6
3.07e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 1.60e3
FS 1234679D
1.52e7
39.61
ES 1234678D
1.15e7
40.27
Abs. Int.
5.69e6
2.85e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.32e7
6.62e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

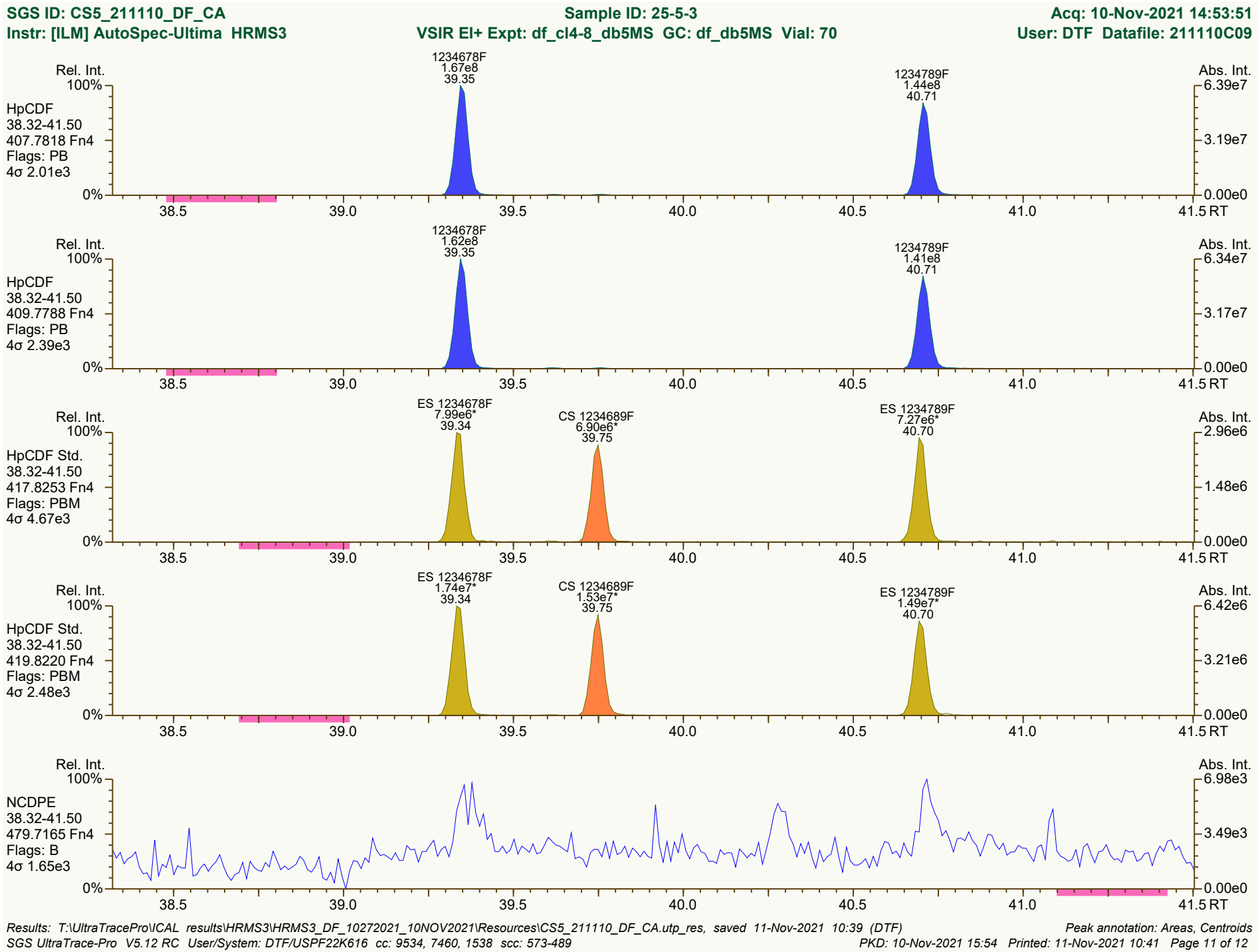

OCDD
1.71e8
42.84
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 1.28e3
0%
Abs. Int.
5.14e7
2.57e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
1.91e8
42.84
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 2.41e3
5.78e7
2.89e7
ES OCDD
1.60e7
42.83
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 2.64e3
4.50e6
2.25e6
ES OCDD
1.72e7
42.83
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 2.29e3
4.94e6
2.47e6
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
1.45e7
7.26e6

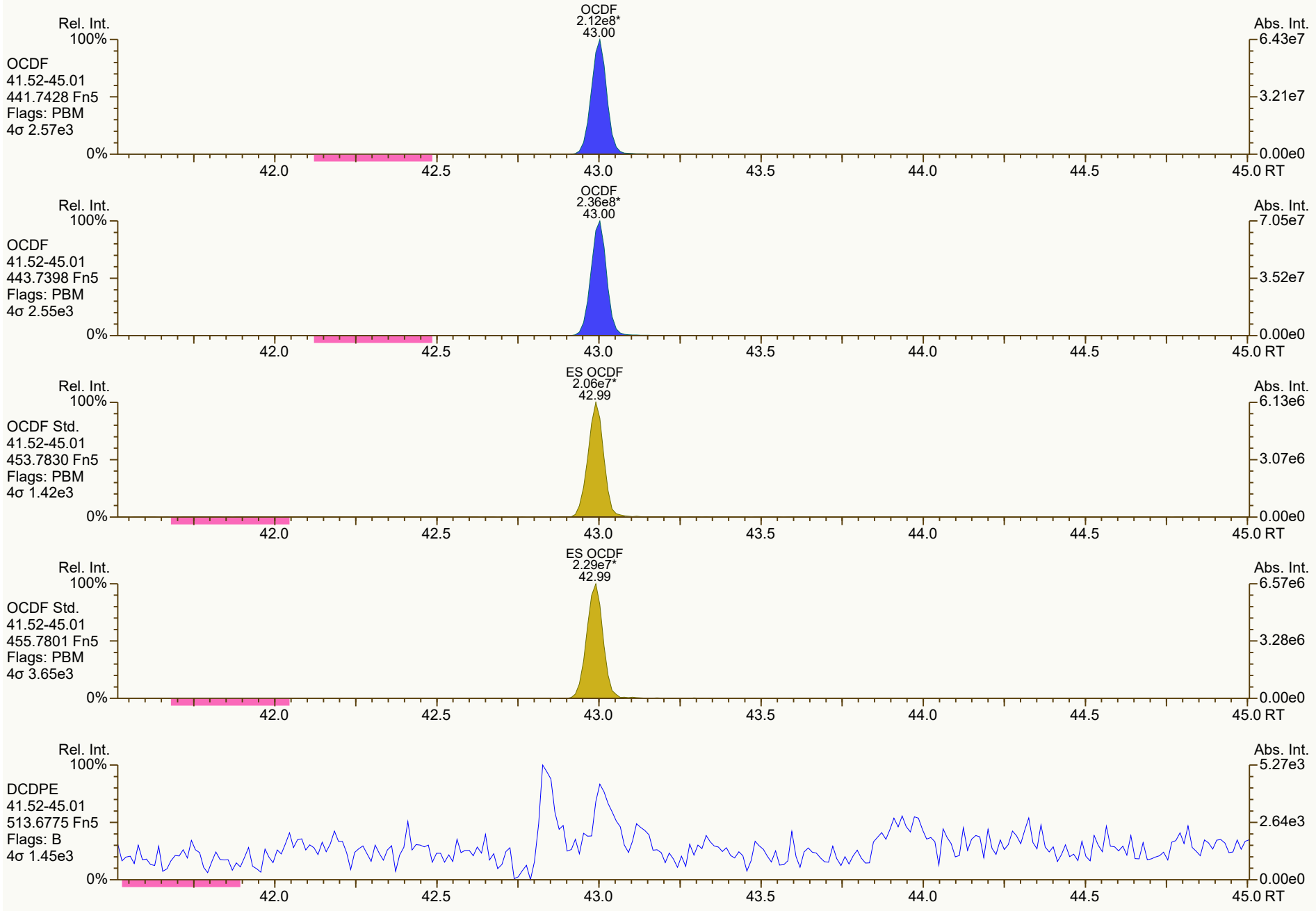

Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PB
4σ 1.90e3
0%
2378F
4.22e7
26.68
Abs. Int.
9.59e6
4.80e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PB
4σ 2.62e3
0%
2378F
5.40e7
26.68
Abs. Int.
1.21e7
6.07e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: PB
4σ 1.77e4
0%
AS 1368F
2.19e7
21.49
JS 1234F
2.02e7
25.24
ES 2378F
2.13e7
26.65
Abs. Int.
4.70e6
2.35e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: PB
4σ 1.51e4
0%
AS 1368F
2.81e7
21.49
JS 1234F
2.48e7
25.24
ES 2378F
2.69e7
26.65
Abs. Int.
5.78e6
2.89e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.60e3
0%
Abs. Int.
7.47e3
3.73e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
9.67e3
4.84e3
0.00e0
RT
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.43e3
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
0%
Abs. Int.
1.39e4
6.94e3
0.00e0
RT
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 2.08e3
20.0
22.0
24.0
26.0
28.0
Rel. Int.
100%
0%
Abs. Int.
8.97e6
4.49e6
0.00e0
RT
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: PB
4σ 1.76e3
0%
12378F
2.48e8
31.62
23478F
2.41e8
32.75
Abs. Int.
7.17e7
3.59e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: PB
4σ 2.82e3
0%
12378F
1.60e8
31.62
23478F
1.56e8
32.75
Abs. Int.
4.68e7
2.34e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: PB
4σ 2.73e3
0%
CS 12346F
2.26e7
31.07
ES 12378F
2.60e7
31.60
ES 23478F
2.49e7
32.73
Abs. Int.
7.55e6
3.78e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: PB
4σ 3.35e3
0%
CS 12346F
1.50e7
31.07
ES 12378F
1.65e7
31.60
ES 23478F
1.63e7
32.73
Abs. Int.
4.88e6
2.44e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 1.64e3
0%
Abs. Int.
1.03e4
5.14e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PBM
4σ 7.39e3
0%
123478F
2.09e8
36.06
123678F
2.13e8*
36.20
234678F
2.02e8*
36.85
123789F
1.88e8
37.84
Abs. Int.
6.94e7
3.47e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PBM
4σ 6.81e3
0%
123478F
1.69e8
36.06
123678F
1.73e8*
36.20
234678F
1.63e8*
36.85
123789F
1.52e8
37.84
Abs. Int.
5.64e7
2.82e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PBM
4σ 7.36e3
0%
ES 123478F
1.06e7
36.04
ES 123678F
1.24e7
36.18
CS 123469F
9.36e6*
36.49
ES 234678F
1.15e7
36.84
ES 123789F
1.06e7
37.83
Abs. Int.
3.78e6
1.89e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PBM
4σ 9.17e3
0%
ES 123478F
2.05e7
36.04
ES 123678F
2.29e7
36.18
CS 123469F
1.79e7*
36.49
ES 234678F
2.11e7
36.84
ES 123789F
2.00e7
37.83
Abs. Int.
7.22e6
3.61e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.55e3
0%
Abs. Int.
9.72e3
4.86e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


SGS ID: CS5_211110_DF_CA
Sample ID: 25-5-3
Acq: 10-Nov-2021 14:53:51
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 70
User: DTF Datafile: 211110C09
Rel. Int.
Abs. Int.
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 2.01e3
1234678F
1.67e8
39.35
1234789F
1.44e8
40.71
6.39e7
3.19e7
0.00e0
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 2.39e3
1234678F
1.62e8
39.35
1234789F
1.41e8
40.71
6.34e7
3.17e7
0.00e0
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.67e3
ES 1234678F
7.99e6*
39.34
CS 1234689F
6.90e6*
39.75
ES 1234789F
7.27e6*
40.70
2.96e6
1.48e6
0.00e0
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.48e3
ES 1234678F
1.74e7*
39.34
CS 1234689F
1.53e7*
39.75
ES 1234789F
1.49e7*
40.70
6.42e6
3.21e6
0.00e0
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.65e3
6.98e3
3.49e3
0.00e0
100%
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS5_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 9534, 7460, 1538 scc: 573-489
PKD: 10-Nov-2021 15:54 Printed: 11-Nov-2021 10:41 Page 11 of 12

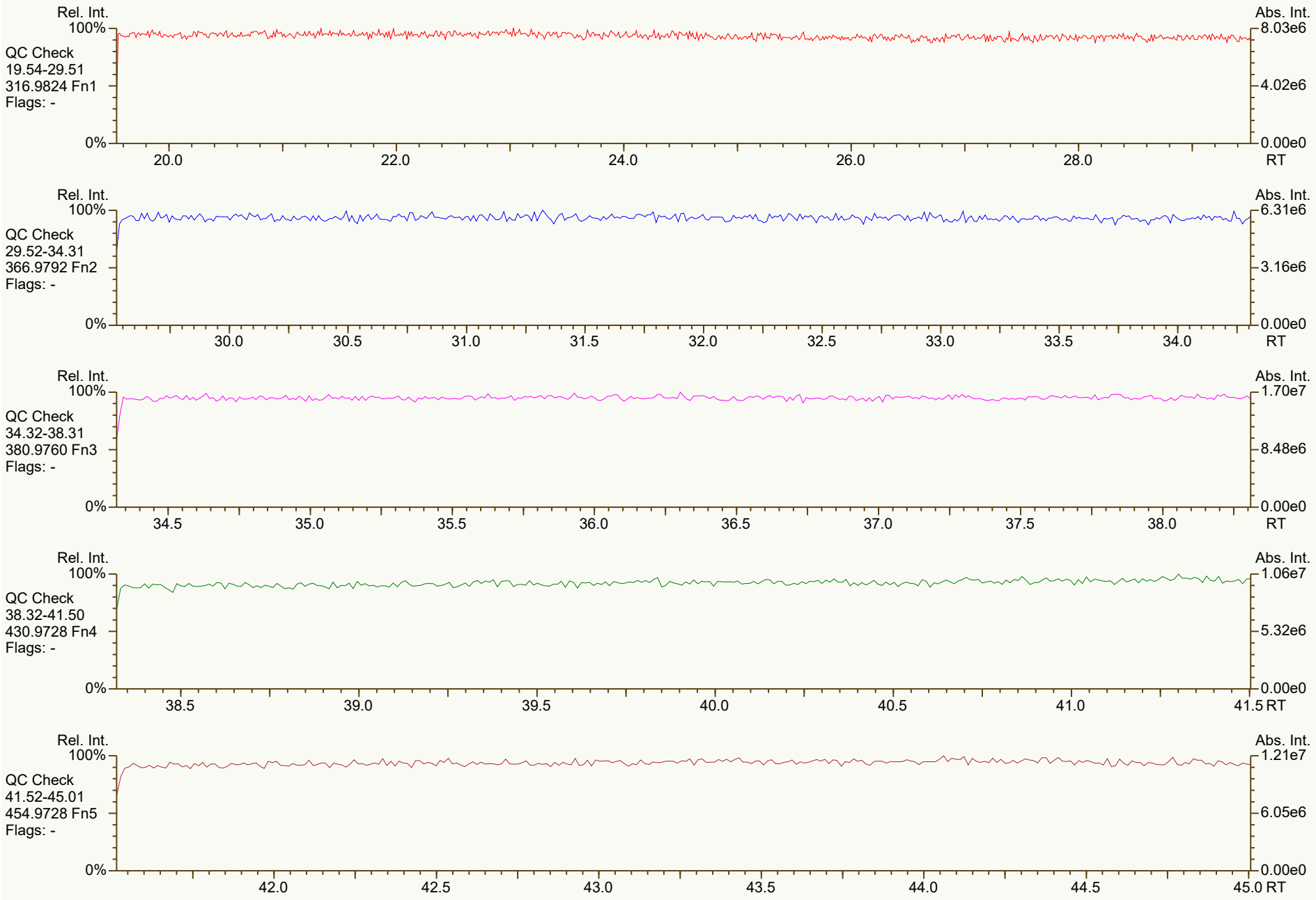

OCDF
2.12e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PBM
4σ 2.57e3
0%
Abs. Int.
6.43e7
3.21e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
2.36e8*
43.00
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PBM
4σ 2.55e3
0%
Abs. Int.
7.05e7
3.52e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.06e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PBM
4σ 1.42e3
0%
Abs. Int.
6.13e6
3.07e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
2.29e7*
42.99
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PBM
4σ 3.65e3
0%
Abs. Int.
6.57e6
3.28e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.45e3
0%
Abs. Int.
5.27e3
2.64e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

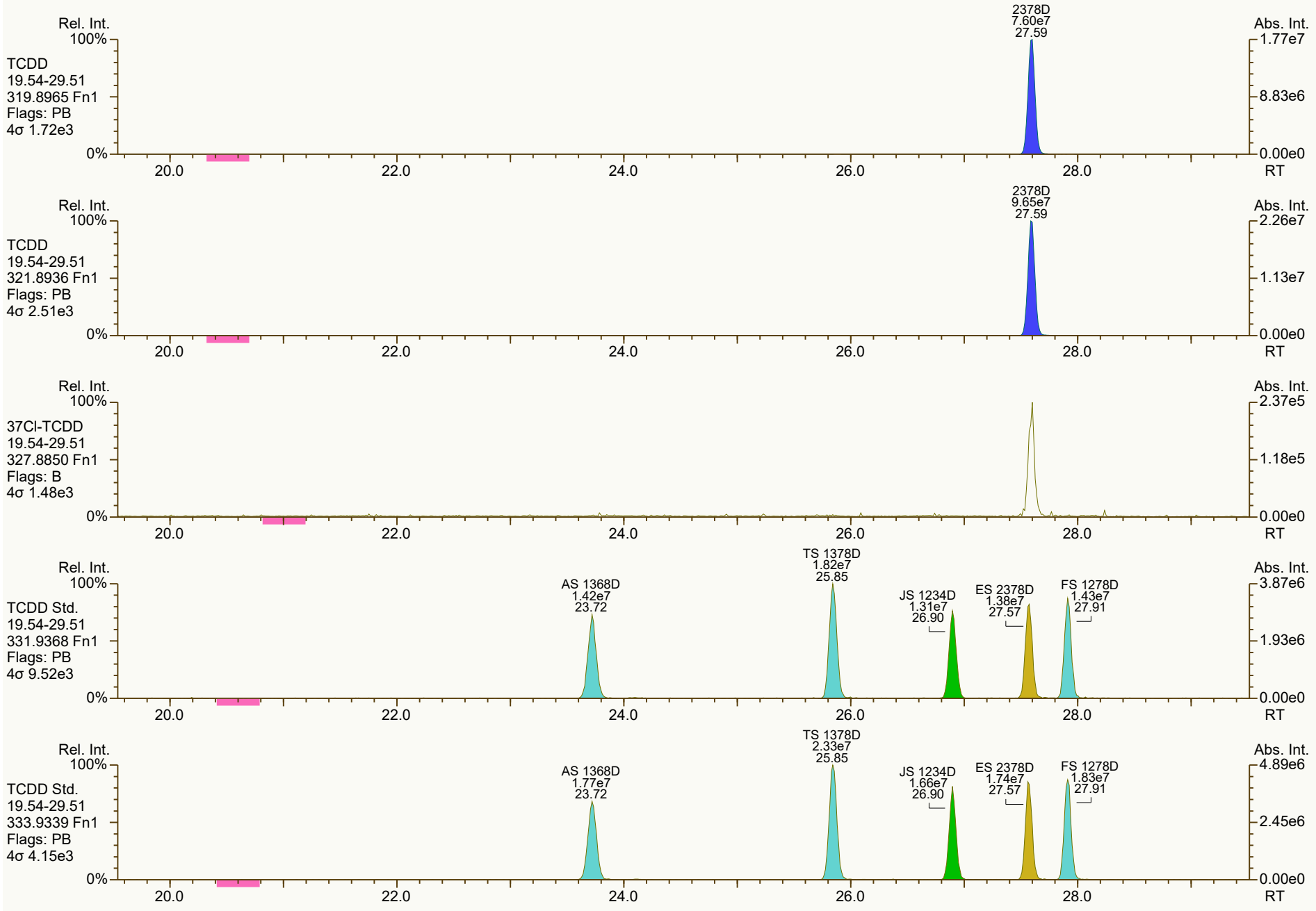
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

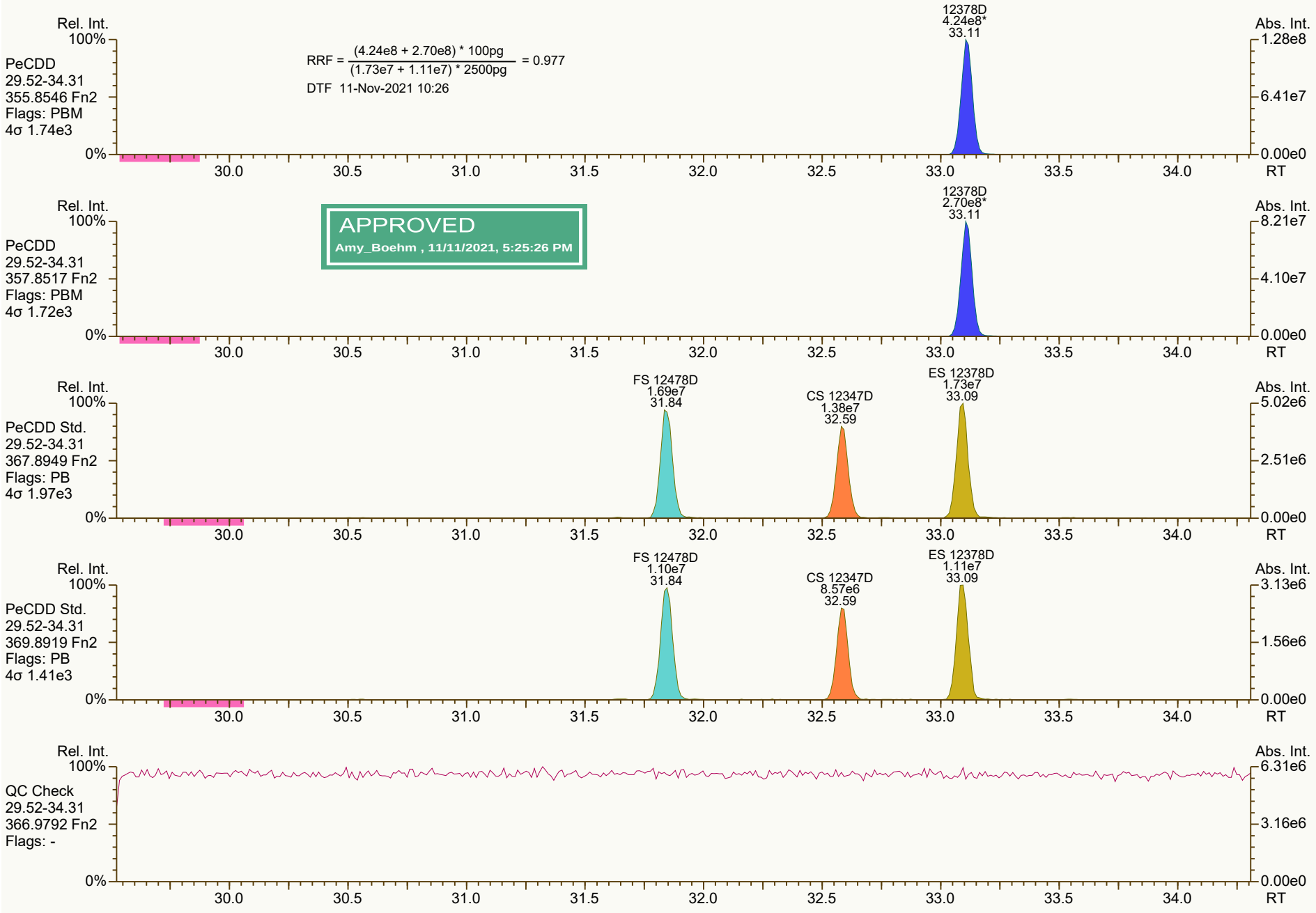
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
2378-TCDD	27.59	1.72E+08	0.79	Y	1.18	1.11	-7%
12378-PeCDD	33.11	6.93E+08	1.57	Y	1.04	0.98	-6%
123478-HxCDD	37.05	6.34E+08	1.25	Y	1.09	1.05	-3%
123678-HxCDD	37.17	6.31E+08	1.26	Y	1.15	1.08	-6%
123789-HxCDD	37.47	6.69E+08	1.25	Y	1.05	1.01	-4%
1234678-HpCDD	40.29	5.69E+08	1.04	Y	1.06	1.00	-6%
OCDD	42.86	8.78E+08	0.90	Y	1.13	1.08	-4%
2378-TCDF	26.68	2.23E+08	0.77	Y	1.08	1.00	-7%
12378-PeCDF	31.63	9.89E+08	1.56	Y	1.02	0.97	-5%
23478-PeCDF	32.76	9.58E+08	1.54	Y	1.02	0.97	-5%
123478-HxCDF	36.07	9.02E+08	1.23	Y	1.27	1.22	-4%
123678-HxCDF	36.21	9.17E+08	1.24	Y	1.15	1.09	-5%
234678-HxCDF	36.86	8.69E+08	1.23	Y	1.19	1.14	-4%
123789-HxCDF	37.85	8.09E+08	1.24	Y	1.16	1.12	-3%
1234678-HpCDF	39.36	7.85E+08	1.03	Y	1.37	1.29	-6%
1234789-HpCDF	40.72	6.79E+08	1.03	Y	1.31	1.27	-3%
OCDF	43.02	1.10E+09	0.90	Y	1.07	1.02	-5%
ES 2378-TCDD	27.57	3.12E+07	0.79	Y	1.05	1.05	0%
ES 12378-PeCDD	33.092	2.84E+07	1.56	Y	0.88	0.96	9%
ES 123478-HxCDD	37.034	2.41E+07	1.24	Y	0.97	1.04	7%
ES 123678-HxCDD	37.151	2.34E+07	1.21	Y	0.94	1.01	7%
ES 123789-HxCDD	37.455	2.66E+07	1.25	Y	1.09	1.15	5%
ES 1234678-HpCDD	40.276	2.28E+07	1.04	Y	0.91	0.98	8%
ES OCDD	42.846	3.26E+07	0.92	Y	0.62	0.70	12%
ES 2378-TCDF	26.657	4.46E+07	0.78	Y	1.06	1.07	1%
ES 12378-PeCDF	31.609	4.08E+07	1.57	Y	0.91	0.98	8%
ES 23478-PeCDF	32.739	3.96E+07	1.55	Y	0.88	0.95	8%
ES 123478-HxCDF	36.05	2.95E+07	0.53	Y	1.20	1.27	6%
ES 123678-HxCDF	36.19	3.35E+07	0.54	Y	1.35	1.44	7%
ES 234678-HxCDF	36.843	3.05E+07	0.51	Y	1.24	1.31	6%
ES 123789-HxCDF	37.835	2.88E+07	0.52	Y	1.16	1.24	7%
ES 1234678-HpCDF	39.347	2.42E+07	0.45	Y	0.97	1.04	8%
ES 1234789-HpCDF	40.708	2.13E+07	0.46	Y	0.85	0.92	8%
ES OCDF	43.008	4.32E+07	0.91	Y	0.81	0.93	15%

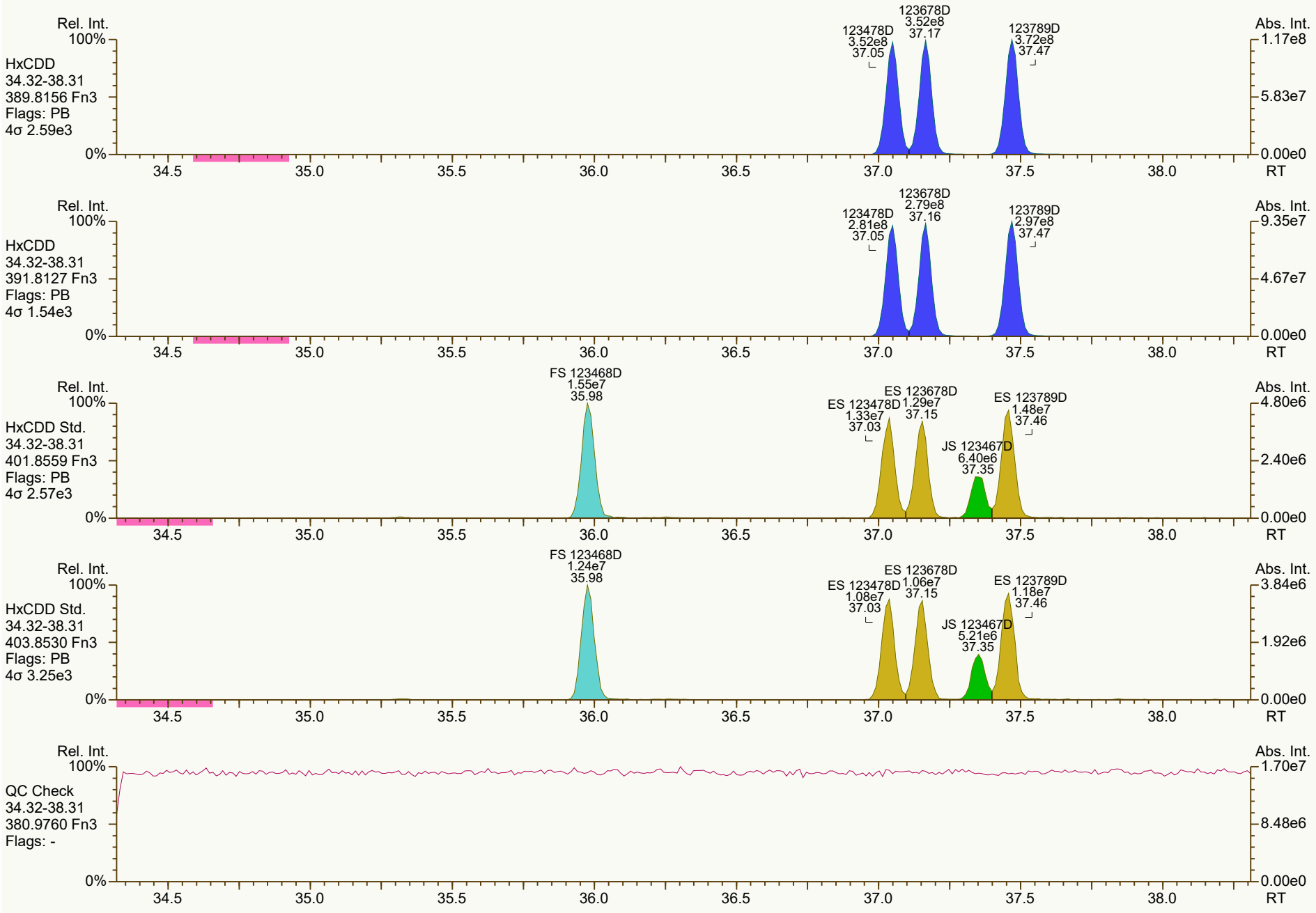
Dioxin/Furan QC Summary	Acq'd: 10 Nov 2021 15:40 DTF	ICAL: HRMS3_DF_10272021 10NOV2021
Lab ID: CS6_211110_DF_CA	UTP: 11-Nov-2021 16:22:23 DTF	Checkcode: 172-736-WQL
Sample ID: 25-5-2	Report: 11 Nov 2021 16:25 TF	Datafile: 211110C10

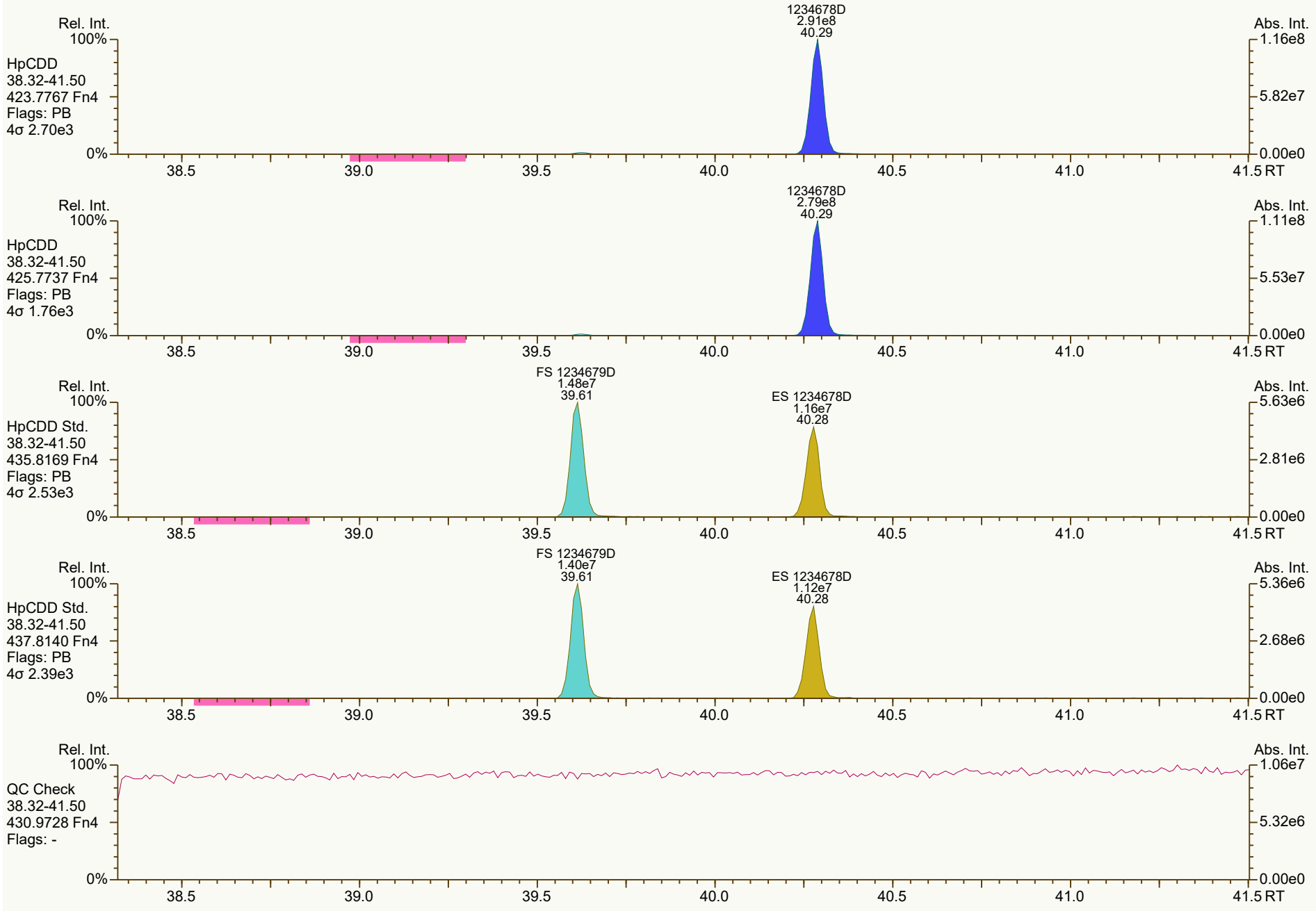
Name	RT	Response	RA	OK	Ref. RRFs	Calc. RRFs	Dev'n
JS 1234-TCDD	26.90	2.97E+07	0.79	Y	-	-	-
JS 1234-TCDF	25.24	4.16E+07	0.79	Y	-	-	-
JS 123467-HxCDD	37.35	1.16E+07	1.23	Y	-	-	-
CS 37Cl-2378-TCDD	NotFnd		n/a	-	1.20		
CS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.75	0.75	0%
CS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.85	0.85	0%
CS 123469-HxCDF	36.50	2.58E+07	0.53	Y	1.12	1.11	-1%
CS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.89	0.87	-2%
SS 37Cl-2378-TCDD	NotFnd		n/a	-	1.15		
SS 12347-PeCDD	32.59	2.24E+07	1.62	Y	0.86	0.79	-8%
SS 12346-PeCDF	31.07	3.54E+07	1.55	Y	0.94	0.87	-7%
SS 123469-HxCDF	36.50	2.58E+07	0.53	Y	0.83	0.77	-7%
SS 1234689-HpCDF	39.76	2.03E+07	0.47	Y	0.92	0.84	-9%
AS 1368-TCDD	23.72	3.19E+07	0.80	Y	1.06	1.07	2%
AS 1368-TCDF	21.49	4.69E+07	0.79	Y	1.13	1.13	0%
FS 1278-TCDD	27.91	3.26E+07	0.78	Y	1.07	1.05	-2%
FS 12478-PeCDD	31.85	2.80E+07	1.54	Y	1.09	0.98	-10%
FS 123468-HxCDD	35.98	2.79E+07	1.25	Y	1.26	1.16	-8%
FS 1234679-HpCDD	39.61	2.88E+07	1.06	Y	1.36	1.26	-7%
TS 1378-TCDD	25.85	4.14E+07	0.78	Y	1.34	1.33	-1%
OCDD-a	42.85	5.41E+07	2.50	Y	0.07	0.07	-8%
OCDF-a	43.02	6.71E+07	2.45	Y	0.07	0.06	-6%

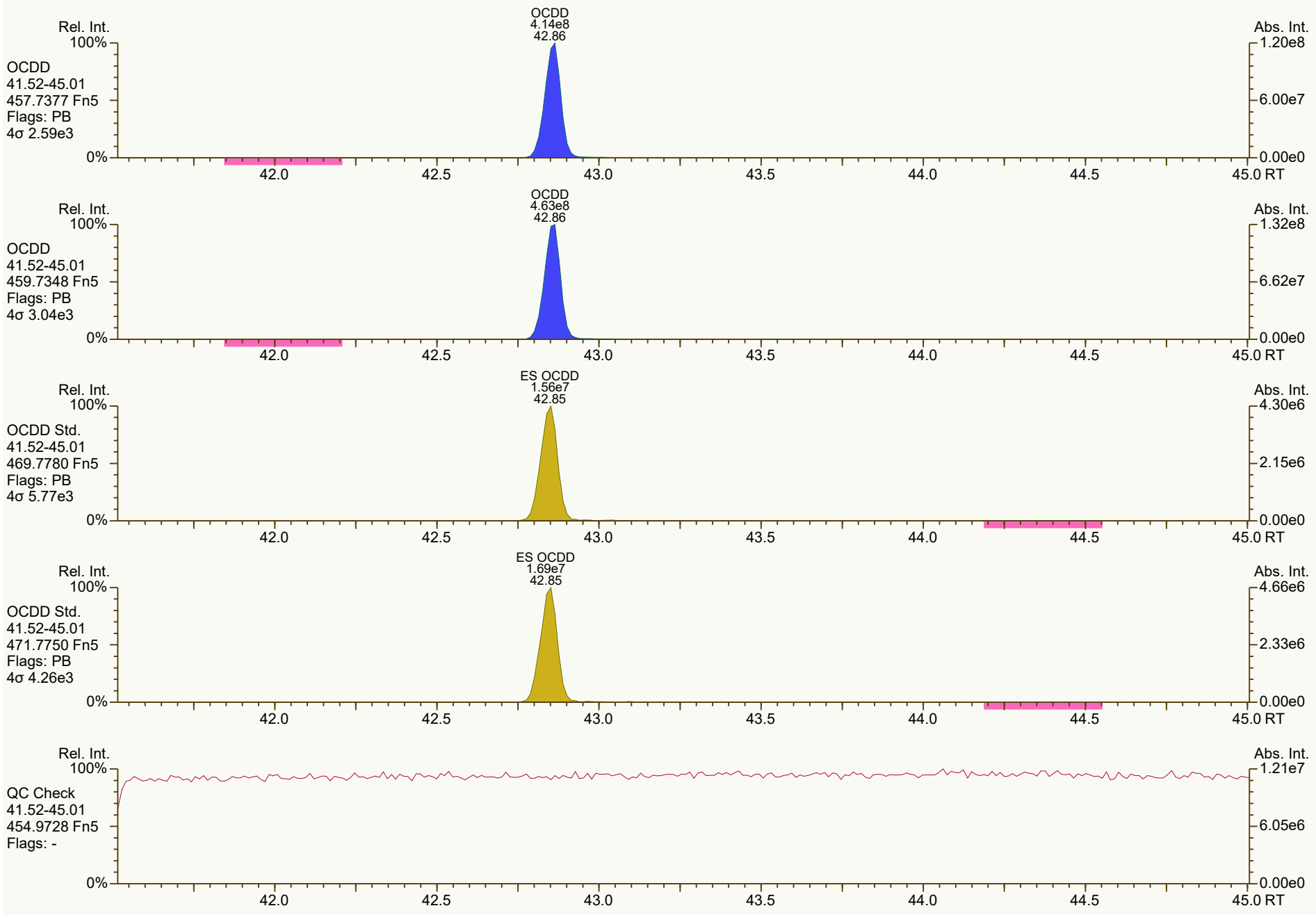

Rel. Int.
100%
QC Check
19.54-29.51
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
RT
Abs. Int.
8.03e6
4.02e6
0.00e0
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Abs. Int.
6.31e6
3.16e6
0.00e0
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Abs. Int.
1.70e7
8.48e6
0.00e0
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Abs. Int.
1.06e7
5.32e6
0.00e0
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Abs. Int.
1.21e7
6.05e6
0.00e0


Rel. Int.
100%
TCDD
19.54-29.51
319.8965 Fn1
Flags: PB
4σ 1.72e3
0%
2378D
7.60e7
27.59
Abs. Int.
1.77e7
8.83e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.51
321.8936 Fn1
Flags: PB
4σ 2.51e3
0%
2378D
9.65e7
27.59
Abs. Int.
2.26e7
1.13e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.51
327.8850 Fn1
Flags: B
4σ 1.48e3
0%
Abs. Int.
2.37e5
1.18e5
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
331.9368 Fn1
Flags: PB
4σ 9.52e3
0%
AS 1368D
1.42e7
23.72
TS 1378D
1.82e7
25.85
JS 1234D
1.31e7
26.90
ES 2378D
1.38e7
27.57
FS 1278D
1.43e7
27.91
Abs. Int.
3.87e6
1.93e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.51
333.9339 Fn1
Flags: PB
4σ 4.15e3
0%
AS 1368D
1.77e7
23.72
TS 1378D
2.33e7
25.85
JS 1234D
1.66e7
26.90
ES 2378D
1.74e7
27.57
FS 1278D
1.83e7
27.91
Abs. Int.
4.89e6
2.45e6
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.52-34.31
355.8546 Fn2
Flags: PBM
4σ 1.74e3
0%
RRF = (4.24e8 + 2.70e8) * 100pg / (1.73e7 + 1.11e7) * 2500pg = 0.977
DTF 11-Nov-2021 10:26
12378D
4.24e8*
33.11
Abs. Int.
1.28e8
6.41e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.52-34.31
357.8517 Fn2
Flags: PBM
4σ 1.72e3
0%
APPROVED
Amy_Boehm , 11/11/2021, 5:25:26 PM
12378D
2.70e8*
33.11
Abs. Int.
8.21e7
4.10e7
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
367.8949 Fn2
Flags: PB
4σ 1.97e3
0%
FS 12478D
1.69e7
31.84
CS 12347D
1.38e7
32.59
ES 12378D
1.73e7
33.09
Abs. Int.
5.02e6
2.51e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.52-34.31
369.8919 Fn2
Flags: PB
4σ 1.41e3
0%
FS 12478D
1.10e7
31.84
CS 12347D
8.57e6
32.59
ES 12378D
1.11e7
33.09
Abs. Int.
3.13e6
1.56e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.52-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
6.31e6
3.16e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: PB
4σ 2.59e3
0%
123478D
3.52e8
37.05
123678D
3.52e8
37.17
123789D
3.72e8
37.47
Abs. Int.
1.17e8
5.83e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: PB
4σ 1.54e3
0%
123478D
2.81e8
37.05
123678D
2.79e8
37.16
123789D
2.97e8
37.47
Abs. Int.
9.35e7
4.67e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: PB
4σ 2.57e3
0%
FS 123468D
1.55e7
35.98
ES 123478D
1.33e7
37.03
ES 123678D
1.29e7
37.15
JS 123467D
6.40e6
37.35
ES 123789D
1.48e7
37.46
Abs. Int.
4.80e6
2.40e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: PB
4σ 3.25e3
0%
FS 123468D
1.24e7
35.98
ES 123478D
1.08e7
37.03
ES 123678D
1.06e7
37.15
JS 123467D
5.21e6
37.35
ES 123789D
1.18e7
37.46
Abs. Int.
3.84e6
1.92e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
1.70e7
8.48e6
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: PB
4σ 2.70e3
1234678D
2.91e8
40.29
Abs. Int.
1.16e8
5.82e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: PB
4σ 1.76e3
1234678D
2.79e8
40.29
Abs. Int.
1.11e8
5.53e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: PB
4σ 2.53e3
FS 1234679D
1.48e7
39.61
ES 1234678D
1.16e7
40.28
Abs. Int.
5.63e6
2.81e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: PB
4σ 2.39e3
FS 1234679D
1.40e7
39.61
ES 1234678D
1.12e7
40.28
Abs. Int.
5.36e6
2.68e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
Abs. Int.
1.06e7
5.32e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT

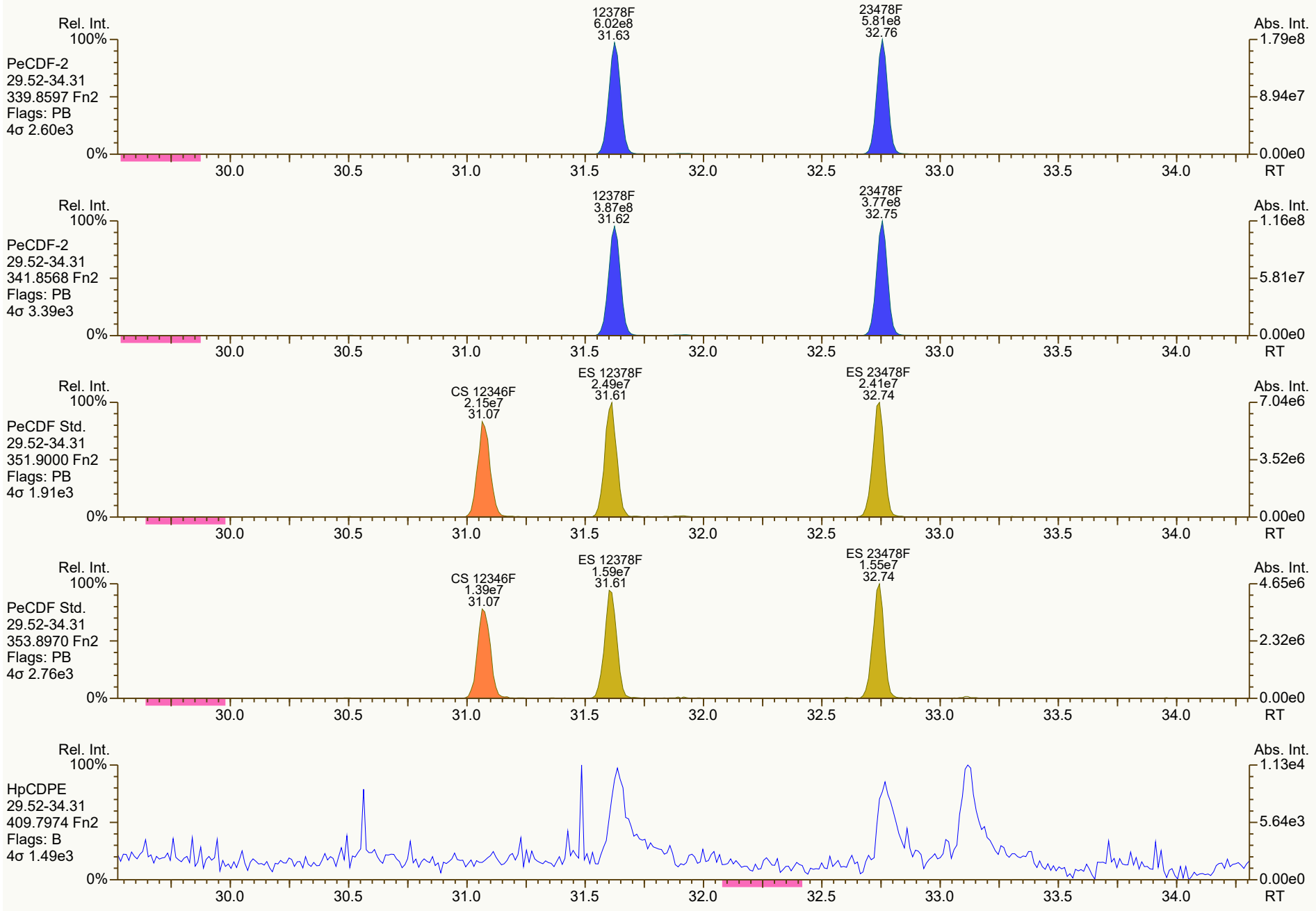

OCDD
4.14e8
42.86
Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: PB
4σ 2.59e3
0%
Abs. Int.
1.20e8
6.00e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.63e8
42.86
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: PB
4σ 3.04e3
0%
Abs. Int.
1.32e8
6.62e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.56e7
42.85
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: PB
4σ 5.77e3
0%
Abs. Int.
4.30e6
2.15e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDD
1.69e7
42.85
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: PB
4σ 4.26e3
0%
Abs. Int.
4.66e6
2.33e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.21e7
6.05e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

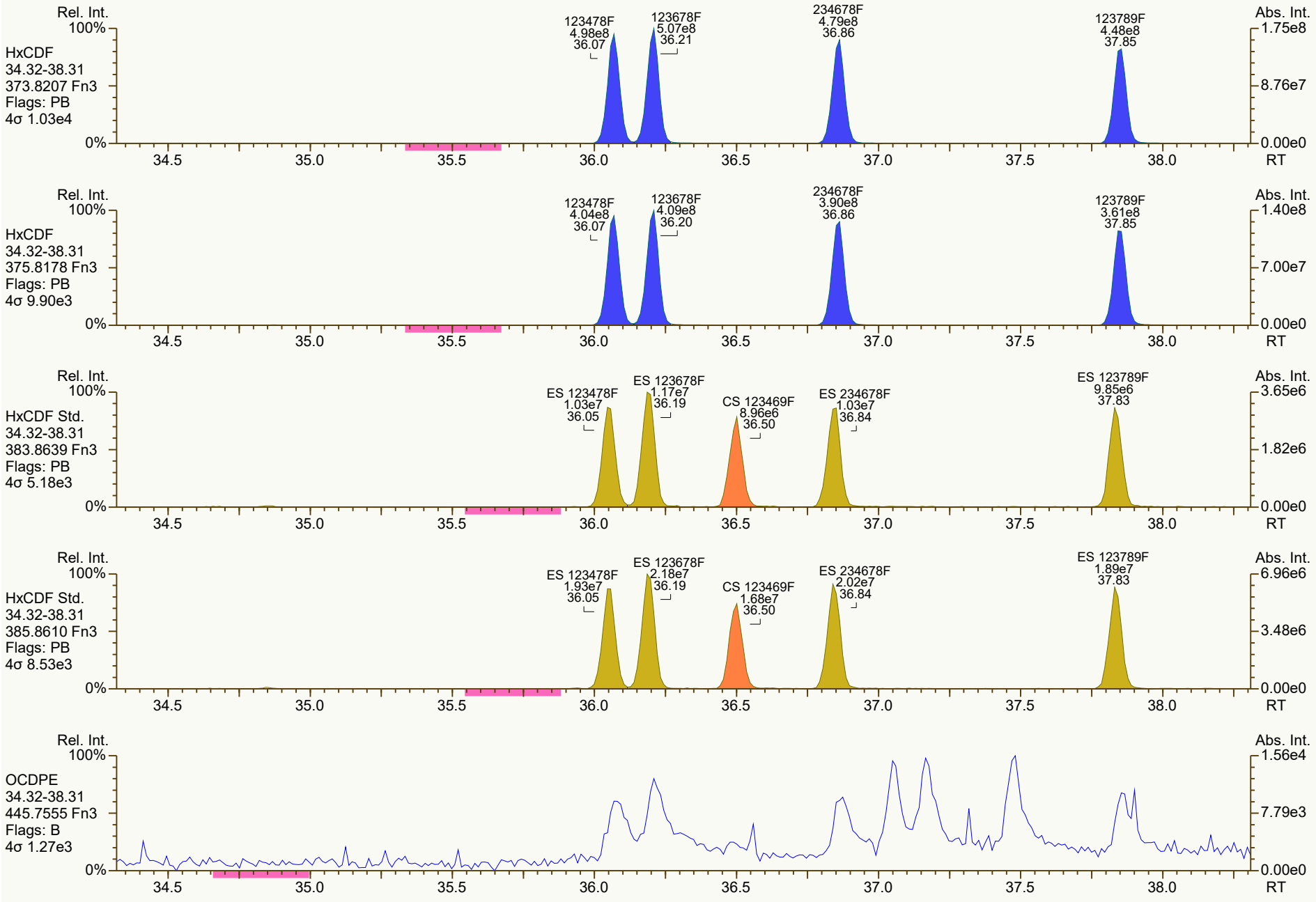

Rel. Int.
100%
TCDF
19.54-29.51
303.9016 Fn1
Flags: PB
4σ 2.26e3
0%
2378F
9.73e7
26.68
Abs. Int.
2.17e7
1.08e7
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
TCDF
19.54-29.51
305.8987 Fn1
Flags: PB
4σ 2.01e3
2378F
1.26e8
26.68
2.85e7
1.42e7
TCDF Std.
19.54-29.51
315.9419 Fn1
Flags: PB
4σ 1.95e4
AS 1368F
2.07e7
21.49
JS 1234F
1.84e7
25.24
ES 2378F
1.95e7
26.66
4.38e6
2.19e6
TCDF Std.
19.54-29.51
317.9389 Fn1
Flags: PB
4σ 7.53e3
AS 1368F
2.62e7
21.49
JS 1234F
2.32e7
25.24
ES 2378F
2.51e7
26.65
5.43e6
2.72e6
HxCDPE
19.54-29.51
375.8364 Fn1
Flags: B
4σ 1.55e3
6.34e3
3.17e3

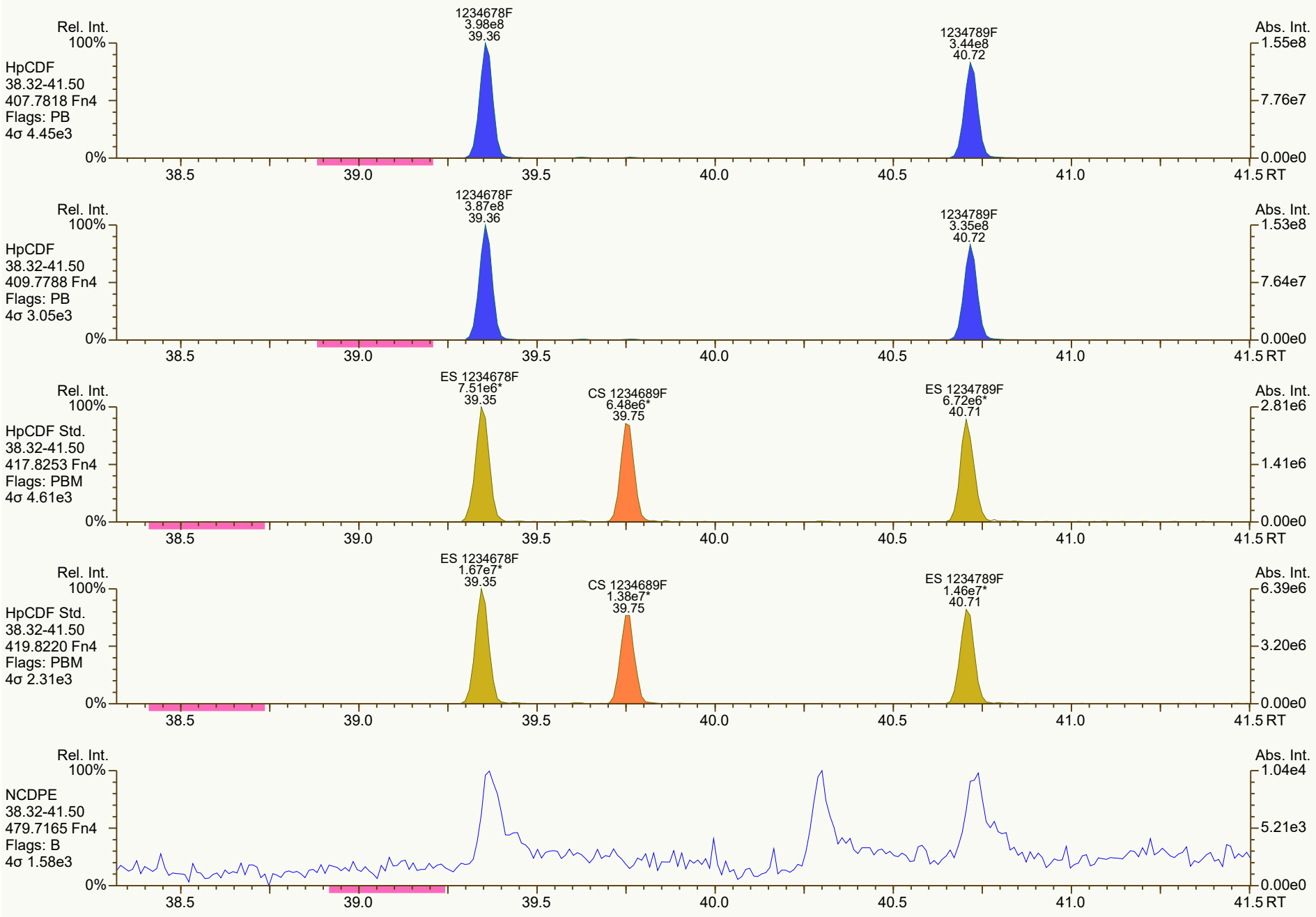
SGS ID: CS6_211110_DF_CA
Sample ID: 25-5-2
Acq: 10-Nov-2021 15:40:10
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 71
User: DTF Datafile: 211110C10

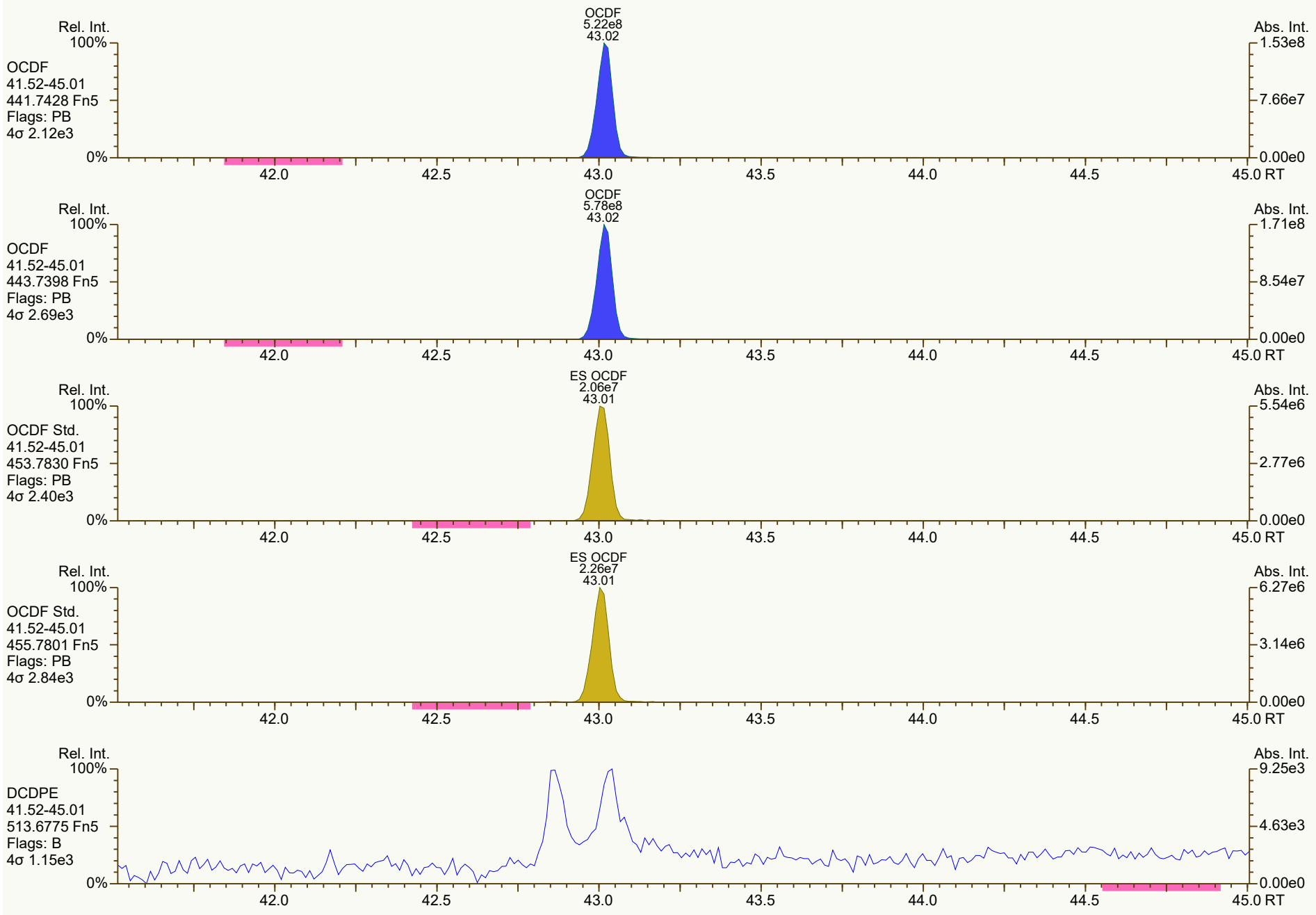


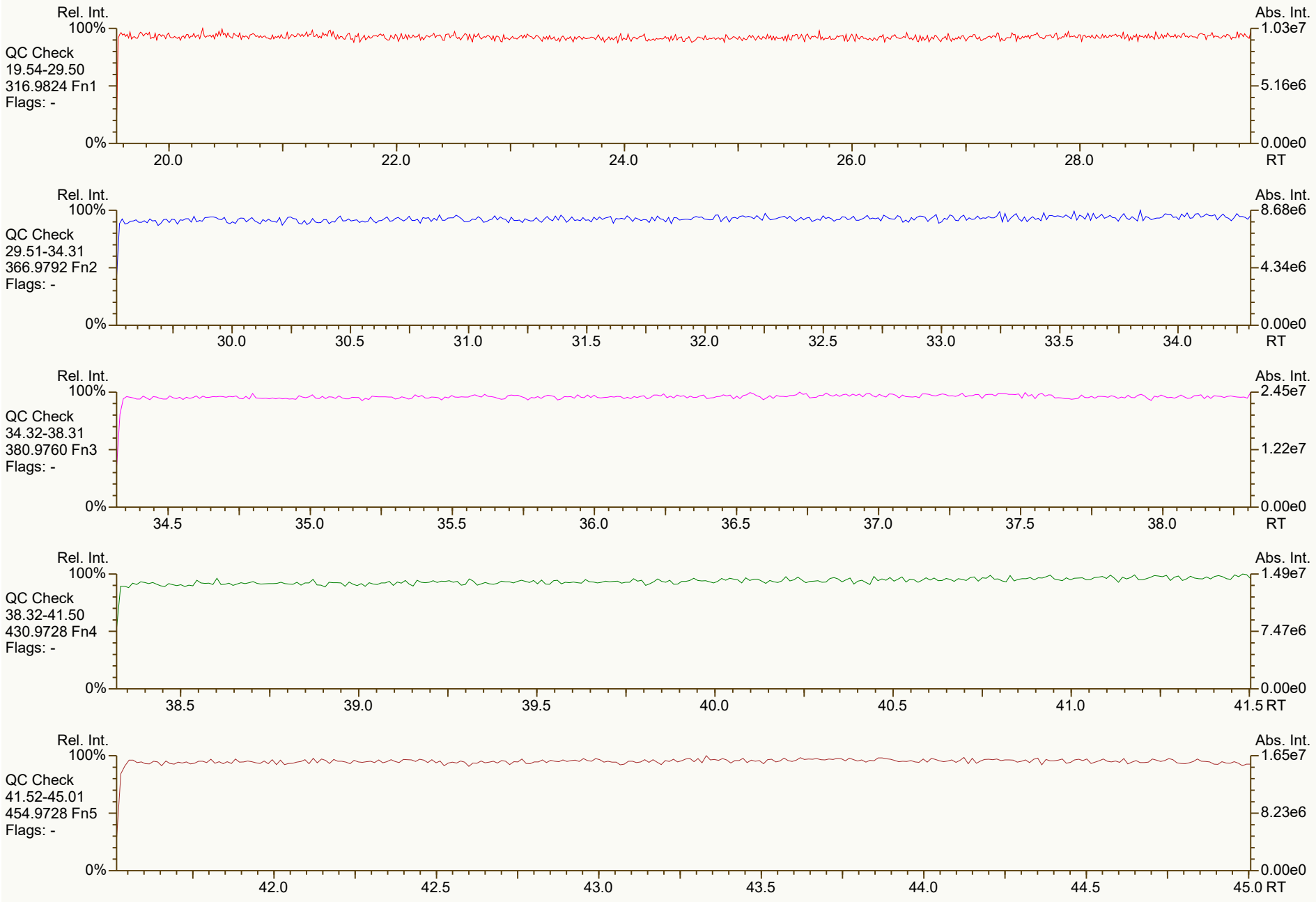
Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\CS6_211110_DF_CA.utp_res, saved 11-Nov-2021 10:39 (DTF)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4239 scc: 172-736
PKD: 10-Nov-2021 16:46 Printed: 11-Nov-2021 10:41 Page 8 of 12


Rel. Int.
100%
PeCDF-2
29.52-34.31
339.8597 Fn2
Flags: PB
4σ 2.60e3
12378F
6.02e8
31.63
23478F
5.81e8
32.76
Abs. Int.
1.79e8
8.94e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.52-34.31
341.8568 Fn2
Flags: PB
4σ 3.39e3
12378F
3.87e8
31.62
23478F
3.77e8
32.75
Abs. Int.
1.16e8
5.81e7
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
351.9000 Fn2
Flags: PB
4σ 1.91e3
CS 12346F
2.15e7
31.07
ES 12378F
2.49e7
31.61
ES 23478F
2.41e7
32.74
Abs. Int.
7.04e6
3.52e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.52-34.31
353.8970 Fn2
Flags: PB
4σ 2.76e3
CS 12346F
1.39e7
31.07
ES 12378F
1.59e7
31.61
ES 23478F
1.55e7
32.74
Abs. Int.
4.65e6
2.32e6
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.52-34.31
409.7974 Fn2
Flags: B
4σ 1.49e3
Abs. Int.
1.13e4
5.64e3
0.00e0
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: PB
4σ 1.03e4
123478F
4.98e8
36.07
123678F
5.07e8
36.21
234678F
4.79e8
36.86
123789F
4.48e8
37.85
Abs. Int.
1.75e8
8.76e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: PB
4σ 9.90e3
123478F
4.04e8
36.07
123678F
4.09e8
36.20
234678F
3.90e8
36.86
123789F
3.61e8
37.85
Abs. Int.
1.40e8
7.00e7
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: PB
4σ 5.18e3
ES 123478F
1.03e7
36.05
ES 123678F
1.17e7
36.19
CS 123469F
8.96e6
36.50
ES 234678F
1.03e7
36.84
ES 123789F
9.85e6
37.83
Abs. Int.
3.65e6
1.82e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: PB
4σ 8.53e3
ES 123478F
1.93e7
36.05
ES 123678F
2.18e7
36.19
CS 123469F
1.68e7
36.50
ES 234678F
2.02e7
36.84
ES 123789F
1.89e7
37.83
Abs. Int.
6.96e6
3.48e6
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.27e3
Abs. Int.
1.56e4
7.79e3
0.00e0
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT


Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: PB
4σ 4.45e3
1234678F
3.98e8
39.36
1234789F
3.44e8
40.72
Abs. Int.
1.55e8
7.76e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: PB
4σ 3.05e3
1234678F
3.87e8
39.36
1234789F
3.35e8
40.72
Abs. Int.
1.53e8
7.64e7
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: PBM
4σ 4.61e3
ES 1234678F
7.51e6*
39.35
CS 1234689F
6.48e6*
39.75
ES 1234789F
6.72e6*
40.71
Abs. Int.
2.81e6
1.41e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678F
1.67e7*
39.35
CS 1234689F
1.38e7*
39.75
ES 1234789F
1.46e7*
40.71
Abs. Int.
6.39e6
3.20e6
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: B
4σ 1.58e3
Abs. Int.
1.04e4
5.21e3
0.00e0
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: PB
4σ 2.12e3
0%
OCDF
5.22e8
43.02
Abs. Int.
1.53e8
7.66e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: PB
4σ 2.69e3
0%
OCDF
5.78e8
43.02
Abs. Int.
1.71e8
8.54e7
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: PB
4σ 2.40e3
0%
ES OCDF
2.06e7
43.01
Abs. Int.
5.54e6
2.77e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: PB
4σ 2.84e3
0%
ES OCDF
2.26e7
43.01
Abs. Int.
6.27e6
3.14e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.15e3
0%
Abs. Int.
9.25e3
4.63e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
0%
20.0
22.0
24.0
26.0
28.0
Abs. Int.
1.03e7
5.16e6
0.00e0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
Abs. Int.
8.68e6
4.34e6
0.00e0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
Abs. Int.
2.45e7
1.22e7
0.00e0
RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
38.5
39.0
39.5
40.0
40.5
41.0
41.5
Abs. Int.
1.49e7
7.47e6
0.00e0
RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
42.0
42.5
43.0
43.5
44.0
44.5
45.0
Abs. Int.
1.65e7
8.23e6
0.00e0
RT

SGS ID: SBS_211110_DF_CA | Sample ID: 20-61-1 | Acq: 10-Nov-2021 10:15:54

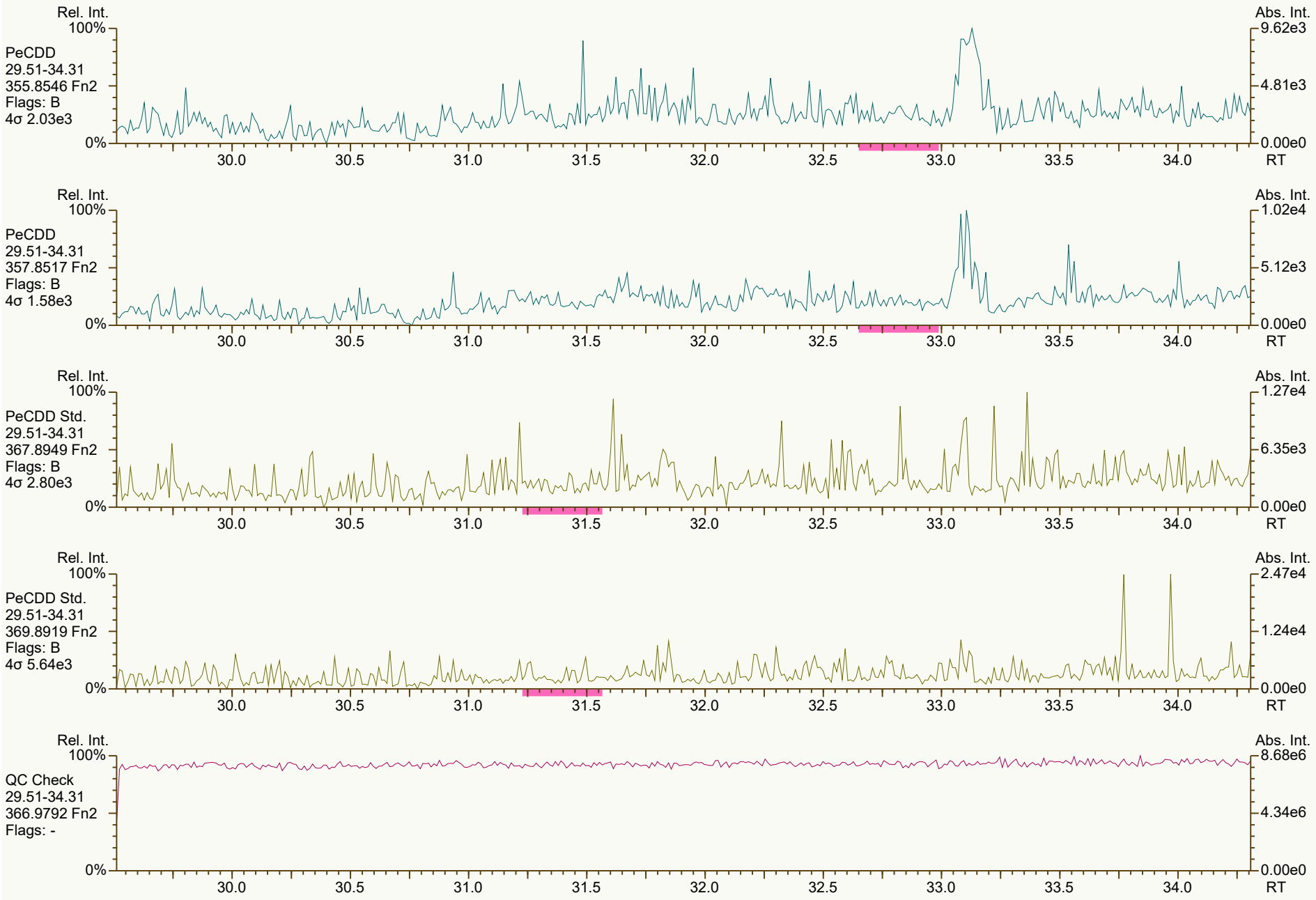
Instr: [ILM] AutoSpec-Ultima HRMS3 | VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 2 | User: DTF Datafile: 211110C03



Results: T:\UltraTracePro\ICAL results\HRMS3\HRMS3_DF_10272021_10NOV2021\Resources\SBS_211110_DF_CA.utp_res, saved 10-Nov-2021 11:40 (DTF) *Peak annotation: Areas, Centroids*

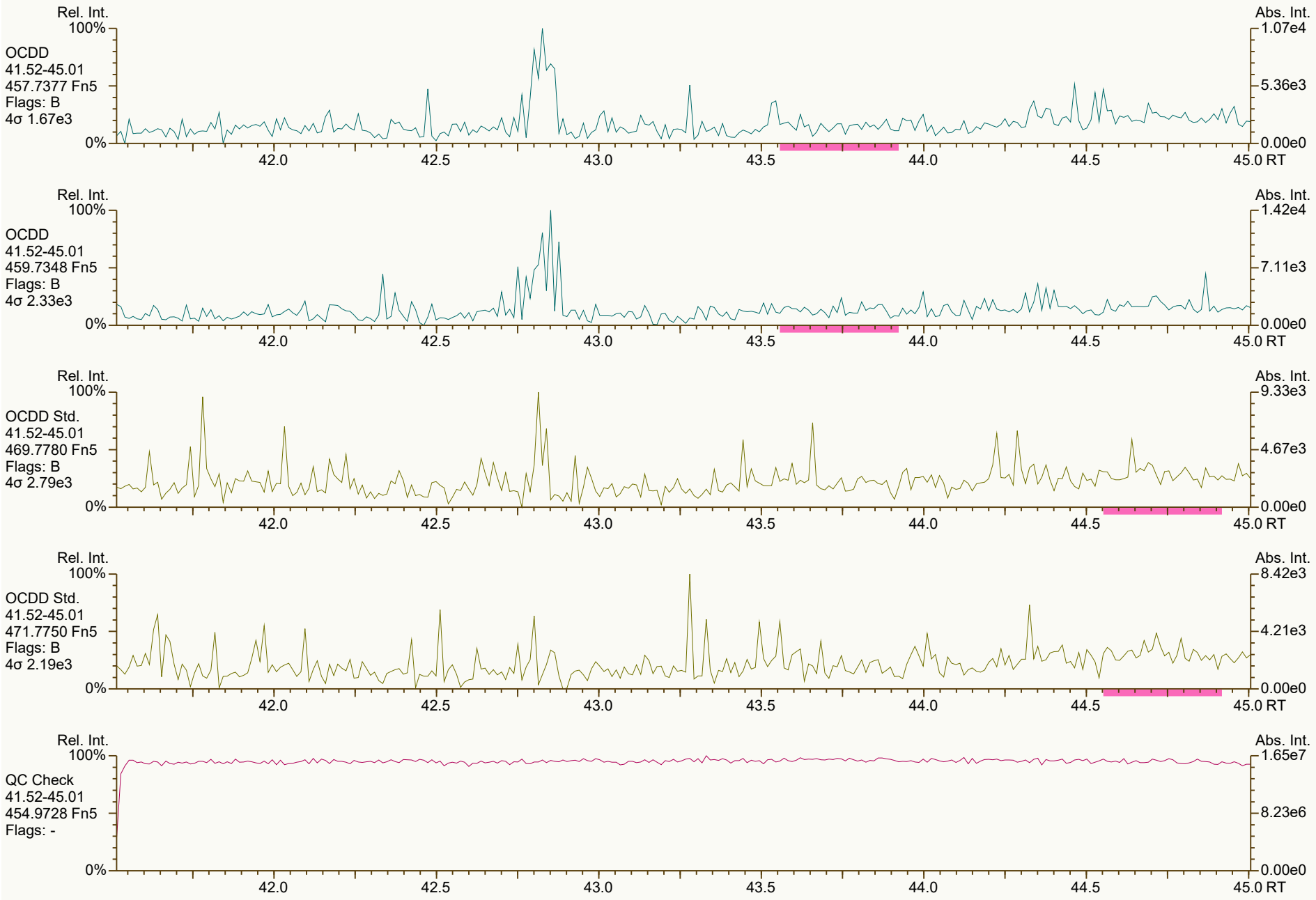
SGS UltraTrace-Pro V5.12 RC User/System: DTF/USPF22K616 cc: 4939, 4247, 1318 scc: 876-647 *PKD: 10-Nov-2021 11:40 Printed: 11-Nov-2021 10:29 Page 1 of 1*


Rel. Int.
100%
TCDD
19.54-29.50
319.8965 Fn1
Flags: B
4σ 2.56e3
0%
Abs. Int.
7.66e3
3.83e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD
19.54-29.50
321.8936 Fn1
Flags: B
4σ 1.58e3
0%
Abs. Int.
9.94e3
4.97e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-29.50
327.8850 Fn1
Flags: B
4σ 1.75e3
0%
Abs. Int.
8.16e3
4.08e3
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
331.9368 Fn1
Flags: B
4σ 7.98e3
0%
Abs. Int.
2.72e4
1.36e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDD Std.
19.54-29.50
333.9339 Fn1
Flags: B
4σ 6.62e3
0%
Abs. Int.
2.68e4
1.34e4
0.00e0
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDD
29.51-34.31
355.8546 Fn2
Flags: B
4σ 2.03e3
0%
Abs. Int.
9.62e3
4.81e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD
29.51-34.31
357.8517 Fn2
Flags: B
4σ 1.58e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
367.8949 Fn2
Flags: B
4σ 2.80e3
0%
Abs. Int.
1.27e4
6.35e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDD Std.
29.51-34.31
369.8919 Fn2
Flags: B
4σ 5.64e3
0%
Abs. Int.
2.47e4
1.24e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
QC Check
29.51-34.31
366.9792 Fn2
Flags: -
0%
Abs. Int.
8.68e6
4.34e6
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT

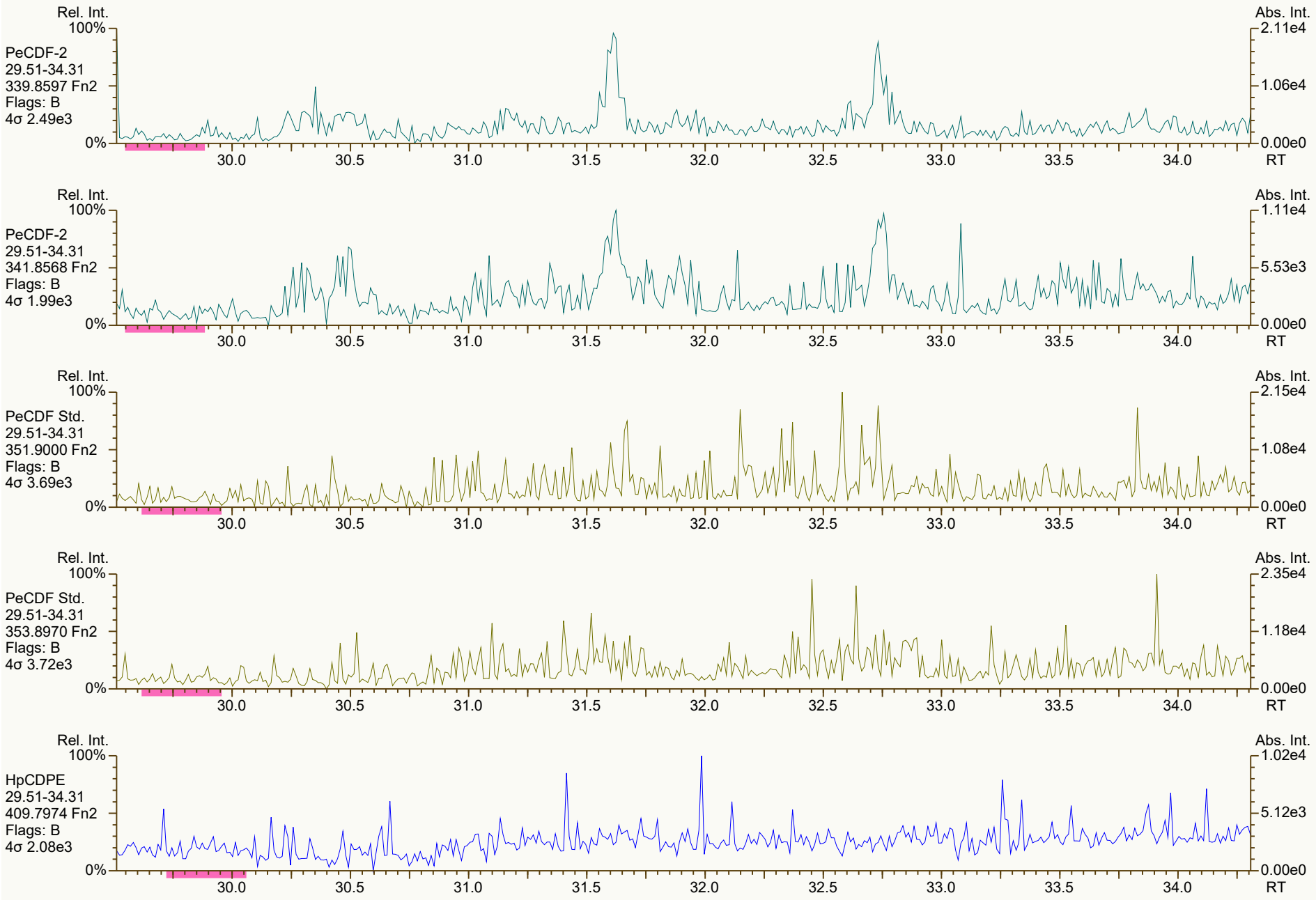

Rel. Int.
100%
HxCDD
34.32-38.31
389.8156 Fn3
Flags: B
4σ 2.06e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD
34.32-38.31
391.8127 Fn3
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.18e4
5.89e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
401.8559 Fn3
Flags: B
4σ 5.99e3
0%
Abs. Int.
1.61e4
8.05e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDD Std.
34.32-38.31
403.8530 Fn3
Flags: B
4σ 2.98e3
0%
Abs. Int.
1.33e4
6.66e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
QC Check
34.32-38.31
380.9760 Fn3
Flags: -
0%
Abs. Int.
2.45e7
1.22e7
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

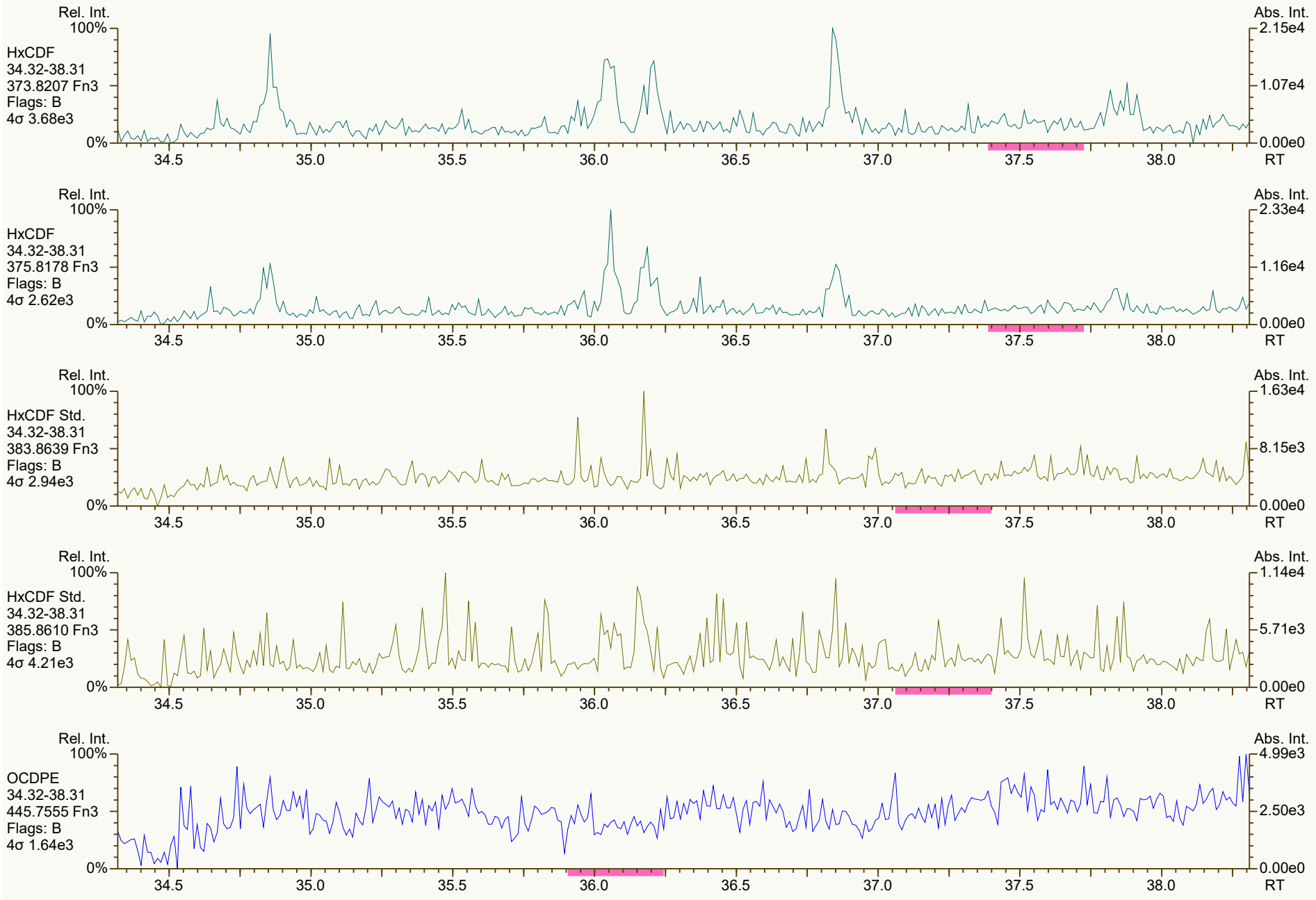

Rel. Int.
100%
HpCDD
38.32-41.50
423.7767 Fn4
Flags: B
4σ 2.29e3
0%
Abs. Int.
1.38e4
6.89e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD
38.32-41.50
425.7737 Fn4
Flags: B
4σ 1.56e3
0%
Abs. Int.
1.62e4
8.12e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
435.8169 Fn4
Flags: B
4σ 2.39e3
0%
Abs. Int.
2.45e4
1.23e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDD Std.
38.32-41.50
437.8140 Fn4
Flags: B
4σ 2.97e3
0%
Abs. Int.
1.32e4
6.60e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
QC Check
38.32-41.50
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.49e7
7.47e6
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDD
41.52-45.01
457.7377 Fn5
Flags: B
4σ 1.67e3
0%
Abs. Int.
1.07e4
5.36e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD
41.52-45.01
459.7348 Fn5
Flags: B
4σ 2.33e3
0%
Abs. Int.
1.42e4
7.11e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
469.7780 Fn5
Flags: B
4σ 2.79e3
0%
Abs. Int.
9.33e3
4.67e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDD Std.
41.52-45.01
471.7750 Fn5
Flags: B
4σ 2.19e3
0%
Abs. Int.
8.42e3
4.21e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
QC Check
41.52-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.65e7
8.23e6
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-29.50
303.9016 Fn1
Flags: PBM
4σ 1.90e3
2468F
3.48e5*
22.78
Abs. Int.
7.07e4
3.53e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF
19.54-29.50
305.8987 Fn1
Flags: PBM
4σ 2.56e3
2468F
5.04e5*
22.78
Abs. Int.
1.06e5
5.32e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
315.9419 Fn1
Flags: B
4σ 1.87e4
Abs. Int.
5.11e4
2.56e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
TCDF Std.
19.54-29.50
317.9389 Fn1
Flags: B
4σ 1.07e4
Abs. Int.
2.83e4
1.42e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
HxCDPE
19.54-29.50
375.8364 Fn1
Flags: B
4σ 1.76e3
Abs. Int.
9.47e3
4.73e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
0%
Abs. Int.
8.70e3
4.35e3
0.00e0
PeCDF-1
19.54-29.50
339.8597 Fn1
Flags: B
4σ 2.84e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
9.49e3
4.75e3
0.00e0
PeCDF-1
19.54-29.50
341.8568 Fn1
Flags: B
4σ 3.09e3
20.0
22.0
24.0
26.0
28.0
RT
Rel. Int.
100%
0%
Abs. Int.
1.03e7
5.16e6
0.00e0
QC Check
19.54-29.50
316.9824 Fn1
Flags: -
20.0
22.0
24.0
26.0
28.0
RT


Rel. Int.
100%
PeCDF-2
29.51-34.31
339.8597 Fn2
Flags: B
4σ 2.49e3
0%
Abs. Int.
2.11e4
1.06e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF-2
29.51-34.31
341.8568 Fn2
Flags: B
4σ 1.99e3
0%
Abs. Int.
1.11e4
5.53e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
351.9000 Fn2
Flags: B
4σ 3.69e3
0%
Abs. Int.
2.15e4
1.08e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
PeCDF Std.
29.51-34.31
353.8970 Fn2
Flags: B
4σ 3.72e3
0%
Abs. Int.
2.35e4
1.18e4
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT
Rel. Int.
100%
HpCDPE
29.51-34.31
409.7974 Fn2
Flags: B
4σ 2.08e3
0%
Abs. Int.
1.02e4
5.12e3
0.00e0
30.0
30.5
31.0
31.5
32.0
32.5
33.0
33.5
34.0
RT


Rel. Int.
100%
HxCDF
34.32-38.31
373.8207 Fn3
Flags: B
4σ 3.68e3
0%
Abs. Int.
2.15e4
1.07e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF
34.32-38.31
375.8178 Fn3
Flags: B
4σ 2.62e3
0%
Abs. Int.
2.33e4
1.16e4
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
383.8639 Fn3
Flags: B
4σ 2.94e3
0%
Abs. Int.
1.63e4
8.15e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
HxCDF Std.
34.32-38.31
385.8610 Fn3
Flags: B
4σ 4.21e3
0%
Abs. Int.
1.14e4
5.71e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT
Rel. Int.
100%
OCDPE
34.32-38.31
445.7555 Fn3
Flags: B
4σ 1.64e3
0%
Abs. Int.
4.99e3
2.50e3
0.00e0
34.5
35.0
35.5
36.0
36.5
37.0
37.5
38.0
RT

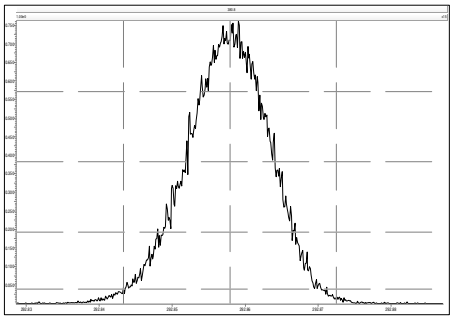

Rel. Int.
100%
HpCDF
38.32-41.50
407.7818 Fn4
Flags: B
4σ 2.42e3
0%
Abs. Int.
2.22e4
1.11e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF
38.32-41.50
409.7788 Fn4
Flags: B
4σ 2.83e3
0%
Abs. Int.
2.10e4
1.05e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
417.8253 Fn4
Flags: B
4σ 6.00e3
0%
Abs. Int.
1.81e4
9.07e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
HpCDF Std.
38.32-41.50
419.8220 Fn4
Flags: B
4σ 5.26e3
0%
Abs. Int.
2.80e4
1.40e4
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT
Rel. Int.
100%
NCDPE
38.32-41.50
479.7165 Fn4
Flags: PB
4σ 1.49e3
0%
Abs. Int.
6.72e3
3.36e3
0.00e0
38.5
39.0
39.5
40.0
40.5
41.0
41.5 RT


Rel. Int.
100%
OCDF
41.52-45.01
441.7428 Fn5
Flags: B
4σ 1.79e3
0%
Abs. Int.
1.02e4
5.08e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
41.52-45.01
443.7398 Fn5
Flags: B
4σ 1.75e3
0%
Abs. Int.
6.88e3
3.44e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
453.7830 Fn5
Flags: B
4σ 2.08e3
0%
Abs. Int.
7.45e3
3.72e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
41.52-45.01
455.7801 Fn5
Flags: B
4σ 4.09e3
0%
Abs. Int.
1.26e4
6.29e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
41.52-45.01
513.6775 Fn5
Flags: B
4σ 1.40e3
0%
Abs. Int.
4.10e3
2.05e3
0.00e0
42.0
42.5
43.0
43.5
44.0
44.5
45.0 RT

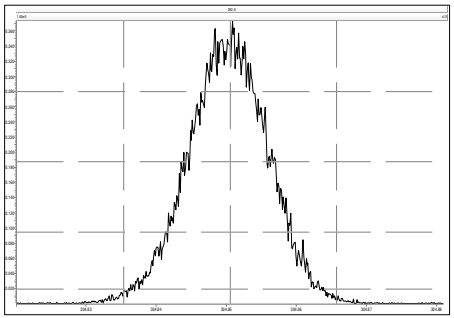
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:23 Eastern Standard Time

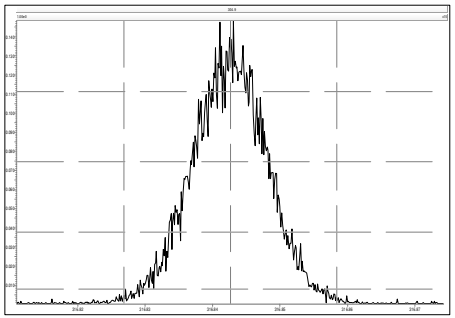
M 292.9824 R 10731



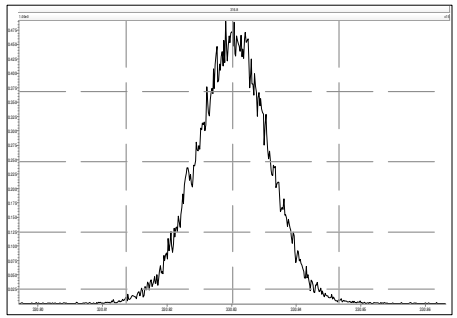
M 304.9824 R 11311



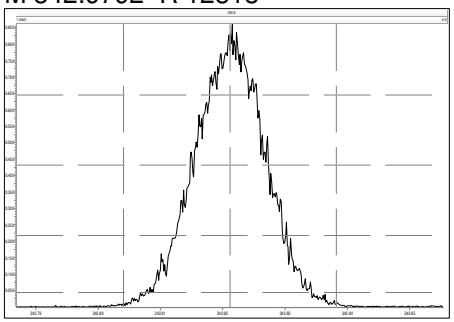
M 316.9824 R 12373



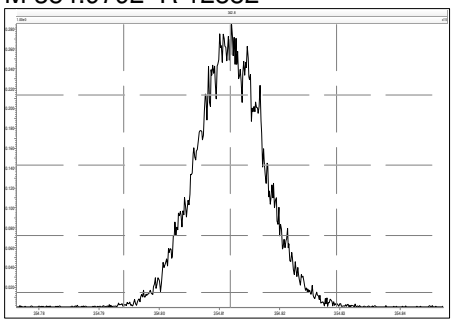
M 330.9792 R 12887



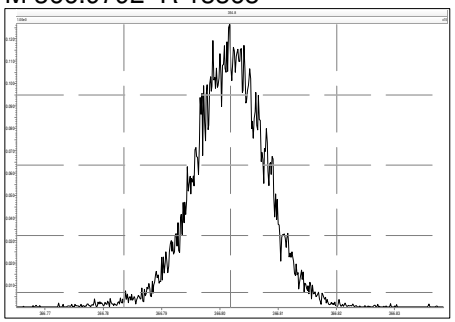
M 342.9792 R 12818



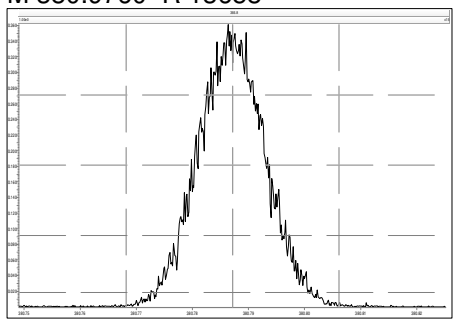
M 354.9792 R 12882



M 366.9792 R 13368



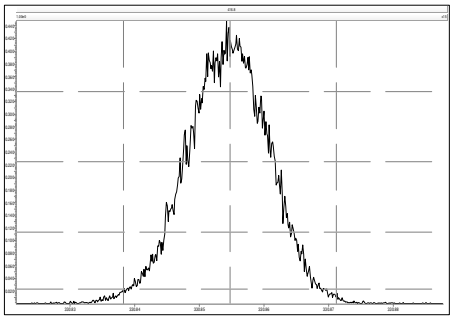
M 380.9760 R 13658



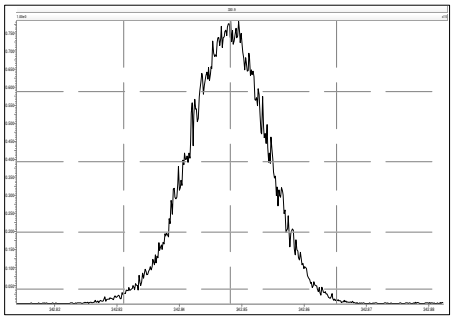
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:02:48 Eastern Standard Time

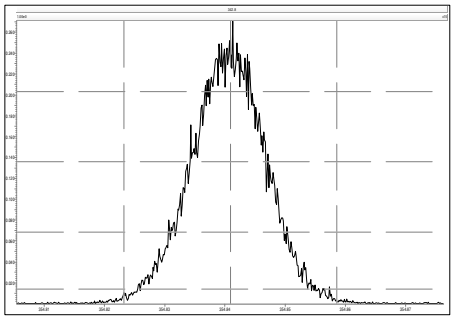
M 330.9792 R 11112



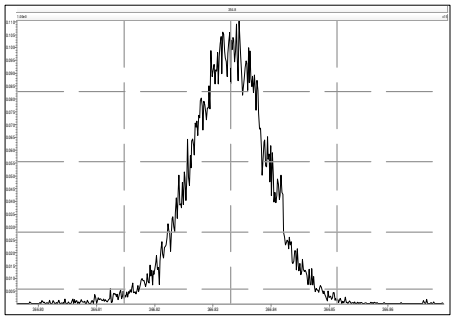
M 342.9792 R 11909



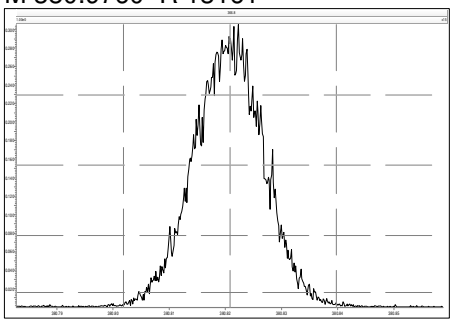
M 354.9792 R 11684



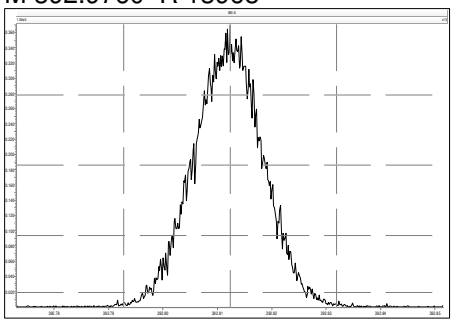
M 366.9792 R 11962



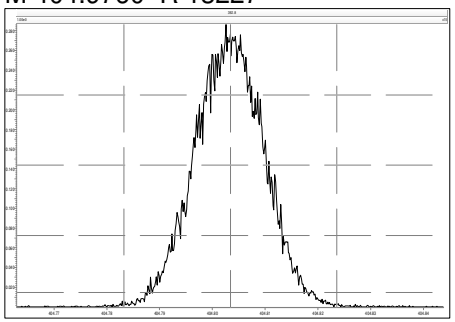
M 380.9760 R 13161



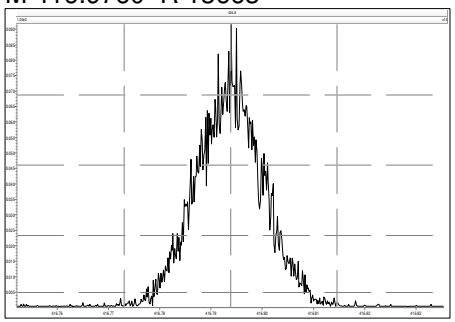
M 392.9760 R 13968



M 404.9760 R 13227



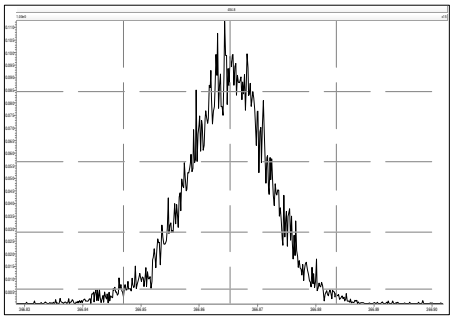
M 416.9760 R 13663



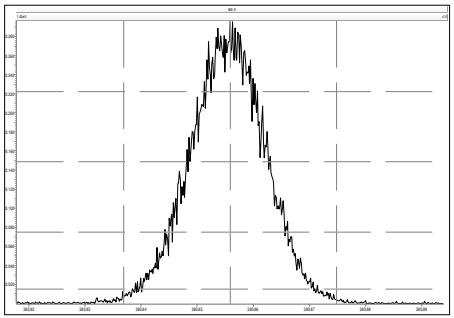
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:13 Eastern Standard Time

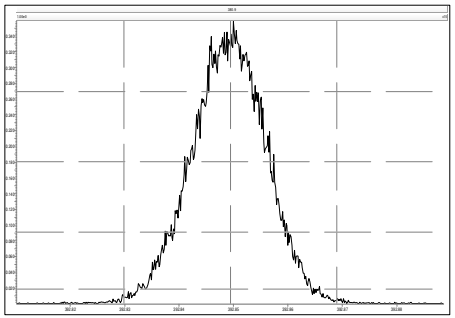
M 366.9792 R 10680



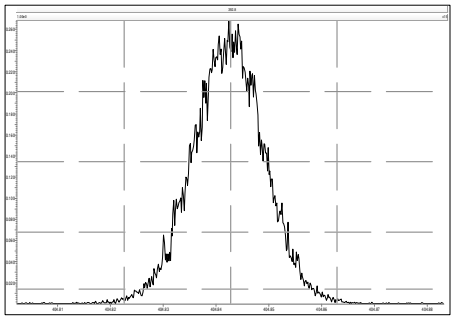
M 380.9760 R 12315



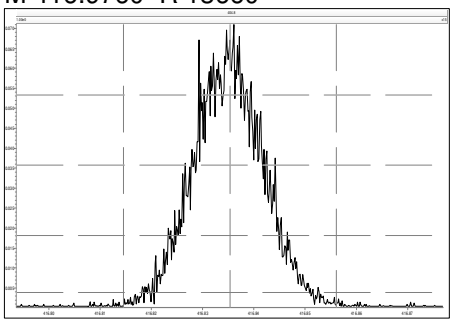
M 392.9760 R 12197



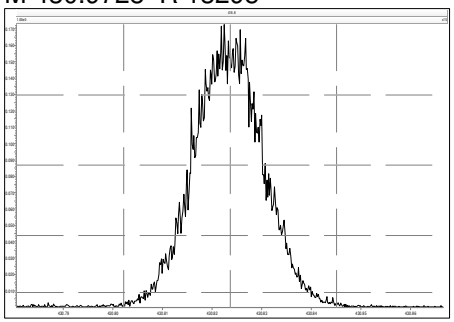
M 404.9760 R 12433



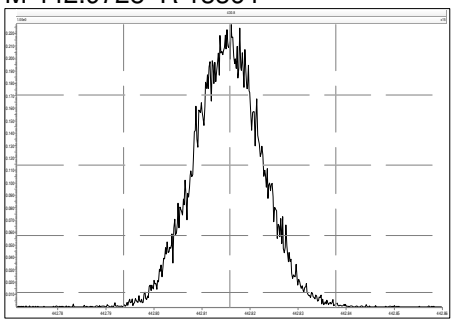
M 416.9760 R 13660



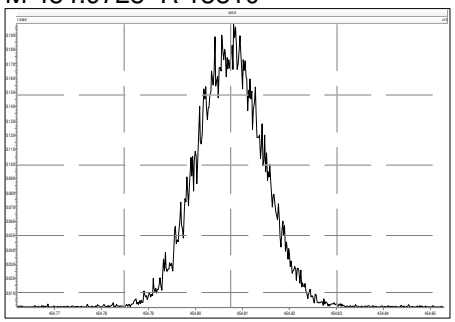
M 430.9728 R 13295



M 442.9728 R 13364



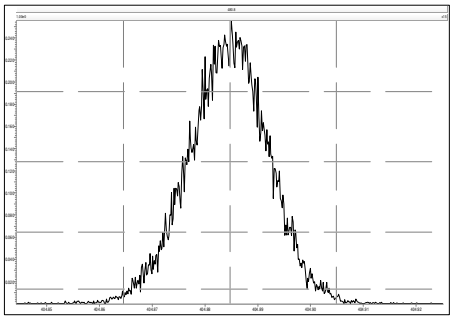
M 454.9728 R 13810



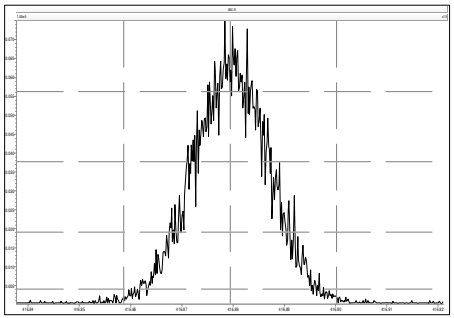
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:03:36 Eastern Standard Time

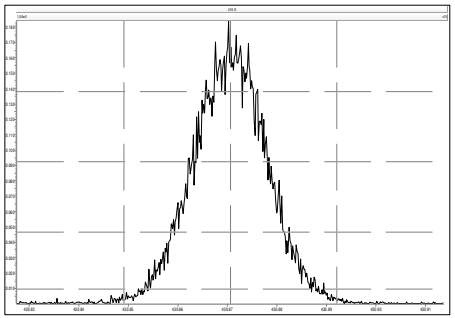
M 404.9760 R 11679



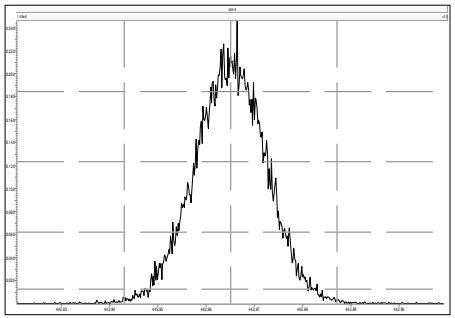
M 416.9760 R 12886



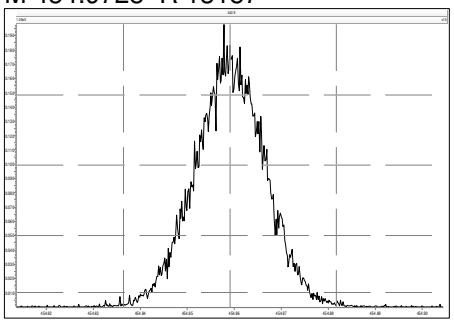
M 430.9728 R 12253



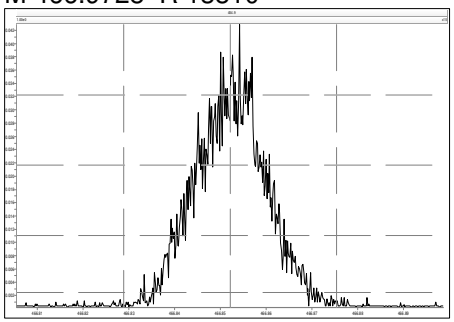
M 442.9728 R 12756



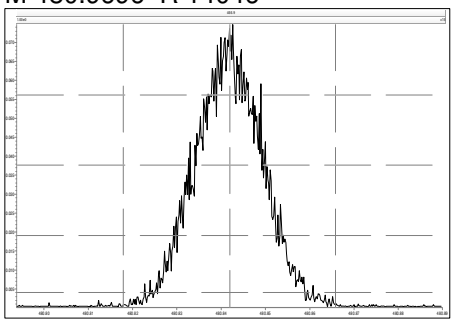
M 454.9728 R 13157



M 466.9728 R 13810



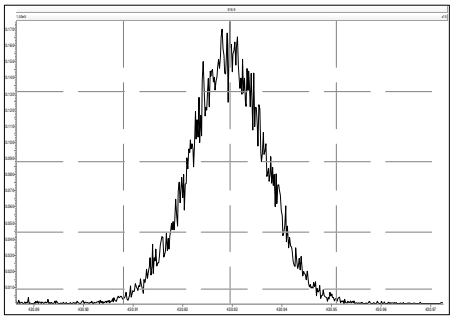
M 480.9696 R 14046



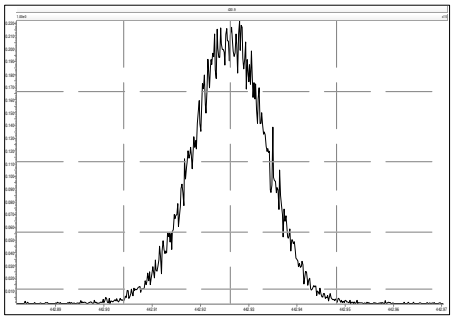
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 08:04:01 Eastern Standard Time

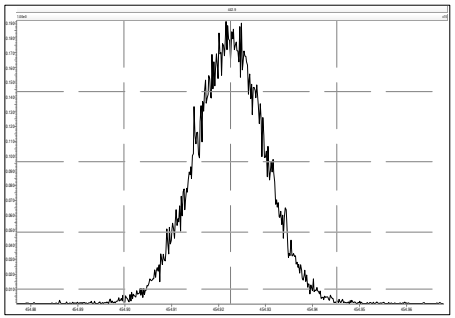
M 430.9728 R 11574



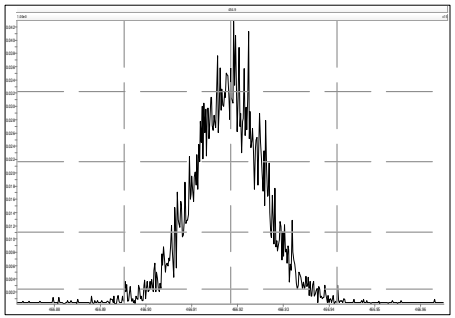
M 442.9728 R 12198



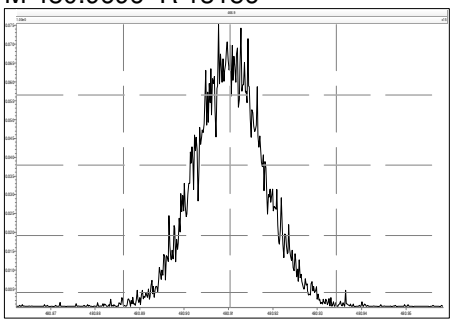
M 454.9728 R 12950



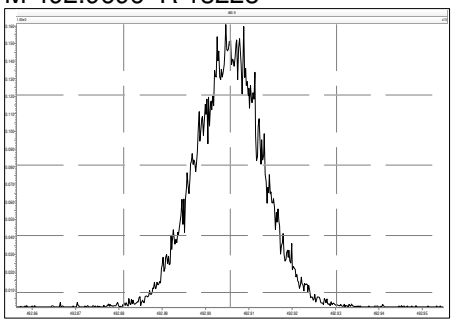
M 466.9728 R 13088



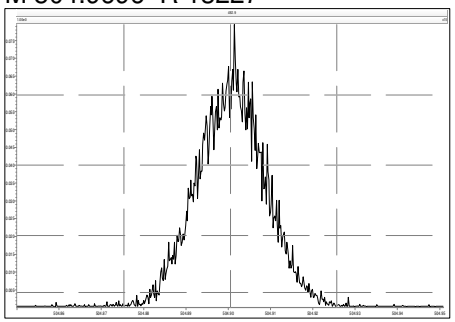
M 480.9696 R 13156



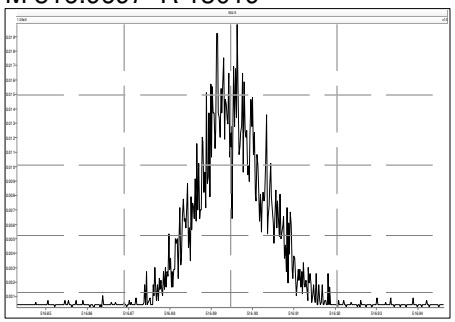
M 492.9696 R 13228



M 504.9696 R 13227



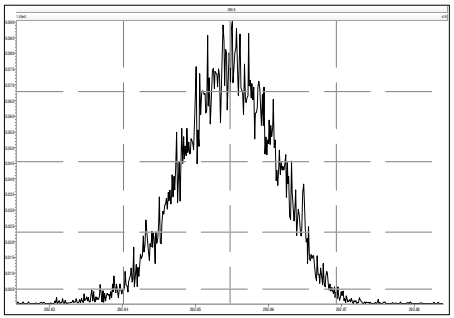
M 516.9697 R 13019



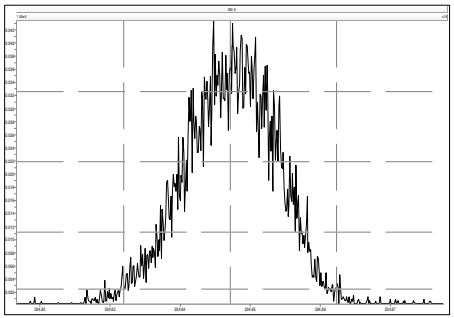
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 1 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:41:38 Eastern Standard Time

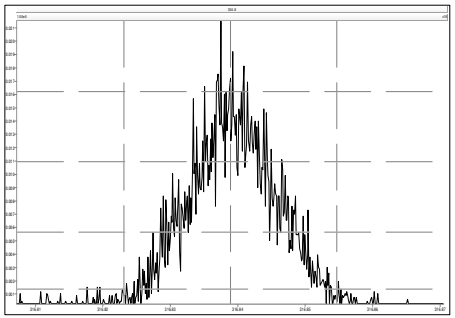
M 292.9824 R 10122



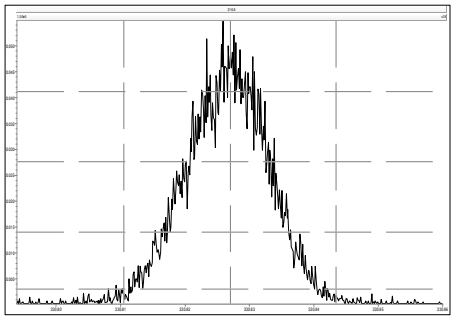
M 304.9824 R 10329



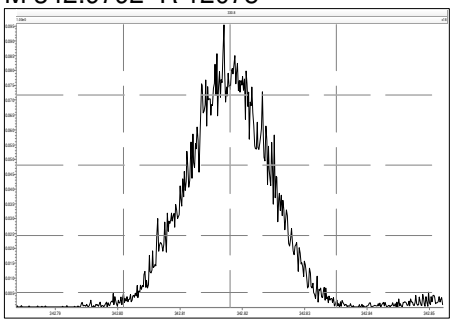
M 316.9824 R 11964



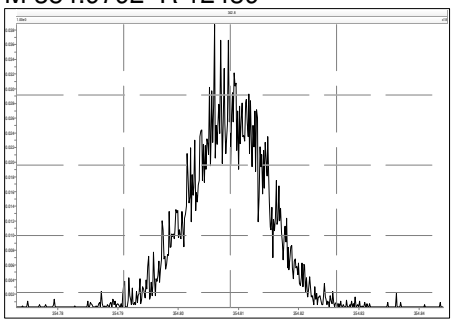
M 330.9792 R 11062



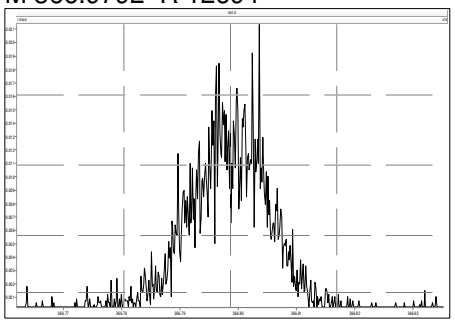
M 342.9792 R 12075



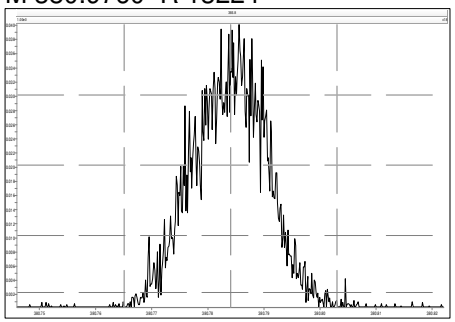
M 354.9792 R 12439



M 366.9792 R 12694



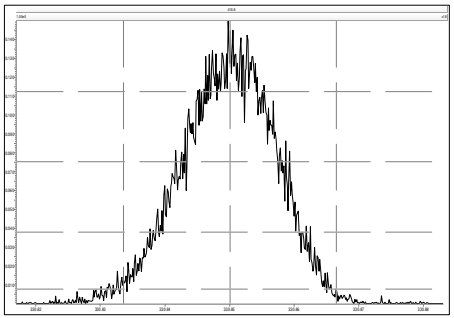
M 380.9760 R 13224



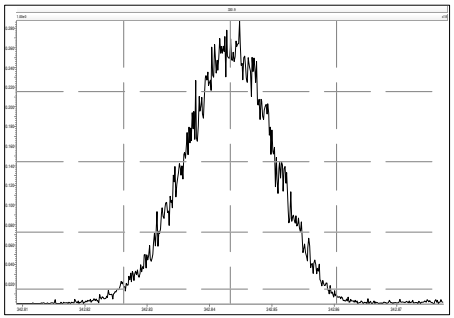
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 2 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:03 Eastern Standard Time

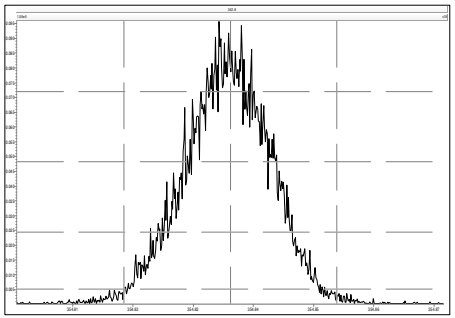
M 330.9792 R 10730



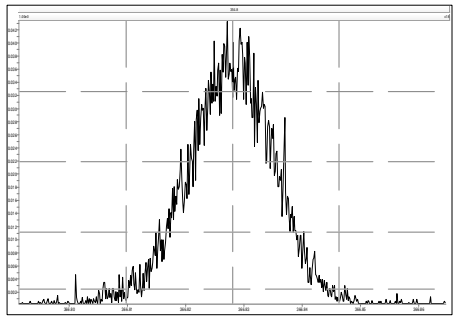
M 342.9792 R 10039



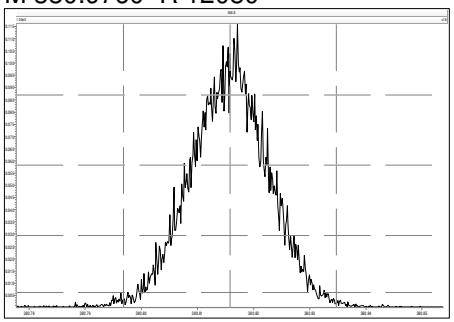
M 354.9792 R 11108



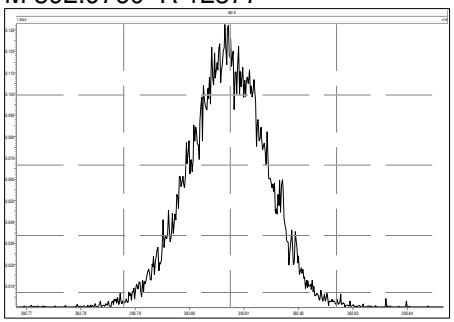
M 366.9792 R 11520



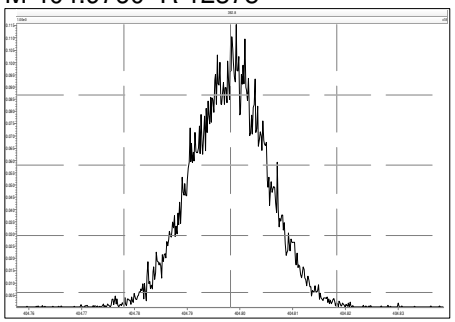
M 380.9760 R 12080



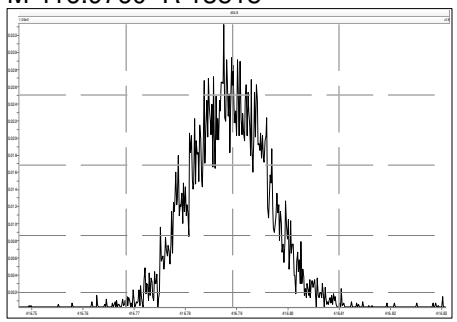
M 392.9760 R 12377



M 404.9760 R 12375



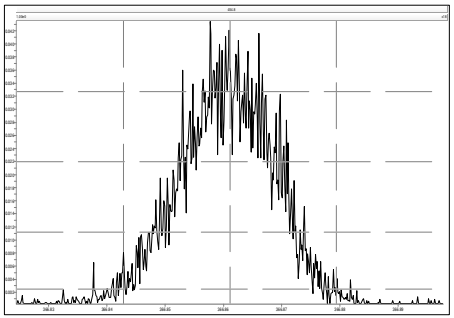
M 416.9760 R 13515



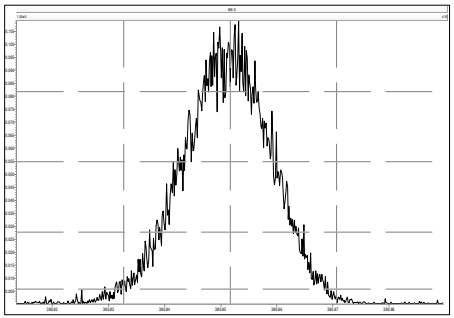
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:37 Eastern Standard Time

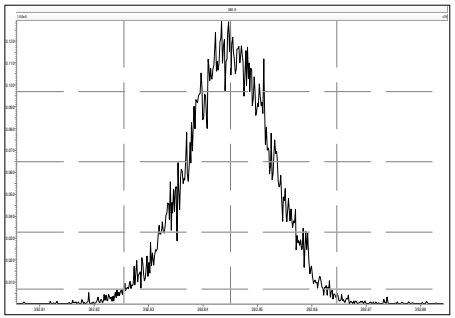
M 366.9792 R 10866



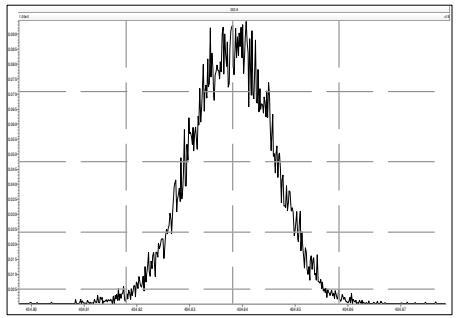
M 380.9760 R 10416



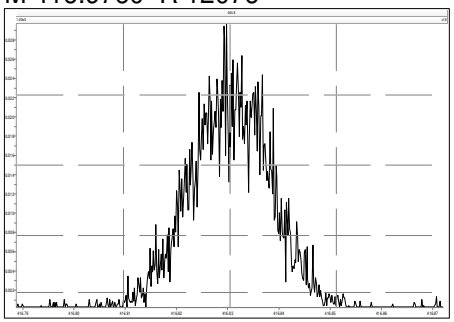
M 392.9760 R 10640



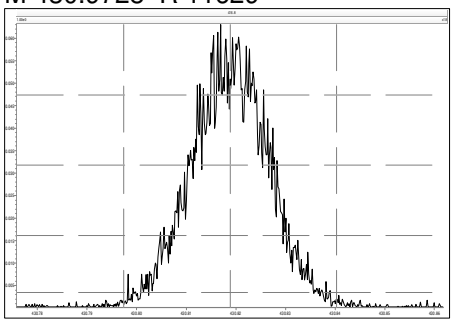
M 404.9760 R 11957



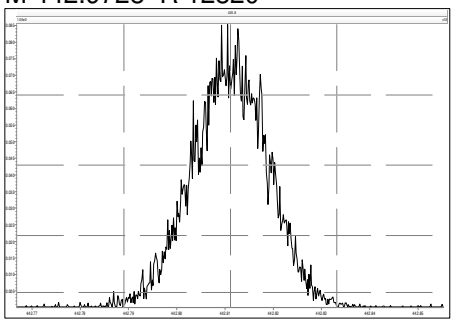
M 416.9760 R 12076



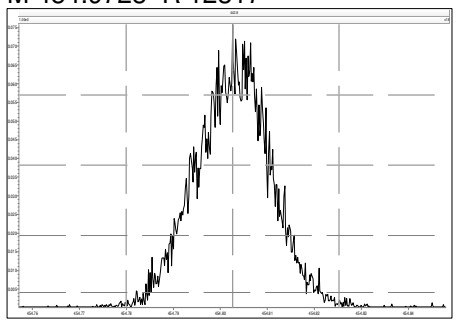
M 430.9728 R 11629



M 442.9728 R 12820



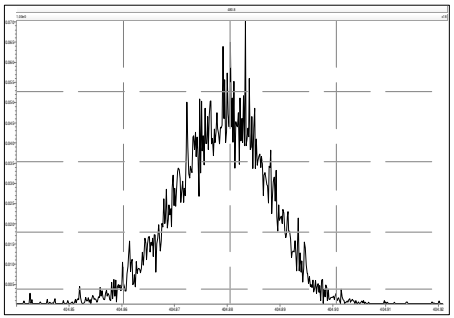
M 454.9728 R 12317



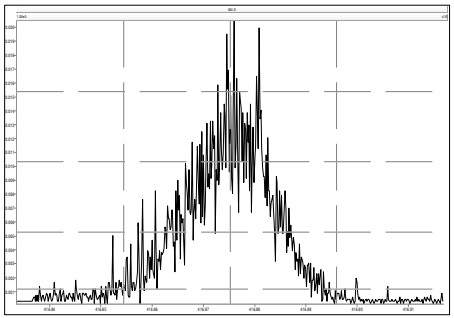
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 4 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:43:56 Eastern Standard Time

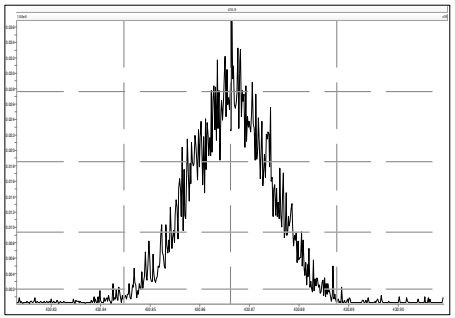
M 404.9760 R 10505



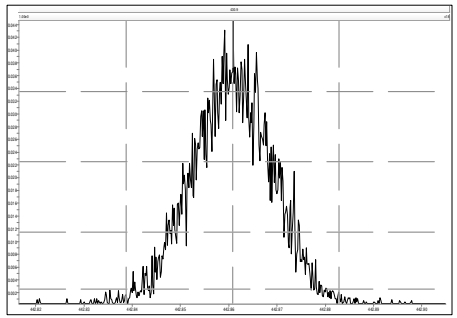
M 416.9760 R 12500



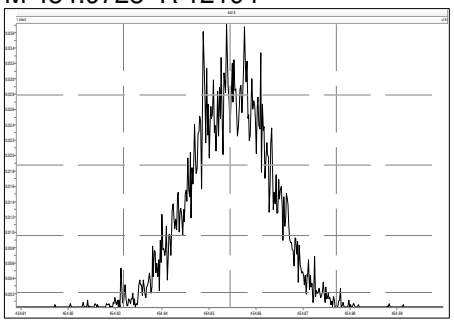
M 430.9728 R 11362



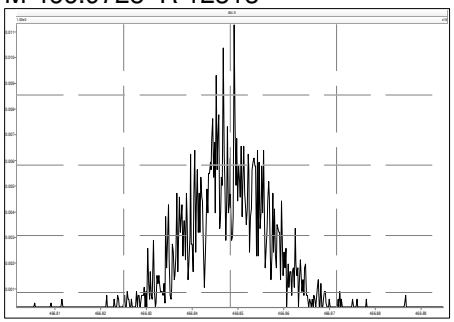
M 442.9728 R 12756



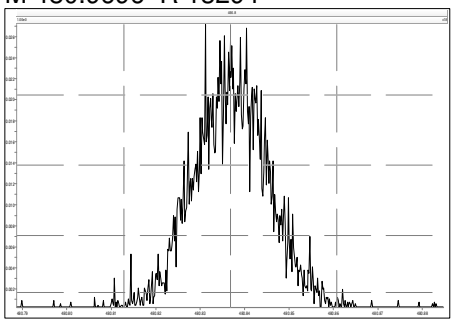
M 454.9728 R 12194



M 466.9728 R 12313



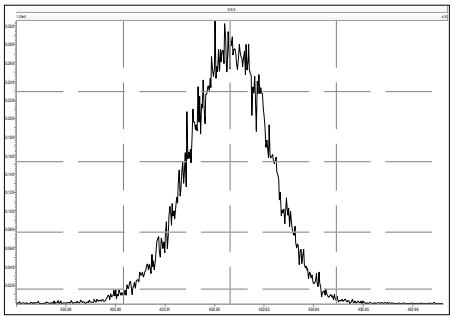
M 480.9696 R 13294



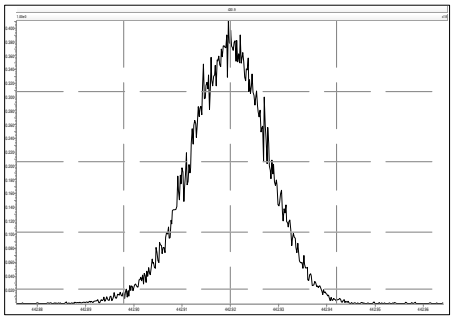
File: Experiment: df_cl4-8_db5MS.exp Reference: DF.ref Function: 5 @ 200 (ppm)

Printed: Wednesday, November 10, 2021 16:44:20 Eastern Standard Time

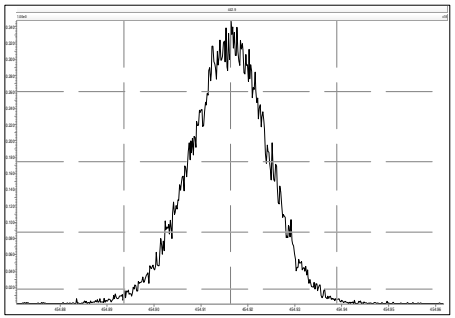
M 430.9728 R 11312



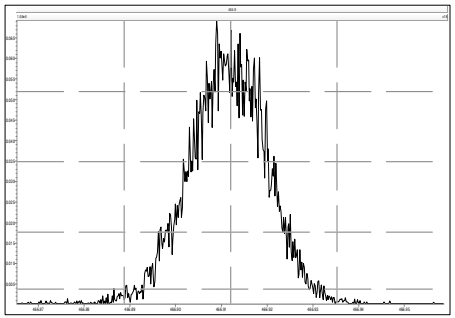
M 442.9728 R 11110



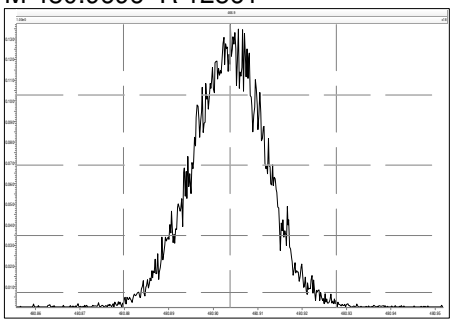
M 454.9728 R 11906



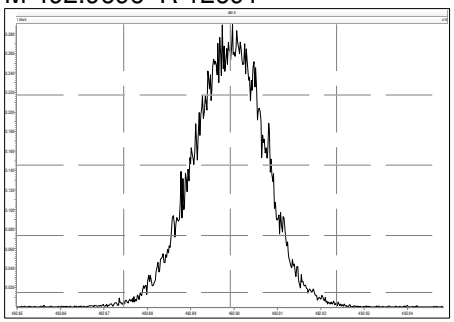
M 466.9728 R 12562



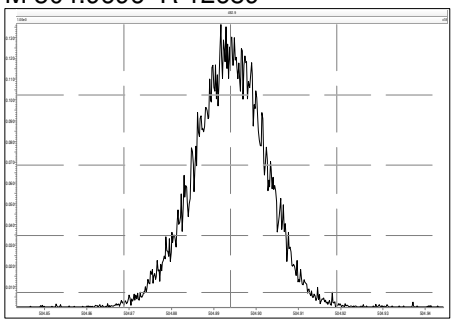
M 480.9696 R 12561



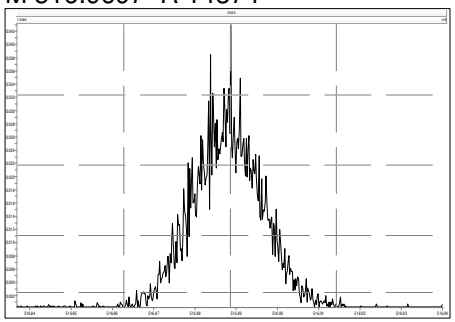
M 492.9696 R 12691



M 504.9696 R 12689



M 516.9697 R 14374



Lab ID: OPR1_18819_DF

REVIEWED
Tamara Burkamper , 1/24/2022, 2:17:33 PM

Acq'd: 20 Jan 2022 11:32 DTF

Wt/Vol: 1 uL

ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001

UTP: 24-Jan-2022 13:18:40 MLS

J-level: 0.25 pg/uL Split: 1

Checkcode: 697-611-TLV

Datafile: 220120C02

Report: 24 Jan 2022 13:22 MS

Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

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12378-PeCDD	34.00		1.0006	1.0006	0	6.85E+06	1.65	Y	1.04	52	6070.623	0.483
123478-HxCDD	37.86		1.0004	1.0004	0	7.78E+06	1.28	Y	1.09	59.9	4977.852	0.336
123678-HxCDD	37.98		1.0034	1.0034	0	8.21E+06	1.27	Y	1.15	56.9	4977.852	0.327
123789-HxCDD	38.26		1.0109	1.0109	0	7.91E+06	1.24	Y	1.05	51.3	4977.852	0.31
1234678-HpCDD	40.88		1.0003	1.0003	0	7.52E+06	1.06	Y	1.06	56.3	4678.282	0.284
OCDD	43.53		1.0002	1.0003	+0.3	9.74E+06	0.94	Y	1.13	114	3010.956	0.402
2378-TCDF	27.84		1.0008	1.0009	+0.2	2.82E+06	0.82	Y	1.08	10.9	6908.662	0.297
12378-PeCDF	32.54		1.0005	1.0005	0	1.24E+07	1.53	Y	1.02	51.3	9493.019	0.387
23478-PeCDF	33.65		1.0005	1.0005	0	1.33E+07	1.58	Y	1.02	56.6	9493.019	0.403
123478-HxCDF	36.86		1.0004	1.0004	0	1.24E+07	1.24	Y	1.27	56.5	3655.327	0.153
123678-HxCDF	37.01		1.0004	1.0005	+0.2	1.38E+07	1.25	Y	1.15	56.4	3655.327	0.139
234678-HxCDF	37.69		1.0004	1.0005	+0.2	9.51E+06	1.23	Y	1.19	57.4	3655.327	0.208
123789-HxCDF	38.62		1.0004	1.0004	0	1.04E+07	1.27	Y	1.16	52.5	3655.327	0.161
1234678-HpCDF	39.95		1.0002	1.0003	+0.2	1.37E+07	1.04	Y	1.37	54.9	3595.802	0.104
1234789-HpCDF	41.34		1.0003	1.0003	0	9.41E+06	1.07	Y	1.31	55.9	3595.802	0.181
OCDF	43.71		1.0002	1.0003	+0.3	1.28E+07	0.89	Y	1.07	115	3429.035	0.3

Name	Act RT	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.66	1.0233	1.0234	+0.2	1.48E+07	0.79	Y	1.05	90.8
ES 12378-PeCDD	33.98	1.2121	1.2133	+2.4	1.27E+07	1.59	Y	0.88	92.9
ES 123478-HxCDD	37.85	0.9921	0.9922	+0.2	1.19E+07	1.26	Y	0.97	90.3
ES 123678-HxCDD	37.97	0.9951	0.9952	+0.2	1.26E+07	1.19	Y	0.94	98
ES 123789-HxCDD	38.25	1.0025	1.0027	+0.5	1.47E+07	1.26	Y	1.09	99.3
ES 1234678-HpCDD	40.87	1.0709	1.0712	+0.7	1.26E+07	1.12	Y	0.91	102
ES OCDD	43.51	1.1403	1.1407	+1.0	1.51E+07	0.90	Y	0.62	89.1
ES 2378-TCDF	27.82	1.0506	1.0512	+1.0	2.41E+07	0.82	Y	1.06	87.1
ES 12378-PeCDF	32.53	1.2281	1.2292	+2.1	2.37E+07	1.49	Y	0.91	99.6
ES 23478-PeCDF	33.64	1.2698	1.2712	+2.8	2.30E+07	1.56	Y	0.88	99.7
ES 123478-HxCDF	36.85	0.9657	0.9659	+0.4	1.73E+07	0.52	Y	1.20	106
ES 123678-HxCDF	36.99	0.9695	0.9696	+0.2	2.13E+07	0.53	Y	1.35	116
ES 234678-HxCDF	37.67	0.9874	0.9874	0	1.40E+07	0.56	Y	1.24	82.7
ES 123789-HxCDF	38.60	1.0116	1.0120	+0.9	1.71E+07	0.53	Y	1.16	109
ES 1234678-HpCDF	39.94	1.0467	1.0470	+0.7	1.83E+07	0.49	Y	0.97	139
ES 1234789-HpCDF	41.33	1.0830	1.0833	+0.7	1.29E+07	0.48	Y	0.85	111
ES OCDF	43.70	1.1451	1.1455	+1.0	2.07E+07	0.93	Y	0.81	94.2

Lab ID: OPR1_18819_DF | **Acq'd:** 20 Jan 2022 11:32 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 | **UTP:** 24-Jan-2022 13:18:40 MLS | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 697-611-TLV

Datafile: 220120C02 | **Report:** 24 Jan 2022 13:22 MS | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	28.01		-	-	-	1.56E+07	0.82	Y	-	-
JS 1234-TCDF	26.46		-	-	-	2.61E+07	0.83	Y	-	-
JS 123467-HxCDD	38.15		-	-	-	6.79E+06	1.32	Y	-	-
CS 37Cl-2378-TCDD	28.69		1.0241	1.0242	+0.2	6.60E+06	n/a	-	1.20	88.2
CS 12347-PeCDD	33.46		1.1943	1.1947	+0.8	3.81E+06	1.69	Y	0.75	32.5
CS 12346-PeCDF	32.00		1.2083	1.2091	+1.5	2.13E+07	1.52	Y	0.85	95.9
CS 123469-HxCDF	37.30		0.9778	0.9779	+0.2	1.82E+07	0.54	Y	1.12	120
CS 1234689-HpCDF	40.34		1.0571	1.0574	+0.7	1.52E+07	0.47	Y	0.89	126
~~SS 37Cl-2378-TCDD~~	~~28.69~~		~~1.0241~~	~~1.0242~~	~~+0.2~~	~~6.60E+06~~	~~n/a~~		~~1.15~~	~~97.3~~
~~SS 12347-PeCDD~~	~~33.46~~		~~1.1943~~	~~1.1947~~	~~+0.8~~	~~3.81E+06~~	~~1.69~~	~~Y~~	~~0.86~~	~~34.9~~
~~SS 12346-PeCDF~~	~~32.00~~		~~1.2083~~	~~1.2091~~	~~+1.5~~	~~2.13E+07~~	~~1.52~~	~~Y~~	~~0.94~~	~~96.1~~
~~SS 123469-HxCDF~~	~~37.30~~		~~0.9778~~	~~0.9779~~	~~+0.2~~	~~1.82E+07~~	~~0.54~~	~~Y~~	~~0.83~~	~~104~~
~~SS 1234689-HpCDF~~	~~40.34~~		~~1.0571~~	~~1.0574~~	~~+0.7~~	~~1.52E+07~~	~~0.47~~	~~Y~~	~~0.92~~	~~90.4~~

Totals	Conc	EMPC
Total TCDD	60	60
Total PeCDD	82.9	82.9
Total HxCDD	186	186
Total HpCDD	71.1	71.1
Total Tetra-Octa Dioxins	514	514
Total TCDF	71.1	71.1
Total PeCDF	206	206
Total HxCDF	377	377
Total HpCDF	111	111
Total Tetra-Octa Furans	880	880
Total Tetra-Octa Dioxins & Furans	1390	1390

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.811	0.81
Response	2.12E+06	2.12E+06

Lab ID: OPR1_18819_DF **Acq'd:** 20 Jan 2022 11:32 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 **UTP:** 24-Jan-2022 13:18:40 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 697-611-TLV

Datafile: 220120C02 **Report:** 24 Jan 2022 13:22 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.08		0.8755	0.8751	-0.6	3.10E+06	0.82	Y	1.18	17.7	5655.871	0.321
1379-TCDD	NotFnd		0.8876						1.18		5655.871	0.321
1369-TCDD	NotFnd		0.9023						1.18		5655.871	0.321
1469-TCDD	NotFnd		0.9291						1.18		5655.871	0.321
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		5655.871	0.321
1378-TCDD	NotFnd		0.9440						1.18		5655.871	0.321
1268-TCDD	NotFnd		0.9506						1.18		5655.871	0.321
1478-TCDD	NotFnd		0.9591						1.18		5655.871	0.321
1279-TCDD	NotFnd		0.9649						1.18		5655.871	0.321
1234/1269-TCDD	NotFnd		0.9771						1.18		5655.871	0.321
1236-TCDD	NotFnd		0.9820						1.18		5655.871	0.321
1237/1238-TCDD	NotFnd		0.9908						1.18		5655.871	0.321
1239-TCDD	28.52		0.9954	0.9952	-0.3	2.17E+06	0.80	Y	1.18	12.4	5655.871	0.321
2378-TCDD	**28.68**		**1.0008**	1.0007	**-0.2**	2.12E+06	0.81	Y	**1.18**	**12.1**	**5655.871**	**0.321**
1278-TCDD	NotFnd		1.0121						1.18		5655.871	0.321
1267-TCDD	NotFnd		1.0167						1.18		5655.871	0.321
1289-TCDD	29.64		1.0341	1.0343	+0.4	3.12E+06	0.85	Y	1.18	17.8	5655.871	0.321
12479/12468-PeCDD	31.49		0.9273	0.9267	-1.1	2.01E+06	1.56	Y	1.04	15.3	6070.623	0.483
12469-PeCDD	NotFnd		0.9430						1.04		6070.623	0.483
12368-PeCDD	NotFnd		0.9592						1.04		6070.623	0.483
12478-PeCDD	NotFnd		0.9647						1.04		6070.623	0.483
12379-PeCDD	NotFnd		0.9676						1.04		6070.623	0.483
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		6070.623	0.483
12346/12347-PeCDD	NotFnd		0.9860						1.04		6070.623	0.483
12378-PeCDD	34.00		**1.0006**	**1.0006**	**0**	**6.85E+06**	**1.65**	**Y**	**1.04**	**52**	**6070.623**	**0.483**
12367-PeCDD	NotFnd		1.0034						1.04		6070.623	0.483
12389-PeCDD	34.46		1.0134	1.0142	+1.7	2.05E+06	1.71	Y	1.04	15.6	6070.623	0.483
124679/124689-HxCDD	36.13		0.9545	0.9545	0	2.52E+06	1.24	Y	1.10	17.6	4977.852	0.323
123468-HxCDD	NotFnd		0.9715						1.10		4977.852	0.323
123679/123689-HxCDD	NotFnd		0.9793						1.10		4977.852	0.323
123469-HxCDD	NotFnd		0.9829						1.10		4977.852	0.323
123478-HxCDD	37.86		**1.0004**	**1.0004**	**0**	**7.78E+06**	**1.28**	**Y**	1.09	**59.9**	**4977.852**	**0.336**
123678-HxCDD	37.98		**1.0034**	**1.0034**	**0**	**8.21E+06**	**1.27**	**Y**	1.15	**56.9**	**4977.852**	**0.327**
123467-HxCDD	NotFnd		1.0082						1.10		4977.852	0.323
123789-HxCDD	38.26		**1.0109**	**1.0109**	**0**	**7.91E+06**	**1.24**	**Y**	1.05	**51.3**	**4977.852**	**0.31**

Lab ID: OPR1_18819_DF | **Acq'd:** 20 Jan 2022 11:32 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR001 | **UTP:** 24-Jan-2022 13:18:40 MLS | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 697-611-TLV

Datafile: 220120C02 | **Report:** 24 Jan 2022 13:22 MS | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.21		0.9838	0.9839	+0.2	1.97E+06	1.06	Y	1.06	14.8	4678.282	0.284
1234678-HpCDD	**40.88**		**1.0003**	**1.0003**	**0**	**7.52E+06**	**1.06**	**Y**	**1.06**	**56.3**	**4678.282**	**0.284**
OCDD	**43.53**		**1.0002**	**1.0003**	**+0.3**	**9.74E+06**	**0.94**	**Y**	**1.13**	**114**	**3010.956**	**0.402**
OCDD-a	NotFnd		1.0002						0.07		3401.432	7.11
1368-TCDF	23.02		0.8282	0.8274	-1.1	4.64E+06	0.80	Y	1.08	17.9	6908.662	0.297
1468-TCDF	NotFnd		0.8485						1.08		6908.662	0.297
2468-TCDF	24.20		0.8709	0.8701	-1.2	1.23E+06	0.80	Y	1.08	4.74	6908.662	0.297
1346/1246-TCDF	NotFnd		0.8829						1.08		6908.662	0.297
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		6908.662	0.297
1348-TCDF	NotFnd		0.8980						1.08		6908.662	0.297
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		6908.662	0.297
1268-TCDF	NotFnd		0.9158						1.08		6908.662	0.297
1467-TCDF	NotFnd		0.9206						1.08		6908.662	0.297
1478-TCDF	NotFnd		0.9266						1.08		6908.662	0.297
1369/1237-TCDF	NotFnd		0.9397						1.08		6908.662	0.297
2467-TCDF	NotFnd		0.9440						1.08		6908.662	0.297
2368-TCDF	NotFnd		0.9497						1.08		6908.662	0.297
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		6908.662	0.297
1278-TCDF	NotFnd		0.9690						1.08		6908.662	0.297
1349-TCDF	NotFnd		0.9730						1.08		6908.662	0.297
1267-TCDF	NotFnd		0.9787						1.08		6908.662	0.297
2346/1249-TCDF	NotFnd		0.9850						1.08		6908.662	0.297
2347/1279-TCDF	NotFnd		0.9929						1.08		6908.662	0.297
2348-TCDF	27.73		0.9970	0.9969	-0.2	5.04E+06	0.78	Y	1.08	19.4	6908.662	0.297
2378-TCDF	**27.84**		**1.0008**	**1.0009**	**+0.2**	**2.82E+06**	**0.82**	**Y**	**1.08**	**10.9**	**6908.662**	**0.297**
2367/3467-TCDF	NotFnd		1.0136						1.08		6908.662	0.297
1269-TCDF	NotFnd		1.0221						1.08		6908.662	0.297
1239-TCDF	NotFnd		1.0319						1.08		6908.662	0.297
1289-TCDF	29.82		1.0740	1.0719	-3.8	4.74E+06	0.79	Y	1.08	18.2	6908.662	0.297
13468/12468-PeCDF	29.72		0.9145	0.9137	-1.4	2.05E+07	1.56	Y	1.02	86	3957.628	0.165
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		9493.019	0.395
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		9493.019	0.395
14678-PeCDF	NotFnd		0.9695						1.02		9493.019	0.395
13479-PeCDF	NotFnd		0.9724						1.02		9493.019	0.395
13469/12479-PeCDF	NotFnd		0.9801						1.02		9493.019	0.395
12346-PeCDF	NotFnd		0.9842						1.02		9493.019	0.395

Lab ID: OPR1_18819_DF | **Acq'd: 20 Jan 2022 11:32 DTF** | **Wt/Vol: 1 uL** | **ICAL: HRMS3_DF_10272021 10NOV2021**

Client ID: 0_18819_OPR001 | **UTP: 24-Jan-2022 13:18:40 MLS** | **J-level: 0.25 pg/uL** | **Split: 1** | **Checkcode: 697-611-TLV**

Datafile: 220120C02 | **Report: 24 Jan 2022 13:22 MS** | **Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)**

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		9493.019	0.395
12347-PeCDF	NotFnd		0.9895						1.02		9493.019	0.395
12348-PeCDF	NotFnd		0.9941						1.02		9493.019	0.395
12378-PeCDF	**32.54**		**1.0005**	**1.0005**	**0**	**1.24E+07**	**1.53**	**Y**	**1.02**	**51.3**	**9493.019**	**0.387**
12678/12367-PeCDF	NotFnd		1.0090						1.02		9493.019	0.395
12379-PeCDF	NotFnd		1.0142						1.02		9493.019	0.395
12679-PeCDF	NotFnd		0.9931						1.02		9493.019	0.395
23467/12369-PeCDF	NotFnd		0.9966						1.02		9493.019	0.395
23478-PeCDF	**33.65**		**1.0005**	**1.0005**	**0**	**1.33E+07**	**1.58**	**Y**	**1.02**	**56.6**	**9493.019**	**0.403**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		9493.019	0.395
12349-PeCDF	NotFnd		1.0101						1.02		9493.019	0.395
12389-PeCDF	34.75		1.0322	1.0331	+1.9	2.96E+06	1.70	Y	1.02	12.4	9493.019	0.395
123468-HxCDF	35.50		0.9627	0.9635	+1.7	3.20E+07	1.22	Y	1.19	154	3655.327	0.162
124678/134678-HxCDF	NotFnd		0.9684						1.19		3655.327	0.162
134679-HxCDF	NotFnd		0.9747						1.19		3655.327	0.162
124679-HxCDF	NotFnd		0.9802						1.19		3655.327	0.162
124689-HxCDF	NotFnd		0.9858						1.19		3655.327	0.162
123467-HxCDF	NotFnd		0.9972						1.19		3655.327	0.162
123478-HxCDF	**36.86**		**1.0004**	**1.0004**	**0**	**1.24E+07**	**1.24**	**Y**	**1.27**	**56.5**	**3655.327**	**0.153**
123678-HxCDF	**37.01**		**1.0004**	**1.0005**	**+0.2**	**1.38E+07**	**1.25**	**Y**	**1.15**	**56.4**	**3655.327**	**0.139**
123479-HxCDF	NotFnd		1.0051						1.19		3655.327	0.162
123469-HxCDF	NotFnd		1.0091						1.19		3655.327	0.162
123679-HxCDF	NotFnd		0.9943						1.19		3655.327	0.162
234678-HxCDF	**37.69**		**1.0004**	**1.0005**	**+0.2**	**9.51E+06**	**1.23**	**Y**	**1.19**	**57.4**	**3655.327**	**0.208**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		3655.327	0.162
123789-HxCDF	**38.62**		**1.0004**	**1.0004**	**0**	**1.04E+07**	**1.27**	**Y**	**1.16**	**52.5**	**3655.327**	**0.161**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		3655.327	0.162
1234678-HpCDF	**39.95**		**1.0002**	**1.0003**	**+0.2**	**1.37E+07**	**1.04**	**Y**	**1.37**	**54.9**	**3595.802**	**0.104**
1234679-HpCDF	NotFnd		1.0067						1.34		3595.802	0.136
1234689-HpCDF	NotFnd		1.0101						1.34		3595.802	0.136
1234789-HpCDF	**41.34**		**1.0003**	**1.0003**	**0**	**9.41E+06**	**1.07**	**Y**	**1.31**	**55.9**	**3595.802**	**0.181**
OCDF	**43.71**		**1.0002**	**1.0003**	**+0.3**	**1.28E+07**	**0.89**	**Y**	**1.07**	**115**	**3429.035**	**0.3**
OCDF-a	43.71		1.0002	1.0003	+0.3	7.09E+05	2.71	Y	0.07	103	3550.28	5.02

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.1	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	52	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	59.9	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	56.9	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	51.3	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.3	35	-	70	Y
OCDD	100	114	78	-	144	Y
2,3,7,8-TCDF	10	10.9	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	51.3	40	-	67	Y
2,3,4,7,8-PeCDF	50	56.6	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	56.5	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	56.4	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	57.4	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	52.5	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	54.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	55.9	39	-	69	Y
OCDF	100	115	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 24 Jan 2022 13:22 Analyst: MS

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	90.8	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	92.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	90.3	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	98	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	99.3	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	102	26	-	166	Y
13C-OCDD	200	178	26	-	397	Y
13C-2,3,7,8-TCDF	100	87.1	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	99.6	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	99.7	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	106	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	116	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	82.7	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	109	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	139	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	111	20	-	186	Y
13C-OCDF	200	188	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	35.3	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
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Processed: 24 Jan 2022 13:22 Analyst: MS

METHOD 1613B **COLUMN PERFORMANCE AND RETENTION TIME WINDOWS** **FORM CPSM**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
CPSM Data Filename:	220120C02	Analysis Date:	20-JAN-2022 11:32:05
Lab ID:	OPR1_18819_DF		

Window Defining Standards Results

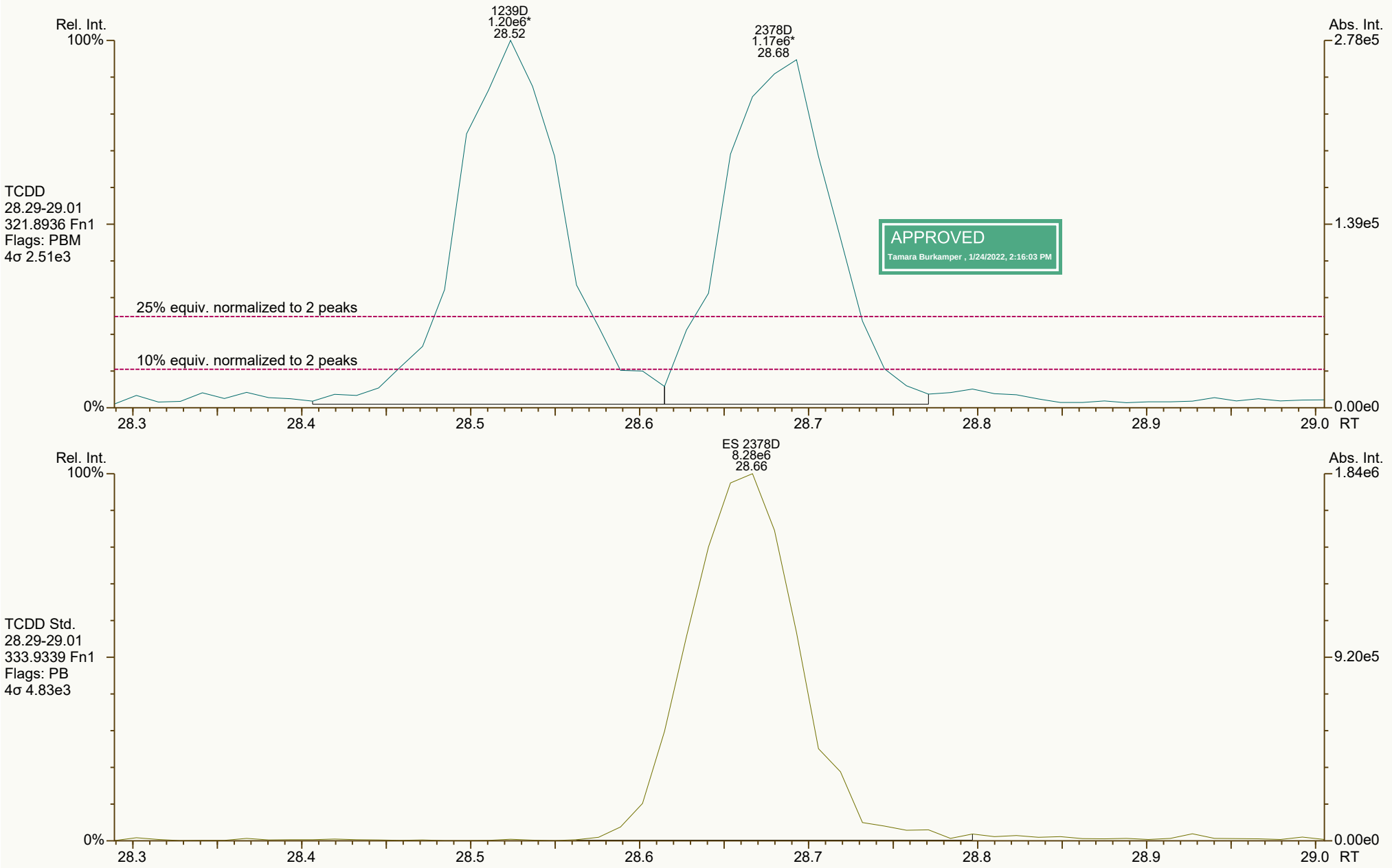
First Eluting Isomer	RT	Last Eluting Isomer	RT
1368-TCDD	25.08	1289-TCDD	29.64
12479/12468-PeCDD	31.49	12389-PeCDD	34.46
124679/124689-HxCDD	36.13	123789-HxCDD	38.26
1234679-HpCDD	40.21	1234678-HpCDD	40.88
1368-TCDF	23.02	1289-TCDF	29.82
13468/12468-PeCDF	29.72	12389-PeCDF	34.75
123468-HxCDF	35.50	123789-HxCDF	38.62
1234678-HpCDF	39.95	1234789-HpCDF	41.34

Isomer Specificity Test Standard Results

Closest Eluting Isomer	RT	2378 Specific Isomer	RT
1239-TCDD	28.52	2378-TCDD	28.68
2348-TCDF	27.73	2378-TCDF	27.84

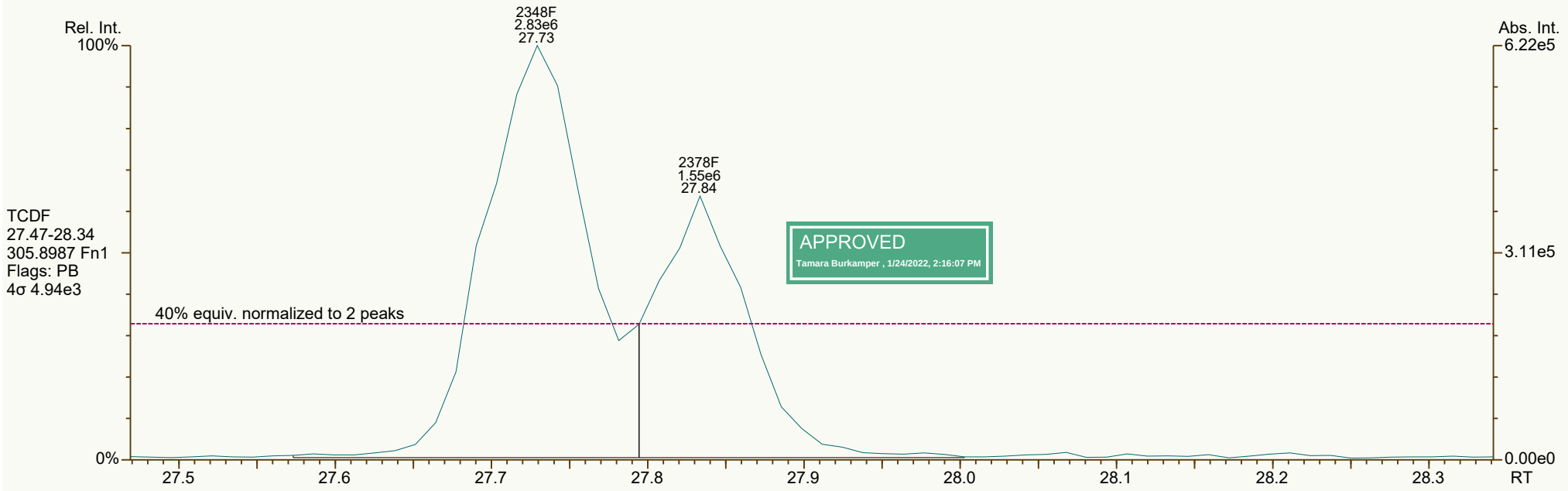
Processed: 24 Jan 2022 13:22 Analyst: MS

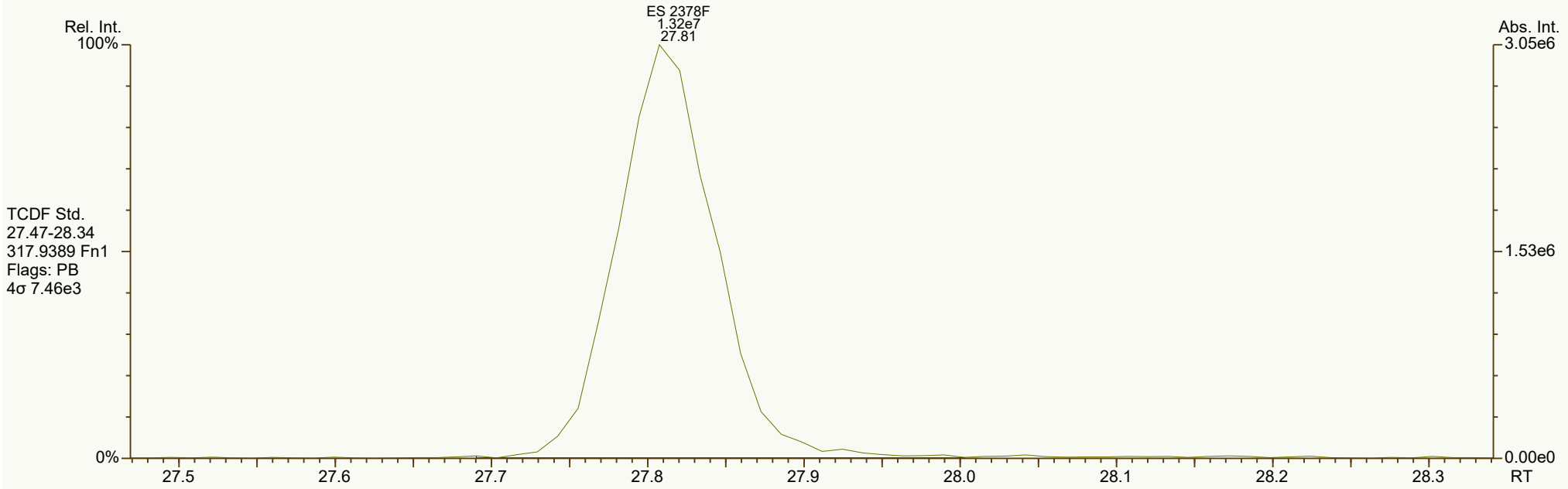
SGS ID: OPR1_18819_DF
Sample ID: 0_18819_OPR001
Acq: 20-Jan-2022 11:32:05
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 50
User: DTF Datafile: 220120C02



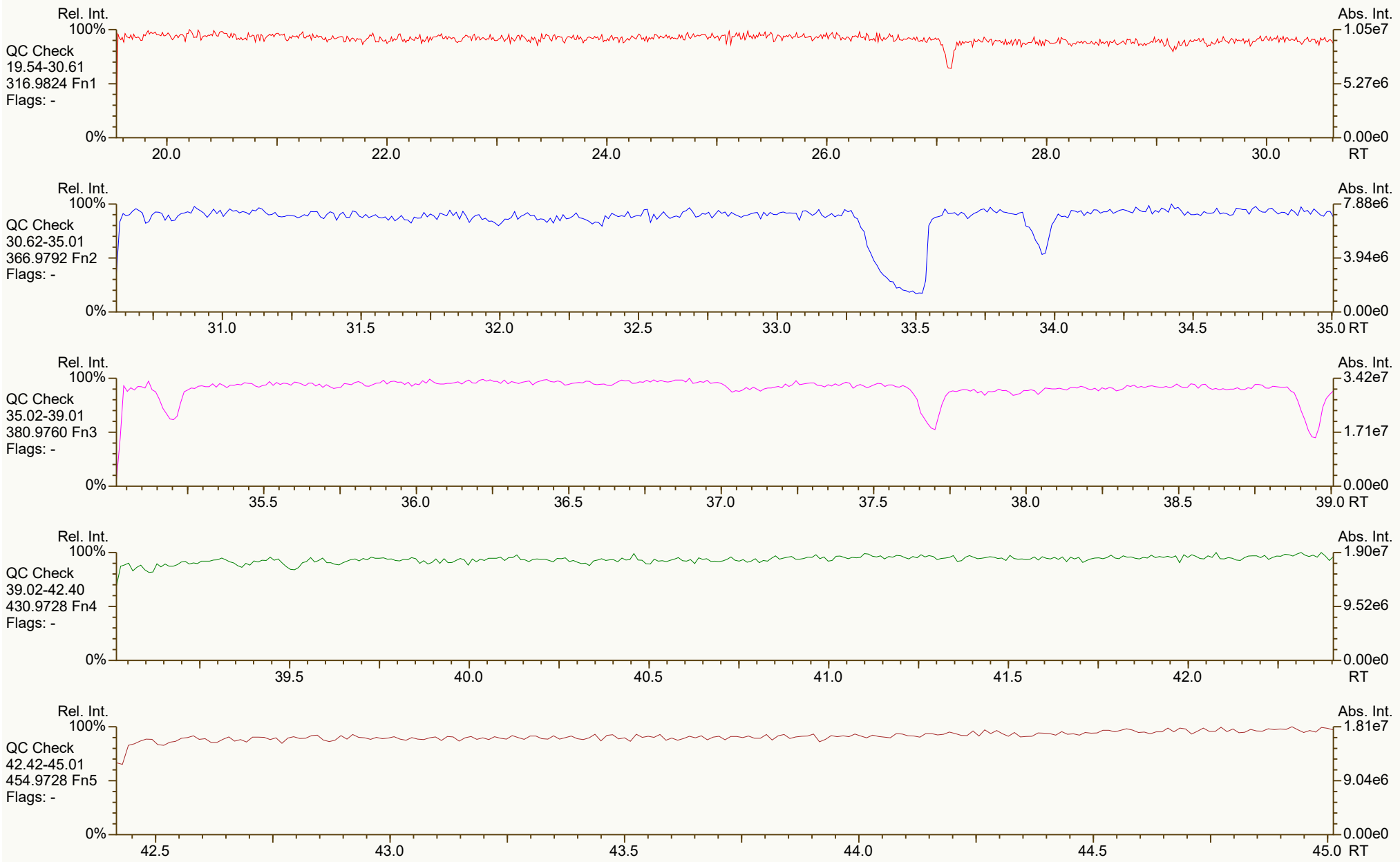
Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\OPR1_18819_DF.utp_res, saved 24-Jan-2022 13:18 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW
Revised: 21-Jan-2022 09:59 (DTF) Printed: 24-Jan-2022 13:32

SGS ID: OPR1_18819_DF
Sample ID: 0_18819_OPR001
Acq: 20-Jan-2022 11:32:05
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 50
User: DTF Datafile: 220120C02

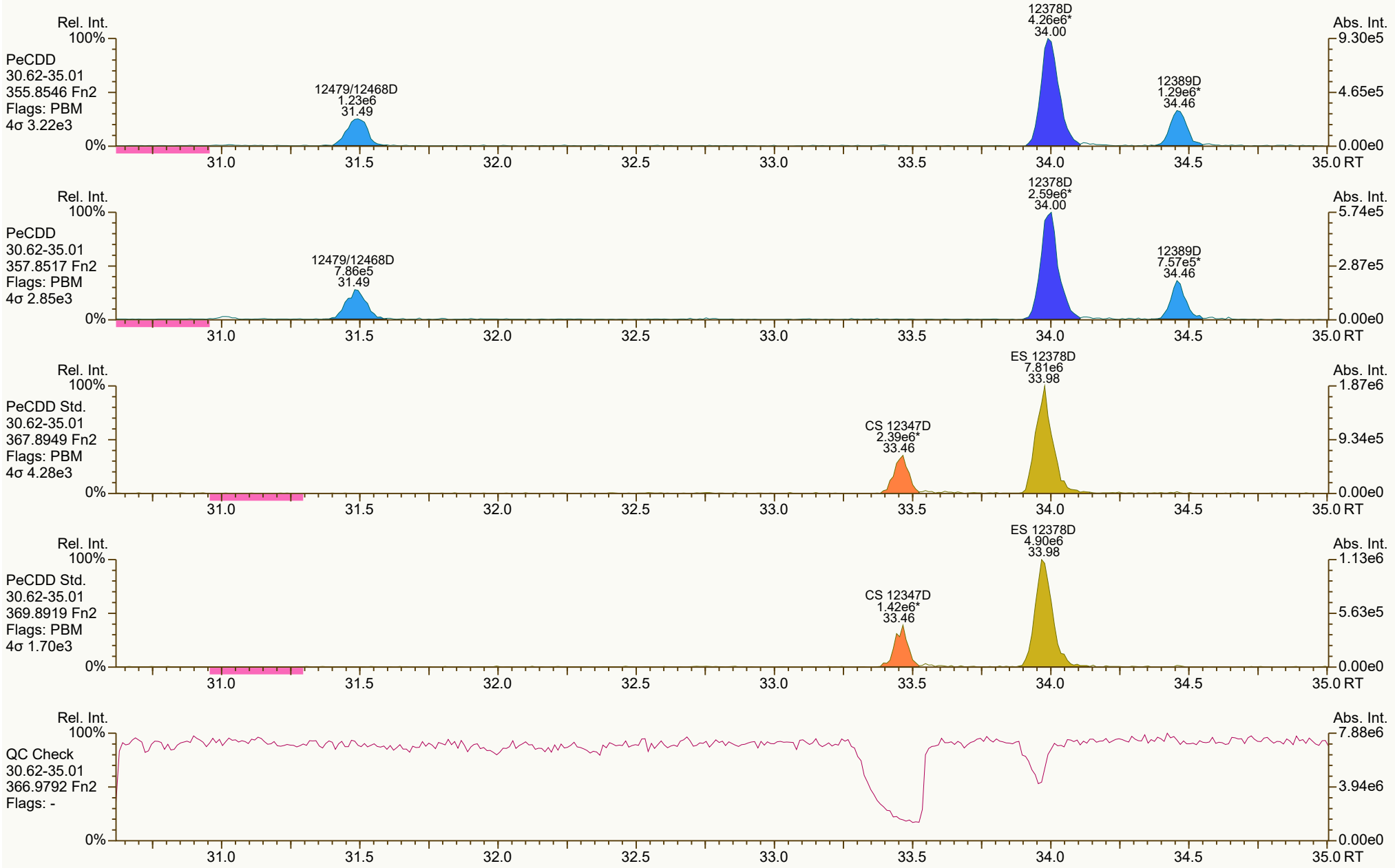


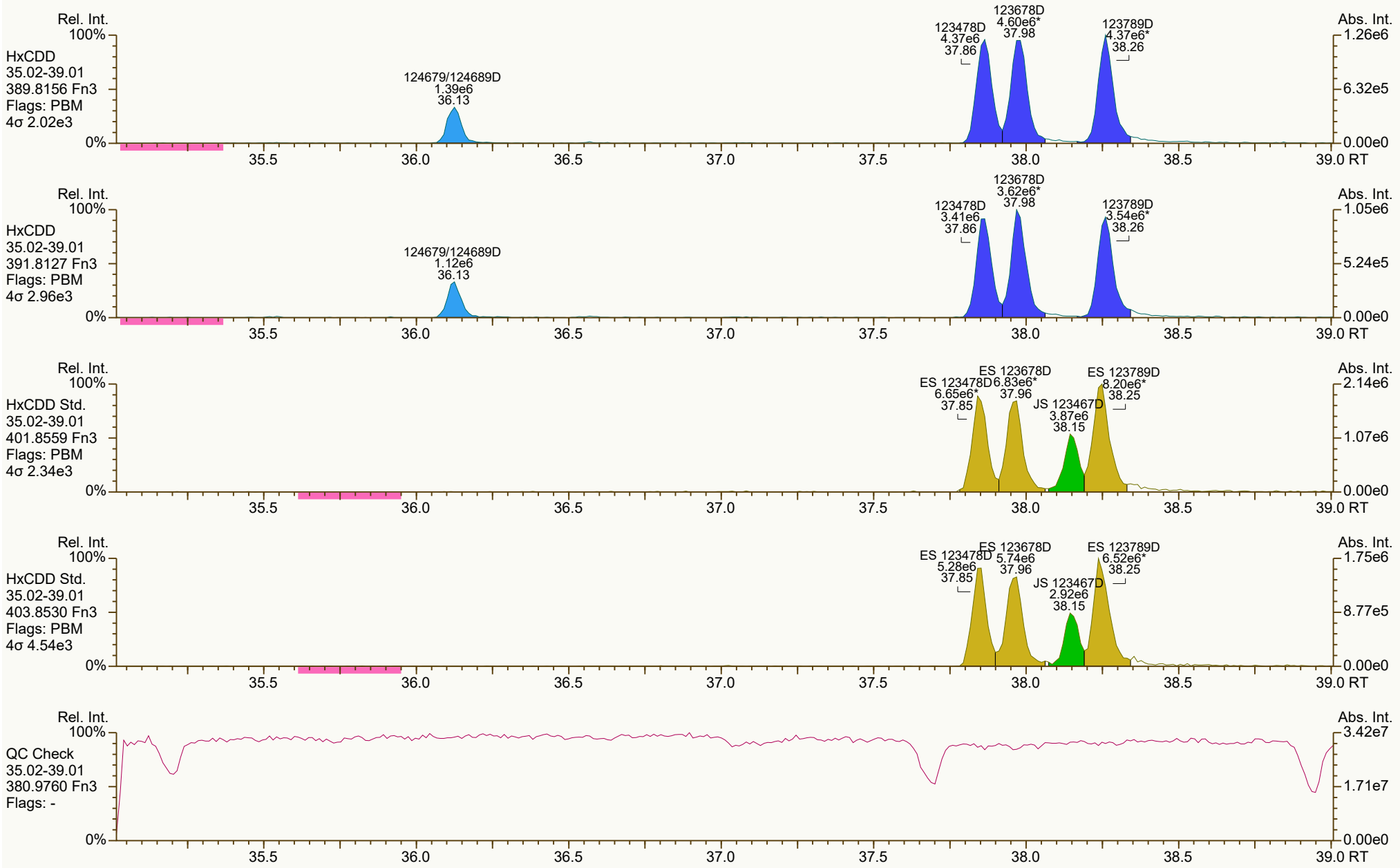


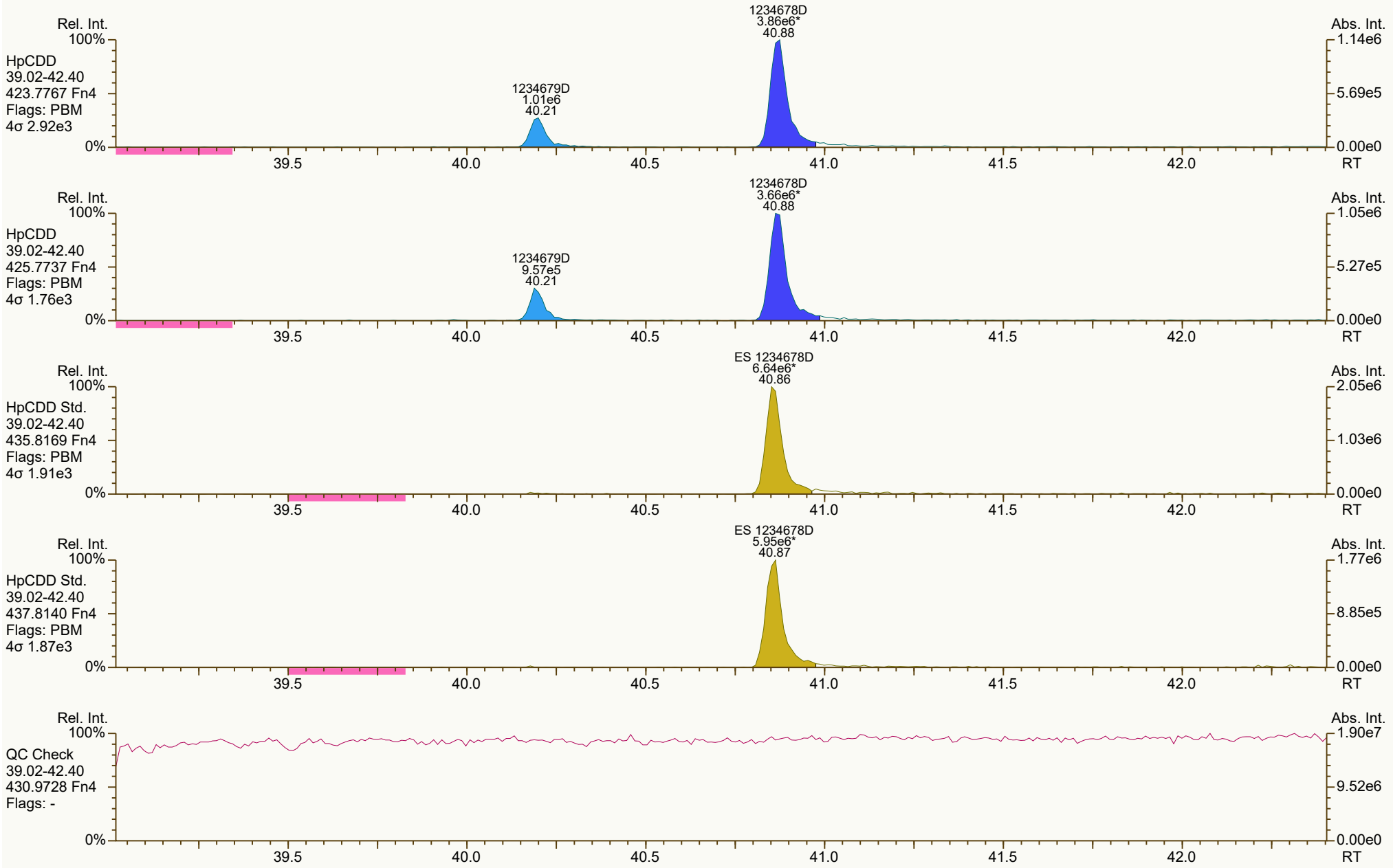
Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\OPR1_18819_DF.utp_res, saved 24-Jan-2022 13:18 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW
Revised: 21-Jan-2022 10:00 (DTF) Printed: 24-Jan-2022 13:32

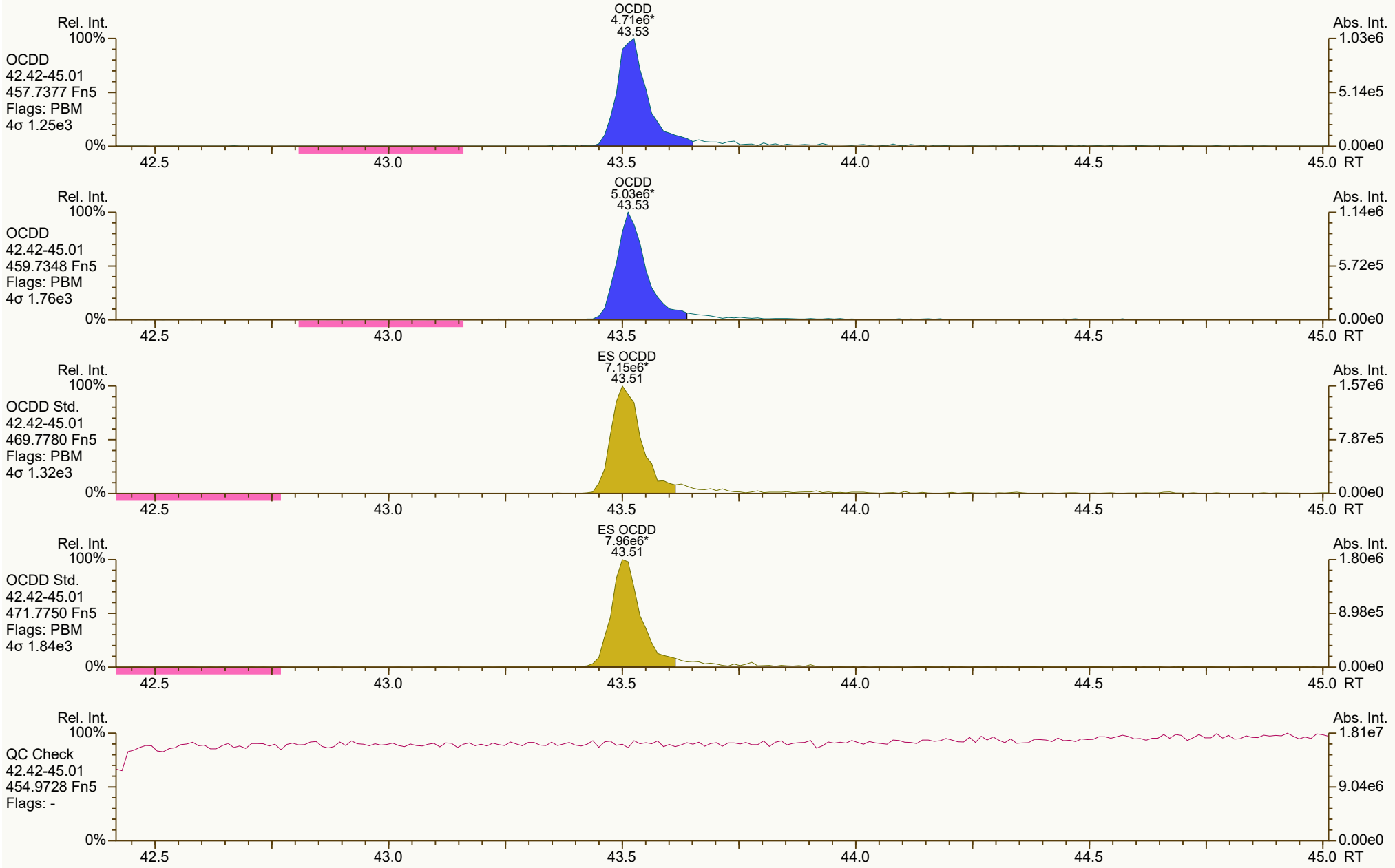

Rel. Int.
100%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
0%
Abs. Int.
1.05e7
5.27e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
0%
Abs. Int.
7.88e6
3.94e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.42e7
1.71e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
1.90e7
9.52e6
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.81e7
9.04e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
Flags: PBM
4σ 3.15e3
1368D
1.40e6
25.08
1239D
9.65e5*
28.52
2378D
9.52e5*
28.68
1289D
1.43e6*
29.64
Abs. Int.
3.58e5
1.79e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 2.51e3
1368D
1.71e6
25.08
1239D
1.20e6*
28.52
2378D
1.17e6*
28.68
1289D
1.69e6*
29.64
Abs. Int.
4.18e5
2.09e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 4.06e3
CS 37Cl-2378D
6.60e6
28.68
Abs. Int.
1.54e6
7.69e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 1.02e4
JS 1234D
7.03e6
28.01
ES 2378D
6.50e6
28.66
Abs. Int.
1.64e6
8.20e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 4.83e3
JS 1234D
8.54e6
28.01
ES 2378D
8.28e6
28.66
Abs. Int.
2.07e6
1.03e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDD
30.62-35.01
355.8546 Fn2
Flags: PBM
4σ 3.22e3
12479/12468D
1.23e6
31.49
12378D
4.26e6*
34.00
12389D
1.29e6*
34.46
Abs. Int.
9.30e5
4.65e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD
30.62-35.01
357.8517 Fn2
Flags: PBM
4σ 2.85e3
12479/12468D
7.86e5
31.49
12378D
2.59e6*
34.00
12389D
7.57e5*
34.46
Abs. Int.
5.74e5
2.87e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.01
367.8949 Fn2
Flags: PBM
4σ 4.28e3
CS 12347D
2.39e6*
33.46
ES 12378D
7.81e6
33.98
Abs. Int.
1.87e6
9.34e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDD Std.
30.62-35.01
369.8919 Fn2
Flags: PBM
4σ 1.70e3
CS 12347D
1.42e6*
33.46
ES 12378D
4.90e6
33.98
Abs. Int.
1.13e6
5.63e5
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
30.62-35.01
366.9792 Fn2
Flags: -
Abs. Int.
7.88e6
3.94e6
0.00e0
0%
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 2.02e3
124679/124689D
1.39e6
36.13
123478D
4.37e6
37.86
123678D
4.60e6*
37.98
123789D
4.37e6*
38.26
1.26e6
6.32e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 2.96e3
124679/124689D
1.12e6
36.13
123478D
3.41e6
37.86
123678D
3.62e6*
37.98
123789D
3.54e6*
38.26
1.05e6
5.24e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 2.34e3
ES 123478D
6.65e6*
37.85
ES 123678D
6.83e6*
37.96
JS 123467D
3.87e6
38.15
ES 123789D
8.20e6*
38.25
2.14e6
1.07e6
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 4.54e3
ES 123478D
5.28e6
37.85
ES 123678D
5.74e6
37.96
JS 123467D
2.92e6
38.15
ES 123789D
6.52e6*
38.25
1.75e6
8.77e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.42e7
1.71e7
0.00e0
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT

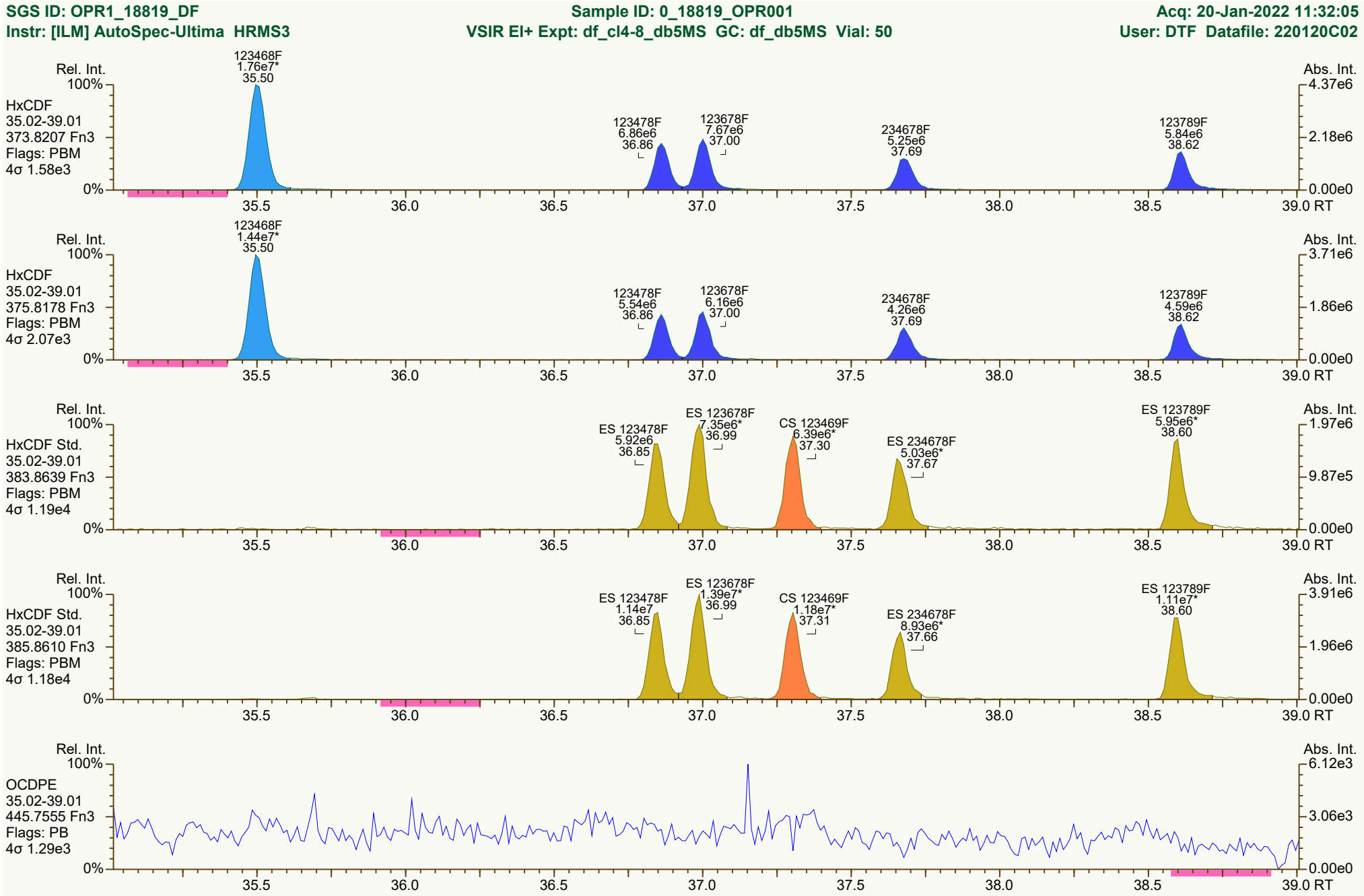

Rel. Int.
100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.92e3
1234678D
3.86e6*
40.88
1234679D
1.01e6
40.21
Abs. Int.
1.14e6
5.69e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.76e3
1234678D
3.66e6*
40.88
1234679D
9.57e5
40.21
Abs. Int.
1.05e6
5.27e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 1.91e3
ES 1234678D
6.64e6*
40.86
Abs. Int.
2.05e6
1.03e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 1.87e3
ES 1234678D
5.95e6*
40.87
Abs. Int.
1.77e6
8.85e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
1.90e7
9.52e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT

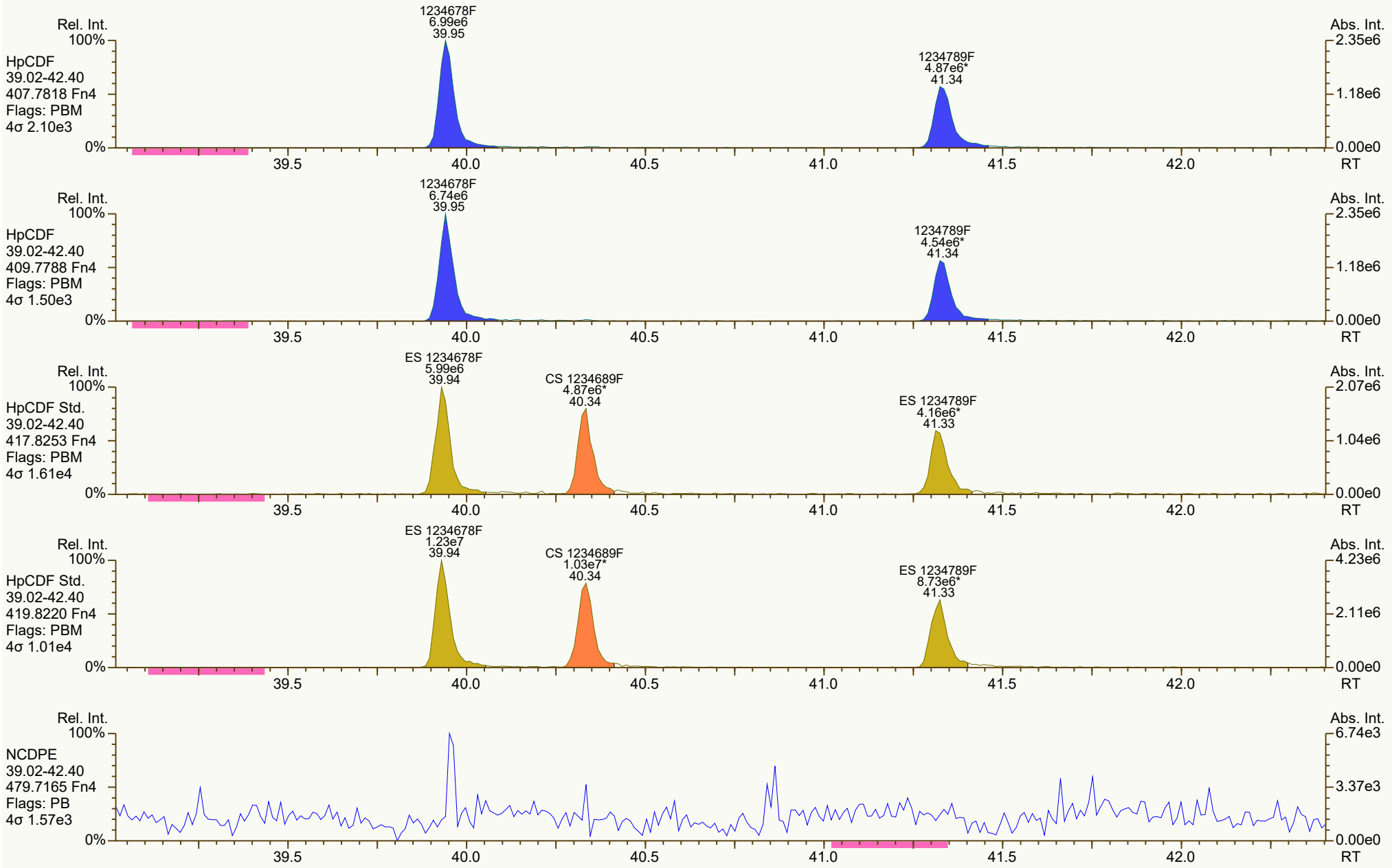

Rel. Int.
Abs. Int.
OCDD
4.71e6*
43.53
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 1.25e3
1.03e6
5.14e5
0.00e0
OCDD
5.03e6*
43.53
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 1.76e3
1.14e6
5.72e5
0.00e0
ES OCDD
7.15e6*
43.51
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 1.32e3
1.57e6
7.87e5
0.00e0
ES OCDD
7.96e6*
43.51
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 1.84e3
1.80e6
8.98e5
0.00e0
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
1.81e7
9.04e6
0.00e0
100%
0%
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.97e3
1368F
2.06e6
23.02
2468F
5.49e5
24.20
2348F
2.21e6
27.73
2378F
1.27e6
27.84
1289F
2.10e6*
29.82
Abs. Int.
5.09e5
2.55e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 4.94e3
1368F
2.58e6
23.02
2468F
6.83e5
24.20
2348F
2.83e6
27.73
2378F
1.55e6
27.84
1289F
2.65e6*
29.82
Abs. Int.
6.22e5
3.11e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 1.29e4
JS 1234F
1.18e7
26.46
ES 2378F
1.09e7
27.82
Abs. Int.
2.46e6
1.23e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 7.46e3
JS 1234F
1.43e7
26.46
ES 2378F
1.32e7
27.81
Abs. Int.
3.10e6
1.55e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.46e3
Abs. Int.
1.22e4
6.09e3
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
Abs. Int.
3.11e6
1.56e6
0.00e0
RT
20.0
22.0
24.0
26.0
28.0
30.0
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PB
4σ 1.52e3
13468/12468F
1.25e7
29.72
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PB
4σ 2.44e3
13468/12468F
8.00e6
29.72
1.99e6
9.97e5
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
1.05e7
5.27e6


Rel. Int.
100%
0%
Abs. Int.
PeCDF-2
30.62-35.01
339.8597 Fn2
Flags: PB
4σ 2.99e3
12378F
7.52e6
32.54
23478F
8.11e6
33.65
12389F
1.86e6
34.75
2.02e6
1.01e6
0.00e0
PeCDF-2
30.62-35.01
341.8568 Fn2
Flags: PB
4σ 6.50e3
12378F
4.93e6
32.54
23478F
5.15e6
33.65
12389F
1.10e6
34.75
1.39e6
6.96e5
0.00e0
PeCDF Std.
30.62-35.01
351.9000 Fn2
Flags: PB
4σ 8.93e3
CS 12346F
1.28e7
32.00
ES 12378F
1.42e7
32.53
ES 23478F
1.40e7
33.64
3.58e6
1.79e6
0.00e0
PeCDF Std.
30.62-35.01
353.8970 Fn2
Flags: PB
4σ 1.00e4
CS 12346F
8.46e6
32.00
ES 12378F
9.49e6
32.53
ES 23478F
8.98e6
33.64
2.42e6
1.21e6
0.00e0
HpCDPE
30.62-35.01
409.7974 Fn2
Flags: PB
4σ 1.64e3
8.51e3
4.25e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


SGS ID: OPR1_18819_DF
Instr: [ILM] AutoSpec-Ultima HRMS3
Sample ID: 0_18819_OPR001
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 50
Acq: 20-Jan-2022 11:32:05
User: DTF Datafile: 220120C02
Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 1.58e3
123468F 1.76e7* 35.50
123478F 6.86e6 36.86
123678F 7.67e6 37.00
234678F 5.25e6 37.69
123789F 5.84e6 38.62
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.07e3
123468F 1.44e7* 35.50
123478F 5.54e6 36.86
123678F 6.16e6 37.00
234678F 4.26e6 37.69
123789F 4.59e6 38.62
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 1.19e4
ES 123478F 5.92e6 36.85
ES 123678F 7.35e6* 36.99
CS 123469F 6.39e6* 37.30
ES 234678F 5.03e6* 37.67
ES 123789F 5.95e6* 38.60
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 1.18e4
ES 123478F 1.14e7 36.85
ES 123678F 1.39e7* 36.99
CS 123469F 1.18e7* 37.31
ES 234678F 8.93e6* 37.66
ES 123789F 1.11e7* 38.60
OCDPE
35.02-39.01
445.7555 Fn3
Flags: PB
4σ 1.29e3
35.5 36.0 36.5 37.0 37.5 38.0 38.5 39.0 RT
Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\OPR1_18819_DF.utp_res, saved 24-Jan-2022 13:18 (MLS)
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 7558, 3886, 2278 scc: 697-611
Peak annotation: Areas, Centroids
Revised: 21-Jan-2022 10:00 (DTF) Printed: 24-Jan-2022 13:27 Page 10 of 12


Rel. Int.
100%
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 2.10e3
1234678F
6.99e6
39.95
1234789F
4.87e6*
41.34
Abs. Int.
2.35e6
1.18e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 1.50e3
1234678F
6.74e6
39.95
1234789F
4.54e6*
41.34
Abs. Int.
2.35e6
1.18e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 1.61e4
ES 1234678F
5.99e6
39.94
CS 1234689F
4.87e6*
40.34
ES 1234789F
4.16e6*
41.33
Abs. Int.
2.07e6
1.04e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 1.01e4
ES 1234678F
1.23e7
39.94
CS 1234689F
1.03e7*
40.34
ES 1234789F
8.73e6*
41.33
Abs. Int.
4.23e6
2.11e6
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
NCDPE
39.02-42.40
479.7165 Fn4
Flags: PB
4σ 1.57e3
Abs. Int.
6.74e3
3.37e3
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT


Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 1.69e3
0%
OCDF
6.00e6*
43.71
Abs. Int.
1.37e6
6.85e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 1.74e3
0%
OCDF
6.76e6*
43.71
Abs. Int.
1.53e6
7.67e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 2.26e3
0%
ES OCDF
9.95e6*
43.70
Abs. Int.
2.57e6
1.28e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 3.70e3
0%
ES OCDF
1.07e7*
43.70
Abs. Int.
2.53e6
1.26e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: B
4σ 1.39e3
0%
Abs. Int.
6.69e3
3.34e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT

Lab ID: OPR2_18819_DF **Acq'd:** 20 Jan 2022 12:20 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 **UTP:** 24-Jan-2022 13:18:40 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 751-300-QNZ

Datafile: 220120C03 **Report:** 24 Jan 2022 13:22 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
2378-TCDD	28.64		1.0008	1.0007	-0.2	1.77E+06	0.83	Y	1.18	12.3	4131.919	0.33
12378-PeCDD	33.95		1.0006	1.0006	0	6.35E+06	1.58	Y	1.04	55.2	2666.107	0.204
123478-HxCDD	37.84		1.0004	1.0004	0	6.59E+06	1.28	Y	1.09	57.7	3320.354	0.245
123678-HxCDD	37.95		1.0034	1.0035	+0.2	7.85E+06	1.27	Y	1.15	61	3320.354	0.246
123789-HxCDD	38.24		1.0109	1.0110	+0.2	6.97E+06	1.24	Y	1.05	58.5	3320.354	0.243
1234678-HpCDD	40.85		1.0003	1.0003	0	6.71E+06	1.03	Y	1.06	56.7	3097.87	0.213
OCDD	43.50		1.0002	1.0003	+0.3	9.54E+06	0.92	Y	1.13	120	4377.598	0.608
2378-TCDF	27.79		1.0008	1.0007	-0.2	2.51E+06	0.80	Y	1.08	12	5324.253	0.27
12378-PeCDF	32.51		1.0005	1.0005	0	1.06E+07	1.54	Y	1.02	54.5	6761.989	0.322
23478-PeCDF	33.61		1.0005	1.0005	0	1.07E+07	1.57	Y	1.02	59	6761.989	0.333
123478-HxCDF	36.83		1.0004	1.0004	0	1.05E+07	1.27	Y	1.27	58.9	5856.549	0.279
123678-HxCDF	36.97		1.0004	1.0004	0	1.20E+07	1.27	Y	1.15	60.3	5856.549	0.242
234678-HxCDF	37.66		1.0004	1.0005	+0.2	8.92E+06	1.26	Y	1.19	55	5856.549	0.335
123789-HxCDF	38.59		1.0004	1.0004	0	8.64E+06	1.25	Y	1.16	56.7	5856.549	0.34
1234678-HpCDF	39.93	V	1.0002	1.0004	+0.5	1.18E+07	1.04	Y	1.37	63.4	4496.819	0.169
1234789-HpCDF	41.31		1.0003	1.0002	-0.2	8.79E+06	1.05	Y	1.31	57.3	4496.819	0.256
OCDF	43.68		1.0002	1.0002	0	1.23E+07	0.89	Y	1.07	116	4554.276	0.462

Name	Act RT		Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
ES 2378-TCDD	28.62		1.0233	1.0235	+0.3	1.21E+07	0.84	Y	1.05	80.5
ES 12378-PeCDD	33.92		1.2121	1.2131	+2.0	1.11E+07	1.49	Y	0.88	87.9
ES 123478-HxCDD	37.82		0.9921	0.9920	-0.2	1.05E+07	1.32	Y	0.97	87
ES 123678-HxCDD	37.94		0.9951	0.9951	0	1.12E+07	1.28	Y	0.94	95.7
ES 123789-HxCDD	38.22		1.0025	1.0025	0	1.14E+07	1.32	Y	1.09	84
ES 1234678-HpCDD	40.84		1.0709	1.0713	+1.0	1.12E+07	1.05	Y	0.91	98.7
ES OCDD	43.49		1.1403	1.1408	+1.3	1.41E+07	0.90	Y	0.62	91.4
ES 2378-TCDF	27.77		1.0506	1.0510	+0.7	1.93E+07	0.78	Y	1.06	72.9
ES 12378-PeCDF	32.49		1.2281	1.2294	+2.5	1.89E+07	1.57	Y	0.91	83.1
ES 23478-PeCDF	33.59		1.2698	1.2712	+2.8	1.78E+07	1.57	Y	0.88	80.6
ES 123478-HxCDF	36.81		0.9657	0.9657	0	1.40E+07	0.55	Y	1.20	94.1
ES 123678-HxCDF	36.96		0.9695	0.9694	-0.2	1.72E+07	0.54	Y	1.35	103
ES 234678-HxCDF	37.64		0.9874	0.9872	-0.5	1.37E+07	0.52	Y	1.24	88.6
ES 123789-HxCDF	38.57		1.0116	1.0118	+0.5	1.31E+07	0.57	Y	1.16	91.3
ES 1234678-HpCDF	39.91		1.0467	1.0469	+0.5	1.35E+07	0.49	Y	0.97	113
ES 1234789-HpCDF	41.30		1.0830	1.0834	+1.0	1.17E+07	0.47	Y	0.85	111
ES OCDF	43.67		1.1451	1.1455	+1.0	1.97E+07	0.88	Y	0.81	98.6

Lab ID: OPR2_18819_DF **Acq'd:** 20 Jan 2022 12:20 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 **UTP:** 24-Jan-2022 13:18:40 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 751-300-QNZ

Datafile: 220120C03 **Report:** 24 Jan 2022 13:22 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Rec. %
JS 1234-TCDD	27.97		-	-	-	1.44E+07	0.87	Y	-	-
JS 1234-TCDF	26.43		-	-	-	2.50E+07	0.82	Y	-	-
JS 123467-HxCDD	38.12		-	-	-	6.20E+06	1.30	Y	-	-
CS 37Cl-2378-TCDD	28.65		1.0241	1.0243	+0.3	5.55E+06	n/a	-	1.20	80.3
CS 12347-PeCDD	33.42		1.1943	1.1952	+1.8	1.04E+07	1.61	Y	0.75	96.3
CS 12346-PeCDF	31.96		1.2083	1.2094	+2.1	1.76E+07	1.56	Y	0.85	82.9
CS 123469-HxCDF	37.27		0.9778	0.9777	-0.2	1.53E+07	0.52	Y	1.12	111
CS 1234689-HpCDF	40.31		1.0571	1.0575	+1.0	1.34E+07	0.43	Y	0.89	122
~~SS 37Cl-2378-TCDD~~	~~28.65~~		~~1.0241~~	~~1.0243~~	~~+0.3~~	~~5.55E+06~~	~~n/a~~		~~1.15~~	~~100~~
~~SS 12347-PeCDD~~	~~33.42~~		~~1.1943~~	~~1.1952~~	~~+1.8~~	~~1.04E+07~~	~~1.61~~	~~Y~~	~~0.86~~	~~109~~
~~SS 12346-PeCDF~~	~~31.96~~		~~1.2083~~	~~1.2094~~	~~+2.1~~	~~1.76E+07~~	~~1.56~~	~~Y~~	~~0.94~~	~~99.5~~
~~SS 123469-HxCDF~~	~~37.27~~		~~0.9778~~	~~0.9777~~	~~-0.2~~	~~1.53E+07~~	~~0.52~~	~~Y~~	~~0.83~~	~~107~~
~~SS 1234689-HpCDF~~	~~40.31~~		~~1.0571~~	~~1.0575~~	~~+1.0~~	~~1.34E+07~~	~~0.43~~	~~Y~~	~~0.92~~	~~108~~

Totals	Conc	EMPC
Total TCDD	62.7	62.7
Total PeCDD	87.1	87.1
Total HxCDD	196	196
Total HpCDD	71.8	71.8
Total Tetra-Octa Dioxins	537	537
Total TCDF	76.3	76.3
Total PeCDF	230	230
Total HxCDF	396	396
Total HpCDF	121	121
Total Tetra-Octa Furans	940	940
Total Tetra-Octa Dioxins & Furans	1480	1480

* 37Cl correction has been applied to 2378-TCDD

	Original Values	Corrected Values
Ratio	0.829	0.83
Response	1.77E+06	1.77E+06

Lab ID: OPR2_18819_DF **Acq'd:** 20 Jan 2022 12:20 DTF **Wt/Vol:** 1 uL **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 **UTP:** 24-Jan-2022 13:18:40 MLS **J-level:** 0.25 pg/uL **Split:** 1 **Checkcode:** 751-300-QNZ

Datafile: 220120C03 **Report:** 24 Jan 2022 13:22 MS **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1368-TCDD	25.04		0.8755	0.8748	-1.1	2.84E+06	0.77	Y	1.18	19.9	4131.919	0.33
1379-TCDD	NotFnd		0.8876						1.18		4131.919	0.33
1369-TCDD	NotFnd		0.9023						1.18		4131.919	0.33
1469-TCDD	NotFnd		0.9291						1.18		4131.919	0.33
1247/1246/1248/1249-TCDD	NotFnd		0.9373						1.18		4131.919	0.33
1378-TCDD	NotFnd		0.9440						1.18		4131.919	0.33
1268-TCDD	NotFnd		0.9506						1.18		4131.919	0.33
1478-TCDD	NotFnd		0.9591						1.18		4131.919	0.33
1279-TCDD	NotFnd		0.9649						1.18		4131.919	0.33
1234/1269-TCDD	NotFnd		0.9771						1.18		4131.919	0.33
1236-TCDD	NotFnd		0.9820						1.18		4131.919	0.33
1237/1238-TCDD	NotFnd		0.9908						1.18		4131.919	0.33
1239-TCDD	28.49		0.9954	0.9952	-0.3	1.90E+06	0.80	Y	1.18	13.3	4131.919	0.33
2378-TCDD	**28.64**		**1.0008**	1.0007	**-0.2**	1.77E+06	0.83	Y	**1.18**	**12.3**	**4131.919**	**0.33**
1278-TCDD	NotFnd		1.0121						1.18		4131.919	0.33
1267-TCDD	NotFnd		1.0167						1.18		4131.919	0.33
1289-TCDD	29.60		1.0341	1.0343	+0.4	2.47E+06	0.78	Y	1.18	17.2	4131.919	0.33
12479/12468-PeCDD	31.45		0.9273	0.9271	-0.4	1.73E+06	1.60	Y	1.04	15	2666.107	0.204
12469-PeCDD	NotFnd		0.9430						1.04		2666.107	0.204
12368-PeCDD	NotFnd		0.9592						1.04		2666.107	0.204
12478-PeCDD	NotFnd		0.9647						1.04		2666.107	0.204
12379-PeCDD	NotFnd		0.9676						1.04		2666.107	0.204
12369/12467/12489-PeCDD	NotFnd		0.9752						1.04		2666.107	0.204
12346/12347-PeCDD	NotFnd		0.9860						1.04		2666.107	0.204
12378-PeCDD	33.95		**1.0006**	**1.0006**	**0**	**6.35E+06**	**1.58**	**Y**	**1.04**	**55.2**	**2666.107**	**0.204**
12367-PeCDD	NotFnd		1.0034						1.04		2666.107	0.204
12389-PeCDD	34.38		1.0134	1.0135	+0.2	1.94E+06	1.45	Y	1.04	16.8	2666.107	0.204
124679/124689-HxCDD	36.09		0.9545	0.9542	-0.6	2.21E+06	1.20	Y	1.10	18.3	3320.354	0.245
123468-HxCDD	NotFnd		0.9715						1.10		3320.354	0.245
123679/123689-HxCDD	NotFnd		0.9793						1.10		3320.354	0.245
123469-HxCDD	NotFnd		0.9829						1.10		3320.354	0.245
123478-HxCDD	37.84		**1.0004**	**1.0004**	**0**	**6.59E+06**	**1.28**	**Y**	1.09	**57.7**	**3320.354**	**0.245**
123678-HxCDD	37.95		**1.0034**	**1.0035**	**+0.2**	**7.85E+06**	**1.27**	**Y**	1.15	**61**	**3320.354**	**0.246**
123467-HxCDD	NotFnd		1.0082						1.10		3320.354	0.245
123789-HxCDD	38.24		**1.0109**	**1.0110**	**+0.2**	**6.97E+06**	**1.24**	**Y**	1.05	**58.5**	**3320.354**	**0.243**

Lab ID: OPR2_18819_DF | **Acq'd:** 20 Jan 2022 12:20 DTF | **Wt/Vol:** 1 uL | **ICAL:** HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 | **UTP:** 24-Jan-2022 13:18:40 MLS | **J-level:** 0.25 pg/uL | **Split:** 1 | **Checkcode:** 751-300-QNZ

Datafile: 220120C03 | **Report:** 24 Jan 2022 13:22 MS | **Stds (pg):** JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
1234679-HpCDD	40.17		0.9838	0.9837	-0.2	1.78E+06	1.03	Y	1.06	15.1	3097.87	0.213
1234678-HpCDD	**40.85**		**1.0003**	**1.0003**	**0**	**6.71E+06**	**1.03**	**Y**	**1.06**	**56.7**	**3097.87**	**0.213**
OCDD	**43.50**		**1.0002**	**1.0003**	**+0.3**	**9.54E+06**	**0.92**	**Y**	**1.13**	**120**	**4377.598**	**0.608**
OCDD-a	43.50		1.0002	1.0001	-0.3	6.00E+05	2.32	Y	0.07	118	3306.42	7.18
1368-TCDF	22.97		0.8282	0.8270	-1.7	4.24E+06	0.82	Y	1.08	20.4	5324.253	0.27
1468-TCDF	NotFnd		0.8485						1.08		5324.253	0.27
2468-TCDF	24.16		0.8709	0.8698	-1.6	1.04E+06	0.86	Y	1.08	4.98	5324.253	0.27
1346/1246-TCDF	NotFnd		0.8829						1.08		5324.253	0.27
1347/1378/1247-TCDF	NotFnd		0.8884						1.08		5324.253	0.27
1348-TCDF	NotFnd		0.8980						1.08		5324.253	0.27
1248/1367/1379-TCDF	NotFnd		0.9026						1.08		5324.253	0.27
1268-TCDF	NotFnd		0.9158						1.08		5324.253	0.27
1467-TCDF	NotFnd		0.9206						1.08		5324.253	0.27
1478-TCDF	NotFnd		0.9266						1.08		5324.253	0.27
1369/1237-TCDF	NotFnd		0.9397						1.08		5324.253	0.27
2467-TCDF	NotFnd		0.9440						1.08		5324.253	0.27
2368-TCDF	NotFnd		0.9497						1.08		5324.253	0.27
1238/1234/1678/1469/1236-TCDF	NotFnd		0.9528						1.08		5324.253	0.27
1278-TCDF	NotFnd		0.9690						1.08		5324.253	0.27
1349-TCDF	NotFnd		0.9730						1.08		5324.253	0.27
1267-TCDF	NotFnd		0.9787						1.08		5324.253	0.27
2346/1249-TCDF	NotFnd		0.9850						1.08		5324.253	0.27
2347/1279-TCDF	NotFnd		0.9929						1.08		5324.253	0.27
2348-TCDF	27.69		0.9970	0.9968	-0.3	4.01E+06	0.79	Y	1.08	19.3	5324.253	0.27
2378-TCDF	**27.79**		**1.0008**	**1.0007**	**-0.2**	**2.51E+06**	**0.80**	**Y**	**1.08**	**12**	**5324.253**	**0.27**
2367/3467-TCDF	NotFnd		1.0136						1.08		5324.253	0.27
1269-TCDF	NotFnd		1.0221						1.08		5324.253	0.27
1239-TCDF	NotFnd		1.0319						1.08		5324.253	0.27
1289-TCDF	29.78		1.0740	1.0721	-3.4	4.08E+06	0.79	Y	1.08	19.6	5324.253	0.27
13468/12468-PeCDF	29.69		0.9145	0.9137	-1.4	1.92E+07	1.63	Y	1.02	102	3756.146	0.182
13678/13467/12467-PeCDF	NotFnd		0.9619						1.02		6761.989	0.327
12368/13478/12478-PeCDF	NotFnd		0.9665						1.02		6761.989	0.327
14678-PeCDF	NotFnd		0.9695						1.02		6761.989	0.327
13479-PeCDF	NotFnd		0.9724						1.02		6761.989	0.327
13469/12479-PeCDF	NotFnd		0.9801						1.02		6761.989	0.327
12346-PeCDF	NotFnd		0.9842						1.02		6761.989	0.327

Lab ID: OPR2_18819_DF | Acq'd: 20 Jan 2022 12:20 DTF | Wt/Vol: 1 uL | ICAL: HRMS3_DF_10272021 10NOV2021

Client ID: 0_18819_OPR002 | UTP: 24-Jan-2022 13:18:40 MLS | J-level: 0.25 pg/uL | Split: 1 | Checkcode: 751-300-QNZ

Datafile: 220120C03 | Report: 24 Jan 2022 13:22 MS | Stds (pg): JS: 100 ES: 100 CS/SS: 100, 40 (37Cl)

Name	Act RT	QC	Pred. RRT	Act. RRT	ΔSecs	Response	Ra	OK	RRF	Conc.	Noise	DL
23468/12469-PeCDF	NotFnd		0.9868						1.02		6761.989	0.327
12347-PeCDF	NotFnd		0.9895						1.02		6761.989	0.327
12348-PeCDF	NotFnd		0.9941						1.02		6761.989	0.327
12378-PeCDF	**32.51**		**1.0005**	**1.0005**	**0**	**1.06E+07**	**1.54**	**Y**	**1.02**	**54.5**	**6761.989**	**0.322**
12678/12367-PeCDF	NotFnd		1.0090						1.02		6761.989	0.327
12379-PeCDF	NotFnd		1.0142						1.02		6761.989	0.327
12679-PeCDF	NotFnd		0.9931						1.02		6761.989	0.327
23467/12369-PeCDF	NotFnd		0.9966						1.02		6761.989	0.327
23478-PeCDF	**33.61**		**1.0005**	**1.0005**	**0**	**1.07E+07**	**1.57**	**Y**	**1.02**	**59**	**6761.989**	**0.333**
23478/12489-PeCDF	NotFnd		0.0000						1.02			
12489-PeCDF	NotFnd		1.0029						1.02		6761.989	0.327
12349-PeCDF	NotFnd		1.0101						1.02		6761.989	0.327
12389-PeCDF	34.68		1.0322	1.0324	+0.4	2.62E+06	1.55	Y	1.02	14	6761.989	0.327
123468-HxCDF	35.44		0.9627	0.9628	+0.2	2.86E+07	1.25	Y	1.19	165	5856.549	0.294
124678/134678-HxCDF	NotFnd		0.9684						1.19		5856.549	0.294
134679-HxCDF	NotFnd		0.9747						1.19		5856.549	0.294
124679-HxCDF	NotFnd		0.9802						1.19		5856.549	0.294
124689-HxCDF	NotFnd		0.9858						1.19		5856.549	0.294
123467-HxCDF	NotFnd		0.9972						1.19		5856.549	0.294
123478-HxCDF	**36.83**		**1.0004**	**1.0004**	**0**	**1.05E+07**	**1.27**	**Y**	**1.27**	**58.9**	**5856.549**	**0.279**
123678-HxCDF	**36.97**		**1.0004**	**1.0004**	**0**	**1.20E+07**	**1.27**	**Y**	**1.15**	**60.3**	**5856.549**	**0.242**
123479-HxCDF	NotFnd		1.0051						1.19		5856.549	0.294
123469-HxCDF	NotFnd		1.0091						1.19		5856.549	0.294
123679-HxCDF	NotFnd		0.9943						1.19		5856.549	0.294
234678-HxCDF	**37.66**		**1.0004**	**1.0005**	**+0.2**	**8.92E+06**	**1.26**	**Y**	**1.19**	**55**	**5856.549**	**0.335**
234678/123689-HxCDF	NotFnd		0.0000						1.19			
123689-HxCDF	NotFnd		1.0054						1.19		5856.549	0.294
123789-HxCDF	**38.59**		**1.0004**	**1.0004**	**0**	**8.64E+06**	**1.25**	**Y**	**1.16**	**56.7**	**5856.549**	**0.34**
123789/123489-HxCDF	NotFnd		0.0000						1.16			
123489-HxCDF	NotFnd		1.0007						1.19		5856.549	0.294
1234678-HpCDF	**39.93**		**1.0002**	**1.0004**	**+0.5**	**1.18E+07**	**1.04**	**Y**	**1.37**	**63.4**	**4496.819**	**0.169**
1234679-HpCDF	NotFnd		1.0067						1.34		4496.819	0.209
1234689-HpCDF	NotFnd		1.0101						1.34		4496.819	0.209
1234789-HpCDF	**41.31**		**1.0003**	**1.0002**	**-0.2**	**8.79E+06**	**1.05**	**Y**	**1.31**	**57.3**	**4496.819**	**0.256**
OCDF	**43.68**		**1.0002**	**1.0002**	**0**	**1.23E+07**	**0.89**	**Y**	**1.07**	**116**	**4554.276**	**0.462**
OCDF-a	43.68		1.0002	1.0001	-0.3	7.47E+05	2.33	Y	0.07	114	3100.175	5.08

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C03	Analysis Date:	20-JAN-2022 12:20:14
Lab ID:	OPR2_18819_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	12.3	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	55.2	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	57.7	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	61	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	58.5	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	56.7	35	-	70	Y
OCDD	100	120	78	-	144	Y
2,3,7,8-TCDF	10	12	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	54.5	40	-	67	Y
2,3,4,7,8-PeCDF	50	59	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	58.9	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	60.3	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	55	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	56.7	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	63.4	41	-	61	N
1,2,3,4,7,8,9-HpCDF	50	57.3	39	-	69	Y
OCDF	100	116	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 24 Jan 2022 13:22 Analyst: MS

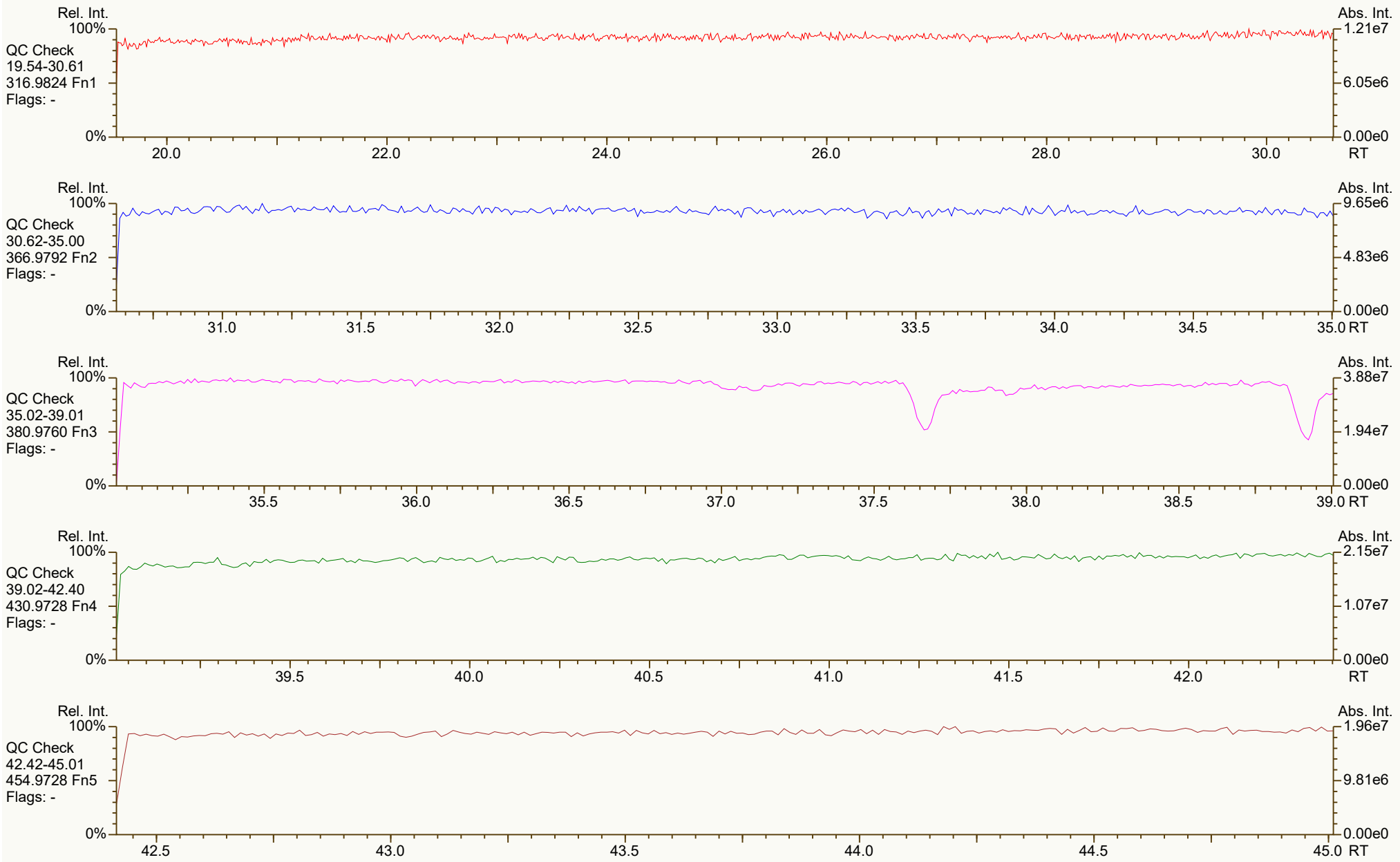
METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10272021 10NOV2021		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	220120C03	Analysis Date:	20-JAN-2022 12:20:14
Lab ID:	OPR2_18819_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	80.5	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	87.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	87	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	95.7	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	84	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	98.7	26	-	166	Y
13C-OCDD	200	183	26	-	397	Y
13C-2,3,7,8-TCDF	100	72.9	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	83.1	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	80.6	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	94.1	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	103	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	88.6	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	91.3	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	113	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	111	20	-	186	Y
13C-OCDF	200	197	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	32.1	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 24 Jan 2022 13:22 Analyst: MS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19.54-30.61
316.9824 Fn1
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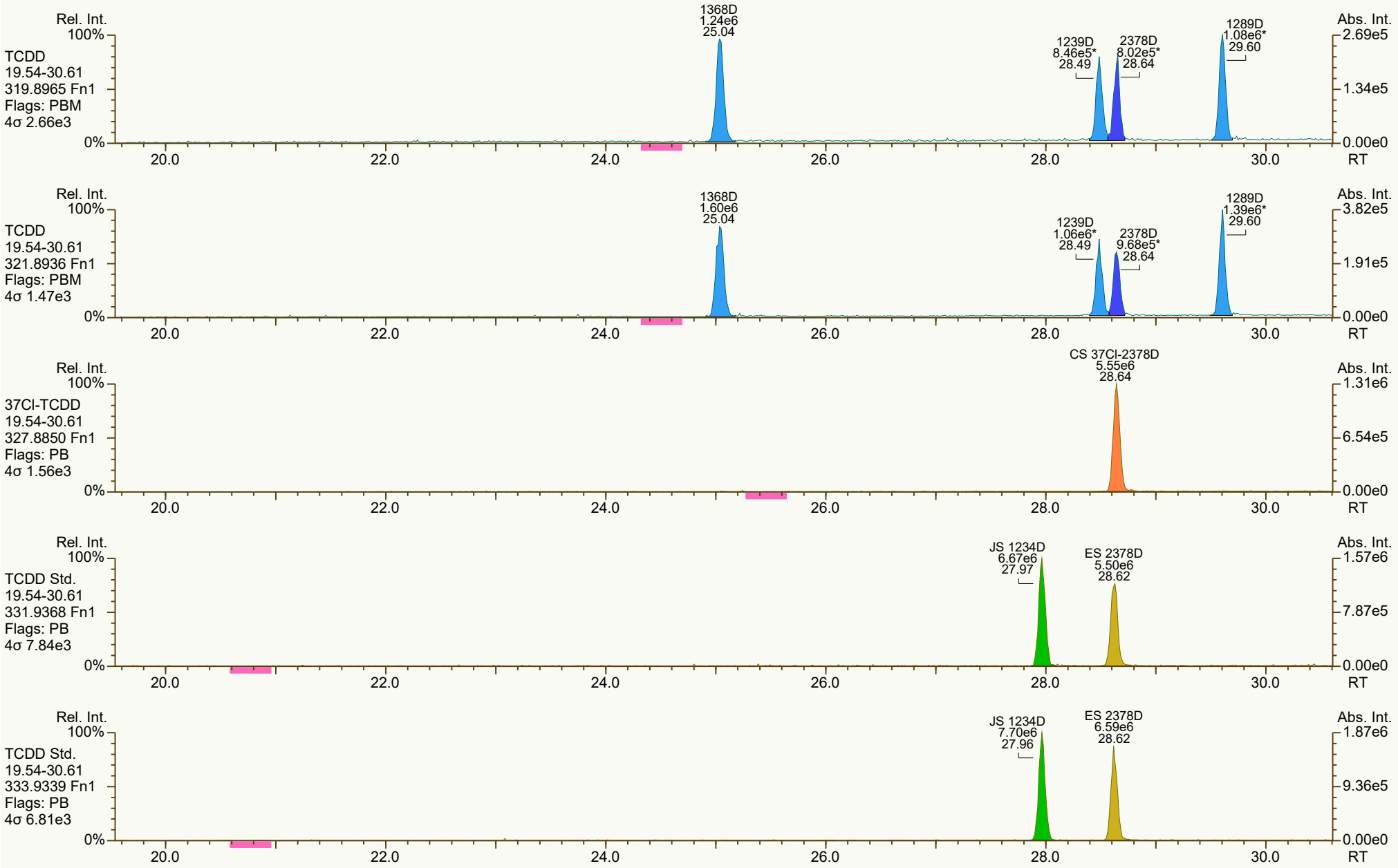
1.21e7
6.05e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
QC Check
30.62-35.00
366.9792 Fn2
Flags: -
0%
Abs. Int.
9.65e6
4.83e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
0%
Abs. Int.
3.88e7
1.94e7
0.00e0
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
0%
Abs. Int.
2.15e7
1.07e7
0.00e0
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
0%
Abs. Int.
1.96e7
9.81e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT


Rel. Int.
100%
TCDD
19.54-30.61
319.8965 Fn1
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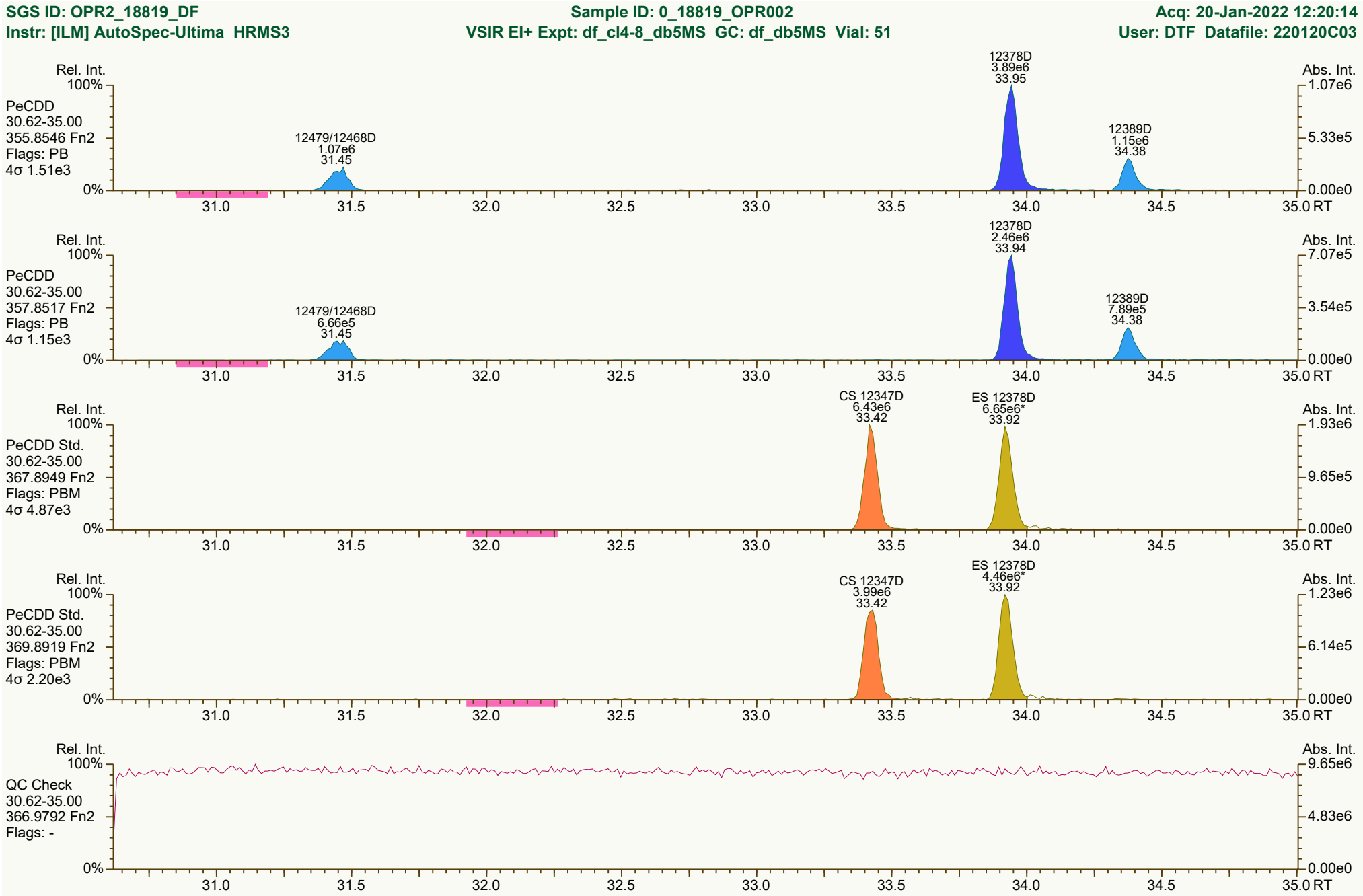
1368D
1.24e6
25.04
1239D
8.46e5*
28.49
2378D
8.02e5*
28.64
1289D
1.08e6*
29.60
Abs. Int.
2.69e5
1.34e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD
19.54-30.61
321.8936 Fn1
Flags: PBM
4σ 1.47e3
1368D
1.60e6
25.04
1239D
1.06e6*
28.49
2378D
9.68e5*
28.64
1289D
1.39e6*
29.60
Abs. Int.
3.82e5
1.91e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
37Cl-TCDD
19.54-30.61
327.8850 Fn1
Flags: PB
4σ 1.56e3
CS 37Cl-2378D
5.55e6
28.64
Abs. Int.
1.31e6
6.54e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
331.9368 Fn1
Flags: PB
4σ 7.84e3
JS 1234D
6.67e6
27.97
ES 2378D
5.50e6
28.62
Abs. Int.
1.57e6
7.87e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDD Std.
19.54-30.61
333.9339 Fn1
Flags: PB
4σ 6.81e3
JS 1234D
7.70e6
27.96
ES 2378D
6.59e6
28.62
Abs. Int.
1.87e6
9.36e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT

SGS ID: OPR2_18819_DF
Instr: [ILM] AutoSpec-Ultima HRMS3

Sample ID: 0_18819_OPR002
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 51

Acq: 20-Jan-2022 12:20:14
User: DTF Datafile: 220120C03



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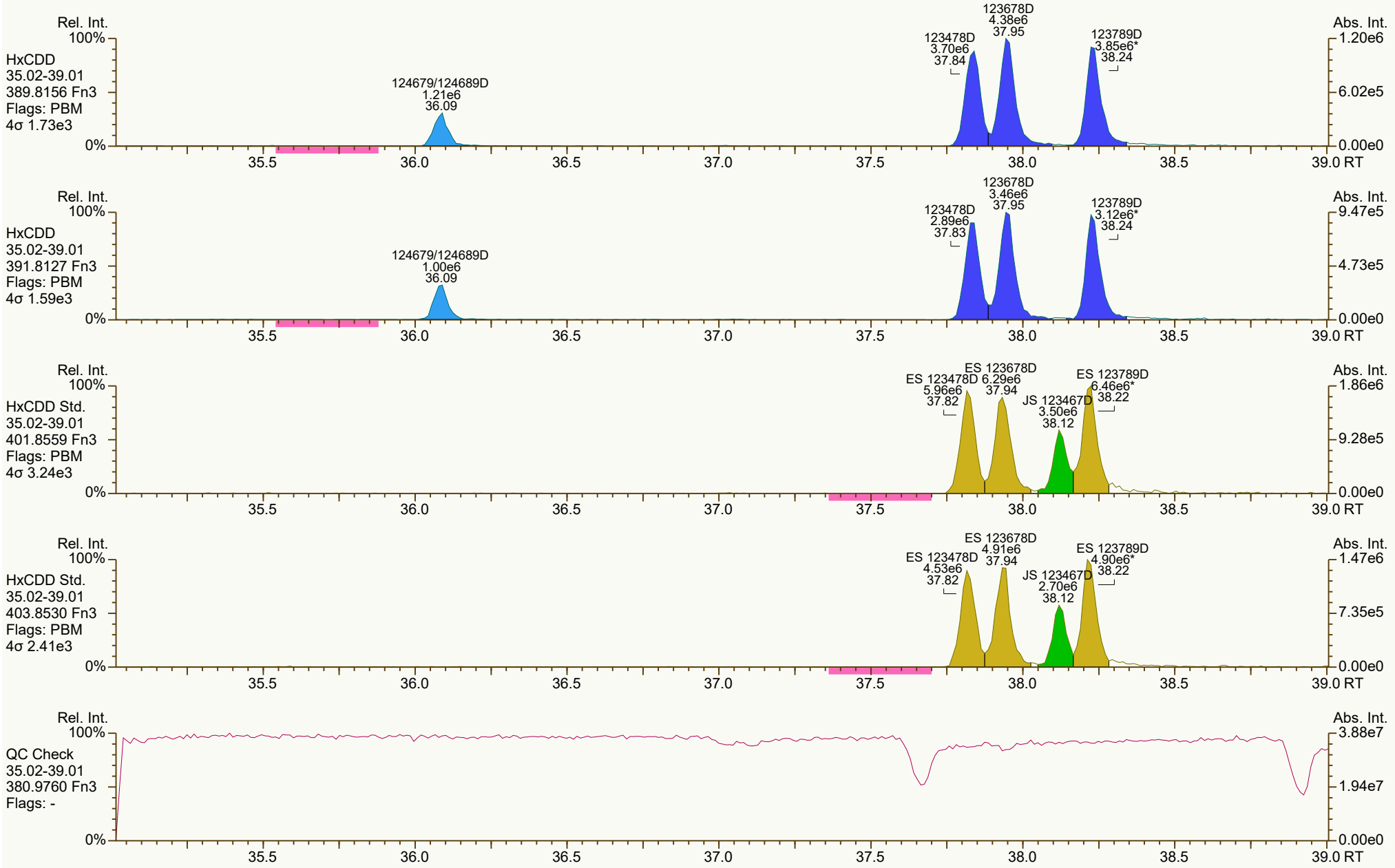
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 1800, 3700 scc: 751-300

Peak annotation: Areas, Centroids
PKD: 21-Jan-2022 10:04 Printed: 24-Jan-2022 13:27 Page 3 of 12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Abs. Int.
HxCDD
35.02-39.01
389.8156 Fn3
Flags: PBM
4σ 1.73e3
124679/124689D
1.21e6
36.09
123478D
3.70e6
37.84
123678D
4.38e6
37.95
123789D
3.85e6*
38.24
1.20e6
6.02e5
0.00e0
HxCDD
35.02-39.01
391.8127 Fn3
Flags: PBM
4σ 1.59e3
124679/124689D
1.00e6
36.09
123478D
2.89e6
37.83
123678D
3.46e6
37.95
123789D
3.12e6*
38.24
9.47e5
4.73e5
0.00e0
HxCDD Std.
35.02-39.01
401.8559 Fn3
Flags: PBM
4σ 3.24e3
ES 123478D
5.96e6
37.82
ES 123678D
6.29e6
37.94
JS 123467D
3.50e6
38.12
ES 123789D
6.46e6*
38.22
1.86e6
9.28e5
0.00e0
HxCDD Std.
35.02-39.01
403.8530 Fn3
Flags: PBM
4σ 2.41e3
ES 123478D
4.53e6
37.82
ES 123678D
4.91e6
37.94
JS 123467D
2.70e6
38.12
ES 123789D
4.90e6*
38.22
1.47e6
7.35e5
0.00e0
QC Check
35.02-39.01
380.9760 Fn3
Flags: -
3.88e7
1.94e7
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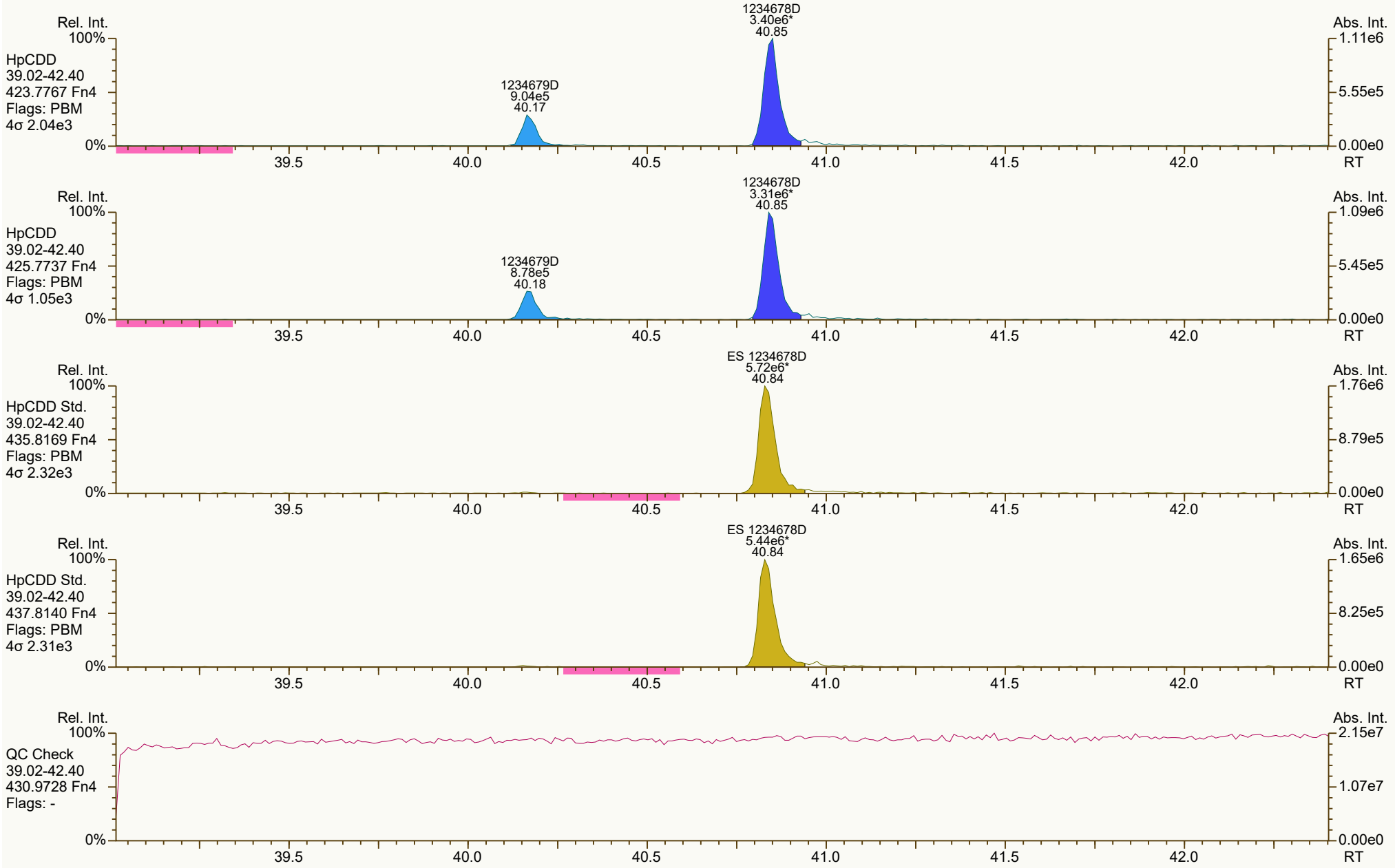
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT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100%
HpCDD
39.02-42.40
423.7767 Fn4
Flags: PBM
4σ 2.04e3
1234678D
3.40e6*
40.85
1234679D
9.04e5
40.17
Abs. Int.
1.11e6
5.55e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD
39.02-42.40
425.7737 Fn4
Flags: PBM
4σ 1.05e3
1234678D
3.31e6*
40.85
1234679D
8.78e5
40.18
Abs. Int.
1.09e6
5.45e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
435.8169 Fn4
Flags: PBM
4σ 2.32e3
ES 1234678D
5.72e6*
40.84
Abs. Int.
1.76e6
8.79e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
HpCDD Std.
39.02-42.40
437.8140 Fn4
Flags: PBM
4σ 2.31e3
ES 1234678D
5.44e6*
40.84
Abs. Int.
1.65e6
8.25e5
0.00e0
0%
39.5
40.0
40.5
41.0
41.5
42.0
RT
Rel. Int.
100%
QC Check
39.02-42.40
430.9728 Fn4
Flags: -
Abs. Int.
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1.07e7
0.00e0
0%
39.5
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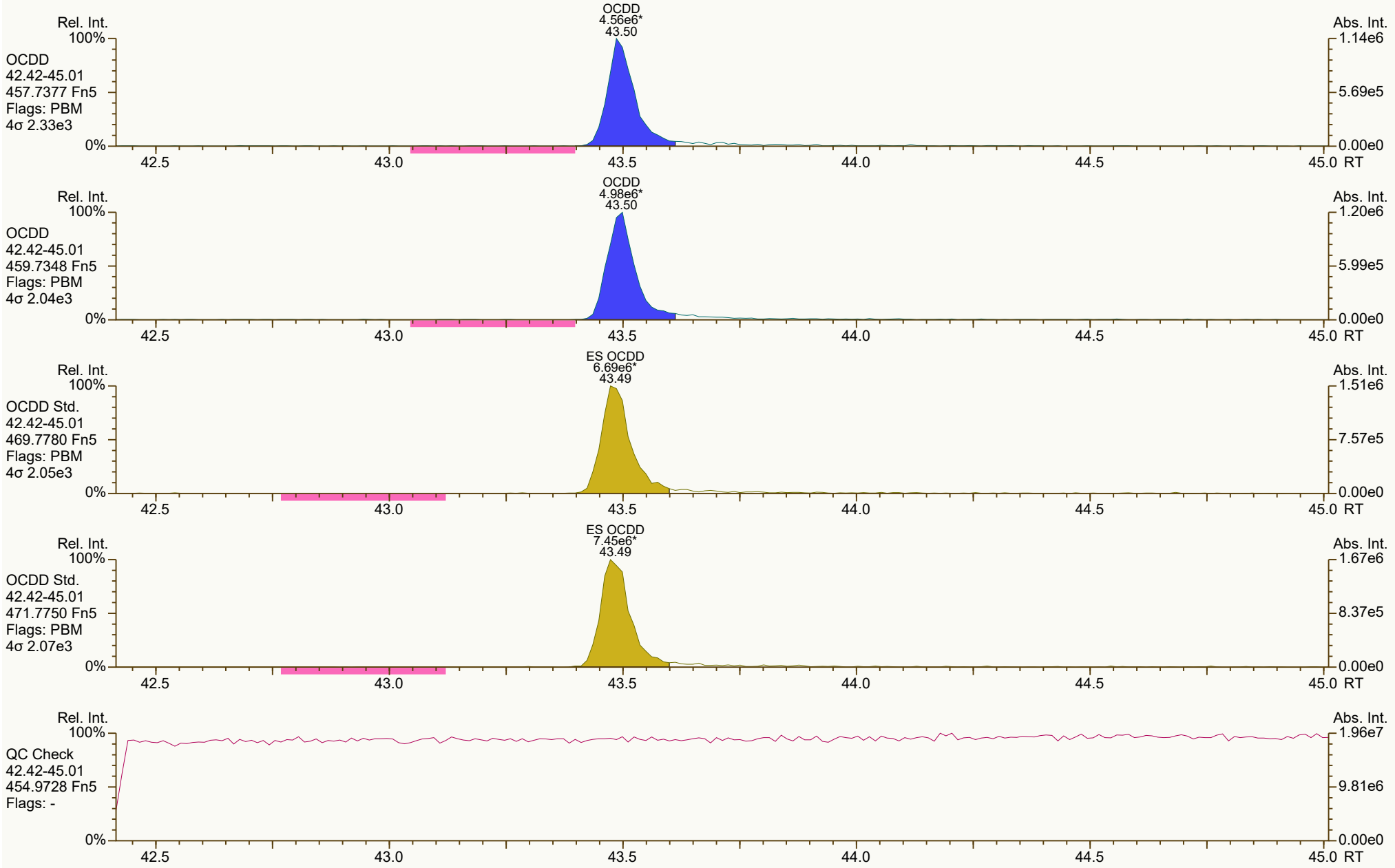
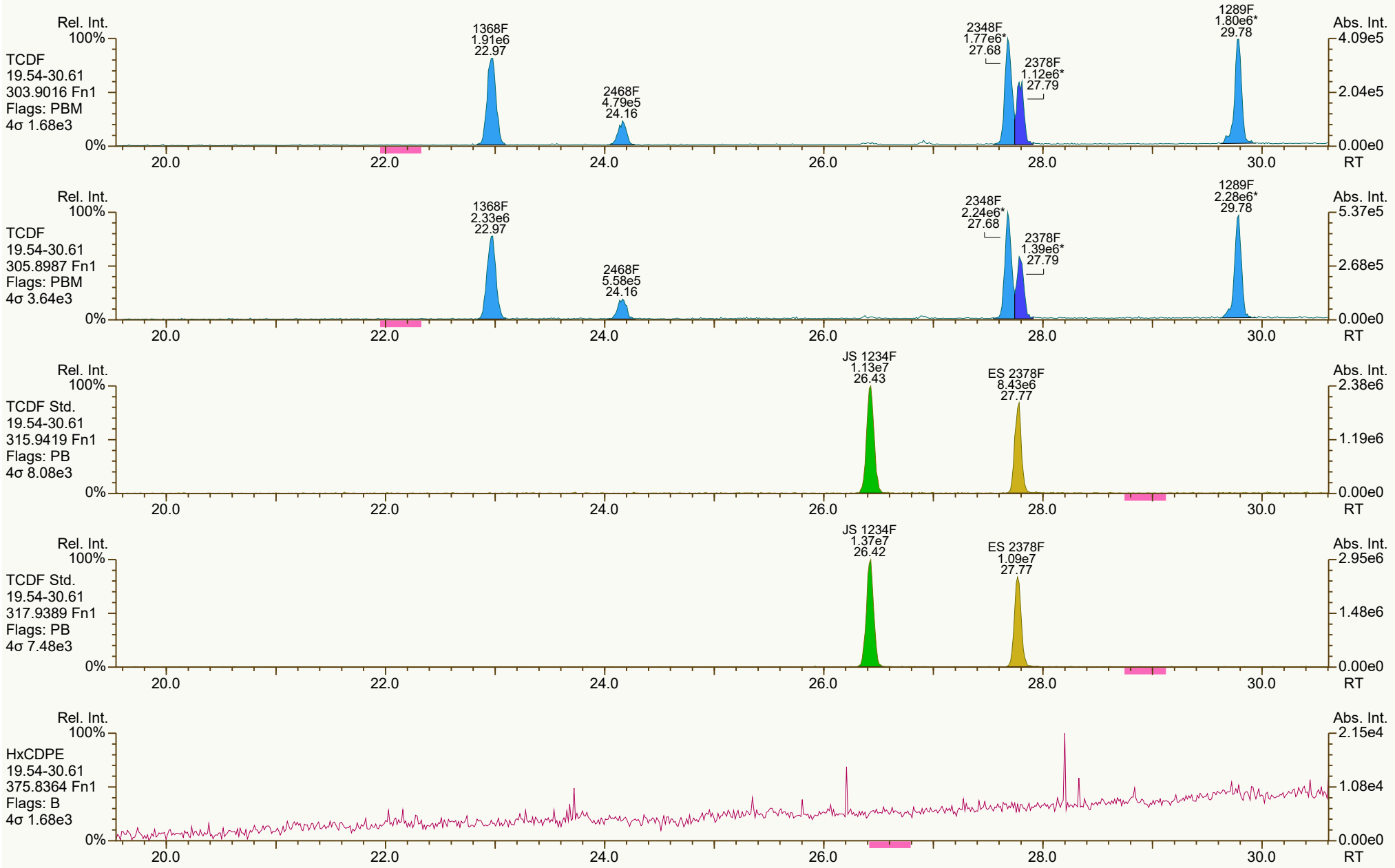
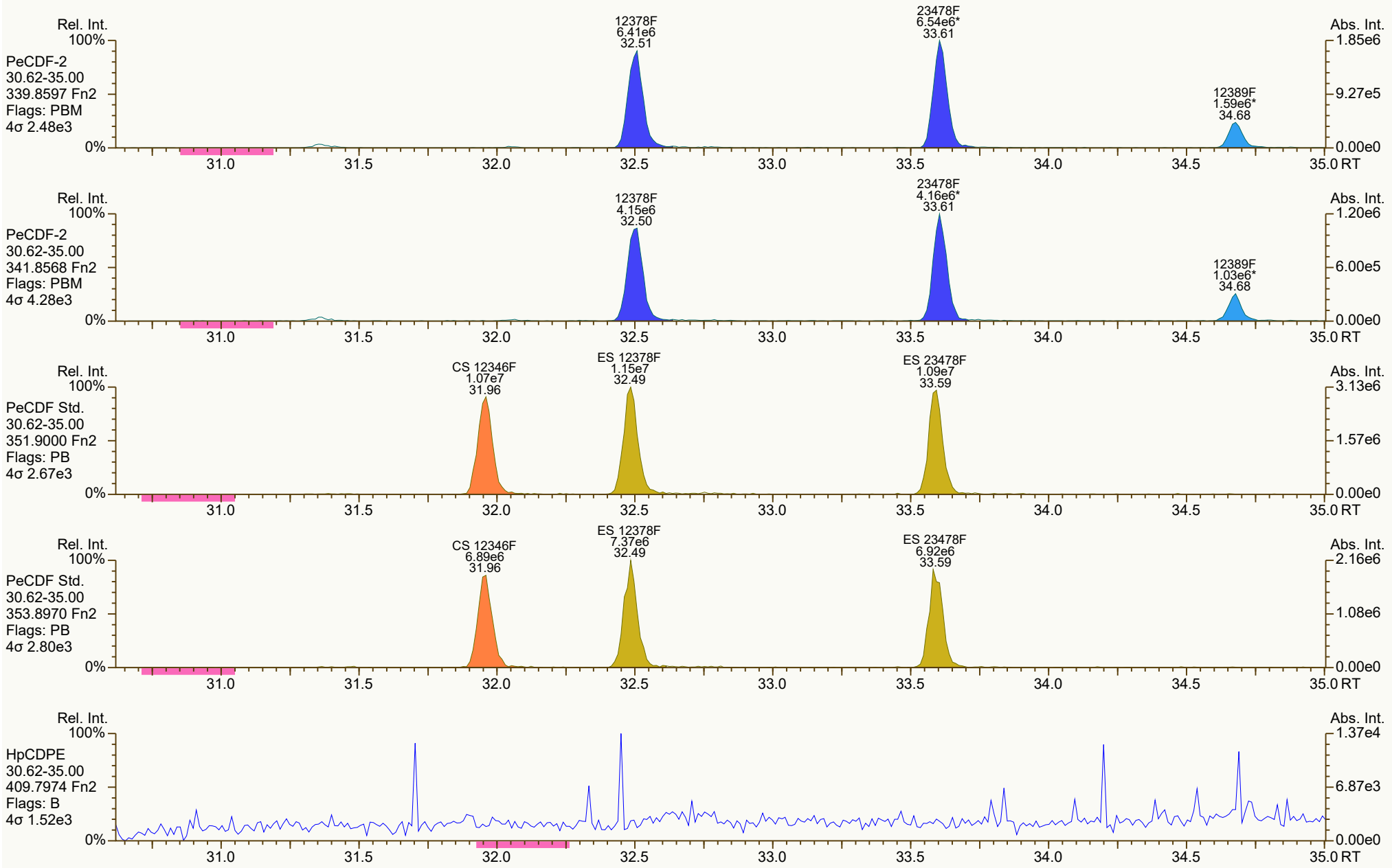
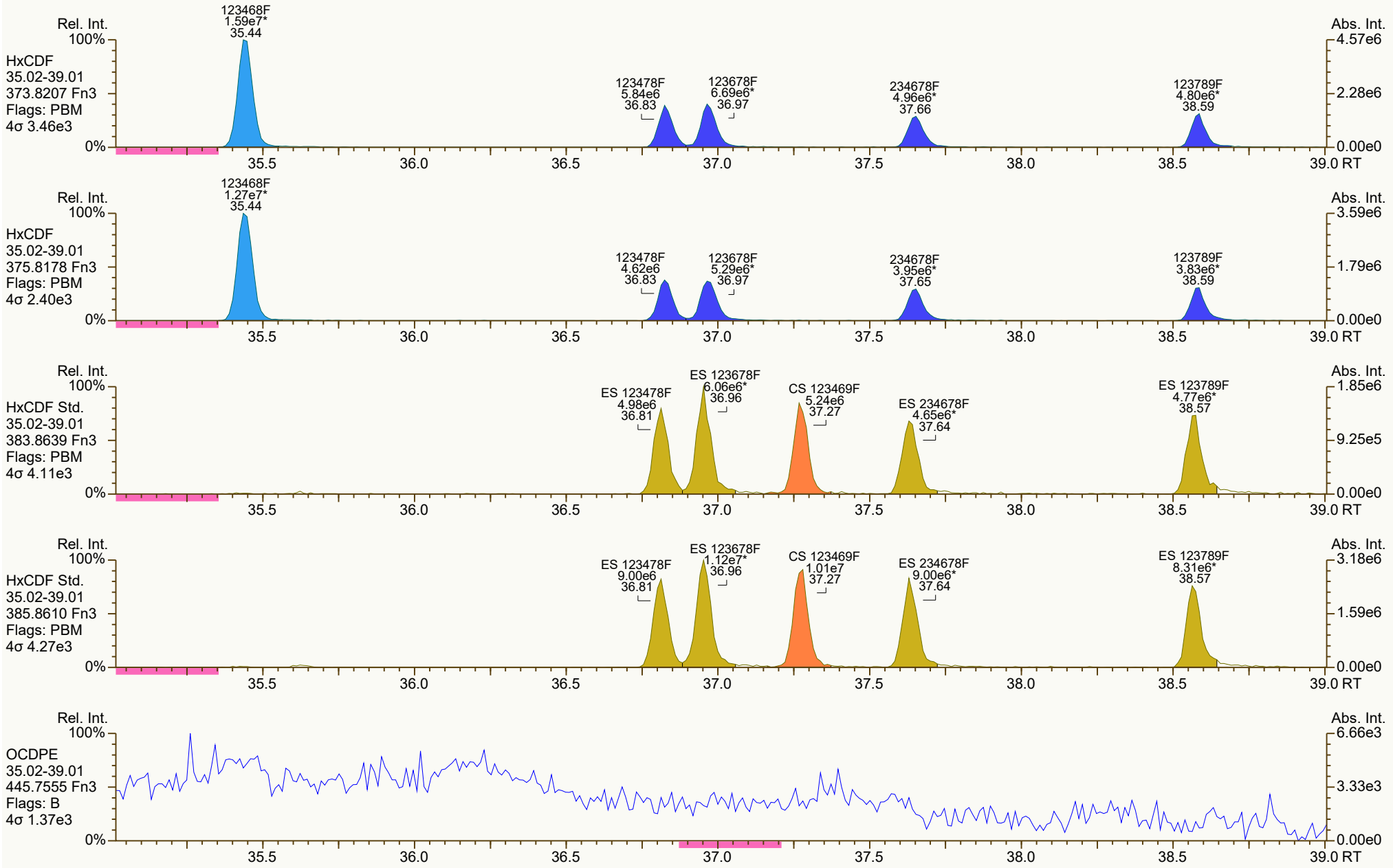
40.5
41.0
41.5
42.0
RT

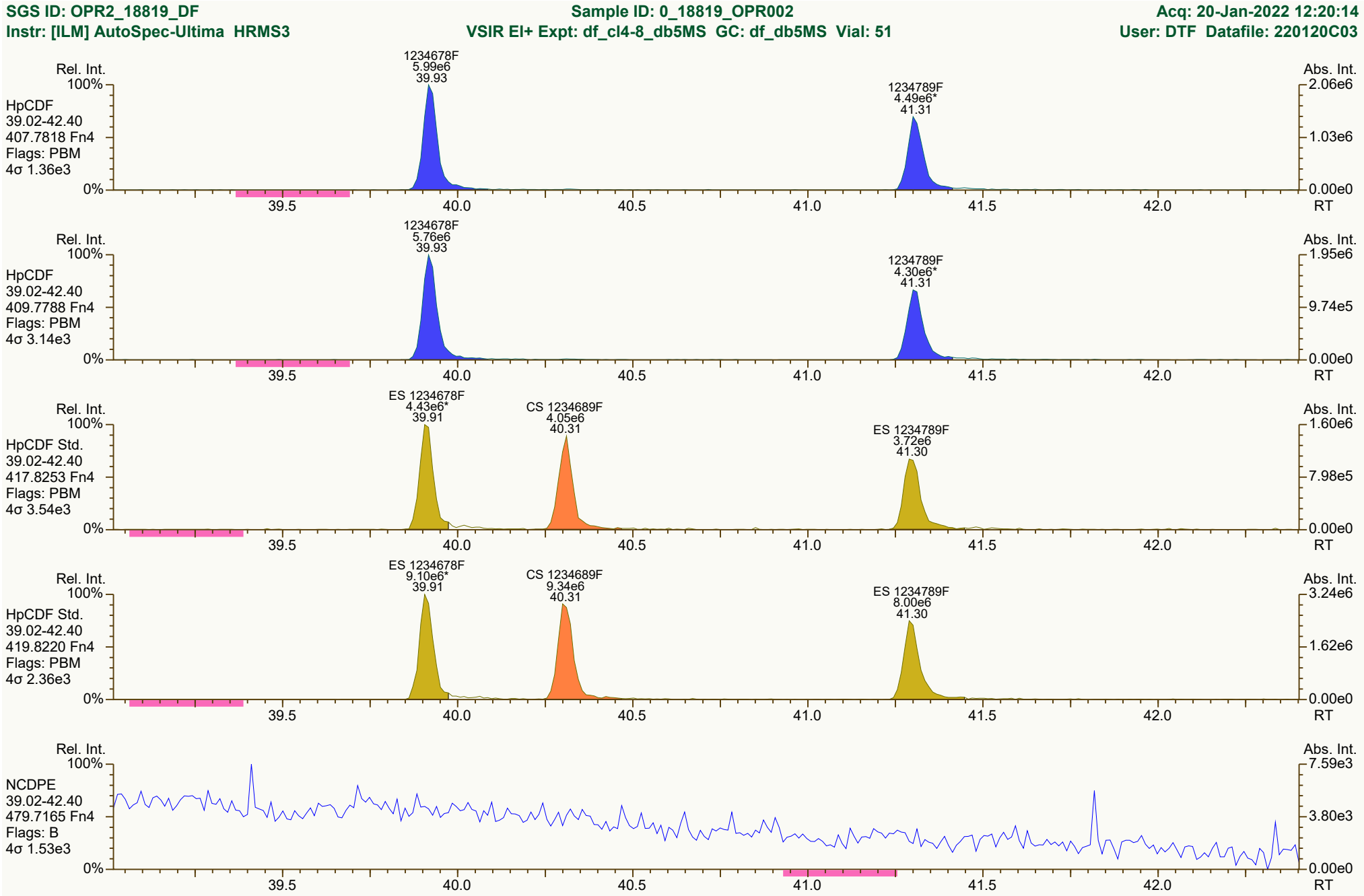

OCDD
4.56e6*
43.50
Rel. Int.
100%
OCDD
42.42-45.01
457.7377 Fn5
Flags: PBM
4σ 2.33e3
0%
Abs. Int.
1.14e6
5.69e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDD
4.98e6*
43.50
OCDD
42.42-45.01
459.7348 Fn5
Flags: PBM
4σ 2.04e3
1.20e6
5.99e5
ES OCDD
6.69e6*
43.49
OCDD Std.
42.42-45.01
469.7780 Fn5
Flags: PBM
4σ 2.05e3
1.51e6
7.57e5
ES OCDD
7.45e6*
43.49
OCDD Std.
42.42-45.01
471.7750 Fn5
Flags: PBM
4σ 2.07e3
1.67e6
8.37e5
QC Check
42.42-45.01
454.9728 Fn5
Flags: -
1.96e7
9.81e6

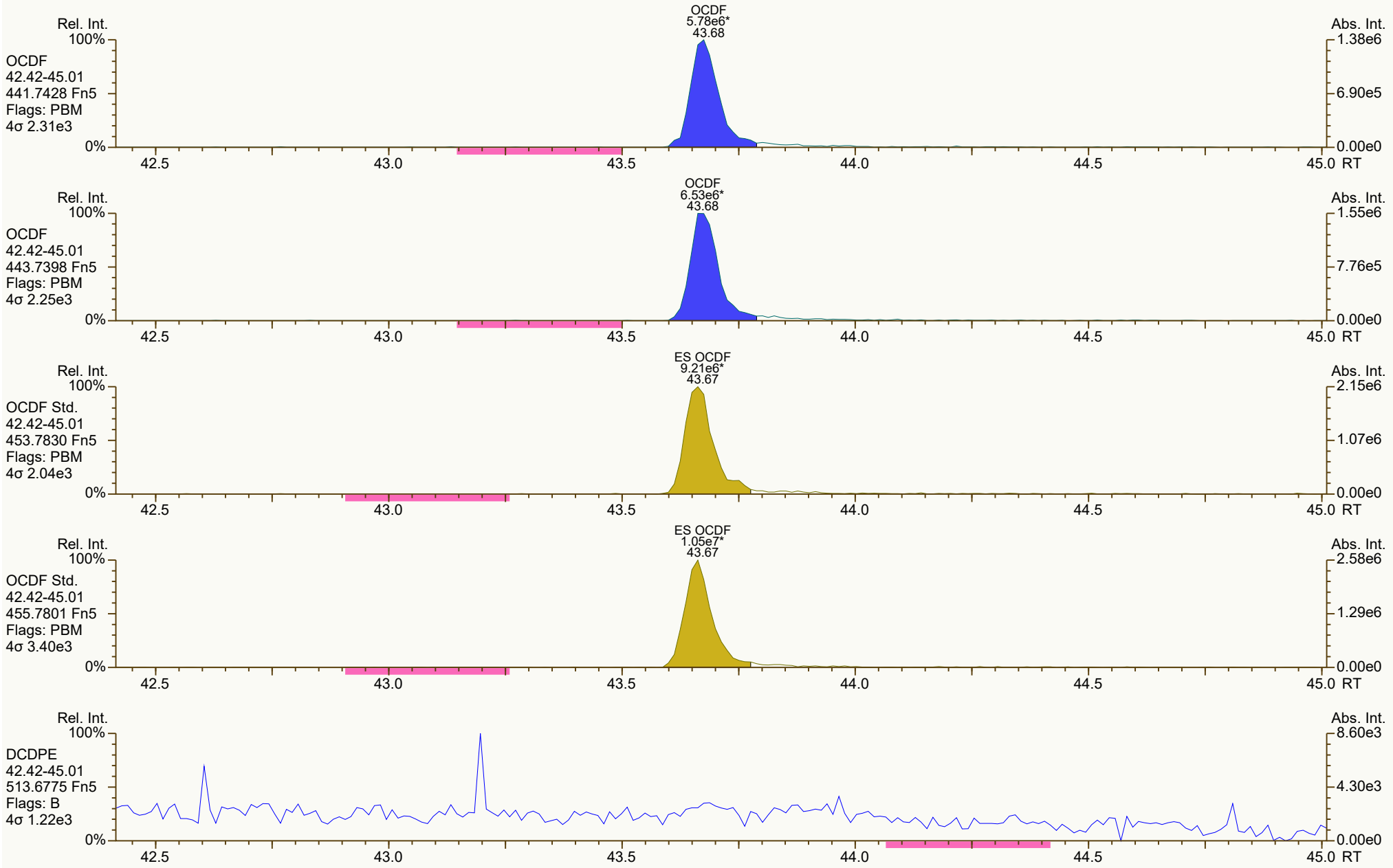

Rel. Int.
100%
TCDF
19.54-30.61
303.9016 Fn1
Flags: PBM
4σ 1.68e3
1368F
1.91e6
22.97
2468F
4.79e5
24.16
2348F
1.77e6*
27.68
2378F
1.12e6*
27.79
1289F
1.80e6*
29.78
Abs. Int.
4.09e5
2.04e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF
19.54-30.61
305.8987 Fn1
Flags: PBM
4σ 3.64e3
1368F
2.33e6
22.97
2468F
5.58e5
24.16
2348F
2.24e6*
27.68
2378F
1.39e6*
27.79
1289F
2.28e6*
29.78
Abs. Int.
5.37e5
2.68e5
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
315.9419 Fn1
Flags: PB
4σ 8.08e3
JS 1234F
1.13e7
26.43
ES 2378F
8.43e6
27.77
Abs. Int.
2.38e6
1.19e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
TCDF Std.
19.54-30.61
317.9389 Fn1
Flags: PB
4σ 7.48e3
JS 1234F
1.37e7
26.42
ES 2378F
1.09e7
27.77
Abs. Int.
2.95e6
1.48e6
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
HxCDPE
19.54-30.61
375.8364 Fn1
Flags: B
4σ 1.68e3
Abs. Int.
2.15e4
1.08e4
0.00e0
0%
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
0%
PeCDF-1
19.54-30.61
339.8597 Fn1
Flags: PB
4σ 1.76e3
13468/12468F
1.19e7
29.68
Abs. Int.
2.93e6
1.46e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
PeCDF-1
19.54-30.61
341.8568 Fn1
Flags: PB
4σ 1.99e3
13468/12468F
7.31e6
29.69
Abs. Int.
1.68e6
8.40e5
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT
Rel. Int.
100%
0%
QC Check
19.54-30.61
316.9824 Fn1
Flags: -
Abs. Int.
1.21e7
6.05e6
0.00e0
20.0
22.0
24.0
26.0
28.0
30.0
RT


Rel. Int.
100%
PeCDF-2
30.62-35.00
339.8597 Fn2
Flags: PBM
4σ 2.48e3
0%
12378F
6.41e6
32.51
23478F
6.54e6*
33.61
12389F
1.59e6*
34.68
Abs. Int.
1.85e6
9.27e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF-2
30.62-35.00
341.8568 Fn2
Flags: PBM
4σ 4.28e3
0%
12378F
4.15e6
32.50
23478F
4.16e6*
33.61
12389F
1.03e6*
34.68
Abs. Int.
1.20e6
6.00e5
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
351.9000 Fn2
Flags: PB
4σ 2.67e3
0%
CS 12346F
1.07e7
31.96
ES 12378F
1.15e7
32.49
ES 23478F
1.09e7
33.59
Abs. Int.
3.13e6
1.57e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
PeCDF Std.
30.62-35.00
353.8970 Fn2
Flags: PB
4σ 2.80e3
0%
CS 12346F
6.89e6
31.96
ES 12378F
7.37e6
32.49
ES 23478F
6.92e6
33.59
Abs. Int.
2.16e6
1.08e6
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT
Rel. Int.
100%
HpCDPE
30.62-35.00
409.7974 Fn2
Flags: B
4σ 1.52e3
0%
Abs. Int.
1.37e4
6.87e3
0.00e0
31.0
31.5
32.0
32.5
33.0
33.5
34.0
34.5
35.0 RT


Rel. Int.
Abs. Int.
HxCDF
35.02-39.01
373.8207 Fn3
Flags: PBM
4σ 3.46e3
123468F 1.59e7* 35.44
123478F 5.84e6 36.83
123678F 6.69e6* 36.97
234678F 4.96e6* 37.66
123789F 4.80e6* 38.59
HxCDF
35.02-39.01
375.8178 Fn3
Flags: PBM
4σ 2.40e3
123468F 1.27e7* 35.44
123478F 4.62e6 36.83
123678F 5.29e6* 36.97
234678F 3.95e6* 37.65
123789F 3.83e6* 38.59
HxCDF Std.
35.02-39.01
383.8639 Fn3
Flags: PBM
4σ 4.11e3
ES 123478F 4.98e6 36.81
ES 123678F 6.06e6* 36.96
CS 123469F 5.24e6 37.27
ES 234678F 4.65e6* 37.64
ES 123789F 4.77e6* 38.57
HxCDF Std.
35.02-39.01
385.8610 Fn3
Flags: PBM
4σ 4.27e3
ES 123478F 9.00e6 36.81
ES 123678F 1.12e7* 36.96
CS 123469F 1.01e7 37.27
ES 234678F 9.00e6* 37.64
ES 123789F 8.31e6* 38.57
OCDPE
35.02-39.01
445.7555 Fn3
Flags: B
4σ 1.37e3
100%
0%
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0 RT


SGS ID: OPR2_18819_DF
Sample ID: 0_18819_OPR002
Acq: 20-Jan-2022 12:20:14
Instr: [ILM] AutoSpec-Ultima HRMS3
VSIR EI+ Expt: df_cl4-8_db5MS GC: df_db5MS Vial: 51
User: DTF Datafile: 220120C03
Rel. Int.
Abs. Int.
HpCDF
39.02-42.40
407.7818 Fn4
Flags: PBM
4σ 1.36e3
1234678F
5.99e6
39.93
1234789F
4.49e6*
41.31
HpCDF
39.02-42.40
409.7788 Fn4
Flags: PBM
4σ 3.14e3
1234678F
5.76e6
39.93
1234789F
4.30e6*
41.31
HpCDF Std.
39.02-42.40
417.8253 Fn4
Flags: PBM
4σ 3.54e3
ES 1234678F
4.43e6*
39.91
CS 1234689F
4.05e6
40.31
ES 1234789F
3.72e6
41.30
HpCDF Std.
39.02-42.40
419.8220 Fn4
Flags: PBM
4σ 2.36e3
ES 1234678F
9.10e6*
39.91
CS 1234689F
9.34e6
40.31
ES 1234789F
8.00e6
41.30
NCDPE
39.02-42.40
479.7165 Fn4
Flags: B
4σ 1.53e3
RT
Results: P:\B5900_B5999\B5987\B5987_18819 DF\Resources\OPR2_18819_DF.utp_res, saved 24-Jan-2022 13:18 (MLS)
Peak annotation: Areas, Centroids
SGS UltraTrace-Pro V5.12 User/System: MLS/USPF22P9BW cc: 4143, 2075, 2891 scc: 751-300
PKD: 21-Jan-2022 10:04 Printed: 24-Jan-2022 13:28 Page 11 of 12


OCDF
5.78e6*
43.68
Rel. Int.
100%
OCDF
42.42-45.01
441.7428 Fn5
Flags: PBM
4σ 2.31e3
0%
Abs. Int.
1.38e6
6.90e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
OCDF
6.53e6*
43.68
Rel. Int.
100%
OCDF
42.42-45.01
443.7398 Fn5
Flags: PBM
4σ 2.25e3
0%
Abs. Int.
1.55e6
7.76e5
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
9.21e6*
43.67
Rel. Int.
100%
OCDF Std.
42.42-45.01
453.7830 Fn5
Flags: PBM
4σ 2.04e3
0%
Abs. Int.
2.15e6
1.07e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
ES OCDF
1.05e7*
43.67
Rel. Int.
100%
OCDF Std.
42.42-45.01
455.7801 Fn5
Flags: PBM
4σ 3.40e3
0%
Abs. Int.
2.58e6
1.29e6
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT
Rel. Int.
100%
DCDPE
42.42-45.01
513.6775 Fn5
Flags: B
4σ 1.22e3
0%
Abs. Int.
8.60e3
4.30e3
0.00e0
42.5
43.0
43.5
44.0
44.5
45.0 RT